

VCCI TEST REPORT
For
ASUSTeK COMPUTER INC.
Motherboard
Model No. : E2KM1I-DELUXE
Brand : ASUS

Prepared for
ASUSTeK COMPUTER INC.
4F. No.150, Li-Te Rd., Peitou, Taipei112, Taiwan

Prepared by
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Report No. : ACWE-V1212002
Date of Test : Dec.25~26, 2012
Date of Report : Jan.05, 2013

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APPENDIX I Photos of EUT

APPENDIX II Conducted Emission Pre-Scanned Data at Conducted shielding enclosure

APPENDIX III Radiated Emission Pre-Scanned Data at 10m Semi-Anechoic Chamber

TEST REPORT VERIFICATION

Applicant : ASUSTeK COMPUTER INC.
 Manufacturer #1 : MainTek Computer (Suzhou) Co., Ltd.
 Manufacturer #2 : Danriver Technology (GZ) Inc.
 Manufacturer #3 : Global Brands Manufacture Ltd.
 Manufacturer #4 : First International Computer (Suzhou) Inc.
 Manufacturer #5 : Boatek Electronic Co., Ltd.
 Manufacturer#6 : Cal-Comp Electronics and Communications (Suzhou) Co., Ltd.
 Manufacturer#7 : NBMProduction (Dongguan) Co., Ltd.
 EUT Description : Motherboard
 (A) Model No. : E2KM11-DELUXE
 (B) Brand : ASUS
 (C) Test Voltage : AC 100V, 50Hz (Via PC)

Applicable standards:

VCCI RULES AND REGULATIONS OF CLASS B APRIL 2012

The device described above is tested by Audix Technology (Wujiang) Co., Ltd. EMC Dept. to determine the maximum emission levels emanating from the device. The maximum emission levels were compared to the Class B limits of the VCCI for radiated and conducted emissions.


The measurement results are contained in this test report and Audix Technology (Wujiang) Co., Ltd. EMC Dept. is assumed full responsibility for the accuracy and completeness of these measurements. This report shows that the EUT, which was tested in 10m semi-anechoic Chamber is technically compliance with the VCCI limits.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of Audix Technology (Wujiang) Co., Ltd. EMC Dept.

Date of Test: Dec.25~26, 2012

Date of Report: Jan.05, 2013

Prepared by :


 (Tina Zhang/Assistant)

Reviewer :


 (Jingo Lin/ Section Manager)

Approved & Authorized Signer :


 (Allen Wang/ Deputy General Manager)

1 SUMMARY OF STANDARDS AND RESULTS

1.1 Description of Standards and Results

The EUT has been tested according to the applicable standards and test results are referred as below.

EMISSION			
Description / Test Item	Test Standard	Results	Meets Limit
Conducted Emission At mains terminal	VCCI RULES AND REGULATIONS OF CLASS B APRIL 2012	Pass	Class B
Conducted common mode disturbance at telecommunication port	VCCI RULES AND REGULATIONS OF CLASS B APRIL 2012	Pass	Class B
Radiated Emission	VCCI RULES AND REGULATIONS OF CLASS B APRIL 2012	Pass	Class B

2 GENERAL INFORMATION

2.1 Description of Device (EUT)

Product	:	Motherboard
Model No.	:	E2KM1I-DELUXE
Brand	:	ASUS
Applicant	:	ASUSTeK COMPUTER INC. 4F, No.150, Li-Te Rd., Peitou, Taipei 112, Taiwan
Manufacturer #1	:	MainTek Computer (Suzhou) Co., Ltd. No.233, jinfeng Road, Suzhou City New District, Jiangsu, P.R. China
Manufacturer #2	:	Danriver Technology (GZ) Inc. No.16, Baoying Dadao, Guangzhou Free Trade Zone, Guangdong, P.R.China
Manufacturer #3	:	Global Brands Manufacture Ltd. EMS Business unit Global Brands Manufacture Limited Yuyuan Industrial Estate, Huangjiang Town, Dongguan City, Guangdong, P.R.China
Manufacturer #4	:	First International Computer (Suzhou) Inc. Export Processing Zone, No.200 Central Suhong Road, SuZhou Industrial Park, Jiangsu, P.R.China
Manufacturer #5	:	Boatek Electronic Co., Ltd. No.124 bubugao road, wu sha kong bacillage, chang an, dong guan, Guangdong province
Manufacturer #6	:	Cal-Comp Electronics and Communications (Suzhou) Co., Ltd. Wujiang Export Processing Zone, No.688, Pangjin Road, Wujiang Economic Development Zone, Jiangsu Province, China.
Manufacturer #7	:	NBM Production (Dongguan) Co., Ltd. No.51 Xinju Rd., Shangjiao community, Changan Town, Dongguan City, Guangdong, P.R. China
Date of Receipt of Sample	:	Dec.23, 2012
Date of Test	:	Dec.25~26, 2012

2.2 EUT's Specification under application

Model Number	:	E2KM1I-DELUXE
CPU	:	AMD E2-2000 APU With Rodeon (tm) HD Graphics 1.75GHz
Chipset	:	South Bridge/PCH: Hudson M1 Rev.:A14
Expansion Slots	:	Slots PCIEX16: 1 Discrete Graphics PCI Express x16 3.3v With latch
System Memory	:	Single channel pure DIMM configuration Type: DDR3-800/1066/1333 Memory Size Max: 8*1024 MB
Graphics	:	Integrated Gfx in North bridge: HD7340 Max. UMA Memory Size: 2G HDMI Max. resolution: 1920*1200@60 Hz DVI Dual-link Max. resolution: 1920*1200@60 Hz
USB	:	Standard: USB1.1&USB2.0 Number of ports:8 ports mid-board:4 ports back panel:4 ports USB 3.0 IC:ASM1042 Number of ports: 4 ports mid-board:2 ports back panel:2 ports
Audio	:	IC: ALC 898 3 jack 8 Channels: Multi-streaming (VIA only); Support Vista Premium; Anti-pop Function (Power On/Off; Resume S3/S4); Front Panel Retasking (HD only)
Network	:	IC: RTL8111F PCIE 1Gbps Wireless LAN Wireless LAN IC: AW-NB111 Interface PCIE USB Support type 802.11b/g 802.11n
Back I/O Ports	:	(1) Antenna port*2 (2) PS-2 port*1 (3) USB 1.1 & 2.0 port*4 (4) Optical port*1 (5) HDMI port*1 (6) DVI Dual-link port*1 (7) e-SATA port*1 (8) RJ-45 port*1 (10M/bps, 100M/bps, 1000M/bps) (9) USB 3.0 port (10) Audio port*3
Highest Working Frequency	:	1.75 GHz

Remark:

EUT with the following modes were pre-scanned at the test voltage AC110V/60Hz for Conducted & Radiated Disturbance Measurements. Please refer all test data to appendix II & III.

Conducted & Radiated Disturbance Measurements

Mode	Test Condition
1	Full System (DVI + HDMI 1920*1200@60Hz 75.8kHz)
2	Full System (DVI + HDMI 1920*1080@60Hz 68.2kHz)
3	Full System (DVI + HDMI 1600*1200@60Hz 75.8kHz)
4	Full System (DVI + HDMI 1280*1024@75Hz 80.8kHz)
5	Full System (DVI + D-Sub 640*480@60Hz 30.3kHz)

Finally, the worst test mode (Mode 1) was demonstrated at AC100V/50Hz for all EMC items and record in the report.

2.3 List of all the components under test

Product	:	Brand/Model Number/Specification
CPU	:	AMD E2-2000 APU With Rodeon (tm) HD Graphics 1.75GHz
Motherboard (EUT)	:	ASUS, E2KM1I-DELUXE
HDD	:	Seagate, ST380815AS, 80GB
RAM	:	Kingston, KVR1333D3N9/2GB
Switching Power Supply	:	Brand: Seventeam Model No.: ST-300WAP Input: AC 100-240V, 10A, 50-60Hz Output: DC(+3.3V/20A; +5V/30A; +12V/18A; -5V/0.1A; -12V/0.8A; +5Vsb/2.0A; MAX 300W) DC Power cord: Unshielded, Undetachable, 0.4m

2.4 Operating Condition of EUT

EUT Exercise Program and Condition	
Operating System	Windows 7
Test Program	“BurnIn Test”
Graphic Controller	Display scrolling “H” pattern (Font: Arial, Size: 11) with respective resolution.
Audio Controller	Run the program “Windows Media Player” and play 1kHz audio signal.
LAN Controller (10M/bps)	Data transfer to host PC (pin test)
LAN Controller (100M/bps & 1G/bps)	Data transfer to host PC (tfgn.exe.)
One USB Port	Write operation to USB peripherals (WINTHRAX.exe.)
Other USB Ports	Read operation to USB peripherals (WINTHRAX.exe.)
PS-2 Port	Write operation to PS-2 peripherals.

2.5 Tested Supporting System Details

2.5.1 PS-2 Mouse

Manufacturer : DELL
 Model Number : M-UARDEL7
 Serial Number : N/A
 BSMI ID : T41126
 Data Cable : Shielded, Undetachable, 1.8m

2.5.2 PS-2 Keyboard

Manufacturer : Logitech
 Model Number : Y-SAM64
 Serial Number : N/A
 BSMI ID : T51160
 Data Cable : Shielded, Undetachable, 1.5m

2.5.3 LCD Monitor # 1

Manufacturer : DELL
 Model Number : 3008WFPt
 Serial Number : CN-0G501H-74443-8A7-027L
 BSMI ID : R3A002
 DVI Cable : Shielded, Detachable, 1.8m, 2 ferrite cores
 AC Power Cord : Unshielded, Detachable, 2.0m

2.5.4 LCD Monitor # 2

Manufacturer : DELL
 Model Number : 3008WFPt
 Serial Number : CN-ORW915-71618-84T-102L
 BSMI ID : R3A002
 HDMI Cable : Shielded, Detachable, 1.8m
 AC Power Cord : Unshielded, Detachable, 2.0m

2.5.5 Earphone & Microphone

Manufacturer : SOMIC
 Model Number : SM-301
 Serial Number : N/A
 Audio Cable : Unshielded, Undetachable, 2.2 m

2.5.6 Walkman

Manufacturer : WINGO
 Model Number : SP-2311
 Serial Number : o143360731
 Audio Cable : Shielded, Detachable, 1.8m

2.5.7 Speaker

Manufacturer : Plank
 Model Number : CAT-522
 Serial Number : 204896
 BSMI ID : R41307
 Audio Cable : Shielded, Detachable, 1.8m

- 2.5.8 Printer
- Manufacturer : HP
- Model Number : DESKJET3918
- Serial Number : CN64S1N0T6
- BSMI ID : R33001
- USB Cable : Shielded, Detachable, 2.0m
- AC Adapter : HP/090-4397
I/P: AC100-240V, 50-60Hz, 500mA,
O/P: DC +32Vdc, 500mA max; +15Vdc, 530mA max
AC Cord: Unshielded, Detachable, 1.8m
DC Cord: Unshielded, Undetachable, 1.8m, 1 ferrite core
- 2.5.9 USB HDD # 1
- Manufacturer : BUFFALO
- Model Number : HD-HX1.OTU3-AP
- Serial Number : 45564800401991
- BSMI ID : D33093
- Data Cable : Shielded, Detachable, 1.0m
- 2.5.10 USB HDD # 2
- Manufacturer : BUFFALO
- Model Number : HD-HX1.OTU3-AP
- Serial Number : 45564800402875
- BSMI ID : D33093
- Data Cable : Shielded, Detachable, 1.0m
- 2.5.11 USB HDD # 3
- Manufacturer : BUFFALO
- Model Number : HD-HX1.OTU3-AP
- Serial Number : 45564800402202
- BSMI ID : D33093
- Data Cable : Shielded, Detachable, 1.0m
- 2.5.12 USB HDD # 4
- Manufacturer : BUFFALO
- Model Number : HD-HX1.OTU3-AP
- Serial Number : 45564800402103
- BSMI ID : D33093
- Data Cable : Shielded, Detachable, 1.0m
- 2.5.13 e-SATA HDD
- Manufacturer : Seagate
- Model Number : FreeAgent Pro
- Serial Number : 9QM3Q0EB
- BSMI ID : D33027
- Data Cable : Shielded, Detachable, 1.5m

2.5.14 Host PC

Manufacturer : Lenovo
 Model Number : 2746-BAC(SL500)
 Power Cord : Unshielded, Detachable, 0.5 m
 AC Adapter : M/N: 92P1211
 Brand: Lenovo
 Input: AC 100-240V, 50-60Hz, 2.0A-1.2A
 Output: DC 20V,3.25A
 DC Cord: Shielded, Undetachable, 1.8m, 1 ferrite core.

2.5.15 AC Power Cord: Unshielded, Detachable, 1.8m (Connecting to PC)

For Conducted Disturbance Measurement:

2.5.16 RJ-45 Cable *1: Unshielded, Detachable, 9m (Connecting between Host PC and ISN)

2.5.17 RJ-45 Cable *1: Unshielded, Detachable, 2m (Connecting between EUT and ISN)

For Radiated Disturbance Measurement (10m Chamber):

2.5.18 RJ-45 Cable *1: Unshielded, Detachable, 25m (Connecting between EUT and PC)

2.6 Description of Test Facility

Name of Firm : **Audix Technology (Wujiang) Co., Ltd. EMC Dept.**
 Site Location : No1289 Jiangxing East Road, the Eastern Part of Wujiang
 Economic Development Zone Jiangsu China 215200
 NVLAP Lab code : 200786-0
 (NVLAP is a NATA accredited body under Mutual Recognition
 Agreement)
 Valid date on Sep.30, 2013
 VCCI Registration : **No.1 Shielding Room**
 Valid date on Oct.10, 2015
 Registered No.: C-2666
 Valid date on Oct.26, 2015
 Registered No.: T-1644

 10m Semi-Anechoic Chamber
 Valid date on Oct.10, 2015
 Registered No.: R-2436

 Valid date on Oct.26, 2015
 Registered No.: G-66

2.7 Measurement Uncertainty

Test Item	Range Frequency	Uncertainty
No.1 Conducted Shielding Enclosure		
Conducted Disturbance Measurement at mains	0.15MHz ~ 30MHz	± 2.82dB
Conducted Disturbance Measurement at telecommunication port	0.15MHz ~ 30MHz	± 2.76dB
At 10m Semi-Anechoic Chamber		
Radiated Disturbance Measurement (Distance 10m)	30MHz ~ 1000MHz	± 3.04dB (Horizontal)
		± 3.30dB (Vertical)
Radiated Disturbance Measurement (Distance 3m)	1000MHz ~ 6000MHz	± 4.72dB

Remark : Uncertainty = $ku_c(y)$

3 CONDUCTED EMISSION MEASUREMENT

3.1 Test Equipment

The following test equipment was used during the conducted emission measurement :

3.1.1 For AC Mains Port

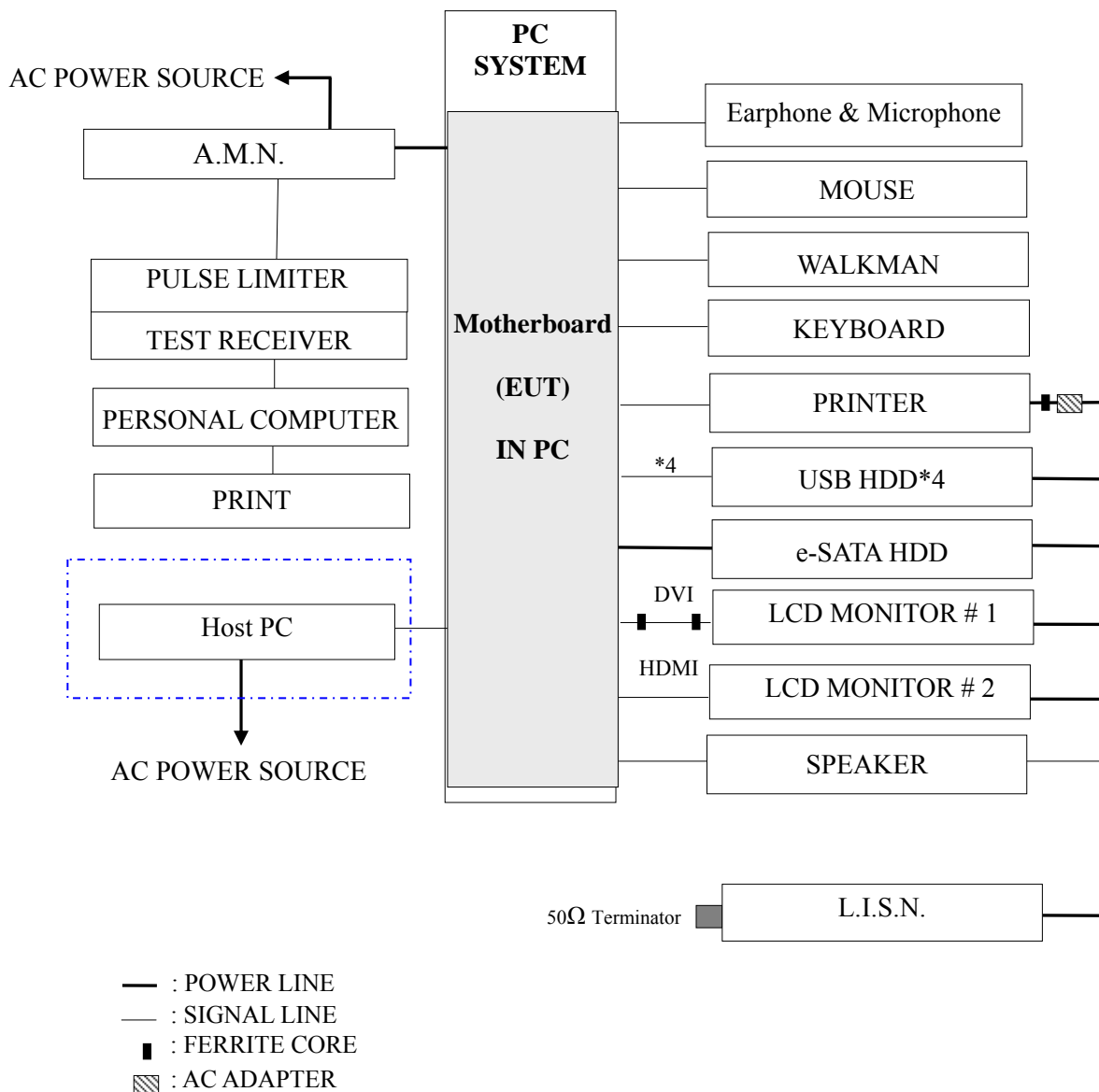
Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Test Receiver	R & S	ESCI	100352	2012-01-05	2013-01-04
2.	A.M.N.	R&S	ESH2-Z5	100153	2012-05-18	2013-05-17
3.	L.I.S.N.	Kyoritsu	KNW-407	8-1793-4	2012-08-06	2013-08-05
4.	Pulse Limiter	R&S	ESH3-Z2	100605	2012-08-06	2013-08-05
5.	50Ω Terminator	Tektronis	MS4630B	001-con	2012-01-05	2013-01-04
6.	RF Cable	Harbour Industries	RG400	002	2012-03-24	2013-03-23

3.1.2 For Telecommunication Port

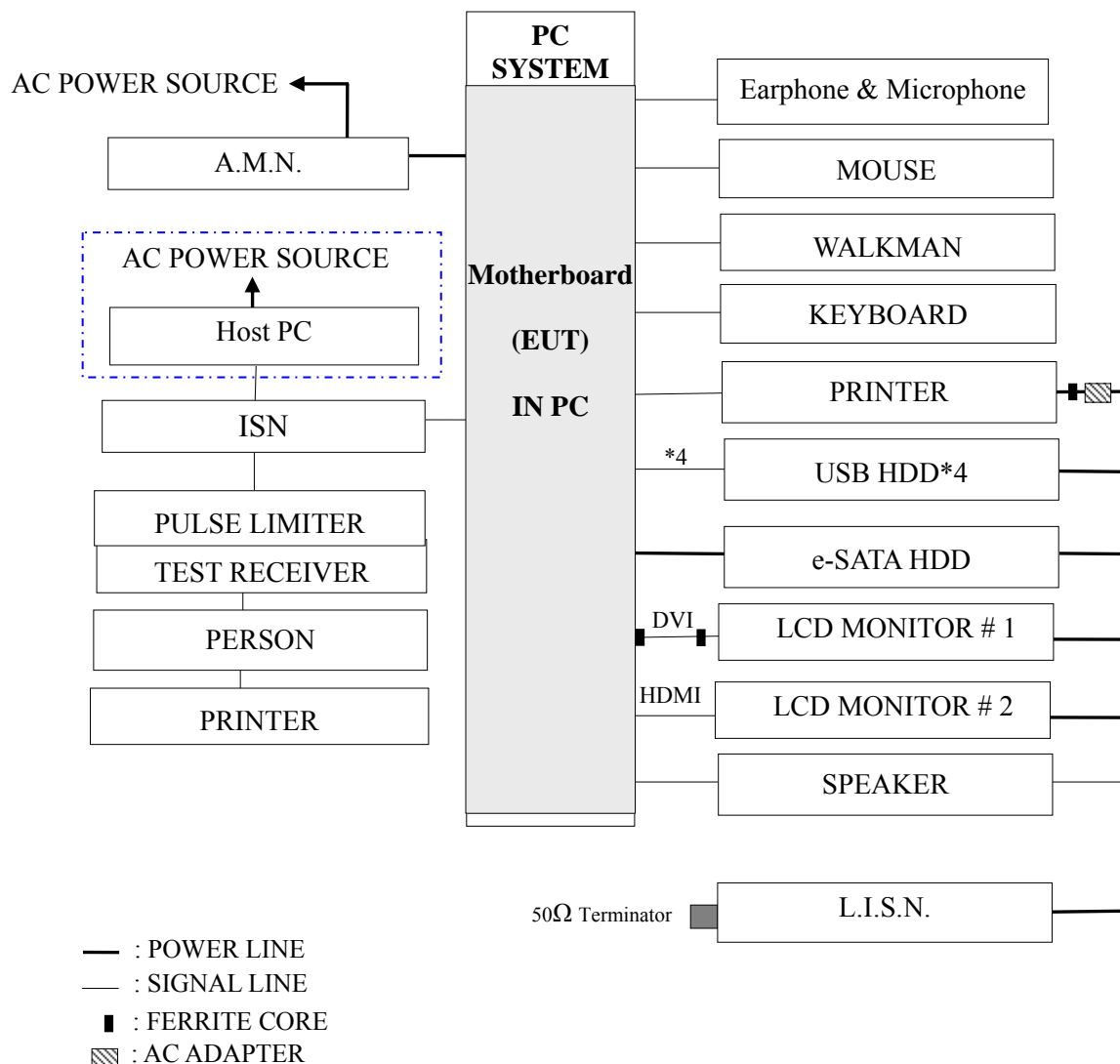
Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Test Receiver	R & S	ESCI	100352	2012-01-05	2013-01-04
2.	A.M.N.	R&S	ESH2-Z5	100153	2012-05-18	2013-05-17
3.	L.I.S.N.	Kyoritsu	KNW-407	8-1793-4	2012-08-06	2013-08-05
4.	I.S.N.	FCC	FCC-TLISN -T8-02	20389	2012-03-16	2013-03-15
5.	50Ω Terminator	Tektronis	MS4630B	001-con	2012-01-05	2013-01-04
6.	Pulse Limiter	R&S	ESH3-Z2	100605	2012-08-06	2013-08-05
7.	RF Cable	Harbour Industries	RG400	002	2012-03-24	2013-03-23

3.2 Block Diagram of Test Setup

3.2.1 Block Diagram of Test Setup for AC mains Port



3.2.2 Block Diagram of Test Setup for RJ-45 Port



3.3 Conducted Emission Limit

3.3.1 Limits for conducted disturbance at the mains ports (Class B)

Frequency Range (MHz)	Limits dB(μV)	
	Quasi-peak	Average
0.15 ~ 0.5	66~56	56~46
0.5 ~ 5.0	56	46
5.0 ~ 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.

