Test Report

Product Name ： Notebook

Model No. ： G60V G51V G61V

Applicant ： ASUSTEK COMPUTER INC.

Address ： NO.150, Li-Te Dd., Peitou, Taipei, Taiwan, R.O.C

Date of Receipt ： 2009/04/30

Issued Date ： 2009/05/13

Report No. ： 095S057-IT-US-P01V02

Report Version. ： V 1.0

This appendix report was based on Quietek report No.088176R

Test Report Certification

Issued Date : 2009/05/13
Report No. : 095S057-IT-US-P01V02

QuieTek

Product Name	:	Notebook
Applicant	:	ASUSTEK COMPUTER INC.
Address	:	NO.150, Li-Te Dd., Peitou, Taipei, Taiwan, R.O.C
Manufacturer	:	1. PEGATRON CORPORATION Taoyuan Mfg
		2. Protek Limited
Model No.	:	G60V G51V G61V
Rated Voltage	:	AC 120 V / 60 Hz
EUT Voltage	:	AC 100-240 V / 50-60 Hz
Trade Name	:	ASUS
Applicable Standard	:	FCC Part 15 Subpart B: 2007 Class B
		ANSI C63.4: 2003
Test Result	:	Complied
Performed Location	:	Linkou EMC laboratory
		No.5-22, Ruei-Shu Valley, Ruei-Ping Tsuen Lin Kuo
		Shiang, Taipei, 244 Taiwan, R.O.C.
		TEL: +886-2-8601-3788 / FAX: +886-2-8601-3789

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Approved By :
(Vincent Lin)

Laboratory Information

We , **QuieTek Corporation**, are an independent EMC and safety consultancy that was established the whole facility in our laboratories. The test facility has been accredited by the following accreditation Bodies in compliance with ISO 17025, EN 45001 and Guide 25:

Taiwan R.O.C.	**:**	**BSMI, DGT, CNLA**
Germany	**:**	**TUV Rheinland**
Norway	**:**	**Nemko, DNV**
USA	**:**	**FCC, NVLAP**
Japan	**:**	**VCCI**

The related certificate for our laboratories about the test site and management system can be downloaded from QuieTek Corporation's Web Site : http://tw.quietek.com/modules/myalbum/
The address and introduction of QuieTek Corporation's laboratories can be founded in our Web site : http://www.quietek.com/
If you have any comments, Please don't hesitate to contact us. Our contact information is as below:

HsinChu Testing Laboratory :
No.75-2, 3rd Lin, Wangye Keng, Yonghxing Tsuen, Qionglin Shiang, Hsinchu County 307, Taiwan, R.O.C.
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NVLAP Lab Code : 200347-0 | 1313

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NVLAP Lab Code: 200533-0 | 0914

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NVLAP Lab Code : 200743-0 | 1596

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1. General Information

1.1. EUT Description

Product Name	Notebook
Trade Name	ASUS
Model No.	G60V G51V G61V

Note: The EUT includes three models. G51V LCD size is 15.6, G60V LCD size is 16, and G61V is for different marketing requirement.

Keyparts List

	Vendor	Model Name	Description
CPU	INTEL	T9550	2.66GHz
		P8800	2.66GHz
		P8700	2.53GHz
		P7550	2.26GHz
		P7450	2.13GHz
		P7350	2.0GHz
		T6600	2.20GHz
		T6500	2.10GHz
		T6400	2.0GHz
		Q9100	2.26GHz
		Q9000	2.0GHz
VGA	nVidia	N10E-GT1	
HDD	Hitachi	HGST/HTS543225L9A300	250GB
	Hitachi	HGST/HTS543232L9A300	250GB
LCD	CMO	N156B6-L04	
	LGD	LP156WH2-TLA1	
	AUO	B156HW01 V5	
	Samsung	LTN160AT01-A05	
Camera	Chicony	CN2015-S36B-OV03	2.0M
ODD	Panasonic	UJ880A2	
DDR	Nanya	NT1GT64UH8D0FN-AD	1GB
	Samsung	M470T5663EH3-CF7	2GB

1.2. Mode of Operation

QuieTek has verified the construction and function in typical operation. All the test modes were carried out with the EUT in normal operation, which was shown in this test report and defined as:

Pre-Test Mode	
Mode 1: LCD (1366*768@60Hz) + VGA (1366*768@60Hz)	
Mode 2: LCD (1280*720@60Hz) + HDMI (1280*720@60Hz)	
Mode 3: LCD (800*600@60Hz) + HDMI (800*600@60Hz)	
Mode 4: LCD (800*600@60Hz) + HDMI (800*600@60Hz)	
Mode 5: LCD (1920*1080@60Hz) + HDMI (1920*1080@60Hz)	
Mode 6: LCD (1280*960@60Hz) + HDMI (1280*960@60Hz)	
Mode 7: LCD (1920*1080@60Hz) + VGA (1920*1080@60Hz)	
Mode 8: LCD (1280*720@60Hz) + VGA (1280*720@60Hz)	
Mode 9: LCD (1366*768@60Hz) + VGA (1366*768@60Hz)	
Mode 10: LCD (1366*768@60Hz) + HDMI (1366*768@60Hz)	
Mode 11: LCD (1280*720@60Hz) + HDMI (1280*720@60Hz)	
Final Test Mode	
EMI	Mode 9: LCD (1366*768@60Hz) + VGA (1366*768@60Hz)

	Mode 1	Mode 2
Motherboard	G60Vx M/B Rev. 1.2(Dual)	G60Vx M/B Rev. 1.2(Dual)
CPU	Intel Core 2 Duo processor T9550 2.53GHz	Core 2 Duo processor P8700 2.53GHz
VGA	nVidia N10E-GT1	nVidia N10E-GT1
LCD	LGD 15.6" LP156WH2-TLA1	LGD 15.6" LP156WH2-TLA1
HDD	HGST/HTS543225L9A300 250G	HGST/HTS543225L9A300
	HGST/HTS543232L9A300 320G	HGST/HTS543232L9A300
WLAN & Antenna	Azurewave AW-NE771	Azurewave AW-NE771
Bluetooth	Azurewave AW-BT253	Azurewave AW-BT253
ODD	Panasonic SMD UJ880A	Panasonic SMD UJ880A
SO-DIMM	Nanya NT1GT64UH8D0FN-AD	Nanya NT1GT64UH8D0FN-AD
	Samsung M470T5663EH3-CF7	Samsung M470T5663EH3-CF7
TV tuner	YUAN MC570QA	YUAN MC570QA
CMOS	Chicony CN2015-S36B-OV03	Chicony CN2015-S36B-OV03

	Mode 3	Mode 4
Motherboard	G60Vx M/B Rev. 1.2 (Dual)	G60Vx M/B Rev. 1.2 (Dual)
CPU	Core 2 Duo processor P8800 2.53GHz	Core 2 Duo processor P7550 2.26GHz
VGA	nVidia N10E-GT1	nVidia N10E-GT1
LCD	LGD 15.6" LP156WH2-TLA1	LGD 15.6" LP156WH2-TLA1
HDD	HGST/HTS543225L9A300	HGST/HTS543225L9A300
	HGST/HTS543232L9A300	HGST/HTS543232L9A300
WLAN & Antenna	Azurewave AW-NE771	Azurewave AW-NE771
Bluetooth	Azurewave AW-BT253	Azurewave AW-BT253
ODD	Panasonic SMD UJ880A	Panasonic SMD UJ880A
SO-DIMM	Nanya NT1GT64UH8D0FN-AD	Nanya NT1GT64UH8D0FN-AD
	Samsung M470T5663EH3-CF7	Samsung M470T5663EH3-CF7
TV tuner	YUAN MC570QA	YUAN MC570QA
CMOS	Chicony CN2015-S36B-OV03	Chicony CN2015-S36B-OV03

	Mode 5	Mode 6
Motherboard	G60Vx M/B Rev. 1.2 (Dual)	G60Vx M/B Rev. 1.2 (Dual)
CPU	Core 2 Duo processor P7450 2.13GHz	Core 2 Duo processor P7350 2.0GHz
VGA	nVidia N10E-GT1	nVidia N10E-GT1
LCD	AUO B156HW01 V5	AUO B156HW01 V5
HDD	HGST/HTS543225L9A300	HGST/HTS543225L9A300
	HGST/HTS543232L9A300	HGST/HTS543232L9A300
WLAN & Antenna	Azurewave AW-NE771	Azurewave AW-NE771
Bluetooth	Azurewave AW-BT253	Azurewave AW-BT253
ODD	Panasonic SMD UJ880A	Panasonic SMD UJ880A
SO-DIMM	Nanya NT1GT64UH8D0FN-AD	Nanya NT1GT64UH8D0FN-AD
	Samsung M470T5663EH3-CF7	Samsung M470T5663EH3-CF7
TV tuner	YUAN MC570QA	YUAN MC570QA
CMOS	Chicony CN2015-S36B-OV03	Chicony CN2015-S36B-OV03

