



Certificate of Conformity

The products

EUT : Switching Power Supply
Trade Name : COMPUWARE; SUPERMICRO
Model No. : CPR-1xxx-xaxbc, x=0~9, a,b,c=A~Z
PWS-1Kxxa-1R, x=0~9, a=A~Z or none

which produced by

Compuware TECHNOLOGY Inc.
5F, No.232, Liancheng Rd., Chuung-Ho 235, Taipei County, Taiwan

Has been tested by Electronics Testing Center, Taiwan ETC
And was found to comply with the EMC requirements of Directive 2004/108/EC on the basis of

EN 55022:2006(Class A)

EN 55024:1998/A1:2001/A2:2003

EN 61000-3-2:2006

EN 61000-3-3:1995/A1:2001/A2:2005

IEC CISPR 22: 2005/A1: 2005/A2: 2006

AS/NZS CISPR 22: 2006(Class A)

Signature

Will Yauo

Manager of EMC Testing Department II

Electronics Testing Center, Taiwan

Report Number : 09-03-RBF-057-1

Date of Issue: 03, 25, 2009

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EMC

TEST REPORT

Responsible Party : *Compuware Technology Inc.*

Manufacturer : *(1) Amax Electronics*
(2) Enhance Electronics CO., LTD
(DONGGUAN)

Description of Product : *Switching Power Supply*

Trade Name : *COMPUWARE; SUPERMICRO*

Model No. : *CPR-1xxx-xaxbc, x=0~9, a,b,c=A~Z*
PWS-1Kxxa-1R, x=0~9, a=A~Z or none

Test Report File No. : *09-03-RBF-057-01*

Date Test Item Received : *Mar. 10, 2009*

Date Test Campaign Completed : *Mar. 20, 2009*

Date of Issue : *Mar. 25, 2009*

Test Performed by

ELECTRONICS TESTING CENTER (ETC) , TAIWAN

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1 TEST REPORT CERTIFICATION

Client : Compuware Technology Inc.

Address : 5F, No.232, Liancheng Rd., Chuung-Ho 235, Taipei County, Taiwan

Manufacturer : (1) Amax Electronics
(2) Enhance Electronics CO., LTD (DONGGUAN)

Address : (1) Wusha Xinan Industry Area, Changan Town, Dongguan,
Guangdong, China
(2) San Lian Industrial Area, Pai sha Wei, Fong Gong Town DongGuan,
GuangDong, China

EUT : Switching Power Supply

Trade name : COMPUWARE; SUPERMICRO

Model No. : CPR-1xxx-xaxbc, x=0~9, a,b,c=A~Z
PWS-1Kxxa-1R, x=0~9, a=A~Z or none

Test specifications :

Emissions : EN 55022:2006(Class A)
EN 61000-3-2:2006
EN 61000-3-3:1995/A1:2001/A2:2005

Immunity : IEC61000-4-2:1995/A1:1998/A2:2000
IEC61000-4-3:2006/A1:2007
IEC61000-4-4:2004
IEC61000-4-5:2005
IEC61000-4-6:2007
IEC61000-4-11:2004

Regulations applied :

Emissions : EN 55022:2006(Class A)
IEC CISPR 22: 2005/A1: 2005/A2:2006
AS/NZS CISPR 22: 2006(Class A)

Immunity : EN 55024:1998/A1:2001/A2:2003

The testing described in this report has been carried out to the best of our knowledge and ability, and our responsibility is limited to the exercise of reasonable care. This certification is not intended to relieve the sellers from their legal and/or contractual obligations. Besides, the "Comment Issues" highlight above is important information for this test report. Responsible must read carefully about the description.

Test Engineer : Max Wu Tien Lu Liao
(Max Wu) (Tien-Lu Liao)

Check By : Charles Wang
(Charles Wang)

Approve & Authorized : Will Yauo
Will Yauo, Manager
EMC Dept. II of ELECTRONICS
TESTING CENTER, TAIWAN

Laboratory Introduction: Electronics Testing Center, Taiwan is recognized, filed and mutual recognition arrangement as following:

- ① ISO9002 : BSMI, TÜV Product Service
- ② ISO/IEC 17025 : BSMI, CNLA, DGT, NVLAP, CCIBLAC, UL, Compliance
- ③ EN45001 : TÜV Rheinland, NEMKO, FIMKO, SGS
- ④ Filing : FCC, Industry Canada, VCCI
- ⑤ MRA : Australia, Hong Kong, New Zealand, Singapore, USA, Japan, Korea, China, APLAC through CNLA

2 GENERAL INFORMATIONS

2.1 Description of EUT

This specification defines the performance characteristics of a single-phase (3-wire) 1.2KW single output power supply with wide range input AC capability (100-240VAC/50-60Hz) under operation temperature 50 degree C. The power supply shall be designed for parallel operation. In the event of a power supply failure, the redundant power supply continues to power the system even under over voltage fault. The number of power supplies per system will be limited to a maximum of three. The power supply shall be designed for “hot swap” exchange and must contain the OR-ing isolation MOSFETs for all outputs and shall communicate to external devices through Inter-Integrated (I2C) Circuit protocol. The power supply will have an EEPROM for storing powers supply FRU information, and meet PMBUS™ Revision 0.3 requirement.

