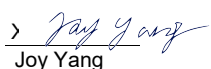


Prüfbericht-Nr.: <i>Test report no.:</i>	CN25K5OB 001	Auftrags-Nr.: <i>Order no.:</i>	48275136	Seite 1 von 3 Page 1 of 3
Kunden-Referenz-Nr.: <i>Client reference no.:</i>	238087605/ P01872072	Auftragsdatum: <i>Order date:</i>	2025-04-08	
Auftraggeber: <i>Client:</i>	MidNite Solar, Inc. 19115 62nd Ave. NE, 98223, Arlington, Washington, United States of America			
Prüfgegenstand: <i>Test item:</i>	ESS Inverter			
Bezeichnung / Typ-Nr.: <i>Identification / Type no.:</i>	see remarks item 5			
Auftrags-Inhalt: <i>Order content:</i>	TÜV Rheinland Test Report			
Prüfgrundlage: <i>Test specification:</i>	UL 1741 CRD issued on April 8, 2023, Subject: Power Control Systems(PCS) UL 3141 Outline of Investigation for Power Control Systems issued on October 9, 2024, section 8 performance			
Wareneingangsdatum: <i>Date of sample receipt:</i>	2025-04-08			
Prüfmuster-Nr.: <i>Test sample no:</i>	2324-20060081PH			
Prüfzeitraum: <i>Testing period:</i>	2025-04-08 – 2025-04-09			
Ort der Prüfung: <i>Place of testing:</i>	See Sonstiges / Other			
Prüflaboratorium: <i>Testing laboratory:</i>	TÜV Rheinland Taiwan Ltd.			
Prüfergebnis*: <i>Test result*:</i>	Pass			
geprüft von: <i>tested by:</i>	 Devin Chen		genehmigt von: <i>authorized by:</i>	 Joy Yang
Datum: <i>Date:</i>	2025-04-25		Ausstellungsdatum: <i>Issue date:</i>	2025-04-25
Stellung / Position:	Project Engineer		Stellung / Position:	Authorizer
Sonstiges / Other:	The testing laboratory is TÜV Rheinland Taiwan Ltd. Taoyuan Testing Laboratories, 4F-1, No. 38, Huaya 1st Road, Guishan District, Taoyuan City 333, Taiwan.			
Zustand des Prüfgegenstandes bei Anlieferung: <i>Condition of the test item at delivery:</i>	Prüfmuster vollständig und unbeschädigt <i>Test item complete and undamaged</i>			
* Legende: <i>* Legend:</i>	P(ass) = entspricht o.g. Prüfgrundlage(n) F(ail) = entspricht nicht o.g. Prüfgrundlage(n) N/A = nicht anwendbar N/T = nicht getestet P(ass) = passed a.m. test specification(s) F(ail) = failed a.m. test specification(s) N/A = not applicable N/T = not tested			
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. <i>This test report only relates to the above mentioned test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.</i>				

Prüfbericht-Nr.: CN25K5OB 001
Test report no.:

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Anmerkungen
Remarks

1	Alle eingesetzten Prüfmittel waren zum angegebenen Prüfzeitraum gemäß eines festgelegten Kalibrierungsprogramms unseres Prüfhauses kalibriert. Sie entsprechen den in den Prüfprogrammen hinterlegten Anforderungen. Die Rückverfolgbarkeit der eingesetzten Prüfmittel ist durch die Einhaltung der Regelungen unseres Managementsystems gegeben. Detaillierte Informationen bezüglich Prüfkonditionen, Prüfequipment und Messunsicherheiten sind im Prüflabor vorhanden und können auf Wunsch bereitgestellt werden. <i>The equipment used during the specified testing period was calibrated according to our test laboratory calibration program. The equipment fulfils the requirements included in the relevant standards. The traceability of the test equipment used is ensured by compliance with the regulations of our management system. Detailed information regarding test conditions, equipment and measurement uncertainty is available in the test laboratory and could be provided on request.</i>
2	Wie vertraglich vereinbart, wurde dieses Dokument nur digital unterzeichnet. Der TÜV Rheinland hat nicht überprüft, welche rechtlichen oder sonstigen diesbezüglichen Anforderungen für dieses Dokument gelten. Diese Überprüfung liegt in der Verantwortung des Benutzers dieses Dokuments. Auf Verlangen des Kunden kann der TÜV Rheinland die Gültigkeit der digitalen Signatur durch ein gesondertes Dokument bestätigen. Diese Anfrage ist an unseren Vertrieb zu richten. Eine Umweltgebühr für einen solchen zusätzlichen Service wird erhoben. Informationen zur Verifizierung der Authentizität unserer Dokumente erhalten Sie auf folgender Webseite: go.tuv.com/digital-signature <i>As contractually agreed, this document has been signed digitally only. TUV Rheinland has not verified and unable to verify which legal or other pertaining requirements are applicable for this document. Such verification is within the responsibility of the user of this document. Upon request by its client, TUV Rheinland can confirm the validity of the digital signature by a separate document. Such request shall be addressed to our Sales department. An environmental fee for such additional service will be charged. For information on verifying the authenticity of our documents, please visit the following website: go.tuv.com/digital-signature</i>
3	Prüfklausel mit der Note * wurden an qualifizierte Unterauftragnehmer vergeben und sind unter der jeweiligen Prüfklausel des Berichts beschrieben. Abweichungen von Prüfspezifikation(en) oder Kundenanforderungen sind in der jeweiligen Prüfklausel im Bericht aufgeführt. <i>Test clauses with remark of * are subcontracted to qualified subcontractors and described under the respective test clause in the report.</i> <i>Deviations of testing specification(s) or customer requirements are listed in specific test clause in the report.</i>
4	Die Entscheidungsregel für Konformitätserklärungen basierend auf numerischen Messergebnissen in diesem Prüfbericht basiert auf der "Null-Grenzwert-Regel" und der "Einfachen Akzeptanz" gemäß ILAC G8:2019 und IEC Guide 115:2023, es sei denn, in der auf Seite 1 dieses Berichts genannten angewandten Norm ist etwas anderes festgelegt oder vom Kunden gewünscht. Dies bedeutet, dass die Messunsicherheit nicht berücksichtigt wird und daher auch nicht im Prüfbericht angegeben wird. Zu weiteren Informationen bezüglich des Risikos durch diese Entscheidungsregel siehe ILAC G8:2019. <i>The decision rule for statements of conformity, based on numerical measurement results, in this test report is based on the "Zero Guard Band Rule" and "Simple Acceptance" in accordance with ILAC G8:2019 and IEC Guide 115:2023, unless otherwise specified in the applied standard mentioned on Page 1 of this report or requested by the customer. This means that measurement uncertainty is not taken in account and hence also not declared in the test report. For additional information to the resulting risk based of this decision rule please refer to ILAC G8:2019.</i>

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Test report no.:

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Absatz Clause	Anforderungen - Prüfungen / Requirements - Tests	Messergebnisse – Bemerkungen/ Measuring results - Remarks	Ergebnis Result

5	The completed test report includes the following documents: - 3 pages of cover page - 307 pages of test data The type no. are as follows: MN 7.5-5KW-AIO, MN 9-6KW-AIO, MN 12-7K6W-AIO, MN 12-8KW-AIO, MN 15-12KW-AIO Unless otherwise specified, all tests were performed on model MN 15-12KW-AIO

<i>Client:</i>	See cover page	<i>Tested by:</i>	See cover page		
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<i>Model No:</i>	See cover page	<i>Standard:</i>	UL 1741 CRD issued on April 8, 2023, Subject: Power Control Systems (PCS)		

Test Package History				
Created By	Reviewed By	Original Version	Original Date	Revision
Xingxin Tian		1.0	2022.07.02	

Remark:

Definition of Power and current flow direction, using generator sign convention:

Load port: Positive values of power or current indicate current flow towards load ;

Grid port: Positive values of power or current indicate current flow towards Grid ;

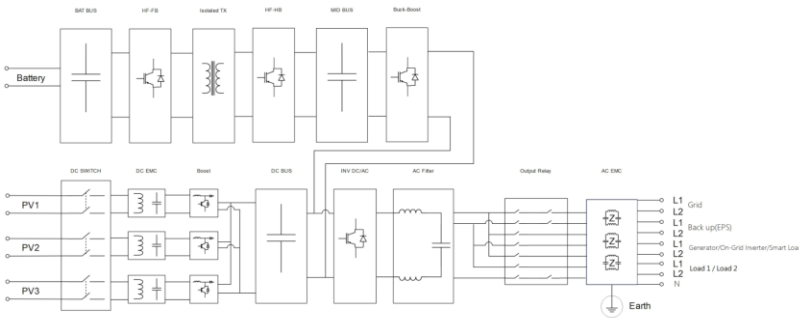
EUT Output port: Positive values of power or current indicate current flow towards AC side;

Generation port: Positive values of power or current indicate current flow away from the generator;

PV port: Positive values of power or current indicate current flow away from the PV array ;

ESS port: Positive values of power or current indicate current flow away from the battery.

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General description of the products	The unit is hybrid PV inverter. The system diagram is as follow: 
Model and/or type reference..... :	MN 15-12KW-AIO
Certification mark to be applied..... :	Test Report
Manufacturer (name and address)..... :	MidNite Solar, Inc. 19115 62nd Ave. NE, 98223, Arlington, Washington, United States of America
Battery DC Port..... :	Battery Voltage Range [V] 40.0 - 64.0 Battery Max. Charge/Discharge Current [A] 210 / 210
Solar DC Port	Max. PV Array Input Power [kW] 15 MPP Voltage Range [V] 70 - 540 Max. Input Current [A] 30 / 22 / 22
Electrical Data (AC)	Max. AC Output Power [kW] 11.4 Rated AC Output Power [kW] 10.0 Nominal AC Output Voltage [V] 120 (L-N) / 240 (L-L) or 208 Max. Output Current [A] 47.5 Nominal Frequency [Hz] 50 / 60
Voltage and Frequency Accuracy..... :	Voltage: $\pm 1\%$, Frequency: $\pm 0.01\text{Hz}$
Installation mode..... :	Permanent installation
Rated ambient temperature range... :	-25°C to 60°C (over 45°C de-rating)
Enclosure index / type..... :	NEMA 3R
Mass of equipment (kg)..... :	46.2
Overall size (W x H x D)..... :	420 by 950 by 240 mm
Firmware Version..... :	051001
Unit Serial Number..... :	2324-20060081PH
The test data comes from report no. CN25KMID 001, the testing samples between current one and previous one are identical, only differ in model name and the name of manufacturer, therefore no additional tests needed.	

<i>Client:</i>	See cover page	<i>Tested by:</i>	See cover page		
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Test Item Summary:

Clause	Description	Applicable	Remarks / Comments
UL 1741 CRD	UL 1741 CRD issued on April 8, 2023, Subject: Power Control Systems (PCS)		
203.5	<i>Step Change in Load Test</i>	Y	
203.6	<i>Step Change in Generation Test</i>	Y	
204	<i>Optional Tests</i>	--	--
204.1	<i>Export limiting from all sources</i>	N	The EUT has no this function.
204.4	<i>Export limiting from Energy Storage Systems</i>	Y	
204.5	<i>Import limiting to Energy Storage Systems</i>	Y	
205	<i>Abnormal Tests</i>	N	Not evaluate this time. See UL 1741 report which shall be provided by the client for details.
NOTE: See clause 204.2 for summary of testing.			

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Test Equipment List:

[illegible]

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201 General Requirements

201.5 Scope of EUT - The EUT referenced in all tests may consist of:

- A single integrated device which includes all of the PCS functionality in a single device; or
- A system with multiple devices operating together; or
- A separate PCS controller intended for use with external devices.

In following tests, the EUT is hybrid inverter with integrated PCS functionality intended for use with external current sensors.

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202 EUT Construction and Configuration

202.4 Where specific devices are required for proper functionality of the PCS, those devices (e.g. external current sensors) shall be specified in the manufacturer's instructions. Other examples of devices required for proper functionality include power converters or inverters, PCS controllers, and controllable AC or DC loads. When specified by the manufacturer, the PCS may optionally be evaluated with a larger number of devices.

In following tests, the EUT is tested with external current sensor of type no. 080-22071-00, 300A/100mA, mfr. YUANXING and/or type no. HY94C82, 150A/50mA, mfr. BEJING STM MEASUREMENT & CONTROL TECHNICAL CO., LTD.

202.10 During all tests, power and current levels, including associated tolerances, are specified as a percentage or the EUT nameplate ratings. Where multiple EUT sources are present the power and current levels shall be calculated using the sum of the nameplate ratings of the individual applicable devices.

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203 Normal Operating Tests

203.1 Normal Operating Tests record and characterize the performance of the PCS during normal operation. These tests monitor currents flowing in PCS controlled conductors in response to step changes in load with generation held constant and in response to step changes in generation with load held constant.

203.2 For testing any required overcurrent devices shall be installed as required in the PCS instructions for the end application. During all tests in Section 203 the EUT shall not result in the opening of any overcurrent protective device. Ratings of overcurrent protective devices used during the testing shall be as specified in the manufacturer's instructions.

203.3 No specific pass / fail criteria currently exist for the temporal response of the PCS. Until standardized temporal requirements are developed, the maximum open loop response shall be less than or equal to 30 seconds. Faster PCS response times are allowed and may be required to meet specific utility requirements.

203.4 The Normal Operation Tests shall use the test setup shown in Figure 203.1 for AC coupled systems or Figure 203.2 for DC coupled systems. For hybrid systems which are capable of combined AC and DC coupled systems the EUT shall be evaluated both as an AC coupled system and as a DC coupled system.

In following tests, DC coupled system used.

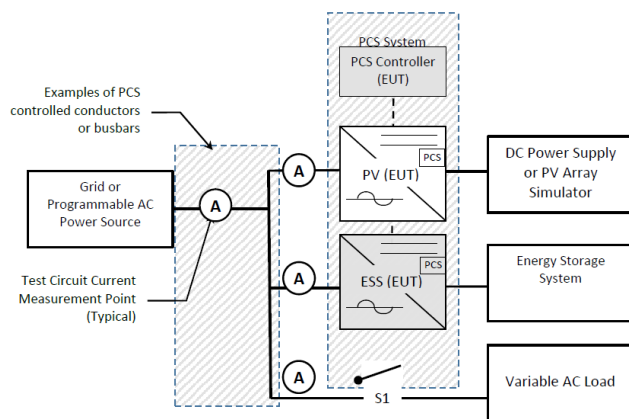


Figure 203.1 – Test Circuit AC Coupled System

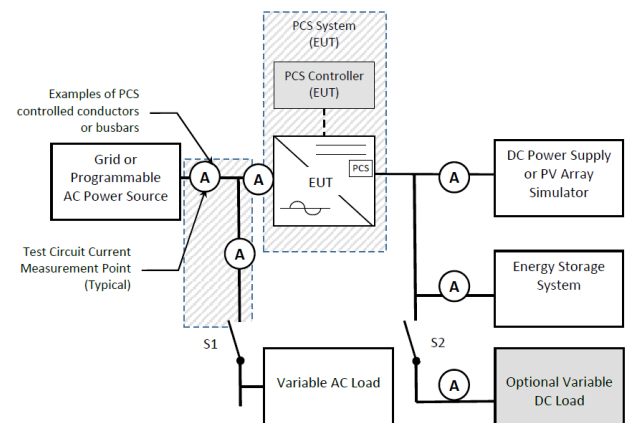


Figure 203.2 – Test Circuit Setup DC Coupled System

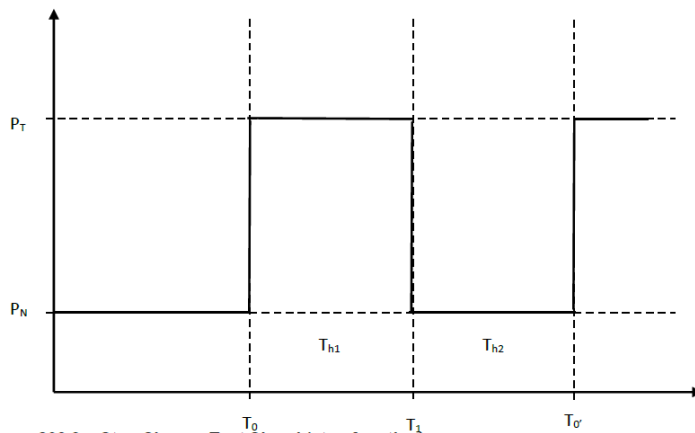


Figure 203.3 – Step Change Test Signal (step function)

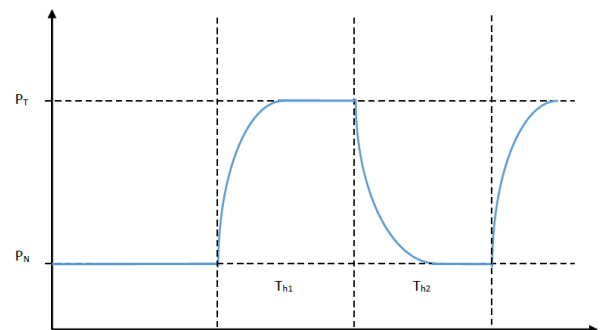


Figure 203.4 - Example EUT response (current) at the measurement point

Where:

P_N = Nominal Condition

P_T = Test Condition

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203.5 Step Change in Load Test

Testing date: see cover page

203.5.1 This procedure uses the step change test signal (step function) defined in Figure 203.3. These tests shall be performed at the terminals of the EUT and/or at an external reference point where the current is controlled. Signal injection test methods may be used for evaluation of Supplemental PCS but shall not be permitted for evaluation of Branch Circuit PCS.

203.5.2 The step change in test loads records the behavior of the PCS to variations in parallel connected loads when operating at constant generation levels. The test may be performed at any convenient voltage and frequency within the continuous operating region. The EUT(s) shall be connected in accordance with the relevant test circuit in Figure 203.1 or 203.2, and in accordance with the manufacturer's instructions.

Test Method:

- a) Set the EUT operating parameters to nominal.
- b) Record the state and settings of any grid support functions of the EUT(s)
- c) Set EUT output current level to rated current, **100%** +/- 5%
- d) Close Switch S1 and adjust the variable load to draw EUT power output at **100%** +/- 2%.
Record the value of the current flowing to the grid or programmable ac power supply
- e) Open Switch S1 and wait for the grid current to reach a new steady state value at EUT rated current. Record the currents flowing in all test circuit current sensors.
- f) Close Switch S1 and wait for the grid current to reach a new steady state value at EUT rated current. Record the currents flowing in all test circuit current sensors. Repeat steps e) and f) two times for **a total of three samples**. The timing of the step transitions used in steps e) and f), shown as Th1 and Th2 in Figure 203.3, shall be selected to achieve steady state conditions in all current sensors.
- g) Repeat steps d) through f) with **load** tuned to **66%** +/- 5% and **33%** +/- 5% of EUT output current.
- h) Repeat steps d) through g) with the **EUT output limit** set to:
 - i. **50%** +/- 5% and **0%** + 5%/-0% of nameplate current rating, and;
 - ii. Optionally, at the maximum negative range of current supported by the system¹.
- i) For three phase units repeat steps c) through h) opening switch S1 on **only one phase** and again **with two phases simultaneously**.
- j) For single phase units connected line to line, repeat steps c) through h) opening switch S1 on only one line.

¹ Apparent current may be limited to negative values if the system is to be evaluated for capability to maintain a load bias rather than a zero-current setting.

Criteria:

No specific pass / fail criteria currently exist for the temporal response of the PCS. Until standardized temporal requirements are developed, the maximum open loop response shall be less than or equal to 30 seconds. Faster PCS response times are allowed and may be required to meet specific utility requirements.

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Results:
(1) For single phase unit connected line to neutral (208Vac)

203.5 Step Change in Load Test																
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			Tr (s) ($<30s$)
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	
1	100%	100%	d	209.00	92.67	11185.00	209.00	92.47	11133.583	209.00	3.08	-26.27	359.89	34.40	11803.47	--
			e	210.00	92.58	11184.39	210.00	0.00	0.000	210.00	92.60	-11190.73	359.87	34.41	11808.98	1.000
			f	209.00	92.73	11190.97	209.00	92.68	11159.152	209.00	3.05	-4.09	359.93	34.41	11810.72	0.400
			e	209.89	92.30	11196.22	209.98	0.00	0.000	209.89	92.66	-11201.16	359.95	34.41	11806.53	1.000
			f	209.00	92.71	11188.38	209.00	92.69	11160.63	209.00	3.04	-1.25	360.00	34.45	11822.15	0.400
			e	210.00	92.60	11192.92	210.00	0.00	0.000	210.00	92.61	-11199.55	359.97	34.45	11814.25	1.000
			f	209.00	92.72	11189.87	209.00	92.71	11161.68	209.00	3.04	-0.05	360.00	34.41	11806.84	0.400
2		66%	d	209.10	92.60	11184.57	209.10	61.62	7423.98	209.10	31.14	-3746.09	360.01	34.40	11805.88	--
			e	210.00	92.33	11197.36	210.000	0.00	0.000	210.00	92.69	-11201.27	360.00	34.42	11810.97	1.000
			f	209.00	92.69	11195.66	209.00	61.86	7454.06	209.00	30.99	-3731.52	360.02	34.39	11806.48	0.400
			e	209.90	92.68	11201.70	209.90	0.00	0.000	209.90	92.77	-11209.98	360.03	34.41	11812.70	1.000
			f	209.00	92.65	11191.77	209.00	61.89	7457.24	209.00	30.93	-3724.91	360.07	34.40	11807.98	0.400
			e	210.00	92.64	11198.55	210.00	0.00	0.00	210.00	92.74	-11204.14	360.05	34.40	11815.74	1.000
			f	209.10	92.64	11190.98	209.10	61.89	7459.31	209.10	30.89	-3716.60	360.11	34.76	11806.56	0.400
3		33%	d	209.09	92.62	11195.45	209.09	30.20	3640.00	209.09	62.59	-7558.36	360.17	34.33	11803.61	--
			e	209.65	80.56	9538.64	209.65	0.00	0.00	209.65	81.60	-9548.10	364.57	29.15	10092.29	1.000
			f	209.20	80.56	9542.99	209.20	30.35	3659.00	209.20	53.22	-5838.18	364.35	29.02	10036.60	0.400
			e	209.60	79.91	9457.89	209.60	0.00	0.00	209.60	80.88	-9443.01	365.18	28.73	9965.22	1.000
			f	209.07	80.56	9542.75	209.07	30.35	3660.79	209.07	53.33	-5879.90	364.70	29.07	10070.55	0.400
			e	209.70	81.31	9644.85	209.702	0.000	0.000	209.70	82.154	-9622.55	364.31	29.37	10161.90	1.000
			f	209.10	92.42	11165.27	209.100	30.352	3664.708	209.10	62.185	-7492.810	360.308	34.24	11769.15	0.400
4	50%	100%	d	208.90	49.20	5922.219	208.904	92.258	11094.091	208.90	43.151	5188.850	380.000	16.424	6181.297	--
			e	209.89	49.47	5873.253	209.898	0.000	0.000	209.89	49.575	-5881.756	380.084	16.309	6127.645	1.000
			f	209.00	49.20	5920.050	209.000	92.737	11152.718	209.00	43.662	5249.426	380.000	16.416	6178.180	0.400
			e	209.52	49.49	5873.902	209.521	0.000	0.000	209.52	49.572	-5879.564	380.083	16.332	6137.568	1.000

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Model No:	See cover page	Standard:	UL 1741 CRD issued on April 8, 2023, Subject: Power Control Systems (PCS)		

203.5 Step Change in Load Test																	
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			Tr (s) ($\leq 30s$)	
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	209.00	49.20	5920.120	209.00	92.81	11160.95	209.00	43.73	5257.28	380.00	16.407	6175.05	0.400	
			e	209.95	49.49	5871.111	209.95	0.00	0.00	209.95	49.58	-5880.81	380.07	16.312	6128.74	1.000	
			f	208.90	49.20	5920.057	208.90	92.80	11160.91	208.90	43.73	5258.51	380.00	16.417	6177.74	0.400	
		5	66%	d	209.00	49.19	5920.000	209.00	61.55	7410.42	209.00	12.74	1498.85	380.00	16.433	6182.92	--
				e	209.98	49.56	5877.804	209.98	0.00	0.00	209.98	49.58	-5881.47	380.07	16.327	6134.09	1.000
				f	209.00	49.99	5920.000	209.00	61.78	7434.96	209.00	12.96	1525.77	380.00	16.401	6175.03	0.400
				e	209.79	49.55	5877.096	209.79	0.00	0.00	209.79	49.59	-5880.43	380.09	16.331	6136.44	1.000
				f	209.00	49.19	5920.279	209.00	61.83	7442.91	209.00	13.03	1534.67	380.00	16.427	6182.61	0.400
				e	209.90	49.55	5874.81	209.90	0.00	0.00	209.90	49.59	-5881.03	380.08	16.316	6130.14	1.000
f	209.00			49.20	5920.22	209.00	61.83	7442.88	209.00	13.02	1534.37	380.00	16.402	6174.90	0.400		
6	33%	d	209.00	49.13	5911.33	209.00	30.20	3629.89	209.00	19.26	-2280.05	380.00	16.408	6175.18	--		
		e	209.591	49.548	5873.25	209.59	0.00	0.00	209.59	49.58	-5879.36	380.08	16.321	6130.67	1.000		
		f	209.000	49.136	5913.76	209.00	30.32	3654.21	209.00	19.08	-2259.70	380.00	16.398	6165.11	0.400		
		e	209.900	49.563	5877.28	209.90	0.00	0.00	209.90	49.59	-5881.39	380.07	16.320	6132.17	1.000		
		f	209.004	49.135	5912.37	209.00	30.21	3643.77	209.00	19.23	-2276.74	380.00	16.410	6175.63	0.400		
		e	209.902	49.566	5877.96	209.90	0.00	0.00	209.90	49.59	-5881.51	380.06	16.336	6136.52	1.000		
		f	209.000	49.132	5912.38	209.00	30.32	3655.89	209.00	19.06	-2257.74	380.00	16.399	6165.44	0.400		
7	0%	100%	d	208.000	1.888	-34.42	208.00	92.14	11066.87	208.00	92.46	11110.74	381.00	0.008	3.01	--	
			e	208.507	1.941	-27.09	208.50	0.00	0.00	208.50	2.13	26.81	381.00	0.004	1.67	1.000	
			f	208.000	1.876	-34.70	208.00	92.67	11129.52	208.00	92.99	11174.46	381.00	-0.011	-4.31	0.400	
			e	208.234	1.911	-27.50	208.23	0.00	0.00	208.23	2.11	27.37	381.00	0.005	1.92	1.000	
			f	207.998	1.839	-34.90	207.99	92.03	11054.44	207.99	92.32	11085.36	381.00	-0.009	-3.37	0.400	
			e	208.100	1.893	-27.35	208.10	0.00	0.00	208.10	2.10	27.29	381.00	0.006	2.14	1.000	
			f	208.000	1.821	-34.59	208.00	92.71	11134.18	208.00	93.02	11178.51	381.00	-0.009	-3.43	0.400	
8	66%	d	208.000	1.759	-32.60	208.00	61.47	7389.81	208.00	61.79	7429.62	381.00	-0.006	-2.31	--		
		e	208.519	1.872	-27.42	208.51	0.00	0.00	208.51	2.10	27.40	381.00	0.007	2.37	1.000		
		f	208.000	1.760	-32.94	208.00	61.68	7415.96	208.00	62.01	7455.86	381.00	-0.006	-2.47	0.400		
		e	208.102	1.863	-27.35	208.10	0.00	0.00	208.10	2.10	27.41	381.00	0.007	2.51	1.000		
		f	208.000	1.747	-32.80	208.00	61.92	7442.64	208.00	62.24	7482.64	381.00	-0.007	-2.86	0.400		
		e	208.010	1.858	-27.28	208.01	0.00	0.00	208.01	2.10	27.41	381.00	0.006	2.20	1.000		

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203.5 Step Change in Load Test																
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			Tr (s) (<30s)
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	
9		33%	f	208.00	1.74	-32.65	208.00	61.72	7418.43	208.00	62.02	7457.80	381.00	-0.007	-2.61	0.400
			d	208.00	1.67	-43.09	208.00	30.00	3620.00	208.00	30.40	3660.00	360.00	-0.078	-28.39	--
			e	210.00	1.74	-25.71	210.00	0.00	0.00	210.00	1.97	26.46	360.00	-0.108	-39.00	1.000
			f	208.00	1.67	-43.13	208.00	30.25	3638.70	208.00	30.67	3680.15	360.00	-0.081	-29.10	0.400
			e	209.90	1.74	-25.80	209.90	0.00	0.00	209.90	1.96	26.46	360.00	-0.109	-39.01	1.000
			f	208.00	1.67	-42.69	208.00	30.39	3647.04	208.00	30.80	3692.29	360.00	-0.083	-30.03	0.400
			e	209.89	1.75	-24.92	209.89	0.00	0.00	209.89	1.98	25.39	360.00	-0.110	-39.99	1.000
			f	208.00	1.67	-42.90	208.00	30.26	3634.52	208.00	30.67	3679.74	360.00	-0.085	-30.61	0.400

(1) For single phase unit connected line to neutral (240Vac)

203.5 Step Change in Load Test																
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			Tr (s) (≤30s)
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	
1	100%	100%	d	240.00	92.59	11123.0	240.00	93.56	11212.05	240.00	2.04	-113.88	359.27	32.35	11594.9	--
			e	240.00	92.37	11108.5	240.00	0.00	0.00	242.00	92.42	11123.76	359.37	32.28	11564.4	1.000
			f	240.00	92.62	11124.9	240.00	93.40	11193.30	240.00	1.96	-92.45	359.39	32.33	11588.0	0.400
			e	240.00	92.47	11120.4	240.00	0.00	0.00	242.00	92.44	11127.82	359.24	32.35	11590.9	1.000
			f	240.00	92.66	11131.1	240.00	93.37	11190.38	240000	1.92	-84.84	359.09	32.39	11598.4	0.400
			e	240.00	92.46	11120.3	240.00	0.00	0.00	242000	92.48	11131.50	359.39	32.30	11575.0	1.000
			f	240.00	92.64	11127.1	240000	93.31	11182.16	240.00	1.91	-78.85	359.47	32.33	11587.4	0.400
2		66%	d	240.00	92.48	11115.2	240.00	61.87	7421.17	240.00	30.67	3683.53	359458	32.28	11567.5	--
			e	240.00	92.42	11115.0	240.00	0.00	0.00	242.00	92.41	11124.28	359.22	32.30	11579.4	1.000
			f	240.00	92.53	11123.5	239.99	61.50	7378.00	240.01	31.14	3740.250	359.31	32.43	11592.3	0.400
			e	240.00	92.46	1118.97	240.00	0.00	0.00	242.00	92.46	11129.68	359.42	32.30	11575.8	1.000
			f	240.00	92.51	11120.6	240.00	61.98	7437.17	240.00	30.58	3672.91	359.54	32.27	11567.0	0.400
			e	240.00	92.48	11122.7	240.00	0.00	0.00	242.00	92.49	11133.09	359.20	32.34	11584.3	1.000
			f	240.00	92.58	11128.9	240.00	60.70	7283.59	240.04	32.02	3843.90	359.08	32.38	11596.0	0.400

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203.5 Step Change in Load Test																
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			Tr (s) (<30s)
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	
3		33%	d	240.00	92.30	11101.1	240.00	30.30	3641.29	240.00	62.04	7462.94	359.84	32.22	11548.9	--
			e	240.00	92.35	11105.6	240.00	0.00	0.00	242.00	92.37	11115.77	359.47	32.29	11571.18	1.000
			f	240.00	92.41	1111056	240.00	30.10	3616.06	240.01	62.32	7497.92	359.30	32.32	11579.6	0.400
			e	240.00	92.41	11113.0	240.00	0.00	0.00	242.00	92.40	11121.08	359.72	32.26	11564.3	1.000
			f	240.00	92.44	11116.9	239.99	27.34	3283.52	240.19	65.191	7842.64	359.85	32.25	11567.2	0.400
			e	240.00	92.46	11118.2	240.00	0.00	0.00	242.00	92.458	11127.89	359.34	32.322	1158.14	1.000
			f	240.00	92.49	11122.0	240.00	30.28	3636.29	240.00	62.231	7485.53	359.28	32.33	11587.1	0.400
4		100%	d	240.00	47.91	5744.90	240.00	93.20	11159.52	240.00	45.302	-5431.48	360.00	16.89	5976.53	--
			e	240.00	48.02	5728.78	240.00	0.00	0.00	240.00	47.999	5730.04	360.00	16.88	5972.32	1.000
			f	240.00	47.93	5746.44	240.00	93.26	11166.69	240.00	45.368	-5438.02	360.00	16.89	5977.04	0.400
			e	240.00	48.02	5728.35	240.00	0.00	0.00	240.00	47.999	5730.87	360.00	16.84	5961.72	1.000
			f	240.00	47.90	5739.95	239.96	83.99	10055.23	239.99	45.705	-4314.28	360.00	16.87	5969.67	0.400
			e	240.00	48.00	5727.20	240.00	2.26	270.90	240.00	47.77	5459.05	360.00	16.86	5967.66	1.000
			f	240.00	47.94	5746.59	240.00	93.26	11166.93	240.00	45.37	-5439.71	360.00	16.89	5979.90	0.400
5	50%	66%	d	240.00	47.90	5745.61	240.00	61.74	7397.09	240.00	13.97	-1662.78	360.00	16.88	5976.99	--
			e	240.00	48.02	5728.18	240000	0.00	0.00	240.00	48.00	5730.38	360.00	16.83	5960.39	1.000
			f	240.00	47.80	5740.57	240.00	61.85	7413.03	240.00	14.10	-1679.03	360.00	16.86	5968.48	0.400
			e	240.00	48.02	5728.84	240.00	0.00	0.00	240.00	48.00	5731.70	360.00	16.86	5968.21	1.000
			f	239.99	47.91	5745.29	239.99	59.45	7125.76	240.00	15.57	-1380.12	360.00	16.90	5981.79	0.400
			e	240.00	48.02	5728.98	240.00	0.00	0.00	240.00	48.00	5730.36	360.00	16.83	5960.98	1.000
			f	240.00	47.89	5745.07	240.00	61.91	7419.28	240.0	14.15	-1685.06	360.00	16.88	5974.05	0.400
6		33%	d	240.89	48.43	5821.33	240.89	30.19	3620.00	240.896	18.41	2200.00	360.00	17.00	6066.87	--
			e	242.00	48.14	5819.76	242.00	0.00	0.00	242.00	48.20	5820.00	360.00	16.99	6060.79	1.000
			f	240.87	48.42	5821.29	240.87	30.28	3639.60	240.87	18.24	2180.00	360.00	17.00	6067.40	0.400
			e	242.000	48.148	5819.880	242.000	0.000	0.000	242.000	48.200	5820.00	360.00	16.99	6062.17	1.000
			f	240.517	48.430	5821.222	240.517	30.364	3647.222	240.517	18.162	2169.81	360.0	17.02	6077.38	0.400
			e	242.000	48.144	5819.002	242.000	0.000	0.000	242.000	48.198	5819.80	360.000	16.99	6062.93	1.000
			f	240.138	48.422	5820.742	240.138	30.316	3643.509	240.138	18.198	2173.83	360.00	17.00	6069.50	0.400
7	0%	100%	d	240.000	1.657	-71.233	240.000	93.368	11166.085	240.000	93.973	-11242.71	361.00	-0.077	-27.981	--
			e	240.000	1.775	-71.472	240.000	0.000	0.000	240.000	1.797	-71.41	361.00	-0.077	-27.999	1.000

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203.5 Step Change in Load Test																
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			Tr (s) (<30s)
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	
8			f	239.99	1.665	-71.383	239.99	92.66	11081.94	239.99	93.12	11134.32	361.00	-0.077	-27.998	0.400
			e	240.00	1.778	-71.365	240.00	0.00	0.00	240.00	1.79	-71.39	361.00	-0.077	-28.000	1.000
			f	240.00	1.662	-71.272	240.00	93.27	11154.53	240.00	93.87	-11228.20	361.00	-0.077	-27.997	0.400
			e	240.00	1.776	-71.364	240.00	0.00	0.00	240.00	1.79	-71.33	361.00	-0.077	-28.000	1.000
			f	240.00	1.667	-71.167	240.00	93.28	11154.66	239.99	93.83	-11222.02	361.00	-0.078	-28.000	0.400
		66%	d	240.00	1.637	-71.356	240.00	61.69	7381.67	240.00	62.30	-7457.052	361.00	-0.078	-28.000	--
			e	240.00	1.784	-71.441	240.00	0.00	0.00	240.00	1.80	-71.39	361.00	-0.078	-28.000	1.000
			f	240.00	1.639	-71.433	240.00	61.83	7402.52	240.00	62.45	-7473.65	361.00	-0.079	-28.321	0.400
			e	240.00	1.790	-71.287	240.00	0.00	0.00	240.00	1.80	-71.36	361.00	-0.079	-28.933	1.000
			f	240.00	1.633	-71.398	240.00	61.85	7404.27	240.00	62.45	-7476.12	361.00	-0.080	-29.000	0.400
9		33%	e	240.00	1.790	-71.287	240.00	0.00	0.00	240.00	1.80	-71.35	361.00	-0.080	-29.000	1.000
			f	240.00	1.632	-71.332	240.00	61.88	7406.50	240.00	62.49	-7480.59	361.00	-0.081	-29.000	0.400
			d	240.00	1.647	-71.550	240.00	30.24	3621.69	240.00	30.86	-3691.22	361.00	-0.085	-30.934	--
			e	240.00	1.800	-71.715	240.00	0.00	0.00	240.00	1.81	-71.62	361.00	-0.085	-30.954	1.000
			f	239.99	1.64	-71.65	239.99	30.09	3602.17	240.00	30.66	-3667.26	361.00	-0.085	-31.000	0.400
			e	240.00	1.80	-71.80	240.00	0.00	0.00	240.00	1.81	-71.81	361.00	-0.086	-31.000	1.000
			f	239.99	1.66	-71.75	239.99	27.11	3246.41	240.00	27.84	-3312.87	361.00	-0.086	-31.000	0.400
			e	240.00	1.80	-71.84	240.00	0.70	84.17	240.00	2.51	-158.44	361.00	-0.086	-31.000	1.000
			f	240.00	1.66	-71.80	240.00	30.24	3623.11	240.00	30.86	-3692.63	361.00	-0.086	-31.000	0.400

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203.6 Step Change in Generation Test

Testing date: see cover page

203.6.1 This procedure uses the step change test signal (step function) defined in Figure 203.3. These tests shall be performed at the terminals of the EUT or an external reference point where the current is controlled. Signal injection test methods may be used.

203.6.2 The step change in generation test records the behavior of the PCS to variations in generation levels when connected in parallel with constant loads. For a PCS which includes an ESS device the step change in generation tests do not apply to the ESS source. The step change in generation test shall be applied only for variable input power sources, e.g. PV or Wind.

203.6.3 The test may be performed at any convenient near nominal voltage and frequency within the continuous operating region. Connect the EUT(s) in accordance with the relevant test circuit in Figure 203.1 or 203.2 and following the manufacturers supplied instructions

Test Method:

- Set or verify that the EUT operating parameters are set to nominal.
- Record the state and settings of any grid support functions of the EUT(s)
- Set **EUT output** current level to rated current, **100%** +/- 5%
- Close Switch S1 and tune the variable **load** to **33%** +/- 2% of EUT nameplate active current output rating. Record the apparent currents flowing in all test circuit current sensors.
- Reduce the current of the DC source to a level which results in an EUT active output current **between 5% and 10%** of EUT's nameplate current rating. Record the currents flowing in all test circuit current sensors.
- Increase the DC source to **full** power and record the value of the current flowing to the grid or programmable ac power supply.
- Repeat steps e) and f) two times for a total of **three** samples.
- Repeat steps e) through g) with the reduced value of the dc source set to a level which results in an EUT active output current **between 33% and 66%** of EUT nameplate rating. Record the currents flowing in all test circuit current sensors.
- Repeat e) through h) with the EUT output current level set to **66%** +/-5% and **33%** +/-5% of EUT nameplate rating. Record the currents flowing in all test circuit current sensors. The timing of the step transitions used in steps e) through h) shown as Th1 and Th2 in Figure 203.3, shall be selected to achieve steady state conditions in all current sensors.

Criteria:

No specific pass / fail criteria currently exist for the temporal response of the PCS. Until standardized temporal requirements are developed, the maximum open loop response shall be less than or equal to 30 seconds. Faster PCS response times are allowed and may be required to meet specific utility requirements.

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Results:
208Vac

203.6 Step Change in Generation Test																
Load level: 33%																
Excel file	EUT output limit	Generatio n level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			Tr (s) (<u><30s</u>)
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	
1	100%	5%-10%	d	209.10	91.86	11114.27	209.10	30.20	3640.00	209.10	61.94	-7480.21	360.00	32.39	11603.61	-
			e	208.10	10.22	1216.63	208.10	30.00	3620.00	208.10	20.18	2419.20	360.00	3.54	1277.20	0.500
			f	209.00	92.04	11120.94	209.00	30.20	3640.00	209.00	62.00	-7491.37	360.00	32.39	11603.24	0.700
			e	208.00	10.22	1216.12	208.00	30.00	3620.00	208.00	20.03	2403.19	360.00	3.56	1285.39	0.500
			f	209.0	92.03	11122.03	209.00	30.20	3640.00	209.00	62.00	-7494.17	360.00	32.39	11611.57	0.700
			e	208.000	10.21	1215.84	208.00	30.00	3620.00	208.00	20.17	2419.25	360.00	3.53	1274.22	0.500
			f	209.09	92.03	11120.97	209.09	30.20	3640.00	209.09	62.00	-7491.46	360.00	32.38	11623.82	0.700
2		33%- <u>66%</u>	d	209.10	92.05	11123.31	209.10	30.20	3640.00	209.10	62.01	-7496.15	360.00	32.40	11700.00	--
			e	209.00	60.40	7284.51	209.00	30.15	3620.00	209.000	30.42	-3660.00	360.00	21.09	7588.04	0.500
			f	209.00	92.05	11122.69	209.00	30.20	3640.00	209.00	62.01	-7495.51	360.00	32.40	11614.21	0.700
			e	209.00	60.40	7284.61	209.00	30.18	3620.98	209.00	30.40	-3657.24	360.00	21.10	7587.29	0.500
			f	209.00	92.15	11135.13	209.00	30.20	3640.00	209.00	62.11	-7502.07	360.00	32.46	11692.81	0.700
			e	209.00	60.40	7282.85	209.00	30.14	3620.00	209.00	30.40	-3660.14	360.00	21.05	7579.72	0.500
			f	209.10	92.15	11135.00	209.10	30.20	3640.00	209.10	62.11	-7502.51	360.00	32.44	11666.47	0.700
3	66%	5%-10%	d	209.00	60.55	7293.95	209.00	30.05	3620.00	209.00	30.59	-3664.22	360.00	21.10	7597.58	--
			e	208.00	10.31	1225.74	208.00	30.00	3620.00	208.00	19.98	2393.37	360.00	3.57	1289.32	0.500
			f	209.00	60.54	7292.66	209.00	30.00	3620.00	209.00	30.60	-3679.002	360.00	21.10	7603.64	0.700
			e	208.00	10.31	1226.01	208.00	30.00	3620.00	208.00	19.99	2400.000	360.00	3.60	1297.51	0.500
			f	209.00	60.56	7295.56	209.00	30.00	3620.00	209.00	30.60	-3679.36	360.00	21.10	7598.22	0.700
			e	208.09	10.31	1226.15	208.09	30.00	3620.00	208.09	19.99	2400.14	360.000	3.58	1290.00	0.500
			f	209.00	60.55	7293.74	209.00	30.00	3620.00	209.00	30.60	-3676.41	360.00	21.10	7606.79	0.700
4		<u>33%</u> -66%	d	209.00	60.56	7294.45	209.00	30.00	3620.00	209.00	30.60	-3677.44	360.00	21.10	7604.21	--
			e	209.00	60.56	7294.51	209.00	30.00	3620.00	209.00	30.60	-3677.45	360.00	21.10	7599.90	0
			f	209.00	60.55	7294.37	209.00	30.0	3620.00	209.00	30.60	-3677.532	360.00	21.102	7604.57	0
			e	209.00	60.56	7294.49	209.00	30.00	3620.00	209.00	30.60	-3678.443	360.000	21.110	7609.40	0
			f	209.00	60.55	7294.55	209.00	30.00	3620.00	209.00	30.60	-3672.111	360.000	21.100	7599.96	0
	e		209.00	60.55	7293.75	209.00	30.00	3620.00	209.00	30.60	-3675.007	360.000	21.104	7603.63	0	

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203.6 Step Change in Generation Test																
Load level: 33%																
Excel file	EUT output limit	Generatio n level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			Tr (s) (30s)
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	
			f	209.00	60.55	7293.75	209.00	30.00	3620.00	209.00	30.60	-3675.00	360.00	21.10	7603.63	0
5	33%	5%-10%	d	208.89	27.93	3359.89	208.89	30.00	3620.00	208.89	3.21	268.75	360.00	9.64	3472.80	--
			e	208.00	10.22	1215.90	208.00	30.00	3620.00	208.00	20.17	2419.12	360.00	3.52	1271.91	0.500
			f	209.00	27.92	3359.75	209.00	30.00	3620.00	209.00	3.21	268.98	360.00	9.64	3475.96	0.700
			e	208.10	10.22	1215.39	208.10	30.00	3620.00	208.10	20.19	2419.63	360.00	3.53	1271.77	0.500
			f	209.00	60.56	7294.45	209.00	30.00	3620.00	209.00	30.60	-3677.44	360.00	21.10	7604.21	--
			e	209.00	60.56	7294.51	209.00	30.00	3620.00	209.00	30.60	-3677.45	360.00	21.10	7599.90	0
			f	209.00	60.55	7294.37	209.00	30.00	3620.00	209.00	30.00	-3677.53	360.00	21.10	7604.57	0
6		<u>33%</u> -66%	d	209.00	60.56	7294.49	209.00	30.00	3620.00	209.00	30.60	-3678.44	360.00	21.11	7609.40	0
			e	209.00	60.55	7294.55	209.00	30.00	3620.00	209.00	30.60	-3672.11	360.00	21.10	7599.96	0
			f	209000	60.55	7293.75	209.00	30.00	3620.00	209.00	30.60	-3675.00	360.00	21.10	7603.63	0
			e	209.00	60.55	7293.75	209.00	30.00	3620.00	209.00	30.60	-3675.00	360.00	21.10	7603.63	0
			f	208.89	27.93	3359.89	208.89	30.00	3620.00	208.89	3.21	268.75	360.00	9.64	3472.80	--
			e	208.00	10.22	1215.90	208.00	30.00	3620.00	208.00	20.17	2419.12	360.00	3.52	1271.91	0.500
			f	209.00	27.92	3359.75	209.00	30.00	3620.00	209.00	3.21	268.98	360.00	9.64	3475.96	0.700
Note																

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203.6 Step Change in Generation Test																
Load level: 33%																
Excel file	EUT output limit	Generatio n level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			Tr (s) (<30s)
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	
1	100%	5%-10%	d	241.00	92.20	11100.00	241.00	29.97	3600.00	241.00	62.29	-7471.31	360.00	32.10	11500.00	-
			e	240.00	9.80	1164.00	240.00	29.80	3563.75	240.00	20.19	2400.08	360.00	3.40	1228.40	1.100
			f	241.00	92.36	11100.99	241.00	29.80	3580.00	241.00	62.57	-7503.74	360.00	32.10	11500.00	1.100
			e	240.00	9.80	1163.92	240.00	29.80	3560.00	240.00	20.06	2399.27	360.00	3.40	1227.84	1.100
			f	241.00	92.24	11100.00	241.00	29.80	3580.00	241.00	62.54	-7503.23	360.000	32.1	11523.75	1.100
			e	240.00	9.80	1164.03	240.00	29.80	3560.00	240.00	20.04	2397.111	360.000	3.405	1227.130	1.100

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203.6 Step Change in Generation Test																
Load level: 33%																
Excel file	EUT output limit	Generatio n level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			Tr (s) (<u><30s</u>)
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	
			f	241.00	92.24	11100.00	241.00	29.80	3580.00	241.00	62.54	-7499.65	360.00	32.10	11500.00	1.100
2		33%- <u>66%</u>	d	240.00	92.27	11100.00	240.00	29.90	3592.83	240.00	62.42	-7486.88	360.00	32.10	11535.96	--
			e	240.00	60.40	7260.00	240.00	29.80	3580.00	240.00	30.68	-3666.04	360.00	20.90	7509.85	1.100
			f	240.00	92.33	11101.24	240.00	29.80	3580.00	240.00	62.56	-7504.89	360.00	32.11	11586.12	0.100
			e	240.00	60.40	7260.00	240.00	29.80	3580.00	240.00	30.76	-3674.06	360.00	20.90	7515.06	1.100
			f	240.00	92.31	11100.28	240.00	29.80	3580.00	240.00	62.56	-7503.65	360.00	32.10	11502.85	0.100
			e	240.00	64.10	7704.42	240.00	29.80	3580.00	240.00	34.72	-4151.33	360.00	22.19	7983.02	1.100
			f	240.00	92.37	11105.13	240.00	29.80	3580.00	240.00	62.56	-7504.30	360.00	32.10	11585.73	0.100
3	66%	5%-10%	d	240.00	60.40	7260.00	240.00	29.80	3580.00	240.00	30.76	-3673.37	360.00	20.88	7502.99	--
			e	240.00	9.81	1163.88	240.00	29.00	3560.00	240.00	20.03	2398.57	360.00	3.39	1223.42	1.100
			f	240.00	60.40	7258.50	240.00	29.80	3580.00	240.00	30.73	-3672.53	360.00	20.85	7500.12	1.100
			e	240.00	9.81	1164.00	240.00	29.80	3560.00	240.00	20.01	2398.47	360.00	3.49	1227.97	1.100
			f	240.00	60.40	7260.00	240.00	29.80	3580.00	240.00	30.74	-3672.63	360.00	20.88	7506.40	1.100
			e	240.00	11.32	1339.58	240.00	29.80	3560.66	239.99	20.40	2166.26	360.00	3.90	1406.40	1.100
			f	240.00	60.40	7256.86	240.00	29.80	3580.00	240.00	30.70	-3668.84	360.00	20.80	7499.71	1.100
4		<u>33%</u> -66%	d	240.00	60.40	7258.84	240.00	29.80	3580.00	240.00	30.72	-3671.48	360.00	20.82	7500.23	--
			e	240.00	60.40	7258.85	240.00	29.80	3580.00	240.00	30.73	-3671.01	360.00	20.90	7511.28	0
			f	240.00	60.40	7260.00	240.00	29.80	3580.00	240.00	30.73	-3671.01	360.00	20.88	7505.64	0
			e	240.00	60.40	7259.16	240.00	29.00	3580.00	240.00	30.71	-3668.93	360.00	20.86	7503.17	0
			f	240.00	60.40	7260.00	240.00	29.80	3580.00	240.00	30.72	-3669.81	360.00	20.88	7506.57	0
			e	240.00	60.40	7259.04	240.00	29.80	3580.00	240.00	30.72	-3669.59	360.00	20.90	7514.51	0
			f	240.00	60.40	7259.45	240.00	29.80	3580.00	240.00	30.73	-3673.06	360.00	20.86	7504.55	0
5	33%	5%-10%	d	242.00	27.40	3300.00	242.00	30.00	3620.00	242.00	3.51	-321.59	360.00	9.49	3420.00	--
			e	242.00	9.72	1162.65	242.00	30.00	3620.00	241.82	20.40	-2441.19	360.00	3.42	1230.69	1.100
			f	242.00	27.40	3300.00	242.00	30.00	3620.00	242.00	3.50	-320.24	360.00	9.49	3420.00	1.100
			e	242.00	9.72	1162.61	242.00	30.00	3620.00	241.81	20.40	-2441.05	360.00	3.41	1230.69	1.100
			f	242.00	27.40	3300.00	242.00	30.00	3620.00	241.99	3.50	-319.17	360.00	9.49	3420.00	1.100
			e	242.00	10.24	1225.93	242.00	30.00	3620.00	241.74	19.74	-2357.92	360.00	3.59	1294.22	1.100

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203.6 Step Change in Generation Test																
Load level: 33%																
Excel file	EUT output limit	Generatio n level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			Tr (s) (<30s)
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	
			f	242.00	27.40	3300.00	242.00	30.00	3620.00	242.00	3.50	-320.06	360.00	9.50	3420.00	1.100
6		<u>33%</u> -66%	d	242.00	27.40	3300.00	242.00	30.00	3620.00	242.00	3.49	-320.09	360.00	9.49	3420.00	--
			e	242.00	27.40	3300.00	242.00	30.00	3620.00	242.00	3.49	-321.08	360.00	9.49	3420.00	0
			f	242.00	27.40	3300.00	242.00	30.00	3620.00	241.99	3.48	-319.65	360.00	9.50	3420.00	0
			e	242.00	27.40	3300.00	242.00	30.00	3620.00	242.00	3.58	-319.93	360.00	9.50	3420.00	0
			f	242.00	27.40	3300.00	242.00	30.00	3620.00	242.00	3.59	-320.17	360.00	9.49	3420.00	0
			e	242.00	27.40	3300.00	242.00	30.00	3620.00	242.00	3.53	-319.56	360.00	9.49	3420.00	0
			f	242.00	27.40	3300.00	242.00	30.00	3620.00	242.00	3.48	-318.65	360.00	9.50	3420.00	0
No																

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204 Optional test

204.1 A PCS may optionally be evaluated to control current exchange with the Area EPS at an external reference point of applicability such as the point of common coupling. The PCS may limit current flow from sources to the Area EPS (exporting) or limit current flow from the Area EPS to loads (importing). During these optional tests the current measured at any external reference point shall not cause the PCS to exceed any current limits as defined in Section 201.9. A PCS shall be considered in compliance if the current conducted to any optional external reference point(s) does not result in a steady state current on any PCS controlled conductor greater than the limits set in tests 203.5 and 203.6. The following optional tests shall be conducted as applicable for functionality and system configurations specified by the manufacturer.

Note: These requirements do not presently evaluate the ability of a PCS to comply with the Prioritization of DER Responses contained in IEEE Standard 1547, 2018. Following publication of IEEE P1547.1 these requirements will be revised to align with the 1547.1 testing protocols that are expected to include requirements for active and reactive power control functions for the PCS controlled conductors except where the active or reactive power control function could cause a PCS controlled current to exceed the limits of protected conductors or bus bars.

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204.1.1 Export limiting from all sources

Testing date: N/A

Test Method:

204.1.1 Where the PCS uses external current sensors to limit currents at an external reference point, such as at the point of common coupling, repeat the test sequence in 203.5 and 203.6 at the following conditions:

- Install the external current sensors in accordance with the instructions supplied by the manufacturer.
- Perform test 203.5 and 203.6 and measure current flows, including current flow to the external reference point such as the Area EPS or programmable ac power source. The timing of the step transitions shown as Th1 and Th2 in Figure 203.3, shall be selected to achieve steady state conditions in all current sensors, including the external current sensor at the external reference point.
- Repeat step b) above with external current limit set to 50% (+/- 5%) and 0% (+/- 5%) of EUT nameplate rating. If the manufacturer also elects to support a minimum import function, repeat tests 203.5 and 203.6 at the minimum import setting which results in maximum current flow from the Area EPS or programmable ac power source (i.e. at the maximum setting of minimum import limit - Example: -50% or -100% of EUT nameplate rating).

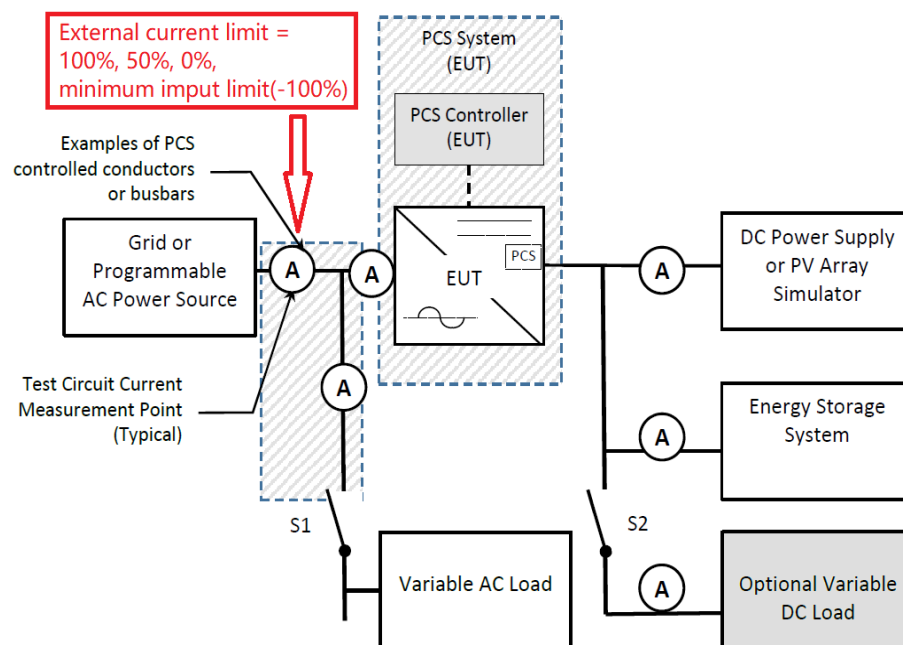


Figure 203.2 – Test Circuit Setup DC Coupled System

Criteria:

204.1.2 An EUT shall be considered in compliance if the current conducted to any optional external reference point(s) does not result in a steady state current on any PCS controlled conductor greater than the limits set in tests 203.5 and 203.6.

Results:

The EUT has no this function.

[illegible]

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204.4 Export limiting from Energy Storage Systems

Testing date: see cover page

Test Method:

204.4.1 Where the PCS includes ability to limit current flow from an ESS to the external reference point such as the point of common coupling to the Area EPS (i.e. ESS grid export limiting). Repeat the test sequence in 203.5 and 203.6 at the following conditions:

- a) Install any external current sensors, if applicable, in accordance with the instructions supplied by the manufacturer.
- b) For EUT's with multiple inputs, such as PV and ESS, set or verify the other, non ESS, inputs are set to 100% +/-5% of their nameplate ratings.
- c) Set or verify that the ESS external export current limit is set to 0% to +5% of EUT nameplate rating.
- d) Run test 203.5 and 203.6 and record current flows including current flow to the Area EPS or programmable ac power source and the output of the ESS. The timing of the step transitions shown as Th1 and Th2 in Figure 203.3, shall be selected to achieve steady state conditions in all current sensors, including the external current sensor at the external reference point and at the output of the ESS.
- e) Where the PCS only supports zero export from the ESS steps f) and g) may be omitted.
- f) Repeat steps c) through e) above with external current limit set to 66% +/- 5% and 33% +/- 5% of EUT nameplate rating.
- g) For EUT's with multiple inputs, such as PV and ESS, repeat steps c) through g) with the other, non ESS, inputs set to 50% +/- 5% and 0% to +5% of their nameplate ratings

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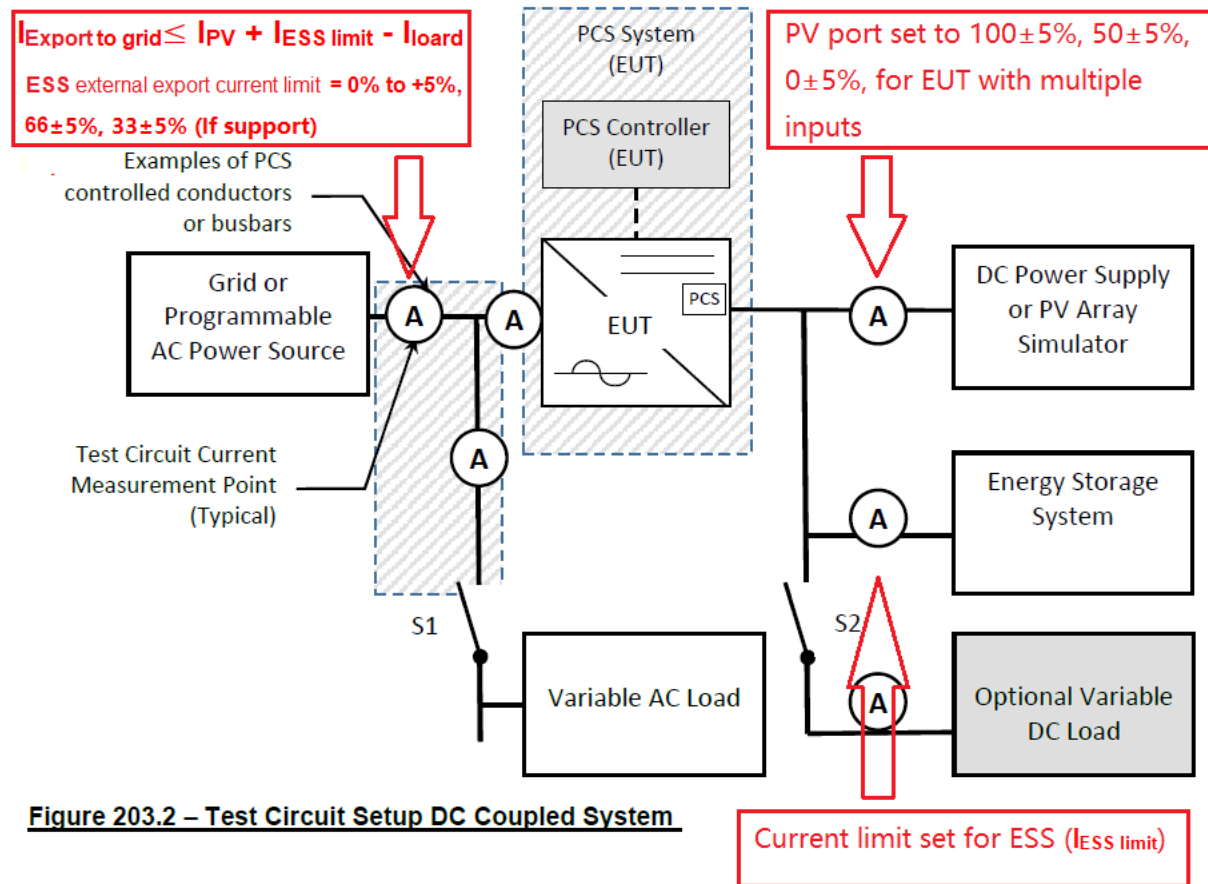


Figure 203.2 – Test Circuit Setup DC Coupled System

Criteria:

204.4.2 The EUT shall be considered in compliance if the steady state export current at the external reference point does not exceed the current from generation sources other than the ESS plus the current limit set for the ESS minus any local load.

204.4.3 For DC coupled systems the AC output current of the EUT shall be considered to be proportional to the to the relative DC current flows from each source divided by the sum of the DC current from all sources.

i.e. $I_{\text{Export to grid}} \leq I_{PV} + I_{ESS \text{ limit}} - I_{load}$ (Clause 204.4.2)

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Results:
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(1) ESS external export current limit = 0% to +5%, PV inputs = 100% ± 5%

(1-1) 203.5 test

(a) For single phase unit connected line to neutral

203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (≤30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
1	100%	100%	d	209.00	92.48	11134.78	209.00	92.03	11050.85	209.00	3.06	-55.832	360.000	32.500	11700.000	48.200	-0.08	-0.02	--	
			e	209.00	92.39	11139.23	209.00	0.00	0.00	209.00	92.40	-11143.521	360.000	32.500	11700.000	48.200	-0.08	-0.58	1.000	
			f	208.89	92.57	11145.77	208.89	92.60	11123.06	208.89	3.03	4.14	360.00	32.56	11711.58	48.20	-0.10	-4.14	0.200	
			e	209.00	92.45	11146.79	209.00	0.00	0.00	209.00	92.52	-11155.81	360.00	32.56	11708.69	48.20	-0.10	-6.26	1.000	
			f	209.00	92.60	11148.41	209.00	92.70	11132.24	209.00	3.09	11.98	360.00	32.57	11716.80	48.20	-0.11	-8.23	0.200	
			e	209.00	92.47	11150.49	209.00	0.00	0.00	209.00	92.56	-11161.51	360.00	32.56	11713.77	48.20	-0.10	-5.68	1.000	
			f	209.00	92.60	11147.87	209.00	92.67	11130.15	209.00	3.13	10.40	360.00	32.52	11705.42	48.20	-0.10	-4.22	0.200	
2		66%	d	209.00	92.47	11142.20	209.00	61.43	7382.73	209.00	31.22	-3749.95	360.00	32.50	11700.00	48.20	-0.10	-6.91	--	
			e	209.00	92.50	11153.06	209.00	0.00	0.00	209.00	92.59	-11160.32	360.00	32.50	11700.00	48.20	-0.10	-6.89	1.000	
			f	209.00	92.54	11147.77	209.00	61.65	7411.05	209.00	31.04	-3730.14	360.00	32.50	11700.00	48.20	-0.10	-7.52	0.200	
			e	209.00	92.55	11158.16	209.00	0.00	0.00	209.00	92.59	-11163.28	360.00	32.50	11700.00	48.20	-0.10	-7.42	1.000	
			f	209.00	92.56	11149.38	209.00	61.72	7418.53	209.00	30.99	-3724.42	360.00	32.50	11700.00	48.20	-0.10	-3.47	0.200	
			e	209.00	92.53	11155.76	209.00	0.00	0.00	209.00	92.59	-11161.35	360.00	32.50	11700.00	48.20	-0.10	-7.44	1.000	
			f	209.00	92.52	11144.87	209.00	61.70	7417.40	209.00	30.96	-3720.65	360.00	32.50	11700.00	48.20	-0.10	-6.91	0.200	
3	33%	d	209.00	92.46	11145.48	209.00	30.00	3620.00	209.00	62.50	-7530.30	360.00	32.50	11700.00	48.20	-0.12	-9.69	--		

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	209.00	92.47	11149.83	209.00	0.00	0.00	209.00	92.58	-11159.63	360.00	32.50	11700.00	48.20	-0.11	-9.20	1.000	
			f	209.00	92.49	11149.42	209.00	30.26	3640.24	209.00	62.36	-7514.91	360.00	32.55	11711.58	48.20	-0.11	-9.68	0.200	
			e	209.00	92.52	11156.55	209.00	0.00	0.00	209.00	92.60	-11165.50	360.00	32.57	11717.71	48.20	-0.11	-7.74	1.000	
			f	209.00	92.49	11149.65	209.00	30.27	3645.19	209.00	62.33	-7509.75	360.00	32.56	11715.80	48.20	-0.11	-9.33	0.200	
			e	209.00	92.50	11153.49	209.00	0.00	0.00	209.00	92.58	-11162.51	360.00	32.57	11716.56	48.20	-0.10	-5.66	1.000	
			f	209.00	92.47	11146.36	209.00	30.26	3642.71	209.00	62.28	-7502.82	360.00	32.55	11712.41	48.20	-0.09	-2.12	0.200	
4	50%	100%	d	208.00	49.00	5886.51	208.00	92.02	11041.85	208.00	43.14	5176.16	360.00	17.00	6120.53	48.20	-0.02	0.000	--	
			e	209.00	49.26	5843.95	209.00	0.00	0.00	209.00	49.39	-5859.71	360.00	16.90	6086.40	48.20	-0.01	0.000	1.000	
			f	208.00	49.00	5891.15	208.00	92.52	11100.10	208.00	43.59	5231.05	360.00	17.00	6121.41	48.20	-0.02	0.000	0.200	
			e	209.00	49.32	5847.15	209.00	0.00	0.00	209.00	49.40	-5860.00	360.00	16.90	6092.30	48.20	-0.02	0.000	1.000	
			f	208.00	49.00	5893.81	208.00	92.65	11116.47	208.00	43.71	5244.85	360.00	17.00	6129.48	48.20	-0.01	0.000	0.200	
			e	209.00	49.32	5847.58	209.00	0.00	0.00	209.00	49.40	-5860.00	360.00	16.90	6088.22	48.20	-0.01	0.000	1.000	
		f	208.00	49.01	5893.83	208.00	92.63	11113.89	208.00	43.69	5241.99	360.00	17.00	6120.84	48.20	-0.04	0.000	0.200		
		66%	d	208.00	49.00	5893.45	208.00	61.41	7375.84	208.00	12.73	1499.71	360.00	17.00	6127.63	48.20	-0.04	0.000	--	
			e	209.00	49.33	5849.76	209.00	0.00	0.00	209.00	49.39	-5860.00	360.00	16.90	6097.15	48.20	-0.04	0.000	1.000	
			f	208.00	49.00	5892.62	208.00	61.62	7399.01	208.00	12.93	1524.33	360.00	17.00	6121.15	48.20	-0.04	0.000	0.200	
			e	209.00	49.31	5847.92	209.00	0.00	0.00	209.00	49.40	-5860.00	360.00	16.90	6089.08	48.20	-0.05	0.000	1.000	
			f	208.07	49.00	5893.54	208.07	61.66	7405.45	208.07	12.95	1523.36	360.00	17.00	6125.32	48.20	-0.04	0.000	0.200	
e	209.00		49.32	5849.10	209.00	0.00	0.00	209.00	49.37	-5852.65	360.00	16.90	6098.58	48.20	-0.05	0.000	1.000			

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	208.00	49.00	5894.97	208.00	61.65	7403.68	208.00	12.94	1525.10	360.00	17.00	6121.94	48.20	-0.05	0.000	0.200	
6		33%	d	208.89	49.00	5880.57	208.89	30.00	3617.80	208.89	19.20	-2279.85	360.00	17.00	6114.42	48.20	-0.05	0.000	--	
			e	209.00	49.30	5848.82	209.00	0.00	0.00	209.00	49.40	-5860.07	360.00	16.90	6095.78	48.20	-0.04	0.000	1.000	
			f	208.28	48.90	5880.74	208.28	30.24	3632.43	208.28	19.02	-2254.06	360.00	17.00	6122.90	48.20	-0.05	0.000	0.200	
			e	209.00	49.31	5849.37	209.00	0.00	0.00	209.00	49.39	-5858.22	360.00	16.00	6089.19	48.20	-0.04	0.000	1.000	
			f	208.10	49.00	5880.56	208.10	30.24	3633.67	208.10	18.97	-2246.42	360.00	17.00	6115.69	48.20	-0.05	0.000	0.200	
			e	209.00	49.29	5849.26	209.00	0.00	0.00	209.00	49.40	-5860.00	360.00	16.90	6089.82	48.20	-0.05	0.000	1.000	
			f	208.79	49.00	5881.18	208.79	30.23	3630.95	208.79	19.04	-2256.63	360.00	17.00	6124.40	48.20	-0.05	0.000	0.200	
7	0%	100%	d	207.91	1.849	-32.94	207.91	91.78	10990.20	207.91	92.02	11038.52	360.00	-0.03	-10.79	48.20	-0.03	0.000	--	
			e	208.00	1.896	-25.74	208.00	0.00	0.00	208.00	2.23	25.63	360.00	-0.01	-3.98	48.20	-0.02	0.000	1.000	
			f	207.99	1.836	-32.96	207.99	92.40	11071.39	207.99	92.71	11113.90	360.00	-0.02	-10.07	48.20	-0.01	0.000	0.200	
			e	208.00	1.884	-25.75	208.00	0.00	0.00	208.00	2.22	25.61	360.00	-0.01	-4.17	48.20	-0.01	0.000	1.000	
			f	207.89	1.816	-32.85	207.89	92.50	11083.59	207.89	92.80	11123.82	360.00	-0.02	-9.79	48.20	-0.01	0.000	0.200	
			e	208.00	1.876	-25.84	208.00	0.00	0.00	208.00	2.22	25.86	360.00	-0.01	-3.85	48.20	-0.01	0.000	1.000	
			f	207.90	1.80	-33.19	207.90	92.48	11081.82	207.90	92.79	11123.88	360.00	-0.02	-9.81	48.20	-0.01	0.000	0.200	
8		66%	d	208.00	1.80	-33.05	208.00	91.66	10984.58	208.00	92.00	11027.49	360.00	-0.02	-9.79	48.20	-0.004	0.000	--	
			e	208.00	1.86	-25.71	208.00	0.00	0.00	208.00	2.22	25.80	360.00	-0.01	-3.84	48.20	0.004	0.000	1.100	
			f	208.00	1.74	-31.20	208.00	61.59	7387.16	208.00	61.92	7426.39	360.00	-0.02	-7.58	48.20	-0.002	0.000	0.100	
			e	208.00	1.85	-25.82	208.00	0.00	0.00	208.00	2.22	25.85	360.00	-0.00	-3.19	48.20	-0.007	0.000	1.000	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
9			f	207.90	1.73	-31.21	207.90	61.59	7388.98	207.90	61.93	7427.42	360.00	-0.02	-7.32	48.20	-0.001	0.000	0.100	
			e	208.00	1.85	-25.75	208.00	0.00	0.00	208.00	2.22	25.93	360.00	-0.008	-2.82	48.20	-0.004	0.000	1.000	
			f	208.00	1.73	-31.25	208.00	61.59	7388.70	208.00	61.92	7427.21	360.00	-0.01	-6.68	48.20	-0.006	0.000	0.100	
		33%	d	208.00	1.70	-29.18	208.00	30.00	3600.00	208.00	30.40	3638.39	360.00	-0.01	-4.99	48.20	-0.01	0.000	--	
			e	208.00	1.85	-25.91	208.00	0.00	0.00	208.00	2.22	26.08	360.00	-0.006	-2.11	48.20	-0.01	0.000	1.100	
			f	208.00	1.69	-29.35	208.00	30.20	3626.44	208.00	30.52	3660.79	360.00	-0.01	-4.93	48.20	-0.01	0.000	0.100	
			e	208.00	1.84	-25.88	208.00	0.00	0.00	208.00	2.23	26.14	360.00	-0.00	-1.74	48.20	-0.01	0.000	1.000	
			f	208.00	1.69	-29.27	208.00	30.22	3628.58	208.00	30.57	3666.13	360.00	-0.01	-4.12	48.20	-0.02	0.000	0.100	
			e	20800	1.84	-25.90	208.00	0.00	0.00	208.00	2.23	26.15	360.00	-0.003	-1.22	48.20	-0.01	0.000	1.000	
			f	208.00	1.69	-29.09	208.00	30.23	3627.41	208.00	30.54	3664.65	360.00	-0.01	-4.19	48.20	-0.02	0.000	0.100	

Note:

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(1-2) 203.6 test

203.6 Step Change in Generation Test																					
Load level: 33%																					
Excel file	EUT output limit	Generation level (PV)	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode	
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)			
1	100%	5%-10%	d	209.00	92.43	11141.72	209.00	3.19	3626.89	209.00	62.39	-7516.36	360.00	32.42	11700.00	48.20	-0.10	-6.45	--		
			e	208.00	10.35	1228.94	208.00	30.00	3600.00	208.00	19.91	2380.07	360.00	3.57	1287.11	48.20	-0.11	-8.18	0.500		
			f	209.00	92.48	11146.23	209.00	30.00	3620.00	209.00	62.58	-7536.61	360.00	32.50	11700.00	48.20	-0.10	-7.13	0.600		
			e	208.00	10.35	1228.87	208.00	30.00	3600.00	208.00	19.90	2380.25	360.00	3.57	1287.27	48.20	-0.11	-9.61	0.500		
			f	209.00	92.47	11146.19	209.00	30.00	3620.00	209.00	62.54	-7531.44	360.00	32.43	11700.00	48.20	-0.12	-9.85	0.600		
			e	208.00	10.35	1228.85	208.00	30.00	3600.00	208.00	19.86	2373.89	360.00	3.55	1280.04	48.20	-0.11	-9.64	0.500		
			f	209.00	92.46	11145.62	209.00	30.00	3620.00	209.00	62.56	-7534.57	360.00	32.50	11700.00	48.20	-0.11	-9.17	0.600		
2		33%-66%	d	209.00	92.50	11151.46	209.00	30.00	3620.00	209.00	62.55	-7534.26	360.00	32.55	11709.31	48.20	-0.11	-7.97	--		
			e	209.00	60.67	7299.94	209.00	30.00	3617.17	209.00	30.80	-3698.40	360.00	21.10	7607.97	48.20	-0.11	-7.90	0.500		
			f	209.00	92.53	11153.73	209.00	30.00	3620.00	209.00	62.56	-7536.35	360.00	32.55	11709.23	48.20	-0.11	-9.80	0.500		
			e	208.90	60.72	7301.83	208.90	30.00	3617.58	208.90	30.80	-3690.53	360.00	21.10	7604.34	48.20	-0.12	-9.83	0.500		
			f	209.00	92.46	11144.93	209.00	30.00	3620.00	209.00	62.57	-7536.23	360.00	32.49	11700.00	48.20	-0.11	-9.37	0.500		
			e	208.99	61.00	7340.17	208.99	30.00	3617.73	208.99	31.19	-3745.56	360.00	21.21	7647.39	48.20	-0.11	-9.33	0.500		
			f	209.00	92.49	11148.47	209.00	30.00	3620.00	209.00	62.57	-7537.23	360.00	32.55	11712.26	48.20	-0.11	-8.78	0.500		
3	66%	5%-10%	d	208.90	60.68	7300.11	208.90	30.00	3616.79	208.90	30.80	-3697.42	360.00	21.10	7607.22	48.20	-0.12	-9.92	--		
			e	208.00	10.35	1228.59	208.00	30.00	3600.00	208.00	19.89	2380.00	360.00	3.55	1280.15	48.20	-0.12	-9.85	1.000		
			f	208.96	60.73	7302.34	208.96	30.00	3615.80	208.96	30.80	-3688.61	360.00	21.10	7592.44	48.20	-0.11	-9.20	1.000		
			e	208.00	10.35	1228.77	208.00	30.00	3600.00	208.00	19.89	2379.67	360.00	3.54	1278.71	48.20	-0.11	-8.63	1.000		
			f	209.00	60.71	7301.08	209.00	30.00	3617.11	209.00	30.80	-3699.82	360.00	21.10	7590.67	48.20	-0.11	-9.00	1.000		
			e	208.00	10.35	1228.75	208.00	30.00	3600.00	208.00	19.90	2380.37	360.00	3.57	1288.23	48.20	-0.10	-7.21	1.000		
			f	208.90	60.67	7300.17	208.90	30.00	3617.60	208.90	30.80	-3695.00	360.00	21.10	7592.96	48.20	-0.09	-2.63	1.000		
4		33%-66%	d	208.92	60.66	7299.88	208.92	30.00	3618.23	208.92	30.80	-3694.71	360.00	21.10	7590.53	48.20	-0.10	-4.98	--		
			e	209.00	60.70	7300.59	209.00	30.00	3618.77	209.00	30.80	-3685.96	360.00	21.10	7597.66	48.20	-0.10	-4.77	0		
			f	209.00	60.72	7300.99	209.00	30.00	3618.72	209.00	30.80	-3699.57	360.00	21.10	7603.52	48.20	-0.09	-2.01	0		
			e	209.00	60.70	7300.77	209.00	30.00	3618.77	209.00	30.80	-3699.29	360.00	21.10	7600.56	48.20	-0.09	-1.93	0		
			f	208.95	60.67	7299.82	208.95	30.00	3618.40	208.95	30.80	-3697.83	360.00	21.10	7590.94	48.20	-0.09	-1.79	0		

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generation level (PV)	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	208.89	60.66	7299.68	208.89	30.00	3619.48	208.89	30.80	-3696.34	360.00	21.10	7590.55	48.20	-0.09	-2.78	0	
			f	208.94	60.70	7301.02	208.94	30.00	3619.28	208.94	30.80	-3698.91	360.00	21.10	7601.69	48.20	-0.10	-4.43	0	
5	33%	5%-10%	d	208.00	28.05	3370.21	208.00	30.00	3600.00	208.00	3.03	238.26	360.00	9.67	3484.57	48.20	-0.10	-5.67	--	
			e	208.00	10.33	1226.89	208.00	30.00	3600.00	208.00	19.92	2382.31	360.00	3.54	1278.20	48.20	-0.11	-7.86	0.500	
			f	208.00	28.00	3362.47	208.00	30.00	3600.00	208.00	3.04	240.61	360.00	9.67	3482.34	48.20	-0.10	-7.15	0.600	
			e	208.00	10.33	1226.35	208.00	30.00	3600.00	208.00	19.92	2381.41	360.00	3.54	1278.26	48.20	-0.09	-3.23	0.500	
			f	208.00	28.00	3361.68	208.00	30.00	3600.00	208.00	3.04	241.28	360.00	9.67	3482.99	48.20	-0.08	0.00	0.600	
			e	207.99	10.50	1246.48	207.99	30.00	3599.96	207.99	19.73	2357.71	360.00	3.60	1300.00	48.20	-0.06	0.00	0.500	
f		208.00	28.00	3361.36	208.00	30.00	3600.00	208.00	3.04	241.48	360.00	9.67	3485.44	48.20	-0.07	0.00	0.600			
6		33%-66%	d	208.00	28.00	3360.94	208.00	30.00	3600.00	208.00	3.05	241.45	360.00	9.68	3489.43	48.20	-0.06	0.00	--	
			e	208.00	28.00	3361.62	208.00	30.00	3600.00	208.00	3.04	241.32	360.00	9.70	3496.02	48.20	-0.05	0.00	0	
			f	208.00	28.00	3360.72	208.00	30.00	3600.00	208.00	3.06	242.00	360.00	9.67	3487.62	48.20	-0.04	0.00	0	
			e	208.00	28.00	3361.38	208.00	30.00	3600.00	208.00	3.05	241.71	360.00	9.67	3488.18	48.20	-0.04	0.00	0	
			f	208.00	28.00	3361.92	208.00	30.00	3600.00	208.00	3.04	241.18	360.00	9.68	3488.74	48.20	-0.02	0.00	0	
	e		208.00	28.00	3361.97	208.00	30.00	3600.00	208.00	3.04	241.08	360.00	9.68	3488.71	48.20	-0.02	0.00	0		
f	208.00	28.00	3361.74	208.00	30.00	3600.00	208.00	3.04	241.29	360.00	9.68	3488.70	48.20	-0.02	0.00	0				
Note:																				

(2) ESS external export current limit = $66 \pm 5\%$, PV inputs = $100\% \pm 5\%$ - (If supported)

(2-1) 203.5 test

203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
1	100%	100%	d	210.000	91.842	11103.233	210.000	92.521	11155.238	210.000	3.045	76.938	354.942	42.332	15000.000	48.800	-65.408	-3194.486	--	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operati ng Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	210.000	91.759	11102.940	210.000	0.000	0.000	210.000	91.800	11116.733	354.891	42.330	15000.000	48.800	-65.392	3193.394	1.000	
			f	209.901	91.885	11106.019	209.901	92.906	11201.678	209.901	3.141	122.091	355.940	42.208	15000.000	48.800	-65.223	3185.885	0.100	
			e	210.000	91.767	11107.053	210.000	0.000	0.000	210.000	91.801	11119.517	359.264	41.806	15000.000	48.800	-65.372	3192.335	1.000	
			f	209.953	91.912	11109.784	209.953	92.968	11210.349	209.953	3.160	127.622	360.028	41.703	15000.000	48.800	-65.346	3190.832	0.100	
			e	210.000	91.804	11113.367	210.000	0.000	0.000	210.000	91.843	11121.845	359.998	41.704	15000.000	48.800	-65.325	3190.474	1.000	
			f	210.000	91.972	11116.690	210.000	92.969	11209.872	210.000	3.160	119.974	360.591	41.644	15000.000	48.800	-65.233	3186.876	0.100	
2		66%	d	210.000	91.892	11115.464	210.000	61.662	7440.677	210.000	30.411	-3668.321	360.004	41.703	15000.000	48.800	-65.310	3189.612	--	
			e	210.000	91.917	11127.441	210.000	0.000	0.000	210.000	91.999	11139.056	360.016	41.703	15000.000	48.800	-65.140	3181.071	1.000	
			f	209.945	91.918	11116.991	209.945	61.819	7461.385	209.945	30.258	-3651.105	361.270	41.574	15000.000	48.800	-65.254	3188.242	0.100	
			e	210.000	91.856	11121.031	210.000	0.000	0.000	210.000	91.950	11130.048	360.485	41.654	15000.000	48.800	-65.133	3180.741	1.000	
			f	210.000	91.877	11114.210	210.000	61.901	7469.351	210.000	30.153	-3636.073	360.020	41.701	15000.000	48.800	-65.055	3177.720	0.100	
			e	210.000	91.921	11128.080	210.000	0.000	0.000	210.000	91.980	11135.711	361.668	41.533	15000.000	48.800	-64.657	3157.706	1.000	
	f		210.000	91.921	11118.944	210.000	61.881	7467.846	210.000	30.209	-3643.937	360.579	41.645	15000.000	48.800	-64.770	3163.381	0.100		

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
3		33%	d	210.00 0	91.88 7	11119.3 23	210.00 0	30.20 0	3640.00 0	210.00 0	61.79 5	- 7473.509	360.02 9	41.70 1	15000.0 00	48.80 0	-64.744	- 3162.35 6	--	
			e	210.00 0	91.90 7	11126.0 25	210.00 0	0.000	0.000	210.00 0	91.94 2	11131.94 2	360.09 8	41.69 3	15000.0 00	48.80 0	-64.624	- 3156.47 9	1.00 0	
			f	210.00 0	91.87 5	11118.6 42	210.00 0	30.33 7	3666.01 9	210.00 0	61.61 0	- 7450.413	360.29 7	41.67 3	15000.0 00	48.80 0	-64.743	- 3162.19 7	0.10 0	
			e	210.00 0	91.89 5	11124.3 16	210.00 0	0.000	0.000	210.00 0	91.97 0	11134.26 7	360.34 9	41.66 8	15000.0 00	48.80 0	-64.673	- 3158.59 9	1.00 0	
			f	210.00 0	91.86 5	11116.9 38	210.00 0	30.36 7	3666.78 9	210.00 0	61.63 3	- 7456.373	360.42 4	41.66 0	15000.0 00	48.80 0	-64.776	- 3163.69 4	0.10 0	
			e	210.00 0	91.88 2	11120.3 49	210.00 0	0.000	0.000	210.00 0	91.93 5	11131.77 1	360.17 7	41.68 5	15000.0 00	48.80 0	-64.683	- 3158.95 3	1.00 0	
			f	210.00 0	91.86 4	11116.4 05	210.00 0	30.35 4	3667.30 4	210.00 0	61.62 7	- 7455.178	360.53 4	41.65 0	15000.0 00	48.80 0	-64.813	- 3165.30 7	0.10 0	
4	50%	100%	d	209.00 0	48.79 9	5880.65 2	209.00 0	92.40 6	11131.1 03	209.00 0	43.75 3	5271.855	360.00 0	36.40 0	13100.0 00	49.60 0	- 131.00 0	- 6500.00 0	--	
			e	210.00 0	49.03 1	5842.43 2	210.00 0	0.000	0.000	210.00 0	49.19 3	- 5859.637	360.00 0	36.30 0	13100.0 00	49.60 0	- 131.00 0	- 6500.00 0	1.00 0	
			f	209.03 2	48.80 5	5879.33 4	209.03 2	89.87 5	10827.1 64	209.03 2	44.09 5	4974.706	360.00 0	36.39 7	13099.7 34	49.60 0	- 131.00 0	- 6500.00 0	0.10 0	
			e	210.00 0	49.03 7	5842.15 8	210.00 0	0.000	0.000	210.00 0	49.19 7	- 5859.871	360.00 0	36.30 0	13100.0 00	49.60 0	- 131.00 0	- 6499.75 8	1.00 0	
			f	209.00 0	48.80 0	5883.29 5	209.00 0	92.71 1	11168.8 52	209.00 0	44.03 0	5304.293	360.00 0	36.40 0	13100.0 00	49.60 0	- 131.00 0	- 6499.53 4	0.10 0	
			e	210.00 0	49.08 5	5845.29 9	210.00 0	0.000	0.000	210.00 0	49.08 4	- 5841.766	360.00 0	36.30 0	13100.0 00	49.60 0	- 131.00 0	- 6500.00 0	1.00 0	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	209.00 0	48.80 0	5884.53 6	209.00 0	92.57 5	11151.8 69	209.00 0	43.86 8	5284.736	360.00 0	36.40 0	13100.0 00	49.60 0	- 131.00 0	- 6500.00 0	0.10 0	
5		66%	d	209.00 0	48.80 0	5882.43 1	209.00 0	61.62 1	7428.24 6	209.00 0	13.17 3	1560.727	360.00 0	36.40 0	13100.0 00	49.60 0	- 131.00 0	- 6499.33 6	--	
			e	210.00 0	49.04 9	5842.94 0	210.00 0	0.000	0.000	210.00 0	49.19 9	- 5860.000	360.00 0	36.30 0	13100.0 00	49.60 0	- 131.00 0	- 6500.00 0	1.00 0	
			f	209.02 5	48.80 3	5881.09 2	209.02 5	60.29 2	7267.31 3	209.02 5	14.06 6	1408.732	360.00 0	36.39 8	13099.7 34	49.60 0	- 131.00 0	- 6500.00 0	0.10 0	
			e	210.00 0	49.03 8	5842.89 9	210.00 0	0.000	0.000	210.00 0	49.19 6	- 5859.775	360.00 0	36.30 3	13100.0 00	49.60 0	- 131.00 0	- 6500.00 0	1.00 0	
			f	209.00 0	48.79 9	5881.49 8	209.00 0	61.78 9	7452.14 6	209.00 0	13.33 7	1575.604	360.00 0	36.40 0	13100.0 00	49.60 0	- 131.00 0	- 6500.00 0	0.10 0	
			e	210.00 0	49.03 0	5841.93 7	210.00 0	0.000	0.000	210.00 0	49.19 2	- 5859.658	360.00 0	36.30 0	13100.0 00	49.60 0	- 131.00 0	- 6500.00 0	1.00 0	
			f	209.00 0	48.79 9	5880.94 2	209.00 0	61.78 4	7449.30 1	209.00 0	13.35 9	1584.225	360.00 0	36.40 0	13100.0 00	49.60 0	- 131.00 0	- 6500.00 0	0.10 0	
6		33%	d	209.03 1	48.71 8	5877.24 3	209.03 1	30.20 0	3640.00 0	209.03 1	18.83 6	- 2240.050	360.00 0	36.40 0	13100.0 00	49.60 0	- 131.00 0	- 6500.00 0	--	
			e	210.00 0	49.02 0	5841.16 2	210.00 0	0.000	0.000	210.00 0	49.18 1	- 5858.911	360.00 0	36.31 7	13100.0 00	49.60 0	- 131.00 0	- 6500.00 0	1.00 0	
			f	209.00 0	48.73 2	5878.18 9	209.00 0	30.33 0	3664.20 8	209.00 0	18.63 4	- 2214.248	360.00 0	36.40 0	13100.0 00	49.60 0	- 131.00 0	- 6500.00 0	0.10 0	
			e	210.00 0	49.03 2	5842.19 0	210.00 0	0.000	0.000	210.00 0	49.13 0	- 5853.688	360.00 0	36.30 0	13100.0 00	49.60 0	- 131.00 0	- 6500.00 0	1.00 0	
			f	209.06 0	48.73 7	5877.90 3	209.06 0	30.34 4	3664.72 5	209.06 0	18.65 1	- 2216.872	360.00 0	36.40 0	13100.0 00	49.60 0	- 131.00 0	- 6500.00 0	0.10 0	

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203.5 Step Change in Load Test																					
Excel file	EUT output limit	Load level	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operati ng Mode	
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)			
			e	210.000	49.016	5840.684	210.000	0.000	0.000	210.000	49.175	-5859.316	360.000	36.300	13100.000	49.600	-131.000	-6500.000	1.000		
			f	209.036	48.735	5877.889	209.036	30.323	3662.682	209.036	18.675	-2220.000	360.000	36.400	13100.000	49.600	-131.000	-6500.000	0.100		
7	0%	100%	d	208.000	1.885	-35.607	208.000	92.282	11100.025	208.000	92.611	11147.694	360.000	19.309	6961.880	49.600	-131.000	-6500.000	--		
			e	209.000	1.934	-28.410	209.000	0.000	0.000	209.000	2.303	28.289	360.000	19.353	6967.260	49.600	-131.000	-6499.891	1.000		
			f	208.017	1.849	-35.635	208.017	92.782	11162.903	208.017	93.116	11208.842	360.000	19.301	6959.587	49.600	-131.000	-6500.000	0.100		
			e	209.000	1.891	-28.232	209.000	0.000	0.000	209.000	2.281	28.234	360.000	19.330	6964.348	49.600	-131.000	-6499.968	1.000		
			f	208.100	1.812	-35.531	208.100	92.841	11169.384	208.100	93.194	11218.136	360.000	19.301	6960.233	49.600	-131.000	-6500.000	0.100		
			e	209.000	1.869	-28.182	209.000	0.000	0.000	209.000	2.276	28.352	360.000	19.385	6969.145	49.600	-131.000	-6500.000	1.000		
			f	208.000	1.805	-35.461	208.000	92.875	11172.696	208.000	93.219	11221.198	360.000	19.300	6960.185	49.600	-131.000	-6500.000	0.100		
8		66%	d	208.898	1.749	-33.524	208.898	61.554	7412.907	208.898	61.885	7452.556	360.000	19.301	6960.276	49.600	-131.000	-6500.000	--		
			e	209.000	1.867	-28.156	209.000	0.000	0.000	209.000	2.274	28.212	360.000	19.318	6963.085	49.600	-131.000	-6499.964	1.000		
			f	208.780	1.749	-33.427	208.780	61.793	7440.692	208.780	62.128	7483.356	360.000	19.303	6960.506	49.600	-131.000	-6500.000	0.100		
			e	209.000	1.871	-28.138	209.000	0.000	0.000	209.000	2.272	28.206	360.000	19.368	6967.987	49.600	-131.000	-6500.032	1.000		

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operati ng Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
9			f	208.93	1.76	-33.34	208.93	61.82	7445.225	208.935	62.174	7487.321	360.000	19.302	6960.715	49.600	-131.000	-6500.000	0.100	
			e	209.00	1.87	-28.09	209.00	0.00	0.000	209.000	2.271	28.179	360.000	19.328	6964.729	49.600	-131.000	-6500.000	1.000	
			f	208.90	1.75	-33.16	208.90	61.83	7446.049	208.900	62.168	7486.191	360.000	19.300	6959.943	49.600	-131.000	-6499.971	0.100	
		33%	d	209.00	1.73	-31.52	209.00	30.20	3633.283	209.000	30.497	3676.742	360.000	19.300	6959.950	49.600	-131.000	-6499.950	--	
			e	209.00	1.89	-28.34	209.00	0.00	0.000	209.000	2.281	28.351	360.000	19.303	6960.635	49.600	-131.000	-6500.000	1.000	
			f	209.00	1.75	-31.76	209.00	30.29	3650.812	209.000	30.687	3694.115	360.000	19.300	6959.587	49.600	-131.000	-6500.000	0.100	
			e	209.00	1.91	-28.59	209.00	0.00	0.000	209.000	2.287	28.534	360.000	19.302	6960.338	49.600	-131.000	-6499.871	1.000	
			f	208.89	1.76	-31.76	208.89	30.31	3654.576	208.897	30.704	3695.175	360.000	19.305	6961.231	49.600	-131.000	-6499.933	0.100	
			e	209.00	1.91	-28.41	209.00	0.00	0.000	209.000	2.288	28.414	360.000	19.348	6966.211	49.600	-131.000	-6500.000	1.000	
			f	242.00	1.67	-77.90	242.00	30.12	3643.852	242.000	30.825	-3711.384	360.000	-0.098	-35.157	48.000	0.564	27.192	0.100	
Note:																				

(2-2) 203.6 test

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203.6 Step Change in Generation Test																					
Load level: 33%																					
Excel file	EUT output limit	Generatio n level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode	
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)			
1	100%	5%-10%	d	209.00	92.01	11106.99	209.00	30.20	3621.880	209.00	61.995	7478.797	357.234	41.786	14900.000	48.600	-63.799	3102.544	--		
			e	209.00	59.39	7150.20	209.00	30.00	3620.000	209.00	29.400	3529.002	300.470	3.880	1169.956	46.500	142.000	6619.379	4.300		
			f	209.00	91.98	11103.96	209.00	30.13	3620.000	209.00	61.994	7478.375	337.169	44.311	14900.000	48.600	-63.121	3070.932	4.400		
			e	209.00	59.31	7140.16	209.00	30.00	3620.000	209.00	29.395	3520.032	300.644	3.878	1161.111	46.500	142.000	6611.948	4.300		
			f	209.00	92.10	11119.40	209.00	30.15	3620.000	209.00	62.108	7493.054	337.599	44.246	14900.000	48.929	-62.220	3046.267	4.400		
			e	209.00	58.95	7099.30	209.00	30.00	3620.000	209.00	28.984	3478.454	300.728	3.875	1160.000	47.100	139.000	6560.100	4.300		
			f	209.01	92.12	11122.23	209.01	30.19	3622.463	209.012	62.117	7494.542	341.644	43.730	14900.000	49.200	-61.935	3049.301	4.400		
2		33%-66%	d	209.00	91.57	11112.14	209.00	30.20	3661.840	209.00	61.343	7440.000	360.013	41.469	14900.000	48.600	-63.665	3096.333	--		
			e	209.00	91.67	11124.87	209.00	30.21	3663.395	209.00	61.400	7448.217	361.126	20.665	7459.971	47.000	92.650	4358.160	2.500		
			f	209.00	91.70	11128.81	209.00	30.24	3665.893	209.00	61.402	7452.884	359.995	41.458	14900.000	48.601	-63.021	3064.295	3.100		
			e	209.00	91.80	11141.25	209.00	30.31	3671.272	209.00	61.563	7460.966	358.934	20.787	7459.694	47.000	93.154	4380.918	2.500		
			f	209.00	91.71	11131.24	209.00	30.29	3669.387	209.00	61.407	7456.719	360.021	41.452	14900.000	48.602	-63.040	3064.750	3.600		

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generation level (PV)	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	209.00	91.69	11128.75	209.00	30.31	3671.159	209.00	61.332	7449.072	358.793	20.788	7459.710	47.002	92.442	4346.725	2.500	
			f	209.00	91.74	11134.20	209.00	30.33	3671.983	209.00	61.440	7459.144	359.976	41.458	14900.000	48.600	-62.952	3060.813	3.100	
3	66%	5%-10%	d	209.00	62.92	7581.75	209.00	30.00	3620.000	209.00	32.997	3960.047	349.704	42.726	14900.000	49.924	131.000	6542.276	--	
			e	209.00	58.91	7095.08	209.00	30.00	3620.000	209.00	28.968	3477.262	300.185	3.872	1160.000	47.100	139.000	6560.193	4.600	
			f	209.00	62.85	7577.28	209.00	30.00	3620.000	209.00	32.863	3957.553	326.486	45.732	14900.000	49.999	130.280	6513.683	4.600	
			e	209.00	58.91	7095.08	209.00	30.00	3620.000	209.00	28.968	3477.262	300.185	3.872	1160.000	47.100	139.000	6560.193	4.600	
			f	209.00	62.86	7578.16	209.00	30.00	3620.000	209.00	32.891	3951.555	315.321	47.326	14900.000	49.999	129.827	6487.275	4.600	
			e	209.00	58.86	7090.14	209.00	30.00	3620.000	209.00	28.922	3471.755	300.141	3.873	1160.000	47.101	138.926	6556.177	4.600	
			f	209.00	62.87	7579.00	209.00	30.00	3620.000	209.00	32.934	3960.685	318.981	46.781	14900.000	50.000	129.886	6492.782	4.600	
4		33%-66%	d	209.00	63.62	7694.46	209.00	30.20	3640.000	209.00	33.400	4040.000	361.797	41.224	14900.000	49.600	130.000	6450.000	--	
			e	209.00	63.69	7699.71	209.00	30.20	3640.000	209.00	33.593	4040.000	360.991	20.674	7450.514	48.000	12.562	603.709	2.500	
			f	209.00	63.61	7694.42	209.00	30.20	3640.000	209.00	33.400	4040.000	359.442	41.473	14900.000	49.600	130.000	6448.924	2.500	

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generatio n level (PV)	Ste P	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	209.00	63.68	7699.14	209.00	30.20	3640.00	209.00	33.590	-4040.000	358.394	20.804	7450.626	48.000	12.608	605.951	2.500	
			f	209.00	63.58	7688.74	209.00	30.20	3640.02	209.00	33.351	-4033.067	359.434	40.269	14467.133	49.519	122.545	6077.063	2.500	
			e	209.00	63.67	7698.62	209.00	30.20	3640.00	209.00	33.594	-4040.160	357.984	20.826	7450.499	48.000	12.600	605.547	2.500	
			f	209.00	63.61	7692.25	209.00	30.20	3640.00	209.00	33.400	-4040.000	359.364	41.480	14900.000	49.600	130.000	6446.391	2.500	
5	33%	5%-10%	d	208.94	31.70	3809.70	208.94	30.00	3620.00	208.948	2.965	-187.717	366.886	31.381	11042.571	50.000	-131.000	-6550.024	--	
			e	208.90	31.20	3747.19	208.90	30.00	3620.00	208.900	2.513	-127.272	301.003	3.862	1160.000	48.000	59.266	2840.385	3.300	
			f	208.89	31.70	3809.63	208.89	30.00	3620.00	208.899	2.965	-187.873	366.871	31.365	11037.828	50.000	-131.000	-6549.650	3.500	
			e	208.99	31.20	3748.19	208.99	30.00	3620.00	208.995	2.500	-128.034	301.029	3.862	1160.000	48.000	59.276	2840.596	3.300	
			f	209.00	31.70	3810.00	209.00	30.00	3620.00	209.000	2.953	-188.317	366.880	31.340	11033.524	50.000	-131.000	-6549.971	3.500	
			e	209.00	31.20	3748.26	209.00	30.00	3620.00	209.000	2.492	-128.085	300.998	3.870	1160.000	48.000	59.294	2841.751	3.300	
			f	209.00	31.70	3809.43	209.00	30.00	3620.00	209.000	2.948	-188.440	366.850	31.379	11043.224	50.000	-131.000	-6550.000	3.500	
6		33%-66%	d	208.95	31.64	3810.94	208.95	30.00	3620.00	208.954	2.914	-182.758	366.708	31.415	11047.052	50.000	-131.000	-6550.000	--	
			e	209.00	31.20	3759.14	209.00	30.00	3620.00	209.000	2.484	-130.262	316.068	23.578	7457.047	49.300	-67.849	3345.806	1.200	

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203.6 Step Change in Generation Test																						
Load level: 33%																						
Excel file	EUT output limit	Generation level (PV)	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode		
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)				
			f	209.00	31.63	3809.63	209.00	30.00	3620.00	209.00	2.912	-182.252	366.745	31.393	11038.577	50.000	-	131.000	-	6549.800	1.800	
			e	209.00	31.20	3759.07	209.00	30.00	3620.00	209.00	2.477	-128.851	311.567	23.916	7457.762	49.300	-67.843	-	3343.849	1.200		
			f	209.00	31.62	3808.19	209.00	30.00	3620.00	209.00	2.90	-181.106	366.770	31.383	11036.393	50.000	-	131.000	-	6549.903	1.800	
			e	208.96	31.20	3759.61	208.96	30.00	3620.00	208.96	2.47	-127.137	309.835	24.044	7458.336	49.300	-67.859	-	3344.859	1.200		
			f	208.94	31.61	3805.87	208.94	30.00	3620.00	208.94	2.89	-180.419	366.743	31.392	11036.519	50.000	-	131.000	-	6550.000	1.800	
Note:																						

(3) ESS external export current limit = $33 \pm 5\%$, PV inputs = $100\% \pm 5\%$ - (If supported)

