



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-P05V01
Report Version : V1.2

The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standard through the calibration of the equipment and evaluated measurement uncertainty herein.

This report must not be used to claim product endorsement by TAF, CNAS or any agency of the Government.
The test report shall not be reproduced except in full without the written approval of QuieTek Corporation.

Test Report Certification

Issued Date : 30/04/2013

Report No. : 133S021R-RF-US-P05V01



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 Li
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 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 : 886-2-8601-3788 / FAX : 886-2-8601-3789 E-Mail : service@quietek.com

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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
Monopole Antenna(Main)	Luxshare corporation	L01RF031-DT-R	2.51dBi for 2.40~2.50GHz band
Monopole Antenna (Aux)	Luxshare corporation	L01RF031-DT-R	-0.12dBi for 5.15~5.85GHz 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:

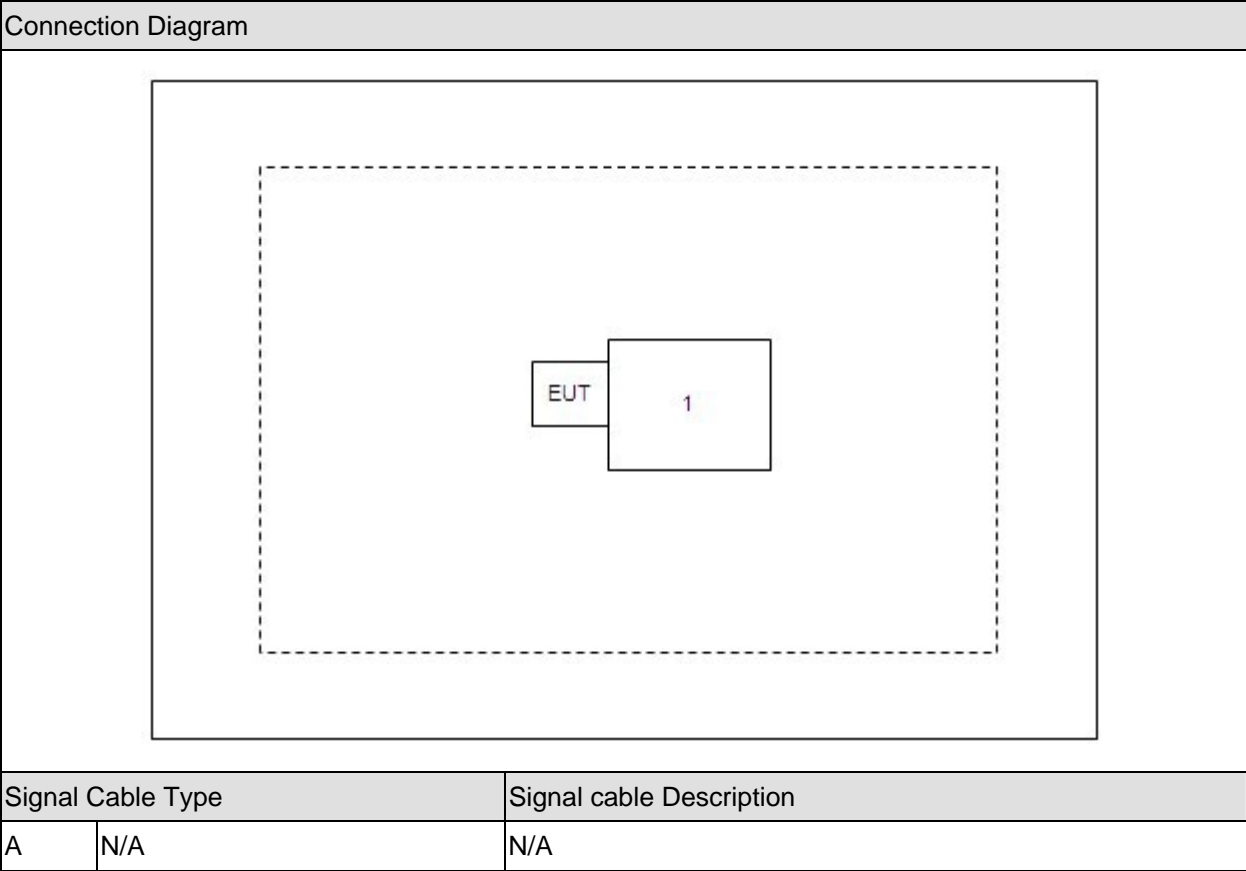
1. Regards to the frequency band operation: the lowest, middle and highest frequency of channel were selected to perform the test, then shown on this report.

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



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

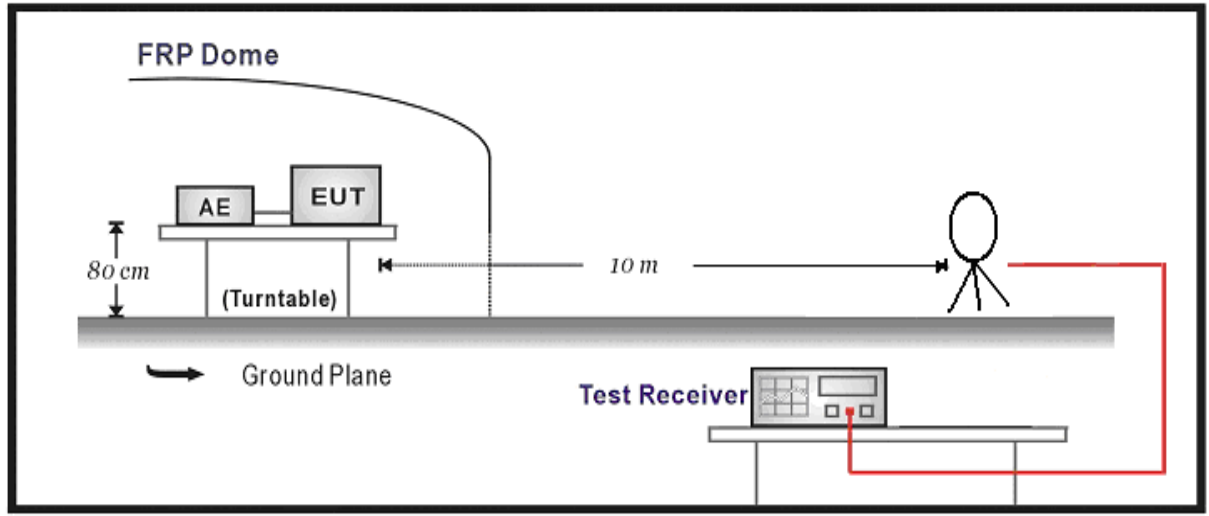
Radiated Emission / AC-5

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

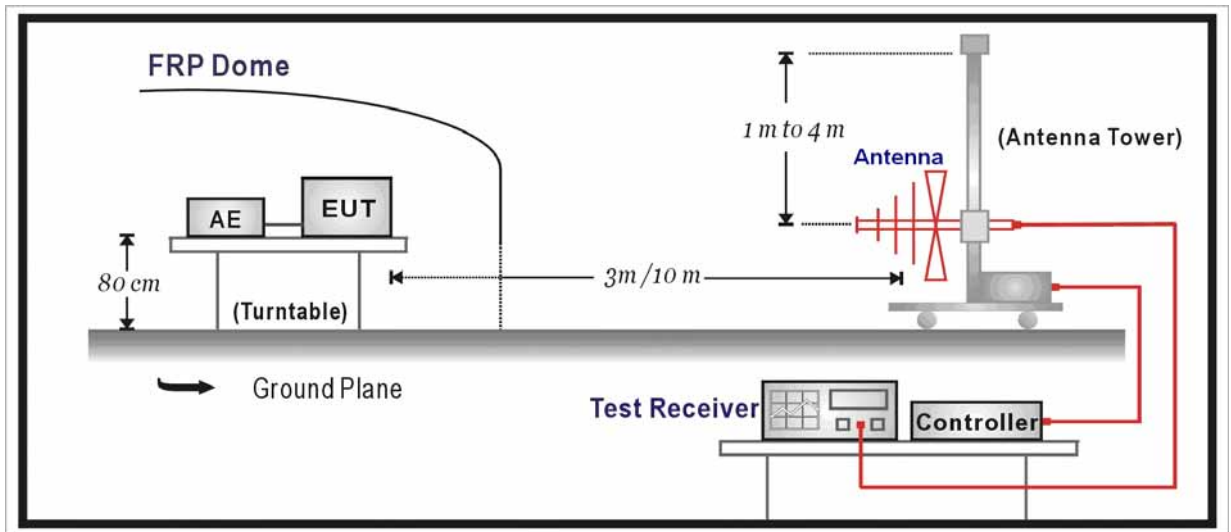
Note 1: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

3.2. Test Setup

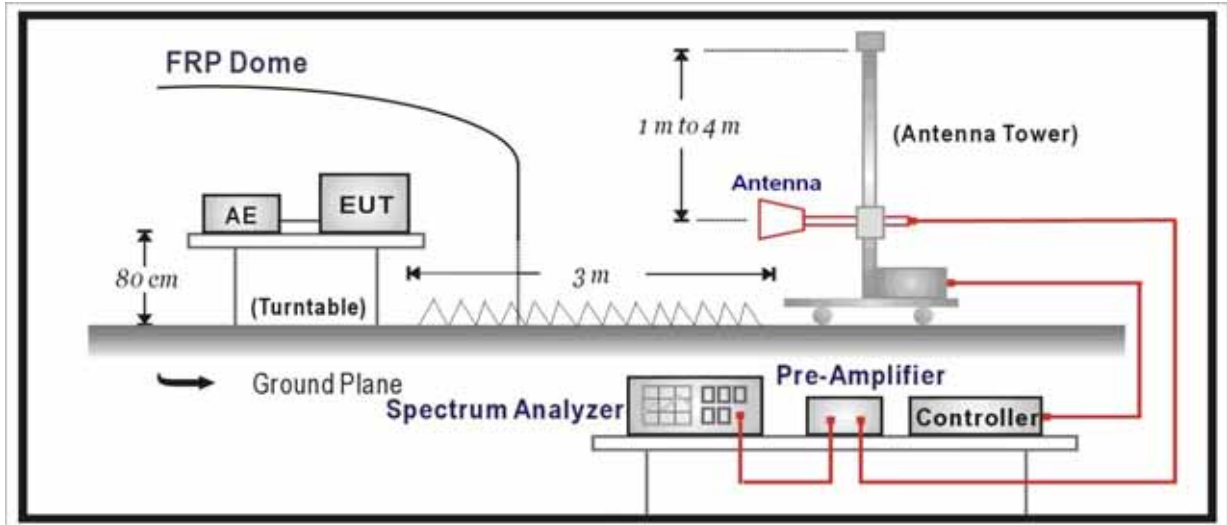
Below 30MHz Test Setup:



Below 1GHz Test Setup:



Above 1GHz Test Setup:



