



**CFR 47 FCC PART 15 SUBPART E  
CFR 47 FCC PART 15 SUBPART C**

**CERTIFICATION TEST REPORT**

*For*

**Tablet**

**MODEL NUMBER: VT-TABLET-5081G**

**FCC ID: 2AAGE5081G98**

**REPORT NUMBER: 4790388615-2**

**ISSUE DATE: April 29, 2022**

*Prepared for*

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Revision History

<u>Rev.</u>	<u>Issue Date</u>	<u>Revisions</u>	<u>Revised By</u>
V0	4/29/2022	Initial Issue	



Summary of Test Results			
Clause	Test Items	FCC Rules	Test Results
1	6dB/26dB Bandwidth	FCC 15.407 (a)&(e)	PASS
2	99% Occupied Bandwidth	FCC part 2.1049	PASS
3	Conducted Output Power	FCC 15.407 (a)	PASS
4	Power Spectral Density	FCC 15.407 (a)	PASS
5	Radiated Bandedge and Spurious Emission	FCC 15.407 (b) FCC 15.209 FCC 15.205	PASS
6	Conducted Emission Test for AC Power Port	FCC 15.207	PASS
7	Frequency Stability	FCC 15.407 (g)	PASS
8	Antenna Requirement	FCC 15.203	PASS
<b>Note:</b> 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: Chengdu Vantron Technology Co., Ltd.  
Address: No.5 GaoPeng Road, Hi-Tech Zone, Chengdu, SiChuan, China

## Manufacturer Information

Company Name: Chengdu Vantron Technology Co., Ltd.  
Address: No.5 GaoPeng Road, Hi-Tech Zone, Chengdu, SiChuan, China

## EUT Information

EUT Name: Tablet  
Model: VT-TABLET-5081G  
Brand: VANTRON  
Sample Received Date: April 27, 2022  
Sample Status: Normal  
Sample ID: 4905778  
Date of Tested: April 27~29, 2022

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

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Checked By:

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## 2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.10-2013, CFR 47 FCC Part 2, CFR 47 FCC Part 15, KDB 789033 D02 v02r01, KDB414788 D01 Radiated Test Site v01r01, KDB 558074 D01 15.247 Meas Guidance v05r02, KDB 662911 D01 Multiple Transmitter Output v02r01.

## 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. The Company Number is 21320 and the test lab Conformity Assessment 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	Tablet	
Model	VT-TABLET-5081G	
Radio Technology (WIFI 5G)	WLAN (IEEE 802.11a20/n HT20/n HT40/ac VHT20/VHT40/VHT80)	
Operation frequency	UNII-1: 5150 ~ 5250 MHz UNII-3: 5725 ~ 5850 MHz	
Modulation	IEEE 802.11a20: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n HT20: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n HT40: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11ac VHT20: OFDM (256QAM, 64QAM, 16QAM, QPSK, BPSK) IEEE 802.11ac VHT40: OFDM (256QAM, 64QAM, 16QAM, QPSK, BPSK) IEEE 802.11ac VHT80: OFDM (256QAM, 64QAM, 16QAM, QPSK, BPSK)	
Radio Technology (WIFI 2.4G)	IEEE802.11b/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) IEEE 802.11g: OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n HT20: OFDM (64QAM, 16QAM, QPSK,BPSK)	
Radio Technology (BLE)	Operation Frequency	2402 MHz ~ 2480 MHz
	Modulation Type	Data Rate
	GFSK	1Mbps
	GFSK	2Mbps
Product Description (Classic Bluetooth)	Operation Frequency	2402 MHz ~ 2480 MHz
	Modulation Type	Data Rate
	GFSK	1Mbps
	π/4-DQPSK	2Mbps
	8DPSK	3Mbps
Radio Technology (NFC)	Operation Frequency	13.56MHz
Modulation	ASK	
Rated Input	USB type-C 5V2A	
Li-ion Battery	3.8 V, 8000 mAh, 30.4Wh	



## 5.2. DESCRIPTION OF AVAILABLE ANTENNAS

Antenna No.	Frequency Band	Antenna Type	Max Antenna Gain (dBi)
1	UNII1& UNII3	Integral antenna	2.4
2	UNII1& UNII3	Integral antenna	1.4

Antenna	Frequency (MHz)	Antenna Type	MAX Antenna Gain (dBi)
1	2402-2480	Integral Antenna	2.2
2	2402-2480	Integral Antenna	3.4

## 5.3. THE WORSE CASE CONFIGURATIONS

Note: The original model had already applied for FCC, the new product television used the original module without any change except removing the LTE module. according to general guidance of KDB484596 D01 (please refer to clause 1). a) b) c)), we used all the original test data to apply the new FCC ID, but added the conducted output power and radiated spurious emission worst case test in this report to demonstrate that the referenced test data remains valid for the new device. For other data, please refer to the original report.

The applicant takes full responsibility that the test data referenced below represents compliance for this FCC ID.

Reference Details:

Equipment Class	Application Type	Reference FCC ID	Reference Test Report Number	Data Re-used
WIFI 2.4G	Original Grant	2AAGE5081GB4898	4790198193.1-3	All
WIFI 5G	Original Grant	2AAGE5081GB4898	4790198193.1-4	All
BLE	Original Grant	2AAGE5081GB4898	4790198193.1-1	All
BT	Original Grant	2AAGE5081GB4898	4790198193.1-2	All
NFC	Original Grant	2AAGE5081GB4898	4790198193.1-6	All

## 5.4. DESCRIPTION OF TEST SETUP

### SUPPORT EQUIPMENT

Item	Equipment	Brand Name	Model Name	P/N
/	/	/	/	/

### I/O CABLES

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

### ACCESSORIES

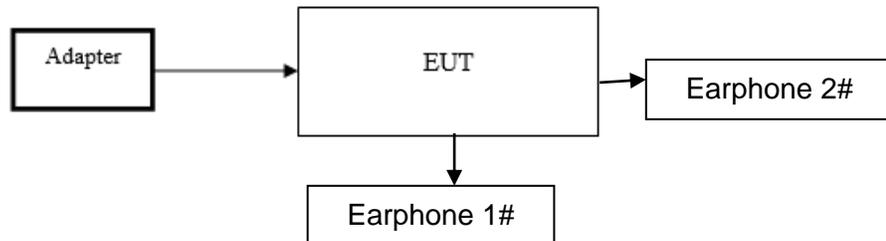
Item	Accessory	Brand Name	Model Name	Description
1	Power adapter	HUAWEI	HW-100225C00	5V2A
2	Earphone 1#	/	/	/
3	Earphone 2#	/	/	/
4	TF Card	/	/	/

### TEST SETUP

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

### SETUP DIAGRAM FOR TESTS

For Conducted Emission Test for AC Power Port test:



**6. MEASURING INSTRUMENT AND SOFTWARE USED**

<b>R&amp;S TS 8997 Test System</b>					
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due. Date
Power sensor, Power Meter	R&S	OSP120	100921	Apr.02,2022	Apr.01,2023
Vector Signal Generator	R&S	SMBV100A	261637	Oct.30, 2021	Oct.29, 2022
Signal Generator	R&S	SMB100A	178553	Oct.30, 2021	Oct.29, 2022
Signal Analyzer	R&S	FSV40	101118	Oct.30, 2021	Oct.29, 2022
<b>Software</b>					
Description	Manufacturer	Name		Version	
For R&S TS 8997 Test System	Rohde & Schwarz	EMC 32		10.60.10	
<b>Tonsend RF Test System</b>					
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due. Date
Wideband Radio Communication Tester	R&S	CMW500	155523	Oct.30, 2021	Oct.29, 2022
Wireless Connectivity Tester	R&S	CMW270	1201.0002N75-102	Sep.29, 2021	Sep.28, 2022
PXA Signal Analyzer	Keysight	N9030A	MY55410512	Oct.30, 2021	Oct.29, 2022
MXG Vector Signal Generator	Keysight	N5182B	MY56200284	Oct.30, 2021	Oct.29, 2022
MXG Vector Signal Generator	Keysight	N5172B	MY56200301	Oct.30, 2021	Oct.29, 2022
DC power supply	Keysight	E3642A	MY55159130	Oct.30, 2021	Oct.29, 2022
Temperature & Humidity Chamber	SANMOOD	SG-80-CC-2	2088	Nov.20,2020	Nov.19,2022
<b>Software</b>					
Description	Manufacturer	Name		Version	
Tonsend SRD Test System	Tonsend	JS1120-3 RF Test System		2.6.77.0518	



Radiated Emissions					
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due Date
MXE EMI Receiver	KESIGHT	N9038A	MY56400036	Oct.30, 2021	Oct.29, 2022
Hybrid Log Periodic Antenna	TDK	HLP-3003C	130959	Aug.02, 2021	Aug.01, 2024
Preamplifier	HP	8447D	2944A09099	Oct.30, 2021	Oct.29, 2022
EMI Measurement Receiver	R&S	ESR26	101377	Oct.30, 2021	Oct.29, 2022
Horn Antenna	TDK	HRN-0118	130940	July 20, 2021	July 19, 2024
Preamplifier	TDK	PA-02-0118	TRS-305-00067	Oct.30, 2021	Oct.29, 2022
Horn Antenna	Schwarzbeck	BBHA9170	697	July 20, 2021	July 19, 2024
Preamplifier	TDK	PA-02-2	TRS-307-00003	Oct.31, 2021	Oct.30, 2022
Preamplifier	TDK	PA-02-3	TRS-308-00002	Oct.31, 2021	Oct.30, 2022
Loop antenna	Schwarzbeck	1519B	00008	Dec.14, 2021	Dec.13, 2024
Preamplifier	TDK	PA-02-001-3000	TRS-302-00050	Oct.31, 2021	Oct.30, 2022
Preamplifier	Mini-Circuits	ZX60-83LN-S+	SUP01201941	Oct.31, 2021	Oct.30, 2022
Highpass Filter	Wainwright	WHKX10-5850-6500-1800-40SS	4	Oct.31, 2021	Oct.30, 2022
Band Reject Filter	Wainwright	WRCJV12-5695-5725-5850-5880-40SS	4	Oct.31, 2021	Oct.30, 2022
Band Reject Filter	Wainwright	WRCJV20-5120-5150-5350-5380-60SS	2	Oct.31, 2021	Oct.30, 2022
Band Reject Filter	Wainwright	WRCJV20-5440-5470-5725-5755-60SS	1	Oct.31, 2021	Oct.30, 2022
Software					
Description			Manufacturer	Name	Version
Test Software for Radiated Emissions			Farad	EZ-EMC	Ver. UL-3A1



## 7. ANTENNA PORT TEST RESULTS

### 7.1. 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) (1)	Peak Conducted Output Power	Hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel: 1 watt or 30 dBm; Hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel: 125 mW or 21 dBm	2400-2483.5

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

CFR 47 FCC Part15, Subpart E		
Test Item	Limit	Frequency Range (MHz)
Conducted Output Power	<input type="checkbox"/> Outdoor Access Point: 1 W (30 dBm) <input type="checkbox"/> Indoor Access Point: 1 W (30 dBm) <input type="checkbox"/> Fixed Point-To-Point Access Points: 1 W (30 dBm) <input checked="" type="checkbox"/> Client Devices: 250 mW (24 dBm)	5150 ~ 5250
	Shall not exceed the lesser of 250 mW (24dBm) or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz.	5250 ~ 5350 5470 ~ 5725
	Shall not exceed 1 Watt (30 dBm).	5725 ~ 5850

Note:

The above limits are based upon the maximum antenna gain does not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

## **TEST PROCEDURE**

Refer to ANSI C63.10-2013 clause 11.9.

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.

Refer to KDB 789033 D02 General U-NII Test Procedures New Rules v02r01 section II.E.

### **Method SA-1 (trace averaging with the EUT transmitting at full power throughout each sweep):**

- (i) Set span to encompass the entire emission bandwidth (EBW) (or, alternatively, the entire 99% occupied bandwidth) of the signal.
- (ii) Set RBW = 1 MHz.
- (iii) Set VBW  $\geq$  3 MHz.
- (iv) Number of points in sweep  $\geq 2 \times$  span / RBW. (This ensures that bin-to-bin spacing is  $\leq$  RBW/2, so that narrowband signals are not lost between frequency bins.)
- (v) Sweep time = auto.
- (vi) Detector = power averaging (rms), if available. Otherwise, use sample detector mode.
- (vii) If transmit duty cycle  $<$  98 %, use a video trigger with the trigger level set to enable triggering only on full power pulses. Transmitter must operate at maximum power control level for the entire duration of every sweep. If the EUT transmits continuously (i.e., with no off intervals) or at duty cycle  $\geq$  98 %, and if each transmission is entirely at the maximum power control level, then the trigger shall be set to "free run."
- (viii) Trace average at least 100 traces in power averaging (rms) mode.
- (ix) Compute power by integrating the spectrum across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal using the instrument's band power measurement function with band limits set equal to the EBW (or occupied bandwidth) band edges. If the instrument does not have a band power function, sum the spectrum levels (in power units) at 1 MHz intervals extending across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the spectrum.

### **Method PM (Measurement using an RF average power meter):**

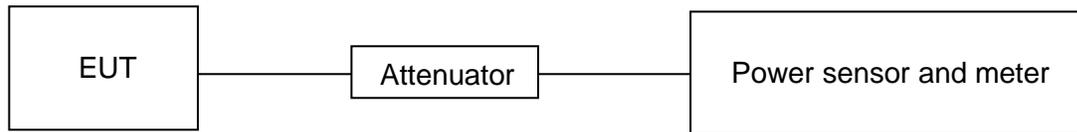
- (i) Measurements may be performed using a wideband RF power meter with a thermocouple detector or equivalent if all of the following conditions are satisfied:
  - a. The EUT is configured to transmit continuously or to transmit with a constant duty cycle.
  - b. At all times when the EUT is transmitting, it must be transmitting at its maximum power control level.
  - c. The integration period of the power meter exceeds the repetition period of the transmitted signal by at least a factor of five.
- (ii) If the transmitter does not transmit continuously, measure the duty cycle,  $x$ , of the transmitter output signal as described in II.B.
- (iii) Measure the average power of the transmitter. This measurement is an average over both the on and off periods of the transmitter.
- (iv) Adjust the measurement in dBm by adding  $10 \log (1/x)$  where  $x$  is the duty cycle (e.g.,  $10 \log (1/0.25)$  if the duty cycle is 25 %).

### **Method PM-G (Measurement using a gated RF average power meter):**



Measurements may be performed using a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Since the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required.