(3-1) 203.5 test

203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
1	100%	100%	d	210.000	91.926	11111.028	210.000	93.022	11217.218	210.000	3.196	132.071	359.451	41.779	15000.000	48.800	-65.254	-3188.421	--	
			e	210.000	91.808	11113.575	210.000	0.000	0.000	210.000	91.832	-11120.871	360.555	41.649	15000.000	48.800	-65.274	-3189.093	1.000	
			f	209.900	91.942	11111.798	209.900	93.007	11214.328	209.900	3.183	129.976	360.383	41.665	15000.000	48.800	-65.206	-3184.740	0.100	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
2			e	210.00 0	91.78 6	11110.2 09	210.00 0	0.000	0.000	210.00 0	91.82 5	11120.58 0	360.32 2	41.67 2	15000.0 00	48.80 0	- 65.22 5	- 3186.20 0	1.00 0	
			f	210.00 0	92.03 3	11124.6 59	210.00 0	93.00 8	11216.1 06	210.00 0	3.188	118.188	360.50 4	41.65 2	15000.0 00	48.80 0	- 64.66 1	- 3158.02 0	0.10 0	
			e	210.00 0	91.90 7	11125.1 37	210.00 0	0.000	0.000	210.00 0	91.97 0	11134.51 4	360.45 6	41.65 6	15000.0 00	48.80 0	- 64.67 1	- 3158.15 5	1.00 0	
			f	210.00 0	92.02 7	11124.7 65	210.00 0	92.98 9	11212.0 97	210.00 0	3.131	114.788	360.66 5	41.63 7	15000.0 00	48.80 0	- 64.65 3	- 3157.77 5	0.10 0	
		66%	d	210.00 0	91.93 1	11119.9 25	210.00 0	61.68 7	7444.96 2	210.00 0	30.41 0	- 3665.138	360.05 5	41.70 2	15000.0 00	48.80 0	- 64.76 9	- 3163.54 6	--	
			e	210.00 0	91.90 9	11126.8 97	210.00 0	0.000	0.000	210.00 0	91.98 7	11135.28 1	360.51 7	41.65 3	15000.0 00	48.80 0	- 64.64 3	- 3156.84 2	1.00 0	
			f	209.90 0	91.90 8	11117.6 30	209.90 0	61.91 1	7471.74 4	209.90 0	30.20 3	- 3642.876	360.19 2	41.68 5	15000.0 00	48.80 0	- 64.81 0	- 3165.37 9	0.10 0	
			e	210.00 0	91.90 0	11124.9 60	210.00 0	0.000	0.000	210.00 0	91.98 6	11135.55 6	360.21 1	41.68 3	15000.0 00	48.80 0	- 64.71 9	- 3160.78 9	1.00 0	
			f	210.00 0	91.90 4	11117.5 37	210.00 0	61.97 2	7480.16 6	210.00 0	30.13 4	- 3634.043	360.38 9	41.66 4	15000.0 00	48.80 0	- 64.86 2	- 3167.90 3	0.10 0	
			e	210.00 0	91.79 3	11110.9 73	210.00 0	0.000	0.000	210.00 0	91.80 9	11120.00 0	360.29 2	41.67 4	15000.0 00	48.80 0	- 65.22 5	- 3186.06 0	1.00 0	
			f	210.00 0	91.79 3	11101.6 26	210.00 0	61.96 4	7478.94 4	210.00 0	29.94 4	- 3607.703	360.29 0	41.67 4	15000.0 00	48.80 0	- 65.31 7	- 3190.35 7	0.10 0	
3		33%	d	210.00 0	91.78 8	11106.2 66	210.00 0	30.20 0	3641.27 8	210.00 0	61.66 2	- 7463.383	360.49 0	41.65 4	15000.0 00	48.80 0	- 65.20 7	- 3184.47 4	--	
			e	210.00 0	91.88 8	11123.1 58	210.00 0	0.000	0.000	210.00 0	91.92 8	11130.74 4	360.85 5	41.61 7	15000.0 00	48.80 0	- 64.74 2	- 3161.88 7	1.00 0	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	210.00 0	91.86 3	11116.5 65	210.00 0	30.35 7	3668.78 8	210.00 0	61.59 2	- 7449.108	360.57 5	41.64 5	15000.0 00	48.80 0	- 64.82 7	- 3166.35 2	0.10 0	
			e	210.00 0	91.89 2	11123.6 39	210.00 0	0.000	0.000	210.00 0	91.93 2	- 11131.40 1	360.63 1	41.64 0	15000.0 00	48.80 0	- 64.63 6	- 3156.94 0	1.00 0	
			f	210.00 0	91.87 5	11117.3 04	210.00 0	30.39 8	3669.95 0	210.00 0	61.57 0	- 7447.454	360.68 4	41.63 4	15000.0 00	48.80 0	- 64.74 8	- 3162.21 3	0.10 0	
			e	210.00 0	91.88 8	11122.7 93	210.00 0	0.000	0.000	210.00 0	91.94 9	- 11132.86 8	360.74 1	41.62 7	15000.0 00	48.80 0	- 64.60 2	- 3154.96 3	1.00 0	
			f	210.00 0	91.86 2	11116.6 90	210.00 0	30.39 6	3669.92 9	210.00 0	61.60 5	- 7451.669	360.48 9	41.65 4	15000.0 00	48.80 0	- 64.70 2	- 3160.34 2	0.10 0	
4	50%	100%	d	209.00 0	48.80 0	5882.58 1	209.00 0	92.34 2	11124.8 87	209.00 0	43.67 3	5260.000	360.00 0	26.60 1	9585.87 7	48.90 0	- 66.78 8	- 3260.95 2	--	
			e	210.00 0	49.12 0	5848.42 1	210.00 0	0.000	0.000	210.00 0	49.20 0	- 5860.000	360.00 0	26.51 6	9550.70 8	48.90 0	- 66.75 1	- 3260.00 0	1.00 0	
			f	209.00 0	48.80 1	5887.96 3	209.00 0	92.89 5	11190.5 73	209.00 0	44.18 5	5323.382	360.00 0	26.60 1	9584.71 4	48.90 0	- 66.75 2	- 3260.00 0	0.10 0	
			e	210.00 0	49.14 2	5850.78 9	210.00 0	0.000	0.000	210.00 0	49.18 8	- 5851.208	360.00 0	26.50 1	9543.83 3	48.90 0	- 66.77 3	- 3262.72 1	1.00 0	
			f	209.00 0	48.80 3	5889.65 1	209.00 0	92.96 4	11199.2 01	209.00 0	44.24 5	5329.950	360.00 0	26.60 0	9579.88 4	48.90 0	- 66.81 6	- 3265.29 1	0.10 0	
			e	210.00 0	49.13 0	5850.71 2	210.00 0	0.000	0.000	210.00 0	49.20 0	- 5860.000	360.00 0	26.58 9	9558.20 5	48.90 0	- 66.84 1	- 3269.03 1	1.00 0	
			f	209.00 0	48.80 1	5887.58 9	209.00 0	92.96 3	11197.4 32	209.00 0	44.25 7	5332.325	360.00 0	26.61 5	9588.35 9	48.90 0	- 66.80 0	- 3261.72 6	0.10 0	
5		66%	d	209.00 0	48.80 0	5886.81 7	209.00 0	61.62 2	7430.60 2	209.00 0	13.16 9	1560.519	360.00 0	26.60 1	9584.19 8	48.90 0	- 66.79 0	- 3260.26 3	--	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
6			e	210.00 0	49.12 0	5848.45 7	210.00 0	0.000	0.000	210.00 0	49.20 0	- 5860.000	360.00 0	26.53 6	9552.45 0	48.90 0	- 66.80 1	- 3264.82 8	1.00 0	
			f	209.00 0	48.80 0	5886.15 2	209.00 0	61.85 3	7458.48 2	209.00 0	13.36 4	1579.441	360.00 0	26.60 0	9578.62 8	48.90 0	- 66.81 5	- 3265.79 2	0.10 0	
			e	210.00 0	49.08 5	5845.44 3	210.00 0	0.000	0.000	210.00 0	49.20 0	- 5860.064	360.00 0	26.51 8	9547.15 0	48.90 0	- 66.82 5	- 3265.12 1	1.00 0	
			f	209.00 0	48.80 0	5884.22 6	209.00 0	61.91 2	7463.06 2	209.00 0	13.44 4	1594.153	360.00 0	26.63 2	9589.68 4	48.90 0	- 66.82 9	- 3266.70 5	0.10 0	
			e	210.00 0	49.08 7	5845.92 6	210.00 0	0.000	0.000	210.00 0	49.20 0	- 5860.000	360.00 0	26.52 4	9551.68 1	48.90 0	- 66.80 0	- 3260.71 2	1.00 0	
			f	209.00 0	48.80 0	5884.30 8	209.00 0	61.90 4	7464.87 9	209.00 0	13.45 1	1595.130	360.00 0	26.60 0	9582.85 3	48.90 0	- 66.77 7	- 3260.00 0	0.10 0	
		33%	d	209.00 0	48.77 8	5879.72 4	209.00 0	30.20 0	3640.00 0	209.00 0	18.85 9	- 2240.301	360.00 0	26.60 0	9570.85 2	48.90 0	- 66.77 7	- 3261.12 8	--	
			e	210.00 0	49.06 6	5844.46 5	210.00 0	0.000	0.000	210.00 0	49.06 2	- 5843.920	360.00 0	26.50 0	9543.04 9	48.90 0	- 66.80 4	- 3263.15 8	1.00 0	
			f	209.03 2	48.78 1	5879.89 3	209.03 2	30.32 9	3665.80 6	209.03 2	18.66 5	- 2218.482	360.00 0	26.60 0	9579.92 0	48.90 0	- 66.82 8	- 3265.47 3	0.10 0	
			e	210.00 0	49.05 8	5843.86 5	210.00 0	0.000	0.000	210.00 0	49.19 9	- 5860.000	360.00 0	26.53 9	9552.67 3	48.90 0	- 66.85 0	- 3268.51 9	1.00 0	
			f	209.09 0	48.78 0	5879.76 7	209.09 0	30.36 4	3666.32 3	209.09 0	18.65 4	- 2217.105	360.00 0	26.60 0	9577.98 7	48.90 0	- 66.80 0	- 3260.00 0	0.10 0	
			e	210.00 0	49.07 6	5845.92 6	210.00 0	0.000	0.000	210.00 0	49.19 9	- 5860.000	360.00 0	26.50 1	9549.63 0	48.90 0	- 66.79 2	- 3260.00 0	1.00 0	
			f	209.00 0	48.77 2	5879.51 5	209.00 0	30.36 7	3666.84 7	209.00 0	18.65 2	- 2216.748	360.00 0	26.60 0	9569.77 2	48.90 0	- 66.82 3	- 3264.46 5	0.10 0	

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203.5 Step Change in Load Test																					
Excel file	EUT output limit	Load level	Ste P	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operati ng Mode	
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)			
7	0%	100%	d	208.00 0	1.830	-33.388	208.00 0	92.31 9	11104.2 61	208.00 0	92.62 8	11148.79 7	360.00 0	9.628	3469.07 3	48.90 0	- 66.83 8	- 3267.18 0	--		
			e	209.00 0	1.867	-26.294	209.00 0	0.000	0.000	209.00 0	2.268	26.334	360.00 0	9.618	3464.12 0	48.90 0	- 66.80 9	- 3262.25 0	1.00 0		
			f	208.10 0	1.799	-33.699	208.10 0	92.78 5	11162.4 77	208.10 0	93.10 5	11207.85 6	360.00 0	9.595	3456.75 1	48.90 0	- 66.81 2	- 3263.14 2	0.10 0		
			e	209.00 0	1.856	-26.406	209.00 0	0.000	0.000	209.00 0	2.261	26.528	360.00 0	9.610	3460.35 4	48.90 0	- 66.80 2	- 3260.69 2	1.00 0		
			f	208.00 0	1.800	-33.587	208.00 0	92.86 8	11171.7 14	208.00 0	93.19 0	11217.97 0	360.00 0	9.625	3468.56 9	48.90 0	- 66.83 2	- 3265.75 7	0.10 0		
			e	209.00 0	1.860	-26.336	209.00 0	0.000	0.000	209.00 0	2.264	26.532	360.00 0	9.636	3470.31 3	48.90 0	- 66.80 7	- 3263.04 8	1.00 0		
			f	208.00 0	1.802	-33.552	208.00 0	92.87 1	11173.0 67	208.00 0	93.18 7	11216.14 8	360.00 0	9.598	3457.91 7	48.90 0	- 66.83 6	- 3265.64 9	0.10 0		
8		66%	d	208.91 2	1.751	-31.694	208.91 2	61.54 0	7411.65 4	208.91 2	61.86 8	7452.732	360.00 0	9.602	3459.68 7	48.90 0	- 66.82 4	- 3262.95 7	--		
			e	209.00 0	1.863	-26.207	209.00 0	0.000	0.000	209.00 0	2.262	26.282	360.00 0	9.645	3473.43 0	48.90 0	- 66.84 4	- 3266.58 8	1.00 0		
			f	208.97 1	1.753	-31.537	208.97 1	61.77 4	7438.88 1	208.97 1	62.10 3	7480.932	360.00 0	9.623	3466.52 5	48.90 0	- 66.80 7	- 3262.29 0	0.10 0		
			e	209.00 0	1.874	-26.048	209.00 0	0.000	0.000	209.00 0	2.273	26.092	360.00 0	9.612	3461.19 2	48.90 0	- 66.83 2	- 3265.65 2	1.00 0		
			f	208.90 0	1.765	-31.464	208.90 0	61.85 4	7448.51 9	208.90 0	62.17 7	7488.819	360.00 0	9.605	3459.90 0	48.90 0	- 66.83 4	- 3265.80 7	0.10 0		
			e	209.00 0	1.886	-26.274	209.00 0	0.000	0.000	209.00 0	2.274	26.247	360.00 0	9.623	3466.72 4	48.90 0	- 66.87 0	- 3270.00 0	1.00 0		

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operati ng Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	208.964	1.765	-31.481	208.964	61.831	7445.792	208.964	62.151	7485.735	360.000	9.636	3470.314	48.900	-66.825	-3265.335	0.100	
9		33%	d	209.000	1.732	-29.308	209.000	30.146	3624.887	209.000	30.406	3664.962	360.000	9.628	3468.509	48.900	-66.815	-3264.474	--	
			e	209.000	1.891	-25.993	209.000	0.000	0.000	209.000	2.280	25.989	360.000	9.615	3462.686	48.900	-66.847	-3266.824	1.000	
			f	208.899	1.764	-29.529	208.899	30.295	3650.573	208.899	30.673	3691.744	360.000	9.609	3460.506	48.900	-66.831	-3265.326	0.100	
			e	209.000	1.912	-26.267	209.000	0.000	0.000	209.000	2.292	26.259	360.000	9.617	3463.543	48.900	-66.814	-3265.282	1.000	
			f	209.000	1.745	-29.478	209.000	30.321	3653.777	209.000	30.647	3685.258	360.000	9.638	3470.699	48.900	-66.846	-3266.306	0.100	
			e	209.000	1.900	-25.954	209.000	0.000	0.000	209.000	2.286	25.779	360.000	9.636	3470.456	48.900	-66.812	-3264.188	1.000	
			f	209.000	1.760	-29.218	209.000	30.310	3653.752	209.000	30.684	3692.011	360.000	9.603	3459.030	48.900	-66.809	-3263.409	0.100	
Note:																				

(3-2) 203.6 test

203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generation level (PV)	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
1	100%	5%-10%	d	210.00 0	91.22 0	11116.1 65	210.00 0	30.40 0	3700.00 0	210.00 0	60.80 0	7401.37 8	361.78 6	41.22 3	14900.0 00	48.80 0	- 6	- 2	--	
			e	207.00 0	35.00 0	4189.32 8	207.00 0	30.00 0	3592.92 2	207.00 0	5.260	-596.171	301.00 2	3.874	1170.00 0	47.50 0	69.40 0	3290.16 3	4.600	

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generati on level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	209.810	87.323	10634.754	209.810	30.372	3692.144	209.810	57.227	6959.997	356.517	38.459	13813.023	48.691	52.216	2557.158	4.700	
			e	207.097	35.000	4189.117	207.097	30.000	3594.815	207.097	5.259	-595.903	301.020	3.872	1169.972	47.500	69.400	3290.541	4.900	
			f	209.973	90.593	11037.318	209.973	30.396	3698.773	209.973	60.359	7345.250	349.655	41.907	14623.780	48.770	60.248	2942.775	4.700	
			e	207.102	35.000	4184.471	207.102	30.000	3596.607	207.102	5.244	-593.916	300.998	3.874	1169.521	47.500	69.445	3299.721	4.900	
			f	210.000	91.173	11109.244	210.000	30.400	3700.000	210.000	60.800	7400.000	343.989	43.421	14900.000	48.800	62.934	3071.441	4.700	
			d	208.950	92.292	11105.495	208.950	30.000	3600.000	208.950	62.388	7499.528	360.034	41.422	14900.000	48.800	63.381	3092.995	--	
e		208.098	84.800	10200.000	208.098	30.000	3600.000	208.098	54.801	6599.800	359.980	20.726	7460.000	47.500	69.431	3298.902	2.600			
f		209.000	92.292	11105.343	209.000	30.000	3600.000	209.000	62.379	7498.652	360.007	41.424	14900.000	48.800	63.343	3091.024	3.100			
e		208.101	84.800	10199.259	208.101	30.000	3600.000	208.101	54.800	6589.758	359.974	20.726	7460.000	47.500	69.399	3290.161	2.600			
f		208.939	92.294	11104.993	208.939	30.000	3600.000	208.939	62.391	7500.228	360.019	41.422	14900.000	48.800	63.234	3087.689	3.100			
e		208.886	84.641	10181.217	208.886	30.000	3600.000	208.886	54.660	6581.739	359.993	20.858	7507.333	47.515	67.862	3218.082	2.600			
f		208.929	92.315	11107.732	208.929	30.000	3600.000	208.929	62.399	7500.799	359.680	41.468	14900.000	48.800	63.293	3089.829	3.100			
3	66%	5%-10%	d	208.000	63.618	7641.722	208.000	30.000	3600.000	208.000	33.800	4044.410	362.021	33.387	11530.896	49.300	66.810	3290.024	--	

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generati on level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
4			e	208.000	34.600	4150.628	208.000	30.000	3600.000	208.000	5.167	-552.245	300.681	3.873	1160.000	47.900	68.030	3260.097	4.100	
			f	208.000	63.609	7640.824	208.000	30.000	3600.000	208.000	33.797	-4040.799	362.010	33.377	11517.603	49.300	-66.830	-3290.212	4.200	
			e	208.000	34.600	4150.628	208.000	30.000	3600.000	208.000	5.167	-552.245	300.681	3.873	1160.000	47.900	68.030	3260.097	4.100	
			f	208.000	63.610	7640.742	208.000	30.000	3600.000	208.000	33.797	-4040.770	362.009	33.392	11533.666	49.300	-66.847	-3292.197	4.200	
			e	208.000	34.598	4140.000	208.000	30.000	3600.000	208.000	5.083	-543.284	300.649	3.874	1160.000	47.900	68.001	3259.914	4.100	
			f	208.000	63.607	7640.143	208.000	30.000	3600.000	208.000	33.797	-4040.799	361.994	33.392	11528.531	49.300	-66.820	-3290.314	4.200	
		33%-66%	d	208.075	63.598	7638.514	208.075	30.000	3600.000	208.075	33.729	-4036.108	362.330	33.259	11502.830	48.881	-66.772	-3260.047	--	
			e	208.049	63.061	7578.345	208.049	30.000	3600.000	208.049	33.200	-3979.658	329.839	22.623	7460.000	48.100	10.272	493.812	2.100	
			f	208.000	63.587	7635.880	208.000	30.000	3600.000	208.000	33.706	-4037.253	362.348	33.239	11498.627	48.847	-66.825	-3264.020	2.100	
			e	208.000	63.048	7577.295	208.000	30.000	3600.000	208.000	33.200	-3979.163	327.578	22.774	7460.000	48.100	10.310	495.493	2.100	
			f	208.000	63.592	7636.805	208.000	30.000	3600.000	208.000	33.704	-4037.318	362.241	33.263	11501.712	48.801	-66.802	-3261.184	2.100	
			e	208.000	63.045	7576.177	208.000	30.000	3600.000	208.000	33.196	-3978.288	328.775	23.925	7843.495	48.168	2.814	130.411	2.100	
			f	208.057	63.589	7636.120	208.057	30.000	3600.000	208.057	33.690	-4035.949	362.262	33.256	11502.425	48.804	-66.834	-3265.407	2.100	

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generati on level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
5	33%	5%-10%	d	208.00 0	31.76 3	3801.39 2	208.00 0	30.00 0	3600.00 0	208.00 0	2.966	-202.408	380.04 6	19.91 5	7439.88 2	48.82 3	- 66.81 7	- 3263.47 9	--	
			e	208.00 0	31.21 4	3742.91 0	208.00 0	30.00 0	3600.00 0	208.00 0	2.538	-147.211	301.00 0	3.885	1170.00 0	47.60 0	59.77 7	2841.32 7	2.500	
			f	208.00 0	31.75 8	3801.19 9	208.00 0	30.00 0	3600.00 0	208.00 0	2.955	-202.175	380.05 1	19.89 1	7431.86 0	48.86 9	- 66.82 8	- 3264.45 7	2.800	
			e	208.00 0	31.22 3	3743.51 0	208.00 0	30.00 0	3600.00 0	208.00 0	2.537	-147.732	301.00 0	3.891	1170.00 0	47.60 0	59.71 4	2839.95 2	2.500	
			f	208.00 0	31.76 3	3801.85 4	208.00 0	30.00 0	3600.00 0	208.00 0	2.954	-202.772	380.04 1	19.93 0	7443.65 2	48.89 5	- 66.81 8	- 3263.55 2	2.800	
			e	208.00 0	30.94 8	3710.41 2	208.00 0	30.00 0	3599.96 9	208.00 0	2.786	-112.493	304.06 4	4.605	1440.95 3	47.66 7	53.13 1	2521.93 0	2.500	
			f	208.00 0	31.76 3	3801.59 8	208.00 0	30.00 0	3600.00 0	208.00 0	2.947	-202.400	380.04 9	19.90 5	7433.49 5	48.89 5	- 66.83 9	- 3265.83 5	2.800	
6		33%-66%	d	207.00 0	31.68 4	3789.76 4	207.00 0	30.00 0	3580.00 0	207.00 0	2.499	-205.404	377.03 9	19.92 1	7417.37 0	48.90 0	- 66.83 1	- 3266.61 6	--	
			e	207.00 0	31.60 0	3780.54 2	207.00 0	30.00 0	3580.00 0	207.00 0	2.460	-197.220	376.98 4	19.92 9	7416.89 0	48.90 0	- 66.80 2	- 3265.66 3	0	
			f	207.00 0	31.60 0	3779.97 5	207.00 0	30.00 0	3580.00 0	207.00 0	2.425	-192.167	376.01 1	19.96 4	7419.77 5	48.90 0	- 66.81 1	- 3266.70 4	0	
			e	207.00 0	31.60 0	3779.83 9	207.00 0	30.00 0	3580.00 0	207.00 0	2.424	-191.695	376.00 5	19.96 3	7419.16 3	48.90 0	- 66.85 6	- 3270.00 0	0	
			f	207.00 0	31.60 0	3779.83 4	207.00 0	30.00 0	3580.00 0	207.00 0	2.443	-192.302	376.37 5	19.94 7	7417.55 4	48.90 0	- 66.80 6	- 3265.52 1	0	
			e	207.00 0	31.60 0	3779.80 9	207.00 0	30.00 0	3580.00 0	207.00 0	2.446	-192.733	376.42 0	19.94 1	7417.01 1	48.90 0	- 66.80 3	- 3264.34 0	0	

203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generati on level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
					f	207.00 0	31.60 0	3779.88 6	207.00 0	30.00 0	3580.00 0	207.00 0	2.437	-191.481	376.29 5	19.95 7	7418.94 4	48.90 0	- 66.80 5	
Note:																				

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(4) ESS external export current limit = 0% to +5%, PV inputs = 50% ± 5%

(4-1) 203.5 test

(a) For single phase unit connected line to neutral

203.5 Step Change in Load Test																					
Excel file	EUT output limit	Load level	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (30s)	ESS Operatin g Mode	
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)			
1	100%	100%	d	208.00 0	60.62 8	7293.38 3	208.00 0	92.08 2	11049.04 8	208.00 0	31.54 8	3781.479	360.00 0	21.10 0	7589.43 6	48.20 0	- 0.004	- 0.203	--		
			e	209.00 0	60.58 2	7271.72 4	209.00 0	0.000	0.000	209.00 0	60.60 0	- 7280.000	360.00 0	21.00 0	7570.32 7	48.20 0	- 0.004	- 0.215	1.000		
			f	208.00 0	60.61 5	7290.57 3	208.00 0	92.52 0	11102.87 6	208.00 0	32.02 2	3837.603	360.00 0	21.10 0	7597.03 1	48.20 0	- 0.004	- 0.202	0.200		
			e	209.00 0	60.58 6	7272.62 5	209.00 0	0.000	0.000	209.00 0	60.60 0	- 7273.720	360.00 0	21.05 5	7576.10 3	48.20 0	- 0.004	- 0.207	1.000		
			f	208.10 1	60.61 0	7290.08 3	208.10 1	92.48 4	11097.67 1	208.10 1	31.96 3	3830.649	360.00 0	21.10 0	7588.58 6	48.20 0	- 0.003	- 0.200	0.200		
			e	209.00 0	60.57 5	7270.92 3	209.00 0	0.000	0.000	209.00 0	60.60 0	- 7280.000	360.00 0	21.02 6	7572.96 8	48.20 0	- 0.003	- 0.200	1.000		
			f	208.00 0	60.62 1	7291.07 0	208.00 0	92.34 6	11082.08 3	208.00 0	31.82 2	3814.322	360.00 0	21.10 0	7598.28 8	48.20 0	- 0.003	- 0.187	0.200		
2		66%	d	209.00 0	60.39 9	7283.33 3	209.00 0	61.57 6	7420.201	209.00 0	2.978	146.452	360.00 0	21.09 6	7580.42 6	48.20 2	- 0.004	- 0.258	--		
			e	209.94 0	60.35 4	7267.11 4	209.94 0	0.000	0.000	209.94 0	60.40 0	- 7279.637	360.00 0	21.00 0	7568.74 8	48.20 0	- 0.003	- 0.192	1.000		
			f	209.00 0	60.40 0	7284.10 1	209.00 0	61.80 7	7448.123	209.00 0	3.074	174.307	360.00 0	21.10 0	7591.29 2	48.20 0	- 0.003	- 0.201	0.200		
			e	209.10 0	60.36 6	7268.05 2	209.10 0	0.000	0.000	209.10 0	60.40 0	- 7280.000	360.00 0	21.03 4	7575.12 1	48.20 0	- 0.003	- 0.200	1.000		
			f	209.00 0	60.39 9	7283.69 4	209.00 0	61.87 8	7456.905	209.00 0	3.102	182.081	360.00 0	21.09 9	7582.19 6	48.20 0	- 0.003	- 0.178	0.200		
			e	209.90 0	60.36 9	7267.38 2	209.90 0	0.000	0.000	209.90 0	60.40 0	- 7280.000	360.00 0	21.00 3	7569.85 0	48.20 0	- 0.003	- 0.200	1.000		
			f	209.00 0	60.39 9	7285.19 3	209.00 0	61.87 1	7455.606	209.00 0	3.092	179.972	360.00 0	21.10 0	7590.87 0	48.20 0	- 0.003	- 0.197	0.200		
3		33%	d	209.00 0	60.30 8	7279.34 8	209.00 0	30.20 0	3640.000	209.00 0	30.28 0	- 3640.652	360.00 0	21.00 0	7570.96 5	48.20 0	- 0.003	- 0.178	--		
			e	209.17 6	60.38 0	7270.05 4	209.17 6	0.000	0.000	209.17 6	60.40 0	- 7279.564	360.00 0	21.00 0	7569.03 8	48.20 0	- 0.003	- 0.199	1.000		
			f	209.10 0	60.32 0	7279.52 1	209.10 0	30.30 9	3658.003	209.10 0	30.13 4	- 3625.965	360.00 0	21.09 8	7580.94 5	48.20 0	- 0.003	- 0.192	0.200		

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203.5 Step Change in Load Test																					
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode	
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)			
			e	209.771	60.380	7271.691	209.771	0.000	0.000	209.771	60.400	-7280.000	360.000	21.017	7575.797	48.200	-0.003	-0.185	1.000		
			f	209.000	60.338	7280.100	209.000	30.351	3664.426	209.000	30.122	-3622.995	360.000	21.000	7570.300	48.200	-0.002	-0.142	0.200		
			e	209.898	60.385	7272.369	209.898	0.000	0.000	209.898	60.400	-7280.000	360.000	21.000	7565.910	48.200	-0.003	-0.179	1.000		
			f	209.000	60.314	7279.515	209.000	30.344	3664.165	209.000	30.105	-3620.086	360.000	21.063	7579.658	48.200	-0.003	-0.192	0.200		
			4	50%	100%	d	209.000	48.799	5880.150	209.000	92.317	11111.805	209.000	43.620	5252.732	360.000	16.900	6099.398	48.200		-0.002
e	210.000	49.000				5839.673	210.000	0.000	0.000	210.000	49.000	-5848.348	360.000	16.801	6061.797	48.200	-0.002	-0.168	1.000		
f	209.000	48.799				5879.846	209.000	92.895	11181.106	209.000	44.219	5323.195	360.000	16.947	6104.163	48.200	-0.002	-0.131	0.200		
e	209.905	48.999				5839.678	209.905	0.000	0.000	209.905	49.000	-5847.343	360.000	16.900	6071.546	48.200	-0.002	-0.179	1.000		
f	209.000	48.800				5880.117	209.000	92.941	11187.084	209.000	44.260	5327.397	360.000	16.903	6099.980	48.200	-0.003	-0.189	0.200		
e	209.456	49.101				5839.772	209.456	0.000	0.000	209.456	49.108	-5847.578	360.000	16.813	6064.615	48.200	-0.002	-0.184	1.000		
f	208.000	48.995				5880.171	208.000	92.553	11103.053	208.000	43.694	5242.939	360.000	16.930	6101.526	48.200	-0.003	-0.186	0.200		
5	66%	d			208.029	48.988	5880.201	208.029	61.363	7367.343	208.029	12.746	1502.749	360.000	17.000	6110.501	48.200	-0.003	-0.189	--	
		e			209.000	49.184	5839.855	209.000	0.000	0.000	209.000	49.200	-5850.127	360.000	16.821	6066.588	48.200	-0.003	-0.191	1.000	
		f			208.000	48.985	5880.123	208.000	61.619	7400.154	208.000	13.007	1535.330	360.000	16.912	6100.307	48.200	-0.003	-0.173	0.200	
		e			209.000	49.187	5839.968	209.000	0.000	0.000	209.000	49.200	-5847.858	360.000	16.807	6065.652	48.200	-0.003	-0.189	1.000	
		f			208.006	48.984	5880.120	208.006	61.705	7408.263	208.006	13.060	1537.373	360.000	17.000	6110.080	48.200	-0.003	-0.194	0.200	
		e			209.000	49.187	5840.228	209.000	0.000	0.000	209.000	49.200	-5850.427	360.000	16.843	6068.689	48.200	-0.003	-0.200	1.000	
		f	208.026	48.988	5880.456	208.026	61.668	7405.136	208.026	13.043	1539.763	360.000	16.907	6100.171	48.200	-0.003	-0.197	0.200			
6	33%	d	208.898	48.840	5873.308	208.898	30.000	3616.341	208.898	19.103	-2261.905	360.000	16.903	6091.992	48.200	-0.003	-0.188	--			

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	209.000	49.184	5839.673	209.000	0.000	0.000	209.000	49.200	-5851.071	360.000	16.900	6075.372	48.200	-0.003	-0.195	1.000	
			f	208.800	48.855	5874.780	208.800	30.247	3631.052	208.800	18.920	-2245.539	360.000	16.909	6094.061	48.200	-0.003	-0.185	0.200	
			e	209.000	49.185	5839.614	209.000	0.000	0.000	209.000	49.200	-5841.481	360.000	16.807	6065.233	48.200	-0.002	-0.184	1.000	
			f	208.100	48.846	5874.609	208.100	30.253	3635.042	208.100	18.896	-2240.865	360.000	16.900	6091.664	48.200	-0.003	-0.201	0.200	
			e	209.000	49.179	5839.487	209.000	0.000	0.000	209.000	49.200	-5849.516	360.000	16.900	6075.014	48.200	-0.003	-0.198	1.000	
			f	208.902	48.846	5873.210	208.902	30.264	3637.261	208.902	18.889	-2240.884	360.000	16.919	6097.718	48.200	-0.003	-0.191	0.200	
7	0%	100%	d	207.929	1.825	-40.820	207.929	91.909	11012.224	207.929	92.305	11062.530	360.000	-0.067	-24.415	48.200	-0.003	-0.194	--	
			e	208.000	1.896	-34.214	208.000	0.000	0.000	208.000	2.239	34.043	360.000	-0.051	-18.388	48.200	-0.003	-0.203	1.000	
			f	207.891	1.809	-41.278	207.891	92.412	11072.037	207.891	92.803	11124.687	360.000	-0.066	-23.546	48.200	-0.003	-0.201	0.200	
			e	208.000	1.867	-34.271	208.000	0.000	0.000	208.000	2.228	34.177	360.000	-0.050	-17.957	48.200	-0.004	-0.215	1.000	
			f	207.902	1.793	-41.248	207.902	92.505	11083.361	207.902	92.891	11134.676	360.000	-0.064	-23.190	48.200	-0.004	-0.209	0.200	
			e	208.000	1.851	-34.336	208.000	0.000	0.000	208.000	2.235	34.434	360.000	-0.050	-18.288	48.200	-0.004	-0.207	1.000	
			f	207.966	1.780	-42.240	207.966	92.725	11139.857	207.966	93.124	11194.009	360.000	-0.068	-24.475	48.200	-0.004	-0.196	0.200	
8		66%	d	208.251	1.723	-40.636	208.251	61.534	7410.282	208.251	61.934	7457.852	360.000	-0.065	-23.138	48.200	-0.003	-0.188	--	
			e	209.000	1.836	-35.539	209.000	0.000	0.000	209.000	2.242	35.633	360.000	-0.052	-18.835	48.200	-0.004	-0.203	1.000	
			f	208.945	1.719	-40.654	208.945	61.821	7445.069	208.945	62.208	7492.504	360.000	-0.064	-22.846	48.200	-0.004	-0.200	0.200	
			e	209.000	1.834	-35.465	209.000	0.000	0.000	209.000	2.246	35.729	360.000	-0.052	-18.865	48.200	-0.004	-0.201	1.000	
			f	208.898	1.720	-40.743	208.898	61.901	7453.653	208.898	62.288	7500.838	360.000	-0.063	-22.814	48.200	-0.004	-0.204	0.200	
			e	209.000	1.833	-35.510	209.000	0.000	0.000	209.000	2.247	35.728	360.000	-0.051	-18.630	48.200	-0.004	-0.200	1.000	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	208.230	1.715	-40.377	208.230	61.842	7447.504	208.230	62.228	7493.295	360.000	-0.063	-22.706	48.200	-0.004	-0.205	0.200	
9		d	209.000	1.696	-39.328	209.000	30.196	3628.496	209.000	30.600	3680.050	360.000	0.032	11.397	48.200	0.002	0.085	--		
		e	209.000	1.852	-36.399	209.000	0.000	0.000	209.000	2.291	36.568	360.000	0.034	12.165	48.200	0.002	0.082	1.000		
		f	209.000	1.698	-39.134	209.000	30.324	3656.897	209.000	30.777	3707.312	360.000	0.025	8.971	48.200	0.002	0.094	0.200		
		e	209.000	1.857	-36.184	209.000	0.000	0.000	209.000	2.294	36.408	360.000	0.028	10.060	48.200	0.002	0.074	1.000		
		f	209.000	1.708	-38.858	209.000	30.372	3661.996	209.000	30.803	3709.182	360.000	0.018	6.355	48.200	0.003	0.099	0.200		
		e	209.000	1.861	-36.211	209.000	0.000	0.000	209.000	2.291	36.359	360.000	0.023	8.285	48.200	0.003	0.094	1.000		
		f	208.902	1.711	-38.668	208.902	30.315	3656.063	208.902	30.769	3705.849	360.000	0.015	5.260	48.200	0.003	0.102	0.200		
Note:																				

(4-2) 203.6 test

203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generation level (PV)	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
1	100%	5%-10%	d	209.100	60.202	7275.990	209.100	30.200	3642.832	209.100	30.187	-3633.008	360.000	21.097	7579.348	48.200	0.003	0.102	--	
			e	209.000	10.201	1215.111	209.000	30.200	3639.419	209.000	20.200	2426.134	360.000	3.572	1286.951	48.200	0.002	0.072	0.200	
			f	209.900	60.192	7266.019	209.900	30.200	3640.000	209.900	30.200	-3638.029	360.000	21.037	7573.622	48.200	0.002	0.082	0.500	
			e	209.000	10.197	1214.696	209.000	30.200	3634.879	209.000	20.200	2423.414	360.000	3.571	1286.570	48.200	0.002	0.095	0.200	

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generation level (PV)	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
2			f	209.900	60.197	7265.763	209.900	30.200	3640.000	209.900	30.200	-3636.748	360.000	21.018	7571.897	48.200	0.002	0.095	0.500	
			e	209.000	10.195	1214.978	209.000	30.200	3638.723	209.000	20.200	2421.198	360.000	3.569	1285.529	48.200	0.002	0.092	0.200	
			f	209.168	60.194	7266.448	209.168	30.200	3640.000	209.168	30.200	-3635.749	360.000	21.019	7572.225	48.200	0.003	0.099	0.500	
		33%-66%	d	209.099	60.193	7266.863	209.099	30.200	3640.000	209.099	30.200	-3636.604	360.000	21.058	7576.297	48.200	0.003	0.101	--	
			e	209.117	60.196	7266.876	209.117	30.200	3640.000	209.117	30.200	-3637.889	360.000	21.059	7576.676	48.200	0.003	0.101	0	
			f	209.918	60.198	7269.713	209.918	30.200	3640.000	209.918	30.200	-3639.351	360.000	21.053	7575.818	48.200	0.002	0.094	0	
			e	209.902	60.201	7273.527	209.902	30.200	3640.000	209.902	30.200	-3639.839	360.000	21.066	7577.472	48.200	0.003	0.096	0	
			f	209.902	60.205	7277.261	209.902	30.200	3640.000	209.902	30.200	-3628.588	360.000	21.087	7579.244	48.200	0.003	0.099	0	
			e	209.900	60.210	7277.478	209.900	30.200	3640.000	209.900	30.200	-3638.783	360.000	21.083	7578.826	48.200	0.003	0.099	0	
			f	209.214	60.200	7273.124	209.214	30.200	3640.000	209.214	30.200	-3639.658	360.000	21.080	7578.559	48.200	0.003	0.099	0	
3	66%	5%-10%	d	209.100	60.197	7270.189	209.100	30.200	3640.000	209.100	30.200	-3638.915	360.000	21.099	7587.488	48.200	0.003	0.102	--	
			e	209.000	10.188	1214.238	209.000	30.200	3640.000	209.000	20.200	2421.320	360.000	3.551	1279.452	48.200	0.003	0.100	0.800	
			f	209.853	60.200	7271.161	209.853	30.200	3640.000	209.853	30.200	-3628.140	360.000	21.052	7576.692	48.200	0.003	0.102	0.700	

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generation level (PV)	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
4			e	209.000	10.188	1214.238	209.000	30.200	3640.000	209.000	20.200	2421.320	360.000	3.551	1279.452	48.200	0.003	0.100	0.800	
			f	209.902	60.200	7271.612	209.902	30.200	3640.000	209.902	30.200	3639.087	360.000	21.050	7576.348	48.200	0.003	0.100	0.700	
			e	209.000	10.189	1214.553	209.000	30.200	3640.000	209.000	20.200	2428.417	360.000	3.550	1279.001	48.200	0.002	0.083	0.800	
			f	209.100	60.200	7272.696	209.100	30.200	3640.000	209.100	30.200	3639.458	360.000	21.072	7580.870	48.200	0.002	0.082	0.700	
		33%-66%	d	209.099	60.201	7273.514	209.099	30.200	3640.000	209.099	30.200	3640.000	360.000	21.058	7578.160	48.200	0.002	0.066	--	
			e	209.053	60.201	7274.437	209.053	30.200	3640.000	209.053	30.200	3622.054	360.000	21.046	7576.790	48.200	0.002	0.078	0	
			f	209.482	60.202	7276.080	209.482	30.200	3640.000	209.482	30.200	3639.775	360.000	21.051	7578.102	48.200	0.002	0.082	0	
			e	209.794	60.212	7277.681	209.794	30.200	3640.000	209.794	30.200	3640.000	360.000	21.097	7583.897	48.200	0.003	0.094	0	
			f	209.090	60.210	7278.374	209.090	30.200	3640.000	209.090	30.200	3640.057	360.000	21.032	7575.635	48.200	0.002	0.081	0	
			e	209.068	60.205	7277.461	209.068	30.200	3640.000	209.068	30.200	3640.000	360.000	21.031	7575.292	48.200	0.002	0.080	0	
			f	209.101	60.211	7278.374	209.101	30.200	3640.000	209.101	30.201	3640.114	360.000	21.100	7584.864	48.200	0.002	0.049	0	
5	33%	5%-10%	d	209.000	27.800	3358.892	209.000	30.200	3640.000	209.000	3.296	284.193	360.000	9.656	3478.950	48.200	0.002	0.067	--	
			e	209.000	10.197	1214.280	209.000	30.200	3640.000	209.000	20.200	2427.076	360.000	3.540	1275.720	48.200	0.002	0.080	0.300	
			f	209.000	27.800	3357.228	209.000	30.200	3640.000	209.000	3.302	284.894	360.000	9.654	3478.502	48.200	0.003	0.094	0.300	

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203.6 Step Change in Generation Test																					
Load level: 33%																					
Excel file	EUT output limit	Generatio n level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (30s)	ESS Operatin g Mode	
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)			
			e	209.00 0	10.24 7	1219.15 9	209.00 0	30.20 0	3640.00 0	209.00 0	20.19 9	2420.32 2	360.00 0	3.561	1283.10 8	48.20 0	0.00 3	0.09 4	0.300		
			f	209.00 0	27.80 0	3355.92 0	209.00 0	30.20 0	3640.00 0	209.00 0	3.307	285.886	360.00 0	9.653	3478.03 1	48.20 0	0.00 2	0.09 2	0.300		
			e	209.00 0	10.19 4	1213.85 3	209.00 0	30.20 0	3640.00 0	209.00 0	20.20 0	2424.43 7	360.00 0	3.540	1275.65 6	48.20 0	0.00 2	0.08 0	0.300		
			f	209.00 0	27.80 0	3356.60 5	209.00 0	30.20 0	3640.00 0	209.00 0	3.299	285.324	360.00 0	9.651	3476.97 6	48.20 0	0.00 2	0.05 2	0.300		
6		33%-66%	d	209.00 0	27.80 0	3356.58 0	209.00 0	30.20 0	3640.00 0	209.00 0	3.304	285.469	360.00 0	9.652	3477.18 2	48.20 0	0.00 2	0.03 9	--		
			e	209.00 0	27.80 0	3356.97 6	209.00 0	30.20 0	3640.00 0	209.00 0	3.308	285.478	360.00 0	9.651	3477.13 3	48.20 0	0.00 2	0.04 5	0		
			f	209.00 0	27.80 0	3357.12 9	209.00 0	30.20 0	3640.00 0	209.00 0	3.307	285.680	360.00 0	9.652	3477.27 8	48.20 0	0.00 2	0.04 8	0		
			e	209.00 0	27.80 0	3356.97 3	209.00 0	30.20 0	3640.00 0	209.00 0	3.311	285.507	360.00 0	9.651	3476.82 8	48.20 0	0.00 2	0.07 2	0		
			f	209.00 0	27.80 0	3358.16 2	209.00 0	30.20 0	3640.00 0	209.00 0	3.301	284.759	360.00 0	9.664	3481.52 8	48.20 0	0.00 3	0.08 5	0		
			e	209.00 0	27.80 0	3357.91 5	209.00 0	30.20 0	3640.00 0	209.00 0	3.299	284.857	360.00 0	9.668	3483.00 0	48.20 0	0.00 2	0.08 3	0		
			f	209.00 0	27.80 0	3358.65 9	209.00 0	30.20 0	3640.00 0	209.00 0	3.303	284.519	360.00 0	9.657	3479.14 4	48.20 0	0.00 3	0.09 4	0		
			Note:																		

(5) ESS external export current limit = $66 \pm 5\%$, PV inputs = $50\% \pm 5\%$ - (If support)

(5-1) 203.5 test

203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
1	100%	100%	d	209.000	92.376	11136.441	209.000	92.708	11145.714	209.000	2.089	39.753	360.972	20.675	7460.000	47.600	91.932	4378.847	--	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
2			e	212.998	90.003	11111.615	212.998	0.000	0.000	212.998	90.000	-11116.915	360.969	20.675	7460.000	47.604	90.830	4329.909	1.000	
			f	209.000	92.283	11123.995	209.000	92.773	11154.168	209.000	2.154	57.362	360.957	20.676	7460.000	47.600	91.691	4368.615	1.000	
			e	211.965	90.451	11114.074	211.965	0.000	0.000	211.965	90.485	-11115.974	360.981	20.675	7460.000	47.600	90.882	4329.581	1.000	
			f	207.000	93.285	11138.968	207.000	91.974	10952.446	207.000	2.476	-157.345	360.960	20.675	7460.000	47.600	92.212	4390.449	1.000	
			e	210.968	91.041	11133.965	210.968	0.000	0.000	210.968	91.014	-11136.708	360.975	20.675	7460.000	47.600	91.730	4369.052	1.000	
			f	207.000	93.369	11149.472	207.000	91.910	10945.193	207.000	2.457	-175.110	360.971	20.675	7460.000	47.600	92.671	4413.124	1.000	
		66%	d	210.000	91.874	11113.584	210.000	61.662	7440.401	210.000	30.392	-3666.642	358.970	20.775	7450.000	47.200	92.141	4350.000	--	
			e	210.000	91.849	11120.218	210.000	0.000	0.000	210.000	91.977	-11130.998	358.966	20.775	7450.000	47.200	92.307	4358.802	0.900	
			f	209.972	91.882	11114.035	209.972	61.882	7467.617	209.972	30.175	-3639.547	356.953	20.885	7450.027	47.200	92.233	4353.129	0.400	
			e	210.000	91.860	11121.192	210.000	0.000	0.000	210.000	91.974	-11132.818	356.961	20.891	7450.000	47.200	92.352	4359.903	0.900	
			f	210.000	91.869	11114.243	210.000	61.962	7478.270	210.000	30.084	-3629.517	356.970	20.896	7449.983	47.200	92.186	4350.732	0.400	
			e	210.000	91.857	11121.047	210.000	0.000	0.000	210.000	91.908	-11125.985	353.965	21.074	7450.200	47.200	92.402	4360.998	0.900	
3		33%	f	210.000	91.870	11114.237	210.000	61.967	7479.401	210.000	30.090	-3630.471	353.969	21.075	7450.185	47.200	92.288	4356.633	0.400	
			d	210.000	91.825	11114.612	210.000	30.200	3640.000	210.000	61.792	-7474.311	351.689	21.220	7450.226	47.585	91.481	4354.348	--	
			e	210.000	91.968	11133.648	210.000	0.000	0.000	210.000	92.070	-11145.554	351.399	21.232	7450.018	47.600	92.070	4383.140	1.000	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	210.00 0	91.97 0	11130.7 59	210.00 0	30.36 1	3668.73 5	210.00 0	61.71 6	- 7465.486	351.55 9	21.21 7	7450.00 0	47.60 0	92.035	4381.97 1	0.400	
			e	210.00 0	91.98 1	11134.9 11	210.00 0	0.000	0.000	210.00 0	92.08 3	- 11147.44 0	351.49 1	21.21 4	7450.00 0	47.60 0	92.169	4388.56 7	1.000	
			f	210.00 0	91.95 6	11129.5 51	210.00 0	30.39 6	3670.58 2	210.00 0	61.63 5	- 7454.143	351.38 3	21.22 3	7450.00 0	47.60 0	92.056	4382.82 9	0.400	
			e	210.00 0	91.97 8	11135.3 12	210.00 0	0.000	0.000	210.00 0	92.05 3	- 11143.84 0	349.13 2	21.36 5	7450.00 0	47.60 0	92.187	4389.10 2	1.000	
			f	210.00 0	91.94 0	11127.4 47	210.00 0	30.40 5	3670.10 0	210.00 0	61.63 5	- 7456.947	351.40 1	21.22 0	7450.07 1	47.60 0	92.017	4381.32 7	0.400	
4	50%	100%	d	209.00 0	48.71 9	5877.11 8	209.00 0	92.39 3	11129.9 50	209.00 0	43.79 6	5277.569	346.60 0	21.51 2	7450.30 1	48.80 0	-25.848	- 1262.51 9	--	
			e	210.00 0	48.79 8	5834.41 0	210.00 0	0.000	0.000	210.00 0	48.80 2	- 5840.944	346.73 9	21.51 0	7450.00 0	48.20 0	-26.882	- 1298.45 7	1.000	
			f	209.00 0	48.75 1	5878.83 3	209.00 0	92.96 5	11197.4 81	209.00 0	44.35 4	5343.318	346.62 5	21.51 2	7450.00 0	48.20 0	-26.173	- 1261.98 2	0.400	
			e	210.00 0	48.80 2	5836.52 2	210.00 0	0.000	0.000	210.00 0	48.81 2	- 5840.773	346.43 8	21.52 6	7450.00 0	48.20 0	-26.864	- 1297.50 4	1.000	
			f	209.00 0	48.76 5	5879.29 5	209.00 0	93.02 5	11204.3 84	209.00 0	44.40 9	5351.546	346.48 3	21.51 7	7450.00 0	48.20 0	-26.151	- 1261.03 7	0.400	
			e	209.94 3	48.81 7	5839.03 1	209.94 3	0.000	0.000	209.94 3	48.96 0	- 5846.952	346.53 3	21.53 0	7450.05 7	48.20 0	-26.877	- 1298.34 8	1.000	
			f	209.00 0	48.79 7	5880.22 8	209.00 0	92.94 1	11193.7 52	209.00 0	44.28 8	5335.492	346.22 5	21.55 1	7450.00 0	48.20 0	-26.359	- 1270.72 8	0.400	
5		66%	d	209.00 0	48.79 0	5880.75 2	209.00 0	61.60 6	7429.29 8	209.00 0	13.18 5	1563.288	346.69 8	21.51 7	7450.00 0	48.20 0	-26.388	- 1272.25 6	--	
			e	210.00 0	48.86 2	5839.60 1	210.00 0	0.000	0.000	210.00 0	48.91 9	- 5844.900	346.85 1	21.50 1	7450.03 6	48.20 0	-26.873	- 1297.44 1	1.000	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
6			f	209.000	48.782	5880.000	209.000	61.876	7458.740	209.000	13.418	1586.992	346.272	21.548	7450.000	48.200	-26.206	1263.917	0.400	
			e	209.944	48.907	5840.161	209.944	0.000	0.000	209.944	49.000	-5856.586	346.279	21.549	7450.000	48.200	-26.889	1299.034	1.000	
			f	209.000	48.790	5880.200	209.000	61.945	7466.667	209.000	13.512	1604.399	346.246	21.551	7450.000	48.200	-26.203	1263.852	0.400	
			e	210.000	48.868	5839.658	210.000	0.000	0.000	210.000	49.000	-5850.769	346.000	21.572	7450.000	48.200	-27.050	1306.895	1.000	
			f	209.000	48.746	5879.829	209.000	61.875	7459.315	209.000	13.477	1599.678	346.300	21.547	7450.842	48.200	-26.455	1276.733	0.400	
		33%	d	209.000	48.618	5870.326	209.000	30.200	3640.000	209.000	18.726	-2222.356	346.449	21.536	7450.000	48.200	-26.424	1273.897	--	
			e	209.936	48.885	5839.274	209.936	0.000	0.000	209.936	48.999	-5851.252	346.289	21.547	7450.109	48.200	-26.904	1299.456	1.000	
			f	209.000	48.618	5870.173	209.000	30.346	3665.539	209.000	18.578	-2212.117	346.124	21.558	7451.212	48.200	-26.399	1273.489	0.400	
			e	210.000	48.845	5838.551	210.000	0.000	0.000	210.000	48.999	-5846.570	343.989	21.674	7450.000	48.200	-26.868	1297.697	1.000	
			f	209.100	48.603	5863.760	209.100	30.377	3666.722	209.100	18.534	-2208.719	343.965	21.676	7450.000	48.200	-26.561	1280.582	0.400	
			e	210.000	48.827	5837.208	210.000	0.000	0.000	210.000	48.992	-5842.393	343.889	21.679	7450.199	48.200	-27.076	1307.265	1.000	
			f	209.000	48.609	5865.877	209.000	30.365	3667.304	209.000	18.503	-2200.000	351.228	21.233	7450.014	48.200	-26.445	1276.063	0.400	
7	0%	100%	d	208.001	1.834	-34.908	208.001	92.293	11100.160	208.001	92.613	11148.682	339.410	21.245	7154.301	49.400	135.000	6669.387	--	

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203.5 Step Change in Load Test																					
Excel file	EUT output limit	Load level	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (30s)	ESS Operati ng Mode	
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)			
8			e	209.00 0	1.941	-27.122	209.00 0	0.000	0.000	209.00 0	2.324	26.995	320.64 4	22.70 2	7181.36 1	49.40 0	- 0	- 0	6670.03 6	1.000	
			f	208.10 0	1.894	-34.176	208.10 0	92.77 3	11161.0 92	208.10 0	93.09 6	11206.81 8	319.01 3	22.85 6	7172.53 0	49.40 0	- 0	- 0	6670.00 0	1.000	
			e	209.00 0	1.936	-26.705	209.00 0	0.000	0.000	209.00 0	2.319	26.539	318.26 1	22.92 9	7182.23 8	49.40 0	- 0	- 0	6670.06 4	1.000	
			f	208.00 0	1.861	-34.240	208.00 0	92.87 7	11173.0 45	208.00 0	93.20 5	11219.73 4	318.70 5	22.88 1	7173.82 7	49.40 0	- 0	- 0	6670.16 6	1.000	
			e	209.00 0	1.924	-27.236	209.00 0	0.000	0.000	209.00 0	2.313	27.067	317.37 6	23.00 1	7186.49 6	49.40 0	- 0	- 0	6671.28 2	1.000	
			f	208.04 3	1.844	-34.476	208.04 3	92.83 7	11168.4 74	208.04 3	93.17 3	11215.23 5	318.15 0	22.93 9	7184.99 3	49.40 0	- 0	- 0	6675.87 7	1.000	
		66%	d	208.48 1	1.773	-32.816	208.48 1	61.51 1	7408.45 6	208.48 1	61.86 5	7450.067	317.78 9	22.96 8	7185.20 8	49.40 0	- 0	- 0	6679.40 9	--	
			e	209.00 0	1.877	-27.263	209.00 0	0.000	0.000	209.00 0	2.302	27.302	318.02 2	22.94 1	7191.52 5	49.40 0	- 0	- 0	6680.00 0	1.000	
			f	208.90 0	1.755	-32.679	208.90 0	61.80 6	7443.07 2	208.90 0	62.15 4	7485.407	317.80 0	22.98 0	7186.74 3	49.40 0	- 0	- 0	6680.00 0	1.000	
			e	209.00 0	1.868	-27.192	209.00 0	0.000	0.000	209.00 0	2.306	27.348	317.36 2	23.01 9	7194.09 0	49.40 0	- 0	- 0	6680.00 0	1.000	
			f	208.95 8	1.739	-32.435	208.95 8	61.84 1	7448.18 4	208.95 8	62.15 9	7484.830	317.46 1	23.00 2	7188.22 4	49.40 0	- 0	- 0	6680.00 0	1.000	
			e	209.00 0	1.866	-27.117	209.00 0	0.000	0.000	209.00 0	2.304	27.152	317.41 6	23.01 2	7194.47 3	49.40 0	- 0	- 0	6680.00 0	1.000	
			f	208.72 5	1.743	-32.462	208.72 5	61.80 7	7441.99 7	208.72 5	62.14 5	7485.535	317.27 7	23.00 6	7188.14 6	49.40 0	- 0	- 0	6680.00 0	1.000	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
9		33%	d	208.955	1.707	-30.471	208.955	30.198	3632.757	208.955	30.492	3674.612	317.335	23.007	7188.358	49.400	-135.000	-6680.025	--	
			e	209.000	1.860	-27.049	209.000	0.000	0.000	209.000	2.298	27.200	317.864	22.960	7189.419	49.400	-135.000	-6680.000	1.000	
			f	208.998	1.707	-30.252	208.998	30.313	3652.535	208.998	30.692	3698.556	317.432	23.003	7191.137	49.400	-135.000	-6680.000	1.000	
			e	209.000	1.860	-26.918	209.000	0.000	0.000	209.000	2.298	27.010	317.110	23.047	7197.407	49.400	-135.000	-6680.000	1.000	
			f	209.000	1.706	-30.072	209.000	30.350	3657.725	209.000	30.708	3698.403	317.463	23.014	7193.553	49.400	-135.000	-6680.000	1.000	
			e	209.000	1.857	-26.786	209.000	0.000	0.000	209.000	2.299	26.903	317.459	23.000	7192.963	49.400	-135.000	-6680.000	1.000	
			f	208.904	1.707	-30.080	208.904	30.324	3655.321	208.904	30.700	3697.432	317.703	22.979	7188.402	49.400	-135.000	-6680.000	1.000	
Note:																				

(5-2) 203.6 test

203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generation level (PV)	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
1	100%	5%-10%	d	209.000	91.922	11105.614	209.000	30.200	3640.000	209.000	61.819	-7467.569	361.624	20.635	7460.063	47.700	90.800	4326.992	-	
			e	209.000	59.000	7113.212	209.000	30.200	3636.334	209.000	29.000	-3480.073	300.775	3.901	1170.000	47.200	139.000	6562.813	2.300	

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generati on level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
2			f	209.044	91.879	11101.092	209.044	30.200	3640.000	209.044	61.805	7467.190	358.969	20.768	7448.069	47.598	91.265	4348.815	2.300	
			e	209.000	58.962	7100.000	209.000	30.200	3631.401	209.000	29.000	3480.000	300.940	3.900	1170.000	47.100	139.000	6560.064	2.300	
			f	209.100	91.854	11097.974	209.100	30.200	3640.000	209.100	61.799	7461.854	334.923	22.290	7460.257	47.600	91.300	4349.244	2.300	
			e	209.000	59.000	7103.473	209.000	30.200	3628.463	209.000	29.000	3480.000	300.776	3.900	1170.000	47.100	139.000	6560.040	2.300	
			f	209.000	91.851	11098.088	209.000	30.200	3640.000	209.000	61.799	7462.767	333.121	22.396	7460.057	47.600	91.313	4349.857	2.300	
		33%-66%	d	209.000	91.892	11102.995	209.000	30.200	3640.000	209.000	61.810	7467.948	341.175	21.883	7460.000	47.600	91.283	4348.892	--	
			e	209.000	91.924	11105.421	209.000	30.200	3640.000	209.000	61.832	7473.352	341.482	21.857	7460.000	47.600	91.319	4349.943	0	
			f	209.090	91.944	11108.265	209.090	30.200	3640.000	209.090	61.859	7473.608	342.196	21.816	7460.000	47.600	91.376	4351.186	0	
			e	209.101	91.980	11112.979	209.101	30.200	3640.000	209.101	61.983	7480.386	346.617	21.533	7460.000	47.600	91.466	4357.536	0	
			f	209.100	91.983	11114.608	209.100	30.200	3640.000	209.100	61.973	7480.171	350.284	21.310	7460.000	47.600	91.339	4350.057	0	
			e	209.036	91.980	11113.246	209.036	30.200	3640.000	209.036	61.968	7479.826	350.284	21.310	7460.000	47.600	91.275	4349.203	0	
			f	209.000	91.969	11111.726	209.000	30.200	3640.000	209.000	61.950	7479.886	350.334	21.307	7460.000	47.600	91.242	4346.776	0	

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203.6 Step Change in Generation Test																					
Load level: 33%																					
Excel file	EUT output limit	Generati on level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operatin g Mode	
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)			
3	66%	5%-10%	d	209.000	62.800	7575.943	209.000	30.200	3636.203	209.000	32.800	-3942.712	360.998	20.674	7460.000	48.500	9.823	476.244	--		
			e	209.000	59.067	7121.320	209.000	30.191	3623.768	209.000	29.166	-3500.000	300.330	3.889	1170.000	47.100	139.000	6562.367	2.300		
			f	209.000	62.800	7575.481	209.000	30.200	3630.487	209.000	32.800	-3946.192	340.444	21.903	7460.000	48.500	9.986	484.393	2.300		
			e	209.000	59.067	7121.320	209.000	30.191	3623.768	209.000	29.166	-3500.000	300.330	3.889	1170.000	47.100	139.000	6562.367	2.300		
			f	209.000	62.795	7573.666	209.000	30.200	3627.447	209.000	32.800	-3943.310	332.980	22.404	7460.000	48.500	10.070	488.160	2.300		
			e	209.000	59.000	7119.943	209.000	30.200	3622.454	209.000	29.000	-3491.983	300.320	3.887	1170.000	47.100	139.000	6565.193	2.300		
f		209.000	62.790	7573.894	209.000	30.200	3632.126	209.000	32.800	-3940.913	337.141	22.126	7460.000	48.500	10.041	486.892	2.300				
4		33%-66%	d	209.000	62.793	7574.104	209.000	30.200	3636.509	209.000	32.800	-3941.014	343.013	21.726	7459.870	48.500	9.807	475.491	--		
			e	209.000	62.793	7574.009	209.000	30.200	3638.944	209.000	32.800	-3940.314	343.006	21.727	7459.872	48.500	9.778	474.067	0		
			f	209.000	62.796	7574.282	209.000	30.200	3637.428	209.000	32.800	-3940.849	343.002	21.726	7459.863	48.500	9.979	483.920	0		
			e	209.000	62.795	7573.784	209.000	30.200	3637.198	209.000	32.800	-3940.644	342.987	21.727	7459.742	48.500	9.986	484.242	0		
	f		209.000	62.802	7576.063	209.000	30.200	3638.174	209.000	32.800	-3940.913	343.000	21.726	7459.715	48.500	9.766	473.512	0			

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generati on level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	209.00 0	62.79 3	7573.809	209.00 0	30.20 0	3638.48 8	209.00 0	32.80 0	- 3940.34 2	343.00 3	21.72 6	7459.65 8	48.50 0	9.766	473.525	0	
			f	209.00 0	62.79 9	7575.777	209.00 0	30.20 0	3638.74 5	209.00 0	32.80 0	- 3943.76 6	343.00 0	21.72 6	7459.54 4	48.50 0	9.994	484.690	0	
5	33%	5%-10%	d	209.00 0	31.20 0	3758.703	209.00 0	30.07 0	3620.00 0	209.00 0	2.527	-126.998	358.98 5	20.77 5	7450.40 1	49.30 0	- 68.347	- 3367.84 2	--	
			e	208.95 3	31.17 7	3741.912	208.95 3	30.00 0	3620.00 0	208.95 3	2.497	-119.355	301.00 0	3.870	1160.00 0	48.00 0	59.200	2839.97 1	2.300	
			f	208.92 6	31.20 0	3758.552	208.92 6	30.00 0	3620.00 0	208.92 6	2.541	-127.759	345.99 1	21.55 4	7456.42 9	49.30 0	- 68.364	- 3368.56 4	2.600	
			e	209.00 0	31.17 4	3741.224	209.00 0	30.00 0	3620.00 0	209.00 0	2.500	-118.886	300.99 7	3.871	1160.00 0	48.00 0	58.989	2830.00 0	2.300	
			f	209.00 0	31.20 0	3757.204	209.00 0	30.00 0	3620.00 0	209.00 0	2.538	-126.922	334.31 0	22.31 3	7459.55 8	49.30 0	- 68.101	- 3355.54 9	2.600	
			e	208.98 6	30.88 7	3706.494	208.98 6	30.00 1	3620.03 1	208.98 6	2.722	-86.015	301.28 9	3.910	1174.39 1	48.01 2	58.060	2785.55 3	2.300	
			f	209.00 0	31.20 0	3755.777	209.00 0	30.00 0	3620.00 0	209.00 0	2.535	-125.568	336.88 6	22.14 5	7459.23 0	49.30 0	- 68.338	- 3369.14 4	2.600	
6	33%	33%-66%	d	209.00 0	31.20 0	3756.604	209.00 0	30.06 3	3620.00 0	209.00 0	2.527	-125.238	345.95 8	21.53 2	7455.96 7	49.30 0	- 68.202	- 3360.16 5	--	
			e	208.97 3	31.20 0	3757.603	208.97 3	30.10 4	3620.00 0	208.97 3	2.526	-125.588	345.98 9	21.53 2	7455.20 7	49.30 0	- 68.215	- 3360.45 6	0	
			f	208.91 0	31.20 0	3758.177	208.91 0	30.10 9	3620.00 0	208.91 0	2.533	-125.989	345.96 0	21.53 4	7453.94 5	49.30 0	- 68.395	- 3370.44 9	0	
			e	209.00 0	31.20 0	3758.100	209.00 0	30.08 8	3620.00 0	209.00 0	2.529	-125.701	345.98 6	21.53 0	7453.39 8	49.30 0	- 68.318	- 3366.69 9	0	

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generati on level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	209.00 0	31.20 0	3758.363	209.00 0	30.09 4	3620.00 0	209.00 0	2.537	-126.274	345.73 9	21.55 0	7453.07 5	49.30 0	- 68.268	- 3363.40 6	0	
			e	209.00 0	31.20 0	3758.277	209.00 0	30.12 2	3620.00 0	209.00 0	2.533	-126.288	345.73 6	21.55 0	7452.95 7	49.30 0	- 68.211	- 3360.44 7	0	
			f	209.00 0	31.20 0	3758.716	209.00 0	30.06 2	3620.00 0	209.00 0	2.543	-126.238	345.67 8	21.55 5	7453.12 4	49.30 0	- 68.365	- 3368.33 1	0	
Note:																				

(6) ESS external export current limit = $33 \pm 5\%$, PV inputs = $50\% \pm 5\%$ - (If support)

(6-1) 203.5 test

203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
1	100%	100%	d	209.000	84.590	10201.554	209.000	92.026	11080.050	209.000	8.011	902.875	359.971	20.776	7480.401	48.300	68.020	3284.273	--	
			e	209.887	84.399	10192.849	209.887	0.000	0.000	209.887	84.400	10200.000	359.485	20.802	7479.982	48.300	68.000	3280.399	1.000	
			f	209.000	84.599	10200.613	209.000	92.770	11167.004	209.000	8.646	984.945	359.121	20.821	7479.973	48.300	67.976	3280.706	1.000	
			e	209.101	84.400	10189.565	209.101	0.000	0.000	209.101	84.400	10200.000	359.063	20.823	7479.791	48.300	68.000	3280.097	1.000	
			f	209.000	84.600	10200.000	209.000	92.865	11178.037	209.000	8.801	1007.541	359.005	20.825	7480.000	48.300	68.000	3280.000	1.000	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	209.903	84.308	10180.050	209.903	0.000	0.000	209.903	84.400	- 10196.409	359.055	20.823	7480.000	48.300	68.000	3280.000	1.000	
			f	209.000	84.577	10199.943	209.000	92.829	11173.181	209.000	8.775	1000.648	357.026	20.930	7479.686	48.300	67.997	3279.914	1.000	
2	66%	d	209.000	84.408	10199.373	209.000	61.681	7432.080	209.000	22.985	- 2759.549	357.016	20.929	7479.787	48.300	68.000	3280.000	--		
		e	209.100	84.395	10189.147	209.100	0.000	0.000	209.100	84.400	10199.855	357.000	20.934	7479.946	48.300	68.000	3280.036	1.000		
		f	209.000	84.587	10206.205	209.000	61.809	7446.285	209.000	22.956	- 2756.005	357.003	20.929	7479.760	48.300	67.995	3280.107	1.000		
		e	209.897	84.338	10184.155	209.897	0.000	0.000	209.897	84.382	10194.300	357.019	20.930	7479.646	48.300	68.001	3281.031	1.000		
		f	209.000	84.377	10186.855	209.000	61.867	7452.612	209.000	22.712	- 2727.488	357.040	20.932	7479.950	48.300	68.000	3283.594	1.000		
		e	209.900	84.264	10176.559	209.900	0.000	0.000	209.900	84.325	10185.237	357.060	20.932	7479.776	48.300	68.000	3280.200	1.000		
		f	209.003	84.379	10186.762	209.003	61.864	7452.582	209.003	22.688	- 2720.913	357.041	20.938	7479.715	48.300	68.000	3280.000	1.000		
3	33%	d	209.100	84.303	10179.524	209.100	30.200	3640.000	209.100	54.223	- 6545.038	357.053	20.931	7479.937	48.300	67.996	3280.000	--		
		e	209.762	84.227	10174.083	209.762	0.000	0.000	209.762	84.298	10181.633	357.064	20.930	7479.982	48.300	67.996	3280.000	1.000		
		f	209.000	84.296	10178.802	209.000	30.313	3657.763	209.000	54.071	- 6526.178	357.051	20.932	7479.960	48.300	67.986	3280.000	1.000		
		e	209.900	84.277	10180.644	209.900	0.000	0.000	209.900	84.338	10186.957	357.048	20.931	7479.984	48.300	67.989	3280.000	1.000		
		f	209.000	84.318	10183.195	209.000	30.343	3662.030	209.000	54.068	- 6526.057	357.030	20.934	7480.000	48.300	67.990	3280.333	1.000		
		e	209.177	84.223	10175.312	209.177	0.000	0.000	209.177	84.262	10179.800	357.030	20.933	7480.000	48.300	67.999	3280.000	1.000		

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	209.100	84.280	10177.061	209.100	30.333	3660.342	209.100	54.020	- 6520.399	356.983	20.944	7480.086	48.300	67.997	3280.000	1.000	
4	50%	100%	d	208.949	48.801	5876.491	208.949	92.243	11093.985	208.949	43.568	5240.100	350.048	21.344	7480.000	49.207	- 25.855	1273.195	--	
			e	209.000	48.840	5827.731	209.000	0.000	0.000	209.000	48.994	- 5840.000	350.054	21.346	7480.000	49.300	- 26.592	1309.964	1.000	
			f	208.985	48.794	5871.674	208.985	92.788	11160.676	208.985	44.144	5308.971	350.035	21.348	7480.000	49.201	- 25.725	1267.404	1.000	
			e	209.100	48.832	5826.473	209.100	0.000	0.000	209.100	48.911	- 5831.337	350.043	21.349	7480.000	49.300	- 26.585	1309.259	1.000	
			f	209.000	48.785	5869.667	209.000	92.862	11168.023	209.000	44.229	5319.491	350.022	21.341	7480.000	49.200	- 25.935	1278.395	1.000	
			e	209.085	48.878	5828.775	209.085	0.000	0.000	209.085	48.999	- 5840.000	350.068	21.348	7480.000	49.294	- 26.408	1300.114	1.000	
			f	208.934	48.781	5868.787	208.934	92.776	11158.488	208.934	44.138	5309.615	350.036	21.344	7480.000	49.201	- 25.880	1275.121	1.000	
5		66%	d	209.000	48.695	5863.873	209.000	61.565	7411.771	209.000	13.176	1560.482	350.046	21.358	7480.000	49.202	- 25.937	1278.242	--	
			e	209.025	48.920	5831.506	209.025	0.000	0.000	209.025	49.000	- 5840.000	350.027	21.350	7480.000	49.273	- 26.389	1300.036	1.000	
			f	209.000	48.761	5870.507	209.000	61.794	7439.785	209.000	13.369	1580.071	349.978	21.351	7480.276	49.202	- 25.938	1277.942	1.000	
			e	209.100	48.898	5828.792	209.100	0.000	0.000	209.100	48.999	- 5839.871	350.034	21.344	7480.000	49.300	- 26.582	1309.936	1.000	
			f	209.000	48.751	5868.383	209.000	61.851	7446.387	209.000	13.450	1593.872	350.084	21.342	7480.000	49.200	- 25.754	1269.261	1.000	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	209.000	48.899	5828.889	209.000	0.000	0.000	209.000	49.000	-5840.000	350.043	21.333	7480.000	49.280	-26.433	1302.934	1.000	
			f	209.000	48.735	5867.846	209.000	61.819	7442.882	209.000	13.412	1589.698	350.058	21.352	7480.000	49.201	-25.939	1277.960	1.000	
6		33%	d	209.000	48.616	5860.125	209.000	30.167	3625.915	209.000	18.802	-2239.850	350.083	21.341	7480.000	49.200	-25.895	1275.013	--	
			e	209.098	48.915	5830.490	209.098	0.000	0.000	209.098	48.972	-5832.196	350.067	21.348	7480.000	49.269	-26.446	1303.430	1.000	
			f	209.000	48.614	5860.000	209.000	30.287	3649.534	209.000	18.603	-2210.546	350.052	21.345	7479.947	49.201	-26.074	1283.289	1.000	
			e	209.000	48.873	5826.699	209.000	0.000	0.000	209.000	48.998	-5840.000	350.085	21.338	7480.000	49.288	-26.460	1304.332	1.000	
			f	209.000	48.621	5860.233	209.000	30.311	3652.845	209.000	18.612	-2212.912	350.067	21.333	7480.000	49.201	-25.873	1273.411	1.000	
			e	209.000	48.904	5829.402	209.000	0.000	0.000	209.000	49.000	-5840.000	350.105	21.334	7480.000	49.300	-26.547	1309.658	1.000	
			f	209.000	48.610	5859.914	209.000	30.306	3651.755	209.000	18.596	-2211.298	350.071	21.345	7480.000	49.200	-26.064	1282.539	1.000	
7	0%	100%	d	208.000	1.835	-30.570	208.000	91.800	11040.000	208.000	92.200	11080.000	360.000	9.674	3481.864	49.700	-65.594	3258.961	--	
			e	208.100	1.911	-23.826	208.100	0.000	0.000	208.100	2.293	23.930	360.000	9.664	3479.437	49.700	-65.552	3254.955	1.000	
			f	208.000	1.839	-30.820	208.000	92.514	11112.570	208.000	92.822	11153.981	360.000	9.658	3476.338	49.700	-65.568	3256.445	1.000	
			e	208.100	1.908	-23.839	208.100	0.000	0.000	208.100	2.289	23.910	360.000	9.689	3488.390	49.700	-65.553	3255.008	1.000	

TEST PACKAGE

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste P	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	208.000	1.835	-31.095	208.000	92.608	11123.960	208.000	92.922	11165.757	360.000	9.652	3473.261	49.700	65.570	3256.889	1.000	
			e	208.892	1.893	-23.966	208.892	0.000	0.000	208.892	2.277	24.112	360.000	9.663	3478.974	49.700	65.556	3255.698	1.000	
			f	208.000	1.832	-31.110	208.000	92.600	11122.710	208.000	92.902	11165.164	360.000	9.661	3478.074	49.700	65.594	3259.201	1.000	
66%		d	208.000	1.834	-30.993	208.000	91.830	11034.765	208.000	92.198	11076.886	360.000	9.669	3480.067	49.701	65.546	3254.577	--		
		e	208.102	1.883	-24.069	208.102	0.000	0.000	208.102	2.274	24.304	360.000	9.655	3475.771	49.700	65.552	3255.118	1.000		
		f	208.000	1.776	-29.253	208.000	61.764	7424.608	208.000	62.040	7459.171	360.000	9.647	3471.935	49.700	65.535	3253.318	1.000		
		e	208.588	1.880	-23.903	208.588	0.000	0.000	208.588	2.275	24.021	360.000	9.668	3480.290	49.700	65.598	3259.646	1.000		
		f	208.000	1.775	-29.178	208.000	61.769	7426.108	208.000	62.079	7463.393	360.000	9.676	3482.036	49.700	65.558	3255.629	1.000		
		e	208.000	1.889	-23.897	208.000	0.000	0.000	208.000	2.272	24.025	360.000	9.681	3486.154	49.700	65.599	3259.886	1.000		
		f	208.000	1.759	-28.987	208.000	61.696	7416.947	208.000	62.007	7454.494	360.000	9.645	3471.084	49.700	65.537	3253.766	1.000		
9	33%	d	208.074	1.721	-26.987	208.074	30.026	3620.000	208.074	30.400	3660.000	360.000	9.660	3478.358	49.700	65.596	3259.524	--		
		e	208.045	1.876	-23.677	208.045	0.000	0.000	208.045	2.279	23.830	360.000	9.689	3488.548	49.700	65.551	3255.027	1.000		
		f	208.000	1.733	-27.081	208.000	30.273	3645.407	208.000	30.590	3675.422	360.000	9.676	3482.396	49.700	65.551	3255.084	1.000		

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	208.42 ₄	1.873	-23.939	208.42 ₄	0.000	0.000	208.42 ₄	2.260	24.088	360.00 ₀	9.652	3474.25 ₁	49.70 ₀	- 65.53 ₆	- 3253.49 ₄	1.000	
			f	208.00 ₂	1.726	-26.926	208.00 ₂	30.29 ₇	3647.54 ₅	208.00 ₂	30.62 ₄	3681.317	360.00 ₀	9.648	3472.09 ₆	49.70 ₀	- 65.51 ₅	- 3251.49 ₇	1.000	
			e	208.10 ₃	1.868	-23.960	208.10 ₃	0.000	0.000	208.10 ₃	2.255	24.056	360.00 ₀	9.669	3480.34 ₂	49.70 ₀	- 65.60 ₁	- 3259.91 ₅	1.000	
			f	208.04 ₃	1.726	-26.933	208.04 ₃	30.27 ₃	3644.96 ₄	208.04 ₃	30.60 ₉	3677.118	360.00 ₀	9.680	3484.20 ₈	49.70 ₀	- 65.57 ₀	- 3256.84 ₇	1.000	

Note:

(6-2) 203.6 test

203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generati on level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
1	100%	5%-10%	d	208.100	84.527	10160.276	208.100	30.123	3619.950	208.100	54.443	-6546.942	359.975	20.726	7460.000	47.900	68.006	3259.787	--	
			e	208.000	34.598	4140.000	208.000	30.000	3600.000	208.000	5.046	-538.995	300.978	3.878	1170.000	47.900	67.999	3259.728	2.300	
			f	208.000	84.479	10160.053	208.000	30.000	3600.000	208.000	54.524	-6552.463	344.996	21.625	7460.000	47.900	67.984	3256.431	3.300	
			e	208.000	34.600	4145.507	208.000	30.000	3600.000	208.000	5.127	-548.341	300.969	3.879	1170.000	47.900	68.010	3259.742	2.300	
			f	208.000	84.402	10160.000	208.000	30.000	3600.000	208.000	54.599	-6559.943	352.977	21.127	7460.000	47.900	67.997	3258.673	3.300	
			e	208.000	34.598	4140.000	208.000	30.000	3600.000	208.000	5.077	-541.784	301.030	3.877	1170.000	47.900	67.998	3259.202	2.300	

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generati on level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	208.10 3	84.60 0	10174.80 7	208.10 3	30.00 0	3600.00 0	208.10 3	54.60 0	- 6567.19 0	359.98 3	20.72 5	7460.00 0	47.90 0	67.99 3	3257.86 0	3.300	
2		33%-66%	d	209.03 9	84.19 4	10161.13 2	209.03 9	30.20 0	3639.00 9	209.03 9	54.16 3	- 6532.59 4	347.34 9	21.47 6	7450.81 4	47.90 0	68.00 0	3259.85 8	--	
			e	209.10 0	84.18 5	10160.08 6	209.10 0	30.20 0	3636.77 6	209.10 0	54.11 3	- 6532.52 5	347.08 6	21.49 2	7450.61 3	47.90 0	68.00 0	3258.08 8	0	
			f	209.03 4	84.10 1	10159.62 5	209.03 4	30.20 0	3637.52 8	209.03 4	54.01 5	- 6523.17 1	347.23 1	21.48 3	7450.56 2	47.90 0	67.99 3	3251.92 3	0	
			e	209.00 0	84.04 7	10159.32 4	209.00 0	30.20 0	3637.23 0	209.00 0	54.00 6	- 6521.25 6	347.03 1	21.49 7	7450.64 4	47.90 0	67.98 6	3250.45 1	0	
			f	209.00 0	84.06 1	10159.48 6	209.00 0	30.20 0	3638.74 5	209.00 0	54.01 4	- 6523.08 1	347.23 7	21.48 2	7450.39 9	47.90 0	67.97 9	3250.48 5	0	
			e	209.00 0	84.15 9	10160.14 5	209.00 0	30.20 0	3636.52 2	209.00 0	54.05 1	- 6528.02 9	347.12 6	21.49 0	7450.52 2	47.90 0	67.95 8	3250.11 6	0	
			f	209.05 1	84.17 5	10159.80 0	209.05 1	30.20 0	3636.91 9	209.05 1	54.07 6	- 6530.24 3	347.18 5	21.48 6	7450.49 9	47.90 0	67.95 4	3250.11 4	0	
3	66%	5%-10%	d	208.00 0	63.15 8	7584.340	208.00 0	30.00 0	3600.00 0	208.00 0	33.22 6	- 3983.25 5	355.99 4	20.97 3	7460.00 0	48.50 0	10.02 6	486.302	--	
			e	208.00 0	34.59 7	4140.000	208.00 0	30.00 0	3600.00 0	208.00 0	5.083	-542.370	300.99 8	3.877	1170.00 0	47.90 0	67.99 6	3258.84 1	2.300	
			f	208.00 0	63.13 2	7581.248	208.00 0	30.00 0	3600.00 0	208.00 0	33.20 1	- 3980.15 0	340.47 7	21.91 4	7460.03 7	48.50 0	10.00 3	485.085	2.200	
			e	208.00 0	34.59 7	4140.000	208.00 0	30.00 0	3600.00 0	208.00 0	5.083	-542.370	300.99 8	3.877	1170.00 0	47.90 0	67.99 6	3258.84 1	2.300	
			f	208.00 0	63.14 2	7582.168	208.00 0	30.00 0	3600.00 0	208.00 0	33.20 6	- 3980.79 9	346.00 7	21.57 3	7460.00 0	48.50 0	9.992	484.529	2.200	

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generati on level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
4			e	208.000	34.600	4152.439	208.000	30.000	3600.000	208.000	5.160	-552.887	300.977	3.878	1170.000	47.900	68.012	3259.658	2.300	
			f	208.000	63.156	7582.853	208.000	30.000	3600.000	208.000	33.210	-3981.369	353.825	21.083	7460.000	48.500	10.029	486.447	2.200	
			d	209.000	62.799	7574.198	209.000	30.200	3623.396	209.000	32.800	-3942.476	342.489	21.763	7453.208	48.500	9.849	477.524	--	
		e	209.000	62.798	7574.351	209.000	30.200	3625.421	209.000	32.800	-3942.425	342.933	21.732	7452.739	48.500	9.841	477.108	0		
		f	209.000	62.802	7575.581	209.000	30.200	3627.740	209.000	32.800	-3942.821	345.759	21.561	7452.422	48.500	9.999	484.894	0		
		e	209.000	62.805	7577.552	209.000	30.200	3630.853	209.000	32.800	-3945.314	345.799	21.559	7452.576	48.500	9.945	482.201	0		
		f	209.000	62.803	7576.320	209.000	30.200	3627.218	209.000	32.800	-3942.225	347.104	21.479	7452.739	48.500	9.765	473.456	0		
		e	209.000	62.802	7576.605	209.000	30.200	3630.613	209.000	32.800	-3944.565	350.943	21.240	7452.254	48.500	9.826	476.435	0		
		f	209.000	62.806	7577.147	209.000	30.200	3630.870	209.000	32.801	-3952.382	350.536	21.265	7452.382	48.500	9.977	483.786	0		
5	33%	5%-10%	d	209.000	31.388	3770.165	209.000	30.000	3620.000	209.000	2.756	-143.206	375.162	19.990	7417.535	49.300	-66.884	-3293.738	--	
			e	209.000	31.169	3741.084	209.000	30.030	3620.000	209.000	2.494	-117.443	301.000	3.867	1161.897	48.000	59.199	2839.943	2.100	
			f	209.000	31.388	3770.437	209.000	30.072	3620.000	209.000	2.753	-144.512	376.378	19.978	7426.829	49.300	-66.851	-3291.398	2.200	
			e	209.000	31.164	3740.966	209.000	30.060	3620.000	209.000	2.486	-117.187	301.000	3.866	1162.254	48.000	58.995	2830.000	2.100	

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generati on level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	209.000	31.423	3776.405	209.000	30.045	3620.000	209.000	2.768	-149.632	376.606	19.974	7427.233	49.300	-66.885	-3294.280	2.200	
			e	208.894	30.881	3705.984	208.894	30.041	3620.031	208.894	2.721	-82.624	301.031	3.907	1175.000	48.011	58.143	2788.885	2.100	
			f	209.000	31.395	3772.639	209.000	30.052	3620.000	209.000	2.740	-143.692	375.168	19.989	7418.573	49.300	66.836	3291.341	2.200	
6		33%-66%	d	209.000	31.375	3770.401	209.000	30.055	3620.000	209.000	2.700	-143.504	375.568	19.968	7417.606	49.300	-66.890	-3294.835	--	
			e	209.000	31.365	3766.191	209.000	30.054	3620.000	209.000	2.676	-141.033	375.733	19.971	7418.659	49.300	-66.865	-3293.195	0	
			f	209.000	31.390	3772.559	209.000	30.066	3620.000	209.000	2.716	-143.221	375.255	19.979	7415.893	49.300	-66.851	-3292.097	0	
			e	208.913	31.394	3772.238	208.913	30.119	3620.000	208.913	2.725	-143.275	375.306	19.980	7416.570	49.300	-66.882	-3294.380	0	
			f	209.000	31.378	3771.452	209.000	30.065	3620.000	209.000	2.699	-143.314	375.453	19.983	7420.122	49.300	-66.867	-3293.596	0	
			e	209.000	31.364	3768.277	209.000	30.061	3620.000	209.000	2.681	-142.290	375.717	19.976	7421.191	49.300	-66.873	-3293.787	0	
			f	209.000	31.397	3775.749	209.000	30.073	3620.000	209.000	2.727	-144.883	375.111	19.996	7419.914	49.300	-66.848	-3292.725	0	
Note:																				

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(7) ESS external export current limit = 0% to +5%, PV inputs = 0% + 5%

(7-1) 203.5 test

(a) For single phase unit connected line to neutral

203.5 Step Change in Load Test																					
Excel file	EUT output limit	Load level	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode	
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)			
1	100%	100%	d	208.000	1.461	-59.306	208.000	92.136	11068.521	208.000	92.667	11135.063	360.000	-0.034	-12.000	49.000	0.501	24.608	--		
			e	208.624	1.591	-57.568	208.624	0.000	0.000	208.624	1.944	57.637	360.000	-0.034	-12.000	49.000	0.502	24.609	1.000		
			f	208.000	1.470	-59.744	208.000	92.628	11127.457	208.000	93.157	11194.061	360.000	-0.033	-12.000	49.000	0.502	24.626	1.000		
			e	208.100	1.590	-57.916	208.100	0.000	0.000	208.100	1.945	57.997	360.000	-0.033	-12.000	49.000	0.502	24.624	1.000		
			f	208.000	1.462	-58.413	208.000	92.707	11134.576	208.000	93.210	11202.030	360.000	-0.033	-12.000	49.000	0.502	24.649	1.000		
			e	208.100	1.571	-55.990	208.100	0.000	0.000	208.100	1.930	56.064	360.000	-0.033	-12.000	49.000	0.502	24.628	1.000		
			f	208.000	1.457	-58.325	208.000	92.723	11138.003	208.000	93.233	11203.680	360.000	-0.033	-12.000	49.000	0.502	24.656	1.000		
2		66%	d	208.000	1.425	-57.613	208.000	61.471	7390.544	208.000	61.987	7453.324	360.000	-0.032	-12.000	49.000	0.502	24.661	--		
			e	208.053	1.588	-57.586	208.053	0.000	0.000	208.053	1.939	57.755	360.000	-0.032	-11.985	49.000	0.503	24.667	1.000		
			f	208.000	1.434	-58.775	208.000	61.680	7415.473	208.000	62.215	7481.971	360.000	-0.032	-11.903	49.000	0.503	24.690	1.000		
			e	208.100	1.596	-58.738	208.100	0.000	0.000	208.100	1.950	58.821	360.000	-0.032	-11.457	49.000	0.502	24.632	1.000		
			f	208.000	1.438	-59.414	208.000	61.757	7424.093	208.000	62.280	7488.852	360.000	-0.032	-11.443	49.000	0.502	24.655	1.000		
			e	208.476	1.599	-58.878	208.476	0.000	0.000	208.476	1.955	59.106	360.000	-0.032	-11.294	49.000	0.502	24.607	1.000		
			f	208.000	1.444	-59.284	208.000	61.748	7423.909	208.000	62.279	7488.188	360.000	-0.032	-11.384	49.000	0.502	24.652	1.000		
3			33%	d	208.006	1.453	-58.266	208.006	30.026	3620.000	208.006	30.608	3681.003	360.000	-0.032	-11.031	49.000	0.502	24.668		--
				e	208.100	1.597	-58.900	208.100	0.000	0.000	208.100	1.954	59.007	360.000	-0.031	-11.004	49.000	0.502	24.638		1.000
				f	208.079	1.455	-58.551	208.079	30.267	3644.980	208.079	30.832	3705.779	360.000	-0.031	-11.005	49.000	0.502	24.666		1.000

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	208.019	1.591	-58.876	208.019	0.000	0.000	208.019	1.946	59.060	360.000	-0.031	-11.000	49.000	0.502	24.644	1.000	
			f	208.000	1.438	-57.238	208.000	30.293	3647.554	208.000	30.842	3706.556	360.000	-0.031	-11.000	49.000	0.502	24.662	1.000	
			e	208.621	1.579	-57.835	208.621	0.000	0.000	208.621	1.938	57.955	360.000	-0.031	-11.000	49.000	0.503	24.641	1.000	
			f	208.000	1.436	-56.996	208.000	30.287	3646.904	208.000	30.848	3707.874	360.000	-0.031	-11.000	49.000	0.503	24.681	1.000	
4	50%	100%	d	208.000	1.449	-59.308	208.000	92.132	11068.221	208.000	92.669	11135.815	360.000	-0.031	-11.000	49.000	0.503	24.681	--	
			e	208.100	1.569	-56.897	208.100	0.000	0.000	208.100	1.931	57.015	360.000	-0.031	-11.000	49.000	0.502	24.644	1.000	
			f	208.000	1.442	-59.124	208.000	92.716	11136.774	208.000	93.242	11205.192	360.000	-0.031	-11.000	49.000	0.503	24.696	1.000	
			e	208.807	1.571	-57.217	208.807	0.000	0.000	208.807	1.931	57.339	360.000	-0.030	-11.000	49.000	0.503	24.655	1.000	
			f	208.000	1.441	-59.068	208.000	92.772	11143.405	208.000	93.292	11211.311	360.000	-0.030	-11.000	49.000	0.503	24.704	1.000	
			e	208.103	1.566	-56.826	208.103	0.000	0.000	208.103	1.925	56.976	360.000	-0.030	-11.000	49.000	0.504	24.702	1.000	
		f	208.000	1.437	-59.181	208.000	92.722	11138.060	208.000	93.235	11204.622	360.000	-0.030	-11.000	49.000	0.504	24.710	1.000		
		66%	d	208.000	1.406	-57.702	208.000	61.488	7391.490	208.000	61.992	7454.573	360.000	-0.030	-11.000	49.000	0.503	24.700	--	
			e	208.073	1.564	-56.868	208.073	0.000	0.000	208.073	1.926	56.954	360.000	-0.030	-11.000	49.000	0.503	24.695	1.000	
			f	208.000	1.407	-57.892	208.000	61.720	7420.123	208.000	62.234	7483.318	360.000	-0.030	-11.000	49.000	0.503	24.704	1.000	
			e	208.147	1.568	-57.176	208.147	0.000	0.000	208.147	1.928	57.265	360.000	-0.030	-11.000	49.000	0.503	24.696	1.000	
			f	208.000	1.411	-58.299	208.000	61.788	7429.341	208.000	62.325	7493.573	360.000	-0.030	-11.000	49.000	0.504	24.712	1.000	
e	208.100		1.565	-56.940	208.100	0.000	0.000	208.100	1.929	57.117	360.000	-0.030	-11.000	49.000	0.504	24.701	1.000			
f	208.000	1.411	-57.883	208.000	61.728	7422.054	208.000	62.258	7486.448	360.000	-0.030	-11.000	49.000	0.504	24.714	1.000				
6	50%	33%	d	208.000	1.424	-56.506	208.000	30.038	3620.000	208.000	30.602	3680.451	360.000	-0.030	-11.000	49.000	0.504	24.714	--	

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203.5 Step Change in Load Test																					
Excel file	EUT output limit	Load level	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode	
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)			
			e	208.791	1.566	-57.143	208.791	0.000	0.000	208.791	1.930	57.281	360.000	-0.030	-11.000	49.000	0.504	24.700	1.000		
			f	208.000	1.421	-56.831	208.000	30.269	3645.459	208.000	30.818	3704.740	360.000	-0.030	-11.000	49.000	0.504	24.728	1.000		
			e	208.089	1.561	-56.789	208.089	0.000	0.000	208.089	1.926	56.935	360.000	-0.030	-11.000	49.000	0.504	24.718	1.000		
			f	208.101	1.418	-56.529	208.101	30.288	3646.256	208.101	30.831	3706.223	360.000	-0.030	-11.000	49.000	0.504	24.759	1.000		
			e	208.100	1.566	-57.111	208.100	0.000	0.000	208.100	1.926	57.239	360.000	-0.030	-11.000	49.000	0.504	24.735	1.000		
			f	208.000	1.421	-56.961	208.000	30.282	3646.790	208.000	30.833	3706.220	360.000	-0.030	-11.000	49.000	0.504	24.738	1.000		
			7	0%	100%	d	208.000	1.241	-57.033	208.000	91.904	11040.000	208.000	92.402	11102.663	360.000	-0.038	-13.977	49.000		0.505
e	208.100	1.408				-55.172	208.100	0.000	0.000	208.100	1.797	55.351	360.000	-0.038	-14.000	49.000	0.504	24.708	1.000		
f	208.000	1.241				-57.009	208.000	92.617	11125.726	208.000	93.123	11190.466	360.000	-0.038	-14.000	49.000	0.504	24.713	1.000		
e	208.079	1.413				-55.362	208.079	0.000	0.000	208.079	1.805	55.457	360.000	-0.038	-14.000	49.000	0.503	24.696	1.000		
f	208.000	1.242				-56.323	208.000	92.706	11134.709	208.000	93.191	11200.632	360.000	-0.038	-14.000	49.000	0.503	24.710	1.000		
e	208.635	1.416				-54.615	208.635	0.000	0.000	208.635	1.809	54.716	360.000	-0.038	-13.986	49.000	0.503	24.650	1.000		
f	208.000	1.255				-57.201	208.000	92.699	11135.378	208.000	93.207	11201.113	360.000	-0.037	-13.629	49.000	0.502	24.665	1.000		
8	66%	d			212.000	3.361	-56.072	212.000	62.484	7630.872	212.000	63.019	7690.550	361.000	-0.105	-38.000	48.600	-0.004	-0.200	--	
		e			215.000	3.363	-40.846	215.000	0.000	0.000	215.000	3.373	40.856	361.000	-0.104	-38.000	48.600	-0.005	-0.203	1.000	
		f			212.000	3.361	-55.773	212.000	62.684	7654.163	212.000	63.203	7713.886	361.000	-0.104	-37.997	48.600	-0.005	-0.201	1.000	
		e			215.000	3.360	-40.225	215.000	0.000	0.000	215.000	3.365	40.285	361.000	-0.104	-37.692	48.600	-0.005	-0.204	1.000	
		f			212.000	3.358	-55.122	212.000	62.640	7650.020	212.000	63.154	7709.222	361.000	-0.104	-37.208	48.600	-0.005	-0.201	1.000	
		e			215.000	3.360	-40.114	215.000	0.000	0.000	215.000	3.377	40.240	361.000	-0.104	-37.003	48.600	-0.005	-0.203	1.000	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	212.00 0	3.35 8	- 55.130	212.00 0	62.55 4	7639.087	212.00 0	63.07 2	7697.575	361.00 0	- 0.103	- 37.000	48.60 1	- 0.007	-0.285	1.000	
9		33%	d	208.06 1	1.30 2	- 54.338	208.06 1	30.01 1	3620.000	208.06 1	30.60 0	3680.000	360.00 0	- 0.035	- 12.972	49.00 0	0.502	24.63 4	--	
			e	208.02 9	1.41 2	- 53.350	208.02 9	0.000	0.000	208.02 9	1.802	53.492	360.00 0	- 0.035	- 12.379	49.00 0	0.502	24.59 8	1.000	
			f	208.00 0	1.30 0	- 54.384	208.00 0	30.27 5	3645.561	208.00 0	30.79 1	3703.564	360.00 0	- 0.034	- 12.077	49.00 0	0.502	24.62 2	1.000	
			e	208.34 8	1.41 2	- 53.481	208.34 8	0.000	0.000	208.34 8	1.800	53.601	360.00 0	- 0.034	- 12.116	49.00 0	0.502	24.60 6	1.000	
			f	208.00 0	1.30 0	- 54.224	208.00 0	30.30 6	3648.583	208.00 0	30.81 6	3707.465	360.00 0	- 0.034	- 12.004	49.00 0	0.502	24.63 9	1.000	
			e	208.09 7	1.40 8	- 53.123	208.09 7	0.000	0.000	208.09 7	1.801	53.310	360.00 0	- 0.034	- 12.006	49.00 0	0.502	24.61 5	1.000	
			f	208.07 4	1.29 5	- 53.960	208.07 4	30.28 2	3646.819	208.07 4	30.80 5	3704.964	360.00 0	- 0.034	- 12.000	49.00 0	0.502	24.62 0	1.000	
Note:																				

(7-2) 203.6 test

203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generatio n level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
1	100%	5%-10%	d	208.07 5	1.40 7	- 55.734	208.07 5	30.00 0	3620.00 0	208.07 5	30.60 0	3679.79 9	360.09 1	- 0.043	- 15.989	49.00 0	0.50 1	24.59 5	-	
			e	208.09 4	1.41 3	- 56.432	208.09 4	30.00 0	3620.00 0	208.09 4	30.60 0	3679.02 0	360.10 5	- 0.043	- 15.969	49.00 0	0.50 1	24.58 7	0	
			f	208.00 0	1.41 2	- 55.949	208.00 0	30.00 0	3620.00 0	208.00 0	30.59 9	3679.09 5	360.08 7	- 0.043	- 15.867	49.00 0	0.50 1	24.60 0	0	
			e	208.00 0	1.41 2	- 56.003	208.00 0	30.00 0	3620.00 0	208.00 0	30.59 9	3679.19 5	360.03 9	- 0.043	- 15.573	49.00 0	0.50 1	24.58 4	0	
			f	208.00 0	1.41 7	- 56.020	208.00 0	30.00 0	3620.00 0	208.00 0	30.60 0	3679.82 9	360.08 3	- 0.043	- 15.879	49.00 0	0.50 1	24.59 9	0	
			e	208.00 0	1.41 8	- 55.852	208.00 0	30.00 0	3620.00 0	208.00 0	30.60 0	3677.52 5	360.01 0	- 0.043	- 15.643	49.00 0	0.50 1	24.60 2	0	

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generatio n level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	208.101	1.418	-55.960	208.101	30.000	3620.000	208.101	30.600	3679.886	360.030	-0.043	-15.014	49.000	0.501	24.601	0	
2		33%-66%	d	208.006	1.420	-56.401	208.006	30.000	3620.000	208.006	30.600	3680.000	360.047	-0.043	-15.006	49.000	0.501	24.597	--	
			e	208.000	1.422	-56.402	208.000	30.000	3620.000	208.000	30.601	3679.971	360.014	-0.043	-15.003	49.000	0.502	24.623	0	
			f	208.000	1.422	-56.464	208.000	30.000	3620.000	208.000	30.600	3679.750	360.025	-0.043	-15.006	49.000	0.502	24.613	0	
			e	208.000	1.425	-56.512	208.000	30.000	3620.000	208.000	30.600	3679.903	360.037	-0.043	-15.013	49.000	0.502	24.631	0	
			f	208.090	1.429	-56.807	208.090	30.000	3620.000	208.090	30.600	3678.488	360.031	-0.043	-15.000	49.000	0.502	24.645	0	
			e	208.099	1.426	-56.646	208.099	30.000	3620.000	208.099	30.602	3679.507	360.035	-0.042	-15.001	49.000	0.502	24.667	0	
			f	208.000	1.428	-56.237	208.000	30.000	3620.000	208.000	30.603	3679.372	360.027	-0.042	-15.000	49.000	0.502	24.649	0	
3	66%	5%-10%	d	208.000	1.426	-56.486	208.000	30.000	3620.000	208.000	30.601	3678.821	360.031	-0.042	-15.000	49.000	0.502	24.653	--	
			e	208.100	1.431	-56.509	208.100	30.000	3620.000	208.100	30.600	3677.971	360.008	-0.042	-15.000	49.000	0.502	24.662	0	
			f	208.076	1.426	-56.270	208.076	30.000	3620.000	208.076	30.601	3678.652	360.020	-0.042	-15.000	49.000	0.502	24.643	0	
			e	208.100	1.431	-56.509	208.100	30.000	3620.000	208.100	30.600	3677.971	360.008	-0.042	-15.000	49.000	0.502	24.662	0	
			f	208.000	1.429	-56.331	208.000	30.000	3620.000	208.000	30.603	3680.086	360.000	-0.042	-15.000	49.000	0.502	24.671	0	
			e	208.000	1.427	-56.382	208.000	30.000	3620.000	208.000	30.601	3680.114	360.073	-0.042	-15.000	49.000	0.503	24.676	0	
			f	208.000	1.439	-57.290	208.000	30.000	3620.000	208.000	30.601	3680.000	360.001	-0.042	-15.000	49.000	0.502	24.658	0	
4		33%-66%	d	208.017	1.444	-57.939	208.017	30.000	3620.000	208.017	30.601	3679.929	360.005	-0.042	-15.000	49.000	0.502	24.652	--	
			e	208.100	1.443	-57.940	208.100	30.000	3620.000	208.100	30.601	3680.114	360.001	-0.042	-15.000	49.000	0.502	24.635	0	
			f	208.049	1.443	-57.770	208.049	30.000	3620.000	208.049	30.600	3678.577	360.000	-0.042	-15.000	49.000	0.502	24.635	0	
			e	208.000	1.443	-57.936	208.000	30.000	3620.000	208.000	30.601	3680.064	360.002	-0.042	-15.000	49.000	0.503	24.675	0	

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generatio n level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	208.00 0	1.44 9	- 58.611	208.00 0	30.00 0	3620.00 0	208.00 0	30.60 4	3680.39 9	360.00 0	- 0.042	- 15.000	49.00 0	0.50 2	24.66 0	0	
			e	208.00 0	1.44 6	- 58.260	208.00 0	30.00 0	3620.00 0	208.00 0	30.60 5	3680.31 4	360.00 7	- 0.042	- 15.000	49.00 0	0.50 2	24.63 4	0	
			f	208.05 1	1.44 2	- 57.472	208.05 1	30.00 0	3620.00 0	208.05 1	30.61 3	3680.71 3	360.02 7	- 0.042	- 15.000	49.00 0	0.50 2	24.62 8	0	
5	33%	5%-10%	d	208.07 7	1.44 8	- 58.233	208.07 7	30.00 0	3620.00 0	208.07 7	30.60 0	3680.09 4	360.00 1	- 0.042	- 15.000	49.00 0	0.50 2	24.64 1	--	
			e	208.00 0	1.44 4	- 57.700	208.00 0	30.00 0	3620.00 0	208.00 0	30.59 9	3678.80 2	360.01 6	- 0.042	- 15.000	49.00 0	0.50 2	24.64 7	0	
			f	208.00 0	1.44 0	- 57.823	208.00 0	30.00 0	3620.00 0	208.00 0	30.60 5	3680.44 9	360.00 5	- 0.042	- 15.000	49.00 0	0.50 2	24.64 7	0	
			e	208.00 0	1.44 6	- 58.000	208.00 0	30.00 0	3620.00 0	208.00 0	30.60 1	3679.67 8	360.00 0	- 0.042	- 15.000	49.00 0	0.50 2	24.65 8	0	
			f	208.00 0	1.45 1	- 58.382	208.00 0	30.00 0	3620.00 0	208.00 0	30.60 2	3680.28 5	360.00 3	- 0.042	- 15.000	49.00 0	0.50 2	24.64 9	0	
			e	208.10 0	1.45 1	- 58.159	208.10 0	30.00 0	3620.00 0	208.10 0	30.60 2	3680.37 5	360.05 5	- 0.042	- 15.000	49.00 0	0.50 3	24.69 3	0	
			f	208.04 3	1.45 3	- 58.345	208.04 3	30.00 0	3620.00 0	208.04 3	30.60 2	3680.34 2	360.01 1	- 0.042	- 15.000	49.00 0	0.50 3	24.67 4	0	
6	33%	33%-66%	d	208.00 0	1.45 2	- 58.350	208.00 0	30.00 0	3620.00 0	208.00 0	30.60 0	3679.45 1	360.00 1	- 0.042	- 15.000	49.00 0	0.50 2	24.65 9	--	
			e	208.00 0	1.44 6	- 58.260	208.00 0	30.00 0	3620.00 0	208.00 0	30.60 7	3680.39 9	360.01 3	- 0.042	- 15.000	49.00 0	0.50 3	24.67 9	0	
			f	208.00 0	1.45 2	- 58.330	208.00 0	30.00 0	3620.00 0	208.00 0	30.60 5	3680.25 0	360.00 4	- 0.042	- 15.000	49.00 0	0.50 3	24.68 9	0	
			e	208.10 1	1.45 5	- 58.322	208.10 1	30.00 0	3620.00 0	208.10 1	30.60 3	3680.32 2	360.00 3	- 0.042	- 15.000	49.00 0	0.50 3	24.67 8	0	
			f	208.00 0	1.45 1	- 58.521	208.00 0	30.00 0	3620.00 0	208.00 0	30.60 7	3680.00 0	360.00 4	- 0.042	- 15.000	49.00 0	0.50 3	24.68 9	0	
			e	208.00 0	1.45 3	- 58.655	208.00 0	30.00 0	3620.00 0	208.00 0	30.60 9	3680.85 1	360.00 2	- 0.042	- 15.000	49.00 0	0.50 3	24.68 8	0	
			f	208.00 0	1.45 1	- 58.602	208.00 0	30.00 0	3620.00 0	208.00 0	30.60 5	3678.85 9	360.00 7	- 0.042	- 15.000	49.00 0	0.50 3	24.68 8	0	
Note:																				

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(8) ESS external export current limit = $66 \pm 5\%$, PV inputs = $0\% + 5\%$ - (If support)

(8-1) 203.5 test

203.5 Step Change in Load Test																					
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode	
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)			
1	100%	100%	d	208.986	50.161	6039.875	208.986	91.916	11056.617	208.986	41.802	5040.000	360.000	-0.125	45.000	47.500	139.000	6610.201	--		
			e	209.100	49.933	5962.976	209.100	0.000	0.000	209.100	50.000	-5979.782	360.000	-0.126	45.000	47.500	139.000	6610.127	1.000		
			f	209.000	50.002	6027.164	209.000	92.663	11143.595	209.000	42.680	5132.969	360.000	-0.126	45.333	47.500	139.003	6610.027	1.000		
			e	209.024	49.843	5961.192	209.024	0.000	0.000	209.024	49.999	-5978.841	360.000	-0.127	46.000	47.500	139.000	6610.000	1.000		
			f	208.915	50.003	6029.251	208.915	92.767	11156.406	208.915	42.783	5146.256	360.000	-0.128	46.000	47.500	139.000	6609.867	1.000		
			e	209.000	49.924	5965.586	209.000	0.000	0.000	209.000	49.972	-5972.170	360.000	-0.128	46.000	47.500	139.000	6610.050	1.000		
			f	209.000	50.006	6032.268	209.000	92.775	11156.576	209.000	42.782	5145.763	360.000	-0.129	46.051	47.500	139.000	6609.971	1.000		
2		66%	d	209.000	50.109	6039.649	209.000	61.587	7415.815	209.000	11.737	1385.847	360.000	-0.107	38.145	47.500	139.000	6618.421	--		
			e	209.000	50.000	5974.047	209.000	0.000	0.000	209.000	50.000	-5980.000	360.000	-0.106	38.020	47.500	139.000	6616.552	1.000		
			f	209.000	50.000	6022.636	209.000	61.772	7436.138	209.000	12.007	1419.478	360.000	-0.106	38.044	47.500	139.000	6610.000	0.100		
			e	209.101	49.948	5960.354	209.101	0.000	0.000	209.101	49.983	-5968.245	360.000	-0.107	38.349	47.500	139.000	6610.064	1.000		
			f	209.000	50.000	6020.000	209.000	61.853	7446.789	209.000	12.125	1433.211	360.000	-0.107	38.945	47.500	139.000	6610.100	0.100		

