Test Report

Industry Canada RSS-Gen Issue 3/RSS-210 Issue 8
FCC Part15 Subpart C

Product Name	:	802.11g/DRAFT 802.11n WLAN PCI-E MINICARD
Model No.	:	BCM94313HMG2L
FCC ID	:	QDS-BRCM1050I
IC	:	4324A-BRCM1050

Applicant	:	BROADCOM CORPORATION
Address	:	190 MATHILDA PLACE SUNNUVALE, CA 94086, U.S.A.

Date of Receipt	:	11/03/2013
Test Date	:	12/03/2013~29/04/2013
Issued Date	:	30/04/2013
Report No.	:	133S021R-RF-US-P05V02
Report Version	:	V1.2

Test Report Certification

Issued Date : 30/04/2013
Report No. : 133S021R-RF-US-P05V02

QuieTek

Product Name	:	802.11g/DRAFT 802.11n WLAN PCI-E MINICARD
Applicant	:	BROADCOM CORPORATION
Address	:	190 MATHILDA PLACE SUNNUVALE, CA 94086, U.S.A.
Manufacturer	:	BROADCOM CORPORATION
Address	:	190 MATHILDA PLACE SUNNUVALE, CA 94086, U.S.A.
Model No.	:	BCM94313HMG2L
FCC ID	:	QDS-BRCM1050I
IC	:	4324A-BRCM1050
EUT Voltage	:	3.3V
Brand Name	:	Broadcom
Applicable Standard	:	FCC CFR Title 47 Part 15 Subpart C: 2012
		ANSI C63.4: 2009; KDB 558074
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; IC Lab Code: 4075B

Documented By	:	Alice Ni
Reviewed By	:	Jame yuan
Approved By	:	Robin Wu

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/accepted(audited or listed) by the following related bodies in compliance with ISO 17025, EN 45001 and specified testing scope:

Taiwan R.O.C.	**:**	**BSMI, NCC, TAF**
Germany	**:**	**TUV Rheinland**
Norway	**:**	**Nemko, DNV**
USA	**:**	**FCC, NVLAP**
Japan	**:**	**VCCI**
China	**:**	**CNAS**

The related certificate for our laboratories about the test site and management system can be downloaded from QuieTek Corporation's Web Site :http://www.quietek.com/tw/ctg/cts/accreditations.htm
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:

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

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No.5-22, Ruishukeng, Linkou Dist., New Taipei City 24451, Taiwan, R.O.C.
TEL : 886-2-8601-3788 / FAX : 886-2-8601-3789 E-Mail : service@quietek.com

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

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1. General Information

1.1. EUT Description

Product Name	802.11g/DRAFT 802.11n WLAN PCI-E MINICARD
Brand Name	Broadcom
Model No.	BCM94313HMG2L
EUT Voltage	3.3V
Frequency Range	802.11b/g/n(20MHz): 2412~2472MHz
Channel Number	802.11b/g/n(20MHz): 13
Type 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 300 Mbps
Channel Control	Auto
Antenna Delivery	1*Tx + 2*Rx
Antenna Type	Reference to Antenna List
Peak Antenna Gain	Reference to Antenna List

For 2.4GHz Band

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	12	2467 MHz
13	2472 MHz	N/A	N/A	N/A	N/A	N/A	N/A

802.11b/g/n Added Antenna List

Antenna	Manufacturer	Model No.	Peak Gain
Dipole Antenna(Main)	Luxshare corporation	L01RF005-R	2.71dBi for 2.40~2.50GHz band
Dipole Antenna (Aux)	Luxshare corporation	L01RF005-R	2.71dBi for 2.40~2.50GHz band
PIFA Antenna 1#	Luxshare corporation	L01RF014-R	-0.14dBi for 2.40~2.50GHz band
PIFA Antenna 2#	Luxshare corporation	L01RF013-R	0.14dBi for 2.40~2.50GHz band
PIFA Antenna 3#	Luxshare corporation	L01RF022-DT-R	-0.04dBi for 2.40~2.50GHz band

Note1: We use the dipole antenna to do all testing for this report.

Note2: Added PIFA Antenna 1#, 2# and 3# needn't test again, because the max peak gain of PIFA antenna show in the original test report is 1.73dBi, and three PIFA antenna peak gain are lower.

BCM94313HMG2L FCC/IC approved power levels

Test Mode	Test Channel	Powers Setting	Peak Output Power
802.11b	1	16	19.52
	6	16	20.56
	13	11	15.60
802.11g	1	16	23.49
	6	16	25.43
	13	11	16.76
802.11n(20MHz)	1	16	23.45
	6	16	25.38
	13	11	16.58

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 802.11n (20MHz)

Note:

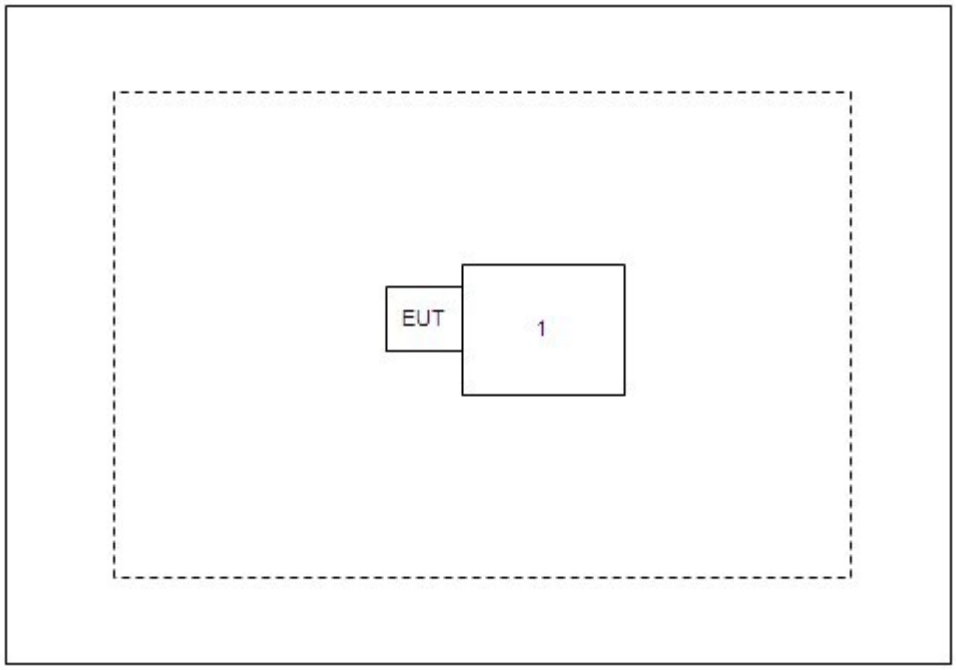
1. Regards to the frequency band operation: the lowest、middle and highest frequency of channel were selected to perform the test, then shown on this report.

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	Notebook	Dell	N80V	8BN0AS226971468	Non-Shielded, 1.8m

1.4. Configuration of Tested System

Connection Diagram		
		
Signal Cable Type		Signal cable Description
A	N/A	N/A

1.5. EUT Exercise Software

1	Setup the EUT and simulators as shown on above.
2	Execute some command on the PC provided by applicant.
3	Setup the test channel and the test mode press ok to start the continue transmit.

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
Radiated Emission	FCC CFR Title 47 Part 15 Subpart C: 2012 Section 15.209 RSS-210 Issue 8 December 2010 Section 2.7 Table 2 and Table 3	Yes	No
Radiated Emission Band Edge	FCC CFR Title 47 Part 15 Subpart C: 2012 15.247(d) RSS-210 Issue 8 December 2010 Section A8.5	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. Radiated Emission

3.1. Test Equipment

Radiated Emission / AC-2

Instrument	Manufacturer	Type No.	Serial No.	Cali. Due Date
EMI Test Receiver	R&S	ESCI	100573	2013.04.18
Loop Antenna	R&S	HFH2-Z2	833799/003	2013.11.22
Bilog Antenna	Teseq GmbH	CBL6112D	27611	2013.10.15
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC2-C	2014.03.01
Temperature/Humidity Meter	Zhicheng	ZC1-2	AC2-TH	2013.05.07

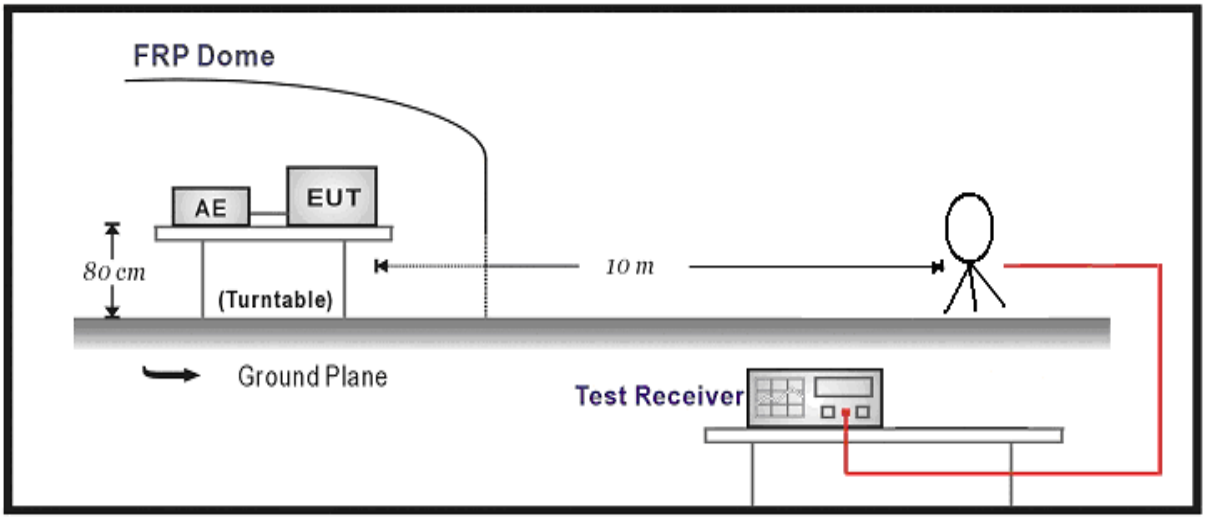
Radiated Emission / AC-5

Instrument	Manufacturer	Type No.	Serial No.	Cali. Due Date
Spectrum Analyzer	Agilent	N9020A	MY49100159	2014.03.30
Preamplifier	Miteq	NSP1800-25	1364185	2013.05.04
Preamplifier	QuieTek	AP-040G	CHM-0906001	2013.05.04
Bilog Antenna	Teseq GmbH	CBL6112D	27612	2013.10.15
DRG Horn	ETS-Lindgren	3117	00123988	2014.01.21
Broad-Band Horn Antenna	Schwarzbeck	BBHA9170	294	2013.11.24
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C1	2014.03.01
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C2	2014.03.01
Coaxial Cable	Huber+Suhner	SUCOFLEX 102	AC5-C3	2014.03.01
EMI Receiver	Agilent	N9038A	MY51210196	2013.06.11
Temperature/Humidity Meter	Zhichen	ZC1-2	AC5-TH	2014.01.11

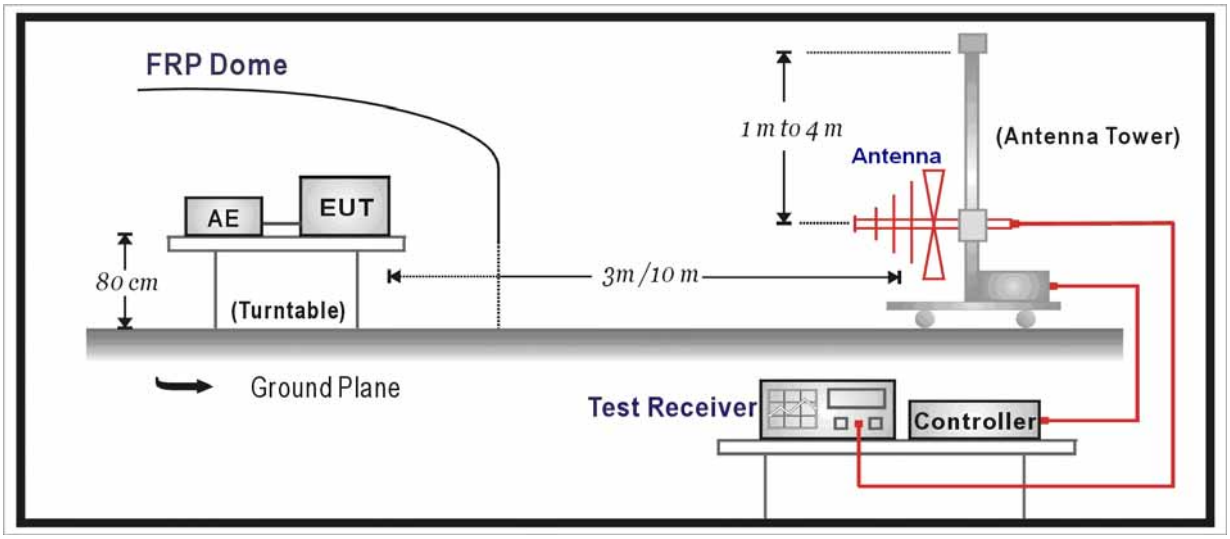
Note 1: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