2.2 Related Information of EUT

Size of EUT	: 370mm × 80mm × 55mm
Power Supply	: I/P: 1000W: 100-140Vac/11-7.5A, 50-60Hz 1200W: 180-240Vac/8-5A, 50-60Hz O/P: 1000W: +12V/83A, +5Vsb/4A 1200W: +12V/100A, +5Vsb/4A
DC Power Line	: <input checked="" type="checkbox"/> Nonshielded <input type="checkbox"/> Shielded <input type="checkbox"/> None, Length: <u>1.8</u> m
RJ45 Line	: <input type="checkbox"/> Nonshielded <input type="checkbox"/> Shielded <input checked="" type="checkbox"/> None, Length: <u> </u> m
PS2 Line	: <input type="checkbox"/> Nonshielded <input type="checkbox"/> Shielded <input checked="" type="checkbox"/> None, Length: <u> </u> m

* For more detailed features, please refer to *User's Manual*.

2.3 Tested Configuration

The EUT connected with other devices.

Following peripheral devices and interface cables were connected during the measurement:

Device	Manufacture	Model	Description
Switching Power Supply *	(1) Amax Electronics (2) Enhance Electronics CO., LTD (DONGGUAN)	CPR-1xxx-xaxbc, x=0~9, a,b,c=A~Z PWS-1Kxxa-1R, x=0~9, a=A~Z or none	1.8m Unshielded DC Power Line

Remark “*” means equipment under test.

2.4 Deviation Record

No deviations were required.

2.5 Modification Record

No modifications were required. (That is the EUT complied with the requirement as tested.)

3 SUMMARY OF TEST RESULTS

3.1 Emissions

3.1.1 Conducted Emissions

– PASS (Full Load -Neutral)

Minimum EMI Margin to the limit: -18.5 dB at 15.652 MHz

– PASS (Full Load -Line)

Minimum EMI Margin to the limit: -21.8 dB at 15.589 MHz

3.1.2 Radiated Emissions

– PASS (Full Load - HOR)

Minimum EMI Margin to the limit: -2.7 dB at 101.270 MHz

– PASS (Full Load - VER)

Minimum EMI Margin to the limit: -1.6 dB at 101.270 MHz

3.1.3 Harmonics Current Emissions

–PASS

The harmonics current values were under the limits of the class A equipment of the EN 61000-3-2.

3.1.4 Voltage Fluctuations and Flicker

–PASS

The voltage fluctuations and flicker values were under the limits of the EN 61000-3-3 requirements.

3.2 Immunity

3.2.1 Immunity Criteria

The results of all of the immunity tests performed on the EUT were evaluated according to the following criteria, and according to the manufacturer's specifications for the EUT:

Performance criterion A : The EUT continued to operate as intended. No degradation of performance or loss of function was allowed below a performance level specified by the manufacturer, when the EUT was used as intended.

Performance criterion B : The EUT continued to operate as intended after the test. No degradation of performance or loss of function was allowed below a performance level specified by the manufacturer, when the EUT was used as intended. During the test, degradation of performance was however allowed. No change of actual operating state or stored data was allowed.

Performance criterion C : Temporary loss of function was allowed, provided the function was self recoverable or could be restored by the operation of the controls.

3.2.2 Electrostatic Discharge Immunity

- No Degradation of Function

- Distortion of Function

- Error of Function

Requirement :Criterion B (or better)

- Satisfies Criterion A

- Satisfies Criterion B

- Satisfies Criterion C

3.2.3 RF Radiated Fields Immunity

- No Degradation of Function

- Distortion of Function

- Error of Function

Requirement :Criterion A

- Satisfies Criterion A

- Satisfies Criterion B

- Satisfies Criterion C

3.2.4 EFT/Burst Immunity

- No Degradation of Function

- Distortion of Function

- Error of Function

Requirement :Criterion B(or better)

- Satisfies Criterion A

- Satisfies Criterion B

- Satisfies Criterion C

3.2.5 Surge Immunity

Requirement :Criterion B (or better)

- | | |
|--|-------------------------|
| <input type="checkbox"/> - No Degradation of Function | - Satisfies Criterion A |
| <input checked="" type="checkbox"/> - Distortion of Function | - Satisfies Criterion B |
| <input type="checkbox"/> - Error of Function | - Satisfies Criterion C |

3.2.6 RF Common Mode Immunity

Requirement :Criterion A

- | | |
|--|-------------------------|
| <input checked="" type="checkbox"/> - No Degradation of Function | - Satisfies Criterion A |
| <input type="checkbox"/> - Distortion of Function | - Satisfies Criterion B |
| <input type="checkbox"/> - Error of Function | - Satisfies Criterion C |

3.2.7 Voltage Interruptions and Voltage Dips Immunity

Requirement :Criterion C (or better)

- | | |
|--|-------------------------|
| <input checked="" type="checkbox"/> - No Degradation of Function | - Satisfies Criterion A |
| <input type="checkbox"/> - Distortion of Function | - Satisfies Criterion B |
| <input type="checkbox"/> - Error of Function | - Satisfies Criterion C |

4 TEST DATA & RELATED INFORMATIONS

4.1 Emissions

4.1.1 Conducted Emissions Test

4.1.1.1 Conducted Emissions Test Data

Operating Conditions of The EUT : Full Load

Test Date : Mar. 20, 2009

Test Specification	EN 55022:2006 (Class A)			
Equipment	Manufacturer	Model No.	Calibration Date	Next Cal. Date
EMI Test Receiver	Rohde & Schwarz	ESCI	2009/02/04	2010/02/04
LISN	EMCO	3625/2	2009/02/06	2010/02/06
LISN	Rohde & Schwarz	ESH2-Z5	2008/09/21	2009/09/20
Climatic Condition	Ambient Temperature: <u>23</u> °C		Relative Humidity: <u>62</u> %RH	
Power Supply System	AC Power : <u>230</u> Vac <u>50</u> Hz			
Test Set-up	Table-top Equipment			

Test data see the next pages.