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	209.027	49.853	5960.399	209.027	0.000	0.000	209.027	49.999	-5972.020	360.000	-0.107	-39.000	47.500	139.000	6610.050	1.000	
			f	209.000	50.000	6020.000	209.000	61.840	7445.164	209.000	12.125	1434.097	360.000	-0.108	-39.000	47.500	139.000	6610.029	0.100	
3		33%	d	209.000	49.811	6008.120	209.000	30.188	3626.266	209.000	19.963	-2380.000	360.000	-0.108	-39.000	47.500	139.003	6610.050	--	
			e	209.000	49.861	5960.653	209.000	0.000	0.000	209.000	49.999	-5976.007	360.000	-0.108	-39.000	47.500	139.000	6609.927	1.000	
			f	209.000	49.801	6003.249	209.000	30.290	3649.960	209.000	19.746	-2355.100	360.000	-0.109	-39.000	47.500	139.000	6609.973	1.000	
			e	209.102	49.840	5960.443	209.102	0.000	0.000	209.102	49.999	-5976.275	360.000	-0.109	-39.000	47.500	139.000	6609.956	1.000	
			f	209.000	49.800	6001.509	209.000	30.324	3654.063	209.000	19.744	-2357.567	360.000	-0.109	-39.083	47.500	139.000	6609.951	1.000	
			e	209.000	49.821	5960.496	209.000	0.000	0.000	209.000	49.993	-5975.207	360.000	-0.110	-39.752	47.500	139.000	6610.000	1.000	
			f	209.000	49.800	6000.827	209.000	30.303	3651.298	209.000	19.742	-2353.866	360.000	-0.110	-39.643	47.500	139.000	6609.914	1.000	
4	50%	100%	d	209.000	48.800	5879.825	209.000	92.161	11086.090	209.000	43.478	5226.140	360.000	-0.110	-40.000	47.500	136.000	6459.975	--	
			e	209.102	49.000	5840.000	209.102	0.000	0.000	209.102	49.000	-5840.907	360.000	-0.111	-40.000	47.500	135.000	6424.065	1.000	
			f	209.000	48.800	5879.969	209.000	92.778	11158.863	209.000	44.072	5301.045	360.000	-0.112	-40.000	47.500	136.000	6460.031	1.000	
			e	209.000	49.000	5839.775	209.000	0.000	0.000	209.000	49.000	-5841.095	360.000	-0.112	-40.279	47.500	135.000	6425.105	1.000	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	208.900	48.800	5879.922	208.900	92.857	11165.949	208.900	44.145	5309.824	360.000	-0.113	-40.978	47.500	136.000	6460.078	1.000	
			e	209.000	49.000	5839.772	209.000	0.000	0.000	209.000	49.000	-5841.538	360.000	-0.113	-41.000	47.500	135.000	6425.584	1.000	
			f	208.993	48.800	5879.914	208.993	92.761	11155.492	208.993	44.050	5297.660	360.000	-0.114	-41.000	47.500	136.000	6460.057	1.000	
5		66%	d	209.000	48.800	5879.847	209.000	61.501	7400.917	209.000	12.979	1535.768	360.000	-0.115	-41.282	47.500	136.000	6460.000	--	
			e	209.102	49.000	5839.964	209.102	0.000	0.000	209.102	49.000	-5841.996	360.000	-0.116	-42.000	47.500	135.000	6426.007	1.000	
			f	209.000	48.800	5879.816	209.000	61.788	7438.525	209.000	13.267	1571.975	360.000	-0.116	-42.000	47.500	136.000	6460.031	1.000	
			e	209.000	49.000	5839.936	209.000	0.000	0.000	209.000	49.000	-5842.641	360.000	-0.117	-42.000	47.500	135.000	6424.718	1.000	
			f	209.000	48.800	5879.920	209.000	61.848	7446.068	209.000	13.335	1580.343	360.000	-0.117	-42.000	47.500	136.000	6460.000	1.000	
			e	209.000	49.000	5840.000	209.000	0.000	0.000	209.000	49.000	-5841.538	360.000	-0.117	-42.000	47.500	135.000	6425.356	1.000	
			f	209.000	48.800	5879.943	209.000	61.816	7441.512	209.000	13.292	1573.718	360.000	-0.118	-42.733	47.500	136.000	6460.086	1.000	
6		33%	d	209.000	48.787	5867.769	209.000	30.197	3626.867	209.000	18.843	-2240.000	360.000	-0.118	-42.934	47.500	136.000	6451.504	--	
			e	209.000	49.000	5840.000	209.000	0.000	0.000	209.000	49.000	-5845.154	360.000	-0.119	-42.998	47.500	135.000	6427.350	1.000	
			f	209.000	48.783	5867.830	209.000	30.289	3649.507	209.000	18.669	-2221.332	360.000	-0.119	-43.000	47.500	136.000	6451.664	1.000	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	209.000	49.000	5839.936	209.000	0.000	0.000	209.000	49.000	-5841.288	360.000	-0.119	-43.000	47.500	135.000	6424.831	1.000	
			f	209.000	48.789	5868.852	209.000	30.315	3652.280	209.000	18.638	-2215.707	360.000	-0.119	-43.000	47.500	136.000	6451.281	1.000	
			e	209.100	49.000	5839.829	209.100	0.000	0.000	209.100	49.000	-5840.570	360.000	-0.119	-43.000	47.500	135.000	6422.336	1.000	
			f	209.000	48.789	5869.358	209.000	30.307	3651.241	209.000	18.654	-2218.602	360.000	-0.119	-43.000	47.500	136.000	6451.127	1.000	
7	0%	100%	d	208.000	1.834	-44.791	208.000	92.076	11056.884	208.000	92.481	11112.117	360.000	-0.120	-43.000	49.000	1.237	60.576	--	
			e	208.488	1.888	-37.935	208.488	0.000	0.000	208.488	2.121	37.753	360.000	-0.120	-43.000	49.000	1.169	57.211	1.000	
			f	208.000	1.816	-44.442	208.000	92.579	11119.920	208.000	92.979	11172.597	360.000	-0.120	-43.000	49.000	1.058	51.825	1.000	
			e	208.098	1.886	-37.771	208.098	0.000	0.000	208.098	2.120	37.578	360.000	-0.120	-43.000	49.000	1.175	57.512	1.000	
			f	208.000	1.826	-44.343	208.000	92.712	11136.273	208.000	93.116	11188.186	360.000	-0.120	-43.000	49.000	1.070	52.436	1.000	
			e	208.000	1.894	-37.538	208.000	0.000	0.000	208.000	2.120	37.224	360.000	-0.120	-43.000	49.000	1.181	57.799	1.000	
			f	208.000	1.835	-43.934	208.000	92.693	11134.807	208.000	93.089	11186.505	360.000	-0.120	-43.140	49.000	1.090	53.413	1.000	
8		66%	d	208.000	1.778	-42.150	208.000	61.392	7380.295	208.000	61.788	7430.067	360.000	-0.121	-43.384	49.000	1.108	54.275	--	
			e	208.096	1.903	-37.100	208.096	0.000	0.000	208.096	2.124	36.899	360.000	-0.121	-43.603	49.000	1.181	57.802	1.000	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
9			f	208.00 0	1.798	-42.043	208.00 0	61.59 0	7404.946	208.00 0	61.97 8	7450.876	360.00 0	- 0.121	43.47 8	49.00 0	1.098	53.785	1.000	
			e	208.04 0	1.915	-36.905	208.04 0	0.000	0.000	208.04 0	2.134	36.493	360.00 0	- 0.121	43.72 5	49.00 0	1.177	57.595	1.000	
			f	208.00 0	1.813	-42.255	208.00 0	61.55 6	7399.641	208.00 0	61.94 5	7448.343	360.00 0	- 0.121	43.65 1	49.00 0	1.099	53.831	1.000	
			e	208.35 6	1.916	-36.946	208.35 6	0.000	0.000	208.35 6	2.135	36.642	360.00 0	- 0.121	43.57 8	49.00 0	1.175	57.544	1.000	
			f	208.00 0	1.814	-42.051	208.00 0	61.48 7	7392.553	208.00 0	61.85 8	7436.662	360.00 0	- 0.121	43.29 4	49.00 0	1.101	53.933	1.000	
		33%	d	208.09 8	1.791	-40.153	208.09 8	30.00 0	3620.000	208.09 8	30.40 2	3660.100	360.00 0	- 0.121	43.20 9	49.00 0	1.124	55.085	--	
			e	208.07 4	1.928	-36.991	208.07 4	0.000	0.000	208.07 4	2.143	36.710	360.00 0	- 0.120	43.07 1	49.00 0	1.175	57.513	1.000	
			f	208.00 0	1.783	-40.209	208.00 0	30.22 1	3635.730	208.00 0	30.62 8	3681.997	360.00 0	- 0.120	43.02 9	49.00 0	1.126	55.170	1.000	
			e	208.63 3	1.916	-37.214	208.63 3	0.979	117.842	208.63 3	3.012	148.416	360.00 0	- 0.120	43.00 2	49.00 0	1.174	57.442	1.000	
			f	208.00 0	1.792	-40.279	208.00 0	30.20 0	3633.493	208.00 0	30.60 2	3679.760	360.00 0	- 0.120	43.02 8	49.00 0	1.129	55.289	1.000	
			e	208.09 4	1.933	-37.111	208.09 4	0.000	0.000	208.09 4	2.145	36.769	360.00 0	- 0.120	43.04 0	49.00 0	1.183	57.940	1.000	
			f	208.07 6	1.805	-40.051	208.07 6	30.19 9	3629.272	208.07 6	30.59 7	3674.579	360.00 0	- 0.121	43.19 0	49.00 0	1.130	55.328	1.000	
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203.6 Step Change in Generation Test																					
Load level: 33%																					
Excel file	EUT output limit	Generatio n level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode	
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)			
1	100%	5%-10%	d	209.00 0	50.00 0	6020.00 0	209.00 0	30.28 5	3650.35 1	209.00 0	19.89 2	- 2373.18 3	360.00 0	- 0.029	- 10.035	47.51 8	139.00 0	6620.72 7	--		
			e	209.00 0	50.00 0	6020.00 0	209.00 0	30.20 0	3639.05 6	209.00 0	19.99 6	- 2383.37 6	360.00 0	- 0.028	- 10.000	47.50 0	139.00 0	6620.03 6	0		
			f	209.00 0	49.99 9	6020.00 0	209.00 0	30.19 9	3622.18 4	209.00 0	20.00 0	- 2399.62 7	360.00 0	- 0.027	- 10.000	47.50 0	139.00 0	6619.82 7	0		
			e	209.00 0	50.00 0	6020.00 0	209.00 0	30.15 2	3620.00 0	209.00 0	20.00 0	- 2400.00 0	360.00 0	- 0.027	- 10.000	47.50 0	139.00 0	6619.90 3	0		
			f	209.00 0	50.00 0	6020.00 0	209.00 0	30.10 4	3620.00 0	209.00 0	20.00 0	- 2398.97 3	360.00 0	- 0.027	- -9.973	47.50 0	139.00 3	6619.11 6	0		
			e	209.00 0	50.00 0	6020.00 0	209.00 0	30.04 6	3620.00 0	209.00 0	20.00 0	- 2399.92 0	360.00 0	- 0.027	- -9.974	47.50 0	139.00 0	6619.84 0	0		
			f	209.00 0	50.00 0	6020.00 0	209.00 0	30.00 0	3620.00 0	209.00 0	20.00 0	- 2399.82 9	360.00 0	- 0.027	- -9.896	47.50 0	139.00 0	6619.42 9	0		
2		33%-66%	d	209.00 0	49.98 9	6019.95 3	209.00 0	30.03 0	3620.00 0	209.00 0	19.99 9	- 2386.03 8	360.00 0	- 0.027	- -9.925	47.50 0	139.00 2	6612.91 3	--		
			e	209.00 0	49.97 1	6019.71 5	209.00 0	30.03 5	3620.00 0	209.00 0	20.00 0	- 2388.67 3	360.00 0	- 0.027	- -9.920	47.50 0	139.00 0	6610.99 9	0		
			f	209.00 0	49.94 9	6019.50 1	209.00 0	30.09 2	3620.00 0	209.00 0	20.00 0	- 2384.49 4	360.00 0	- 0.027	- -9.900	47.50 0	139.00 0	6610.25 0	0		
			e	209.00 0	49.93 2	6018.71 2	209.00 0	30.02 8	3620.00 0	209.00 0	20.00 0	- 2382.41 5	360.00 0	- 0.027	- -9.934	47.50 0	139.00 0	6610.35 4	0		
			f	209.00 0	49.92 2	6018.08 8	209.00 0	30.03 5	3620.00 0	209.00 0	20.00 0	- 2382.79 6	360.00 0	- 0.027	- -9.990	47.50 0	139.00 0	6610.02 9	0		

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203.6 Step Change in Generation Test																					
Load level: 33%																					
Excel file	EUT output limit	Generatio n level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode	
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)			
			e	209.00 0	49.92 3	6017.39 1	209.00 0	30.01 2	3620.00 0	209.00 0	20.00 0	- 2383.68 1	360.00 0	- 0.027	-9.983	47.50 0	139.00 3	6610.29 0	0		
			f	209.00 0	49.89 0	6017.77 5	209.00 0	30.06 1	3620.00 0	209.00 0	19.98 5	- 2380.00 0	360.00 0	- 0.027	-9.966	47.50 0	139.00 0	6610.14 3	0		
3	66%	5%-10%	d	209.00 0	49.87 1	6015.54 2	209.00 0	30.03 8	3620.00 0	209.00 0	19.99 9	- 2380.75 5	360.00 0	- 0.027	-9.999	47.50 0	139.00 2	6610.07 1	--		
			e	209.00 0	49.83 5	6013.65 5	209.00 0	30.05 1	3620.00 0	209.00 0	19.99 6	- 2380.12 9	360.00 0	- 0.027	-	10.000	47.50 0	139.00 0	6610.22 5	0	
			f	209.00 0	49.81 8	6010.36 2	209.00 0	30.03 7	3620.00 0	209.00 0	19.99 3	- 2380.30 0	360.00 0	- 0.027	-	10.000	47.50 0	139.00 0	6610.00 0	0	
			e	209.00 0	49.83 5	6013.65 5	209.00 0	30.05 1	3620.00 0	209.00 0	19.99 6	- 2380.12 9	360.00 0	- 0.027	-	10.000	47.50 0	139.00 0	6610.22 5	0	
			f	209.00 0	49.83 4	6012.92 4	209.00 0	30.04 0	3620.00 0	209.00 0	19.96 9	- 2380.11 4	360.00 0	- 0.027	-	10.000	47.50 0	139.00 0	6610.02 9	0	
			e	209.00 0	49.86 9	6016.40 5	209.00 0	30.06 4	3620.00 0	209.00 0	19.99 9	- 2380.57 1	360.00 0	- 0.027	-	10.000	47.50 0	139.00 0	6609.97 1	0	
			f	209.00 0	49.82 5	6013.18 1	209.00 0	30.07 2	3620.00 0	209.00 0	19.99 5	- 2380.45 6	360.00 0	- 0.028	-	10.000	47.50 0	139.00 0	6610.17 1	0	
4		33%-66%	d	209.00 0	49.83 6	6012.57 1	209.00 0	30.05 3	3620.00 0	209.00 0	19.99 4	- 2380.42 5	360.00 0	- 0.027	-	10.000	47.50 0	139.00 0	6609.97 6	--	
			e	209.00 0	49.83 1	6012.86 7	209.00 0	30.10 0	3620.00 0	209.00 0	19.99 4	- 2380.17 1	360.00 0	- 0.027	-	10.000	47.50 0	139.00 3	6610.11 4	0	
			f	209.00 0	49.82 2	6012.08 5	209.00 0	30.14 6	3620.00 0	209.00 0	19.98 8	- 2380.44 9	360.00 0	- 0.027	-	10.000	47.50 0	139.00 0	6610.03 7	0	

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generatio n level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	209.000	49.843	6014.815	209.000	30.154	3620.000	209.000	19.967	2380.000	360.000	-0.027	-10.000	47.500	139.000	6610.161	0	
			f	209.000	49.861	6014.893	209.000	30.128	3620.000	209.000	19.998	2380.285	360.000	-0.028	-10.000	47.500	139.000	6610.029	0	
			e	209.000	49.843	6015.521	209.000	30.180	3620.000	209.000	19.995	2380.114	360.000	-0.028	-10.000	47.500	139.000	6610.057	0	
			f	209.000	49.837	6013.039	209.000	30.144	3620.000	209.000	19.992	2380.057	360.000	-0.028	-10.000	47.500	139.003	6610.086	0	
5	33%	5%-10%	d	208.000	27.921	3346.745	208.000	30.000	3608.231	208.000	2.862	264.399	361.000	-0.086	-31.000	47.700	76.098	3630.000	--	
			e	208.000	27.915	3346.220	208.000	30.000	3600.029	208.000	2.858	263.415	361.000	-0.087	-31.001	47.700	76.169	3633.352	0	
			f	208.000	27.939	3348.265	208.000	30.000	3600.000	208.000	2.847	262.085	361.000	-0.087	-31.564	47.700	76.305	3640.000	0	
			e	208.000	27.941	3347.568	208.000	30.000	3600.000	208.000	2.849	262.238	361.000	-0.088	-31.995	47.700	76.100	3630.000	0	
			f	208.000	27.940	3347.760	208.000	30.000	3600.000	208.000	2.846	262.368	361.000	-0.088	-32.000	47.700	76.161	3630.000	0	
			e	208.000	27.938	3347.219	208.000	30.000	3600.000	208.000	2.847	262.419	361.000	-0.089	-32.000	47.700	76.397	3640.078	0	
			f	208.000	27.946	3347.903	208.000	30.000	3600.000	208.000	2.842	262.000	361.000	-0.090	-32.104	47.700	76.221	3632.354	0	
6		33%-66%	d	208.000	27.938	3347.441	208.000	30.000	3600.000	208.000	2.843	262.157	361.000	-0.091	-33.000	47.700	76.315	3636.767	--	
			e	208.000	27.952	3348.588	208.000	30.000	3600.000	208.000	2.840	261.946	361.000	-0.092	-33.000	47.700	76.400	3640.128	0	
			f	208.000	27.955	3349.189	208.000	30.000	3600.000	208.000	2.841	261.843	361.000	-0.093	-33.077	47.700	76.198	3632.247	0	
			e	208.000	27.948	3349.018	208.000	30.000	3600.000	208.000	2.841	261.887	361.000	-0.093	-33.535	47.700	76.238	3639.324	0	
			f	208.000	27.961	3349.990	208.000	30.000	3600.000	208.000	2.840	261.430	361.000	-0.094	-34.000	47.700	76.255	3640.544	0	
			e	208.000	27.963	3350.532	208.000	30.000	3600.000	208.000	2.841	261.289	361.000	-0.094	-34.000	47.700	76.277	3640.298	0	

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generation level (PV)	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	208.000	27.955	3348.959	208.000	30.000	3600.000	208.000	2.840	261.621	361.000	-0.095	-34.000	47.700	76.207	3639.729	0	
Note:																				

(9) ESS external export current limit = $33 \pm 5\%$, PV inputs = $0\% + 5\%$ - (If support)

(9-1) 203.5 test

203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
1	100%	100%	d	208.020	25.236	3040.000	208.020	92.140	11075.589	208.020	66.929	8050.201	360.000	-0.028	-10.000	48.300	68.000	3280.000	--	
			e	209.000	25.234	3040.000	209.000	0.000	0.000	209.000	25.400	-3040.290	360.000	-0.029	-10.000	48.300	68.000	3280.653	1.000	
			f	208.000	25.200	3025.326	208.000	92.634	11134.248	208.000	67.500	8118.509	360.000	-0.029	-10.439	48.300	67.993	3280.692	1.000	
			e	209.000	25.200	3039.420	209.000	0.000	0.000	209.000	25.245	-3040.000	360.000	-0.030	-10.998	48.300	67.984	3280.000	1.000	
			f	208.040	25.211	3040.000	208.040	92.736	11145.957	208.040	67.522	8120.333	360.000	-0.031	-11.000	48.300	68.000	3280.250	1.000	
			e	209.000	25.200	3040.000	209.000	0.000	0.000	209.000	25.275	-3040.000	360.000	-0.031	-11.002	48.300	67.901	3280.000	1.000	
			f	208.064	25.200	3022.625	208.064	92.717	11143.623	208.064	67.589	8128.588	360.000	-0.032	-11.853	48.300	68.000	3280.000	1.000	
2		66%	d	208.900	25.200	3040.000	208.900	61.462	7394.762	208.900	36.286	4362.807	360.000	-0.033	-12.000	48.300	67.999	3280.000	--	
			e	209.000	25.200	3040.000	209.000	0.000	0.000	209.000	25.215	-3040.000	360.000	-0.034	-12.000	48.300	67.960	3280.000	1.000	
			f	208.811	25.200	3021.491	208.811	61.712	7424.527	208.811	36.633	4405.593	360.000	-0.035	-12.340	48.300	67.991	3280.266	1.000	
			e	209.000	25.200	3032.271	209.000	0.000	0.000	209.000	25.203	-3039.871	360.000	-0.035	-12.948	48.300	67.940	3280.000	1.000	

TEST PACKAGE

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
3			f	208.100	25.200	3040.000	208.100	61.775	7431.281	208.100	36.604	4403.860	360.000	-0.036	-13.000	48.300	68.000	3280.100	1.000	
			e	209.000	25.200	3040.000	209.000	0.000	0.000	209.000	25.230	-3040.000	360.000	-0.036	-13.000	48.300	67.984	3280.000	1.000	
			f	208.890	25.200	3021.341	208.890	61.767	7430.756	208.890	36.682	4411.526	360.004	-0.037	-13.043	48.300	68.000	3280.000	1.000	
		33%	d	208.901	25.200	3040.000	208.901	30.007	3620.000	208.901	5.242	586.551	360.000	-0.038	-13.930	48.300	67.991	3280.000	--	
			e	209.000	25.200	3040.000	209.000	0.000	0.000	209.000	25.226	-3040.000	360.000	-0.038	-13.996	48.300	67.958	3280.000	1.000	
			f	209.000	25.200	3022.210	209.000	30.273	3646.844	209.000	5.502	622.575	360.000	-0.039	-14.000	48.300	67.991	3280.053	1.000	
			e	209.000	25.200	3032.949	209.000	0.000	0.000	209.000	25.200	-3039.823	360.004	-0.039	-14.000	48.300	67.947	3280.000	1.000	
			f	209.000	25.201	3040.000	209.000	30.291	3648.516	209.000	5.464	617.757	360.000	-0.039	-14.000	48.300	68.000	3280.000	1.000	
			e	209.000	25.200	3040.000	209.000	0.000	0.000	209.000	25.283	-3040.000	360.000	-0.040	-14.000	48.300	68.000	3280.000	1.000	
			f	208.900	25.200	3024.479	208.900	30.292	3648.388	208.900	5.529	623.318	360.000	-0.040	-14.064	48.300	68.000	3280.000	1.000	
4	50%	100%	d	208.083	25.200	3040.000	208.083	92.148	11076.917	208.083	66.953	8054.135	360.000	-0.040	-14.877	48.300	67.997	3280.000	--	
			e	209.000	25.200	3040.000	209.000	0.000	0.000	209.000	25.270	-3040.000	360.000	-0.041	-14.996	48.300	67.975	3280.000	1.000	
			f	208.000	25.200	3020.645	208.000	92.707	11143.195	208.000	67.589	8129.524	360.014	-0.041	-15.000	48.300	67.999	3280.000	1.000	
			e	209.000	25.200	3034.686	209.000	0.000	0.000	209.000	25.233	-3040.000	360.019	-0.041	-15.000	48.300	67.955	3280.000	1.000	
			f	208.000	25.201	3040.000	208.000	92.788	11153.033	208.000	67.591	8130.294	360.000	-0.042	-15.000	48.300	68.000	3280.000	1.000	
			e	209.000	25.200	3040.000	209.000	0.000	0.000	209.000	25.299	-3040.000	360.000	-0.042	-15.000	48.300	68.000	3280.000	1.000	
			f	208.100	25.200	3020.599	208.100	92.711	11143.395	208.100	67.600	8129.757	360.000	-0.042	-15.000	48.300	68.000	3280.000	1.000	
		66%	d	208.106	25.200	3040.000	208.106	61.473	7393.834	208.106	36.308	4366.471	360.019	-0.043	-15.279	48.300	67.994	3280.000	--	
			e	209.000	25.200	3040.000	209.000	0.000	0.000	209.000	25.324	-3040.000	360.194	-0.043	-15.764	48.300	67.981	3280.000	1.000	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
6			f	208.900	25.200	3020.492	208.900	61.758	7428.172	208.900	36.676	4410.046	360.235	-0.044	-15.995	48.300	67.990	3280.092	1.000	
			e	209.000	25.200	3033.172	209.000	0.000	0.000	209.000	25.200	-	360.200	-0.044	-16.000	48.300	67.969	3280.000	1.000	
			f	208.100	25.200	3040.000	208.100	61.810	7436.727	208.100	36.641	4407.585	360.000	-0.044	-16.000	48.300	68.000	3280.000	1.000	
			e	209.000	25.200	3040.000	209.000	0.000	0.000	209.000	25.363	-	360.154	-0.044	-16.000	48.300	68.000	3280.000	1.000	
			f	208.270	25.200	3020.856	208.270	61.736	7426.733	208.270	36.663	4409.444	360.378	-0.044	-16.000	48.300	67.997	3280.029	1.000	
			d	208.900	25.200	3036.667	208.900	30.019	3620.000	208.900	5.295	593.456	360.000	-0.044	-16.000	48.300	67.990	3280.000	--	
		e	209.000	25.200	3040.000	209.000	0.000	0.000	209.000	25.292	-	360.005	-0.045	-16.000	48.300	67.961	3280.000	1.000		
		f	209.000	25.200	3026.897	209.000	30.274	3646.844	209.000	5.508	619.923	360.001	-0.045	-16.000	48.300	67.997	3280.346	1.000		
		e	209.000	25.200	3034.976	209.000	0.000	0.000	209.000	25.200	-	360.000	-0.045	-16.000	48.300	68.000	3280.000	1.000		
		f	209.000	25.200	3040.000	209.000	30.288	3647.720	209.000	5.458	612.902	360.215	-0.045	-16.000	48.300	67.999	3280.000	1.000		
		e	209.000	25.200	3040.000	209.000	0.000	0.000	209.000	25.233	-	360.000	-0.045	-16.000	48.300	67.946	3280.000	1.000		
		f	208.899	25.200	3023.852	208.899	30.293	3648.702	208.899	5.546	628.046	360.034	-0.045	-16.000	48.300	67.996	3280.342	1.000		
	7	0%	100%	d	208.957	1.775	-44.442	208.957	92.727	11174.860	208.957	93.131	11228.842	360.121	-0.045	-16.000	48.200	1.027	49.511	
e				209.000	1.842	-37.750	209.000	0.000	0.000	209.000	2.079	37.724	360.002	-0.045	-16.000	48.200	1.134	54.648	1.000	
f				209.000	1.779	-44.479	209.000	92.799	11182.595	209.000	93.201	11235.090	360.000	-0.045	-16.000	48.200	1.038	50.031	1.000	
e				209.000	1.843	-37.778	209.000	0.000	0.000	209.000	2.078	37.675	360.000	-0.045	-16.000	48.200	1.134	54.645	1.000	
f				209.000	1.782	-44.512	209.000	92.810	11183.927	209.000	93.217	11236.572	360.000	-0.045	-16.000	48.199	1.042	50.213	1.000	
e				209.000	1.848	-37.709	209.000	0.000	0.000	209.000	2.079	37.619	360.000	-0.045	-16.000	48.200	1.135	54.683	1.000	
f				208.899	1.794	-44.474	208.899	92.713	11172.981	208.899	93.118	11226.676	360.429	-0.045	-16.000	48.200	1.042	50.207	1.000	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
8		66%	d	208.000	1.708	-43.823	208.000	61.400	7381.772	208.000	61.819	7431.946	360.034	-0.045	-16.000	49.000	1.082	53.049	--	
			e	208.289	1.829	-39.067	208.289	0.000	0.000	208.289	2.140	39.138	360.020	-0.045	-16.000	49.000	1.143	55.949	1.000	
			f	208.000	1.708	-43.724	208.000	61.632	7409.923	208.000	62.048	7460.860	360.237	-0.045	-16.000	49.000	1.088	53.317	1.000	
			e	208.039	1.826	-39.150	208.039	0.000	0.000	208.039	2.139	39.249	360.063	-0.045	-16.000	49.000	1.141	55.850	1.000	
			f	208.000	1.706	-43.904	208.000	61.622	7407.824	208.000	62.040	7458.323	360.186	-0.045	-16.000	49.000	1.088	53.296	1.000	
			e	208.097	1.818	-39.208	208.097	0.000	0.000	208.097	2.137	39.288	360.456	-0.045	-16.000	49.000	1.148	56.222	1.000	
			f	208.000	1.704	-43.501	208.000	61.547	7399.001	208.000	61.957	7448.588	360.016	-0.045	-16.000	49.000	1.084	53.104	1.000	
9		33%	d	208.000	1.673	-41.742	208.000	30.000	3620.000	208.000	30.429	3660.050	360.188	-0.045	-16.000	49.000	1.107	54.210	--	
			e	208.018	1.819	-38.820	208.018	0.000	0.000	208.018	2.135	38.906	360.007	-0.045	-16.000	49.000	1.140	55.820	1.000	
			f	208.081	1.671	-41.680	208.081	30.272	3645.376	208.081	30.694	3689.124	360.086	-0.045	-16.000	49.000	1.102	53.995	1.000	
			e	208.100	1.816	-38.522	208.100	0.000	0.000	208.100	2.130	38.685	360.002	-0.044	-16.000	49.000	1.139	55.770	1.000	
			f	208.000	1.668	-41.589	208.000	30.299	3646.866	208.000	30.729	3692.615	360.058	-0.044	-16.000	49.000	1.096	53.689	1.000	
			e	208.689	1.812	-38.821	208.689	0.000	0.000	208.689	2.128	39.023	360.006	-0.044	-16.000	49.000	1.142	55.904	1.000	
			f	208.000	1.669	-41.769	208.000	30.284	3646.106	208.000	30.688	3686.847	360.053	-0.044	-16.000	49.000	1.091	53.452	1.000	
Note:																				

(9-2) 203.6 test

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203.6 Step Change in Generation Test																					
Load level: 33%																					
Excel file	EUT output limit	Generatio n level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode	
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)			
1	100%	5%-10%	d	209.00 0	25.20 2	3040.00 0	209.00 0	30.00 0	3620.00 0	209.00 0	5.25 3	583.39 8	360.06 0	- 0.042	- 15.000	48.30 0	67.90 6	3280.00 0	--		
			e	209.00 0	25.20 0	3040.00 0	209.00 0	30.00 0	3620.00 0	209.00 0	5.26 4	586.13 1	360.12 3	- 0.042	- 15.000	48.30 0	67.93 4	3280.00 0	0		
			f	209.00 0	25.20 2	3039.57 4	209.00 0	30.00 0	3620.00 0	209.00 0	5.27 5	588.16 0	360.09 2	- 0.042	- 15.000	48.30 0	67.97 5	3280.02 7	0		
			e	208.92 1	25.20 0	3033.20 5	208.92 1	30.00 0	3620.00 0	208.92 1	5.32 8	593.99 4	360.00 0	- 0.042	- 15.000	48.30 0	67.99 0	3280.00 0	0		
			f	208.90 0	25.20 2	3036.40 5	208.90 0	30.00 0	3620.00 0	208.90 0	5.29 6	589.09 3	360.00 0	- 0.042	- 15.000	48.30 0	67.98 3	3280.05 7	0		
			e	208.99 0	25.20 8	3040.00 0	208.99 0	30.00 0	3620.00 0	208.99 0	5.25 0	583.01 8	360.00 0	- 0.042	- 15.002	48.30 0	68.00 0	3280.04 0	0		
			f	209.00 0	25.20 0	3034.52 2	209.00 0	30.00 0	3620.00 0	209.00 0	5.28 7	588.00 9	360.00 0	- 0.043	- 15.017	48.30 0	67.99 5	3280.00 0	0		
2		33%-66%	d	209.00 0	25.20 0	3028.44 3	209.00 0	30.00 0	3620.00 0	209.00 0	5.33 7	596.40 8	360.00 0	- 0.043	- 15.027	48.30 0	67.93 4	3280.00 0	--		
			e	208.95 9	25.20 1	3040.00 0	208.95 9	30.00 0	3620.00 0	208.95 9	5.27 7	588.70 2	360.00 0	- 0.043	- 15.010	48.30 0	68.00 0	3280.08 6	0		
			f	208.90 1	25.20 0	3037.85 3	208.90 1	30.00 0	3620.00 0	208.90 1	5.29 3	589.37 6	360.00 2	- 0.043	- 15.016	48.30 0	67.96 0	3280.00 0	0		
			e	208.96 5	25.20 0	3028.53 5	208.96 5	30.00 0	3620.00 0	208.96 5	5.33 8	594.49 6	360.08 5	- 0.042	- 15.005	48.30 0	68.00 0	3280.03 2	0		
			f	209.00 0	25.20 0	3028.70 2	209.00 0	30.00 0	3620.00 0	209.00 0	5.32 3	592.37 4	360.00 1	- 0.043	- 15.078	48.30 0	67.92 5	3280.00 0	0		
			e	209.00 0	25.20 0	3040.00 0	209.00 0	30.00 0	3620.00 0	209.00 0	5.26 9	585.36 8	360.08 0	- 0.043	- 15.670	48.30 0	67.99 9	3280.02 9	0		
			f	209.00 0	25.20 0	3032.58 2	209.00 0	30.00 0	3620.00 0	209.00 0	5.31 5	592.61 1	360.08 8	- 0.043	- 15.280	48.30 0	67.99 5	3280.20 0	0		
3	66%	5%-10%	d	208.90 0	25.20 0	3026.60 4	208.90 0	30.00 0	3620.00 0	208.90 0	5.34 2	596.90 3	360.05 2	- 0.043	- 15.213	48.30 0	67.92 9	3280.00 0	--		
			e	209.00 0	25.20 0	3025.08 9	209.00 0	30.00 0	3620.00 0	209.00 0	5.34 4	595.20 1	360.26 1	- 0.043	- 15.807	48.30 0	68.00 0	3280.00 0	0		
			f	209.00 0	25.20 0	3036.50 4	209.00 0	30.00 0	3620.00 0	209.00 0	5.30 0	589.36 3	360.09 5	- 0.043	- 15.875	48.30 0	67.96 5	3280.00 0	0		
			e	209.00 0	25.20 0	3025.08 9	209.00 0	30.00 0	3620.00 0	209.00 0	5.34 4	595.20 1	360.26 1	- 0.043	- 15.807	48.30 0	68.00 0	3280.00 0	0		
			f	209.00 0	25.20 0	3027.33 2	209.00 0	30.00 0	3620.00 0	209.00 0	5.33 0	593.39 8	360.04 0	- 0.043	- 15.820	48.30 0	67.91 4	3280.00 0	0		

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generatio n level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	208.974	25.200	3040.000	208.974	30.000	3620.000	208.974	5.279	588.146	360.001	-0.043	-15.827	48.300	67.998	3280.114	0	
			f	208.900	25.200	3032.953	208.900	30.000	3620.000	208.900	5.315	593.692	360.020	-0.043	-15.713	48.300	67.987	3280.285	0	
4		33%-66%	d	209.000	25.200	3028.137	209.000	30.000	3620.000	209.000	5.334	594.295	360.022	-0.043	-15.236	48.300	67.956	3280.000	--	
			e	209.000	25.202	3040.000	209.000	30.000	3620.000	209.000	5.269	585.506	360.029	-0.043	-15.037	48.300	67.989	3280.171	0	
			f	209.000	25.200	3038.102	209.000	30.000	3620.000	209.000	5.278	586.677	360.001	-0.042	-15.000	48.300	68.001	3281.623	0	
			e	208.997	25.200	3026.699	208.997	30.000	3620.000	208.997	5.339	594.754	360.000	-0.042	-15.000	48.300	68.000	3280.097	0	
			f	208.900	25.200	3031.213	208.900	30.000	3620.000	208.900	5.317	593.238	360.000	-0.042	-15.000	48.300	67.963	3280.000	0	
			e	208.902	25.201	3040.000	208.902	30.000	3620.000	208.902	5.286	589.518	360.000	-0.041	-15.000	48.300	67.981	3280.000	0	
			f	209.000	25.200	3030.813	209.000	30.000	3620.000	209.000	5.325	593.552	360.000	-0.041	-15.000	48.300	67.989	3280.000	0	
			d	209.000	25.200	3032.217	209.000	30.000	3620.000	209.000	5.315	591.500	360.000	-0.040	-14.606	48.300	67.966	3280.071	--	
e	209.000	25.201	3040.000	209.000	30.000	3620.000	209.000	5.278	586.650	360.000	-0.040	-14.183	48.300	67.971	3280.000	0				
f	208.908	25.200	3034.007	208.908	30.000	3620.000	208.908	5.304	590.642	360.000	-0.040	-14.000	48.300	67.995	3280.225	0				
e	208.900	25.200	3025.797	208.900	30.000	3620.000	208.900	5.354	598.634	360.000	-0.039	-14.000	48.300	68.000	3280.032	0				
f	208.996	25.200	3035.720	208.996	30.000	3620.000	208.996	5.307	592.462	360.000	-0.039	-14.000	48.300	67.972	3280.057	0				
e	209.000	25.200	3040.000	209.000	30.000	3620.000	209.000	5.289	589.334	360.000	-0.039	-14.000	48.300	67.972	3280.000	0				
f	209.000	25.200	3026.591	209.000	30.000	3620.000	209.000	5.343	595.312	360.000	-0.039	-14.000	48.300	67.988	3280.200	0				
6		33%-66%	d	208.961	25.200	3035.189	208.961	30.000	3620.000	208.961	5.296	588.906	360.000	-0.038	-14.000	48.300	67.990	3280.024	--	
			e	208.903	25.200	3040.000	208.903	30.000	3620.000	208.903	5.277	586.859	360.000	-0.038	-13.999	48.300	67.981	3280.314	0	
			f	208.951	25.200	3030.187	208.951	30.000	3620.000	208.951	5.338	596.125	360.000	-0.038	-13.929	48.300	67.990	3281.149	0	

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generation level (PV)	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	209.00 0	25.20 0	3025.47 5	209.00 0	30.00 0	3620.00 0	209.00 0	5.35 7	598.75 4	360.00 0	- 0.037	- 13.377	48.30 0	67.99 8	3279.96 8	0	
			f	208.98 2	25.20 0	3033.56 7	208.98 2	30.00 0	3620.00 0	208.98 2	5.30 9	590.72 5	360.00 0	- 0.037	- 13.189	48.30 0	67.98 5	3280.09 7	0	
			e	209.00 0	25.20 0	3040.00 0	209.00 0	30.00 0	3620.00 0	209.00 0	5.28 3	587.29 1	360.00 0	- 0.037	- 13.254	48.30 0	67.97 5	3280.02 1	0	
			f	208.95 6	25.20 0	3025.67 8	208.95 6	30.00 0	3620.00 0	208.95 6	5.34 5	595.57 2	360.00 0	- 0.037	- 13.039	48.30 0	67.99 1	3280.05 7	0	
Note:																				

208Vac

(1) ESS external export current limit = 0% to +5%, PV inputs = 100% ± 5%

(1-1) 203.5 test

(a) For single phase unit connected line to neutral

203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
1	100%	100%	d	243.000	91.649	11109.148	243.000	93.501	11303.960	243.000	2.909	-218.640	360.000	32.183	11600.000	48.005	0.567	27.301	--	
			e	243.000	91.526	11100.000	243.000	0.000	0.000	243.000	91.514	11075.717	360.000	32.100	11523.412	48.007	0.566	27.291	1.100	
			f	243.000	91.677	11110.280	243.000	93.357	11286.924	243.000	2.833	-199.832	360.000	32.188	11600.000	48.008	0.567	27.302	0.100	
			e	243.000	91.551	11100.000	243.000	0.000	0.000	243.000	91.519	11077.230	360.000	32.100	11582.287	48.000	0.567	27.306	1.000	
			f	243.000	91.790	11120.000	243.000	93.377	11290.516	243.000	2.812	-199.594	360.000	32.105	11600.000	48.003	0.567	27.305	0.100	
			e	243.000	91.580	11100.000	243.000	0.000	0.000	243.000	91.536	11077.445	360.000	32.100	11527.944	48.002	0.567	27.299	1.000	
			f	243.000	91.800	11120.000	243.000	93.352	11286.819	243.000	2.767	-191.671	360.000	32.200	11600.000	48.001	0.567	27.300	0.100	

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203.5 Step Change in Load Test																					
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode	
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)			
2		66%	d	243.00 0	91.55 3	11098.99 7	243.00 0	62.06 1	7511.253	243.00 0	29.52 3	3556.015	360.00 0	32.10 0	11506.76 7	48.00 1	0.56 8	27.33 6	--		
			e	243.00 0	91.47 7	11100.00 0	243.00 0	0.000	0.000	243.00 0	91.49 1	11071.79 7	360.00 0	32.10 2	11600.00 0	48.00 1	0.56 8	27.31 8	1.100		
			f	243.00 0	91.60 0	11100.53 3	243.00 0	62.17 0	7523.622	243.00 0	29.48 4	3551.931	360.00 0	32.19 9	11600.00 0	48.00 0	0.56 8	27.31 3	0.100		
			e	243.00 0	91.56 9	11099.71 0	243.00 0	0.000	0.000	243.00 0	91.50 5	11073.33 3	360.00 0	32.10 0	11541.22 4	48.00 3	0.56 8	27.32 7	1.000		
			f	243.00 0	91.60 0	11103.09 5	243.00 0	62.23 0	7531.581	243.00 0	29.44 2	3547.022	360.00 0	32.10 0	11576.70 5	48.00 0	0.56 7	27.29 6	0.100		
			e	243.00 0	91.59 6	11100.00 0	243.00 0	0.000	0.000	243.00 0	91.56 6	11079.96 0	360.00 0	32.10 0	11586.62 7	48.00 1	0.56 7	27.30 1	1.000		
			f	243.00 0	91.60 6	11120.00 0	243.00 0	62.20 8	7528.531	243.00 0	29.53 5	3557.575	360.00 0	32.20 0	11600.00 0	48.00 0	0.56 8	27.31 7	0.100		
3		33%	d	243.00 0	91.59 5	11109.62 4	243.00 0	30.00 0	3640.000	243.00 0	61.57 6	7445.564	360.00 0	32.10 0	11545.73 9	48.00 1	0.56 8	27.30 8	--		
			e	243.00 0	91.60 0	11117.49 5	243.00 0	0.000	0.000	243.00 0	91.60 4	11088.20 3	360.00 0	32.12 9	11598.18 5	48.01 9	0.56 7	27.30 0	1.100		
			f	243.00 0	91.60 0	11119.49 4	243.00 0	30.15 9	3651.931	243.00 0	61.51 0	7435.979	360.00 0	32.18 8	11600.00 0	48.00 9	0.56 7	27.30 1	0.100		
			e	243.00 0	91.60 0	11117.10 1	243.00 0	0.000	0.000	243.00 0	91.63 5	11092.14 2	360.00 0	32.10 6	11595.16 9	48.00 4	0.56 8	27.30 7	1.000		
			f	243.00 0	91.60 0	11120.00 0	243.00 0	30.20 0	3657.903	243.00 0	61.43 7	7428.353	360.00 0	32.11 0	11596.67 2	48.00 0	0.56 7	27.30 0	0.100		
			e	243.00 0	91.60 0	11118.40 3	243.00 0	0.000	0.000	243.00 0	91.62 8	11089.70 1	360.00 0	32.17 8	11598.00 4	48.00 1	0.56 7	27.30 2	1.000		
			f	243.00 0	91.60 6	11119.42 9	243.00 0	30.20 0	3655.920	243.00 0	61.48 2	7432.496	360.00 0	32.18 6	11600.00 0	48.00 0	0.56 7	27.30 1	0.100		
4	50%	100%	d	240.89 8	48.19 8	5791.754	240.89 8	92.30 0	11076.36 6	240.89 8	44.13 1	-5297.419	360.00 0	16.70 6	6022.368	48.00 0	0.00 3	0.101	--		
			e	241.47 5	48.46 7	5768.820	241.47 5	0.000	0.000	241.47 5	48.40 0	5755.064	360.00 0	16.70 0	6015.517	48.00 0	0.00 2	0.087	1.000		
			f	241.00 0	48.20 5	5795.792	241.00 0	92.96 5	11155.65 9	241.00 0	44.77 4	-5372.730	360.00 0	16.74 5	6028.868	48.00 0	0.00 2	0.097	0.100		
			e	241.10 0	48.48 3	5771.530	241.10 0	0.000	0.000	241.10 0	48.40 0	5754.074	360.00 0	16.69 9	6007.150	48.00 0	0.00 2	0.094	1.000		
			f	241.00 0	48.20 3	5794.143	241.00 0	93.05 5	11165.79 0	241.00 0	44.87 6	-5385.557	360.00 0	16.70 9	6023.178	48.00 0	0.00 3	0.101	0.100		

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
5			e	241.094	48.460	5770.220	241.094	0.000	0.000	241.094	48.430	5765.190	360.000	16.699	6006.267	48.000	0.003	0.100	1.000	
			f	240.909	48.202	5793.438	240.909	93.029	11162.910	240.909	44.835	-5380.086	360.000	16.761	6030.899	48.000	0.003	0.101	0.100	
		66%	d	240.964	48.198	5793.835	240.964	61.694	7410.125	240.964	13.659	-1607.779	360.000	16.704	6021.153	48.000	0.003	0.101	--	
			e	241.013	48.444	5767.514	241.013	0.000	0.000	241.013	48.400	5756.697	360.000	16.698	6004.682	48.000	0.003	0.100	1.100	
			f	241.000	48.200	5792.197	241.000	61.827	7425.619	241.000	13.807	-1626.589	360.000	16.758	6030.692	48.000	0.003	0.102	0.100	
			e	241.100	48.446	5768.277	241.100	0.000	0.000	241.100	48.414	5760.225	360.000	16.699	6008.406	48.000	0.003	0.102	1.000	
			f	241.000	48.199	5792.346	241.000	61.903	7434.376	241.000	13.972	-1655.800	360.000	16.704	6020.998	48.000	0.003	0.117	0.100	
			e	241.026	48.442	5767.146	241.026	0.000	0.000	241.026	48.399	5750.579	360.000	16.698	6004.092	48.000	0.003	0.104	1.000	
			f	240.980	48.199	5792.496	240.980	61.857	7429.130	240.980	13.859	-1631.618	360.000	16.750	6029.886	48.000	0.003	0.111	0.100	
			33%	d	241.000	48.163	5781.805	241.000	30.200	3620.000	241.000	18.148	2140.000	360.000	16.700	6013.008	48.000	0.003	0.114	
		e		241.056	48.437	5768.711	241.056	0.000	0.000	241.056	48.400	5749.583	360.000	16.695	6003.194	48.000	0.003	0.105	1.100	
		f		241.000	48.156	5781.225	241.000	30.296	3646.312	241.000	18.019	2130.040	360.000	16.701	6017.111	48.000	0.003	0.104	0.100	
		e		241.101	48.446	5768.535	241.101	0.000	0.000	241.101	48.403	5759.163	360.000	16.700	6012.576	48.000	0.003	0.100	1.000	
		f		241.000	48.155	5781.498	241.000	30.324	3647.854	241.000	17.970	2119.135	360.000	16.700	6012.479	48.000	0.003	0.119	0.100	
		e		241.044	48.442	5768.543	241.044	0.000	0.000	241.044	48.400	5757.525	360.000	16.695	6003.074	48.000	0.003	0.108	1.000	
		f		241.000	48.140	5780.742	241.000	30.333	3648.759	241.000	17.943	2115.720	360.000	16.702	6015.706	48.000	0.003	0.103	0.100	
7	0%	100%	d	242.000	1.694	-78.534	242.000	92.750	11189.774	242.000	93.383	11260.125	360.000	-0.090	-32.842	48.004	0.567	27.302	--	
			e	242.000	1.810	-78.868	242.000	0.000	0.000	242.000	2.347	-78.585	360.000	-0.091	-32.964	48.000	0.567	27.300	1.100	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
8			f	242.000	1.695	-78.831	242.000	93.100	11232.863	242.000	93.740	11303.222	360.000	-0.091	-33.000	48.000	0.567	27.293	0.100	
			e	242.000	1.812	-79.034	242.000	0.000	0.000	242.000	2.328	-79.081	360.000	-0.091	-33.000	48.000	0.566	27.258	1.000	
			f	242.000	1.693	-78.576	242.000	93.200	11246.356	242.000	93.853	11318.037	360.000	-0.091	-33.000	48.000	0.566	27.251	0.100	
			e	242.000	1.812	-78.786	242.000	0.000	0.000	242.000	2.324	-78.946	360.000	-0.092	-33.000	48.000	0.566	27.251	1.000	
			f	242.000	1.693	-78.288	242.000	93.179	11243.823	242.000	93.835	11314.579	360.000	-0.092	-33.000	48.000	0.565	27.211	0.100	
		66%	d	242.000	1.662	-78.223	242.000	61.889	7473.108	242.000	62.537	-7545.514	360.000	-0.093	-33.143	48.000	0.565	27.205	--	
			e	242.000	1.820	-78.483	242.000	0.000	0.000	242.000	2.323	-78.210	360.000	-0.093	-34.000	48.000	0.565	27.202	1.100	
			f	242.000	1.667	-78.224	242.000	62.018	7489.108	242.000	62.676	-7562.370	360.000	-0.094	-34.000	48.000	0.565	27.201	0.100	
			e	242.000	1.819	-78.357	242.000	0.000	0.000	242.000	2.338	-78.461	360.000	-0.094	-34.000	48.000	0.565	27.202	1.000	
			f	242.000	1.671	-77.967	242.000	62.067	7495.607	242.000	62.727	-7567.055	360.000	-0.095	-34.000	48.000	0.565	27.204	0.100	
			e	242.000	1.827	-78.080	242.000	0.000	0.000	242.000	2.340	-78.350	360.000	-0.095	-34.000	48.000	0.565	27.202	1.000	
			f	242.000	1.671	-77.880	242.000	62.058	7493.438	242.000	62.714	-7565.078	360.000	-0.096	-34.399	48.000	0.565	27.201	0.100	
33%	d	242.000	1.670	-77.977	242.000	30.000	3620.000	242.000	30.610	-3690.501	360.000	-0.096	-35.000	48.000	0.565	27.200	--			
	e	242.000	1.825	-78.073	242.000	0.000	0.000	242.000	2.338	-78.098	360.000	-0.097	-35.000	48.000	0.565	27.196	1.100			
	f	242.000	1.666	-77.933	242.000	30.094	3640.107	242.000	30.807	-3713.795	360.000	-0.097	-35.000	48.000	0.565	27.194	0.100			
	e	242.000	1.823	-78.061	242.000	0.000	0.000	242.000	2.335	-78.308	360.000	-0.098	-35.000	48.000	0.564	27.186	1.000			
	f	242.000	1.668	-77.800	242.000	30.111	3641.464	242.000	30.809	-3711.947	360.000	-0.098	-35.000	48.000	0.564	27.191	0.100			
	e	242.000	1.835	-78.040	242.000	0.000	0.000	242.000	2.337	-77.673	360.000	-0.098	-35.000	48.000	0.564	27.192	1.000			

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	242.000	1.676	-77.906	242.000	30.121	3643.852	242.000	30.825	-3711.384	360.000	-0.098	-35.157	48.000	0.564	27.192	0.100	
Note:																				

(1-2) 203.6 test

203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generatio n level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
1	100%	5%-10%	d	243.000	91.398	11086.992	243.000	30.000	3640.000	243.000	61.382	7419.373	360.000	32.099	11500.000	48.000	0.577	27.797	--	
			e	242.000	9.721	1162.033	242.000	30.000	3620.000	242.000	20.400	-2447.114	360.000	3.411	1229.637	48.001	0.577	27.772	1.100	
			f	243.000	91.400	11092.676	243.000	30.000	3640.000	243.000	61.463	7431.318	360.000	32.095	11500.000	48.014	0.576	27.714	1.100	
			e	242.000	9.720	1162.029	242.000	30.000	3620.000	242.000	20.400	-2447.729	360.000	3.419	1232.818	48.001	0.575	27.698	1.100	
			f	243.000	91.416	11100.000	243.000	30.000	3640.000	243.000	61.485	7431.926	360.000	32.100	11511.840	48.000	0.574	27.640	1.100	
			e	242.000	9.724	1163.449	242.000	30.000	3620.000	242.000	20.400	-2448.064	360.000	3.411	1230.000	48.000	0.573	27.603	1.100	
			f	243.000	91.467	11100.000	243.000	30.000	3640.000	243.000	61.507	7434.437	360.000	32.100	11501.284	48.000	0.573	27.599	1.100	
2		33%-66%	d	243.000	91.454	11098.585	243.000	30.000	3640.000	243.000	61.503	7433.608	360.000	32.100	11558.019	48.000	0.572	27.552	--	
			e	243.000	59.803	7255.492	243.000	30.000	3620.000	243.000	29.992	3610.357	360.000	20.883	7513.538	48.000	0.571	27.500	1.000	
			f	243.000	91.417	11100.000	243.000	30.000	3640.000	243.000	61.504	7434.607	360.000	32.100	11500.000	48.000	0.571	27.496	1.000	
			e	243.000	59.800	7257.520	243.000	30.000	3636.232	243.000	29.971	3601.610	360.000	20.894	7518.164	48.000	0.571	27.494	1.000	

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203.6 Step Change in Generation Test																					
Load level: 33%																					
Excel file	EUT output limit	Generatio n level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode	
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)			
			f	243.00 0	91.42 8	11100.00 0	243.00 0	30.00 0	3640.00 0	243.00 0	61.49 8	7433.38 1	360.00 0	32.10 0	11564.05 1	48.00 0	0.57 0	27.42 5	1.000		
			e	243.00 0	59.96 0	7274.348	243.00 0	30.00 0	3621.53 6	243.00 0	29.96 0	3601.47 8	360.00 0	20.94 9	7532.029	48.00 0	0.56 9	27.39 6	1.000		
			f	243.00 0	91.43 7	11100.00 0	243.00 0	30.00 0	3640.00 0	243.00 0	61.49 5	7433.29 5	360.00 0	32.10 0	11500.00 0	48.00 0	0.56 9	27.40 3	1.000		
3	66%	5%-10%	d	243.00 0	59.80 0	7240.000	243.00 0	30.00 0	3638.34 9	243.00 0	29.89 8	3596.36 8	360.00 0	20.80 0	7498.715	48.10 0	0.56 9	27.42 4	--		
			e	242.00 0	9.720	1162.568	242.00 0	30.00 0	3620.00 0	242.00 0	20.40 0	- 2448.24 5	360.00 0	3.410	1229.572	48.10 0	0.56 9	27.43 0	1.000		
			f	243.00 0	59.80 0	7240.250	243.00 0	30.00 0	3621.47 3	243.00 0	29.94 9	3601.64 8	360.00 0	20.80 0	7500.000	48.10 0	0.56 8	27.40 5	1.000		
			e	242.00 0	9.720	1162.258	242.00 0	30.00 0	3620.00 0	242.00 0	20.40 0	- 2441.86 8	360.00 0	3.410	1229.517	48.10 0	0.56 8	27.40 1	1.000		
			f	243.00 0	59.80 0	7240.000	243.00 0	30.00 0	3629.64 3	243.00 0	29.93 3	3597.88 9	360.00 0	20.90 0	7510.000	48.10 0	0.56 7	27.36 3	1.000		
			e	242.00 0	9.720	1162.248	242.00 0	30.00 0	3620.00 0	242.00 0	20.40 0	- 2442.88 2	360.00 0	3.410	1229.444	48.10 0	0.56 6	27.30 1	1.000		
			f	243.00 0	59.80 0	7240.000	243.00 0	30.00 0	3626.87 6	243.00 0	29.90 6	3596.34 8	360.00 0	20.80 0	7499.287	48.10 0	0.56 6	27.30 0	1.000		
4		33%-66%	d	243.00 0	59.80 0	7240.236	243.00 0	30.00 0	3631.08 5	243.00 0	29.94 9	3603.60 8	360.00 0	20.81 8	7501.179	48.10 0	0.56 6	27.29 8	--		
			e	243.00 0	59.80 0	7242.853	243.00 0	30.00 0	3628.70 2	243.00 0	29.92 6	3598.11 7	360.00 0	20.90 0	7513.552	48.09 8	0.56 6	27.29 7	0		
			f	243.00 0	59.80 0	7245.468	243.00 0	30.00 0	3639.75 0	243.00 0	29.90 6	3596.65 4	360.00 0	20.88 1	7507.378	48.10 0	0.56 6	27.27 9	0		
			e	243.00 0	59.80 0	7248.438	243.00 0	30.00 0	3640.00 0	243.00 0	29.92 5	3598.48 6	360.00 0	20.83 1	7500.725	48.10 0	0.56 6	27.25 8	0		
			f	243.00 0	59.80 0	7247.675	243.00 0	30.00 0	3639.71 5	243.00 0	29.91 4	3598.08 8	360.00 0	20.80 6	7499.429	48.10 0	0.56 6	27.27 8	0		
			e	243.00 0	59.80 0	7255.578	243.00 0	30.00 0	3640.00 0	243.00 0	29.93 8	3599.25 8	360.00 0	20.89 0	7509.016	48.10 0	0.56 6	27.28 5	0		
			f	243.00 0	59.80 0	7259.401	243.00 0	30.00 0	3630.95 6	243.00 0	29.96 8	3603.08 1	360.00 0	20.84 2	7503.595	48.09 9	0.56 6	27.25 3	0		

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generatio n level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
5	33%	5%-10%	d	242.000	27.400	3300.000	242.000	30.000	3620.000	242.000	3.477	-319.988	360.000	9.489	3420.000	48.088	0.565	27.229	--	
			e	242.000	9.734	1162.710	242.000	30.000	3620.000	242.000	20.400	-2440.371	360.000	3.404	1227.846	48.091	0.566	27.247	1.000	
			f	242.000	27.400	3300.000	242.000	30.000	3620.000	242.000	3.460	-319.258	360.000	9.500	3423.558	48.084	0.566	27.252	1.000	
			e	242.000	9.731	1162.641	242.000	30.000	3620.000	242.000	20.400	-2441.159	360.000	3.429	1237.295	48.092	0.565	27.209	1.000	
			f	242.000	27.400	3300.000	242.000	30.000	3620.000	242.000	3.482	-320.790	360.000	9.488	3419.429	48.095	0.564	27.199	1.000	
			e	242.000	9.845	1175.766	242.000	30.000	3620.000	242.000	20.401	-2457.156	360.000	3.441	1239.766	48.088	0.565	27.207	1.000	
			f	242.000	27.400	3300.000	242.000	30.000	3620.000	242.000	3.484	-320.787	360.000	9.490	3420.000	48.096	0.565	27.222	1.000	
6		33%-66%	d	242.000	27.400	3300.000	242.000	30.000	3620.000	242.000	3.498	-322.057	360.000	9.488	3419.446	48.100	0.565	27.220	--	
			e	242.000	27.400	3300.000	242.000	30.000	3620.000	242.000	3.493	-321.421	360.000	9.489	3420.000	48.085	0.565	27.222	0	
			f	242.000	27.400	3300.000	242.000	30.000	3620.000	242.000	3.501	-322.127	360.000	9.488	3419.875	48.062	0.565	27.212	0	
			e	242.000	27.400	3300.000	242.000	30.000	3620.000	242.000	3.501	-321.810	360.000	9.490	3420.000	48.089	0.565	27.206	0	
			f	242.000	27.400	3300.000	242.000	30.000	3620.000	242.000	3.498	-320.824	360.000	9.506	3425.594	48.087	0.565	27.202	0	
			e	242.000	27.400	3300.000	242.000	30.000	3620.000	242.000	3.500	-321.364	360.000	9.496	3422.330	48.087	0.565	27.204	0	
			f	242.000	27.400	3300.000	242.000	30.000	3620.000	242.000	3.495	-320.117	360.000	9.520	3430.000	48.087	0.564	27.197	0	
Note:																				

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(2) ESS external export current limit = $66 \pm 5\%$, PV inputs = $100\% \pm 5\%$ - (If supported)

(2-1) 203.5 test

203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
1	100%	100%	d	242.00 0	92.20 0	11140.0 00	242.00 0	92.73 7	11166.0 15	242.00 0	2.205	-56.529	361.82 6	41.31 0	14900.0 00	47.68 6	-65.173	- 3106.60 4	--	
			e	242.00 0	92.07 3	11120.0 00	242.00 0	0.000	0.000	242.00 0	92.10 8	11104.90 0	361.85 7	41.30 7	14900.0 00	47.63 7	-65.311	- 3112.75 9	1.00 0	
			f	242.00 0	92.20 0	11139.2 01	242.00 0	93.24 0	11227.1 90	242.00 0	2.342	-115.750	361.81 4	41.30 3	14900.0 00	47.60 1	-65.064	- 3100.55 9	0.10 0	
			e	242.00 0	92.16 8	11120.0 00	242.00 0	0.000	0.000	242.00 0	92.14 6	11107.76 2	361.81 0	41.29 6	14900.0 00	47.60 0	-65.289	- 3111.70 7	1.00 0	
			f	242.00 0	92.20 0	11140.0 00	242.00 0	93.32 7	11236.3 73	242.00 0	2.372	-124.410	361.80 0	41.29 2	14900.0 00	47.60 0	-65.096	- 3101.71 4	0.10 0	
			e	242.00 0	92.19 5	11120.9 98	242.00 0	0.000	0.000	242.00 0	92.15 1	11108.08 0	361.85 0	41.28 4	14900.0 00	47.60 0	-65.324	- 3113.09 2	1.00 0	
			f	242.00 0	92.24 8	11140.0 00	242.00 0	93.30 8	11234.3 22	242.00 0	2.368	-121.023	361.81 5	41.40 0	14992.8 67	47.60 0	-65.886	- 3139.87 2	0.10 0	
2	66%	66%	d	242.00 0	92.20 0	11140.0 00	242.00 0	61.78 0	7444.93 7	242.00 0	30.49 2	3662.105	361.82 6	41.40 0	14994.9 87	47.60 3	-66.005	- 3145.76 4	--	
			e	242.00 0	92.20 0	11140.0 00	242.00 0	0.000	0.000	242.00 0	92.20 6	11118.00 4	361.87 5	41.40 0	14994.7 37	47.60 2	-66.028	- 3146.67 9	1.00 0	
			f	242.00 0	92.20 0	11140.0 00	242.00 0	62.02 5	7474.16 8	242.00 0	30.30 5	3639.441	361.89 3	41.40 0	14994.6 74	47.60 0	-66.058	- 3148.33 6	0.10 0	
			e	242.00 0	92.20 0	11140.0 00	242.00 0	0.000	0.000	242.00 0	92.24 7	11125.28 2	361.90 3	41.40 0	14995.1 69	47.60 1	-66.056	- 3148.24 5	1.00 0	
			f	242.00 0	92.21 3	11140.0 00	242.00 0	62.07 5	7481.46 4	242.00 0	30.27 5	3636.938	361.78 9	41.40 0	14995.0 08	47.60 4	-65.905	- 3140.58 2	0.10 0	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
3			e	242.00 0	92.20 0	11140.0 00	242.00 0	0.000	0.000	242.00 0	92.21 4	11119.00 2	361.78 3	41.40 0	14987.7 81	47.60 0	-65.824	3137.03 2	1.00 0	
			f	242.00 0	92.20 0	11140.0 00	242.00 0	62.08 1	7481.85 4	242.00 0	30.23 3	3631.526	361.85 9	41.40 0	14994.4 37	47.60 0	-65.870	3138.81 6	0.10 0	
		33%	d	242.00 0	92.21 1	11143.5 84	242.00 0	30.20 0	3640.00 0	242.00 0	62.12 9	7484.110	361.92 9	41.40 0	14996.6 17	47.60 1	-65.354	3113.86 0	--	
			e	242.00 0	92.20 0	11140.0 00	242.00 0	0.000	0.000	242.00 0	92.28 6	11124.79 1	361.84 9	41.40 0	14992.7 40	47.60 1	-65.308	3111.92 4	1.00 0	
			f	242.00 0	92.20 0	11140.0 00	242.00 0	30.34 7	3664.58 1	242.00 0	61.91 8	7458.695	361.93 1	41.40 0	14997.3 37	47.60 2	-65.415	3116.84 4	0.10 0	
			e	242.00 0	92.20 0	11140.0 00	242.00 0	0.000	0.000	242.00 0	92.26 6	11123.22 1	361.88 7	41.40 0	14996.7 79	47.60 3	-65.403	3116.13 5	1.00 0	
			f	242.00 0	92.20 0	11140.0 00	242.00 0	30.37 6	3665.62 4	242.00 0	61.89 0	7453.478	361.85 0	41.40 0	14993.3 44	47.60 2	-65.321	3112.31 3	0.10 0	
			e	242.00 0	92.20 0	11140.0 00	242.00 0	0.000	0.000	242.00 0	92.25 6	11122.19 5	361.93 3	41.40 0	14998.2 54	47.60 1	-65.382	3115.26 2	1.00 0	
			f	242.00 0	92.20 0	11140.0 00	242.00 0	30.36 8	3666.13 4	242.00 0	61.88 0	7453.466	361.87 2	41.40 0	14994.2 94	47.60 2	-65.361	3114.25 1	0.10 0	
			d	241.00 0	48.20 7	5811.30 3	241.00 0	92.56 6	11140.0 00	241.00 0	44.38 3	- 5341.128	351.48 5	37.45 8	12540.2 26	48.60 0	- 135.00 0	- 6577.71 9	--	
4	50%	100%	e	242.00 0	48.59 7	5779.96 4	242.00 0	0.000	0.000	242.00 0	48.59 9	5774.483	350.99 5	37.62 4	12574.5 92	48.60 0	- 135.00 0	- 6577.31 4	1.00 0	
			f	241.00 0	48.20 3	5813.15 6	241.00 0	93.26 3	11227.8 30	241.00 0	45.05 6	- 5427.909	342.04 3	41.45 0	13600.2 66	48.60 0	- 135.00 0	- 6576.56 5	0.10 0	
			e	242.00 0	48.59 0	5780.22 5	242.00 0	0.000	0.000	242.00 0	48.59 4	5774.074	342.54 4	41.20 5	13538.0 03	48.60 0	- 135.00 0	- 6578.34 1	1.00 0	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
5			f	241.101	48.210	5815.973	241.101	93.376	11242.662	241.101	45.164	-5441.131	342.043	41.439	13600.000	48.600	-135.000	-6575.524	0.100	
			e	242.100	48.598	5781.766	242.100	0.000	0.000	242.100	48.597	5776.467	343.120	41.025	13497.151	48.600	-135.000	-6579.886	1.000	
			f	241.100	48.208	5813.581	241.100	93.374	11241.569	241.100	45.162	-5441.312	342.653	41.271	13565.763	48.600	-135.000	-6577.803	0.100	
		66%	d	241.951	48.201	5814.912	241.951	61.904	7459.975	241.951	13.927	-1653.789	342.150	41.415	13599.373	48.600	-135.000	-6580.150	--	
			e	242.000	48.590	5781.125	242.000	0.000	0.000	242.000	48.592	5773.430	342.737	41.166	13535.027	48.641	-135.000	-6580.000	1.000	
			f	241.900	48.200	5808.469	241.900	62.098	7482.983	241.900	14.102	-1672.415	343.752	41.051	13562.051	48.681	-135.000	-6579.920	0.100	
			e	242.000	48.592	5780.225	242.000	0.000	0.000	242.000	48.593	5777.037	343.718	40.966	13519.646	48.700	-135.000	-6580.032	1.000	
			f	242.000	48.178	5805.191	242.000	62.161	7489.251	242.000	14.167	-1680.300	343.784	40.998	13546.256	48.700	-135.000	-6580.932	0.100	
			e	242.100	48.579	5778.803	242.100	0.000	0.000	242.100	48.595	5775.271	343.359	40.954	13498.860	48.700	-135.000	-6580.741	1.000	
			f	242.000	48.139	5801.826	242.000	62.146	7488.017	242.000	14.214	-1688.802	343.315	40.978	13508.131	48.700	-135.000	-6580.285	0.100	
6		33%	d	242.000	48.200	5806.441	242.000	30.271	3656.115	242.000	18.087	2140.451	343.679	40.935	13492.607	48.700	-135.000	-6580.075	--	
			e	242.024	48.619	5786.606	242.024	0.000	0.000	242.024	48.596	5779.782	342.793	41.185	13551.724	48.700	-135.000	-6580.000	1.000	
			f	242.000	48.198	5807.057	242.000	30.443	3669.907	242.000	17.946	2122.530	343.635	40.961	13503.063	48.700	-135.000	-6580.000	0.100	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	242.00 0	48.66 1	5792.07 7	242.00 0	0.000	0.000	242.00 0	48.59 8	5779.291	343.39 6	40.98 3	13505.6 36	48.70 0	- 135.00 0	- 6580.58 0	1.00 0	
			f	242.00 0	48.20 9	5815.80 7	242.00 0	30.45 4	3671.34 8	242.00 0	17.93 3	2120.666	343.34 6	40.89 4	13482.1 96	48.70 0	- 135.00 0	- 6582.23 0	0.10 0	
			e	242.09 7	48.69 2	5795.78 3	242.09 7	0.000	0.000	242.09 7	48.59 9	5779.316	343.65 8	40.92 9	13498.0 06	48.70 0	- 135.00 0	- 6581.31 1	1.00 0	
			f	242.00 0	48.21 7	5816.94 7	242.00 0	30.45 8	3671.72 6	242.00 0	17.93 6	2121.027	343.33 7	40.88 9	13480.3 14	48.70 0	- 135.00 0	- 6580.20 0	0.10 0	
7	0%	100%	d	241.00 0	1.879	-54.000	241.00 0	92.70 4	11139.1 73	241.00 0	93.17 2	- 11184.16 0	360.00 0	19.42 3	6992.80 7	48.57 3	- 134.57 1	- 6530.76 4	--	
			e	241.00 0	1.944	-48.000	241.00 0	0.000	0.000	241.00 0	2.254	-48.079	360.00 0	19.43 4	6999.09 3	48.40 0	- 134.93 5	- 6516.60 6	1.00 0	
			f	241.00 0	1.843	-54.000	241.00 0	93.03 0	11177.7 63	241.00 0	93.48 9	- 11222.87 6	360.00 0	19.30 0	6940.00 0	48.40 0	- 134.00 0	- 6477.85 6	0.10 0	
			e	241.00 0	1.915	-48.000	241.00 0	0.000	0.000	241.00 0	2.151	-46.458	360.00 0	19.30 0	6950.00 0	48.40 0	- 134.00 0	- 6480.00 0	1.00 0	
			f	241.00 0	1.831	-54.000	241.00 0	93.13 9	11190.2 16	241.00 0	93.58 3	- 11234.77 5	360.00 0	19.30 0	6940.00 0	48.40 0	- 134.00 0	- 6480.00 0	0.10 0	
			e	241.00 0	1.920	-48.000	241.00 0	0.000	0.000	241.00 0	2.145	-48.272	360.00 0	19.30 0	6950.00 0	48.40 0	- 134.00 0	- 6480.00 0	1.00 0	
			f	241.00 0	1.845	-54.000	241.00 0	93.12 3	11188.7 87	241.00 0	93.57 8	- 11232.95 3	360.00 0	19.30 0	6940.00 0	48.40 0	- 134.00 0	- 6480.00 0	0.10 0	
8		66%	d	241.00 0	1.802	-52.000	241.00 0	61.71 3	7419.52 4	241.00 0	62.16 1	- 7468.421	360.00 0	19.30 0	6943.62 2	48.40 0	- 134.00 0	- 6480.00 0	--	
			e	241.00 0	1.935	-48.000	241.00 0	0.000	0.000	241.00 0	2.149	-45.265	360.00 0	19.30 0	6950.00 0	48.40 0	- 134.00 0	- 6480.00 0	1.00 0	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operati ng Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
9			f	241.00 0	1.808	-52.000	241.00 0	61.90 2	7444.36 8	241.00 0	62.36 0	- 7491.851	360.00 0	19.30 0	6940.79 9	48.40 0	- 134.00 0	- 6480.00 0	0.10 0	
			e	241.00 0	1.937	-48.000	241.00 0	0.000	0.000	241.00 0	2.151	-46.042	360.00 0	19.30 0	6950.00 0	48.40 0	- 134.00 0	- 6480.00 0	1.00 0	
			f	241.00 0	1.819	-52.000	241.00 0	61.96 3	7450.11 6	241.00 0	62.39 8	- 7498.469	360.00 0	19.30 0	6943.66 1	48.40 0	- 134.00 0	- 6480.00 0	0.10 0	
			e	241.00 0	1.950	-48.000	241.00 0	0.000	0.000	241.00 0	2.152	-48.793	360.00 0	19.30 0	6950.00 0	48.40 0	- 134.00 0	- 6480.00 0	1.00 0	
			f	241.00 0	1.826	-52.000	241.00 0	61.96 4	7450.12 8	241.00 0	62.41 1	- 7499.173	360.00 0	19.30 0	6946.30 5	48.40 0	- 134.00 0	- 6480.00 0	0.10 0	
		33%	d	241.00 0	1.798	-50.000	241.00 0	30.20 0	3620.00 0	241.00 0	30.60 0	- 3679.198	360.00 0	19.30 0	6949.87 5	48.40 0	- 134.00 0	- 6479.95 0	--	
			e	241.00 0	1.957	-48.000	241.00 0	0.000	0.000	241.00 0	2.165	-46.814	360.00 0	19.30 0	6950.00 0	48.40 0	- 134.00 0	- 6479.60 1	1.00 0	
			f	241.00 0	1.807	-50.000	241.00 0	30.29 3	3647.69 6	241.00 0	30.77 5	- 3695.393	360.00 0	19.30 0	6949.73 4	48.40 0	- 134.00 0	- 6479.89 3	0.10 0	
			e	241.00 0	1.973	-48.000	241.00 0	0.000	0.000	241.00 0	2.167	-48.232	360.00 0	19.30 0	6950.00 0	48.40 0	- 134.00 0	- 6480.00 0	1.00 0	
			f	241.00 0	1.824	-50.033	241.00 0	30.29 7	3647.85 4	241.00 0	30.79 3	- 3696.206	360.00 0	19.30 0	6949.85 0	48.40 0	- 134.00 0	- 6480.00 0	0.10 0	
			e	241.00 0	1.980	-48.000	241.00 0	0.000	0.000	241.00 0	2.168	-48.912	360.00 0	19.30 0	6950.00 0	48.40 0	- 134.00 0	- 6480.00 0	1.00 0	
			f	242.00 0	1.676	-77.906	242.00 0	30.12 1	3643.85 2	242.00 0	30.82 5	- 3711.384	360.00 0	- 0.098	-35.157	48.00 0	0.564	27.192	0.10 0	
			Note:																	

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203.6 Step Change in Generation Test																					
Load level: 33%																					
Excel file	EUT output limit	Generati on level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operatin g Mode	
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)			
1	100%	5%-10%	d	241.910	92.266	11120.777	241.910	30.293	3646.591	241.910	61.958	7457.068	359.840	41.475	14900.000	48.700	-63.782	-3103.860	--		
			e	241.000	59.231	7135.033	241.000	30.200	3620.000	241.000	29.200	3494.900	298.000	3.905	1160.000	46.500	142.000	6602.528	4.700		
			f	241.887	92.022	11091.345	241.887	30.200	3620.000	241.887	61.897	7452.383	359.924	41.193	14807.084	48.686	-62.459	-3039.361	4.900		
			e	241.000	59.200	7126.634	241.000	30.200	3620.000	241.000	29.200	3493.752	298.005	3.902	1160.000	46.500	142.000	6608.100	4.700		
			f	241.106	92.208	11113.253	241.106	30.200	3620.000	241.106	62.041	7470.619	345.441	43.177	14900.000	48.700	-63.333	-3082.076	4.900		
			e	241.000	59.167	7117.756	241.000	30.200	3620.000	241.000	29.157	3490.374	298.032	3.902	1160.000	46.500	142.000	6607.082	4.700		
			f	241.827	92.220	11115.075	241.827	30.200	3620.266	241.827	62.029	7469.451	345.511	43.177	14900.000	48.700	-63.321	-3081.481	4.900		
2		33%-66%	d	241.993	92.177	11108.656	241.993	30.278	3645.118	241.993	61.881	7447.972	361.834	41.217	14900.000	48.653	-63.836	-3106.215	--		
			e	242.000	92.297	11124.479	242.000	30.200	3638.174	242.000	62.124	7476.462	361.459	20.640	7450.000	47.000	92.521	4346.733	2.600		
			f	241.999	92.340	11128.939	241.999	30.200	3621.773	241.999	62.188	7488.889	359.800	41.441	14900.000	48.610	-62.995	-3064.532	2.900		
			e	241.987	92.341	11129.372	241.987	30.200	3620.000	241.987	62.195	7481.739	358.696	20.789	7450.000	47.000	92.502	4346.103	2.600		
			f	241.900	92.371	11133.666	241.900	30.200	3620.000	241.900	62.188	7487.247	360.926	41.321	14900.000	48.611	-63.017	-3065.777	2.900		
			e	241.887	92.086	11098.058	241.887	30.200	3620.029	241.887	61.908	7450.174	361.361	20.747	7487.232	47.018	90.812	4266.349	2.600		
			f	241.936	92.403	11136.805	241.936	30.200	3620.000	241.936	62.219	7488.673	361.847	41.216	14900.000	48.608	-63.026	-3066.348	2.900		

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203.6 Step Change in Generation Test																					
Load level: 33%																					
Excel file	EUT output limit	Generati on level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operatin g Mode	
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)			
3	66%	5%-10%	d	241.000	62.827	7561.675	241.000	30.200	3620.000	241.000	32.795	3930.755	346.104	43.105	14900.000	49.987	-131.002	-6556.792	--		
			e	241.000	59.000	7099.807	241.000	30.200	3620.000	241.000	28.809	3460.000	299.274	3.901	1170.000	47.100	139.003	6560.064	4.600		
			f	241.000	62.808	7560.275	241.000	30.200	3620.000	241.000	32.779	3921.448	344.242	43.338	14900.000	50.000	-131.005	-6559.825	4.600		
			e	241.000	59.000	7099.807	241.000	30.200	3620.000	241.000	28.809	3460.000	299.274	3.901	1170.000	47.100	139.003	6560.064	4.600		
			f	241.097	62.814	7561.084	241.097	30.200	3620.000	241.097	32.789	3923.138	347.993	42.874	14900.000	50.000	-131.000	-6561.569	4.600		
			e	241.000	58.965	7095.920	241.000	30.200	3620.000	241.000	28.937	3462.596	299.375	3.900	1170.000	47.103	138.887	6554.893	4.600		
			f	241.000	62.809	7560.114	241.000	30.200	3620.000	241.000	32.793	3929.301	341.210	43.714	14900.000	50.000	-131.000	-6550.799	4.600		
4		33%-66%	d	241.009	63.025	7584.623	241.009	30.200	3635.165	241.009	32.836	3937.429	331.860	45.416	14904.127	49.400	-131.000	-6473.420	--		
			e	241.000	62.979	7577.204	241.000	30.200	3620.000	241.000	32.831	3940.770	331.722	22.489	7450.214	47.900	10.278	492.053	2.600		
			f	241.000	63.052	7588.265	241.000	30.200	3620.000	241.000	32.985	3946.891	346.230	43.703	14902.871	49.400	-131.000	-6474.057	2.500		
			e	241.000	62.969	7575.781	241.000	30.200	3620.000	241.000	32.802	3939.034	334.395	22.311	7450.000	47.900	10.263	491.374	2.600		
			f	241.000	63.031	7585.250	241.000	30.200	3620.000	241.000	32.956	3943.738	340.799	44.385	14905.849	49.400	-131.000	-6475.007	2.500		
			e	241.000	62.951	7574.291	241.000	30.200	3620.000	241.000	32.800	3938.483	331.275	22.513	7450.020	47.900	10.288	492.481	2.600		
			f	241.078	63.013	7583.167	241.078	30.200	3620.000	241.078	32.944	3942.311	346.839	43.609	14894.294	49.400	-131.000	-6470.414	2.500		

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203.6 Step Change in Generation Test																						
Load level: 33%																						
Excel file	EUT output limit	Generati on level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operatin g Mode		
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)				
5	33%	5%-10%	d	241.000	31.600	3795.472	241.000	30.200	3620.000	241.000	2.823	170.917	366.223	31.418	11019.693	50.000	-	131.000	6542.618	--		
			e	241.000	31.038	3733.352	241.000	30.200	3620.000	241.000	2.338	110.029	301.001	3.883	1170.000	48.000	59.029	2833.338	3.000			
			f	241.000	31.600	3794.906	241.000	30.200	3620.000	241.000	2.819	170.300	366.213	31.420	11019.850	49.945	-	131.000	6542.896	3.600		
			e	241.000	31.025	3733.398	241.000	30.200	3620.000	241.000	2.326	109.245	301.000	3.884	1170.000	48.000	58.932	2828.132	3.000			
			f	240.939	31.600	3794.437	240.939	30.200	3620.000	240.939	2.815	170.215	366.141	31.445	11027.675	49.900	-	131.000	6542.168	3.600		
			e	240.889	30.747	3698.309	240.889	30.197	3620.000	240.889	2.563	75.243	301.220	4.677	1413.875	48.059	53.035	2539.947	3.000			
			f	241.000	31.600	3792.696	241.000	30.200	3620.000	241.000	2.812	169.853	366.211	31.443	11029.101	49.900	-	131.000	6544.479	3.600		
6		33%-66%	d	241.000	31.600	3790.849	241.000	30.000	3620.000	241.000	2.897	174.319	338.333	33.850	11032.193	49.900	-	131.000	6540.000	--		
			e	241.000	31.200	3740.228	241.000	30.000	3620.000	241.000	2.523	130.861	327.525	22.878	7489.244	49.200	-68.207	3356.762	1.300			
			f	241.000	31.600	3789.713	241.000	30.000	3620.000	241.000	2.915	175.175	342.714	33.372	11030.462	49.900	-	131.000	6533.458	1.800		
			e	241.000	31.200	3740.064	241.000	30.000	3620.000	241.000	2.521	130.291	315.631	23.726	7487.037	49.200	-68.104	3350.902	1.200			
			f	241.000	31.605	3795.105	241.000	30.000	3620.000	241.000	2.929	178.196	340.475	33.593	11019.163	49.900	-	131.000	6530.081	1.800		
			e	241.000	31.200	3740.399	241.000	30.000	3620.000	241.000	2.527	130.846	327.141	22.901	7489.784	49.200	-68.235	3357.870	1.200			

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generati on level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	241.000	31.604	3792.553	241.000	30.000	3620.000	241.000	2.916	176.025	339.399	33.705	11017.689	49.900	- 131.000	- 6530.514	1.800	
Note:																				

(3) ESS external export current limit = $33 \pm 5\%$, PV inputs = $100\% \pm 5\%$ - (If supported)

(3-1) 203.5 test

203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste P	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operati ng Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
1	100%	100%	d	240.000	93.069	11152.957	240.000	92.539	11062.857	240.000	1.764	63.098	361.840	41.219	14900.000	48.800	62.894	3070.664	--	
			e	245.000	91.250	11145.263	245.000	0.000	0.000	245.000	91.211	11139.819	361.864	41.217	14900.000	48.800	63.309	3090.417	1.000	
			f	240.000	93.090	11155.579	240.000	92.566	11066.471	240.000	1.752	62.157	361.928	41.217	14900.000	48.800	62.802	3066.405	0.100	
			e	245.000	91.223	11142.480	245.000	0.000	0.000	245.000	91.203	11139.034	361.934	41.219	14900.000	48.800	63.262	3089.936	1.000	
			f	240.000	93.081	11154.709	240.000	92.551	11064.060	240.000	1.750	64.441	361.915	41.221	14900.000	48.800	62.714	3061.048	0.100	
			e	244.950	91.235	11143.092	244.950	0.000	0.000	244.950	91.204	11140.000	361.950	41.223	14900.000	48.800	63.224	3087.481	1.000	
			f	240.000	93.103	11158.231	240.000	92.419	11048.359	240.000	1.798	83.542	362.044	41.216	14900.000	48.800	62.753	3062.582	0.100	
2		66%	d	241.896	92.446	11151.153	241.896	61.830	7440.501	241.896	30.652	3688.922	361.984	41.220	14900.000	48.800	62.993	3075.764	--	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
3			e	244.902	91.238	11144.174	244.902	0.000	0.000	244.902	91.212	11139.819	362.069	41.217	14900.000	48.800	-63.278	-3090.000	1.000	
			f	242.036	92.371	11149.214	242.036	58.920	7090.067	242.036	33.247	4004.368	362.092	41.221	14900.000	48.800	-63.012	-3076.804	0.100	
			e	244.894	91.263	11148.116	244.894	0.000	0.000	244.894	91.263	11139.839	362.216	41.217	14900.000	48.800	-63.258	-3089.710	1.000	
			f	241.809	92.472	11154.908	241.809	61.684	7421.448	241.809	30.699	3693.411	362.183	41.220	14900.000	48.800	-62.961	-3073.178	0.100	
			e	245.000	91.301	11152.519	245.000	0.000	0.000	245.000	91.379	11140.499	362.257	41.219	14900.000	48.800	-63.196	-3085.985	1.000	
			f	241.214	92.511	11158.688	241.214	61.808	7439.258	241.214	30.742	3701.826	362.310	41.213	14900.000	48.800	-62.896	-3070.057	0.100	
		33%	d	243.000	91.923	11159.173	243.000	30.400	3680.000	243.000	61.596	7461.203	362.283	41.212	14900.000	48.800	-63.014	-3077.381	--	
			e	245.000	91.342	11158.004	245.000	0.000	0.000	245.000	91.400	11149.946	362.319	41.209	14900.000	48.800	-63.120	-3080.690	1.000	
			f	243.103	91.914	11162.690	243.103	28.955	3510.860	243.103	62.852	7622.690	362.393	41.200	14900.000	48.800	-62.968	-3073.089	0.100	
			e	245.000	91.379	11163.060	245.000	0.000	0.000	245.000	91.400	11158.937	362.308	41.204	14900.000	48.800	-63.058	-3079.903	1.000	
			f	243.082	91.958	11167.088	243.082	29.264	3547.221	243.082	62.554	7586.689	362.359	41.202	14900.000	48.800	-62.908	-3071.048	0.100	
			e	244.900	91.376	11162.893	244.900	0.000	0.000	244.900	91.400	11158.653	362.309	41.201	14900.000	48.800	-63.037	-3079.252	1.000	
			f	243.000	91.958	11164.536	243.000	30.476	3693.238	243.000	61.508	7458.203	362.454	41.189	14900.000	48.800	-62.917	-3071.013	0.100	

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203.5 Step Change in Load Test																					
Excel file	EUT output limit	Load level	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operati ng Mode	
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)			
4	50%	100%	d	241.000	50.600	6095.238	241.000	92.396	11117.368	241.000	41.903	- 5028.496	360.000	27.115	9768.496	48.500	- 66.699	- 3230.150	--		
			e	242.000	50.800	6069.510	242.000	0.000	0.000	242.000	50.790	6054.555	360.000	27.100	9746.860	48.500	- 66.690	- 3231.688	1.000		
			f	241.000	50.600	6100.000	241.000	92.833	11168.282	241.000	42.304	- 5078.296	360.000	27.114	9761.691	48.500	- 66.691	- 3231.491	0.100		
			e	242.000	50.800	6065.539	242.000	0.000	0.000	242.000	50.790	6053.688	360.000	27.100	9751.948	48.500	- 66.726	- 3234.155	1.000		
			f	241.000	50.600	6100.000	241.000	92.843	11169.318	241.000	42.317	- 5078.003	360.000	27.153	9770.000	48.500	- 66.788	- 3239.800	0.100		
			e	242.000	50.800	6073.789	242.000	0.000	0.000	242.000	50.798	6057.151	360.000	27.100	9747.066	48.500	- 66.781	- 3239.630	1.000		
			f	241.000	50.600	6098.431	241.000	92.794	11164.223	241.000	42.282	- 5074.408	360.000	27.124	9764.108	48.500	- 66.751	- 3236.904	0.100		
5		66%	d	241.000	50.600	6099.248	241.000	61.724	7433.108	241.000	11.468	- 1340.794	360.000	27.178	9770.000	48.500	- 66.683	- 3230.890	--		
			e	242.000	50.800	6064.646	242.000	0.000	0.000	242.000	50.793	6055.826	360.000	27.100	9749.819	48.500	- 66.652	- 3230.000	1.000		
			f	241.000	50.600	6100.000	241.000	61.897	7451.984	241.000	11.624	- 1360.863	360.000	27.100	9760.346	48.500	- 66.708	- 3233.382	0.100		
			e	242.000	50.800	6067.536	242.000	0.000	0.000	242.000	50.785	6052.142	360.000	27.100	9751.256	48.500	- 66.783	- 3239.259	1.000		
			f	241.000	50.600	6099.002	241.000	61.954	7459.667	241.000	11.680	- 1365.171	360.000	27.172	9770.000	48.500	- 66.780	- 3239.384	0.100		
			e	242.000	50.800	6067.350	242.000	0.000	0.000	242.000	50.793	6055.385	360.000	27.100	9750.000	48.500	- 66.713	- 3232.764	1.000		

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	241.00 0	50.60 0	6096.32 0	241.00 0	61.93 8	7457.74 6	241.00 0	11.66 5	- 1364.126	360.00 0	27.10 0	9759.01 6	48.50 0	- 66.69 2	- 3231.01 3	0.10 0	
6		33%	d	242.00 0	50.40 3	6080.00 0	242.00 0	30.00 0	3600.17 5	242.00 0	20.79 0	2467.043	360.00 0	27.10 0	9761.45 4	48.50 0	- 66.69 3	- 3230.80 2	--	
			e	242.00 0	50.80 0	6062.28 7	242.00 0	0.000	0.000	242.00 0	50.77 7	6052.704	360.00 0	27.10 0	9749.47 4	48.50 0	- 66.71 4	- 3233.75 7	1.00 0	
			f	242.00 0	50.41 9	6080.00 0	242.00 0	30.06 4	3625.32 6	242.00 0	20.58 5	2444.421	360.00 0	27.10 0	9752.41 0	48.50 0	- 66.77 4	- 3239.24 1	0.10 0	
			e	242.00 0	50.80 0	6066.18 4	242.00 0	0.000	0.000	242.00 0	50.79 3	6054.428	360.00 0	27.10 0	9747.48 8	48.50 0	- 66.79 9	- 3239.90 3	1.00 0	
			f	242.00 0	50.40 3	6080.00 0	242.00 0	30.08 0	3627.02 2	242.00 0	20.54 8	2437.970	360.00 0	27.10 0	9760.00 0	48.50 0	- 66.74 8	- 3236.29 0	0.10 0	
			e	242.00 0	50.80 0	6067.12 3	242.00 0	0.000	0.000	242.00 0	50.79 5	6054.017	360.00 0	27.10 0	9750.00 0	48.50 0	- 66.65 6	- 3230.00 0	1.00 0	
			f	242.00 0	50.41 8	6080.00 0	242.00 0	30.08 6	3627.47 5	242.00 0	20.58 6	2449.301	360.00 0	27.10 0	9750.84 2	48.50 0	- 66.66 6	- 3230.31 4	0.10 0	
7	0%	100%	d	240.91 4	1.884	-51.975	240.91 4	92.28 0	11086.4 66	240.91 4	92.70 6	- 11128.64 7	360.00 0	9.512	3424.16 0	48.50 0	- 66.73 7	- 3237.08 0	--	
			e	241.00 0	1.959	-45.819	241.00 0	0.000	0.000	241.00 0	2.460	-45.298	360.00 0	9.525	3430.00 0	48.50 0	- 66.75 2	- 3238.96 6	1.00 0	
			f	240.82 8	1.876	-51.867	240.82 8	92.71 2	11139.3 61	240.82 8	93.14 3	- 11181.30 5	360.00 0	9.522	3430.08 0	48.50 0	- 66.76 9	- 3239.01 5	0.10 0	
			e	241.00 0	1.965	-45.214	241.00 0	0.000	0.000	241.00 0	2.462	-44.869	360.00 0	9.546	3440.00 0	48.50 0	- 66.73 8	- 3234.97 6	1.00 0	
			f	240.90 0	1.882	-52.000	240.90 0	92.76 0	11145.2 91	240.90 0	93.20 0	- 11187.55 4	360.00 0	9.498	3420.00 0	48.50 0	- 66.73 6	- 3234.72 5	0.10 0	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
8			e	241.00 0	1.960	-45.613	241.00 0	0.000	0.000	241.00 0	2.469	-44.978	360.00 0	9.523	3430.00 0	48.50 0	- 66.77 1	- 3240.00 0	1.00 0	
			f	241.00 0	1.874	-51.971	241.00 0	92.74 5	11143.5 95	241.00 0	93.17 6	- 11185.70 6	360.00 0	9.516	3425.62 1	48.50 0	- 66.73 0	- 3239.08 7	0.10 0	
		66%	d	241.00 0	1.835	-50.000	241.00 0	61.66 9	7415.89 0	241.00 0	62.10 5	- 7457.995	360.00 0	9.521	3427.18 0	48.50 0	- 66.74 5	- 3235.45 1	--	
			e	241.00 0	1.948	-45.927	241.00 0	0.000	0.000	241.00 0	2.464	-45.658	360.00 0	9.519	3430.00 0	48.50 0	- 66.74 3	- 3235.22 7	1.00 0	
			f	241.00 0	1.822	-50.000	241.00 0	61.81 3	7433.12 9	241.00 0	62.23 0	- 7474.913	360.00 0	9.512	3427.16 4	48.50 0	- 66.76 9	- 3237.96 3	0.10 0	
			e	241.00 0	1.950	-45.005	241.00 0	0.000	0.000	241.00 0	2.466	-44.567	360.00 0	9.546	3438.82 4	48.50 0	- 66.73 9	- 3235.63 6	1.00 0	
			f	241.00 0	1.832	-50.000	241.00 0	61.86 1	7439.76 7	241.00 0	62.28 9	- 7480.200	360.00 0	9.517	3426.27 3	48.50 0	- 66.73 6	- 3236.17 3	0.10 0	
			e	241.00 0	1.962	-46.000	241.00 0	0.000	0.000	241.00 0	2.466	-45.287	360.00 0	9.514	3430.00 0	48.50 0	- 66.71 1	- 3232.67 8	1.00 0	
			f	241.00 0	1.833	-50.000	241.00 0	61.86 4	7440.68 5	241.00 0	62.30 2	- 7483.195	360.00 0	9.512	3429.14 4	48.50 0	- 66.78 8	- 3239.97 1	0.10 0	
9		33%	d	241.00 0	1.806	-48.000	241.00 0	29.80 0	3600.00 0	241.00 0	30.39 6	- 3639.198	360.00 0	9.536	3434.87 5	48.50 0	- 66.73 2	- 3234.62 4	--	
			e	241.00 0	1.957	-45.927	241.00 0	0.000	0.000	241.00 0	2.464	-45.298	360.00 0	9.516	3429.27 4	48.50 0	- 66.73 1	- 3235.66 2	1.00 0	
			f	241.00 0	1.799	-48.000	241.00 0	30.03 2	3612.22 4	241.00 0	30.48 2	- 3654.887	360.00 0	9.513	3429.32 1	48.50 0	- 66.74 2	- 3237.87 0	0.10 0	
			e	241.00 0	1.956	-45.324	241.00 0	0.000	0.000	241.00 0	2.468	-44.792	360.00 0	9.529	3430.43 5	48.50 0	- 66.78 7	- 3239.14 7	1.00 0	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	241.000	1.800	-48.000	241.000	30.051	3616.639	241.000	30.511	-3659.301	360.000	9.535	3434.376	48.500	-66.732	-3234.809	0.100	
			e	241.000	1.940	-46.000	241.000	0.000	0.000	241.000	2.464	-45.713	360.000	9.513	3429.715	48.500	-66.722	-3233.191	1.000	
			f	241.000	1.783	-48.000	241.000	30.047	3614.608	241.000	30.490	-3654.294	360.000	9.514	3429.515	48.500	-66.760	-3239.187	0.100	
Note:																				

(3-2) 203.6 test

203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generation level (PV)	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
1	100%	5%-10%	d	241.976	92.113	11100.175	241.976	30.289	3646.667	241.976	61.807	7450.476	350.313	42.585	14900.000	49.200	-63.217	-3113.020	--	
			e	240.962	34.400	4122.142	240.962	30.200	3620.000	240.962	4.750	503.060	300.118	3.892	1170.000	47.900	67.992	3259.383	4.800	
			f	241.899	92.174	11106.445	241.899	30.200	3620.000	241.899	61.999	7473.582	350.632	42.543	14900.000	49.200	-63.276	-3115.925	4.900	
			e	241.000	34.400	4120.773	241.000	30.083	3620.000	241.000	4.775	506.538	300.066	3.891	1170.000	47.900	68.001	3259.549	4.800	
			f	242.000	92.165	11107.019	242.000	30.200	3620.000	242.000	62.006	7478.802	343.088	43.495	14900.000	49.200	-63.069	-3105.278	4.900	
			e	241.000	34.400	4127.545	241.000	30.077	3620.000	241.000	4.794	508.128	300.022	3.891	1170.000	47.900	68.002	3259.681	4.800	
			f	242.000	92.207	11113.124	242.000	30.200	3620.000	242.000	62.044	7480.542	345.519	43.198	14900.000	49.200	-62.990	-3101.355	4.900	

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generati on level (PV)	Ste P	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
2		33%-66%	d	242.00 0	92.36 3	11132.71 2	242.00 0	30.20 0	3620.00 0	242.00 0	62.20 4	7495.51 9	327.91 9	45.50 3	14900.00 0	48.60 0	- 62.31 5	- 3031.23 8	--	
			e	241.90 2	84.40 0	10161.36 9	241.90 2	30.20 0	3620.00 0	241.90 2	54.20 0	6528.53 1	343.21 1	21.73 0	7450.385	47.30 0	69.37 5	3279.95 7	2.800	
			f	241.89 1	91.52 9	11031.41 1	241.89 1	30.20 0	3620.02 5	241.89 1	61.36 3	7392.58 4	350.08 7	40.91 6	14301.93 5	48.51 2	- 53.16 5	- 2592.21 6	3.400	
			e	241.94 4	84.65 5	10204.96 0	241.94 4	30.20 0	3620.00 0	241.94 4	54.48 5	6572.56 0	352.42 8	21.40 9	7531.514	47.31 0	68.39 2	3232.93 4	2.800	
			f	241.98 1	91.98 1	11085.73 5	241.98 1	30.20 0	3620.02 9	241.98 1	61.88 1	7455.69 2	361.67 9	40.62 6	14679.80 0	48.58 2	- 60.08 0	- 2923.71 5	3.400	
			e	242.00 0	84.48 9	10189.59 4	242.00 0	30.20 0	3620.00 0	242.00 0	54.46 3	6549.24 6	359.95 5	20.76 9	7465.609	47.30 0	69.33 9	3278.00 0	2.800	
			f	242.00 0	92.40 6	11137.86 0	242.00 0	30.20 0	3620.00 0	242.00 0	62.24 9	7502.65 3	361.87 9	41.21 3	14900.00 0	48.61 4	- 63.66 5	- 3098.20 3	3.400	
3	66%	5%-10%	d	241.00 0	64.05 6	7726.344	241.00 0	30.20 0	3640.00 0	241.00 0	33.97 7	4080.00 0	357.14 0	32.38 1	11526.53 3	48.90 0	- 66.80 0	- 3261.82 8	--	
			e	239.90 0	34.80 0	4178.035	239.90 0	30.00 0	3592.46 4	239.90 0	5.092	579.862	360.65 9	3.234	1170.000	47.40 0	69.35 8	3290.00 0	0.400	
			f	241.00 0	64.04 5	7725.343	241.00 0	30.20 0	3640.00 0	241.00 0	33.98 4	4080.00 0	359.62 9	32.13 4	11524.22 0	48.90 0	- 66.80 0	- 3260.97 4	1.800	
			e	239.90 0	34.80 0	4178.035	239.90 0	30.00 0	3592.46 4	239.90 0	5.092	579.862	360.65 9	3.234	1170.000	47.40 0	69.35 8	3290.00 0	0.400	
			f	241.00 0	64.04 1	7724.907	241.00 0	30.20 0	3640.00 0	241.00 0	33.95 3	4080.00 0	357.09 1	32.36 2	11518.11 7	48.90 0	- 66.80 3	- 3261.22 7	1.800	
			e	239.89 9	34.97 3	4179.658	239.89 9	30.00 0	3594.40 8	239.89 9	5.156	588.197	360.09 4	3.244	1170.000	47.49 0	69.32 9	3290.00 0	0.400	
			f	241.00 0	64.05 4	7727.133	241.00 0	30.20 0	3640.00 0	241.00 0	33.98 6	4080.28 5	358.50 8	32.23 8	11520.97 0	48.90 0	- 66.79 9	- 3260.92 7	1.800	

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generati on level (PV)	Ste P	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
4		33%-66%	d	241.00 0	63.98 6	7699.906	241.00 0	30.39 4	3653.98 6	241.00 0	33.68 7	4037.28 8	365.00 0	31.49 9	11500.00 0	48.70 0	- 0	- 0	--	
			e	241.00 0	63.84 7	7685.221	241.00 0	30.20 0	3630.35 7	241.00 0	33.74 8	4039.85 7	307.62 8	24.32 0	7469.272	47.80 0	12.64 9	605.268	0.400	
			f	241.00 0	64.03 5	7707.790	241.00 0	30.20 0	3620.00 0	241.00 0	34.00 0	4069.68 8	365.00 0	31.50 2	11500.00 0	48.70 0	66.80 0	3250.00 0	0.400	
			e	241.00 0	63.85 0	7685.217	241.00 0	30.20 0	3620.00 0	241.00 0	33.80 0	4054.52 5	301.41 4	24.79 5	7468.293	47.80 0	12.65 9	605.862	0.400	
			f	241.00 0	64.01 2	7703.195	241.00 0	30.20 0	3620.00 0	241.00 0	34.00 0	4075.74 9	343.38 2	33.96 2	11518.54 5	48.70 0	- 6	- 0	0.400	
			e	241.00 0	63.73 7	7672.068	241.00 0	30.20 0	3620.00 0	241.00 0	33.71 0	4033.89 4	298.35 2	25.55 1	7630.942	47.84 5	8.953	425.730	0.400	
			f	241.00 0	64.00 9	7703.880	241.00 0	30.20 0	3620.00 0	241.00 0	34.00 0	4064.45 1	365.00 0	31.50 1	11500.00 0	48.70 0	- 0	- 0	0.400	
5	33%	5%-10%	d	241.00 0	31.73 2	3801.132	241.00 0	30.00 1	3620.00 0	241.00 0	2.878	185.825	380.00 0	20.06 6	7506.333	49.30 0	- 2	- 3	--	
			e	241.00 0	31.07 2	3736.291	241.00 0	30.00 0	3620.00 0	241.00 0	2.378	113.496	301.00 0	3.874	1165.535	48.00 0	58.83 6	2823.60 9	2.000	
			f	240.89 9	31.71 2	3800.749	240.89 9	30.00 1	3620.00 0	240.89 9	2.880	185.064	380.00 0	20.07 7	7509.663	49.30 0	- 0	- 4	2.700	
			e	240.90 7	31.06 2	3735.459	240.90 7	30.00 0	3620.00 0	240.90 7	2.372	113.525	301.00 0	3.873	1166.393	48.00 0	58.86 8	2825.29 8	2.000	
			f	241.00 0	31.71 0	3800.200	241.00 0	30.07 0	3620.00 0	241.00 0	2.869	184.144	380.00 0	20.04 9	7502.910	49.30 0	- 1	- 5	2.700	
			e	240.98 4	30.76 4	3696.684	240.98 4	30.07 6	3620.00 0	240.98 4	2.619	77.422	304.05 3	4.600	1440.891	48.06 6	52.51 5	2517.58 5	2.000	
			f	241.00 0	31.47 6	3779.971	241.00 0	30.15 1	3620.00 0	241.00 0	2.768	158.569	380.00 0	20.07 5	7504.051	49.30 0	- 2	- 7	2.700	

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generati on level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
6		33%-66%	d	240.908	32.364	3879.953	240.908	30.200	3620.000	240.908	3.264	253.717	360.000	21.342	7576.167	48.200	-68.155	-3286.179	--	
			e	240.912	32.024	3843.880	240.912	30.178	3620.000	240.912	2.955	226.631	295.096	25.407	7470.870	48.200	-67.265	-3241.598	0	
			f	241.000	32.557	3900.325	241.000	30.110	3620.000	241.000	3.426	282.744	360.000	21.296	7558.077	48.200	-68.135	-3284.594	0	
			e	241.000	32.000	3840.161	241.000	30.003	3620.000	241.000	2.922	223.678	286.623	26.042	7462.979	48.200	-67.159	-3236.731	0	
			f	241.000	32.350	3878.031	241.000	30.000	3620.000	241.000	3.250	260.475	333.256	23.005	7523.835	48.200	-67.712	-3264.391	0	
			e	241.000	32.134	3855.043	241.000	30.000	3620.000	241.000	3.053	237.019	301.618	25.021	7481.521	48.200	-67.213	-3240.351	0	
			f	241.000	32.565	3900.514	241.000	30.000	3620.000	241.000	3.438	283.943	360.000	21.295	7557.561	48.200	-68.135	-3284.779	0	
Note:																				

