FCC TEST REPORT

For

Wireless VOIP Gateway

Model Number: G801, G800

FCC ID: 2AATVG801

Report Number : WT138001696

Test Laboratory	:	Shenzhen Academy of Metrology and Quality Inspection National Digital Electronic Product Testing Center
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Test report declaration

Applicant	:	Flying Voice Technology Limited
Address	:	Room 7007, Tiansha Building, No.115 Yiyuan Rd Shenzhen China
Manufacturer	:	Beijing FlyingVoice Technology Limited
Address	:	Room 415, ChuangXin Bldg A#, No. 12 HongDa North Rd, BDA, Beijing, China
EUT Description	:	Wireless VOIP Gateway
Model No	:	G801, G800
Trade mark	:	FlyingVoice
Serial Number	:	--
FCC ID	:	2AATVG801

Test Standards:

FCC Part 15 15.207, 15.209, 15.247(2012)

The EUT described above is tested by Shenzhen Academy of Metrology and Quality Inspection EMC Laboratory to determine the maximum emissions from the EUT. Shenzhen Academy of Metrology and Quality Inspection EMC Laboratory is assumed full responsibility for the accuracy of the test results. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4 (2003) and the energy emitted by the sample EUT tested as described in this report is in compliance with FCC Rules Part 15.207, 15.209 and 15.247.

The test report is valid for above tested sample only and shall not be reproduced in part without written approval of the laboratory.

Project Engineer:	(Wu Feiyun)	Date:	Aug.7,2013
Checked by:	(Chen QiChun)	Date:	Aug.7,2013
Approved by:	(Lin Bin)	Date:	Aug.7,2013

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1. TEST RESULTS SUMMARY

Table 1 Test Results Summary

Test Items	FCC Rules	Test Results
6dB DTS bandwidth measurement	15.247 (a) (2)	Pass
Maximum Peak Conducted Power	15.247 (b) (3)	Pass
Maximum Power Spectral Density Level	15.247 (3)	Pass
Conducted Bandedge and Spurious	15.247 (d)	Pass
Radiated Bandedge and Spurious	15.247 (d) 15.209 15.205	Pass
Conducted emission test for AC power port	15.207	Pass
Antenna Requirment	15.203	Pass

Remark: " N/A" means " Not applicable."

2. GENERAL INFORMATION

2.1. Report information

2.1.1. This report is not a certificate of quality; it only applies to the sample of the specific product/equipment given at the time of its testing. The results are not used to indicate or imply that they are application to the similar items. In addition, such results must not be used to indicate or imply that SMQ approves recommends or endorses the manufacture, supplier or use of such product/equipment, or that SMQ in any way guarantees the later performance of the product/equipment.

2.1.2. The sample/s mentioned in this report is/are supplied by Applicant, SMQ therefore assumes no responsibility for the accuracy of information on the brand name, model number, origin of manufacture or any information supplied.

2.1.3. Additional copies of the report are available to the Applicant at an additional fee. No third part can obtain a copy of this report through SMQ, unless the applicant has authorized SMQ in writing to do so.

2.2. Laboratory Accreditation and Relationship to Customer

The testing report were performed by the Shenzhen Academy of Metrology and quality Inspection EMC Laboratory (Guangdong EMC compliance testing center), in their facilities located at Bldg. of Metrology & Quality Inspection, Longzhu Road, Nanshan District, Shenzhen, Guangdong, China. At the time of testing, Laboratory is accredited by the following organizations:

China National Accreditation Service for Conformity Assessment (CNAS) accredits the Laboratory for conformance to FCC standards, EMC international standards and EN standards. The Registration Number is CNAS L0579.
The Laboratory is listed in the United States of American Federal Communications Commission (FCC), and the registration number are 446246 806614 994606(semi anechoic chamber).

The Laboratory is listed in Voluntary Control Council for Interference by Information

Technology Equipment (VCCI), and the registration number are R-1974(open area test site) , R-1966(semi anechoic chamber),C-2117(mains ports conducted interference measurement) and T-180(telecommunication ports conducted interference measurement).

The Laboratory is registered to perform emission tests with Industry Canada (IC), and the registration number is 11177A-1 11177A-2.

TUV Rhineland accredits the Laboratory for conformance to IEC and EN standards, the registration number is E2024086Z02.

2.3. Measurement Uncertainty

Conducted Emission

9kHz~30MHz 3.5dB

Radiated Emission

30MHz~1000MHz 4.5dB

1GHz~18GHz 4.6dB

3. PRODUCT DESCRIPTION

3.1. EUT Description

Description	:	Wireless Router
Manufacturer	:	Beijing FlyingVoice Technology Limited
Model Number	:	G800, G801
Operate Frequency	:	2.412GHz~2.462GHz
Antenna Designation	:	Dipole Antenna 5dBi

Remark : The model G801 and G800 are identical except FXS port on G800 is not installed. Tests were performed on G801 only.

WLAN :

Table 2 Working Frequency List

Channel	Center Frequency(MHz)	Channel	Center Frequency(MHz)
1	2412	8	2447
2	2417	9	2452
3	2422	10	2457
4	2427	11	2462
5	2432		
6	2437		
7	2442		

3.2. Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for FCC ID: 2AATVG801, filing to comply with Section 15.207，15.209，15.247 of the FCC Part 15, Subpart C Rules.

3.3. Block Diagram of EUT Configuration

Figure 1 EUT setup

3.4. Operating Condition of EUT

Worst-case mode and channel used for 30-1000 MHz radiated and power line conducted emissions was the mode and channel with the highest output power.

Worst-case data rates as provided by the client were:

802.11b mode: 1 Mbps

802.11g mode: 6 Mbps

802.11n HT20mode: MCS0

802.11n HT40mode: MCS0

Test mode is configured to be with duty cycle >98%

802.11b and 802.11g operate in SISO mode. For SISO conducted measurements, the modes tested in this report will be considered as a worst case mode.

802.11n operates in MIMO mode. For MIMO, the 2TX emissions testing are considered as a worst case scenario and were tested at power levels, per transmit chain, greater than or equal to the maximum power in any 1TX mode.

3.5. Directional Antenna Gain

The EUT incorporates a MIMO function without beam forming.

Per KDB 662911 D01 Multiple Transmitter Output v02

Directional gain = G_{ANT} + 10 log(N_{ANT}) dBi=8dBi

3.6. Support Equipment List

Table 3 Support Equipment List

Name	Model No	S/N	Manufacturer	FCC Approval
Notebook	R51	--	IBM	DoC
Adaptor for Notebook	02K6654	--	IBM	VoC
Computer	9439	L3BDF2K	Lenovo	DoC
Keyboard (USB)	SK-8825 (L)	02553778	Lenovo	DoC
Mouse (USB)	MO28UOL	4418011108	Lenovo	DoC
Monitor	9227-AE1	V1TDB38	Lenovo	DoC
Printer	BJC-265SP	EVX81604	CANON	DoC
Adaptor for Printer	AD-300	---	CANON	DoC
MODEM	TM-EC5656V	03402406009	TP-Link	DoC
Adaptor for modem	EI-41-AD9010	---	---	VoC
Adaptor	F12W-050200SPAU	--	Shenzhen Frecom Electronics CO., Ltd	VoC
Telephone	HCD129P/TSDL 2957E	11330220	Shenzhen Daerxun Technology CO., Ltd	VoC

3.7. Test Conditions

Date of test：July.12-Aug 7, 2013

Date of EUT Receive：July 10,2013

Temperature: 23-24 ℃

Relative Humidity: 53-56%

3.8. Special Accessories

Not available for this EUT intended for grant.

3.9. Equipment Modifications

Not available for this EUT intended for grant.

4. TEST EQUIPMENT USED

Table 4 Test Equipment

No.	Equipment	Manufacturer	Model No.	Last Cal.	Cal. Interval
SB2603	EMI Test Receiver	Rohde & Schwarz	ESCS30	Jan.21, 2013	1 Year
SB3321	AMN	Rohde & Schwarz	ESH2-Z5	Jan.21, 2013	1 Year
SB2604	AMN	Rohde & Schwarz	ESH3-Z5	Jan.21, 2013	1 Year
SB8501/09	EMI Test Receiver	Rohde & Schwarz	ESU40	May.17, 2013	1 Year
SB8501/04	Bilog Antenna	Schwarzbeck	VULB9163	Jan.21, 2013	1 Year
SB3435	Horn Antenna	Rohde & Schwarz	HF906	Jan.21, 2013	1 Year
SB3435/01	Amplifier(1-18GHz)	Rohde & Schwarz	---	Jan.21, 2013	1 Year
SB3435/02	Amplifier(18-40GHz)	Rohde & Schwarz	---	May.17, 2013	1 Year
SB5392/02	Horn Antenna	Amplifier Research	AT4560	May.17, 2013	1 Year
SB3450/01	3m Semi-anechoic chamber	Albatross Projects	9X6X6	Oct.12, 2012	2 Years
SB3345	Loop Antenna	Schwarzbeck	FMZB1516	Jan.23, 2012	2 Years

5. 6DB BANDWIDTH MEASUREMENT

5.1. LIMITS OF 6dB BANDWIDTH MEASUREMENT

CFR 47 (FCC) part 15.247 (a) (2) and 558074 D01 DTS Meas Guidance v03r01

5.2. TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer.

a) Set RBW = 100 kHz.

b) Set the video bandwidth (VBW) ≥ 3 RBW.

c)Detector = Peak.

d)Trace mode = max hold.

e)Sweep = auto couple.

f)Allow the trace to stabilize.

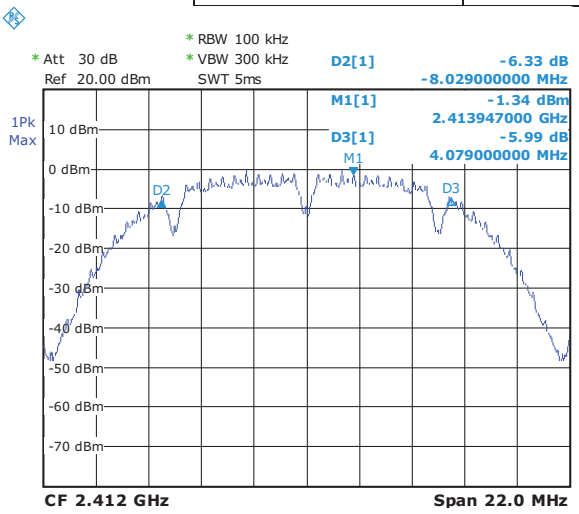
g)Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

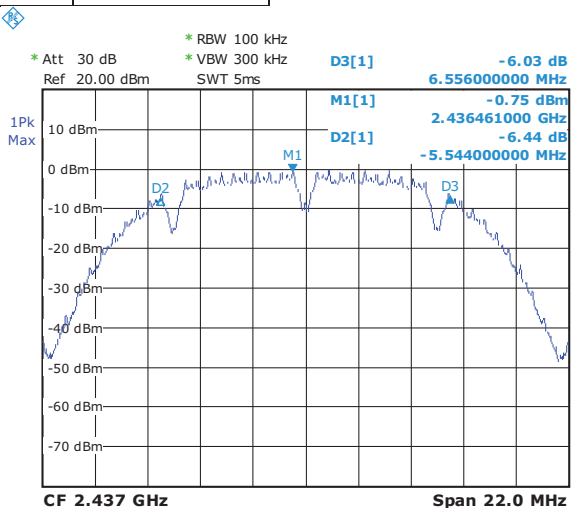
5.3. TEST SETUP

5.4. Test Data

Table 5 6dB Bandwidth Test Data 802.11b

CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	results
2412	12.108	Pass
2437	12.100	Pass
2462	12.100	Pass





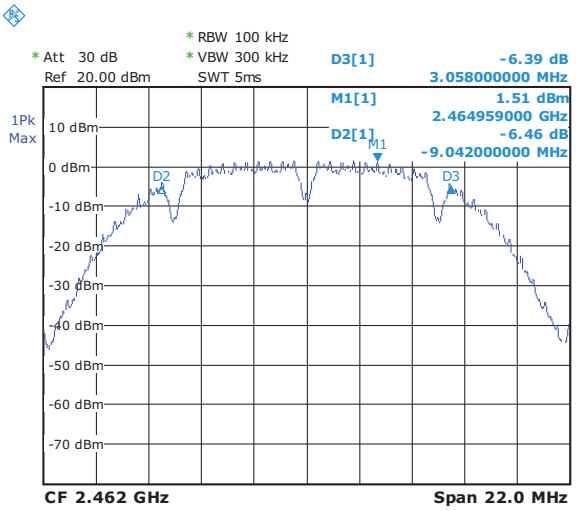
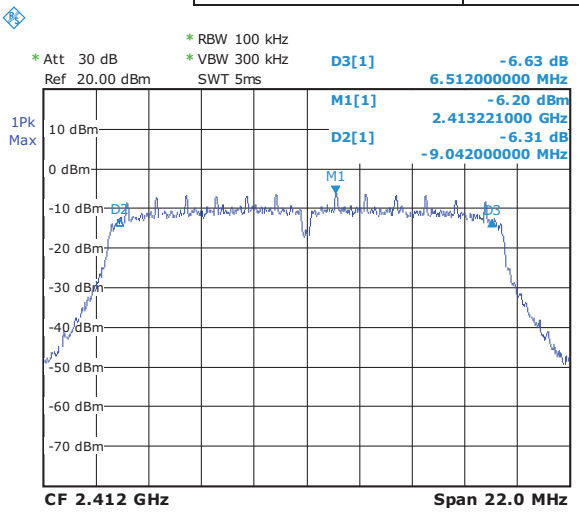
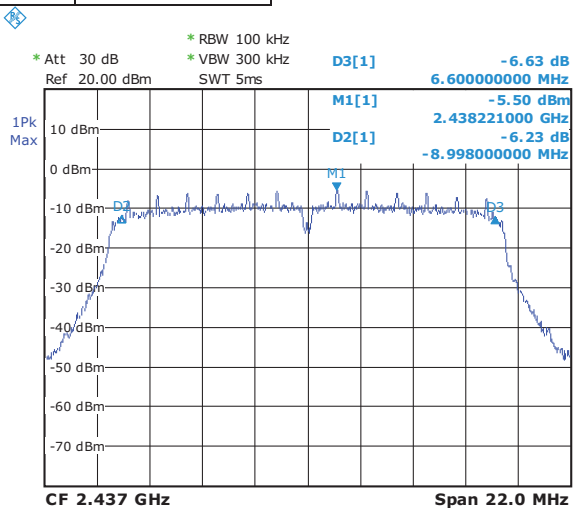


Table 6 6dB Bandwidth Test Data 802.11g

CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	results
2412	15.554	Pass
2437	15.598	Pass
2462	15.532	Pass





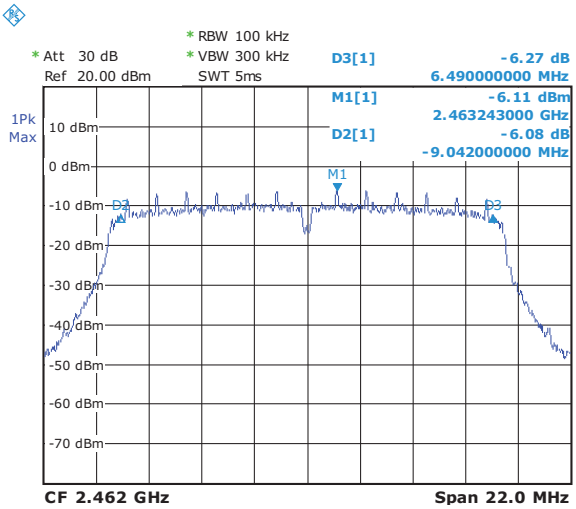
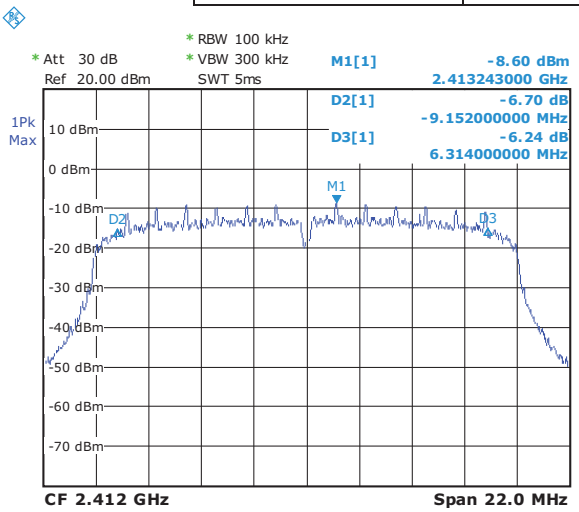
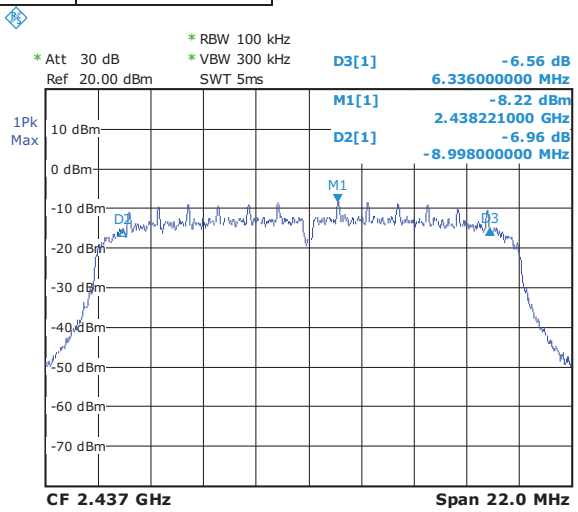


Table 7 6dB Bandwidth Test Data 802.11n 20M

CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	results
2412	15.466	Pass
2437	15.334	Pass
2462	15.312	Pass





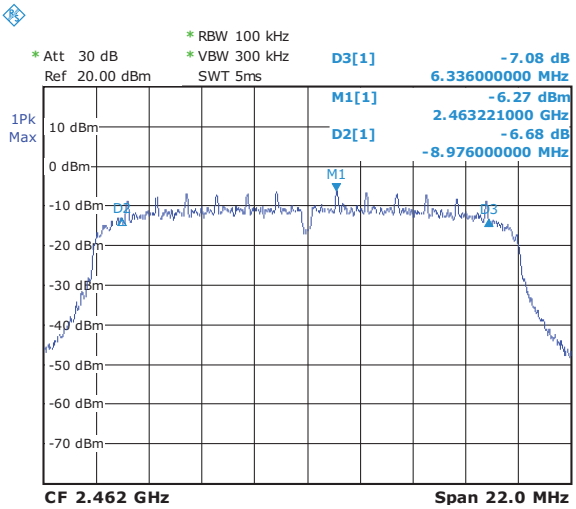
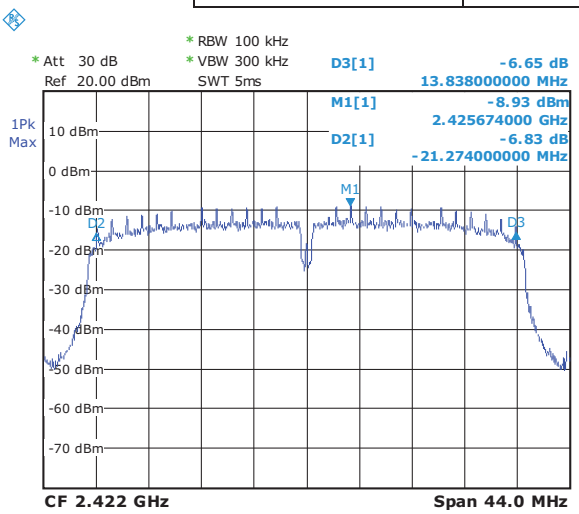
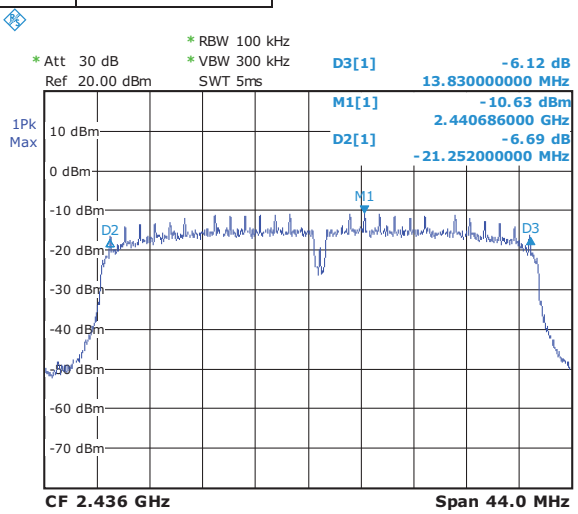
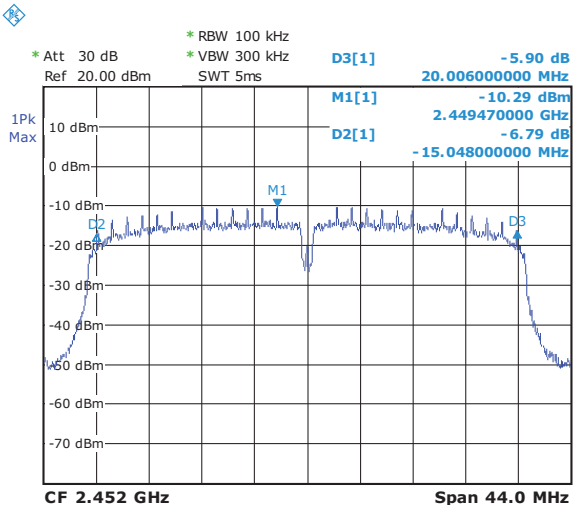


Table 8 6dB Bandwidth Test Data 802.11n 40M

CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	results
2422	35.112	Pass
2437	35.082	Pass
2452	35.054	Pass







6. MAXIMUM PEAK CONDUCTED OUTPUT POWER MEASUREMENT

6.1. LIMITS OF Maximum Peak Conducted Output Power Measurement

CFR 47 (FCC) part 15.247 (b) (3) and 558074 D01 DTS Meas Guidance v03r01

6.2. TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer.

a)Set the RBW = 1 MHz.

b)Set the VBW ≥ 3 RBW

c)Set the span ≥ 1.5 x DTS bandwidth.

d)Detector = peak.

e)Sweep time = auto couple.

f)Trace mode = max hold.

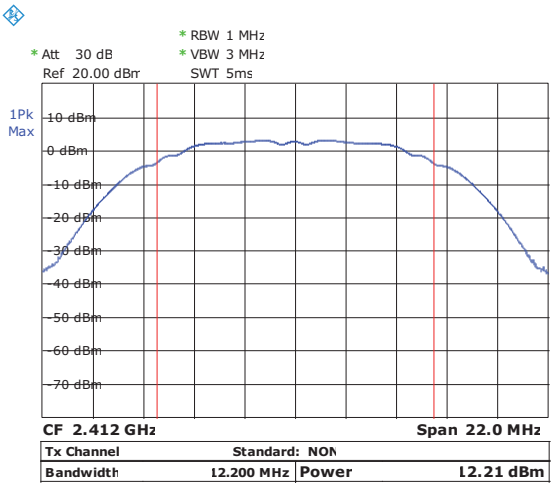
g)Allow trace to fully stabilize.

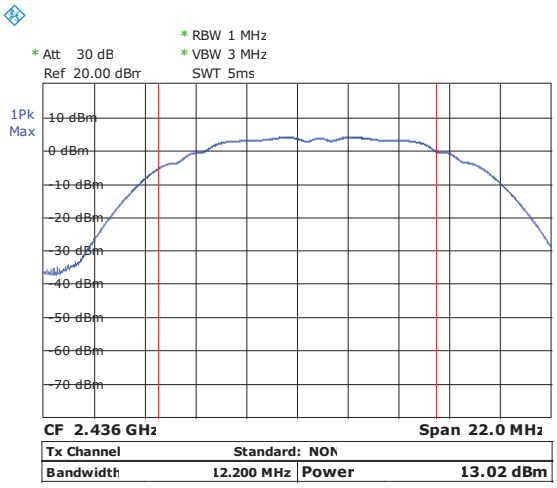
h)Use the instrument’ s band/channel power measurement function with the band limits set equal to the DTS bandwidth edges

6.3. TEST DATA

Table 9 Maximum Peak Conducted Output Power Test Data 802.11b

Center Freq.[MHz]	Meas. Level (Cond.) [dBm]	Limit [dBm]	Result
2412	12.21	< 30	Pass
2437	13.02	< 30	Pass
2462	15.28	< 30	Pass





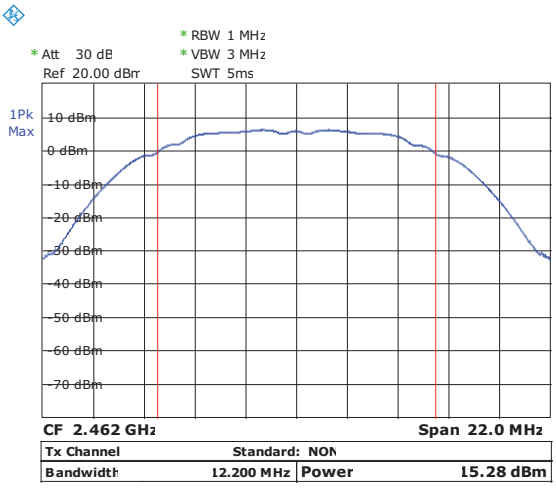
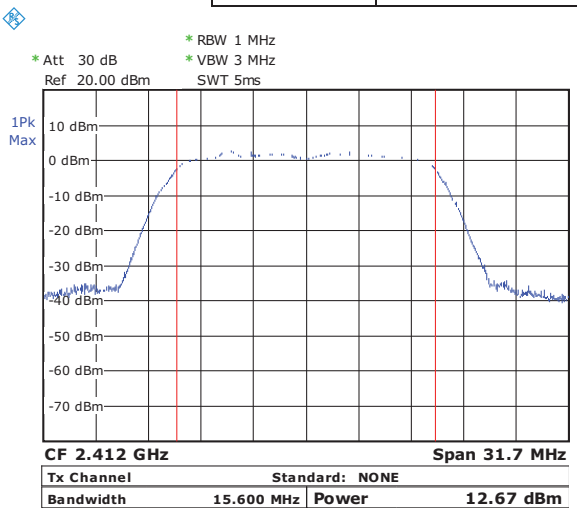
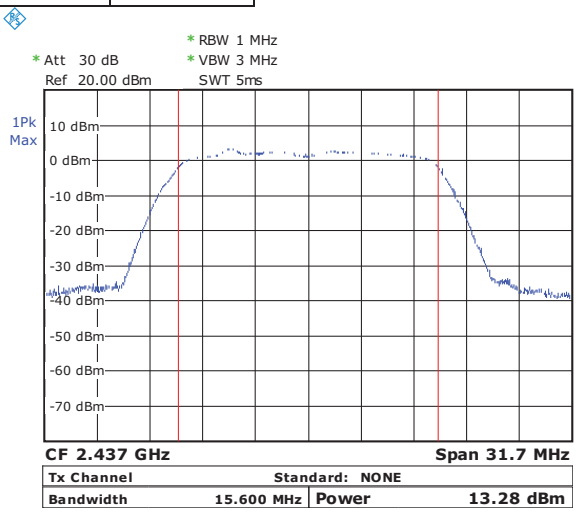


Table 10 Maximum Peak Conducted Output Power Test Data 802.11g

Center Freq.[MHz]	Meas. Level (Cond.) [dBm]	Limit [dBm]	Result
2412	12.67	< 30	Pass
2437	13.28	< 30	Pass
2462	15.53	< 30	Pass





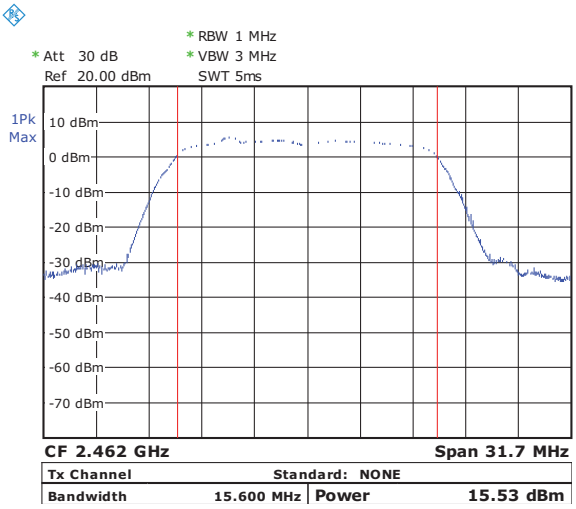
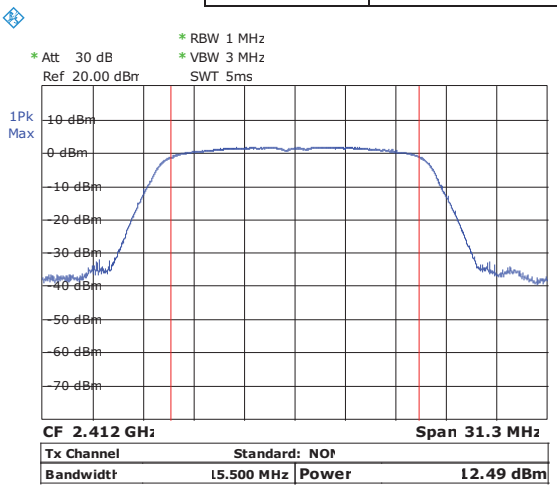
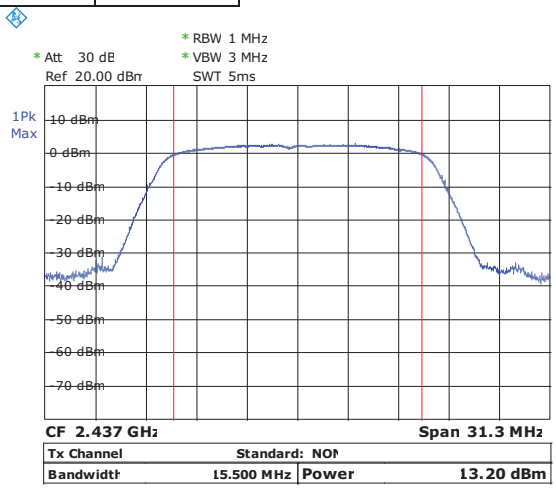


Table 11 Maximum Peak Conducted Output Power Test Data 802.11n 20M Ant 0

Center Freq.[MHz]	Meas. Level (Cond.) [dBm]	Limit [dBm]	Result
2412	12.49	< 30	Pass
2437	13.20	< 30	Pass
2462	15.45	< 30	Pass





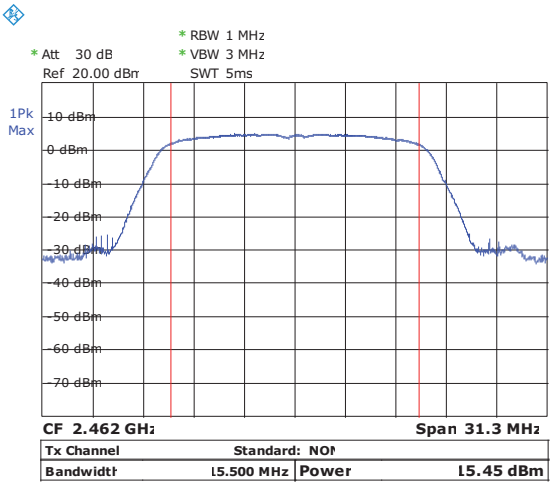
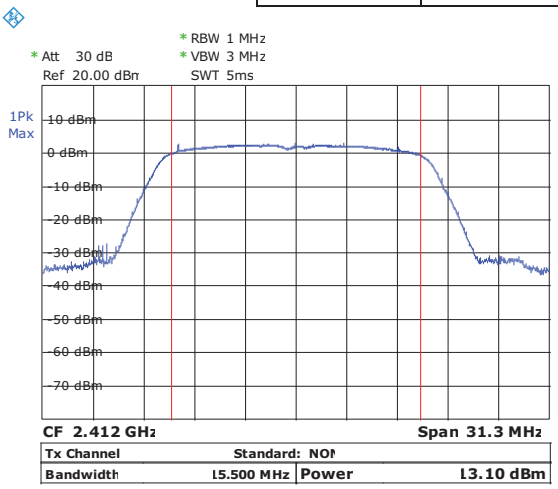
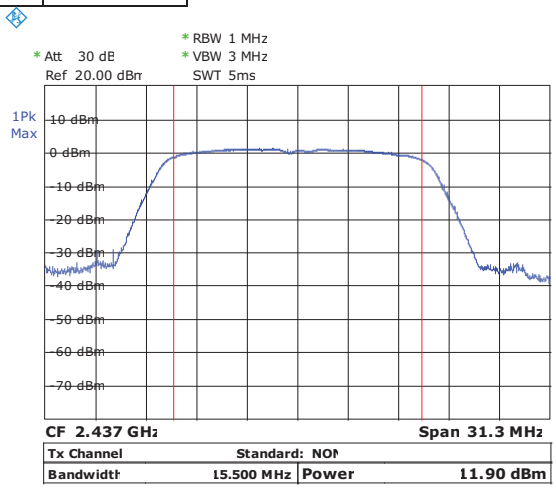
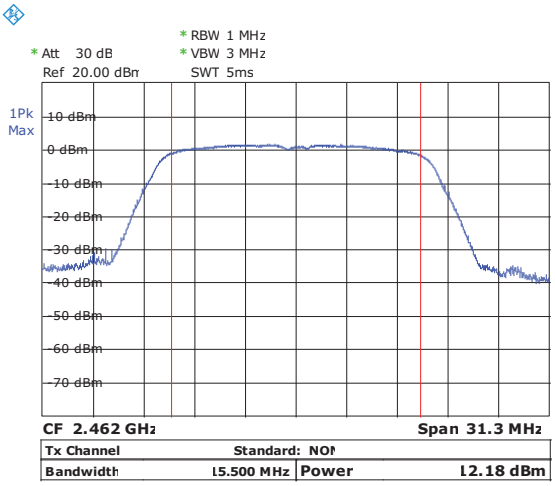


Table 12 Maximum Peak Conducted Output Power Test Data 802.11n 20M Ant 1

Center Freq.[MHz]	Meas. Level (Cond.) [dBm]	Limit [dBm]	Result
2412	13.10	< 30	Pass
2437	11.90	< 30	Pass
2462	12.18	< 30	Pass