	Mode 7	Mode 8
Motherboard	G60Vx M/B Rev. 1.2 (Dual)	G60Vx M/B Rev. 1.2 (Dual)
CPU	Core 2 Duo Processor T6600 2.20GHz	Core 2 Duo Processor T6500 2.10GHz
VGA	nVidia N10E-GT1	nVidia N10E-GT1
LCD	AUO B156HW01 V5	CMO 15.6" HD N156B6-L04
HDD	HGST/HTS543225L9A300	HGST/HTS543225L9A300
	HGST/HTS543232L9A300	HGST/HTS543232L9A300
WLAN & Antenna	Azurewave AW-NE771	Azurewave AW-NE771
Bluetooth	Azurewave AW-BT253	Azurewave AW-BT253
ODD	Panasonic SMD UJ880A	Panasonic SMD UJ880A
SO-DIMM	Nanya NT1GT64UH8D0FN-AD	Nanya NT1GT64UH8D0FN-AD
	Samsung M470T5663EH3-CF7	Samsung M470T5663EH3-CF7
TV tuner	YUAN MC570QA	YUAN MC570QA
CMOS	Chicony CN2015-S36B-OV03	Chicony CN2015-S36B-OV03

	Mode 9	Mode 10
Motherboard	G60Vx M/B Rev. 1.2 (Dual)	G60Vx M/B Rev.1.2 (Quad)
CPU	Core 2 Duo Processor T6400 2.0GHz	Intel Core 2 Quad processor Q9100 2.26GHz
VGA	nVidia N10E-GT1	nVidia N10E-GT1
LCD	CMO 15.6" HD N156B6-L04	Samsung 16.0"LTN160AT01-A05
HDD	HGST/HTS543225L9A300	HGST/HTS543225L9A300
	HGST/HTS543232L9A300	HGST/HTS543232L9A300
WLAN & Antenna	Azurewave AW-NE771	Intel WiFi Link 5100
Bluetooth	Azurewave AW-BT253	Azurewave AW-BT253
ODD	Panasonic SMD UJ880A	Panasonic SMD UJ880A
SO-DIMM	Nanya NT1GT64UH8D0FN-AD	Nanya NT1GT64UH8D0FN-AD
	Samsung M470T5663EH3-CF7	Samsung M470T5663EH3-CF7
TV tuner	YUAN MC570QA	YUAN MC770A
CMOS	Chicony CN2015-S36B-OV03	Chicony CNF724621003870L

	Mode 11
Motherboard	G60Vx M/B Rev.1.2 (Quad)
CPU	Intel Core 2 Quad processor Q9000 2.26GHz
VGA	nVidia N10E-GT1
LCD	Samsung 16.0"LTN160AT01-A05
HDD	HGST/HTS543225L9A300
	HGST/HTS543232L9A300
WLAN & Antenna	Intel WiFi Link 5100
Bluetooth	Azurewave AW-BT253
ODD	Panasonic SMD UJ880A
SO-DIMM	Nanya NT1GT64UH8D0FN-AD
	Samsung M470T5663EH3-CF7
TV tuner	YUAN MC770A
CMOS	Chicony CNF724621003870L

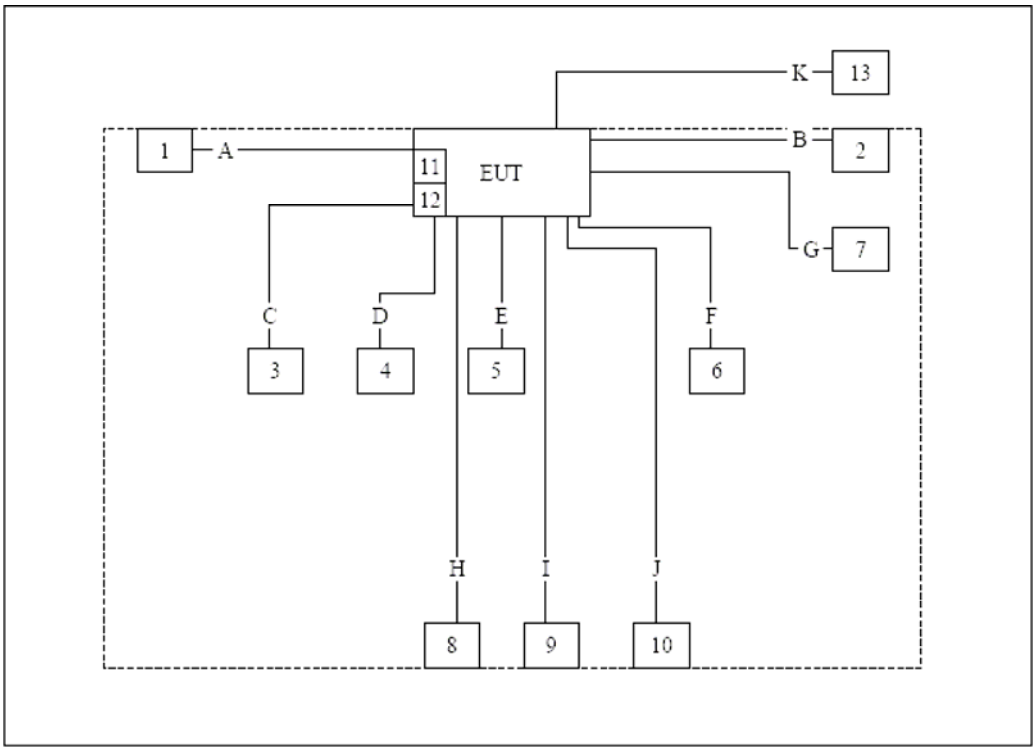
1.3. Tested System Details

The types for all equipments, plus descriptions of all cables used in the tested system (including inserted cards) are:

Product		Manufacturer	Model No.	Serial No.	Power Cord
1	LCD Monitor	DELL	3008WFP	7735432490P08B	Non-Shielded, 1.8m
2	CRT ‘’21	IBM	6652-U3N	1	Non-Shielded, 1.8m
3	SATA HDD&1394 HDD	Seagate	9NL6M6-500	6QG05BN1	Power by adapter
4	SATA HDD&1394 HDD	Seagate	9NL6M6-500	5QG1M245	Power by adapter
5	iPod	Apple	A1199	6U715UPHVQ5	Power by PC
6	iPod	Apple	A1199	6U715YT3VQ5	Power by PC
7	Printer	EPSON	P950A	3KTE013597	Non-Shielded, 1.8m
8	USB Mouse	DELL	MO56UOA	F1B03EZZ	Power by PC
9	Microphone & Earphone	SOMIC	SM-360	N/A	N/A
10	Walkman	Meier	MD-082	N/A	Battery
11	SD Card	Kingston	1GB	N/A	N/A
12	Express Card	APIOTEK	24in1	2	N/A
13	MacBook	Apple	MB061CH	W8732B4TZ5V	Power by adapter

1.4. Configuration of Tested System

Connection Diagram



Signal Cable Type		Signal cable Description
A	HDMI Cable	Shielded, 1.8m
B	VGA Cable	Shielded, 1.8m, with two ferrite core bonded
C	1394 Cable	Shielded, 1.2m
D	SATA Cable	Shielded, 1.1m
E	USB Cable	Shielded, 1.0m
F	USB Cable	Shielded, 1.0m
G	USB Cable	Shielded, 1.8m
H	USB Mouse Cable	Shielded, 1.8m
I	Earphone & Microphone Cable	Non-Shielded, 1.8m
J	Audio Cable	Non-Shielded, 1.8m
K	LAN Cable	Non-Shielded, >10m

1.5. EUT Exercise Software

1	Setup the EUT and simulators as shown above.
2	Turn on the power of all equipment.
3	Execute the HDD running Program using Burn In Test v3.0 software.
4	Run EMC test program using EMCTEST (Ver:5.0) software and send “H” pattern to the monitor.
5	EUT will send and receive data through LAN using “Ping” function.
6	Open the camera and play music using media player program.