(4) ESS external export current limit = 0% to +5%, PV inputs = 50% ± 5%

(4-1) 203.5 test

203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
1	100%	100%	d	241.000	60.600	7300.000	241.000	92.920	11182.481	241.000	32.444	-3890.301	360.000	21.100	7600.000	47.700	0.567	27.070	--	
			e	242.000	60.600	7280.000	242.000	0.000	0.000	242.000	60.595	7260.871	360.000	21.100	7588.748	47.700	0.567	27.038	1.000	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
2			f	241.000	60.600	7300.000	241.000	92.896	11178.322	241.000	32.397	-3885.273	360.000	21.100	7608.935	47.700	0.567	27.062	1.000	
			e	242.000	60.600	7280.000	242.000	0.000	0.000	242.000	60.601	7262.770	360.000	21.100	7591.997	47.700	0.567	27.042	1.000	
			f	241.000	60.600	7300.000	241.000	92.950	11184.459	241.000	32.420	-3887.953	360.000	21.200	7619.667	47.700	0.566	27.001	1.000	
			e	242.000	60.600	7280.000	242.000	0.000	0.000	242.000	60.599	7261.546	360.000	21.100	7590.000	47.700	0.565	26.997	1.000	
			f	241.000	60.600	7300.000	241.000	92.933	11182.197	241.000	32.406	-3886.933	360.000	21.109	7608.859	47.700	0.566	27.001	1.000	
			d	242.000	60.597	7300.000	242.000	61.798	7442.657	242.000	2.946	-151.765	360.000	21.195	7618.759	47.700	0.566	27.002	--	
		e	242.000	60.600	7280.000	242.000	0.000	0.000	242.000	60.609	7266.897	360.000	21.100	7595.554	47.700	0.566	27.000	1.900		
		f	242.000	60.600	7300.000	242.000	61.915	7456.378	242.000	2.985	-163.391	360.000	21.100	7609.348	47.700	0.566	27.001	1.000		
		e	242.000	60.600	7280.000	242.000	0.000	0.000	242.000	60.615	7267.118	360.000	21.100	7597.536	47.700	0.566	27.005	1.000		
		f	242.000	60.600	7300.000	242.000	61.980	7464.692	242.000	2.994	-167.769	360.000	21.190	7618.985	47.700	0.566	27.001	1.000		
		e	242.000	60.600	7280.000	242.000	0.000	0.000	242.000	60.617	7269.127	360.000	21.100	7590.798	47.700	0.566	27.000	1.000		
		f	242.000	60.600	7300.000	242.000	61.969	7463.167	242.000	2.990	-166.150	360.000	21.153	7615.193	47.700	0.566	27.016	1.000		
3		33%	d	242.000	60.472	7298.747	242.000	29.892	3600.000	242.000	30.656	3670.326	360.000	21.100	7603.734	47.700	0.566	27.001	--	
			e	242.000	60.600	7280.000	242.000	0.000	0.000	242.000	60.632	7270.889	360.000	21.100	7590.000	47.700	0.566	27.001	1.000	
			f	242.000	60.465	7298.935	242.000	30.060	3625.246	242.000	30.525	3653.289	360.000	21.100	7606.192	47.700	0.567	27.043	1.000	
			e	242.000	60.600	7280.000	242.000	0.000	0.000	242.000	60.646	7274.138	360.000	21.100	7599.388	47.700	0.566	27.002	1.000	
			f	242.000	60.471	7300.000	242.000	30.060	3625.691	242.000	30.517	3651.714	360.000	21.100	7600.000	47.700	0.566	27.008	1.000	
			e	242.000	60.600	7280.000	242.000	0.000	0.000	242.000	60.604	7266.484	360.000	21.100	7594.938	47.700	0.567	27.043	1.000	
			f	242.000	60.405	7300.000	242.000	30.044	3623.852	242.000	30.529	3652.953	360.000	21.100	7609.444	47.700	0.566	27.016	1.000	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
4	50%	100%	d	241.00 0	50.60 0	6099.32 3	241.00 0	92.35 2	11111.32 8	241.00 0	41.84 8	-5021.930	360.00 0	17.60 0	6339.77 4	47.70 0	0.56 6	27.04 7	--	
			e	242.00 0	50.80 0	6060.65 3	242.00 0	0.000	0.000	242.00 0	50.79 4	6055.862	360.00 0	17.60 0	6329.85 5	47.70 0	0.56 6	27.02 9	1.000	
			f	241.00 0	50.60 0	6096.95 9	241.00 0	92.69 6	11151.39 8	241.00 0	42.18 7	-5063.625	360.00 0	17.60 0	6341.16 7	47.70 0	0.56 6	27.00 8	1.000	
			e	242.00 0	50.80 0	6063.54 3	242.00 0	0.000	0.000	242.00 0	50.79 6	6055.813	360.00 0	17.58 1	6320.00 0	47.70 0	0.56 7	27.03 1	1.000	
			f	241.00 0	50.60 0	6091.15 5	241.00 0	92.63 5	11144.61 8	241.00 0	42.13 3	-5057.808	360.00 0	17.60 0	6343.85 5	47.70 0	0.56 7	27.09 3	1.000	
			e	242.00 0	50.80 0	6063.64 7	242.00 0	0.000	0.000	242.00 0	50.80 0	6054.872	360.00 0	17.60 0	6325.84 0	47.70 0	0.56 6	27.01 0	1.000	
			f	241.00 0	50.60 0	6093.23 8	241.00 0	92.48 7	11126.39 1	241.00 0	42.00 1	-5041.484	360.00 0	17.60 0	6336.74 8	47.70 0	0.56 6	27.03 1	1.000	
5		66%	d	241.00 0	50.60 0	6093.98 5	241.00 0	61.70 9	7431.704	241.00 0	11.48 1	-1344.637	360.00 0	17.60 0	6344.54 9	47.70 0	0.56 7	27.08 6	--	
			e	242.00 0	50.80 0	6060.72 6	242.00 0	0.000	0.000	242.00 0	50.78 9	6053.466	360.00 0	17.57 9	6325.88 0	47.70 0	0.56 6	27.00 3	1.000	
			f	241.00 0	50.60 0	6094.19 4	241.00 0	61.89 7	7452.166	241.00 0	11.64 0	-1361.260	360.00 0	17.60 0	6338.15 7	47.70 0	0.56 6	27.01 0	1.000	
			e	242.00 0	50.80 0	6060.99 8	242.00 0	0.000	0.000	242.00 0	50.79 0	6052.754	360.00 0	17.57 3	6320.00 0	47.70 0	0.56 7	27.03 7	1.000	
			f	241.00 0	50.58 4	6085.94 8	241.00 0	61.94 7	7458.683	241.00 0	11.70 9	-1369.553	360.00 0	17.60 0	6344.77 0	47.70 0	0.56 6	27.03 2	1.000	
			e	242.00 0	50.80 0	6060.00 0	242.00 0	0.000	0.000	242.00 0	50.78 6	6054.758	360.00 0	17.57 2	6319.43 0	47.70 0	0.56 5	26.99 7	1.000	
			f	241.00 0	50.60 0	6096.00 6	241.00 0	61.92 1	7455.121	241.00 0	11.67 1	-1367.039	360.00 0	17.60 0	6339.00 1	47.70 0	0.56 6	27.01 5	1.000	
6		33%	d	242.00 0	50.40 0	6079.74 9	242.00 0	29.90 5	3600.000	242.00 0	20.78 1	2461.504	360.00 0	17.60 0	6338.03 3	47.70 0	0.56 6	27.03 9	--	
			e	242.00 0	50.80 0	6060.69 0	242.00 0	0.000	0.000	242.00 0	50.79 2	6055.172	360.00 0	17.59 0	6321.67 0	47.70 0	0.56 6	27.00 0	1.000	
			f	242.00 0	50.41 3	6079.46 7	242.00 0	29.12 1	3511.451	242.00 0	21.96 8	2609.534	360.00 0	17.60 0	6327.11 1	47.70 0	0.56 6	27.00 7	1.000	
			e	242.00 0	50.80 0	6061.57 8	242.00 0	0.000	0.000	242.00 0	50.79 2	6055.233	360.00 0	17.59 8	6326.05 5	47.70 0	0.56 7	27.04 9	1.000	
			f	242.00 0	50.40 0	6080.00 0	242.00 0	30.01 1	3620.000	242.00 0	20.61 8	2447.754	360.00 0	17.60 0	6337.82 0	47.70 0	0.56 6	27.00 1	1.000	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	242.00 0	50.80 0	6061.14 0	242.00 0	0.000	0.000	242.00 0	50.78 9	6054.131	360.00 0	17.58 5	6320.00 0	47.70 0	0.56 6	27.00 2	1.000	
			f	242.00 0	50.40 0	6080.00 0	242.00 0	30.00 7	3620.000	242.00 0	20.61 7	2449.044	360.00 0	17.60 0	6330.65 6	47.70 0	0.56 7	27.06 6	1.000	
7	0%	100%	d	241.00 0	1.842	-53.920	241.00 0	92.00 0	11060.00 0	241.00 0	92.42 5	- 11100.85 2	360.00 0	0.006	2.164	47.70 0	0.57 3	27.38 5	--	
			e	241.00 0	1.921	-47.782	241.00 0	0.000	0.000	241.00 0	2.458	-47.364	360.00 0	0.024	8.623	47.70 0	0.57 2	27.30 6	1.000	
			f	241.00 0	1.840	-53.893	241.00 0	92.72 3	11141.81 1	241.00 0	93.16 7	- 11185.43 3	360.00 0	0.005	1.674	47.70 0	0.57 2	27.30 3	1.000	
			e	241.00 0	1.923	-47.903	241.00 0	0.000	0.000	241.00 0	2.458	-47.415	360.00 0	0.024	8.441	47.70 0	0.57 1	27.27 8	1.000	
			f	241.00 0	1.849	-53.933	241.00 0	92.81 6	11153.71 0	241.00 0	93.26 8	- 11197.53 7	360.00 0	0.004	1.622	47.70 0	0.57 1	27.26 2	1.000	
			e	241.00 0	1.920	-47.778	241.00 0	0.000	0.000	241.00 0	2.456	-47.229	360.00 0	0.022	8.088	47.70 0	0.57 0	27.20 5	1.000	
			f	241.00 0	1.832	-53.971	241.00 0	92.82 2	11154.40 8	241.00 0	93.27 4	- 11197.66 0	360.00 0	0.003	1.134	47.70 0	0.57 0	27.20 4	1.000	
8		66%	d	241.00 0	1.779	-52.000	241.00 0	61.64 9	7412.617	241.00 0	62.09 0	-7458.497	360.00 0	0.007	2.609	47.70 0	0.57 0	27.20 5	--	
			e	241.00 0	1.906	-47.456	241.00 0	0.000	0.000	241.00 0	2.444	-47.556	360.00 0	0.021	7.603	47.70 0	0.56 9	27.19 1	1.000	
			f	241.00 0	1.778	-52.000	241.00 0	61.84 4	7438.833	241.00 0	62.30 2	-7482.458	360.00 0	0.006	2.069	47.70 0	0.56 9	27.18 8	1.000	
			e	241.00 0	1.911	-47.742	241.00 0	0.000	0.000	241.00 0	2.449	-46.981	360.00 0	0.022	7.866	47.70 0	0.56 9	27.14 1	1.000	
			f	241.00 0	1.780	-52.000	241.00 0	61.92 3	7446.068	241.00 0	62.36 2	-7491.058	360.00 0	0.006	2.232	47.70 0	0.56 9	27.16 5	1.000	
			e	241.00 0	1.902	-47.584	241.00 0	0.000	0.000	241.00 0	2.445	-47.199	360.00 0	0.020	7.160	47.70 0	0.56 8	27.10 5	1.000	
			f	241.00 0	1.772	-52.000	241.00 0	61.87 4	7442.054	241.00 0	62.33 3	-7488.616	360.00 0	0.006	2.010	47.70 0	0.56 8	27.11 1	1.000	
9		33%	d	241.00 0	1.745	-50.000	241.00 0	29.80 0	3600.000	241.00 0	30.38 6	-3638.346	360.00 0	0.010	3.793	47.70 0	0.56 8	27.10 2	--	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	241.000	1.902	-47.528	241.000	0.000	0.000	241.000	2.442	-47.216	360.000	0.018	6.604	47.700	0.568	27.097	1.000	
			f	241.000	1.743	-50.000	241.000	30.019	3612.627	241.000	30.490	-3656.129	360.000	0.011	3.869	47.700	0.567	27.099	1.000	
			e	241.000	1.899	-47.224	241.000	0.000	0.000	241.000	2.440	-46.956	360.000	0.018	6.651	47.700	0.567	27.081	1.000	
			f	241.000	1.734	-50.000	241.000	30.032	3617.086	241.000	30.519	-3658.962	360.000	0.010	3.519	47.700	0.567	27.083	1.000	
			e	241.000	1.894	-47.231	241.000	0.000	0.000	241.000	2.440	-47.230	360.000	0.018	6.607	47.700	0.567	27.053	1.000	
			f	241.000	1.731	-50.000	241.000	30.041	3614.379	241.000	30.503	-3659.544	360.000	0.010	3.586	47.700	0.567	27.082	1.000	
Note:																				

(4-2) 203.6 test

203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generatio n level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
1	100%	5%-10%	d	242.000	60.400	7299.749	242.000	30.000	3618.972	242.000	30.584	3666.015	360.000	21.100	7591.504	47.800	0.568	27.094	--	
			e	241.000	10.140	1206.831	241.000	29.800	3600.000	241.000	19.942	2389.183	360.000	3.574	1290.000	47.800	0.568	27.093	1.000	
			f	242.000	60.400	7292.836	242.000	30.000	3600.000	242.000	30.617	3674.434	360.000	21.100	7590.000	47.800	0.567	27.043	1.000	
			e	241.000	10.140	1206.322	241.000	29.800	3600.000	241.000	19.925	2383.865	360.000	3.573	1289.678	47.800	0.567	27.057	1.000	
			f	242.000	60.400	7293.153	242.000	29.913	3600.000	242.000	30.618	3675.492	360.000	21.100	7592.511	47.800	0.567	27.015	1.000	
			e	241.000	10.140	1207.800	241.000	29.800	3600.000	241.000	19.927	2384.112	360.000	3.598	1298.263	47.800	0.565	26.965	1.000	
			f	242.000	60.400	7298.317	242.000	30.000	3600.000	242.000	30.620	3674.693	360.000	21.100	7591.427	47.800	0.565	26.927	1.000	

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generatio n level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
2		33%-66%	d	242.00 0	60.40 0	7294.85 8	242.00 0	30.00 0	3600.00 0	242.00 0	30.61 8	3675.87 3	360.00 0	21.10 0	7596.72 2	47.80 0	0.56 5	26.97 1	--	
			e	242.00 0	60.40 0	7298.28 8	242.00 0	30.00 0	3600.00 0	242.00 0	30.61 7	3674.83 6	360.00 0	21.10 0	7608.43 1	47.80 0	0.56 5	26.97 1	0	
			f	242.00 0	60.40 0	7297.27 8	242.00 0	30.00 0	3600.00 0	242.00 0	30.62 2	3675.70 5	360.00 0	21.10 0	7600.88 6	47.80 0	0.56 4	26.91 1	0	
			e	242.00 0	60.40 0	7298.06 8	242.00 0	30.00 0	3600.00 0	242.00 0	30.63 0	3675.52 3	360.00 0	21.10 0	7598.39 0	47.80 0	0.56 4	26.91 2	0	
			f	242.00 0	60.40 0	7296.06 3	242.00 0	30.00 0	3600.00 0	242.00 0	30.62 7	3677.09 0	360.00 0	21.10 0	7602.92 4	47.80 0	0.56 5	26.96 8	0	
			e	242.00 0	60.44 9	7300.00 0	242.00 0	30.00 0	3600.00 0	242.00 0	30.66 5	3679.07 2	360.00 0	21.10 0	7609.92 8	47.80 0	0.56 5	26.99 6	0	
			f	242.00 0	60.45 4	7300.00 0	242.00 0	30.00 0	3600.00 0	242.00 0	30.67 1	3678.97 3	360.00 0	21.10 0	7599.04 4	47.80 0	0.56 5	26.99 0	0	
3	66%	5%-10%	d	242.00 0	60.51 8	7300.00 0	242.00 0	30.00 0	3600.00 0	242.00 0	30.66 8	3672.50 0	360.00 0	21.10 0	7609.45 8	47.80 0	0.56 5	27.03 9	--	
			e	241.00 0	10.15 3	1207.14 3	241.00 0	29.80 0	3600.00 0	241.00 0	19.94 4	- 2381.80 4	360.00 0	3.568	1286.68 3	47.80 0	0.56 5	26.99 9	1.000	
			f	242.00 0	60.41 7	7299.00 1	242.00 0	30.00 0	3600.00 0	242.00 0	30.65 4	3673.25 8	360.00 0	21.10 0	7595.68 0	47.80 0	0.56 4	26.95 7	1.000	
			e	241.00 0	10.15 3	1207.14 3	241.00 0	29.80 0	3600.00 0	241.00 0	19.94 4	- 2381.80 4	360.00 0	3.568	1286.68 3	47.80 0	0.56 5	26.99 9	1.000	
			f	242.00 0	60.45 6	7300.00 0	242.00 0	30.00 0	3600.00 0	242.00 0	30.68 4	3677.88 9	360.00 0	21.10 0	7598.77 3	47.80 0	0.56 5	27.00 0	1.000	
			e	241.00 0	10.16 0	1208.00 0	241.00 0	29.80 0	3600.00 0	241.00 0	19.94 3	- 2381.82 6	360.00 0	3.594	1297.01 9	47.80 0	0.56 5	26.96 6	1.000	
			f	242.00 0	60.49 5	7299.71 5	242.00 0	30.00 0	3600.00 0	242.00 0	30.66 4	3675.77 7	360.00 0	21.10 0	7594.72 2	47.80 0	0.56 4	26.92 1	1.000	
4		33%-66%	d	242.00 0	60.56 7	7300.00 0	242.00 0	30.00 0	3600.00 0	242.00 0	30.71 1	3678.65 6	360.00 0	21.10 0	7598.12 5	47.80 0	0.56 5	26.98 9	--	
			e	242.00 0	60.60 0	7300.00 0	242.00 0	30.00 0	3600.00 0	242.00 0	30.74 2	3681.25 5	360.00 0	21.10 0	7609.85 7	47.80 0	0.56 5	26.97 5	0	
			f	242.00 0	60.58 3	7300.00 0	242.00 0	30.00 0	3600.00 0	242.00 0	30.71 4	3678.97 6	360.00 0	21.10 0	7605.10 6	47.80 0	0.56 4	26.93 9	0	

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generatio n level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (≤30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	242.00 0	60.53 9	7300.00 0	242.00 0	30.00 0	3600.00 0	242.00 0	30.72 8	3681.41 7	360.00 0	21.10 0	7594.52 5	47.80 0	0.56 4	26.92 0	0	
			f	242.00 0	60.58 0	7300.00 0	242.00 0	30.00 0	3600.00 0	242.00 0	30.71 7	3678.85 9	360.00 0	21.10 0	7596.80 5	47.80 0	0.56 4	26.96 2	0	
			e	242.00 0	60.54 3	7300.00 0	242.00 0	30.00 0	3600.00 0	242.00 0	30.69 2	3677.20 4	360.00 0	21.10 0	7603.39 5	47.80 0	0.56 5	26.98 4	0	
			f	242.00 0	60.57 2	7300.00 0	242.00 0	30.00 0	3600.00 0	242.00 0	30.70 2	3678.63 1	360.00 0	21.10 0	7603.28 1	47.80 0	0.56 4	26.95 3	0	
5	33%	5%-10%	d	241.00 0	30.40 0	3647.78 3	241.00 0	30.11 3	3620.00 0	241.00 0	2.365	28.696	360.00 0	10.50 0	3787.11 1	48.00 0	0.00 3	0.074	--	
			e	240.10 1	10.09 1	1198.20 8	240.10 1	30.00 0	3620.00 0	240.10 1	20.17 8	- 2399.54 4	360.00 0	3.515	1266.69 0	48.00 0	0.00 3	0.101	0.300	
			f	241.00 0	30.40 0	3646.91 6	241.00 0	30.00 0	3620.00 0	241.00 0	2.359	30.346	360.00 0	10.50 0	3786.71 7	48.00 0	0.00 3	0.100	0.300	
			e	240.10 0	10.09 1	1198.03 2	240.10 0	30.00 0	3620.00 0	240.10 0	20.17 9	- 2405.63 6	360.00 0	3.517	1267.37 5	48.00 0	0.00 3	0.103	0.300	
			f	241.00 0	30.40 0	3646.73 3	241.00 0	30.00 0	3620.00 0	241.00 0	2.369	30.372	360.00 0	10.50 0	3786.41 9	48.00 0	0.00 3	0.101	0.300	
			e	240.00 9	10.30 1	1222.79 4	240.00 9	30.00 0	3619.84 4	240.00 9	19.95 6	- 2369.27 4	360.00 0	3.585	1291.87 5	48.00 0	0.00 4	0.108	0.300	
			f	240.89 9	30.40 0	3645.84 9	240.89 9	30.00 0	3620.00 0	240.89 9	2.376	30.540	360.00 0	10.50 0	3786.36 2	48.00 0	0.00 4	0.127	0.300	
6	33%	33%-66%	d	241.00 0	27.90 8	3360.00 0	241.00 0	29.80 0	3600.00 0	241.00 0	3.115	-246.568	360.00 0	9.691	3490.00 0	47.80 0	0.56 5	26.98 7	--	
			e	241.00 0	27.91 9	3360.00 0	241.00 0	29.80 0	3600.00 0	241.00 0	3.115	-245.926	360.00 0	9.703	3493.95 1	47.80 0	0.56 5	26.99 2	0	
			f	241.00 0	27.87 3	3360.00 0	241.00 0	29.80 0	3600.00 0	241.00 0	3.109	-244.981	360.00 0	9.719	3500.00 0	47.80 0	0.56 4	26.92 4	0	
			e	241.00 0	27.93 2	3360.00 0	241.00 0	29.80 0	3600.00 0	241.00 0	3.109	-242.528	360.00 0	9.694	3490.00 0	47.80 0	0.56 3	26.89 9	0	
			f	241.00 0	27.96 6	3360.00 0	241.00 0	29.80 0	3600.00 0	241.00 0	3.114	-245.006	360.00 0	9.697	3490.00 0	47.80 0	0.56 4	26.90 7	0	
			e	241.00 0	27.95 6	3360.00 0	241.00 0	29.80 0	3600.00 0	241.00 0	3.114	-244.623	360.00 0	9.696	3490.00 0	47.80 0	0.56 4	26.90 5	0	

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generation level (PV)	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	241.000	27.963	3360.000	241.000	29.800	3600.000	241.000	3.115	-245.960	360.000	9.697	3490.000	47.800	0.564	26.911	0	
Note:																				

(5) ESS external export current limit = $66 \pm 5\%$, PV inputs = $50\% \pm 5\%$ - (If support)

(5-1) 203.5 test

203.5 Step Change in Load Test																					
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operating Mode	
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)			
1	100%	100%	d	242.000	92.395	11140.000	242.000	92.841	11179.373	242.000	2.251	-60.708	361.063	20.641	7459.373	47.800	90.449	4325.025	--		
			e	242.000	92.200	11138.911	242.000	0.000	0.000	242.000	92.189	11110.345	361.218	20.635	7459.274	47.800	90.566	4330.472	1.000		
			f	242.000	92.400	11140.000	242.000	93.242	11226.711	242.000	2.348	-106.199	361.361	20.634	7458.668	47.800	90.996	4350.333	1.000		
			e	242.000	92.200	11140.000	242.000	0.000	0.000	242.000	92.196	11114.106	361.274	20.636	7458.889	47.800	90.829	4342.947	1.000		
			f	242.000	92.400	11140.000	242.000	93.341	11239.135	242.000	2.379	-115.897	361.153	20.633	7458.835	47.800	90.916	4346.872	1.000		
			e	242.000	92.200	11140.000	242.000	0.000	0.000	242.000	92.202	11116.309	361.349	20.622	7457.506	47.800	90.566	4330.798	1.000		
			f	242.000	92.400	11144.280	242.000	93.300	11233.096	242.000	2.362	-107.884	361.193	20.639	7457.575	47.800	90.820	4342.810	1.000		
2		66%	d	242.000	92.200	11134.962	242.000	61.789	7447.444	242.000	30.457	3657.870	361.006	20.680	7462.494	47.740	90.727	4329.825	--		
			e	242.000	92.200	11139.637	242.000	0.000	0.000	242.000	92.185	11110.563	361.078	20.669	7461.633	47.745	90.629	4325.390	1.000		
			f	242.000	92.200	11140.000	242.000	62.022	7475.047	242.000	30.276	3634.487	361.176	20.659	7461.358	47.703	90.913	4338.802	1.000		
			e	242.000	92.200	11140.000	242.000	0.000	0.000	242.000	92.208	11117.327	361.274	20.650	7460.322	47.700	91.036	4343.865	1.000		
			f	242.000	92.200	11140.000	242.000	62.092	7483.161	242.000	30.215	3627.654	361.103	20.656	7460.166	47.700	91.027	4343.644	1.000		

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
3			e	242.00 0	92.20 0	11140.0 00	242.00 0	0.000	0.000	242.00 0	92.20 1	11116.06 0	361.38 4	20.64 9	7460.00 0	47.70 0	90.854	4335.46 1	1.00 0	
			f	242.00 0	92.20 0	11140.0 00	242.00 0	62.09 6	7484.13 7	242.00 0	30.19 1	3624.907	361.35 5	20.64 7	7460.14 3	47.70 0	90.896	4337.47 5	1.00 0	
		33%	d	242.00 0	92.20 0	11140.0 00	242.00 0	30.20 0	3640.00 0	242.00 0	62.00 6	7468.672	361.24 1	20.65 2	7460.00 0	47.70 0	90.774	4331.83 0	--	
			e	242.00 0	92.20 0	11140.0 00	242.00 0	0.000	0.000	242.00 0	92.20 4	11116.80 6	361.30 5	20.64 5	7460.00 0	47.70 0	91.056	4344.80 9	1.00 0	
			f	242.00 0	92.20 0	11140.0 00	242.00 0	30.33 7	3662.98 3	242.00 0	61.89 2	7452.916	361.29 3	20.65 0	7460.00 0	47.70 0	91.035	4343.83 5	1.00 0	
			e	242.00 0	92.20 0	11140.0 00	242.00 0	0.000	0.000	242.00 0	92.20 7	11117.61 7	361.48 8	20.64 0	7459.83 9	47.70 0	91.042	4344.38 0	1.00 0	
			f	242.00 0	92.20 0	11140.0 00	242.00 0	30.34 5	3663.26 1	242.00 0	61.86 9	7450.316	361.56 9	20.62 8	7460.00 0	47.70 0	90.738	4330.26 6	1.00 0	
			e	242.00 0	92.20 0	11140.0 00	242.00 0	0.000	0.000	242.00 0	92.21 1	11118.20 4	361.60 1	20.63 0	7460.00 0	47.70 0	90.748	4330.20 0	1.00 0	
			f	242.00 0	92.20 0	11140.0 00	242.00 0	30.36 1	3664.96 4	242.00 0	61.87 1	7452.183	361.57 9	20.63 1	7459.85 7	47.70 2	90.733	4329.82 9	1.00 0	
4	50%	100%	d	241.00 0	47.80 3	5762.98 2	241.00 0	92.60 0	11140.0 00	241.00 0	44.75 9	- 5386.015	356.05 9	20.92 4	7450.05 0	48.50 0	-28.574	1385.21 3	--	
			e	242.00 0	48.01 3	5743.15 8	242.00 0	0.000	0.000	242.00 0	48.00 0	5739.129	356.01 8	20.92 4	7450.10 9	48.50 0	-28.861	1399.41 9	1.00 0	
			f	241.00 0	47.82 7	5767.52 7	241.00 0	93.32 9	11234.1 32	241.00 0	45.50 0	- 5483.103	355.97 4	20.92 8	7450.13 8	48.50 0	-28.345	1373.34 9	1.00 0	
			e	242.03 9	48.06 3	5750.20 9	242.03 9	0.000	0.000	242.03 9	48.00 0	5739.936	355.94 8	20.92 9	7450.17 7	48.50 0	-28.649	1389.21 1	1.00 0	
			f	241.10 0	47.85 7	5772.13 3	241.10 0	93.43 4	11247.7 89	241.10 0	45.59 4	- 5494.207	356.02 2	20.92 4	7450.11 7	48.50 0	-28.351	1373.79 6	1.00 0	
			e	242.00 0	48.06 3	5750.59 8	242.00 0	0.000	0.000	242.00 0	48.03 0	5750.883	355.92 6	20.93 1	7450.14 2	48.50 0	-28.852	1399.23 1	1.00 0	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	241.000	47.839	5770.642	241.000	93.351	11237.603	241.000	45.496	-5482.796	356.047	20.923	7450.057	48.500	-28.534	1382.496	1.000	
5		66%	d	241.898	47.805	5766.817	241.898	61.908	7456.892	241.898	14.219	-1690.253	355.986	20.927	7450.038	48.500	-28.364	1374.586	--	
			e	242.000	48.047	5749.111	242.000	0.000	0.000	242.000	48.001	5739.855	356.000	20.925	7450.036	48.500	-28.661	1389.401	1.000	
			f	242.000	47.806	5767.896	242.000	62.038	7476.621	242.000	14.356	-1706.725	355.994	20.925	7450.000	48.500	-28.560	1383.932	1.000	
			e	242.003	48.038	5748.213	242.003	0.000	0.000	242.003	48.000	5739.807	355.974	20.926	7450.000	48.500	-28.837	1398.631	1.000	
			f	241.958	47.802	5766.866	241.958	62.107	7482.954	241.958	14.466	-1726.411	355.958	20.928	7450.000	48.500	-28.409	1376.846	1.000	
			e	242.000	48.037	5747.236	242.000	0.000	0.000	242.000	48.000	5739.316	355.940	20.929	7450.028	48.500	-28.672	1389.886	1.000	
			f	241.924	47.809	5767.504	241.924	62.061	7476.519	241.924	14.380	-1709.432	356.007	20.924	7450.029	48.500	-28.470	1380.128	1.000	
6		33%	d	242.000	47.789	5759.774	242.000	30.200	3640.476	242.000	17.692	2099.950	356.006	20.924	7450.013	48.500	-28.690	1390.201	--	
			e	242.089	48.031	5746.969	242.089	0.000	0.000	242.089	48.000	5739.492	355.886	20.933	7450.018	48.500	-28.706	1391.906	1.000	
			f	242.000	47.795	5760.559	242.000	30.421	3667.696	242.000	17.521	2079.361	356.009	20.924	7450.000	48.500	-28.516	1381.718	1.000	
			e	242.000	48.050	5750.274	242.000	0.000	0.000	242.000	48.032	5750.789	356.048	20.922	7450.000	48.500	-28.802	1396.006	1.000	
			f	241.942	47.800	5760.566	241.942	30.441	3669.085	241.942	17.507	2076.972	355.970	20.927	7450.000	48.500	-28.686	1390.216	1.000	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (s)	ESS Operati ng Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	242.00 0	48.02 5	5746.21 1	242.00 0	0.000	0.000	242.00 0	48.00 0	5739.772	356.02 3	20.92 4	7450.00 0	48.50 0	-28.789	1395.69 8	1.00 0	
			f	242.00 0	47.79 8	5760.11 4	242.00 0	30.44 8	3670.21 4	242.00 0	17.50 2	2075.806	355.96 7	20.92 8	7450.00 0	48.50 0	-28.487	1380.42 8	1.00 0	
7	0%	100%	d	241.00 0	1.815	-54.000	241.00 0	92.62 1	11128.1 23	241.00 0	93.08 1	-11174.51 4	340.96 7	20.64 7	7030.33 3	50.00 0	-131.00 0	-6560.16 0	--	
			e	241.00 0	1.905	-47.833	241.00 0	0.000	0.000	241.00 0	2.201	-47.983	341.54 6	20.62 3	7036.66 1	50.00 0	-131.00 0	-6560.03 6	1.00 0	
			f	241.00 0	1.834	-53.720	241.00 0	88.80 5	10668.1 76	241.00 0	88.34 0	-10594.34 6	340.50 7	20.67 8	7030.05 3	50.00 0	-131.00 0	-6560.02 7	1.00 0	
			e	241.00 0	1.918	-47.807	241.00 0	0.000	0.000	241.00 0	2.205	-46.843	341.38 5	20.62 6	7034.87 9	50.05 1	-131.00 0	-6560.01 6	1.00 0	
			f	241.00 0	1.838	-54.409	241.00 0	92.57 4	11121.1 31	241.00 0	91.77 1	-11008.12 7	338.00 5	20.80 5	7029.11 8	50.10 0	-131.00 0	-6560.03 3	1.00 0	
			e	241.00 0	1.922	-47.345	241.00 0	0.000	0.000	241.00 0	2.203	-46.292	341.74 4	20.60 7	7035.29 9	50.10 0	-131.00 0	-6560.00 0	1.00 0	
			f	241.00 0	1.837	-53.840	241.00 0	92.70 8	11139.4 29	241.00 0	93.16 9	-11184.42 2	340.81 5	20.65 3	7031.02 7	50.10 0	-131.00 0	-6560.48 5	1.00 0	
8		66%	d	241.00 0	1.808	-51.976	241.00 0	61.67 2	7415.65 1	241.00 0	62.12 2	-7463.141	340.55 6	20.68 0	7033.96 0	50.10 0	-131.00 0	-6560.56 4	--	
			e	241.00 0	1.935	-47.862	241.00 0	0.000	0.000	241.00 0	2.206	-48.977	341.40 7	20.64 7	7040.12 7	50.10 0	-131.00 0	-6561.25 2	1.00 0	
			f	241.00 0	1.821	-52.000	241.00 0	61.81 3	7433.76 3	241.00 0	62.27 7	-7482.366	340.99 2	20.65 1	7033.99 4	50.10 0	-131.00 0	-6560.29 2	1.00 0	
			e	241.00 0	1.954	-47.852	241.00 0	0.000	0.000	241.00 0	2.223	-46.646	341.39 5	20.63 6	7039.51 7	50.10 0	-131.00 0	-6561.65 9	1.00 0	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (s)	ESS Operati ng Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
9			f	241.00 0	1.825	-52.000	241.00 0	61.80 0	7432.85 4	241.00 0	62.26 4	- 7479.561	341.08 8	20.65 3	7034.49 1	50.10 0	- 131.00 0	- 6563.17 4	1.00 0	
			e	241.00 0	1.963	-47.345	241.00 0	0.000	0.000	241.00 0	2.225	-47.629	341.54 1	20.63 1	7039.80 1	50.10 0	- 131.00 0	- 6566.49 6	1.00 0	
			f	241.00 0	1.827	-52.000	241.00 0	61.70 3	7418.14 6	241.00 0	62.14 5	- 7465.592	340.59 6	20.67 6	7034.87 9	50.10 0	- 131.00 0	- 6563.65 2	1.00 0	
		d	241.00 0	1.795	-50.241	241.00 0	30.20 0	3620.00 0	241.00 0	30.60 0	- 3675.764	340.20 8	20.70 4	7036.99 2	50.10 0	- 131.00 0	- 6564.71 2	--		
		e	241.00 0	1.962	-47.652	241.00 0	0.000	0.000	241.00 0	2.225	-45.324	341.11 4	20.65 7	7039.63 7	50.10 0	- 131.00 0	- 6561.99 6	1.00 0		
		f	241.00 0	1.802	-50.031	241.00 0	30.26 4	3644.63 9	241.00 0	30.73 6	- 3690.906	340.50 8	20.68 7	7037.08 1	50.10 0	- 131.00 0	- 6563.68 7	1.00 0		
		e	241.00 0	1.954	-47.752	241.00 0	0.000	0.000	241.00 0	2.222	-47.082	340.87 1	20.67 2	7039.74 2	50.10 0	- 131.00 0	- 6562.65 7	1.00 0		
		f	241.00 0	1.804	-50.036	241.00 0	30.23 9	3641.63 7	241.00 0	30.72 5	- 3688.263	341.07 8	20.65 4	7036.58 7	50.10 0	- 131.00 0	- 6565.46 9	1.00 0		
		e	241.00 0	1.974	-48.171	241.00 0	0.000	0.000	241.00 0	2.227	-49.688	338.77 8	20.79 5	7039.20 2	50.10 0	- 131.00 0	- 6561.39 6	1.00 0		
		f	241.00 0	1.817	-51.364	241.00 0	30.21 8	3639.08 7	241.00 0	30.70 7	- 3687.504	337.65 3	20.83 4	7035.43 5	50.10 0	- 131.00 0	- 6565.39 2	1.00 0		
Note:																				

(5-2) 203.6 test

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203.6 Step Change in Generation Test																					
Load level: 33%																					
Excel file	EUT output limit	Generati on level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode	
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)			
1	100%	5%-10%	d	241.801	92.364	11128.170	241.801	30.000	3620.000	241.801	62.233	7480.000	361.619	20.723	7487.481	48.100	90.043	4326.792	--		
			e	241.000	59.427	7160.000	241.000	30.000	3620.000	241.000	29.463	3520.000	299.927	3.973	1190.000	47.600	139.000	6620.000	2.100		
			f	242.000	92.398	11137.710	242.000	30.000	3620.000	242.000	62.380	7484.288	350.048	21.390	7480.000	48.100	90.234	4333.475	2.200		
			e	241.000	59.400	7155.169	241.000	30.000	3620.000	241.000	29.400	3520.000	299.903	3.972	1190.000	47.520	139.000	6610.000	2.100		
			f	242.000	92.364	11130.385	242.000	30.000	3620.000	242.000	62.235	7480.000	361.126	20.732	7480.000	48.096	90.062	4326.020	2.200		
			e	241.000	59.400	7143.234	241.000	30.000	3620.000	241.000	29.400	3520.000	299.673	3.974	1190.000	47.500	139.000	6610.200	2.100		
			f	242.000	92.372	11129.187	242.000	30.054	3620.000	242.000	62.210	7480.000	342.033	21.882	7480.000	48.000	90.414	4340.899	2.200		
2		33%-66%	d	241.801	92.383	11132.264	241.801	30.118	3620.000	241.801	62.223	7480.000	350.429	21.357	7480.024	48.015	90.321	4338.903	--		
			e	241.926	92.395	11135.949	241.926	30.162	3620.000	241.926	62.324	7482.111	350.214	21.365	7480.000	48.084	90.343	4339.572	0		
			f	242.000	92.399	11138.402	242.000	30.169	3620.000	242.000	62.357	7480.524	350.029	21.377	7480.000	48.098	90.382	4340.175	0		
			e	242.000	92.407	11140.709	242.000	30.086	3620.000	242.000	62.400	7494.525	350.490	21.350	7480.000	48.100	90.443	4342.383	0		
			f	242.000	92.410	11140.685	242.000	30.100	3620.000	242.000	62.400	7497.603	350.064	21.374	7480.000	48.099	90.473	4345.292	0		
			e	242.000	92.404	11140.145	242.000	30.067	3620.000	242.000	62.400	7493.971	350.183	21.368	7480.000	48.100	90.477	4345.913	0		
			f	242.000	92.401	11139.829	242.000	30.066	3620.000	242.000	62.399	7489.358	350.568	21.345	7480.000	48.100	90.510	4348.359	0		
3	66%	5%-10%	d	241.000	63.147	7583.137	241.000	30.000	3603.656	241.000	33.164	3969.575	359.065	20.794	7460.047	48.500	9.889	479.450	--		
			e	240.900	59.200	7118.261	240.900	30.000	3600.000	240.900	29.201	3499.291	299.061	3.920	1170.000	47.129	139.000	6560.000	2.100		
			f	240.993	63.145	7584.370	240.993	30.000	3601.199	240.993	33.113	3960.250	342.820	21.783	7460.275	48.500	10.014	485.514	2.200		
			e	240.900	59.200	7118.261	240.900	30.000	3600.000	240.900	29.201	3499.291	299.061	3.920	1170.000	47.129	139.000	6560.000	2.100		
			f	241.000	63.104	7581.141	241.000	30.000	3601.712	241.000	33.056	3960.114	335.392	22.266	7460.456	48.500	10.045	487.117	2.200		

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generati on level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	241.00 0	59.19 8	7100.257	241.00 0	30.00 0	3600.00 0	241.00 0	29.20 0	3480.59 9	299.11 3	3.919	1170.00 0	47.10 1	139.00 3	6560.05 7	2.100	
			f	241.00 0	63.13 3	7581.854	241.00 0	30.00 0	3601.85 4	241.00 0	33.10 0	3961.31 2	332.86 3	22.41 6	7460.22 8	48.50 0	10.114	490.275	2.200	
4		33%-66%	d	241.00 0	63.00 0	7580.849	241.00 0	30.00 0	3620.00 0	241.00 0	33.00 0	3941.10 8	343.00 7	21.80 7	7480.00 0	48.90 0	9.664	472.429	--	
			e	241.00 0	63.00 0	7580.285	241.00 0	30.00 0	3620.00 0	241.00 0	33.00 0	3940.88 4	343.72 5	21.76 0	7480.00 0	48.90 0	9.719	475.220	0	
			f	241.00 0	63.00 0	7580.649	241.00 0	30.00 0	3620.00 0	241.00 0	33.00 0	3942.52 2	349.90 8	21.38 6	7480.00 0	48.90 0	9.830	480.567	0	
			e	241.00 0	63.00 0	7580.322	241.00 0	30.00 0	3620.00 0	241.00 0	33.00 0	3940.64 4	351.00 8	21.32 4	7480.00 0	48.90 0	9.801	479.142	0	
			f	241.00 0	63.00 0	7580.742	241.00 0	30.00 0	3620.00 0	241.00 0	33.00 0	3942.42 5	350.97 9	21.32 5	7480.00 0	48.90 0	9.609	469.779	0	
			e	241.00 0	63.00 0	7580.884	241.00 0	30.00 0	3620.00 0	241.00 0	33.00 0	3944.36 5	350.81 0	21.33 3	7480.00 0	48.90 0	9.631	470.852	0	
			f	241.00 0	63.00 1	7581.312	241.00 0	30.00 0	3620.00 0	241.00 0	33.00 0	3942.68 2	350.65 6	21.34 4	7480.00 0	48.90 0	9.857	481.900	0	
5	33%	5%-10%	d	240.00 0	31.20 3	3741.462	240.00 0	30.00 0	3600.00 0	240.00 0	2.491	139.557	343.00 6	21.77 3	7461.13 2	49.30 0	- 68.333	- 3367.65 3	--	
			e	240.10 0	31.19 9	3738.973	240.10 0	30.00 0	3600.00 0	240.10 0	2.452	130.748	301.00 0	3.900	1170.00 0	48.00 0	59.158	2838.91 6	2.100	
			f	240.09 7	31.20 3	3740.999	240.09 7	30.00 0	3600.00 0	240.09 7	2.493	138.964	333.99 3	22.34 6	7460.71 2	49.30 0	- 68.194	- 3361.66 0	2.200	
			e	240.00 0	31.19 8	3738.486	240.00 0	30.00 0	3600.00 0	240.00 0	2.441	128.764	301.00 2	3.900	1170.00 0	48.00 0	58.889	2825.36 2	2.100	
			f	240.00 0	31.20 3	3740.799	240.00 0	30.00 0	3600.00 0	240.00 0	2.480	136.727	345.90 9	21.58 0	7460.44 2	49.30 0	- 68.365	- 3369.52 9	2.200	
			e	240.00 2	30.91 4	3704.909	240.00 2	30.00 0	3600.03 1	240.00 2	2.682	95.612	301.54 4	3.959	1192.96 9	48.01 3	57.914	2777.87 6	2.100	
			f	240.00 0	31.20 1	3740.342	240.00 0	30.00 0	3600.00 0	240.00 0	2.486	138.284	350.82 3	21.28 4	7460.38 5	49.30 0	- 68.466	- 3373.89 4	2.200	

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generati on level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
6		33%-66%	d	241.000	31.200	3740.637	241.000	30.000	3620.000	241.000	2.539	131.930	346.008	21.625	7480.000	49.700	-67.758	3367.465	--	
			e	241.000	31.200	3741.084	241.000	30.000	3620.000	241.000	2.540	131.989	346.000	21.625	7480.000	49.700	-67.792	3369.857	0	
			f	241.000	31.200	3741.898	241.000	30.000	3620.000	241.000	2.539	132.313	346.026	21.625	7480.000	49.700	-67.823	3371.635	0	
			e	241.000	31.200	3741.804	241.000	30.000	3620.000	241.000	2.536	132.298	346.011	21.624	7480.000	49.700	-67.921	3374.799	0	
			f	241.000	31.200	3742.047	241.000	30.000	3620.000	241.000	2.534	132.381	346.006	21.624	7480.000	49.700	-67.767	3368.806	0	
			e	241.000	31.200	3741.149	241.000	30.000	3620.000	241.000	2.533	132.149	346.007	21.624	7480.000	49.700	-67.764	3368.830	0	
			f	241.000	31.200	3742.739	241.000	30.000	3620.000	241.000	2.535	132.579	346.017	21.624	7480.000	49.700	-67.784	3369.643	0	
Note:																				

(6) ESS external export current limit = $33 \pm 5\%$, PV inputs = $50\% \pm 5\%$ - (If support)

(6-1) 203.5 test

203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
1	100%	100%	d	241.740	85.305	10290.346	241.740	92.810	11172.917	241.740	7.803	-901.184	360.920	20.962	7565.703	47.584	69.432	3303.457	--	
			e	242.310	85.159	10280.163	242.310	0.000	0.000	242.310	85.160	10261.535	360.938	20.961	7565.474	47.584	69.218	3293.303	1.000	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
2			f	241.771	85.110	10267.454	241.771	88.675	10673.888	241.771	13.051	-244.839	360.942	20.959	7565.024	47.582	69.224	3293.441	1.000	
			e	242.312	85.099	10273.076	242.312	0.000	0.000	242.312	85.110	10256.963	360.917	20.958	7564.021	47.580	69.196	3291.948	1.000	
			f	241.759	85.198	10277.894	241.759	91.720	11039.820	241.759	10.491	-566.684	360.970	20.956	7564.587	47.576	69.391	3300.970	1.000	
			e	242.312	85.086	10271.870	242.312	0.000	0.000	242.312	85.100	10256.082	360.894	20.955	7562.504	47.575	69.380	3300.326	1.000	
			f	241.748	85.144	10271.027	241.748	92.870	11179.298	241.748	8.002	-928.394	360.919	20.954	7562.628	47.573	69.346	3298.604	1.000	
		66%	d	242.000	85.158	10276.491	242.000	61.836	7451.754	242.000	23.397	2802.531	360.912	20.900	7563.885	47.600	69.436	3301.303	--	
			e	242.000	85.157	10277.169	242.000	0.000	0.000	242.000	85.166	10260.254	360.877	20.900	7562.051	47.600	69.436	3300.000	1.000	
			f	242.000	85.158	10276.112	242.000	62.036	7474.168	242.000	23.187	2779.121	360.846	20.900	7559.734	47.600	69.287	3295.566	1.000	
			e	242.000	85.181	10288.921	242.000	0.000	0.000	242.000	85.181	10267.085	360.855	20.900	7558.213	47.600	69.215	3291.063	1.000	
			f	242.000	85.140	10275.707	242.000	62.092	7481.231	242.000	23.145	2772.812	360.884	20.900	7556.639	47.600	69.284	3294.676	1.000	
			e	242.000	85.140	10275.461	242.000	0.000	0.000	242.000	85.149	10257.905	360.873	20.900	7556.733	47.600	69.310	3292.918	1.000	
			f	242.000	85.106	10272.525	242.000	62.088	7481.598	242.000	23.087	2767.332	360.815	20.900	7556.405	47.600	69.373	3300.000	1.000	
3		33%	d	242.000	85.023	10275.815	242.000	30.200	3640.000	242.000	54.963	6616.190	360.875	20.900	7557.406	47.600	69.383	3300.000	--	
			e	242.000	85.120	10274.918	242.000	0.000	0.000	242.000	85.134	10255.862	360.819	20.900	7556.370	47.600	69.291	3296.588	1.000	
			f	242.000	85.159	10285.939	242.000	30.335	3661.358	242.000	54.849	6604.341	360.916	20.900	7557.430	47.600	69.259	3293.009	1.000	
			e	242.000	85.169	10278.068	242.000	0.000	0.000	242.000	85.177	10262.222	360.928	20.900	7558.148	47.600	69.289	3295.266	1.000	
			f	242.000	85.147	10276.872	242.000	30.367	3665.458	242.000	54.769	6594.676	360.844	20.900	7557.205	47.600	69.350	3295.740	1.000	
			e	242.000	85.163	10277.656	242.000	0.000	0.000	242.000	85.169	10260.948	360.930	20.900	7557.681	47.600	69.421	3300.000	1.000	
			f	242.000	85.153	10277.404	242.000	30.334	3660.399	242.000	54.819	6600.656	360.899	20.900	7557.903	47.600	69.381	3300.000	1.000	

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203.5 Step Change in Load Test																					
Excel file	EUT output limit	Load level	Ste P	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operatin g Mode	
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)			
4	50%	100%	d	241.000	47.864	5774.386	241.000	92.661	11156.015	241.000	44.844	-5403.985	358.875	20.820	7460.000	49.200	28.039	1378.835	--		
			e	242.000	48.091	5753.539	242.000	0.000	0.000	242.000	48.000	5739.782	358.897	20.818	7460.000	49.200	28.435	1399.093	1.000		
			f	241.000	47.859	5771.551	241.000	93.365	11240.737	241.000	45.541	-5486.820	358.931	20.813	7460.000	49.200	28.038	1378.710	1.000		
			e	242.000	48.075	5751.723	242.000	0.000	0.000	242.000	48.054	5750.113	358.923	20.814	7460.000	49.200	28.303	1391.884	1.000		
			f	241.102	47.856	5772.564	241.102	93.465	11252.368	241.102	45.596	-5494.442	358.937	20.811	7460.000	49.200	28.149	1384.305	1.000		
			e	242.043	48.087	5752.023	242.043	0.000	0.000	242.043	48.002	5740.342	358.920	20.816	7460.000	49.200	28.407	1397.407	1.000		
			f	241.021	47.862	5772.011	241.021	93.366	11240.086	241.021	45.514	-5484.822	358.933	20.813	7460.000	49.200	27.966	1374.893	1.000		
5		66%	d	241.899	47.821	5771.694	241.899	61.898	7456.076	241.899	14.197	-1688.227	358.918	20.816	7460.000	49.200	28.155	1384.497	--		
			e	242.000	48.061	5749.909	242.000	0.000	0.000	242.000	48.002	5740.073	358.931	20.813	7460.000	49.200	28.303	1392.196	1.000		
			f	242.000	47.812	5771.705	242.000	62.153	7488.018	242.000	14.492	-1727.982	358.939	20.810	7460.000	49.200	28.016	1377.942	1.000		
			e	242.074	48.061	5751.047	242.074	0.000	0.000	242.074	48.000	5739.742	358.942	20.810	7460.000	49.200	28.446	1399.227	1.000		
			f	242.000	47.814	5770.739	242.000	62.194	7496.008	242.000	14.527	-1728.220	358.938	20.812	7460.000	49.200	28.101	1381.717	1.000		
			e	242.000	48.065	5750.598	242.000	0.000	0.000	242.000	48.000	5739.430	358.940	20.812	7460.000	49.200	28.272	1390.228	1.000		

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste P	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	241.899	47.816	5772.011	241.899	62.152	7489.330	241.899	14.477	-1722.340	358.964	20.815	7460.000	49.200	28.161	1384.551	1.000	
6		33%	d	241.989	47.799	5761.404	241.989	30.200	3640.376	241.989	17.729	2107.168	358.956	20.819	7460.000	49.200	28.135	1383.133	--	
			e	242.000	48.060	5750.163	242.000	0.000	0.000	242.000	48.003	5740.290	358.964	20.818	7460.000	49.200	28.422	1397.586	1.000	
			f	242.000	47.801	5761.811	242.000	30.436	3668.069	242.000	17.545	2083.036	358.959	20.819	7460.000	49.200	28.282	1390.479	1.000	
			e	242.047	48.072	5751.659	242.047	0.000	0.000	242.047	48.001	5740.064	358.957	20.819	7460.000	49.200	28.276	1390.789	1.000	
			f	242.000	47.800	5762.429	242.000	30.447	3671.048	242.000	17.528	2080.732	358.948	20.821	7460.000	49.200	28.217	1387.371	1.000	
			e	242.000	48.080	5752.650	242.000	0.000	0.000	242.000	48.003	5740.228	358.957	20.823	7460.000	49.200	28.436	1399.430	1.000	
f	241.959	47.800	5761.255	241.959	30.452	3670.100	241.959	17.535	2083.538	358.943	20.822	7460.000	49.200	28.099	1381.569	1.000				
7	0%	100%	d	241.000	1.884	-50.850	241.000	92.636	11130.280	241.000	93.083	11174.807	360.000	9.669	3483.755	48.900	66.874	3270.000	--	
			e	241.000	1.962	-44.000	241.000	0.000	0.000	241.000	2.153	-46.596	360.000	9.693	3490.000	48.900	66.817	3270.000	1.000	
			f	241.000	1.871	-50.186	241.000	93.031	11177.390	241.000	93.461	11220.107	360.000	9.656	3476.605	48.901	66.799	3270.000	1.000	
			e	241.000	1.954	-44.612	241.000	0.000	0.000	241.000	2.121	-42.195	360.000	9.662	3480.000	48.917	66.805	3270.000	1.000	
			f	241.000	1.857	-51.035	241.000	93.127	11187.754	241.000	93.550	11230.483	360.000	9.651	3476.822	48.978	66.842	3270.000	1.000	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste P	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (30 s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
8			e	241.00 0	1.933	-44.849	241.00 0	0.000	0.000	241.00 0	2.106	-42.551	360.00 0	9.679	3483.39 0	48.96 0	66.89 7	3270.00 0	1.000	
			f	241.00 0	1.871	-50.434	241.00 0	93.11 9	11187.6 18	241.00 0	93.54 7	-11230.72 8	360.00 0	9.672	3480.85 6	48.98 8	66.80 7	3270.00 0	1.000	
		66%	d	241.00 0	1.804	-50.000	241.00 0	61.69 4	7417.71 8	241.00 0	62.12 4	-7464.698	360.00 0	9.644	3470.26 8	48.98 0	66.79 5	3270.00 0	--	
			e	241.00 0	1.927	-45.165	241.00 0	0.000	0.000	241.00 0	2.102	-47.317	360.00 0	9.664	3480.00 0	48.99 0	66.80 5	3270.00 0	1.000	
			f	241.00 0	1.793	-50.000	241.00 0	61.95 5	7448.81 7	241.00 0	62.37 5	-7494.931	360.00 0	9.655	3480.00 0	48.99 8	66.80 0	3270.00 0	1.000	
			e	241.00 0	1.929	-44.841	241.00 0	0.000	0.000	241.00 0	2.100	-45.490	360.00 0	9.690	3490.00 0	48.99 3	66.80 2	3270.00 0	1.000	
			f	241.00 0	1.795	-50.000	241.00 0	61.99 2	7455.48 9	241.00 0	62.41 2	-7500.200	360.00 0	9.666	3478.96 2	48.99 5	66.78 8	3270.00 0	1.000	
			e	241.00 0	1.921	-45.886	241.00 0	0.000	0.000	241.00 0	2.119	-45.296	360.00 0	9.659	3480.00 0	48.99 8	66.79 9	3270.00 0	1.000	
			f	241.00 0	1.784	-49.943	241.00 0	61.94 2	7447.67 5	241.00 0	62.37 3	-7494.636	360.00 0	9.654	3479.04 4	48.99 6	66.83 6	3270.00 0	1.000	
		33%	d	241.00 0	1.768	-48.000	241.00 0	30.12 8	3620.00 0	241.00 0	30.60 0	-3671.955	360.00 0	9.683	3487.74 4	48.98 8	66.82 3	3270.00 0	--	
e	241.00 0		1.936	-44.570	241.00 0	0.000	0.000	241.00 0	2.121	-42.687	360.00 0	9.684	3487.09 6	48.99 5	66.82 4	3270.00 0	1.000			
f	241.00 0		1.757	-48.000	241.00 0	30.30 2	3648.35 6	241.00 0	30.76 3	-3694.439	360.00 0	9.648	3474.43 9	48.99 8	66.79 9	3270.00 0	1.000			
e	241.00 0		1.912	-45.578	241.00 0	0.000	0.000	241.00 0	2.103	-43.258	360.00 0	9.665	3480.00 0	49.00 0	66.83 4	3270.00 0	1.000			

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	241.000	1.757	-48.000	241.000	30.327	3650.339	241.000	30.793	-3696.926	360.000	9.668	3483.034	49.000	66.809	3270.000	1.000	
			e	241.000	1.928	-44.695	241.000	0.000	0.000	241.000	2.059	-44.342	360.000	9.687	3490.000	49.000	66.804	3270.000	1.000	
			f	241.000	1.765	-48.000	241.000	30.302	3648.445	241.000	30.752	-3693.524	360.000	9.654	3476.020	49.000	66.793	3270.000	1.000	
Note:																				

(6-2) 203.6 test

203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generatio n level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
1	100%	5%-10%	d	241.075	84.800	10219.549	241.075	30.073	3620.000	241.075	54.763	6569.499	350.645	21.385	7490.000	47.800	69.457	3320.000	--	
			e	241.000	34.800	4180.000	241.000	30.000	3619.855	241.000	5.315	570.000	299.688	3.992	1200.000	47.800	69.442	3320.000	2.100	
			f	241.802	84.757	10210.173	241.802	30.000	3620.000	241.802	54.692	6567.217	339.921	22.056	7486.458	47.800	69.442	3320.000	2.200	
			e	241.000	34.800	4180.000	241.000	30.000	3616.812	241.000	5.320	569.903	300.000	3.990	1200.000	47.800	69.400	3320.000	2.100	
			f	241.201	84.800	10219.372	241.201	30.000	3620.000	241.201	54.800	6577.632	347.904	21.529	7489.971	47.800	69.412	3319.957	2.200	
			e	241.000	34.984	4198.403	241.000	30.000	3616.647	241.000	5.399	580.323	299.952	3.990	1200.000	47.800	69.500	3320.000	2.100	
			f	241.203	84.800	10219.315	241.203	30.000	3620.000	241.203	54.796	6571.783	352.863	21.228	7490.000	47.800	69.437	3320.000	2.200	
2		33%-66%	d	241.198	84.798	10208.467	241.198	30.000	3620.000	241.198	54.646	6560.118	347.828	21.532	7489.175	47.800	69.485	3320.000	--	
			e	241.201	84.665	10200.171	241.201	30.000	3620.000	241.201	54.603	6560.143	347.672	21.541	7489.601	47.800	69.400	3320.000	0	
			f	241.097	84.643	10200.000	241.097	30.000	3620.000	241.097	54.600	6560.000	347.705	21.538	7488.976	47.800	69.400	3320.000	0	

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generation level (PV)	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
3	66%	5%-10%	e	241.80 0	84.70 4	10200.19 3	241.80 0	30.00 0	3620.00 0	241.80 0	54.60 0	6560.00 0	347.64 4	21.54 7	7489.42 0	47.80 0	69.40 0	3320.00 0	0	
			f	241.80 0	84.78 7	10203.79 5	241.80 0	30.00 0	3620.00 0	241.80 0	54.60 0	6560.00 0	347.74 6	21.53 9	7488.80 2	47.80 0	69.40 0	3320.00 0	0	
			e	241.47 0	84.79 5	10206.66 7	241.47 0	30.00 0	3620.00 0	241.47 0	54.60 1	6560.00 0	347.63 6	21.54 7	7487.21 7	47.80 0	69.40 0	3320.00 0	0	
			f	241.20 1	84.80 0	10215.40 7	241.20 1	30.00 0	3620.00 0	241.20 1	54.63 9	6560.00 0	347.61 9	21.54 8	7487.26 1	47.80 0	69.40 7	3320.00 0	0	
			d	241.00 0	63.12 2	7582.335	241.00 0	30.00 0	3600.11 8	241.00 0	33.09 3	3960.80 2	361.39 5	20.64 7	7460.00 0	48.50 0	9.795	474.896	--	
			e	240.05 2	34.43 1	4139.936	240.05 2	30.00 0	3600.00 0	240.05 2	4.972	529.288	299.98 7	3.906	1170.00 0	47.90 0	67.95 5	3252.09 3	2.100	
			f	241.00 0	63.10 6	7580.849	241.00 0	30.00 0	3600.00 0	241.00 0	33.08 7	3960.25 0	350.99 1	21.27 4	7460.00 0	48.50 0	9.791	474.637	2.200	
			e	240.05 2	34.43 1	4139.936	240.05 2	30.00 0	3600.00 0	240.05 2	4.972	529.288	299.98 7	3.906	1170.00 0	47.90 0	67.95 5	3252.09 3	2.100	
4	66%	33%-66%	f	241.00 0	63.08 6	7579.829	241.00 0	30.00 0	3600.00 0	241.00 0	33.04 7	3960.00 0	333.00 4	22.40 2	7460.10 0	48.50 0	10.06 0	487.676	2.200	
			e	240.09 7	34.40 0	4120.057	240.09 7	30.00 0	3600.00 0	240.09 7	4.890	519.247	300.02 3	3.904	1170.00 0	47.90 0	67.89 7	3250.14 3	2.100	
			f	241.00 0	63.08 9	7580.371	241.00 0	30.00 0	3600.00 0	241.00 0	33.11 6	3967.78 9	337.62 9	22.09 7	7460.02 9	48.50 0	9.802	475.234	2.200	
			d	241.00 0	63.05 0	7586.509	241.00 0	30.00 0	3620.00 0	241.00 0	33.04 7	3950.49 5	358.31 1	20.90 4	7489.03 3	48.40 2	9.913	479.529	--	
			e	241.00 0	62.55 8	7527.675	241.00 0	30.00 0	3620.00 0	241.00 0	32.57 0	3892.78 2	360.16 4	20.80 0	7489.40 1	48.41 4	8.774	424.434	0	
			f	241.00 0	63.08 6	7593.483	241.00 0	30.00 0	3620.00 0	241.00 0	33.07 1	3959.50 1	359.12 4	20.86 0	7488.51 4	48.40 0	10.24 4	495.558	0	
			e	241.00 0	62.51 8	7521.546	241.00 0	30.00 0	3620.00 0	241.00 0	32.50 8	3886.05 5	360.51 2	20.78 1	7488.90 5	48.41 5	8.707	421.115	0	
			f	241.00 0	62.03 9	7463.680	241.00 0	30.00 0	3620.00 0	241.00 0	32.03 5	3829.04 4	360.03 0	20.80 6	7487.74 6	48.42 7	7.355	355.887	0	
			e	241.00 0	63.12 2	7595.663	241.00 0	30.00 0	3620.00 0	241.00 0	33.11 8	3959.28 7	360.57 6	20.77 9	7488.14 6	48.40 0	10.01 3	484.365	0	
			f	241.00 0	63.14 5	7597.461	241.00 0	30.00 0	3620.00 0	241.00 0	33.12 4	3959.42 9	361.45 8	20.72 9	7489.08 7	48.40 0	10.28 0	497.589	0	

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203.6 Step Change in Generation Test																					
Load level: 33%																					
Excel file	EUT output limit	Generatio n level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode	
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)			
5	33%	5%-10%	d	241.00 0	31.60 0	3800.024	241.00 0	30.20 0	3640.00 0	241.00 0	2.677	159.956	359.98 6	20.95 7	7439.54 0	48.20 0	- 67.99 6	- 3274.15 1	--		
			e	241.00 0	31.00 1	3739.829	241.00 0	30.20 0	3640.00 0	241.00 0	2.261	96.300	301.92 2	3.892	1173.12 4	46.90 0	60.20 2	2822.21 1	2.100		
			f	241.00 0	31.60 0	3800.000	241.00 0	30.20 0	3640.00 0	241.00 0	2.667	159.443	360.00 0	20.96 4	7441.49 8	48.20 0	- 68.06 2	- 3279.46 3	2.200		
			e	241.10 0	31.02 4	3740.000	241.10 0	30.20 0	3640.00 0	241.10 0	2.259	99.387	292.54 8	4.020	1175.37 8	46.90 0	60.23 2	2824.63 8	2.100		
			f	241.10 0	31.60 0	3800.000	241.10 0	30.20 0	3640.00 0	241.10 0	2.659	158.243	360.00 0	20.95 3	7439.15 8	48.20 0	- 68.00 7	- 3279.15 8	2.200		
			e	241.10 0	30.83 1	3709.003	241.10 0	30.20 0	3640.03 1	241.10 0	2.492	71.199	282.93 9	4.179	1183.68 7	46.90 8	59.49 0	2790.93 7	2.100		
			f	241.00 0	31.59 1	3799.116	241.00 0	30.20 0	3640.00 0	241.00 0	2.643	155.533	359.88 9	20.96 4	7440.97 0	48.20 0	- 68.09 7	- 3279.85 7	2.200		
6		33%-66%	d	241.00 0	31.40 0	3760.094	241.00 0	30.00 0	3617.05 2	241.00 0	2.685	151.280	354.66 4	20.80 0	7335.04 7	49.20 0	- 66.83 1	- 3287.57 1	--		
			e	241.00 0	31.40 0	3760.114	241.00 0	30.00 0	3618.34 5	241.00 0	2.681	151.123	351.34 7	21.22 2	7425.82 0	49.20 0	- 66.80 0	- 3280.21 4	0		
			f	241.00 0	31.40 0	3760.100	241.00 0	30.00 0	3618.17 7	241.00 0	2.682	150.985	350.92 6	21.14 3	7387.46 6	49.20 0	- 66.81 9	- 3284.04 5	0		
			e	241.00 0	31.40 0	3761.417	241.00 0	30.00 0	3618.26 1	241.00 0	2.693	152.972	360.53 6	20.21 6	7236.65 1	49.20 0	- 66.82 0	- 3285.25 0	0		
			f	241.00 0	31.40 0	3760.409	241.00 0	30.00 0	3619.26 9	241.00 0	2.686	151.600	358.20 8	20.38 3	7249.99 5	49.20 0	- 66.83 7	- 3288.15 8	0		
			e	241.00 0	31.40 0	3760.553	241.00 0	30.00 0	3619.55 3	241.00 0	2.691	152.142	361.31 6	20.00 6	7172.12 8	49.20 0	- 66.83 9	- 3288.30 9	0		

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generation level (PV)	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	241.00 0	31.40 0	3760.342	241.00 0	30.00 0	3619.20 1	241.00 0	2.682	151.216	355.10 6	20.73 7	7320.28 5	49.20 0	- 66.82 1	- 3287.88 9	0	
Note:																				

(7) ESS external export current limit = 0% to +5%, PV inputs = 0% + 5%

(7-1) 203.5 test

203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
1	100%	100%	d	241.00 0	1.43 4	- 63.489	241.00 0	92.77 3	11145.61 4	241.00 0	93.29 6	- 11205.188	360.00 0	- 0.112	- 40.000	47.70 0	0.48 4	23.17 5	--	
			e	241.00 0	1.60 5	- 65.027	241.00 0	0.000	0.000	241.00 0	1.907	-63.315	360.00 0	- 0.111	- 40.000	47.70 0	0.48 4	23.13 4	1.000	
			f	241.00 0	1.43 4	- 63.103	241.00 0	92.73 8	11143.14 2	241.00 0	93.26 6	- 11200.346	360.00 0	- 0.111	- 40.000	47.70 0	0.48 4	23.19 4	1.000	
			e	241.00 0	1.61 2	- 64.873	241.00 0	0.000	0.000	241.00 0	1.905	-64.413	360.00 0	- 0.110	- 40.000	47.70 0	0.48 4	23.16 7	1.000	
			f	241.00 0	1.44 1	- 63.607	241.00 0	92.80 4	11152.04 7	241.00 0	93.33 4	- 11208.586	360.00 0	- 0.110	- 40.000	47.70 0	0.48 4	23.19 1	1.000	
			e	241.00 0	1.60 9	- 65.067	241.00 0	0.000	0.000	241.00 0	1.905	-66.544	360.00 0	- 0.110	- 39.840	47.70 0	0.48 4	23.15 0	1.000	
			f	241.00 0	1.44 8	- 63.869	241.00 0	92.79 9	11151.12 7	241.00 0	93.33 5	- 11208.531	360.00 0	- 0.110	- 39.384	47.70 0	0.48 4	23.18 8	1.000	
2	66%	d	241.00 0	1.42 7	- 63.637	241.00 0	61.68 4	7417.544	241.00 0	62.22 4	-7478.396	360.00 0	- 0.109	- 39.000	47.70 0	0.48 4	23.19 4	--		
		e	241.00 0	1.61 2	- 64.969	241.00 0	0.000	0.000	241.00 0	1.913	-64.322	360.00 0	- 0.108	- 39.000	47.70 0	0.48 4	23.17 2	1.000		
		f	241.00 0	1.42 6	- 63.800	241.00 0	61.78 7	7430.439	241.00 0	62.34 0	-7491.718	360.00 0	- 0.108	- 39.000	47.70 0	0.48 4	23.19 4	1.000		
		e	241.00 0	1.61 1	- 64.995	241.00 0	0.000	0.000	241.00 0	1.905	-65.542	360.00 0	- 0.108	- 39.000	47.70 0	0.48 4	23.17 6	1.000		

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
3			f	241.00 0	1.41 9	- 63.168	241.00 0	61.84 8	7438.403	241.00 0	62.38 5	-7499.368	360.00 0	- 0.107	- 39.000	47.70 0	0.48 4	23.18 8	1.000	
			e	241.00 0	1.59 8	- 64.544	241.00 0	0.000	0.000	241.00 0	1.901	-63.741	360.00 0	- 0.107	- 38.925	47.70 0	0.48 4	23.17 1	1.000	
			f	241.00 0	1.41 3	- 63.281	241.00 0	61.83 5	7436.262	241.00 0	62.37 5	-7497.775	360.00 0	- 0.107	- 38.311	47.70 0	0.48 4	23.18 8	1.000	
		33%	d	241.00 0	1.43 9	- 63.479	241.00 0	29.80 0	3599.749	241.00 0	30.40 1	-3656.316	360.00 0	- 0.106	- 38.000	47.70 0	0.48 4	23.19 0	--	
			e	241.00 0	1.59 3	- 64.287	241.00 0	0.000	0.000	241.00 0	1.895	-63.815	360.00 0	- 0.106	- 38.000	47.70 0	0.48 5	23.19 5	1.000	
			f	241.00 0	1.44 1	- 63.340	241.00 0	30.00 0	3609.294	241.00 0	30.56 5	-3671.611	360.00 0	- 0.105	- 38.000	47.70 0	0.48 5	23.20 0	1.000	
			e	241.00 0	1.59 6	- 64.831	241.00 0	0.000	0.000	241.00 0	1.901	-66.411	360.00 0	- 0.105	- 38.000	47.70 0	0.48 5	23.19 6	1.000	
			f	241.00 0	1.43 6	- 62.882	241.00 0	30.00 0	3611.181	241.00 0	30.58 3	-3673.012	360.00 0	- 0.105	- 38.000	47.70 0	0.48 5	23.20 6	1.000	
			e	241.00 0	1.58 9	- 64.534	241.00 0	0.000	0.000	241.00 0	1.904	-63.889	360.00 0	- 0.104	- 38.000	47.70 0	0.48 5	23.20 0	1.000	
			f	241.00 0	1.43 4	- 63.398	241.00 0	30.01 8	3612.325	241.00 0	30.58 9	-3675.292	360.00 0	- 0.104	- 37.702	47.70 0	0.48 5	23.21 7	1.000	
4	50%	100%	d	241.00 0	1.41 9	- 62.772	241.00 0	92.28 8	11088.59 6	241.00 0	92.79 8	- 11145.288	360.00 0	- 0.104	- 37.000	47.70 0	0.48 5	23.21 2	--	
			e	241.00 0	1.59 4	- 64.574	241.00 0	0.000	0.000	241.00 0	1.899	-65.938	360.00 0	- 0.103	- 37.000	47.70 0	0.48 5	23.20 2	1.000	
			f	241.00 0	1.41 2	- 62.737	241.00 0	92.79 0	11150.10 8	241.00 0	93.31 6	- 11207.281	360.00 0	- 0.103	- 37.000	47.70 0	0.48 6	23.23 6	1.000	
			e	241.00 0	1.58 7	- 64.548	241.00 0	0.000	0.000	241.00 0	1.899	-62.790	360.00 0	- 0.103	- 37.000	47.70 0	0.48 5	23.20 4	1.000	
			f	241.00 0	1.42 5	- 63.491	241.00 0	92.87 0	11159.06 1	241.00 0	93.39 7	- 11216.477	360.00 0	- 0.102	- 37.000	47.70 0	0.48 5	23.21 0	1.000	
			e	241.00 0	1.59 0	- 64.171	241.00 0	0.000	0.000	241.00 0	1.900	-62.481	360.00 0	- 0.102	- 37.000	47.70 0	0.48 5	23.19 9	1.000	
			f	241.00 0	1.41 5	- 62.924	241.00 0	92.79 8	11151.98 3	241.00 0	93.33 1	- 11208.274	360.00 0	- 0.102	- 37.000	47.70 0	0.48 5	23.20 4	1.000	
			5	66%	d	241.00 0	1.39 0	- 62.660	241.00 0	61.62 1	7412.739	241.00 0	62.15 4	-7471.745	360.00 0	- 0.102	- 36.962	47.70 0	0.48 5	
e	241.00 0	1.57 9			- 64.036	241.00 0	0.000	0.000	241.00 0	1.896	-64.611	360.00 0	- 0.102	- 37.000	47.70 0	0.48 5	23.20 1	1.000		

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
6			f	241.00 0	1.39 7	- 63.238	241.00 0	61.81 3	7435.238	241.00 0	62.36 2	-7495.484	360.00 0	- 0.101	- 36.558	47.70 0	0.48 5	23.21 3	1.000	
			e	241.00 0	1.58 3	- 64.039	241.00 0	0.000	0.000	241.00 0	1.902	-63.448	360.00 0	- 0.101	- 36.369	47.70 0	0.48 5	23.20 2	1.000	
			f	241.00 0	1.39 8	- 63.525	241.00 0	61.88 3	7441.517	241.00 0	62.42 2	-7502.555	360.00 0	- 0.101	- 36.040	47.70 0	0.48 5	23.21 2	1.000	
			e	241.00 0	1.58 8	- 64.889	241.00 0	0.000	0.000	241.00 0	1.897	-64.977	360.00 0	- 0.101	- 36.000	47.70 0	0.48 6	23.20 9	1.000	
			f	241.00 0	1.39 2	- 63.330	241.00 0	61.84 2	7438.317	241.00 0	62.38 4	-7498.688	360.00 0	- 0.101	- 36.000	47.70 0	0.48 6	23.24 5	1.000	
			d	241.00 0	1.42 1	- 63.822	241.00 0	29.80 0	3600.000	241.00 0	30.40 1	-3657.268	360.00 0	- 0.100	- 36.000	47.70 0	0.48 6	23.23 4	--	
		33%	e	241.00 0	1.57 5	- 64.319	241.00 0	0.000	0.000	241.00 0	1.897	-63.213	360.00 0	- 0.100	- 36.000	47.70 0	0.48 6	23.21 4	1.000	
			f	241.00 0	1.41 8	- 63.294	241.00 0	29.99 9	3608.948	241.00 0	30.55 7	-3670.413	360.00 0	- 0.100	- 36.000	47.70 0	0.48 5	23.21 8	1.000	
			e	241.00 0	1.57 1	- 64.454	241.00 0	0.000	0.000	241.00 0	1.893	-62.944	360.00 0	- 0.100	- 36.000	47.70 0	0.48 6	23.21 1	1.000	
			f	241.00 0	1.41 1	- 63.092	241.00 0	30.00 0	3612.080	241.00 0	30.58 6	-3674.975	360.00 0	- 0.100	- 36.000	47.70 0	0.48 6	23.23 5	1.000	
			e	241.00 0	1.57 0	- 64.330	241.00 0	0.000	0.000	241.00 0	1.890	-65.803	360.00 0	- 0.099	- 36.000	47.70 0	0.48 6	23.22 6	1.000	
			f	241.00 0	1.41 2	- 63.096	241.00 0	30.02 0	3612.268	241.00 0	30.58 8	-3674.180	360.00 0	- 0.099	- 36.000	47.70 0	0.48 6	23.24 2	1.000	
	7	0%	100%	d	241.00 0	1.34 4	- 62.487	241.00 0	92.16 7	11075.36 6	241.00 0	92.70 8	- 11133.023	360.00 0	- 0.111	- 40.000	47.70 0	0.48 4	23.14 0	
e				241.00 0	1.50 4	- 63.074	241.00 0	0.000	0.000	241.00 0	1.810	-64.151	360.00 0	- 0.111	- 40.000	47.70 0	0.48 3	23.10 9	1.000	
f				241.00 0	1.34 0	- 62.293	241.00 0	92.67 5	11135.34 0	241.00 0	93.18 6	- 11191.478	360.00 0	- 0.111	- 40.000	47.70 0	0.48 3	23.12 6	1.000	
e				241.00 0	1.50 8	- 63.002	241.00 0	0.000	0.000	241.00 0	1.818	-63.160	360.00 0	- 0.111	- 40.000	47.70 0	0.48 3	23.10 8	1.000	
f				241.00 0	1.33 1	- 61.993	241.00 0	92.77 4	11147.48 8	241.00 0	93.29 2	- 11203.661	360.00 0	- 0.111	- 40.000	47.70 0	0.48 4	23.13 4	1.000	
e				241.00 0	1.49 3	- 62.627	241.00 0	0.000	0.000	241.00 0	1.808	-62.738	360.00 0	- 0.111	- 40.000	47.70 0	0.48 4	23.11 5	1.000	
f				241.00 0	1.33 5	- 62.000	241.00 0	92.75 7	11145.62 1	241.00 0	93.27 6	- 11201.797	360.00 0	- 0.112	- 40.000	47.70 0	0.48 3	23.12 5	1.000	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
8		66%	d	241.00 0	1.32 5	- 62.365	241.00 0	61.60 4	7409.450	241.00 0	62.13 4	-7468.725	360.00 0	- 0.112	- 40.000	47.70 0	0.48 4	23.14 8	--	
			e	241.00 0	1.49 6	- 62.907	241.00 0	0.000	0.000	241.00 0	1.807	-61.295	360.00 0	- 0.112	- 40.000	47.70 0	0.48 4	23.11 9	1.000	
			f	241.00 0	1.32 7	- 62.344	241.00 0	61.81 1	7435.177	241.00 0	62.35 9	-7494.747	360.00 0	- 0.112	- 40.000	47.70 0	0.48 4	23.15 3	1.000	
			e	241.00 0	1.48 8	- 62.924	241.00 0	0.000	0.000	241.00 0	1.802	-60.839	360.00 0	- 0.112	- 40.000	47.70 0	0.48 4	23.13 9	1.000	
			f	241.00 0	1.31 2	- 61.956	241.00 0	61.87 7	7441.158	241.00 0	62.40 8	-7500.599	360.00 0	- 0.112	- 40.020	47.70 0	0.48 4	23.15 8	1.000	
			e	241.00 0	1.48 1	- 62.872	241.00 0	0.000	0.000	241.00 0	1.796	-62.443	360.00 0	- 0.112	- 40.000	47.70 0	0.48 4	23.15 6	1.000	
			f	241.00 0	1.30 7	- 62.830	241.00 0	61.85 2	7438.887	241.00 0	62.38 4	-7499.258	360.00 0	- 0.112	- 40.086	47.70 0	0.48 4	23.15 1	1.000	
9		33%	d	241.00 0	1.36 7	- 63.003	241.00 0	29.80 0	3597.544	241.00 0	30.40 1	-3656.316	360.00 0	- 0.112	- 40.064	47.70 0	0.48 4	23.14 7	--	
			e	241.00 0	1.47 6	- 63.122	241.00 0	0.000	0.000	241.00 0	1.804	-63.091	360.00 0	- 0.112	- 40.054	47.70 0	0.48 4	23.11 4	1.000	
			f	241.00 0	1.36 7	- 62.955	241.00 0	30.00 0	3609.831	241.00 0	30.55 9	-3671.828	360.00 0	- 0.112	- 40.232	47.70 0	0.48 4	23.15 9	1.000	
			e	241.00 0	1.47 3	- 63.024	241.00 0	0.000	0.000	241.00 0	1.800	-62.840	360.00 0	- 0.112	- 40.209	47.70 0	0.48 4	23.16 1	1.000	
			f	241.00 0	1.36 5	- 62.874	241.00 0	30.00 0	3614.611	241.00 0	30.59 7	-3676.088	360.00 0	- 0.112	- 40.000	47.70 0	0.48 4	23.18 3	1.000	
			e	241.00 0	1.47 3	- 62.991	241.00 0	0.000	0.000	241.00 0	1.794	-63.846	360.00 0	- 0.112	- 40.000	47.70 0	0.48 4	23.16 5	1.000	
			f	241.00 0	1.36 4	- 62.805	241.00 0	30.01 0	3611.213	241.00 0	30.57 7	-3672.782	360.00 0	- 0.112	- 40.000	47.70 0	0.48 4	23.19 2	1.000	
Note:																				

(7-2) 203.6 test

203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generation level (PV)	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
1	100%	5%-10%	d	241.00 0	1.47 3	- 65.075	241.00 0	29.93 0	3600.00 0	241.00 0	30.51 0	- 3664.211	360.00 0	- 0.112	- 40.000	47.70 0	0.48 4	23.17 6	--	

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generatio n level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (≤30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
2			e	241.00 0	1.46 0	- 63.419	241.00 0	29.80 0	3600.00 0	241.00 0	30.40 1	- 3658.548	360.00 0	- 0.112	- 40.000	47.70 0	0.48 4	23.15 7	0	
			f	241.00 0	1.45 3	- 63.305	241.00 0	29.80 0	3600.00 0	241.00 0	30.40 1	- 3656.591	360.00 0	- 0.111	- 40.000	47.70 0	0.48 4	23.13 6	0	
			e	241.00 0	1.46 5	- 64.110	241.00 0	29.80 0	3600.00 0	241.00 0	30.40 3	- 3657.295	360.00 0	- 0.111	- 40.000	47.70 0	0.48 3	23.12 0	0	
			f	241.00 0	1.45 9	- 63.675	241.00 0	29.80 0	3600.00 0	241.00 0	30.40 1	- 3656.890	360.00 0	- 0.111	- 40.000	47.70 0	0.48 3	23.11 4	0	
			e	241.00 0	1.46 8	- 64.683	241.00 0	29.80 0	3600.00 0	241.00 0	30.40 5	- 3656.327	360.00 0	- 0.111	- 40.000	47.70 0	0.48 3	23.10 2	0	
			f	241.00 0	1.46 3	- 63.800	241.00 0	29.80 0	3600.00 0	241.00 0	30.40 0	- 3657.090	360.00 0	- 0.111	- 40.000	47.70 0	0.48 3	23.10 2	0	
		33%-66%	d	241.00 0	1.46 8	- 63.432	241.00 0	29.80 0	3600.00 0	241.00 0	30.40 1	- 3656.344	360.00 0	- 0.111	- 40.000	47.70 0	0.48 2	23.09 9	--	
			e	241.00 0	1.47 1	- 63.090	241.00 0	29.80 0	3600.00 0	241.00 0	30.40 1	- 3655.949	360.00 0	- 0.111	- 40.000	47.70 0	0.48 2	23.09 8	0	
			f	241.00 0	1.47 8	- 63.001	241.00 0	29.80 0	3600.00 0	241.00 0	30.40 1	- 3655.206	360.00 0	- 0.110	- 40.000	47.70 0	0.48 2	23.09 7	0	
			e	241.00 0	1.47 9	- 62.731	241.00 0	29.80 0	3600.00 0	241.00 0	30.40 1	- 3655.233	360.00 0	- 0.110	- 40.000	47.70 0	0.48 2	23.09 9	0	
			f	241.00 0	1.47 6	- 62.767	241.00 0	29.80 0	3600.00 0	241.00 0	30.40 0	- 3655.777	360.00 0	- 0.110	- 40.000	47.70 0	0.48 3	23.09 9	0	
			e	241.00 0	1.48 7	- 62.939	241.00 0	29.80 0	3600.00 0	241.00 0	30.40 0	- 3655.594	360.00 0	- 0.110	- 40.000	47.70 0	0.48 2	23.09 6	0	
			f	241.00 0	1.48 8	- 62.351	241.00 0	29.80 0	3600.00 0	241.00 0	30.39 9	- 3652.896	360.00 0	- 0.110	- 40.000	47.70 0	0.48 2	23.09 7	0	
			3	66%	5%-10%	d	241.00 0	1.48 6	- 61.976	241.00 0	29.80 0	3600.00 0	241.00 0	30.40 0	- 3653.137	360.00 0	- 0.110	- 40.000	47.70 0	
e	241.00 0	1.48 6				- 62.444	241.00 0	29.80 0	3600.00 0	241.00 0	30.40 0	- 3654.171	360.00 0	- 0.110	- 40.000	47.70 0	0.48 2	23.09 7	0	
f	241.00 0	1.49 8				- 62.100	241.00 0	29.80 0	3600.00 0	241.00 0	30.40 0	- 3654.657	360.00 0	- 0.110	- 40.000	47.70 0	0.48 2	23.09 7	0	
e	241.00 0	1.48 6				- 62.444	241.00 0	29.80 0	3600.00 0	241.00 0	30.40 0	- 3654.171	360.00 0	- 0.110	- 40.000	47.70 0	0.48 2	23.09 7	0	
f	241.00 0	1.49 4				- 62.499	241.00 0	29.80 0	3600.00 0	241.00 0	30.39 9	- 3655.350	360.00 0	- 0.110	- 40.000	47.70 0	0.48 2	23.09 6	0	
e	241.00 0	1.50 7				- 62.722	241.00 0	29.80 0	3600.00 0	241.00 0	30.40 1	- 3656.148	360.00 0	- 0.110	- 40.000	47.70 0	0.48 2	23.09 8	0	

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203.6 Step Change in Generation Test																					
Load level: 33%																					
Excel file	EUT output limit	Generatio n level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (30s)	ESS Operatin g Mode	
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)			
			f	241.00 0	1.52 2	- 62.796	241.00 0	29.80 0	3600.00 0	241.00 0	30.40 1	- 3656.377	360.00 0	- 0.110	- 40.000	47.70 0	0.48 2	23.09 8	0		
4		33%-66%	d	241.00 0	1.53 8	- 62.877	241.00 0	29.80 0	3600.00 0	241.00 0	30.40 0	- 3656.344	360.00 0	- 0.110	- 40.000	47.70 0	0.48 2	23.09 8	-		
	e		241.00 0	1.53 5	- 63.061	241.00 0	29.80 0	3600.00 0	241.00 0	30.40 0	- 3656.947	360.00 0	- 0.110	- 40.000	47.70 0	0.48 3	23.10 1	0			
	f		241.00 0	1.54 2	- 63.201	241.00 0	29.80 0	3600.00 0	241.00 0	30.40 0	- 3656.929	360.00 0	- 0.110	- 40.000	47.70 0	0.48 3	23.10 2	0			
	e		241.00 0	1.54 7	- 63.243	241.00 0	29.80 0	3600.00 0	241.00 0	30.40 0	- 3657.810	360.00 0	- 0.110	- 40.000	47.70 0	0.48 3	23.10 5	0			
	f		241.00 0	1.53 9	- 63.076	241.00 0	29.80 0	3600.00 0	241.00 0	30.40 1	- 3655.949	360.00 0	- 0.110	- 40.000	47.70 0	0.48 3	23.10 6	0			
	e		241.00 0	1.54 5	- 63.478	241.00 0	29.80 0	3600.00 0	241.00 0	30.40 0	- 3656.576	360.00 0	- 0.111	- 40.000	47.70 0	0.48 3	23.10 3	0			
	f		241.00 0	1.54 5	- 63.474	241.00 0	29.80 0	3600.00 0	241.00 0	30.40 0	- 3656.574	360.00 0	- 0.111	- 40.000	47.70 0	0.48 4	23.10 3	0			
5	33%	5%-10%	d	241.00 0	1.55 5	- 63.724	241.00 0	29.80 0	3589.00 9	241.00 0	30.40 0	- 3654.458	360.00 0	- 0.110	- 40.000	47.70 0	0.48 3	23.10 1	-		
			e	241.00 0	1.55 3	- 63.369	241.00 0	29.80 0	3581.42 7	241.00 0	30.40 0	- 3653.295	360.00 0	- 0.110	- 40.000	47.70 0	0.48 3	23.10 2	0		
			f	241.00 0	1.54 6	- 63.498	241.00 0	29.80 0	3580.00 0	241.00 0	30.40 0	- 3654.457	360.00 0	- 0.111	- 40.000	47.70 0	0.48 3	23.10 8	0		
			e	241.00 0	1.54 5	- 63.491	241.00 0	29.80 0	3580.00 0	241.00 0	30.40 0	- 3654.847	360.00 0	- 0.111	- 40.000	47.70 0	0.48 3	23.10 5	0		
			f	241.00 0	1.53 6	- 63.572	241.00 0	29.80 0	3580.00 0	241.00 0	30.40 0	- 3654.722	360.00 0	- 0.111	- 40.000	47.70 0	0.48 3	23.11 0	0		
			e	241.00 0	1.54 0	- 64.034	241.00 0	29.80 0	3580.00 0	241.00 0	30.40 0	- 3656.531	360.00 0	- 0.111	- 40.000	47.70 0	0.48 3	23.11 5	0		
			f	241.00 0	1.54 0	- 63.515	241.00 0	29.80 0	3580.00 0	241.00 0	30.40 0	- 3654.893	360.00 0	- 0.111	- 40.000	47.70 0	0.48 3	23.11 2	0		
6		33%-66%	d	241.00 0	1.53 8	- 63.978	241.00 0	29.80 0	3580.00 0	241.00 0	30.40 0	- 3655.830	360.00 0	- 0.111	- 40.000	47.70 0	0.48 3	23.12 8	-		
	e		241.00 0	1.52 5	- 63.903	241.00 0	29.80 0	3582.82 5	241.00 0	30.39 9	- 3655.292	360.00 0	- 0.111	- 40.000	47.70 0	0.48 3	23.12 0	0			
	f		241.00 0	1.52 2	- 64.097	241.00 0	29.80 0	3585.89 3	241.00 0	30.40 0	- 3655.955	360.00 0	- 0.111	- 40.000	47.70 0	0.48 3	23.12 6	0			
	e		241.00 0	1.51 9	- 64.531	241.00 0	29.80 0	3592.01 3	241.00 0	30.40 0	- 3655.749	360.00 0	- 0.111	- 40.000	47.70 0	0.48 3	23.13 0	0			

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generation level (PV)	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	241.000	1.509	-64.170	241.000	29.800	3584.525	241.000	30.400	-3655.754	360.000	-0.111	-40.000	47.700	0.483	23.135	0	
			e	241.000	1.507	-64.104	241.000	29.800	3584.468	241.000	30.400	-3655.638	360.000	-0.111	-40.000	47.700	0.484	23.137	0	
			f	241.000	1.514	-64.200	241.000	29.800	3583.795	241.000	30.400	-3655.663	360.000	-0.111	-40.000	47.700	0.483	23.136	0	
Note:																				

(8) ESS external export current limit = $66 \pm 5\%$, PV inputs = $0\% + 5\%$ - (If support)

(8-1) 203.5 test

203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
1	100%	100%	d	241.00 0	49.25 7	5919.54 9	241.00 0	93.28 8	11204.33 6	241.00 0	44.06 7	-5282.732	360.00 0	- 0.103	- 37.00 0	47.40 2	136.89 5	6486.37 8	--	
			e	242.00 0	49.40 0	5906.60 6	242.00 0	0.000	0.000	242.00 0	49.40 5	5901.561	360.00 0	- 0.103	- 37.00 0	47.40 0	137.00 0	6490.00 0	1.000	
			f	241.00 0	49.20 0	5904.50 1	241.00 0	93.09 2	11180.53 3	241.00 0	44.00 2	-5275.632	360.00 0	- 0.103	- 37.00 0	47.40 0	137.00 0	6490.00 0	1.000	
			e	242.00 0	49.40 0	5900.00 0	242.00 0	0.000	0.000	242.00 0	49.40 0	5900.000	360.00 0	- 0.103	- 37.00 0	47.36 2	137.00 0	6490.00 0	1.000	
			f	241.00 0	49.20 0	5900.00 0	241.00 0	93.13 1	11184.55 9	241.00 0	44.04 0	-5281.564	360.00 0	- 0.103	- 37.00 0	47.30 0	137.00 0	6490.00 0	1.000	
			e	242.00 0	49.40 0	5900.00 0	242.00 0	0.000	0.000	242.00 0	49.40 0	5899.900	360.00 0	- 0.104	- 37.00 0	47.30 0	137.00 0	6490.00 0	1.000	
			f	241.00 0	49.20 0	5900.00 0	241.00 0	93.09 7	11181.17 0	241.00 0	44.02 2	-5278.802	360.00 0	- 0.104	- 37.27 1	47.30 0	137.00 0	6488.45 9	1.000	

TEST PACKAGE

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
2		66%	d	241.000	49.005	5900.000	241.000	61.729	7418.446	241.000	12.842	-1519.231	360.000	-0.104	-37.962	47.300	137.000	6480.827	--	
			e	242.000	49.400	5900.000	242.000	0.000	0.000	242.000	49.400	5897.532	360.000	-0.105	-38.000	47.300	137.000	6482.958	1.000	
			f	241.000	49.000	5900.000	241.000	61.863	7436.751	241.000	12.990	-1537.137	360.000	-0.105	-38.000	47.300	137.000	6489.361	0.100	
			e	242.000	49.400	5900.000	242.000	0.000	0.000	242.000	49.400	5897.327	360.000	-0.105	-38.000	47.300	137.000	6489.549	1.000	
			f	241.000	49.000	5900.000	241.000	61.928	7443.527	241.000	13.048	-1544.732	360.000	-0.106	-38.000	47.300	137.000	6487.537	0.100	
			e	242.000	49.400	5900.000	242.000	0.000	0.000	242.000	49.400	5898.903	360.000	-0.106	-38.000	47.300	137.000	6480.000	1.000	
			f	241.000	49.000	5900.000	241.000	61.902	7442.282	241.000	13.033	-1542.782	360.000	-0.106	-38.000	47.300	137.000	6480.000	0.100	
3		33%	d	241.000	49.000	5900.000	241.000	30.077	3620.000	241.000	19.134	2275.564	360.000	-0.107	-38.013	47.300	137.000	6480.150	--	
			e	242.000	49.400	5900.000	242.000	0.000	0.000	242.000	49.400	5898.403	360.000	-0.107	-38.309	47.300	137.000	6488.621	1.000	
			f	241.000	49.000	5900.000	241.000	30.281	3646.019	241.000	18.962	2253.289	360.000	-0.107	-38.854	47.300	137.000	6488.642	1.000	
			e	242.000	49.400	5900.000	242.000	0.000	0.000	242.000	49.400	5896.497	360.000	-0.107	-39.000	47.300	137.000	6487.982	1.000	
			f	241.000	49.000	5900.000	241.000	30.298	3646.423	241.000	18.923	2248.273	360.000	-0.107	-39.000	47.300	137.000	6480.097	1.000	
			e	242.000	49.400	5900.000	242.000	0.000	0.000	242.000	49.400	5897.355	360.000	-0.108	-39.000	47.300	137.000	6480.000	1.000	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	241.000	49.000	5900.000	241.000	30.296	3647.675	241.000	18.922	2249.101	360.000	-0.108	39.000	47.300	137.000	6480.000	1.000	
4	50%	100%	d	241.000	48.800	5880.000	241.000	92.529	11113.910	241.000	43.721	-5240.802	360.000	-0.096	34.653	47.400	136.000	6438.421	--	
			e	242.000	49.000	5860.000	242.000	0.000	0.000	242.000	49.006	5843.085	360.000	-0.096	34.929	47.400	136.000	6435.154	1.000	
			f	241.000	48.800	5880.000	241.000	92.942	11162.427	241.000	44.124	-5290.261	360.000	-0.096	35.000	47.400	136.000	6449.293	1.000	
			e	242.000	49.000	5860.000	242.000	0.000	0.000	242.000	49.014	5845.346	360.000	-0.096	35.000	47.400	136.000	6431.288	1.000	
			f	241.000	48.800	5880.000	241.000	92.895	11156.556	241.000	44.072	-5285.362	360.000	-0.097	35.000	47.400	136.000	6449.100	1.000	
			e	242.000	49.000	5860.000	242.000	0.000	0.000	242.000	49.036	5847.920	360.000	-0.098	35.000	47.371	136.000	6439.174	1.000	
			f	241.000	48.800	5880.000	241.000	92.741	11138.716	241.000	43.920	-5265.963	360.000	-0.098	35.000	47.300	136.177	6456.819	1.000	
5		66%	d	241.000	48.800	5880.000	241.000	61.647	7412.204	241.000	13.014	-1540.690	360.000	-0.098	35.189	47.300	136.075	6453.478	--	
			e	242.000	49.000	5860.000	242.000	0.000	0.000	242.000	49.040	5850.672	360.000	-0.099	36.000	47.300	136.000	6434.283	1.000	
			f	241.000	48.800	5880.000	241.000	61.804	7429.493	241.000	13.173	-1559.241	360.000	-0.099	36.000	47.300	136.000	6451.183	1.000	
			e	242.000	49.000	5860.000	242.000	0.000	0.000	242.000	49.045	5853.043	360.000	-0.100	36.000	47.300	136.000	6433.736	1.000	
			f	241.000	48.800	5880.000	241.000	61.793	7428.663	241.000	13.145	-1557.417	360.000	-0.100	36.000	47.300	136.058	6454.631	1.000	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
6			e	242.000	49.000	5860.000	242.000	0.000	0.000	242.000	49.027	5851.909	360.000	-0.101	36.000	47.300	136.000	6439.516	1.000	
			f	241.000	48.800	5880.000	241.000	61.721	7418.288	241.000	13.066	-1545.278	360.000	-0.101	36.000	47.300	136.515	6457.874	1.000	
		33%	d	241.000	48.800	5872.907	241.000	30.065	3620.000	241.000	18.878	2240.301	360.000	-0.101	36.000	47.300	136.000	6443.709	--	
			e	242.000	49.000	5860.000	242.000	0.000	0.000	242.000	49.055	5851.652	360.000	-0.101	36.000	47.300	136.000	6432.668	1.000	
			f	241.000	48.802	5873.555	241.000	30.178	3631.718	241.000	19.169	2274.674	360.000	-0.101	36.136	47.300	136.000	6444.607	1.000	
			e	242.000	49.000	5860.000	242.000	0.000	0.000	242.000	49.045	5849.694	360.000	-0.101	36.597	47.300	136.000	6440.306	1.000	
			f	241.000	48.800	5879.667	241.000	30.239	3641.631	241.000	18.737	2223.062	360.000	-0.102	36.985	47.300	136.000	6447.671	1.000	
			e	242.000	49.000	5860.000	242.000	0.000	0.000	242.000	49.055	5851.396	360.000	-0.102	37.000	47.300	136.000	6439.231	1.000	
			f	241.000	48.800	5860.571	241.000	30.219	3636.377	241.000	18.751	2224.964	360.000	-0.102	37.000	47.300	136.000	6442.054	1.000	
			7	0%	100%	d	240.000	1.788	-62.503	240.000	92.538	11100.000	240.000	93.060	11155.286	360.000	-0.092	33.000	48.800	
e	241.000	1.873				-57.481	241.000	0.000	0.000	241.000	2.199	-57.637	360.000	-0.091	33.000	48.800	1.060	51.745	1.000	
f	240.001	1.788				-62.146	240.001	92.282	11070.519	240.001	91.340	10940.952	360.000	-0.092	33.000	48.800	0.924	45.100	1.000	
e	241.000	1.871				-57.813	241.000	0.000	0.000	241.000	2.202	-57.430	360.000	-0.092	33.000	48.800	1.056	51.514	1.000	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	240.00 0	1.783	-62.822	240.00 0	92.77 5	11129.91 7	240.00 0	93.30 6	11185.09 2	360.00 0	- 0.092	33.00 0	48.80 0	0.921	44.984	1.000	
			e	241.00 0	1.869	-57.242	241.00 0	0.000	0.000	241.00 0	2.199	-54.897	360.00 0	- 0.092	33.00 0	48.80 0	1.047	51.075	1.000	
			f	240.00 0	1.785	-63.041	240.00 0	92.63 3	11111.92 6	240.00 0	93.16 7	11167.56 1	360.00 0	- 0.092	33.00 0	48.80 0	0.920	44.891	1.000	
8	66%	d	240.00 0	1.739	-61.801	240.00 0	61.57 0	7393.423	240.00 0	62.10 8	-7450.846	360.00 0	- 0.092	33.00 0	48.80 0	0.955	46.613	--		
		e	241.00 0	1.867	-57.789	241.00 0	0.000	0.000	241.00 0	2.186	-59.277	360.00 0	- 0.093	33.01 6	48.80 0	1.045	50.972	1.000		
		f	240.00 0	1.733	-61.791	240.00 0	61.74 8	7413.456	240.00 0	62.27 9	-7471.336	360.00 0	- 0.093	33.16 3	48.80 0	0.964	47.033	1.000		
		e	241.00 0	1.864	-56.931	241.00 0	0.000	0.000	241.00 0	2.196	-54.670	360.00 0	- 0.093	34.00 0	48.80 0	1.056	51.533	1.000		
		f	240.00 0	1.730	-61.409	240.00 0	61.72 4	7411.976	240.00 0	62.25 8	-7468.144	360.00 0	- 0.094	34.00 0	48.80 0	0.963	47.008	1.000		
		e	241.00 0	1.869	-56.678	241.00 0	0.000	0.000	241.00 0	2.195	-56.595	360.00 0	- 0.094	34.00 0	48.80 0	1.054	51.436	1.000		
		f	240.00 0	1.737	-61.144	240.00 0	61.68 2	7405.963	240.00 0	62.20 7	-7463.167	360.00 0	- 0.094	34.00 0	48.80 0	0.961	46.893	1.000		
9	33%	d	240.00 0	1.704	-60.000	240.00 0	30.00 0	3620.000	240.00 0	30.60 0	-3671.253	360.00 0	- 0.094	34.00 0	48.80 0	0.990	48.299	--		
		e	241.00 0	1.864	-57.608	241.00 0	0.000	0.000	241.00 0	2.193	-56.610	360.00 0	- 0.095	34.00 0	48.80 0	1.047	51.106	1.000		
		f	240.00 0	1.707	-60.000	240.00 0	30.26 5	3635.207	240.00 0	30.82 9	-3692.965	360.00 0	- 0.095	34.00 0	48.80 0	0.985	48.101	1.000		

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	241.000	1.869	-57.678	241.000	0.000	0.000	241.000	2.193	-55.032	360.000	-0.095	-34.000	48.800	1.049	51.175	1.000	
			f	240.000	1.708	-60.000	240.000	30.287	3640.279	240.000	30.842	-3697.445	360.000	-0.095	-34.000	48.800	0.990	48.318	1.000	
			e	241.000	1.867	-57.670	241.000	0.000	0.000	241.000	2.183	-57.516	360.000	-0.095	-34.057	48.800	1.050	51.214	1.000	
			f	240.000	1.709	-60.000	240.000	30.269	3636.234	240.000	30.835	-3693.581	360.000	-0.096	-34.589	48.800	0.990	48.299	1.000	

Note:

(8-2) 203.6 test

203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generatio n level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
1	100%	5%-10%	d	241.00 0	49.60 0	5965.91 5	241.00 0	30.20 0	3630.65 2	241.00 0	19.57 7	2327.21 8	360.00 0	- 0.107	- 39.000	47.80 0	137.00 0	6550.00 0	--	
			e	241.00 0	49.60 0	5960.00 0	241.00 0	30.01 0	3620.00 0	241.00 0	19.62 5	2336.37 0	360.00 0	- 0.107	- 38.982	47.80 0	137.00 0	6548.56 6	0	
			f	241.00 0	49.60 0	5960.00 0	241.00 0	30.00 0	3620.00 0	241.00 0	19.62 8	2336.53 8	360.00 0	- 0.107	- 38.987	47.80 0	137.00 0	6542.46 3	0	
			e	241.00 0	49.60 0	5960.00 0	241.00 0	30.00 0	3620.00 0	241.00 0	19.61 5	2334.33 2	360.00 0	- 0.107	- 38.971	47.75 4	137.00 0	6540.00 0	0	
			f	241.00 0	49.60 0	5960.00 0	241.00 0	30.00 0	3620.00 0	241.00 0	19.62 3	2335.66 3	360.00 0	- 0.107	- 39.000	47.70 0	137.00 0	6541.22 7	0	
			e	241.00 0	49.60 0	5960.00 0	241.00 0	30.00 0	3620.00 0	241.00 0	19.63 0	2337.12 6	360.00 0	- 0.107	- 39.000	47.70 0	137.00 0	6547.82 4	0	
			f	241.00 0	49.60 0	5960.00 0	241.00 0	30.00 0	3620.00 0	241.00 0	19.63 5	2337.77 5	360.00 0	- 0.107	- 39.000	47.70 0	137.00 0	6548.27 4	0	
2		33%-66%	d	241.00 0	49.60 0	5960.00 0	241.00 0	30.00 0	3620.00 0	241.00 0	19.61 9	2334.62 3	360.00 0	- 0.108	- 39.000	47.70 0	137.00 0	6540.14 2	--	
			e	241.00 0	49.60 0	5960.00 0	241.00 0	30.00 0	3620.00 0	241.00 0	19.61 7	2335.35 0	360.00 0	- 0.108	- 39.000	47.70 0	137.00 0	6540.00 0	0	

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generatio n level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	241.000	49.600	5960.000	241.000	30.000	3620.000	241.000	19.609	2333.233	360.000	-0.108	-39.000	47.700	137.000	6540.000	0	
			e	241.000	49.600	5960.000	241.000	30.000	3620.000	241.000	19.608	2332.786	360.000	-0.108	-39.000	47.700	137.000	6540.064	0	
			f	241.000	49.600	5960.000	241.000	30.000	3620.000	241.000	19.606	2332.810	360.000	-0.108	-39.000	47.700	137.000	6540.000	0	
			e	241.000	49.600	5960.000	241.000	30.000	3620.000	241.000	19.609	2335.855	360.000	-0.109	-39.000	47.700	137.000	6540.029	0	
			f	241.000	49.600	5960.000	241.000	30.000	3620.000	241.000	19.599	2337.632	360.000	-0.109	-39.000	47.700	137.000	6540.057	0	
3	66%	5%-10%	d	241.000	49.600	5960.000	241.000	30.000	3620.000	241.000	19.591	2332.594	360.000	-0.109	-39.078	47.700	137.000	6540.000	--	
			e	241.000	49.600	5960.000	241.000	30.000	3620.000	241.000	19.592	2336.876	360.000	-0.110	-39.968	47.700	137.000	6540.000	0	
			f	241.000	49.600	5960.000	241.000	30.000	3620.000	241.000	19.595	2337.753	360.000	-0.110	-39.925	47.700	137.000	6540.000	0	
			e	241.000	49.600	5960.000	241.000	30.000	3620.000	241.000	19.592	2336.876	360.000	-0.110	-39.968	47.700	137.000	6540.000	0	
			f	241.000	49.600	5960.000	241.000	30.000	3620.000	241.000	19.590	2335.777	360.000	-0.110	-40.000	47.700	137.000	6540.000	0	
			e	241.000	49.600	5960.000	241.000	30.000	3620.000	241.000	19.582	2332.040	360.000	-0.110	-40.000	47.700	137.000	6540.000	0	
			f	241.000	49.600	5960.000	241.000	30.000	3620.000	241.000	19.585	2334.437	360.000	-0.110	-40.000	47.700	137.000	6540.000	0	
4	66%	33%-66%	d	241.000	49.600	5960.000	241.000	30.000	3620.000	241.000	19.585	2334.057	360.000	-0.111	-40.000	47.700	137.000	6540.000	--	
			e	241.000	49.600	5960.000	241.000	30.000	3620.000	241.000	19.581	2332.382	360.000	-0.111	-40.000	47.700	137.000	6540.000	0	
			f	241.000	49.600	5960.000	241.000	30.000	3620.000	241.000	19.588	2334.582	360.000	-0.111	-40.000	47.700	137.000	6540.000	0	
			e	241.000	49.600	5960.000	241.000	30.000	3620.000	241.000	19.580	2330.660	360.000	-0.111	-40.000	47.700	137.000	6540.000	0	
			f	241.000	49.563	5960.000	241.000	30.000	3620.000	241.000	19.572	2327.332	360.000	-0.111	-40.000	47.700	137.000	6540.000	0	
			e	241.000	49.543	5960.000	241.000	30.000	3620.000	241.000	19.568	2324.993	360.000	-0.111	-40.000	47.700	137.000	6539.971	0	
			f	241.000	49.476	5960.000	241.000	30.000	3620.000	241.000	19.565	2324.365	360.000	-0.111	-40.000	47.700	137.000	6539.857	0	