### TEST SETUP



### TEST ENVIRONMENT

Temperature	23.1 °C	Relative Humidity	51.2 %
Atmosphere Pressure	101 kPa	Test Voltage	DC 5 V

### RESULTS

WIFI 2.4G					
Test Mode	Antenna	Channel	AVG Result[dBm]	Limit[dBm]	Verdict
11N20MIMO	Ant1	2412	13.18	≤30	PASS
	Ant2	2412	12.07	≤30	PASS
	total	2412	15.67	≤30	PASS
	Ant1	2437	13.05	≤30	PASS
	Ant2	2437	12.27	≤30	PASS
	total	2437	15.69	≤30	PASS
	Ant1	2462	13.16	≤30	PASS
	Ant2	2462	12.09	≤30	PASS
total	2462	15.67	≤30	PASS	

WIFI 5G					
Test Mode	Antenna	Channel	AVG Result[dBm]	Limit[dBm]	Verdict
11N40MIMO	Ant1	5190	11.17	≤23.98	PASS
	Ant2	5190	12.37	≤23.98	PASS
	total	5190	14.82	≤23.98	PASS
	Ant1	5230	12.27	≤23.98	PASS
	Ant2	5230	12.55	≤23.98	PASS
	total	5230	15.42	≤23.98	PASS
	Ant1	5755	12.08	≤30	PASS
	Ant2	5755	13.45	≤30	PASS
	total	5755	15.83	≤30	PASS
	Ant1	5795	12.15	≤30	PASS
	Ant2	5795	14.48	≤30	PASS
	total	5795	16.48	≤30	PASS



BT					
Test Mode	Antenna	Channel	PEAK Result[dBm]	Limit[dBm]	Verdict
3DH5	Ant1	2402	12.36	≤20.97	PASS
		2441	12.54	≤20.97	PASS
		2480	12.72	≤20.97	PASS
Test Mode	Antenna	Channel	AVG Result[dBm]	Limit[dBm]	Verdict
3DH5	Ant1	2402	9.67	≤20.97	PASS
		2441	9.23	≤20.97	PASS
		2480	9.19	≤20.97	PASS

BLT					
Test Mode	Antenna	Channel	PEAK Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	8.04	≤30	PASS
		2440	8.13	≤30	PASS
		2480	8.59	≤30	PASS
Test Mode	Antenna	Channel	AVG Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	7.53	≤30	PASS
		2440	7.39	≤30	PASS
		2480	8.19	≤30	PASS



## 8. RADIATED TEST RESULTS

### LIMITS

Refer to CFR 47 FCC §15.205, §15.209 and §15.407 (b).

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



Fundamental field strength

FCC Reference:	Part 15.225(a)(b)(c)(d) & 15.209(a)
Test Method Used:	ANSI C63.10 Sections 6.3, 6.4 and 6.5

Frequency (MHz)	Field Strength (uV/m)	Field Strength (dBuV/m)	Measured Distance (Meters)
13.553-13.567	15848	84	30
13.410-13.553/13.567-13.710	334	50.47	30
13.110-13.410/13.710-14.010	106	40.51	30

Note(s):

1. The field strength of any emissions appearing outside of the 13.110-14.010 MHz band shall not exceed the general radiated emission limits in §15.209.

2. The limit is specified at a test distance of 30 meters. However, as specified by FCC Section 15.31 (f)(2), measurements may be performed at a closer distance and the measured level corrected to the specified measurement distance by using the square of an inverse linear distance extrapolation factor (40dB/decade).



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
<sup>1</sup> 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

Limits of unwanted/undesirable emission out of the restricted bands refer to CFR 47 FCC §15.407 (b) and ISSED RSS-247 6.2.

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1GHz)		
Frequency Range (MHz)	EIRP Limit	Field Strength Limit (dBuV/m) at 3 m
5150~5250 MHz	PK: -27 (dBm/MHz)	PK:68.2(dBμV/m)
5250~5350 MHz		
5470~5725 MHz		
5725~5850 MHz	PK: -27 (dBm/MHz) *1 PK: 10 (dBm/MHz) *2 PK: 15.6 (dBm/MHz) *3 PK: 27 (dBm/MHz) *4	PK: 68.2(dBμV/m) *1 PK: 105.2 (dBμV/m) *2 PK: 110.8(dBμV/m) *3 PK: 122.2 (dBμV/m) *4

Note:

\*1 beyond 75 MHz or more above of the band edge.

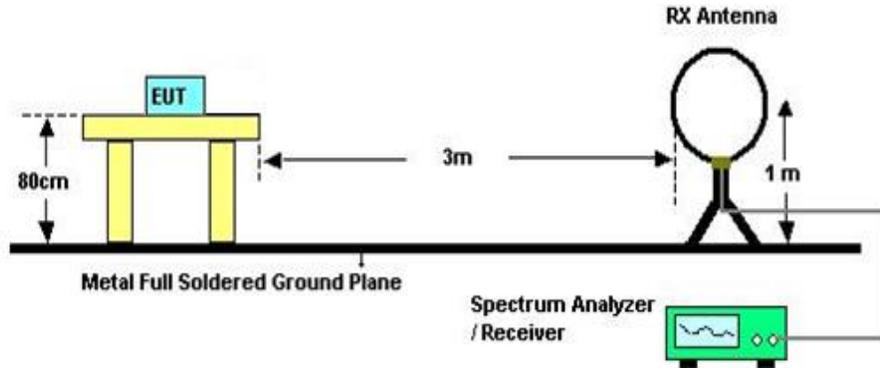
\*2 below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above.

\*3 below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above.

\*4 from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

**TEST SETUP AND PROCEDURE**

Below 30 MHz

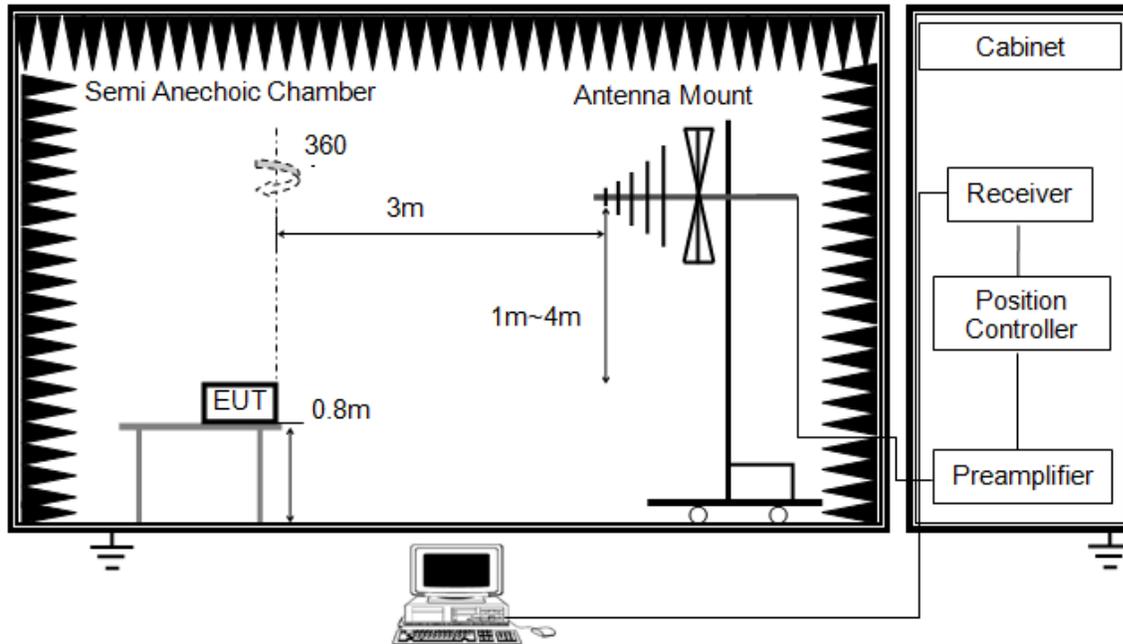


The setting of the spectrum analyser

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.

Below 1 GHz and above 30 MHz

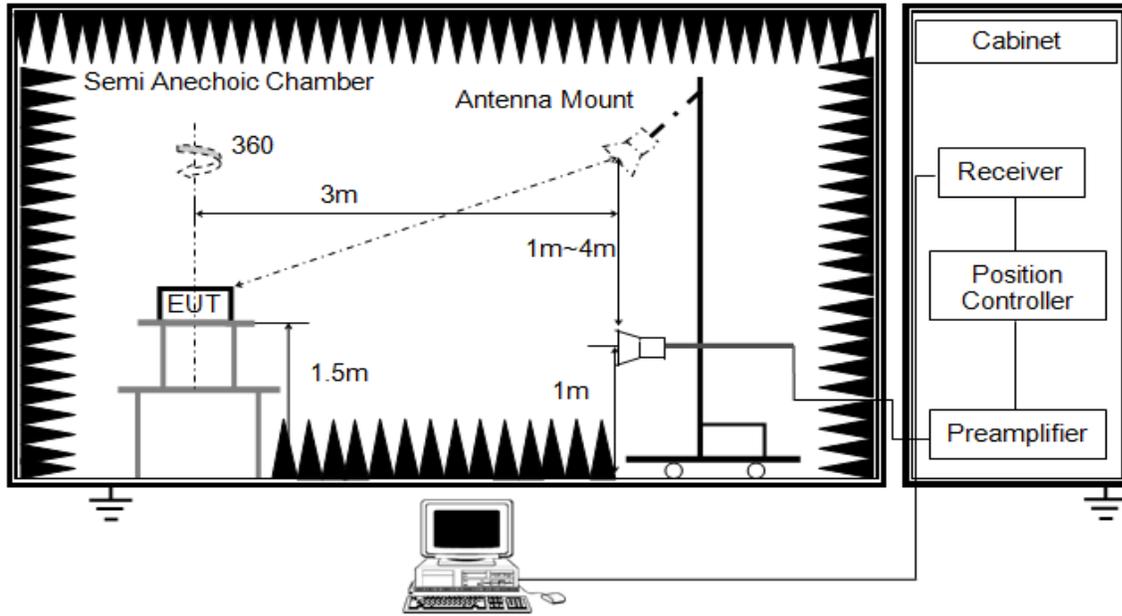


The setting of the spectrum analyser

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

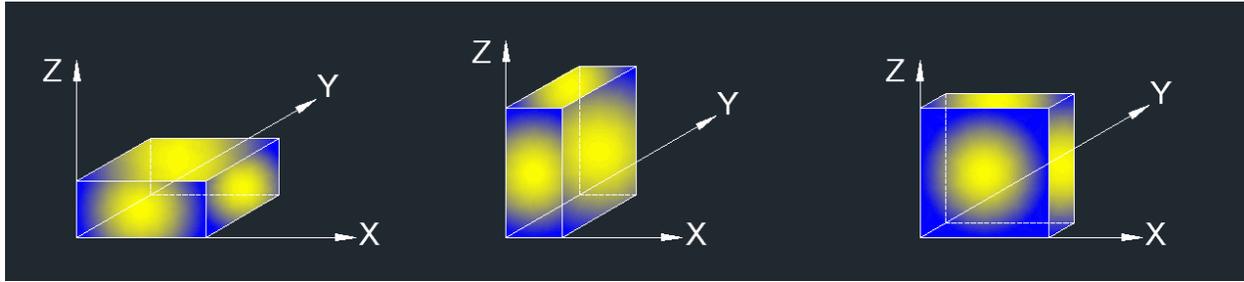


The setting of the spectrum analyser

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 KDB 789033 D02 General U-NII Test Procedures New Rules v02r01 section II.G.3 ~ II.G.6.
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 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	22.5°C	Relative Humidity	48 %
Atmosphere Pressure	101 kPa	Test Voltage	DC 5 V

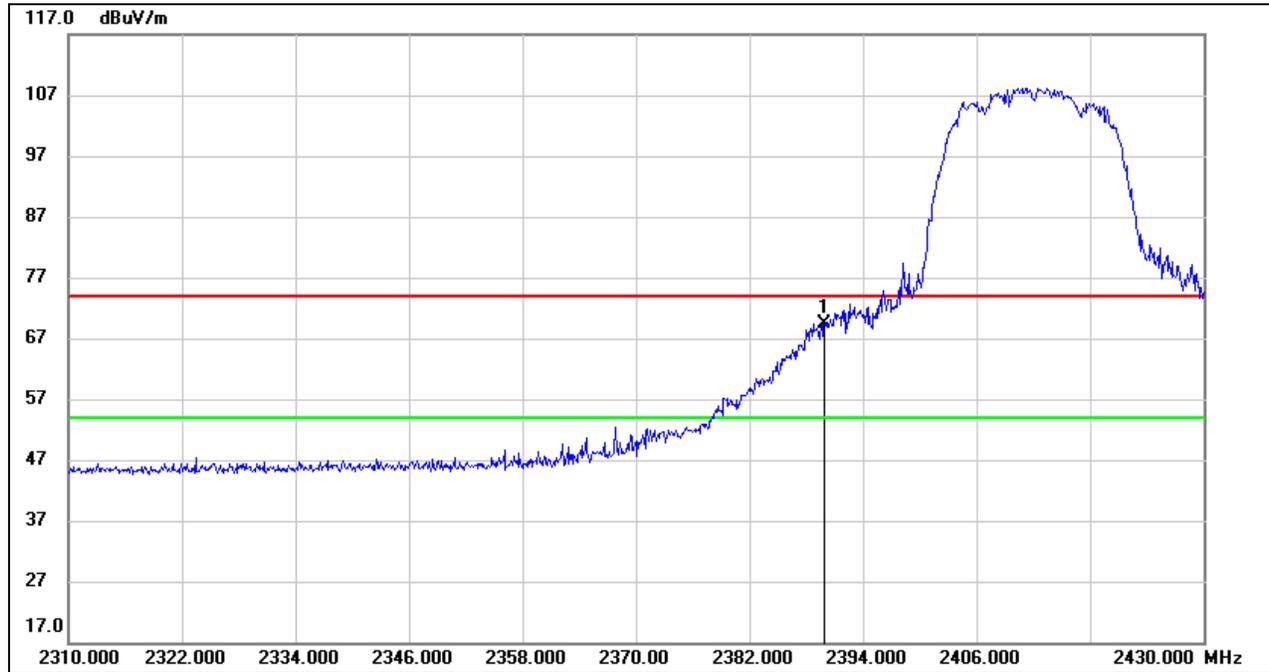
### RESULTS

## 8.1. RESTRICTED BANDEDGE

### 8.1.1. WIFI 2.4G 802.11n HT20 MIMO MODE

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

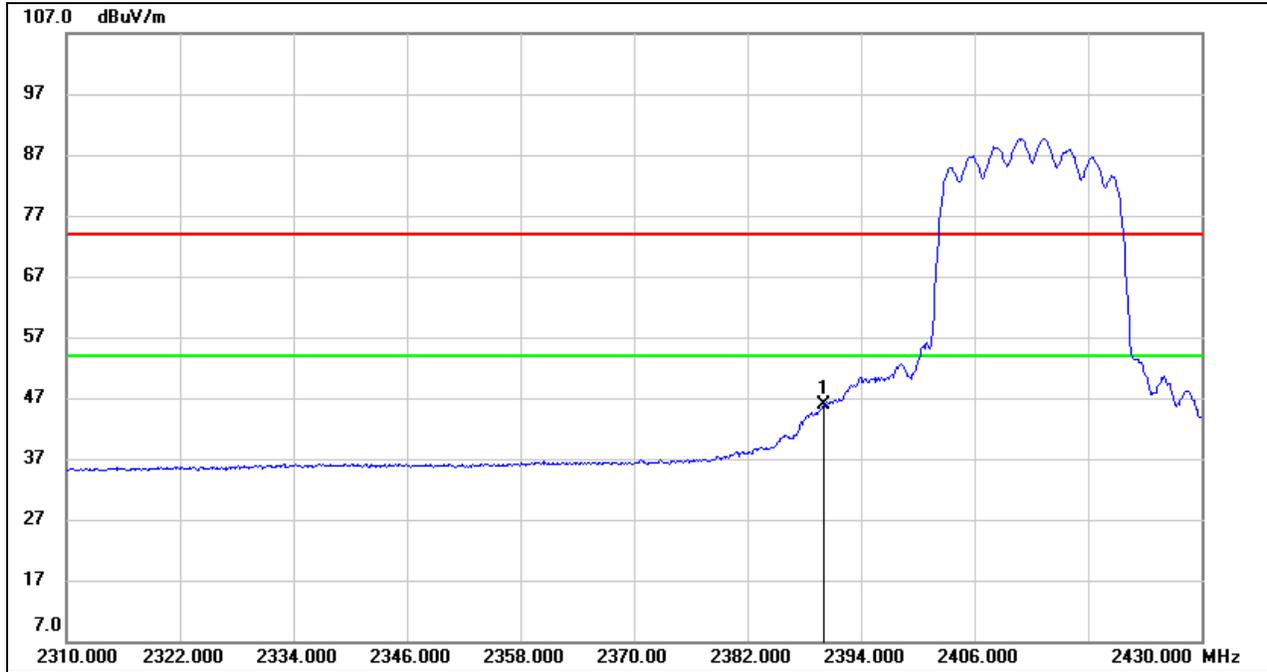
#### PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2390.000	36.71	32.66	69.37	74.00	-4.63	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**