2. Technical Test

2.1. Summary of Test Result

☒ No deviations from the test standards

☐ Deviations from the test standards as below description:

Emission			
Performed Test Item	Normative References	Test Performed	Deviation
Conducted Emission	FCC Part 15 Subpart B: 2007 Class B ANSI C63.4: 2003	Yes	No
Radiated Emission	FCC Part 15 Subpart B: 2007 Class B ANSI C63.4: 2003	Yes	No

2.2. List of Test Equipment

Conducted Emission / SR-1

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
EMI Test Receiver	R&S	ESCS 30	836858/022	2008/06/28
LISN	R&S	ESH3-Z5	836679/023	2008/06/28
LISN	R&S	ENV4200	833209/007	2008/06/28
Pulse Limiter	R&S	ESH3-Z2	357.88.10.52	2008/09/07

Radiated Emission / AC-2

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
EMI Test Receiver	R&S	ESI26	838786/004	2008/06/14
Preamplifier	Quietek	AP-025C	QT-AP002	2008/11/24
Preamplifier	Quietek	AP-180C	CHM-0602012	2008/11/24
Bilog Type Antenna	Schaffner	CBL6112B	2905	2008/11/24
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	576	2008/11/24

2.3. Measurement Uncertainty

Conducted Emission

The measurement uncertainty is evaluated as ± 2.26 dB.

Radiated Emission

The measurement uncertainty is evaluated as ± 3.19 dB.

2.4. Test Environment

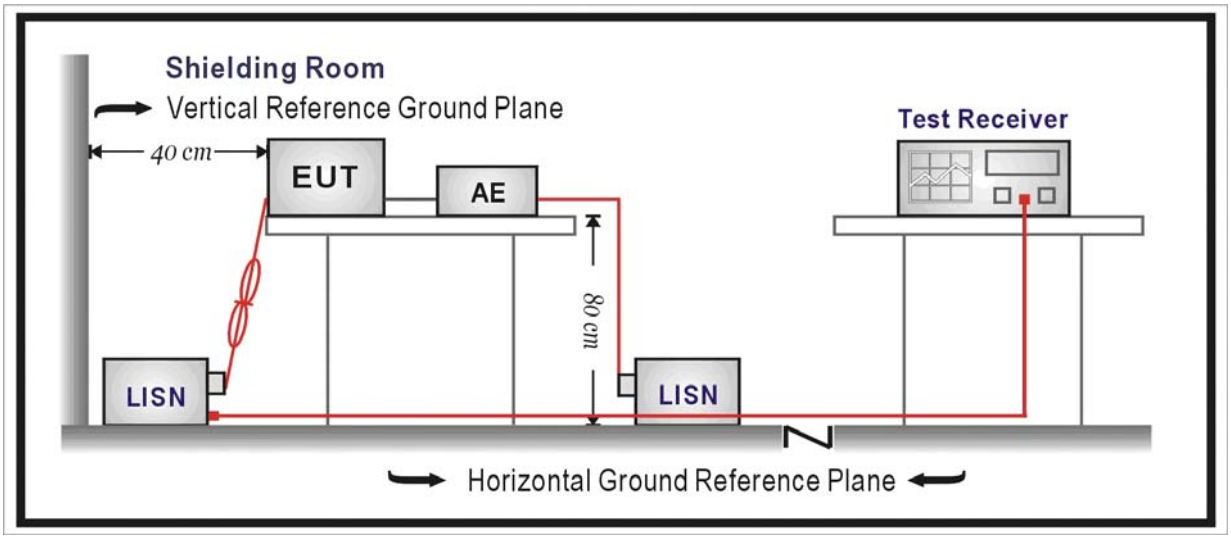
Performed Item	Items	Required	Actual
Conducted Emission	Temperature (°C)	15-35	23
	Humidity (%RH)	25-75	44
	Barometric pressure (kpa)	86-106	95-105
Radiated Emission	Temperature (°C)	15-35	23
	Humidity (%RH)	25-75	44
	Barometric pressure (kpa)	86-106	95-105

3. Conducted Emission

3.1. Test Specification

According to EMC Standard: FCC Part 15 Subpart B Class B, ANSI C63.4

3.2. Test Setup



3.3. Limit

Limits for Class A Equipment		
Frequency (MHz)	QP (dBuV)	AV (dBuV)
0.15 - 0.50	79	66
0.50 - 30	73	60

Note: The lower limit shall apply at the transition frequencies.

Limits for Class B Equipment		
Frequency (MHz)	QP (dBuV)	AV (dBuV)
0.15 - 0.50	66 - 56	56 - 46
0.50 - 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 to 0.5 MHz.

3.4. Test Procedure

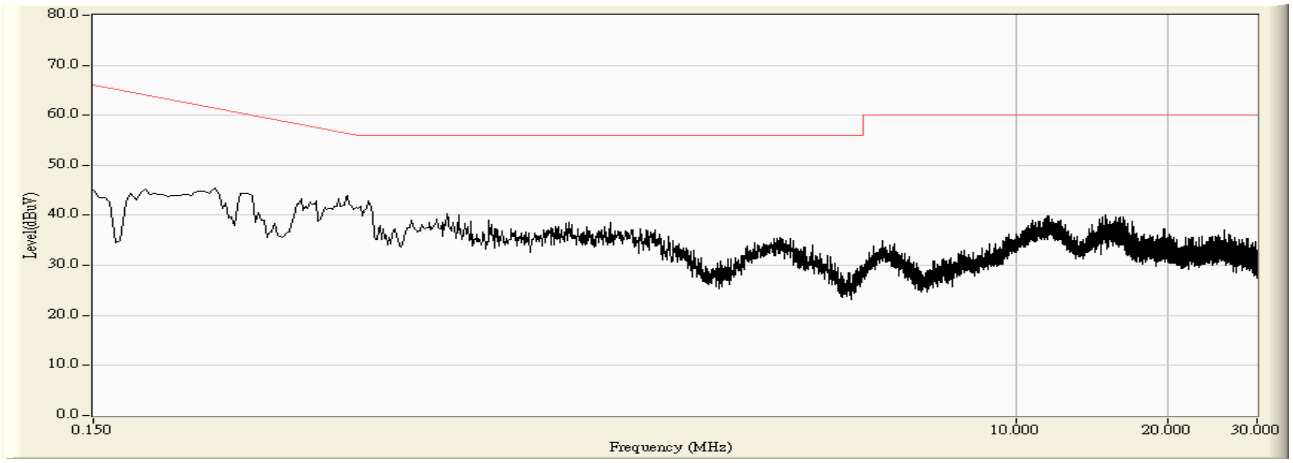
The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination.
(Please refers to the block diagram of the test setup and photographs.)
Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed on conducted measurement.
Conducted emissions were invested over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

3.5. Deviation from Test Standard

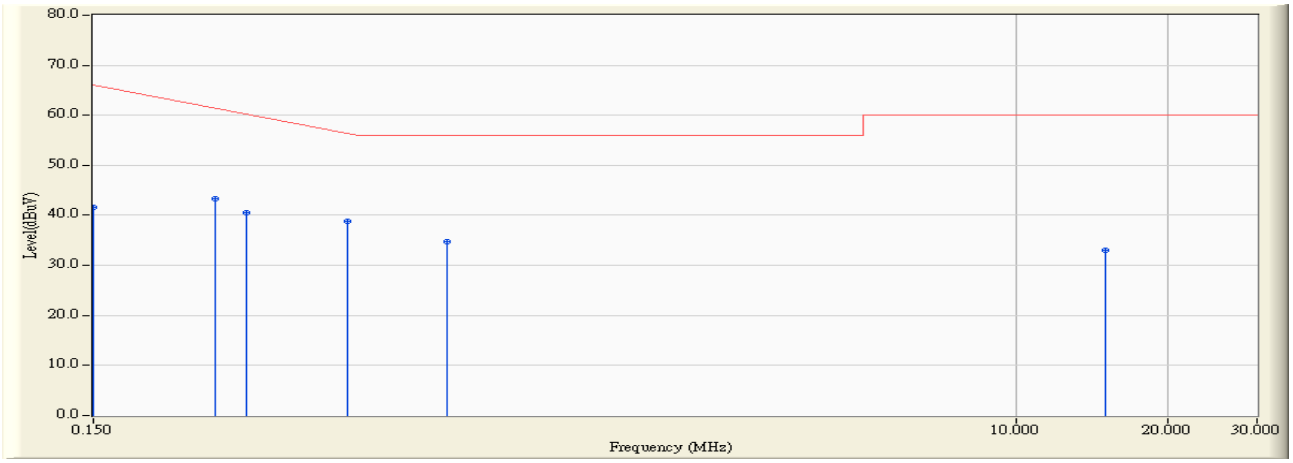
No deviation.