3.3. Limit

FCC Part 15 Subpart C Paragraph 15.209		
Frequency (MHz)	Distance (m)	Level (dByV/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 (dByV/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	3099.5	50.1	-10.7	39.4	54(note3)	-14.6	PK
	V	3006.0	51.3	-11.2	40.1	54(note3)	-13.9	PK
	H	4824.0	48.3	-8.3	40.0	54(note3)	-14.0	PK
	V	4824.0	49.8	-8.4	41.4	54(note3)	-12.6	PK
	H	7236.0	43.5	-3.4	40.1	54(note3)	-13.9	PK
	V	7236.0	43.7	-3.4	40.3	54(note3)	-13.7	PK
	H	9648.0	39.1	2.6	41.7	54(note3)	-12.3	PK
	V	9648.0	39.3	2.6	41.9	54(note3)	-12.1	PK
6	H	3048.5	50.8	-10.7	40.1	54(note3)	-13.9	PK
	V	3133.5	50.3	-10.9	39.4	54(note3)	-14.6	PK
	H	4874.0	47.5	-8.3	39.2	54(note3)	-14.8	PK
	V	4884.5	53.4	-8.3	45.1	54(note3)	-8.9	PK
	H	7311.0	44.1	-3.3	40.8	54(note3)	-13.2	PK
	V	7311.0	44.0	-3.3	40.7	54(note3)	-13.3	PK
	H	9748.0	39.6	2.7	42.3	54(note3)	-11.7	PK
	V	9748.0	39.0	2.8	41.8	54(note3)	-12.2	PK
13	H	3125.0	48.9	-10.6	38.3	54(Note3)	-15.7	PK
	V	3074.0	50.3	-11.1	39.2	54(Note3)	-14.8	PK
	H	4944.0	47.9	-8.4	39.5	54(Note3)	-14.5	PK
	V	4944.0	47.0	-8.3	38.7	54(Note3)	-15.3	PK
	H	7416.0	44.1	-3.0	41.1	54(Note3)	-12.9	PK
	V	7416.0	43.7	-3.0	40.7	54(Note3)	-13.3	PK
	H	9888.0	38.9	3.1	42.0	54(Note3)	-12.0	PK
	V	9888.0	38.2	3.2	41.4	54(Note3)	-12.6	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	50.8	-10.5	40.3	54(note3)	-13.7	PK
	V	3133.5	50.0	-10.9	39.1	54(note3)	-14.9	PK
	H	4824.0	47.9	-8.3	39.6	54(note3)	-14.4	PK
	V	4824.0	49.4	-8.4	41.0	54(note3)	-13.0	PK
	H	7236.0	44.6	-3.4	41.2	54(note3)	-12.8	PK
	V	7236.0	44.0	-3.4	40.6	54(note3)	-13.4	PK
	H	9648.0	40.2	2.6	42.8	54(note3)	-11.2	PK
	V	9648.0	38.8	2.6	41.4	54(note3)	-12.6	PK
6	H	3108.0	50.1	-10.7	39.4	54(note3)	-14.6	PK
	V	2946.5	51.6	-11.2	40.4	54(note3)	-13.6	PK
	H	4874.0	48.0	-8.3	39.7	54(note3)	-14.3	PK
	V	4876.0	50.6	-8.3	42.3	54(note3)	-11.7	PK
	H	7311.0	44.7	-3.3	41.4	54(note3)	-12.6	PK
	V	7311.0	46.0	-3.3	42.7	54(note3)	-11.3	PK
	H	9748.0	39.4	2.7	42.1	54(note3)	-11.9	PK
	V	9748.0	39.2	2.8	42.0	54(note3)	-12.0	PK
13	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	4944.0	47.6	-8.4	39.2	54(Note3)	-14.8	PK
	V	4944.0	47.2	-8.3	38.9	54(Note3)	-15.1	PK
	H	7416.0	44.1	-3.0	41.1	54(Note3)	-12.9	PK
	V	7416.0	43.7	-3.0	40.7	54(Note3)	-13.3	PK
	H	9888.0	39.1	3.1	42.2	54(Note3)	-11.8	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 (dByV/m)	Factor (dB)	Measure Level (dByV/m)	Limit (dByV/m)	Margin (dB)	Detector
1	H	2989.0	50.4	-10.9	39.5	54(note3)	-14.5	PK
	V	3014.5	50.7	-11.2	39.5	54(note3)	-14.5	PK
	H	4824.0	47.5	-8.3	39.2	54(note3)	-14.8	PK
	V	4824.0	48.8	-8.4	40.4	54(note3)	-13.6	PK
	H	7236.0	44.2	-3.4	40.8	54(note3)	-13.2	PK
	V	7236.0	43.6	-3.4	40.2	54(note3)	-13.8	PK
	H	9648.0	39.0	2.6	41.6	54(note3)	-12.4	PK
	V	9648.0	39.0	2.6	41.6	54(note3)	-12.4	PK
6	H	3023.0	50.9	-10.8	40.1	54(note3)	-13.9	PK
	V	3142.0	49.5	-10.8	38.7	54(note3)	-15.3	PK
	H	4874.0	47.3	-8.3	39.0	54(note3)	-15.0	PK
	V	4884.5	50.3	-8.3	42.0	54(note3)	-12.0	PK
	H	7311.0	44.8	-3.3	41.5	54(note3)	-12.5	PK
	V	7311.0	44.9	-3.3	41.6	54(note3)	-12.4	PK
	H	9748.0	39.4	2.7	42.1	54(note3)	-11.9	PK
	V	9748.0	38.7	2.8	41.5	54(note3)	-12.5	PK
13	H	3125.0	50.7	-10.6	40.1	54(Note3)	-13.9	PK
	V	3057.0	50.5	-11.1	39.4	54(Note3)	-14.6	PK
	H	4944.0	48.0	-8.4	39.6	54(Note3)	-14.4	PK
	V	4944.0	48.7	-8.3	40.4	54(Note3)	-13.6	PK
	H	7416.0	44.1	-3.0	41.1	54(Note3)	-12.9	PK
	V	7416.0	43.8	-3.0	40.8	54(Note3)	-13.2	PK
	H	9888.0	38.9	3.1	42.0	54(Note3)	-12.0	PK
	V	9888.0	39.5	3.2	42.7	54(Note3)	-11.3	PK

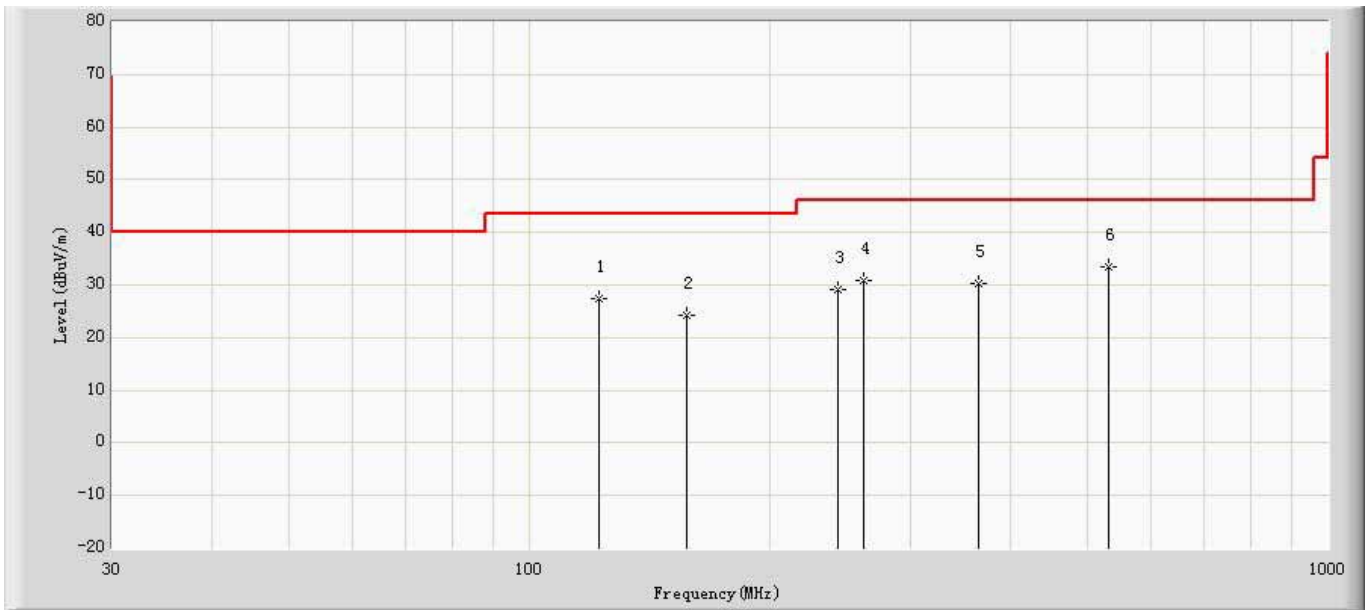
Note: 1. Measure Level = Reading Level + Factor.

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.

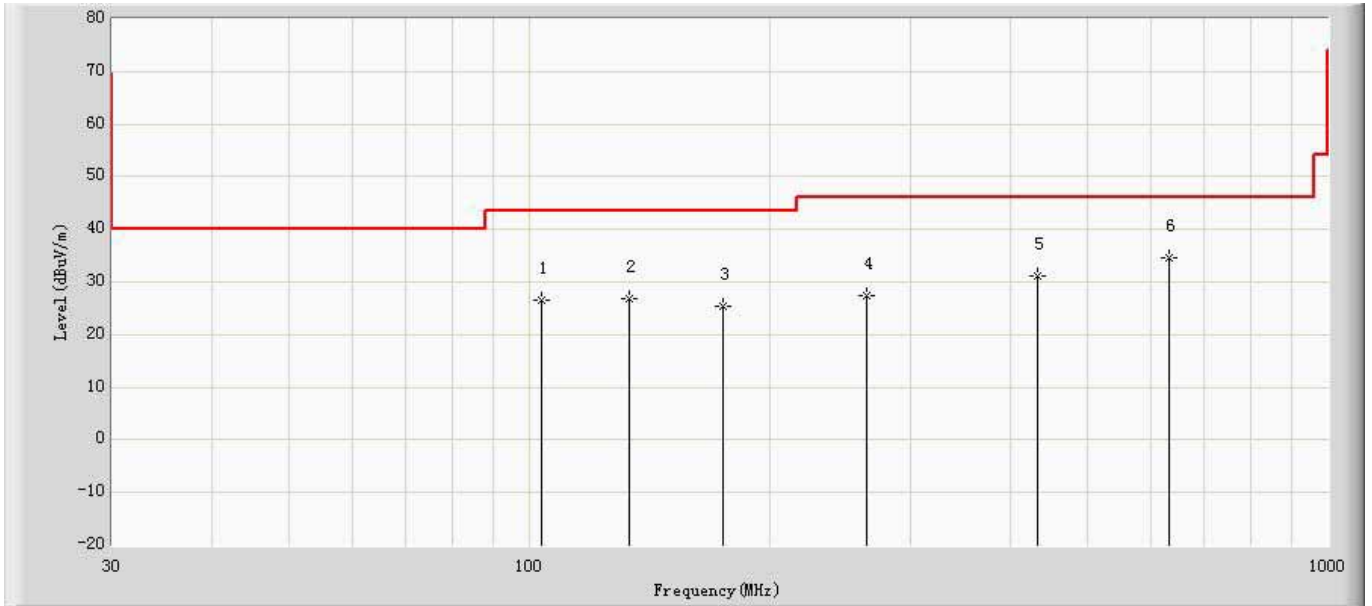
The worst case of the Radiated Emission below 1GHz:

Engineer: Milo	
Site: AC2	Time: 2013/03/26 - 18:18
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 3: Transmit at 2412MHz by n20MHz	



No	Mark	Frequency (MHz)	Measure Level (dByV/m)	Reading Level (dByV)	Over Limit (dB)	Limit (dByV/m)	Factor (dB)	Type
1		122.150	27.387	8.773	-16.113	43.500	18.614	QP
2		157.434	24.311	7.799	-19.189	43.500	16.511	QP
3		243.400	29.127	10.504	-16.873	46.000	18.623	QP
4		261.951	30.996	11.054	-15.004	46.000	19.941	QP
5		365.741	30.327	7.892	-15.673	46.000	22.434	QP
6	*	532.460	33.542	7.651	-12.458	46.000	25.891	QP

Engineer: Milo	
Site: AC2	Time: 2013/03/26 - 18:18
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 3: Transmit at 2412MHz by n20MHz	



No	Mark	Frequency (MHz)	Measure Level (dByV/m)	Reading Level (dByV)	Over Limit (dB)	Limit (dByV/m)	Factor (dB)	Type
1		103.599	26.443	8.641	-17.057	43.500	17.802	QP
2		133.062	26.884	8.592	-16.616	43.500	18.292	QP
3		174.894	25.421	9.581	-18.079	43.500	15.840	QP
4		264.255	27.459	7.476	-18.541	46.000	19.983	QP
5		432.307	31.095	6.894	-14.905	46.000	24.201	QP
6	*	633.340	34.741	7.460	-11.259	46.000	27.281	QP

