



Test Report: HRPG-1000N3-48

1000W Ultra-High Peak Power Supply

■ DESIGN VERIFY TEST

Output Function Test

Input Function Test

Protection Function Test

Control Function Test

Component Stress Test

■ SAFETY & E.M.C. TEST

Safety Test

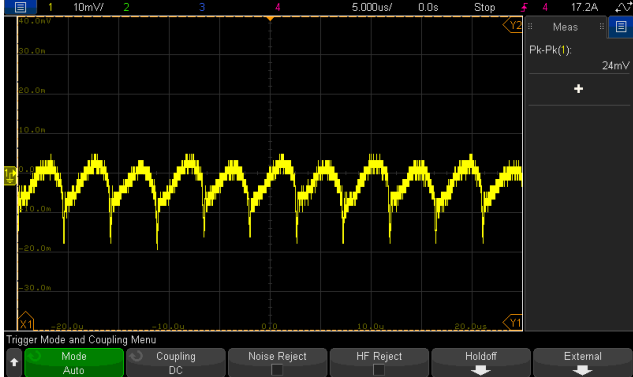
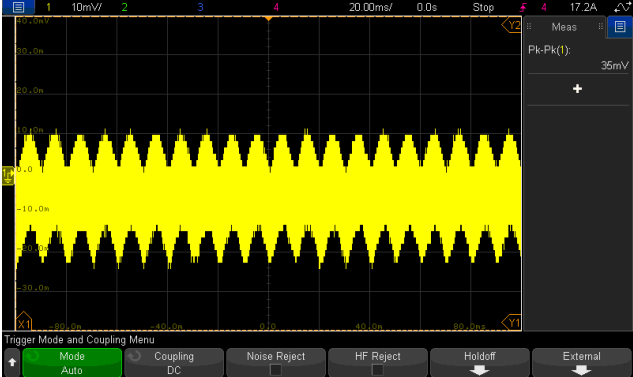
E.M.C. Test

■ RELIABILITY TEST

ENVIRONMENT TEST

■ DESIGN VERIFY TEST

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OUTPUT VOLTAGE ADJUST RANGE	CH1: 46V~ 56 V	I/P : 230 VAC I/P : 115 VAC O/P : MIN LOAD Ta : 25°C	43.46V~57.35V/230VAC 43.45V~57.35V/115VAC
2	OUTPUT VOLTAGE TOLERANCE	V1: -1.0 %~ +1.0 %	I/P: 90VAC /264VAC O/P:FULL/ MIN. LOAD Ta:25°C	V1: -0.01 %~ 0.03%
3	LINE REGULATION	V1: -0.5 %~ 0.5 %	I/P: 90VAC~ 264VAC O/P:FULL LOAD Ta:25°C	V1: 0 %~ 0.004%
4	LOAD REGULATION	V1: -0.5 %~ 0.5 %	I/P: 230VAC O/P:FULL ~MIN LOAD Ta:25°C	V1: -0.01 %~ 0.03%
5	OVER/UNDERSHOOT TEST	<±5%	I/P: 230VAC O/P:FULL LOAD Ta:25°C	-1.91%
6	RIPPLE & NOISE (Max)	V1: 250 mVp-p	I/P:230VAC O/P:FULL LOAD Ta:25°C	V1: 24mVp-p / high frequency 35mVp-p / low frequency
		high frequency :	low frequency :	
				
7	SET UP TIME(Max)	230VAC/1000ms 115VAC/2000ms	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	230VAC/ 339ms 115VAC/ 442ms
		INPUT=230VAC/50HZ @ FULL LOAD CH1 : Output Voltage CH2 : AC Input Voltage	INPUT=115VAC/60HZ @ FULL LOAD CH1 : Output Voltage CH2 : AC Input Voltage	