3.3.2 Limits for conducted common-mode (asymmetric mode) disturbance at telecommunication ports (Class B)

Frequency Range (MHz)	Voltage Limits dB(μ V)		Current limits dB(μ A)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 ~ 0.5	84~74	74~64	40~30	30~20
0.5 ~ 30	74	64	30	20

NOTE 1 – The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz~0.50 MHz

NOTE 2– If the average limit is met in a measurement with quasi-peak detector, the measurement with average detector receiver at the same frequency is unnecessary.

NOTE 3 –The conversion factor between voltage limits and current limits is $20\log_{10}150=44$ dB.

3.4 Test Procedures

The measuring process is according to VCCI, Class B and laboratory internal procedure TKC-301-015.

3.4.1 For AC Mains Port

In the conducted emission measurement, the EUT and all peripheral devices were set up on a non-metallic table which was 0.8 meters height above the ground plane, and 0.4 meters far away from the vertical plane. The EUT was powered by AC mains through Artificial Main Network (A.M.N), other peripheral devices were powered by AC mains through the second Line Impedance Stabilization Network (L.I.S.N). For the measurement, the A.M.N measuring port was terminated by a 50 Ω measuring equipment and the second L.I.S.N measuring port was terminated by a 50 Ω resistive load. All measurements were done on the phase and neutral line of the EUT's power cord. All cables or wires placement were verified to find maximum emission.

3.4.2 For telecommunication Port

The setup is the same as conduction besides this, connecting between AE and telecommunication port through ISN. Each phase of telecommunication wire is measured to evaluate the maximum conducted emission in accordance to VCCI Class B.

The resolution bandwidth of measuring receiver was set at 9 kHz.

The frequency range (0.15 MHz ~ 30 MHz) was pre-scanned with a peak detector; the final measurement was measured with quasi-peak detector and average detector. (If the average limit is met when using a quasi-peak detector, the average detector is unnecessary).

The emission level is calculated automatically by the test system which uses the following equation:

Emission Level (dB μ V) = Meter-Reading (dB μ V) + A.M.N /I.S.N factor (dB) + Cable Loss (dB)
(Cable Loss include pulse limiter loss)

3.5 Measurement Results

PASSED

(All the emissions not reported below are too low against the prescribed limits.)

The worst mode was measured and reported as follows:

3.5.1 AC main Ports Measurement Results

Test Date : Dec.26, 2012 Temperature : 21.4 Humidity : 53%

Item	Test Condition	Reference Test Data No.	
		Neutral	Line
1	Full System (DVI + HDMI 1920*1200@60Hz 75.8kHz)	# 22	# 21

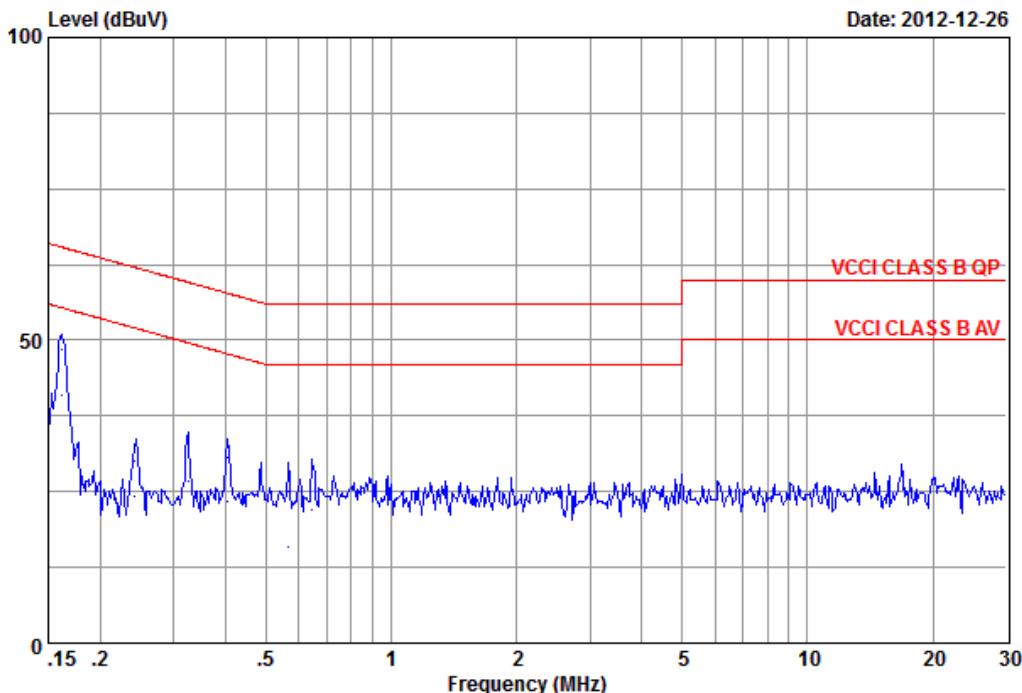
NOTE 1 - ‘ ’ means the worst test mode.

NOTE 2 - The worst emission is detected at 0.16 MHz with corrected signal of 43.31 dB (µV) (Limit is 55.41dB (µV)) with AV detector, when the Line of the EUT is connected to A.M.N.



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Data: 22 File: F:\2012Test Data\Report\12\G1212023.EM6 (32) Date: 2012-12-26



Site no. : No.1 Conducted shielding Enclosure Data no. : 22
 AMN/LISN : ESH2-Z5-1205 Phase : NEUTRAL
 Limit : VCCI CLASS B QP
 Env. / Ins. : 21.4*C&53%/ESCI Engineer : KM Tong
 EUT : Motherboard
 M/N : E2KM1I-DELUXE
 Power Rating : 100Vac/50Hz
 Test mode : Full System
 Memo : DVI+HDMI 1920*1200@60Hz 75.8KHz
 CPU:AMD E2-2000 APU With Radeon(tm) HD
 Graphics 1.75GHz

	Freq. (MHz)	AMN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.16	0.17	9.88	38.51	48.56	65.41	16.85	QP
2	0.16	0.17	9.88	30.91	40.96	55.41	14.45	Average
3	0.24	0.17	9.89	19.90	29.96	62.03	32.07	QP
4	0.24	0.17	9.89	14.20	24.26	52.03	27.77	Average
5	0.33	0.18	9.89	20.50	30.57	59.58	29.01	QP
6	0.33	0.18	9.89	16.60	26.67	49.58	22.91	Average
7	0.40	0.19	9.90	20.49	30.58	57.77	27.19	QP
8	0.40	0.19	9.90	13.19	23.28	47.77	24.49	Average
9	0.57	0.19	9.90	5.71	15.80	46.00	30.20	Average
10	0.57	0.19	9.90	15.11	25.20	56.00	30.80	QP
11	0.64	0.20	9.90	11.90	22.00	46.00	24.00	Average
12	0.64	0.20	9.90	18.14	28.24	56.00	27.76	QP

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

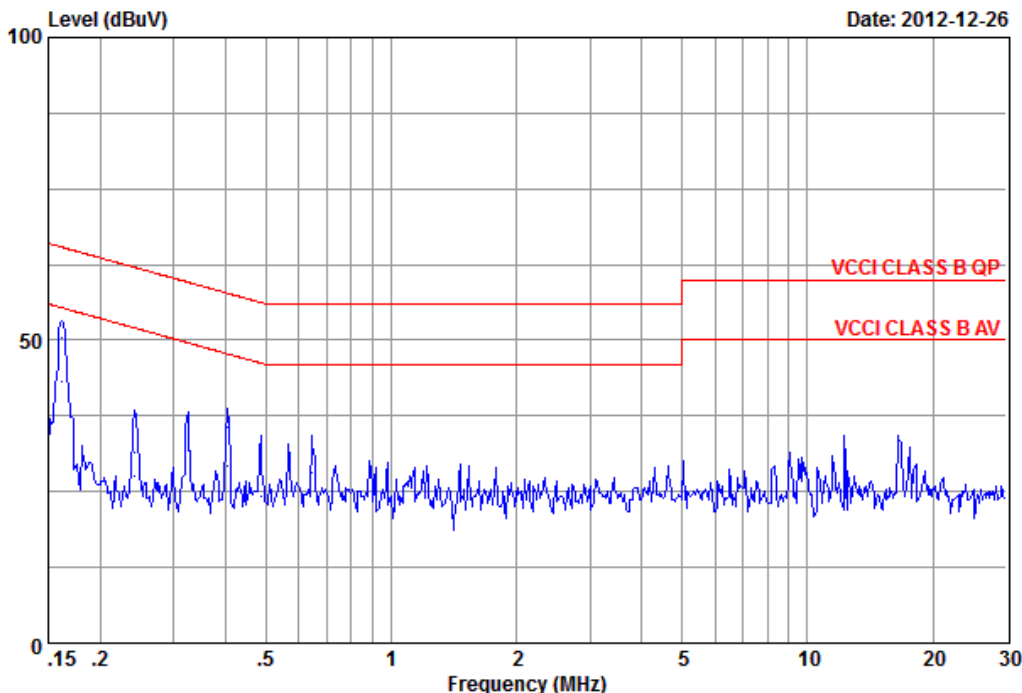


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Data: 21

File: F:\2012Test Data\Report\12\G1212023.EM6 (32)

Date: 2012-12-26



Site no. : No.1 Conducted shielding Enclosure Data no. : 21
 AMN/LISN : ESH2-Z5-1205 Phase : LINE
 Limit : VCCI CLASS B QP
 Env. / Ins. : 21.4*C&53%/ESCI Engineer : KM Tong
 EUT : Motherboard
 M/N : E2KM1I-DELUXE
 Power Rating : 100Vac/50Hz
 Test mode : Full System
 Memo : DVI+HDMI 1920*1200@60Hz 75.8KHz
 CPU:AMD E2-2000 APU With Radeon(tm) HD
 Graphics 1.75GHz

	Freq. (MHz)	AMN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.16	0.23	9.88	40.30	50.41	65.41	15.00	QP
2	0.16	0.23	9.88	33.20	43.31	55.41	12.10	Average
3	0.24	0.25	9.89	21.30	31.44	62.06	30.62	QP
4	0.24	0.25	9.89	17.40	27.54	52.06	24.52	Average
5	0.33	0.28	9.89	25.50	35.67	59.58	23.91	QP
6	0.33	0.28	9.89	21.70	31.87	49.58	17.71	Average
7	0.40	0.29	9.90	25.40	35.59	57.77	22.18	QP
8	0.40	0.29	9.90	19.10	29.29	47.77	18.48	Average
9	0.49	0.31	9.90	18.90	29.11	56.24	27.13	QP
10	0.49	0.31	9.90	14.00	24.21	46.24	22.03	Average
11	0.64	0.33	9.90	20.41	30.64	56.00	25.36	QP
12	0.64	0.33	9.90	17.91	28.14	46.00	17.86	Average

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

3.5.2 Measurement results at telecommunication port

Test Date : Dec.26, 2012 Temperature : 21.4 Humidity : 53%

Item	Test Condition	Reference Test Data No.
1	RJ-45 10M/bps Full	# 20
2	RJ-45 100M/bps Full	# 19
3	RJ-45 1000M/bps Full	# 18

NOTE 1 - ' ' means the worst test mode.

NOTE 2 - The worst emission is detected at 7.50 MHz with emission level of 57.35 dB (μ V) and with AV detector (limit is 64.00 dB (μ V)), when the RJ-45 port (under 10M/bps) of the EUT is connected to I.S.N.

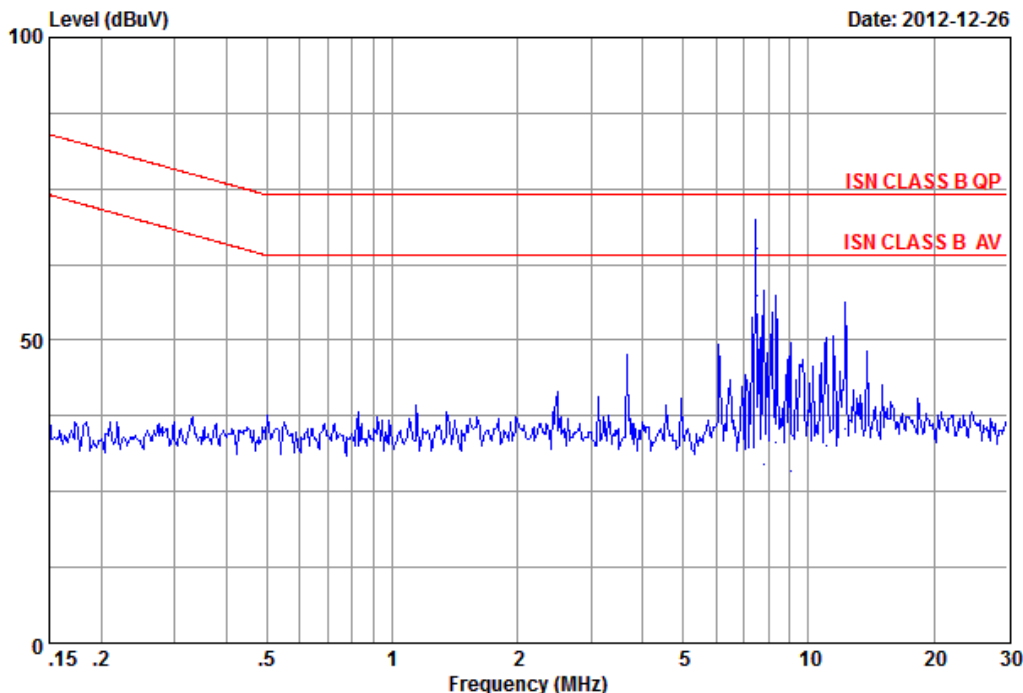


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Data: 20

File: F:\2012Test Data\Report\12\G1212023.EM6 (32)

Date: 2012-12-26



Site no. : No.1 Conducted shielding Enclosure Data no. : 20
 AMN/LISN : FCC ISN-T8-1203 Phase :
 Limit : ISN CLASS B QP
 Env. / Ins. : 21.4*C&53%/ESCI Engineer : KM Tong
 EUT : Motherboard
 M/N : E2KM1I-DELUXE
 Power Rating : 100Vac/50Hz
 Test mode : Full System
 Memo : RJ-45 10Mbps Full
 CPU:AMD E2-2000 APU With Radeon(tm) HD
 Graphics 1.75GHz

	Freq. (MHz)	AMN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	7.50	9.93	9.93	45.39	65.25	74.00	8.75	QP
2	7.50	9.93	9.93	37.49	57.35	64.00	6.65	Average
3	7.80	9.93	9.93	33.90	53.76	74.00	20.24	QP
4	7.80	9.93	9.93	9.70	29.56	64.00	34.44	Average
5	8.37	9.93	9.93	30.40	50.26	74.00	23.74	QP
6	8.37	9.93	9.93	13.30	33.16	64.00	30.84	Average
7	9.06	9.94	9.93	25.21	45.08	74.00	28.92	QP
8	9.06	9.94	9.93	8.61	28.48	64.00	35.52	Average
9	11.02	9.96	9.95	26.11	46.02	74.00	27.98	QP
10	11.02	9.96	9.95	12.71	32.62	64.00	31.38	Average
11	12.26	9.98	9.97	15.30	35.25	64.00	28.75	Average
12	12.26	9.98	9.97	31.20	51.15	74.00	22.85	QP

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

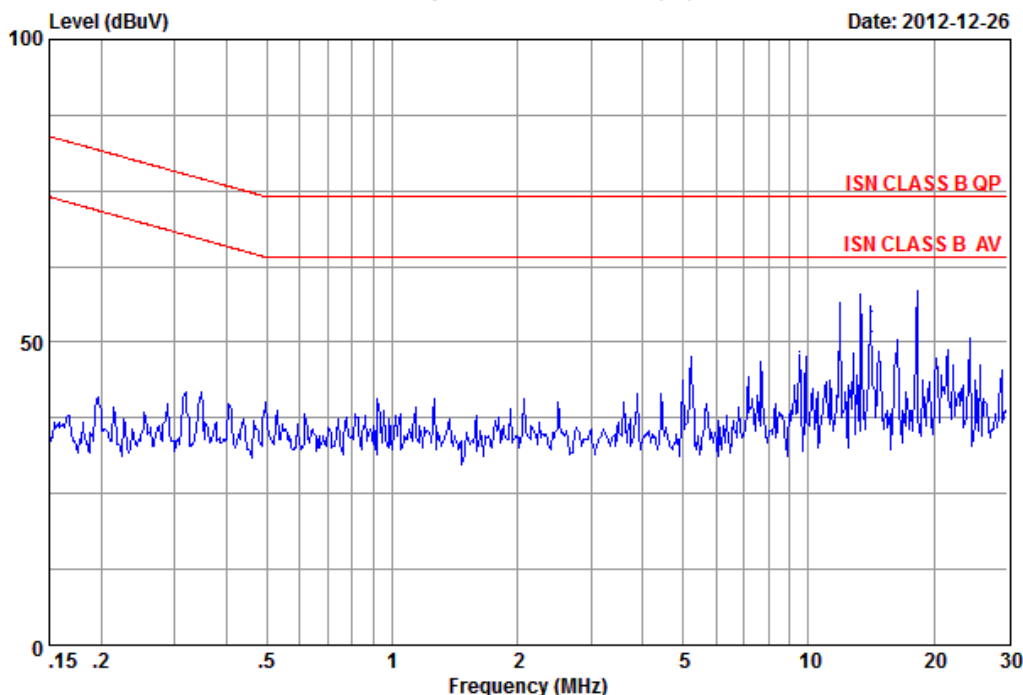


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Data: 19

File: F:\2012Test Data\Report\12\G1212023.EM6 (32)

Date: 2012-12-26



Site no. : No.1 Conducted shielding Enclosure Data no. : 19
 AMN/LISN : FCC ISN-T8-1203 Phase :
 Limit : ISN CLASS B QP
 Env. / Ins. : 21.4*C&53%/ESCI Engineer : KM Tong
 EUT : Motherboard
 M/N : E2KM11-DELUXE
 Power Rating : 100Vac/50Hz
 Test mode : Full System
 Memo : RJ-45 100Mbps Full
 CPU:AMD E2-2000 APU With Radeon(tm) HD
 Graphics 1.75GHz

	Freq. (MHz)	AMN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	9.51	9.95	9.94	28.59	48.48	74.00	25.52	QP
2	9.51	9.95	9.94	25.39	45.28	64.00	18.72	Average
3	11.95	9.98	9.97	35.69	55.64	74.00	18.36	QP
4	11.95	9.98	9.97	32.39	52.34	64.00	11.66	Average
5	13.35	10.00	9.99	33.19	53.18	64.00	10.82	Average
6	13.35	10.00	9.99	36.59	56.58	74.00	17.42	QP
7	14.15	10.01	10.00	31.70	51.71	64.00	12.29	Average
8	14.15	10.01	10.00	35.10	55.11	74.00	18.89	QP
9	16.41	10.05	10.03	30.10	50.18	74.00	23.82	QP
10	16.41	10.05	10.03	26.90	46.98	64.00	17.02	Average
11	18.24	10.08	10.06	37.10	57.24	74.00	16.76	QP
12	18.24	10.08	10.06	33.90	54.04	64.00	9.96	Average