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generatio n level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
5	33%	5%-10%	d	241.00 0	27.80 0	3340.00 0	241.00 0	30.00 0	3620.00 0	241.00 0	3.075	- 270.759	360.00 0	- 0.091	- 33.000	48.40 0	75.105	3638.60 8	--	
			e	241.00 0	27.80 0	3340.00 0	241.00 0	30.00 0	3620.00 0	241.00 0	3.074	- 271.535	360.00 0	- 0.091	- 33.000	48.40 0	74.883	3627.46 1	0	
			f	241.00 0	27.80 0	3340.00 0	241.00 0	30.00 0	3620.00 0	241.00 0	3.075	- 273.191	360.00 0	- 0.092	- 33.000	48.40 0	74.907	3629.05 1	0	
			e	241.00 0	27.80 0	3340.00 0	241.00 0	30.00 0	3620.00 0	241.00 0	3.084	- 273.952	360.00 0	- 0.092	- 33.000	48.40 0	75.182	3640.17 7	0	
			f	241.00 0	27.80 0	3340.00 0	241.00 0	30.00 0	3620.00 0	241.00 0	3.078	- 271.686	360.00 0	- 0.092	- 33.000	48.40 0	75.032	3632.85 3	0	
			e	241.00 0	27.80 0	3340.00 0	241.00 0	30.00 0	3620.00 0	241.00 0	3.066	- 272.197	360.00 0	- 0.092	- 33.000	48.40 0	74.990	3630.62 5	0	
			f	241.00 0	27.80 0	3340.00 0	241.00 0	30.00 0	3620.00 0	241.00 0	3.065	- 271.897	360.00 0	- 0.093	- 33.000	48.40 0	75.197	3640.38 5	0	
6		33%-66%	d	241.00 0	27.81 0	3340.00 0	241.00 0	30.10 0	3620.00 0	241.00 0	3.078	- 271.686	360.00 0	- 0.092	- 33.000	48.40 0	75.032	3632.85 3	--	
			e	241.00 0	27.80 0	3340.00 0	241.00 0	30.00 0	3620.00 0	241.00 0	3.084	- 274.984	360.00 0	- 0.093	- 34.000	48.40 0	75.078	3634.53 6	0	
			f	241.00 0	27.80 0	3340.00 0	241.00 0	30.00 0	3620.00 0	241.00 0	3.086	- 272.749	360.00 0	- 0.094	- 34.000	48.40 0	75.059	3635.76 8	0	
			e	241.00 0	27.80 0	3340.00 0	241.00 0	30.00 0	3620.00 0	241.00 0	3.076	- 272.370	360.00 0	- 0.094	- 34.000	48.40 0	74.930	3629.74 2	0	
			f	241.00 0	27.80 0	3340.00 0	241.00 0	30.00 0	3620.00 0	241.00 0	3.075	- 272.882	360.00 0	- 0.094	- 34.000	48.40 0	75.011	3633.40 7	0	
			e	241.00 0	27.80 0	3340.00 0	241.00 0	30.00 0	3620.00 0	241.00 0	3.072	- 272.111	360.00 0	- 0.094	- 34.000	48.40 0	75.077	3636.50 0	0	
			f	241.00 0	27.80 0	3340.00 0	241.00 0	30.00 0	3620.00 0	241.00 0	3.080	- 274.200	360.00 0	- 0.095	- 34.000	48.40 0	74.915	3629.04 4	0	
Note:																				

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(9) ESS external export current limit = $33 \pm 5\%$, PV inputs = $0\% + 5\%$ - (If support)

(9-1) 203.5 test

203.5 Step Change in Load Test																					
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode	
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)			
1	100%	100%	d	242.000	25.200	3040.000	242.000	93.199	11247.343	242.000	68.053	-8207.769	360.000	-0.108	-39.000	47.000	70.400	3310.000	--		
			e	242.000	25.200	3040.000	242.000	0.000	0.000	242.000	25.200	3039.165	360.000	-0.108	-39.000	47.000	70.400	3309.964	1.000		
			f	242.000	25.041	3024.136	242.000	92.823	11205.657	242.000	67.776	-8175.121	360.000	-0.110	-39.986	47.000	70.372	3304.925	1.000		
			e	242.000	25.146	3034.557	242.000	0.000	0.000	242.000	25.175	3033.816	360.000	-0.109	-39.000	47.000	70.368	3305.556	1.000		
			f	242.000	25.200	3040.000	242.000	92.880	11211.314	242.000	67.352	-8082.023	360.000	-0.109	-39.113	47.000	70.400	3309.218	1.000		
			e	242.000	25.048	3024.788	242.000	0.000	0.000	242.000	25.053	3024.389	360.000	-0.110	-39.279	47.000	70.400	3308.878	1.000		
			f	242.000	25.041	3024.137	242.000	92.823	11205.678	242.000	67.773	-8175.121	360.000	-0.110	-39.986	47.000	70.372	3304.922	1.000		
2		66%	d	242.000	25.200	3040.000	242.000	61.928	7480.251	242.000	36.868	-4446.667	360.000	-0.110	-40.000	47.000	70.341	3301.842	--		
			e	242.000	25.186	3038.584	242.000	0.000	0.000	242.000	25.184	3035.209	360.000	-0.111	-40.000	47.000	70.393	3307.768	1.000		
			f	242.000	25.000	3020.000	242.000	62.055	7498.216	242.000	37.078	-4471.664	360.000	-0.111	-40.000	47.000	70.378	3304.181	1.000		
			e	242.000	25.172	3037.230	242.000	0.000	0.000	242.000	25.181	3034.074	360.000	-0.112	-40.208	47.000	70.397	3307.262	1.000		
			f	242.000	25.200	3040.000	242.000	62.113	7503.627	242.000	37.048	-4469.551	360.000	-0.113	-41.000	47.000	70.383	3305.324	1.000		

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
3	50%		e	242.000	25.031	3023.142	242.000	0.000	0.000	242.000	25.051	3022.893	360.000	-0.113	-41.000	47.000	70.384	3305.162	1.000	
			f	242.000	25.041	3024.137	242.000	62.091	7502.625	242.000	37.091	-4473.894	360.000	-0.114	-41.000	47.000	70.311	3300.000	1.000	
		33%	d	242.000	25.200	3040.000	242.000	30.000	3620.000	242.000	5.324	-585.632	360.000	-0.114	-41.000	47.000	70.323	3300.276	--	
			e	242.000	25.034	3023.412	242.000	0.000	0.000	242.000	25.045	3023.194	360.000	-0.115	-41.000	47.000	70.371	3304.574	1.000	
			f	242.000	25.230	3040.000	242.000	30.008	3632.543	242.000	5.386	-593.602	360.000	-0.114	-41.000	47.000	70.354	3301.688	1.000	
			e	242.000	25.200	3040.000	242.000	0.000	0.000	242.000	25.200	3034.324	360.000	-0.115	-41.000	47.000	70.382	3304.457	1.000	
			f	242.000	25.178	3037.762	242.000	29.622	3592.000	242.000	6.207	-443.138	360.000	-0.114	-41.000	47.000	70.376	3302.165	1.000	
			e	242.000	25.000	3020.000	242.000	0.000	0.000	242.000	25.000	3020.000	360.000	-0.114	-41.000	47.000	70.315	3300.000	1.000	
			f	242.000	25.200	3040.000	242.000	30.008	3632.553	242.000	5.386	-593.601	360.000	-0.114	-41.000	47.000	70.353	3301.698	1.000	
		100%	d	241.000	25.400	3040.000	241.000	92.179	11081.128	241.000	66.880	-8039.624	360.000	-0.108	-39.000	47.000	70.300	3300.000	--	
			e	241.000	25.200	3040.000	241.000	0.000	0.000	241.000	25.341	3040.145	360.000	-0.108	-39.000	47.000	70.260	3300.000	1.000	
			f	241.000	25.200	3040.000	241.000	92.818	11160.952	241.000	67.576	-8118.802	360.000	-0.109	-39.000	47.000	70.205	3300.000	1.000	
			e	241.000	25.200	3040.000	241.000	0.000	0.000	241.000	25.217	3039.742	360.000	-0.109	-39.163	47.000	70.200	3300.000	1.000	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	241.000	25.200	3040.000	241.000	92.911	11173.425	241.000	67.695	-8134.012	360.000	-0.110	-40.000	47.000	70.210	3300.000	1.000	
			e	241.000	25.200	3040.000	241.000	0.000	0.000	241.000	25.210	3038.746	360.000	-0.111	-40.000	47.000	70.294	3300.000	1.000	
			f	241.000	25.200	3040.000	241.000	92.864	11165.563	241.000	67.631	-8125.592	360.000	-0.112	-40.000	47.000	70.300	3300.000	1.000	
5	66%	d	241.000	25.200	3040.000	241.000	61.677	7420.739	241.000	36.480	-4383.032	360.000	-0.112	-40.540	47.000	70.306	3300.102	--		
		e	241.000	25.200	3040.000	241.000	0.000	0.000	241.000	25.215	3039.855	360.000	-0.113	-41.000	47.000	70.304	3300.290	1.000		
		f	241.000	25.200	3040.000	241.000	61.851	7443.902	241.000	36.685	-4406.820	360.000	-0.114	-41.000	47.000	70.300	3300.000	1.000		
		e	241.000	25.200	3039.646	241.000	0.000	0.000	241.000	25.200	3037.295	360.000	-0.114	-41.000	47.000	70.300	3300.000	1.000		
		f	241.000	25.200	3020.958	241.000	61.939	7454.092	241.000	36.832	-4425.749	360.000	-0.115	-41.545	47.000	70.300	3300.000	1.000		
		e	241.000	25.200	3040.000	241.000	0.000	0.000	241.000	25.200	3038.405	360.000	-0.116	-42.000	47.000	70.298	3300.000	1.000		
		f	241.000	25.200	3040.000	241.000	61.903	7448.616	241.000	36.748	-4413.552	360.000	-0.117	-42.000	47.000	70.272	3300.000	1.000		
6	33%	d	241.000	25.200	3021.203	241.000	29.800	3600.000	241.000	5.157	-567.672	360.000	-0.117	-42.000	47.000	70.260	3300.000	--		
		e	241.000	25.200	3040.000	241.000	0.000	0.000	241.000	25.201	3037.278	360.000	-0.118	-42.138	47.000	70.236	3300.000	1.000		
		f	241.000	25.200	3040.000	241.000	30.000	3612.304	241.000	5.233	-576.056	360.000	-0.118	-42.947	47.000	70.275	3300.027	1.000		

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	241.00 0	25.20 0	3029.95 2	241.00 0	0.000	0.000	241.00 0	25.20 3	3029.404	360.00 0	- 0.119	- 43.00 0	47.00 0	70.35 6	3304.38 0	1.000	
			f	241.00 0	25.20 0	3031.08 2	241.00 0	30.00 8	3615.208	241.00 0	5.293	-586.313	360.00 0	- 0.119	- 43.00 0	47.00 0	70.29 1	3300.00 0	1.000	
			e	241.00 0	25.20 0	3040.00 0	241.00 0	0.000	0.000	241.00 0	25.20 1	3036.923	360.00 0	- 0.120	- 43.00 0	47.00 0	70.30 0	3300.00 0	1.000	
			f	241.00 0	25.20 0	3035.40 7	241.00 0	30.00 6	3612.839	241.00 0	5.240	-577.538	360.00 0	- 0.121	- 43.65 6	47.00 0	70.30 5	3300.25 7	1.000	
7	0%	100%	d	241.00 0	1.840	-64.000	241.00 0	92.35 0	11097.81 6	241.00 0	92.90 0	- 11155.76 6	360.00 0	- 0.123	- 44.00 0	47.70 0	0.930	44.386	--	
			e	241.00 0	1.916	-58.000	241.00 0	0.000	0.000	241.00 0	2.209	-60.123	360.00 0	- 0.123	- 44.00 0	47.70 0	1.062	50.643	1.000	
			f	241.00 0	1.825	-64.000	241.00 0	92.61 9	11128.92 1	241.00 0	93.15 2	- 11186.25 8	360.00 0	- 0.123	- 44.01 3	47.70 0	0.932	44.489	1.000	
			e	241.00 0	1.909	-58.000	241.00 0	0.000	0.000	241.00 0	2.208	-55.696	360.00 0	- 0.124	- 44.58 0	47.70 0	1.055	50.318	1.000	
			f	241.00 0	1.826	-64.000	241.00 0	92.72 2	11141.49 8	241.00 0	93.26 4	- 11199.30 1	360.00 0	- 0.123	- 44.38 3	47.70 0	0.933	44.513	1.000	
			e	241.00 0	1.911	-58.000	241.00 0	0.000	0.000	241.00 0	2.212	-56.652	360.00 0	- 0.124	- 44.77 2	47.70 0	1.055	50.315	1.000	
			f	241.00 0	1.829	-64.000	241.00 0	92.73 2	11142.22 5	241.00 0	93.27 4	- 11200.17 1	360.00 0	- 0.124	- 45.00 0	47.70 0	0.930	44.402	1.000	
8		66%	d	241.00 0	1.781	-62.027	241.00 0	61.61 6	7410.631	241.00 0	62.15 9	-7470.631	360.00 0	- 0.124	- 45.00 0	47.70 0	0.952	45.422	--	
			e	241.00 0	1.906	-58.000	241.00 0	0.000	0.000	241.00 0	2.203	-59.364	360.00 0	- 0.125	- 45.00 0	47.70 0	1.042	49.717	1.000	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
9			f	241.00 0	1.771	-62.000	241.00 0	61.80 8	7434.931	241.00 0	62.36 3	-7494.777	360.00 0	- 0.125	- 45.00 0	47.70 0	0.956	45.614	1.000	
			e	241.00 0	1.901	-58.000	241.00 0	0.000	0.000	241.00 0	2.203	-57.057	360.00 0	- 0.126	- 45.00 0	47.70 0	1.045	49.853	1.000	
			f	241.00 0	1.779	-62.000	241.00 0	61.89 2	7442.076	241.00 0	62.42 5	-7502.156	360.00 0	- 0.126	- 45.04 0	47.70 0	0.956	45.642	1.000	
			e	241.00 0	1.898	-58.000	241.00 0	0.000	0.000	241.00 0	2.201	-58.497	360.00 0	- 0.126	- 45.57 0	47.70 0	1.042	49.697	1.000	
			f	241.00 0	1.774	-62.000	241.00 0	61.83 9	7437.546	241.00 0	62.38 3	-7497.660	360.00 0	- 0.127	- 46.00 0	47.70 0	0.956	45.609	1.000	
		33%	d	241.00 0	1.745	-60.872	241.00 0	29.80 0	3600.000	241.00 0	30.40 0	-3656.817	360.00 0	- 0.127	- 46.00 0	47.70 0	0.981	46.827	--	
			e	241.00 0	1.901	-58.000	241.00 0	0.000	0.000	241.00 0	2.201	-55.933	360.00 0	- 0.127	- 46.00 0	47.70 0	1.041	49.685	1.000	
			f	241.00 0	1.738	-60.000	241.00 0	30.00 0	3609.892	241.00 0	30.56 6	-3669.739	360.00 0	- 0.127	- 46.00 0	47.70 0	0.986	47.034	1.000	
			e	241.00 0	1.902	-58.000	241.00 0	0.000	0.000	241.00 0	2.206	-57.163	360.00 0	- 0.128	- 46.00 0	47.70 0	1.042	49.682	1.000	
			f	241.00 0	1.744	-60.527	241.00 0	30.00 0	3612.934	241.00 0	30.59 9	-3671.218	360.00 0	- 0.128	- 46.00 0	47.70 0	0.984	46.926	1.000	
			e	241.00 0	1.896	-58.114	241.00 0	0.000	0.000	241.00 0	2.197	-60.470	360.00 0	- 0.128	- 46.00 0	47.70 0	1.038	49.513	1.000	
			f	241.00 0	1.739	-61.267	241.00 0	30.00 2	3611.013	241.00 0	30.58 8	-3671.098	360.00 0	- 0.128	- 46.00 0	47.70 0	0.980	46.758	1.000	

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(9-2) 203.6 test

203.6 Step Change in Generation Test																					
Load level: 33%																					
Excel file	EUT output limit	Generation level (PV)	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode	
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)			
1	100%	5%-10%	d	241.00 0	25.00 0	3007.87 0	241.00 0	30.32 9	3656.34 1	241.00 0	5.74 6	- 650.195	361.00 0	- 0.097	- 35.000	48.20 0	67.91 9	3270.70 2	--		
			e	241.00 0	24.99 7	3010.92 6	241.00 0	30.20 0	3640.00 0	241.00 0	5.61 0	- 629.681	361.00 0	- 0.097	- 35.000	48.20 0	67.98 1	3275.48 1	0		
			f	241.00 0	24.96 4	3000.00 0	241.00 0	30.20 0	3640.00 0	241.00 0	5.65 7	- 635.164	361.00 0	- 0.096	- 34.997	48.20 0	67.90 5	3270.39 9	0		
			e	241.09 0	25.00 0	3003.67 1	241.09 0	30.20 0	3640.00 0	241.09 0	5.59 1	- 627.233	361.00 0	- 0.096	- 34.995	48.20 0	67.90 0	3270.12 9	0		
			f	241.10 0	25.00 0	3001.05 6	241.10 0	30.20 0	3640.00 0	241.10 0	5.62 5	- 634.394	361.00 0	- 0.096	- 34.904	48.20 0	67.89 1	3269.90 0	0		
			e	241.09 4	24.94 0	3000.00 0	241.09 4	30.20 0	3640.00 0	241.09 4	5.69 3	- 643.920	361.00 0	- 0.096	- 34.872	48.20 0	67.90 8	3270.47 9	0		
			f	241.00 0	24.99 9	3002.93 9	241.00 0	30.20 0	3640.00 0	241.00 0	5.62 8	- 634.876	361.00 0	- 0.096	- 34.264	48.20 0	67.90 0	3270.24 3	0		
2		33%-66%	d	241.00 0	25.20 0	3032.31 1	241.00 0	29.80 0	3600.00 0	241.00 0	5.12 8	- 565.476	360.00 0	- 0.129	- 46.000	47.00 0	70.39 8	3308.82 1	--		
			e	241.00 0	25.20 0	3040.00 0	241.00 0	29.80 0	3600.00 0	241.00 0	5.06 0	- 555.495	360.00 0	- 0.129	- 46.154	47.00 0	70.39 3	3308.73 0	0		
			f	241.00 0	25.20 0	3040.00 0	241.00 0	29.80 0	3600.00 0	241.00 0	5.05 1	- 553.161	360.00 0	- 0.129	- 46.285	47.00 0	70.36 7	3305.38 1	0		
			e	241.00 0	25.20 0	3027.60 1	241.00 0	29.80 0	3600.00 0	241.00 0	5.12 3	- 562.519	360.00 0	- 0.129	- 46.000	47.00 0	70.35 9	3304.10 6	0		
			f	241.00 0	25.20 0	3034.09 4	241.00 0	29.80 0	3600.00 0	241.00 0	5.07 7	- 556.611	360.00 0	- 0.129	- 46.210	47.00 0	70.33 1	3300.89 9	0		
			e	241.00 0	25.20 0	3040.00 0	241.00 0	29.80 0	3600.00 0	241.00 0	5.05 1	- 553.104	360.00 0	- 0.129	- 46.713	47.00 0	70.37 5	3305.63 8	0		
			f	241.00 0	25.20 0	3029.98 6	241.00 0	29.80 0	3600.00 0	241.00 0	5.12 5	- 565.224	360.00 0	- 0.129	- 46.445	47.00 0	70.39 8	3308.77 3	0		
3	66%	5%-10%	d	241.00 0	24.97 4	3000.07 1	241.00 0	30.20 0	3640.00 0	241.00 0	5.62 4	- 630.807	361.00 0	- 0.095	- 34.002	48.20 0	67.90 5	3270.34 2	--		
			e	241.09 3	24.99 6	3005.15 3	241.09 3	30.20 0	3640.00 0	241.09 3	5.62 6	- 634.879	361.00 0	- 0.095	- 34.000	48.20 0	67.92 9	3270.77 3	0		
			f	241.10 2	25.00 0	3002.62 2	241.10 2	30.20 0	3640.00 0	241.10 2	5.61 5	- 633.448	361.00 0	- 0.095	- 34.004	48.20 0	67.90 3	3270.16 2	0		
			e	241.09 3	24.99 6	3005.15 3	241.09 3	30.20 0	3640.00 0	241.09 3	5.62 6	- 634.879	361.00 0	- 0.095	- 34.000	48.20 0	67.92 9	3270.77 3	0		

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generatio n level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
4			f	241.00 0	24.95 2	3000.00 0	241.00 0	30.20 0	3640.00 0	241.00 0	5.70 1	- 644.257	361.00 0	- 0.095	- 34.000	48.20 0	67.91 1	3270.38 5	0	
			e	241.00 0	24.99 8	3003.25 2	241.00 0	30.20 0	3640.00 0	241.00 0	5.60 5	- 628.599	361.00 0	- 0.095	- 34.000	48.20 0	67.89 9	3270.08 6	0	
			f	241.00 0	25.00 0	3001.62 6	241.00 0	30.20 0	3640.00 0	241.00 0	5.60 4	- 628.291	361.00 0	- 0.094	- 34.000	48.20 0	67.90 0	3270.27 1	0	
		33%-66%	d	241.00 0	25.20 0	3034.24 5	241.00 0	29.80 0	3600.00 0	241.00 0	5.08 0	- 557.847	360.00 0	- 0.132	- 47.621	47.00 0	70.33 6	3301.58 0	--	
			e	241.00 0	25.20 0	3040.00 0	241.00 0	29.80 0	3600.00 0	241.00 0	5.04 7	- 553.201	360.00 0	- 0.132	- 48.000	47.00 0	70.37 9	3305.80 6	0	
			f	241.00 0	25.20 0	3034.30 7	241.00 0	29.80 0	3600.00 0	241.00 0	5.09 8	- 560.469	360.00 0	- 0.132	- 48.000	47.00 0	70.39 8	3308.09 0	0	
			e	241.00 0	25.20 0	3028.66 3	241.00 0	29.80 0	3600.00 0	241.00 0	5.13 9	- 567.269	360.00 0	- 0.133	- 48.000	47.00 0	70.36 9	3304.62 2	0	
			f	241.00 0	25.20 0	3040.00 0	241.00 0	29.80 0	3600.00 0	241.00 0	5.05 9	- 555.318	360.00 0	- 0.133	- 48.000	47.00 0	70.36 8	3302.95 3	0	
			e	241.00 0	25.20 0	3040.00 0	241.00 0	29.80 0	3600.00 0	241.00 0	5.05 7	- 554.231	360.00 0	- 0.134	- 48.000	47.00 0	70.35 0	3301.04 1	0	
			f	241.00 0	25.20 0	3028.35 9	241.00 0	29.80 0	3600.00 0	241.00 0	5.12 6	- 563.444	360.00 0	- 0.134	- 48.000	47.00 0	70.33 0	3300.67 0	0	
5	33%	5%-10%	d	241.10 0	24.98 2	3001.88 7	241.10 0	30.20 0	3640.00 0	241.10 0	5.67 2	- 640.542	361.00 0	- 0.094	- 34.000	48.20 0	67.90 2	3270.16 5	--	
			e	241.10 1	25.00 0	3003.68 0	241.10 1	30.20 0	3640.00 0	241.10 1	5.63 1	- 635.660	361.00 0	- 0.094	- 34.000	48.20 0	67.90 2	3270.20 0	0	
			f	241.02 0	24.99 0	3001.54 8	241.02 0	30.20 0	3640.00 0	241.02 0	5.64 5	- 637.213	361.00 0	- 0.094	- 34.000	48.20 0	67.89 9	3270.03 7	0	
			e	241.00 0	24.95 5	3000.00 0	241.00 0	30.20 0	3640.00 0	241.00 0	5.66 8	- 636.757	361.00 0	- 0.094	- 34.000	48.20 0	67.90 5	3270.38 6	0	
			f	241.00 0	24.99 5	3004.13 7	241.00 0	30.20 0	3640.00 0	241.00 0	5.59 5	- 626.773	361.00 0	- 0.094	- 34.000	48.20 0	67.90 4	3270.14 3	0	
			e	241.00 0	25.00 0	3004.09 4	241.00 0	30.20 0	3640.00 0	241.00 0	5.59 1	- 626.569	361.00 0	- 0.094	- 34.000	48.20 0	67.90 9	3270.31 2	0	
			f	241.10 1	24.94 4	3000.11 4	241.10 1	30.20 0	3640.00 0	241.10 1	5.69 1	- 642.959	361.00 0	- 0.094	- 34.000	48.20 0	67.90 4	3270.34 2	0	
		33%-66%	d	241.00 0	25.20 0	3033.98 6	241.00 0	29.80 0	3600.00 0	241.00 0	5.12 3	- 564.028	360.00 0	- 0.136	- 49.000	47.00 0	70.38 7	3305.44 8	--	
			e	241.00 0	25.20 0	3040.00 0	241.00 0	29.80 0	3600.00 0	241.00 0	5.08 0	- 556.805	360.00 0	- 0.136	- 49.000	47.00 0	70.34 2	3301.05 6	0	

203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generation level (PV)	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	241.000	25.200	3029.164	241.000	29.800	3600.000	241.000	5.129	-563.109	360.000	-0.136	-49.000	47.000	70.327	3300.449	0	
			e	241.000	25.200	3020.000	241.000	29.800	3600.000	241.000	5.146	-565.562	360.000	-0.136	-49.000	47.000	70.311	3300.000	0	
			f	241.000	25.200	3030.939	241.000	29.800	3600.000	241.000	5.124	-564.124	360.000	-0.136	-49.000	47.000	70.389	3306.833	0	
			e	241.000	25.200	3037.426	241.000	29.800	3600.000	241.000	5.098	-560.255	360.000	-0.136	-49.000	47.000	70.387	3306.681	0	
			f	241.000	25.200	3023.281	241.000	29.800	3600.000	241.000	5.155	-568.639	360.000	-0.136	-49.000	47.000	70.399	3308.516	0	
Note:																				

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204.5 Import limiting to Energy Storage Systems

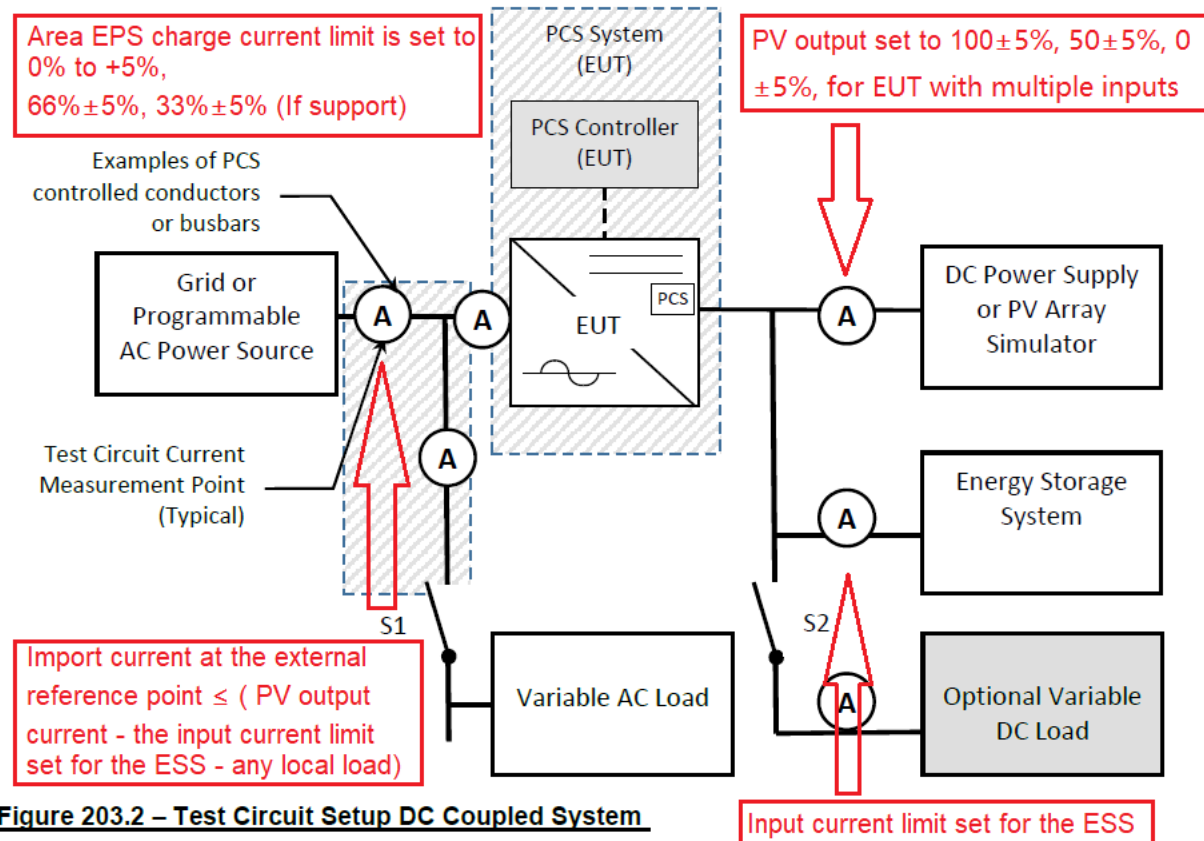
Testing date: see cover page

Test Method:

204.5.1 Where the PCS includes ability to limit current flow from the Area EPS to an Energy Storage System (ESS), i.e. ESS grid charge limiting, repeat the test sequence in 203.5 and 203.6 at the following conditions:

- a) Install any external current sensors, if applicable, in accordance with the instructions supplied by the manufacturer.
- b) Set or verify that the ESS is at **the lowest state of charge** the ESS can support for the duration of the tests without causing damage or mis-operation. The lowest state of charge operating condition shall be specified by the manufacturer.
- c) Set or verify that the Area EPS charge current limit is set to 0% to +5% of EUT nameplate rating.
- d) For EUT's with multiple inputs, such as PV and ESS, set or verify the other, non ESS, inputs are set to 100% +/- 5% of their nameplate ratings.
- e) Where the PCS only supports zero charging from the Area EPS steps f) and g) may be omitted.
- f) Run test 203.5 and 203.6 and record current flows including current flow from the Area EPS or programmable ac power source and the input of the ESS. The timing of the step transitions, Th1 and Th2, in Figure 203.3 shall be selected to achieve steady state conditions in all current sensors including the external current sensor at the external reference point and at the output of the ESS.
- g) Repeat steps b) through d) above with external charge current limit set to 66% (+/- 5%) and 33% (+/- 5%) of EUT nameplate rating.
- h) For EUT's with multiple inputs, such as PV and ESS, repeat steps c) through g) with the other, non ESS, inputs set to 50% +/- 5% and 0% +5% of their nameplate ratings

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Criteria:

204.5.2 For EUT's with multiple inputs, such as PV and ESS, the EUT shall be considered in compliance if the steady state import current at the external reference point does not exceed the sum of the PV output current minus the input current limit set for the ESS minus any local load. For DC coupled systems the EUT input current, shall be considered to be proportional to the sum of the relative current flows of each source.

ie. $I_{\text{from grid}} \leq I_{\text{PV}} - I_{\text{ESS limit}} - I_{\text{load}}$ **(Clause 204.5.2)**

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Results:
208Vac

(1) ESS external charge current limit = 0% to +5%, PV inputs = 100% ± 5%

(1-1) 203.5 test

(a) For single phase unit connected line to neutral

203.5 Step Change in Load Test																					
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode	
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)			
1	100%	100%	d	210.00 0	91.84 0	11121.15 3	210.00 0	92.55 8	11181.22 8	210.00 0	3.120	86.493	360.00 0	32.47 6	11700.00 0	48.20 0	0.001	0.001	--		
			e	210.00 0	91.75 8	11122.57 7	210.00 0	0.000	0.000	210.00 0	91.79 9	11135.35 4	360.00 0	32.50 0	11700.00 0	48.20 0	0.001	0.000	1.000		
			f	210.00 0	91.89 3	11125.31 5	210.00 0	93.15 1	11252.35 0	210.00 0	3.299	151.550	359.99 1	32.50 0	11700.00 0	48.20 0	0.001	- 0.000	0.100		
			e	210.10 0	91.79 5	11131.60 1	210.10 0	0.000	0.000	210.10 0	91.81 4	11140.09 3	360.00 0	32.50 0	11700.00 0	48.20 0	0.001	0.002	1.000		
			f	210.00 0	91.94 4	11130.90 9	210.00 0	93.29 8	11271.08 6	210.00 0	3.355	165.669	359.99 8	32.49 9	11700.00 0	48.20 0	0.001	0.000	0.100		
			e	210.00 0	91.82 0	11135.56 1	210.00 0	0.000	0.000	210.00 0	91.88 8	11141.69 6	359.99 8	32.50 0	11700.00 0	48.20 0	0.002	0.016	1.000		
			f	210.00 0	92.00 1	11139.77 2	210.00 0	93.15 3	11252.52 5	210.00 0	3.275	139.514	359.99 4	32.50 0	11700.00 0	48.20 0	0.001	0.005	0.100		
2		66%	d	210.00 0	91.89 9	11135.33 8	210.00 0	61.74 0	7467.293	210.00 0	30.31 5	-3664.085	359.99 0	32.50 0	11700.00 0	48.20 0	0.001	0.003	--		
			e	210.00 0	91.87 9	11141.99 6	210.00 0	0.000	0.000	210.00 0	91.99 4	11153.53 9	360.00 0	32.50 0	11700.00 0	48.20 0	0.001	0.000	1.000		
			f	210.00 0	91.91 4	11137.11 2	210.00 0	62.03 7	7502.058	210.00 0	30.03 7	-3629.094	360.00 0	32.50 0	11700.00 0	48.20 0	0.001	0.014	1.000		
			e	210.08 6	91.88 2	11141.61 5	210.08 6	0.000	0.000	210.08 6	91.99 2	- 11152.73 2	360.00 0	32.50 0	11700.00 0	48.20 0	0.001	0.008	1.000		
			f	210.00 0	91.86 3	11132.15 1	210.00 0	62.12 4	7510.510	210.00 0	29.90 5	-3610.333	360.00 0	32.50 0	11700.00 0	48.20 0	0.001	- 0.000	1.000		

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	210.000	91.829	11137.756	210.000	0.000	0.000	210.000	91.880	11141.995	360.000	32.500	11700.000	48.200	0.001	-0.000	1.000	
f			210.000	91.834	11128.902	210.000	62.045	7503.195	210.000	29.976	-3621.598	360.000	32.500	11700.000	48.200	0.001	0.003	1.000		
3		33%	d	210.000	91.808	11130.476	210.000	30.200	3660.000	210.000	61.658	-7476.491	360.000	32.500	11700.000	48.200	0.001	0.001	--	
			e	210.100	91.833	11138.185	210.100	0.000	0.000	210.100	91.932	11143.702	360.000	32.500	11700.000	48.200	0.001	-0.000	1.000	
			f	210.000	91.890	11139.539	210.000	30.447	3685.284	210.000	61.577	-7461.167	359.997	32.555	11707.527	48.200	0.000	-0.002	1.000	
			e	210.000	91.904	11145.786	210.000	0.000	0.000	210.000	91.964	11152.369	360.000	32.575	11712.469	48.200	0.001	0.002	1.000	
			f	210.000	91.883	11138.847	210.000	30.471	3687.938	210.000	61.495	-7451.707	360.000	32.565	11709.091	48.200	0.001	0.004	1.000	
			e	210.000	91.902	11144.638	210.000	0.000	0.000	210.000	91.935	11150.524	360.000	32.580	11712.968	48.200	0.001	-0.000	1.000	
			f	210.000	91.897	11139.829	210.000	30.463	3687.247	210.000	61.520	-7455.378	359.999	32.573	11712.553	48.200	0.001	0.000	1.000	
			4	50%	100%	d	209.096	48.757	5882.807	209.096	92.516	11160.902	209.096	43.906	5297.268	360.000	17.014	6131.353	48.200	
e	210.000	48.821				5843.013	210.000	0.000	0.000	210.000	48.988	-5859.855	360.000	16.999	6105.263	48.200	0.001	0.002	1.000	
f	209.000	48.794				5890.353	209.000	93.097	11231.859	209.000	44.442	5363.072	360.000	17.050	6135.084	48.200	0.001	0.001	1.000	
e	210.000	48.897				5848.599	210.000	0.000	0.000	210.000	49.000	-5860.000	360.000	16.900	6092.874	48.200	0.001	-0.002	1.000	
f	209.000	48.787				5888.160	209.000	93.227	11248.248	209.000	44.589	5380.310	360.000	17.000	6129.490	48.200	0.001	0.000	1.000	
e	210.000	48.879				5844.217	210.000	0.000	0.000	210.000	49.000	-5860.000	360.000	16.997	6101.453	48.200	0.001	0.001	1.000	
f	209.100	48.787				5888.588	209.100	93.120	11236.091	209.100	44.477	5368.417	360.000	17.053	6135.136	48.200	0.000	-0.003	1.000	
5		66%	d	209.020	48.691	5883.261	209.020	61.697	7453.045	209.020	13.313	1577.073	360.000	17.000	6127.631	48.200	0.000	0.013	--	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
6	0%	33%	e	210.000	48.870	5841.561	210.000	0.000	0.000	210.000	48.952	-5854.229	360.000	16.900	6090.454	48.200	0.001	-0.008	1.000	
			f	209.094	48.710	5884.270	209.094	61.975	7485.530	209.094	13.591	1613.518	360.000	17.084	6138.587	48.200	0.001	0.000	1.000	
			e	210.000	48.890	5842.993	210.000	0.000	0.000	210.000	49.000	-5859.620	360.000	16.943	6096.152	48.200	0.001	-0.003	1.000	
			f	209.100	48.661	5881.198	209.100	62.038	7494.531	209.100	13.685	1627.094	360.000	17.000	6126.427	48.200	0.000	-0.010	1.000	
			e	210.000	48.872	5841.311	210.000	0.000	0.000	210.000	48.999	-5858.575	360.000	16.900	6090.456	48.200	0.000	-0.022	1.000	
			f	209.029	48.662	5881.512	209.029	62.013	7488.474	209.029	13.636	1619.498	360.000	17.061	6136.476	48.200	0.001	-0.000	1.000	
			d	242.000	50.565	6080.000	242.000	29.961	3600.000	242.000	20.792	2466.817	360.000	17.600	6330.125	47.800	0.564	27.000	--	
			e	242.000	50.800	6078.875	242.000	0.000	0.000	242.000	50.805	6061.307	360.000	17.581	6318.530	47.800	0.564	26.992	1.000	
		f	242.000	50.585	6080.000	242.000	30.073	3626.114	242.000	20.614	2449.032	360.000	17.600	6320.000	47.800	0.564	27.000	1.000		
		e	242.000	50.800	6073.824	242.000	0.000	0.000	242.000	50.800	6060.048	360.000	17.500	6310.713	47.800	0.564	27.000	1.000		
		f	242.000	50.544	6080.000	242.000	30.109	3629.091	242.000	20.598	2451.353	360.000	17.596	6324.789	47.800	0.565	27.061	1.000		
		e	242.000	50.800	6080.000	242.000	0.000	0.000	242.000	50.801	6060.342	360.000	17.600	6320.000	47.800	0.564	27.000	1.000		
		f	242.000	50.523	6080.000	242.000	30.083	3627.190	242.000	20.578	2443.224	360.000	17.587	6325.449	47.800	0.564	27.012	1.000		
		7	0%	100%	d	209.000	1.804	-43.433	209.000	92.420	11137.763	209.000	92.822	11193.316	360.000	0.043	15.242	48.200	-0.001	
e	209.000				1.912	-36.229	209.000	0.000	0.000	209.000	2.308	36.357	360.000	0.046	16.862	48.200	0.001	-0.000	1.000	
f	209.000				1.848	-43.229	209.000	92.997	11207.343	209.000	93.407	11262.550	360.000	0.030	10.995	48.200	0.004	0.175	1.000	
e	209.000				1.902	-36.014	209.000	0.000	0.000	209.000	2.301	36.154	360.000	0.048	17.496	48.200	0.000	-0.007	1.000	
f	208.973				1.822	-43.149	208.973	93.130	11224.302	208.973	93.534	11278.359	360.000	0.031	11.284	48.200	0.001	-0.001	1.000	
e	209.000				1.871	-36.205	209.000	0.000	0.000	209.000	2.280	36.324	360.000	0.049	17.578	48.200	0.001	-0.005	1.000	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	209.00 0	1.795	-42.816	209.00 0	92.98 5	11206.19 1	209.00 0	93.39 4	11259.34 4	360.00 0	0.035	12.621	48.20 0	0.001	0.006	1.000	
8		66%	d	241.00 0	1.786	-52.000	241.00 0	61.64 4	7413.396	241.00 0	62.10 3	-7459.114	360.00 0	- 0.016	-5.891	47.80 0	0.564	26.91 8	--	
			e	241.00 0	1.911	-48.000	241.00 0	0.000	0.000	241.00 0	2.319	-47.330	360.00 0	- 0.002	-0.730	47.80 0	0.564	26.89 9	1.000	
			f	241.00 0	1.783	-52.000	241.00 0	61.79 9	7432.750	241.00 0	62.26 1	-7478.740	360.00 0	- 0.017	-6.198	47.80 0	0.563	26.90 0	1.000	
			e	241.00 0	1.906	-47.952	241.00 0	0.000	0.000	241.00 0	2.320	-47.318	360.00 0	- 0.002	-0.841	47.80 0	0.563	26.88 4	1.000	
			f	241.00 0	1.782	-52.196	241.00 0	61.86 6	7439.681	241.00 0	62.32 6	-7486.707	360.00 0	- 0.018	-6.489	47.80 0	0.563	26.89 9	1.000	
			e	241.00 0	1.915	-48.000	241.00 0	0.000	0.000	241.00 0	2.315	-47.646	360.00 0	- 0.003	-1.011	47.80 0	0.563	26.86 5	1.000	
			f	241.00 0	1.787	-52.000	241.00 0	61.81 8	7434.437	241.00 0	62.27 9	-7481.997	360.00 0	- 0.018	-6.611	47.80 0	0.563	26.89 9	1.000	
9		33%	d	209.00 0	1.686	-39.724	209.00 0	30.20 0	3640.000	209.00 0	30.60 0	3693.609	360.00 0	0.043	15.549	48.20 0	0.001	0.000	--	
			e	209.00 0	1.834	-36.544	209.00 0	0.000	0.000	209.00 0	2.260	36.750	360.00 0	0.052	18.505	48.20 0	0.000	- 0.032	1.000	
			f	209.00 0	1.684	-39.727	209.00 0	30.37 0	3668.909	209.00 0	30.80 5	3709.217	360.00 0	0.043	15.551	48.20 0	0.001	- 0.001	1.000	
			e	209.00 0	1.833	-36.261	209.00 0	0.000	0.000	209.00 0	2.260	36.427	360.00 0	0.052	18.755	48.20 0	0.000	- 0.013	1.000	
			f	209.00 0	1.683	-39.425	209.00 0	30.41 0	3671.856	209.00 0	30.84 4	3721.038	360.00 0	0.047	16.792	48.20 2	0.002	0.055	1.000	
			e	209.00 0	1.833	-36.313	209.00 0	0.000	0.000	209.00 0	2.260	36.521	360.00 0	0.053	19.048	48.20 0	0.001	- 0.002	1.000	
			f	209.00 0	1.683	-39.612	209.00 0	30.41 5	3669.586	209.00 0	30.85 7	3719.715	360.00 0	0.046	16.451	48.20 0	0.001	0.000	1.000	
Note:																				

(1-2) 203.6 test

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203.6 Step Change in Generation Test																					
Load level: 33%																					
Excel file	EUT output limit	Generati on level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operati ng Mode	
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)			
1	100%	5%-10%	d	210.00 0	91.69 8	11115.0 88	210.00 0	30.32 3	3667.59 4	210.00 0	61.48 4	- 7449.57 4	359.66 8	32.43 1	11700.0 00	48.20 0	0.001	0.003	--		
			e	209.00 0	10.18 1	1215.39 7	209.00 0	30.20 0	3640.00 0	209.00 0	20.20 0	2426.60 6	360.00 0	3.648	1313.46 6	48.20 0	0.001	0.003	1.10 0		
			f	210.00 0	91.74 8	11119.4 94	210.00 0	30.20 0	3660.00 0	210.00 0	61.59 9	- 7461.22 5	359.79 0	32.41 3	11700.0 00	48.20 0	0.001	0.008	1.10 0		
			e	209.00 0	10.17 8	1214.99 5	209.00 0	30.20 0	3640.00 0	209.00 0	20.20 0	2440.00 0	360.00 0	3.621	1303.86 5	48.20 0	0.001	0.004	1.10 0		
			f	210.00 0	91.71 9	11117.8 32	210.00 0	30.20 0	3660.00 0	210.00 0	61.60 0	- 7461.08 4	359.93 2	32.46 1	11699.8 57	48.20 0	0.001	0.001	1.10 0		
			e	209.00 0	10.17 6	1214.83 4	209.00 0	30.20 0	3640.00 0	209.00 0	20.20 3	2440.24 0	360.00 0	3.647	1313.25 3	48.20 0	-0.001	-0.087	1.10 0		
f		210.00 0	91.73 1	11118.5 73	210.00 0	30.20 0	3660.00 0	210.00 0	61.60 1	- 7461.65 5	359.95 0	32.40 8	11699.8 57	48.20 0	0.000	-0.005	1.10 0				
2		33%-66%	d	210.00 0	91.73 1	11118.8 44	210.00 0	30.20 0	3660.00 0	210.00 0	61.59 5	- 7458.96 2	359.85 0	32.49 8	11700.0 00	48.20 0	0.001	-0.001	--		
			e	210.00 0	60.20 0	7281.88 3	210.00 0	30.20 0	3660.00 0	210.00 0	30.19 9	- 3639.71 5	360.00 0	21.19 9	7612.02 6	48.20 0	0.001	-0.001	1.00 0		
			f	210.00 0	91.74 5	11119.7 00	210.00 0	30.20 0	3660.00 0	210.00 0	61.60 0	- 7462.84 6	359.96 6	32.42 8	11700.0 00	48.20 0	0.000	-0.013	1.00 0		
			e	210.00 0	60.20 2	7282.22 2	210.00 0	30.20 0	3660.00 0	210.00 0	30.20 0	- 3639.93 6	360.00 0	21.13 6	7604.62 2	48.20 0	0.000	-0.008	1.00 0		
			f	210.00 0	91.81 3	11127.4 18	210.00 0	30.20 0	3660.00 0	210.00 0	61.67 6	- 7475.12 1	359.97 1	32.52 9	11703.8 52	48.20 0	0.000	-0.011	1.00 0		
	e		209.99 9	60.52 8	7321.39 1	209.99 9	30.20 0	3659.97 1	209.99 9	30.57 7	- 3684.60 9	360.00 0	21.27 1	7649.71 0	48.20 0	0.001	-0.005	1.00 0			

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generati on level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operati ng Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	210.00 0	91.84 1	11132.9 53	210.00 0	30.20 0	3660.00 0	210.00 0	61.69 2	- 7472.01 1	359.96 1	32.51 9	11701.9 97	48.20 0	0.000	-0.006	1.00 0	
3	66%	5%-10%	d	210.00 0	60.20 1	7282.64 2	210.00 0	30.20 0	3660.00 0	210.00 0	30.20 0	- 3639.85 8	360.00 0	21.14 6	7609.17 5	48.20 0	0.000	-0.010	--	
			e	209.00 0	10.17 8	1214.76 5	209.00 0	30.20 0	3640.00 0	209.00 0	20.20 0	2439.94 3	360.00 0	3.612	1300.85 6	48.20 0	0.000	-0.009	1.00 0	
			f	210.00 0	60.20 0	7281.59 8	210.00 0	30.20 0	3660.00 0	210.00 0	30.20 0	- 3639.57 6	360.00 0	21.10 0	7597.77 8	48.20 0	0.001	-0.001	1.00 0	
			e	209.00 0	10.18 0	1215.17 2	209.00 0	30.20 0	3640.00 0	209.00 0	20.20 0	2440.00 0	360.00 0	3.614	1301.43 3	48.20 0	0.001	-0.000	1.00 0	
			f	210.00 0	60.20 0	7281.68 3	210.00 0	30.20 0	3660.00 0	210.00 0	30.17 5	- 3635.37 8	360.00 0	21.11 8	7602.62 5	48.20 0	0.000	-0.013	1.00 0	
			e	209.00 0	10.17 9	1215.10 7	209.00 0	30.20 0	3640.00 0	209.00 0	20.20 0	2423.31 0	360.00 0	3.637	1309.91 4	48.19 9	0.003	0.114	1.00 0	
			f	210.00 0	60.19 8	7280.62 8	210.00 0	30.20 0	3660.00 0	210.00 0	30.19 6	- 3638.14 6	360.00 0	21.10 0	7599.71 5	48.20 0	0.001	0.002	1.00 0	
4		33%-66%	d	210.00 0	60.20 0	7281.15 6	210.00 0	30.20 0	3660.00 0	210.00 0	30.19 4	- 3638.72 6	360.00 0	21.10 0	7600.00 0	48.20 0	0.001	0.003	--	
			e	210.00 0	60.20 0	7281.02 7	210.00 0	30.20 0	3660.00 0	210.00 0	30.19 8	- 3639.05 8	360.00 0	21.18 2	7610.01 4	48.20 0	0.001	0.001	0	
			f	210.00 0	60.20 1	7281.64 8	210.00 0	30.20 0	3660.00 0	210.00 0	30.20 0	- 3639.57 6	360.00 0	21.13 8	7605.11 9	48.20 0	0.001	0.000	0	
			e	210.00 0	60.20 0	7281.77 1	210.00 0	30.20 0	3660.00 0	210.00 0	30.18 0	- 3628.82 4	360.00 0	21.10 0	7599.93 6	48.20 0	0.001	-0.000	0	
			f	209.90 9	60.19 8	7281.48 4	209.90 9	30.20 0	3660.00 0	209.90 9	30.18 2	- 3635.17 8	360.00 0	21.11 3	7601.51 2	48.20 0	0.001	-0.005	0	

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generati on level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operati ng Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	209.997	60.201	7281.198	209.997	30.200	3660.000	209.997	30.199	-3639.486	360.000	21.152	7609.315	48.200	0.000	-0.003	0	
			f	210.000	60.199	7281.084	210.000	30.200	3660.000	210.000	30.199	-3639.829	360.000	21.100	7599.558	48.200	0.000	-0.011	0	
5	33%	5%-10%	d	209.099	27.800	3359.929	209.099	30.200	3640.000	209.099	3.369	293.670	360.000	9.737	3503.125	48.200	0.000	-0.008	--	
			e	209.000	10.247	1220.217	209.000	30.200	3640.000	209.000	20.200	2430.471	360.000	3.658	1317.133	48.200	0.001	-0.003	1.000	
			f	209.000	27.800	3359.925	209.000	30.200	3640.000	209.000	3.369	293.763	360.000	9.735	3503.633	48.200	0.000	-0.022	1.000	
			e	209.000	10.173	1214.380	209.000	30.200	3640.000	209.000	20.201	2439.614	360.000	3.616	1302.335	48.200	0.000	-0.008	1.000	
			f	209.000	27.800	3359.829	209.000	30.200	3640.000	209.000	3.363	294.394	360.000	9.732	3501.469	48.200	0.001	-0.005	1.000	
			e	209.000	10.429	1244.872	209.000	30.200	3639.969	209.000	19.983	2410.934	360.000	3.706	1334.516	48.200	0.001	0.002	1.000	
			f	208.919	31.606	3803.909	208.919	30.095	3620.000	208.919	2.901	-178.812	366.850	31.307	11007.703	48.700	134.000	-6510.171	1.000	
6		33%-66%	d	209.002	27.800	3359.858	209.002	30.200	3640.000	209.002	3.359	294.417	360.000	9.731	3501.533	48.200	0.001	0.000	--	
			e	209.000	27.800	3359.686	209.000	30.200	3640.000	209.000	3.359	294.496	360.000	9.730	3500.999	48.200	0.001	0.000	0	
			f	209.000	27.800	3359.326	209.000	30.200	3640.000	209.000	3.359	294.522	360.000	9.732	3501.735	48.200	0.001	0.000	0	
			e	209.000	27.800	3359.775	209.000	30.200	3640.000	209.000	3.359	294.808	360.000	9.729	3500.676	48.200	0.001	-0.000	0	
			f	209.082	27.800	3359.800	209.082	30.200	3640.000	209.082	3.358	294.805	360.000	9.730	3500.832	48.200	0.001	-0.004	0	
			e	209.100	27.800	3359.894	209.100	30.200	3640.000	209.100	3.361	294.909	360.000	9.746	3506.702	48.200	0.001	-0.000	0	
	f		209.049	27.800	3359.658	209.049	30.200	3640.000	209.049	3.362	295.013	360.000	9.737	3503.595	48.200	0.001	0.004	0		
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(2) ESS external charge current limit = $66 \pm 5\%$ (If support), PV inputs = $100\% \pm 5\%$ -

(2-1) 203.5 test

203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste P	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
1	100%	100%	d	208.900	63.400	7638.697	208.900	91.995	11052.556	208.900	28.614	3440.000	361.244	41.279	14900.000	48.600	-134.000	-6509.962	--	
			e	209.000	63.372	7620.036	209.000	0.000	0.000	209.000	63.400	-7628.530	361.071	41.296	14900.000	48.600	-134.000	-6507.223	1.000	
			f	209.000	63.400	7634.593	209.000	92.706	11142.212	209.000	29.461	3534.900	361.143	41.289	14900.000	48.600	-134.000	-6501.014	1.000	
			e	209.000	63.265	7619.907	209.000	0.000	0.000	209.000	63.397	-7621.114	361.086	41.294	14900.000	48.600	-134.000	-6508.886	1.000	
			f	209.000	63.354	7620.044	209.000	92.877	11163.282	209.000	29.690	3562.395	361.157	41.287	14900.000	48.600	-134.000	-6509.956	1.000	
			e	209.000	63.220	7619.800	209.000	0.000	0.000	209.000	63.384	-7620.000	361.085	41.294	14900.000	48.600	-134.000	-6508.603	1.000	
			f	208.900	63.383	7620.742	208.900	92.748	11147.561	208.900	29.548	3545.991	361.261	41.276	14900.000	48.600	-134.000	-6506.491	1.000	
2	66%	d	209.000	63.200	7619.875	209.000	61.467	7394.185	209.000	3.119	-210.377	361.257	41.277	14900.000	48.600	-134.000	-6510.000	--		
		e	209.000	63.202	7618.403	209.000	0.000	0.000	209.000	63.320	-7620.073	361.198	41.283	14900.000	48.600	-134.000	-6510.000	1.000		
		f	209.000	63.200	7619.908	209.000	61.757	7429.217	209.000	2.967	-176.529	361.323	41.270	14900.000	48.600	-134.000	-6510.000	1.000		
		e	209.000	63.200	7616.342	209.000	0.000	0.000	209.000	63.226	-7620.000	361.375	41.264	14900.000	48.600	-134.000	-6510.000	1.000		

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203.5 Step Change in Load Test																							
Excel file	EUT output limit	Load level	Ste P	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operatin g Mode			
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)					
3			f	209.000	63.200	7619.778	209.000	61.818	7437.827	209.000	2.921	-166.086	361.346	41.267	14900.000	48.600	-	134.000	-	6510.000	1.000		
			e	209.000	63.211	7619.551	209.000	0.000	0.000	209.000	63.383	-	7620.000	361.406	41.262	14900.000	48.600	-	134.000	-	6510.000		1.000
			f	209.000	63.201	7620.000	209.000	61.779	7431.241	209.000	2.961	-175.660	361.322	41.270	14900.000	48.600	-	134.000	-	6509.971	1.000		
		33%	d	209.000	63.200	7618.145	209.000	30.105	3620.000	209.000	33.200	-	3992.807	361.353	41.267	14900.000	48.600	-	134.000	-	6510.000		--
			e	209.000	63.205	7618.911	209.000	0.000	0.000	209.000	63.323	-	7620.073	361.412	41.260	14900.000	48.600	-	134.000	-	6510.000		1.000
			f	209.000	63.198	7615.330	209.000	30.297	3649.309	209.000	32.956	-	3966.206	361.375	41.264	14900.000	48.600	-	134.000	-	6510.000		1.000
			e	209.000	63.201	7618.454	209.000	0.000	0.000	209.000	63.279	-	7620.000	361.416	41.260	14900.000	48.600	-	134.000	-	6510.000		1.000
			f	209.000	63.200	7619.113	209.000	30.343	3653.304	209.000	32.959	-	3962.572	361.346	41.268	14900.000	48.600	-	134.000	-	6510.000		1.000
			e	209.000	63.219	7619.900	209.000	0.000	0.000	209.000	63.386	-	7620.399	361.434	41.258	14900.000	48.600	-	134.000	-	6510.000		1.000
			f	209.000	63.200	7619.601	209.000	30.305	3649.786	209.000	32.951	-	3962.111	361.362	41.265	14900.000	48.600	-	134.000	-	6510.000		1.000
4	50%	100%	d	208.001	49.300	5931.404	208.001	92.148	11071.579	208.001	42.951	5158.321	361.792	37.670	13229.323	48.600	-	134.000	-	6500.175	--		
			e	209.000	49.568	5872.995	209.000	0.000	0.000	209.000	49.604	-	5880.944	348.838	39.301	13182.033	48.600	-	134.000	-	6500.145		1.000
			f	208.000	49.143	5909.493	208.000	92.696	11137.112	208.000	43.685	5247.834	341.576	40.412	13215.975	48.600	-	134.000	-	6500.307	1.000		

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste P	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	209.000	49.451	5864.466	209.000	0.000	0.000	209.000	49.525	5878.100	341.572	40.309	13178.147	48.600	- 134.000	- 6500.333	1.000	
			f	208.104	49.118	5906.918	208.104	92.848	11155.255	208.104	43.846	5267.494	341.166	40.480	13222.616	48.600	- 134.000	- 6500.133	1.000	
			e	209.028	49.431	5862.564	209.028	0.000	0.000	209.028	49.481	5873.504	341.339	40.358	13186.895	48.600	- 134.000	- 6503.476	1.000	
			f	208.000	49.165	5913.352	208.000	92.674	11134.322	208.000	43.650	5243.795	343.563	40.130	13220.827	48.600	- 134.000	- 6506.605	1.000	
5		66%	d	208.899	49.092	5907.414	208.899	61.468	7392.255	208.899	12.720	1497.124	341.293	40.464	13224.204	48.600	- 134.000	- 6508.815	--	
			e	209.002	49.438	5863.448	209.002	0.000	0.000	209.002	49.537	5877.241	341.670	40.309	13185.844	48.600	- 134.000	- 6504.773	1.000	
			f	209.000	49.072	5905.714	209.000	61.748	7425.315	209.000	13.002	1532.307	341.190	40.466	13216.283	48.600	- 134.000	- 6502.780	1.000	
			e	209.071	49.442	5863.088	209.071	0.000	0.000	209.071	49.538	5877.625	341.936	40.276	13186.936	48.600	- 134.000	- 6501.568	1.000	
			f	208.926	49.096	5907.824	208.926	61.806	7434.172	208.926	13.042	1534.691	341.212	40.464	13217.964	48.600	- 134.000	- 6500.758	1.000	
			e	209.000	49.441	5863.533	209.000	0.000	0.000	209.000	49.522	5877.607	341.553	40.321	13181.481	48.600	- 134.000	- 6500.798	1.000	
			f	208.960	49.087	5907.418	208.960	61.760	7427.817	208.960	13.009	1532.639	341.136	40.475	13217.118	48.600	- 134.000	- 6500.114	1.000	
6		33%	d	209.000	49.035	5899.599	209.000	30.077	3620.000	209.000	19.242	2279.850	343.152	40.142	13200.000	48.600	- 134.000	- 6500.125	--	
	e		209.038	49.440	5862.577	209.038	0.000	0.000	209.038	49.501	5877.024	341.379	40.334	13177.858	48.600	- 134.000	- 6500.254	1.000		

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste P	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	209.000	49.010	5898.495	209.000	30.293	3648.510	209.000	19.020	2252.719	341.358	40.419	13207.066	48.600	-	-	1.000	
			e	209.000	49.424	5862.185	209.000	0.000	0.000	209.000	49.460	5869.739	341.515	40.321	13180.285	48.600	-	-	1.000	
			f	209.000	49.016	5899.690	209.000	30.325	3650.998	209.000	19.010	2252.018	342.408	40.266	13205.765	48.600	-	-	1.000	
			e	209.100	49.440	5864.274	209.100	0.000	0.000	209.100	49.544	5878.405	341.627	40.298	13179.202	48.600	-	-	1.000	
			f	209.000	49.007	5899.173	209.000	30.300	3648.645	209.000	19.013	2252.668	341.227	40.433	13204.850	48.600	-	-	1.000	
7	0%	100%	d	208.000	3.011	281.156	208.000	92.008	11041.518	208.000	89.709	10771.025	360.128	20.689	7319.507	48.600	-	-	--	
			e	208.000	3.141	290.341	208.000	0.000	0.000	208.000	3.298	-290.828	360.142	20.716	7329.746	48.600	-	-	1.000	
			f	208.000	3.016	281.032	208.000	92.605	11113.333	208.000	90.312	10843.472	360.092	20.687	7319.601	48.600	-	-	1.000	
			e	208.100	3.114	290.893	208.100	0.000	0.000	208.100	3.285	-291.226	360.081	20.707	7326.841	48.600	-	-	1.000	
			f	208.000	2.996	281.228	208.000	92.732	11128.426	208.000	90.445	10858.315	360.095	20.698	7323.215	48.600	-	-	1.000	
			e	208.000	3.108	290.479	208.000	0.000	0.000	208.000	3.277	-290.866	360.097	20.702	7325.726	48.600	-	-	1.000	
			f	208.000	2.988	281.150	208.000	92.618	11114.465	208.000	90.320	10844.536	360.093	20.688	7320.342	48.600	-	-	1.000	
8		66%	d	208.000	2.960	284.051	208.000	61.374	7370.980	208.000	59.063	7094.577	360.115	20.700	7325.074	48.600	-	-	--	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste P	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	208.102	3.081	290.900	208.102	0.000	0.000	208.102	3.271	-291.020	360.105	20.711	7327.858	48.600	-134.000	-6506.715	1.000	
			f	208.000	2.952	283.828	208.000	61.641	7404.209	208.000	59.342	7128.633	360.134	20.692	7322.227	48.600	-134.000	-6503.625	1.000	
			e	208.000	3.083	291.316	208.000	0.000	0.000	208.000	3.273	-291.473	360.105	20.712	7327.981	48.600	-134.000	-6501.045	1.000	
			f	208.000	2.951	284.040	208.000	61.752	7416.687	208.000	59.430	7139.800	360.122	20.695	7324.052	48.600	-134.000	-6502.355	1.000	
			e	208.000	3.079	291.020	208.000	0.000	0.000	208.000	3.269	-291.157	360.100	20.710	7328.262	48.600	-134.000	-6502.279	1.000	
			f	208.000	2.951	284.137	208.000	61.672	7407.361	208.000	59.365	7130.899	360.110	20.691	7322.111	48.600	-134.000	-6505.207	1.000	
9		33%	d	208.000	2.954	286.674	208.000	30.000	3620.000	208.000	27.791	3331.053	360.099	20.699	7324.023	48.600	-134.000	-6502.444	--	
			e	208.000	3.082	291.263	208.000	0.000	0.000	208.000	3.269	-291.260	360.103	20.705	7326.007	48.600	-134.000	-6500.181	1.000	
			f	208.000	2.955	287.112	208.000	30.257	3634.409	208.000	27.949	3354.286	360.104	20.691	7321.690	48.600	-133.997	-6500.261	1.000	
			e	208.000	3.081	291.154	208.000	0.000	0.000	208.000	3.267	-291.368	360.097	20.702	7325.511	48.600	-134.000	-6500.143	1.000	
			f	208.000	2.954	286.739	208.000	30.274	3639.721	208.000	27.980	3357.285	360.102	20.691	7321.277	48.600	-134.000	-6500.040	1.000	
			e	208.031	3.086	291.054	208.031	0.000	0.000	208.031	3.268	-291.254	360.103	20.699	7324.501	48.600	-134.000	-6500.114	1.000	
			f	208.000	2.965	286.622	208.000	30.269	3638.374	208.000	27.956	3353.267	360.127	20.685	7319.401	48.600	-133.997	-6500.029	1.000	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
Note:																				

(2-2) 203.6 test

203.6 Step Change in Generation Test																					
Load level: 33%																					
Excel file	EUT output limit	Generati on level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operatin g Mode	
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)			
1	100%	5%-10%	d	209.000	63.134	7616.165	209.000	30.200	3638.496	209.000	33.048	-3980.426	361.530	41.248	14900.000	48.700	-133.997	-6519.248	--		
			e	208.000	50.581	-6040.000	208.000	30.000	3619.964	208.000	80.583	9659.855	301.000	3.870	1160.000	48.700	-134.000	-6520.000	4.800		
			f	209.000	62.952	7593.378	209.000	30.200	3626.323	209.000	32.956	-3959.734	345.795	43.166	14900.000	48.700	-134.000	-6520.050	4.600		
			e	208.000	50.600	-6042.483	208.000	30.000	3619.113	208.000	80.600	9660.000	301.000	3.868	1160.000	48.700	-134.000	-6520.244	4.800		
			f	209.000	62.782	7575.848	209.000	30.200	3625.589	209.000	32.792	-3952.216	336.854	44.358	14900.000	48.700	-134.000	-6520.080	4.600		
			e	207.998	50.600	-6054.451	207.998	30.000	3618.084	207.998	80.600	9660.080	301.000	3.868	1160.000	48.700	-134.000	-6520.978	4.800		
			f	209.000	62.800	7577.660	209.000	30.200	3629.187	209.000	32.799	-3948.730	339.585	43.991	14900.000	48.700	-134.000	-6523.153	4.600		
2		33%-66%	d	210.000	62.386	7542.075	210.000	30.200	3660.000	210.000	32.209	-3894.741	337.854	44.192	14900.000	48.600	-135.000	-6559.752	--		
			e	209.000	3.623	394.391	209.000	30.200	3640.000	209.000	27.000	3259.715	338.265	22.070	7460.071	48.600	-135.000	-6552.867	2.600		
			f	210.000	62.444	7560.000	210.000	30.200	3660.000	210.000	32.400	-3908.503	345.689	43.161	14900.000	48.600	-135.000	-6556.307	2.500		

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generati on level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	209.000	3.649	397.370	209.000	30.200	3640.000	209.000	27.000	3248.958	346.993	21.514	7460.000	48.600	-135.000	-6559.911	2.600	
			f	210.000	62.531	7564.638	210.000	30.200	3660.000	210.000	32.400	-3910.873	346.394	43.078	14900.000	48.600	-135.000	-6559.950	2.500	
			e	209.241	18.516	2207.194	209.241	30.200	3644.471	209.241	27.306	1434.501	347.406	26.911	9341.265	48.600	-135.000	-6559.882	2.600	
			f	209.999	62.474	7560.057	209.999	30.200	3660.000	209.999	32.400	-3914.693	353.034	42.267	14900.000	48.600	-135.000	-6559.971	2.500	
3	66%	5%-10%	d	209.000	62.848	7582.123	209.000	30.263	3649.363	209.000	32.734	-3938.396	353.592	42.229	14900.000	48.700	-134.000	-6518.031	--	
			e	207.991	37.613	-3826.422	207.991	30.062	3620.000	207.991	62.116	7447.047	300.999	3.870	1160.000	48.263	-92.227	4487.207	4.800	
			f	209.000	62.764	7571.311	209.000	30.200	3638.252	209.000	32.768	-3940.549	335.698	44.536	14900.000	48.700	-134.000	-6519.725	4.700	
			e	208.000	50.551	-6040.032	208.000	30.000	3620.000	208.000	80.570	9659.259	301.000	3.870	1160.000	48.700	-134.000	-6519.887	4.800	
			f	209.000	62.745	7564.850	209.000	30.200	3631.783	209.000	32.756	-3936.262	331.542	45.069	14900.000	48.700	-134.000	-6520.057	4.700	
			e	208.000	50.600	-6040.342	208.000	30.000	3619.857	208.000	80.600	9660.000	301.000	3.867	1160.000	48.700	-133.997	-6519.743	4.800	
			f	209.000	62.759	7571.013	209.000	30.200	3629.187	209.000	32.759	-3939.629	340.621	43.901	14900.000	48.700	-134.000	-6520.000	4.700	
4		33%-66%	d	210.000	62.300	7540.118	210.000	30.200	3660.000	210.000	32.200	-3886.203	341.942	43.686	14900.000	48.600	-135.000	-6560.000	--	

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generati on level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	209.00 0	3.575	386.200	209.00 0	30.20 0	3640.00 0	209.00 0	27.00 0	3260.00 0	349.70 2	21.33 6	7460.00 0	48.60 0	- 135.00 0	- 6560.31 4	2.600	
			f	210.00 0	62.40 0	7543.07 1	210.00 0	30.20 0	3660.00 0	210.00 0	32.21 6	- 3897.75 3	348.18 5	42.84 9	14900.0 00	48.60 0	- 135.00 0	- 6560.16 2	2.500	
			e	209.00 0	3.582	386.998	209.00 0	30.20 0	3640.00 0	209.00 0	27.00 3	3260.35 5	349.71 4	21.33 6	7459.95 6	48.60 3	- 135.00 0	- 6560.44 3	2.600	
			f	210.00 0	62.40 1	7559.76 0	210.00 0	30.20 0	3660.00 0	210.00 0	32.39 9	- 3900.47 9	356.06 4	41.90 1	14900.0 00	48.60 0	- 135.00 0	- 6560.12 0	2.500	
			e	209.00 0	3.604	389.641	209.00 0	30.20 0	3640.00 0	209.00 0	27.00 0	3260.00 0	354.98 7	21.02 1	7459.84 5	48.60 0	- 134.99 6	- 6559.82 3	2.600	
			f	209.90 7	62.40 0	7558.18 2	209.90 7	30.20 0	3660.00 0	209.90 7	32.39 0	- 3900.00 0	352.47 9	42.30 9	14900.0 00	48.60 0	- 135.00 0	- 6560.35 5	2.500	
5	33%	5%-10%	d	208.93 7	31.61 7	3805.94 3	208.93 7	30.00 1	3620.00 0	208.93 7	2.913	- 180.535	366.81 6	31.34 7	11029.7 17	48.70 0	- 134.00 0	- 6519.62 3	--	
			e	208.00 0	30.74 3	- 3675.80 6	208.00 0	30.00 0	3620.00 0	208.00 0	60.80 0	7299.37 2	300.58 5	3.870	1160.00 0	48.30 0	-92.107	4446.94 7	3.400	
			f	209.00 0	31.62 0	3807.56 6	209.00 0	30.01 4	3620.00 0	209.00 0	2.912	- 180.695	366.82 1	31.33 0	11022.0 97	48.70 0	134.00 0	6519.57 6	3.500	
			e	208.00 0	30.74 7	- 3675.42 7	208.00 0	30.00 0	3620.00 0	208.00 0	60.80 0	7298.39 0	300.85 7	3.870	1160.00 0	48.30 0	-92.164	4449.46 9	3.400	
			f	209.00 0	31.61 0	3805.64 9	209.00 0	30.06 5	3620.00 0	209.00 0	2.906	- 179.822	366.85 0	31.31 4	11012.6 96	48.70 0	134.00 0	6515.06 4	3.500	
			e	208.00 0	30.73 3	- 3674.47 6	208.00 0	30.00 0	3620.00 0	208.00 0	60.80 0	7297.10 5	300.88 2	3.870	1160.00 0	48.30 0	-92.160	4449.36 8	3.400	

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generati on level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	241.000	31.600	3789.073	241.000	30.000	3620.000	241.000	2.886	173.645	338.168	33.732	10995.720	48.400	-134.000	-6470.143	3.500	
6		33%-66%	d	212.000	34.390	4200.047	212.000	30.600	3740.000	212.000	4.138	-459.052	362.913	33.146	11511.321	49.600	-133.000	-6600.000	--	
			e	210.000	3.245	340.970	210.000	30.400	3680.000	210.000	27.600	3340.000	313.488	23.775	7459.715	49.600	-133.000	-6610.000	1.100	
			f	211.819	31.580	3854.105	211.819	30.581	3734.532	211.819	6.083	-135.625	357.208	32.409	11146.816	49.600	-133.000	-6600.886	1.100	
			e	210.000	3.237	339.316	210.000	30.400	3680.000	210.000	27.600	3340.000	312.346	23.860	7459.660	49.600	-133.000	-6610.000	1.100	
			f	212.000	34.365	4199.309	212.000	30.600	3740.000	212.000	4.121	-456.407	362.879	33.155	11513.052	49.600	-133.000	-6600.000	1.100	
			e	210.299	7.887	915.724	210.299	30.429	3688.974	210.299	24.174	2793.629	319.970	25.241	8066.026	49.600	-133.000	-6608.632	1.100	
			f	212.000	34.371	4199.401	212.000	30.600	3740.000	212.000	4.127	-457.088	362.837	33.154	11513.644	49.600	-133.000	-6600.000	1.100	
Note:																				

(3) ESS external charge current limit = $33 \pm 5\%$ (If support), PV inputs = $100\% \pm 5\%$ -
 (3-1) 203.5 test

203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
1	100%	100%	d	209.000	90.800	10940.551	209.000	92.000	11059.975	209.000	3.110	139.212	343.955	43.401	14900.000	47.900	-68.238	-3270.000	--	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
2			e	209.000	90.400	10919.601	209.000	0.000	0.000	209.000	90.407	-10920.290	343.966	43.401	14900.000	47.900	-68.270	-3270.000	1.100	
			f	209.000	90.720	10939.908	209.000	92.747	11154.624	209.000	3.526	245.319	343.968	43.401	14900.000	47.900	-68.200	-3269.939	0.300	
			e	209.000	90.400	10919.954	209.000	0.000	0.000	209.000	90.408	-10920.464	343.984	43.398	14900.000	47.900	-68.227	-3270.000	1.100	
			f	209.000	90.580	10921.951	209.000	92.898	11173.525	209.000	3.747	278.554	343.936	43.399	14900.000	47.900	-68.300	-3270.000	0.300	
			e	209.105	90.307	10900.399	209.105	0.000	0.000	209.105	90.377	-10909.825	343.963	43.397	14900.000	47.900	-68.274	-3270.000	1.100	
			f	209.000	90.587	10924.793	209.000	92.754	11155.863	209.000	3.709	259.001	344.909	43.274	14900.000	47.900	-68.300	-3270.000	0.300	
		66%	d	209.000	90.616	10933.584	209.000	61.516	7404.511	209.000	29.289	-3521.579	348.905	42.796	14900.000	47.900	-68.266	-3270.000	--	
			e	209.000	90.450	10921.343	209.000	0.000	0.000	209.000	90.600	-10939.782	348.949	42.800	14900.000	47.900	-68.286	-3270.000	1.100	
			f	209.000	90.657	10940.061	209.000	61.787	7438.740	209.000	29.025	-3489.524	348.968	42.798	14900.000	47.900	-68.300	-3270.000	0.400	
			e	209.100	90.407	10920.190	209.100	0.000	0.000	209.100	90.592	-10936.152	348.962	42.798	14900.000	47.900	-68.300	-3270.000	1.100	
			f	209.000	90.629	10940.044	209.000	61.884	7449.933	209.000	28.961	-3483.326	348.971	42.795	14900.000	47.900	-68.261	-3270.000	0.400	
			e	209.000	90.400	10919.950	209.000	0.000	0.000	209.000	90.477	-10924.489	348.970	42.795	14900.000	47.900	-68.282	-3270.000	1.100	
			f	209.000	90.600	10937.489	209.000	61.804	7440.485	209.000	28.968	-3485.421	348.961	42.798	14900.000	47.900	-68.300	-3270.000	0.400	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
3		33%	d	209.023	90.359	10909.774	209.023	30.198	3627.794	209.023	60.360	-7280.551	348.912	42.789	14900.000	47.900	-68.300	-3270.000	--	
			e	209.087	90.349	10909.655	209.087	0.000	0.000	209.087	90.402	10916.951	354.828	42.045	14900.000	47.900	-68.291	-3270.000	1.100	
			f	209.000	90.509	10924.700	209.000	30.314	3652.381	209.000	60.285	-7272.873	356.743	41.808	14900.000	47.900	-68.231	-3270.000	0.400	
			e	209.000	90.366	10912.519	209.000	0.000	0.000	209.000	90.437	10921.047	356.718	41.810	14900.000	47.900	-68.215	-3270.000	1.100	
			f	209.000	90.517	10925.632	209.000	30.353	3656.186	209.000	60.245	-7269.135	356.714	41.810	14900.000	47.900	-68.269	-3270.000	0.400	
			e	209.100	90.376	10913.666	209.100	0.000	0.000	209.100	90.438	10921.596	356.741	41.810	14900.000	47.900	-68.284	-3270.000	1.100	
			f	209.004	90.496	10922.111	209.004	30.315	3653.609	209.004	60.266	-7270.157	356.812	41.808	14900.000	47.900	-68.297	-3270.000	0.400	
4	50%	100%	d	208.000	49.380	5938.797	208.000	92.137	11070.000	208.000	42.893	5152.607	375.138	26.753	9710.226	47.900	-68.120	-3260.150	--	
			e	209.000	49.638	5888.167	209.000	0.000	0.000	209.000	49.789	-5900.218	375.432	26.147	9505.753	47.900	-68.168	-3260.944	1.100	
			f	208.078	49.408	5943.564	208.078	92.681	11135.484	208.078	43.391	5212.995	375.269	26.716	9707.742	47.900	-68.194	-3265.407	0.400	
			e	209.100	49.710	5892.114	209.100	0.000	0.000	209.100	49.800	-5900.998	375.283	26.771	9725.154	47.900	-68.143	-3261.235	1.100	
			f	208.060	49.404	5943.814	208.060	92.836	11153.437	208.060	43.523	5230.510	375.242	26.723	9710.976	47.900	-68.136	-3260.710	0.400	
			e	209.000	49.774	5885.299	209.000	0.000	0.000	209.000	49.800	-5900.684	374.940	26.325	9568.832	47.900	-68.197	-3264.615	1.100	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	208.000	49.394	5941.940	208.000	92.695	11137.404	208.000	43.418	5216.006	375.097	26.774	9717.546	47.900	-68.183	-3264.579	0.400	
5		66%	d	209.000	49.358	5938.701	209.000	61.465	7393.834	209.000	12.511	1467.254	374.982	26.161	9497.223	47.900	-68.113	-3260.000	--	
			e	209.102	49.773	5885.481	209.102	0.000	0.000	209.102	49.800	-5899.819	375.332	26.555	9651.361	47.900	-68.142	-3260.436	1.100	
			f	208.971	49.400	5940.645	208.971	61.757	7426.697	208.971	12.786	1502.805	375.607	25.815	9379.677	47.900	-68.160	-3261.459	0.400	
			e	209.000	49.708	5882.850	209.000	0.000	0.000	209.000	49.800	-5899.810	375.131	26.575	9654.038	47.900	-68.198	-3266.295	1.100	
			f	208.924	49.372	5939.202	208.924	61.796	7433.453	208.924	12.855	1511.533	376.693	26.195	9558.403	47.900	-68.200	-3265.569	0.400	
			e	209.100	49.720	5883.134	209.100	0.000	0.000	209.100	49.797	-5880.741	375.074	26.714	9699.516	47.900	-68.193	-3263.960	1.100	
			f	209.000	49.315	5935.292	209.000	61.742	7425.506	209.000	12.788	1501.889	375.254	26.655	9677.660	47.900	-68.164	-3261.940	0.400	
6		33%	d	209.000	49.256	5923.810	209.000	30.083	3620.000	209.000	19.480	-2300.501	375.317	26.631	9672.632	47.900	-68.142	-3260.752	--	
			e	209.000	49.782	5885.953	209.000	0.000	0.000	209.000	49.800	-5899.855	375.114	26.705	9697.659	47.900	-68.164	-3261.597	1.100	
			f	209.000	49.254	5924.025	209.000	30.295	3648.909	209.000	19.279	-2280.983	375.135	26.578	9646.237	47.900	-68.182	-3262.565	0.400	
			e	209.100	49.778	5885.273	209.100	0.000	0.000	209.100	49.800	-5899.810	375.105	26.678	9690.143	47.900	-68.191	-3263.420	1.100	
			f	209.000	49.265	5924.967	209.000	30.331	3651.530	209.000	19.210	-2268.514	375.111	26.614	9656.585	47.900	-68.197	-3264.368	0.400	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste P	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operati ng Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	209.000	49.772	5886.496	209.000	0.000	0.000	209.000	49.800	-5899.886	375.179	26.568	9649.516	47.900	-68.189	-3261.766	1.100	
			f	209.000	49.257	5924.394	209.000	30.299	3648.759	209.000	19.266	-2278.459	375.201	26.684	9688.074	47.900	-68.182	-3262.411	0.400	
7	0%	100%	d	208.000	1.844	-25.606	208.000	91.800	11020.000	208.000	92.052	11058.828	360.395	9.659	3469.734	47.900	-68.199	-3266.232	--	
			e	208.007	1.901	-17.953	208.007	0.000	0.000	208.007	2.180	18.000	360.352	9.657	3469.746	47.900	-68.201	-3266.679	1.100	
			f	208.000	1.834	-25.656	208.000	92.573	11108.664	208.000	92.830	11144.578	360.370	9.626	3458.771	47.900	-68.215	-3267.527	0.400	
			e	208.000	1.893	-17.724	208.000	0.000	0.000	208.000	2.179	17.600	360.361	9.677	3476.200	47.900	-68.201	-3267.720	1.100	
			f	208.000	1.826	-25.366	208.000	92.694	11123.149	208.000	92.955	11160.665	360.361	9.672	3474.191	47.900	-68.226	-3268.404	0.400	
			e	208.103	1.880	-17.789	208.103	0.000	0.000	208.103	2.180	17.820	360.393	9.694	3482.393	47.900	-68.202	-3268.860	1.100	
			f	208.000	1.823	-25.432	208.000	92.612	11113.980	208.000	92.872	11150.243	360.362	9.644	3464.822	47.900	-68.207	-3267.019	0.400	
8		66%	d	208.000	1.764	-23.259	208.000	61.387	7372.993	208.000	61.645	7403.624	360.384	9.647	3465.946	47.900	-68.210	-3266.000	--	
			e	208.000	1.878	-17.477	208.000	0.000	0.000	208.000	2.177	17.527	360.365	9.694	3481.851	47.900	-68.223	-3267.895	1.100	
			f	208.000	1.763	-23.171	208.000	61.667	7406.298	208.000	61.910	7437.020	360.366	9.662	3471.106	47.900	-68.207	-3265.714	0.400	
			e	208.100	1.879	-17.743	208.100	0.000	0.000	208.100	2.179	17.706	360.373	9.660	3470.689	47.900	-68.187	-3266.105	1.100	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
9			f	208.00 0	1.769	-23.014	208.00 0	61.74 1	7415.40 9	208.00 0	61.97 3	7443.393	360.33 7	9.644	3464.09 2	47.90 0	- 68.20 8	- 3265.98 8	0.40 0	
			e	208.00 0	1.880	-17.584	208.00 0	0.000	0.000	208.00 0	2.171	17.458	360.35 9	9.678	3476.49 6	47.90 0	- 68.19 6	- 3263.81 8	1.10 0	
			f	208.00 0	1.764	-22.867	208.00 0	61.69 4	7409.41 5	208.00 0	61.93 7	7439.914	360.34 8	9.687	3479.40 1	47.90 0	- 68.22 7	- 3269.25 8	0.40 0	
		33%	d	208.00 0	1.739	-20.792	208.00 0	30.00 0	3620.00 0	208.00 0	30.34 3	3639.699	360.38 0	9.651	3467.31 8	47.90 0	- 68.19 3	- 3265.56 4	--	
			e	208.10 0	1.900	-17.368	208.10 0	0.000	0.000	208.10 0	2.180	17.162	360.35 9	9.662	3470.92 6	47.90 0	- 68.21 5	- 3267.78 6	1.10 0	
			f	208.00 0	1.751	-20.734	208.00 0	30.25 6	3634.71 6	208.00 0	30.49 1	3664.086	360.35 9	9.646	3465.51 5	47.90 0	- 68.20 1	- 3265.62 2	0.40 0	
			e	208.00 0	1.899	-17.150	208.00 0	0.000	0.000	208.00 0	2.179	17.000	360.37 3	9.700	3484.86 9	47.90 0	- 68.21 4	- 3267.79 1	1.10 0	
			f	208.00 0	1.750	-20.914	208.00 0	30.29 1	3643.83 2	208.00 0	30.54 5	3668.543	360.35 9	9.688	3479.36 1	47.90 0	- 68.18 5	- 3264.51 1	0.40 0	
			e	208.00 0	1.918	-17.413	208.00 0	0.000	0.000	208.00 0	2.189	17.202	360.33 3	9.629	3459.20 2	47.90 0	- 68.17 3	- 3263.73 2	1.10 0	
			f	208.00 0	1.774	-20.796	208.00 0	30.27 7	3640.79 9	208.00 0	30.51 6	3665.678	360.33 5	9.661	3470.51 4	47.90 0	- 68.20 6	- 3265.46 4	0.40 0	

Note:

(3-2) 203.6 test

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203.6 Step Change in Generation Test																					
Load level: 33%																					
Excel file	EUT output limit	Generati on level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operatin g Mode	
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)			
1	100%	5%-10%	d	209.000	90.601	10939.950	209.000	30.059	3620.000	209.000	60.600	7319.298	351.190	42.476	14900.000	47.900	68.293	3270.000	--		
			e	208.000	19.984	-2380.436	208.000	30.000	3600.073	208.000	50.000	6000.000	301.000	3.852	1160.000	47.900	68.266	3269.927	4.600		
			f	209.000	90.527	10921.092	209.000	30.156	3620.000	209.000	60.489	7299.787	336.929	44.338	14900.000	47.900	68.207	3270.000	4.600		
			e	208.000	19.981	-2380.161	208.000	30.000	3600.258	208.000	50.000	6000.000	301.002	3.850	1160.000	47.900	68.251	3269.807	4.600		
			f	209.000	90.524	10921.626	209.000	30.187	3620.000	209.000	60.477	7293.552	337.625	44.243	14900.000	47.900	68.297	3270.000	4.600		
			e	208.000	19.974	-2382.156	208.000	30.000	3605.868	208.000	49.975	5997.844	301.004	3.850	1160.000	47.900	68.246	3269.920	4.600		
			f	209.000	90.552	10925.963	209.000	30.199	3620.000	209.000	60.515	7299.772	337.367	44.272	14900.000	47.900	68.288	3270.000	4.600		
2		33%-66%	d	209.000	90.411	10920.000	209.000	30.199	3620.000	209.000	60.400	7298.443	340.960	43.801	14900.000	47.900	68.257	3270.000	--		
			e	209.000	32.000	3840.685	209.000	30.000	3620.000	209.000	2.929	-225.772	339.314	21.950	7450.000	47.900	68.272	3269.943	3.600		
			f	209.000	90.600	10936.904	209.000	30.192	3620.000	209.000	60.600	7300.449	343.964	43.410	14900.000	47.900	68.200	3268.926	2.600		
			e	208.942	32.000	3858.776	208.942	30.000	3620.000	208.942	2.962	-231.401	344.981	21.600	7450.000	47.900	68.208	3269.742	3.600		
			f	209.000	90.600	10934.522	209.000	30.192	3620.000	209.000	60.600	7301.398	343.919	43.416	14900.000	47.900	68.240	3270.000	2.600		

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generati on level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	208.900	32.205	3878.667	208.900	30.000	3620.000	208.900	3.164	-256.536	344.714	21.695	7476.304	47.900	-68.254	-3269.754	3.600	
			f	209.000	90.600	10932.611	209.000	30.176	3620.000	209.000	60.599	-7300.571	343.924	43.415	14900.000	47.900	-68.288	-3270.000	2.600	
3	66%	5%-10%	d	209.000	63.400	7639.599	209.000	30.002	3620.000	209.000	33.413	-4019.811	362.068	33.264	11500.000	47.900	-68.141	-3260.472	--	
			e	208.000	19.985	-2380.628	208.000	30.000	3605.991	208.000	50.000	6000.000	301.000	3.850	1160.000	47.900	-68.287	-3270.086	3.400	
			f	209.000	63.399	7639.301	209.000	30.048	3620.000	209.000	33.403	-4010.387	362.047	33.230	11499.875	47.900	-68.136	-3260.949	4.100	
			e	208.000	19.989	-2381.127	208.000	30.000	3608.696	208.000	49.994	5999.163	300.994	3.852	1160.000	47.900	-68.294	-3269.919	3.400	
			f	209.000	63.399	7638.916	209.000	30.013	3620.000	209.000	33.406	-4018.802	362.100	33.257	11496.576	47.900	-68.162	-3261.969	4.100	
			e	208.000	19.962	-2380.057	208.000	30.000	3604.165	208.000	50.000	5999.943	301.000	3.851	1160.000	47.900	-68.204	-3269.672	3.400	
			f	209.000	63.400	7639.715	209.000	30.033	3620.000	209.000	33.413	-4019.201	362.068	33.243	11500.000	47.900	-68.132	-3260.571	4.100	
4		33%-66%	d	209.000	63.400	7639.434	209.000	30.000	3620.000	209.000	33.409	-4018.868	362.053	33.282	11500.708	47.900	-68.175	-3262.913	--	
			e	208.900	31.892	3837.603	208.900	30.000	3620.000	208.900	2.866	-214.856	316.247	23.565	7450.114	47.900	-68.217	-3269.743	1.300	
			f	209.000	63.398	7638.801	209.000	30.009	3620.000	209.000	33.405	-4018.102	362.055	33.273	11500.499	47.900	-68.123	-3260.100	1.700	

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generati on level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	208.921	31.934	3839.903	208.921	30.000	3620.000	208.921	2.874	-216.573	317.391	23.470	7450.097	47.900	-68.206	-3269.839	1.300	
			f	209.000	63.399	7639.515	209.000	30.016	3620.000	209.000	33.412	-4019.429	362.151	33.267	11500.713	47.900	-68.150	-3260.713	1.700	
			e	208.999	34.766	4185.535	208.999	30.000	3620.000	208.999	5.707	-569.110	315.699	24.793	7815.407	47.900	-68.198	-3268.773	1.300	
			f	209.000	63.401	7639.800	209.000	30.015	3620.000	209.000	33.413	-4019.829	362.061	33.265	11500.000	47.900	-68.123	-3260.171	1.700	
5	33%	5%-10%	d	208.000	31.777	3804.057	208.000	30.042	3604.646	208.000	2.949	-196.284	380.054	19.937	7447.972	48.000	-68.228	-3272.217	--	
			e	207.000	20.076	-2388.502	207.000	30.000	3581.912	207.000	49.992	5978.573	301.000	3.874	1166.776	48.000	-68.300	-3279.943	1.700	
			f	207.918	30.657	3304.347	207.918	30.000	3598.327	207.918	6.731	289.361	373.403	18.637	6930.874	48.000	-68.212	-3271.610	2.800	
			e	207.079	20.559	-1929.610	207.079	30.000	3581.675	207.079	46.502	5528.055	305.473	5.154	1633.849	48.000	-68.358	-3279.791	1.700	
			f	207.947	30.985	3498.437	207.947	30.000	3598.916	207.947	5.244	92.766	375.839	19.161	7137.275	48.000	-68.197	-3270.785	2.800	
			e	207.000	20.042	-2384.017	207.000	30.000	3580.000	207.000	49.945	5972.280	301.037	3.884	1171.165	48.000	-68.305	-3279.933	1.700	
			f	208.000	31.767	3800.942	208.000	30.000	3600.000	208.000	2.986	-204.076	380.056	19.918	7440.799	48.000	-68.247	-3273.609	2.800	
6		33%-66%	d	208.901	31.634	3802.830	208.901	30.000	3620.000	208.901	2.878	-182.789	380.071	19.864	7420.991	47.900	-68.146	-3261.450	--	

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generati on level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	209.000	31.584	3797.718	209.000	30.000	3620.000	209.000	2.846	-177.804	379.218	19.889	7422.511	47.900	-68.170	-3263.524	0	
			f	209.000	31.632	3802.647	209.000	30.000	3620.000	209.000	2.878	-183.068	380.077	19.893	7431.049	47.900	-68.149	-3261.561	0	
			e	209.000	31.539	3792.496	209.000	30.000	3620.000	209.000	2.819	-173.295	378.224	19.913	7421.691	47.900	-68.164	-3263.221	0	
			f	208.982	31.626	3801.930	208.982	30.000	3620.000	208.982	2.874	-182.258	380.078	19.857	7420.948	47.900	-68.129	-3260.466	0	
			e	208.900	31.586	3797.106	208.900	30.000	3620.000	208.900	2.846	-177.226	379.344	19.879	7421.021	47.900	-68.172	-3263.213	0	
			f	208.900	31.627	3802.140	208.900	30.000	3620.000	208.900	2.871	-181.681	380.074	19.895	7433.538	47.900	-68.150	-3261.541	0	
Note:																				

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(4) ESS external charge current limit = 0% to +5%, PV inputs = 50% ± 5%

(4-1) 203.5 test

(a) For single phase unit connected line to neutral

203.5 Step Change in Load Test																					
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode	
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)			
1	100%	100%	d	209.10 0	60.38 5	7298.27 1	209.10 0	92.57 2	11174.76 2	209.10 0	32.35 3	3898.847	360.00 0	21.10 0	7600.50 1	48.00 0	0.003	0.088	--		
			e	210.00 0	60.26 6	7278.73 0	210.00 0	0.000	0.000	210.00 0	60.39 1	- 7281.597	360.00 0	21.10 0	7588.82 0	48.00 0	0.002	0.034	1.100		
			f	209.05 1	60.39 9	7300.15 4	209.05 1	93.16 2	11244.30 1	209.05 1	32.92 3	3968.694	360.00 0	21.10 0	7606.35 9	48.00 0	0.002	0.043	0.200		
			e	210.00 0	60.35 0	7280.88 2	210.00 0	0.000	0.000	210.00 0	60.40 0	- 7291.972	360.00 0	21.10 0	7589.69 8	48.00 0	0.002	0.016	1.100		
			f	209.00 0	60.40 3	7302.39 5	209.00 0	93.29 6	11260.79 8	209.00 0	33.03 4	3981.419	360.00 0	21.19 4	7616.54 1	48.00 0	0.005	0.162	0.200		
			e	210.00 0	60.34 4	7280.79 8	210.00 0	0.000	0.000	210.00 0	60.40 0	- 7294.314	360.00 0	21.10 0	7589.80 0	48.00 0	0.002	0.005	1.100		
			f	209.07 8	60.40 0	7300.99 9	209.07 8	93.16 8	11245.39 2	209.07 8	32.88 7	3963.138	360.00 0	21.10 0	7607.17 5	48.00 0	0.002	0.055	0.200		
2		66%	d	210.00 0	60.39 1	7300.10 0	210.00 0	61.85 2	7472.256	210.00 0	3.191	184.089	360.00 0	21.16 9	7611.88 0	48.00 0	0.002	0.004	--		
			e	210.00 0	60.35 2	7281.45 2	210.00 0	0.000	0.000	210.00 0	60.40 0	- 7295.209	360.00 0	21.10 0	7590.87 1	48.00 0	0.002	0.003	1.100		
			f	209.99 1	60.39 2	7300.67 6	209.99 1	62.05 1	7496.959	209.99 1	3.280	206.396	360.00 0	21.10 0	7602.41 2	48.00 0	0.001	- 0.002	0.200		
			e	210.00 0	60.33 2	7281.14 0	210.00 0	0.000	0.000	210.00 0	60.40 0	- 7291.259	360.00 0	21.10 0	7593.84 8	48.00 0	0.001	0.000	1.100		
			f	209.89 8	60.38 8	7300.00 0	209.89 8	62.14 3	7505.455	209.89 8	3.320	217.830	360.00 0	21.16 3	7611.39 7	48.00 0	0.001	- 0.002	0.200		
			e	210.00 0	60.31 1	7280.24 9	210.00 0	0.000	0.000	210.00 0	60.39 9	- 7290.474	360.00 0	21.10 0	7589.50 1	48.00 0	0.002	0.001	1.100		
			f	210.00 0	60.38 5	7300.02 9	210.00 0	62.05 4	7496.491	210.00 0	3.282	208.467	360.00 0	21.12 8	7607.66 0	48.00 0	0.001	0.004	0.200		
3		33%	d	210.00 0	60.22 1	7288.74 7	210.00 0	30.20 0	3660.000	210.00 0	30.20 0	- 3639.900	360.00 0	21.10 0	7597.76 9	48.00 0	0.001	- 0.000	--		
			e	210.00 0	60.34 2	7280.98 0	210.00 0	0.000	0.000	210.00 0	60.40 0	- 7293.975	360.00 0	21.10 0	7589.94 6	48.00 0	0.002	0.003	1.100		
			f	210.00 0	60.23 1	7290.23 0	210.00 0	30.44 4	3682.826	210.00 0	29.97 0	- 3612.934	360.00 0	21.10 0	7600.87 6	48.00 0	0.001	- 0.009	0.200		
			e	210.00 0	60.33 2	7280.59 9	210.00 0	0.000	0.000	210.00 0	60.40 0	- 7291.621	360.00 0	21.10 0	7599.95 0	48.00 0	0.001	- 0.002	1.100		

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	210.00 0	60.22 0	7288.38 1	210.00 0	30.46 9	3685.898	210.00 0	29.90 7	- 3600.532	360.00 0	21.10 0	7595.01 1	48.00 0	0.001	- 0.000	0.200	
			e	210.00 0	60.32 5	7280.99 8	210.00 0	0.000	0.000	210.00 0	60.40 0	- 7296.459	360.00 0	21.10 0	7592.94 3	48.00 0	0.001	- 0.004	1.100	
			f	210.00 0	60.22 6	7290.67 0	210.00 0	30.45 1	3683.424	210.00 0	29.97 7	- 3613.923	360.00 0	21.10 1	7606.09 1	48.00 0	0.001	- 0.020	0.200	
4	50%	100%	d	209.90 4	48.80 9	5899.79 9	209.90 4	92.73 6	11186.54 1	209.90 4	43.95 6	5304.286	360.00 0	17.32 1	6172.56 9	48.20 0	- 0.001	- 0.002	--	
			e	213.89 8	47.58 4	5882.90 4	213.89 8	0.000	0.000	213.89 8	47.60 0	- 5880.000	360.00 0	17.26 3	6147.62 3	48.20 0	- 0.001	- 0.005	1.100	
			f	209.89 9	48.82 3	5900.36 9	209.89 9	93.15 8	11237.57 3	209.89 9	44.37 1	5353.978	360.00 0	17.32 5	6173.36 4	48.20 0	- 0.002	- 0.007	0.200	
			e	213.89 5	47.58 1	5882.09 0	213.89 5	0.000	0.000	213.89 5	47.60 0	- 5880.238	360.00 0	17.25 8	6147.29 2	48.20 0	- 0.002	- 0.043	1.100	
			f	209.90 0	48.82 5	5900.04 4	209.90 0	93.26 3	11249.13 5	209.90 0	44.47 7	5367.273	360.00 0	17.32 3	6173.23 7	48.20 0	- 0.002	- 0.065	0.200	
			e	213.89 7	47.59 5	5884.61 5	213.89 7	0.000	0.000	213.89 7	47.60 0	- 5880.000	360.00 0	17.25 1	6145.55 6	48.20 0	- 0.002	- 0.100	1.100	
			f	209.90 2	48.83 8	5900.77 0	209.90 2	93.10 4	11229.64 3	209.90 2	44.29 3	5345.050	360.00 0	17.31 0	6169.71 5	48.20 0	- 0.002	- 0.100	0.200	
5		66%	d	211.00 0	48.41 4	5899.43 9	211.00 0	62.26 2	7573.758	211.00 0	13.94 1	1684.092	360.00 0	17.30 0	6163.00 6	48.20 0	- 0.002	- 0.040	--	
			e	213.90 2	47.60 1	5890.30 9	213.90 2	0.000	0.000	213.90 2	47.60 0	- 5896.479	360.00 0	17.25 3	6146.29 8	48.20 0	- 0.002	- 0.024	1.100	
			f	211.00 0	48.43 1	5900.43 0	211.00 0	62.44 1	7594.654	211.00 0	14.10 6	1704.341	360.00 0	17.30 1	6164.47 0	48.20 0	- 0.002	- 0.041	0.200	
			e	214.00 0	47.59 9	5886.03 3	214.00 0	0.000	0.000	214.00 0	47.60 0	- 5881.425	360.00 0	17.24 8	6144.91 7	48.20 0	- 0.002	- 0.073	1.100	
			f	211.00 0	48.41 4	5899.12 2	211.00 0	62.50 6	7600.359	211.00 0	14.16 1	1713.796	360.00 0	17.30 0	6161.81 6	48.20 0	- 0.002	- 0.100	0.200	
			e	214.00 0	47.59 9	5884.72 9	214.00 0	0.000	0.000	214.00 0	47.60 0	- 5880.570	360.00 0	17.29 4	6153.47 6	48.20 0	- 0.002	- 0.100	1.100	
			f	211.00 0	48.40 7	5898.94 4	211.00 0	62.43 7	7593.894	211.00 0	14.12 5	1707.347	360.00 0	17.29 9	6160.65 6	48.20 0	- 0.002	- 0.044	0.200	
6	33%	d	212.09 9	47.99 9	5892.53 1	212.09 9	30.71 2	3762.030	212.09 9	17.35 8	- 2120.000	360.00 0	17.28 2	6150.48 9	48.20 0	- 0.002	- 0.001	--		
		e	214.00 0	47.59 6	5885.29 9	214.00 0	0.000	0.000	214.00 0	47.60 0	- 5880.907	360.00 0	17.22 5	6142.63 2	48.20 0	- 0.002	- 0.020	1.100		

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	212.094	48.000	5895.146	212.094	30.879	3788.049	212.094	17.190	-2099.447	360.000	17.300	6162.504	48.200	-0.002	0.000	0.200	
			e	214.000	47.600	5886.936	214.000	0.000	0.000	214.000	47.600	-5883.230	360.000	17.243	6144.513	48.200	-0.002	-0.060	1.100	
			f	212.098	48.000	5893.703	212.098	30.871	3787.450	212.098	17.191	-2100.133	360.000	17.293	6153.503	48.200	-0.002	-0.056	0.200	
			e	214.000	47.595	5884.330	214.000	0.000	0.000	214.000	47.600	-5880.000	360.000	17.246	6144.957	48.200	-0.002	-0.032	1.100	
			f	212.093	47.999	5892.582	212.093	30.829	3782.967	212.093	17.246	-2107.874	360.000	17.300	6162.539	48.200	-0.002	-0.019	0.200	
7	0%	100%	d	208.941	1.868	-34.565	208.941	92.544	11151.877	208.941	92.885	11198.961	360.000	-0.014	-4.903	48.000	0.001	0.013	--	
			e	209.000	1.935	-27.702	209.000	0.000	0.000	209.000	2.324	27.554	360.000	0.003	1.047	48.000	0.002	0.014	1.100	
			f	209.000	1.870	-34.691	209.000	93.006	11209.155	209.000	93.351	11255.699	360.000	-0.013	-4.788	48.000	0.002	0.066	0.200	
			e	209.000	1.930	-27.796	209.000	0.000	0.000	209.000	2.316	27.726	360.000	0.003	1.031	48.000	0.002	0.055	1.100	
			f	209.000	1.869	-34.789	209.000	93.131	11225.322	209.000	93.475	11267.716	360.000	-0.013	-4.683	48.000	0.002	0.075	0.200	
			e	209.000	1.932	-27.670	209.000	0.000	0.000	209.000	2.324	27.511	360.000	0.006	1.946	48.000	0.002	0.011	1.100	
			f	208.902	1.871	-34.902	208.902	93.024	11211.041	208.902	93.357	11256.205	360.000	-0.013	-4.930	48.000	0.002	0.020	0.200	
8		66%	d	209.000	1.819	-33.264	209.000	61.710	7443.490	209.000	62.056	7485.530	360.000	-0.008	-3.055	48.000	0.002	0.031	--	
			e	209.000	1.926	-27.949	209.000	0.000	0.000	209.000	2.307	27.848	360.000	0.002	0.809	48.000	0.002	0.004	1.100	
			f	209.000	1.816	-33.137	209.000	61.967	7474.009	209.000	62.301	7515.238	360.000	-0.008	-2.823	48.000	-0.001	-0.118	0.200	
			e	209.000	1.925	-27.796	209.000	0.000	0.000	209.000	2.306	27.703	360.000	0.005	1.981	48.000	0.002	0.011	1.100	
			f	209.000	1.799	-32.842	209.000	62.022	7482.315	209.000	62.367	7523.553	360.000	-0.007	-2.393	48.000	0.002	0.035	0.200	
			e	209.000	1.916	-27.903	209.000	0.000	0.000	209.000	2.301	27.795	360.000	0.005	2.037	48.000	0.002	0.018	1.100	
			f	209.000	1.791	-32.842	209.000	61.983	7477.575	209.000	62.314	7517.033	360.000	-0.006	-1.953	48.000	0.002	0.029	0.200	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
9		33%	d	209.00 0	1.758	-31.013	209.00 0	30.20 0	3640.000	209.00 0	30.60 0	3682.055	360.00 0	- 0.002	-0.539	48.00 0	0.002	0.009	--	
			e	209.00 0	1.902	-27.699	209.00 0	0.000	0.000	209.00 0	2.299	27.718	360.00 0	0.005	1.782	48.00 0	0.002	0.004	1.100	
			f	209.00 0	1.758	-30.986	209.00 0	30.38 4	3668.571	209.00 0	30.70 0	3700.922	360.00 0	- 0.002	-0.747	48.00 0	0.002	0.046	0.200	
			e	209.00 0	1.901	-27.397	209.00 0	0.000	0.000	209.00 0	2.297	27.270	360.00 0	0.010	3.667	48.00 0	0.002	0.029	1.100	
			f	209.00 0	1.754	-30.818	209.00 0	30.42 6	3671.697	209.00 0	30.79 2	3712.056	360.00 0	0.000	0.166	48.00 0	0.002	0.006	0.200	
			e	209.00 0	1.902	-27.903	209.00 0	0.000	0.000	209.00 0	2.296	27.897	360.00 0	0.006	2.222	48.00 0	0.002	0.015	1.100	
			f	209.00 0	1.751	-31.050	209.00 0	30.43 4	3669.700	209.00 0	30.75 4	3710.414	360.00 0	0.001	0.200	48.00 0	0.002	0.048	0.200	
Note:																				

(4-2) 203.6 test

203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generatio n level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
1	100%	5%-10%	d	210.00 0	60.24 2	7292.85 7	210.00 0	30.20 0	3660.00 0	210.00 0	30.20 0	- 3640.10 0	360.00 0	21.10 0	7592.71 9	48.00 0	0.001	- 0.013	--	
			e	209.00 0	10.26 1	1223.62 3	209.00 0	30.20 0	3640.00 0	209.00 0	20.20 0	2430.92 6	360.00 0	3.594	1294.91 8	48.00 0	0.001	- 0.002	0.800	
			f	210.00 0	60.23 5	7291.98 4	210.00 0	30.20 0	3660.00 0	210.00 0	30.20 0	- 3640.32 0	360.00 0	21.10 0	7592.47 7	48.00 0	0.001	- 0.002	0.800	
			e	209.00 0	10.25 5	1223.36 9	209.00 0	30.20 0	3640.00 0	209.00 0	20.20 0	2429.46 9	360.00 0	3.568	1285.42 7	48.00 0	0.001	- 0.003	0.800	
			f	210.00 0	60.23 4	7290.87 0	210.00 0	30.20 0	3660.00 0	210.00 0	30.20 0	- 3640.05 7	360.00 0	21.10 0	7593.16 7	48.00 0	0.001	- 0.001	0.800	
			e	209.00 0	10.25 7	1223.22 2	209.00 0	30.20 0	3640.00 0	209.00 0	20.20 0	2420.00 0	360.00 0	3.583	1290.97 8	48.00 0	0.001	0.001	0.800	