		<p>8</p> <p>RISE TIME (Max)</p> <p>230VAC/50ms 115VAC/50ms</p> <p>I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C</p>	<p>230VAC/ 4.76ms 115VAC/ 4.28ms</p>
<p>INPUT=230VAC/50HZ @ FULL LOAD CH1 : Output Voltage</p>		<p>INPUT=115VAC/60HZ @ FULL LOAD CH1 : Output Voltage</p>	
		<p>9</p> <p>HOLD UP TIME (Typ.)</p> <p>230VAC/16ms 115VAC/16ms</p> <p>I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C</p>	<p>230VAC/ 25.6ms 115VAC/ 25.2ms</p>
<p>INPUT=230VAC/50HZ @ FULL LOAD CH1 : Output Voltage CH2 : AC Input Voltage</p>		<p>INPUT=115VAC/60HZ @ FULL LOAD CH1 : Output Voltage CH2 : AC Input Voltage</p>	
		<p>10</p> <p>DYNAMIC LOAD</p> <p>V1: 4800mVp-p</p> <p>I/P: 230VAC O/P: (1)FULL /50% LOAD 50%DUTY / 120HZ (2)FULL /50% LOAD 50%DUTY / 1KHZ Ta:25°C</p>	<p>306mVp-p 324mVp-p</p>

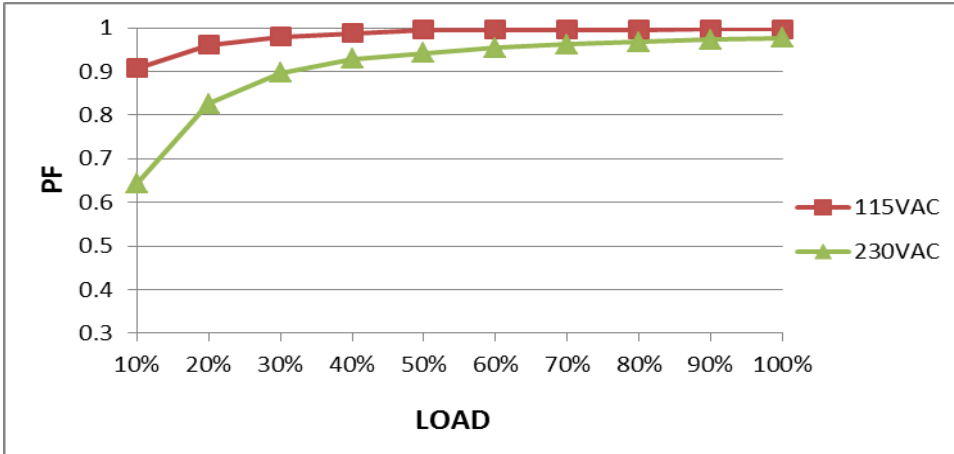
	FULL /50% LOAD 50%DUTY / 120HZ		FULL /50% LOAD 50%DUTY / 1KHZ	
11	TRANSIENT RECOVERY TIME	V1: 4800 mVp-p <500us	I/P: 230VAC O/P:40% LOAD CHANGE 50%DUTY/120HZ 1.25A/us	236mVp-p 0us
12	PEAK LOAD	PEAK LOAD@5S	I/P: 264VAC I/P: 200VAC I/P: 100VAC O/P: PEAK LOAD	TEST : I/P: 264VAC <u>OK</u> I/P: 200VAC <u>OK</u> I/P: 100VAC <u>OK</u>

INPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	INPUT VOLTAGE RANGE	90VAC~264VAC (300VAC for 5 sec.) 127VDC~ 370VDC 	(1) I/P:TESTING O/P: FULL / 80% LOAD (2) I/P:DC TESTING(L:+ N:-) O/P: FULL / 80% LOAD (3) I/P:DC TESTING(L:- N:+) O/P: FULL / 80% LOAD Ta:25°C I/P: HIGH-LINE +15%=300V O/P:FULL/MIN LOAD (PLEASE CHECK DERATING CURVE) ON: 30 Sec OFF: 30 Sec 10MIN (POWER ON/OFF NO DAMAGE)	(1) 82.7V~264V/ FULL LOAD 75.8V~264V/ 80% LOAD (2) 117.9Vdc~370Vdc/FULL LOAD 117.9Vdc~370Vdc/80% LOAD (3) 117.9Vdc~370Vdc/FULL LOAD 117.9Vdc~370Vdc/80% LOAD TEST : OK
2	INPUT FREQUENCY RANGE	47HZ ~63 HZ NO DAMAGE	I/P:90 VAC ~264 VAC O/P:FULL~MIN LOAD Ta:25°C	TEST: OK
3	INPUT CURRENT (Typ.)	230V/ 5 A 115V/ 8.5 A	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	I =4.796A/ 230VAC I =8.303A/ 115VAC
4	LEAKAGE CURRENT	< 1.2mA / 240 VAC	I/P : 240 VAC O/P : Min LOAD Ta : 25°C	0.656mA
5	NO LOAD CONSUMPTION	<0.85W@RC OFF	I/P : 240VAC O/P : NO LOAD Ta : 25°C	0.645W/ 240VAC

