



## CFR 47 FCC PART 15 SUBPART C

### CERTIFICATION TEST REPORT

*For*

**Smart Display**

**MODEL NUMBER: TAW8805**

**FCC ID: ARS-TAW8805**

**REPORT NUMBER: 4789630275-3**

**ISSUE DATE: October 30, 2020**

*Prepared for*

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*Prepared by*

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Revision History

Rev.	Issue Date	Revisions	Revised By
V0	10/30/2020	Initial Issue	

Summary of Test Results			
Clause	Test Items	FCC Rules	Test Results
1	6dB Bandwidth and 99% Occupied Bandwidth	FCC Part 15.247 (a) (2)	Pass
2	Conducted Output Power	FCC Part 15.247 (b) (3)	Pass
3	Power Spectral Density	FCC Part 15.247 (e)	Pass
4	Conducted Bandedge and Spurious Emission	FCC Part 15.247 (d)	Pass
5	Radiated Bandedge and Spurious Emission	FCC Part 15.247 (d) FCC Part 15.209 FCC Part 15.205	Pass
6	Conducted Emission Test for AC Power Port	FCC Part 15.207	Pass
7	Antenna Requirement	FCC Part 15.203	Pass

**Note:**

1. This test report is only published to and used by the applicant, and it is not for evidence purpose in China.

2. The measurement result for the sample received is <Pass> according to < CFR 47 FCC PART 15 SUBPART C >when <Accuracy Method> decision rule is applied.

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## 1. ATTESTATION OF TEST RESULTS

### Applicant Information

Company Name: Top Victory Electronics (Taiwan) Co Ltd  
Address: 10F., No.230, Liancheng Rd. Zhonghe City, Taipei, Taiwan

### Manufacturer Information

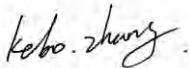
Company Name: MMD (Shanghai) Electronics Technology Co.,Ltd  
Address: Room 5060A, No.2 Building, 555 Dong Chuan Road, Min hang District, Shanghai, 200241, China

### EUT Information

EUT Name: Smart Display  
Model: TAW8805  
Brand: Phillips  
Sample Received Date: September 17, 2020  
Sample Status: Normal  
Sample ID: 3172174  
Date of Tested: September 17, 2020~ September 30, 2020

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
CFR 47 FCC PART 15 SUBPART C	PASS

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## 2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with KDB 558074 D01 15.247 Meas Guidance v05r02, KDB 414788 D01 Radiated Test Site v01r01, CFR 47 FCC Part 2, CFR 47 FCC Part 15, ANSI C63.10-2013.

## 3. FACILITIES AND ACCREDITATION

Accreditation Certificate	<p><b>A2LA (Certificate No.: 4102.01)</b> UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with A2LA.</p> <p><b>FCC (FCC Designation No.: CN1187)</b> UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. Has been recognized to perform compliance testing on equipment subject to the Commission's Declaration of Conformity (DoC) and Certification rules</p> <p><b>ISED (Company No.: 21320)</b> UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been registered and fully described in a report filed with ISED. Body Identifier (CABID) is CN0046.</p> <p><b>VCCI (Registration No.: G-20019, R-20004, C-20012 and T-20011)</b> UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with VCCI, the Membership No. is 3793. Facility Name: Chamber D, the VCCI registration No. is G-20019 and R-20004 Shielding Room B , the VCCI registration No. is C-20012 and T-20011</p>
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Note 1: All tests measurement facilities use to collect the measurement data are located at Building 10, Innovation Technology Park, Song Shan Lake Hi tech Development Zone, Dongguan, 523808, China

Note 2: The test anechoic chamber in UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch had been calibrated and compared to the open field sites and the test anechoic chamber is shown to be equivalent to or worst case from the open field site.

Note 3: For below 30 MHz, lab had performed measurements at test anechoic chamber and comparing to measurements obtained on an open field site. And these measurements below 30 MHz had been correlated to measurements performed on an OFS.

## 4. CALIBRATION AND UNCERTAINTY

### 4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations and is traceable to recognize national standards.

### 4.2. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Test Item	Uncertainty
Conduction emission	3.62 dB
Radiated Emission (Included Fundamental Emission) (9 kHz ~ 30 MHz)	2.2 dB
Radiated Emission (Included Fundamental Emission) (30 MHz ~ 1 GHz)	4.00 dB
Radiated Emission (Included Fundamental Emission) (1 GHz to 26 GHz)	5.78 dB (1 GHz ~ 18 GHz) 5.23 dB (18 GHz ~ 26 GHz)

Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

## 5. EQUIPMENT UNDER TEST

### 5.1. DESCRIPTION OF EUT

EUT Name	Smart Display	
Model	TAW8805	
Radio Technology	WLAN (IEEE 802.11b/g/n HT20)	
Operation frequency	IEEE 802.11b: 2412MHz ~ 2462MHz IEEE 802.11g: 2412MHz ~ 2462MHz IEEE 802.11n HT20: 2412MHz ~ 2462MHz	
Modulation	IEEE 802.11b: DSSS (CCK, DQPSK, DBPSK) IEEE 802.11g: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n HT20: OFDM (256QAM, 64QAM, 16QAM, QPSK, BPSK)	
Supply Voltage	Rate Input:	100-240 V~, 50/60Hz, 0.8A
	Rate Output:	12 V == 2000mA

### 5.2. CHANNEL LIST

Channel List for 802.11b/g/n (20 MHz)							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2412	4	2427	7	2442	10	2457
2	2417	5	2432	8	2447	11	2462
3	2422	6	2437	9	2452	/	/

### 5.3. MAXIMUM OUTPUT POWER

IEEE Std. 802.11	Frequency (MHz)	Channel Number	Maximum Conducted AVG Output Power (dBm)	Maximum AVG EIRP (dBm)
b	2412 ~ 2462	1-11[11]	13.69	16.47
g	2412 ~ 2462	1-11[11]	13.92	16.70
n HT20	2412 ~ 2462	1-11[11]	12.75	15.53

### 5.4. TEST CHANNEL CONFIGURATION

IEEE Std. 802.11	Test Channel Number	Frequency
b	CH 1(Low Channel), CH 6(MID Channel), CH 11(High Channel)	2412 MHz, 2437 MHz, 2462 MHz
g	CH 1(Low Channel), CH 6(MID Channel), CH 11(High Channel)	2412 MHz, 2437 MHz, 2462 MHz
n HT20	CH 1(Low Channel), CH 6(MID Channel), CH 11(High Channel)	2412 MHz, 2437 MHz, 2462 MHz

## 5.5. THE WORSE CASE POWER SETTING PARAMETER

The Worse Case Power Setting Parameter under 2400 ~ 2483.5 MHz Band						
Test Software		ADB Command				
IEEE Std. 802.11	Transmit Antenna Number	Test Software Setting Value				
		NCB: 20 MHz			NCB: 40 MHz	
		CH 1	CH 6	CH 11	CH 3	CH 6
b	1	default	default	default	/	
g	1	default	default	default		
n HT20	1	default	default	default		

## 5.6. THE WORSE CASE CONFIGURATIONS

The EUT was tested in the following configuration(s):

Controlled in test mode using a software application on the EUT supplied by customer. The application was used to enable a continuous transmission and to select the mode, test channels, bandwidth, data rates as required.

Test channels referring to section 5.4.

Maximum power setting referring to section 5.5.

Worst case Data Rates declared by the customer:

IEEE 802.11b / SISO – DBPSK / 1 Mbps  
IEEE 802.11g / SISO – BPSK / 6 Mbps  
IEEE 802.11n HT20 / SISO – BPSK / MCS0

The measured additional path loss was included in any path loss calculations for all RF cable used during tested.

## 5.7. DESCRIPTION OF AVAILABLE ANTENNAS

Antenna	Frequency (MHz)	Antenna Type	MAX Antenna Gain (dBi)
1	2412-2462	PIFA antenna	2.78

Test Mode	Transmit and Receive Mode	Description
IEEE 802.11b	<input checked="" type="checkbox"/> 1TX, 1RX	ANT 1 can be used as transmitting/receiving antenna.
IEEE 802.11g	<input checked="" type="checkbox"/> 1TX, 1RX	ANT 1 can be used as transmitting/receiving antenna.
IEEE 802.11n HT20	<input checked="" type="checkbox"/> 1TX, 1RX	ANT 1 can be used as transmitting/receiving antenna.
Note: BT&WLAN can't transmit simultaneously. (declared by client)		

Note: The value of the antenna gain was declared by customer.

## 5.8. DESCRIPTION OF TEST SETUP

### SUPPORT EQUIPMENT

Item	Equipment	Brand Name	Model Name	Remarks
1	Laptop	Lenovo	ThinkPad E480	/
2	Monitor	DELL	P2715Qt	/

### I/O CABLES

Cable No	Port	Connector Type	Cable Type	Cable Length(m)	Remarks
1	USB	TYPE C	/	1.0	/

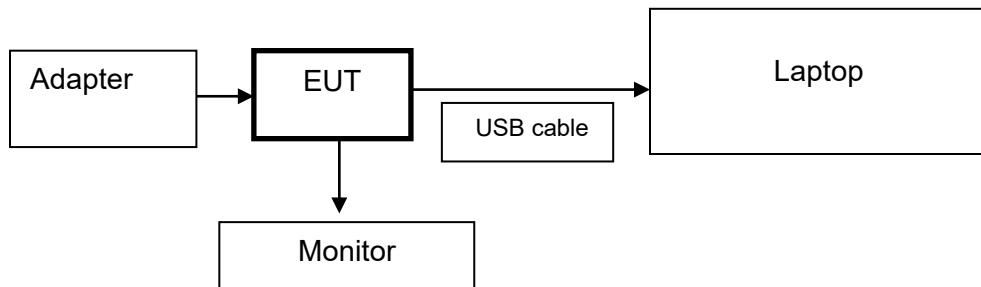
### ACCESSORIES

Item	Accessory	Brand Name	Model Name	Description
1	Power Adapter	PHILIPS	AS2401A-1202000US	INPUT: 100~240V,50/60Hz,0.8A OUTPUT:12Vdc,2A

### TEST SETUP

The EUT can work in engineering mode with a software through a Laptop.

### SETUP DIAGRAM FOR TESTS



## 6. MEASURING INSTRUMENT AND SOFTWARE USED

Conducted Emissions									
Instrument									
Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.			
<input checked="" type="checkbox"/>	EMI Test Receiver	R&S	ESR3	101961	Dec.05,2019	Dec.05,2020			
<input checked="" type="checkbox"/>	Two-Line V-Network	R&S	ENV216	101983	Dec.05,2019	Dec.05,2020			
Software									
Used	Description			Manufacturer	Name	Version			
<input checked="" type="checkbox"/>	Test Software for Conducted disturbance			Farad	EZ-EMC	Ver. UL-3A1			
Radiated Emissions									
Instrument									
Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.			
<input checked="" type="checkbox"/>	MXE EMI Receiver	KESIGHT	N9038A	MY56400036	Dec.06,2019	Dec.05,2020			
<input checked="" type="checkbox"/>	Hybrid Log Periodic Antenna	TDK	HLP-3003C	130960	Sep.17,2018	Sep.17,2021			
<input checked="" type="checkbox"/>	Preamplifier	HP	8447D	2944A09099	Dec.05,2019	Dec.05,2020			
<input checked="" type="checkbox"/>	EMI Measurement Receiver	R&S	ESR26	101377	Dec.05,2019	Dec.05,2020			
<input checked="" type="checkbox"/>	Horn Antenna	TDK	HRN-0118	130939	Sep.17,2018	Sep.17,2021			
<input checked="" type="checkbox"/>	High Gain Horn Antenna	Schwarzbeck	BBHA-9170	691	Aug.11,2018	Aug.11,2021			
<input checked="" type="checkbox"/>	Preamplifier	TDK	PA-02-0118	TRS-305-00067	Dec.05,2019	Dec.05,2020			
<input checked="" type="checkbox"/>	Preamplifier	TDK	PA-02-2	TRS-307-00003	Dec.05,2019	Dec.05,2020			
<input checked="" type="checkbox"/>	Loop antenna	Schwarzbeck	1519B	00008	Jan.07,2019	Jan.07,2022			
<input checked="" type="checkbox"/>	High Pass Filter	Wi	WHKX10-2700-3000-18000-40SS	23	Dec.05,2019	Dec.05,2020			
Software									
Used	Description			Manufacturer	Name	Version			
<input checked="" type="checkbox"/>	Test Software for Radiated disturbance			Farad	EZ-EMC	Ver. UL-3A1			
Other instruments									
Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.			
<input checked="" type="checkbox"/>	Spectrum Analyzer	Keysight	N9030A	MY55410512	Dec.06,2019	Dec.05,2020			
<input checked="" type="checkbox"/>	Power sensor, Power Meter	R&S	OSP120	100921	Dec.06,2019	Dec.06,2020			

## 7. ANTENNA PORT TEST RESULTS

### 7.1. ON TIME AND DUTY CYCLE

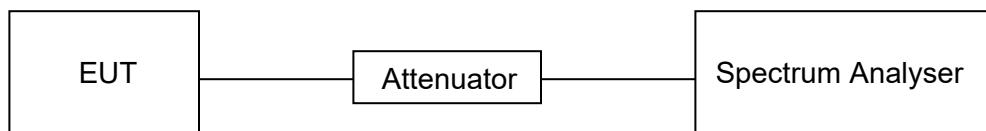
#### LIMITS

None; for reporting purposes only

#### PROCEDURE

Refer to ANSI C63.10-2013 clause 11.6 Zero – Span Spectrum Analyzer method.

#### TEST SETUP



#### TEST ENVIRONMENT

Temperature	25.3 °C	Relative Humidity	68.1 %
Atmosphere Pressure	101 kPa	Test Voltage	AC120 V,60 Hz

#### RESULTS

Please refer to appendix G.

## 7.2. 6 dB DTS BANDWIDTH AND 99 % OCCUPIED BANDWIDTH

### LIMITS

CFR 47 FCC Part15 (15.247) Subpart C			
Section	Test Item	Limit	Frequency Range (MHz)
CFR 47 FCC 15.247(a)(2)	6 dB Bandwidth	$\geq 500$ kHz	2400-2483.5

### TEST PROCEDURE

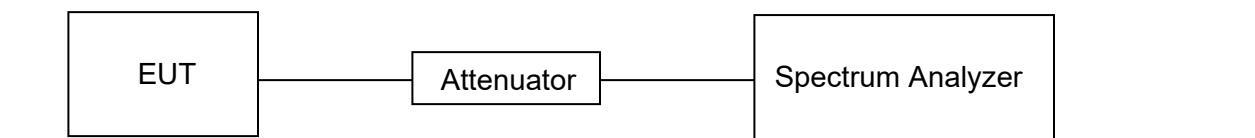
Refer to ANSI C63.10-2013 clause 11.8 for DTS bandwidth and clause 6.9 for Occupied Bandwidth.

Connect the EUT to the spectrum analyser and use the following settings:

Center Frequency	The center frequency of the channel under test
Frequency Span	Between 1.5 times and 5.0 times the OBW
Detector	Peak
RBW	For 6 dB Bandwidth: 100 kHz
VBW	For 6 dB Bandwidth: $\geq 3 \times$ RBW
Trace	Max hold
Sweep	Auto couple

- Use the 99 % power bandwidth function of the instrument, allow the trace to stabilize and report the measured bandwidth.
- Allow the trace to stabilize and 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.

### TEST SETUP



**TEST ENVIRONMENT**

Temperature	25.3 °C	Relative Humidity	68.1 %
Atmosphere Pressure	101 kPa	Test Voltage	AC120 V,60 Hz

**RESULTS**

Please refer to appendix A & B.

### 7.3. CONDUCTED OUTPUT POWER

#### LIMITS

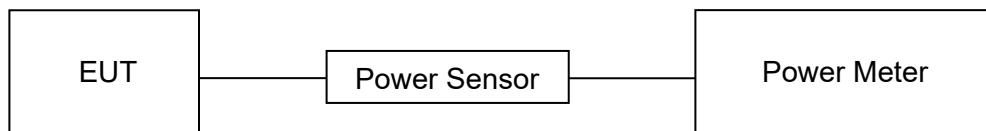
CFR 47 FCC Part15 (15.247) Subpart C			
Section	Test Item	Limit	Frequency Range (MHz)
CFR 47 FCC 15.247(b)(3)	AVG Output Power	1 watt or 30 dBm	2400-2483.5

#### TEST PROCEDURE

Connect the EUT to a low loss RF cable from the antenna port to the power sensor (video bandwidth is greater than the occupied bandwidth).

Measure peak emission level, the indicated level is the average output power, after any corrections for external attenuators and cables.

#### TEST SETUP



#### TEST ENVIRONMENT

Temperature	25.3 °C	Relative Humidity	68.1 %
Atmosphere Pressure	101 kPa	Test Voltage	AC120 V,60 Hz

#### RESULTS

Please refer to appendix C.

## 7.4. POWER SPECTRAL DENSITY

### LIMITS

CFR 47 FCC Part15 (15.247) Subpart C			
Section	Test Item	Limit	Frequency Range (MHz)
CFR 47 FCC §15.247 (e)	Power Spectral Density	8 dBm/3 kHz	2400-2483.5

### TEST PROCEDURE

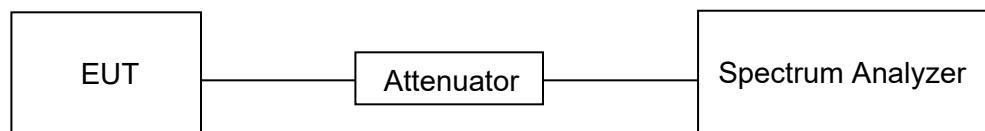
Connect the EUT to the spectrum analyser and use the following settings:

Center Frequency	The center frequency of the channel under test
Detector	RMS
RBW	$3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$
VBW	$\geq 3 \times \text{RBW}$
Span	1.5 x DTS bandwidth
Trace	Max hold
Sweep time	Auto couple

Allow trace to fully stabilize and use the peak marker function to determine the maximum amplitude level within the RBW.

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

### TEST SETUP



### TEST ENVIRONMENT

Temperature	25.3 °C	Relative Humidity	68.1 %
Atmosphere Pressure	101 kPa	Test Voltage	AC120 V,60 Hz

### RESULTS

Please refer to appendix D.

## 7.5. CONDUCTED BANDEDGE AND SPURIOUS EMISSIONS

### LIMITS

CFR 47 FCC Part15 (15.247) Subpart C		
Section	Test Item	Limit
CFR 47 FCC §15.247 (d)	Conducted Bandedge and Spurious Emissions	at least 30 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power

### TEST PROCEDURE

Refer to ANSI C63.10-2013 clause 11.11 and 11.13.

Connect the EUT to the spectrum analyser and use the following settings for reference level measurement:

Center Frequency	The center frequency of the channel under test
Detector	Peak
RBW	100 kHz
VBW	$\geq 3 \times$ RBW
Span	1.5 x DTS bandwidth
Trace	Max hold
Sweep time	Auto couple.

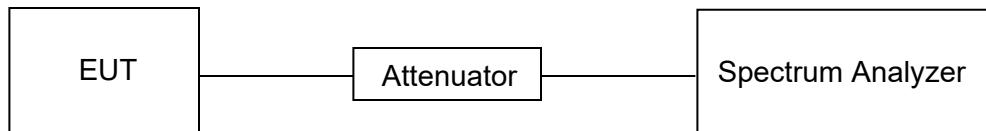
Allow trace to fully stabilize and use the peak marker function to determine the maximum PSD level.

Change the settings for emission level measurement:

Span	Set the center frequency and span to encompass frequency range to be measured
Detector	Peak
RBW	100 kHz
VBW	$\geq 3 \times$ RBW
measurement points	$\geq$ span/RBW
Trace	Max hold
Sweep time	Auto couple.

Allow trace to fully stabilize and use the peak marker function to determine the maximum PSD level. Ensure that the amplitude of all unwanted emissions outside of the authorized frequency band (excluding restricted frequency bands) is attenuated by at least the minimum requirements specified in 11.11.

### TEST SETUP



### **TEST ENVIRONMENT**

Temperature	25.3 °C	Relative Humidity	68.1 %
Atmosphere Pressure	101 kPa	Test Voltage	AC120 V,60 Hz

### **RESULTS**

Please refer to appendix E & F.

## 8. RADIATED TEST RESULTS

### LIMITS

Please refer to CFR 47 FCC §15.205 and §15.209.

Radiation Disturbance Test Limit for FCC (Class B) (9 kHz ~ 1 GHz)

Emissions radiated outside of the specified frequency bands above 30 MHz			
Frequency Range (MHz)	Field Strength Limit (uV/m) at 3 m	Field Strength Limit (dBuV/m) at 3 m	
		Quasi-Peak	
30 - 88	100	40	
88 - 216	150	43.5	
216 - 960	200	46	
Above 960	500	54	
Above 1000	500	Peak	Average
		74	54

FCC Emissions radiated outside of the specified frequency bands below 30 MHz			
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	

FCC Restricted bands of operation refer to FCC §15.205 (a):

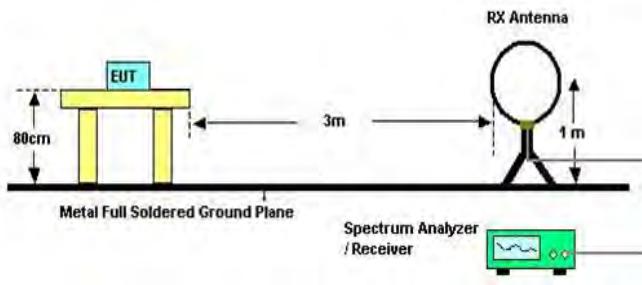
MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	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	2690-2900	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	( <sup>2</sup> )
13.36-13.41			

Note: <sup>1</sup>Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

<sup>2</sup>Above 38.6c

## TEST SETUP AND PROCEDURE

Below 30 MHz

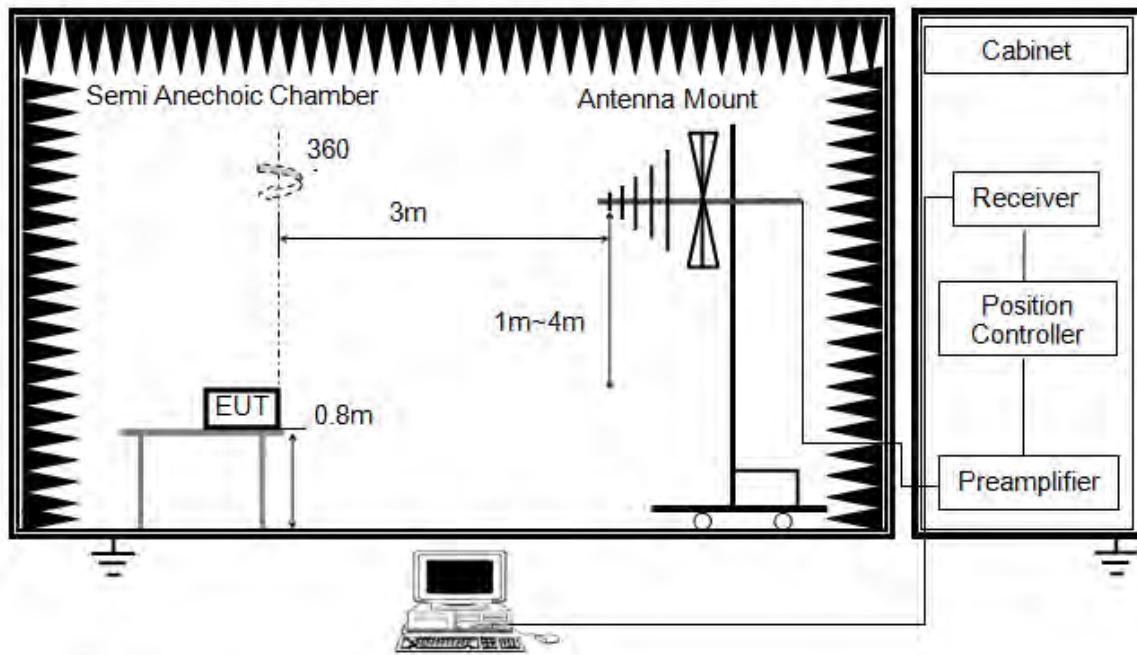


The setting of the spectrum analyser

RBW	200 Hz (From 9 kHz to 0.15 MHz) / 9 kHz (From 0.15 MHz to 30 MHz)
VBW	200 Hz (From 9 kHz to 0.15 MHz) / 9 kHz (From 0.15 MHz to 30 MHz)
Sweep	Auto
Trace	Max hold

1. The testing follows the guidelines in ANSI C63.10-2013 clause 6.4.
2. The EUT was arranged to its worst case and then 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. Both Horizontal, Face-on and Face-off polarizations of the antenna are set to make the measurement.
3. The EUT was placed on a turntable with 80 cm above ground.
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a 1 m height antenna tower.
5. The radiated emission limits are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.
6. For measurement below 1 GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak and average detector mode re-measured. 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 and average detector and reported.
7. Although these tests were performed other than open field site, adequate comparison measurements were confirmed against 30 m open field site. Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field site based on KDB 414788.
8. The limits in CFR 47, Part 15, Subpart C, paragraph 15.209 (a), are identical to those in RSS-GEN Section 8.9, Table 6, since the measurements are performed in terms of magnetic field strength and converted to electric field strength levels (as reported in the table) using the free space impedance of  $377 \Omega$ . For example, the measurement frequency  $X$  kHz resulted in a level of  $Y$  dB $V/m$ , which is equivalent to  $Y - 51.5 = Z$  dB $uA/m$ , which has the same margin,  $W$  dB, to the corresponding RSS-GEN Table 6 limit as it has to be 15.209(a) limit

Below 1 GHz and above 30 MHz

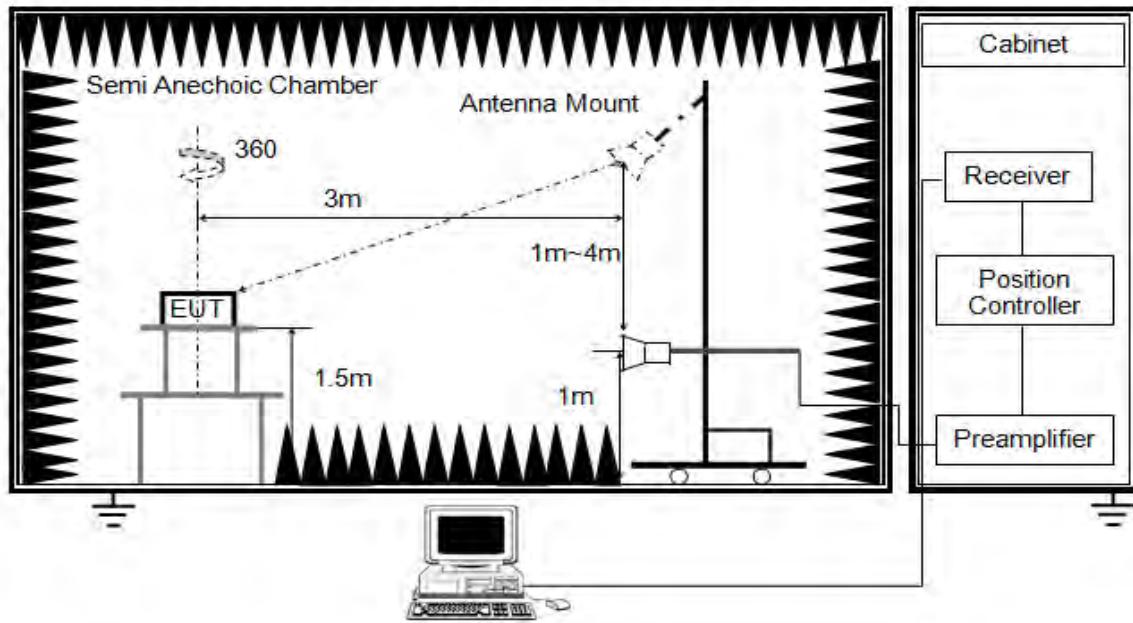


The setting of the spectrum analyser

RBW	120 kHz
VBW	300 kHz
Sweep	Auto
Detector	Peak/QP
Trace	Max hold

1. The testing follows the guidelines in ANSI C63.10-2013 clause 6.5.
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. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
3. The EUT was placed on a turntable with 80 cm 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. For measurement below 1 GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured. 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.