Mode: Full Load

Neutral

Frequency (MHz)	Meter Reading (dB μ V)		Factor (dB)	Result (dB μ V)		Limit (dB μ V)		Margin (dB μ V)	
	Q.P	AVG		Q.P	AVG	Q.P	AVG	Q.P	AVG
0.150	48.7	----	0.2	48.9	----	79.0	66.0	-30.1	----
0.271	41.8	----	0.2	42.0	----	79.0	66.0	-37.0	----
15.304	52.1	----	1.1	53.2	----	73.0	60.0	-19.8	----
15.523	53.2	----	1.1	54.3	----	73.0	60.0	-18.7	----
15.652	53.4	----	1.1	54.5	----	73.0	60.0	-18.5	----
17.242	46.6	----	1.2	47.8	----	73.0	60.0	-25.2	----

Mode: Full Load

Line

Frequency (MHz)	Meter Reading (dB μ V)		Factor (dB)	Result (dB μ V)		Limit (dB μ V)		Margin (dB μ V)	
	Q.P	AVG		Q.P	AVG	Q.P	AVG	Q.P	AVG
15.425	49.6	----	1.1	50.7	----	73.0	60.0	-22.3	----
15.464	49.8	----	1.1	50.9	----	73.0	60.0	-22.1	----
15.492	49.9	----	1.1	51.0	----	73.0	60.0	-22.0	----
15.589	50.1	----	1.1	51.2	----	73.0	60.0	-21.8	----
15.617	49.8	----	1.1	50.9	----	73.0	60.0	-22.1	----
15.761	49.1	----	1.1	50.2	----	73.0	60.0	-22.8	----

Notes: 1) Place of measurement: EMC LAB. of the ETC

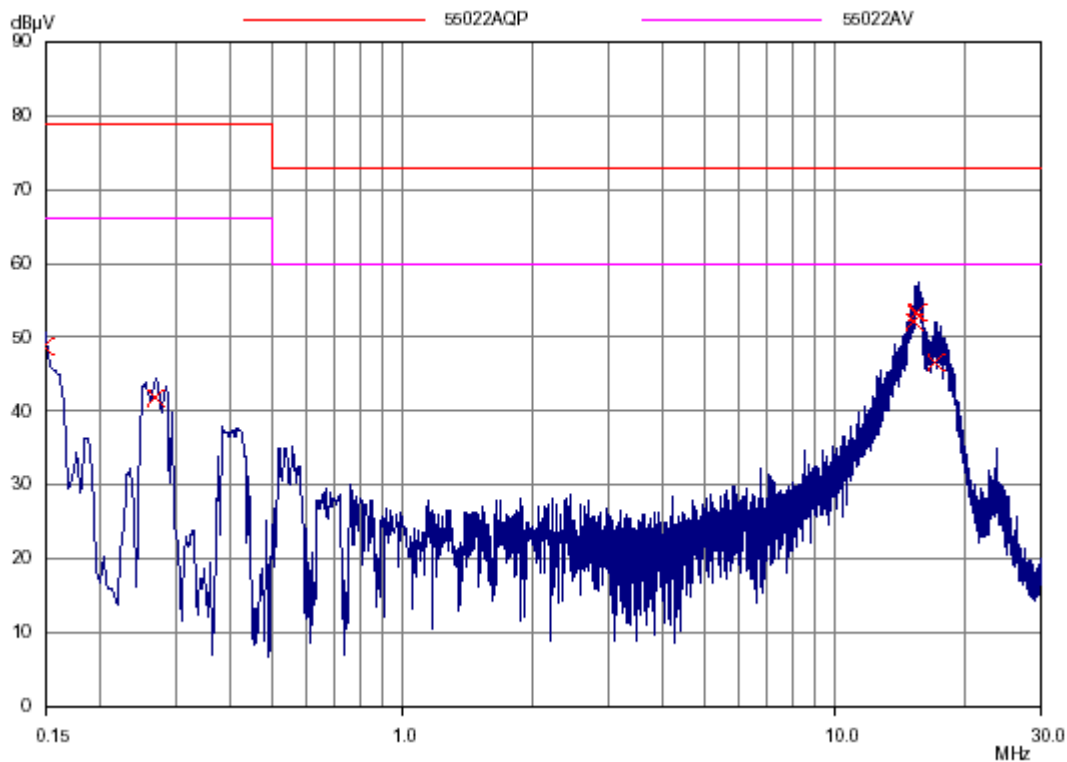
2) The EUT was placed 0.8m above reference ground plane.

3) The symbol of "----" means the Q.P. value is under the limit for AVG. so, the AVG. value doesn't need to be measured.

4) The expanded uncertainty of the conducted emission tests is 2.45 dB.

