1 SUMMARY OF STANDARDS AND RESULTS

1.1 Description of Standards and Results

The EUT have been tested according to the applicable standards as referenced below:

EMISSION			
Description of Test Item	**Standard**	**Limits**	**Results**
Conducted Disturbance at the Mains Terminal	EN 55022:2010 (CISPR 22:2008)	Class B	Pass
Conducted Common Mode Disturbance at Telecommunication Port	EN 55022:2010 (CISPR 22:2008)	N/A	N/A
Radiated Disturbance	EN 55022:2010 (CISPR 22:2008)	Class B	Pass
Harmonic Current Emission	EN 61000-3-2: 2006+A2:2009 (IEC 61000-3-2:2005+A2:2009)	N/A	N/A
Voltage Fluctuations and Flicker	EN 61000-3-3:2008 (IEC 61000-3-3:2008)	Section 5	Pass
IMMUNITY (EN 55024:2010) (CISPR 24:2010)			
Description of Test Item	**Basic Standard**	**Performance Criteria**	**Results**
Electrostatic Discharge (ESD)	IEC 61000-4-2:2008	B	Pass
Radio-frequency, Continuous Radiated Disturbance	IEC 61000-4-3:2010	A	Pass
Electrical Fast Transient (EFT)	IEC 61000-4-4:2004+A1:2010	B	Pass
Surge	IEC 61000-4-5:2005	B	Pass
Radio-frequency, Continuous Conducted Disturbance	IEC 61000-4-6:2008	A	Pass
Power Frequency Magnetic Field	IEC 61000-4-8:2009	A	Pass
Voltage Dips, >95%Reduction	IEC 61000-4-11:2004	B	Pass
Voltage Dips, 30% Reduction		C	Pass
Voltage Interruptions		C	Pass
N/A is an abbreviation for Not Applicable.			

1.2 Description of Performance Criteria

The variety and the diversity of the apparatus within the scope of this standard make it difficult to define precise criteria for the evaluation of the immunity test results.
If, as result of the application of the tests defined in this standard, the apparatus becomes dangerous or unsafe, the apparatus shall be deemed to have failed the test.
A functional description and a definition of performance criteria, during or as a consequence of the EMC testing, shall be provided by the manufacturer and noted in the test report, based on the following criteria:

1.2.1 Performance criterion A

The apparatus shall continue to operate as intended during the test. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer, when the apparatus is used as intended. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and from what the user may reasonably expect from the apparatus if used as intended.

Particular performance criteria for data display equipment:

When seen from the normal viewing distance, the EUT shall operate with no change beyond the manufacturer's specification, in flicker, color, focus and jitter.

1.2.2 Performance criterion B

The apparatus shall continue to operate as intended after the test. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer, when the apparatus is used as intended. The performance level may be replaced by a permissible loss of performance. During the test, degradation of performance is allowed however. No change of actual operating state or stored data is allowed. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and from what the user may reasonably expect from the apparatus if used as intended.

Particular performance criteria for data display equipment:

Screen disturbances during the application of the test are permissible.

1.2.3 Performance criterion C

Temporary loss of function is allowed, provided the function is self-recoverable or can be restored by the operation of the controls, or by any operation specified in the instructions for use.

Particular performance criteria for data display equipment:

Failures which are not self-recovered after removal of the external disturbance, but which can be recovered to normal operation by reset or reboot are permissible.

2 GENERAL INFORMATION

2.1 Description of EUT

Description : Switching Power Supply

Model No.:	AK25W-SSM-5	AK25W -SSM-7.5	AK25W -SSM-9
	AK25W-SSM-12	AK25W -SSM-13.8	AK25W -SSM-15
	AK25W -SSM-18	AK25W -SSM-24	AK25W -SSM-27
	AK25W -SSM-28	AK25W -SSM-36	AK25W -SSM-48
Serial No.:	E1207849-02/03	--	--
	--	--	--
	--	E1207849-03/03	--
	--	--	E1207849-01/03

Note #1 : AK25W -SSM-5, AK25W -SSM-24 and AK25W -SSM-48 were tested

and recorded in this report.

Input :

Model Number	AC Input
AK25W -SSM-5	100V-240V (88~264V) 50/60Hz
AK25W -SSM-24	
AK25W -SSM-48	

Output :

Model Number	DC Output
AK25W -SSM-5	5V 5.0A
AK25W -SSM-24	24V 1.1A
AK25W -SSM-48	48V 0.57A

Output Tolerance : ±2% for AK25W -SSM-5

±1% for AK25W -SSM-24 & AK25W -SSM-48

Real Power :

Model Number	Real Power
AK25W -SSM-5	31.3W
AK25W -SSM-24	29.7W
AK25W -SSM-48	31.3W

2.2 Load

Model Number	Full Load (Ω)	Half Load (Ω)
AK25W -SSM-5	1.00	2.00
AK25W -SSM-24	21.81	43.62
AK25W -SSM-48	84.21	168.42

2.3 Description of Test Facility

Name of Firm : Audix Technology (Shanghai) Co., Ltd.

Site Location : 3F 34Bldg 680 Guiping Rd,
Caohejing Hi-Tech Park,
Shanghai 200233, China

Accredited by NVLAP, Lab Code : 200371-0

2.4 Measurement Uncertainty

Conducted Emission Expanded Uncertainty: U = 3.42 dB
Radiated Emission Expanded Uncertainty (30-200MHz): U = 4.14 dB (Horizontal)
U = 4.28 dB (Vertical)
Radiated Emission Expanded Uncertainty (200M-1GHz): U = 4.18 dB (Horizontal)
U = 4.26 dB (Vertical)

3 TEST EQUIPMENT

3.1 For Conducted Disturbance Test

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Test Receiver	R&S	ESCI	100841	Mar 22, 2012	Mar 22, 2013
2.	Artificial Mains Network (AMN)	R&S	ESH2-Z5	843890/011	Feb 13, 2012	Feb 13, 2013
3.	50Ω Coaxial Switch	Anritsu	MP59B	6200426389	Mar 18, 2012	Sep 18, 2012
4.	Software	Audix	E3	SET00200 9804M592	--	--

3.2 For Radiated Disturbance Test

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Test Receiver	R&S	ESVS10	844594/001	Mar 22, 2012	Mar 22, 2013
2.	Preamplifier	Agilent	8447D	2944A10548	Mar 18, 2012	Sep 18, 2012
3.	Bi-log Antenna	TESEQ	CBL6112D	23192	Dec 01, 2011	Dec 01, 2012
4.	Spectrum	Agilent	E7405A	MY45106600	Mar 22, 2012	Mar 22, 2013
5.	50Ω Coaxial Switch	Anritsu	MP59B	6200426389	Mar 18, 2012	Sep 18, 2012
6.	Software	Audix	E3	SET00200 9912M295-2	--	--

3.3 For Voltage Fluctuations and Flicker Test

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	AC Source	CI	5001IX	58478	Mar 22, 2012	Mar 22, 2013
2.	Power Analyzer	CI	PACS-1	72626	Mar 22, 2012	Mar 22, 2013
3.	Software	CI	CTS 3.0	Version 3.2.0.32	--	--

3.4 For Electrostatic Discharge Immunity Test

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	ESD Simulator	TESEQ	NSG 437	130	Dec 05, 2011	Dec 05, 2012
2.	Digital Multimeter	Agilent	34401A	MY41050690	Mar 22, 2012	Mar 22, 2013

3.5 For RF Electromagnetic Field Immunity Test

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Signal Generator	Agilent	E4421B	MY 43350935	Mar 22, 2012	Mar 22, 2013
2.	Power Amplifier	AR	KAW 2180	10088-1	Mar 22, 2012	Mar 22, 2013
3.	Log-Periodic Antenna	AR	AT1080	19300	Jan 30, 2012	Jan 30, 2013
4.	Dual Directional Coupler (DDC)	AR	DC6180	19326	Mar 18, 2012	Sep 18, 2012
5.	Power Meter	HP	438A	2517A02731	Mar 22, 2012	Mar 22, 2013
6.	Power Sensor	HP	8481D	3318A13765	Apr 06, 2012	Apr 06, 2013
7.	Field Monitor	AR	FM2000	19221	NCR	NCR
8.	Field Probe	AR	FP2036	308920	May 19, 2012	May 19, 2013
9.	Digital Multimeter	Agilent	34401A	MY41050690	Mar 22, 2012	Mar 22, 2013

3.6 For Electrical Fast Transient/Burst Immunity Test

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	EFT Generator	Prima	EFT61004A	PR11034301	Jul 08, 2012	Jul 08, 2013
2.	Digital Multimeter	Agilent	34401A	MY41050690	Mar 22, 2012	Mar 22, 2013

3.7 For Surge Immunity Test

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Surge Generator	Prima	SUG61005B	PR11065349	Jul 06, 2012	Jul 06, 2013
2.	Digital Multimeter	Agilent	34401A	MY41050690	Mar 22, 2012	Mar 22, 2013

3.8 For Conducted Disturbances Immunity Test

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Signal Generator	HP	8648A	3636A02166	Mar 18, 2012	Sep 18, 2012
2.	Coupling Decoupling Network (CDN)	FCC	FCC-801-M3-25	105	Mar 22, 2012	Mar 22, 2013
3.	Power Amplifier	AR	100A250	19367	Mar 22, 2012	Mar 22, 2013
4.	Attenuator	HP	40-6-34	LJ094	Mar 18, 2012	Sep 18, 2012
5.	Power Meter	HP	438A	2517A02731	Mar 22, 2012	Mar 22, 2013
6.	Power Sensor	HP	8482B	3318A06358	Mar 22, 2012	Mar 22, 2013
7.	Digital Multimeter	Agilent	34401A	MY41050690	Mar 22, 2012	Mar 22, 2013

3.9 For Power Frequency Magnetic Field Immunity Test

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	p-f Magnetic Field Loop	FCC	F-1000-4-8/9/10-1M	13	Mar 22, 2012	Mar 22, 2013
2.	EMC Immunity test system	KeyTek	CE Master	9609367	Mar 22, 2012	Mar 22, 2013
3.	Digital Multimeter	Agilent	34401A	MY41050690	Mar 22, 2012	Mar 22, 2013

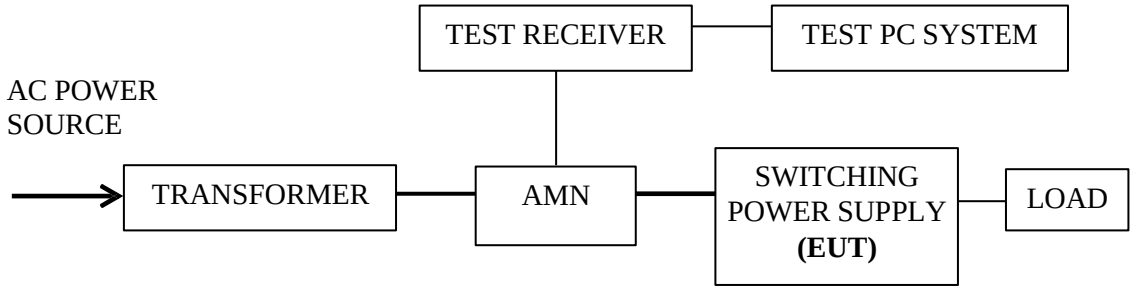
3.10 For Voltage Dips and Short Interruptions Immunity Test

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	EMC Immunity test system	KeyTek	CE Master	9609367	Mar 22, 2012	Mar 22, 2013
2.	Digital Multimeter	Agilent	34401A	MY41050690	Mar 22, 2012	Mar 22, 2013

4 CONDUCTED DISTURBANCE TEST

4.1 Block Diagram of Test Setup

4.1.1 Conducted Disturbance Test Setup



: Signal Line
: Power Line

4.2 Applicable Standard

EN 55022:2010 (CISPR 22:2008) (Class B)

4.3 Limits for Conducted Disturbance

Frequency Range (MHz)	Limits dB (μV)	
	Quasi-peak	Average
0.15 ~ 0.5	66~56	56~46
0.5 ~ 5	56	46
5 ~ 30	60	50

NOTE 1 - The lower limit shall apply at the transition frequencies.

NOTE 2 - The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz~0.50 MHz

NOTE 3 - If the average limit is met when using a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with the average detector is unnecessary.

4.4 EUT Configuration

The EUT and the peripherals were installed as shown on Sec.4.1.1. in Conducted Disturbance Test to meet EN 55022:2010 (CISPR 22:2008) (Class B) requirement and operating in a manner which tends to maximize its disturbance level in a normal application.

4.5 Operating Condition of EUT

4.5.1 Set up the EUT as shown in Sec.4.1.

4.5.2 Turn on the power of all equipments.

4.5.3 Turn on the power of EUT.

4.5.4 Set the EUT on the test modes, and then test.

4.6 Test Procedure

The EUT was placed upon a non-metallic table, which is 0.8 m above the horizontal conducting ground plane and 0.4 m from a vertical reference plane. The EUT was connected to the power mains through an Artificial Mains Network (AMN) to provide a 50 ∧ coupling impedance for the measuring equipment. Both sides of AC line (Line & Neutral) were checked to find out the maximum conducted emission according to EN 55022:2010 regulations during conducted disturbance test.

The IF bandwidth of R & S Test Receiver ESCI was set at 9 kHz.

The frequency range from 150 kHz to 30 MHz was checked.

The test mode (Full Load and Half Load) were done on conducted disturbance test and all the test results are listed in Sec. 4.7.

4.7 Test Results

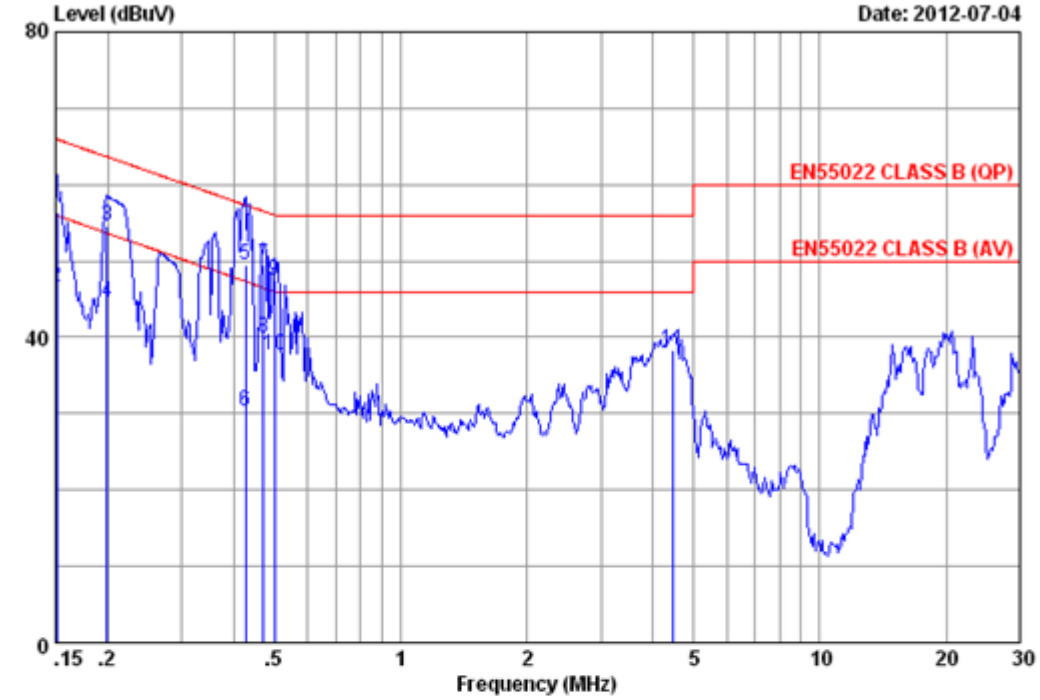
<PASS>
The frequency range is swept from 150 kHz to 30 MHz.

All the following records are the disturbance levels and the frequencies of the highest disturbances, and if the emissions not reported below are too low against the prescribed limits.

Model Number	Test Mode	Data Page
AK25W -SSM-5	Full Load	P15 – P16
	Half Load	P17 – P18
AK25W -SSM-24	Full Load	P19 – P20
	Half Load	P21 – P22
AK25W -SSM-48	Full Load	P23 – P24
	Half Load	P25 – P26

NOTE 1 – "QP" means "Quasi-Peak" values, "AV" means "Average" values.
NOTE 2 – The worst case is for Half Load (M/N: AK25W-SSM-5) test mode. The worst emission is detected at 0.413 MHz (Quasi-Peak Value) with corrected signal level of 52.04 dB (μV) (limit is 57.59 dB (μV)), when the Line of the EUT is connected to AMN.

Data: 111

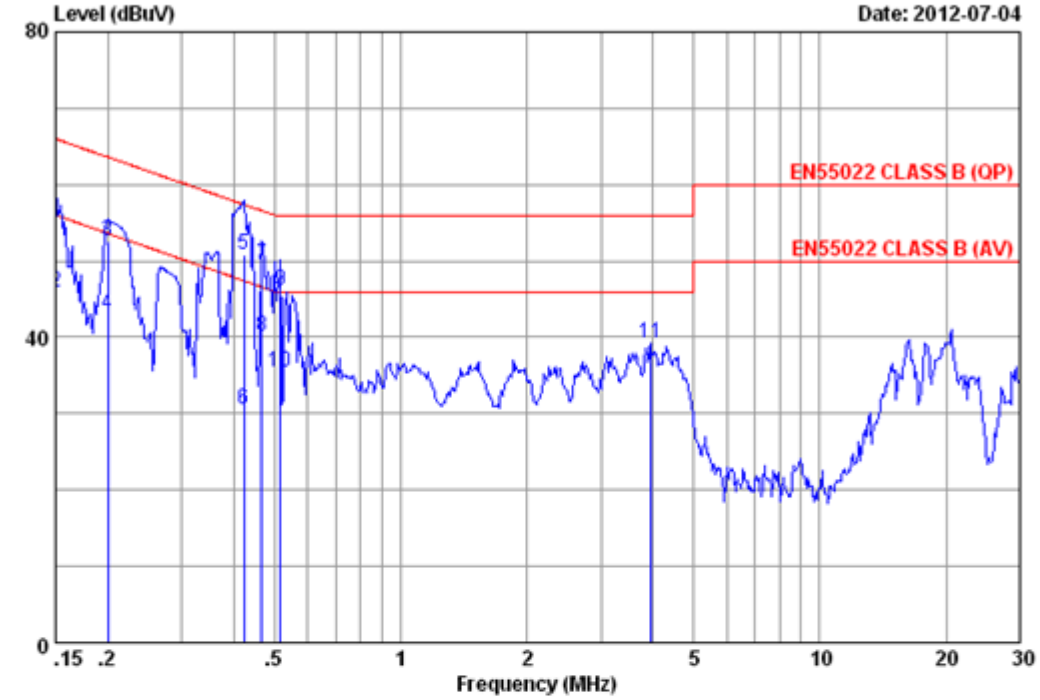


Site no : Audix(Shanghai) Shielded1 Data no :111
AMN : ESH2-Z5-20120213 AMN Phase :LINE
Limit : EN55022 CLASS B (QP)
Env/Ins : 22'C 48%RH / ESCI Engineer :Sawen
EUT : Switching Power Supply
M/N : AK25W-SSM-5
S/N : E1207849-02/03
Power Rating : 230V/50Hz
Test Mode : Full Load

	Freq (MHz)	AMN. Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.151	0.20	0.03	56.12	56.35	65.96	9.61	QP
2	0.151	0.20	0.03	46.31	46.54	55.96	9.42	Average
3	0.199	0.22	0.03	54.26	54.51	63.67	9.16	QP
4	0.199	0.22	0.03	44.31	44.56	53.67	9.11	Average
5	0.426	0.30	0.04	49.02	49.36	57.33	7.97	QP
6	0.426	0.30	0.04	29.90	30.24	47.33	17.09	Average
7	0.471	0.31	0.04	49.11	49.46	56.49	7.03	QP
8	0.471	0.31	0.04	39.64	39.99	46.49	6.50	Average
9	0.499	0.31	0.04	47.06	47.41	56.01	8.60	QP
10	0.499	0.31	0.04	37.26	37.61	46.01	8.40	Average
11	4.454	0.32	0.18	37.87	38.37	56.00	17.63	QP

Remark: 1.Emission Level= AMN Factor + Cable Loss + Reading.
2.If the average limit is met when using a quasipeak detector the EUT shall be deemed to meet both limits and measurement with averavge detector is unnecessary.