4. Radiated Emission Band Edge

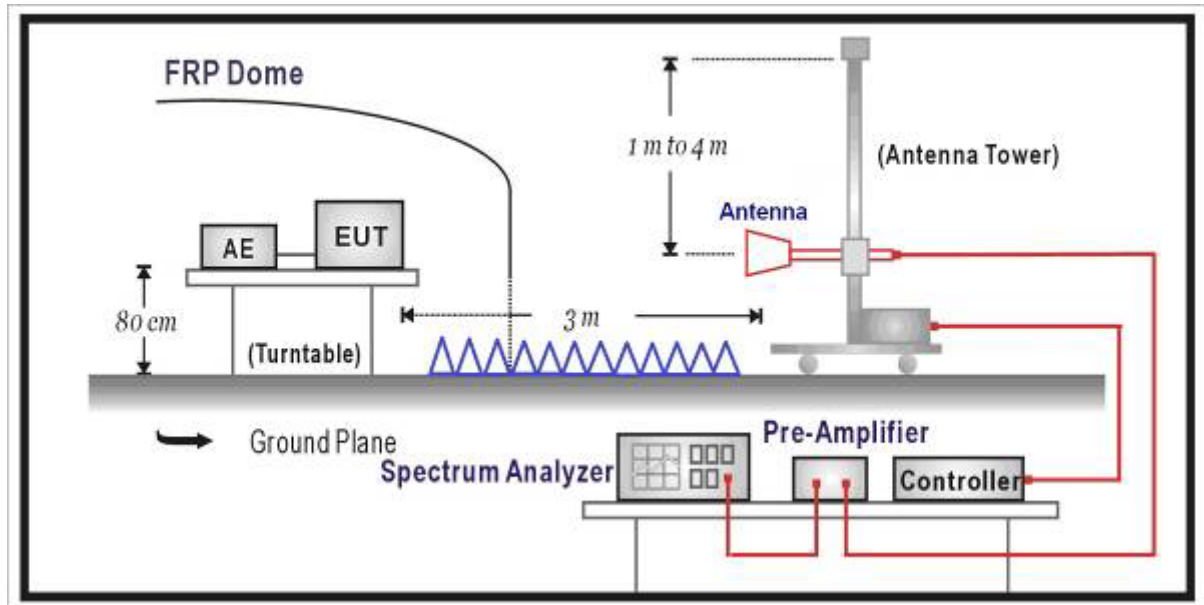
4.1. Test Equipment

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.

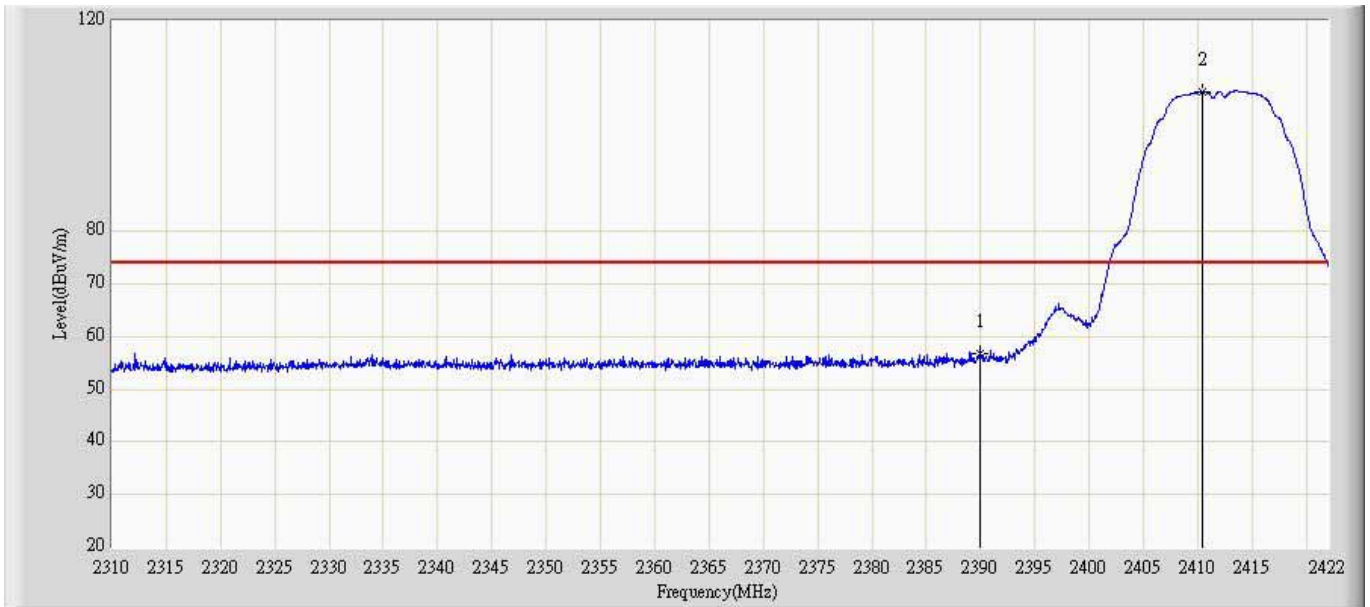
The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.4: 2009 on radiated measurement.

4.5. Uncertainty

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

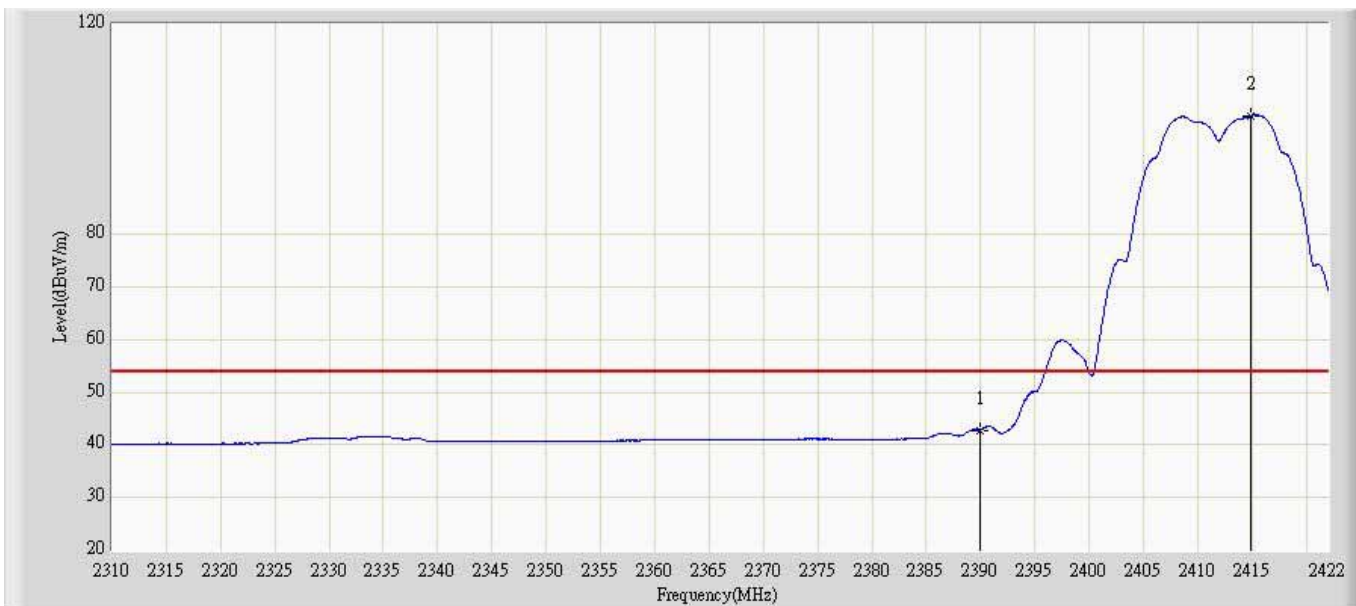
4.6. Test Result

Engineer: Milo	
Site: AC5	Time: 2013/04/11 - 16:42
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	



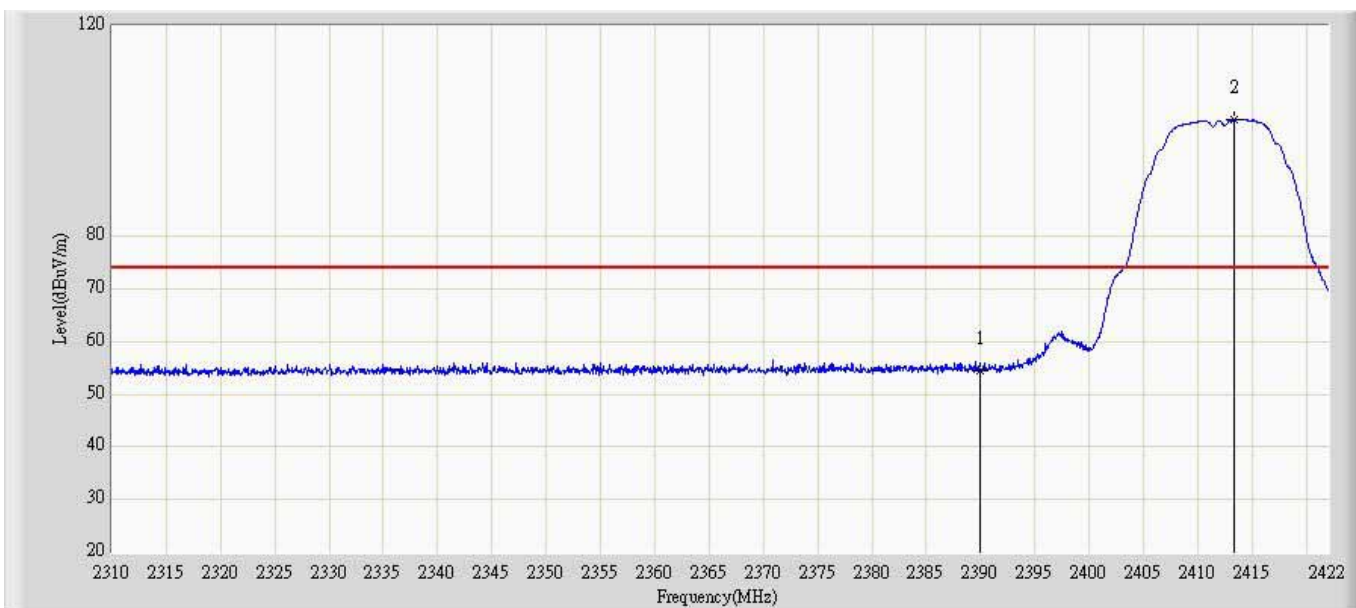
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	56.675	20.374	-17.325	74.000	36.302	PK
2		*	2410.464	106.497	70.027	N/A	N/A	36.470	PK

Engineer: Milo	
Site: AC5	Time: 2013/04/11 - 16:50
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	



