FCC Part15 Subpart C Test Report

Product Name	:	Notebook
Model No.	:	SZ901P
FCC ID	:	WXC-SZ901PWB

Applicant	：	FOXCONN INTERNATIONAL INC
Address	：	2 TZU YU ST TU-CHENG, TAIPEI HSIEN 236 TAIWAN

Date of Receipt	:	Nov. 26, 2009
Test Date	:	Nov. 26, 2009 ~ Dec. 05, 2009
Issued Date	:	Dec. 08, 2009
Report No.	:	09BS145R-RF-US-P05V01
Report Version	:	V1.0

Test Report Certification

Issued Date : Dec. 08, 2009
Report No. : 09BS145R-RF-US-P05V01

QuieTek

Product Name	:	Notebook
Applicant	:	FOXCONN INTERNATIONAL INC
Address	:	2 TZU YU ST TU-CHENG, TAIPEI HSIEN 236 TAIWAN
Manufacturer	:	FOXCONN INTERNATIONAL INC
Address	:	2 TZU YU ST TU-CHENG, TAIPEI HSIEN 236 TAIWAN
Model No.	:	SZ901P
FCC ID	:	WXC-SZ901PWB
EUT Voltage	:	19Vdc
Trade Name	:	Foxconn
Applicable Standard	:	FCC CFR Title 47 Part 15 Subpart C: 2008 ANSI C63.4: 2003
Test Result	:	Complied
Performed Location	:	SuZhou EMC laboratory No.99 Hongye Rd., Suzhou Industrial Park Loufeng Hi-Tech Development Zone., SuZhou, China TEL: +86-512-6251-5088 / FAX: +86-512-6251-5098 FCC Registration Number: 800392

Documented By : Alice Ni
(Engineering ADM: Alice Ni)

Reviewed By : Marlin Chen
(Engineering Supervisor: Marlin Chen)

Approved By : Dream Cao
(Engineering Manager: Dream Cao)

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.
TEL:+886-3-592-8858 / FAX:+886-3-592-8859 E-Mail : service@quietek.com

NVLAP Lab Code : 200347-0
1313

LinKou Testing Laboratory :
No. 5, Ruei-Shu Valley, Ruei-Ping Tsuen, Lin-Kou Shiang, Taipei, Taiwan, R.O.C.
TEL : +886-2-8601-3788 / FAX : 886-2-8601-3789 E-Mail : service@quietek.com

NVLAP Lab Code: 200533-0
0914

Suzhou Testing Laboratory :
No.99 Hongye Rd., Suzhou Industrial Park Loufeng Hi-Tech Development Zone., SuZhou, China
TEL : +86-512-6251-5088 / FAX : 86-512-6251-5098 E-Mail : service@quietek.com

NVLAP Lab Code : 200743-0
1596

TABLE OF CONTENTS

1. General Information

1.1. EUT Description

Product Name	Notebook
Trade Name	Foxconn
Model No.	SZ901P
EUT Voltage	19Vdc
WLAN Module	T77H121.04 (AR5B95)
Frequency Range	802.11b/g/n(20MHz): 2412~2462MHz 802.11n(40MHz): 2422~2452MHz
Channel Number	802.11b/g/n(20MHz): 11 802.11n(40MHz): 7
Tech. of Modulation	802.11b: DSSS
	802.11g/n: OFDM
Data Rate	802.11g: 6/9/12/18/24/36/48/54 Mbps
	802.11b: 1/2/5.5/11 Mbps
	802.11n: up to 270 Mbps
Channel Control	Auto
Antenna Delivery	1*Tx + 2*Rx
Antenna Type	PIFA
Peak Antenna Gain	0.75dBi for 2.4GHz band
AC Adapter	Manufacturer: Chicony M/N: CPA09-002A Input: 100-240V~50/60Hz 2.5A Output: 19Vdc, 2.1A

Channel List

802.11b/g/n(20MHz) Working Frequency of Each Channel:							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
01	2412 MHz	02	2417 MHz	03	2422 MHz	04	2427 MHz
05	2432 MHz	06	2437 MHz	07	2442 MHz	08	2447 MHz
09	2452 MHz	10	2457 MHz	11	2462 MHz	N/A	N/A
802.11n(40MHz) Working Frequency of Each Channel:							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
03	2422 MHz	04	2427 MHz	05	2432 MHz	06	2437 MHz
07	2442 MHz	08	2447 MHz	09	2452 MHz	N/A	N/A

Antenna Information:

Antenna	Manufacturer	Model No.	Antenna Gain(dBi)
802.11bgn Antenna	Foxconn	SZ901	0.75dBi for 2.4G

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:

Test Mode
Mode 1: Transmit by 802.11b
Mode 2: Transmit by 802.11g
Mode 3: Transmit by 802.11 n (20MHz)
Mode 4: Transmit by 802.11n (40MHz)

Note:

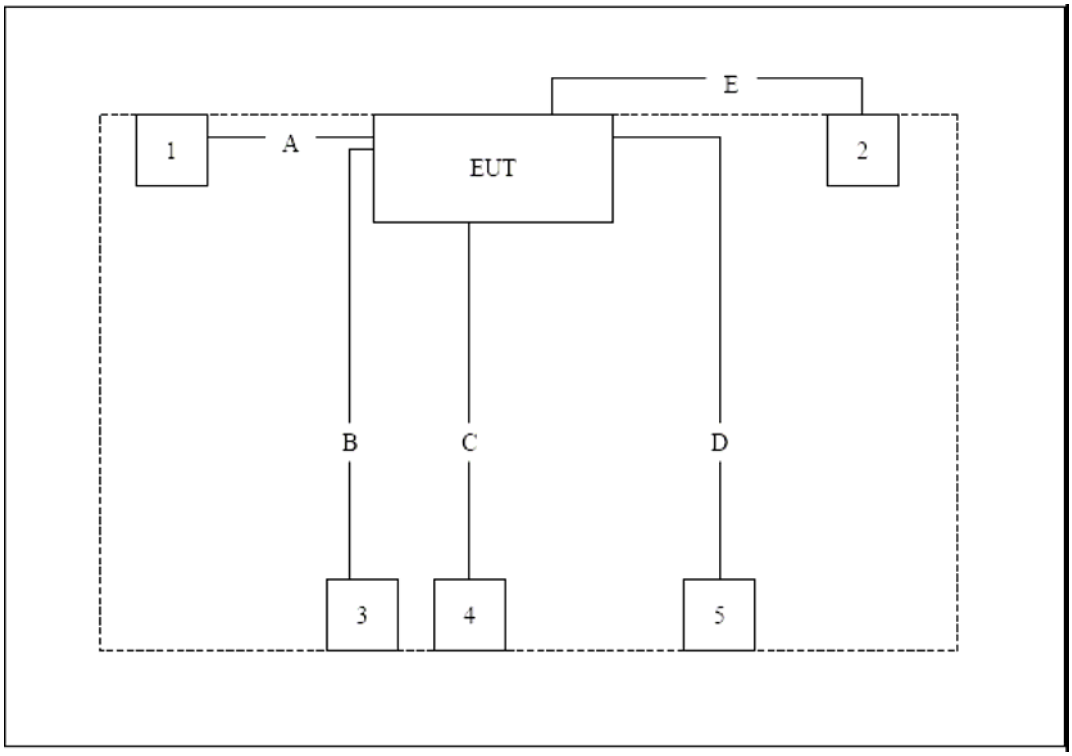
1. Regards to the frequency band operation: the lowest、middle and highest frequency of channel were selected to perform the test, then shown on this report.
2. This device is a composite device in accordance with Part 15 Subpart B regulations. The function for the receiver was measured and made a test report that the report number is 09C023R- ITUSP01V02.

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	Lenovo	L2240pwD	9M0337992301042	Non-Shielded, 1.8m
2	Printer	EPSON	P950A	3KTE013597	Non-Shielded, 1.8m
3	Microphone & Earphone	SOMIC	CD-2688M.V	N/A	N/A
4	iPod	Apple	A1199	6U715UPHVQ5	Power by PC
5	USB Mouse	DELL	MO56UOA	F1B03EZZ	Power by PC

1.4. Configuration of Tested System

Connection Diagram


Signal Cable Type		Signal cable Description
A	VGA Cable	Shielded, 1.8m, with two ferrite core bonded
B	Earphone & Microphone Cable	Non-Shielded, 2.1m
C	USB Cable	Shielded, 1.0m
D	USB Cable	Shielded, 1.8m
E	USB Cable	Non-Shielded, 1.8m

1.5. EUT Exercise Software

1	Setup the EUT and simulators as shown on above
2	Turn on the power of equipment.
3	Run control software “ART” provided by applicant.
4	Select test channel and test mode for test.

2. Technical Test

2.1. Summary of Test Result

☒ No deviations from the test standards

☐ Deviations from the test standards as below description:

Performed Test Item	Normative References	Test Performed	Deviation
Conducted Emission	FCC CFR Title 47 Part 15 Subpart C: 2008 Section 15.207	Yes	No
Radiated Emission	FCC CFR Title 47 Part 15 Subpart C: 2008 Section 15.209	Yes	No
RF Antenna Conducted Spurious	FCC CFR Title 47 Part 15 Subpart C: 2008 Section 15.247(d)	Yes	No
Radiated Emission Band Edge	FCC CFR Title 47 Part 15 Subpart C: 2008 15.247(d)	Yes	No
Operation Frequency Range of 20dB Bandwidth	FCC CFR Title 47 Part 15 Subpart C: 2008 15.215(c)	Yes	No
Occupied Bandwidth	FCC CFR Title 47 Part 15 Subpart C: 2008 Section 15.247(a)(2)	Yes	No
Power Output	FCC CFR Title 47 Part 15 Subpart C: 2008 Section 15.247(b)(3)	Yes	No
Power Spectral Density	FCC CFR Title 47 Part 15 Subpart C: 2008 Section 15.247(e)	Yes	No

2.2. Test Environment

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	21
Humidity (%RH)	25-75	50
Barometric pressure (mbar)	860-1060	950-1000

3. Conducted Emission

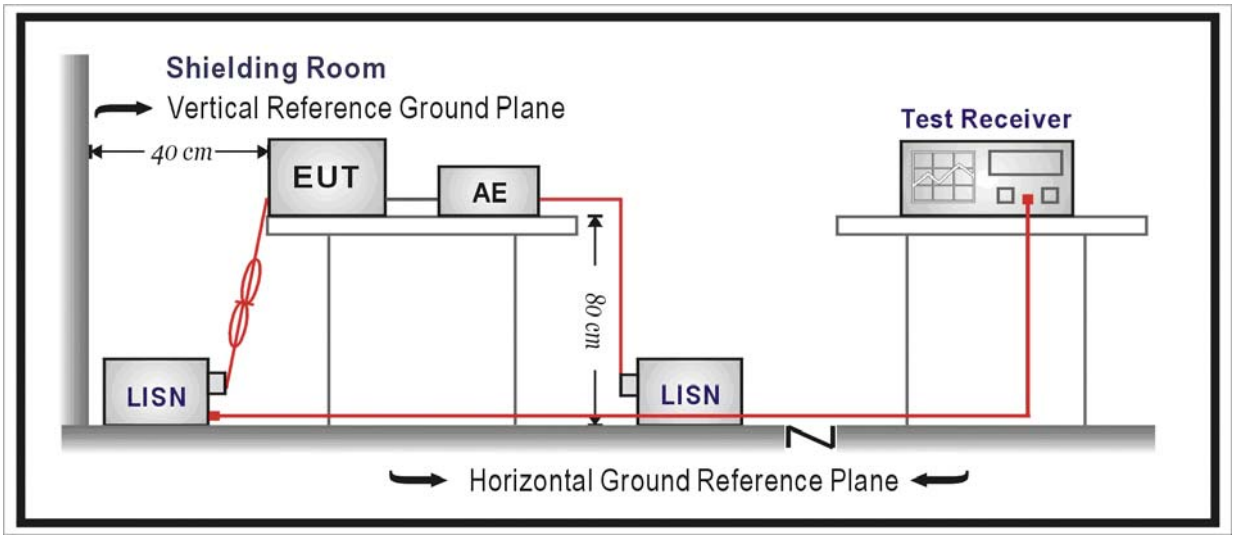
3.1. Test Equipment

Conducted Emission / SR-1

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
EMI Test Receiver	R&S	ESCI	100726	2009/02/07
Two-Line V-Network	R&S	ENV216	100013	2009/11/15
Two-Line V-Network	R&S	ENV216	100014	2009/11/15
50ohm Coaxial Switch	Anritsu	MP59B	6200464462	2009/11/25
50ohm Termination	SHX	TF2	07081401	2009/10/19
Coaxial Cable	Luthi	RG214	519358	2009/11/25
Temperature/Humidity Meter	zhicheng	ZC1-2	QT-TH004	2009/03/31

Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

3.2. Test Setup



3.3. Limit

FCC Part 15 Subpart C Paragraph 15.207 Limits		
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

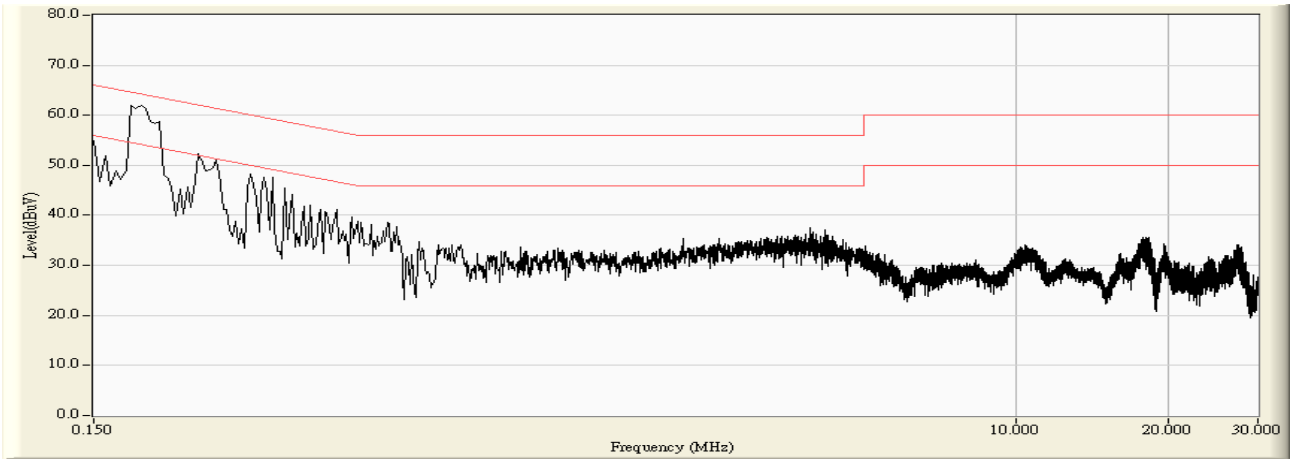
The EUT was setup according to ANSI C63.4, 2003 and tested according to DTS test procedure of Oct 2002 KDB558074 for compliance to FCC 47CFR 15.247 requirements.
The EUT was placed on a platform of nominal size, 1 m by 1.5 m, raised 80 cm above the conducting ground plane. The vertical conducting plane was located 40 cm to the rear of the EUT. All other surfaces of EUT were at least 80 cm from any other grounded conducting surface. The EUT and simulators are connected to the main power through a line impedance stabilization network (LISN). The LISN provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN. (Please refer to the block diagram of the test setup and photographs)
Each current-carrying conductor of the EUT power cord, except the ground (safety) conductor, was individually connected through a LISN to the input power source.
The excess length of the power cord between the EUT and the LISN receptacle were folded back and forth at the center of the lead to form a bundle not exceeding 40 cm in length.
Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9 kHz.

3.5. Uncertainty

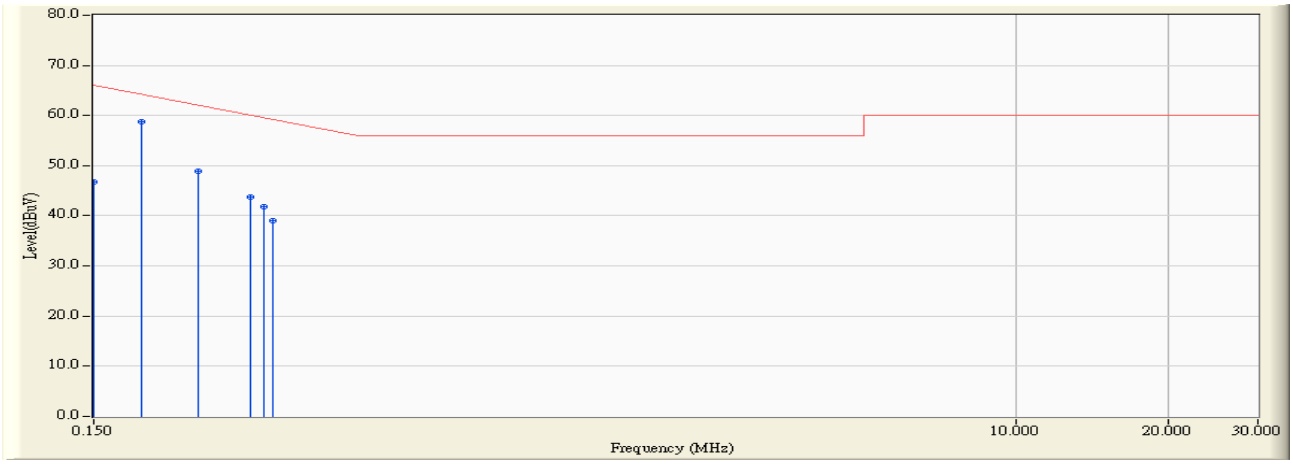
The measurement uncertainty is defined as ± 2.02 dB

3.6. Test Result

Engineer : Jame	
Site : SR-1 (Conducted Emission and Power Disturbance Test)	**Time : 2009/12/01 - 09:25**
Limit : FCC_Part15_207_00M_QP	**Margin : 10**
Probe : ENV216_100014(0.009-30MHz) - Line1	**Power : AC 120V/60Hz**
EUT : Notebook	**Note : Mode 1**