3.2. Test Setup

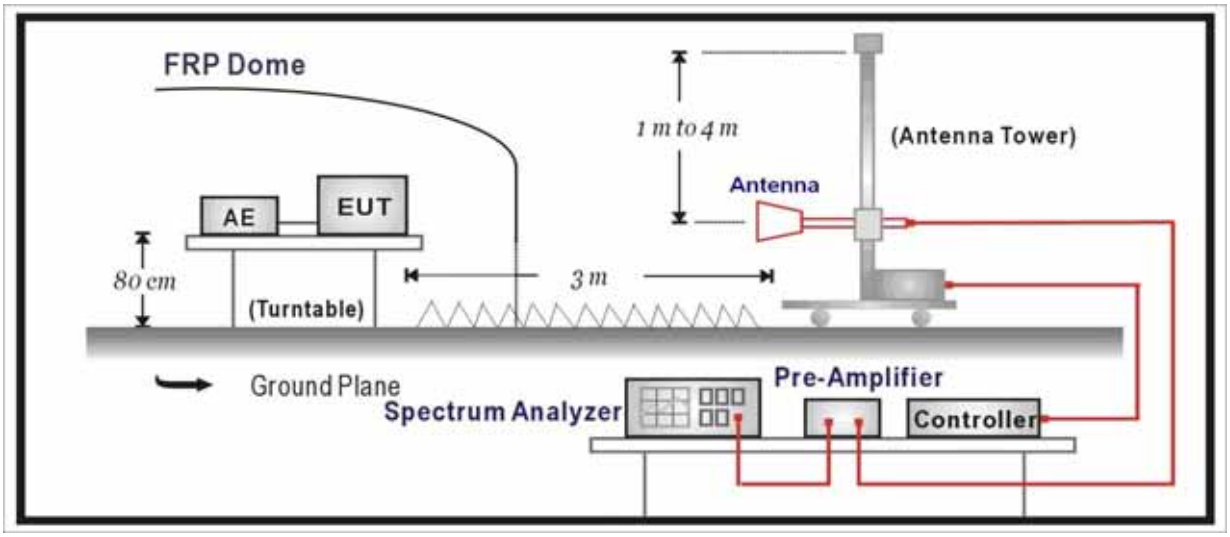
Below 30MHz Test Setup:



Below 1GHz Test Setup:



Above 1GHz Test Setup:



3.3. 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)

3.4. Test Procedure

The EUT was setup according to ANSI C63.4: 2009 and tested according to KDB 558074 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: 2009 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 60 degrees for H-plane and 90 degrees for E-plane.

3.5. Uncertainty

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

below 1G is defined as ± 3.8 dB

3.6. 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

Mode1: Transmit by 802.11b

CH	Antenna	Frequency (MHz)	Reading Level (dBYV/m)	Factor (dB)	Measure Level (dBYV/m)	Limit (dBYV/m)	Margin (dB)	Detector
1	H	3133.5	50.7	-10.6	40.1	54(note3)	-13.9	PK
	V	3040.0	50.1	-11.1	39.0	54(note3)	-15.0	PK
	H	4824.0	48.0	-8.3	39.7	54(note3)	-14.3	PK
	V	4824.0	47.8	-8.4	39.4	54(note3)	-14.6	PK
	H	7236.0	44.0	-3.4	40.6	54(note3)	-13.4	PK
	V	7236.0	44.0	-3.4	40.6	54(note3)	-13.4	PK
	H	9648.0	39.1	2.6	41.7	54(note3)	-12.3	PK
	V	9648.0	38.8	2.6	41.4	54(note3)	-12.6	PK
6	H	3040.0	50.3	-10.8	39.5	54(note3)	-14.5	PK
	V	3150.5	51.2	-10.8	40.4	54(note3)	-13.6	PK
	H	4874.0	47.3	-8.3	39.0	54(note3)	-15.0	PK
	V	4876.0	51.2	-8.3	42.9	54(note3)	-11.1	PK
	H	7311.0	44.2	-3.3	40.9	54(note3)	-13.1	PK
	V	7311.0	44.2	-3.3	40.9	54(note3)	-13.1	PK
	H	9748.0	39.3	2.7	42.0	54(note3)	-12.0	PK
	V	9748.0	38.9	2.8	41.7	54(note3)	-12.3	PK
13	H	3184.5	50.5	-10.5	40.0	54(Note3)	-14.0	PK
	V	3116.5	51.0	-10.9	40.1	54(Note3)	-13.9	PK
	H	4944.0	47.6	-8.4	39.2	54(Note3)	-14.8	PK
	V	4944.0	47.7	-8.3	39.4	54(Note3)	-14.6	PK
	H	7416.0	43.5	-3.0	40.5	54(Note3)	-13.5	PK
	V	7416.0	43.8	-3.0	40.8	54(Note3)	-13.2	PK
	H	9888.0	39.2	3.1	42.3	54(Note3)	-11.7	PK
	V	9888.0	38.6	3.2	41.8	54(Note3)	-12.2	PK

Note: 1. Measure Level = Reading Level + Factor.

2. The test trace is same as the ambient noise (the test frequency range: 9kHz~30MHz, 18GHz~25GHz), therefore no data appear in the report.
3. 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.

Mode2: Transmit by 802.11g

CH	Antenna	Frequency (MHz)	Reading Level (dBYV/m)	Factor (dB)	Measure Level (dBYV/m)	Limit (dBYV/m)	Margin (dB)	Detector
1	H	3159.0	50.7	-10.5	40.2	54(note3)	-13.8	PK
	V	3065.5	50.7	-11.1	39.6	54(note3)	-14.4	PK
	H	4824.0	47.6	-8.3	39.3	54(note3)	-14.7	PK
	V	4824.0	47.7	-8.4	39.3	54(note3)	-14.7	PK
	H	7236.0	43.9	-3.4	40.5	54(note3)	-13.5	PK
	V	7236.0	44.1	-3.4	40.7	54(note3)	-13.3	PK
	H	9648.0	39.3	2.6	41.8	54(note3)	-12.2	PK
	V	9648.0	39.3	2.6	41.9	54(note3)	-12.1	PK
6	H	3074.0	50.0	-10.7	39.3	54(note3)	-14.7	PK
	V	3006.0	51.3	-11.2	40.0	54(note3)	-14.0	PK
	H	4874.0	47.7	-8.3	39.4	54(note3)	-14.6	PK
	V	4884.5	52.5	-8.3	44.2	54(note3)	-9.8	PK
	H	7311.0	44.2	-3.3	40.9	54(note3)	-13.1	PK
	V	7311.0	45.2	-3.3	41.9	54(note3)	-12.1	PK
	H	9748.0	38.6	2.7	41.3	54(note3)	-12.7	PK
	V	9748.0	38.9	2.8	41.6	54(note3)	-12.4	PK
13	H	3159.0	50.8	-10.5	40.3	54(Note3)	-13.7	PK
	V	3133.5	50.0	-10.9	39.1	54(Note3)	-14.9	PK
	H	4944.0	47.7	-8.4	39.3	54(Note3)	-14.7	PK
	V	4944.0	48.7	-8.3	40.4	54(Note3)	-13.6	PK
	H	7416.0	44.3	-3.0	41.3	54(Note3)	-12.7	PK
	V	7416.0	44.7	-3.0	41.7	54(Note3)	-12.3	PK
	H	9888.0	39.3	3.1	42.4	54(Note3)	-11.6	PK
	V	9888.0	38.8	3.2	42.0	54(Note3)	-12.0	PK

Note: 1. Measure Level = Reading Level + Factor.
2. The test trace is same as the ambient noise (the test frequency range: 9kHz~30MHz, 18GHz~25GHz), therefore no data appear in the report.

3. 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.

Mode3: Transmit by 802.11n(20MHz)

CH	Antenna	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	H	3125.0	50.7	-10.6	40.1	54(note3)	-13.9	PK
	V	3091.0	50.0	-11.0	38.9	54(note3)	-15.1	PK
	H	4824.0	47.0	-8.3	38.7	54(note3)	-15.3	PK
	V	4824.0	47.3	-8.4	38.9	54(note3)	-15.2	PK
	H	7236.0	43.4	-3.4	40.0	54(note3)	-14.0	PK
	V	7236.0	44.0	-3.4	40.6	54(note3)	-13.4	PK
	H	9648.0	39.1	2.6	41.6	54(note3)	-12.4	PK
	V	9648.0	38.9	2.6	41.5	54(note3)	-12.5	PK
6	H	3040.0	50.8	-10.8	40.0	54(note3)	-14.0	PK
	V	3167.5	50.0	-10.8	39.2	54(note3)	-14.8	PK
	H	4874.0	47.2	-8.3	38.9	54(note3)	-15.1	PK
	V	4874.0	48.6	-8.3	40.3	54(note3)	-13.7	PK
	H	7311.0	44.2	-3.3	40.9	54(note3)	-13.1	PK
	V	7311.0	44.4	-3.3	41.1	54(note3)	-12.9	PK
	H	9748.0	38.2	2.7	40.9	54(note3)	-13.1	PK
	V	9748.0	39.3	2.8	42.1	54(note3)	-11.9	PK
13	H	3133.5	50.2	-10.6	39.6	54(Note3)	-14.4	PK
	V	3014.5	50.7	-11.2	39.5	54(Note3)	-14.5	PK
	H	4944.0	47.2	-8.4	38.8	54(Note3)	-15.2	PK
	V	4944.0	47.9	-8.3	39.6	54(Note3)	-14.4	PK
	H	7416.0	43.5	-3.0	40.5	54(Note3)	-13.5	PK
	V	7416.0	44.0	-3.0	41.0	54(Note3)	-13.0	PK
	H	9888.0	38.8	3.1	41.9	54(Note3)	-12.1	PK
	V	9888.0	38.4	3.2	41.6	54(Note3)	-12.4	PK

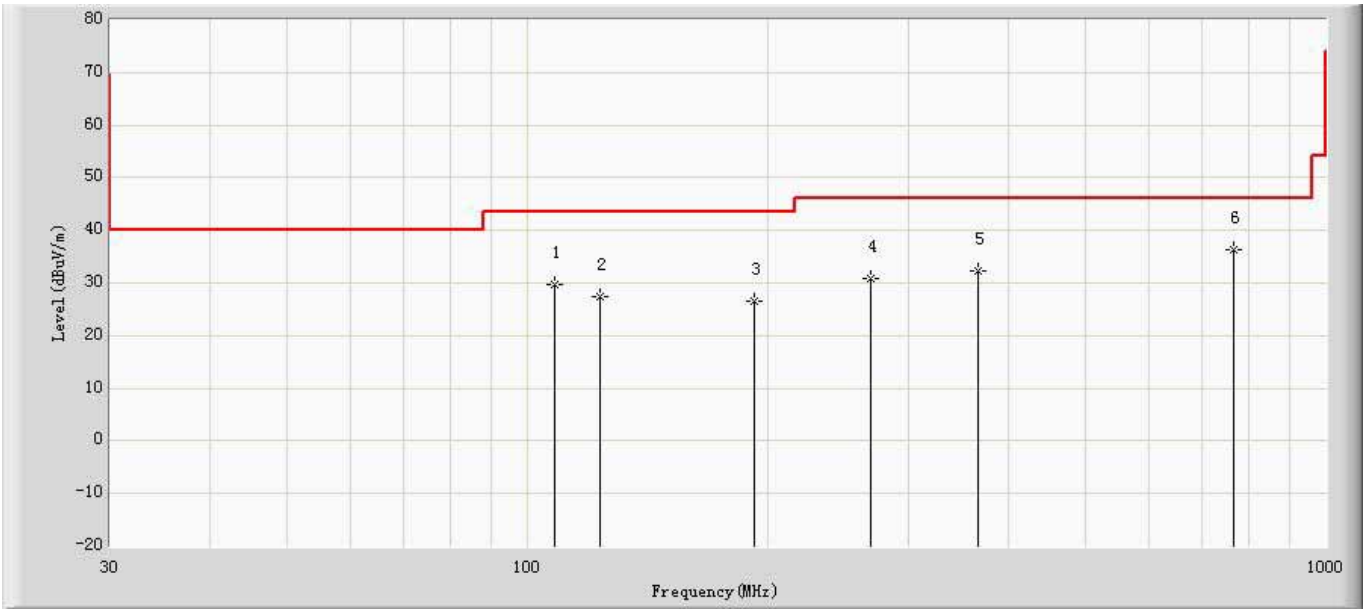
Note: 1. Measure Level = Reading Level + Factor.

2. The test trace is same as the ambient noise (the test frequency range: 9kHz~30MHz, 18GHz~25GHz), therefore no data appear in the report.

3. 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.

