

Test Report

FCC Part15 Subpart C

Product Name : 300Mbps Wireless N Mini Router
Model No. : TL-WR810N
FCC ID : TE7WR810N

Applicant : TP-LINK TECHNOLOGIES CO., LTD.
Address : Building 24(floors1,3,4,5) and 28(floors1-4) Central
Science and Technology Park, Shennan Rd, Nanshan,
Shenzhen, China

Date of Receipt : Jul. 28, 2015
Test Date : Jul. 29, 2015~ Dec. 13, 2015
Issued Date : Dec. 16, 2015
Report No. : 1580056R-RF-US-P06V01
Report Version : V1.0

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.

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Test Report Certification

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and Technology Park, Shennan Rd, Nanshan,
Shenzhen, China
Model No. : TL-WR810N
FCC ID : TE7WR810N
EUT Voltage : 100-120V~50/60Hz
Brand Name : TP-LINK
Applicable Standard : FCC CFR Title 47 Part 15 Subpart C: 2014
ANSI C63.4:2014;
ANSI C63.10:2013;
KDB 558074 D01v03r03
KDB 662911 D01 Multiple Transmitter Output v02r01
Test Result : Complied
Performed Location : Suzhou EMC Laboratory
No.99 Hongye Rd., Suzhou Industrial Park, Suzhou,215006,
Jiangsu, China
TEL: +86-512-6251-5088 / FAX: +86-512-6251-5098
FCC Registration Number: 800392;

Documented By : Elaine Wong
Reviewed By : Frank He
Approved By : my nes

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
USA	:	FCC
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:

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

LinKou Testing Laboratory :

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, Suzhou,215006, Jiangsu, China
TEL : +86-512-6251-5088 / FAX : 86-512-6251-5098 E-Mail : service@quietek.com

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History of This Test Report

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
1580056R-RF-US-P06V01	V1.0	Initial Issued Report	Dec. 16, 2015

1. General Information

1.1. EUT Description

Product Name	300Mbps Wireless N Mini Router
Brand Name	TP-LINK
Model No.	TL-WR810N
EUT Voltage	100-120V~50/60Hz
Frequency Range	802.11b/g/n(20MHz): 2412~2462MHz 802.11n(40MHz): 2422~2452MHz
Channel Number	For 2.4GHz Band 802.11b/g/n(20MHz): 11 802.11n(40MHz): 7
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	2*Tx +2*Rx for 2.4GHz
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	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 List

Antenna	Type	Model No.	Peak Gain	Directional gain for CDD
Antenna 1	plug-in antenna	N/A	2dBi	5.01
Antenna 2	plug-in antenna	N/A	2dBi	

Note: 1: The EUT has two antennas, and each port has same gain, they transmit signals are correlated with each other.

(1) 2.4G Directional gain for CDD Calculation is:

- a. For power measurements
 Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;
 Directional gain = $G_{ANT} + \text{Array Gain} = 2.0\text{dBi}$
- b. For power spectral density (PSD) measurements
 Directional gain = $G_{ANT} + \text{Array Gain} \approx 5.01\text{dBi}$

Power Parameter Value of the test software

For 2.4G with CDD

Test Mode	Test Channel	Ant 1	Ant 2
802.11b	2412	17.5	17.5
	2437	16.0	16.0
	2462	15.5	15.5
802.11g	2412	16.0	16.0
	2437	22.0	22.0
	2462	19.5	19.5
802.11n(20MHz)	2412	15.0	15.0
	2437	22.0	22.0
	2462	17.0	17.0
802.11n(40MHz)	2422	14.5	14.5
	2437	16.5	16.5
	2452	13.5	13.5

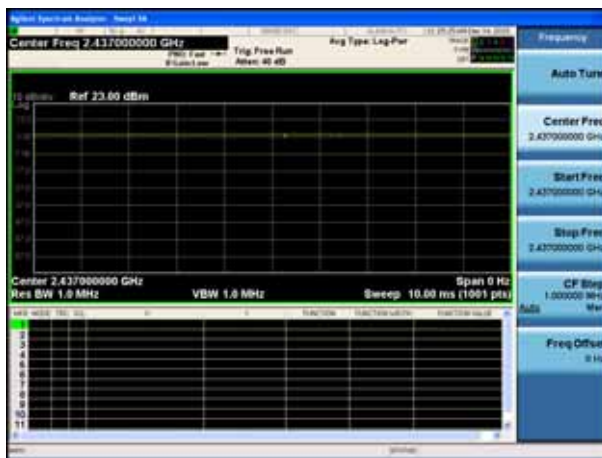
Note : 1: The EUT uses CDD technology. The EUT of all test mode which always operate with the antennas transmitting simultaneously, so we only test the mode when the antennas transmitting simultaneously.

Duty Cycle

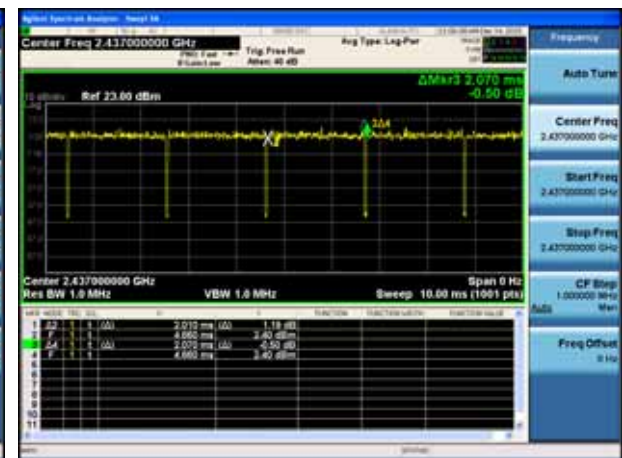
2.4GHz Band

Test Mode	Tx On (ms)	T (ms)	VBW	Tx On + Tx Off (ms)	Duty Cycle
802.11b	----	----	10Hz	----	100.00%
802.11g	2.01	2.01	510Hz	2.070	97.10%
802.11n(20MHz)	1.88	1.88	550Hz	1.94	96.91%
802.11n(40MHz)	0.92	0.92	1.0kHz	0.97	94.85%

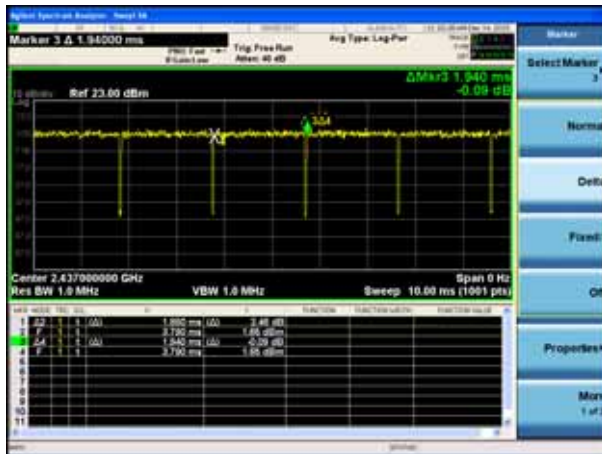
802.11 b



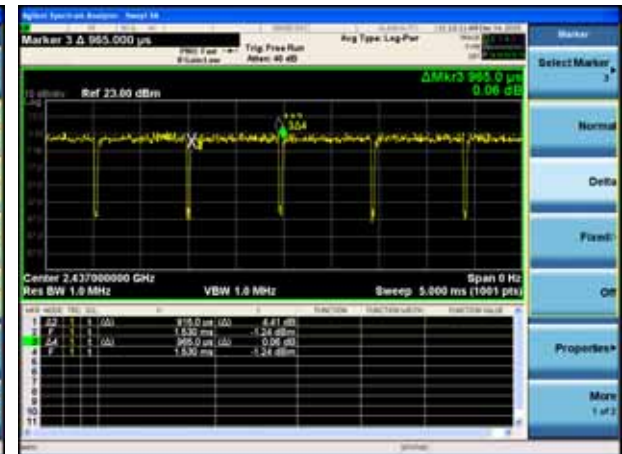
802.11 g



802.11 n(20MHz)



802.11 n(40MHz)



- Note: 1. T means the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.
2. According to KDB 558074, when test for Radiated Emission Band Edge and Radiated Emission, $VBW \geq 1/T$ will be used

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)
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, and be shown on this report.

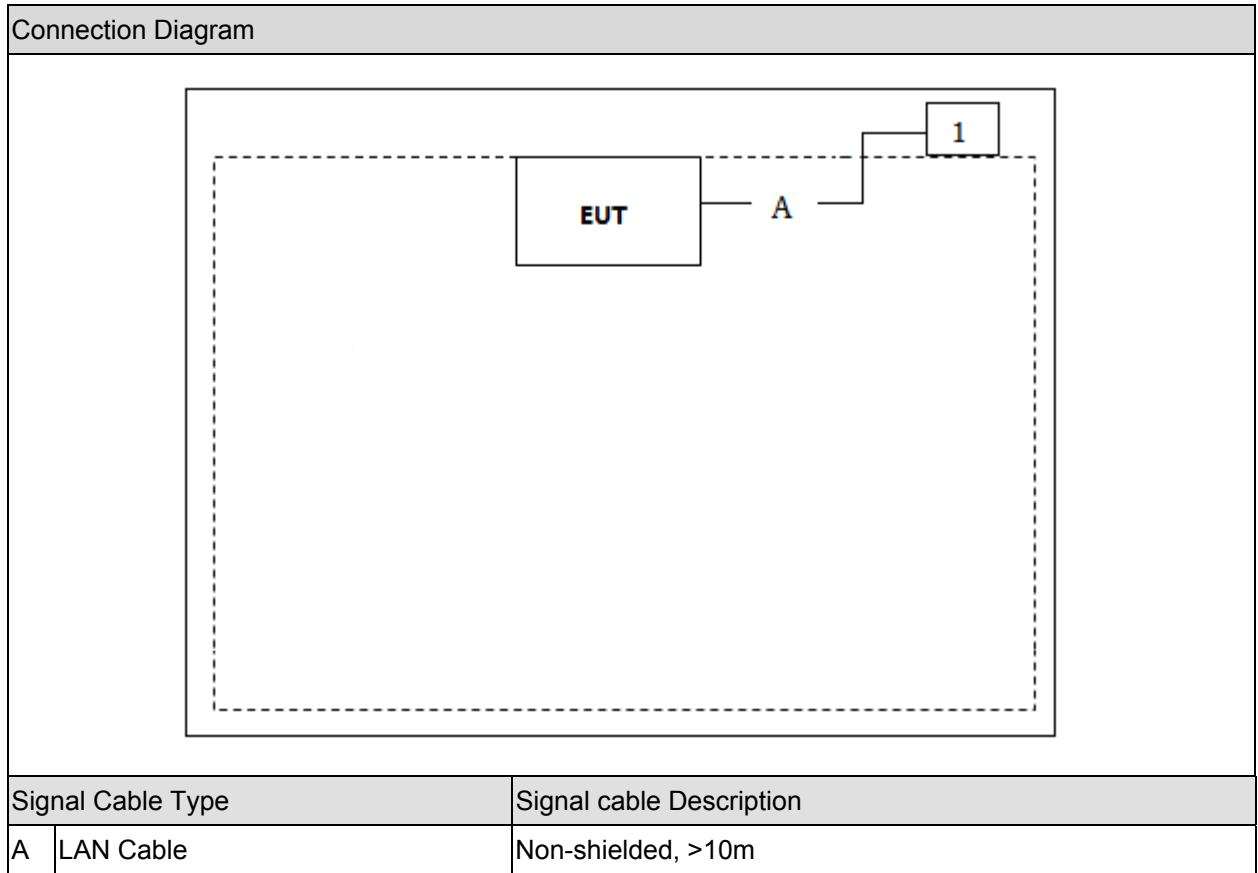
2. For this device, radiated test was verified over X, Y, Z Axis, and shown the worst case on this report.

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	Lenovo	Think pad x220	SUA0600195	Non-shielded

1.4. Configuration of Tested System



1.5. EUT Exercise Software

1	Setup the EUT and simulators as shown on above.
2	Turn on the power of equipment.
3	Run the software, and set the test mode and channel, then press OK to start continue Transmit or receive.

2. Technical Test

2.1. Summary of Test Result

- ☒ No deviations from the test standards
☐ Deviations from the test standards as below description:

For FCC

Performed Test Item	Normative References	Test Performed	Deviation
Conducted Emission	FCC CFR Title 47 Part 15 Subpart C: 2015 Section 15.207	Yes	No
Radiated Emission	FCC CFR Title 47 Part 15 Subpart C: 2015 Section 15.209	Yes	No
RF Antenna Conducted Spurious	FCC CFR Title 47 Part 15 Subpart C: 2015 Section 15.247(d)	Yes	No
Radiated Emission Band Edge	FCC CFR Title 47 Part 15 Subpart C: 2015 15.247(d)	Yes	No
Operation Frequency Range of 20dB Bandwidth	FCC CFR Title 47 Part 15 Subpart C: 2015 15.215(c)	Yes	No
Occupied Bandwidth	FCC CFR Title 47 Part 15 Subpart C: 2015 Section 15.247(a)(2)	Yes	No
Power Output	FCC CFR Title 47 Part 15 Subpart C: 2015 Section 15.247(b)(3)	Yes	No
Power Spectral Density	FCC CFR Title 47 Part 15 Subpart C: 2015 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

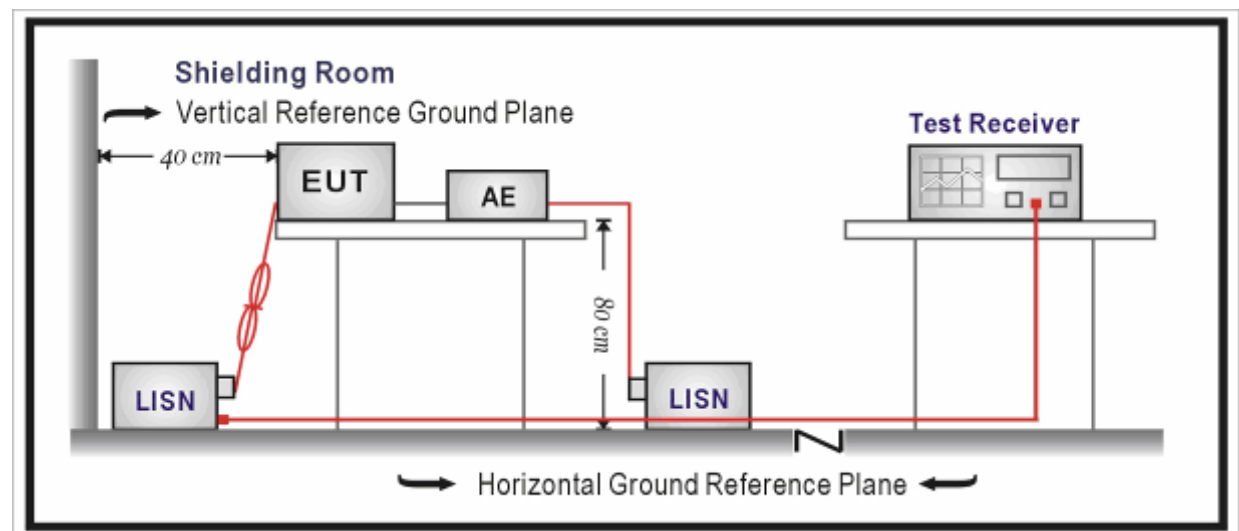
3.1. Test Equipment

Conducted Emission / TR-1

Instrument	Manufacturer	Type No.	Serial No.	Cal. Due Date
EMI Test Receiver	R&S	ESCI	100726	2016.03.28
Two-Line V-Network	R&S	ENV216	100043	2016.03.28
Two-Line V-Network	R&S	ENV216	100044	2016.09.16
50ohm Coaxial Switch	Anritsu	MP59B	6200464462	2016.03.01
50ohm Termination	SHX	TF2	07081401	2016.09.16
Temperature/Humidity Meter	zhichen	ZC1-2	TR1-TH	2016.01.08

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

According to FCC ANSI C63.4: 2014 & ANSI C63.10: 2013

FCC

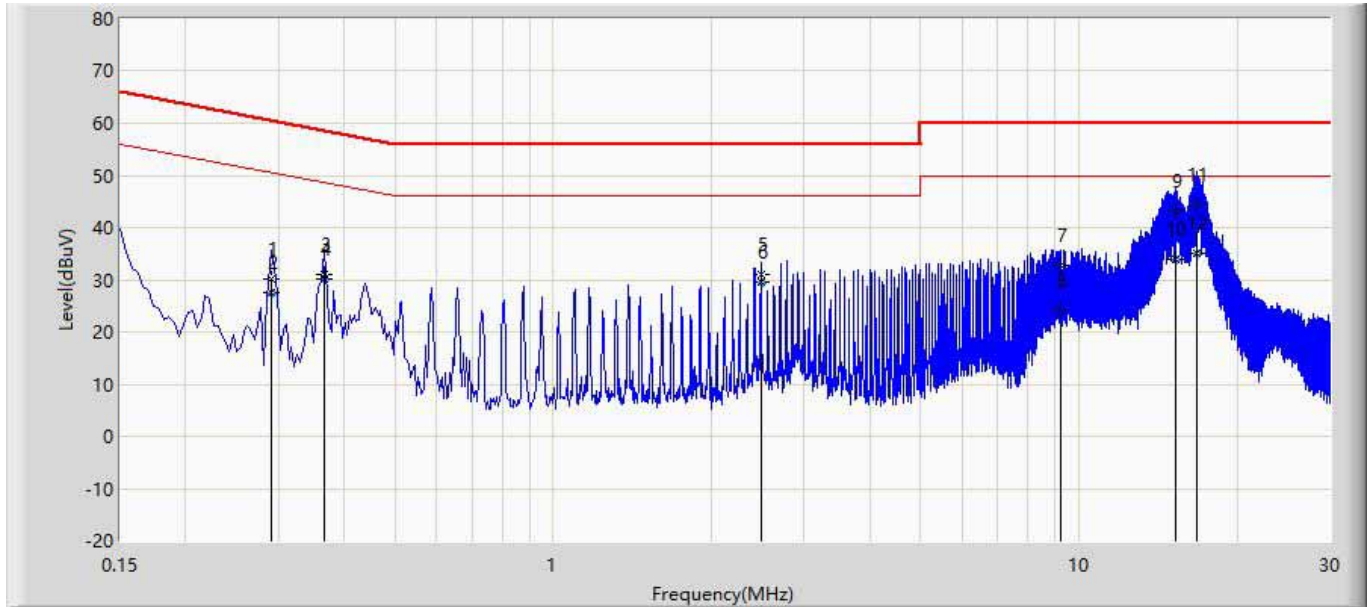
The EUT was setup according to ANSI C63.4, 2014 for compliance to FCC 47CFR 15.247 requirements. The EUT was placed on a platform of nominal size, 1 m by 1.5 m, raised 80 cm above the conducting ground plane. The vertical conducting plane was located 40 cm to the rear of the EUT. All other surfaces of 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

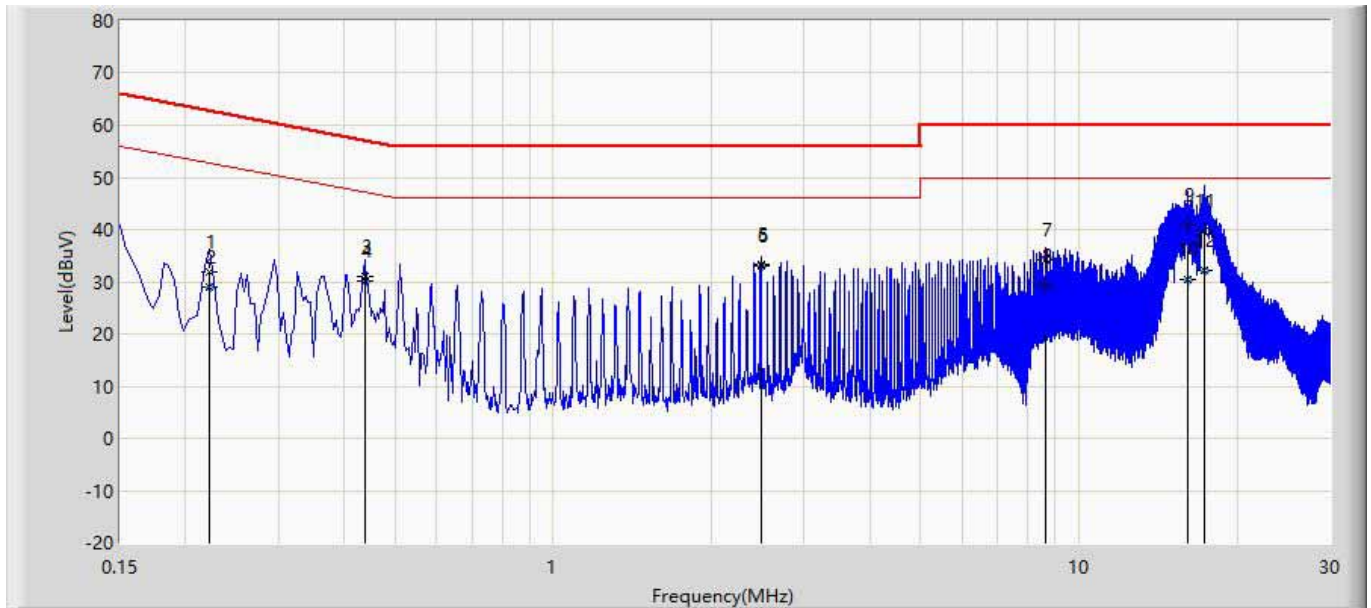
3.6. Test Result

Site: TR1	Time: 2015/08/06
Limit: FCC_Part15.107_CE_AC Power_ClassB	Margin: 0
Probe: ENV216_101044(0.009-30MHz)	Polarity: Line
EUT: 300Mbps Wireless N Mini Router	Power: AC 120V/60Hz
Note: Mode 1	



No	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Probe (dB)	Cable (dB)	Amp (dB)	Type
1		0.290	30.262	20.422	-30.262	60.524	9.640	0.200	0.000	QP
2		0.290	27.554	17.714	-22.970	50.524	9.640	0.200	0.000	AV
3		0.366	30.870	21.030	-27.721	58.591	9.640	0.200	0.000	QP
4		0.366	30.142	20.302	-18.449	48.591	9.640	0.200	0.000	AV
5		2.486	31.021	21.181	-24.979	56.000	9.640	0.200	0.000	QP
6		2.486	29.569	19.729	-16.431	46.000	9.640	0.200	0.000	AV
7		9.206	32.623	22.703	-27.377	60.000	9.720	0.200	0.000	QP
8		9.206	24.045	14.125	-25.955	50.000	9.720	0.200	0.000	AV
9		15.266	43.072	32.832	-16.928	60.000	9.840	0.400	0.000	QP
10		15.266	33.956	23.716	-16.044	50.000	9.840	0.400	0.000	AV
11		16.802	44.486	34.256	-15.514	60.000	9.830	0.400	0.000	QP
12	*	16.802	34.968	24.738	-15.032	50.000	9.830	0.400	0.000	AV

Site: TR1	Time: 2015/08/06
Limit: FCC_Part15.107_CE_AC Power_ClassB	Margin: 0
Probe: ENV216_101044(0.009-30MHz)	Polarity: Neutral
EUT: 300Mbps Wireless N Mini Router	Power: AC 120V/60Hz
Note: Mode 1	



No	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Probe (dB)	Cable (dB)	Amp (dB)	Type
1		0.222	31.999	22.139	-30.745	62.744	9.660	0.200	0.000	QP
2		0.222	28.916	19.056	-23.828	52.744	9.660	0.200	0.000	AV
3		0.438	31.103	21.266	-25.997	57.100	9.637	0.200	0.000	QP
4		0.438	30.245	20.408	-16.855	47.100	9.637	0.200	0.000	AV
5		2.482	33.403	23.563	-22.597	56.000	9.640	0.200	0.000	QP
6	*	2.482	33.120	23.280	-12.880	46.000	9.640	0.200	0.000	AV
7		8.614	34.243	24.323	-25.757	60.000	9.720	0.200	0.000	QP
8		8.614	29.339	19.419	-20.661	50.000	9.720	0.200	0.000	AV
9		16.138	40.975	30.735	-19.025	60.000	9.840	0.400	0.000	QP
10		16.138	30.479	20.239	-19.521	50.000	9.840	0.400	0.000	AV
11		17.294	39.709	29.479	-20.291	60.000	9.830	0.400	0.000	QP
12		17.294	32.238	22.008	-17.762	50.000	9.830	0.400	0.000	AV

4. Radiated Emission

4.1. Test Equipment

Radiated Emission / AC-2

Instrument	Manufacturer	Type No.	Serial No.	Cal. Due Date
EMI Test Receiver	R&S	ESCI	100573	2016.03.28
Loop Antenna	R&S	HFH2-Z2	833799/003	2016.11.17
Bilog Chainenna	Teseq GmbH	CBL6112D	27611	2016.10.15
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC2-C	2016.03.01
Temperature/Humidity Meter	Zhicheng	ZC1-2	AC2-TH	2016.01.08

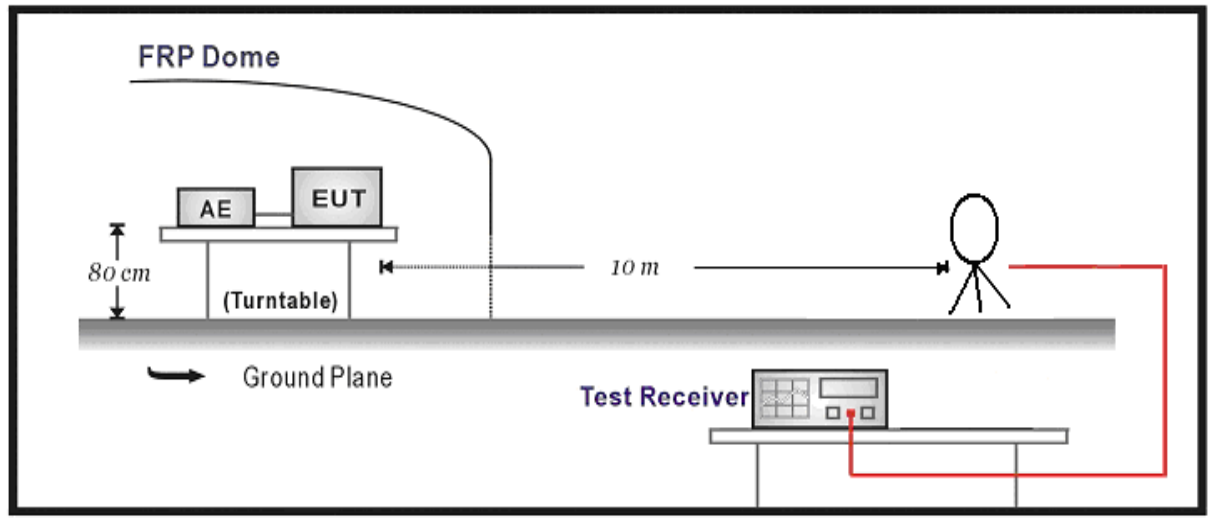
Radiated Emission / AC-5

Instrument	Manufacturer	Type No.	Serial No.	Cal. Due Date
Spectrum Analyzer	Agilent	N9020A	MY49100159	2016.03.28
Spectrum Analyzer	Agilent	E4446A	MY45300103	2016.01.07
Preamplifier	Miteq	NSP1800-25	1364185	2016.05.05
Preamplifier	QuieTek	AP-040G	CHM-0906001	2016.05.05
DRG Horn	ETS-Lindgren	3117	00123988	2016.01.21
Broad-Band Horn Antenna	Schwarzbeck	BBHA9170	294	2016.11.24
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C1	2016.03.01
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C2	2016.03.01
Coaxial Cable	Huber+Suhner	SUCOFLEX 102	AC5-C3	2016.03.01
EMI Receiver	Agilent	N9038A	MY51210196	2016.06.09
Temperature/Humidity Meter	Zhichen	ZC1-2	AC5-TH	2016.01.08

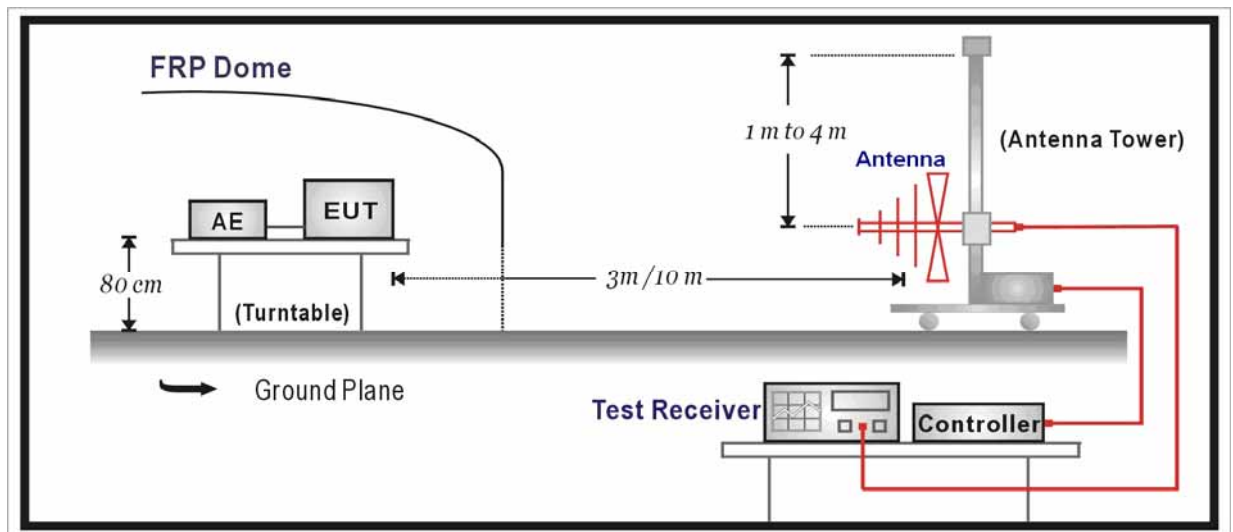
Note 1: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

4.2. Test Setup

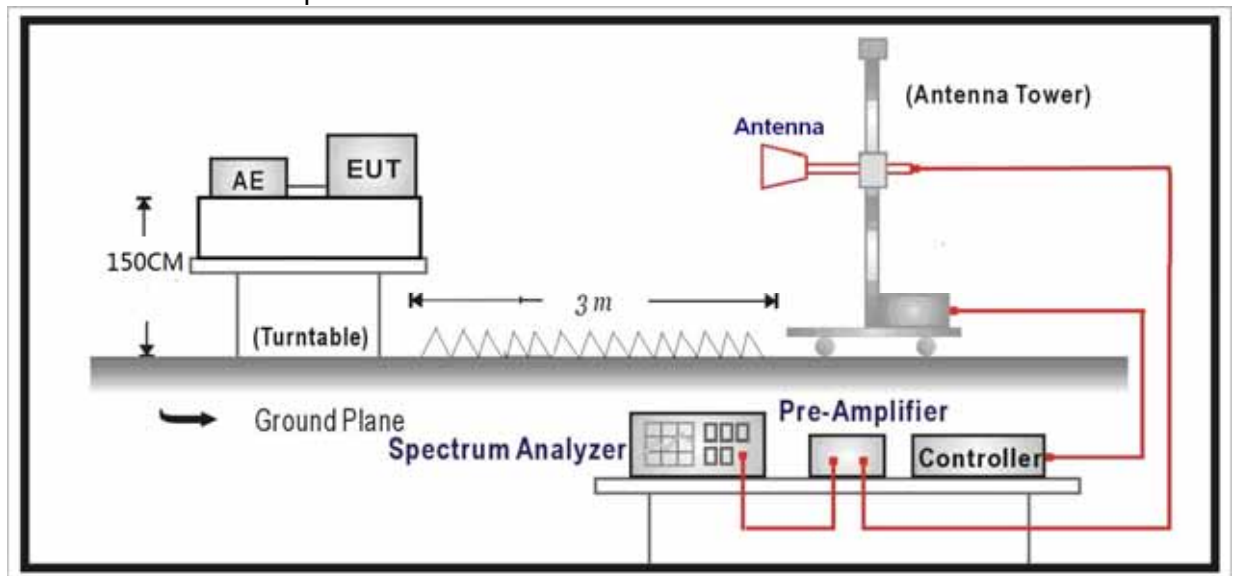
Below 30MHz Test Setup:



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

According to FCC ANSI C63.4: 2014 & ANSI C63.10: 2013

The EUT is placed on a turn table which is 1.5 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 C63.4:2014 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 $\geq$ 1/T, sweep time = auto.