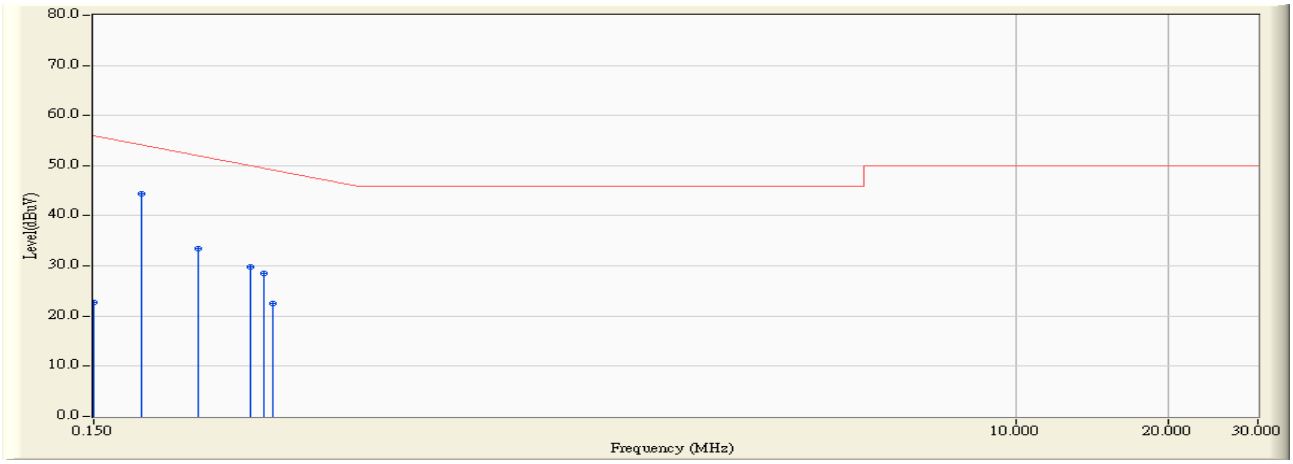


Engineer : Jame	
Site : SR-1 (Conducted Emission and Power Disturbance Test)	**Time : 2009/12/01 - 09:27**
Limit : FCC_Part15_207_00M_QP	**Margin : 0**
Probe : ENV216_100014(0.009-30MHz) - Line1	**Power : AC 120V/60Hz**
EUT : Notebook	**Note : Mode 1**



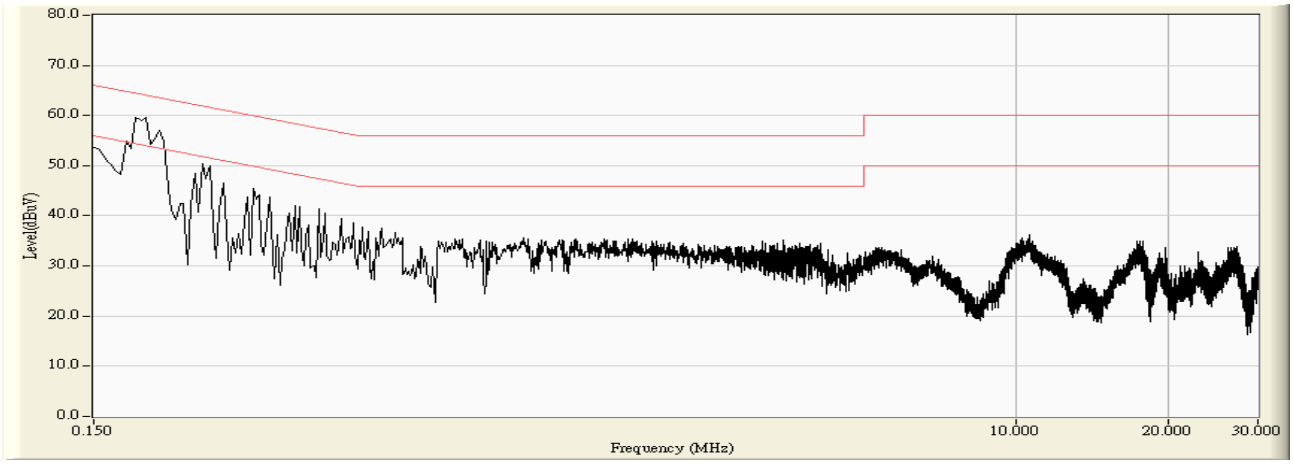
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.150	10.160	36.500	46.660	-19.340	66.000	QUASIPEAK
2	*	0.186	9.697	49.100	58.797	-5.416	64.213	QUASIPEAK
3		0.242	9.455	39.500	48.955	-13.072	62.027	QUASIPEAK
4		0.306	9.508	34.200	43.708	-16.370	60.078	QUASIPEAK
5		0.326	9.521	32.300	41.821	-17.731	59.552	QUASIPEAK
6		0.338	9.529	29.400	38.929	-20.323	59.252	QUASIPEAK

Engineer : Jame	
Site : SR-1 (Conducted Emission and Power Disturbance Test)	**Time : 2009/12/01 - 09:27**
Limit : FCC_Part15_207_00M_AV	**Margin : 0**
Probe : ENV216_100014(0.009-30MHz) - Line1	**Power : AC 120V/60Hz**
EUT : Notebook	**Note : Mode 1**

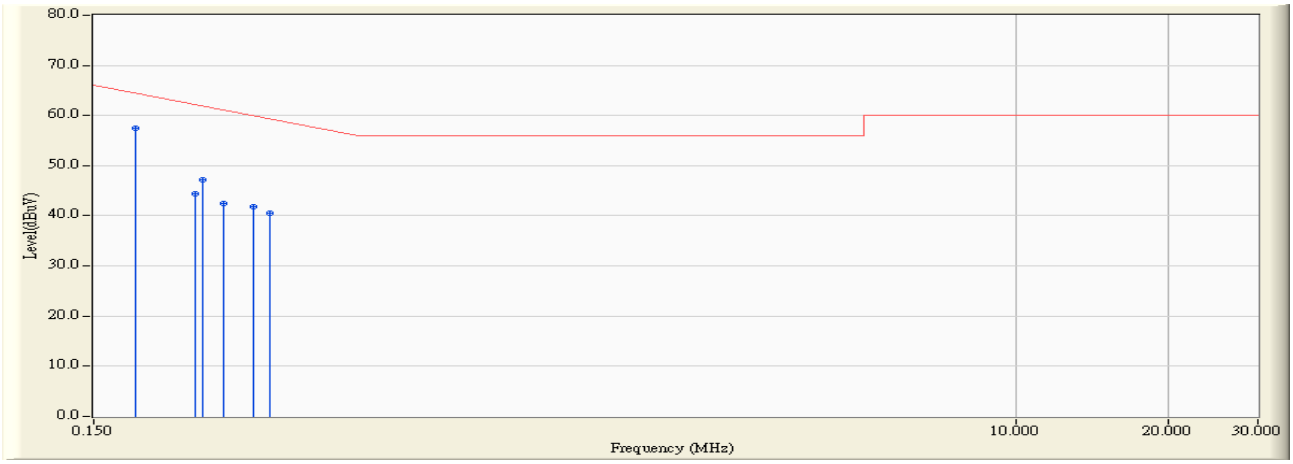


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.150	10.160	12.600	22.760	-33.240	56.000	AVERAGE
2	*	0.186	9.697	34.800	44.497	-9.716	54.213	AVERAGE
3		0.242	9.455	24.000	33.455	-18.572	52.027	AVERAGE
4		0.306	9.508	20.200	29.708	-20.370	50.078	AVERAGE
5		0.326	9.521	18.900	28.421	-21.131	49.552	AVERAGE
6		0.338	9.529	12.900	22.429	-26.823	49.252	AVERAGE

Engineer : Jame	
Site : SR-1 (Conducted Emission and Power Disturbance Test)	**Time : 2009/12/01 - 09:28**
Limit : FCC_Part15_207_00M_QP	**Margin : 10**
Probe : ENV216_100014(0.009-30MHz) - Line2	**Power : AC 120V/60Hz**
EUT : Notebook	**Note : Mode 1**

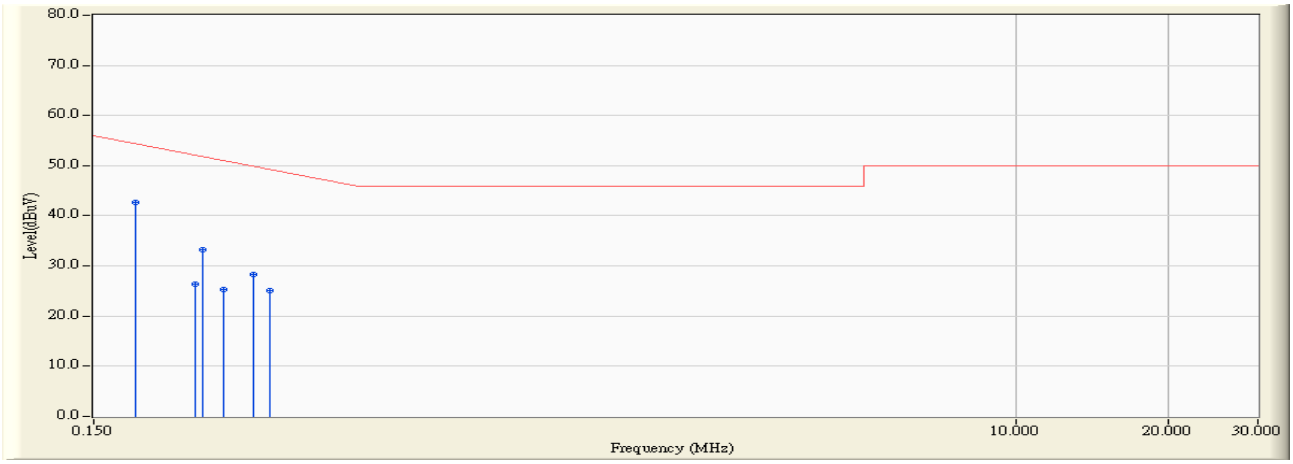


Engineer : Jame	
Site : SR-1 (Conducted Emission and Power Disturbance Test)	**Time : 2009/12/01 - 09:30**
Limit : FCC_Part15_207_00M_QP	**Margin : 0**
Probe : ENV216_100014(0.009-30MHz) - Line2	**Power : AC 120V/60Hz**
EUT : Notebook	**Note : Mode 1**



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1	*	0.182	9.776	47.800	57.576	-6.818	64.394	QUASIPEAK
2		0.238	9.580	34.800	44.380	-17.786	62.166	QUASIPEAK
3		0.246	9.580	37.700	47.280	-14.611	61.891	QUASIPEAK
4		0.270	9.587	32.800	42.387	-18.731	61.118	QUASIPEAK
5		0.310	9.600	32.200	41.800	-18.170	59.970	QUASIPEAK
6		0.334	9.600	30.900	40.500	-18.851	59.351	QUASIPEAK

Engineer : Jame	
Site : SR-1 (Conducted Emission and Power Disturbance Test)	**Time : 2009/12/01 - 09:30**
Limit : FCC_Part15_207_00M_AV	**Margin : 0**
Probe : ENV216_100014(0.009-30MHz) - Line2	**Power : AC 120V/60Hz**
EUT : Notebook	**Note : Mode 1**



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1	*	0.182	9.776	33.000	42.776	-11.618	54.394	AVERAGE
2		0.238	9.580	16.900	26.480	-25.686	52.166	AVERAGE
3		0.246	9.580	23.600	33.180	-18.711	51.891	AVERAGE
4		0.270	9.587	15.700	25.287	-25.831	51.118	AVERAGE
5		0.310	9.600	18.800	28.400	-21.570	49.970	AVERAGE
6		0.334	9.600	15.400	25.000	-24.351	49.351	AVERAGE

4. Radiated Emission

4.1. Test Equipment

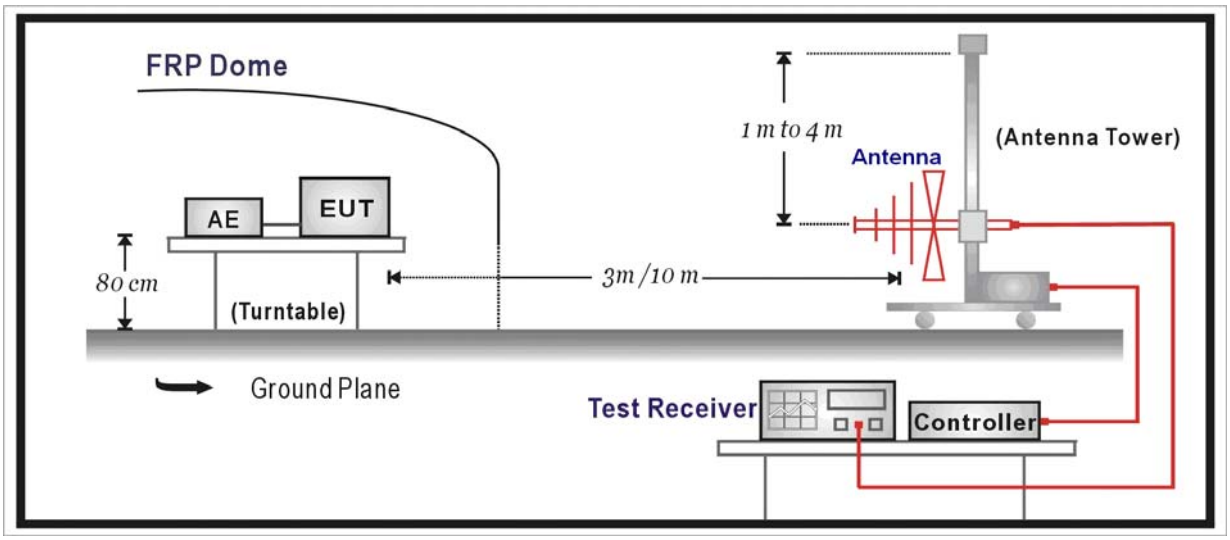
☒Radiated Emission / AC-5

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	N9010A	MY48030494	2009.04.23
EMI Test Receiver	R&S	ESCI	100906	2009.02.16
Preamplifier	Quietek	AP-180C	CHM-0602013	2009.05.25
Preamplifier	QuieTek	AP-040G	CHM-0906001	2009.06.18
Bilog Antenna	Teseq GmbH	CBL6112D	27612	2009.02.25
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	499	2009.06.11
High-Pass Filter	Wainwright	WHKX2.8/18G-12SS	SN1	2009.03.03
High-Pass Filter	Wainwright	WHKX7.0/18G-8SS	SN16	2009.03.03
Lowpass Filter	Wainwright	WLKS4500-9SS	SN2	2009.03.03
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C1	2009.05.25
Coaxial Cable	Huber+Suhner	SUCOFLEX 102	AC5-C2	2009.05.25
Temperature/Humidity Meter	Zhicheng	ZC1-2	AC5-TH	2009.03.31

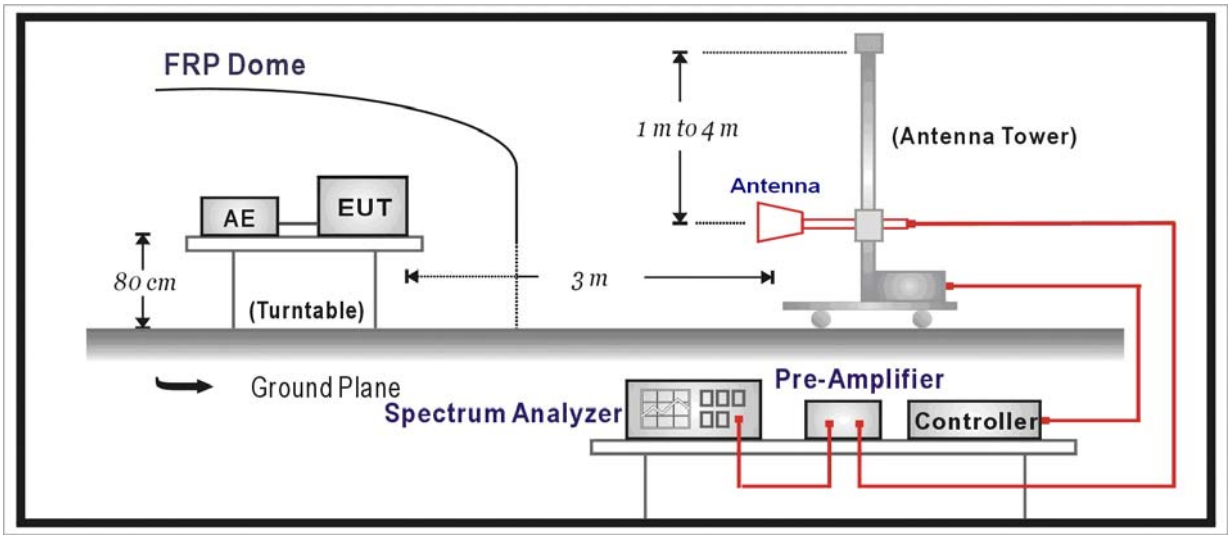
Note 1: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

4.2. Test Setup

Below 1GHz Test Setup:



Above 1GHz Test Setup:



4.3. Limit

FCC Part 15 Subpart C Paragraph 15.209		
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.

Note 3: E field strength (dBuV/m) = 20 log E field strength (uV/m)

4.4. Test Procedure

The EUT was setup according to ANSI C63.4, 2003 and tested according to DTS test procedure of Oct 2002 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

The EUT is placed on a turn table which is 0.8 meter above ground. The turn table is rotated 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 3 meters.

The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.4:2003 on radiated measurement.

The resolution bandwidth below 1GHz setting on the field strength meter is 120 kHz and above 1GHz is 1MHz.

The frequency range from 30MHz to 10th harmonic is checked.

Note: When doing emission measurement above 1GHz, the horn antenna will be bended down a little (as horn antenna has the narrow beamwidth) in order to keeping the antenna in the “cone of radiation” of EUT. The 3dB beamwidth is 10~60 degrees for H-plane and 10~90 degrees for E-plane.