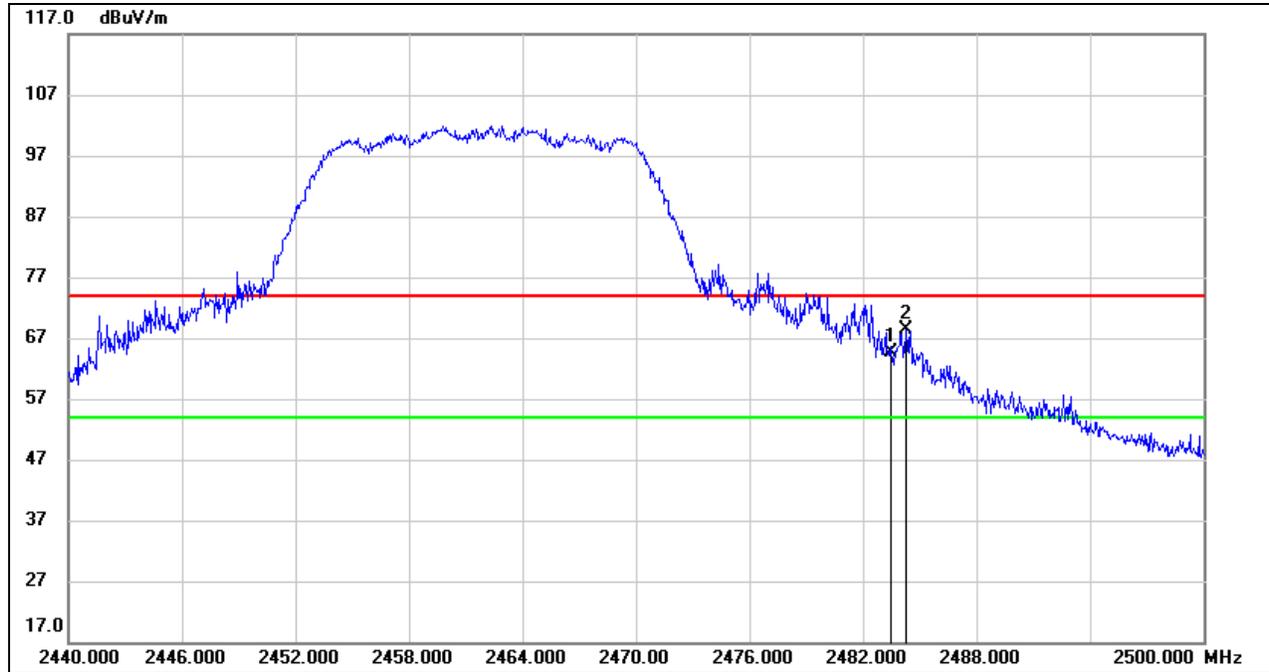


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2390.000	13.11	32.66	45.77	54.00	-8.23	AVG

- 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.

**RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)**

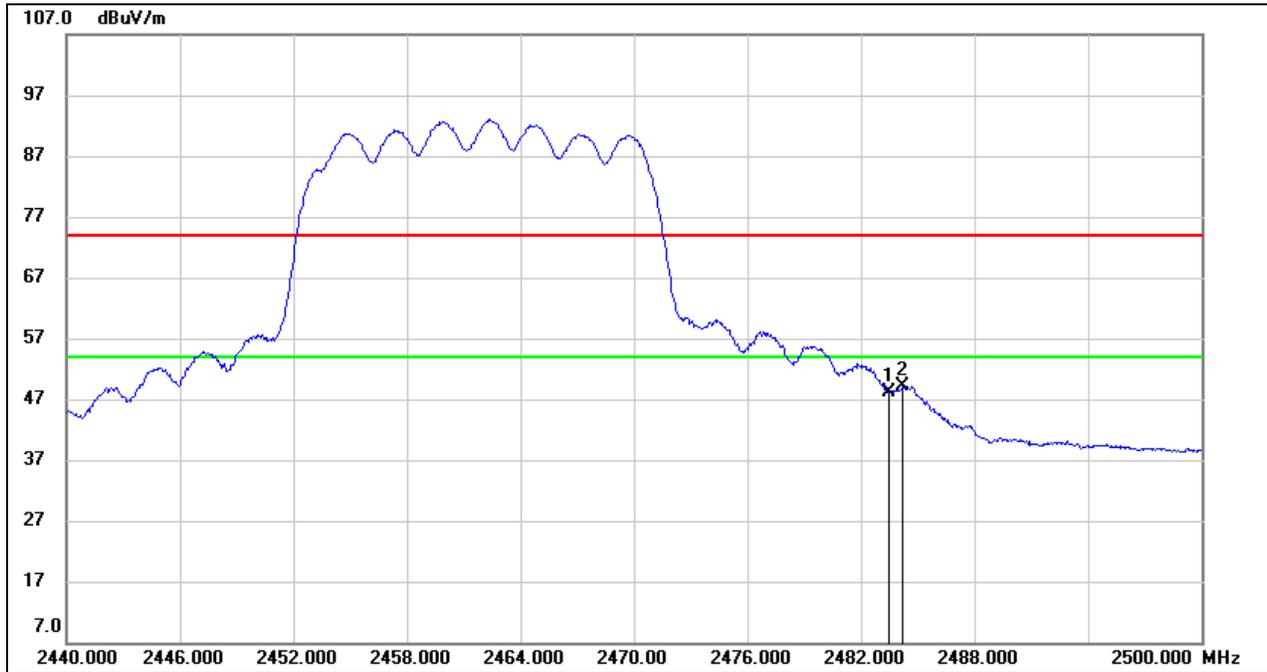
**PEAK**



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	31.46	33.10	64.56	74.00	-9.44	peak
2	2484.280	35.24	33.10	68.34	74.00	-5.66	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	15.00	33.10	48.10	54.00	-5.90	AVG
2	2484.220	16.05	33.10	49.15	54.00	-4.85	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.

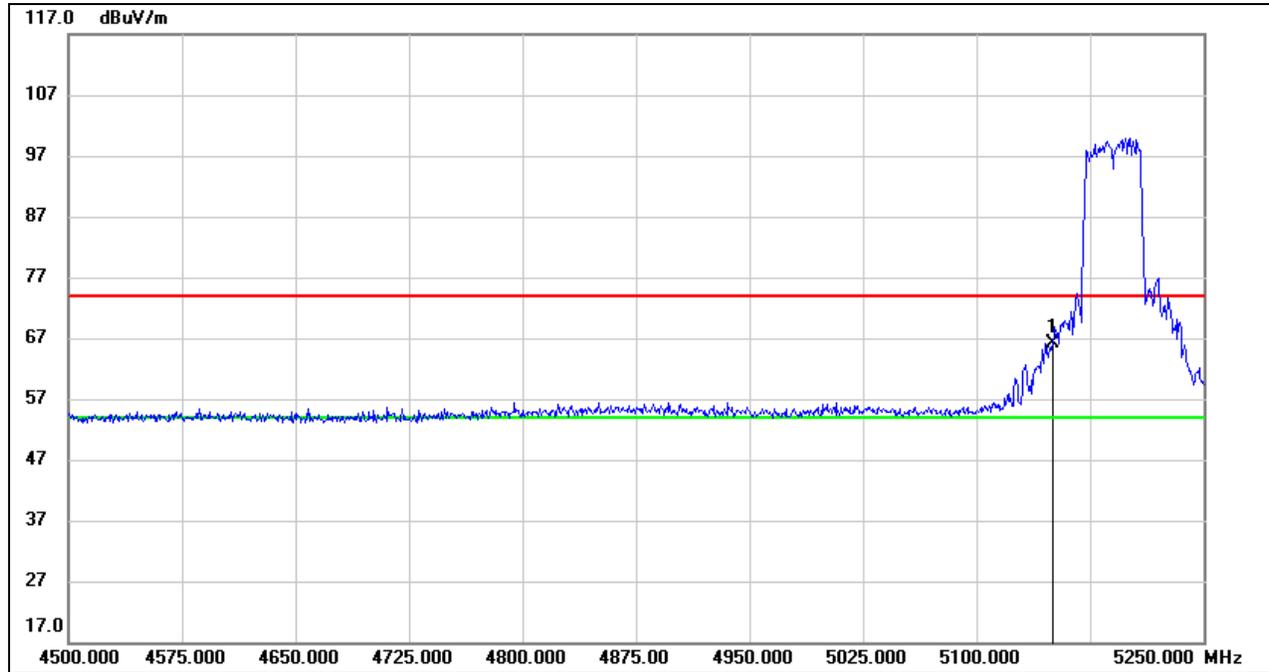
Note: All the polarities (vertical and horizontal) had been tested, only the worst data was recorded in the report.

8.1.2. WIFI 5G 802.11n HT40 MIMO MODE

UNII-1 BAND

RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)

PEAK

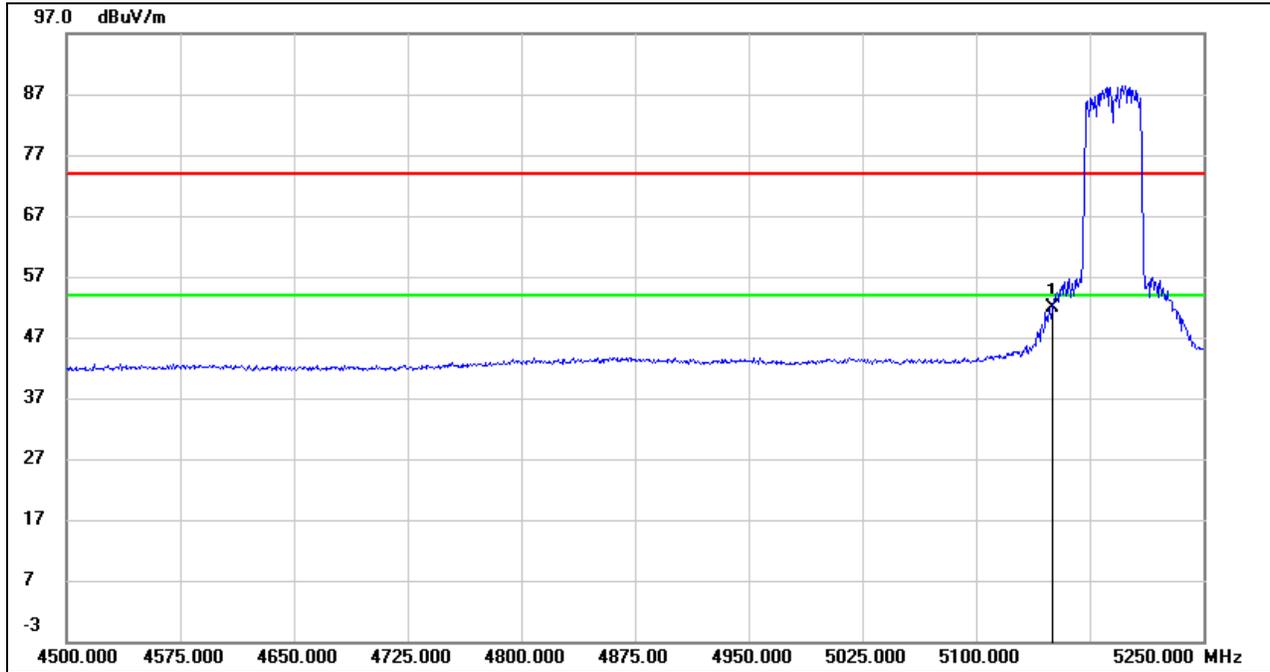


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5150.000	26.30	39.91	66.21	74.00	-7.79	peak

- 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.
  5. All the polarities (vertical and horizontal) had been tested, only the worst data was recorded in the report.