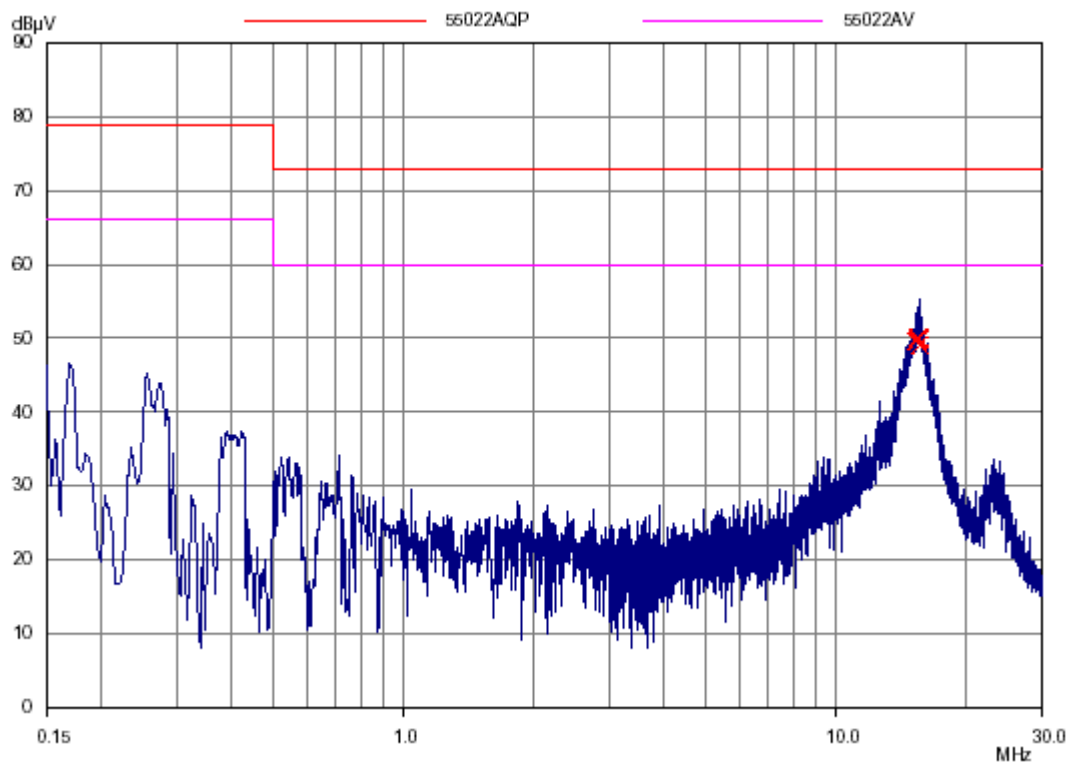
Mode: Full Load

Neutral



Mode: Full Load

Line



4.1.1.2 Conducted Emissions Test Setup Photos

4.1.2 Radiated Emissions Test

4.1.2.1 Radiated Emissions Test Data

Operating Conditions of The EUT : Full Load

Test Date : Mar. 20, 2009

Test Specification	EN 55022:2006 (Class A)			
Equipment	Manufacturer	Model No.	Calibration Date	Next Cal. Date
Test Receiver	Rohde & Schwarz	ESCS 30	2009/01/26	2010/01/25
Amplifier	HP	8447D	2008/05/16	2009/05/16
Spectrum	Advantest	R3162	2009/02/03	2010/02/03
Bi-Log Antenna	Schaffner	CBL 6111	2008/06/05	2009/06/05
Climatic Condition	Ambient Temperature: <u>23</u> °C		Relative Humidity: <u>64</u> %RH	
Power Supply System	AC Power : <u>230</u> Vac <u>50</u> Hz			
Test Set-up	Table-top Equipment			

Test data see the next pages.

Mode : Full Load (HOR)

Emission Frequency (MHz)	Meter Reading (dBuV)	CORR'd Factor (dB)	Results (dBuV/m)	Limit (dBuV/m)	Margins (dB)
	HOR.		HOR.		
101.270	51.4	-14.1	37.3	40.0	-2.7
104.250	49.9	-13.4	36.5	40.0	-3.5
187.990	47.5	-14.0	33.5	40.0	-6.5
428.100	36.9	-5.0	31.9	47.0	-15.1
453.300	39.0	-5.2	33.8	47.0	-13.2
484.100	38.7	-4.0	34.7	47.0	-12.3

Mode : Full Load (VER)

Emission Frequency (MHz)	Meter Reading (dBuV)	CORR'd Factor (dB)	Results (dBuV/m)	Limit (dBuV/m)	Margins (dB)
	VER.		VER.		
101.270	52.5	-14.1	38.4	40.0	-1.6
104.250	50.5	-13.4	37.1	40.0	-2.9
187.990	48.4	-14.0	34.4	40.0	-5.6
428.100	37.4	-5.0	32.4	47.0	-14.6
453.300	39.4	-5.2	34.2	47.0	-12.8
484.100	39.2	-4.0	35.2	47.0	-11.8

- Notes: 1) Place of Measurement: Measuring site of the ETC
2) Measurement Distance: 10 m
3) Height of table on which the EUT was placed: 0.8 m
4) Height of Receiving Antenna: 1 - 4 m
5) Remark “----” means that the emissions level is too low to be measured.
6) The expanded uncertainty of the radiated emission tests is 3.53 dB.

4.1.2.2 Radiated Emissions Test Setup Photos



4.1.3 Harmonics Current Emissions Test

4.1.3.1 Harmonics Current Emissions Test Data

Operating Conditions of The EUT : Operation Mode

Test Date : Mar. 12, 2009

Test Specification	EN 61000-3-2:2006			
Equipment	Manufacturer	Model No.	Calibration Date	Next Cal. Date
Harmonics-1000	EMC-Partner	Harmonics-1000	2008/12/10	2009/12/10
Climatic Condition	Ambient Temperature: <u>22</u> °C		Relative Humidity: <u>51</u> %RH	
Power Supply System	AC Power : <u>230</u> Vac <u>50</u> Hz			
Test Set-up	Table-top Equipment			

Test data see the next pages.