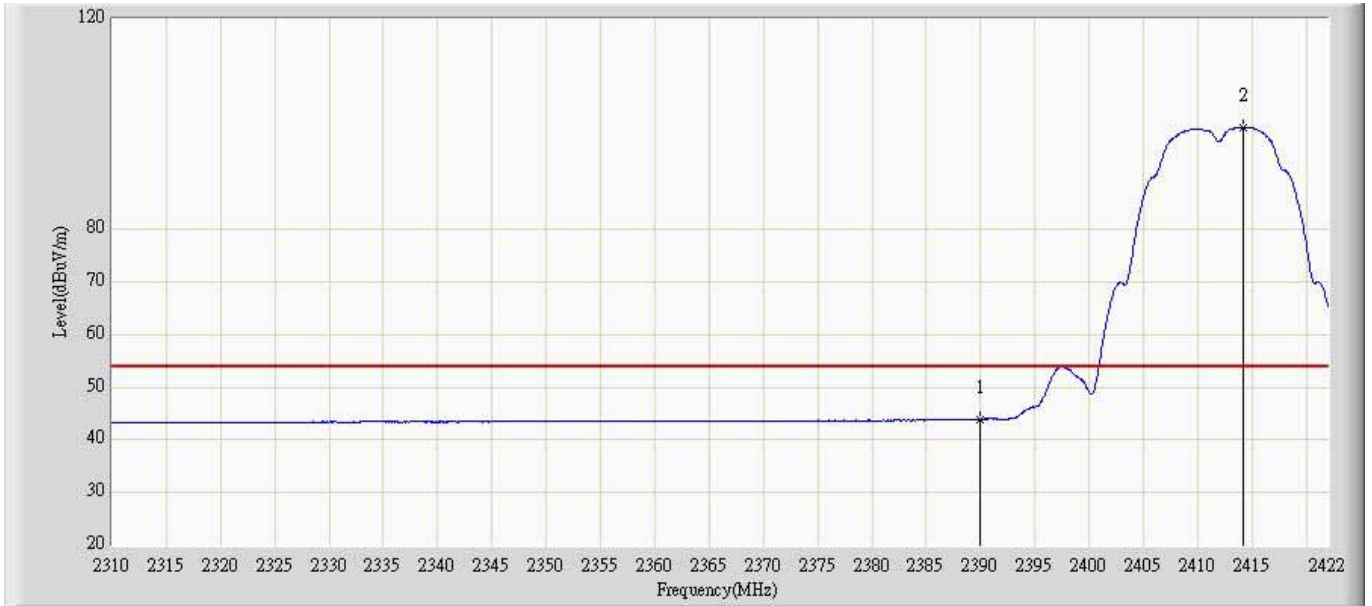
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	42.829	6.528	-11.171	54.000	36.302	AV
2		*	2414.832	102.481	65.973	N/A	N/A	36.508	AV

Engineer: Milo	
Site: AC5	Time: 2013/04/11 - 16:53
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	



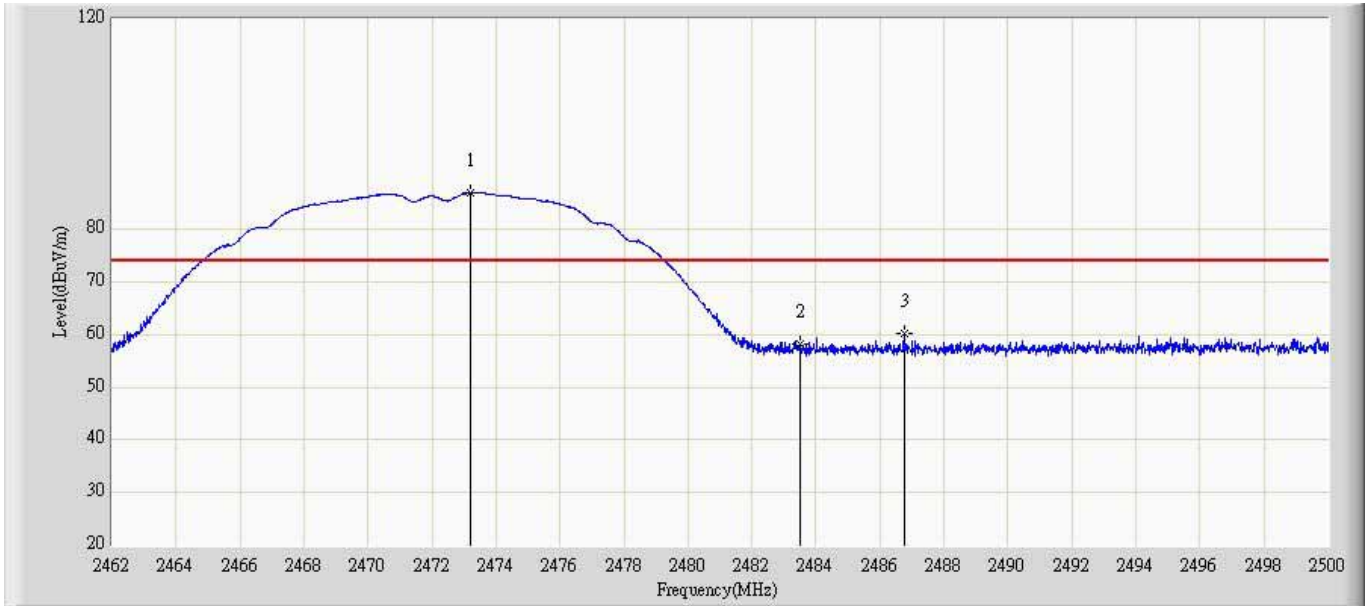
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	54.420	18.779	-19.580	74.000	35.642	PK
2		*	2413.432	102.227	66.485	N/A	N/A	35.742	PK

Engineer: Milo	
Site: AC5	Time: 2013/04/11 - 17:01
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 2412MHz by 802.11b	



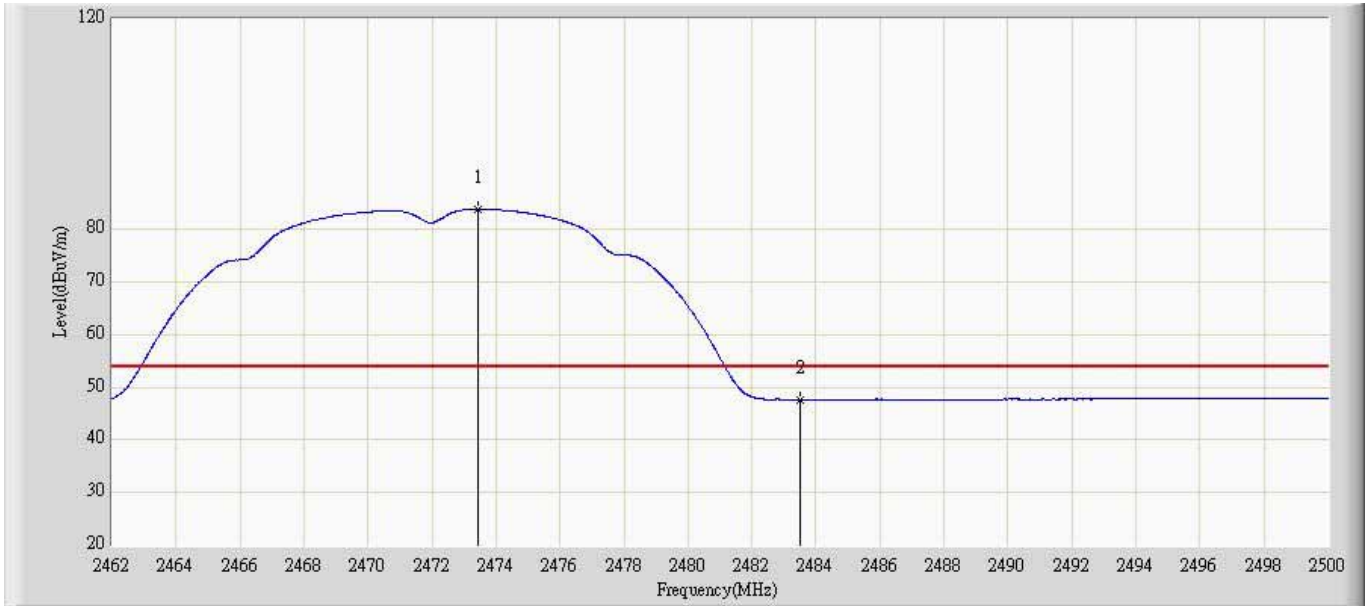
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	43.966	8.325	-10.034	54.000	35.642	AV
2		*	2414.216	99.348	63.603	N/A	N/A	35.746	AV

Engineer: Milo	
Site: AC5	Time: 2013/04/28 - 19:21
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 1: Transmit at channel 2472MHz by 802.11b	



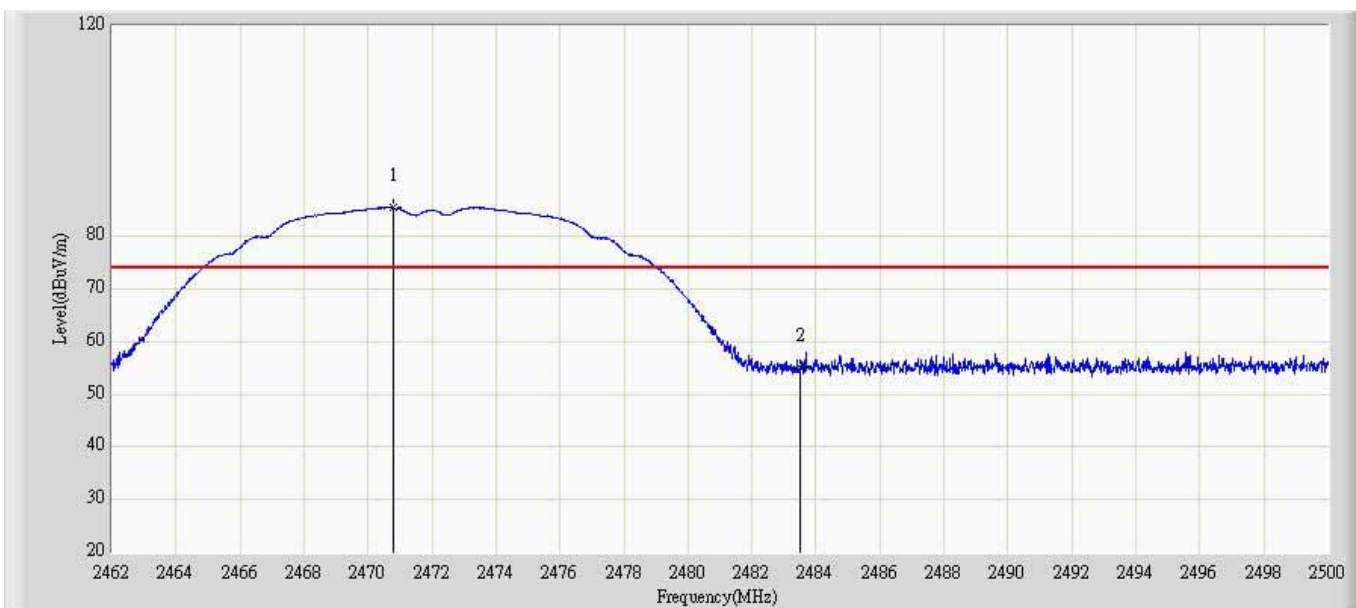
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2473.210	86.823	49.820	N/A	N/A	37.003	PK
2			2483.500	58.135	21.045	-15.865	74.000	37.089	PK
3			2486.757	60.232	23.114	-13.768	74.000	37.118	PK

Engineer: Milo	
Site: AC5	Time: 2013/04/28 - 19:26
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	



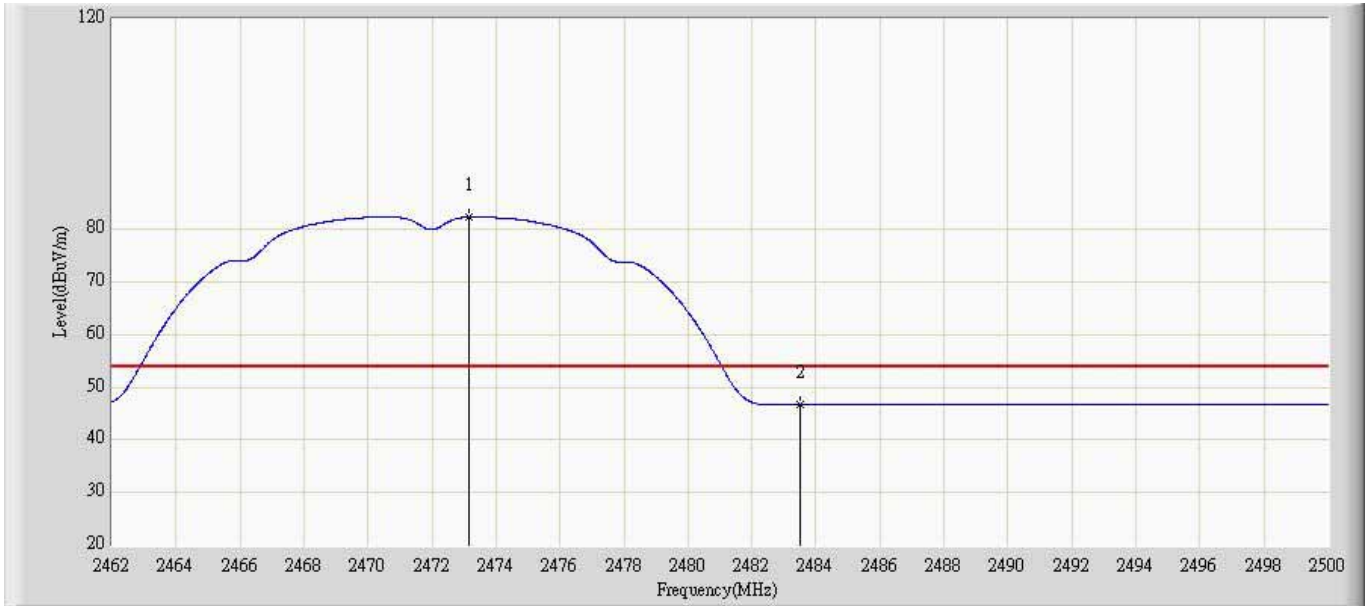
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2473.438	83.798	46.793	N/A	N/A	37.005	AV
2			2483.500	47.673	10.583	-6.327	54.000	37.089	AV