**AVG**



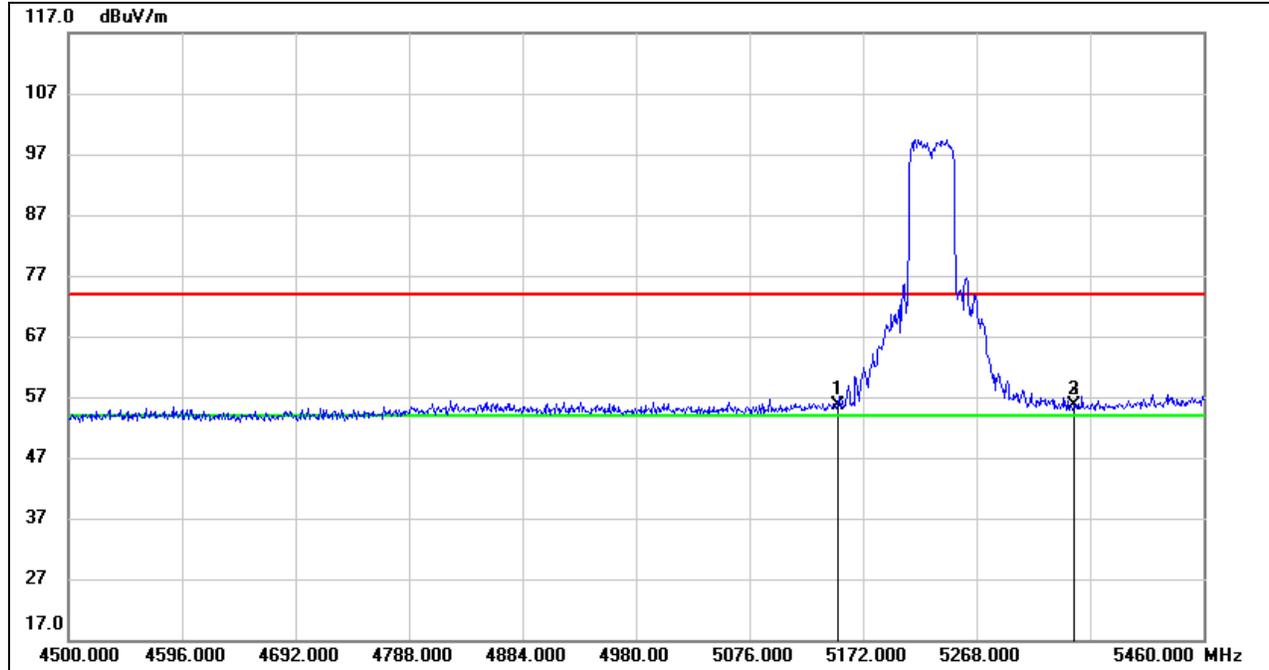
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5150.000	12.08	39.91	51.99	54.00	-2.01	AVG

- 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, VERTICAL)**

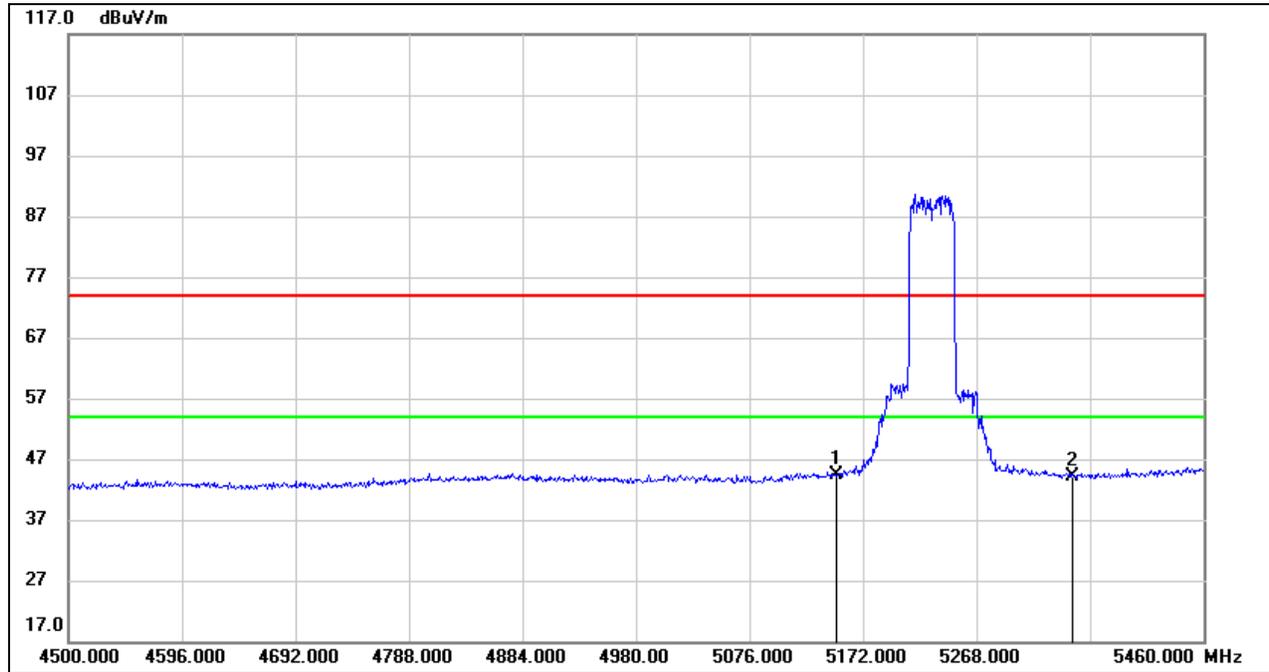
**PEAK**



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5150.000	15.79	39.91	55.70	74.00	-18.30	peak
2	5350.000	15.63	40.08	55.71	74.00	-18.29	peak
3	5350.000	15.63	40.08	55.71	74.00	-18.29	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.  
 5. All the polarities (vertical and horizontal) had been tested, only the worst data was recorded in the report.

**AVG**



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5150.000	4.42	39.91	44.33	54.00	-9.67	AVG
2	5350.000	4.01	40.08	44.09	54.00	-9.91	AVG

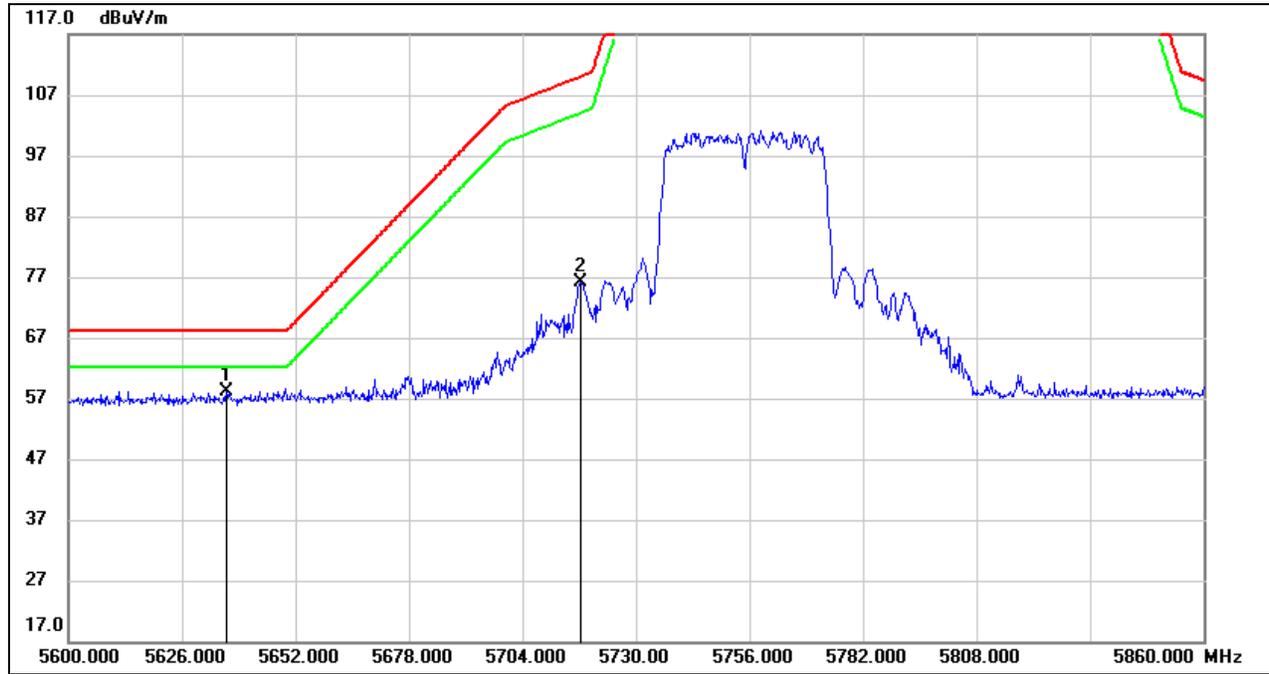
- Note:
1. Measurement = Reading Level + Correct Factor.
  2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
  3. AVG:  $VBW=1/Ton$ , where: Ton is the transmitting duration.
  4. For the transmitting duration, please refer to clause 7.1.
  5. Only the worst data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

Note: All the polarities (vertical and horizontal) had been tested, only the worst data was recorded in the report.

**UNII-3 BAND**

**RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)**

**PEAK**

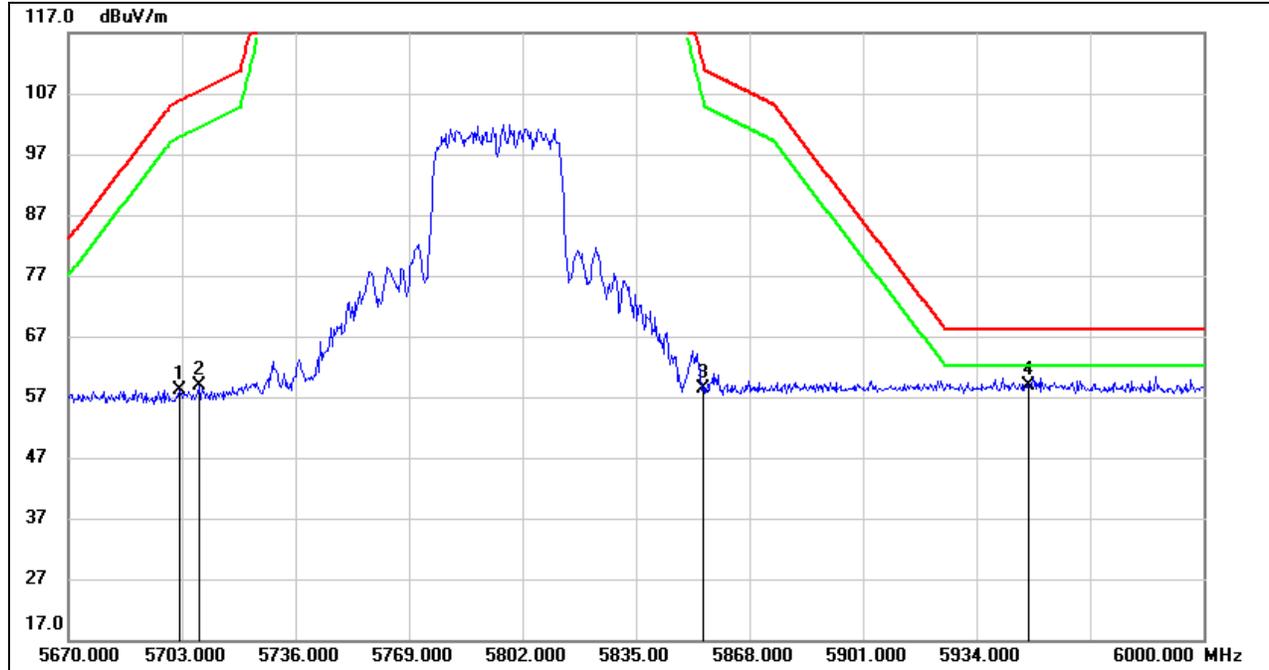


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5636.140	17.38	40.64	58.02	68.20	-10.18	peak
2	5717.260	35.52	40.59	76.11	110.03	-33.92	peak

- 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.  
 5. All the polarities (vertical and horizontal) had been tested, only the worst data was recorded in the report.

**RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)**

**PEAK**



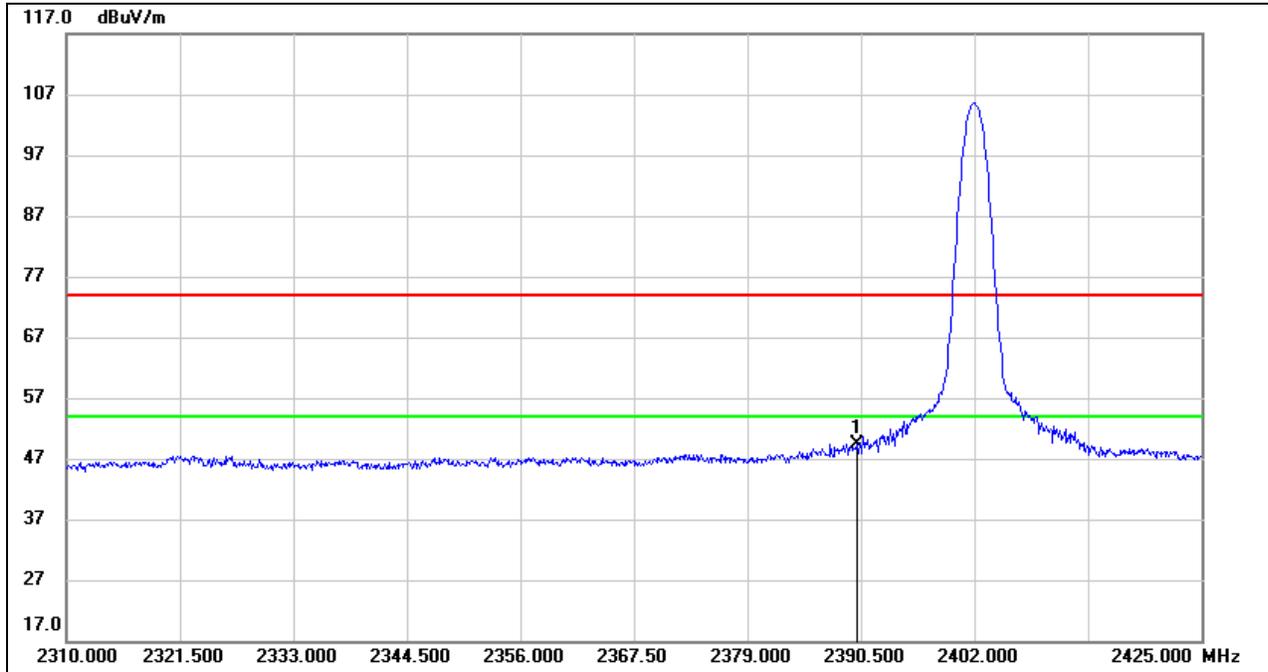
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5702.340	17.72	40.52	58.24	105.86	-47.62	peak
2	5707.950	18.30	40.55	58.85	107.43	-48.58	peak
3	5854.470	16.85	41.49	58.34	112.01	-53.67	peak
4	5949.180	17.10	41.71	58.81	68.20	-9.39	peak

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.  
 5. All the polarities (vertical and horizontal) had been tested, only the worst data was recorded in the report.