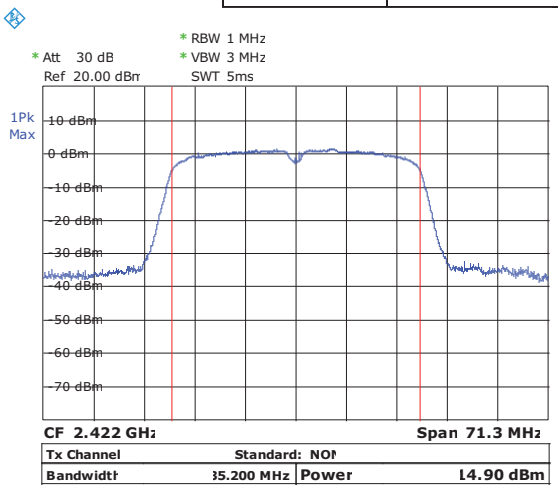


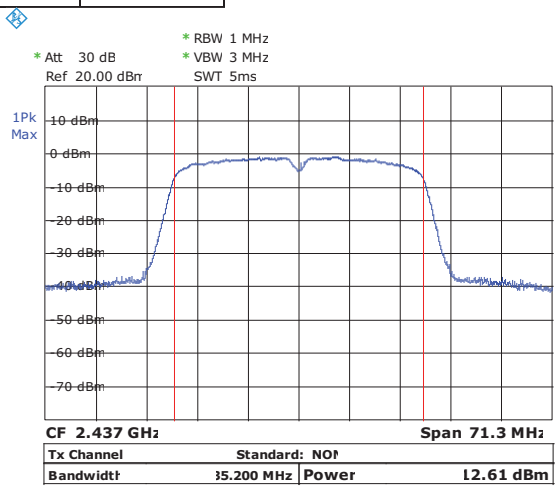


Center Freq.[MHz]	ANT0 (Cond.) [dBm]	ANT1 (Cond.) [dBm]	Total	Limit [dBm]	Result
2412	12.49	13.10	15.82	< 28	Pass
2437	13.20	11.90	15.61	< 28	Pass
2462	15.45	12.18	17.13	< 28	Pass

Table 13 Maximum Peak Conducted Output Power Test Data 802.11n 40M Ant 0

Center Freq.[MHz]	Meas. Level (Cond.) [dBm]	Limit [dBm]	Result
2422	14.90	< 30	Pass
2437	12.61	< 30	Pass
2452	13.24	< 30	Pass





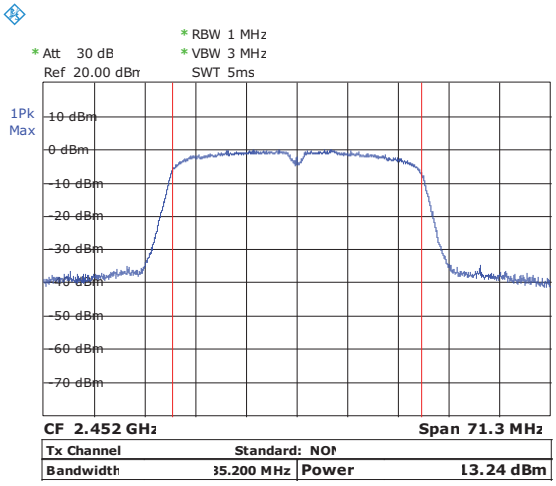
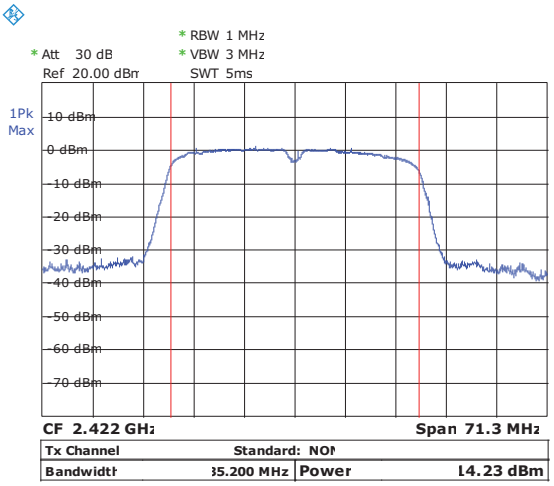
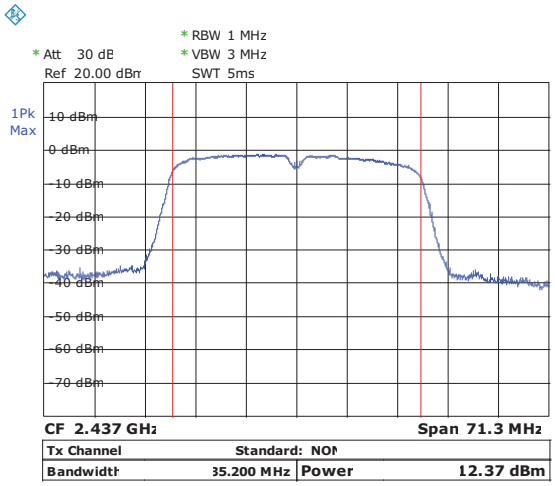
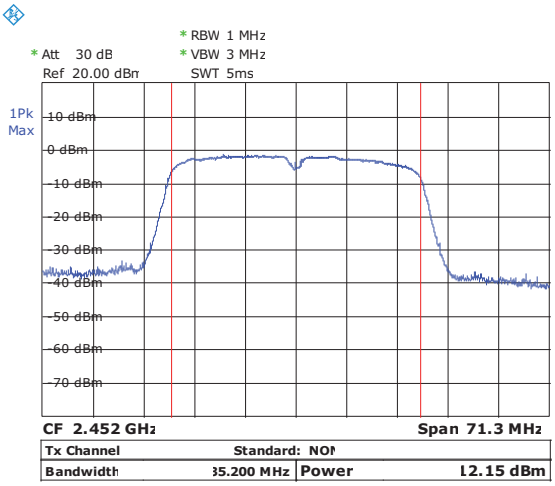


Table 14 Maximum Peak Conducted Output Power Test Data 802.11n 40M Ant 1

Center Freq.[MHz]	Meas. Level (Cond.) [dBm]	Limit [dBm]	Result
2422	14.23	< 30	Pass
2437	12.37	< 30	Pass
2452	12.15	< 30	Pass







Center Freq.[MHz]	ANT0 (Cond.) [dBm]	ANT1 (Cond.) [dBm]	Total	Limit [dBm]	Result
2422	14.90	14.23	17.59	< 28	Pass
2437	12.61	12.37	15.50	< 28	Pass
2452	13.24	12.15	15.74	< 28	Pass

7. MAXIMUM POWER SPECTRAL DENSITY LEVEL MEASUREMENT

7.1. LIMITS OF Maximum Power Spectral Density Level Measurement

CFR 47 (FCC) part 15.247 (e) and 558074 D01 DTS Meas Guidance v03r01

7.2. TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer.

a)Set analyzer center frequency to DTS channel center frequency.

b)Set the span to 1.5 times the DTS bandwidth.

c)Set the RBW to: 3 kHz ≤ RBW ≤ 100 kHz.

d)Set the VBW ≥ 3 RBW.

e)Detector = peak.

f)Sweep time = auto couple.

g)Trace mode = max hold.

h)Allow trace to fully stabilize.

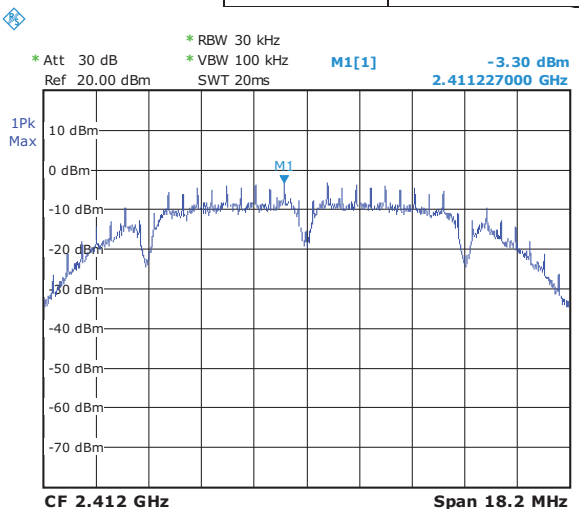
i)Use the peak marker function to determine the maximum amplitude level within the RBW.

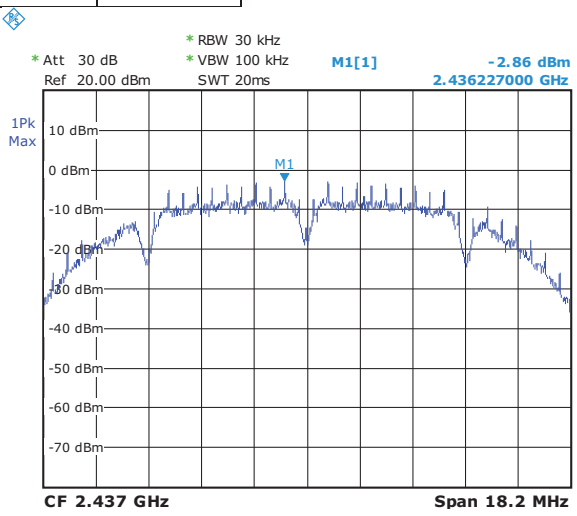
j)If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

7.3. TEST DATA

Table 15 Maximum Power Spectral Density Level Test Data 802.11b

Center Freq.[MHz]	PSD [dBm]	Limit [dBm]	Result
2412	-3.30	8	Pass
2437	-2.86	8	Pass
2462	-1.30	8	Pass





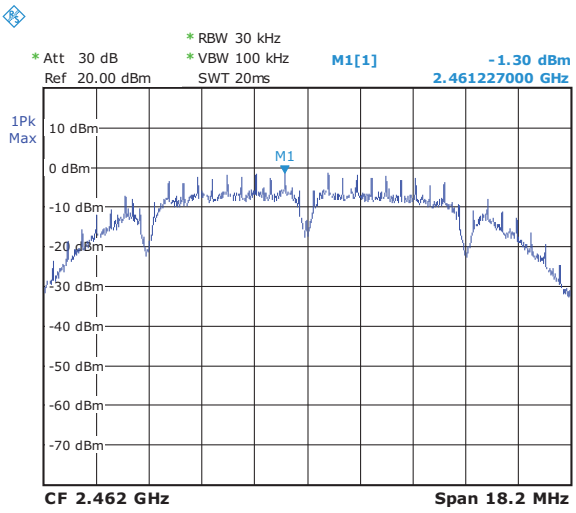
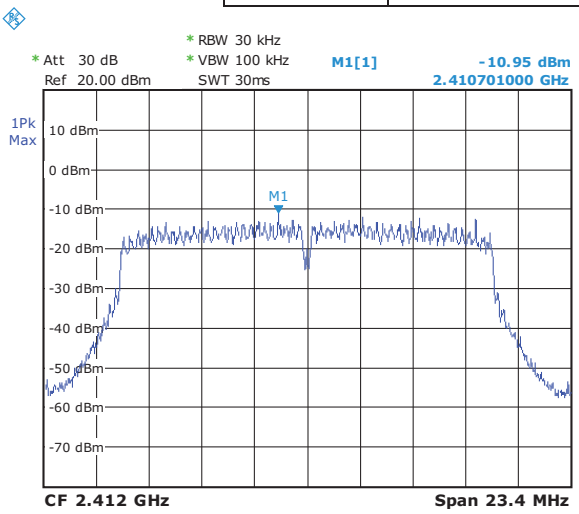
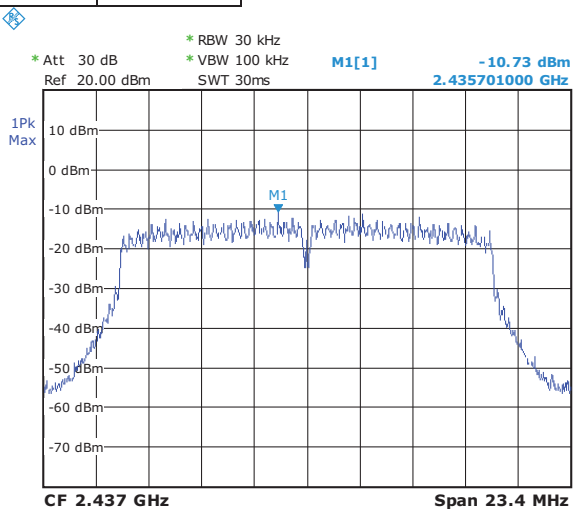


Table 16 Maximum Power Spectral Density Level Test Data 802.11g

Center Freq.[MHz]	PSD [dBm]	Limit [dBm]	Result
2412	-10.95	8	Pass
2437	-10.73	8	Pass
2462	-9.12	8	Pass





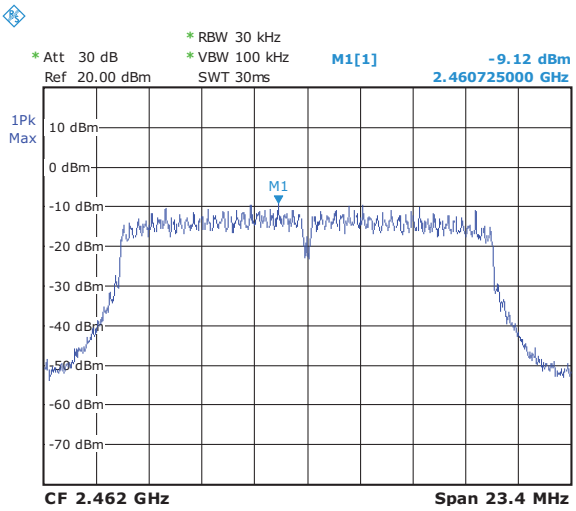
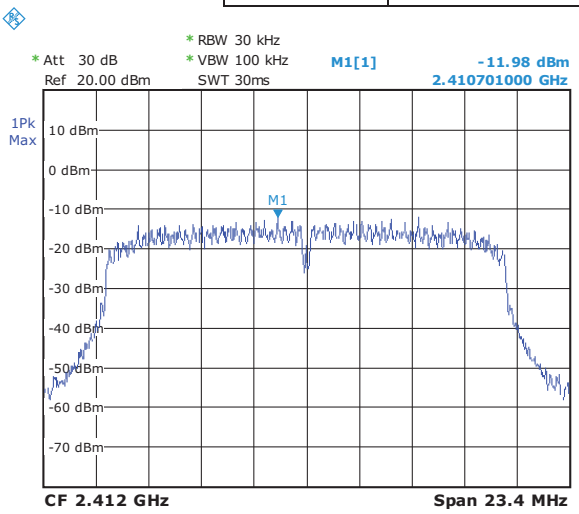
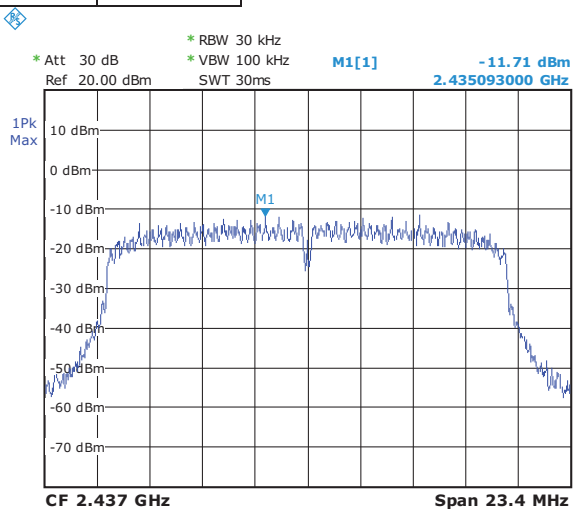


Table 17 Maximum Power Spectral Density Level Test Data 802.11n 20M Ant 0

Center Freq.[MHz]	PSD [dBm]	Limit [dBm]	Result
2412	-11.98	8	Pass
2437	-11.71	8	Pass
2462	-9.71	8	Pass





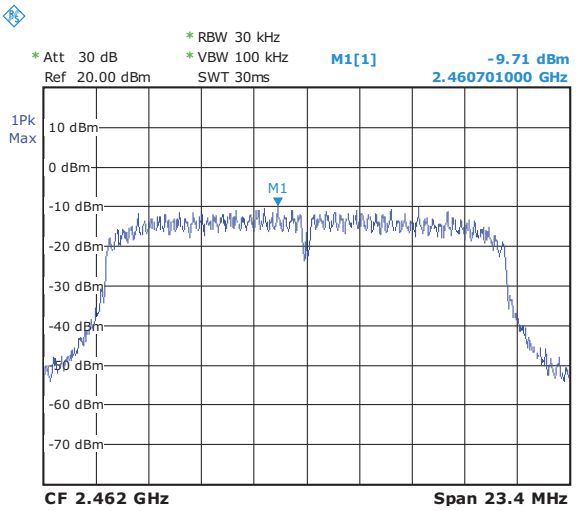
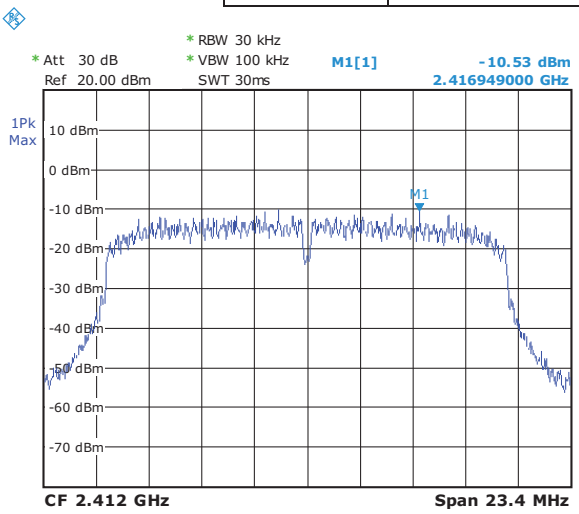
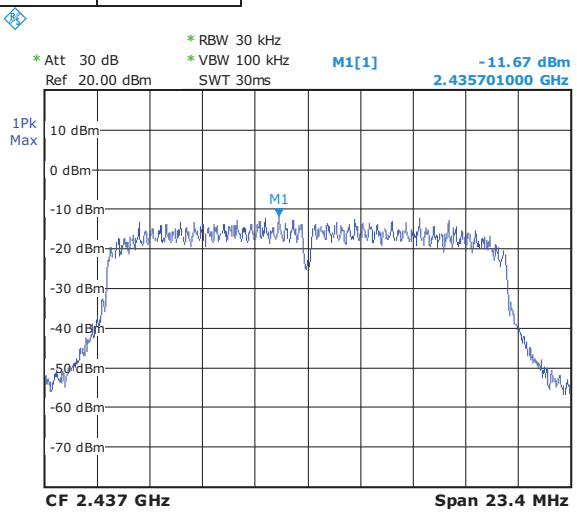
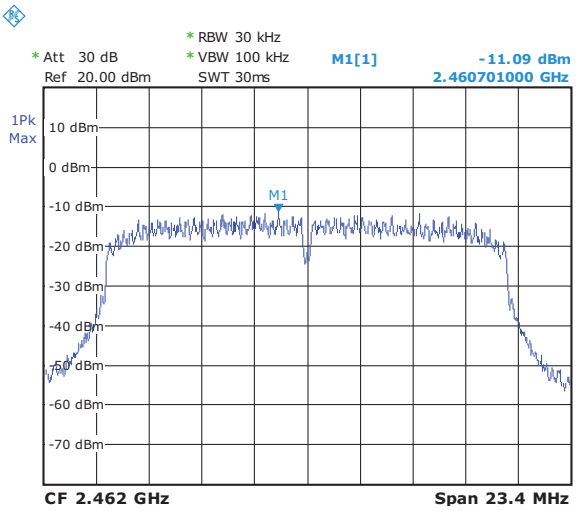


Table 18 Maximum Power Spectral Density Level Test Data 802.11n 20M Ant 1

Center Freq.[MHz]	PSD [dBm]	Limit [dBm]	Result
2412	-10.53	8	Pass
2437	-11.67	8	Pass
2462	-11.09	8	Pass



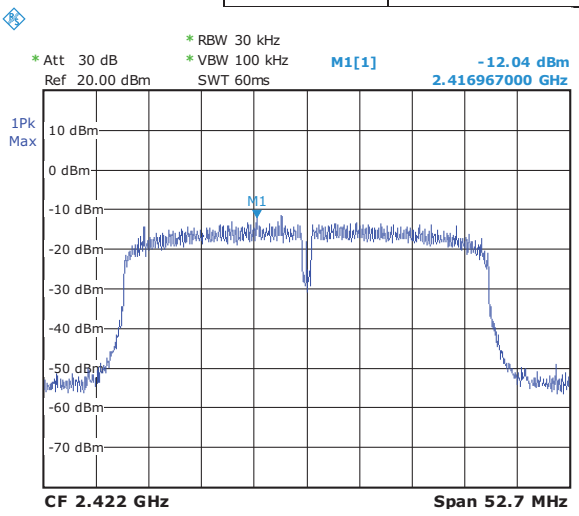


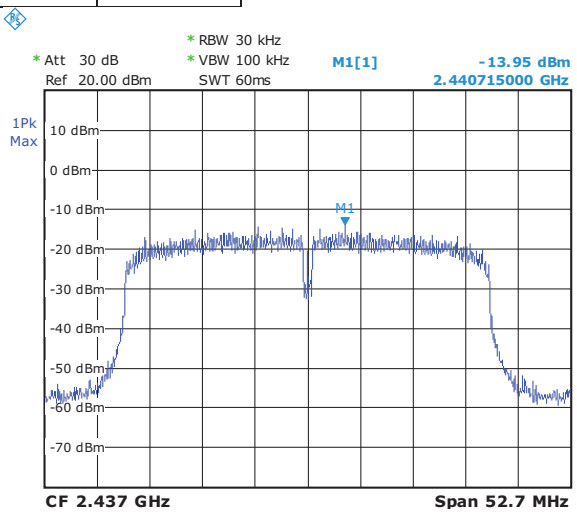


Center Freq.[MHz]	Ant 0 PSD [dBm]	Ant 1 PSD [dBm]	Total PSD [dBm]	Limit [dBm]	Result
2412	-11.98	-10.53	-8.18	8	Pass
2437	-11.71	-11.67	-8.68	8	Pass
2462	-9.71	-11.09	-7.34	8	Pass

Table 19 Maximum Power Spectral Density Level Test Data 802.11n 40M Ant 0

Center Freq.[MHz]	PSD [dBm]	Limit [dBm]	Result
2422	-12.04	8	Pass
2437	-13.95	8	Pass
2452	-13.53	8	Pass





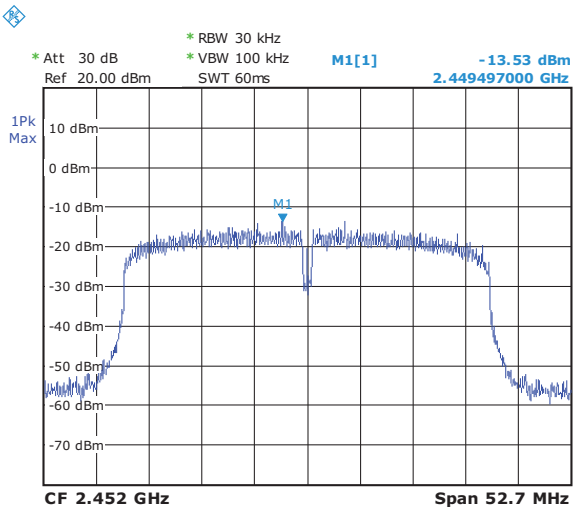
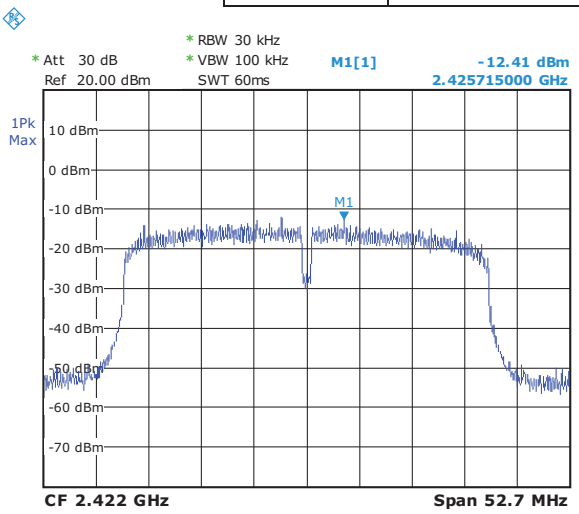
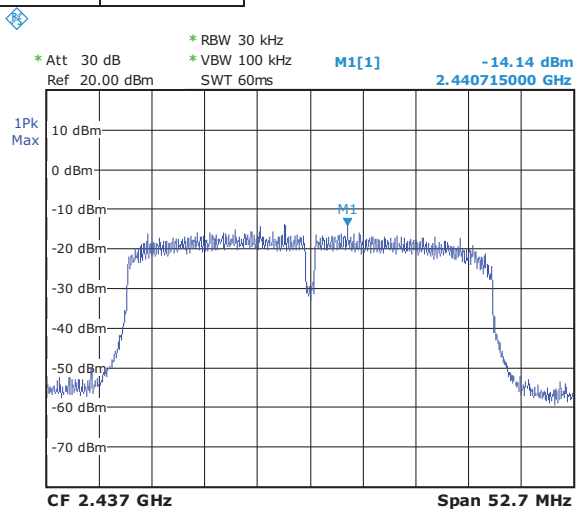
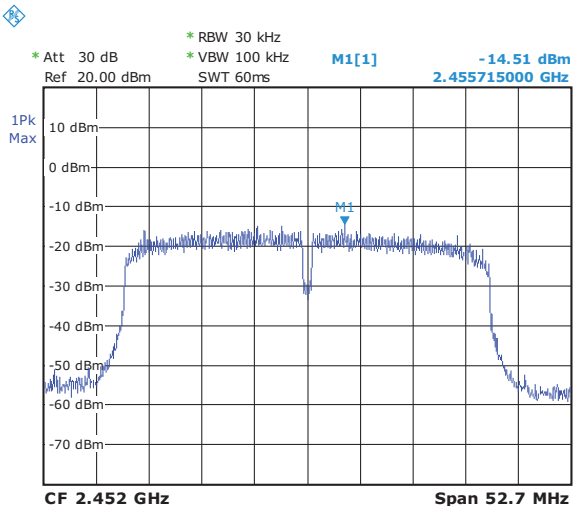


Table 20 Maximum Power Spectral Density Level Test Data 802.11n 40M Ant 1

Center Freq.[MHz]	PSD [dBm]	Limit [dBm]	Result
2422	-12.41	8	Pass
2437	-14.14	8	Pass
2452	-14.51	8	Pass







Center Freq.[MHz]	Ant 0 PSD [dBm]	Ant 1 PSD [dBm]	Total PSD [dBm]	Limit [dBm]	Result
2422	-12.04	-12.41	-9.21	8	Pass
2437	-13.95	-14.14	-11.03	8	Pass
2452	-13.53	-14.51	-10.98	8	Pass

8. CONDUCTED BANDEDGE AND SPURIOUS MEASURMENT

8.1. LIMITS OF Conducted Bandedge and Spurious Measurement

CFR 47 (FCC) part 15.247 (d) and 558074 D01 DTS Meas Guidance v03r01

8.2. TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer.

Establish a reference level by using the following procedure:

a)Set instrument center frequency to DTS channel center frequency.

b)Set the span to ≥ 1.5 times the DTS bandwidth.

c)Set the RBW = 100 kHz.

d)Set the VBW ≥ 3 x RBW.

e)Detector = peak.

f)Sweep time = auto couple.

g)Trace mode = max hold.

h)Allow trace to fully stabilize.

i)Use the peak marker function to determine the maximum PSD level.

Emission level measurement

a)Set the center frequency and span to encompass frequency range to be measured.

b)Set the RBW = 100 kHz.

c)Set the VBW ≥ 3 x RBW.

d)Detector = peak.

e)Ensure that the number of measurement points ≥ span/RBW

f)Sweep time = auto couple.

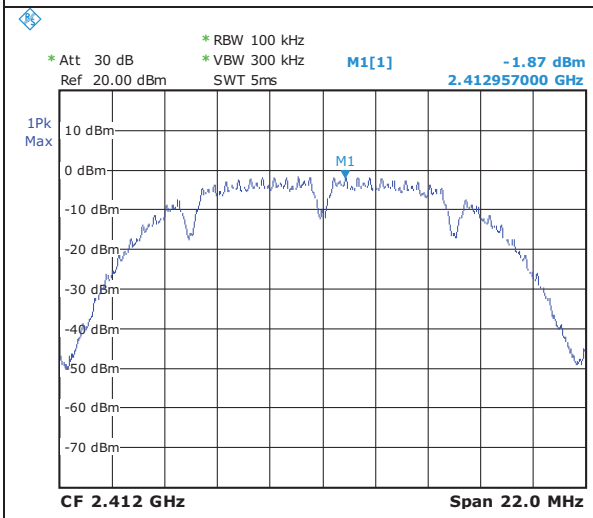
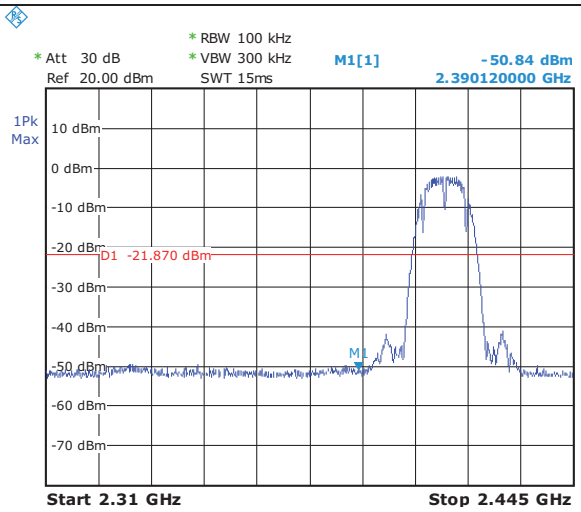
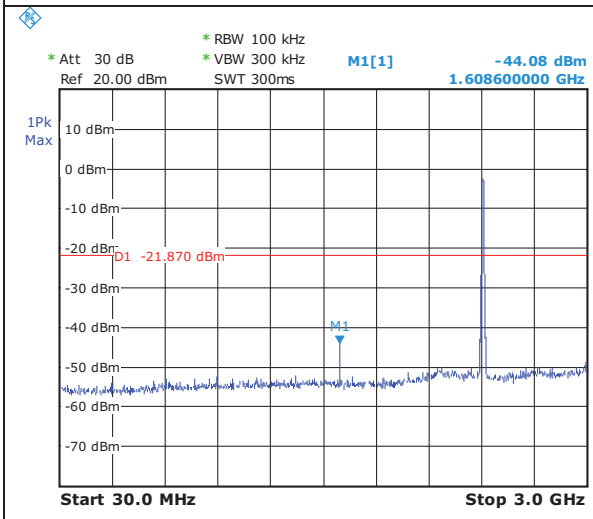
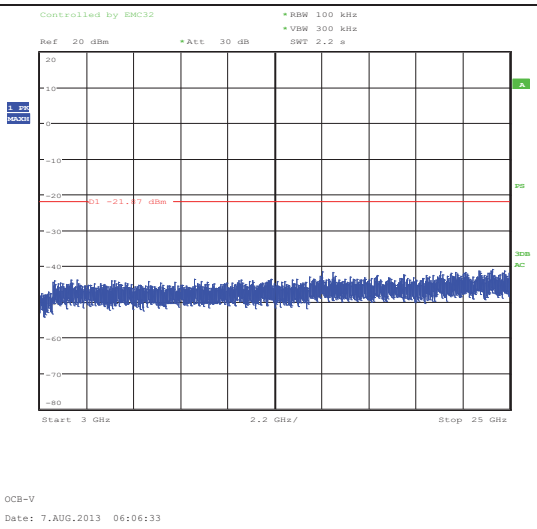
g)Trace mode = max hold.

h)Allow trace to fully stabilize.

i)Use the peak marker function to determine the maximum amplitude level.

