



# Test Report: XDR-960E-24

---

960W AC/DC Economical Ultra Slim Industrial DIN Rail  
Power

## ■ 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

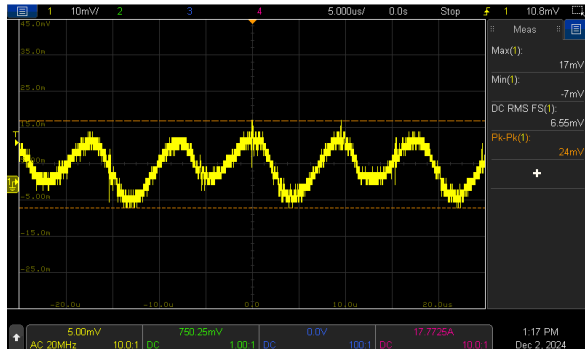
ENVIRONMENT TEST

## DESIGN VERIFY TEST

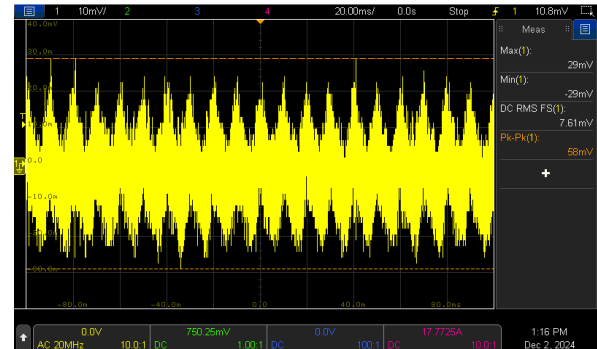
### OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OUTPUT VOLTAGE ADJUST RANGE	CH1: 24V~29V	I/P : 230 VAC O/P : MIN LOAD Ta : 25°C	23.08V~29.759V/230VAC
2	OUTPUT VOLTAGE TOLERANCE	V1: -1% ~ +1%	I/P: 180VAC~ 264VAC O/P:FULL~ MIN. LOAD Ta:25°C	V1: -0.0958% ~ 0.1083%
3	LINE REGULATION	V1: -0.5% ~ +0.5%	I/P: 180VAC~ 264VAC O/P:FULL LOAD Ta:25°C	V1: 0% ~ 0.0208%
4	LOAD REGULATION	V1: -1% ~ +1%	I/P: 230VAC O/P:FULL ~MIN LOAD Ta:25°C	V1: -0.0958% ~ 0.1083%
5	OVER/UNDERSHOOT TEST	< ±5%	I/P: 230VAC O/P:FULL LOAD / NO LOAD Ta:25°C	-2.0% →FULL LOAD 1.91% →NO LOAD
6	RIPPLE & NOISE (Max)	V1: 120mVp-p	I/P:230VAC O/P:FULL LOAD Ta:25°C	V1: 24mVp-p / high frequency 58mVp-p / low frequency

high frequency :



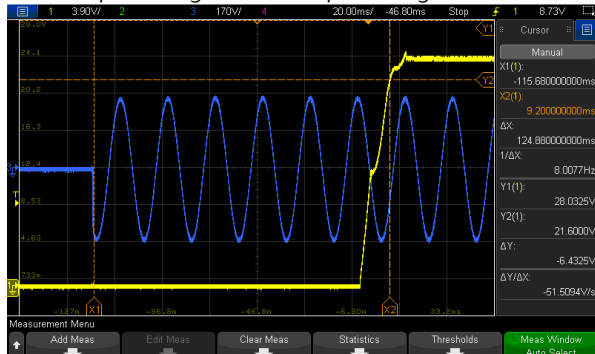
low frequency :