**8.1.3. BT 8DPSK MODE**

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

**PEAK**

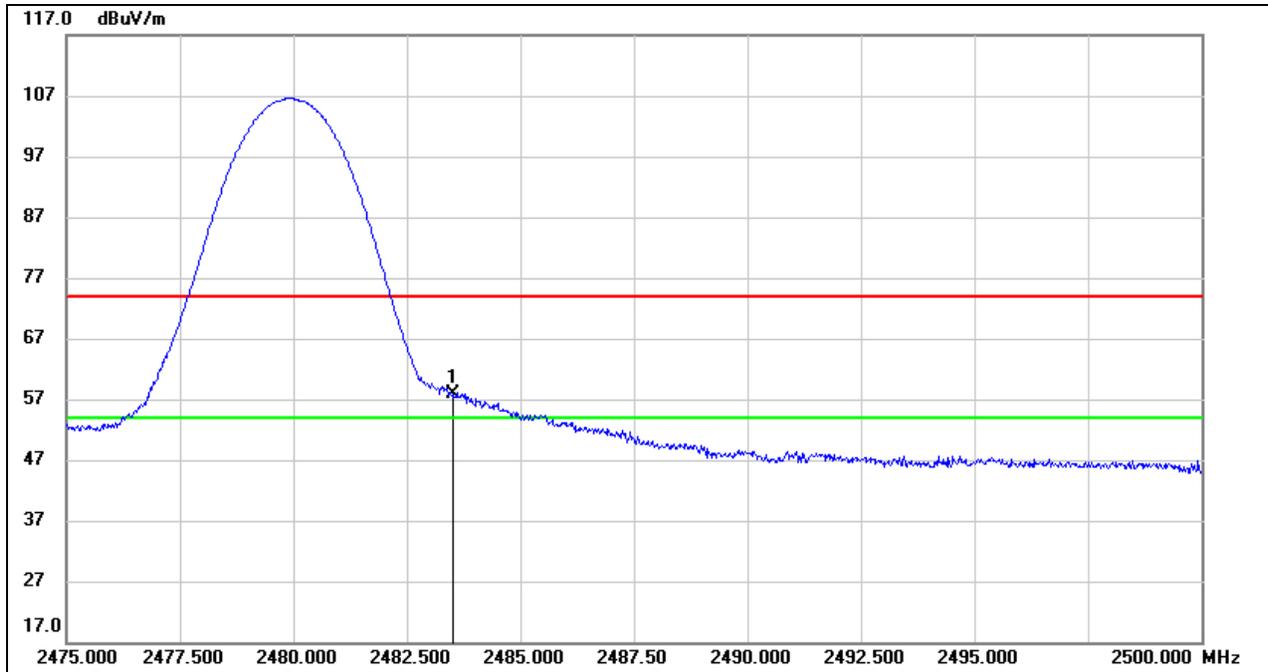


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2390.000	16.68	32.66	49.34	74.00	-24.66	peak

- 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)**

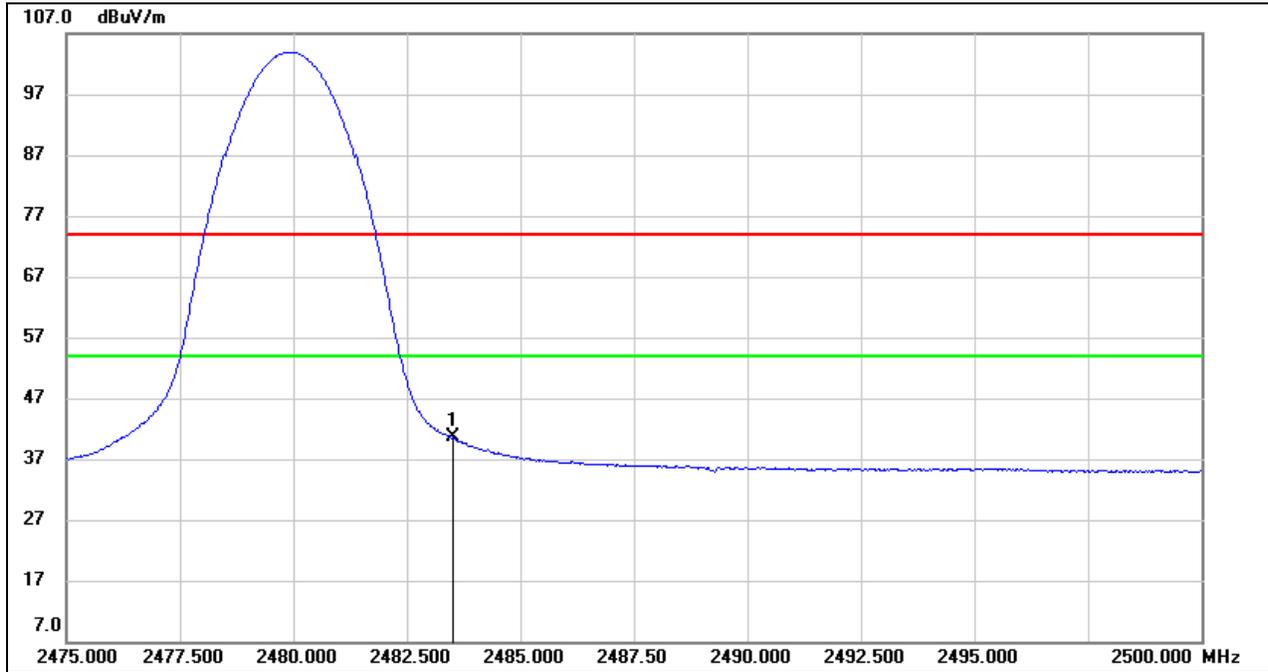
**PEAK**



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	24.87	33.10	57.97	74.00	-16.03	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	7.49	33.10	40.59	74.00	-33.41	peak

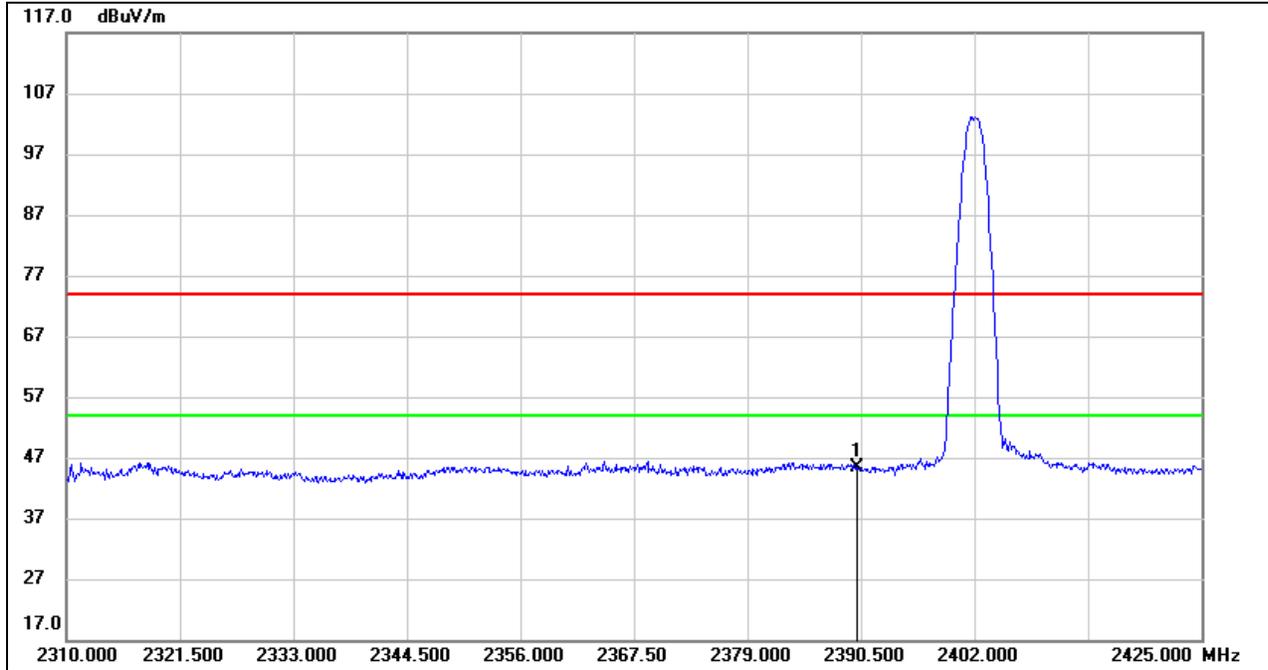
- Note: 1. Measurement = Reading Level + Correct Factor.  
 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.  
 3. Peak: Peak detector.  
 4. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

Note: All the polarities (vertical and horizontal) had been tested, only the worst data was recorded in the report.

**8.1.4. BLE 1M MODE**

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

**PEAK**



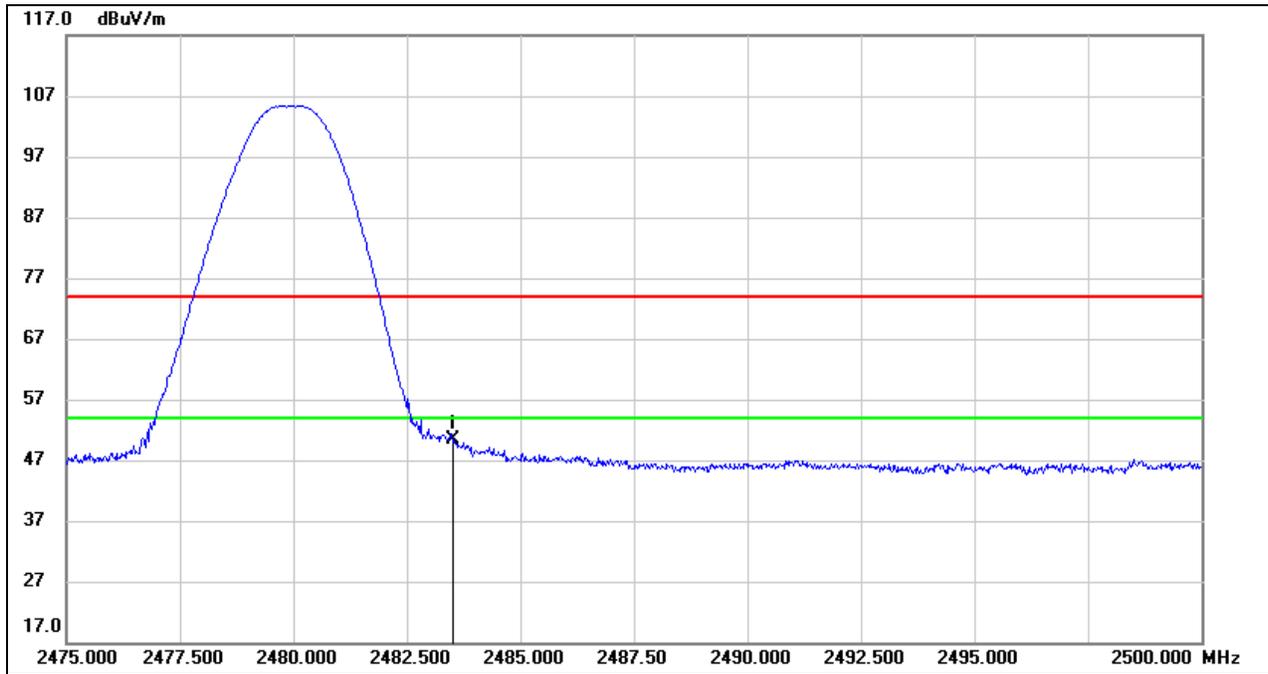
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2390.000	12.73	32.66	45.39	74.00	-28.61	peak

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. 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	17.30	33.10	50.40	74.00	-23.60	peak

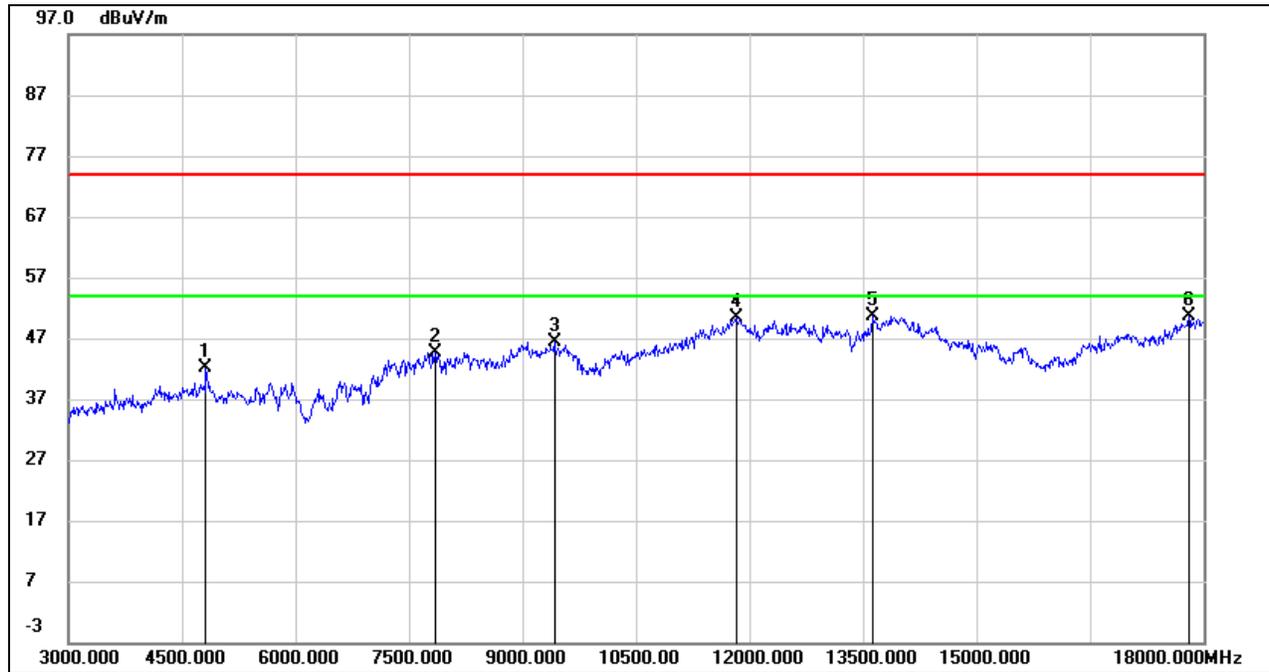
- Note: 1. Measurement = Reading Level + Correct Factor.  
 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.  
 3. Peak: Peak detector.  
 4. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

Note: Horizontal and Vertical have been tested, only the worst data was recorded in the report.

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

### 8.2.1. WIFI 2.4G 802.11n HT20 MIMO MODE

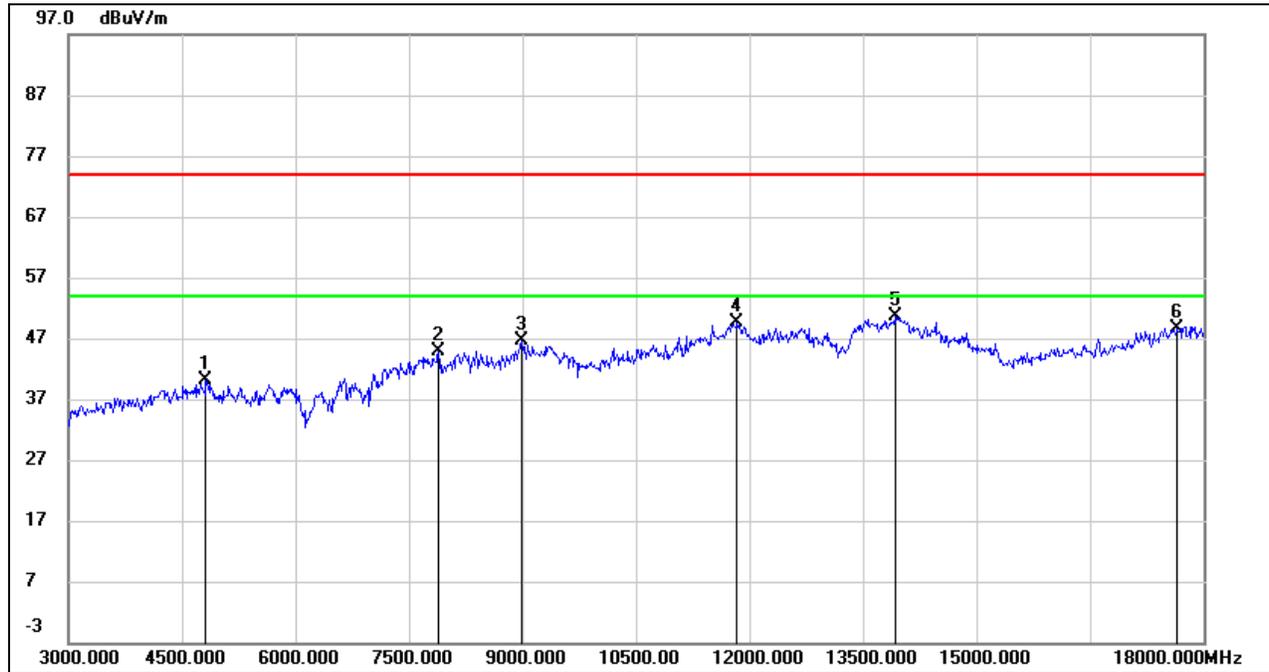
#### HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4815.000	43.27	-1.14	42.13	74.00	-31.87	peak
2	7845.000	38.82	5.92	44.74	74.00	-29.26	peak
3	9420.000	36.54	9.73	46.27	74.00	-27.73	peak
4	11820.000	33.15	17.21	50.36	74.00	-23.64	peak
5	13620.000	30.92	19.79	50.71	74.00	-23.29	peak
6	17805.000	27.48	23.20	50.68	74.00	-23.32	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.