4.5. Uncertainty

The measurement uncertainty above 1G is defined as ± 3.9 dB

below 1G is defined as ± 3.8 dB

4.6. Test Result

All of the test result shown indicates the worst case, and spectrum analyzer parameters setting as shown below:
Peak detector: RBW = 1MHz, VBW = 3MHz, sweep time = 200ms;
Average detector: RBW = 1MHz, VBW = 10Hz, sweep time = auto.
Measure Level = Reading Level + Cable Loss + Antenna Factor - Preamplifier Gain

802.11b

CH	Antenna	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	V	2413.6	77.7	31.1	108.8	Fundamental	/	PK
	V	191.9	23.6	15.0	38.6	43.5	-4.9	QP
	H	336.8	25.8	16.6	42.4	46	-3.6	QP
	V	2989.0	50.1	-4.4	45.7	54	-8.3	PK
	V	4264.0	44.9	-1.3	43.6	54	-10.4	PK
	H	11120.0	40.2	12.7	52.9	54	-1.1	PK
	V	24000.0	59.1	-8.9	50.2	54	-3.8	PK
6	V	2435.3	77.3	31.2	108.5	Fundamental	/	PK
	V	191.9	23.6	15.0	38.6	43.5	-4.9	QP
	H	336.8	25.8	16.6	42.4	46	-3.6	QP
	V	2989.0	50.1	-4.4	45.7	54	-8.3	PK
	V	4264.0	44.9	-1.3	43.6	54	-10.4	PK
	H	11120.0	40.2	12.7	52.9	54	-1.1	PK
	V	24000.0	59.1	-8.9	50.2	54	-3.8	PK
11	V	2463.2	75.0	31.2	106.2	Fundamental	/	PK
	V	191.9	23.6	15.0	38.6	43.5	-4.9	QP
	H	336.8	25.8	16.6	42.4	46	-3.6	QP
	V	2989.0	50.1	-4.4	45.7	54	-8.3	PK
	V	4264.0	44.9	-1.3	43.6	54	-10.4	PK
	H	11120.0	40.2	12.7	52.9	54	-1.1	PK
	V	24000.0	59.1	-8.9	50.2	54	-3.8	PK

802.11g

CH	Antenna	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	V	2414.7	80.7	31.1	111.8	Fundamental	/	PK
	V	191.9	23.6	15.0	38.6	43.5	-4.9	QP
	H	336.8	25.8	16.6	42.4	46	-3.6	QP
	V	2989.0	50.1	-4.4	45.7	54	-8.3	PK
	V	4264.0	44.9	-1.3	43.6	54	-10.4	PK
	H	11120.0	40.2	12.7	52.9	54	-1.1	PK
	V	24000.0	59.1	-8.9	50.2	54	-3.8	PK
6	V	2435.1	81.1	31.2	112.3	Fundamental	/	PK
	V	191.9	23.6	15.0	38.6	43.5	-4.9	QP
	H	336.8	25.8	16.6	42.4	46	-3.6	QP
	V	2989.0	50.1	-4.4	45.7	54	-8.3	PK
	V	4264.0	44.9	-1.3	43.6	54	-10.4	PK
	H	11120.0	40.2	12.7	52.9	54	-1.1	PK
	V	24000.0	59.1	-8.9	50.2	54	-3.8	PK
11	V	2457.1	78.0	31.2	109.2	Fundamental	/	PK
	V	191.9	23.6	15.0	38.6	43.5	-4.9	QP
	H	336.8	25.8	16.6	42.4	46	-3.6	QP
	V	2989.0	50.1	-4.4	45.7	54	-8.3	PK
	V	4264.0	44.9	-1.3	43.6	54	-10.4	PK
	H	11120.0	40.2	12.7	52.9	54	-1.1	PK
	V	24000.0	59.1	-8.9	50.2	54	-3.8	PK

802.11n(20MHz)

CH	Antenna	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	V	2414.5	79.2	31.1	110.3	Fundamental	/	PK
	V	191.9	23.6	15.0	38.6	43.5	-4.9	QP
	H	336.8	25.8	16.6	42.4	46	-3.6	QP
	V	2989.0	50.1	-4.4	45.7	54	-8.3	PK
	V	4264.0	44.9	-1.3	43.6	54	-10.4	PK
	H	11120.0	40.2	12.7	52.9	54	-1.1	PK
	V	24000.0	59.1	-8.9	50.2	54	-3.8	PK
6	V	2439.3	81.4	31.2	112.6	Fundamental	/	PK
	V	191.9	23.6	15.0	38.6	43.5	-4.9	QP
	H	336.8	25.8	16.6	42.4	46	-3.6	QP
	V	2989.0	50.1	-4.4	45.7	54	-8.3	PK
	V	4264.0	44.9	-1.3	43.6	54	-10.4	PK
	H	11120.0	40.2	12.7	52.9	54	-1.1	PK
	V	24000.0	59.1	-8.9	50.2	54	-3.8	PK
11	V	2459.8	77.1	31.2	108.3	Fundamental	/	PK
	V	191.9	23.6	15.0	38.6	43.5	-4.9	QP
	H	336.8	25.8	16.6	42.4	46	-3.6	QP
	V	2989.0	50.1	-4.4	45.7	54	-8.3	PK
	V	4264.0	44.9	-1.3	43.6	54	-10.4	PK
	H	11120.0	40.2	12.7	52.9	54	-1.1	PK
	V	24000.0	59.1	-8.9	50.2	54	-3.8	PK

802.11n(40MHz)

CH	Antenna	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
3	V	2418.6	71.1	31.2	102.3	Fundamental	/	PK
	V	191.9	23.6	15.0	38.6	43.5	-4.9	QP
	H	336.8	25.8	16.6	42.4	46	-3.6	QP
	V	2989.0	50.1	-4.4	45.7	54	-8.3	PK
	V	4264.0	44.9	-1.3	43.6	54	-10.4	PK
	H	11120.0	40.2	12.7	52.9	54	-1.1	PK
	V	24000.0	59.1	-8.9	50.2	54	-3.8	PK
6	V	2435.3	76.3	31.2	107.5	Fundamental	/	PK
	V	191.9	23.6	15.0	38.6	43.5	-4.9	QP
	H	336.8	25.8	16.6	42.4	46	-3.6	QP
	V	2989.0	50.1	-4.4	45.7	54	-8.3	PK
	V	4264.0	44.9	-1.3	43.6	54	-10.4	PK
	H	11120.0	40.2	12.7	52.9	54	-1.1	PK
	V	24000.0	59.1	-8.9	50.2	54	-3.8	PK
9	V	2438.5	73.5	31.2	104.7	Fundamental	/	PK
	V	191.9	23.6	15.0	38.6	43.5	-4.9	QP
	H	336.8	25.8	16.6	42.4	46	-3.6	QP
	V	2989.0	50.1	-4.4	45.7	54	-8.3	PK
	V	4264.0	44.9	-1.3	43.6	54	-10.4	PK
	H	11120.0	40.2	12.7	52.9	54	-1.1	PK
	V	24000.0	59.1	-8.9	50.2	54	-3.8	PK

Note 1: This limit applies for using average detector, if the test result on peak is lower than average limit, then average measurement needn't be performed.

5. RF Antenna Conducted Spurious

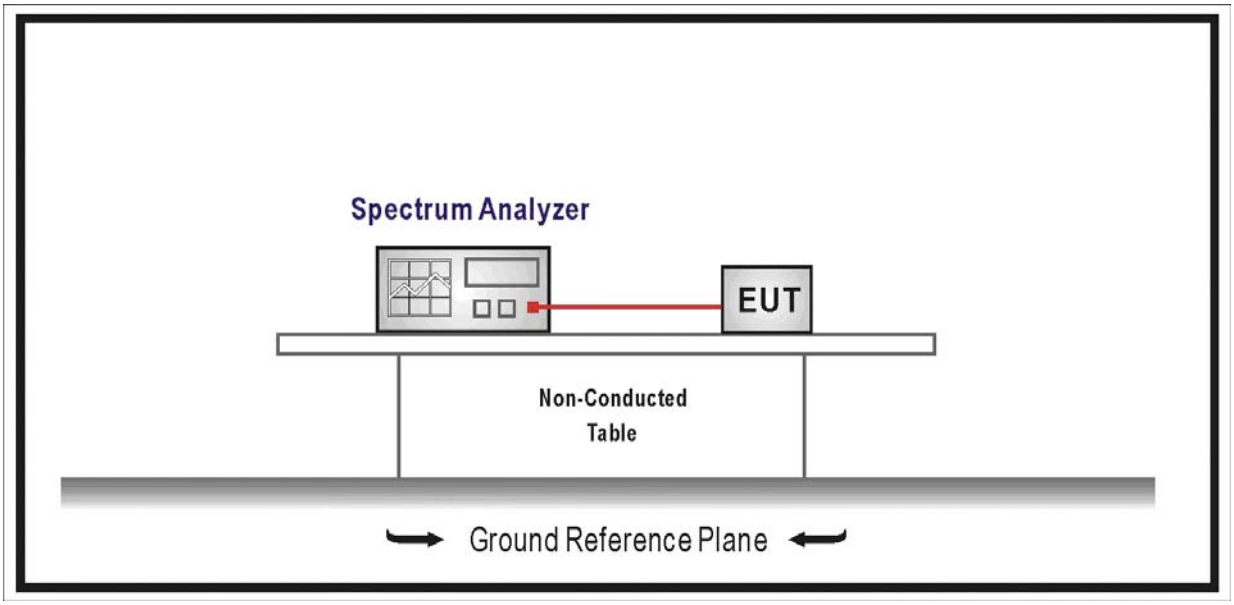
5.1. Test Equipment

RF Antenna Conducted Spurious / AC-6

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	N9020A	MY49100159	2009/05/06
Temperature/Humidity Meter	zhicheng	ZC1-2	QT-TH007	2009/03/30

Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

5.2. Test Setup



5.3. Limit

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.

5.4. Test Procedure

The EUT was tested according to DTS test procedure of Oct 2002 KDB558074 for compliance to FCC 47CFR 15.247 requirements.
Set RBW = 100 kHz, Set VBW > RBW, scan up through 10th harmonic.

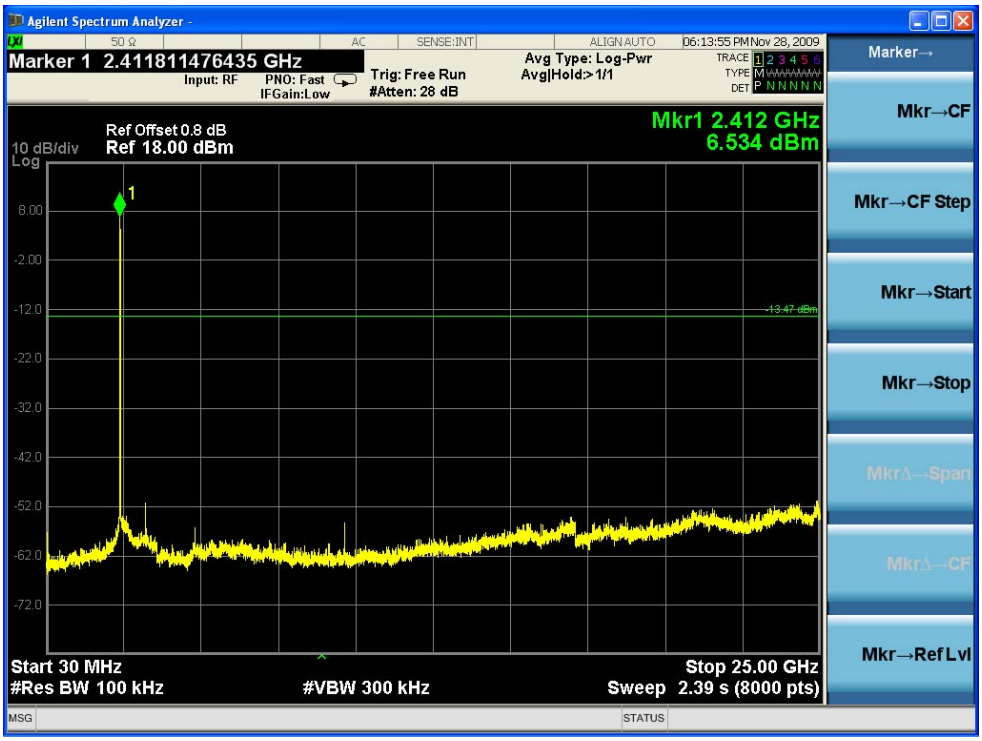
5.5. Uncertainty

The measurement uncertainty is defined as ± 1.27 dB

5.6. Test Result

Product	:	Notebook
Test Item	:	RF Antenna Conducted Spurious
Test Mode	:	Mode 1: Transmit by 802.11b

Channel 01 (2412MHz)



Channel 06 (2437MHz)

Channel 11 (2462MHz)

Product	:	Notebook
Test Item	:	RF Antenna Conducted Spurious
Test Mode	:	Mode 2: Transmit by 802.11g

Channel 01 (2412MHz)

Channel 06 (2437MHz)

Channel 11 (2462MHz)

Product	:	Notebook
Test Item	:	RF Antenna Conducted Spurious
Test Mode	:	Mode 3: Transmit by 802.11n (20MHz)

Channel 01 (2412MHz)

Channel 06 (2437MHz)

Channel 11 (2462MHz)

Product	:	Notebook
Test Item	:	RF Antenna Conducted Spurious
Test Mode	:	Mode 4: Transmit by 802.11n(40MHz)

Channel 03 (2422MHz)

Channel 06 (2437MHz)

Channel 09 (2452MHz)

6. Radiated Emission Band Edge

6.1. Test Equipment

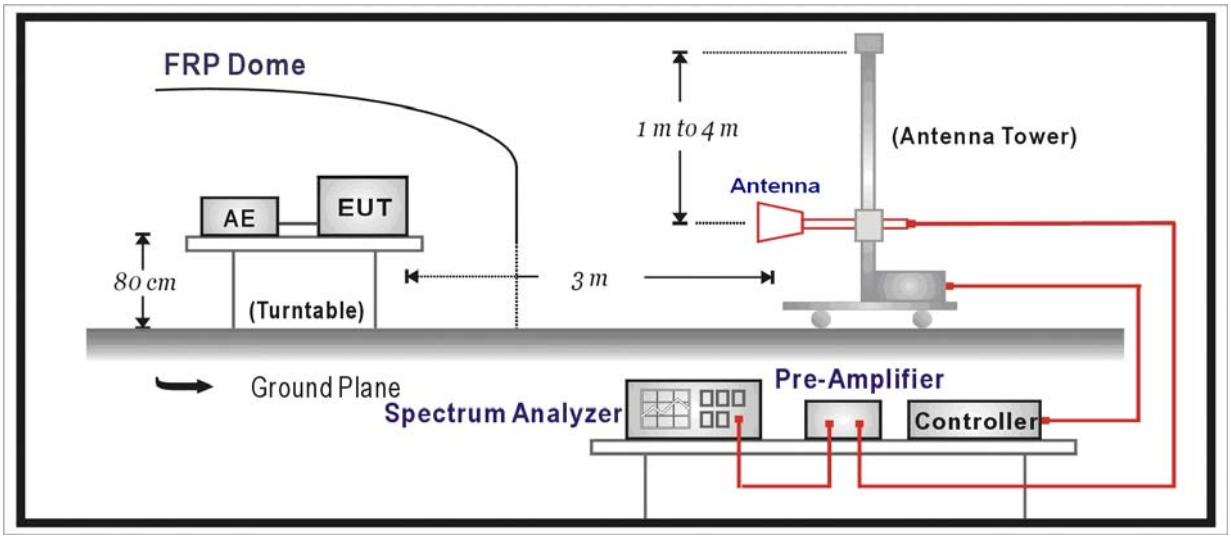
☒Radiated Emission / AC-5

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	N9010A	MY48030494	2009.04.23
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	499	2009.06.11
Temperature/Humidity Meter	Zhicheng	ZC1-2	AC5-TH	2009.03.31

Note 1: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

Note 2: The test instruments marked with “X” are used to measure the final test results.

6.2. Test Setup



6.3. Limit

Radiated emissions which fall in the restricted bands, as defined in Section 15.205(a) of FCC part 15, must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

6.4. Test Procedure

The EUT was setup according to ANSI C63.4, 2003 and tested according to DTS test procedure of Oct 2002 KDB558074 for compliance to FCC 47CFR 15.247 requirements.
The EUT is placed on a turn table which is 0.8 meter above ground. The turn table is rotated 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 3 meters.
The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.4:2003 on radiated measurement.

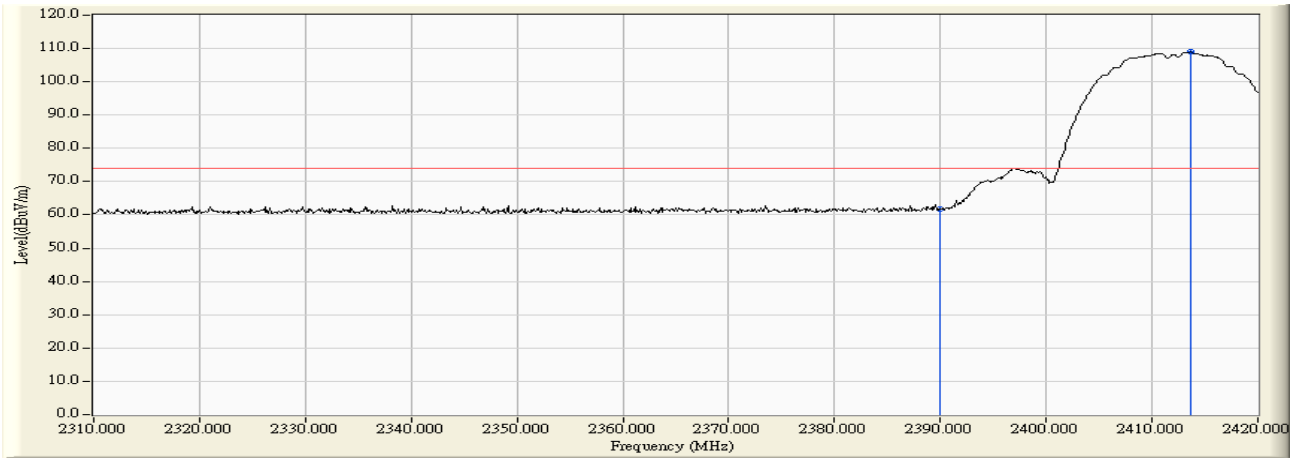
6.5. Uncertainty

The measurement uncertainty above 1G is defined as ± 3.9 dB

6.6. Test Result

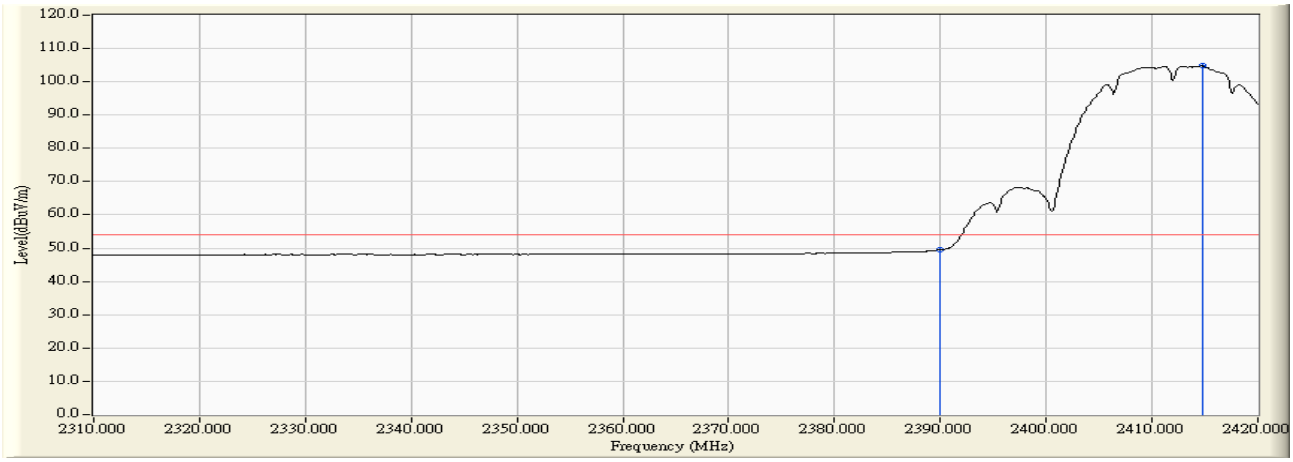
Peak detector: RBW = 1MHz, VBW = 3MHz, sweep time = 200ms;
Average detector: RBW = 1MHz, VBW = 10Hz, sweep time = auto.

