TEST REPORT

Applicant name and address	:	**Hitachi Hi-Rel Power Electronics Pvt. Ltd.** SM 3 & 4, Sanand – II GIDC, Industrial Estate, Boll Village, Sanand – 382 110, Gujarat, India.
Manufacture name and address	:	**Hitachi Hi-Rel Power Electronics Pvt. Ltd.** SM 3 & 4, Sanand – II GIDC, Industrial Estate, Boll Village, Sanand – 382 110, Gujarat, India.
Report No	:	191012014GZU-001 **Issue Date** : 28 Nov., 2019
Total Pages	:	22
Sample Description		
Name of Sample	:	Solar Grid Tied Inverter
Model Number	:	Hiverter Si-4.4K, Hiverter Si-5.5K, Hiverter Si-6.6K, Hiverter Si-8.8K, Hiverter Si-11K, Hiverter Si-12K
Sample Condition	:	Prototype
Quantity of Sample(s)	:	6 pcs
Date of Receival	:	12 Oct., 2019
Date of test Conducted	:	12 Oct., 2019 – 22 Nov., 2019
Test		
Test Requested	:	Power efficiency, loss measurement, Test A: clod, Test B: Dry heat, Test N: change of temperature, Test Db: Damp heat, cyclic
Test Method	:	Refer to IEC 60068-2-1:2007, IEC 60068-2-2:2007, IEC60068-2-14:2009, IEC60068-2-30:2005, IEC61683:1999
Test Conclusion:	:	Refer to test result
Other information	:	Six models have identical mechanical and structure except model name and some parameter of the software architecture.
Remark	:	• This test report is only for evaluation of the specified standard clauses listed in *Test Requested*. • When determine the test result, measurement uncertainty has been considered.

********** End of page **********

Tested by:

Tommy Zhong
Technical Manager

Approved by:

Jason Fu
Technical Team Leader

. The test results reported in this test report shall refer only to the sample actually tested and shall not refer or be deemed to refer to bulk from which such a sample may be said to have been obtained.
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Note:

1. This report does not imply the compliance of all requirements of above standards. It is only partial checking according to above standards.
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3. When determining of test conclusion, measurement uncertainty of test has been considered.

This report is based on original report 170418010GZU-001, dated 18 April 2017 Revision 1: 22 Nov., 2019 and changes the applicant, trade mark, product name and model name to apply for a new certificate.

The model Hiverter Si-4.4K, Hiverter Si-5.5K, Hiverter Si-6.6K, Hiverter Si-8.8K, Hiverter Si-11K, Hiverter Si-12K in this report are same as the model SOFAR 4.4KTL-X, SOFAR 5.5KTL-X, SOFAR 6.6KTL-X, SOFAR 8.8KTL-X,SOFAR 11KTL-X, SOFAR 12KTL-X respectively in the report 170418010GZU-001, dated 18 April 2017 Revision 1: 22 Nov., 2019, except the product name, model name and the trade Mark.

Electrical Rating:

Maximum d.c. input voltage: 1000 Vdc

Input voltage range: 160-960 Vdc

MPPT voltage range (full Load): 190-850 V (for Hiverter Si-4.4K); 240-850 V (for Hiverter Si-5.5K); 290-850 V (for Hiverter Si-6.6K); 380-850 V (for Hiverter Si-8.8K); 480-850 V (for Hiverter Si-11K); 575-850 V (for Hiverter Si-12K);

Max. input current: 2×11 A

Nominal output voltage: 3/N/PE230V/400Vac

Max. output current: 3×6.4 A (for Hiverter Si-4.4K); 3×8.0 A (for Hiverter Si-5.5K); 3×9.6 A (for Hiverter Si-6.6K); 3×12.8A (for Hiverter Si-8.8K); 3×15.9 A (for Hiverter Si-11K); 3×19.1 A (for Hiverter Si-12K);

Nominal frequency: 50 Hz

Max. output power: 4400VA (for Hiverter Si-4.4K); 5500VA (for Hiverter Si-5.5K); 6600VA (for Hiverter Si-6.6K); 8800VA (for Hiverter Si-8.8K); 11000VA (for Hiverter Si-11K); 13200VA (for Hiverter Si-12K)

Ingress protection: IP65

Operating temperature range: -25～+60℃

Other than special notes, the model Hiverter Si-6.6K and Hiverter Si-12K used as representative for testing

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Test Results:

Clause	Title/ Description	Pass	Fail	N.A.	Comment[1]
IEC 61683: 1999 (Cl.6)	Power efficiency	✓			
IEC 61683: 1999 (Cl.7)	Loss measurement	✓			
IEC 60068-2-1:2007 (Cl. 5.2)	Test A: Cold	✓			
IEC 60068-2-2:2007 (Cl. 5.2)	Test B: Dry heat	✓			
IEC 60068-2-14:2009 (Cl. 7)	Test N: Change of temperature	✓			
IEC 60068-2-30:2005 (Cl. 7)	Test Db: Damp heat, cyclic	✓			

Remark:

1. If there is special attention or condition needed to be pointed out, it can be written down in the column of "comment".

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TEST REPORT

Test Results:

IEC 61683: 1999 Power efficiency

For model: Hiverter Si-4.4K
Test condition: Rated input voltage: 190 Vdc, Resistive load:

Power level	10%	25%	50%	75%	100%	120%
Input voltage (V)	188.27	189.15	189.17	188.74	194.18	--
Input current (A)	2.225	5.505	11.177	16.780	21.074	--
Input power (W)	418.51	1040.77	2113.56	3166.68	4091.89	--
Output voltage (V)	235.64	231.39	233.97	234.18	233.11	--
Output current (A)	1.082	1.704	3.268	4.631	5.776	--
Output power (W)	403.53	1010.92	2063.05	3092.83	3984.03	--
Efficiency (%)	96.56	97.29	97.80	97.86	97.56	--
Power factor	0.5277	0.8545	0.8993	0.9506	0.9862	--

b) Test condition: Rated input voltage: 600Vdc, Resistive load:

Power level	10%	25%	50%	75%	100%	120%
Input voltage (V)	589.13	594.14	595.81	597.45	597.84	--
Input current (A)	0.728	1.775	3.517	5.248	6.985	--
Input power (W)	428.36	1053.88	2094.86	3135.37	4175.73	--
Output voltage (V)	230.65	231.33	233.60	233.90	232.48	--
Output current (A)	1.066	1.728	3.062	4.476	5.938	--
Output power (W)	416.04	1029.40	2051.94	3071.51	4084.61	--
Efficiency (%)	97.27	97.84	98.12	98.16	98.02	--
Power factor	0.5642	0.8584	0.9563	0.9781	0.9863	--

c) Test condition: Rated input voltage: 800 Vdc, Resistive load:

Power level	10%	25%	50%	75%	100%	120%
Input voltage (V)	782.04	791.51	795.99	797.89	796.26	--
Input current (A)	0.556	1.335	2.642	3.941	5.250	--
Input power (W)	431.24	1055.78	2102.13	3144.02	4179.44	--
Output voltage (V)	231.57	230.62	231.33	230.93	231.37	--
Output current (A)	1.405	1.972	3.231	4.646	6.068	--
Output power (W)	417.98	1030.23	2055.57	3076.05	4084.81	--
Efficiency (%)	97.06	97.74	97.96	98.03	97.93	--
Power factor	0.4285	0.7550	0.9168	0.9558	0.9699	--

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TEST REPORT

Test Results:

IEC 61683: 1999 Power efficiency

For model: Hiverter Si-5.5K
Test condition: Rated input voltage: 240 Vdc, Resistive load:

Power level	10%	25%	50%	75%	100%	120%
Input voltage (V)	238.37	239.09	238.75	238.43	234.04	--
Input current (A)	2.187	5.418	10.813	16.201	21.911	--
Input power (W)	520.90	1294.93	2581.34	3862.49	5127.73	--
Output voltage (V)	231.01	231.31	231.97	233.25	232.45	--
Output current (A)	1.595	2.284	3.891	5.592	7.235	--
Output power (W)	502.94	1258.70	2522.96	3777.85	4993.74	--
Efficiency (%)	96.72	97.36	97.93	98.01	97.58	--
Power factor	0.4549	0.7941	0.9317	0.9654	0.9897	--

b) Test condition: Rated input voltage: 600Vdc, Resistive load:

Power level	10%	25%	50%	75%	100%	120%
Input voltage (V)	597.05	596.62	598.38	597.79	598.60	--
Input current (A)	0.889	2.183	4.343	6.504	8.658	--
Input power (W)	530.05	1301.72	2598.54	3887.87	5182.17	--
Output voltage (V)	234.44	228.37	226.26	226.15	232.54	--
Output current (A)	1.586	2.129	3.991	5.788	7.418	--
Output power (W)	514.93	1272.04	2545.13	3809.52	5070.44	--
Efficiency (%)	97.32	97.89	98.14	98.18	98.04	--
Power factor	0.4615	0.8729	0.9395	0.9700	0.9798	--

c) Test condition: Rated input voltage: 800 Vdc, Resistive load:

Power level	10%	25%	50%	75%	100%	120%
Input voltage (V)	796.07	798.38	799.58	799.59	799.50	--
Input current (A)	0.673	1.646	3.260	4.876	6.494	--
Input power (W)	532.55	1311.01	2604.62	3896.84	5190.25	--
Output voltage (V)	230.58	231.40	232.20	231.28	231.45	--
Output current (A)	2.078	2.610	4.124	5.835	7.589	--
Output power (W)	516.09	1280.04	2547.85	3813.06	5074.18	--
Efficiency (%)	97.07	97.80	98.01	98.05	97.96	--
Power factor	0.3589	0.7063	0.8869	0.9419	0.9629	--

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TEST REPORT

Test Results:

IEC 61683: 1999 Power efficiency

For model: Hiverter Si-6.6K
Test condition: Rated input voltage: 290 Vdc, Resistive load:

Power level	10%	25%	50%	75%	100%	120%
Input voltage (V)	288.85	289.02	288.78	288.29	288.02	--
Input current (A)	2.179	5.411	10.800	16.193	21.578	--
Input power (W)	629.06	1563.56	3118.63	4668.11	6214.73	--
Output voltage (V)	233.75	232.50	233.15	232.79	232.86	--
Output current (A)	1.658	2.575	4.586	6.707	8.812	--
Output power (W)	607.95	1520.61	3049.12	4567.26	6058.50	--
Efficiency (%)	96.80	97.42	97.97	98.04	97.68	--
Power factor	0.5227	0.8466	0.9505	0.9750	0.9842	--

b) Test condition: Rated input voltage: 600Vdc, Resistive load:

Power level	10%	25%	50%	75%	100%	120%
Input voltage (V)	597.97	597.49	597.77	598.17	598.12	--
Input current (A)	1.067	2.637	5.243	7.845	10.450	--
Input power (W)	637.40	1574.95	3133.82	4692.40	6250.30	--
Output voltage (V)	232.52	232.14	231.99	231.62	232.03	--
Output current (A)	1.657	2.604	4.630	6.776	8.923	--
Output power (W)	619.74	1539.36	3070.74	4599.42	6117.09	--
Efficiency (%)	97.39	97.91	98.18	98.22	98.07	--
Power factor	0.5362	0.8488	0.9529	0.9769	0.9849	--

c) Test condition: Rated input voltage: 800 Vdc, Resistive load:

Power level	10%	25%	50%	75%	100%	120%
Input voltage (V)	797.87	798.83	799.00	799.19	798.92	--
Input current (A)	0.811	1.983	3.936	5.885	7.838	--
Input power (W)	642.79	1581.56	3142.78	4700.96	6260.71	--
Output voltage (V)	231.28	231.12	231.51	231.02	232.19	--
Output current (A)	2.123	2.903	4.827	6.939	9.049	--
Output power (W)	623.30	1544.54	3075.51	4601.43	6122.87	--
Efficiency (%)	97.13	97.85	98.05	98.08	98.00	--
Power factor	0.4232	0.7674	0.9173	0.9568	0.9714	--