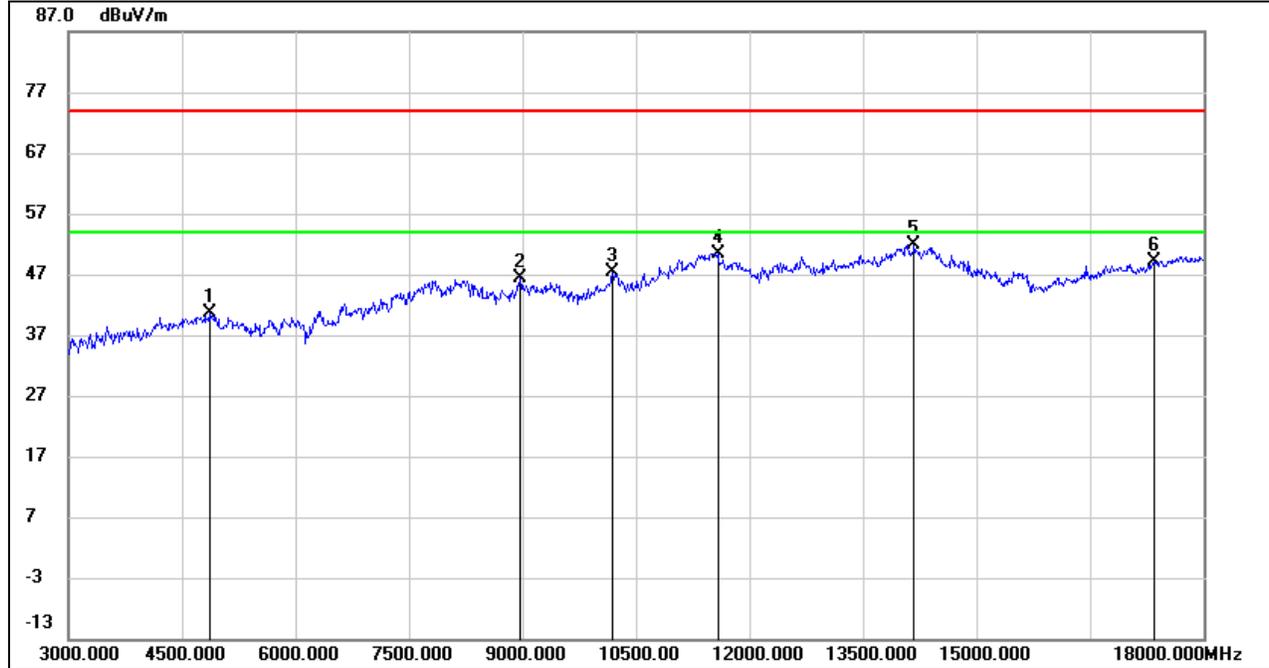
**HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)**



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4815.000	41.25	-1.14	40.11	74.00	-33.89	peak
2	7890.000	39.02	5.75	44.77	74.00	-29.23	peak
3	8985.000	37.20	9.34	46.54	74.00	-27.46	peak
4	11835.000	32.45	17.20	49.65	74.00	-24.35	peak
5	13920.000	29.97	20.58	50.55	74.00	-23.45	peak
6	17655.000	27.01	21.68	48.69	74.00	-25.31	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.

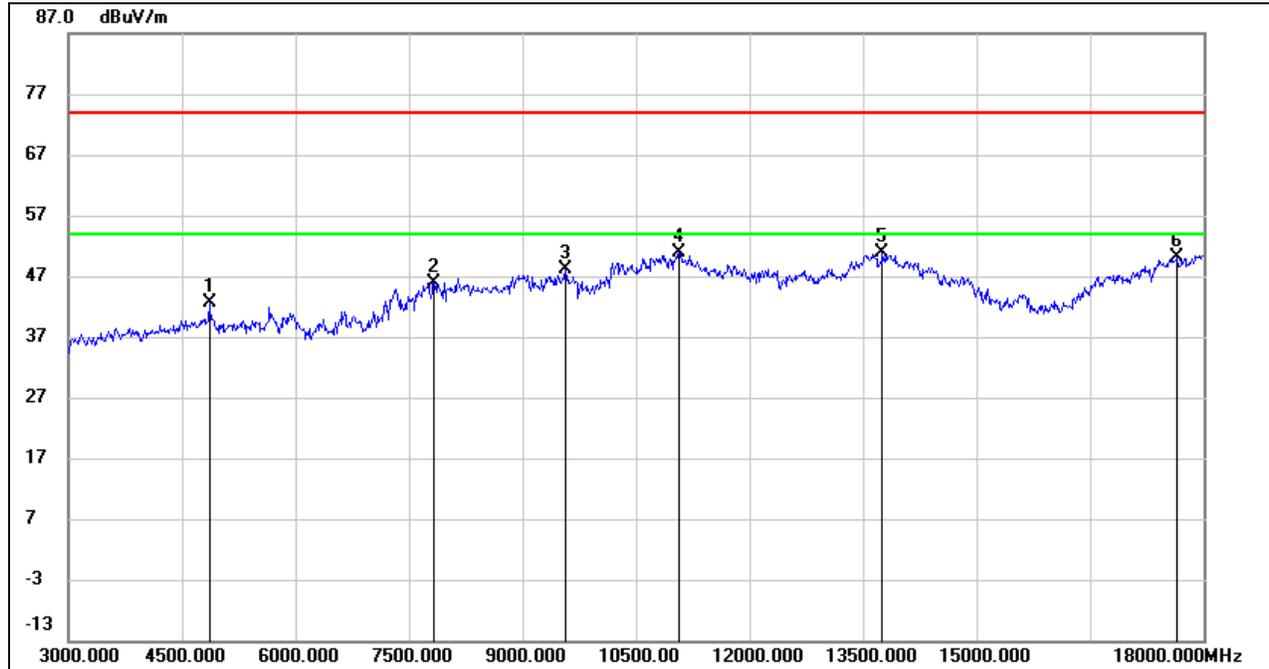
**HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)**



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4867.500	41.18	-0.61	40.57	74.00	-33.43	peak
2	8977.500	36.39	9.88	46.27	74.00	-27.73	peak
3	10192.500	36.18	11.28	47.46	74.00	-26.54	peak
4	11587.500	34.20	16.28	50.48	74.00	-23.52	peak
5	14175.000	33.96	17.93	51.89	74.00	-22.11	peak
6	17347.500	29.29	19.81	49.10	74.00	-24.90	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.

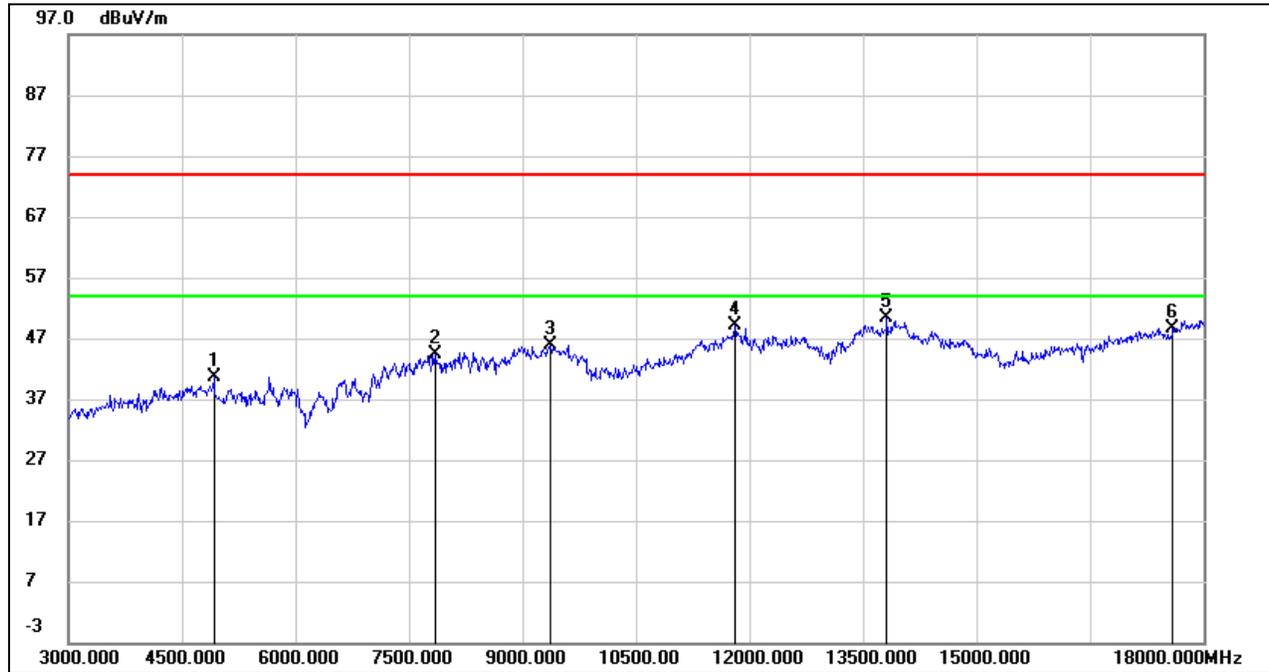
**HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, VERTICAL)**



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4867.500	43.24	-0.61	42.63	74.00	-31.37	peak
2	7830.000	38.45	7.53	45.98	74.00	-28.02	peak
3	9577.500	37.59	10.47	48.06	74.00	-25.94	peak
4	11077.500	36.34	14.44	50.78	74.00	-23.22	peak
5	13755.000	32.17	18.69	50.86	74.00	-23.14	peak
6	17662.500	28.60	21.41	50.01	74.00	-23.99	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.

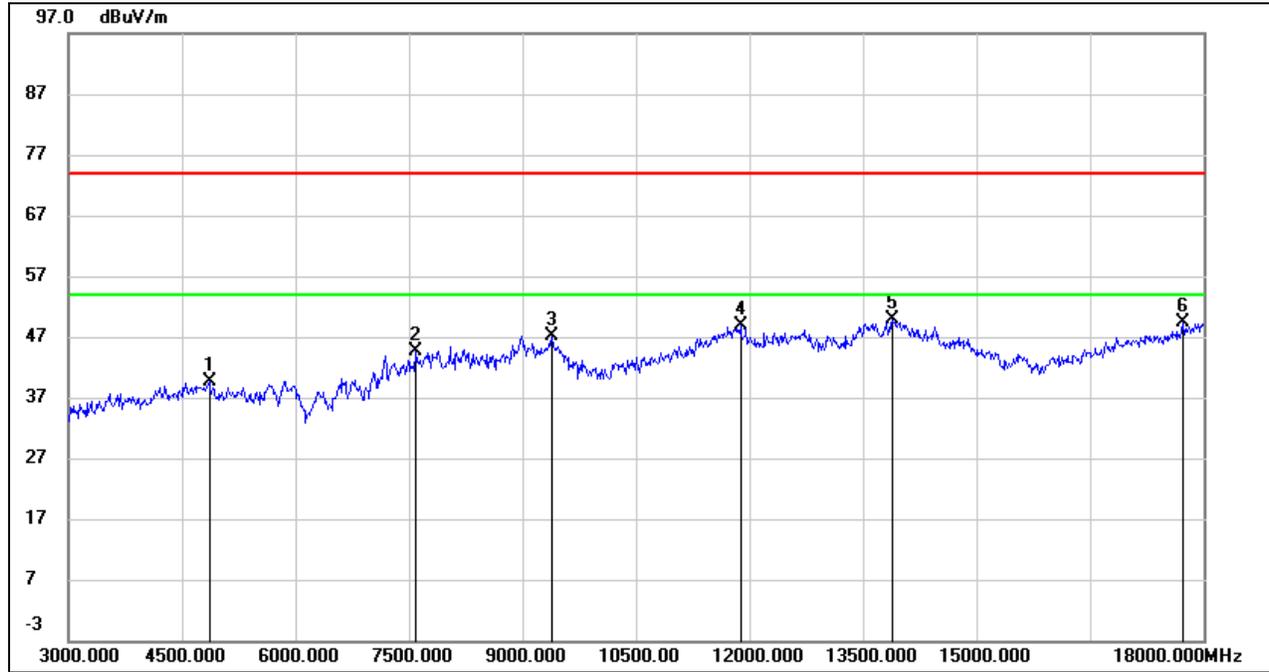
**HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)**



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4920.000	41.87	-1.13	40.74	74.00	-33.26	peak
2	7845.000	38.44	5.92	44.36	74.00	-29.64	peak
3	9375.000	36.45	9.53	45.98	74.00	-28.02	peak
4	11805.000	31.88	17.21	49.09	74.00	-24.91	peak
5	13815.000	29.88	20.50	50.38	74.00	-23.62	peak
6	17595.000	27.66	21.08	48.74	74.00	-25.26	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)**



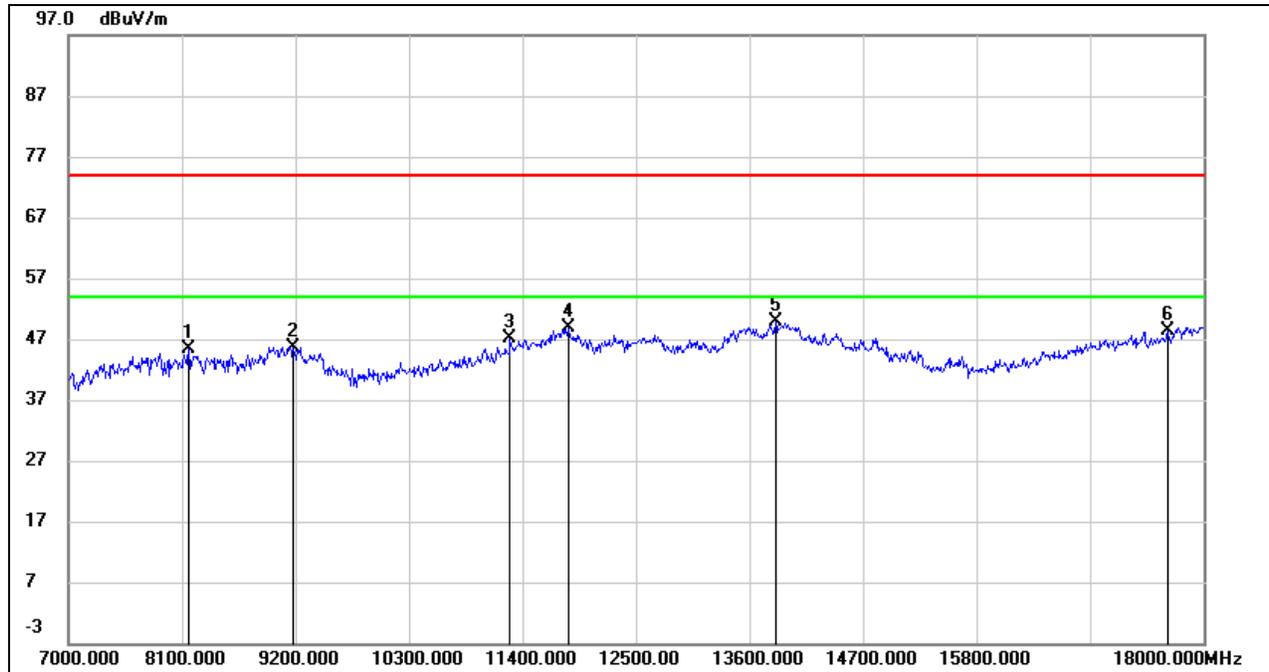
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4860.000	40.87	-1.14	39.73	74.00	-34.27	peak
2	7590.000	39.14	5.46	44.60	74.00	-29.40	peak
3	9390.000	37.55	9.61	47.16	74.00	-26.84	peak
4	11880.000	31.64	17.17	48.81	74.00	-25.19	peak
5	13890.000	29.20	20.56	49.76	74.00	-24.24	peak
6	17730.000	27.00	22.46	49.46	74.00	-24.54	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.