3.6. Test Result

Engineer : Peter	
Site : SR-1 (Conducted Emission and Power Disturbance Test)	**Time : 2009/05/13 - 03:55**
Limit : FCC_Part15_B_00M_QP	**Margin : 0**
EUT : Notebook	**Probe : ENV216_100014(0.009-30MHz) - Line1**
Power : AC 120V/60Hz	**Note : Mode 9: LCD (1366*768@60Hz) + VGA (1366*768@60Hz)**



Engineer : Peter	
Site : SR-1 (Conducted Emission and Power Disturbance Test)	**Time : 2009/05/13 - 03:55**
Limit : FCC_Part15_B_00M_QP	**Margin : 0**
EUT : Notebook	**Probe : ENV216_100014(0.009-30MHz) - Line1**
Power : AC 120V/60Hz	**Note : Mode 9: LCD (1366*768@60Hz) + VGA (1366*768@60Hz)**

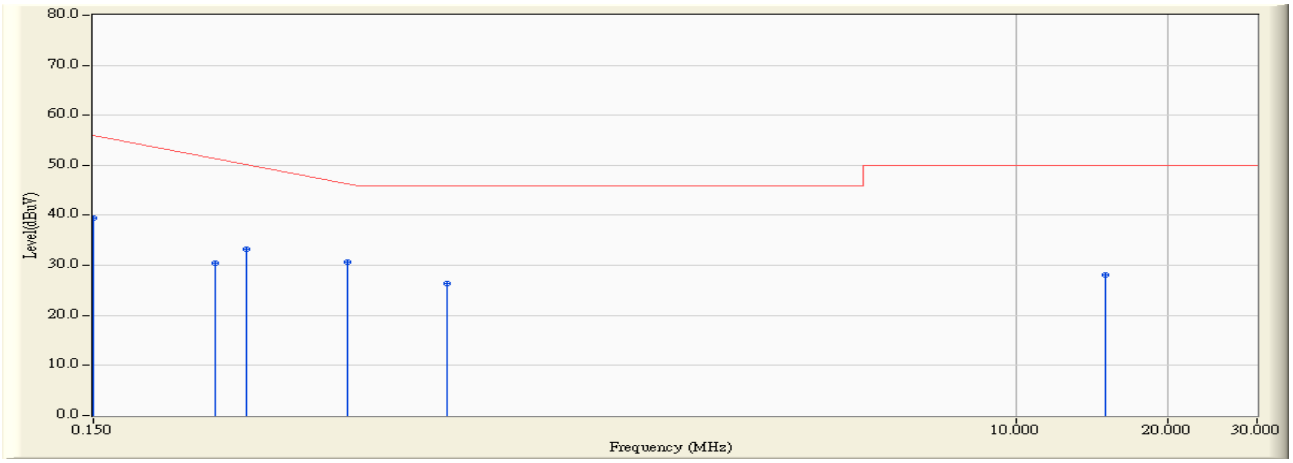


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.150	10.160	31.400	41.560	-24.440	66.000	QUASIPEAK
2		0.262	9.469	33.900	43.369	-19.431	62.800	QUASIPEAK
3		0.302	9.495	31.000	40.495	-21.162	61.657	QUASIPEAK
4	*	0.478	9.613	29.300	38.913	-17.716	56.629	QUASIPEAK
5		0.750	9.677	25.100	34.777	-21.223	56.000	QUASIPEAK
6		15.030	10.160	22.800	32.960	-27.040	60.000	QUASIPEAK

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Peter	
Site : SR-1 (Conducted Emission and Power Disturbance Test)	**Time : 2009/05/13 - 03:55**
Limit : FCC_Part15_B_00M_AV	**Margin : 0**
EUT : Notebook	**Probe : ENV216_100014(0.009-30MHz) - Line1**
Power : AC 120V/60Hz	**Note : Mode 9: LCD (1366*768@60Hz) + VGA (1366*768@60Hz)**

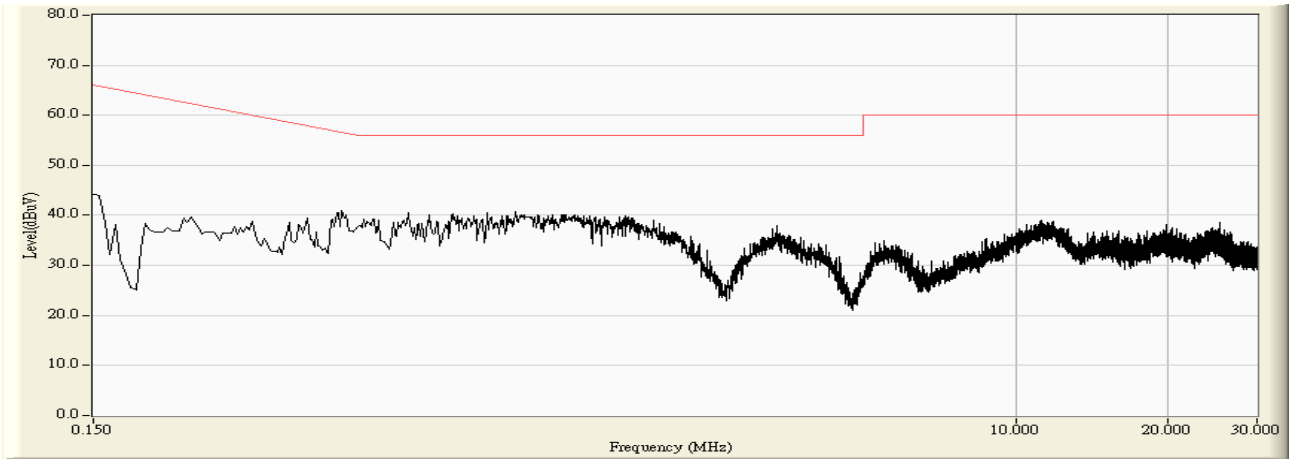


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.150	10.160	29.200	39.360	-16.640	56.000	AVERAGE
2		0.262	9.469	21.000	30.469	-22.331	52.800	AVERAGE
3		0.302	9.495	23.800	33.295	-18.362	51.657	AVERAGE
4	*	0.478	9.613	21.000	30.613	-16.016	46.629	AVERAGE
5		0.750	9.677	16.700	26.377	-19.623	46.000	AVERAGE
6		15.030	10.160	18.000	28.160	-21.840	50.000	AVERAGE

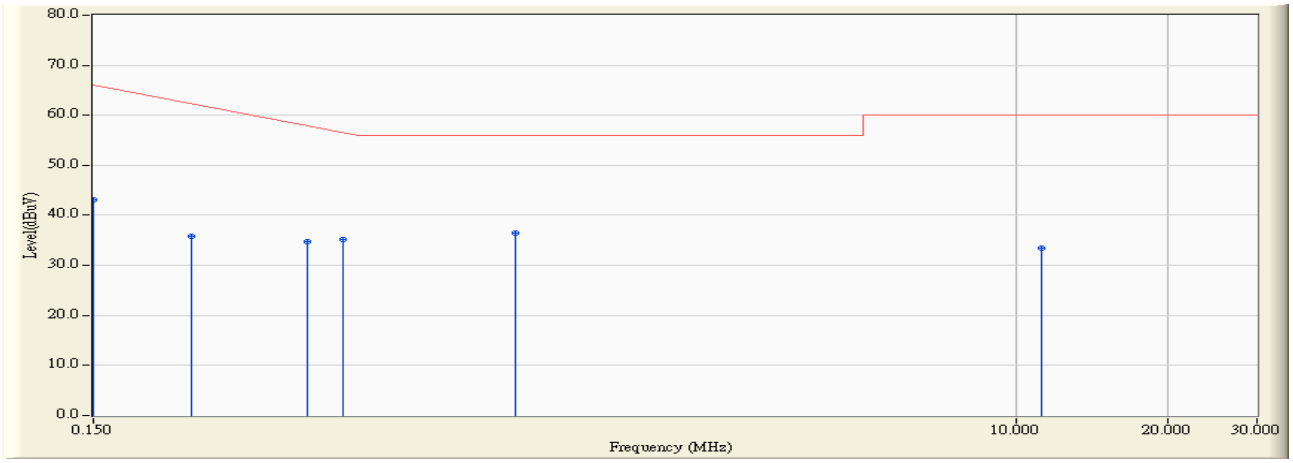
Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Peter	
Site : SR-1 (Conducted Emission and Power Disturbance Test)	**Time : 2009/05/13 - 03:56**
Limit : FCC_Part15_B_00M_QP	**Margin : 0**
EUT : Notebook	**Probe : ENV216_100014(0.009-30MHz) - Line2**
Power : AC 120V/60Hz	**Note : Mode 9: LCD (1366*768@60Hz) + VGA (1366*768@60Hz)**



