CONFORMANCE TEST REPORT
FOR
FCC 47 CFR, Part 15 Subpart C

Report No.: 16-05-MAS-002-03

Client:	KEN SEAN INDUSTRIES CO., LTD
Product:	Cycle Camera
Model:	G242
FCC ID:	2AHJEKS00G242
Manufacturer/supplier:	KEN SEAN INDUSTRIES CO., LTD

Date test item received:	2016/05/03
Date test campaign completed:	2016/05/27
Date of issue:	2016/06/02

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Total number of pages of this test report: 115 pages
Total number of pages of photos: External photos 2 pages
Internal photos 5 pages
Setup photos 3 pages

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Manufacturer	: KEN SEAN INDUSTRIES CO., LTD
Address	: 501, Sec. 6, Chang-Lu Rd., Fu-Shin Township, Chang-Hwa County 50648, Taiwan
EUT	: Cycle Camera
Trade name	: K source
Model No.	: G242
Power Source	: DC 3.7V Battery
Regulations applied	: FCC 47 CFR, Part 15 Subpart C

The testing described in this report has been carried out to the best of our knowledge and ability, and our responsibility is limited to the exercise of reasonable care. This certification is not intended to believe the sellers from their legal and/or contractual obligations.

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⑤ FCC Registration Number: 91095, 392735, 278818
⑥ Industry Canada Site Registration Number: IC 2949A-2

NVLAP Lab Code 200133-0

Table of Contents Page

1 GENERAL INFORMATION

1.1 Product Description

a) Type of EUT : Cycle Camera
b) Trade Name : K source
c) Model No. : G242
d) FCC ID : 2AHJEKS00G242

1.2 Characteristics of Device

Motorcycle& bicycle video recorder with wifi feature in order to display view on smartphone.

RF chain	1T1R
Frequency Range	IEEE 802.11b/g, 802.11n HT20: 2412MHz~2462MHz
Channel Spacing	IEEE 802.11b/g, 802.11n HT20: 5MHz
Channel Number	IEEE 802.11b/g, 802.11n HT20:11 Channels
Transmit Data Rate	IEEE 802.11b: 11, 5.5, 2, 1 Mbps IEEE 802.11g: 54, 48, 36, 24, 18, 12, 11, 9, 6 Mbps IEEE 802.11n HT20: 65, 58.5, 52, 39, 26, 19.5, 13, 6.5Mbps
Type of Modulation	IEEE 802.11b: DSSS (CCK, DQPSK, DBPSK) IEEE 802.11g: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n HT20: OFDM (64QAM, 16QAM, QPSK, BPSK)

1.3 Test Methodology

All testing were performed according to the procedures in ANSI C63.10 (2013) and FCC CFR 47 Part 2 and Part 15 and KDB 558074 D01 v03r05.

1.4 Test Facility

The semi-anechoic chamber and conducted measurement facility used to collect the radiated and conducted data are located inside the Building at No.8, Lane 29, Wenming Rd. Guishan Dist. Taoyuan City 33383, Taiwan, R.O.C.
This site has been accreditation as a FCC filing site.

1.5 Test Summary

Requirement	FCC Paragraph #	Test Pass
Antenna Requirement	15.203	☒
Conducted Emission	15.207	☒
Emission Bandwidth	15.247 (a)(2)	☒
Output Power Requirement	15.247 (b)	☒
Power Density Requirement	15.247 (e)	☒
Spurious Emissions	15.247 (d)	☒
Radiated Emission	15.247 (d)	☒

Note: The test setup and measurement method for conductive output power measurements shown in this test report is different to the "Peak Output Power" test. Certain measurement uncertainty of peak power may be expected with the use of different power detection method or measuring equipment. Therefore, the conductive output power measurement results provided in this test report may be different to the specification of the device under test.

2 PROVISIONS APPLICABLE

2.1 Definition

Unintentional radiator:
A device that intentionally generates and radio frequency energy for use within the device, or that sends radio frequency signals by conduction to associated equipment via connecting wiring, but which is not intended to emit RF energy by radiation or induction.

Class A Digital Device:
A digital device which is marketed for use in commercial or business environment; exclusive of a device which is market for use by the general public, or which is intended to be used in the home.

Class B Digital Device :
A digital device which is marketed for use in a residential environment notwithstanding use in a commercial, business of industrial environment. Example of such devices that are marketed for the general public.

Note : A manufacturer may also qualify a device intended to be marketed in a commercial, business, or industrial environment as a Class B digital device, and in fact is encouraged to do so, provided the device complies with the technical specifications for a Class B Digital Device. In the event that a particular type of device has been found to repeatedly cause harmful interference to radio communications, the Commission may classify such a digital device as a Class B Digital Device, Regardless of its intended use.

Intentional radiator:
A device that intentionally generates and emits radio frequency energy by radiation or induction.

2.2 Requirement for Compliance

(1) Conducted Emission Requirement

For unintentional device, according to §15.107(a) Line Conducted Emission Limits is as following:

Frequency MHz	Quasi Peak dB μV	Average dB μV
0.15 - 0.5	66-56*	56-46*
0.5 - 5.0	56	46
5.0 - 30.0	60	50

*Decreases with the logarithm of the frequency.

For intentional device, according to §15.207(a) Line Conducted Emission Limits is same as above table.

(2) Radiated Emission Requirement

For unintentional device, according to §15.109(a), except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

Frequency MHz	Distance Meters	Radiated dB μV/m	Radiated μV/m
30 - 88	3	40.0	100
88 - 216	3	43.5	150
216 - 960	3	46.0	200
above 960	3	54.0	500

For intentional radiator device, according to §15.209(a), the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table::

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100**	3
88-216	150**	3
216-960	200**	3
Above 960	500	3

** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72MHz, 76-88MHz, 174-216MHz or 470-806MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g., Sections 15.231 and 15.241.

For intentional device, according to §15.209(a), the general requirement of field strength of

radiated emissions from intentional radiators at a distance of 3 meters shall not exceed the above table.

(3) Antenna Requirement

For intentional device, according to §15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

(4) Bandwidth Requirement

According to 15.247 (a)(2), systems using digital modulation techniques may operate in the 902 - 928 MHz, 2400 - 2483.5 MHz, and 5725 - 5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

(5) Output Power Requirement

For systems using digital modulation , according to 15.247(b), the maximum peak output power of the intentional radiator shall not exceed 1 Watt. If transmitting antennas of directional gain greater than 6 dBi are used, the peak output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(6) Spurious Emissions Measurement

According to 15.247 (d) , in any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated 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. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

(7) Power Density Requirement

According to 15.247 (e) , for digitally modulated systems, the peak power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission..

2.3 Restricted Bands of Operation

Only spurious emissions are permitted in any of the frequency bands listed below :

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42-16.423	399.9-410	4.5-5.25
0.495 - 0.505 **	16.69475 - 16.69525	608-614	5.35-5.46
2.1735 - 2.1905	16.80425 - 16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475 - 156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2655-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	Above 38.6
13.36-13.41			

** : Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz

2.4 Labeling Requirement

The device shall bear the following statement in a conspicuous location on the device :

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

2.5 User Information

The users manual or instruction manual for an intentional or unintentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

For a Class B digital device or peripheral, the instructions furnished the user shall include the following or similar statement, placed in a prominent location in the text of the manual.

The Federal Communications Commission Radio Frequency Interference Statement includes the following paragraph.

This equipment has been tested and found to comply with the limits for a Class B Digital Device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction may cause harmful interference to radio communication. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

-- Reorient or relocate the receiving antenna.

-- Increase the separation between the equipment and receiver.

-- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

-- Consult the dealer or an experienced radio / TV technician for help.

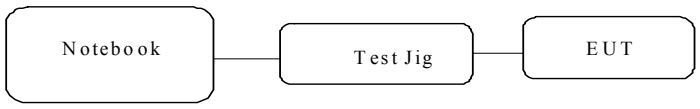
3. SYSTEM TEST CONFIGURATION

3.1 Devices for Tested System

Description	Manufacturer	Model No.	I/O Cable
* Cycle Camera	KEN SEAN INDUSTRIES CO., LTD	G242	----
Test Jig	N/A	N/A	0.1m*1 Unshielded Signal Line
Notebook	HP	6570b	0.3m*1 Unshielded Signal Line 1.8m*1, Unshielded Power Line/Adapter

Remark

1. "*" means equipment under test.



2.

Test Software:	Tera Term		
Power setting:	Mode	Channel	Setting
	b	Low	Defual
		Mid	Defual
		High	Defual
	g	Low	Defual
		Mid	Defual
		High	Defual
	n HT20	Low	Defual
		Mid	Defual
		High	Defual

3.2 Dscription of Test modes

3.2.1 IEEE 802.11b, 802.11g, 802.11n HT20 mode:

There are three channels have been tested as following:

Channel	Frequency (MHz)
Low = 1	2412
Middle = 6	2437
High = 11	2462

IEEE 802.11b mode: 1 Mbps data rate is the worse case for full testing.
IEEE 802.11g mode: 6 Mbps data rate is the worse case for full testing.
IEEE 802.11n HT20 mode: MCS0 6.5 Mbps data rateis the worse case for full testing.

3.2.2 Test Mode Description

3.2.2.1 Modulation Type

Test Mode	Modulation
A	IEEE 802.11b
B	IEEE 802.11g
C	IEEE 802.11 n HT20

Test modes A,B,C	
Test Channel	Frequency (MHz)
Channel Low(L)	2412
Channel Mid(M)	2437
Channel High(H)	2462

3.2.2.2 Test Mode and Worse Case Determination

Item	Test Item	Test mode	Frequrency(MHz)
1	Conducted emission measurement	B (note1)	M (note2)
2	Emisson bandwidth measurement	A，B，C	L，M，H
3	Output power measurement	A，B，C	L，M，H
4	Power density measurement	A，B，C	L，M，H
5	Spurious emission	A，B，C	L，M，H
6	Radiated emisson measurement(Harmonic)	A，B，C	L，M，H
6.1	Radiated emisson measurement (Below 1GHz)	B (note1)	M (note2)
6.2	Radiated emisson measurement (Above 1GHz)	A，B，C	L，M，H

Note: 1. Pretest result is no difference in four test modes, Choose one for final testing.
2. Pretest result is no difference by channel low, middle and high.Choose one for final testing and record the result

4 CONDUCTED EMISSION MEASUREMENT

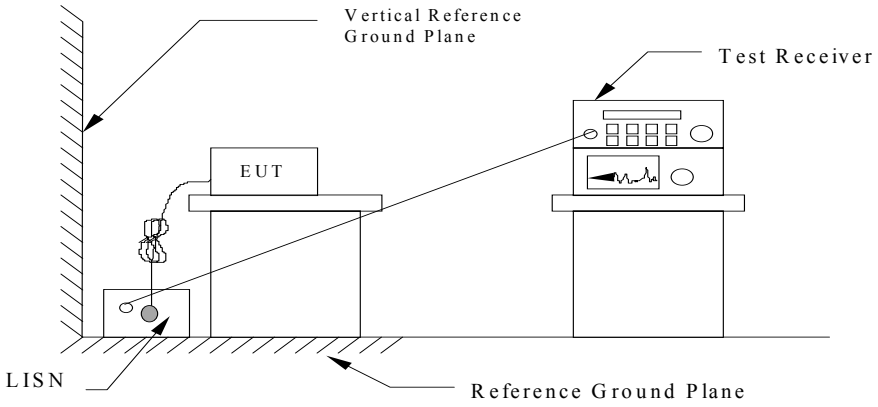
4.1 Standard Applicable

For unintentional and intentional device, Line Conducted Emission Limits are in accordance to § 15.107(a) and §15.207(a) respectively. Both Limits are identical specification.

4.2 Measurement Procedure

1. The testing follows FCC ANSI C63.10 (2013).
2. Setup the configuration per figure 1.
3. A preliminary scan with a spectrum monitor is performed to identify the frequency of emission that has the highest amplitude relative to the limit by operating the EUT in selected modes of operation, typical cable positions, and with a typical system configuration.
4. Record the 6 highest emissions relative to the limit.
5. Measure each frequency obtained from step 3 by a test receiver set on quasi peak detector function, and then record the accuracy frequency and emission level. If all emissions measured in the specified band are attenuated more than 20 dB from the limit, this step would be inored, and the peak detector function would be used.
6. Confirm the highest three emissions with variation of the EUT cable configuration and record the final data.
7. Repeat all above procedures on measuring each operation mode of EUT.

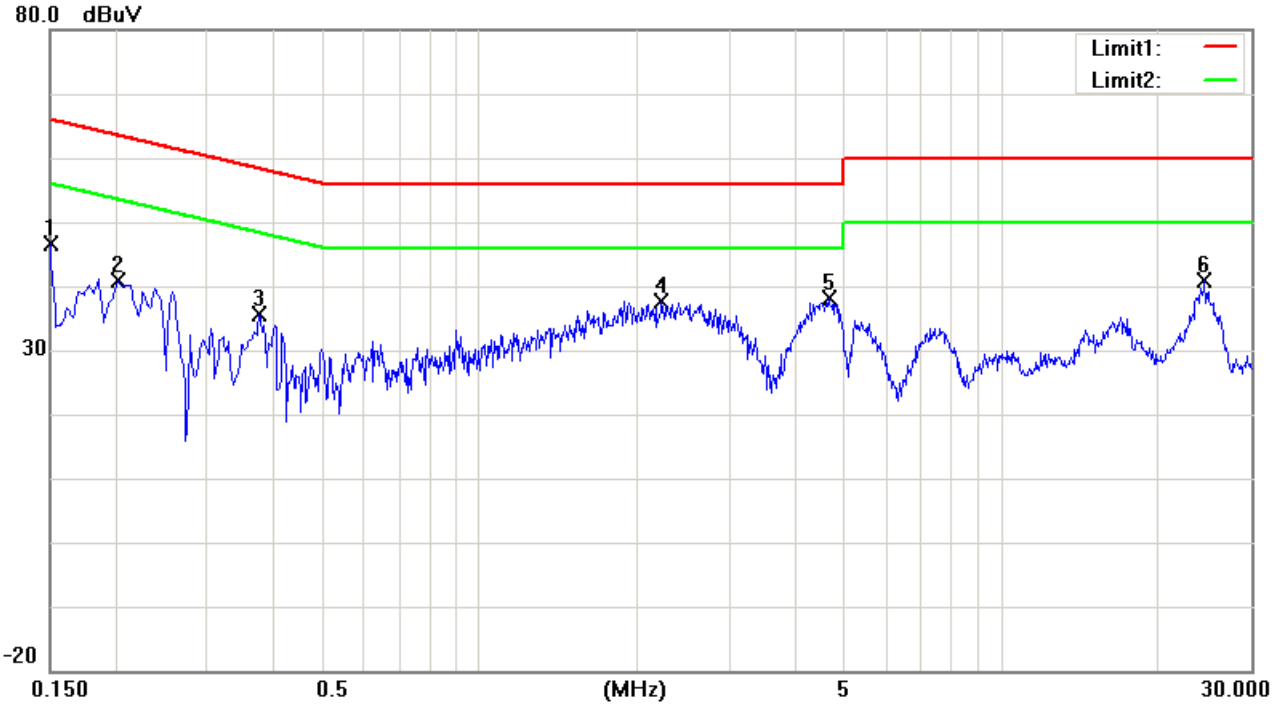
Figure 1 : Conducted emissions measurement configuration



4.3 Conducted Emission Data

File: 16-05-MAS-002 **Data:** #1 **Date:** 2016/5/27 **Temperature:** 18 ℃

Time: AM 09:09:17 **Humidity:** 66 %



Condition: **Phase:** L1

EUT:

Model:

Test Mode:

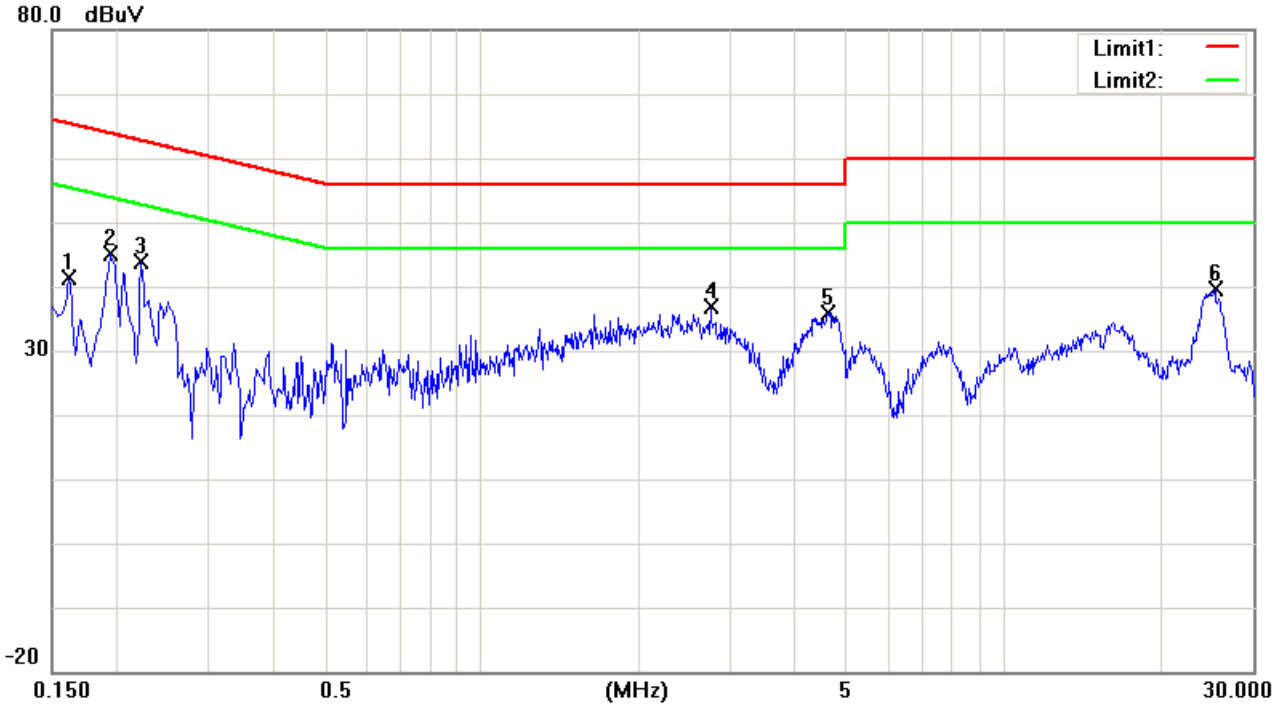
Note:

No.	Frequency (MHz)	Reading (dBuV)	Detector	Corrected dB	Result (dBuV)	Limit (dBuV)	Margin (dB)
1	0.1500	36.86	peak	9.65	46.51	66.00	-19.49
2	0.2020	31.17	peak	9.65	40.82	63.53	-22.71
3	0.3780	25.90	peak	9.65	35.55	58.32	-22.77
4	2.2300	28.02	peak	9.69	37.71	56.00	-18.29
5	4.6660	28.28	peak	9.77	38.05	56.00	-17.95
6	24.4260	30.82	peak	10.04	40.86	60.00	-19.14

Note: 1. Place of measurement: EMC LAB. of the ETC.
2. "***" means the value was too low to be measured.
3. If the data table appeared symbol of "----" means the Q.P. value is under the limit of AVG. so, the AVG. value doesn't need to be measured.
4. "#" means the noise was too low, so record the peak value.
5. The estimated measurement uncertainty of the result measurement is ±2.5dB.

File: 16-05-MAS-002 **Data:** #2 **Date:** 2016/5/27 **Temperature:** 18 ℃

Time: AM 09:10:04 **Humidity:** 66 %



Condition: **Phase:** N

EUT:

Model:

Test Mode:

Note:

No.	Frequency (MHz)	Reading (dBuV)	Detector	Corrected dB	Result (dBuV)	Limit (dBuV)	Margin (dB)
1	0.1620	31.69	peak	9.64	41.33	65.36	-24.03
2	0.1940	35.41	peak	9.63	45.04	63.86	-18.82
3	0.2220	34.36	peak	9.63	43.99	62.74	-18.75
4	2.7420	27.22	peak	9.69	36.91	56.00	-19.09
5	4.6220	26.09	peak	9.75	35.84	56.00	-20.16
6	25.3700	29.52	peak	10.09	39.61	60.00	-20.39

Note: 1. Place of measurement: EMC LAB. of the ETC.
2. "***" means the value was too low to be measured.
3. If the data table appeared symbol of "----" means the Q.P. value is under the limit of AVG. so, the AVG. value doesn't need to be measured.
4. "#" means the noise was too low, so record the peak value.
5. The estimated measurement uncertainty of the result measurement is ±2.5dB.

4.4 Result Data Calculation

The result data is calculated by adding the LISN Factor to the measured reading. The basic equation with a sample calculation is as follows:

RESULT = READING + LISN FACTOR (Included Cable Loss)

4.5 Conducted Measurement EquiPMent

The following test equiPMent are used during the conducted test.

Equipment	Manufacturer	Model No.
EMI Test Receiver	R&S	ESCI
V-LISN	R&S	ENV216

5 ANTENNA REQUIREMENT

5.1 Standard Applicable

For intentional device, according to §15.203, an intentional radiator shall be desined to ensure that no antenna other than that furnished by the responsible party shall be used with the device.
And according to §15.247 (b), if transmitting antennas of directional gain greater than 6 dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

5.2 Antenna Construction and Directional Gain

The antennas is a Surface Dipole Antenna

Antenna Type	Dipole
Antenna Gain	-4.32 dBi

The directional gain of antenna doesn't greater than 6 dBi, the power won't be reduced.

6 EMISSION BANDWIDTH MEASUREMENT

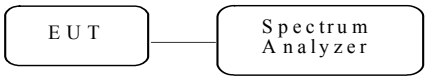
6.1 Standard Applicable

According to 15.247(a)(2), system using digital modulation techniques, the minimum 6dB bandwidth shall be at least 500 kHz.

6.2 Measurement Procedure

1. The testing follows FCC KDB 558074 D01 v03r05.
2. Check the calibration of the measuring instrument using either an internal calibrator or a known sinal from an external generator.
3. Position the EUT as shown in figure 2. Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.
4. Measure the frequency difference of two frequencies that were attenuated 6 dB from the reference level. Record the frequency difference as the emission bandwidth.
5. Repeat above procedures until all frequencies measured were complete.

Figure 2: Emission bandwidth measurement configuration.



6.3 Measurement Equipment

Equipment	Manufacturer	Model No.
Spectrum Analyzer	Agilent	E4446A

6.4 Measurement Data

6.4.1 IEEE 802.11b

Test Date: May 13, 2016 Temperature: 26℃ Humidity: 60%

Channel	6dB Bandwidth (MHz)	FCC Limit (kHz)	Chart
L	8.250	500	Page 21
M	8.167	500	Page 22
H	8.250	500	Page 23

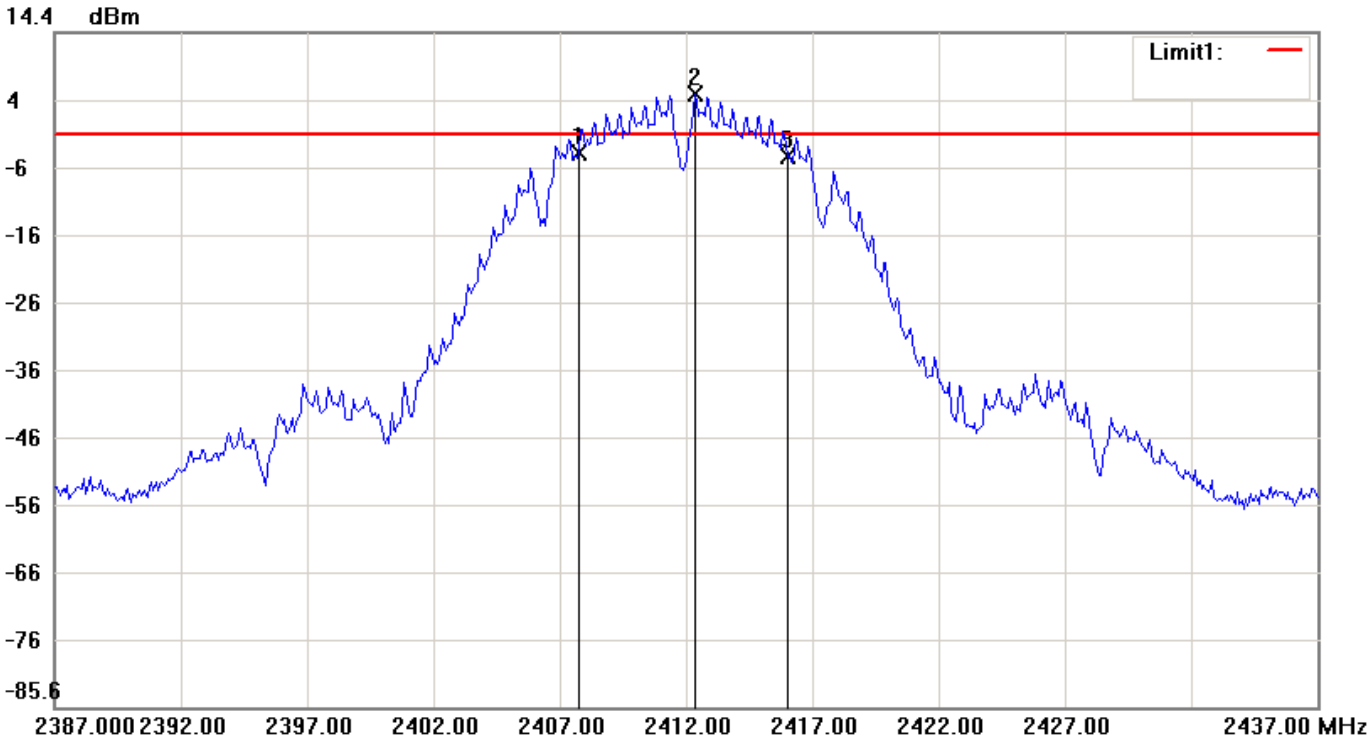
Note:

1. Please refer to page 21 to page 23 for chart

2. The estimated measurement uncertainty of the result measurement is 8.25×10^{-7} (1GHz ≦ f ≦ 18GHz)

File: 16-05-MAS-002 Dat a #8 **Date: 2016/5/13** **Temperature: 26 ℃**

Time: PM 12:52:43 **Humidity: 60 %**



Condition: **-0.73dBm** **RF Conducted**

EUT: **Sweep Time: 500ms Att.: 20dB**

Model: **RBW: 100 KHz VBW: 300 KHz**

Test Mode:

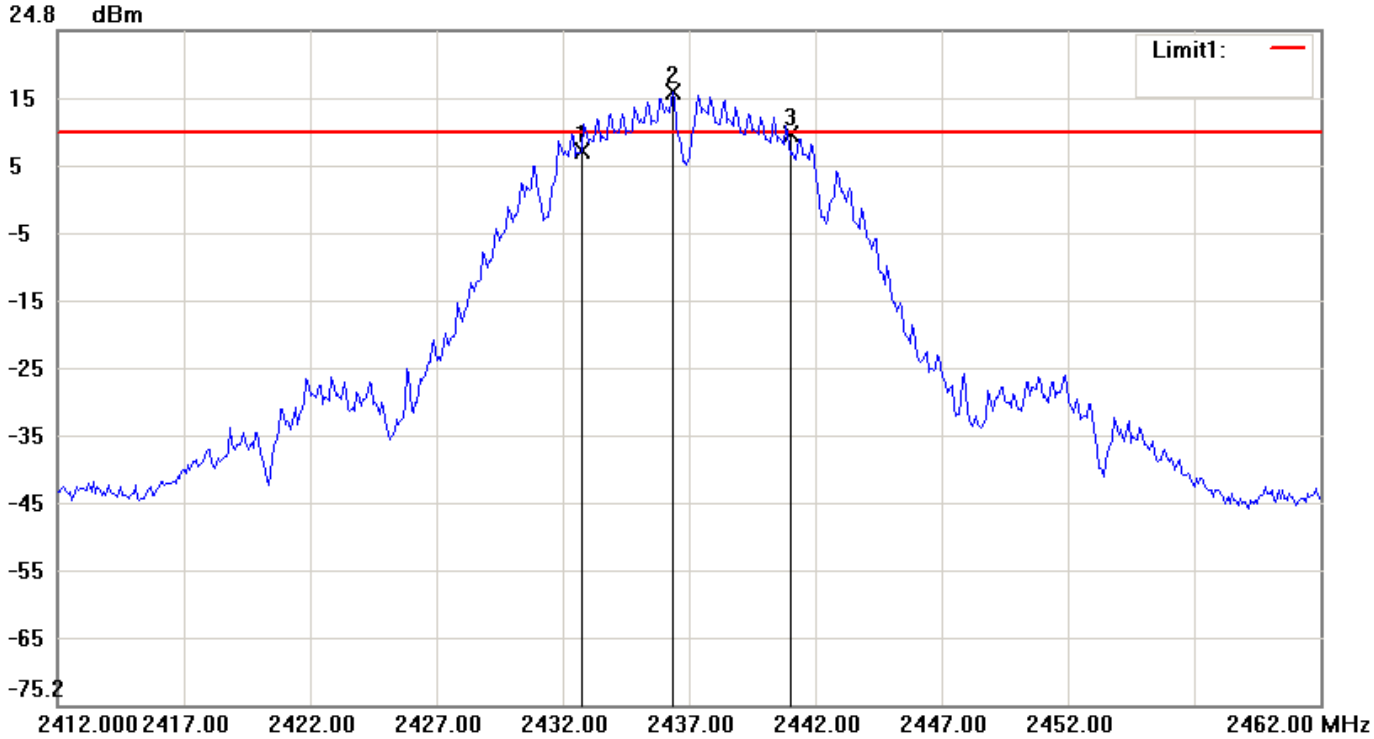
Note: **FCC-802.11b Channel 01-6dB EBW**

No.	Frequency(MHz)	Level(dBm)
1	2407.75000	-3.56
2	2412.33330	5.27
3	2416.00000	-3.96

No.		△Frequency(MHz)	△Level(dB)
1	mk3-mk1	8.25	-0.4

File: **16-05-MAS-002 Data #15** **Date:** **2016/5/13** **Temperature:** **26 ℃**

Time: **PM 01:19:23** **Humidity:** **60 %**



Condition: **9.69dBm**

EUT:

Model:

Test Mode:

Note: **FCC-802.11b Channel 06-6dB EBW**

RF Conducted

Sweep Time: 500ms **Att.: 20dB**

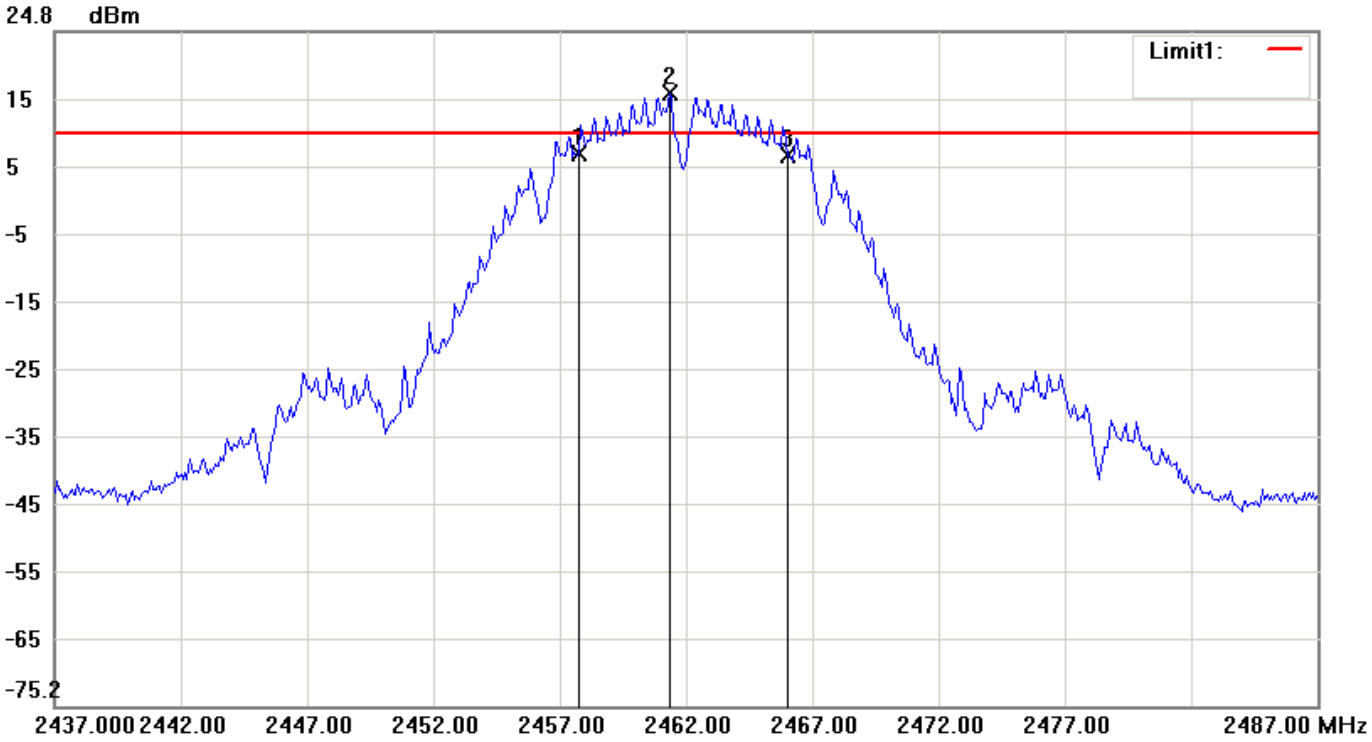
RBW: 100 KHz **VBW: 300 KHz**

No.	Frequency(MHz)	Level(dBm)
1	2432.75000	6.92
2	2436.33330	15.69
3	2440.91670	9.45

No.		△Frequency(MHz)	△Level(dB)
1	mk3-mk1	8.1667	2.53

File: **16-05-MAS-002 Data #19** **Date:** **2016/5/13** **Temperature:** **26 ℃**

Time: **PM 01:30:41** **Humidity:** **60 %**



Condition: **9.64dBm** **RF Conducted**

EUT: **Sweep Time: 500ms** **Att.: 20dB**

Model: **RBW: 100 KHz** **VBW: 300 KHz**

Test Mode:

Note: **FCC-802.11b channel 11-6dB EBW**

No.	Frequency(MHz)	Level(dBm)
1	2457.75000	6.67
2	2461.33330	15.64
3	2466.00000	6.55

No.		△Frequency(MHz)	△Level(dB)
1	mk3-mk1	8.25	-0.12

6.4.2 IEEE 802.11g

Test Date: May 13, 2016 Temperature: 26℃ Humidity: 60%

Channel	6dB Bandwidth (MHz)	FCC Limit (kHz)	Chart
L	15.250	500	Page 25
M	15.583	500	Page 26
H	15.500	500	Page 27

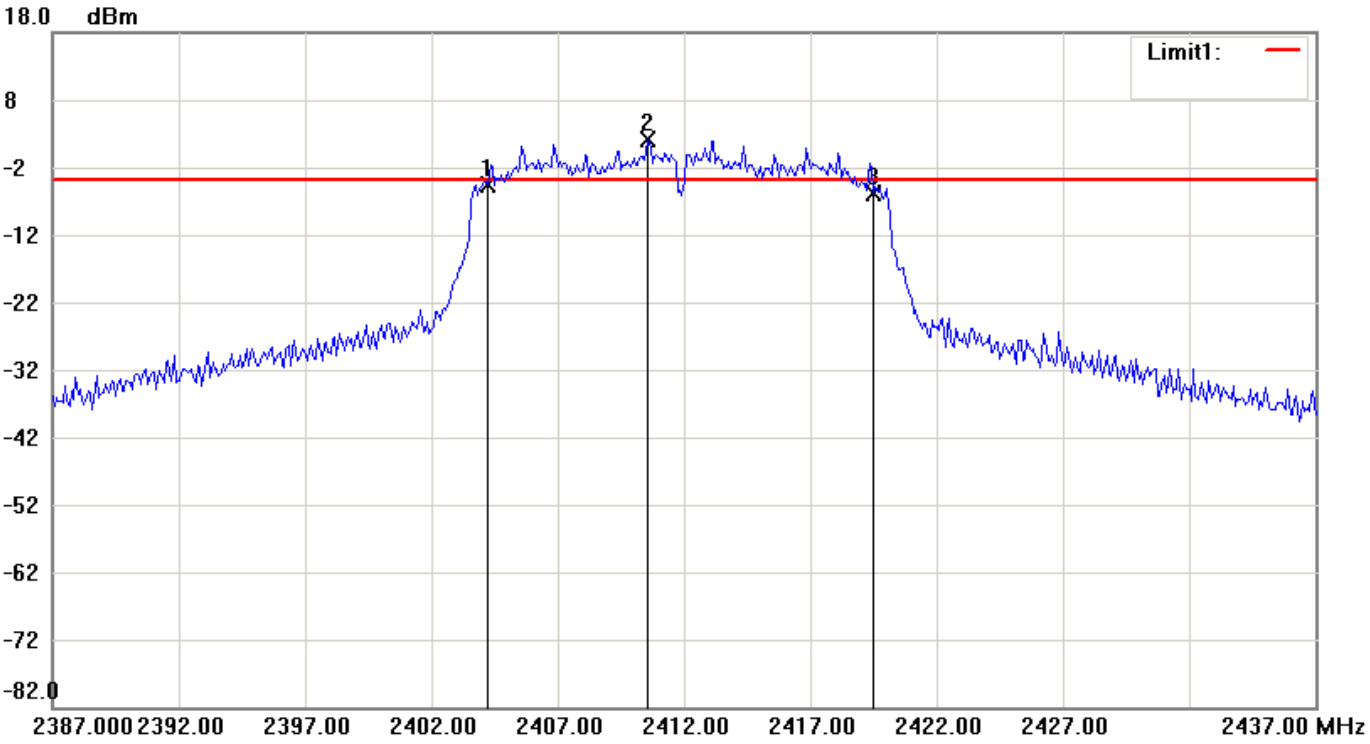
Note:

1. Please refer to page 25 to page 27 for chart

2. The estimated measurement uncertainty of the result measurement is 8.25×10^{-7} *(1GHz≦f≦ 18GHz)*

File: 16-05-MAS-002 Dat a #24 **Date: 2016/5/13** **Temperature: 26 ℃**

Time: PM 01:40:33 **Humidity: 60 %**



Condition: **-3.99dBm** **RF Conducted**

EUT: **Sweep Time: 500ms Att.: 20dB**

Model: **RBW: 100 KHz VBW: 300 KHz**

Test Mode:

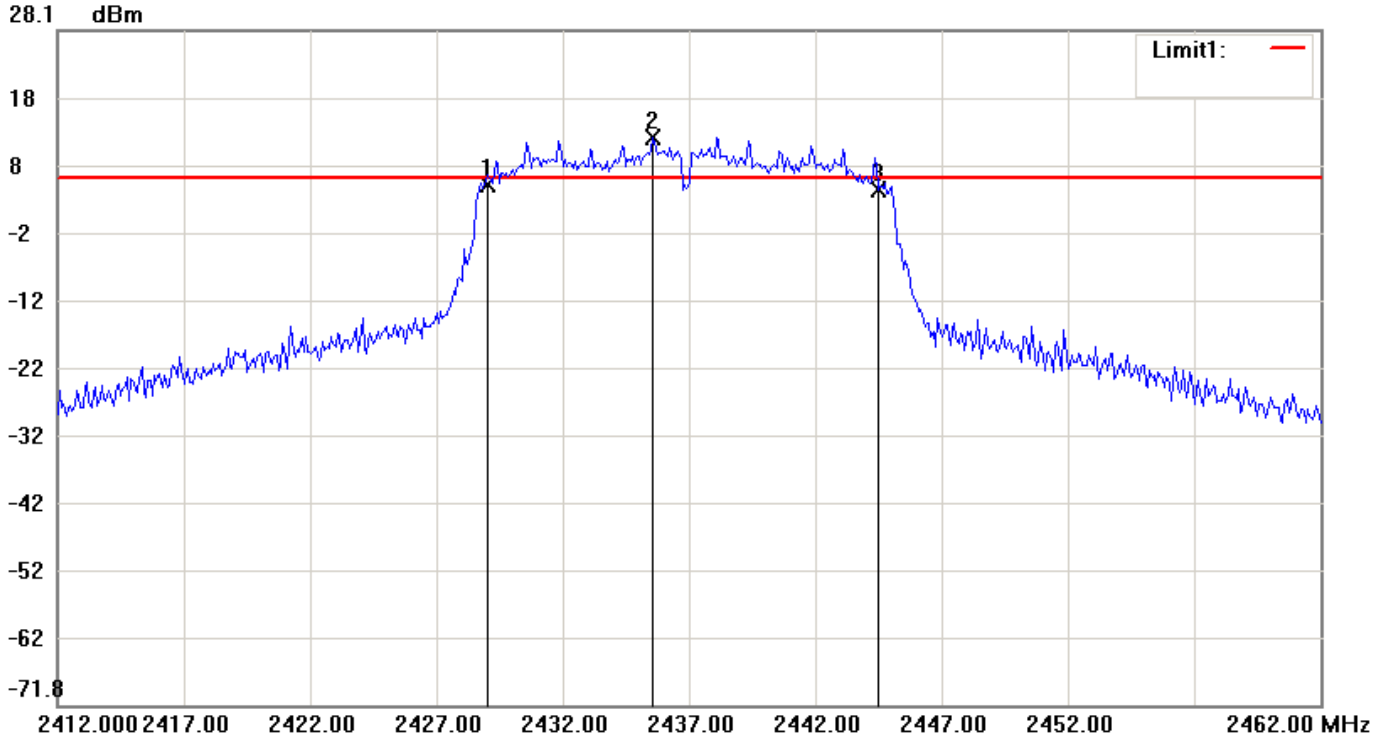
Note: **FCC-802.11g Channel 01-6dB EBW**