**8.2.2. WIFI 5G 802.11n HT40 MIMO MODE**

**UNII-1 BAND**

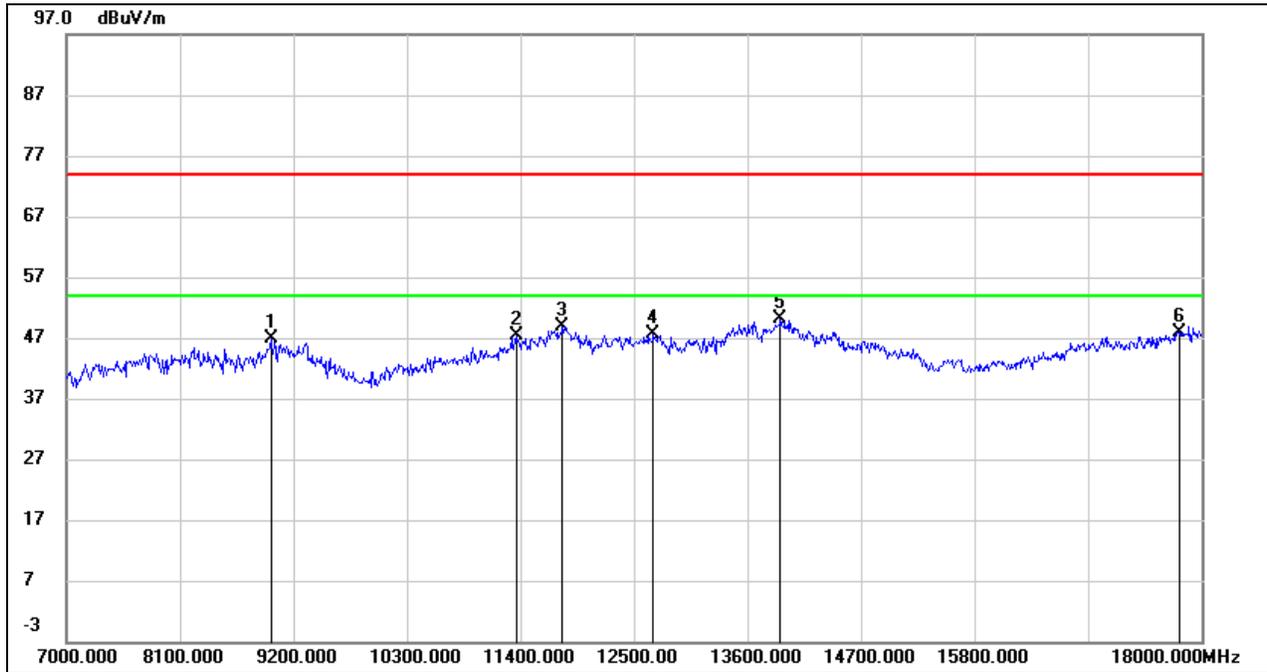
**HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)**



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	8166.000	38.40	6.90	45.30	74.00	-28.70	peak
2	9178.000	37.16	8.54	45.70	74.00	-28.30	peak
3	11279.000	32.43	14.58	47.01	74.00	-26.99	peak
4	11840.000	31.76	17.20	48.96	74.00	-25.04	peak
5	13853.000	29.24	20.54	49.78	74.00	-24.22	peak
6	17648.000	26.88	21.62	48.50	74.00	-25.50	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. AVG:  $VBW=1/Ton$ , where: Ton is the transmitting duration.
  5. For the transmitting duration, please refer to clause 7.1.
  6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
  7. Proper operation of the transmitter prior to adding the filter to the measurement chain.
  8. Owing to the highest peak level of unwanted emission out of the restricted bands complies with the lowest limit(54dBuV/m), so all the test point was deemed to comply with the limits list in the standard.

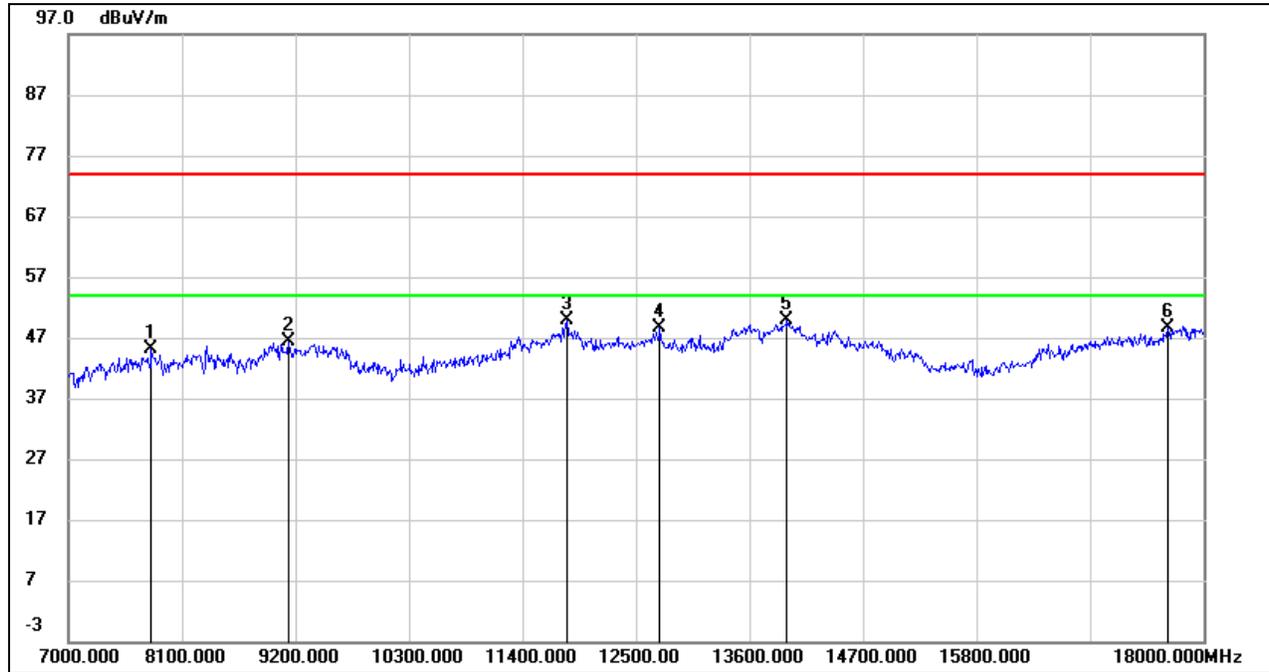
**HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)**



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	8980.000	37.60	9.29	46.89	74.00	-27.11	peak
2	11367.000	32.39	15.08	47.47	74.00	-26.53	peak
3	11807.000	31.68	17.22	48.90	74.00	-25.10	peak
4	12687.000	30.51	17.01	47.52	74.00	-26.48	peak
5	13919.000	29.55	20.58	50.13	74.00	-23.87	peak
6	17780.000	25.00	22.98	47.98	74.00	-26.02	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. AVG:  $VBW=1/Ton$ , where: Ton is the transmitting duration.
  5. For the transmitting duration, please refer to clause 7.1.
  6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
  7. Proper operation of the transmitter prior to adding the filter to the measurement chain.
  8. Owing to the highest peak level of unwanted emission out of the restricted bands complies with the lowest limit(54dBuV/m), so all the test point was deemed to comply with the limits list in the standard.

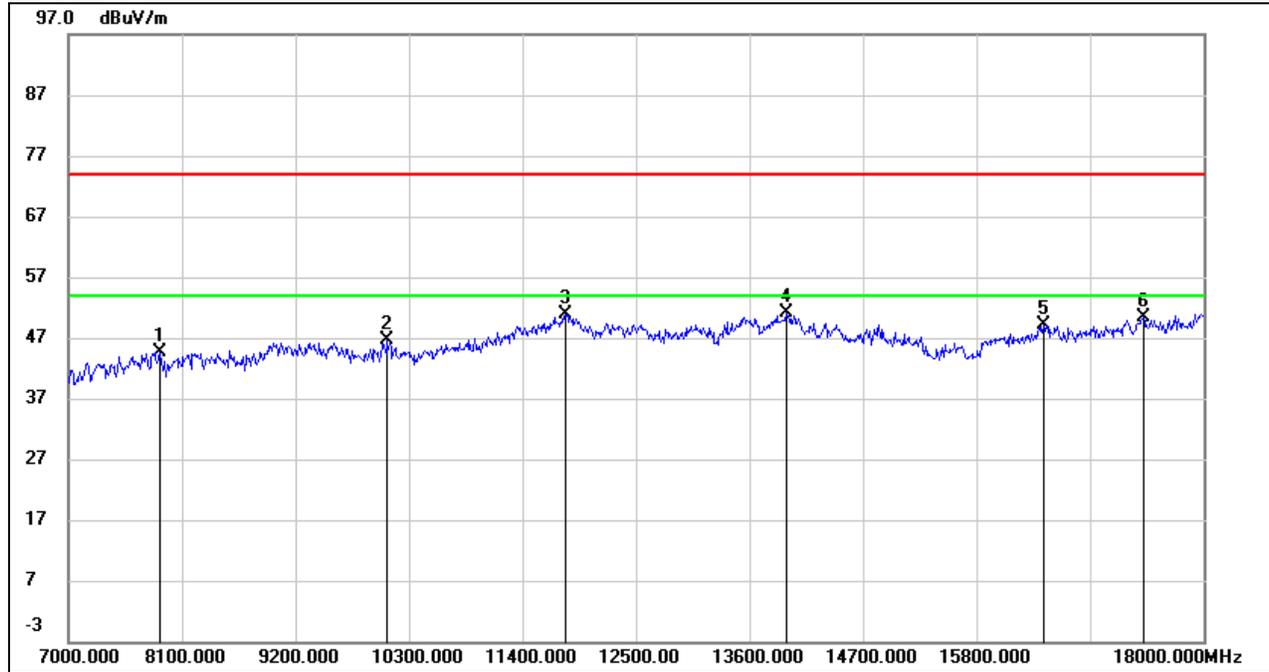
**HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)**



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7803.000	39.00	6.07	45.07	74.00	-28.93	peak
2	9134.000	37.48	8.78	46.26	74.00	-27.74	peak
3	11829.000	32.59	17.20	49.79	74.00	-24.21	peak
4	12731.000	31.45	17.13	48.58	74.00	-25.42	peak
5	13963.000	29.15	20.61	49.76	74.00	-24.24	peak
6	17648.000	27.05	21.62	48.67	74.00	-25.33	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. AVG:  $VBW=1/Ton$ , where: Ton is the transmitting duration.  
 5. For the transmitting duration, please refer to clause 7.1.  
 6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.  
 7. Proper operation of the transmitter prior to adding the filter to the measurement chain.  
 8. Owing to the highest peak level of unwanted emission out of the restricted bands complies with the lowest limit(54dBuV/m), so all the test point was deemed to comply with the limits list in the standard.

**HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, VERTICAL)**

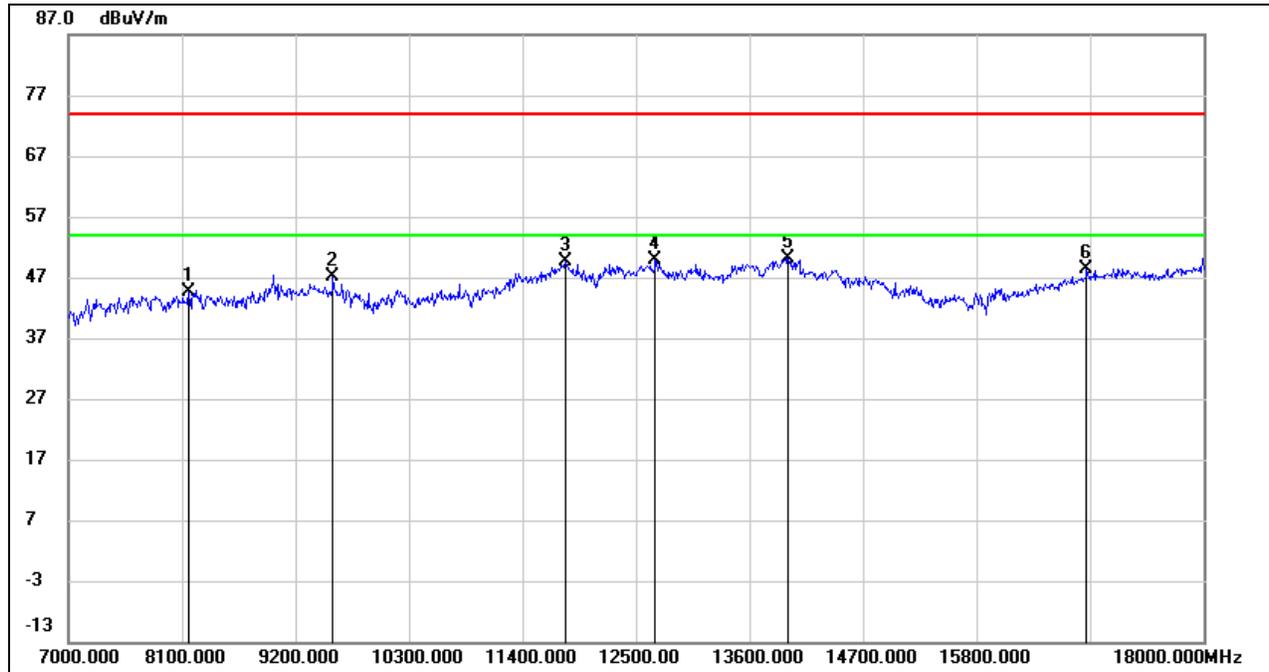


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7880.000	38.92	5.79	44.71	74.00	-29.29	peak
2	10091.000	35.99	10.75	46.74	74.00	-27.26	peak
3	11818.000	33.58	17.20	50.78	74.00	-23.22	peak
4	13952.000	30.50	20.61	51.11	74.00	-22.89	peak
5	16449.000	31.90	17.14	49.04	74.00	-24.96	peak
6	17417.000	30.10	20.26	50.36	74.00	-23.64	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. AVG:  $VBW=1/Ton$ , where:  $Ton$  is the transmitting duration.
  5. For the transmitting duration, please refer to clause 7.1.
  6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
  7. Proper operation of the transmitter prior to adding the filter to the measurement chain.
  8. Owing to the highest peak level of unwanted emission out of the restricted bands complies with the lowest limit(54dBuV/m), so all the test point was deemed to comply with the limits list in the standard.