Above 1 GHz

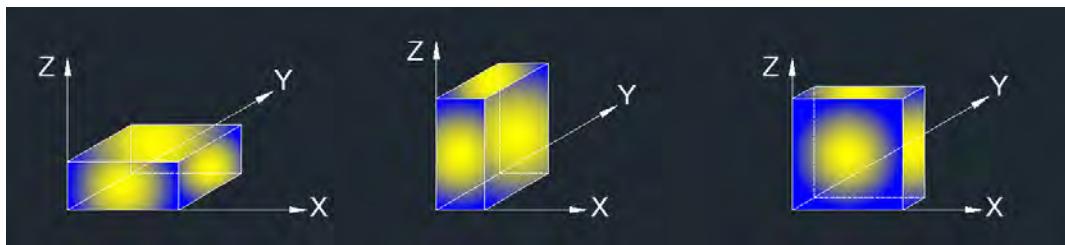


The setting of the spectrum analyser

RBW	1 MHz
VBW	PEAK: 3 MHz AVG: see note 6
Sweep	Auto
Detector	Peak
Trace	Max hold

1. The testing follows the guidelines in ANSI C63.10-2013 clause 6.6.
2. The EUT was arranged to its worst case and then tune the antenna tower (1.5 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. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
3. The EUT was placed on a turntable with 1.5 m 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. For measurement above 1 GHz, the emission measurement will be measured by the peak detector. This peak level, once corrected, must comply with the limit specified in Section 15.209.
6. For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 3 MHz for peak measurements and 1 MHz resolution bandwidth with 1/T video bandwidth with peak detector for average measurements. For the Duty Cycle please refer to clause 7.1.ON TIME AND DUTY CYCLE.

X axis, Y axis, Z axis positions:



Note 1: For all radiated test, EUT in each of three orthogonal axis emissions had been tested, but only the worst case (X axis) data recorded in the report.

Note 2: The EUT was fully exercised with external accessories during the test. In the case of multiple accessory external ports, an external accessory shall be connected to one of each type of port.

#### TEST ENVIRONMENT

Temperature	27.1 °C	Relative Humidity	53 %
Atmosphere Pressure	101 kPa	Test Voltage	AC120 V,60 Hz

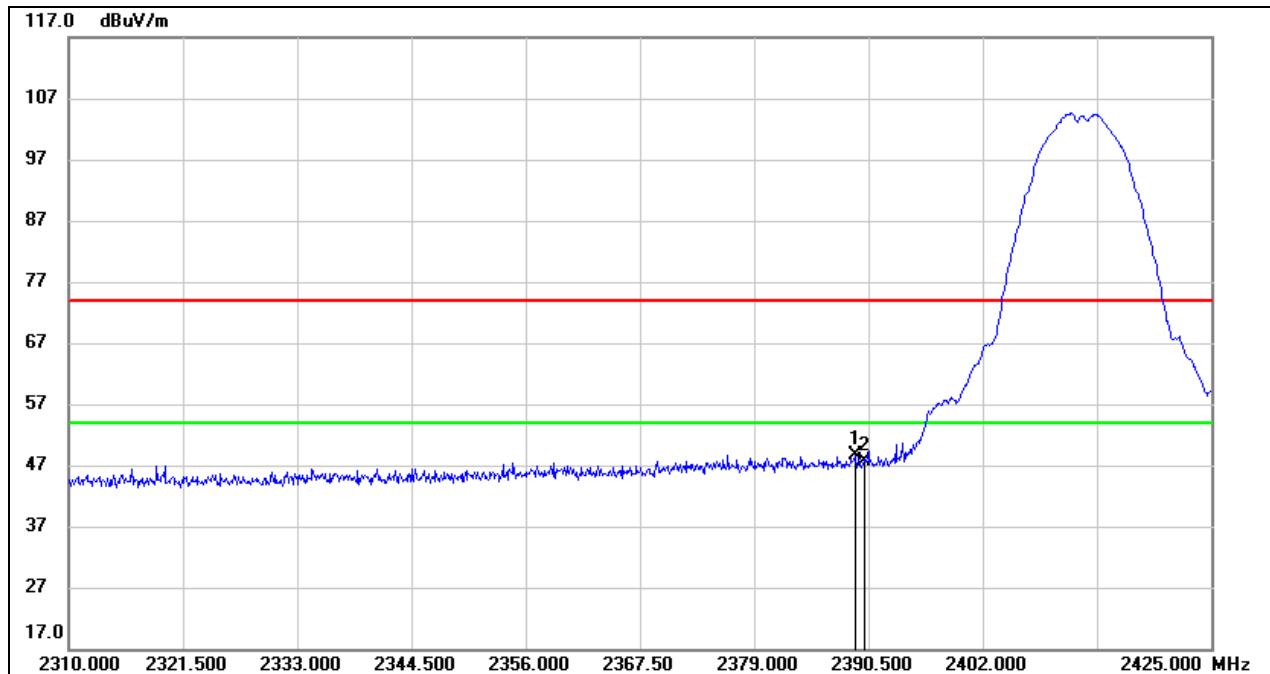
#### RESULTS

## 8.1. RESTRICTED BANDEDGE

### 8.1.1. 802.11b MODE

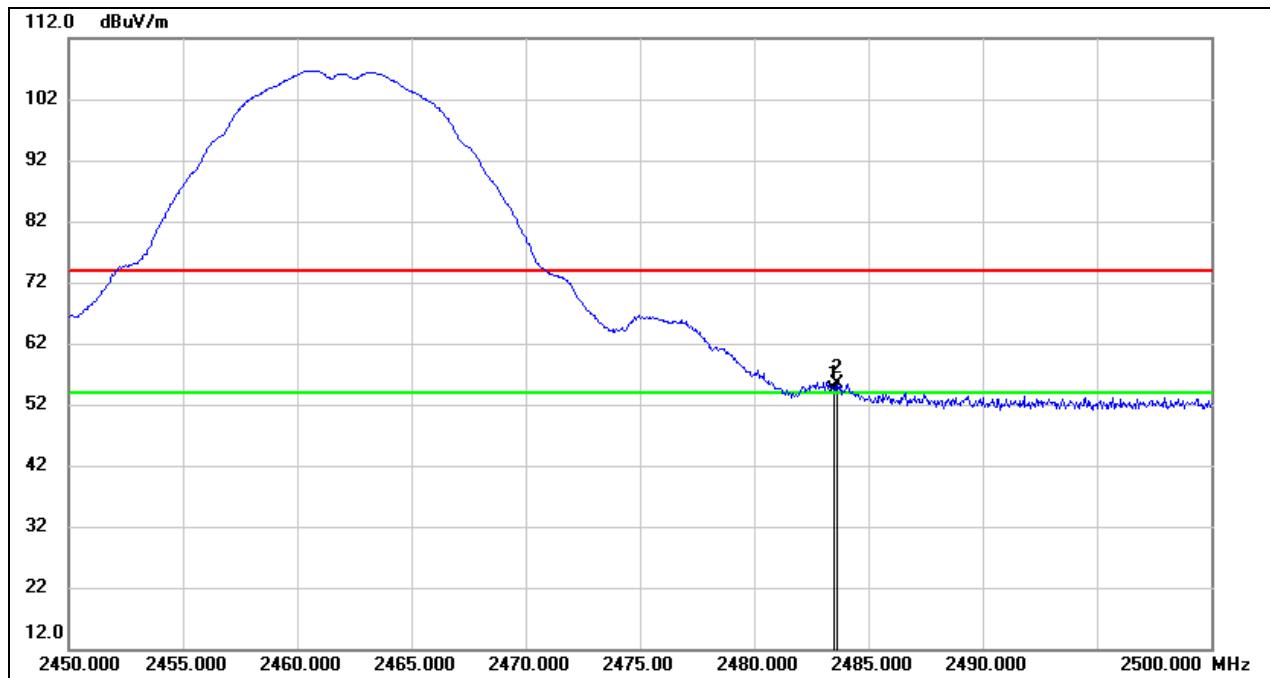
#### RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)

##### PEAK



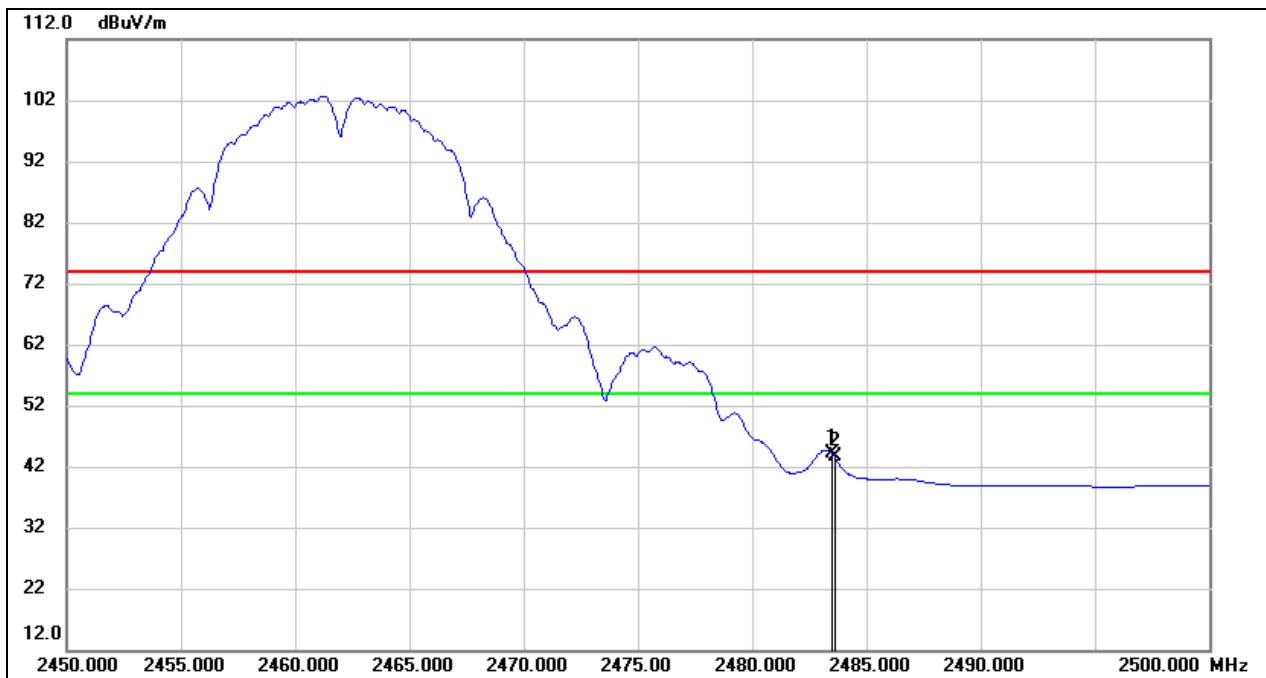
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2389.120	36.71	11.95	48.66	74.00	-25.34	peak
2	2390.000	35.57	11.96	47.53	74.00	-26.47	peak

Note: 1. Measurement = Reading Level + Correct Factor.  
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.  
3. Peak: Peak detector.  
4. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)PEAK

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	42.03	12.38	54.41	74.00	-19.59	peak
2	2483.600	43.09	12.38	55.47	74.00	-18.53	peak

Note: 1. Measurement = Reading Level + Correct Factor.  
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.  
3. Peak: Peak detector.  
4. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

AVG

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	31.72	12.38	44.10	54.00	-9.90	AVG
2	2483.600	31.21	12.38	43.59	54.00	-10.41	AVG

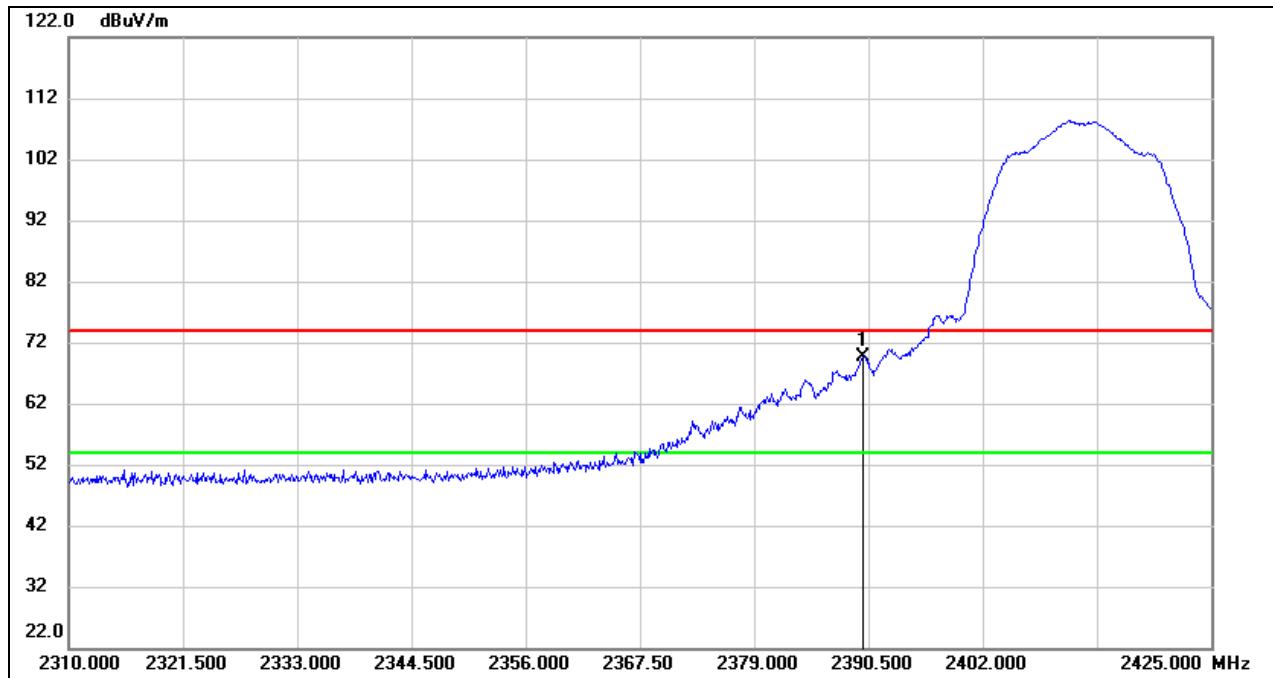
Note: 1. Measurement = Reading Level + Correct Factor.  
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.  
3. AVG: VBW=1/Ton, where: Ton is the transmitting duration.  
4. For the transmitting duration, please refer to clause 7.1.  
5. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

Note: Both horizontal and vertical had been tested, only the worst data was recorded in the report.

### 8.1.2. 802.11g MODE

#### RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)

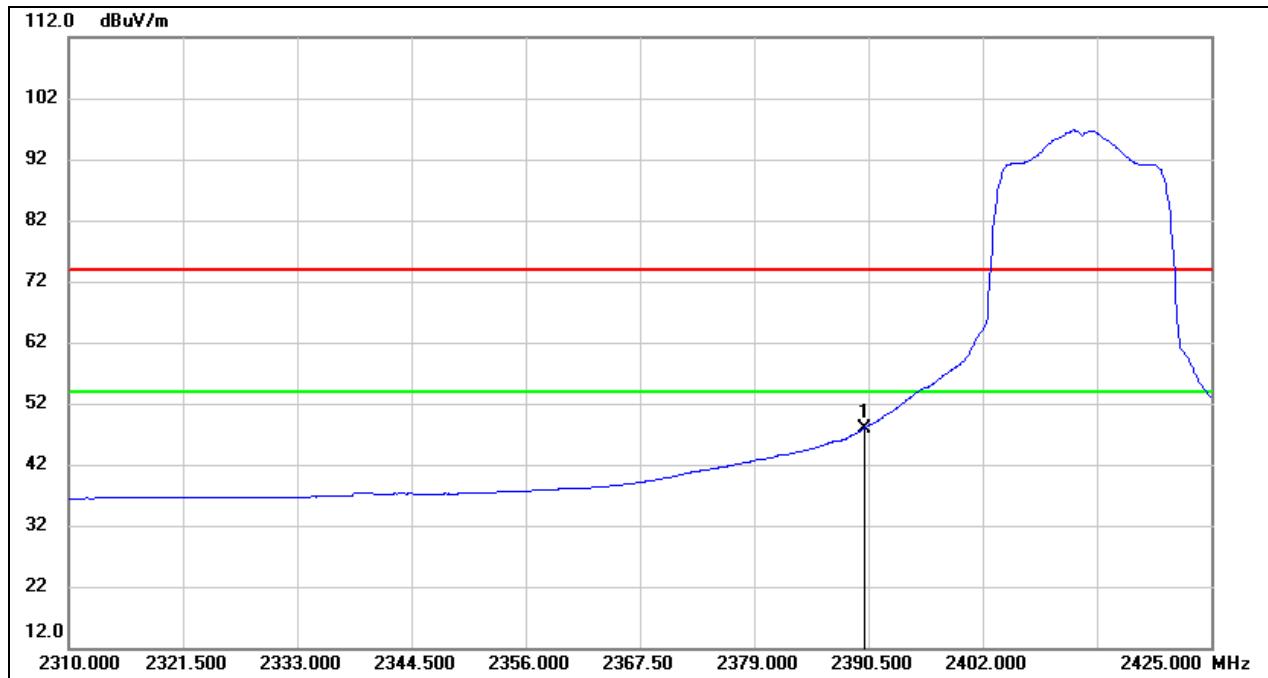
##### PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2390.000	57.59	11.96	69.55	74.00	-4.45	peak

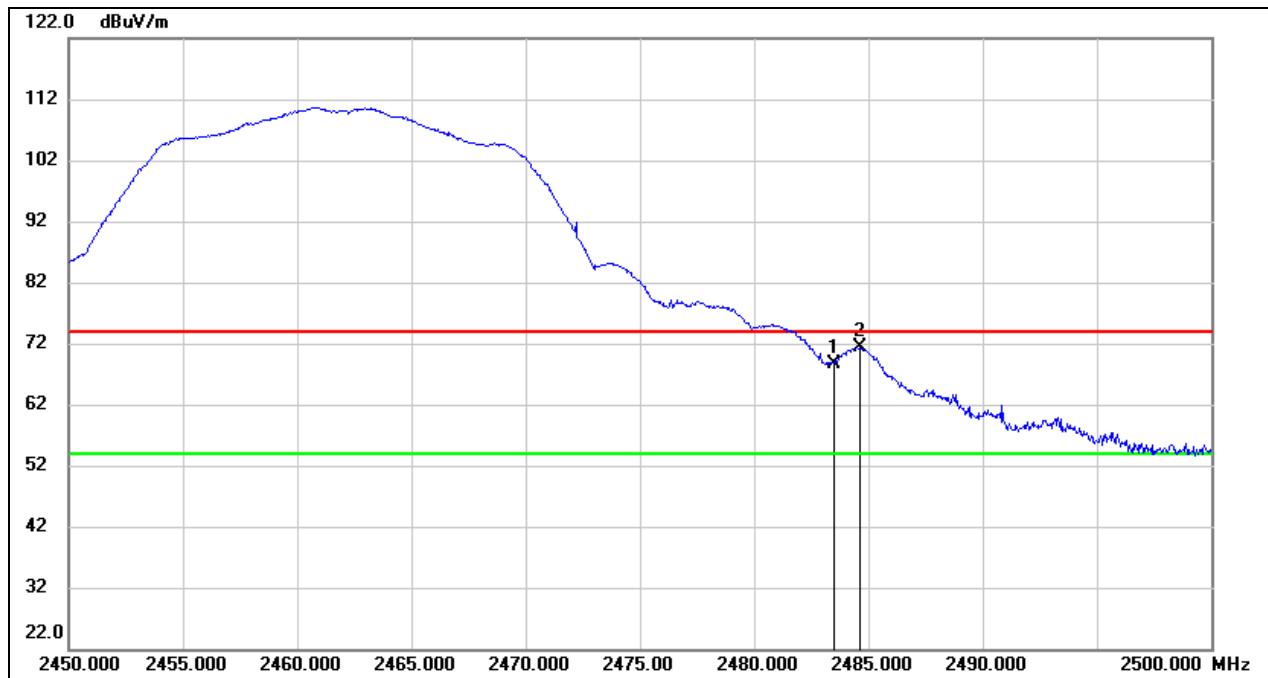
Note:

1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

AVG

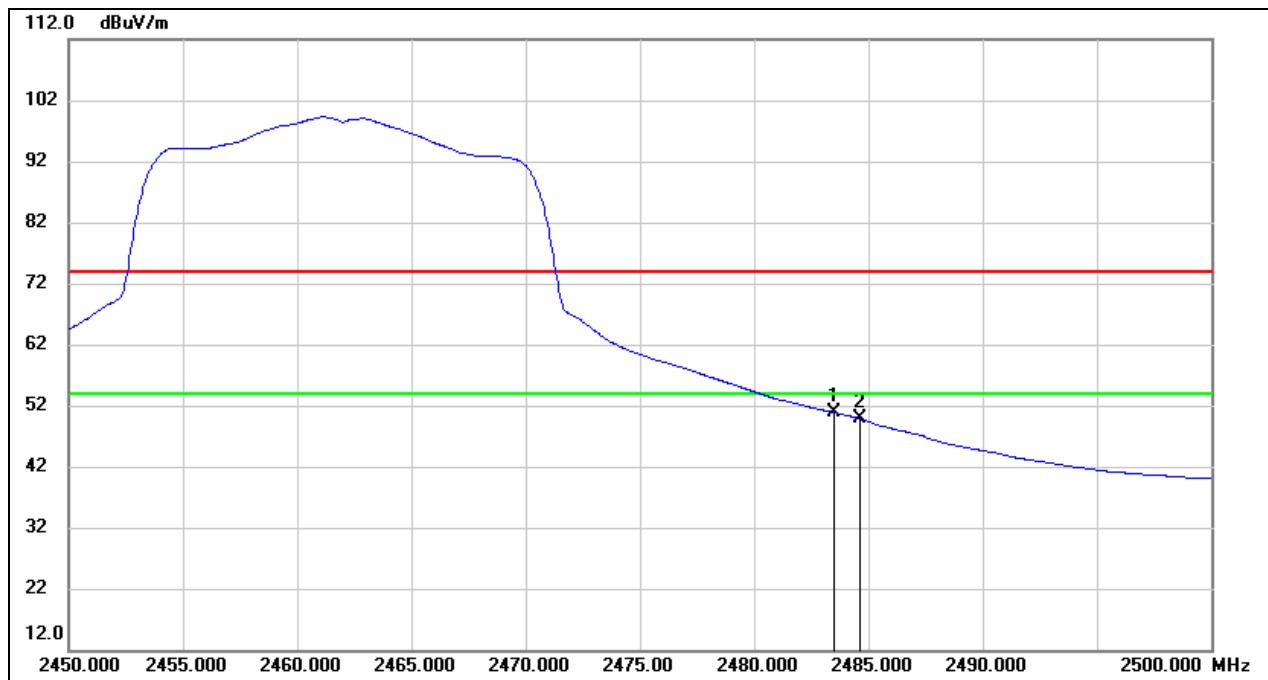
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2390.000	35.93	11.96	47.89	54.00	-6.11	AVG

Note: 1. Measurement = Reading Level + Correct Factor.  
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.  
3. AVG:  $VBW=1/Ton$ , where: Ton is the transmitting duration.  
4. For the transmitting duration, please refer to clause 7.1.  
5. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)PEAK

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	56.14	12.38	68.52	74.00	-5.48	peak
2	2484.650	59.08	12.38	71.46	74.00	-2.54	peak

Note: 1. Measurement = Reading Level + Correct Factor.  
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.  
3. Peak: Peak detector.  
4. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

AVG

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	38.47	12.38	50.85	54.00	-3.15	AVG
2	2484.650	37.39	12.38	49.77	54.00	-4.23	AVG

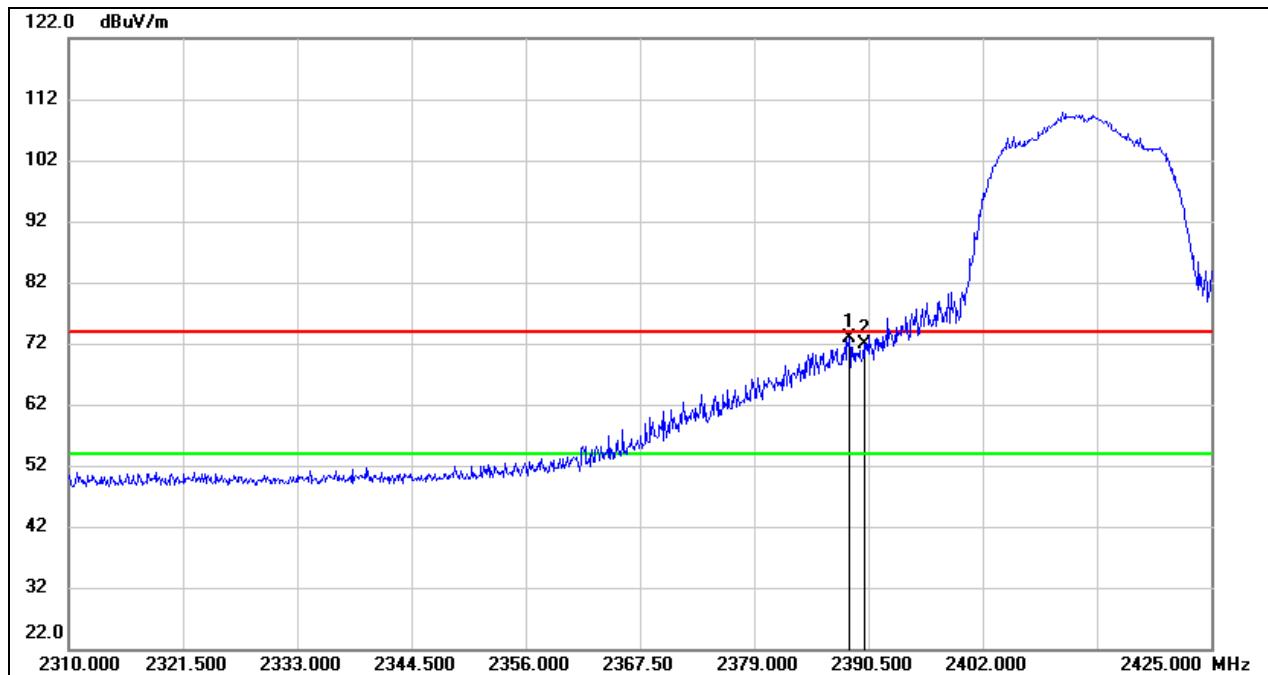
Note: 1. Measurement = Reading Level + Correct Factor.  
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.  
3. AVG: VBW=1/Ton, where: Ton is the transmitting duration.  
4. For the transmitting duration, please refer to clause 7.1.  
5. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

Note: Both horizontal and vertical had been tested, only the worst data was recorded in the report.