Engineer: Milo	
Site: AC5	Time: 2013/04/28 - 19:27
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	



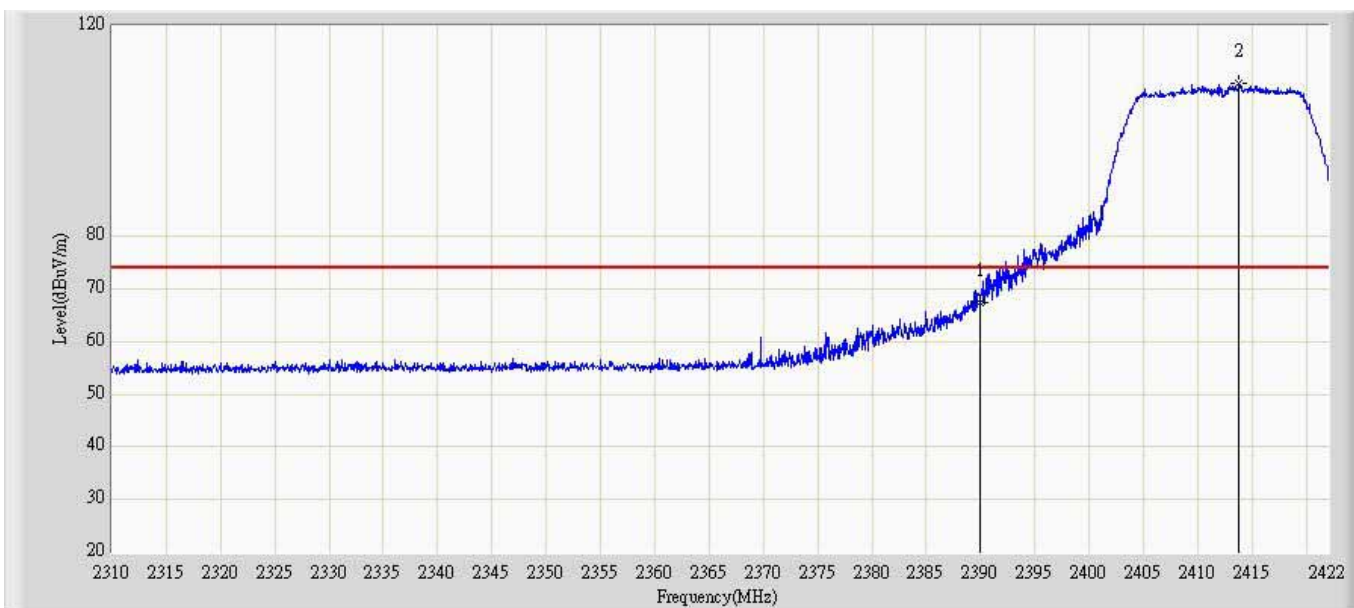
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2470.778	85.383	49.383	N/A	N/A	35.999	PK
2			2483.500	55.033	18.977	-18.967	74.000	36.055	PK

Engineer: Milo	
Site: AC5	Time: 2013/04/28 - 19:29
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	



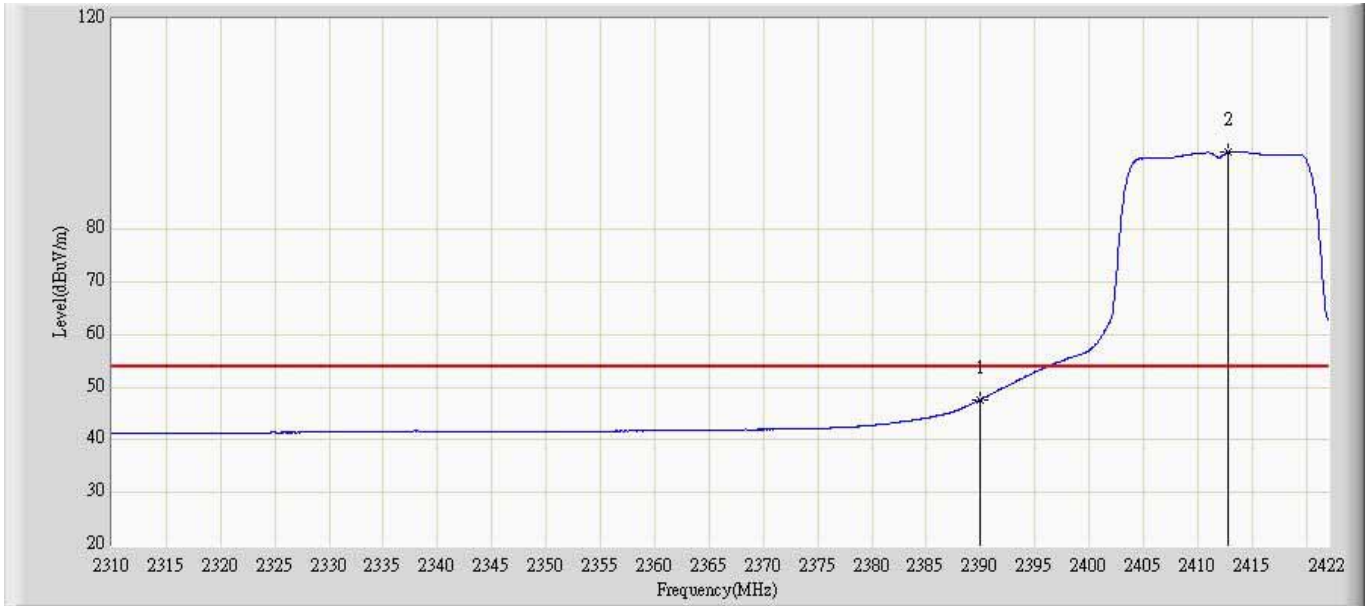
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2473.153	82.315	46.305	N/A	N/A	36.010	AV
2			2483.500	46.650	10.594	-7.350	54.000	36.055	AV

Engineer: Milo	
Site: AC5	Time: 2013/04/11 - 17:10
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	



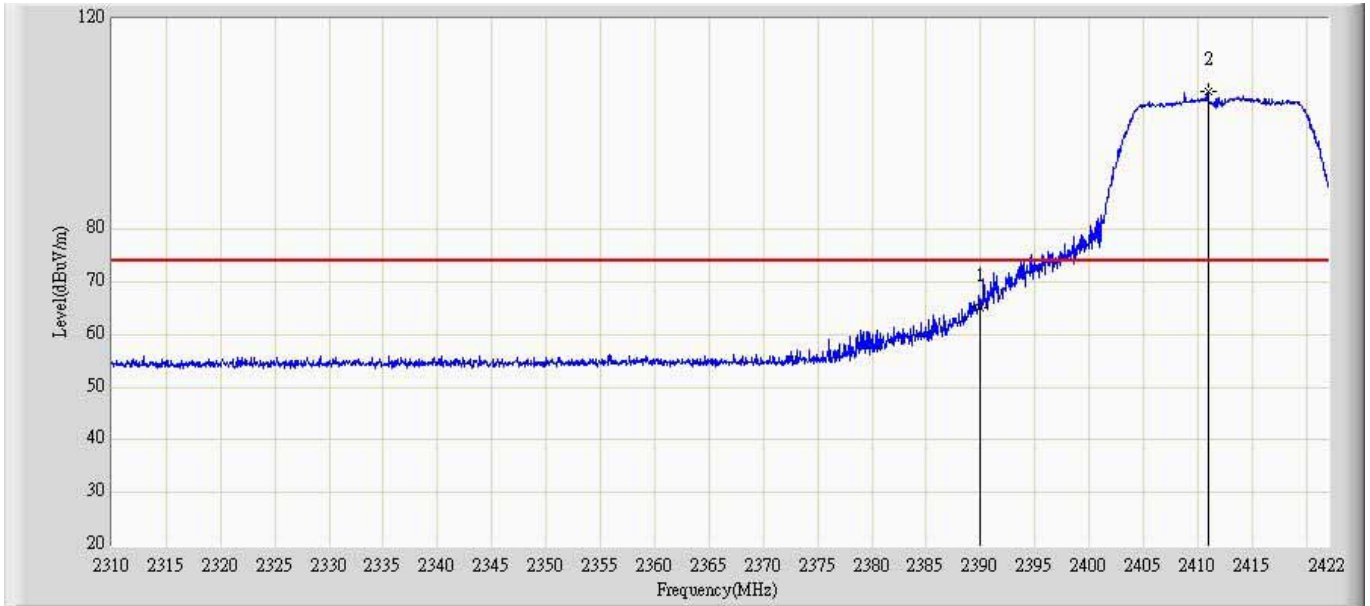
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	67.417	31.116	-6.583	74.000	36.302	PK
2		*	2413.824	108.974	72.475	N/A	N/A	36.498	PK

Engineer: Milo	
Site: AC5	Time: 2013/04/11 - 17:16
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	



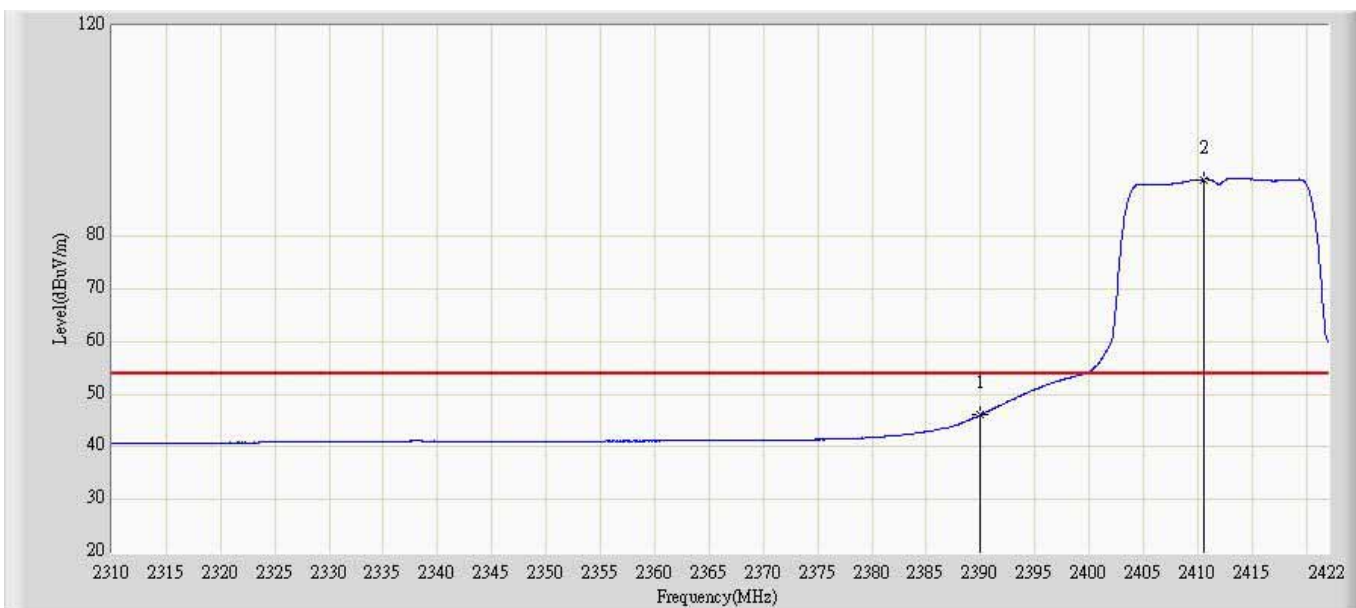
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	47.667	11.366	-6.333	54.000	36.302	AV
2		*	2412.872	94.711	58.221	N/A	N/A	36.490	AV