No.	Frequency(MHz)	Level(dBm)
1	2404.25000	-4.78
2	2410.58330	2.01
3	2419.50000	-5.93

No.		△Frequency(MHz)	△Level(dB)
1	mk3-mk1	15.25	-1.15

File: 16-05-MAS-002 Dat a #29 **Date:** 2016/5/13 **Temperature:** 26 ℃

Time: PM 01:51:46 **Humidity:** 60 %



Condition: 6.4dBm

EUT:

Model:

Test Mode:

Note: FCC-802.11g Channel 06-6dB EBW

RF Conducted

Sweep Time: 500ms Att.: 20dB

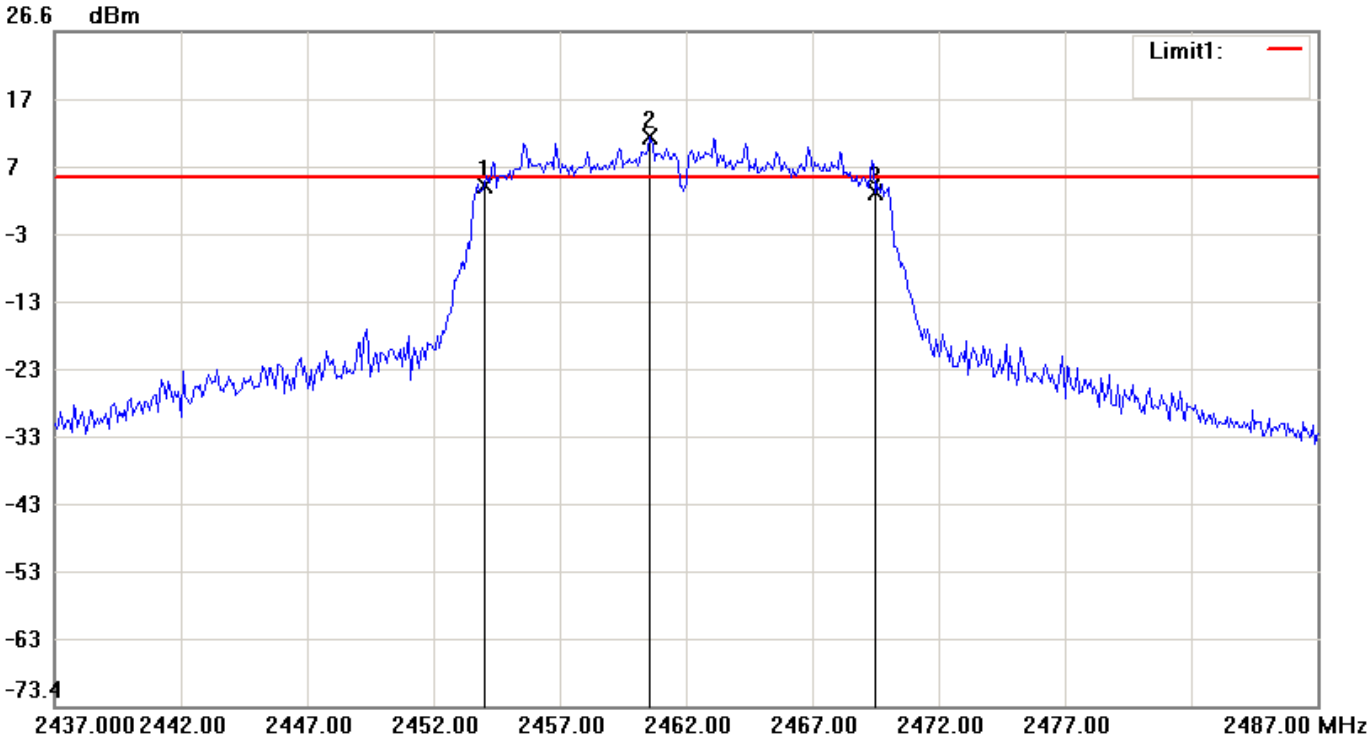
RBW: 100 KHz VBW: 300 KHz

No.	Frequency(MHz)	Level(dBm)
1	2428.91670	5.30
2	2435.58330	12.40
3	2444.50000	4.48

No.		△Frequency(MHz)	△Level(dB)
1	mk3-mk1	15.5833	-0.82

File: **16-05-MAS-002 Data #33** **Date:** **2016/5/13** **Temperature:** **26 ℃**

Time: **PM 02:07:01** **Humidity:** **60 %**



Condition: **4.89dBm** **RF Conducted**

EUT: **Sweep Time: 500ms** **Att.: 20dB**

Model: **RBW: 100 KHz** **VBW: 300 KHz**

Test Mode:

Note: **FCC-802.11g Channel 11-6dB EBW**

No.	Frequency(MHz)	Level(dBm)
1	2454.00000	3.83
2	2460.58330	10.89
3	2469.50000	2.69

No.		△Frequency(MHz)	△Level(dB)
1	mk3-mk1	15.5	-1.14

6.4.3 IEEE 802.11n, HT20

Test Date: May 13, 2016 Temperature: 26℃ Humidity: 60%

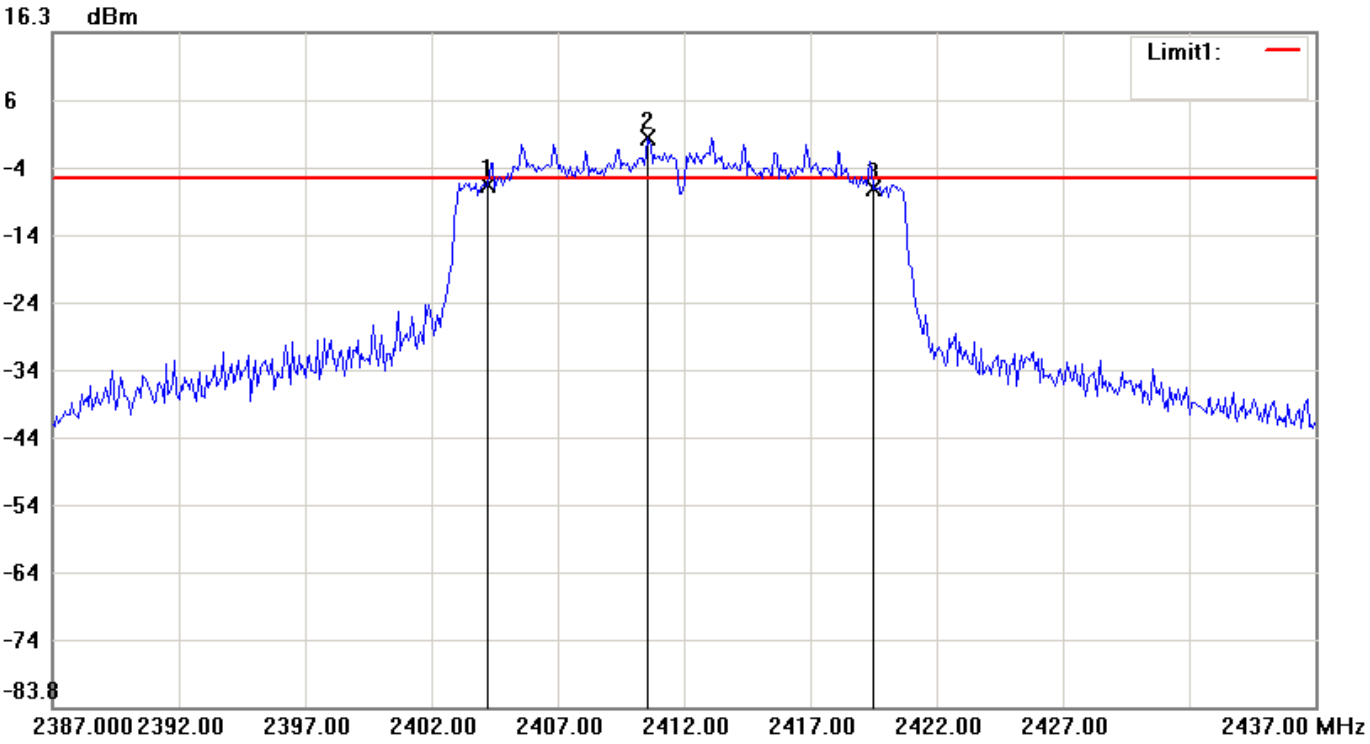
Channel	6dB Bandwidth (MHz)	FCC Limit (kHz)	Chart
L	15.250	500	Page 29
M	15.250	500	Page 30
H	15.250	500	Page 31

Note:

1. Please refer to page 29 to page 31 for chart
2. The estimated measurement uncertainty of the result measurement is 8.25×10^{-7} *(1GHz≦f≦ 18GHz)*

File: 16-05-MAS-002 Dat a #38 **Date: 2016/5/13** **Temperature: 26 ℃**

Time: PM 02:35:58 **Humidity: 60 %**



Condition: **-5.38dBm** **RF Conducted**

EUT: **Sweep Time: 500ms Att.: 20dB**

Model: **RBW: 100 KHz VBW: 300 KHz**

Test Mode:

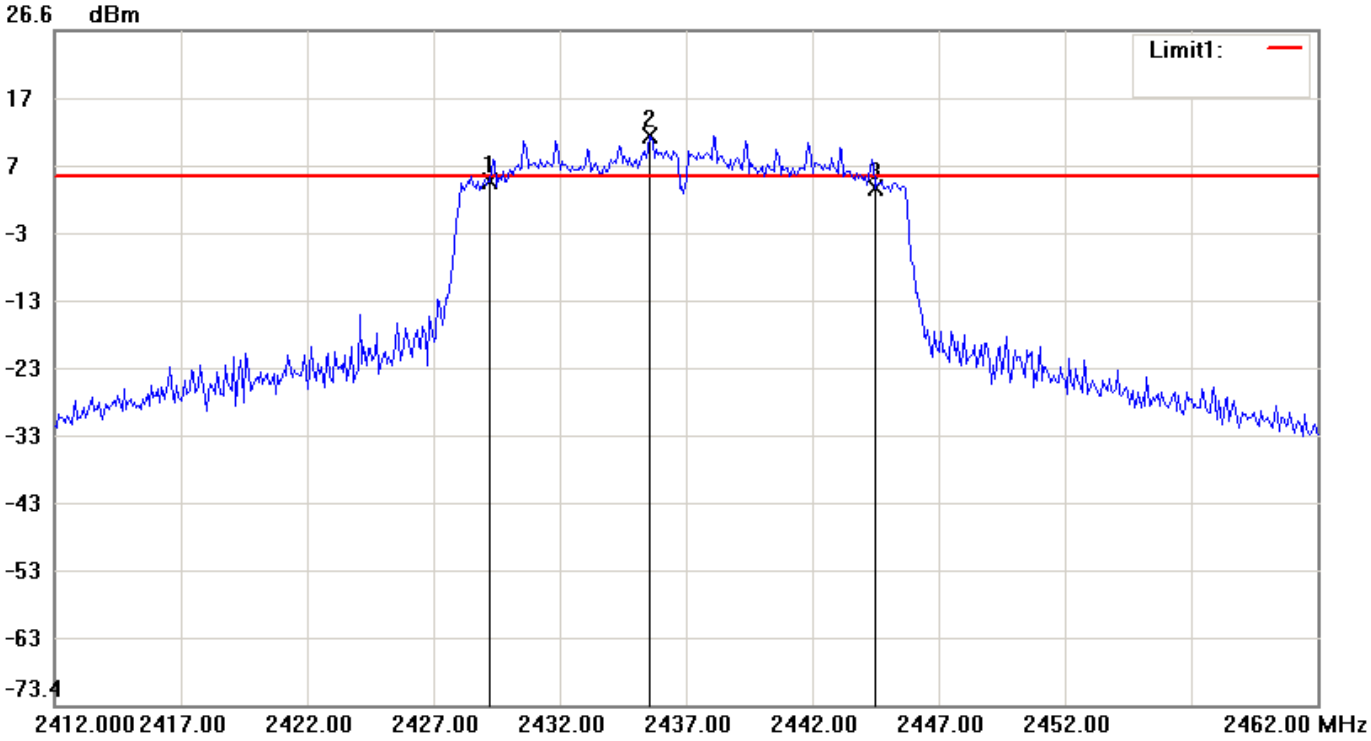
Note: **FCC-802.11gn_HT20 Channel 01-6dB EBW**

No.	Frequency(MHz)	Level(dBm)
1	2404.25000	-6.42
2	2410.58330	0.62
3	2419.50000	-6.96

No.		△Frequency(MHz)	△Level(dB)
1	mk3-mk1	15.25	-0.54

File: **16-05-MAS-002 Data #43** **Date:** **2016/5/13** **Temperature:** **26 ℃**

Time: **PM 03:01:48** **Humidity:** **60 %**



Condition: **4.99dBm** **RF Conducted**

EUT: **Sweep Time: 500ms** **Att.: 20dB**

Model: **RBW: 100 KHz** **VBW: 300 KHz**

Test Mode:

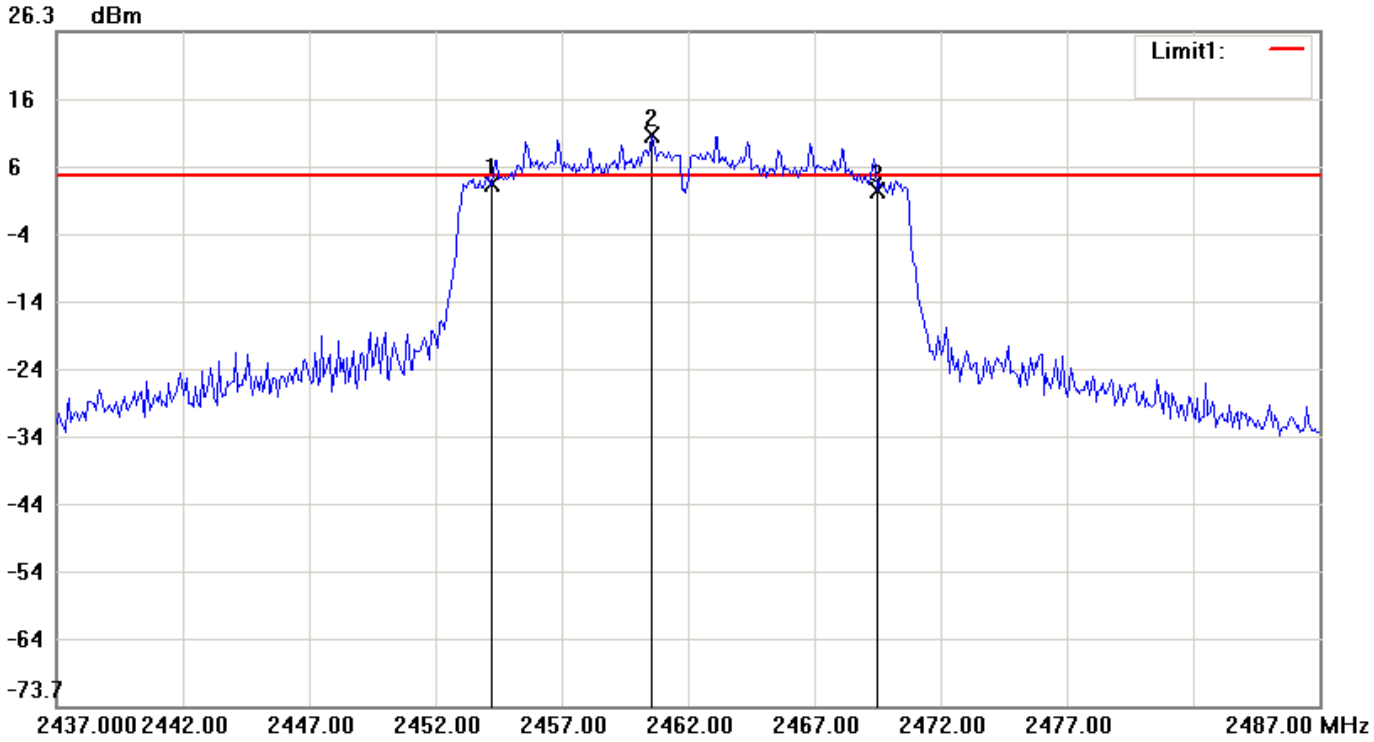
Note: **FCC-802.11gn_HT20 Channel 06-6dB EBW**

No.	Frequency(MHz)	Level(dBm)
1	2429.25000	4.10
2	2435.58330	10.99
3	2444.50000	3.29

No.		△Frequency(MHz)	△Level(dB)
1	mk3-mk1	15.25	-0.81

File: **16-05-MAS-002 Data #47** **Date:** **2016/5/13** **Temperature:** **26 ℃**

Time: **PM 03:14:55** **Humidity:** **60 %**



Condition: **4.9dBm** **RF Conducted**

EUT: **Sweep Time: 500ms** **Att.: 20dB**

Model: **RBW: 100 KHz** **VBW: 300 KHz**

Test Mode:

Note: **FCC-802.11gn_HT20 Channel 11-6dB EBW**

No.	Frequency(MHz)	Level(dBm)
1	2454.25000	3.68
2	2460.58330	10.90
3	2469.50000	2.75

No.		△Frequency(MHz)	△Level(dB)
1	mk3-mk1	15.25	-0.93

7 OUTPUT POWER MEASUREMENT

7.1 Standard Applicable

For direct sequence system, according to 15.247(b), the maximum peak output power of the transmitter shall not exceed 1 Watt. If transmitting antennas of directional gain greater than 6 dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

7.2 Measurement Procedure

1. The testing follows FCC KDB 558074 D01 v03r05.
2. The test is performed in accordance with FCC KDB Publication No. 558074: Guidance on Measurements for Digital Transmission Systems (47 CFR 15.247)
3. Position the EUT as shown in figure 2.

7.3 Measurement Equipment

Equipment	Manufacturer	Model No.
Power Meter	Agilent	N1912A
Wideband Power Sensor	Agilent	N1922A

7.4 Measurement Data

7.4.1 IEEE 802.11b

Test Date: May 13, 2016 Temperature: 26℃ Humidity: 60%

Channel	Maximum Peak Output Power (dBm)	FCC Limit (dBm)	Chart
L	15.92	30.0	-
M	15.84	30.0	-
H	15.83	30.0	-

Note:

The estimated measurement uncertainty of the result measurement is ±1.5dB(1GHz≦f≦18GHz)

7.4.2 IEEE 802.11g

Test Date: May 13, 2016 Temperature: 26℃ Humidity: 60%

Channel	Maximum Peak Output Power (dBm)	FCC Limit (dBm)	Chart
L	21.05	30.0	-
M	20.87	30.0	-
H	20.42	30.0	-

Note:

The estimated measurement uncertainty of the result measurement is ±1.5dB(1GHz≦f≦18GHz)

7.4.3 IEEE 802.11n, HT20

Test Date: May 13, 2016 Temperature: 26℃ Humidity: 60%

Channel	Maximum Peak Output Power (dBm)	FCC Limit (dBm)	Chart
L	20.69	30.0	-
M	20.69	30.0	-
H	20.44	30.0	-

Note:

The estimated measurement uncertainty of the result measurement is ±1.5dB(1GHz≦f≦18GHz)

8 POWER DENSITY MEASUREMENT

8.1 Standard Applicable

According to 15.247(e), for direct sequence systems, the transmitted power density averaged over any 1 second interval shall not be greater than 8 dBm in any 3 kHz bandwidth within these bands.

8.2 Measurement Procedure

1. The testing follows FCC KDB 558074 D01 v03r05.
2. Check the calibration of the measuring instrument using either an internal calibrator or a known sinal from an external generator.
3. Position the EUT as shown in figure 2. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set EUT to any one measured frequency within its operating range and make sure the instrument is operated in its linear range.
4. Adjust the center frequency of spectrum analyzer on highest level appearing on spectral display within a 300 kHz frequency span.
5. Set the spectrum analyzer on a 3 kHz resolution bandwidth and 10 kHz video bandwidth as well as max. hold function, then record the measurement result.
6. Repeat above procedures until all measured frequencies were complete.

8.3 Measurement Equipment

Equipment	Manufacturer	Model No.
Spectrum Analyzer	Agilent	E4446A

8.4 Measurement Data

8.4.1 IEEE 802.11b

Test Date: May 13, 2016 Temperature: 26℃ Humidity: 60%

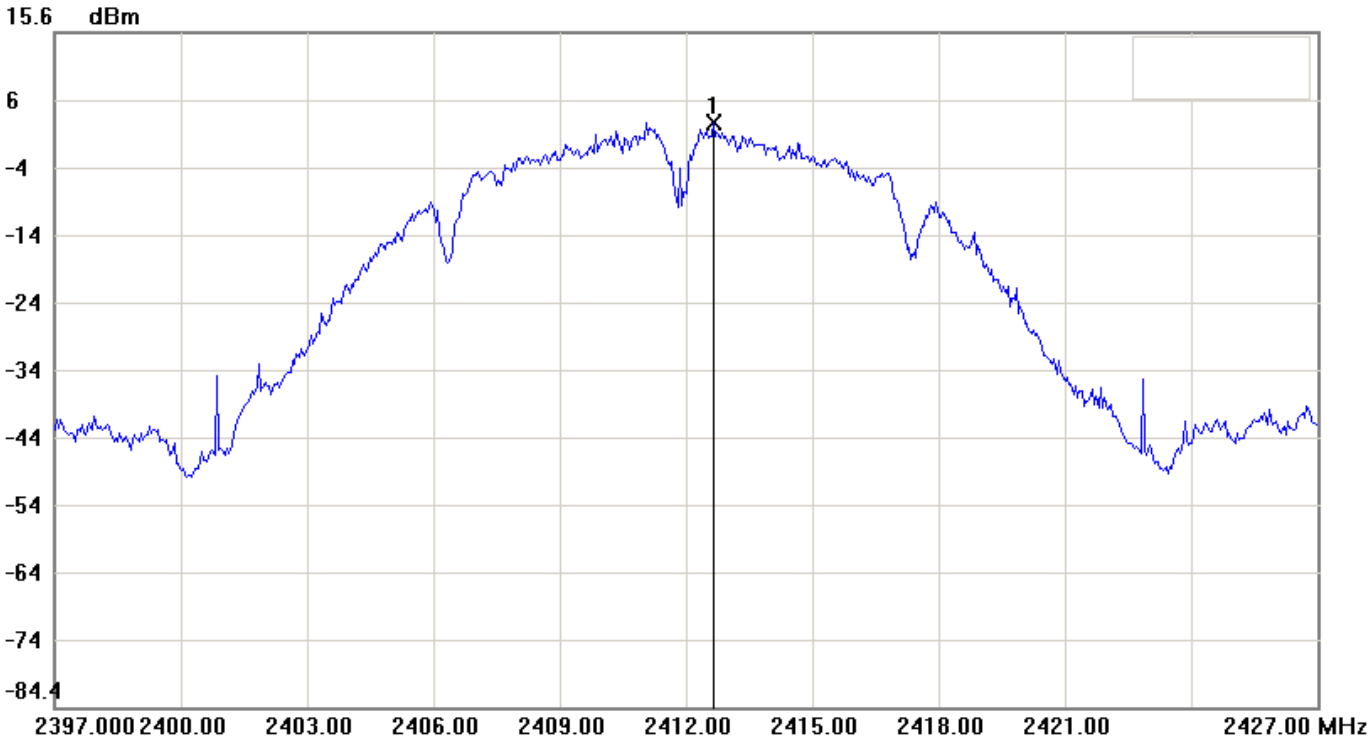
Channel	Peak Power Spectral Density (dBm)	FCC Limit (dBm)	Chart
L	2.24	8	Page 38
M	2.37	8	Page 39
H	1.35	8	Page 40

Note:

1. *Please refer to page 38 to page 40 for chart*
2. *The estimated measurement uncertainty of the result measurement is ±1.5dB(1GHz≦f≦ 18GHz)*

File: 16-05-MAS-002 Dat a #13 **Date: 2016/5/13** **Temperature: 26 ℃**

Time: PM 01:04:31 **Humidity: 60 %**



Condition: **RF Conducted**

EUT: **Sweep Time: 3163.2ms Att.: 10dB**

Model: **RBW: 3 KHz VBW: 10 KHz**

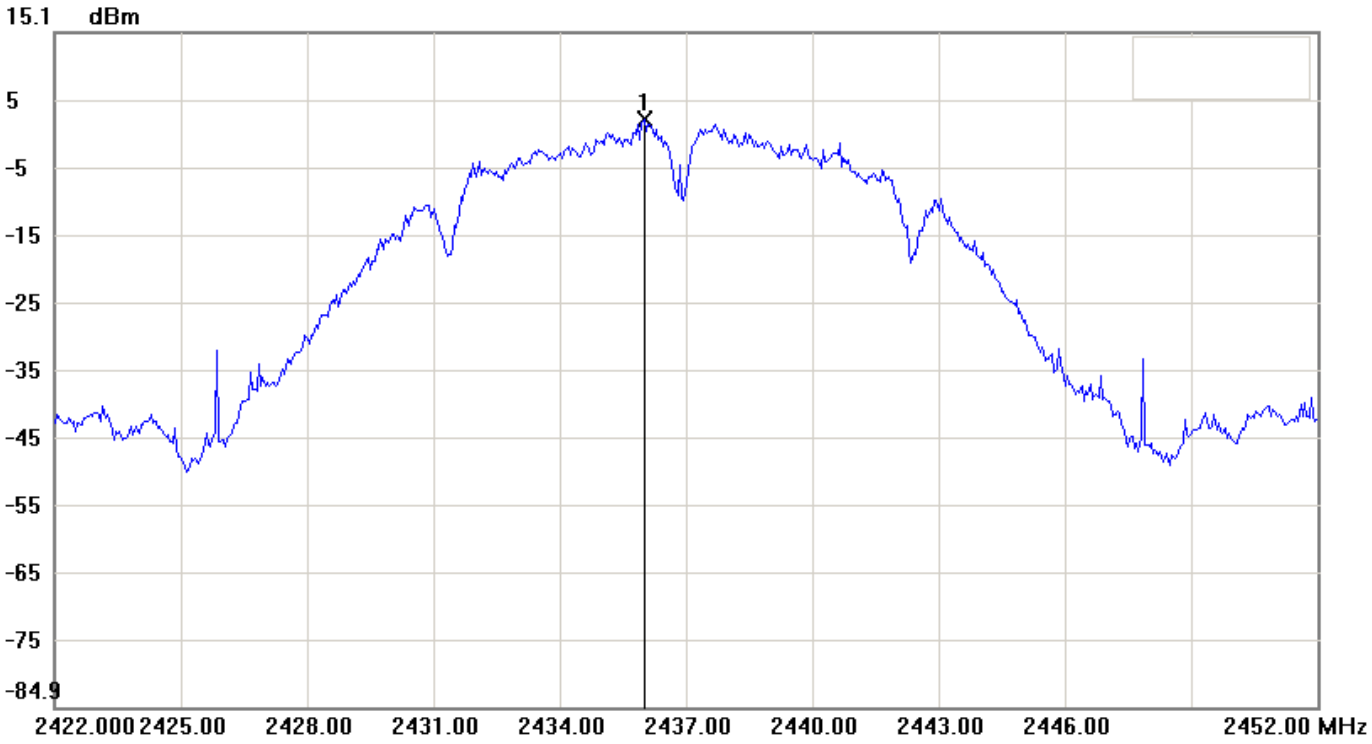
Test Mode:

Note: **FCC-802.11b Channel 01-Power Density (PK)**

No.	Frequency(MHz)	Level(dBm)
1	2412.65000	2.24

File: 16-05-MAS-002 Dat a #18 **Date: 2016/5/13** **Temperature: 26 ℃**

Time: PM 01:25:45 **Humidity: 60 %**



Condition: **RF Conducted**

EUT: **Sweep Time: 3163.2ms Att.: 10dB**

Model: **RBW: 3 KHz VBW: 10 KHz**

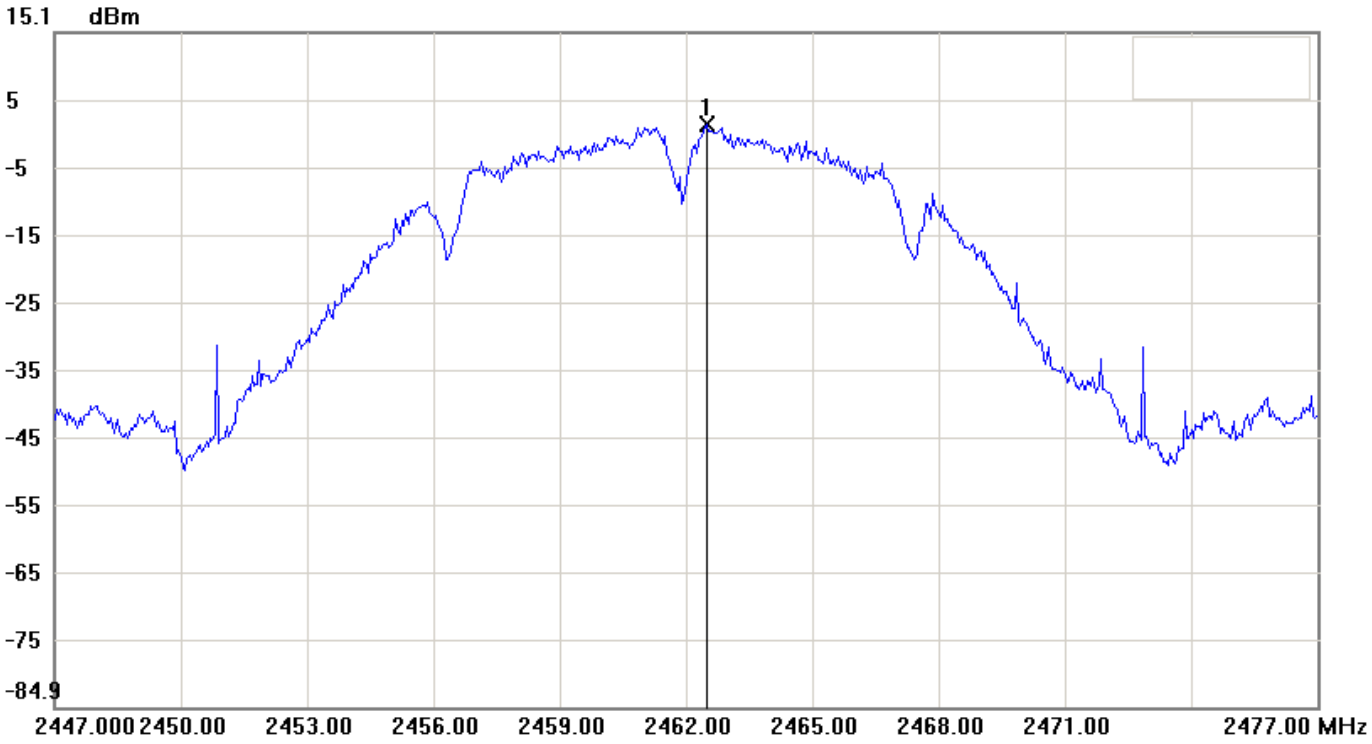
Test Mode:

Note: **FCC-802.11b Channel 06-Power Density (PK)**

No.	Frequency(MHz)	Level(dBm)
1	2436.00000	2.37

File: 16-05-MAS-002 Data #22 **Date: 2016/5/13** **Temperature: 26 ℃**

Time: PM 01:36:43 **Humidity: 60 %**



Condition: **RF Conducted**

EUT: **Sweep Time: 3163.2ms Att.: 10dB**

Model: **RBW: 3 KHz VBW: 10 KHz**

Test Mode:

Note: **FCC-802.11b Channel 11-Power Density (PK)**

No.	Frequency(MHz)	Level(dBm)
1	2462.50000	1.35

8.4.2 IEEE 802.11g

Test Date: May 13, 2016 Temperature: 26℃ Humidity: 60%

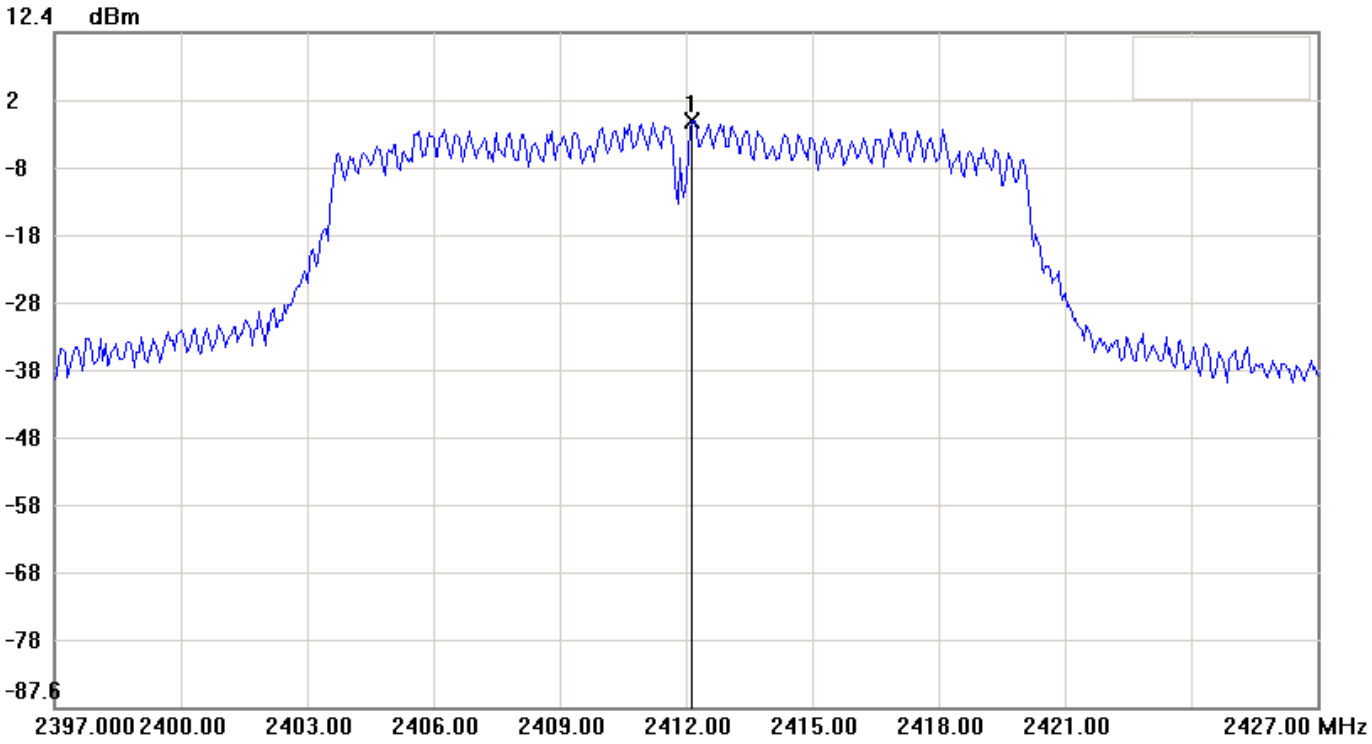
Channel	Peak Power Spectral Density (dBm)	FCC Limit (dBm)	Chart
L	-0.83	8	Page 42
M	-0.27	8	Page 43
H	-1.95	8	Page 44

Note:

1. *Please refer to page 42 to page 44 for chart*
2. *The estimated measurement uncertainty of the result measurement is ±1.5dB(1GHz≦f≦ 18GHz)*

File: 16-05-MAS-002 Data #27 **Date: 2016/5/13** **Temperature: 26 ℃**

Time: PM 01:47:47 **Humidity: 60 %**



Condition: **RF Conducted**

EUT: **Sweep Time: 3163.2ms Att.: 10dB**

Model: **RBW: 3 KHz VBW: 10 KHz**

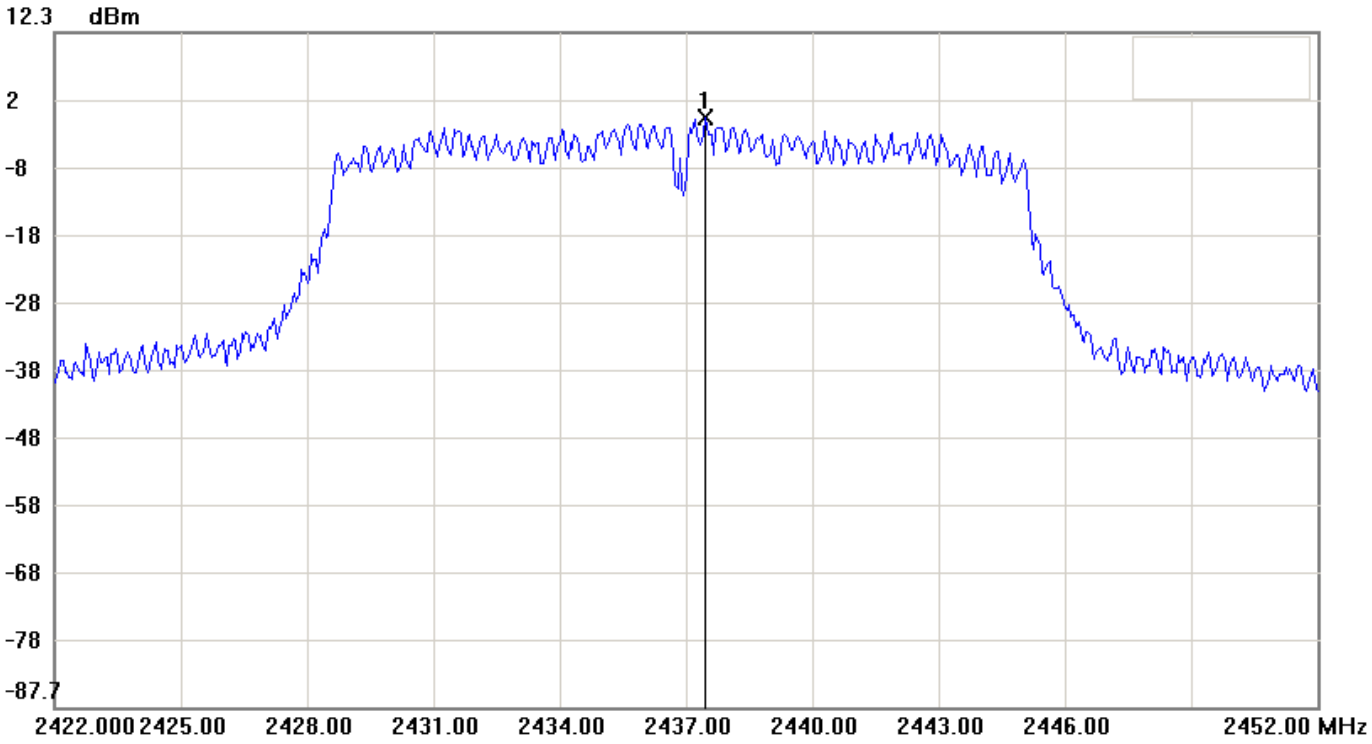
Test Mode:

Note: **FCC-802.11g Channel 01-Power Density (PK)**

No.	Frequency(MHz)	Level(dBm)
1	2412.15000	-0.83

File: 16-05-MAS-002 Data #32 **Date: 2016/5/13** **Temperature: 26 ℃**

Time: PM 02:00:20 **Humidity: 60 %**



Condition: **RF Conducted**

EUT: **Sweep Time: 3163.2ms Att.: 10dB**

Model: **RBW: 3 KHz VBW: 10 KHz**

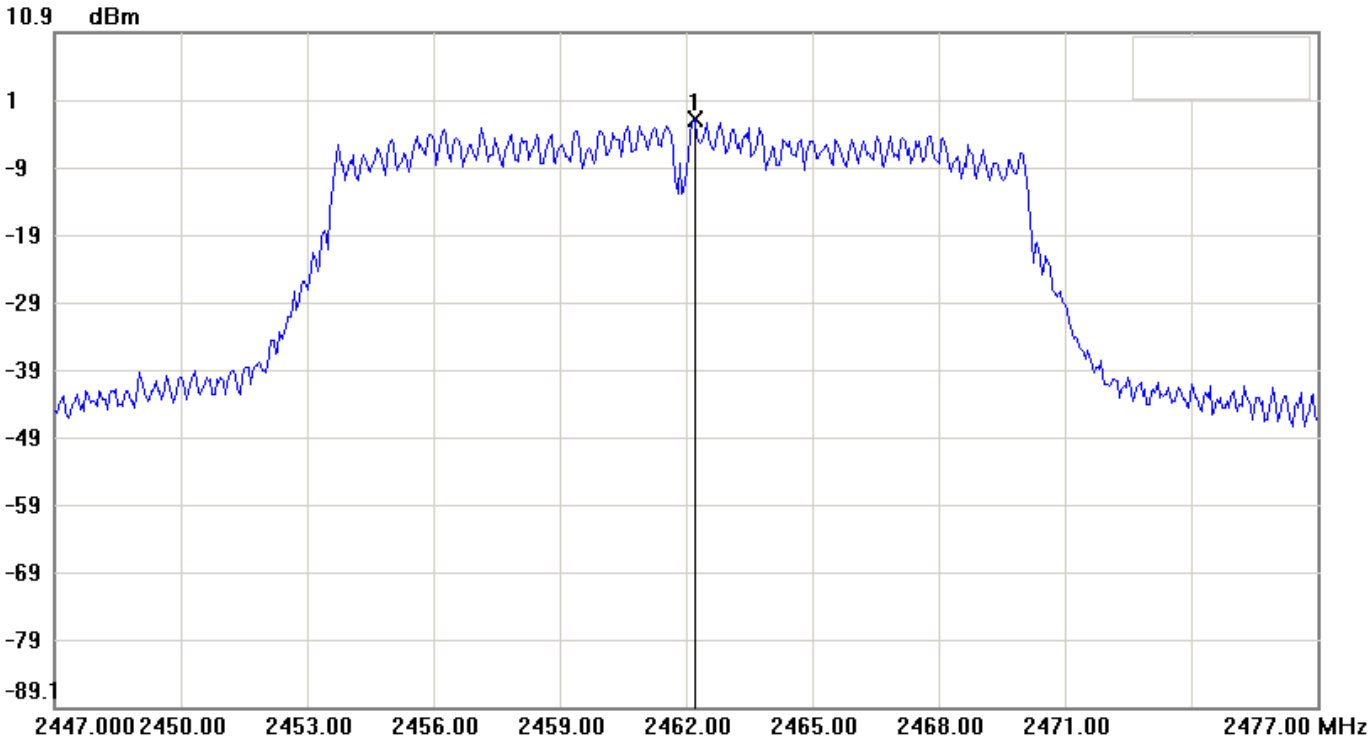
Test Mode:

Note: **FCC-802.11g Channel 06-Power Density (PK)**

No.	Frequency(MHz)	Level(dBm)
1	2437.45000	-0.27

File: 16-05-MAS-002 Data #36 **Date: 2016/5/13** **Temperature: 26 ℃**

Time: PM 02:12:48 **Humidity: 60 %**



Condition: **RF Conducted**

EUT: **Sweep Time: 3163.2ms Att.: 10dB**

Model: **RBW: 3 KHz VBW: 10 KHz**

Test Mode:

Note: **FCC-802.11g Channel 11-Power Density (PK)**

No.	Frequency(MHz)	Level(dBm)
1	2462.20000	-1.95

8.4.3 IEEE 802.11n, HT20

Test Date: May 13, 2016 Temperature: 26℃ Humidity: 60%

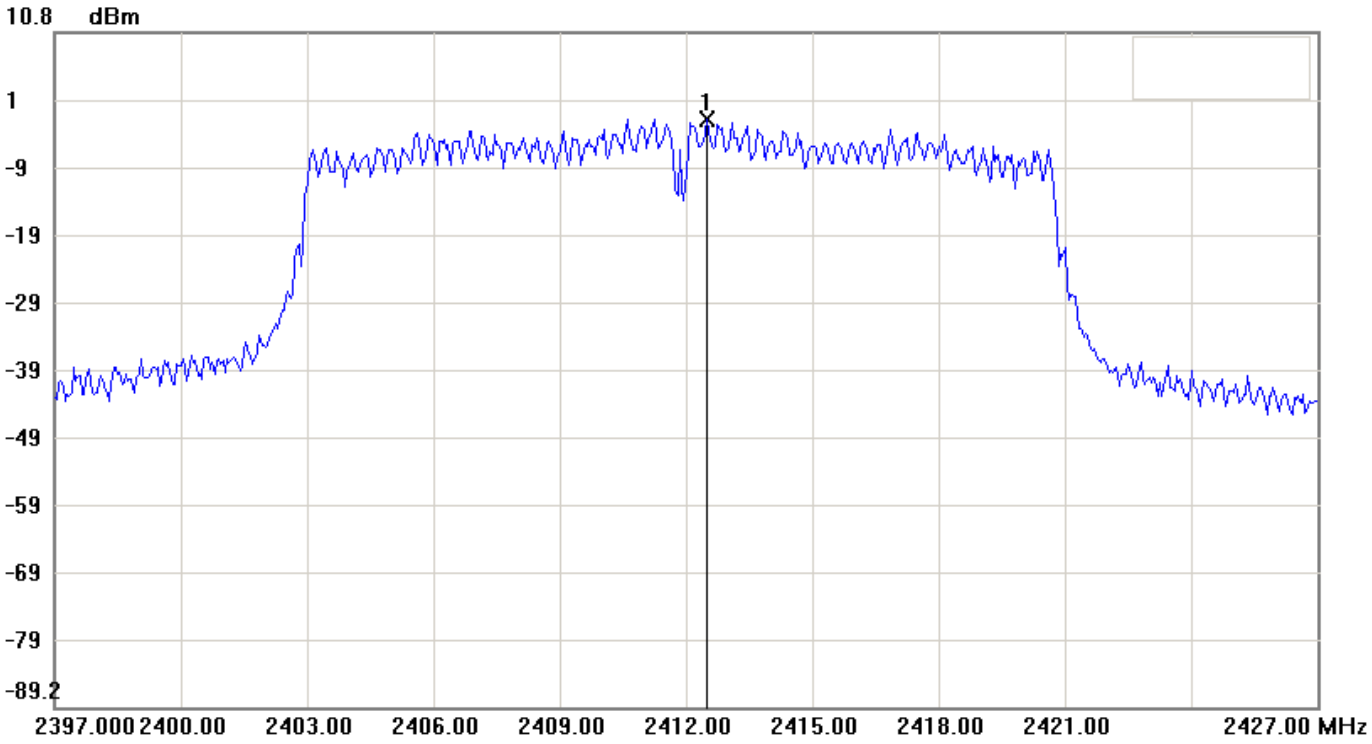
Channel	Peak Power Spectral Density (dBm)	FCC Limit (dBm)	Chart
L	-1.96	8	Page 46
M	-2.18	8	Page 47
H	-2.64	8	Page 48

Note:

1. *Please refer to page 46 to page 48 for chart*
2. *The estimated measurement uncertainty of the result measurement is ±1.5dB(1GHz≦f≦ 18GHz)*

File: 16-05-MAS-002 Dat a #41 **Date: 2016/5/13** **Temperature: 26 ℃**

Time: PM 02:58:31 **Humidity: 60 %**



Condition: **RF Conducted**

EUT: **Sweep Time: 3163.2ms Att.: 10dB**

Model: **RBW: 3 KHz VBW: 10 KHz**

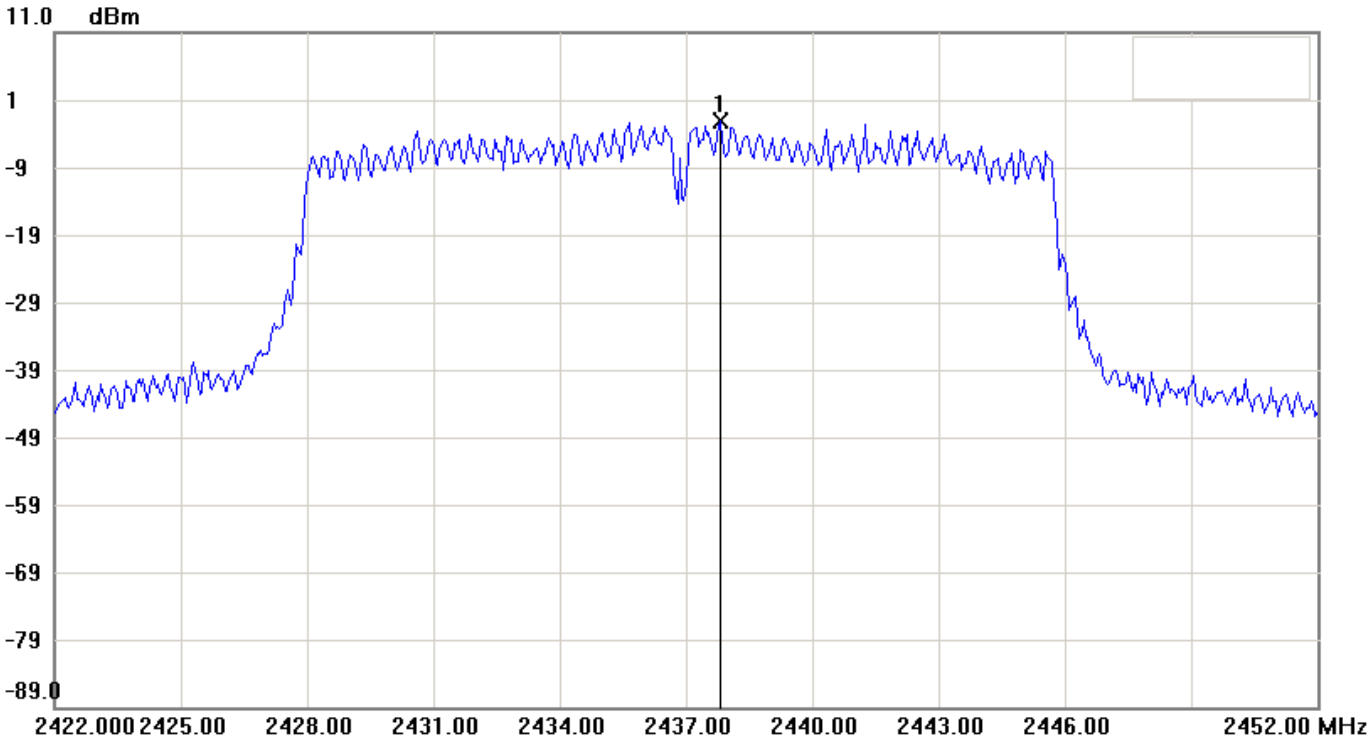
Test Mode:

Note: **FCC-802.11gn_HT20 Channel 01-Power Density (PK)**

No.	Frequency(MHz)	Level(dBm)
1	2412.50000	-1.96

File: 16-05-MAS-002 Dat a #46 **Date: 2016/5/13** **Temperature: 26 ℃**

Time: PM 03:11:08 **Humidity: 60 %**



Condition: **RF Conducted**

EUT: **Sweep Time: 3163.2ms Att.: 10dB**

Model: **RBW: 3 KHz VBW: 10 KHz**

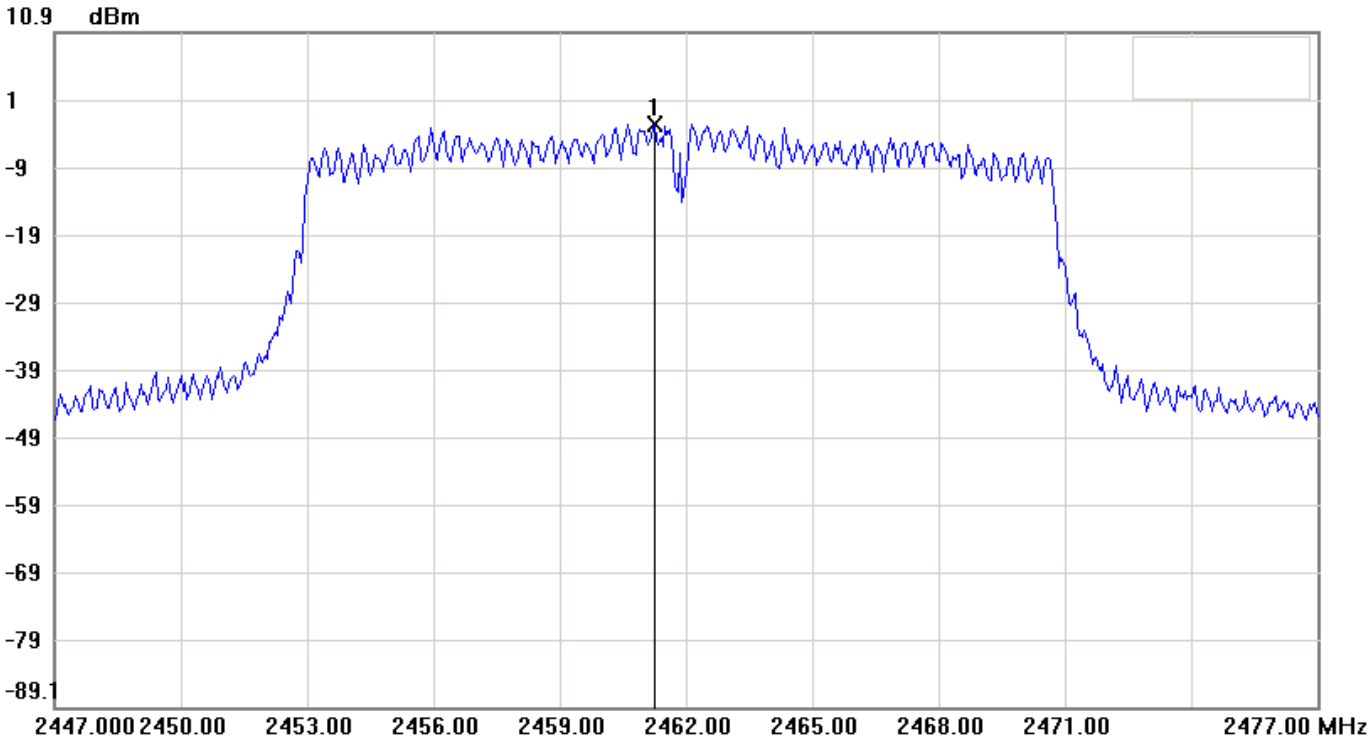
Test Mode:

Note: **FCC-802.11gn_HT20 Channel 06-Power Density (PK)**

No.	Frequency(MHz)	Level(dBm)
1	2437.80000	-2.18

File: 16-05-MAS-002 Dat a #50 **Date: 2016/5/13** **Temperature: 26 ℃**

Time: PM 03:20:53 **Humidity: 60 %**



Condition: **RF Conducted**

EUT: **Sweep Time: 3163.2ms Att.: 10dB**

Model: **RBW: 3 KHz VBW: 10 KHz**

Test Mode:

Note: **FCC-802.11gn_HT20 Channel 11-Power Density (PK)**

No.	Frequency(MHz)	Level(dBm)
1	2461.25000	-2.64

9 SPURIOUS EMISSION - RF CONDUCTED MEASUREMENT

9.1 Standard Applicable

According to 12.247 (d) , in any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated 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. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

9.2 Measurement Procedure

1. The testing follows FCC KDB 558074 D01 v03r05.
2. Check the calibration of the measuring instrument using either an internal calibrator or a known sinal from an external generator.
3. Position the EUT as shown in figure 2. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range and make sure the instrument is operated in its linear range.
4. Set both RBW and VBW of spectrum analyzer to 100 kHz with a convenient frequency span including 100kHz bandwidth from band edge.
5. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
6. Repeat above procedures until all measured frequencies were complete.

9.3 Measurement Equipment

Equipment	Manufacturer	Model No.
Spectrum Analyzer	Agilent	E4446A

9.4 Measurement Data

9.4.1 IEEE 802.11b

Test Date: May 13, 2016 Temperature: 26℃ Humidity: 60%

Channel	Frequency(MHz)	Chart
1	2412	Page 51, Page 53
6	2437	Page 54
11	2462	Page 52, Page 55

Frequency Band: 2400 MHz ~ 2483.5 MHz
All out-of –band conducted emissions were more than 20dB below the carrier.

Note: 1. Please refer to page 51 to page 55 for chart
2. An external attenuator is used as part of the test system for these measurements, the attenuation introduced by the external attenuator has not been explicitly compensated in the measured power level as it is irrelevant to these specific measurement results.

9.4.2 IEEE 802.11g

Channel	Frequency(MHz)	Chart
1	2412	Page 56, Page 58
6	2437	Page 59
11	2462	Page 57, Page 60

Frequency Band: 2400 MHz ~ 2483.5 MHz
All out-of –band conducted emissions were more than 20dB below the carrier.

Note: 1. Please refer to page 56 to page 60 for chart
2. An external attenuator is used as part of the test system for these measurements, the attenuation introduced by the external attenuator has not been explicitly compensated in the measured power level as it is irrelevant to these specific measurement results.

9.4.3 IEEE 802.11n, HT20

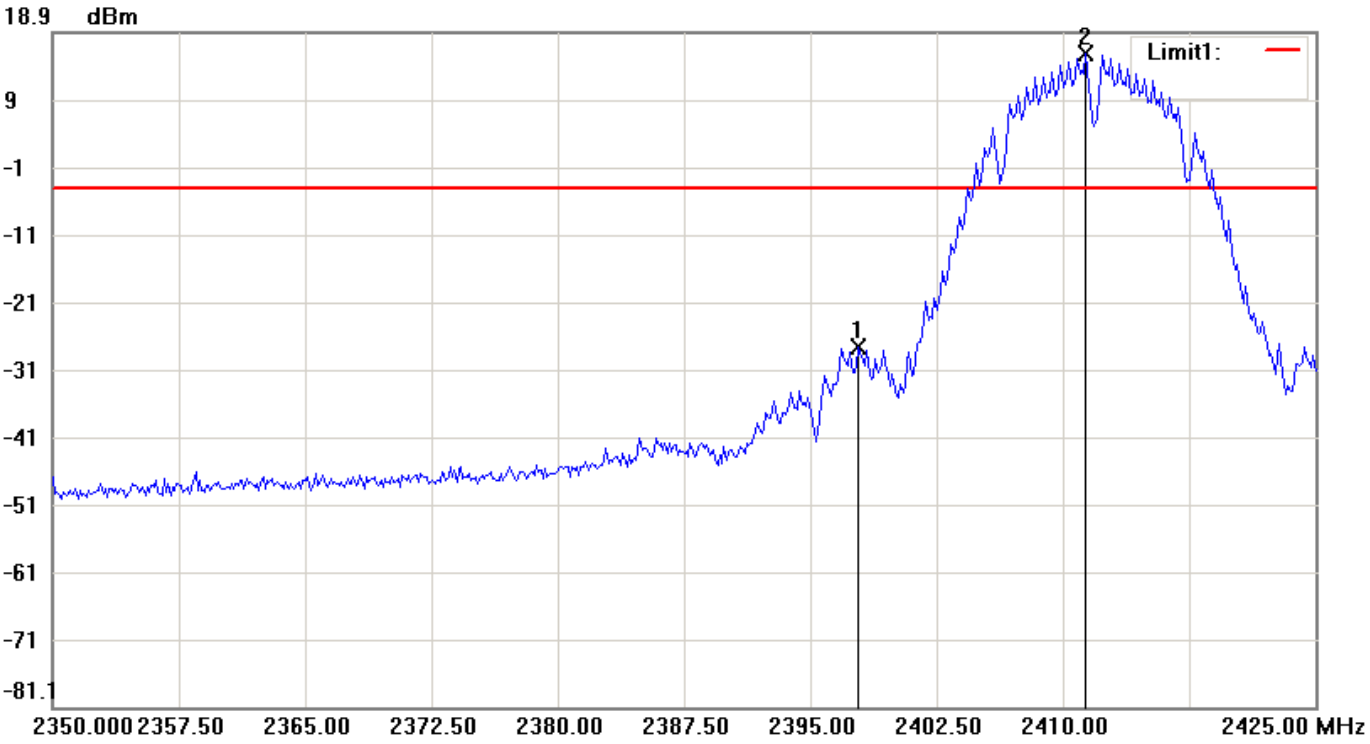
Channel	Frequency(MHz)	Chart
1	2412	Page 61 Page 63
6	2437	Page 64
11	2462	Page 62, Page 65

Frequency Band: 2400 MHz ~ 2483.5 MHz
All out-of –band conducted emissions were more than 20dB below the carrier.

Note: 1. Please refer to page 61 to page 65 for chart
2. An external attenuator is used as part of the test system for these measurements, the attenuation introduced by the external attenuator has not been explicitly compensated in the measured power level as it is irrelevant to these specific measurement results.

File: 16-05-MAS-002 Dat a #14 **Date: 2016/5/13** **Temperature: 26 ℃**

Time: PM 01:05:15 **Humidity: 60 %**



Condition: **-4.33dBm** **RF Conducted**

EUT: **Sweep Time: 500ms Att.: 10dB**

Model: **RBW: 100 KHz VBW: 300 KHz**

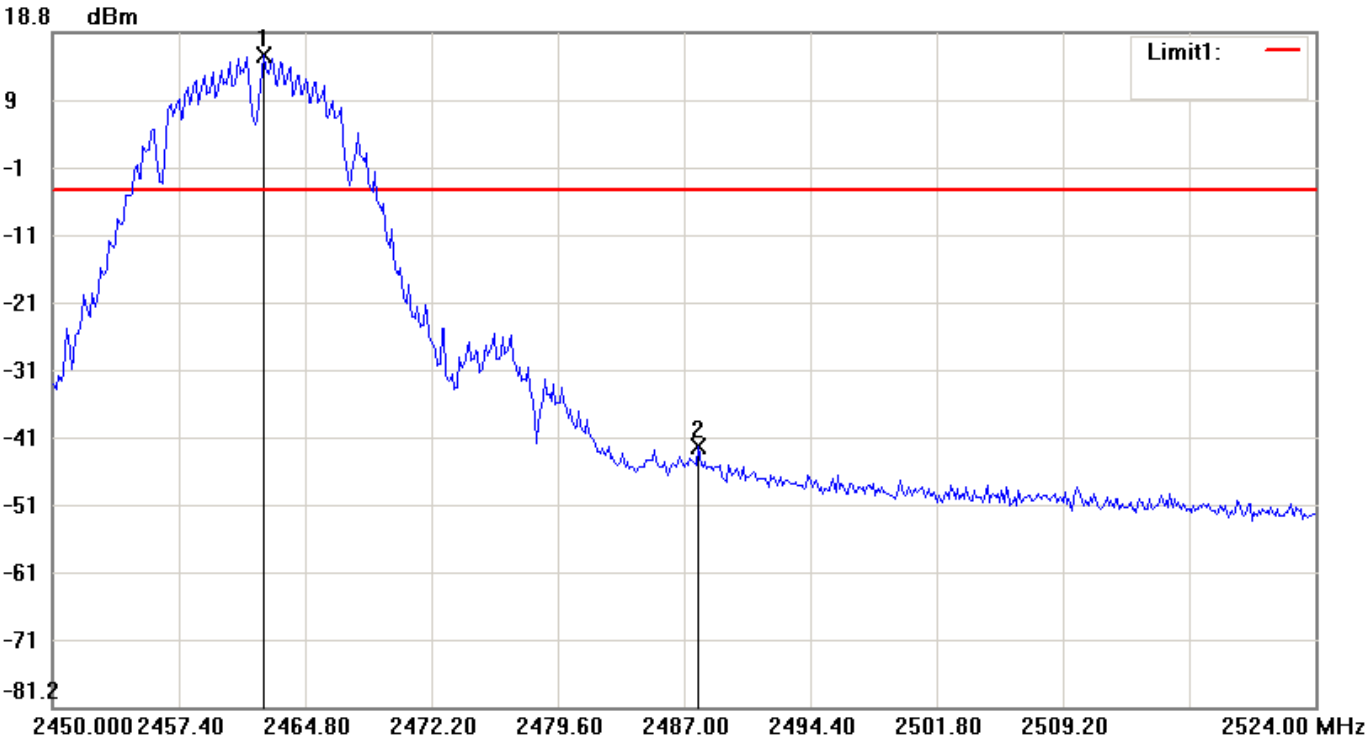
Test Mode:

Note: **FCC-802.11b Channel 01-Bandedge**

No.	Frequency(MHz)	Level(dBm)
1	2397.87500	-27.72
2	2411.37500	15.67

File: 16-05-MAS-002 Dat a #23 **Date: 2016/5/13** **Temperature: 26 ℃**

Time: PM 01:37:31 **Humidity: 60 %**



Condition: **-4.65dBm** **RF Conducted**

EUT: **Sweep Time: 500ms Att.: 10dB**

Model: **RBW: 100 KHz VBW: 300 KHz**

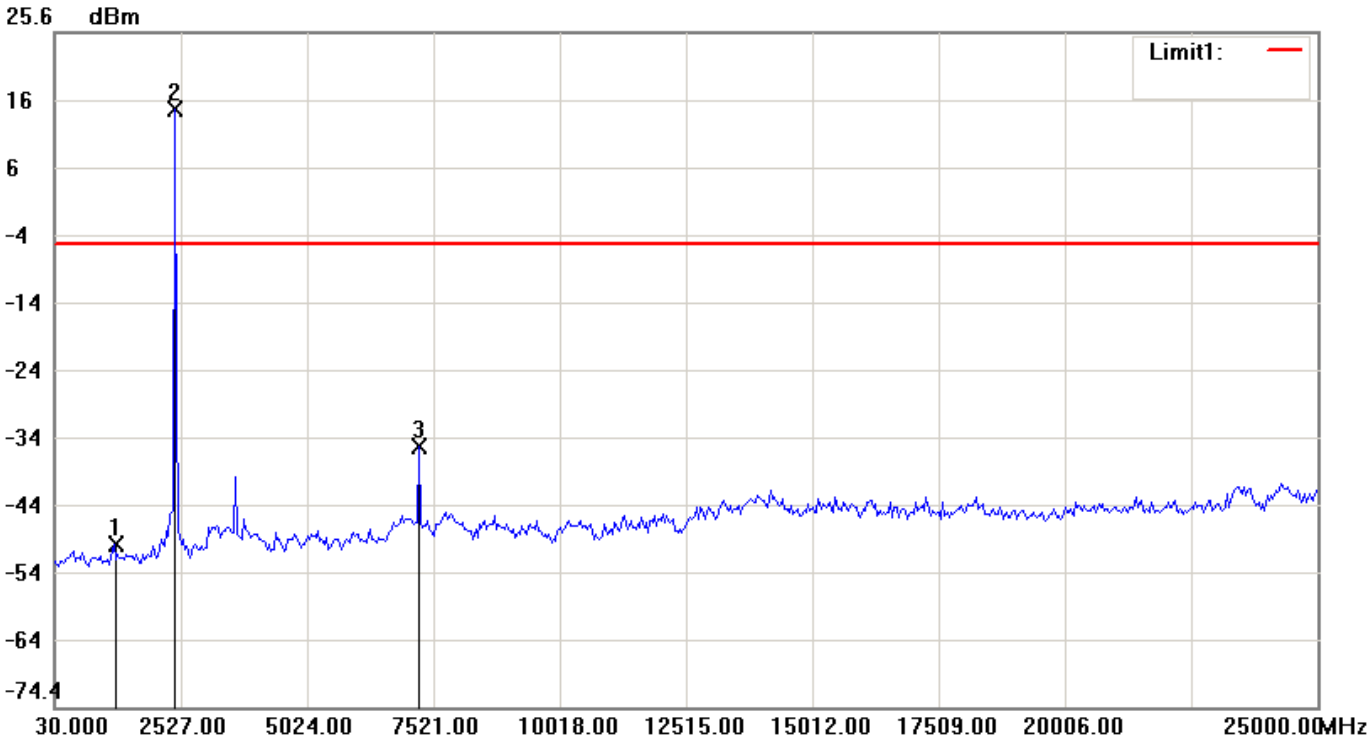
Test Mode:

Note: **FCC-802.11b Channel 11-Bandedge**

No.	Frequency(MHz)	Level(dBm)
1	2462.33330	15.35
2	2487.86330	-42.51

File: 16-05-MAS-002 Dat a #9 **Date: 2016/5/13** **Temperature: 26 ℃**

Time: PM 12:53:58 **Humidity: 60 %**



Condition: **-5.9dBm** **RF Conducted**

EUT: **Sweep Time: 2386.4ms Att.: 20dB**

Model: **RBW: 100 KHz VBW: 300 KHz**

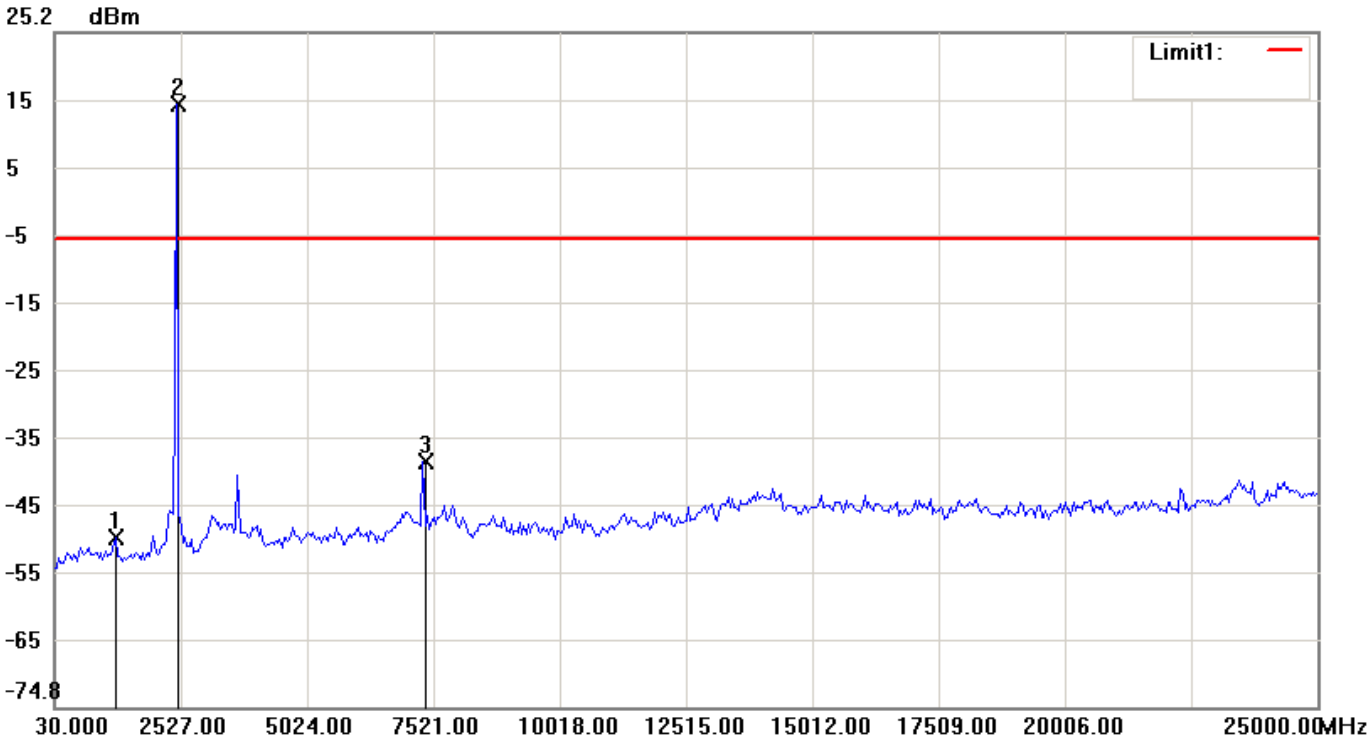
Test Mode:

Note: **FCC-802.11b Channel 01-Conducted Spurious**

No.	Frequency(MHz)	Level(dBm)
1	1195.26670	-50.37
2	2402.15000	14.10
3	7229.68330	-35.76

File: 16-05-MAS-002 Dat a #16 **Date: 2016/5/13** **Temperature: 26 ℃**

Time: PM 01:21:14 **Humidity: 60 %**



Condition: **-5.37dBm** **RF Conducted**

EUT: **Sweep Time: 2386.4ms Att.: 20dB**

Model: **RBW: 100 KHz VBW: 300 KHz**

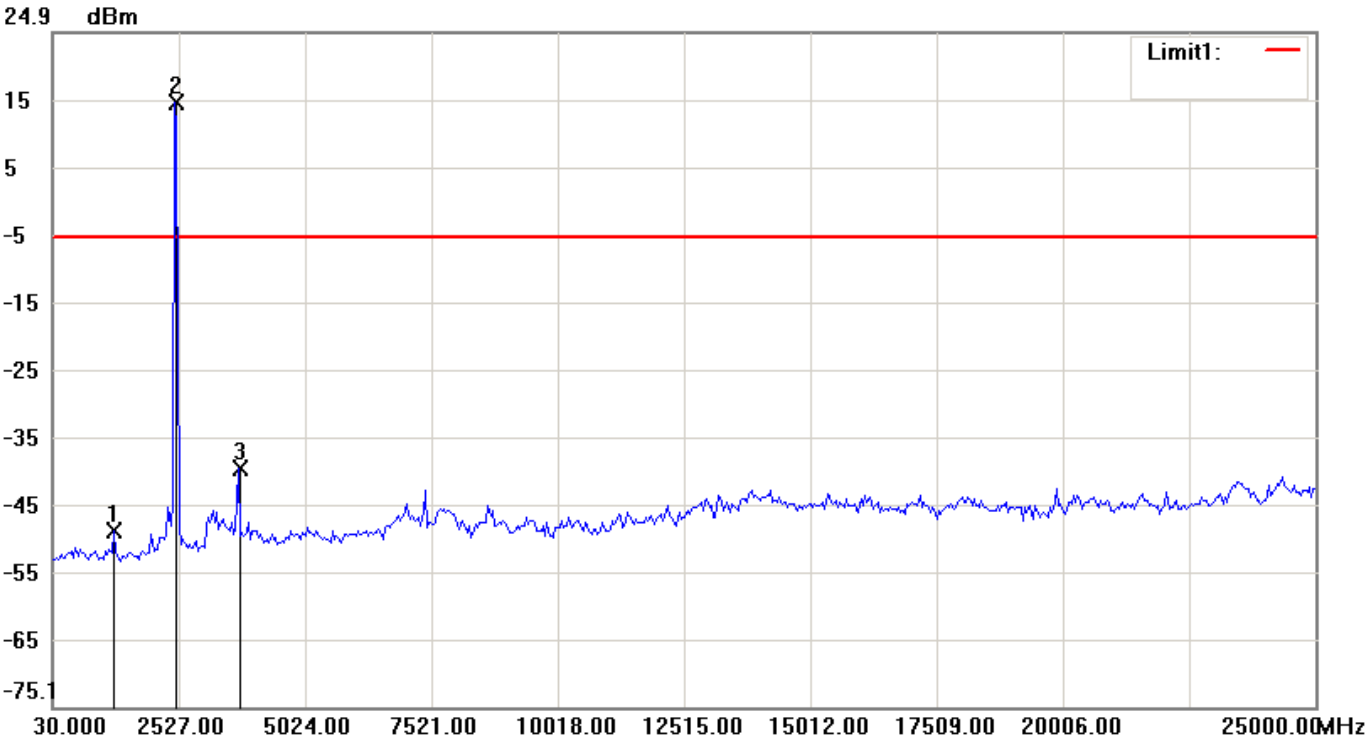
Test Mode:

Note: **FCC-802.11b Channel 06-Conducted Spurious**

No.	Frequency(MHz)	Level(dBm)
1	1236.88330	-49.73
2	2443.76670	14.63
3	7312.91670	-38.45

File: 16-05-MAS-002 Dat a #20 **Date: 2016/5/13** **Temperature: 26 ℃**

Time: PM 01:32:19 **Humidity: 60 %**



Condition: **-5.34dBm** **RF Conducted**

EUT: **Sweep Time: 2386.4ms Att.: 20dB**

Model: **RBW: 100 KHz VBW: 300 KHz**

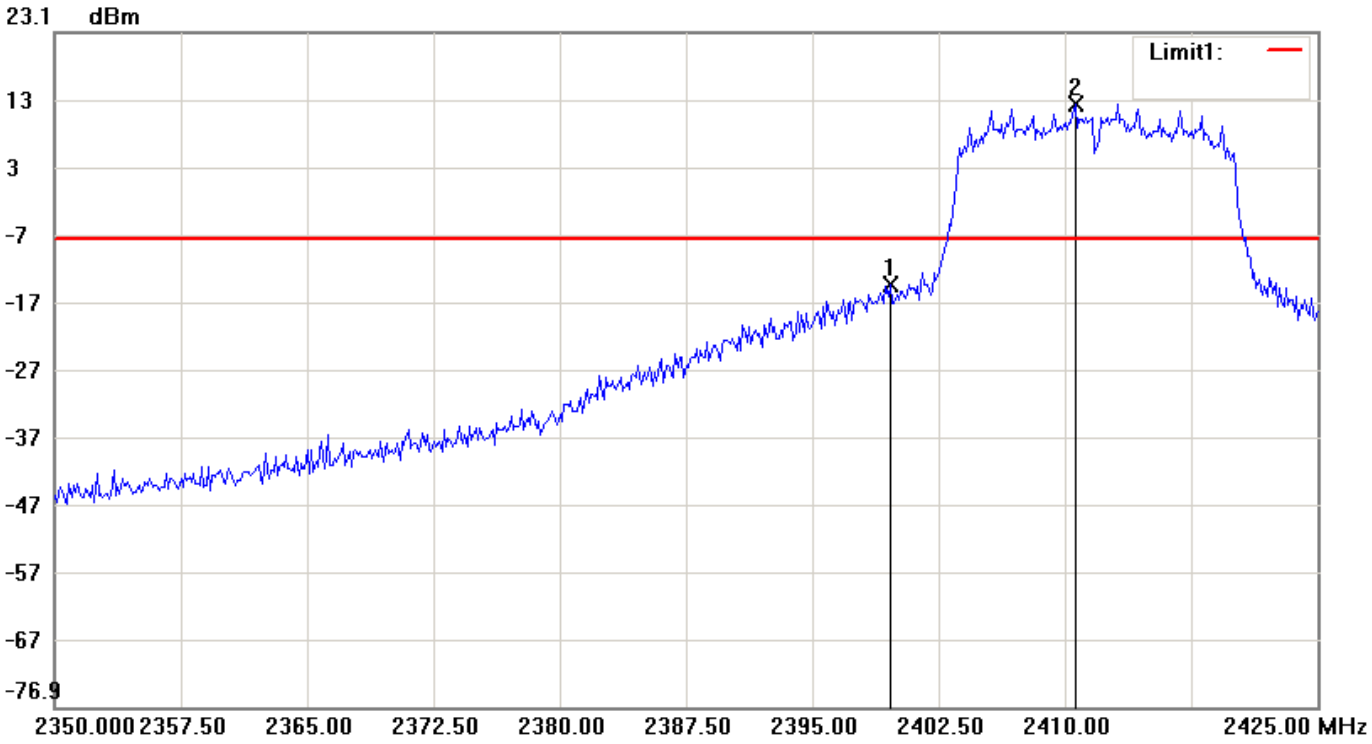
Test Mode:

Note: **FCC-802.11b channel 11-Conducted Spurious**

No.	Frequency(MHz)	Level(dBm)
1	1236.88330	-49.02
2	2443.76670	14.66
3	3692.26670	-39.80

File: 16-05-MAS-002 Dat a #28 **Date: 2016/5/13** **Temperature: 26 ℃**

Time: PM 01:48:35 **Humidity: 60 %**



Condition: **-7.56dBm** **RF Conducted**

EUT: **Sweep Time: 500ms Att.: 20dB**

Model: **RBW: 100 KHz VBW: 300 KHz**

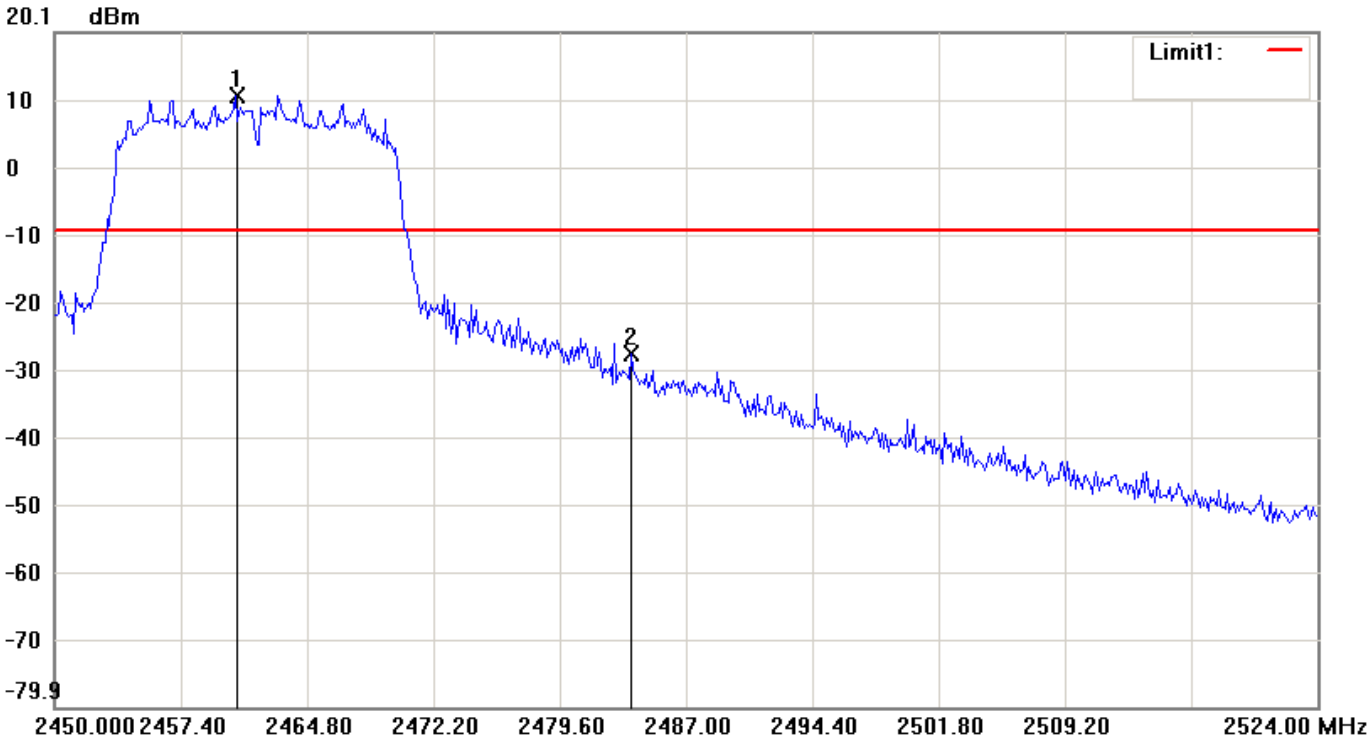
Test Mode:

Note: **FCC-802.11g Channel 01-Bandedge**

No.	Frequency(MHz)	Level(dBm)
1	2399.62500	-14.20
2	2410.62500	12.44

File: 16-05-MAS-002 Dat a #37 **Date: 2016/5/13** **Temperature: 26 ℃**

Time: PM 02:13:32 **Humidity: 60 %**



Condition: **-9.16dBm** **RF Conducted**

EUT: **Sweep Time: 500ms Att.: 10dB**

Model: **RBW: 100 KHz VBW: 300 KHz**

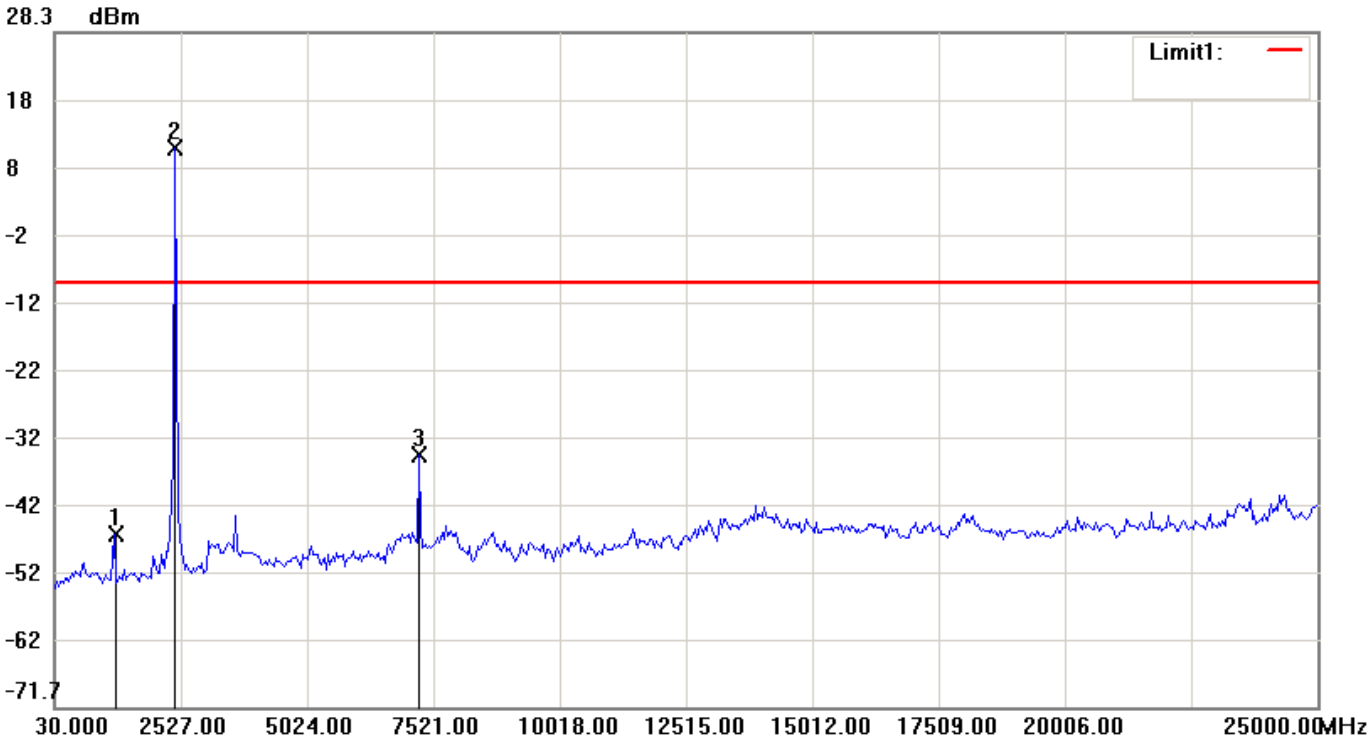
Test Mode:

Note: **FCC-802.11g Channel 11-Bandedge**

No.	Frequency(MHz)	Level(dBm)
1	2460.60670	10.84
2	2483.79330	-27.55

File: **16-05-MAS-002 Data #25** **Date:** **2016/5/13** **Temperature:** **26 ℃**

Time: **PM 01:43:26** **Humidity:** **60 %**



Condition: **-8.93dBm** **RF Conducted**

EUT: **Sweep Time: 2386.4ms Att.: 20dB**

Model: **RBW: 100 KHz VBW: 300 KHz**

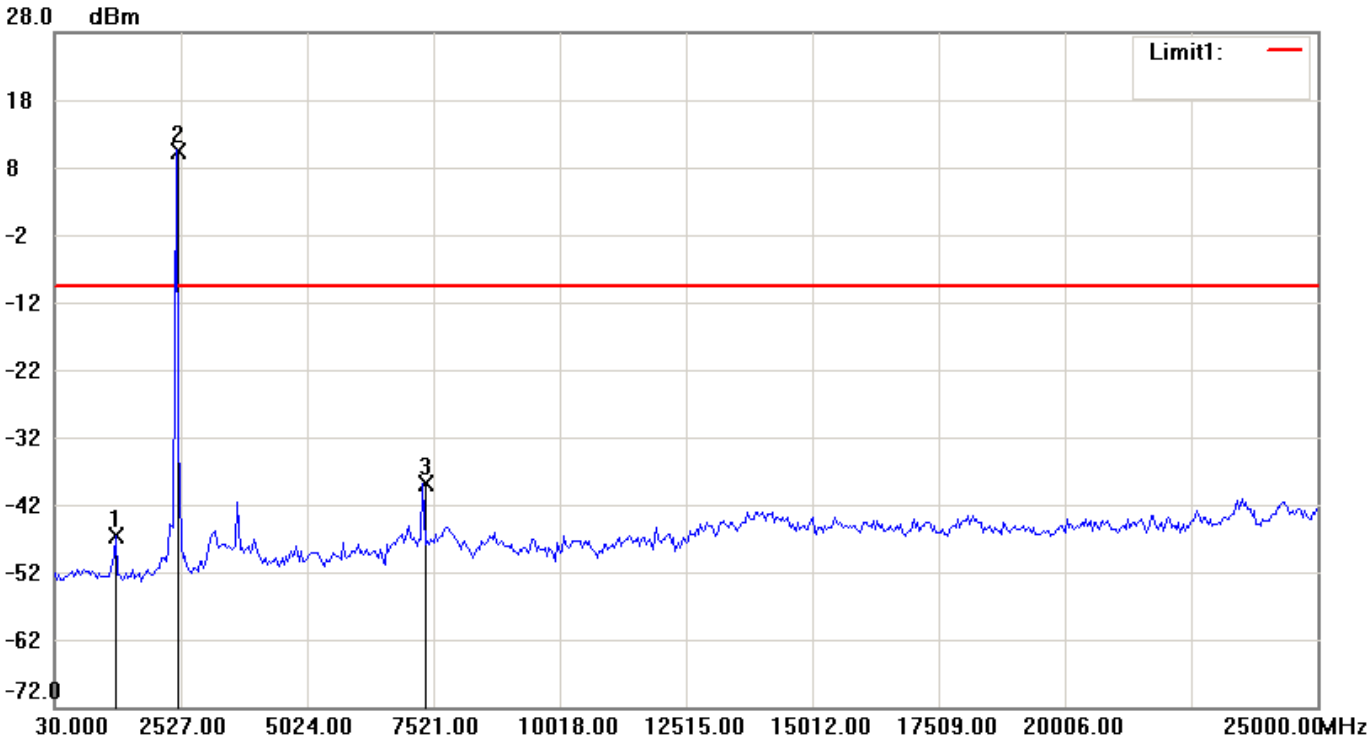
Test Mode:

Note: **FCC-802.11g Channel 01-Conducted Spurious**

No.	Frequency(MHz)	Level(dBm)
1	1195.26670	-46.13
2	2402.15000	11.07
3	7229.68330	-34.45

File: 16-05-MAS-002 Dat a #30 **Date: 2016/5/13** **Temperature: 26 ℃**

Time: PM 01:56:00 **Humidity: 60 %**



Condition: **-9.51dBm** **RF Conducted**

EUT: **Sweep Time: 2386.4ms Att.: 20dB**

Model: **RBW: 100 KHz VBW: 300 KHz**

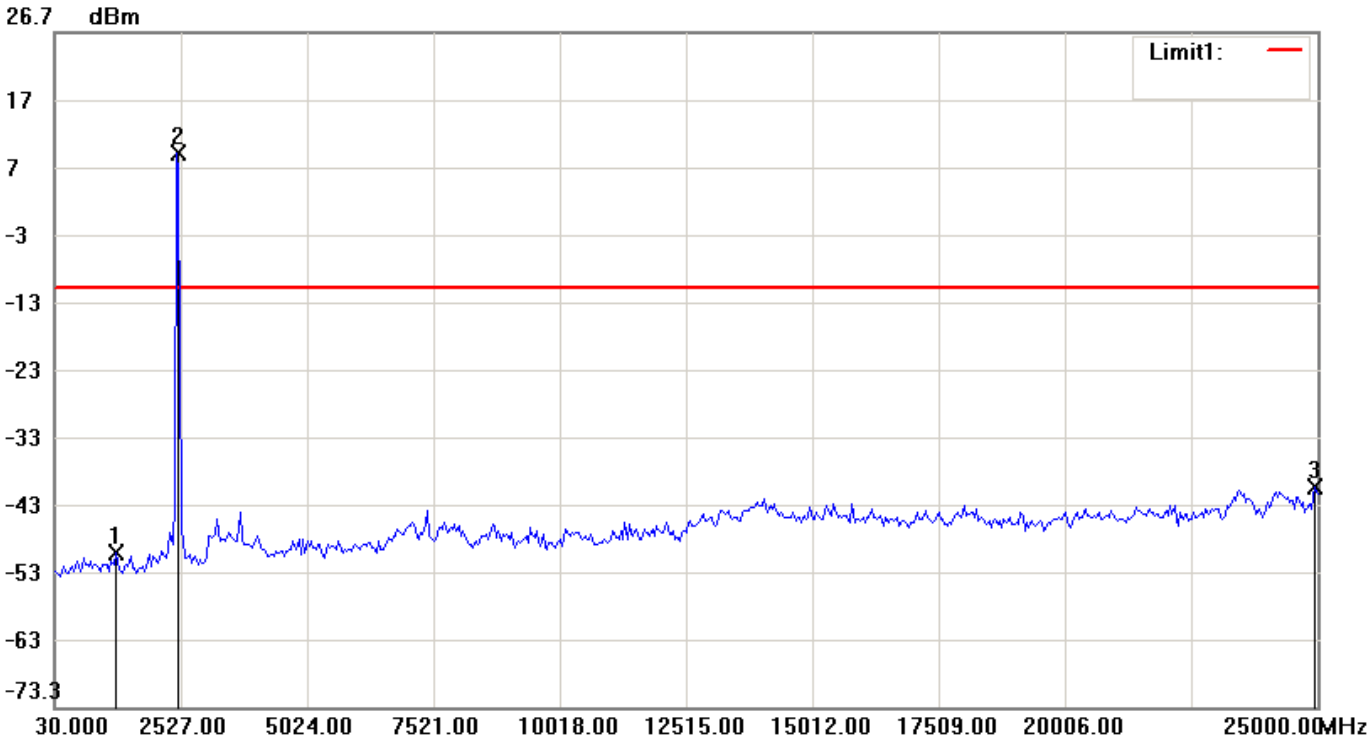
Test Mode:

Note: **FCC-802.11g Channel 06-Conducted Spurious**

No.	Frequency(MHz)	Level(dBm)
1	1236.88330	-46.66
2	2443.76670	10.49
3	7312.91670	-39.00

File: 16-05-MAS-002 Dat a #34 **Date: 2016/5/13** **Temperature: 26 ℃**

Time: PM 02:08:24 **Humidity: 60 %**



Condition: **-11.09dBm** **RF Conducted**

EUT: **Sweep Time: 2386.4ms Att.: 20dB**

Model: **RBW: 100 KHz VBW: 300 KHz**

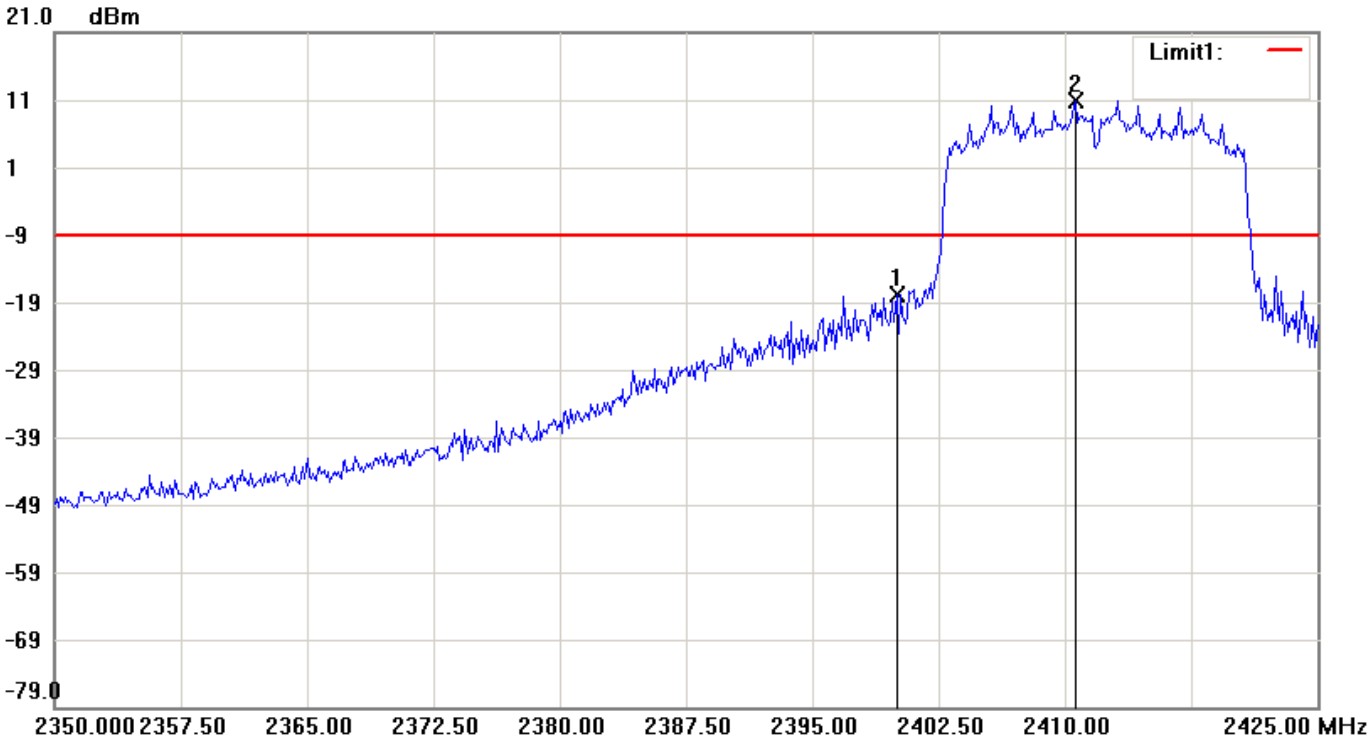
Test Mode:

Note: **FCC-802.11g Channel 11-Conducted Spurious**

No.	Frequency(MHz)	Level(dBm)
1	1236.88330	-50.47
2	2443.76670	8.91
3	24958.38330	-40.75

File: 16-05-MAS-002 Data #42 **Date: 2016/5/13** **Temperature: 26 ℃**

Time: PM 02:59:15 **Humidity: 60 %**



Condition: **-9.12dBm** **RF Conducted**

EUT: **Sweep Time: 500ms Att.: 10dB**

Model: **RBW: 100 KHz VBW: 300 KHz**

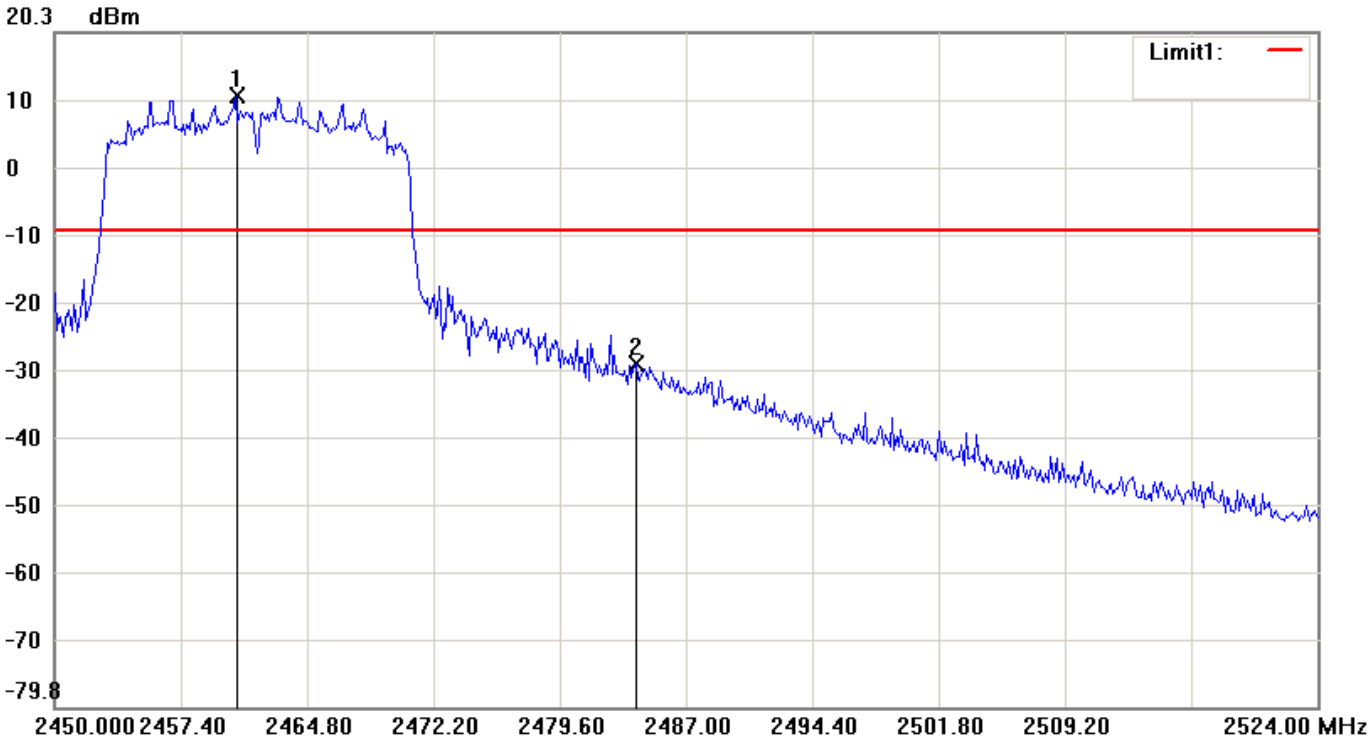
Test Mode:

Note: **FCC-802.11gn_HT20 Channel 01-Bandedge**

No.	Frequency(MHz)	Level(dBm)
1	2400.00000	-17.83
2	2410.62500	10.88

File: 16-05-MAS-002 Dat a #51 **Date: 2016/5/13** **Temperature: 26 ℃**

Time: PM 03:21:41 **Humidity: 60 %**



Condition: **-9.15dBm** **RF Conducted**

EUT: **Sweep Time: 500ms Att.: 10dB**

Model: **RBW: 100 KHz VBW: 300 KHz**

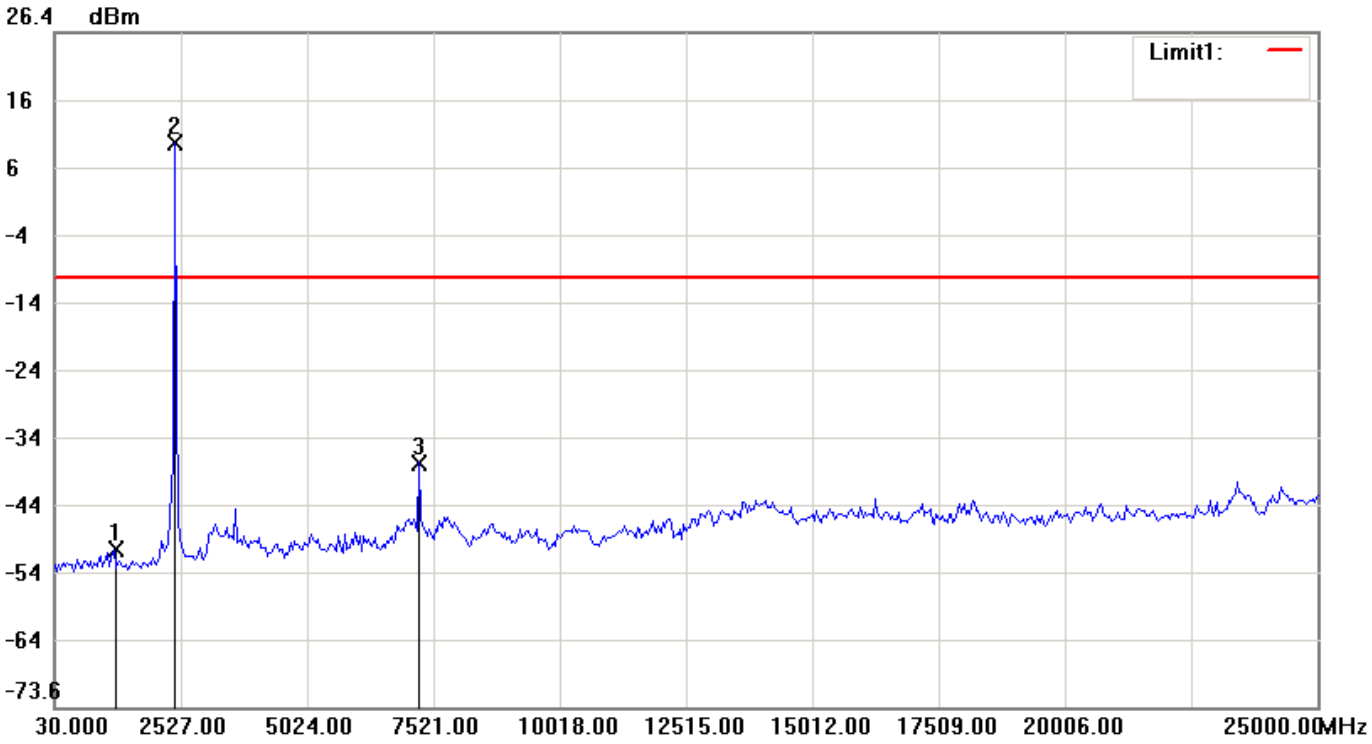
Test Mode:

Note: **FCC-802.11gn_HT20 Channel 11-Bandedge**

No.	Frequency(MHz)	Level(dBm)
1	2460.60670	10.85
2	2484.04000	-28.90

File: **16-05-MAS-002 Dat a** **#39** **Date:** **2016/5/13** **Temperature:** **26 ℃**

Time: **PM 02:54:11** **Humidity:** **60 %**



Condition: **-9.96dBm** **RF Conducted**

EUT: **Sweep Time: 2386.4ms Att.: 20dB**

Model: **RBW: 100 KHz VBW: 300 KHz**

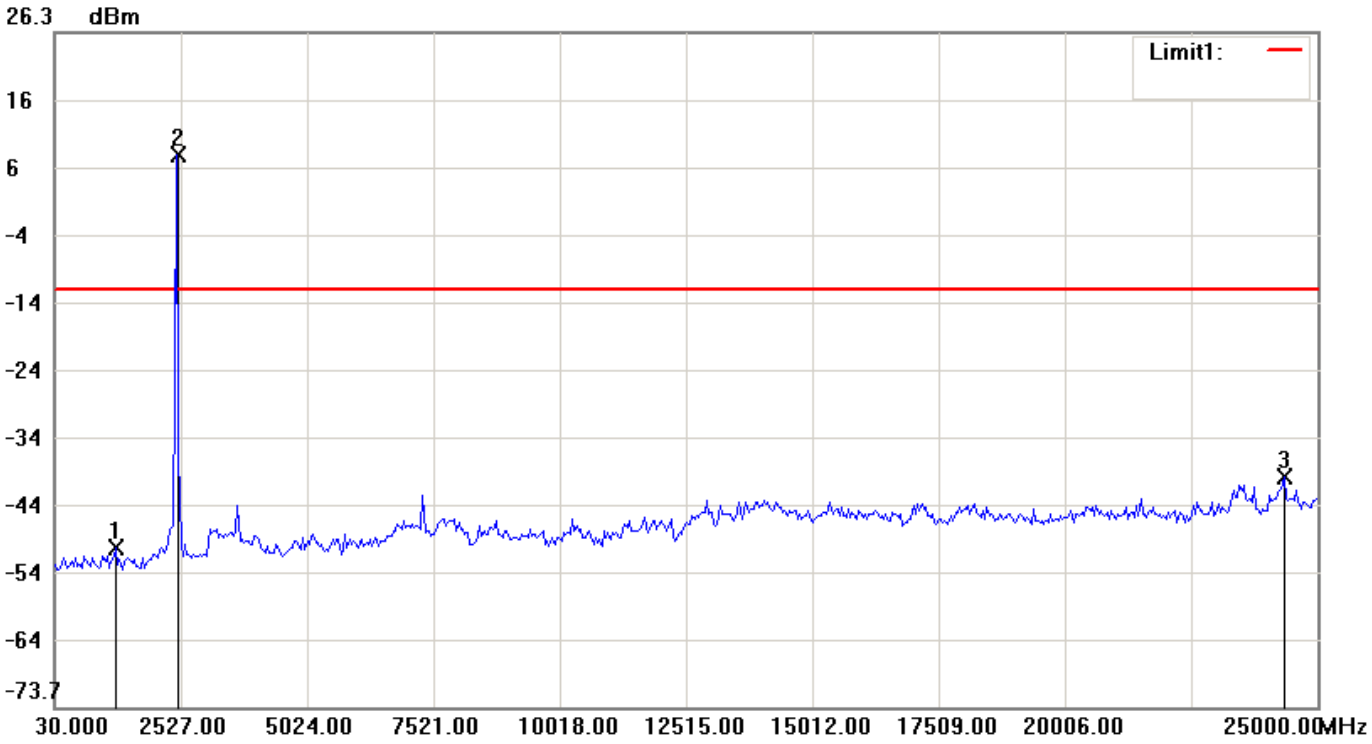
Test Mode:

Note: **FCC-802.11gn_HT20 Channel 01-Conducted Spurious**

No.	Frequency(MHz)	Level(dBm)
1	1195.26670	-50.12
2	2402.15000	10.04
3	7229.68330	-37.32

File: 16-05-MAS-002 Dat a #44 **Date: 2016/5/13** **Temperature: 26 ℃**

Time: PM 03:06:49 **Humidity: 60 %**



Condition: **-11.8dBm** **RF Conducted**

EUT: **Sweep Time: 2386.4ms Att.: 20dB**

Model: **RBW: 100 KHz VBW: 300 KHz**

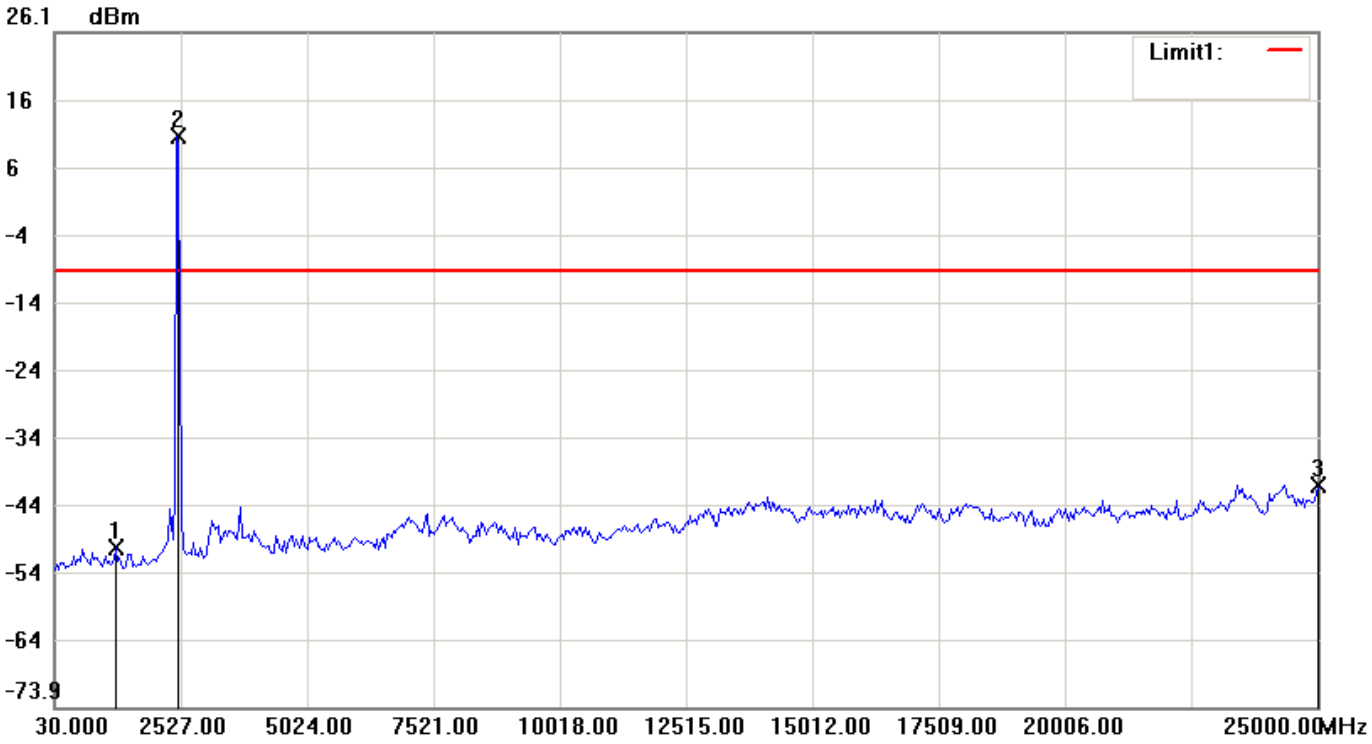
Test Mode:

Note: **FCC-802.11gn_HT20 Channel 06-Conducted Spurious**

No.	Frequency(MHz)	Level(dBm)
1	1236.88330	-50.21
2	2443.76670	8.20
3	24334.13330	-39.59

File: 16-05-MAS-002 Dat a #48 **Date: 2016/5/13** **Temperature: 26 ℃**

Time: PM 03:16:28 **Humidity: 60 %**



Condition: **-9.26dBm** **RF Conducted**

EUT: **Sweep Time: 2386.4ms Att.: 20dB**

Model: **RBW: 100 KHz VBW: 300 KHz**

Test Mode:

Note: **FCC-802.11gn_HT20 Channel 11-Conducted Spurious**

No.	Frequency(MHz)	Level(dBm)
1	1236.88330	-50.36
2	2443.76670	10.74
3	25000.00000	-40.92

10 RADIATED EMISSION MEASUREMENT

10.1 Standard Applicable

For unintentional radiator, the radiated emission shall comply with §15.109(a).

For intentional radiators, according to §15.247 (a), operation under this provision is limited to frequency hopping and direct sequence spread spectrum, and the out band emission shall be comply with §15.247 (d)

10.2 Measurement Procedure

The testing follows FCC KDB 558074 D01 v03r05.

A.Preliminary Measurement For Portable Devices.

For movable devices, the following procedure was performed to determine the maximum emission axis of EUT (X,Y and Z axis):

1. With the receiving antenna is H polarization, rotate the EUT in turns with three orthogonal axes to determine the axis of maximum emission.
2. With the receiving ntenna is V polarization, rotate the EUT in turns with three orthogonal axes to determine the axis of maximum emission.
3. Compare the results derived from above two steps. The axis of maximum emission from EUT was determined and the configuration was used to perform the final measurement.
4. The position in which the maximum noise occurred was “X axis”. (Please see the test setup photos)

B. Final Measurement

1. Setup the configuration per figure 3 and 4 for frequencies measured below and above 1 GHz respectively. Turn on EUT and make sure that it is in continuous operating function.
2. For emission frequencies measured below 1 GHz, a pre-scan is performed in a semi-anechoic chamber to determine the accurate frequencies of higher emissions and then each selected frequency is precisely measured. As the same purpose, for emission measured above 1 GHz, a pre-scan also be performed with a 1 meter measuring distance before final test.
3. For emission measured below and above 1 GHz, set the spectrum analyzer on a 120 kHz and 1 MHz resolution bandwidth respectively for each frequency measured in step 2.
4. The search antenna is to be raised and lowered over a range from 1 to 4 meters in horizontally polarized orientation. Position the highness when the highest value is indicated on spectrum analyzer, then change the orientation of EUT on test table over a range from 0 ° to 360 ° with a speed as slow as possible, and keep the azimuth that highest emission is indicated on the spectrum analyzer. Vary the antenna position again and record the highest value as a final reading. A RF test receiver is also used to confirm emissions measured.

Figure 3 : Frequencies measured below 1 GHz configuration

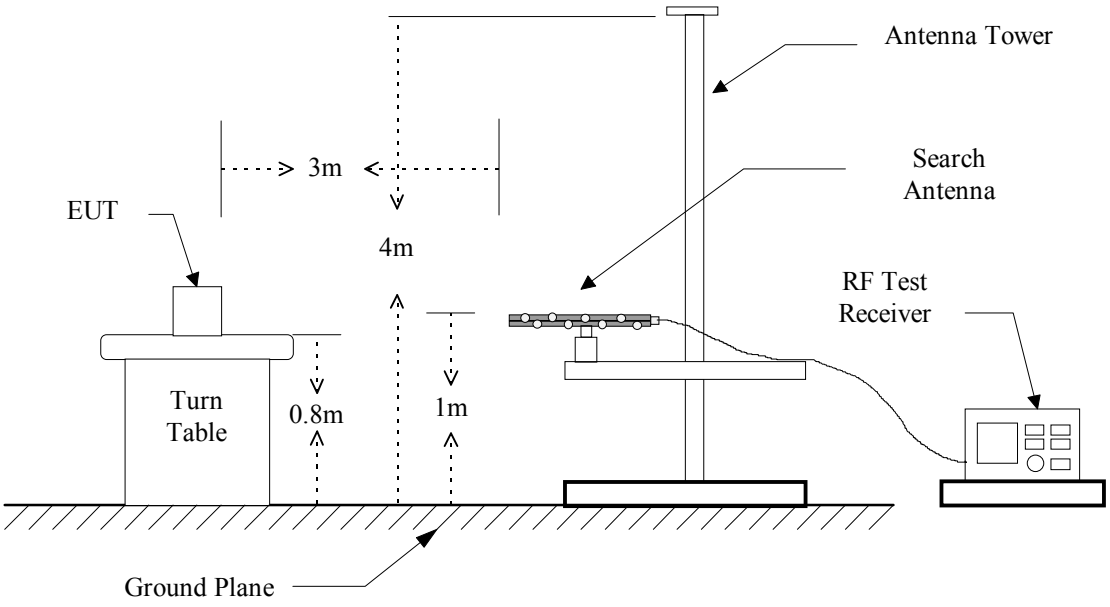
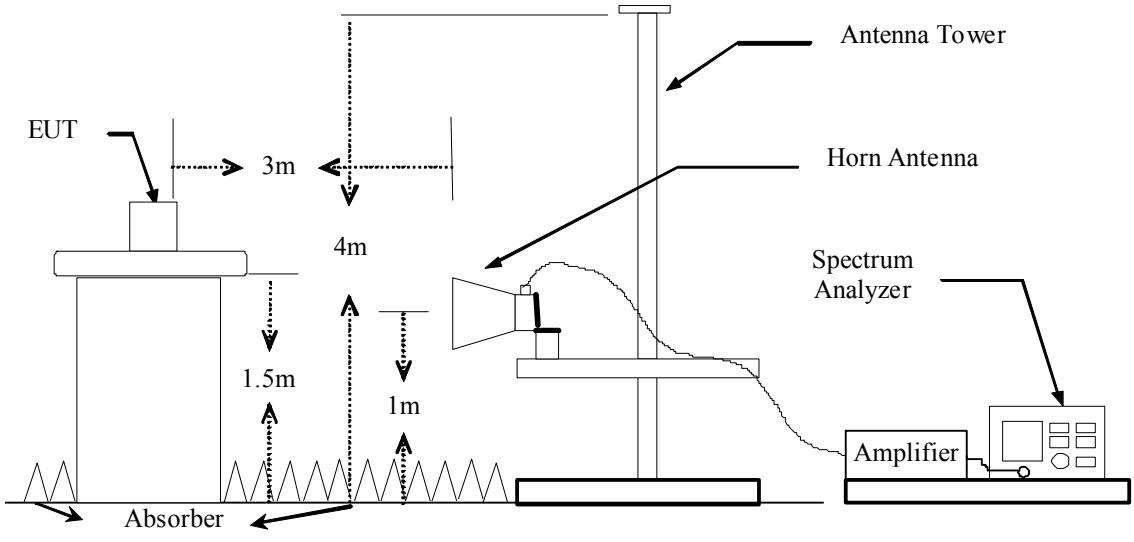


Figure 4 : Frequencies measured above 1 GHz configuration



10.3 Measuring Instrument

The following instrument are used for radiated emissions measurement :

Equipment	Manufacturer	Model No.
EMI Receiver	R&S	ESCI
Spectrum Analyzer	R&S	FSU46
Horn Antenna	EMCO	3115
BiLog Antenna	Schaffner	CBL6112B
Horn Antenna	EMCO	3116
Preamplifier	Hewlett-Packard	8449B
Loop Antenna	EMCO	6512
PRE-Amplifier	EMCI	PA303N

Measuring instrument setup in measured frequency band when specified detector function is used :

Frequency Band (MHz)	Instrument	Function	Resolution Bandwidth	Video Bandwidth
30 to 1000	RF Test Receiver	Quasi-Peak	120 kHz	300 kHz
	Spectrum Analyzer	Peak	120 kHz	300 kHz
Above 1000	Spectrum Analyzer	Peak	1 MHz	1 MHz
	Spectrum Analyzer	Average	1 MHz	VBW_avg (Note)

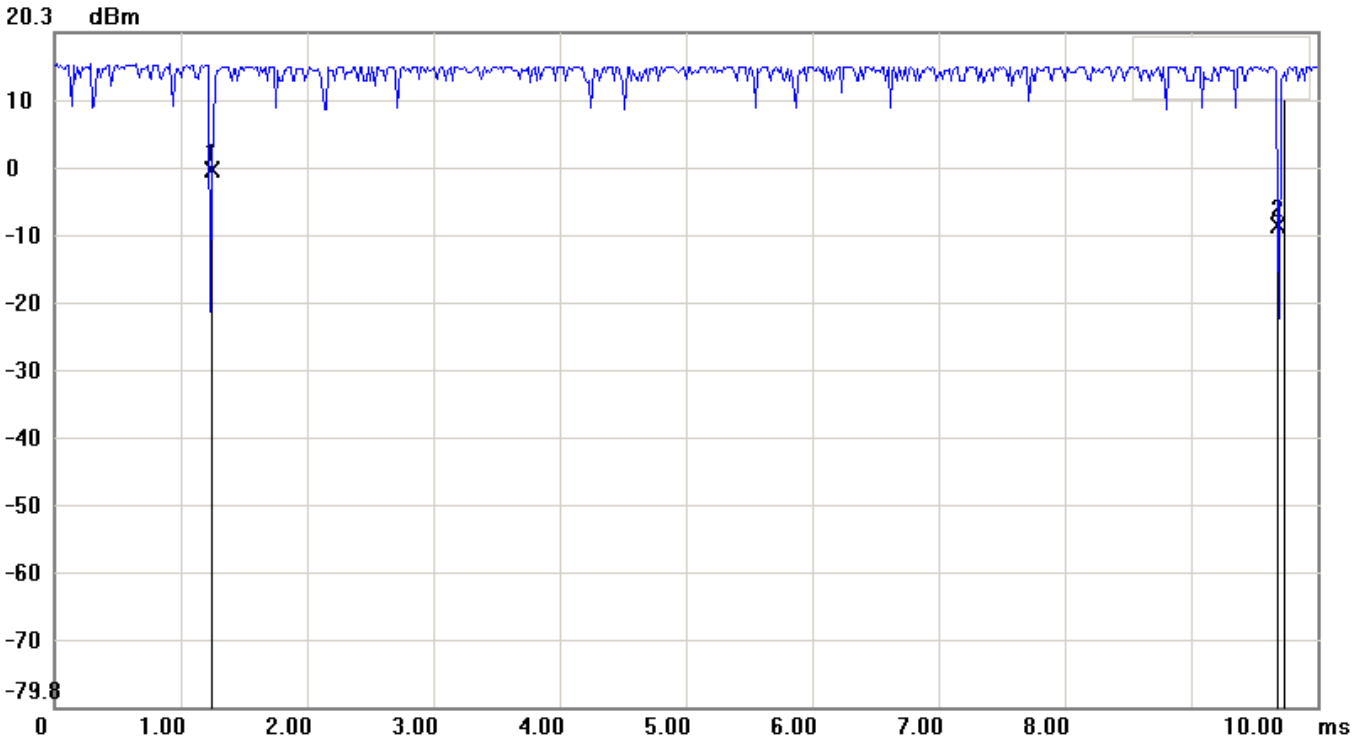
Note:For average measurement

Condition	VBW_avg
Duty cycle is no less than 98 percent	10 Hz
Duty cycle is less than 98 percent, T is 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	$\geq \frac{1}{T}$
Current use	10Hz

Duty cycle:

File: 16-05-MAS-002 Dat a #54 **Date: 2016/5/13** **Temperature: 26 ℃**

Time: PM 03:34:07 **Humidity: 60 %**



Condition: **RF Conducted**

EUT: **Sweep Time: 10ms Att.: 10dB**

Model: **RBW: 300 KHz VBW: 300 KHz**

Test Mode: **IEEE 802.11b**

Note:

No.	Sweep time(ms)	Level(dBm)
1	1.2500	-0.21
2	9.6833	-8.43
3	9.7167	13.08

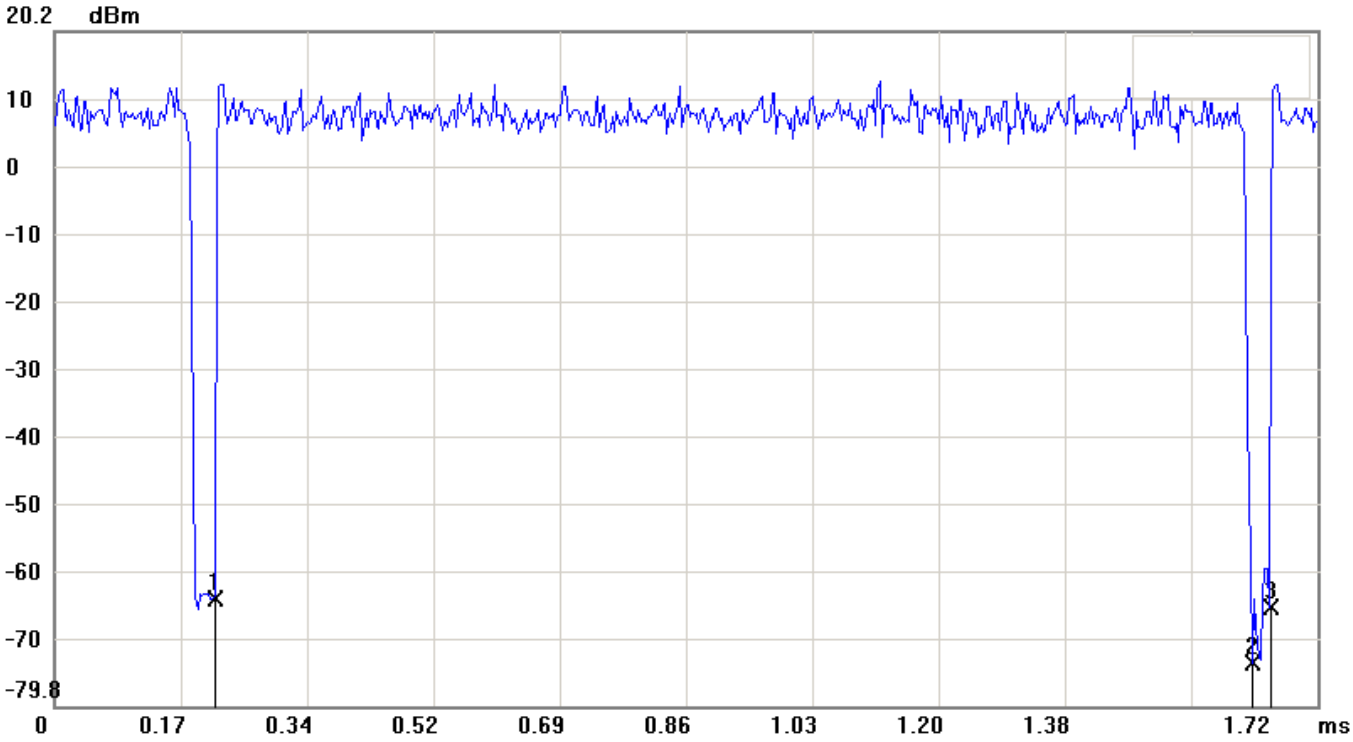
No.		△Time(ms)	△Level(dB)
1	mk3-mk2	0.0334	21.51
2	mk2-mk1	8.4333	-8.22

TX on / (TX on + TX off) = 8.4333(8.4333+0.0334) = 0.996

TX on / (TX on + TX off) * 100 = 0.996*100 =99.6%

File: **16-05-MAS-002 Data #53** **Date:** **2016/5/13** **Temperature:** **26 ℃**

Time: **PM 03:27:54** **Humidity:** **60 %**



Condition: **RF Conducted**

EUT: **Sweep Time: 1.72ms** **Att.: 10dB**

Model: **RBW: 300 KHz** **VBW: 300 KHz**

Test Mode: **IEEE 802.11g**

Note:

No.	Sweep time(ms)	Level(dBm)
1	0.2150	-63.83
2	1.6310	-73.44
3	1.6541	-65.21

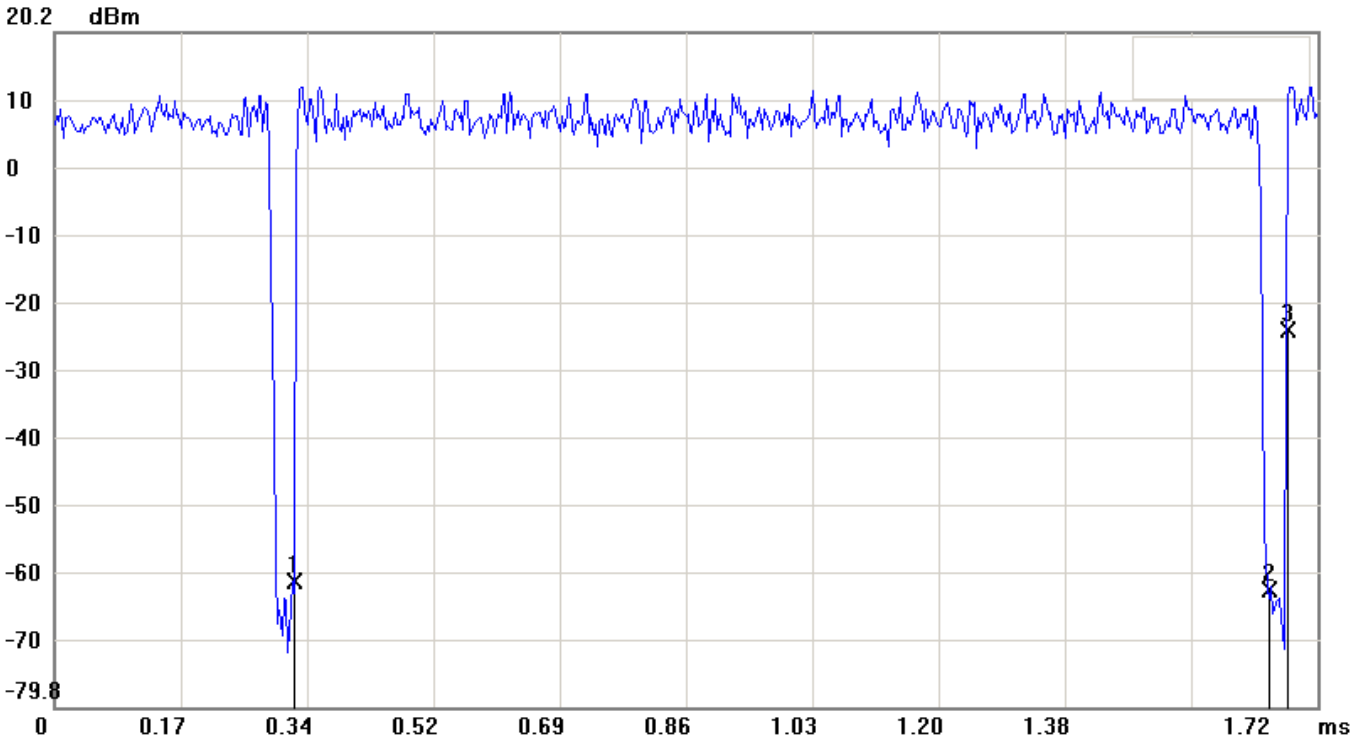
No.		△Time(ms)	△Level(dB)
1	mk2-mk1	1.416	-9.61
2	mk3-mk2	0.0231	8.23

TX on / (TX on + TX off) = 1.416(1.416+0.0231)=0.984

TX on / (TX on + TX off) * 100 = 0.984*100=98.4%

File: 16-05-MAS-002 Dat a #52 **Date: 2016/5/13** **Temperature: 26 ℃**

Time: PM 03:24:12 **Humidity: 60 %**



Condition: **RF Conducted**

EUT: **Sweep Time: 1.72ms Att.: 10dB**

Model: **RBW: 300 KHz VBW: 300 KHz**

Test Mode: **IEEE 802.11 n HT20**

Note:

No.	Sweep time(ms)	Level(dBm)
1	0.3240	-61.23
2	1.6512	-62.49
3	1.6770	-23.87

No.		△Time(ms)	△Level(dB)
1	mk2-mk1	1.3272	-1.26
2	mk3-mk2	0.0258	38.62

TX on / (TX on + TX off) = 1.3272(1.3272+0.0258) = 0.981

TX on / (TX on + TX off) * 100 = 0.981*100 =98.1%

10.4 Radiated Emission Data

10.4.1 Harmonic

10.4.1.1 IEEE 802.11b

Test Date: May 24, 2016 Temperature: 23℃ Humidity: 57%

a) Channel 1

Fundamental Frequency: 2412 MHz

Frequency	Ant Pol	Reading (dBuV/m)@3m		Correct Factor	Duty Factor	Result (dBuV/m)@3m		Limit (dBuV/m)@3m		Margin (worse)
(MHz)	H/V	Peak	AVG	(dB)	(dB)	Peak	AVG	Peak	AVG	(dB)
4800.0000	H	---	---	-2.37	---	---	---	74.0	54.0	---
4800.0000	V	---	---	-2.37	---	---	---	74.0	54.0	---
7200.0000	H	51.1	45.2	0.54	---	51.6	45.7	74.0	54.0	-8.3
7200.0000	V	52.2	45.7	0.54	---	52.7	46.2	74.0	54.0	-7.8
9600.0000	H	---	---	2.29	---	---	---	74.0	54.0	---
9600.0000	V	---	---	2.29	---	---	---	74.0	54.0	---
12000.0000	H	---	---	4.78	---	---	---	74.0	54.0	---
12000.0000	V	---	---	4.78	---	---	---	74.0	54.0	---
14400.0000	H	---	---	9.39	---	---	---	74.0	54.0	---
14400.0000	V	---	---	9.39	---	---	---	74.0	54.0	---

Note :

1. Item of margin shown in above table refer to average limit.
2. Remark "---" means that the emissions level is too low to be measured.
3. If the peak result is under the average limit, that is deemed to meet the average limit.
4. If there is only peak result, item "Margin" referred to "peak result – average limit".
5. The radiation emissions have been measured to beyond the tenth harmonic of the fundamental frequency and show the significant frequencies, other means the value is too low to be detected.

b) Channel 6

Fundamental Frequency: 2437 MHz

Frequency	Ant Pol	Reading (dBuV/m)@3m		Correct Factor	Duty Factor	Result (dBuV/m)@3m		Limit (dBuV/m)@3m		Margin (worse)
(MHz)	H/V	Peak	AVG	(dB)	(dB)	Peak	AVG	Peak	AVG	(dB)
4874.0000	H	---	---	-2.23	---	---	---	74.0	54.0	---
4874.0000	V	---	---	-2.23	---	---	---	74.0	54.0	---
7311.0000	H	---	---	0.81	---	---	---	74.0	54.0	---
7311.0000	V	50.7	45.0	0.81	---	51.5	45.8	74.0	54.0	-8.2
9748.0000	H	---	---	2.40	---	---	---	74.0	54.0	---
9748.0000	V	---	---	2.40	---	---	---	74.0	54.0	---
12185.0000	H	---	---	4.91	---	---	---	74.0	54.0	---
12185.0000	V	---	---	4.91	---	---	---	74.0	54.0	---
14622.0000	H	---	---	8.60	---	---	---	74.0	54.0	---
14622.0000	V	---	---	8.60	---	---	---	74.0	54.0	---

Note :

1. Item of margin shown in above table refer to average limit.
2. Remark "---" means that the emissions level is too low to be measured.
3. If the peak result is under the average limit, that is deemed to meet the average limit.
4. If there is only peak result, item "Margin" referred to "peak result – average limit".
5. The radiation emissions have been measured to beyond the tenth harmonic of the fundamental frequency and show the significant frequencies, other means the value is too low to be detected.

c) Channel 11

Fundamental Frequency: 2462 MHz

Frequency	Ant Pol	Reading (dBuV/m)@3m		Correct Factor	Duty Factor	Result (dBuV/m)@3m		Limit (dBuV/m)@3m		Margin (worse)
(MHz)	H/V	Peak	AVG	(dB)	(dB)	Peak	AVG	Peak	AVG	(dB)
4924.0000	H	---	---	-2.13	---	---	---	74.0	54.0	---
4924.0000	V	---	---	-2.13	---	---	---	74.0	54.0	---
7386.0000	H	---	---	0.99	---	---	---	74.0	54.0	---
7386.0000	V	---	---	0.99	---	---	---	74.0	54.0	---
9848.0000	H	---	---	2.47	---	---	---	74.0	54.0	---
9848.0000	V	---	---	2.47	---	---	---	74.0	54.0	---
12310.0000	H	---	---	5.00	---	---	---	74.0	54.0	---
12310.0000	V	---	---	5.00	---	---	---	74.0	54.0	---
14772.0000	H	---	---	7.87	---	---	---	74.0	54.0	---
14772.0000	V	---	---	7.87	---	---	---	74.0	54.0	---

Note :

1. Item of margin shown in above table refer to average limit.
2. Remark "---" means that the emissions level is too low to be measured.
3. If the peak result is under the average limit, that is deemed to meet the average limit.
4. If there is only peak result, item "Margin" referred to "peak result – average limit".
5. The radiation emissions have been measured to beyond the tenth harmonic of the fundamental frequency and show the significant frequencies, other means the value is too low to be detected.

10.4.1.2 IEEE 802.11g

Test Date: May 24, 2016 Temperature: 23℃ Humidity: 57%

a) Channel 1

Fundamental Frequency: 2412 MHz

Frequency	Ant Pol	Reading (dBuV/m)@3m		Correct Factor	Duty Factor	Result (dBuV/m)@3m		Limit (dBuV/m)@3m		Margin (worse)
(MHz)	H/V	Peak	AVG	(dB)	(dB)	Peak	AVG	Peak	AVG	(dB)
4824.0000	H	---	---	-2.33	---	---	---	74.0	54.0	---
4824.0000	V	---	---	-2.33	---	---	---	74.0	54.0	---
7236.0000	H	57.6	44.8	0.63	---	58.2	45.4	74.0	54.0	-8.6
7236.0000	V	59.2	45.0	0.63	---	59.8	45.6	74.0	54.0	-8.4
9648.0000	H	---	---	2.33	---	---	---	74.0	54.0	---
9648.0000	V	---	---	2.33	---	---	---	74.0	54.0	---
12060.0000	H	---	---	4.83	---	---	---	74.0	54.0	---
12060.0000	V	---	---	4.83	---	---	---	74.0	54.0	---
14472.0000	H	---	---	9.25	---	---	---	74.0	54.0	---
14472.0000	V	---	---	9.25	---	---	---	74.0	54.0	---

Note :

1. Item of margin shown in above table refer to average limit.
2. Remark "---" means that the emissions level is too low to be measured.
3. If the peak result is under the average limit, that is deemed to meet the average limit.
4. If there is only peak result, item "Margin" referred to "peak result – average limit".
5. The radiation emissions have been measured to beyond the tenth harmonic of the fundamental frequency and show the significant frequencies, other means the value is too low to be detected.

b) Channel 6

Fundamental Frequency: 2437 MHz

Frequency	Ant Pol	Reading (dBuV/m)@3m		Correct Factor	Duty Factor	Result (dBuV/m)@3m		Limit (dBuV/m)@3m		Margin (worse)
(MHz)	H/V	Peak	AVG	(dB)	(dB)	Peak	AVG	Peak	AVG	(dB)
4874.0000	H	---	---	-2.23	---	---	---	74.0	54.0	---
4874.0000	V	---	---	-2.23	---	---	---	74.0	54.0	---
7311.0000	H	54.9	41.6	0.81	---	55.7	42.4	74.0	54.0	-11.6
7311.0000	V	56.4	42.6	0.81	---	57.2	43.4	74.0	54.0	-10.6
9748.0000	H	---	---	2.40	---	---	---	74.0	54.0	---
9748.0000	V	---	---	2.40	---	---	---	74.0	54.0	---
12185.0000	H	---	---	4.91	---	---	---	74.0	54.0	---
12185.0000	V	---	---	4.91	---	---	---	74.0	54.0	---
14622.0000	H	---	---	8.60	---	---	---	74.0	54.0	---
14622.0000	V	---	---	8.60	---	---	---	74.0	54.0	---

Note :

1. Item of margin shown in above table refer to average limit.
2. Remark "---" means that the emissions level is too low to be measured.
3. If the peak result is under the average limit, that is deemed to meet the average limit.
4. If there is only peak result, item "Margin" referred to "peak result – average limit".
5. The radiation emissions have been measured to beyond the tenth harmonic of the fundamental frequency and show the significant frequencies, other means the value is too low to be detected.

c) Channel 11

Fundamental Frequency: 2462 MHz

Frequency	Ant Pol	Reading (dBuV/m)@3m		Correct Factor	Duty Factor	Result (dBuV/m)@3m		Limit (dBuV/m)@3m		Margin (worse)
(MHz)	H/V	Peak	AVG	(dB)	(dB)	Peak	AVG	Peak	AVG	(dB)
4924.0000	H	---	---	-2.13	---	---	---	74.0	54.0	---
4924.0000	V	---	---	-2.13	---	---	---	74.0	54.0	---
7386.0000	H	---	---	0.99	---	---	---	74.0	54.0	---
7386.0000	V	---	---	0.99	---	---	---	74.0	54.0	---
9848.0000	H	---	---	2.47	---	---	---	74.0	54.0	---
9848.0000	V	---	---	2.47	---	---	---	74.0	54.0	---
12310.0000	H	---	---	5.00	---	---	---	74.0	54.0	---
12310.0000	V	---	---	5.00	---	---	---	74.0	54.0	---
14772.0000	H	---	---	7.87	---	---	---	74.0	54.0	---
14772.0000	V	---	---	7.87	---	---	---	74.0	54.0	---

Note :

1. Item of margin shown in above table refer to average limit.
2. Remark "---" means that the emissions level is too low to be measured.
3. If the peak result is under the average limit, that is deemed to meet the average limit.
4. If there is only peak result, item "Margin" referred to "peak result – average limit".
5. The radiation emissions have been measured to beyond the tenth harmonic of the fundamental frequency and show the significant frequencies, other means the value is too low to be detected.

10.4.1.3 IEEE 802.11n, HT20

Test Date: May 24, 2016 Temperature: 23℃ Humidity: 57%

a) Channel 1

Fundamental Frequency: 2412 MHz

Frequency	Ant Pol	Reading (dBuV/m)@3m		Correct Factor	Duty Factor	Result (dBuV/m)@3m		Limit (dBuV/m)@3m		Margin (worse)
(MHz)	H/V	Peak	AVG	(dB)	(dB)	Peak	AVG	Peak	AVG	(dB)
4824.0000	H	---	---	-2.33	---	---	---	74.0	54.0	---
4824.0000	V	---	---	-2.33	---	---	---	74.0	54.0	---
7236.0000	H	52.3	37.6	0.63	---	52.9	38.2	74.0	54.0	-15.8
7236.0000	V	52.7	39.4	0.63	---	53.3	40.0	74.0	54.0	-14.0
9648.0000	H	---	---	2.33	---	---	---	74.0	54.0	---
9648.0000	V	---	---	2.33	---	---	---	74.0	54.0	---
12060.0000	H	---	---	4.83	---	---	---	74.0	54.0	---
12060.0000	V	---	---	4.83	---	---	---	74.0	54.0	---
14472.0000	H	---	---	9.25	---	---	---	74.0	54.0	---
14472.0000	V	---	---	9.25	---	---	---	74.0	54.0	---

Note :

1. Item of margin shown in above table refer to average limit.
2. Remark "---" means that the emissions level is too low to be measured.
3. If the peak result is under the average limit, that is deemed to meet the average limit.
4. If there is only peak result, item "Margin" referred to "peak result – average limit".
5. The radiation emissions have been measured to beyond the tenth harmonic of the fundamental frequency and show the sinificant frequencies, other means the value is too low to be detected.

b) Channel 6

Fundamental Frequency: 2437 MHz

Frequency	Ant Pol	Reading (dBuV/m)@3m		Correct Factor	Duty Factor	Result (dBuV/m)@3m		Limit (dBuV/m)@3m		Margin (worse)
(MHz)	H/V	Peak	AVG	(dB)	(dB)	Peak	AVG	Peak	AVG	(dB)
4874.0000	H	---	---	-2.23	---	---	---	74.0	54.0	---
4874.0000	V	---	---	-2.23	---	---	---	74.0	54.0	---
7311.0000	H	48.3	---	0.81	---	49.1	---	74.0	54.0	-4.9
7311.0000	V	50.3	36.9	0.81	---	51.1	37.7	74.0	54.0	-16.3
9748.0000	H	---	---	2.40	---	---	---	74.0	54.0	---
9748.0000	V	---	---	2.40	---	---	---	74.0	54.0	---
12185.0000	H	---	---	4.91	---	---	---	74.0	54.0	---
12185.0000	V	---	---	4.91	---	---	---	74.0	54.0	---
14622.0000	H	---	---	8.60	---	---	---	74.0	54.0	---
14622.0000	V	---	---	8.60	---	---	---	74.0	54.0	---

Note :

1. Item of margin shown in above table refer to average limit.
2. Remark "---" means that the emissions level is too low to be measured.
3. If the peak result is under the average limit, that is deemed to meet the average limit.
4. If there is only peak result, item "Margin" referred to "peak result – average limit".
5. The radiation emissions have been measured to beyond the tenth harmonic of the fundamental frequency and show the sinificant frequencies, other means the value is too low to be detected.

c) Channel 11

Fundamental Frequency: 2462 MHz

Frequency	Ant Pol	Reading (dBuV/m)@3m		Correct Factor	Duty Factor	Result (dBuV/m)@3m		Limit (dBuV/m)@3m		Margin (worse)
(MHz)	H/V	Peak	AVG	(dB)	(dB)	Peak	AVG	Peak	AVG	(dB)
4924.0000	H	---	---	-2.13	---	---	---	74.0	54.0	---
4924.0000	V	---	---	-2.13	---	---	---	74.0	54.0	---
7386.0000	H	---	---	0.99	---	---	---	74.0	54.0	---
7386.0000	V	---	---	0.99	---	---	---	74.0	54.0	---
9848.0000	H	---	---	2.47	---	---	---	74.0	54.0	---
9848.0000	V	---	---	2.47	---	---	---	74.0	54.0	---
12310.0000	H	---	---	5.00	---	---	---	74.0	54.0	---
12310.0000	V	---	---	5.00	---	---	---	74.0	54.0	---
14772.0000	H	---	---	7.87	---	---	---	74.0	54.0	---
14772.0000	V	---	---	7.87	---	---	---	74.0	54.0	---

Note :

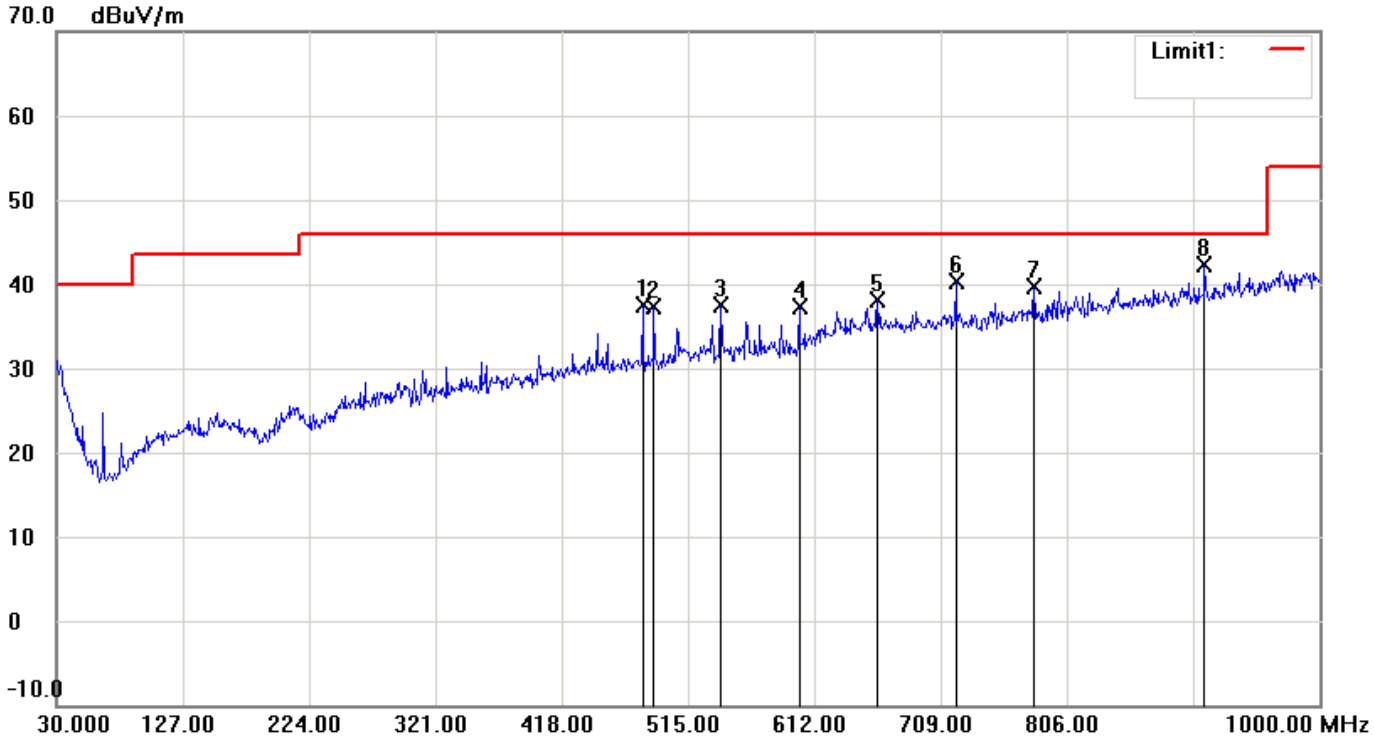
1. Item of margin shown in above table refer to average limit.
2. Remark "---" means that the emissions level is too low to be measured.
3. If the peak result is under the average limit, that is deemed to meet the average limit.
4. If there is only peak result, item "Margin" referred to "peak result – average limit".
5. The radiation emissions have been measured to beyond the tenth harmonic of the fundamental frequency and show the sinificant frequencies, other means the value is too low to be detected.

10.4.2 Spurious Emission

Operation Mode: Tx

10.4.2.1 30MHz to 1GHz

File: 16-05-MAS-002 Data #113 **Date:** 2016/5/24 **Temperature:** 23 ℃
Time: PM 05:34:08 **Humidity:** 57 %

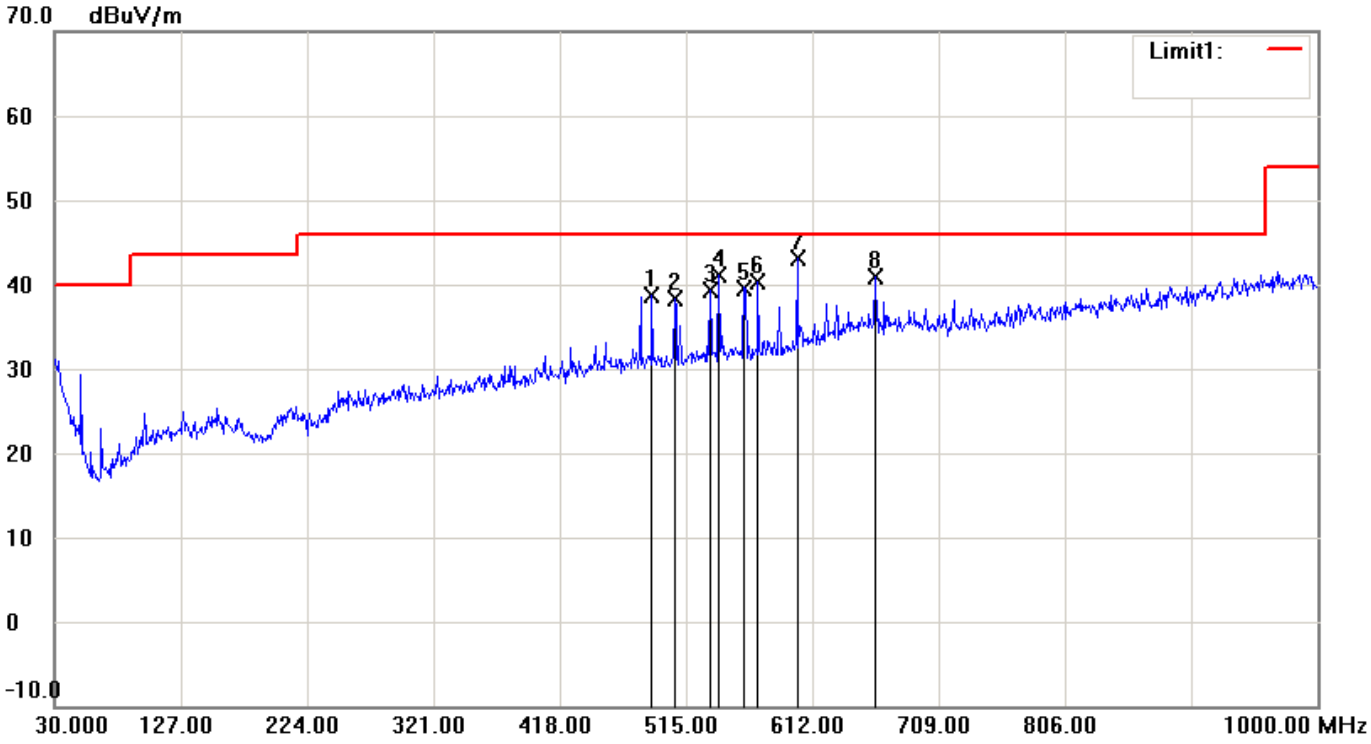


Condition: FCC Part15 RE-Class B_30-1000MHz **Polarization:** Horizontal
EUT: **Distance:** 3m
Model:
Test Mode:
Note:

No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	480.0800	9.68	peak	27.77	37.45	46.00	-8.55
2	488.8100	9.44	peak	27.90	37.34	46.00	-8.66
3	540.2200	8.69	peak	28.73	37.42	46.00	-8.58
4	600.3600	8.07	peak	29.25	37.32	46.00	-8.68
5	660.5000	6.85	peak	31.34	38.19	46.00	-7.81
6	720.6400	8.80	peak	31.57	40.37	46.00	-5.63
7	780.7800	7.27	peak	32.52	39.79	46.00	-6.21
8	911.7300	7.31	peak	34.94	42.25	46.00	-3.75

File: **16-05-MAS-002** **Data** **#112** **Date:** **2016/5/24** **Temperature:** **23 ℃**

Time: **PM 05:32:42** **Humidity:** **57 %**



Condition: **FCC Part15 RE-Class B_30-1000MHz** **Polarization:** **Vertical**

EUT: **Distance:** **3m**

Model:

Test Mode:

Note: **IEEE 802.11N**

No.	Frequency	Reading	Detector	Corrected	Result	Limit	Margin
	(MHz)	(dBuV/m)		dB/m	(dBuV/m)	(dBuV/m)	(dB)
1	488.8100	10.86	peak	27.90	38.76	46.00	-7.24
2	506.2700	10.13	peak	28.17	38.30	46.00	-7.70
3	533.4300	10.77	peak	28.61	39.38	46.00	-6.62
4	540.2200	12.29	peak	28.73	41.02	46.00	-4.98
5	559.6200	10.64	peak	28.96	39.60	46.00	-6.40
6	570.2900	11.24	peak	29.03	40.27	46.00	-5.73
7	600.3600	13.77	peak	29.25	43.02	46.00	-2.98
8	660.5000	9.56	peak	31.34	40.90	46.00	-5.10

10.4.2.2 above 1GHz

10.4.2.2.1 IEEE 802.11b

10.4.2.2.1.1 Fundamental Frequency: 2412 MHz

Frequency	Ant Pol	Reading (dBuV/m)@3m		Correct Factor	Duty Factor	Result (dBuV/m)@3m		Limit (dBuV/m)@3m		Margin (worse)
(MHz)	H/V	Peak	AVG	(dB)	(dB)	Peak	AVG	Peak	AVG	(dB)
1493.5896	H	53.1	---	-12.08	---	41.0	---	74	54	-13.0
1498.0700	V	57.2	---	-12.06	---	45.1	---	74	54	-8.9
1601.2800	V	53.7	---	-11.49	---	42.2	---	74	54	-11.8
2092.6282	V	52.0	---	-9.00	---	43.0	---	74	54	-11.0
2254.1600	V	50.6	---	-8.54	---	42.1	---	74	54	-11.9
2254.1670	H	51.0	---	-8.54	---	42.5	---	74	54	-11.5
3602.4700	H	52.1	---	-4.41	---	47.7	---	74	54	-6.3

10.4.2.2.1.2 Fundamental Frequency: 2437 MHz

Frequency	Ant Pol	Reading (dBuV/m)@3m		Correct Factor	Duty Factor	Result (dBuV/m)@3m		Limit (dBuV/m)@3m		Margin (worse)
(MHz)	H/V	Peak	AVG	(dB)	(dB)	Peak	AVG	Peak	AVG	(dB)
1493.5300	H	53.8	---	-12.08	---	41.7	---	74	54	-12.3
1493.5300	V	55.5	---	-12.08	---	43.4	---	74	54	-10.6
1596.7900	V	54.1	---	-11.51	---	42.6	---	74	54	-11.4
2058.9700	V	53.2	---	-9.08	---	44.1	---	74	54	-9.9
2092.6200	V	52.8	---	-9.00	---	43.8	---	74	54	-10.2
3652.2100	H	51.5	---	-4.19	---	47.3	---	74	54	-6.7

10.4.2.2.1.3 Fundamental Frequency: 2462 MHz

Frequency	Ant Pol	Reading (dBuV/m)@3m		Correct Factor	Duty Factor	Result (dBuV/m)@3m		Limit (dBuV/m)@3m		Margin (worse)
(MHz)	H/V	Peak	AVG	(dB)	(dB)	Peak	AVG	Peak	AVG	(dB)
1199.6700	V	52.7	---	-13.28	---	39.4	---	74	54	-14.6
1246.7900	H	54.4	---	-13.10	---	41.3	---	74	54	-12.7
1495.8330	H	53.8	---	-12.08	---	41.7	---	74	54	-12.3
1495.8330	V	53.6	---	-12.08	---	41.5	---	74	54	-12.5
1596.7900	H	50.6	---	-11.51	---	39.1	---	74	54	-14.9
1596.7900	V	52.8	---	-11.51	---	41.3	---	74	54	-12.7
2092.6200	V	52.2	---	-9.00	---	43.2	---	74	54	-10.8

Note: 1. Place of Measurement: Measuring site of the ETC.
2. Item of margin shown in above table refer to Peak & average limit.
3. Remark "---" means that the emissions level is too low to be measured.
4. If the peak result is under the average limit, that is deemed to meet the average limit.
5. If there is only peak result, item "Margin" referred to "peak result – average limit".
6. The radiation emissions have been measured to beyond the tenth harmonic of the fundamental frequency and show the sinificant frequencies, other means the value is too low to be detected.
7. The estimated measurement uncertainty of the result measurement is
±4.6dB (30MHz≦f<300MHz).
±4.4dB (300MHz≦f<1000MHz).
±4.1dB (1GHz≦f≦18GHz).
±4.4dB (18GHz<f≦40GHz).
8. Please refer to page 87 to page 95 for chart.

10.4.2.2.2 IEEE 802.11g

10.4.2.2.2.1 Fundamental Frequency: 2412 MHz

Frequency	Ant Pol	Reading (dBuV/m)@3m		Correct Factor	Duty Factor	Result (dBuV/m)@3m		Limit (dBuV/m)@3m		Margin (worse)
(MHz)	H/V	Peak	AVG	(dB)	(dB)	Peak	AVG	Peak	AVG	(dB)
1199.6700	V	52.6	---	-13.28	---	39.3	---	74	54	-14.7
1493.0000	V	55.0	---	-12.08	---	42.9	---	74	54	-11.1
1495.8300	H	51.3	---	-12.08	---	39.2	---	74	54	-14.8
1599.0300	V	54.0	---	-11.50	---	42.5	---	74	54	-11.5
2097.1100	V	51.4	---	-8.98	---	42.4	---	74	54	-11.6
3602.4700	H	51.7	---	-4.41	---	47.3	---	74	54	-6.7

10.4.2.2.2.2 Fundamental Frequency: 2437 MHz

Frequency	Ant Pol	Reading (dBuV/m)@3m		Correct Factor	Duty Factor	Result (dBuV/m)@3m		Limit (dBuV/m)@3m		Margin (worse)
(MHz)	H/V	Peak	AVG	(dB)	(dB)	Peak	AVG	Peak	AVG	(dB)
1498.0000	H	53.0	---	-12.06	---	40.9	---	74.0	54.0	-13.1
1498.0000	V	52.3	---	-12.06	---	40.2	---	74.0	54.0	-13.8
1594.5500	V	53.6	---	-11.52	---	42.1	---	74.0	54.0	-11.9
2092.6200	V	52.6	---	-9.00	---	43.6	---	74.0	54.0	-10.4

10.4.2.2.2.3 Fundamental Frequency: 2462 MHz

Frequency	Ant Pol	Reading (dBuV/m)@3m		Correct Factor	Duty Factor	Result (dBuV/m)@3m		Limit (dBuV/m)@3m		Margin (worse)
(MHz)	H/V	Peak	AVG	(dB)	(dB)	Peak	AVG	Peak	AVG	(dB)
1498.0770	H	52.6	---	-12.06	---	40.5	---	74.0	54.0	-13.5
1498.0770	V	57.9	---	-12.06	---	45.8	---	74.0	54.0	-8.2
1596.7900	V	53.3	---	-11.51	---	41.8	---	74.0	54.0	-12.2

Note: 1. Place of Measurement: Measuring site of the ETC.
2. Item of margin shown in above table refer to Peak & average limit..
3. Remark "---" means that the emissions level is too low to be measured.
4. If the peak result is under the average limit, that is deemed to meet the average limit.
5. If there is only peak result, item "Margin" referred to "peak result – average limit".
6. The radiation emissions have been measured to beyond the tenth harmonic of the fundamental frequency and show the sinificant frequencies, other means the value is too low to be detected.
7. The estimated measurement uncertainty of the result measurement is
±4.6dB (30MHz≦f<300MHz).
±4.4dB (300MHz≦f<1000MHz).
±4.1dB (1GHz≦f≦18GHz).
±4.4dB (18GHz<f≦40GHz).
8. Please refer to page 96 to page 104 for chart.