Data: 112

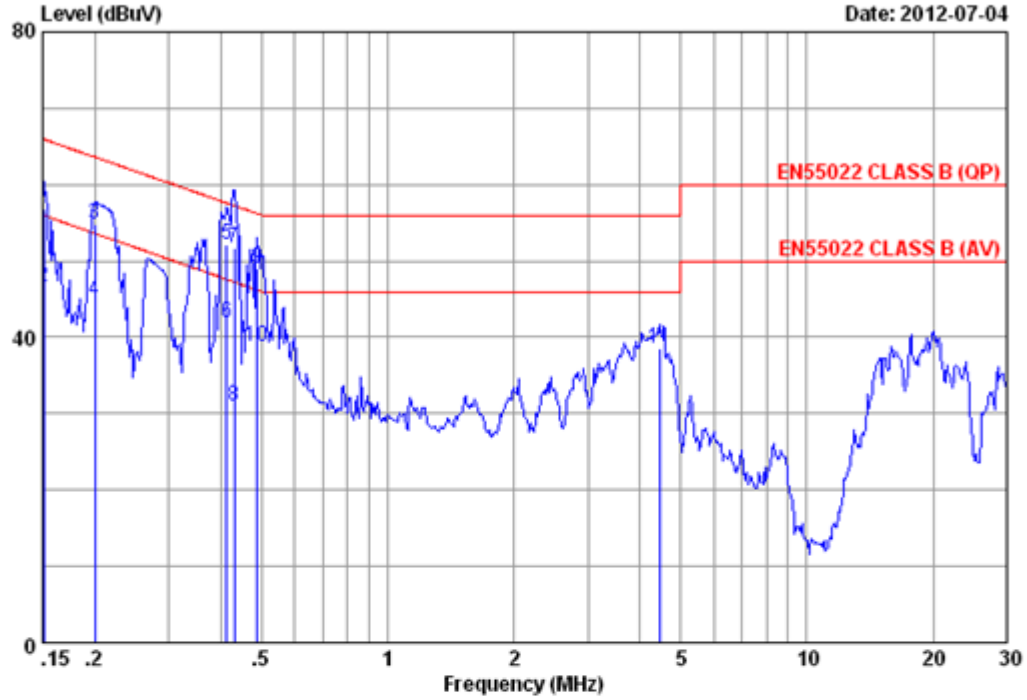


Site no : Audix(Shanghai) Shielded1 Data no :112
AMN : ESH2-Z5-20120213 AMN Phase :NEUTRAL
Limit : EN55022 CLASS B (QP)
Env/Ins : 22'C 48%RH / ESCI Engineer :Sawen
EUT : Switching Power Supply
M/N : AK25W-SSM-5
S/N : E1207849-02/03
Power Rating : 230V/50Hz
Test Mode : Full Load

	Freq (MHz)	AMN. Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.150	0.10	0.03	55.84	55.97	66.00	10.03	QP
2	0.150	0.10	0.03	45.67	45.80	56.00	10.20	Average
3	0.200	0.09	0.03	52.42	52.54	63.62	11.08	QP
4	0.200	0.09	0.03	42.94	43.06	53.62	10.56	Average
5	0.422	0.13	0.04	50.63	50.80	57.41	6.61	QP
6	0.422	0.13	0.04	30.39	30.56	47.41	16.85	Average
7	0.466	0.13	0.04	49.33	49.50	56.58	7.08	QP
8	0.466	0.13	0.04	39.89	40.06	46.58	6.52	Average
9	0.516	0.13	0.04	45.87	46.04	56.00	9.96	QP
10	0.516	0.13	0.04	35.21	35.38	46.00	10.62	Average
11	3.943	0.22	0.17	38.82	39.21	56.00	16.79	QP

Remark: 1.Emission Level= AMN Factor + Cable Loss + Reading.
2.If the average limit is met when using a quasipeak detector the EUT shall be deemed to meet both limits and measurement with averavge detector is unnecessary.

Data: 114

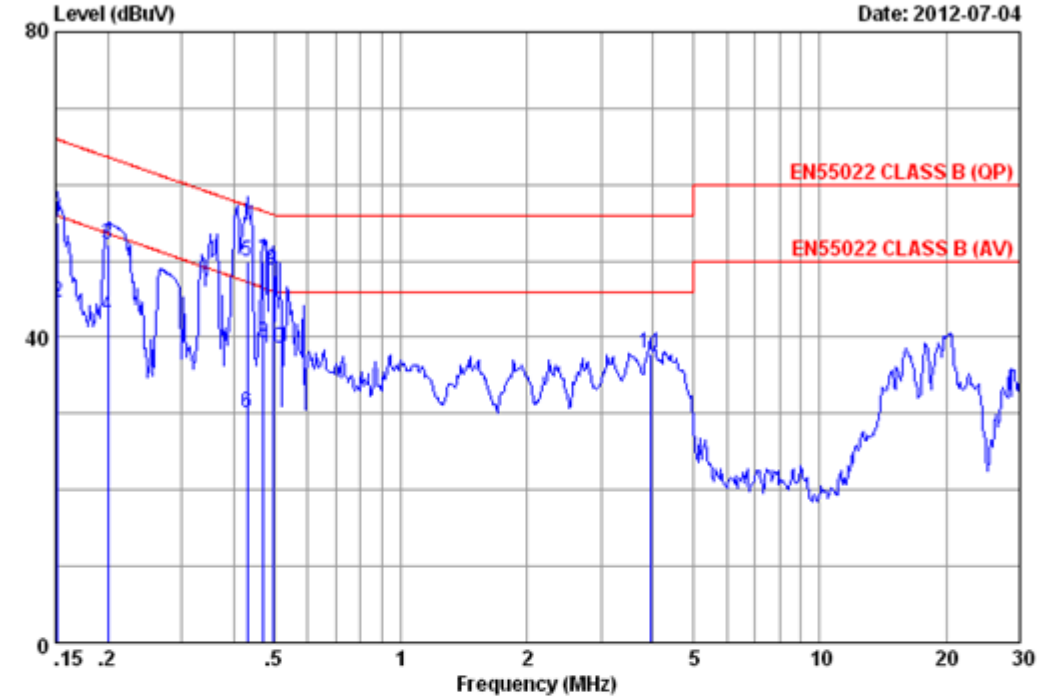


Site no : Audix(Shanghai) Shielded1 Data no :114
AMN : ESH2-Z5-20120213 AMN Phase :LINE
Limit : EN55022 CLASS B (QP)
Env/Ins : 22'C 48%RH / ESCI Engineer :Sawen
EUT : Switching Power Supply
M/N : AK25W-SSM-5
S/N : E1207849-02/03
Power Rating : 230V/50Hz
Test Mode : Half Load

	Freq (MHz)	AMN. Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.151	0.20	0.03	56.68	56.91	65.96	9.05	QP
2	0.151	0.20	0.03	46.35	46.58	55.96	9.38	Average
3	0.200	0.22	0.03	54.55	54.80	63.62	8.82	QP
4	0.200	0.22	0.03	44.64	44.89	53.62	8.73	Average
5	0.413	0.30	0.04	51.70	52.04	57.59	5.55	QP
6	0.413	0.30	0.04	41.65	41.99	47.59	5.60	Average
7	0.431	0.31	0.04	51.24	51.59	57.24	5.65	QP
8	0.431	0.31	0.04	30.59	30.94	47.24	16.30	Average
9	0.489	0.31	0.04	48.62	48.97	56.19	7.22	QP
10	0.489	0.31	0.04	38.46	38.81	46.19	7.38	Average
11	4.454	0.32	0.18	38.06	38.56	56.00	17.44	QP

Remark: 1.Emission Level= AMN Factor + Cable Loss + Reading.
2.If the average limit is met when using a quasipeak detector the EUT shall be deemed to meet both limits and measurement with averavge detector is unnecessary.

Data: 113

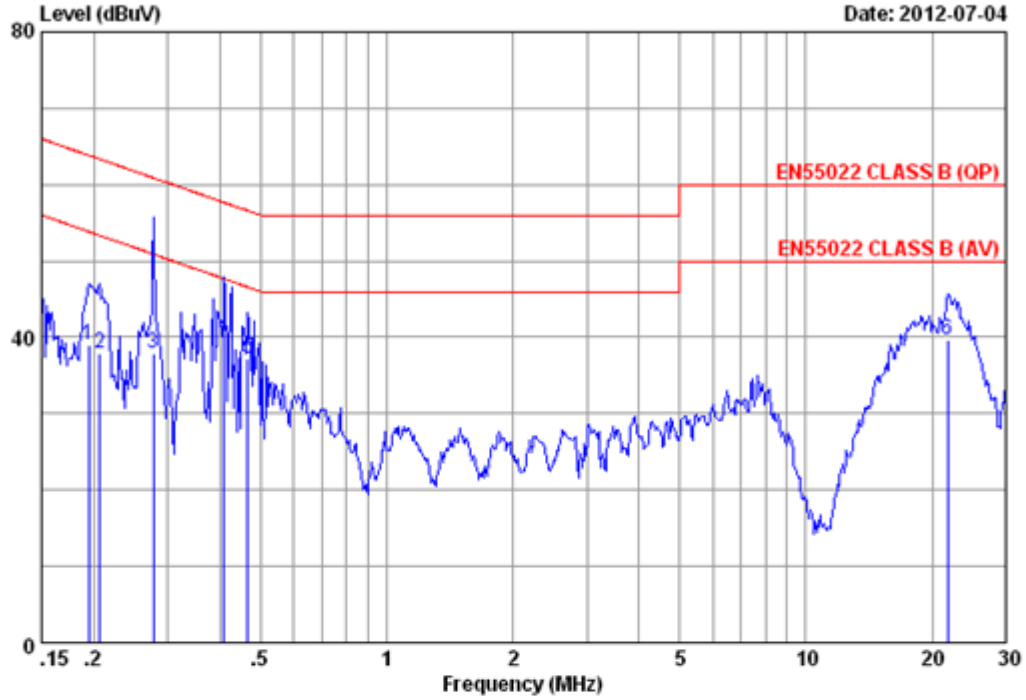


Site no : Audix(Shanghai) Shielded1 Data no :113
AMN : ESH2-Z5-20120213 AMN Phase :NEUTRAL
Limit : EN55022 CLASS B (QP)
Env/Ins : 22'C 48%RH / ESCI Engineer :Sawen
EUT : Switching Power Supply
M/N : AK25W-SSM-5
S/N : E1207849-02/03
Power Rating : 230V/50Hz
Test Mode : Half Load

	Freq (MHz)	AMN. Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.152	0.10	0.03	54.92	55.05	65.91	10.86	QP
2	0.152	0.10	0.03	44.36	44.49	55.91	11.42	Average
3	0.200	0.09	0.03	52.01	52.13	63.62	11.49	QP
4	0.200	0.09	0.03	42.67	42.79	53.62	10.83	Average
5	0.431	0.13	0.04	49.64	49.81	57.24	7.43	QP
6	0.431	0.13	0.04	30.00	30.17	47.24	17.07	Average
7	0.471	0.13	0.04	49.68	49.85	56.49	6.64	QP
8	0.471	0.13	0.04	39.13	39.30	46.49	7.19	Average
9	0.494	0.13	0.04	48.68	48.85	56.10	7.25	QP
10	0.494	0.13	0.04	38.46	38.63	46.10	7.47	Average
11	3.943	0.22	0.17	37.54	37.93	56.00	18.07	QP

Remark: 1.Emission Level= AMN Factor + Cable Loss + Reading.
2.If the average limit is met when using a quasipeak detector the EUT shall be deemed to meet both limits and measurement with averavge detector is unnecessary.

Data: 118

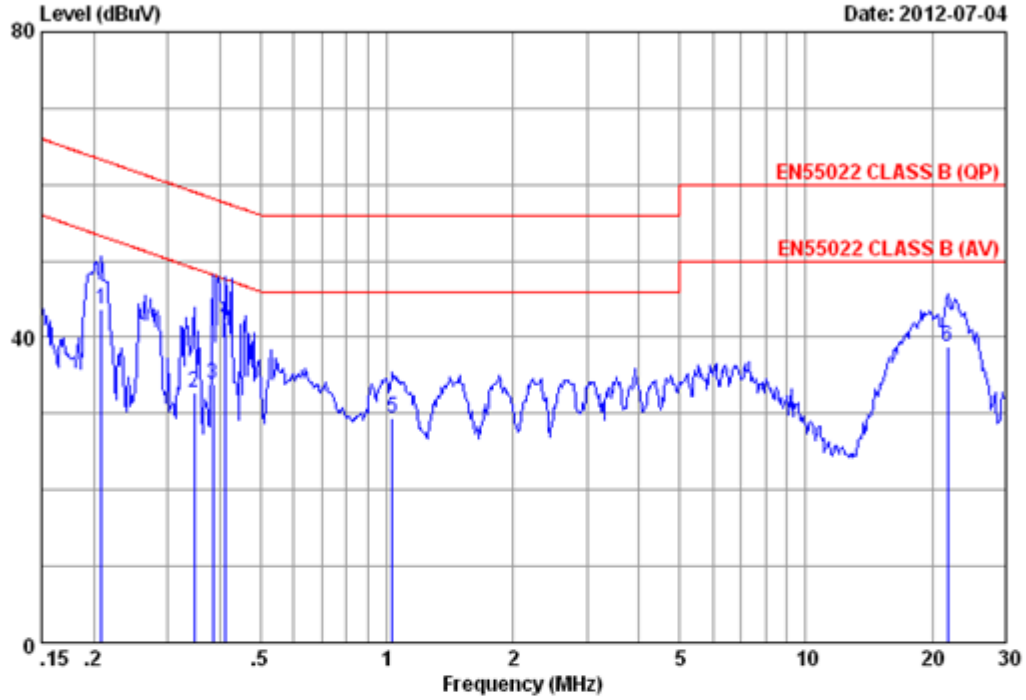


Site no	: Audix(Shanghai) Shielded1	Data no	:118
AMN	: ESH2-Z5-20120213	AMN Phase	:LINE
Limit	: EN55022 CLASS B (QP)		
Env/Ins	: 22'C 48%RH / ESCI	Engineer	:Sawen
EUT	: Switching Power Supply		
M/N	: AK25W-SSM-24		
S/N	: E1207849-03/03		
Power Rating	: 230V/50Hz		
Test Mode	: Full Load		

	Freq (MHz)	AMN. Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.194	0.22	0.03	38.66	38.91	63.84	24.93	QP
2	0.206	0.22	0.03	37.69	37.94	63.36	25.42	QP
3	0.277	0.24	0.02	37.53	37.79	60.90	23.11	QP
4	0.408	0.30	0.03	39.68	40.01	57.68	17.67	QP
5	0.466	0.31	0.04	36.89	37.24	56.58	19.34	QP
6	21.830	0.58	0.41	38.68	39.67	60.00	20.33	QP

Remark: 1.Emission Level= AMN Factor + Cable Loss + Reading.
2.If the average limit is met when using a quasipeak detector the EUT shall be deemed to meet both limits and measurement with averavge detector is unnecessary.

Data: 117

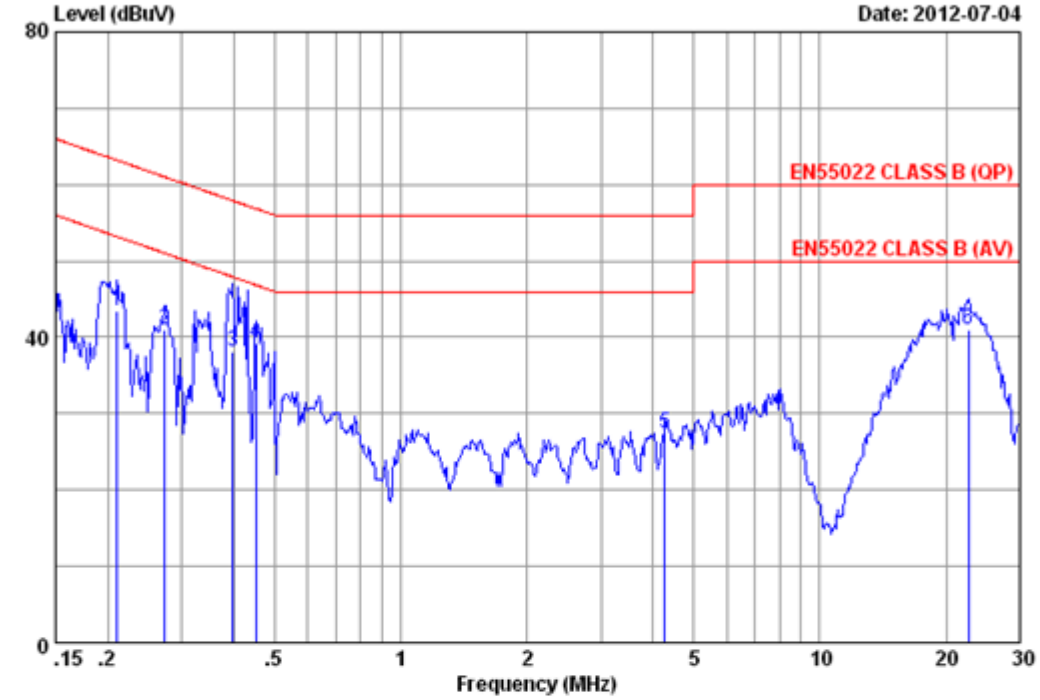


Site no : Audix(Shanghai) Shielded1 Data no :117
AMN : ESH2-Z5-20120213 AMN Phase :NEUTRAL
Limit : EN55022 CLASS B (QP)
Env/Ins : 22'C 48%RH / ESCI Engineer :Sawen
EUT : Switching Power Supply
M/N : AK25W-SSM-24
S/N : E1207849-03/03
Power Rating : 230V/50Hz
Test Mode : Full Load

	Freq (MHz)	AMN. Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.208	0.09	0.03	43.51	43.63	63.27	19.64	QP
2	0.346	0.12	0.02	32.67	32.81	59.05	26.24	QP
3	0.385	0.13	0.03	33.60	33.76	58.17	24.41	QP
4	0.413	0.13	0.04	41.85	42.02	57.59	15.57	QP
5	1.032	0.15	0.07	29.27	29.49	56.00	26.51	QP
6	21.830	0.48	0.41	37.82	38.71	60.00	21.29	QP

Remark: 1.Emission Level= AMN Factor + Cable Loss + Reading.
2.If the average limit is met when using a quasipeak detector the EUT shall be deemed to meet both limits and measurement with averavge detector is unnecessary.