Engineer : Peter	
Site : SR-1 (Conducted Emission and Power Disturbance Test)	**Time : 2009/05/13 - 03:56**
Limit : FCC_Part15_B_00M_QP	**Margin : 0**
EUT : Notebook	**Probe : ENV216_100014(0.009-30MHz) - Line2**
Power : AC 120V/60Hz	**Note : Mode 9: LCD (1366*768@60Hz) + VGA (1366*768@60Hz)**

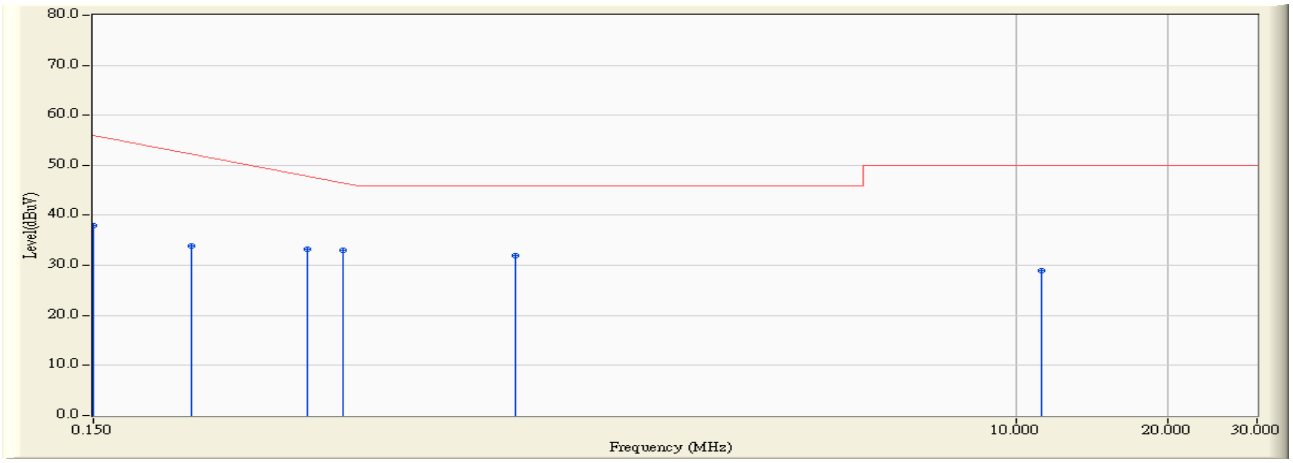


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.150	10.006	33.000	43.006	-22.994	66.000	QUASIPEAK
2		0.234	9.580	26.200	35.780	-27.820	63.600	QUASIPEAK
3		0.398	9.603	25.200	34.803	-24.111	58.914	QUASIPEAK
4		0.466	9.620	25.600	35.220	-21.751	56.971	QUASIPEAK
5	*	1.026	9.770	26.600	36.370	-19.630	56.000	QUASIPEAK
6		11.230	10.020	23.400	33.420	-26.580	60.000	QUASIPEAK

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Peter	
Site : SR-1 (Conducted Emission and Power Disturbance Test)	**Time : 2009/05/13 - 03:56**
Limit : FCC_Part15_B_00M_AV	**Margin : 0**
EUT : Notebook	**Probe : ENV216_100014(0.009-30MHz) - Line2**
Power : AC 120V/60Hz	**Note : Mode 9: LCD (1366*768@60Hz) + VGA (1366*768@60Hz)**



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.150	10.006	28.000	38.006	-17.994	56.000	AVERAGE
2		0.234	9.580	24.300	33.880	-19.720	53.600	AVERAGE
3		0.398	9.603	23.600	33.203	-15.711	48.914	AVERAGE
4	*	0.466	9.620	23.400	33.020	-13.951	46.971	AVERAGE
5		1.026	9.770	22.200	31.970	-14.030	46.000	AVERAGE
6		11.230	10.020	19.000	29.020	-20.980	50.000	AVERAGE

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

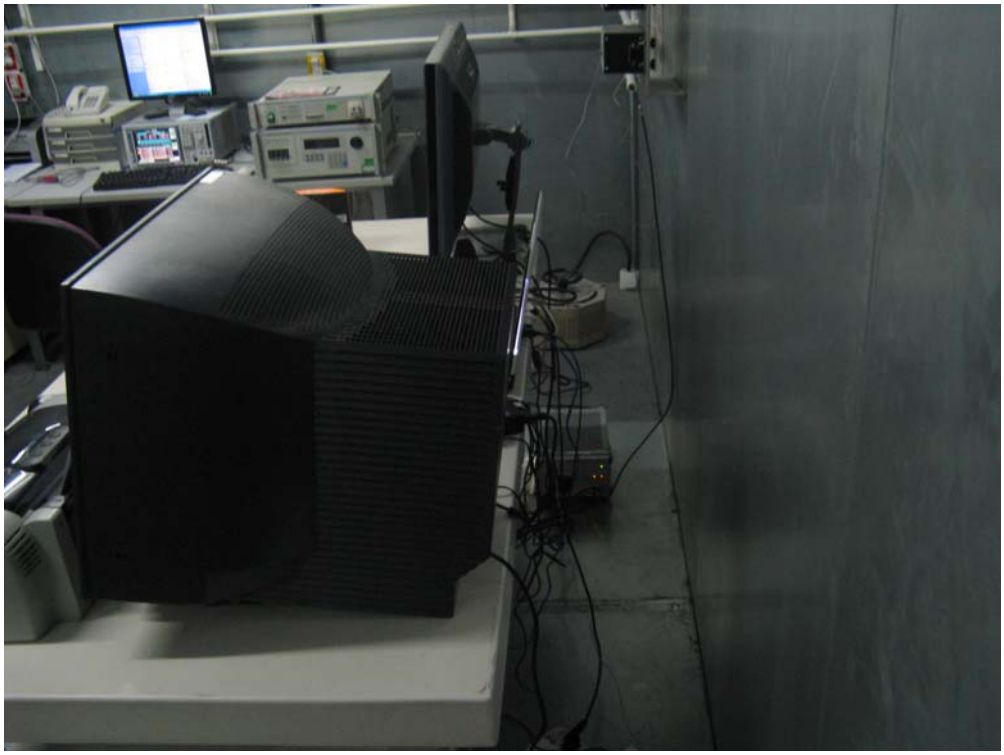
3.7. Test Photograph

Test Mode: Mode 9: LCD (1366*768@60Hz) + VGA (1366*768@60Hz)

Description: Front View of Conducted Emission Test Setup

Test Mode: Mode 9: LCD (1366*768@60Hz) + VGA (1366*768@60Hz)