### 8.1.3. 802.11n HT20 MODE

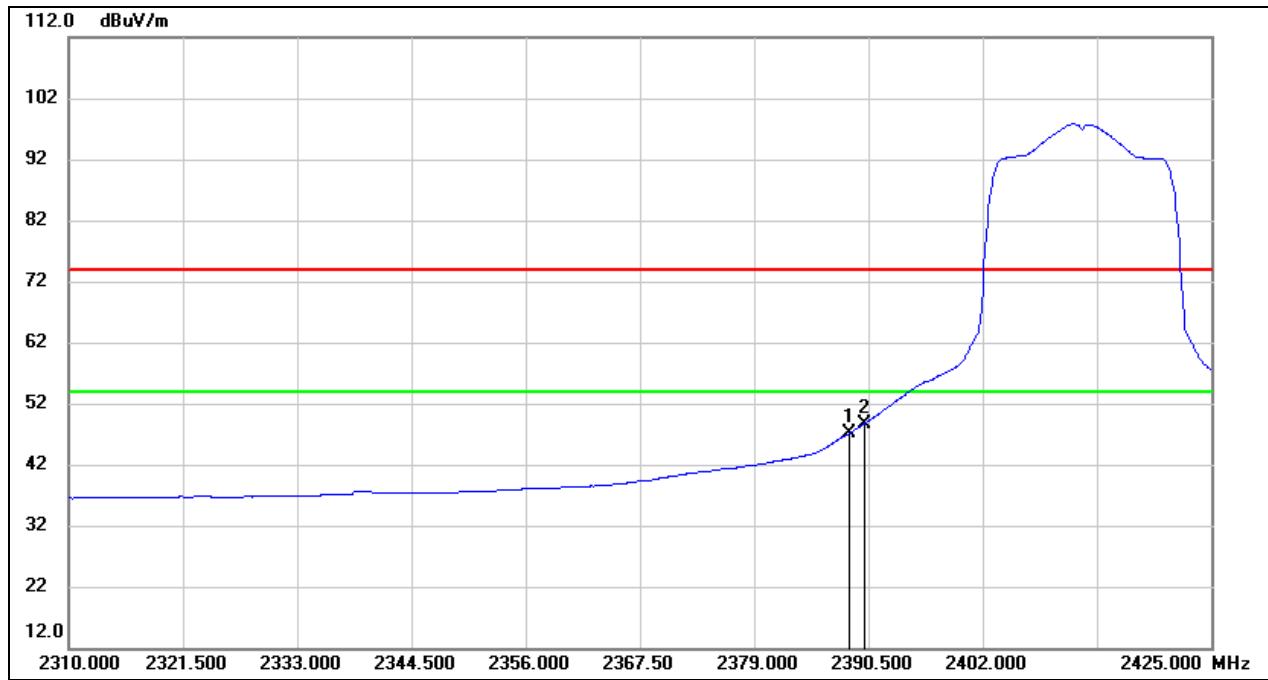
#### RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)

##### PEAK



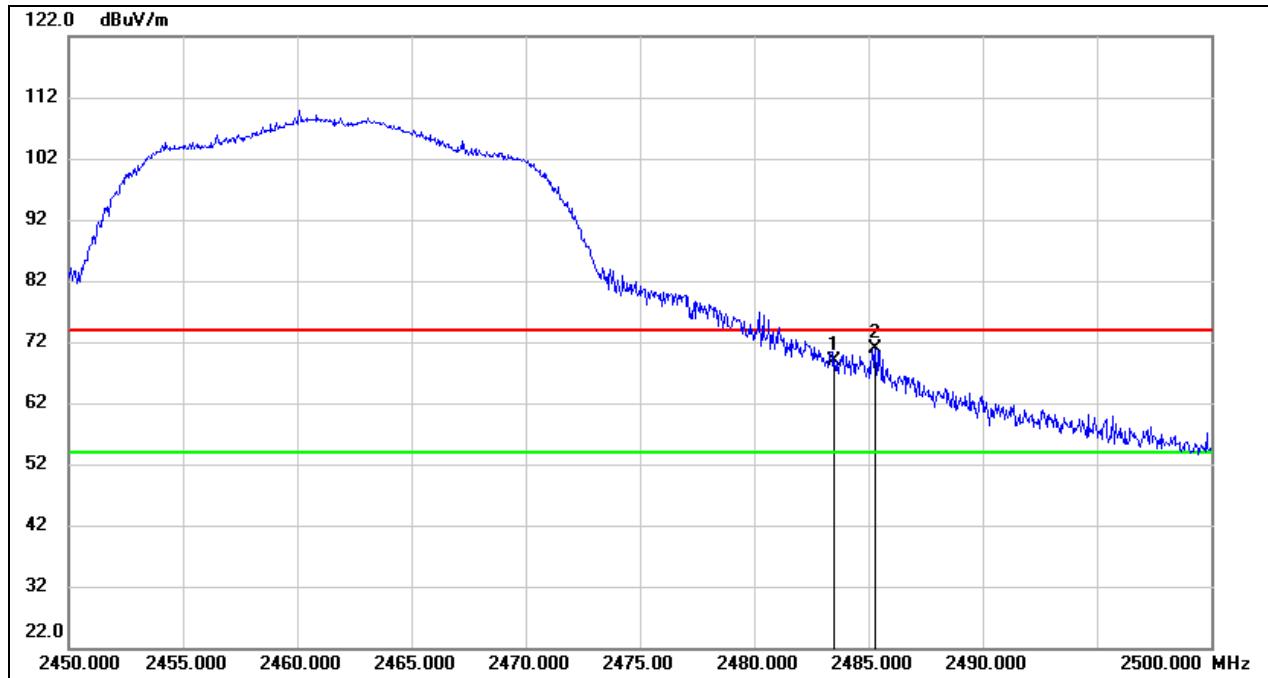
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2388.545	60.85	11.95	72.80	74.00	-1.20	peak
2	2390.000	59.84	11.96	71.80	74.00	-2.20	peak

Note: 1. Measurement = Reading Level + Correct Factor.  
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.  
3. Peak: Peak detector.  
4. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

AVG

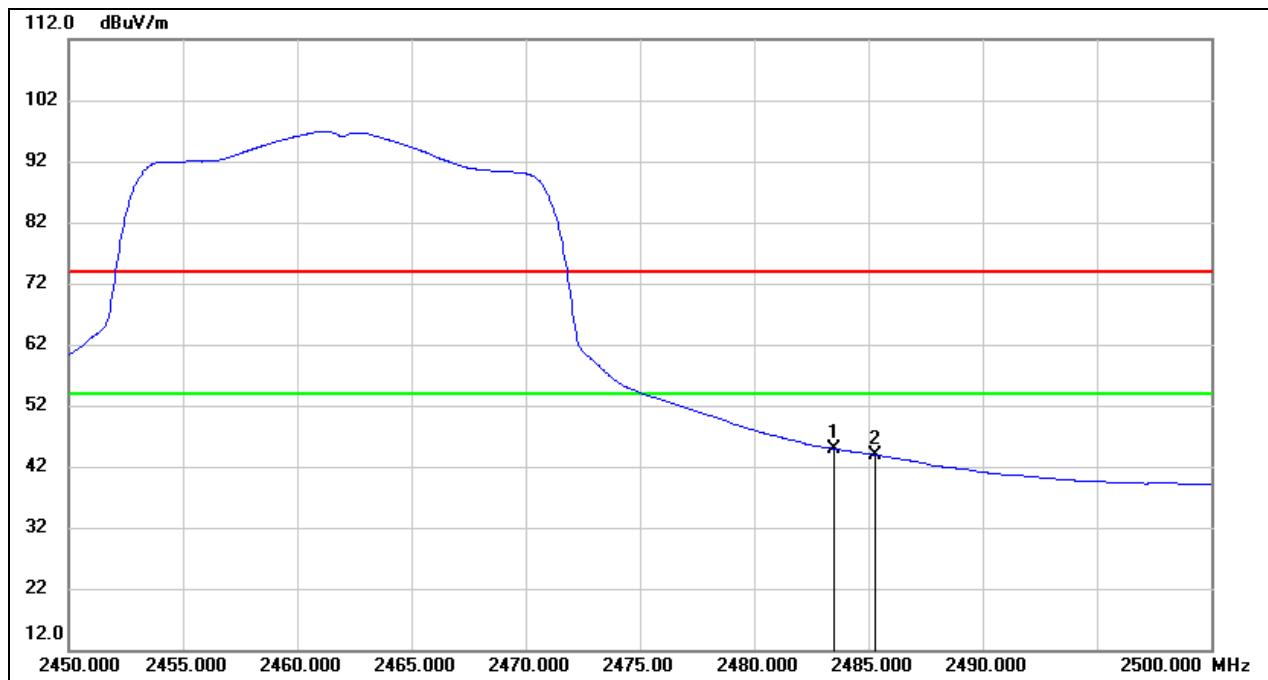
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2388.545	35.17	11.95	47.12	54.00	-6.88	AVG
2	2390.000	36.71	11.96	48.67	54.00	-5.33	AVG

Note: 1. Measurement = Reading Level + Correct Factor.  
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.  
3. AVG: VBW=1/Ton, where: Ton is the transmitting duration.  
4. For the transmitting duration, please refer to clause 7.1.  
5. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

**RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)****PEAK**

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	56.47	12.38	68.85	74.00	-5.15	peak
2	2485.300	58.43	12.38	70.81	74.00	-3.19	peak

Note: 1. Measurement = Reading Level + Correct Factor.  
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.  
3. Peak: Peak detector.  
4. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

AVG

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	32.57	12.38	44.95	54.00	-9.05	AVG
2	2485.300	31.50	12.38	43.88	54.00	-10.12	AVG

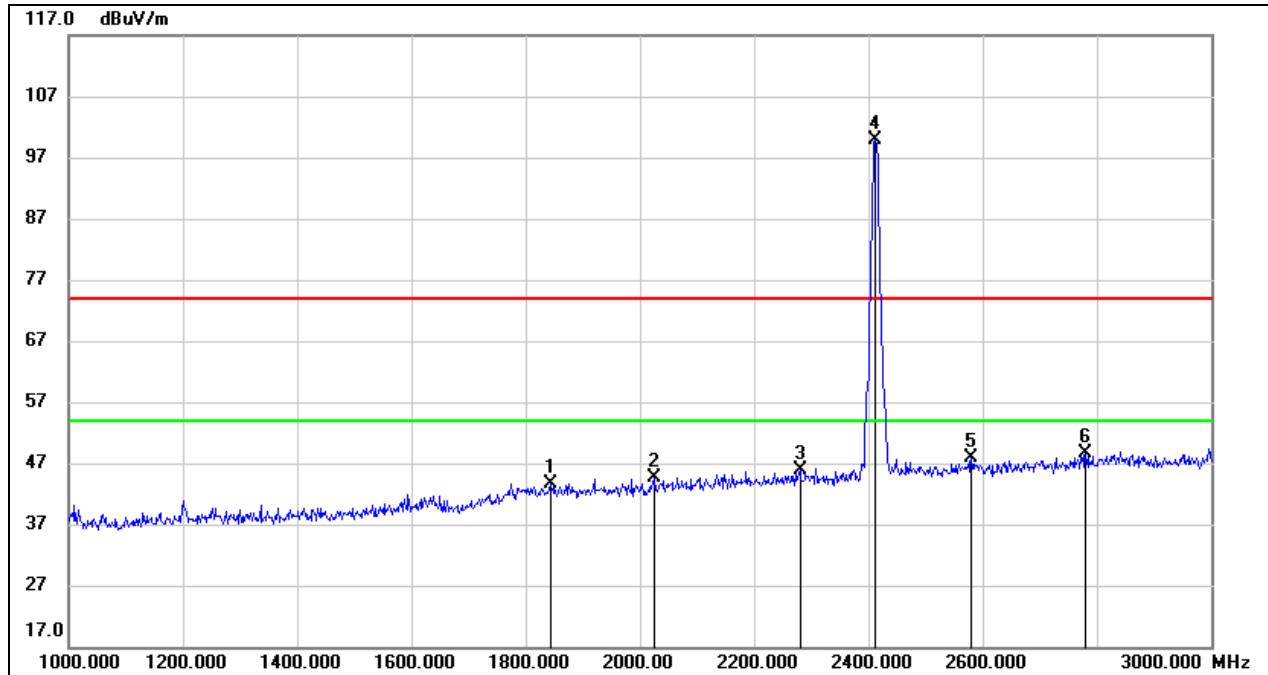
Note: 1. Measurement = Reading Level + Correct Factor.  
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.  
3. AVG: VBW=1/Ton, where: Ton is the transmitting duration.  
4. For the transmitting duration, please refer to clause 7.1.  
5. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

Note: Both horizontal and vertical had been tested, only the worst data was recorded in the report.

## 8.2. SPURIOUS EMISSIONS (1 GHz ~ 3 GHz)

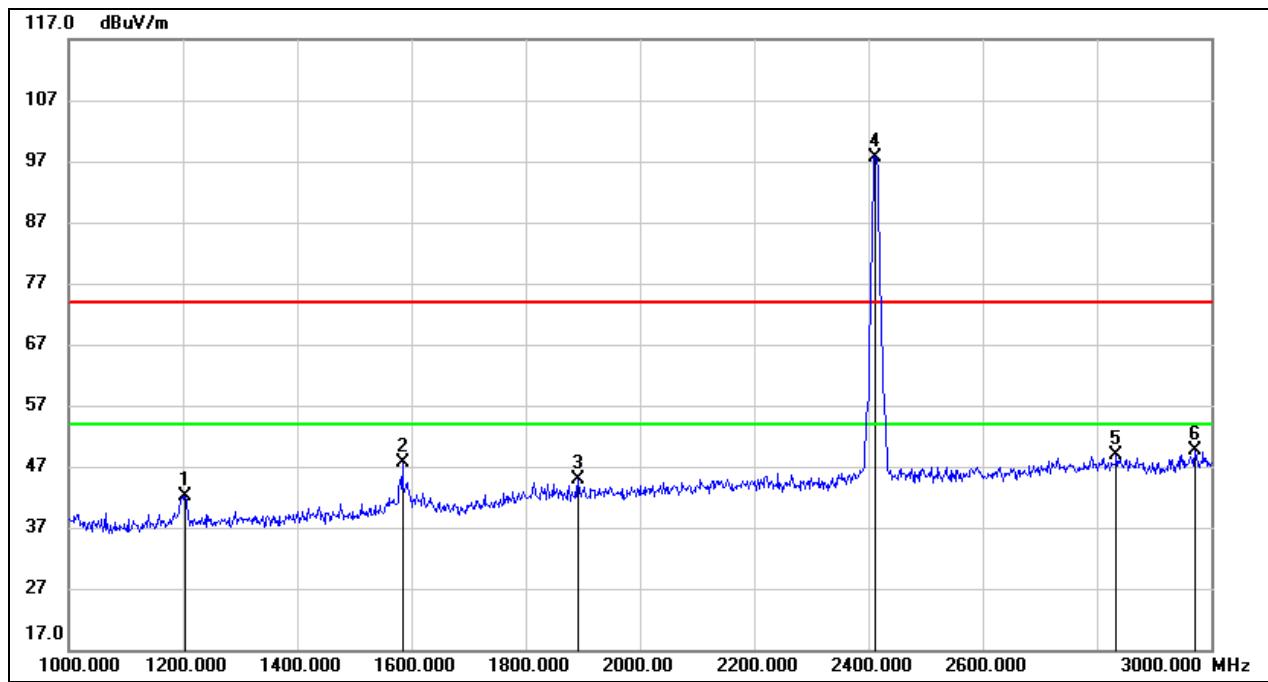
### 8.2.1. 802.11g MODE

#### HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1844.000	33.76	9.87	43.63	74.00	-30.37	peak
2	2026.000	34.09	10.46	44.55	74.00	-29.45	peak
3	2280.000	34.52	11.32	45.84	74.00	-28.16	peak
4	2412.000	87.82	12.08	99.90	/	/	fundamental
5	2580.000	35.38	12.42	47.80	74.00	-26.20	peak
6	2780.000	35.03	13.61	48.64	74.00	-25.36	peak

Note: 1. Measurement = Reading Level + Correct Factor.  
 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.  
 3. Peak: Peak detector.

HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1204.000	35.77	6.43	42.20	74.00	-31.80	peak
2	1584.000	39.70	7.81	47.51	74.00	-26.49	peak
3	1892.000	34.99	9.95	44.94	74.00	-29.06	peak
4	2412.000	85.64	12.08	97.72	/	/	fundamental
5	2834.000	35.08	13.86	48.94	74.00	-25.06	peak
6	2972.000	35.06	14.51	49.57	74.00	-24.43	peak

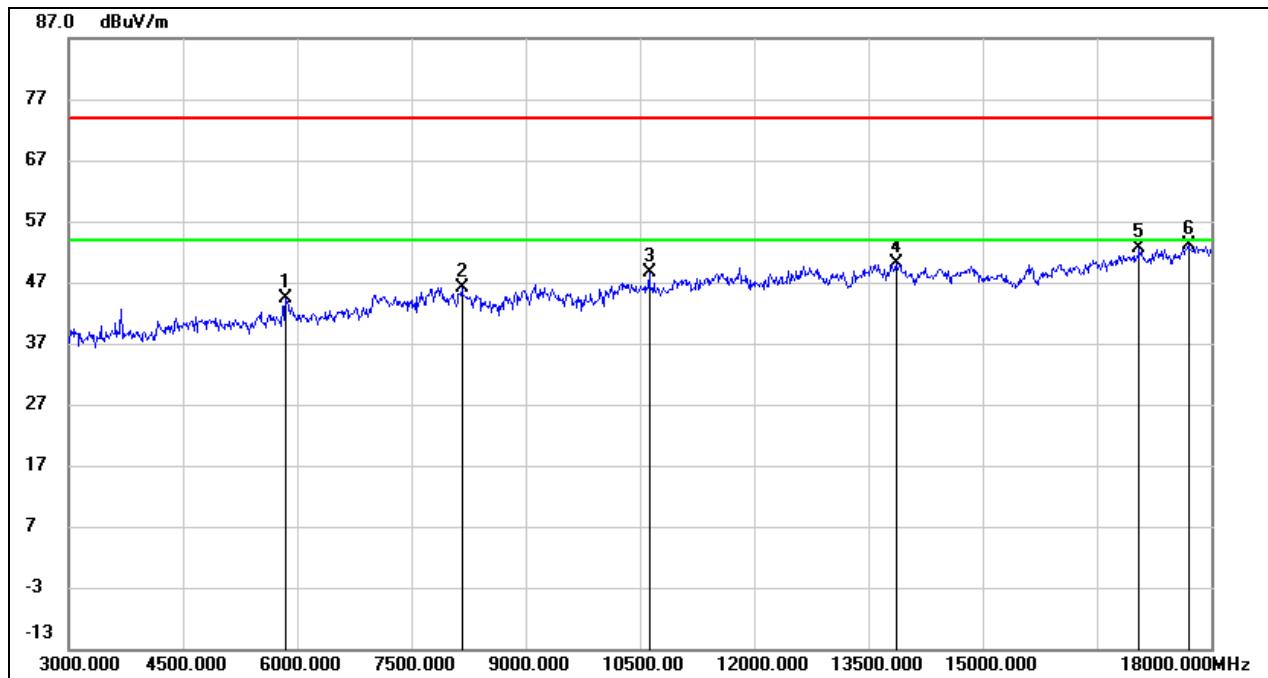
Note: 1. Measurement = Reading Level + Correct Factor.  
 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.  
 3. Peak: Peak detector.

Note: All the modes and channels had been tested, but only the worst data was recorded in the report.