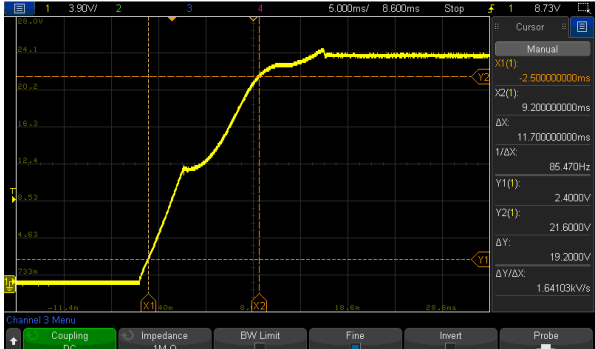

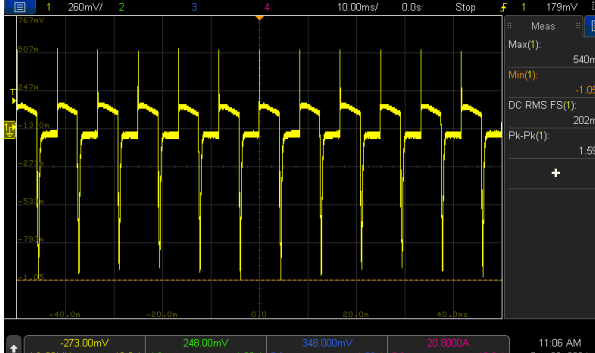
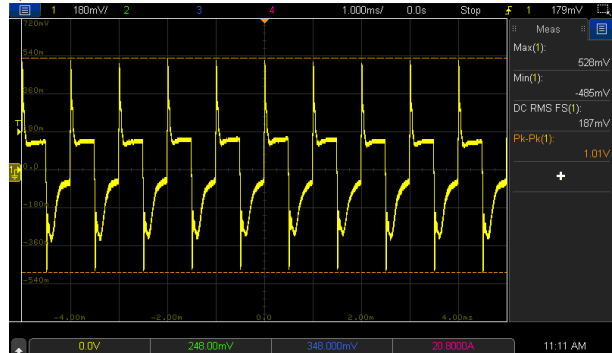
7	SET UP TIME (Max)	230VAC/500ms	I/P : 230 VAC O/P : FULL LOAD Ta : 25°C	230VAC/ 124.88ms
---	-------------------	--------------	---	------------------

INPUT=230VAC/50HZ @ FULL LOAD

CH1: Output Voltage CH3: AC Input Voltage





8	RISE TIME (Max)	230VAC/50ms	I/P : 230 VAC O/P : FULL LOAD Ta : 25°C	230VAC/ 11.7ms
<p>INPUT=230VAC/50HZ @ FULL LOAD CH1: Output Voltage</p> 				
9	HOLD UP TIME (Typ.)	230VAC/ 15ms	I/P : 230 VAC O/P : FULL LOAD Ta : 25°C	230VAC/ 21.4ms
<p>INPUT=230VAC/50HZ @ FULL LOAD CH1: Output Voltage CH3: AC Input Voltage</p> 				
10	DYNAMIC LOAD	V1: 2400mVp-p	I/P: 230VAC O/P: (1) FULL/ MIN LOAD 50%DUTY / 120HZ (2) FULL/ MIN LOAD 50%DUTY / 1KHZ Ta:25°C	(1) 1590mVp-p (2) 1010mVp-p
<div style="display: flex; justify-content: space-around;"> <div data-bbox="145 1576 767 1975"> <p>FULL / MIN LOAD 50%DUTY / 120HZ</p>  </div> <div data-bbox="767 1576 1527 1975"> <p>FULL / MIN LOAD 50%DUTY / 1KHZ</p>  </div> </div>				