Engineer: Milo	
Site: AC5	Time: 2013/04/11 - 20:27
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	



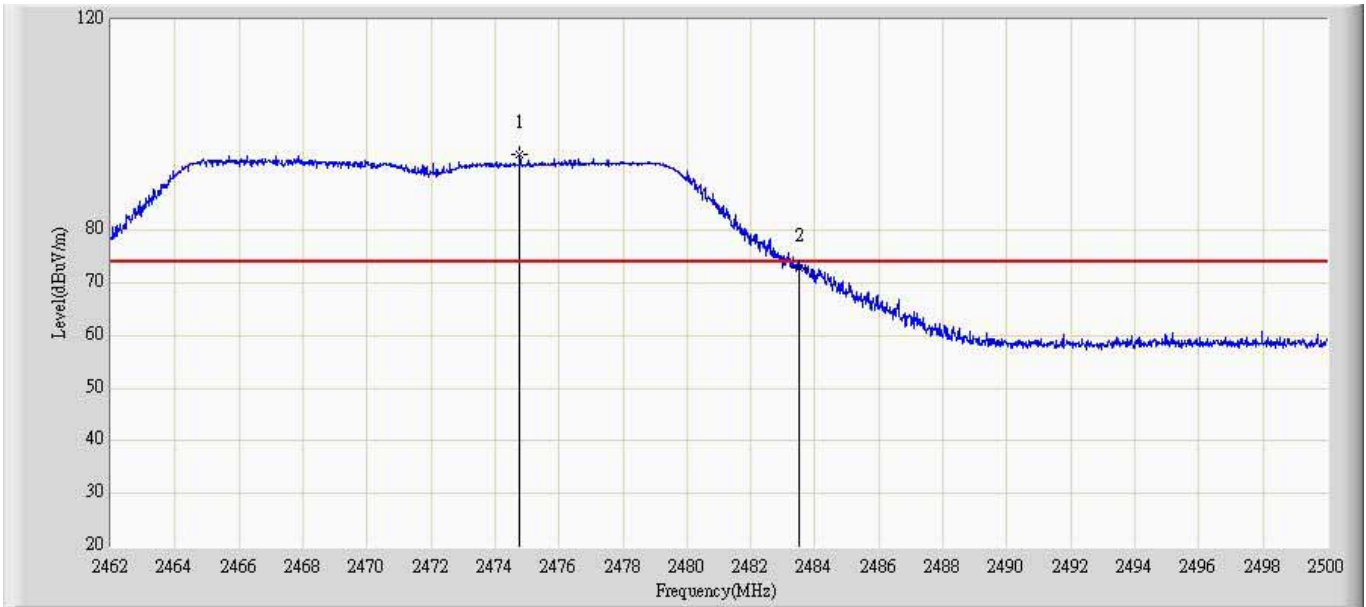
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	65.254	29.613	-8.746	74.000	35.642	PK
2		*	2410.968	106.098	70.368	N/A	N/A	35.730	PK

Engineer: Milo	
Site: AC5	Time: 2013/04/11 - 20:31
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	



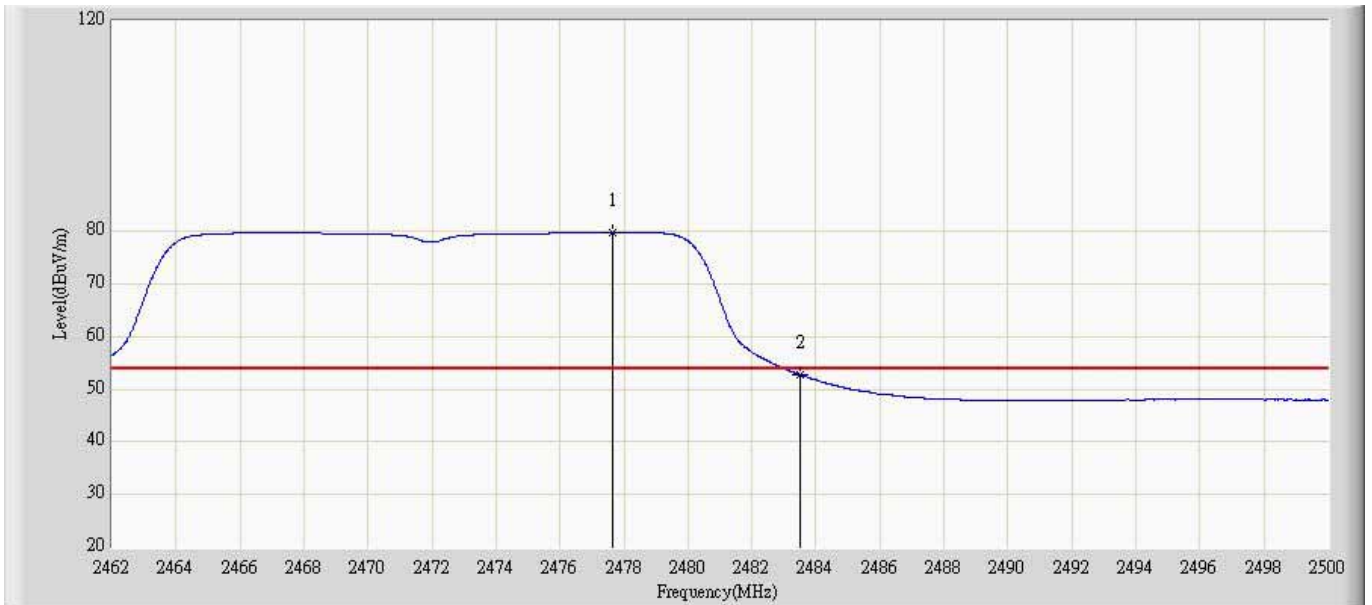
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	46.081	10.440	-7.919	54.000	35.642	AV
2		*	2410.632	90.795	55.067	N/A	N/A	35.729	AV

Engineer: Milo	
Site: AC5	Time: 2013/04/28 - 19:38
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	



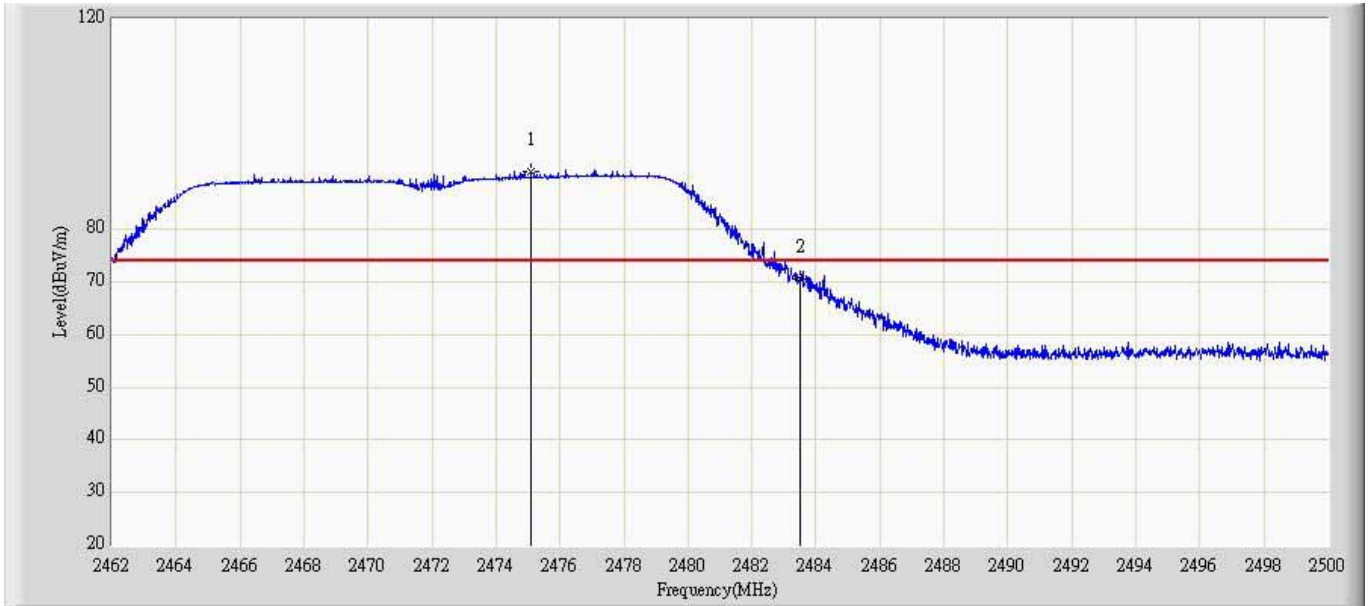
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2474.768	94.366	57.351	N/A	N/A	37.016	PK
2			2483.500	72.931	35.842	-1.069	74.000	37.089	PK

Engineer: Milo	
Site: AC5	Time: 2013/04/28 - 19:38
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	



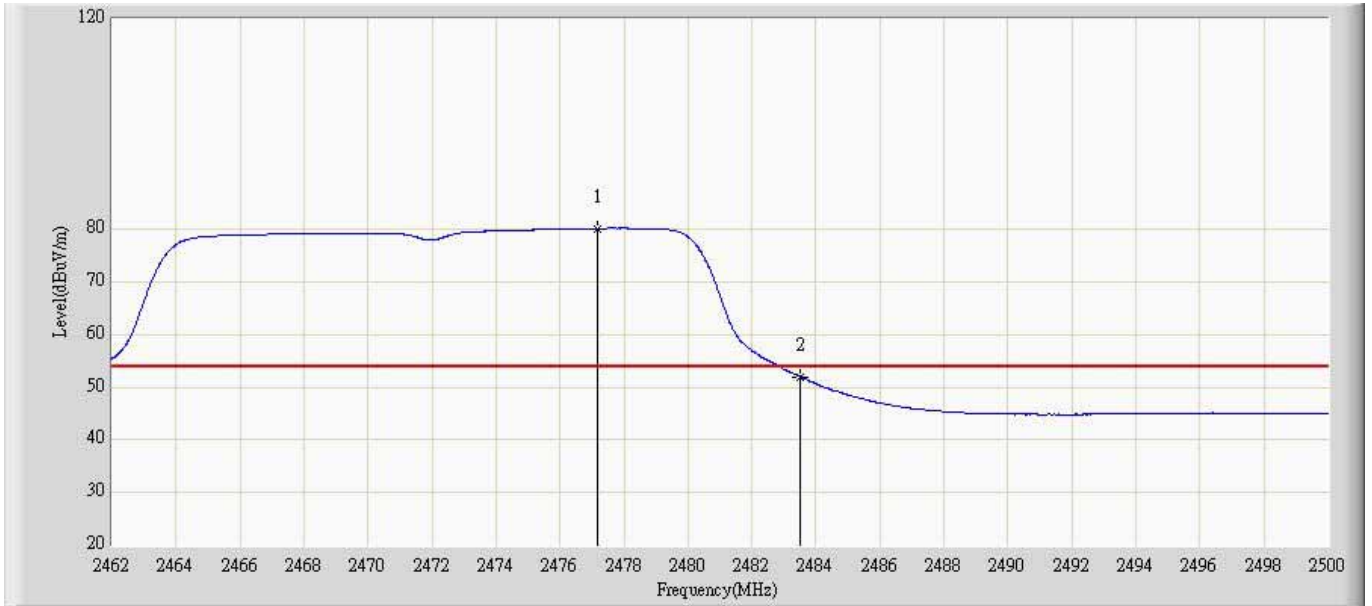
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2477.656	79.785	42.746	N/A	N/A	37.039	AV
2			2483.500	52.789	15.699	-1.211	54.000	37.089	AV