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TEST REPORT

Test Results:

IEC 61683: 1999 Power efficiency

For model: Hiverter Si-8.8K
Test condition: Rated input voltage: 380 Vdc, Resistive load:

Power level	10%	25%	50%	75%	100%	120%
Input voltage (V)	380.16	380.05	379.49	379.58	379.44	--
Input current (A)	2.218	5.475	10.867	16.317	21.733	--
Input power (W)	842.80	2080.28	4123.69	6193.27	8246.00	--
Output voltage (V)	229.83	229.67	231.03	230.74	230.42	--
Output current (A)	1.836	3.273	6.010	8.915	11.809	--
Output power (W)	818.52	2035.70	4043.63	6078.26	8076.91	--
Efficiency (%)	97.27	98.05	98.26	98.34	98.15	--
Power factor	0.6464	0.9026	0.9707	0.9850	0.9895	--

b) Test condition: Rated input voltage: 600Vdc, Resistive load:

Power level	10%	25%	50%	75%	100%	120%
Input voltage (V)	599.87	599.85	599.75	599.46	611.47	--
Input current (A)	1.446	3.499	13.795	10.357	13.473	--
Input power (W)	862.97	2098.42	8272.67	6207.77	8237.79	--
Output voltage (V)	229.63	229.68	231.79	230.59	229.90	--
Output current (A)	1.829	3.280	11.810	8.956	11.843	--
Output power (W)	840.36	2055.12	8128.91	6103.77	8085.49	--
Efficiency (%)	97.53	98.14	98.46	98.53	98.35	--
Power factor	0.6667	0.9092	0.9899	0.9851	0.9899	--

c) Test condition: Rated input voltage: 800 Vdc, Resistive load:

Power level	10%	25%	50%	75%	100%	120%
Input voltage (V)	799.22	799.72	800.15	800.00	811.96	--
Input current (A)	1.065	2.609	5.221	7.796	10.201	--
Input power (W)	842.86	2081.13	4177.15	6236.22	8281.89	--
Output voltage (V)	231.72	231.48	228.92	229.35	229.95	--
Output current (A)	2.226	3.478	6.263	9.144	11.993	--
Output power (W)	819.45	2037.80	4098.18	6127.56	8125.39	--
Efficiency (%)	97.39	98.11	98.31	98.46	98.31	--
Power factor	0.5294	0.8436	0.9528	0.9739	0.9821	--

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TEST REPORT

Test Results:

IEC 61683: 1999 Power efficiency

For model: Hiverter Si-11K
Test condition: Rated input voltage: 480 Vdc, Resistive load:

Power level	10%	25%	50%	75%	100%	120%
Input voltage (V)	479.46	479.71	479.34	479.02	478.65	--
Input current (A)	2.169	5.381	10.745	16.105	21.462	--
Input power (W)	1039.73	2580.88	5150.17	7714.14	10272.67	--
Output voltage (V)	235.63	232.73	231.89	231.59	231.09	--
Output current (A)	2.004	3.880	7.409	11.022	14.634	--
Output power (W)	1010.21	2526.29	5050.78	7572.27	10062.68	--
Efficiency (%)	97.32	98.08	98.27	98.36	98.16	--
Power factor	0.7131	0.9325	0.9799	0.9889	0.9919	--

b) Test condition: Rated input voltage: 600Vdc, Resistive load:

Power level	10%	25%	50%	75%	100%	120%
Input voltage (V)	597.88	598.96	599.34	599.14	598.78	--
Input current (A)	1.750	4.322	8.608	12.898	17.185	--
Input power (W)	1043.89	2588.52	5159.02	7727.17	10289.87	--
Output voltage (V)	229.83	229.98	232.06	233.87	234.57	--
Output current (A)	2.021	3.929	7.435	10.958	14.470	--
Output power (W)	1016.83	2536.69	5071.14	7601.78	10100.93	--
Efficiency (%)	97.57	98.19	98.50	98.58	98.37	--
Power factor	0.7296	0.9358	0.9797	0.9888	0.9920	--

c) Test condition: Rated input voltage: 800 Vdc, Resistive load:

Power level	10%	25%	50%	75%	100%	120%
Input voltage (V)	800.14	800.29	799.59	799.63	799.99	--
Input current (A)	1.313	3.245	6.465	9.682	12.887	--
Input power (W)	1044.37	2594.73	5167.64	7741.19	10309.04	--
Output voltage (V)	230.87	230.66	230.21	230.07	230.58	--
Output current (A)	2.364	4.127	7.619	11.254	14.852	--
Output power (W)	1015.90	2541.40	5072.53	7608.19	10117.88	--
Efficiency (%)	97.42	98.14	98.36	98.48	98.35	--
Power factor	0.6205	0.8898	0.9640	0.9794	0.9848	--

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TEST REPORT

Test Results:

IEC 61683: 1999 Power efficiency

For model: Hiverter Si-12K
Test condition: Rated input voltage: 575 Vdc, Resistive load:

Power level	10%	25%	50%	75%	100%	120%
Input voltage (V)	572.07	573.61	573.61	573.31	573.05	--
Input current (A)	2.176	5.397	10.764	16.129	21.493	--
Input power (W)	1243.68	3095.60	6174.32	9246.87	12316.22	--
Output voltage (V)	230.08	230.44	231.08	233.28	234.11	--
Output current (A)	2.226	4.605	8.879	13.098	17.300	--
Output power (W)	1210.53	3031.90	6060.21	9083.44	12069.56	--
Efficiency (%)	97.50	98.14	98.35	98.43	98.20	--
Power factor	0.7879	0.9523	0.9846	0.9910	0.9933	--

b) Test condition: Rated input voltage: 600Vdc, Resistive load:

Power level	10%	25%	50%	75%	100%	120%
Input voltage (V)	598.09	597.89	598.16	598.05	597.86	--
Input current (A)	2.083	5.178	10.324	15.466	20.602	--
Input power (W)	1244.80	3095.66	6174.98	9248.94	12316.86	--
Output voltage (V)	231.60	231.52	231.69	231.83	231.88	--
Output current (A)	2.220	4.590	8.871	13.201	17.503	--
Output power (W)	1213.08	3033.87	6071.20	9098.39	12091.34	--
Efficiency (%)	97.61	98.20	98.52	98.59	98.37	--
Power factor	0.7862	0.9515	0.9846	0.9909	0.9931	--

c) Test condition: Rated input voltage: 800 Vdc, Resistive load:

Power level	10%	25%	50%	75%	100%	120%
Input voltage (V)	797.42	798.14	799.37	798.59	799.31	--
Input current (A)	1.575	3.890	7.738	11.600	15.456	--
Input power (W)	1252.16	3103.23	6184.21	9263.16	12353.36	--
Output voltage (V)	231.28	230.94	231.14	231.08	231.32	--
Output current (A)	2.552	4.789	9.014	13.368	17.717	--
Output power (W)	1219.25	3040.35	6071.35	9105.19	12124.11	--
Efficiency (%)	97.53	98.17	98.37	98.50	98.35	--
Power factor	0.6884	0.9163	0.9713	0.9825	0.9861	--

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Test Results:

IEC 61683: 1999
Power efficiency

7 Loss measurement

7,1 No-load loss

a) manufacturer's minimum rated input voltage:

model	Input voltage (V)	Input current (A)	Input power W1 (W)	Output voltage (V)	Frequency (Hz)	Output power W2 (W)
Hiverter Si-12K	575.02	0.0358	15.7	230.201	50	0
Hiverter Si-11K	480.19	0.0381	14.68	230.199	50	0
Hiverter Si-8.8K	380.17	0.043	13.3	230.199	50	0
Hiverter Si-6.6K	290.07	0.057	12.86	229.977	50	0
Hiverter Si-5.5K	240.05	0.0638	13.63	229.993	50	0
Hiverter Si-4.4K	190.02	0.0742	13.5	229.994	50	0

b) the inverter's nominal voltage or average of its rated input range: 300,0Vdc

model	Input voltage (V)	Input current (A)	Input power W1 (W)	Output voltage (V)	Frequency (Hz)	Output power W2 (W)
Hiverter Si-12K	600.36	0.0349	14.89	230.198	50	0
Hiverter Si-11K	600.32	0.0353	14.72	230.191	50	0
Hiverter Si-8.8K	600.37	0.0388	14.8	230.162	50	0
Hiverter Si-6.6K	600.07	0.06443	14.15	229.985	50	0
Hiverter Si-5.5K	600.04	0.0626	14.25	229.973	50	0
Hiverter Si-4.4K	600.06	0.0615	14.26	229.972	50	0

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c) 90% of the inverter's maximum input voltage: 440,0Vdc

model	Input voltage (V)	Input current (A)	Input power W1 (W)	Output voltage (V)	Frequency (Hz)	Output power W2 (W)
Hiverter Si-12K	765.07	0.0305	16.57	230.011	50	0
Hiverter Si-11K	765.08	0.031	15.65	229.863	50	0
Hiverter Si-8.8K	765.09	0.03	15.67	230.006	50	0
Hiverter Si-6.6K	765.04	0.0639	15.06	229.975	50	0
Hiverter Si-5.5K	765.06	0.0653	15.03	229.938	50	0
Hiverter Si-4.4K	765.07	0.0652	15.04	229.991	50	0

7.2 Standby loss

model	Input voltage (V)	Input power W1 (W)	Output voltage (V)	Frequency (Hz)	Output current (A)	Output power W2 (W)
Hiverter Si-12K	--	--	230.186	50	0.1644×3	0.605
Hiverter Si-11K	--	--	230.212	50	0.1644×3	0.607
Hiverter Si-8.8K	--	--	230.206	50	0.1644×3	0.606
Hiverter Si-6.6K	--	--	230.034	50	0.1646×3	0.608
Hiverter Si-5.5K	--	--	230.046	50	0.1647×3	0.608
Hiverter Si-4.4K	--	--	230.037	50	0.1647×3	0.607

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Test Results:

IEC 60068-2-1: 2007 Test A: Cold

Clause 5.2 Test Ab: Cold for non heat-dissipating specimens with gradual change of temperature

The specimen is introduced into the chamber which is at the temperature of the laboratory. The temperature is then adjusted to the temperature appropriate to the degree of severity, as specified in the relevant specification. After temperature stability of the test specimen has been reached, the specimen is exposed to these conditions for the specified duration. For specimens that are required to be operational (even though they do not meet the requirements of being heat dissipating), power shall then be applied to the specimen and a functional test is performed as necessary. A further period of stabilization may be necessary and the specimen shall then be exposed to the low temperature conditions for a duration as specified in the relevant specification. Specimens under test are normally in non-operating conditions.
Specimens under test are normally in non-operating conditions.

Test condition:
Test Temperature : -25℃
Test Duration : 16h

Test result:
After the test, the specimens can operation normally.

IEC 60068-2-2: 2007 Test B: Dry heat

Clause 5.2 Test Bb: Dry heat for non heat-dissipating specimens with gradual change of temperature

The specimen is introduced into the chamber, which is at the temperature of the laboratory. The temperature is then adjusted to the temperature appropriate to the degree of severity as specified in the relevant specification. After temperature stability of the test specimen has been reached, the specimen is exposed to these conditions for the specified duration. For specimens that are required to be operational (even though they do not meet the requirements of being heat dissipating) power shall then be applied to the specimen and a functional test is performed as necessary. A further period of stabilization may be necessary and the specimen shall then be exposed to the high temperature conditions for a duration as specified in the relevant specification.
Specimens under test are normally in non-operating conditions.

Test condition:
Test Temperature : +60℃
Test Duration : 16h

Test result:
After the test, the specimens can operation normally.