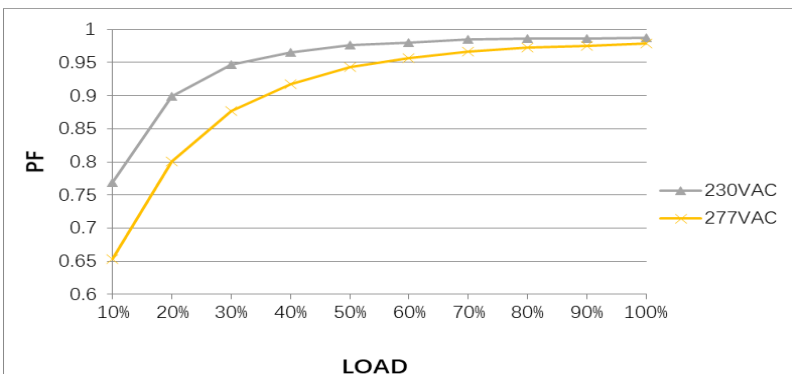


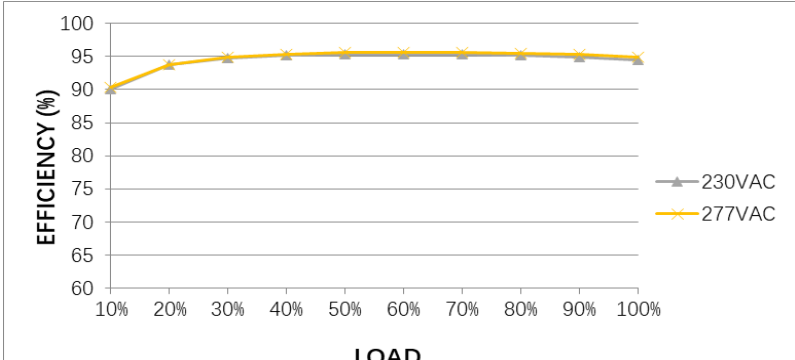
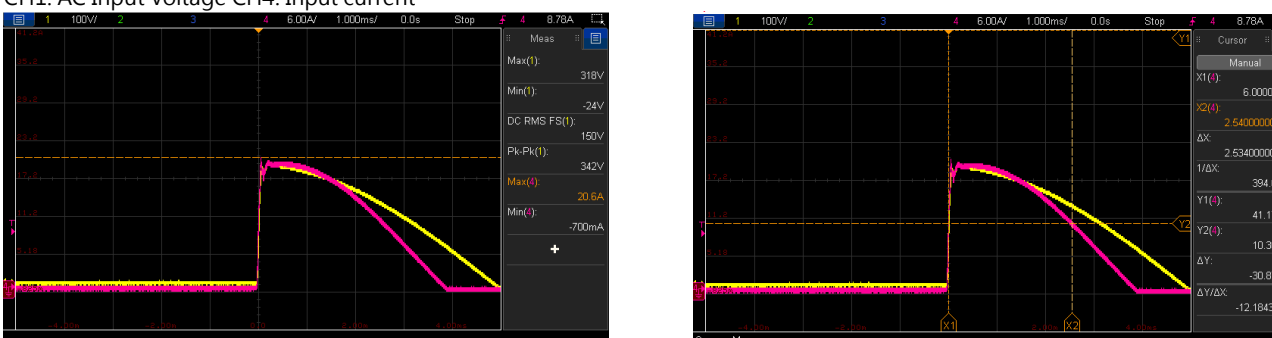
11	TRANSIENT RECOVERY TIME	V1: 2400mVp-p <500us	I/P: 230VAC O/P:40% LOAD CHANGE 50%DUTY/120HZ 2.5A/us	546mVp-p
----	-------------------------	-------------------------	---	----------

### INPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	INPUT VOLTAGE RANGE	180VAC~264VAC 254.5VDC~370VDC	(1) I/P: TESTING O/P: FULL / 85% LOAD (2) I/P: DC TESTING (L: + N: -) O/P: FULL / 85% LOAD (3) I/P: DC TESTING (L: - N: +) O/P: FULL / 85% LOAD Ta:25°C	(1)122.6VAC~264VAC/ FULL LOAD 122.6VAC~264VAC/ 85% LOAD (2) 172.4Vdc~370Vdc/FULL LOAD 172.4Vdc~370Vdc/85% LOAD (3) 172.4Vdc~370Vdc/FULL LOAD 172.4Vdc~370Vdc/85% LOAD
			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 )	TEST : OK
2	INPUT FREQUENCY RANGE	47HZ ~63 HZ NO DAMAGE	I/P:180VAC ~264 VAC O/P:FULL~MIN LOAD Ta:25°C	TEST : OK
3	INPUT CURRENT (Typ.)	230V/ 4.5A	I/P : 230 VAC O/P : FULL LOAD Ta : 25°C	I =4.493A/ 230VAC
4	LEAKAGE CURRENT	< 3.5mA / 240 VAC	I/P : 240 VAC/60HZ O/P : Min LOAD Ta : 25°C	0.871mA
5	NO LOAD CONSUMPTION	< 2.7W	I/P : 230VAC O/P : NO LOAD Ta : 25°C	2.01W/ 230VAC
6	POWER FACTOR (Typ.)	0.95/ 230VAC	I/P : 230 VAC O/P : FULL LOAD Ta : 25°C	PF=0.9786/230VAC