Mode1: Transmit by 802.11b

CH	Antenna	Frequency (MHz)	Reading Level (dBuV)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Type
1	H	4825.0	48.0	8.0	56.0	74	-18.0	PK
	H	4824.0	45.9	8.0	53.9	54	-0.1	AV
	H	7230.5	33.6	12.6	46.2	54(note3)	-7.8	PK
	H	9644.5	32.1	14.9	47.0	54(note3)	-7.0	PK
	V	4825.0	42.3	7.3	49.6	54(note3)	-4.4	PK
	V	7239.0	38.2	12.7	50.9	54(note3)	-3.1	PK
	V	9644.5	32.8	14.9	47.7	54(note3)	-6.3	PK
6	H	4876.0	46.2	7.3	53.5	54(note3)	-0.5	PK
	H	7311.0	31.8	12.4	44.2	54(note3)	-9.8	PK
	H	9748.0	31.8	14.8	46.6	54(note3)	-7.4	PK
	V	4876.0	39.7	7.4	47.1	54(note3)	-6.9	PK
	V	7307.0	36.6	12.3	48.9	54(note3)	-5.1	PK
	V	9746.5	33.5	14.8	48.3	54(note3)	-5.7	PK
11	H	4927.0	47.3	7.5	54.8	74	-19.2	PK
	H	4924.0	46.1	7.6	53.7	54	-0.3	AV
	H	7386.0	31.8	12.3	44.1	54(note3)	-9.9	PK
	H	9848.0	31.7	15.2	46.9	54(note3)	-7.1	PK
	V	4927.0	40.3	7.6	47.9	54(note3)	-6.1	PK
	V	7383.5	36.1	12.4	48.5	54(note3)	-5.5	PK
	V	9848.5	33.5	15.2	48.7	54(note3)	-5.3	PK

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

- The test frequency range, 9kHz~30MHz, 18GHz~25GHz, both of the worst case are at least 6dB below the limits, therefore no data appear in the report.
- 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 (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	H	4825.0	42.9	7.3	50.2	54(note3)	-3.8	PK
	H	7236.0	31.7	12.7	44.4	54(note3)	-9.6	PK
	H	9648.0	29.7	14.8	44.5	54(note3)	-9.5	PK
	V	4816.5	38.7	7.4	46.1	54(note3)	-7.9	PK
	H	7239.0	37.6	12.7	50.3	54(note3)	-3.7	PK
	V	9653.0	31.6	14.7	46.3	54(note3)	-7.7	PK
6	H	4876.0	57.0	7.4	64.4	74	-9.6	PK
	H	4874.1	44.4	7.4	51.8	54	-2.2	AV
	H	7315.5	40.8	12.6	53.4	54(note3)	-0.6	PK
	H	9755.0	43.6	14.8	58.4	74	-15.6	PK
	H	9748.0	28.6	14.8	43.4	54	-10.6	AV
	V	4876.0	49.5	7.4	56.9	74	-17.1	PK
	V	4874.1	36.7	7.3	44.0	54	-10.0	AV
	V	7307.0	47.6	12.3	59.9	74	-14.1	PK
	V	7311.1	35.1	12.5	47.6	54	-6.4	AV
	V	9772.0	45.3	15.6	60.9	74	-13.1	PK
	V	9748.0	31.2	14.8	46.0	54	-8.0	AV
11	H	4825.0	51.2	7.3	58.5	74.00	-15.5	PK
	H	4822.8	38.0	7.3	45.3	54.00	-8.7	AV
	H	7230.5	37.1	12.6	49.7	54(note3)	-4.3	PK
	H	9644.5	33.8	14.9	48.7	54(note3)	-5.3	PK
	V	4825.0	45.5	7.3	52.8	54(note3)	-1.2	PK
	V	7247.5	41.8	12.7	54.5	74	-19.5	PK
	V	7230.5	29.3	12.7	42.0	54	-12.0	AV
	V	9653.0	36.7	14.7	51.4	54(note3)	-2.6	PK

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

2. The test frequency range, 9kHz~30MHz, 18GHz~25GHz, both of the worst case are at least 6dB below the limits, 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	4825.0	51.2	7.3	58.5	74	-15.5	PK
	H	4822.8	38.0	7.3	45.3	54	-8.7	AV
	H	7230.5	37.1	12.6	49.7	54(note3)	-4.3	PK
	H	9644.5	33.8	14.9	48.7	54(note3)	-5.3	PK
	V	4825.0	45.5	7.3	52.8	54(note3)	-1.2	PK
	V	7247.5	41.8	12.7	54.5	74	-19.5	PK
	V	7230.5	29.3	12.7	42.0	54	-12.0	AV
	V	9653.0	36.7	14.7	51.4	54(note3)	-2.6	PK
	H	4876.0	57.4	7.4	64.8	74	-9.2	PK
	H	4873.2	44.3	7.3	51.6	54	-2.4	AV
	H	7315.5	41.9	12.7	54.6	74	-19.4	PK
	H	7313.8	27.2	12.5	39.7	54	-14.3	AV
	H	9746.5	42.6	14.8	57.4	74	-16.6	PK
	H	9745.2	29.0	14.7	43.7	54	-10.3	AV
	V	4876.0	49.8	7.3	57.1	74	-16.9	PK
	V	4875.4	34.6	7.4	42.0	54	-12.0	AV
	V	7307.0	46.7	12.3	59.0	74	-15.0	PK
	V	7305.5	31.2	12.3	43.5	54	-10.5	AV
6	V	9746.5	47.3	14.8	62.1	74	-11.9	PK
	V	9743.8	30.8	14.7	45.5	54	-8.5	AV
11	H	4927.0	51.7	7.5	59.2	74	-14.8	PK
	H	4923.4	35.6	7.6	43.2	54	-10.8	AV
	H	7386.0	33.4	12.3	45.7	54(note3)	-8.3	PK
	H	9848.0	30.6	15.3	45.9	54(note3)	-8.1	PK
	V	4918.5	42.4	7.6	50.0	54(note3)	-4.0	PK
	V	7375.0	41.8	12.5	54.3	74	-19.7	PK
	V	7374.1	27.5	12.6	40.1	54	-13.9	AV
	V	9848.5	32.6	15.2	47.8	54(note3)	-6.2	PK

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

2. The test frequency range, 9kHz~30MHz, 18GHz~25GHz, both of the worst case are at least 6dB below the limits, 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.

Mode4: Transmit by 802.11n(40MHz)

CH	Antenna	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
3	H	4842.0	40.1	7.5	47.6	54(note3)	-6.4	PK
	H	7266.0	31.8	12.5	44.3	54(note3)	-9.7	PK
	H	9688.0	29.8	14.7	44.5	54(note3)	-9.5	PK
	V	4844.0	34.4	7.5	41.9	54(note3)	-12.1	PK
	V	7266.0	32.0	12.5	44.5	54(note3)	-9.5	PK
	V	9688.0	30.0	14.6	44.6	54(note3)	-9.4	PK
5	H	4876.0	42.5	7.4	49.9	54(note3)	-4.1	PK
	H	7311.0	31.8	12.4	44.2	54(note3)	-9.8	PK
	H	9748.0	30.2	14.8	45.0	54(note3)	-9.0	PK
	V	4874.0	36.7	7.3	44.0	54(note3)	-10.0	PK
	V	7311.0	35.0	12.4	47.4	54(note3)	-6.6	PK
	V	9748.0	30.5	14.8	45.3	54(note3)	-8.7	PK
9	H	4904.0	38.0	7.6	45.6	54(note3)	-8.4	PK
	H	7356.0	31.6	13.0	44.6	54(note3)	-9.4	PK
	H	9808.0	28.9	14.9	43.8	54(note3)	-10.2	PK
	V	4904.0	34.3	7.7	42.0	54(note3)	-12.0	PK
	V	7356.0	32.0	13.0	45.0	54(note3)	-9.0	PK
	V	9808.0	29.3	14.9	44.2	54(note3)	-9.8	PK

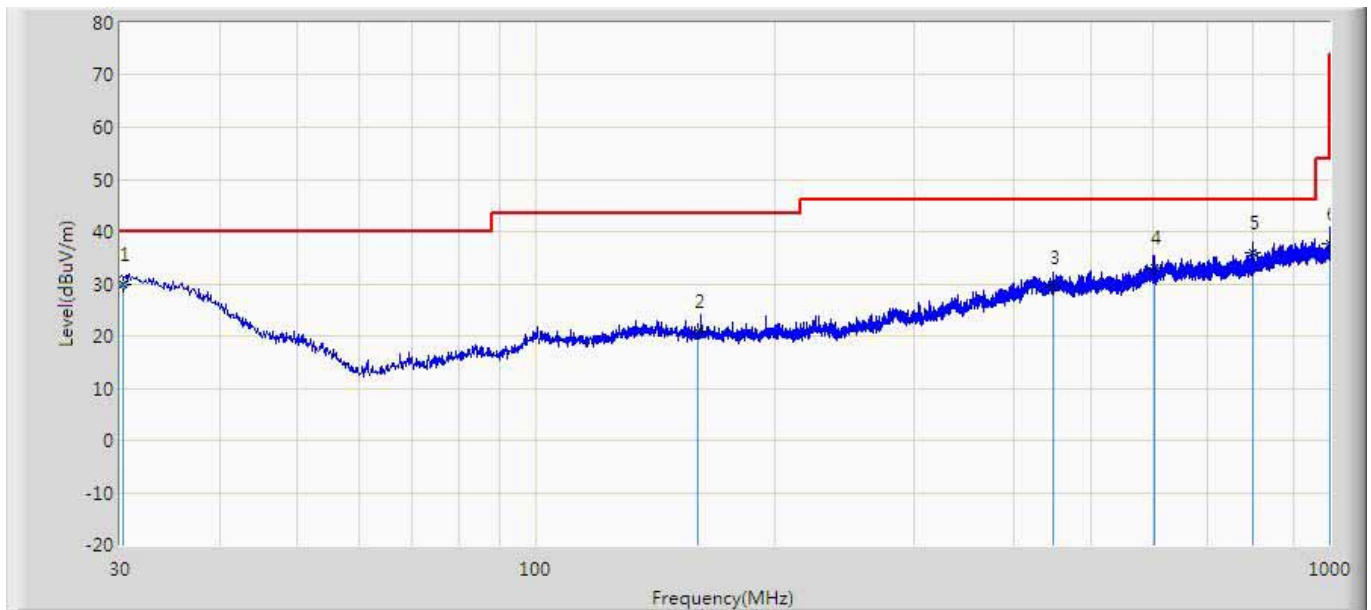
Note: 1. Measure Level = Reading Level + Factor.

2. The test frequency range, 9kHz~30MHz, 18GHz~25GHz, both of the worst case are at least 6dB below the limits, 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.

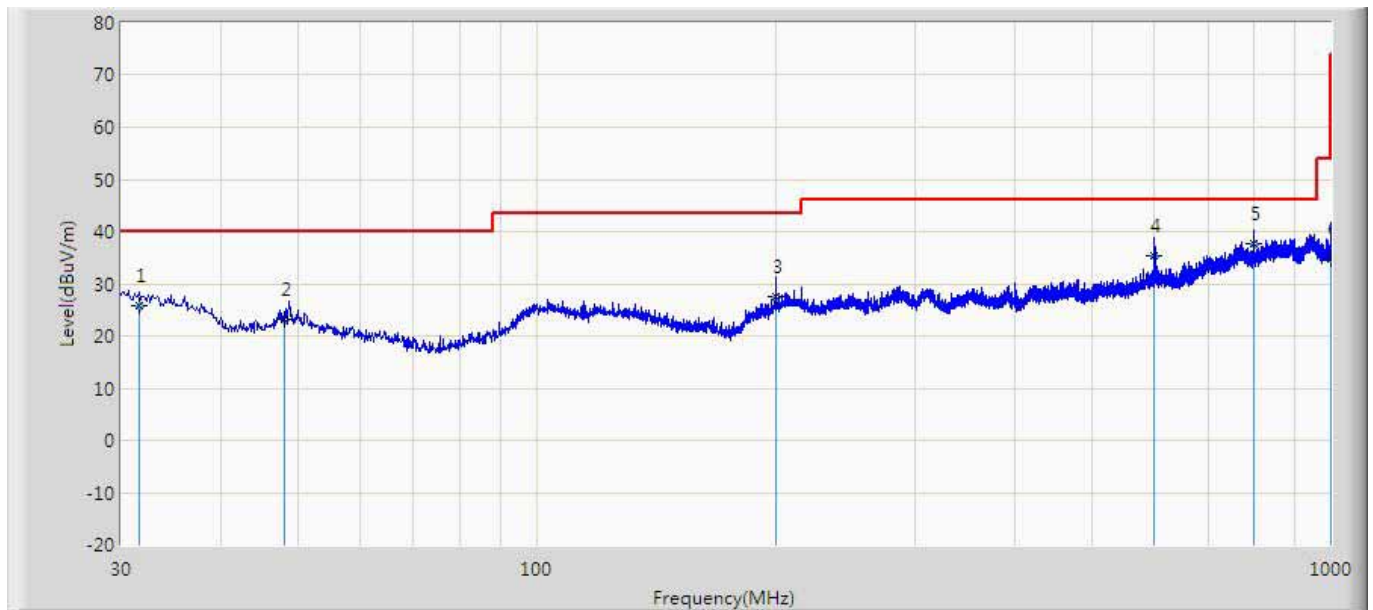
The worst case of Radiated Emission below 1GHz:

Site: AC3	Time: 2015/09/24
Limit: FCC_Part15.109_RE(3m)_ClassB	Margin: 0
Probe: AC3_10m (30-1000MHz)	Polarity: Horizontal
EUT: 300Mbps Wireless N Mini Router	Power: AC 120V/60Hz
Note: Mode 1: Transmit at CH2412 by 802.11b	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		30.265	29.851	2.033	-10.149	40.000	27.818	QP
2		160.265	20.780	3.465	-22.720	43.500	17.315	QP
3		447.766	29.415	2.565	-16.585	46.000	26.850	QP
4		600.265	33.172	5.015	-12.828	46.000	28.157	QP
5	*	800.457	35.945	6.226	-10.055	46.000	29.719	QP
6		999.987	37.566	5.157	-16.434	54.000	32.409	QP

Site: AC3	Time: 2015/09/24
Limit: FCC_Part15.109_RE(3m)_ClassB	Margin: 0
Probe: AC3_10m (30-1000MHz)	Polarity: Vertical
EUT: 300Mbps Wireless N Mini Router	Power: AC 120V/60Hz
Note: Mode 1: Transmit at CH2412 by 802.11b	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		31.666	25.665	2.100	-14.335	40.000	23.565	QP
2		48.235	23.204	5.356	-16.796	40.000	17.848	QP
3		200.032	27.493	5.032	-16.007	43.500	22.461	QP
4		600.033	35.433	8.165	-10.567	46.000	27.268	QP
5	*	800.655	37.707	6.022	-8.293	46.000	31.685	QP
6		999.999	34.749	2.200	-19.251	54.000	32.549	QP

5. RF Antenna Conducted Spurious

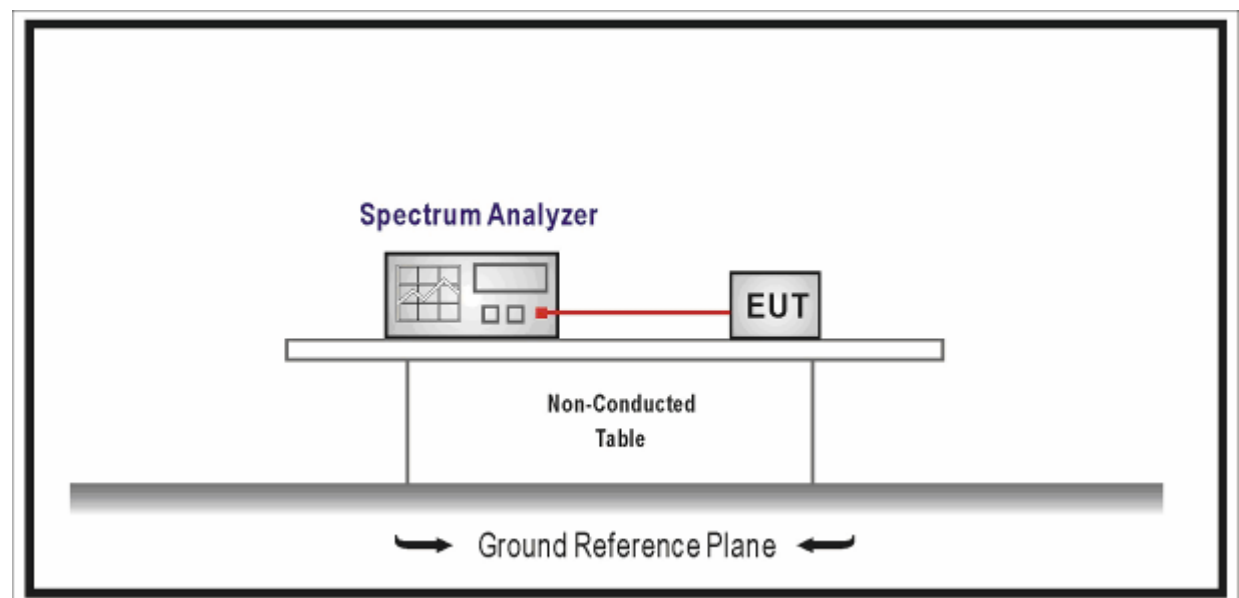
5.1. Test Equipment

RF Antenna Conducted Spurious / TR-8

Instrument	Manufacturer	Type No.	Serial No.	Cal. Due Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2016.01.07
Temperature/Humidity Meter	zhichen	ZC1-2	TR8-TH	2016.04.09

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

FCC

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.

If maximum conducted (average) output power was used to determine compliance as described in 11.9.2, then the peak power in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 30 dB relative to the maximum in-band peak

PSD level in 100 kHz (i.e., 30 dBc)

5.4. Test Procedure

According to FCCANSI C63.10: 2013

Set RBW = 100 kHz, Set VBW > RBW, scan up through 10th harmonic.

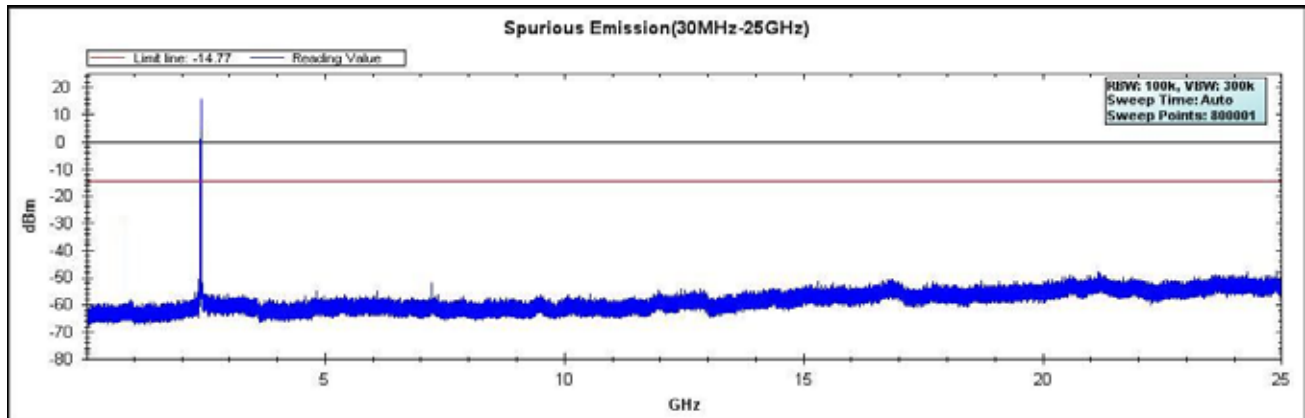
5.5. Uncertainty

The measurement uncertainty is defined as ± 1.27 dB

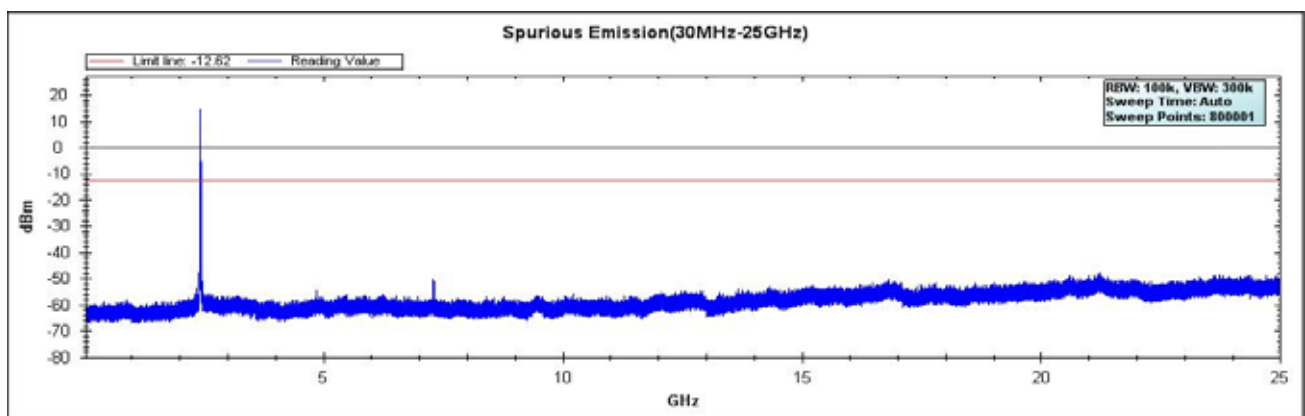
5.6. Test Result

Product	:	300Mbps Wireless N Mini Router
Test Item	:	RF Antenna Conducted Spurious
Test Site	:	TR-8
Test Mode	:	Mode 1: Transmit by 802.11b (Ant 0)

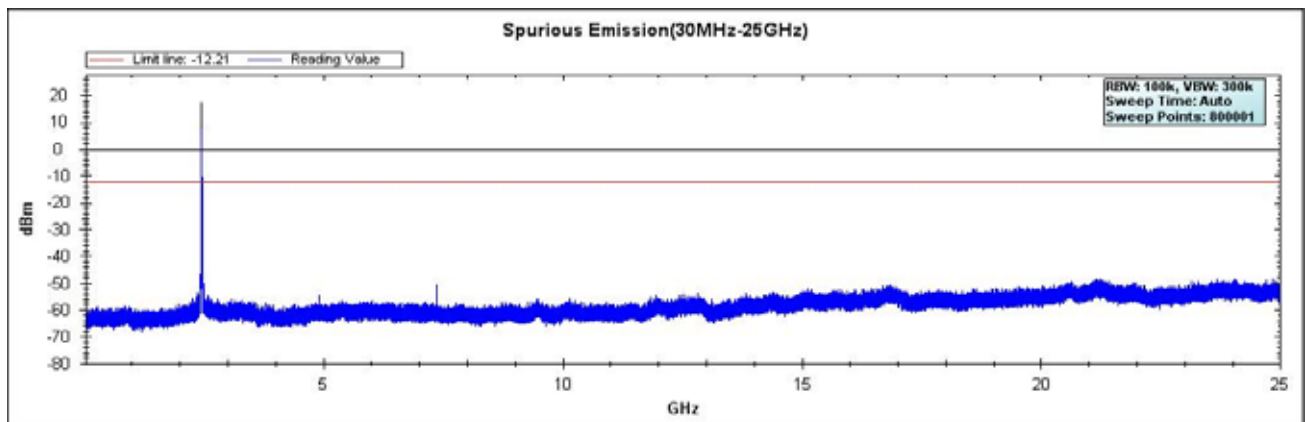
Channel 01 (2412MHz)



Channel 06 (2437MHz)



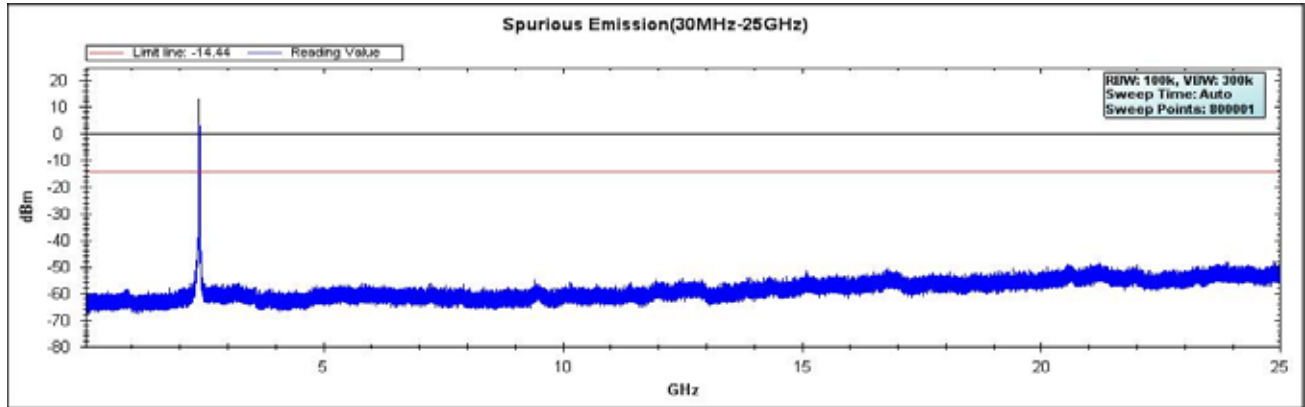
Channel 11 (2462MHz)



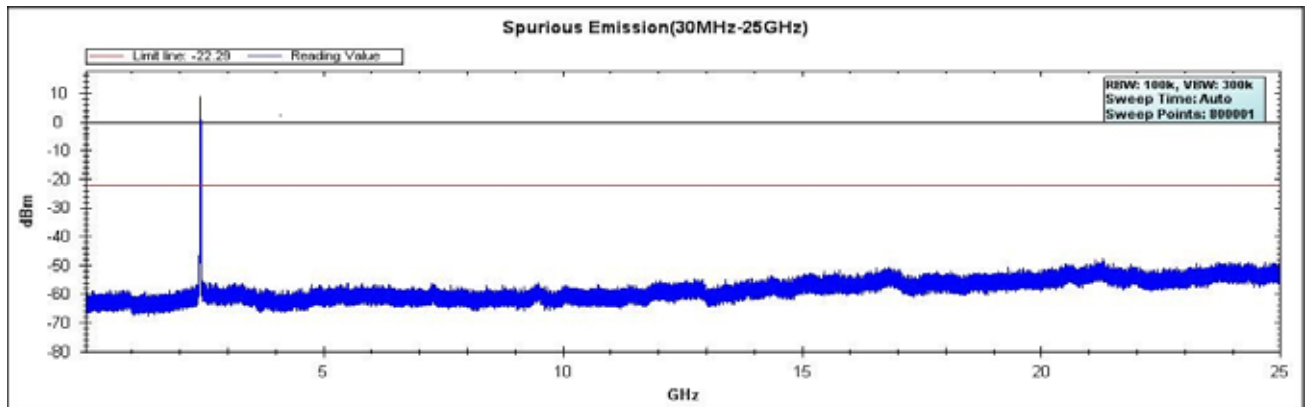
Note: For this test item, the modulation of this mode we have evaluated three antennas, presented data in the report is the worst case.