Engineer : Jame	
Site : AC-5 (3m Semi-Anechoic Chamber)	**Time : 2009/12/02 - 16:04**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 0**
Probe : 9120D_499(1-18GHz) - HORIZONTAL	**Power : AC 120V/60Hz**
EUT : Notebook	**Note : Mode 1: Transmit at Channel 2412MHz By 802.11b**



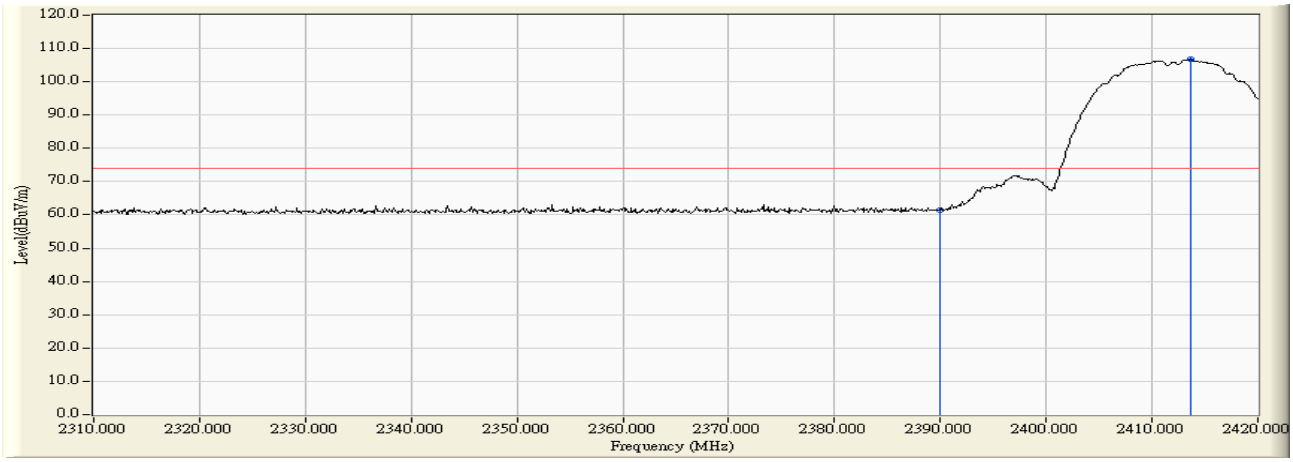
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2390.000	31.184	30.624	61.808	-12.162	73.970	PEAK
2	*	2413.620	31.191	77.751	108.943	N/A	N/A	PEAK

Engineer : Jame	
Site : AC-5 (3m Semi-Anechoic Chamber)	**Time : 2009/12/02 - 16:04**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 0**
Probe : 9120D_499(1-18GHz) - HORIZONTAL	**Power : AC 120V/60Hz**
EUT : Notebook	**Note : Mode 1: Transmit at Channel 2412MHz By 802.11b**



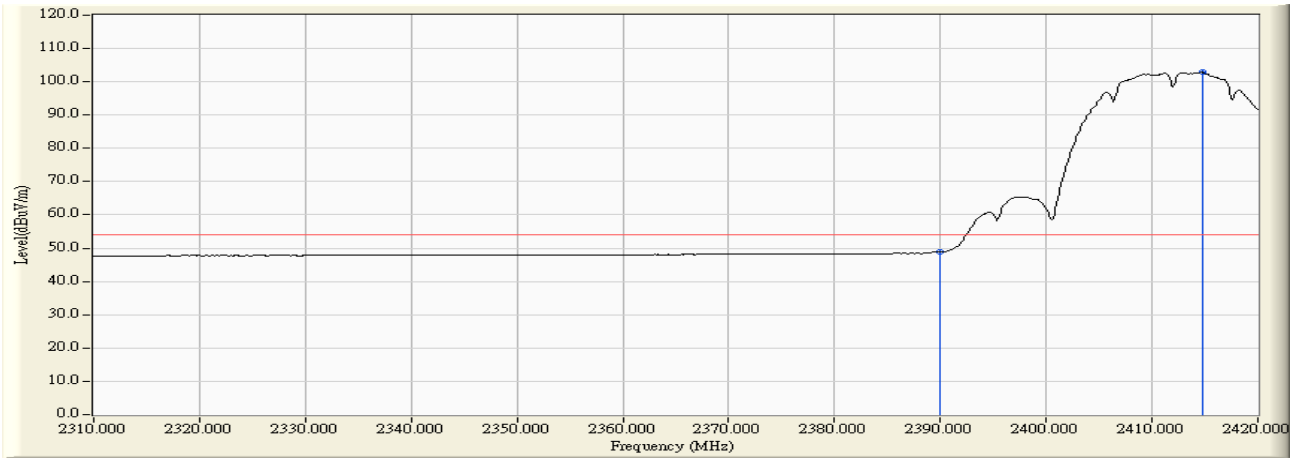
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2390.000	31.184	18.219	49.403	-4.567	53.970	AVERAGE
2	*	2414.720	31.193	73.564	104.757	N/A	N/A	AVERAGE

Engineer : Jame	
Site : AC-5 (3m Semi-Anechoic Chamber)	**Time : 2009/12/02 - 16:06**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 0**
Probe : 9120D_499(1-18GHz) - VERTICAL	**Power : AC 120V/60Hz**
EUT : Notebook	**Note : Mode 1: Transmit at Channel 2412MHz By 802.11b**



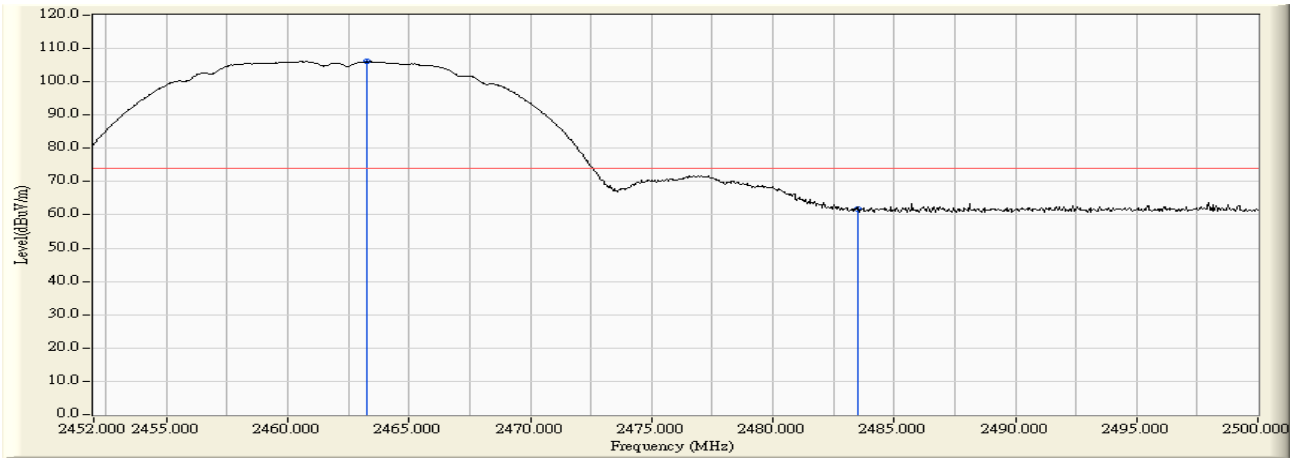
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2390.000	31.184	30.422	61.606	-12.364	73.970	PEAK
2	*	2413.620	31.191	75.464	106.656	N/A	N/A	PEAK

Engineer : Jame	
Site : AC-5 (3m Semi-Anechoic Chamber)	**Time : 2009/12/02 - 16:07**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 0**
Probe : 9120D_499(1-18GHz) - VERTICAL	**Power : AC 120V/60Hz**
EUT : Notebook	**Note : Mode 1: Transmit at Channel 2412MHz By 802.11b**



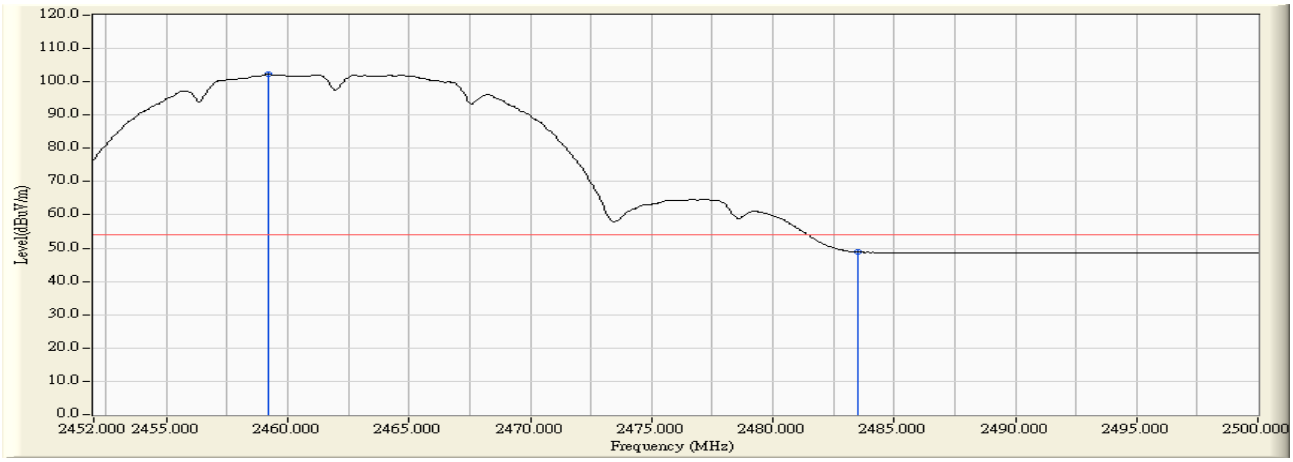
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2390.000	31.184	17.600	48.784	-5.186	53.970	AVERAGE
2	*	2414.720	31.193	71.649	102.842	N/A	N/A	AVERAGE

Engineer : Jame	
Site : AC-5 (3m Semi-Anechoic Chamber)	**Time : 2009/12/02 - 16:10**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 0**
Probe : 9120D_499(1-18GHz) - HORIZONTAL	**Power : AC 120V/60Hz**
EUT : Notebook	**Note : Mode 1: Transmit at Channel 2462MHz By 802.11b**



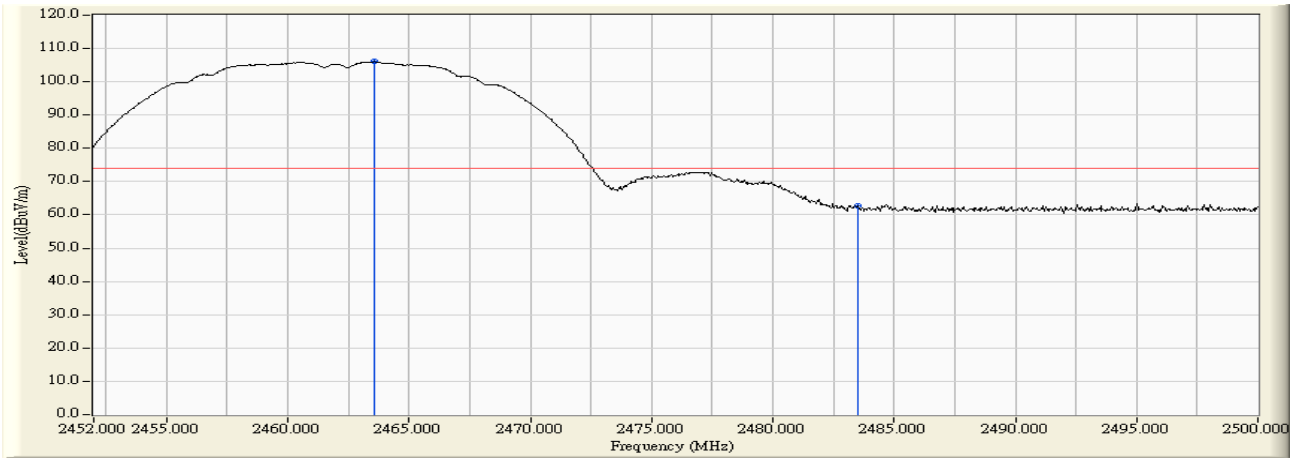
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2463.280	31.224	75.024	106.249	N/A	N/A	PEAK
2		2483.500	31.212	30.527	61.739	-12.231	73.970	PEAK

Engineer : Jame	
Site : AC-5 (3m Semi-Anechoic Chamber)	**Time : 2009/12/02 - 16:10**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 0**
Probe : 9120D_499(1-18GHz) - HORIZONTAL	**Power : AC 120V/60Hz**
EUT : Notebook	**Note : Mode 1: Transmit at Channel 2462MHz By 802.11b**



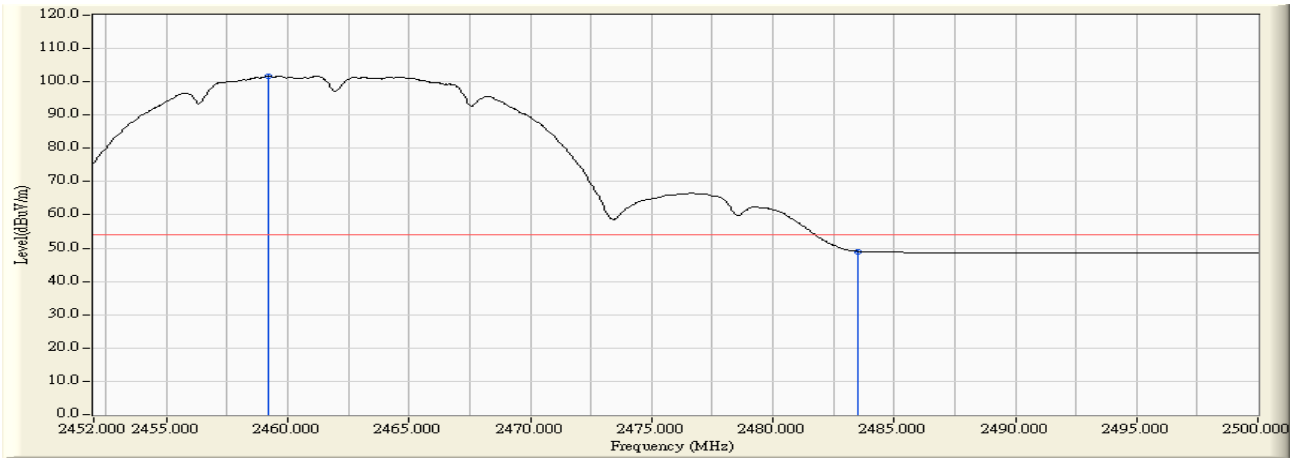
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2459.200	31.224	70.991	102.215	N/A	N/A	AVERAGE
2		2483.500	31.212	17.569	48.781	-5.189	53.970	AVERAGE

Engineer : Jame	
Site : AC-5 (3m Semi-Anechoic Chamber)	**Time : 2009/12/02 - 16:12**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 0**
Probe : 9120D_499(1-18GHz) - VERTICAL	**Power : AC 120V/60Hz**
EUT : Notebook	**Note : Mode 1: Transmit at Channel 2462MHz By 802.11b**



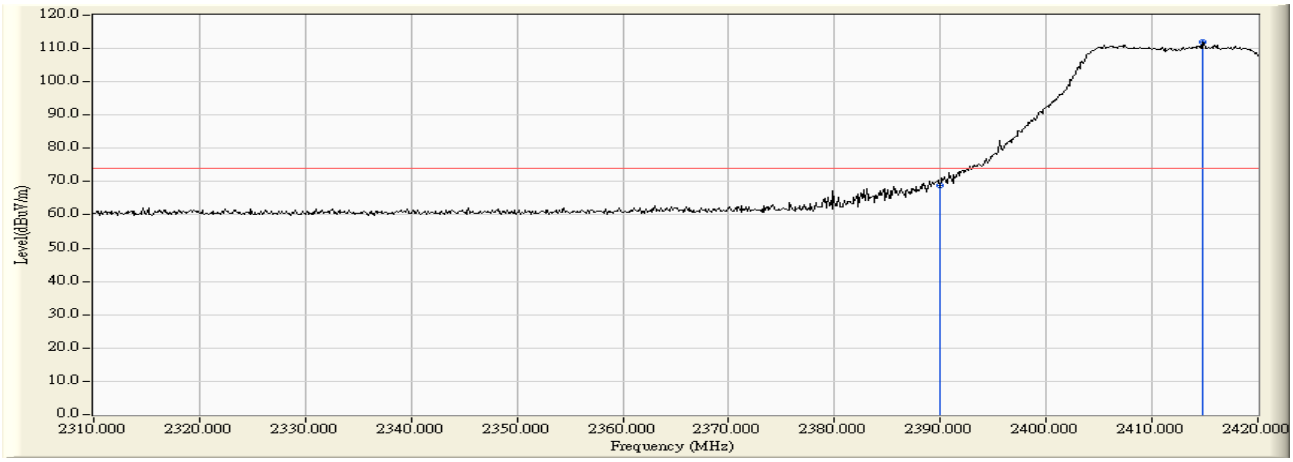
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2463.568	31.224	74.783	106.007	N/A	N/A	PEAK
2		2483.500	31.212	31.496	62.708	-11.262	73.970	PEAK

Engineer : Jame	
Site : AC-5 (3m Semi-Anechoic Chamber)	**Time : 2009/12/02 - 16:12**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 0**
Probe : 9120D_499(1-18GHz) - VERTICAL	**Power : AC 120V/60Hz**
EUT : Notebook	**Note : Mode 1: Transmit at Channel 2462MHz By 802.11b**



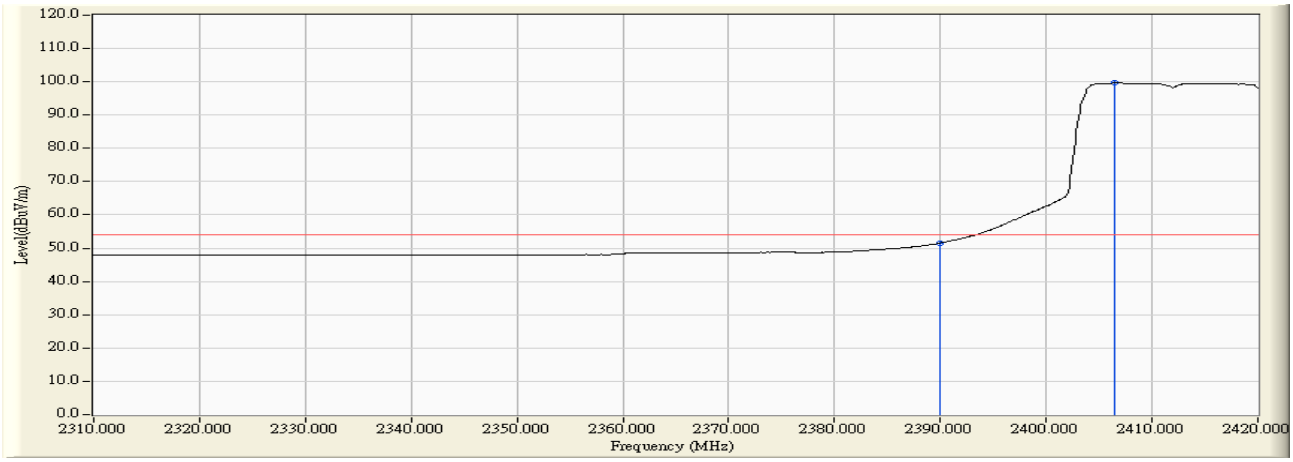
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2459.200	31.224	70.420	101.644	N/A	N/A	AVERAGE
2		2483.500	31.212	17.841	49.053	-4.917	53.970	AVERAGE

Engineer : Jame	
Site : AC-5 (3m Semi-Anechoic Chamber)	**Time : 2009/12/02 - 16:19**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 0**
Probe : 9120D_499(1-18GHz) - HORIZONTAL	**Power : AC 120V/60Hz**
EUT : Notebook	**Note : Mode 2: Transmit at Channel 2412MHz By 802.11g**