Urms = 230.1V Freq = 49.987 Range: 10:00 AM

Irms = 4.595A Ipk = 7.056A cf = 1.536

P = 1046W S = 1057VA pf = 0.989

THDi = 10.70% THDu = 0.10% Class A

Test -

Time : 3min -100%

Test completed, Result: PASSED

Order	Freq. [Hz]	Iavg [A]	Imax [A]	Limit [A]	Order	Freq. [Hz]	Iavg [A]	Imax [A]	Limit [A]
1	50	4.5703	4.5764		21	1050	0	0.0092	0.1071
2	100	0	0.0195	1.08	22	1100	0	0.0012	0.0836
3	150	0.4654	0.4675	2.3	23	1150	0	0.0055	0.0978
4	200	0	0.0018	0.43	24	1200	0	0.0006	0.0767
5	250	0.1107	0.1111	1.14	25	1250	0	0.0037	0.09
6	300	0	0.0018	0.3	26	1300	0	0.0012	0.0708
7	350	0.0781	0.0781	0.77	27	1350	0	0.0037	0.0833
8	400	0	0.0018	0.23	28	1400	0	0.0012	0.0657
9	450	0.0584	0.0586	0.4	29	1450	0	0.0049	0.0776
10	500	0	0.0012	0.184	30	1500	0	0.0012	0.0613
11	550	0.0448	0.0452	0.33	31	1550	0	0.0061	0.0726
12	600	0	0.0018	0.1533	32	1600	0	0.0012	0.0575
13	650	0.0336	0.0342	0.21	33	1650	0	0.0061	0.0682
14	700	0	0.0018	0.1314	34	1700	0	0.0006	0.0541
15	750	0	0.0256	0.15	35	1750	0	0.0067	0.0643
16	800	0	0.0012	0.115	36	1800	0	0.0012	0.0511
17	850	0	0.0189	0.1324	37	1850	0	0.0061	0.0608
18	900	0	0.0012	0.1022	38	1900	0	0.0012	0.0484
19	950	0	0.014	0.1184	39	1950	0	0.0055	0.0577
20	1000	0	0.0012	0.092	40	2000	0	0.0012	0.046

4.1.3.2 Harmonics Current Emissions Test Setup Photos

4.1.4 Voltage Fluctuations and Flicker Test

4.1.4.1 Voltage Fluctuations and Flicker Test Data

Operating Conditions of The EUT : Operation Mode

Test Date : Mar. 12, 2009

Test Specification	EN 61000-3-3:1995/A1:2001/A2:2005			
Equipment	Manufacturer	Model No.	Calibration Date	Next Cal. Date
Harmonics-1000	EMC-Partner	Harmonics-1000	2008/12/10	2009/12/10
Climatic Condition	Ambient Temperature: <u>22</u> °C		Relative Humidity: <u>51</u> %RH	
Power Supply System	AC Power : <u>230</u> Vac <u>50</u> Hz			
Test Set-up	Table-top Equipment			

	Test Data	Limit	Pass or Fail
Plt	0.072	0.65	Pass
Pst	0.072	1.00	Pass
dt	0.00ms	500ms	Pass
dmax	0.00%	4.0 %	Pass
dc	0.01%	3.3 %	Pass

4.1.4.2 Voltage Fluctuations and Flicker Test Setup Photos



4.2 Immunity

4.2.1 Electrostatic Discharge Immunity Test

4.2.1.1 Electrostatic Discharge Immunity Test Data

Operating Conditions of The EUT : Operation Mode

Test Date : Mar. 12, 2009

Test Specification	IEC 61000-4-2:1995/A1:1998/A2:2000			
Equipment	Manufacturer	Model No.	Calibration Date	Next Cal. Date
Electrostatic Discharge Simulator	Noiseken	ESS2002	2008/09/18	2009/09/18
Climatic Condition	Ambient Temperature: <u>22</u> °C		Relative Humidity: <u>51</u> %RH	
	Atmospheric Pressure : 990 mbar			
Power Supply System	AC Power : <u>230</u> Vac <u>50</u> Hz			
Test Set-up	Table-top Equipment			

Energy-Storage Capacitor : <u>150</u> pF	Contact Discharge Times : <u>25</u> times/each condition															
Discharge Resistor : <u>330</u> Ω	Air Discharge Times : 10 times/each condition															
\ Discharge Mode	Contact Discharge								Air Discharge							
\ ESD Voltage	<u>2</u> kV		<u>4</u> kV		___ kV		___ kV		<u>2</u> kV		<u>4</u> kV		<u>8</u> kV		___ kV	
\ Points \ Result \ Polarity	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-
VCP	A	A	A	A	---	---	---	---	---	---	---	---	---	---	---	---
HCP	A	A	A	A	---	---	---	---	---	---	---	---	---	---	---	---
P1	---	---	---	---	---	---	---	---	A	A	A	A	A	A	---	---
P2~P10	A	A	A	A	---	---	---	---	---	---	---	---	---	---	---	---

Note : “---“means the test could not be carrier out.

“ A ” means the EUT function was correct during the test.