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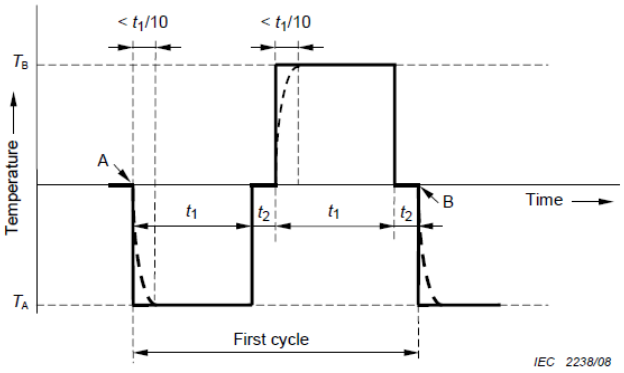
Test Results:

IEC 60068-2-14: 2009 Test N: Change of temperature

Clause 7 Test Na: Rapid change of temperature with prescribed time of transfer

The severity of the test is defined by the combination of the two temperatures, the transfer time, the exposure time of the specimen and the number of cycles.
The lower temperature, T_A, shall be specified in the relevant specification and should be chosen from the test temperatures of IEC 60068-2-1 and IEC 60068-2-2.
The higher temperature, T_B, shall be specified in the relevant specification and should be chosen from the test temperatures of IEC 60068-2-1 and IEC 60068-2-2.
The exposure time, t_1, of each of the two temperatures depends upon the heat capacity of the specimen. It may be 3 h, 2 h, 1 h, 30 min or 10 min, or as specified in the relevant specification. Where no exposure period is specified in the relevant specification, it is understood to be 3 h.
The preferred number of test cycles is five, unless otherwise specified in the relevant specification.



Key

A start of first cycle
B end of first cycle and start of second cycle

NOTE The dotted curve is explained above.

Figure 2 – Na test cycle

Test condition:
Low temperature T_A: -25℃
High temperature T_B: +60℃
Duration of exposure time t_1: 3h
Duration of transfer time t_2: 3min
Number of cycles: 5
Recovery: 2h

Test result:
Initial measurements: Input: 507.89Vdc; 12.08A; 6.134kW Output: 230Vac; 8.649A; 5.983kW; 50Hz
Final measurements: Input: 502.28Vdc; 12.21A; 6.131kW Output: 230Vac; 8.655A; 5.979kW; 50Hz
Test with model Hiverter Si-6.6K
Initial measurements: Input: 559.52Vdc; 21.94A; 12.275kW Output: 230Vac; 17.259A; 11.950kW; 50Hz
Final measurements: Input: 555.98Vdc; 21.96A; 12.208kW Output: 230Vac; 17.160A; 11.885kW; 50Hz
Test with model Hiverter Si-12K

After the test, the specimens can operation normally.
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Test Results:

IEC 60068-2-30: 2005 Test Db: Damp heat, cyclic

Clause 7 Test Na: Rapid change of temperature with prescribed time of transfer

Variant 2 (see Figure 2b)
The temperature shall be lowered to 25 °C ± 3 K within 3 h to 6 h, but without the additional requirement for the first hour and one half as in variant 1. The relative humidity shall be not less than 80 % RH.

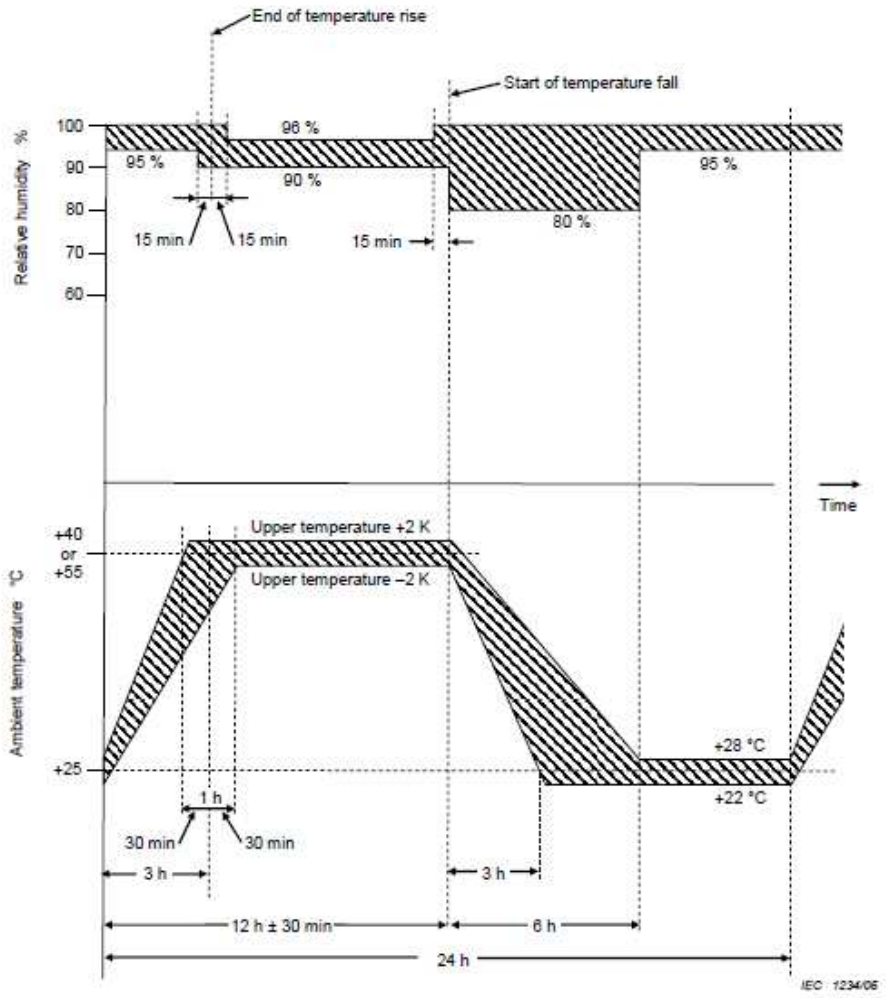

Figure 2b – Test Db – Test cycle – Variant 2

.