Data: 115

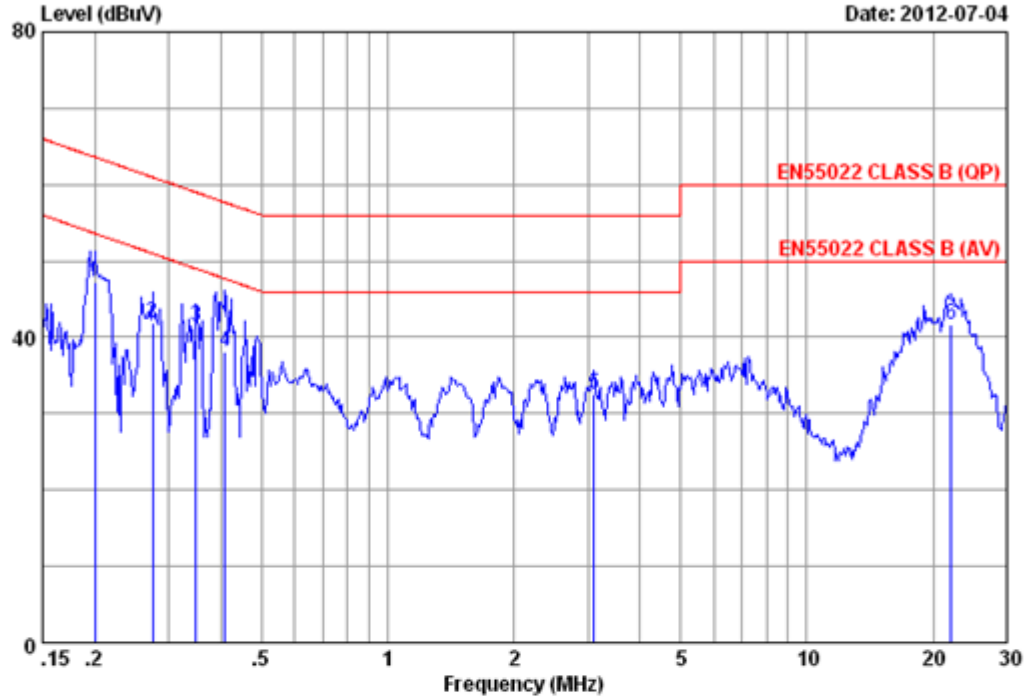


Site no : Audix(Shanghai) Shielded1 Data no :115
AMN : ESH2-Z5-20120213 AMN Phase :LINE
Limit : EN55022 CLASS B (QP)
Env/Ins : 22'C 48%RH / ESCI Engineer :Sawen
EUT : Switching Power Supply
M/N : AK25W-SSM-24
S/N : E1207849-03/03
Power Rating : 230V/50Hz
Test Mode : Half Load

	Freq (MHz)	AMN. Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.211	0.22	0.03	43.31	43.56	63.18	19.62	QP
2	0.273	0.23	0.02	40.84	41.09	61.03	19.94	QP
3	0.398	0.30	0.03	37.67	38.00	57.90	19.90	QP
4	0.452	0.31	0.04	38.83	39.18	56.85	17.67	QP
5	4.269	0.32	0.17	26.85	27.34	56.00	28.66	QP
6	22.655	0.63	0.45	39.84	40.92	60.00	19.08	QP

Remark: 1.Emission Level= AMN Factor + Cable Loss + Reading.
2.If the average limit is met when using a quasipeak detector the EUT shall be deemed to meet both limits and measurement with averavge detector is unnecessary.

Data: 116

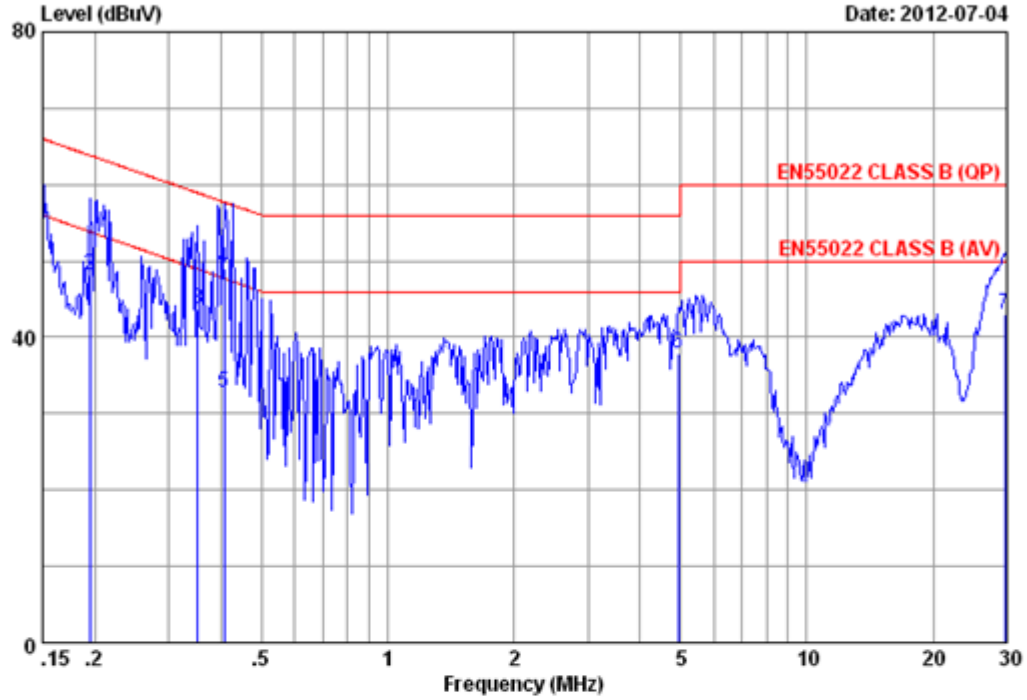


Site no : Audix(Shanghai) Shielded1 Data no :116
AMN : ESH2-Z5-20120213 AMN Phase :NEUTRAL
Limit : EN55022 CLASS B (QP)
Env/Ins : 22'C 48%RH / ESCI Engineer :Sawen
EUT : Switching Power Supply
M/N : AK25W-SSM-24
S/N : E1207849-03/03
Power Rating : 230V/50Hz
Test Mode : Half Load

	Freq (MHz)	AMN. Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.200	0.09	0.03	47.16	47.28	63.62	16.34	QP
2	0.274	0.10	0.02	41.74	41.86	60.98	19.12	QP
3	0.348	0.12	0.02	41.23	41.37	59.00	17.63	QP
4	0.408	0.13	0.03	37.95	38.11	57.68	19.57	QP
5	3.107	0.14	0.11	32.32	32.57	56.00	23.43	QP
6	22.063	0.48	0.42	40.80	41.70	60.00	18.30	QP

Remark: 1.Emission Level= AMN Factor + Cable Loss + Reading.
2.If the average limit is met when using a quasipeak detector the EUT shall be deemed to meet both limits and measurement with averavge detector is unnecessary.

Data: 119

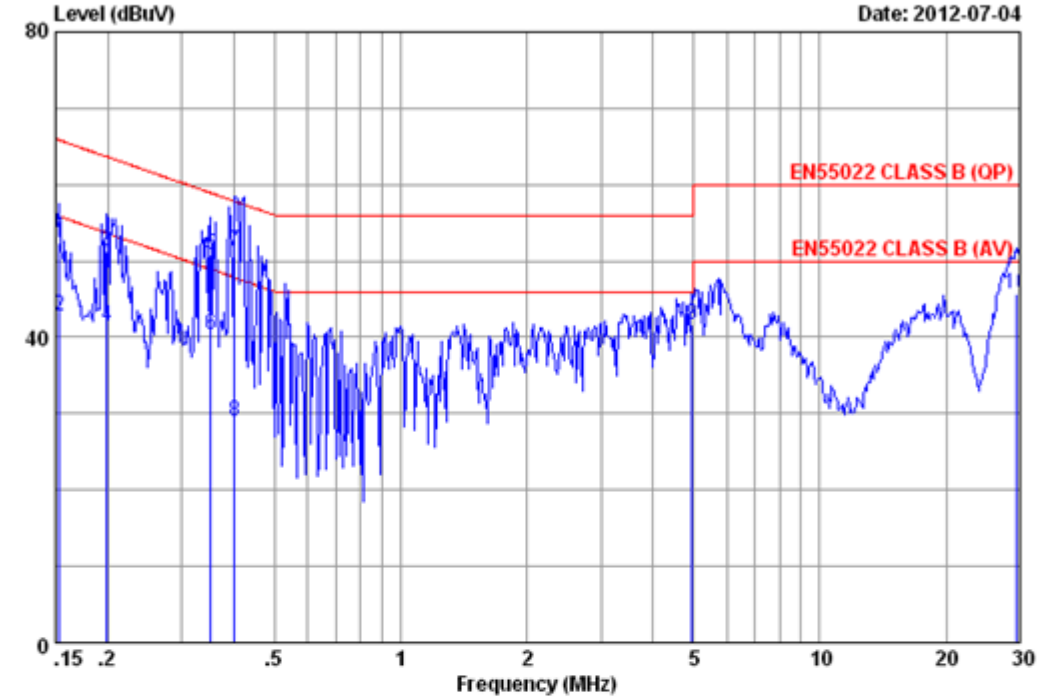


Site no : Audix(Shanghai) Shielded1 Data no :119
AMN : ESH2-Z5-20120213 AMN Phase :LINE
Limit : EN55022 CLASS B (QP)
Env/Ins : 22'C 48%RH / ESCI Engineer :Sawen
EUT : Switching Power Supply
M/N : AK25W-SSM-48
S/N : E1207849-01/03
Power Rating : 230V/50Hz
Test Mode : Full Load

	Freq (MHz)	AMN. Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.150	0.20	0.03	50.36	50.59	66.00	15.41	QP
2	0.194	0.22	0.03	47.83	48.08	63.84	15.76	QP
3	0.352	0.29	0.02	43.27	43.58	58.91	15.33	QP
4	0.406	0.30	0.03	48.70	49.03	57.73	8.70	QP
5	0.406	0.30	0.03	32.41	32.74	47.73	14.99	Average
6	4.926	0.32	0.18	37.32	37.82	56.00	18.18	QP
7	29.684	0.77	0.50	41.83	43.10	60.00	16.90	QP

Remark: 1.Emission Level= AMN Factor + Cable Loss + Reading.
2.If the average limit is met when using a quasipeak detector the EUT shall be deemed to meet both limits and measurement with averavge detector is unnecessary.

Data: 120

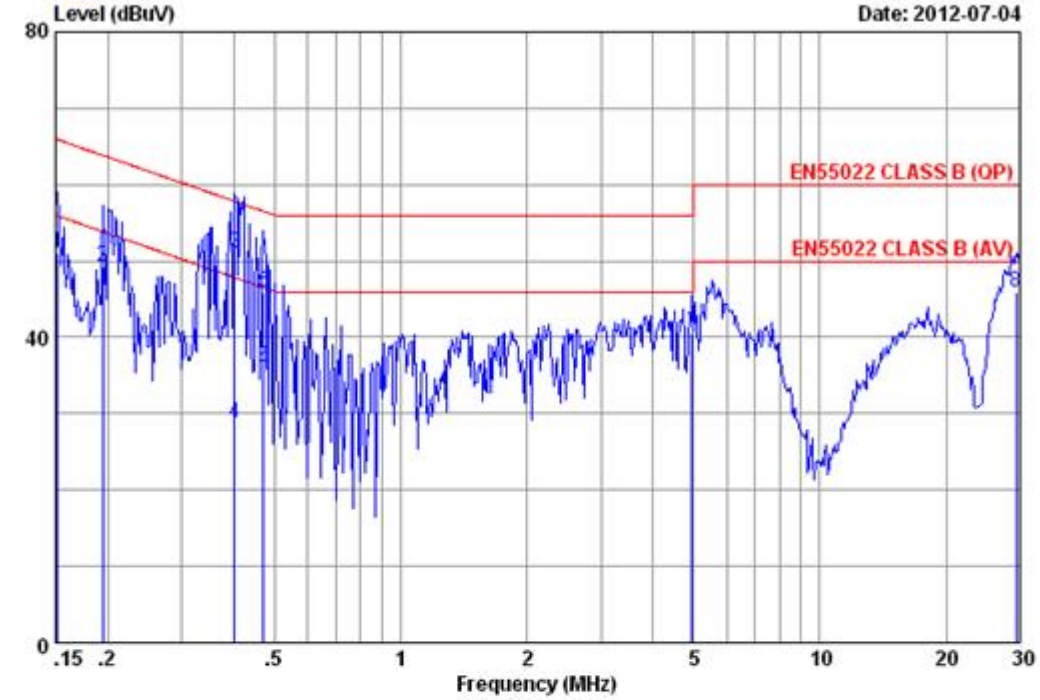


Site no	: Audix(Shanghai) Shielded1	Data no	:120
AMN	: ESH2-Z5-20120213	AMN Phase	:NEUTRAL
Limit	: EN55022 CLASS B (QP)		
Env/Ins	: 22'C 48%RH / ESCI	Engineer	:Sawen
EUT	: Switching Power Supply		
M/N	: AK25W-SSM-48		
S/N	: E1207849-01/03		
Power Rating	: 230V/50Hz		
Test Mode	: Full Load		

	Freq (MHz)	AMN. Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.153	0.10	0.03	52.26	52.39	65.82	13.43	QP
2	0.153	0.10	0.03	42.65	42.78	55.82	13.04	Average
3	0.199	0.09	0.03	51.12	51.24	63.67	12.43	QP
4	0.199	0.09	0.03	41.23	41.35	53.67	12.32	Average
5	0.352	0.12	0.02	50.63	50.77	58.91	8.14	QP
6	0.352	0.12	0.02	40.27	40.41	48.91	8.50	Average
7	0.402	0.13	0.03	50.98	51.14	57.81	6.67	QP
8	0.402	0.13	0.03	28.90	29.06	47.81	18.75	Average
9	4.952	0.24	0.18	41.24	41.66	56.00	14.34	QP
10	29.371	0.64	0.50	44.64	45.78	60.00	14.22	QP

Remark: 1.Emission Level= AMN Factor + Cable Loss + Reading.
2.If the average limit is met when using a quasipeak detector the EUT shall be deemed to meet both limits and measurement with averavge detector is unnecessary.

Data: 122

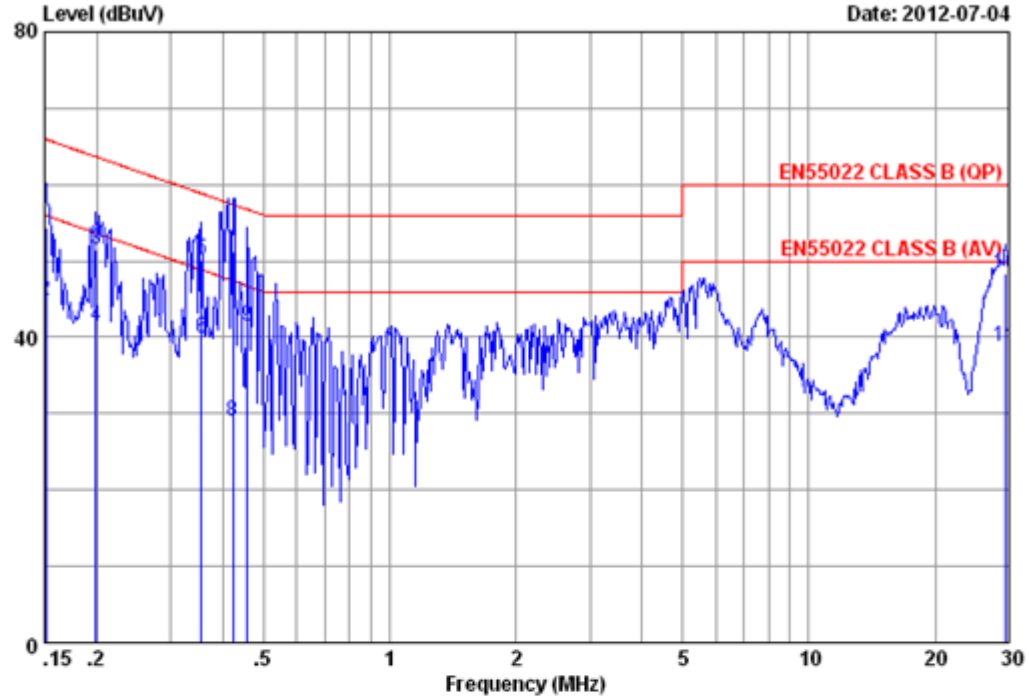


Site no : Audix(Shanghai) Shielded1 Data no :122
AMN : ESH2-Z5-20120213 AMN Phase :LINE
Limit : EN55022 CLASS B (QP)
Env/Ins : 22'C 48%RH / ESCI Engineer :Sawen
EUT : Switching Power Supply
M/N : AK25W-SSM-48
S/N : E1207849-01/03
Power Rating : 230V/50Hz
Test Mode : Half Load

	Freq (MHz)	AMN. Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.152	0.20	0.03	50.86	51.09	65.91	14.82	QP
2	0.194	0.22	0.03	48.96	49.21	63.84	14.63	QP
3	0.402	0.30	0.03	50.65	50.98	57.81	6.83	QP
4	0.402	0.30	0.03	28.33	28.66	47.81	19.15	Average
5	0.471	0.31	0.04	45.54	45.89	56.49	10.60	QP
6	0.471	0.31	0.04	35.68	36.03	46.49	10.46	Average
7	4.952	0.32	0.18	40.04	40.54	56.00	15.46	QP
8	29.371	0.76	0.50	44.68	45.94	60.00	14.06	QP

Remark: 1.Emission Level= AMN Factor + Cable Loss + Reading.
2.If the average limit is met when using a quasipeak detector the EUT shall be deemed to meet both limits and measurement with averavge detector is unnecessary.

Data: 121



Site no	: Audix(Shanghai) Shielded1	Data no	:121
AMN	: ESH2-Z5-20120213	AMN Phase	:NEUTRAL
Limit	: EN55022 CLASS B (QP)		
Env/Ins	: 22'C 48%RH / ESCI	Engineer	:Sawen
EUT	: Switching Power Supply		
M/N	: AK25W-SSM-48		
S/N	: E1207849-01/03		
Power Rating	: 230V/50Hz		
Test Mode	: Half Load		

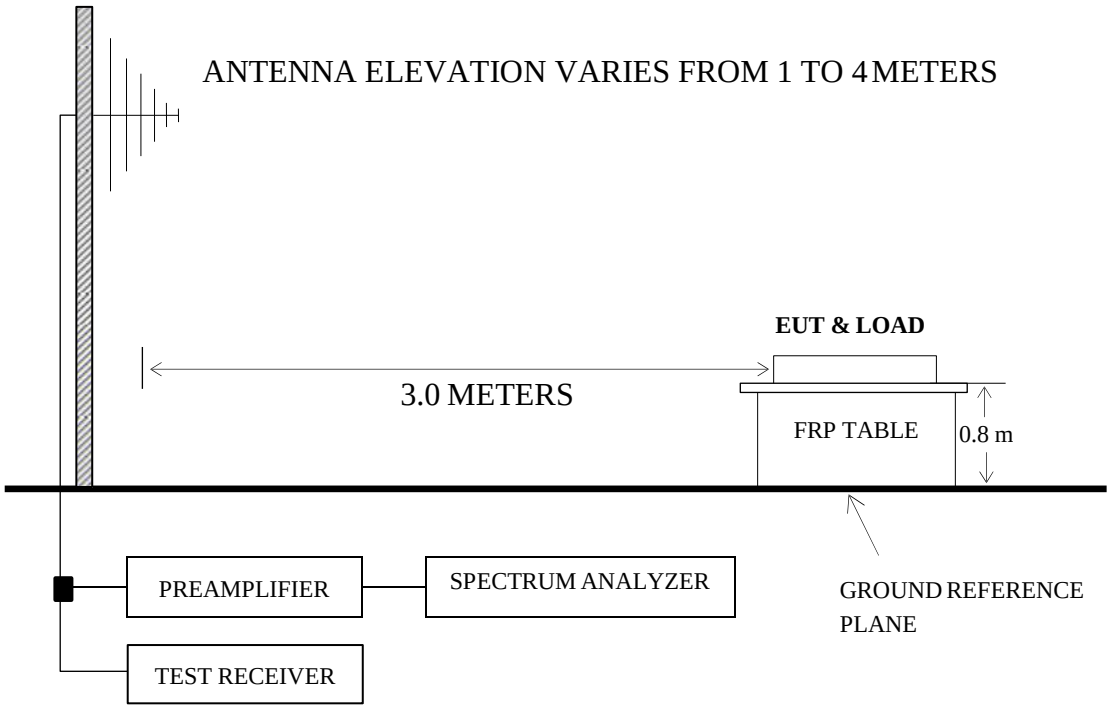
	Freq (MHz)	AMN. Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.151	0.10	0.03	54.29	54.42	65.96	11.54	QP
2	0.151	0.10	0.03	44.65	44.78	55.96	11.18	Average
3	0.199	0.09	0.03	51.28	51.40	63.67	12.27	QP
4	0.199	0.09	0.03	41.32	41.44	53.67	12.23	Average
5	0.356	0.12	0.02	49.93	50.07	58.83	8.76	QP
6	0.356	0.12	0.02	39.65	39.79	48.83	9.04	Average
7	0.421	0.13	0.04	51.13	51.30	57.42	6.12	QP
8	0.421	0.13	0.04	28.69	28.86	47.42	18.56	Average
9	0.456	0.13	0.04	41.19	41.36	56.76	15.40	QP
10	29.371	0.64	0.50	47.11	48.25	60.00	11.75	QP
11	29.371	0.64	0.50	37.63	38.77	50.00	11.23	Average

Remark: 1.Emission Level= AMN Factor + Cable Loss + Reading.
2.If the average limit is met when using a quasipeak detector the EUT shall be deemed to meet both limits and measurement with averavge detector is unnecessary.