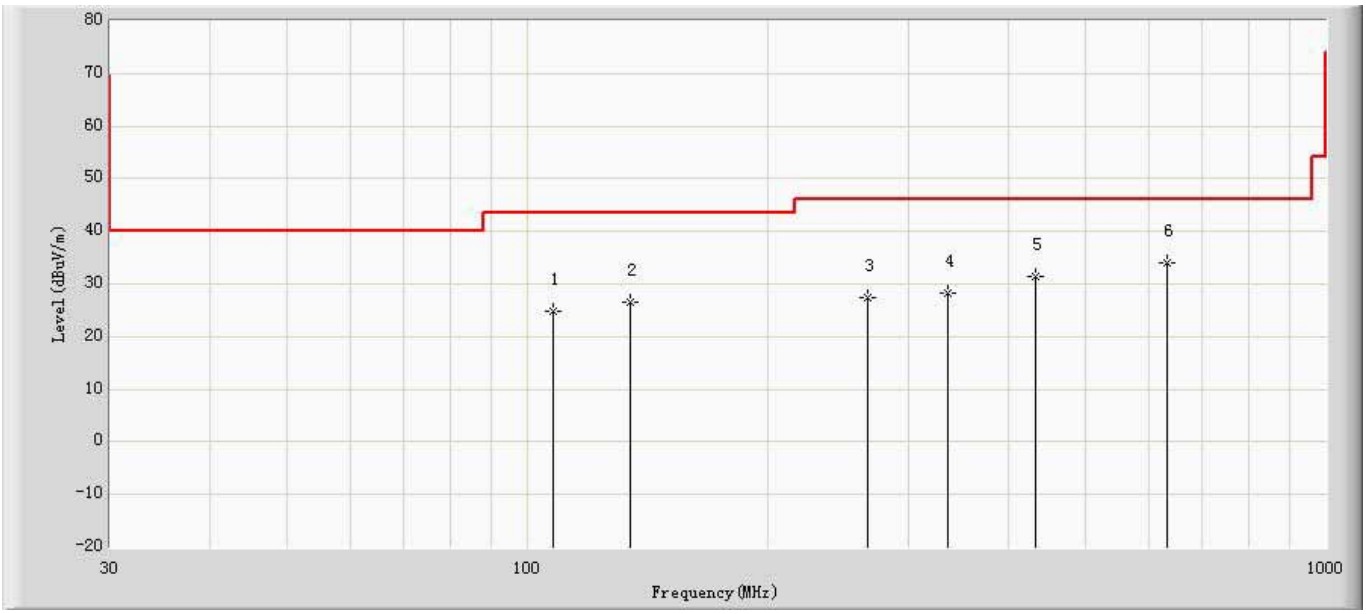
The worst case of the Radiated Emission below 1GHz:

Engineer: Milo	
Site: AC2	Time: 2013/03/26 - 18:19
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: CBL6112D_27611(30-1000MHz)	Polarity: Horizontal
EUT: 802.11g/DRAFT 802.11n WLAN PCI-E MINICARD	Power: AC 120V/60Hz
Note: Mode 1: Transmit at 2437MHz by 802.11b	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		108.327	29.646	11.342	-13.854	43.500	18.304	QP
2		123.363	27.374	8.755	-16.126	43.500	18.619	QP
3		191.990	26.631	10.833	-16.869	43.500	15.798	QP
4		268.741	30.939	11.054	-15.061	46.000	19.885	QP
5		366.348	32.248	9.800	-13.752	46.000	22.448	QP
6	*	766.351	36.245	7.853	-9.755	46.000	28.392	QP

Engineer: Milo	
Site: AC2	Time: 2013/03/26 - 18:19
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: CBL6112D_27611(30-1000MHz)	Polarity: Vertical
EUT: 802.11g/DRAFT 802.11n WLAN PCI-E MINICARD	Power: AC 120V/60Hz
Note: Mode 1: Transmit at 2437MHz by 802.11b	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		107.721	24.889	6.641	-18.611	43.500	18.248	QP
2		134.275	26.662	8.449	-16.838	43.500	18.214	QP
3		266.559	27.407	7.466	-18.593	46.000	19.942	QP
4		335.914	28.180	6.620	-17.820	46.000	21.559	QP
5		433.035	31.397	7.198	-14.603	46.000	24.198	QP
6	*	631.279	34.058	6.780	-11.942	46.000	27.278	QP

4. Radiated Emission Band Edge

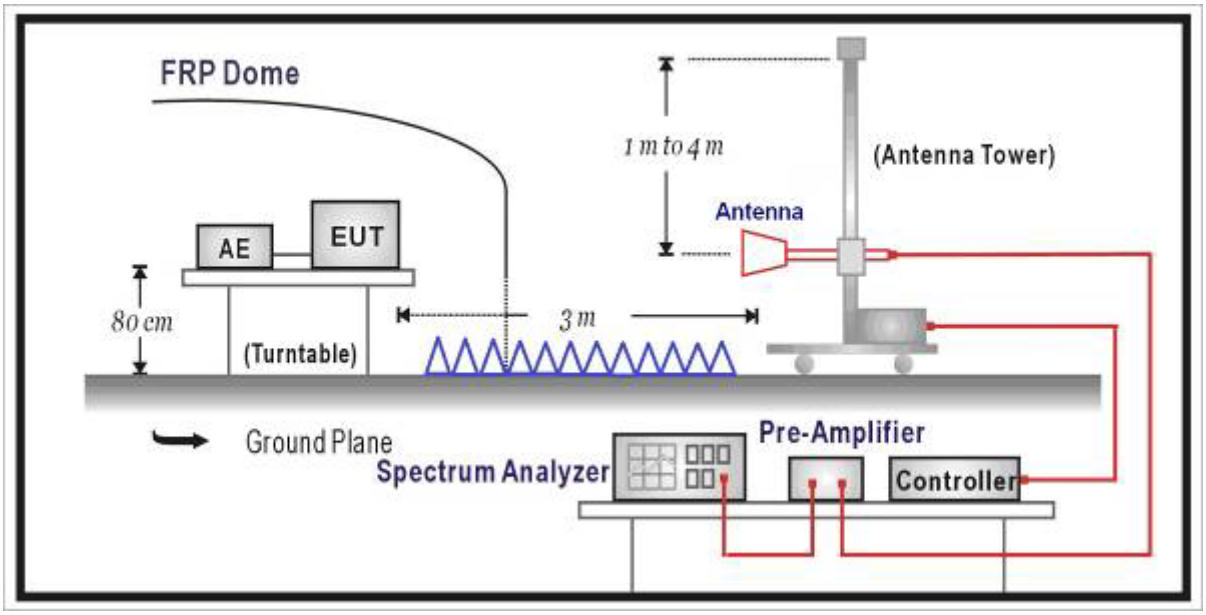
4.1. Test Equipment

☒Radiated Emission Band Edge / AC-5

Instrument	Manufacturer	Type No.	Serial No.	Cali. Due Date
Spectrum Analyzer	Agilent	N9020A	MY49100159	2014.03.30
Preamplifier	Miteq	NSP1800-25	1364185	2013.05.04
Preamplifier	QuieTek	AP-040G	CHM-0906001	2013.05.04
Bilog Antenna	Teseq GmbH	CBL6112D	27612	2013.10.15
DRG Horn	ETS-Lindgren	3117	00123988	2014.01.21
Broad-Band Horn Antenna	Schwarzbeck	BBHA9170	294	2013.11.24
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C1	2014.03.01
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C2	2014.03.01
Coaxial Cable	Huber+Suhner	SUCOFLEX 102	AC5-C3	2014.03.01
EMI Receiver	Agilent	N9038A	MY51210196	2013.06.11
Temperature/Humidity Meter	Zhichen	ZC1-2	AC5-TH	2014.01.11

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

4.2. Test Setup



4.3. 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)).

4.4. Test Procedure

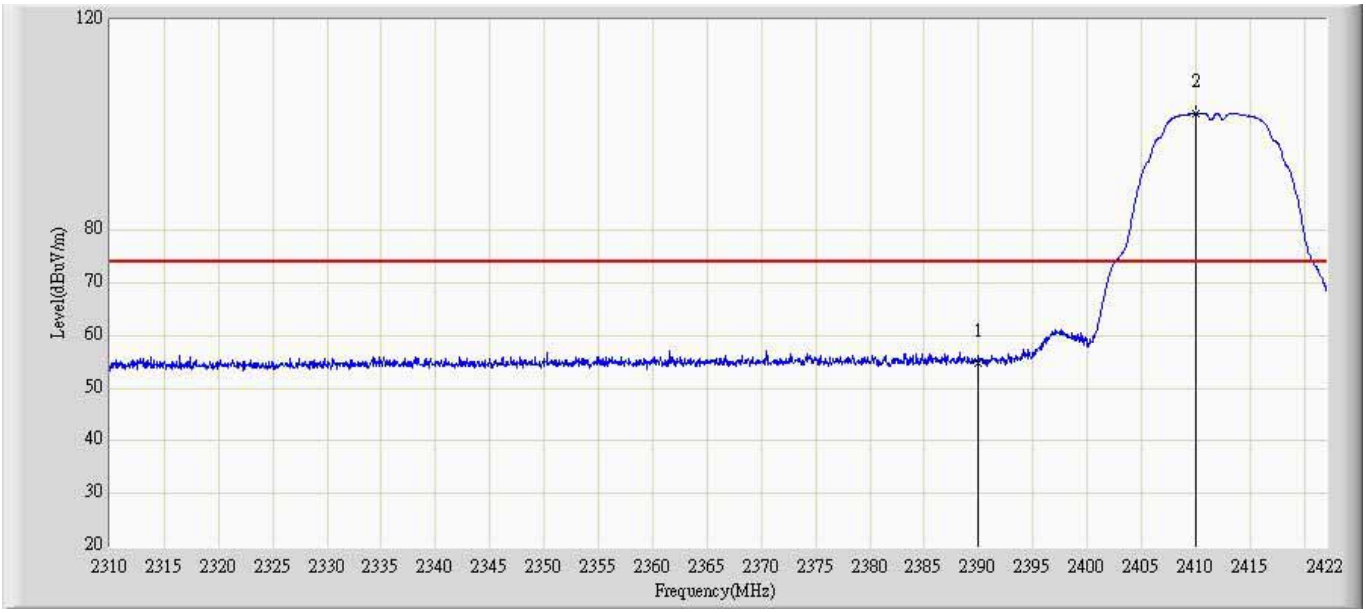
The EUT was setup according to ANSI C63.4: 2009 and tested according to KDB 558074 for compliance to FCC 47CFR 15.247 requirements.
The EUT is placed on a turn table which is 0.8 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level. The EUT 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: 2009 on radiated measurement.

4.5. Uncertainty

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

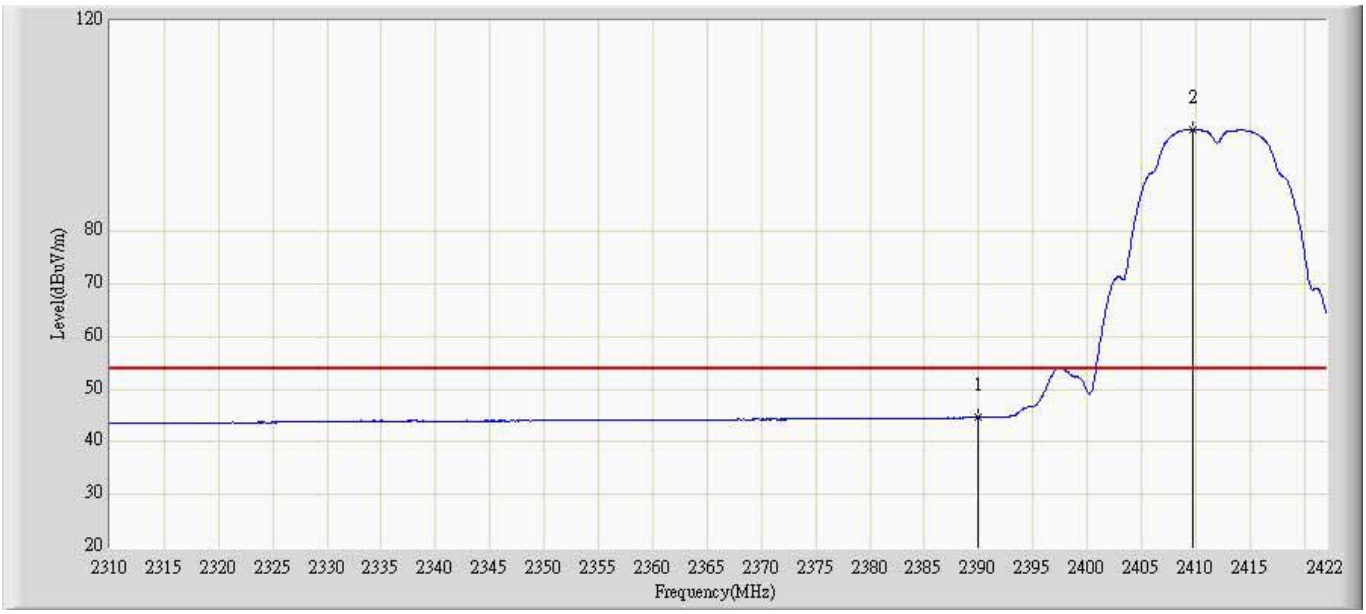
4.6. Test Result

Engineer: Milo	
Site: AC5	Time: 2013/04/11 - 21:03
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_988(1-18GHz)	Polarity: Horizontal
EUT: 802.11g/DRAFT 802.11n WLAN PCI-E MINICARD	Power: AC 120V/60Hz
Note: Mode 1: Transmit at 2412MHz by 802.11b	