Engineer: Milo	
Site: AC5	Time: 2013/04/28 - 19:41
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	



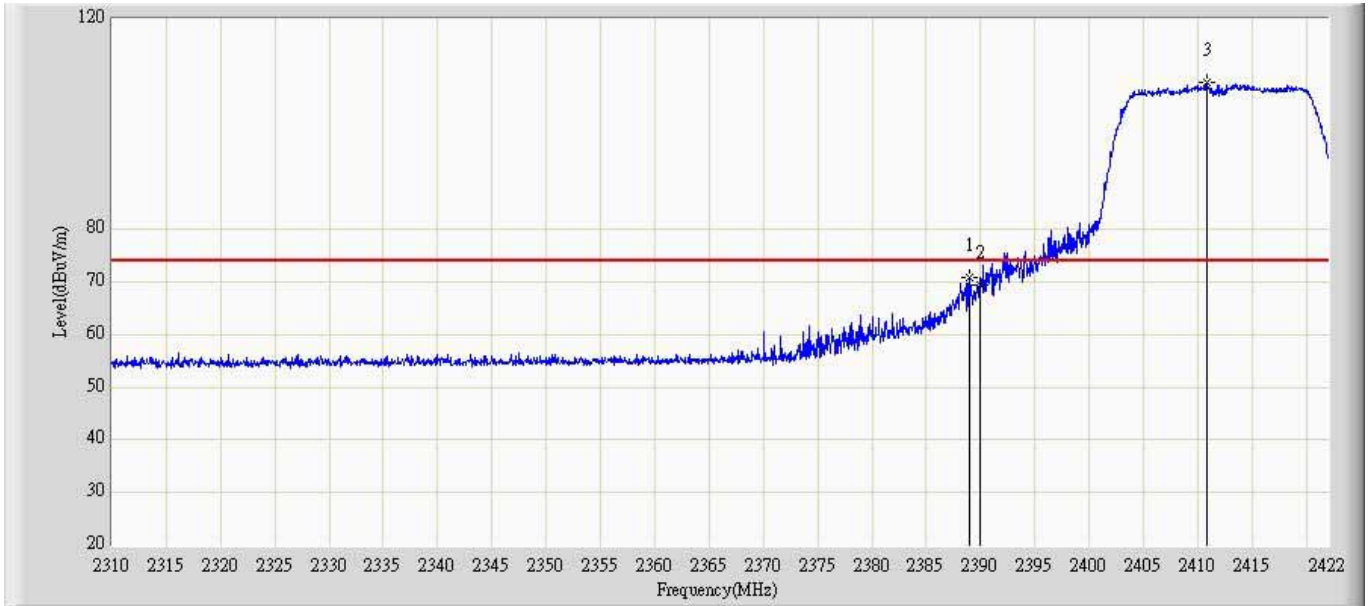
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2475.091	91.074	55.056	N/A	N/A	36.018	PK
2			2483.500	70.449	34.393	-3.551	74.000	36.055	PK

Engineer: Milo	
Site: AC5	Time: 2013/04/28 - 19:49
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	



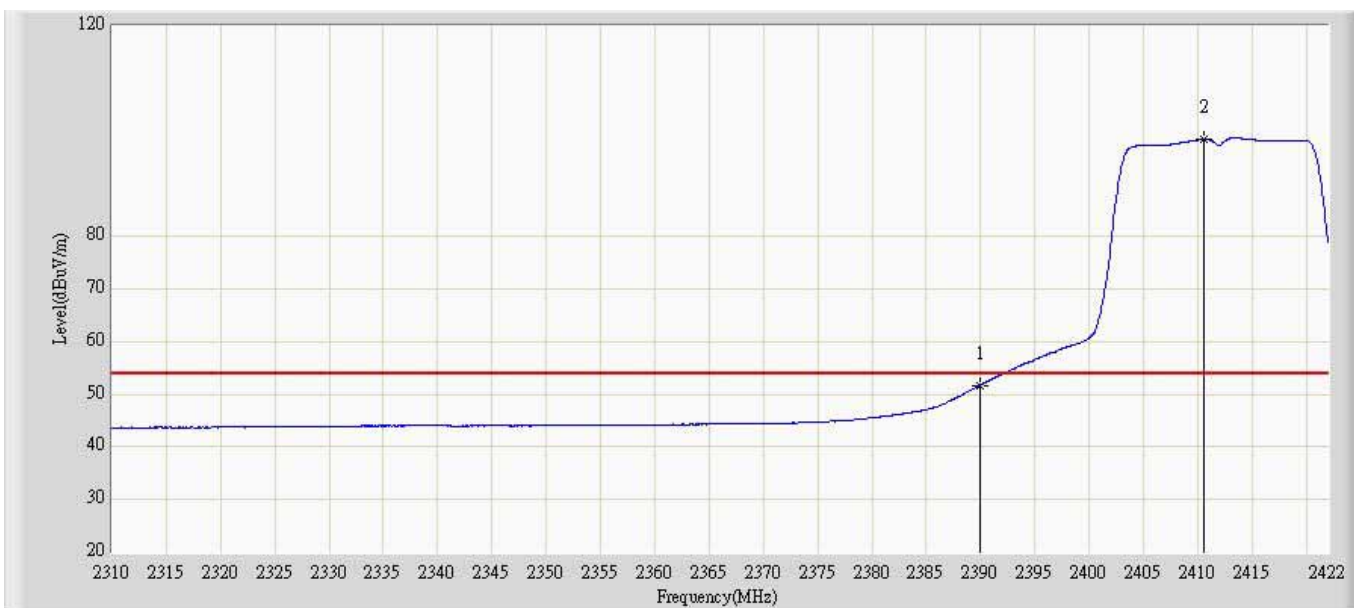
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2477.162	80.187	44.161	N/A	N/A	36.026	AV
2			2483.500	52.009	15.954	-1.991	54.000	36.055	AV

Engineer: Milo	
Site: AC5	Time: 2013/04/11 - 20:40
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	



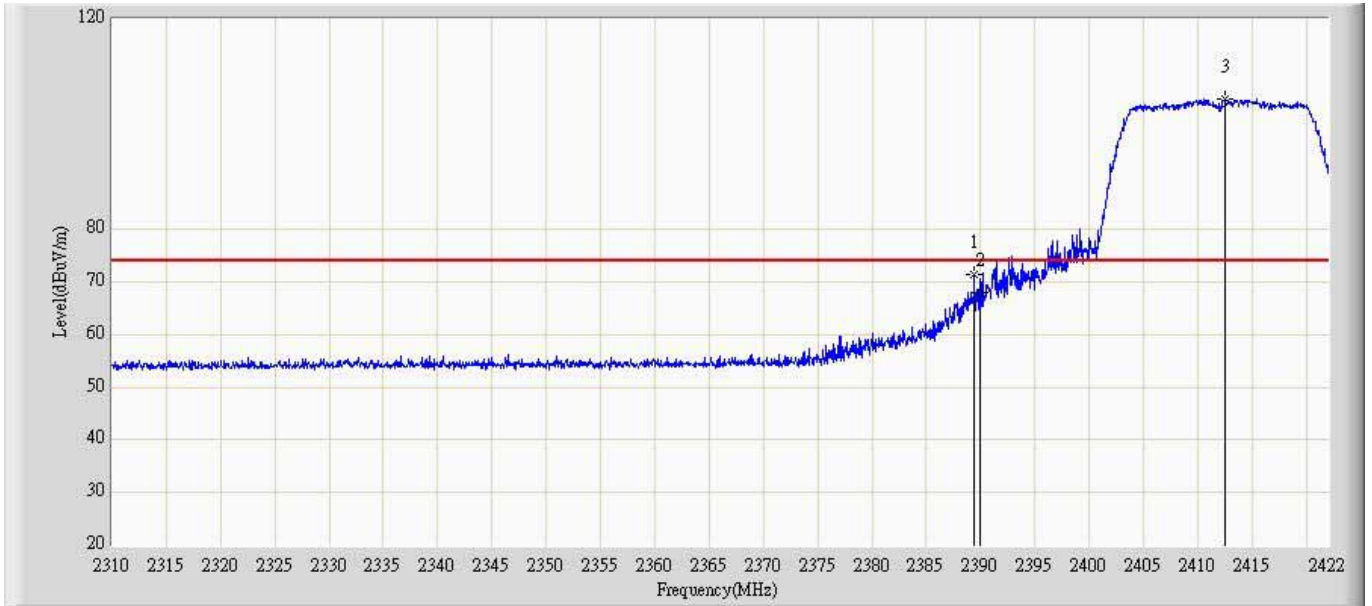
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2389.016	70.959	34.666	-3.041	74.000	36.293	PK
2			2390.000	69.535	33.234	-4.465	74.000	36.302	PK
3		*	2410.800	107.788	71.316	N/A	N/A	36.472	PK

Engineer: Milo	
Site: AC5	Time: 2013/04/11 - 20:43
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	



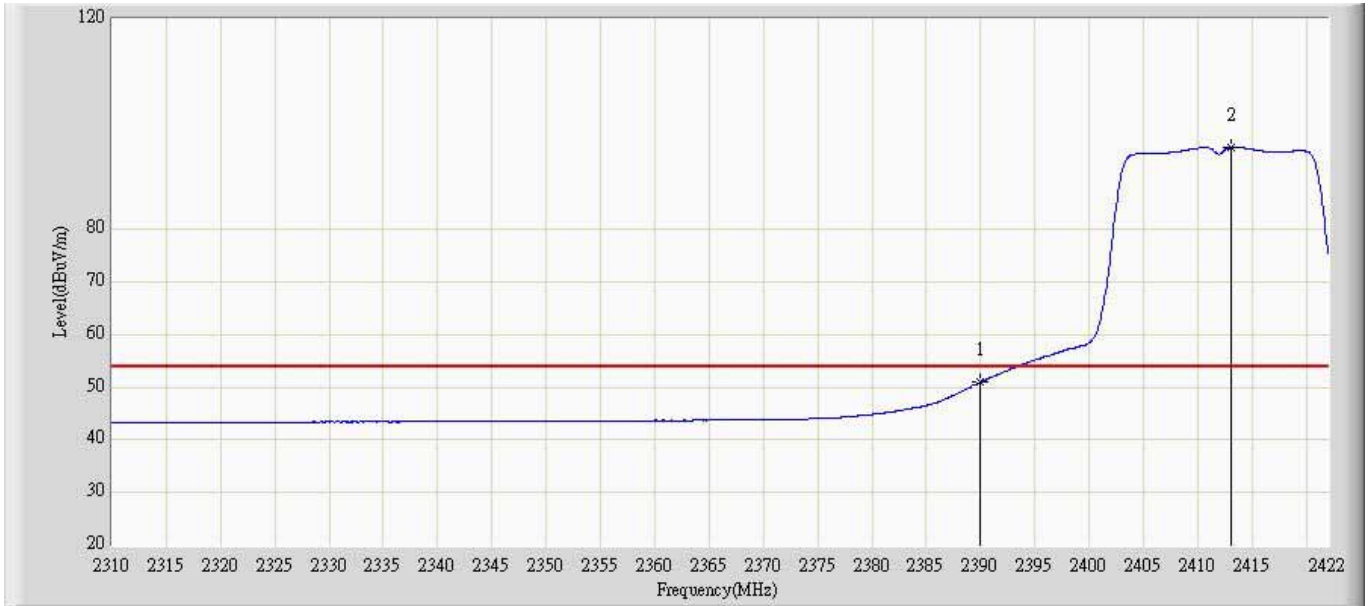
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	51.751	15.450	-2.249	54.000	36.302	AV
2		*	2410.632	98.427	61.956	N/A	N/A	36.471	AV

Engineer: Milo	
Site: AC5	Time: 2013/04/11 - 20:44
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	