5 RADIATED DISTURBANCE TEST

5.1 Block Diagram of Test Setup

5.1.1 Radiated emission test setup



■ : 50 ohm Coaxial Switch

5.2 Applicable Standard

EN 55022:2010 (CISPR 22:2008) (Class B)

5.3 Limits for Radiated Disturbance

All emanations from a Class B devices or system of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified below:

Frequency (MHz)	Distance (m)	Field Strength Limits dB(μV/m)	Converted Field Strength Limits By 3 Meters Measuring Distance dB(μV/m)
30 ~ 230	10	30	40
230 ~ 1000	10	37	47

NOTE 1 - The tighter limit applies at the edge between two frequency bands.

NOTE 2 - Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

NOTE 3 - Audix Technology (Shanghai) Co., Ltd. Only has a 3 meters Semi-anechoic Chamber to do the radiated test, therefore, Audix Shanghai used 3 meters measuring distance and converted limits to judge the EUT compliance with or not.

5.4 EUT Configuration

The configuration of the EUT is same as those used in conducted disturbance test.

Refer to Sec.4.4.

5.5 Operating Condition of EUT

Same as conducted disturbance test which is listed in Sec.4.5, except for the test setup replaced by Sec.5.1.1.

5.6 Test Procedure

The EUT and the peripherals were placed upon a FRP turntable 0.8 m above the horizontal metal ground plane. The FRP turntable rotated 360 degrees to determine the position of the maximum emission level. The EUT was set 3 meters away from the receiving antenna that was mounted on an antenna tower. The antenna moved up and down between 1 meter and 4 meters to find out the maximum emission level. Broadband antenna (Calibrated Bilog Antenna) or dipole antenna was used as receiving antenna. Both horizontal and vertical polarizations of the antenna were set on measurement. In order to find the maximum emission, all of the interface cables were manipulated according to EN 55022 requirements during radiated test.

The IF bandwidth of R&S Test Receiver ESVS10 was set at 120 kHz.

The frequency range from 30 MHz to 1000 MHz was checked.

The test mode (Full Load and Half Load) were done on radiated disturbance test and all the test results are listed in Sec.5.7.

5.7 Test Results

<PASS>

All the following records are the disturbance levels and the frequencies of the highest disturbances, and if the disturbance not reported below are too low against the limits.

Refer to the following pages.

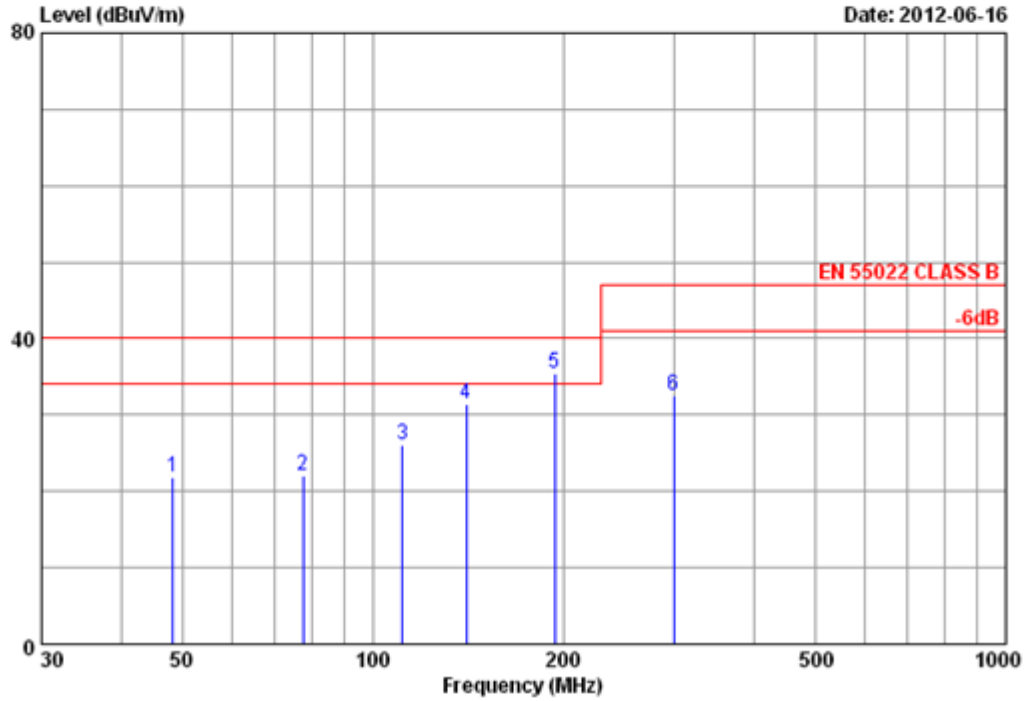
Model Number	Test Mode	Data Page
AK25W-SSM-5	Full Load	P30 – P31
	Half Load	P32 – P33
AK25W-SSM-24	Full Load	P34 – P35
	Half Load	P36 – P37
AK25W-SSM-48	Full Load	P38 – P39
	Half Load	P40 – P41

NOTE 1 – All reading are Quasi-Peak values.

NOTE 2 – 0° was the table front facing the antenna. Degree is calculated from 0° clockwise facing the antenna.

NOTE 3 – The worst case is for Half Load (M/N: AK25W-SSM-5) test mode. The worst emission at horizontal polarization was detected at 187.140 MHz with corrected signal level of 34.09 dB (μV/m) (limit is 40.00 dB (μV/m)), when the antenna was 1.10 m height and the turntable was at 140°. The worst emission at vertical polarization was detected at 77.530 MHz with corrected signal level of 38.58 dB (μV/m) (limit is 40.00 dB (μV/m)), when the antenna was 1.00 m height and the turntable was at 293° clockwise facing the antenna.

Data: 366



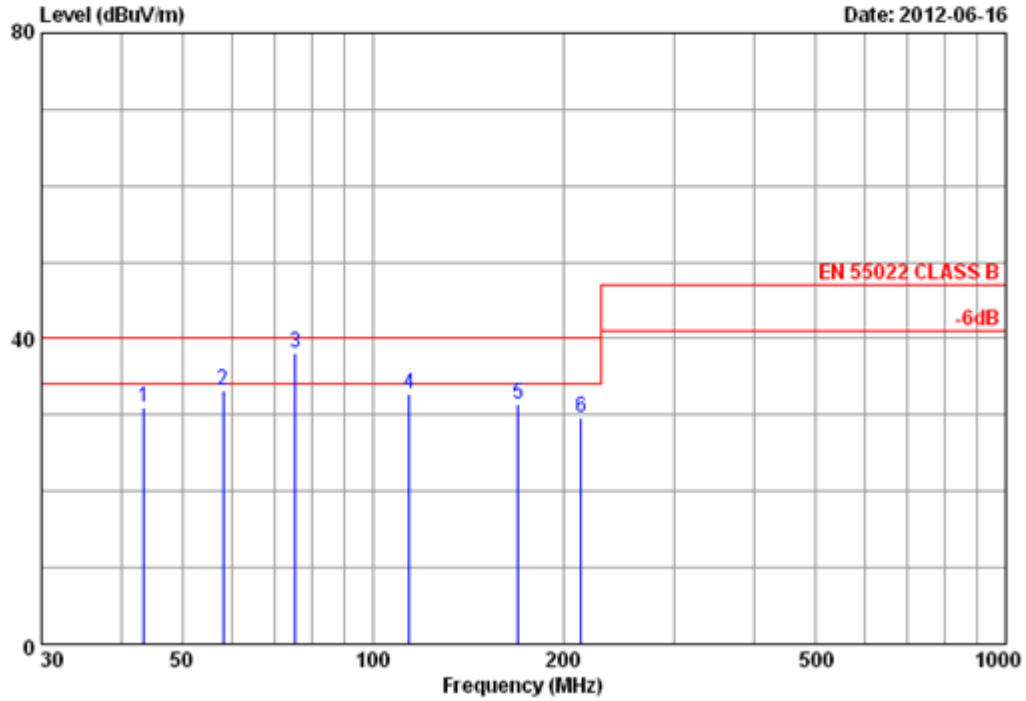
Site no :Audix ACI (3m Chamber)
Dis. / Ant. :3m /CBL 6112D-2011.12.01
Limit :EN 55022 CLASS B
Env. / Ins. :22'C 60%RH/ESVS 10
EUT :Switching Power Supply
M/N :AK25W-SSM-5
S/N :E1207849-02/03
Power Rating:230V/50Hz
Test Mode :Full Load

Data no. :366
Ant. pol. :HORIZONTAL
Engineer :Raven

	Freq. (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)
1	48.430	9.02	0.90	11.97	21.89	40.00	18.11
2	77.530	10.39	1.56	10.01	21.96	40.00	18.04
3	111.480	11.15	1.96	12.85	25.96	40.00	14.04
4	140.580	10.60	2.18	18.60	31.38	40.00	8.62
5	193.930	9.86	2.41	23.27	35.54	40.00	4.46
6	298.690	13.67	2.75	16.01	32.43	47.00	14.57

Remarks: 1.Emission Level= Antenna Factor + Cable Loss + Reading.
2.The emission levels that are 20dB below the offical limits are not report.

Data: 367



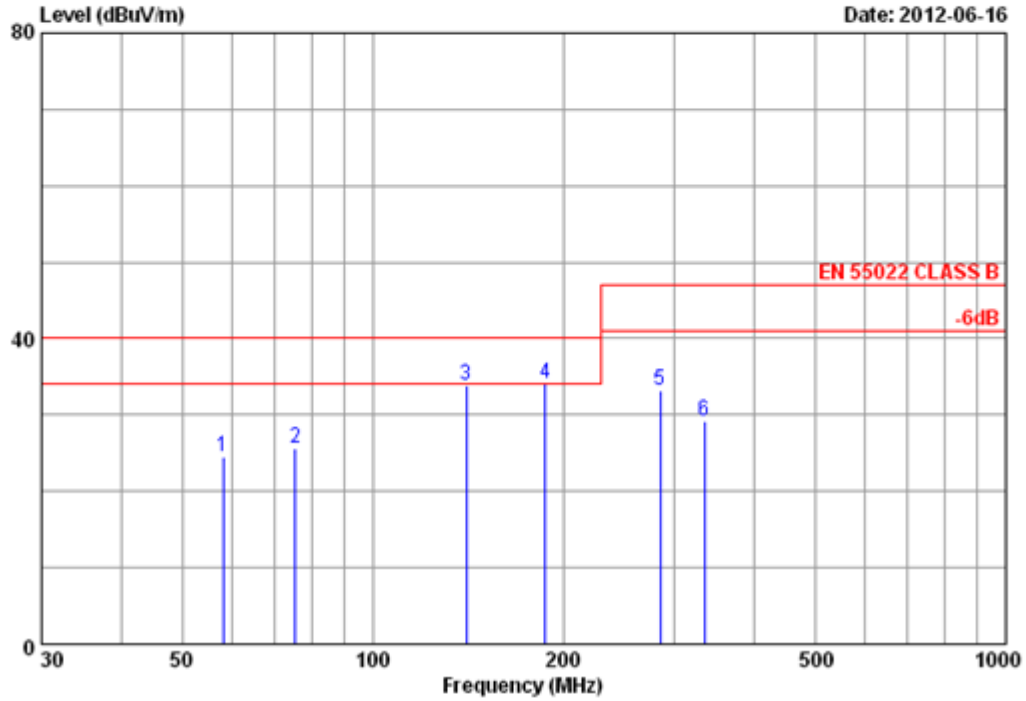
Site no :Audix ACI (3m Chamber)
Dis. / Ant. :3m /CBL 6112D-2011.12.01
Limit :EN 55022 CLASS B
Env. / Ins. :22'C 60%RH/ESVS 10
EUT :Switching Power Supply
M/N :AK25W-SSM-5
S/N :E1207849-02/03
Power Rating:230V/50Hz
Test Mode :Full Load

Data no. :367
Ant. pol. :VERTICAL
Engineer :Raven

	Freq. (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)
1	43.580	10.86	0.89	19.33	31.08	40.00	8.92
2	58.130	9.02	1.14	23.11	33.27	40.00	6.73
3	75.590	10.27	1.53	26.40	38.20	40.00	1.80
4	114.390	11.10	1.97	19.66	32.73	40.00	7.27
5	169.680	10.11	2.32	19.08	31.51	40.00	8.49
6	213.330	10.33	2.47	16.87	29.67	40.00	10.33

Remarks: 1.Emission Level= Antenna Factor + Cable Loss + Reading.
2.The emission levels that are 20dB below the offical limits are not report.

Data: 368



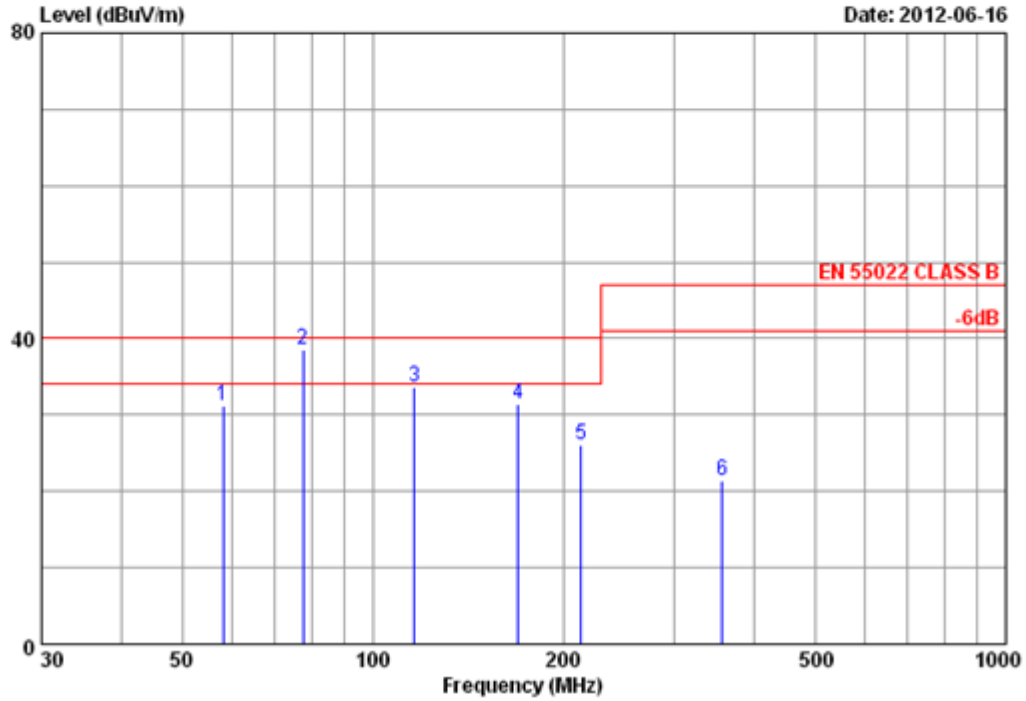
Site no :Audix ACI (3m Chamber)
Dis. / Ant. :3m /CBL 6112D-2011.12.01
Limit :EN 55022 CLASS B
Env. / Ins. :22'C 60%RH/ESVS 10
EUT :Switching Power Supply
M/N :AK25W-SSM-5
S/N :E1207849-02/03
Power Rating:230V/50Hz
Test Mode :Half Load

Data no. :368
Ant. pol. :HORIZONTAL
Engineer :Raven

	Freq. (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)
1	58.130	9.02	1.14	14.43	24.59	40.00	15.41
2	75.590	10.27	1.53	13.74	25.54	40.00	14.46
3	140.580	10.60	2.18	21.05	33.83	40.00	6.17
4	187.140	9.92	2.38	21.79	34.09	40.00	5.91
5	284.140	13.24	2.71	17.18	33.13	47.00	13.87
6	334.580	14.66	2.84	11.59	29.09	47.00	17.91

Remarks: 1.Emission Level= Antenna Factor + Cable Loss + Reading.
2.The emission levels that are 20dB below the offical limits are not report.