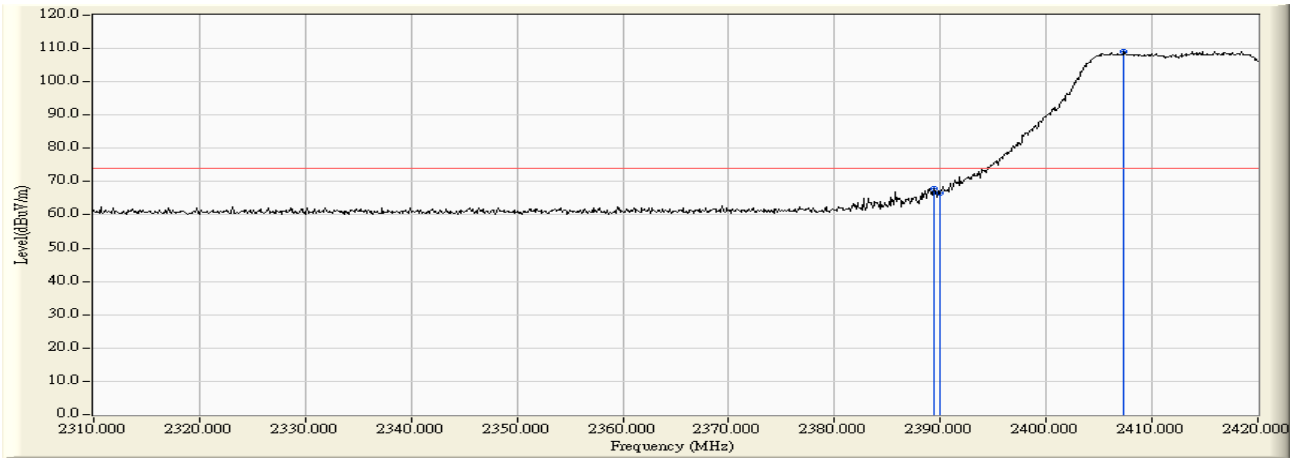
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2390.000	31.184	37.735	68.919	-5.051	73.970	PEAK
2	*	2414.720	31.193	80.790	111.983	N/A	N/A	PEAK

Engineer : Jame	
Site : AC-5 (3m Semi-Anechoic Chamber)	**Time : 2009/12/02 - 16:19**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 0**
Probe : 9120D_499(1-18GHz) - HORIZONTAL	**Power : AC 120V/60Hz**
EUT : Notebook	**Note : Mode 2: Transmit at Channel 2412MHz By 802.11g**



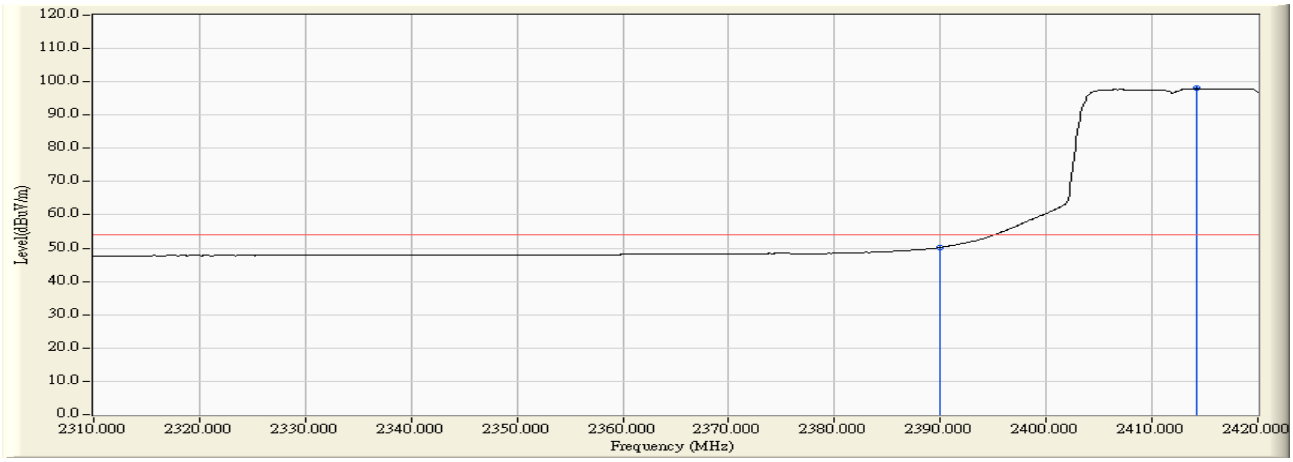
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2390.000	31.184	20.448	51.632	-2.338	53.970	AVERAGE
2	*	2406.470	31.187	68.432	99.619	N/A	N/A	AVERAGE

Engineer : Jame	
Site : AC-5 (3m Semi-Anechoic Chamber)	**Time : 2009/12/02 - 16:21**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 0**
Probe : 9120D_499(1-18GHz) - VERTICAL	**Power : AC 120V/60Hz**
EUT : Notebook	**Note : Mode 2: Transmit at Channel 2412MHz By 802.11g**



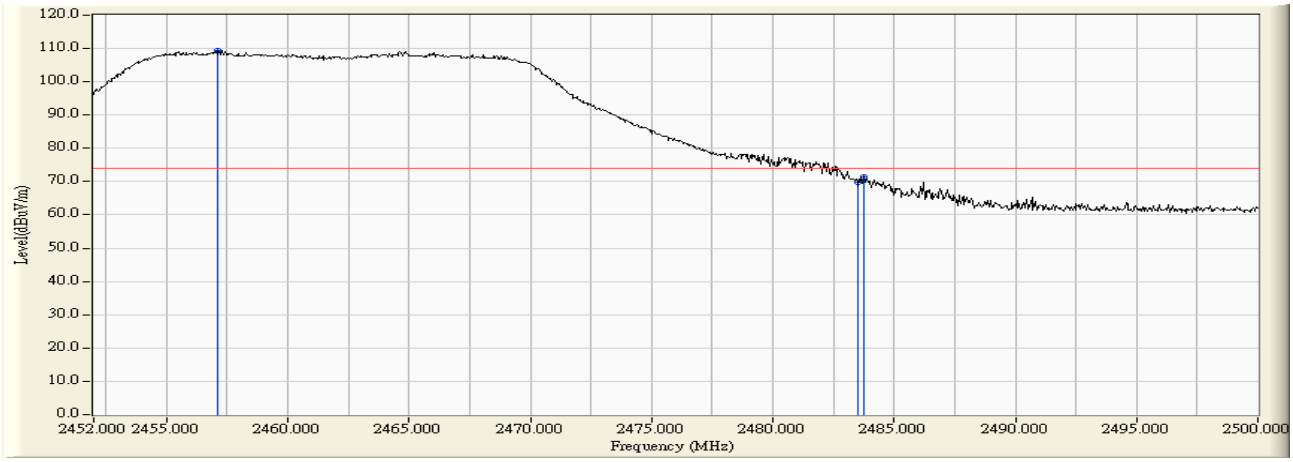
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2389.420	31.185	36.794	67.979	-5.991	73.970	PEAK
2		2390.000	31.184	35.369	66.553	-7.417	73.970	PEAK
3	*	2407.350	31.187	78.020	109.207	N/A	N/A	PEAK

Engineer : Jame	
Site : AC-5 (3m Semi-Anechoic Chamber)	**Time : 2009/12/02 - 16:21**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 0**
Probe : 9120D_499(1-18GHz) - VERTICAL	**Power : AC 120V/60Hz**
EUT : Notebook	**Note : Mode 2: Transmit at Channel 2412MHz By 802.11g**



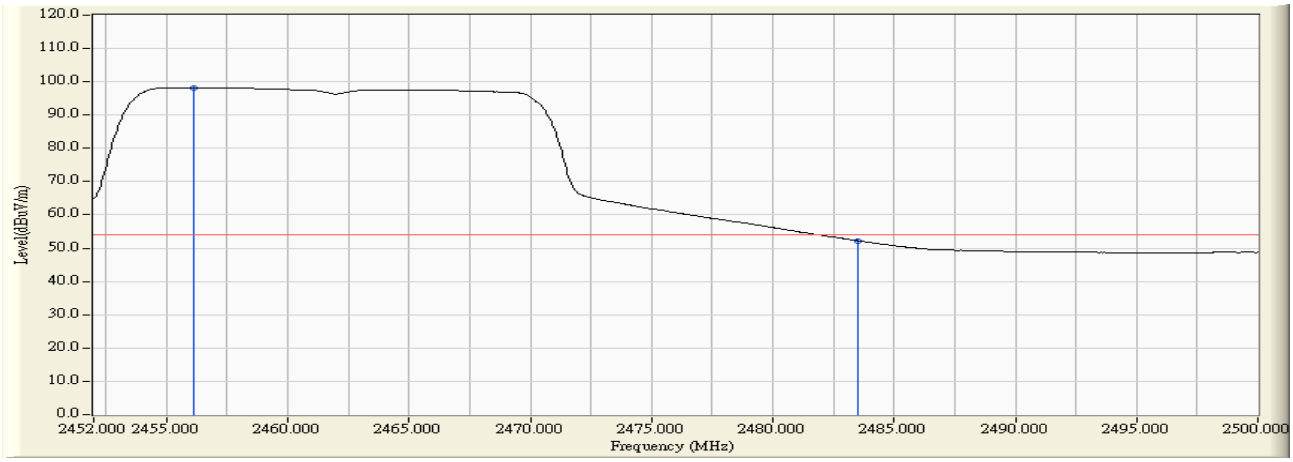
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2390.000	31.184	19.056	50.240	-3.730	53.970	AVERAGE
2	*	2414.170	31.192	66.778	97.970	N/A	N/A	AVERAGE

Engineer : Jame	
Site : AC-5 (3m Semi-Anechoic Chamber)	**Time : 2009/12/02 - 16:24**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 0**
Probe : 9120D_499(1-18GHz) - HORIZONTAL	**Power : AC 120V/60Hz**
EUT : Notebook	**Note : Mode 2: Transmit at Channel 2462MHz By 802.11g**



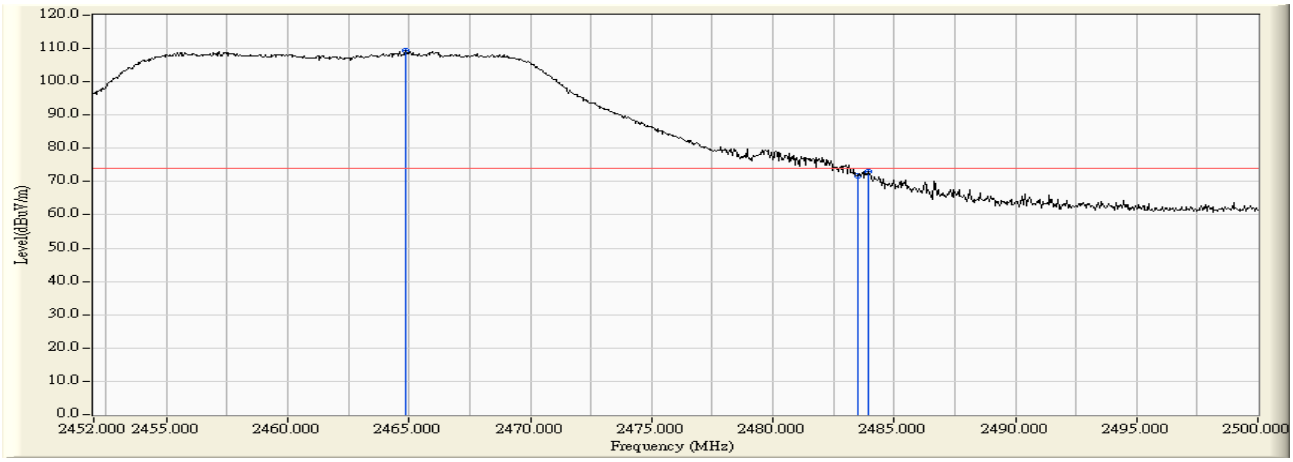
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2457.136	31.223	78.074	109.297	N/A	N/A	PEAK
2		2483.500	31.212	38.548	69.760	-4.210	73.970	PEAK
3		2483.728	31.212	40.276	71.488	-2.482	73.970	PEAK

Engineer : Jame	
Site : AC-5 (3m Semi-Anechoic Chamber)	**Time : 2009/12/02 - 16:26**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 0**
Probe : 9120D_499(1-18GHz) - HORIZONTAL	**Power : AC 120V/60Hz**
EUT : Notebook	**Note : Mode 2: Transmit at Channel 2462MHz By 802.11g**



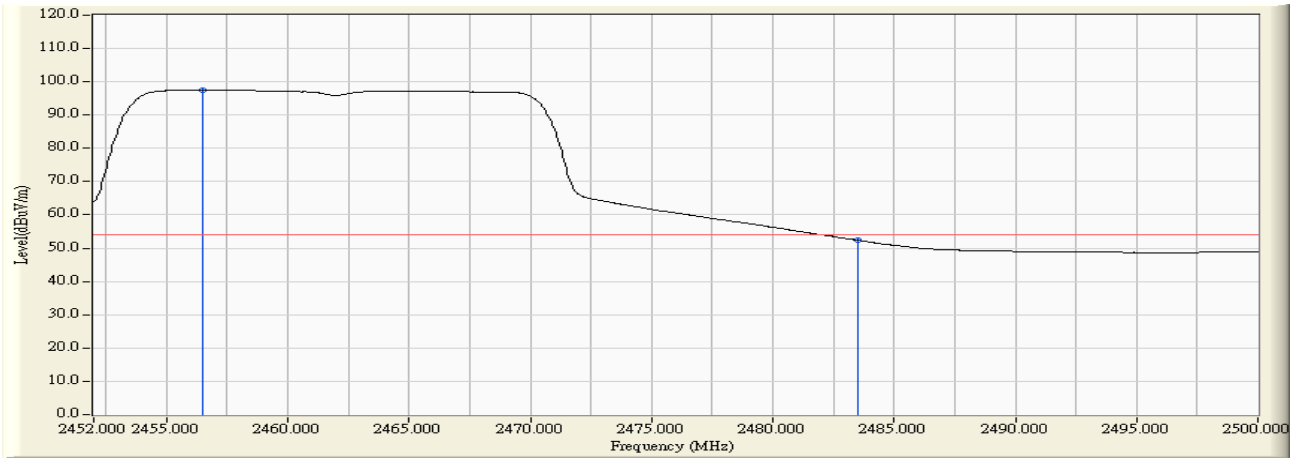
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2456.128	31.223	67.038	98.261	N/A	N/A	AVERAGE
2		2483.500	31.212	21.037	52.249	-1.721	53.970	AVERAGE

Engineer : Jame	
Site : AC-5 (3m Semi-Anechoic Chamber)	**Time : 2009/12/02 - 16:31**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 0**
Probe : 9120D_499(1-18GHz) - VERTICAL	**Power : AC 120V/60Hz**
EUT : Notebook	**Note : Mode 2: Transmit at Channel 2462MHz By 802.11g**



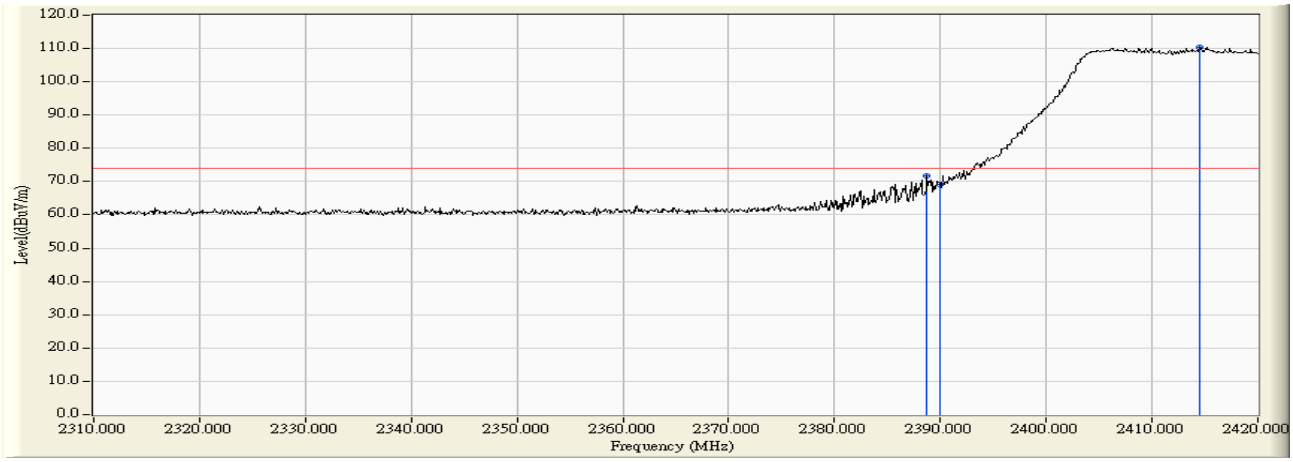
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2464.864	31.223	78.160	109.384	N/A	N/A	PEAK
2		2483.500	31.212	40.537	71.749	-2.221	73.970	PEAK
3		2483.920	31.212	41.729	72.941	-1.029	73.970	PEAK

Engineer : Jame	
Site : AC-5 (3m Semi-Anechoic Chamber)	**Time : 2009/12/02 - 16:32**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 0**
Probe : 9120D_499(1-18GHz) - VERTICAL	**Power : AC 120V/60Hz**
EUT : Notebook	**Note : Mode 2: Transmit at Channel 2462MHz By 802.11g**



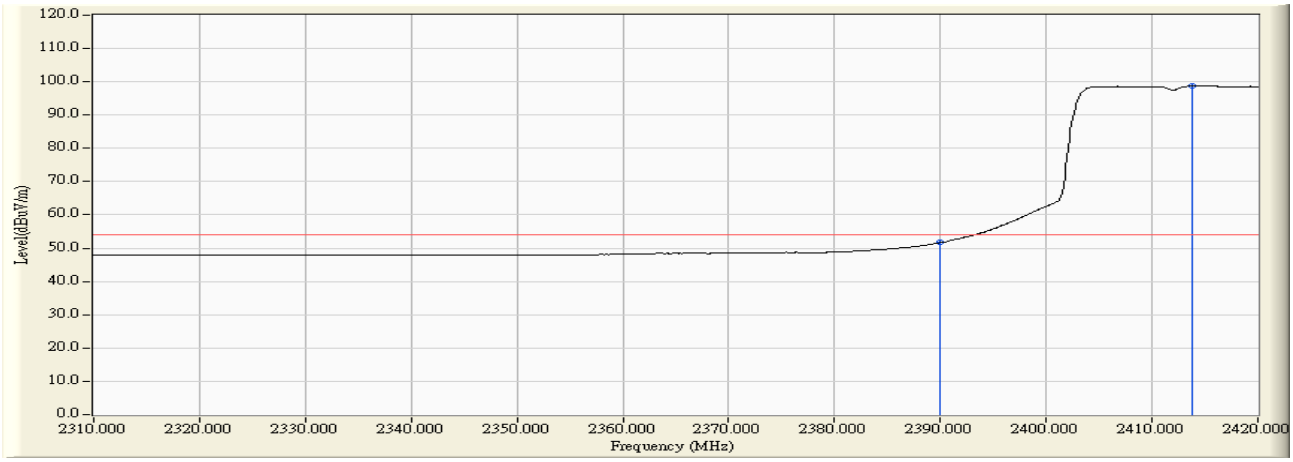
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2456.464	31.223	66.360	97.583	N/A	N/A	AVERAGE
2		2483.500	31.212	21.194	52.406	-1.564	53.970	AVERAGE