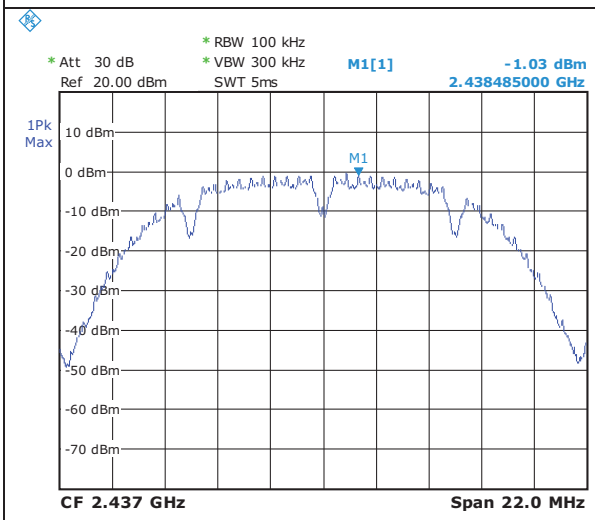
8.3.TEST DATA

802.11b CH1

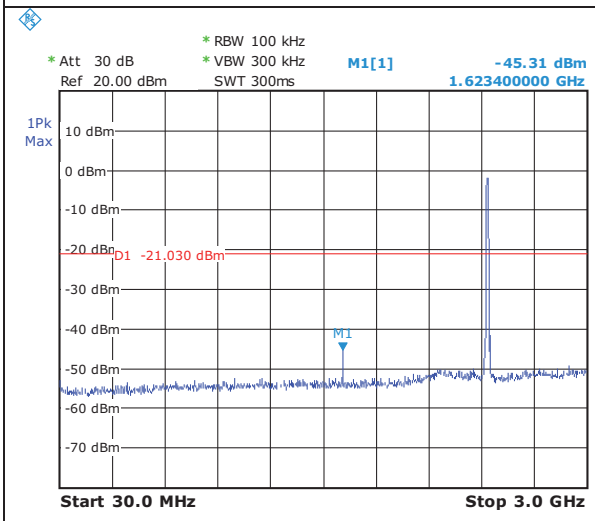
Pref	Lower Edge
	
30MHz-3GHz	**3GHz-25GHz**
	

802.11b CH6

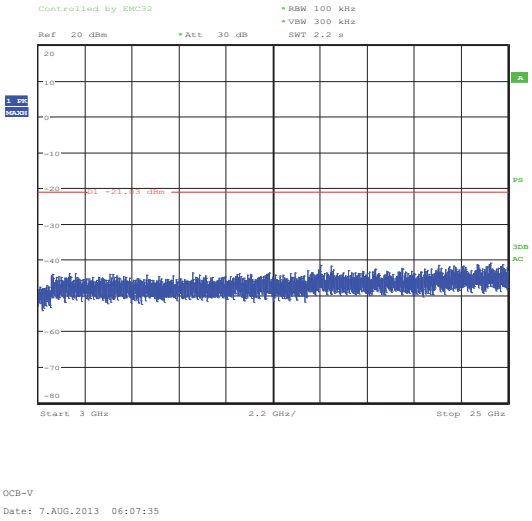
Pref



30MHz-3GHz

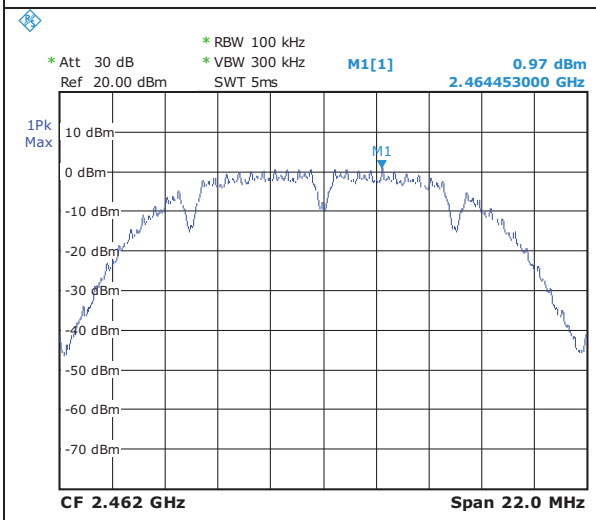


3GHz-25GHz

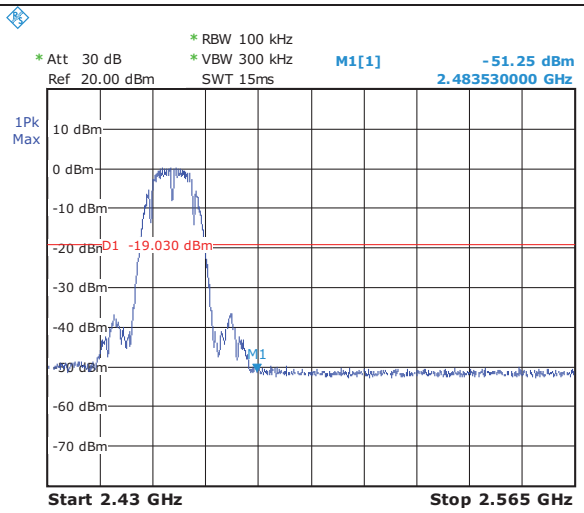


802.11b CH11

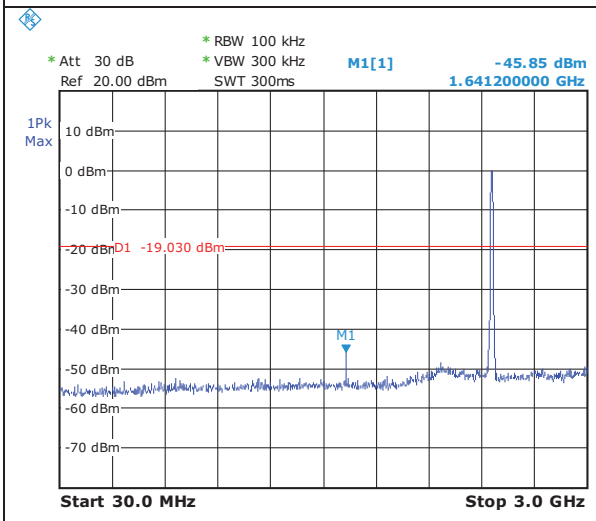
Pref



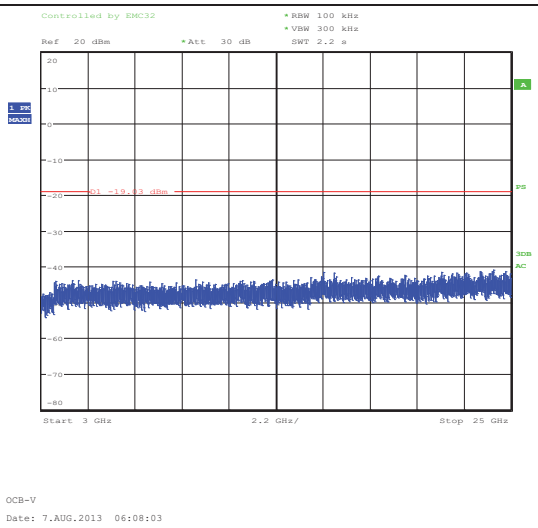
Upper Edge



30MHz-3GHz

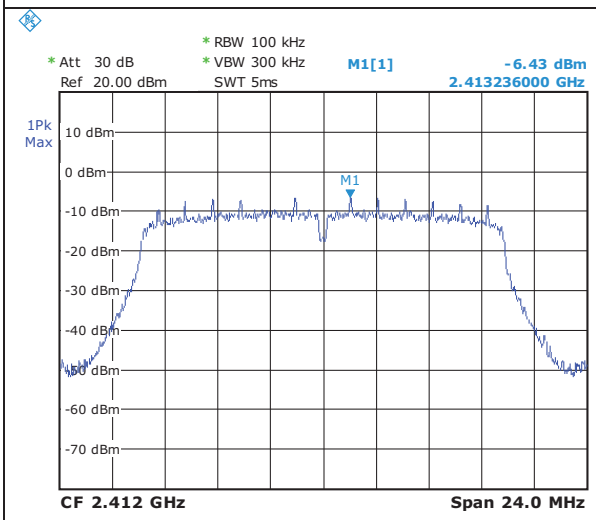


3GHz-25GHz

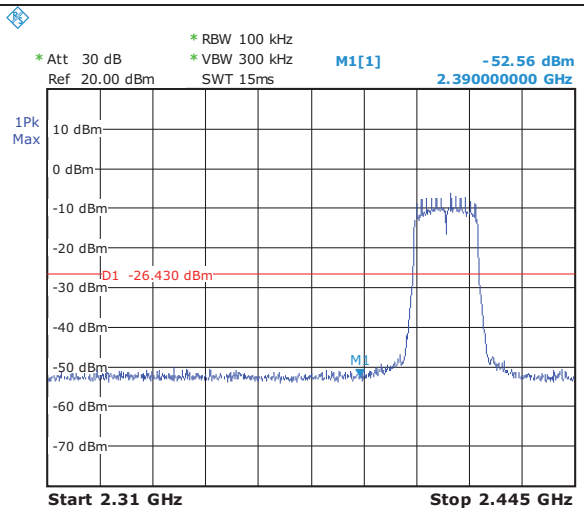


802.11g CH1

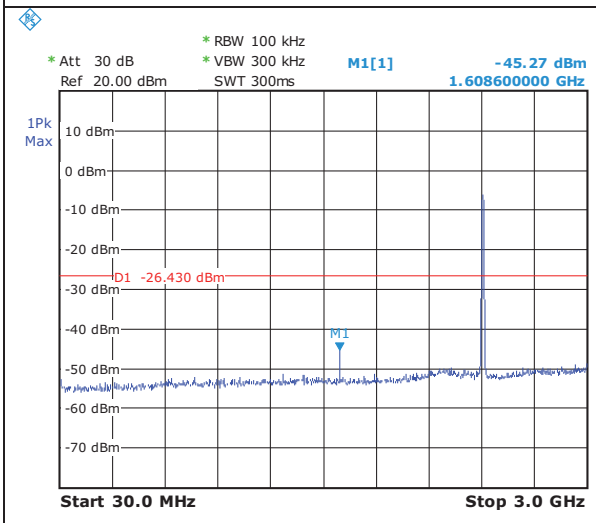
Pref



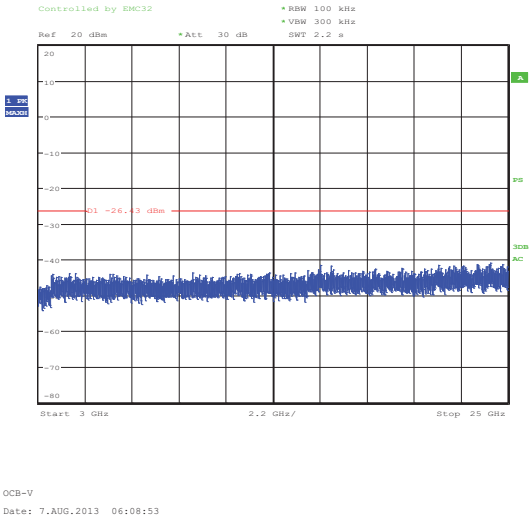
Lower Edge



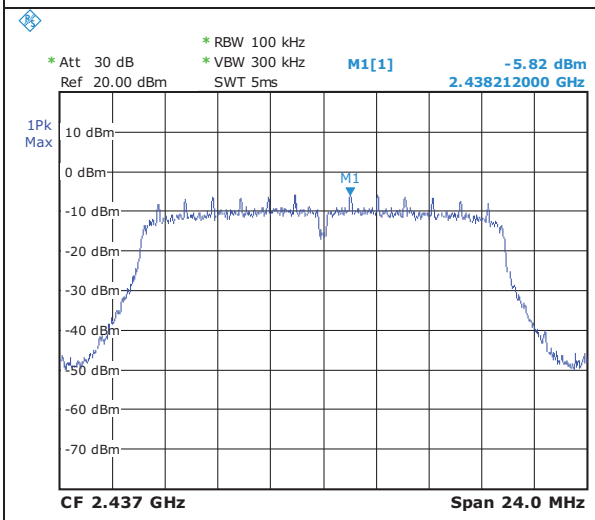
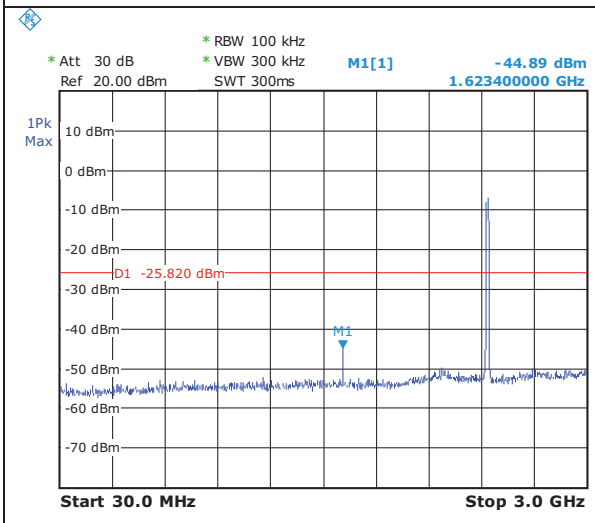
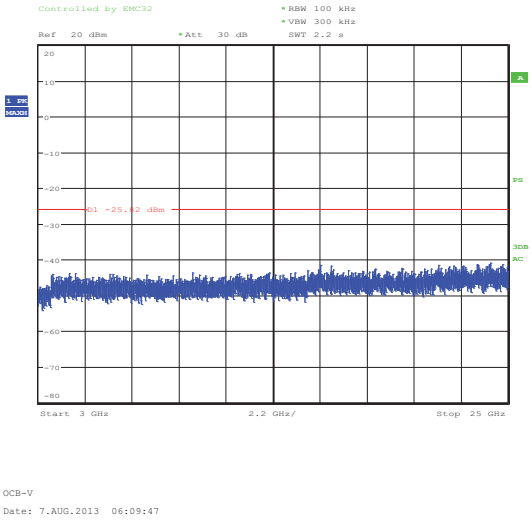
30MHz-3GHz