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generation level (PV)	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	209.971	60.236	7289.615	209.971	30.200	3660.000	209.971	30.200	3640.000	360.000	21.100	7595.692	48.000	0.002	0.024	0.800	
2		33%-66%	d	210.000	60.234	7290.660	210.000	30.200	3660.000	210.000	30.200	3640.047	360.000	21.100	7595.342	48.000	0.002	0.004	--	
			e	210.000	60.245	7291.441	210.000	30.200	3659.971	210.000	30.200	3640.399	360.000	21.100	7603.096	48.000	0.001	0.000	0	
			f	210.000	60.262	7293.508	210.000	30.200	3659.925	210.000	30.200	3640.449	360.000	21.100	7600.712	48.000	0.002	0.002	0	
			e	210.000	60.254	7291.916	210.000	30.200	3659.936	210.000	30.200	3640.064	360.000	21.100	7595.056	48.000	0.002	0.000	0	
			f	209.994	60.263	7293.666	209.994	30.200	3659.943	209.994	30.200	3639.601	360.000	21.100	7597.375	48.000	0.001	-0.001	0	
			e	209.913	60.263	7294.551	209.913	30.200	3659.971	209.913	30.201	3642.319	360.000	21.100	7603.971	48.000	0.001	-0.000	0	
f	210.000	60.253	7293.980	210.000	30.200	3659.743	210.000	30.200	3641.198	360.000	21.100	7593.680	48.000	0.001	-0.004	0				
3	66%	5%-10%	d	210.000	60.260	7294.552	210.000	30.200	3659.717	210.000	30.200	3641.156	360.000	21.100	7603.361	48.000	0.001	-0.012	--	
			e	209.000	10.263	1223.997	209.000	30.200	3640.000	209.000	20.200	2426.876	360.000	3.570	1286.234	48.000	0.000	-0.046	0.600	
			f	210.000	60.232	7291.115	210.000	30.200	3660.000	210.000	30.200	3638.278	360.000	21.100	7592.994	48.000	0.000	-0.014	0.500	
			e	209.000	10.255	1223.372	209.000	30.200	3640.000	209.000	20.200	2429.440	360.000	3.569	1286.180	48.000	0.000	-0.010	0.600	
			f	210.000	60.240	7290.125	210.000	30.200	3660.000	210.000	30.200	3640.000	360.000	21.100	7596.484	48.000	-0.000	-0.032	0.500	

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203.6 Step Change in Generation Test																							
Load level: 33%																							
Excel file	EUT output limit	Generation level (PV)	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode			
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)					
4			e	209.000	10.260	1223.661	209.000	30.200	3640.000	209.000	20.200	2430.978	360.000	3.590	1293.752	48.000	0.000	-0.006	0.600				
			f	210.000	60.234	7290.157	210.000	30.200	3660.000	210.000	30.200	-3640.000	360.000	21.100	7594.322	48.000	0.000	-0.035	0.500				
			d	210.000	60.245	7292.099	210.000	30.200	3660.000	210.000	30.200	3639.410	360.000	21.100	7598.208	48.000	0.001	-0.020	--				
		e	210.000	60.280	7295.464	210.000	30.200	3660.000	210.000	30.200	-3639.943	360.000	21.100	7606.619	48.000	0.000	-0.031	0					
		f	209.930	60.257	7294.981	209.930	30.200	3660.000	209.930	30.200	-3640.449	360.000	21.100	7596.529	48.000	0.000	-0.037	0					
		e	209.998	60.270	7295.266	209.998	30.200	3660.000	209.998	30.200	3640.709	360.000	21.100	7596.554	48.000	0.000	-0.015	0					
		f	210.000	60.262	7294.636	210.000	30.200	3660.000	210.000	30.200	-3640.770	360.000	21.100	7604.608	48.000	0.001	-0.004	0					
		e	210.000	60.263	7295.093	210.000	30.200	3660.000	210.000	30.201	-3640.799	360.000	21.100	7597.247	48.000	0.001	0.000	0					
		f	210.000	60.264	7294.893	210.000	30.200	3660.000	210.000	30.200	3639.715	360.000	21.100	7593.167	48.000	0.001	-0.005	0					
		5	33%	5%-10%	d	209.000	27.849	3360.189	209.000	30.200	3640.000	209.000	3.320	284.917	360.000	9.698	3492.936	48.000	0.001		-0.001	--	
					e	209.000	10.259	1223.404	209.000	30.200	3640.000	209.000	20.200	2434.265	360.000	3.569	1286.063	48.000	0.001		0.000	0.600	
					f	209.000	25.456	3071.820	209.000	30.200	3639.975	209.000	5.559	572.779	360.000	8.868	3193.396	48.000	0.001		-0.077	0.500	
e	209.011				12.049	1441.159	209.011	30.200	3640.032	209.011	18.509	2219.163	360.000	4.197	1512.013	48.000	0.000	-0.004	0.600				
f	209.091				25.885	3124.645	209.091	30.200	3639.971	209.091	5.144	517.949	360.000	9.017	3247.175	48.000	0.000	-0.005	0.500				
e	209.003				10.648	1271.281	209.003	30.200	3640.033	209.003	19.857	2378.849	360.000	3.709	1336.406	48.000	0.000	-0.008	0.600				

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generation level (PV)	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	209.00 0	27.82 5	3360.08 6	209.00 0	30.20 0	3640.00 0	209.00 0	3.310	286.211	360.00 0	9.692	3490.11 4	48.00 0	0.001	0.000	0.500	
6		33%-66%	d	209.00 0	27.81 8	3360.07 1	209.00 0	30.20 0	3640.00 0	209.00 0	3.315	286.210	360.00 0	9.692	3490.04 7	48.00 0	0.001	0.002	--	
			e	209.00 0	27.82 3	3360.00 0	209.00 0	30.20 0	3640.00 0	209.00 0	3.313	285.906	360.00 0	9.693	3490.15 7	48.00 0	0.001	- 0.001	0	
			f	209.07 7	27.81 4	3360.00 0	209.07 7	30.20 0	3640.00 0	209.07 7	3.306	286.395	360.00 0	9.707	3495.85 5	48.00 0	0.000	- 0.007	0	
			e	209.10 3	27.81 9	3360.00 0	209.10 3	30.20 0	3640.00 0	209.10 3	3.298	285.948	360.00 0	9.700	3493.02 7	48.00 0	0.001	- 0.003	0	
			f	209.08 2	27.81 8	3360.10 0	209.08 2	30.20 0	3640.00 0	209.08 2	3.297	285.970	360.00 0	9.693	3490.33 3	48.00 0	0.001	0.000	0	
			e	209.00 0	27.81 9	3360.10 6	209.00 0	30.20 0	3640.00 0	209.00 0	3.297	285.872	360.00 0	9.693	3490.21 3	48.00 0	0.001	0.005	0	
			f	209.00 0	27.81 7	3360.00 0	209.00 0	30.20 0	3640.00 0	209.00 0	3.297	286.359	360.00 0	9.694	3490.35 7	48.00 0	0.001	- 0.001	0	
Note:																				

(5) ESS external charge current limit = $66 \pm 5\%$, PV inputs = $50\% \pm 5\%$ - (If support)

(5-1) 203.5 test

203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
1	100%	100%	d	208.965	4.106	458.802	208.965	92.555	11157.193	208.965	88.798	10706.867	359.812	20.807	7489.962	48.600	-134.000	-6508.195	--	
			e	209.000	4.171	461.728	209.000	0.000	0.000	209.000	4.346	-461.593	359.470	20.822	7489.946	48.600	-134.000	-6508.421	1.100	
			f	209.000	4.156	465.512	209.000	93.038	11216.006	209.000	89.214	10757.020	359.516	20.818	7489.923	48.600	-134.000	-6508.863	0.200	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste P	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	209.030	4.160	460.422	209.030	0.000	0.000	209.030	4.337	-460.418	359.469	20.820	7489.791	48.600	134.000	6510.000	1.100	
			f	209.000	4.061	452.537	209.000	93.166	11230.466	209.000	89.466	10786.475	359.528	20.819	7489.823	48.600	134.000	6509.956	0.200	
			e	209.000	4.135	456.828	209.000	0.000	0.000	209.000	4.317	-456.698	359.409	20.826	7489.726	48.600	134.000	6509.950	1.100	
			f	209.000	4.094	456.913	209.000	93.013	11210.613	209.000	89.272	10765.535	359.431	20.824	7489.700	48.600	134.000	6509.772	0.200	
2		66%	d	209.000	4.086	458.266	209.000	61.643	7437.444	209.000	57.896	6985.013	359.429	20.825	7489.612	48.600	133.995	6509.875	--	
			e	209.000	4.160	459.880	209.000	0.000	0.000	209.000	4.341	-459.953	359.525	20.821	7489.546	48.600	134.000	6509.927	1.100	
			f	209.000	4.089	458.464	209.000	61.943	7472.719	209.000	58.186	7020.891	359.438	20.825	7489.462	48.599	133.997	6509.631	0.200	
			e	209.102	4.166	460.741	209.102	0.000	0.000	209.102	4.344	-460.428	359.463	20.824	7489.382	48.600	134.000	6509.952	1.100	
			f	209.000	4.094	459.259	209.000	62.014	7481.330	209.000	58.259	7030.200	359.435	20.825	7488.492	48.600	134.000	6509.911	0.200	
			e	209.000	4.173	462.010	209.000	0.000	0.000	209.000	4.358	-461.167	359.464	20.824	7486.858	48.600	134.000	6510.000	1.100	
			f	209.000	4.096	459.809	209.000	61.946	7472.325	209.000	58.189	7021.227	359.442	20.826	7486.790	48.600	134.000	6510.086	0.200	
3		33%	d	209.000	4.045	452.455	209.000	30.200	3640.000	209.000	26.585	3200.160	359.466	20.826	7486.032	48.600	134.000	6509.947	--	
	e		209.000	4.104	452.450	209.000	0.000	0.000	209.000	4.286	-452.399	359.457	20.824	7484.592	48.600	134.000	6510.000	1.100		

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste P	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	209.00 0	4.052	453.174	209.00 0	30.37 5	3668.23 3	209.00 0	26.69 8	3217.48 1	359.45 5	20.82 5	7483.73 3	48.60 0	- 134.00 0	- 6510.03 1	0.200	
			e	209.00 2	4.123	455.052	209.00 2	0.000	0.000	209.00 2	4.305	-454.928	359.45 1	20.82 5	7482.91 8	48.60 0	- 134.00 0	- 6510.00 0	1.100	
			f	209.00 0	4.062	454.576	209.00 0	30.40 3	3672.28 4	209.00 0	26.74 8	3224.16 9	359.45 0	20.82 5	7481.48 6	48.60 0	- 134.00 0	- 6510.04 4	0.200	
			e	209.00 0	4.135	456.514	209.00 0	0.000	0.000	209.00 0	4.315	-456.434	359.43 9	20.82 5	7480.67 3	48.60 0	- 134.00 0	- 6510.00 0	1.100	
			f	209.00 0	4.077	456.633	209.00 0	30.39 9	3669.15 8	209.00 0	26.69 3	3217.94 6	359.45 5	20.82 5	7480.48 5	48.60 0	- 134.00 0	- 6510.00 0	0.200	
4	50%	100%	d	209.00 0	4.092	456.604	209.00 0	92.42 9	11139.0 23	209.00 0	88.70 2	10695.3 38	359.45 9	20.82 5	7480.50 1	48.60 0	- 133.99 7	- 6509.97 5	--	
			e	209.04 7	4.145	457.753	209.04 7	0.000	0.000	209.04 7	4.323	-457.550	359.46 5	20.82 6	7480.39 9	48.60 0	- 134.00 0	- 6510.00 0	1.100	
			f	209.00 0	4.091	456.298	209.00 0	93.01 6	11211.0 60	209.00 0	89.28 1	10765.5 30	359.48 7	20.82 5	7480.36 9	48.60 0	- 134.00 0	- 6510.00 0	0.200	
			e	210.00 0	60.34 2	7281.99 5	210.00 0	0.000	0.000	210.00 0	60.39 8	- 7295.05 9	360.00 0	21.10 0	7590.11 9	48.00 0	0.001	-0.003	1.100	
			f	209.00 0	4.082	455.384	209.00 0	93.14 8	11227.7 16	209.00 0	89.43 2	10782.4 83	359.49 9	20.82 5	7480.35 5	48.60 0	- 134.00 0	- 6510.04 4	0.200	
			e	209.00 0	4.137	456.872	209.00 0	0.000	0.000	209.00 0	4.318	-456.934	359.41 0	20.82 6	7480.31 3	48.60 0	- 134.00 0	- 6510.00 0	1.100	
			f	209.00 0	4.084	455.515	209.00 0	93.03 7	11214.3 79	209.00 0	89.30 2	10768.1 03	359.45 4	20.82 4	7480.30 0	48.60 0	- 134.00 0	- 6509.94 3	0.200	
5		66%	d	209.00 0	4.069	456.015	209.00 0	61.65 5	7435.54 1	209.00 0	57.91 8	6988.48 4	359.44 5	20.82 4	7480.20 4	48.60 0	- 134.00 0	- 6509.94 9	--	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste P	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	209.029	4.141	457.368	209.029	0.000	0.000	209.029	4.321	-456.701	359.416	20.826	7480.163	48.600	-	-	1.100	
			f	209.000	4.072	456.077	209.000	61.915	7469.124	209.000	58.183	7020.860	359.467	20.825	7480.138	48.600	-	-	0.200	
			e	209.000	4.145	457.606	209.000	0.000	0.000	209.000	4.324	-457.805	359.444	20.824	7480.095	48.600	-	-	1.100	
			f	209.000	4.069	455.697	209.000	61.992	7479.042	209.000	58.265	7030.898	359.463	20.824	7480.040	48.600	-	-	0.200	
			e	209.000	4.139	456.917	209.000	0.000	0.000	209.000	4.317	-456.667	359.470	20.825	7480.057	48.600	-	-	1.100	
			f	209.000	4.062	454.639	209.000	61.939	7471.355	209.000	58.219	7024.822	359.442	20.825	7480.014	48.600	-	-	0.200	
6		33%	d	209.000	4.071	455.581	209.000	30.200	3640.000	209.000	26.503	3199.298	359.519	20.823	7480.013	48.600	-	-	--	
			e	209.000	4.130	455.804	209.000	0.000	0.000	209.000	4.308	-455.724	359.532	20.823	7480.018	48.600	-	-	1.100	
			f	209.000	4.065	454.621	209.000	30.370	3668.756	209.000	26.701	3219.478	359.531	20.823	7480.000	48.600	-	-	0.200	
			e	209.000	4.129	455.439	209.000	0.000	0.000	209.000	4.293	-455.411	359.513	20.822	7480.000	48.600	-	-	1.100	
			f	209.000	4.060	453.933	209.000	30.415	3672.550	209.000	26.754	3224.479	359.466	20.823	7480.000	48.600	-	-	0.200	
			e	209.000	4.123	454.587	209.000	0.000	0.000	209.000	4.285	-454.399	359.567	20.820	7480.000	48.600	-	-	1.100	
f	209.000	4.057	453.598	209.000	30.401	3670.128	209.000	26.709	3221.912	359.488	20.822	7480.000	48.600	-	-	0.200				

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203.5 Step Change in Load Test																					
Excel file	EUT output limit	Load level	Ste P	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operatin g Mode	
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)			
7	0%	100%	d	209.000	1.816	-31.774	209.000	92.384	11133.795	209.000	92.697	11174.487	352.467	20.114	7020.333	48.600	133.995	6509.281	--		
			e	209.000	1.885	-23.114	209.000	0.000	0.000	209.000	2.221	23.358	356.946	19.847	7019.601	48.607	134.000	6509.891	1.100		
			f	208.899	1.828	-26.719	208.899	92.991	11207.005	208.899	93.265	11244.393	360.637	19.639	7017.051	48.608	134.003	6509.508	0.200		
			e	209.000	1.889	-17.644	209.000	0.000	0.000	209.000	2.222	17.866	364.670	19.438	7024.869	48.601	134.000	6509.715	1.100		
			f	209.000	1.824	-24.448	209.000	93.110	11221.552	209.000	93.365	11256.585	364.583	19.417	7016.253	48.614	134.004	6509.601	0.200		
			e	209.000	1.886	-15.014	209.000	0.000	0.000	209.000	2.221	15.501	366.336	19.349	7028.746	48.617	134.000	6509.943	1.100		
			f	209.000	1.825	-25.327	209.000	93.004	11209.529	209.000	93.260	11243.224	362.767	19.519	7018.388	48.673	134.000	6509.686	0.200		
8		66%	d	209.000	1.774	-23.243	209.000	61.635	7433.047	209.000	61.873	7463.409	363.750	19.481	7023.302	48.679	133.995	6509.906	--		
			e	209.000	1.883	-16.425	209.000	0.000	0.000	209.000	2.217	16.637	365.443	19.390	7026.207	48.683	133.996	6509.891	1.100		
			f	209.000	1.761	-26.750	209.000	61.917	7468.971	209.000	62.187	7501.045	359.038	19.726	7019.232	48.672	133.997	6509.785	0.200		
			e	209.000	1.874	-25.021	209.000	0.000	0.000	209.000	2.207	25.067	352.556	20.117	7024.751	48.687	133.995	6509.881	1.100		
			f	209.000	1.765	-26.762	209.000	61.979	7477.246	209.000	62.242	7509.661	359.521	19.709	7022.395	48.678	134.000	6509.920	0.200		
			e	209.000	1.879	-18.781	209.000	0.000	0.000	209.000	2.215	18.872	363.567	19.501	7026.268	48.650	134.000	6509.430	1.100		

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste P	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	209.000	1.761	-27.164	209.000	61.931	7470.556	209.000	62.215	7505.592	358.412	19.757	7017.261	48.648	-134.000	-6509.429	0.200	
9		33%	d	209.000	1.728	-22.747	209.000	30.200	3640.000	209.000	30.401	3669.273	361.753	19.578	7016.642	48.645	-133.990	-6507.607	--	
			e	209.000	1.873	-25.013	209.000	0.000	0.000	209.000	2.207	25.125	352.227	20.111	7014.900	48.645	-133.996	-6508.367	1.100	
			f	209.000	1.724	-29.226	209.000	30.368	3667.680	209.000	30.711	3702.396	349.158	20.294	7014.777	48.632	-133.991	-6507.727	0.200	
			e	209.000	1.876	-24.033	209.000	0.000	0.000	209.000	2.210	24.208	353.596	20.051	7023.207	48.609	-133.990	-6505.962	1.100	
			f	209.000	1.730	-21.848	209.000	30.401	3670.459	209.000	30.671	3698.802	362.948	19.509	7017.066	48.610	-133.984	-6504.950	0.200	
			e	209.000	1.881	-17.054	209.000	0.000	0.000	209.000	2.219	17.415	364.510	19.428	7019.259	48.603	-133.989	-6504.558	1.100	
			f	209.000	1.729	-22.308	209.000	30.385	3668.502	209.000	30.666	3693.923	362.392	19.535	7015.464	48.612	-133.994	-6505.178	0.200	
Note:																				

(5-2) 203.6 test

203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generati on level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
1	100%	5%-10%	d	208.000	3.972	441.040	208.000	30.000	3620.000	208.000	26.443	3180.050	359.405	20.741	7459.875	48.700	-134.000	-6520.000	--	
			e	208.000	50.400	-6037.858	208.000	30.000	3619.746	208.000	80.400	9640.000	301.548	3.875	1170.000	48.700	-134.000	-6520.000	2.200	

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generati on level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
2			f	208.00 3	3.837	422.743	208.00 3	30.00 0	3620.00 0	208.00 3	26.60 2	3200.10 7	323.25 0	23.08 0	7459.94 7	48.70 0	- 134.00 0	- 6520.00 0	2.300	
			e	208.00 0	50.40 1	- 6039.96 8	208.00 0	30.00 0	3619.51 7	208.00 0	80.40 0	9642.51 2	301.74 4	3.874	1170.00 0	48.70 0	- 134.00 0	- 6520.70 9	2.200	
			f	208.10 0	3.818	420.516	208.10 0	30.00 0	3620.00 0	208.10 0	26.60 7	3199.94 3	321.65 3	23.19 7	7459.98 6	48.70 0	- 134.00 0	- 6520.00 0	2.300	
			e	208.00 0	50.40 0	- 6039.96 0	208.00 0	30.00 0	3620.00 0	208.00 0	80.40 1	9647.58 5	301.83 6	3.873	1170.00 0	48.70 0	- 134.00 0	- 6520.24 0	2.200	
			f	208.00 0	3.820	420.793	208.00 0	30.00 0	3620.00 0	208.00 0	26.64 6	3200.94 2	321.63 6	23.19 4	7460.01 4	48.70 0	- 134.00 0	- 6520.00 0	2.300	
		33%-66%	d	209.00 0	3.983	444.642	209.00 0	30.20 0	3640.00 0	209.00 0	26.60 0	3200.04 7	346.96 7	21.57 5	7480.00 0	48.70 0	- 134.00 0	- 6510.02 4	--	
			e	209.00 0	3.982	444.408	209.00 0	30.20 0	3640.00 0	209.00 0	26.60 0	3200.22 8	346.96 9	21.57 5	7480.00 0	48.69 7	- 133.98 6	- 6509.85 7	0	
			f	209.00 0	3.983	444.414	209.00 0	30.20 0	3640.00 0	209.00 0	26.60 0	3200.05 0	346.97 6	21.57 4	7480.00 0	48.69 9	- 133.99 5	- 6510.15 0	0	
			e	209.00 0	3.982	444.029	209.00 0	30.20 0	3640.00 0	209.00 0	26.60 0	3200.00 0	346.95 0	21.57 5	7480.00 0	48.69 9	- 134.00 0	- 6510.19 3	0	
			f	209.00 0	3.981	443.869	209.00 0	30.20 0	3640.00 0	209.00 0	26.60 0	3199.94 3	346.97 1	21.57 4	7480.00 0	48.69 7	- 134.00 0	- 6509.97 1	0	
			e	209.00 0	3.980	443.887	209.00 0	30.20 0	3640.00 0	209.00 0	26.60 0	3200.23 2	346.96 7	21.57 5	7480.00 0	48.70 0	- 134.00 0	- 6509.97 1	0	
			f	209.00 0	3.977	443.712	209.00 0	30.20 0	3640.00 0	209.00 0	26.60 0	3200.22 8	346.97 0	21.57 5	7480.00 0	48.69 9	- 133.99 4	- 6510.14 3	0	

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203.6 Step Change in Generation Test																					
Load level: 33%																					
Excel file	EUT output limit	Generati on level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode	
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)			
3	66%	5%-10%	d	207.95 2	3.924	431.745	207.95 2	30.00 0	3599.48 1	207.95 2	26.40 0	3160.11 8	342.82 2	21.75 9	7459.64 6	48.70 0	- 134.00 0	- 6520.00 0	--		
			e	207.00 0	50.65 4	- 6040.00 0	207.00 0	30.00 0	3580.00 0	207.00 0	80.60 0	9620.08 0	301.40 9	3.871	1170.00 0	48.70 0	- 134.00 0	- 6520.08 0	2.200		
			f	207.90 6	3.856	422.747	207.90 6	30.00 0	3596.68 7	207.90 6	26.51 9	3172.01 6	325.94 4	22.89 0	7459.84 0	48.70 0	- 134.00 0	- 6520.00 0	2.300		
			e	207.00 0	50.76 2	- 6040.00 0	207.00 0	30.00 0	3580.00 0	207.00 0	80.60 0	9620.18 1	301.52 0	3.872	1170.00 0	48.70 0	- 134.00 0	- 6521.08 6	2.200		
			f	207.86 7	3.891	427.329	207.86 7	30.00 0	3598.80 4	207.86 7	26.41 2	3161.92 7	335.31 2	22.24 8	7459.86 7	48.70 0	- 134.00 0	- 6520.00 0	2.300		
			e	207.00 0	50.75 3	- 6040.00 0	207.00 0	30.00 0	3580.00 0	207.00 0	80.60 0	9620.08 0	301.76 0	3.870	1170.00 0	48.70 0	- 134.00 0	- 6520.18 0	2.200		
			f	207.95 1	3.864	424.123	207.95 1	30.00 0	3599.20 1	207.95 1	26.48 8	3170.01 4	329.78 6	22.62 4	7459.82 9	48.70 0	- 134.00 0	- 6520.00 0	2.300		
4		33%-66%	d	209.00 0	3.956	441.038	209.00 0	30.20 0	3640.00 0	209.00 0	26.60 0	3200.23 6	343.71 5	21.78 2	7480.00 0	48.70 0	- 134.00 0	- 6510.00 0	--		
			e	209.00 0	3.950	440.237	209.00 0	30.20 0	3640.00 0	209.00 0	26.60 0	3200.45 6	343.35 0	21.80 5	7480.00 0	48.70 0	- 134.00 0	- 6510.00 0	0		
			f	209.00 0	3.955	440.929	209.00 0	30.20 0	3640.00 0	209.00 0	26.60 0	3200.25 0	344.19 2	21.75 1	7480.00 0	48.70 0	- 134.00 0	- 6510.02 5	0		
			e	209.00 0	3.947	439.723	209.00 0	30.20 0	3640.00 0	209.00 0	26.60 0	3201.03 1	341.97 3	21.89 1	7480.00 0	48.70 0	- 134.00 0	- 6510.00 0	0		
			f	209.00 0	3.947	439.786	209.00 0	30.20 0	3640.00 0	209.00 0	26.60 0	3201.59 8	341.97 3	21.88 9	7480.00 0	48.70 0	- 134.00 0	- 6510.00 0	0		

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generati on level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	209.00 0	3.958	441.158	209.00 0	30.20 0	3640.00 0	209.00 0	26.60 0	3200.17 1	344.19 0	21.75 1	7480.00 0	48.70 0	- 134.00 0	- 6510.00 0	0	
			f	209.00 0	3.964	441.909	209.00 0	30.20 0	3640.00 0	209.00 0	26.60 0	3200.14 3	344.63 1	21.72 4	7480.00 0	48.70 0	- 134.00 0	- 6510.00 0	0	
5	33%	5%-10%	d	208.00 0	3.917	433.972	208.00 0	30.00 0	3620.00 0	208.00 0	26.60 0	3191.20 3	343.98 0	21.69 4	7459.91 7	48.70 0	- 134.00 0	- 6520.00 0	--	
			e	208.00 0	30.64 5	- 3673.75 2	208.00 0	30.00 0	3620.00 0	208.00 0	60.77 4	7285.30 7	301.04 1	3.880	1170.00 0	48.30 0	-92.196	- 4449.97 1	2.300	
			f	208.10 0	3.888	430.424	208.10 0	30.00 0	3620.00 0	208.10 0	26.60 0	3191.67 1	327.41 1	22.78 1	7459.95 0	48.70 0	- 134.00 0	- 6520.00 0	2.300	
			e	208.00 0	30.63 3	- 3673.27 1	208.00 0	30.00 0	3620.00 0	208.00 0	60.64 7	7280.74 8	301.17 4	3.879	1170.00 0	48.30 0	-92.256	- 4452.43 0	2.300	
			f	208.00 0	3.876	428.747	208.00 0	30.00 0	3620.00 0	208.00 0	26.60 0	3199.52 1	315.58 3	23.62 5	7460.00 0	48.70 0	- 134.00 0	- 6520.00 0	2.300	
			e	208.00 0	30.62 1	- 3673.57 7	208.00 0	30.00 0	3620.00 0	208.00 0	60.64 9	7280.86 5	301.00 3	3.880	1170.00 0	48.30 0	-92.171	- 4449.83 4	2.300	
			f	208.00 0	3.848	424.702	208.00 0	30.00 0	3620.00 0	208.00 0	26.60 0	3200.00 0	324.71 2	22.97 7	7460.01 4	48.70 0	- 134.00 0	- 6520.00 0	2.300	
6	33%-66%		d	209.00 0	3.967	442.495	209.00 0	30.20 0	3640.00 0	209.00 0	26.60 0	3200.33 0	344.68 6	21.72 1	7480.00 0	48.60 1	- 134.00 5	- 6510.42 5	--	
			e	209.00 0	3.975	443.481	209.00 0	30.20 0	3640.00 0	209.00 0	26.60 0	3200.22 8	344.69 0	21.71 9	7480.00 0	48.60 0	- 134.00 0	- 6510.02 9	0	
			f	209.00 0	3.990	445.423	209.00 0	30.20 0	3640.00 0	209.00 0	26.60 0	3200.10 0	346.96 4	21.57 5	7480.00 0	48.60 2	- 133.98 8	- 6510.20 0	0	

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generati on level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	209.000	3.996	446.216	209.000	30.200	3640.000	209.000	26.600	3200.064	346.979	21.574	7480.000	48.600	-134.000	-6509.968	0	
			f	209.000	3.998	446.489	209.000	30.200	3640.000	209.000	26.600	3200.067	346.960	21.575	7480.000	48.602	-133.990	-6510.100	0	
			e	209.000	4.002	446.921	209.000	30.200	3640.000	209.000	26.599	3199.872	346.970	21.575	7480.000	48.603	-133.987	-6510.213	0	
			f	209.000	4.001	446.659	209.000	30.200	3640.000	209.000	26.598	3199.829	346.967	21.575	7480.000	48.604	-134.000	-6510.000	0	
Note:																				

(6) ESS external charge current limit = $33 \pm 5\%$, PV inputs = $50\% \pm 5\%$ - (If support)

(6-1) 203.5 test

203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
1	100%	100%	d	209.000	31.897	3849.724	209.000	92.463	11153.534	209.000	60.610	7315.890	344.528	21.733	7480.000	47.900	-68.235	-3270.050	--	
			e	210.000	32.000	3860.000	210.000	0.000	0.000	210.000	32.000	-3861.234	344.659	21.722	7480.000	47.900	-68.300	-3270.254	1.100	
			f	209.000	32.000	3860.000	209.000	93.092	11228.449	209.000	61.222	7388.602	344.848	21.709	7480.000	47.900	-68.301	-3270.184	0.200	
			e	209.900	31.938	3855.499	209.900	0.000	0.000	209.900	31.984	-3860.000	344.984	21.699	7480.000	47.900	-68.302	-3270.186	1.100	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
2			f	209.000	31.802	3840.177	209.000	93.187	11239.246	209.000	61.388	7408.692	344.747	21.716	7480.000	47.900	68.315	3270.665	0.200	
			e	210.000	31.807	3856.209	210.000	0.000	0.000	210.000	32.000	-3860.000	344.658	21.723	7480.000	47.900	68.314	3270.623	1.100	
			f	209.000	32.000	3859.943	209.000	93.060	11224.251	209.000	61.189	7384.879	344.742	21.716	7480.000	47.900	68.299	3270.071	0.200	
		66%	d	209.000	31.842	3844.261	209.000	61.668	7444.286	209.000	29.906	3607.719	344.904	21.704	7480.000	47.900	68.304	3270.150	--	
			e	209.902	31.836	3856.116	209.902	0.000	0.000	209.902	32.000	-3860.000	344.695	21.720	7480.000	47.900	68.307	3270.073	1.100	
			f	209.000	31.995	3859.785	209.000	61.962	7480.676	209.000	30.149	3633.272	344.788	21.712	7480.000	47.900	68.302	3270.031	0.200	
			e	209.993	32.000	3860.000	209.993	0.000	0.000	209.993	32.000	-3860.000	344.874	21.708	7480.000	47.900	68.311	3270.333	1.100	
			f	209.064	31.800	3840.089	209.064	62.030	7488.160	209.064	30.306	3654.545	344.965	21.701	7480.000	47.900	68.318	3270.177	0.200	
			e	210.000	31.863	3859.252	210.000	0.000	0.000	210.000	32.000	-3860.000	344.693	21.719	7480.000	47.900	68.301	3270.050	1.100	
			f	209.000	31.996	3859.943	209.000	61.977	7483.452	209.000	30.157	3635.378	344.840	21.710	7480.000	47.900	68.298	3270.000	0.200	
3	33%	d	209.000	31.800	3840.666	209.000	30.200	3645.885	209.000	2.756	-193.488	344.824	21.711	7480.000	47.900	68.310	3270.053	--		
		e	209.900	31.915	3859.528	209.900	0.000	0.000	209.900	32.000	-3860.581	344.721	21.717	7480.000	47.900	68.305	3270.127	1.100		
		f	209.075	31.992	3859.939	209.075	30.417	3672.381	209.075	2.689	-179.076	344.780	21.713	7480.000	47.900	68.303	3270.031	0.200		

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	210.000	31.882	3854.913	210.000	0.000	0.000	210.000	31.998	- 3860.599	344.970	21.701	7480.000	47.900	68.307	3270.050	1.100	
			f	209.104	31.800	3840.488	209.104	30.447	3680.355	209.104	2.617	-163.129	344.707	21.719	7480.000	47.900	68.341	3270.000	0.200	
			e	209.933	32.000	3860.000	209.933	0.000	0.000	209.933	32.000	- 3864.638	344.771	21.713	7480.000	47.900	68.303	3270.000	1.100	
			f	209.000	31.907	3850.927	209.000	30.432	3674.180	209.000	2.661	-172.708	344.827	21.711	7480.000	47.900	68.308	3270.114	0.200	
4	50%	100%	d	209.000	31.946	3854.937	209.000	92.505	11157.193	209.000	60.611	7317.945	344.731	21.717	7480.000	47.900	68.306	3270.276	--	
			e	210.000	32.000	3860.000	210.000	0.000	0.000	210.000	32.000	- 3860.762	344.848	21.710	7480.000	47.900	68.317	3270.290	1.100	
			f	209.000	31.820	3842.028	209.000	93.069	11226.759	209.000	61.258	7393.118	344.912	21.705	7480.000	47.900	68.318	3270.215	0.200	
			e	210.000	31.889	3858.242	210.000	0.000	0.000	210.000	32.000	- 3860.855	344.696	21.719	7480.000	47.900	68.323	3270.143	1.100	
			f	209.000	32.000	3860.000	209.000	93.201	11241.330	209.000	61.303	7399.468	344.876	21.709	7480.000	47.900	68.309	3270.000	0.200	
			e	209.900	31.821	3854.587	209.900	0.000	0.000	209.900	31.998	- 3860.000	344.943	21.703	7480.000	47.900	68.309	3270.114	1.100	
			f	209.000	31.884	3848.787	209.000	93.082	11228.959	209.000	61.246	7390.728	344.662	21.723	7480.000	47.900	68.333	3270.257	0.200	
5		66%	d	241.000	32.184	3859.898	241.000	61.577	7393.197	241.000	29.560	- 3537.860	359.610	20.829	7491.389	47.700	68.300	3258.522	--	
			e	241.000	32.200	3860.000	241.000	0.000	0.000	241.000	32.200	3859.637	360.481	20.796	7492.414	47.700	68.244	3250.000	1.100	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	240.802	32.200	3860.000	240.802	61.787	7419.201	240.802	29.737	-3558.894	360.035	20.797	7489.140	47.700	-68.185	-3250.000	0.200	
			e	241.000	32.200	3860.475	241.000	0.000	0.000	241.000	32.200	3861.045	359.235	20.845	7489.715	47.700	-68.192	-3250.000	1.100	
			f	241.000	32.195	3860.000	241.000	61.847	7426.148	241.000	29.822	-3570.259	360.062	20.802	7491.876	47.700	-68.208	-3250.000	0.200	
			e	241.000	32.194	3860.000	241.000	0.000	0.000	241.000	32.199	3858.519	358.880	20.872	7489.943	47.700	-68.273	-3251.140	1.100	
			f	241.000	32.200	3860.000	241.000	61.790	7418.716	241.000	29.749	-3561.598	360.103	20.785	7490.000	47.700	-68.259	-3250.171	0.200	
		33%	d	209.099	31.834	3843.985	209.099	30.200	3652.005	209.099	2.767	-193.872	344.981	21.700	7480.000	47.900	-68.311	-3269.950	--	
			e	209.962	31.871	3858.258	209.962	0.000	0.000	209.962	32.000	-3860.000	344.675	21.723	7480.000	47.900	-68.328	-3270.327	1.100	
			f	209.000	32.000	3860.000	209.000	30.435	3674.347	209.000	2.695	-179.051	344.786	21.719	7480.000	47.900	-68.300	-3269.939	0.200	
			e	209.900	32.000	3860.000	209.900	0.000	0.000	209.900	32.000	-3864.751	344.905	21.708	7480.000	47.900	-68.297	-3269.905	1.100	
			f	209.000	31.801	3841.641	209.000	30.443	3678.182	209.000	2.633	-164.458	344.920	21.707	7480.000	47.900	-68.314	-3270.044	0.200	
7	0%	100%	d	210.000	31.904	3858.917	210.000	0.000	0.000	210.000	32.000	-3861.254	344.718	21.718	7480.000	47.900	-68.341	-3270.513	1.100	
				209.100	31.999	3859.971	209.100	30.441	3673.837	209.100	2.693	-177.759	344.893	21.708	7480.000	47.900	-68.310	-3270.043	0.200	

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203.5 Step Change in Load Test																					
Excel file	EUT output limit	Load level	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode	
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)			
			e	209.00 0	1.887	-18.519	209.00 0	0.000	0.000	209.00 0	2.214	18.767	360.17 2	9.783	3511.23 4	47.90 0	68.26 1	3270.00 0	1.100		
			f	209.00 0	1.824	-25.619	209.00 0	92.96 6	11204.85 4	209.00 0	93.22 7	11239.60 1	360.19 4	9.790	3514.16 3	47.90 0	68.30 2	3270.09 2	0.200		
			e	209.00 0	1.889	-18.328	209.00 0	0.000	0.000	209.00 0	2.222	18.467	360.19 2	9.811	3521.33 0	47.90 0	68.27 3	3270.00 0	1.100		
			f	209.00 0	1.824	-25.778	209.00 0	93.11 9	11222.83 8	209.00 0	93.37 7	11257.73 8	360.19 7	9.782	3511.53 0	47.90 0	68.25 4	3269.55 7	0.200		
			e	209.00 0	1.891	-18.234	209.00 0	0.000	0.000	209.00 0	2.238	18.548	360.19 7	9.784	3511.76 6	47.90 0	68.27 9	3270.00 0	1.100		
			f	209.00 0	1.827	-25.501	209.00 0	92.98 5	11206.64 8	209.00 0	93.24 5	11241.74 0	360.20 0	9.794	3515.23 5	47.90 0	68.28 1	3269.94 3	0.200		
8		66%	d	209.00 0	1.764	-23.541	209.00 0	61.62 3	7432.779	209.00 0	61.87 1	7459.946	360.18 7	9.779	3510.30 9	47.90 0	68.23 6	3269.59 7	--		
			e	209.00 0	1.885	-18.269	209.00 0	0.000	0.000	209.00 0	2.230	18.322	360.18 7	9.773	3507.49 5	47.90 0	68.24 9	3269.96 4	1.100		
			f	209.00 0	1.768	-23.425	209.00 0	61.93 0	7469.217	209.00 0	62.17 4	7500.860	360.15 8	9.780	3510.26 1	47.90 0	68.30 1	3270.21 5	0.200		
			e	209.00 0	1.899	-17.933	209.00 0	0.000	0.000	209.00 0	2.236	18.072	360.16 9	9.817	3523.89 5	47.90 0	68.26 5	3269.95 2	1.100		
			f	209.00 0	1.774	-23.689	209.00 0	61.98 9	7478.044	209.00 0	62.23 0	7507.824	360.15 0	9.781	3510.79 8	47.90 0	68.24 7	3269.92 0	0.200		
			e	209.00 0	1.892	-18.268	209.00 0	0.000	0.000	209.00 0	2.221	18.362	360.18 2	9.787	3513.02 0	47.90 0	68.23 2	3269.94 3	1.100		
			f	209.00 0	1.769	-23.318	209.00 0	61.95 5	7473.524	209.00 0	62.19 9	7503.224	360.18 0	9.768	3506.30 5	47.90 0	68.29 6	3270.04 3	0.200		

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
9		33%	d	209.00 0	1.740	-21.424	209.00 0	30.20 0	3640.000	209.00 0	30.40 0	3668.822	360.18 9	9.813	3522.74 4	47.90 0	- 68.25 6	- 3269.97 5	--	
			e	209.00 0	1.887	-18.294	209.00 0	0.000	0.000	209.00 0	2.217	18.408	360.20 0	9.786	3512.19 6	47.90 0	- 68.25 8	- 3269.96 4	1.100	
			f	209.00 0	1.729	-21.490	209.00 0	30.37 3	3668.694	209.00 0	30.65 2	3692.412	360.18 7	9.782	3510.99 8	47.90 0	- 68.27 0	- 3269.95 4	0.200	
			e	209.00 0	1.874	-17.948	209.00 0	0.000	0.000	209.00 0	2.203	18.170	360.20 2	9.781	3511.33 0	47.90 0	- 68.30 0	- 3270.00 0	1.100	
			f	209.00 0	1.725	-21.333	209.00 0	30.40 0	3670.419	209.00 0	30.67 2	3696.367	360.18 8	9.808	3521.29 7	47.90 0	- 68.27 9	- 3270.00 0	0.200	
			e	209.00 0	1.880	-18.462	209.00 0	0.000	0.000	209.00 0	2.210	18.627	360.18 8	9.783	3510.99 7	47.90 0	- 68.24 4	- 3269.94 3	1.100	
			f	209.00 0	1.725	-21.421	209.00 0	30.38 1	3668.959	209.00 0	30.65 9	3693.096	360.19 0	9.774	3508.11 7	47.90 0	- 68.25 6	- 3269.91 4	0.200	
Note:																				

(6-2) 203.6 test

203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generation level (PV)	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
1	100%	5%-10%	d	209.09 9	31.92 9	3854.48 6	209.09 9	30.20 0	3643.18 3	209.09 9	2.746	- 203.036	357.94 7	20.89 9	7469.62 4	48.81 0	67.10 3	3280.00 0	--	
			e	209.00 0	19.92 7	- 2382.79 5	209.00 0	30.20 0	3640.00 0	209.00 0	50.00 0	6027.11 4	301.01 5	3.907	1180.00 0	48.87 9	67.09 9	3279.92 7	2.200	
			f	209.10 0	31.80 5	3841.94 4	209.10 0	30.20 0	3640.74 6	209.10 0	2.699	- 193.628	327.45 3	22.81 4	7469.62 7	48.88 5	67.09 3	3279.93 3	2.200	

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generatio n level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	209.000	19.868	-2380.064	209.000	30.200	3640.000	209.000	50.000	6020.129	301.000	3.909	1180.000	48.900	-67.102	-3280.000	2.200	
			f	209.000	31.800	3839.173	209.000	30.200	3645.906	209.000	2.648	-183.730	329.474	22.668	7469.601	48.899	-67.100	-3280.000	2.200	
			e	209.000	19.865	-2379.880	209.000	30.200	3640.000	209.000	50.000	6020.559	301.000	3.902	1172.036	48.900	-67.076	-3279.481	2.200	
			f	209.000	31.801	3840.742	209.000	30.200	3646.505	209.000	2.688	-191.781	328.877	22.708	7469.486	48.900	-67.099	-3279.943	2.200	
2		33%-66%	d	209.000	31.800	3840.000	209.000	30.200	3640.000	209.000	2.742	-187.193	341.988	21.896	7480.000	47.900	-68.495	-3279.976	--	
			e	209.000	31.800	3840.000	209.000	30.200	3640.000	209.000	2.750	-188.722	341.987	21.895	7480.000	47.900	-68.475	-3279.857	0	
			f	209.000	31.801	3841.698	209.000	30.200	3640.000	209.000	2.777	-194.993	341.965	21.897	7480.000	47.900	-68.482	-3280.000	0	
			e	209.101	31.800	3840.354	209.101	30.200	3640.000	209.101	2.785	-196.237	341.990	21.895	7480.000	47.900	-68.478	-3279.968	0	
			f	209.101	31.800	3839.943	209.101	30.200	3640.000	209.101	2.743	-186.999	341.969	21.894	7480.000	47.900	-68.499	-3280.000	0	
			e	209.100	31.800	3840.000	209.100	30.200	3640.000	209.100	2.739	-186.946	341.984	21.893	7480.000	47.900	-68.486	-3279.913	0	
f	209.000	31.802	3841.854	209.000	30.200	3640.000	209.000	2.760	-191.243	341.966	21.892	7480.000	47.900	-68.482	-3279.829	0				
3	66%	5%-10%	d	212.000	31.745	3877.783	212.000	30.640	3743.986	212.000	1.958	-129.529	359.987	20.725	7459.434	48.900	-66.981	-3270.000	--	

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generatio n level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	209.000	19.844	-2379.458	209.000	30.200	3640.000	209.000	50.000	6005.164	301.335	3.870	1170.000	48.900	-66.903	-3270.000	2.400	
			f	211.639	30.300	3275.988	211.639	30.560	3730.087	211.639	6.377	426.973	350.323	19.354	6850.137	48.900	-66.901	-3270.000	3.300	
			e	209.134	19.925	-2071.797	209.134	30.218	3644.605	209.134	47.798	5748.120	302.607	4.760	1463.221	48.900	-66.921	-3270.000	2.400	
			f	211.726	30.600	3502.291	211.726	30.575	3733.951	211.726	4.432	192.790	330.521	21.403	7097.504	48.900	-66.986	-3270.000	3.300	
			e	209.292	20.686	-1748.728	209.292	30.240	3650.043	209.292	45.320	5409.926	301.626	5.965	1807.161	48.900	-66.917	-3270.000	2.400	
			f	211.900	31.600	3861.769	211.900	30.600	3740.000	211.900	1.951	-127.293	321.207	23.216	7460.000	48.900	-66.903	-3270.000	3.300	
4		33%-66%	d	209.000	31.800	3840.071	209.000	30.200	3640.000	209.000	2.764	-192.216	341.980	21.891	7480.000	47.900	-68.499	-3279.976	--	
			e	209.097	31.800	3839.971	209.097	30.200	3640.000	209.097	2.739	-187.148	341.984	21.887	7480.000	47.900	-68.481	-3280.029	0	
			f	209.100	31.800	3840.000	209.100	30.200	3640.000	209.100	2.751	-189.246	341.978	21.890	7480.000	47.900	-68.458	-3279.925	0	
			e	209.074	31.809	3845.539	209.074	30.200	3640.000	209.074	2.792	-198.331	341.968	21.892	7480.000	47.900	-68.462	-3280.000	0	
			f	209.000	31.802	3841.056	209.000	30.200	3640.000	209.000	2.781	-195.958	341.980	21.890	7480.000	47.900	-68.486	-3279.971	0	
			e	209.000	31.800	3839.971	209.000	30.200	3640.000	209.000	2.735	-186.525	341.979	21.889	7480.000	47.900	-68.489	-3280.029	0	

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generation level (PV)	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	209.000	31.800	3840.000	209.000	30.200	3640.000	209.000	2.755	-189.871	341.979	21.890	7480.000	47.900	68.447	3279.943	0	
5	33%	5%-10%	d	211.900	31.478	3847.406	211.900	30.600	3740.000	211.900	1.900	-110.529	349.160	21.442	7458.502	48.900	66.948	3270.000	--	
			e	209.000	19.839	-2379.601	209.000	30.200	3640.000	209.000	49.999	6000.000	301.494	3.873	1168.688	48.901	66.899	3269.715	2.400	
			f	211.900	31.414	3840.499	211.900	30.600	3740.000	211.900	1.878	-106.094	321.776	23.161	7459.800	48.900	66.900	3270.000	2.200	
			e	209.000	19.776	-2365.670	209.000	30.200	3640.000	209.000	49.800	6000.000	301.006	3.875	1169.252	48.900	66.955	3270.000	2.400	
			f	211.906	31.400	3839.840	211.906	30.600	3740.000	211.906	1.857	-101.286	327.717	22.750	7459.780	48.900	66.965	3270.000	2.200	
			e	209.000	19.834	-2379.368	209.000	30.200	3640.000	209.000	49.995	6000.000	301.130	3.875	1169.285	48.900	66.900	3270.000	2.400	
			f	212.000	31.403	3840.000	212.000	30.600	3740.000	212.000	1.878	-105.369	320.304	23.271	7459.815	48.900	66.916	3270.000	2.200	
6	33%	33%-66%	d	209.100	31.803	3842.046	209.100	30.200	3640.000	209.100	2.786	-196.684	341.969	21.884	7480.000	47.900	68.481	3280.024	--	
			e	209.030	31.800	3839.886	209.030	30.200	3640.000	209.030	2.740	-188.550	341.971	21.884	7480.000	47.900	68.493	3280.000	0	
			f	209.000	31.800	3840.000	209.000	30.200	3640.000	209.000	2.746	-188.545	341.990	21.885	7480.000	47.900	68.491	3280.050	0	
			e	209.000	31.814	3843.639	209.000	30.200	3640.000	209.000	2.777	-194.341	341.976	21.889	7480.000	47.900	68.418	3279.936	0	

203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generatio n level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	209.00 0	31.80 3	3842.96 2	209.00 0	30.20 0	3640.00 0	209.00 0	2.787	- 197.811	341.97 0	21.88 7	7480.00 0	47.90 0	- 68.47 7	- 3279.96 7	0	
			e	209.10 0	31.80 0	3840.02 1	209.10 0	30.20 0	3640.00 0	209.10 0	2.749	- 190.113	341.98 1	21.88 7	7480.00 0	47.90 0	- 68.49 4	- 3280.00 0	0	
			f	209.09 8	31.80 0	3840.00 0	209.09 8	30.20 0	3640.00 0	209.09 8	2.738	- 188.047	341.99 4	21.88 7	7480.00 0	47.90 0	- 68.49 0	- 3279.94 3	0	
Note:																				

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(7) ESS external charge current limit = 0% to +5%, PV inputs = 0% + 5%

(7-1) 203.5 test

(a) For single phase unit connected line to neutral

203.5 Step Change in Load Test																							
Excel file	EUT output limit	Load level	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode			
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)					
1	100%	100%	d	209.000	3.240	-40.003	209.000	92.579	11159.724	209.000	92.951	11203.835	360.000	-0.104	-37.009	48.000	0.001	0.111	--				
			e	209.000	3.241	-37.851	209.000	0.000	0.000	209.000	3.420	37.336	360.000	-0.103	-37.000	48.000	0.002	0.101	1.100				
			f	209.000	3.241	-39.810	209.000	93.009	11209.708	209.000	93.368	11256.375	360.000	-0.103	-37.000	48.000	0.001	0.102	0.300				
			e	209.000	3.243	-37.782	209.000	0.000	0.000	209.000	3.412	37.792	360.000	-0.103	-37.000	48.000	0.001	0.101	1.100				
			f	209.000	3.242	-40.000	209.000	93.004	11208.426	209.000	93.360	11255.388	360.000	-0.102	-37.000	48.001	0.000	0.086	0.300				
			e	209.000	3.240	-36.284	209.000	0.000	0.000	209.000	3.400	36.690	360.000	-0.102	-37.000	48.000	0.001	0.080	1.100				
			f	209.000	3.240	-39.849	209.000	92.878	11192.183	209.000	93.233	11240.685	360.000	-0.102	-37.000	48.000	0.001	0.100	0.300				
2		66%	d	209.000	3.240	-38.109	209.000	61.679	7437.523	209.000	62.078	7484.314	360.000	-0.102	-37.000	48.000	0.001	0.103	--				
			e	209.000	3.240	-36.907	209.000	0.000	0.000	209.000	3.420	37.126	360.000	-0.102	-37.000	48.000	0.001	0.100	1.100				
			f	209.000	3.240	-37.994	209.000	61.957	7472.627	209.000	62.359	7517.696	360.000	-0.102	-37.000	48.000	0.001	0.098	0.300				
			e	209.000	3.242	-36.755	209.000	0.000	0.000	209.000	3.420	37.022	360.000	-0.102	-37.000	48.000	0.001	0.100	1.100				
			f	209.000	3.240	-38.004	209.000	62.031	7483.769	209.000	62.433	7528.204	360.000	-0.102	-37.000	48.000	0.001	0.104	0.300				
			e	209.000	3.240	-36.354	209.000	0.000	0.000	209.000	3.420	36.397	360.000	-0.102	-37.000	48.000	0.002	0.103	1.100				
			f	209.000	3.240	-38.080	209.000	61.975	7477.261	209.000	62.373	7520.000	360.000	-0.102	-37.000	48.000	0.001	0.100	0.300				
3			33%	d	209.000	3.240	-36.953	209.000	30.200	3640.000	209.000	30.613	3680.053	360.000	-0.102	-37.000	48.000	0.001	0.100			--	
				e	209.000	3.241	-36.955	209.000	0.000	0.000	209.000	3.420	37.064	360.000	-0.102	-37.000	48.000	0.001	0.084			1.100	
				f	209.000	3.240	-37.266	209.000	30.401	3669.063	209.000	30.882	3708.909	360.000	-0.102	-37.000	48.000	0.001	0.098			0.300	
				e	209.000	3.242	-36.703	209.000	0.000	0.000	209.000	3.420	36.709	360.000	-0.102	-36.988	48.000	0.000	0.079			1.100	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	209.00 0	3.24 0	- 36.723	209.00 0	30.40 0	3671.530	209.00 0	30.90 1	3712.461	360.00 0	- 0.102	- 36.982	48.00 0	0.001	0.100	0.300	
			e	209.00 0	3.24 1	- 36.434	209.00 0	0.000	0.000	209.00 0	3.420	36.750	360.00 0	- 0.102	- 36.863	48.00 0	0.001	0.100	1.100	
			f	209.00 0	3.24 0	- 36.893	209.00 0	30.41 9	3669.757	209.00 0	30.88 8	3710.157	360.00 0	- 0.101	- 36.805	48.00 0	0.001	0.100	0.300	
4	50%	100%	d	209.00 0	3.24 2	- 39.792	209.00 0	92.47 9	11142.75 7	209.00 0	92.82 6	11193.50 9	360.00 0	- 0.101	- 36.081	48.00 0	0.001	0.104	--	
			e	209.00 0	3.24 4	- 36.973	209.00 0	0.000	0.000	209.00 0	3.416	36.754	360.00 0	- 0.101	- 36.145	48.00 0	0.001	0.097	1.100	
			f	209.00 0	3.24 4	- 39.886	209.00 0	93.02 5	11211.30 6	209.00 0	93.39 2	11259.41 6	360.00 0	- 0.101	- 36.406	48.00 0	0.002	0.117	0.300	
			e	209.00 0	3.24 4	- 36.532	209.00 0	0.000	0.000	209.00 0	3.420	36.674	360.00 0	- 0.101	- 36.397	48.00 0	0.001	0.100	1.100	
			f	208.95 6	3.25 2	- 39.987	208.95 6	93.13 5	11225.45 5	208.95 6	93.49 5	11272.41 7	360.00 0	- 0.102	- 36.891	48.00 0	0.001	0.101	0.300	
			e	209.00 0	3.25 2	- 36.541	209.00 0	0.000	0.000	209.00 0	3.405	37.096	360.00 0	- 0.102	- 36.997	48.00 0	0.001	0.097	1.100	
			f	209.00 0	3.25 4	- 39.894	209.00 0	92.99 7	11206.96 1	209.00 0	93.35 5	11255.20 7	360.00 0	- 0.102	- 37.000	48.00 0	0.001	0.099	0.300	
5		66%	d	209.00 0	3.24 0	- 37.987	209.00 0	61.71 8	7444.917	209.00 0	62.11 1	7487.567	360.00 0	- 0.102	- 37.000	48.00 0	0.001	0.101	--	
			e	209.00 0	3.25 0	- 37.093	209.00 0	0.000	0.000	209.00 0	3.415	36.440	360.00 0	- 0.102	- 37.000	48.00 0	0.001	0.099	1.100	
			f	209.00 0	3.24 2	- 38.000	209.00 0	61.96 6	7472.473	209.00 0	62.36 6	7518.648	360.00 0	- 0.102	- 37.000	48.00 0	- 0.002	-0.020	0.300	
			e	209.00 0	3.25 4	- 36.646	209.00 0	0.000	0.000	209.00 0	3.412	37.148	360.00 0	- 0.102	- 37.000	48.00 0	0.001	0.100	1.100	
			f	209.00 0	3.24 0	- 38.196	209.00 0	61.98 3	7476.487	209.00 0	62.38 3	7520.439	360.00 0	- 0.103	- 37.000	48.00 0	0.002	0.116	0.300	
			e	209.00 0	3.25 7	- 36.667	209.00 0	0.000	0.000	209.00 0	3.414	37.082	360.00 0	- 0.103	- 37.000	48.00 0	0.002	0.102	1.100	
			f	209.00 0	3.24 1	- 38.009	209.00 0	61.97 2	7476.205	209.00 0	62.37 2	7520.371	360.00 0	- 0.103	- 37.000	48.00 0	0.002	0.128	0.300	
6		33%	d	209.00 0	3.24 0	- 37.501	209.00 0	30.20 0	3640.000	209.00 0	30.63 8	3680.251	360.00 0	- 0.103	- 37.000	48.00 0	0.001	0.112	--	
			e	209.00 0	3.25 8	- 36.951	209.00 0	0.000	0.000	209.00 0	3.420	36.639	360.00 0	- 0.103	- 37.000	48.00 0	0.002	0.101	1.100	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	209.00 0	3.24 2	- 37.146	209.00 0	30.39 8	3668.387	209.00 0	30.88 1	3708.879	360.00 0	- 0.103	- 37.000	48.00 0	0.002	0.149	0.300	
			e	209.00 0	3.25 9	- 36.565	209.00 0	0.000	0.000	209.00 0	3.400	37.137	360.00 0	- 0.103	- 37.000	48.00 0	0.002	0.101	1.100	
			f	209.00 0	3.24 0	- 37.033	209.00 0	30.41 9	3672.506	209.00 0	30.91 7	3713.038	360.00 0	- 0.103	- 37.000	48.00 0	0.002	0.146	0.300	
			e	209.00 0	3.25 8	- 36.667	209.00 0	0.000	0.000	209.00 0	3.400	36.917	360.00 0	- 0.103	- 37.000	48.00 0	0.002	0.107	1.100	
			f	209.00 0	3.24 0	- 37.555	209.00 0	30.40 9	3669.986	209.00 0	30.88 6	3709.330	360.00 0	- 0.103	- 37.000	48.00 0	0.001	0.104	0.300	
7	0%	100%	d	208.95 6	1.72 3	- 65.848	208.95 6	92.20 0	11114.64 7	208.95 6	92.80 0	11182.82 3	360.00 0	- 0.026	-9.020	47.30 0	0.570	27.00 2	--	
			e	209.00 0	1.79 2	- 62.588	209.00 0	0.000	0.000	209.00 0	2.029	62.617	360.00 0	- 0.026	-9.408	47.30 0	0.570	26.99 5	1.100	
			f	209.00 0	1.73 2	- 64.685	209.00 0	92.91 7	11198.15 7	209.00 0	93.47 9	11269.12 4	360.00 0	- 0.026	-9.757	47.30 0	0.570	27.01 4	0.300	
			e	209.00 0	1.80 6	- 62.513	209.00 0	0.000	0.000	209.00 0	2.048	62.695	360.00 0	- 0.027	-9.862	47.30 0	0.571	27.02 7	1.100	
			f	209.00 0	1.73 2	- 64.718	209.00 0	93.05 5	11214.72 3	209.00 0	93.62 9	11286.60 8	360.00 0	- 0.027	-10.000	47.30 0	0.571	27.02 4	0.300	
			e	209.00 0	1.80 6	- 62.615	209.00 0	0.000	0.000	209.00 0	2.043	62.832	360.00 0	- 0.028	-10.000	47.30 0	0.571	27.01 3	1.100	
			f	208.91 3	1.74 1	- 64.793	208.91 3	92.92 5	11198.88 7	208.91 3	93.49 3	11271.69 8	360.00 0	- 0.028	-10.000	47.30 0	0.570	27.00 4	0.300	
8		66%	d	209.00 0	1.73 8	- 64.628	209.00 0	92.20 0	11109.42 3	209.00 0	92.77 0	11180.88 6	360.00 0	- 0.028	-10.000	47.30 0	0.571	27.03 4	--	
			e	209.00 0	1.80 1	- 62.835	209.00 0	0.000	0.000	209.00 0	2.045	62.907	360.00 0	- 0.028	-10.000	47.30 0	0.571	27.00 4	1.100	
			f	209.00 0	1.69 0	- 64.344	209.00 0	61.98 8	7475.699	209.00 0	62.55 8	7546.144	360.00 0	- 0.028	-10.000	47.30 0	0.571	27.02 0	0.300	
			e	209.00 0	1.80 3	- 62.955	209.00 0	0.000	0.000	209.00 0	2.050	63.055	360.00 0	- 0.029	-10.029	47.30 0	0.571	27.00 4	1.100	
			f	209.00 0	1.68 8	- 64.511	209.00 0	62.00 6	7479.760	209.00 0	62.58 1	7549.142	360.00 0	- 0.029	-10.246	47.30 0	0.571	27.02 8	0.300	
			e	209.00 0	1.80 8	- 62.838	209.00 0	0.000	0.000	209.00 0	2.054	62.937	360.00 0	- 0.029	-10.575	47.30 0	0.570	26.99 8	1.100	
			f	209.00 0	1.69 5	- 64.468	209.00 0	61.94 0	7470.927	209.00 0	62.51 4	7540.742	360.00 0	- 0.029	-10.839	47.30 0	0.570	27.00 0	0.300	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
9		33%	d	209.00 0	1.66 7	- 63.905	209.00 0	30.20 0	3640.000	209.00 0	30.80 0	3711.604	360.00 0	- 0.029	- 10.945	47.30 0	0.570	26.99 9	--	
			e	209.00 0	1.80 3	- 62.799	209.00 0	0.000	0.000	209.00 0	2.023	62.982	360.00 0	- 0.030	- 11.000	47.30 0	0.571	27.00 1	1.100	
			f	209.00 0	1.66 6	- 63.843	209.00 0	30.38 8	3669.002	209.00 0	30.97 5	3733.272	360.00 0	- 0.030	- 11.000	47.30 0	0.570	27.00 5	0.300	
			e	209.00 0	1.80 7	- 62.855	209.00 0	0.000	0.000	209.00 0	2.031	62.998	360.00 0	- 0.030	- 11.000	47.30 0	0.570	26.99 9	1.100	
			f	209.00 0	1.66 6	- 64.184	209.00 0	30.40 0	3669.301	209.00 0	30.99 1	3733.373	360.00 0	- 0.030	- 11.000	47.30 0	0.570	27.00 6	0.300	
			e	209.00 0	1.80 5	- 63.071	209.00 0	0.000	0.000	209.00 0	2.033	62.961	360.00 0	- 0.030	- 11.000	47.30 0	0.571	27.00 1	1.100	
			f	209.00 0	1.66 5	- 64.143	209.00 0	30.34 7	3666.220	209.00 0	30.93 6	3729.586	360.00 0	- 0.030	- 10.976	47.30 0	0.570	27.00 1	0.300	
Note:																				

(7-2) 203.6 test

203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generatio n level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
1	100%	5%-10%	d	209.00 0	1.77 5	- 67.296	209.00 0	30.20 0	3640.00 0	209.00 0	30.80 0	3703.35 8	360.00 0	- 0.038	- 14.000	47.30 0	0.56 9	26.93 6	--	
			e	209.00 0	1.77 4	- 67.710	209.00 0	30.20 0	3640.00 0	209.00 0	30.80 0	3706.27 9	360.00 0	- 0.037	- 13.185	47.30 0	0.56 9	26.92 2	0	
			f	209.00 0	1.78 2	- 68.000	209.00 0	30.20 0	3640.00 0	209.00 0	30.80 0	3707.90 9	360.00 0	- 0.037	- 13.032	47.30 0	0.56 9	26.94 5	0	
			e	209.00 0	1.78 1	- 67.762	209.00 0	30.20 0	3640.00 0	209.00 0	30.80 0	3705.02 4	360.00 0	- 0.036	- 13.000	47.30 0	0.56 9	26.96 1	0	
			f	209.00 0	1.77 7	- 67.743	209.00 0	30.20 0	3640.00 0	209.00 0	30.80 0	3707.04 7	360.00 0	- 0.035	- 12.959	47.30 0	0.56 9	26.93 5	0	
			e	209.00 0	1.78 8	- 67.497	209.00 0	30.20 0	3640.00 0	209.00 0	30.80 0	3710.77 8	360.00 0	- 0.035	- 12.639	47.30 0	0.56 9	26.96 8	0	
			f	209.00 0	1.78 2	- 67.464	209.00 0	30.20 0	3640.00 0	209.00 0	30.80 0	3715.06 4	360.00 0	- 0.034	- 12.000	47.30 0	0.56 9	26.97 9	0	
2		33%-66%	d	209.00 0	1.78 7	- 67.302	209.00 0	30.20 0	3640.00 0	209.00 0	30.80 0	3715.56 6	360.00 0	- 0.033	- 12.000	47.30 0	0.56 9	26.94 0	--	

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generatio n level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	209.00 0	1.79 7	- 67.247	209.00 0	30.20 0	3640.00 0	209.00 0	30.80 0	3715.77 7	360.00 0	- 0.032	- 11.668	47.30 0	0.56 9	26.95 0	0	
			f	209.00 0	1.80 4	- 67.398	209.00 0	30.20 0	3640.00 0	209.00 0	30.80 0	3717.35 3	360.00 0	- 0.031	- 11.001	47.30 0	0.56 9	26.96 1	0	
			e	209.00 0	1.79 6	- 67.304	209.00 0	30.20 0	3640.00 0	209.00 0	30.80 0	3709.34 0	360.00 0	- 0.030	- 11.000	47.30 0	0.56 9	26.97 3	0	
			f	209.00 0	1.81 2	- 67.330	209.00 0	30.20 0	3640.00 0	209.00 0	30.80 0	3707.01 9	360.00 0	- 0.030	- 11.000	47.30 0	0.56 9	26.91 6	0	
			e	209.00 0	1.80 4	- 67.272	209.00 0	30.20 0	3640.00 0	209.00 0	30.80 0	3707.10 1	360.00 0	- 0.029	- 10.465	47.30 0	0.56 9	26.93 6	0	
			f	209.00 0	1.79 7	- 67.127	209.00 0	30.20 0	3640.00 0	209.00 0	30.80 0	3705.70 6	360.00 0	- 0.028	- 10.000	47.30 0	0.56 9	26.92 1	0	
3	66%	5%-10%	d	209.00 0	1.79 9	- 67.177	209.00 0	30.20 0	3640.00 0	209.00 0	30.80 0	3705.87 3	360.00 0	- 0.027	- 10.000	47.30 0	0.56 9	26.93 0	--	
			e	209.00 0	1.79 5	- 67.198	209.00 0	30.20 0	3640.00 0	209.00 0	30.80 0	3706.93 3	360.00 0	- 0.027	-9.772	47.30 0	0.56 9	26.92 1	0	
			f	209.00 0	1.78 8	- 67.216	209.00 0	30.20 0	3640.00 0	209.00 0	30.80 0	3709.26 3	360.00 0	- 0.026	-9.019	47.30 0	0.56 7	26.88 6	0	
			e	209.00 0	1.78 1	- 67.208	209.00 0	30.20 0	3640.00 0	209.00 0	30.80 0	3718.90 5	360.00 0	- 0.025	-9.000	47.30 0	0.56 8	26.89 5	0	
			f	209.00 0	1.78 3	- 67.275	209.00 0	30.20 0	3640.00 0	209.00 0	30.80 0	3718.83 0	360.00 0	- 0.024	-8.780	47.30 0	0.56 8	26.89 5	0	
			e	209.00 0	1.78 8	- 67.270	209.00 0	30.20 0	3640.00 0	209.00 0	30.80 0	3719.42 9	360.00 0	- 0.023	-8.013	47.30 0	0.56 8	26.90 3	0	
f	209.00 0	1.78 3	- 67.238	209.00 0	30.20 0	3640.00 0	209.00 0	30.80 0	3719.48 6	360.00 0	- 0.022	-8.000	47.30 0	0.56 8	26.90 0	0				
4	66%	33%-66%	d	209.00 0	1.78 4	- 67.290	209.00 0	30.20 0	3640.00 0	209.00 0	30.80 0	3719.67 0	360.00 0	- 0.022	-8.000	47.30 0	0.56 8	26.89 9	--	
			e	209.00 0	1.77 3	- 67.272	209.00 0	30.20 0	3640.00 0	209.00 0	30.80 0	3708.13 1	360.00 0	- 0.021	-7.812	47.30 0	0.56 8	26.89 5	0	
			f	209.00 0	1.77 2	- 67.276	209.00 0	30.20 0	3640.00 0	209.00 0	30.80 0	3716.42 9	360.00 0	- 0.020	-7.007	47.30 0	0.56 8	26.89 9	0	
			e	209.00 0	1.77 9	- 67.311	209.00 0	30.20 0	3640.00 0	209.00 0	30.80 0	3716.39 3	360.00 0	- 0.020	-7.000	47.30 0	0.56 7	26.88 3	0	
			f	209.00 0	1.77 5	- 67.250	209.00 0	30.20 0	3640.00 0	209.00 0	30.80 0	3716.17 7	360.00 0	- 0.019	-7.000	47.30 0	0.56 8	26.89 6	0	
			e	209.00 0	1.76 9	- 67.301	209.00 0	30.20 0	3640.00 0	209.00 0	30.80 0	3717.14 7	360.00 0	- 0.019	-6.999	47.30 0	0.56 8	26.90 5	0	

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generatio n level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	209.00 0	1.76 0	- 67.407	209.00 0	30.20 0	3640.00 0	209.00 0	30.80 0	3717.88 9	360.00 0	- 0.018	-6.305	47.30 0	0.56 8	26.91 3	0	
5	33%	5%-10%	d	209.00 0	1.76 1	- 67.349	209.00 0	30.20 0	3640.00 0	209.00 0	30.80 0	3718.01 9	360.00 0	- 0.017	-6.001	47.30 0	0.56 8	26.90 3	--	
			e	209.00 0	1.76 6	- 67.392	209.00 0	30.20 0	3640.00 0	209.00 0	30.80 0	3720.00 0	360.00 0	- 0.017	-6.000	47.30 0	0.56 8	26.91 1	0	
			f	209.00 0	1.76 2	- 67.426	209.00 0	30.20 0	3640.00 0	209.00 0	30.80 0	3720.00 0	360.00 0	- 0.016	-6.000	47.30 0	0.56 9	26.92 3	0	
			e	209.00 0	1.76 0	- 67.508	209.00 0	30.20 0	3640.00 0	209.00 0	30.80 0	3720.00 0	360.00 0	- 0.016	-6.000	47.30 0	0.56 8	26.89 9	0	
			f	209.00 0	1.76 2	- 67.497	209.00 0	30.20 0	3640.00 0	209.00 0	30.80 0	3720.00 0	360.00 0	- 0.016	-6.000	47.30 0	0.56 8	26.91 0	0	
			e	209.00 0	1.76 7	- 67.498	209.00 0	30.20 0	3640.00 0	209.00 0	30.80 0	3720.00 0	360.00 0	- 0.016	-5.990	47.30 0	0.56 8	26.91 0	0	
			f	209.00 0	1.77 0	- 67.612	209.00 0	30.20 0	3640.00 0	209.00 0	30.80 0	3716.89 0	360.00 0	- 0.015	-5.746	47.30 0	0.56 8	26.90 3	0	
			d	209.00 0	1.76 4	- 67.617	209.00 0	30.20 0	3640.00 0	209.00 0	30.80 0	3720.00 0	360.00 0	- 0.015	-5.001	47.30 0	0.56 8	26.91 1	--	
e		209.00 0	1.76 2	- 67.595	209.00 0	30.20 0	3640.00 0	209.00 0	30.80 0	3719.94 3	360.00 0	- 0.014	-5.000	47.30 0	0.56 8	26.91 0	0			
f		209.00 0	1.75 5	- 67.740	209.00 0	30.20 0	3640.00 0	209.00 0	30.80 0	3719.95 0	360.00 0	- 0.014	-5.000	47.30 0	0.56 8	26.89 7	0			
e		209.00 0	1.75 6	- 67.729	209.00 0	30.20 0	3640.00 0	209.00 0	30.80 0	3720.00 0	360.00 0	- 0.014	-5.000	47.30 0	0.56 8	26.89 5	0			
f		209.00 0	1.75 6	- 67.797	209.00 0	30.20 0	3640.00 0	209.00 0	30.80 0	3716.40 5	360.00 0	- 0.014	-5.000	47.30 0	0.56 8	26.89 1	0			
e		209.00 0	1.75 5	- 67.813	209.00 0	30.20 0	3640.00 0	209.00 0	30.80 0	3719.74 5	360.00 0	- 0.014	-5.000	47.30 0	0.56 8	26.90 2	0			
f		209.00 0	1.75 5	- 67.772	209.00 0	30.20 0	3640.00 0	209.00 0	30.80 0	3720.00 0	360.00 0	- 0.014	-5.000	47.30 0	0.56 8	26.91 8	0			
Note:																				

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(8) ESS external charge current limit = $66 \pm 5\%$, PV inputs = $0\% + 5\%$ - (If support)

(8-1) 203.5 test

203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
1	100%	100%	d	208.100	33.218	3984.787	208.100	92.651	11157.068	208.100	125.789	15140.451	360.000	0.016	-6.000	48.100	-75.302	3618.321	--	
			e	208.060	60.397	7240.472	208.060	0.000	0.000	208.060	60.400	7240.653	360.000	0.016	-6.000	48.700	134.000	6518.766	1.100	
			f	208.000	34.769	4163.472	208.000	92.914	11189.524	208.000	127.536	15350.077	360.000	0.016	-6.000	48.100	-78.633	3780.000	0.300	
			e	208.900	60.236	7232.993	208.900	0.000	0.000	208.900	60.296	7239.722	360.000	0.017	-6.000	48.700	134.000	6519.954	1.100	
			f	208.000	34.797	4161.552	208.000	93.035	11201.596	208.000	127.675	15367.317	360.000	0.017	-6.000	48.100	-78.650	3782.949	0.300	
			e	208.100	60.400	7242.095	208.100	0.000	0.000	208.100	60.400	7246.135	360.000	0.017	-6.000	48.700	134.000	6519.776	1.100	
			f	208.101	34.794	4160.029	208.101	92.888	11185.678	208.101	127.514	15348.074	360.000	0.018	-6.001	48.100	-78.626	3780.057	0.300	
2		66%	d	210.000	60.545	7309.081	210.000	61.676	7460.639	210.000	122.200	14779.068	361.000	0.109	39.000	49.600	132.000	6559.640	--	
			e	213.000	59.286	7280.726	213.000	0.000	0.000	213.000	59.395	7280.000	361.000	0.109	39.134	49.600	132.000	6560.000	1.100	
			f	210.003	60.598	7318.495	210.003	62.130	7519.324	210.003	122.618	14826.175	361.000	0.110	39.808	49.600	132.000	6560.000	0.300	
			e	213.000	59.352	7283.658	213.000	0.000	0.000	213.000	59.398	7280.475	361.000	0.110	40.000	49.600	132.000	6560.000	1.100	
			f	210.406	60.598	7318.226	210.406	62.121	7519.246	210.406	122.628	14828.470	361.000	0.110	40.000	49.600	132.000	6560.000	0.300	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
3			e	213.000	59.244	7280.748	213.000	0.000	0.000	213.000	59.273	7280.000	361.000	0.111	40.000	49.600	132.000	6560.000	1.100	
			f	210.522	60.584	7314.665	210.522	62.033	7508.987	210.522	122.531	14815.777	361.000	0.111	40.000	49.600	132.000	6560.000	0.300	
		33%	d	210.000	60.400	7300.000	210.000	30.400	3679.973	210.000	90.600	10960.000	361.000	0.111	40.000	49.600	132.000	6560.000	--	
			e	212.000	59.800	7285.191	212.000	0.000	0.000	212.000	59.800	7281.597	361.000	0.112	40.004	49.600	132.000	6560.000	1.100	
			f	210.000	60.400	7300.000	210.000	30.530	3700.246	210.000	90.910	10994.501	361.000	0.112	40.002	49.600	132.000	6560.000	0.300	
			e	212.000	59.800	7285.237	212.000	0.000	0.000	212.000	59.800	7280.998	361.000	0.112	40.020	49.600	132.000	6560.000	1.100	
			f	210.000	60.400	7300.000	210.000	30.579	3704.612	210.000	90.942	10999.956	361.000	0.112	40.035	49.600	132.000	6560.000	0.300	
			e	212.000	59.800	7284.738	212.000	0.000	0.000	212.000	59.800	7280.748	361.000	0.113	40.953	49.600	132.000	6560.000	1.100	
			f	210.100	60.400	7300.000	210.100	30.516	3699.914	210.100	90.893	10994.836	361.000	0.112	40.728	49.600	132.000	6560.000	0.300	
			4	50%	100%	d	208.000	34.661	4158.145	208.000	92.602	11151.955	208.000	127.188	15307.794	360.000	0.021	-7.909	48.100	
e	208.603	60.325				7238.258	208.603	0.000	0.000	208.603	60.393	7241.343	360.000	0.021	-7.996	48.700	134.000	6520.000	1.100	
f	208.000	34.768				4165.192	208.000	92.926	11190.384	208.000	127.569	15353.856	360.000	0.022	-8.000	48.100	-78.655	3781.659	0.300	
e	208.100	60.400				7240.618	208.100	0.000	0.000	208.100	60.400	7240.950	360.000	0.022	-8.000	48.700	134.000	6520.000	1.100	

TEST PACKAGE

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	208.100	34.753	4164.922	208.100	93.047	11204.302	208.100	127.670	15366.785	360.000	0.022	-8.000	48.100	-78.659	3780.621	0.300	
			e	208.100	60.399	7241.481	208.100	0.000	0.000	208.100	60.400	7240.912	360.000	0.023	-8.000	48.700	134.000	6520.000	1.100	
			f	208.000	34.770	4163.680	208.000	92.854	11181.569	208.000	127.474	15343.281	360.000	0.023	-8.181	48.100	-78.659	3780.029	0.300	
66%		d	208.000	60.396	7252.739	208.000	61.439	7401.987	208.000	121.800	14645.146	360.000	0.024	-9.000	48.700	134.000	6520.000	--		
		e	208.083	60.401	7255.608	208.083	0.000	0.000	208.083	60.402	7260.000	360.000	0.025	-9.000	48.700	134.000	6520.000	1.100		
		f	208.000	60.400	7260.000	208.000	61.745	7437.204	208.000	122.137	14689.524	360.000	0.025	-9.000	48.700	134.000	6520.000	0.300		
		e	208.095	60.405	7258.242	208.095	0.000	0.000	208.095	60.477	7260.000	360.000	0.026	-9.000	48.700	134.000	6520.000	1.100		
		f	208.000	60.408	7260.040	208.000	61.719	7434.651	208.000	122.147	14692.854	360.000	0.026	-9.004	48.700	134.000	6520.080	0.300		
		e	208.425	60.426	7259.658	208.425	0.000	0.000	208.425	60.599	7260.741	360.000	0.026	-9.009	48.700	134.000	6520.000	1.100		
		f	208.000	60.431	7260.114	208.000	61.636	7425.706	208.000	122.090	14683.994	360.000	0.026	-9.039	48.700	134.000	6520.000	0.300		
6	33%	d	208.003	60.536	7264.185	208.003	30.200	3640.000	208.003	90.600	10900.000	360.000	0.026	-9.492	48.700	134.000	6520.000	--		
		e	208.105	60.509	7260.000	208.105	0.000	0.000	208.105	60.585	7259.927	360.000	0.026	-9.205	48.700	134.000	6520.073	1.100		
		f	208.065	60.557	7264.424	208.065	30.292	3652.381	208.065	90.767	10920.707	360.000	0.026	-9.164	48.700	134.000	6520.031	0.300		

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	208.088	60.495	7259.952	208.088	0.000	0.000	208.088	60.590	7260.333	360.000	0.026	-9.033	48.700	134.000	6520.095	1.100	
			f	208.000	60.542	7264.878	208.000	30.312	3655.521	208.000	90.794	10920.532	360.000	0.026	-9.000	48.700	134.000	6520.000	0.300	
			e	208.897	60.470	7259.886	208.897	0.000	0.000	208.897	60.577	7260.228	360.000	0.026	-9.000	48.700	134.000	6520.142	1.100	
			f	208.000	60.520	7262.910	208.000	30.252	3648.359	208.000	90.712	10912.953	360.000	0.026	-9.000	48.700	134.000	6520.029	0.300	
7	0%	100%	d	208.000	1.734	-64.402	208.000	92.182	11063.063	208.000	92.757	11136.565	360.000	0.104	37.003	48.000	0.583	28.017	--	
			e	208.000	1.801	-61.891	208.000	0.000	0.000	208.000	2.081	61.851	360.000	0.104	37.009	48.000	0.582	27.959	1.100	
			f	208.000	1.738	-63.797	208.000	92.639	11117.757	208.000	93.202	11190.783	360.000	0.104	37.009	48.000	0.581	27.923	0.300	
			e	208.100	1.799	-61.848	208.100	0.000	0.000	208.100	2.072	61.691	360.000	0.104	37.000	48.000	0.581	27.895	1.100	
			f	208.000	1.737	-63.929	208.000	92.760	11132.683	208.000	93.324	11205.721	360.000	0.104	37.098	48.000	0.580	27.872	0.300	
			e	208.000	1.806	-61.943	208.000	0.000	0.000	208.000	2.075	61.898	360.000	0.104	37.114	48.000	0.579	27.813	1.100	
			f	208.000	1.739	-63.912	208.000	92.621	11114.950	208.000	93.184	11187.076	360.000	0.104	37.946	48.001	0.583	28.027	0.300	
8		66%	d	208.000	1.689	-63.439	208.000	61.449	7378.631	208.000	62.004	7449.342	360.000	0.104	37.452	48.000	0.579	27.826	--	
			e	208.000	1.802	-61.887	208.000	0.000	0.000	208.000	2.033	61.735	360.000	0.104	37.973	48.000	0.578	27.795	1.100	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
9			f	208.000	1.689	-63.555	208.000	61.677	7407.957	208.000	62.243	7476.989	360.000	0.105	38.000	48.000	0.577	27.761	0.300	
			e	208.100	1.801	-61.857	208.100	0.000	0.000	208.100	2.021	61.699	360.000	0.105	38.000	48.000	0.577	27.698	1.100	
			f	208.000	1.687	-63.301	208.000	61.675	7407.545	208.000	62.233	7476.806	360.000	0.105	38.000	48.000	0.576	27.698	0.300	
			e	208.000	1.801	-61.806	208.000	0.000	0.000	208.000	2.035	61.708	360.000	0.105	38.000	48.000	0.575	27.641	1.100	
			f	208.000	1.680	-63.398	208.000	61.565	7396.434	208.000	62.139	7462.710	360.000	0.105	38.000	48.000	0.575	27.665	0.300	
		33%	d	208.000	1.665	-62.697	208.000	30.008	3620.000	208.000	30.600	3680.000	360.000	0.105	38.000	48.000	0.576	27.691	--	
			e	208.082	1.806	-61.993	208.082	0.000	0.000	208.082	2.024	61.817	360.000	0.105	38.000	48.000	0.576	27.646	1.100	
			f	208.000	1.669	-62.808	208.000	30.230	3631.551	208.000	30.814	3698.955	360.000	0.105	38.000	48.000	0.576	27.693	0.300	
			e	208.000	1.806	-61.981	208.000	0.000	0.000	208.000	2.021	61.894	360.000	0.105	38.000	48.000	0.575	27.625	1.100	
			f	208.000	1.670	-62.762	208.000	30.216	3635.449	208.000	30.806	3700.758	360.000	0.105	38.000	48.000	0.575	27.646	0.300	
			e	208.000	1.804	-61.977	208.000	0.000	0.000	208.000	2.040	61.867	360.000	0.105	38.000	48.000	0.575	27.607	1.100	
			f	208.000	1.663	-62.742	208.000	30.216	3632.183	208.000	30.806	3697.860	360.000	0.105	37.999	48.000	0.575	27.623	0.300	
Note:																				

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203.6 Step Change in Generation Test																					
Load level: 33%																					
Excel file	EUT output limit	Generatio n level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode	
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)			
1	100%	5%-10%	d	208.025	60.309	-7244.386	208.025	30.200	3639.975	208.025	90.408	10878.997	360.020	-0.036	-13.000	48.700	-134.000	-6519.173	--		
			e	208.000	60.400	-7259.710	208.000	30.200	3639.927	208.000	90.437	10881.162	360.000	-0.036	-13.000	48.700	-134.000	-6519.782	0		
			f	208.000	60.400	-7260.000	208.000	30.200	3639.947	208.000	90.566	10889.081	360.033	-0.036	-13.000	48.700	-134.000	-6519.840	0		
			e	208.000	60.404	-7260.032	208.000	30.200	3639.227	208.000	90.600	10897.681	360.045	-0.037	-13.002	48.700	-133.994	-6519.775	0		
			f	208.000	60.489	-7262.653	208.000	30.200	3640.000	208.000	90.600	10899.943	360.003	-0.037	-13.077	48.700	-133.994	-6520.143	0		
			e	208.098	60.545	-7264.471	208.098	30.200	3639.880	208.098	90.600	10900.000	360.000	-0.038	-13.800	48.700	-133.992	-6520.439	0		
			f	208.024	60.582	-7268.160	208.024	30.200	3640.000	208.024	90.600	10900.000	360.043	-0.038	-13.999	48.700	-134.000	-6520.642	0		
2		33%-66%	d	208.000	60.600	-7275.165	208.000	30.200	3639.670	208.000	90.600	10900.189	360.000	-0.038	-14.000	48.700	-134.002	-6521.710	--		
			e	208.000	60.600	-7276.148	208.000	30.200	3640.000	208.000	90.600	10900.114	360.000	-0.039	-14.000	48.700	-134.000	-6521.783	0		
			f	208.000	60.600	-7277.953	208.000	30.200	3640.000	208.000	90.600	10900.524	360.000	-0.039	-14.000	48.700	-133.998	-6522.072	0		
			e	208.061	60.600	-7278.647	208.061	30.200	3640.000	208.061	90.600	10900.548	360.106	-0.040	-14.000	48.700	-134.000	-6522.206	0		
			f	208.098	60.600	-7278.802	208.098	30.200	3640.000	208.098	90.600	10900.114	360.011	-0.040	-14.016	48.700	-133.997	-6521.912	0		

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generatio n level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	208.000	60.600	-7279.739	208.000	30.200	3640.000	208.000	90.600	10900.580	360.080	-0.040	-14.416	48.700	-134.000	-6524.638	0	
			f	208.000	60.600	-7279.715	208.000	30.200	3640.000	208.000	90.600	10900.999	360.103	-0.040	-14.936	48.700	-133.994	-6521.854	0	
3	66%	5%-10%	d	208.000	60.400	-7256.958	208.000	30.200	3640.000	208.000	90.476	10881.722	360.000	-0.012	-4.004	48.700	-134.000	-6519.929	--	
			e	208.000	60.400	-7257.432	208.000	30.200	3640.000	208.000	90.407	10880.114	360.000	-0.012	-4.021	48.700	-134.000	-6519.971	0	
			f	208.000	60.400	-7259.900	208.000	30.200	3640.000	208.000	90.464	10881.248	360.000	-0.012	-4.061	48.700	-134.000	-6519.975	0	
			e	208.000	60.400	-7260.000	208.000	30.200	3640.000	208.000	90.596	10889.791	360.000	-0.013	-4.712	48.700	-134.000	-6520.000	0	
			f	208.000	60.400	-7260.000	208.000	30.200	3640.000	208.000	90.598	10891.498	360.000	-0.013	-4.994	48.700	-134.000	-6520.000	0	
			e	208.100	60.400	-7260.000	208.100	30.200	3640.000	208.100	90.591	10888.103	360.000	-0.013	-5.000	48.700	-134.000	-6520.000	0	
			f	208.063	60.400	-7260.000	208.063	30.200	3640.000	208.063	90.583	10887.019	360.000	-0.014	-5.000	48.700	-134.000	-6520.029	0	
4		33%-66%	d	208.000	60.600	-7279.552	208.000	30.200	3640.000	208.000	90.600	10900.613	360.302	-0.041	-14.882	48.700	-134.000	-6521.203	--	
			e	208.047	60.600	-7279.230	208.047	30.200	3640.000	208.047	90.600	10900.228	360.220	-0.041	-15.000	48.700	-133.997	-6520.827	0	
			f	208.100	60.600	-7279.251	208.100	30.200	3640.000	208.100	90.600	10900.424	360.347	-0.041	-15.000	48.700	-134.000	-6521.648	0	

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generatio n level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	208.00 0	60.60 0	- 7279.09 8	208.00 0	30.20 0	3640.00 0	208.00 0	90.60 1	10900.90 2	360.16 3	- 0.041	- 15.00 0	48.70 0	- 134.00 0	- 6521.86 8	0	
			f	208.00 0	60.60 0	- 7279.17 3	208.00 0	30.20 0	3640.00 0	208.00 0	90.60 0	10900.57 1	360.57 6	- 0.041	- 15.00 0	48.70 0	- 134.00 0	- 6522.63 9	0	
			e	208.00 0	60.60 0	- 7278.34 5	208.00 0	30.20 0	3640.00 0	208.00 0	90.60 0	10900.79 9	360.30 2	- 0.042	- 15.00 0	48.70 0	- 134.00 0	- 6522.95 3	0	
			f	208.00 0	60.60 0	- 7278.74 5	208.00 0	30.20 0	3640.00 0	208.00 0	90.60 0	10900.74 2	360.09 7	- 0.042	- 15.00 0	48.70 0	- 134.00 0	- 6522.96 7	0	
5	33%	5%-10%	d	209.00 0	30.75 7	- 3689.15 1	209.00 0	30.20 0	3640.00 0	209.00 0	60.80 0	7321.368	360.10 3	- 0.042	- 15.00 0	48.00 0	-69.863	- 3357.81 8	--	
			e	209.00 0	30.76 6	- 3689.35 8	209.00 0	30.20 0	3640.00 0	209.00 0	60.80 0	7320.171	360.04 1	- 0.042	- 15.00 0	48.00 0	-69.896	- 3359.01 6	0	
			f	208.95 3	30.77 3	- 3686.58 4	208.95 3	30.20 0	3640.00 0	208.95 3	60.80 0	7320.200	360.06 0	- 0.042	- 15.00 0	48.00 0	-69.900	- 3359.25 2	0	
			e	208.90 0	30.79 4	- 3681.18 4	208.90 0	30.20 0	3640.00 0	208.90 0	60.80 0	7320.125	360.24 6	- 0.042	- 15.00 0	48.00 0	-70.076	- 3363.76 9	0	
			f	208.96 6	30.79 6	- 3681.63 7	208.96 6	30.20 0	3640.00 0	208.96 6	60.80 0	7320.399	360.10 4	- 0.041	- 15.00 0	48.00 0	-70.017	- 3359.50 1	0	
			e	209.00 0	30.79 2	- 3681.86 4	209.00 0	30.20 0	3640.00 0	209.00 0	60.80 0	7320.266	360.16 5	- 0.042	- 15.00 0	48.00 0	-69.889	- 3357.45 4	0	
			f	209.00 0	30.79 0	- 3681.31 2	209.00 0	30.20 0	3640.00 0	209.00 0	60.80 0	7320.314	360.02 9	- 0.042	- 15.00 0	48.00 0	-69.980	- 3362.71 0	0	
6		33%-66%	d	208.98 4	30.78 6	- 3680.98 7	208.98 4	30.20 0	3640.00 0	208.98 4	60.80 0	7320.144	360.06 0	- 0.041	- 15.00 0	48.00 0	-70.034	- 3359.57 9	--	

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generatio n level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	208.90 0	30.75 9	- 3683.11 0	208.90 0	30.20 0	3640.00 0	208.90 0	60.80 0	7320.514	360.07 6	- 0.041	- 15.00 0	48.00 0	-69.893	- 3356.66 2	0	
			f	208.94 4	30.76 1	- 3683.64 5	208.94 4	30.20 0	3640.00 0	208.94 4	60.80 0	7320.250	360.09 1	- 0.041	- 15.00 0	48.00 0	-69.976	- 3362.26 0	0	
			e	209.00 0	30.76 1	- 3683.25 3	209.00 0	30.20 0	3640.00 0	209.00 0	60.80 0	7320.064	360.01 0	- 0.041	- 14.96 0	48.00 0	-70.091	- 3364.86 3	0	
			f	209.00 0	30.75 3	- 3683.46 1	209.00 0	30.20 0	3640.00 0	209.00 0	60.80 0	7320.333	360.00 3	- 0.040	- 14.43 8	48.00 0	-69.960	- 3357.10 5	0	
			e	209.00 0	30.75 7	- 3683.57 4	209.00 0	30.20 0	3640.00 0	209.00 0	60.80 0	7320.723	360.04 5	- 0.040	- 14.01 8	48.00 0	-69.899	- 3358.08 5	0	
			f	208.95 7	30.75 8	- 3683.82 3	208.95 7	30.20 0	3640.00 0	208.95 7	60.80 0	7320.171	360.00 0	- 0.039	- 14.00 0	48.00 0	-70.091	- 3364.82 2	0	
Note:																				

(9) ESS external charge current limit = $33 \pm 5\%$, PV inputs = $0\% + 5\%$ - (If support)

(9-1) 203.5 test

203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
1	100%	100%	d	208.000	30.000	-3599.975	208.000	92.341	11122.857	208.000	122.277	14718.722	360.000	-0.015	-5.028	48.000	-68.302	-3279.875	--	
			e	209.000	29.912	-3591.325	209.000	0.000	0.000	209.000	30.000	3601.887	360.000	-0.015	-5.396	48.000	-68.300	-3279.855	1.100	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
2			f	208.098	30.001	3599.785	208.098	92.943	11192.780	208.098	122.881	14793.733	360.000	-0.016	-5.817	48.000	68.277	3277.419	0.200	
			e	209.000	29.865	3587.193	209.000	0.000	0.000	209.000	29.997	3599.536	360.000	-0.016	-6.000	48.000	68.300	3279.768	1.100	
			f	208.000	30.020	3600.798	208.000	93.068	11208.160	208.000	123.016	14809.978	360.000	-0.016	-6.000	48.000	68.300	3279.867	0.200	
			e	209.000	29.989	3598.903	209.000	0.000	0.000	209.000	30.000	3601.546	360.000	-0.017	-6.000	48.000	68.300	3279.950	1.100	
			f	208.000	29.999	3598.859	208.000	92.930	11192.582	208.000	122.822	14787.789	360.000	-0.017	-6.000	48.000	68.294	3279.301	0.200	
		66%	d	208.971	30.031	3604.501	208.971	61.565	7421.811	208.971	91.540	11028.762	360.000	-0.018	-6.109	48.000	68.278	3277.803	--	
			e	209.000	29.803	3581.307	209.000	0.000	0.000	209.000	29.836	3580.871	360.000	-0.018	-6.915	48.000	68.271	3277.132	1.100	
			f	208.157	30.000	3596.375	208.157	61.868	7458.618	208.157	91.771	11055.177	360.000	-0.019	-6.974	48.000	68.302	3280.031	0.200	
			e	209.000	30.000	3600.095	209.000	0.000	0.000	209.000	30.001	3602.755	360.000	-0.019	-7.000	48.000	68.298	3279.857	1.100	
			f	208.900	29.992	3596.497	208.900	61.962	7468.647	208.900	91.842	11062.794	360.000	-0.019	-7.000	48.000	68.264	3276.430	0.200	
			e	209.000	29.860	3587.581	209.000	0.000	0.000	209.000	30.000	3599.900	360.000	-0.020	-7.000	48.000	68.298	3279.800	1.100	
			f	208.900	30.012	3601.369	208.900	61.907	7464.593	208.900	91.889	11067.618	360.000	-0.020	-7.004	48.000	68.277	3278.217	0.200	
3	33%	d	209.000	29.964	3594.887	209.000	30.200	3640.000	209.000	60.000	7238.881	360.000	-0.021	-7.683	48.000	68.290	3279.467	--		

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	209.000	29.968	3597.096	209.000	0.000	0.000	209.000	30.000	3601.960	360.000	-0.022	-8.000	48.000	-68.300	3279.964	1.100	
			f	209.000	29.998	3601.106	209.000	30.338	3664.547	209.000	60.312	7264.670	360.000	-0.022	-8.000	48.000	-68.268	3277.250	0.200	
			e	209.000	29.835	3584.539	209.000	0.000	0.000	209.000	29.994	3598.853	360.000	-0.023	-8.000	48.000	-68.289	3279.576	1.100	
			f	208.900	29.999	3600.000	208.900	30.400	3669.490	208.900	60.354	7267.805	360.000	-0.023	-8.000	48.000	-68.301	3279.956	0.200	
			e	209.000	29.999	3599.751	209.000	0.000	0.000	209.000	30.000	3600.599	360.000	-0.023	-8.000	48.000	-68.244	3275.411	1.100	
			f	209.000	29.998	3598.374	209.000	30.343	3665.991	209.000	60.266	7252.611	360.000	-0.023	-8.063	48.000	-68.297	3279.815	0.200	
4	50%	100%	d	208.099	30.016	3600.927	208.099	92.358	11126.090	208.099	122.346	14730.175	360.000	-0.024	-8.930	48.000	-68.281	3278.521	--	
			e	209.000	29.804	3580.944	209.000	0.000	0.000	209.000	29.985	3597.677	360.000	-0.024	-8.942	48.000	-68.279	3278.312	1.100	
			f	208.000	30.000	3600.123	208.000	92.933	11193.026	208.000	122.838	14788.879	360.000	-0.024	-8.997	48.000	-68.304	3280.000	0.200	
			e	209.000	29.994	3598.765	209.000	0.000	0.000	209.000	30.000	3602.090	360.000	-0.025	-9.000	48.000	-68.299	3279.952	1.100	
			f	208.000	30.000	3596.098	208.000	93.053	11206.962	208.000	122.928	14799.557	360.000	-0.025	-9.000	48.000	-68.267	3277.206	0.200	
			e	209.000	29.855	3586.325	209.000	0.000	0.000	209.000	29.913	3581.880	360.000	-0.025	-9.000	48.000	-68.299	3279.943	1.100	
			f	208.101	30.010	3600.542	208.101	92.930	11192.011	208.101	122.905	14797.974	360.000	-0.026	-9.000	48.000	-68.300	3279.857	0.200	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
5		66%	d	208.587	29.992	3597.146	208.587	61.595	7424.127	208.587	91.475	11017.834	360.000	-0.026	-9.117	48.000	-68.285	-3278.535	--	
			e	209.000	29.875	3588.348	209.000	0.000	0.000	209.000	29.996	3599.710	360.000	-0.026	-9.673	48.000	-68.300	-3279.964	1.100	
			f	208.902	30.016	3603.041	208.902	61.852	7455.883	208.902	91.813	11060.276	360.000	-0.027	-9.971	48.000	-68.272	-3277.896	0.200	
			e	209.000	29.802	3580.760	209.000	0.000	0.000	209.000	29.946	3596.200	360.000	-0.027	10.000	48.000	-68.281	-3278.432	1.100	
			f	208.966	29.994	3595.609	208.966	61.907	7462.076	208.966	91.787	11057.405	360.000	-0.027	10.000	48.000	-68.300	-3279.960	0.200	
			e	209.000	30.000	3600.000	209.000	0.000	0.000	209.000	30.000	3601.481	360.000	-0.028	10.000	48.000	-68.304	-3280.057	1.100	
			f	208.116	29.981	3594.836	208.116	61.844	7456.719	208.116	91.743	11050.899	360.000	-0.028	10.000	48.000	-68.285	-3278.859	0.200	
6		33%	d	208.979	29.998	3598.822	208.979	30.200	3640.000	208.979	60.068	7240.000	360.000	-0.029	-10.003	48.000	-68.299	-3279.850	--	
			e	209.000	29.977	3596.951	209.000	0.000	0.000	209.000	30.000	3600.508	360.000	-0.029	10.310	48.000	-68.288	-3279.201	1.100	
			f	208.917	29.947	3592.903	208.917	30.352	3665.161	208.917	60.245	7254.808	360.000	-0.029	10.257	48.000	-68.289	-3279.109	0.200	
			e	209.000	29.831	3583.895	209.000	0.000	0.000	209.000	29.857	3584.323	360.000	-0.029	10.463	48.000	-68.296	-3279.715	1.100	
			f	209.000	30.004	3602.439	209.000	30.400	3668.603	209.000	60.372	7271.486	360.000	-0.029	10.763	48.000	-68.301	-3279.956	0.200	
			e	209.000	29.836	3584.103	209.000	0.000	0.000	209.000	29.943	3597.037	360.000	-0.030	11.000	48.000	-68.253	-3275.869	1.100	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	209.000	29.964	-3594.950	209.000	30.355	3665.563	209.000	60.258	7259.601	360.000	-0.030	11.000	48.000	-68.301	-3279.914	0.200	
7	0%	100%	d	208.900	1.725	-65.830	208.900	92.372	11135.579	208.900	92.953	11208.628	360.000	-0.030	11.000	47.300	0.569	26.975	--	
			e	209.000	1.794	-62.443	209.000	0.000	0.000	209.000	2.100	62.648	360.000	-0.031	11.000	47.300	0.570	26.975	1.100	
			f	209.000	1.731	-64.627	209.000	92.949	11202.335	209.000	93.521	11274.286	360.000	-0.031	11.000	47.300	0.570	26.990	0.200	
			e	209.000	1.798	-62.551	209.000	0.000	0.000	209.000	2.101	62.649	360.000	-0.031	11.000	47.300	0.570	26.986	1.100	
			f	209.000	1.734	-64.608	209.000	93.094	11220.443	209.000	93.669	11293.348	360.000	-0.031	11.000	47.300	0.570	26.988	0.200	
			e	209.000	1.793	-62.610	209.000	0.000	0.000	209.000	2.099	62.770	360.000	-0.031	11.000	47.300	0.571	27.010	1.100	
			f	208.900	1.728	-64.770	208.900	92.949	11203.623	208.900	93.515	11274.779	360.000	-0.032	11.290	47.300	0.571	27.026	0.200	
8		66%	d	209.000	1.676	-64.365	209.000	61.573	7430.685	209.000	62.151	7496.322	360.000	-0.032	11.946	47.300	0.571	27.029	--	
			e	209.000	1.793	-62.809	209.000	0.000	0.000	209.000	2.100	62.809	360.000	-0.032	12.000	47.300	0.571	27.014	1.100	
			f	209.000	1.675	-64.347	209.000	61.895	7466.820	209.000	62.473	7535.699	360.000	-0.032	12.000	47.300	0.571	27.016	0.200	
			e	209.000	1.793	-62.969	209.000	0.000	0.000	209.000	2.099	63.029	360.000	-0.033	12.000	47.300	0.568	26.901	1.100	
			f	209.000	1.677	-64.599	209.000	61.961	7473.772	209.000	62.546	7543.673	360.000	-0.033	12.000	47.300	0.570	27.005	0.200	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	209.000	1.791	-63.259	209.000	0.000	0.000	209.000	2.098	63.327	360.000	-0.033	12.000	47.300	0.570	26.997	1.100	
f			209.000	1.680	-64.631	209.000	61.920	7469.358	209.000	62.498	7539.772	360.000	-0.034	12.000	47.300	0.570	27.010	0.200		
d			209.000	1.661	-64.103	209.000	30.200	3640.000	209.000	30.800	3715.764	360.000	-0.034	12.009	47.300	0.570	27.003	--		
e		209.000	1.795	-63.241	209.000	0.000	0.000	209.000	2.099	63.244	360.000	-0.035	12.494	47.300	0.570	26.988	1.100			
f		209.000	1.660	-64.135	209.000	30.333	3664.916	209.000	30.942	3729.862	360.005	-0.035	12.717	47.300	0.570	27.012	0.200			
e		209.000	1.790	-63.287	209.000	0.000	0.000	209.000	2.095	63.343	360.000	-0.035	12.998	47.300	0.572	27.068	1.100			
f		209.000	1.663	-64.060	209.000	30.327	3662.076	209.000	30.945	3728.902	360.000	-0.035	12.998	47.300	0.570	27.005	0.200			
e		209.000	1.796	-63.037	209.000	0.000	0.000	209.000	2.090	63.200	360.000	-0.035	13.000	47.300	0.570	26.994	1.100			
f		209.000	1.663	-63.991	209.000	30.310	3662.454	209.000	30.901	3726.933	360.014	-0.036	13.000	47.300	0.570	26.996	0.200			
Note:																				

(9-2) 203.6 test

203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generation level (PV)	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
1	100%	5%-10%	d	209.000	29.999	-3599.574	209.000	30.200	3640.000	209.000	60.001	7240.000	360.000	-0.014	-5.000	48.000	-68.399	-3279.975	--	

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203.6 Step Change in Generation Test																					
Load level: 33%																					
Excel file	EUT output limit	Generatio n level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode	
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)			
			e	209.00 0	30.00 9	- 3601.96 0	209.00 0	30.20 0	3640.00 0	209.00 0	60.18 9	7240.07 3	360.00 0	- 0.014	- 5.000	48.00 0	- 68.317	- 3279.92 7	0		
			f	209.00 0	29.97 3	- 3595.97 9	209.00 0	30.20 0	3640.00 0	209.00 0	60.01 6	7228.33 6	360.00 0	- 0.014	- 5.000	48.00 0	- 68.307	- 3279.97 3	0		
			e	209.00 0	29.97 4	- 3596.29 6	209.00 0	30.20 0	3640.00 0	209.00 0	60.00 0	7231.82 0	360.00 0	- 0.014	- 5.000	48.00 0	- 68.305	- 3279.93 6	0		
			f	209.00 0	30.00 7	- 3601.96 9	209.00 0	30.20 0	3640.00 0	209.00 0	60.11 6	7239.57 2	360.00 0	- 0.014	- 5.000	48.00 0	- 68.307	- 3279.88 6	0		
			e	208.89 8	30.00 0	- 3598.72 3	208.89 8	30.20 0	3640.00 0	208.89 8	60.01 8	7232.61 5	360.00 0	- 0.014	- 5.000	48.00 0	- 68.304	- 3280.00 0	0		
			f	208.92 2	29.99 7	- 3597.77 5	208.92 2	30.20 0	3640.00 0	208.92 2	60.00 0	7228.53 1	360.00 0	- 0.014	- 5.000	48.00 0	- 68.300	- 3279.88 6	0		
2		33%-66%	d	209.00 0	30.00 0	- 3600.04 7	209.00 0	30.20 0	3640.00 0	209.00 0	60.09 0	7239.71 7	360.00 0	- 0.015	- 5.000	48.00 0	- 68.303	- 3279.92 9	--		
			e	209.00 0	29.99 5	- 3597.03 3	209.00 0	30.20 0	3640.00 0	209.00 0	60.00 0	7230.30 0	360.00 0	- 0.015	- 5.030	48.00 0	- 68.300	- 3279.94 3	0		
			f	209.00 0	29.99 9	- 3599.05 1	209.00 0	30.20 0	3640.00 0	209.00 0	60.04 4	7237.25 3	360.00 0	- 0.015	- 5.005	48.00 0	- 68.300	- 3279.92 5	0		
			e	209.00 0	30.00 0	- 3600.03 2	209.00 0	30.20 0	3640.00 0	209.00 0	60.19 6	7240.19 3	360.00 0	- 0.015	- 5.068	48.00 0	- 68.310	- 3280.06 4	0		
			f	208.93 2	29.97 5	- 3596.26 2	208.93 2	30.20 0	3640.00 0	208.93 2	60.00 3	7236.40 5	360.00 0	- 0.015	- 5.123	48.00 0	- 68.308	- 3280.00 0	0		
			e	208.90 0	29.97 6	- 3596.08 7	208.90 0	30.20 0	3640.00 0	208.90 0	60.00 1	7238.72 5	360.00 0	- 0.015	- 5.301	48.00 0	- 68.312	- 3279.97 1	0		