P.F vs LOAD



7	EFFICIENCY(Typ.)	94.5%	I/P:230 VAC O/P:FULL LOAD Ta:25°C	94.92%																																	
<p>EFFICIENCY vs LOAD</p>  <table border="1"> <caption>Efficiency vs Load Data</caption> <thead> <tr> <th>LOAD (%)</th> <th>230VAC Efficiency (%)</th> <th>277VAC Efficiency (%)</th> </tr> </thead> <tbody> <tr><td>10%</td><td>90.0</td><td>90.0</td></tr> <tr><td>20%</td><td>93.5</td><td>93.5</td></tr> <tr><td>30%</td><td>94.5</td><td>94.5</td></tr> <tr><td>40%</td><td>94.8</td><td>94.8</td></tr> <tr><td>50%</td><td>94.9</td><td>94.9</td></tr> <tr><td>60%</td><td>94.9</td><td>94.9</td></tr> <tr><td>70%</td><td>94.9</td><td>94.9</td></tr> <tr><td>80%</td><td>94.9</td><td>94.9</td></tr> <tr><td>90%</td><td>94.9</td><td>94.9</td></tr> <tr><td>100%</td><td>94.9</td><td>94.9</td></tr> </tbody> </table>					LOAD (%)	230VAC Efficiency (%)	277VAC Efficiency (%)	10%	90.0	90.0	20%	93.5	93.5	30%	94.5	94.5	40%	94.8	94.8	50%	94.9	94.9	60%	94.9	94.9	70%	94.9	94.9	80%	94.9	94.9	90%	94.9	94.9	100%	94.9	94.9
LOAD (%)	230VAC Efficiency (%)	277VAC Efficiency (%)																																			
10%	90.0	90.0																																			
20%	93.5	93.5																																			
30%	94.5	94.5																																			
40%	94.8	94.8																																			
50%	94.9	94.9																																			
60%	94.9	94.9																																			
70%	94.9	94.9																																			
80%	94.9	94.9																																			
90%	94.9	94.9																																			
100%	94.9	94.9																																			
8	INRUSH CURRENT(Typ.)	230V/30A COLD START	I/P : 230 VAC O/P : FULL LOAD Ta : 25°C	I =20.6A/ 230VAC T50= 2534us/230V																																	
<p>INPUT=230VAC/50HZ @ FULL LOAD CH1: AC Input Voltage CH4: Input current</p> 																																					

### PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OVER LOAD PROTECTION	105%~130% rated output power  Protection type: Hiccup mode when output voltage <30%, recovers automatically after fault condition is removed Constant current limiting without shutdown within 30%~100% rated output voltage, recovers automatically after fault condition is removed	I/P: 264VAC I/P: 230VAC I/P: 200VAC O/P:TESTING Ta:25°C	119.9%/ 264VAC 119.9%/ 230VAC 119.9%/ 200VAC  PROTECTION TYPE : Hiccup mode when output voltage <30%, recovers automatically after fault condition is removed Constant current limiting without shutdown within 30%~100% rated output voltage, recovers automatically after fault condition is removed



2	OVER VOLTAGE PROTECTION	30V~34V Protection type: Shut down o/p voltage, re-power on to recover	I/P: 264VAC I/P: 180VAC O/P:MIN LOAD Ta:25°C	32.14V/ 264VAC 32.14V/ 180VAC PROTECTION TYPE : Shut down o/p voltage, re-power on to recover
3	OVER TEMPERATURE PROTECTION	Protection type: Shut down o/p voltage, recovers automatically after temperature goes down	I/P: 264VAC I/P: 180VAC O/P:FULL LOAD	O.T.P. Active OK Protection type : Shut down o/p voltage, recovers automatically after temperature goes down
4	SHORT PROTECTION	SHORT EVERY OUTPUT 1 HOUR NO DAMAGE Protection type: Hiccup mode, recovers automatically after fault condition is removed	I/P: 264VAC I/P: 180VAC O/P: FULL LOAD Ta:25°C	NO DAMAGE OK PROTECTION TYPE : Hiccup mode, recovers automatically after fault condition is removed

### CONTROL FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	DC OK CONTACT RATINGS	30VDC/1A 30VAC/0.5A RESISTIVE LOAD	I/P:230VAC O/P:FULL LOAD Ta:25°C	TEST : OK
2	PARALLEL	Up to 3840W (3+1) units; Please refer to the Instruction manual	I/P : 230 VAC O/P : TESTING LOAD 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	Q13/Q14 : Rated: 62A/600 V	AC ON/OFF I/P: High-Line +3V =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 Ta:25°C	Q13 Q14 VDS: VDS: (1) 500V (1) 503V (2) 517V (2) 513V (3) 497V (3) 503V (4) 497V (4) 503V (5) 497V (5) 500V (6) 513V (6) 506V (7) 510V (7) 506V