10.4.2.2.3 IEEE 802.11n, HT20

10.4.2.2.3.1 Fundamental Frequency: 2412 MHz

Frequency	Ant Pol	Reading (dBuV/m)@3m		Correct Factor	Duty Factor	Result (dBuV/m)@3m		Limit (dBuV/m)@3m		Margin (worse)
(MHz)	H/V	Peak	AVG	(dB)	(dB)	Peak	AVG	Peak	AVG	(dB)
1498.2000	V	52.3	---	-12.06	---	40.2	---	74.0	54.0	-13.8
1599.2300	V	51.2	---	-11.50	---	39.7	---	74.0	54.0	-14.3

10.4.2.2.3.2 Fundamental Frequency: 2437 MHz

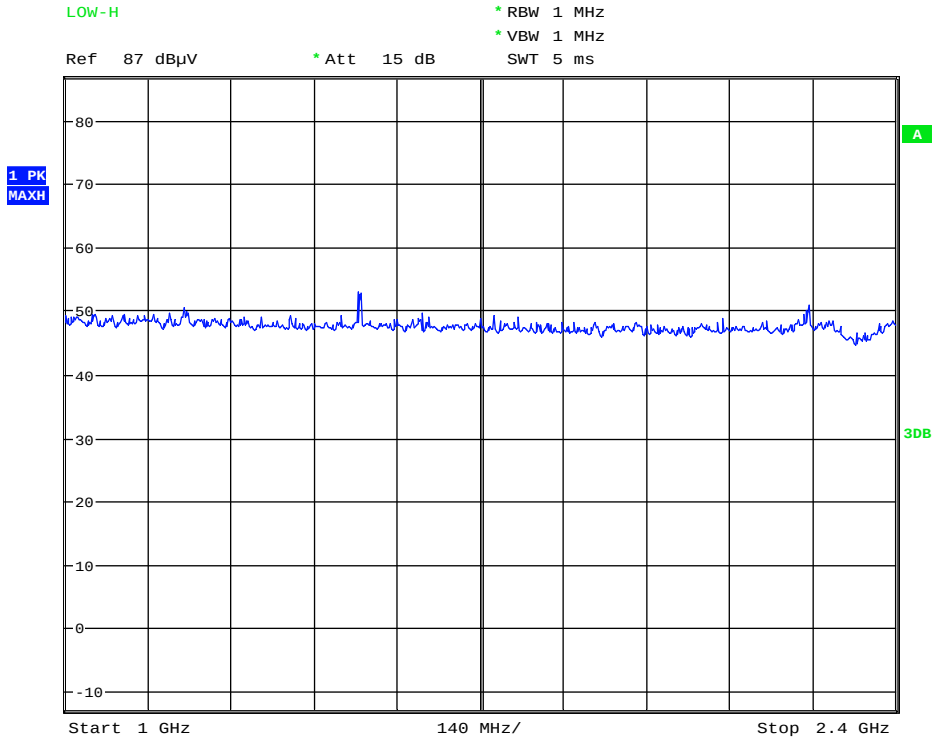
Frequency	Ant Pol	Reading (dBuV/m)@3m		Correct Factor	Duty Factor	Result (dBuV/m)@3m		Limit (dBuV/m)@3m		Margin (worse)
(MHz)	H/V	Peak	AVG	(dB)	(dB)	Peak	AVG	Peak	AVG	(dB)
1493.5800	V	52.4	---	-12.08	---	40.3	---	74.0	54.0	-13.7
1596.7900	V	52.7	---	-11.51	---	41.2	---	74.0	54.0	-12.8
2092.6200	V	52.6	---	-9.00	---	43.6	---	74.0	54.0	-10.4

10.4.2.2.3.3 Fundamental Frequency: 2462 MHz

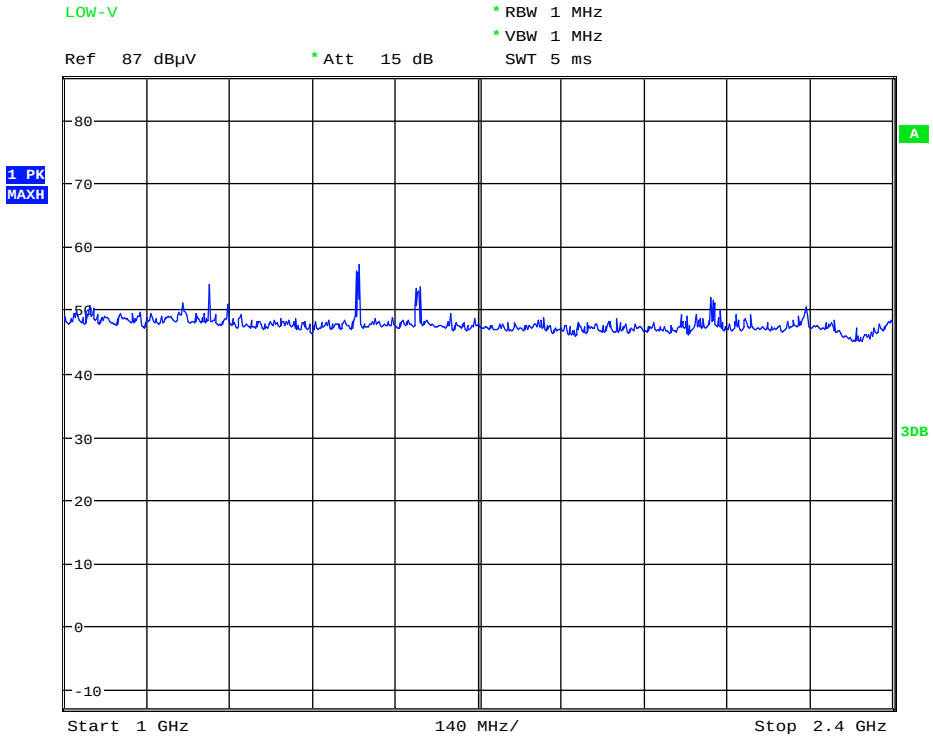
Frequency	Ant Pol	Reading (dBuV/m)@3m		Correct Factor	Duty Factor	Result (dBuV/m)@3m		Limit (dBuV/m)@3m		Margin (worse)
(MHz)	H/V	Peak	AVG	(dB)	(dB)	Peak	AVG	Peak	AVG	(dB)
1498.0700	H	52.6	---	-12.06	---	40.5	---	74.0	54.0	-13.5
1498.0700	V	57.9	---	-12.06	---	45.8	---	74.0	54.0	-8.2
1596.7900	V	53.3	---	-11.51	---	41.8	---	74.0	54.0	-12.2

Note: 1. Place of Measurement: Measuring site of the ETC.
2. Item of margin shown in above table refer to Peak & average limit.
3. Remark "---" means that the emissions level is too low to be measured.
4. If the peak result is under the average limit, that is deemed to meet the average limit.
5. If there is only peak result, item "Margin" referred to "peak result – average limit".
6. The radiation emissions have been measured to beyond the tenth harmonic of the fundamental frequency and show the sinificant frequencies, other means the value is too low to be detected.
7. The estimated measurement uncertainty of the result measurement is
±4.6dB (30MHz≦f<300MHz).
±4.4dB (300MHz≦f<1000MHz).
±4.1dB (1GHz≦f≦18GHz).
±4.4dB (18GHz<f≦40GHz).
8. Please refer to page 105 to page 113 for chart.

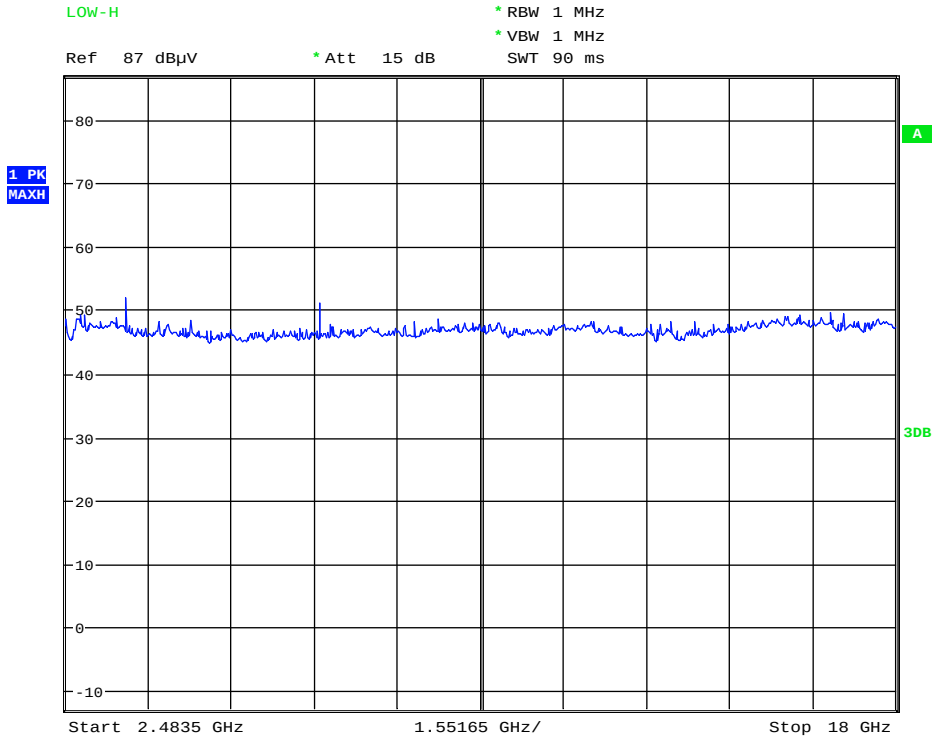
IEEE 802.11b



Date: 24.MAY.2016 08:08:02



Date: 24.MAY.2016 08:11:37



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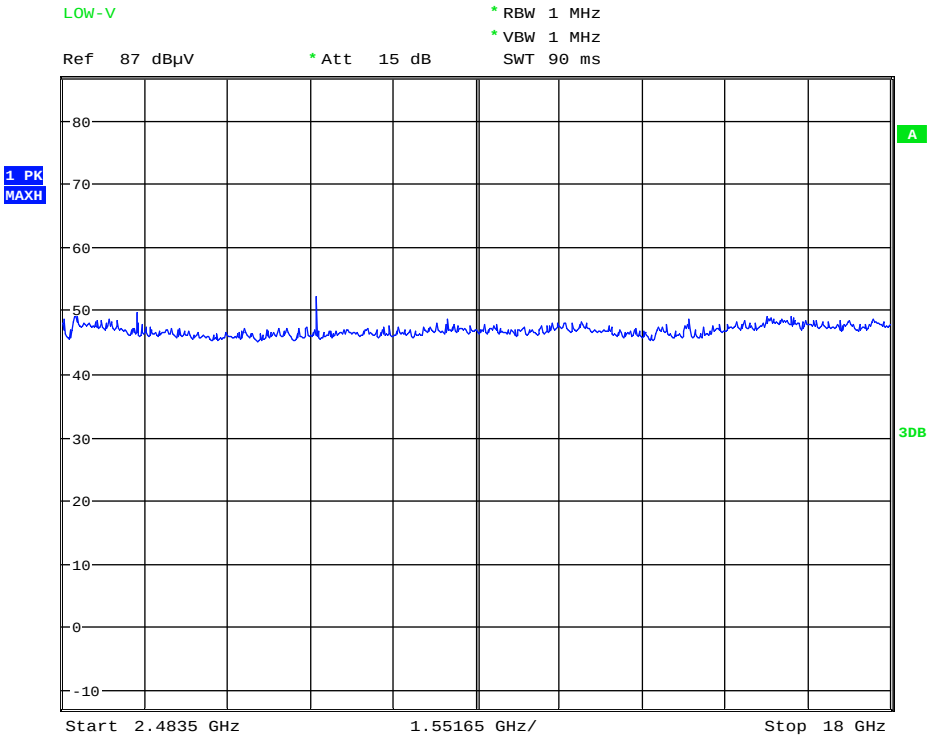

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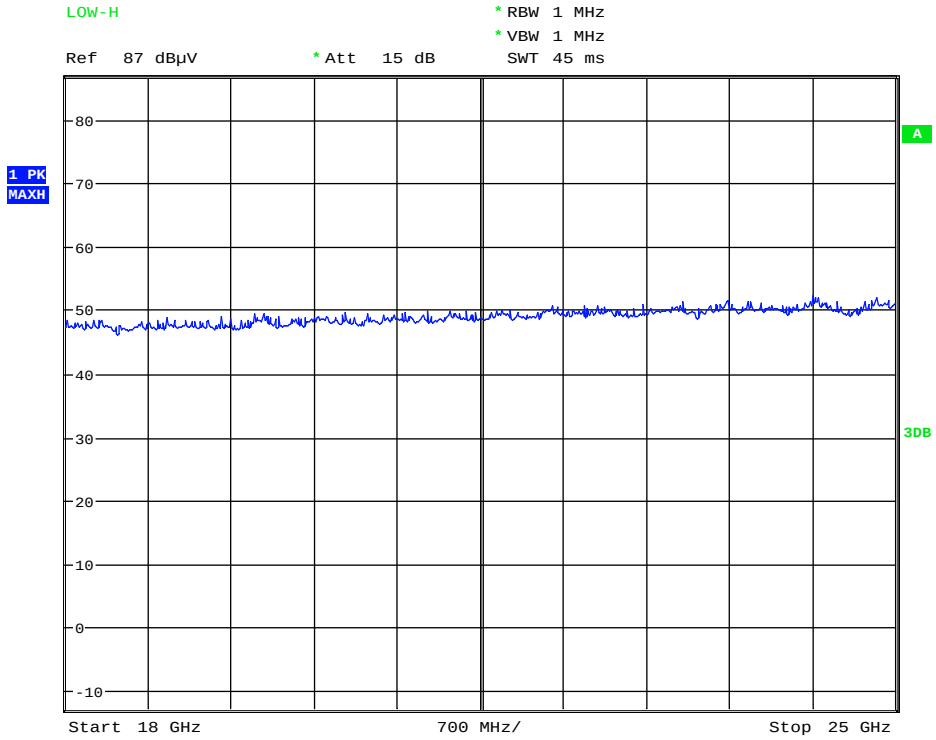

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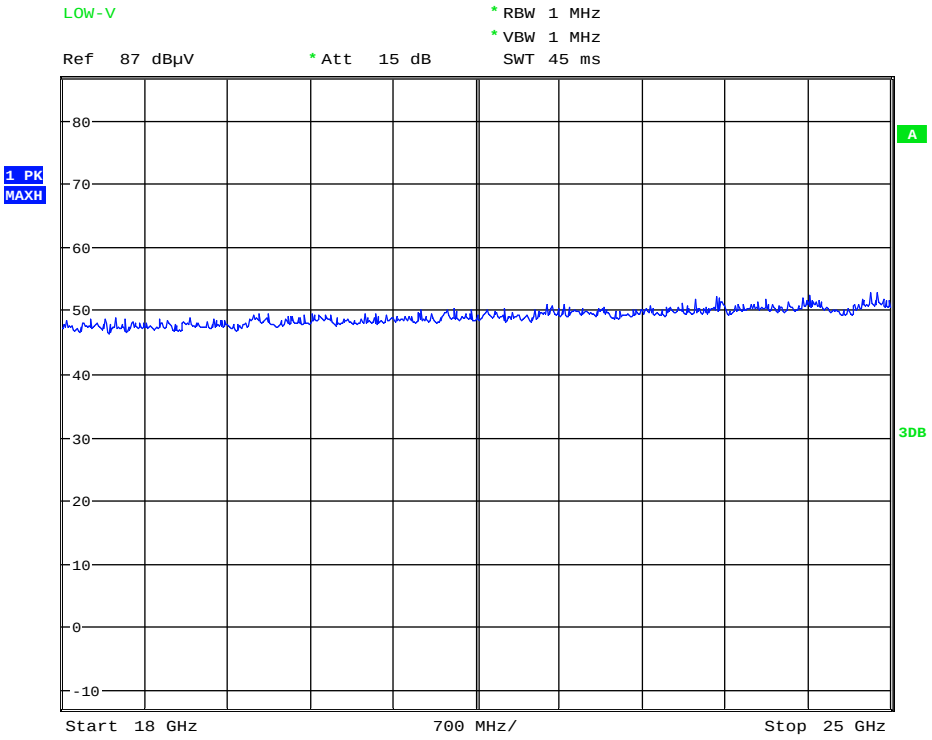

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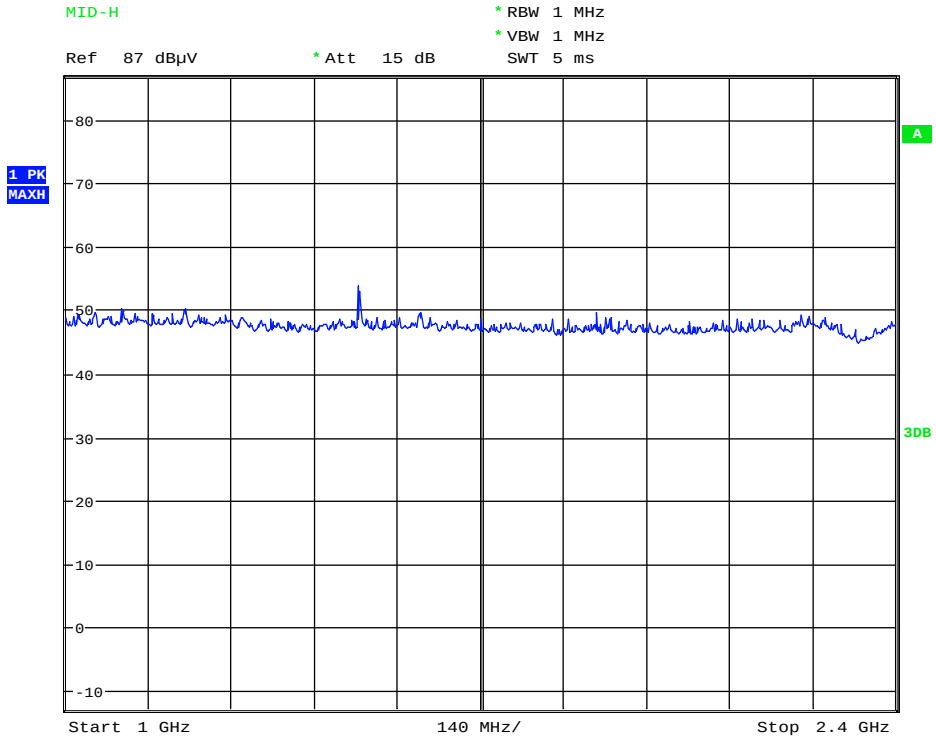

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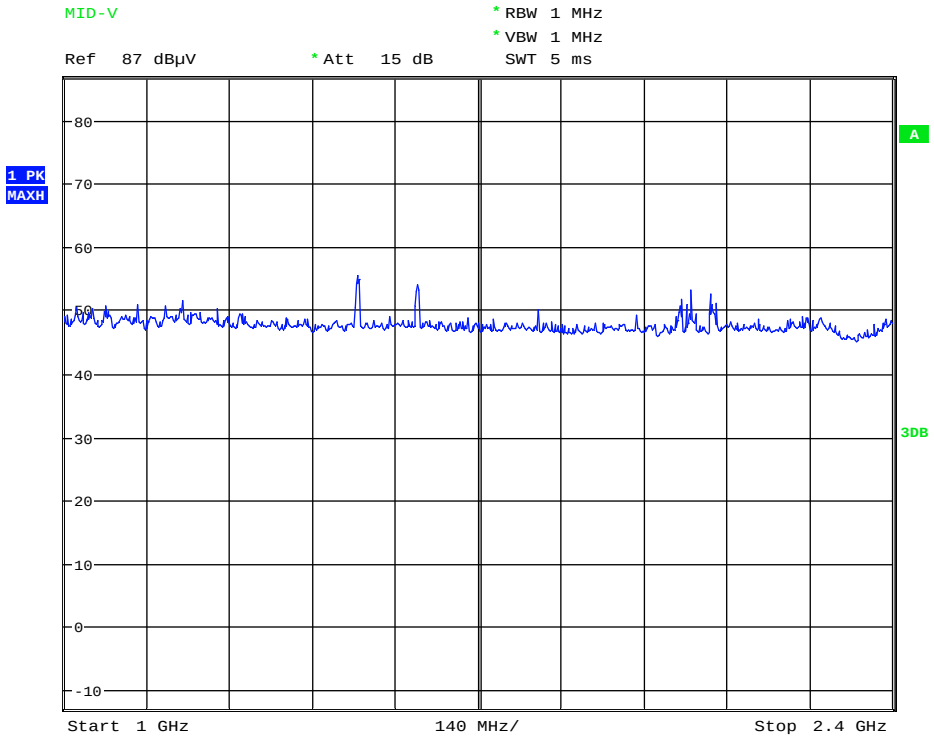

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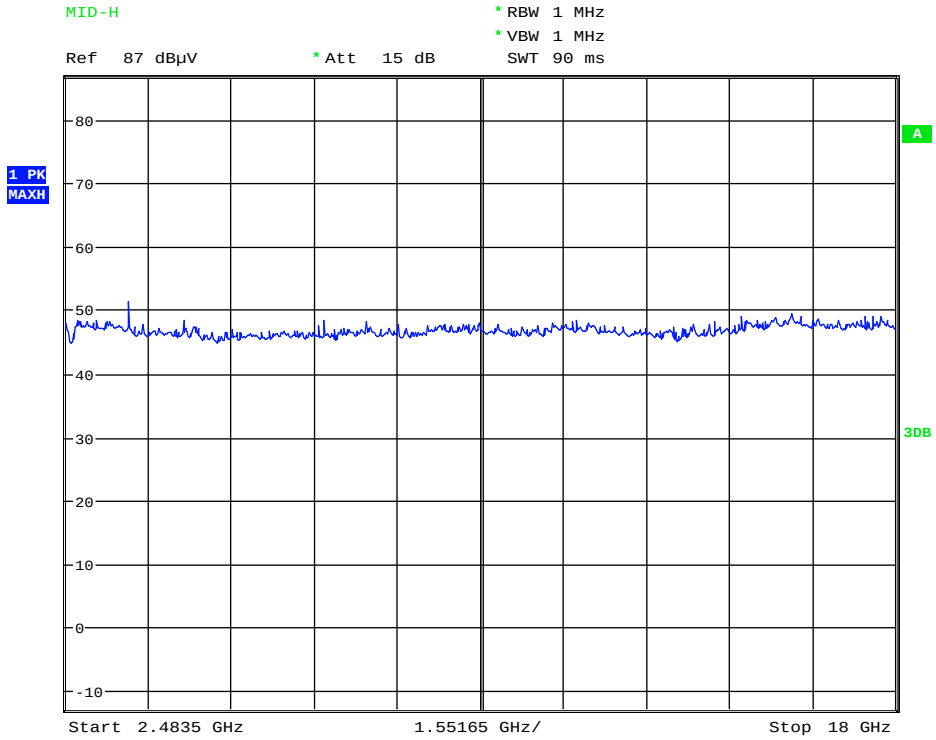

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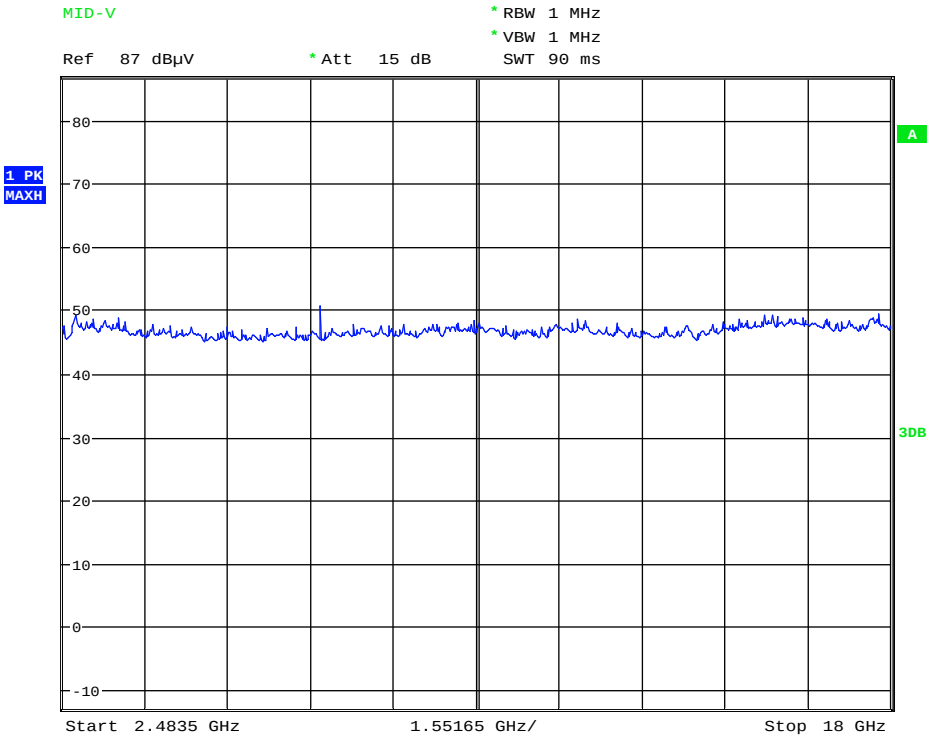

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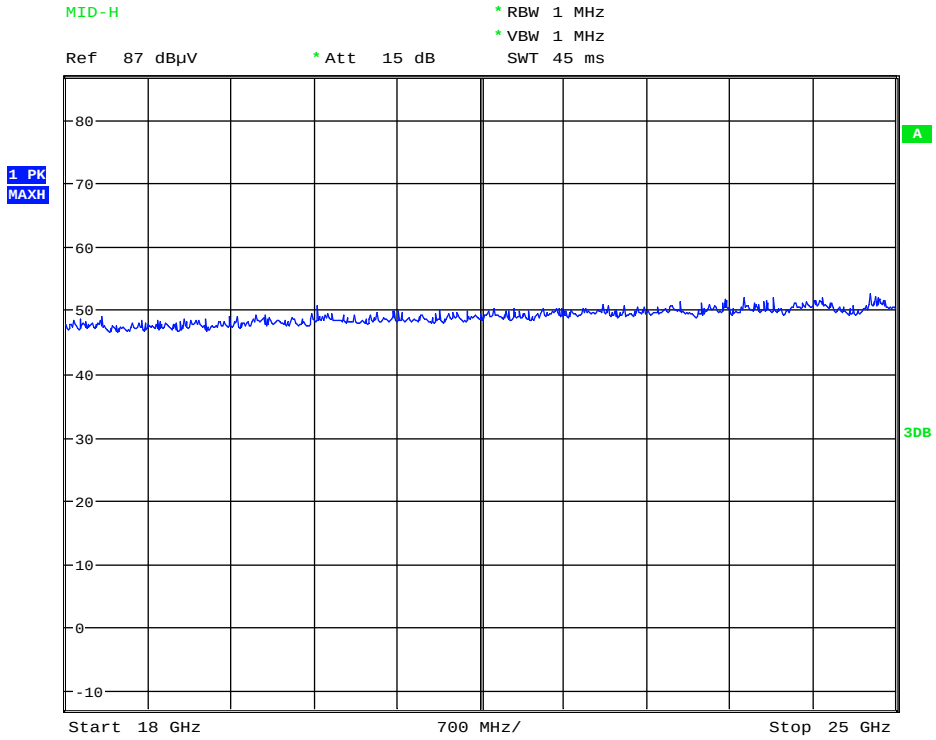

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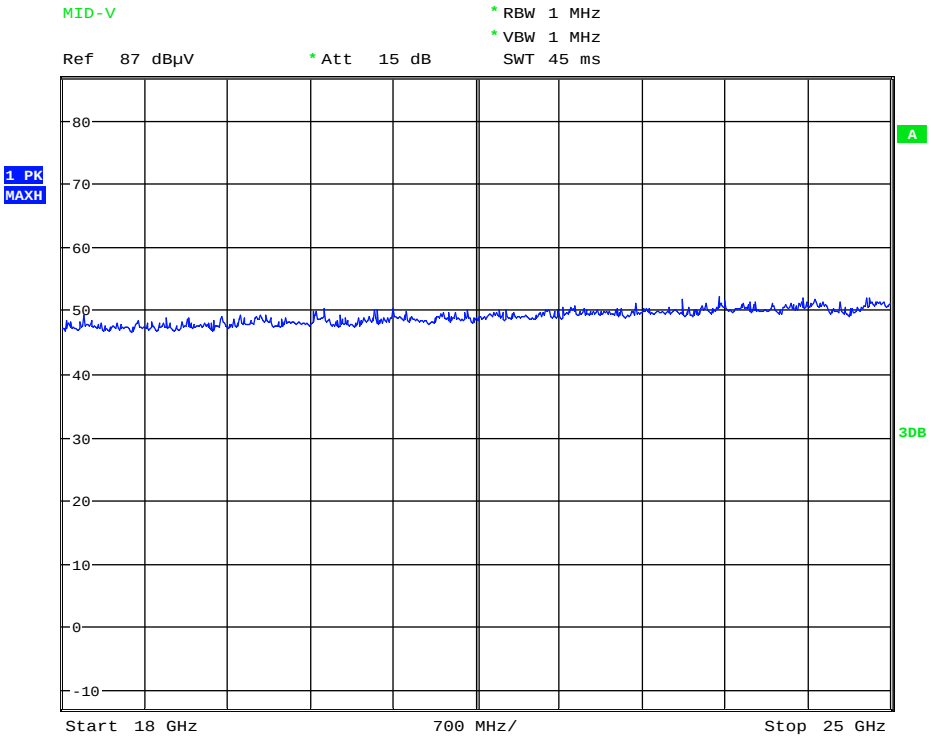

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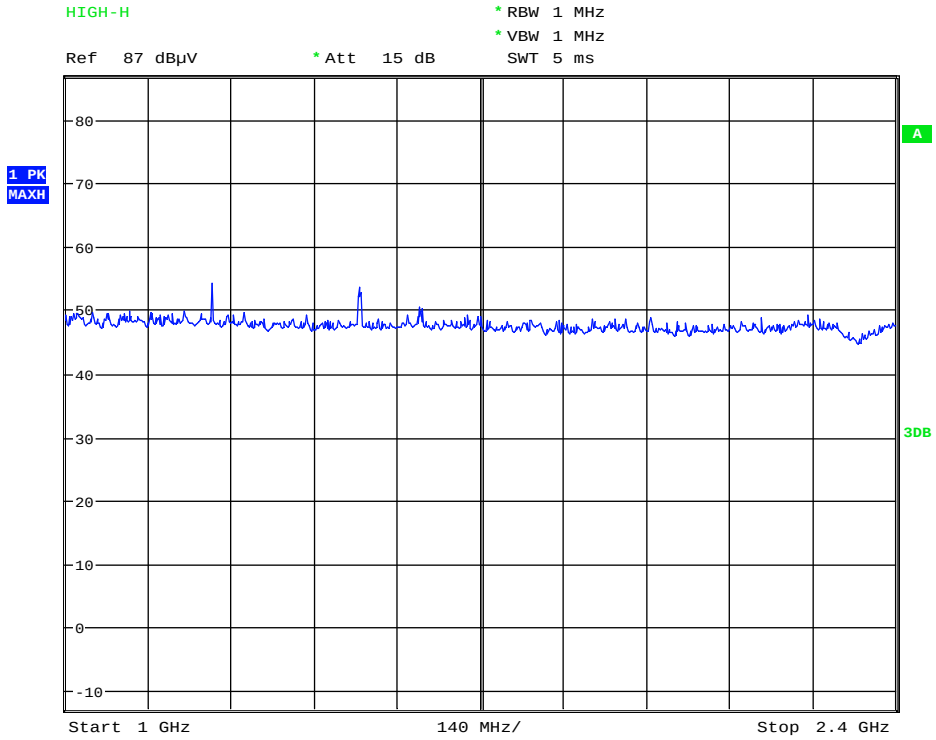

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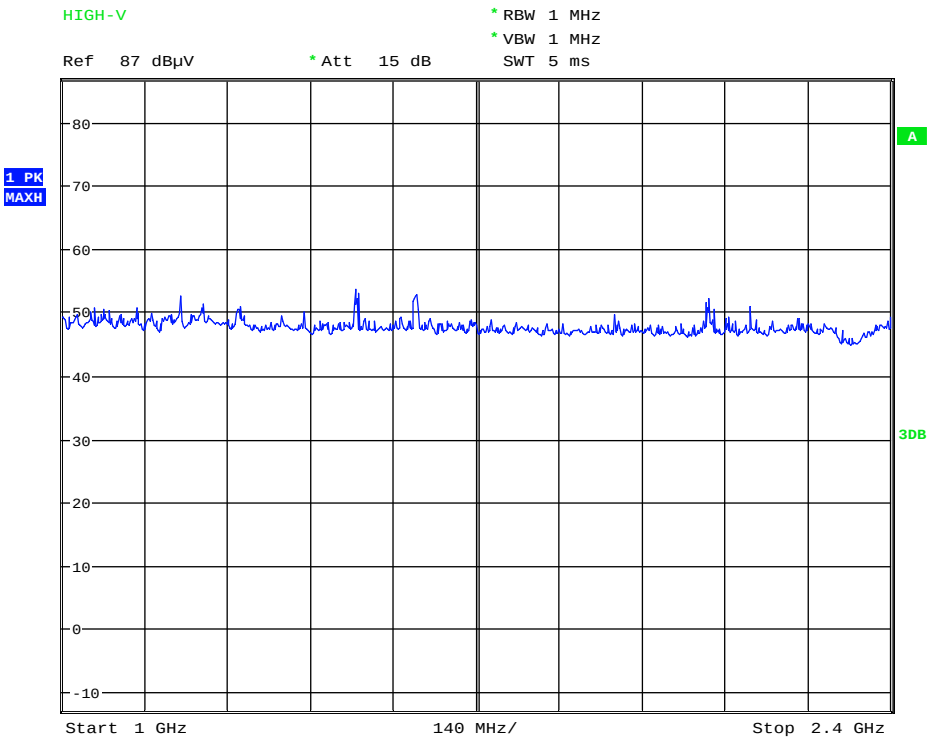

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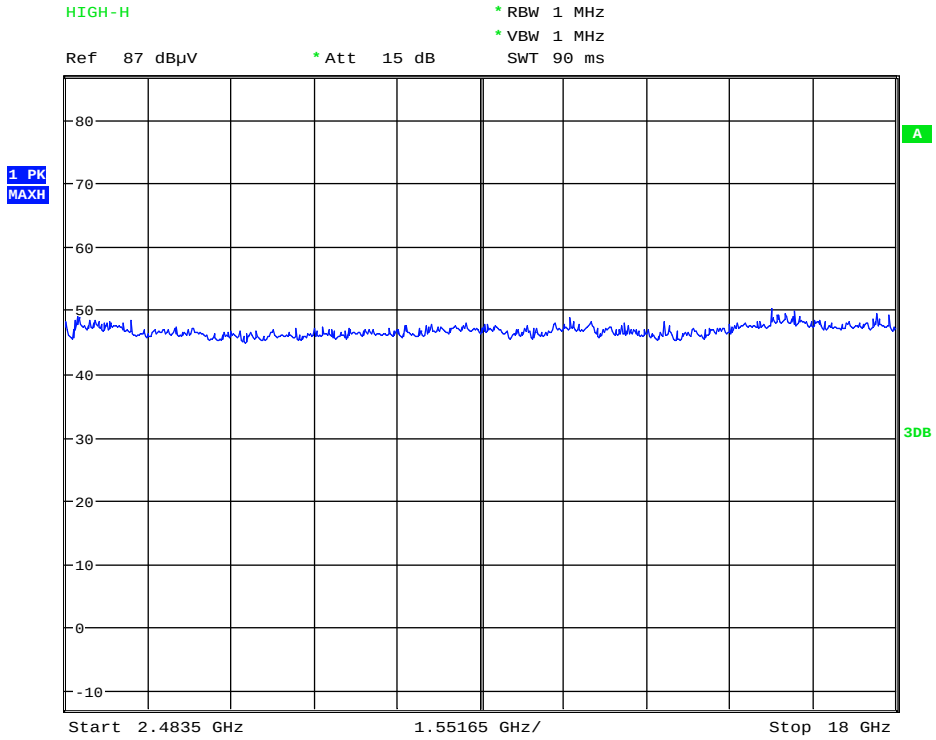

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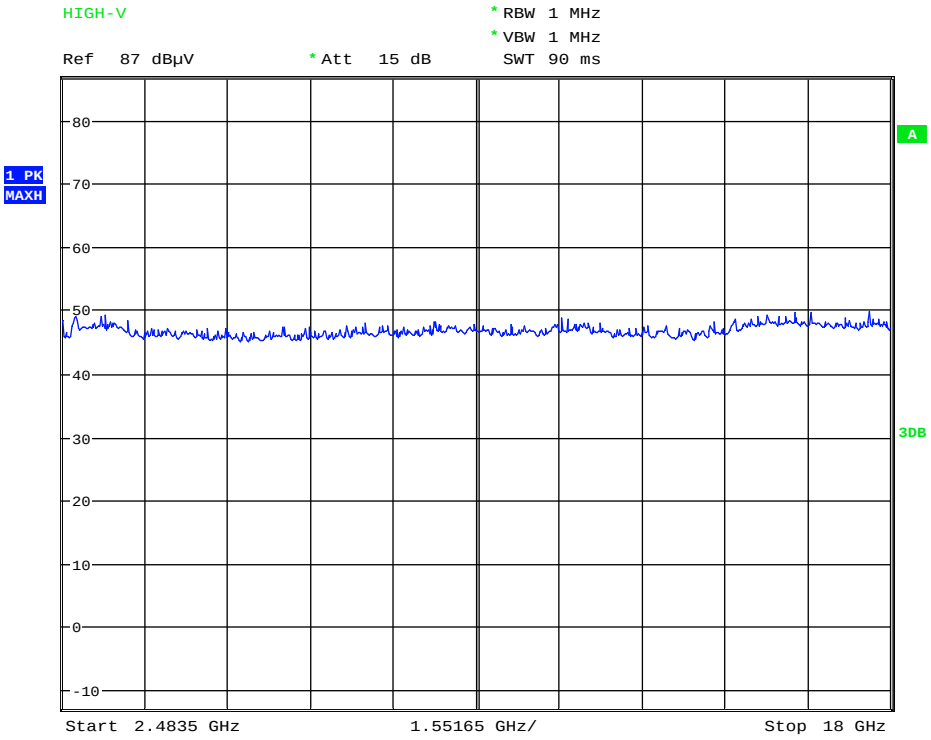

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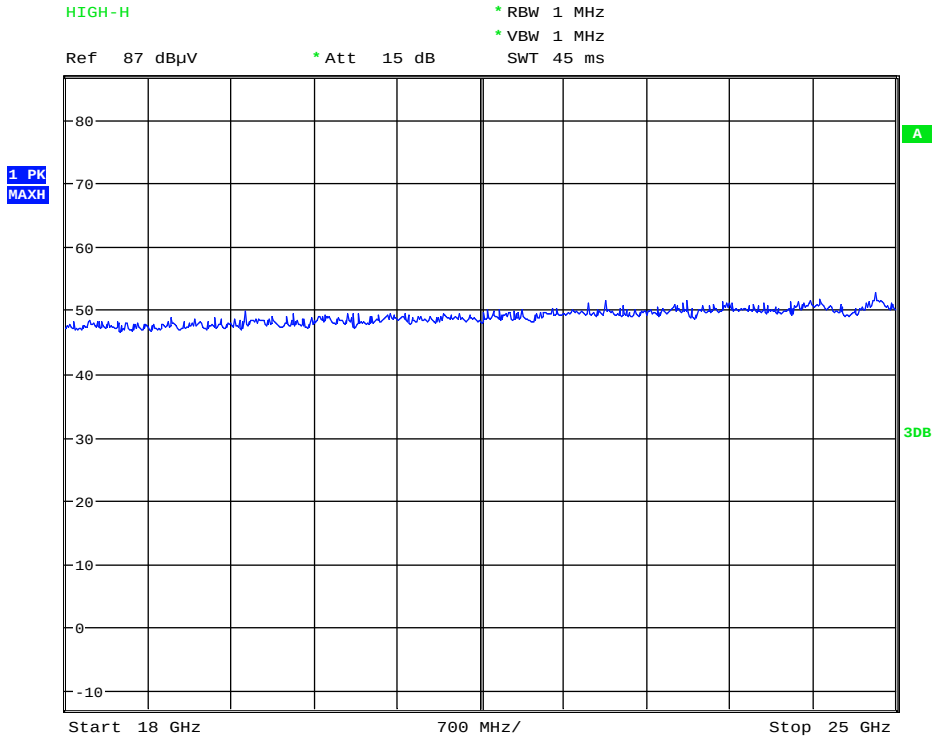

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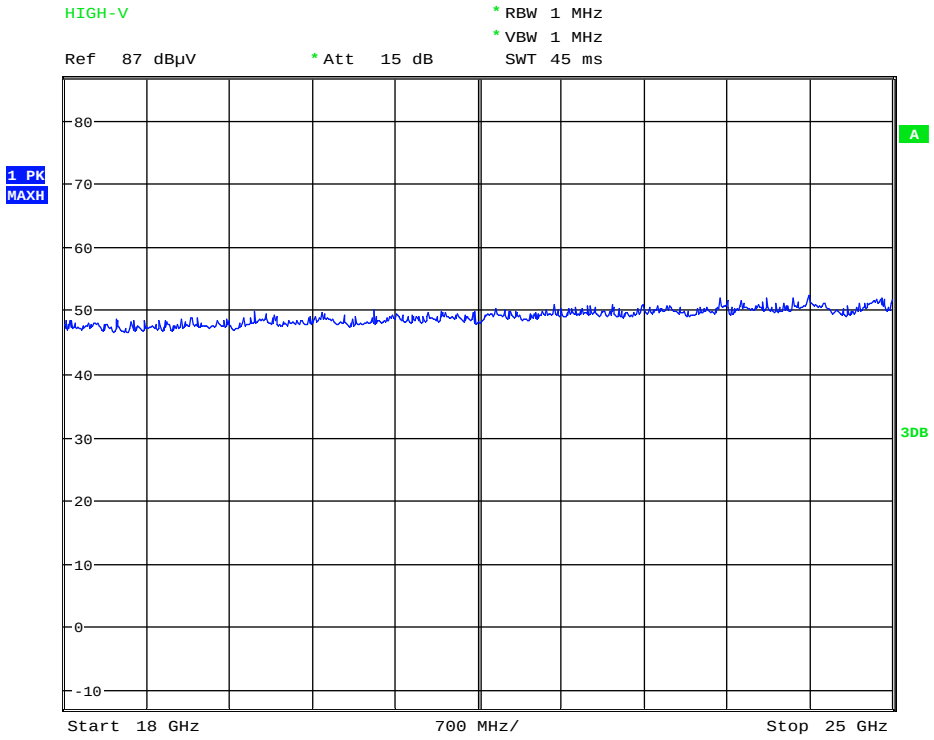

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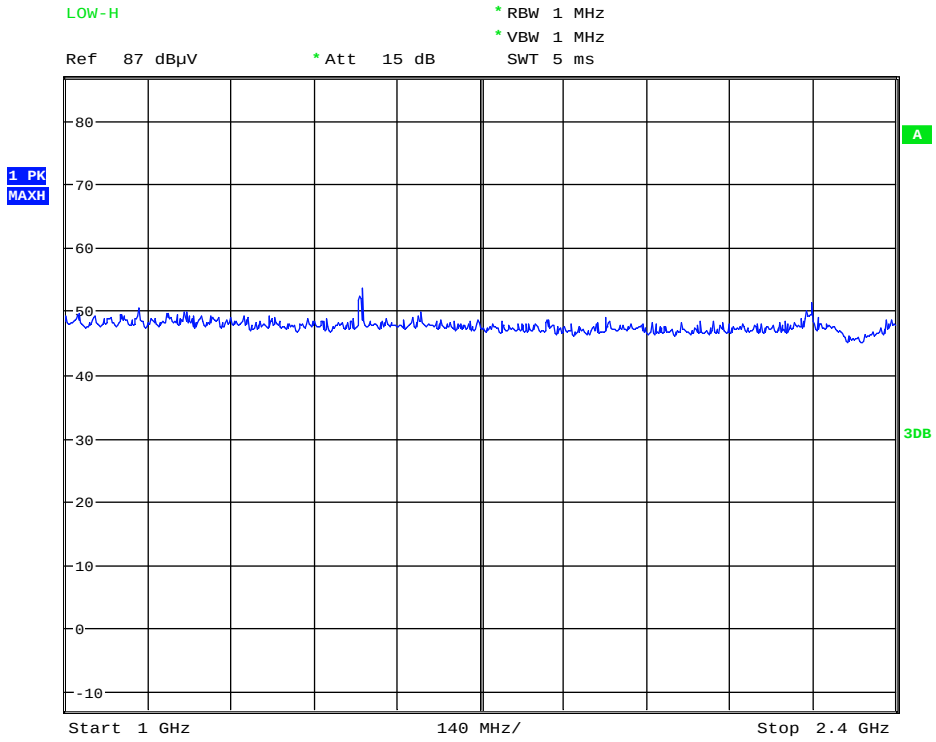
IEEE 802.11g