### 8.3. SPURIOUS EMISSIONS (3 GHz ~ 18 GHz)

#### 8.3.1. 802.11b MODE

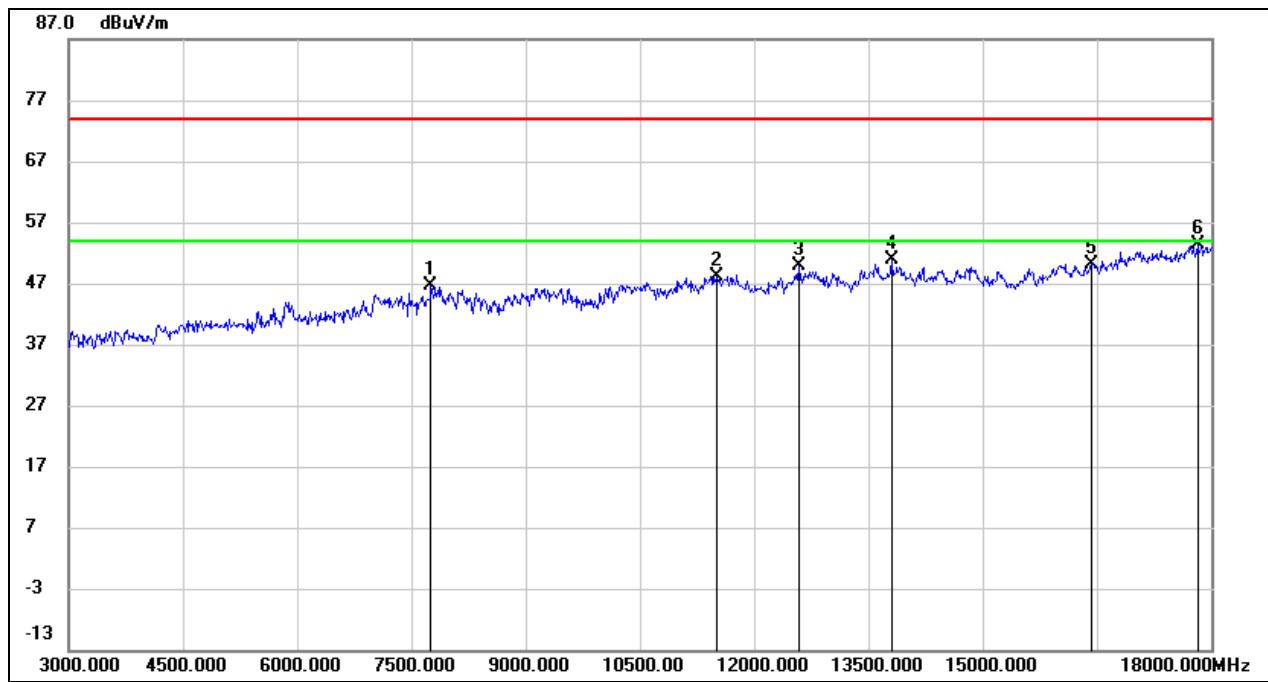
##### HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5850.000	40.38	4.02	44.40	74.00	-29.60	peak
2	8160.000	38.06	8.18	46.24	74.00	-27.76	peak
3	10620.000	36.73	11.88	48.61	74.00	-25.39	peak
4	13860.000	33.57	16.56	50.13	74.00	-23.87	peak
5	17055.000	31.99	20.53	52.52	74.00	-21.48	peak
6	17700.000	30.67	22.43	53.10	74.00	-20.90	peak

Note:

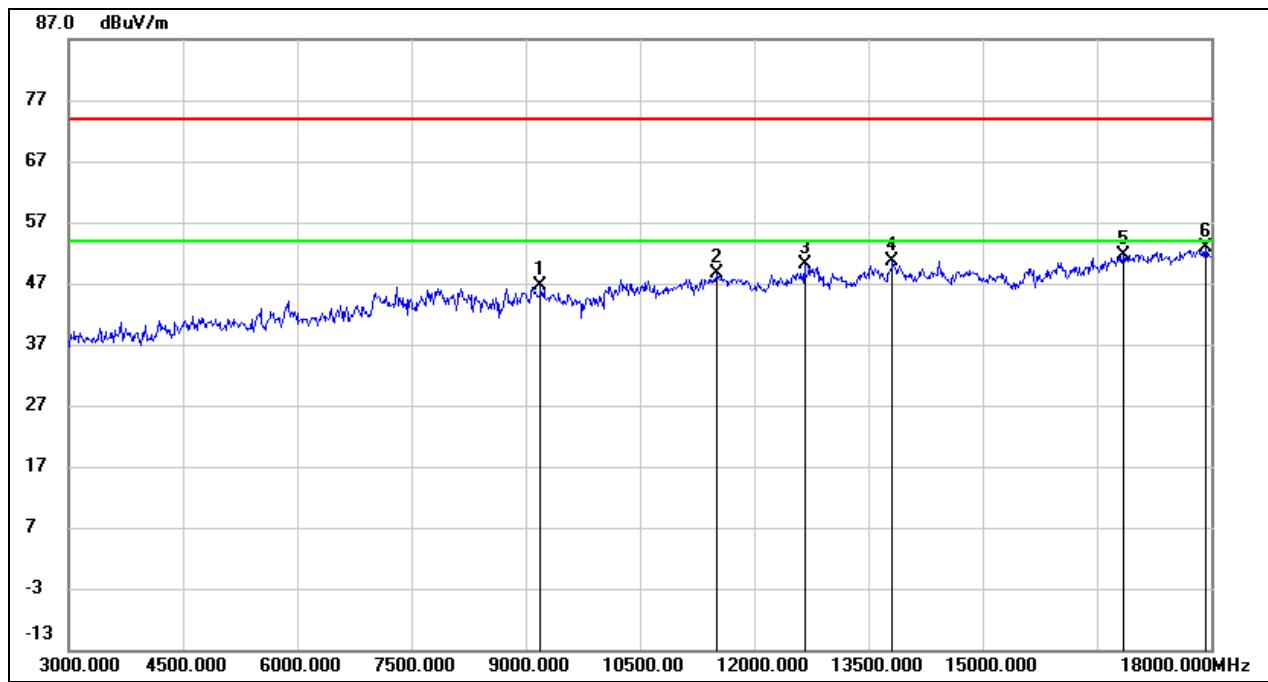
1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7755.000	39.26	7.29	46.55	74.00	-27.45	peak
2	11505.000	34.77	13.42	48.19	74.00	-25.81	peak
3	12585.000	35.75	14.08	49.83	74.00	-24.17	peak
4	13800.000	33.86	17.10	50.96	74.00	-23.04	peak
5	16425.000	31.23	18.88	50.11	74.00	-23.89	peak
6	17820.000	30.04	23.30	53.34	74.00	-20.66	peak

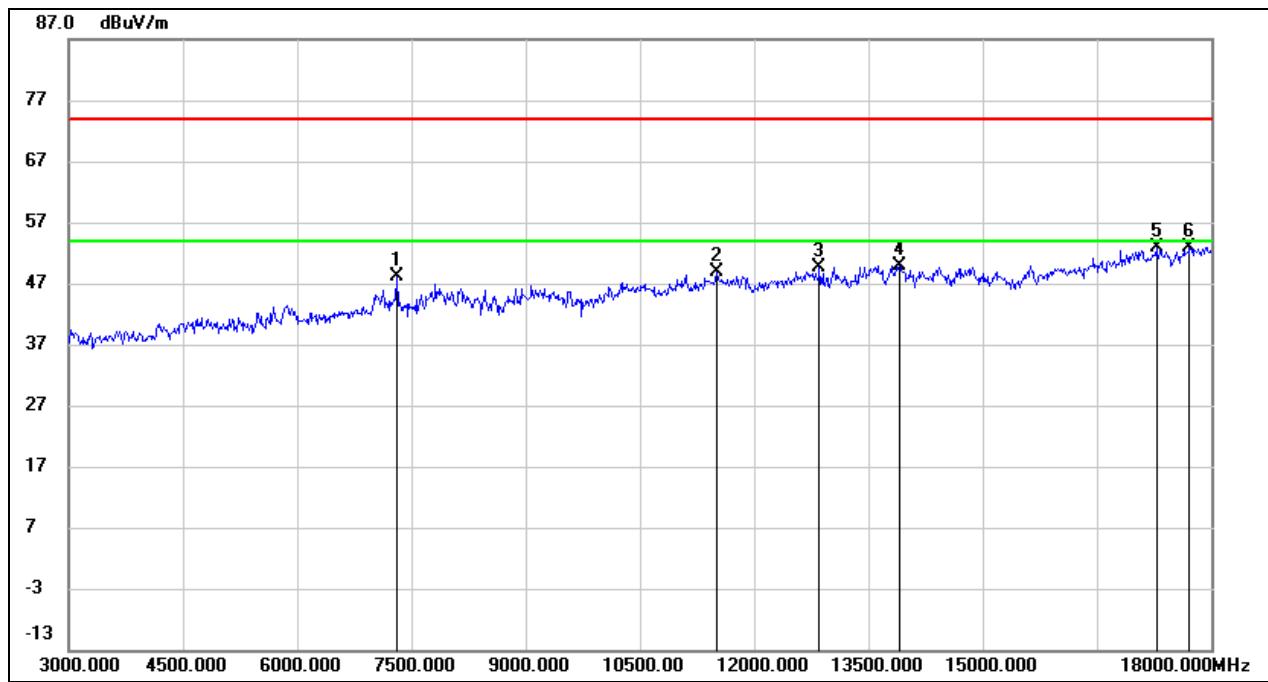
Note:

1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)

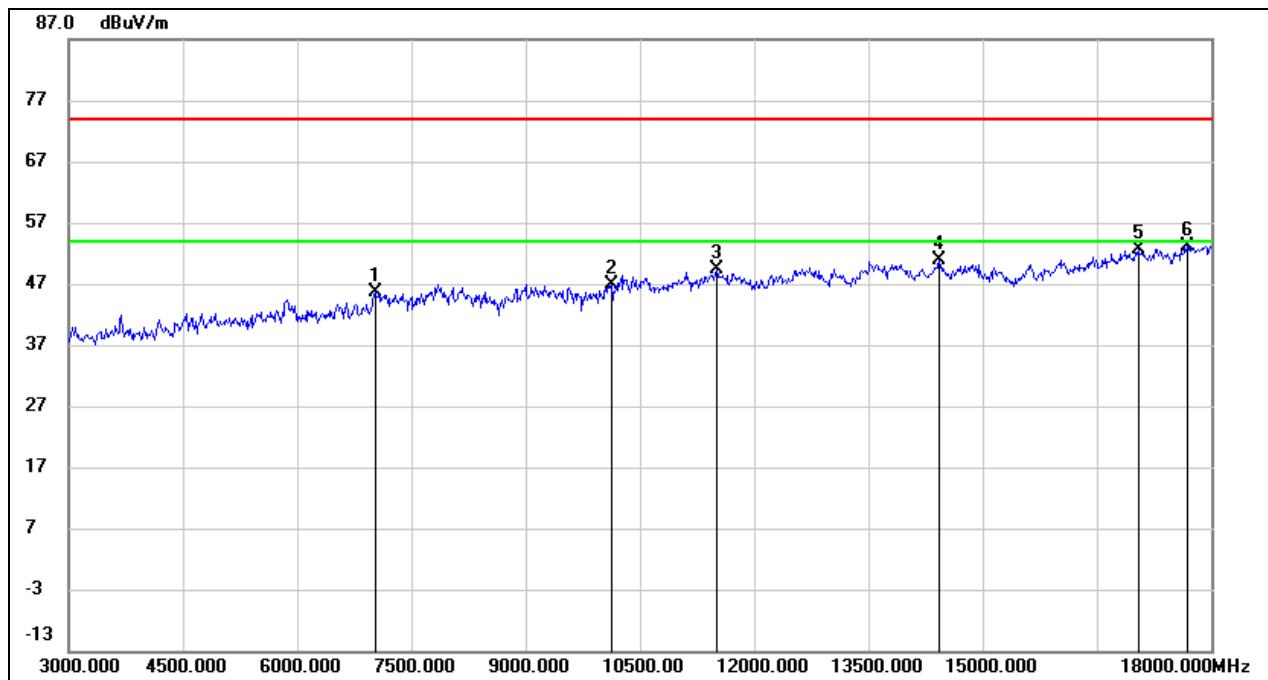
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	9195.000	37.85	8.70	46.55	74.00	-27.45	peak
2	11505.000	35.15	13.42	48.57	74.00	-25.43	peak
3	12660.000	35.85	14.18	50.03	74.00	-23.97	peak
4	13815.000	33.74	16.97	50.71	74.00	-23.29	peak
5	16845.000	31.75	19.96	51.71	74.00	-22.29	peak
6	17925.000	29.46	23.37	52.83	74.00	-21.17	peak

Note: 1. Peak Result = Reading Level + Correct Factor.  
 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.  
 3. Peak: Peak detector.  
 4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.  
 5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, VERTICAL)

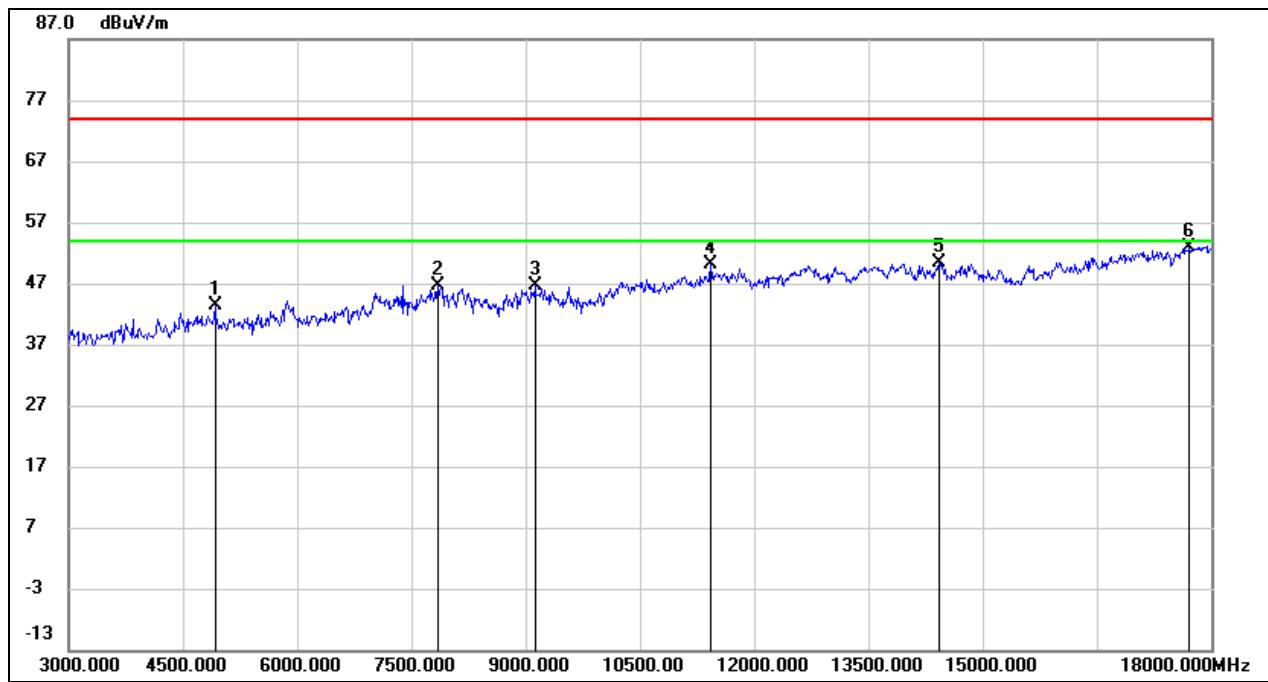
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7305.000	42.14	6.08	48.22	74.00	-25.78	peak
2	11505.000	35.57	13.42	48.99	74.00	-25.01	peak
3	12855.000	34.36	15.23	49.59	74.00	-24.41	peak
4	13905.000	33.74	16.20	49.94	74.00	-24.06	peak
5	17280.000	31.18	21.59	52.77	74.00	-21.23	peak
6	17715.000	30.42	22.56	52.98	74.00	-21.02	peak

Note: 1. Peak Result = Reading Level + Correct Factor.  
 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.  
 3. Peak: Peak detector.  
 4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.  
 5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7020.000	39.78	5.78	45.56	74.00	-28.44	peak
2	10125.000	36.34	10.47	46.81	74.00	-27.19	peak
3	11505.000	36.00	13.42	49.42	74.00	-24.58	peak
4	14430.000	34.56	16.35	50.91	74.00	-23.09	peak
5	17040.000	32.17	20.49	52.66	74.00	-21.34	peak
6	17685.000	30.84	22.33	53.17	74.00	-20.83	peak

Note: 1. Peak Result = Reading Level + Correct Factor.  
 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.  
 3. Peak: Peak detector.  
 4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.  
 5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, VERTICAL)

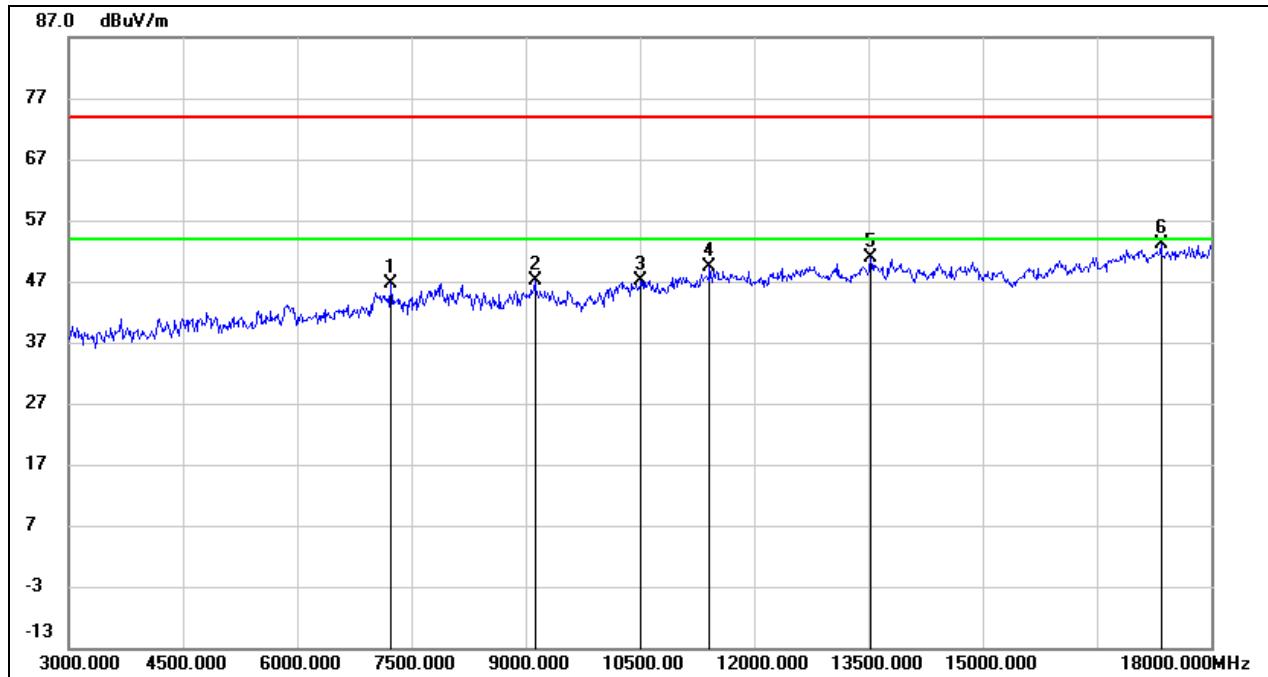
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4920.000	42.31	0.96	43.27	74.00	-30.73	peak
2	7845.000	38.97	7.62	46.59	74.00	-27.41	peak
3	9120.000	37.56	9.16	46.72	74.00	-27.28	peak
4	11430.000	37.37	12.85	50.22	74.00	-23.78	peak
5	14430.000	33.92	16.35	50.27	74.00	-23.73	peak
6	17715.000	30.43	22.56	52.99	74.00	-21.01	peak

Note:

1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

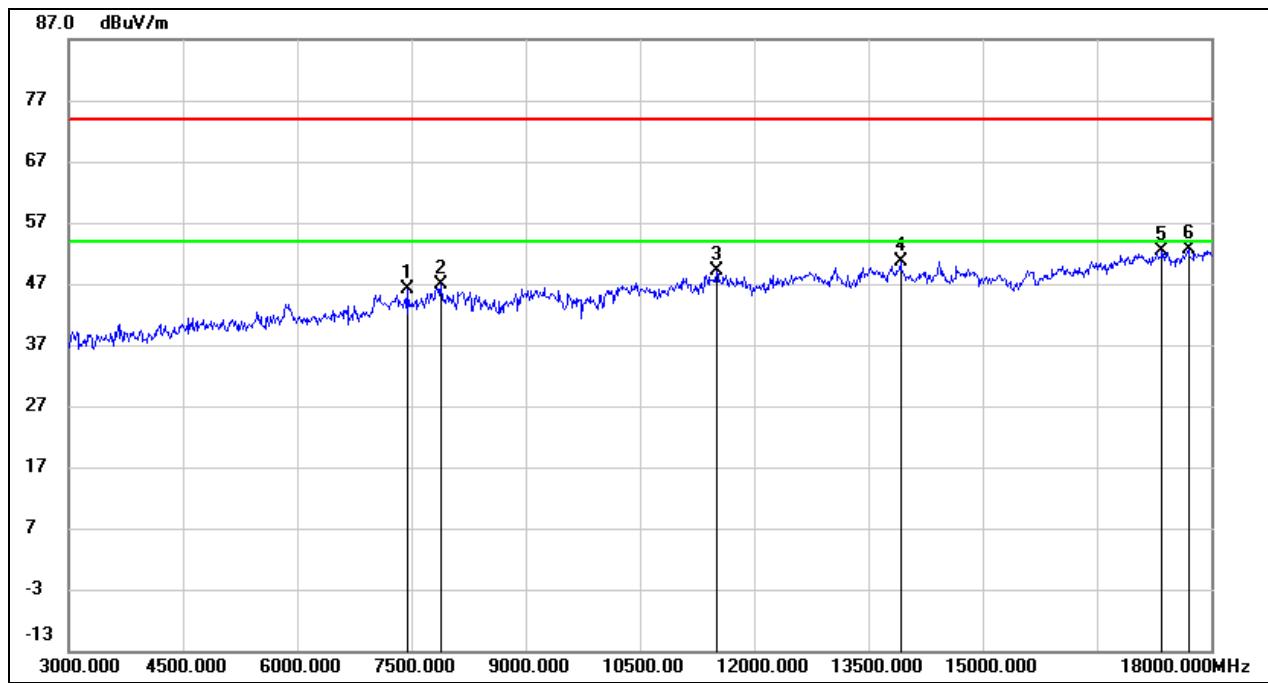
### 8.3.2. 802.11g MODE

#### HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)



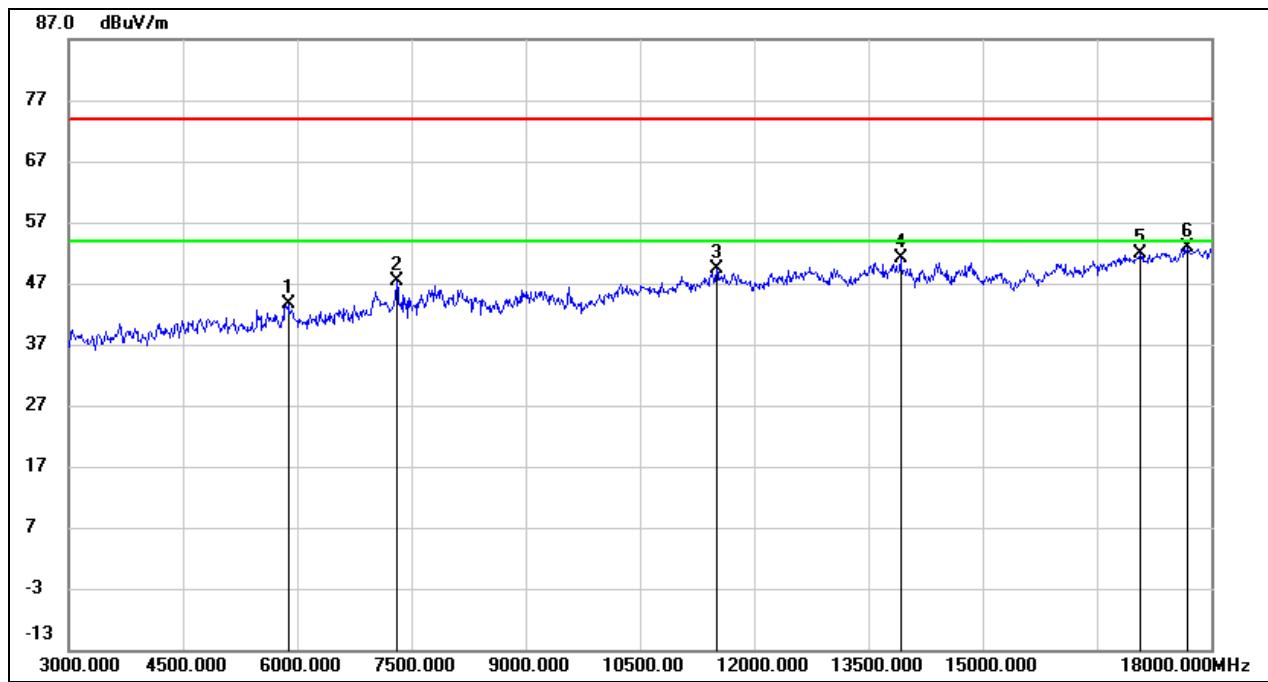
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7230.000	40.71	5.89	46.60	74.00	-27.40	peak
2	9120.000	37.87	9.16	47.03	74.00	-26.97	peak
3	10515.000	35.68	11.47	47.15	74.00	-26.85	peak
4	11415.000	36.62	12.74	49.36	74.00	-24.64	peak
5	13530.000	35.13	15.86	50.99	74.00	-23.01	peak
6	17340.000	31.62	21.61	53.23	74.00	-20.77	peak

Note: 1. Peak Result = Reading Level + Correct Factor.  
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.  
3. Peak: Peak detector.  
4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.  
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)

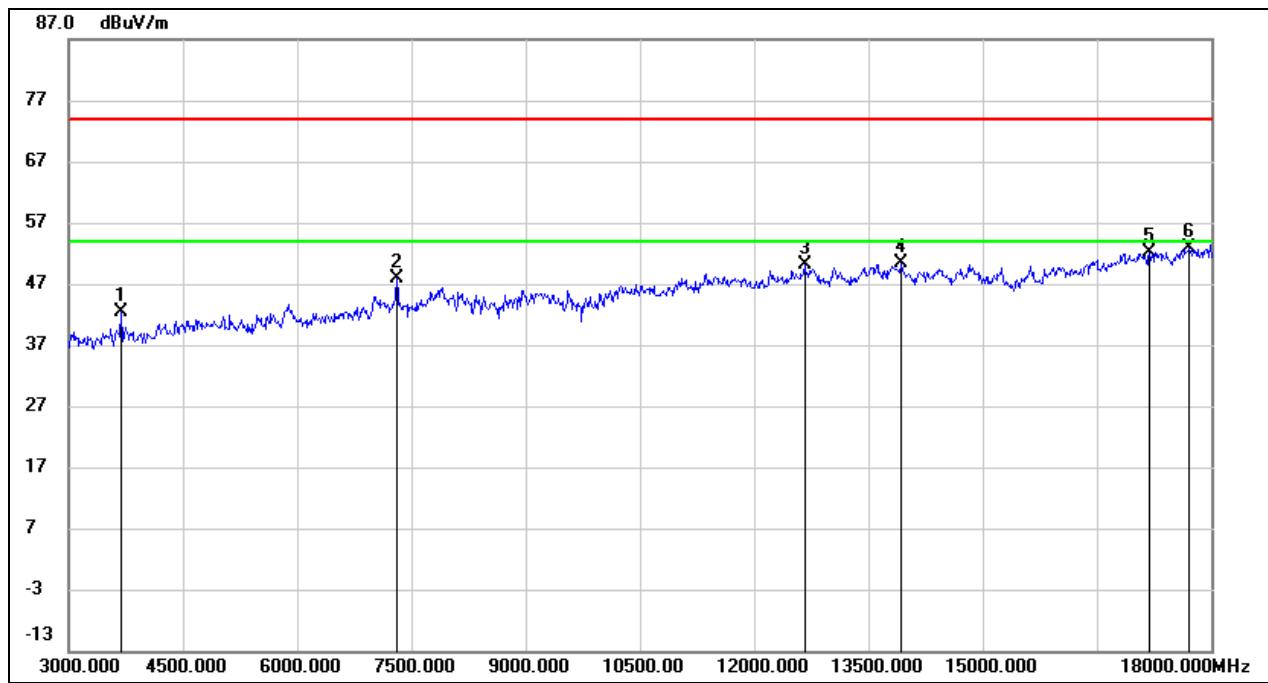
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7440.000	39.81	6.32	46.13	74.00	-27.87	peak
2	7890.000	39.47	7.30	46.77	74.00	-27.23	peak
3	11505.000	35.61	13.42	49.03	74.00	-24.97	peak
4	13920.000	34.56	16.17	50.73	74.00	-23.27	peak
5	17355.000	30.75	21.56	52.31	74.00	-21.69	peak
6	17700.000	30.13	22.43	52.56	74.00	-21.44	peak

Note: 1. Peak Result = Reading Level + Correct Factor.  
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.  
3. Peak: Peak detector.  
4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.  
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)

