



Test Report: XDR-480E-12

480W 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

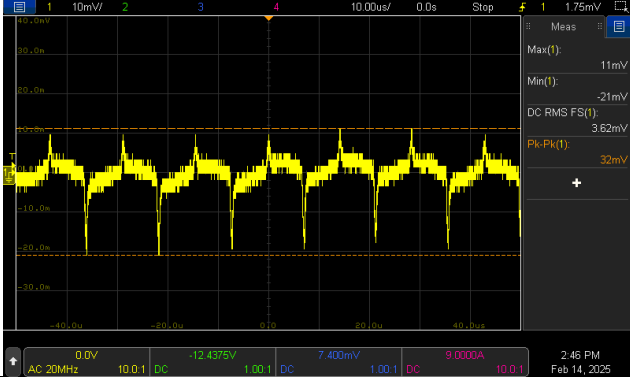
E.M.C. Test

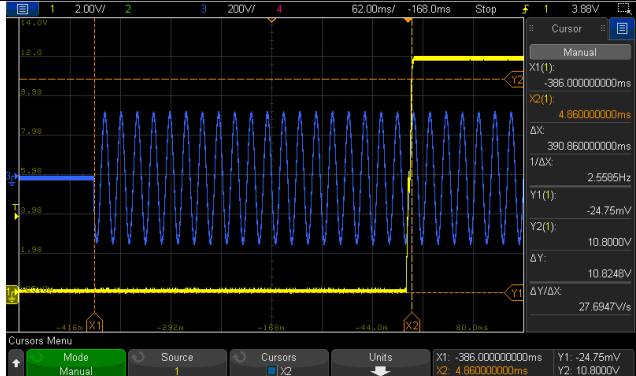
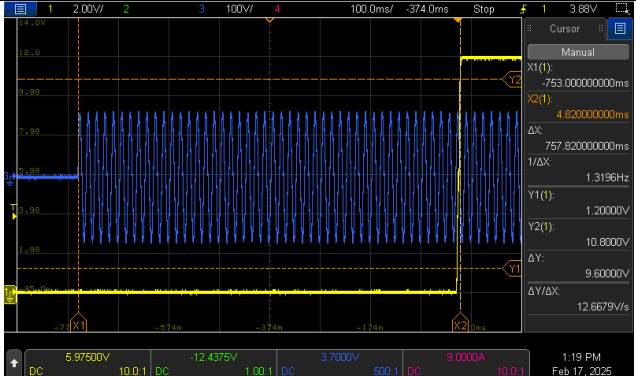
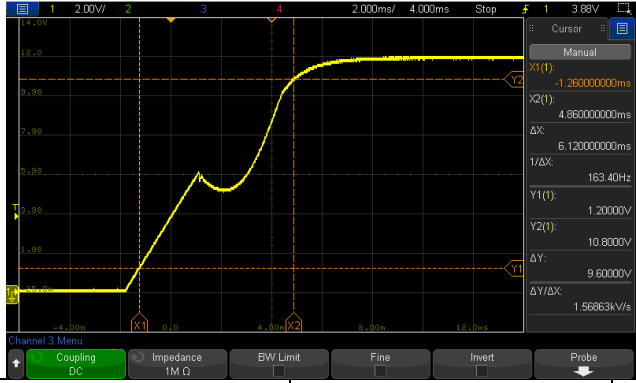
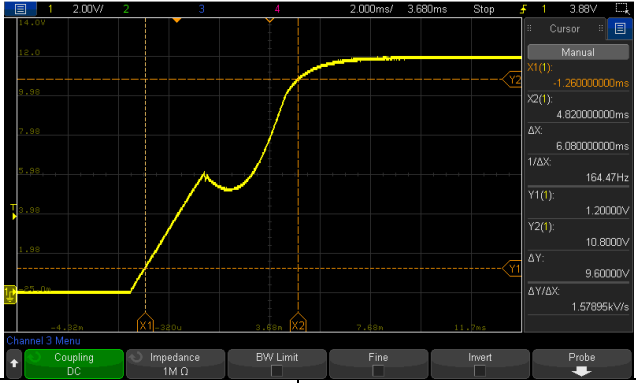
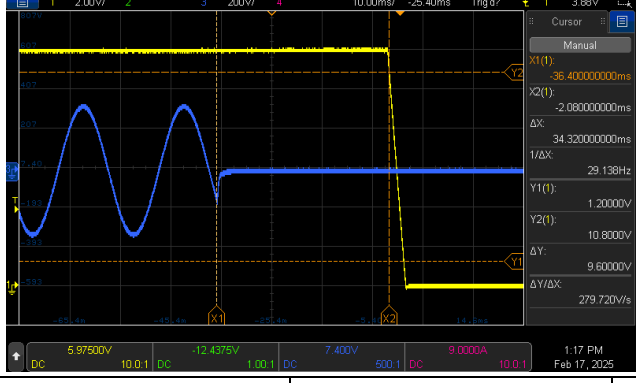
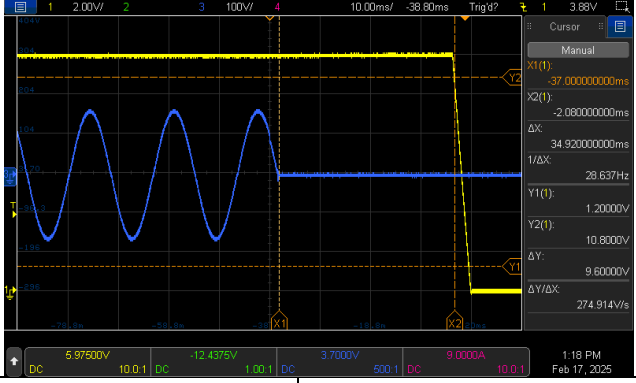
■ RELIABILITY TEST