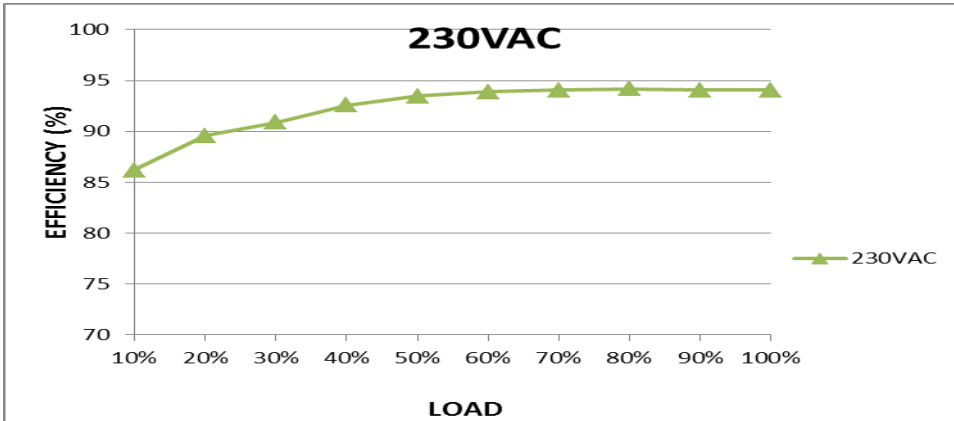
6	POWER FACTOR (Typ.)	0.95/230VAC 0.99/115VAC	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	PF=0.978/230VAC PF=0.997/115VAC
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P.F vs LOAD



7	EFFICIENCY(Typ.)	94%	I/P:230 VAC O/P:FULL LOAD Ta:25°C	94.13 %
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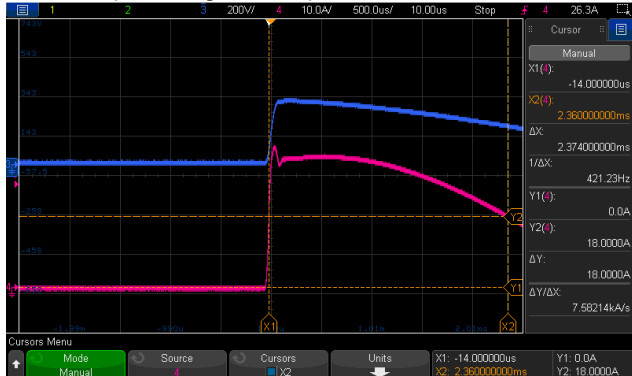
EFFICIENCY vs LOAD



8	INRUSH CURRENT(Typ.)	230V/40A 115V/25A COLD START	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	I =36.0A/ 230VAC I =18.5A/ 115VAC T50= 2374us/230V
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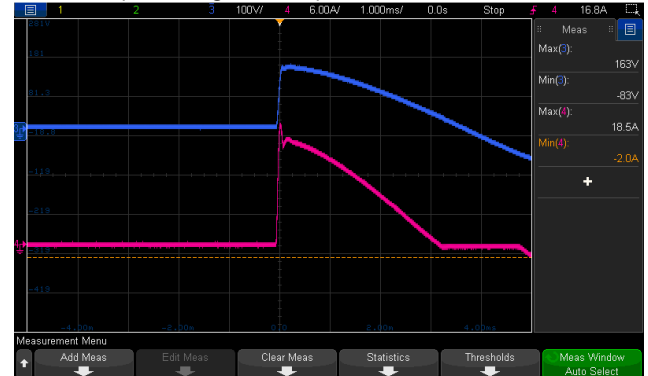
INPUT=230VAC/50HZ @ FULL LOAD