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

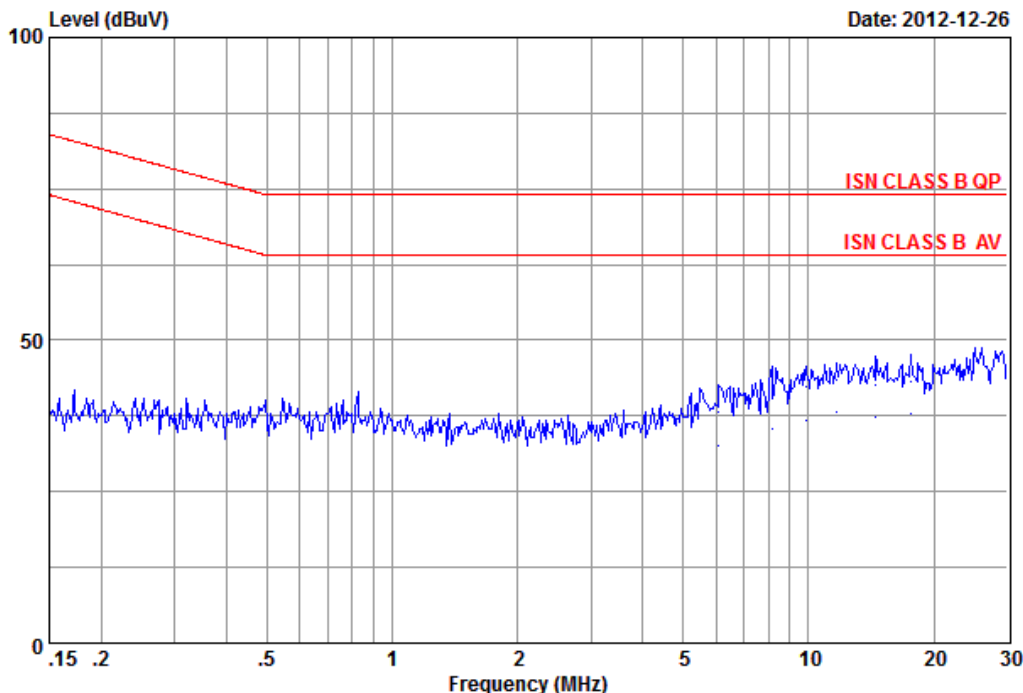


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Data: 18

File: F:\2012Test Data\Report\12\G1212023.EM6 (32)

Date: 2012-12-26



Site no. : No.1 Conducted shielding Enclosure Data no. : 18
 AMN/LISN : FCC ISN-T8-1203 Phase :
 Limit : ISN CLASS B QP
 Env. / Ins. : 21.4*C&53%/ESCI Engineer : KM Tong
 EUT : Motherboard
 M/N : E2KM11-DELUXE
 Power Rating : 100Vac/50Hz
 Test mode : Full System
 Memo : RJ-45 1000Mbps Full
 CPU:AMD E2-2000 APU With Radeon(tm) HD
 Graphics 1.75GHz

	Freq. (MHz)	AMN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	6.08	9.91	9.92	18.20	38.03	74.00	35.97	QP
2	6.08	9.91	9.92	12.90	32.73	64.00	31.27	Average
3	8.15	9.93	9.93	20.90	40.76	74.00	33.24	QP
4	8.15	9.93	9.93	15.60	35.46	64.00	28.54	Average
5	9.86	9.95	9.94	17.00	36.89	64.00	27.11	Average
6	9.86	9.95	9.94	22.50	42.39	74.00	31.61	QP
7	11.68	9.97	9.96	23.51	43.44	74.00	30.56	QP
8	11.68	9.97	9.96	18.21	38.14	64.00	25.86	Average
9	14.51	10.01	10.00	17.31	37.32	64.00	26.68	Average
10	14.51	10.01	10.00	22.51	42.52	74.00	31.48	QP
11	17.56	10.07	10.05	23.10	43.22	74.00	30.78	QP
12	17.56	10.07	10.05	17.70	37.82	64.00	26.18	Average

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

4 RADIATED EMISSION MEASUREMENT

4.1 Test Equipment

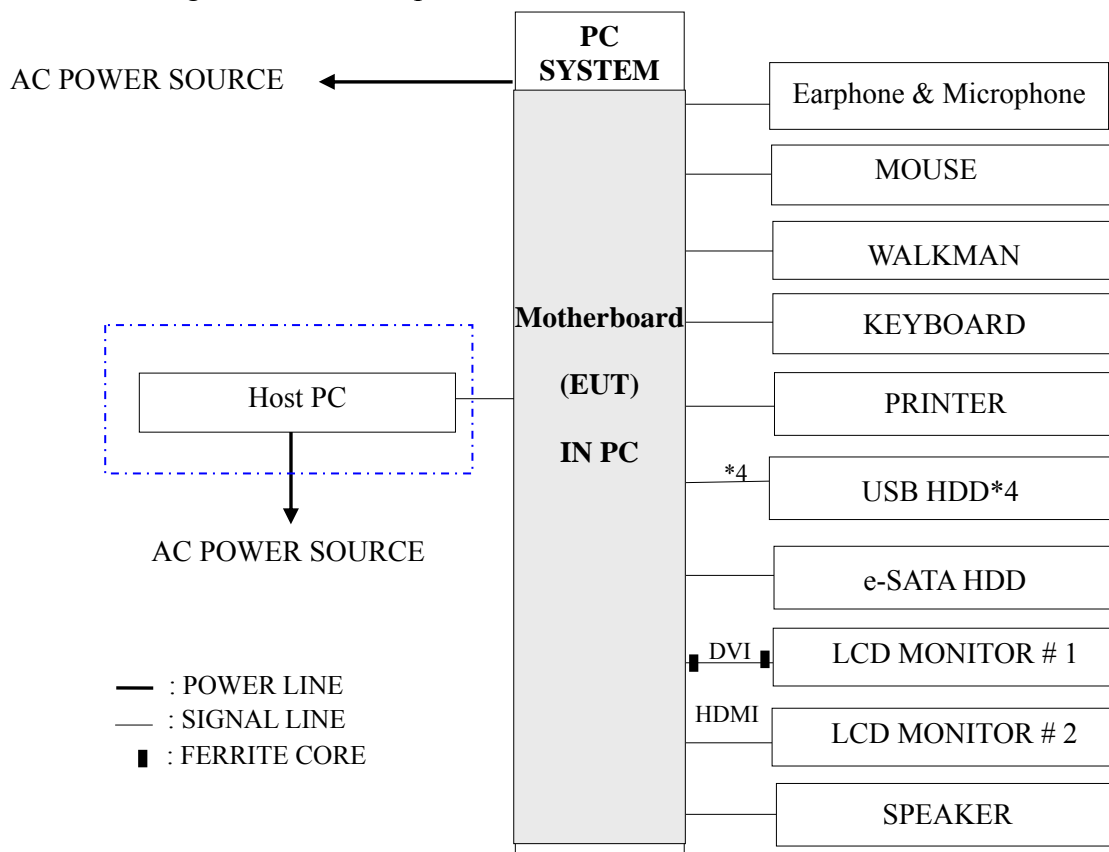
The following test equipment was used during the radiated emission measurement :

(At 10m Semi-Anechoic Chamber)

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	E7405A	MY45107028	2012-01-05	2013-01-04
2.	Spectrum Analyzer	Agilent	E7405A	MY45107030	2012-01-05	2013-01-04
3.	Spectrum Analyzer	Agilent	E4447A	MY45300134	2012-01-05	2013-01-04
4.	Pre-Amplifier	Agilent	8447D	2944A10923	2012-08-14	2013-08-13
5.	Pre-Amplifier	Agilent	8447D	2944A10922	2012-08-14	2013-08-13
6.	Bi-log Antenna (Horizontal)	Schaffner	CBL6112D	22253	2012-05-04	2013-05-03
7.	Bi-log Antenna (Vertical)	Schaffner	CBL6112D	22251	2012-04-25	2013-04-24
8.	Horn Antenna	ESCO	3115	00062593	2012-05-04	2013-05-03
9.	Test Receiver	R&S	ESCI	100351	2012-01-05	2013-01-04
10.	50Ω Coaxial Switch # 1	ANRITSU	MP59B	6200547935	2012-03-24	2013-03-23
11.	50Ω Coaxial Switch # 2	ANRITSU	MP59B	6200547937	2012-03-24	2013-03-23
12.	50Ω Coaxial Switch # 3	ANRITSU	MP59B	6200547934	2012-03-24	2013-03-23
13.	Microwave amplifier	Agilent	8449B	3008A02234	2012-01-05	2013-01-04
14.	RF Cable	Yuhang	CSYH	001	2012-08-14	2013-08-13
15.	RF Cable	Yuhang	CSYH	002	2012-08-14	2013-08-13
16.	RF Cable	Yuhang	CSYH	003	2012-08-14	2013-08-13
17.	RF Cable	Yuhang	CSYH	004	2012-08-14	2013-08-13
18.	RF Cable	Yuhang	CSYH	005	2012-03-24	2013-03-23
19.	RF Cable	Yuhang	CSYH	006	2012-03-24	2013-03-23
20.	RF Cable	Yuhang	CSYH	008	2012-03-24	2013-03-23
21.	RF Cable	Yuhang	CSYH	009	2012-03-24	2013-03-23
22.	RF Cable	Huber+Suhner	SUCOFLEX 102	28571	2012-03-24	2013-03-23
23.	RF Cable	Huber+Suhner	SUCOFLEX 102	28579	2012-03-24	2013-03-23

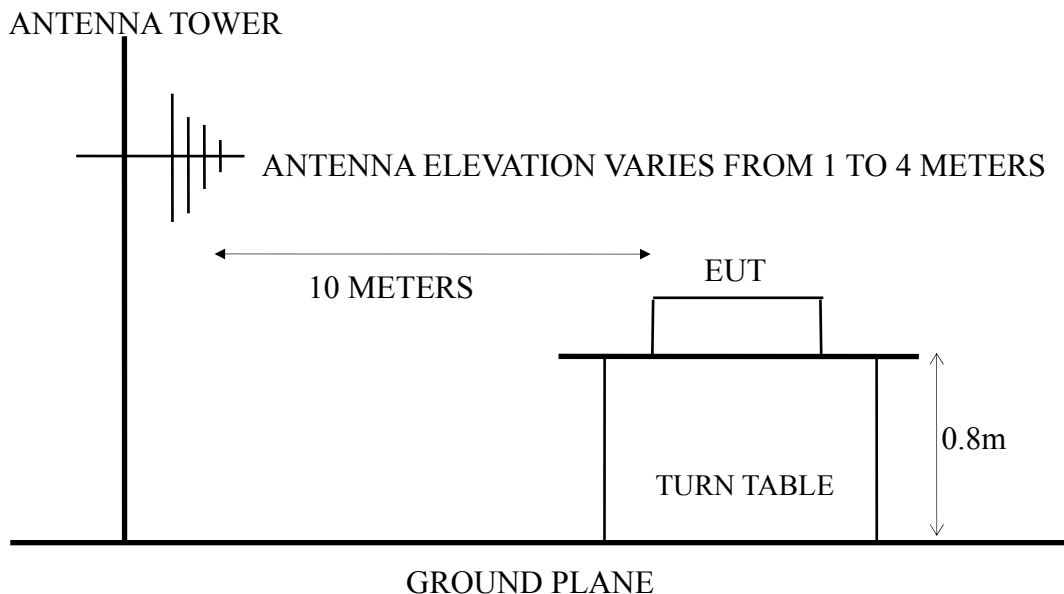
4.2 Block Diagram of Test Setup

4.2.1 Block Diagram of Test Setup

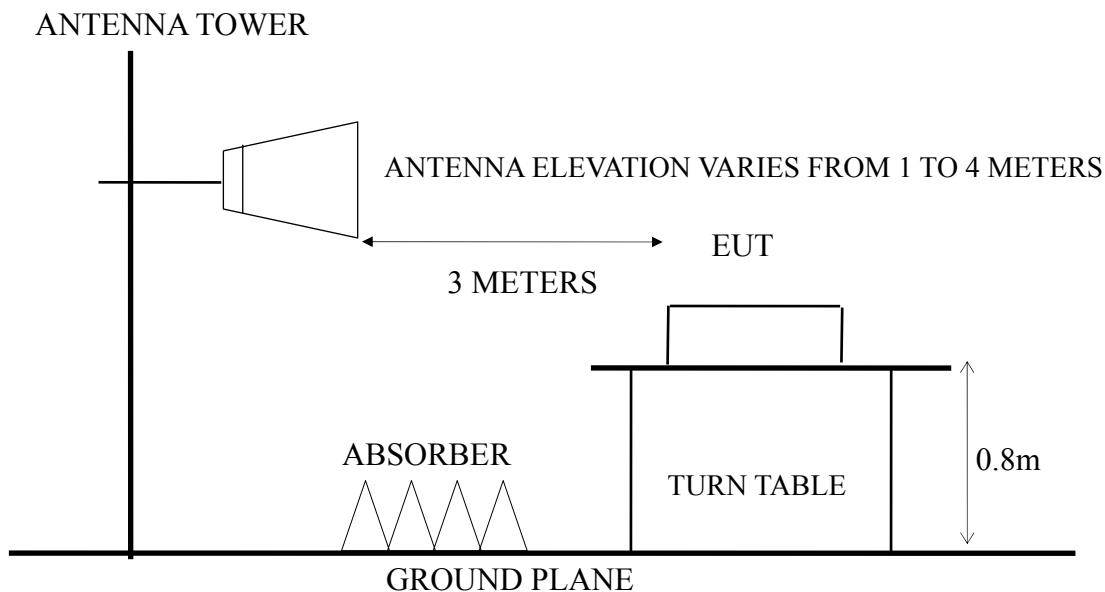


4.2.2 No. 1 10m Semi-Anechoic Chamber Setup Diagram (Test distance: 10m)

For 30MHz~1000MHz



4.2.3 No.1 10m Semi-Anechoic Chamber Setup Diagram (Test distance: 3m)
For Above 1GHz



4.3 Radiated Emission Limit

4.3.1 Radiated Emission Limit (30MHz~1GHz, VCCI Class B)

Frequency (MHz)	Distance (m)	Field Strength Limits (dB μ V/m)
30 ~ 230	10	30
230 ~ 1000	10	37

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.

4.3.2 Radiated Emission Limit (1GHz~6GHz, VCCI Class B)

Frequency (GHz)	Distance (m)	Average Limit (dB μ V/m)	Peak Limit (dB μ V/m)
1 ~ 3	10	50	70
3 ~ 6	10	54	74

NOTE - The lower limit applies at the transition frequency

4.4 Test Procedures

The measuring process is according to VCCI Class B and laboratory internal procedure TKC-301-024.

In the radiated disturbance measurement, the EUT and all simulators were set up on a non-metallic turn table which was 0.8 meters above the ground plane. Measurement distance between EUT and receiving antennas was set at 10 meters at 30MHz~1000MHz and 3 meters at 1000MHz~6000MHz. The specified distance is the distance between the antennas and the closest periphery of EUT. During the radiated measurement, the EUT was rotated 360° and receiving antennas were moved from 1 ~ 4 meters for pre-test with peak detector. QP detector was used for final measurement to find maximum emission. Two receiving antennas were used for both horizontal and vertical polarization detection for 30MHz~1GHz, One receiving antennas was used for both horizontal and vertical polarization detection for 1GHz~6GHz (the absorbing material was added when testing of 1GHz~6GHz was done). All cables or wires placement were verified to find out the maximum emission.

The bandwidth of measuring receiver (or spectrum analyzer) was set to:

RBW (120 kHz), VBW (300kHz) for QP detector below 1GHz
 RBW (1 MHz), VBW (1MHz) for Peak detector above 1GHz
 RBW (1 MHz), VBW (10 Hz) for Average detector above 1GHz

Which is defined against CISPR16-1-1 section.

The required frequency band (30 MHz ~ 6000 MHz) was pre-scanned with peak detector; all final measurements were measured with quasi-peak detector below 1GHz , measured with average detector and peak detector above 1GHz.

The emission level is calculated automatically by the test system which uses the following equation:

1.For 30-1000MHz measurement:

$$\text{Emission Level (dB}\mu\text{V/m)} = \text{Meter-Reading (dB}\mu\text{V)} + \text{Antenna Factor (dB/m)} + \text{Cable Loss (dB)}$$

2.For 1000-6000MHz measurement:

$$\text{Emission Level (dB}\mu\text{V/m)} = \text{Meter-Reading (dB}\mu\text{V)} + \text{Antenna Factor (dB/m)} + \text{Cable Loss (dB)} - \text{Pre-amplifier factor (dB)}$$

In chapter 7.6.6.1 the standard CISPR 16-2-3 requires to include the values of w in the test report: “ w : The dimension of the line tangent to the EUT formed by θ_{3dB} at the measurement distance d . Equation (10) shall be used to calculate w for each actual antenna and measurement distance used. The values of w shall be included in the test report. This calculation may be based on the manufacturer-provided receive-antenna beamwidth specifications:

$$w = 2 \times d \times \tan(0,5 \times \theta_{3dB})$$

Frequency GHz	3115 Horn	
	θ_{3dB} (°)	d=3m w (M)
1.00	66	3.90
2.00	54	3.06
4.00	50	2.80
6.00	34	1.83

The values of w . are greater than chapter 7.6.6.1 of Table 2, the minimum dimension of w . (W_{min}) requirements.

4.5 Test Results

PASSED

(All the emissions not reported below are too low against the prescribed limits.)

The worst mode was measured and reported as follows:

4.5.1 For 30MHz~1GHz frequency range

Test Date: Dec.25, 2012

Temperature: 23.4

Humidity: 49%

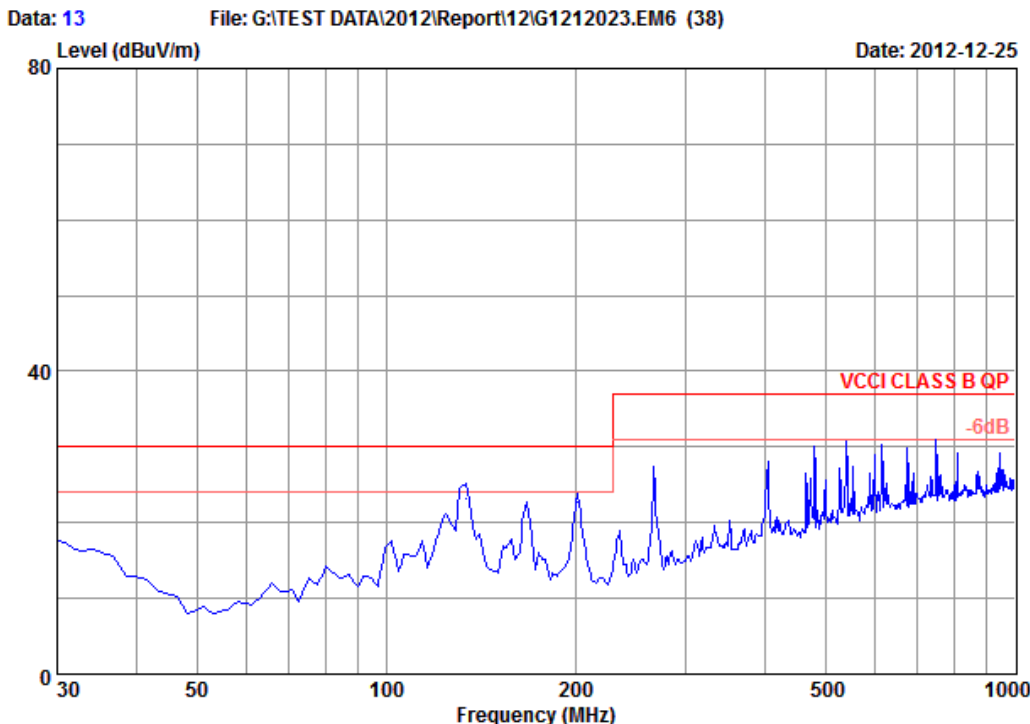
Item	Test Condition	Reference Test Data No.	
		Horizontal	Vertical
1	Full System (DVI + HDMI 1920*1200@60Hz 75.8kHz)	# 13	# 14

NOTE 1 - 0° was the table front facing the antenna. Degree is calculated from 0° clockwise facing the antenna.

NOTE 2 - The worst emission at horizontal polarization was detected at 133.79 MHz with emission level of 23.20 dB μ V/m (limit is 30.00 dB μ V/m), when the antenna was 3.8 m height and the turntable was at 205°. The worst emission at vertical polarization was detected at 133.79 MHz with emission level of 23.19 dB μ V/m (limit is 30.00 dB μ V/m), when the antenna was 1.2m height and the turntable was at 163°.