Engineer : Jame	
Site : AC-5 (3m Semi-Anechoic Chamber)	**Time : 2009/12/02 - 16:41**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 0**
Probe : 9120D_499(1-18GHz) - HORIZONTAL	**Power : AC 120V/60Hz**
EUT : Notebook	**Note : Mode 3: Transmit at Channel 2412MHz By 802.11n(20MHz)**



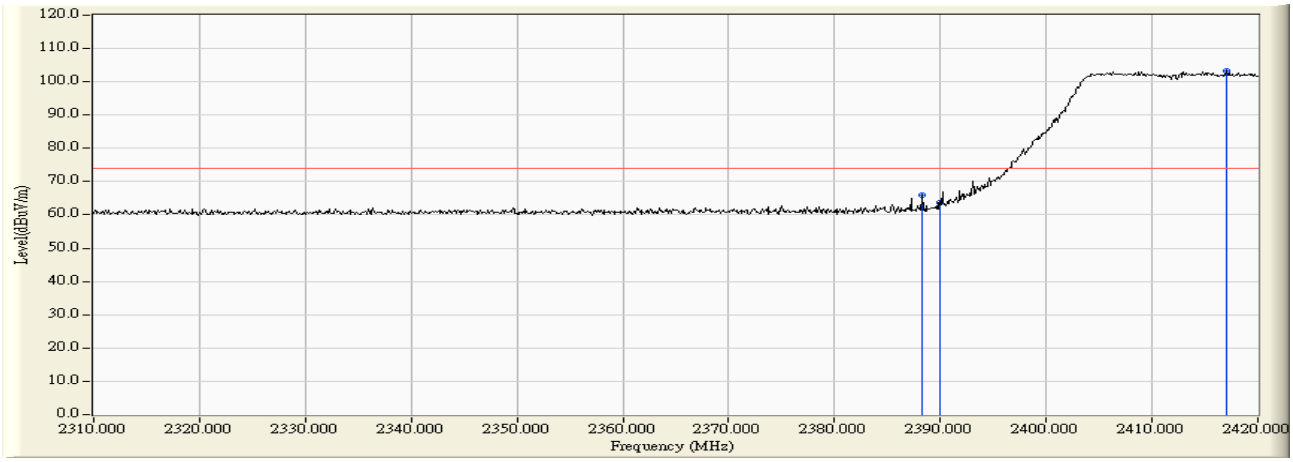
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2388.760	31.185	40.427	71.613	-2.357	73.970	PEAK
2		2390.000	31.184	37.958	69.142	-4.828	73.970	PEAK
3	*	2414.500	31.193	79.252	110.444	N/A	N/A	PEAK

Engineer : Jame	
Site : AC-5 (3m Semi-Anechoic Chamber)	**Time : 2009/12/02 - 16:42**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 0**
Probe : 9120D_499(1-18GHz) - HORIZONTAL	**Power : AC 120V/60Hz**
EUT : Notebook	**Note : Mode 3: Transmit at Channel 2412MHz By 802.11n(20MHz)**



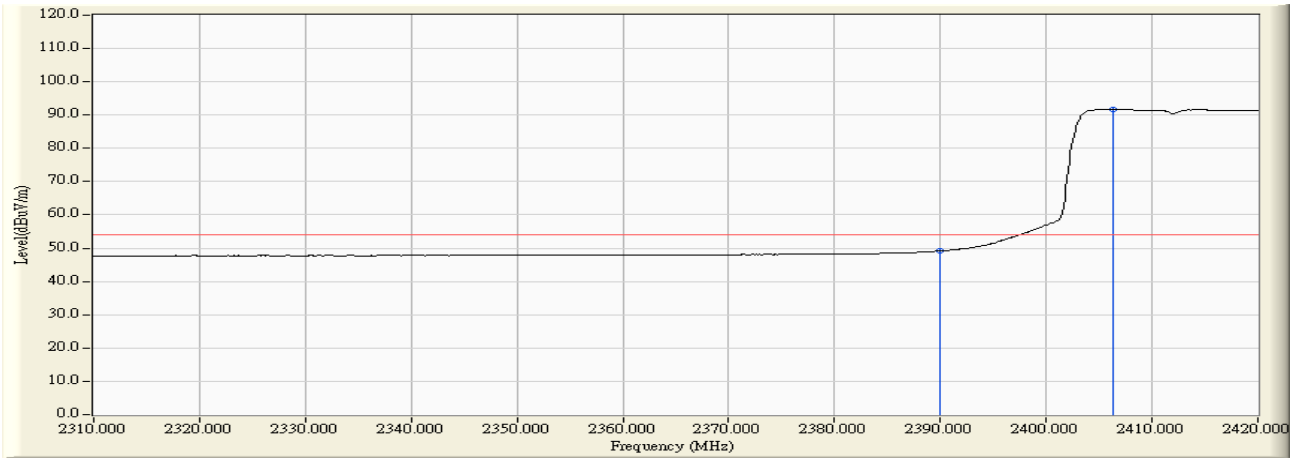
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2390.000	31.184	20.497	51.681	-2.289	53.970	AVERAGE
2	*	2413.840	31.192	67.508	98.700	N/A	N/A	AVERAGE

Engineer : Jame	
Site : AC-5 (3m Semi-Anechoic Chamber)	**Time : 2009/12/02 - 16:43**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 0**
Probe : 9120D_499(1-18GHz) - VERTICAL	**Power : AC 120V/60Hz**
EUT : Notebook	**Note : Mode 3: Transmit at Channel 2412MHz By 802.11n(20MHz)**



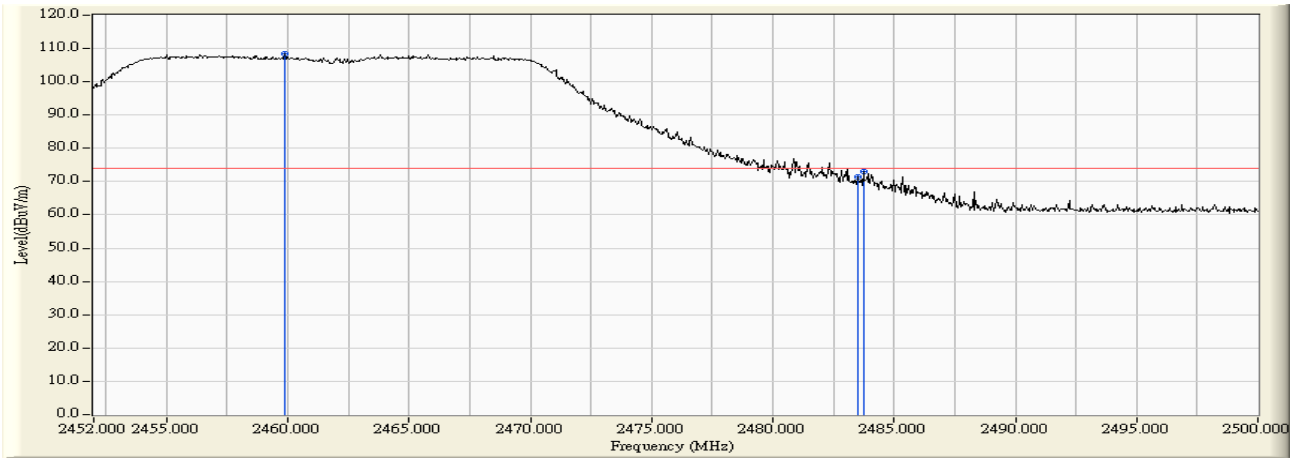
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2388.320	31.186	34.767	65.953	-8.017	73.970	PEAK
2		2390.000	31.184	32.657	63.841	-10.129	73.970	PEAK
3	*	2417.030	31.194	72.082	103.277	N/A	N/A	PEAK

Engineer : Jame	
Site : AC-5 (3m Semi-Anechoic Chamber)	**Time : 2009/12/02 - 16:43**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 0**
Probe : 9120D_499(1-18GHz) - VERTICAL	**Power : AC 120V/60Hz**
EUT : Notebook	**Note : Mode 3: Transmit at Channel 2412MHz By 802.11n(20MHz)**



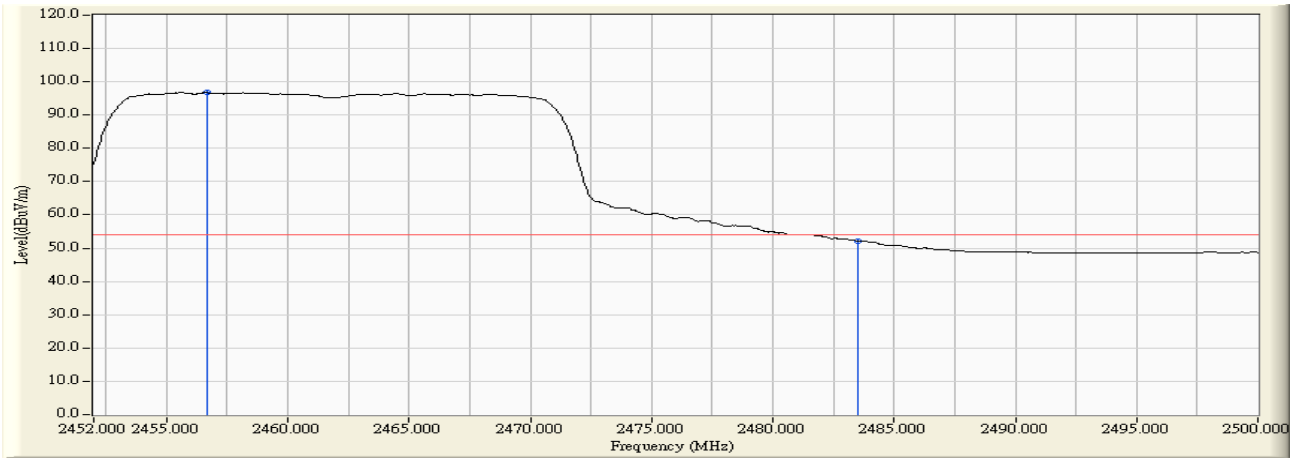
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2390.000	31.184	18.016	49.200	-4.770	53.970	AVERAGE
2	*	2406.360	31.187	60.549	91.736	N/A	N/A	AVERAGE

Engineer : Jame	
Site : AC-5 (3m Semi-Anechoic Chamber)	**Time : 2009/12/02 - 16:49**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 0**
Probe : 9120D_499(1-18GHz) - HORIZONTAL	**Power : AC 120V/60Hz**
EUT : Notebook	**Note : Mode 3: Transmit at Channel 2462MHz By 802.11n(20MHz)**



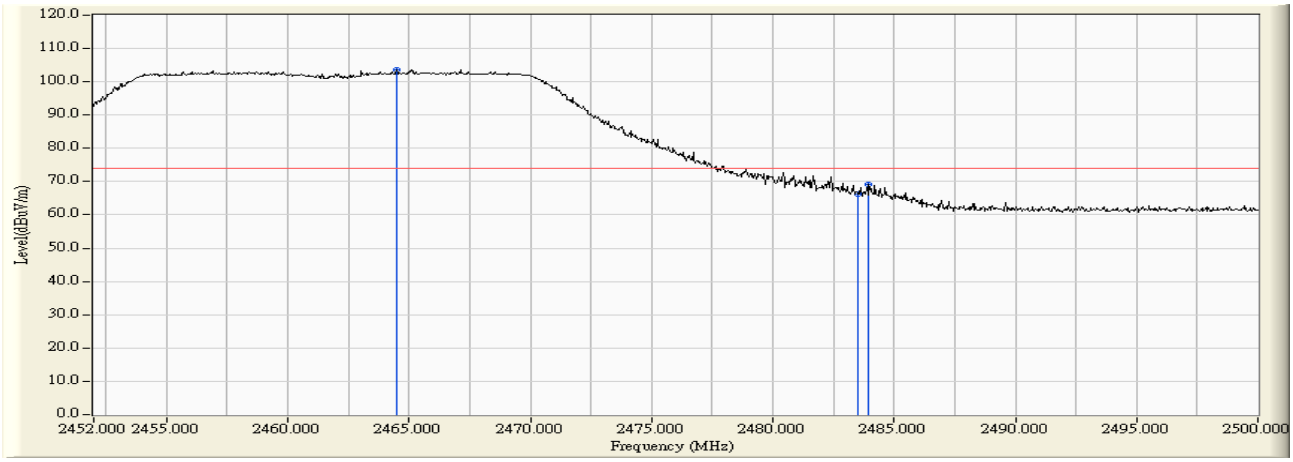
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2459.872	31.224	77.119	108.343	N/A	N/A	PEAK
2		2483.500	31.212	40.098	71.310	-2.660	73.970	PEAK
3		2483.728	31.212	41.913	73.125	-0.845	73.970	PEAK

Engineer : Jame	
Site : AC-5 (3m Semi-Anechoic Chamber)	**Time : 2009/12/02 - 16:50**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 0**
Probe : 9120D_499(1-18GHz) - HORIZONTAL	**Power : AC 120V/60Hz**
EUT : Notebook	**Note : Mode 3: Transmit at Channel 2462MHz By 802.11n(20MHz)**



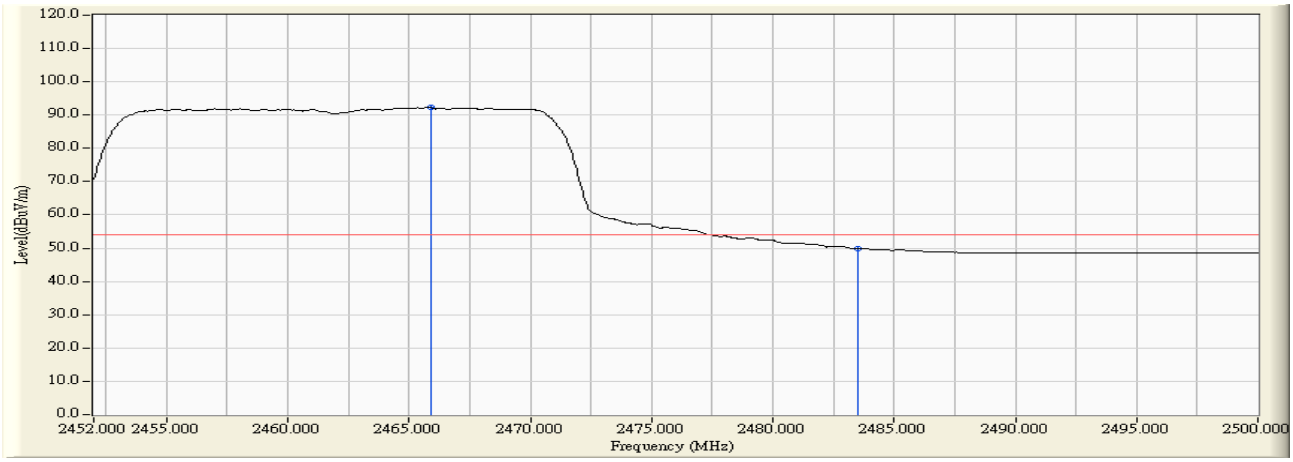
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2456.656	31.223	65.568	96.791	N/A	N/A	AVERAGE
2		2483.500	31.212	20.962	52.174	-1.796	53.970	AVERAGE

Engineer : Jame	
Site : AC-5 (3m Semi-Anechoic Chamber)	**Time : 2009/12/02 - 16:52**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 0**
Probe : 9120D_499(1-18GHz) - VERTICAL	**Power : AC 120V/60Hz**
EUT : Notebook	**Note : Mode 3: Transmit at Channel 2462MHz By 802.11n(20MHz)**



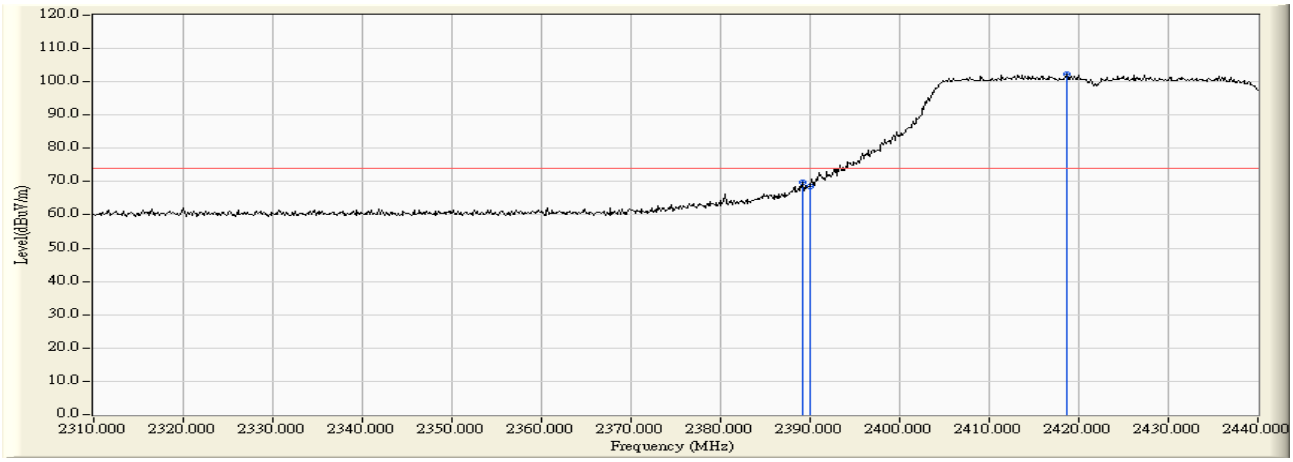
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2464.480	31.224	72.360	103.584	N/A	N/A	PEAK
2		2483.500	31.212	35.187	66.399	-7.571	73.970	PEAK
3		2483.920	31.212	37.830	69.042	-4.928	73.970	PEAK

Engineer : Jame	
Site : AC-5 (3m Semi-Anechoic Chamber)	**Time : 2009/12/02 - 16:52**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 0**
Probe : 9120D_499(1-18GHz) - VERTICAL	**Power : AC 120V/60Hz**
EUT : Notebook	**Note : Mode 3: Transmit at Channel 2462MHz By 802.11n(20MHz)**