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generatio n level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	209.000	30.008	3602.767	209.000	30.200	3640.000	209.000	60.197	7240.000	360.000	-0.016	-5.966	48.000	-68.314	-3280.029	0	
3	66%	5%-10%	d	209.000	29.962	3595.071	209.000	30.200	3640.000	209.000	60.000	7233.137	360.000	-0.016	-6.000	48.000	-68.304	-3279.788	--	
			e	209.000	30.003	3600.913	209.000	30.200	3640.000	209.000	60.100	7239.658	360.000	-0.016	-6.000	48.000	-68.316	-3280.029	0	
			f	209.000	29.992	3600.075	209.000	30.200	3640.000	209.000	60.090	7237.054	360.000	-0.016	-6.000	48.000	-68.302	-3279.925	0	
			e	208.963	29.979	3596.973	208.963	30.200	3640.000	208.963	60.000	7233.043	360.000	-0.017	-6.000	48.000	-68.315	-3279.903	0	
			f	208.900	30.000	3600.114	208.900	30.200	3640.000	208.900	60.055	7239.572	360.000	-0.017	-6.000	48.000	-68.310	-3280.057	0	
			e	208.939	30.000	3600.086	208.939	30.200	3640.000	208.939	60.134	7240.000	360.000	-0.018	-6.011	48.000	-68.303	-3279.971	0	
			f	209.000	29.999	3598.944	209.000	30.200	3640.000	209.000	60.000	7237.233	360.000	-0.018	-6.643	48.000	-68.304	-3279.943	0	
4		33%-66%	d	209.000	30.000	3600.212	209.000	30.200	3640.000	209.000	60.169	7240.000	360.000	-0.019	-7.000	48.000	-68.307	-3279.976	--	
			e	209.000	29.995	3597.775	209.000	30.200	3640.000	209.000	60.066	7235.521	360.000	-0.019	-7.000	48.000	-68.300	-3279.914	0	
			f	208.984	29.991	3597.528	208.984	30.200	3640.000	208.984	60.000	7236.255	360.000	-0.020	-7.000	48.000	-68.303	-3279.975	0	
			e	208.902	30.006	3601.707	208.902	30.200	3640.000	208.902	60.144	7240.000	360.000	-0.020	-7.008	48.000	-68.307	-3280.000	0	

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generatio n level (PV)	Ste P	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	208.914	29.998	3601.198	208.914	30.200	3640.000	208.914	60.113	7238.602	360.000	-0.021	-7.204	48.000	-68.300	3279.857	0	
			e	209.000	29.963	3595.121	209.000	30.200	3640.000	209.000	60.000	7236.291	360.000	-0.021	-7.755	48.000	-68.309	3279.943	0	
			f	209.000	30.004	3600.713	209.000	30.200	3640.000	209.000	60.107	7240.114	360.000	-0.021	-7.994	48.000	-68.316	3279.971	0	
5	33%	5%-10%	d	209.000	29.972	3597.028	209.000	30.200	3640.000	209.000	60.016	7235.637	360.000	-0.022	-8.000	48.000	-68.302	3279.976	--	
			e	209.000	29.963	3594.950	209.000	30.200	3640.000	209.000	60.000	7236.719	360.000	-0.022	-8.000	48.000	-68.309	3279.886	0	
			f	208.900	30.000	3600.249	208.900	30.200	3640.000	208.900	60.186	7240.000	360.000	-0.023	-8.000	48.000	-68.319	3279.900	0	
			e	208.903	29.994	3596.698	208.903	30.200	3640.000	208.903	60.006	7233.832	360.000	-0.023	-8.000	48.000	-68.298	3279.813	0	
			f	209.000	29.999	3598.523	209.000	30.200	3640.000	209.000	60.000	7238.244	360.000	-0.023	-8.000	48.000	-68.302	3279.760	0	
			e	209.000	30.000	3600.166	209.000	30.200	3640.000	209.000	60.100	7240.133	360.000	-0.023	-8.047	48.000	-68.302	3279.800	0	
			f	209.000	29.999	3598.745	209.000	30.200	3640.000	209.000	60.151	7238.716	360.000	-0.024	-8.738	48.000	-68.297	3279.772	0	
6		33%-66%	d	208.989	29.996	3598.821	208.989	30.200	3640.000	208.989	60.001	7239.663	360.000	-0.024	-8.996	48.000	-68.303	3279.904	--	
			e	208.900	30.011	3603.680	208.900	30.200	3640.000	208.900	60.200	7240.171	360.000	-0.024	-9.000	48.000	-68.307	3279.971	0	

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generation level (PV)	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	208.928	29.980	-3598.527	208.928	30.200	3640.000	208.928	60.060	7237.253	360.000	-0.025	-9.000	48.000	-68.299	-3279.875	0	
			e	209.000	29.963	-3594.911	209.000	30.200	3640.000	209.000	60.000	7235.878	360.000	-0.025	-9.000	48.000	-68.301	-3280.000	0	
			f	209.000	30.013	-3602.163	209.000	30.200	3640.000	209.000	60.142	7240.000	360.000	-0.025	-9.000	48.000	-68.311	-3280.000	0	
			e	209.000	29.992	-3600.511	209.000	30.200	3640.000	209.000	60.130	7238.128	360.000	-0.025	-9.000	48.000	-68.301	-3280.000	0	
			f	209.000	29.967	-3595.578	209.000	30.200	3640.000	209.000	60.000	7236.719	360.000	-0.026	-9.000	48.000	-68.306	-3280.000	0	
Note:																				

240Vac

(1) ESS external charge current limit = 0% to +5%, PV inputs = 100% ± 5%

(1-1) 203.5 test

(a) For single phase unit connected line to neutral

203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port-bat			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
1	100%	100%	d	242.000	92.550	11160.977	242.000	92.430	11131.779	242.000	2.418	11.564	360.000	32.479	11700.000	47.800	0.563	26.882	--	
			e	242.000	92.400	11160.000	242.000	0.000	0.000	242.000	92.398	11137.459	360.000	32.500	11700.000	47.800	0.562	26.817	1.000	
			f	242.000	92.600	11176.928	242.000	92.949	11191.767	242.000	2.411	-43.693	360.000	32.500	11700.000	47.800	0.563	26.894	0.100	
			e	242.000	92.400	11160.000	242.000	0.000	0.000	242.000	92.410	11137.262	360.000	32.500	11700.000	47.800	0.564	26.900	1.000	
			f	242.000	92.600	11178.315	242.000	93.061	11205.055	242.000	2.452	-55.587	360.000	32.500	11700.000	47.800	0.565	26.983	0.100	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port-bat			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
2			e	242.000	92.400	11163.491	242.000	0.000	0.000	242.000	92.441	11142.045	360.000	32.489	11700.000	47.800	0.565	26.993	1.000	
			f	242.000	92.600	11179.486	242.000	92.860	11180.827	242.000	2.445	-27.729	360.000	32.500	11700.000	47.800	0.566	27.012	0.100	
			d	242.000	92.525	11174.185	242.000	61.817	7451.529	242.000	30.756	3688.020	360.000	32.500	11700.000	47.800	0.566	27.023	--	
		e	242.000	92.475	11173.829	242.000	0.000	0.000	242.000	92.469	11146.788	360.000	32.488	11700.000	47.800	0.566	27.006	1.000		
		f	242.000	92.597	11180.000	242.000	61.892	7458.679	242.000	30.720	3685.438	360.000	32.500	11700.000	47.800	0.566	27.049	1.000		
		e	242.000	92.593	11179.572	242.000	0.000	0.000	242.000	92.544	11153.919	360.000	32.500	11700.000	47.800	0.566	27.004	1.000		
		f	242.000	92.600	11180.000	242.000	61.839	7450.909	242.000	30.804	3696.763	360.000	32.500	11700.000	47.800	0.566	27.057	1.000		
		e	242.000	92.600	11180.000	242.000	0.000	0.000	242.000	92.581	11158.155	360.000	32.500	11700.000	47.800	0.566	27.000	1.000		
		f	242.000	92.600	11180.000	242.000	61.695	7435.521	242.000	30.953	3714.066	360.000	32.500	11700.000	47.800	0.566	27.045	1.000		
		33%	d	242.000	92.595	11180.000	242.000	30.000	3603.459	242.000	62.671	7545.664	360.000	32.500	11700.000	47.800	0.567	27.056	--	
			e	242.000	92.600	11180.000	242.000	0.000	0.000	242.000	92.580	11158.185	360.000	32.500	11700.000	47.800	0.567	27.014	1.000	
			f	242.000	92.594	11180.000	242.000	30.045	3625.131	242.000	62.542	7530.138	360.000	32.500	11700.000	47.800	0.567	27.081	1.000	
			e	242.000	92.524	11177.656	242.000	0.000	0.000	242.000	92.530	11153.067	360.000	32.500	11700.000	47.800	0.567	27.022	1.000	
			f	242.000	92.522	11177.960	242.000	30.025	3623.725	242.000	62.476	7522.483	360.000	32.498	11700.000	47.800	0.567	27.091	1.000	
			e	242.000	92.531	11178.603	242.000	0.000	0.000	242.000	92.516	11151.172	360.000	32.500	11700.000	47.800	0.567	27.041	1.000	
			f	242.000	92.466	11177.632	242.000	30.000	3620.000	242.000	62.510	7526.819	360.000	32.500	11700.000	47.800	0.567	27.095	1.000	
4	50%	100%	d	241.000	50.600	6096.491	241.000	92.194	11083.409	241.000	41.634	-4997.794	360.000	17.600	6340.539	47.800	0.563	27.003	--	
			e	242.000	50.800	6078.185	242.000	0.000	0.000	242.000	50.802	6059.492	360.000	17.600	6328.730	47.800	0.563	26.952	1.000	
			f	241.000	50.600	6098.771	241.000	92.860	11170.538	241.000	42.321	-5079.877	360.000	17.600	6333.210	47.800	0.563	26.998	1.000	

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203.5 Step Change in Load Test																					
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port-bat			Tr (s) (<30s)	ESS Operating Mode	
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)			
			e	242.00 0	50.80 0	6078.575	242.00 0	0.000	0.000	242.00 0	50.80 0	6058.765	360.00 0	17.50 0	6315.986	47.80 0	0.56 3	26.91 8	1.000		
			f	241.00 0	50.60 0	6100.000	241.00 0	92.99 9	11187.18 4	241.00 0	42.44 0	-5095.122	360.00 0	17.60 0	6332.173	47.80 0	0.56 3	26.99 8	1.000		
			e	242.00 0	50.80 0	6080.000	242.00 0	0.000	0.000	242.00 0	50.80 5	6061.197	360.00 0	17.60 0	6327.607	47.80 0	0.56 4	26.97 8	1.000		
			f	241.00 0	50.60 0	6100.000	241.00 0	92.75 5	11159.37 2	241.00 0	42.18 9	-5065.563	360.00 0	17.60 0	6339.872	47.80 0	0.56 4	27.00 3	1.000		
		5	66%	d	241.00 0	50.60 0	6100.000	241.00 0	61.71 0	7430.701	241.00 0	11.41 3	-1336.622	360.00 0	17.60 0	6330.357	47.80 0	0.56 3	26.99 9		--
				e	242.00 0	50.80 0	6079.165	242.00 0	0.000	0.000	242.00 0	50.80 1	6060.544	360.00 0	17.50 0	6315.172	47.80 0	0.56 4	26.98 9		1.000
				f	241.00 0	50.60 0	6100.000	241.00 0	61.84 2	7446.206	241.00 0	11.55 0	-1353.327	360.00 0	17.60 0	6338.157	47.80 0	0.56 4	27.01 0		1.000
				e	242.00 0	50.80 0	6075.534	242.00 0	0.000	0.000	242.00 0	50.79 9	6059.952	360.00 0	17.60 0	6320.998	47.80 0	0.56 4	26.97 3		1.000
f	241.00 0	50.60 0		6100.000	241.00 0	61.83 7	7444.870	241.00 0	11.53 7	-1351.549	360.00 0	17.60 0	6330.798	47.80 0	0.56 4	27.00 2	1.000				
e	242.00 0	50.80 0		6077.778	242.00 0	0.000	0.000	242.00 0	50.80 0	6061.880	360.00 0	17.50 0	6314.815	47.80 0	0.56 4	26.98 8	1.000				
f	241.00 0	50.60 0		6099.743	241.00 0	61.73 5	7434.094	241.00 0	11.45 7	-1341.515	360.00 0	17.60 0	6331.369	47.80 0	0.56 5	27.04 7	1.000				
6	33%	d	242.00 0	50.56 5	6080.000	242.00 0	29.96 1	3600.000	242.00 0	20.79 2	2466.817	360.00 0	17.60 0	6330.125	47.80 0	0.56 4	27.00 0	--			
		e	242.00 0	50.80 0	6078.875	242.00 0	0.000	0.000	242.00 0	50.80 5	6061.307	360.00 0	17.58 1	6318.530	47.80 0	0.56 4	26.99 2	1.000			
		f	242.00 0	50.58 5	6080.000	242.00 0	30.07 3	3626.114	242.00 0	20.61 4	2449.032	360.00 0	17.60 0	6320.000	47.80 0	0.56 4	27.00 0	1.000			
		e	242.00 0	50.80 0	6073.824	242.00 0	0.000	0.000	242.00 0	50.80 0	6060.048	360.00 0	17.50 0	6310.713	47.80 0	0.56 4	27.00 0	1.000			
		f	242.00 0	50.54 4	6080.000	242.00 0	30.10 9	3629.091	242.00 0	20.59 8	2451.353	360.00 0	17.59 6	6324.789	47.80 0	0.56 5	27.06 1	1.000			
		e	242.00 0	50.80 0	6080.000	242.00 0	0.000	0.000	242.00 0	50.80 1	6060.342	360.00 0	17.60 0	6320.000	47.80 0	0.56 4	27.00 0	1.000			
		f	242.00 0	50.52 3	6080.000	242.00 0	30.08 3	3627.190	242.00 0	20.57 8	2443.224	360.00 0	17.58 7	6325.449	47.80 0	0.56 4	27.01 2	1.000			
7	0%	100%	d	241.00 0	1.833	-54.160	241.00 0	92.32 8	11092.59 7	241.00 0	92.77 3	-11138.56 2	360.00 0	-0.025	-9.085	47.80 0	0.56 5	27.00 1	--		

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port-bat			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	241.000	1.913	-48.000	241.000	0.000	0.000	241.000	2.323	-48.556	360.000	-0.004	-1.528	47.800	0.565	26.966	1.000	
			f	241.000	1.834	-54.000	241.000	92.774	11147.250	241.000	93.229	-11191.951	360.000	-0.023	-8.416	47.800	0.565	26.987	1.000	
			e	241.000	1.915	-48.000	241.000	0.000	0.000	241.000	2.323	-47.133	360.000	-0.001	-0.309	47.800	0.565	26.920	1.000	
			f	241.000	1.830	-54.000	241.000	92.904	11163.193	241.000	93.348	-11207.849	360.000	-0.020	-7.166	47.800	0.564	26.965	1.000	
			e	241.000	1.911	-48.000	241.000	0.000	0.000	241.000	2.320	-47.815	360.000	0.001	0.251	47.798	0.564	26.906	1.000	
			f	241.000	1.831	-54.000	241.000	92.783	11148.588	241.000	93.255	-11194.979	360.000	-0.021	-7.558	47.800	0.564	26.961	1.000	
8		66%	d	241.000	1.786	-52.000	241.000	61.644	7413.396	241.000	62.103	-7459.114	360.000	-0.016	-5.891	47.800	0.564	26.918	--	
			e	241.000	1.911	-48.000	241.000	0.000	0.000	241.000	2.319	-47.330	360.000	-0.002	-0.730	47.800	0.564	26.899	1.000	
			f	241.000	1.783	-52.000	241.000	61.799	7432.750	241.000	62.261	-7478.740	360.000	-0.017	-6.198	47.800	0.563	26.900	1.000	
			e	241.000	1.906	-47.952	241.000	0.000	0.000	241.000	2.320	-47.318	360.000	-0.002	-0.841	47.800	0.563	26.884	1.000	
			f	241.000	1.782	-52.196	241.000	61.866	7439.681	241.000	62.326	-7486.707	360.000	-0.018	-6.489	47.800	0.563	26.899	1.000	
			e	241.000	1.915	-48.000	241.000	0.000	0.000	241.000	2.315	-47.646	360.000	-0.003	-1.011	47.800	0.563	26.865	1.000	
9		33%	f	241.000	1.787	-52.000	241.000	61.818	7434.437	241.000	62.279	-7481.997	360.000	-0.018	-6.611	47.800	0.563	26.899	1.000	
			d	241.000	1.760	-50.075	241.000	29.804	3600.000	241.000	30.399	-3640.301	360.000	-0.012	-4.218	47.800	0.563	26.891	--	
			e	241.000	1.914	-47.891	241.000	0.000	0.000	241.000	2.321	-46.869	360.000	-0.002	-0.688	47.800	0.563	26.844	1.000	
			f	241.000	1.760	-50.000	241.000	30.043	3614.409	241.000	30.512	-3662.857	360.000	-0.012	-4.298	47.800	0.563	26.887	1.000	
			e	241.000	1.914	-47.905	241.000	0.000	0.000	241.000	2.319	-47.350	360.000	-0.002	-0.898	47.800	0.562	26.815	1.000	
			f	241.000	1.753	-50.000	241.000	30.061	3619.681	241.000	30.548	-3667.226	360.000	-0.013	-4.579	47.800	0.563	26.887	1.000	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port-bat			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	241.000	1.915	-48.000	241.000	0.000	0.000	241.000	2.319	-48.244	360.000	-0.003	-0.917	47.800	0.563	26.841	1.000	
			f	241.000	1.763	-50.000	241.000	30.056	3616.148	241.000	30.514	-3662.910	360.000	-0.013	-4.683	47.800	0.563	26.888	1.000	
Note:																				

(1-2) 203.6 test

203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generati on level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operati ng Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
1	100%	5%-10%	d	242.00 0	92.40 0	11160.0 00	242.00 0	30.00 0	3612.65 7	242.00 0	62.46 6	7520.87 7	360.00 0	32.45 2	11700.0 00	47.80 0	0.565	26.953	--	
			e	241.00 0	10.14 1	1207.90 6	241.00 0	29.80 0	3600.00 0	241.00 0	19.92 3	- 2380.14 5	360.00 0	3.596	1297.36 8	47.80 0	0.565	26.942	1.10 0	
			f	242.00 0	92.40 0	11160.0 00	242.00 0	30.00 0	3600.00 0	242.00 0	62.45 6	7520.00 0	360.00 0	32.50 0	11700.0 00	47.80 0	0.564	26.903	1.10 0	
			e	241.00 0	10.15 1	1207.71 0	241.00 0	29.80 0	3600.00 0	241.00 0	19.92 1	- 2380.58 0	360.00 0	3.583	1292.46 4	47.80 0	0.564	26.933	1.10 0	
			f	242.00 0	92.38 6	11160.0 00	242.00 0	30.00 0	3600.00 0	242.00 0	62.46 7	7522.11 1	360.00 0	32.40 0	11700.0 00	47.80 0	0.564	26.901	1.10 0	
			e	241.00 0	10.15 3	1207.84 0	241.00 0	29.80 0	3600.00 0	241.00 0	19.92 5	- 2380.35 9	360.00 0	3.569	1287.40 5	47.80 0	0.564	26.901	1.10 0	
			f	242.00 0	92.40 0	11160.0 00	242.00 0	30.00 0	3600.00 0	242.00 0	62.47 6	7522.11 1	360.00 0	32.47 7	11700.0 00	47.80 0	0.564	26.918	1.10 0	
2		33%-66%	d	242.00 0	92.38 8	11160.0 00	242.00 0	30.00 0	3600.00 0	242.00 0	62.48 1	7522.99 5	360.00 0	32.50 0	11700.0 00	47.80 0	0.564	26.919	--	
			e	242.00 0	60.58 9	7300.00 0	242.00 0	29.80 0	3600.00 0	242.00 0	30.74 0	3679.65 8	360.00 0	21.11 2	7609.42 9	47.80 0	0.565	26.970	1.00 0	
			f	242.00 0	92.40 0	11160.0 00	242.00 0	30.00 0	3620.00 0	242.00 0	62.48 4	7524.71 9	360.00 0	32.49 6	11700.0 00	47.80 0	0.564	26.934	1.00 0	
			e	242.00 0	60.58 4	7300.00 0	242.00 0	30.00 0	3600.00 0	242.00 0	30.70 7	3678.06 8	360.00 0	21.10 0	7603.67 1	47.80 0	0.565	26.968	1.00 0	

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generati on level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operati ng Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	242.00 0	92.39 7	11160.0 00	242.00 0	30.00 0	3620.00 0	242.00 0	62.46 3	7521.05 6	360.00 0	32.49 9	11700.0 00	47.80 0	0.565	26.983	1.00 0	
			e	242.00 0	61.35 7	7389.56 5	242.00 0	30.00 0	3600.29 0	242.00 0	31.10 5	3724.05 8	360.00 0	21.37 0	7703.62 3	47.80 0	0.565	26.988	1.00 0	
			f	242.00 0	92.40 0	11160.0 00	242.00 0	30.00 0	3620.00 0	242.00 0	62.48 5	7521.82 6	360.00 0	32.47 2	11700.0 00	47.80 0	0.565	26.990	1.00 0	
3	66%	5%-10%	d	242.00 0	60.60 0	7300.00 0	242.00 0	30.00 0	3600.00 0	242.00 0	30.77 2	3682.99 5	360.00 0	21.10 0	7609.88 2	47.80 0	0.565	26.999	--	
			e	241.00 0	10.16 0	1208.00 0	241.00 0	29.80 0	3600.00 0	241.00 0	19.94 6	- 2382.36 8	360.00 0	3.578	1287.71 8	47.80 0	0.565	26.982	1.00 0	
			f	242.00 0	60.56 7	7300.00 0	242.00 0	30.00 0	3600.00 0	242.00 0	30.66 5	3675.88 0	360.00 0	21.10 0	7595.61 8	47.80 0	0.565	26.992	1.00 0	
			e	241.00 0	10.15 8	1207.09 8	241.00 0	29.80 0	3600.00 0	241.00 0	19.95 8	- 2383.18 8	360.00 0	3.564	1283.04 3	47.80 0	0.566	27.006	1.00 0	
			f	242.00 0	60.59 4	7300.00 0	242.00 0	30.00 0	3600.00 0	242.00 0	30.67 5	3675.89 2	360.00 0	21.10 0	7601.19 8	47.80 0	0.566	27.022	1.00 0	
			e	241.00 0	10.16 1	1207.45 8	241.00 0	29.80 0	3600.00 0	241.00 0	19.95 8	- 2382.45 4	360.00 0	3.593	1293.28 1	47.80 0	0.566	26.998	1.00 0	
			f	242.00 0	60.59 9	7300.00 0	242.00 0	30.00 0	3600.00 0	242.00 0	30.68 9	3677.06 1	360.00 0	21.10 0	7600.00 0	47.80 0	0.565	26.965	1.00 0	
4		33%-66%	d	242.00 0	60.56 0	7300.00 0	242.00 0	30.00 0	3600.00 0	242.00 0	30.70 0	3677.21 7	360.00 0	21.10 0	7598.36 1	47.80 0	0.565	26.998	--	
			e	242.00 0	60.60 0	7300.00 0	242.00 0	30.00 0	3600.00 0	242.00 0	30.73 6	3679.60 1	360.00 0	21.10 1	7610.00 0	47.80 0	0.566	26.997	0	
			f	242.00 0	60.59 0	7300.00 0	242.00 0	30.00 0	3600.00 0	242.00 0	30.72 0	3678.62 7	360.00 0	21.10 0	7609.75 0	47.80 0	0.565	26.955	0	
			e	242.00 0	60.57 1	7300.00 0	242.00 0	30.00 0	3600.00 0	242.00 0	30.72 4	3678.77 6	360.00 0	21.10 0	7598.71 2	47.80 0	0.564	26.924	0	
			f	242.00 0	60.54 0	7299.71 5	242.00 0	30.00 0	3600.00 0	242.00 0	30.71 1	3677.91 7	360.00 0	21.10 0	7597.00 4	47.80 0	0.565	26.960	0	
			e	242.00 0	60.60 0	7300.00 0	242.00 0	30.00 0	3600.00 0	242.00 0	30.73 7	3680.05 7	360.00 0	21.10 0	7603.63 8	47.80 0	0.565	26.991	0	
			f	242.00 0	60.60 0	7300.00 0	242.00 0	30.00 0	3600.00 0	242.00 0	30.69 8	3677.48 9	360.00 0	21.10 0	7610.00 0	47.80 0	0.565	26.963	0	

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203.6 Step Change in Generation Test																					
Load level: 33%																					
Excel file	EUT output limit	Generati on level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operati ng Mode	
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)			
5	33%	5%-10%	d	241.00 0	27.99 1	3360.00 0	241.00 0	29.80 0	3600.00 0	241.00 0	3.154	- 244.625	360.00 0	9.700	3490.10 6	47.80 0	0.565	26.946	--		
			e	241.00 0	10.16 0	1208.00 0	241.00 0	29.80 0	3600.00 0	241.00 0	19.94 9	- 2381.82 6	360.00 0	3.568	1287.43 2	47.80 0	0.565	26.990	1.00 0		
			f	241.00 0	27.89 7	3360.00 0	241.00 0	29.80 0	3600.00 0	241.00 0	3.141	- 246.659	360.00 0	9.698	3490.10 0	47.80 0	0.565	26.996	1.00 0		
			e	241.00 0	10.15 9	1207.55 2	241.00 0	29.80 0	3600.00 0	241.00 0	19.95 6	- 2386.79 5	360.00 0	3.571	1288.39 0	47.80 0	0.565	26.998	1.00 0		
			f	241.00 0	27.86 9	3360.00 0	241.00 0	29.80 0	3600.00 0	241.00 0	3.136	- 247.161	360.00 0	9.700	3490.72 8	47.80 0	0.565	26.990	1.00 0		
			e	241.00 0	10.67 8	1271.63 8	241.00 0	29.80 0	3600.00 0	241.00 0	19.64 3	- 2343.90 0	360.00 0	3.778	1362.81 2	47.80 0	0.564	26.948	1.00 0		
			f	241.00 0	31.60 0	3789.07 3	241.00 0	30.00 0	3620.00 0	241.00 0	2.886	173.645	338.16 8	33.73 2	10995.7 20	48.40 0	- 134.00 0	- 6470.14 3	1.00 0		
6		33%-66%	d	241.00 0	27.82 8	3360.00 0	241.00 0	29.80 0	3600.00 0	241.00 0	3.123	- 245.675	360.00 0	9.699	3490.00 0	47.80 0	0.564	26.900	--		
			e	241.00 0	27.82 7	3360.00 0	241.00 0	29.80 0	3600.00 0	241.00 0	3.126	- 246.588	360.00 0	9.700	3490.00 0	47.80 0	0.564	26.911	0		
			f	241.00 0	27.81 7	3360.00 0	241.00 0	29.80 0	3600.00 0	241.00 0	3.125	- 247.456	360.00 0	9.699	3490.12 5	47.80 0	0.564	26.909	0		
			e	241.00 0	27.84 2	3360.00 0	241.00 0	29.80 0	3600.00 0	241.00 0	3.123	- 246.982	360.00 0	9.699	3490.00 0	47.80 0	0.564	26.908	0		
			f	241.00 0	27.80 6	3360.00 0	241.00 0	29.80 0	3600.00 0	241.00 0	3.122	- 247.048	360.00 0	9.696	3490.00 0	47.80 0	0.564	26.917	0		
			e	241.00 0	27.82 6	3360.00 0	241.00 0	29.80 0	3600.00 0	241.00 0	3.115	- 244.987	360.00 0	9.723	3499.14 9	47.80 0	0.564	26.908	0		
	f		241.00 0	27.87 2	3360.00 0	241.00 0	29.80 0	3600.00 0	241.00 0	3.113	- 245.458	360.00 0	9.719	3497.33 2	47.80 0	0.563	26.890	0			
Note:																					

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(2) ESS external charge current limit = $66 \pm 5\%$ (lf support), PV inputs = $100\% \pm 5\%$ -

(2-1) 203.5 test

203.5 Step Change in Load Test																					
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operating Mode	
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)			
1	100%	100%	d	241.000	63.211	7602.055	241.000	92.566	11109.950	241.000	29.393	-3516.917	359.139	41.574	14939.223	48.400	-134.000	-6470.401	--		
			e	241.800	63.202	7583.049	241.800	0.000	0.000	241.800	63.214	7576.225	360.016	41.443	14931.034	48.400	-134.000	-6470.036	1.000		
			f	241.000	63.224	7604.209	241.000	92.984	11162.335	241.000	29.792	-3565.438	360.002	41.488	14951.613	48.400	-134.000	-6473.149	1.000		
			e	242.000	63.212	7585.615	242.000	0.000	0.000	242.000	63.223	7576.984	359.320	41.527	14930.858	48.400	-134.000	-6479.861	1.000		
			f	241.000	63.255	7607.938	241.000	93.102	11176.452	241.000	29.891	-3576.718	360.729	41.420	14964.302	48.400	-134.000	-6480.000	1.000		
			e	242.000	63.222	7590.324	242.000	0.000	0.000	242.000	63.234	7578.105	360.329	41.412	14938.155	48.400	-134.000	-6476.135	1.000		
			f	241.000	63.302	7612.382	241.000	92.997	11163.595	241.000	29.773	-3562.568	361.492	41.319	14965.478	48.400	-134.000	-6473.310	1.000		
2		66%	d	241.000	63.214	7607.193	241.000	61.708	7413.684	241.000	2.859	185.402	360.561	41.432	14961.529	48.400	-134.000	-6474.674	--		
			e	241.989	63.275	7595.608	241.989	0.000	0.000	241.989	63.311	7582.577	361.007	41.336	14940.109	48.400	-134.000	-6478.076	1.000		
			f	241.000	63.237	7612.934	241.000	61.870	7433.395	241.000	2.795	164.832	360.716	41.405	14961.444	48.400	-134.000	-6477.788	1.000		
			e	241.910	63.327	7598.480	241.910	0.000	0.000	241.910	63.345	7584.371	361.024	41.337	14943.705	48.400	-134.000	-6479.287	1.000		
			f	241.000	63.257	7612.949	241.000	61.928	7439.202	241.000	2.768	160.204	359.470	41.556	14961.863	48.400	-134.000	-6480.000	1.000		

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
3			e	241.800	63.351	7599.501	241.800	0.000	0.000	241.800	63.362	7586.234	360.718	41.382	14949.626	48.400	-	-	1.000	
			f	241.000	63.249	7612.126	241.000	61.862	7432.011	241.000	2.798	168.134	358.427	41.677	14944.365	48.400	-	-	1.000	
		33%	d	241.000	63.200	7601.930	241.000	30.046	3620.000	241.000	33.198	3973.258	359.855	41.488	14953.509	48.400	-	-	--	
			e	241.775	63.373	7599.819	241.775	0.000	0.000	241.775	63.371	7587.623	360.548	41.394	14946.642	48.400	-	-	1.000	
			f	241.000	63.201	7604.025	241.000	30.278	3644.209	241.000	32.997	3949.862	361.080	41.340	14952.842	48.400	-	-	1.000	
			e	241.943	63.339	7597.207	241.943	0.000	0.000	241.943	63.337	7584.638	358.938	41.577	14931.671	48.400	-	-	1.000	
			f	241.000	63.198	7602.572	241.000	30.314	3646.075	241.000	32.954	3944.124	358.823	41.614	14949.224	48.400	-	-	1.000	
			e	241.798	63.365	7599.900	241.798	0.000	0.000	241.798	63.381	7588.479	361.155	41.328	14949.127	48.400	-	-	1.000	
			f	241.000	63.197	7601.312	241.000	30.290	3645.763	241.000	32.983	3949.672	360.775	41.386	14955.492	48.400	-	-	1.000	
			d	241.000	48.800	5880.000	241.000	92.700	11151.203	241.000	43.929	-	360.000	36.300	13100.000	48.311	-	-	--	
4	50%	100%	e	242.000	49.000	5860.000	242.000	0.000	0.000	242.000	49.017	5846.788	360.000	36.300	13066.788	48.400	-	-	1.000	
			f	241.000	48.800	5880.000	241.000	93.131	11203.717	241.000	44.362	-	360.000	36.300	13100.000	48.400	-	-	1.000	
			e	242.000	49.000	5860.000	242.000	0.000	0.000	242.000	49.028	5848.599	360.000	36.300	13035.867	48.400	-	-	1.000	
			d	241.000	48.800	5880.000	241.000	92.700	11151.203	241.000	43.929	5275.614	360.000	36.300	13100.000	48.311	-	-	--	

TEST PACKAGE

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
5			f	241.00 0	48.80 0	5880.00 0	241.00 0	93.11 6	11203.5 03	241.00 0	44.33 4	- 5325.100	360.00 0	36.40 0	13100.0 00	48.40 0	- 134.00 0	- 6468.24 8	1.00 0	
			e	242.00 0	49.16 8	5860.00 0	242.00 0	0.000	0.000	242.00 0	49.10 0	5855.385	360.00 0	36.30 0	13100.0 00	48.40 0	- 134.00 0	- 6467.72 1	1.00 0	
			f	241.00 0	48.80 0	5880.00 0	241.00 0	92.92 8	11179.9 14	241.00 0	44.13 8	- 5299.857	360.00 0	36.35 9	13100.0 00	48.40 0	- 134.00 0	- 6465.00 7	1.00 0	
		66%	d	241.00 0	48.80 0	5880.00 0	241.00 0	61.78 0	7438.72 6	241.00 0	13.20 1	- 1564.800	360.00 0	36.37 4	13100.0 00	48.40 0	- 134.00 0	- 6470.00 0	--	
			e	242.00 0	49.00 0	5860.00 0	242.00 0	0.000	0.000	242.00 0	49.02 7	5849.474	360.00 0	36.30 0	13100.0 00	48.40 0	- 134.00 0	- 6472.12 3	1.00 0	
			f	241.00 0	48.80 0	5880.00 0	241.00 0	61.95 1	7459.69 3	241.00 0	13.37 4	- 1586.012	360.00 0	36.34 8	13100.0 00	48.40 0	- 134.00 0	- 6470.00 0	1.00 0	
			e	242.00 0	49.00 0	5860.00 0	242.00 0	0.000	0.000	242.00 0	49.02 1	5848.171	360.00 0	36.30 0	13100.0 00	48.40 0	- 134.00 0	- 6470.00 0	1.00 0	
			f	241.00 0	48.80 0	5880.00 0	241.00 0	61.94 2	7458.08 4	241.00 0	13.36 9	- 1585.597	360.00 0	36.40 0	13100.0 00	48.40 0	- 134.00 0	- 6470.00 0	1.00 0	
			e	242.00 0	49.00 0	5860.00 0	242.00 0	0.000	0.000	242.00 0	49.03 8	5851.225	360.00 0	36.30 0	13100.0 00	48.40 0	- 134.00 0	- 6470.00 0	1.00 0	
			f	241.00 0	48.80 0	5880.00 0	241.00 0	61.89 6	7452.18 3	241.00 0	13.31 1	- 1578.368	360.00 0	36.40 0	13100.0 00	48.40 0	- 134.00 0	- 6472.41 1	1.00 0	
6		33%	d	242.00 0	48.80 0	5878.99 7	242.00 0	30.20 0	3640.00 0	242.00 0	18.74 8	2224.536	360.00 0	36.39 9	13100.0 00	48.40 0	- 134.00 0	- 6474.82 5	--	
			e	242.00 0	49.00 0	5860.00 0	242.00 0	0.000	0.000	242.00 0	49.02 0	5848.494	360.00 0	36.30 0	13100.0 00	48.40 0	- 134.00 0	- 6471.54 3	1.00 0	
			f	242.00 0	48.80 0	5879.07 8	242.00 0	30.35 1	3660.98 3	242.00 0	18.57 1	2206.974	360.00 0	36.30 5	13100.0 00	48.40 0	- 134.00 0	- 6470.00 0	1.00 0	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	242.00 0	49.00 0	5860.00 0	242.00 0	0.000	0.000	242.00 0	49.03 9	5853.207	360.00 0	36.30 0	13100.0 00	48.40 0	- 134.00 0	- 6470.00 0	1.00 0	
			f	242.00 0	48.80 0	5880.00 0	242.00 0	30.40 0	3664.83 4	242.00 0	18.53 7	2202.040	360.00 0	36.40 0	13100.0 00	48.40 0	- 134.00 0	- 6470.66 5	1.00 0	
			e	242.00 0	49.00 0	5860.00 0	242.00 0	0.000	0.000	242.00 0	49.05 2	5851.396	360.00 0	36.30 0	13100.0 00	48.40 0	- 134.00 0	- 6473.64 7	1.00 0	
			f	242.00 0	48.80 0	5880.00 0	242.00 0	30.35 8	3662.36 8	242.00 0	18.56 9	2204.251	360.00 0	36.35 1	13100.0 00	48.40 0	- 134.00 0	- 6474.43 7	1.00 0	
7	0%	100%	d	239.00 0	1.885	-52.000	239.00 0	92.02 5	10983.3 56	239.00 0	92.47 3	11025.77 9	360.00 0	19.30 0	6940.66 6	48.40 0	- 134.00 0	- 6476.72 4	--	
			e	239.00 0	1.938	-46.000	239.00 0	0.000	0.000	239.00 0	2.157	-44.924	360.00 0	19.30 0	6950.25 4	48.40 0	- 134.00 0	- 6480.00 0	1.00 0	
			f	239.00 0	1.836	-52.000	239.00 0	92.47 8	11036.0 06	239.00 0	92.91 5	11078.03 4	360.00 0	19.30 0	6950.00 0	48.40 0	- 134.00 0	- 6480.00 0	1.00 0	
			e	239.00 0	1.908	-46.000	239.00 0	0.000	0.000	239.00 0	2.142	-45.185	360.00 0	19.30 0	6950.71 3	48.40 0	- 134.00 0	- 6480.00 0	1.00 0	
			f	239.00 0	1.819	-52.000	239.00 0	92.63 4	11054.5 01	239.00 0	93.06 6	11096.98 4	360.00 0	19.30 0	6950.00 0	48.40 0	- 134.00 0	- 6480.00 0	1.00 0	
			e	239.00 0	1.917	-46.000	239.00 0	0.000	0.000	239.00 0	2.138	-48.120	360.00 0	19.30 0	6952.56 4	48.40 0	- 134.00 0	- 6480.00 0	1.00 0	
			f	239.00 0	1.834	-52.000	239.00 0	92.52 0	11041.6 55	239.00 0	92.96 0	11082.65 3	360.00 0	19.30 0	6950.00 0	48.40 0	- 134.00 0	- 6480.00 0	1.00 0	
8		66%	d	239.00 0	1.791	-50.000	239.00 0	61.29 7	7320.72 5	239.00 0	61.73 1	- 7366.711	360.00 0	19.30 0	6950.00 0	48.40 0	- 134.00 0	- 6480.00 0	--	
			e	239.00 0	1.923	-46.000	239.00 0	0.000	0.000	239.00 0	2.144	-43.216	360.00 0	19.30 0	6960.00 0	48.40 0	- 134.00 0	- 6480.00 0	1.00 0	

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203.5 Step Change in Load Test																					
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operating Mode	
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)			
			f	239.000	1.786	-50.000	239.000	61.515	7346.943	239.000	61.953	-7392.012	360.000	19.300	6950.000	48.400	-134.000	-6480.000	1.000		
			e	239.000	1.927	-45.952	239.000	0.000	0.000	239.000	2.144	-44.871	360.000	19.300	6960.000	48.400	-134.000	-6480.000	1.000		
			f	239.000	1.798	-50.000	239.000	61.592	7357.605	239.000	62.020	-7401.637	360.000	19.300	6950.000	48.400	-134.000	-6480.000	1.000		
			e	239.000	1.932	-45.892	239.000	0.000	0.000	239.000	2.144	-47.055	360.000	19.300	6958.177	48.400	-134.000	-6480.000	1.000		
			f	239.000	1.812	-50.000	239.000	61.558	7351.270	239.000	61.995	-7397.718	360.000	19.300	6950.000	48.400	-134.000	-6480.000	1.000		
		9	33%	d	240.742	1.802	-49.805	240.742	30.173	3614.586	240.742	30.575	-3672.030	360.000	19.300	6950.000	48.400	-134.000	-6480.000		--
				e	241.000	1.953	-48.000	241.000	0.000	0.000	241.000	2.160	-47.988	360.000	19.300	6950.000	48.400	-134.000	-6480.000		1.000
				f	241.000	1.798	-50.031	241.000	30.307	3648.848	241.000	30.798	-3697.788	360.000	19.300	6950.000	48.400	-134.000	-6480.000		1.000
				e	241.000	1.974	-48.000	241.000	0.000	0.000	241.000	2.167	-49.987	360.000	19.300	6950.000	48.400	-134.000	-6480.000		1.000
				f	241.000	1.824	-50.160	241.000	30.334	3650.978	241.000	30.810	-3700.120	360.000	19.300	6950.000	48.400	-134.000	-6480.000		1.000
				e	241.000	1.967	-48.000	241.000	0.000	0.000	241.000	2.167	-44.519	360.000	19.300	6950.000	48.400	-134.000	-6480.000		1.000
f	241.000	1.814	-50.225	241.000	30.314	3649.444	241.000	30.819	-3699.544	360.000	19.300	6950.000	48.400	-134.000	-6480.000	1.000					

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(2-2) 203.6 test

203.6 Step Change in Generation Test																					
Load level: 33%																					
Excel file	EUT output limit	Generati on level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operatin g Mode	
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)			
1	100%	5%-10%	d	240.976	63.978	7682.030	240.976	30.000	3616.967	240.976	33.891	4058.672	361.529	41.288	14900.000	49.300	131.000	6465.063	--		
			e	239.000	49.800	5940.000	239.000	30.000	3600.000	239.000	79.720	9513.757	301.047	3.909	1180.000	49.328	131.000	6469.601	4.500		
			f	241.000	63.794	7666.855	241.000	30.000	3602.895	241.000	33.787	4039.867	359.749	41.478	14900.000	49.400	131.000	6470.000	4.500		
			e	239.007	49.801	5940.000	239.007	30.000	3599.246	239.007	79.782	9518.137	301.009	3.905	1180.000	49.400	131.000	6470.000	4.500		
			f	241.000	63.663	7649.301	241.000	30.000	3601.876	241.000	33.648	4028.303	346.745	43.085	14900.000	49.400	131.000	6470.000	4.500		
			e	239.000	49.800	5940.040	239.000	30.000	3599.561	239.000	79.790	9518.483	301.000	3.904	1175.050	49.400	131.000	6470.000	4.500		
			f	240.974	63.652	7650.556	240.974	30.000	3603.252	240.974	33.622	4028.702	347.388	42.982	14900.000	49.400	131.000	6470.000	4.500		
2		33%-66%	d	241.000	63.400	7638.774	241.000	30.000	3620.000	241.000	33.400	4000.000	356.960	41.910	15000.000	48.400	134.000	6480.000	--		
			e	240.000	4.086	454.981	240.000	30.000	3600.000	240.000	26.200	3140.000	355.019	21.076	7490.000	48.400	134.000	6479.929	2.600		
			f	241.000	63.400	7639.840	241.000	30.000	3620.000	241.000	33.400	4000.000	356.940	41.913	15000.000	48.400	134.000	6480.000	2.500		
			e	240.000	4.118	459.268	240.000	30.000	3600.000	240.000	26.200	3140.000	358.047	20.908	7490.000	48.400	134.000	6480.000	2.600		
			f	241.000	63.402	7640.000	241.000	30.000	3620.000	241.000	33.400	4000.000	356.910	41.918	15000.000	48.400	134.000	6480.000	2.500		

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generati on level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	240.000	4.126	460.088	240.000	30.000	3600.000	240.000	26.200	3140.000	358.026	20.911	7490.000	48.400	134.000	6480.000	2.600	
			f	241.000	63.403	7640.000	241.000	30.000	3620.000	241.000	33.400	4000.999	356.932	41.911	15000.000	48.400	134.000	6480.000	2.500	
3	66%	5%-10%	d	240.978	63.201	7593.302	240.978	30.000	3607.618	240.978	33.199	3970.495	347.443	43.570	14903.892	49.400	131.000	6470.236	--	
			e	239.000	49.896	5943.252	239.000	30.000	3600.000	239.000	79.800	9520.057	301.000	3.900	1170.000	49.400	131.000	6470.000	4.600	
			f	241.000	63.174	7589.139	241.000	30.000	3608.439	241.000	33.178	3966.292	337.950	44.790	14923.096	49.400	131.000	6470.000	4.600	
			e	239.027	49.968	5950.274	239.027	30.000	3600.000	239.027	79.800	9520.386	301.000	3.900	1170.000	49.400	131.000	6473.784	4.600	
			f	241.000	63.180	7589.272	241.000	30.000	3608.588	241.000	33.173	3961.969	341.890	44.291	14917.261	49.400	131.000	6470.728	4.600	
			e	239.000	49.857	5942.682	239.000	30.000	3600.000	239.000	79.799	9519.886	301.000	3.900	1170.000	49.400	131.000	6470.057	4.600	
			f	240.909	63.182	7590.243	240.909	30.000	3608.417	240.909	33.166	3962.511	338.559	44.695	14917.118	49.400	131.000	6470.314	4.600	
4	66%	33%-66%	d	242.000	63.582	7675.425	242.000	30.200	3640.000	242.000	33.402	4027.877	361.538	41.267	14900.000	48.600	133.000	6459.175	--	
			e	241.000	4.376	492.422	241.000	30.200	3640.000	241.000	26.012	3133.324	357.044	20.836	7449.815	48.600	133.000	6460.000	2.600	
			f	242.000	63.568	7673.783	242.000	30.200	3640.000	242.000	33.400	4019.151	360.453	41.408	14900.000	48.600	133.000	6459.975	2.500	

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generati on level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	241.00 0	4.382	492.896	241.00 0	30.20 0	3640.00 0	241.00 0	26.00 6	3132.77 2	357.00 0	20.84 1	7449.86 7	48.60 0	- 133.00 0	- 6460.00 0	2.600	
			f	242.00 0	63.59 0	7676.32 7	242.00 0	30.20 0	3640.00 0	242.00 0	33.40 0	4019.68 1	361.49 1	41.27 3	14900.0 00	48.60 0	- 133.00 0	- 6459.92 0	2.500	
			e	241.00 0	4.380	493.508	241.00 0	30.20 0	3640.00 0	241.00 0	26.00 4	3131.57 4	357.07 5	20.83 4	7449.86 7	48.60 0	- 133.00 0	- 6460.00 0	2.600	
			f	242.00 0	63.58 5	7675.07 8	242.00 0	30.20 0	3640.00 0	242.00 0	33.40 0	4021.50 8	361.01 6	41.34 0	14900.0 00	48.60 0	- 133.00 0	- 6459.95 6	2.500	
5	33%	5%-10%	d	241.00 0	31.64 5	3795.84 9	241.00 0	30.00 0	3620.00 0	241.00 0	2.958	180.395	342.28 9	33.31 4	11000.9 43	48.40 0	- 134.00 0	- 6479.11 6	--	
			e	240.00 0	30.99 3	3698.20 3	240.00 0	30.00 0	3600.00 0	240.00 0	60.80 3	7298.85 9	299.00 0	4.000	1200.00 0	48.00 0	-92.870	4456.47 6	3.200	
			f	241.00 0	31.60 0	3784.44 4	241.00 0	30.00 0	3620.00 0	241.00 0	2.898	173.509	338.47 2	33.67 3	10977.6 53	48.40 0	- 134.00 0	- 6470.06 2	2.200	
			e	240.00 0	30.99 6	3695.74 9	240.00 0	30.00 0	3600.00 0	240.00 0	60.80 0	7296.61 8	299.00 0	4.000	1200.00 0	48.00 0	-92.914	4460.00 0	3.200	
			f	241.00 0	31.60 0	3793.23 8	241.00 0	30.00 0	3620.00 0	241.00 0	2.907	175.786	338.30 8	33.71 5	10989.8 72	48.40 0	- 134.00 0	- 6470.00 0	3.300	
			e	240.00 0	30.99 7	3697.13 8	240.00 0	30.00 0	3600.00 0	240.00 0	60.80 0	7297.80 4	299.00 0	4.000	1200.00 0	48.00 0	-92.910	4459.68 4	3.200	
			f	241.00 0	31.60 0	3789.07 3	241.00 0	30.00 0	3620.00 0	241.00 0	2.886	173.645	338.16 8	33.73 2	10995.7 20	48.40 0	- 134.00 0	- 6470.14 3	3.200	
6		33%-66%	d	241.00 0	31.60 0	3781.13 2	241.00 0	30.00 0	3620.00 0	241.00 0	2.884	172.980	338.11 7	33.74 6	10995.7 55	48.40 0	- 134.00 0	- 6470.00 0	--	

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generati on level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	240.00 0	3.962	438.836	240.00 0	30.00 0	3600.00 0	240.00 0	26.40 0	- 3160.42 8	314.73 3	23.79 7	7488.67 3	48.40 0	- 134.00 0	- 6480.00 0	1.100	
			f	241.00 0	31.60 2	3788.93 9	241.00 0	30.00 0	3620.00 0	241.00 0	2.908	175.885	341.12 7	33.43 6	10996.2 55	48.40 0	- 134.00 0	- 6470.00 0	1.100	
			e	240.00 0	3.935	434.832	240.00 0	30.00 0	3600.00 0	240.00 0	26.40 0	- 3160.00 0	307.00 4	24.40 5	7486.43 3	48.40 0	- 134.00 0	- 6480.00 0	1.100	
			f	241.00 0	31.59 8	3783.49 3	241.00 0	30.00 0	3620.00 0	241.00 0	2.885	172.607	338.25 1	33.72 0	10992.7 06	48.40 0	- 134.00 0	- 6470.00 0	1.100	
			e	240.00 0	3.952	438.846	240.00 0	30.00 0	3600.00 0	240.00 0	26.40 0	- 3160.44 8	314.72 3	23.79 7	7488.67 3	48.40 0	- 134.00 0	- 6480.00 0	1.100	
			f	241.00 0	31.60 4	3793.41 1	241.00 0	30.00 0	3620.00 0	241.00 0	2.932	178.227	342.93 7	33.22 8	10995.1 75	48.40 0	- 134.00 0	- 6470.00 0	1.100	
Note:																				

(3) ESS external charge current limit = $33 \pm 5\%$ (If support), PV inputs = $100\% \pm 5\%$ -

(3-1) 203.5 test

203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operati ng Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
1	100%	100%	d	242.00 0	92.58 3	11160.2 51	242.00 0	92.43 8	11132.5 06	242.00 0	2.425	10.661	360.00 0	42.29 9	15200.0 00	48.50 0	68.20 2	3305.99 0	--	
			e	242.00 0	92.40 0	11160.0 00	242.00 0	0.000	0.000	242.00 0	92.36 8	11132.45 0	360.00 0	42.30 0	15200.0 00	48.50 0	68.38 4	3313.63 0	1.00 0	
			f	242.00 0	92.54 2	11159.6 93	242.00 0	92.96 6	11194.6 85	242.00 0	2.466	-53.682	360.00 0	42.30 0	15200.0 00	48.50 0	68.39 4	3319.44 7	1.00 0	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
2			e	242.000	92.400	11160.000	242.000	0.000	0.000	242.000	92.393	11136.473	360.000	42.300	15200.000	48.500	-68.389	-3318.840	1.000	
			f	242.000	92.543	11160.000	242.000	93.082	11207.938	242.000	2.480	-66.890	360.000	42.300	15200.000	48.500	-68.108	-3300.776	1.000	
			e	242.000	92.400	11160.000	242.000	0.000	0.000	242.000	92.392	11137.456	360.000	42.300	15200.000	48.500	-68.109	-3300.923	1.000	
			f	242.000	92.600	11173.096	242.000	92.953	11192.325	242.000	2.442	-44.861	360.000	42.300	15200.000	48.500	-68.133	-3301.427	1.000	
		66%	d	242.000	92.400	11160.000	242.000	61.819	7451.053	242.000	30.719	3683.935	360.000	42.300	15200.000	48.500	-68.331	-3310.890	--	
			e	242.000	92.407	11172.849	242.000	0.000	0.000	242.000	92.485	11147.042	360.000	42.300	15200.000	48.500	-68.291	-3310.000	1.000	
			f	242.000	92.478	11169.309	242.000	61.988	7471.736	242.000	30.596	3669.462	360.000	42.300	15200.000	48.500	-68.367	-3310.031	1.000	
			e	242.000	92.515	11176.722	242.000	0.000	0.000	242.000	92.522	11152.257	360.000	42.300	15200.000	48.500	-68.133	-3300.760	1.000	
			f	242.000	92.600	11180.000	242.000	62.060	7479.823	242.000	30.588	3669.978	360.000	42.300	15200.000	48.500	-68.103	-3300.222	1.000	
			e	242.000	92.519	11180.000	242.000	0.000	0.000	242.000	92.506	11148.678	360.000	42.300	15200.000	48.500	-68.106	-3300.599	1.000	
			f	242.000	92.491	11170.214	242.000	61.980	7469.244	242.000	30.576	3667.133	360.000	42.300	15200.000	48.500	-68.384	-3312.311	1.000	
3		33%	d	242.000	92.400	11162.005	242.000	30.000	3617.494	242.000	62.516	7525.990	360.000	42.300	15200.000	48.500	-68.395	-3319.023	--	
			e	242.000	92.400	11160.726	242.000	0.000	0.000	242.000	92.425	11141.742	360.000	42.300	15200.000	48.500	-68.302	-3309.800	1.000	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	242.00 0	92.40 0	11160.0 00	242.00 0	30.09 3	3630.26 1	242.00 0	62.32 4	7504.178	360.00 0	42.30 0	15200.0 00	48.50 0	- 68.10 6	- 3300.61 4	1.00 0	
			e	242.00 0	92.40 0	11160.0 00	242.00 0	0.000	0.000	242.00 0	92.38 2	11137.00 7	360.00 0	42.30 0	15200.0 00	48.50 0	- 68.11 0	- 3300.94 8	1.00 0	
			f	242.00 0	92.40 0	11160.0 00	242.00 0	30.14 0	3635.29 9	242.00 0	62.29 4	7499.113	360.00 0	42.30 0	15200.0 00	48.50 0	- 68.12 4	- 3301.22 0	1.00 0	
			e	242.00 0	92.40 0	11159.5 01	242.00 0	0.000	0.000	242.00 0	92.40 2	11138.20 4	360.00 0	42.30 0	15200.0 00	48.50 0	- 68.39 1	- 3319.05 2	1.00 0	
			f	242.00 0	92.40 0	11160.0 00	242.00 0	30.10 2	3631.61 2	242.00 0	62.31 7	7502.311	360.00 0	42.30 0	15200.0 00	48.50 0	- 68.39 6	- 3319.50 1	1.00 0	
4	50%	100%	d	241.00 0	50.60 0	6100.00 0	241.00 0	92.36 9	11114.1 60	241.00 0	41.82 5	- 5020.852	360.00 0	27.40 0	9850.00 0	48.50 0	- 68.26 0	- 3310.00 0	--	
			e	242.00 0	50.80 0	6080.00 0	242.00 0	0.000	0.000	242.00 0	50.80 1	6063.557	360.00 0	27.30 0	9830.00 0	48.50 0	- 68.20 1	- 3306.51 5	1.00 0	
			f	241.00 0	50.60 0	6100.00 0	241.00 0	92.87 6	11172.2 89	241.00 0	42.28 1	- 5075.607	360.00 0	27.37 8	9840.76 8	48.50 0	- 68.13 2	- 3300.36 9	1.00 0	
			e	242.00 0	50.80 0	6080.00 0	242.00 0	0.000	0.000	242.00 0	50.82 6	6069.026	360.00 0	27.30 0	9830.00 0	48.50 0	- 68.23 1	- 3309.57 2	1.00 0	
			f	241.00 0	50.60 0	6100.00 0	241.00 0	93.01 5	11189.2 24	241.00 0	42.45 0	- 5094.279	360.00 0	27.38 1	9843.63 6	48.50 0	- 68.30 1	- 3310.00 0	1.00 0	
			e	242.00 0	50.80 0	6080.00 0	242.00 0	0.000	0.000	242.00 0	50.79 7	6062.621	360.00 0	27.30 0	9820.28 5	48.50 0	- 68.29 9	- 3310.00 0	1.00 0	
			f	241.00 0	50.60 0	6100.00 0	241.00 0	92.89 2	11174.5 22	241.00 0	42.33 2	- 5081.255	360.00 0	27.36 6	9840.85 6	48.50 0	- 68.24 3	- 3309.05 8	1.00 0	
5		66%	d	241.00 0	50.60 0	6099.51 6	241.00 0	61.72 3	7432.81 5	241.00 0	11.43 6	- 1342.222	360.00 0	27.33 0	9834.79 0	48.50 0	- 68.17 5	- 3301.74 5	--	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
6			e	242.00 0	50.80 0	6079.63 7	242.00 0	0.000	0.000	242.00 0	50.79 9	6060.254	360.00 0	27.30 0	9819.27 4	48.50 0	- 68.19 9	- 3303.52 1	1.00 0	
			f	241.00 0	50.60 0	6100.00 0	241.00 0	61.92 0	7455.08 4	241.00 0	11.60 7	- 1361.312	360.00 0	27.39 2	9843.37 9	48.50 0	- 68.24 3	- 3309.57 0	1.00 0	
			e	242.00 0	50.80 0	6077.62 5	242.00 0	0.000	0.000	242.00 0	50.79 8	6060.380	360.00 0	27.30 0	9822.37 5	48.50 0	- 68.27 1	- 3309.95 2	1.00 0	
			f	241.00 0	50.60 0	6100.00 0	241.00 0	61.98 8	7463.47 3	241.00 0	11.69 2	- 1372.515	360.00 0	27.39 6	9844.69 1	48.50 0	- 68.30 0	- 3310.00 0	1.00 0	
			e	242.00 0	50.80 0	6072.59 3	242.00 0	0.000	0.000	242.00 0	50.79 2	6057.379	360.00 0	27.30 0	9820.65 5	48.50 0	- 68.20 7	- 3309.40 2	1.00 0	
			f	241.00 0	50.60 0	6100.00 0	241.00 0	61.94 6	7458.23 1	241.00 0	11.66 5	- 1369.475	360.00 0	27.30 2	9840.00 0	48.50 0	- 68.12 3	- 3300.05 7	1.00 0	
		33%	d	242.00 0	50.45 3	6080.00 0	242.00 0	30.00 0	3601.83 0	242.00 0	20.77 1	2462.882	360.00 0	27.30 0	9822.70 7	48.50 0	- 68.15 6	- 3301.75 4	--	
			e	242.00 0	50.80 0	6074.12 0	242.00 0	0.000	0.000	242.00 0	50.79 9	6061.234	360.00 0	27.30 0	9826.15 2	48.50 0	- 68.29 4	- 3310.00 0	1.00 0	
			f	242.00 0	50.46 3	6080.00 0	242.00 0	30.07 6	3626.66 7	242.00 0	20.59 0	2447.343	360.00 0	27.30 0	9836.94 3	48.50 0	- 68.30 0	- 3310.00 0	1.00 0	
			e	242.00 0	50.80 0	6068.07 6	242.00 0	0.000	0.000	242.00 0	50.78 6	6058.100	360.00 0	27.30 0	9823.32 5	48.50 0	- 68.29 7	- 3310.00 0	1.00 0	
			f	242.00 0	50.44 1	6080.00 0	242.00 0	30.12 3	3630.55 4	242.00 0	20.55 7	2441.020	360.00 0	27.30 0	9832.48 3	48.50 0	- 68.22 1	- 3309.31 3	1.00 0	
			e	242.00 0	50.80 0	6077.32 2	242.00 0	0.000	0.000	242.00 0	50.80 3	6062.165	360.00 0	27.30 0	9829.14 5	48.50 0	- 68.20 5	- 3310.00 0	1.00 0	
			f	242.00 0	50.50 8	6080.00 0	242.00 0	30.08 6	3627.70 3	242.00 0	20.59 1	2444.907	360.00 0	27.30 0	9837.10 4	48.50 0	- 68.20 1	- 3303.72 3	1.00 0	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste P	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operati ng Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
7	0%	100%	d	241.000	1.962	-54.000	241.000	92.344	11095.846	241.000	92.784	-11139.095	360.000	9.731	3504.834	48.500	-68.236	-3309.707	--	
			e	241.000	1.995	-47.539	241.000	0.000	0.000	241.000	2.378	-47.110	360.000	9.747	3510.000	48.500	-68.215	-3310.000	1.000	
			f	240.985	1.869	-54.000	240.985	92.767	11146.206	240.985	93.221	-11190.261	360.000	9.707	3494.793	48.500	-68.227	-3309.846	1.000	
			e	241.000	1.917	-48.000	241.000	0.000	0.000	241.000	2.339	-48.425	360.000	9.715	3500.000	48.500	-68.229	-3307.601	1.000	
			f	241.000	1.825	-54.000	241.000	92.896	11161.729	241.000	93.337	-11204.789	360.000	9.702	3498.226	48.500	-68.222	-3310.000	1.000	
			e	241.000	1.902	-48.000	241.000	0.000	0.000	241.000	2.339	-47.079	360.000	9.749	3511.425	48.500	-68.248	-3309.886	1.000	
			f	241.000	1.822	-54.000	241.000	92.775	11147.618	241.000	93.230	-11191.526	360.000	9.731	3503.823	48.500	-68.244	-3310.000	1.000	
8		66%	d	241.000	1.772	-52.000	241.000	61.620	7411.248	241.000	62.077	-7456.456	360.000	9.705	3497.826	48.500	-68.230	-3309.423	--	
			e	241.000	1.902	-47.964	241.000	0.000	0.000	241.000	2.332	-47.533	360.000	9.725	3500.544	48.500	-68.240	-3306.534	1.000	
			f	241.000	1.776	-52.000	241.000	61.844	7438.187	241.000	62.304	-7484.178	360.000	9.715	3500.061	48.500	-68.230	-3310.000	1.000	
			e	241.000	1.903	-47.672	241.000	0.000	0.000	241.000	2.336	-47.396	360.000	9.755	3511.663	48.500	-68.229	-3309.905	1.000	
			f	241.000	1.783	-52.000	241.000	61.908	7443.273	241.000	62.354	-7489.461	360.000	9.734	3509.182	48.500	-68.226	-3309.840	1.000	
			e	241.000	1.919	-47.504	241.000	0.000	0.000	241.000	2.339	-46.637	360.000	9.723	3500.199	48.500	-68.206	-3309.487	1.000	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operati ng Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	241.000	1.790	-52.000	241.000	61.856	7439.372	241.000	62.302	-7484.650	360.000	9.716	3500.000	48.500	68.229	-3308.959	1.000	
9		33%	d	241.000	1.759	-50.000	241.000	29.813	3600.000	241.000	30.399	-3640.100	360.000	9.738	3506.378	48.500	68.217	-3305.827	--	
			e	241.000	1.921	-47.194	241.000	0.000	0.000	241.000	2.332	-47.778	360.000	9.756	3513.612	48.500	68.232	-3309.927	1.000	
			f	241.000	1.773	-50.000	241.000	30.044	3615.115	241.000	30.511	-3662.273	360.000	9.719	3500.983	48.500	68.208	-3307.250	1.000	
			e	241.000	1.938	-46.238	241.000	0.000	0.000	241.000	2.346	-46.333	360.000	9.729	3503.373	48.500	68.204	-3309.952	1.000	
			f	241.000	1.789	-50.000	241.000	30.066	3620.000	241.000	30.572	-3665.988	360.000	9.720	3500.000	48.500	68.200	-3308.503	1.000	
			e	241.000	1.943	-46.735	241.000	0.000	0.000	241.000	2.345	-46.768	360.000	9.761	3516.553	48.500	68.221	-3309.117	1.000	
			f	241.000	1.784	-50.000	241.000	30.056	3616.148	241.000	30.525	-3664.622	360.000	9.743	3510.000	48.500	68.201	-3305.763	1.000	
Note:																				

(3-2) 203.6 test

203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generation level (PV)	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
1	100%	5%-10%	d	241.00 0	90.59 9	10900.0 75	241.00 0	30.19 9	3621.52 9	241.00 0	60.40 4	7266.86 7	347.64 3	42.91 0	14900.0 00	48.20 0	- 68.36 8	- 3292.85 7	--	

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203.6 Step Change in Generation Test																					
Load level: 33%																					
Excel file	EUT output limit	Generati on level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operatin g Mode	
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)			
			e	239.90 2	20.39 2	- 2421.05 3	239.90 2	30.00 0	3600.00 0	239.90 2	50.20 2	- 6003.70 2	300.99 8	3.885	1170.00 0	48.20 0	- 68.37 6	- 3290.58 1	4.600		
			f	241.00 0	90.59 9	10900.3 99	241.00 0	30.00 0	3620.00 0	241.00 0	60.57 7	7282.77 0	345.81 5	43.13 5	14900.0 00	48.20 0	- 68.30 0	- 3290.00 0	4.600		
			e	239.90 2	20.39 5	- 2419.87 1	239.90 2	30.00 0	3600.00 0	239.90 2	50.20 0	- 5999.93 6	301.00 0	3.880	1170.00 0	48.20 0	- 68.30 5	- 3290.32 2	4.600		
			f	241.00 0	90.51 5	10890.8 99	241.00 0	30.00 0	3619.94 3	241.00 0	60.48 5	7273.60 9	339.00 7	44.06 4	14900.0 00	48.20 0	- 68.35 7	- 3290.00 0	4.600		
			e	240.00 0	20.39 6	- 2419.96 0	240.00 0	30.00 0	3600.00 0	240.00 0	50.20 0	- 6000.00 0	301.00 2	3.880	1170.00 0	48.20 0	- 68.38 1	- 3290.24 0	4.600		
			f	241.00 0	90.57 5	10897.7 46	241.00 0	30.00 0	3619.42 9	241.00 0	60.56 2	7279.54 4	343.94 3	43.38 0	14900.0 00	48.20 0	- 68.31 0	- 3290.00 0	4.600		
2			33%-66%	d	241.84 7	90.91 3	10959.5 99	241.84 7	30.00 0	3620.00 0	241.84 7	60.80 0	7306.84 0	361.53 8	41.35 0	15000.0 00	47.70 0	- 68.30 0	- 3256.65 1	--	
				e	241.00 0	32.03 3	3859.88 6	241.00 0	30.00 0	3617.48 9	241.00 0	3.072	239.652	360.86 2	20.77 6	7490.00 0	47.70 0	- 68.30 0	- 3260.00 0	2.600	
				f	242.00 0	90.99 9	10960.0 00	242.00 0	30.00 0	3620.00 0	242.00 0	60.80 2	7316.50 4	361.62 5	41.34 1	15000.0 00	47.70 0	- 68.30 1	- 3260.00 0	2.600	
				e	241.00 0	32.16 1	3860.00 0	241.00 0	30.00 0	3620.00 0	241.00 0	3.080	241.005	360.90 5	20.77 4	7490.00 0	47.70 0	- 68.30 0	- 3260.00 0	2.600	
				f	242.00 0	90.99 9	10960.0 00	242.00 0	30.00 0	3620.00 0	242.00 0	60.81 4	7319.42 9	361.69 9	41.33 3	15000.0 00	47.70 0	- 68.29 9	- 3259.92 9	2.600	
				e	241.00 0	32.45 8	3892.40 6	241.00 0	30.00 0	3619.88 4	241.00 0	3.540	298.232	360.85 8	20.87 0	7523.66 7	47.70 0	- 68.30 4	- 3260.00 0	2.600	

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generation level (PV)	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	242.000	91.000	10960.000	242.000	30.000	3620.000	242.000	60.848	7319.829	361.659	41.338	15000.000	47.700	68.300	3254.850	2.600	
3	66%	5%-10%	d	241.000	63.606	7654.104	241.000	30.000	3620.000	241.000	33.600	4020.236	357.488	33.006	11523.703	47.700	68.168	3250.000	--	
			e	240.000	19.989	2382.796	240.000	30.000	3600.000	240.000	49.980	5980.000	300.000	3.990	1200.000	47.700	68.300	3259.929	3.400	
			f	241.000	63.400	7629.388	241.000	30.000	3620.000	241.000	33.394	3992.884	335.931	35.295	11490.762	47.700	68.200	3250.000	3.400	
			e	240.000	19.953	2377.874	240.000	30.000	3600.000	240.000	49.813	5976.876	300.000	3.990	1200.000	47.700	68.298	3258.551	3.400	
			f	241.000	63.395	7630.014	241.000	30.000	3620.000	241.000	33.387	3994.437	336.188	35.246	11483.452	47.700	68.184	3250.000	3.400	
			e	240.000	19.970	2380.171	240.000	30.000	3600.000	240.000	49.917	5980.000	300.000	3.999	1200.000	47.700	68.284	3256.548	3.400	
			f	241.000	63.407	7631.127	241.000	30.000	3620.000	241.000	33.400	3995.949	336.568	35.247	11498.573	47.700	68.201	3250.000	3.400	
4		33%-66%	d	241.000	63.403	7630.825	241.000	30.000	3620.000	241.000	33.398	3994.623	336.261	35.280	11497.288	47.700	68.227	3250.342	--	
			e	241.000	32.000	3840.000	241.000	30.000	3620.000	241.000	2.974	223.407	326.809	22.930	7490.000	47.700	68.300	3260.000	1.400	
			f	241.000	63.439	7636.579	241.000	30.000	3620.000	241.000	33.429	4000.574	340.049	34.859	11497.378	47.700	68.200	3250.000	1.800	
			e	241.000	32.000	3840.000	241.000	30.000	3620.000	241.000	2.974	225.942	327.359	22.885	7490.000	47.700	68.300	3259.839	1.400	

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generati on level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	241.00 0	63.43 0	7638.14 6	241.00 0	30.00 0	3620.00 0	241.00 0	33.42 3	4002.14 0	341.58 1	34.69 4	11500.5 71	47.70 0	- 68.19 8	- 3250.00 0	1.800	
			e	241.00 0	34.98 6	4200.62 8	241.00 0	30.00 0	3619.94 3	241.00 0	6.018	601.934	321.73 0	24.51 8	7868.18 8	47.70 0	- 68.29 0	- 3255.72 0	1.400	
			f	241.00 0	63.42 0	7636.17 7	241.00 0	30.00 0	3620.00 0	241.00 0	33.40 3	3999.85 7	337.97 7	35.11 1	11503.8 52	47.70 0	- 68.20 4	- 3250.00 0	1.800	
5	33%	5%-10%	d	241.00 0	31.44 8	3780.00 0	241.00 0	30.10 5	3620.00 0	241.00 0	2.753	158.600	360.00 0	20.89 8	7412.54 7	47.70 0	- 67.99 9	- 3240.05 9	--	
			e	240.00 0	19.73 7	- 2355.03 6	240.00 0	30.00 0	3600.00 0	240.00 0	49.60 1	- 5953.72 3	285.42 1	4.128	1179.21 5	47.70 0	- 68.10 3	- 3250.00 0	1.400	
			f	241.00 0	31.42 0	3780.00 0	241.00 0	30.00 0	3620.00 0	241.00 0	2.762	162.639	360.00 0	20.90 0	7415.20 6	47.70 0	- 68.02 8	- 3240.18 7	2.800	
			e	240.00 0	19.74 9	- 2357.68 1	240.00 0	30.00 0	3600.00 0	240.00 0	49.60 0	- 5953.07 6	283.91 9	4.146	1179.13 0	47.70 0	- 68.10 2	- 3250.00 0	1.400	
			f	241.00 0	31.60 0	3800.00 0	241.00 0	30.00 0	3620.00 0	241.00 0	2.860	184.932	360.00 0	20.85 3	7407.44 7	47.70 0	- 68.02 2	- 3240.07 1	2.800	
			e	240.00 0	19.77 7	- 2359.10 1	240.00 0	30.00 0	3600.00 0	240.00 0	49.65 0	- 5958.96 8	283.34 3	4.151	1179.05 2	47.70 0	- 68.19 3	- 3250.00 0	1.400	
			f	241.00 0	31.60 0	3800.00 0	241.00 0	30.00 0	3620.00 0	241.00 0	2.850	183.230	360.00 0	20.87 1	7409.80 0	47.70 0	- 68.09 7	- 3247.26 1	2.800	
6		33%-66%	d	241.00 0	31.60 0	3800.00 0	241.00 0	30.00 0	3620.00 0	241.00 0	2.841	182.900	360.00 0	20.87 1	7409.48 1	47.70 0	- 68.04 0	- 3240.41 3	--	
			e	241.00 0	31.60 0	3800.00 0	241.00 0	30.00 0	3620.00 0	241.00 0	2.840	182.284	360.00 0	20.89 7	7413.19 5	47.70 0	- 68.09 6	- 3247.09 0	0	

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generati on level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	241.000	31.600	3800.000	241.000	30.000	3620.000	241.000	2.838	181.798	360.000	20.899	7415.743	47.700	-68.101	-3249.813	0	
			e	241.000	31.600	3800.000	241.000	30.000	3620.000	241.000	2.842	182.529	360.000	20.900	7421.224	47.700	-68.087	-3246.940	0	
			f	241.000	31.600	3800.000	241.000	30.000	3620.000	241.000	2.860	182.989	360.000	20.882	7410.815	47.700	-68.080	-3245.507	0	
			e	241.000	31.600	3800.000	241.000	30.000	3620.000	241.000	2.859	183.227	360.000	20.887	7413.479	47.700	-68.079	-3243.287	0	
			f	241.000	31.600	3800.000	241.000	30.000	3620.000	241.000	2.859	183.460	360.000	20.889	7414.893	47.700	-68.072	-3243.367	0	
Note:																				

(4) ESS external charge current limit = 0% to +5%, PV inputs = 50% ± 5%

(4-1) 203.5 test

(a) For single phase unit connected line to neutral

203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
1	100%	100%	d	241.000	60.800	7300.000	241.000	92.586	11124.336	241.000	31.964	-3825.915	360.000	21.100	7610.000	47.800	0.566	27.006	--	
			e	242.000	60.793	7280.000	242.000	0.000	0.000	242.000	60.724	7263.339	360.000	21.100	7590.181	47.800	0.566	27.002	2.100	
			f	241.000	60.800	7300.307	241.000	93.114	11185.899	241.000	32.449	-3884.240	360.000	21.200	7620.922	47.800	0.565	26.994	0.100	
			e	242.000	60.800	7280.000	242.000	0.000	0.000	242.000	60.757	7268.213	360.000	21.100	7608.631	47.800	0.565	26.971	1.100	
			f	241.000	60.773	7300.443	241.000	93.229	11199.424	241.000	32.557	-3896.630	360.000	21.176	7612.705	47.800	0.565	26.950	0.100	
			e	242.000	60.800	7280.000	242.000	0.000	0.000	242.000	60.756	7267.531	360.000	21.100	7598.529	47.800	0.565	26.958	1.100	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	241.00 0	60.78 9	7302.25 4	241.00 0	93.12 0	11186.73 3	241.00 0	32.44 1	-3883.281	360.00 0	21.20 0	7619.85 7	47.80 0	0.56 5	26.98 3	0.100	
2		66%	d	241.00 0	60.77 3	7301.72 9	241.00 0	61.75 8	7425.865	241.00 0	2.872	-127.638	360.00 0	21.18 5	7617.01 8	47.80 0	0.56 5	26.97 2	--	
			e	242.00 0	60.79 9	7289.00 2	242.00 0	0.000	0.000	242.00 0	60.76 9	7268.711	360.00 0	21.10 0	7593.53 9	47.80 0	0.56 5	26.94 7	1.100	
			f	241.00 0	60.78 5	7304.48 5	241.00 0	61.93 2	7446.237	241.00 0	2.930	-147.022	360.00 0	21.12 4	7610.00 0	47.80 0	0.56 5	26.99 6	1.100	
			e	242.00 0	60.80 0	7300.00 0	242.00 0	0.000	0.000	242.00 0	60.79 4	7275.202	360.00 0	21.10 0	7608.33 7	47.80 0	0.56 5	26.99 1	1.100	
			f	241.00 0	60.80 0	7320.00 0	241.00 0	61.99 8	7456.718	241.00 0	2.941	-152.451	360.00 0	21.20 0	7620.00 0	47.80 0	0.56 5	26.97 8	1.100	
			e	242.00 0	60.80 0	7297.55 6	242.00 0	0.000	0.000	242.00 0	60.79 9	7274.813	360.00 0	21.10 0	7595.28 7	47.80 0	0.56 5	26.96 1	1.100	
			f	241.00 0	60.80 0	7319.45 8	241.00 0	61.92 6	7446.362	241.00 0	2.914	-143.358	360.00 0	21.15 6	7611.25 5	47.80 0	0.56 5	26.99 7	1.100	
3		33%	d	241.00 0	60.60 0	7300.00 0	241.00 0	30.14 9	3620.000	241.00 0	30.59 6	3656.767	360.00 0	21.10 9	7609.49 9	47.80 0	0.56 5	26.98 2	--	
			e	242.00 0	60.80 0	7298.94 7	242.00 0	0.000	0.000	242.00 0	60.79 7	7274.011	360.00 0	21.10 0	7591.88 7	47.80 0	0.56 5	26.96 5	1.100	
			f	241.00 0	60.60 0	7300.00 0	241.00 0	30.29 8	3648.264	241.00 0	30.41 5	3633.303	360.00 0	21.10 0	7599.23 2	47.80 0	0.56 5	26.99 3	1.100	
			e	242.00 0	60.80 0	7300.00 0	242.00 0	0.000	0.000	242.00 0	60.79 0	7274.514	360.00 0	21.10 0	7598.00 5	47.80 0	0.56 6	27.00 0	1.100	
			f	241.00 0	60.60 0	7300.00 0	241.00 0	30.33 8	3651.574	241.00 0	30.38 1	3630.022	360.00 0	21.10 9	7610.00 0	47.80 0	0.56 5	26.99 6	1.100	
			e	242.00 0	60.80 0	7291.17 2	242.00 0	0.000	0.000	242.00 0	60.78 3	7273.017	360.00 0	21.10 0	7590.24 9	47.80 0	0.56 5	26.97 4	1.100	
			f	241.00 0	60.60 0	7300.00 0	241.00 0	30.29 5	3648.046	241.00 0	30.40 6	3633.609	360.00 0	21.10 0	7600.00 0	47.80 0	0.56 5	26.99 8	1.100	
4	50%	100%	d	241.00 0	47.85 2	5771.65 4	241.00 0	92.98 4	11193.35 8	241.00 0	45.12 8	-5435.589	360.00 0	16.60 7	5988.17 0	47.20 0	0.00 4	0.134	--	
			e	242.00 0	48.14 1	5749.00 2	242.00 0	0.000	0.000	242.00 0	48.00 2	5739.383	360.00 0	16.59 9	5971.92 4	47.20 0	0.00 4	0.129	1.100	
			f	241.00 0	47.88 6	5773.24 1	241.00 0	93.38 4	11243.47 2	241.00 0	45.52 0	-5482.765	360.00 0	16.60 8	5988.18 7	47.20 0	0.00 4	0.145	1.100	
			e	242.00 0	48.14 4	5749.35 9	242.00 0	0.000	0.000	242.00 0	48.09 7	5748.646	360.00 0	16.59 8	5970.78 4	47.20 0	0.00 4	0.142	1.100	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
5			f	241.100	47.898	5774.678	241.100	93.504	11257.339	241.100	45.642	-5497.428	360.000	16.649	5994.235	47.200	0.004	0.173	1.100	
			e	242.094	48.155	5752.308	242.094	0.000	0.000	242.094	48.005	5739.316	360.000	16.599	5972.279	47.200	0.004	0.132	1.100	
			f	241.054	47.901	5774.922	241.054	93.405	11245.193	241.054	45.534	-5483.852	360.000	16.610	5988.602	47.199	0.004	0.186	1.100	
		66%	d	241.898	47.860	5775.771	241.898	61.883	7456.331	241.898	14.163	-1678.306	360.000	16.652	5995.197	47.200	0.004	0.144	--	
			e	242.000	48.177	5755.463	242.000	0.000	0.000	242.000	48.025	5740.726	360.000	16.599	5971.851	47.200	0.004	0.104	1.100	
			f	241.945	47.850	5776.897	241.945	62.076	7480.799	241.945	14.400	-1717.533	360.000	16.606	5987.896	47.201	0.000	-0.057	1.100	
			e	242.000	48.181	5755.487	242.000	0.000	0.000	242.000	48.047	5740.190	360.000	16.600	5972.185	47.200	0.004	0.116	1.100	
			f	242.000	47.889	5777.605	242.000	62.077	7479.521	242.000	14.322	-1700.084	360.000	16.668	5997.864	47.200	0.004	0.140	1.100	
			e	242.020	48.187	5757.208	242.020	0.000	0.000	242.020	48.068	5740.684	360.000	16.599	5972.877	47.200	0.005	0.177	1.100	
			f	241.996	47.873	5777.775	241.996	62.048	7477.290	241.996	14.307	-1698.066	360.000	16.608	5988.787	47.200	0.005	0.166	1.100	
		33%	d	241.966	47.809	5766.065	241.966	30.200	3641.378	241.966	17.788	2109.699	360.000	16.603	5983.208	47.201	0.004	0.131	--	
			e	242.000	48.184	5757.350	242.000	0.000	0.000	242.000	48.083	5740.653	360.000	16.601	5981.216	47.200	0.005	0.156	1.100	
			f	242.000	47.816	5768.326	242.000	30.421	3666.974	242.000	17.590	2088.080	360.000	16.601	5982.120	47.200	0.005	0.190	1.100	
			e	242.000	48.174	5756.057	242.000	0.000	0.000	242.000	48.038	5740.380	360.000	16.598	5972.803	47.200	0.005	0.177	1.100	
			f	242.000	47.823	5769.135	242.000	30.400	3665.765	242.000	17.596	2086.741	360.000	16.607	5984.302	47.200	0.005	0.168	1.100	
			e	242.000	48.189	5758.063	242.000	0.000	0.000	242.000	48.085	5740.855	360.000	16.601	5978.319	47.200	0.005	0.163	1.100	
			f	242.000	47.819	5769.529	242.000	30.354	3663.081	242.000	17.680	2101.027	360.000	16.601	5982.168	47.200	0.004	0.175	1.100	
7	0%	100%	d	240.000	1.835	-54.000	240.000	92.523	11099.015	240.000	92.965	11142.876	360.000	-0.006	-2.337	47.800	0.565	26.999	--	
			e	241.000	1.918	-48.000	241.000	0.000	0.000	241.000	2.463	-47.562	360.000	0.013	4.762	47.800	0.566	27.000	1.100	

TEST PACKAGE

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	240.00 0	1.839	-54.000	240.00 0	92.97 7	11154.80 8	240.00 0	93.43 1	11197.26 6	360.00 0	- 0.008	-2.674	47.80 0	0.56 6	27.00 7	1.100	
			e	241.00 0	1.926	-47.905	241.00 0	0.000	0.000	241.00 0	2.464	-47.359	360.00 0	0.015	5.292	47.80 0	0.56 6	27.00 0	1.100	
			f	240.00 0	1.842	-54.000	240.00 0	93.11 2	11171.22 0	240.00 0	93.56 4	11213.96 9	360.00 0	- 0.005	-1.780	47.80 0	0.56 6	27.00 2	1.100	
			e	241.00 0	1.920	-47.829	241.00 0	0.000	0.000	241.00 0	2.463	-47.282	360.00 0	0.016	5.701	47.80 0	0.56 6	27.00 1	1.100	
			f	240.00 0	1.841	-53.971	240.00 0	92.97 4	11153.06 7	240.00 0	93.42 0	11196.32 0	360.00 0	- 0.003	-1.040	47.80 0	0.56 6	26.99 9	1.100	
		66%	d	240.00 0	1.795	-52.000	240.00 0	61.59 3	7395.329	240.00 0	62.04 5	-7439.624	360.00 0	0.004	1.366	47.80 0	0.56 5	26.99 7	--	
			e	241.00 0	1.926	-47.024	241.00 0	0.000	0.000	241.00 0	2.464	-46.907	360.00 0	0.019	6.702	47.80 0	0.56 5	26.98 0	1.100	
			f	240.00 0	1.799	-52.000	240.00 0	61.83 0	7424.240	240.00 0	62.29 2	-7470.476	360.00 0	0.002	0.719	47.80 0	0.56 5	26.96 5	1.100	
			e	241.00 0	1.924	-47.748	241.00 0	0.000	0.000	241.00 0	2.460	-47.404	360.00 0	0.017	6.038	47.80 0	0.56 5	26.94 1	1.100	
			f	240.00 0	1.800	-52.000	240.00 0	61.87 6	7429.621	240.00 0	62.33 3	-7473.054	360.00 0	0.001	0.301	47.80 0	0.56 4	26.93 8	1.100	
9	33%	e	241.00 0	1.931	-47.487	241.00 0	0.000	0.000	241.00 0	2.469	-46.759	360.00 0	0.015	5.305	47.80 0	0.56 4	26.90 8	1.100		
		f	240.00 0	1.815	-52.000	240.00 0	61.83 5	7424.422	240.00 0	62.27 4	-7466.933	360.00 0	0.001	0.281	47.80 0	0.56 4	26.92 2	1.100		
		d	240.00 0	1.789	-50.000	240.00 0	30.00 0	3620.000	240.00 0	30.57 6	-3656.065	360.00 0	0.007	2.385	47.80 0	0.56 4	26.91 4	--		
		e	241.00 0	1.945	-47.887	241.00 0	0.000	0.000	241.00 0	2.476	-47.299	360.00 0	0.015	5.505	47.80 0	0.56 4	26.90 3	1.100		
		f	240.00 0	1.798	-50.000	240.00 0	30.25 4	3633.395	240.00 0	30.71 6	-3678.618	360.00 0	0.006	2.346	47.80 0	0.56 4	26.90 5	1.100		
		e	241.00 0	1.950	-47.720	241.00 0	0.000	0.000	241.00 0	2.479	-47.186	360.00 0	0.015	5.549	47.80 0	0.56 4	26.90 0	1.100		
		f	240.00 0	1.790	-50.000	240.00 0	30.28 3	3639.401	240.00 0	30.76 4	-3681.437	360.00 0	0.006	2.327	47.80 0	0.56 4	26.90 6	1.100		
		e	241.00 0	1.947	-46.536	241.00 0	0.000	0.000	241.00 0	2.477	-46.601	360.00 0	0.016	5.613	47.80 0	0.56 4	26.90 1	1.100		

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	240.000	1.802	-49.971	240.000	30.271	3637.347	240.000	30.736	-3683.338	360.000	0.007	2.733	47.800	0.564	26.900	1.100	
Note:																				

(4-2) 203.6 test

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203.6 Step Change in Generation Test																					
Load level: 33%																					
Excel file	EUT output limit	Generatio n level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode	
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)			
1	100%	5%-10%	d	242.00 0	60.26 1	7277.21 8	242.00 0	30.30 9	3660.00 0	242.00 0	29.99 8	3600.80 2	360.00 0	21.00 2	7564.73 7	47.20 0	0.00 4	0.123	--		
			e	241.00 0	10.04 4	1195.74 6	241.00 0	30.20 0	3640.00 0	241.00 0	20.21 8	2420.58 1	360.00 0	3.502	1261.97 8	47.20 0	0.00 4	0.129	0.500		
			f	242.00 0	60.28 1	7277.84 3	242.00 0	30.20 0	3640.00 0	242.00 0	30.10 5	3617.31 0	360.00 0	21.01 1	7567.49 7	47.20 0	0.00 4	0.133	0.500		
			e	241.00 0	10.05 1	1196.36 4	241.00 0	30.20 0	3640.00 0	241.00 0	20.20 0	2420.06 4	360.00 0	3.518	1267.55 2	47.20 0	0.00 4	0.183	0.500		
			f	242.00 0	60.29 4	7277.94 6	242.00 0	30.20 0	3640.00 0	242.00 0	30.13 8	3618.51 6	360.00 0	21.00 2	7564.18 0	47.20 0	0.00 4	0.185	0.500		
			e	241.10 2	10.04 4	1195.62 9	241.10 2	30.20 0	3640.00 0	241.10 2	20.39 4	2439.44 1	360.00 0	3.503	1262.39 5	47.20 0	0.00 4	0.163	0.500		
			f	242.00 0	60.28 8	7277.46 1	242.00 0	30.20 0	3640.00 0	242.00 0	30.13 0	3617.77 5	360.00 0	21.00 1	7562.83 9	47.20 0	0.00 4	0.176	0.500		
2		33%-66%	d	241.00 0	60.60 0	7300.00 0	241.00 0	30.00 0	3620.00 0	241.00 0	30.60 8	3665.61 3	360.00 0	21.10 0	7609.41 0	47.80 0	0.56 4	26.90 6	--		
			e	241.00 0	60.60 0	7300.00 0	241.00 0	30.00 0	3620.00 0	241.00 0	30.60 9	3666.24 8	360.00 0	21.10 0	7609.85 7	47.80 0	0.56 4	26.89 8	0		
			f	241.00 0	60.60 0	7300.00 0	241.00 0	30.00 0	3620.00 0	241.00 0	30.60 3	3664.79 4	360.00 0	21.10 0	7608.39 0	47.80 0	0.56 4	26.90 0	0		
			e	241.00 0	60.60 0	7300.00 0	241.00 0	30.00 0	3620.00 0	241.00 0	30.60 4	3665.73 3	360.00 0	21.10 0	7597.74 6	47.80 0	0.56 4	26.89 7	0		
			f	241.00 0	60.60 0	7300.00 0	241.00 0	30.00 0	3620.00 0	241.00 0	30.60 5	3665.56 3	360.00 0	21.10 0	7597.58 9	47.80 0	0.56 4	26.89 9	0		
			e	241.00 0	60.60 0	7300.00 0	241.00 0	30.00 0	3620.00 0	241.00 0	30.60 2	3665.15 9	360.00 0	21.10 0	7597.31 9	47.80 0	0.56 5	26.90 8	0		
			f	241.00 0	60.60 0	7300.00 0	241.00 0	30.00 0	3620.00 0	241.00 0	30.60 4	3664.85 0	360.00 0	21.10 0	7602.49 6	47.80 0	0.56 4	26.89 9	0		
3	66%	5%-10%	d	241.00 0	60.60 0	7300.00 0	241.00 0	30.00 0	3620.00 0	241.00 0	30.60 2	3664.12 7	360.00 0	21.10 0	7600.44 8	47.80 0	0.56 4	26.90 1	--		
			e	241.00 0	10.16 1	1207.65 8	241.00 0	30.00 0	3620.00 0	241.00 0	20.03 4	2400.00 0	360.00 0	3.555	1280.00 0	47.80 0	0.56 4	26.90 0	1.100		
			f	241.00 0	60.60 0	7300.00 0	241.00 0	30.00 0	3620.00 0	241.00 0	30.60 6	3665.24 3	360.00 0	21.10 0	7590.49 9	47.80 0	0.56 4	26.90 7	1.100		

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203.6 Step Change in Generation Test																					
Load level: 33%																					
Excel file	EUT output limit	Generation level (PV)	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode	
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)			
			e	241.000	10.160	1207.903	241.000	30.000	3620.000	241.000	20.035	-2400.129	360.000	3.552	1280.000	47.800	0.565	26.945	1.100		
			f	241.000	60.600	7298.317	241.000	30.000	3620.000	241.000	30.598	3663.795	360.000	21.110	7592.282	47.800	0.565	26.952	1.100		
			e	241.000	10.161	1207.912	241.000	30.000	3620.000	241.000	20.035	-2400.000	360.000	3.579	1290.000	47.800	0.565	26.907	1.100		
			f	241.000	60.600	7300.000	241.000	30.000	3620.000	241.000	30.599	3663.795	360.000	21.110	7600.000	47.800	0.564	26.901	1.100		
		4	33%-66%	d	241.000	60.600	7300.000	241.000	30.000	3620.000	241.000	30.600	3664.458	360.000	21.110	7590.236	47.800	0.564	26.896		-
				e	241.000	60.600	7299.715	241.000	30.000	3620.000	241.000	30.601	3662.767	360.000	21.110	7590.428	47.800	0.564	26.904		0
				f	241.000	60.600	7300.000	241.000	30.000	3620.000	241.000	30.602	3665.169	360.000	21.110	7600.749	47.800	0.564	26.910		0
				e	241.000	60.600	7300.000	241.000	30.000	3620.000	241.000	30.609	3668.019	360.000	21.110	7604.348	47.800	0.564	26.892		0
f	241.000	60.600		7300.000	241.000	30.000	3620.000	241.000	30.602	3659.772	360.000	21.110	7603.267	47.800	0.564	26.922	0				
e	241.000	60.600		7300.000	241.000	30.000	3620.000	241.000	30.604	3659.629	360.000	21.110	7600.713	47.800	0.564	26.930	0				
f	241.000	60.600	7300.000	241.000	30.000	3620.000	241.000	30.601	3658.003	360.000	21.110	7590.414	47.800	0.564	26.922	0					
	33%	5%-10%	d	241.000	28.000	3360.000	241.000	30.000	3620.000	241.000	3.311	-261.259	360.000	9.749	3510.000	47.800	0.579	27.625	-		
			e	241.000	10.180	1208.086	241.000	30.000	3620.000	241.000	20.019	-2395.663	360.000	3.618	1300.984	47.800	0.579	27.609	1.100		
			f	241.000	28.000	3360.000	241.000	30.000	3620.000	241.000	3.325	-263.056	360.000	9.740	3510.000	47.800	0.578	27.600	1.100		
			e	241.000	10.169	1208.000	241.000	30.000	3620.000	241.000	20.043	-2397.746	360.000	3.612	1300.000	47.800	0.578	27.594	1.100		
			f	241.000	28.000	3360.000	241.000	30.000	3620.000	241.000	3.325	-264.708	360.000	9.732	3504.551	47.800	0.577	27.562	1.100		

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generatio n level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	241.000	10.171	1208.000	241.000	30.000	3620.000	241.000	20.135	-2401.564	360.000	3.609	1300.000	47.800	0.577	27.539	1.100	
			f	241.000	28.000	3360.000	241.000	30.000	3620.000	241.000	3.315	-264.300	360.000	9.730	3500.143	47.800	0.576	27.500	1.100	
6		33%-66%	d	241.000	28.000	3360.000	241.000	30.000	3620.000	241.000	3.308	-263.557	360.000	9.728	3500.000	47.800	0.576	27.497	--	
			e	241.000	28.000	3360.000	241.000	30.000	3620.000	241.000	3.304	-263.290	360.000	9.730	3500.000	47.800	0.575	27.469	0	
			f	241.000	28.000	3360.000	241.000	30.000	3620.000	241.000	3.306	-264.172	360.000	9.727	3500.000	47.800	0.575	27.419	0	
			e	241.000	28.000	3360.000	241.000	30.000	3620.000	241.000	3.303	-264.544	360.000	9.722	3500.000	47.800	0.574	27.406	0	
			f	241.000	27.993	3360.000	241.000	30.000	3620.000	241.000	3.307	-264.908	360.000	9.720	3500.000	47.800	0.574	27.400	0	
			e	241.000	27.989	3360.000	241.000	30.000	3620.000	241.000	3.308	-265.104	360.000	9.719	3500.000	47.800	0.574	27.392	0	
			f	241.000	27.991	3359.715	241.000	30.000	3620.000	241.000	3.302	-263.860	360.000	9.719	3500.000	47.800	0.573	27.373	0	
Note:																				

(5) ESS external charge current limit = $66 \pm 5\%$, PV inputs = $50\% \pm 5\%$ - (If support)

(5-1) 203.5 test

203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
1	100%	100%	d	241.000	3.728	399.175	241.000	92.713	11151.253	241.000	89.412	10745.088	361.217	20.513	7404.010	48.400	134.000	6470.025	--	
			e	241.000	3.792	399.154	241.000	0.000	0.000	241.000	3.920	399.521	361.167	20.509	7403.140	48.400	134.000	6470.000	1.100	
			f	241.000	3.732	399.478	241.000	93.081	11195.084	241.000	89.774	10788.725	361.002	20.518	7402.258	48.400	134.000	6470.000	1.100	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste P	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	241.000	3.792	399.346	241.000	0.000	0.000	241.000	3.917	399.907	361.299	20.507	7405.429	48.400	-134.000	-6470.255	1.100	
			f	241.000	3.728	399.379	241.000	93.064	11193.481	241.000	89.763	-10786.962	361.058	20.523	7406.053	48.400	-134.000	-6470.687	1.100	
			e	241.000	3.793	399.486	241.000	0.000	0.000	241.000	3.918	399.726	360.880	20.535	7406.259	48.400	-134.000	-6473.142	1.100	
			f	241.000	3.729	399.441	241.000	92.832	11165.506	241.000	89.522	-10758.402	360.194	20.547	7397.646	48.400	-134.000	-6470.728	1.100	
2		66%	d	241.000	3.712	399.742	241.000	61.717	7430.602	241.000	58.427	-7026.416	361.028	20.521	7405.013	48.400	-134.000	-6470.877	--	
			e	241.000	3.788	399.434	241.000	0.000	0.000	241.000	3.891	399.666	360.998	20.522	7404.446	48.400	-134.000	-6470.073	1.100	
			f	241.000	3.702	398.575	241.000	61.890	7449.555	241.000	58.595	-7047.619	356.127	20.669	7355.991	48.400	-134.000	-6470.061	1.100	
			e	241.000	3.791	399.411	241.000	0.000	0.000	241.000	3.886	399.634	361.145	20.510	7402.304	48.400	-134.000	-6470.000	1.100	
			f	241.000	3.713	399.721	241.000	61.867	7445.898	241.000	58.562	-7042.040	361.146	20.512	7402.927	48.400	-134.000	-6470.000	1.100	
			e	241.000	3.794	399.441	241.000	0.000	0.000	241.000	3.910	399.786	361.037	20.520	7402.818	48.400	-134.000	-6470.000	1.100	
			f	241.000	3.715	399.646	241.000	61.763	7435.920	241.000	58.476	-7032.439	360.378	20.558	7402.739	48.400	-134.000	-6470.029	1.100	
3		33%	d	241.000	3.713	400.213	241.000	30.200	3630.067	241.000	26.803	-3225.486	360.960	20.523	7403.888	48.400	-134.000	-6470.053	--	
			e	241.000	3.791	399.525	241.000	0.000	0.000	241.000	3.902	399.779	360.114	20.572	7403.557	48.400	-134.000	-6470.145	1.100	

TEST PACKAGE

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste P	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	241.000	3.716	400.135	241.000	30.284	3649.247	241.000	27.044	-3248.418	360.929	20.527	7404.731	48.400	134.000	6470.061	1.100	
			e	241.000	3.791	399.406	241.000	0.000	0.000	241.000	3.931	399.581	360.162	20.573	7405.112	48.400	134.000	6470.324	1.100	
			f	241.000	3.716	400.124	241.000	30.296	3651.175	241.000	27.034	-3249.357	360.038	20.560	7396.807	48.400	134.000	6470.288	1.100	
			e	241.000	3.797	399.416	241.000	0.000	0.000	241.000	3.927	399.666	360.544	20.549	7404.264	48.400	134.000	6470.773	1.100	
			f	241.000	3.722	400.262	241.000	30.257	3646.448	241.000	27.013	-3245.193	361.034	20.522	7404.037	48.400	134.000	6470.899	1.100	
4	50%	100%	d	241.000	4.342	488.922	241.000	92.641	11143.609	241.000	88.582	-10646.992	358.307	20.827	7468.496	48.400	133.083	6459.850	--	
			e	241.000	4.397	488.842	241.000	0.000	0.000	241.000	4.486	488.933	358.283	20.828	7465.408	48.400	133.152	6459.201	1.100	
			f	241.000	4.345	488.897	241.000	93.183	11207.650	241.000	89.136	-10712.135	358.324	20.827	7465.684	48.400	133.155	6459.002	1.100	
			e	242.000	60.800	7290.119	242.000	0.000	0.000	242.000	60.777	7269.264	360.000	21.100	7600.000	47.800	0.564	26.911	1.100	
			f	241.000	4.349	489.042	241.000	93.290	11220.621	241.000	89.242	-10724.213	358.341	20.826	7467.517	48.400	133.058	6459.379	1.100	
			e	241.000	4.399	488.610	241.000	0.000	0.000	241.000	4.490	488.957	358.293	20.826	7463.761	48.400	133.085	6459.316	1.100	
			f	241.000	4.348	489.024	241.000	93.174	11206.448	241.000	89.120	-10710.071	358.291	20.826	7464.165	48.400	133.094	6459.829	1.100	
5		66%	d	241.000	4.340	489.271	241.000	61.738	7433.070	241.000	57.704	-6939.439	358.279	20.826	7469.516	48.400	133.000	6459.975	--	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste P	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	241.000	4.399	488.719	241.000	0.000	0.000	241.000	4.490	488.951	358.278	20.826	7467.368	48.400	133.131	6459.310	1.100	
			f	241.000	4.339	489.075	241.000	61.966	7459.877	241.000	57.922	- 6966.759	358.290	20.826	7464.485	48.400	133.077	6459.785	1.100	
			e	241.000	4.397	488.356	241.000	0.000	0.000	241.000	4.488	488.779	358.309	20.826	7464.276	48.400	133.109	6459.002	1.100	
			f	241.000	4.337	488.958	241.000	62.031	7468.583	241.000	57.995	- 6976.208	358.327	20.827	7466.866	48.400	133.016	6459.721	1.100	
			e	241.000	4.398	488.627	241.000	0.000	0.000	241.000	4.489	488.849	358.370	20.825	7467.464	48.400	133.000	6459.772	1.100	
			f	241.000	4.338	488.993	241.000	61.995	7463.966	241.000	57.956	- 6970.357	358.287	20.827	7466.262	48.400	133.049	6458.502	1.100	
6		33%	d	241.000	4.343	489.464	241.000	30.200	3640.000	241.000	26.200	- 3140.000	358.312	20.825	7464.900	48.400	133.011	6458.672	--	
			e	241.000	4.399	488.555	241.000	0.000	0.000	241.000	4.488	488.828	358.319	20.826	7467.024	48.400	133.036	6459.201	1.100	
			f	241.000	4.342	489.220	241.000	30.322	3653.671	241.000	26.324	- 3166.298	358.349	20.826	7463.287	48.400	133.026	6457.788	1.100	
			e	241.000	4.400	488.561	241.000	0.000	0.000	241.000	4.488	488.679	358.356	20.824	7463.705	48.400	133.000	6459.952	1.100	
			f	241.000	4.342	489.171	241.000	30.382	3659.335	241.000	26.375	- 3169.180	358.346	20.826	7468.271	48.400	133.031	6459.335	1.100	
			e	241.000	4.399	488.530	241.000	0.000	0.000	241.000	4.489	488.826	358.376	20.824	7469.886	48.400	133.000	6460.000	1.100	
f	241.000	4.347	489.515	241.000	30.336	3656.063	241.000	26.331	- 3167.418	358.340	20.826	7469.230	48.400	133.000	6459.971	1.100				

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203.5 Step Change in Load Test																					
Excel file	EUT output limit	Load level	Ste P	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operatin g Mode	
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)			
7	0%	100%	d	241.00 0	1.842	-54.240	241.00 0	92.73 4	11151.8 51	241.00 0	93.18 0	11198.58 9	360.39 9	19.36 8	6942.90 3	48.40 0	- 134.00 0	- 6470.00 0	--		
			e	241.00 0	1.916	-48.018	241.00 0	0.000	0.000	241.00 0	2.112	-48.198	361.45 7	19.33 0	6950.14 5	48.40 0	- 134.00 0	- 6470.25 4	1.100		
			f	241.00 0	1.833	-54.086	241.00 0	93.19 1	11207.8 03	241.00 0	93.65 6	11254.65 4	361.58 7	19.30 3	6942.50 4	48.40 0	- 134.00 0	- 6470.09 2	1.100		
			e	241.00 0	1.913	-48.114	241.00 0	0.000	0.000	241.00 0	2.111	-48.793	361.49 2	19.32 9	6950.23 8	48.40 0	- 134.00 0	- 6470.09 5	1.100		
			f	241.00 0	1.823	-54.328	241.00 0	93.29 0	11219.7 34	241.00 0	93.76 2	11267.14 0	361.67 8	19.30 0	6943.43 7	48.40 0	- 134.00 0	- 6470.62 1	1.100		
			e	241.00 0	1.907	-48.080	241.00 0	0.000	0.000	241.00 0	2.112	-46.533	361.54 4	19.32 6	6950.22 8	48.40 0	- 134.00 0	- 6470.68 4	1.100		
			f	241.00 0	1.820	-54.103	241.00 0	93.16 9	11205.1 07	241.00 0	93.63 1	11251.52 6	360.29 1	19.37 6	6947.16 1	48.40 0	- 134.00 0	- 6470.65 6	1.100		
8		66%	d	241.00 0	1.768	-52.268	241.00 0	61.71 8	7430.36 2	241.00 0	62.18 6	- 7478.282	361.41 2	19.31 9	6949.57 0	48.40 0	- 134.00 0	- 6470.56 4	--		
			e	241.00 0	1.897	-48.022	241.00 0	0.000	0.000	241.00 0	2.100	-49.209	361.40 5	19.34 3	6951.83 3	48.40 0	- 134.00 0	- 6472.35 9	1.100		
			f	241.00 0	1.770	-52.307	241.00 0	61.96 5	7458.55 6	241.00 0	62.41 3	- 7506.452	361.67 0	19.31 2	6949.96 9	48.40 0	- 134.00 0	- 6473.37 9	1.100		
			e	241.00 0	1.897	-47.876	241.00 0	0.000	0.000	241.00 0	2.105	-47.356	361.56 5	19.33 5	6954.10 9	48.40 0	- 134.00 0	- 6475.05 9	1.100		
			f	241.00 0	1.766	-52.367	241.00 0	62.01 5	7465.66 9	241.00 0	62.48 2	- 7514.770	361.56 3	19.31 7	6949.98 0	48.40 0	- 134.00 0	- 6475.36 9	1.100		
			e	241.00 0	1.897	-47.977	241.00 0	0.000	0.000	241.00 0	2.111	-47.592	361.23 6	19.35 1	6952.73 5	48.40 0	- 134.00 0	- 6473.19 1	1.100		