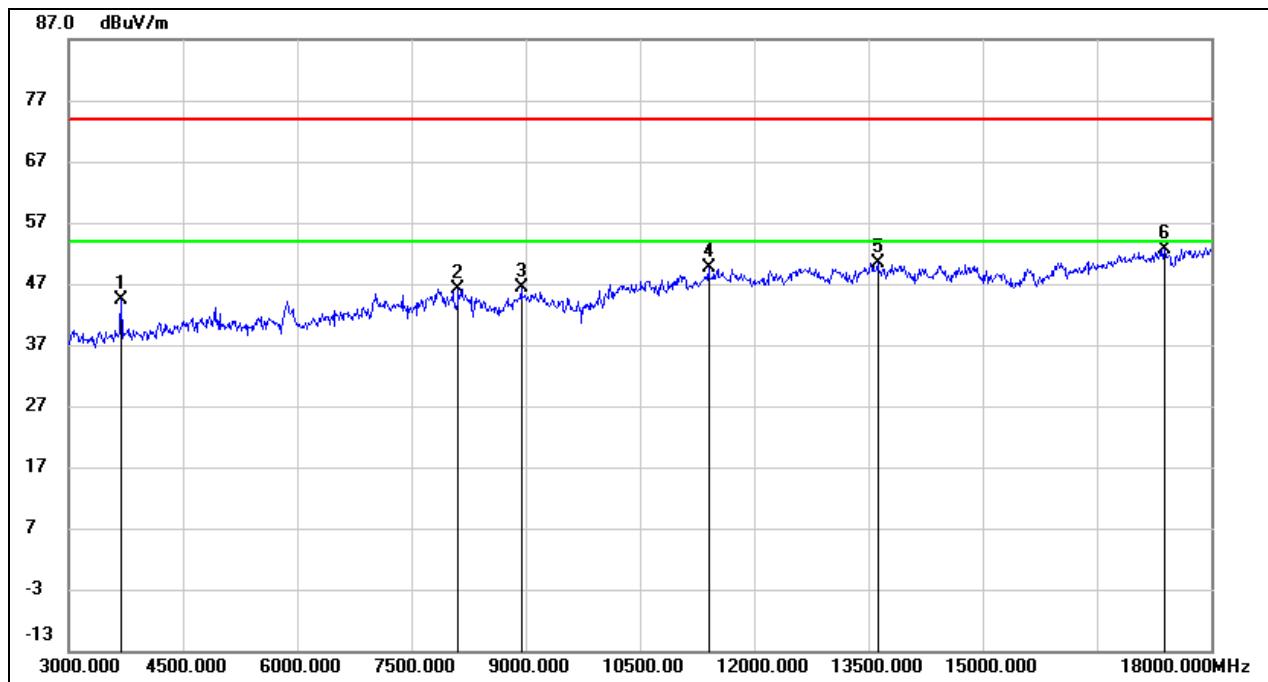
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5880.000	39.01	4.59	43.60	74.00	-30.40	peak
2	7305.000	41.29	6.08	47.37	74.00	-26.63	peak
3	11505.000	35.99	13.42	49.41	74.00	-24.59	peak
4	13920.000	35.01	16.17	51.18	74.00	-22.82	peak
5	17070.000	31.35	20.57	51.92	74.00	-22.08	peak
6	17685.000	30.57	22.33	52.90	74.00	-21.10	peak

Note: 1. Peak Result = Reading Level + Correct Factor.  
 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.  
 3. Peak: Peak detector.  
 4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.  
 5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, VERTICAL)

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	3690.000	45.26	-2.81	42.45	74.00	-31.55	peak
2	7305.000	41.72	6.08	47.80	74.00	-26.20	peak
3	12660.000	36.01	14.18	50.19	74.00	-23.81	peak
4	13935.000	34.21	16.15	50.36	74.00	-23.64	peak
5	17190.000	31.25	20.88	52.13	74.00	-21.87	peak
6	17715.000	30.38	22.56	52.94	74.00	-21.06	peak

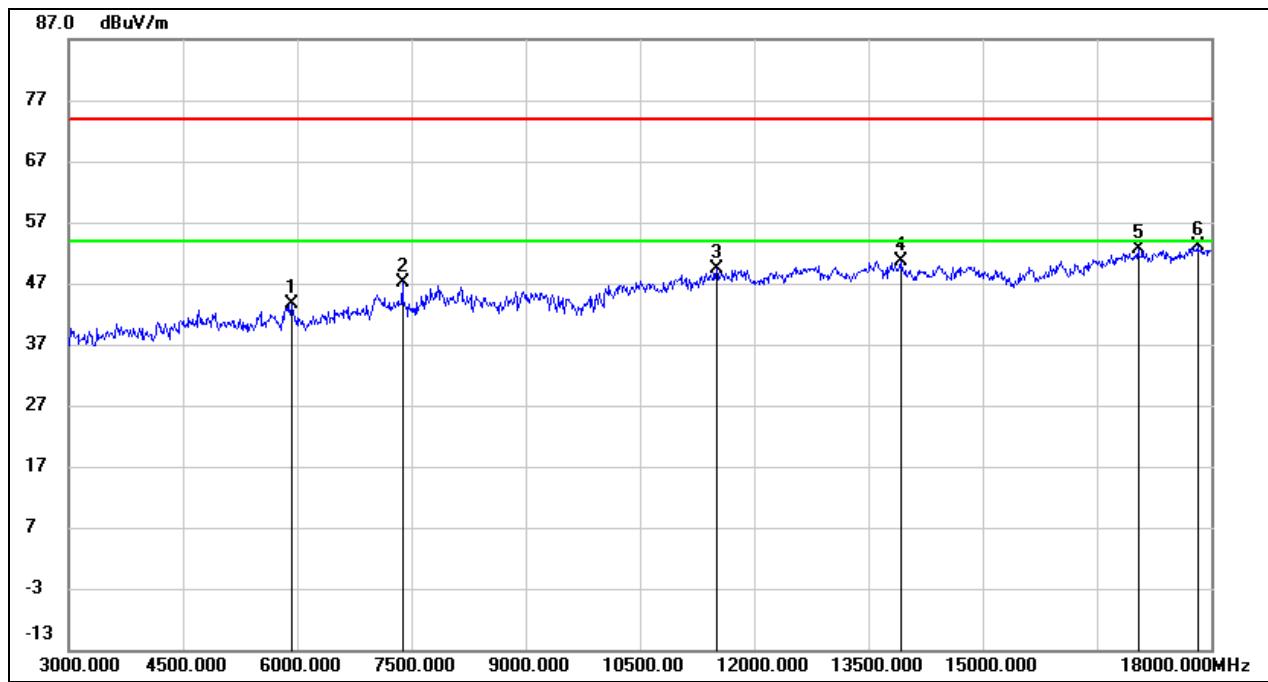
Note: 1. Peak Result = Reading Level + Correct Factor.  
 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.  
 3. Peak: Peak detector.  
 4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.  
 5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	3690.000	47.18	-2.81	44.37	74.00	-29.63	peak
2	8115.000	38.31	7.90	46.21	74.00	-27.79	peak
3	8940.000	37.55	8.71	46.26	74.00	-27.74	peak
4	11400.000	37.00	12.62	49.62	74.00	-24.38	peak
5	13620.000	34.42	15.99	50.41	74.00	-23.59	peak
6	17385.000	31.19	21.46	52.65	74.00	-21.35	peak

Note:

1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

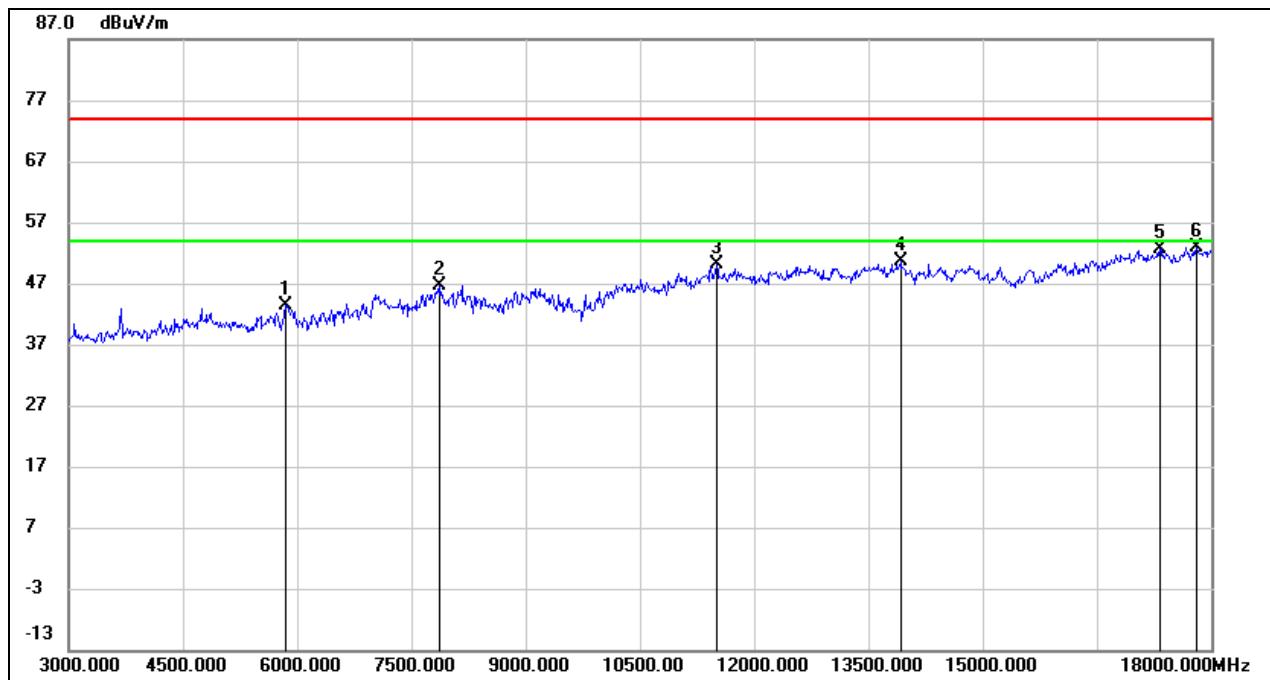
HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, VERTICAL)

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5925.000	39.04	4.54	43.58	74.00	-30.42	peak
2	7380.000	40.60	6.41	47.01	74.00	-26.99	peak
3	11505.000	35.84	13.42	49.26	74.00	-24.74	peak
4	13920.000	34.41	16.17	50.58	74.00	-23.42	peak
5	17040.000	32.12	20.49	52.61	74.00	-21.39	peak
6	17820.000	29.85	23.30	53.15	74.00	-20.85	peak

Note:

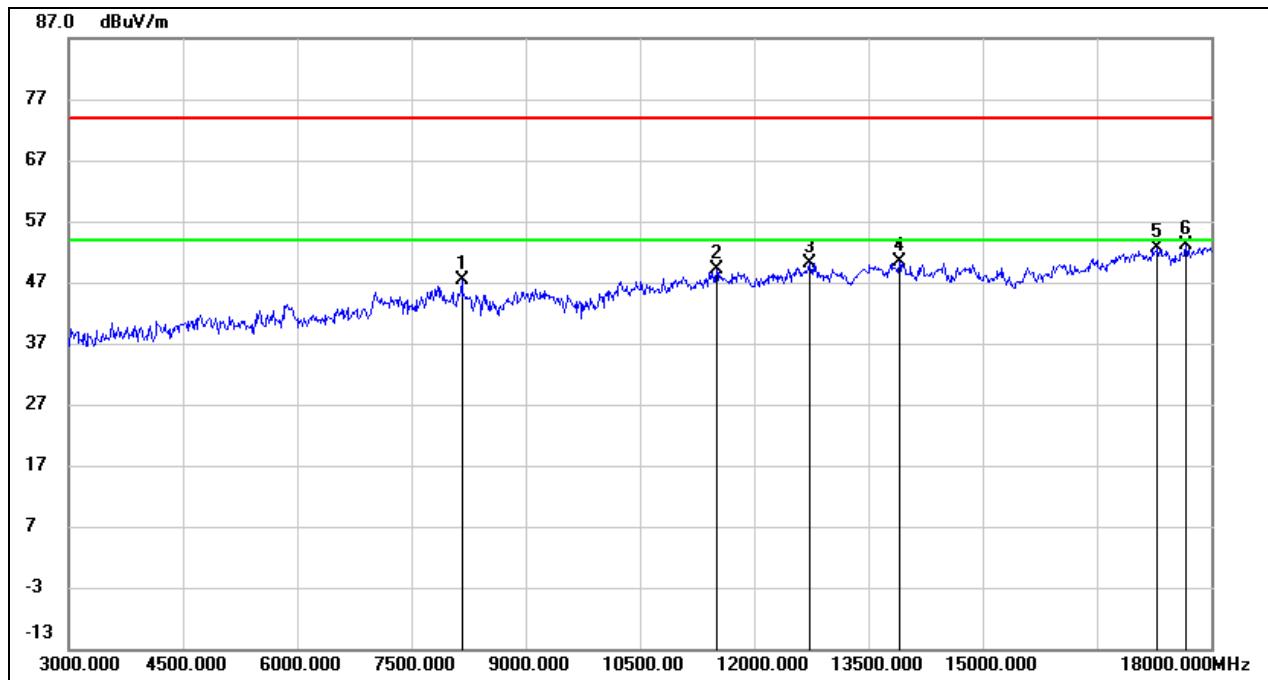
1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

## 8.3.3. 802.11n HT20 MODE

HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)

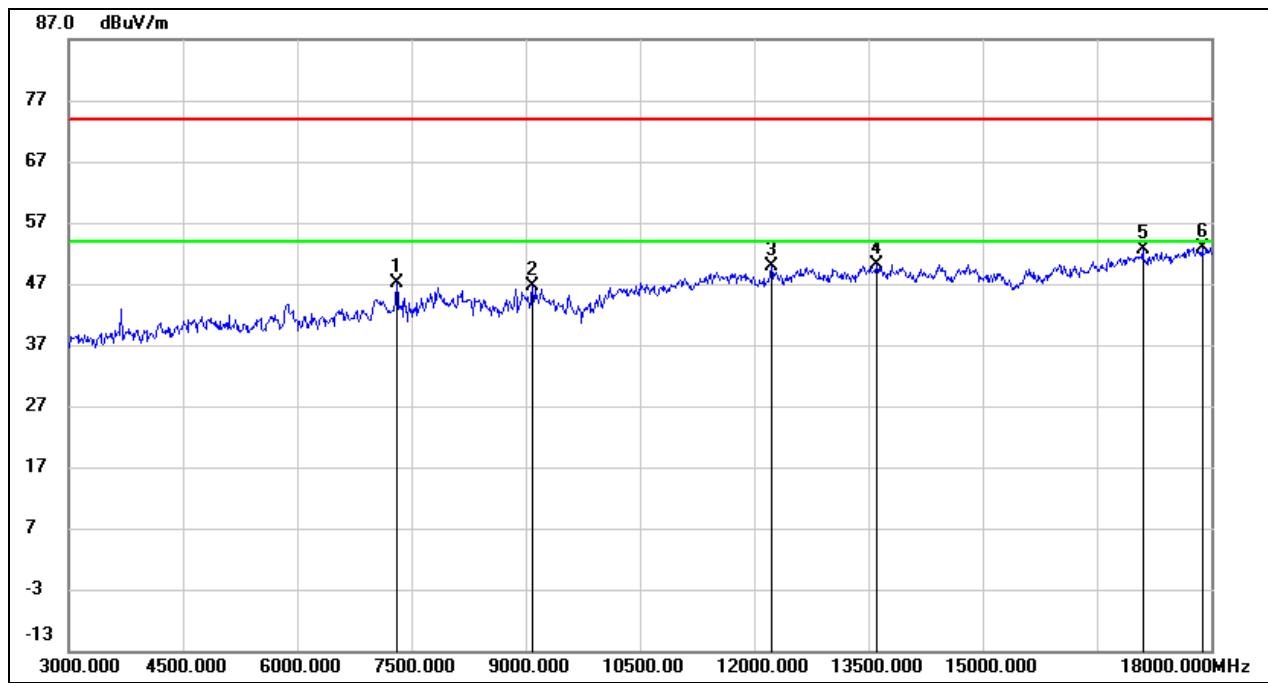
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5850.000	39.42	4.02	43.44	74.00	-30.56	peak
2	7875.000	39.12	7.40	46.52	74.00	-27.48	peak
3	11505.000	36.59	13.42	50.01	74.00	-23.99	peak
4	13920.000	34.34	16.17	50.51	74.00	-23.49	peak
5	17325.000	31.05	21.67	52.72	74.00	-21.28	peak
6	17805.000	29.67	23.31	52.98	74.00	-21.02	peak

Note: 1. Peak Result = Reading Level + Correct Factor.  
 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.  
 3. Peak: Peak detector.  
 4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.  
 5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)

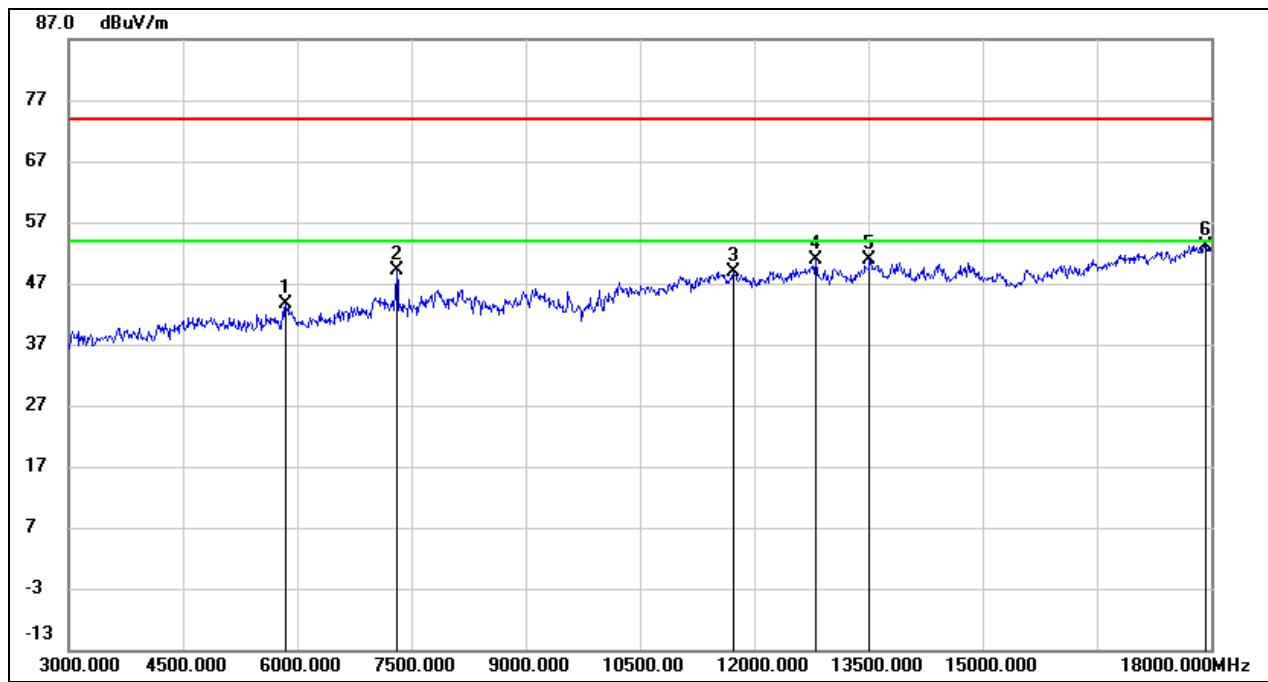
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	8160.000	39.11	8.18	47.29	74.00	-26.71	peak
2	11505.000	35.64	13.42	49.06	74.00	-24.94	peak
3	12720.000	35.58	14.57	50.15	74.00	-23.85	peak
4	13905.000	34.06	16.20	50.26	74.00	-23.74	peak
5	17295.000	30.81	21.71	52.52	74.00	-21.48	peak
6	17670.000	30.81	22.24	53.05	74.00	-20.95	peak

Note: 1. Peak Result = Reading Level + Correct Factor.  
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.  
3. Peak: Peak detector.  
4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.  
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7305.000	40.96	6.08	47.04	74.00	-26.96	peak
2	9090.000	37.24	9.28	46.52	74.00	-27.48	peak
3	12225.000	36.10	13.81	49.91	74.00	-24.09	peak
4	13605.000	34.21	16.02	50.23	74.00	-23.77	peak
5	17100.000	32.04	20.64	52.68	74.00	-21.32	peak
6	17880.000	29.59	23.34	52.93	74.00	-21.07	peak

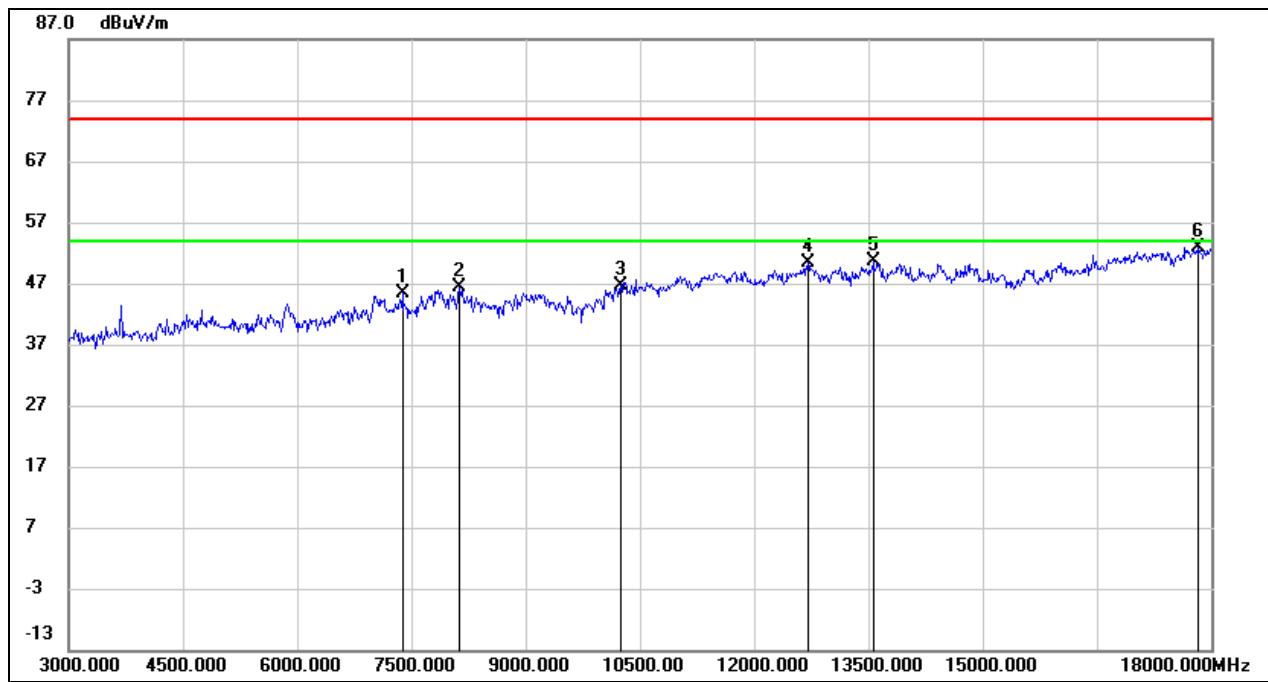
Note: 1. Peak Result = Reading Level + Correct Factor.  
 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.  
 3. Peak: Peak detector.  
 4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.  
 5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, VERTICAL)

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5850.000	39.53	4.02	43.55	74.00	-30.45	peak
2	7305.000	43.03	6.08	49.11	74.00	-24.89	peak
3	11730.000	35.90	13.02	48.92	74.00	-25.08	peak
4	12810.000	35.26	15.59	50.85	74.00	-23.15	peak
5	13515.000	35.13	15.81	50.94	74.00	-23.06	peak
6	17925.000	29.88	23.37	53.25	74.00	-20.75	peak

Note:

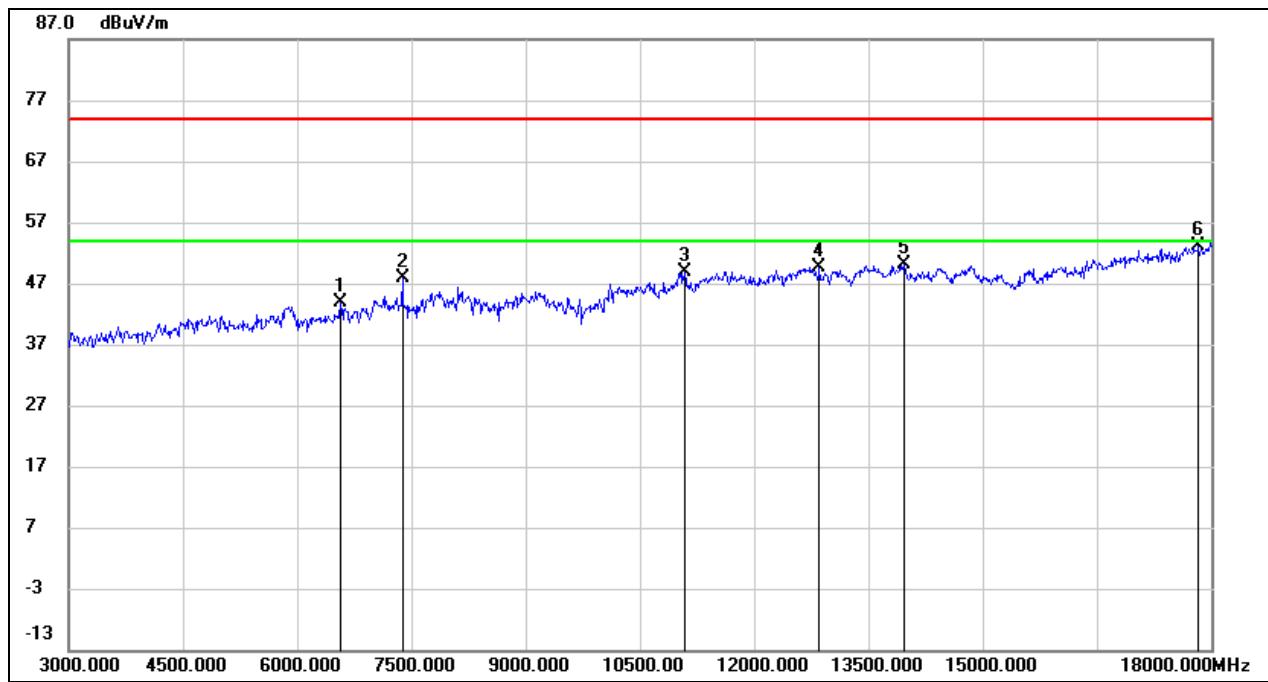
1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7380.000	38.86	6.41	45.27	74.00	-28.73	peak
2	8130.000	38.29	7.99	46.28	74.00	-27.72	peak
3	10245.000	35.97	10.56	46.53	74.00	-27.47	peak
4	12705.000	36.07	14.35	50.42	74.00	-23.58	peak
5	13560.000	34.69	15.93	50.62	74.00	-23.38	peak
6	17835.000	29.65	23.31	52.96	74.00	-21.04	peak