2	P.F.C Transistor (D to S) or (C to E) Peak Voltage	Q2 Rated: 64A/600 V	AC ON/OFF I/P: High-Line +3V =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 Ta:25°C	Q2 : VDS: (1) 468V (2) 483V (3) 468V (4) 468V (5) 471V (6) 486V (7) 441V
3	P.F.C DIODE	D18 Rated: 8A/ 650V	I/P: High-Line +3V =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 Ta:25°C	(1) 443V (2) 443V (3) 443V (4) 439V
4	Diode Peak Voltage	Q100/Q107 Rated : 136A/ 100V	AC ON/OFF I/P: High-Line +3V =267 V <u>Vo=Vomax</u> 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).NO LOAD (9) burst Mode <u>Vo=Vnormal</u> O/P: (1) Full Load Ta:25°C	Q100 : <u>Vo=Vomax</u> VDS: (1) 72.7V (2) 72.7V (3) 72.7V (4) 72.7V (5) 72.2V (6) 73.2V (7) 70.3V (8) 70.3V (9) 69.4V <u>Vo=Vnormal</u> (1) 71.3V Q107 : <u>Vo=Vomax</u> VDS: (1) 72.6V (2) 72.6V (3) 72.6V (4) 72.6V (5) 72.1V (6) 73.6V (7) 66.8V (8) 66.8V (9) 66.8V <u>Vo=Vnormal</u> (1) 69.7V
5	Input Capacitor Voltage	C5 Rated : 180u/450V	I/P: High-Line +3V =267V O/P: (1)Full Load input on/off (2) Min load input on /Off (3) Full Load /Min load Change (4) Full load continue Ta:25°C	(1) 442V (2) 436V (3) 445V (4) 430V

6	Control IC Voltage Test	<p>PWM IC U5 Rated : 8.9V~ 15.5V</p> <p>PFC IC U2 Rated : 9.75V~ 20V</p> <p>O/P IC U100 : Rated : 4.2V~35V</p> <p>U103 : Rated: 4.5V~ 36V</p> <p>U104 : Rated: 3.3~24 V</p>	<p>AC ON/OFF I/P: High-Line +3V =267 V O/P: (1) FULL LOAD (2) Output Short (3) O.L.P (4) O.V.P. (5) NO LOAD VRmin (LOW LINE) Ta:25°C</p>	<p>U2/U5: (1) 14.2V (2) 14.4V (3) 14.4V (4) 14.3V (5) 14.3V</p> <p>U100/U103/U104: (1) 11.59V (2) 11.66V (3) 11.59V (4) 11.43V (5) 11.59V</p>
---	-------------------------	---	--	---

## ■ SAFETY& E.M.C. TEST

### SAFETY TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	WITHSTAND VOLTAGE	<p>I/P-O/P: 4 K VAC/min I/P-FG : 2 K VAC/min O/P-FG: 1.5 KVAC/min O/P-DC OK: 0.5 KVAC/min</p>	<p>I/P-O/P: 4.4 KVAC/min I/P-FG: 2.4 KVAC/min O/P-FG: 1.8 KVAC/min O/P-DC OK: 0.6 KVAC/min Ta:25°C</p>	<p>I/P-O/P: 4.45 mA I/P - FG : 3.12 mA O/P-FG: 5.43 mA O/P-DC OK: 0.007 mA NO DAMAGE</p>
2	ISOLATION RESISTANCE	<p>I/P-O/P: 500 VDC&gt;100MΩ O/P-FG: 500 VDC&gt;100MΩ I/P-FG: 500 VDC &gt;100MΩ</p>	<p>I/P-O/P: 600 VDC I/P-FG: 600 VDC O/P-FG: 600 VDC Ta:25°C</p>	<p>I/P-O/P: 50 GΩ I/P - FG : 50 GΩ O/P-FG: 50 GΩ NO DAMAGE</p>
3	GROUNDING CONTINUITY	<p>FG(PE) TO CHASSIS OR TRACE &lt; 100 mΩ</p>	<p>40A / 2min Ta:25°C</p>	<p>8mΩ</p>