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Test Results:

Test condition:

Test Db, variant 2, b-cycle
The humidity level shall be 95 % ± 5 %
A minimum number of 3 cycles
Lower temperature: 25°C
Upper temperature: 55°C

Test result:

Initial measurements: Input: 502.10Vdc; 12.21A; 6.132kW Output: 230Vac; 8.658A; 5.980kW; 50Hz
Final measurements: Input: 500.11Vdc; 12.26A; 6.130kW Output: 230Vac; 8.654A; 5.978kW; 50Hz
Test with model Hiverter Si-6.6K
Initial measurements: Input: 559.83Vdc; 21.98A; 12.259kW Output: 230Vac; 17.266A; 11.955kW; 50Hz
Final measurements: Input: 561.98Vdc; 21.64A; 12.162kW Output: 230Vac; 17.100A; 11.842kW; 50Hz
Test with model Hiverter Si-12K

After the test, the specimens can operation normally.

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Overview

Heatsink view

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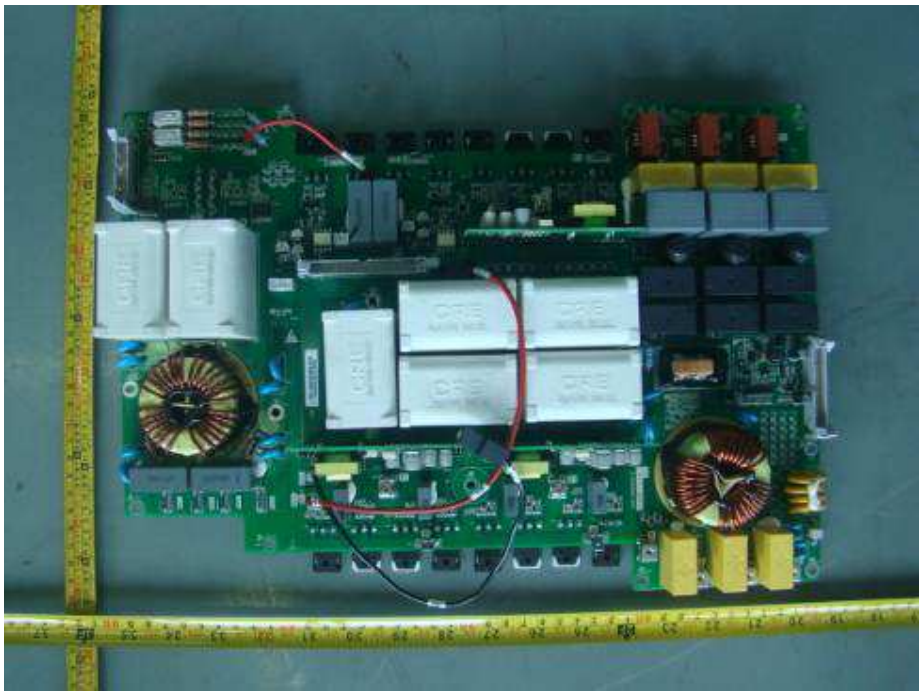
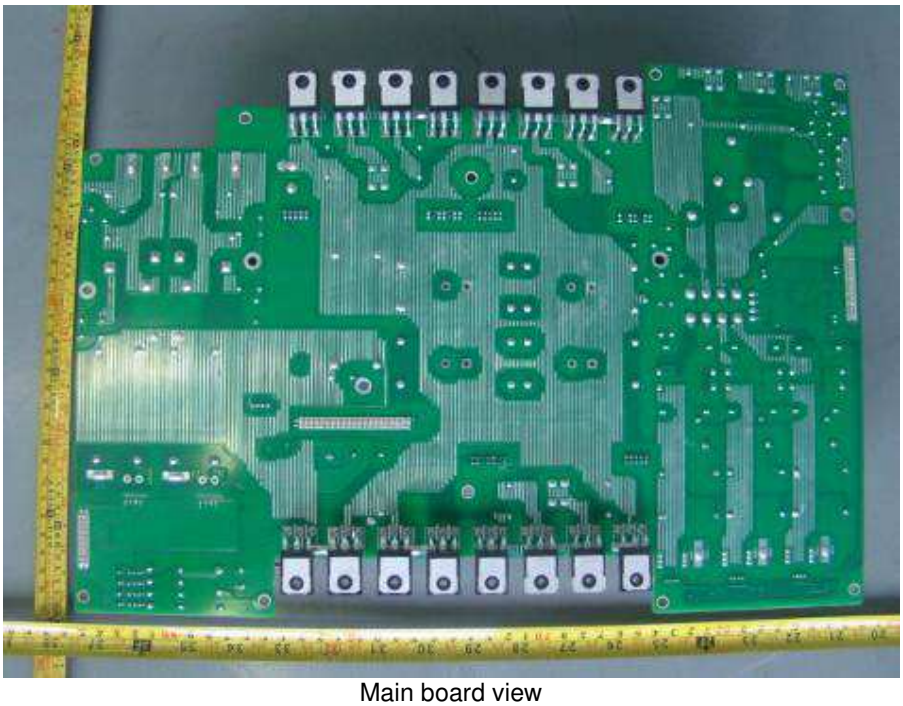