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Site No. : NO.1 10m Semi-Anechoic Chamber Data NO. : 13
 Dis./Ant. : 10m . 6112D(22253)-1206-H Ant.pol : HORIZONTAL
 Env./Ins. : 23.4°C 49%/ESCI Engineer : Leo
 EUT. : Motherboard
 M/N : E2KM1I-DELUXE
 Power Rating: 100Vac/50Hz
 Test Mode : Full System
 Memo : DVI+HDMI 1920*1200@60Hz 75.8kHz
 CPU:AMD E2-2000 APU With Radeon(tm) HD
 Graphics 1.75GHz

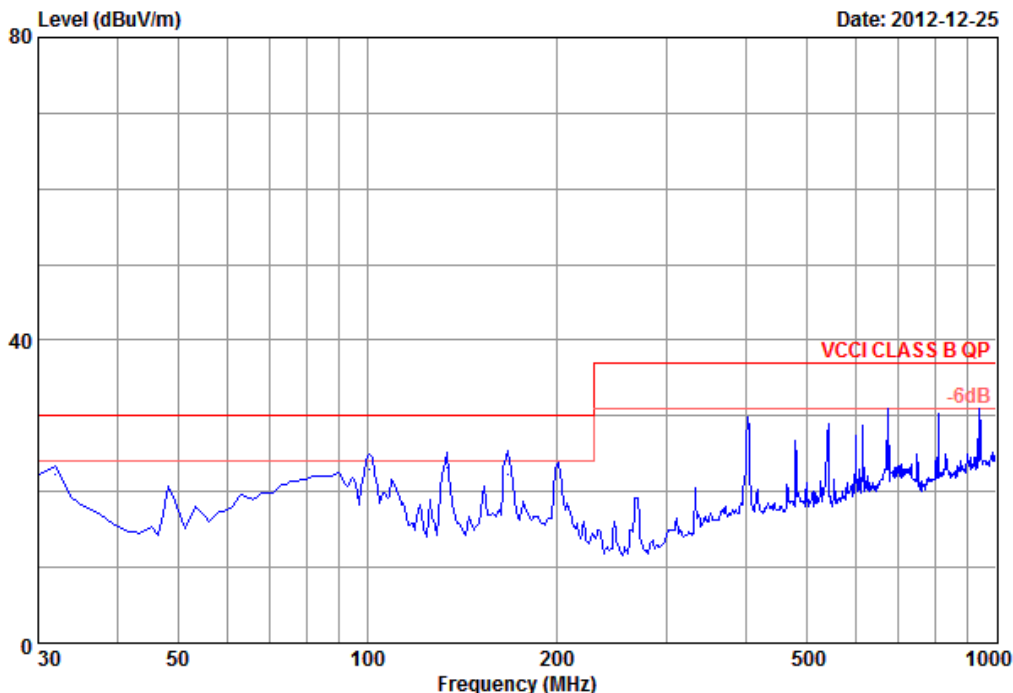
	Freq. (MHz)	Ant. Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	133.79	11.91	1.62	9.67	23.20	30.00	6.80	QP
2	201.69	9.40	2.02	11.38	22.80	30.00	7.20	QP
3	480.08	17.80	3.37	7.81	28.98	37.00	8.02	QP
4	538.28	18.92	3.58	7.15	29.65	37.00	7.35	QP
5	614.91	19.50	3.83	5.96	29.29	37.00	7.71	QP
6	749.74	20.60	4.25	5.11	29.96	37.00	7.04	QP

Remarks: 1.Emission Level= Antenna factor + Cable loss + Reading
 2.The emission level that are 20dB below the official limit are not reported



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Data: 14 File: G:\TEST DATA\2012\Report\12\G1212023.EM6 (38) Date: 2012-12-25



Site No. : NO.1 10m Semi-Anechoic Chamber Data NO. : 14
 Dis./Ant. : 10m . 6112D(22251)-1204-V Ant.pol : VERTICAL
 Env./Ins. : 23.4°C 49%/ESCI Engineer : Leo
 EUT. : Motherboard
 M/N : E2KM1I-DELUXE
 Power Rating: 100Vac/50Hz
 Test Mode : Full System
 Memo : DVI+HDMI 1920*1200@60Hz 75.8kHz
 CPU:AMD E2-2000 APU With Radeon(tm) HD
 Graphics 1.75GHz

	Freq. (MHz)	Ant. Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	31.94	18.30	0.68	3.37	22.35	30.00	7.65	QP
2	100.81	12.30	1.11	9.56	22.97	30.00	7.03	QP
3	133.79	12.40	1.31	9.48	23.19	30.00	6.81	QP
4	167.74	11.05	1.50	9.80	22.35	30.00	7.65	QP
5	674.08	18.70	3.15	8.05	29.90	37.00	7.10	QP
6	938.89	21.20	3.79	5.09	30.08	37.00	6.92	QP

Remarks: 1.Emission Level= Antenna factor + Cable loss + Reading
 2.The emission level that are 20dB below the official limit are not reported

4.5.2 For 1G~6GHz frequency range

Test Date: Dec.25, 2012

Temperature: 23.4

Humidity: 49%

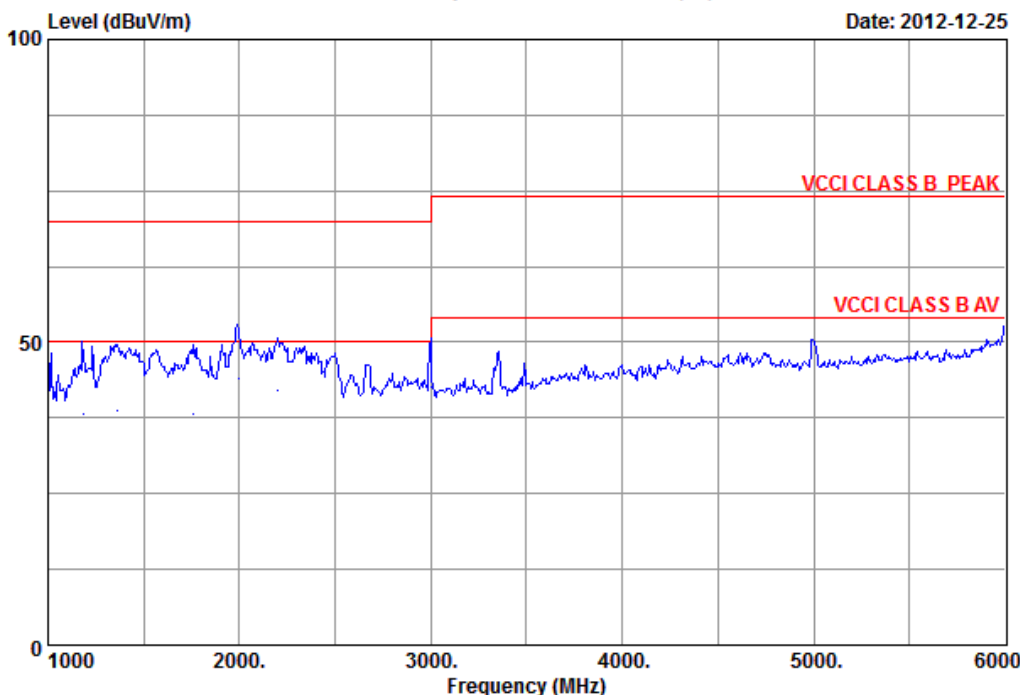
Item	Test Condition	Reference Test Data No.	
		Horizontal	Vertical
1	Full System (DVI + HDMI 1920*1200@60Hz 75.8kHz)	# 33	# 34

NOTE - The highest internal frequency of the EUT is 1.75GHz, according to V-3(2012) section 4.3.2, the measurement shall be made up to 6GHz.



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Data: 33 File: G:\TEST DATA\2012\Report\12\G1212023.EM6 (38) Date: 2012-12-25



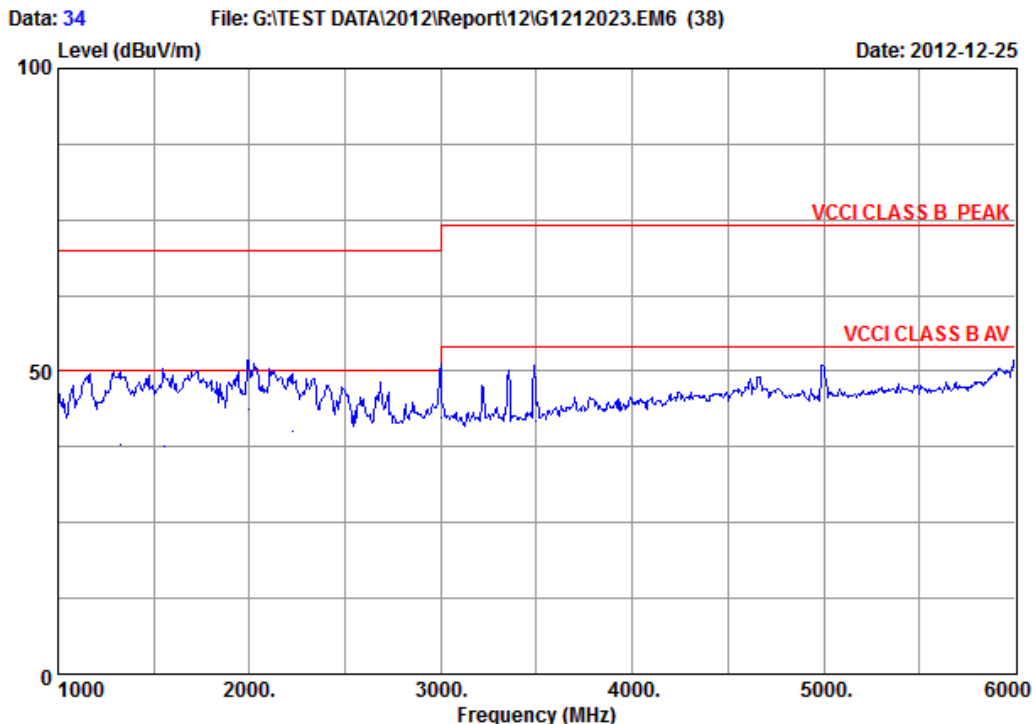
Site No. : NO.1 10m Semi-Anechoic Chamber Data NO. : 33
 Dis./Ant. : 3m 3115(62593)-1205 Ant.pol : HORIZONTAL
 Limit : VCCI CLASS B PEAK
 Env./Ins. : 23.4°C 49%/E4447A Engineer : Leo
 EUT. : Motherboard
 M/N : E2KM1I-DELUXE
 Power Rating : 100Vac/50Hz
 Test Mode : Full System
 Memo : DVI+HDMI 1920*1200@60Hz 75.8kHz
 CPU:AMD E2-2000 APU With Radeon(tm) HD
 Graphics 1.75GHz

	Freq. (MHz)	Ant. Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	1180.00	25.99	7.06	52.60	35.40	50.25	70.00	19.75	Peak
2	1182.00	25.99	7.06	40.60	35.40	38.25	50.00	11.75	Average
3	1364.00	26.16	7.44	40.60	35.40	38.80	50.00	11.20	Average
4	1365.00	26.16	7.44	51.50	35.40	49.70	70.00	20.30	Peak
5	1755.00	27.45	8.37	49.18	35.29	49.71	70.00	20.29	Peak
6	1756.00	27.45	8.37	37.50	35.29	38.03	50.00	11.97	Average
7	1990.00	28.52	8.88	50.72	35.20	52.92	70.00	17.08	Peak
8	1995.00	28.60	8.94	41.60	35.20	43.94	50.00	6.06	Average
9	2200.00	28.56	9.40	48.15	35.36	50.75	70.00	19.25	Peak
10	2203.00	28.56	9.40	39.50	35.36	42.10	50.00	7.90	Average
11	2999.00	30.60	10.44	36.90	35.40	42.54	50.00	7.46	Average
12	3000.00	30.60	10.44	45.11	35.40	50.75	70.00	19.25	Peak

Remarks: 1.Emission Level= Antenna factor + Cable loss + Reading - Preamp
 2.The emission level that are 20dB below the official limit are not reported



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Site No. : NO.1 10m Semi-Anechoic Chamber Data NO. : 34
 Dis./Ant. : 3m 3115(62593)-1205 Ant.pol : VERTICAL
 Limit : VCCI CLASS B PEAK
 Env./Ins. : 23.4°C 49%/E4447A Engineer : Leo
 EUT : Motherboard
 M/N : E2KM1I-DELUXE
 Power Rating : 100Vac/50Hz
 Test Mode : Full System
 Memo : DVI+HDMI 1920*1200@60Hz 75.8kHz
 CPU:AMD E2-2000 APU With Radeon(tm) HD
 Graphics 1.75GHz

	Freq. (MHz)	Ant. Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	1325.00	26.13	7.37	51.88	35.40	49.98	70.00	20.02	Peak
2	1326.00	26.13	7.37	39.80	35.40	37.90	50.00	12.10	Average
3	1550.00	26.53	7.89	51.24	35.38	50.28	70.00	19.72	Peak
4	1552.00	26.53	7.89	38.51	35.38	37.55	50.00	12.45	Average
5	1990.00	28.52	8.88	49.64	35.20	51.84	70.00	18.16	Peak
6	1993.00	28.52	8.88	41.60	35.20	43.80	50.00	6.20	Average
7	2225.00	28.56	9.40	47.09	35.38	49.67	70.00	20.33	Peak
8	2226.00	28.56	9.40	37.60	35.38	40.18	50.00	9.82	Average
9	2999.00	30.60	10.44	36.60	35.40	42.24	50.00	7.76	Average
10	3000.00	30.60	10.44	45.59	35.40	51.23	70.00	18.77	Peak
11	3490.00	31.28	11.14	43.60	35.10	50.92	74.00	23.08	Peak
12	3493.00	31.30	11.14	34.50	35.10	41.84	54.00	12.16	Average

Remarks: 1.Emission Level= Antenna factor + Cable loss + Reading - Preamp
 2.The emission level that are 20dB below the official limit are not reported

5 DEVIATION TO TEST SPECIFICATIONS

None

6 PHOTOGRAPHS

6.1 Photos of Conducted Disturbance Measurement



Front View of Conducted Measurement (AC Mains Port)



Side View of Conducted Measurement (AC Mains Port)



Front View of Conducted Emission Measurement (Telecommunication port)



Side View of Conducted Emission Measurement (Telecommunication port)

6.2 Photos of Radiated Disturbance Measurement

For 30MHz ~1GHz



Front View of Radiated Disturbance Measurement



Back View of Radiated Disturbance Measurement

For above 1GHz



Front View of Radiated Measurement



Back View of Radiated Measurement

6.3 Photos of host PC RJ-45 ping test



For RJ-45 Ping Test

APPENDIX I

Photos of EUT

Figure 1
General Appearance (Motherboard, Front View)



Figure 2
General Appearance (Motherboard, Back View)



Figure 3
General Appearance (Motherboard, I/O Ports)