3GHz-25GHz

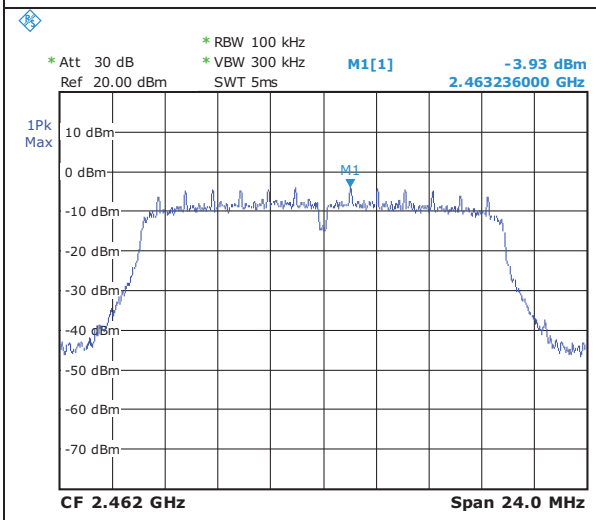


802.11g CH6

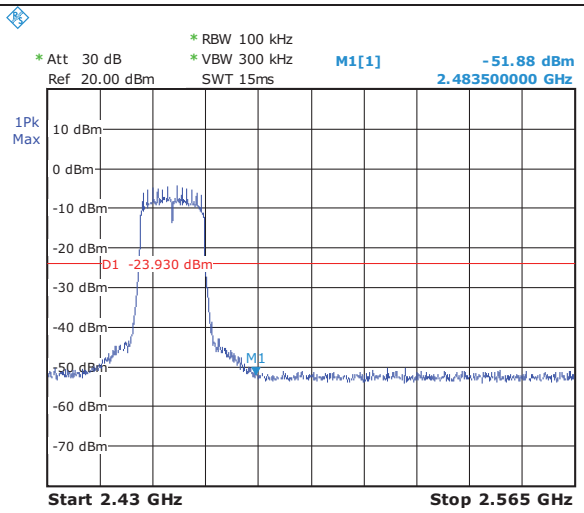
Pref	
	
30MHz-3GHz	3GHz-25GHz
	

802.11g CH11

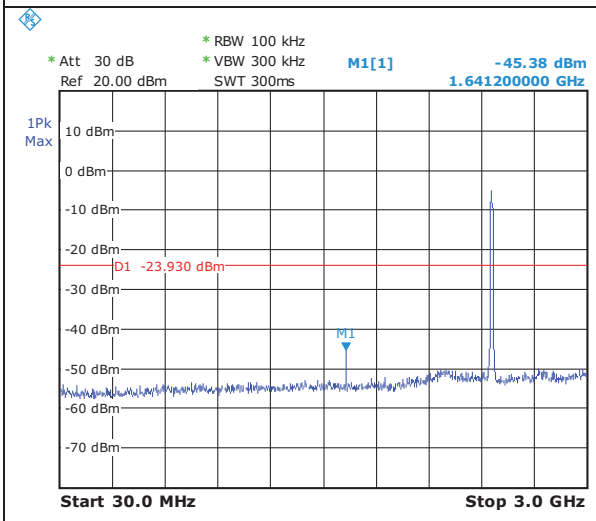
Pref



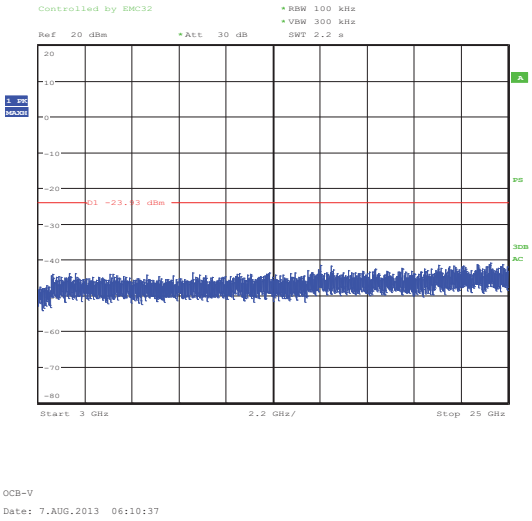
Upper Edge



30MHz-3GHz

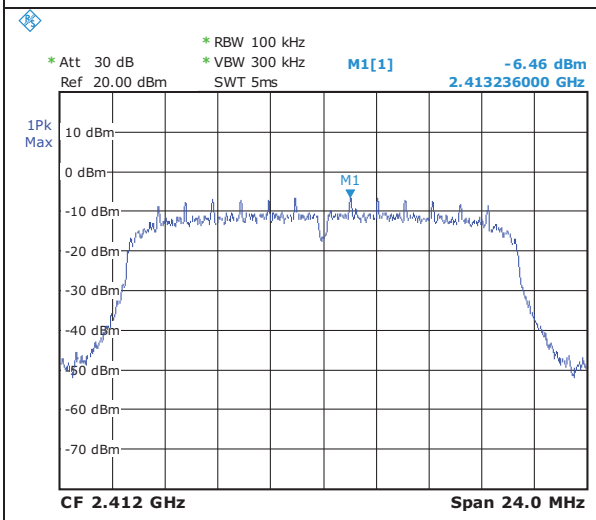


3GHz-25GHz

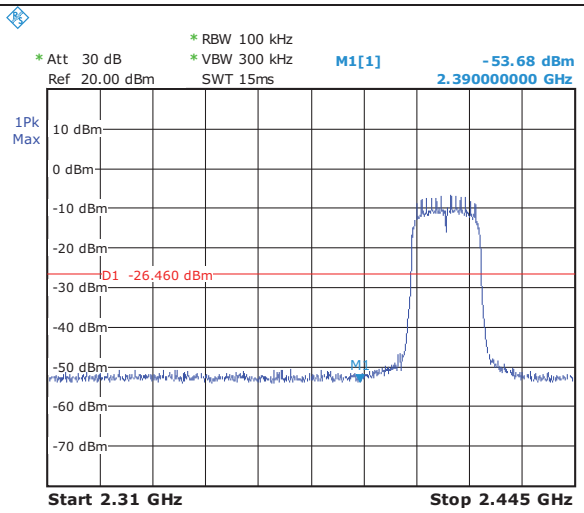


802.11n 20M Ant 0 CH1

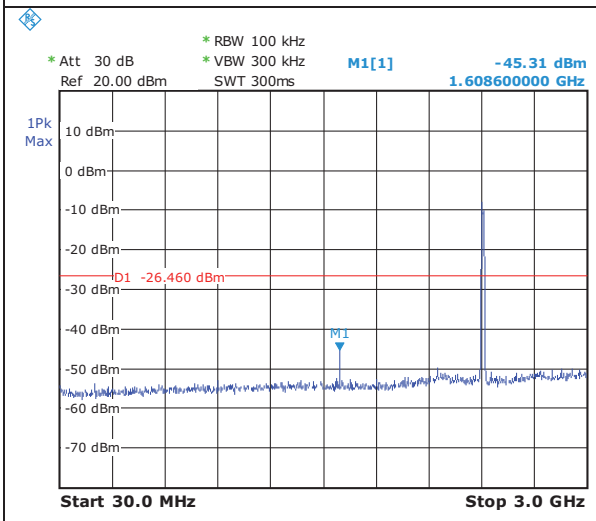
Pref



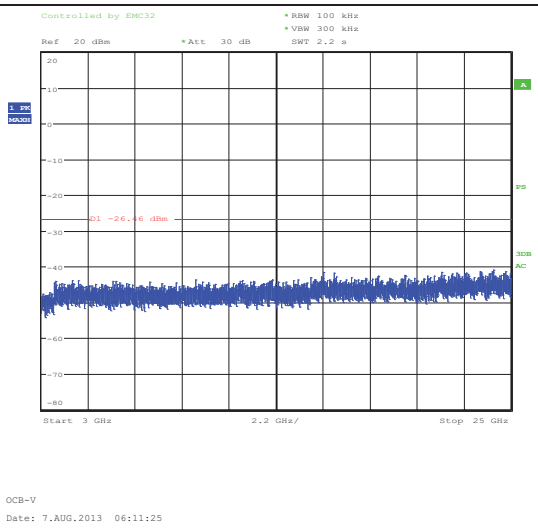
Lower Edge



30MHz-3GHz

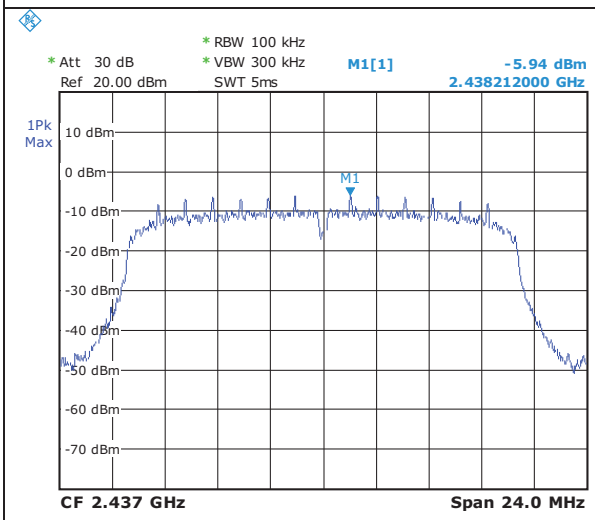


3GHz-25GHz

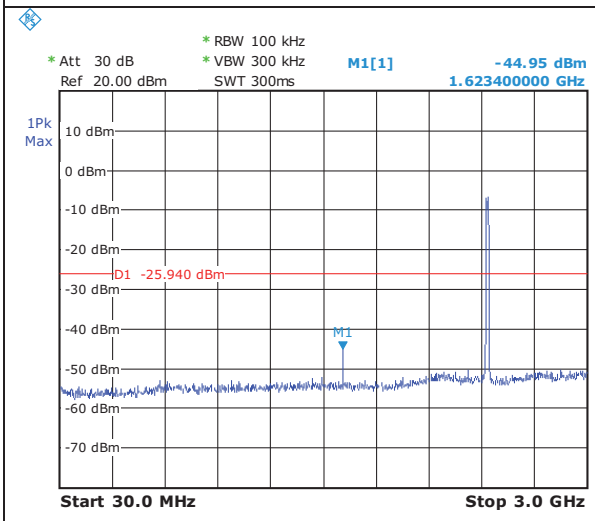


802.11n 20M Ant 0 CH6

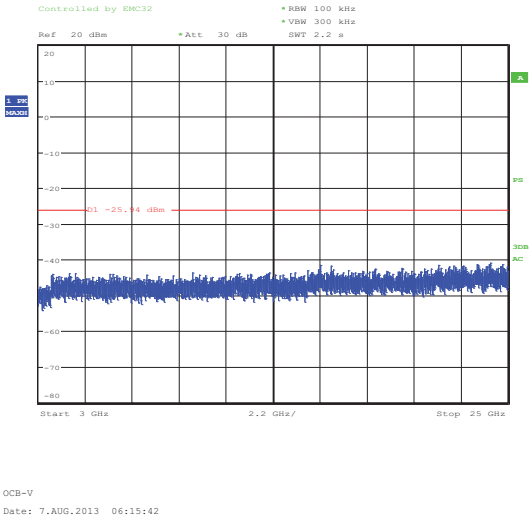
Pref



30MHz-3GHz

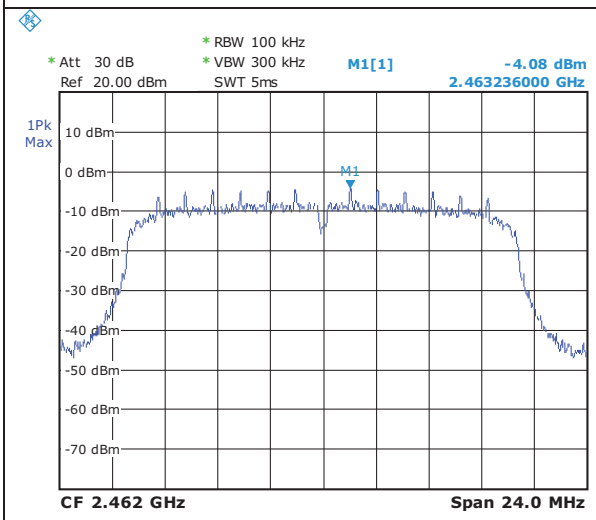


3GHz-25GHz

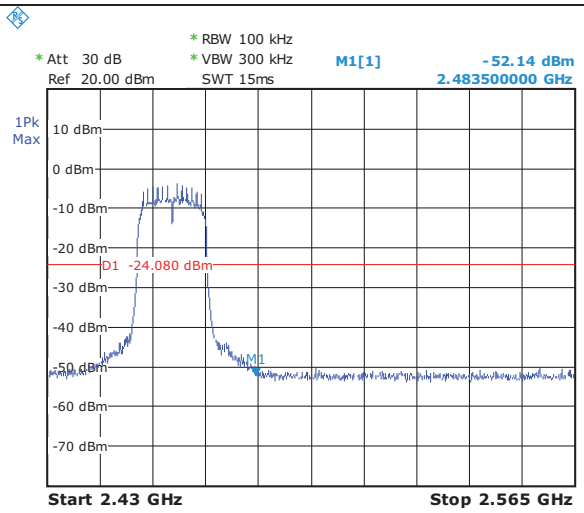


802.11n 20M Ant 0 CH11

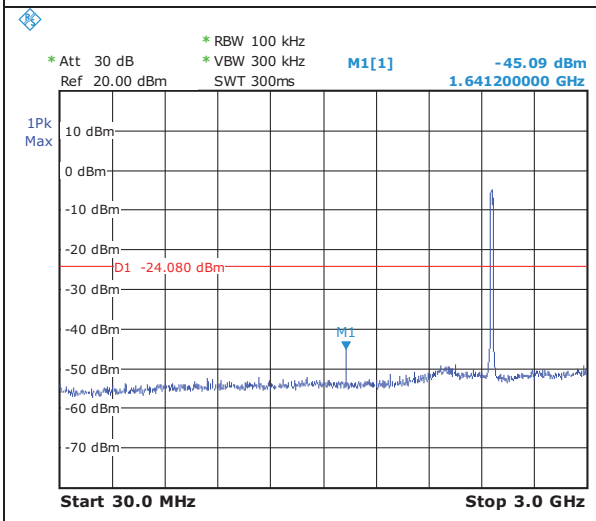
Pref



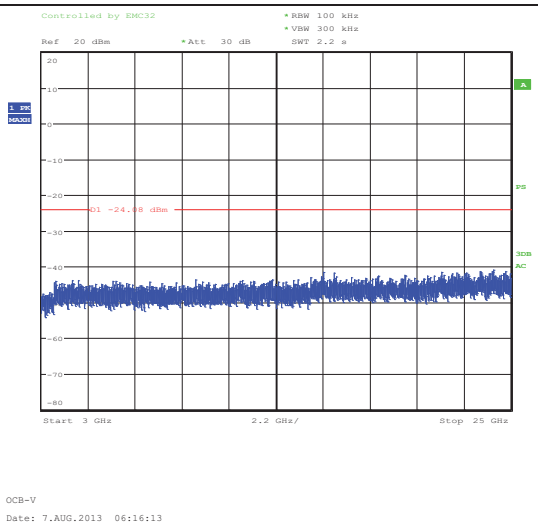
Upper Edge



30MHz-3GHz

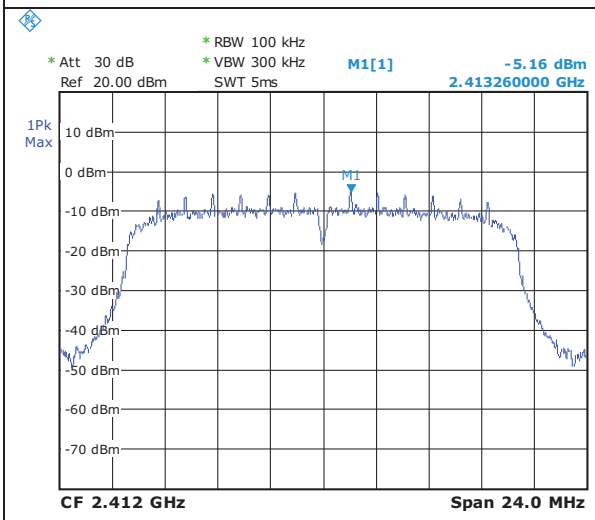


3GHz-25GHz

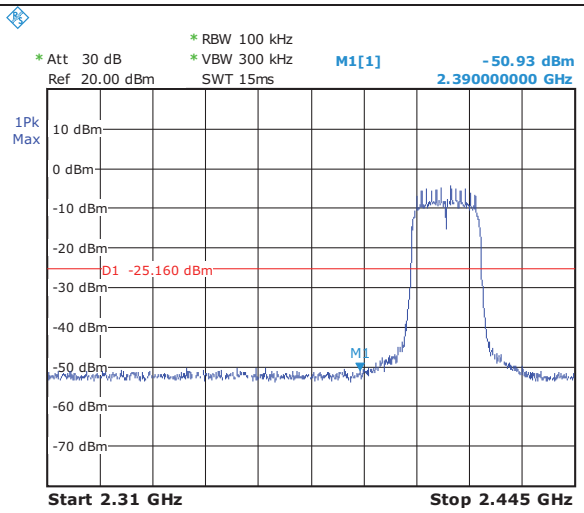


802.11n 20M Ant 1 CH1

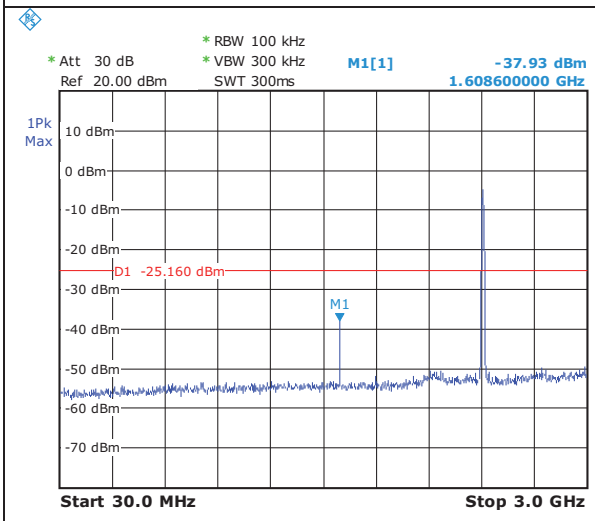
Pref



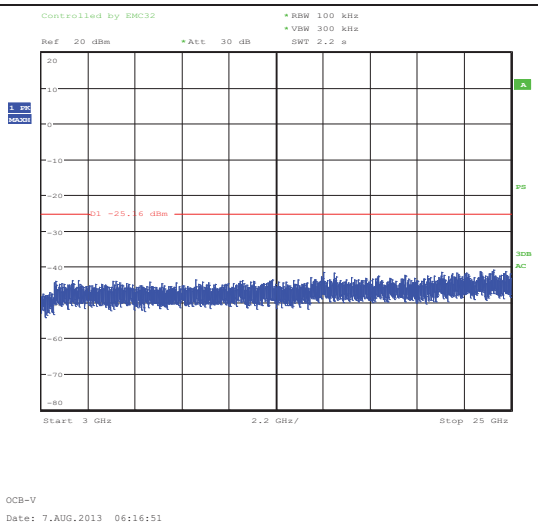
Lower Edge



30MHz-3GHz

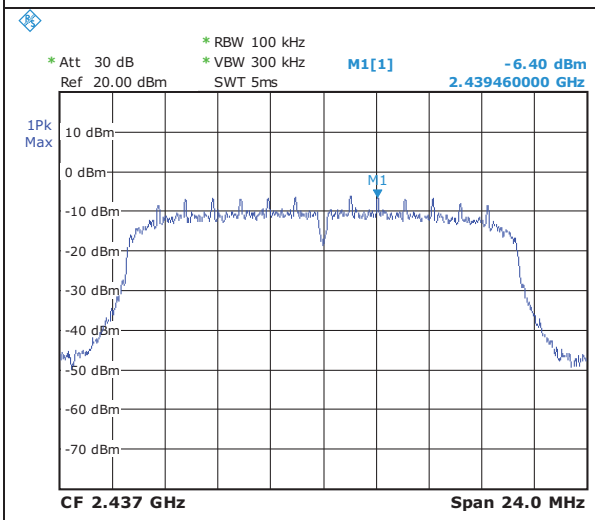


3GHz-25GHz

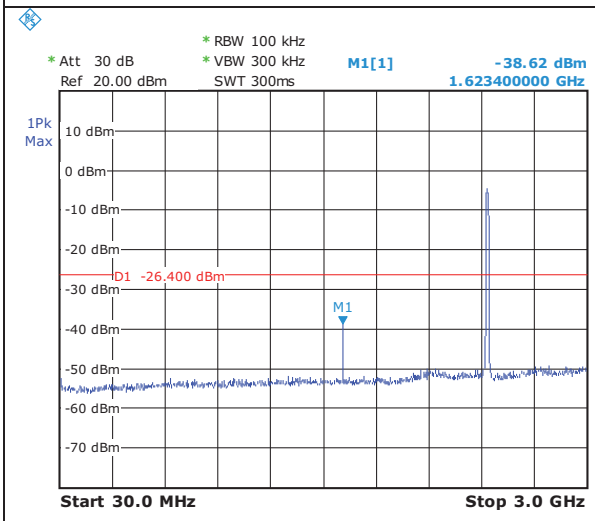


802.11n 20M Ant 1 CH6

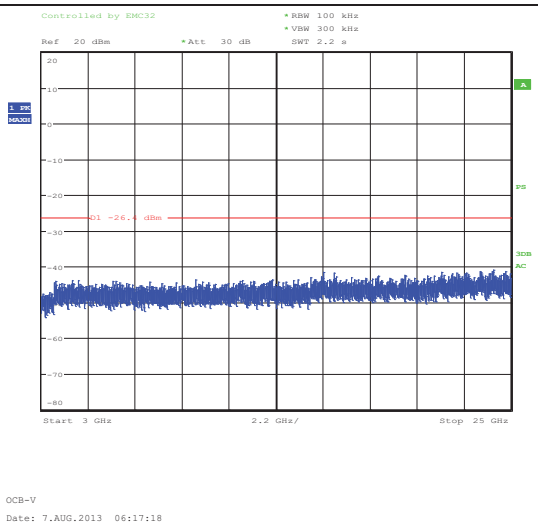
Pref



30MHz-3GHz

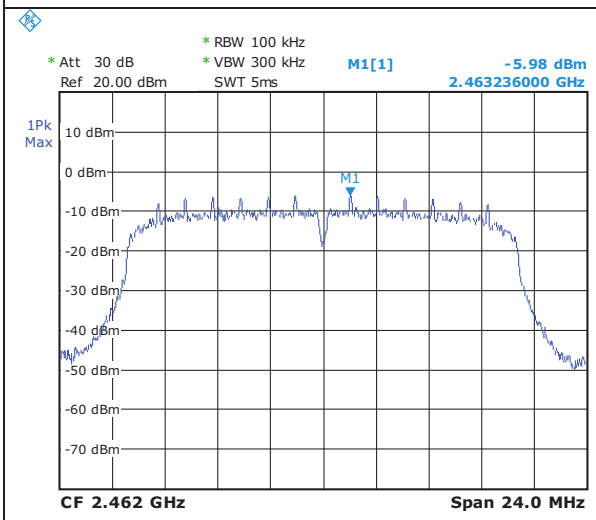


3GHz-25GHz

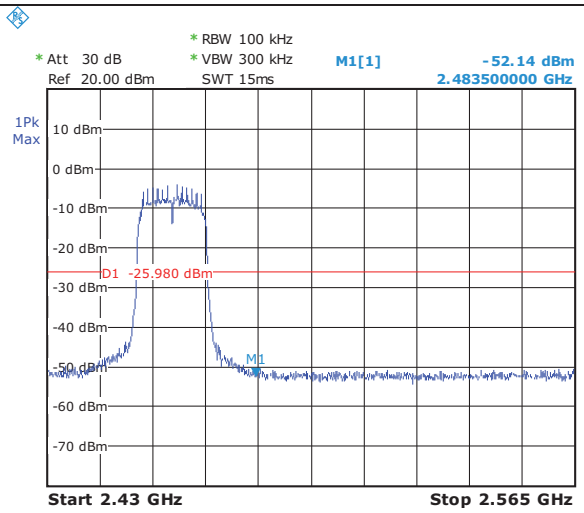


802.11n 20M Ant 1 CH11

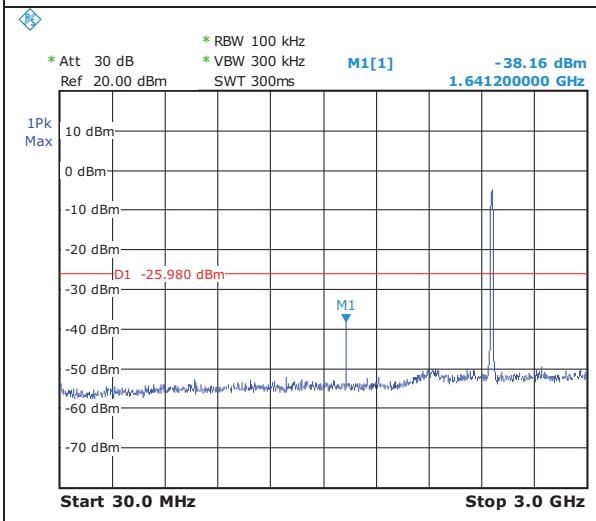
Pref



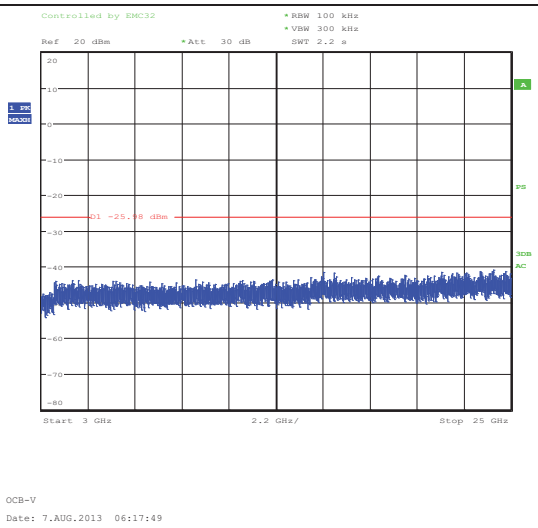
Upper Edge



30MHz-3GHz

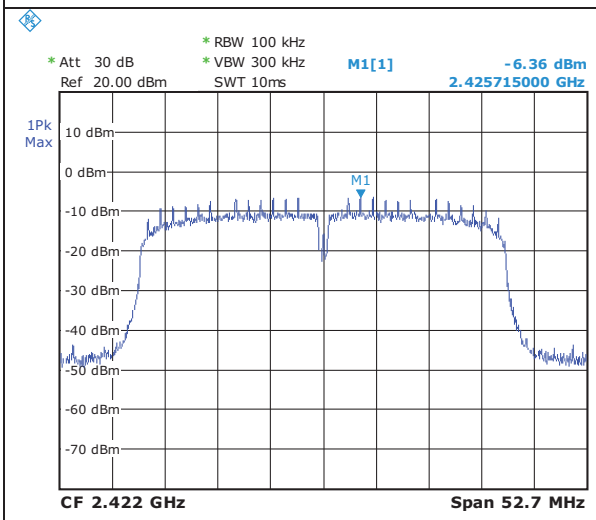


3GHz-25GHz

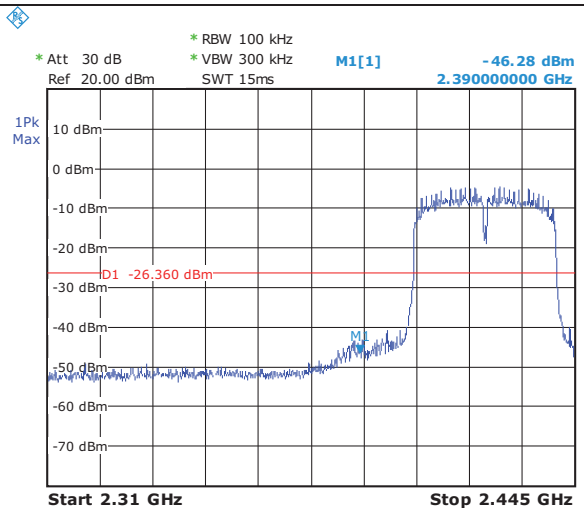


802.11n 40M Ant 0 CH3

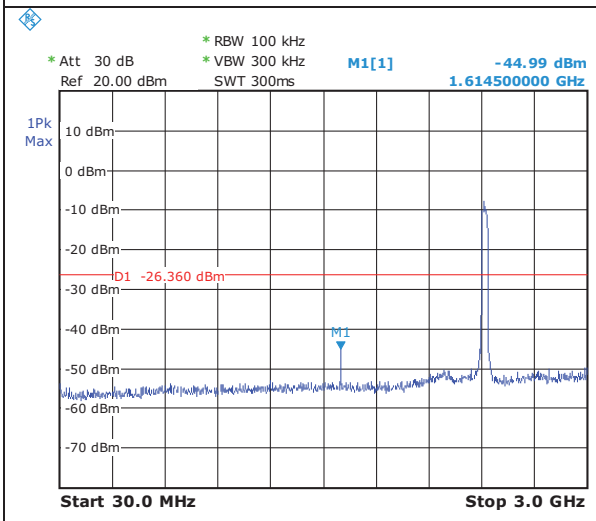
Pref



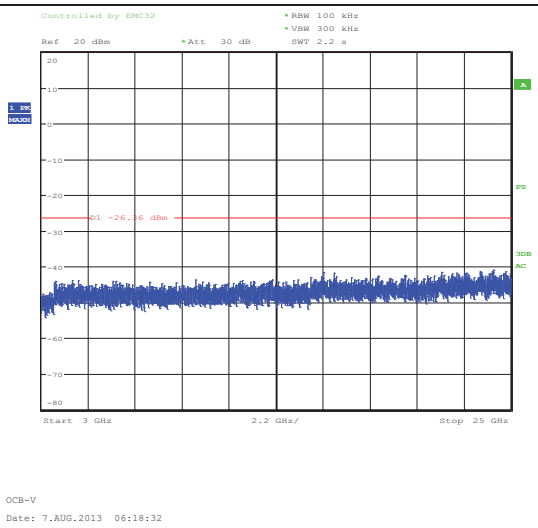
Lower Edge



30MHz-3GHz

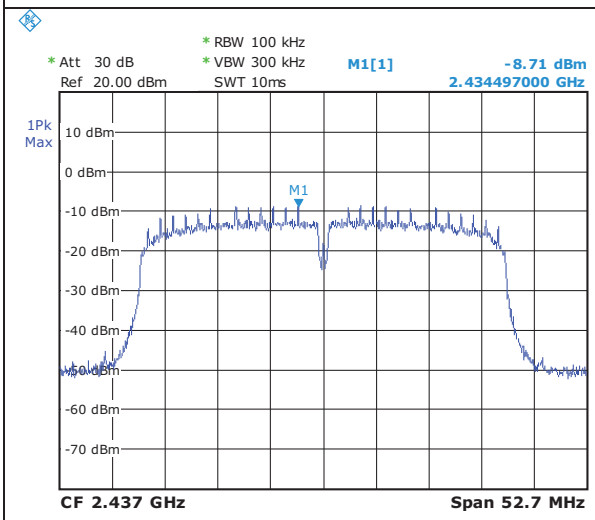


3GHz-25GHz

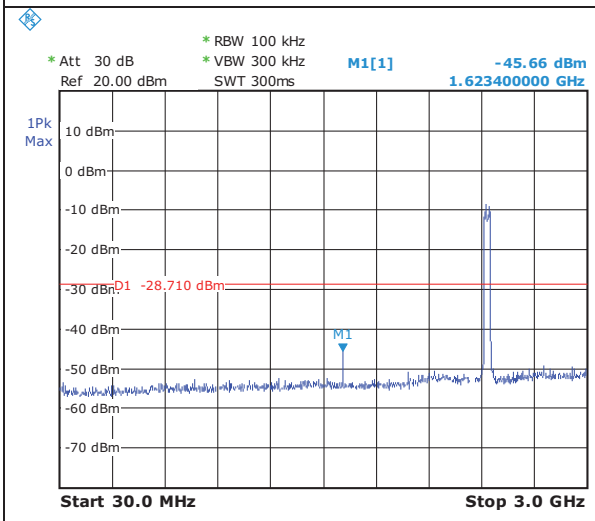


802.11n 40M Ant 0 CH6

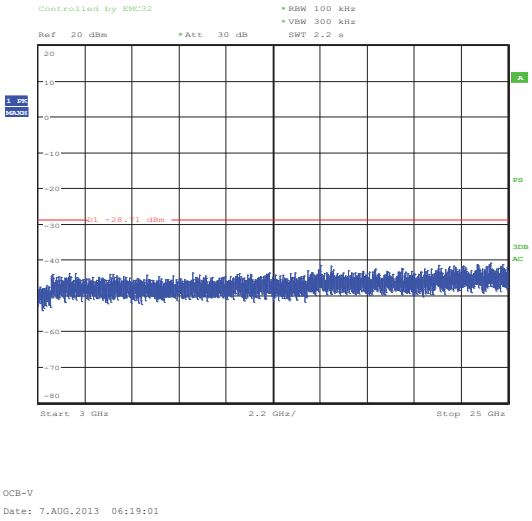
Pref



30MHz-3GHz

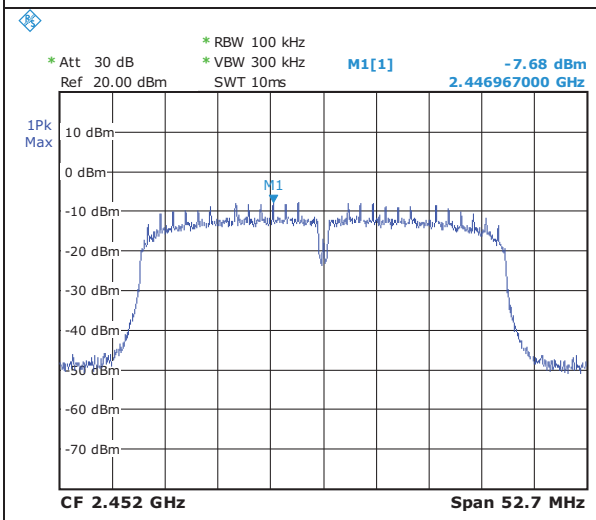


3GHz-25GHz

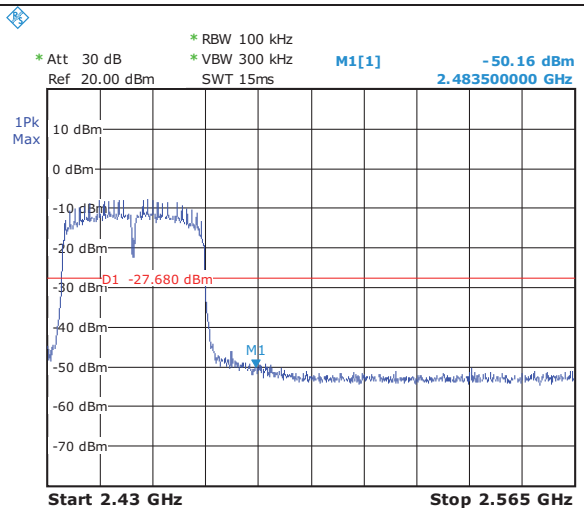


802.11n 40M Ant 0 CH9

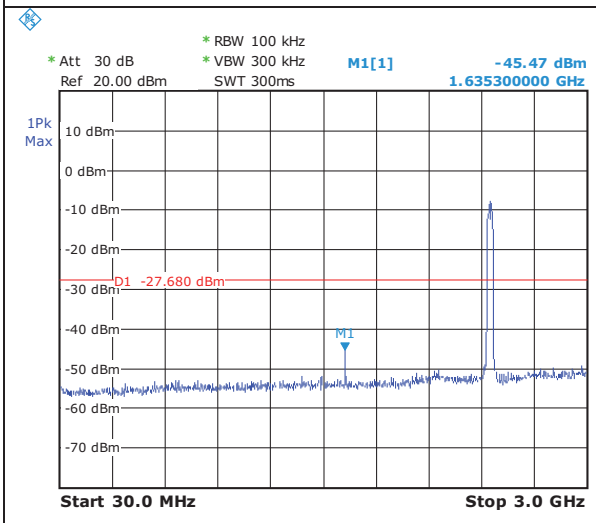
Pref



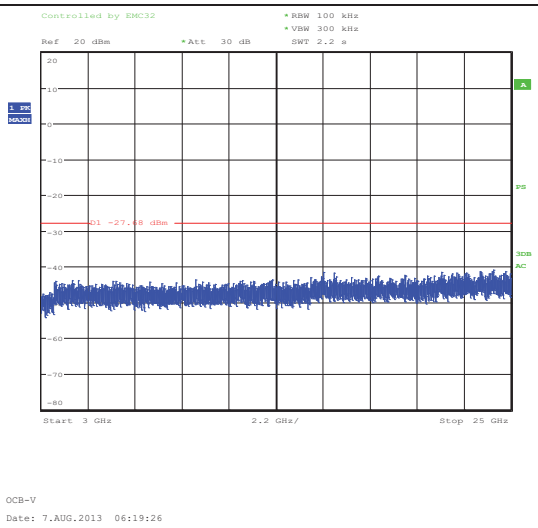
Upper Edge



30MHz-3GHz

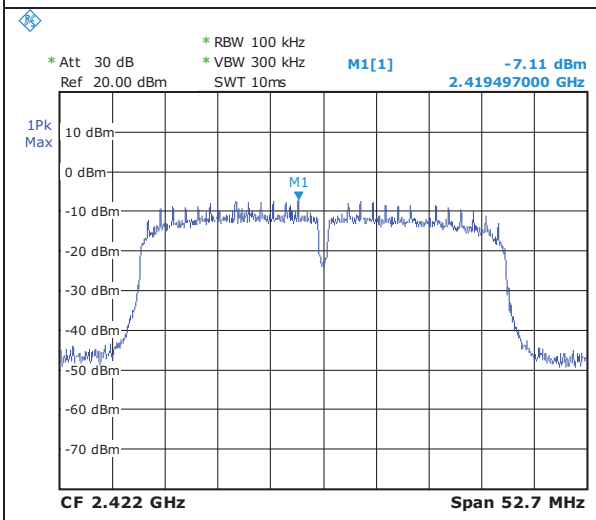


3GHz-25GHz

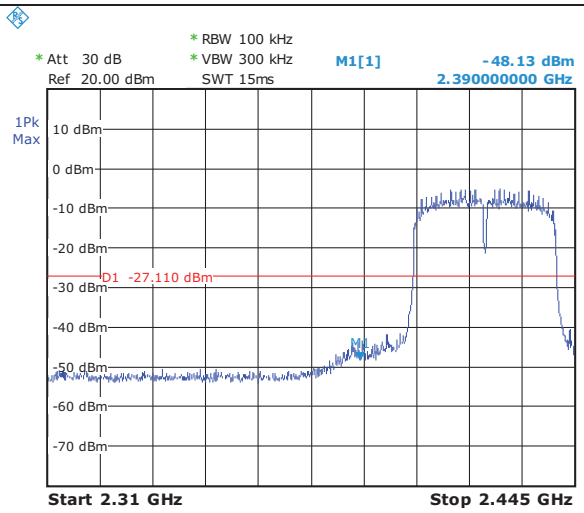


802.11n 40M Ant 1 CH3

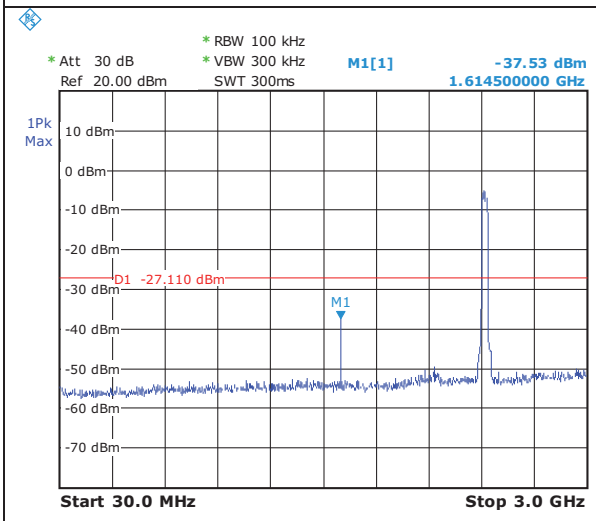
Pref



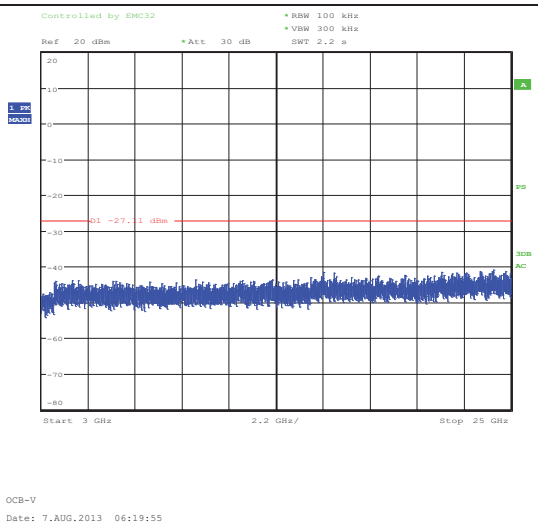
Lower Edge



30MHz-3GHz

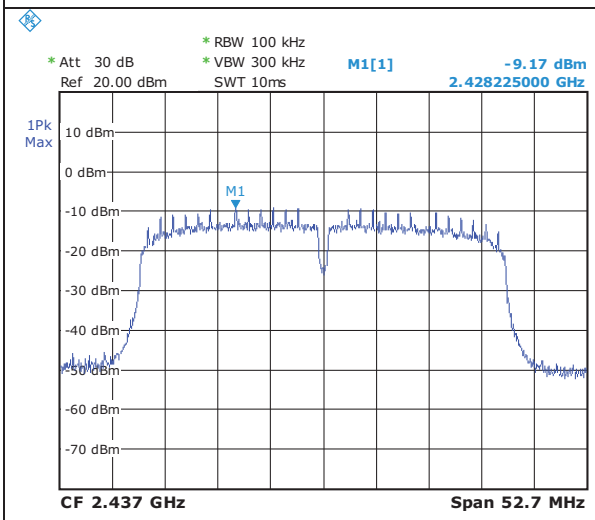


3GHz-25GHz

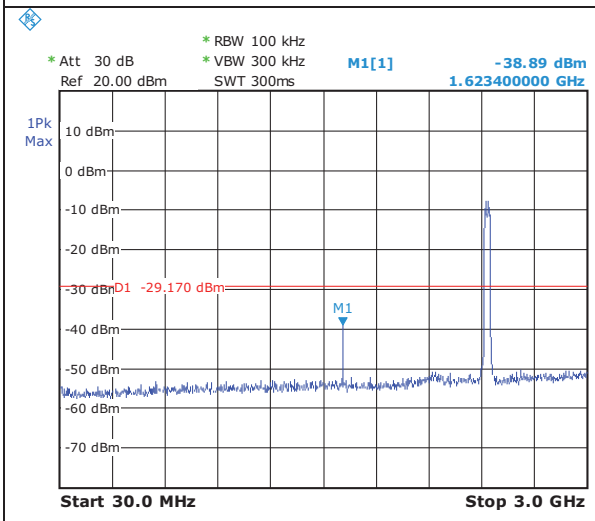


802.11n 40M Ant 1 CH6

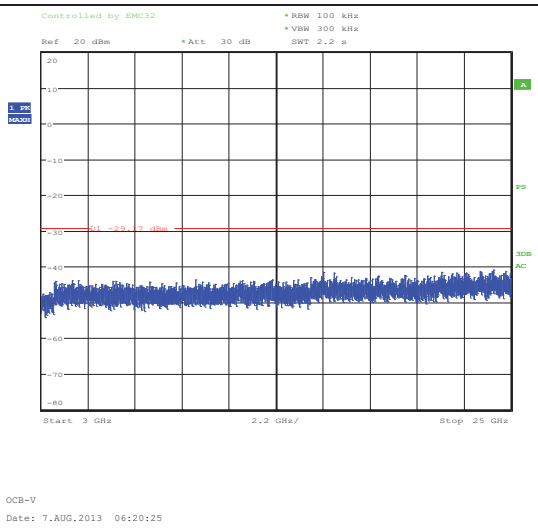
Pref



30MHz-3GHz

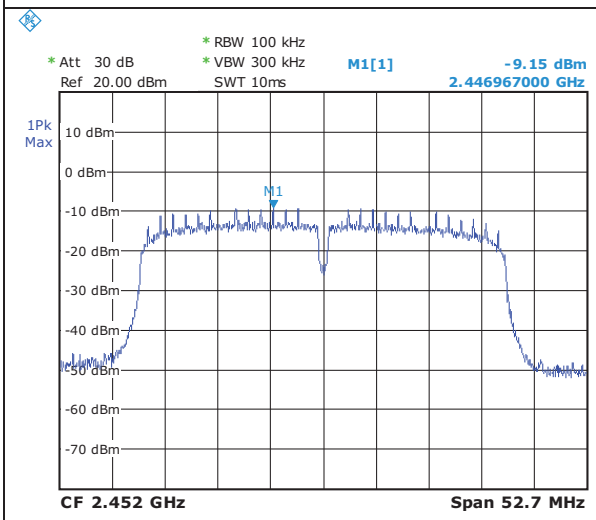


3GHz-25GHz

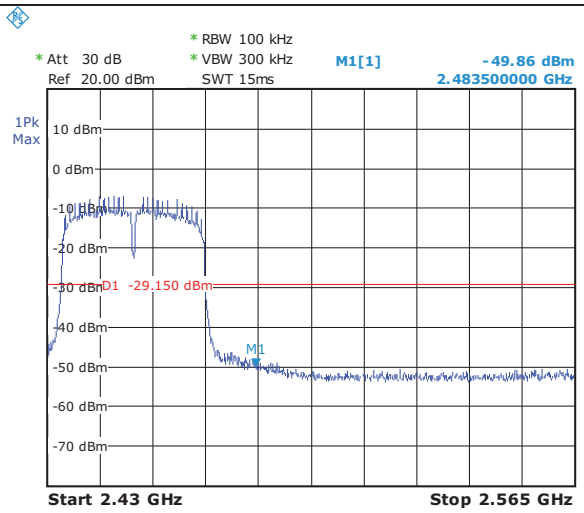


802.11n 40M Ant 1 CH9

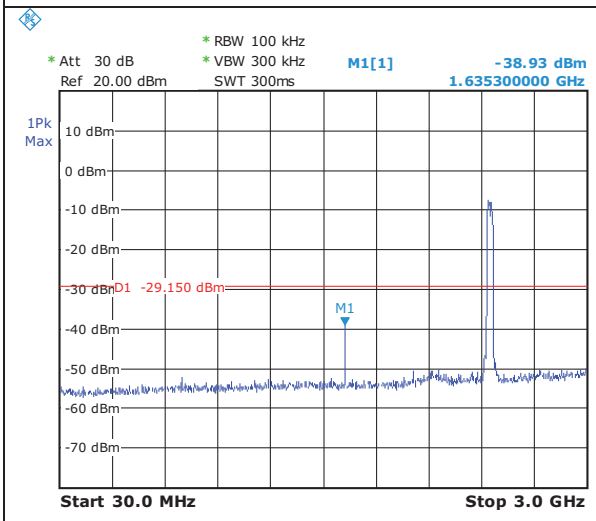
Pref



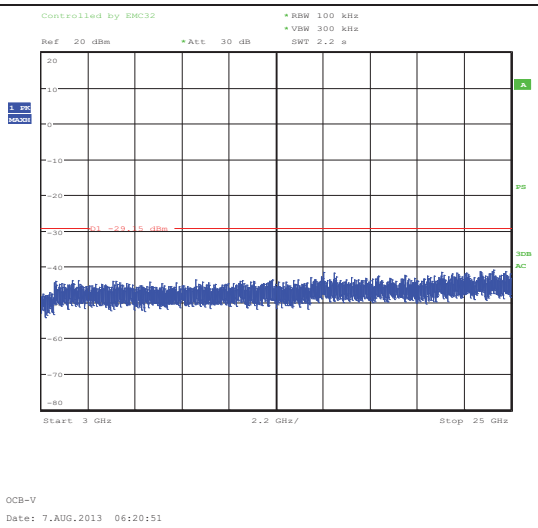
Upper Edge



30MHz-3GHz



3GHz-25GHz



9. RADIATED BANDEDGE AND SPURIOUS MEASUREMENT

9.1. LIMITS OF Radiated Bandedge and Spurious Measurement

CFR 47 (FCC) part 15.247 (d) and 558074 D01 DTS Meas Guidance v03r01

9.2. TEST PROCEDURE

1. The testing follows the guidelines in ANSI C63.10-2009.

2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level.

3. The EUT was placed on a turntable with 0.8 meter above ground.

4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.

5. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level

6. For measurement below 1GHz, If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.

7. Use the following spectrum analyzer settings:

(1) Span shall wide enough to fully capture the emission being measured;

(2) Set RBW=100 kHz for f < 1 GHz; VBW >= RBW; Sweep = auto; Detector function = peak; Trace = max hold;

(3) Set RBW = 1 MHz, VBW= 3MHz for f > 1 GHz for peak measurement.

Set RBW = 1 MHz, VBW= 10Hz for f > 1 GHz for AV measurement.

9.3. TEST DATA

30MHz-1GHz

Worst case is shown below for 30MHz-1GHz only.

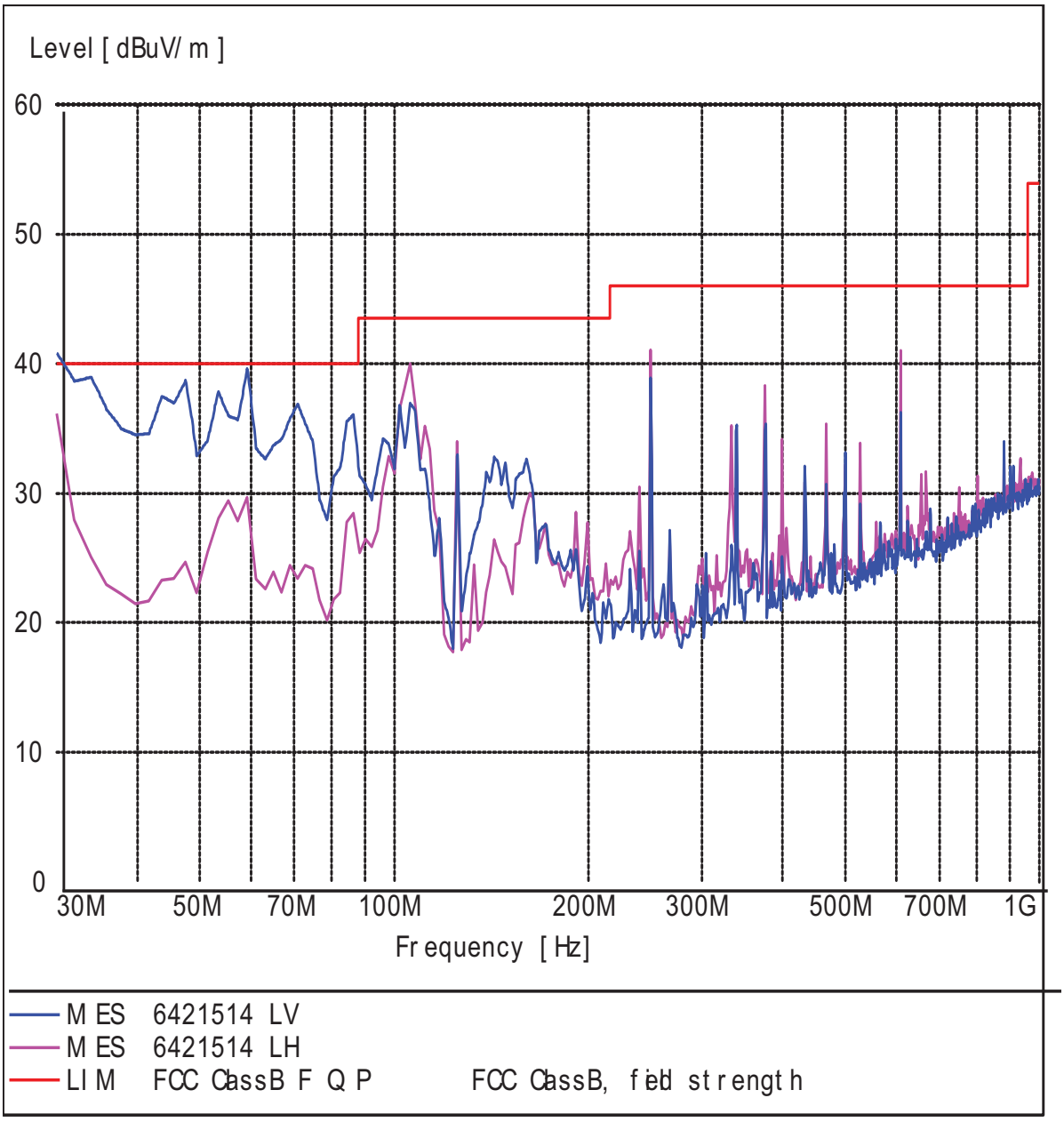
Table 21 Radiated Emission Test Data 30-1GHz

Frequency MHz	Cable Loss(dB)	Antenna Factor(dB)	Readings(dBμV/m)	Level(dBμV/m)	Polarity(H/V)	Turntable Angle(deg)	Antenna Height(m)	Limits(dBμV/m)	Margin(dB)
30.012	0.9	18.8	13.0	32.7	H	72.4	2.1	40.0	7.3
125.012	1.9	12.6	18.7	33.1	H	288.4	1.5	43.5	10.4
105.811	1.6	12.7	21.2	35.5	H	254.3	1.6	43.5	8.0
249.659	2.7	12.7	24.9	40.3	H	257.8	1.2	46.0	5.7
375.022	3.2	15.9	19.5	38.6	H	144.7	1.0	46.0	7.4
609.278	4.1	18.8	17.6	40.5	H	32.9	1.0	46.0	5.5
30.000	0.9	18.8	14.9	34.6	V	296.2	1.0	40.0	5.4
47.494	1.2	9.4	19.6	30.2	V	298.5	1.3	40.0	9.8
59.158	1.2	5.3	27.1	33.6	V	218.5	1.3	40.0	6.4
70.821	1.4	7.5	20.7	29.6	V	158.8	1.1	40.0	10.4
105.811	1.6	12.7	18.1	32.4	V	309.7	1.2	43.5	11.1
250.020	2.7	13.2	22.9	38.8	V	69.1	1.0	46.0	7.2

Radiated Emission

SMQ NETC EMC Lab.3m Chamber

EUT Name: G801
Manufacturer:
Operator:
Operating Condition: 802.11n 40M
Antenna Position: Vertical&Horizontal
Comment1: AC 120V/60Hz
Comment2:



1GHz-18GHz

11B CH1

Radiated Emission

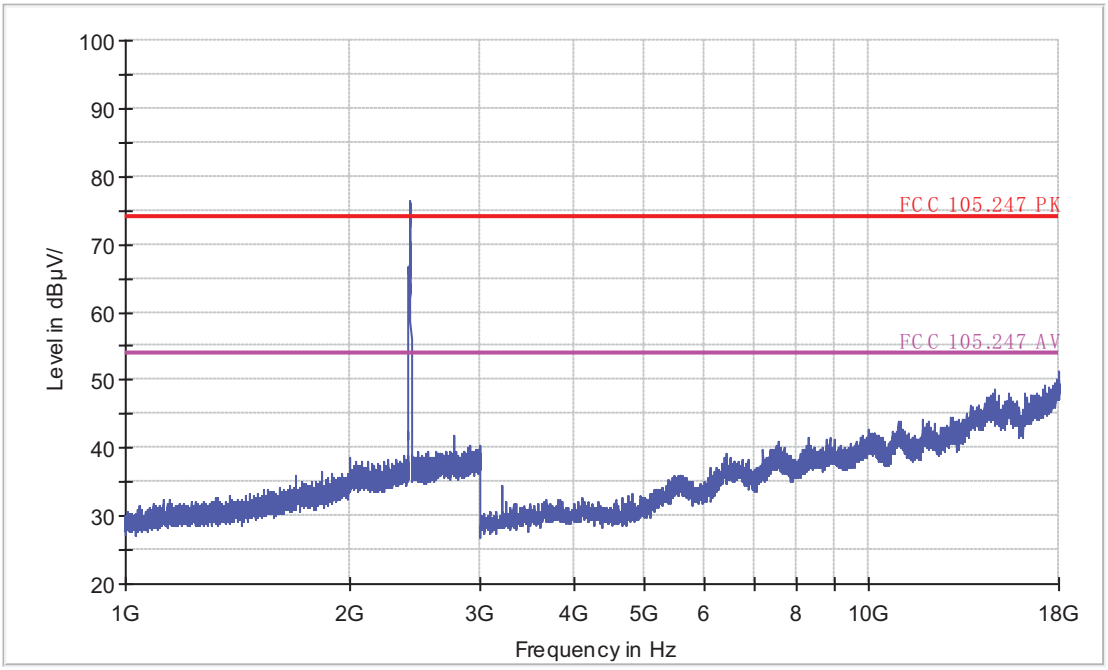
EUT Information

EUT Model Name:	G801
Operation mode:	11B CH1
Test Voltage:	AC 120V/60Hz
Comment:	

Common Information

Test Site:	SMQ EMC Lab.
Environment	
Antenna Polarization:	Horizontal
Operator Name:	
Comment:	