Data: 369



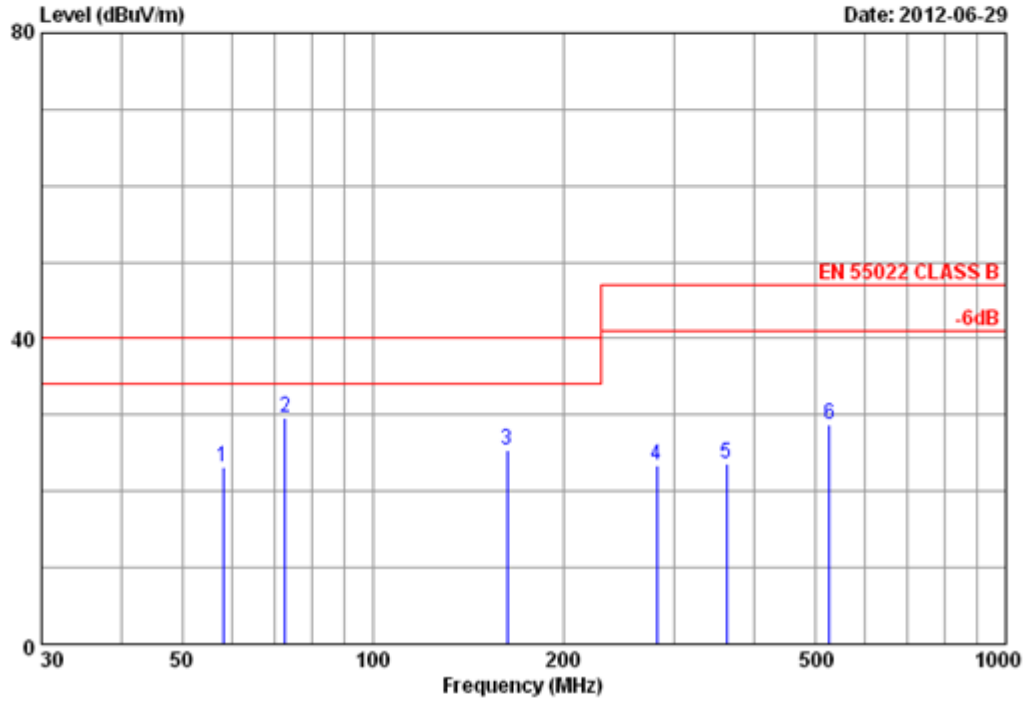
Site no :Audix ACI (3m Chamber)
Dis. / Ant. :3m /CBL 6112D-2011.12.01
Limit :EN 55022 CLASS B
Env. / Ins. :22'C 60%RH/ESVS 10
EUT :Switching Power Supply
M/N :AK25W-SSM-5
S/N :E1207849-02/03
Power Rating:230V/50Hz
Test Mode :Half Load

Data no. :369
Ant. pol. :VERTICAL
Engineer :Raven

	Freq. (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)
1	58.130	9.02	1.14	21.05	31.21	40.00	8.79
2	77.530	10.39	1.56	26.63	38.58	40.00	1.42
3	116.330	11.07	2.00	20.61	33.68	40.00	6.32
4	169.680	10.11	2.32	19.02	31.45	40.00	8.55
5	213.330	10.33	2.47	13.19	25.99	40.00	14.01
6	356.890	15.33	2.90	3.19	21.42	47.00	25.58

Remarks: 1.Emission Level= Antenna Factor + Cable Loss + Reading.
2.The emission levels that are 20dB below the offical limits are not report.

Data: 370



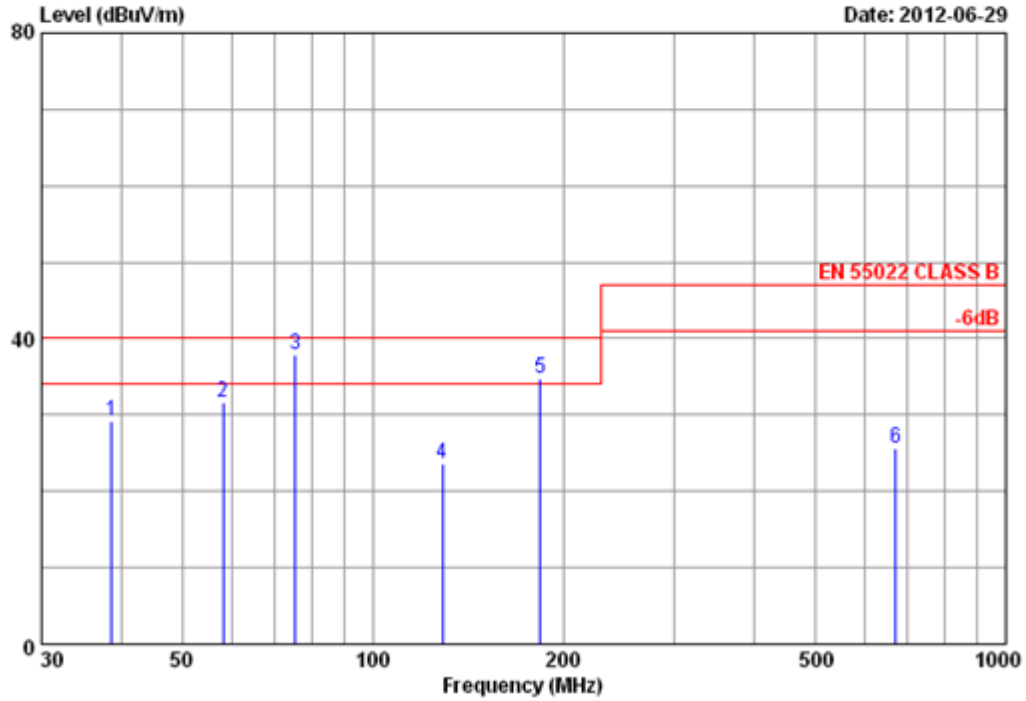
Site no :Audix ACI (3m Chamber)
Dis. / Ant. :3m /CBL 6112D-2011.12.01
Limit :EN 55022 CLASS B
Env. / Ins. :22'C 60%RH/ESVS 10
EUT :Switching Power Supply
M/N :AK25W-SSM-24
S/N :E1207849-03/03
Power Rating:230V/50Hz
Test Mode :Full Load

Data no. :370
Ant. pol. :HORIZONTAL
Engineer :Raven

	Freq. (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)
1	58.130	9.02	1.14	13.01	23.17	40.00	16.83
2	72.680	10.08	1.47	18.15	29.70	40.00	10.30
3	162.890	10.21	2.29	12.93	25.43	40.00	14.57
4	281.230	13.17	2.70	7.48	23.35	47.00	23.65
5	361.740	15.45	2.91	5.18	23.54	47.00	23.46
6	526.640	17.76	3.33	7.76	28.85	47.00	18.15

Remarks: 1.Emission Level= Antenna Factor + Cable Loss + Reading.
2.The emission levels that are 20dB below the offical limits are not report.

Data: 371



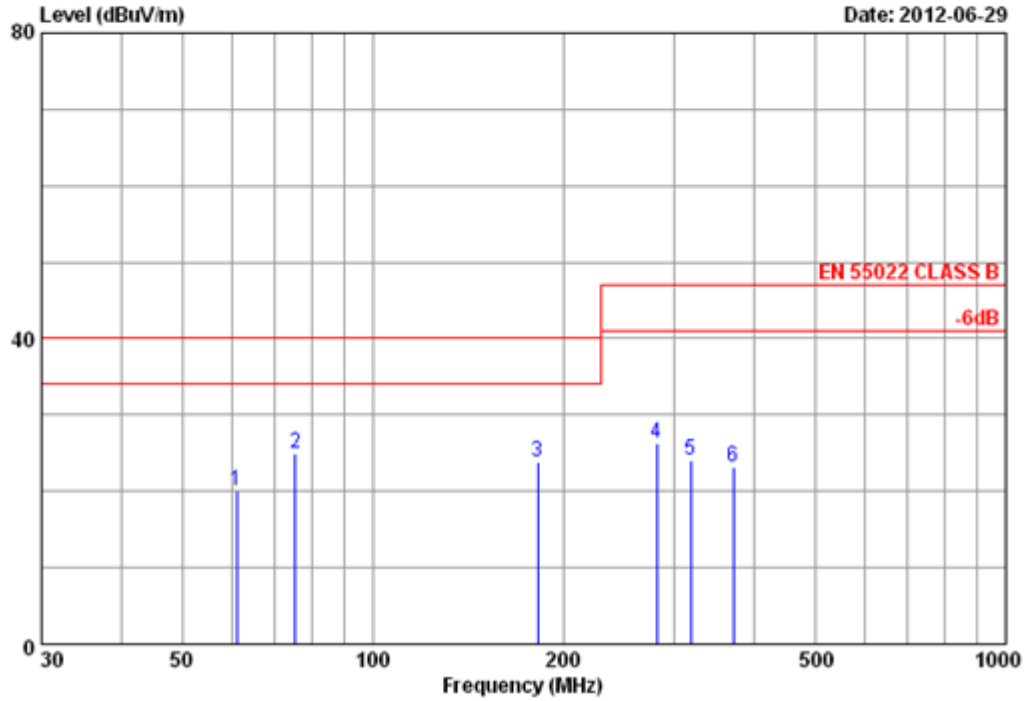
Site no :Audix ACI (3m Chamber)
Dis. / Ant. :3m /CBL 6112D-2011.12.01
Limit :EN 55022 CLASS B
Env. / Ins. :22'C 60%RH/ESVS 10
EUT :Switching Power Supply
M/N :AK25W-SSM-24
S/N :E1207849-03/03
Power Rating:230V/50Hz
Test Mode :Full Load

Data no. :371
Ant. pol. :VERTICAL
Engineer :Raven

	Freq. (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)
1	38.730	13.40	0.86	14.99	29.25	40.00	10.75
2	58.130	9.02	1.14	21.51	31.67	40.00	8.33
3	75.590	10.27	1.53	26.00	37.80	40.00	2.20
4	128.940	10.84	2.10	10.70	23.64	40.00	16.36
5	184.230	9.95	2.37	22.42	34.74	40.00	5.26
6	669.230	19.12	3.62	2.91	25.65	47.00	21.35

Remarks: 1.Emission Level= Antenna Factor + Cable Loss + Reading.
2.The emission levels that are 20dB below the offical limits are not report.

Data: 372



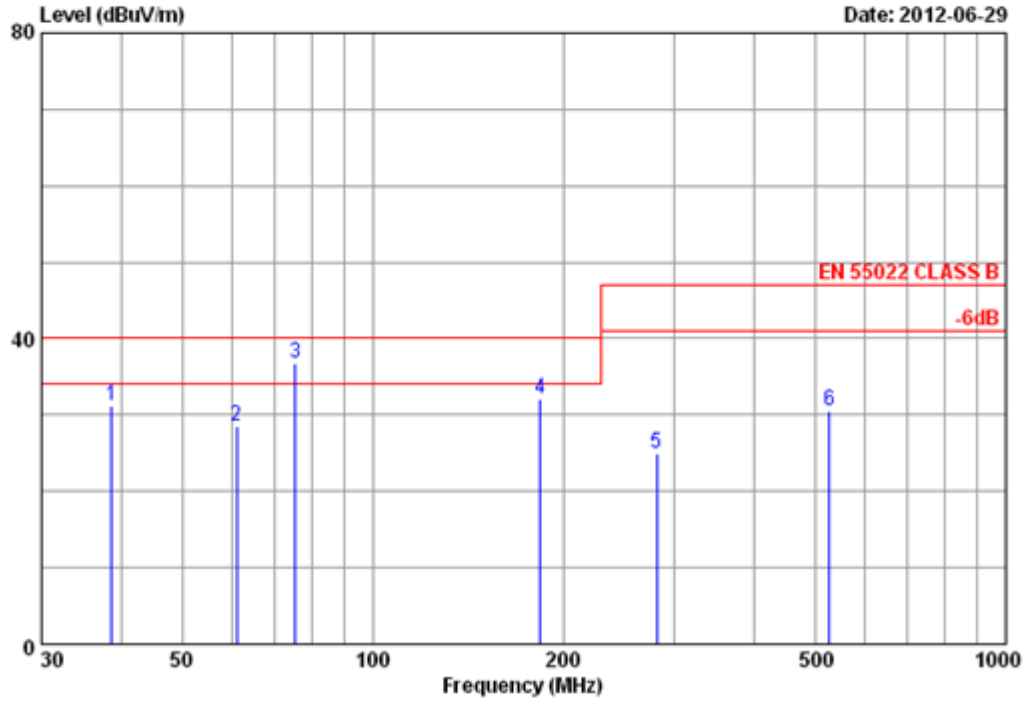
Site no :Audix ACI (3m Chamber)
Dis. / Ant. :3m /CBL 6112D-2011.12.01
Limit :EN 55022 CLASS B
Env. / Ins. :22'C 60%RH/ESVS 10
EUT :Switching Power Supply
M/N :AK25W-SSM-24
S/N :E1207849-03/03
Power Rating:230V/50Hz
Test Mode :Half Load

Data no. :372
Ant. pol. :HORIZONTAL
Engineer :Raven

	Freq. (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)
1	61.040	9.21	1.21	9.54	19.96	40.00	20.04
2	75.590	10.27	1.53	13.08	24.88	40.00	15.12
3	182.290	9.97	2.36	11.52	23.85	40.00	16.15
4	281.230	13.17	2.70	10.45	26.32	47.00	20.68
5	318.090	14.19	2.80	7.06	24.05	47.00	22.95
6	371.440	15.68	2.93	4.66	23.27	47.00	23.73

Remarks: 1.Emission Level= Antenna Factor + Cable Loss + Reading.
2.The emission levels that are 20dB below the offical limits are not report.

Data: 373



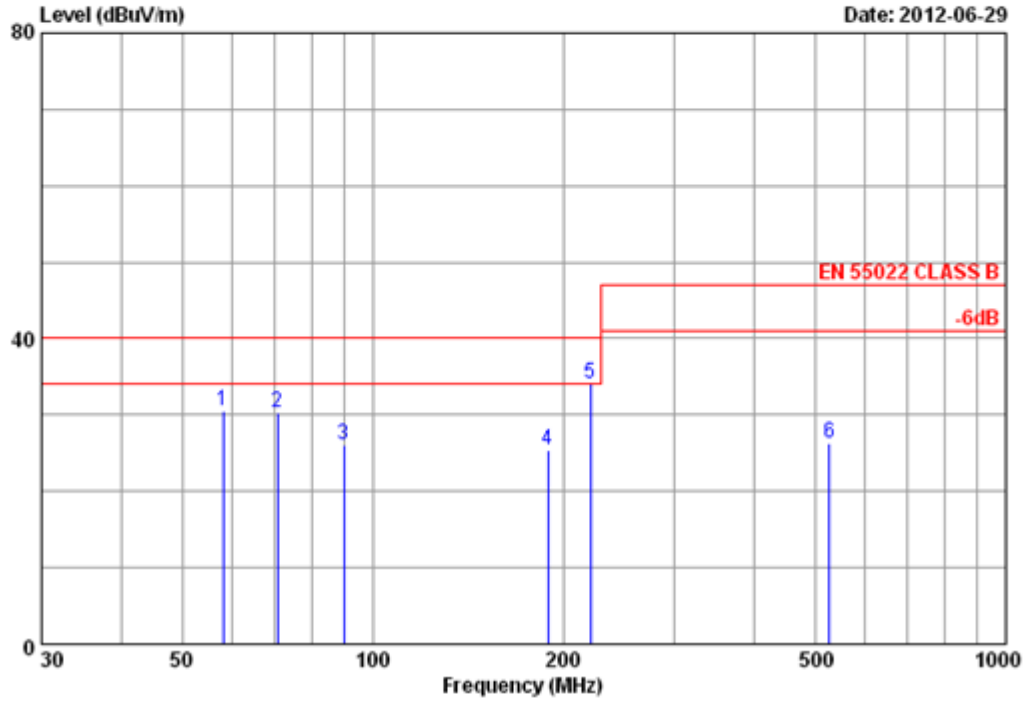
Site no :Audix ACI (3m Chamber)
Dis. / Ant. :3m /CBL 6112D-2011.12.01
Limit :EN 55022 CLASS B
Env. / Ins. :22'C 60%RH/ESVS 10
EUT :Switching Power Supply
M/N :AK25W-SSM-24
S/N :E1207849-03/03
Power Rating:230V/50Hz
Test Mode :Half Load

Data no. :373
Ant. pol. :VERTICAL
Engineer :Raven

	Freq. (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)
1	38.730	13.40	0.86	16.98	31.24	40.00	8.76
2	61.040	9.21	1.21	18.18	28.60	40.00	11.40
3	75.590	10.27	1.53	25.00	36.80	40.00	3.20
4	184.230	9.95	2.37	19.80	32.12	40.00	7.88
5	281.230	13.17	2.70	9.07	24.94	47.00	22.06
6	526.640	17.76	3.33	9.41	30.50	47.00	16.50

Remarks: 1.Emission Level= Antenna Factor + Cable Loss + Reading.
2.The emission levels that are 20dB below the offical limits are not report.

Data: 374



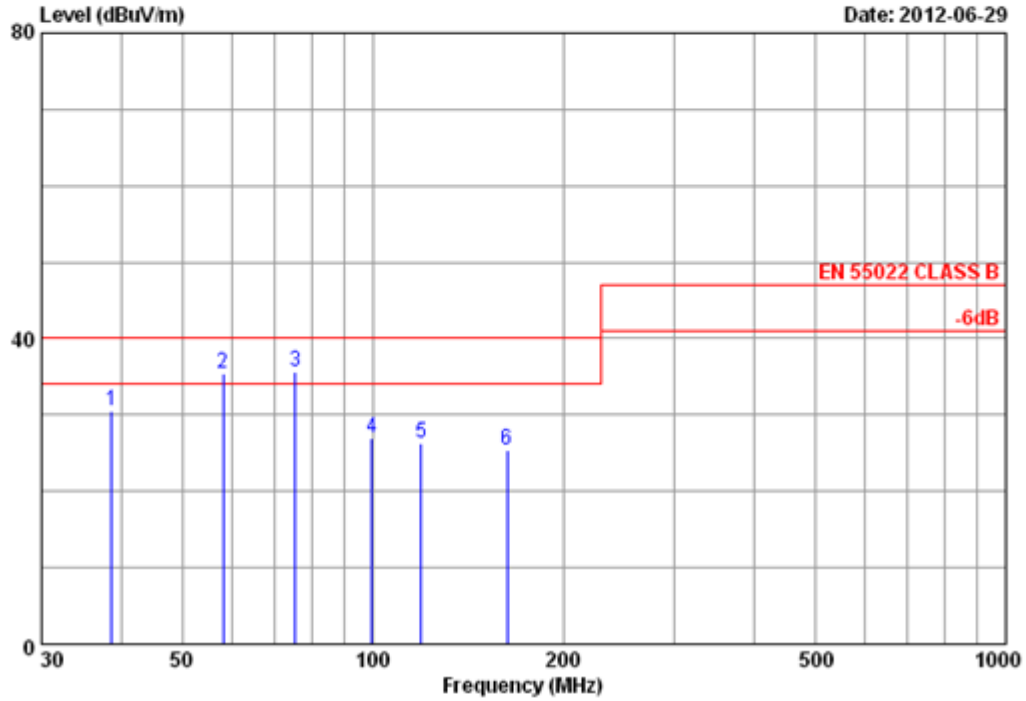
Site no :Audix ACI (3m Chamber)
Dis. / Ant. :3m /CBL 6112D-2011.12.01
Limit :EN 55022 CLASS B
Env. / Ins. :22'C 60%RH/ESVS 10
EUT :Switching Power Supply
M/N :AK25W-SSM-48
S/N :E1207849-01/03
Power Rating:230V/50Hz
Test Mode :Full Load

Data no. :374
Ant. pol. :HORIZONTAL
Engineer :Raven

	Freq. (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)
1	58.130	9.02	1.14	20.39	30.55	40.00	9.45
2	70.740	9.93	1.43	18.86	30.22	40.00	9.78
3	90.140	11.00	1.73	13.39	26.12	40.00	13.88
4	189.080	9.90	2.39	13.10	25.39	40.00	14.61
5	221.090	10.68	2.51	20.80	33.99	40.00	6.01
6	526.640	17.76	3.33	5.25	26.34	47.00	20.66

Remarks: 1.Emission Level= Antenna Factor + Cable Loss + Reading.
2.The emission levels that are 20dB below the offical limits are not report.