Description: Back View of Conducted Emission Test Setup



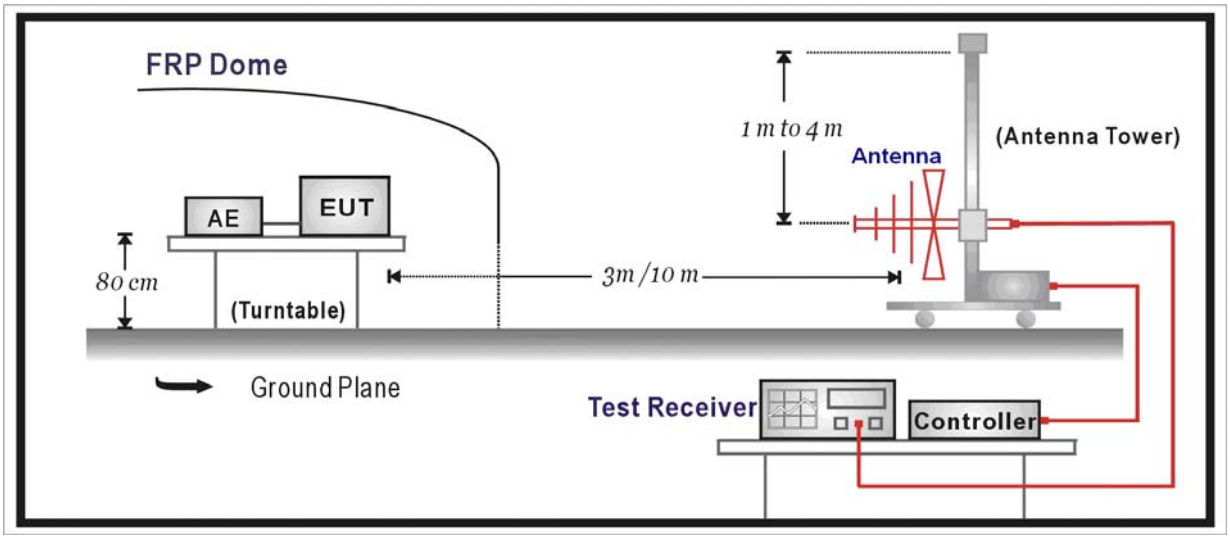
4. Radiated Emission

4.1. Test Specification

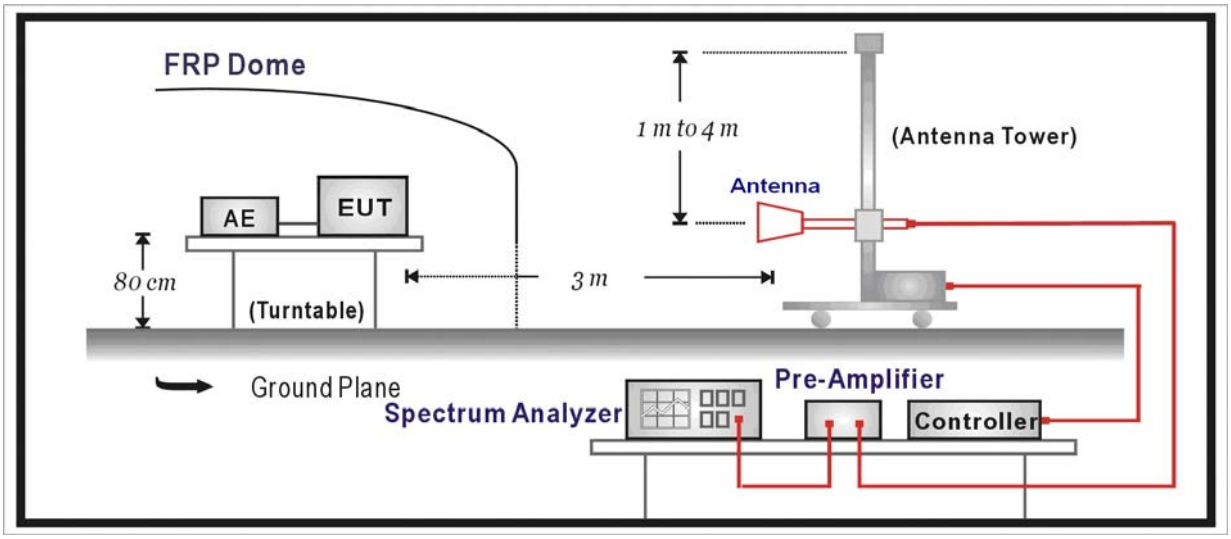
According to EMC Standard: FCC Part 15 Subpart B Class B, ANSI C63.4

4.2. Test Setup

Below 1GHz Test Setup:



Above 1GHz Test Setup:



4.3. Limit

Limits for Class A Equipment		
Frequency (MHz)	Distance (m)	Level (dBuV/m)
30 - 88	10	39
88 - 216	10	43.5
216 - 960	10	46.4
Above 960	10	49.5

Note 1: The lower limit shall apply at the transition frequency.

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.

Limits for Class B Equipment		
Frequency (MHz)	Distance (m)	Level (dBuV/m)
30 - 88	3	40
88 - 216	3	43.5
216 - 960	3	46
Above 960	3	54

Note 1: The lower limit shall apply at the transition frequency.

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.

4.4. Test Procedure

The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 10 meters. The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Both horizontal and vertical polarization of the antenna are set on measurement. In order to

find the maximum emission, all of the interface cables must be manipulated on radiated measurement.

Radiated emissions were invested over the frequency range from 30MHz to1GHz using a receiver bandwidth of 120kHz.

For an unintentional radiator, including a digital device, the spectrum shall be investigated from the lowest radio frequency signal generated or used in the device, without going below the lowest frequency for which a radiated emission limit is specified, up to the frequency shown in the following table:

Highest frequency generated or used in the device or on which the device operates or tunes (MHz)	Upper frequency of measurement range (MHz)
Below 1.705	30
1.705 - 108	1000
108 - 500	2000
500 - 1000	5000
Above 1000	5th harmonic of the highest frequency or 40 GHz, whichever is lower

On any frequency or frequencies below or equal to 1000 MHz, the radiated limits shown are based on measuring equipment employing a quasi-peak detector function and above 1000 MHz, the radiated limits shown are based measuring equipment employing an average detector function.

When average radiated emission measurement are included emission measurement Above 1000 MHz, there also is a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit.

For class A, the measurement distance between the EUT and antenna is 10 meters for under 1GHz and above 1GHz.

For class B, the measurement distance between the EUT and antenna is 3 meters for under 1GHz and 3 meters for above 1GHz.

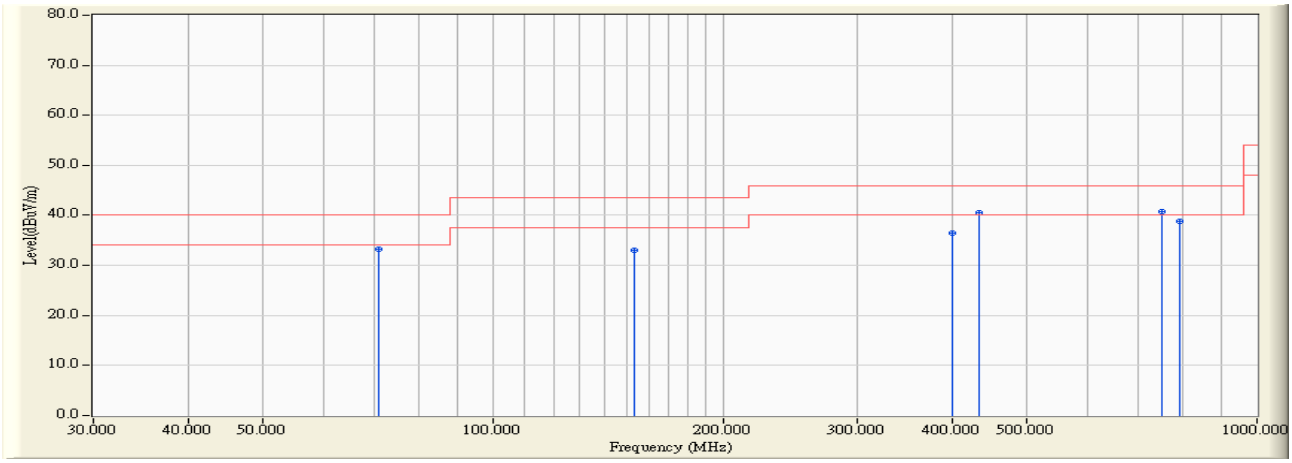
The bandwidth below 1GHz setting on the field strength meter (R&S Test Receiver ESCI) is 120 kHz and above 1GHz is 1MHz.

4.5. Deviation from Test Standard

No deviation.

4.6. Test Result

Engineer : Peter	
Site : AC-3 (3m Semi-Anechoic Chamber)	**Time : 2009/05/07 - 09:15**
Limit : FCC_CLASS_B_03M_QP	**Margin : 6**
EUT : Notebook	**Probe : CBL6112D_22254(30-2000MHz) - HORIZONTAL**
Power : AC 120V/60Hz	**Note : Mode 9: LCD (1366*768@60Hz) + VGA (1366*768@60Hz)**