Electric Field Strength FCC 15.247 1-18GHz



Radiated Emission

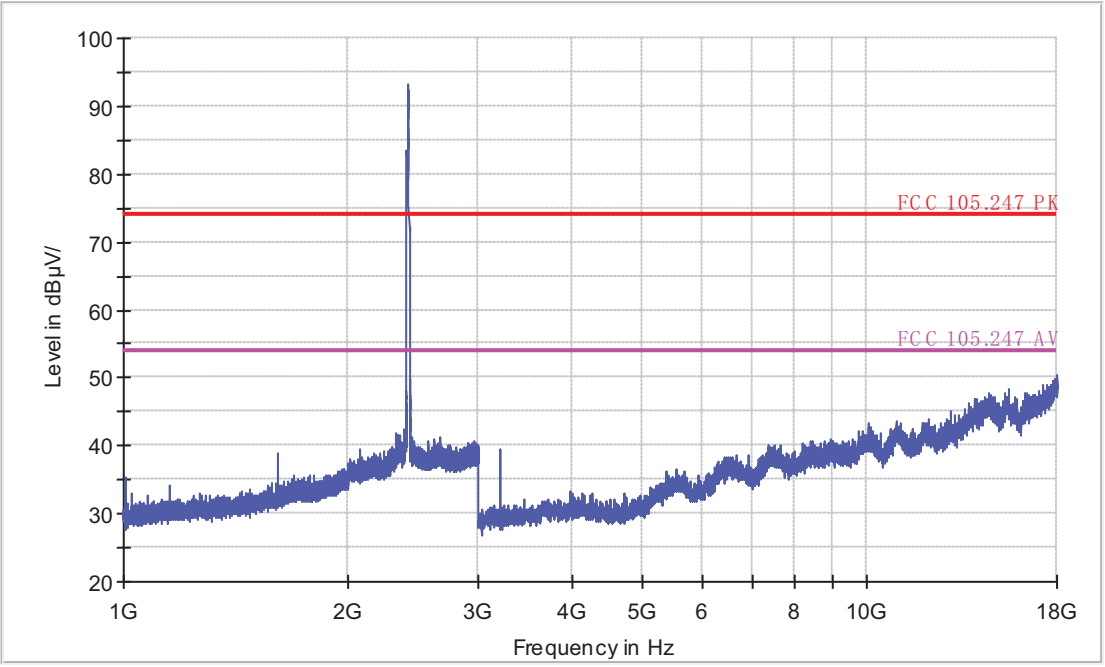
EUT Information

EUT Model Name:	G801
Operation mode:	11B CH1
Test Voltage:	AC 120V/60Hz
Comment:	

Common Information

Test Site:	SMQ EMC Lab.
Environment	
Antenna Polarization:	Vertical
Operator Name:	
Comment:	

Electric Field Strength FCC 15.247 1-18GHz



Radiated Emission

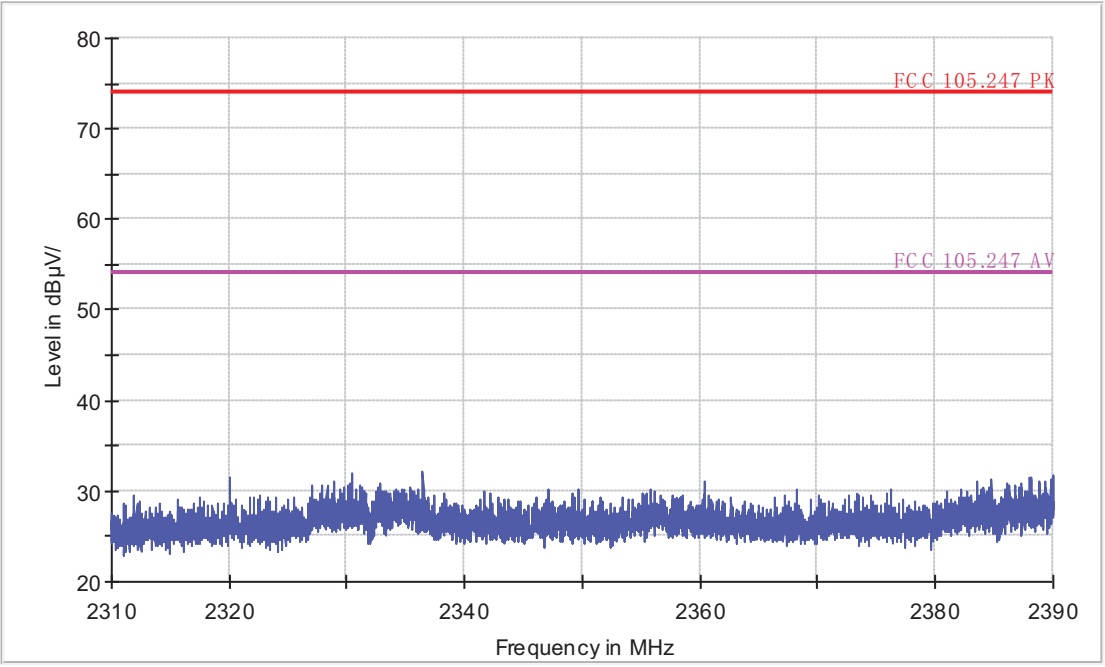
EUT Information

EUT Model Name:	G801
Operation mode:	11B CH1
Test Voltage:	
Comment:	

Common Information

Test Site:	SMQ EMC Lab.
Environment	
Antenna Polarization:	Horizontal
Operator Name:	
Comment:	

FCC Electric Field Strength 2.4GHz Bandedge-PK



Radiated Emission

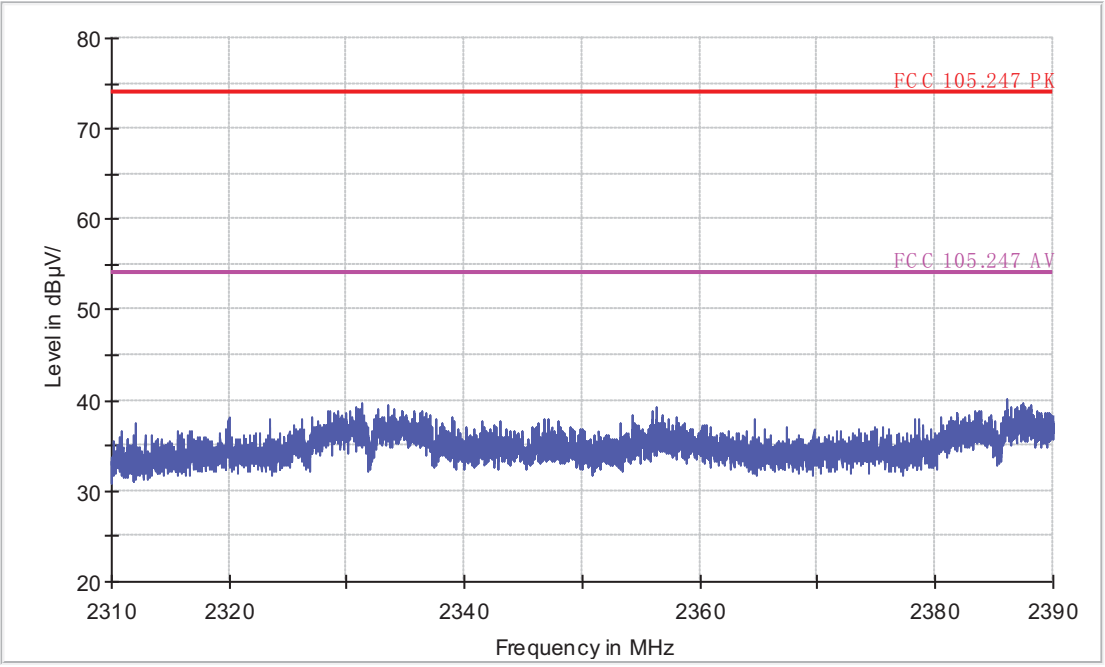
EUT Information

EUT Model Name:	G801
Operation mode:	11B CH1
Test Voltage:	
Comment:	

Common Information

Test Site:	SMQ EMC Lab.
Environment	
Antenna Polarization:	Vertical
Operator Name:	
Comment:	

FCC Electric Field Strength 2.4GHz Bandedge-PK



11B CH6

Radiated Emission

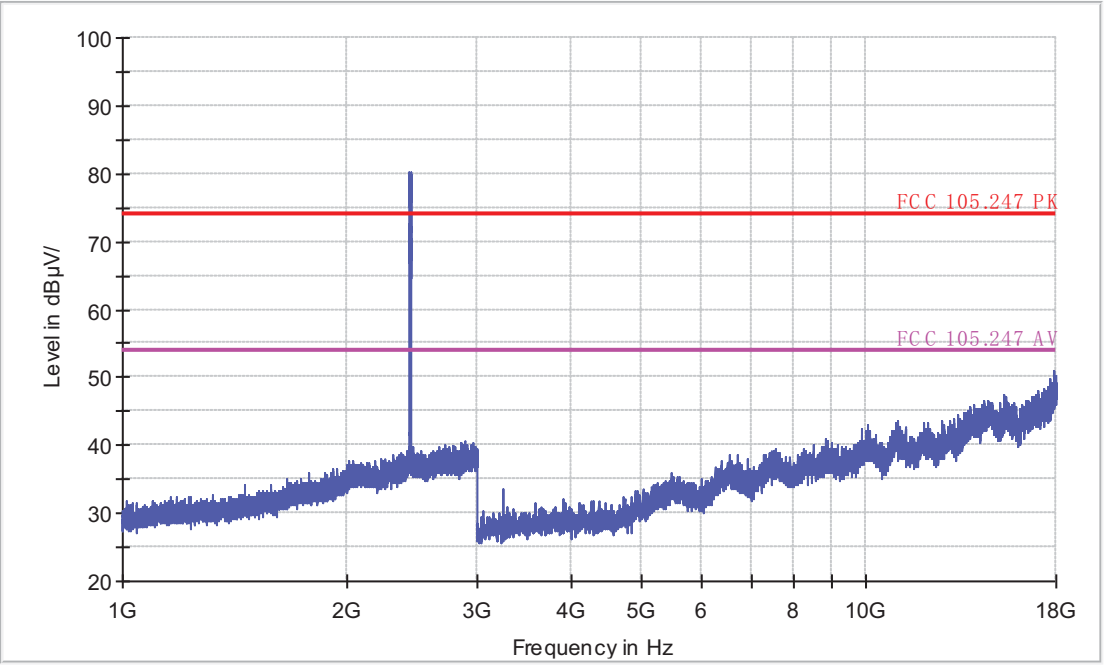
EUT Information

EUT Model Name:	G801
Operation mode:	11B CH6
Test Voltage:	AC 120V/60Hz
Comment:	

Common Information

Test Site:	SMQ EMC Lab.
Environment	
Antenna Polarization:	Horizontal
Operator Name:	
Comment:	

Electric Field Strength FCC 15.247 1-18GHz



Radiated Emission

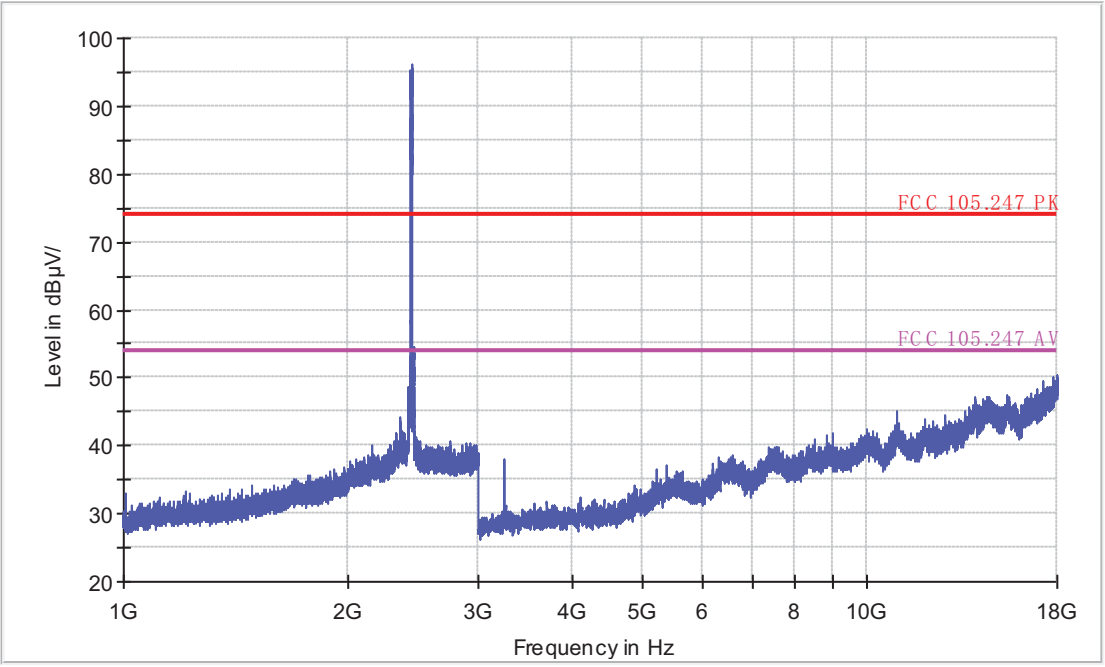
EUT Information

EUT Model Name:	G801
Operation mode:	11B CH6
Test Voltage:	AC 120V/60Hz
Comment:	

Common Information

Test Site:	SMQ EMC Lab.
Environment	
Antenna Polarization:	Vertical
Operator Name:	
Comment:	

Electric Field Strength FCC 15.247 1-18GHz



11B CH11

Radiated Emission

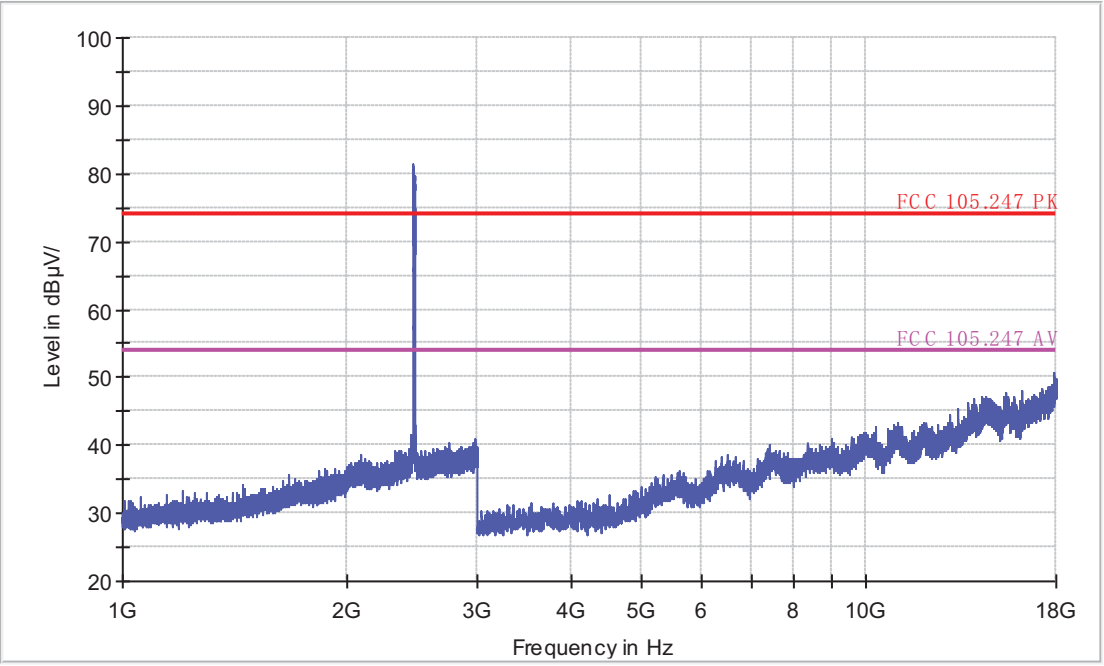
EUT Information

EUT Model Name:	G801
Operation mode:	11B CH11
Test Voltage:	AC 120V/60Hz
Comment:	

Common Information

Test Site:	SMQ EMC Lab.
Environment	
Antenna Polarization:	Horizontal
Operator Name:	
Comment:	

Electric Field Strength FCC 15.247 1-18GHz



Radiated Emission

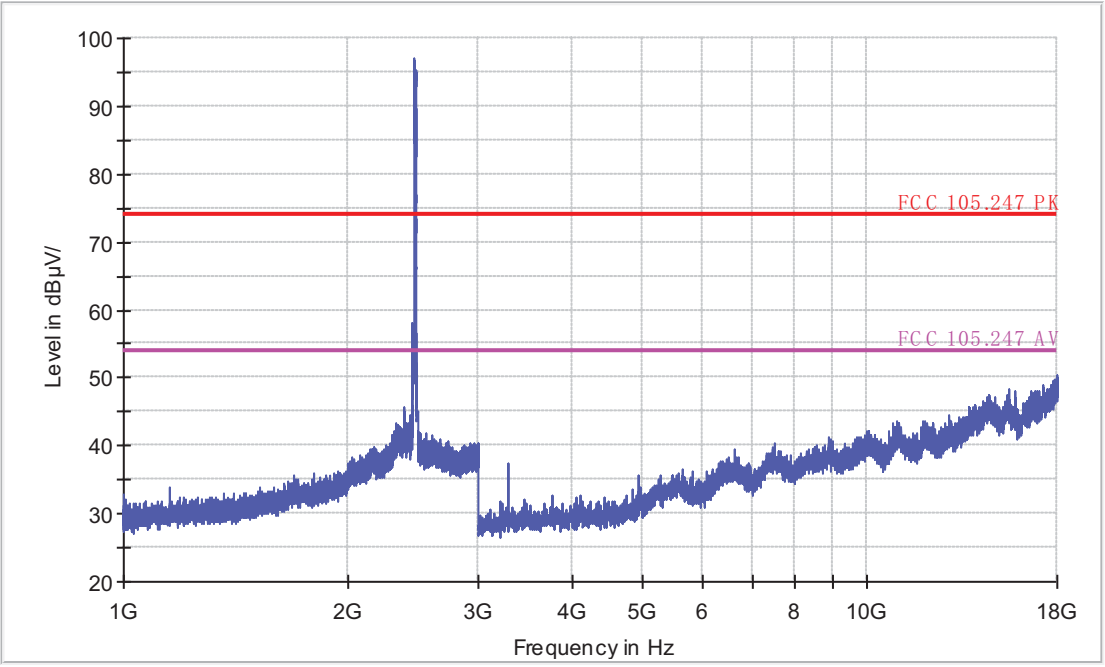
EUT Information

EUT Model Name:	G801
Operation mode:	11B CH11
Test Voltage:	AC 120V/60Hz
Comment:	

Common Information

Test Site:	SMQ EMC Lab.
Environment	
Antenna Polarization:	Vertical
Operator Name:	
Comment:	

Electric Field Strength FCC 15.247 1-18GHz



Radiated Emission

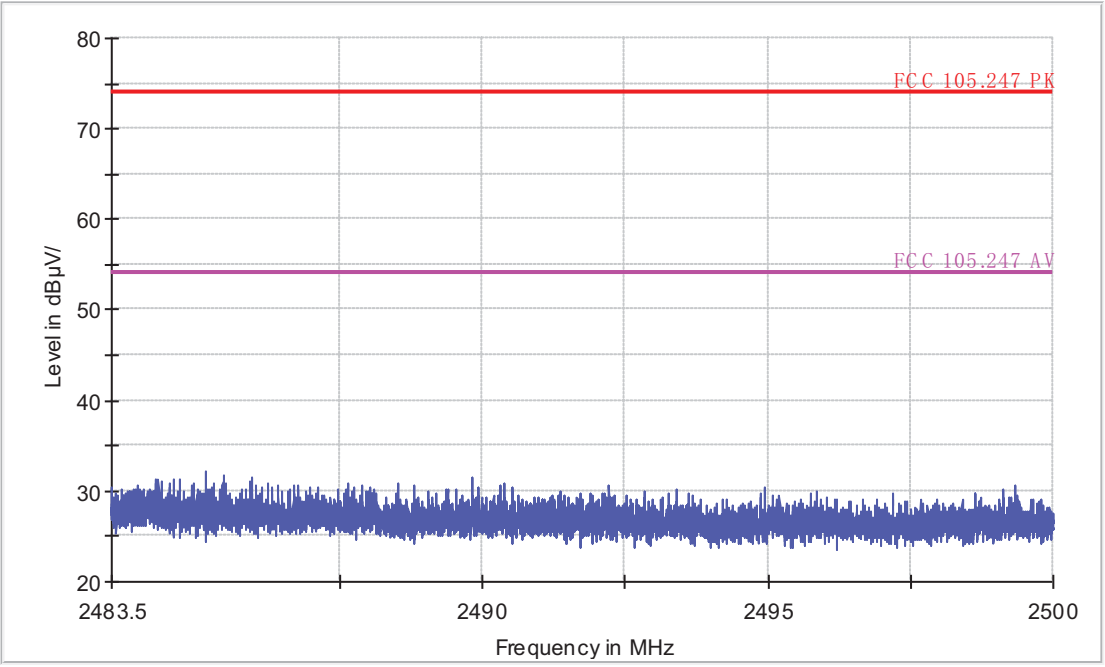
EUT Information

EUT Model Name:	G801
Operation mode:	11B CH11
Test Voltage:	
Comment:	

Common Information

Test Site:	SMQ EMC Lab.
Environment	
Antenna Polarization:	Horizontal
Operator Name:	
Comment:	

Copy of FCC Electric Field Strength 1-18GHz



Radiated Emission

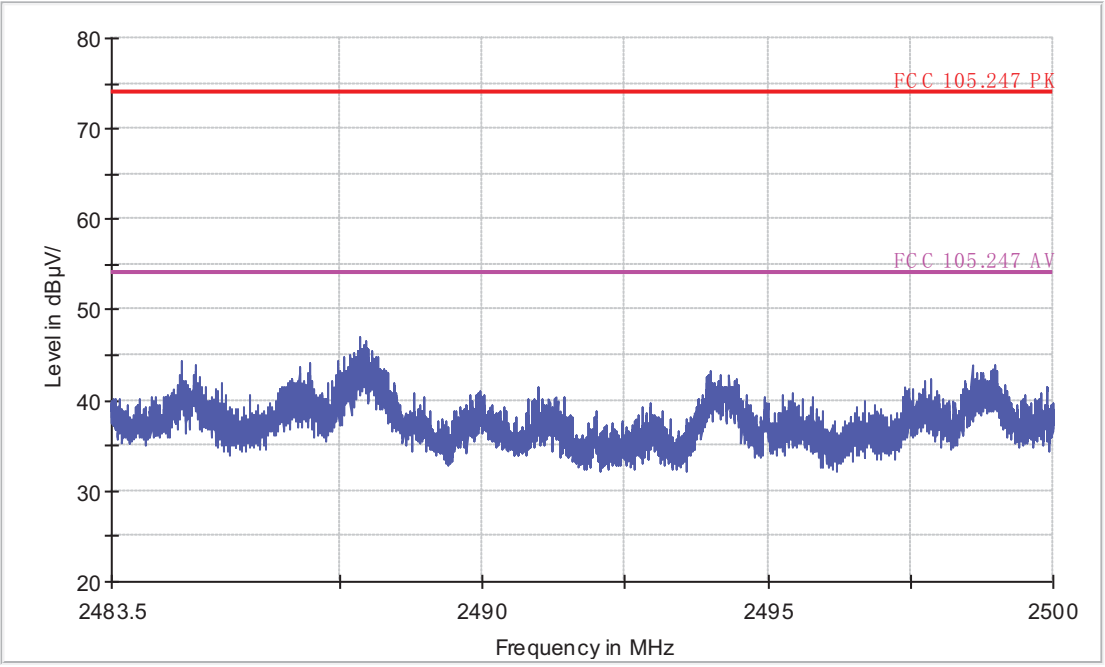
EUT Information

EUT Model Name:	G801
Operation mode:	11B CH11
Test Voltage:	
Comment:	

Common Information

Test Site:	SMQ EMC Lab.
Environment	
Antenna Polarization:	Vertical
Operator Name:	
Comment:	

FCC Electric Field Strength 2.4GHz Bandedge-PK



11G CH1

Radiated Emission

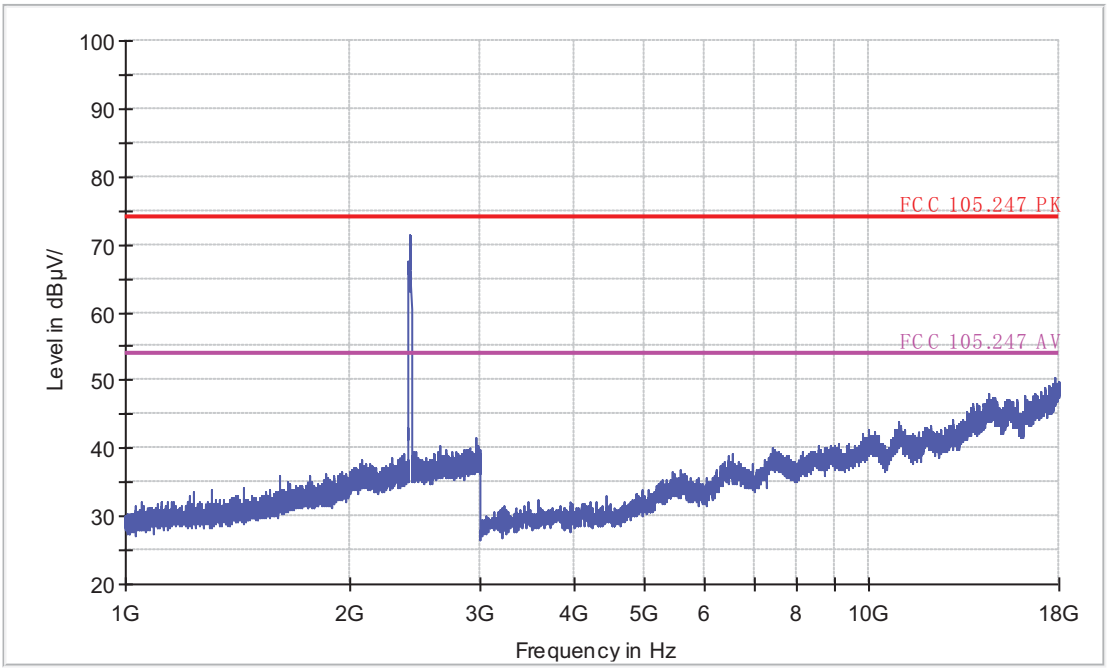
EUT Information

EUT Model Name:	G801
Operation mode:	11g CH1
Test Voltage:	AC 120V/60Hz
Comment:	

Common Information

Test Site:	SMQ EMC Lab.
Environment	
Antenna Polarization:	Horizontal
Operator Name:	
Comment:	

Electric Field Strength FCC 15.247 1-18GHz



Radiated Emission

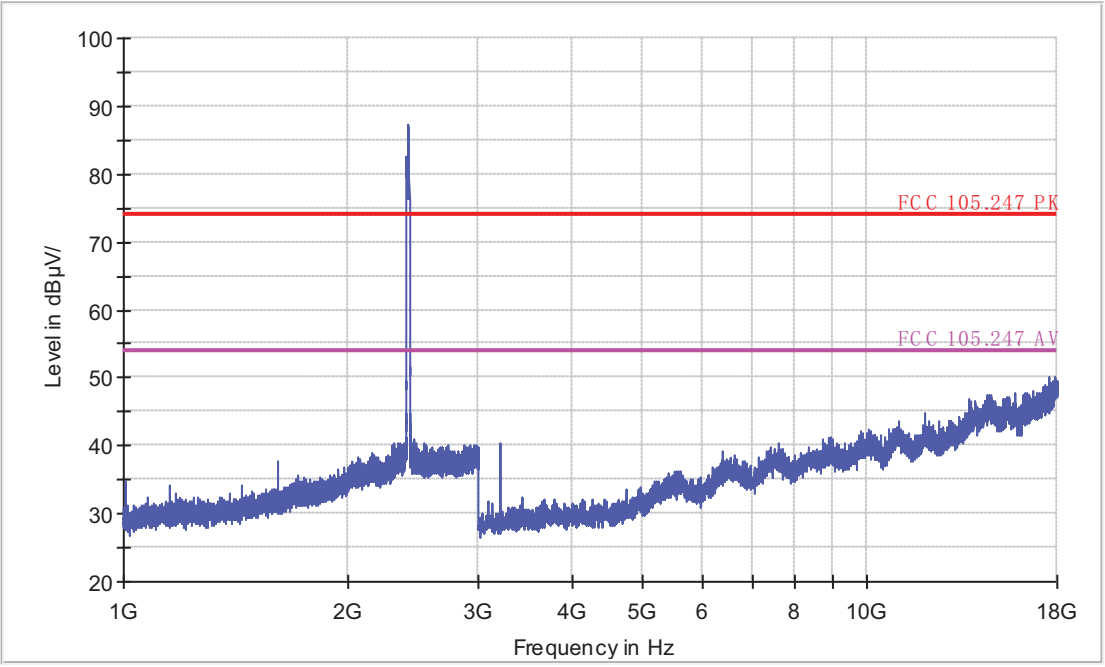
EUT Information

EUT Model Name:	G801
Operation mode:	11g CH1
Test Voltage:	AC 120V/60Hz
Comment:	

Common Information

Test Site:	SMQ EMC Lab.
Environment	
Antenna Polarization:	Vertical
Operator Name:	
Comment:	

Electric Field Strength FCC 15.247 1-18GHz



Radiated Emission

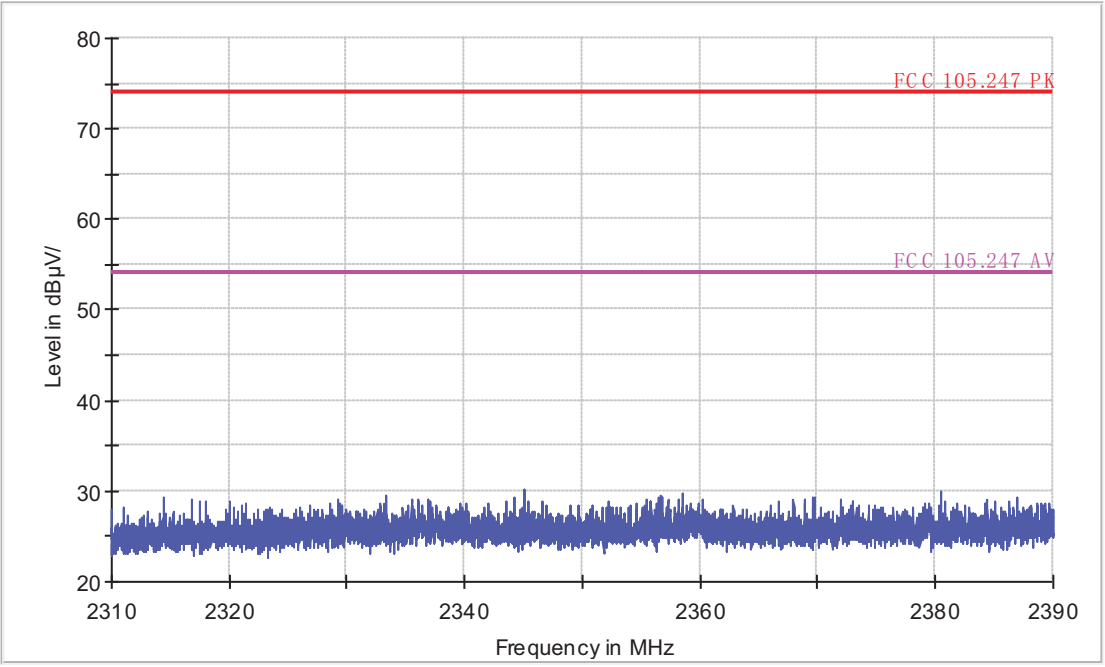
EUT Information

EUT Model Name:	G801
Operation mode:	11g CH1
Test Voltage:	
Comment:	

Common Information

Test Site:	SMQ EMC Lab.
Environment	
Antenna Polarization:	Horizontal
Operator Name:	
Comment:	

FCC Electric Field Strength 2.4GHz Bandedge-PK



Radiated Emission

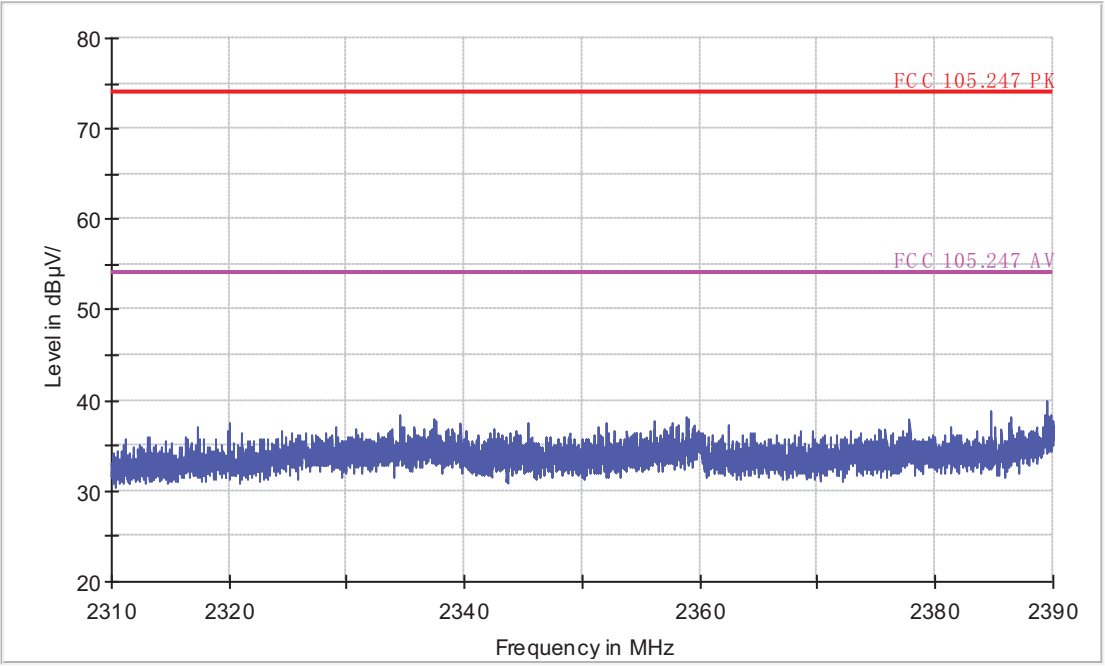
EUT Information

EUT Model Name:	G801
Operation mode:	11g CH1
Test Voltage:	
Comment:	

Common Information

Test Site:	SMQ EMC Lab.
Environment	
Antenna Polarization:	Vertical
Operator Name:	
Comment:	