CH3: AC Input Voltage CH4: Input current



INPUT=115VAC/ 60HZ @ FULL LOAD

CH3: AC Input Voltage CH4: Input current



PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OVER LOAD PROTECTION	<p>Output power >105% rated for more than 5 seconds then shut down o/p voltage, re-power on to recover ;</p> <p>Output power >350% rated then shut down o/p voltage, re-power on to recover</p>	<p>I/P: 264VAC I/P: 230VAC I/P: 200VAC O/P: TESTING Ta: 25°C</p>	<p>>105%: 118.6%/ 264VAC 118.1%/ 230VAC 118.1%/200VAC</p> <p>>350% : 348.1%/ 264VAC 347.6%/ 230VAC 347.6%/200VAC</p> <p>PROTECTION TYPE : Output power >105% rated for more than 5 seconds then shut down o/p voltage, re-power on to recover ;</p> <p>Output power >350% rated then shut down o/p voltage, re-power on to recover</p>
2	OVER VOLTAGE PROTECTION	<p>58V~65V Protection type : Shut down o/p voltage, re-power on to recover</p>	<p>I/P: 264VAC I/P: 90VAC O/P: MIN LOAD Ta: 25°C</p>	<p>61.9V/ 264VAC 62.1V/ 90VAC</p> <p>PROTECTION TYPE : Shut down o/p voltage, re-power on to recover.</p>
3	OVER TEMPERATURE PROTECTION	<p>Protection type : Shut down o/p voltage, recovers automatically after temperature goes down</p>	<p>I/P: 264VAC I/P: 90VAC O/P: FULL LOAD</p>	<p>O.T.P. Active OK Protection type : Shut down o/p voltage, recovers automatically after temperature goes down</p>
4	SHORT PROTECTION	<p>SHORT EVERY OUTPUT 1 HOUR NO DAMAGE</p>	<p>I/P: 264VAC I/P: 90VAC O/P: FULL LOAD Ta: 25°C</p>	<p>NO DAMAGE PROTECTION TYPE : Shut down o/p voltage, re-power on to recover.</p>

CONTROL FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT		
1	REMOTE ON/OFF CONTROL	Power ON : short; Power OFF : open.	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	TEST: OK		
2	REMOTE SENSE	S+ / S- The remote sensing compensates voltage drop on the load wiring up to 0.5V	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	TEST: OK		
3	DC-OK SIGNAL	The TTL signal out, PSU turn on = 3.3 ~ 5.6V ; PSU turn off = 0 ~ 1V	I/P: 230 VAC O/P:FULL LOAD Ta:25°C	PSU turn on = 4.78 V PSU turn off = 0.05 V		
4	5V STANDBY	5VSB : 5V@0.3A ; tolerance 5%, ripple : 50mVp-p(max.)	I/P: 230 VAC O/P:TESTING Ta:25°C	TOLERANCE	RIPPLE	
				-0.72%~0.42 %	13mVp-p	
5	FAN ON/OFF CONTROL	Fan on/off by NTC(RT50) or 30% load min	I/P: 230 VAC O/P:TESTING		By NTC	LOAD (%)
				FAN ON	OK	0.48%
6	CURRENT SHARING	Up to 4000W or (3+1) units.	I/P: 230 VAC O/P: (The rated current per unit) x (Number of unit) x 0.9 Ta:25°C	TEST: OK		

COMPONENT STRESS TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	
1	PWM Transistor (D to S) or (C to E) Peak Voltage	Q910 / Q911 Rated: 66 A/ 600 V	AC ON/OFF I/P:High-Line =300V VDS: O/P: (1)Full Load (2)Output Short (3)Dynamic Load Full Load/ Min. Load 90%Duty/1KHz (4)Dynamic Load Full Load/ Min. Load 90%Duty/3KHz (5)Dynamic Load Full Load/ Min. Load 90%Duty/5KHz (6)Dynamic Load 100% Load/ Min. Load 50%Duty/120Hz (7)0%→400% Load. (8)Peak Load Ta:25°C	Q910 VDS: (1) 472V (2) 468V (3) 472V (4) 472V (5) 472V (6) 472V (7) 476V (8) 476V	Q911 VDS: (1) 476V (2) 468V (3) 480V (4) 476V (5) 476V (6) 476V (7) 484V (8) 480V