Note:

1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, VERTICAL)

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	6570.000	38.58	5.30	43.88	74.00	-30.12	peak
2	7380.000	41.45	6.41	47.86	74.00	-26.14	peak
3	11085.000	36.41	12.57	48.98	74.00	-25.02	peak
4	12855.000	34.32	15.23	49.55	74.00	-24.45	peak
5	13965.000	34.08	16.09	50.17	74.00	-23.83	peak
6	17835.000	29.92	23.31	53.23	74.00	-20.77	peak

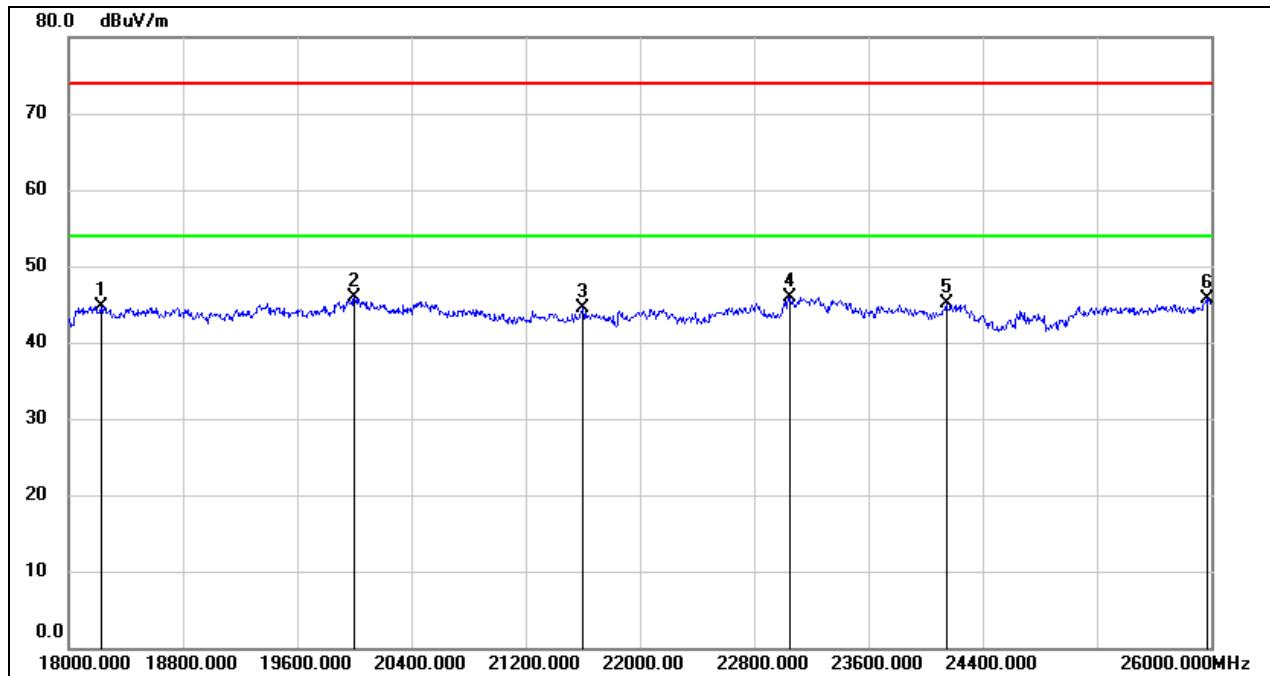
Note:

1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

## 8.4. SPURIOUS EMISSIONS (18 GHz ~ 26 GHz)

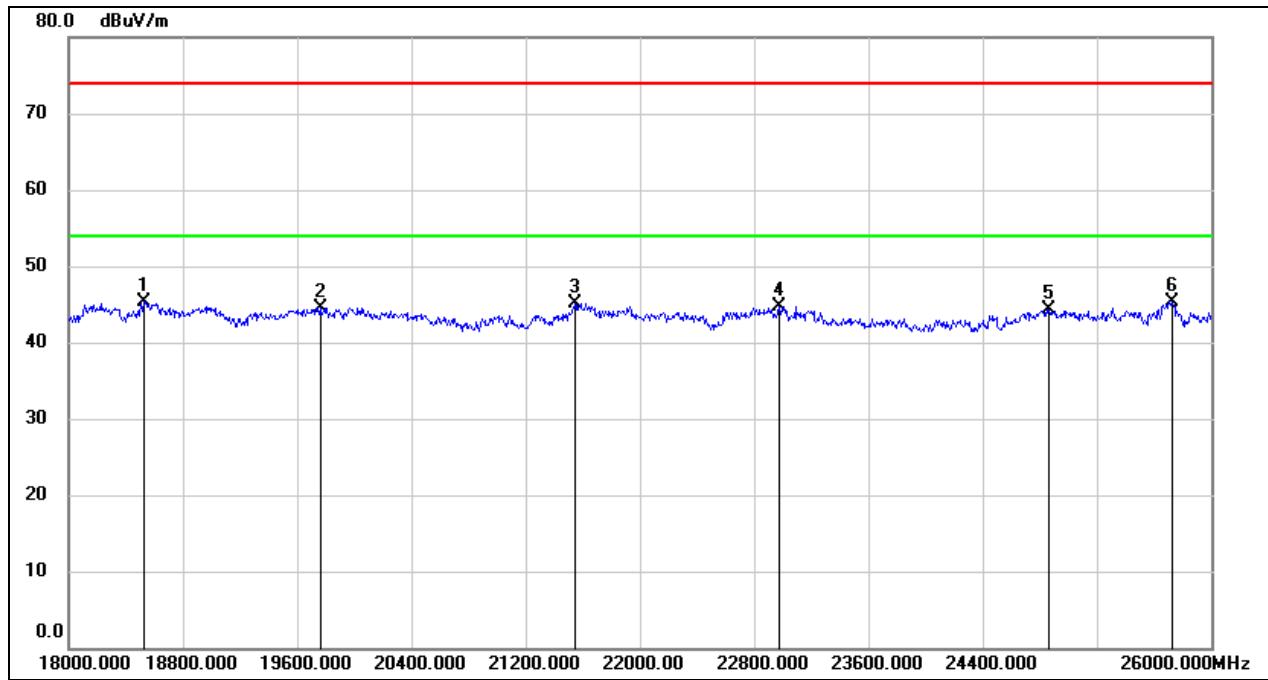
### 8.4.1. 802.11g MODE

#### SPURIOUS EMISSIONS (HIGH CHANNEL, WORST-CASE CONFIGURATION, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	18224.000	50.27	-5.53	44.74	74.00	-29.26	peak
2	20000.000	51.31	-5.45	45.86	74.00	-28.14	peak
3	21600.000	49.02	-4.54	44.48	74.00	-29.52	peak
4	23048.000	49.43	-3.43	46.00	74.00	-28.00	peak
5	24144.000	47.91	-2.79	45.12	74.00	-28.88	peak
6	25968.000	46.63	-1.00	45.63	74.00	-28.37	peak

Note: 1. Measurement = Reading Level + Correct Factor.  
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.  
3. Peak: Peak detector.  
4. The preamplifier only effect to the above 18GHz signal and no filter added to the measurement chain.

**SPURIOUS EMISSIONS (HIGH CHANNEL, WORST-CASE CONFIGURATION, VERTICAL)**

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	18528.000	50.61	-5.26	45.35	74.00	-28.65	peak
2	19760.000	49.85	-5.26	44.59	74.00	-29.41	peak
3	21544.000	49.76	-4.63	45.13	74.00	-28.87	peak
4	22976.000	48.26	-3.46	44.80	74.00	-29.20	peak
5	24864.000	46.53	-2.23	44.30	74.00	-29.70	peak
6	25728.000	46.11	-0.72	45.39	74.00	-28.61	peak

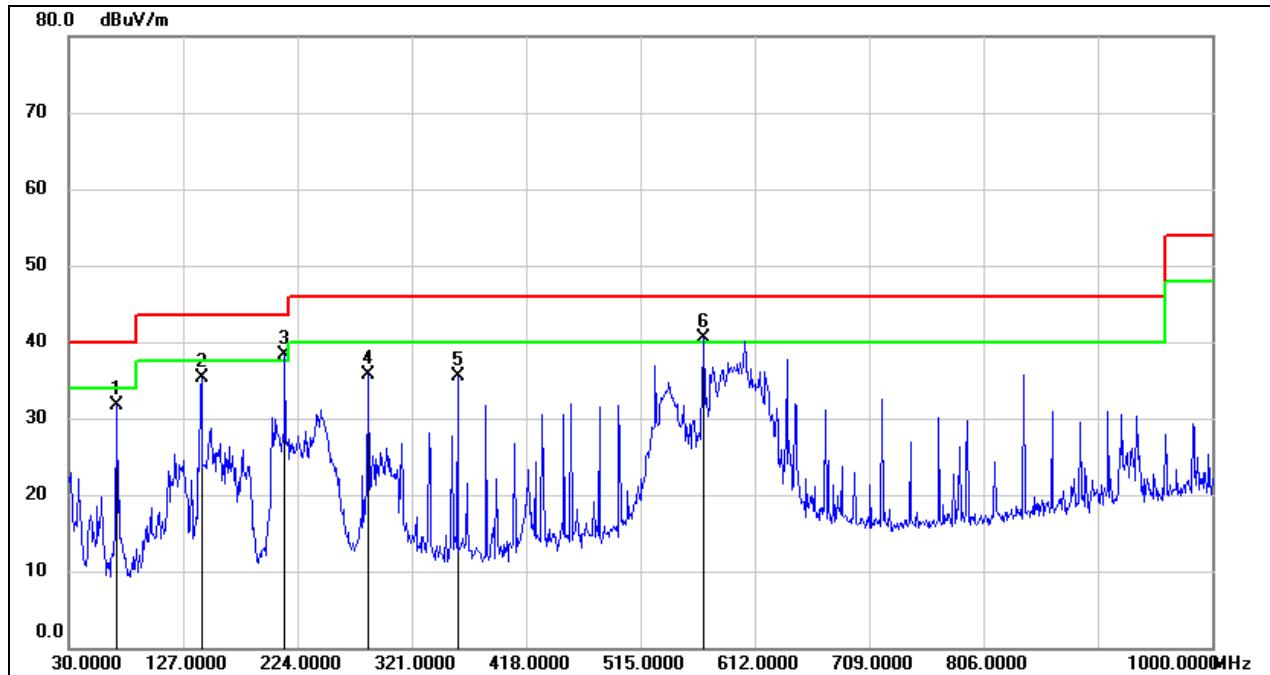
Note: 1. Measurement = Reading Level + Correct Factor.  
 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.  
 3. Peak: Peak detector.  
 4. The preamplifier only effect to the above 18GHz signal and no filter added to the measurement chain.

Note: All the modes and channels have been tested, but only the worst data was recorded in the report.

## 8.5. SPURIOUS EMISSIONS (30 MHz ~ 1 GHz)

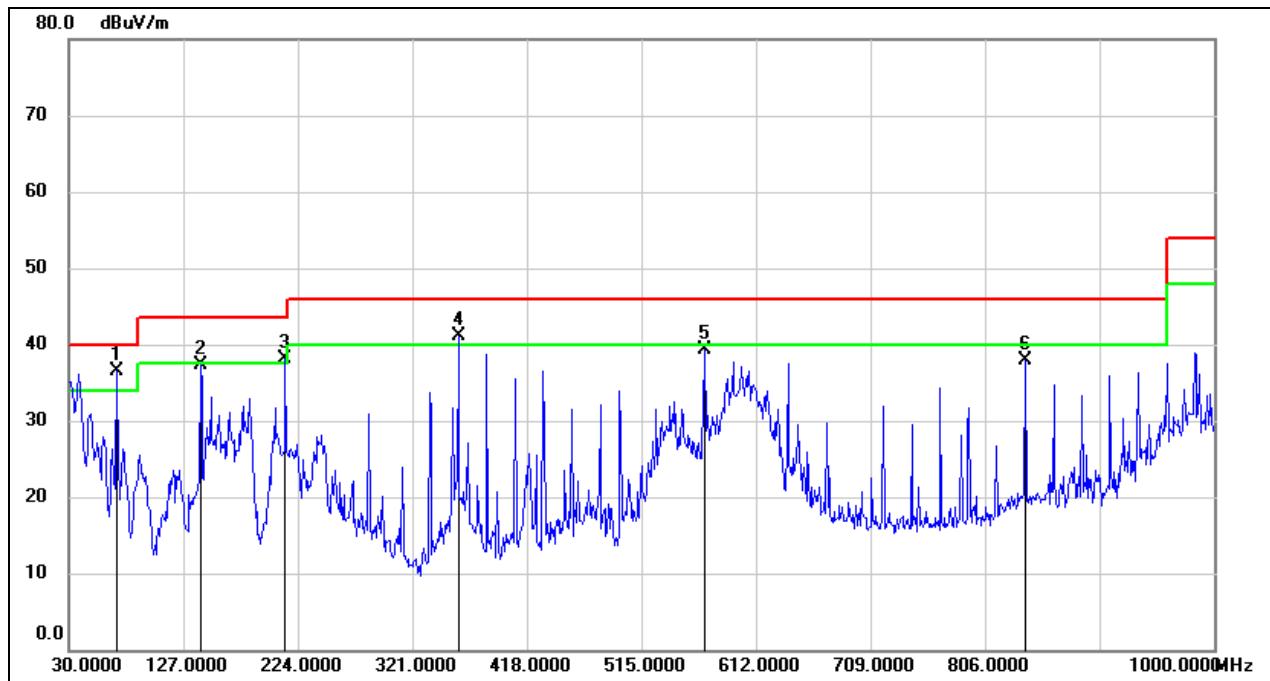
### 8.5.1. 802.11g MODE

#### SPURIOUS EMISSIONS (HIGH CHANNEL, WORST-CASE CONFIGURATION, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	70.7400	52.28	-20.63	31.65	40.00	-8.35	QP
2	142.5200	54.01	-18.70	35.31	43.50	-8.19	QP
3	213.3300	55.88	-17.58	38.30	43.50	-5.20	QP
4	284.1400	52.02	-16.36	35.66	46.00	-10.34	QP
5	359.8000	49.58	-14.10	35.48	46.00	-10.52	QP
6	568.3500	50.62	-10.11	40.51	46.00	-5.49	QP

Note: 1. Result Level = Read Level + Correct Factor.  
 2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.  
 3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

SPURIOUS EMISSIONS (HIGH CHANNEL, WORST-CASE CONFIGURATION, VERTICAL)

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	70.7400	57.04	-20.63	36.41	40.00	-3.59	QP
2	141.5500	56.12	-18.76	37.36	43.50	-6.14	QP
3	213.3300	55.76	-17.58	38.18	43.50	-5.32	QP
4	359.8000	55.11	-14.10	41.01	46.00	-4.99	QP
5	568.3500	49.46	-10.11	39.35	46.00	-6.65	QP
6	839.9500	44.29	-6.47	37.82	46.00	-8.18	QP

Note: 1. Result Level = Read Level + Correct Factor.  
2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.  
3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto

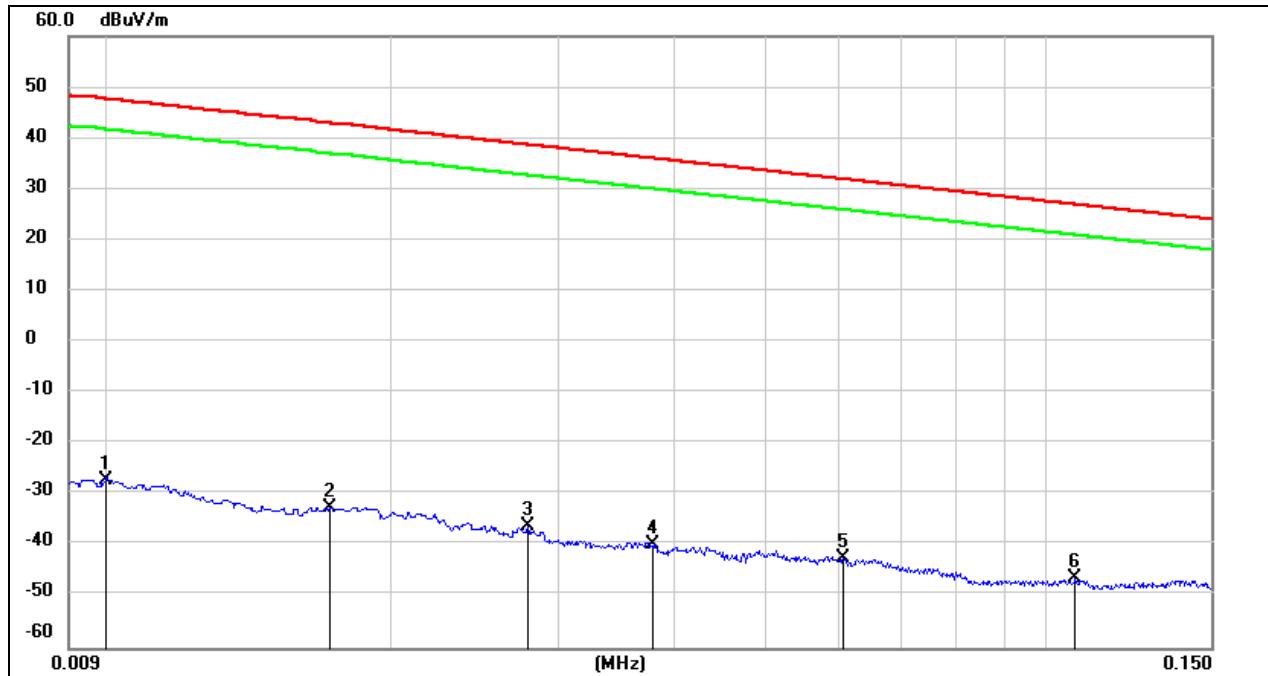
Note: All the modes and channels have been tested, but only the worst data was recorded in the report.

## 8.6. SPURIOUS EMISSIONS BELOW 30 MHz

### 8.6.1. 802.11g MODE

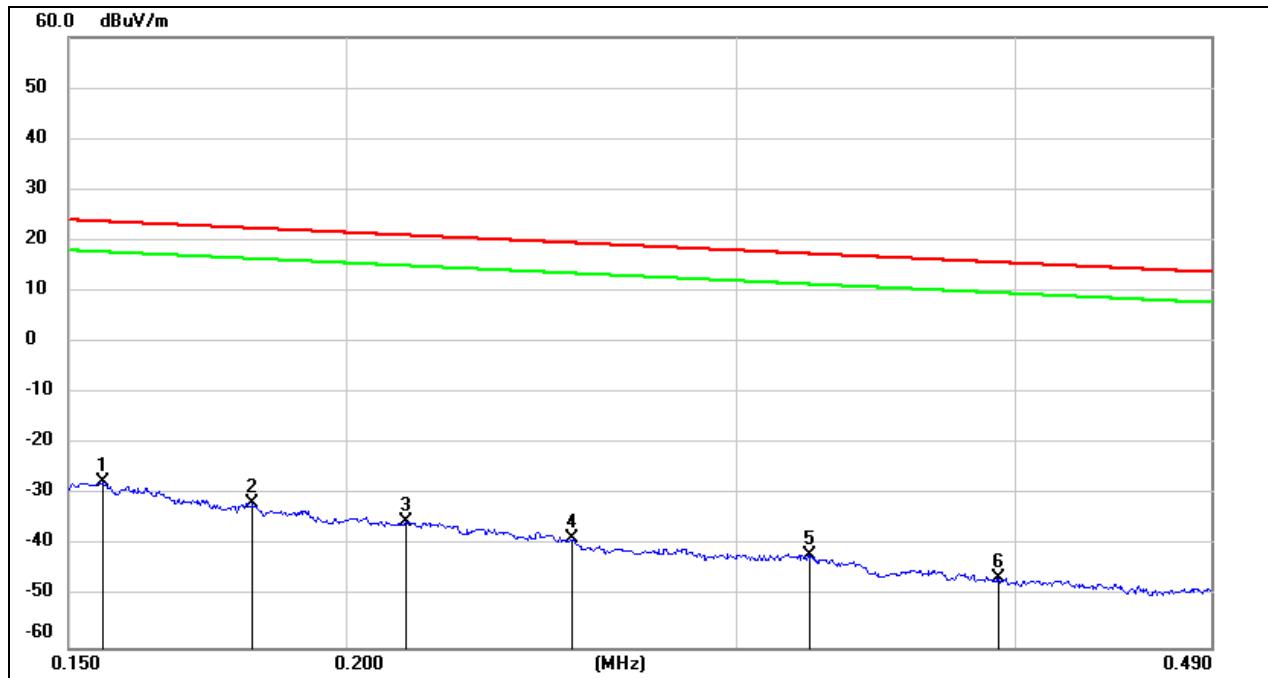
#### SPURIOUS EMISSIONS (HIGH CHANNEL, LOOP ANTENNA FACE ON TO THE EUT, WORST-CASE CONFIGURATION)

9 kHz~ 150 kHz



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	FCC Result (dBuV/m)	FCC Limit (dBuV/m)	Margin (dB)	Remark
1	0.0100	74.22	-101.40	-27.18	47.6	-74.78	peak
2	0.0171	68.88	-101.36	-32.48	42.94	-75.42	peak
3	0.0279	65.17	-101.38	-36.21	38.69	-74.90	peak
4	0.0379	61.57	-101.42	-39.85	36.03	-75.88	peak
5	0.0606	58.95	-101.52	-42.57	31.95	-74.52	peak
6	0.1073	55.30	-101.77	-46.47	26.99	-73.46	peak

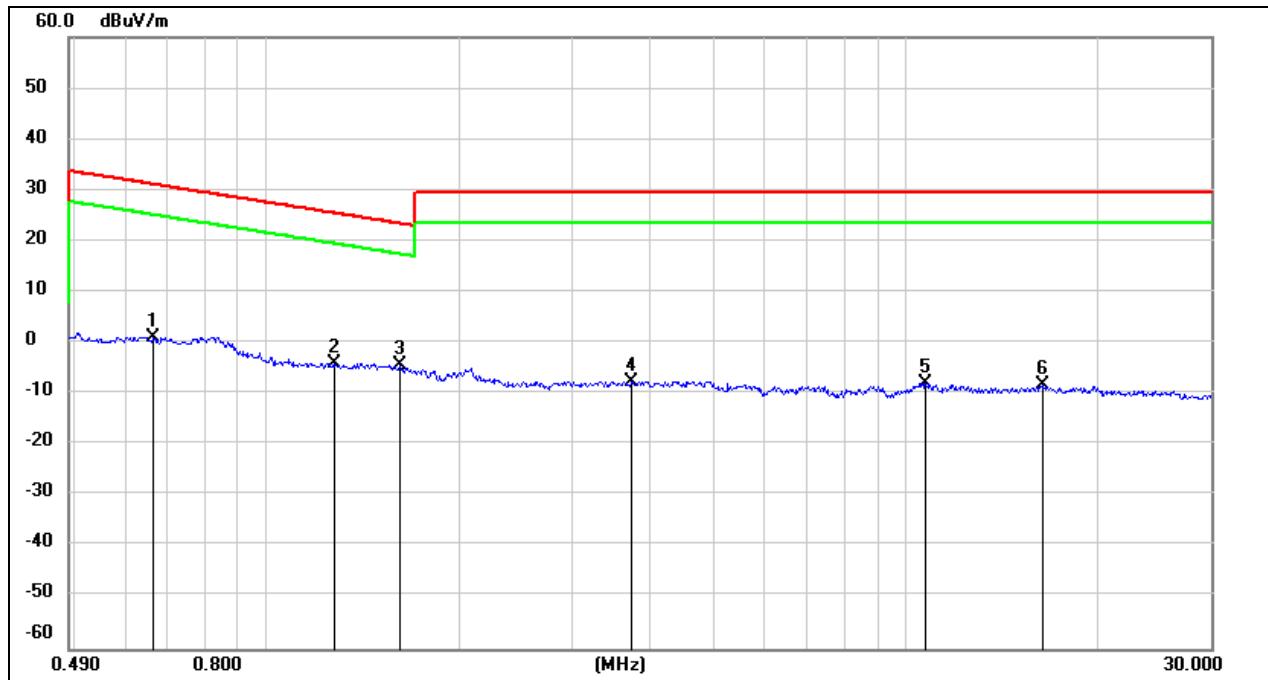
Note: 1. Measurement = Reading Level + Correct Factor  
2. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.  
3. All 3 polarizations (Horizontal, Face-on and Face-off) of the loop antenna had been tested, but only the worst data recorded in the report.

150 kHz ~ 490 kHz

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	FCC Result (dBuV/m)	FCC Limit (dBuV/m)	Margin (dB)	Remark
1	0.1554	74.27	-101.65	-27.38	23.77	-51.15	peak
2	0.1816	70.04	-101.68	-31.64	22.42	-54.06	peak
3	0.2127	66.45	-101.74	-35.29	21.04	-56.33	peak
4	0.2530	63.14	-101.80	-38.66	19.54	-58.20	peak
5	0.3234	59.98	-101.88	-41.9	17.41	-59.31	peak
6	0.3933	55.72	-101.96	-46.24	15.71	-61.95	peak

Note:

1. Measurement = Reading Level + Correct Factor
2. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.
3. All 3 polarizations (Horizontal, Face-on and Face-off) of the loop antenna had been tested, but only the worst data recorded in the report.