FCC Electric Field Strength 2.4GHz Bandedge-PK



11G CH6

Radiated Emission

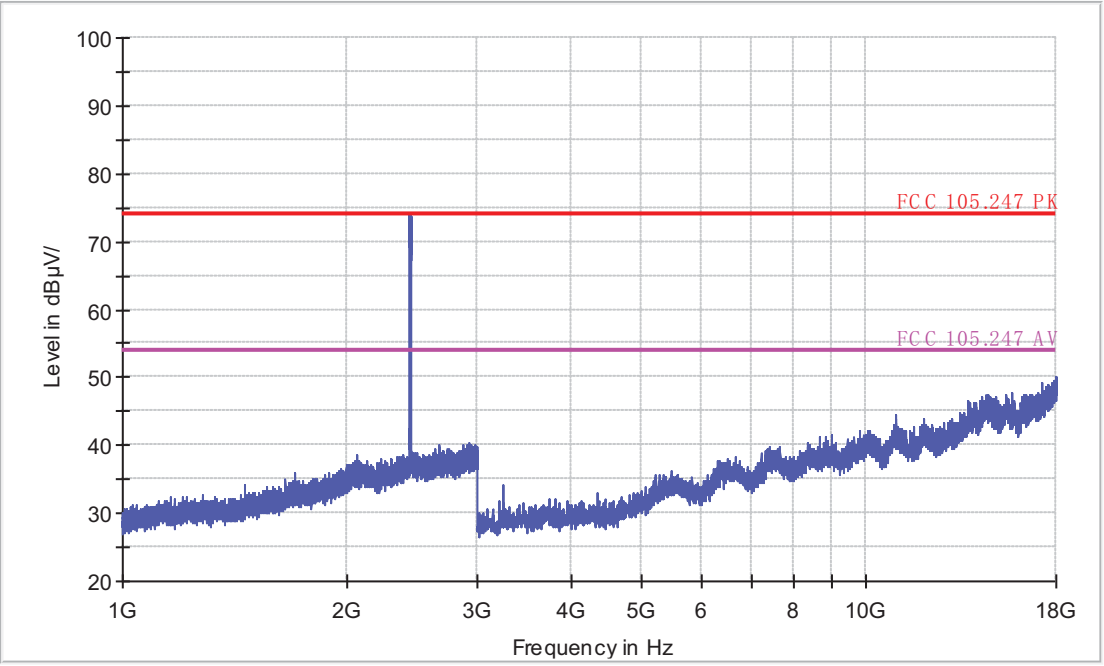
EUT Information

EUT Model Name:	G801
Operation mode:	11g CH6
Test Voltage:	AC 120V/60Hz
Comment:	

Common Information

Test Site:	SMQ EMC Lab.
Environment	
Antenna Polarization:	Horizontal
Operator Name:	
Comment:	

Electric Field Strength FCC 15.247 1-18GHz



Radiated Emission

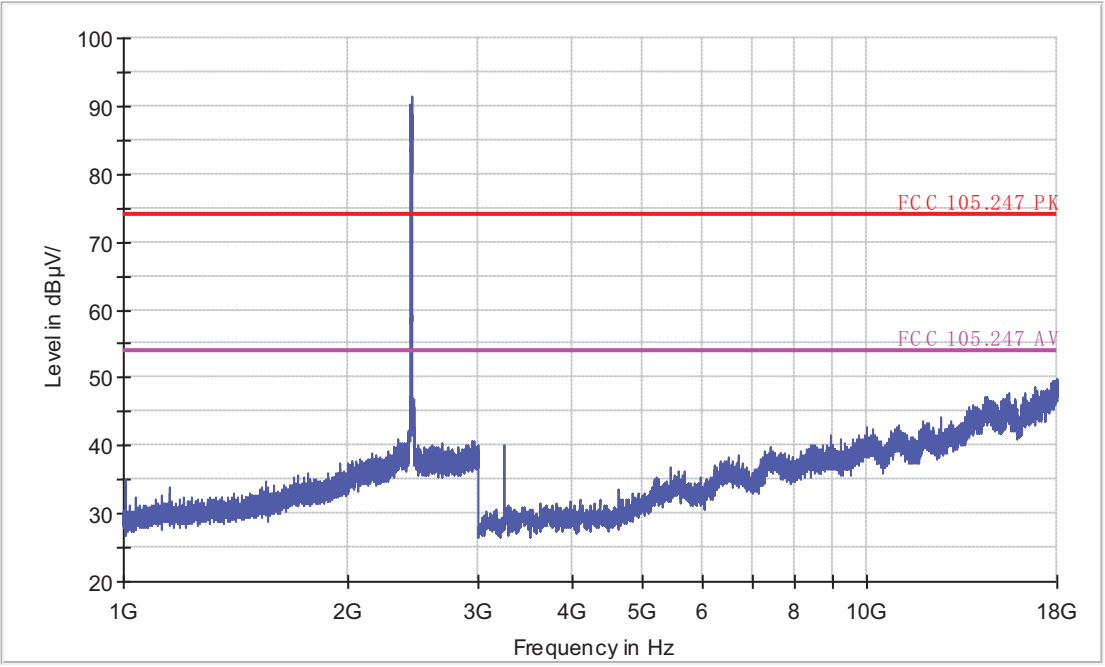
EUT Information

EUT Model Name:	G801
Operation mode:	11g CH6
Test Voltage:	AC 120V/60Hz
Comment:	

Common Information

Test Site:	SMQ EMC Lab.
Environment	
Antenna Polarization:	Vertical
Operator Name:	
Comment:	

Electric Field Strength FCC 15.247 1-18GHz



11G CH11

Radiated Emission

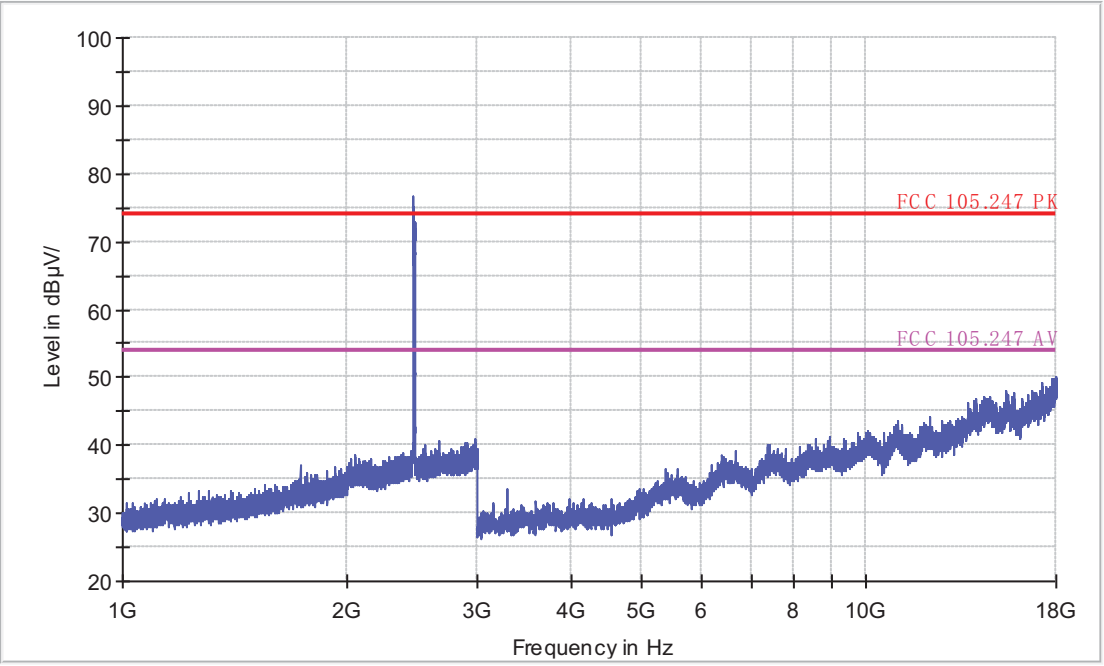
EUT Information

EUT Model Name:	G801
Operation mode:	11g CH11
Test Voltage:	AC 120V/60Hz
Comment:	

Common Information

Test Site:	SMQ EMC Lab.
Environment	
Antenna Polarization:	Horizontal
Operator Name:	
Comment:	

Electric Field Strength FCC 15.247 1-18GHz



Radiated Emission

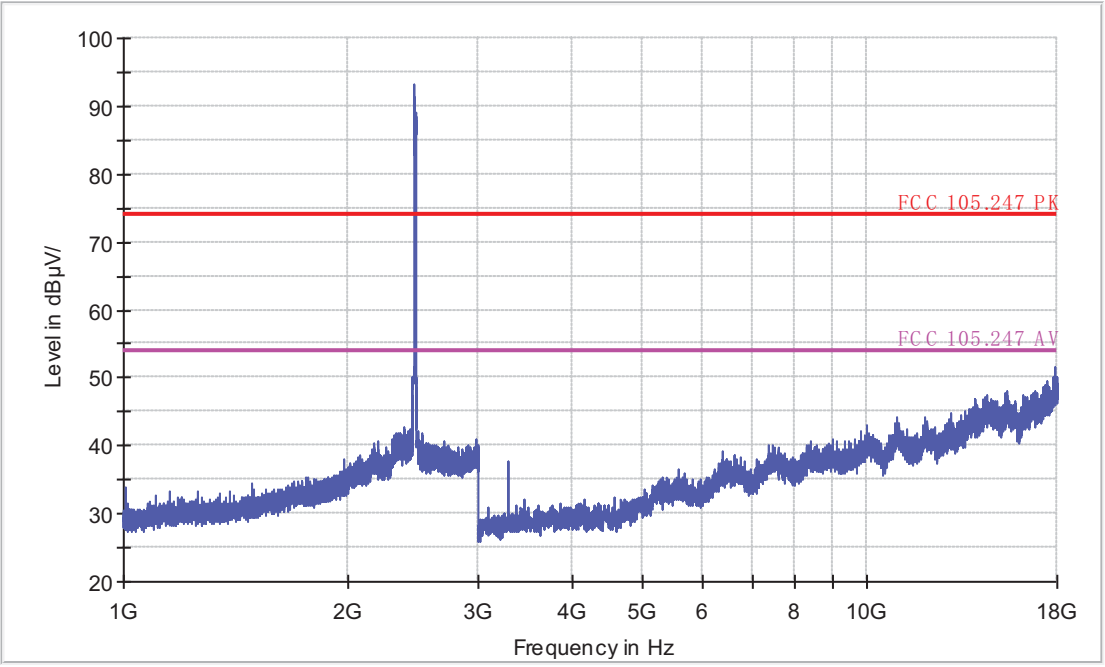
EUT Information

EUT Model Name:	G801
Operation mode:	11g CH11
Test Voltage:	AC 120V/60Hz
Comment:	

Common Information

Test Site:	SMQ EMC Lab.
Environment	
Antenna Polarization:	Vertical
Operator Name:	
Comment:	

Electric Field Strength FCC 15.247 1-18GHz



Radiated Emission

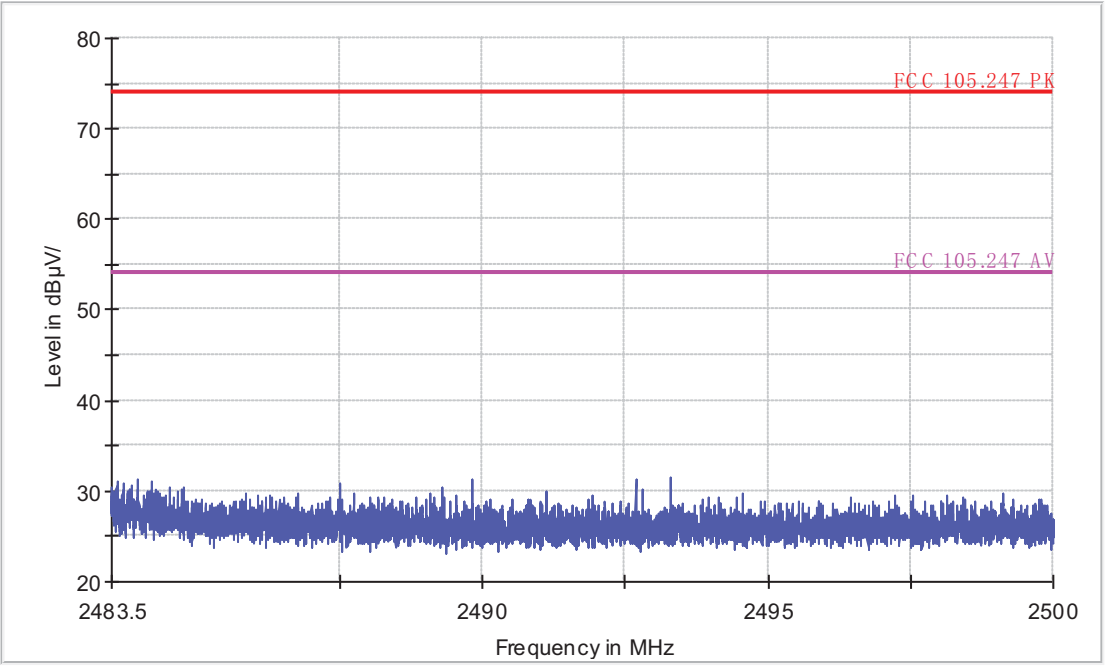
EUT Information

EUT Model Name:	G801
Operation mode:	11g CH11
Test Voltage:	
Comment:	

Common Information

Test Site:	SMQ EMC Lab.
Environment	
Antenna Polarization:	Horizontal
Operator Name:	
Comment:	

Copy of FCC Electric Field Strength 1-18GHz



Radiated Emission

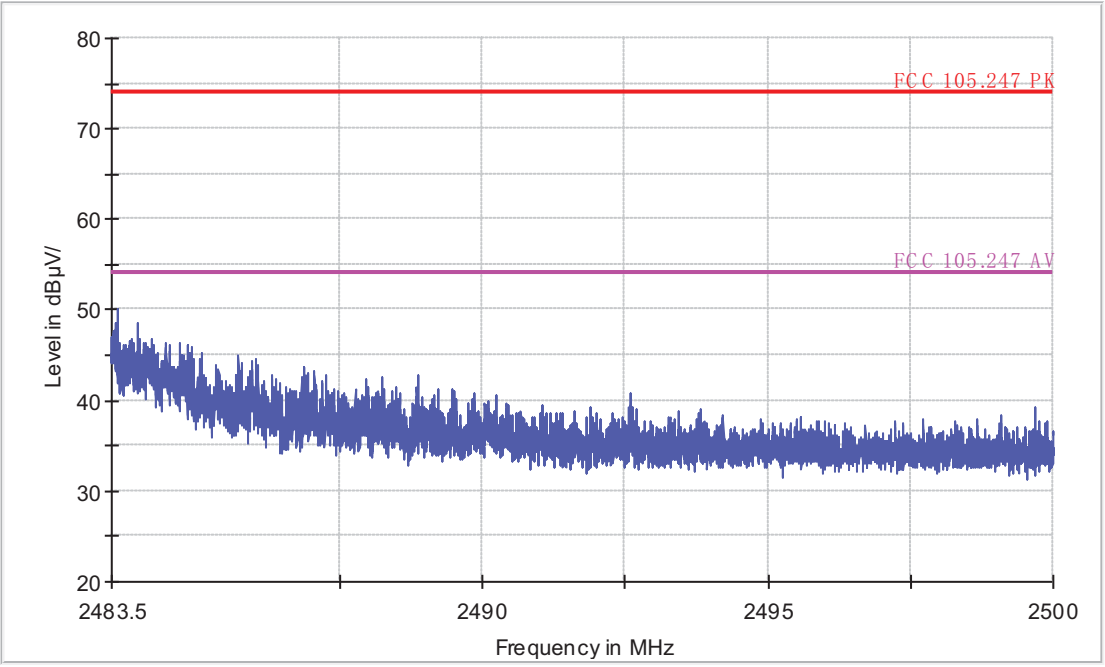
EUT Information

EUT Model Name:	G801
Operation mode:	11g CH11
Test Voltage:	
Comment:	

Common Information

Test Site:	SMQ EMC Lab.
Environment	
Antenna Polarization:	Vertical
Operator Name:	
Comment:	

FCC Electric Field Strength 2.4GHz Bandedge-PK



11N 20M CH1

Radiated Emission

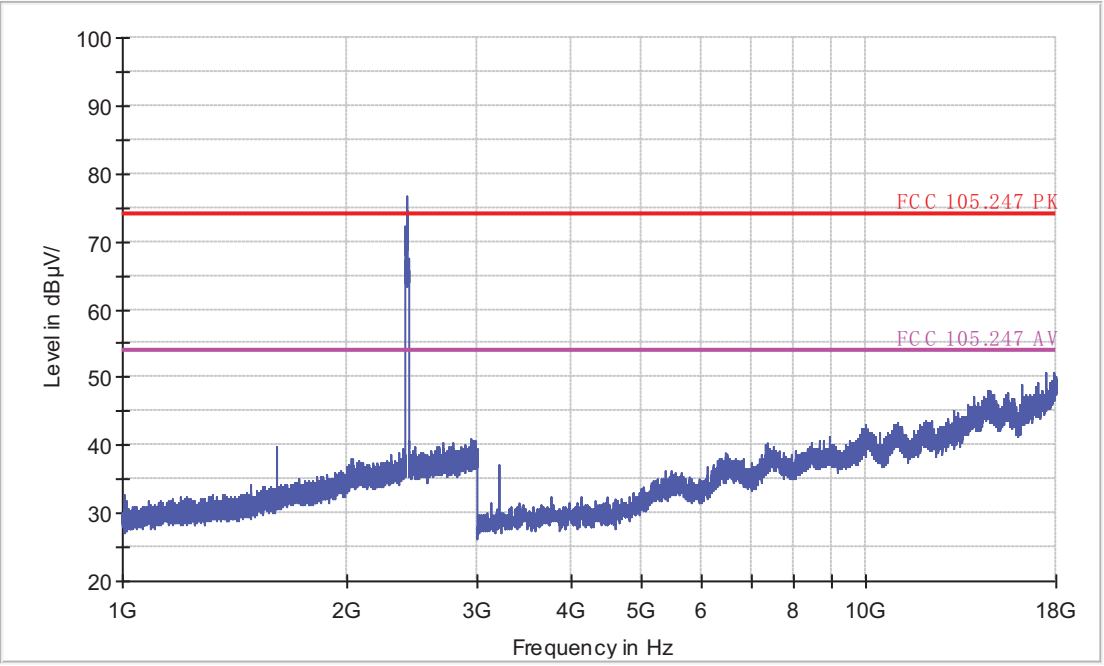
EUT Information

EUT Model Name:	G801
Operation mode:	11n(20M) CH1 MIMO continue TX mode
Test Voltage:	AC 120V/60Hz
Comment:	

Common Information

Test Site:	SMQ EMC Lab.
Environment	
Antenna Polarization:	Horizontal
Operator Name:	
Comment:	

Electric Field Strength FCC 15.247 1-18GHz



Radiated Emission

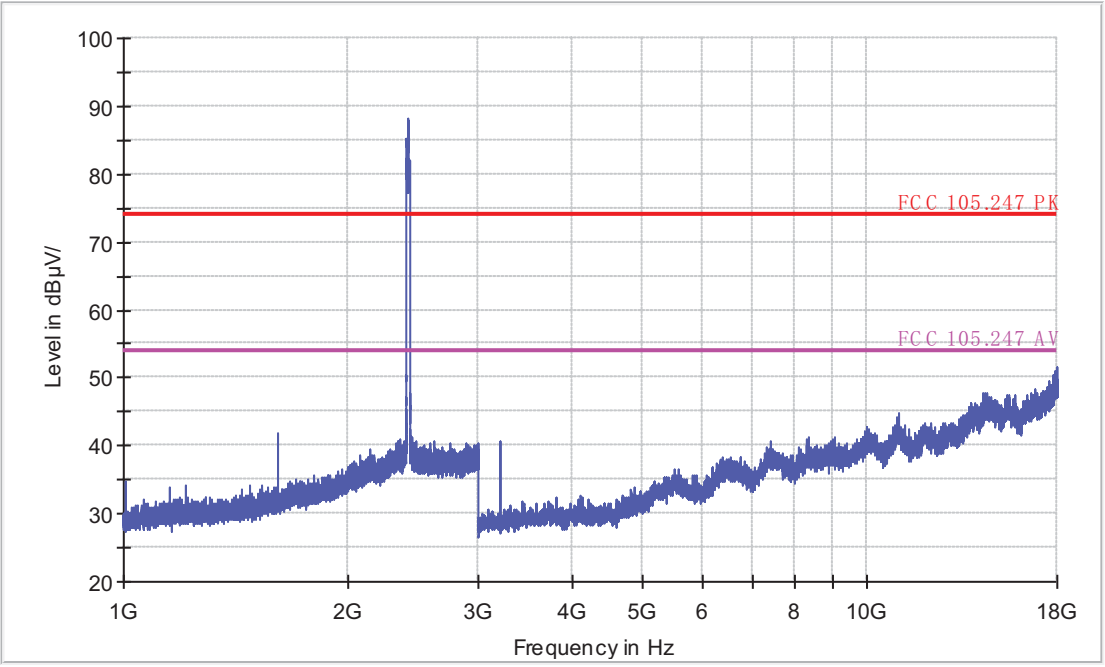
EUT Information

EUT Model Name:	G801
Operation mode:	11n(20M) CH1 MIMO continue TX mode
Test Voltage:	AC 120V/60Hz
Comment:	

Common Information

Test Site:	SMQ EMC Lab.
Environment	
Antenna Polarization:	Vertical
Operator Name:	
Comment:	

Electric Field Strength FCC 15.247 1-18GHz



Radiated Emission

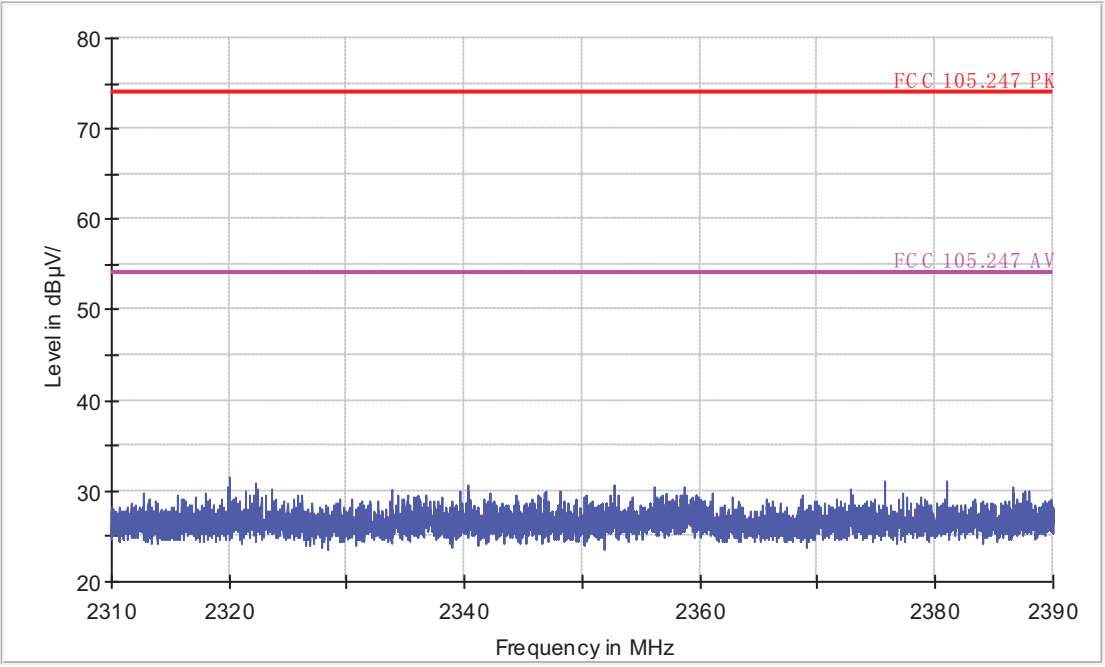
EUT Information

EUT Model Name:	G801
Operation mode:	11n(20M) CH1 MIMO continue TX mode
Test Voltage:	
Comment:	

Common Information

Test Site:	SMQ EMC Lab.
Environment	
Antenna Polarization:	Horizontal
Operator Name:	
Comment:	

FCC Electric Field Strength 2.4GHz Bandedge-PK



Radiated Emission

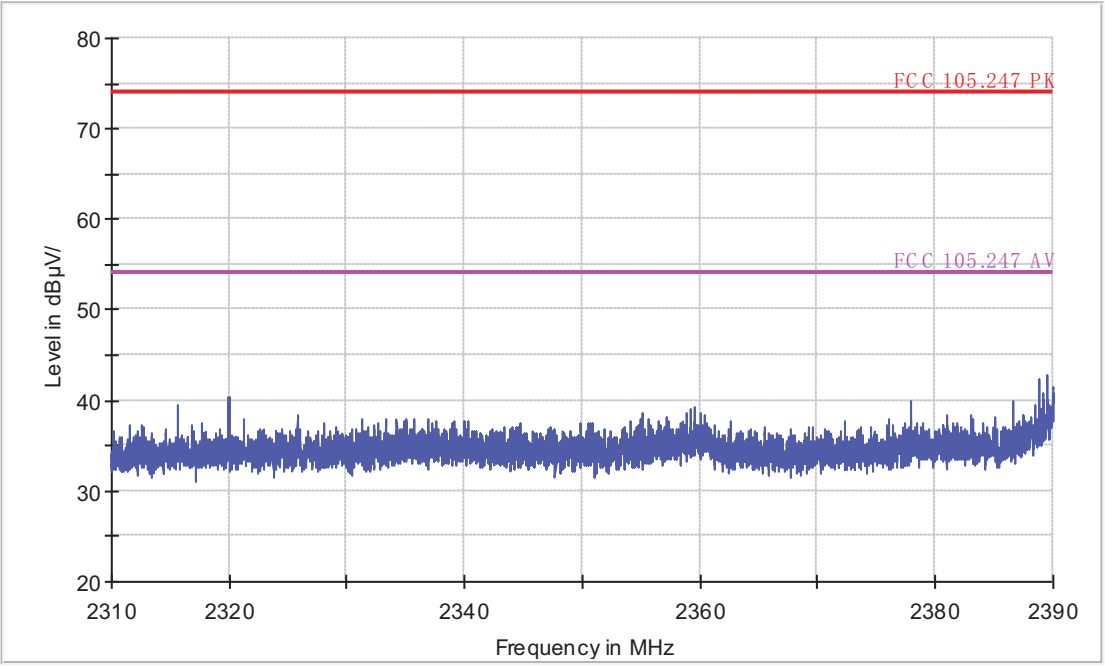
EUT Information

EUT Model Name:	G801
Operation mode:	11n(20M) CH1 MIMO continue TX mode
Test Voltage:	
Comment:	

Common Information

Test Site:	SMQ EMC Lab.
Environment	
Antenna Polarization:	Vertical
Operator Name:	
Comment:	

FCC Electric Field Strength 2.4GHz Bandedge-PK



11N 20M CH6

Radiated Emission

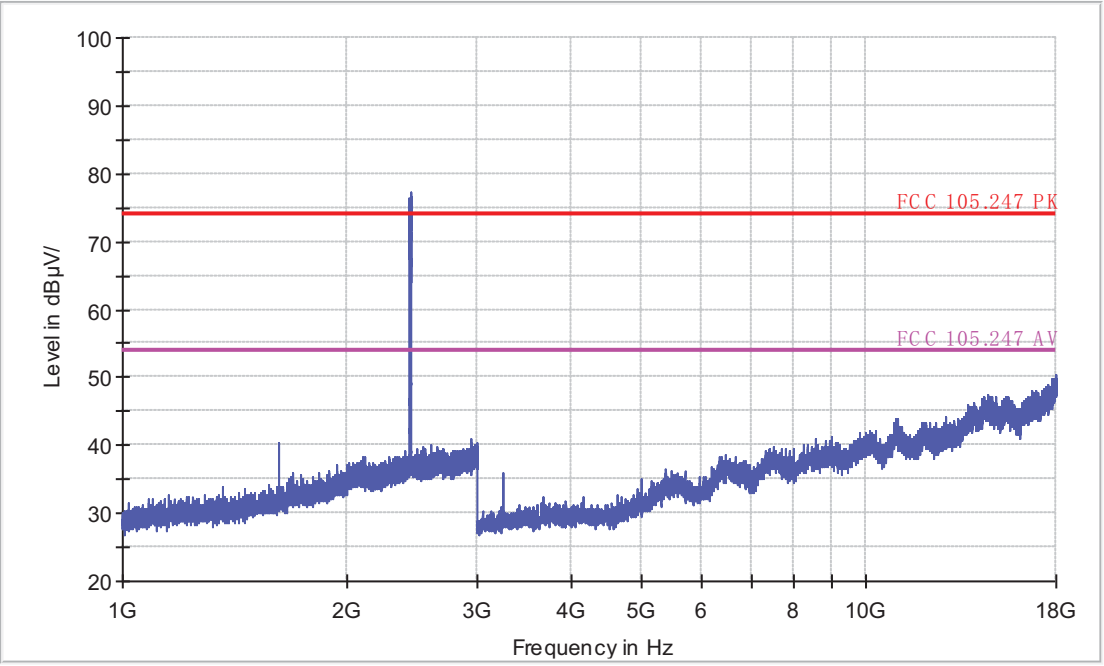
EUT Information

EUT Model Name:	G801
Operation mode:	11n(20M) CH6 MIMO continue TX mode
Test Voltage:	AC 120V/60Hz
Comment:	

Common Information

Test Site:	SMQ EMC Lab.
Environment	
Antenna Polarization:	Horizontal
Operator Name:	
Comment:	

Electric Field Strength FCC 15.247 1-18GHz



Radiated Emission

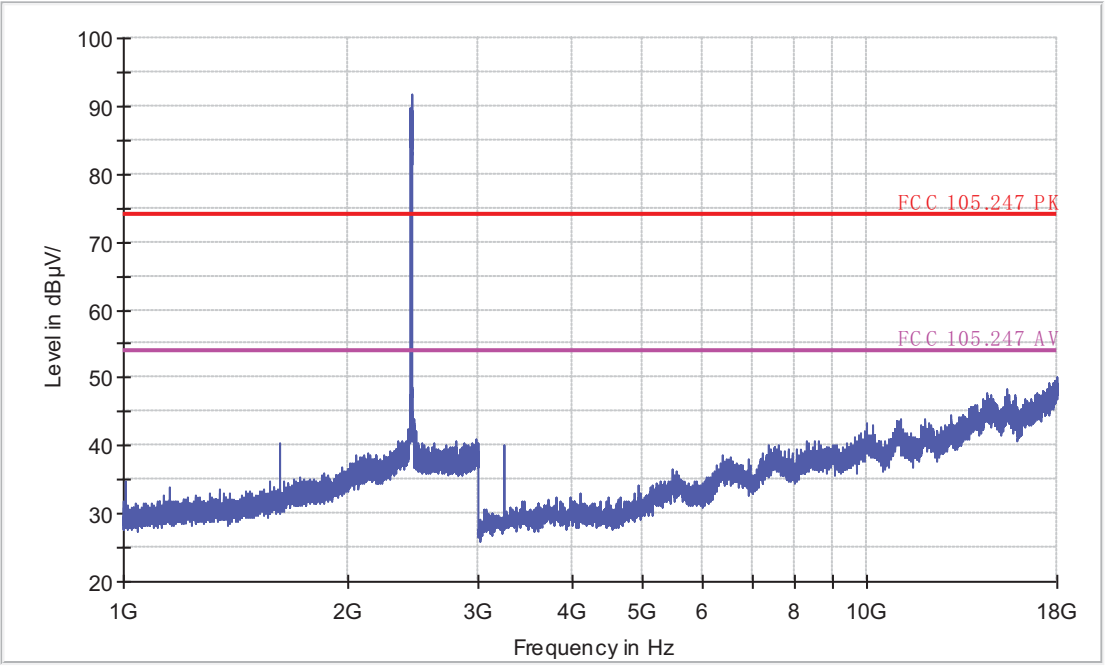
EUT Information

EUT Model Name:	G801
Operation mode:	11n(20M) CH6 MIMO continue TX mode
Test Voltage:	AC 120V/60Hz
Comment:	

Common Information

Test Site:	SMQ EMC Lab.
Environment	
Antenna Polarization:	Vertical
Operator Name:	
Comment:	

Electric Field Strength FCC 15.247 1-18GHz



11N 20M CH11

Radiated Emission

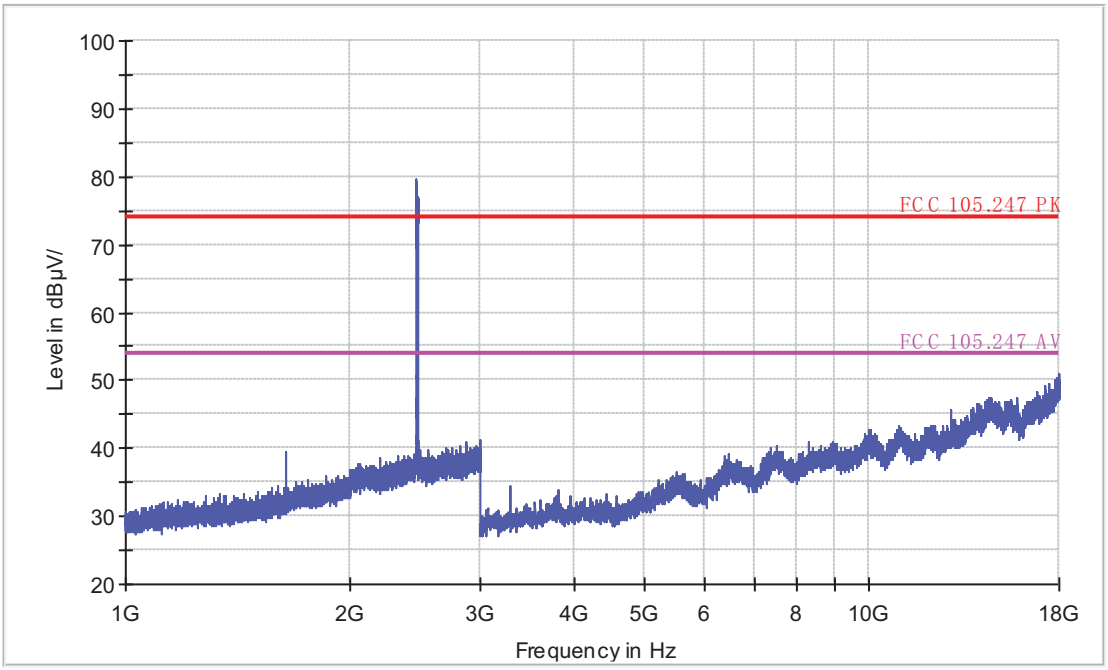
EUT Information

EUT Model Name:	G801
Operation mode:	11n(20M) CH11 MIMO continue TX mode
Test Voltage:	
Comment:	

Common Information

Test Site:	SMQ EMC Lab.
Environment	
Antenna Polarization:	Horizontal
Operator Name:	
Comment:	