1000W Ultra-High Peak Power Supply

HRPG-1000N3 series

2	P.F.C Transistor (D to S) or (C to E) Peak Voltage	Q1 Rated : 73 A/ 600 V	AC ON/OFF I/P:High-Line =267V VDS: O/P: (1)Full Load (2)Output Short (3)Dynamic Load Full Load/ Min. Load 90%Duty/1KHz (4)Dynamic Load Full Load/ Min. Load 90%Duty/3KHz (5)Dynamic Load Full Load/ Min. Load 90%Duty/5KHz (6)Dynamic Load 100% Load/ Min. Load 50%Duty/120Hz (7)0%→400% Load. (8)Peak Load Ta:25°C	Q1 VDS: (1) 473V (2) 457V (3) 473V (4) 473V (5) 473V (6) 469V (7) 469V (8) 477V
3	P.F.C DIODE	D6 Rated : 20 A/ 650 V	I/P:High-Line =267V AC ON/OFF O/P: (1)Full Load (2)Output Short (3)Dynamic Load Full Load/ Min. Load 90%Duty/5KHz (4)Dynamic Load 100% Load/ Min. Load 50%Duty/120Hz (5) Peak Load Ta:25°C	(1) 412V (2) 396V (3) 412V (4) 412V (5) 410V
4	AUX MOS	U971 Rated : 1.8 A/ 700V	AC ON/OFF I/P:High-Line =300V VDS: O/P: (1)Full Load (2)Output Short (3)Dynamic Load Full Load/ Min. Load 90%Duty/1KHz (4)Dynamic Load Full Load/ Min. Load 90%Duty/3KHz (5)Dynamic Load Full Load/ Min. Load 90%Duty/5KHz (6)Dynamic Load 100% Load/ Min. Load 50%Duty/120Hz (7)0%→400% Load. (8)Peak Load Ta:25°C	VDS: (1) 557V (2) 531V (3) 553V (4) 553V (5) 557V (6) 557V (7) 545V (8) 545V
5	Diode Peak Voltage	Q501/Q503 /Q505/Q507 Rated: 36 A/200V	AC ON/OFF I/P:High-Line =300 V Vo=Vmax O/P: (1)Full Load (2)Output Short (3)Dynamic Load Full Load/ Min. Load 90%Duty/1KHz	Q501: Q503: Vo=Vmax Vo=Vmax VDS: VDS: (1) 153V (1) 166V (2) 141V (2) 160V (3) 152V (3) 168V (4) 152V (4) 168V