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste P	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	241.000	1.766	-52.602	241.000	61.977	7461.113	241.000	62.439	-7510.071	361.602	19.306	6948.816	48.400	134.000	6471.056	1.100	
9		33%	d	241.000	1.735	-50.950	241.000	30.200	3638.872	241.000	30.600	-3680.000	361.546	19.316	6949.799	48.400	134.000	6471.128	--	
			e	241.000	1.898	-48.189	241.000	0.000	0.000	241.000	2.106	-48.415	361.470	19.332	6950.218	48.400	134.000	6470.290	1.100	
			f	241.000	1.735	-50.839	241.000	30.327	3653.487	241.000	30.833	-3705.929	361.432	19.316	6949.785	48.400	134.000	6470.184	1.100	
			e	241.000	1.901	-48.095	241.000	0.000	0.000	241.000	2.116	-46.665	360.002	19.410	6950.380	48.400	134.000	6470.000	1.100	
			f	241.000	1.735	-50.874	241.000	30.363	3657.006	241.000	30.842	-3707.944	359.401	19.438	6949.920	48.400	134.000	6470.000	1.100	
			e	241.000	1.899	-48.114	241.000	0.000	0.000	241.000	2.113	-46.963	361.618	19.327	6950.570	48.400	134.000	6470.057	1.100	
			f	241.000	1.739	-50.836	241.000	30.332	3654.693	241.000	30.845	-3706.790	359.706	19.424	6950.399	48.400	134.000	6470.057	1.100	
Note:																				

(5-2) 203.6 test

203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generati on level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
1	100%	5%-10%	d	240.00 0	4.001	443.767	240.00 0	30.00 1	3600.00 0	240.00 0	26.39 9	- 3151.77 9	359.29 2	20.78 8	7462.16 8	48.60 0	- 134.00 0	- 6500.00 0	--	
			e	239.00 0	50.20 0	- 5982.21 4	239.00 0	30.00 0	3600.00 0	239.00 0	80.13 6	- 9559.92 7	301.00 0	3.900	1170.00 0	48.60 0	- 134.00 0	- 6500.03 6	2.100	

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generati on level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
2			f	240.00 0	3.925	433.707	240.00 0	30.00 0	3600.00 0	240.00 0	26.40 0	- 3159.14 8	340.29 8	21.94 3	7466.87 1	48.60 0	- 134.00 0	- 6500.00 0	2.200	
			e	239.04 8	50.20 0	- 5980.51 5	239.04 8	30.00 0	3599.90 3	239.04 8	80.04 1	- 9559.29 1	301.00 0	3.900	1170.00 0	48.60 0	- 134.00 0	- 6500.00 0	2.100	
			f	240.00 0	3.938	435.332	240.00 0	30.00 0	3600.00 0	240.00 0	26.42 5	- 3153.72 3	341.47 5	21.89 5	7467.27 5	48.60 0	- 134.00 0	- 6500.00 0	2.200	
			e	239.00 0	50.20 0	- 5980.04 0	239.00 0	30.00 0	3599.76 0	239.00 0	80.02 3	- 9559.68 1	301.00 0	3.900	1170.00 0	48.60 0	- 134.00 0	- 6500.00 0	2.100	
			f	240.00 0	3.951	437.116	240.00 0	30.00 0	3600.00 0	240.00 0	26.40 0	- 3154.12 3	344.40 1	21.69 0	7467.57 5	48.60 0	- 134.00 0	- 6500.00 0	2.200	
		33%-66%	d	241.00 0	3.482	369.729	241.00 0	30.20 0	3621.72 2	241.00 0	27.09 5	- 3250.59 0	360.54 4	20.69 6	7460.00 0	49.20 0	- 134.00 0	- 6580.00 0	--	
			e	241.00 0	3.483	370.011	241.00 0	30.20 0	3620.00 0	241.00 0	27.08 5	- 3253.18 1	360.45 8	20.70 0	7460.00 0	49.20 0	- 134.00 0	- 6580.00 0	0	
			f	241.00 0	3.456	366.789	241.00 0	30.20 0	3620.00 0	241.00 0	27.14 4	- 3255.85 5	360.38 7	20.70 3	7460.00 0	49.20 0	- 134.00 0	- 6580.00 0	0	
			e	241.00 0	3.451	366.303	241.00 0	30.20 0	3620.00 0	241.00 0	27.16 3	- 3256.90 8	360.31 6	20.70 7	7460.00 0	49.20 0	- 134.00 0	- 6580.00 0	0	
			f	241.00 0	3.454	366.536	241.00 0	30.20 0	3620.00 0	241.00 0	27.17 6	- 3258.14 6	360.36 1	20.70 5	7460.00 0	49.20 0	- 134.00 0	- 6580.00 0	0	
			e	241.00 0	3.451	366.481	241.00 0	30.20 0	3620.00 0	241.00 0	27.17 0	- 3258.40 6	360.42 2	20.70 1	7460.00 0	49.20 0	- 134.00 0	- 6580.00 0	0	
			f	241.00 0	3.447	366.536	241.00 0	30.20 0	3620.00 0	241.00 0	27.15 9	- 3257.00 4	360.37 5	20.70 4	7460.00 0	49.20 0	- 134.00 0	- 6580.00 0	0	

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203.6 Step Change in Generation Test																					
Load level: 33%																					
Excel file	EUT output limit	Generati on level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operatin g Mode	
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)			
3	66%	5%-10%	d	240.00 0	3.978	440.512	240.00 0	30.00 0	3600.00 0	240.00 0	26.40 0	- 3151.50 9	351.19 0	21.25 3	7461.92 2	48.60 0	- 134.00 0	- 6500.02 4	--		
			e	239.03 3	50.20 0	- 5980.02 9	239.03 3	30.00 0	3600.00 0	239.03 3	80.05 1	- 9560.11 4	301.00 0	3.900	1170.00 0	48.60 0	- 134.00 0	- 6500.11 4	2.200		
			f	240.00 0	3.949	436.649	240.00 0	30.00 0	3600.00 0	240.00 0	26.40 0	- 3154.33 2	344.15 4	21.70 8	7463.52 1	48.60 0	- 134.00 0	- 6500.00 0	2.200		
			e	239.00 0	50.20 0	- 5980.25 8	239.00 0	30.00 0	3600.00 0	239.00 0	80.02 3	- 9559.42 0	301.00 0	3.900	1170.00 0	48.60 0	- 134.00 0	- 6500.03 2	2.200		
			f	240.00 0	3.916	432.314	240.00 0	30.00 0	3600.00 0	240.00 0	26.41 8	- 3158.00 3	337.04 6	22.17 8	7464.99 3	48.60 0	- 134.00 0	- 6500.02 9	2.200		
			e	239.00 0	50.20 0	- 5980.25 7	239.00 0	30.00 0	3600.00 0	239.00 0	80.01 6	- 9559.71 5	301.00 3	3.900	1170.00 0	48.60 0	- 134.00 0	- 6500.00 0	2.200		
			f	240.00 0	3.938	435.378	240.00 0	30.00 0	3600.00 0	240.00 0	26.40 0	- 3155.94 9	342.62 3	21.80 6	7463.78 0	48.60 0	- 134.00 0	- 6500.00 0	2.200		
4		33%-66%	d	241.00 0	3.312	346.943	241.00 0	30.20 0	3620.00 0	241.00 0	27.20 0	- 3265.33 0	329.94 6	22.60 7	7460.00 0	49.20 0	- 134.00 0	- 6581.35 6	--		
			e	241.00 0	3.313	347.367	241.00 0	30.20 0	3620.00 0	241.00 0	27.20 0	- 3263.68 0	329.99 7	22.60 0	7460.00 0	49.20 0	- 134.00 0	- 6581.41 2	0		
			f	241.00 0	3.311	347.915	241.00 0	30.20 0	3620.00 0	241.00 0	27.20 0	- 3261.24 8	329.94 8	22.60 5	7460.00 0	49.20 0	- 134.00 0	- 6580.56 2	0		
			e	241.00 0	3.311	347.704	241.00 0	30.20 0	3620.00 0	241.00 0	27.20 0	- 3262.09 3	329.68 9	22.62 2	7460.00 0	49.20 0	- 134.00 0	- 6580.56 4	0		
			f	241.00 0	3.318	348.126	241.00 0	30.20 0	3620.00 0	241.00 0	27.20 3	- 3275.52 1	329.61 9	22.62 7	7460.00 0	49.20 0	- 134.00 0	- 6580.42 8	0		

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generati on level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	241.00 0	3.323	348.799	241.00 0	30.20 0	3620.00 0	241.00 0	27.20 0	- 3262.88 2	329.73 6	22.62 0	7460.00 0	49.20 0	- 134.00 0	- 6580.07 1	0	
			f	241.00 0	3.324	349.350	241.00 0	30.20 0	3620.00 0	241.00 0	27.20 0	- 3261.68 3	330.31 7	22.58 2	7460.00 0	49.20 0	- 134.00 0	- 6580.00 0	0	
5	33%	5%-10%	d	240.00 0	4.026	445.512	240.00 0	30.12 5	3611.98 1	240.00 0	26.42 0	- 3158.70 3	358.18 4	20.88 5	7469.45 8	48.60 0	- 134.00 0	- 6500.01 2	--	
			e	239.09 8	30.95 7	- 3690.84 2	239.09 8	30.00 0	3600.00 0	239.09 8	60.83 9	- 7273.29 5	300.01 1	3.916	1170.24 3	48.19 7	-92.621	- 4459.82 9	2.200	
			f	240.00 0	3.951	436.504	240.00 0	30.00 0	3600.00 0	240.00 0	26.40 0	- 3156.40 9	336.09 2	22.22 6	7469.57 6	48.60 0	- 134.00 0	- 6500.00 0	2.200	
			e	239.00 0	30.95 6	- 3688.53 6	239.00 0	30.00 0	3600.00 0	239.00 0	60.80 2	- 7263.30 2	300.35 5	3.911	1170.21 8	48.20 0	-92.696	- 4463.39 6	2.200	
			f	240.00 0	4.033	447.960	240.00 0	30.00 0	3600.00 0	240.00 0	26.27 5	- 3139.92 0	346.33 5	21.56 9	7469.52 1	48.60 0	- 134.00 0	- 6500.00 0	2.200	
			e	239.01 7	30.95 7	- 3687.48 8	239.01 7	30.00 0	3600.00 0	239.01 7	60.80 1	- 7263.42 8	300.08 8	3.915	1171.18 1	48.20 0	-92.546	- 4456.93 8	2.200	
			f	240.00 0	3.970	439.335	240.00 0	30.00 0	3600.00 0	240.00 0	26.40 0	- 3153.86 6	350.42 7	21.31 9	7469.44 4	48.60 0	- 134.00 0	- 6500.02 9	2.200	
6	33%-66%		d	241.00 0	3.295	345.163	241.00 0	30.20 0	3620.00 0	241.00 0	27.21 9	- 3277.40 6	329.99 9	22.60 2	7460.00 0	49.20 0	- 134.00 0	- 6580.95 5	--	
			e	241.00 0	3.311	346.625	241.00 0	30.20 0	3620.00 0	241.00 0	27.20 1	- 3275.29 2	329.95 9	22.60 4	7460.00 0	49.20 0	- 134.00 0	- 6580.00 0	0	
			f	241.00 0	3.331	348.439	241.00 0	30.20 0	3620.00 0	241.00 0	27.20 0	- 3273.00 9	329.90 1	22.60 9	7460.00 0	49.20 0	- 134.00 0	- 6580.00 0	0	

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generati on level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	241.00 0	3.336	349.449	241.00 0	30.20 0	3620.00 0	241.00 0	27.20 0	- 3260.16 1	329.74 9	22.61 9	7460.00 0	49.20 0	- 134.00 0	- 6580.00 0	0	
			f	241.00 0	3.331	349.754	241.00 0	30.20 0	3620.00 0	241.00 0	27.20 0	- 3260.16 6	329.89 4	22.60 9	7460.00 0	49.20 0	- 134.00 0	- 6580.00 0	0	
			e	241.00 0	3.328	349.668	241.00 0	30.20 0	3620.00 0	241.00 0	27.20 0	- 3260.00 0	329.71 2	22.62 1	7460.00 0	49.20 0	- 134.00 0	- 6580.00 0	0	
			f	241.00 0	3.333	349.983	241.00 0	30.20 0	3620.00 0	241.00 0	27.20 0	- 3260.00 0	329.83 0	22.61 4	7460.00 0	49.20 0	- 134.00 0	- 6580.00 0	0	
Note:																				

(6) ESS external charge current limit = $33 \pm 5\%$, PV inputs = $50\% \pm 5\%$ - (If support)

(6-1) 203.5 test

203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
1	100%	100%	d	240.202	32.200	3860.000	240.202	92.488	11094.185	240.202	60.388	-7234.812	360.133	20.781	7490.000	47.700	68.226	3250.501	--	
			e	241.000	32.200	3860.218	241.000	0.000	0.000	241.000	32.201	3860.436	359.840	20.806	7489.710	47.700	68.278	3255.826	1.100	
			f	240.000	32.200	3860.000	240.000	92.948	11148.387	240.000	60.823	-7287.527	360.098	20.782	7486.866	47.700	68.240	3251.920	1.100	
			e	241.000	32.195	3859.907	241.000	0.000	0.000	241.000	32.200	3858.886	359.682	20.815	7490.882	47.700	68.216	3250.186	1.100	
			f	240.000	32.157	3859.379	240.000	93.080	11164.701	240.000	61.018	-7309.756	359.098	20.861	7491.419	47.700	68.256	3252.506	1.100	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
2			e	241.000	32.199	3860.000	241.000	0.000	0.000	241.000	32.200	3858.204	359.471	20.837	7490.000	47.700	68.286	3256.160	1.100	
			f	240.198	32.199	3860.000	240.198	92.948	11148.474	240.198	60.851	-7288.531	359.723	20.814	7490.143	47.700	68.236	3251.655	1.100	
		66%	d	241.000	32.187	3859.950	241.000	61.642	7399.699	241.000	29.602	-3544.035	359.014	20.857	7487.644	47.700	68.281	3253.183	--	
			e	241.000	32.200	3860.000	241.000	0.000	0.000	241.000	32.200	3860.073	360.036	20.811	7494.519	47.700	68.223	3250.581	1.100	
			f	240.796	32.191	3860.000	240.796	61.798	7420.922	240.796	29.764	-3562.765	359.871	20.807	7490.031	47.700	68.242	3250.184	1.000	
			e	241.000	32.187	3859.715	241.000	0.000	0.000	241.000	32.191	3856.960	359.019	20.865	7492.162	47.700	68.230	3250.903	1.100	
			f	241.000	32.164	3860.000	241.000	61.891	7430.643	241.000	29.862	-3576.896	359.426	20.843	7491.086	47.700	68.292	3258.160	1.000	
			e	241.000	32.200	3860.000	241.000	0.000	0.000	241.000	32.200	3859.302	360.200	20.786	7490.150	47.700	68.292	3250.050	1.100	
			f	241.000	32.199	3860.000	241.000	61.821	7423.281	241.000	29.767	-3564.679	359.930	20.794	7487.575	47.700	68.275	3254.650	1.000	
			33%	d	241.000	32.199	3860.000	241.000	30.000	3620.000	241.000	3.126	245.539	359.638	20.820	7490.519	47.700	68.245	3250.759	
e	241.000	32.200		3860.000	241.000	0.000	0.000	241.000	32.200	3858.838	360.138	20.810	7491.525	47.700	68.212	3250.036	1.100			
f	241.000	32.198		3860.000	241.000	30.264	3634.531	241.000	2.979	219.797	359.653	20.837	7497.435	47.700	68.204	3250.000	1.100			
e	241.000	32.199		3860.000	241.000	0.000	0.000	241.000	32.200	3859.052	359.768	20.838	7495.686	47.700	68.300	3259.052	1.100			

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	241.000	32.200	3860.089	241.000	30.280	3639.601	241.000	2.998	219.734	359.936	20.815	7491.530	47.700	68.258	3252.683	1.100	
			e	241.000	32.200	3860.100	241.000	0.000	0.000	241.000	32.200	3860.349	359.277	20.855	7494.015	47.700	68.273	3254.489	1.100	
			f	241.000	32.169	3859.943	241.000	30.260	3634.465	241.000	2.965	218.564	358.977	20.871	7493.980	47.700	68.244	3250.713	1.100	
4	50%	100%	d	240.199	32.199	3860.000	240.199	92.482	11093.709	240.199	60.390	-7234.185	360.036	20.815	7491.955	47.700	68.233	3250.940	--	
			e	241.000	32.199	3860.000	241.000	0.000	0.000	241.000	32.200	3859.129	359.352	20.856	7492.505	47.700	68.293	3255.209	1.100	
			f	240.000	32.199	3860.000	240.000	92.924	11145.469	240.000	60.825	-7286.390	359.022	20.872	7491.152	47.700	68.295	3252.903	1.000	
			e	241.000	32.200	3860.000	241.000	0.000	0.000	241.000	32.200	3859.810	360.743	20.781	7490.380	47.700	68.201	3250.000	1.100	
			f	240.000	32.200	3860.000	240.000	93.039	11159.557	240.000	60.910	-7296.630	359.443	20.826	7488.115	47.700	68.218	3250.000	1.000	
			e	241.000	32.200	3860.114	241.000	0.000	0.000	241.000	32.200	3860.000	359.222	20.854	7490.000	47.700	68.221	3250.000	1.100	
			f	240.165	32.191	3860.000	240.165	92.882	11141.398	240.165	60.796	-7283.509	359.327	20.855	7493.395	47.700	68.291	3254.565	1.000	
5	66%	66%	d	241.000	32.184	3859.898	241.000	61.577	7393.197	241.000	29.560	-3537.860	359.610	20.829	7491.389	47.700	68.300	3258.522	--	
			e	241.000	32.200	3860.000	241.000	0.000	0.000	241.000	32.200	3859.637	360.481	20.796	7492.414	47.700	68.244	3250.000	1.100	
			f	240.802	32.200	3860.000	240.802	61.787	7419.201	240.802	29.737	-3558.894	360.035	20.797	7489.140	47.700	68.185	3250.000	1.000	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	241.000	32.200	3860.475	241.000	0.000	0.000	241.000	32.200	3861.045	359.235	20.845	7489.715	47.700	68.192	3250.000	1.100	
			f	241.000	32.195	3860.000	241.000	61.847	7426.148	241.000	29.822	-3570.259	360.062	20.802	7491.876	47.700	68.208	3250.000	1.000	
			e	241.000	32.194	3860.000	241.000	0.000	0.000	241.000	32.199	3858.519	358.880	20.872	7489.943	47.700	68.273	3251.140	1.100	
			f	241.000	32.200	3860.000	241.000	61.790	7418.716	241.000	29.749	-3561.598	360.103	20.785	7490.000	47.700	68.259	3250.171	1.000	
6		33%	d	241.000	32.199	3860.000	241.000	30.000	3620.000	241.000	3.128	245.055	359.212	20.853	7489.962	47.700	68.198	3250.000	--	
			e	241.000	32.200	3860.218	241.000	0.000	0.000	241.000	32.200	3860.508	358.721	20.874	7489.819	47.700	68.213	3250.000	1.100	
			f	241.000	32.199	3860.061	241.000	30.260	3634.470	241.000	3.031	225.788	360.226	20.769	7489.754	47.700	68.209	3250.000	1.000	
			e	241.000	32.194	3860.000	241.000	0.000	0.000	241.000	32.197	3858.100	359.601	20.824	7490.570	47.700	68.241	3251.354	1.100	
			f	241.000	32.200	3860.000	241.000	30.273	3637.916	241.000	2.937	216.271	360.226	20.787	7490.133	47.700	68.300	3258.714	1.000	
			e	241.000	32.199	3860.000	241.000	0.000	0.000	241.000	32.200	3860.000	359.838	20.803	7489.858	47.700	68.234	3250.000	1.100	
f	241.000	32.200	3860.000	241.000	30.246	3632.924	241.000	3.028	224.185	358.682	20.878	7489.843	47.700	68.200	3250.000	1.000				
7	0%	100%	d	241.000	1.849	-51.901	241.000	92.544	11118.322	241.000	92.973	-11162.983	360.000	9.637	3470.000	49.000	66.800	3270.000	--	
			e	241.000	1.923	-45.753	241.000	0.000	0.000	241.000	2.168	-46.437	360.000	9.661	3480.000	49.000	66.804	3270.000	1.100	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	241.000	1.848	-51.794	241.000	92.954	11167.650	241.000	93.391	11210.998	360.000	9.667	3480.154	49.000	66.815	3270.000	1.000	
			e	241.000	1.943	-45.729	241.000	0.000	0.000	241.000	2.183	-42.321	360.000	9.677	3484.418	49.000	66.802	3270.000	1.100	
			f	241.000	1.852	-51.916	241.000	92.994	11171.175	241.000	93.421	11213.038	360.000	9.634	3470.000	49.000	66.795	3270.000	1.000	
			e	241.000	1.919	-45.772	241.000	0.000	0.000	241.000	2.165	-45.270	360.000	9.664	3480.000	49.000	66.835	3270.000	1.100	
			f	241.000	1.844	-51.974	241.000	92.777	11146.277	241.000	93.216	11189.529	360.000	9.663	3477.632	49.000	66.809	3270.000	1.000	
8		66%	d	241.000	1.803	-49.946	241.000	61.682	7416.349	241.000	62.115	-7462.604	360.000	9.663	3478.564	49.000	66.810	3270.000	--	
			e	241.000	1.926	-45.626	241.000	0.000	0.000	241.000	2.174	-44.687	360.000	9.656	3479.328	49.000	66.798	3270.000	1.100	
			f	241.000	1.794	-49.972	241.000	61.831	7435.637	241.000	62.266	-7481.751	360.000	9.650	3475.515	49.000	66.831	3270.000	1.000	
			e	241.000	1.918	-44.998	241.000	0.000	0.000	241.000	2.167	-44.559	360.000	9.677	3484.608	49.000	66.808	3270.000	1.100	
			f	241.000	1.804	-49.924	241.000	61.829	7434.850	241.000	62.270	-7480.160	360.000	9.668	3480.200	49.000	66.801	3270.000	1.000	
			e	241.000	1.925	-45.299	241.000	0.000	0.000	241.000	2.169	-46.121	360.000	9.655	3480.000	49.000	66.800	3270.000	1.100	
			f	241.000	1.791	-50.000	241.000	61.736	7422.625	241.000	62.165	-7469.158	360.000	9.649	3474.551	49.000	66.830	3270.000	1.000	
9	33%	d	241.000	1.758	-48.000	241.000	30.130	3620.000	241.000	30.600	-3670.175	360.000	9.674	3484.799	49.000	66.813	3270.000	--		

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	241.000	1.919	-45.506	241.000	0.000	0.000	241.000	2.167	-42.829	360.000	9.684	3488.802	49.000	66.800	3270.000	1.100	
			f	241.000	1.755	-48.000	241.000	30.267	3644.885	241.000	30.713	-3689.186	360.000	9.647	3473.487	49.000	66.795	3270.000	1.000	
			e	241.000	1.916	-45.435	241.000	0.000	0.000	241.000	2.165	-45.182	360.000	9.660	3480.000	49.000	66.800	3270.000	1.100	
			f	241.000	1.755	-48.000	241.000	30.253	3642.994	241.000	30.728	-3689.301	360.000	9.666	3482.036	49.000	66.806	3270.000	1.000	
			e	241.000	1.918	-45.402	241.000	0.000	0.000	241.000	2.161	-47.715	360.000	9.687	3490.000	49.000	66.801	3270.000	1.100	
			f	241.000	1.751	-48.000	241.000	30.229	3640.770	241.000	30.682	-3684.993	360.000	9.647	3473.481	49.000	66.782	3270.000	1.000	
Note:																				

(6-2) 203.6 test

203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generati on level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
1	100%	5%-10%	d	240.00 0	32.00 0	3835.61 4	240.00 0	30.00 0	3600.00 0	240.00 0	2.894	225.128	357.96 4	20.87 6	7460.50 1	47.90 0	- 68.39 9	- 3275.82 7	--	
			e	239.90 0	20.19 9	- 2400.14 5	239.90 0	30.00 0	3600.00 0	239.90 0	50.00 0	5979.92 7	300.99 8	3.900	1170.00 0	47.90 0	- 68.40 0	- 3277.33 2	2.200	
			f	240.00 0	31.99 9	3839.25 4	240.00 0	30.00 0	3600.00 0	240.00 0	2.931	231.398	341.93 3	21.83 0	7460.67 9	47.90 0	- 68.38 4	- 3273.34 2	2.200	
			e	240.00 0	20.05 2	- 2388.40 6	240.00 0	30.00 0	3600.00 0	240.00 0	49.99 9	5969.85 5	300.99 5	3.900	1170.00 0	47.90 0	- 68.37 2	- 3272.81 8	2.200	

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generati on level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	240.100	31.914	3821.398	240.100	30.000	3600.000	240.100	2.868	220.836	334.839	22.307	7462.496	47.900	-68.382	-3272.425	2.200	
			e	240.000	20.168	-2399.441	240.000	30.000	3600.000	240.000	50.000	-5979.601	301.000	3.900	1170.000	47.900	-68.362	-3272.774	2.200	
			f	240.000	32.000	3839.829	240.000	30.000	3600.000	240.000	2.929	231.272	341.872	21.834	7460.742	47.900	-68.372	-3272.468	2.200	
2		33%-66%	d	241.000	31.759	3803.208	241.000	30.030	3620.000	241.000	2.732	189.154	360.226	20.714	7460.000	48.500	-68.369	-3311.474	--	
			e	241.000	31.617	3800.000	241.000	30.000	3620.000	241.000	2.715	186.769	360.251	20.712	7460.000	48.500	-68.401	-3317.004	0	
			f	241.000	31.600	3800.000	241.000	30.000	3620.000	241.000	2.693	181.494	360.027	20.723	7460.000	48.500	-68.376	-3312.896	0	
			e	241.000	31.704	3800.258	241.000	30.000	3620.000	241.000	2.746	190.673	359.945	20.728	7460.000	48.500	-68.394	-3312.738	0	
			f	241.000	31.683	3800.057	241.000	30.000	3620.000	241.000	2.737	188.495	360.034	20.724	7460.000	48.500	-68.379	-3312.482	0	
			e	241.000	31.600	3800.000	241.000	30.000	3620.000	241.000	2.687	178.847	360.033	20.723	7460.000	48.500	-68.400	-3315.377	0	
			f	241.000	31.827	3820.999	241.000	30.000	3620.000	241.000	2.843	207.824	359.950	20.727	7460.000	48.500	-68.023	-3297.404	0	
3	66%	5%-10%	d	240.000	31.940	3820.731	240.000	30.000	3600.000	240.000	2.870	221.597	342.019	21.823	7460.531	47.900	-68.371	-3272.571	--	
			e	240.000	20.135	-2394.351	240.000	30.000	3600.000	240.000	49.997	-5974.180	300.999	3.900	1170.000	47.900	-68.395	-3275.207	2.200	

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generati on level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
4			f	240.101	31.977	3835.880	240.101	30.000	3600.000	240.101	2.914	228.749	337.186	22.157	7461.049	47.900	-68.380	-3273.733	2.200	
			e	240.000	20.112	-2394.364	240.000	30.000	3600.000	240.000	49.999	-5974.493	300.987	3.900	1170.000	47.900	-68.390	-3273.333	2.200	
			f	240.000	31.894	3819.943	240.000	30.000	3600.000	240.000	2.852	218.271	334.598	22.330	7461.056	47.900	-68.370	-3273.367	2.200	
			e	239.900	20.058	-2387.760	239.900	30.000	3600.000	239.900	49.987	-5968.417	300.999	3.900	1170.000	47.900	-68.383	-3274.793	2.200	
			f	240.000	32.000	3838.374	240.000	30.000	3600.000	240.000	2.919	229.854	339.943	21.962	7460.642	47.900	-68.373	-3272.825	2.200	
		33%-66%	d	241.000	31.456	3780.000	241.000	30.000	3620.000	241.000	2.624	164.323	329.853	22.613	7460.000	48.500	-68.401	-3315.637	--	
			e	241.000	31.557	3789.301	241.000	30.000	3620.000	241.000	2.655	171.562	329.562	22.636	7460.000	48.500	-68.394	-3316.576	0	
			f	241.000	31.646	3796.305	241.000	30.000	3620.000	241.000	2.692	178.679	329.745	22.621	7460.000	48.500	-68.279	-3308.002	0	
			e	241.000	31.421	3780.000	241.000	30.000	3620.000	241.000	2.613	162.774	329.779	22.618	7460.000	48.500	-68.396	-3314.686	0	
			f	241.000	31.463	3780.000	241.000	30.000	3620.000	241.000	2.622	164.504	329.592	22.630	7460.000	48.500	-68.389	-3312.297	0	
			e	241.000	31.518	3785.735	241.000	30.000	3620.000	241.000	2.645	168.556	329.558	22.633	7460.000	48.500	-68.401	-3317.233	0	
			f	241.000	31.624	3786.990	241.000	30.000	3620.000	241.000	2.672	174.497	329.531	22.635	7460.000	48.500	-68.341	-3311.184	0	

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203.6 Step Change in Generation Test																					
Load level: 33%																					
Excel file	EUT output limit	Generati on level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode	
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)			
5	33%	5%-10%	d	240.07 2	31.98 5	3828.11 3	240.07 2	30.00 0	3600.00 0	240.07 2	2.895	225.554	350.38 2	21.30 1	7460.41 3	47.90 0	- 68.37 8	- 3272.77 1	--		
			e	240.00 0	20.08 8	- 2390.27 1	240.00 0	30.00 0	3600.00 0	240.00 0	50.00 0	- 5975.29 2	301.00 0	3.898	1170.20 0	47.90 0	- 68.38 9	- 3275.50 6	2.200		
			f	240.00 0	31.92 8	3821.49 6	240.00 0	30.00 0	3600.00 0	240.00 0	2.872	221.526	323.90 8	23.04 0	7461.79 6	47.90 0	- 68.36 4	- 3271.64 6	2.200		
			e	239.90 3	20.17 7	- 2399.50 2	239.90 3	30.00 0	3600.00 0	239.90 3	50.00 0	- 5980.00 0	301.00 0	3.900	1170.09 3	47.90 0	- 68.39 1	- 3273.61 4	2.200		
			f	240.00 0	31.83 8	3817.32 5	240.00 0	30.00 0	3600.00 0	240.00 0	2.830	214.040	325.91 8	22.91 5	7461.07 8	47.90 0	- 68.36 1	- 3270.39 9	2.200		
			e	239.90 0	20.02 2	- 2385.29 1	239.90 0	30.00 0	3600.00 0	239.90 0	49.98 6	- 5964.16 0	301.00 0	3.899	1170.03 3	47.90 0	- 68.38 0	- 3273.71 0	2.200		
			f	240.06 4	31.82 5	3819.74 3	240.06 4	30.00 0	3600.00 0	240.06 4	2.842	216.445	328.76 7	22.71 1	7461.74 0	47.90 0	- 68.39 7	- 3275.97 7	2.200		
6		33%-66%	d	241.00 0	31.40 0	3780.00 0	241.00 0	30.20 0	3620.00 0	241.00 0	2.573	148.557	329.98 7	22.60 3	7460.00 0	48.50 0	- 68.40 3	- 3315.78 8	--		
			e	241.00 0	31.42 6	3784.13 7	241.00 0	30.20 0	3620.28 5	241.00 0	2.600	153.308	329.99 1	22.60 3	7460.00 0	48.50 0	- 68.40 1	- 3315.05 0	0		
			f	241.00 0	31.43 2	3786.59 2	241.00 0	30.20 0	3620.44 9	241.00 0	2.614	156.959	329.91 5	22.60 8	7460.00 0	48.50 0	- 68.40 6	- 3316.08 0	0		
			e	241.00 0	31.40 1	3780.25 8	241.00 0	30.20 0	3620.83 7	241.00 0	2.592	152.191	329.94 4	22.60 7	7460.00 0	48.50 0	- 68.41 0	- 3319.75 8	0		
			f	241.00 0	31.40 0	3780.00 0	241.00 0	30.20 0	3620.20 0	241.00 0	2.578	148.312	329.88 2	22.61 1	7460.00 0	48.50 0	- 68.39 8	- 3314.67 6	0		

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generation level (PV)	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	241.000	31.414	3782.511	241.000	30.200	3621.021	241.000	2.590	150.106	329.716	22.622	7460.000	48.500	68.402	3317.872	0	
			f	241.000	31.468	3791.298	241.000	30.200	3622.910	241.000	2.619	158.111	329.873	22.610	7460.000	48.500	68.393	3314.765	0	
Note:																				

(7) ESS external charge current limit = 0% to +5%, PV inputs = 0% + 5%

(7-1) 203.5 test

(a) For single phase unit connected line to neutral

203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
1	100%	100%	d	240.118	3.220	-36.115	240.118	92.571	11125.664	240.118	92.937	-11164.737	360.000	-0.092	-33.000	48.000	-0.000	0.006	--	
			e	241.000	3.240	-37.241	241.000	0.000	0.000	241.000	3.360	-37.084	360.000	-0.091	-33.000	48.000	-0.001	0.072	1.000	
			f	240.693	3.220	-35.991	240.693	93.144	11191.429	240.693	93.475	-11231.398	360.000	-0.092	-33.000	48.000	-0.000	0.011	0.200	
			e	241.000	3.240	-37.341	241.000	0.000	0.000	241.000	3.360	-37.365	360.000	-0.092	-33.000	48.000	-0.000	0.006	1.000	
			f	240.900	3.222	-36.004	240.900	93.247	11202.705	240.900	93.571	-11242.306	360.000	-0.092	-33.000	48.000	-0.000	0.009	0.200	
			e	241.000	3.239	-36.309	241.000	0.000	0.000	241.000	3.360	-37.519	360.000	-0.092	-33.000	48.000	-0.000	0.007	1.000	
			f	240.101	3.220	-36.000	240.101	93.104	11185.849	240.101	93.427	-11225.478	360.000	-0.092	-33.000	48.000	-0.000	0.011	0.200	
2	66%	66%	d	241.000	3.220	-35.854	241.000	61.666	7416.192	241.000	62.026	-7449.561	360.000	-0.117	-42.000	48.000	-0.000	0.044	--	
			e	241.000	3.240	-36.065	241.000	0.000	0.000	241.000	3.360	-36.589	360.000	-0.118	-42.138	48.000	-0.000	0.027	1.000	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
3			f	240.902	3.222	-35.994	240.902	61.944	7447.988	240.902	62.298	-7482.089	360.000	-0.118	-42.939	48.000	0.000	0.029	0.200	
			e	241.000	3.239	-36.029	241.000	0.000	0.000	241.000	3.360	-36.964	360.000	-0.119	-43.000	48.000	0.000	0.039	1.000	
			f	241.000	3.220	-36.027	241.000	62.043	7462.173	241.000	62.396	-7494.767	360.000	-0.119	-43.000	48.000	0.000	0.060	0.200	
			e	241.000	3.239	-36.185	241.000	0.000	0.000	241.000	3.360	-36.584	360.000	-0.120	-43.000	48.000	0.000	0.034	1.000	
			f	241.000	3.220	-35.849	241.000	61.975	7451.526	241.000	62.335	-7486.106	360.000	-0.121	-43.656	48.000	0.001	0.070	0.200	
		33%	d	241.000	3.232	-35.848	241.000	30.200	3625.060	241.000	30.600	-3659.947	360.000	-0.127	-46.000	48.000	0.000	0.059	--	
			e	241.000	3.240	-36.287	241.000	0.000	0.000	241.000	3.360	-36.542	360.000	-0.127	-46.000	48.000	0.000	0.008	1.000	
			f	241.000	3.234	-35.880	241.000	30.333	3651.214	241.000	30.794	-3682.734	360.000	-0.127	-46.000	48.000	0.000	0.016	0.200	
			e	241.000	3.240	-36.204	241.000	0.000	0.000	241.000	3.360	-37.461	360.000	-0.128	-46.000	48.000	-0.000	0.000	1.000	
			f	241.000	3.234	-35.765	241.000	30.400	3657.916	241.000	30.839	-3686.874	360.000	-0.128	-46.000	48.000	-0.001	0.000	0.200	
			e	241.000	3.239	-35.985	241.000	0.000	0.000	241.000	3.360	-36.035	360.000	-0.128	-46.000	48.000	-0.001	0.000	1.000	
			f	240.994	3.233	-35.892	240.994	30.341	3651.412	240.994	30.798	-3683.595	360.000	-0.128	-46.000	48.000	-0.001	0.000	0.200	
	4	50%	100%	d	240.911	3.220	-36.005	240.911	92.536	11117.694	240.911	92.880	-11158.321	360.000	-0.114	-41.000	48.000	-0.001	-0.001	
e				241.000	3.240	-36.269	241.000	0.000	0.000	241.000	3.360	-37.141	360.000	-0.115	-41.000	48.000	-0.001	-0.000	1.000	
f				240.098	3.220	-35.982	240.098	93.138	11190.507	240.098	93.457	-11228.510	360.000	-0.115	-41.000	48.000	-0.001	0.000	0.200	
e				241.000	3.239	-36.176	241.000	0.000	0.000	241.000	3.359	-36.494	360.000	-0.115	-41.000	48.000	-0.001	-0.000	1.000	
f				240.900	3.220	-35.880	240.900	93.231	11200.621	240.900	93.556	-11240.266	360.000	-0.114	-41.000	48.000	-0.000	0.000	0.200	
e				241.000	3.240	-36.080	241.000	0.000	0.000	241.000	3.360	-36.481	360.000	-0.114	-41.000	48.000	-0.001	-0.001	1.000	
f				240.738	3.220	-36.009	240.738	93.101	11185.678	240.738	93.440	-11226.534	360.000	-0.114	-41.000	48.000	-0.000	0.001	0.200	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
5		66%	d	241.00 0	3.22 8	- 36.020	241.00 0	61.66 3	7414.624	241.00 0	62.01 2	-7447.643	360.00 0	- 0.108	- 39.000	48.00 0	- 0.001	0.000	--	
			e	241.00 0	3.24 0	- 36.123	241.00 0	0.000	0.000	241.00 0	3.360	-37.543	360.00 0	- 0.108	- 39.000	48.00 0	- 0.001	0.000	1.000	
			f	240.95 4	3.22 5	- 35.843	240.95 4	61.93 4	7447.803	240.95 4	62.29 6	-7483.840	360.00 0	- 0.109	- 39.000	48.00 0	- 0.001	0.000	0.200	
			e	241.00 0	3.23 9	- 36.109	241.00 0	0.000	0.000	241.00 0	3.360	-35.954	360.00 0	- 0.109	- 39.000	48.00 0	- 0.000	0.000	1.000	
			f	240.94 4	3.22 8	- 36.048	240.94 4	61.99 0	7455.329	240.94 4	62.36 0	-7488.743	360.00 0	- 0.109	- 39.096	48.00 0	- 0.000	0.004	0.200	
			e	241.00 0	3.23 9	- 36.108	241.00 0	0.000	0.000	241.00 0	3.360	-36.573	360.00 0	- 0.110	- 39.291	48.00 0	- 0.001	0.002	1.000	
			f	241.00 0	3.23 1	- 36.026	241.00 0	61.95 4	7449.016	241.00 0	62.31 3	-7484.793	360.00 0	- 0.110	- 39.986	48.00 0	- 0.001	0.001	0.200	
6		33%	d	241.00 0	3.23 9	- 35.757	241.00 0	30.20 0	3622.180	241.00 0	30.60 0	-3659.850	360.00 0	- 0.124	- 45.000	48.00 0	- 0.000	0.005	--	
			e	241.00 0	3.24 0	- 36.225	241.00 0	0.000	0.000	241.00 0	3.360	-36.886	360.00 0	- 0.125	- 45.000	48.00 0	- 0.000	0.000	1.000	
			f	241.00 0	3.23 9	- 35.849	241.00 0	30.32 7	3650.722	241.00 0	30.78 0	-3682.028	360.00 0	- 0.125	- 45.000	48.00 0	- 0.000	0.002	0.200	
			e	241.00 0	3.24 0	- 36.328	241.00 0	0.000	0.000	241.00 0	3.360	-36.273	360.00 0	- 0.126	- 45.000	48.00 0	- 0.000	0.024	1.000	
			f	241.00 0	3.23 8	- 35.902	241.00 0	30.38 6	3655.432	241.00 0	30.81 1	-3685.543	360.00 0	- 0.126	- 45.044	48.00 0	- 0.000	0.025	0.200	
			e	241.00 0	3.24 0	- 36.011	241.00 0	0.000	0.000	241.00 0	3.360	-36.495	360.00 0	- 0.126	- 45.570	48.00 0	- 0.000	0.012	1.000	
			f	241.00 0	3.23 9	- 35.641	241.00 0	30.34 1	3651.155	241.00 0	30.82 2	-3684.622	360.00 0	- 0.127	- 46.000	48.00 0	- 0.000	0.005	0.200	
7	0%	100%	d	240.90 0	3.22 2	- 36.013	240.90 0	92.52 3	11117.36 4	240.90 0	92.87 6	- 11158.242	360.00 0	- 0.103	- 37.000	48.00 0	- 0.000	0.014	--	
			e	241.00 0	3.24 1	- 36.385	241.00 0	0.000	0.000	241.00 0	3.359	-36.001	360.00 0	- 0.103	- 37.000	48.00 0	- 0.001	0.055	1.000	
			f	240.10 0	3.22 1	- 35.991	240.10 0	93.09 5	11184.76 2	240.10 0	93.42 4	- 11224.578	360.00 0	- 0.103	- 37.000	48.00 0	- 0.000	0.038	0.200	
			e	241.00 0	3.24 1	- 36.252	241.00 0	0.000	0.000	241.00 0	3.360	-36.549	360.00 0	- 0.103	- 37.000	48.00 0	- 0.000	0.000	1.000	
			f	240.90 0	3.22 2	- 35.916	240.90 0	93.23 5	11200.00 0	240.90 0	93.57 1	- 11241.375	360.00 0	- 0.103	- 37.000	48.00 0	- 0.000	0.018	0.200	

Client:	See cover page	Tested by:	See cover page		
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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
8			e	241.00 0	3.24 0	- 36.097	241.00 0	0.000	0.000	241.00 0	3.360	-36.921	360.00 0	- 0.104	- 37.000	48.00 0	0.000	0.010	1.000	
			f	240.22 4	3.22 2	- 36.003	240.22 4	93.09 6	11184.16 5	240.22 4	93.42 2	- 11224.394	360.00 0	- 0.104	- 37.271	48.00 0	- 0.000	0.016	0.200	
		66%	d	241.00 0	3.23 8	- 35.992	241.00 0	61.65 6	7411.383	241.00 0	62.00 4	-7446.980	360.00 0	- 0.098	- 35.199	48.00 0	- 0.001	- 0.002	--	
			e	241.00 0	3.24 0	- 35.953	241.00 0	0.000	0.000	241.00 0	3.360	-36.181	360.00 0	- 0.099	- 36.000	48.00 0	- 0.001	- 0.005	1.000	
			f	240.90 0	3.23 8	- 35.966	240.90 0	61.91 3	7445.008	240.90 0	62.27 5	-7479.754	360.00 0	- 0.099	- 36.000	48.00 0	- 0.001	- 0.001	0.200	
			e	241.00 0	3.24 1	- 36.157	241.00 0	0.000	0.000	241.00 0	3.360	-36.477	360.00 0	- 0.100	- 36.000	48.00 0	- 0.001	- 0.006	1.000	
			f	241.00 0	3.23 9	- 36.092	241.00 0	61.97 6	7452.695	241.00 0	62.34 6	-7486.467	360.00 0	- 0.100	- 36.000	48.00 0	- 0.001	- 0.001	0.200	
			e	241.00 0	3.24 1	- 36.256	241.00 0	0.000	0.000	241.00 0	3.359	-37.601	360.00 0	- 0.101	- 36.000	48.00 0	- 0.001	- 0.021	1.000	
			f	241.00 0	3.23 9	- 35.889	241.00 0	61.92 0	7445.649	241.00 0	62.29 4	-7482.282	360.00 0	- 0.101	- 36.000	48.00 0	- 0.001	0.000	0.200	
			33%	d	240.95 6	3.24 0	- 35.855	240.95 6	30.20 0	3621.704	240.95 6	30.60 0	-3659.624	360.00 0	- 0.092	- 33.000	48.00 0	- 0.001	- 0.001	
		e		241.00 0	3.24 1	- 36.160	241.00 0	0.000	0.000	241.00 0	3.360	-36.369	360.00 0	- 0.091	- 33.000	48.00 0	- 0.001	- 0.000	1.000	
		f		241.00 0	3.23 9	- 35.886	241.00 0	30.33 4	3650.353	241.00 0	30.78 8	-3682.273	360.00 0	- 0.092	- 33.000	48.00 0	- 0.001	- 0.009	0.200	
		e		241.00 0	3.24 0	- 36.209	241.00 0	0.000	0.000	241.00 0	3.360	-36.656	360.00 0	- 0.092	- 33.000	48.00 0	- 0.001	- 0.002	1.000	
		f		241.00 0	3.23 9	- 35.689	241.00 0	30.36 6	3653.174	241.00 0	30.81 2	-3684.950	360.00 0	- 0.092	- 33.000	48.00 0	- 0.000	0.002	0.200	
		e		241.00 0	3.24 1	- 36.114	241.00 0	0.000	0.000	241.00 0	3.360	-37.341	360.00 0	- 0.092	- 33.000	48.00 0	- 0.001	- 0.001	1.000	
		f		240.99 9	3.23 9	- 35.823	240.99 9	30.33 1	3650.471	240.99 9	30.79 7	-3683.024	360.00 0	- 0.092	- 33.000	48.00 0	- 0.000	0.009	0.200	
Note:																				

(7-2) 203.6 test

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203.6 Step Change in Generation Test																					
Load level: 33%																					
Excel file	EUT output limit	Generatio n level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (30s)	ESS Operatin g Mode	
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)			
1	100%	5%-10%	d	241.00 0	3.23 9	- 35.925	241.00 0	30.20 0	3620.00 0	241.00 0	30.60 0	- 3658.797	360.00 0	- 0.129	- 46.931	48.00 0	0.000	0.034	--		
			e	241.00 0	3.23 9	- 35.731	241.00 0	30.20 0	3620.00 0	241.00 0	30.60 0	- 3658.113	360.00 0	- 0.129	- 46.967	48.00 0	- 0.000	0.011	0		
			f	241.00 0	3.23 9	- 35.736	241.00 0	30.20 0	3620.00 0	241.00 0	30.60 0	- 3658.269	360.00 0	- 0.130	- 47.000	48.00 0	- 0.000	0.001	0		
			e	240.94 2	3.24 0	- 35.890	240.94 2	30.20 0	3620.00 0	240.94 2	30.60 0	- 3657.842	360.00 0	- 0.130	- 47.000	48.00 0	- 0.000	0.001	0		
			f	241.00 0	3.24 0	- 35.886	241.00 0	30.20 0	3620.00 0	241.00 0	30.60 0	- 3657.974	360.00 0	- 0.130	- 47.000	48.00 0	- 0.000	0.005	0		
			e	241.00 0	3.23 9	- 35.876	241.00 0	30.20 0	3620.00 0	241.00 0	30.60 0	- 3659.481	360.00 0	- 0.131	- 47.000	48.00 0	- 0.001	0.000	0		
			f	241.00 0	3.24 0	- 35.766	241.00 0	30.20 0	3620.00 0	241.00 0	30.60 0	- 3657.946	360.00 0	- 0.131	- 47.000	48.00 0	- 0.001	0.000	0		
2		33%-66%	d	240.97 6	3.24 0	- 35.830	240.97 6	30.20 0	3620.00 0	240.97 6	30.60 0	- 3658.585	360.00 0	- 0.129	- 46.000	48.00 0	- 0.001	- 0.000	--		
			e	240.99 6	3.24 0	- 35.869	240.99 6	30.20 0	3620.00 0	240.99 6	30.60 0	- 3658.003	360.00 0	- 0.129	- 46.154	48.00 0	- 0.001	- 0.001	0		
			f	241.00 0	3.24 0	- 35.915	241.00 0	30.20 0	3620.00 0	241.00 0	30.60 0	- 3658.777	360.00 0	- 0.129	- 46.285	48.00 0	- 0.001	- 0.001	0		
			e	241.00 0	3.24 0	- 35.887	241.00 0	30.20 0	3620.00 0	241.00 0	30.60 0	- 3658.712	360.00 0	- 0.129	- 46.000	48.00 0	- 0.001	- 0.001	0		
			f	241.00 0	3.23 9	- 35.800	241.00 0	30.20 0	3620.00 0	241.00 0	30.60 0	- 3659.486	360.00 0	- 0.129	- 46.210	48.00 0	- 0.001	- 0.000	0		
			e	241.00 0	3.23 9	- 35.762	241.00 0	30.20 0	3620.00 0	241.00 0	30.60 0	- 3658.754	360.00 0	- 0.129	- 46.713	48.00 0	- 0.001	- 0.000	0		
			f	240.99 1	3.24 0	- 35.926	240.99 1	30.20 0	3620.00 0	240.99 1	30.60 0	- 3658.516	360.00 0	- 0.129	- 46.445	48.00 0	- 0.001	- 0.001	0		
3	66%	5%-10%	d	241.00 0	3.24 0	- 35.936	241.00 0	30.20 0	3620.00 0	241.00 0	30.60 0	- 3658.656	360.00 0	- 0.109	- 39.078	48.00 0	- 0.001	- 0.000	--		
			e	241.00 0	3.24 0	- 35.880	241.00 0	30.20 0	3620.00 0	241.00 0	30.60 0	- 3658.231	360.00 0	- 0.110	- 39.240	48.00 0	- 0.001	- 0.001	0		
			f	241.00 0	3.24 0	- 35.843	241.00 0	30.20 0	3620.00 0	241.00 0	30.60 0	- 3658.527	360.00 0	- 0.110	- 39.925	48.00 0	- 0.001	- 0.000	0		
			e	240.94 4	3.23 9	- 35.887	240.94 4	30.20 0	3620.00 0	240.94 4	30.60 0	- 3659.485	360.00 0	- 0.110	- 39.968	48.00 0	- 0.001	- 0.000	0		
			f	241.00 0	3.24 0	- 35.949	241.00 0	30.20 0	3620.00 0	241.00 0	30.60 0	- 3658.659	360.00 0	- 0.110	- 40.000	48.00 0	- 0.001	- 0.000	0		

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generatio n level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	241.00 0	3.24 0	- 35.874	241.00 0	30.20 0	3620.00 0	241.00 0	30.60 0	- 3659.144	360.00 0	- 0.110	- 40.000	48.00 0	- 0.000	- 0.001	0	
f			241.00 0	3.24 0	- 35.843	241.00 0	30.20 0	3620.00 0	241.00 0	30.60 0	- 3658.973	360.00 0	- 0.110	- 40.000	48.00 0	- 0.001	- 0.000	0		
4		33%-66%	d	241.00 0	3.24 0	- 35.750	241.00 0	30.20 0	3620.00 0	241.00 0	30.60 0	- 3658.915	360.00 0	- 0.134	- 48.000	48.00 0	- 0.001	- 0.002	--	
			e	240.94 4	3.23 9	- 35.809	240.94 4	30.20 0	3620.00 0	240.94 4	30.60 0	- 3659.030	360.00 0	- 0.134	- 48.294	48.00 0	- 0.001	- 0.008	0	
			f	241.00 0	3.24 0	- 35.958	241.00 0	30.20 0	3620.00 0	241.00 0	30.60 0	- 3658.951	360.00 0	- 0.135	- 48.568	48.00 0	- 0.001	- 0.000	0	
			e	241.00 0	3.24 0	- 35.874	241.00 0	30.20 0	3620.00 0	241.00 0	30.60 0	- 3659.807	360.00 0	- 0.135	- 49.000	48.00 0	- 0.001	- 0.000	0	
			f	241.00 0	3.24 0	- 35.874	241.00 0	30.20 0	3620.00 0	241.00 0	30.60 0	- 3658.916	360.00 0	- 0.135	- 49.000	48.00 0	- 0.000	- 0.014	0	
			e	241.00 0	3.24 0	- 35.772	241.00 0	30.20 0	3620.00 0	241.00 0	30.60 0	- 3659.173	360.00 0	- 0.135	- 49.000	48.00 0	- 0.000	- 0.003	0	
f	240.94 9	3.24 0	- 35.937	240.94 9	30.20 0	3620.00 0	240.94 9	30.60 0	- 3659.372	360.00 0	- 0.135	- 49.000	48.00 0	- 0.000	- 0.010	0				
5	33%	5%-10%	d	241.00 0	3.24 0	- 35.920	241.00 0	30.20 0	3620.00 0	241.00 0	30.60 0	- 3659.009	360.00 0	- 0.107	- 39.000	48.00 0	- 0.000	- 0.007	--	
			e	241.00 0	3.24 0	- 35.946	241.00 0	30.20 0	3620.00 0	241.00 0	30.60 0	- 3659.201	360.00 0	- 0.107	- 38.986	48.00 0	- 0.000	- 0.008	0	
			f	241.00 0	3.24 0	- 35.716	241.00 0	30.20 0	3620.00 0	241.00 0	30.60 0	- 3660.000	360.00 0	- 0.107	- 39.000	48.00 0	- 0.000	- 0.016	0	
			e	240.97 5	3.24 0	- 35.925	240.97 5	30.20 0	3620.00 0	240.97 5	30.60 0	- 3659.502	360.00 0	- 0.107	- 39.000	48.00 0	- 0.000	- 0.022	0	
			f	241.00 0	3.24 0	- 35.876	241.00 0	30.20 0	3620.00 0	241.00 0	30.60 0	- 3658.802	360.00 0	- 0.107	- 39.000	48.00 0	- 0.001	- 0.000	0	
			e	241.00 0	3.24 0	- 35.903	241.00 0	30.20 0	3620.00 0	241.00 0	30.60 0	- 3659.268	360.00 0	- 0.107	- 39.000	48.00 0	- 0.001	- 0.005	0	
			f	241.00 0	3.24 0	- 35.852	241.00 0	30.20 0	3620.00 0	241.00 0	30.60 0	- 3659.315	360.00 0	- 0.107	- 39.000	48.00 0	- 0.000	- 0.016	0	
6	33%-66%	d	241.00 0	3.24 0	- 35.755	241.00 0	30.20 0	3620.00 0	241.00 0	30.60 0	- 3659.374	360.00 0	- 0.111	- 40.000	48.00 0	- 0.000	- 0.034	--		
		e	240.95 1	3.24 0	- 35.923	240.95 1	30.20 0	3620.00 0	240.95 1	30.60 0	- 3659.601	360.00 0	- 0.111	- 40.000	48.00 0	- 0.000	- 0.043	0		
		f	241.00 0	3.24 0	- 35.965	241.00 0	30.20 0	3620.00 0	241.00 0	30.60 0	- 3659.351	360.00 0	- 0.111	- 40.000	48.00 0	- 0.000	- 0.011	0		

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generatio n level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (≤30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	241.00 0	3.23 9	- 35.913	241.00 0	30.20 0	3620.00 0	241.00 0	30.60 0	- 3659.388	360.00 0	- 0.111	- 40.000	48.00 0	- 0.000	0.018	0	
			f	241.00 0	3.24 0	- 35.863	241.00 0	30.20 0	3620.00 0	241.00 0	30.60 0	- 3658.973	360.00 0	- 0.111	- 40.000	48.00 0	- 0.001	0.001	0	
			e	241.00 0	3.23 9	- 35.755	241.00 0	30.20 0	3620.00 0	241.00 0	30.60 0	- 3659.170	360.00 0	- 0.111	- 40.000	48.00 0	- 0.000	0.001	0	
			f	240.94 7	3.24 0	- 35.906	240.94 7	30.20 0	3620.00 0	240.94 7	30.60 0	- 3658.688	360.00 0	- 0.111	- 40.000	48.00 0	- 0.000	0.002	0	
Note:																				

(8) ESS external charge current limit = $66 \pm 5\%$, PV inputs = 0% + 5% - (If support)

(8-1) 203.5 test

203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
1	100%	100%	d	240.000	34.403	-4122.506	240.000	92.359	11099.699	240.000	126.691	-15212.581	360.000	-0.091	-33.000	47.800	-78.598	-3751.078	--	
			e	240.773	60.000	-7179.855	240.773	0.000	0.000	240.773	60.000	-7184.755	360.000	-0.092	-33.000	48.300	-134.000	-6469.673	1.000	
			f	240.000	34.548	-4132.043	240.000	93.076	11185.192	240.000	127.490	-15306.083	360.000	-0.093	-33.739	47.800	-78.502	-3750.000	0.200	
			e	241.000	60.000	-7175.499	241.000	0.000	0.000	241.000	60.000	-7180.557	360.000	-0.094	-34.000	48.398	-134.000	-6469.722	1.000	
			f	240.000	34.524	-4130.200	240.000	93.194	11199.246	240.000	127.597	-15319.157	360.000	-0.094	-34.000	47.800	-78.502	-3750.000	0.200	
			e	240.800	60.000	-7171.571	240.800	0.000	0.000	240.800	60.000	-7180.299	360.000	-0.095	-34.000	48.400	-134.000	-6470.000	1.000	

TEST PACKAGE

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste P	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	240.00 0	34.56 7	4134.60 8	240.00 0	93.06 2	11183.5 09	240.00 0	127.46 7	15304.79 3	360.00 0	0.09 6	34.43 2	47.80 0	-78.507	3750.00 0	0.200	
2		66%	d	240.00 0	59.91 8	7180.00 0	240.00 0	61.40 0	7382.39 7	240.00 0	121.21 3	14562.53 0	360.00 0	0.09 7	35.00 0	48.40 0	134.00 0	6470.26 6	--	
			e	240.85 3	60.06 9	7182.32 3	240.85 3	0.000	0.000	240.85 3	60.108	7199.201	360.00 0	0.09 7	35.00 0	48.40 0	134.00 0	6470.00 0	1.000	
			f	240.00 0	60.00 0	7189.27 8	240.00 0	61.77 1	7426.54 4	240.00 0	121.68 2	14615.88 3	360.00 0	0.09 8	35.00 0	48.40 0	134.00 0	6470.09 2	0.200	
			e	240.96 7	60.18 6	7192.11 4	240.96 7	0.000	0.000	240.96 7	60.181	7200.285	360.00 0	0.09 8	35.00 0	48.40 0	134.00 0	6470.00 0	1.000	
			f	240.00 0	60.00 0	7193.08 2	240.00 0	61.75 7	7425.89 8	240.00 0	121.68 2	14616.23 1	360.00 0	0.09 8	35.00 0	48.40 0	134.00 0	6470.37 7	0.200	
			e	240.80 0	60.19 8	7199.00 2	240.80 0	0.000	0.000	240.80 0	60.197	7201.397	360.00 0	0.09 8	35.00 0	48.40 0	134.00 0	6477.05 7	1.000	
			f	240.00 0	60.00 0	7199.94 3	240.00 0	61.73 7	7420.57 1	240.00 0	121.67 8	14615.97 7	360.00 0	0.09 8	35.00 0	48.40 0	134.00 0	6479.85 7	0.200	
3		33%	d	240.00 0	60.00 0	7199.94 7	240.00 0	30.09 1	3620.00 0	240.00 0	90.002	10820.47 9	360.00 0	0.09 7	35.00 0	48.40 0	134.00 0	6476.21 8	--	
			e	240.66 6	60.20 0	7199.20 1	240.66 6	0.000	0.000	240.66 6	60.199	7201.996	360.00 0	0.09 7	35.00 0	48.40 0	134.00 0	6470.43 6	1.000	
			f	240.00 0	60.00 0	7196.46 7	240.00 0	30.29 9	3647.61 9	240.00 0	90.239	10844.48 5	360.00 0	0.09 7	35.00 0	48.40 0	134.00 0	6470.00 0	0.200	
			e	240.80 0	60.19 9	7197.50 6	240.80 0	0.000	0.000	240.80 0	60.196	7200.898	360.00 0	0.09 6	35.00 0	48.40 0	134.00 0	6470.34 9	1.000	
			f	240.00 0	60.00 0	7198.75 8	240.00 0	30.34 7	3651.75 2	240.00 0	90.274	10850.02 2	360.00 0	0.09 6	34.15 3	48.40 0	134.00 0	6471.55 2	0.200	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste P	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	240.800	60.200	7199.401	240.800	0.000	0.000	240.800	60.200	-7202.793	360.000	0.095	34.000	48.400	134.000	6474.838	1.000	
			f	240.000	60.000	7199.943	240.000	30.310	3648.902	240.000	90.273	10848.987	360.000	0.094	34.000	48.400	134.000	6479.444	0.200	
4	50%	100%	d	240.000	34.598	4139.098	240.000	92.200	11080.000	240.000	126.616	15206.241	360.000	0.090	32.434	47.800	-78.567	3752.769	--	
			e	241.000	48.400	5761.016	241.000	0.000	0.000	241.000	48.401	-5772.523	360.000	0.090	32.004	48.100	109.000	5227.677	1.000	
			f	240.000	34.593	4138.925	240.000	93.021	11179.846	240.000	127.435	15301.229	360.000	0.089	32.000	47.800	-78.553	3750.707	0.200	
			e	241.000	48.400	5760.380	241.000	0.000	0.000	241.000	48.401	-5771.401	360.000	0.090	32.000	48.100	109.000	5233.325	1.000	
			f	240.000	34.600	4140.000	240.000	93.198	11199.867	240.000	127.653	15325.410	360.000	0.089	32.000	47.800	-78.579	3755.344	0.200	
			e	241.000	48.400	5762.564	241.000	0.000	0.000	241.000	48.400	-5771.510	360.000	0.089	32.000	48.100	108.994	5228.604	1.000	
			f	240.000	34.598	4136.348	240.000	93.081	11185.906	240.000	127.516	15310.385	360.000	0.089	32.000	47.800	-78.594	3757.019	0.200	
5		66%	d	240.000	48.204	5780.102	240.000	61.488	7394.752	240.000	109.661	13173.631	360.000	0.088	32.000	48.100	109.000	5248.917	--	
			e	241.000	48.399	5762.250	241.000	0.000	0.000	241.000	48.405	-5771.724	360.000	0.088	32.000	48.100	108.993	5226.679	1.000	
			f	240.000	48.228	5780.492	240.000	61.874	7440.891	240.000	110.041	13221.321	360.000	0.088	32.000	48.100	109.000	5243.287	0.200	
			e	241.000	48.400	5761.948	241.000	0.000	0.000	241.000	48.400	-5773.159	360.000	0.088	31.971	48.100	109.000	5227.435	1.000	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste P	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	240.00 0	48.20 1	- 5780.08 0	240.00 0	61.95 9	7450.77 8	240.00 0	110.12 5	- 13228.74 3	360.00 0	- 0.08 8	- 31.81 8	48.10 0	- 109.00 0	- 5242.43 5	0.200	
			e	241.00 0	48.40 0	- 5760.91 2	241.00 0	0.000	0.000	241.00 0	48.400	- 5772.536	360.00 0	- 0.08 7	- 31.20 5	48.10 0	- 109.00 0	- 5226.72 4	1.000	
			f	240.00 0	48.20 5	- 5780.08 6	240.00 0	61.86 9	7440.74 2	240.00 0	110.04 0	- 13221.22 7	360.00 0	- 0.08 7	- 31.03 1	48.10 0	- 109.00 0	- 5242.98 1	0.200	
33%		d	240.13 3	48.20 0	- 5779.62 4	240.13 3	30.20 0	3620.00 0	240.13 3	78.216	- 9401.880	360.00 0	- 0.08 7	- 31.00 0	48.10 0	- 109.00 0	- 5237.94 5	--		
		e	241.00 0	48.40 0	- 5760.54 4	241.00 0	0.000	0.000	241.00 0	48.400	- 5772.377	360.00 0	- 0.08 7	- 31.00 0	48.10 0	- 108.99 6	- 5226.87 8	1.000		
		f	240.00 0	48.20 0	- 5779.20 1	240.00 0	30.26 4	3644.97 7	240.00 0	78.412	- 9422.028	360.00 0	- 0.08 7	- 31.00 0	48.10 0	- 109.00 0	- 5240.16 9	1.100		
		e	241.00 0	48.40 0	- 5761.33 0	241.00 0	0.000	0.000	241.00 0	48.399	- 5770.736	360.00 0	- 0.08 7	- 31.00 0	48.10 0	- 109.00 0	- 5230.00 0	1.000		
		f	240.00 0	48.20 1	- 5778.80 3	240.00 0	30.27 9	3645.67 6	240.00 0	78.422	- 9424.878	360.00 0	- 0.08 6	- 31.00 0	48.10 0	- 109.00 0	- 5241.35 3	1.100		
		e	241.00 0	48.40 0	- 5761.82 3	241.00 0	0.000	0.000	241.00 0	48.401	- 5772.251	360.00 0	- 0.08 6	- 31.00 0	48.10 0	- 109.00 0	- 5230.62 7	1.000		
		f	240.19 8	48.20 1	- 5777.46 1	240.19 8	30.25 0	3643.28 1	240.19 8	78.398	- 9420.685	360.00 0	- 0.08 6	- 31.00 0	48.10 0	- 109.00 0	- 5240.34 2	1.100		
7	0%	100%	d	240.00 0	1.756	-81.973	240.00 0	92.38 8	11085.0 87	240.00 0	93.095	- 11159.46 7	360.00 0	- 0.08 9	- 32.00 0	47.50 0	0.564	26.803	--	
			e	241.00 0	1.846	-81.691	241.00 0	0.000	0.000	241.00 0	2.217	-79.311	360.00 0	0.08 8	- 32.00 0	47.50 0	0.564	26.803	1.000	
			f	240.00 0	1.757	-82.000	240.00 0	92.98 7	11157.4 50	240.00 0	93.684	- 11230.38 4	360.00 0	0.08 8	- 32.00 0	47.50 0	0.564	26.809	1.100	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste P	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	241.00 0	1.841	-81.857	241.00 0	0.000	0.000	241.00 0	2.201	-81.935	360.00 0	0.08 8	32.00 0	47.50 0	0.564	26.829	1.000	
			f	240.00 0	1.755	-82.000	240.00 0	93.08 7	11167.6 27	240.00 0	93.774	11240.71 0	360.00 0	0.08 8	32.00 0	47.50 0	0.564	26.843	1.100	
			e	241.00 0	1.839	-81.265	241.00 0	0.000	0.000	241.00 0	2.200	-81.724	360.00 0	0.08 8	32.00 0	47.50 0	0.564	26.820	1.000	
			f	240.00 0	1.756	-82.000	240.00 0	92.98 5	11155.1 78	240.00 0	93.672	11229.24 4	360.00 0	0.08 8	32.00 0	47.50 0	0.565	26.849	1.100	
8		66%	d	240.00 0	1.708	-81.893	240.00 0	61.60 6	7396.83 2	240.00 0	62.297	- 7474.604	360.00 0	0.08 8	31.84 0	47.50 0	0.565	26.870	--	
			e	241.00 0	1.838	-80.218	241.00 0	0.000	0.000	241.00 0	2.200	-80.085	360.00 0	0.08 7	31.48 3	47.50 0	0.565	26.838	1.000	
			f	240.00 0	1.708	-81.570	240.00 0	61.85 0	7426.57 5	240.00 0	62.555	- 7503.902	360.00 0	0.08 8	31.92 0	47.50 0	0.564	26.841	1.100	
			e	241.00 0	1.837	-80.000	241.00 0	0.000	0.000	241.00 0	2.200	-82.706	360.00 0	0.08 8	31.95 2	47.50 0	0.565	26.844	1.000	
			f	240.00 0	1.707	-81.094	240.00 0	61.92 3	7434.29 1	240.00 0	62.600	- 7513.094	360.00 0	0.08 7	31.16 8	47.50 0	0.564	26.855	1.100	
			e	241.00 0	1.836	-80.000	241.00 0	0.000	0.000	241.00 0	2.208	-78.794	360.00 0	0.08 7	31.34 2	47.50 0	0.564	26.826	1.000	
			f	240.00 0	1.707	-80.556	240.00 0	61.86 7	7428.10 3	240.00 0	62.565	- 7506.191	360.00 0	0.08 7	31.28 0	47.50 0	0.565	26.862	1.100	
9		33%	d	240.00 0	1.687	-80.506	240.00 0	30.01 8	3620.00 0	240.00 0	30.800	- 3699.073	360.00 0	0.08 7	31.19 9	47.50 0	0.564	26.842	--	
			e	241.00 0	1.837	-80.000	241.00 0	0.000	0.000	241.00 0	2.200	-81.277	360.00 0	0.08 8	31.70 1	47.50 0	0.564	26.817	1.000	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30 s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	240.00 0	1.686	-80.123	240.00 0	30.26 9	3637.08 1	240.00 0	31.002	- 3715.177	360.00 0	0.08 7	31.04 6	47.50 0	0.564	26.847	1.100	
			e	241.00 0	1.837	-80.000	241.00 0	0.000	0.000	241.00 0	2.196	-78.435	360.00 0	0.08 7	31.26 1	47.50 0	0.564	26.807	1.000	
			f	240.00 0	1.686	-80.343	240.00 0	30.28 2	3639.56 1	240.00 0	31.008	- 3717.725	360.00 0	0.08 7	31.00 0	47.50 0	0.564	26.835	1.100	
			e	241.00 0	1.837	-80.000	241.00 0	0.000	0.000	241.00 0	2.195	-78.237	360.00 0	0.08 7	31.00 0	47.50 0	0.564	26.810	1.000	
			f	240.00 0	1.686	-80.422	240.00 0	30.28 2	3640.08 6	240.00 0	31.021	- 3717.090	360.00 0	0.08 7	31.00 0	47.50 0	0.564	26.815	1.100	
Note:																				

(8-2) 203.6 test

203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generati on level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
1	100%	5%-10%	d	240.098	60.600	-7260.075	240.098	30.200	3639.373	240.098	90.621	-10878.797	361.000	-0.120	-43.112	48.600	-135.000	-6548.672	--	
			e	240.000	60.600	-7262.759	240.000	30.200	3620.073	240.000	90.639	-10879.056	361.000	-0.120	-43.056	48.600	-135.000	-6550.000	0	
			f	240.000	60.600	-7264.634	240.000	30.200	3620.000	240.000	90.638	-10879.095	361.000	-0.120	-43.252	48.600	-135.000	-6550.000	0	
			e	240.000	60.600	-7265.153	240.000	30.200	3620.000	240.000	90.628	-10879.034	361.000	-0.120	-43.209	48.600	-135.000	-6550.000	0	
			f	240.000	60.600	-7266.448	240.000	30.200	3620.000	240.000	90.672	-10879.258	361.000	-0.121	-43.696	48.600	-135.000	-6550.000	0	

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generati on level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
2			e	240.00 0	60.60 0	- 7267.90 4	240.00 0	30.20 0	3620.00 0	240.00 0	90.71 6	- 10879.92 0	361.00 0	- 0.121	- 43.92 2	48.60 0	- 135.00 0	- 6550.00 0	0	
			f	240.00 0	60.60 0	- 7268.90 2	240.00 0	30.20 0	3620.00 0	240.00 0	90.71 6	- 10880.02 9	361.00 0	- 0.121	- 43.99 9	48.60 0	- 135.00 0	- 6550.00 0	0	
		33%-66%	d	240.00 0	59.60 0	- 7129.90 6	240.00 0	30.00 0	3600.00 0	240.00 0	89.60 0	- 10739.55 2	360.00 0	- 0.099	- 35.87 9	48.80 0	- 132.00 0	- 6430.00 0	--	
			e	240.00 0	59.60 0	- 7138.65 9	240.00 0	30.00 0	3600.00 0	240.00 0	89.60 0	- 10740.00 0	360.00 0	- 0.099	- 36.00 0	48.83 3	- 132.00 0	- 6432.79 6	0	
			f	240.00 0	59.60 2	- 7139.47 6	240.00 0	30.00 0	3600.00 0	240.00 0	89.60 0	- 10740.44 9	360.00 0	- 0.099	- 36.00 0	48.90 0	- 131.99 4	- 6438.92 6	0	
			e	240.00 0	59.60 0	- 7140.00 0	240.00 0	30.00 0	3600.00 0	240.00 0	89.60 0	- 10741.96 5	360.00 0	- 0.100	- 36.00 0	48.90 0	- 132.00 0	- 6440.00 0	0	
			f	240.00 0	59.60 0	- 7139.51 5	240.00 0	30.00 0	3600.00 0	240.00 0	89.60 0	- 10742.85 3	360.00 0	- 0.100	- 36.00 0	48.90 0	- 131.99 1	- 6438.83 0	0	
			e	240.00 0	59.60 0	- 7140.00 0	240.00 0	30.00 0	3600.00 0	240.00 0	89.60 0	- 10743.07 2	360.00 0	- 0.100	- 36.00 0	48.90 0	- 132.00 0	- 6434.49 3	0	
			f	240.00 0	59.60 0	- 7140.00 0	240.00 0	30.00 0	3600.00 0	240.00 0	89.60 0	- 10743.13 8	360.00 0	- 0.100	- 36.00 0	48.90 0	- 132.00 0	- 6432.49 6	0	
3	66%	5%-10%	d	240.04 7	60.60 4	- 7272.66 5	240.04 7	30.20 0	3620.00 0	240.04 7	90.72 5	- 10880.02 4	361.00 0	- 0.121	- 44.00 0	48.60 0	- 135.00 0	- 6550.00 0	--	
			e	240.00 0	60.60 0	- 7277.03 3	240.00 0	30.20 0	3620.00 0	240.00 0	90.74 3	- 10880.17 1	361.00 0	- 0.121	- 44.00 0	48.60 0	- 135.00 0	- 6550.00 0	0	
			f	240.00 0	60.60 2	- 7277.95 3	240.00 0	30.20 0	3620.00 0	240.00 0	90.77 5	- 10880.20 0	361.00 0	- 0.121	- 44.00 0	48.60 0	- 135.00 0	- 6550.00 0	0	

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generati on level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	240.00 0	60.60 1	- 7278.06 8	240.00 0	30.20 0	3620.00 0	240.00 0	90.76 0	- 10880.06 4	361.00 0	- 0.122	- 44.00 0	48.60 0	- 135.00 0	- 6550.00 0	0	
			f	240.00 0	60.60 0	- 7277.11 8	240.00 0	30.20 0	3620.00 0	240.00 0	90.73 1	- 10880.00 0	361.00 0	- 0.122	- 44.00 0	48.60 0	- 135.00 0	- 6550.00 0	0	
			e	240.00 0	60.60 1	- 7276.63 3	240.00 0	30.20 0	3620.00 0	240.00 0	90.76 5	- 10880.85 6	361.00 0	- 0.122	- 44.00 0	48.60 0	- 135.00 0	- 6550.00 0	0	
			f	240.01 4	60.60 3	- 7277.80 3	240.01 4	30.20 0	3620.00 0	240.01 4	90.79 7	- 10881.19 8	361.00 0	- 0.122	- 44.00 0	48.60 0	- 135.00 0	- 6550.00 0	0	
4		33%-66%	d	240.00 0	59.60 0	- 7135.99 1	240.00 0	30.00 0	3600.00 0	240.00 0	89.60 0	- 10739.78 8	360.00 0	- 0.093	- 33.00 0	48.80 0	- 132.00 0	- 6430.46 0	--	
			e	240.00 0	59.60 0	- 7126.84 7	240.00 0	30.00 0	3600.00 0	240.00 0	89.60 0	- 10739.20 1	360.00 0	- 0.093	- 33.35 8	48.80 0	- 132.00 0	- 6430.00 0	0	
			f	240.00 0	59.60 0	- 7139.27 6	240.00 0	30.00 0	3600.00 0	240.00 0	89.60 0	- 10739.77 5	360.00 0	- 0.093	- 33.98 8	48.84 0	- 132.00 0	- 6432.08 5	0	
			e	240.00 0	59.60 0	- 7140.00 0	240.00 0	30.00 0	3600.00 0	240.00 0	89.60 0	- 10740.64 4	360.00 0	- 0.094	- 34.00 0	48.90 0	- 132.00 0	- 6439.93 6	0	
			f	240.00 0	59.60 0	- 7140.00 0	240.00 0	30.00 0	3600.00 0	240.00 0	89.60 0	- 10740.77 0	360.00 0	- 0.094	- 34.00 0	48.90 0	- 132.00 0	- 6439.97 1	0	
			e	240.00 0	59.60 0	- 7140.00 0	240.00 0	30.00 0	3600.00 0	240.00 0	89.60 0	- 10740.68 5	360.00 0	- 0.094	- 34.00 0	48.90 0	- 132.00 0	- 6439.84 3	0	
f	240.00 0	59.60 0	- 7140.00 0	240.00 0	30.00 0	3600.00 0	240.00 0	89.60 0	- 10740.74 2	360.00 0	- 0.095	- 34.00 0	48.90 0	- 132.00 0	- 6430.24 3	0				
5	33%	5%-10%	d	241.00 0	31.76 1	- 3801.39 2	241.00 0	30.20 0	3635.59 0	241.00 0	61.80 0	- 7420.377	361.00 0	- 0.122	- 44.00 0	48.00 0	-72.177	3461.73 3	--	

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generati on level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	241.00 0	31.75 4	- 3800.91 3	241.00 0	30.20 0	3637.66 0	241.00 0	61.80 0	- 7420.399	361.00 0	- 0.123	- 44.00 0	48.00 0	-72.128	- 3458.17 4	0	
			f	240.90 0	31.75 4	- 3801.09 7	240.90 0	30.20 0	3638.10 5	240.90 0	61.80 0	- 7421.047	361.00 0	- 0.123	- 44.00 0	47.97 1	-72.038	- 3453.99 0	0	
			e	240.90 0	31.76 7	- 3803.17 8	240.90 0	30.20 0	3640.00 0	240.90 0	61.80 0	- 7421.433	361.00 0	- 0.123	- 44.00 0	47.90 1	-72.237	- 3463.39 6	0	
			f	240.90 0	31.77 0	- 3800.35 9	240.90 0	30.20 0	3639.84 0	240.90 0	61.80 1	- 7422.715	361.00 0	- 0.123	- 44.00 2	47.90 0	-72.155	- 3459.12 2	0	
			e	241.00 0	31.76 3	- 3800.06 7	241.00 0	30.20 0	3639.93 3	241.00 0	61.80 0	- 7419.933	361.00 0	- 0.123	- 44.00 0	47.90 0	-72.099	- 3457.17 1	0	
			f	241.00 0	31.76 8	- 3800.45 6	241.00 0	30.20 0	3639.94 3	241.00 0	61.80 0	- 7420.000	361.00 0	- 0.123	- 44.02 6	47.90 0	-72.248	- 3463.45 2	0	
6		33%-66%	d	240.00 0	27.60 0	- 3300.00 0	240.00 0	30.00 0	3600.00 0	240.00 0	57.60 4	- 6917.112	360.00 0	- 0.091	- 33.00 0	48.10 0	-62.480	- 3004.52 5	--	
			e	240.00 0	27.60 0	- 3300.00 0	240.00 0	30.00 0	3600.00 0	240.00 0	57.60 3	- 6916.405	360.00 0	- 0.091	- 33.00 0	48.10 0	-62.609	- 3010.77 0	0	
			f	240.00 0	27.60 0	- 3300.00 0	240.00 0	30.00 0	3600.00 0	240.00 0	57.60 4	- 6915.780	360.00 0	- 0.091	- 32.91 3	48.10 0	-62.547	- 3007.57 8	0	
			e	240.00 0	27.60 0	- 3300.00 0	240.00 0	30.00 0	3600.00 0	240.00 0	57.60 5	- 6916.908	360.00 0	- 0.090	- 32.67 5	48.10 0	-62.468	- 3003.67 1	0	
			f	240.00 0	27.60 0	- 3300.00 0	240.00 0	30.00 0	3600.00 0	240.00 0	57.60 1	- 6915.807	360.00 0	- 0.090	- 32.01 7	48.10 0	-62.556	- 3010.03 3	0	
			e	240.00 0	27.60 0	- 3300.00 0	240.00 0	30.00 0	3600.00 0	240.00 0	57.60 5	- 6916.766	360.00 0	- 0.090	- 32.00 0	48.10 0	-62.494	- 3008.03 2	0	

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generati on level (PV)	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
					f	240.00 0	27.60 0	- 3300.00 0	240.00 0	30.00 0	3600.00 0	240.00 0	57.60 9	- 6916.491	360.00 0	- 0.089	- 32.00 0	48.10 0	-62.435	
Note:																				

(9) ESS external charge current limit = $33 \pm 5\%$, PV inputs = 0% + 5% - (If support)

(9-1) 203.5 test

203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
1	100%	100%	d	240.000	30.256	3616.541	240.000	92.177	11072.105	240.000	122.303	14675.439	360.000	-0.101	36.000	48.500	-67.958	3292.982	--	
			e	241.000	30.110	3601.016	241.000	0.000	0.000	241.000	30.106	-3599.601	360.000	-0.100	36.000	48.500	-67.627	3276.642	1.100	
			f	240.000	30.244	3618.833	240.000	92.688	11130.661	240.000	122.841	14740.707	360.000	-0.100	36.000	48.500	-67.826	3288.863	0.200	
			e	241.000	30.114	3603.063	241.000	0.000	0.000	241.000	30.121	-3600.186	360.000	-0.100	36.000	48.500	-67.564	3277.726	1.100	
			f	240.000	30.073	3594.900	240.000	92.840	11147.627	240.000	122.769	14728.914	360.000	-0.100	36.000	48.500	-67.484	3270.244	0.200	
			e	241.000	30.113	3602.294	241.000	0.000	0.000	241.000	30.097	-3601.596	360.000	-0.099	36.000	48.500	-67.528	3274.364	1.100	
			f	240.000	30.071	3594.779	240.000	92.735	11135.435	240.000	122.694	14721.484	360.000	-0.099	36.000	48.500	-67.487	3272.439	0.200	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
2		66%	d	240.00 0	30.07 9	- 3595.07 3	240.00 0	61.67 4	7413.529	240.00 0	91.617	- 11000.98 5	360.00 0	- 0.099	- 36.00 0	48.50 0	- 67.55 2	- 3275.45 9	--	
			e	241.00 0	30.10 5	- 3602.39 6	241.00 0	0.000	0.000	241.00 0	30.106	- 3602.359	360.00 0	- 0.100	- 36.00 0	48.50 0	- 67.49 1	- 3271.92 4	1.100	
			f	240.00 0	30.11 5	- 3601.53 6	240.00 0	61.80 0	7428.817	240.00 0	91.830	- 11026.45 2	360.00 0	- 0.100	- 36.00 0	48.50 0	- 67.54 4	- 3275.22 3	1.100	
			e	241.00 0	30.03 9	- 3594.34 7	241.00 0	0.000	0.000	241.00 0	30.089	- 3595.724	360.00 0	- 0.100	- 36.00 0	48.50 0	- 67.50 4	- 3271.21 1	1.100	
			f	240.00 0	30.07 8	- 3591.61 9	240.00 0	61.89 6	7439.113	240.00 0	91.825	- 11025.63 2	360.00 0	- 0.100	- 36.00 0	48.50 0	- 67.50 9	- 3273.65 9	1.100	
			e	241.00 0	30.09 9	- 3600.99 8	241.00 0	0.000	0.000	241.00 0	30.084	- 3599.800	360.00 0	- 0.100	- 36.00 0	48.50 0	- 67.54 1	- 3273.14 2	1.100	
			f	240.00 0	30.06 3	- 3589.98 6	240.00 0	61.83 1	7431.983	240.00 0	91.741	- 11016.17 7	360.00 0	- 0.100	- 36.00 0	48.50 0	- 67.52 4	- 3273.55 2	1.100	
3		33%	d	240.00 0	30.08 5	- 3596.59 1	240.00 0	29.80 0	3600.000	240.00 0	59.872	- 7188.282	360.00 0	- 0.101	- 36.00 0	48.50 0	- 67.51 1	- 3273.83 5	--	
			e	241.00 0	30.07 5	- 3597.31 4	241.00 0	0.000	0.000	241.00 0	30.081	- 3597.314	360.00 0	- 0.101	- 36.00 0	48.50 0	- 67.45 6	- 3271.70 6	1.100	
			f	240.00 0	29.99 1	- 3585.74 5	240.00 0	30.02 6	3611.367	240.00 0	59.923	- 7196.498	360.00 0	- 0.101	- 36.00 0	48.50 0	- 67.40 9	- 3268.52 5	1.100	
			e	241.00 0	29.96 8	- 3584.83 8	241.00 0	0.000	0.000	241.00 0	29.981	- 3582.244	360.00 0	- 0.101	- 36.00 0	48.50 0	- 67.31 6	- 3264.63 8	1.100	
			f	240.00 0	30.06 3	- 3596.36 4	240.00 0	30.03 4	3616.186	240.00 0	60.060	- 7213.215	360.00 0	- 0.101	- 36.02 2	48.50 0	- 67.47 5	- 3271.08 6	1.100	
			e	241.00 0	30.01 0	- 3591.52 1	241.00 0	0.000	0.000	241.00 0	30.055	- 3591.521	360.00 0	- 0.101	- 36.57 6	48.50 0	- 67.50 2	- 3273.01 7	1.100	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	240.00 0	30.05 3	- 3590.75 6	240.00 0	30.03 8	3612.040	240.00 0	59.966	- 7201.883	360.00 0	- 0.101	- 36.51 5	48.50 0	- 67.44 0	- 3269.64 3	1.100	
4	50%	100%	d	240.00 0	30.09 5	- 3598.77 2	240.00 0	92.21 5	11075.51 4	240.00 0	122.21 6	- 14665.08 8	360.00 0	- 0.102	- 37.00 0	48.50 0	- 67.47 1	- 3271.85 5	--	
			e	241.00 0	30.05 6	- 3594.08 3	241.00 0	0.000	0.000	241.00 0	30.083	- 3594.555	360.00 0	- 0.102	- 37.00 0	48.50 0	- 67.55 4	- 3275.80 8	1.100	
			f	240.00 0	30.08 2	- 3591.12 1	240.00 0	92.70 3	11131.21 4	240.00 0	122.62 8	- 14713.97 8	360.00 0	- 0.102	- 37.00 0	48.50 0	- 67.54 4	- 3275.68 4	1.100	
			e	241.00 0	30.10 1	- 3600.57 0	241.00 0	0.000	0.000	241.00 0	30.093	- 3600.475	360.00 0	- 0.102	- 37.00 0	48.50 0	- 67.55 6	- 3274.08 6	1.100	
			f	240.00 0	30.08 6	- 3591.61 9	240.00 0	92.85 5	11150.55 4	240.00 0	122.77 6	- 14731.57 4	360.00 0	- 0.102	- 37.00 0	48.50 0	- 67.54 0	- 3273.50 3	1.100	
			e	241.00 0	30.07 5	- 3597.72 1	241.00 0	0.000	0.000	241.00 0	30.080	- 3594.188	360.00 0	- 0.103	- 37.00 0	48.50 0	- 67.49 5	- 3274.24 5	1.100	
			f	240.00 0	30.13 3	- 3601.85 4	240.00 0	92.74 0	11136.26 2	240.00 0	122.77 4	- 14729.38 7	360.00 0	- 0.103	- 37.00 0	48.50 0	- 67.52 9	- 3274.50 8	1.100	
5		66%	d	240.00 0	30.04 8	- 3590.47 1	240.00 0	61.60 3	7404.994	240.00 0	91.539	- 10990.93 0	360.00 0	- 0.103	- 37.00 0	48.50 0	- 67.43 0	- 3270.05 1	--	
			e	241.00 0	30.04 4	- 3593.06 7	241.00 0	0.000	0.000	241.00 0	30.073	- 3594.083	360.00 0	- 0.104	- 37.15 1	48.50 0	- 67.52 3	- 3273.79 3	1.100	
			f	240.00 0	30.07 5	- 3598.03 4	240.00 0	61.81 2	7430.384	240.00 0	91.810	- 11023.62 5	360.00 0	- 0.104	- 37.51 8	48.50 0	- 67.50 7	- 3272.75 0	1.100	
			e	241.00 0	30.13 3	- 3603.89 5	241.00 0	0.000	0.000	241.00 0	30.118	- 3603.040	360.00 0	- 0.104	- 37.69 1	48.50 0	- 67.55 3	- 3275.55 8	1.100	
			f	240.00 0	30.05 5	- 3591.41 7	240.00 0	61.86 3	7437.764	240.00 0	91.808	- 11023.19 4	360.00 0	- 0.104	- 38.00 0	48.50 0	- 67.48 9	- 3271.21 8	1.100	

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203.5 Step Change in Load Test																							
Excel file	EUT output limit	Load level	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (30s)	ESS Operatin g Mode			
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)					
6			e	241.00 0	30.05 7	- 3593.67 5	241.00 0	0.000	0.000	241.00 0	30.081	- 3594.302	360.00 0	- 0.105	- 38.00 0	48.50 0	- 67.46 8	- 3270.51 3	1.100				
			f	240.00 0	30.09 6	- 3599.91 4	240.00 0	61.81 6	7431.013	240.00 0	91.839	11027.53 2	360.00 0	- 0.105	- 38.00 0	48.50 0	- 67.49 8	- 3272.56 8	1.100				
		33%	d	240.00 0	30.04 2	- 3591.65 4	240.00 0	29.80 0	3600.000	240.00 0	59.821	- 7181.328	360.00 0	- 0.105	- 38.00 0	48.50 0	- 67.54 8	- 3274.29 8	--				
			e	241.00 0	30.08 0	- 3597.09 6	241.00 0	0.000	0.000	241.00 0	30.098	- 3597.495	360.00 0	- 0.105	- 38.00 0	48.50 0	- 67.61 5	- 3277.26 0	1.100				
			f	240.00 0	30.10 6	- 3601.29 0	240.00 0	30.01 9	3610.753	240.00 0	60.069	- 7212.596	360.00 0	- 0.105	- 38.00 0	48.50 0	- 67.55 7	- 3275.89 9	1.100				
			e	241.00 0	29.98 5	- 3588.93 1	241.00 0	0.000	0.000	241.00 0	30.015	- 3587.221	360.00 0	- 0.105	- 38.00 0	48.50 0	- 67.38 3	- 3266.60 3	1.100				
			f	240.00 0	30.04 2	- 3591.61 9	240.00 0	30.04 3	3617.162	240.00 0	59.984	- 7205.499	360.00 0	- 0.105	- 38.00 0	48.50 0	- 67.47 4	- 3270.15 5	1.100				
			e	241.00 0	30.10 0	- 3599.77 2	241.00 0	0.000	0.000	241.00 0	30.091	- 3599.658	360.00 0	- 0.106	- 38.00 0	48.50 0	- 67.49 6	- 3273.44 7	1.100				
			f	240.00 0	30.06 5	- 3596.00 6	240.00 0	30.02 4	3610.385	240.00 0	60.000	- 7205.421	360.00 0	- 0.106	- 38.00 0	48.50 0	- 67.46 2	- 3272.12 6	1.100				
			7	0%	100%	d	240.95 1	1.783	-81.342	240.95 1	92.04 2	11062.45 0	240.95 1	92.759	- 11135.92 5	360.00 0	- 0.102	- 37.00 0	47.80 0		0.569	27.216	--
		e				241.00 0	1.862	-80.036	241.00 0	0.000	0.000	241.00 0	2.058	-78.469	360.00 0	- 0.102	- 37.00 0	47.80 0	0.569		27.182	1.100	
		f				240.48 8	1.778	-81.161	240.48 8	92.68 6	11137.20 4	240.48 8	93.363	- 11209.18 6	360.00 0	- 0.102	- 37.00 0	47.80 0	0.568		27.197	1.100	
		e				241.00 0	1.868	-80.000	241.00 0	0.000	0.000	241.00 0	2.062	-80.590	360.00 0	- 0.102	- 37.00 0	47.80 0	0.568		27.155	1.100	

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Ste p	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	240.978	1.790	-80.310	240.978	92.825	11152.727	240.978	93.484	11224.568	360.000	-0.102	37.000	47.800	0.568	27.154	1.100	
			e	241.000	1.864	-80.000	241.000	0.000	0.000	241.000	2.065	-80.970	360.000	-0.102	37.000	47.800	0.568	27.107	1.100	
			f	241.000	1.784	-80.143	241.000	92.704	11139.258	241.000	93.369	11211.127	360.000	-0.102	37.000	47.800	0.567	27.121	1.100	
8	66%	d	241.000	1.732	-80.027	241.000	61.641	7412.805	241.000	62.323	-7489.235	360.000	-0.102	37.000	47.800	0.567	27.109	--		
		e	241.000	1.860	-80.000	241.000	0.000	0.000	241.000	1.997	-79.623	360.000	-0.102	37.000	47.800	0.567	27.082	1.100		
		f	241.000	1.733	-80.068	241.000	61.822	7435.392	241.000	62.520	-7512.873	360.000	-0.102	37.000	47.800	0.567	27.099	1.100		
		e	241.000	1.860	-80.000	241.000	0.000	0.000	241.000	1.974	-80.590	360.000	-0.102	37.000	47.800	0.567	27.090	1.100		
		f	241.000	1.730	-80.000	241.000	61.854	7439.002	241.000	62.548	-7517.086	360.000	-0.102	37.000	47.800	0.566	27.089	1.100		
		e	241.000	1.860	-80.000	241.000	0.000	0.000	241.000	1.998	-79.659	360.000	-0.102	37.000	47.800	0.566	27.037	1.100		
		f	241.000	1.724	-80.000	241.000	61.753	7426.020	241.000	62.427	-7503.310	360.000	-0.102	37.000	47.800	0.566	27.073	1.100		
9	33%	d	241.000	1.696	-80.000	241.000	29.802	3600.000	241.000	30.600	-3678.947	360.000	-0.102	37.000	47.800	0.566	27.072	--		
		e	241.000	1.851	-80.000	241.000	0.000	0.000	241.000	1.973	-79.885	360.000	-0.102	37.000	47.800	0.566	27.049	1.100		
		f	241.000	1.700	-80.000	241.000	30.003	3610.507	241.000	30.712	-3689.585	360.000	-0.102	36.986	47.800	0.566	27.090	1.100		

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203.5 Step Change in Load Test																				
Excel file	EUT output limit	Load level	Step	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operating Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			e	241.000	1.852	-80.000	241.000	0.000	0.000	241.000	2.060	-80.335	360.000	-0.102	37.000	47.800	0.566	27.065	1.100	
			f	241.000	1.701	-80.000	241.000	30.000	3611.896	241.000	30.720	-3689.102	360.000	-0.102	37.000	47.800	0.566	27.090	1.100	
			e	241.000	1.853	-80.000	241.000	0.000	0.000	241.000	2.064	-77.915	360.000	-0.101	36.228	47.800	0.566	27.043	1.100	
			f	241.000	1.696	-80.000	241.000	30.000	3609.872	241.000	30.697	-3688.131	360.000	-0.101	36.000	47.800	0.566	27.090	1.100	

Note:

(9-2) 203.6 test

203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generatio n level (PV)	Ste P	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
1	100%	5%-10%	d	240.00 0	30.05 8	3594.78 7	240.00 0	29.80 0	3600.00 0	240.00 0	59.81 6	7180.45 1	360.00 0	- 0.106	38.00 0	48.50 0	67.51 0	3273.96 0	--	
			e	240.00 0	30.10 7	3600.50 8	240.00 0	29.80 0	3580.00 0	240.00 0	59.90 6	7191.83 3	360.00 0	- 0.106	38.00 0	48.50 0	67.50 3	3272.63 2	0	
			f	240.00 0	30.04 5	3593.52 9	240.00 0	29.80 0	3580.00 0	240.00 0	59.77 9	7179.36 1	360.00 0	- 0.107	38.01 3	48.50 0	67.41 7	3267.45 7	0	
			e	240.00 0	30.09 6	3595.33 0	240.00 0	29.80 0	3580.00 0	240.00 0	59.78 0	7182.31 9	360.00 0	- 0.107	38.05 6	48.50 0	67.51 8	3273.34 9	0	
			f	240.00 0	30.10 6	3601.42 7	240.00 0	29.80 0	3580.00 0	240.00 0	59.87 3	7188.13 1	360.00 0	- 0.107	38.72 0	48.50 0	67.60 2	3276.80 5	0	
			e	240.00 0	30.09 4	3600.16 0	240.00 0	29.80 0	3580.00 0	240.00 0	59.89 8	7191.81 6	360.00 0	- 0.107	39.00 0	48.50 0	67.57 8	3274.65 1	0	

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generatio n level (PV)	Ste P	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
			f	240.00 0	30.05 6	3590.98 4	240.00 0	29.80 0	3580.00 0	240.00 0	59.73 4	7177.66 0	360.00 0	- 0.107	- 39.00 0	48.50 0	- 67.54 3	- 3273.58 1	0	
2		33%-66%	d	240.00 0	30.09 8	3599.67 0	240.00 0	29.80 0	3580.00 0	240.00 0	59.85 3	7186.15 6	360.00 0	- 0.108	- 39.00 0	48.50 0	- 67.52 0	- 3274.04 5	--	
			e	240.00 0	30.11 3	3602.68 2	240.00 0	29.80 0	3580.00 0	240.00 0	59.90 8	7191.12 7	360.00 0	- 0.108	- 39.00 0	48.50 0	- 67.53 0	- 3274.75 0	0	
			f	240.00 0	30.05 1	3591.98 5	240.00 0	29.80 0	3580.00 0	240.00 0	59.75 3	7179.82 5	360.00 0	- 0.108	- 39.00 0	48.50 0	- 67.48 8	- 3272.60 9	0	
			e	240.00 0	30.06 9	3595.42 7	240.00 0	29.80 0	3580.00 0	240.00 0	59.77 9	7181.22 4	360.00 0	- 0.108	- 39.00 0	48.50 0	- 67.55 9	- 3275.76 5	0	
			f	240.00 0	30.11 2	3602.25 4	240.00 0	29.80 0	3580.00 0	240.00 0	59.89 2	7191.72 6	360.00 0	- 0.108	- 39.00 0	48.50 0	- 67.56 5	- 3276.16 3	0	
			e	240.00 0	30.10 5	3601.24 6	240.00 0	29.80 0	3580.00 0	240.00 0	59.89 0	7189.65 2	360.00 0	- 0.108	- 39.00 0	48.50 0	- 67.54 6	- 3274.18 8	0	
3	66%	5%-10%	f	240.00 0	30.05 1	3591.15 5	240.00 0	29.80 0	3580.00 0	240.00 0	59.73 5	7177.68 9	360.00 0	- 0.108	- 39.00 0	48.50 0	- 67.43 2	- 3267.91 7	0	
			d	240.00 0	30.11 5	3602.85 4	240.00 0	29.80 0	3580.00 0	240.00 0	59.90 6	7192.31 1	360.00 0	- 0.109	- 39.00 0	48.50 0	- 67.51 2	- 3273.05 4	--	
			e	240.00 0	30.06 4	3594.15 1	240.00 0	29.80 0	3580.00 0	240.00 0	59.78 8	7181.79 7	360.00 0	- 0.109	- 39.00 0	48.50 0	- 67.51 5	- 3273.28 1	0	
			f	240.00 0	30.08 2	3595.13 1	240.00 0	29.80 0	3580.00 0	240.00 0	59.78 3	7180.25 0	360.00 0	- 0.109	- 39.00 0	48.50 0	- 67.56 6	- 3274.93 1	0	
			e	240.00 0	30.11 1	3602.44 8	240.00 0	29.80 0	3580.00 0	240.00 0	59.88 3	7191.69 1	360.00 0	- 0.109	- 39.00 0	48.50 0	- 67.60 6	- 3276.68 3	0	

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generatio n level (PV)	Ste P	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
4			f	240.00 0	30.11 4	- 3603.36 7	240.00 0	29.80 0	3580.00 0	240.00 0	59.90 6	- 7192.66 8	360.00 0	- 0.109	- 39.00 0	48.50 0	- 67.57 4	- 3275.92 0	0	
			e	240.00 0	30.06 3	- 3593.15 3	240.00 0	29.80 0	3580.00 0	240.00 0	59.74 8	- 7179.65 8	360.00 0	- 0.109	- 39.00 0	48.50 0	- 67.49 5	- 3272.58 2	0	
			f	240.00 0	30.08 8	- 3598.71 6	240.00 0	29.80 0	3580.00 0	240.00 0	59.83 8	- 7183.02 4	360.00 0	- 0.109	- 39.00 0	48.50 0	- 67.53 0	- 3275.69 2	0	
		33%-66%	d	240.00 0	30.12 1	- 3602.45 3	240.00 0	29.80 0	3580.00 0	240.00 0	59.90 9	- 7191.62 7	360.00 0	- 0.109	- 39.00 0	48.50 0	- 67.57 8	- 3275.82 5	--	
			e	240.00 0	30.04 0	- 3591.12 7	240.00 0	29.80 0	3580.00 0	240.00 0	59.74 3	- 7177.97 4	360.00 0	- 0.109	- 39.00 0	48.50 0	- 67.49 3	- 3272.59 6	0	
			f	240.00 0	30.09 0	- 3596.00 5	240.00 0	29.80 0	3580.00 0	240.00 0	59.80 2	- 7181.99 8	360.00 0	- 0.110	- 39.18 6	48.50 0	- 67.57 0	- 3276.28 0	0	
			e	240.00 0	30.07 9	- 3598.84 1	240.00 0	29.80 0	3580.00 0	240.00 0	59.87 4	- 7187.47 2	360.00 0	- 0.109	- 39.04 8	48.50 0	- 67.43 2	- 3268.26 1	0	
			f	240.00 0	30.09 2	- 3598.17 4	240.00 0	29.80 0	3580.00 0	240.00 0	59.87 3	- 7187.07 6	360.00 0	- 0.110	- 39.31 4	48.50 0	- 67.45 5	- 3269.25 8	0	
			e	240.00 0	30.03 8	- 3592.32 5	240.00 0	29.80 0	3580.00 0	240.00 0	59.73 6	- 7177.03 3	360.00 0	- 0.110	- 39.58 3	48.50 0	- 67.43 0	- 3268.95 9	0	
			f	240.00 0	30.12 1	- 3603.45 2	240.00 0	29.80 0	3580.00 0	240.00 0	59.89 1	- 7189.72 9	360.00 0	- 0.110	- 39.72 5	48.50 0	- 67.62 3	- 3278.50 2	0	
5	33%	5%-10%	d	240.00 0	30.02 2	- 3585.42 5	240.00 0	30.00 0	3602.64 2	240.00 0	60.00 0	- 7179.76 4	361.00 0	- 0.114	- 41.00 0	47.90 0	- 68.17 6	- 3260.37 7	--	
			e	240.00 0	30.04 6	- 3588.33 1	240.00 0	30.00 0	3600.00 0	240.00 0	60.00 0	- 7179.94 3	361.00 0	- 0.114	- 41.00 0	47.90 0	- 68.19 2	- 3260.95 6	0	

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203.6 Step Change in Generation Test																				
Load level: 33%																				
Excel file	EUT output limit	Generatio n level (PV)	Ste P	EUT output port			Load port			Grid port			PV port			ESS port			Tr (s) (<30s)	ESS Operatin g Mode
				U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)	U (V)	I (A)	P (W)		
6			f	240.00 0	30.16 7	- 3599.10 2	240.00 0	30.00 0	3600.00 0	240.00 0	60.10 0	- 7195.56 1	361.00 0	- 0.114	- 41.00 0	47.90 0	- 68.16 7	- 3261.14 7	0	
			e	240.00 0	30.04 5	- 3588.16 2	240.00 0	30.00 0	3605.35 8	240.00 0	60.00 0	- 7180.12 5	361.00 0	- 0.114	- 41.00 0	47.90 0	- 68.14 9	- 3260.81 0	0	
			f	240.00 0	30.07 6	- 3593.09 4	240.00 0	30.00 0	3608.74 3	240.00 0	60.00 0	- 7183.83 2	361.00 0	- 0.114	- 41.00 0	47.90 0	- 68.18 9	- 3261.99 6	0	
			e	240.00 0	30.09 7	- 3592.21 3	240.00 0	30.00 0	3602.89 5	240.00 0	60.06 8	- 7187.28 8	361.00 0	- 0.114	- 41.00 0	47.90 0	- 68.13 7	- 3260.83 2	0	
			f	240.00 0	30.04 6	- 3588.38 8	240.00 0	30.00 0	3606.59 1	240.00 0	60.00 0	- 7180.85 6	361.00 0	- 0.114	- 41.00 0	47.90 0	- 68.15 1	- 3260.94 2	0	
		33%-66%	d	240.00 0	30.06 5	- 3593.64 6	240.00 0	29.80 0	3599.03 7	240.00 0	59.79 4	- 7181.94 9	360.00 0	- 0.110	- 40.00 0	48.50 0	- 67.45 9	- 3270.38 5	--	
			e	240.00 0	30.05 0	- 3592.63 9	240.00 0	29.80 0	3585.19 3	240.00 0	59.76 8	- 7177.43 2	360.00 0	- 0.111	- 40.00 0	48.50 0	- 67.43 0	- 3267.83 2	0	
			f	240.00 0	30.10 0	- 3600.05 0	240.00 0	29.80 0	3585.99 3	240.00 0	59.87 3	- 7189.88 8	360.00 0	- 0.110	- 40.00 0	48.50 0	- 67.48 4	- 3270.63 7	0	
			e	240.00 0	30.10 3	- 3601.48 1	240.00 0	29.80 0	3593.33 3	240.00 0	59.91 2	- 7193.62 3	360.00 0	- 0.111	- 40.00 0	48.50 0	- 67.55 3	- 3275.52 3	0	
			f	240.00 0	30.06 9	- 3594.54 2	240.00 0	29.80 0	3585.92 3	240.00 0	59.77 3	- 7180.26 6	360.00 0	- 0.110	- 40.00 0	48.50 0	- 67.55 8	- 3274.67 6	0	
			e	240.00 0	30.08 4	- 3596.44 7	240.00 0	29.80 0	3593.80 9	240.00 0	59.81 4	- 7182.44 7	360.00 0	- 0.111	- 40.00 0	48.50 0	- 67.57 2	- 3275.75 5	0	
			f	240.00 0	30.09 3	- 3599.54 4	240.00 0	29.80 0	3581.68 3	240.00 0	59.87 7	- 7188.95 9	360.00 0	- 0.111	- 40.00 0	48.50 0	- 67.49 9	- 3272.32 5	0	
		Note:																		

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205 Abnormal tests

Testing date: N/A

Test Method:

205.1 All Power Control Systems shall be tested as described in UL1741 Section 47 and comply with section 47.1.1 and 47.1.2 of UL 1741.

Criteria:

Passing criteria are specified in the "Criteria" column of Table 44.

Results:

Not evaluate this time. See UL 1741 report which shall be provided by the client for details.

----- End of report -----