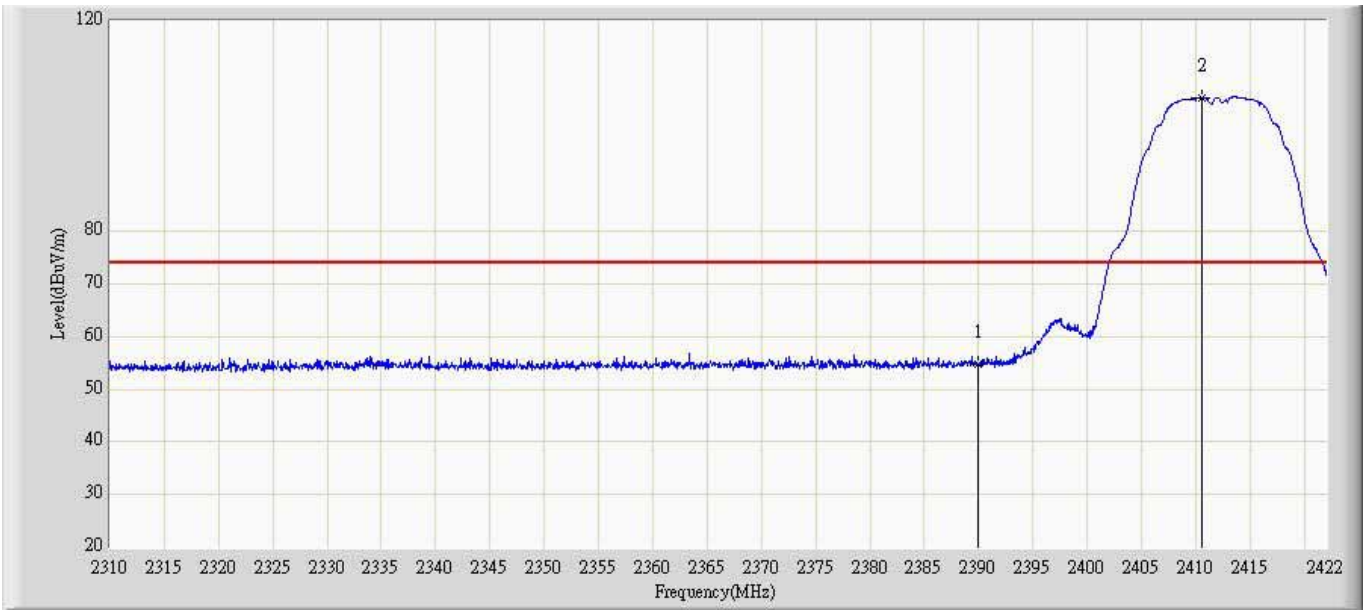
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	54.648	18.347	-19.352	74.000	36.302	PK
2		*	2410.016	102.193	65.727	N//A	N//A	36.465	PK

Engineer: Milo	
Site: AC5	Time: 2013/04/11 - 21:09
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_988(1-18GHz)	Polarity: Horizontal
EUT: 802.11g/DRAFT 802.11n WLAN PCI-E MINICARD	Power: AC 120V/60Hz
Note: Mode 1: Transmit at 2412MHz by 802.11b	



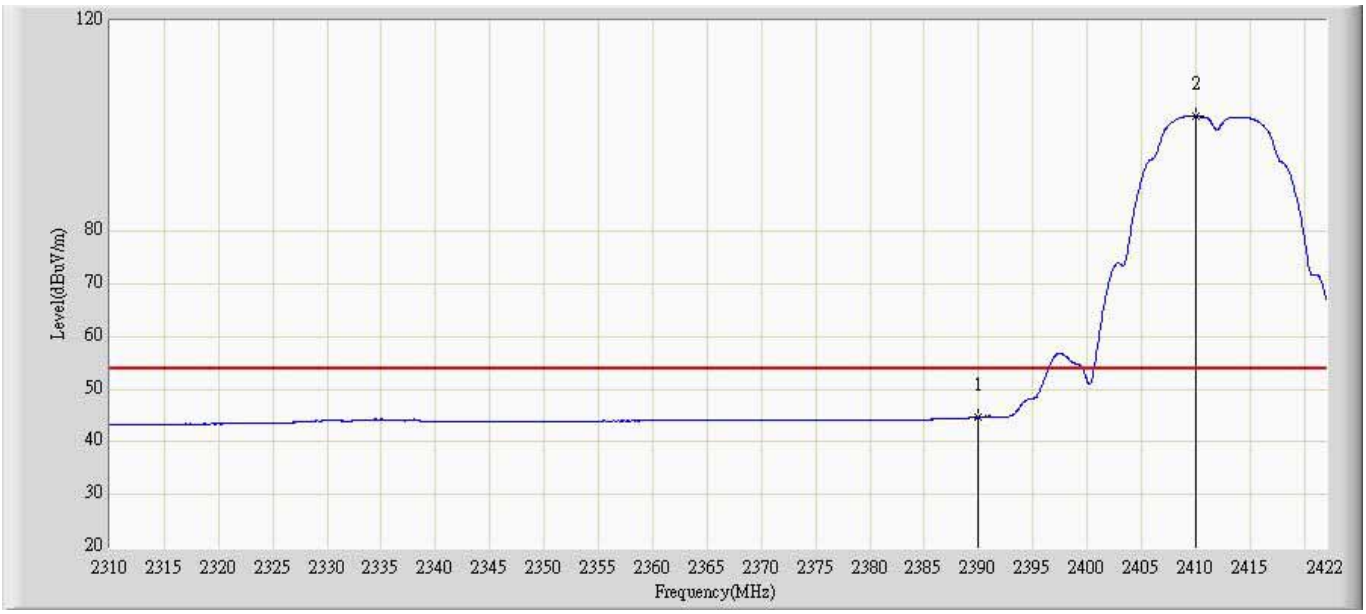
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	44.659	8.358	-9.341	54.000	36.302	AV
2		*	2409.736	99.368	62.904	N//A	N//A	36.463	AV

Engineer: Milo	
Site: AC5	Time: 2013/04/11 - 21:10
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_988(1-18GHz)	Polarity: Vertical
EUT: 802.11g/DRAFT 802.11n WLAN PCI-E MINICARD	Power: AC 120V/60Hz
Note: Mode 1: Transmit at 2412MHz by 802.11b	



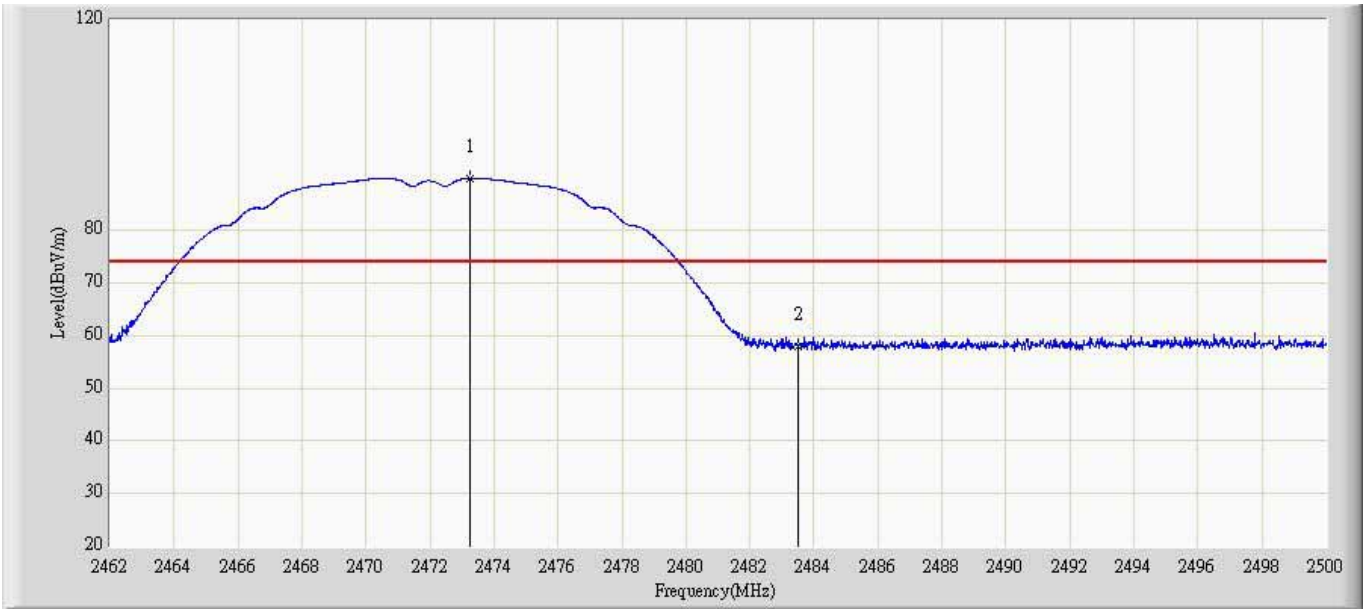
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	54.785	19.144	-19.215	74.000	35.642	PK
2		*	2410.632	105.415	69.687	N//A	N//A	35.729	PK

Engineer: Milo	
Site: AC5	Time: 2013/04/11 - 21:11
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_988(1-18GHz)	Polarity: Vertical
EUT: 802.11g/DRAFT 802.11n WLAN PCI-E MINICARD	Power: AC 120V/60Hz
Note: Mode 1: Transmit at 2412MHz by 802.11b	



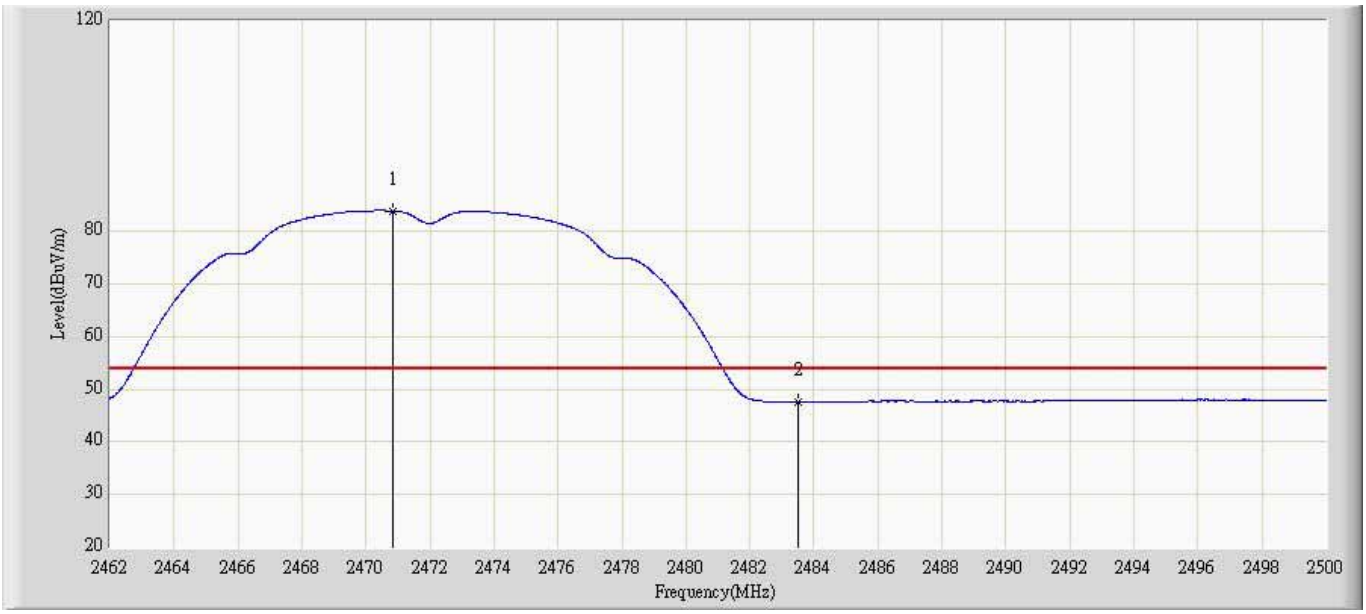
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	44.589	8.948	-9.411	54.000	35.642	AV
2		*	2410.072	101.876	66.150	N//A	N//A	35.726	AV

Engineer: Milo	
Site: AC5	Time: 2013/04/28 - 19:56
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_988(1-18GHz)	Polarity: Horizontal
EUT: 802.11g/DRAFT 802.11n WLAN PCI-E MINICARD	Power: AC 120V/60Hz
Note: Mode 1: Transmit at channel 2472MHz by 802.11b	