Data: 375



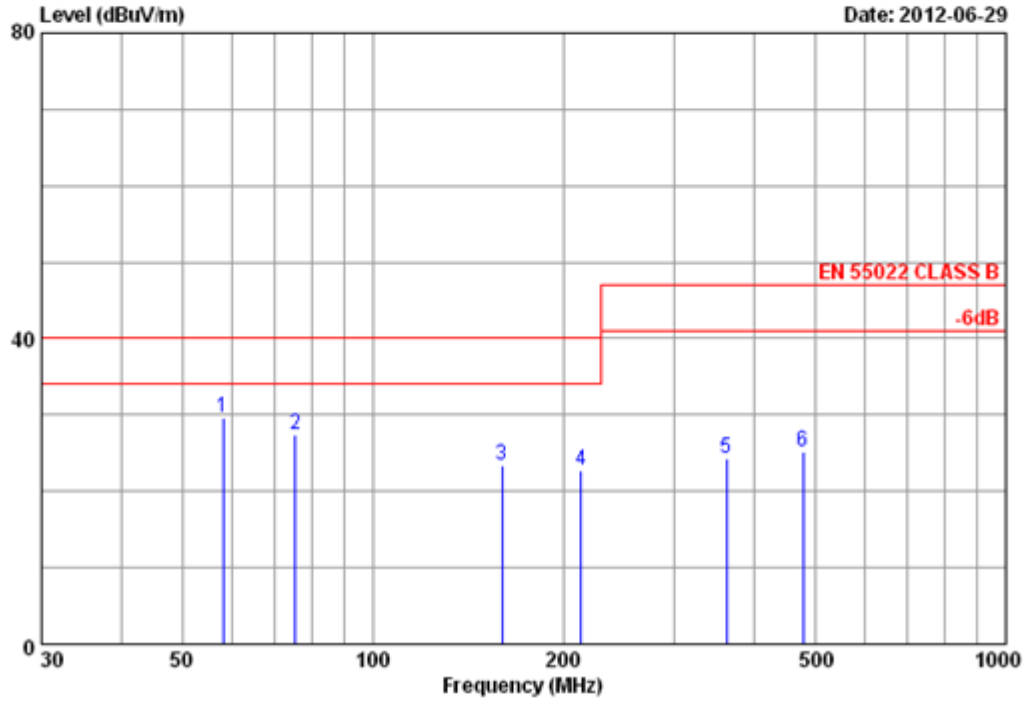
Site no :Audix ACI (3m Chamber)
Dis. / Ant. :3m /CBL 6112D-2011.12.01
Limit :EN 55022 CLASS B
Env. / Ins. :22'C 60%RH/ESVS 10
EUT :Switching Power Supply
M/N :AK25W-SSM-48
S/N :E1207849-01/03
Power Rating:230V/50Hz
Test Mode :Full Load

Data no. :375
Ant. pol. :VERTICAL
Engineer :Raven

	Freq. (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)
1	38.730	13.40	0.86	16.33	30.59	40.00	9.41
2	58.130	9.02	1.14	25.22	35.38	40.00	4.62
3	75.590	10.27	1.53	23.92	35.72	40.00	4.28
4	99.840	11.34	1.85	13.81	27.00	40.00	13.00
5	119.240	11.02	2.01	13.17	26.20	40.00	13.80
6	162.890	10.21	2.29	12.98	25.48	40.00	14.52

Remarks: 1.Emission Level= Antenna Factor + Cable Loss + Reading.
2.The emission levels that are 20dB below the offical limits are not report.

Data: 376



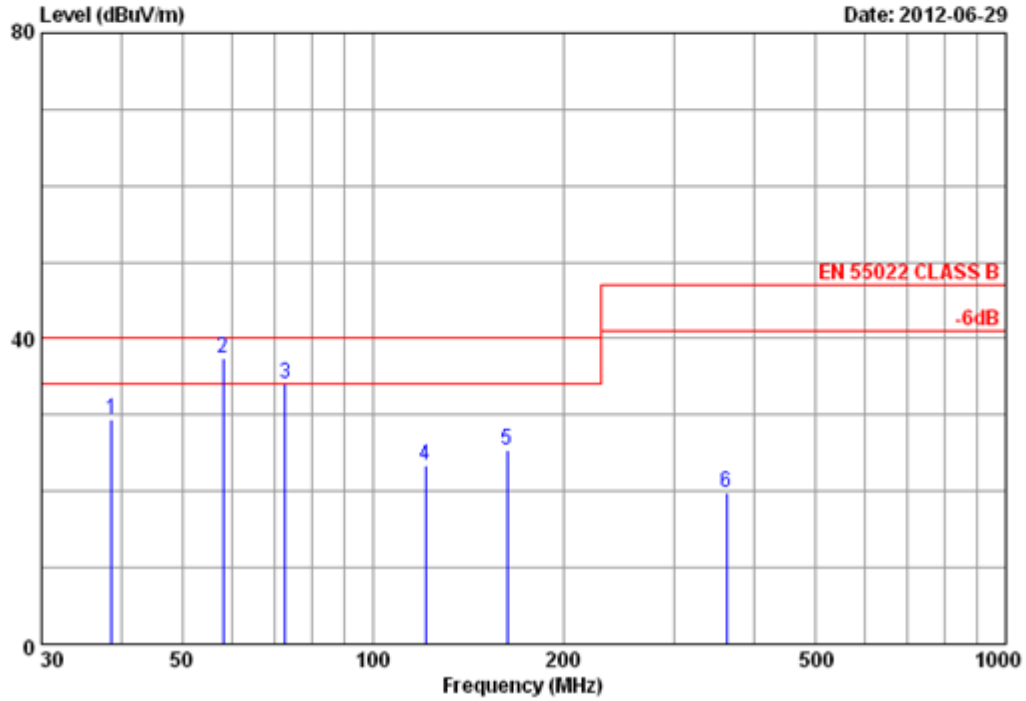
Site no :Audix ACI (3m Chamber)
Dis. / Ant. :3m /CBL 6112D-2011.12.01
Limit :EN 55022 CLASS B
Env. / Ins. :22'C 60%RH/ESVS 10
EUT :Switching Power Supply
M/N :AK25W-SSM-48
S/N :E1207849-01/03
Power Rating:230V/50Hz
Test Mode :Half Load

Data no. :376
Ant. pol. :HORIZONTAL
Engineer :Raven

	Freq. (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)
1	58.130	9.02	1.14	19.51	29.67	40.00	10.33
2	75.590	10.27	1.53	15.58	27.38	40.00	12.62
3	159.980	10.25	2.27	10.89	23.41	40.00	16.59
4	213.330	10.33	2.47	9.90	22.70	40.00	17.30
5	361.740	15.45	2.91	5.88	24.24	47.00	22.76
6	478.140	17.34	3.21	4.61	25.16	47.00	21.84

Remarks: 1.Emission Level= Antenna Factor + Cable Loss + Reading.
2.The emission levels that are 20dB below the offical limits are not report.

Data: 377



Site no :Audix ACI (3m Chamber)
Dis. / Ant. :3m /CBL 6112D-2011.12.01
Limit :EN 55022 CLASS B
Env. / Ins. :22'C 60%RH/ESVS 10
EUT :Switching Power Supply
M/N :AK25W-SSM-48
S/N :E1207849-01/03
Power Rating:230V/50Hz
Test Mode :Half Load

Data no. :377
Ant. pol. :VERTICAL
Engineer :Raven

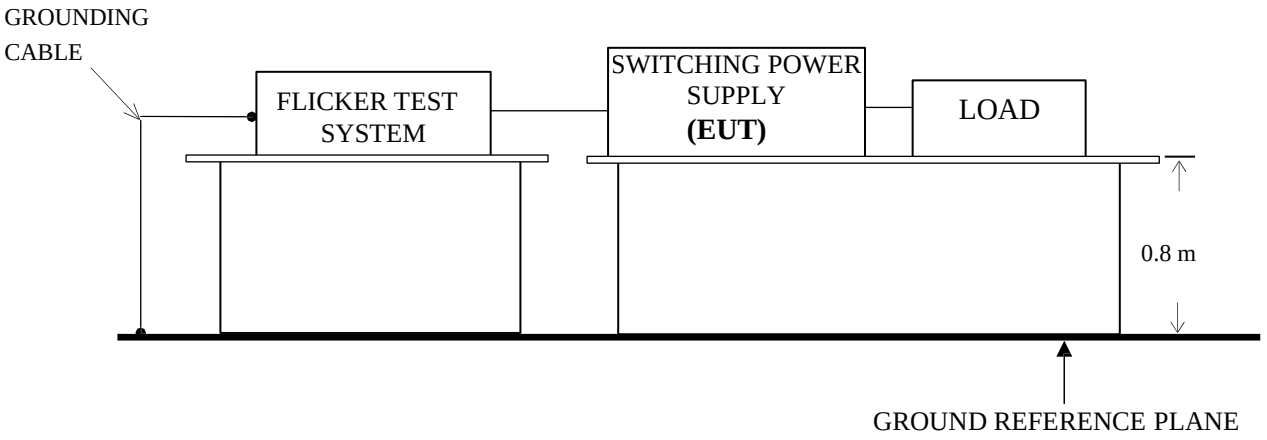
	Freq. (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)
1	38.730	13.40	0.86	15.20	29.46	40.00	10.54
2	58.130	9.02	1.14	27.26	37.42	40.00	2.58
3	72.680	10.08	1.47	22.52	34.07	40.00	5.93
4	121.180	10.99	2.03	10.42	23.44	40.00	16.56
5	162.890	10.21	2.29	12.80	25.30	40.00	14.70
6	361.740	15.45	2.91	1.48	19.84	47.00	27.16

Remarks: 1.Emission Level= Antenna Factor + Cable Loss + Reading.
2.The emission levels that are 20dB below the offical limits are not report.

6 VOLTAGE FLUCTUATIONS AND FLICKER TEST

6.1 Block Diagram of Test Setup

6.1.1 Voltage Fluctuations and Flicker test setup



6.2 Applicable Standard

EN 61000-3-3:2008 (IEC 61000-3-3:2008)

6.3 Voltage Fluctuations and Flicker Emission Limits

Corresponding limits for each flicker are listed in following data sheets.

6.4 EUT Configuration

The configuration of the EUT is same as Sec. 4.4.except the test setup replaced by Sec.6.1.

The EUT power was supplied by flicker test system.

6.5 Operating Condition of EUT

6.5.1 Setup the EUT and the peripherals in shielded room as Sec 6.1 and operate them as 4.5.

6.5.2 The test system analyzed the flicker.

6.5.3 Read the values and recorded them.

6.6 Test Procedure

Refer to Sec. 4.6.

6.7 Test Results

<PASS>

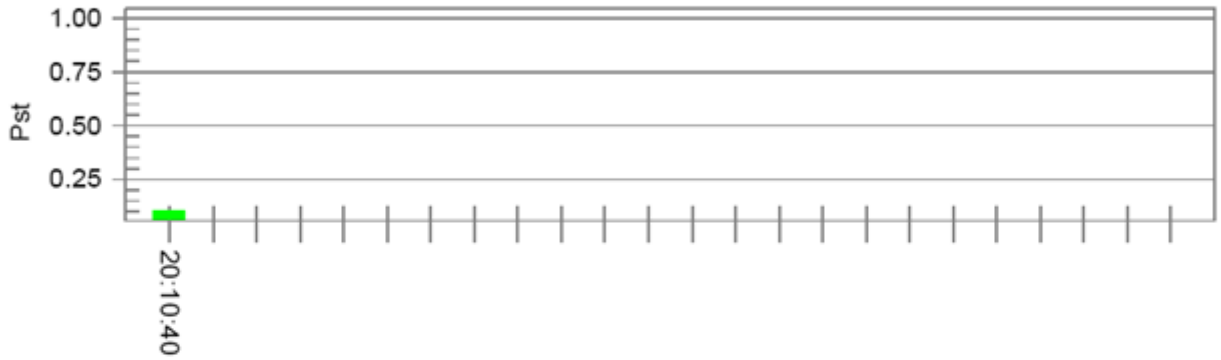
Test results refer to the following pages.

Flicker Test Summary per EN/IEC61000-3-3 (Run time)

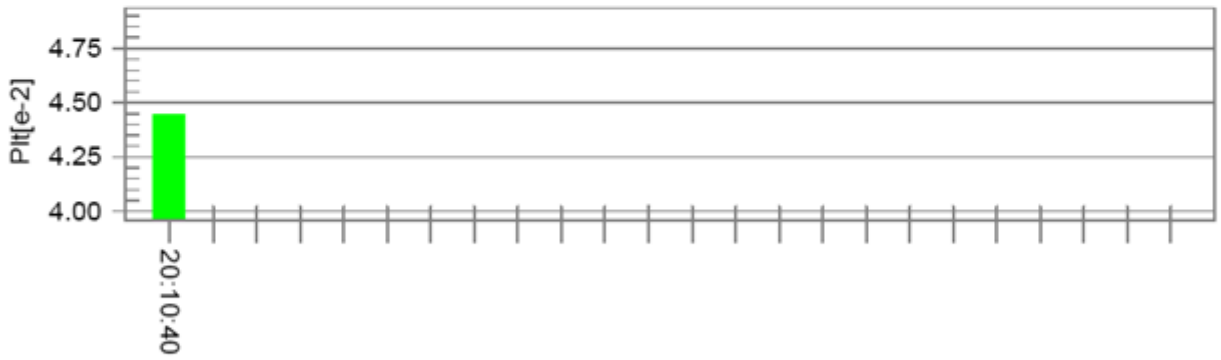
EUT: Switching Power Supply
Tested by: Lvy
Test category: dt,dmax,dc and Pst (European limits)
Test Margin: 100
Test date: 2012-7-11
Start time: 20:00:20
End time: 20:10:41
Test duration (min): 10
Data file name: F-000068.cts_data
Comment: AK25W-SSM-5

Test Result: Pass
Status: Test Completed

Pst_i and limit line
European Limits



Plt and limit line



Parameter values recorded during the test:

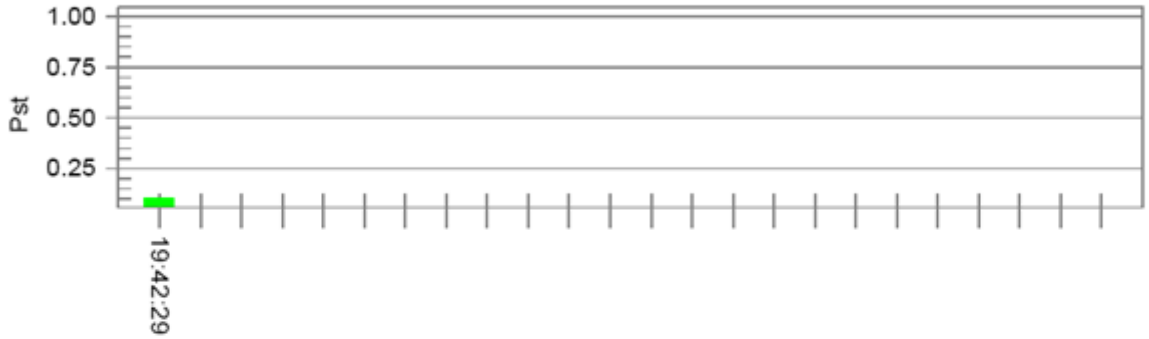
Vrms at the end of test (Volt):	230.07			
Highest dt (%):	0.62	Test limit (%):	3.30	Pass
Time(mS) > dt:	0.0	Test limit (mS):	500.0	Pass
Highest dc (%):	0.00	Test limit (%):	3.30	Pass
Highest dmax (%):	0.61	Test limit (%):	4.00	Pass
Highest Pst (10 min. period):	0.102	Test limit:	1.000	Pass

Flicker Test Summary per EN/IEC61000-3-3 (Run time)

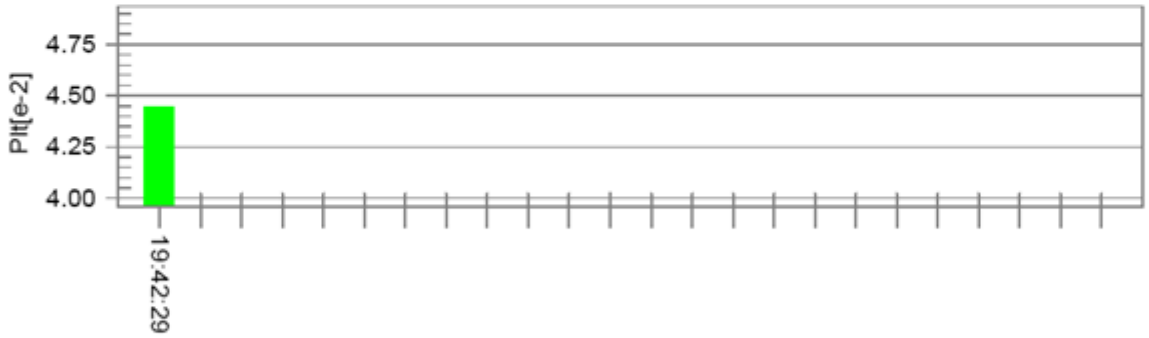
EUT: Switching Power Supply
Tested by: Lvy
Test category: dt,dmax,dc and Pst (European limits)
Test Margin: 100
Test date: 2012-7-11
Start time: 19:32:09
End time: 19:42:30
Test duration (min): 10
Data file name: F-000066.cts_data
Comment: AK25W-SSM-24

Test Result: Pass
Status: Test Completed

Pst_i and limit line — **European Limits**



Plt and limit line



Parameter values recorded during the test:

Vrms at the end of test (Volt):	230.12			
Highest dt (%):	0.40	Test limit (%):	3.30	Pass
Time(mS) > dt:	0.0	Test limit (mS):	500.0	Pass
Highest dc (%):	0.00	Test limit (%):	3.30	Pass
Highest dmax (%):	0.41	Test limit (%):	4.00	Pass
Highest Pst (10 min. period):	0.102	Test limit:	1.000	Pass

Flicker Test Summary per EN/IEC61000-3-3 (Run time)

EUT: Switching Power Supply
Test category: dt,dmax,dc and Pst (European limits)
Test date: 2012-7-11
Test duration (min): 10
Comment: AK25W-SSM-48

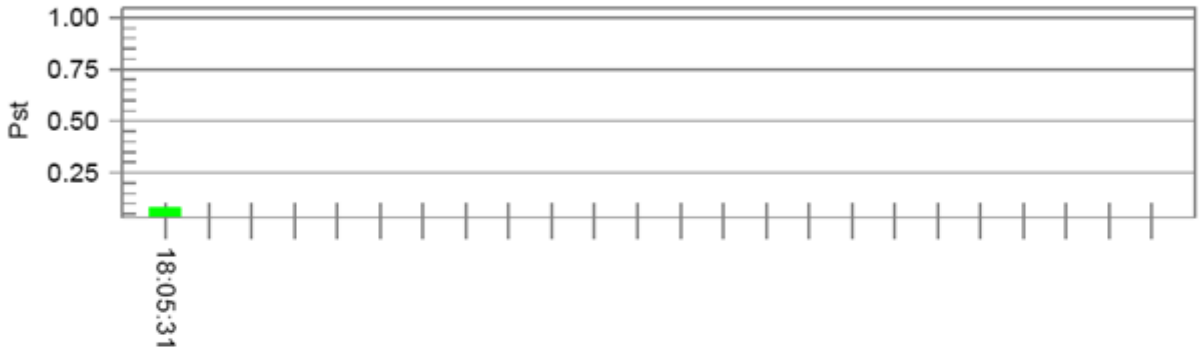
Tested by: Lvy
Test Margin: 100
Start time: 17:55:10
End time: 18:05:32
Data file name: F-000063.cts_data