			<p>(4)Dynamic Load Full Load/ Min. Load 90%Duty/3KHz</p> <p>(5)Dynamic Load Full Load/ Min. Load 90%Duty/5KHz</p> <p>(6)Dynamic Load 100% Load/ Min. Load 50%Duty/120Hz</p> <p>(7)0%→400% Load.</p> <p>(8).NO LOAD</p> <p>(9) burst Mode 脫離前</p> <p>(10) Peak Load</p> <p>Vo=Vnormal O/P: (1)Full Load Ta:25°C</p>	<p>(5) 152V</p> <p>(6) 150V</p> <p>(7) 190V</p> <p>(8) 139V</p> <p>(9) 146V</p> <p>(10) 182V</p> <p>Vo=Vnormal</p> <p>(1) 153V</p> <p>Q505: Vo=Vmax VDS: (1) 166V (2) 161V (3) 162V (4) 164V (5) 164V (6) 162V (7) 184V (8) 153V (9) 157V (10) 184V Vo=Vnormal (1) 161V</p>	<p>(5) 167V</p> <p>(6) 168V</p> <p>(7) 188V</p> <p>(8) 139V</p> <p>(9) 174V</p> <p>(10) 184V</p> <p>Vo=Vnormal</p> <p>(1) 179V</p> <p>Q507: Vo=Vmax VDS: (1) 174V (2) 162V (3) 174V (4) 175V (5) 174V (6) 173V (7) 186V (8) 145V (9) 161V (10) 190V Vo=Vnormal (1) 166V</p>
6	Input Capacitor Voltage	C5 Rated :270 μ / 420 V	<p>I/P:High-Line =300V</p> <p>O/P: (1)Full Load input on/off (2) Min load input on /Off (3)Full Load /Min load Change (4)Full load continue (5)Peak Load on/off (320%) (6)Peak Load continue (320%)</p> <p>Ta:25°C</p>	<p>(1) 388V</p> <p>(2) 388V</p> <p>(3) 401V</p> <p>(4) 388V</p> <p>(5) 405V</p> <p>(6) 405V</p>	
7	Control IC Voltage Test	<p>PFC IC U1 Rated 12V~ 25V</p> <p>PWM IC U900 Rated 8.9 V~ 15.5V</p> <p>AUX PWM IC U971 Rated 15V~ 32V</p>	<p>AC ON/OFF</p> <p>I/P:High-Line =300 V</p> <p>O/P(1)FULL LOAD</p> <p>(2) Output Short</p> <p>(3)O.L.P</p> <p>(4)O.V.P.</p> <p>(5)NO LOAD VRmin(Low LINE)</p> <p>Ta:25°C</p>	<p>U1</p> <p>(1) 19.1V</p> <p>(2) 19.1V</p> <p>(3) 19.1V</p> <p>(4) 19.1V</p> <p>(5) 15.9V</p> <p>U900</p> <p>(1) 14.1V</p> <p>(2) 14.1V</p> <p>(3) 14.1V</p> <p>(4) 14.3V</p> <p>(5) 13.5V</p>	<p>U971</p> <p>(1) 19.4V</p> <p>(2) 19.4V</p> <p>(3) 19.4V</p> <p>(4) 19.2V</p> <p>(5) 19.2V</p>

■ SAFETY& E.M.C. TEST

SAFETY TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	WITHSTAND VOLTAGE	I/P-O/P: 3KVAC/min I/P-FG :2KVAC/min O/P-FG:0.5KVAC/min	I/P-O/P: 3.6 KVAC/min I/P-FG: 2.4 KVAC/min O/P-FG:0.6 KVAC/min Ta:25°C	I/P-O/P: 5.57 mA I/P-FG: 4.68 mA O/P-FG: 2.79 mA NO DAMAGE
2	ISOLATION RESISTANCE	I/P-O/P:500VDC>100MΩ I/P-FG: 500VDC>100MΩ O/P-FG:500VDC>100MΩ	I/P-O/P: 600 VDC I/P-FG: 600 VDC O/P-FG: 600 VDC Ta:25°C	I/P-O/P: 50 GΩ I/P-FG: 24841MΩ O/P-FG: 44154MΩ NO DAMAGE
3	GROUNDING CONTINUITY	FG(PE) TO CHASSIS OR TRACE < 100 mΩ	40A / 2min Ta:25°C	12mΩ

E.M.C TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	HARMONIC	BS EN/ EN61000-3-2 CLASS A	I/P:230VAC/50HZ O/P:FULL LOAD Ta:25°C	PASS
2	CONDUCTION	BS EN/ EN55032 (CISPR32) CLASS B	I/P : 230 VAC (50HZ) O/P : FULL/50% LOAD Ta : 25°C	PASS Test by certified Lab
3	RADIATION	BS EN/ EN55032 (CISPR32) CLASS B	I/P : 230 VAC (50HZ) O/P : FULL LOAD Ta : 25°C	PASS Test by certified Lab
4	E.S.D	BS EN/ EN61000-4-2 AIR : 8KV / Contact : 4KV	I/P : 230 VAC/50HZ O/P : FULL LOAD Ta : 25°C	CRITERIA A
5	E.F.T	BS EN/ EN61000-4-4 INDUSTRY INPUT : 2KV	I/P : 230 VAC/50HZ O/P : FULL LOAD Ta : 25°C	CRITERIA A
6	SURGE	BS EN/ EN61000-4-5 L-N : 2KV L,N-PE : 4KV	I/P : 230 VAC/50HZ O/P : FULL LOAD Ta : 25°C	CRITERIA A
7	Test by certified Lab & Test Report Prepare Any contradictions of the test results, please refer to the latest EMC test report			