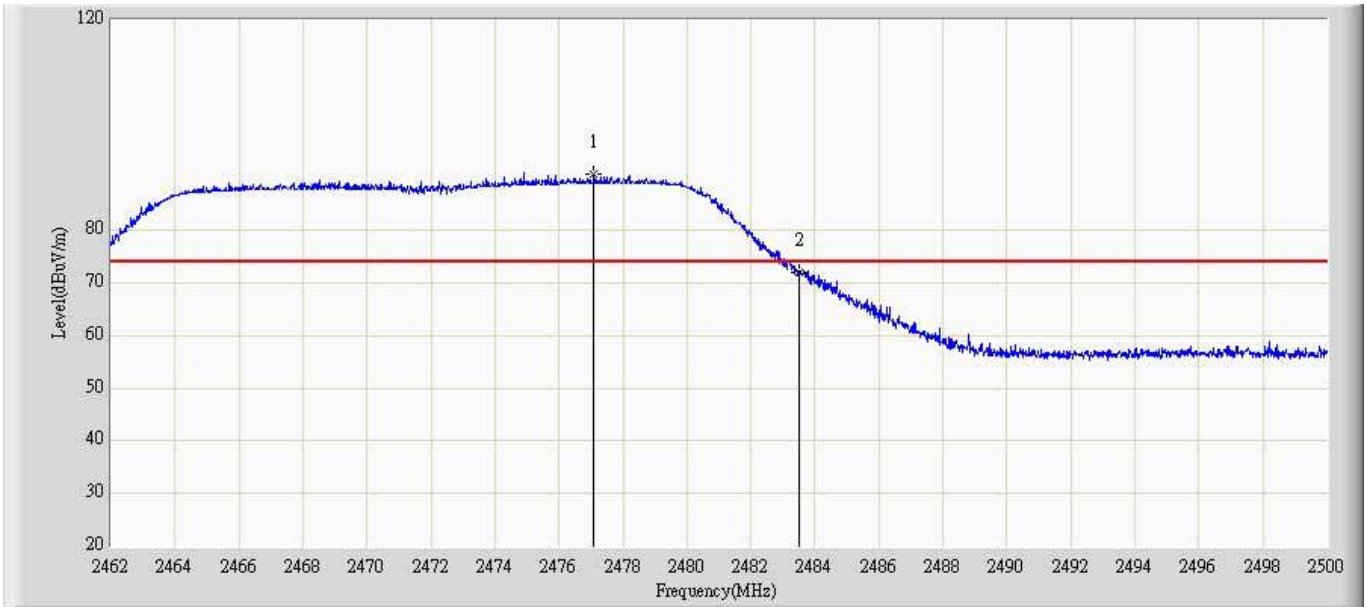
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2389.464	71.362	35.723	-2.638	74.000	35.639	PK
2			2390.000	68.021	32.380	-5.979	74.000	35.642	PK
3		*	2412.536	104.649	68.912	N/A	N/A	35.738	PK

Engineer: Milo	
Site: AC5	Time: 2013/04/11 - 20:46
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	



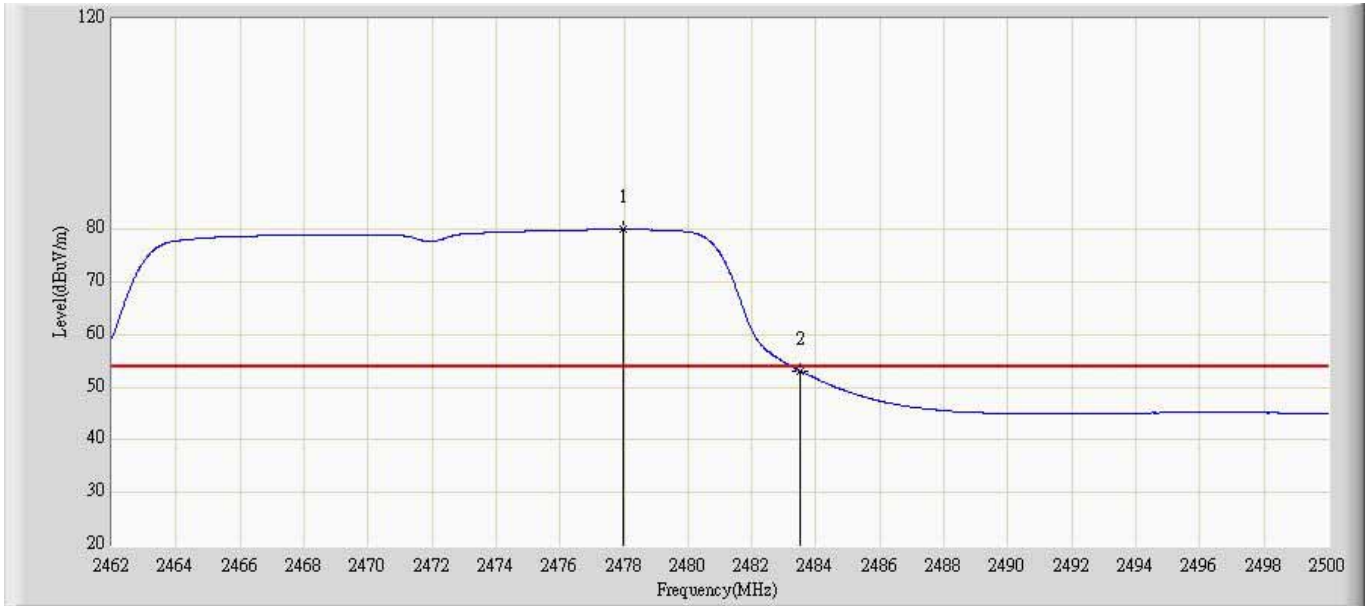
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	50.997	15.356	-3.003	54.000	35.642	AV
2		*	2413.040	95.572	59.832	N/A	N/A	35.739	AV

Engineer: Milo	
Site: AC5	Time: 2013/04/28 - 19:51
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	



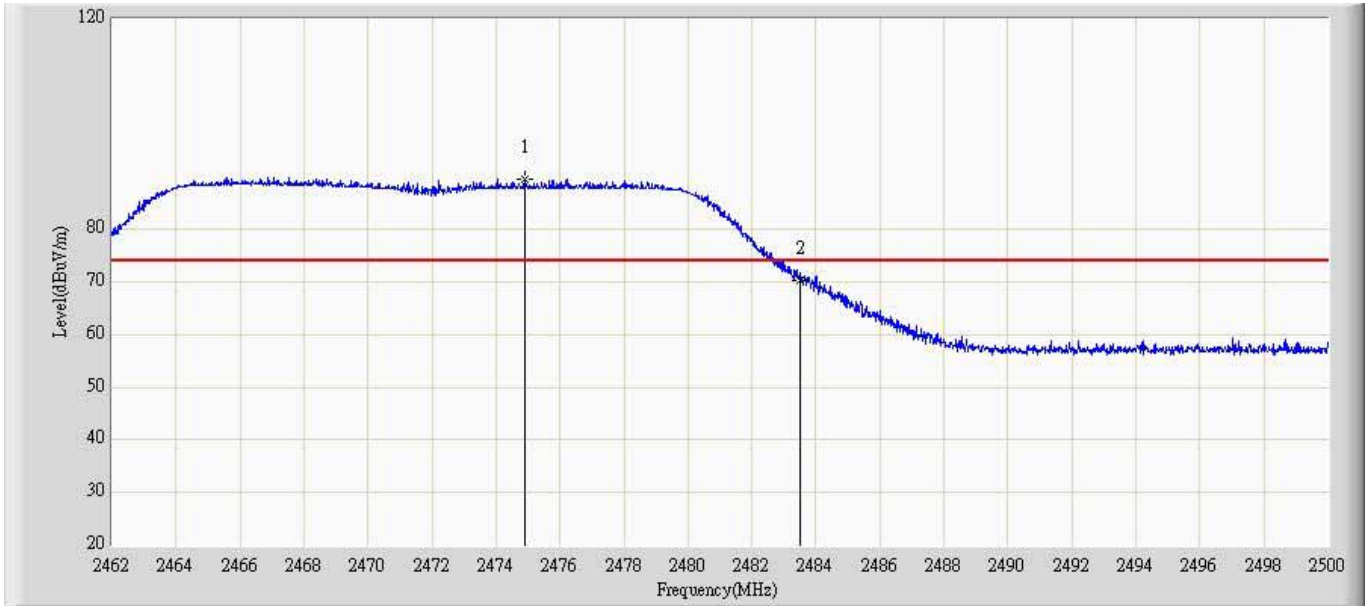
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2477.086	90.610	53.576	N/A	N/A	37.034	PK
2			2483.500	71.954	34.865	-2.046	74.000	37.089	PK

Engineer: Milo	
Site: AC5	Time: 2013/04/28 - 19:53
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	



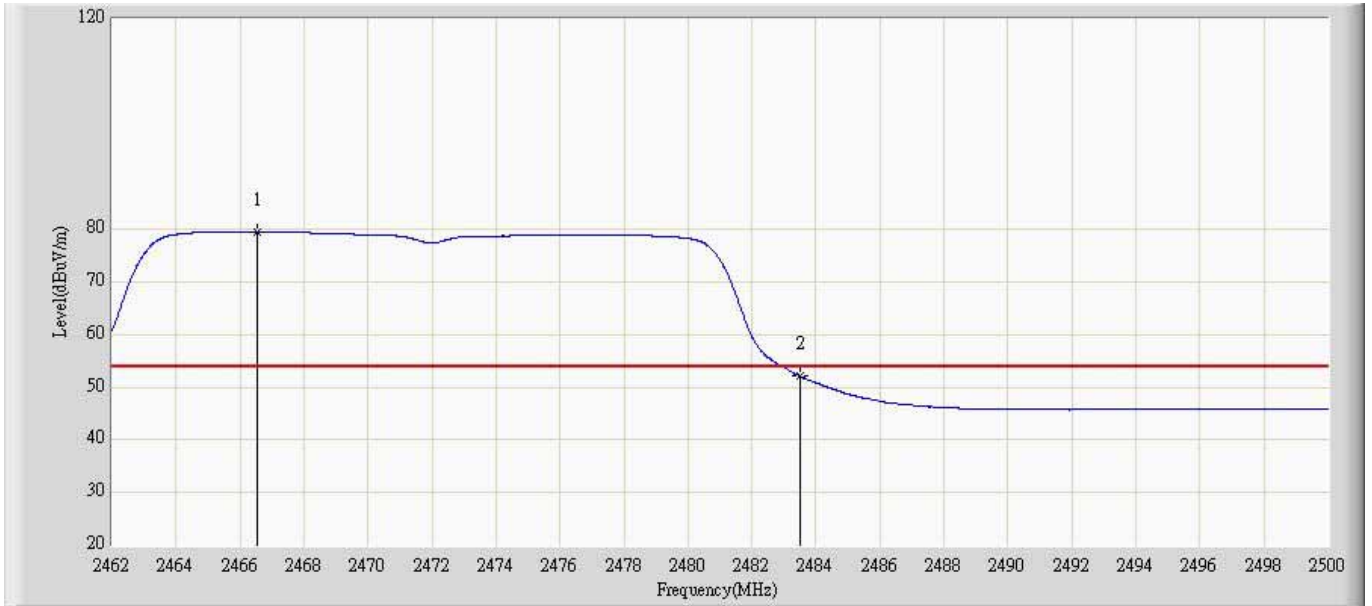
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2477.998	79.972	42.931	N/A	N/A	37.041	AV
2			2483.500	53.123	16.034	-0.877	54.000	37.089	AV

Engineer: Milo	
Site: AC5	Time: 2013/04/28 - 19:53
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		*	2474.882	89.527	53.510	N/A	N/A	36.017	PK
2			2483.500	70.425	34.369	-3.575	74.000	36.055	PK

Engineer: Milo	
Site: AC5	Time: 2013/04/28 - 19:55
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		*	2466.522	79.600	43.618	N/A	N/A	35.982	AV
2			2483.500	52.153	16.098	-1.847	54.000	36.055	AV