Test Result: Pass

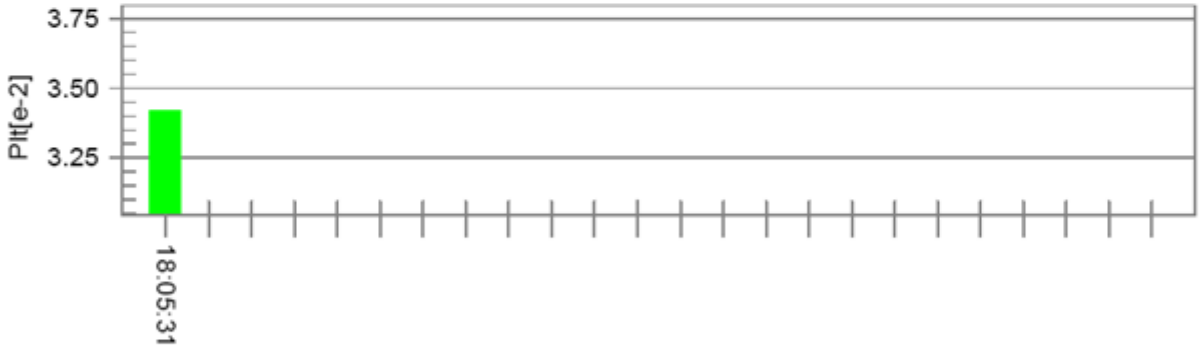
Status: Test Completed

Pst_i and limit line

European Limits



Plt and limit line



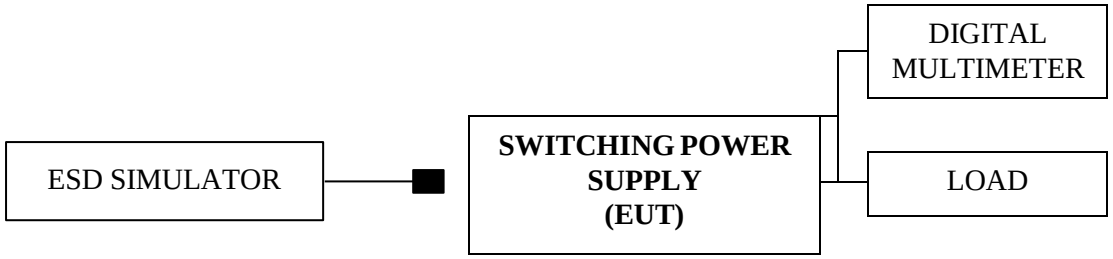
Parameter values recorded during the test:

Vrms at the end of test (Volt):	230.12			
Highest dt (%):	-0.56	Test limit (%):	3.30	Pass
Time(mS) > dt:	0.0	Test limit (mS):	500.0	Pass
Highest dc (%):	0.00	Test limit (%):	3.30	Pass
Highest dmax (%):	0.34	Test limit (%):	4.00	Pass
Highest Pst (10 min. period):	0.078	Test limit:	1.000	Pass

7 ELECTROSTATIC DISCHARGE IMMUNITY TEST

7.1 Block Diagram of Test Setup

7.1.1 Electrostatic Discharge Immunity test setup



7.2 Applicable Standard

EN 55024:2010 (CISPR 24:2010)
(IEC 61000-4-2:2008, Contact Discharge: ± 2kV, ± 4kV, Air Discharge: ± 2kV, ± 4kV, ± 8kV)

7.3 Severity Levels and Performance Criterion

7.3.1 Severity levels

Level	Test Voltage	
	Contact Discharge (kV)	Air Discharge (kV)
1.	2	2
2.	4	4
3.	6	8
4.	8	15
X	Special	Special

7.3.2 Performance criterion: **B**

7.4 EUT Configuration

The configuration of the EUT is same as those used in conducted disturbance test. Refer to Sec. 4.4.

7.5 Operating Condition of EUT

7.5.1 Setup the EUT on a reference plane in a shielded room as Sec. 7.1, and operate them as Sec. 4.5.

7.5.2 Single discharges are applied to the horizontal and vertical coupling plane at points on each side of the EUT.

7.5.3 Check the effects of this test.

7.6 Test Procedure

The test applied a non-conductive surface and a horizontal coupling plane on a wooden table, 0.8 m high, standing on the reference ground plane, which is a 2 m x 3 m metallic sheet with 1.5 mm thickness. This reference ground plane projected beyond the EUT by at least 0.5 m on all sides and the minimum distance between the EUT and all other conductive structure, except the ground plane beneath the EUT, was more than 1.0 m.

7.6.1 Contact Discharge

The tip of the discharge electrode should touch the EUT, before the discharge switch was operated. The EUT shall be exposed to at least 200 discharges, 100 each at negative and positive polarity, at a minimum of four test points (a minimum of 50 discharges at each point). One of the test points shall be subjected to at least 50 indirect discharges (contact) to the center of the front edge of the horizontal coupling plane. If no direct contact test points are available, then at least 200 indirect discharges shall be applied in the indirect mode (use of the Vertical Coupling Plane)

7.6.2 Horizontal Coupling Plane (HCP)

More than 50 single discharges were applied at the front edge of each HCP opposite the center point of the EUT and 0.1mm from vertically the front of the EUT. Discharge to the HCP was made horizontal to the edge of the HCP.

7.6.3 Vertical Coupling Plane (VCP)

More than 50 single discharges were applied to the center of one vertical edge of the coupling plane. The coupling plane, of dimensions 0.5 m x 0.5 m, was placed parallel to, and positioned at a distance of 0.1 m from the EUT. Discharges were applied to the coupling plane, with this plane in sufficient different positions that all sides of the EUT were completely illuminated.

7.6.4 Air Discharge

The round discharge tip of the discharge electrode was approached as fast as possible to touch the EUT. After each discharge, the ESD simulator (discharge electrode) was removed from the EUT. The simulator was then re-trigged for a new single discharge and applies more than 10 times on each reselected point. This procedure was repeated until the air discharge completed.

7.7 Test Results

<PASS>

Refer to the following pages.

Electrostatic Discharge Immunity Test Result

EUT :	Switching Power Supply	Test Date :	Jul 12, 2012
M/N :	AK25W-SSM-5, AK25W-SSM-24, AK25W-SSM-48	Temperature :	23℃
S/N :	E1207849-02/03, E1207849-03/03, E1207849-01/03	Humidity :	55％RH
Power Supply :	AC 230V/50Hz	Atmospheric Pressure :	101.3 kPa
		Test Mode :	Full Load

Contact Discharge Voltage: ± 2kV; ± 4 kV	Air Discharge Voltage: ± 2 kV; ± 4 kV; ± 8 kV
Contact Discharge: For each point positive 25 times and negative 25 times discharge	Air Discharge: For each point positive 10 times and negative 10 times discharge

Location	**Point**(s)	**Kind**	**Result**
Around EUT	4	C (VCP)	**A/PASS**
Around EUT	4	C (HCP)	**A/PASS**
Metal Shell	6	C	**A/PASS**
Screws	4	C	**A/PASS**

NOTE 1 – C (Contact Discharge)

NOTE 2 – HCP (Horizontal Coupling Plane), VCP (Vertical Coupling Plane)

NOTE 3 – During the test, the maximum output voltage variation was < 1%.

Test Equipment:

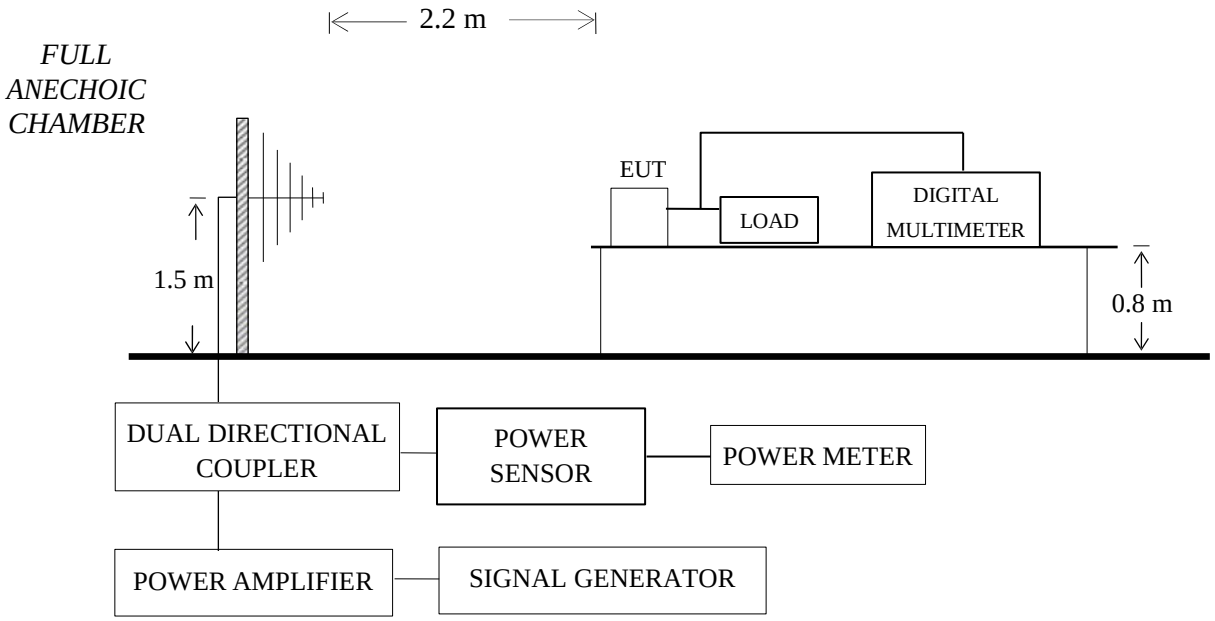
- ❒ ESD Simulator : TESEQ NSG 437
- ❒ Digital Multimeter : Agilent 34401A

TEST ENGINEER: LVY LV

8 RF ELECTROMAGNETIC FIELD IMMUNITY TEST

8.1 Block Diagram of Test Setup

8.1.1 RF Electromagnetic Field Immunity test setup



8.2 Applicable Standard

EN 55024:2010 (CISPR 24:2010)
(IEC 61000-4-3: 2010, Frequency Range: 80 - 1000 MHz, Field Strength: 3 V/m, Modulation: 80% AM 1 kHz)

8.3 Severity Levels and Performance Criterion

8.3.1 Severity levels

Level	Field Strength V/m
1.	1
2.	3
3.	10
X	Special

8.3.2 Performance criterion: **A**

8.4 EUT Configuration

The configuration of the EUT is same as those used in conducted disturbance test.

Refer to Sec. 4.4.

8.5 Operating Condition of EUT

8.5.1 Setup the EUT on the table in an anechoic chamber as Sec. 8.1.1.

8.5.2 The test was performed with the transmitting antenna facing each side of the EUT.

8.5.3 Check the effects of the test.

8.6 Test Procedure

The EUT and peripherals were placed on a wooden table, 0.8 m high, standing on the ground reference plane.

The power meter was used to measure the forward power. The EUT was set 2.2 m from the transmitting antenna. Both horizontal and vertical polarization of the antenna was set on test. Each side of the EUT was faced to the transmitting antenna and measured individually.

A CCD camera was put inside the chamber and through its display to monitor the operational situation of the EUT to judge the EUT performance criterion during test.

The frequency range is swept from 80 MHz to 1000 MHz.

All the scanning conditions are as follows:

Condition of Test	Remarks
Fielded Strength	3 V/m (Severity Level 2)
Modulation	80% AM 1 kHz
Scanning Frequency	80 - 1000 MHz
Dwell Time	3 sec.

8.7 Test Results

<PASS>

Refer to the following pages.

RF Field Strength Susceptibility Immunity Test Result

EUT	: Switching Power Supply	Test Date	: Jul 05, 2012
M/N	: AK25W-SSM-5, AK25W-SSM-24, AK25W-SSM-48	Temperature	: 23℃
S/N	: E1207849-02/03, E1207849-03/03, E1207849-01/03	Humidity	: 48％RH
Power Supply	: AC 230V/50Hz	Atmospheric Pressure	: 101.3 kPa
Test Mode	: Full Load	Field Strength	: 3 V/m
		Modulation	: ☐Pulse ❒ AM

Frequency Range		80 MHz to 1000 MHz		900 MHz	
Modulation		80% AM 1 kHz		-----	
Steps		1 %		------	
Dwell Time		3 s		------	
Antenna Polarization		**Horizontal**	**Vertical**	**Horizontal**	**Vertical**
EUT Position	Front	**PASS**	**PASS**	--	--
	Rear	**PASS**	**PASS**	--	--
	Right	**PASS**	**PASS**	--	--
	Left	**PASS**	**PASS**	--	--
	Floor	**PASS**	**PASS**	--	--
	Top	**PASS**	**PASS**	--	--

NOTE 1 – "--" means the item is no applicable.

NOTE 2 – During the test, the output has no change.

Test equipment:

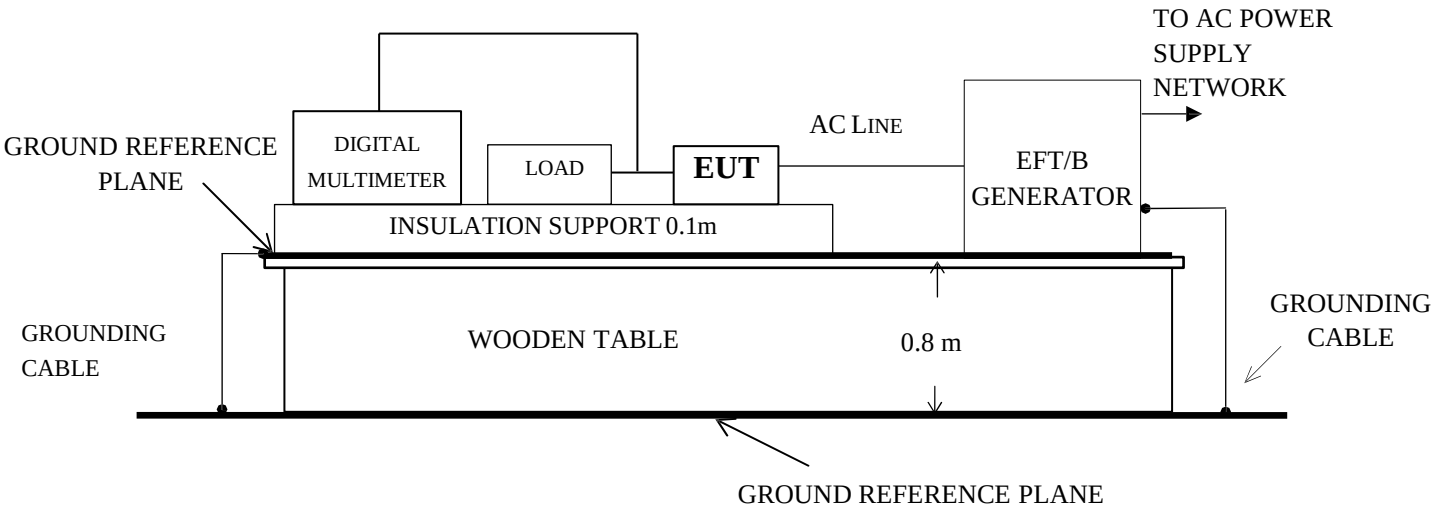
- ❒ Signal Generator : Agilent E4421B
- ❒ Power Amplifier : AR KAW2180
- ❒ Power Meter : HP 438A
- ❒ Log-Periodic Antenna : AR AT1080
- ❒ DDC : AR DC6180
- ❒ Power Sensor : HP 8481D
- ❒ Field Probe : AR FP2036
- ❒ Field Monitor : AR FM2000
- ❒ Digital Multimeter: Agilent 34401A

TEST ENGINEER: VINCENT GAO

9 ELECTRICAL FAST TRANSIENT/BURST IMMUNITY TEST

9.1 Block Diagram of Test Setup

9.1.1 Electrical Fast Transient/Burst Immunity test setup



9.2 Applicable Standard

EN 55024:2010 (CISPR 24:2010)
(IEC 61000-4-4:2004+A1:2010,
Test Value：Power Line: ±1kV, 5/50ns, 5kHz)

9.3 Severity Levels and Performance Criterion

9.3.1 Severity levels

Open circuit output test voltage and repetition rate of the impulses				
Level	On power port, PE		On I/O (input/output) signal, data and control ports	
	Voltage peak kV	Repetition rate kHz	Voltage peak kV	Repetition rate kHz
1.	0.5	5 or 100	0.25	5 or 100
2.	1	5 or 100	0.5	5 or 100
3.	2	5 or 100	1	5 or 100
4.	4	5 or 100	2	5 or 100
X[a]	Special	Special	Special	Special
Note 1: Use of 5kHz repetition rates is traditional; however, 100kHz is closer to reality. Product committees should determine which frequencies are relevant for specific products or product types. Note 2: With some products, there may be no clear distinction between power ports and I/O ports, in which case it is up to product committees to make this determination for test purposes.				
[a] "X" is an open level. The level has to be specified in the dedicated equipment specification.				

9.3.2 Performance criterion: **B**

9.4 EUT Configuration

The configuration of the EUT is same as those used in conducted disturbance test. Refer to Sec. 4.4.

9.5 Operating Condition of EUT

9.5.1 Setup the EUT on the table in a shielded room as Sec. 9.1.1.

9.5.2 The test voltage was coupled to AC mains of the EUT.

9.5.3 Check the effects of the test.

9.6 Test Procedure

The EUT was placed upon a wooden table, 0.8 m high, standing on the ground reference plane, which is a 2 m × 3 m metallic sheet with 1.5 mm thickness. This ground reference plane projected beyond the EUT by at least 0.1 m on all sides and the minimum distance between the EUT and all other conductive structure, except the ground plane beneath the EUT, was more than 0.5 m.

9.6.1 For input and output AC power ports:

The EUT was connected to the power mains by using a coupling device, which coupled the EFT interference signal to AC power lines.

9.7 Test Results

<PASS>

Refer to the following pages.

Electrical Fast Transient/Burst Immunity Test Result

EUT	:	Switching Power Supply	Test Date	:	Jul 12, 2012
M/N	:	AK25W-SSM-5, AK25W-SSM-24, AK25W-SSM-48	Temperature	:	23℃
S/N	:	E1207849-02/03, E1207849-03/03, E1207849-01/03	Humidity	:	55％RH
Power Supply	:	AC 230V/50Hz	Atmospheric Pressure	:	101.3 kPa
Test Mode	:	Full Load	Inject Place	:	AC Mains

Inject Line	Voltage (kV)	Duration of Test (s)	Inject Method	Result
L	±1	120	Direct	**A/PASS**
N	±1	120	Direct	**A/PASS**
PE	±1	120	Direct	**A/PASS**
L、N	±1	120	Direct	**A/PASS**
L、PE	±1	120	Direct	**A/PASS**
N、PE	±1	120	Direct	**A/PASS**
L、N、PE	±1	120	Direct	**A/PASS**
DC Supply	--	--	--	--
Signal Line	--	--	--	--

NOTE 1 – "--" means the item is no applicable.

NOTE 2 – During the test, the maximum output voltage variation was < 1%.