■ RELIABILITY TEST

ENVIRONMENT TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT																																																																																																																								
1	TEMPERATURE RISE TEST	MODEL : HRP-1000N3-24 1. ROOM AMBIENT BURN-IN : 2 HRS I/P : 230VAC O/P : FULL LOAD Ta= 26.8 °C 2. HIGH AMBIENT BURN-IN : 2 HRS I/P : 230VAC O/P : FULL LOAD Ta= 60.9 °C																																																																																																																										
				<table border="1"> <thead> <tr> <th>NO</th> <th>Position</th> <th>ROOM AMBIENT Ta= 26.8 °C</th> <th>HIGH AMBIENT Ta= 60.9 °C</th> </tr> </thead> <tbody> <tr><td>1</td><td>RTH3</td><td>42.8°C</td><td>76.9°C</td></tr> <tr><td>2</td><td>LF2</td><td>42.2°C</td><td>77°C</td></tr> <tr><td>3</td><td>C1</td><td>34°C</td><td>69.2°C</td></tr> <tr><td>4</td><td>ZNR1</td><td>31°C</td><td>65.8°C</td></tr> <tr><td>5</td><td>LF1</td><td>40.4°C</td><td>76°C</td></tr> <tr><td>6</td><td>L900</td><td>54°C</td><td>87.7°C</td></tr> <tr><td>7</td><td>Q910</td><td>55°C</td><td>91.8°C</td></tr> <tr><td>8</td><td>Q911</td><td>50.5°C</td><td>86.6°C</td></tr> <tr><td>9</td><td>C950</td><td>37.2°C</td><td>72°C</td></tr> <tr><td>10</td><td>C11</td><td>41.5°C</td><td>75.7°C</td></tr> <tr><td>11</td><td>BD1</td><td>47.7°C</td><td>81°C</td></tr> <tr><td>12</td><td>Q1</td><td>38.9°C</td><td>73.3°C</td></tr> <tr><td>13</td><td>Q2</td><td>37.3°C</td><td>71.6°C</td></tr> <tr><td>14</td><td>TSW4</td><td>33.9°C</td><td>68.3°C</td></tr> <tr><td>15</td><td>L1</td><td>54°C</td><td>86.8°C</td></tr> <tr><td>16</td><td>C6</td><td>37.3°C</td><td>70.9°C</td></tr> <tr><td>17</td><td>T2coil</td><td>66.7°C</td><td>99.2°C</td></tr> <tr><td>18</td><td>T2core</td><td>53.1°C</td><td>85.1°C</td></tr> <tr><td>19</td><td>D935</td><td>34.7°C</td><td>64.7°C</td></tr> <tr><td>20</td><td>T1coil</td><td>66°C</td><td>99.9°C</td></tr> <tr><td>21</td><td>T1core</td><td>52.4°C</td><td>84.3°C</td></tr> <tr><td>22</td><td>D6</td><td>43.1°C</td><td>77.6°C</td></tr> <tr><td>23</td><td>Q508</td><td>43.1°C</td><td>76.8°C</td></tr> <tr><td>24</td><td>Q505</td><td>45.8°C</td><td>80.7°C</td></tr> <tr><td>25</td><td>RT50</td><td>42.4°C</td><td>78°C</td></tr> <tr><td>26</td><td>Q504</td><td>45.9°C</td><td>70.5°C</td></tr> <tr><td>27</td><td>Q502</td><td>44.9°C</td><td>79.2°C</td></tr> <tr><td>28</td><td>TSW3</td><td>36.7°C</td><td>71.8°C</td></tr> <tr><td>29</td><td>U502</td><td>44.8°C</td><td>79.6°C</td></tr> </tbody> </table>	NO	Position	ROOM AMBIENT Ta= 26.8 °C	HIGH AMBIENT Ta= 60.9 °C	1	RTH3	42.8°C	76.9°C	2	LF2	42.2°C	77°C	3	C1	34°C	69.2°C	4	ZNR1	31°C	65.8°C	5	LF1	40.4°C	76°C	6	L900	54°C	87.7°C	7	Q910	55°C	91.8°C	8	Q911	50.5°C	86.6°C	9	C950	37.2°C	72°C	10	C11	41.5°C	75.7°C	11	BD1	47.7°C	81°C	12	Q1	38.9°C	73.3°C	13	Q2	37.3°C	71.6°C	14	TSW4	33.9°C	68.3°C	15	L1	54°C	86.8°C	16	C6	37.3°C	70.9°C	17	T2coil	66.7°C	99.2°C	18	T2core	53.1°C	85.1°C	19	D935	34.7°C	64.7°C	20	T1coil	66°C	99.9°C	21	T1core	52.4°C	84.3°C	22	D6	43.1°C	77.6°C	23	Q508	43.1°C	76.8°C	24	Q505	45.8°C	80.7°C	25	RT50	42.4°C	78°C	26	Q504	45.9°C	70.5°C	27	Q502	44.9°C	79.2°C	28	TSW3	36.7°C	71.8°C	29	U502	44.8°C	79.6°C
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2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR (MIN)	I/P : 230 VAC O/P : 108%LOAD Ta : 25°C	TEST : OK																																																																																
3	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOUR	I/P : 264VAC/200VAC O/P : 100 %LOAD Ta= -45°C	TEST : OK																																																																																
4	HIGH HUMIDITY HIGH TEMPERATURE HIGH VOLTAGE TURN ON TEST	AFTER 12 HOURS IN CHAMBER ON CONTROL 60 °C/95 %R.H NO DAMAGE	I/P : 272 VAC O/P : FULL LOAD Ta= 59.4 °C HUMIDITY= 95 %R.H	TEST : OK																																																																																
5	TEMPERATURE COEFFICIENT	± 0.03%/°C(0~50°C)	I/P : 230 VAC O/P : FULL LOAD	0.02%/°C(0~50°C)																																																																																
6	STORAGE TEMPERATURE TEST	-40~85°C	1. Thermal shock Temperature : -45°C~ +90°C 2. Temperature change rate : 25°C / MIN 3. Dwell time low and high temperature : 30 MIN/EACH 4. Total test cycle : 10 CYCLE 5. Input/Output condition : STATIC																																																																																	
7	THERMAL SHOCK TEST	-40~60°C	1. Thermal shock Temperature : -45°C~ +65°C 2. Temperature change rate : 25°C / MIN 3. Dwell time low and high temperature : 30 MIN/EACH 4. Total test cycle : 16 CYCLE 5. Input/Output condition : 15cycle:230V/ FULL LOAD AC ON 3sec/AC OFF 1sec TEST 1cycle:230V/ FULL LOAD Burn In Test																																																																																	