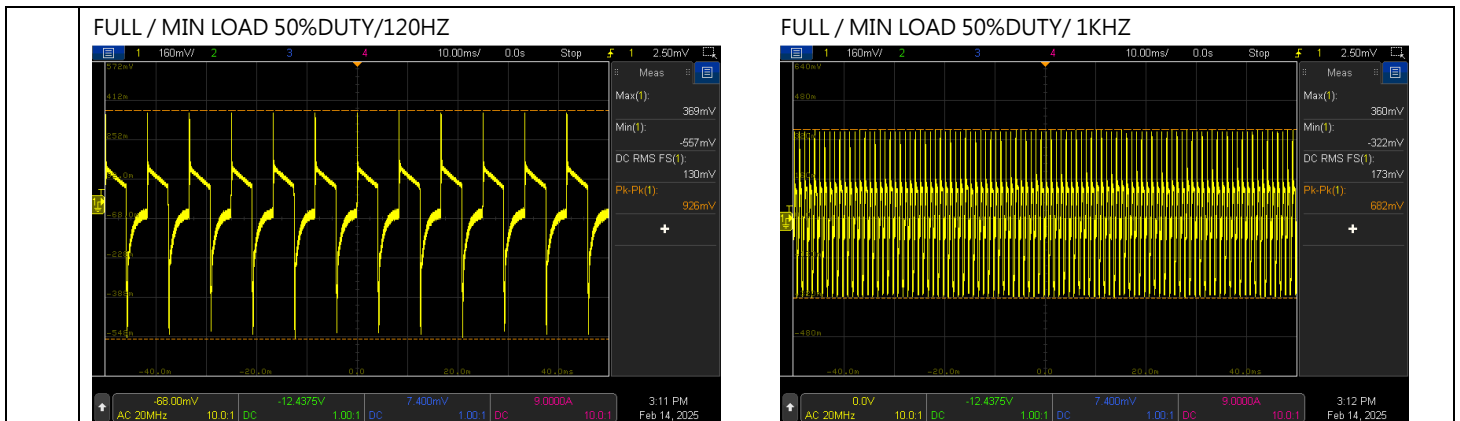
ENVIRONMENT TEST

■ DESIGN VERIFY TEST

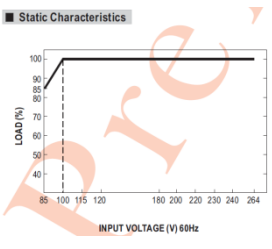
OUTPUT FUNCTION TEST

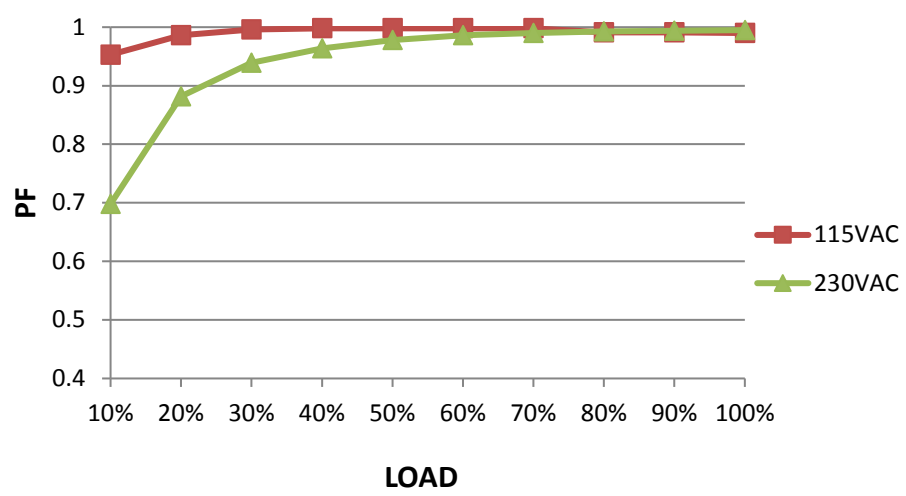
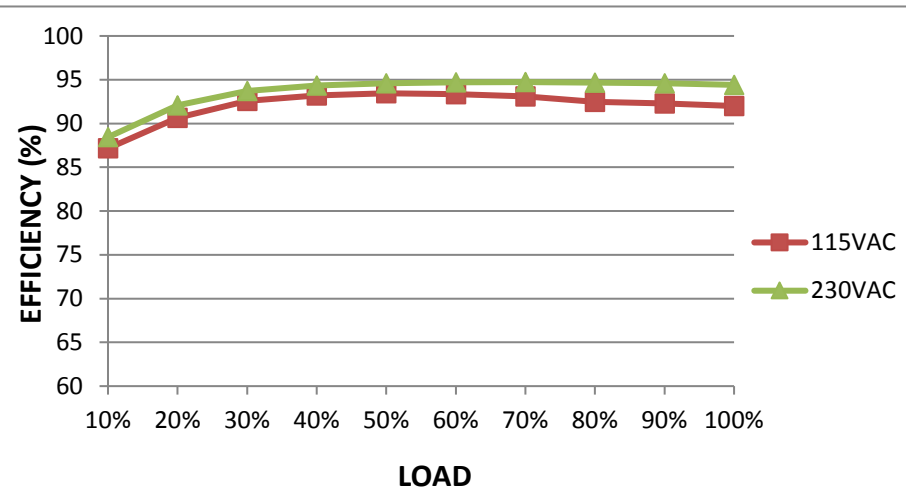
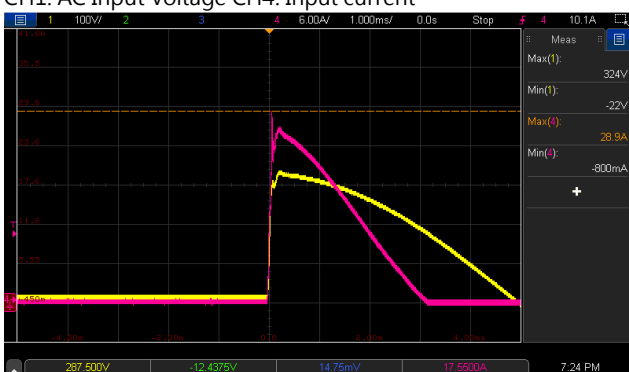
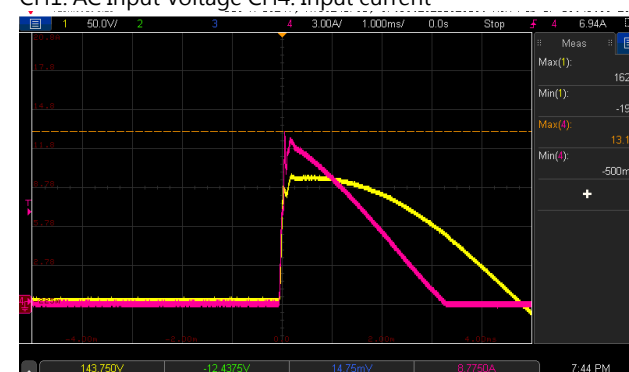
NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OUTPUT VOLTAGE ADJUST RANGE	CH1: 12V~15V	I/P : 230 VAC I/P : 115 VAC O/P : MIN LOAD Ta : 25°C	11.525V~15.39V/230VAC 11.519V~15.39V/115VAC
2	OUTPUT VOLTAGE TOLERANCE	V1: -2% ~ +2%	I/P: 85VAC~ 264VAC O/P:FULL~ MIN. LOAD Ta:25°C	V1: -0.3169% ~0.4086%
3	LINE REGULATION	V1: -0.5% ~ +0.5%	I/P: 85VAC~264VAC O/P:FULL LOAD Ta:25°C	V1: -0.0081% ~0.3178%
4	LOAD REGULATION	V1: -1% ~ +1%	I/P: 230VAC O/P:FULL ~MIN LOAD Ta:25°C	V1: -0.375% ~0.35%
5	OVER/UNDERSHOOT TEST	<±5%	I/P: 230VAC O/P:FULL LOAD / NO LOAD Ta:25°C	0.66%
6	RIPPLE & NOISE (Max)	V1: 100mVp-p	I/P:230VAC O/P:FULL LOAD Ta:25°C	32mVp-p / high frequency 43mVp-p / low frequency
high frequency :  low frequency : 				
7	SET UP TIME (Max)	230VAC/1500ms 115VAC/3000ms	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	230VAC/ 390.86ms 115VAC/ 757.82ms
INPUT=230VAC/50HZ @ FULL LOAD CH1: Output Voltage CH3: AC Input Voltage			INPUT=115VAC/60HZ @ FULL LOAD CH1: Output Voltage CH3: AC Input Voltage	