Figure 4
Fan Set & Heat Sink Removed



Figure 5
Fan Set



Figure 6
CPU

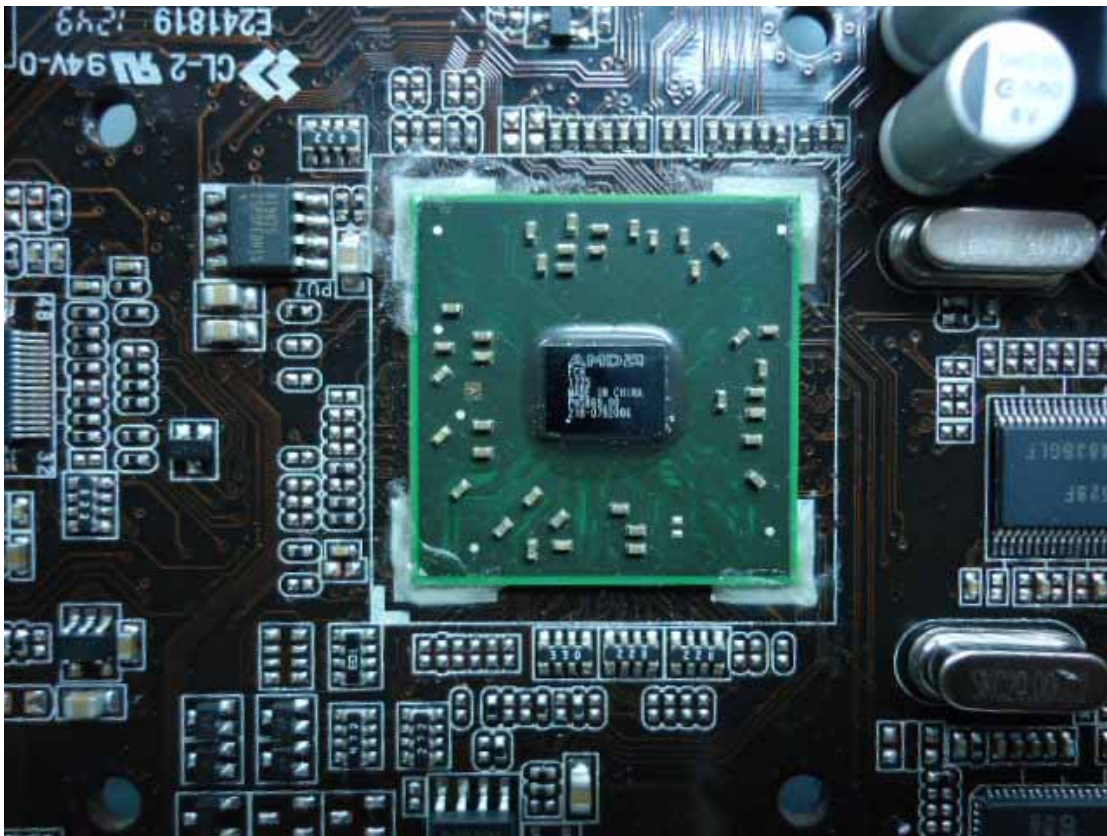


Figure 7
Crystal Oscillator

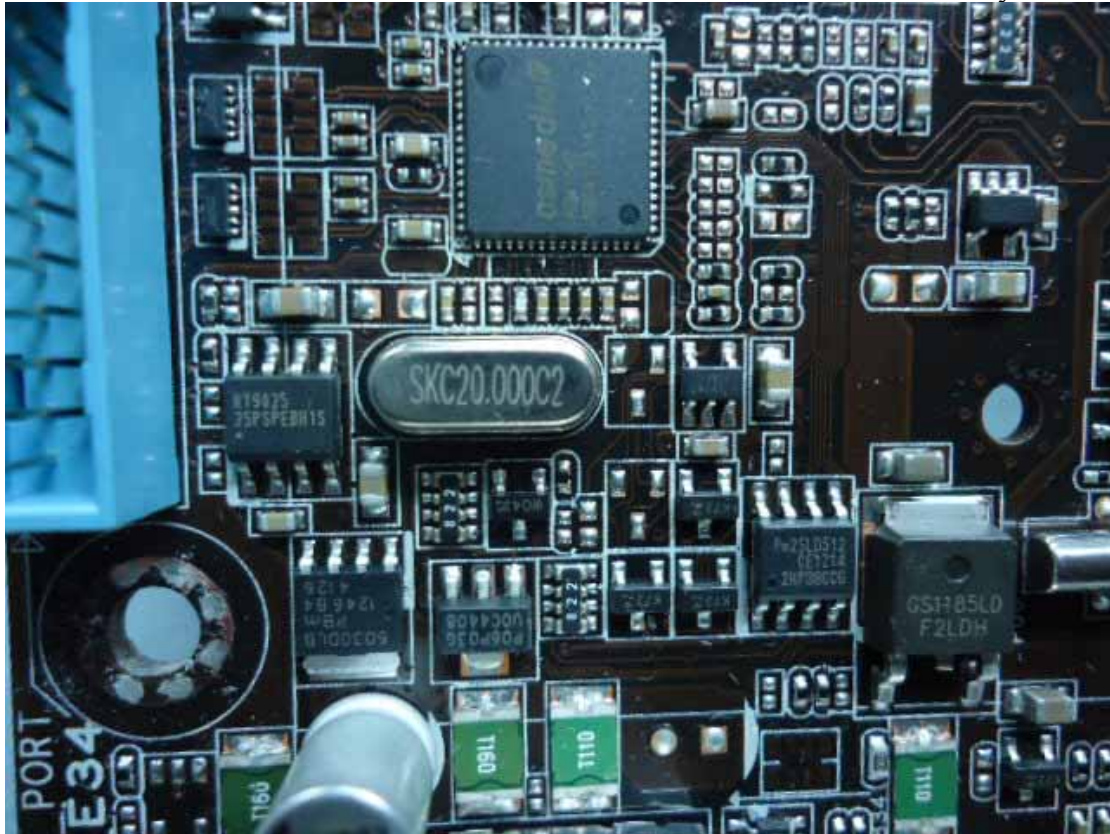


Figure 8
Crystal Oscillator

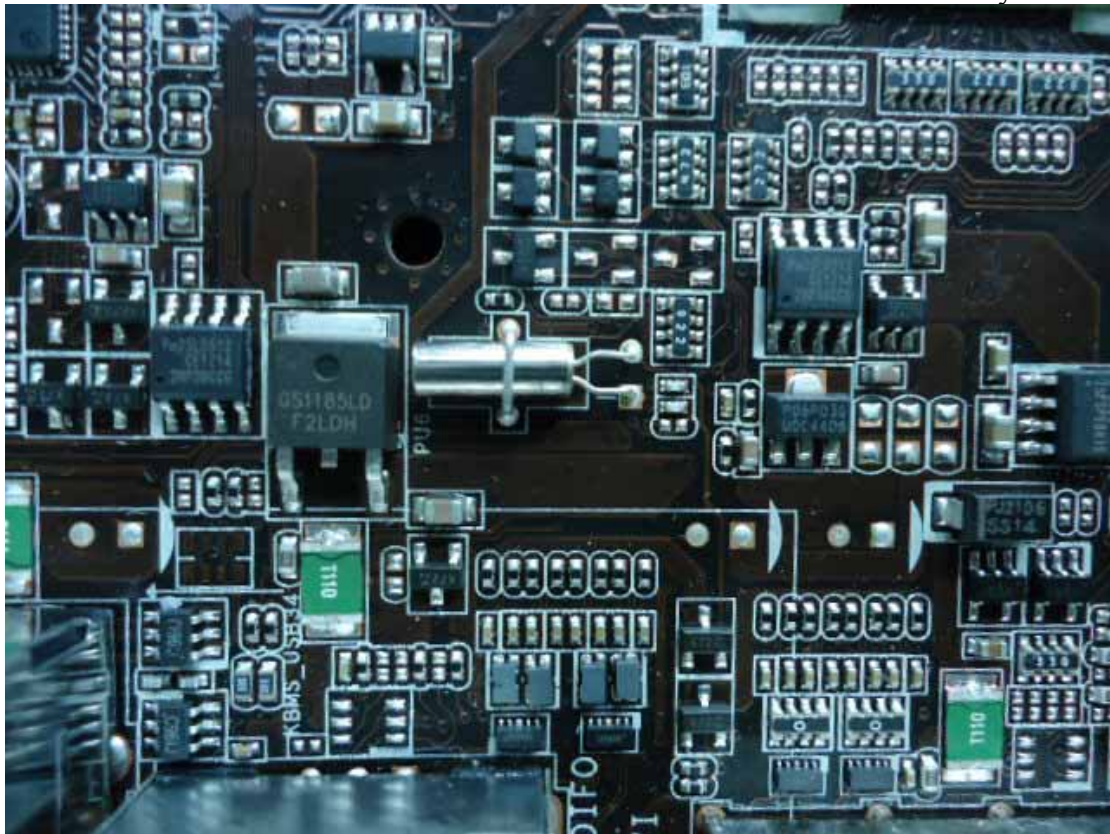


Figure 9
Crystal Oscillator

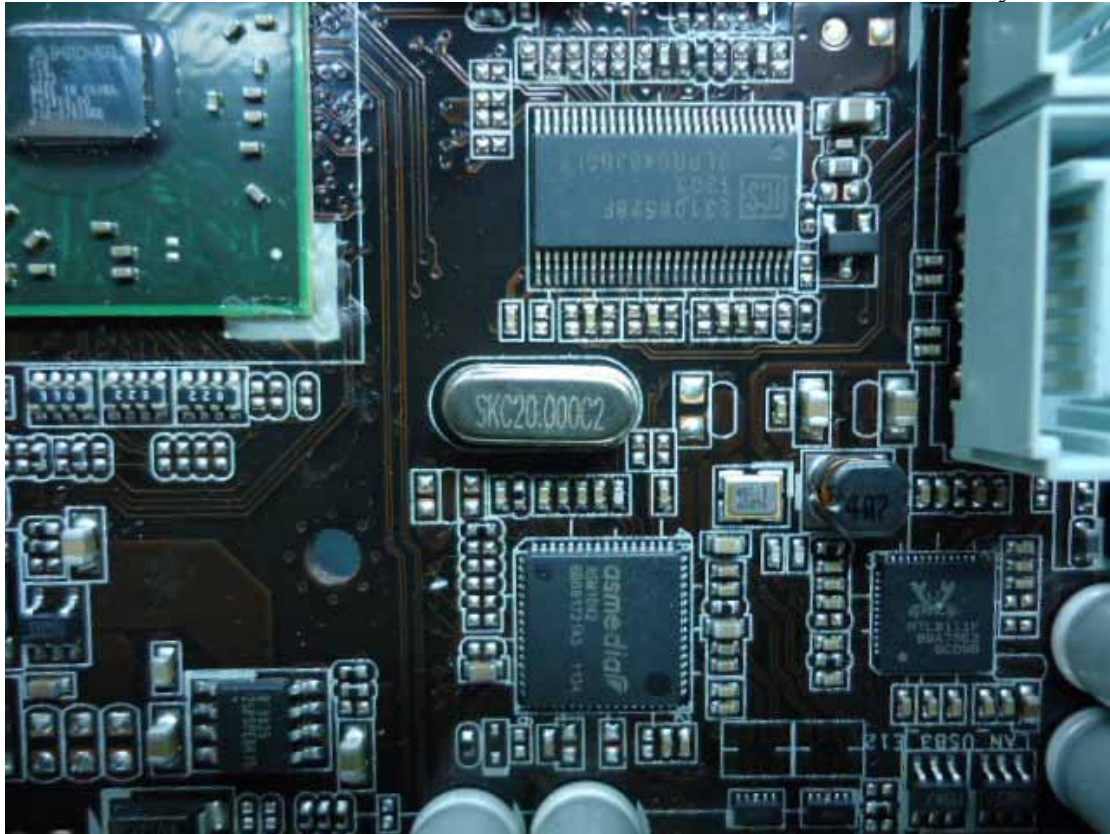
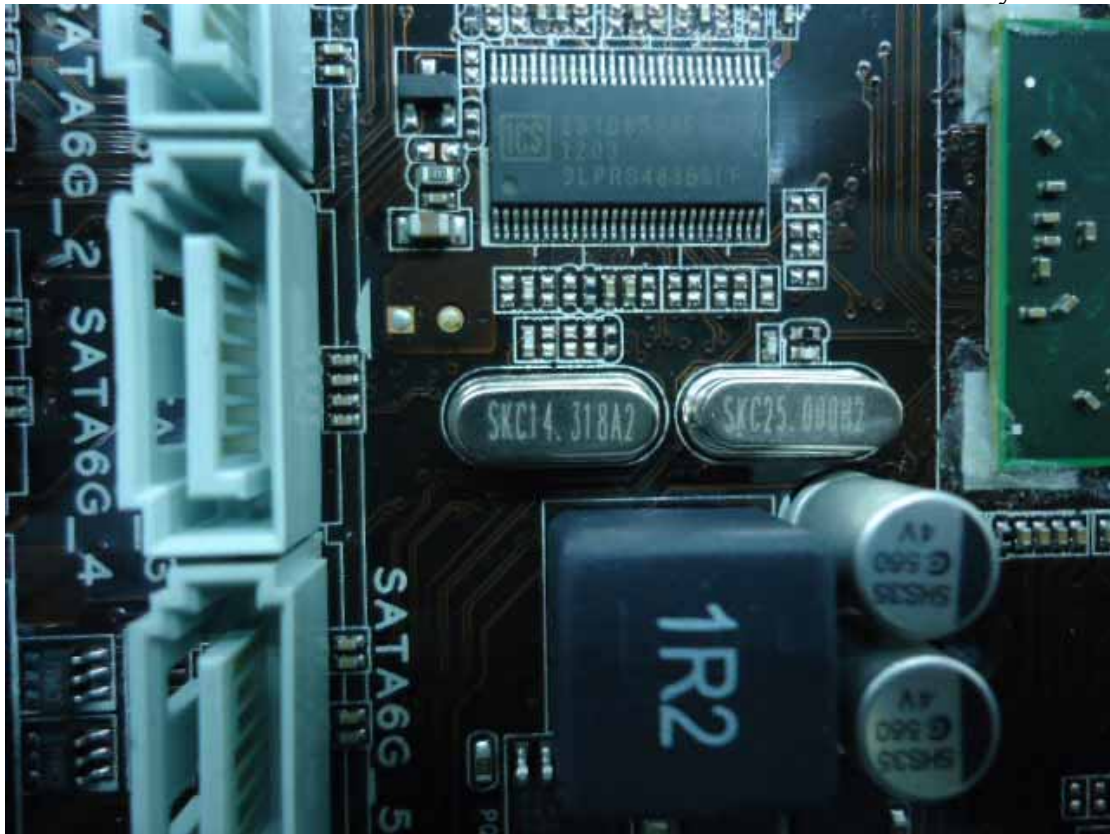


Figure 10
Crystal Oscillator



APPENDIX II

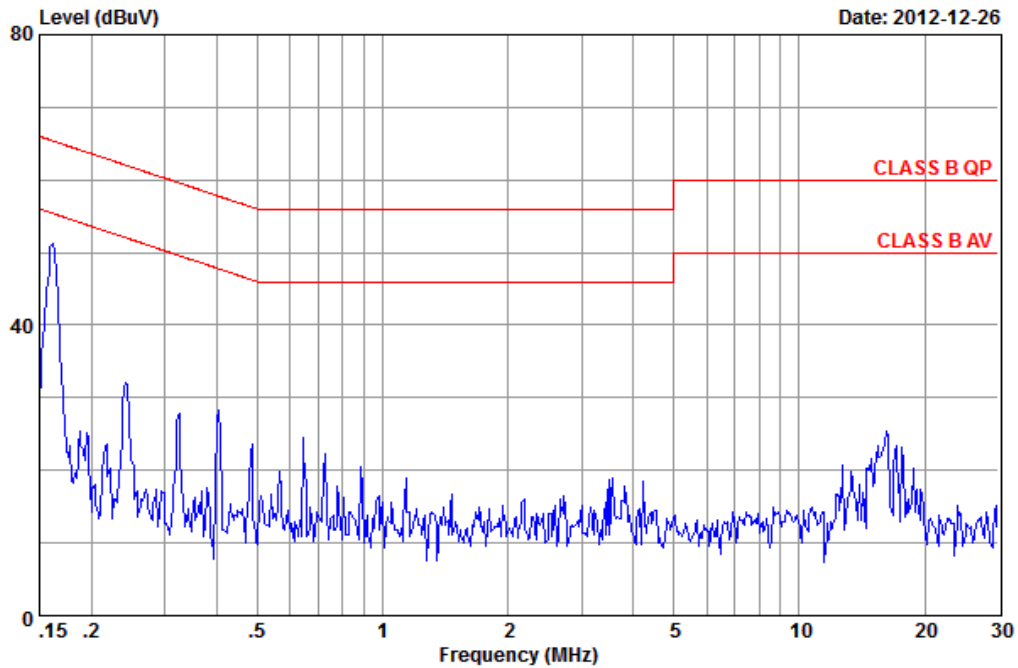
Conducted Emission Pre-Scanned Data at Conducted Shielding Enclosure



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 Economic Development Zone, JiangSu, China
 Tel : (0512) 63403993 Fax: (0512) 63403339

Data: 1 File: F:\2012Test Data\Report\12\G1212023.EM6 (32)

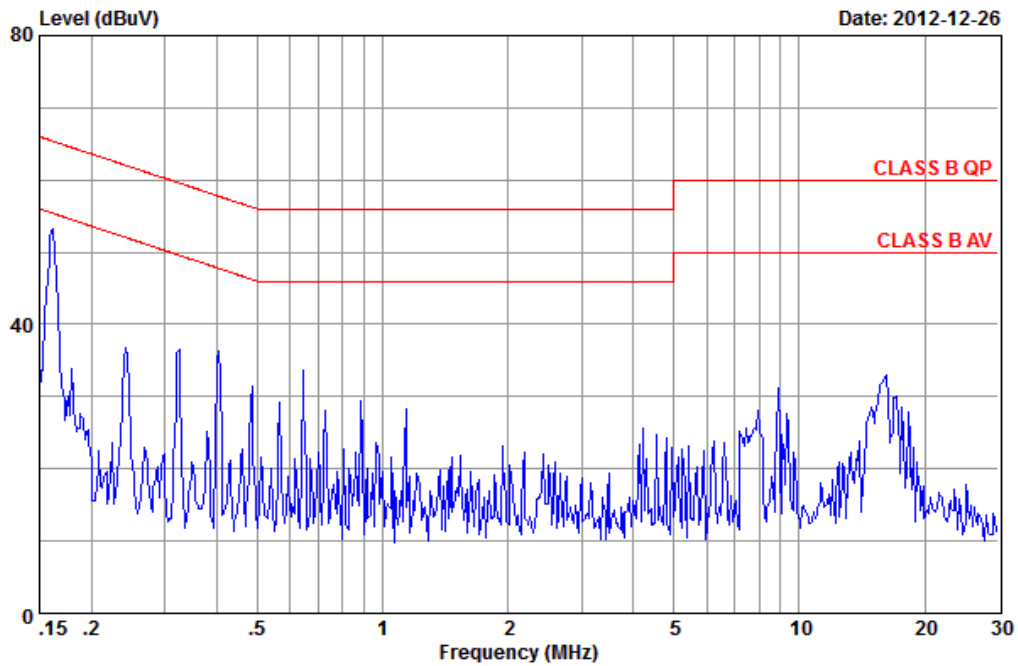
Date: 2012-12-26



Site no. : No.1 Conducted shielding Enclosure Data no. : 1
 AMN/LISN : ESH2-Z5-1205 Phase : NEUTRAL
 Limit : CLASS B QP
 Env. / Ins. : 21.4*C&53%/ESCI Engineer : KM Tong
 EUT : Motherboard
 M/N : E2KM1I-DELUXE
 Power Rating : 110Vac/60Hz
 Test mode : Full System
 Memo : DVI+HDMI 1920*1200@60Hz 75.8KHz
 CPU:AMD E2-2000 APU With Radeon(tm) HD
 Graphics 1.75GHz

Data: 2 File: F:\2012Test Data\Report\12\G1212023.EM6 (32)

Date: 2012-12-26



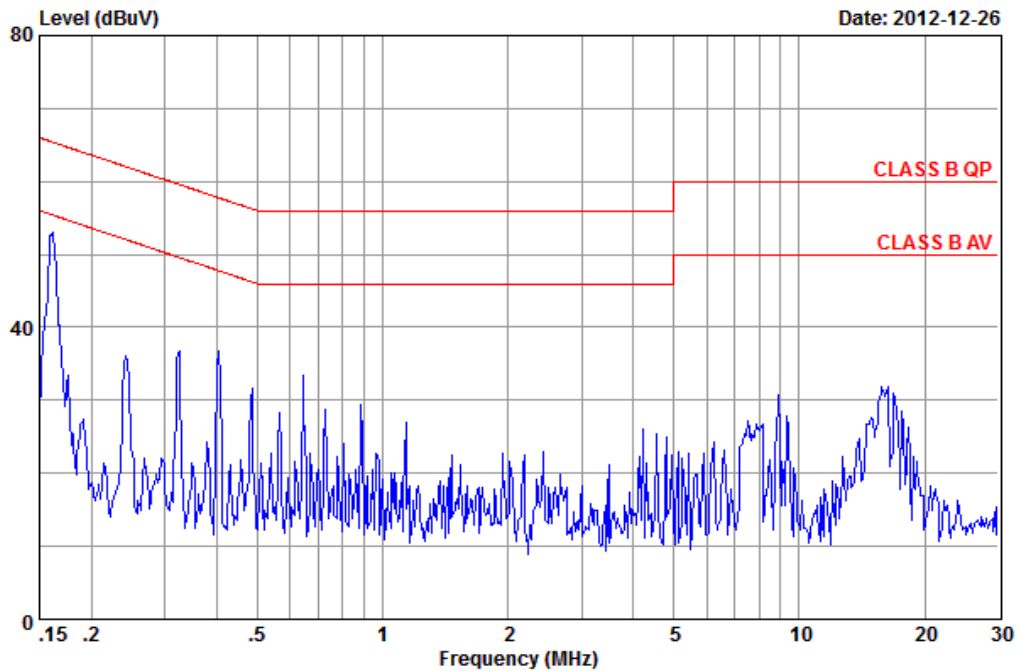
Site no. : No.1 Conducted shielding Enclosure Data no. : 2
 AMN/LISN : ESH2-Z5-1205 Phase : LINE
 Limit : CLASS B QP
 Env. / Ins. : 21.4*C&53%/ESCI Engineer : KM Tong
 EUT : Motherboard
 M/N : E2KM1I-DELUXE
 Power Rating : 110Vac/60Hz
 Test mode : Full System
 Memo : DVI+HDMI 1920*1200@60Hz 75.8KHz
 CPU:AMD E2-2000 APU With Radeon(tm) HD
 Graphics 1.75GHz



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Data: 3 File: F:\2012Test Data\Report\12\G1212023.EM6 (32)

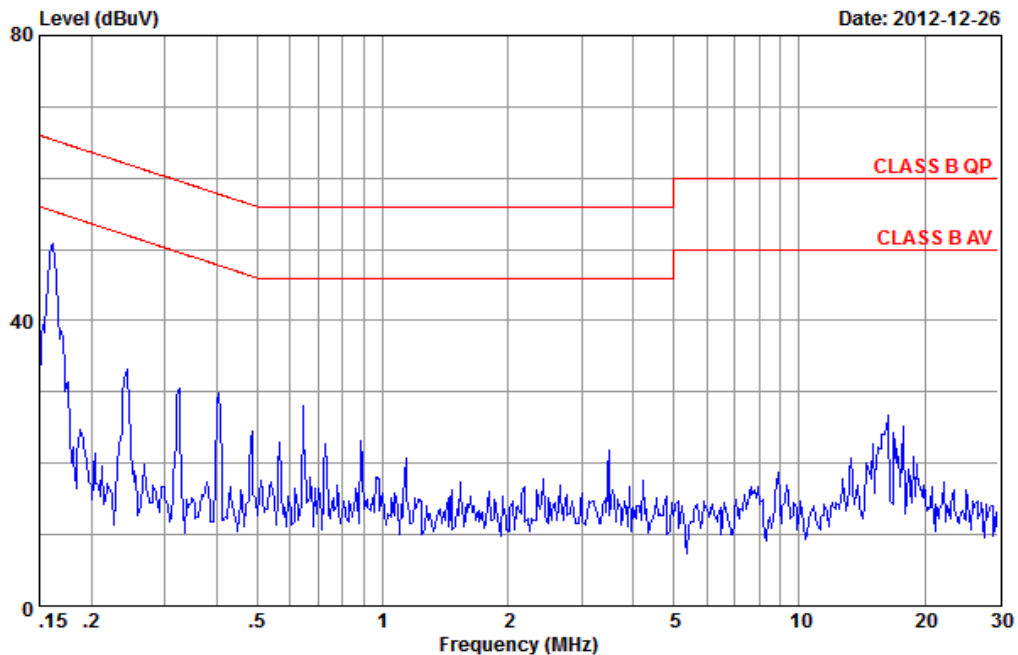
Date: 2012-12-26



Site no. : No.1 Conducted shielding Enclosure Data no. : 3
 AMN/LISN : ESH2-Z5-1205 Phase : LINE
 Limit : CLASS B QP
 Env. / Ins. : 21.4*C&53%/ESCI Engineer : KM Tong
 EUT : Motherboard
 M/N : E2KM1I-DELUXE
 Power Rating : 110Vac/60Hz
 Test mode : Full System
 Memo : DVI+HDMI 1920*1080@60Hz 68.2KHz
 CPU:AMD E2-2000 APU With Radeon(tm) HD
 Graphics 1.75GHz

Data: 4 File: F:\2012Test Data\Report\12\G1212023.EM6 (32)

Date: 2012-12-26

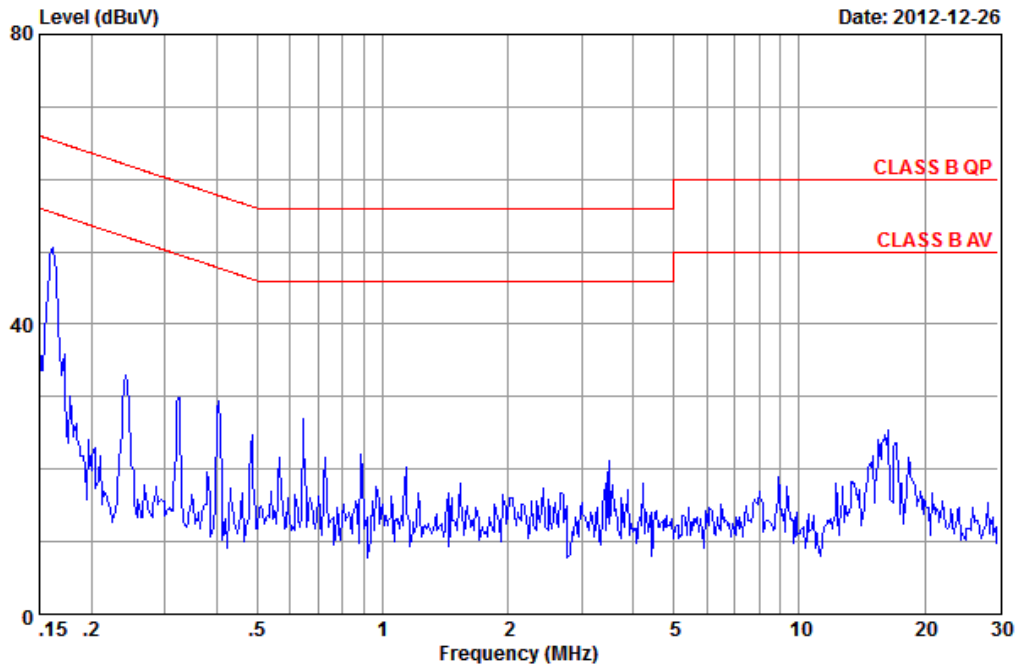


Site no. : No.1 Conducted shielding Enclosure Data no. : 4
 AMN/LISN : ESH2-Z5-1205 Phase : NEUTRAL
 Limit : CLASS B QP
 Env. / Ins. : 21.4*C&53%/ESCI Engineer : KM Tong
 EUT : Motherboard
 M/N : E2KM1I-DELUXE
 Power Rating : 110Vac/60Hz
 Test mode : Full System
 Memo : DVI+HDMI 1920*1080@60Hz 68.2KHz
 CPU:AMD E2-2000 APU With Radeon(tm) HD
 Graphics 1.75GHz



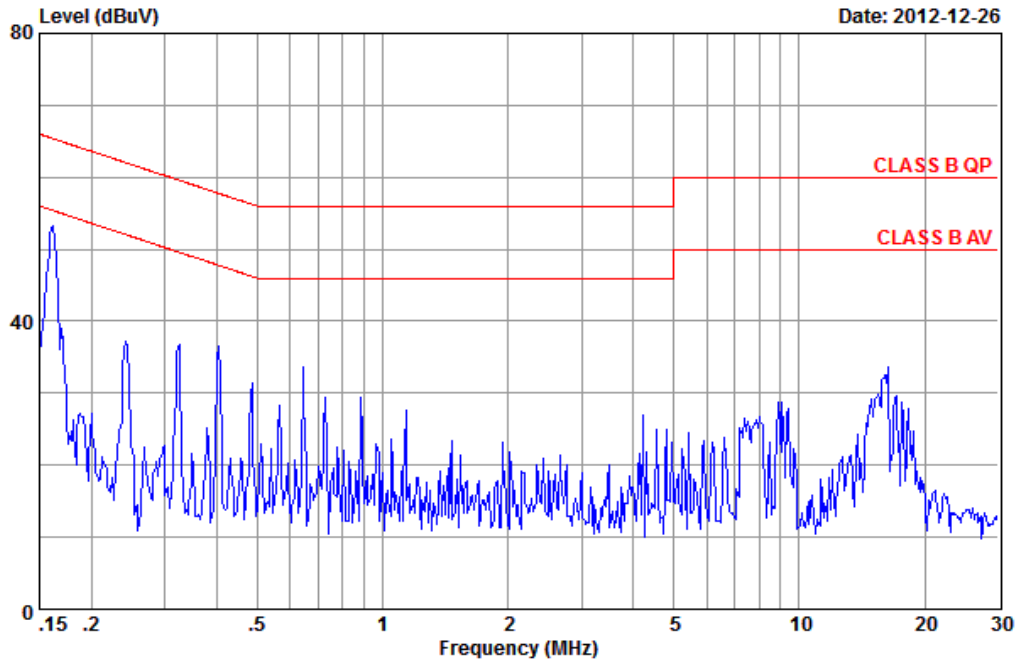
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Data: 5 File: F:\2012Test Data\Report\12\G1212023.EM6 (32)