Test equipment:

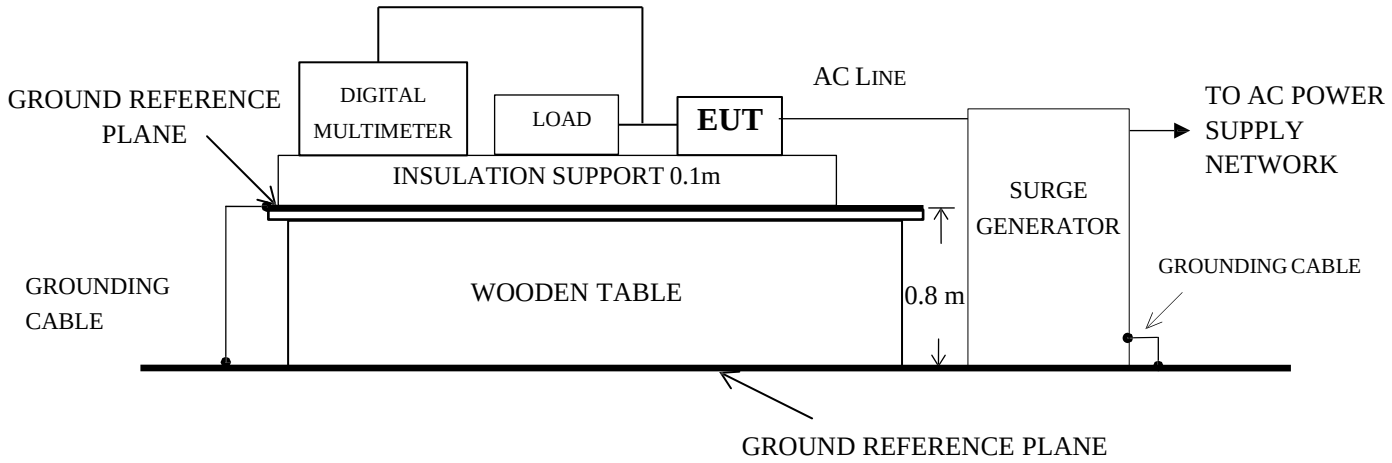
- ❒ EFT Generator : Prima EFT61004A
- ❒ Digital Multimeter : Agilent 34401A

TEST ENGINEER: LVY LV

10 SURGE IMMUNITY TEST

10.1 Block Diagram of Test Setup

10.1.1 Surge Immunity test setup



Remark: Combination wave generator and decoupling networks are included in test.

10.2 Applicable Standard

EN 55024:2010 (CISPR 24:2010)
(IEC 61000-4-5: 2005, Test Specification：AC Mains: Line to line: 0.5kV & 1.0kV; Line to Earth: 0.5kV, 1.0kV & 2.0kV)

10.3 Severity Levels and Performance Criterion

10.3.1 Severity levels

Test Level	Power supply Coupling mode	
	Line to line kV	Line to earth kV
1	NA	0.5
2	0.5	1.0
3	1.0	2.0
4	2.0	4.0
X	Special	Special

10.3.2 Performance criterion: **B**

10.4 EUT Configuration

The configuration of the EUT is same as those used in conducted disturbance test. Refer to Sec. 4.4.

10.5 Operating Condition of EUT

10.5.1 Setup the EUT on the table in the shielded room as Sec. 10.1.1.

10.5.2 Provide the voltage surge to the AC mains.

10.5.3 Check the effects of the test.

10.6 Test Procedure

For line to line coupling mode, provide a 0.5kV & 1kV surge (at open-circuit condition) to the EUT AC mains. The generator with its effective output impedance of 2Ω is used.

For line to earth coupling mode, provide 0.5kV, 1kV & 2kV surge (at open-circuit condition) to the EUT AC mains. The generator with its effective output impedance of 12Ω is used.

Such surge is a 1.2/50μs voltage surge at open-circuit condition, and an 8/20μs current surge into a short circuit.

At least five positive and five negative (polarity) tests with a maximum 1/min repetition rate during test.

Different phase angles were done individually.

10.7 Test Results

<PASS>

Refer to the following pages.

Surge Immunity Test Result

EUT	:	Switching Power Supply	Test Date	:	Jul 12, 2012
M/N	:	AK25W-SSM-5, AK25W-SSM-24, AK25W-SSM-48	Temperature	:	23℃
S/N	:	E1207849-02/03, E1207849-03/03, E1207849-01/03	Humidity	:	55％RH
Power Supply	:	AC 230V/50Hz	Atmospheric Pressure	:	101.3 kPa
Test Mode	:	Full Load	Inject Place	:	AC Mains

AC Input Power Port

Location	Polarity		Phase Angle	No. of Pulse	Pulse Voltage (kV)	Result
L-N	+	-	0	5	0.5 & 1	**A/PASS**
	+	-	90	5	0.5 & 1	**A/PASS**
	+	-	180	5	0.5 & 1	**A/PASS**
	+	-	270	5	0.5 & 1	**A/PASS**
L-PE	+	-	0	5	0.5, 1 & 2	**A/PASS**
	+	-	90	5	0.5, 1 & 2	**A/PASS**
	+	-	180	5	0.5, 1 & 2	**A/PASS**
	+	-	270	5	0.5, 1 & 2	**A/PASS**
N-PE	+	-	0	5	0.5, 1 & 2	**A/PASS**
	+	-	90	5	0.5, 1 & 2	**A/PASS**
	+	-	180	5	0.5, 1 & 2	**A/PASS**
	+	-	270	5	0.5, 1 & 2	**A/PASS**
Signal Line	+	-	L-PE	--	--	--
	+	-	L-L	--	--	--

NOTE – During the test, the maximum output voltage variation of AK25W-SSM-5 was < 2%; the maximum output voltage variation of AK25W-SSM-24 and AK25W-SSM-48 was < 1%

Test equipment:

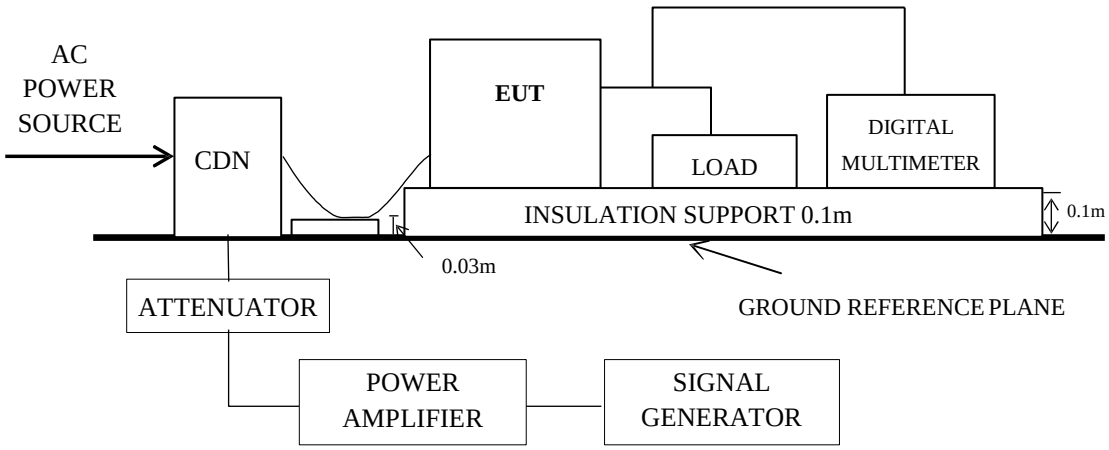
❒ Surge Generator : Prima SUG61005B
❒ Digital Multimeter : Agilent 34401A

TEST ENGINEER: LVY LV

11 CONDUCTED DISTURBANCES IMMUNITY TEST

11.1 Block Diagram of Test Setup

11.1.1 Conducted Disturbances Immunity test setup



11.2 Applicable Standard

EN 55024:2010 (CISPR 24:2010)
(IEC 61000-4-6: 2008, Test Specification：0.15-80MHz, 3V, 80%AM (1kHz))

11.3 Severity Levels and Performance Criterion

11.3.1 Severity levels

Frequency Range 0.15 MHz – 80 MHz		
Level	Voltage Level (e.m.f.)	
	U_0 dB(μV)	U_0 (V)
1.	120	1
2.	130	3
3.	140	10
X	Special	

11.3.2 Performance criterion: **A**

11.4 EUT Configuration

The configuration of the EUT is same as those used in conducted disturbance test. Refer to Sec. 4.4.

11.5 Operating Condition of EUT

11.5.1 Setup the EUT and load on the table as Sec.11.1, and operated them as Sec.4.5.

11.5.2 Inject the disturbance signal to the EUT AC mains through CDN.

11.5.3 Check the effects of the test.

11.6 Test Procedure

The EUT was placed on a wooden table 0.1m above a ground reference plane. Cables between CDN and the EUT are as short as possible, and their height above the ground reference plane is 0.03 m.

The disturbance signal was injected to the AC input port of EUT through CDN.

The frequency range is swept from 150 kHz to 80 MHz using 3V signal level, and with the disturbance signal 80% amplitude modulated with a 1 kHz sine wave.

All the scanning conditions are as follows:

Condition of Test	Remarks
Fielded Strength	3 V (Severity Level 2)
Modulation	80% AM 1 kHz
Scanning Frequency	0.15 - 80 MHz
Dwell Time	3 sec.

11.7 Test Results

<PASS>

Refer to the following pages.

Conducted Disturbances Immunity Test Result

Audix Technology (Shanghai) Co., Ltd.

		Test Date :	Jul 05, 2012
EUT :	Switching Power Supply	Temperature :	22℃
M/N :	AK25W-SSM-5, AK25W-SSM-24, AK25W-SSM-48	Humidity:	50％RH
S/N :	E1207849-02/03, E1207849-03/03, E1207849-01/03	Atmospheric Pressure :	101.3 kPa
Power Supply :	AC 230V/50Hz	Steps :	1%
Test Mode :	Full Load	Modulation : ☐ None ☐ Pulse ❒ 80% AM 1kHz	

Frequency Range (MHz)	Injected Position	Strength (Unmodulated)	Criterion	Results
0.15 ~ 80	AC Mains	3V(r.m.s.)	A	**PASS**

NOTE – During the test, the output has no change.

Test equipment:

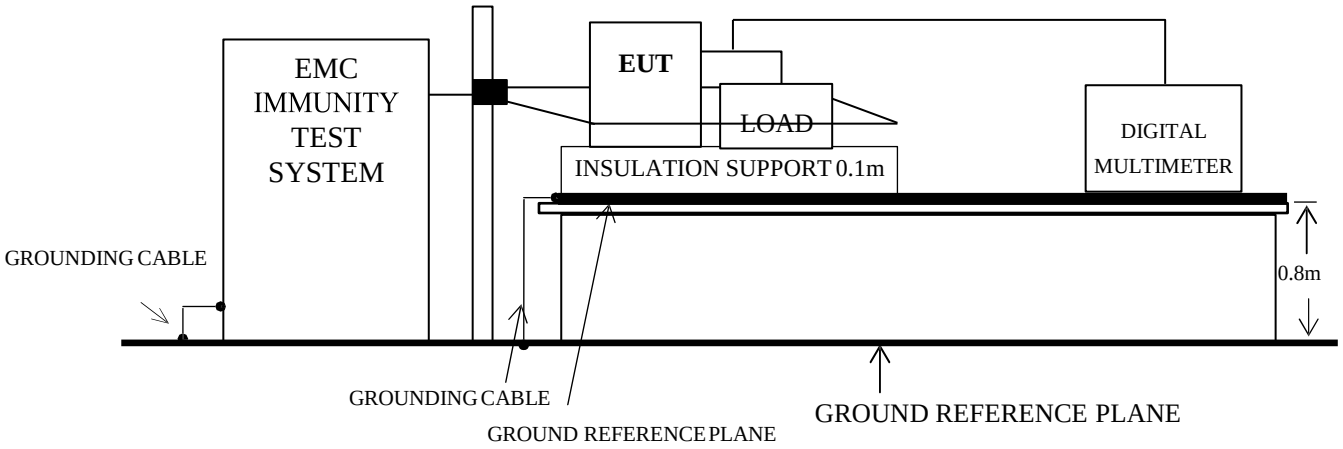
- ❒ Signal Generator : HP 8648A
- ❒ CDN : FCC-801-M3-25
- ❒ Power Amplifier : AR 100A250
- ❒ Attenuator : WC 40-6-34
- ❒ Power Meter: : HP 438A
- ❒ Power Sensor : HP 8482B
- ❒ Digital Multimeter : Agilent 34401A

TEST ENGINEER: VINCENT GAO

12 POWER FREQUENCY MAGNETIC FIELD IMMUNITY TEST

12.1 Block Diagram of Test Setup

12.1.1 Power Frequency Magnetic Field Immunity test setup



12.2 Applicable Standard

EN 55024:2010 (CISPR 24:2010)
(IEC 61000-4-8: 2009, Magnetic field strength: 1A/m)

12.3 Severity Levels and Performance Criterion

12.3.1 Severity level:

Test Level	Magnetic field strength A/m
1	1
2	3
3	10
4	30
5	100
X	Special

12.3.2 Performance criterion: **A**

12.4 EUT Configuration

The configuration of the EUT is same as those used in conducted disturbance test. Refer to Sec. 4.4.

12.5 Operating Condition of EUT

Same as conducted measurement, which is listed in 4.5 except for the test set up that replaced by section 12.1.1.

12.6 Test Procedure

The EUT placed on high 1m table that above the ground reference plane which the min. size 1m × 2m and 1.2mm thickness metallic, and subjected to the test magnetic field by using the induction coil of standard dimensions (1m × 1m). The induction coil rotated by 90 degrees in order to expose the EUT to the test field with different orientations. All cables of EUT exposed to magnetic field for 1m of their length.

12.7 Test Results

<PASS>

Refer to the following pages.

Power Frequency Magnetic Field Immunity Test Result

Audix Technology (Shanghai) Co., Ltd.

EUT	:	Switching Power Supply	Test Date	:	Jul 12, 2012
M/N	:	AK25W-SSM-5, AK25W -SSM-24, AK25W -SSM-48	Temperature	:	23℃
S/N	:	E1207849-02/03, E1207849-03/03, E1207849-01/03	Humidity	:	55％RH
Power Supply	:	AC 230V/50Hz	Atmospheric Pressure	:	101.3 kPa
			Test Mode	:	Full Load

Test Level (A/m)	**Testing Duration (in second)**	**Coil Orientation**	**Criterion**	**Result**
1	120	Axis-X	A	**PASS**
1	120	Axis-Y	A	**PASS**
1	120	Axis-Z	A	**PASS**

NOTE – During the test, the maximum output voltage variation was < 0.2%.

Test Instrumentation:

- ❒ P-f Magnetic Field Loop : FCC F-1000-4-8/9/10-1M
- ❒ EMC Immunity Test System : KeyTek CE Master
- ❒ Digital Multimeter : Agilent 34401A

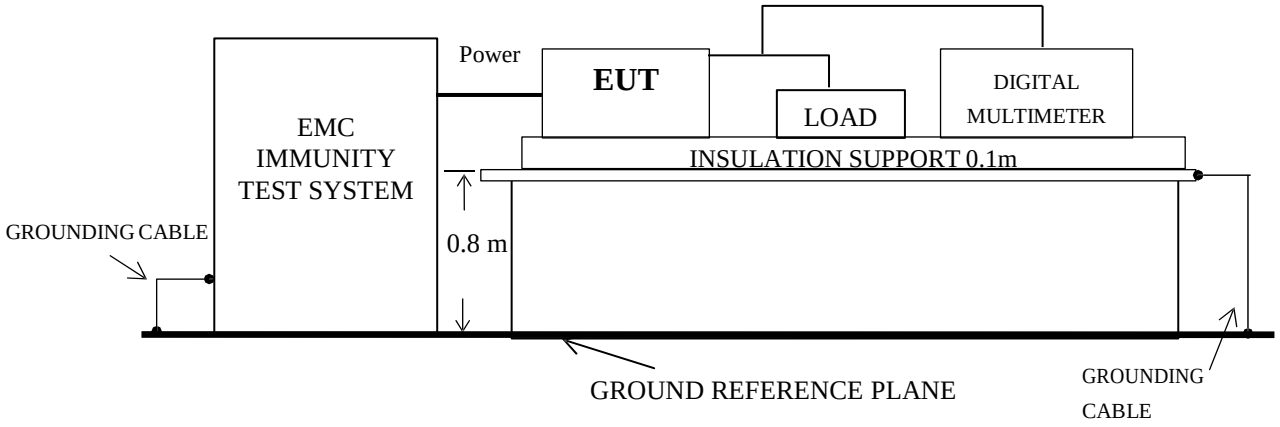
TEST ENGINEER: LVY LV

13 VOLTAGE DIPS AND SHORT INTERRUPTIONS

IMMUNITY TEST

13.1 Block Diagram of Test Setup

13.1.1 Voltage Dips and Short Interruptions Immunity test setup



13.2 Applicable Standard

EN 55024:2010 (CISPR 24:2010)
(IEC 61000-4-11:2004, Test Specification：Voltage dips, >95% reduction; Voltage dips, 30% reduction; Voltage interruptions)

13.3 Severity Levels and Performance Criterion

13.3.1 Preferred severity levels and durations for voltage dips

Class[a]	**Test level and durations for voltage dips (t_s) (50Hz/60Hz)**				
Class 1	Case-by-case according to the equipment requirements				
Class 2	0% during ½ cycle	0% during 1 cycle	70% during 25/30[c] cycles		
Class 3	0% during ½ cycle	0% during 1 cycle	40% during 10/12[c] cycles	70% during 25/30[c] cycles	80% during 250/300[c] cycles
Class X[b]	X	X	X	X	X

[a] Classes as per IEC 61000-2-4.
[b] To be defined by product committee. For equipment connected directly or indirectly to the public network, the levels must not be less severe than Class 2.
[c] "25/30 cycles" means "25 cycles for 50Hz test" and "30 cycles for 60Hz test".

13.3.2 Preferred severity levels and durations for short interruptions:

Class[a]	Test level and durations for short interruptions (t_s) (50Hz/60Hz)
Class 1	Case-by-case according to the equipment requirements
Class 2	0% during 250/300[c] cycles
Class 3	80% during 250/300[c] cycles
Class X[b]	X

[a] Classes as per IEC 61000-2-4.
[b] To be defined by product committee. For equipment connected directly or indirectly to the public network, the levels must not be less severe than Class 2.
[c] "250/300 cycles" means "250 cycles for 50Hz test" and "300 cycles for 60Hz test".

13.4 EUT Configuration

The configuration of the EUT is same as those used in conducted disturbance test. Refer to Sec. 4.4.

13.5 Operating Condition of EUT

13.5.1 Setup the EUT on the table in a shielded room as Sec. 13.1.1.

13.5.2 Provide the interruptions and voltage dips to the EUT AC mains.

13.5.3 Check the effects of the test.

13.6 Test Procedure

The EUT was placed upon a wooden table, 0.8 m above the ground.

The short interruptions and voltage dips were introduced at selected phase angles with specified duration. There were three dips/interruptions with interval of 10s minimum between each test event. After each group of tests a full functional check was performed.

13.7 Test Results

<PASS>

Refer to the following pages.

Voltage Dips & Short Interruptions Immunity Test Result

		Test Date :	Jul 12, 2012
EUT :	Switching Power Supply	Temperature :	25℃
M/N :	AK25W-SSM-5, AK25W -SSM-24, AK25W -SSM-48	Humidity :	53%RH
S/N :	E1207849-02/03, E1207849-03/03, E1207849-01/03	Atmospheric Pressure :	101.3 k/Pa
Power Supply :	100-240VAC~50/60Hz	Test Mode :	Full Load
Test Voltage :	100V~50/60Hz, 240V~50/60Hz		

Test Level (%Ut)	Voltage Dips & Short Interruptions (%Ut)	Duration (in period)	Phase (In Angle)	Criterion	Voltage phenomenon	Result
70	30	25P	0°, 45°, 90°, 135°, 180°, 225°, 270°, 315°	C	Dips	**A/PASS**
0	100	0.5P	0°, 45°, 90°, 135°, 180°, 225°, 270°, 315°	B	Dips	**A/PASS**
0	100	250P	0°, 45°, 90°, 135°, 180°, 225°, 270°, 315°	C	Interruptions	**B/PASS**

NOTE 1 – "P" means period (20ms).

NOTE 2 – B means during the level 100%, dip 250P test, the EUT will restart.

NOTE 3 – During the other levels of test, the maximum output voltage variation was < 0.5%.

Test equipment:

- ❒ EMC Immunity Test System : KeyTek CE Master
- ❒ Digital Multimeter : Agilent 34401A

TEST ENGINEER: LVY LV