Electric Field Strength FCC 15.247 1-18GHz



Radiated Emission

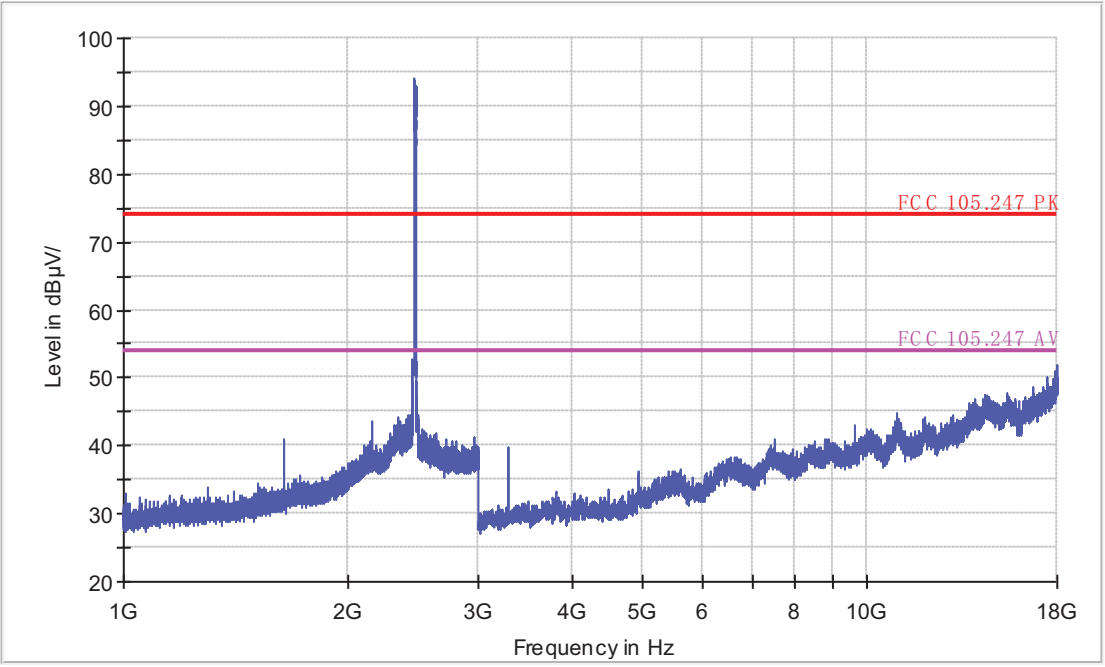
EUT Information

EUT Model Name:	G801
Operation mode:	11n(20M) CH11 MIMO continue TX mode
Test Voltage:	
Comment:	

Common Information

Test Site:	SMQ EMC Lab.
Environment	
Antenna Polarization:	Vertical
Operator Name:	
Comment:	

Electric Field Strength FCC 15.247 1-18GHz



Radiated Emission

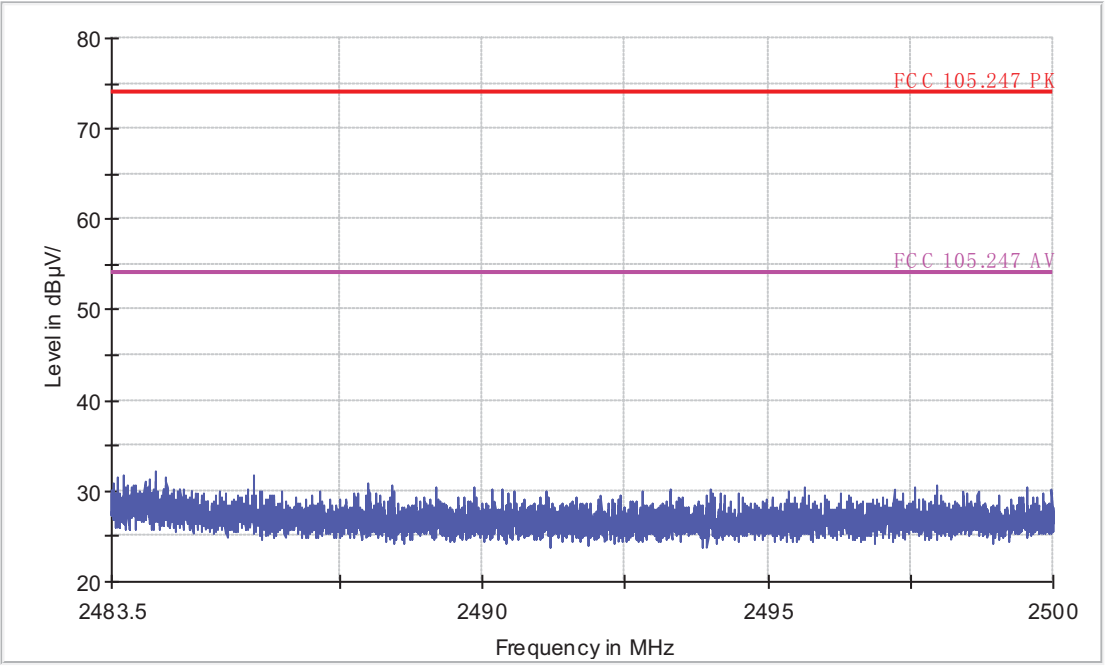
EUT Information

EUT Model Name:	G801
Operation mode:	11n(20M) CH11 MIMO continue TX mode
Test Voltage:	
Comment:	

Common Information

Test Site:	SMQ EMC Lab.
Environment	
Antenna Polarization:	Horizontal
Operator Name:	
Comment:	

Copy of FCC Electric Field Strength 1-18GHz



Radiated Emission

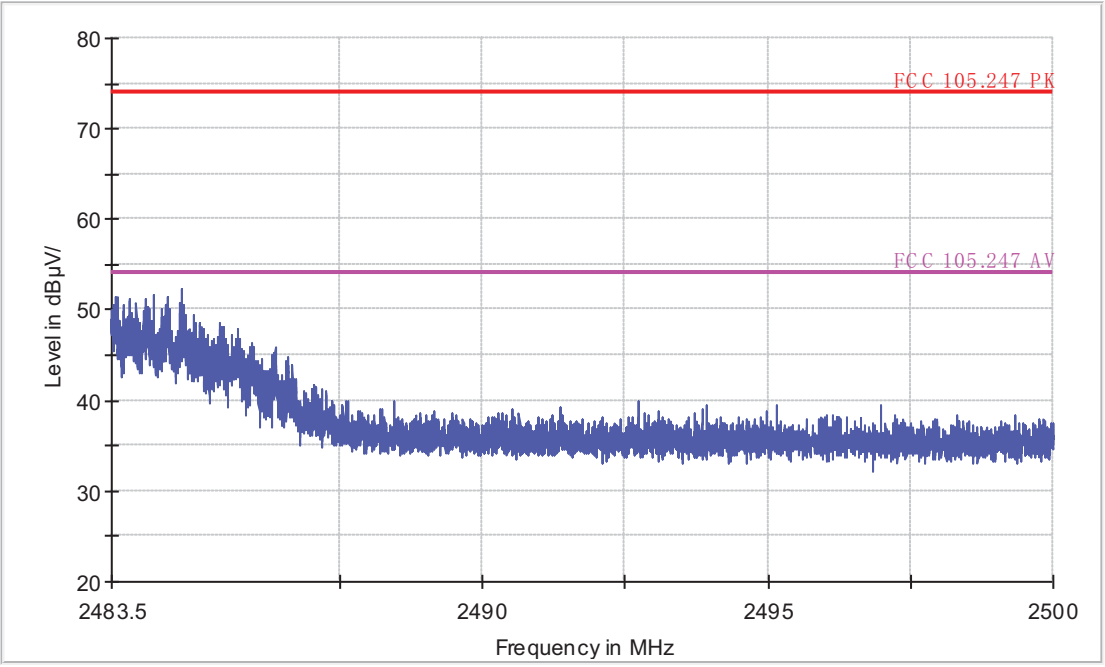
EUT Information

EUT Model Name:	G801
Operation mode:	11n(20M) CH11 MIMO continue TX mode
Test Voltage:	
Comment:	

Common Information

Test Site:	SMQ EMC Lab.
Environment	
Antenna Polarization:	Vertical
Operator Name:	
Comment:	

FCC Electric Field Strength 2.4GHz Bandedge-PK



11N 40M CH3

Radiated Emission

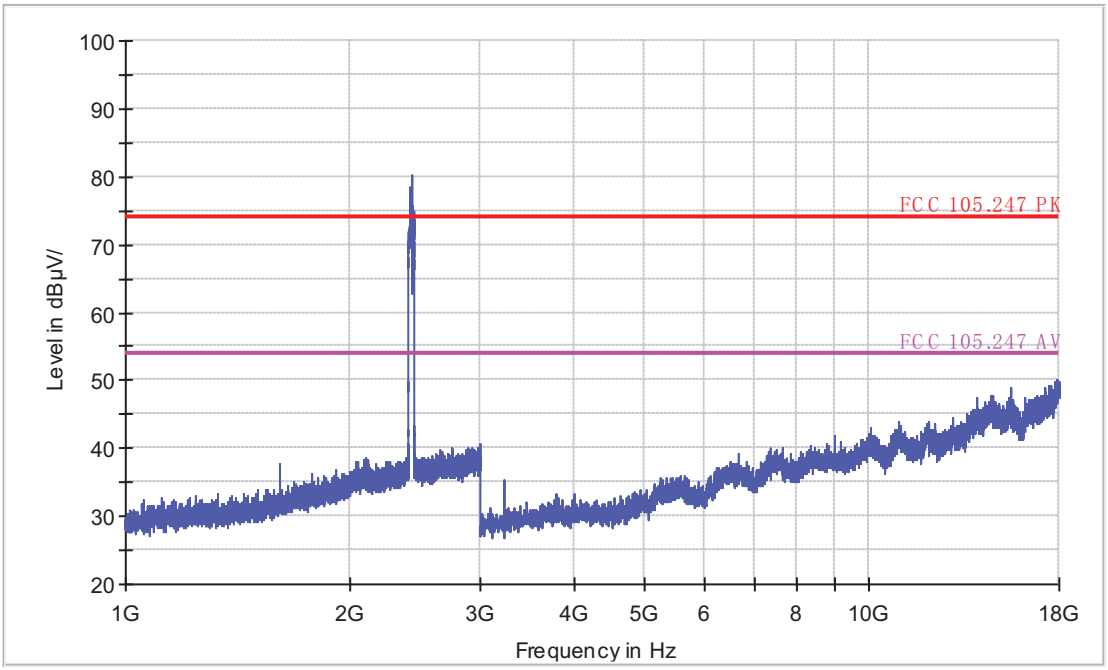
EUT Information

EUT Model Name:	G801
Operation mode:	11n(40M) CH3 MIMO continue TX mode
Test Voltage:	
Comment:	

Common Information

Test Site:	SMQ EMC Lab.
Environment	
Antenna Polarization:	Horizontal
Operator Name:	
Comment:	

Electric Field Strength FCC 15.247 1-18GHz



Radiated Emission

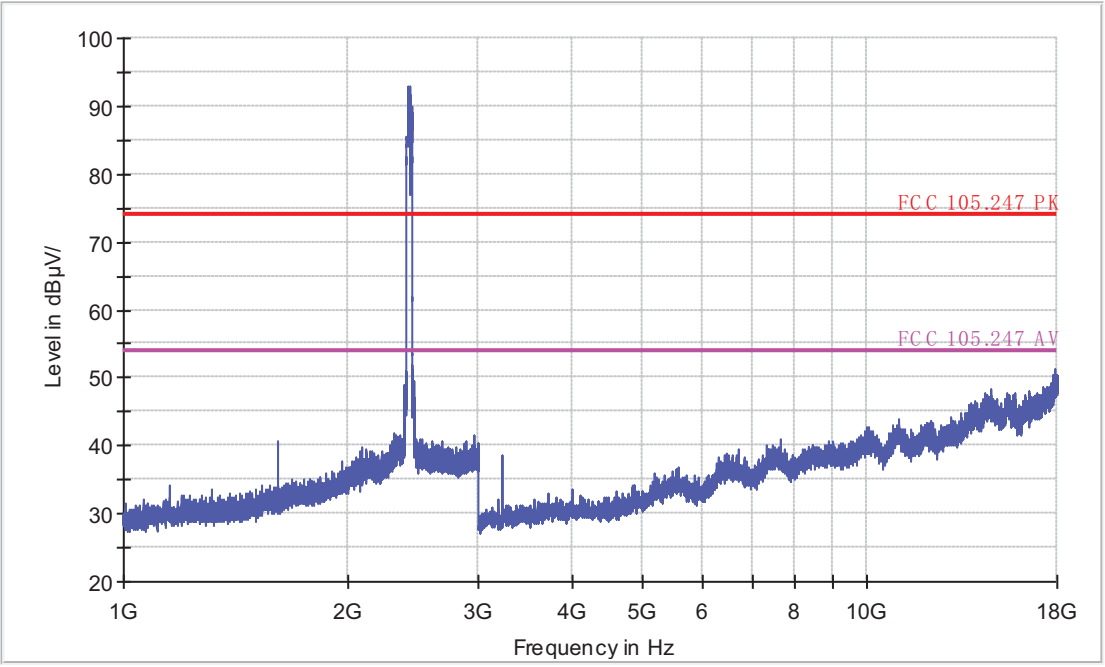
EUT Information

EUT Model Name:	G801
Operation mode:	11n(40M) CH3 MIMO continue TX mode
Test Voltage:	
Comment:	

Common Information

Test Site:	SMQ EMC Lab.
Environment	
Antenna Polarization:	Vertical
Operator Name:	
Comment:	

Electric Field Strength FCC 15.247 1-18GHz



Radiated Emission

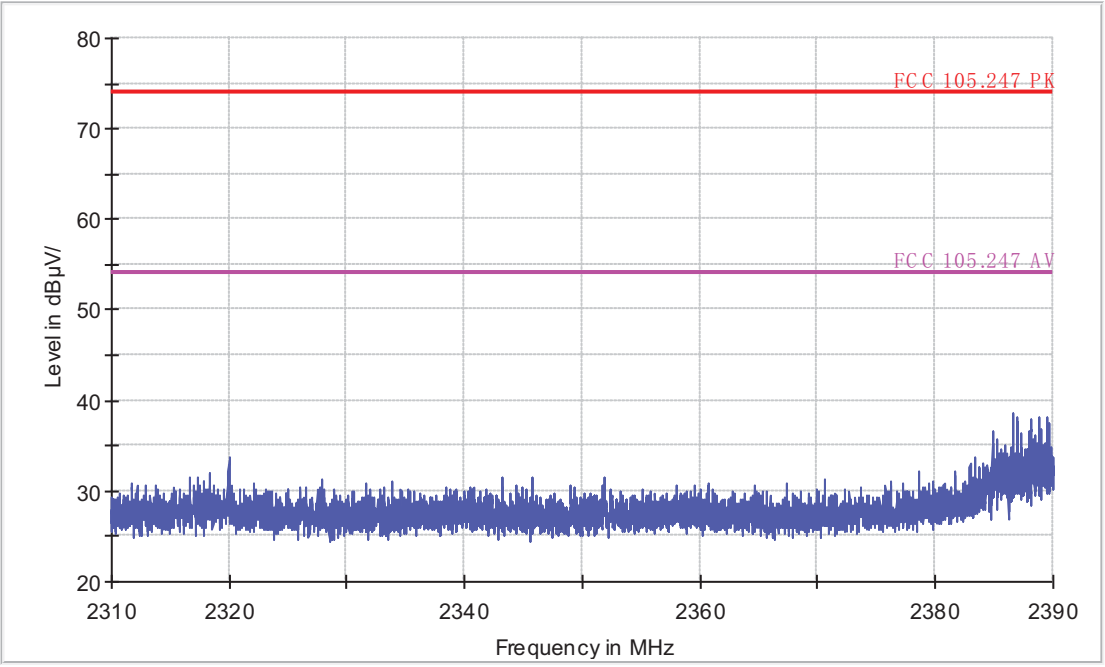
EUT Information

EUT Model Name:	G801
Operation mode:	11n(40M) CH3 MIMO continue TX mode
Test Voltage:	
Comment:	

Common Information

Test Site:	SMQ EMC Lab.
Environment	
Antenna Polarization:	Horizontal
Operator Name:	
Comment:	

FCC Electric Field Strength 2.4GHz Bandedge-PK



Radiated Emission

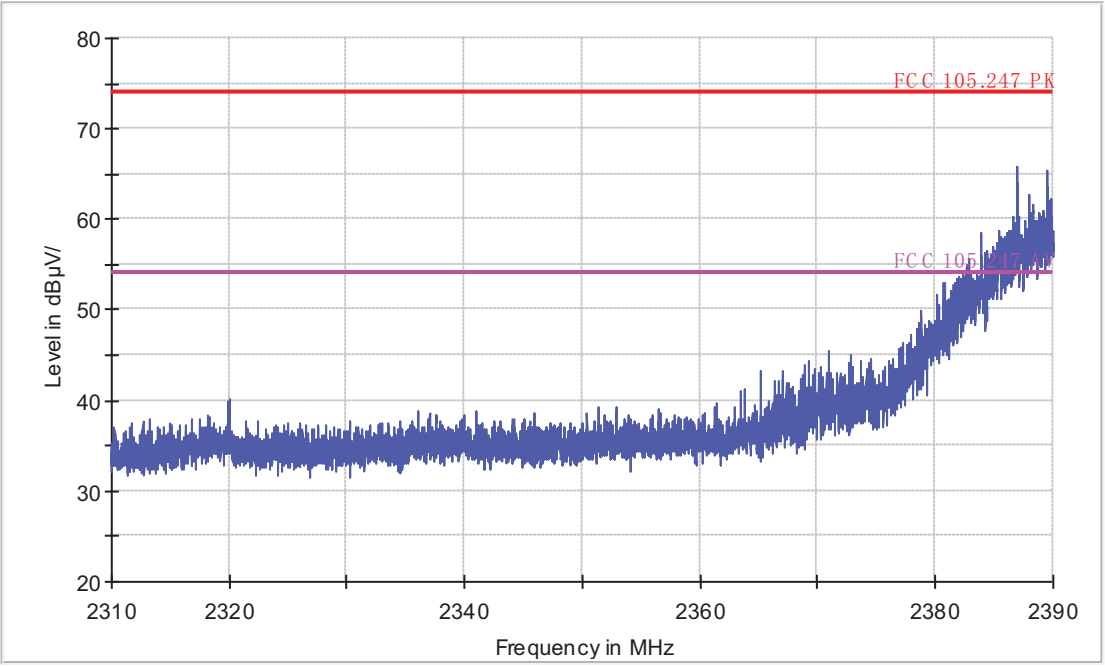
EUT Information

EUT Model Name:	G801
Operation mode:	11n(40M) CH3 MIMO continue TX mode
Test Voltage:	
Comment:	

Common Information

Test Site:	SMQ EMC Lab.
Environment	
Antenna Polarization:	Vertical
Operator Name:	
Comment:	

FCC Electric Field Strength 2.4GHz Bandedge-PK



Radiated Emission

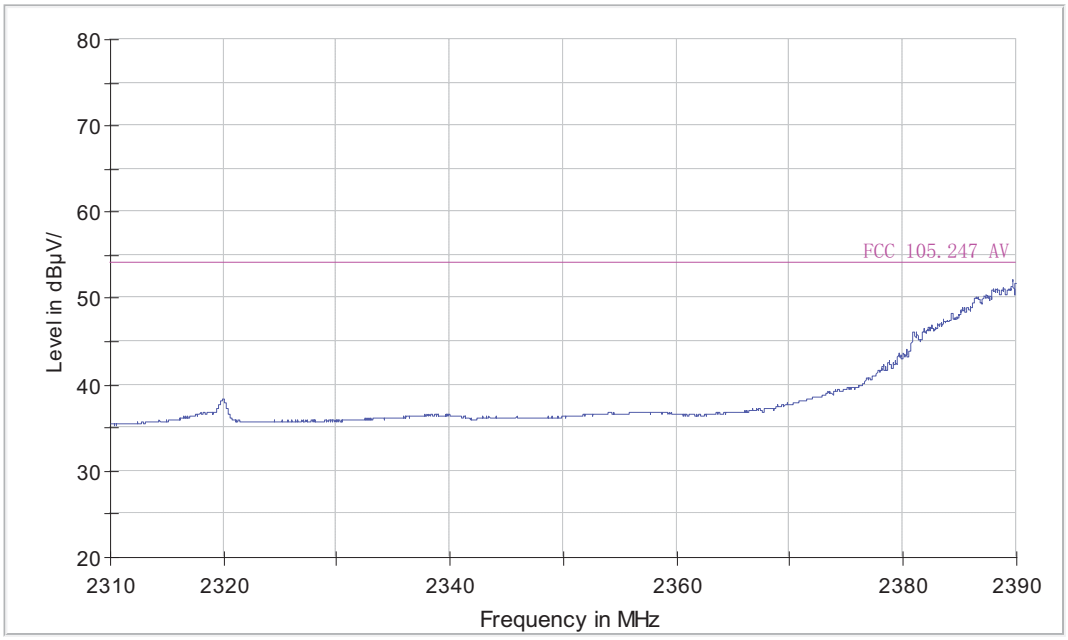
EUT Information

EUT Model Name:	G801
Operation mode:	11n(40M) CH3 MIMO continue TX mode
Test Voltage:	
Comment:	

Common Information

Test Site:	SMQ EMC Lab.
Environment	
Antenna Polarization:	Vertical
Operator Name:	
Comment:	

FCC Electric Field Strength 2.4GHz Bandedge-AV



Radiated Emission

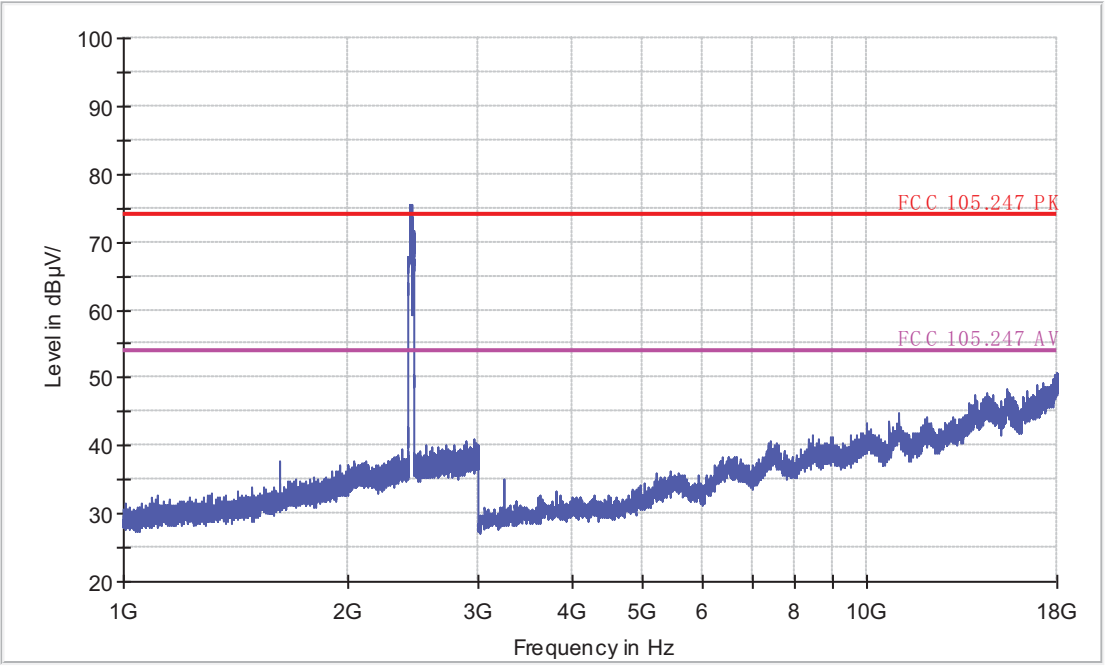
EUT Information

EUT Model Name:	G801
Operation mode:	11n(40M) CH6 MIMO continue TX mode
Test Voltage:	
Comment:	

Common Information

Test Site:	SMQ EMC Lab.
Environment	
Antenna Polarization:	Horizontal
Operator Name:	
Comment:	

Electric Field Strength FCC 15.247 1-18GHz



Radiated Emission

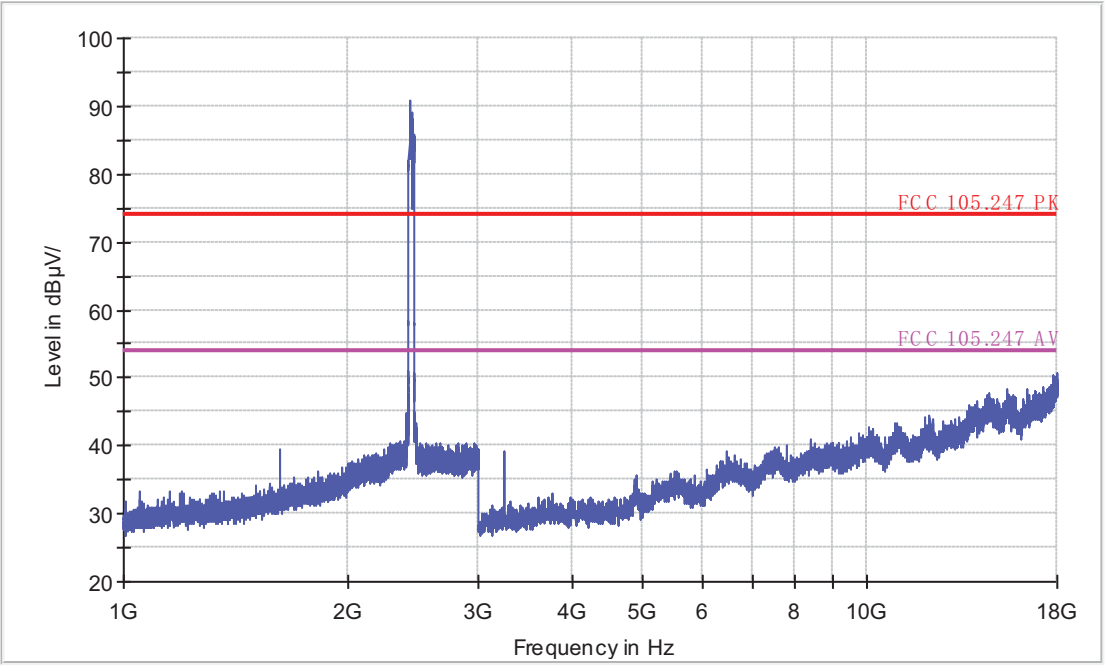
EUT Information

EUT Model Name:	G801
Operation mode:	11n(40M) CH6 MIMO continue TX mode
Test Voltage:	
Comment:	

Common Information

Test Site:	SMQ EMC Lab.
Environment	
Antenna Polarization:	Vertical
Operator Name:	
Comment:	

Electric Field Strength FCC 15.247 1-18GHz



Radiated Emission

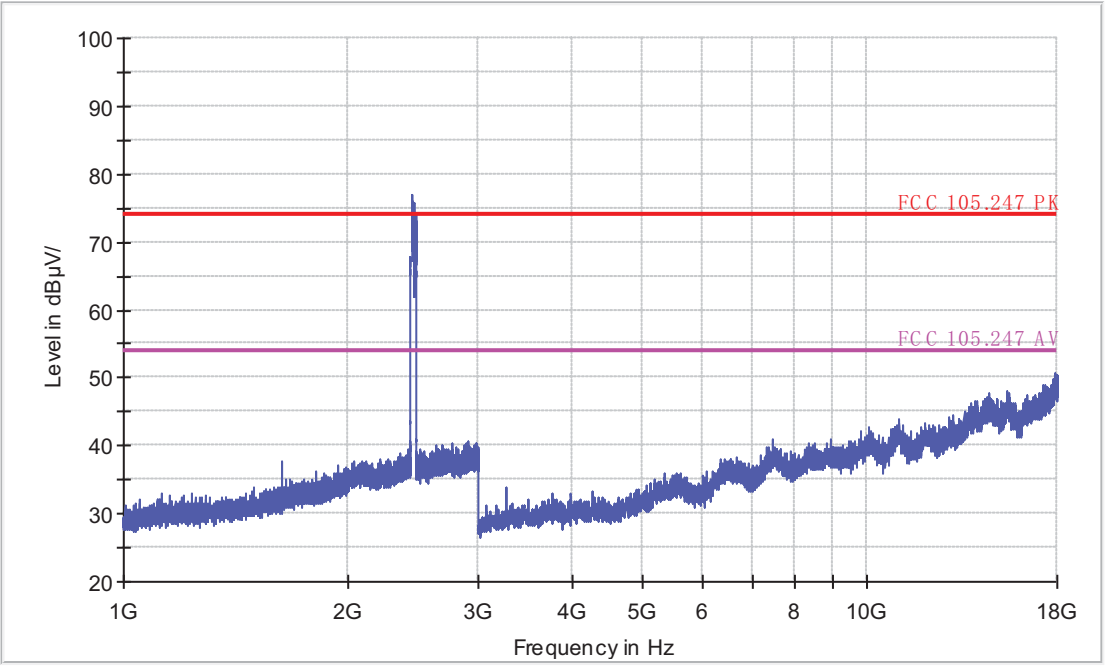
EUT Information

EUT Model Name:	G801
Operation mode:	11n(40M) CH9 MIMO continue TX mode
Test Voltage:	
Comment:	

Common Information

Test Site:	SMQ EMC Lab.
Environment	
Antenna Polarization:	Horizontal
Operator Name:	
Comment:	

Electric Field Strength FCC 15.247 1-18GHz



Radiated Emission

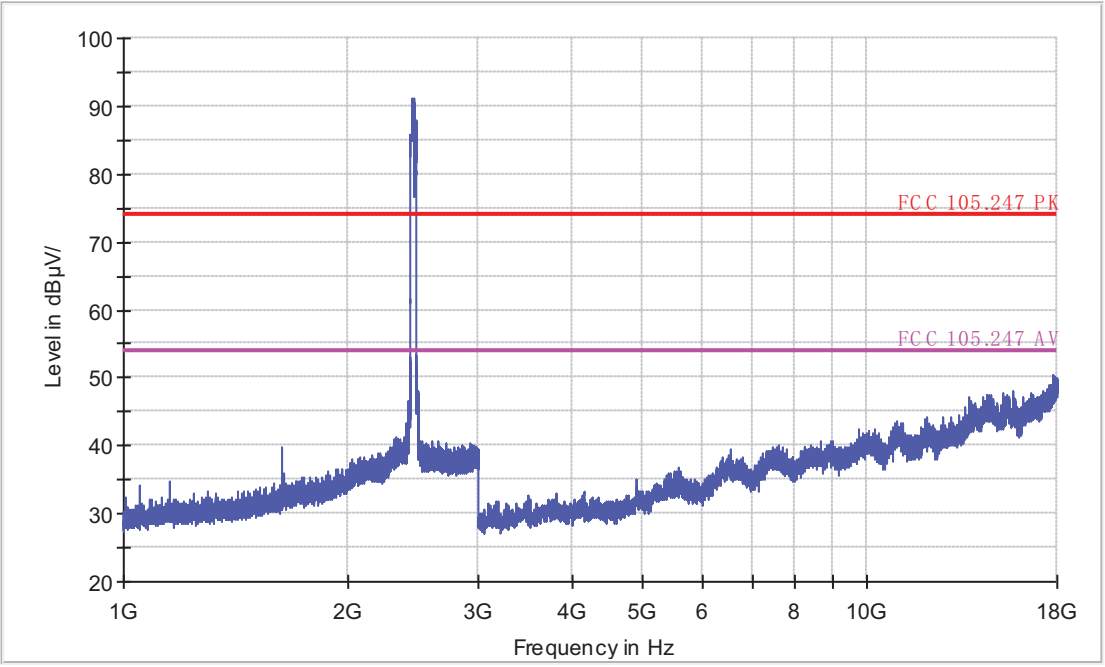
EUT Information

EUT Model Name:	G801
Operation mode:	11n(40M) CH9 MIMO continue TX mode
Test Voltage:	
Comment:	

Common Information

Test Site:	SMQ EMC Lab.
Environment	
Antenna Polarization:	Vertical
Operator Name:	
Comment:	

Electric Field Strength FCC 15.247 1-18GHz



Radiated Emission

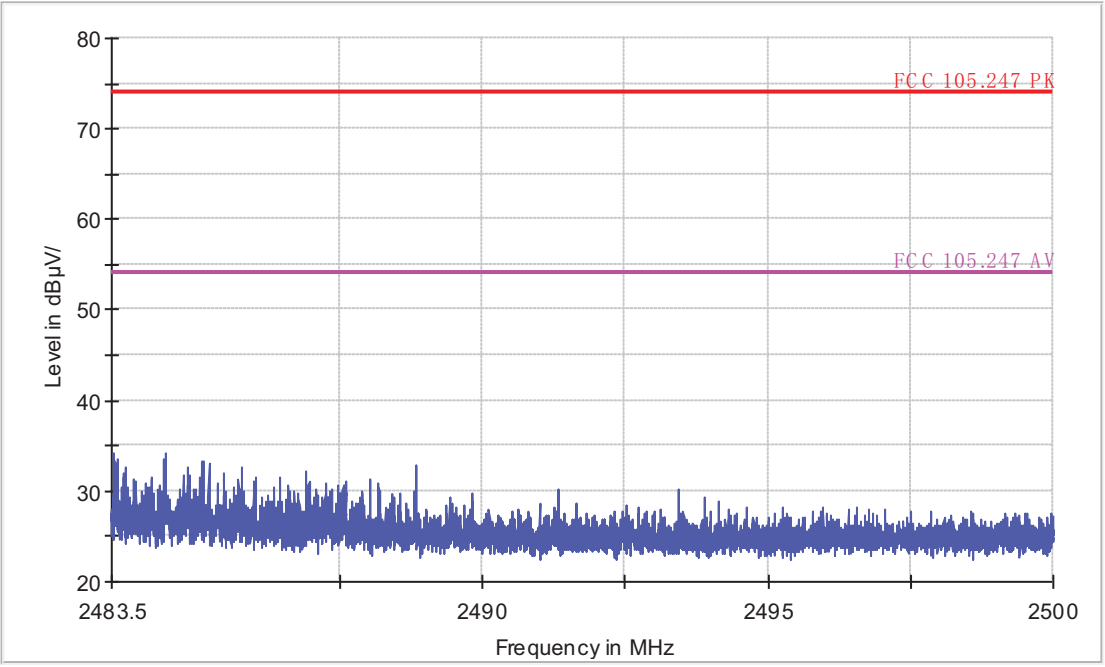
EUT Information

EUT Model Name:	G801
Operation mode:	11n(40M) CH9 MIMO continue TX mode
Test Voltage:	
Comment:	