Product	:	300Mbps Wireless N Mini Router
Test Item	:	RF Antenna Conducted Spurious
Test Site	:	TR-8
Test Mode	:	Mode 2: Transmit by 802.11g (Ant 0)

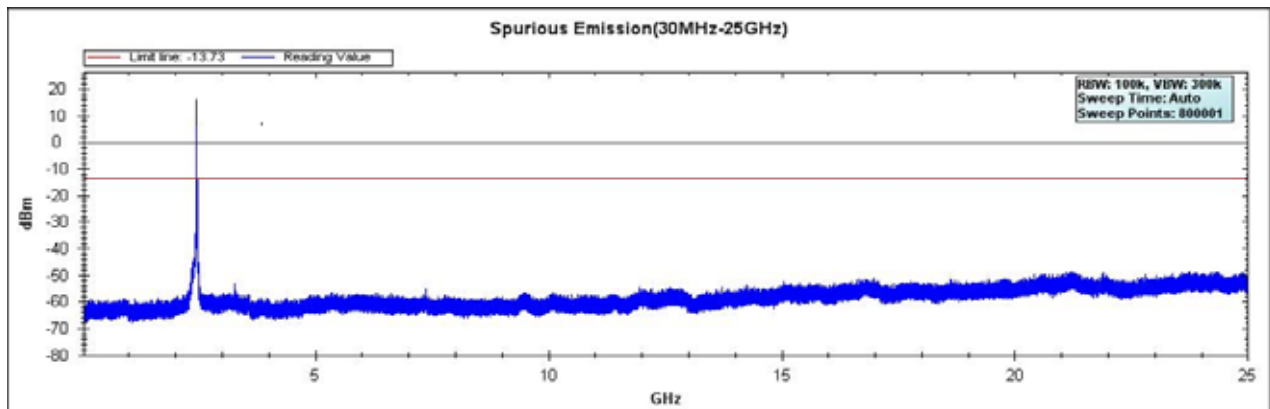
Channel 01 (2412MHz)



Channel 06 (2437MHz)



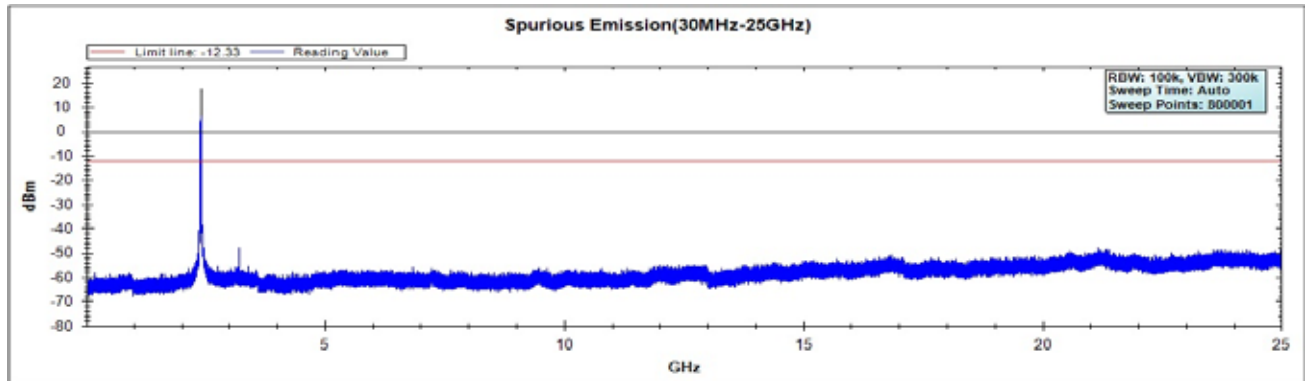
Channel 11 (2462MHz)



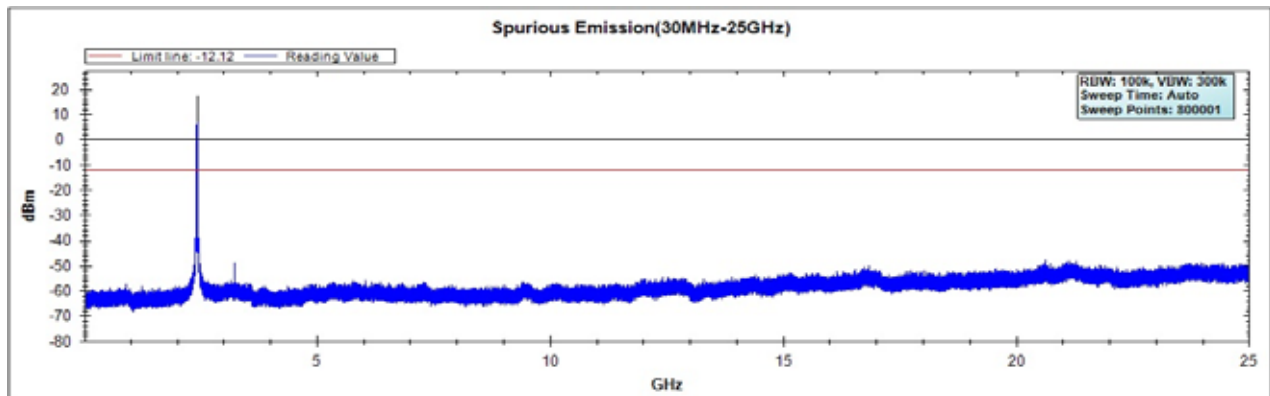
Note: For this test item, the modulation of this mode we have evaluated three antennas, presented data in the report is the worst case.

Product	:	300Mbps Wireless N Mini Router
Test Item	:	RF Antenna Conducted Spurious
Test Site	:	TR-8
Test Mode	:	Mode 3: Transmit by 802.11n(20MHz) (Ant 0)

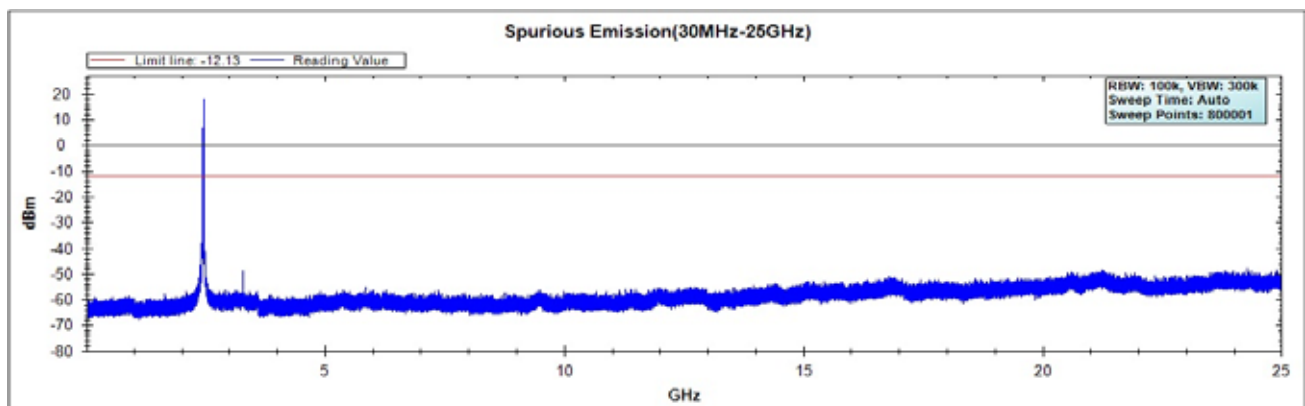
Channel 01 (2412MHz)



Channel 06 (2437MHz)



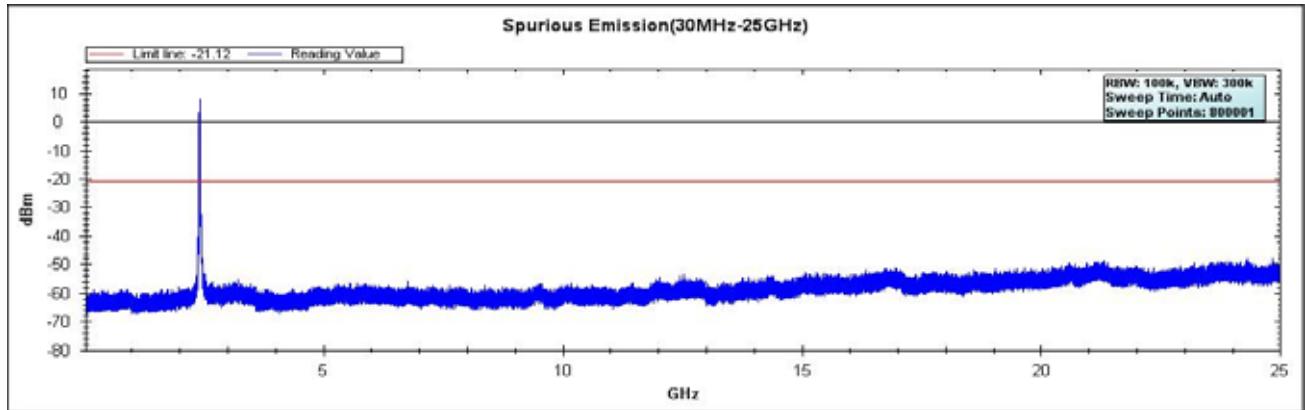
Channel 11 (2462MHz)



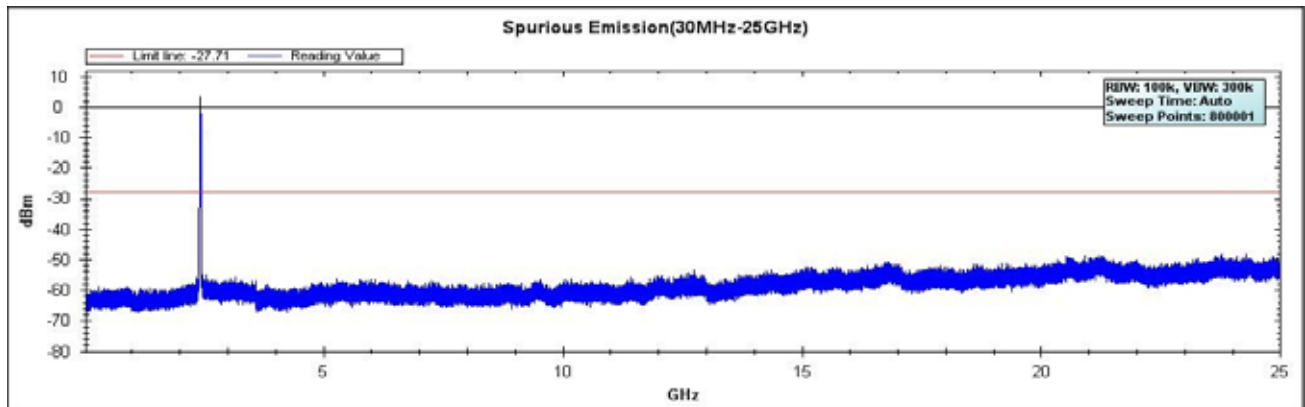
Note: For this test item, the modulation of this mode we have evaluated three antennas, presented data in the report is the worst case.

Product	:	300Mbps Wireless N Mini Router
Test Item	:	RF Antenna Conducted Spurious
Test Site	:	TR-8
Test Mode	:	Mode 4: Transmit by 802.11n(40MHz) (Ant 0)

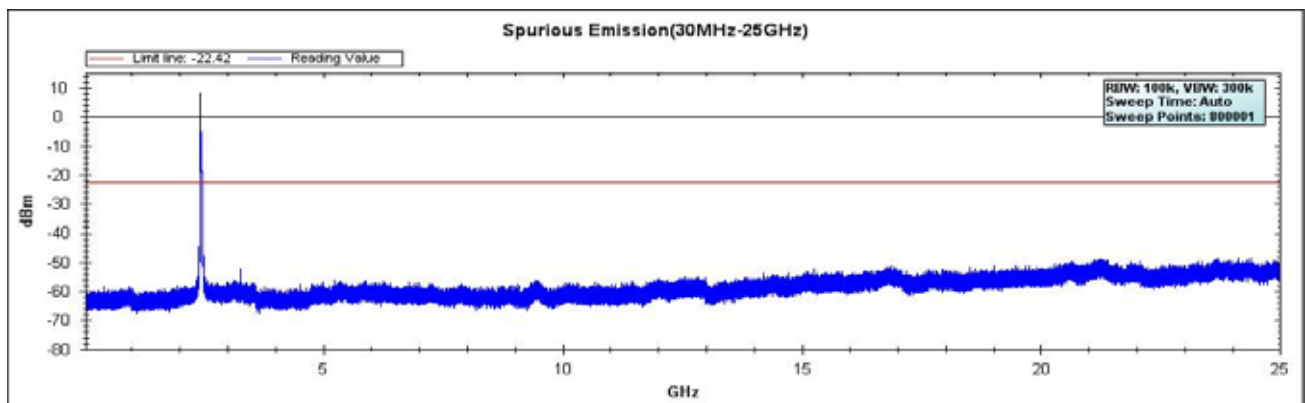
Channel 03 (2422MHz)



Channel 06 (2437MHz)



Channel 09 (2452MHz)



Note: For this test item, the modulation of this mode we have evaluated two antennas, presented data in the report is the worst case.

6. Radiated Emission Band Edge

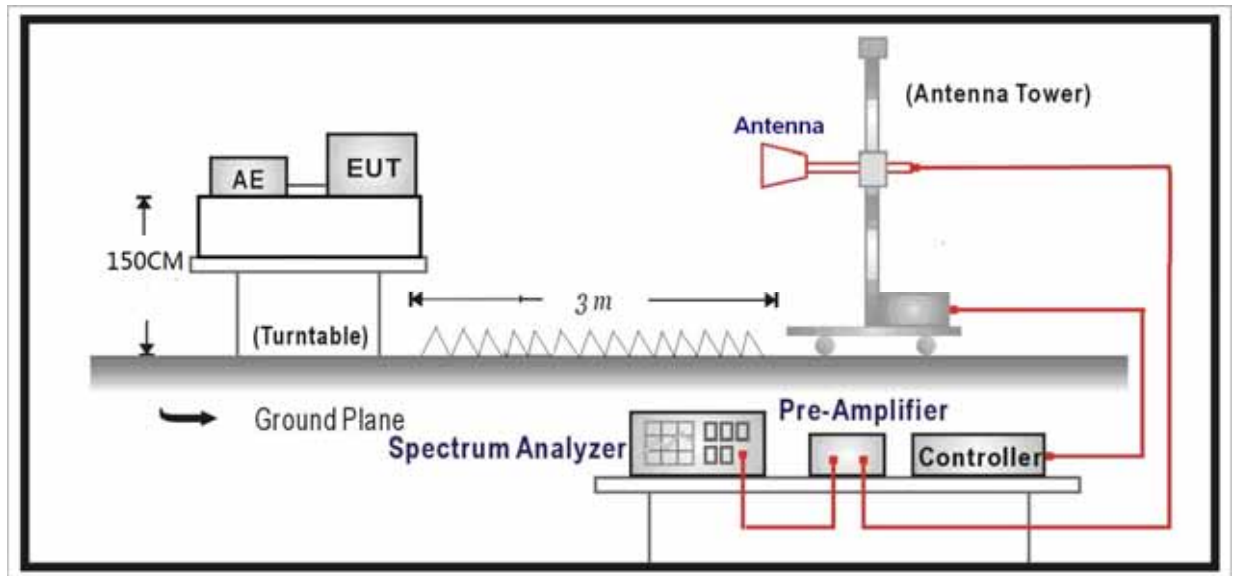
6.1. Test Equipment

☒ Radiated Emission Band Edge / AC-5

Instrument	Manufacturer	Type No.	Serial No.	Cali. Due Date
Preamplifier	Miteq	NSP1800-25	1364185	2016.05.03
Preamplifier	QuieTek	AP-040G	CHM-0906001	2016.05.03
Bilog Antenna	Teseq GmbH	CBL6112D	27612	2016.10.15
DRG Horn	ETS-Lindgren	3117	00123988	2016.01.07
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C1	2016.03.01
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C2	2016.03.01
Coaxial Cable	Huber+Suhner	SUCOFLEX 102	AC5-C3	2016.03.01
EMI Receiver	Agilent	N9038A	MY51210196	2016.06.09
Temperature/Humidity Meter	Zhichen	ZC1-2	AC5-TH	2016.01.08

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

6.2. Test Setup



6.3. Limit

FCC

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

According to FCC ANSI C63.4: 2014 & ANSI C63.10: 2013

This test is required for any spurious emission or modulation product that falls in a Restricted Band, as defined in Section 15.205 of FCC part 15. It must be performed with the highest gain of each type of antenna proposed for use with the EUT. Use the following spectrum analyzer settings:

Span = wide enough to fully capture the emission being measured

RBW = 1 MHz for $f \geq 1$ GHz, 100 kHz for $f < 1$ GHz

VBW $\geq$ RBW

Sweep = auto

Detector function = peak

Trace = max hold

Follow the guidelines in ANSI C63.4 with respect to maximizing the emission by rotating the EUT, measuring the emission while the EUT is situated in three orthogonal planes (if appropriate), adjusting the measurement antenna height and polarization, etc. A pre-amp and a

high pass filter are required for this test, in order to provide the measuring system with sufficient sensitivity. Allow the trace to stabilize. The peak reading of the emission, after being corrected by the antenna factor, cable loss, pre-amp gain, etc., is the peak field strength, which must comply with the limit specified in Section 15.35(b) of FCC part 15.

Now set the VBW $\geq 1 / T$ (the minimum transmission duration), while maintaining all of the other instrument settings. This peak level, once corrected, must comply with the limit specified in Section 15.209 of FCC Part 15.

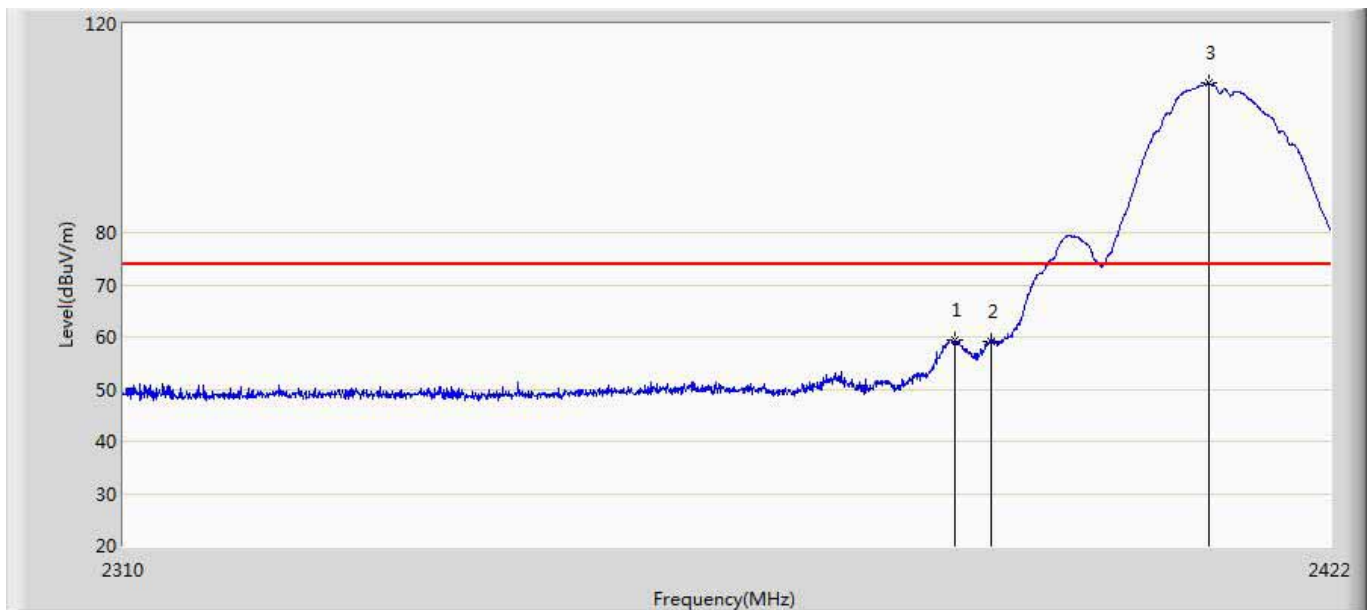
If the emission on which a radiated measurement must be made is located at the edge of the authorized band of operation, then the alternative “marker-delta” method may be employed.

6.5. Uncertainty

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

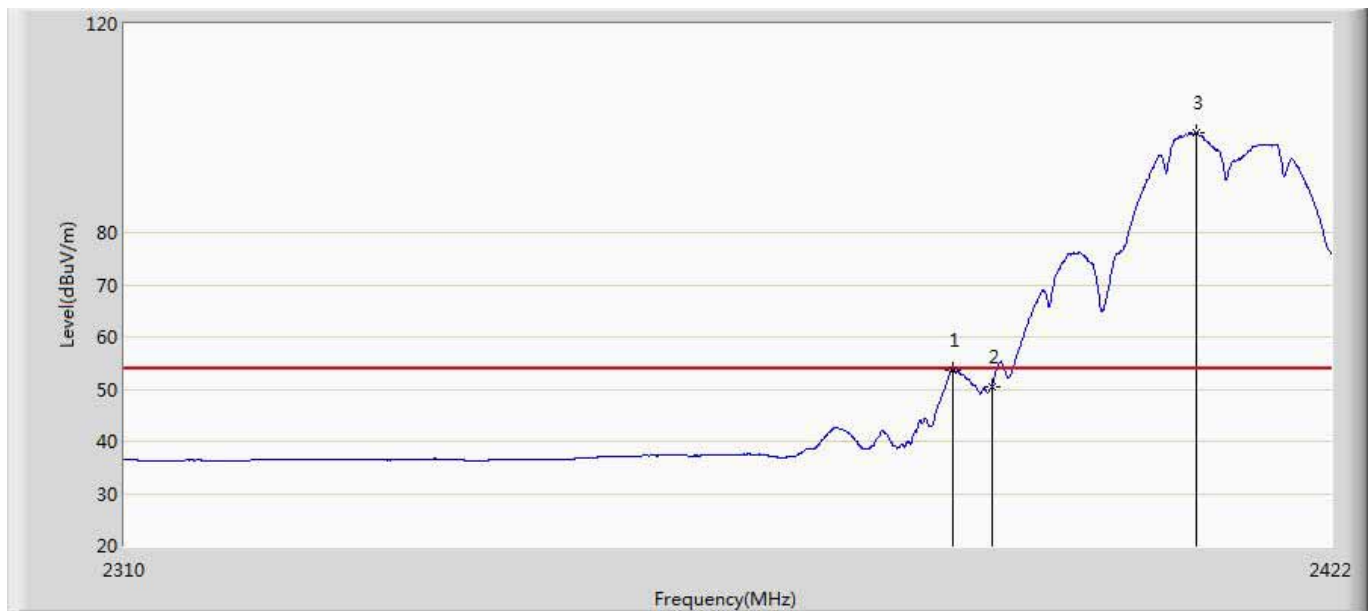
6.6. Test Result

Engineer: Yock	
Site: AC5	Time: 2015/09/01 - 21:56
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 300Mbps Wireless N Mini Router	Power: AC 120V/60Hz
Note: Mode 1:Transmit at channel 2412MHz by 802.11b	



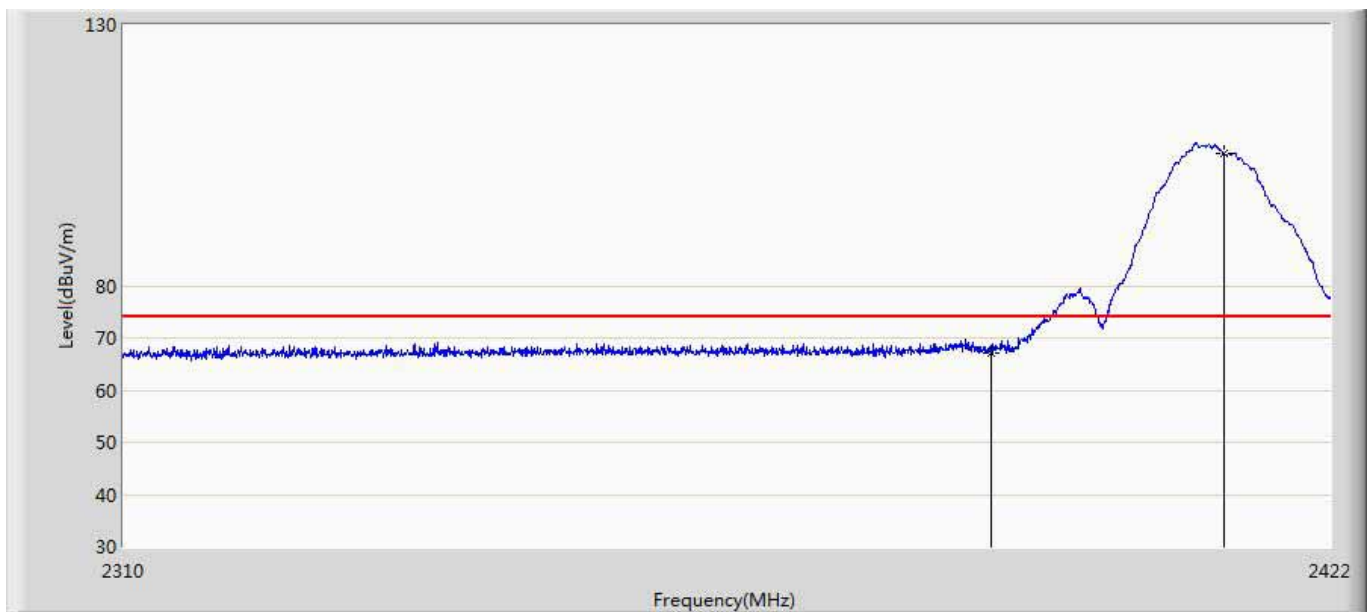
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2386.664	59.482	21.606	-14.518	74.000	37.876	PK
2		2390.000	59.237	21.374	-14.763	74.000	37.863	PK
3	*	2410.464	108.563	70.731	N/A	N/A	37.832	PK

Engineer: Yock	
Site: AC5	Time: 2015/09/01 - 21:57
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 300Mbps Wireless N Mini Router	Power: AC 120V/60Hz
Note: Mode 1:Transmit at channel 2412MHz by 802.11b	



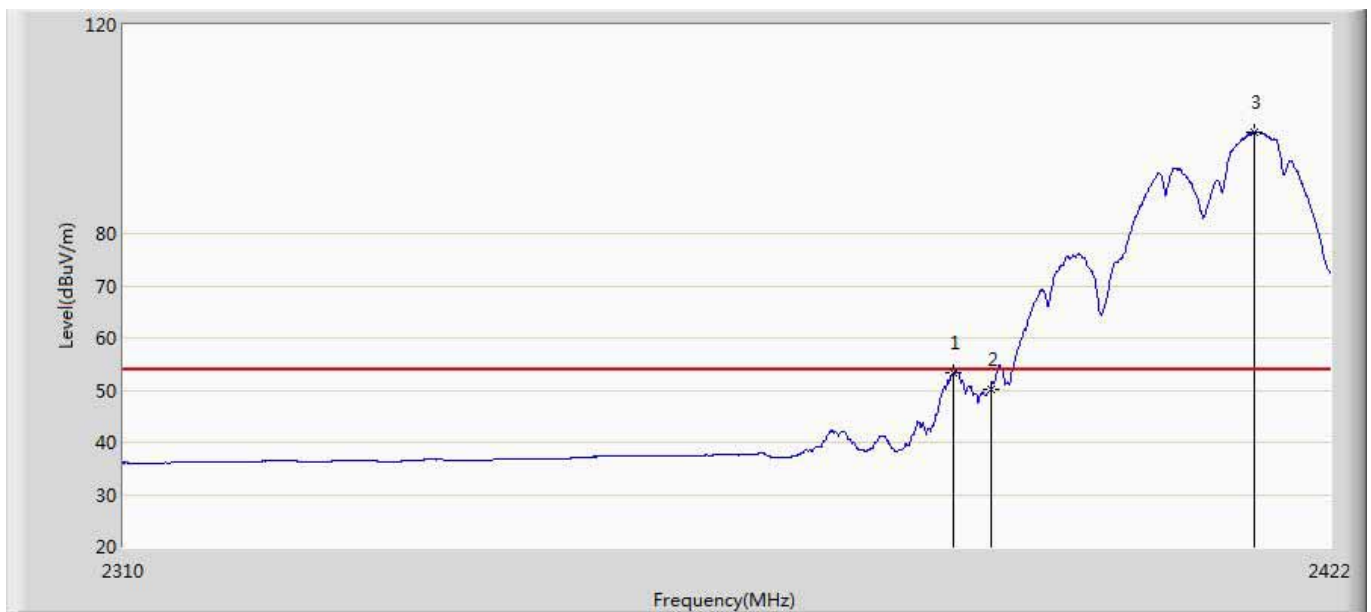
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2386.328	53.603	16.099	-0.397	54.000	37.503	AV
2		2390.000	50.373	12.874	-3.627	54.000	37.499	AV
3	*	2409.176	99.074	61.558	N/A	N/A	37.515	AV

Engineer: Yock	
Site: AC5	Time: 2015/08/25 - 08:42
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: 300Mbps Wireless N Mini Router	Power: AC 230V/60Hz
Note: Mode 1: Transmit at channel 2412MHz by 802.11b	



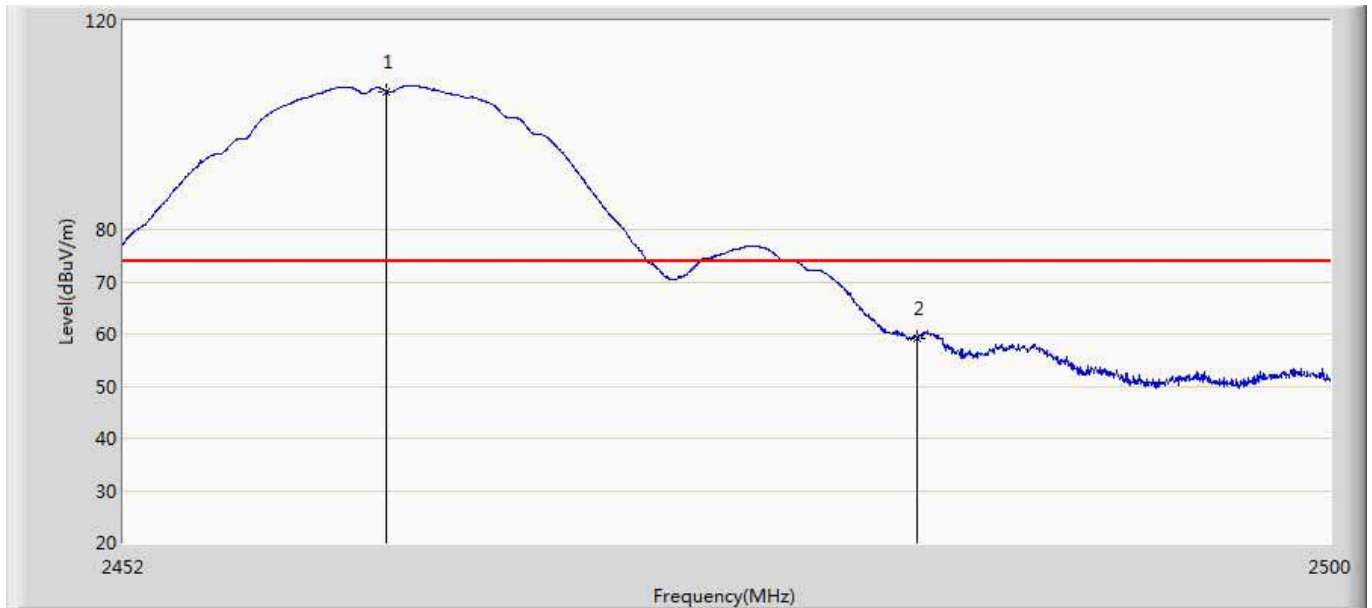
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	67.246	29.747	-6.754	74.000	37.499	PK
2	*	2412.000	105.250	67.724	N/A	N/A	37.527	PK