8	VIBRATION TEST	10 ~ 500Hz, 5G 10min./1cycle, 60min. each along X, Y, Z axes	1 Carton & 1 Set (1) Waveform : Sine Wave (2) Frequency : 10~500Hz (3) Sweep Time : 12min/sweep cycle (4) Acceleration : 6G (5) Test Time : 180min in each axis (X.Y.Z) (6) Ta : 25°C
9	CAPACITOR LIFE CYCLE	SUPPOSE C107 IS THE MOST CRITICAL COMPONENT (1) I/P : 230VAC O/P : FULL LOAD Ta= 25 °C LIFE TIME (2) I/P : 230VAC O/P : FULL LOAD Ta= 60 °C LIFE TIME (3) I/P : 230VAC O/P : 75% LOAD Ta= 60 °C LIFE TIME (4) I/P : 230VAC O/P : 50% LOAD Ta= 60 °C LIFE TIME	(1) 1575336.8HRS (2) 131730.4HRS (3) 187927.8HRS (4) 228149.2HRS
10	MTBF	Conducted by Parts Stress Analysis Prediction 989.2K hrs min. Telcordia SR-332 (Bellcore) ; 130.6K hrs min. MIL-HDBK-217F (25°C)	
11	Ongoing Reliability Test	I/P : 230VAC O/P : FULL LOAD TA=50°C Demonstration Mean Time Between Failure : 50,000 hours	

TEST RESULT	TESTER	REVIEW	APPROVAL
PASS	Yuwei	Liutt	Wangdz

2020.10.1 TAG-QA-009