### E.M.C TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	HARMONIC	<p>BS EN/EN61000-3-2 ■ CLASS A</p>	<p>I/P:230VAC/50HZ O/P:FULL LOAD Ta:25°C</p>	<p>■ PASS □ FAIL</p>
2	CONDUCTION	<p>BS EN/EN55032 (CISPR32) / BS EN/EN61204-3 / CNS15936 CLASS B</p>	<p>I/P : 230 VAC (50HZ)/115 VAC (60HZ) O/P: FULL/50% LOAD/10% LOAD Ta : 25°C</p>	<p>PASS Test by certified Lab</p>
3	RADIATION	<p>BS EN/EN55032 (CISPR32) / BS EN/EN61204-3 / CNS15936 CLASS B</p>	<p>I/P : 230 VAC (50HZ)/115 VAC (60HZ) O/P: FULL/50% LOAD/10% LOAD Ta : 25°C</p>	<p>PASS Test by certified Lab</p>



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	<input checked="" type="checkbox"/> CRITERIA A <input type="checkbox"/> CRITERIA B
5	E.F.T	BS EN/EN61000-4-4 INPUT : 2KV	I/P : 230 VAC/50HZ O/P : FULL LOAD Ta : 25°C	<input checked="" type="checkbox"/> CRITERIA A <input type="checkbox"/> CRITERIA B
6	SURGE	BS EN/EN61000-4-5 2KV/Line-Line 4KV/Line-Line-Chassis	I/P : 230 VAC/50HZ O/P : MIN/FULL LOAD D Ta : 25°C	<input checked="" type="checkbox"/> CRITERIA A <input type="checkbox"/> CRITERIA B
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 : XDR-960E-24 1. ROOM AMBIENT BURN-IN : 2HRS I/P : 230VAC O/P : FULL LOAD Ta= 21.7 °C 2. HIGH AMBIENT BURN-IN : 2HRS I/P : 230VAC O/P : FULL LOAD Ta= 51.8 °C																																																																										
				<table border="1"> <thead> <tr> <th>NO</th> <th>Position</th> <th>ROOM AMBIENT Ta=21.7°C</th> <th>HIGH AMBIENT Ta=51.8°C</th> </tr> </thead> <tbody> <tr><td>1</td><td>C2</td><td>65.3°C</td><td>94.4°C</td></tr> <tr><td>2</td><td>LF2</td><td>69.8°C</td><td>99.1°C</td></tr> <tr><td>3</td><td>BD1</td><td>91.9°C</td><td>116°C</td></tr> <tr><td>4</td><td>RTH2</td><td>73.6°C</td><td>102.4°C</td></tr> <tr><td>6</td><td>L5</td><td>76.7°C</td><td>105.4°C</td></tr> <tr><td>7</td><td>Q4</td><td>63.5°C</td><td>91.9°C</td></tr> <tr><td>8</td><td>Q2</td><td>67.4°C</td><td>95.5°C</td></tr> <tr><td>9</td><td>C60</td><td>55°C</td><td>84°C</td></tr> <tr><td>10</td><td>C5</td><td>55.7°C</td><td>84.4°C</td></tr> <tr><td>11</td><td>C6</td><td>53.6°C</td><td>82.2°C</td></tr> <tr><td>12</td><td>Q5</td><td>62.3°C</td><td>90.5°C</td></tr> <tr><td>13</td><td>U2</td><td>58.5°C</td><td>86.7°C</td></tr> <tr><td>14</td><td>D19</td><td>70.2°C</td><td>98.2°C</td></tr> <tr><td>15</td><td>U1</td><td>66.2°C</td><td>93.5°C</td></tr> <tr><td>16</td><td>D18</td><td>64.2°C</td><td>92.1°C</td></tr> <tr><td>17</td><td>D16</td><td>62.5°C</td><td>90.4°C</td></tr> <tr><td>18</td><td>Q14</td><td>63.5°C</td><td>92.5°C</td></tr> </tbody> </table>	NO	Position	ROOM AMBIENT Ta=21.7°C	HIGH AMBIENT Ta=51.8°C	1	C2	65.3°C	94.4°C	2	LF2	69.8°C	99.1°C	3	BD1	91.9°C	116°C	4	RTH2	73.6°C	102.4°C	6	L5	76.7°C	105.4°C	7	Q4	63.5°C	91.9°C	8	Q2	67.4°C	95.5°C	9	C60	55°C	84°C	10	C5	55.7°C	84.4°C	11	C6	53.6°C	82.2°C	12	Q5	62.3°C	90.5°C	13	U2	58.5°C	86.7°C	14	D19	70.2°C	98.2°C	15	U1	66.2°C	93.5°C	16	D18	64.2°C	92.1°C	17	D16	62.5°C	90.4°C	18	Q14	63.5°C	92.5°C
NO	Position	ROOM AMBIENT Ta=21.7°C	HIGH AMBIENT Ta=51.8°C																																																																									
1	C2	65.3°C	94.4°C																																																																									
2	LF2	69.8°C	99.1°C																																																																									
3	BD1	91.9°C	116°C																																																																									
4	RTH2	73.6°C	102.4°C																																																																									
6	L5	76.7°C	105.4°C																																																																									
7	Q4	63.5°C	91.9°C																																																																									
8	Q2	67.4°C	95.5°C																																																																									
9	C60	55°C	84°C																																																																									
10	C5	55.7°C	84.4°C																																																																									
11	C6	53.6°C	82.2°C																																																																									
12	Q5	62.3°C	90.5°C																																																																									
13	U2	58.5°C	86.7°C																																																																									
14	D19	70.2°C	98.2°C																																																																									
15	U1	66.2°C	93.5°C																																																																									
16	D18	64.2°C	92.1°C																																																																									
17	D16	62.5°C	90.4°C																																																																									
18	Q14	63.5°C	92.5°C																																																																									