490 kHz ~ 30 MHz

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	FCC Result (dBuV/m)	FCC Limit (dBuV/m)	Margin (dB)	Remark
1	0.6643	63.29	-62.10	1.19	31.15	-29.96	peak
2	1.2721	58.24	-62.15	-3.91	25.52	-29.43	peak
3	1.6149	57.62	-62.00	-4.38	23.44	-27.82	peak
4	3.7360	53.83	-61.40	-7.57	29.54	-37.11	peak
5	10.7299	52.98	-60.83	-7.85	29.54	-37.39	peak
6	16.3959	52.67	-60.96	-8.29	29.54	-37.83	peak

Note:

1. Measurement = Reading Level + Correct Factor
2. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.
3. All 3 polarizations (Horizontal, Face-on and Face-off) of the loop antenna had been tested, but only the worst data recorded in the report.

Note: All the modes had been tested, but only the worst data was recorded in the report.

## 9. AC POWER LINE CONDUCTED EMISSIONS

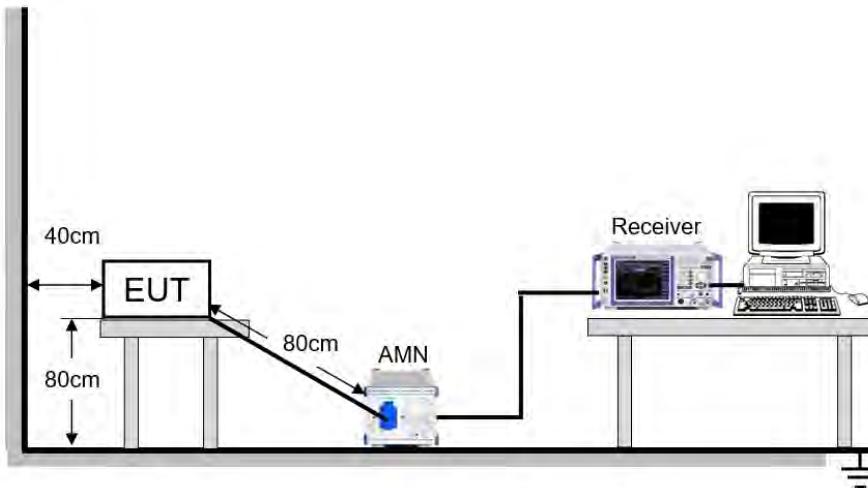
### LIMITS

Please refer to CFR 47 FCC §15.207 (a) and ISED RSS-Gen Clause 8.8

FREQUENCY (MHz)	Quasi-peak	Average
0.15 -0.5	66 - 56 *	56 - 46 *
0.50 -5.0	56.00	46.00
5.0 -30.0	60.00	50.00

### TEST SETUP AND PROCEDURE

Refer to ANSI C63.10-2013 clause 6.2.

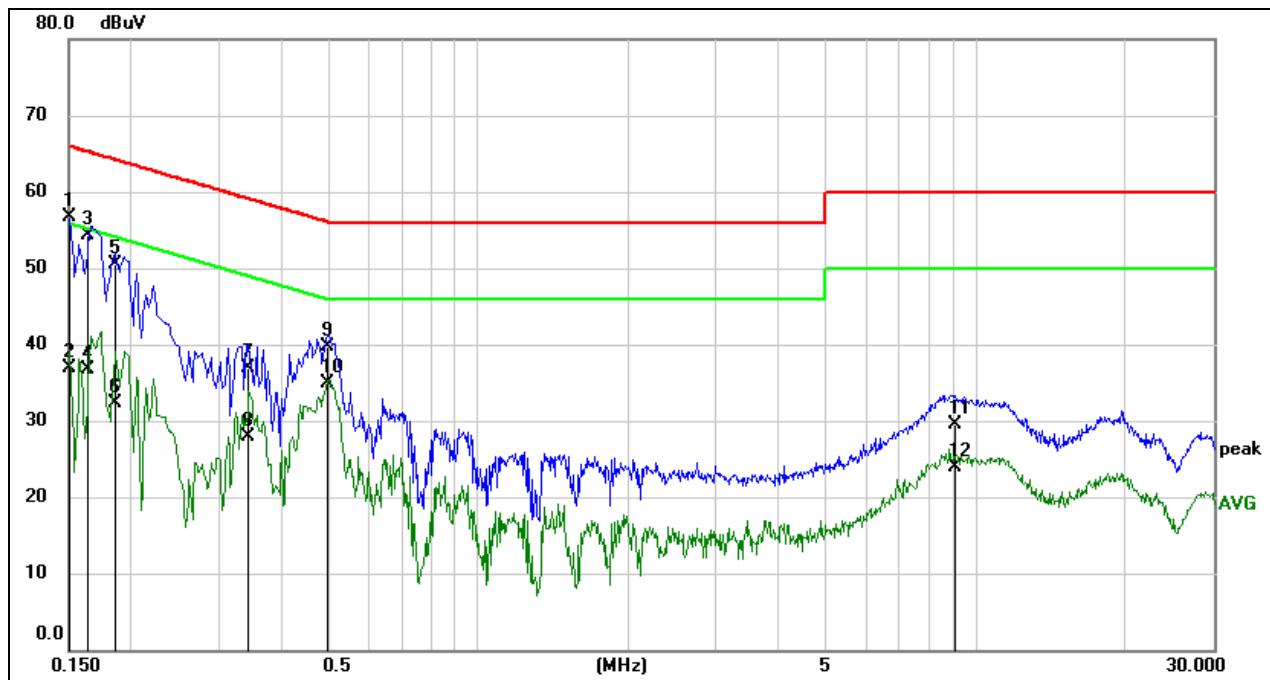


The EUT is put on a table of non-conducting material that is 80 cm high. The vertical conducting wall of shielding is located 40 cm to the rear of the EUT. The power line of the EUT is connected to the AC mains through a Artificial Mains Network (A.M.N.). A EMI Measurement Receiver (R&S Test Receiver ESR3) is used to test the emissions from both sides of AC line. According to the requirements in Section 6.2 of ANSI C63.10-2013. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30 MHz using CISPR Quasi-Peak and average detector mode. The bandwidth of EMI test receiver is set at 9 kHz.

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.

### TEST ENVIRONMENT

Temperature	24.6°C	Relative Humidity	59.5 %
Atmosphere Pressure	101 kPa	Test Voltage	AC120 V,60 Hz

**RESULTS****9.1. 802.11g SISO MODE****LINE N RESULTS (HIGH CHANNEL, WORST-CASE CONFIGURATION)**

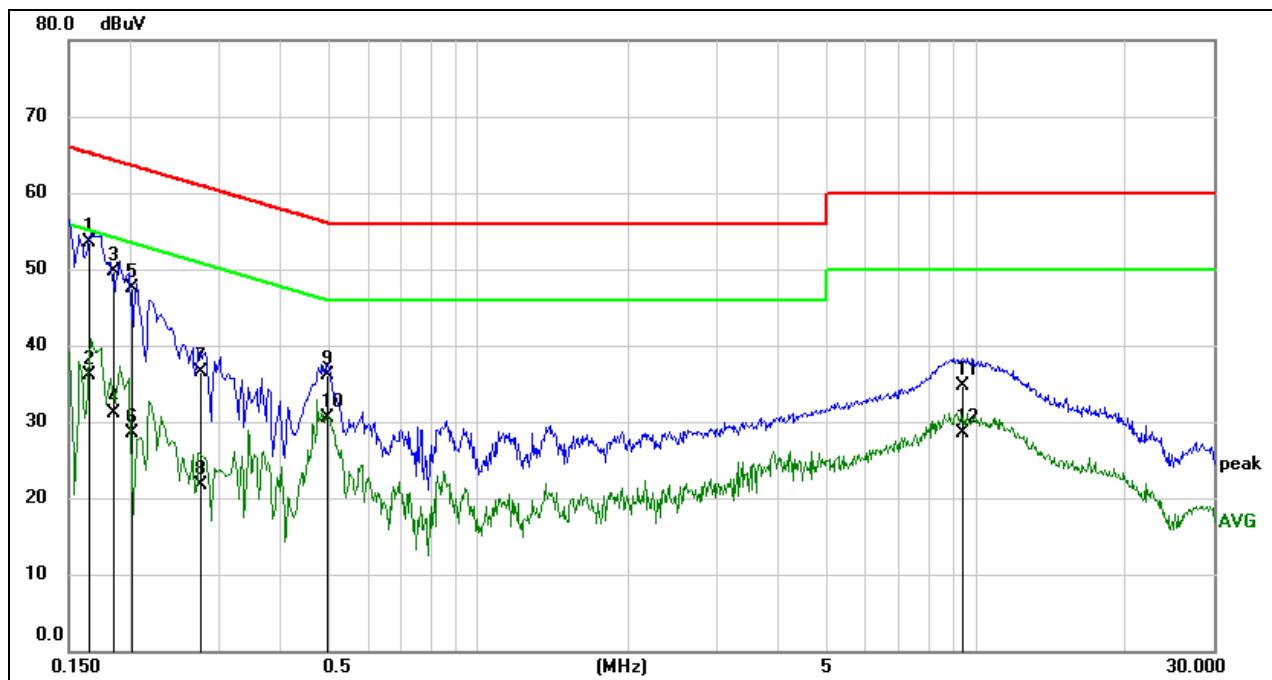
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1500	47.04	9.59	56.63	66.00	-9.37	QP
2	0.1500	27.41	9.59	37.00	56.00	-19.00	AVG
3	0.1633	44.62	9.59	54.21	65.29	-11.08	QP
4	0.1633	27.10	9.59	36.69	55.29	-18.60	AVG
5	0.1846	40.90	9.59	50.49	64.28	-13.79	QP
6	0.1846	22.76	9.59	32.35	54.28	-21.93	AVG
7	0.3441	27.30	9.59	36.89	59.10	-22.21	QP
8	0.3441	18.29	9.59	27.88	49.10	-21.22	AVG
9	0.4981	30.01	9.60	39.61	56.03	-16.42	QP
10	0.4981	25.24	9.60	34.84	46.03	-11.19	AVG
11	9.0666	19.97	9.61	29.58	60.00	-30.42	QP
12	9.0666	14.26	9.61	23.87	50.00	-26.13	AVG

Note: 1. Result = Reading +Correct Factor.

2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Test setup: RBW: 200 Hz (9 kHz ~ 150 kHz), 9 kHz (150 kHz ~ 30 MHz).

4. Step size: 80 Hz (0.009 MHz ~ 0.15 MHz), 4 kHz (0.15 MHz ~ 30 MHz), Scan time: auto.

**LINE L RESULTS (HIGH CHANNEL, WORST-CASE CONFIGURATION)**

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1645	43.95	9.59	53.54	65.23	-11.69	QP
2	0.1645	26.59	9.59	36.18	55.23	-19.05	AVG
3	0.1855	40.12	9.59	49.71	64.24	-14.53	QP
4	0.1855	21.45	9.59	31.04	54.24	-23.20	AVG
5	0.2011	37.83	9.59	47.42	63.57	-16.15	QP
6	0.2011	18.98	9.59	28.57	53.57	-25.00	AVG
7	0.2775	27.01	9.59	36.60	60.89	-24.29	QP
8	0.2775	12.08	9.59	21.67	50.89	-29.22	AVG
9	0.4963	26.50	9.60	36.10	56.06	-19.96	QP
10	0.4963	20.98	9.60	30.58	46.06	-15.48	AVG
11	9.4441	25.01	9.62	34.63	60.00	-25.37	QP
12	9.4441	18.98	9.62	28.60	50.00	-21.40	AVG

Note: 1. Result = Reading +Correct Factor.

2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Test setup: RBW: 200 Hz (9 kHz ~ 150 kHz), 9 kHz (150 kHz ~ 30 MHz).

4. Step size: 80 Hz (0.009 MHz ~ 0.15 MHz), 4 kHz (0.15 MHz ~ 30 MHz), Scan time: auto.

Note: All the modes had been tested, but only the worst data was recorded in the report.

## 10. ANTENNA REQUIREMENTS

### APPLICABLE REQUIREMENTS

Please refer to FCC §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. 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 provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

Please refer to FCC §15.247(b)(4)

The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

### RESULTS

Complies

## 11. Appendix A

### 11.1. Appendix A: DTS Bandwidth

#### 11.1.1. Test Result

Test Mode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	7.080	2407.960	2415.040	0.5	PASS
		2437	7.120	2433.440	2440.560	0.5	PASS
		2462	7.160	2458.400	2465.560	0.5	PASS
11G	Ant1	2412	15.240	2404.400	2419.640	0.5	PASS
		2437	15.240	2429.400	2444.640	0.5	PASS
		2462	15.240	2454.360	2469.600	0.5	PASS
11N20SISO	Ant1	2412	15.400	2404.400	2419.800	0.5	PASS
		2437	16.040	2428.560	2444.600	0.5	PASS
		2462	15.240	2454.400	2469.640	0.5	PASS

### 11.1.2. Test Graphs







11N20SISO Ant1 2412



11N20SISO\_Ant1 2437



111203150\_Amt\_2402

## 11.2. Appendix B: Occupied Channel Bandwidth

### 11.2.1. Test Result

Test Mode	Antenna	Channel	OCB [MHz]	FL [MHz]	FH [MHz]	Verdict
11B	Ant1	2412	11.900	2406.034	2417.934	PASS
		2437	11.818	2431.059	2442.877	PASS
		2462	11.890	2456.045	2467.935	PASS
11G	Ant1	2412	17.086	2403.342	2420.428	PASS
		2437	17.145	2428.305	2445.450	PASS
		2462	16.892	2453.512	2470.404	PASS
11N20SISO	Ant1	2412	18.182	2402.830	2421.012	PASS
		2437	18.079	2427.912	2445.991	PASS
		2462	18.141	2452.986	2471.127	PASS

## 11.2.2. Test Graphs







### 11.3. Appendix C: Maximum AVG conducted output power

#### 11.3.1. Test Result

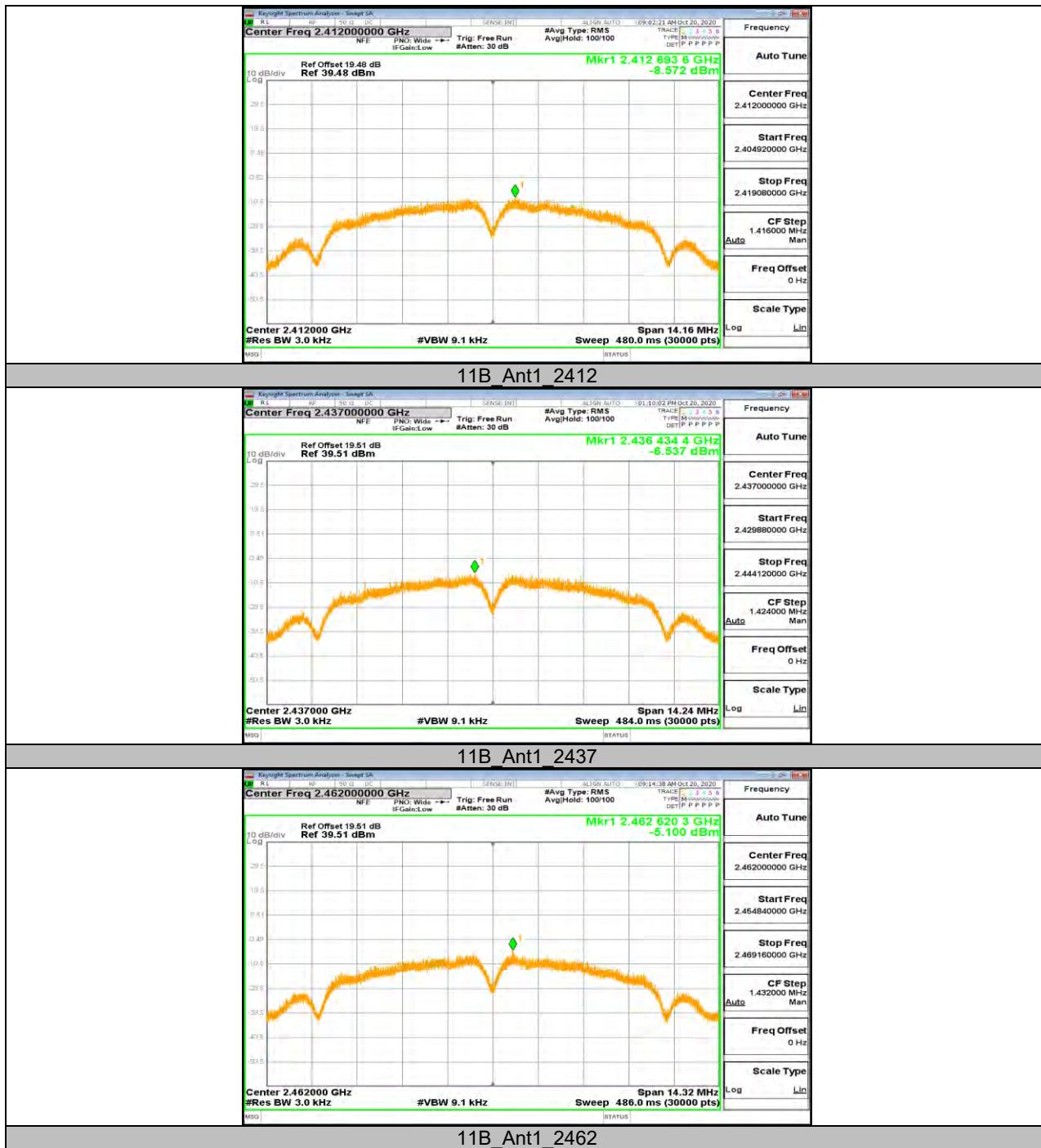
Test Mode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	2412	13.11	<=30	PASS
		2437	13.57	<=30	PASS
		2462	13.69	<=30	PASS
11G	Ant1	2412	13.68	<=30	PASS
		2437	13.77	<=30	PASS
		2462	13.92	<=30	PASS
11N20SISO	Ant1	2412	11.12	<=30	PASS
		2437	12.75	<=30	PASS
		2462	12.61	<=30	PASS

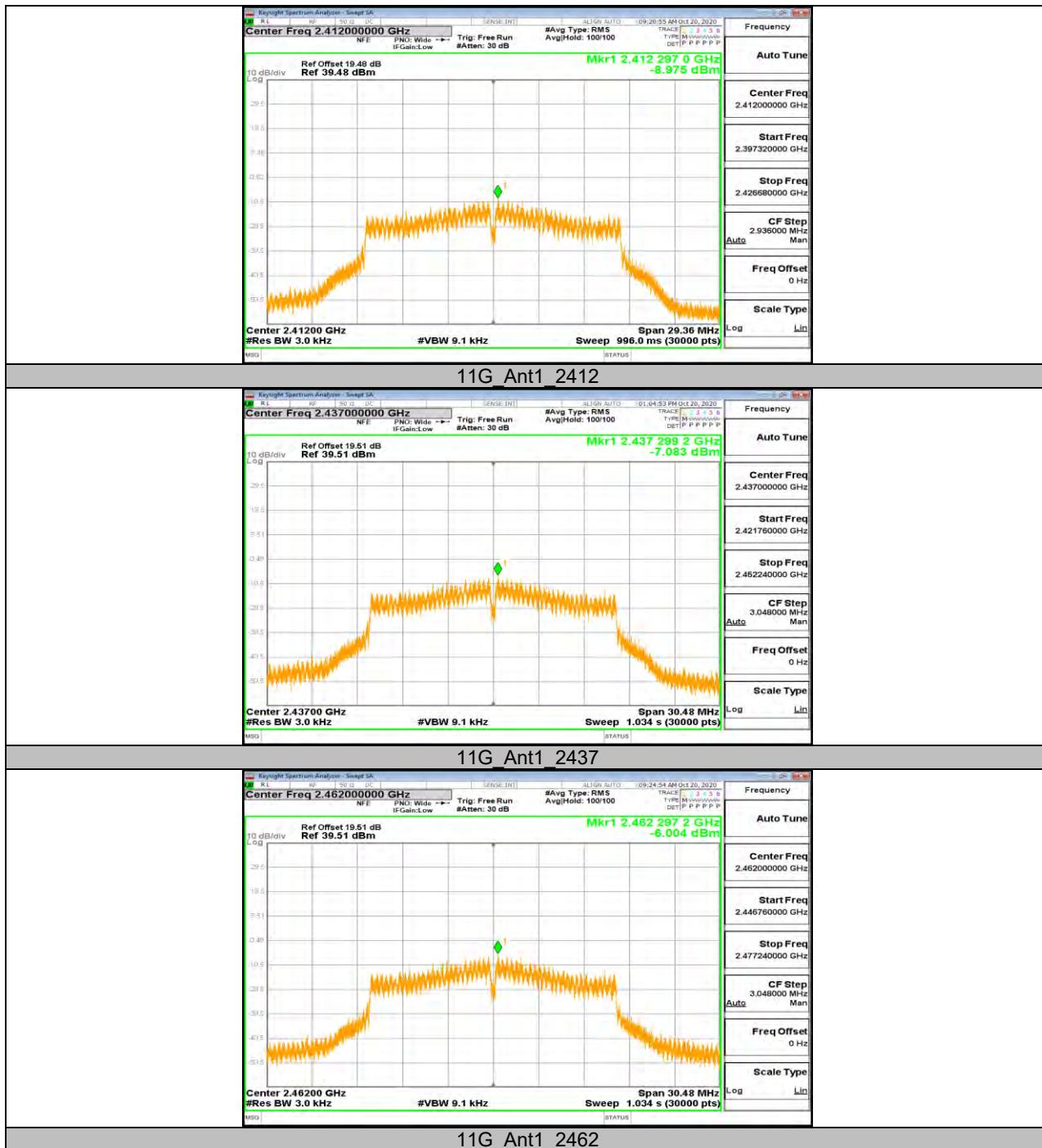
## 11.4. Appendix D: Maximum power spectral density

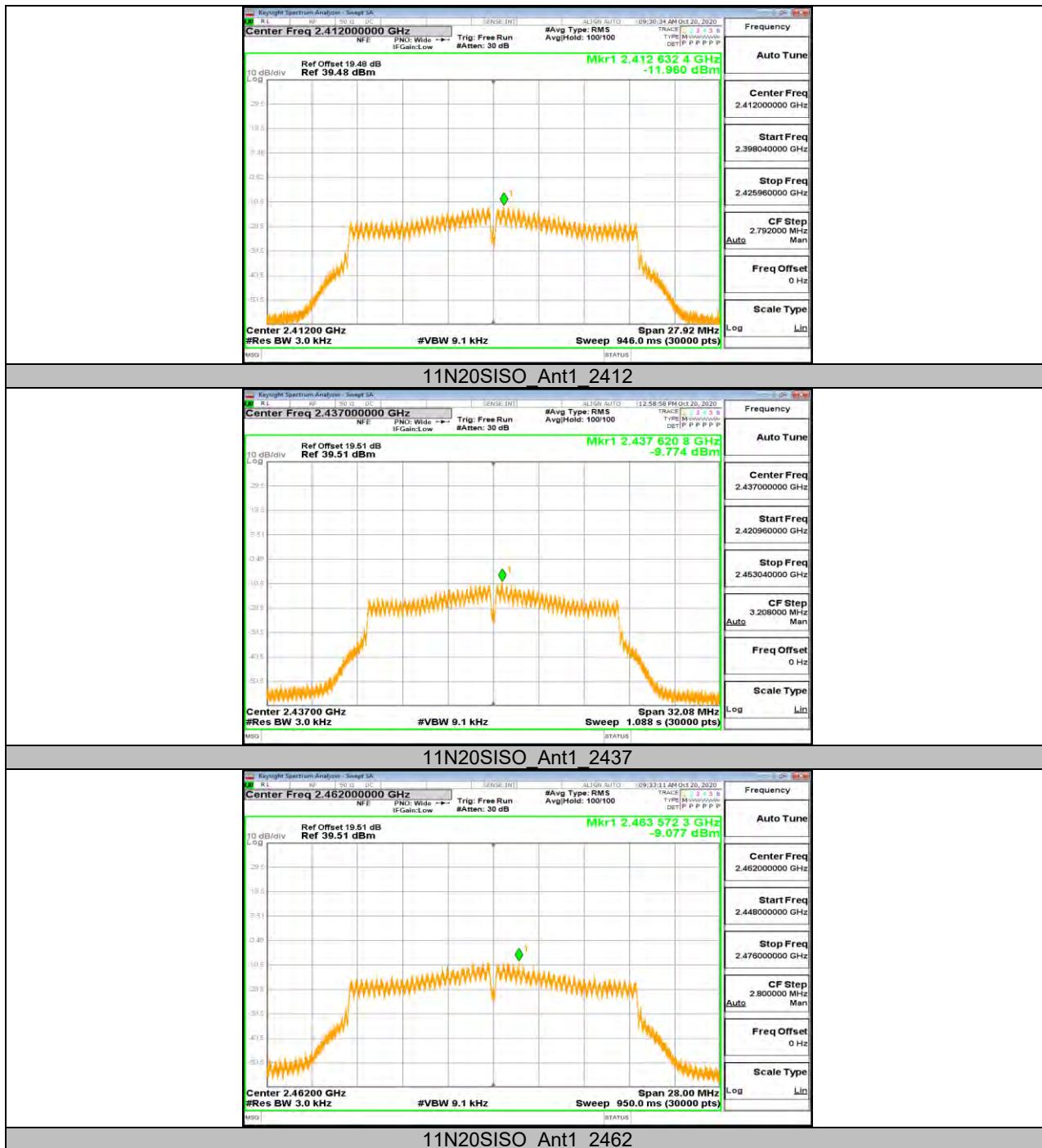
### 11.4.1. Test Result

Test Mode	Antenna	Channel	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-8.57	<=8	PASS
		2437	-6.54	<=8	PASS
		2462	-5.10	<=8	PASS
11G	Ant1	2412	-8.98	<=8	PASS
		2437	-7.08	<=8	PASS
		2462	-6.00	<=8	PASS
11N20SISO	Ant1	2412	-11.96	<=8	PASS
		2437	-9.77	<=8	PASS
		2462	-9.08	<=8	PASS