Main board view



Main board view

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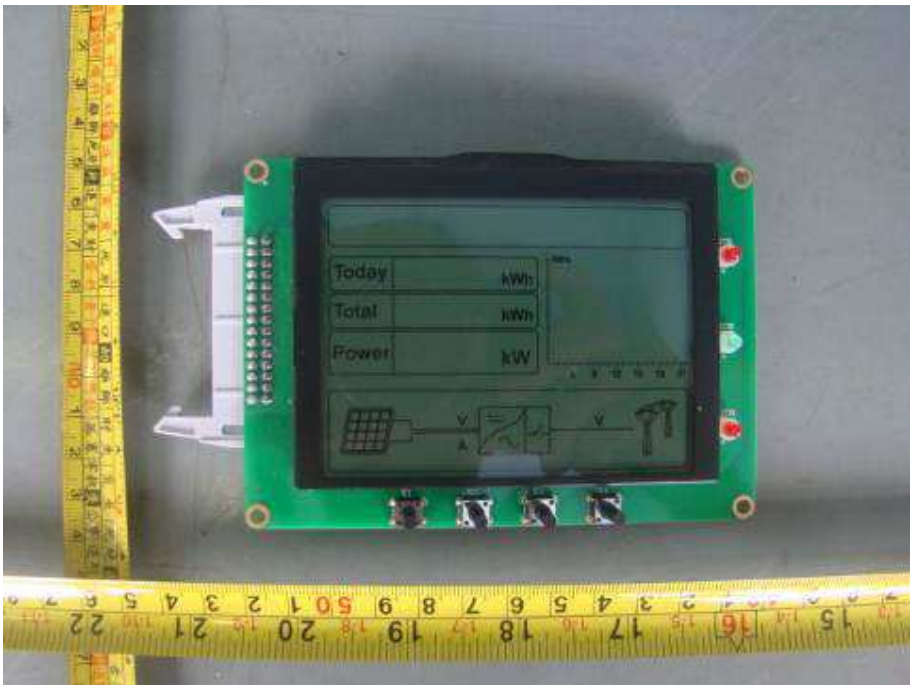
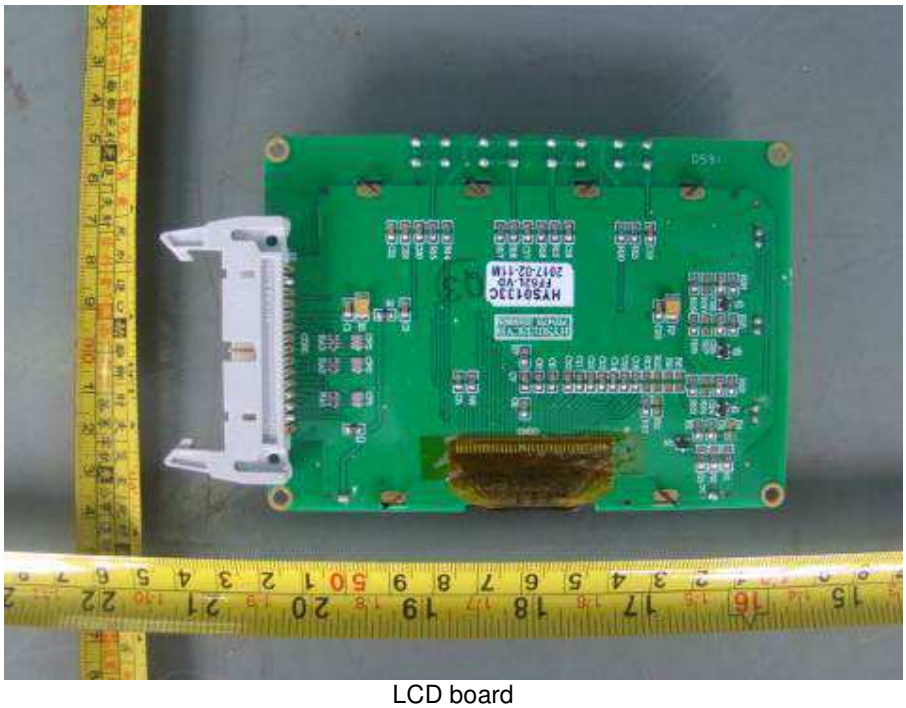


LCD board



LCD board

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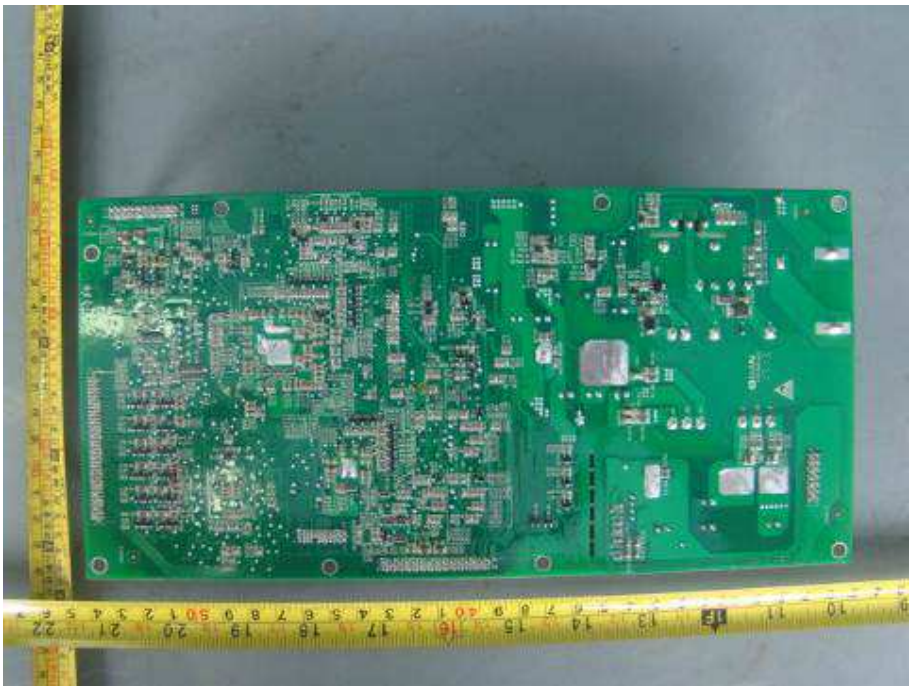
Control board