Engineer: Yock	
Site: AC5	Time: 2015/09/01 - 21:49
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: 300Mbps Wireless N Mini Router	Power: AC 120V/60Hz
Note: Mode 1:Transmit at channel 2412MHz by 802.11b	



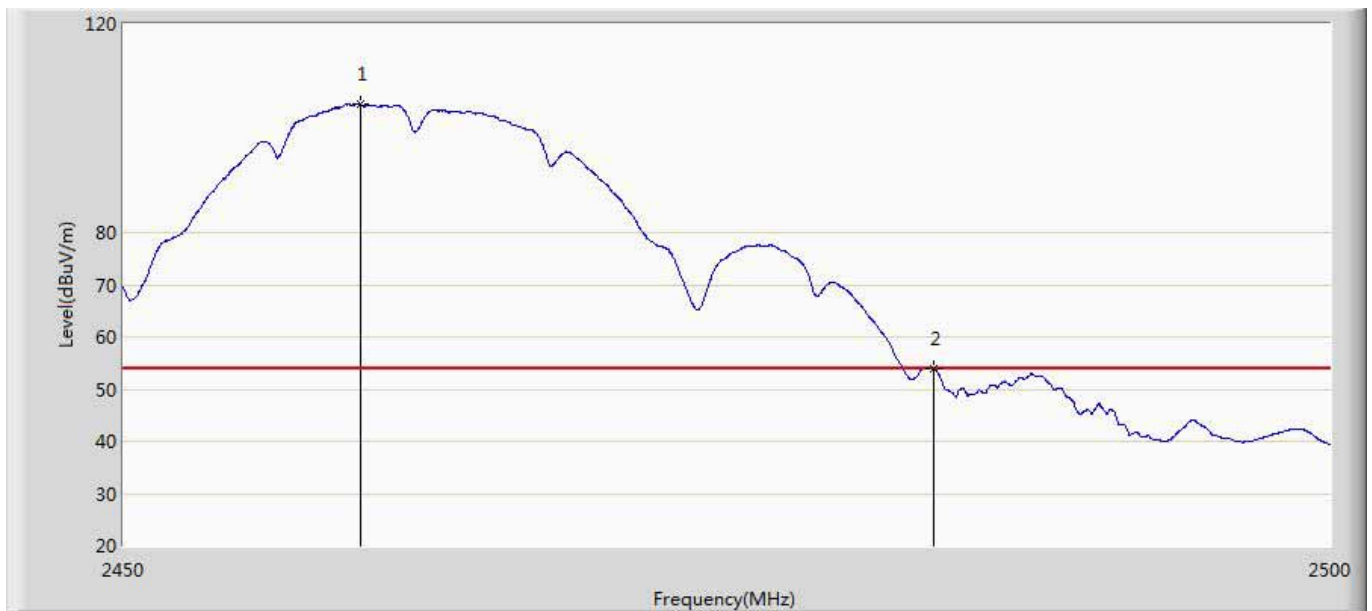
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2386.496	53.195	15.691	-0.805	54.000	37.504	AV
2		2390.000	50.040	12.541	-3.960	54.000	37.499	AV
3	*	2414.776	99.516	61.663	N/A	N/A	37.853	AV

Engineer: Yock	
Site: AC5	Time: 2015/09/02 - 08:30
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 300Mbps Wireless N Mini Router	Power: AC 120V/60Hz
Note: Mode 1:Transmit at channel 2462MHz by 802.11b	



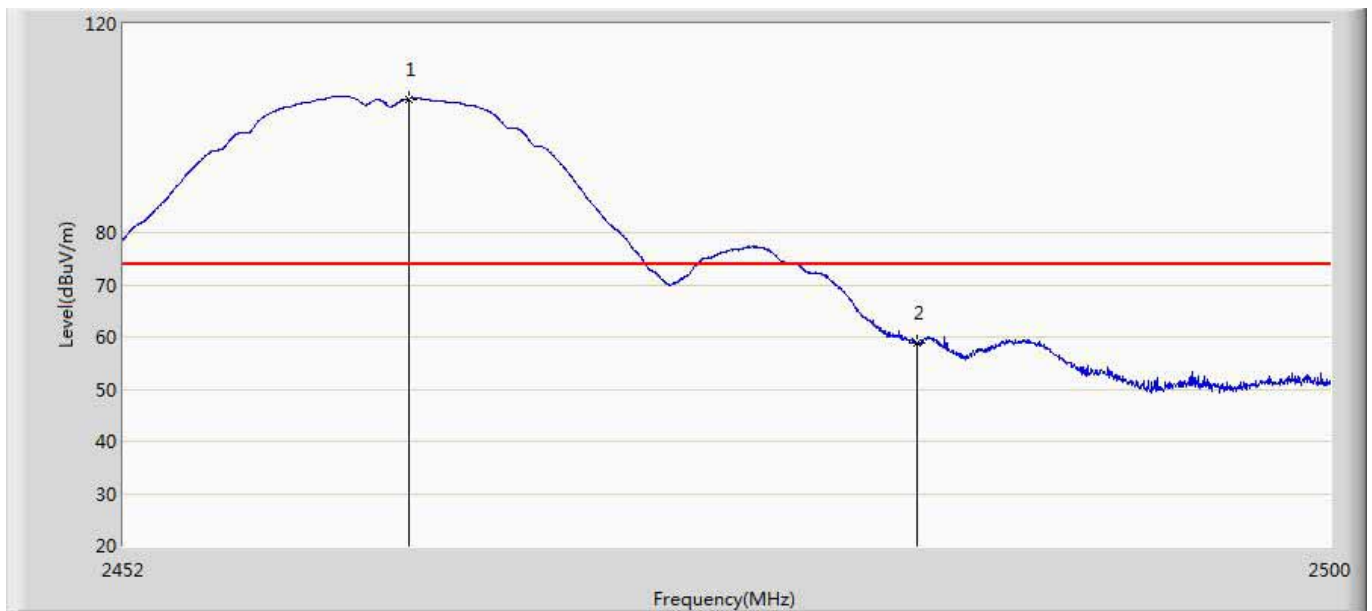
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2462.416	106.511	68.694	N/A	N/A	37.817	PK
2		2483.500	59.098	21.200	-14.902	74.000	37.898	PK

Engineer: Yock	
Site: AC5	Time: 2015/09/24 - 20:57
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 300Mbps Wireless N Mini Router	Power: AC 120V/60Hz
Note: Mode 1:Transmit at channel 2462MHz by 802.11b	



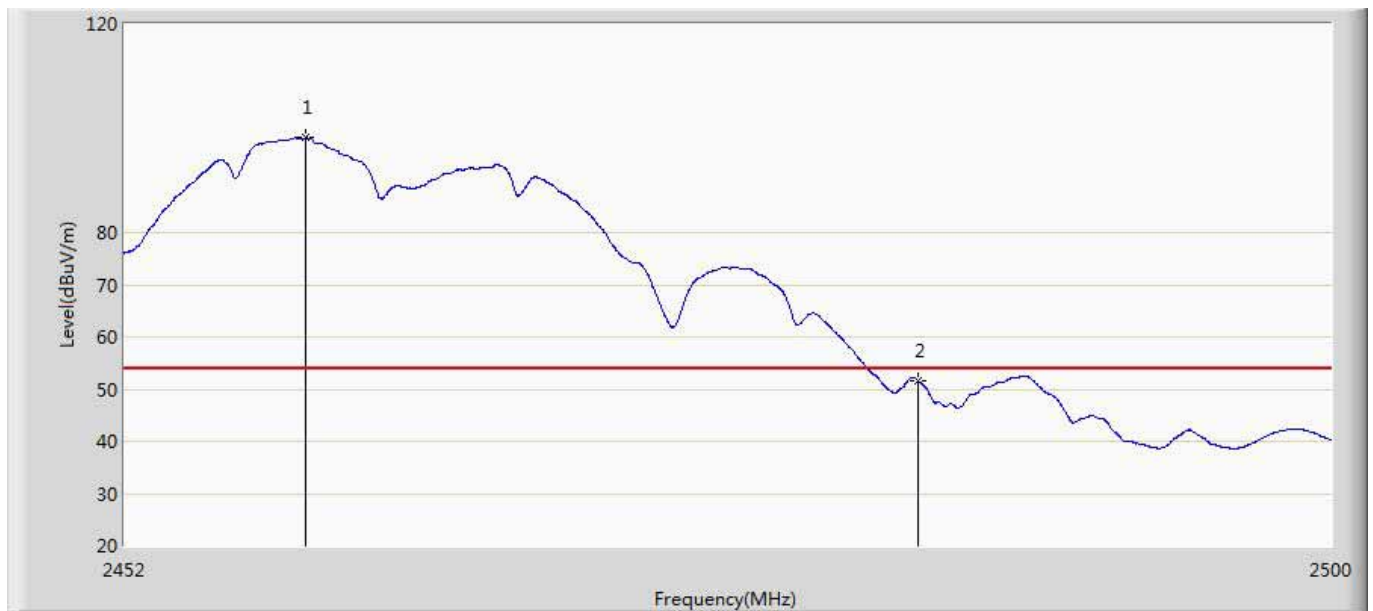
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2459.750	104.657	66.658	N/A	N/A	37.998	AV
2		2483.500	53.929	15.891	-0.071	54.000	38.038	AV

Engineer: Yock	
Site: AC5	Time: 2015/09/02 - 08:36
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: 300Mbps Wireless N Mini Router	Power: AC 120V/60Hz
Note: Mode 1:Transmit at channel 2462MHz by 802.11b	



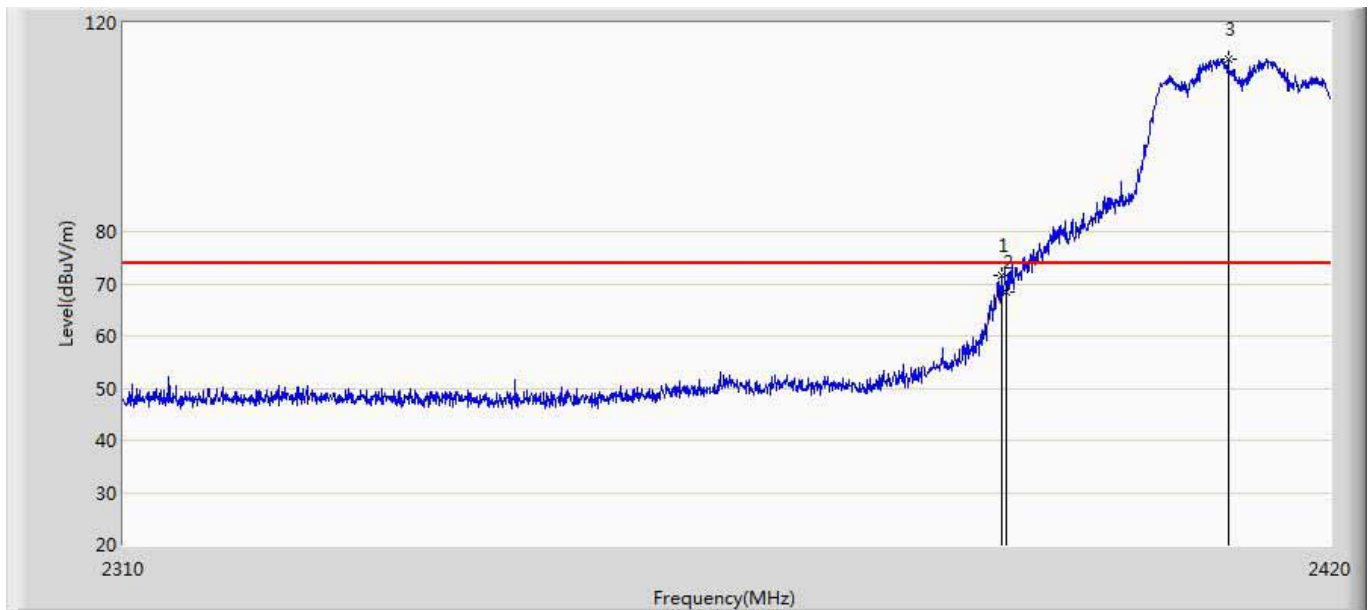
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2463.259	105.586	67.767	N/A	N/A	37.820	PK
2		2483.500	58.925	21.027	-15.075	74.000	37.898	PK

Engineer: Yock	
Site: AC5	Time: 2015/09/02 - 08:31
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 300Mbps Wireless N Mini Router	Power: AC 120V/60Hz
Note: Mode 1:Transmit at channel 2462MHz by 802.11b	



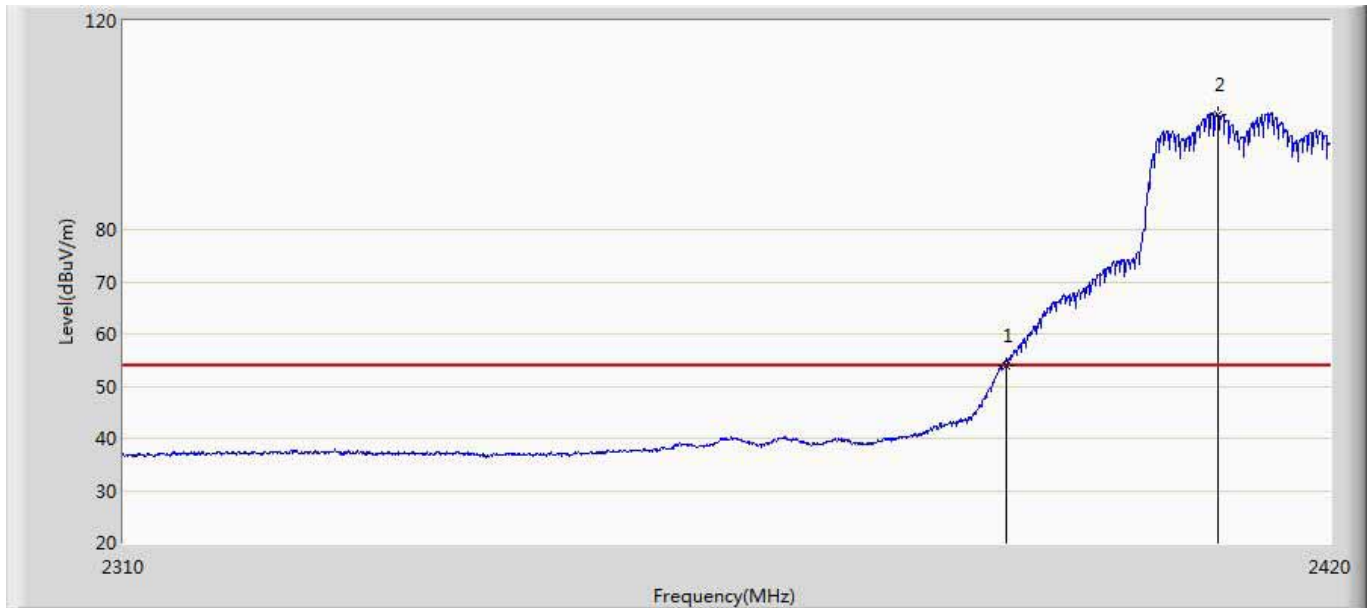
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2459.176	98.136	60.338	N/A	N/A	37.799	AV
2		2483.500	51.500	13.602	-2.500	54.000	37.898	AV

Engineer: Yock	
Site: AC5	Time: 2015/09/24 - 21:21
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 300Mbps Wireless N Mini Router	Power: AC 120V/60Hz
Note: Mode 2:Transmit at channel 2412MHz by 802.11g	



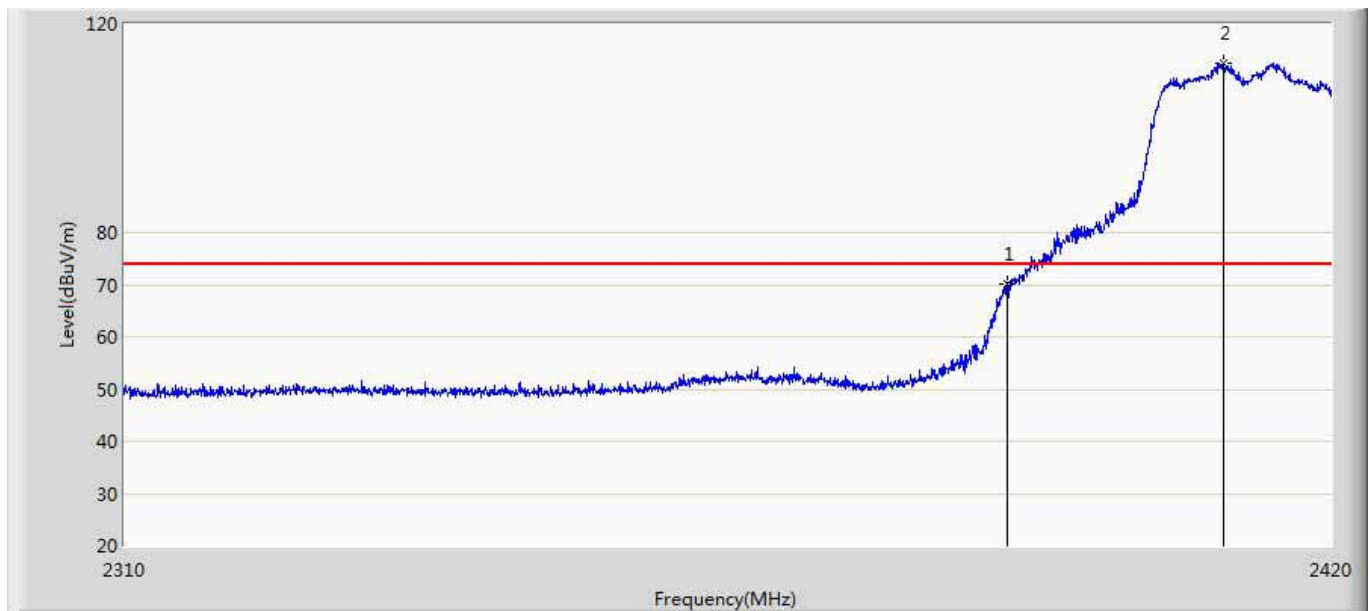
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2389.530	71.607	33.742	-2.393	74.000	37.864	PK
2		2390.000	68.454	30.591	-5.546	74.000	37.863	PK
3	*	2410.540	113.181	75.349	N/A	N/A	37.831	PK

Engineer: Yock	
Site: AC5	Time: 2015/09/24 - 21:11
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 300Mbps Wireless N Mini Router	Power: AC 120V/60Hz
Note: Mode 2:Transmit at channel 2412MHz by 802.11g	



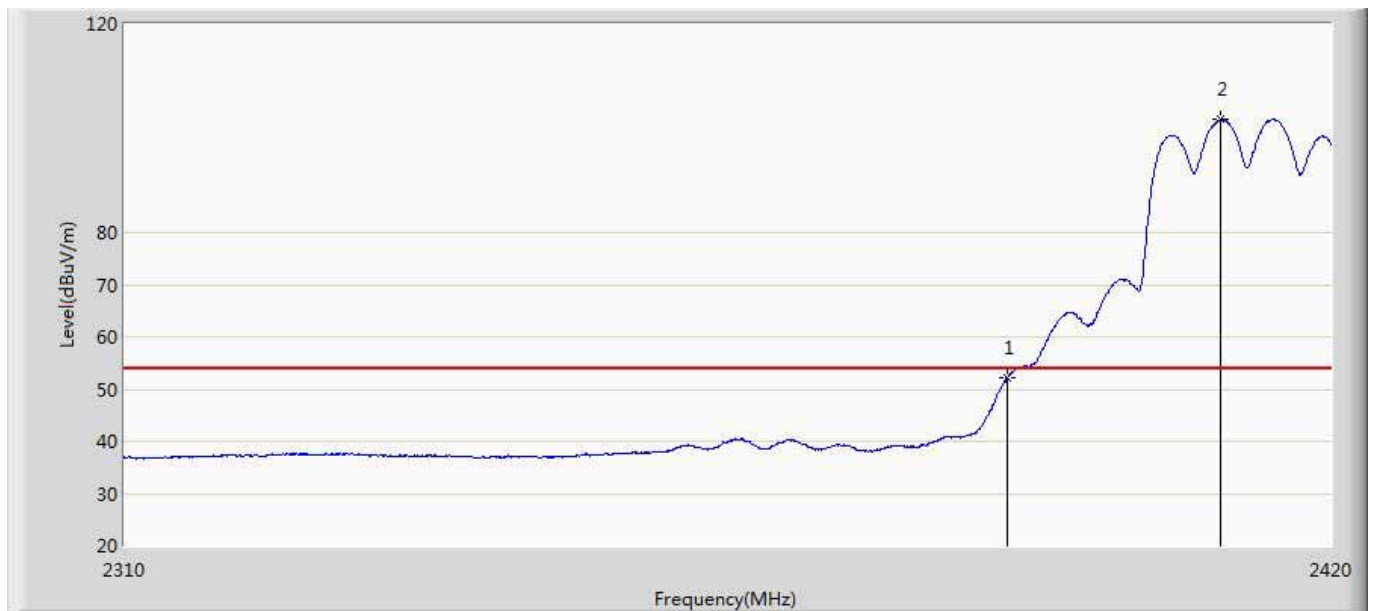
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	53.852	15.989	-0.148	54.000	37.863	AV
2	*	2409.550	102.159	64.326	N/A	N/A	37.832	AV

Engineer: Yock	
Site: AC5	Time: 2015/09/24 - 21:23
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: 300Mbps Wireless N Mini Router	Power: AC 120V/60Hz
Note: Mode 2:Transmit at channel 2412MHz by 802.11g	



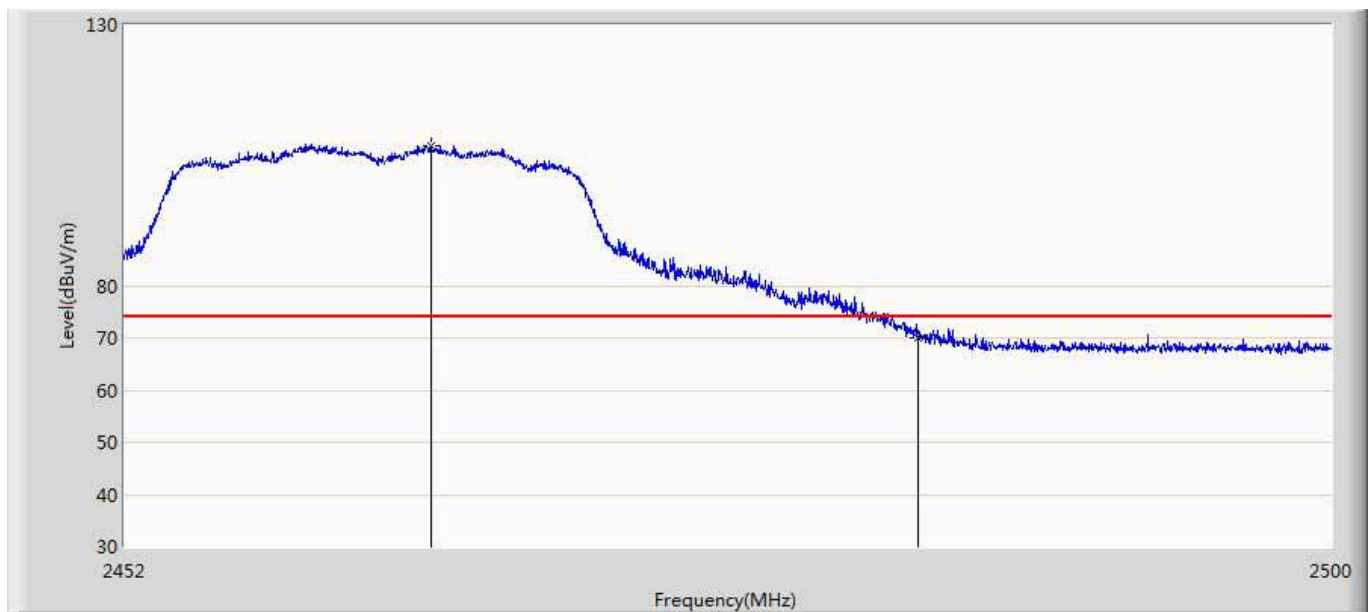
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	70.009	32.146	-3.991	74.000	37.863	PK
2	*	2409.935	112.413	74.581	N/A	N/A	37.833	PK

Engineer: Yock	
Site: AC5	Time: 2015/09/24 - 21:24
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: 300Mbps Wireless N Mini Router	Power: AC 120V/60Hz
Note: Mode 2:Transmit at channel 2412MHz by 802.11g	



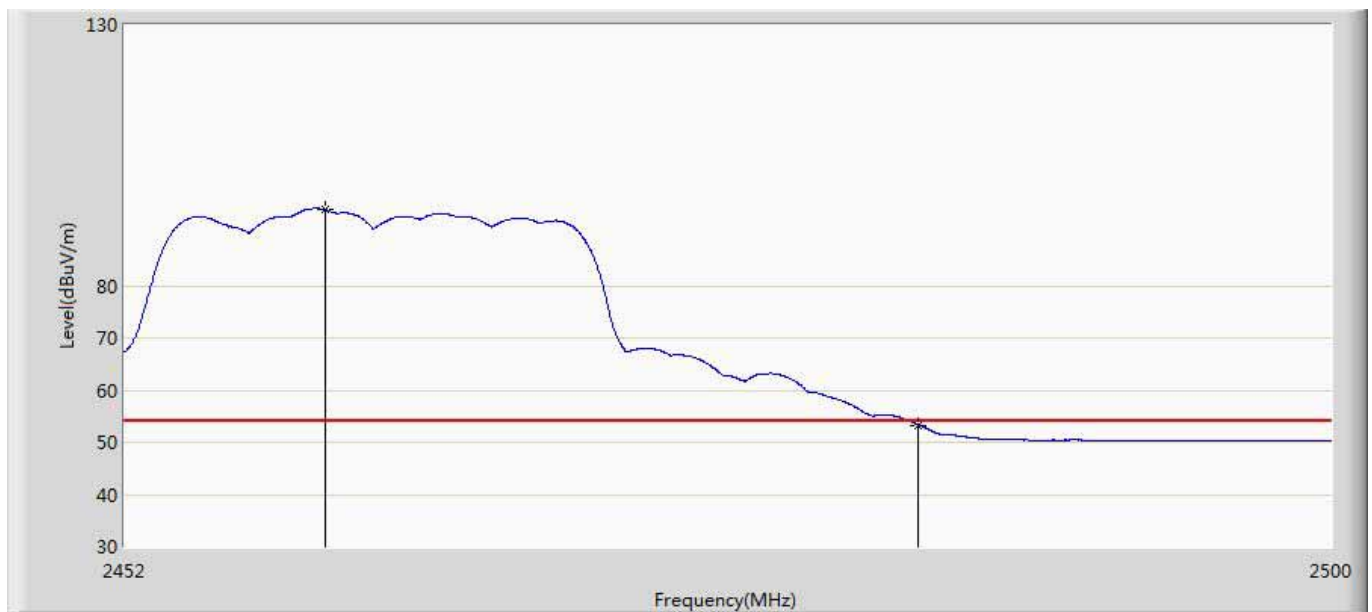
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	52.037	14.174	-1.963	54.000	37.863	AV
2	*	2409.770	101.630	63.797	N/A	N/A	37.833	AV

Engineer: Yock	
Site: AC5	Time: 2015/08/25 - 13:37
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 300Mbps Wireless N Mini Router	Power: AC 230V/60Hz
Note: Mode 2:Transmit at channel 2462MHz by 802.11g	



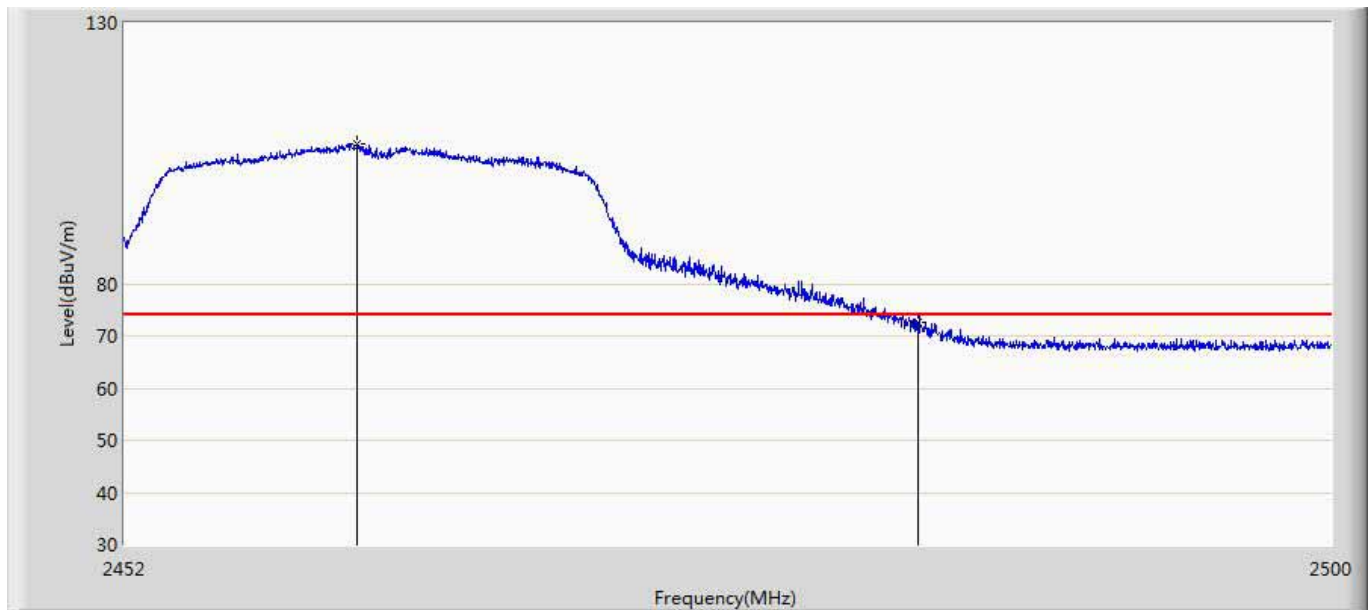
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2464.144	106.869	69.048	N/A	N/A	37.822	PK
2		2483.500	69.885	31.987	-4.115	74.000	37.898	PK