Site no. : No.1 Conducted shielding Enclosure Data no. : 5
 AMN/LISN : ESH2-Z5-1205 Phase : NEUTRAL
 Limit : CLASS B QP
 Env. / Ins. : 21.4*C&53%/ESCI Engineer : KM Tong
 EUT : Motherboard
 M/N : E2KM1I-DELUXE
 Power Rating : 110Vac/60Hz
 Test mode : Full System
 Memo : DVI+HDMI 1600*1200@60Hz 75.8KHz
 CPU:AMD E2-2000 APU With Radeon(tm) HD
 Graphics 1.75GHz

Data: 6 File: F:\2012Test Data\Report\12\G1212023.EM6 (32)

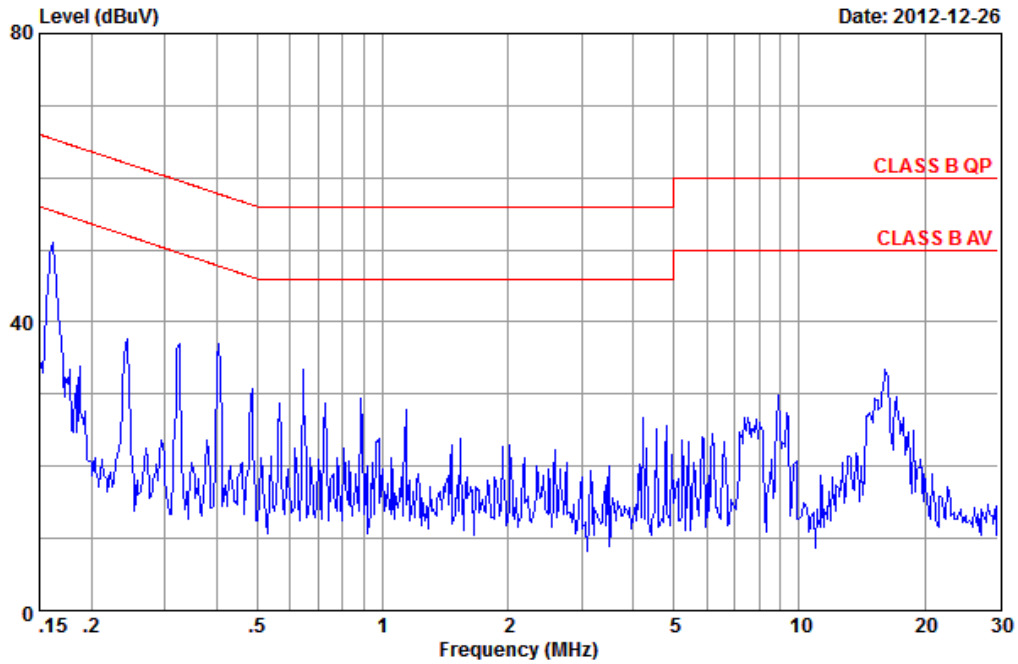


Site no. : No.1 Conducted shielding Enclosure Data no. : 6
 AMN/LISN : ESH2-Z5-1205 Phase : LINE
 Limit : CLASS B QP
 Env. / Ins. : 21.4*C&53%/ESCI Engineer : KM Tong
 EUT : Motherboard
 M/N : E2KM1I-DELUXE
 Power Rating : 110Vac/60Hz
 Test mode : Full System
 Memo : DVI+HDMI 1600*1200@60Hz 75.8KHz
 CPU:AMD E2-2000 APU With Radeon(tm) HD
 Graphics 1.75GHz



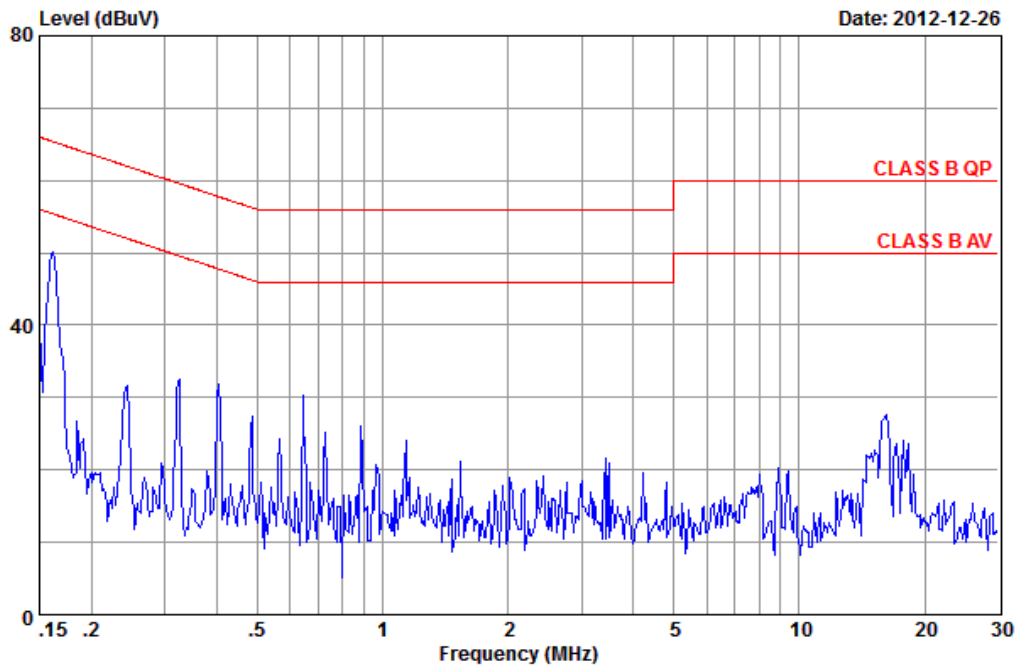
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 Tel : (0512)63403993 Fax: (0512) 63403339

Data: 7 File: F:\2012Test Data\Report\12\G1212023.EM6 (32) Date: 2012-12-26



Site no. : No.1 Conducted shielding Enclosure Data no. : 7
 AMN/LISN : ESH2-Z5-1205 Phase : LINE
 Limit : CLASS B QP
 Env. / Ins. : 21.4*C&53%/ESCI Engineer : KM Tong
 EUT : Motherboard
 M/N : E2KM1I-DELUXE
 Power Rating : 110Vac/60Hz
 Test mode : Full System
 Memo : DVI+HDMI 1280*1024@75Hz 80.8KHz
 CPU:AMD E2-2000 APU With Radeon(tm) HD
 Graphics 1.75GHz

Data: 8 File: F:\2012Test Data\Report\12\G1212023.EM6 (32) Date: 2012-12-26

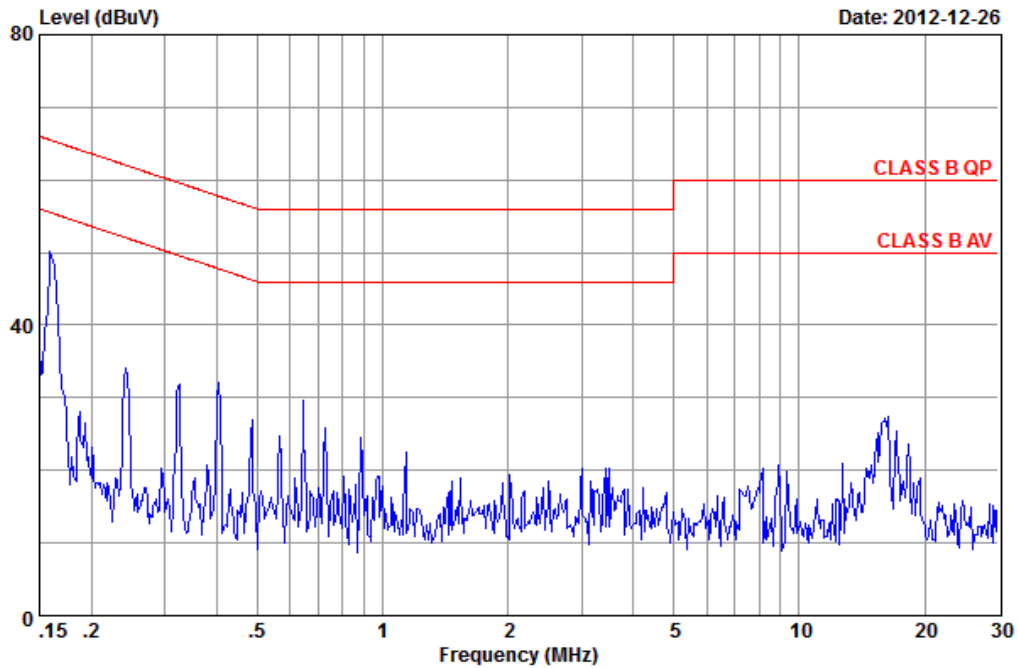


Site no. : No.1 Conducted shielding Enclosure Data no. : 8
 AMN/LISN : ESH2-Z5-1205 Phase : NEUTRAL
 Limit : CLASS B QP
 Env. / Ins. : 21.4*C&53%/ESCI Engineer : KM Tong
 EUT : Motherboard
 M/N : E2KM1I-DELUXE
 Power Rating : 110Vac/60Hz
 Test mode : Full System
 Memo : DVI+HDMI 1280*1024@75Hz 80.8KHz
 CPU:AMD E2-2000 APU With Radeon(tm) HD
 Graphics 1.75GHz



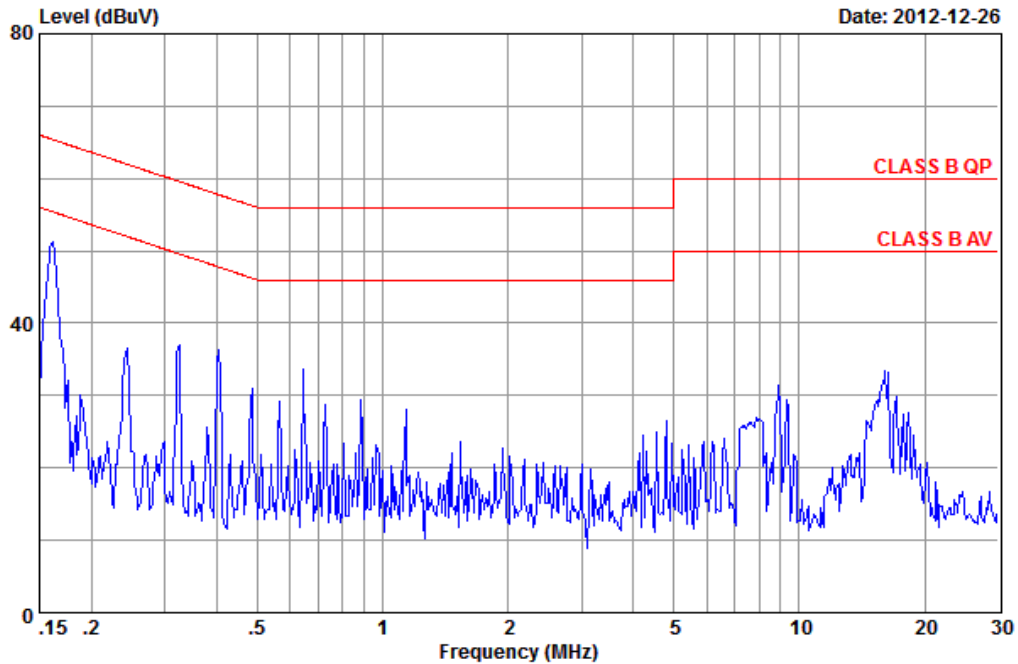
Audix Technology (Wu Jiang) Co.,Ltd
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 Economic Development Zone,JiangSu,China
 Tel : (0512)63403993 Fax:(0512)63403339

Data: 9 File: F:\2012Test Data\Report\12\G1212023.EM6 (32) Date: 2012-12-26



Site no. : No.1 Conducted shielding Enclosure Data no. : 9
 AMN/LISN : ESH2-Z5-1205 Phase : NEUTRAL
 Limit : CLASS B QP
 Env. / Ins. : 21.4*C&53%/ESCI Engineer : KM Tong
 EUT : Motherboard
 M/N : E2KM1I-DELUXE
 Power Rating : 110Vac/60Hz
 Test mode : Full System
 Memo : DVI+HDMI 640*480@60Hz 30.3KHz
 CPU:AMD E2-2000 APU With Radeon(tm) HD
 Graphics 1.75GHz

Data: 10 File: F:\2012Test Data\Report\12\G1212023.EM6 (32) Date: 2012-12-26



Site no. : No.1 Conducted shielding Enclosure Data no. : 10
 AMN/LISN : ESH2-Z5-1205 Phase : LINE
 Limit : CLASS B QP
 Env. / Ins. : 21.4*C&53%/ESCI Engineer : KM Tong
 EUT : Motherboard
 M/N : E2KM1I-DELUXE
 Power Rating : 110Vac/60Hz
 Test mode : Full System
 Memo : DVI+HDMI 640*480@60Hz 30.3KHz
 CPU:AMD E2-2000 APU With Radeon(tm) HD
 Graphics 1.75GHz

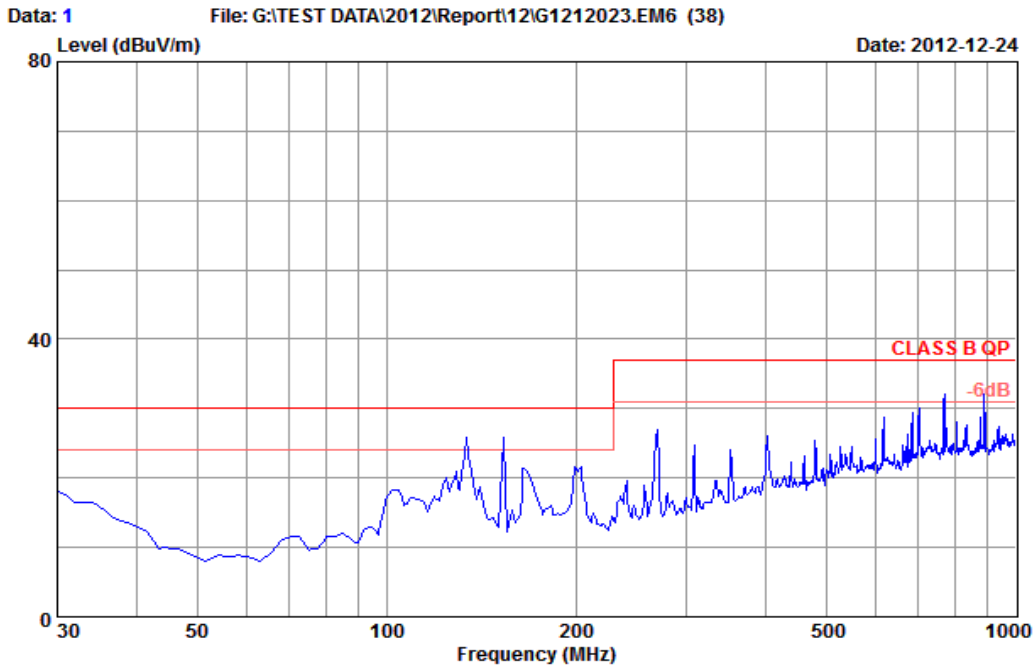
APPENDIX III

Radiated Emission Pre-Scanned Data at 10m Semi-Anechoic Chamber

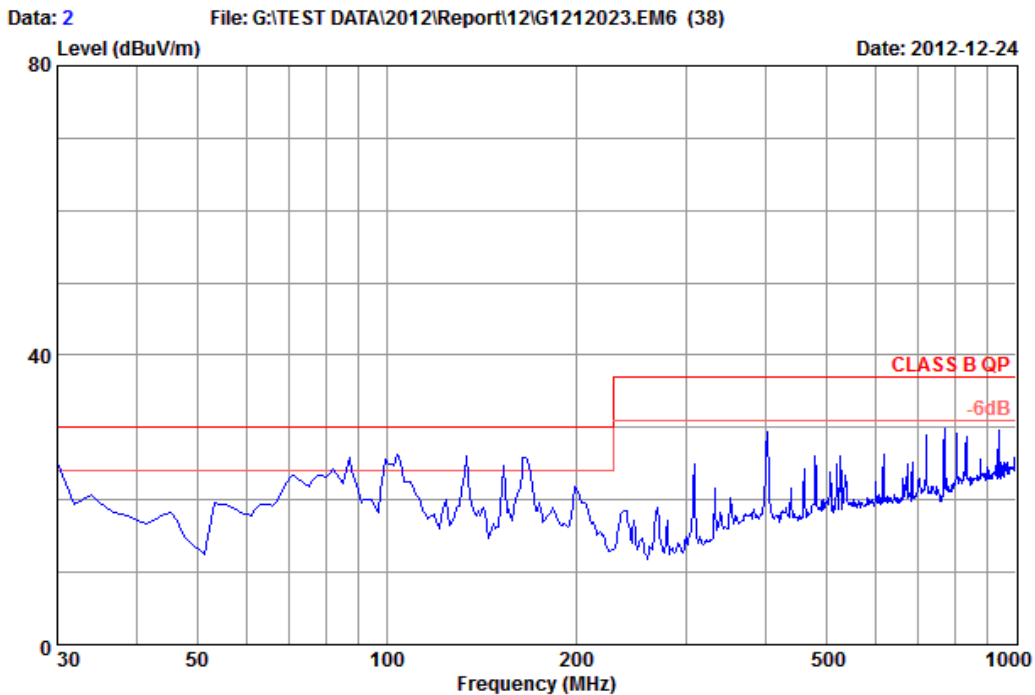
1. Radiated Emission Pre-Scanned (30-1000MHz)



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Site No. : NO.1 10m Semi-Anechoic Chamber Data NO. : 1
 Dis./Ant. : 10m 6112D(22253)-1206-H Ant.pol : HORIZONTAL
 Env./Ins. : 23.4*C 49%/ESCI Engineer : Leo
 EUT : Motherboard
 M/N : E2KM1I-DELUXE
 Power Rating: 110Vac/60Hz
 Test Mode : Full System
 Memo : DVI+HDMI 1920*1200@60Hz 75.8kHz
 CPU:AMD E2-2000 APU With Radeon(tm) HD
 Graphics 1.75GHz

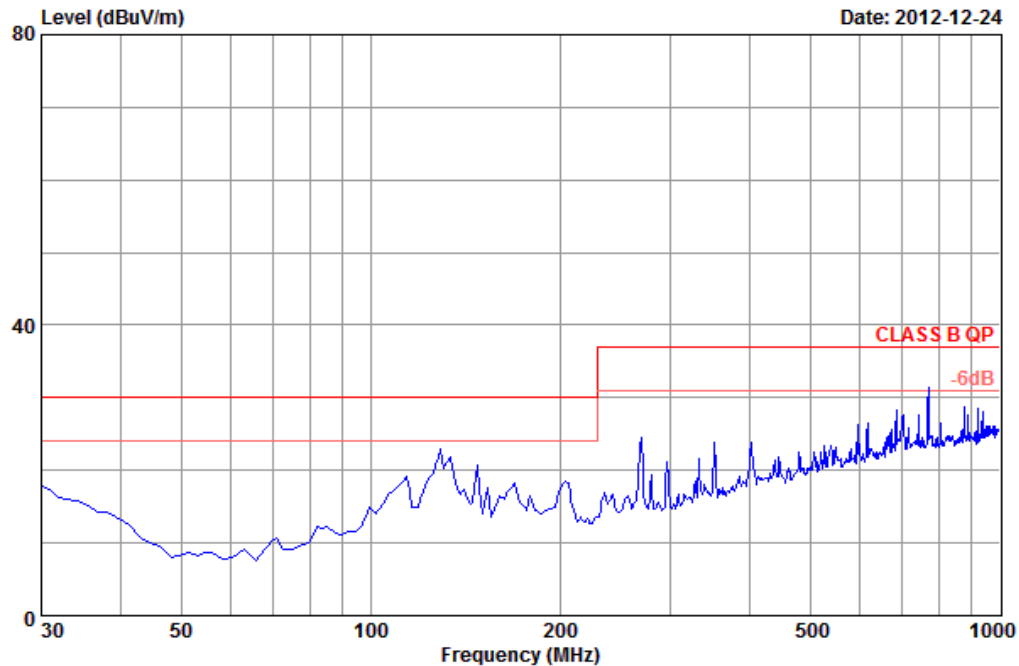


Site No. : NO.1 10m Semi-Anechoic Chamber Data NO. : 2
 Dis./Ant. : 10m 6112D(22251)-1204-V Ant.pol : VERTICAL
 Env./Ins. : 23.4*C 49%/ESCI Engineer : Leo
 EUT : Motherboard
 M/N : E2KM1I-DELUXE
 Power Rating: 110Vac/60Hz
 Test Mode : Full System
 Memo : DVI+HDMI 1920*1200@60Hz 75.8kHz
 CPU:AMD E2-2000 APU With Radeon(tm) HD
 Graphics 1.75GHz