TEST POINTS



4.2.1.2 Electrostatic Discharge Immunity Test Setup Photos

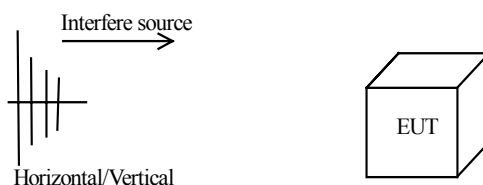
4.2.2 RF Radiated Fields Immunity Test

4.2.2.1 RF Radiated Fields Immunity Test Data

Operating Conditions of The EUT : Operation Mode

Test Date : Mar. 06, 2009

Test Specification	IEC 61000-4-3:2006/A1:2007			
Equipment	Manufacturer	Model No.	Calibration Date	Next Cal. Date
Antenna	AR	AT5080	N/A	N/A
signal Generator	Aglient	E4421B	2008/08/07	2009/08/07
Amplifier	Ophir	5172	N/A	N/A
Amplifier	Ophir	5127	N/A	N/A
POWER METER	Booton	4232A	2008/08/08	2009/08/08
Climatic Condition	Ambient Temperature: <u>25</u> °C		Relative Humidity: <u>55</u> %RH	
	Atmospheric Pressure : 990 mbar			
Power Supply System	AC Power : <u>230</u> Vac <u>50</u> Hz			
Test Set-up	Table-top Equipment			



Frequency Range:	<u>80</u> MHz ~ <u>1000</u> MHz	Field Strength:	<u>3</u> V/m	Modulation (AM 1KHz 80%)
Sweep Rate	: ≤ 1.5×10 ⁻³ decades/s	Step Size	: ≤ 1 % of preceding frequency value	Dwell time : 2.9 s
Frequency Range (MHz)	Antenna-Polarization	Direction of Device		Test Result
80~1000	Horizontal	front		A
		rear		A
		left		A
		right		A
80~1000	Vertical	front		A
		rear		A
		left		A
		right		A

Note : “A” means the EUT function was correct during the test .

4.2.2.2 RF Radiated Fields Immunity Test Setup Photos



4.2.3 EFT/Burst Immunity Test

4.2.3.1 EFT/Burst Immunity Test Data

Operating Conditions of The EUT : Operation Mode

Test Date : Mar. 12, 2009

Test Specification	IEC 61000-4-4:2004			
Equipment	Manufacturer	Model No.	Calibration Date	Next Cal. Date
EMC Immunity Tester	EMC-PARTNER	TRANSIENT-1000	2009/02/23	2010/02/23
Climatic Condition	Ambient Temperature: <u>25</u> °C		Relative Humidity: <u>55</u> %RH	
	Atmospheric Pressure : 990 mbar			
Power Supply System	AC Power : <u>230</u> Vac <u>50</u> Hz			
Test Set-up	Table-top Equipment			

Pulse : 5 /50ns Burst : 15ms /300ms		Repetition Rate : <u>5kHz</u>		Test time : <u>1</u> min/each condition	
\Voltage\Polarity\		<u>1.0 kV</u>			
\Test Point\Mode\Result\		+		-	
Power Line	L	A		A	
	N	A		A	
	L-N	A		A	
	PE	A		A	
	L-PE	A		A	
	N-PE	A		A	
	L-N-PE	A		A	

Note : “A” means the EUT function was correct during the test.

4.2.3.2 EFT/Burst Immunity Test Setup Photos



4.2.4 Surge Immunity Test

4.2.4.1 Surge Immunity Test Data

Operating Conditions of The EUT : Operation Mode

Test Date : Mar. 12, 2009

Test Specification	IEC 61000-4-5:2005			
Equipment	Manufacturer	Model No.	Calibration Date	Next Cal. Date
EMC Immunity Tester	EMC-PARTNER	TRANSIENT-1000	2009/02/23	2010/02/23
Climatic Condition	Ambient Temperature: <u>25</u> °C		Relative Humidity: <u>55</u> %RH	
	Atmospheric Pressure : 990 mbar			
Power Supply System	AC Power : <u>230</u> Vac <u>50</u> Hz			
Test Set-up	Table-top Equipment			

Waveform : 1.2/50µs(8/20µs)			Repetition rate : <u>60</u> sec		Times : <u>5</u> time/each condition	
\Voltage \Mode \Polarity \Result			0°	90°	180°	270°
0.5kV	L-N	+	A	A	A	A
		-	A	A	A	A
1.0kV	L-N	+	A	A	A	A
		-	A	A	A	A
0.5kV	L-N	+	A	A	A	A
		-	A	A	A	A
	N-PE	+	A	A	A	A
		-	A	A	A	A
1.0kV	L-N	+	A	A	A	A
		-	A	A	A	A
	N-PE	+	A	A	A	A
		-	A	A	A	A
2.0kV	L-N	+	A	A	A	A
		-	A	A	A	A
	N-PE	+	A	A	A	A
		-	A	A	A	A

Note : “A” means the EUT function was correct during the test.