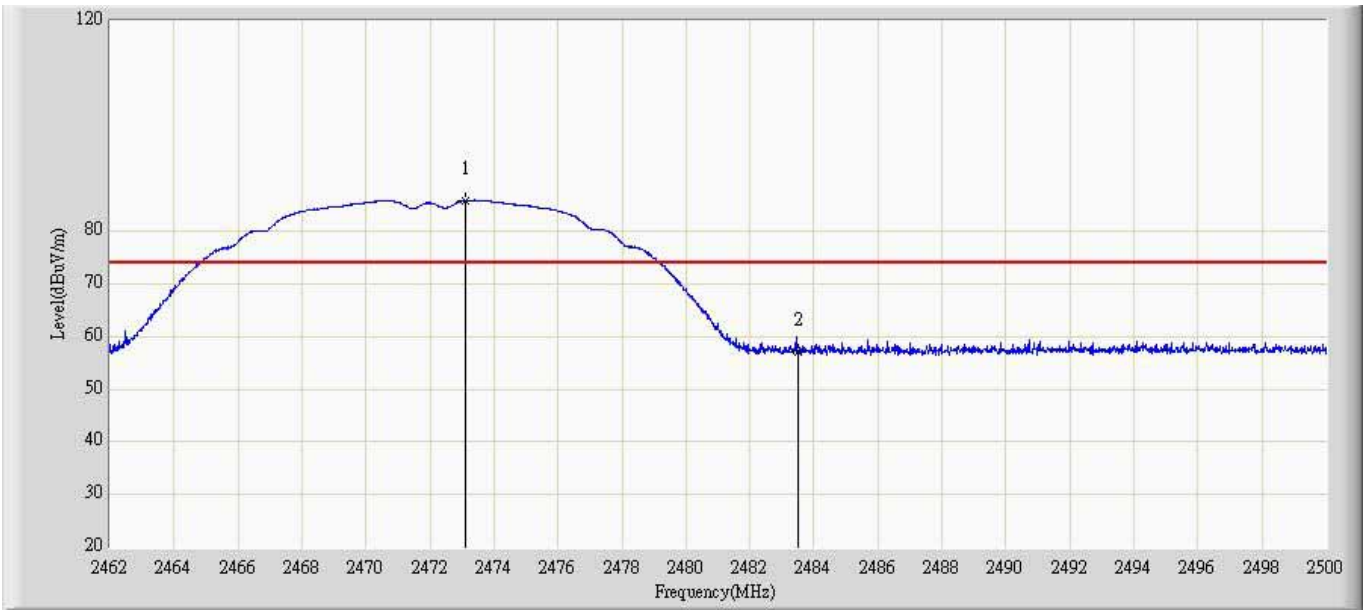
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2473.267	89.920	52.917	N/A	N/A	37.003	PK
2			2483.500	58.058	20.968	-15.942	74.000	37.089	PK

Engineer: Milo	
Site: AC5	Time: 2013/04/28 - 19:59
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_988(1-18GHz)	Polarity: Horizontal
EUT: 802.11g/DRAFT 802.11n WLAN PCI-E MINICARD	Power: AC 120V/60Hz
Note: Mode 1: Transmit at channel 2472MHz by 802.11b	



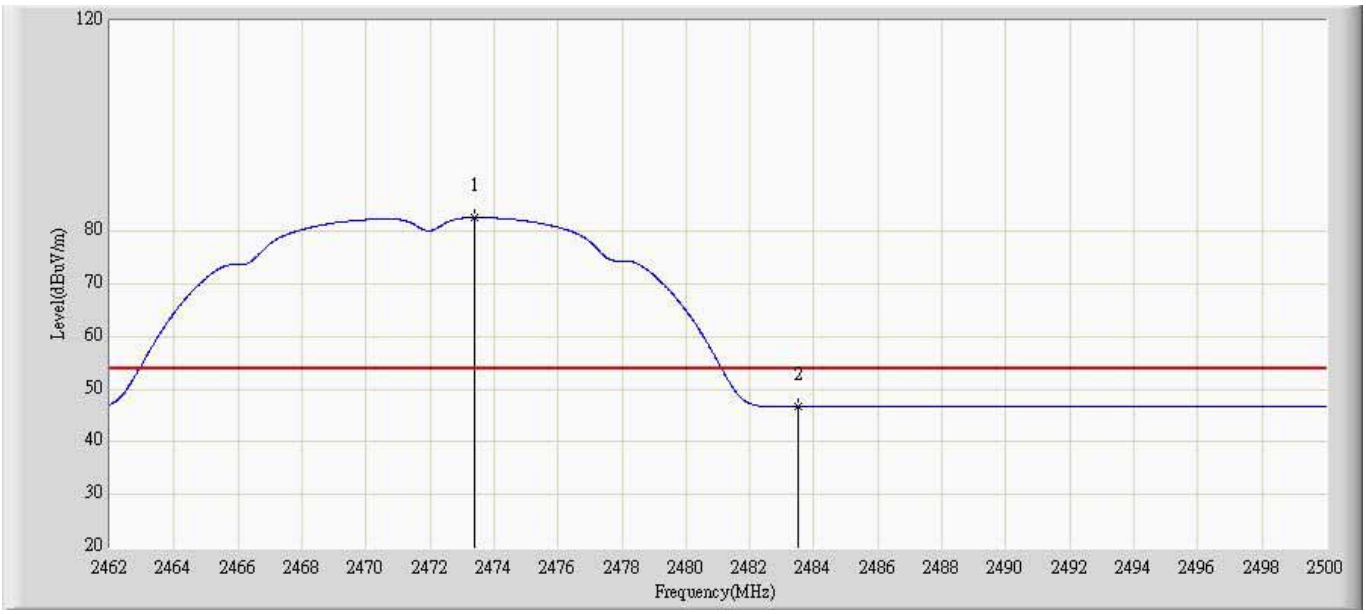
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2470.854	83.890	46.907	N/A	N/A	36.983	AV
2			2483.500	47.695	10.605	-6.305	54.000	37.089	AV

Engineer: Milo	
Site: AC5	Time: 2013/04/28 - 19:59
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_988(1-18GHz)	Polarity: Vertical
EUT: 802.11g/DRAFT 802.11n WLAN PCI-E MINICARD	Power: AC 120V/60Hz
Note: Mode 1: Transmit at channel 2472MHz by 802.11b	



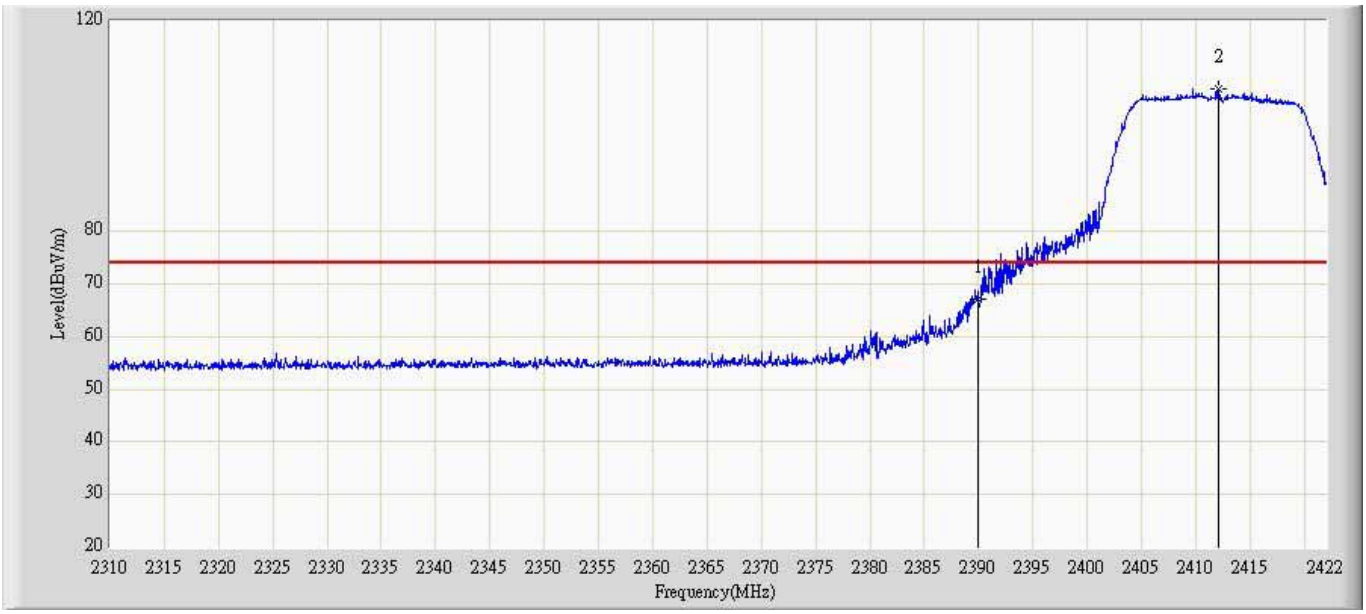
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2473.096	85.770	49.761	N/A	N/A	36.010	PK
2			2483.500	57.015	20.959	-16.985	74.000	36.055	PK

Engineer: Milo	
Site: AC5	Time: 2013/04/28 - 20:01
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_988(1-18GHz)	Polarity: Vertical
EUT: 802.11g/DRAFT 802.11n WLAN PCI-E MINICARD	Power: AC 120V/60Hz
Note: Mode 1: Transmit at channel 2472MHz by 802.11b	



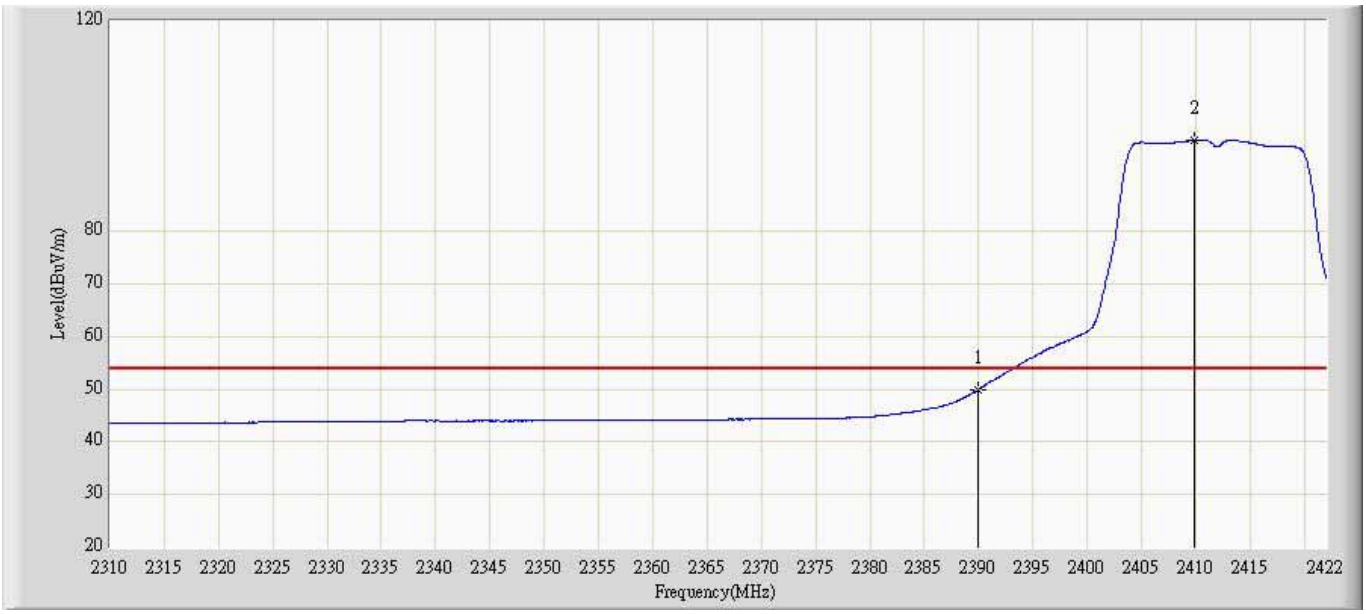
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2473.381	82.604	46.593	N/A	N/A	36.011	AV
2			2483.500	46.689	10.633	-7.311	54.000	36.055	AV

Engineer: Milo	
Site: AC5	Time: 2013/04/11 - 21:19
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_988(1-18GHz)	Polarity: Horizontal
EUT: 802.11g/DRAFT 802.11n WLAN PCI-E MINICARD	Power: AC 120V/60Hz
Note: Mode 2: Transmit at 2412MHz by 802.11g	



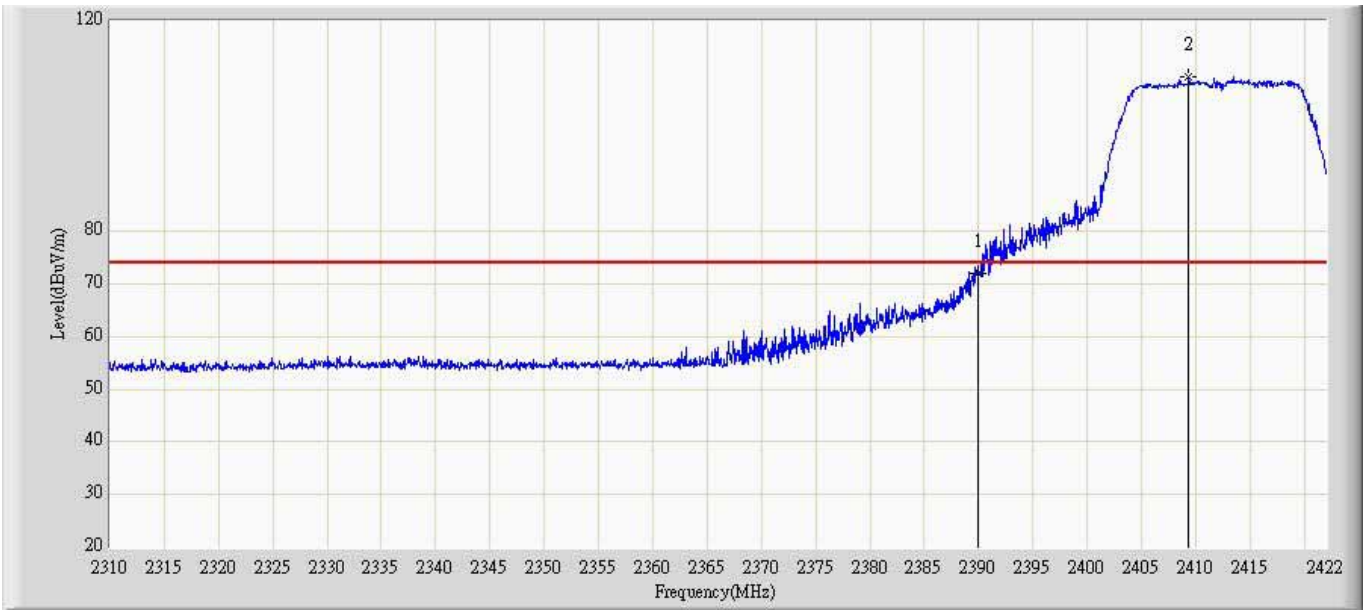
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	67.213	30.912	-6.787	74.000	36.302	PK
2		*	2412.144	107.127	70.643	N//A	N//A	36.484	PK