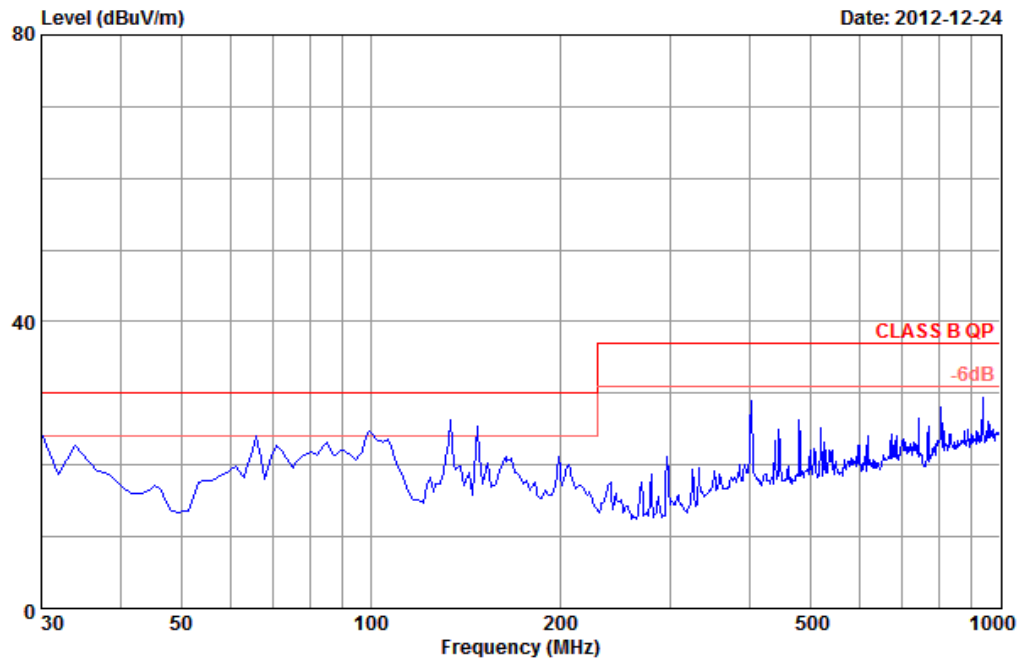
Audix Technology (Wujiang) Co., Ltd.
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 Economic Development Zone, Jiangsu, China
 Tel: 0512-63403993 Fax: 0512-63403339

Data: 3 File: G:\TEST DATA\2012\Report\12\G1212023.EM6 (38)



Site No. : NO.1 10m Semi-Anechoic Chamber Data NO. : 3
 Dis./Ant. : 10m 6112D(22253)-1206-H Ant. pol : HORIZONTAL
 Env./Ins. : 23.4°C 49%/ESCI Engineer : Leo
 EUT : Motherboard
 M/N : E2KM1I-DELUXE
 Power Rating: 110Vac/60Hz
 Test Mode : Full System
 Memo : DVI+HDMI 1920*1080@60Hz 68.2kHz
 CPU:AMD E2-2000 APU With Radeon(tm) HD
 Graphics 1.75GHz

Data: 4 File: G:\TEST DATA\2012\Report\12\G1212023.EM6 (38)

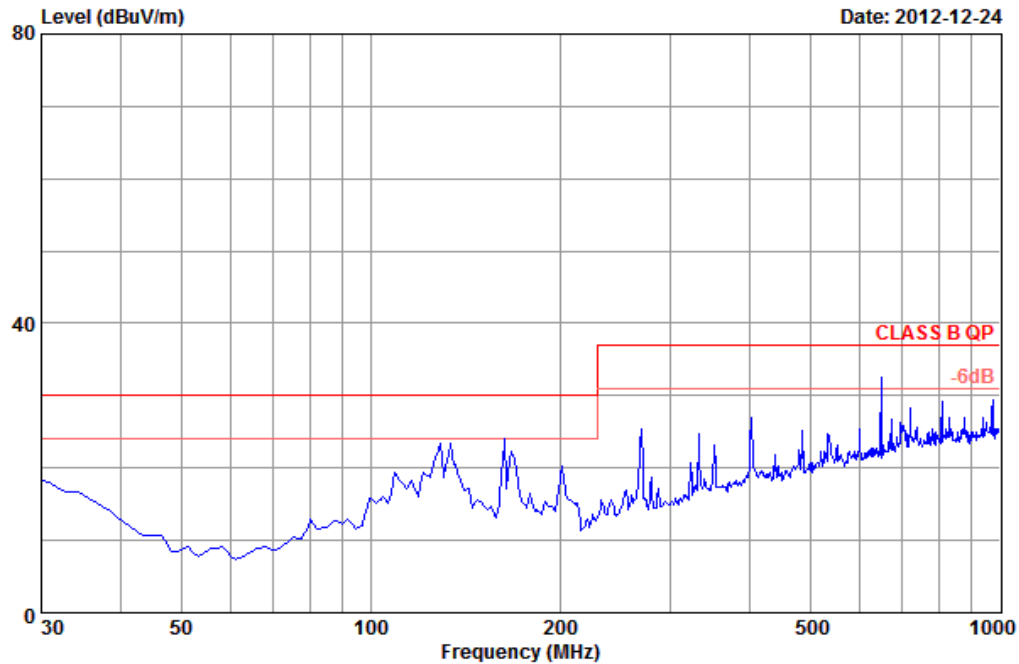


Site No. : NO.1 10m Semi-Anechoic Chamber Data NO. : 4
 Dis./Ant. : 10m 6112D(22251)-1204-V Ant. pol : VERTICAL
 Env./Ins. : 23.4°C 49%/ESCI Engineer : Leo
 EUT : Motherboard
 M/N : E2KM1I-DELUXE
 Power Rating: 110Vac/60Hz
 Test Mode : Full System
 Memo : DVI+HDMI 1920*1080@60Hz 68.2kHz
 CPU:AMD E2-2000 APU With Radeon(tm) HD
 Graphics 1.75GHz



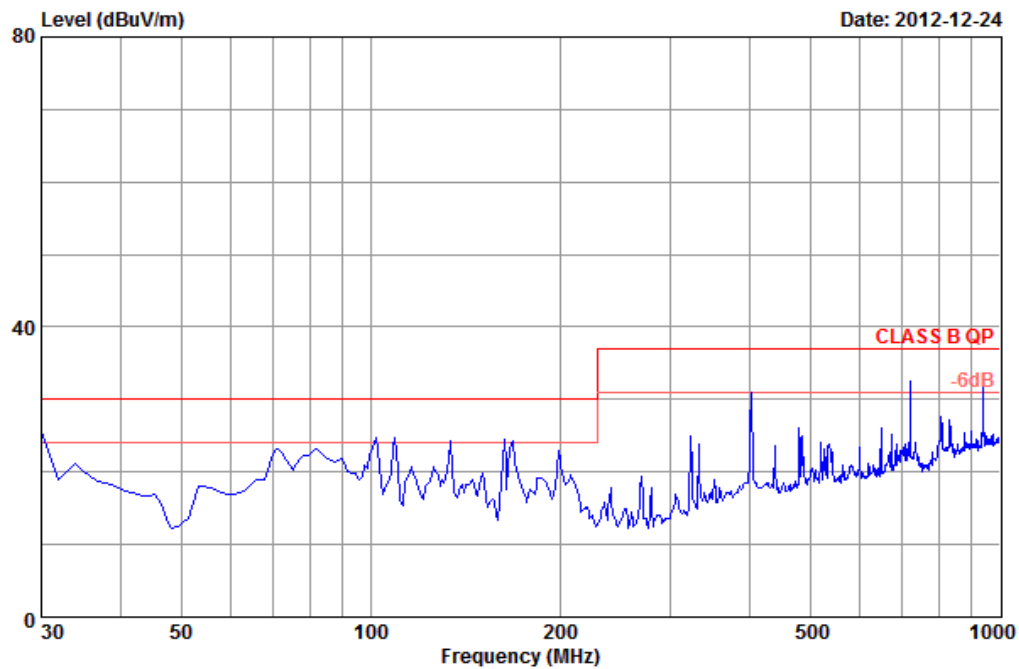
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 Economic Development Zone, Jiangsu, China
 Tel: 0512-63403993 Fax: 0512-63403339

Data: 5 File: G:\TEST DATA\2012\Report\12\G1212023.EM6 (38)



Site No.	: NO.1 10m Semi-Anechoic Chamber	Data NO.	: 5
Dis./Ant.	: 10m 6112D(22253)-1206-H	Ant.pol	: HORIZONTAL
Env./Ins.	: 23.4°C 49%/ESCI	Engineer	: Leo
EUT	: Motherboard		
M/N	: E2KM1I-DELUXE		
Power Rating	: 110Vac/60Hz		
Test Mode	: Full System		
Memo	: DVI+HDMI 1600*1200@60Hz 75.8 kHz		
	: CPU:AMD E2-2000 APU With Radeon(tm) HD		
	: Graphics 1.75GHz		

Data: 6 File: G:\TEST DATA\2012\Report\12\G1212023.EM6 (38)

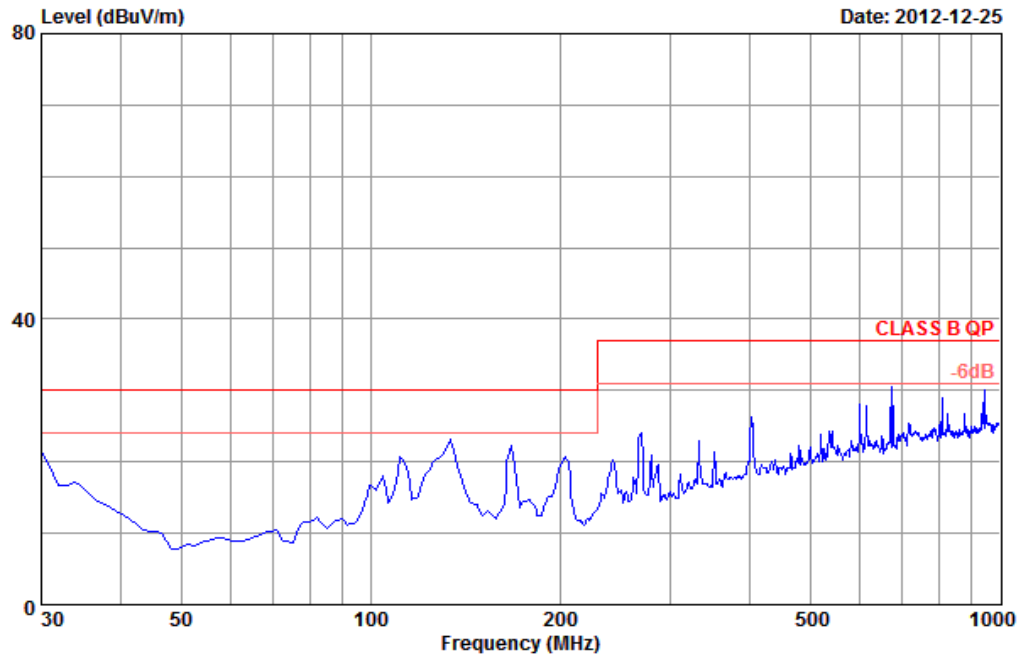


Site No.	: NO.1 10m Semi-Anechoic Chamber	Data NO.	: 6
Dis./Ant.	: 10m 6112D(22251)-1204-V	Ant.pol	: VERTICAL
Env./Ins.	: 23.4°C 49%/ESCI	Engineer	: Leo
EUT	: Motherboard		
M/N	: E2KM1I-DELUXE		
Power Rating	: 110Vac/60Hz		
Test Mode	: Full System		
Memo	: DVI+HDMI 1600*1200@60Hz 75.8 kHz		
	: CPU:AMD E2-2000 APU With Radeon(tm) HD		
	: Graphics 1.75GHz		



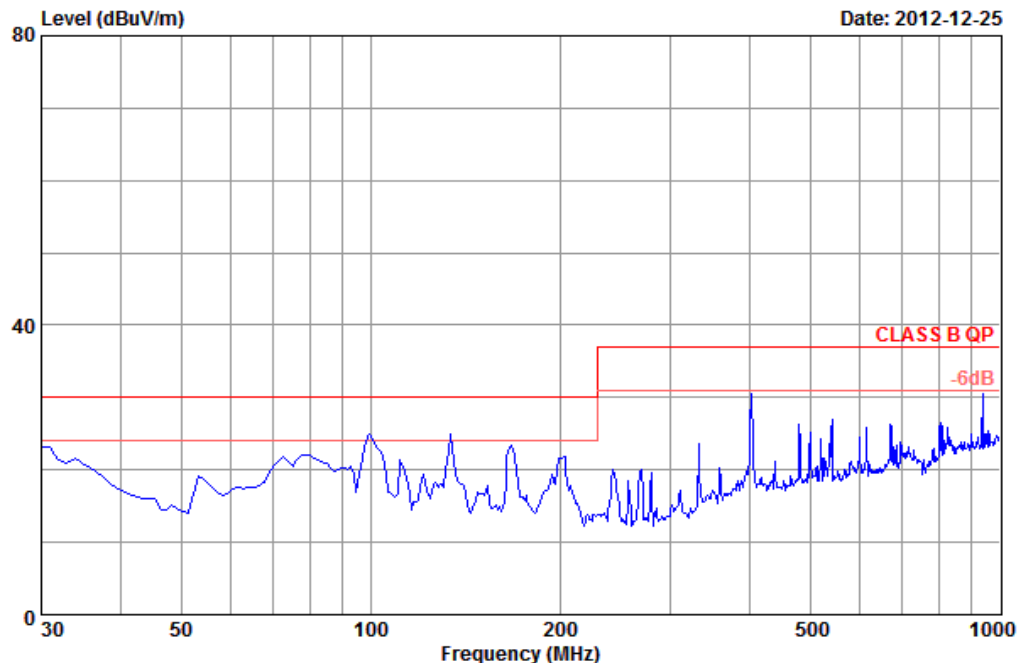
Audix Technology (Wujiang) Co., Ltd.
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 Economic Development Zone, JiangSu, China
 Tel: 0512-63403993 Fax: 0512-63403339

Data: 7 File: G:\TEST DATA\2012\Report\12\G1212023.EM6 (38)



Site No. : NO.1 10m Semi-Anechoic Chamber Data NO. : 7
 Dis./Ant. : 10m 6112D(22253)-1206-H Ant. pol : HORIZONTAL
 Env./Ins. : 23.4°C 49%/ESCI Engineer : Leo
 EUT : Motherboard
 M/N : E2KM1I-DELUXE
 Power Rating: 110Vac/60Hz
 Test Mode : Full System
 Memo : DVI+HDMI 1280*1024@75Hz 80.8kHz
 CPU: AMD E2-2000 APU With Radeon(tm) HD
 Graphics 1.75GHz

Data: 8 File: G:\TEST DATA\2012\Report\12\G1212023.EM6 (38)

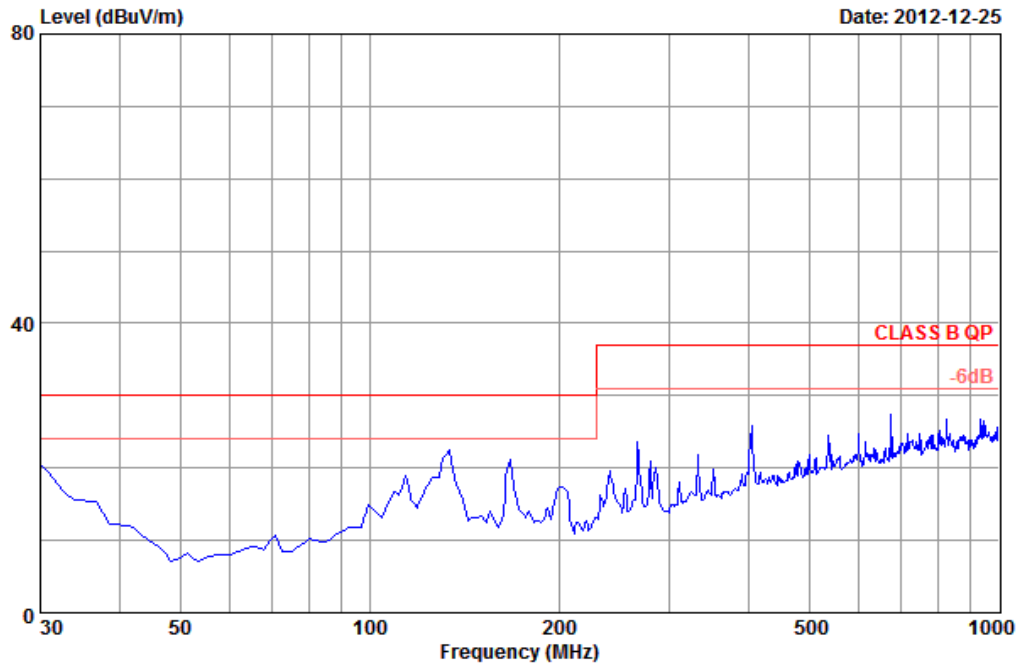


Site No. : NO.1 10m Semi-Anechoic Chamber Data NO. : 8
 Dis./Ant. : 10m 6112D(22251)-1204-V Ant. pol : VERTICAL
 Env./Ins. : 23.4°C 49%/ESCI Engineer : Leo
 EUT : Motherboard
 M/N : E2KM1I-DELUXE
 Power Rating: 110Vac/60Hz
 Test Mode : Full System
 Memo : DVI+HDMI 1280*1024@75Hz 80.8kHz
 CPU: AMD E2-2000 APU With Radeon(tm) HD
 Graphics 1.75GHz



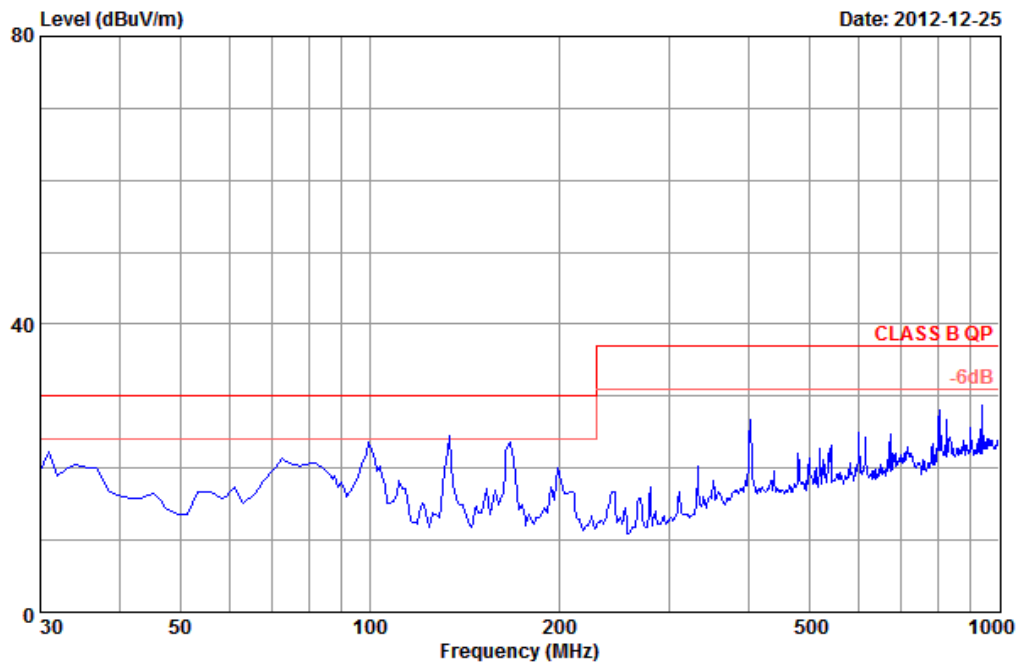
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 Economic Development Zone, Jiangsu, China
 Tel:0512-63403993 Fax:0512-63403339

Data: 9 File: G:\TEST DATA\2012\Report\12\G1212023.EM6 (38)



Site No. : NO.1 10m Semi-Anechoic Chamber Data NO. : 9
 Dis./Ant. : 10m 6112D(22253)-1206-H Ant.pol : HORIZONTAL
 Env./Ins. : 23.4°C 49%/ESCI Engineer : Leo
 EUT : Motherboard
 M/N : E2KM1I-DELUXE
 Power Rating: 110Vac/60Hz
 Test Mode : Full System
 Memo : DVI+HDMI 640*480@60Hz 30.3kHz
 CPU:AMD E2-2000 APU With Radeon(tm) HD
 Graphics 1.75GHz

Data: 10 File: G:\TEST DATA\2012\Report\12\G1212023.EM6 (38)



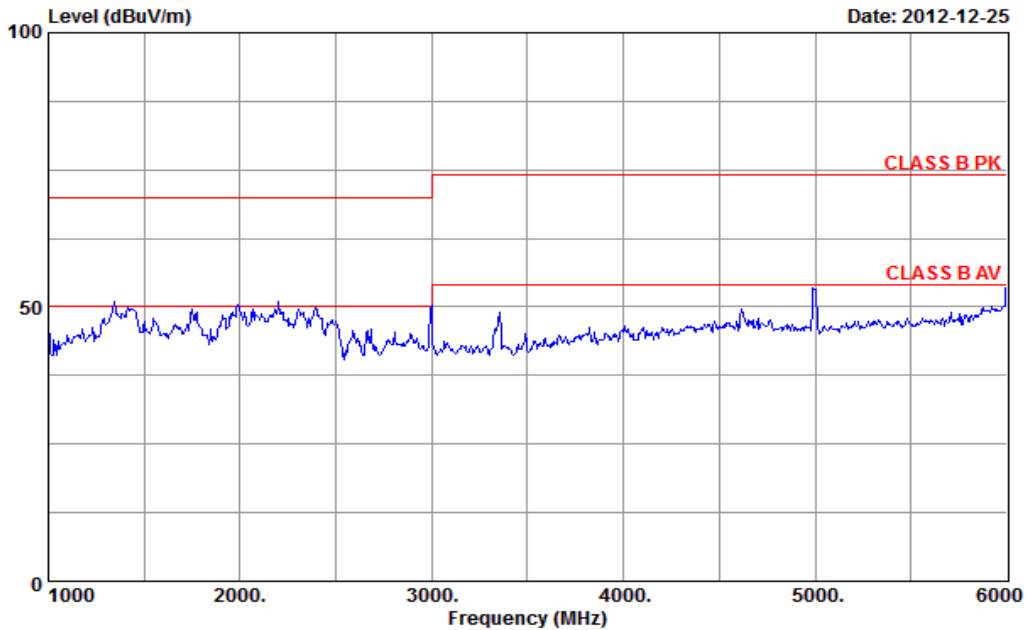
Site No. : NO.1 10m Semi-Anechoic Chamber Data NO. : 10
 Dis./Ant. : 10m 6112D(22251)-1204-V Ant.pol : VERTICAL
 Env./Ins. : 23.4°C 49%/ESCI Engineer : Leo
 EUT : Motherboard
 M/N : E2KM1I-DELUXE
 Power Rating: 110Vac/60Hz
 Test Mode : Full System
 Memo : DVI+HDMI 640*480@60Hz 30.3kHz
 CPU:AMD E2-2000 APU With Radeon(tm) HD
 Graphics 1.75GHz