				
8	RISE TIME (Max)	230VAC/150ms 115VAC/150ms	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	230VAC/ 6.12ms 115VAC/ 6.08ms
	INPUT=230VAC/50HZ @ FULL LOAD CH1: Output Voltage 		INPUT=115VAC/60HZ @ FULL LOAD CH1: Output Voltage 	
9	HOLD UP TIME (Typ.)	230VAC/15ms 115VAC/15ms	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	230VAC/ 34.32ms 115VAC/ 34.92ms
	INPUT=230VAC/50HZ @ FULL LOAD CH1: Output Voltage CH3: AC Input Voltage 		INPUT=115VAC/60HZ @ FULL LOAD CH1: Output Voltage CH3: AC Input Voltage 	
10	DYNAMIC LOAD	V1: 1200mVp-p	I/P: 230VAC O/P: (1) FULL/ MIN LOAD 50%DUTY/120HZ (2) FULL/ MIN LOAD 50%DUTY/ 1KHZ Ta:25°C	926mVp-p 682mVp-p



INPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	INPUT VOLTAGE RANGE	85VAC~264VAC 120VDC~ 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 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) 73.8V~264V/ FULL LOAD 73.8V~264V/ 85% LOAD (2) 104.1Vdc~370Vdc/FULL LOAD 104.1Vdc~370Vdc/85% LOAD (3) 104.1Vdc~370Vdc/FULL LOAD 104.1Vdc~370Vdc/85% LOAD TEST : OK
2	INPUT FREQUENCY RANGE	47HZ ~63 HZ NO DAMAGE	I/P:85VAC ~264 VAC O/P:FULL~MIN LOAD Ta:25°C	TEST : OK
3	INPUT CURRENT(Typ.)	230V/ 3A 115V/ 6A	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	I =1.658A/ 230VAC I =3.402A/ 115VAC
4	LEAKAGE CURRENT	<1mA / 240 VAC	I/P : 240 VAC/60HZ O/P : Min LOAD Ta : 25°C	0.588mA
5	NO LOAD CONSUMPTION	<1W	I/P : 230VAC I/P : 115VAC O/P : NO LOAD Ta : 25°C	0.691W/ 230VAC 0.669W/ 115VAC
6	POWER FACTOR(Typ.)	0.95/230VAC 0.98/115VAC	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	PF=0.9955/230VAC PF=0.9965/115VAC
	P.F vs LOAD			

				
7	EFFICIENCY(Typ.)	94%	I/P:230 VAC O/P:FULL LOAD Ta:25°C	94.2%
	EFFICIENCY vs LOAD 			
8	INRUSH CURRENT(Typ.)	230V/30A 115V/15A COLD START	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	I =28.9A/ 230VAC I =13.1A/ 115VAC T50=1564us/230V
	INPUT=230VAC/50HZ @ FULL LOAD CH1: AC Input Voltage CH4: Input current 			INPUT=115VAC/ 60HZ @ FULL LOAD CH1: AC Input Voltage CH4: Input current 



PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OVER LOADPROTECTION	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: 100VAC O/P: TESTING Ta:25°C	122.33%/ 264VAC 122.33%/ 230VAC 122.33%/100VAC 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	Max.18V Protection type: Hiccup mode, recovers automatically after fault condition is removed	I/P: 264VAC I/P: 85VAC O/P: MIN LOAD Ta:25°C	16.82V/264VAC 16.86V/ 85VAC PROTECTION TYPE : Hiccup mode, recovers automatically after fault condition is removed
3	OVER TEMPERATURE PROTECTION	Protection type: Shut down o/p voltage, recovers automatically after temperature goes down	I/P: 264VAC I/P: 85VAC 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: 85VAC 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 : <u>OK</u>
2	PARALLEL	Up to 1920W (3+1) units	I/P : 230 VAC O/P : TESTING LOAD Ta : 25°C	TEST : <u>OK</u>

COMPONENT STRESS TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	PWM Transistor (D to S) or (C to E) Peak Voltage	Q5/Q6 Rated: 600 V/33A	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	Q5 Q6 VDS: (1) 483V (2) 507V (3) 478V (4) 478V (5) 478V (6) 484V (7) 490V (1) 445V (2) 465V (3) 465V (4) 459V (5) 453V (6) 459V (7) 453V
2	P.F.C Transistor (D to S) or (C to E) Peak Voltage	Q1/Q2 Rated: 600 V/34A	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	Q1 : VDS: (1) 482V (2) 482V (3) 479V (4) 479V (5) 479V (6) 479V (7) 437V
3	P.F.C DIODE	D1 Rated: 6A/ 650V	I/P: High-Line +3V =267V AC ON/OFF O/P: (1)Full Load	(1) 428V (2) 437V (3) 434V