Engineer: Milo	
Site: AC5	Time: 2013/04/11 - 21:21
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_988(1-18GHz)	Polarity: Horizontal
EUT: 802.11g/DRAFT 802.11n WLAN PCI-E MINICARD	Power: AC 120V/60Hz
Note: Mode 2: Transmit at 2412MHz by 802.11g	



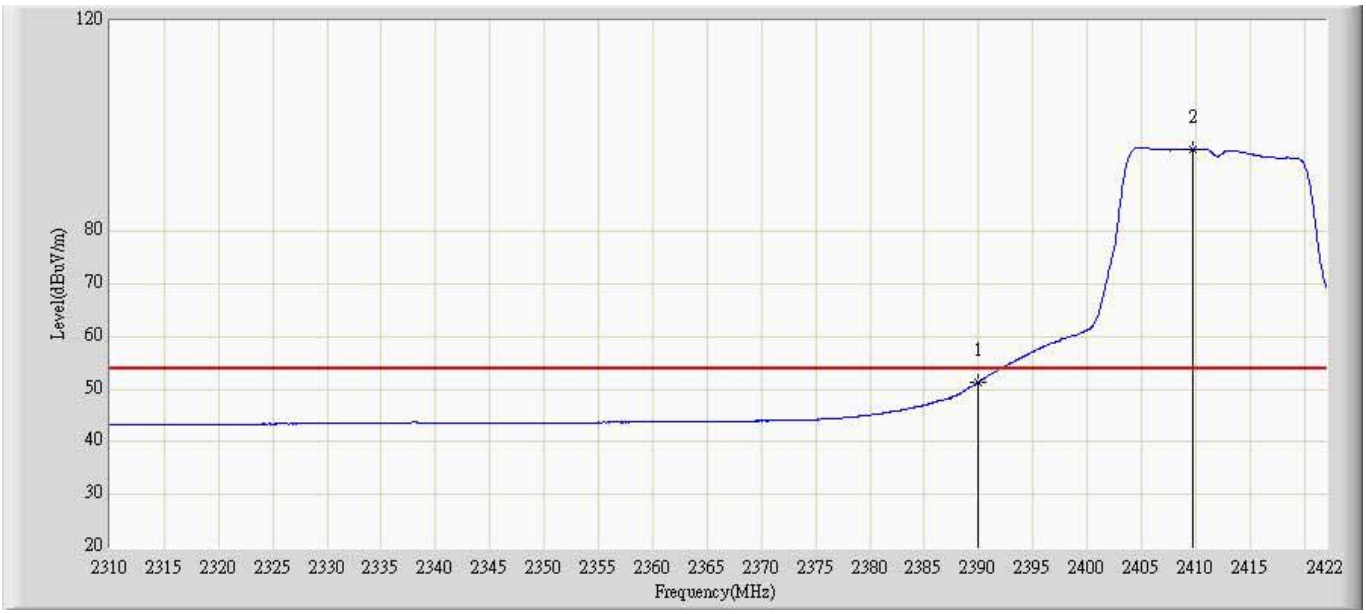
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	49.927	13.626	-4.073	54.000	36.302	AV
2		*	2409.904	97.260	60.795	N//A	N//A	36.465	AV

Engineer: Milo	
Site: AC5	Time: 2013/04/11 - 21:22
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_988(1-18GHz)	Polarity: Vertical
EUT: 802.11g/DRAFT 802.11n WLAN PCI-E MINICARD	Power: AC 120V/60Hz
Note: Mode 2: Transmit at 2412MHz by 802.11g	



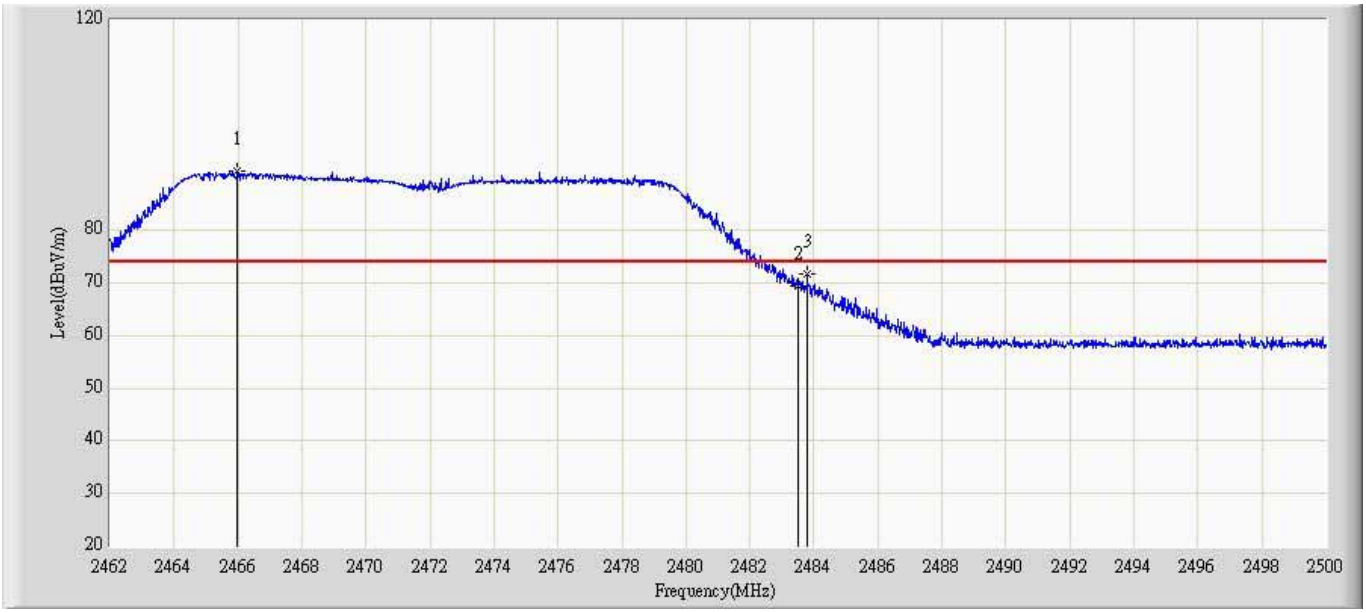
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	72.117	36.476	-1.883	74.000	35.642	PK
2		*	2409.344	109.416	73.693	N//A	N//A	35.723	PK

Engineer: Milo	
Site: AC5	Time: 2013/04/11 - 21:24
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_988(1-18GHz)	Polarity: Vertical
EUT: 802.11g/DRAFT 802.11n WLAN PCI-E MINICARD	Power: AC 120V/60Hz
Note: Mode 2: Transmit at 2412MHz by 802.11g	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	51.410	15.769	-2.590	54.000	35.642	AV
2		*	2409.736	95.655	59.930	N//A	N//A	35.724	AV

Engineer: Milo	
Site: AC5	Time: 2013/04/28 - 20:07
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_988(1-18GHz)	Polarity: Horizontal
EUT: 802.11g/DRAFT 802.11n WLAN PCI-E MINICARD	Power: AC 120V/60Hz
Note: Mode 2: Transmit at channel 2472MHz by 802.11g	

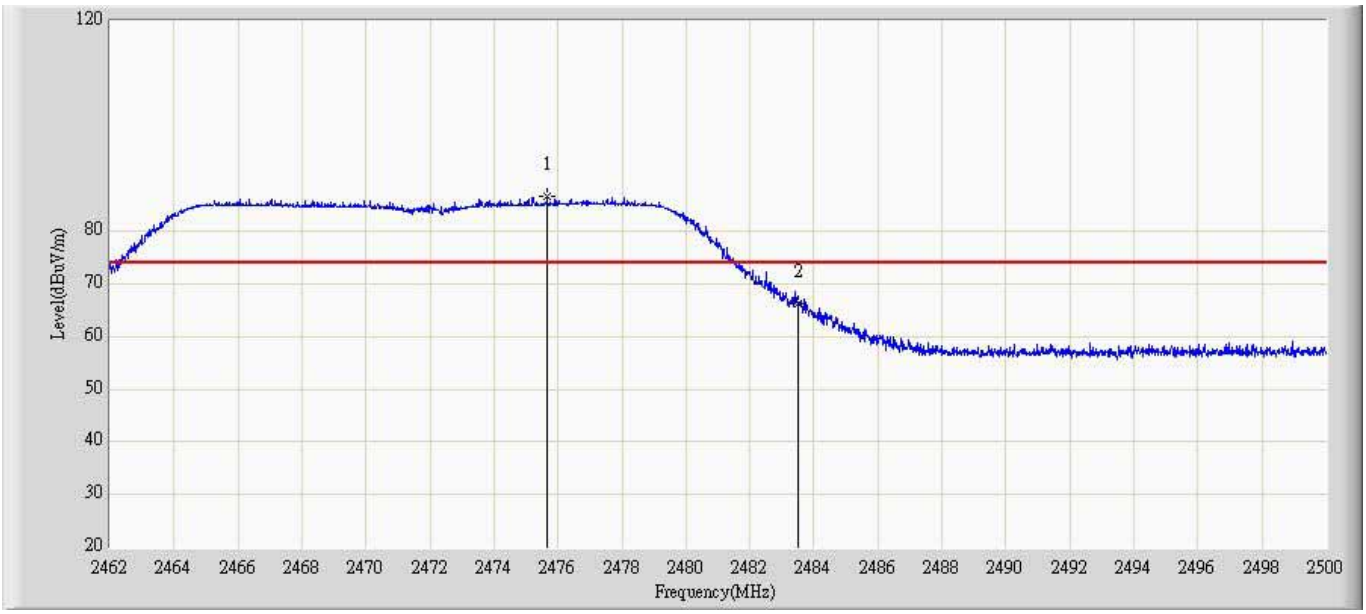


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2465.971	91.130	54.187	N/A	N/A	36.943	PK
2			2483.500	69.541	32.451	-4.459	74.000	37.089	PK
3			2483.793	71.757	34.665	-2.243	74.000	37.093	PK

Engineer: Milo	
Site: AC5	Time: 2013/04/28 - 20:08
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_988(1-18GHz)	Polarity: Horizontal
EUT: 802.11g/DRAFT 802.11n WLAN PCI-E MINICARD	Power: AC 120V/60Hz
Note: Mode 2: Transmit at channel 2472MHz by 802.11g	

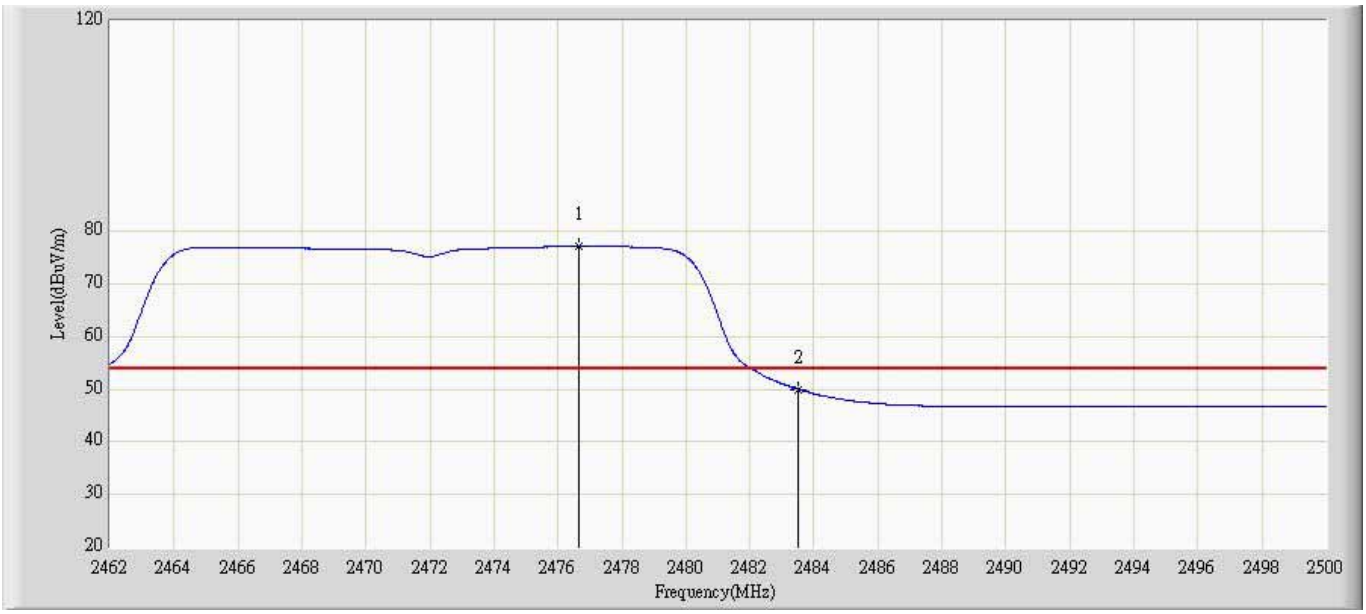
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2467.244	81.870	44.916	N/A	N/A	36.954	AV
2			2483.500	51.912	14.822	-2.088	54.000	37.089	AV