		NO	Position	ROOM AMBIENT Ta=21.7°C	HIGH AMBIENT Ta=51.8°C
		19	T1coil	72.1°C	101.3°C
		20	T1core	65.3°C	94.4°C
		21	C52	67.5°C	96.4°C
		22	C63	61.9°C	92.2°C
		23	T2	52.5°C	83.5°C
		24	C134	62.6°C	92.4°C
		25	D103	65.1°C	93.8°C
		26	U5	67.6°C	96.6°C
		27	U6	74.4°C	103.5°C
		28	Q9	66.6°C	94.7°C
		29	D23	60.9°C	89.7°C
		30	C51	62.9°C	91.9°C
		31	Q101	67.5°C	97.2°C
		32	Q103	69.4°C	99.1°C
		33	Q105	71.2°C	101.3°C
		34	RTH3	63.5°C	93.1°C
		35	U100	70.3°C	101.8°C
		36	U103	66.1°C	94.5°C
		37	U9	61.6°C	90.3°C
		38	D32	64.9°C	93.1°C
		39	U102	79°C	109.1°C
		40	ZNR1	53.2°C	82.7°C
		41	LF100	78.9°C	108.7°C
		42	C107	71.4°C	100°C
		43	C108	70.5°C	99.6°C
		44	RY100	67.3°C	96.2°C
		45	C103	68°C	98.9°C
		46	R105	66.1°C	97.2°C
		47	TSW1	63.3°C	91.5°C
2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR ( MIN )		I/P : 230 VAC O/P : 118.8%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= -35 °C	TEST : OK
4	HIGH HUMIDITY HIGH TEMPERATURE HIGH VOLTAGE TURN ON TEST	AFTER 12 HOURS IN CHAMBER ON CONTROL 50°C/95 %R.H NO DAMAGE		I/P : 272 VAC O/P : FULL LOAD Ta= 50°C HUMIDITY= 95 %R.H	TEST : OK
5	TEMPERATURE COEFFICIENT	±0.03 %/°C(0~50°C)		I/P : 230 VAC O/P : FULL LOAD	0.006 %/°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	-30~50°C	1. Thermal shock Temperature : -35°C~ +55°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, 2G 10min./1cycle, 60min. each along X, Y, Z axes	1 Carton & 1 Set (1) Waveform : Sine Wave (2) Frequency : 10~500Hz (3) Sweep Time : 10min/sweep cycle (4) Acceleration : 3G (5) Test Time : 180min in each axis (X.Y.Z) (6) Ta : 25°C	
9	CAPACITOR LIFE CYCLE	SUPPOSE C109 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=50 °C LIFE TIME (3) I/P : 230VAC O/P : 75% LOAD Ta= 50°C LIFE TIME (4) I/P : 230VAC O/P : 50% LOAD Ta= 50 °C LIFE TIME	(1) 154834.9HRS (2) 29952.1HRS (3) 116959.3HRS (4) 303826.9HRS	
10	MTBF	Conducted by Parts Stress Analysis Prediction Khrs min. Telcordia SR-332 (Bellcore) ; K 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 : 30,000 hours		

TEST RESULT	TESTER	REVIEW	APPROVAL
PASS	Hanxr	Liutt	Wangzd

2020.10.1 TAG-QA-009