Common Information

Test Site:	SMQ EMC Lab.
Environment	
Antenna Polarization:	Horizontal
Operator Name:	
Comment:	

Copy of FCC Electric Field Strength 1-18GHz



Radiated Emission

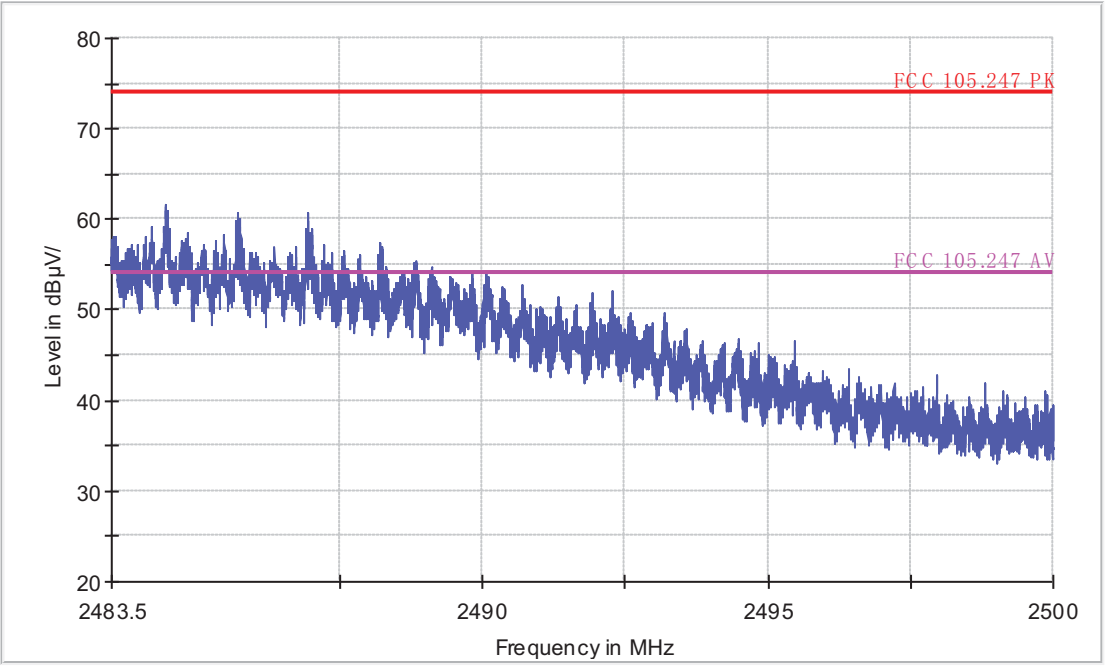
EUT Information

EUT Model Name:	G801
Operation mode:	11n(40M) CH9 MIMO continue TX mode
Test Voltage:	
Comment:	

Common Information

Test Site:	SMQ EMC Lab.
Environment	
Antenna Polarization:	Vertical
Operator Name:	
Comment:	

FCC Electric Field Strength 2.4GHz Bandedge-PK



Radiated Emission

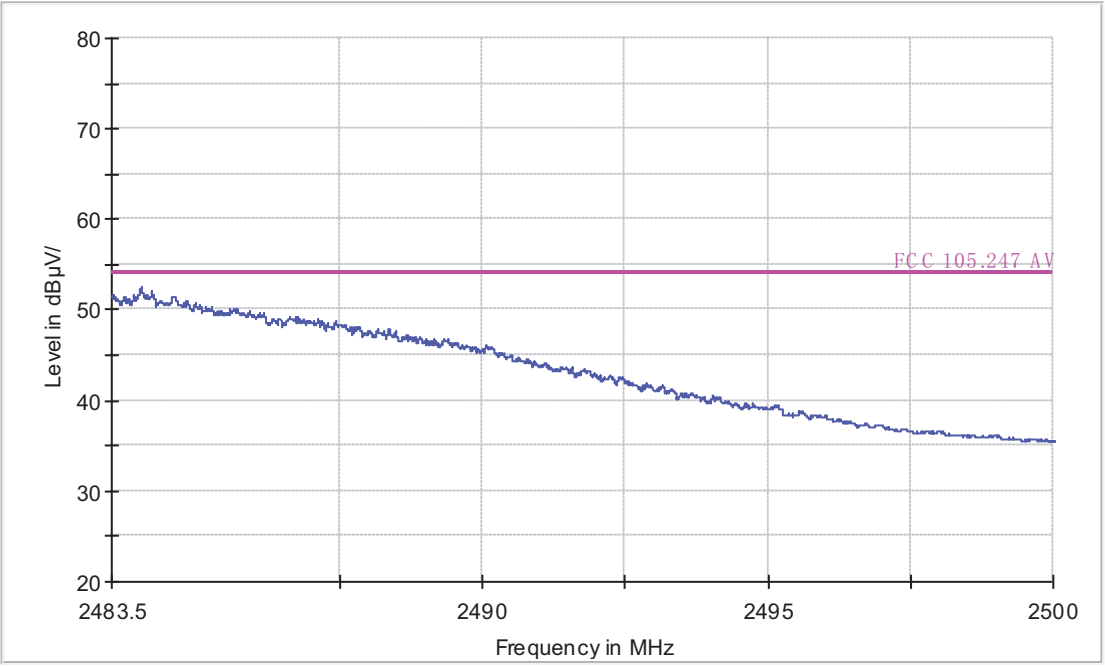
EUT Information

EUT Model Name:	G801
Operation mode:	11n(40M) CH9 MIMO continue TX mode
Test Voltage:	
Comment:	

Common Information

Test Site:	SMQ EMC Lab.
Environment	
Antenna Polarization:	Vertical
Operator Name:	
Comment:	

FCC Electric Field Strength 2.4GHz Bandedge-AV



18-26.5GHz

No Peak found in pre-scan, only worst case result is listed in this report.

Radiated Emission

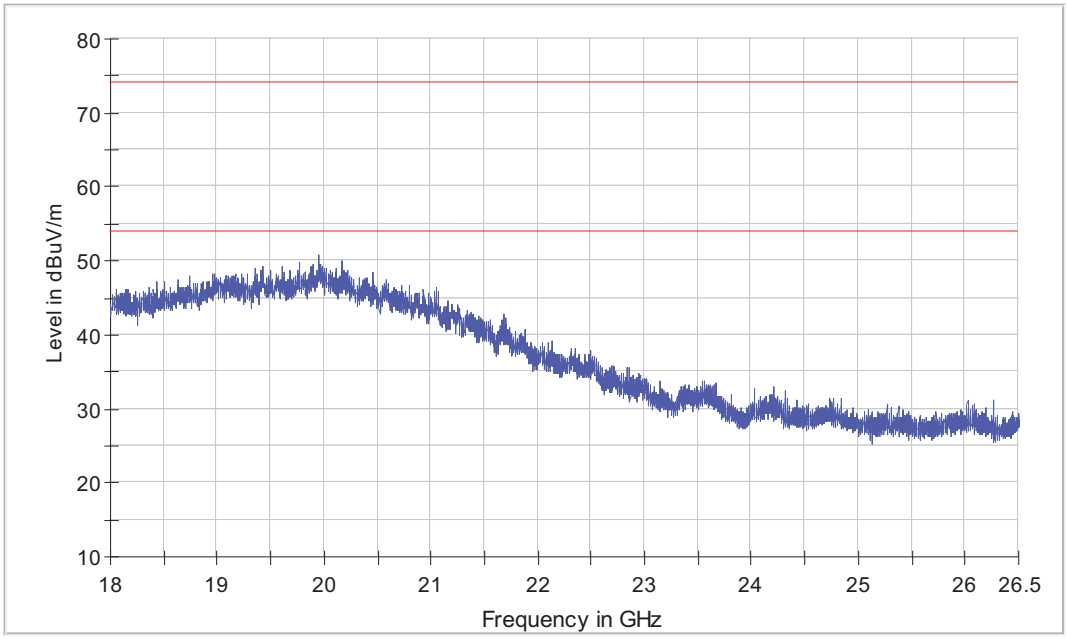
EUT Information

EUT Model Name:	G801
Operation mode:	802.11n 40M MIMO continue TX mode
Test Voltage:	
Comment:	

Common Information

Test Site:	SMQ EMC Lab.
Environment	
Antenna Polarization:	Horizontal
Operator Name:	
Comment:	

Electric Field Strength 18-26.5GHz



Radiated Emission

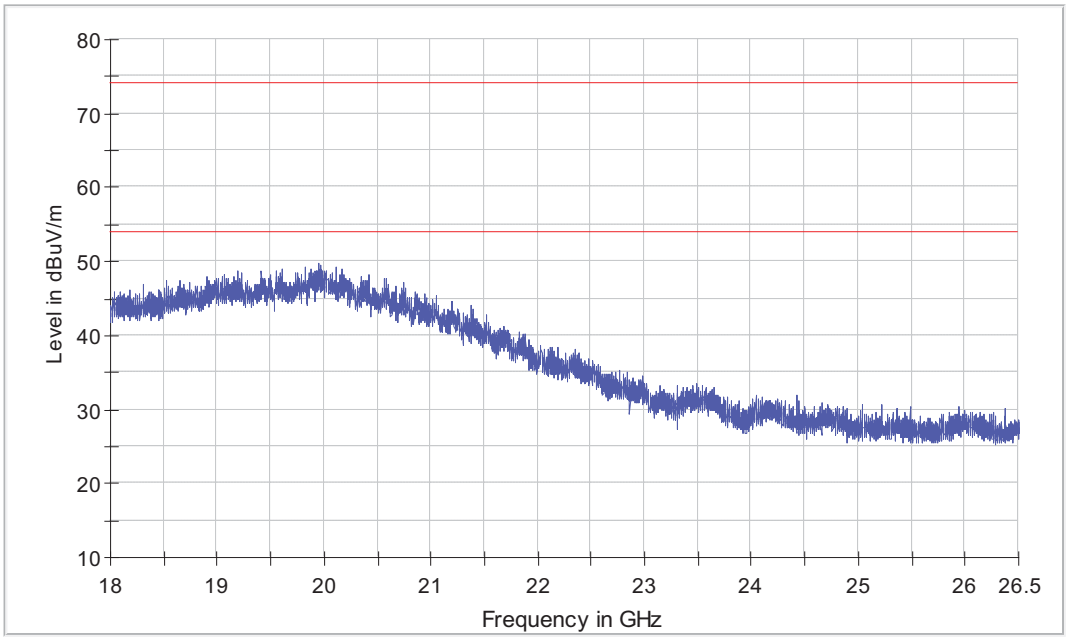
EUT Information

EUT Model Name:	G801
Operation mode:	802.11n 40M MIMO continue TX mode
Test Voltage:	
Comment:	

Common Information

Test Site:	SMQ EMC Lab.
Environment	
Antenna Polarization:	Vertical
Operator Name:	
Comment:	

Electric Field Strength 18-26.5GHz



10. CONDUCTED EMISSION TEST FOR AC POWER PORT MEASUREMENT

10.1. Test Standard and Limit

10.1.1. Test Standard

FCC Part 15 15.207

10.1.2. Test Limit

Table 22 Conducted Disturbance Test Limit

Frequency	Maximum RF Line Voltage (dBμV)	
	Quasi-peak Level	Average Level
150kHz~500kHz	66 ~ 56 *	56 ~ 46 *
500kHz~5MHz	56	46
5MHz~30MHz	60	50

* Decreasing linearly with logarithm of the frequency

* The lower limit shall apply at the transition frequency.

10.2. Test Procedure

The EUT is put on a table of non-conducting material that is 80cm high. The vertical conducting wall of shielding is located 40cm to the rear of the EUT. The power line of the EUT is connected to the AC mains through a Artificial Mains Network (A.M.N.). A EMI test receiver (R&S Test Receiver ESCS30) is used to test the emissions form both sides of AC line. According to the requirements in Section 7 and 13 of ANSI C63.4-2003.Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-Peak and average detector mode.

The bandwidth of EMI test receiver is set at 9kHz.

10.3. Test Arrangement

The arrangement of the equipment is installed to meet the standards and operating in a manner, which tends to maximize its emission characteristics in a normal application. The detailed information refers to test picture.

10.4.Test Data

The emissions don’ t show in below are too low against the limits. Refer to the test curves.

Table 23 Conducted Disturbance Test Data

Model No.: G801

Test mode: 802.11n 40M

	Frequency (MHz)	Correction Factor (dB)	Quasi-Peak			Average		
			Reading (dBμV)	Emission Level (dBμV)	Limits (dBμV)	Reading (dBμV)	Emission Level (dBμV)	Limits (dBμV)
Line	0.302	9.7	40.6	50.3	60.2	27.8	37.5	50.2
	0.354	9.7	37.0	46.7	58.9	25.1	34.8	48.9
	0.918	9.8	40.6	50.4	56	22.6	32.4	46
	1.150	9.8	44.7	54.5	56	27.3	37.1	46
	1.370	9.8	43.3	53.1	56	26.7	36.5	46
	9.600	10.0	31.0	41.0	60	21.6	31.6	50
Neutral	0.302	9.7	38.0	47.7	60.2	23.2	32.9	50.2
	0.374	9.7	36.4	46.1	58.4	26.0	35.7	48.4
	0.526	9.8	31.0	40.8	56	15.6	25.4	46
	1.014	9.8	38.4	48.2	56	19.5	29.3	46
	1.158	9.8	41.4	51.2	56	24.3	34.1	46
	9.836	10.0	31.5	41.5	60	23.2	33.2	50

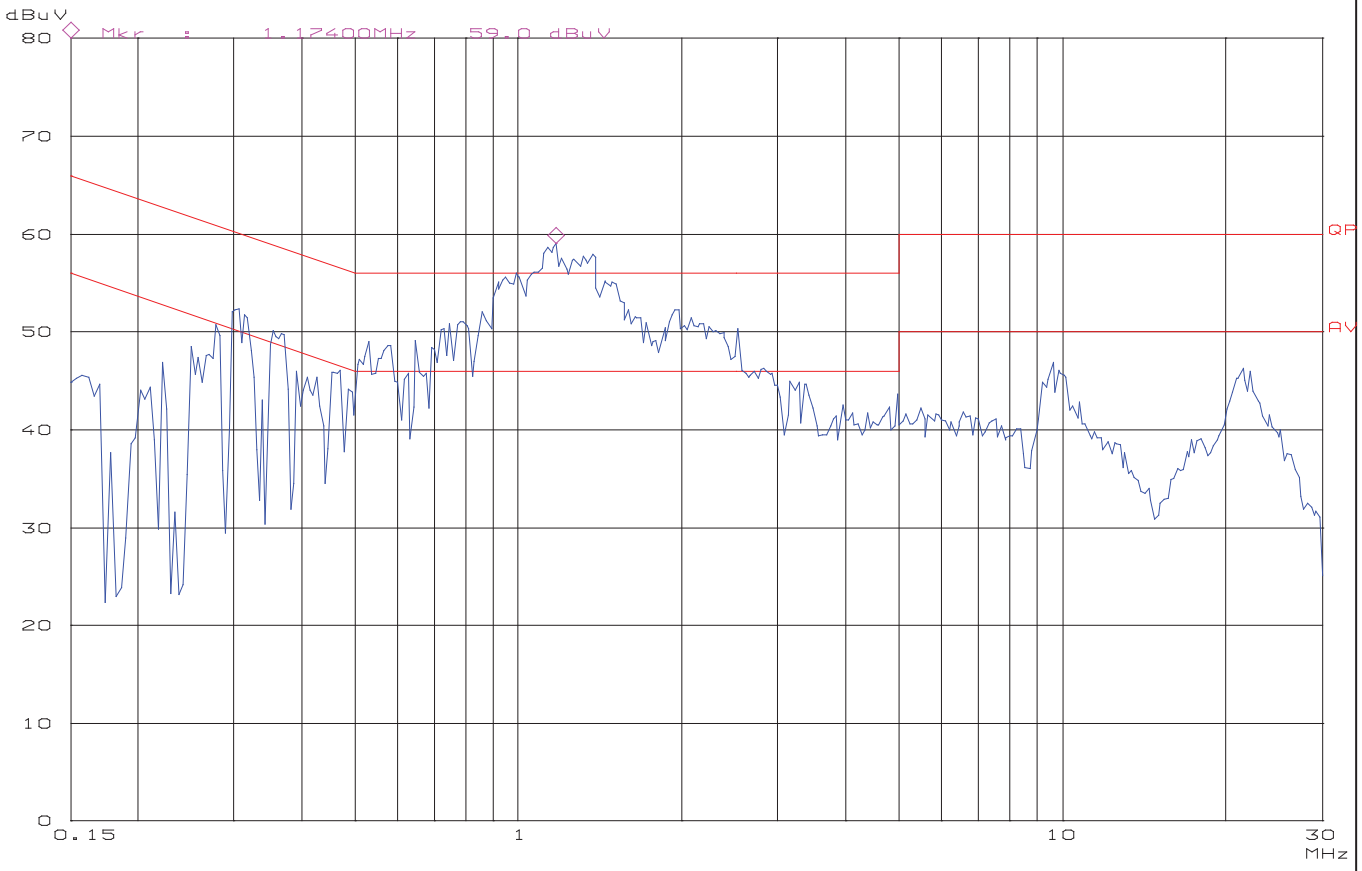
REMARKS: 1. Emission level(dBuV)=Read Value(dBuV) + Correction Factor(dB)

2. Correction Factor(dB) =LISN Factor (dB) + Cable Factor (dB)+Limiter Factor(dB)

3. The other emission levels were very low against the limit.

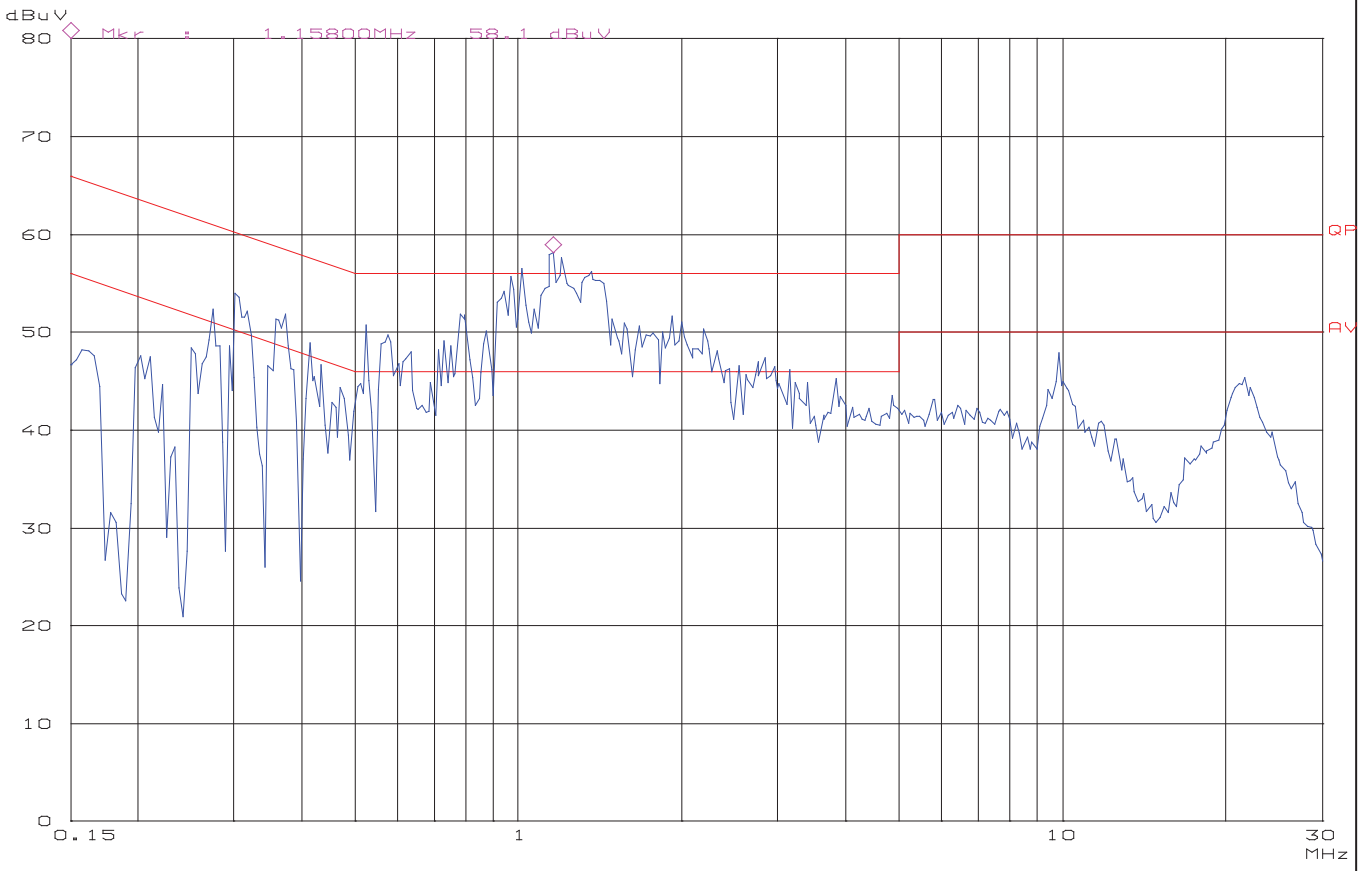
Conducted Disturbance

EUT: 6801
Op Cond: COMMUNICATION
Test Spec: L
Comment: AC 120V/60Hz



Conducted Disturbance

EUT: 6801
Op Cond: COMMUNICATION
Test Spec: N
Comment: AC 120V/60Hz



11. ANTENNA REQUIREMENTS

11.1. Applicable requirements

The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the FCC rule.

11.2. Antenna Connector

Antenna Connector is on the PCB within enclosure and not accessible to user.

APPENDIX I TEST PHOTOS

Photo 1 Conducted Disturbance Test (mains terminal)

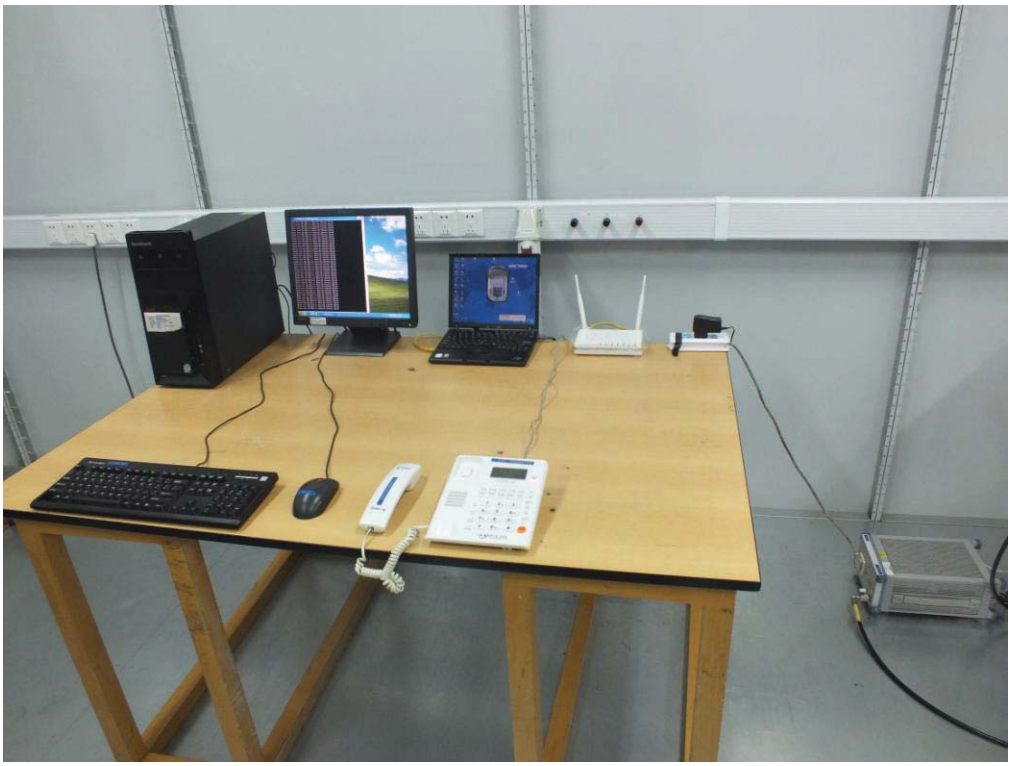


Photo 2 Radiated Disturbance Test

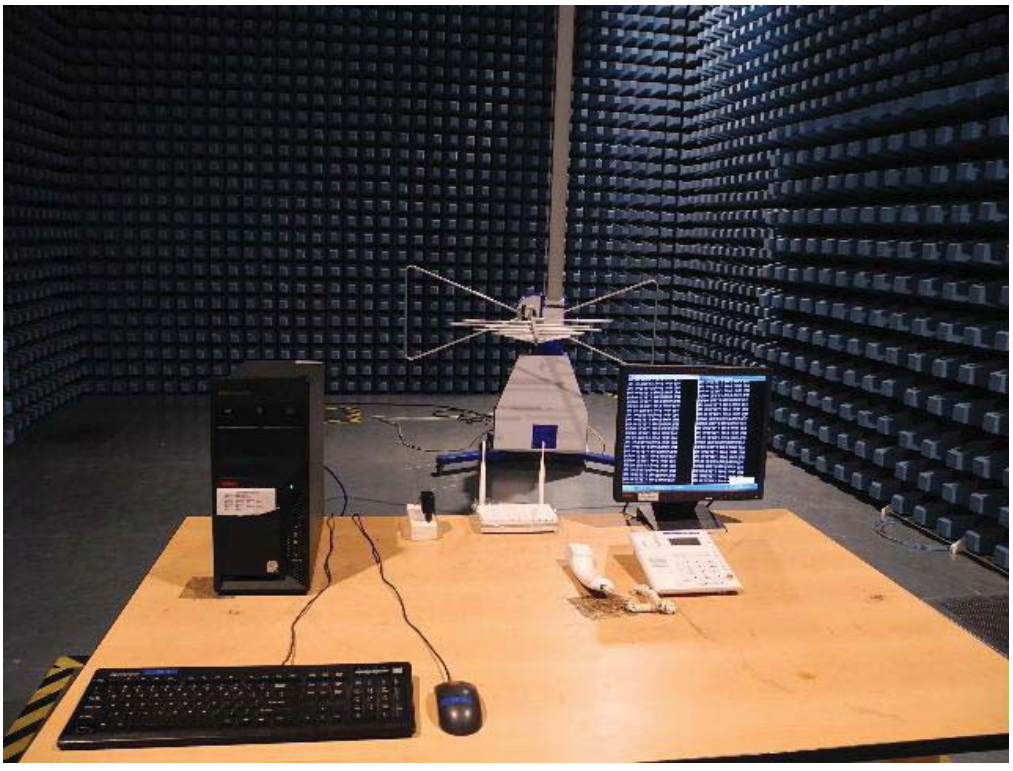
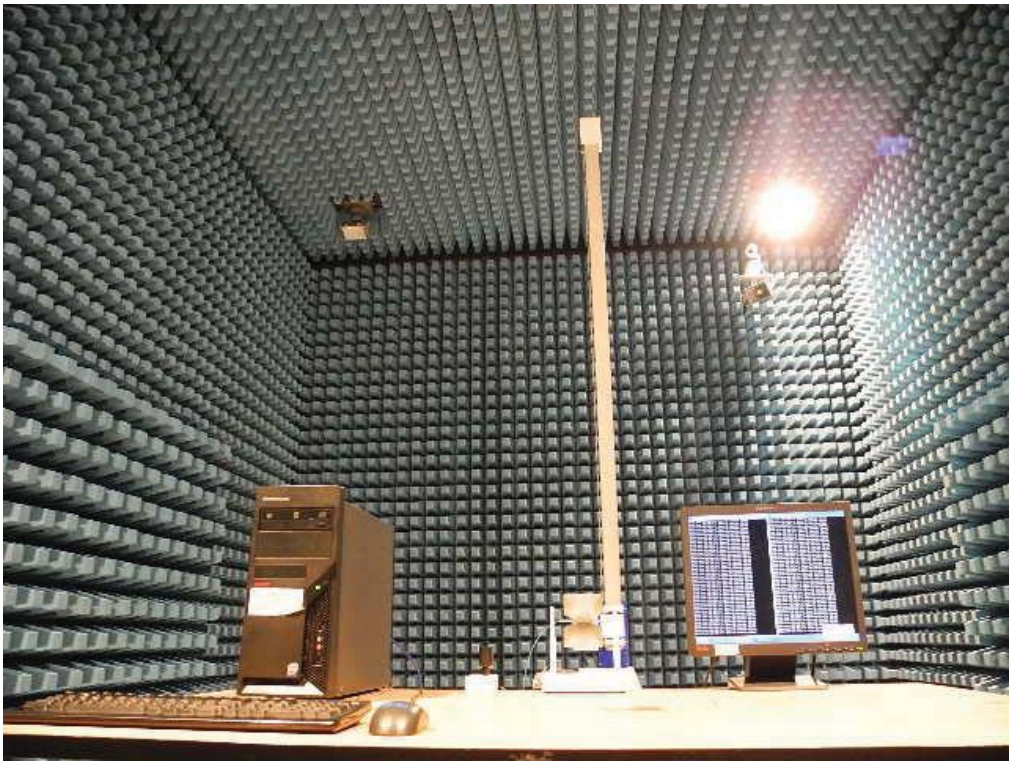


Photo 3 Radiated Disturbance Test



APPENDIX II EUT Photo

Photo 1 Appearance of EUT

Photo 2 Appearance of EUT

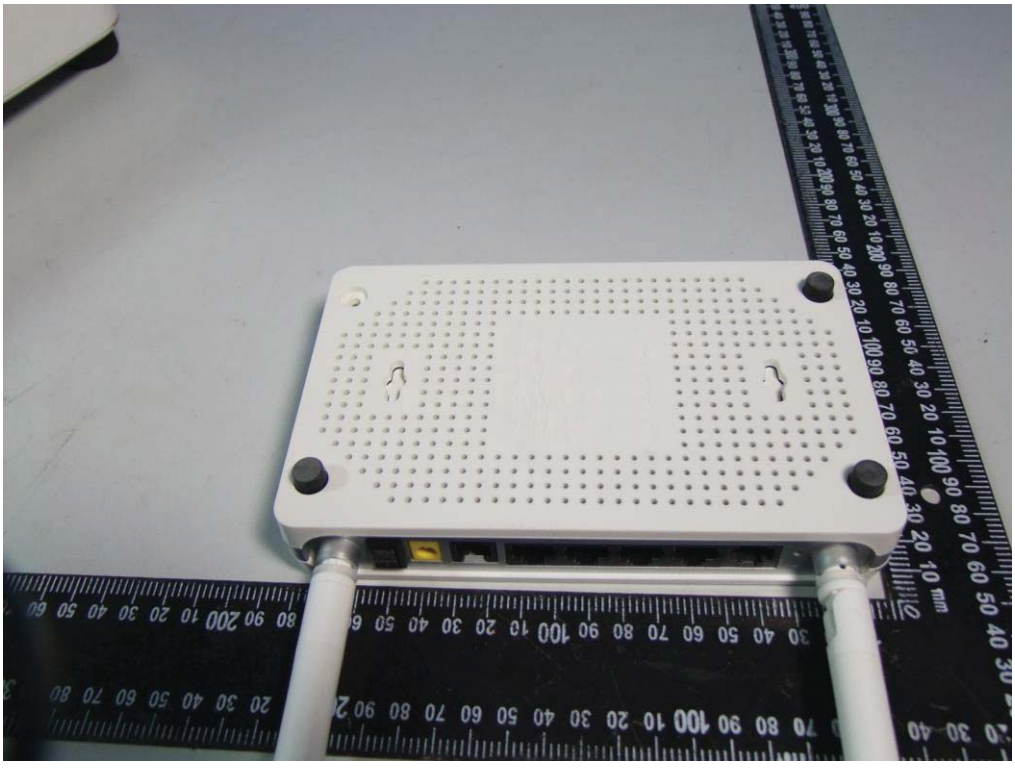


Photo 3 Inside of EUT

Photo 4 Inside of EUT

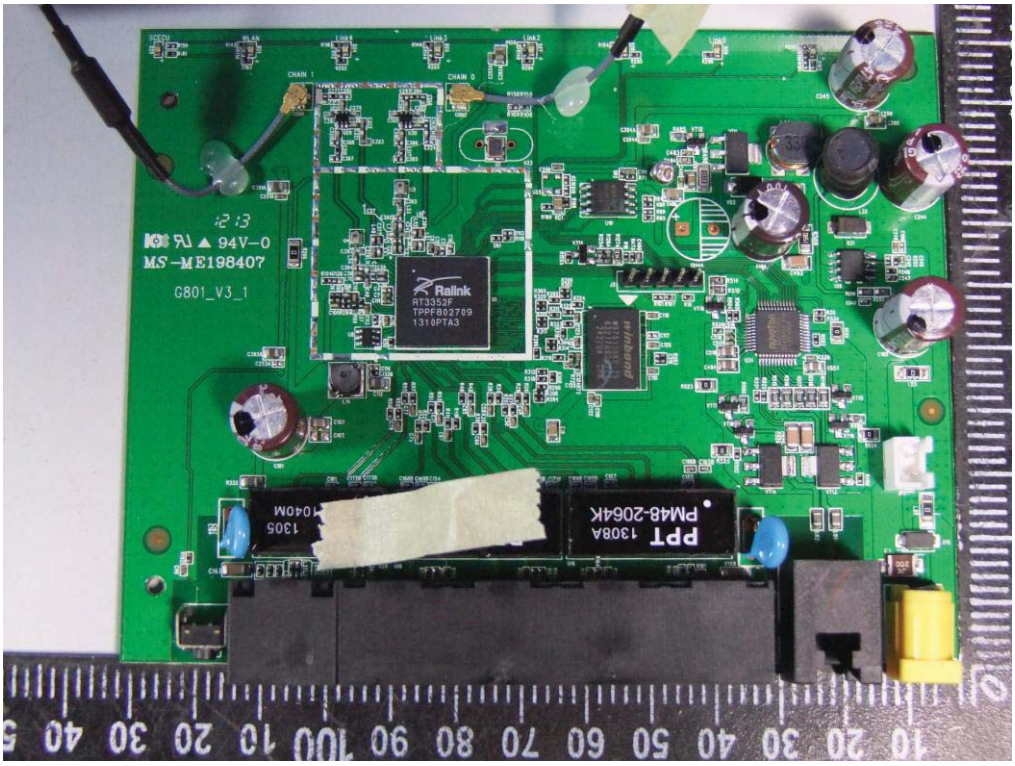


Photo 5 Inside of EUT