Control board

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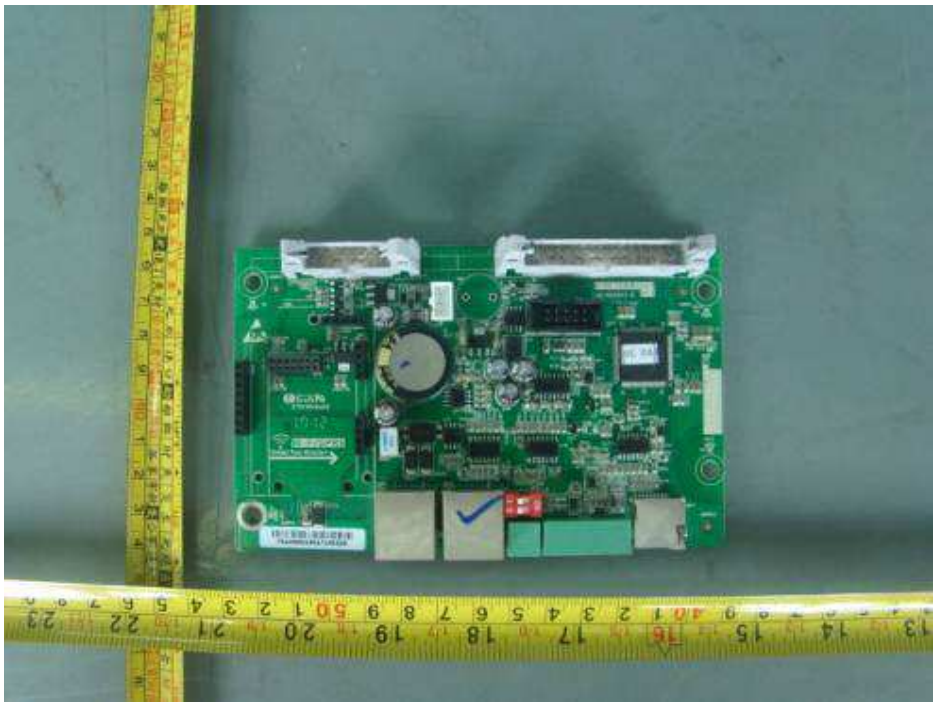
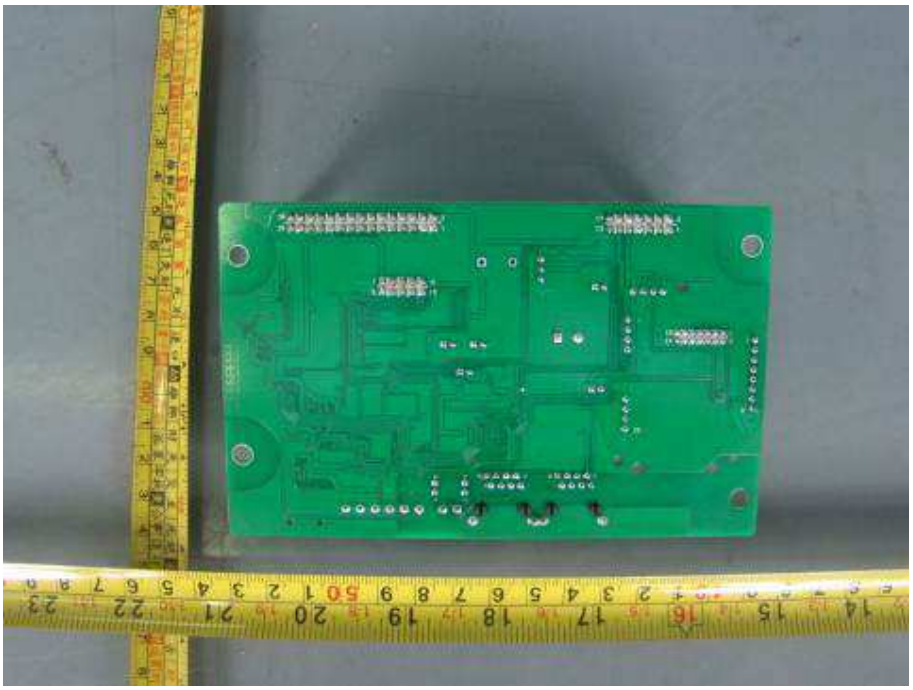


Communication board



Communication board

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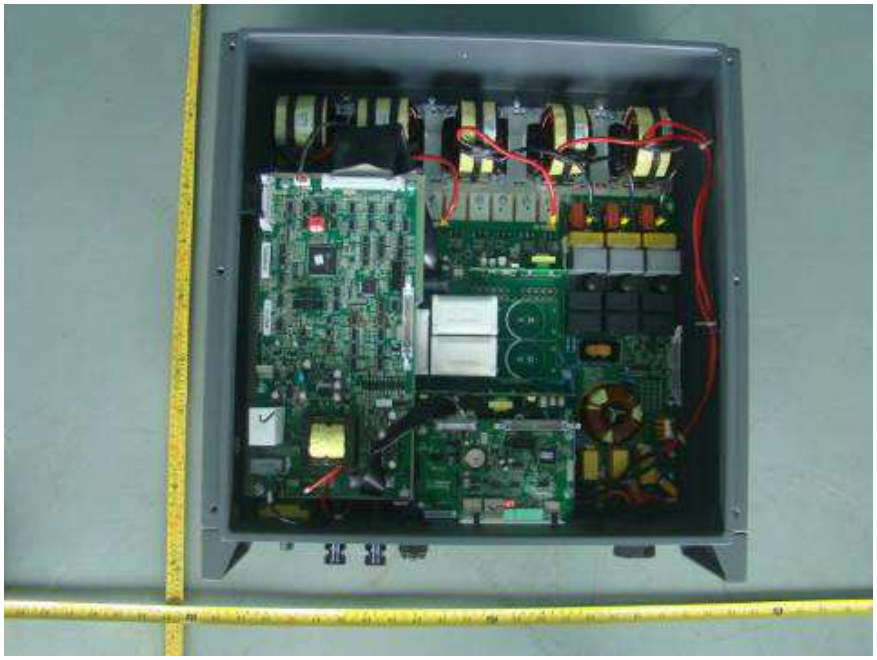
Internal view for Hiverter Si-8.8K, Hiverter Si-11K, Hiverter Si-12K



Internal view for Hiverter Si-4.4K, Hiverter Si-5.5K, Hiverter Si-6.6K

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Input/output terminal view

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