4.2.4.2 Surge Immunity Test Setup Photos

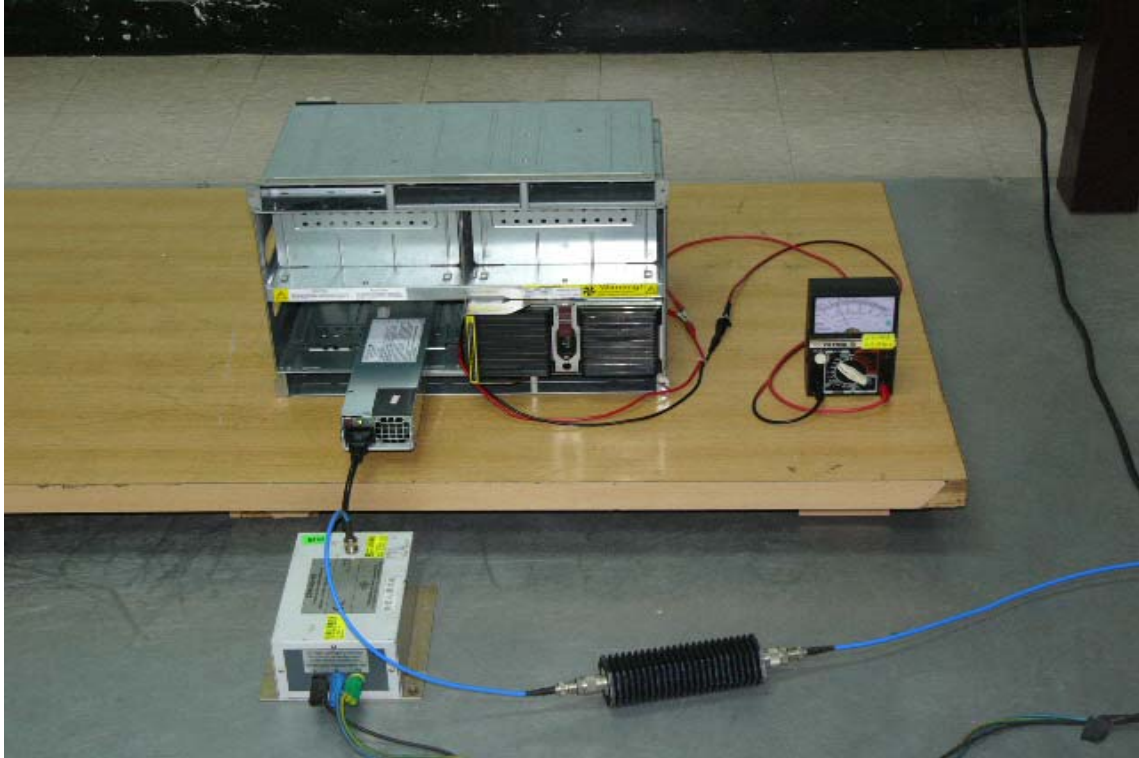
4.2.5 RF Common Mode Immunity Test**4.2.5.1 RF Common Mode Immunity Test Data**Operating Conditions of The EUT : Operation Mode

Test Date : Mar. 12, 2009

Test Specification	IEC 61000-4-6:2007			
Equipment	Manufacturer	Model No.	Calibration Date	Next Cal. Date
CS TESTER	FRANKONIA	CIT-10	2008/09/24	2009/09/24
M2+3 CDN-KIT	FRANKONIA	M2+3	2008/09/19	2009/09/19
SCHAFFUER	CS-CLAMP	KEMZ801	2008/09/19	2009/09/19
Climatic Condition	Ambient Temperature: <u>25</u> °C		Relative Humidity: <u>55</u> %RH	
Power Supply System	AC Power : <u>230</u> Vac <u>50</u> Hz			
Test Set-up	Table-top Equipment			

Frequency Range	: 0.15 MHz ~ 80 MHz	Field Strength	: 3 V/m	Modulation (AM 1kHz 80%)
Sweep Rate	: $\leq 1.5 \times 10^{-3}$ decades/s	Step Size	: ≤ 1 % of preceding frequency value	
			Dwell Time : <u>2.9</u> s	
Frequency Range (MHz)	Tested Line		Test Result	
0.15~80	M3		A	

Note : "A" means the EUT function was correct during the test.

4.2.5.2 RF Common Mode Immunity Test Setup Photos

4.2.6 Voltage Interruptions and Voltage Dips Immunity Test

4.2.6.1 Voltage Interruptions and Voltage Dips Immunity Test Data

Operating Conditions of The EUT : Operation Mode

Test Date : Mar. 12, 2009

Test Specification	IEC 61000-4-11:2004			
Equipment	Manufacturer	Model No.	Calibration Date	Next Cal. Date
EMC Immunity Tester	EMC-PARTNER	TRANSIENT-1000	2009/02/23	2010/02/23
Climatic Condition	Ambient Temperature: <u>25</u> °C		Relative Humidity: <u>55</u> %RH	
Power Supply System	AC Power: <u>100</u> Vac <u>60</u> Hz ; AC Power: <u>240</u> Vac <u>50</u> Hz			
Test Set-up	Table-top Equipment			

Test mode	Voltage dips	Durations (periods)	Interval(s)	Times	Phase	Result
Voltage interruptions	>95%	250	10	3	0°/180°	A
	>95%	300	10	3	0°/180°	A
Voltage dips in %U _T	>95%	0.5	10	3	0°/180°	A
	30%	25	10	3	0°/180°	A
	30%	30	10	3	0°/180°	A

Note : “A” means the EUT function was correct during the test.