Engineer: Yock	
Site: AC5	Time: 2015/08/26 - 13:23
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 300Mbps Wireless N Mini Router	Power: AC 230V/60Hz
Note: Mode 2:Transmit at channel 2462MHz by 802.11g	



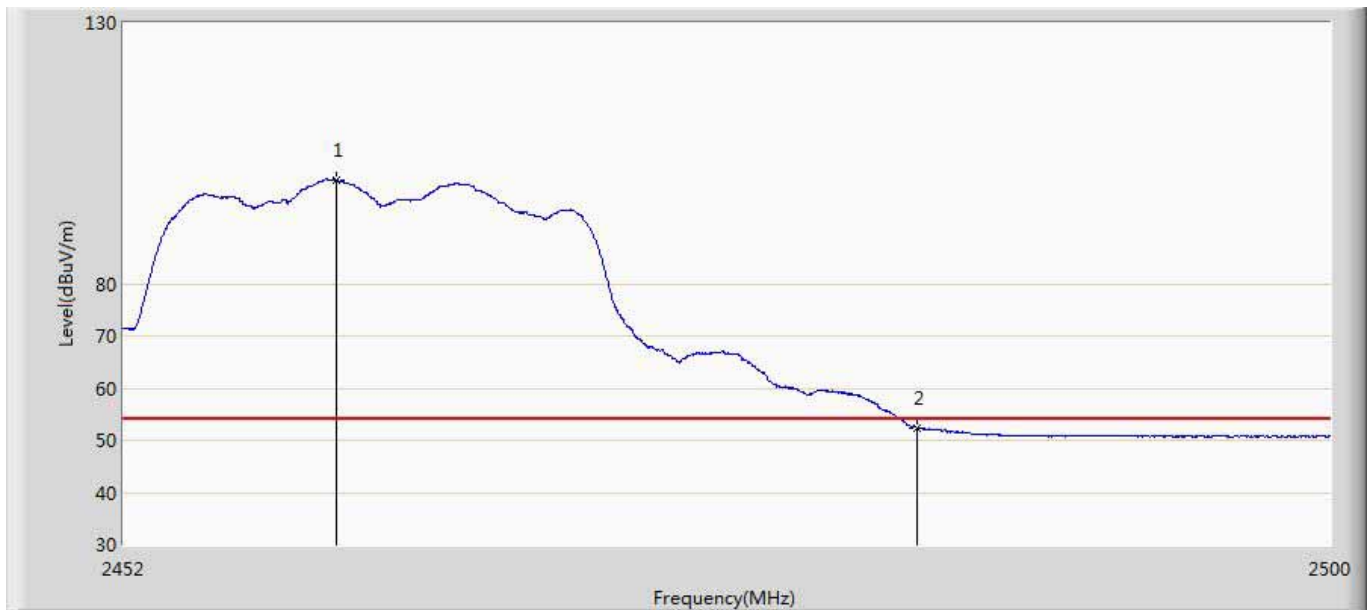
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2459.944	94.576	56.773	N/A	N/A	37.804	AV
2		2483.500	53.302	15.404	-0.698	54.000	37.898	AV

Engineer: Yock	
Site: AC5	Time: 2015/08/25 - 13:35
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: 300Mbps Wireless N Mini Router	Power: AC 230V/60Hz
Note: Mode 2:Transmit at channel 2462MHz by 802.11g	



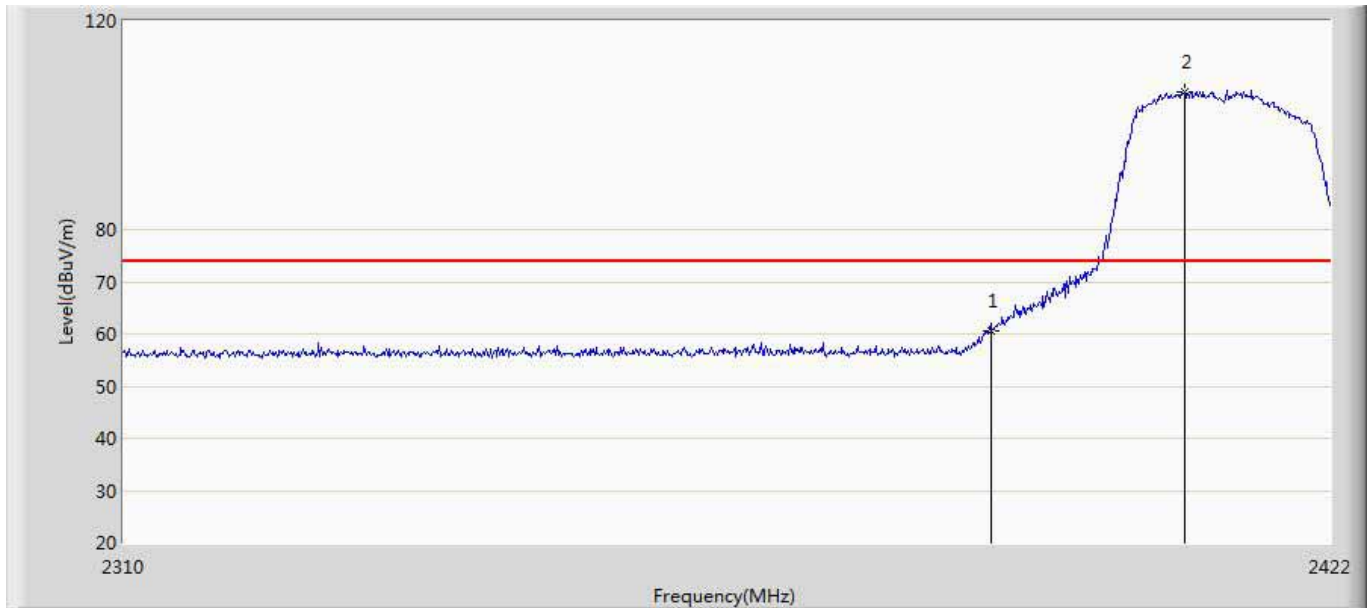
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2461.216	106.809	68.998	N/A	N/A	37.811	PK
2		2483.500	72.649	34.751	-1.351	74.000	37.898	PK

Engineer: Yock	
Site: AC5	Time: 2015/08/26 - 13:21
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: 300Mbps Wireless N Mini Router	Power: AC 230V/60Hz
Note: Mode 2:Transmit at channel 2462MHz by 802.11g	



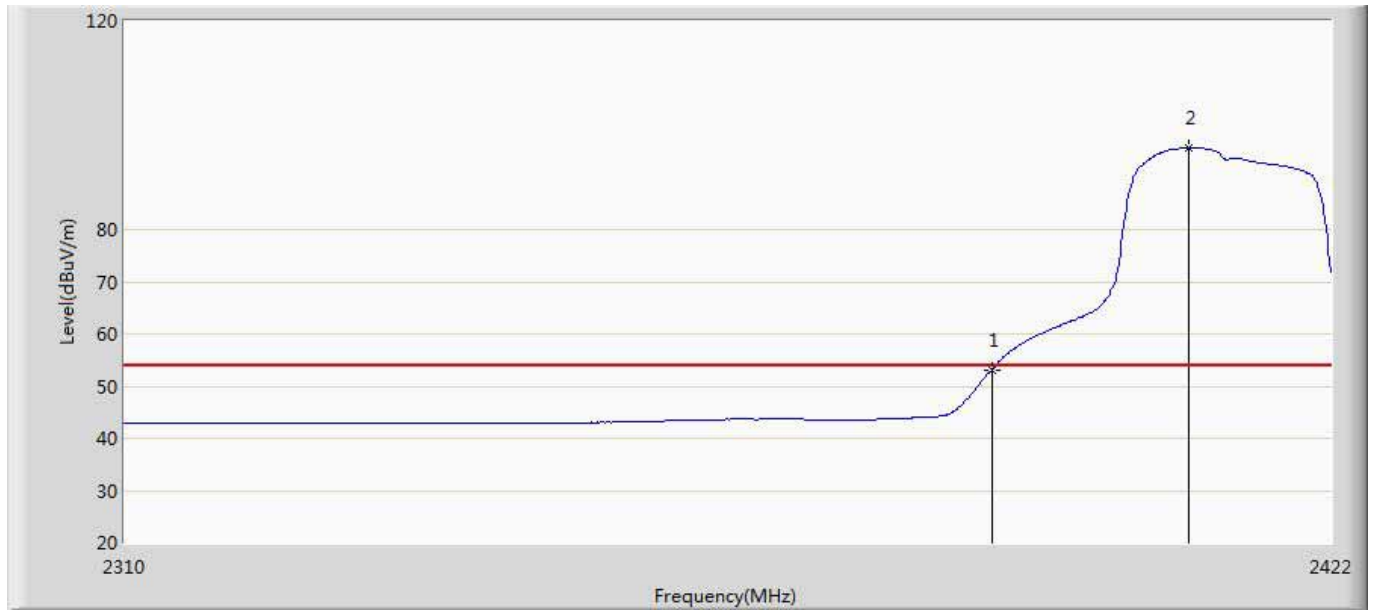
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2460.400	99.972	62.166	45.972	54.000	37.806	AV
2		2483.500	52.319	14.421	-1.681	54.000	37.898	AV

Engineer: Yock	
Site: AC5	Time: 2015/11/10 - 10:04
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 300Mbps Wireless N Mini Router	Power: AC 120V/60Hz
Note: Mode 3:Transmit at channel 2412MHz by 802.11n(20MHz)	



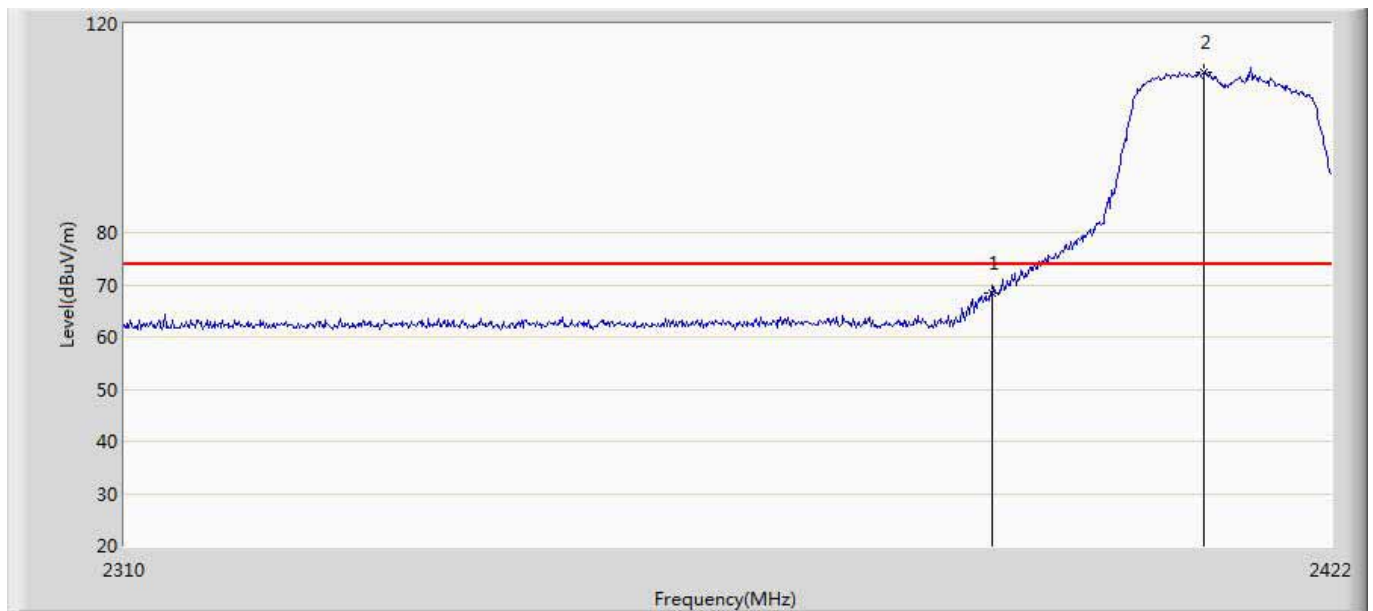
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	60.578	23.223	-13.422	74.000	37.355	PK
2	*	2408.224	106.251	68.919	N/A	N/A	37.332	PK

Engineer: Yock	
Site: AC5	Time: 2015/11/10 - 10:09
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 300Mbps Wireless N Mini Router	Power: AC 120V/60Hz
Note: Mode 3:Transmit at channel 2412MHz by 802.11n(20MHz)	



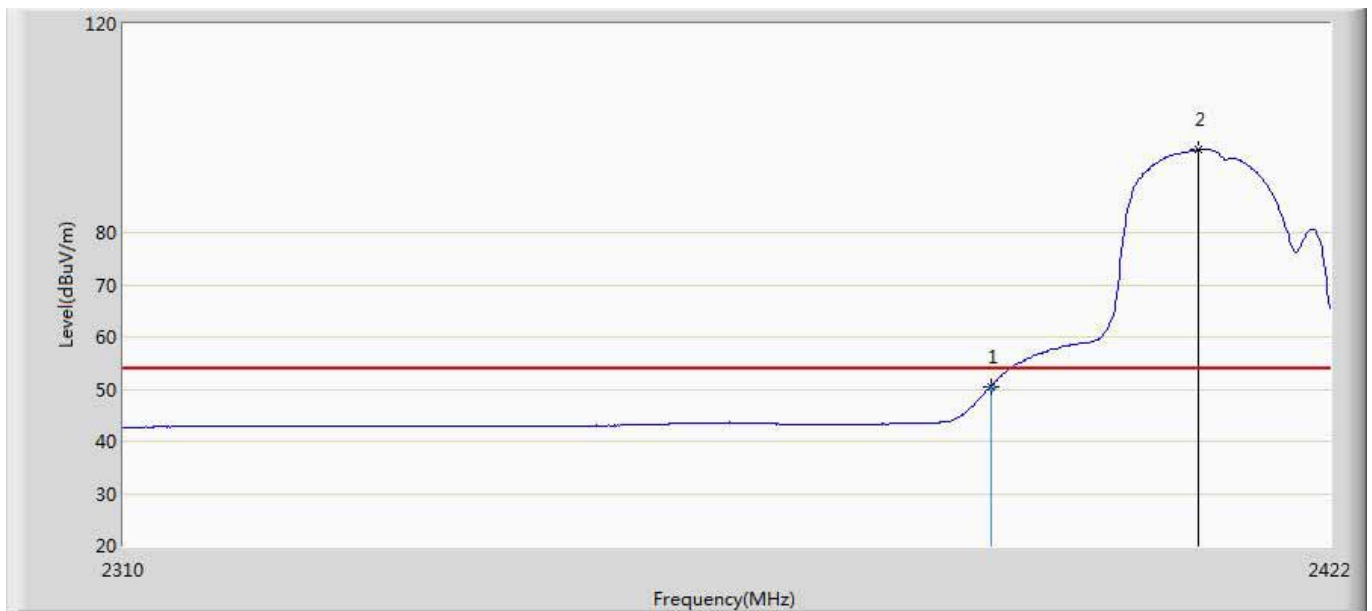
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	53.183	15.828	-0.817	54.000	37.355	AV
2	*	2408.560	95.722	58.391	N/A	N/A	37.331	AV

Engineer: Yock	
Site: AC5	Time: 2015/11/10 - 10:21
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: 300Mbps Wireless N Mini Router	Power: AC 120V/60Hz
Note: Mode 3:Transmit at channel 2412MHz by 802.11n(20MHz)	



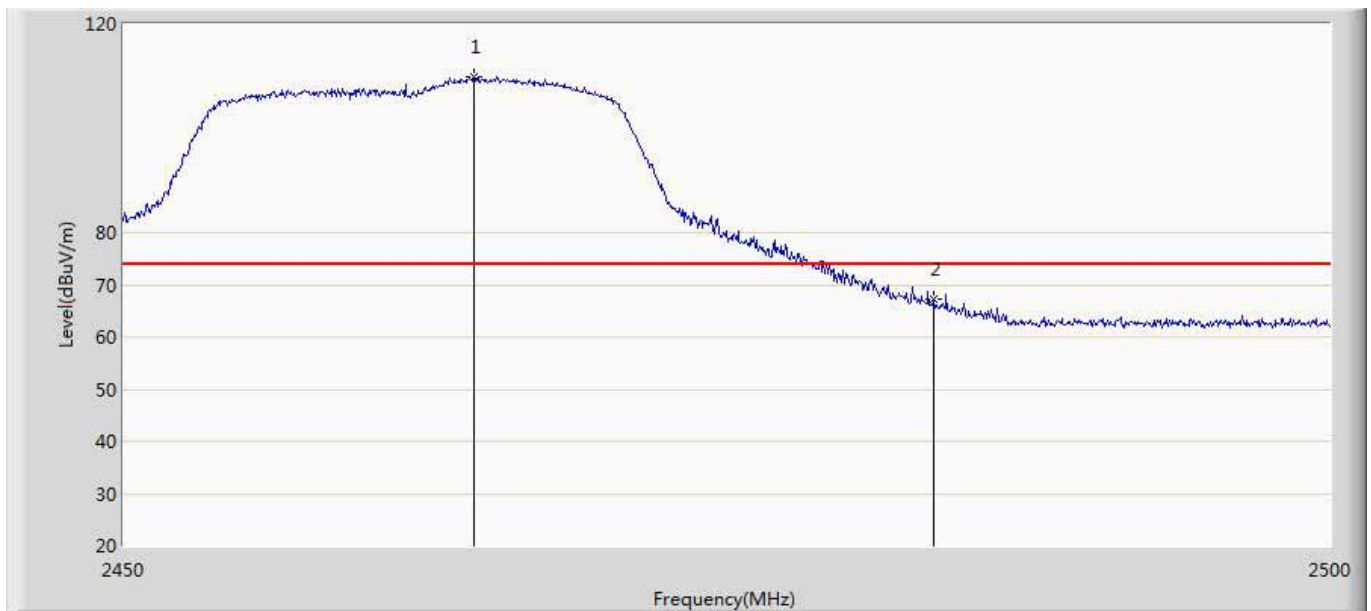
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	68.487	31.132	-5.513	74.000	37.355	PK
2	*	2410.016	110.596	73.267	N/A	N/A	37.329	PK

Engineer: Yock	
Site: AC5	Time: 2015/11/10 - 10:22
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: 300Mbps Wireless N Mini Router	Power: AC 120V/60Hz
Note: Mode 3:Transmit at channel 2412MHz by 802.11n(20MHz)	



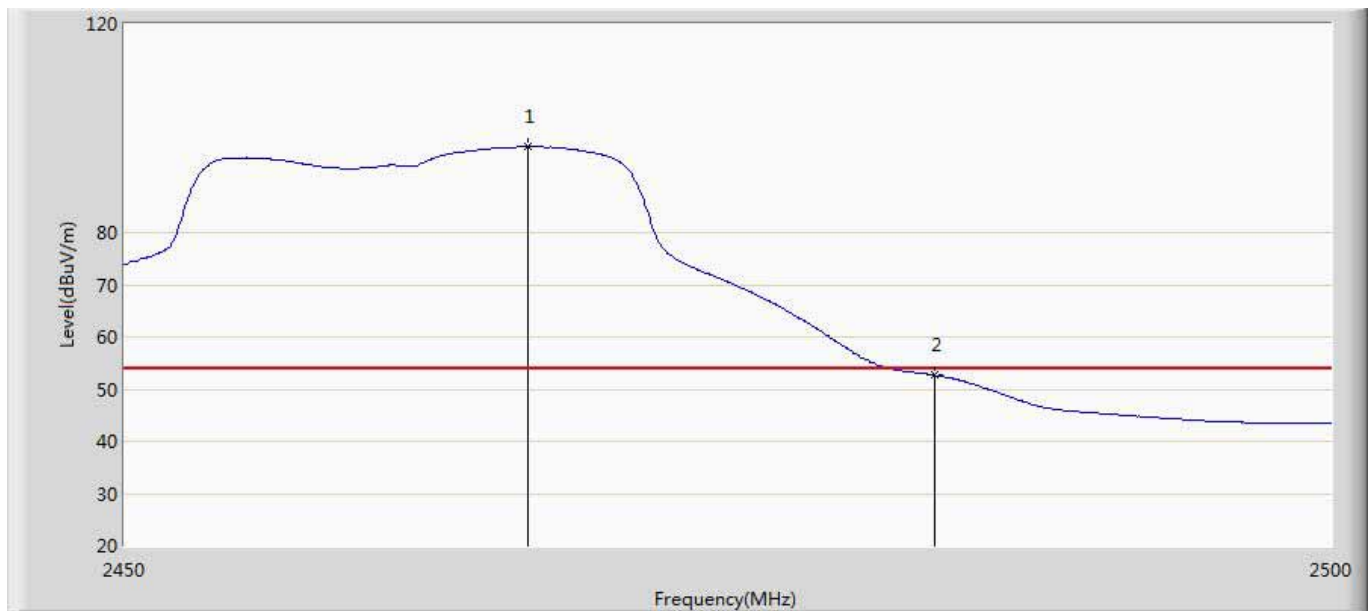
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	50.570	13.215	-23.430	74.000	37.355	PK
2	*	2409.568	95.829	58.499	N/A	N/A	37.329	AV

Engineer: Yock	
Site: AC5	Time: 2015/11/10 - 10:26
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 300Mbps Wireless N Mini Router	Power: AC 120V/60Hz
Note: Mode 3:Transmit at channel 2462MHz by 802.11n(20MHz)	



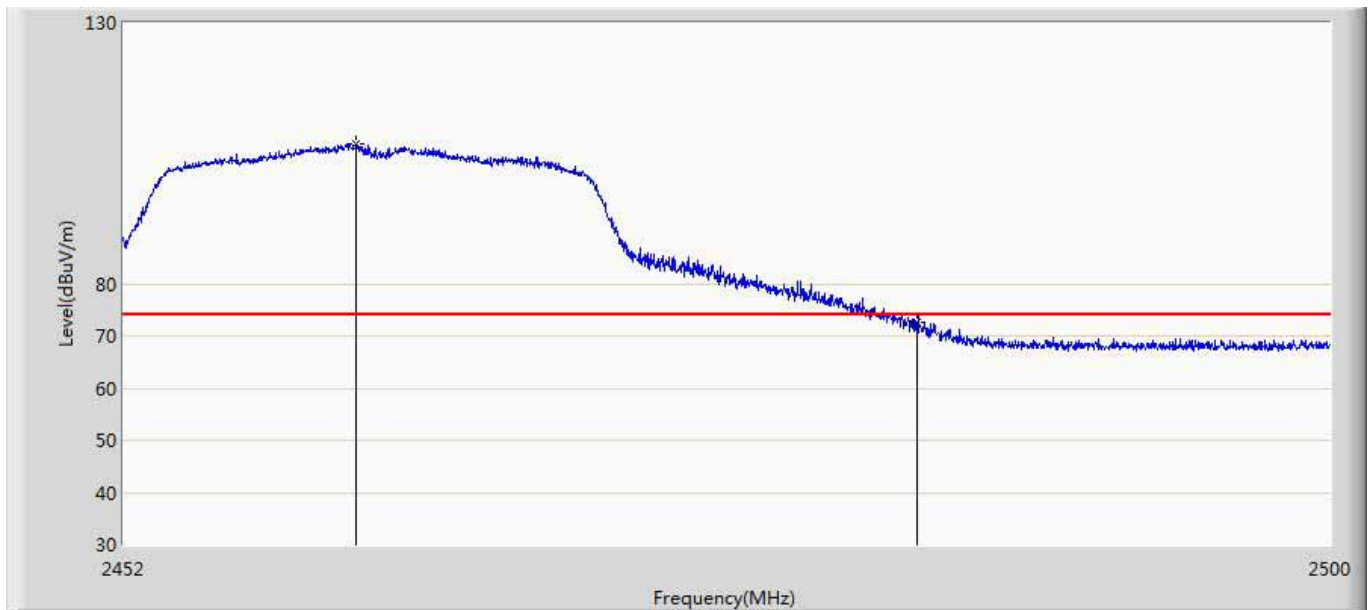
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2464.450	109.777	72.348	N/A	N/A	37.429	PK
2		2483.500	67.323	29.812	-6.677	74.000	37.511	PK

Engineer: Yock	
Site: AC5	Time: 2015/11/10 - 10:31
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 300Mbps Wireless N Mini Router	Power: AC 120V/60Hz
Note: Mode 3:Transmit at channel 2462MHz by 802.11n(20MHz)	



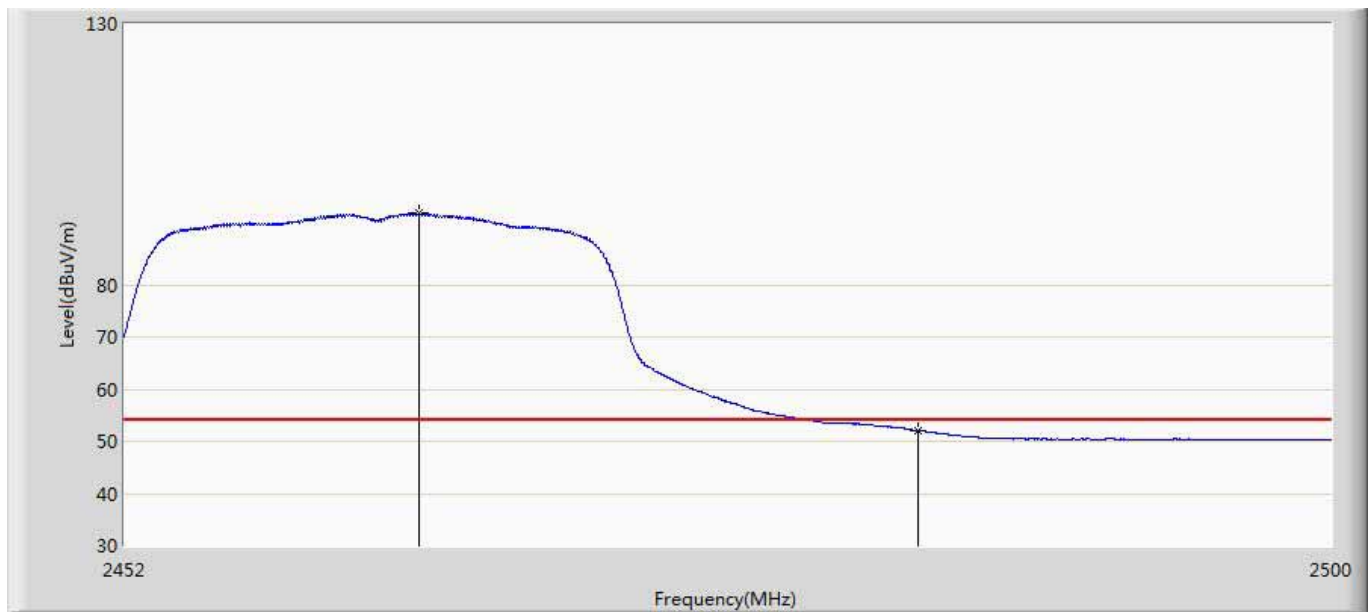
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2466.600	96.417	58.981	N/A	N/A	37.437	AV
2		2483.500	53.024	15.513	-0.976	54.000	37.511	AV

Engineer: Yock	
Site: AC5	Time: 2015/08/25 - 13:35
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: 300Mbps Wireless N Mini Router	Power: AC 230V/60Hz
Note: Mode 3:Transmit at channel 2462MHz by 802.11n(20MHz)	



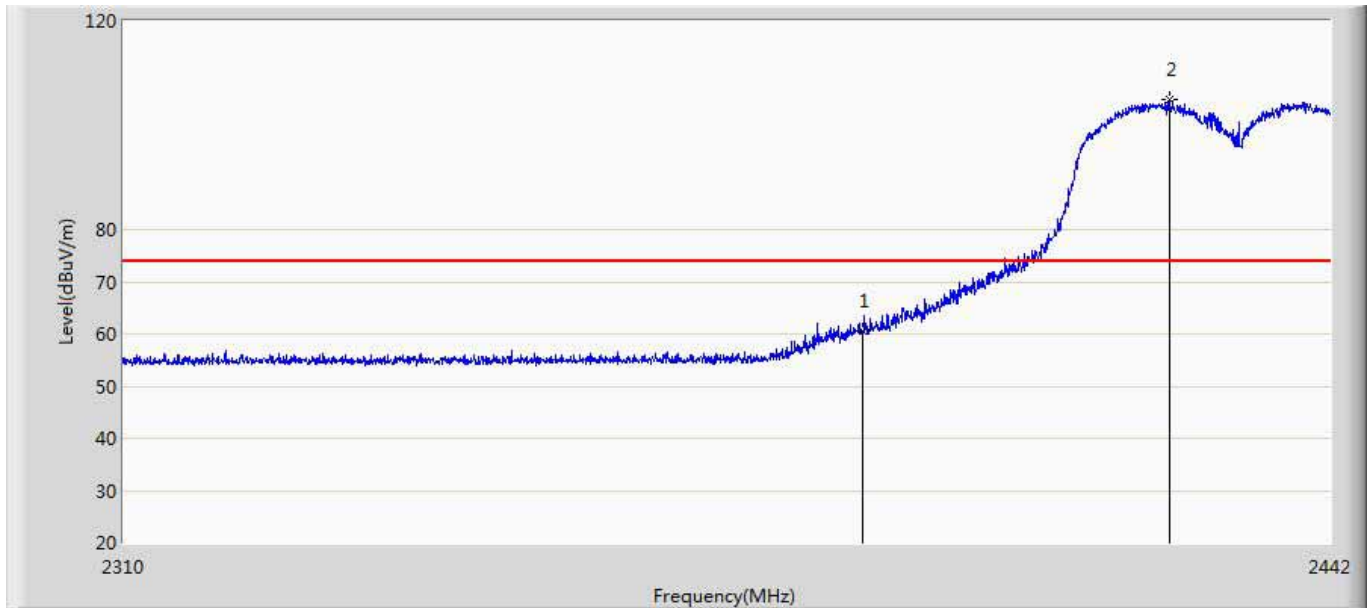
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2461.216	106.809	68.998	N/A	N/A	37.811	PK
2		2483.500	72.649	34.751	-1.351	74.000	37.898	PK