			(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	(4) 427V	
4	Diode Peak Voltage	Q102/Q104 Rated : 130A/ 60V	AC ON/OFF I/P: High-Line +3V =267 V VO=Vomax 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 VO=Vnormal O/P: (1) Full Load Ta:25°C	Q102 : VO=Vomax VDS: (1) 40.2V (2) 40.2V (3) 41.0V (4) 41.0V (5) 40.2V (6) 40.7V (7) 38.0V (8) 37.7V (9) 38.8V VO=Vnormal (1) 32.1V	Q104 : VO=Vomax VDS: (1) 39.4V (2) 39.4V (3) 39.9V (4) 39.9V (5) 39.4V (6) 39.6V (7) 36.7V (8) 36.4V (9) 37.2V VO=Vnormal (1) 31.6V
5	Input Capacitor Voltage	C5 Rated : 150u/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)421V (2)418V (3)439V (4)424V	
6	Control IC Voltage Test	PFC /PWM IC U1: Rated : 12.5V~ 27.9V O/P IC U101 Rated : 4.2V~35V U102 Rated: 3.3V~ 36V U202 Rated: 3~30 V	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	U1 (1) 22.4V (2) 20.2V (3) 21.0V (4) 26.5V (5) 19.0V	U101/ U102/U202 (1) 11.46V (2) 11.46V (3) 11.46V (4) 11.37V (5) 11.37V

■ SAFETY& E.M.C. TEST

SAFETY TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	WITHSTANDVOLTAGE	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: 0.5KVAC/min	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	I/P-O/P: 4.41 mA I/P-FG: 3.66 mA O/P-FG: 7.40 mA O/P-DC OK: 0.007 mA NO DAMAGE
2	ISOLATIONRESISTANCE	I/P-O/P: 500 VDC>100MΩ O/P-FG: 500 VDC>100MΩ I/P-FG: 500 VDC >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: 50 GΩ O/P-FG: 50 GΩ NO DAMAGE
3	GROUNDINGCONTINUITY	FG(PE) TO CHASSIS OR TRACE < 100 mΩ	40A / 2min Ta:25°C	2mΩ