Engineer: Milo	
Site: AC5	Time: 2013/04/28 - 20:09
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_988(1-18GHz)	Polarity: Vertical
EUT: 802.11g/DRAFT 802.11n WLAN PCI-E MINICARD	Power: AC 120V/60Hz
Note: Mode 2: Transmit at channel 2472MHz by 802.11g	



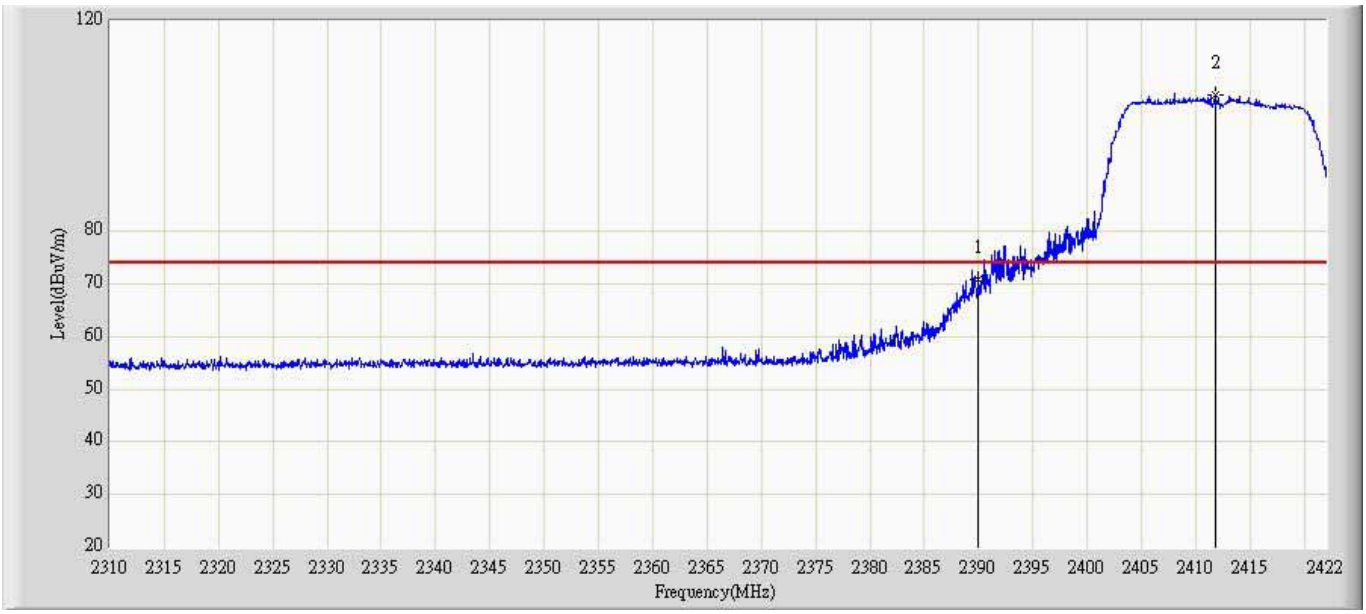
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2475.661	86.643	50.623	N/A	N/A	36.020	PK
2			2483.500	66.279	30.223	-7.721	74.000	36.055	PK

Engineer: Milo	
Site: AC5	Time: 2013/04/28 - 20:10
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_988(1-18GHz)	Polarity: Vertical
EUT: 802.11g/DRAFT 802.11n WLAN PCI-E MINICARD	Power: AC 120V/60Hz
Note: Mode 2: Transmit at channel 2472MHz by 802.11g	



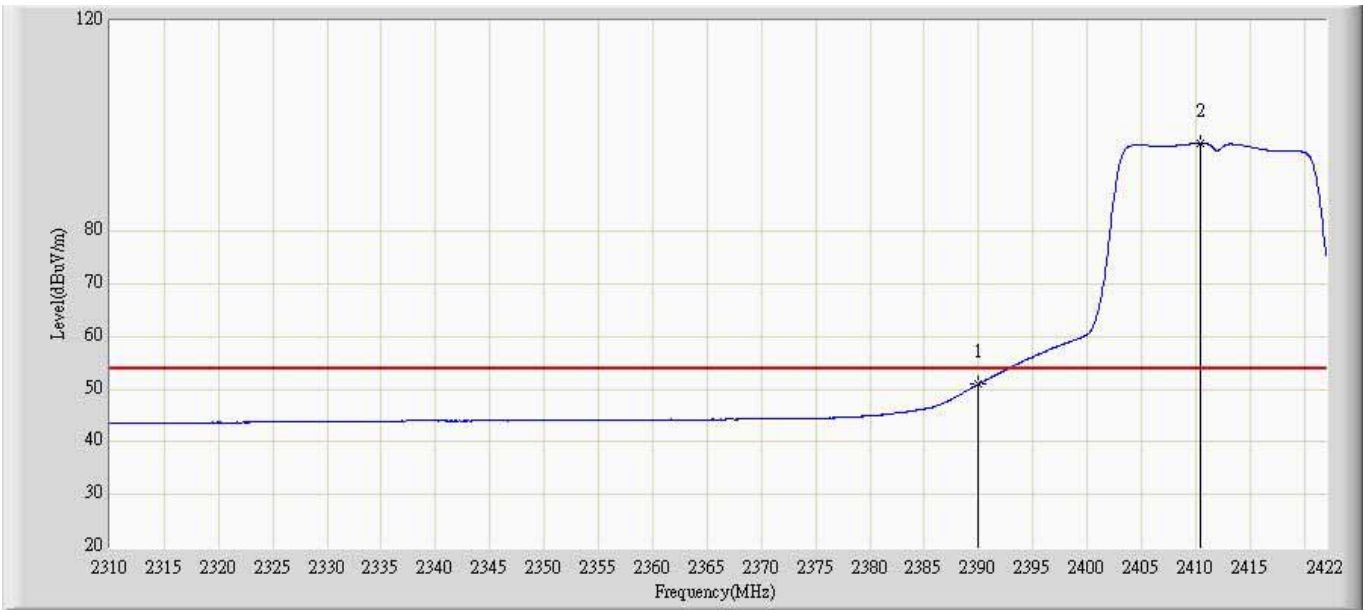
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2476.630	77.118	41.094	N/A	N/A	36.024	AV
2			2483.500	50.020	13.964	-3.980	54.000	36.055	AV

Engineer: Milo	
Site: AC5	Time: 2013/04/11 - 21:31
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_988(1-18GHz)	Polarity: Horizontal
EUT: 802.11g/DRAFT 802.11n WLAN PCI-E MINICARD	Power: AC 120V/60Hz
Note: Mode 3: Transmit at 2412MHz by 802.11n20MHz	



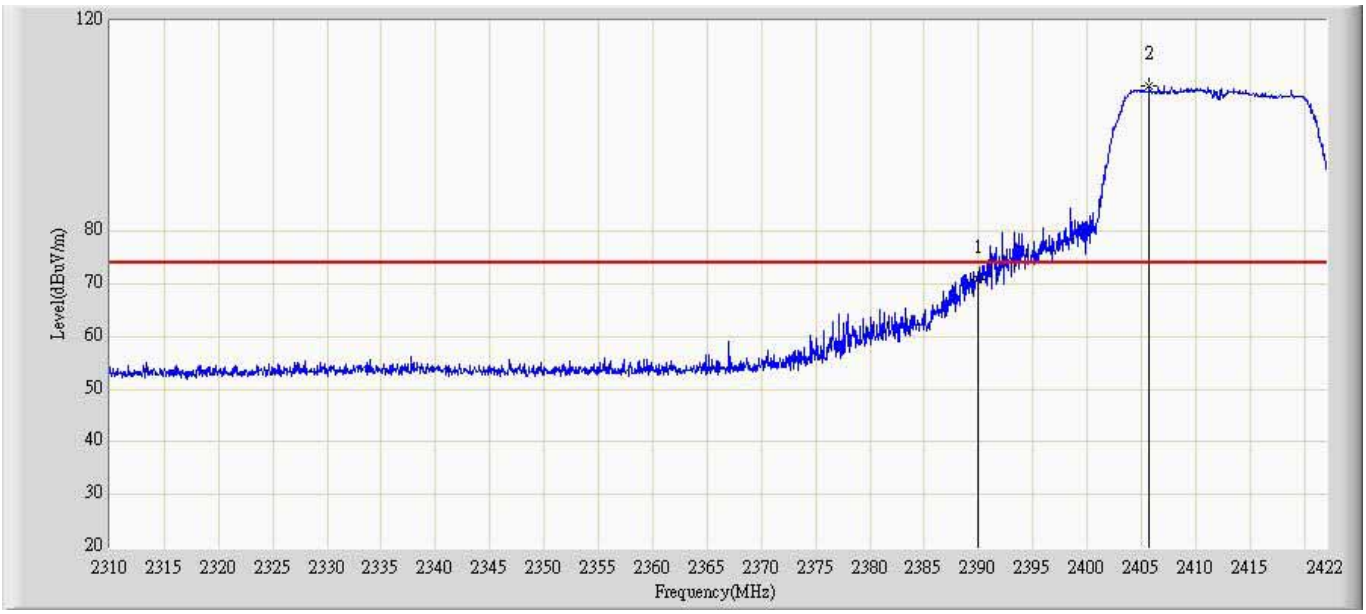
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	70.841	34.540	-3.159	74.000	36.302	PK
2		*	2411.808	105.990	69.509	N//A	N//A	36.481	PK

Engineer: Milo	
Site: AC5	Time: 2013/04/11 - 21:33
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_988(1-18GHz)	Polarity: Horizontal
EUT: 802.11g/DRAFT 802.11n WLAN PCI-E MINICARD	Power: AC 120V/60Hz
Note: Mode 3: Transmit at 2412MHz by 802.11n20MHz	



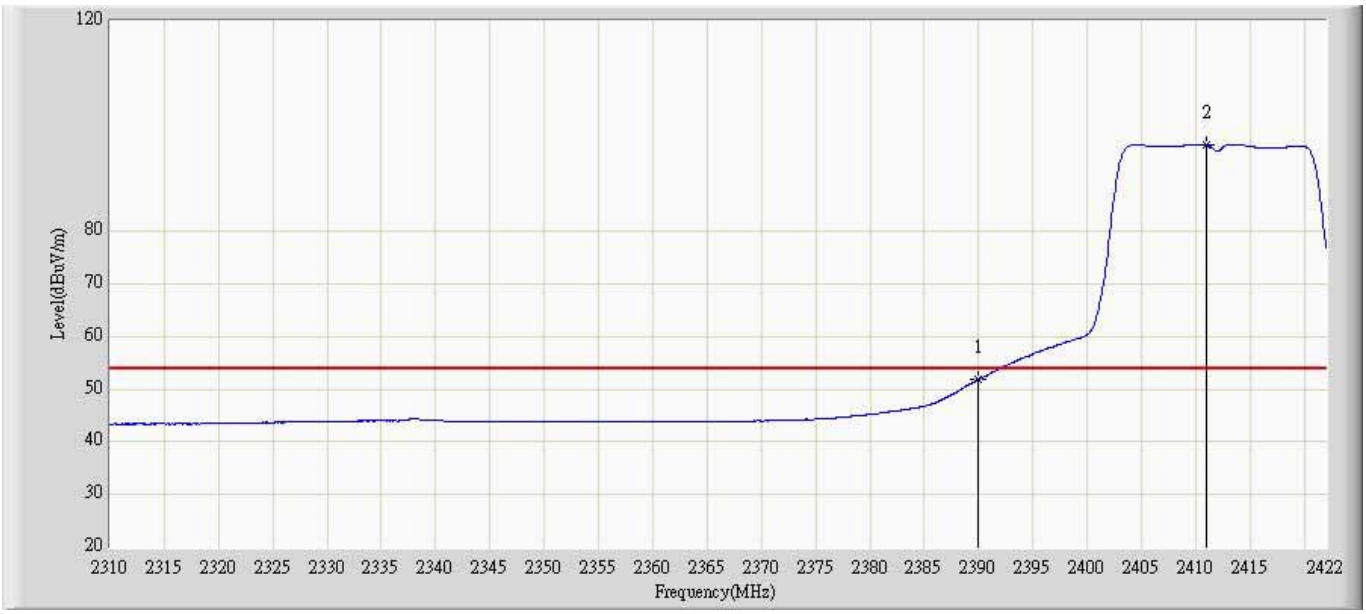
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	50.924	14.623	-3.076	54.000	36.302	AV
2		*	2410.464	96.733	60.263	N//A	N//A	36.470	AV

Engineer: Milo	
Site: AC5	Time: 2013/04/11 - 21:34
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_988(1-18GHz)	Polarity: Vertical
EUT: 802.11g/DRAFT 802.11n WLAN PCI-E MINICARD	Power: AC 120V/60Hz
Note: Mode 3: Transmit at 2412MHz by 802.11n20MHz	