Engineer: Yock	
Site: AC5	Time: 2015/08/26 - 13:47
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: 300Mbps Wireless N Mini Router	Power: AC 230V/60Hz
Note: Mode 3:Transmit at channel 2462MHz by 802.11n(20MHz)	



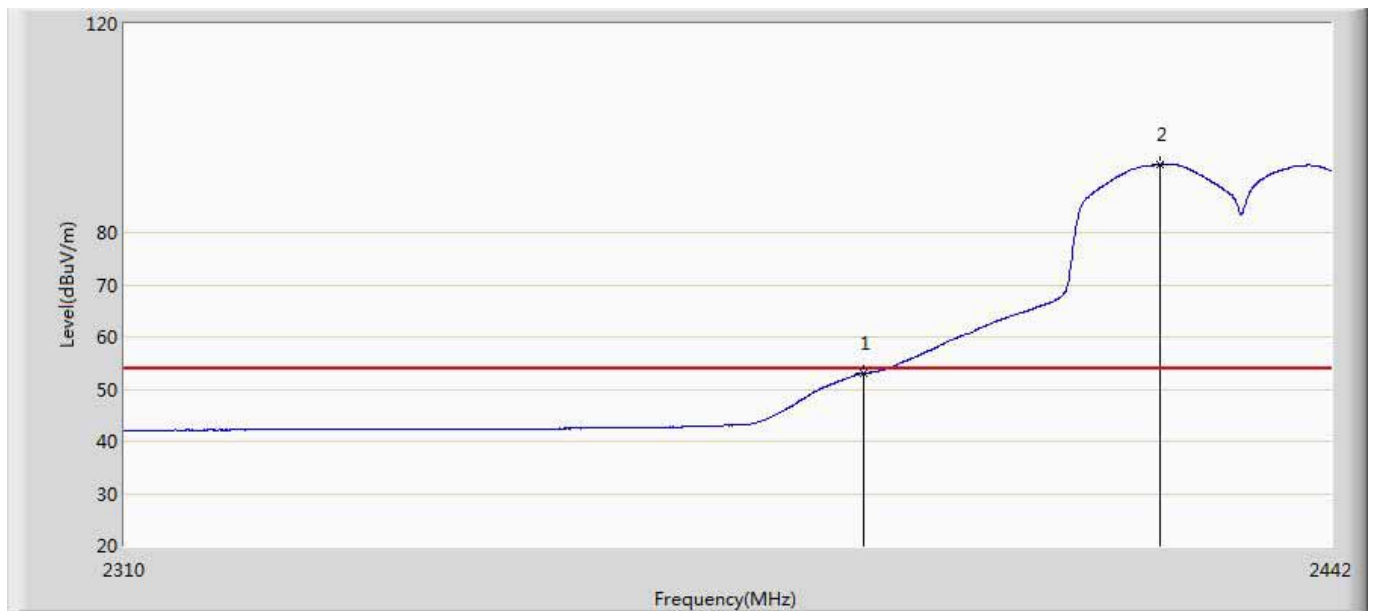
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2463.616	93.695	55.875	N/A	N/A	37.820	AV
2		2483.500	52.015	14.117	-1.985	54.000	37.898	AV

Engineer: Yock	
Site: AC5	Time: 2015/11/11 - 13:32
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 300Mbps Wireless N Mini Router	Power: AC 120V/60Hz
Note: Mode 4:Transmit at channel 2422MHz by 802.11n(40MHz)	



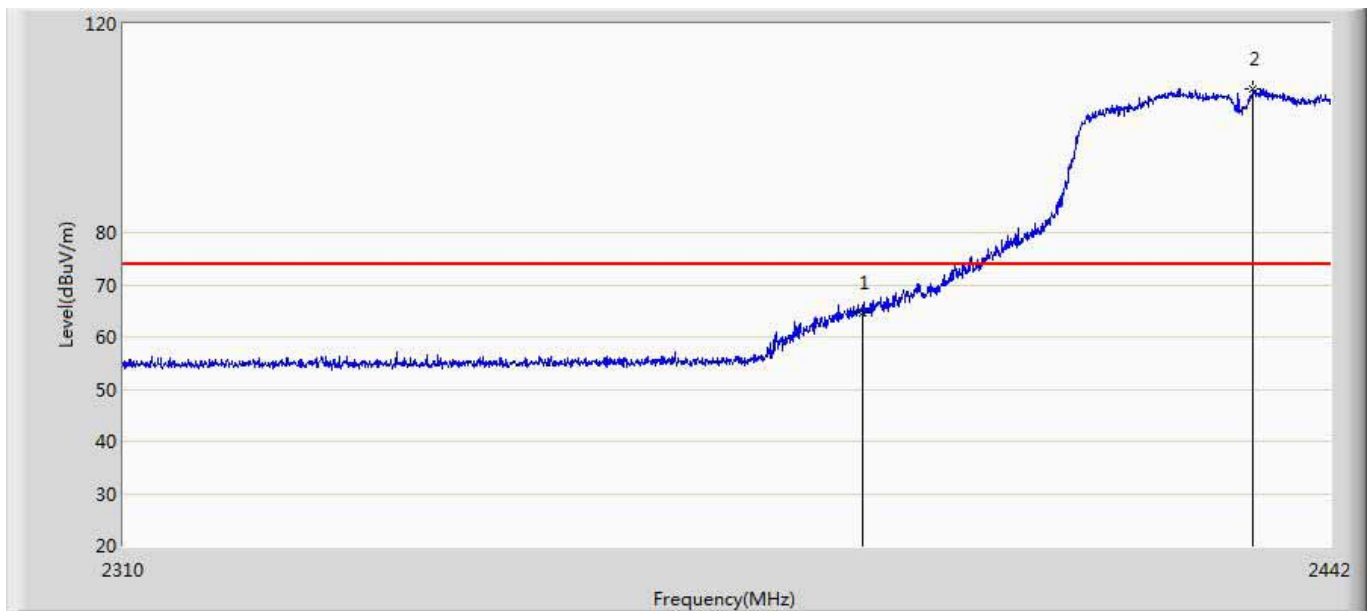
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	60.569	23.214	-13.431	74.000	37.355	PK
2	*	2424.048	105.060	67.645	N/A	N/A	37.415	PK

Engineer: Yock	
Site: AC5	Time: 2015/11/11 - 13:35
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 300Mbps Wireless N Mini Router	Power: AC 120V/60Hz
Note: Mode 4:Transmit at channel 2422MHz by 802.11n(40MHz)	



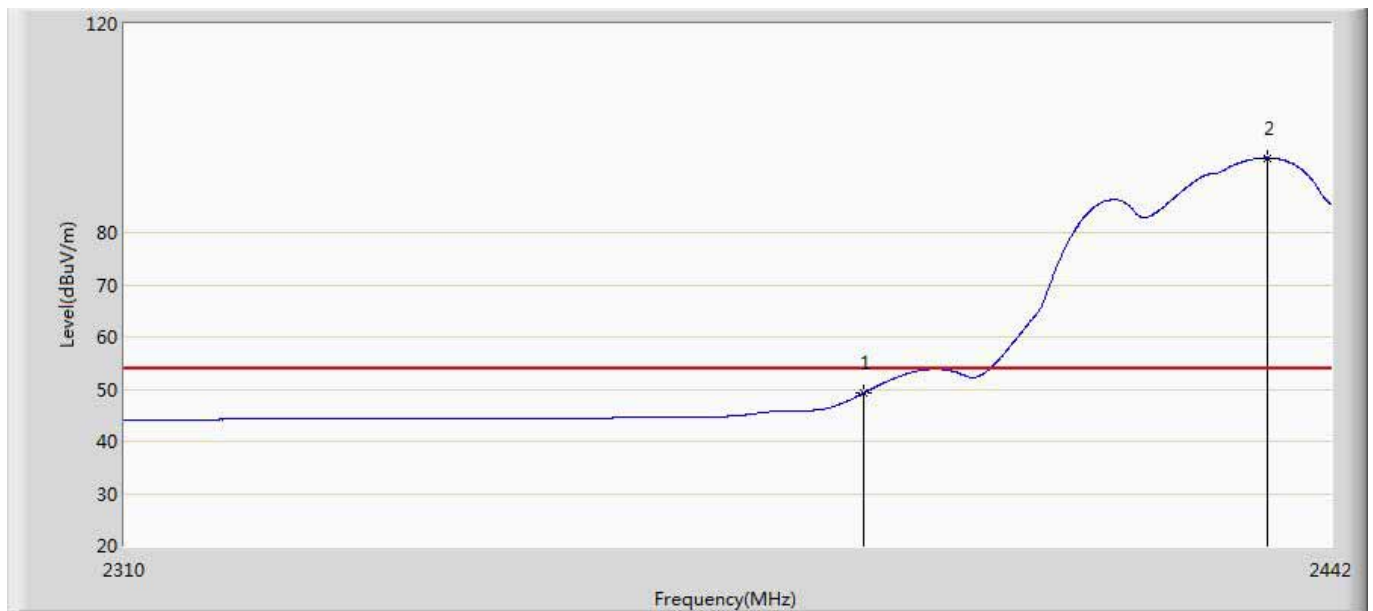
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	53.013	15.658	-0.987	54.000	37.355	AV
2	*	2422.926	93.145	55.737	N/A	N/A	37.408	AV

Engineer: Yock	
Site: AC5	Time: 2015/11/11 - 13:40
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: 300Mbps Wireless N Mini Router	Power: AC 120V/60Hz
Note: Mode 4:Transmit at channel 2422MHz by 802.11n(40MHz)	



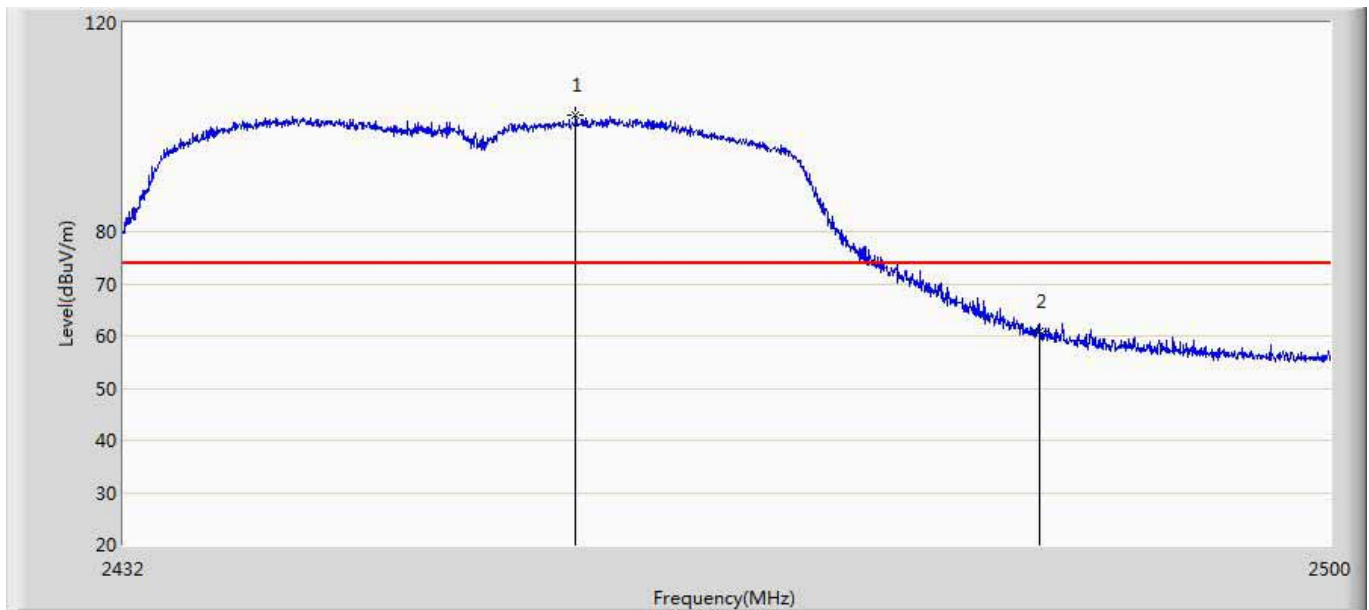
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	64.495	27.140	-9.505	74.000	37.355	PK
2	*	2433.354	107.430	69.991	N/A	N/A	37.439	PK

Engineer: Yock	
Site: AC5	Time: 2015/11/11 - 13:42
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: 300Mbps Wireless N Mini Router	Power: AC 120V/60Hz
Note: Mode 4:Transmit at channel 2422MHz by 802.11n(40MHz)	



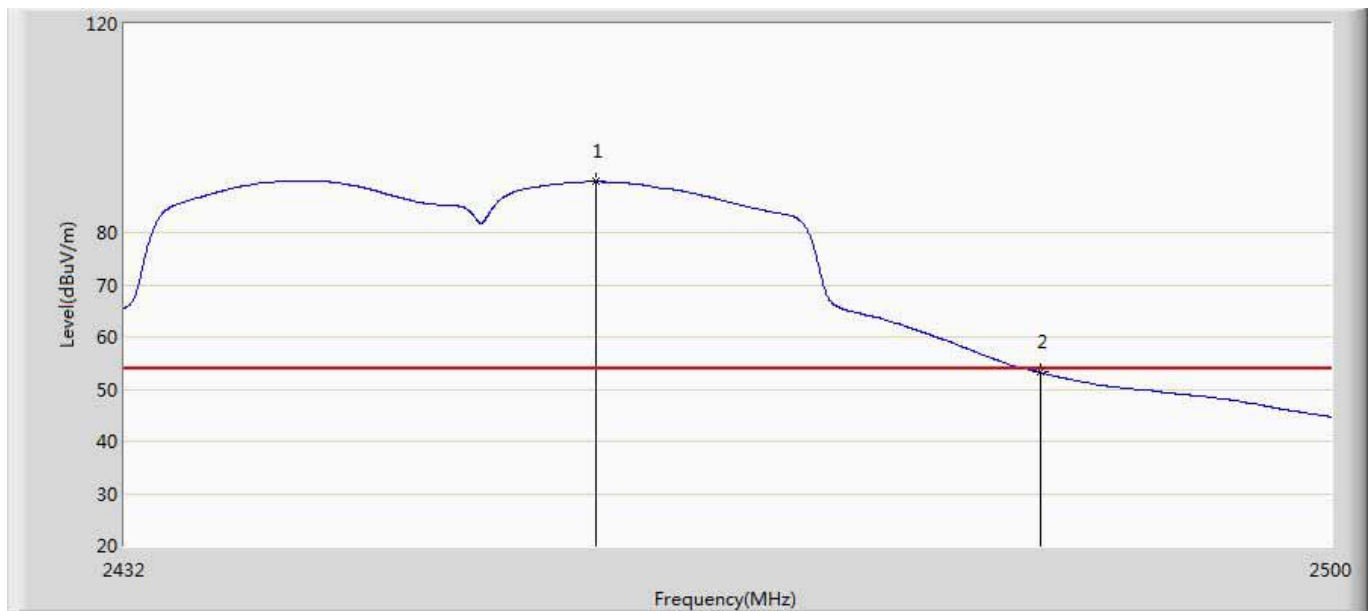
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2390.000	49.220	11.865	-4.780	54.000	37.355	AV
2	*	2434.938	94.340	56.901	N/A	N/A	37.438	AV

Engineer: Yock	
Site: AC5	Time: 2015/11/11 - 20:06
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 300Mbps Wireless N Mini Router	Power: AC 120V/60Hz
Note: Mode 4:Transmit at channel 2452MHz by 802.11n(40MHz)	



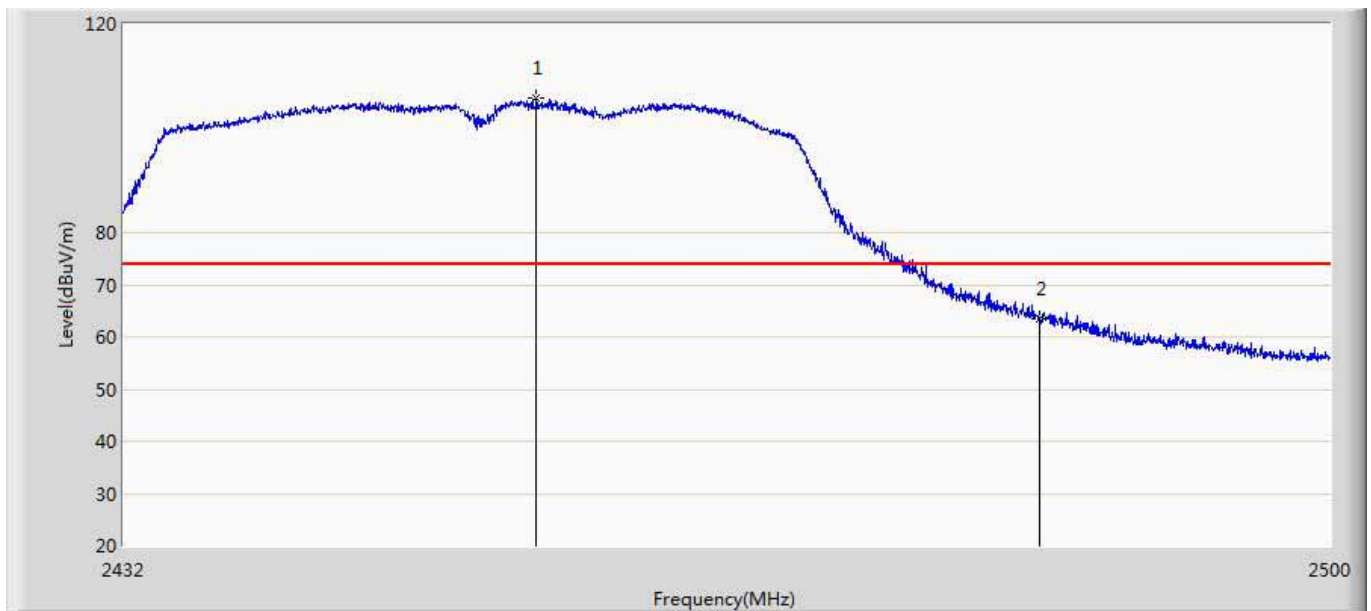
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2457.296	102.289	64.865	N/A	N/A	37.424	PK
2		2483.500	60.907	23.396	-13.093	74.000	37.511	PK

Engineer: Yock	
Site: AC5	Time: 2015/11/11 - 20:08
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: 300Mbps Wireless N Mini Router	Power: AC 120V/60Hz
Note: Mode 4:Transmit at channel 2452MHz by 802.11n(40MHz)	



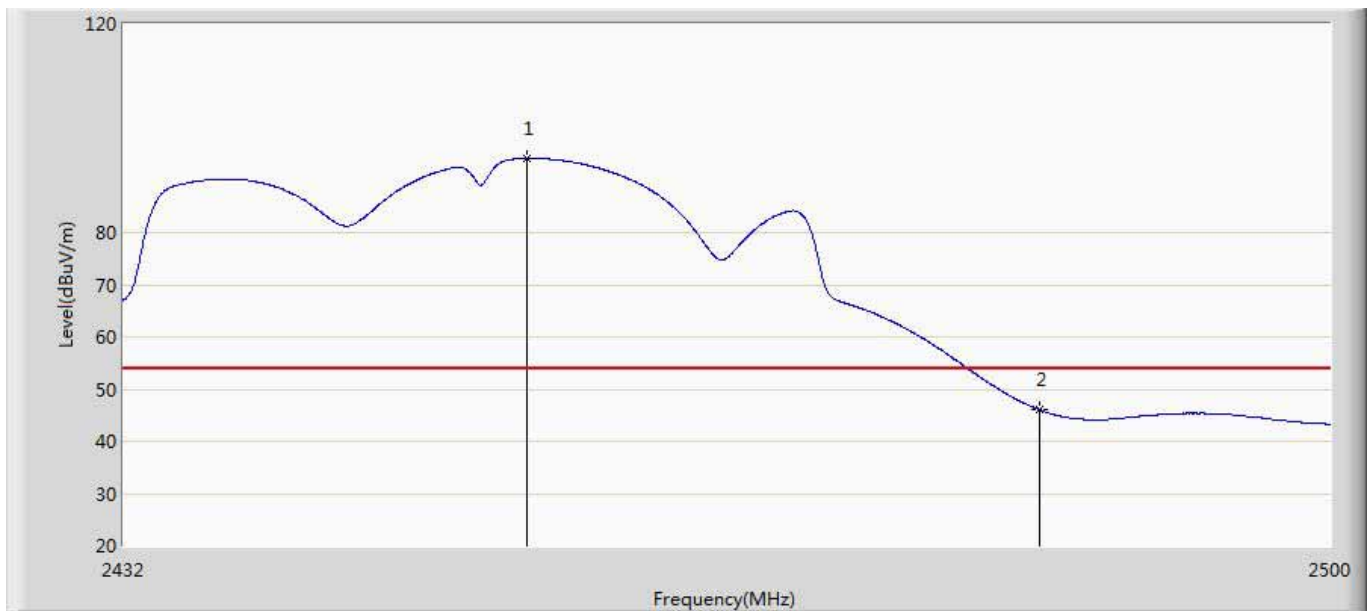
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2458.350	89.811	52.388	N/A	N/A	37.423	AV
2		2483.500	53.200	15.689	-0.800	54.000	37.511	AV

Engineer: Yock	
Site: AC5	Time: 2015/11/11 - 20:03
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: 300Mbps Wireless N Mini Router	Power: AC 120V/60Hz
Note: Mode 4:Transmit at channel 2452MHz by 802.11n(40MHz)	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2455.052	105.924	68.498	N/A	N/A	37.426	PK
2		2483.500	63.391	25.880	-10.609	74.000	37.511	PK

Engineer: Yock	
Site: AC5	Time: 2015/11/11 - 20:04
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: 300Mbps Wireless N Mini Router	Power: AC 120V/60Hz
Note: Mode 4:Transmit at channel 2452MHz by 802.11n(40MHz)	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2454.542	94.205	56.779	40.205	54.000	37.426	AV
2		2483.500	46.008	8.497	-7.992	54.000	37.511	AV

7. Occupied Bandwidth

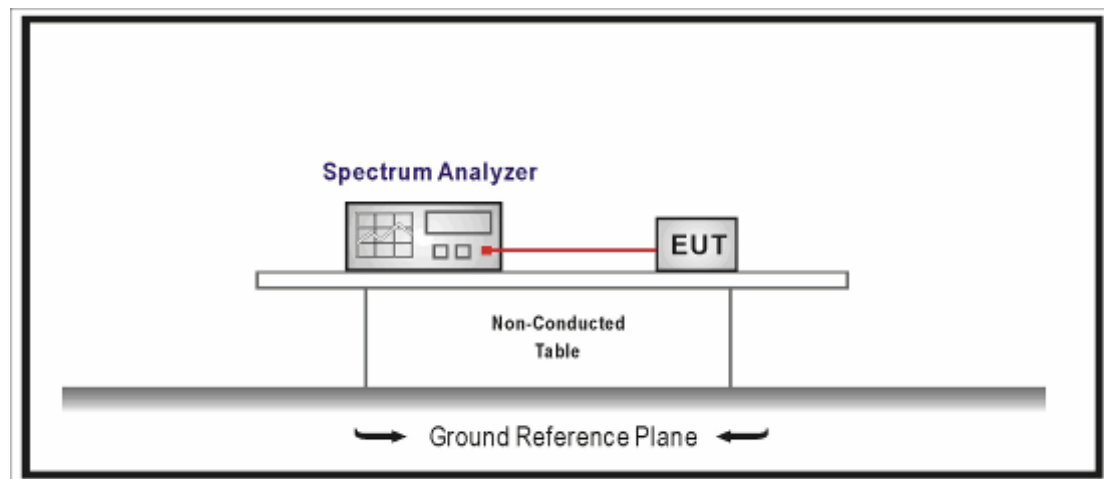
7.1. Test Equipment

Occupied Bandwidth / TR-8

Instrument	Manufacturer	Type No.	Serial No.	Cal. Due Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2016.01.07
Temperature/Humidity Meter	zhicheng	ZC1-2	TR8-TH	2016.04.09

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

For FCC

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

7.4. Test Procedure

According to FCC ANSI C63.10: 2013

- Set RBW = in the range of 1% to 5% of the OBW.
- Set the video bandwidth (VBW) $\geq 3 \times$ RBW.
- Detector = Peak.
- Trace mode = max hold.
- Sweep = auto couple.
- Allow the trace to stabilize.

g) Use the 99% power bandwidth function of the instrument (if available) and report the measured bandwidth.

7.5. Uncertainty

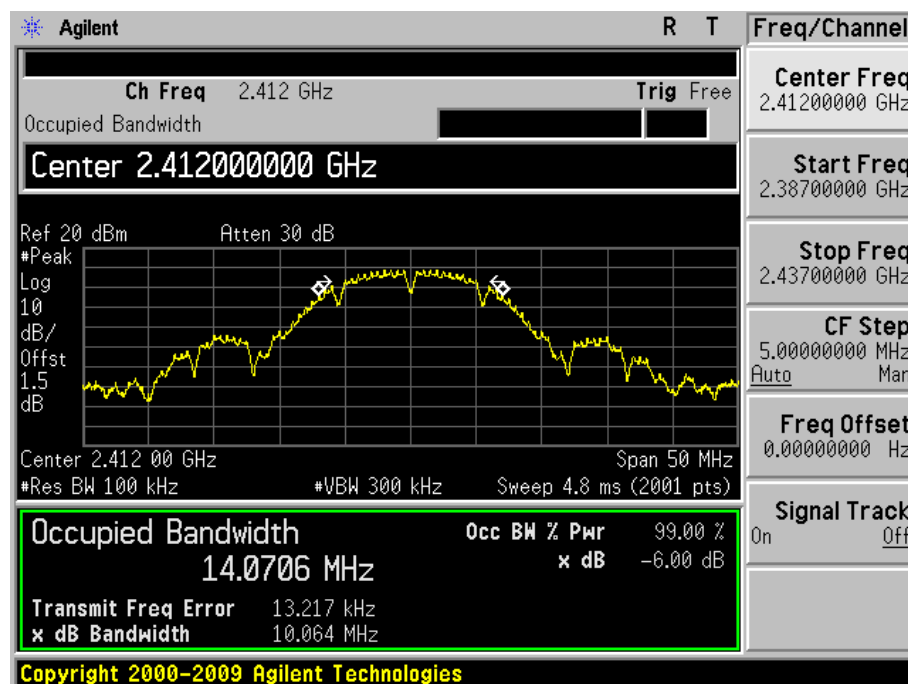
The measurement uncertainty is defined as ± 1 kHz

7.6. Test Result

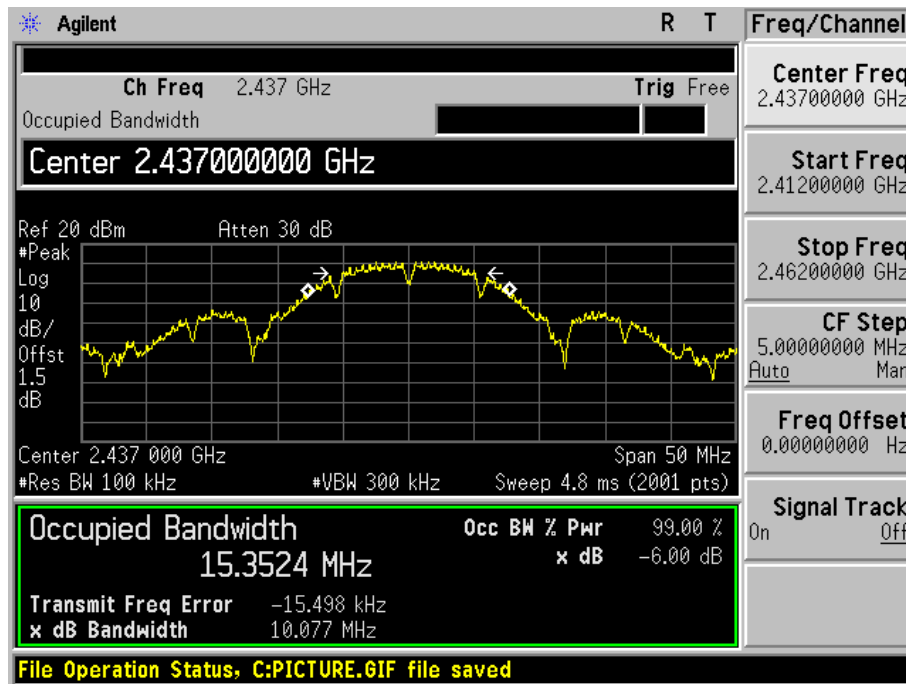
Product	:	300Mbps Wireless N Mini Router
Test Item	:	Occupied Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 1: Transmit by 802.11b

Channel No.	Frequency (MHz)	99%Occupied Bandwidth (kHz)	6dB Bandwidth (kHz)	Limit (kHz)	Result
01	2412	14070.6	10064	500	Pass
06	2437	15352.4	10077	500	Pass
11	2462	14479.9	10055	500	Pass

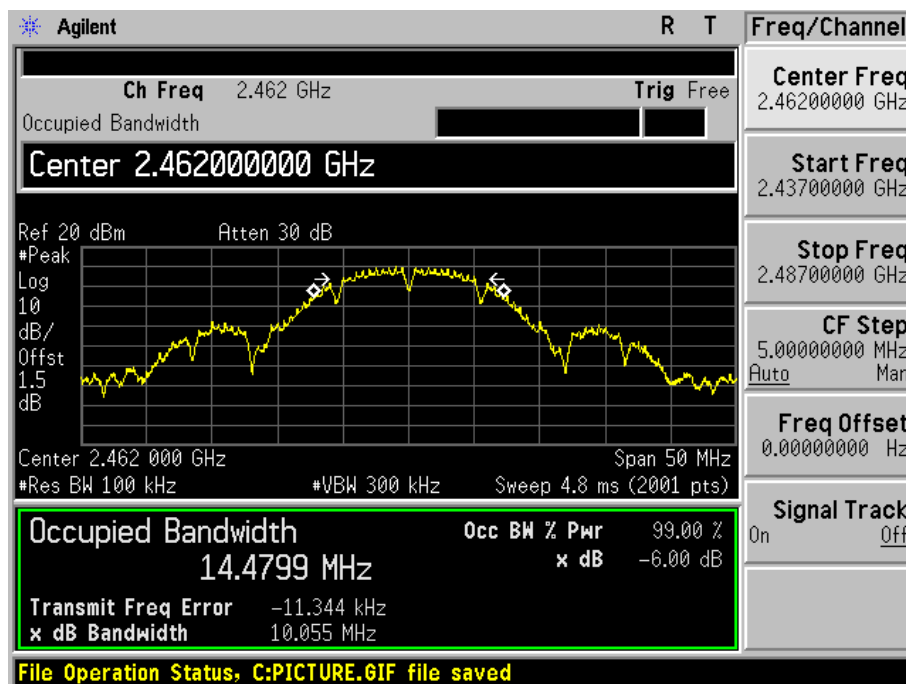
Channel 01 (2412MHz)



Channel 06 (2437MHz)



Channel 11 (2462MHz)

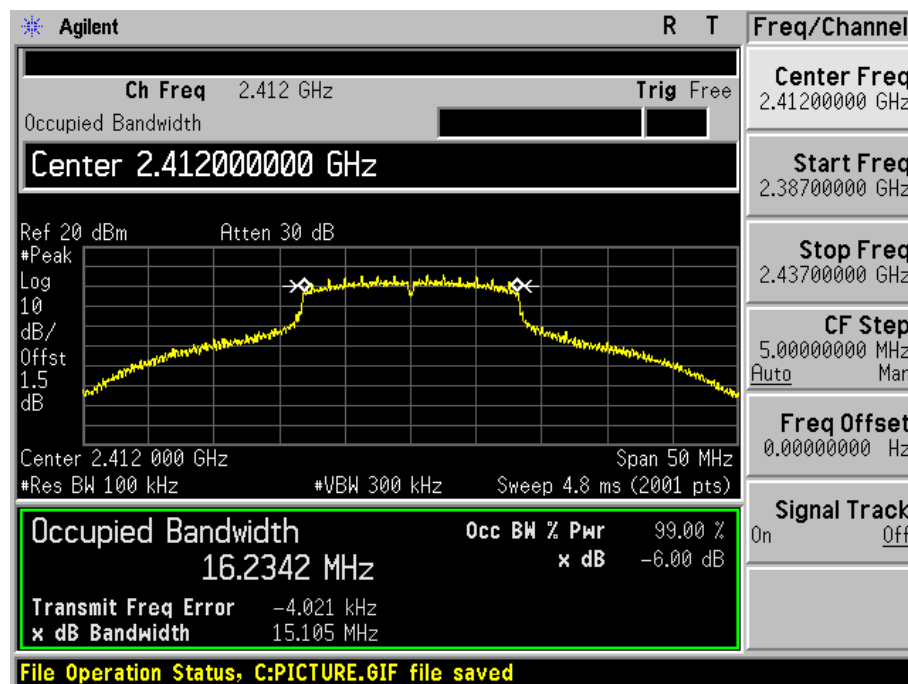


Note: For this test item, the modulation of this mode we have evaluated three antennas, presented data in the report is the worst case.