### 11.4.2. Test Graphs







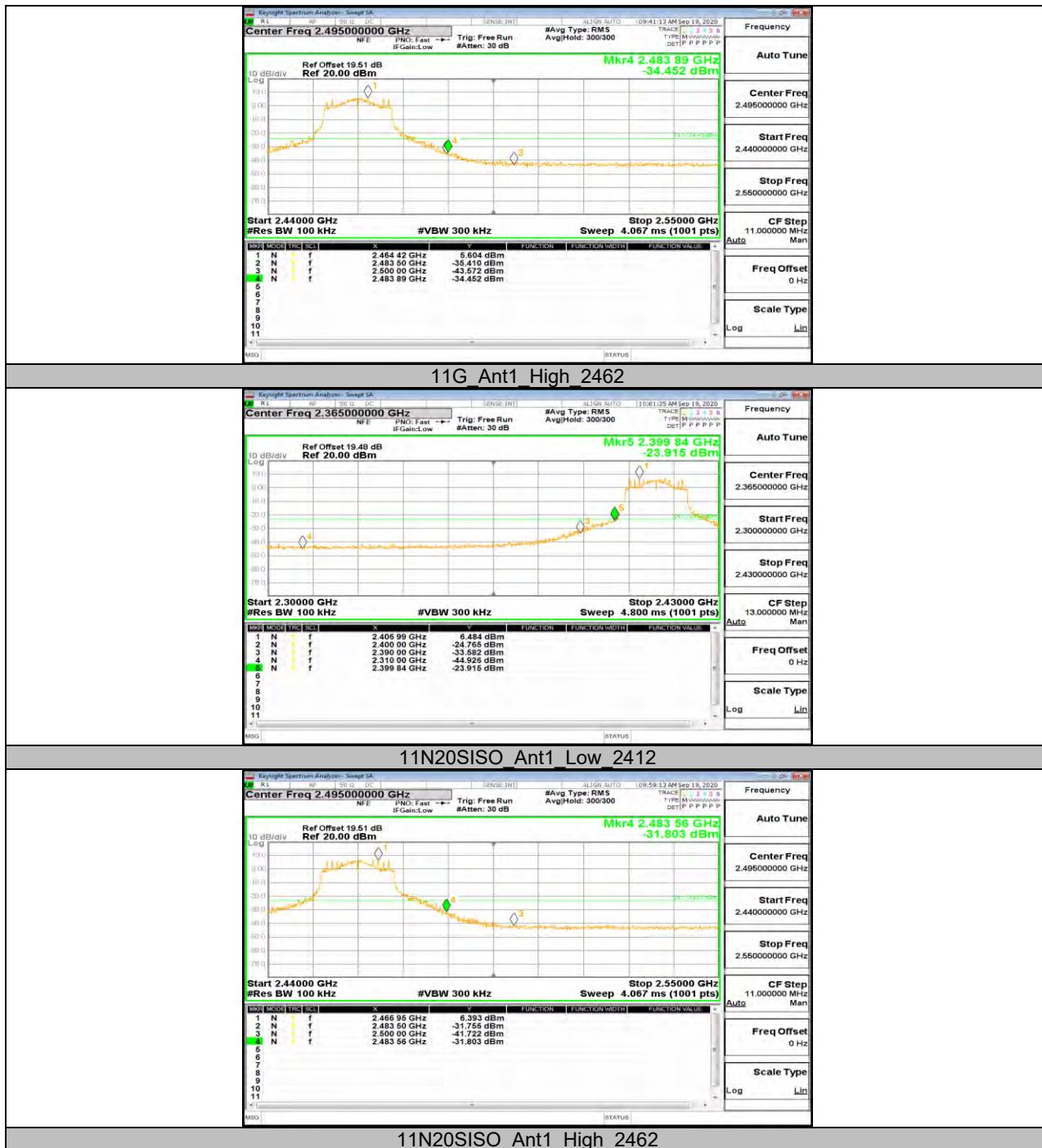
## 11.5. Appendix E: Band edge measurements

### 11.5.1. Test Result

Test Mode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	8.66	-31.32	<=-21.34	PASS
		High	2462	8.23	-40.53	<=-21.77	PASS
11G	Ant1	Low	2412	5.07	-25.36	<=-24.94	PASS
		High	2462	5.60	-34.45	<=-24.4	PASS
11N20SISO	Ant1	Low	2412	6.48	-23.92	<=-23.52	PASS
		High	2462	6.39	-31.8	<=-23.61	PASS

## 11.5.2. Test Graphs



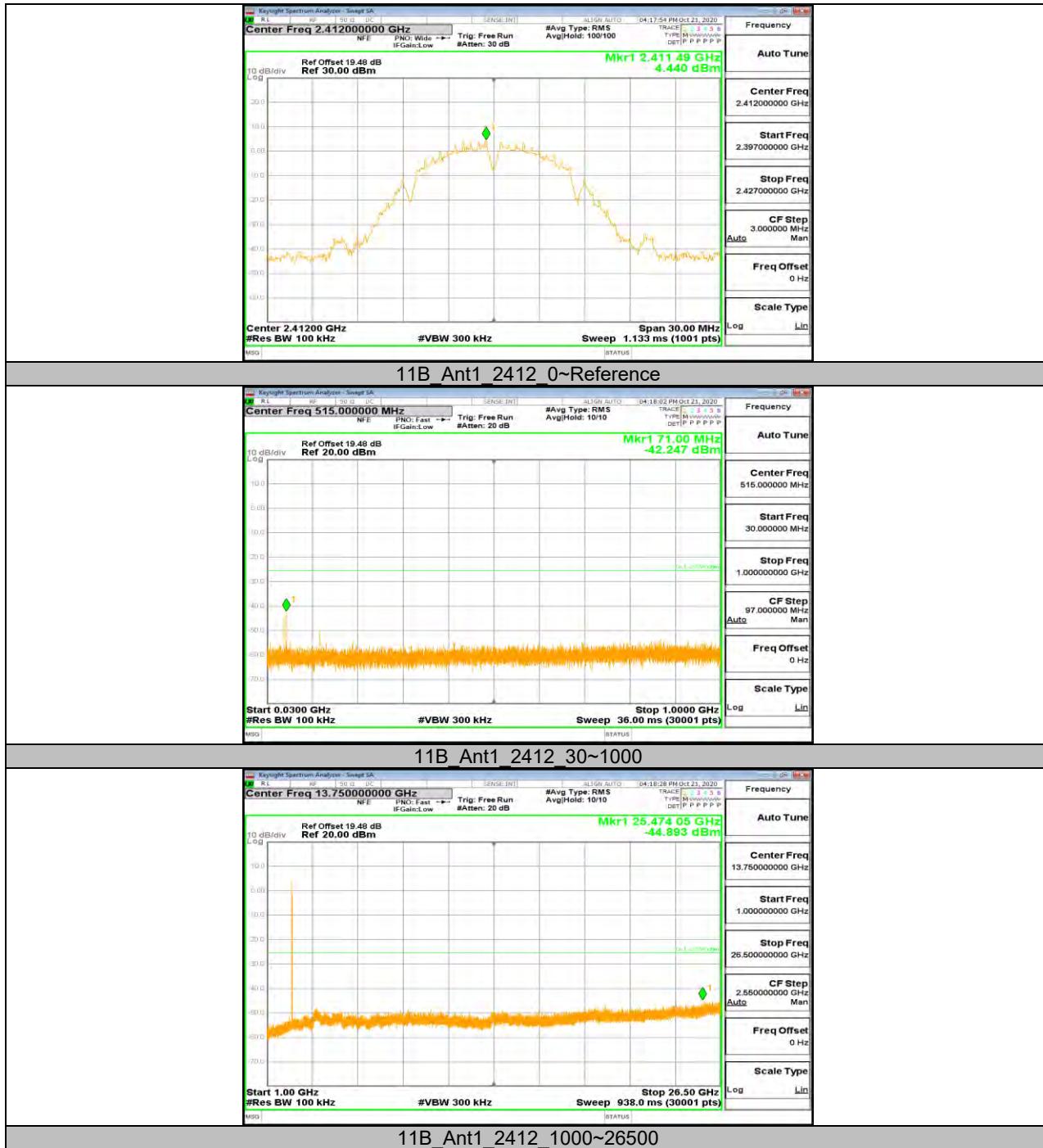


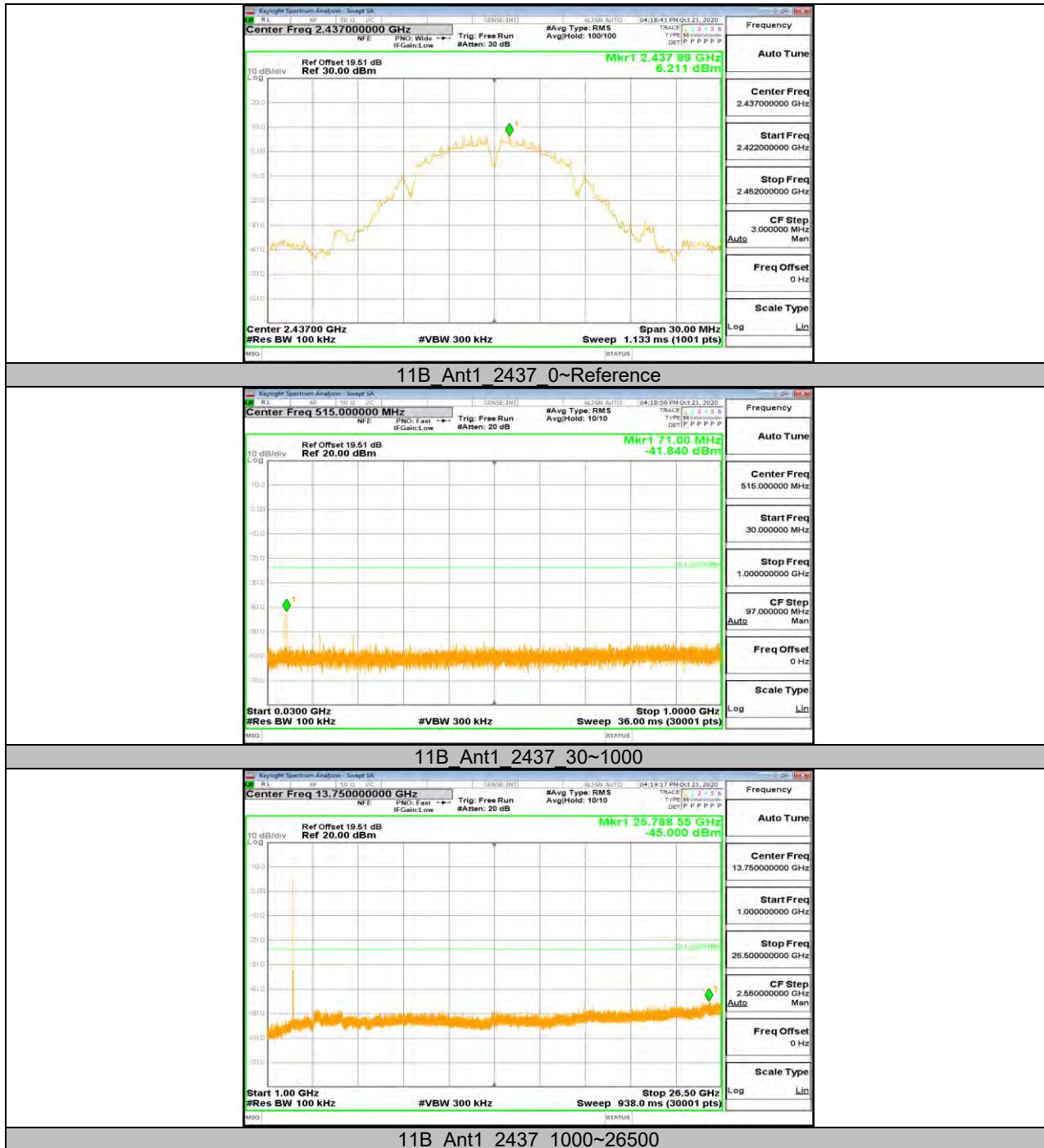
## 11.6. Appendix F: Conducted Spurious Emission

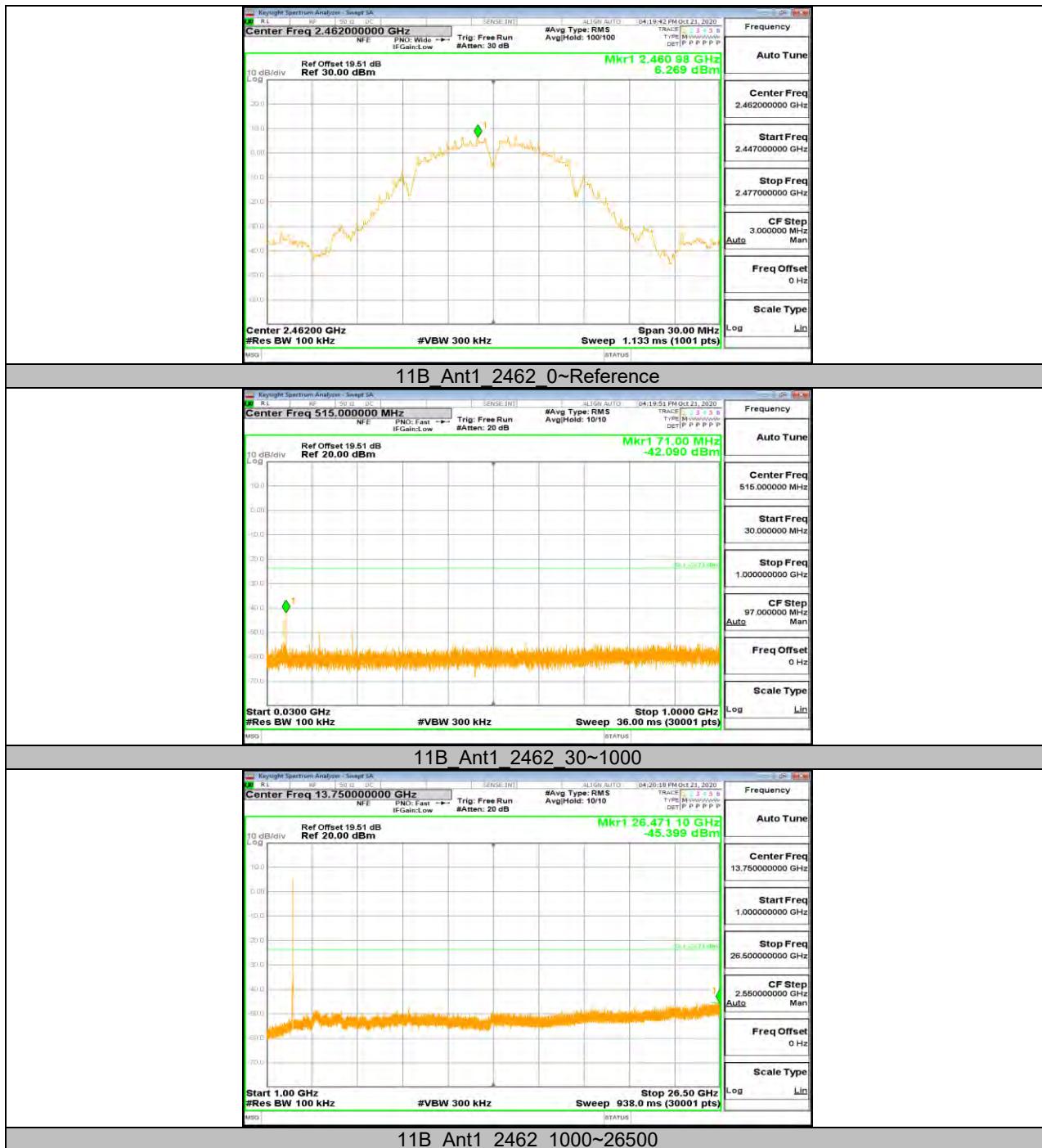
### 11.6.1. Test Result

Test Mode	Antenna	Channel	FreqRange [Mhz]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	Reference	4.44	---	PASS
			30~1000	-42.247	<=-25.56	PASS
			1000~26500	-44.893	<=-25.56	PASS
		2437	Reference	6.21	---	PASS
			30~1000	-41.84	<=-23.789	PASS
			1000~26500	-45	<=-23.789	PASS
		2462	Reference	6.27	---	PASS
			30~1000	-42.09	<=-23.731	PASS
			1000~26500	-45.399	<=-23.731	PASS
11G	Ant1	2412	Reference	1.19	---	PASS
			30~1000	-42.44	<=-28.808	PASS
			1000~26500	-44.169	<=-28.808	PASS
		2437	Reference	3.17	---	PASS
			30~1000	-42.201	<=-26.832	PASS
			1000~26500	-44.851	<=-26.832	PASS
		2462	Reference	4.09	---	PASS
			30~1000	-41.84	<=-25.912	PASS
			1000~26500	-44.527	<=-25.912	PASS
11N20SISO	Ant1	2412	Reference	-1.90	---	PASS
			30~1000	-42.597	<=-31.901	PASS
			1000~26500	-45.206	<=-31.901	PASS
		2437	Reference	0.57	---	PASS
			30~1000	-41.964	<=-29.433	PASS
			1000~26500	-44.145	<=-29.433	PASS
		2462	Reference	1.31	---	PASS
			30~1000	-42.51	<=-28.689	PASS
			1000~26500	-44.824	<=-28.689	PASS

## 11.6.2. Test Graphs



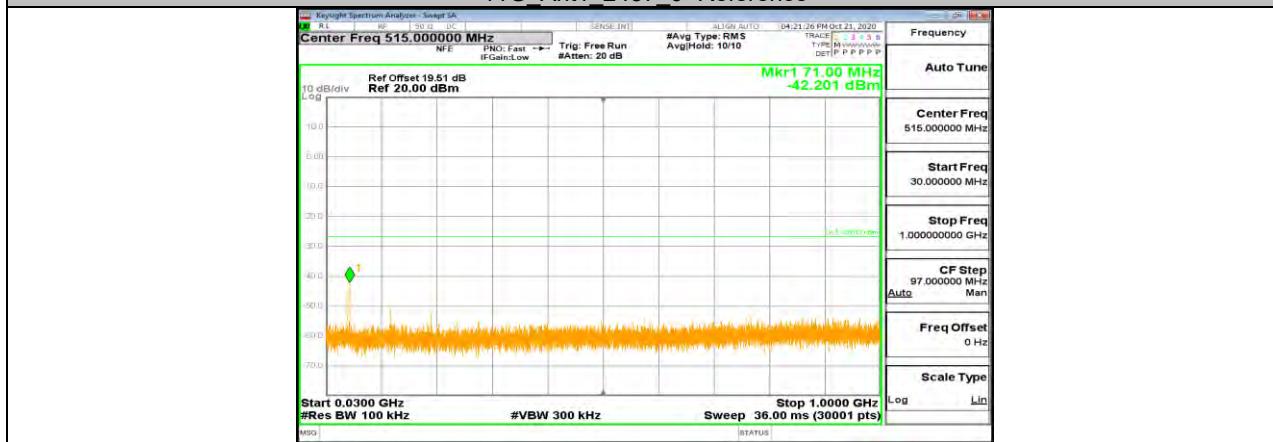




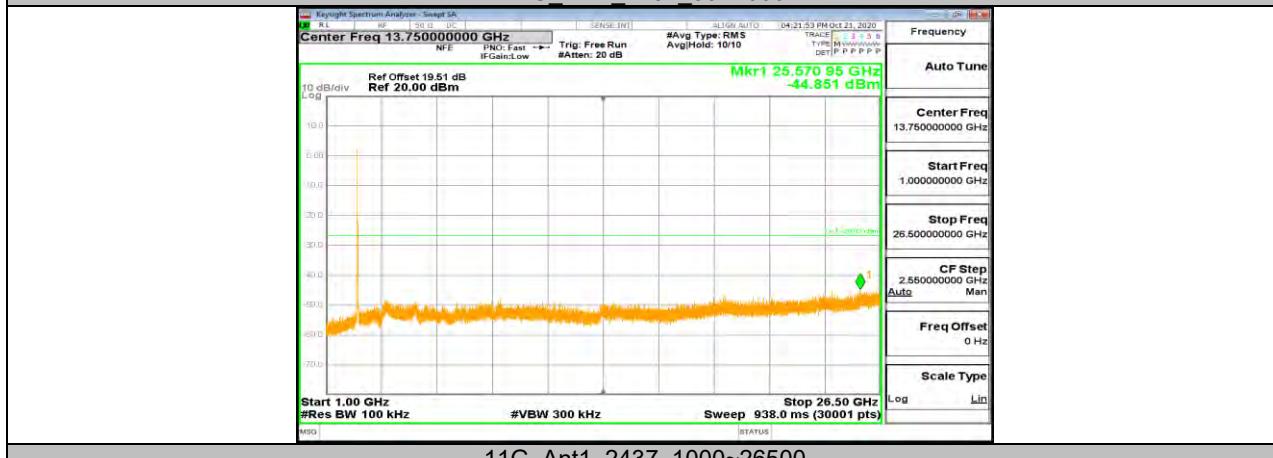




11G Ant1 2437 0~Reference



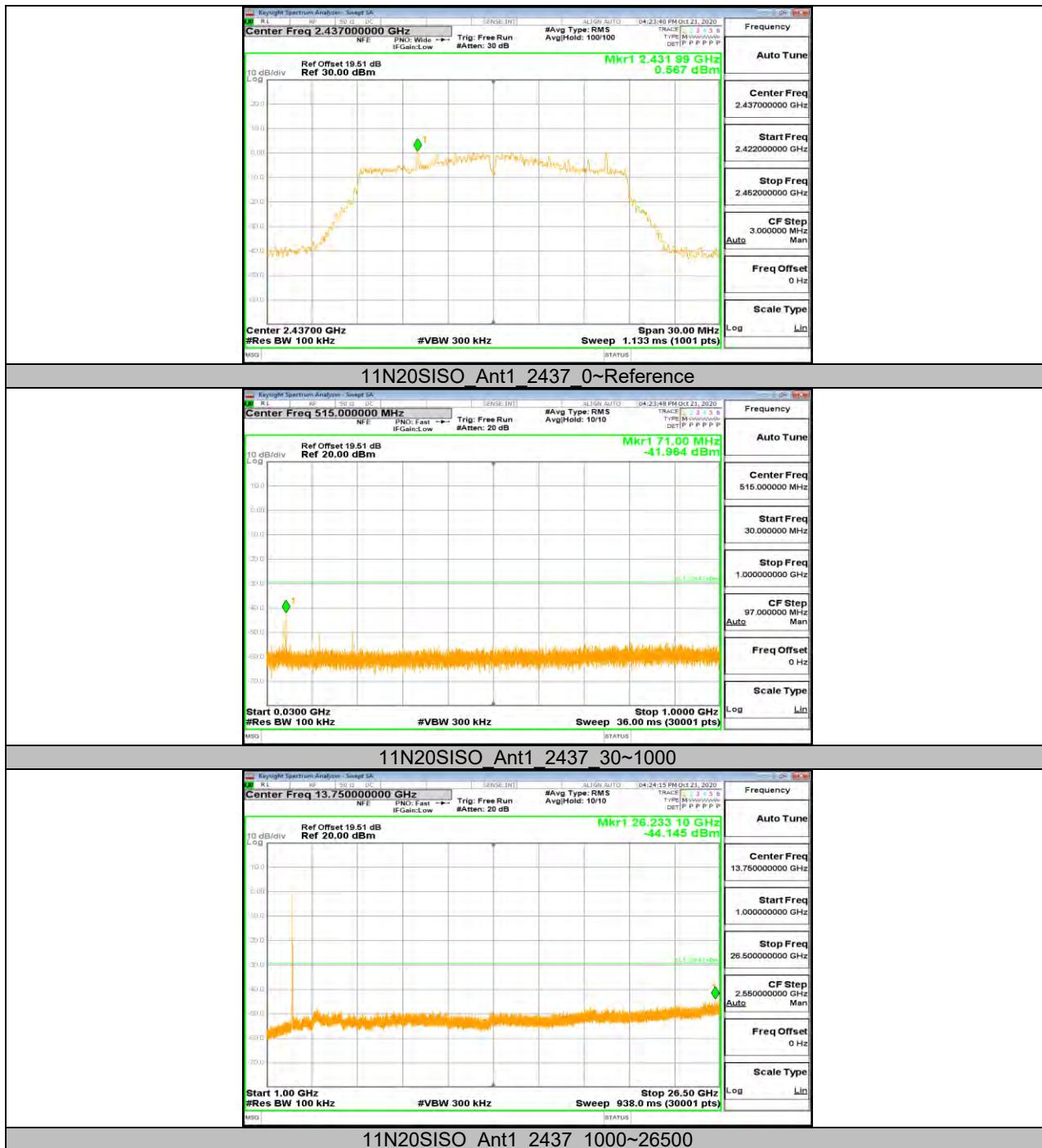
11G\_Ant1\_2437\_30~1000



11G\_Ant1\_2437\_1000~26500









## 11.7. Appendix G: Duty Cycle

### 11.7.1. Test Result

Mode	On Time (msec)	Period (msec)	Duty Cycle x (Linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/T Minimum VBW (kHz)	Final setting For VBW (kHz)
11B	8.41	8.51	0.9882	98.82	0.05	0.12	0.01
11G	1.39	1.50	0.9267	92.67	0.33	0.72	1
11N20SISO	1.31	1.41	0.9291	92.91	0.32	0.76	1

Note:

Duty Cycle Correction Factor=10log (1/x).

Where: x is Duty Cycle (Linear)

Where: T is On Time

If that calculated VBW is not available on the analyzer then the next higher value should be used.

If the duty cycle is greater than 98%, the VBW will be setting for 10Hz. And that calculated VBW is not available on the analyzer then the next higher value should be used.

## 11.7.2. Test Graphs





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END OF REPORT