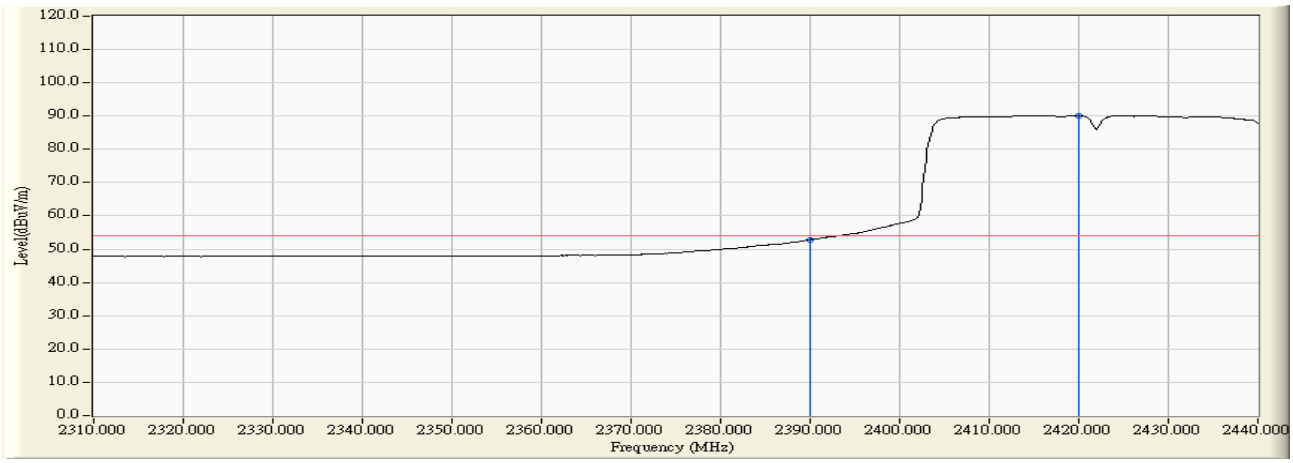
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2465.920	31.223	60.984	92.207	N/A	N/A	AVERAGE
2		2483.500	31.212	18.708	49.920	-4.050	53.970	AVERAGE

Engineer : Jame	
Site : AC-5 (3m Semi-Anechoic Chamber)	**Time : 2009/12/02 - 17:00**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 0**
Probe : 9120D_499(1-18GHz) - HORIZONTAL	**Power : AC 120V/60Hz**
EUT : Notebook	**Note : Mode 4: Transmit at Channel 2422MHz By 802.11n(40MHz)**



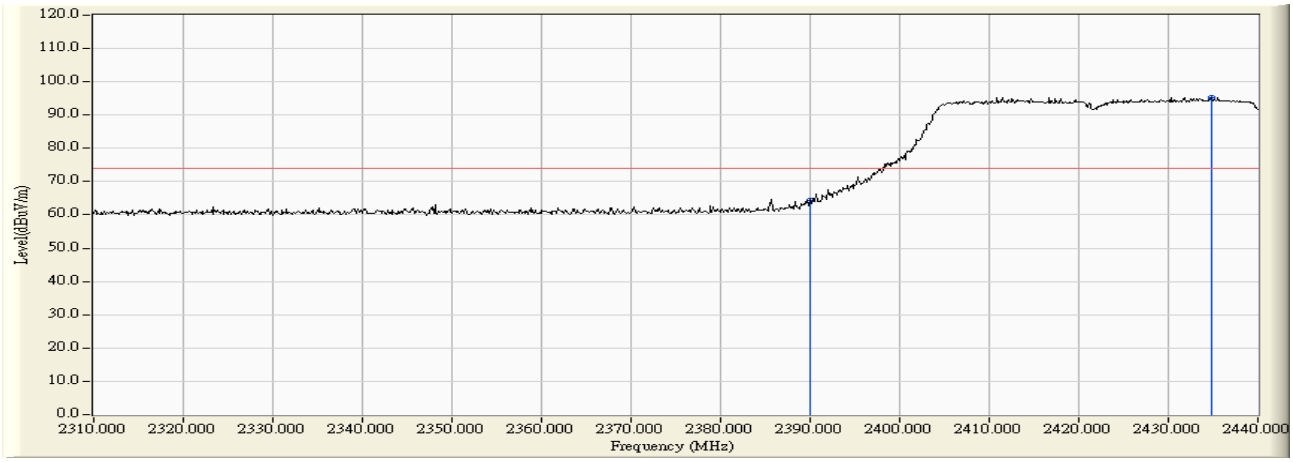
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2389.170	31.186	38.757	69.942	-4.028	73.970	PEAK
2		2390.000	31.184	37.477	68.661	-5.309	73.970	PEAK
3	*	2418.680	31.196	71.177	102.373	N/A	N/A	PEAK

Engineer : Jame	
Site : AC-5 (3m Semi-Anechoic Chamber)	**Time : 2009/12/02 - 16:59**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 0**
Probe : 9120D_499(1-18GHz) - HORIZONTAL	**Power : AC 120V/60Hz**
EUT : Notebook	**Note : Mode 4: Transmit at Channel 2422MHz By 802.11n(40MHz)**



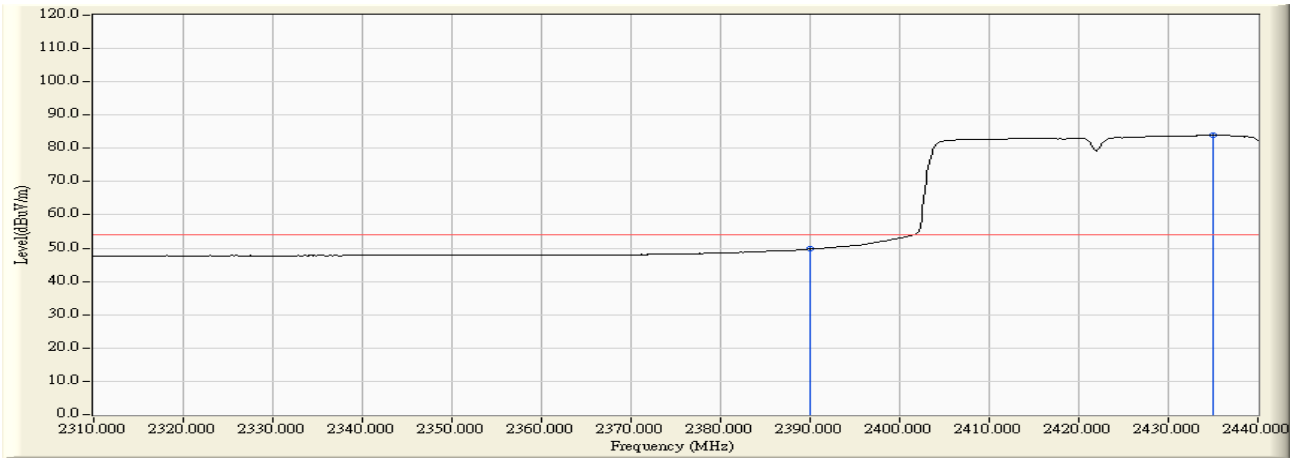
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2390.000	31.184	21.687	52.871	-1.099	53.970	AVERAGE
2	*	2419.980	31.197	58.924	90.121	N/A	N/A	AVERAGE

Engineer : Jame	
Site : AC-5 (3m Semi-Anechoic Chamber)	**Time : 2009/12/02 - 17:01**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 0**
Probe : 9120D_499(1-18GHz) - VERTICAL	**Power : AC 120V/60Hz**
EUT : Notebook	**Note : Mode 4: Transmit at Channel 2422MHz By 802.11n(40MHz)**



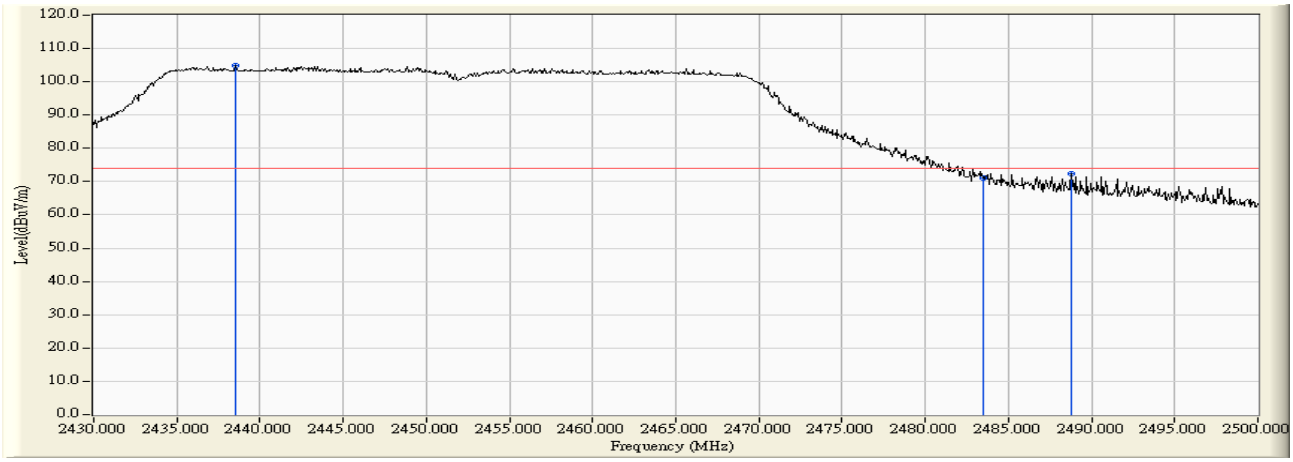
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2390.000	31.184	33.075	64.259	-9.711	73.970	PEAK
2	*	2434.800	31.210	64.169	95.379	N/A	N/A	PEAK

Engineer : Jame	
Site : AC-5 (3m Semi-Anechoic Chamber)	**Time : 2009/12/02 - 17:01**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 0**
Probe : 9120D_499(1-18GHz) - VERTICAL	**Power : AC 120V/60Hz**
EUT : Notebook	**Note : Mode 4: Transmit at Channel 2422MHz By 802.11n(40MHz)**



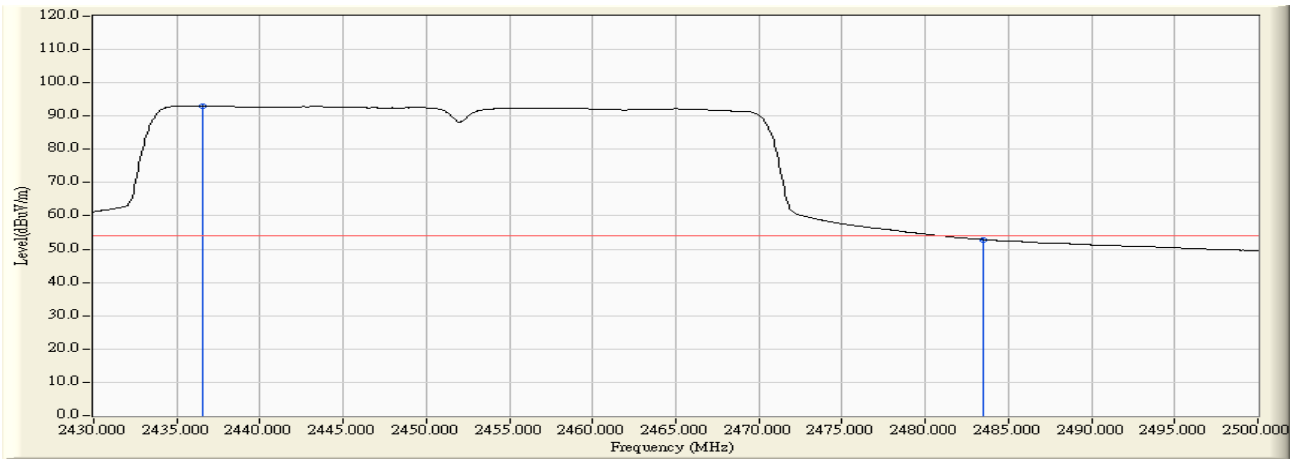
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2390.000	31.184	18.529	49.713	-4.257	53.970	AVERAGE
2	*	2435.060	31.210	52.749	83.959	N/A	N/A	AVERAGE

Engineer : Jame	
Site : AC-5 (3m Semi-Anechoic Chamber)	**Time : 2009/12/02 - 17:07**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 0**
Probe : 9120D_499(1-18GHz) - HORIZONTAL	**Power : AC 120V/60Hz**
EUT : Notebook	**Note : Mode 4: Transmit at Channel 2452MHz By 802.11n(40MHz)**



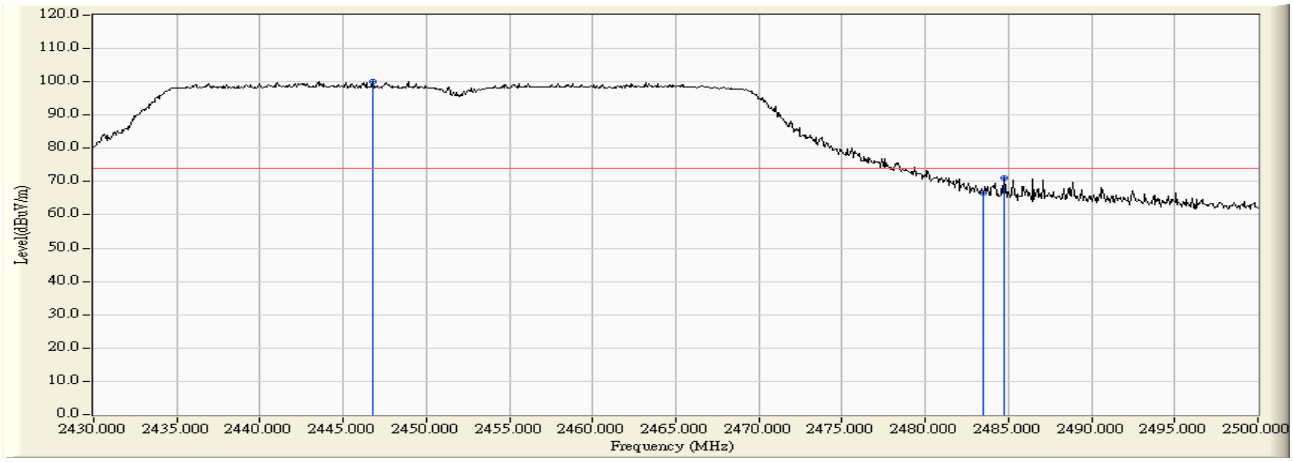
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2438.540	31.213	73.517	104.730	N/A	N/A	PEAK
2		2483.500	31.212	39.831	71.043	-2.927	73.970	PEAK
3		2488.800	31.209	41.229	72.438	-1.532	73.970	PEAK

Engineer : Jame	
Site : AC-5 (3m Semi-Anechoic Chamber)	**Time : 2009/12/02 - 17:06**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 0**
Probe : 9120D_499(1-18GHz) - HORIZONTAL	**Power : AC 120V/60Hz**
EUT : Notebook	**Note : Mode 4: Transmit at Channel 2452MHz By 802.11n(40MHz)**



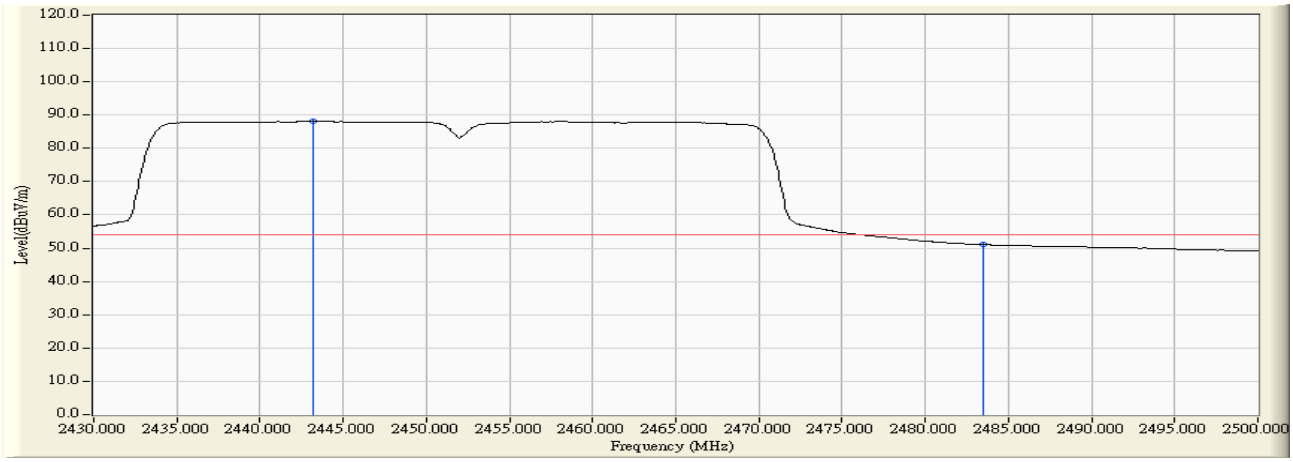
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2436.510	31.211	61.872	93.083	N/A	N/A	AVERAGE
2		2483.500	31.212	21.655	52.867	-1.103	53.970	AVERAGE

Engineer : Jame	
Site : AC-5 (3m Semi-Anechoic Chamber)	**Time : 2009/12/02 - 17:09**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 0**
Probe : 9120D_499(1-18GHz) - VERTICAL	**Power : AC 120V/60Hz**
EUT : Notebook	**Note : Mode 4: Transmit at Channel 2452MHz By 802.11n(40MHz)**



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2446.800	31.219	68.986	100.205	N/A	N/A	PEAK
2		2483.500	31.212	35.425	66.637	-7.333	73.970	PEAK
3		2484.740	31.212	39.744	70.955	-3.015	73.970	PEAK

Engineer : Jame	
Site : AC-5 (3m Semi-Anechoic Chamber)	**Time : 2009/12/02 - 17:09**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 0**
Probe : 9120D_499(1-18GHz) - VERTICAL	**Power : AC 120V/60Hz**
EUT : Notebook	**Note : Mode 4: Transmit at Channel 2452MHz By 802.11n(40MHz)**



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2443.160	31.217	56.962	88.179	N/A	N/A	AVERAGE
2		2483.500	31.212	19.862	51.074	-2.896	53.970	AVERAGE

7. Operation Frequency Range of 20dB Bandwidth

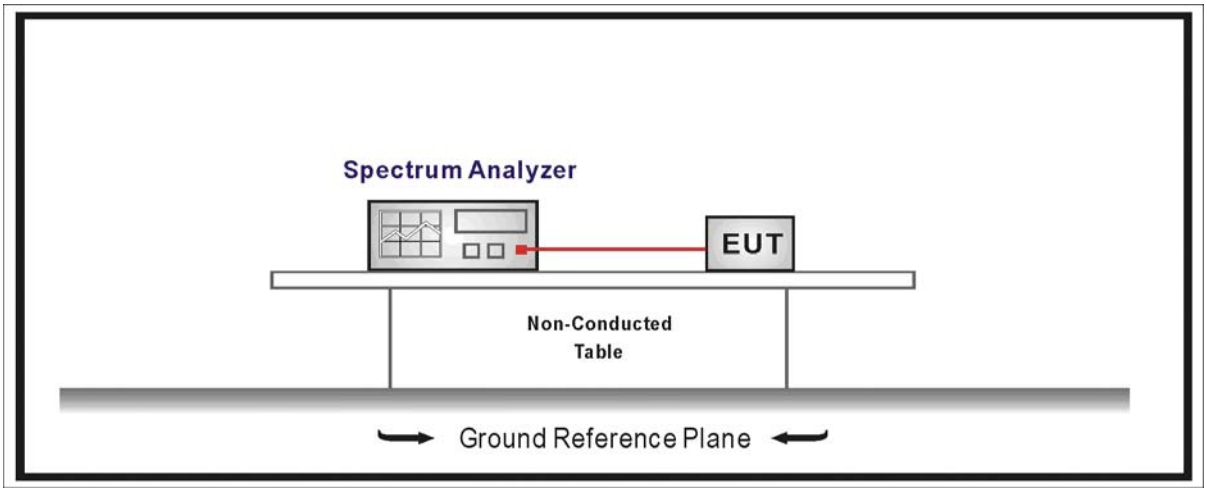
7.1. Test Equipment

Operation Frequency Range of 20dB Bandwidth / AC-6

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	N9020A	MY49100159	2009/05/06
Temperature/Humidity Meter	zhicheng	ZC1-2	QT-TH007	2009/03/30

Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

7.2. Test Setup



7.3. Limit

20 dB bandwidth of the emission is contained within the operation frequency band.