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)/ BS EN/EN61204-3/ CNS15936 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)/ BS EN/EN61204-3/ CNS15936 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 INDUSTRY 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 INDUSTRY Line-Line : 2KV Line-Line-Chassis : 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 : XDR-480E-12 1. ROOM AMBIENT BURN-IN : 2 HRS I/P : 230VAC O/P : FULL LOAD Ta= 24.5°C 2. HIGH AMBIENT BURN-IN : 2 HRS I/P : 230VAC O/P : FULL LOAD Ta= 49.9°C																																																																																																																																										
		<table><tr><th>NO</th><th>Position</th><th>ROOM AMBIENTTa=24.5 °C</th><th>HIGH AMBIENT Ta= 49.9 °C</th></tr><tr><td>1</td><td>R6</td><td>52.2°C</td><td>77°C</td></tr><tr><td>2</td><td>D10</td><td>58.1°C</td><td>82.6°C</td></tr><tr><td>3</td><td>R47</td><td>56.2°C</td><td>81.1°C</td></tr><tr><td>4</td><td>L5</td><td>45.1°C</td><td>70.4°C</td></tr><tr><td>5</td><td>LF1</td><td>44.5°C</td><td>70.3°C</td></tr><tr><td>6</td><td>Q6</td><td>57.1°C</td><td>82.8°C</td></tr><tr><td>7</td><td>U1</td><td>66.5°C</td><td>85.5°C</td></tr><tr><td>8</td><td>D2</td><td>48.7°C</td><td>73.5°C</td></tr><tr><td>9</td><td>Q5</td><td>59.1°C</td><td>85.1°C</td></tr><tr><td>10</td><td>D1</td><td>67.4°C</td><td>91.1°C</td></tr><tr><td>11</td><td>U4</td><td>52.7°C</td><td>77.6°C</td></tr><tr><td>12</td><td>D14</td><td>57.1°C</td><td>81.8°C</td></tr><tr><td>13</td><td>U101</td><td>80.3°C</td><td>104.9°C</td></tr><tr><td>14</td><td>U202</td><td>63.6°C</td><td>87.2°C</td></tr><tr><td>15</td><td>Q8</td><td>60.4°C</td><td>84.6°C</td></tr><tr><td>16</td><td>LF2</td><td>51°C</td><td>76.3°C</td></tr><tr><td>17</td><td>C1</td><td>45.5°C</td><td>71.2°C</td></tr><tr><td>18</td><td>BD1</td><td>53.8°C</td><td>78.5°C</td></tr><tr><td>19</td><td>LF100</td><td>73.6°C</td><td>100.2°C</td></tr><tr><td>20</td><td>RY100</td><td>58.1°C</td><td>83.8°C</td></tr><tr><td>21</td><td>RY1</td><td>45°C</td><td>70.8°C</td></tr><tr><td>22</td><td>RTH1</td><td>45°C</td><td>70.5°C</td></tr><tr><td>23</td><td>Q108</td><td>90.1°C</td><td>72.8°C</td></tr><tr><td>24</td><td>R10</td><td>41.5°C</td><td>64.1°C</td></tr><tr><td>25</td><td>L2</td><td>46.8°C</td><td>72.3°C</td></tr><tr><td>26</td><td>T1 Coil</td><td>74.1°C</td><td>100.4°C</td></tr><tr><td>27</td><td>T1 Core</td><td>52.5°C</td><td>77.5°C</td></tr><tr><td>28</td><td>C26</td><td>51.7°C</td><td>77.4°C</td></tr><tr><td>29</td><td>C49</td><td>52°C</td><td>77.2°C</td></tr><tr><td>30</td><td>C105</td><td>65.1°C</td><td>91.7°C</td></tr><tr><td>31</td><td>C107</td><td>61°C</td><td>87.7°C</td></tr><tr><td>32</td><td>C109</td><td>61.7°C</td><td>87.4°C</td></tr><tr><td>33</td><td>C114</td><td>59.2°C</td><td>85.2°C</td></tr></table>			NO	Position	ROOM AMBIENTTa=24.5 °C	HIGH AMBIENT Ta= 49.9 °C	1	R6	52.2°C	77°C	2	D10	58.1°C	82.6°C	3	R47	56.2°C	81.1°C	4	L5	45.1°C	70.4°C	5	LF1	44.5°C	70.3°C	6	Q6	57.1°C	82.8°C	7	U1	66.5°C	85.5°C	8	D2	48.7°C	73.5°C	9	Q5	59.1°C	85.1°C	10	D1	67.4°C	91.1°C	11	U4	52.7°C	77.6°C	12	D14	57.1°C	81.8°C	13	U101	80.3°C	104.9°C	14	U202	63.6°C	87.2°C	15	Q8	60.4°C	84.6°C	16	LF2	51°C	76.3°C	17	C1	45.5°C	71.2°C	18	BD1	53.8°C	78.5°C	19	LF100	73.6°C	100.2°C	20	RY100	58.1°C	83.8°C	21	RY1	45°C	70.8°C	22	RTH1	45°C	70.5°C	23	Q108	90.1°C	72.8°C	24	R10	41.5°C	64.1°C	25	L2	46.8°C	72.3°C	26	T1 Coil	74.1°C	100.4°C	27	T1 Core	52.5°C	77.5°C	28	C26	51.7°C	77.4°C	29	C49	52°C	77.2°C	30	C105	65.1°C	91.7°C	31	C107	61°C	87.7°C	32	C109	61.7°C	87.4°C	33	C114	59.2°C	85.2°C