2. Radiated Emission Pre-Scanned (1000-6000MHz)



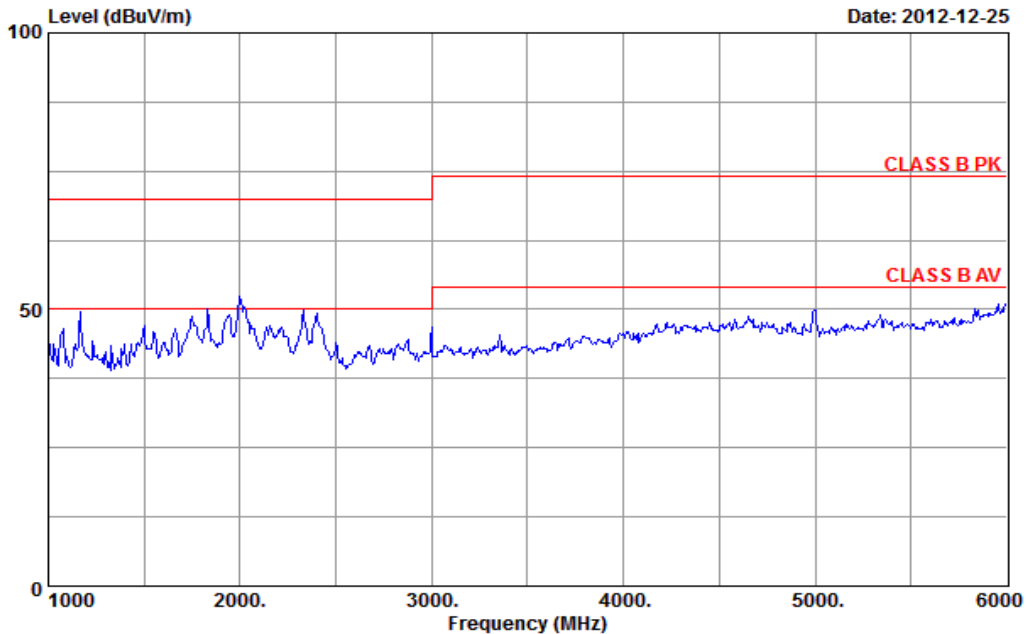
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 Tel:0512-63403993 Fax:0512-63403339

Data: 21 File: G:\TEST DATA\2012\Report\12\G1212023.EM6 (38) Date: 2012-12-25



Site No. : NO.1 10m Semi-Anechoic Chamber Data NO. : 21
 Dis./Ant. : 3m . 3115(62593)-1205 Ant.pol : HORIZONTAL
 Limit : CLASS B PK
 Env./Ins. : 23.4*C 49%/E4447A Engineer : Leo
 EUT. : Motherboard
 M/N : E2KM1I-DELUXE
 Power Rating : 110Vac/60Hz
 Test Mode : Full System
 Memo : DVI+HDMI 1920*1200@60Hz 75.8kHz
 CPU:AMD E2-2000 APU With Radeon(tm) HD
 Graphics 1.75GHz

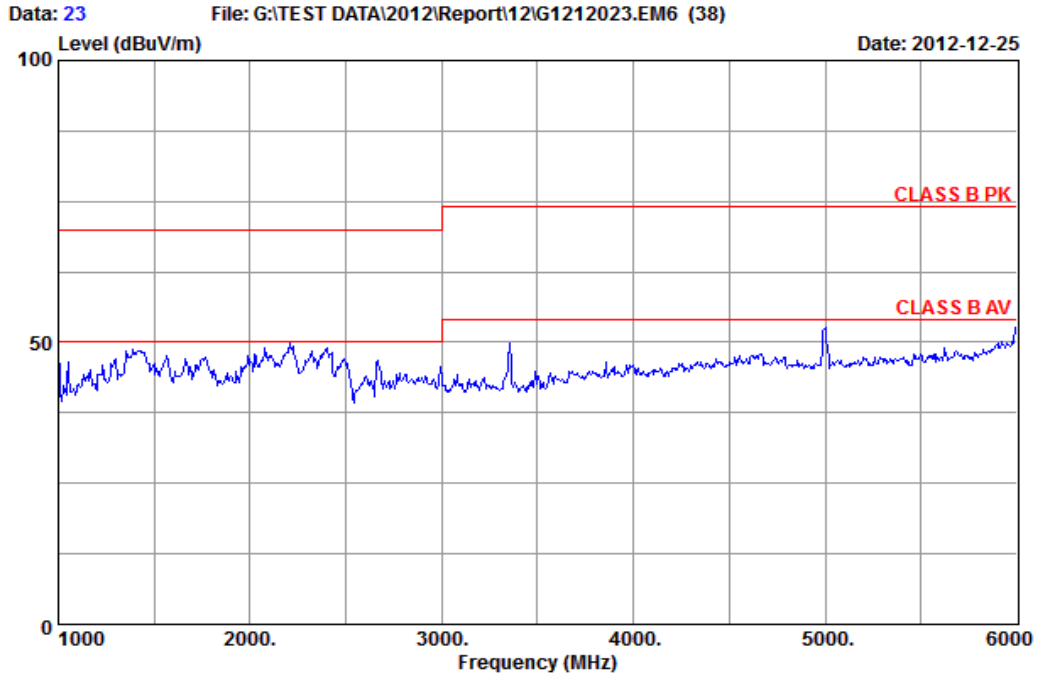
Data: 22 File: G:\TEST DATA\2012\Report\12\G1212023.EM6 (38) Date: 2012-12-25



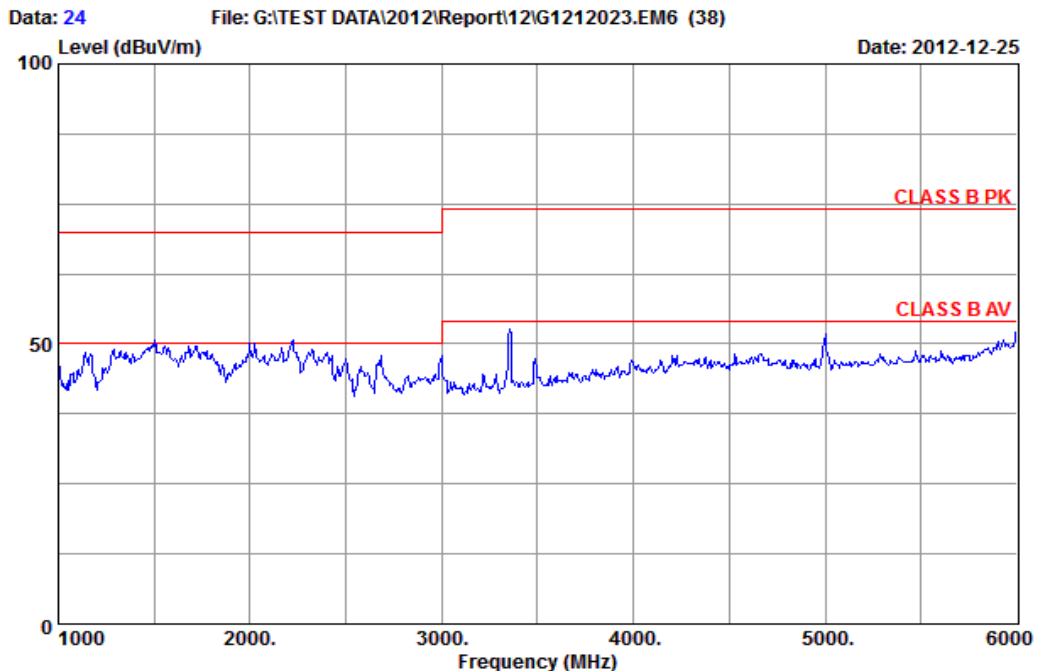
Site No. : NO.1 10m Semi-Anechoic Chamber Data NO. : 22
 Dis./Ant. : 3m . 3115(62593)-1205 Ant.pol : VERTICAL
 Limit : CLASS B PK
 Env./Ins. : 23.4*C 49%/E4447A Engineer : Leo
 EUT. : Motherboard
 M/N : E2KM1I-DELUXE
 Power Rating : 110Vac/60Hz
 Test Mode : Full System
 Memo : DVI+HDMI 1920*1200@60Hz 75.8kHz
 CPU:AMD E2-2000 APU With Radeon(tm) HD
 Graphics 1.75GHz



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 Economic Development Zone, Jiangsu, China
 Tel: 0512-63403993 Fax: 0512-63403339



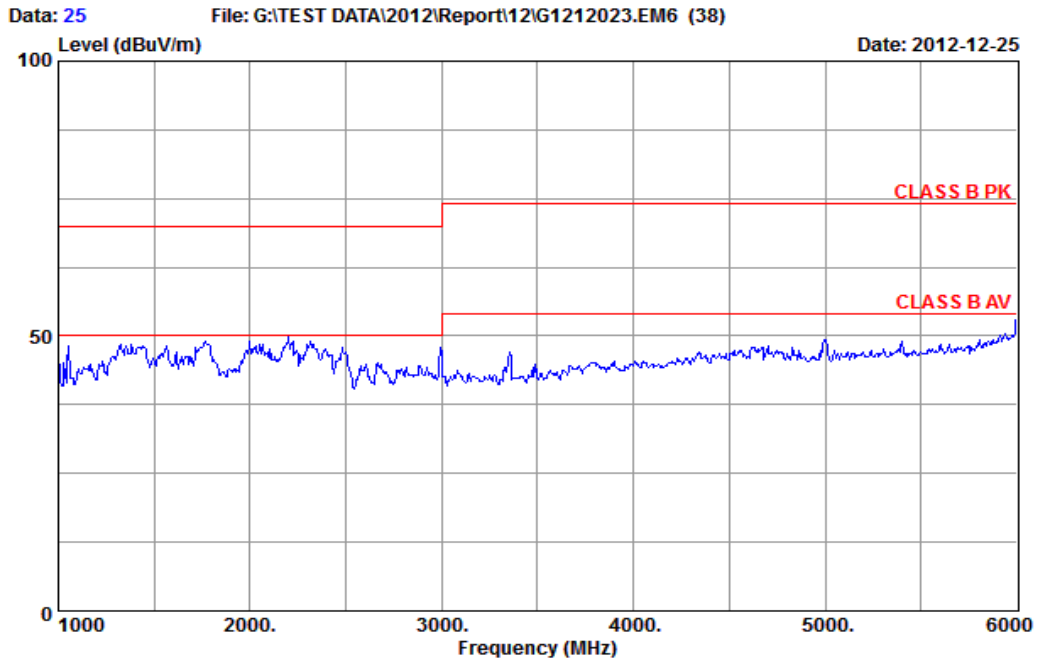
Site No. : NO.1 10m Semi-Anechoic Chamber Data NO. : 23
 Dis./Ant. : 3m 3115(62593)-1205 Ant.pol : HORIZONTAL
 Limit : CLASS B PK
 Env./Ins. : 23.4*C 49%/E4447A Engineer : Leo
 EUT. : Motherboard
 M/N : E2KM1I-DELUXE
 Power Rating : 110Vac/60Hz
 Test Mode : Full System
 Memo : DVI+HDMI 1920*1080@60Hz 68.2kHz
 CPU:AMD E2-2000 APU With Radeon(tm) HD
 Graphics 1.75GHz



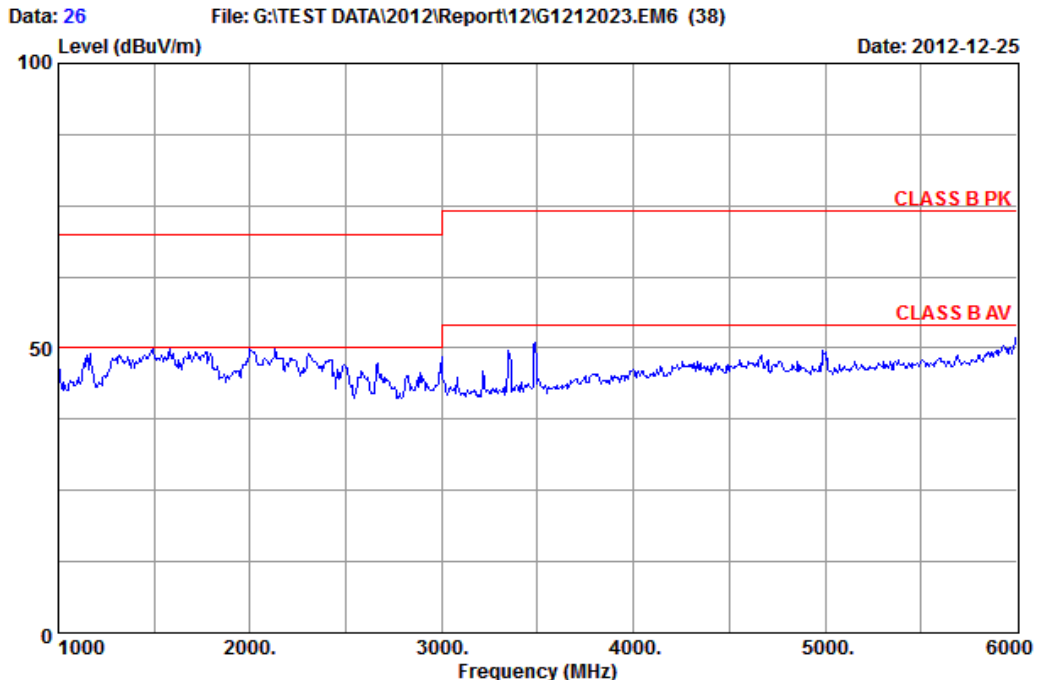
Site No. : NO.1 10m Semi-Anechoic Chamber Data NO. : 24
 Dis./Ant. : 3m 3115(62593)-1205 Ant.pol : VERTICAL
 Limit : CLASS B PK
 Env./Ins. : 23.4*C 49%/E4447A Engineer : Leo
 EUT. : Motherboard
 M/N : E2KM1I-DELUXE
 Power Rating : 110Vac/60Hz
 Test Mode : Full System
 Memo : DVI+HDMI 1920*1080@60Hz 68.2kHz
 CPU:AMD E2-2000 APU With Radeon(tm) HD
 Graphics 1.75GHz



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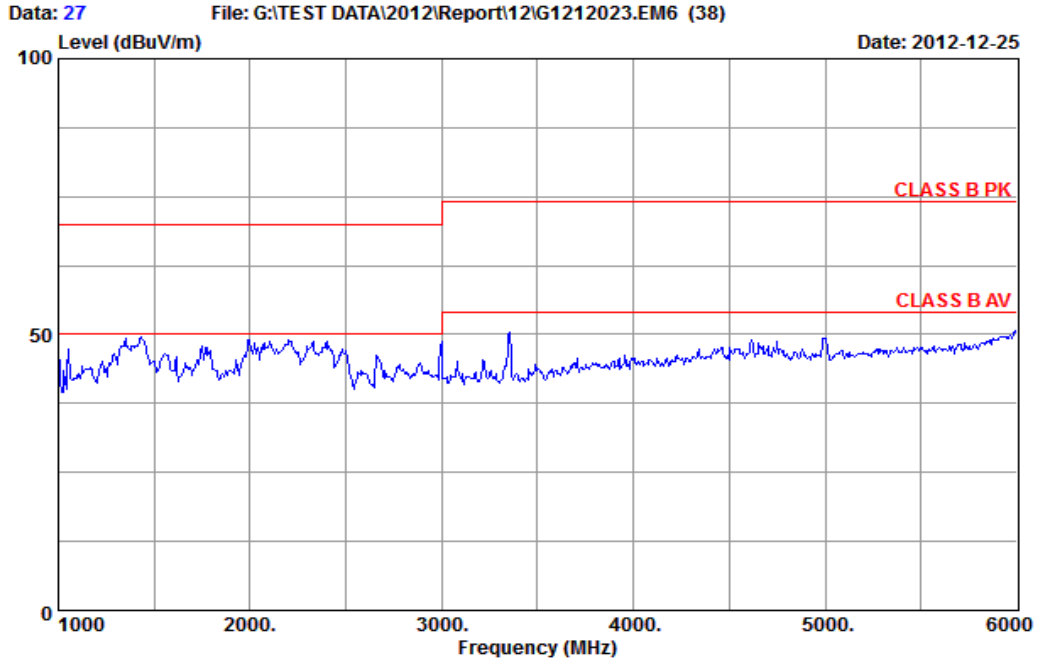
Site No. : NO.1 10m Semi-Anechoic Chamber Data NO. : 25
 Dis./Ant. : 3m . 3115(62593)-1205 Ant.pol : HORIZONTAL
 Limit : CLASS B PK
 Env./Ins. : 23.4*C 49%/E4447A Engineer : Leo
 EUT. : Motherboard
 M/N : E2KM1I-DELUXE
 Power Rating : 110Vac/60Hz
 Test Mode : Full System
 Memo : DVI+HDMI 1600*1200@60Hz 75.8 kHz
 CPU:AMD E2-2000 APU With Radeon(tm) HD
 Graphics 1.75GHz



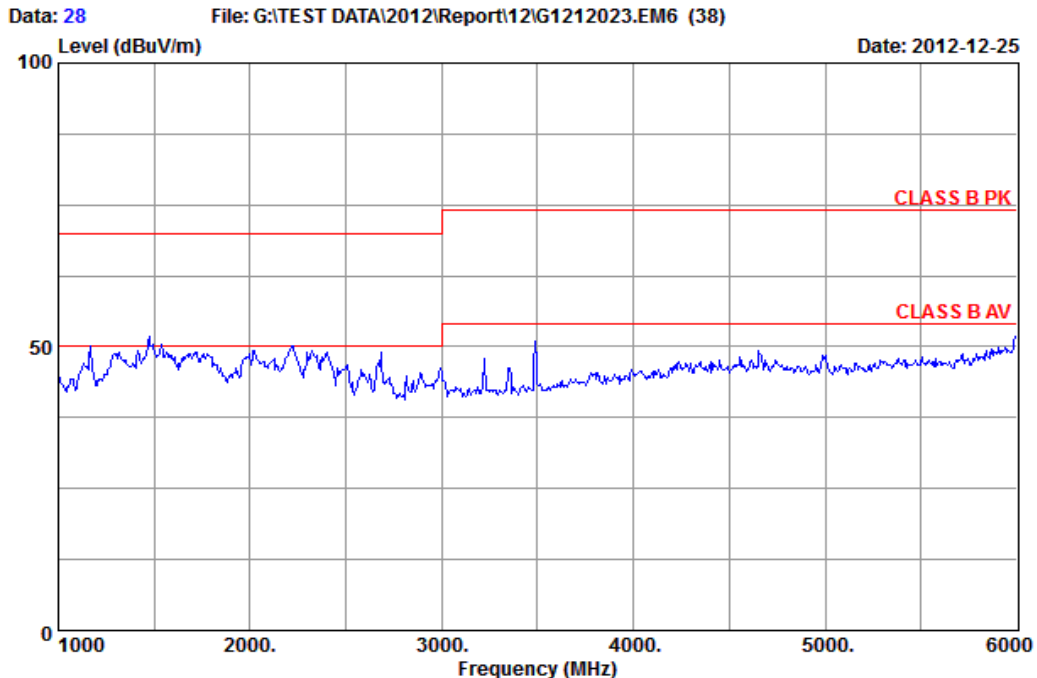
Site No. : NO.1 10m Semi-Anechoic Chamber Data NO. : 26
 Dis./Ant. : 3m . 3115(62593)-1205 Ant.pol : VERTICAL
 Limit : CLASS B PK
 Env./Ins. : 23.4*C 49%/E4447A Engineer : Leo
 EUT. : Motherboard
 M/N : E2KM1I-DELUXE
 Power Rating : 110Vac/60Hz
 Test Mode : Full System
 Memo : DVI+HDMI 1600*1200@60Hz 75.8 kHz
 CPU:AMD E2-2000 APU With Radeon(tm) HD
 Graphics 1.75GHz



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Site No. : NO.1 10m Semi-Anechoic Chamber Data NO. : 27
 Dis./Ant. : 3m . 3115(62593)-1205 Ant.pol : HORIZONTAL
 Limit : CLASS B PK
 Env./Ins. : 23.4*C 49%/E4447A Engineer : Leo
 EUT. : Motherboard
 M/N : E2KM11-DELUXE
 Power Rating : 110Vac/60Hz
 Test Mode : Full System
 Memo : DVI+HDMI 1280*1024@75Hz 80.8kHz
 CPU:AMD E2-2000 APU With Radeon(tm) HD
 Graphics 1.75GHz



Site No. : NO.1 10m Semi-Anechoic Chamber Data NO. : 28
 Dis./Ant. : 3m . 3115(62593)-1205 Ant.pol : VERTICAL
 Limit : CLASS B PK
 Env./Ins. : 23.4*C 49%/E4447A Engineer : Leo
 EUT. : Motherboard
 M/N : E2KM11-DELUXE
 Power Rating : 110Vac/60Hz
 Test Mode : Full System
 Memo : DVI+HDMI 1280*1024@75Hz 80.8kHz
 CPU:AMD E2-2000 APU With Radeon(tm) HD
 Graphics 1.75GHz