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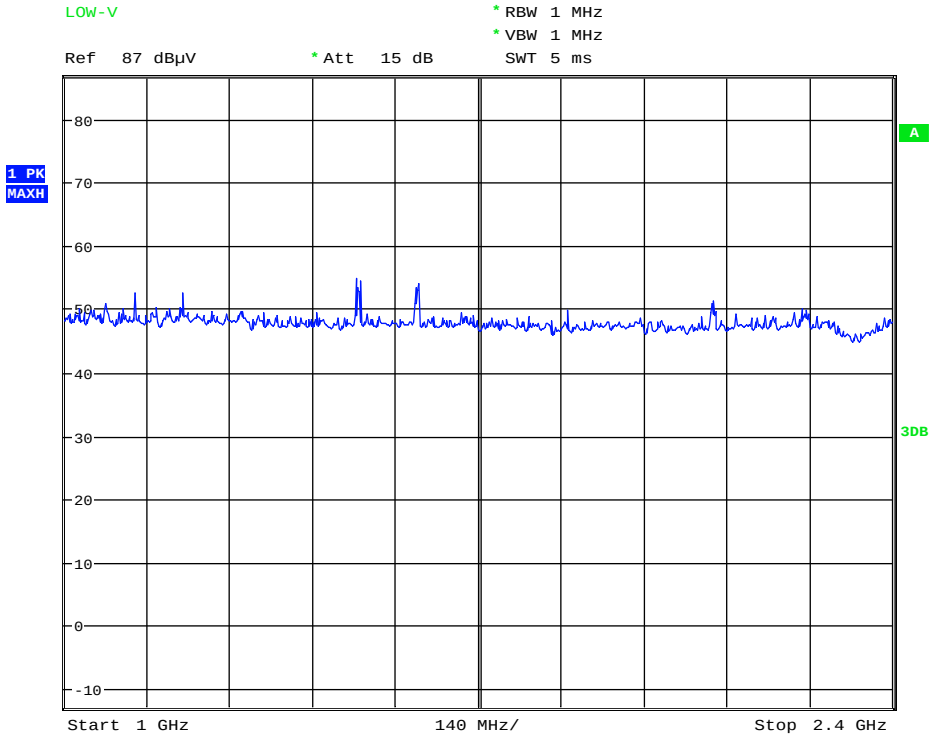

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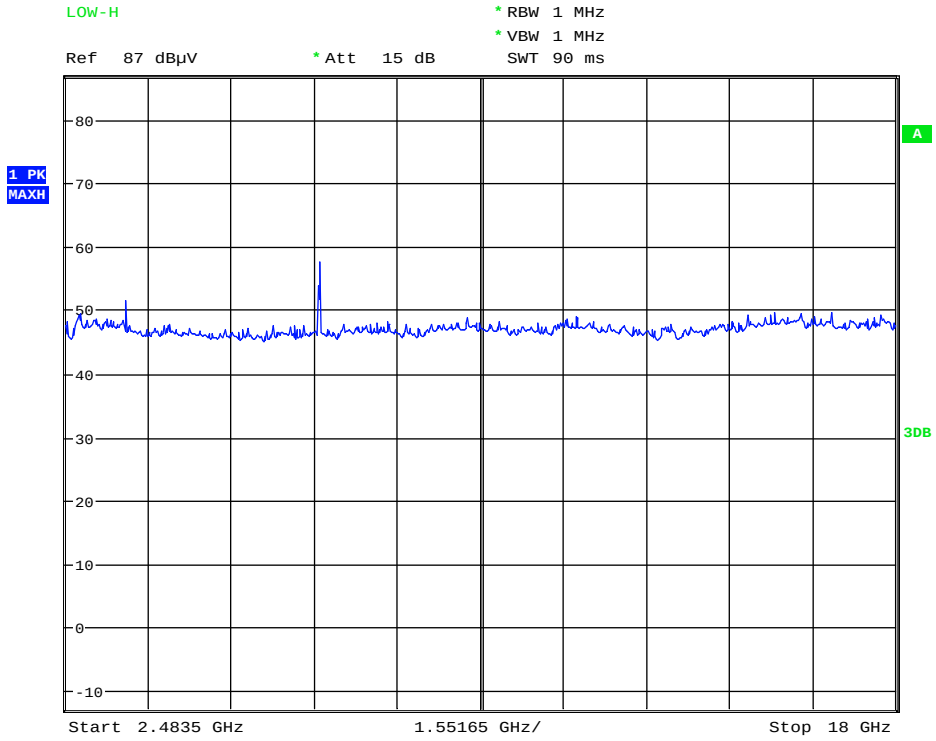

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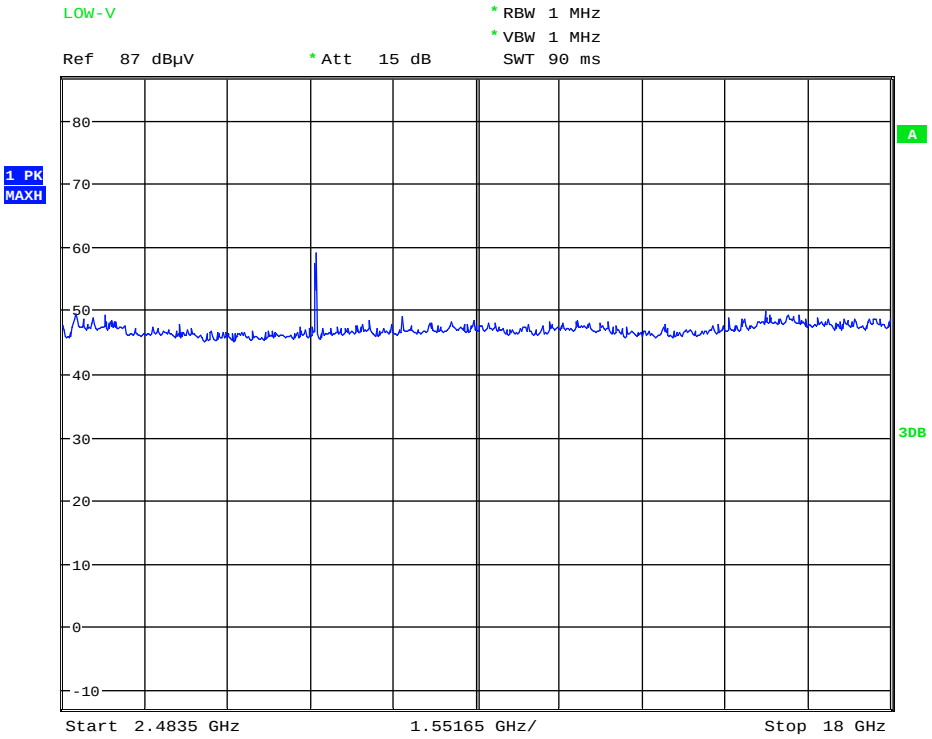

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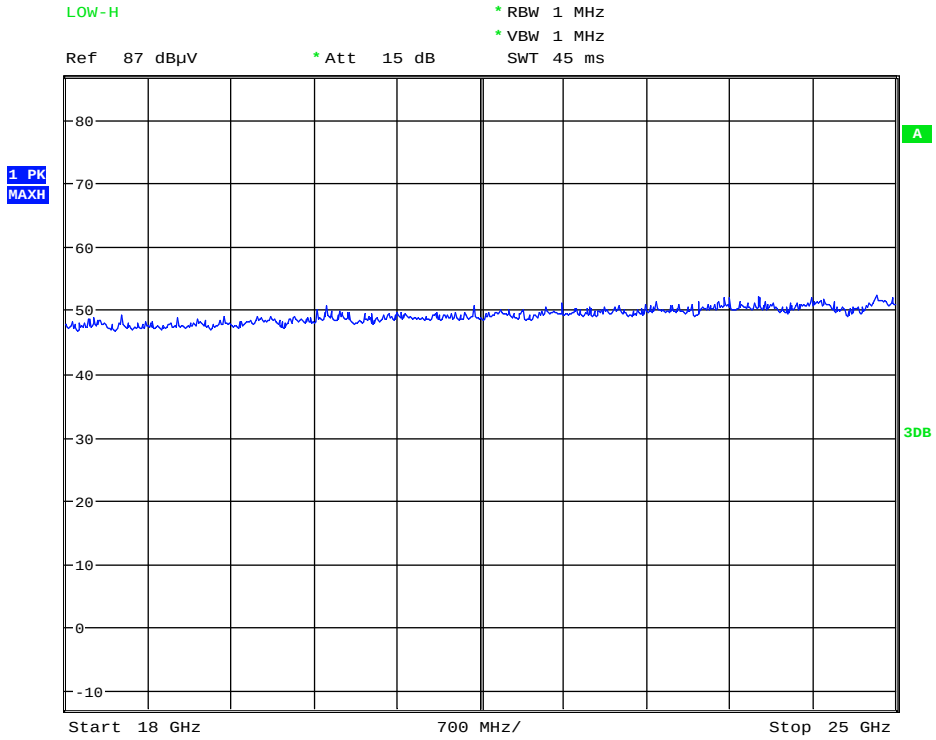

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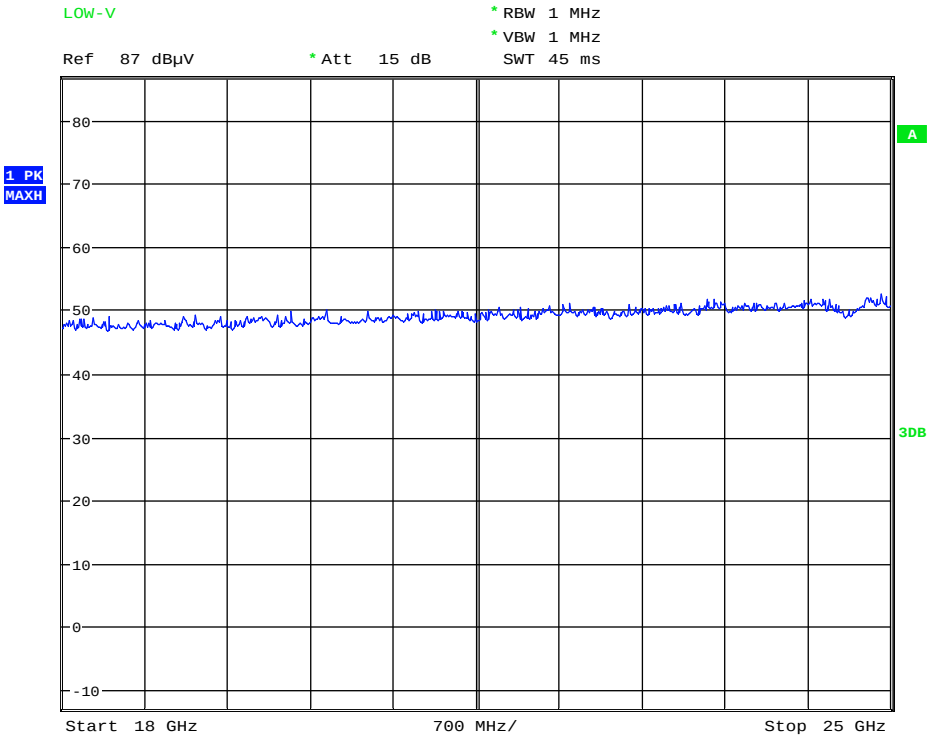

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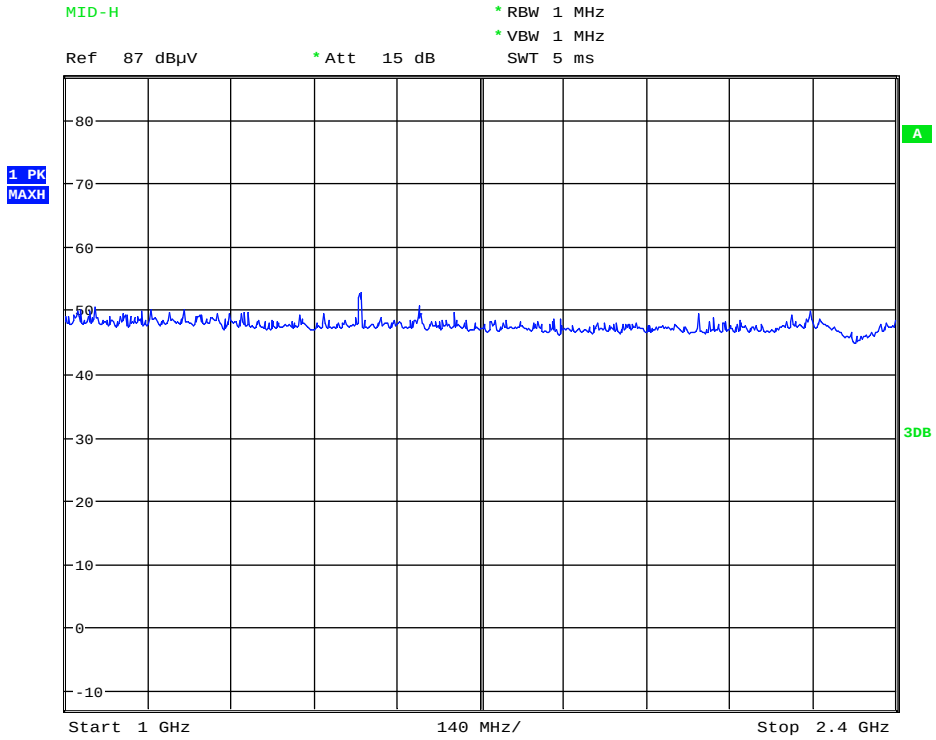

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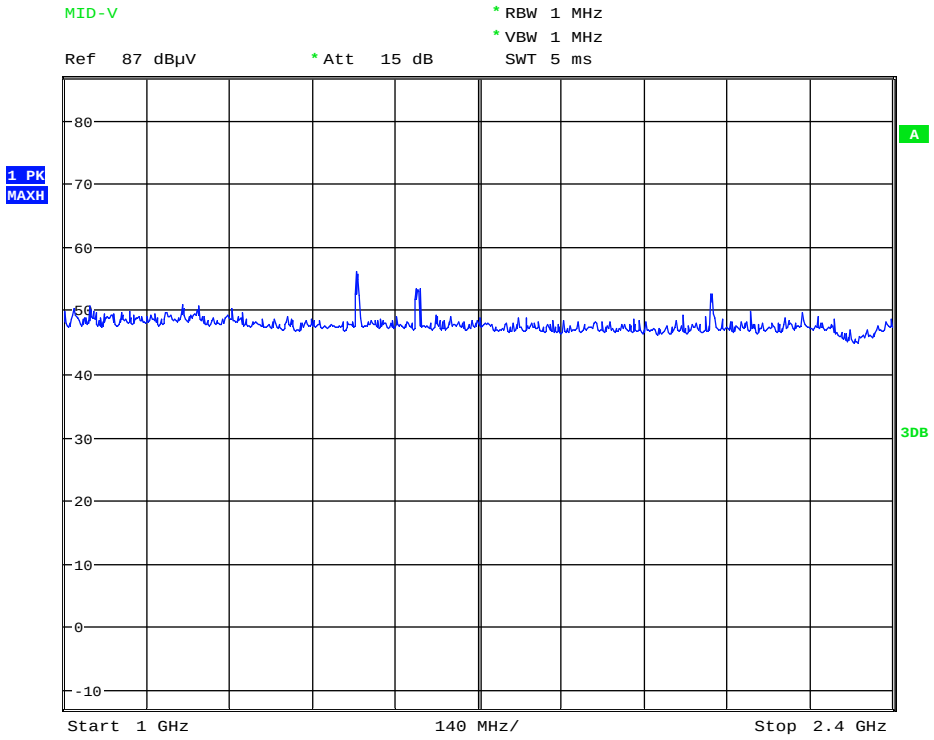

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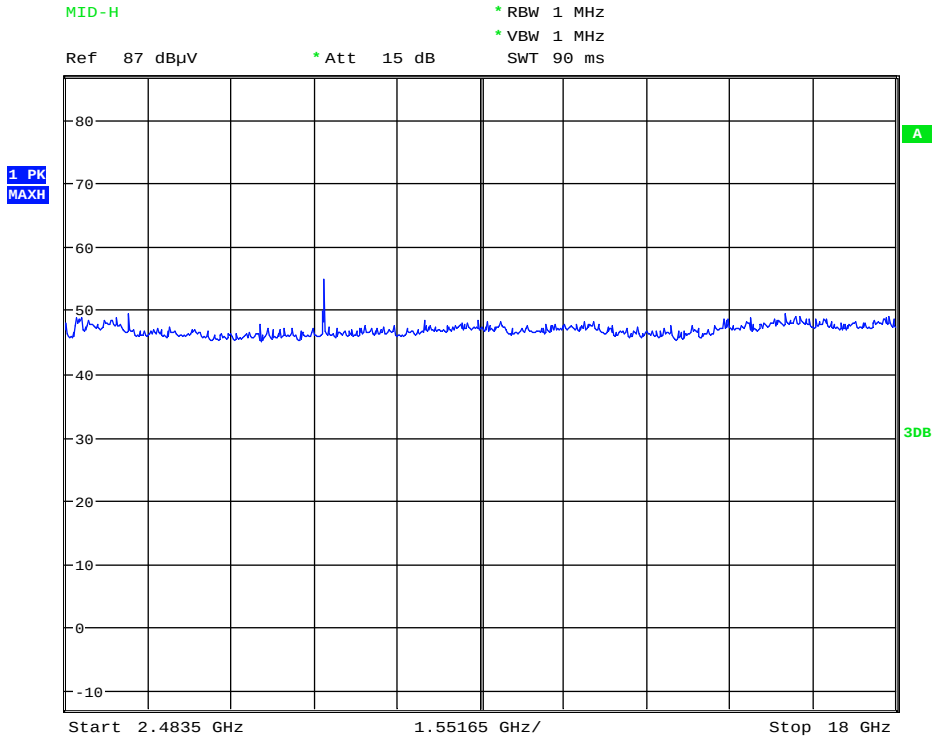

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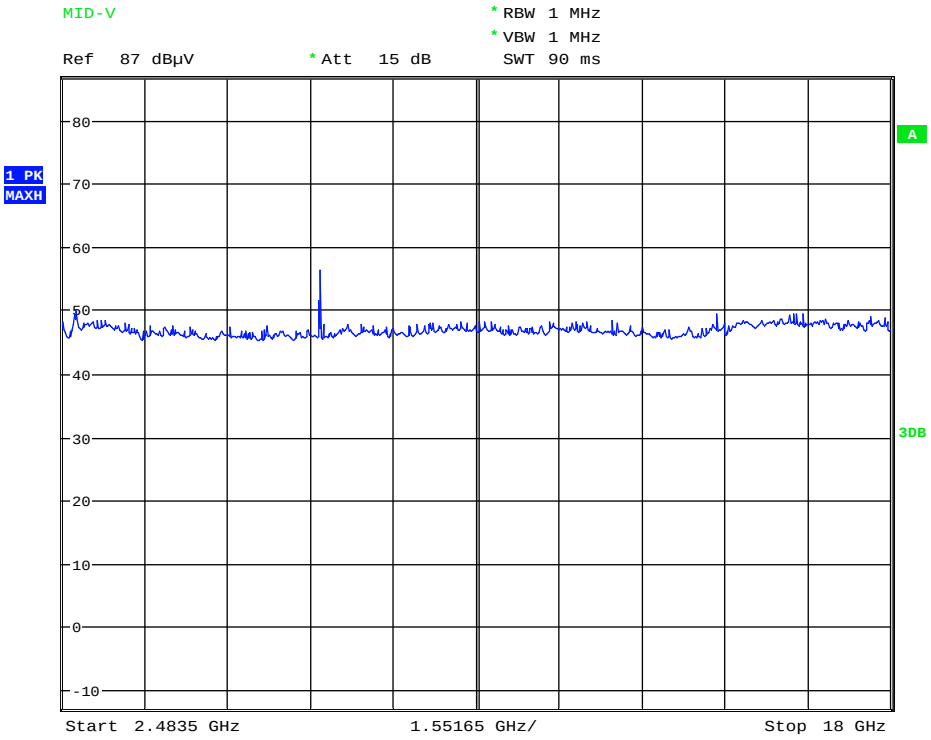

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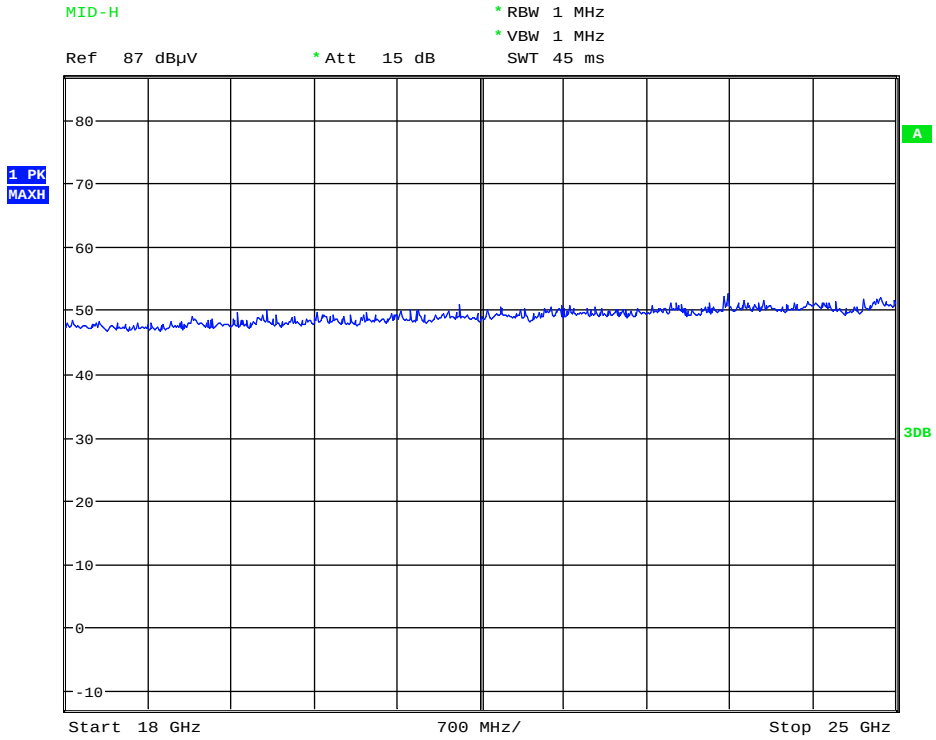

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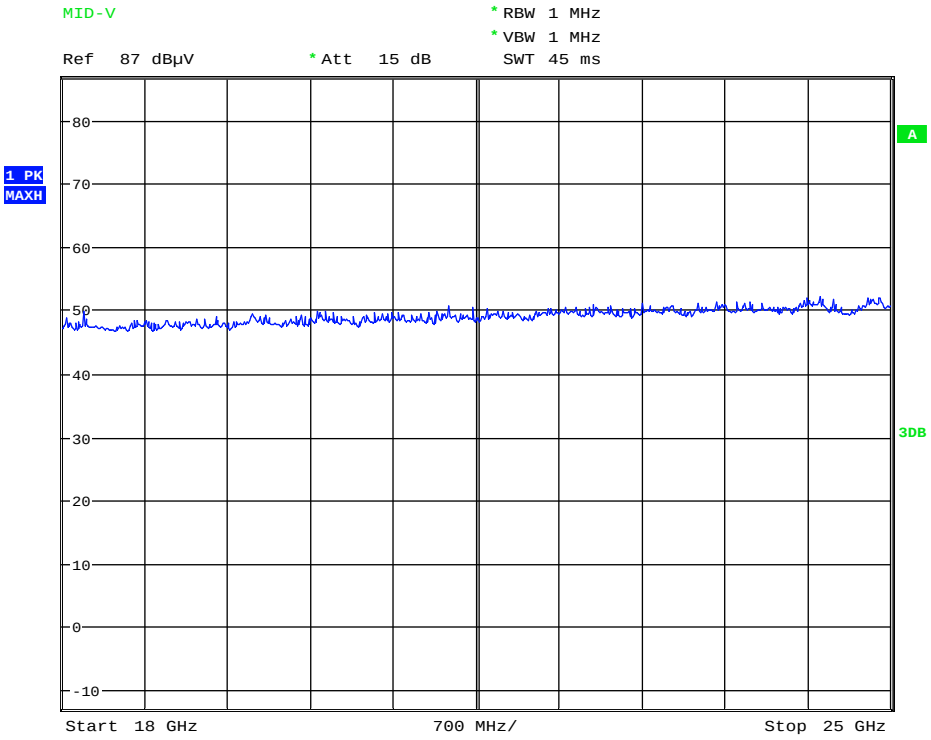
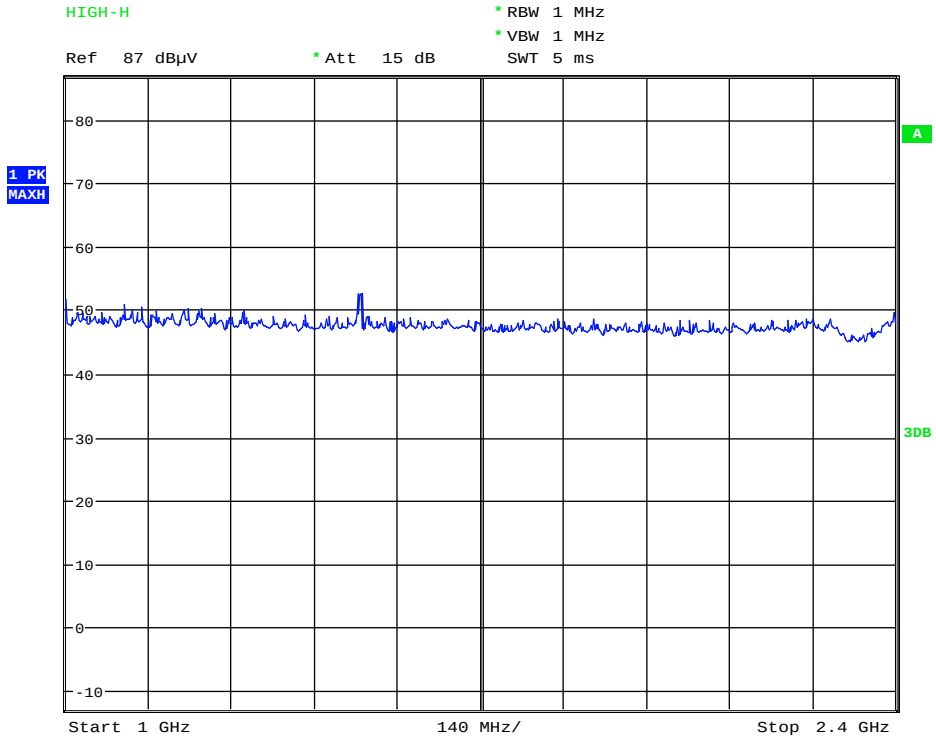


Date: 24.MAY.2016 09:24:02



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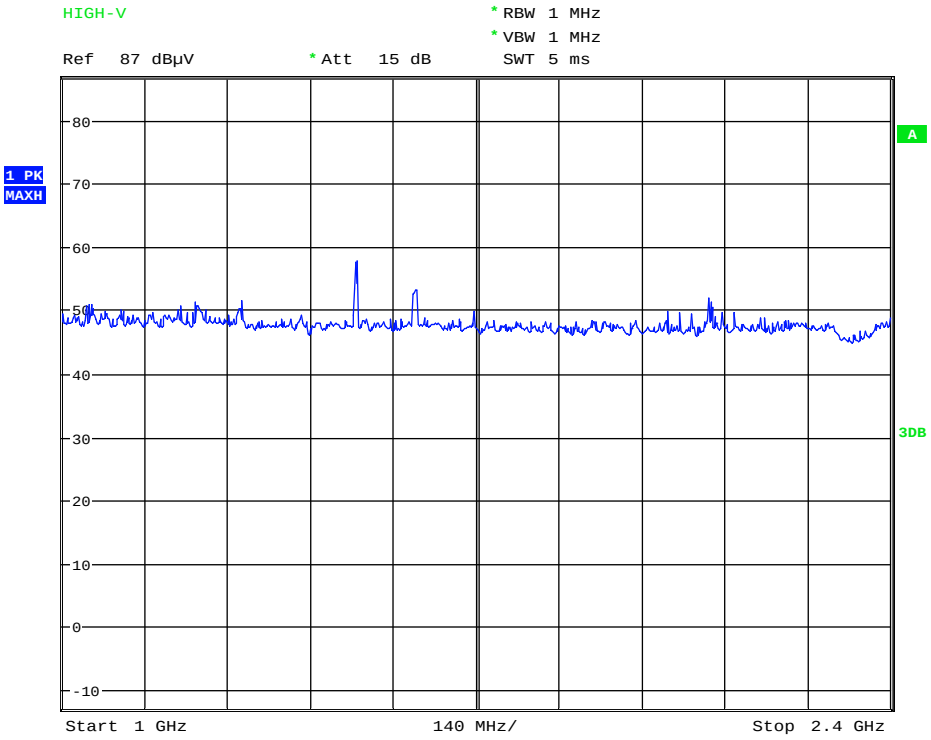

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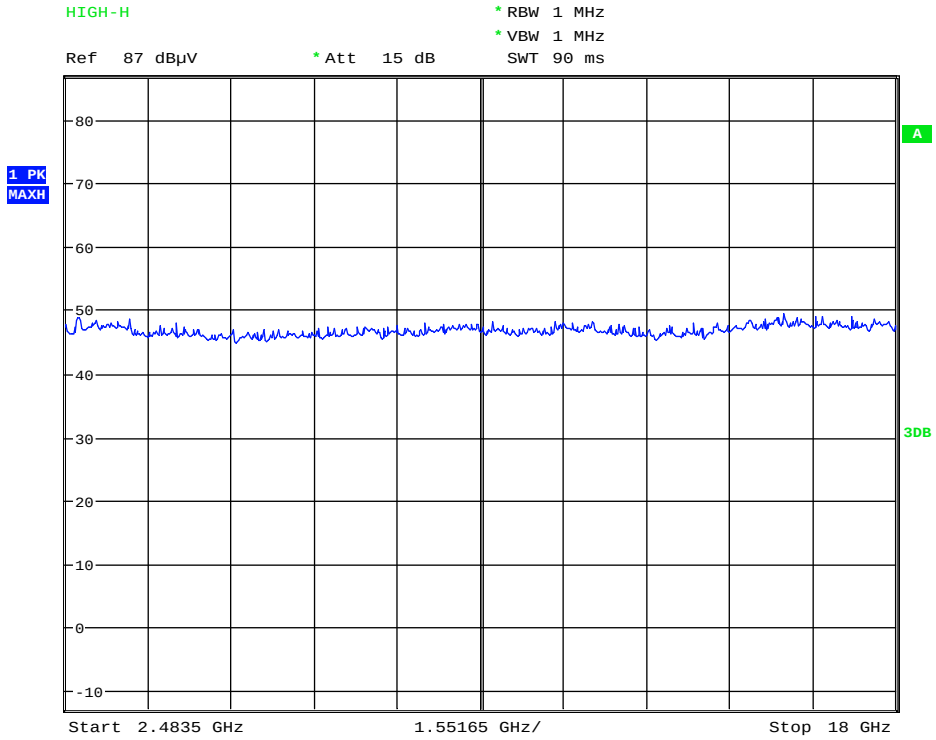
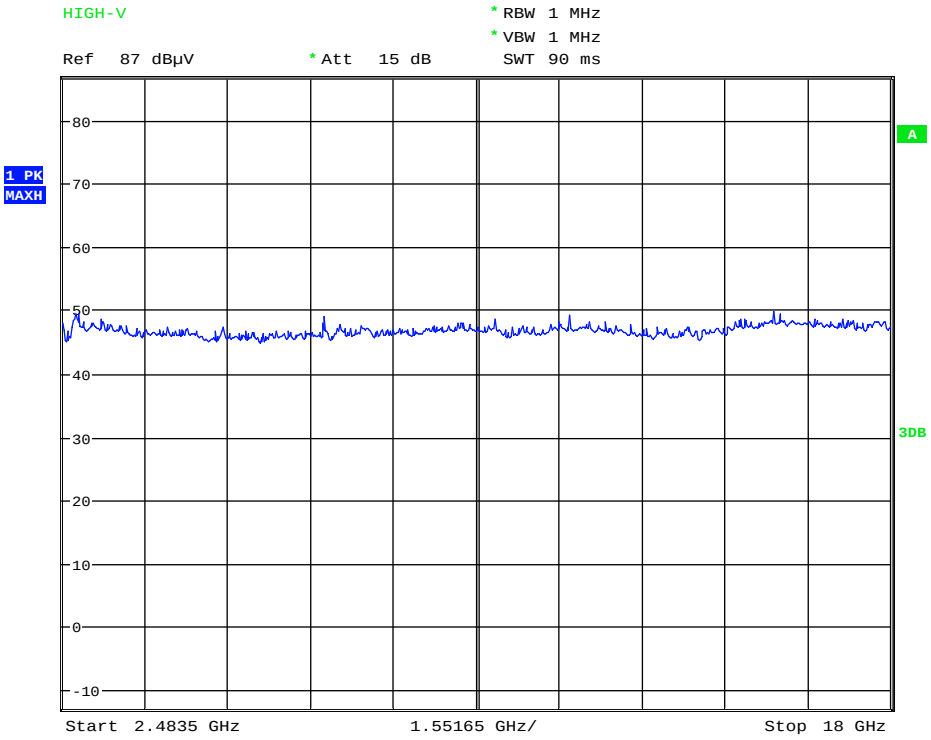
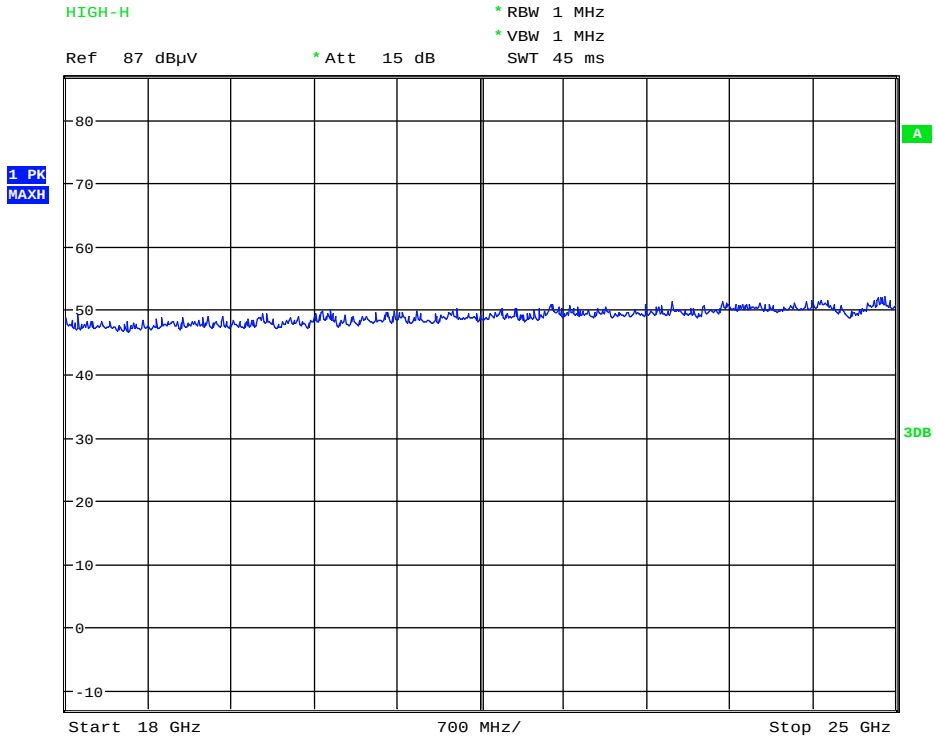


Date: 24.MAY.2016 09:38:04



Date: 24.MAY.2016 09:41:38



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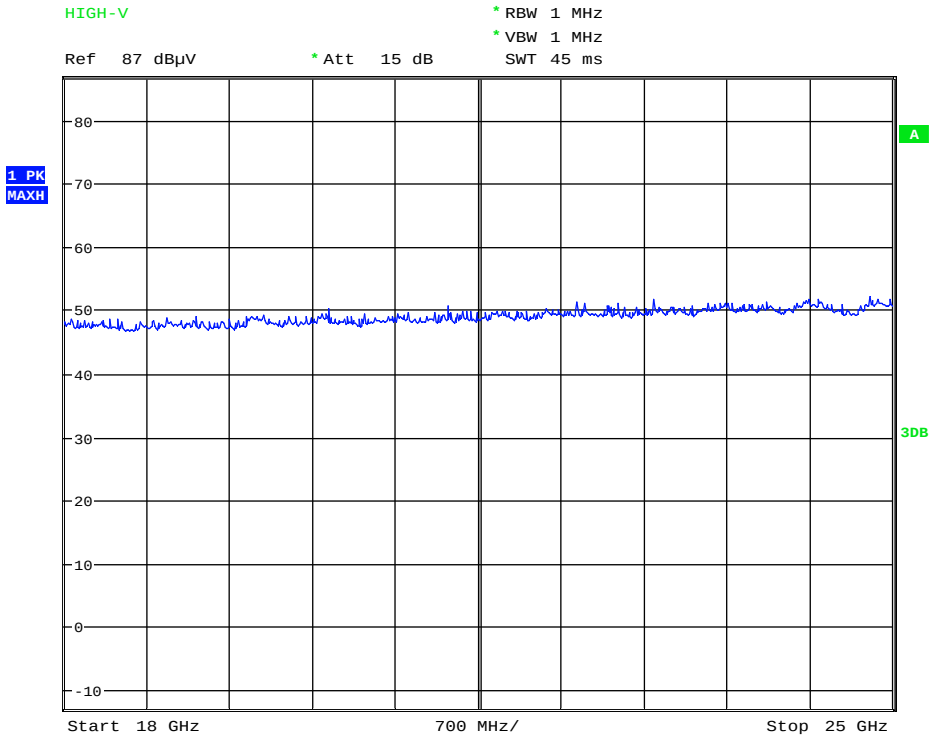
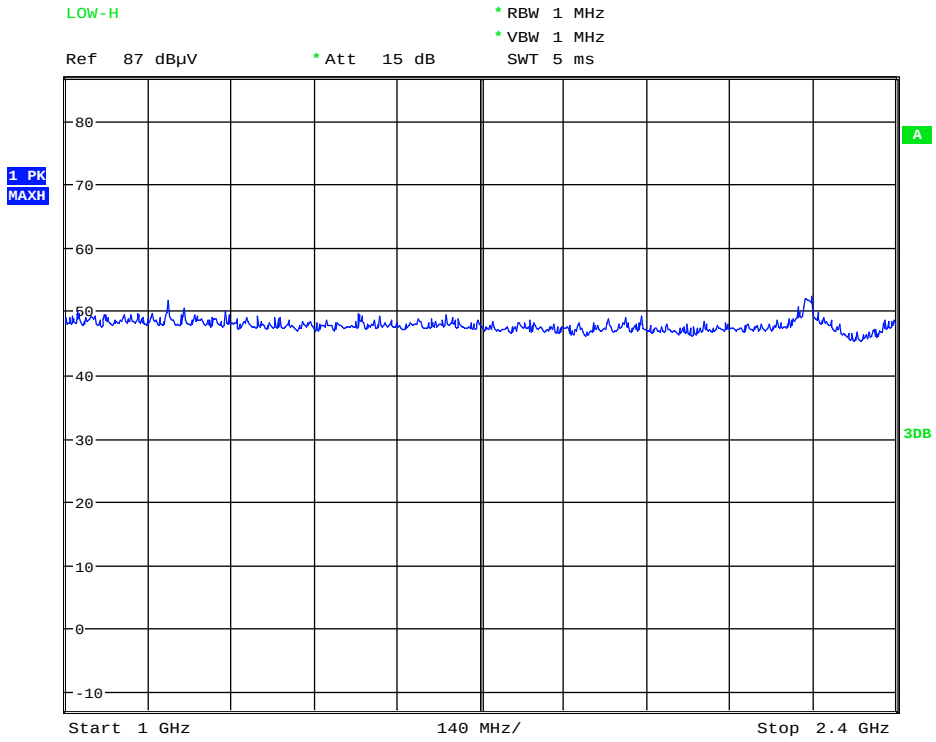
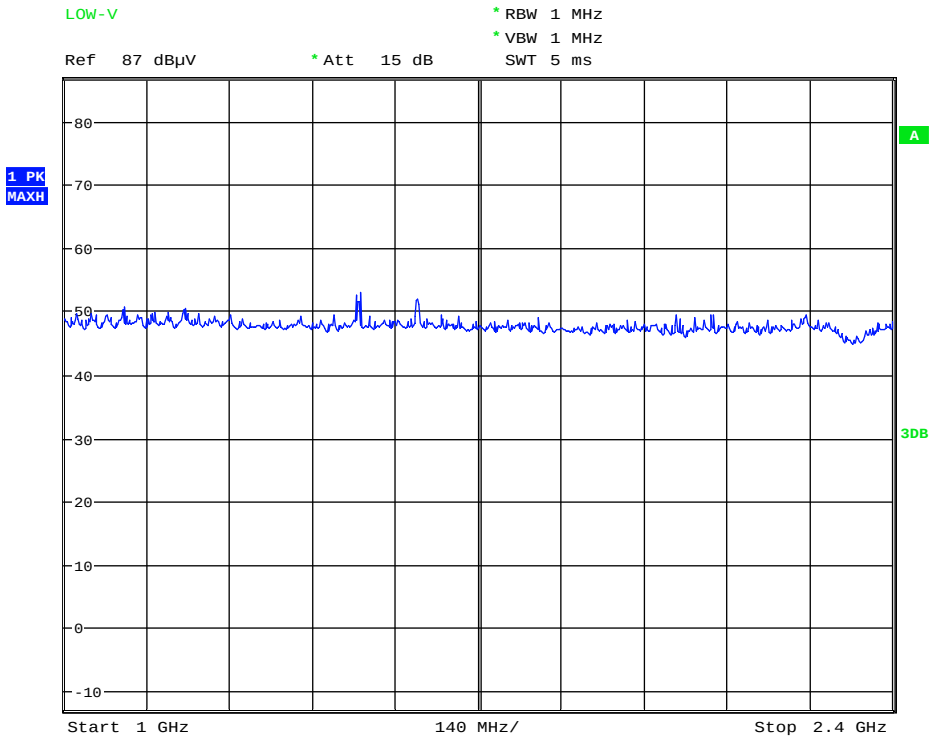