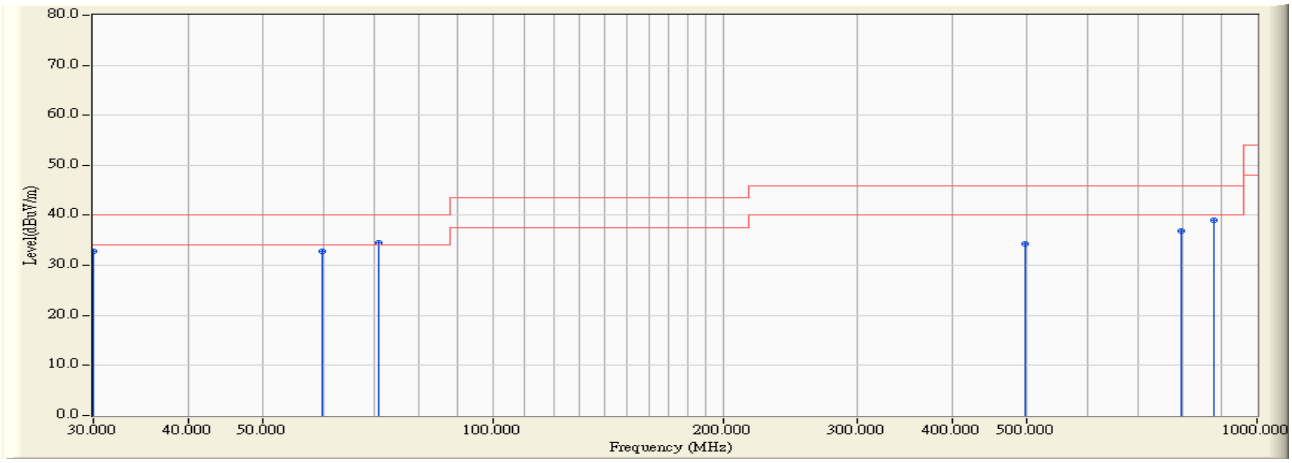


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1		70.815	6.527	26.800	33.327	-6.673	40.000	QUASIPEAK	254.000	342.000
2		153.075	11.029	21.900	32.929	-10.571	43.500	QUASIPEAK	125.300	10.000
3		398.975	17.625	18.900	36.525	-9.475	46.000	QUASIPEAK	100.000	299.800
4		432.650	18.173	22.400	40.573	-5.427	46.000	QUASIPEAK	100.000	128.300
5	*	750.025	22.204	18.600	40.804	-5.196	46.000	QUASIPEAK	100.000	166.300
6		793.210	21.997	16.800	38.797	-7.203	46.000	QUASIPEAK	100.000	73.6.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Peter	
Site : AC-3 (3m Semi-Anechoic Chamber)	**Time : 2009/05/07 - 09:15**
Limit : FCC_CLASS_B_03M_QP	**Margin : 6**
EUT : Notebook	**Probe : CBL6112D_22254(30-2000MHz) - VERTICAL**
Power : AC 120V/60Hz	**Note : Mode 9: LCD (1366*768@60Hz) + VGA (1366*768@60Hz)**

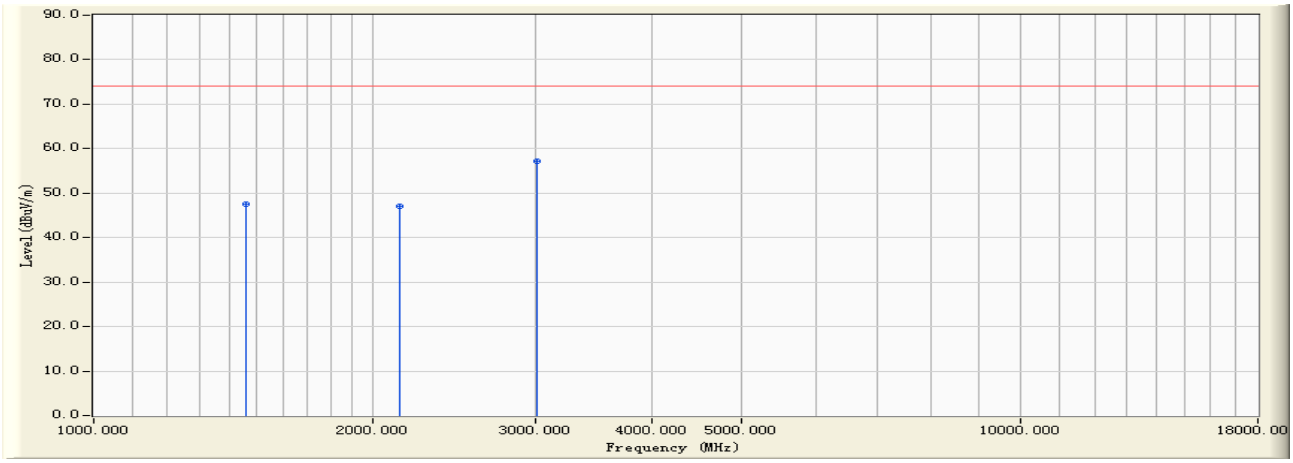


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1		30.000	18.540	14.300	32.840	-7.160	40.000	QUASIPEAK	110.000	60.000
2		59.755	6.579	26.300	32.878	-7.122	40.000	QUASIPEAK	100.000	220.000
3	*	70.895	6.533	28.000	34.533	-5.467	40.000	QUASIPEAK	100.000	240.000
4		498.310	19.283	15.100	34.383	-11.617	46.000	QUASIPEAK	110.000	30.000
5		794.495	22.068	14.900	36.968	-9.032	46.000	QUASIPEAK	120.000	40.000
6		878.025	22.550	16.500	39.050	-6.950	46.000	QUASIPEAK	100.000	50.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Peter	
Site : AC 2 (3m Semi-anechoic Chamber)	**Time : 2009/05/12 - 14:05**
Limit : FCC_B_(Above_1G)_3M_PK	**Margin : 0**
EUT :Notebook	**Probe : BBHA9120D_496(1-18GHz) - HORIZONTAL**
Power : AC 120V/60Hz	**Note : Mode 9: LCD (1366*768@60Hz) + VGA (1366*768@60Hz)**

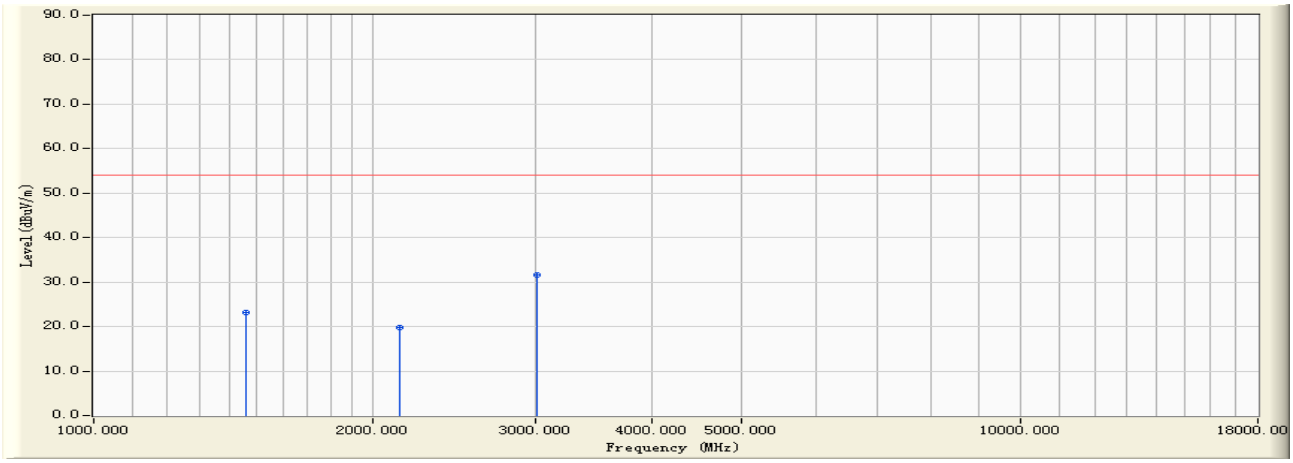


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1		1459.000	-7.070	54.521	47.451	-26.549	74.000	PEAK	100.000	389.200
2		2139.000	-2.820	49.813	46.993	-27.007	74.000	PEAK	100.000	146.800
3	*	3006.000	-1.180	58.403	57.223	-16.777	74.000	PEAK	100.000	28.600

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.
4. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Engineer : Peter	
Site : AC 2 (3m Semi-anechoic Chamber)	**Time : 2009/05/12 - 14:05**
Limit : FCC_B_(Above_1G)_3M_AV	**Margin : 0**
EUT :Notebook	**Probe : BBHA9120D_496(1-18GHz) - HORIZONTAL**
Power : AC 120V/60Hz	**Note : Mode 9: LCD (1366*768@60Hz) + VGA (1366*768@60Hz)**