7.4. Test Procedure

The EUT was tested according to DTS test procedure of Oct 2002 KDB558074 for compliance to FCC 47CFR 15.247 requirements.
Set RBW = 100 kHz, Span greater than RBW.

7.5. Uncertainty

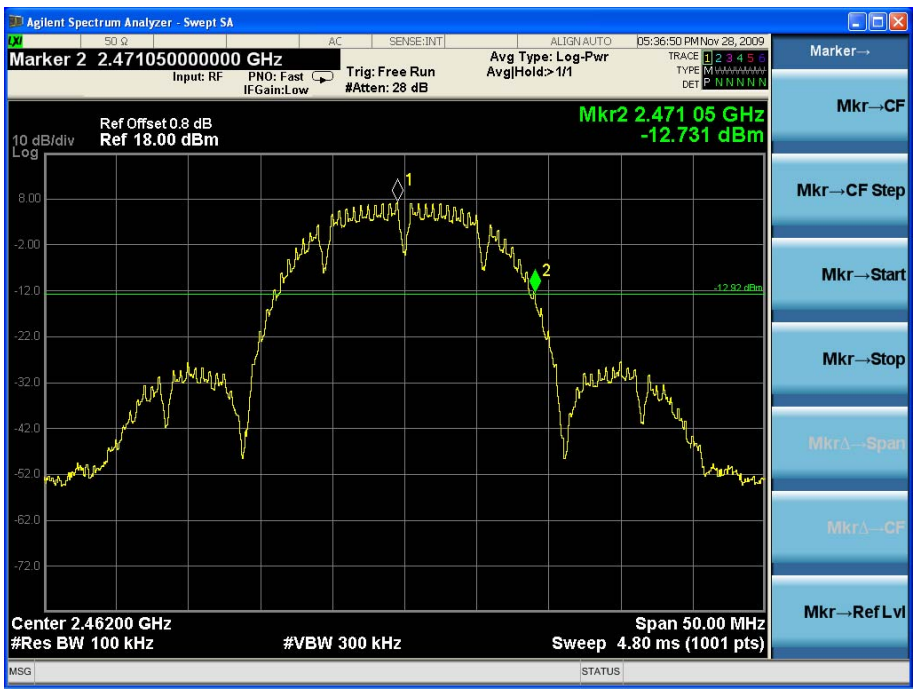
The measurement uncertainty is defined as ± 1 kHz

7.6. Test Result

Product	:	Notebook
Test Item	:	Operation Frequency Range of 20dB Bandwidth
Test Mode	:	Mode 1: Transmit by 802.11b

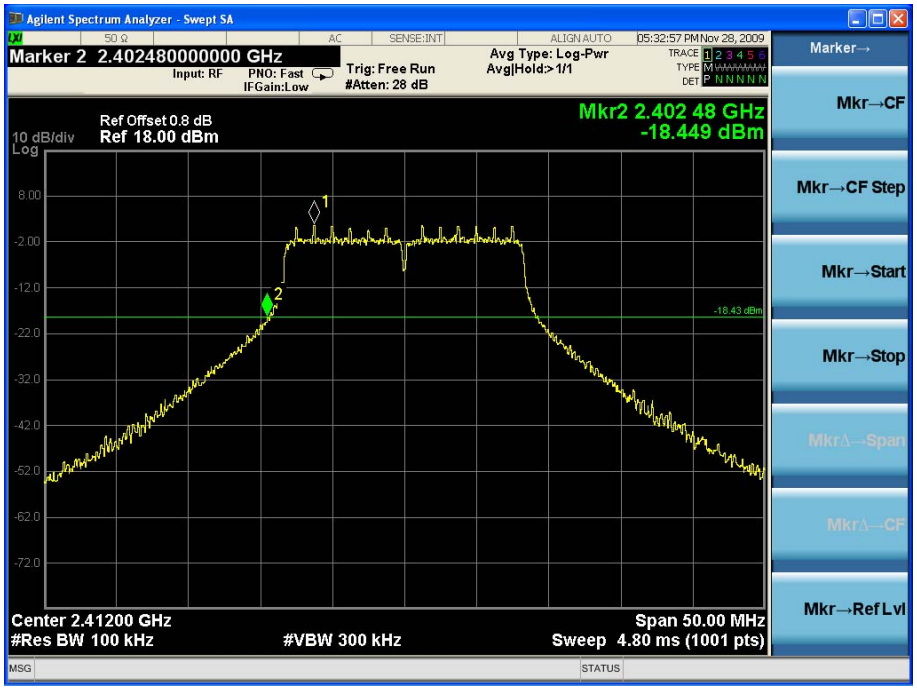
Channel 01 (2412MHz)

Channel 11 (2462MHz)

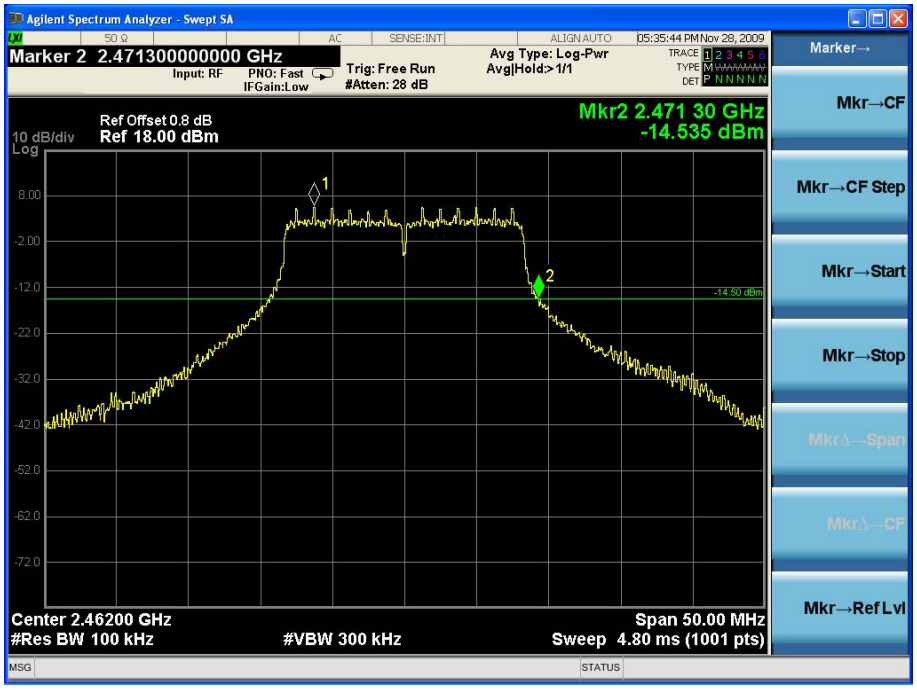


Product	:	Notebook
Test Item	:	Operation Frequency Range of 20dB Bandwidth
Test Mode	:	Mode 2: Transmit by 802.11g

Channel 01 (2412MHz)

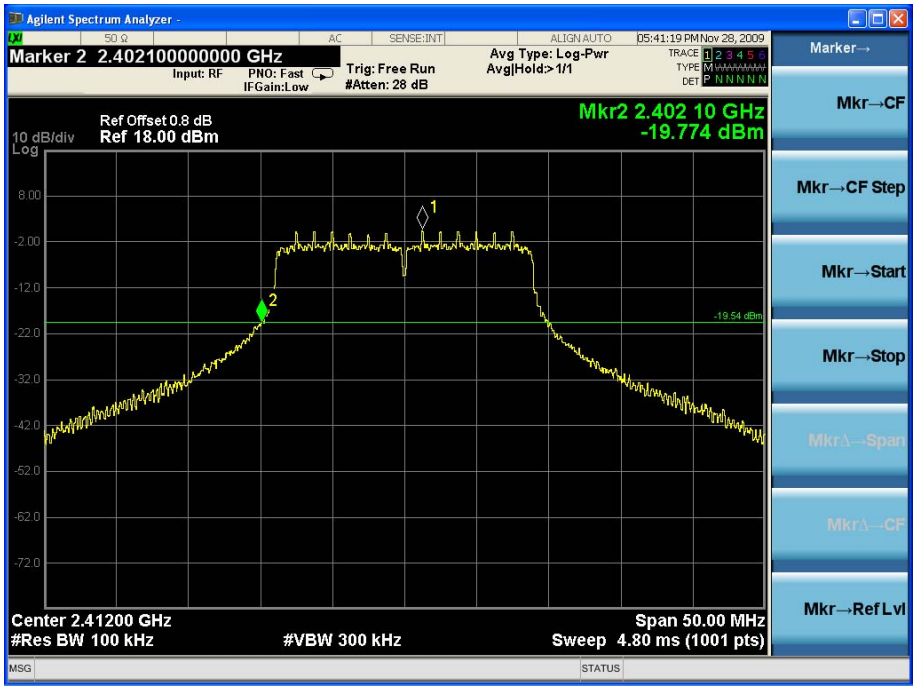


Channel 11 (2462MHz)

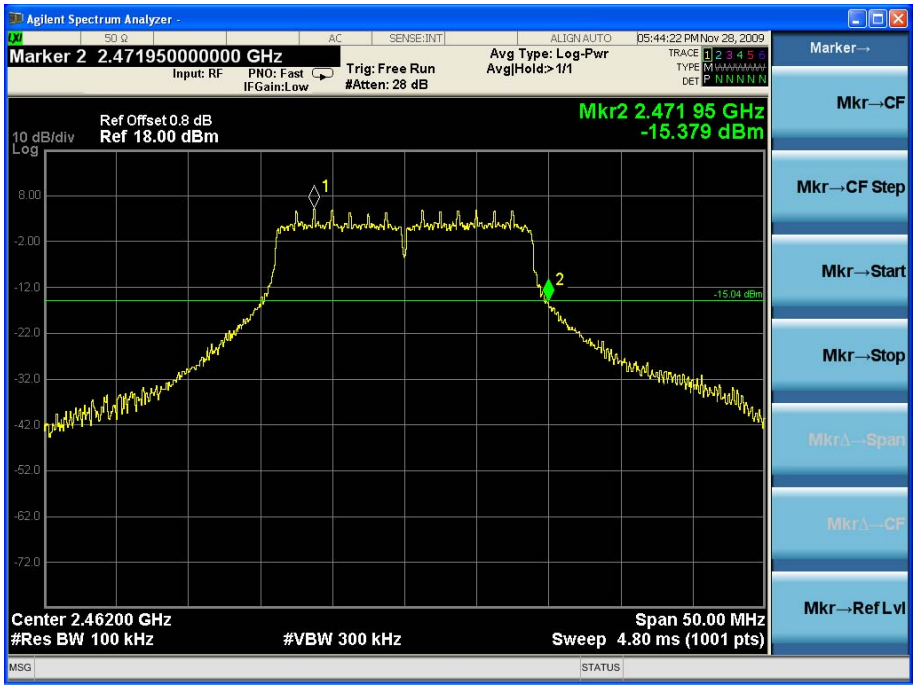


Product	:	Notebook
Test Item	:	Operation Frequency Range of 20dB Bandwidth
Test Mode	:	Mode 3: Transmit by 802.11n (20MHz)

Channel 01 (2412MHz)

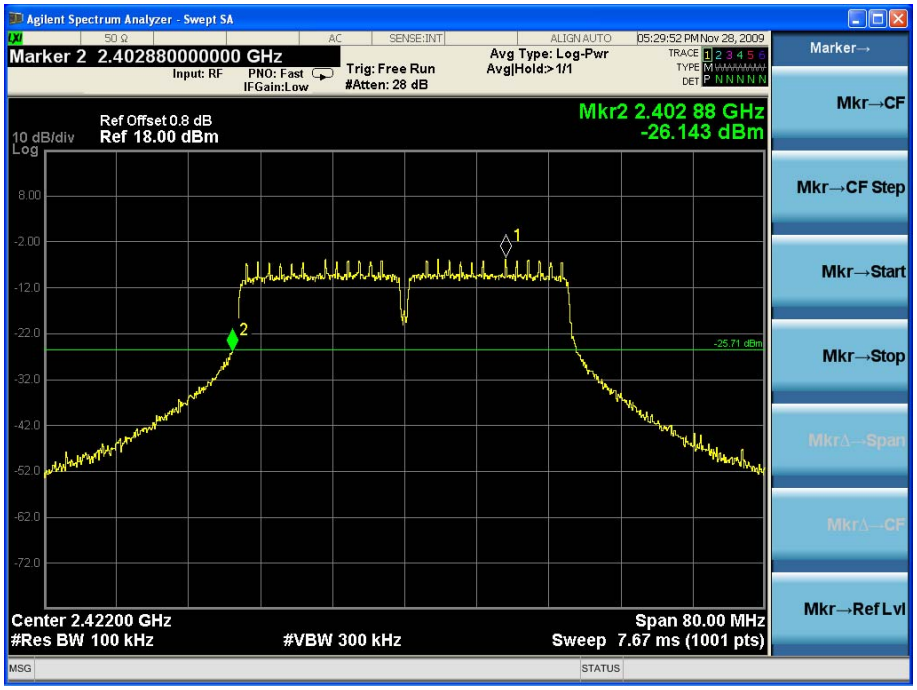


Channel 11 (2462MHz)

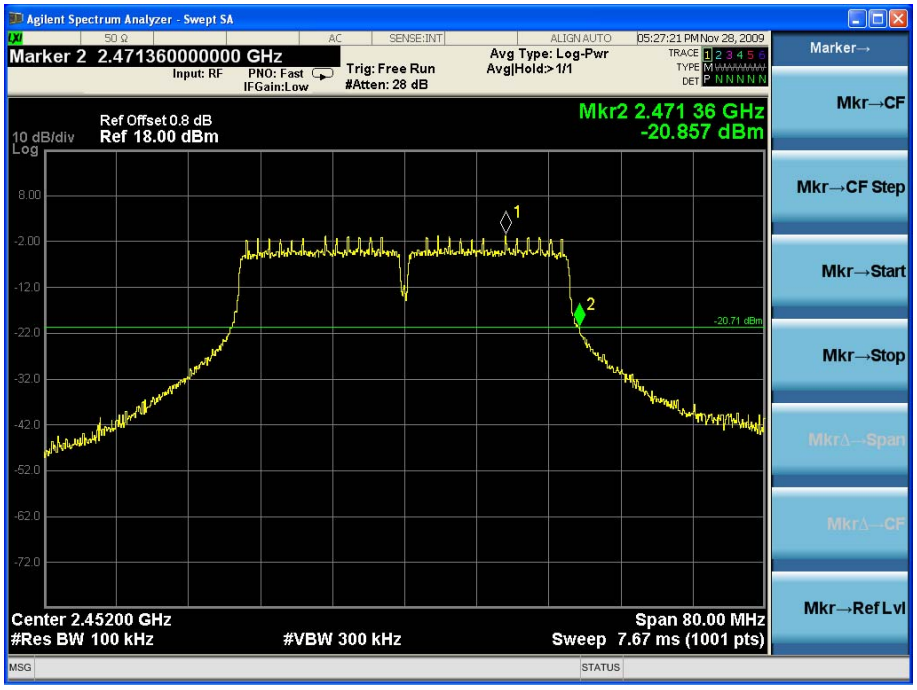


Product	:	Notebook
Test Item	:	Operation Frequency Range of 20dB Bandwidth
Test Mode	:	Mode 4: Transmit by 802.11n (40MHz)

Channel 03 (2422MHz)



Channel 09 (2452MHz)



8. Occupied Bandwidth

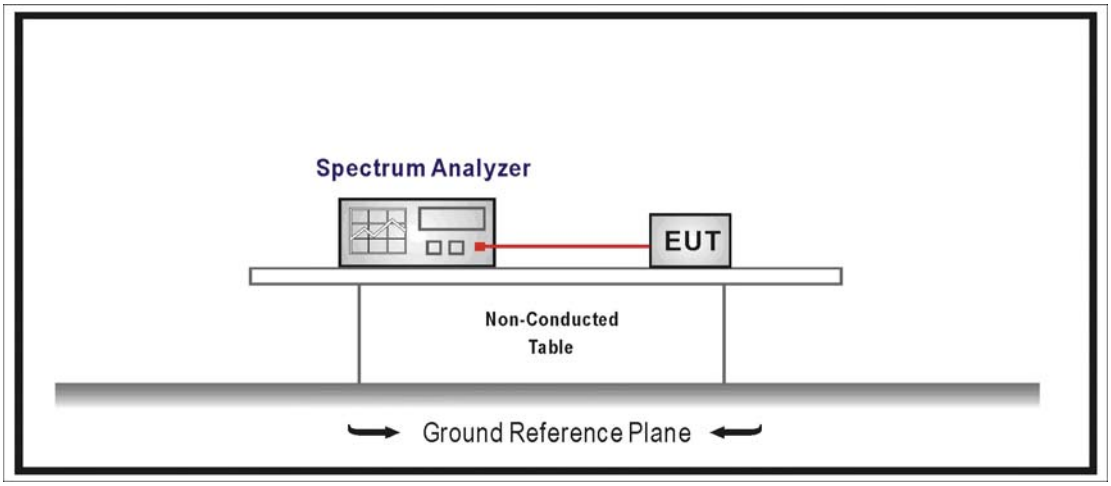
8.1. Test Equipment

Occupied Bandwidth / AC-6

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	N9020A	MY49100159	2009/05/06
Temperature/Humidity Meter	zhicheng	ZC1-2	QT-TH007	2009/03/30

Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

8.2. Test Setup



8.3. Limit

The minimum 6 dB bandwidth shall be at least 500 kHz.

8.4. Test Procedure

The EUT was tested according to DTS test procedure of Oct 2002 KDB558074 for compliance to FCC 47CFR 15.247 requirements.
Set RBW = 100 kHz, Span greater than RBW.

8.5. Uncertainty

The measurement uncertainty is defined as ± 1 kHz

8.6. Test Result

Product	:	Notebook
Test Item	:	6dB Occupied Bandwidth
Test Mode	:	Mode 1: Transmit by 802.11b

Channel No.	Frequency (MHz)	Occupied Bandwidth (kHz)	Limit (kHz)	Result
01	2412	13050	500	Pass
06	2437	12100	500	Pass
11	2462	12100	500	Pass

Channel 01 (2412MHz)

Channel 06 (2437MHz)

Channel 11 (2462MHz)