Date: 24.MAY.2016 09:42:49

IEEE 802.11n HT20



Date: 24.MAY.2016 10:24:29



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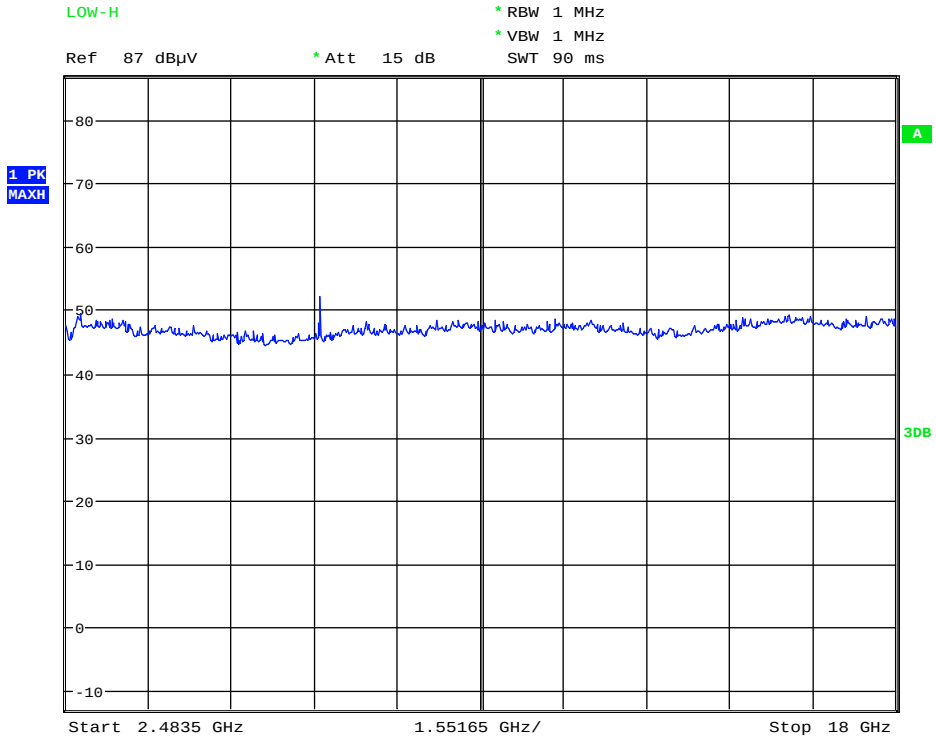

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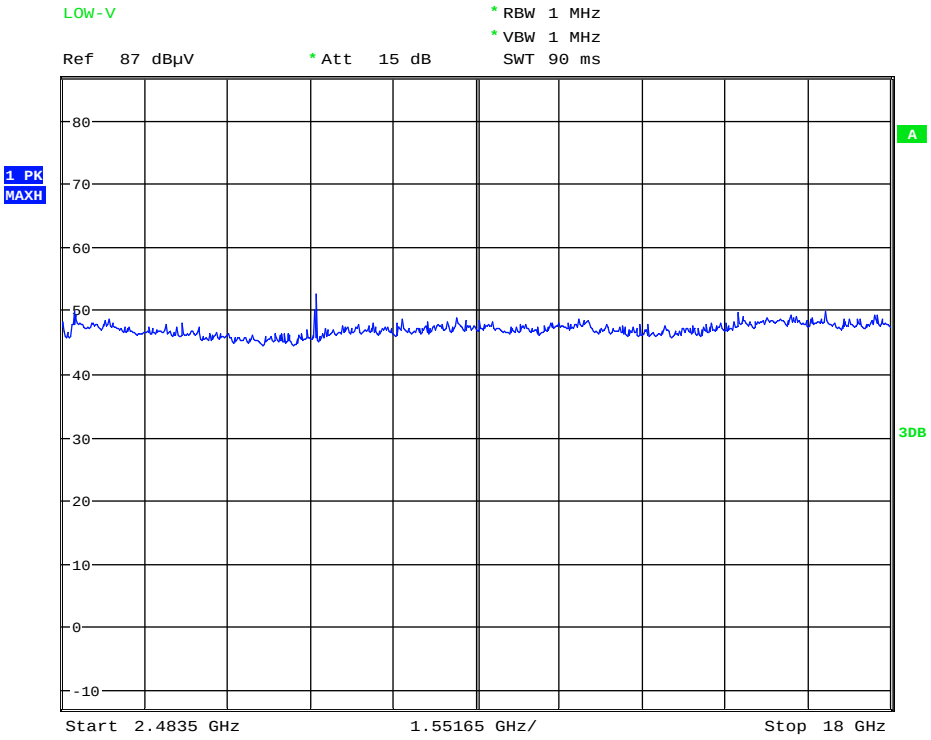

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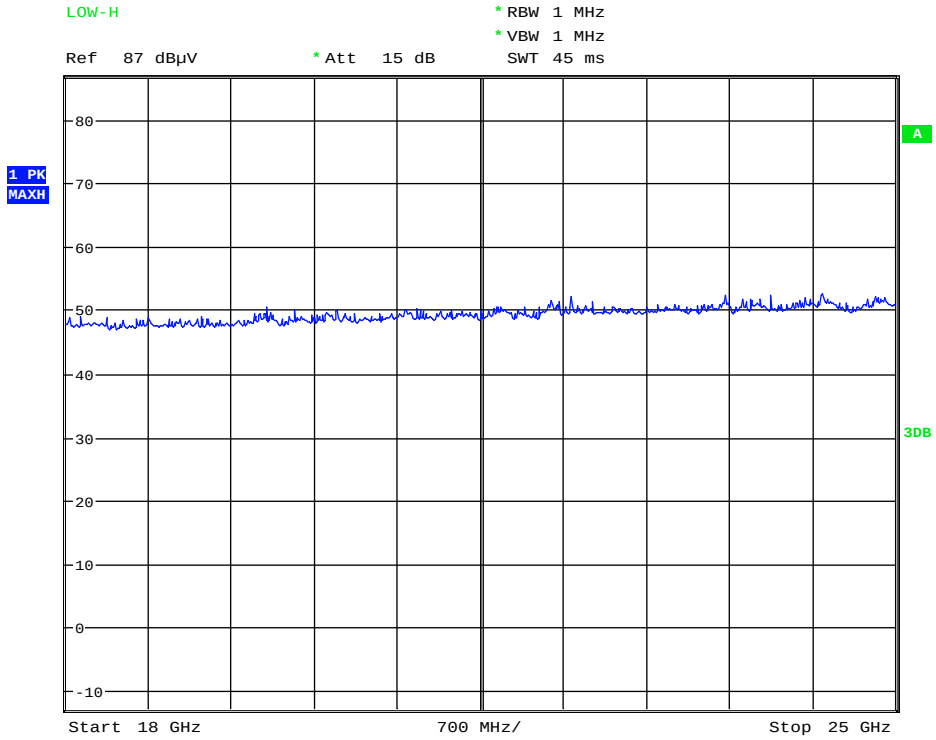
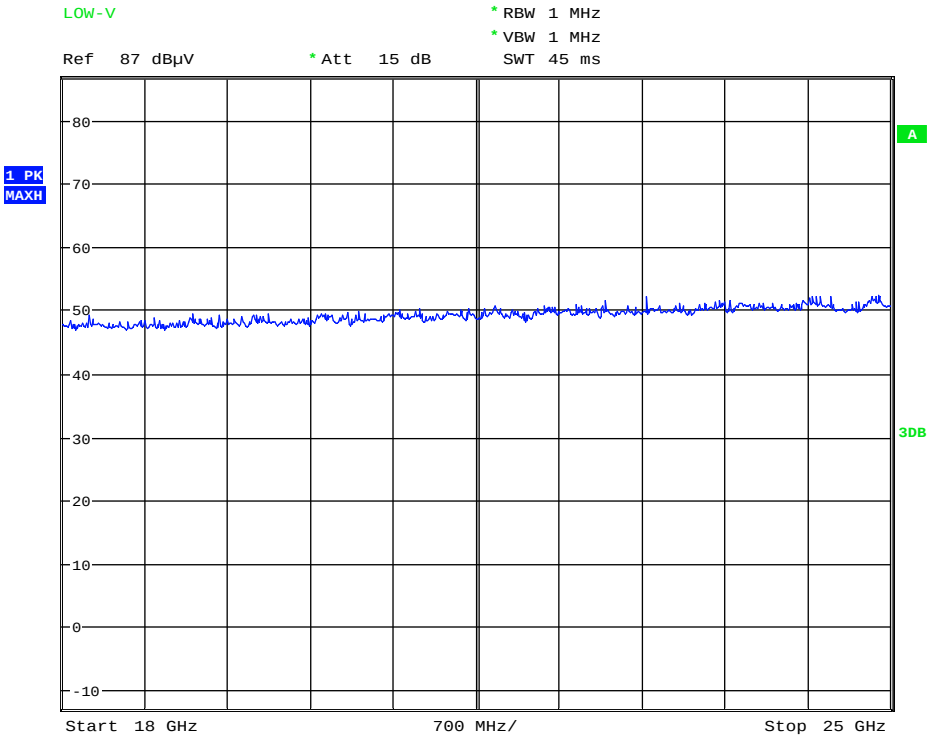


Date: 24.MAY.2016 10:26:52



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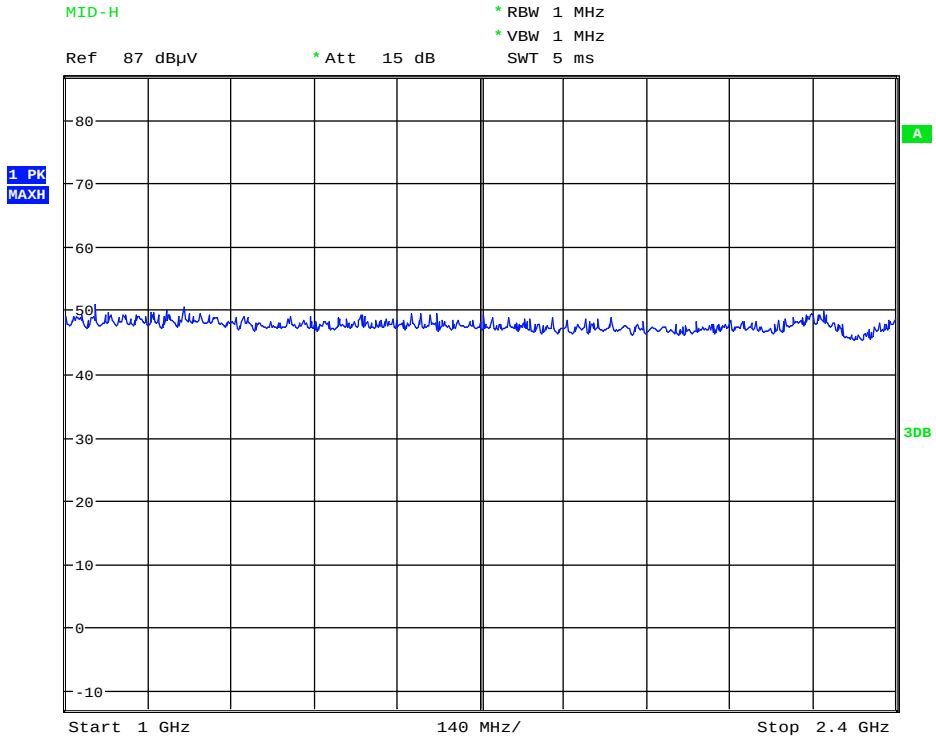

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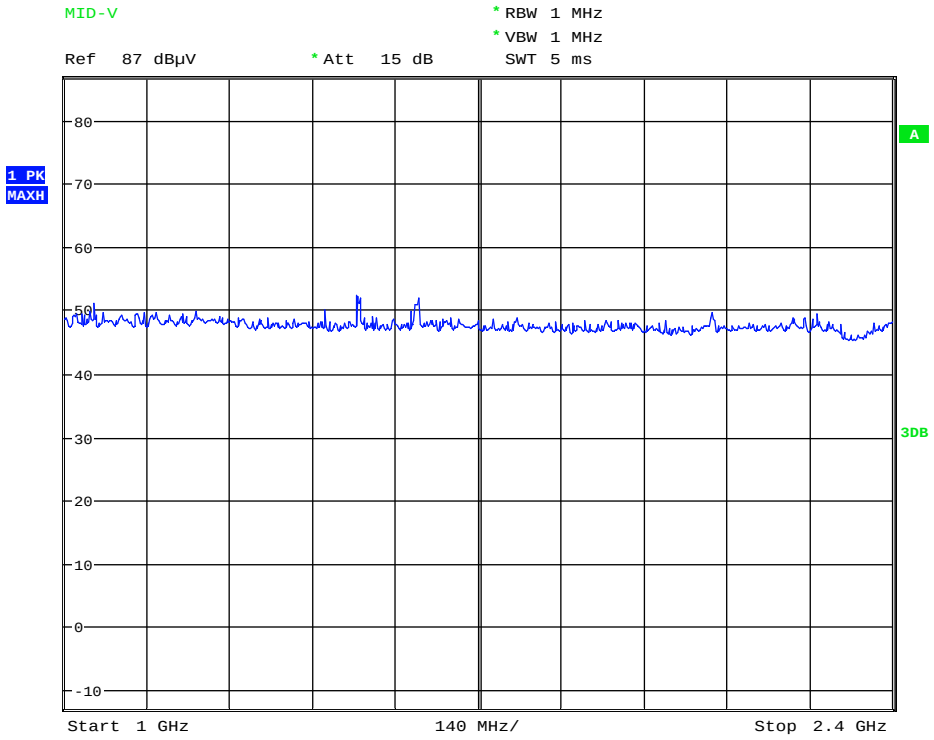

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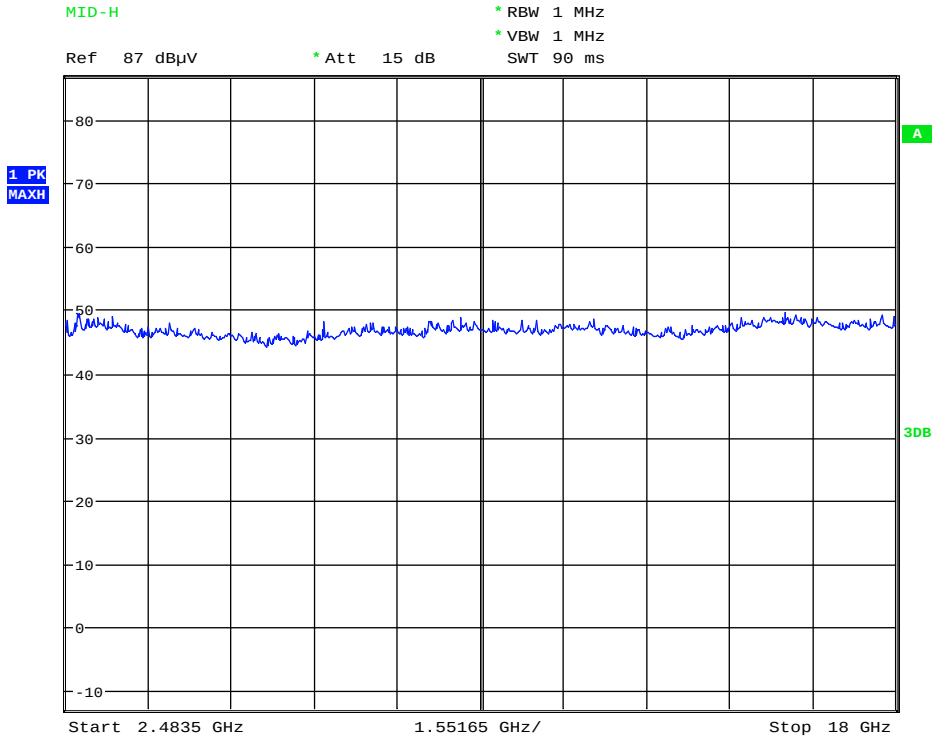

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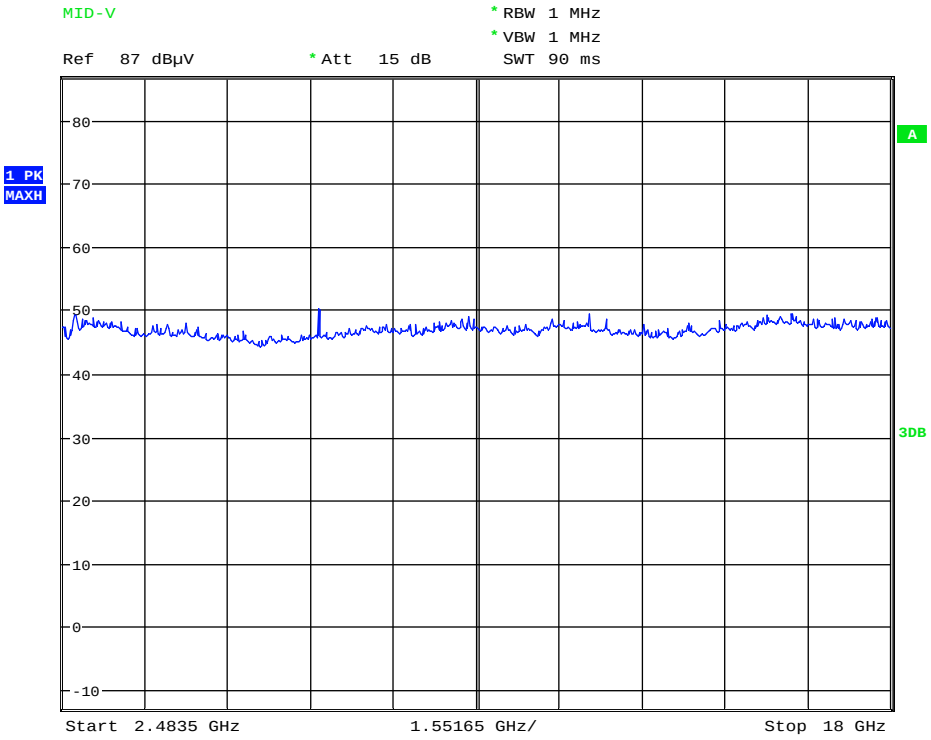
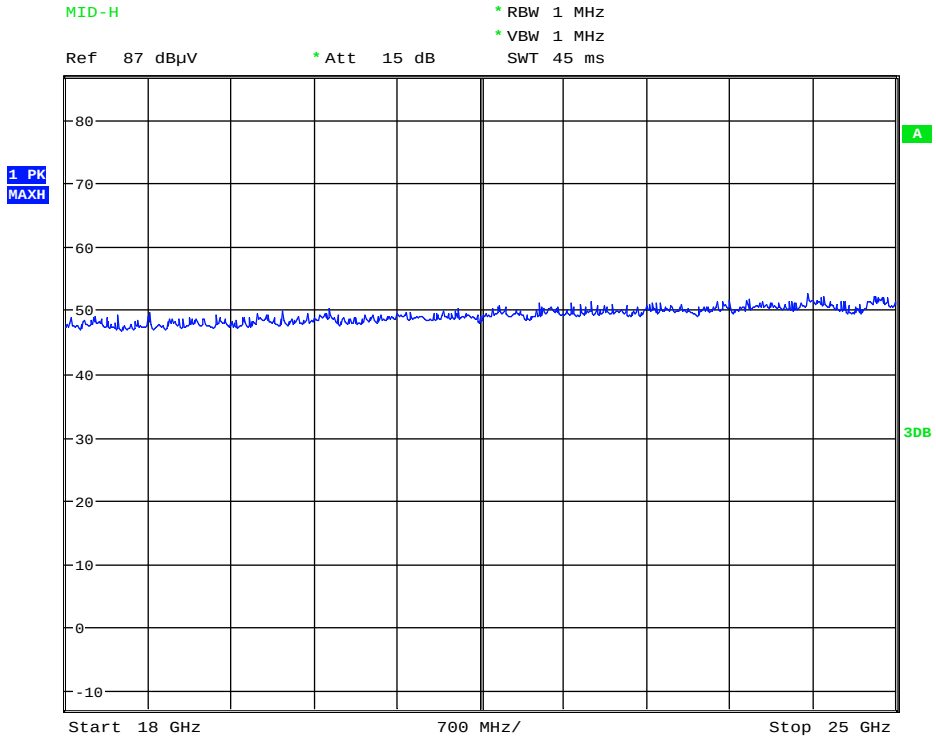


Date: 24.MAY.2016 10:42:53



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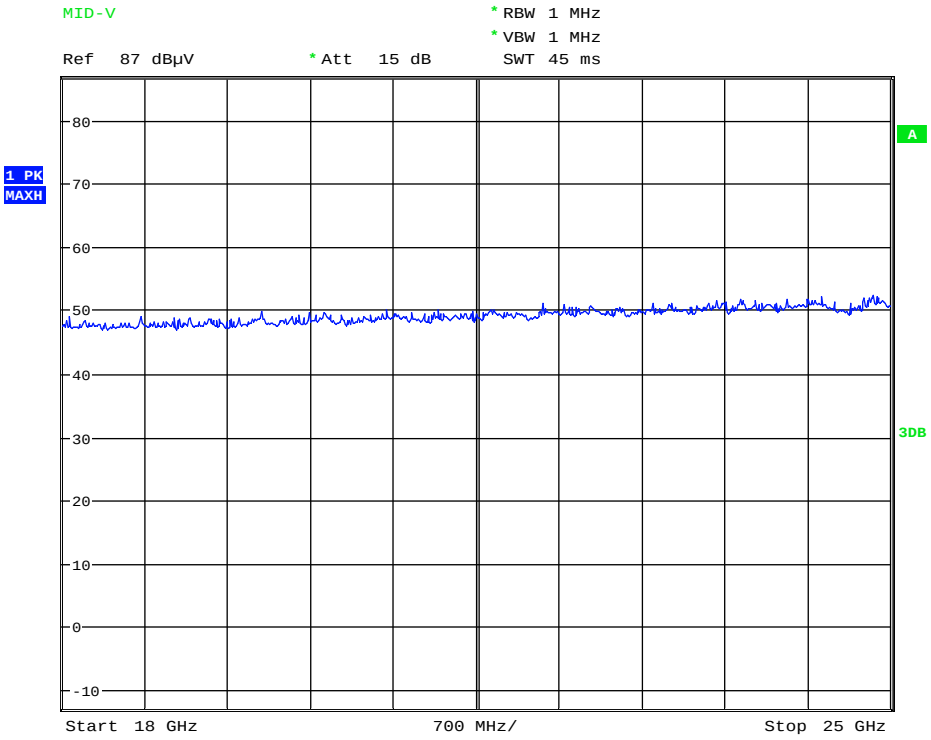

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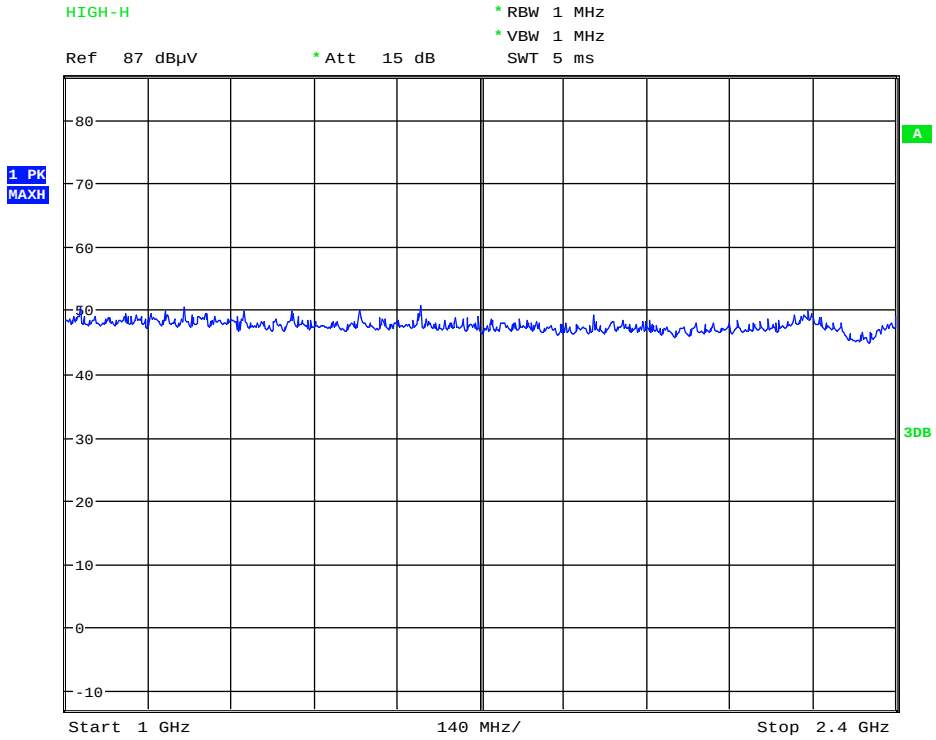

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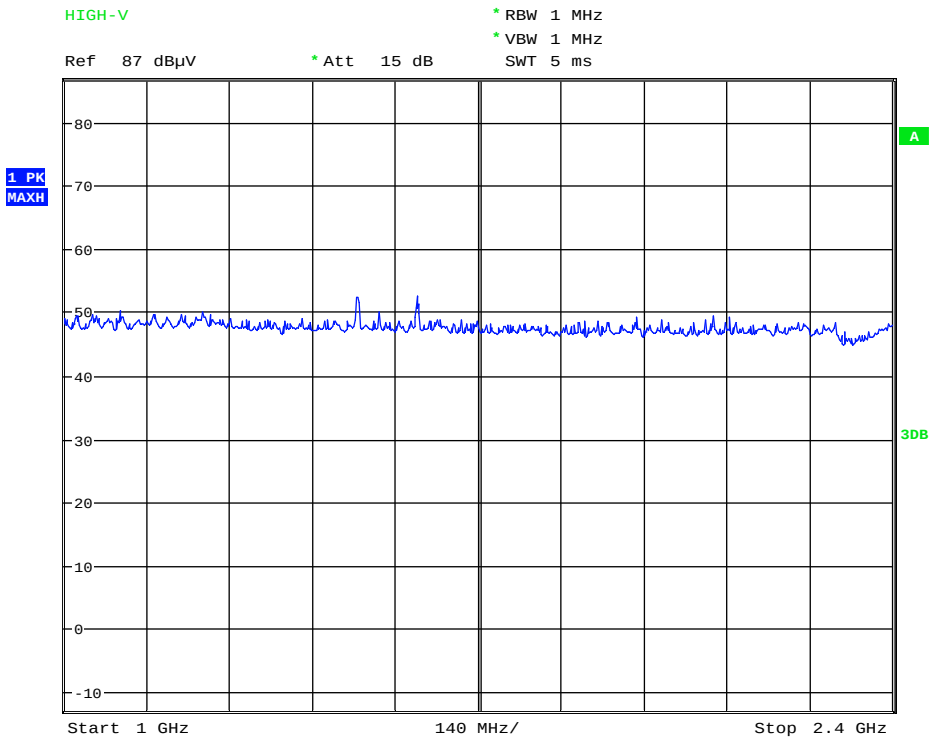

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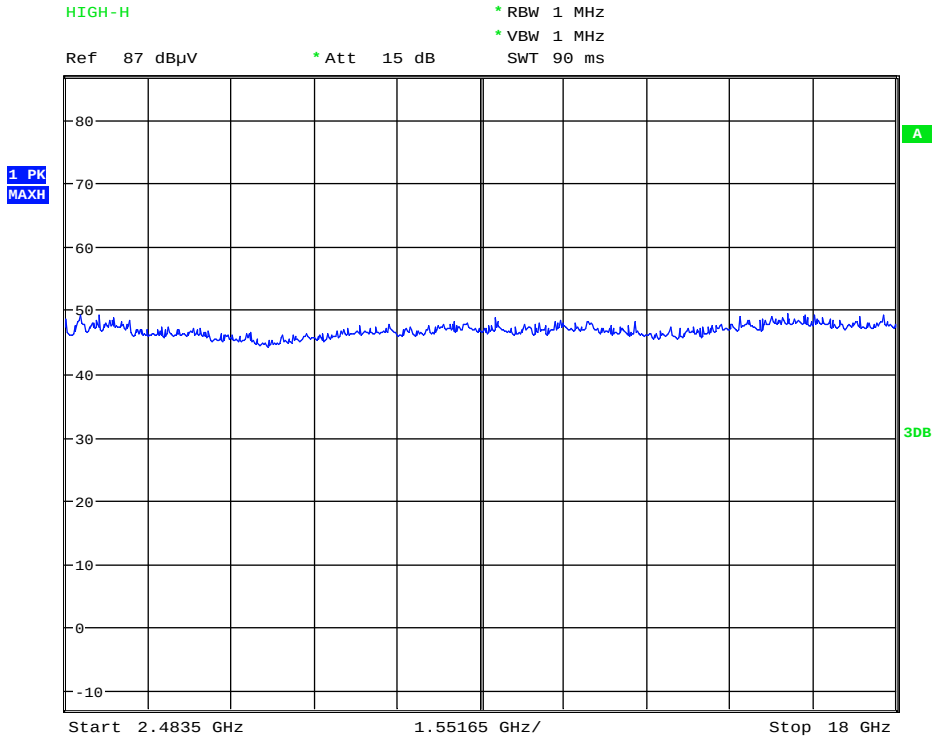

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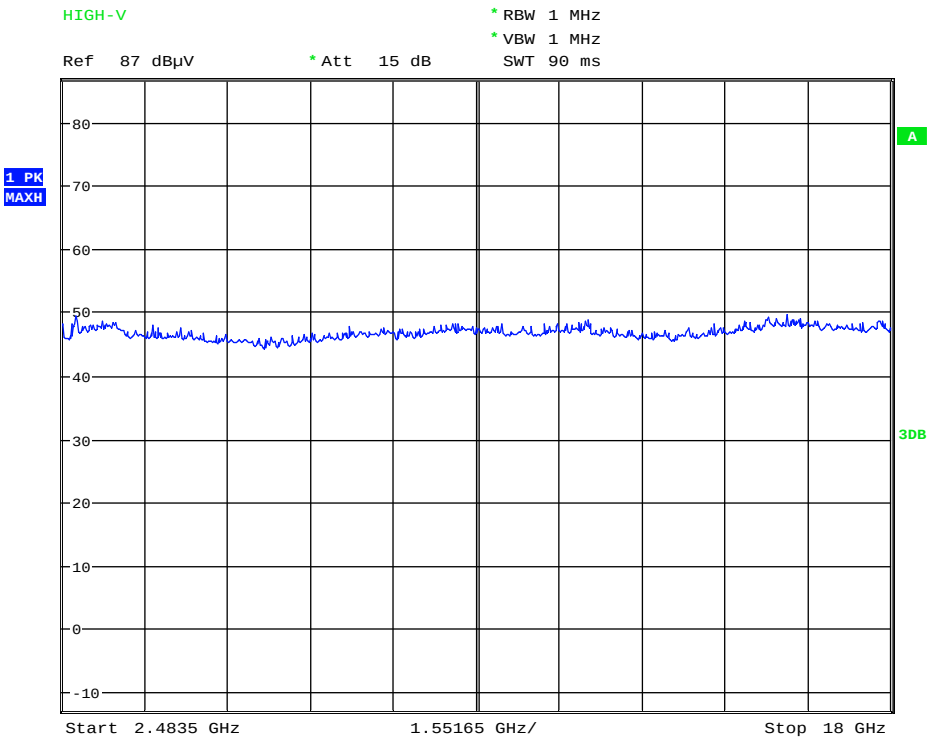

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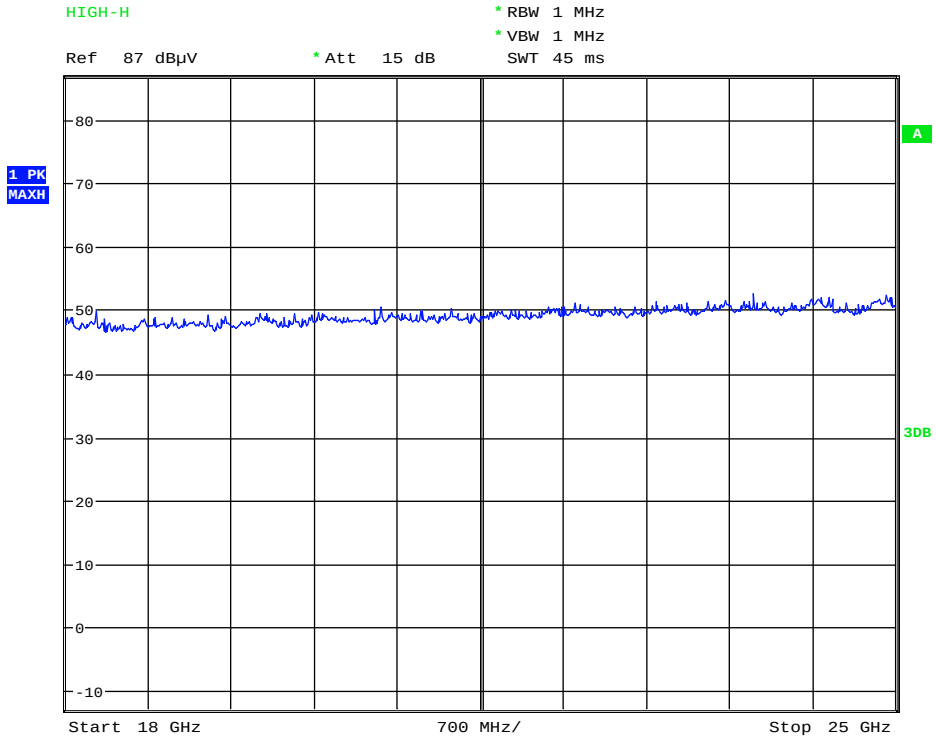

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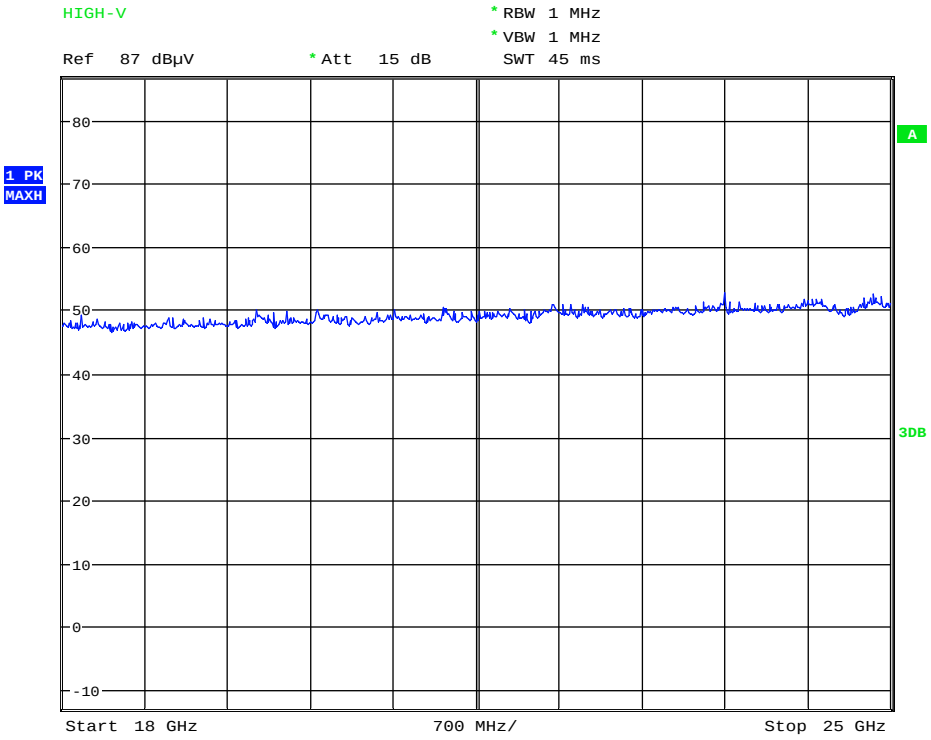

Date: 24.MAY.2016 10:56:55

10.4.3 Radiated Measurement at Bandedge with Fundamental Frequencies and co-location

Test Date: May 24, 2016 Temperature: 23℃ Humidity: 57%

10.4.3.1 IEEE 802.11b

Operation Channel	Frequenc	Reading @3m (dBuV/m)				Factor	Result		Limit @3m		Margin (worse)	
		H		V			(dBuV/m)		(dBuV/m)		(dB)	
	(MHz)	Peak	Ave	Peak	Ave	(dB)	Peak	Ave	Peak	Ave	Peak	Ave
Low	2390.000	27.2	14.6	27.6	14.1	29.8	57.4	44.4	74	54	-16.6	-9.6
High	2483.500	27.1	14.5	27.6	14.1	29.8	57.4	44.3	74	54	-16.6	-9.7

10.4.3.2 IEEE 802.11g

Operation Channel	Frequenc	Reading @3m (dBuV/m)				Factor	Result		Limit @3m		Margin (worse)	
		H		V			(dBuV/m)		(dBuV/m)		(dB)	
	(MHz)	Peak	Ave	Peak	Ave	(dB)	Peak	Ave	Peak	Ave	Peak	Ave
Low	2390.000	32.2	23.8	29.8	19.6	29.8	62.0	53.6	74	54	-12.0	-0.4
High	2483.500	41.2	21.2	36.1	16.9	29.8	71.0	51.0	74	54	-3.0	-3.0

10.4.3.3 IEEE 802.11n, HT20

Operation Channel	Frequenc	Reading @3m (dBuV/m)				Factor	Result		Limit @3m		Margin (worse)	
		H		V			(dBuV/m)		(dBuV/m)		(dB)	
	(MHz)	Peak	Ave	Peak	Ave	(dB)	Peak	Ave	Peak	Ave	Peak	Ave
Low	2390.000	41.7	19.0	36.9	17.4	29.8	71.5	48.8	74	54	-2.5	-5.2
High	2483.500	38.9	17.9	35.5	16.0	29.8	68.7	47.7	74	54	-5.3	-6.3

Note: 1. Remark "---" means that the emissions level is too low to be measured.
2. The result is the highest value of radiated emission from restrict band of 2310 ~ 2390 MHz and 2483.5 ~ 2500 MHz.

10.5 Field Strength Calculation

The field strength is calculated by adding the Antenna Factor, High Pass Filter Loss(if used) and Cable Loss, and subtracting the Amplifier Gain (if any) from the measured reading. The basic equation calculation is as follows:

Result = Reading + Corrected Factor

where

Corrected Factor = Antenna Factor + Cable Loss + High Pass Filter Loss - Amplifier Gain

11. EQUIPMENTS LIST FOR TESTING

Equipment	Manufacturer	Model No.	S/N	Calibration Date	Next Cal. Due
EMI Test Receiver	R&S	ESCI	13054418-001	05/04/2015	05/03/2016
V-LISN	R&S	ENV216	13057719-001	05/13/2015	05/12/2016
Spectrum Analyzer	Agilent	E4446A	13052013-001	10/07/2015	10/06/2016
Power Meter	Agilent	N1922A	13053523-001	12/05/2015	12/04/2016
Peak Power Sensor	Agilent	N1912A	13050625-001	12/05/2015	12/04/2016
EMI Receiver	R&S	ESCI	13054423-001	01/28/2016	01/27/2017
Spectrum Analyzer	R&S	FSU46	13040904-001	01/22/2016	01/21/2017
Horn Antenna	EMCO	3115	13059201-001	09/10/2015	09/09/2016
BiLog Antenna	Schaffner	CBL6112B	2927	10/16/2015	10/15/2016
Hom Antenna	EMCO	3116	13059202-001	08/22/2015	08/21/2016
PRE-Amplifier	Agilent	8449B	13040709-001	11/21/2015	11/20/2016
Loop Antenna	EMCO	6512	13054104-001	07/01/2015	06/30/2016
PRE-Amplifier	EMCI	PA303N	13040720-001	07/14/2015	07/13/2016