4.2.6.2 Voltage Interruptions and Voltage Dips Immunity Test Setup Photos



CONSTRUCTED PHOTOS of EUT

1. Front View of EUT

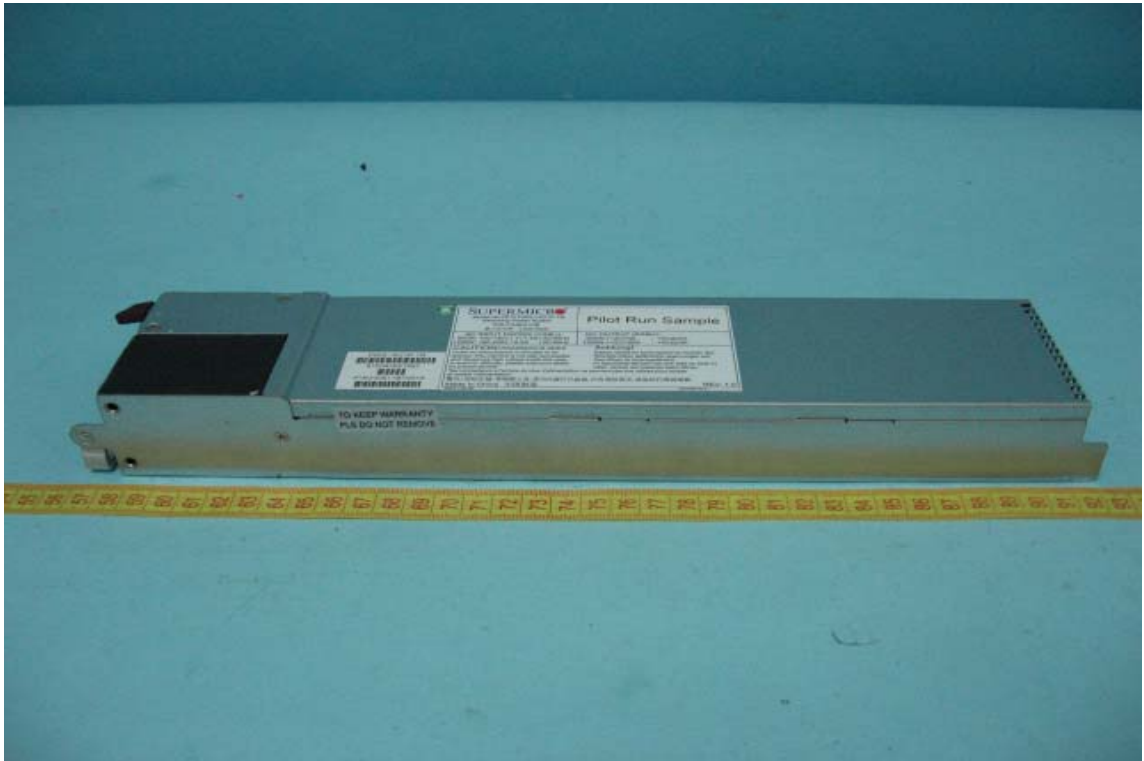


2. Rear View of EUT



CONSTRUCTED PHOTOS of EUT

3. Side View of EUT



4. Side View of EUT



CONSTRUCTED PHOTOS of EUT

5. Top View of EUT



6. Bottom View of EUT



CONSTRUCTED PHOTOS of EUT

7. Label View of EUT



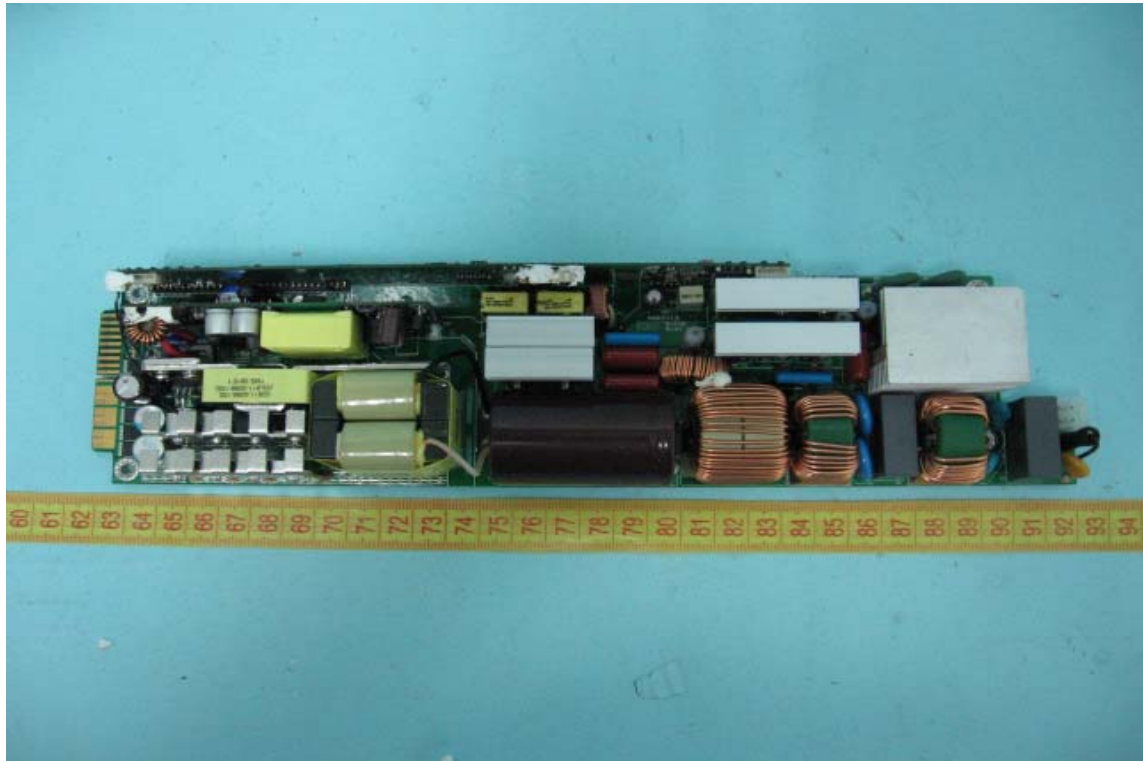
CONSTRUCTED PHOTOS of EUT

8. Internal View of EUT



CONSTRUCTED PHOTOS of EUT

9. Component View of PCB



10. Solder View of PCB