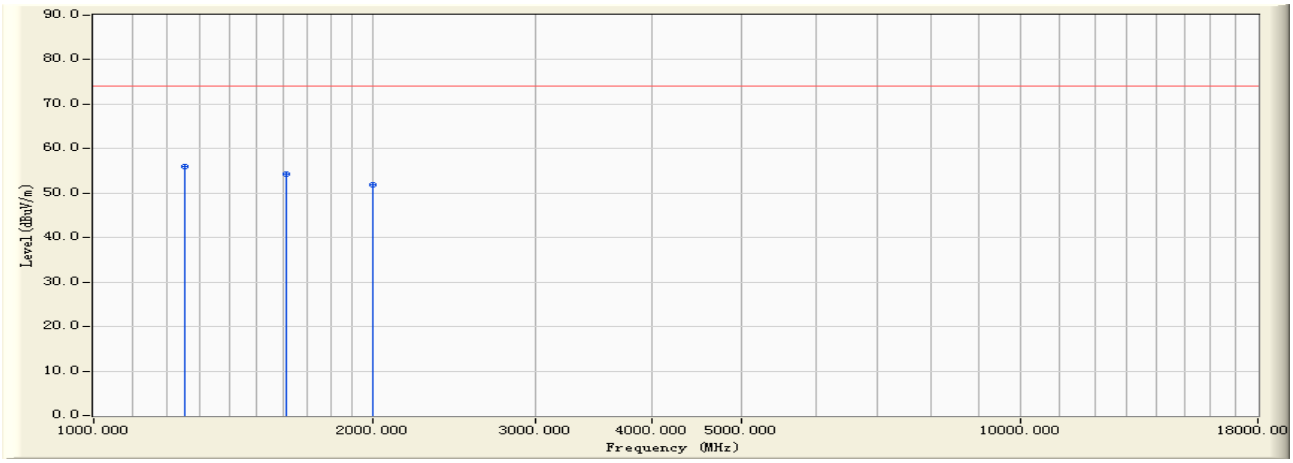


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1		1459.000	-7.070	30.240	23.170	-30.830	54.000	AVERAGE	100.000	389.200
2		2139.000	-2.820	22.590	19.770	-34.230	54.000	AVERAGE	100.000	146.800
3	*	3006.000	-1.180	32.810	31.630	-22.370	54.000	AVERAGE	100.000	28.600

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.
4. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Engineer : Peter	
Site : AC 2 (3m Semi-anechoic Chamber)	**Time : 2009/05/12 - 14:05**
Limit : FCC_B_(Above_1G)_3M_PK	**Margin : 0**
EUT :Notebook	**Probe : BBHA9120D_496(1-18GHz) - VERTICAL**
Power : AC 120V/60Hz	**Note : Mode 9: LCD (1366*768@60Hz) + VGA (1366*768@60Hz)**

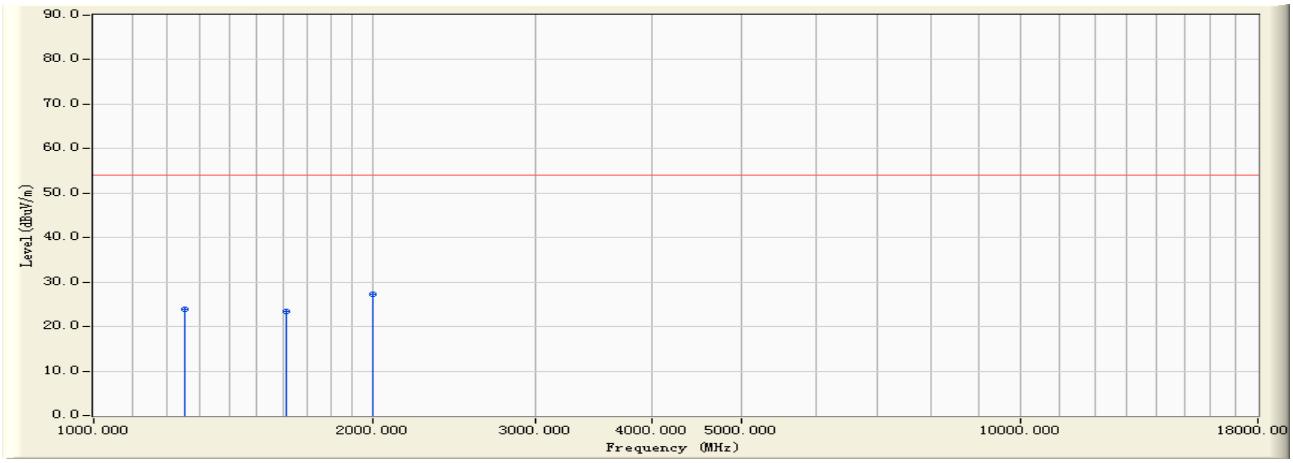


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1	*	1255.000	-7.680	63.635	55.955	-18.045	74.000	PEAK	100.000	158.200
2		1612.000	-7.100	61.284	54.184	-19.816	74.000	PEAK	100.000	316.200
3		2003.000	-5.320	57.262	51.942	-22.058	74.000	PEAK	100.000	221.500

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.
4. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Engineer : Peter	
Site : AC 2 (3m Semi-anechoic Chamber)	**Time : 2009/05/12 - 14:05**
Limit : FCC_B_(Above_1G)_3M_AV	**Margin : 0**
EUT :Notebook	**Probe : BBHA9120D_496(1-18GHz) - VERTICAL**
Power : AC 120V/60Hz	**Note : Mode 9: LCD (1366*768@60Hz) + VGA (1366*768@60Hz)**



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type	Ant Pos (cm)	Table Pos (deg)
1		1255.000	-7.680	31.620	23.940	-30.060	54.000	AVERAGE	100.000	158.200
2		1612.000	-7.100	30.620	23.520	-30.480	54.000	AVERAGE	100.000	316.200
3	*	2003.000	-5.320	32.490	27.170	-26.830	54.000	AVERAGE	100.000	221.500

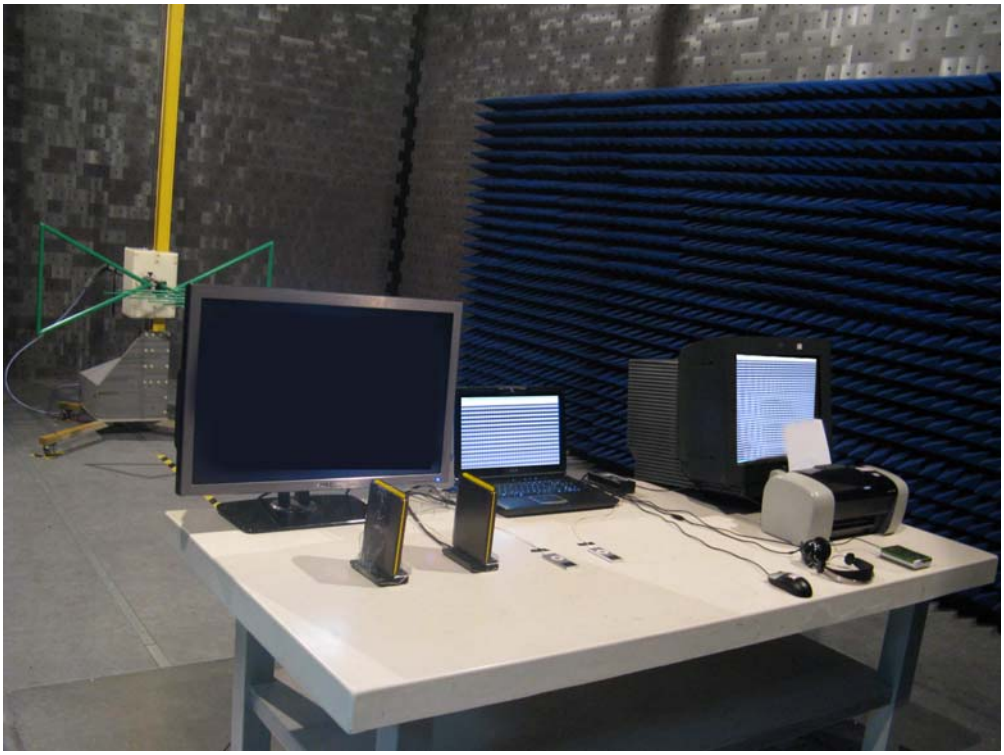
Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.
4. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

4.7. Test Photograph

Test Mode : Mode 9: LCD (1366*768@60Hz) + VGA (1366*768@60Hz)

Description : Front View of Radiated Emission Test Setup (Below 1GHz)



Test Mode : Mode 9: LCD (1366*768@60Hz) + VGA (1366*768@60Hz)

Description : Back View of Radiated Emission Test Setup (Below 1GHz)

Test Mode : Mode 9: LCD (1366*768@60Hz) + VGA (1366*768@60Hz)
Description : Front View of Radiated Emission Test Setup (Above 1GHz)

Test Mode : Mode 9: LCD (1366*768@60Hz) + VGA (1366*768@60Hz)
Description : Back View of Radiated Emission Test Setup (Above 1GHz)

5. Attachment

➢ EUT Photograph

(1) EUT Photo

(2) EUT Photo

(3) EUT Photo

(4) EUT Photo

(5) EUT Photo

(6) EUT Photo

(7) EUT Photo

(8) EUT Photo

(9) EUT Photo

(10) EUT Photo