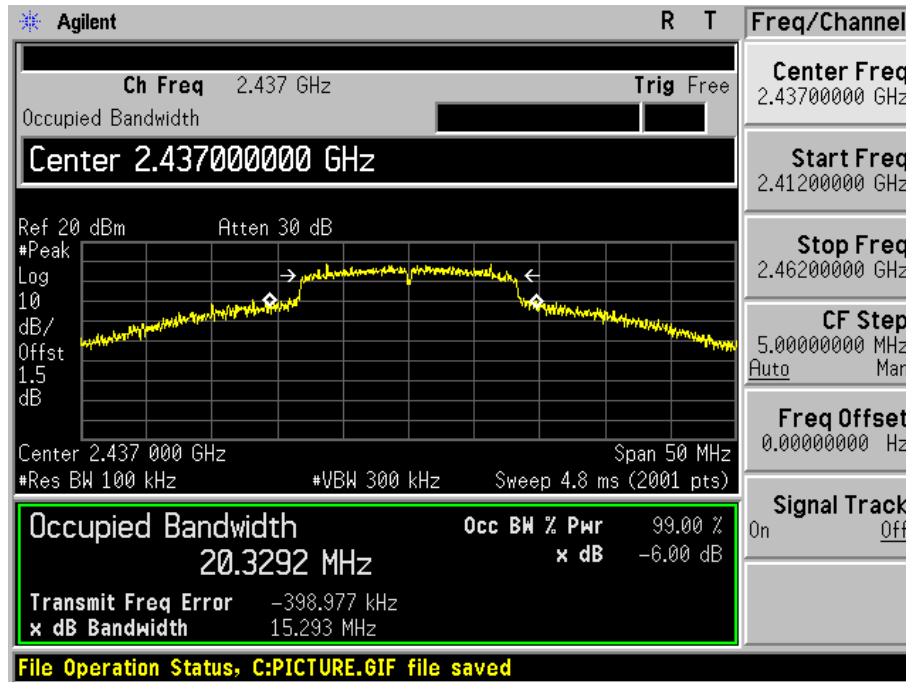
Product	:	300Mbps Wireless N Mini Router
Test Item	:	Occupied Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 2: Transmit by 802.11g (Ant 0)

Channel No.	Frequency (MHz)	99%Occupied Bandwidth (kHz)	6dB Bandwidth (kHz)	Limit (kHz)	Result
01	2412	16234.2	15105	500	Pass
06	2437	20329.2	15293	500	Pass
11	2462	17557.8	15125	500	Pass

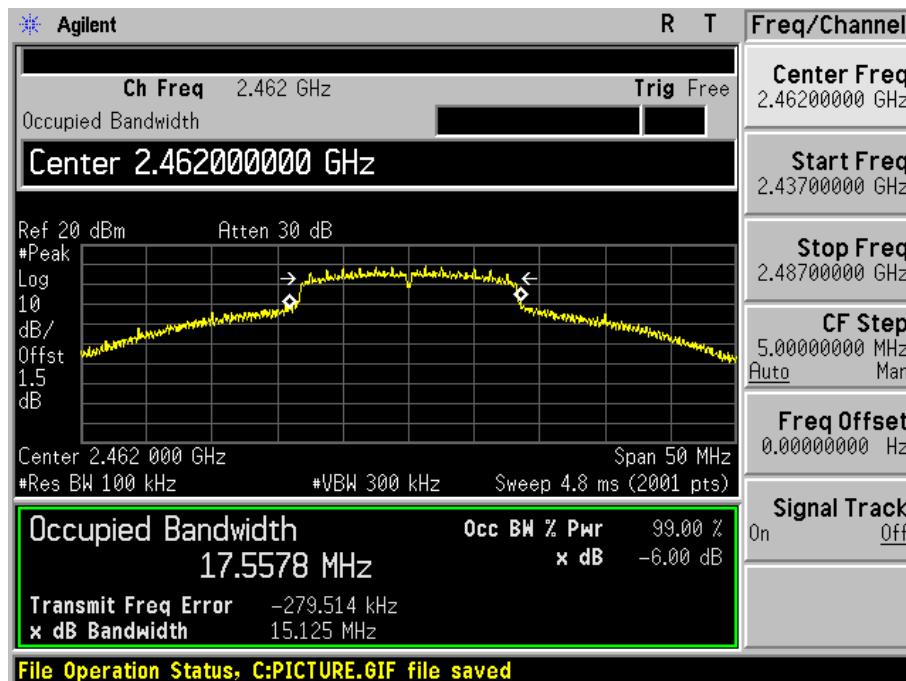
Channel 01 (2412MHz)



Channel 06 (2437MHz)



Channel 11 (2462MHz)

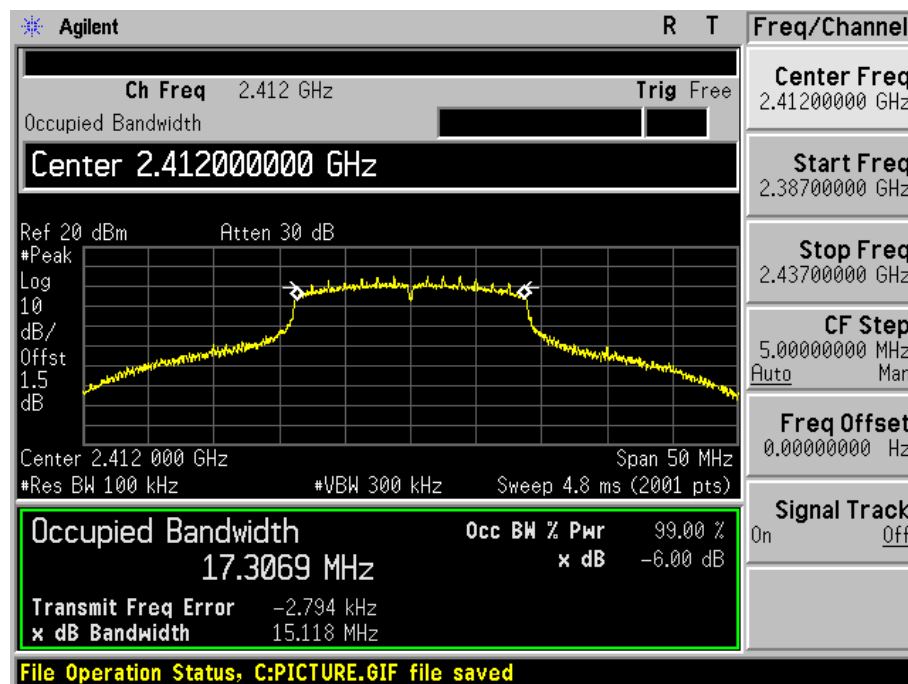


Note: For this test item, the modulation of this mode we have evaluated three antennas, presented data in the report is the worst case.

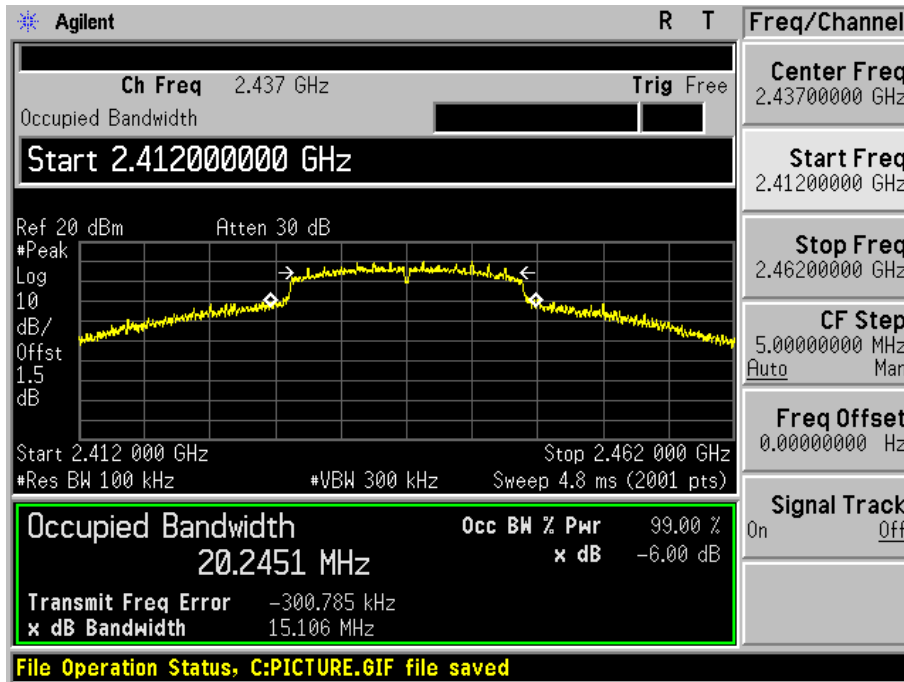
Product	:	300Mbps Wireless N Mini Router
Test Item	:	Occupied Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 3: Transmit by 802.11n(20MHz) (Ant 0)

Channel No.	Frequency (MHz)	99%Occupied Bandwidth (kHz)	6dB Bandwidth (kHz)	Limit (kHz)	Result
01	2412	17306.9	15118	500	Pass
06	2437	20245.1	15106	500	Pass
11	2462	17532.7	15157	500	Pass

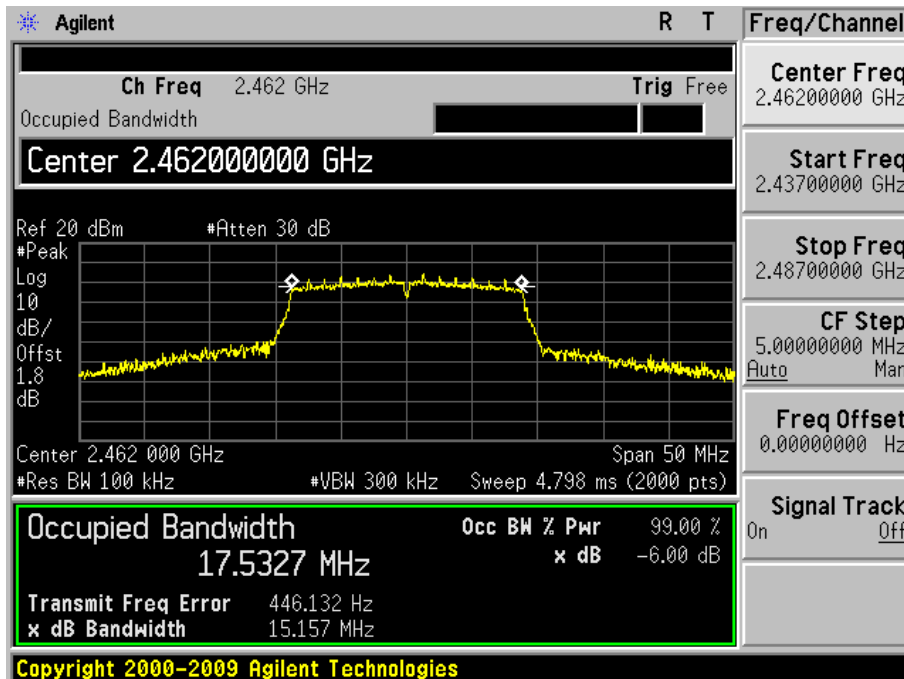
Channel 01 (2412MHz)



Channel 06 (2437MHz)



Channel 11 (2462MHz)

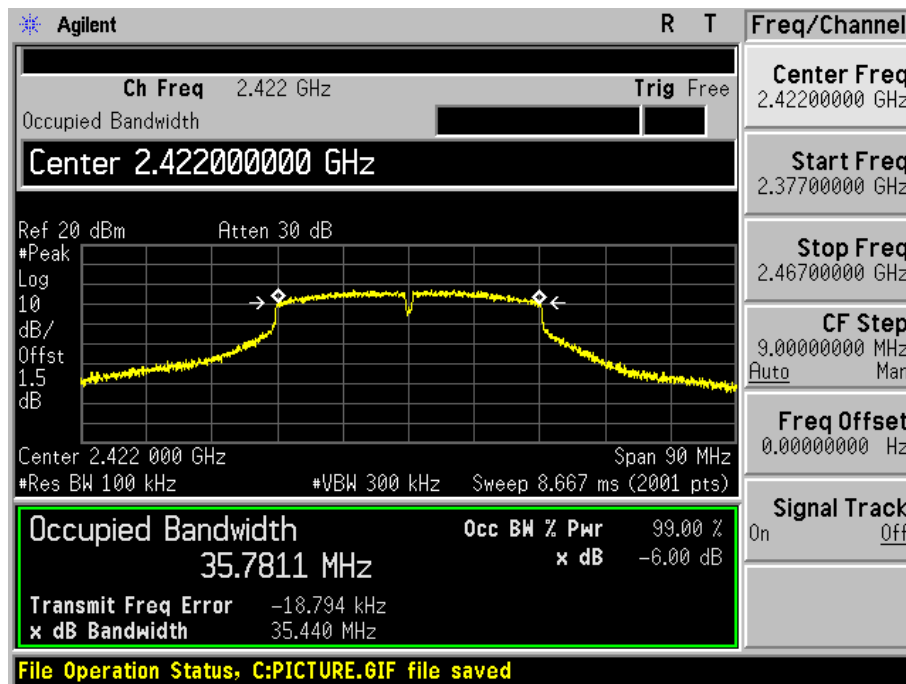


Note: For this test item, the modulation of this mode we have evaluated three antennas, presented data in the report is the worst case.

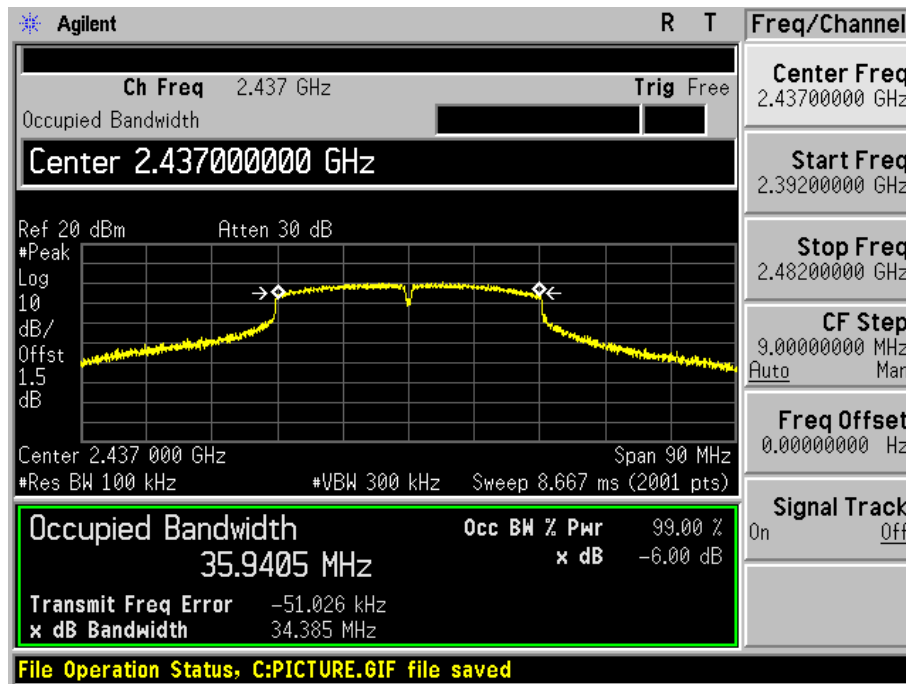
Product	:	300Mbps Wireless N Mini Router
Test Item	:	Occupied Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 4: Transmit by 802.11n(40MHz) (Ant 0)

Channel No.	Frequency (MHz)	99%Occupied Bandwidth (kHz)	6dB Bandwidth (kHz)	Limit (kHz)	Result
03	2422	35781.1	35440	500	Pass
06	2437	35940.5	34385	500	Pass
09	2452	35681.6	32643	500	Pass

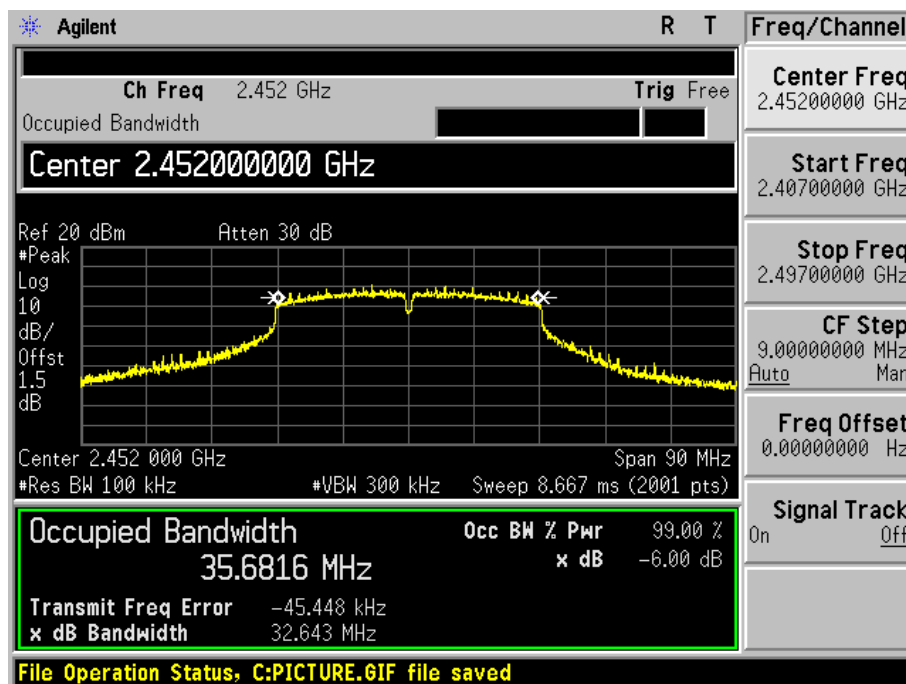
Channel 03 (2422MHz)



Channel 06 (2437MHz)



Channel 09 (2452MHz)



Note: For this test item, the modulation of this mode we have evaluated three antennas, presented data in the report is the worst case.

8. Power Output

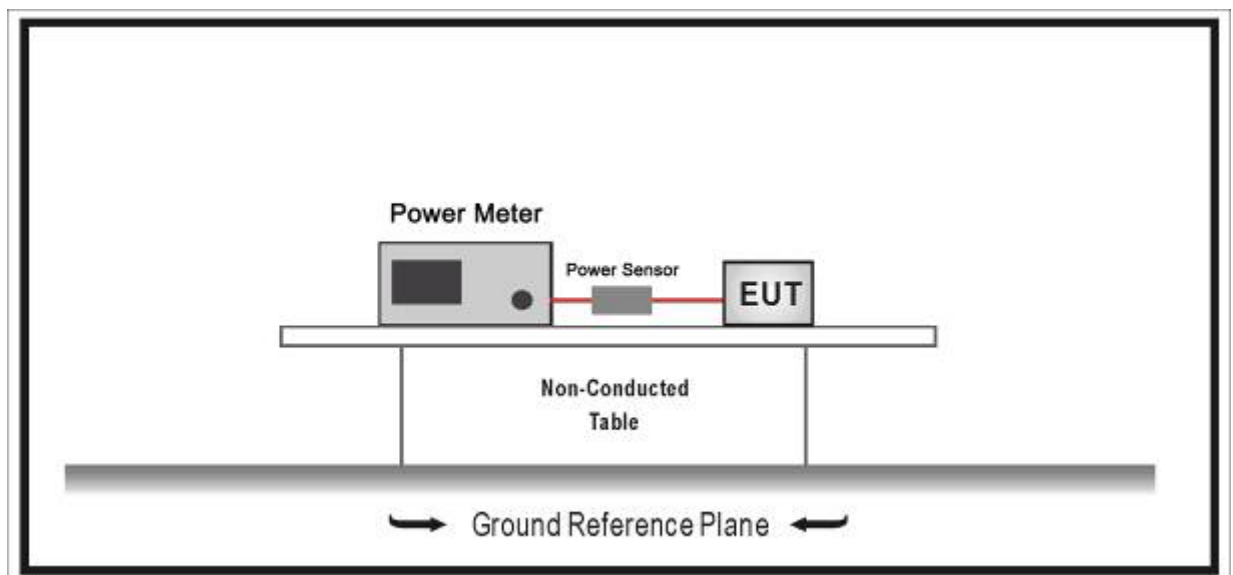
8.1. Test Equipment

Power Output / TR-8

Instrument	Manufacturer	Type No.	Serial No.	Cal. Due Date
Wideband Peak Power Meter	Anritsu	ML2495A	0905006	2016.11.10
Power Sensor	Anritsu	MA2411B	0846014	2016.11.10
Temperature/Humidity Meter	zhicheng	ZC1-2	TR8-TH	2016.04.09

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

For FCC

The maximum peak power shall be less 1 Watt (30dBm).

Note: the conducted output power limit specified above is based on the use the antennas with directional gains that do not exceed 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values above, as appropriate, by the amount in dB that the directional gain of antenna exceeds 6 dBi.

8.4. Test Procedure

According to FCC ANSI C63.10: 2013

1. Power meter and sensor's minimum video bandwidth is 50MHz, larger than 802.11n(40MHz) bandwidth;
2. Fast responding diode sensors respond immediately to changes in power level to reduce total test time.
3. Use average detector to test.

8.5. Uncertainty

The measurement uncertainty is defined as ± 1.27 dB

8.6. Test Result

Power output test was verified over all data rates of each mode shown as below, and then choose the maximum power output (blue marker) for final test of each channel.

Power output at various data rates:

MCS Index for 802.11n	Spatial Streams	Data Rate (Mbps)						
		802.11b	802.11g	802.11a	20MHz Bandwidth		40MHz Bandwidth	
					800ns GI	400ns GI	800ns GI	400ns GI
0	1	1	6	6	6.5	7.2	13.5	15.0
1	1	2	9	9	13.0	14.4	27.0	30.0
2	1	5.5	12	12	19.5	21.7	40.5	45.0
3	1	11	18	18	26.0	28.9	54.0	60.0
4	1	---	24	24	39.0	43.3	81.0	90.0
5	1	---	36	36	52.0	57.8	108.0	120.0
6	1	---	48	48	58.5	65.0	121.5	135.0
7	1	---	54	54	65.0	72.2	135.0	150.0
8	2	---	---	---	13.0	14.4	27.0	30.0
9	2	---	---	---	26.0	28.9	54.0	60.0
10	2	---	---	---	39.0	43.3	81.0	90.0
11	2	---	---	---	52.0	57.8	108.0	120.0
12	2	---	---	---	78.0	86.7	162.0	180.0
13	2	---	---	---	104.0	115.6	216.0	240.0
14	2	---	---	---	117.0	130.0	243.0	270.0
15	2	---	---	---	130.0	144.0	270.0	300.0

Product	:	300Mbps Wireless N Mini Router
Test Item	:	Power Output
Test Site	:	TR8
Test Mode	:	Mode 1: Transmit by 802.11b

802.11b

Channel No.	Frequency (MHz)	Measurement Power Output (dBm)		Total Power (dBm)	Limit (dBm)	Result
		Ant 0	Ant 1			
1	2412	17.43	16.94	20.20	30.00	Pass
6	2437	15.42	15.15	18.30	30.00	Pass
11	2462	15.31	15.12	18.23	30.00	Pass

802.11g

Channel No.	Frequency (MHz)	Measurement Power Output (dBm)		Total Power (dBm)	Limit (dBm)	Result
		Ant 0	Ant 1			
1	2412	15.13	15.15	18.15	30.00	Pass
6	2437	20.11	19.49	22.82	30.00	Pass
11	2462	18.37	18.16	21.28	30.00	Pass

802.11n(20MHz)

Channel No.	Frequency (MHz)	Measurement Power Output (dBm)		Total Power (dBm)	Limit (dBm)	Result
		Ant 0	Ant 1			
1	2412	14.78	14.25	17.53	30.00	Pass
6	2437	19.71	19.41	22.57	30.00	Pass
11	2462	16.38	15.97	19.19	30.00	Pass

802.11n(40MHz)

Channel No.	Frequency (MHz)	Measurement Power Output (dBm)		Total Power (dBm)	Limit (dBm)	Result
		Ant 0	Ant 1			
3	2412	13.26	13.15	16.22	30.00	Pass
6	2437	15.41	14.95	18.20	30.00	Pass
9	2462	12.89	12.57	15.74	30.00	Pass

Note : Directional gain = $G_{ANT} + \text{Array Gain} = 2\text{dBi} < 6\text{dBi}$, so The Limit is 30dBm

9. Power Spectral Density

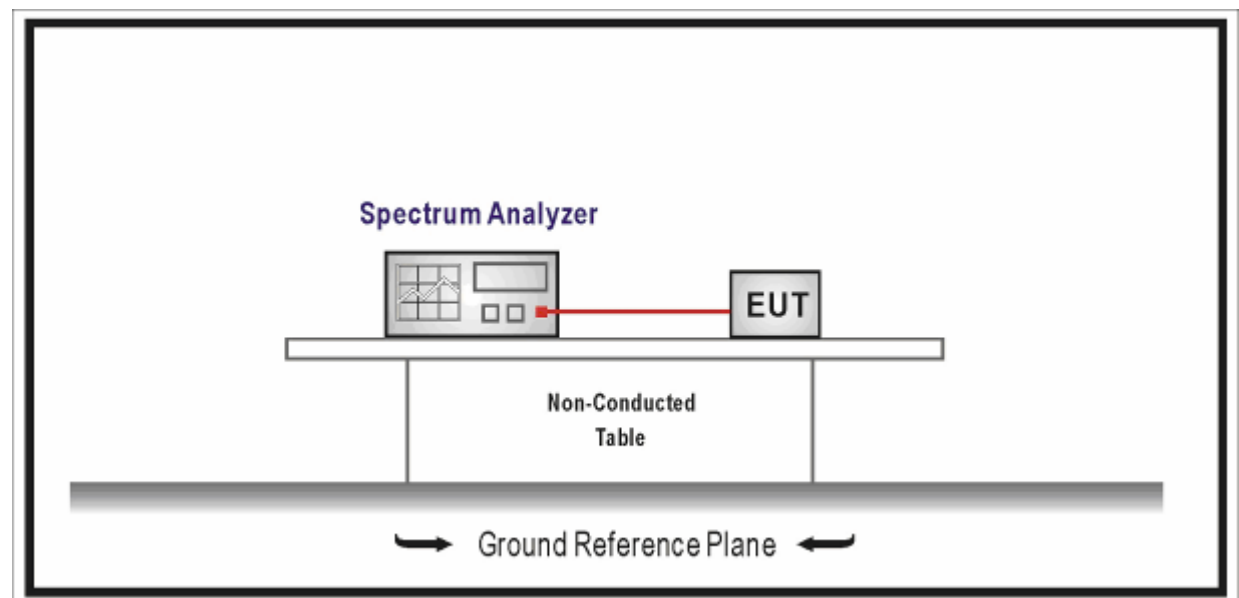
9.1. Test Equipment

Power Spectral Density / TR-8

Instrument	Manufacturer	Type No.	Serial No.	Cal. Due Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2016.01.07
Temperature/Humidity Meter	zhicheng	ZC1-2	TR8-TH	2016.04.09

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

9.2. Test Setup



9.3. Limit

For FCC

For digitally modulated systems, the power spectral density conducted from the intentional radiated to the Antenna shall not be greater than 8dBm in any 3kHz band during any time interval of continuous transmission.