NO	Position	ROOM AMBIENTTa=24.5 °C	HIGH AMBIENT Ta= 49.9 °C																																																																																																																																									
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12	D14	57.1°C	81.8°C																																																																																																																																									
13	U101	80.3°C	104.9°C																																																																																																																																									
14	U202	63.6°C	87.2°C																																																																																																																																									
15	Q8	60.4°C	84.6°C																																																																																																																																									
16	LF2	51°C	76.3°C																																																																																																																																									
17	C1	45.5°C	71.2°C																																																																																																																																									
18	BD1	53.8°C	78.5°C																																																																																																																																									
19	LF100	73.6°C	100.2°C																																																																																																																																									
20	RY100	58.1°C	83.8°C																																																																																																																																									
21	RY1	45°C	70.8°C																																																																																																																																									
22	RTH1	45°C	70.5°C																																																																																																																																									
23	Q108	90.1°C	72.8°C																																																																																																																																									
24	R10	41.5°C	64.1°C																																																																																																																																									
25	L2	46.8°C	72.3°C																																																																																																																																									
26	T1 Coil	74.1°C	100.4°C																																																																																																																																									
27	T1 Core	52.5°C	77.5°C																																																																																																																																									
28	C26	51.7°C	77.4°C																																																																																																																																									
29	C49	52°C	77.2°C																																																																																																																																									
30	C105	65.1°C	91.7°C																																																																																																																																									
31	C107	61°C	87.7°C																																																																																																																																									
32	C109	61.7°C	87.4°C																																																																																																																																									
33	C114	59.2°C	85.2°C																																																																																																																																									