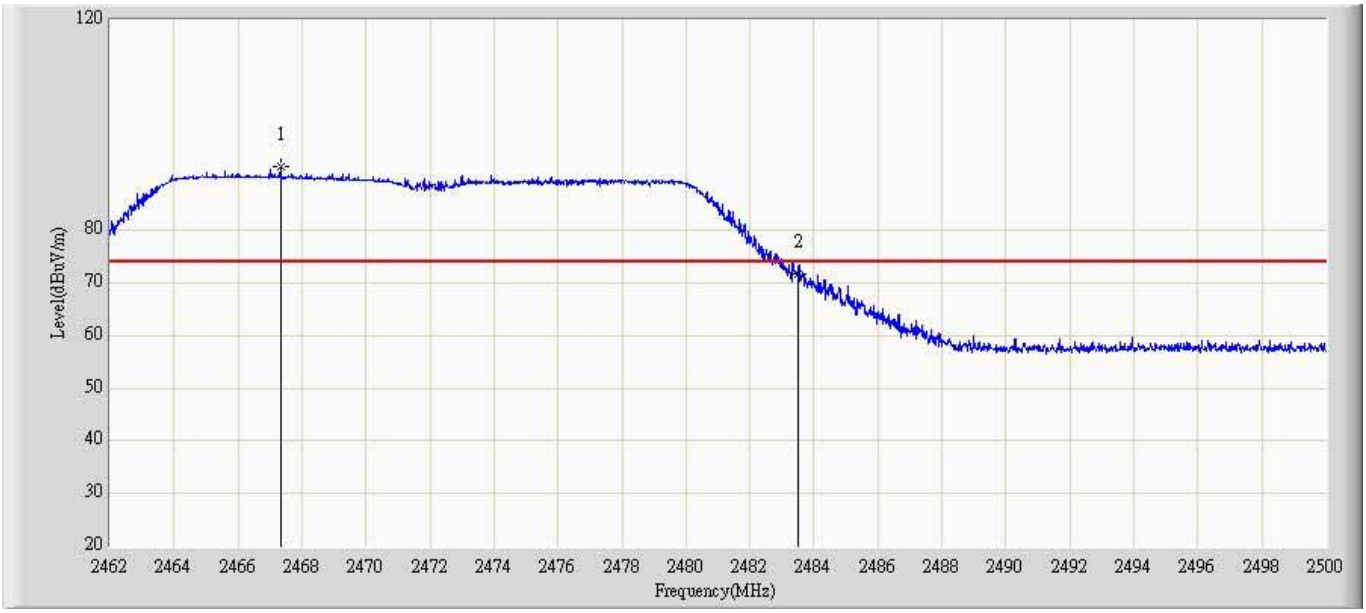
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	70.987	35.346	-3.013	74.000	35.642	PK
2		*	2405.760	107.779	72.071	N//A	N//A	35.708	PK

Engineer: Milo	
Site: AC5	Time: 2013/04/11 - 21:39
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_988(1-18GHz)	Polarity: Vertical
EUT: 802.11g/DRAFT 802.11n WLAN PCI-E MINICARD	Power: AC 120V/60Hz
Note: Mode 3: Transmit at 2412MHz by 802.11n20MHz	



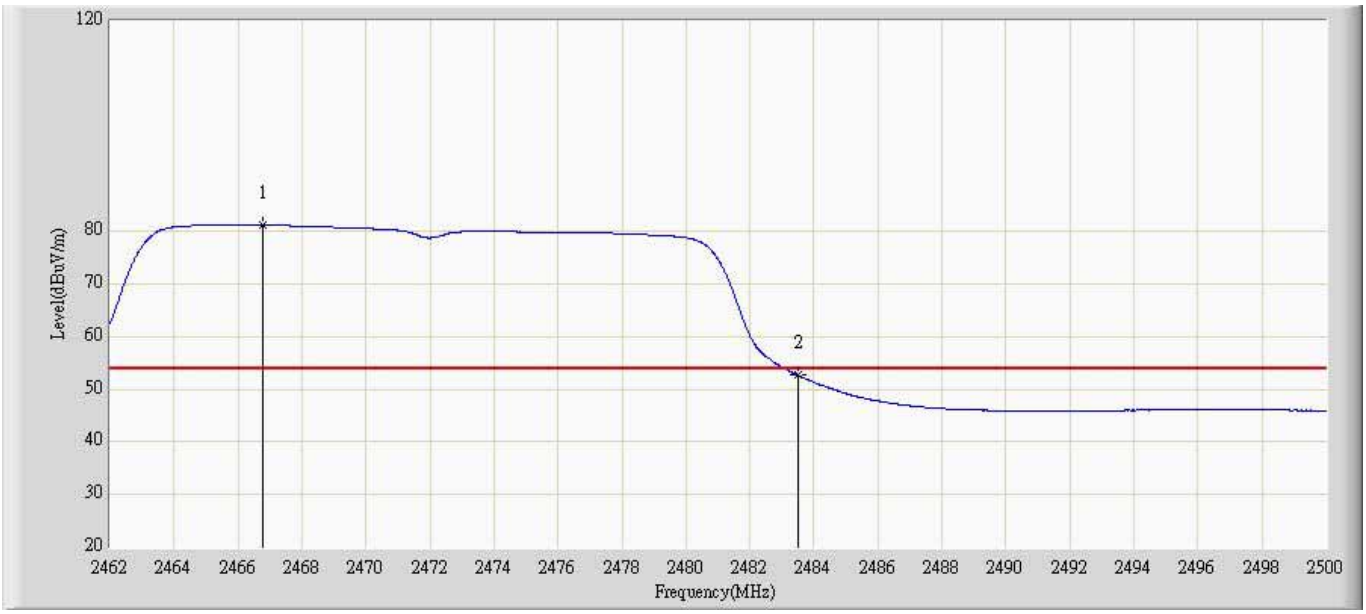
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	51.913	16.272	-2.087	54.000	35.642	AV
2		*	2410.968	96.494	60.764	N//A	N//A	35.730	AV

Engineer: Milo	
Site: AC5	Time: 2013/04/28 - 20:13
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_988(1-18GHz)	Polarity: Horizontal
EUT: 802.11g/DRAFT 802.11n WLAN PCI-E MINICARD	Power: AC 120V/60Hz
Note: Mode 3: Transmit at channel 2472MHz by 802.11n20MHz	



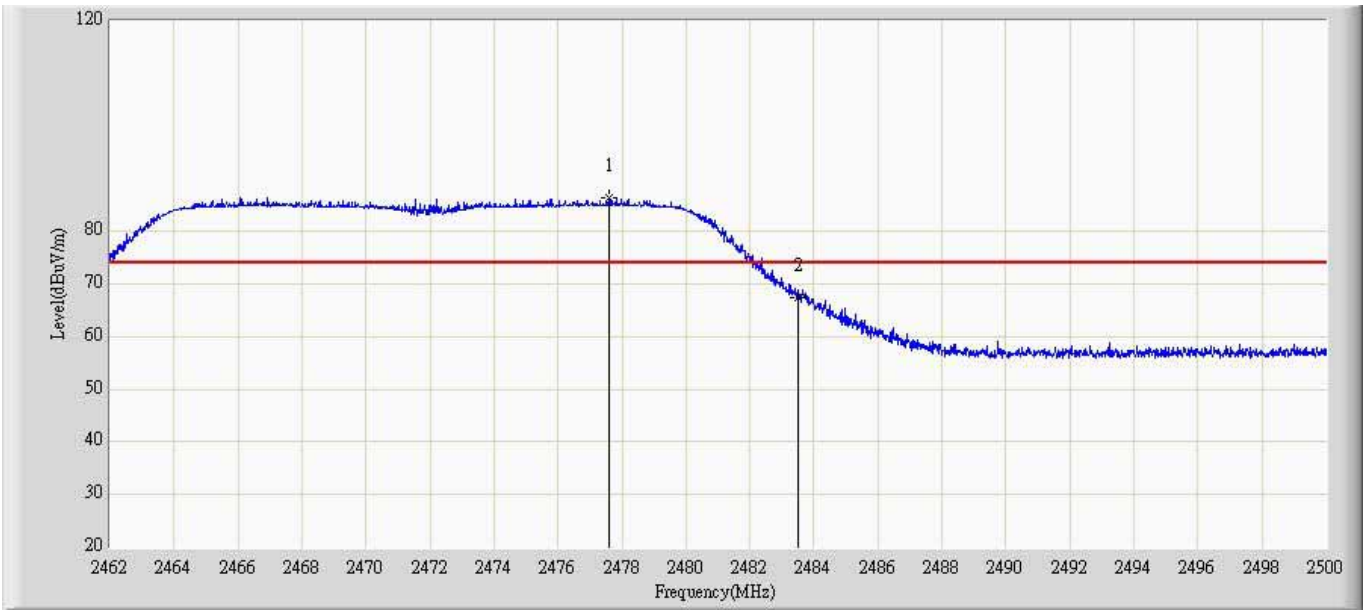
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2467.320	92.076	55.122	N/A	N/A	36.954	PK
2			2483.500	71.644	34.555	-2.356	74.000	37.089	PK

Engineer: Milo	
Site: AC5	Time: 2013/04/28 - 20:13
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_988(1-18GHz)	Polarity: Horizontal
EUT: 802.11g/DRAFT 802.11n WLAN PCI-E MINICARD	Power: AC 120V/60Hz
Note: Mode 3: Transmit at channel 2472MHz by 802.11n20MHz	



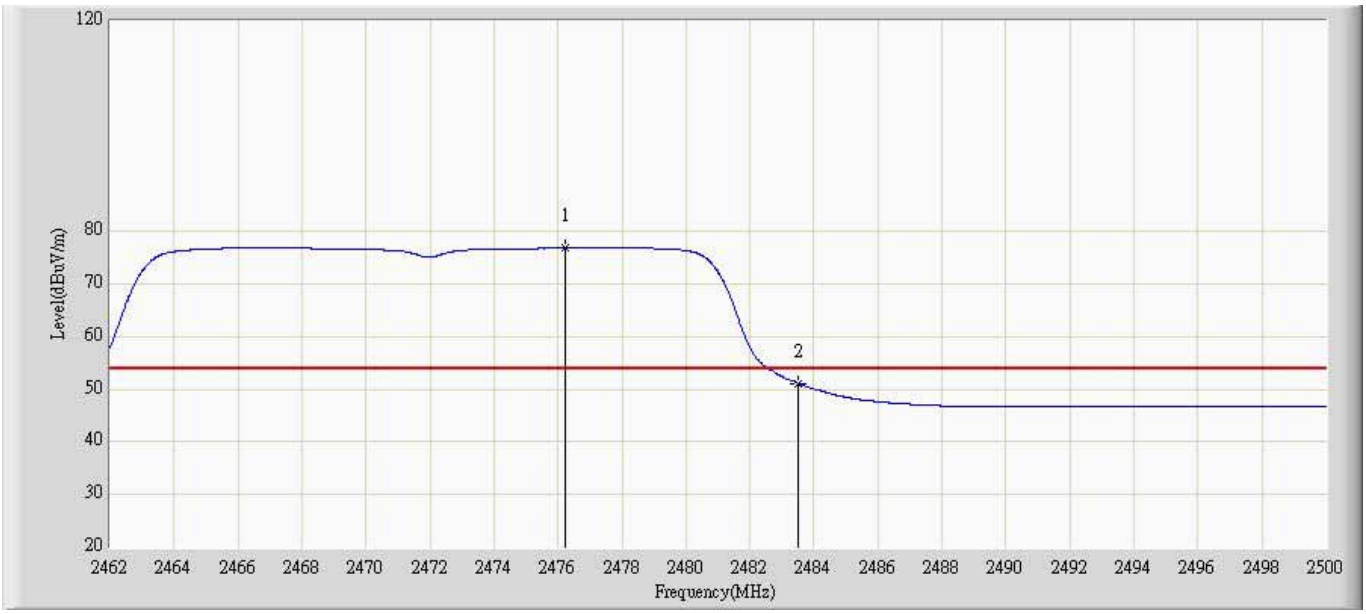
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2466.788	81.204	44.254	N/A	N/A	36.950	AV
2			2483.500	52.745	15.656	-1.255	54.000	37.089	AV

Engineer: Milo	
Site: AC5	Time: 2013/04/28 - 20:14
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_988(1-18GHz)	Polarity: Vertical
EUT: 802.11g/DRAFT 802.11n WLAN PCI-E MINICARD	Power: AC 120V/60Hz
Note: Mode 3: Transmit at channel 2472MHz by 802.11n20MHz	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2477.580	86.400	50.372	N/A	N/A	36.028	PK
2			2483.500	67.477	31.421	-6.523	74.000	36.055	PK

Engineer: Milo	
Site: AC5	Time: 2013/04/28 - 20:14
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_988(1-18GHz)	Polarity: Vertical
EUT: 802.11g/DRAFT 802.11n WLAN PCI-E MINICARD	Power: AC 120V/60Hz
Note: Mode 3: Transmit at channel 2472MHz by 802.11n20MHz	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2476.231	76.825	40.803	N/A	N/A	36.022	AV
2			2483.500	51.104	15.048	-2.896	54.000	36.055	AV