9.4. Test Procedure

According to ANSI C63.10: 2013&KDB662911

- 1,
 - a) Set analyzer center frequency to DTS channel center frequency.
 - b) Set the span to 1.5 times the DTS bandwidth.
 - c) Set the RBW to: $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$. (Actually we use 3kHz RBW)
 - d) Set the VBW $\geq 3 \times \text{RBW}$.
 - e) Detector = peak.
 - f) Sweep time = auto couple.
 - g) Trace mode = max hold.
 - h) Allow trace to fully stabilize.
 - i) Use the peak marker function to determine the maximum amplitude level within the band.
 - j) If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.
- 2, Cyclic Delay Diversity (CDD) [also known as cyclic shift diversity (CSD)]. CDD signals are correlated and create unintended array gain that varies with signal bandwidth, antenna geometry, and cyclic delay values. Consequently, depending on system parameters, it may be appropriate to use different values of array gain for compliance with power limits versus compliance with power spectral density limits. CAUTION: The term CDD, as used here, does not apply to any transmission mode in which the cyclic delay values are chosen to optimize performance at a given receiver; such a system shall be classified as an intentional beamforming system. CDD refers only to cases in which the cyclic delay values are selected apriori with out regard to the specific communication device pair.

For CDD transmissions, directional gain is calculated as follows. In all formulas,

NANT = number of transmit antennas and

NSS = number of spatial streams. (Assume NSS = 1 unless you have specific information to the contrary.)

CAUTION: Most devices can operate with one spatial stream (NSS = 1) even if they also are capable of more spatial streams. The worst case directional gain will occur when NSS = 1; therefore, it is especially important to ensure that the device complies with all emission limits for the case of NSS = 1 (or with the lowest possible value of NSS, if the device always uses spatial multiplexing).

Directional gain = $G_{\text{ANT}} + \text{Array Gain}$,

For power spectral density (PSD) measurements on all devices,

Array Gain = $10 \log(\text{NANT}/\text{NSS}) \text{ dB}$.

For power measurements on IEEE 802.11 devices

Array Gain = 0 dB (i.e., no array gain) for $\text{NANT} \leq 4$;

Array Gain = 0 dB (i.e., no array gain) for channel widths $\geq 40 \text{ MHz}$ for any NANT;

Array Gain = $5 \log(\text{NANT}/\text{NSS}) \text{ dB}$ or 3 dB, whichever is less, for 20-MHz channel widths with

$NANT \geq 5$

3 , The conducted output power limits for DTS EUTs are based on the use of transmit antennas with directional gains that do not exceed 6 dBi. If transmit antennas with an effective directional gain greater than 6 dBi are used, then the conducted output power from the EUT shall be reduced, as specified in the applicable requirements for DTS. For those cases where the rule specifies that the conducted output power be reduced by the amount in dB that the directional gain of the transmitting antenna exceeds 6 dBi, the applicable output power limit shall be calculated as follows: $P_{out} = P_{Limit} - (G_{Tx} - 6)$

9.5. Uncertainty

The measurement uncertainty is defined as ± 1.27 dB

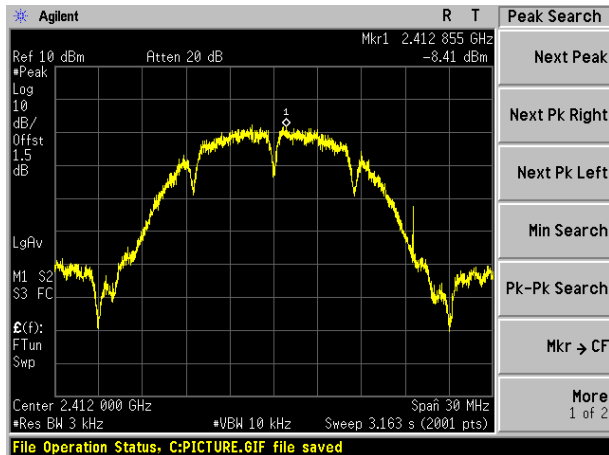
9.6. Test Result

Product	:	300Mbps Wireless N Mini Router
Test Item	:	Power Spectral Density
Test Site	:	TR-8
Test Mode	:	Mode 1: Transmit by 802.11b

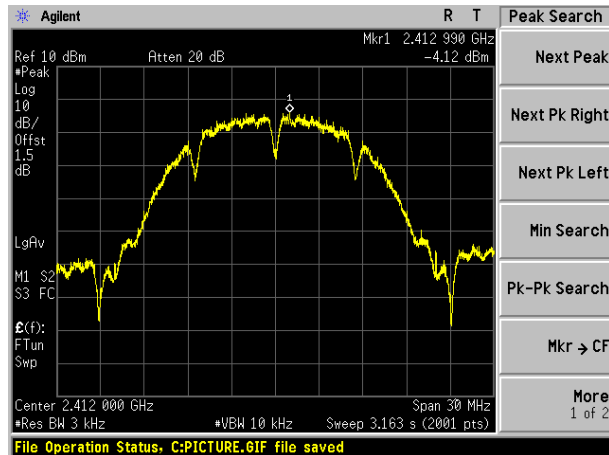
Channel No.	Frequency (MHz)	Measurement PPSP (dBm/3KHz)		Total PPSP (dBm/3KHz)	Limit (dBm/3KHz)	Result
		Ant 1	Ant 2			
01	2412	-8.41	-4.12	-2.75	8	Pass
06	2437	-2.68	-3.75	-0.17	8	Pass
11	2462	-2.51	-4.68	-0.45	8	Pass

Directional gain = $G_{ANT} + \text{Array Gain} = 5.01\text{dBi} < 6\text{dBi}$, so The Limit = 8dBm/3KHz

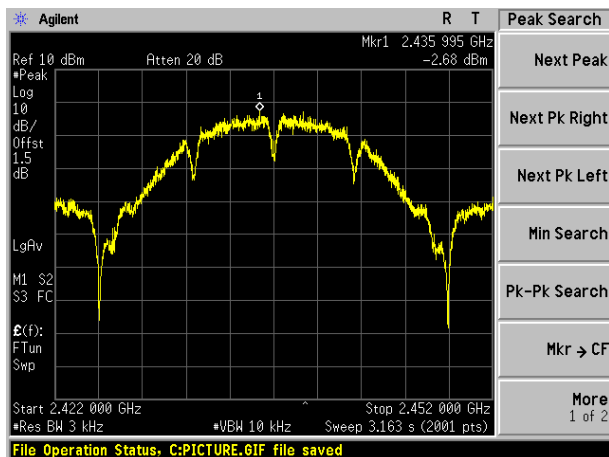
Channel 01 (2412MHz) Ant 1



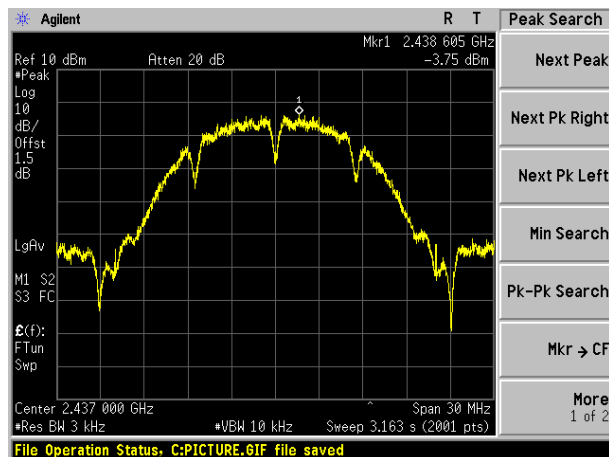
Channel 01 (2412MHz) Ant 2



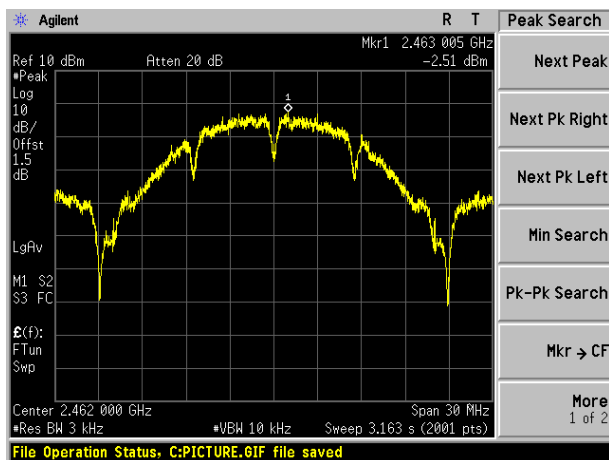
Channel 06 (2437MHz) Ant 1



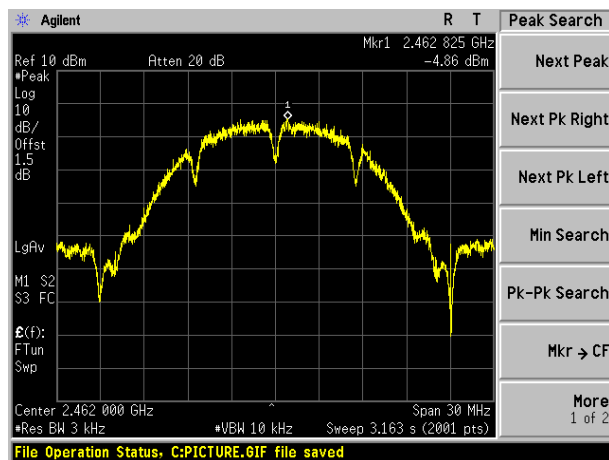
Channel 06 (2437MHz) Ant 2



Channel 11 (2462MHz) Ant 1



Channel 06 (2462MHz) Ant 2

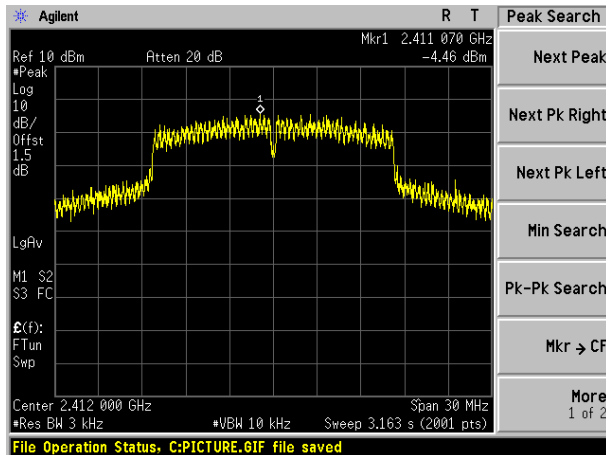


Product	:	300Mbps Wireless N Mini Router
Test Item	:	Power Spectral Density
Test Site	:	TR-8
Test Mode	:	Mode 2: Transmit by 802.11g

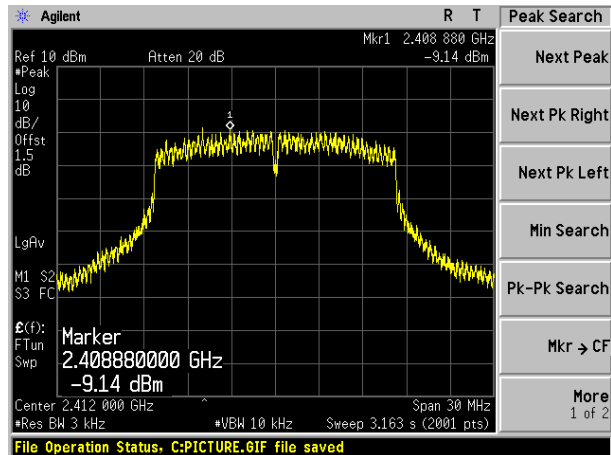
Channel No.	Frequency (MHz)	Measurement PPSD (dBm/3KHz)		Total PPSD (dBm/3KHz)	Limit (dBm/3KHz)	Result
		Ant 1	Ant 2			
01	2412	-4.46	-9.14	-3.19	8	Pass
06	2437	-3.62	-2.37	0.06	8	Pass
11	2462	-5.52	-5.06	-2.27	8	Pass

Directional gain = $G_{ANT} + \text{Array Gain} = 5.01\text{dBi} < 6\text{dBi}$, so The Limit = 8dBm/3KHz

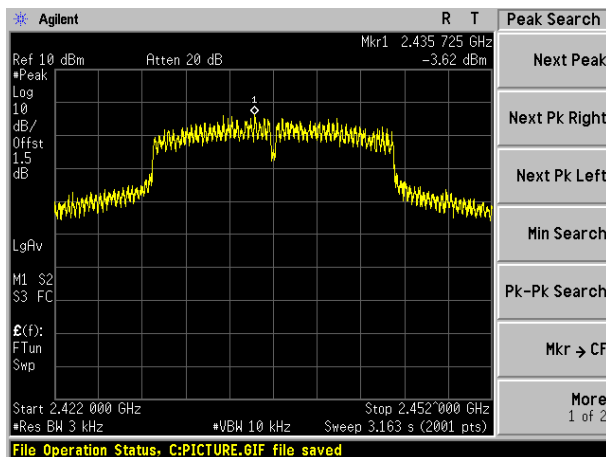
Channel 01 (2412MHz) Ant 1



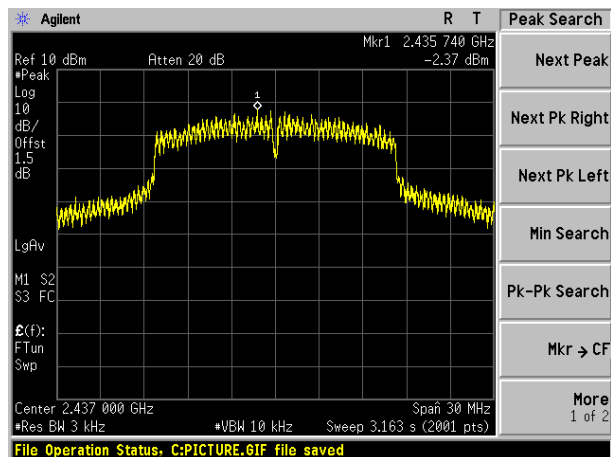
Channel 01 (2412MHz) Ant 2



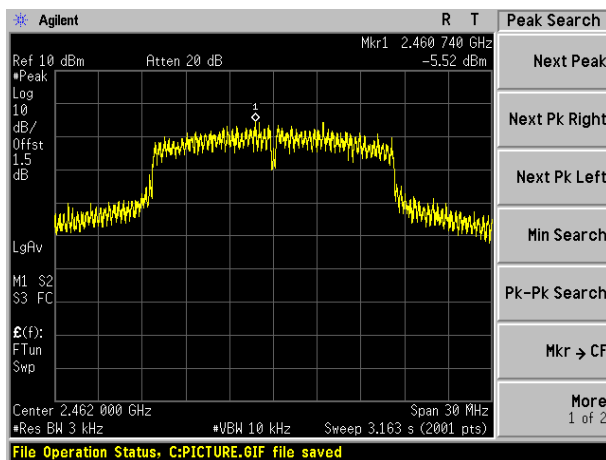
Channel 06 (2437MHz) Ant 1



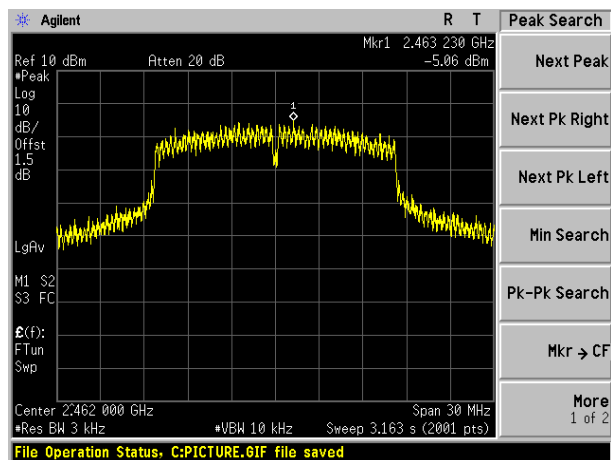
Channel 06 (2437MHz) Ant 2



Channel 11 (2462MHz) Ant 1



Channel 06 (2462MHz) Ant 2

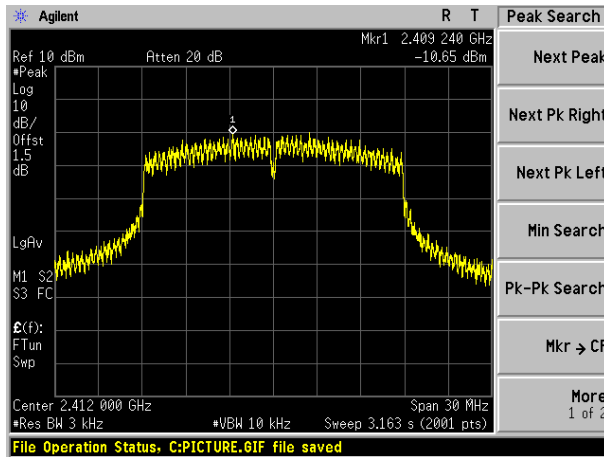


Product	:	300Mbps Wireless N Mini Router
Test Item	:	Power Spectral Density
Test Site	:	TR-8
Test Mode	:	Mode 3: Transmit by 802.11n(20MHz)

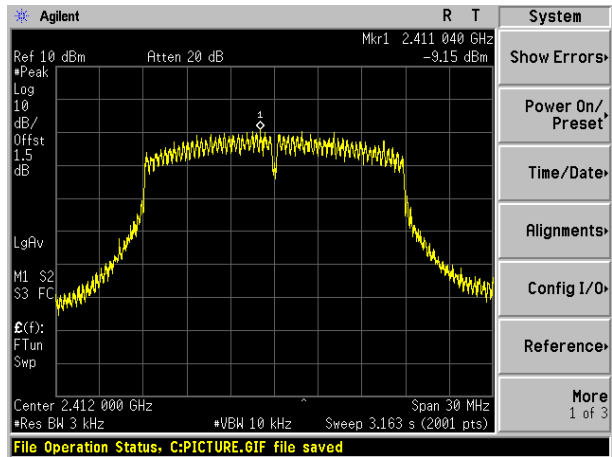
Channel No.	Frequency (MHz)	Measurement PPSD (dBm/3KHz)		Total PPSD (dBm/3KHz)	Limit (dBm/3KHz)	Result
		Ant 1	Ant 2			
01	2412	-10.65	-9.15	-6.83	8	Pass
06	2437	-10.40	-2.85	-2.15	8	Pass
11	2462	-6.25	-7.86	-3.97	8	Pass

Directional gain = $G_{ANT} + \text{Array Gain} = 5.01\text{dBi} < 6\text{dBi}$, so The Limit = 8dBm/3KHz

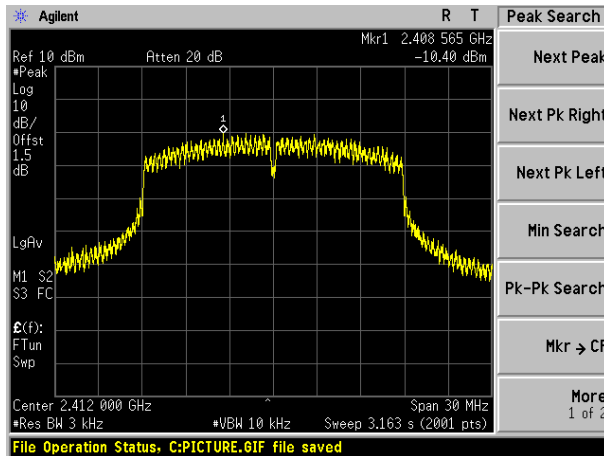
Channel 01 (2412MHz) Ant 1



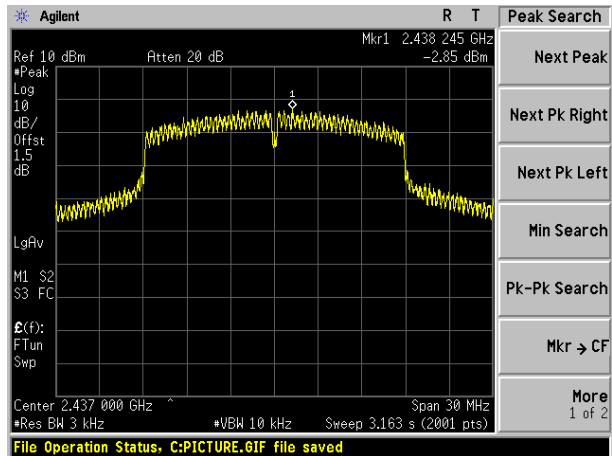
Channel 01 (2412MHz) Ant 2



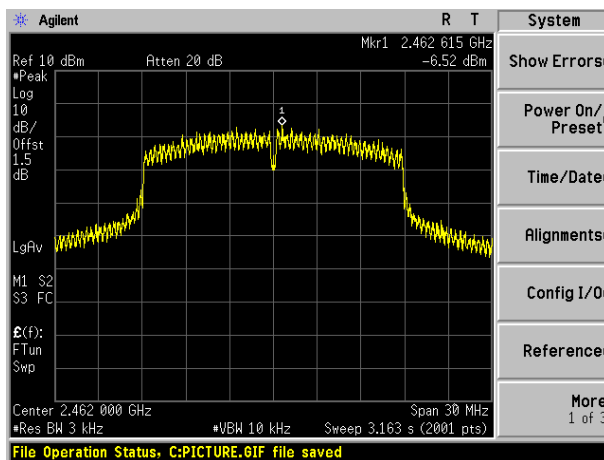
Channel 06 (2437MHz) Ant 1



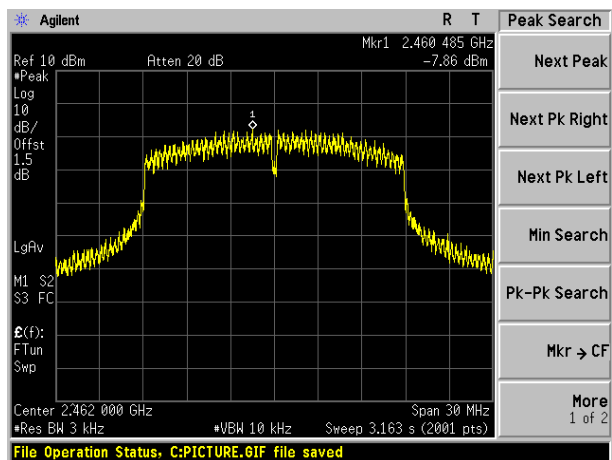
Channel 06 (2437MHz) Ant 2



Channel 11 (2462MHz) Ant 1



Channel 06 (2462MHz) Ant 2

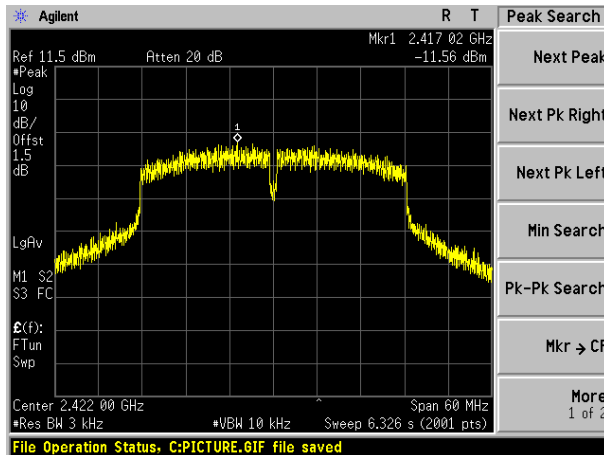


Product	:	300Mbps Wireless N Mini Router
Test Item	:	Power Spectral Density
Test Site	:	TR-8
Test Mode	:	Mode 4: Transmit by 802.11n(40MHz)

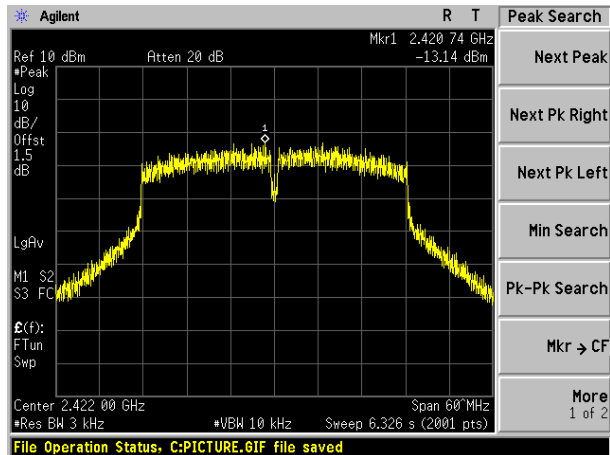
Channel No.	Frequency (MHz)	Measurement PPSD (dBm/3KHz)		Total PPSD (dBm/3KHz)	Limit (dBm/3KHz)	Result
		Ant 1	Ant 2			
01	2412	-11.56	-13.14	-9.27	8	Pass
06	2437	-10.02	-11.56	-7.71	8	Pass
11	2462	-14.00	-14.92	-11.43	8	Pass

Directional gain = $G_{ANT} + \text{Array Gain} = 5.01\text{dBi} < 6\text{dBi}$, so The Limit = 8dBm/3KHz

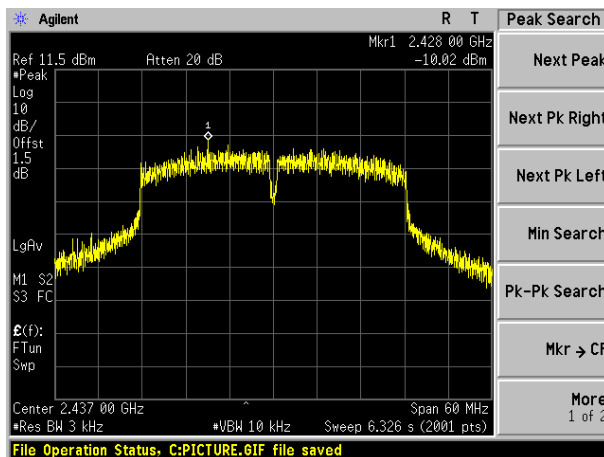
Channel 03 (2412MHz) Ant 1



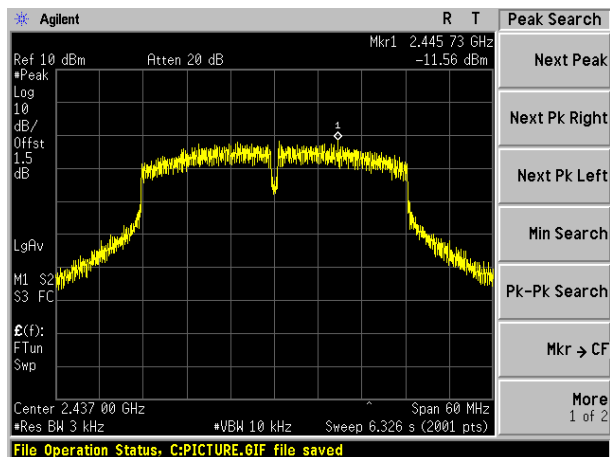
Channel 03 (2412MHz) Ant 2



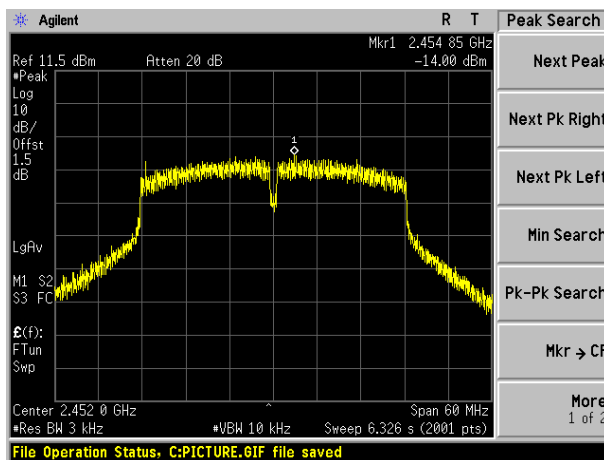
Channel 06 (2437MHz) Ant 1



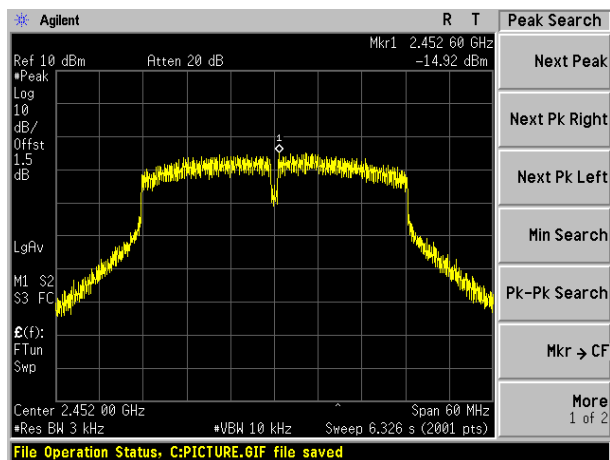
Channel 06 (2437MHz) Ant 2



Channel 09 (2452MHz) Ant 1



Channel 09 (2452MHz) Ant 2



The End