		<table><tr><th>NO</th><th>Position</th><th>ROOM AMBIENTTa=24.5 °C</th><th>HIGH AMBIENT Ta= 49.9 °C</th></tr><tr><td>34</td><td>RTH2</td><td>53.6°C</td><td>78.3°C</td></tr><tr><td>35</td><td>U102</td><td>58°C</td><td>83°C</td></tr><tr><td>36</td><td>Q103</td><td>66.8°C</td><td>92.9°C</td></tr><tr><td>37</td><td>Q101</td><td>63.6°C</td><td>89.1°C</td></tr><tr><td>38</td><td>J101</td><td>76.5°C</td><td>102.3°C</td></tr><tr><td>39</td><td>D104</td><td>64.5°C</td><td>89.7°C</td></tr><tr><td>40</td><td>C6</td><td>48.3°C</td><td>72.8°C</td></tr><tr><td>41</td><td>C5</td><td>48.2°C</td><td>72.6°C</td></tr><tr><td>42</td><td>L1</td><td>49.8°C</td><td>74.5°C</td></tr><tr><td>43</td><td>Q1</td><td>50.9°C</td><td>75.8°C</td></tr><tr><td>44</td><td>Q2</td><td>51.8°C</td><td>76.8°C</td></tr></table>			NO	Position	ROOM AMBIENTTa=24.5 °C	HIGH AMBIENT Ta= 49.9 °C	34	RTH2	53.6°C	78.3°C	35	U102	58°C	83°C	36	Q103	66.8°C	92.9°C	37	Q101	63.6°C	89.1°C	38	J101	76.5°C	102.3°C	39	D104	64.5°C	89.7°C	40	C6	48.3°C	72.8°C	41	C5	48.2°C	72.6°C	42	L1	49.8°C	74.5°C	43	Q1	50.9°C	75.8°C	44	Q2	51.8°C	76.8°C
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2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR (MIN)	I/P : 230 VAC O/P : 124 % LOAD Ta : 25°C	TEST : OK																																																
3	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOUR	I/P : 264VAC/100VAC O/P : 100% LOAD Ta= -30 °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	± 0.013 %/°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 C105 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		(1) 234274.3 HRS (2) 37845.6 HRS																																																



		(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	(3) 127048.6 HRS (4) 316835.3 HRS
10	MTBF	Conducted by Parts Stress Analysis Prediction 1482.0K hrs min. Telcordia SR-332 (Bellcore) ; 258.3K 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	LIUTT	LIUTT	WANGZD

2020.10.1 TAG-QA-009