**UNII-3 BAND**

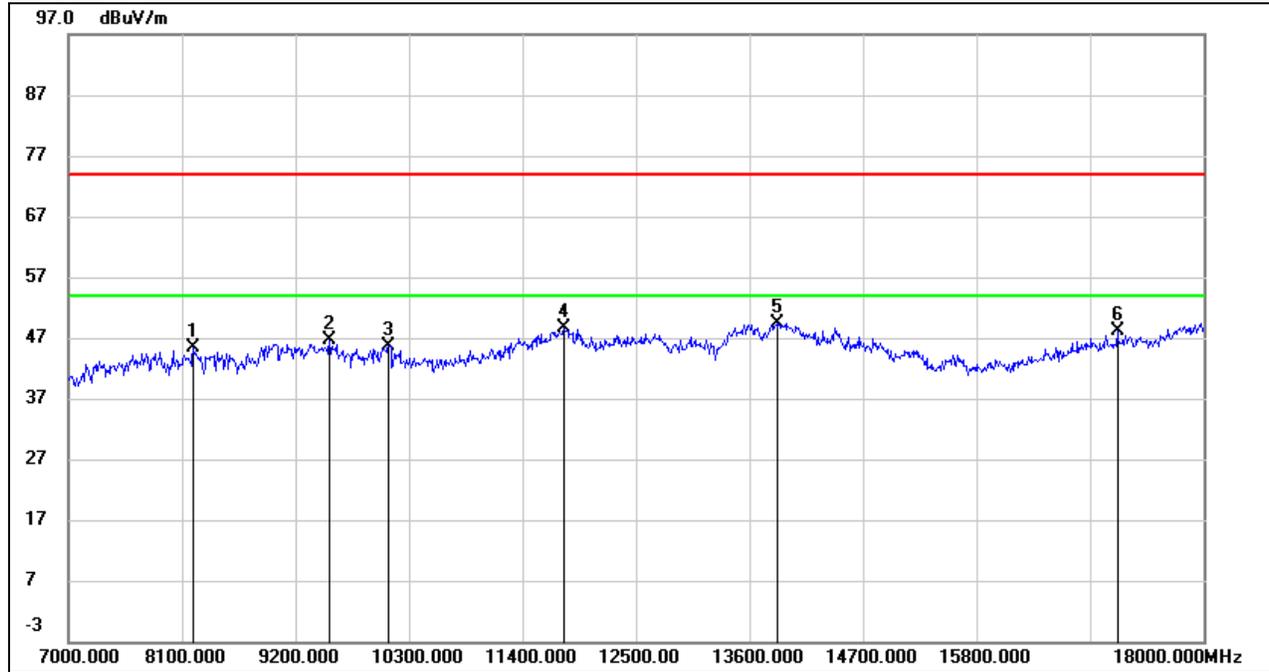
**HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)**



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	8166.000	37.73	6.90	44.63	74.00	-29.37	peak
2	9563.000	36.96	10.05	47.01	74.00	-26.99	peak
3	11818.000	32.42	17.20	49.62	74.00	-24.38	peak
4	12687.000	32.82	17.01	49.83	74.00	-24.17	peak
5	13974.000	29.56	20.63	50.19	74.00	-23.81	peak
6	16867.000	30.00	18.49	48.49	74.00	-25.51	peak

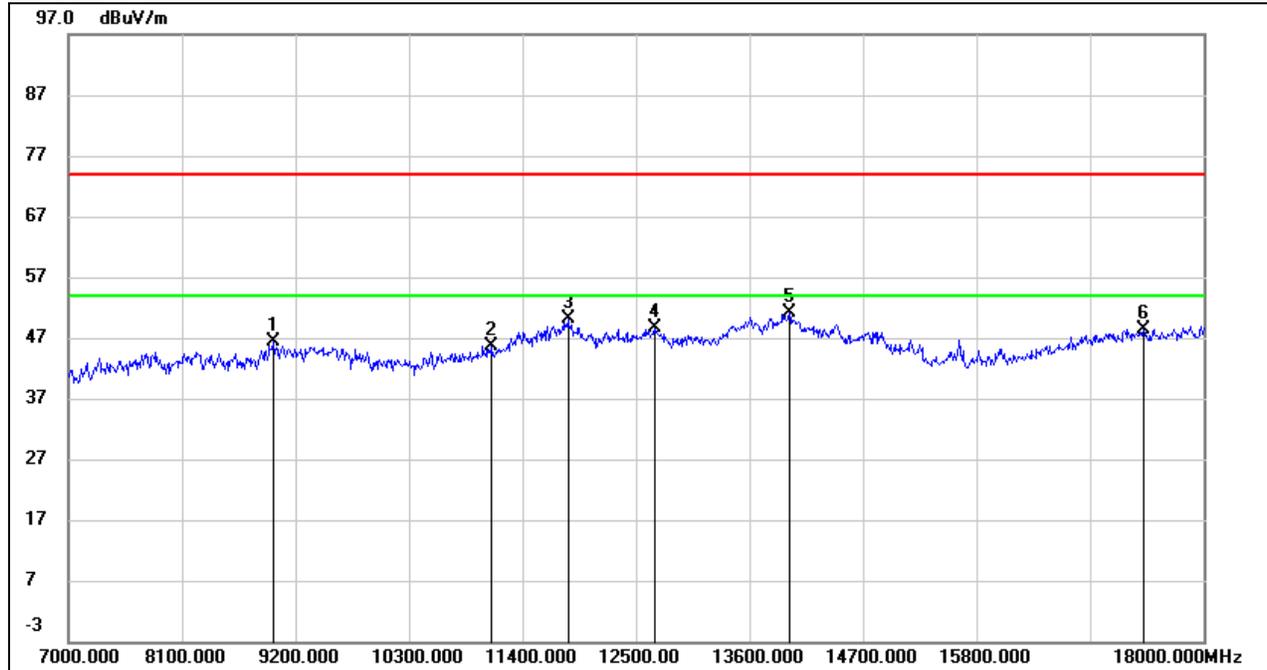
- Note:
1. Measurement = Reading Level + Correct Factor.
  2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
  3. Peak: Peak detector.
  4. AVG:  $VBW=1/Ton$ , where: Ton is the transmitting duration.
  5. For the transmitting duration, please refer to clause 7.1.
  6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
  7. Proper operation of the transmitter prior to adding the filter to the measurement chain.
  8. Owing to the highest peak level of unwanted emission out of the restricted bands complies with the lowest limit(54dBuV/m), so all the test point was deemed to comply with the limits list in the standard.

**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	8210.000	38.08	7.20	45.28	74.00	-28.72	peak
2	9530.000	36.62	9.99	46.61	74.00	-27.39	peak
3	10102.000	34.90	10.76	45.66	74.00	-28.34	peak
4	11796.000	31.46	17.19	48.65	74.00	-25.35	peak
5	13864.000	28.96	20.54	49.50	74.00	-24.50	peak
6	17164.000	28.16	19.93	48.09	74.00	-25.91	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. AVG:  $VBW=1/Ton$ , where: Ton is the transmitting duration.
  5. For the transmitting duration, please refer to clause 7.1.
  6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
  7. Proper operation of the transmitter prior to adding the filter to the measurement chain.
  8. Owing to the highest peak level of unwanted emission out of the restricted bands complies with the lowest limit(54dBuV/m), so all the test point was deemed to comply with the limits list in the standard.

**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	8991.000	36.96	9.42	46.38	74.00	-27.62	peak
2	11103.000	31.96	13.68	45.64	74.00	-28.36	peak
3	11840.000	33.03	17.20	50.23	74.00	-23.77	peak
4	12676.000	31.55	16.99	48.54	74.00	-25.46	peak
5	13985.000	30.51	20.63	51.14	74.00	-22.86	peak
6	17417.000	28.19	20.26	48.45	74.00	-25.55	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. AVG:  $VBW=1/Ton$ , where: Ton is the transmitting duration.

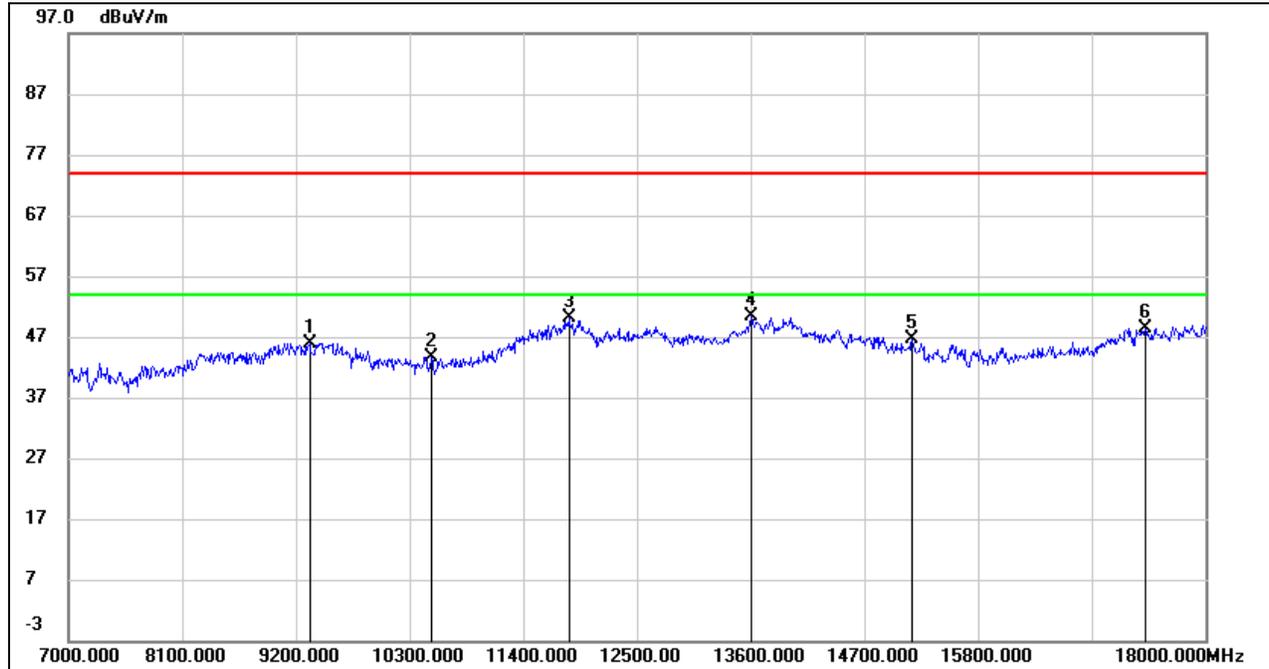
5. For the transmitting duration, please refer to clause 7.1.

6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.

7. Proper operation of the transmitter prior to adding the filter to the measurement chain.

8. Owing to the highest peak level of unwanted emission out of the restricted bands complies with the lowest limit(54dBuV/m), so all the test point was deemed to comply with the limits list in the standard.

### HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, VERTICAL)

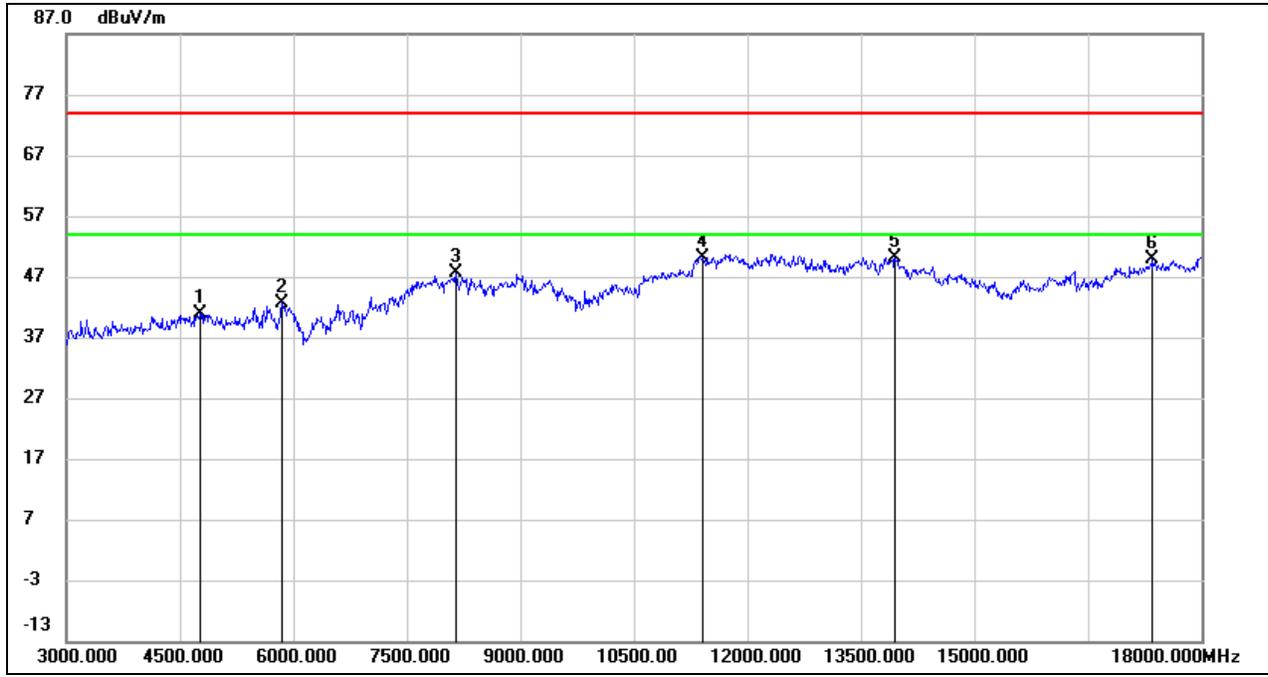


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	9332.000	36.74	9.25	45.99	74.00	-28.01	peak
2	10509.000	31.78	11.88	43.66	74.00	-30.34	peak
3	11840.000	33.03	17.20	50.23	74.00	-23.77	peak
4	13611.000	30.71	19.76	50.47	74.00	-23.53	peak
5	15162.000	30.98	15.72	46.70	74.00	-27.30	peak
6	17417.000	28.19	20.26	48.45	74.00	-25.55	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. AVG:  $VBW=1/Ton$ , where: Ton is the transmitting duration.
  5. For the transmitting duration, please refer to clause 7.1.
  6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
  7. Proper operation of the transmitter prior to adding the filter to the measurement chain.
  8. Owing to the highest peak level of unwanted emission out of the restricted bands complies with the lowest limit(54dBuV/m), so all the test point was deemed to comply with the limits list in the standard.

### 8.2.1. BT 8DPSK MODE

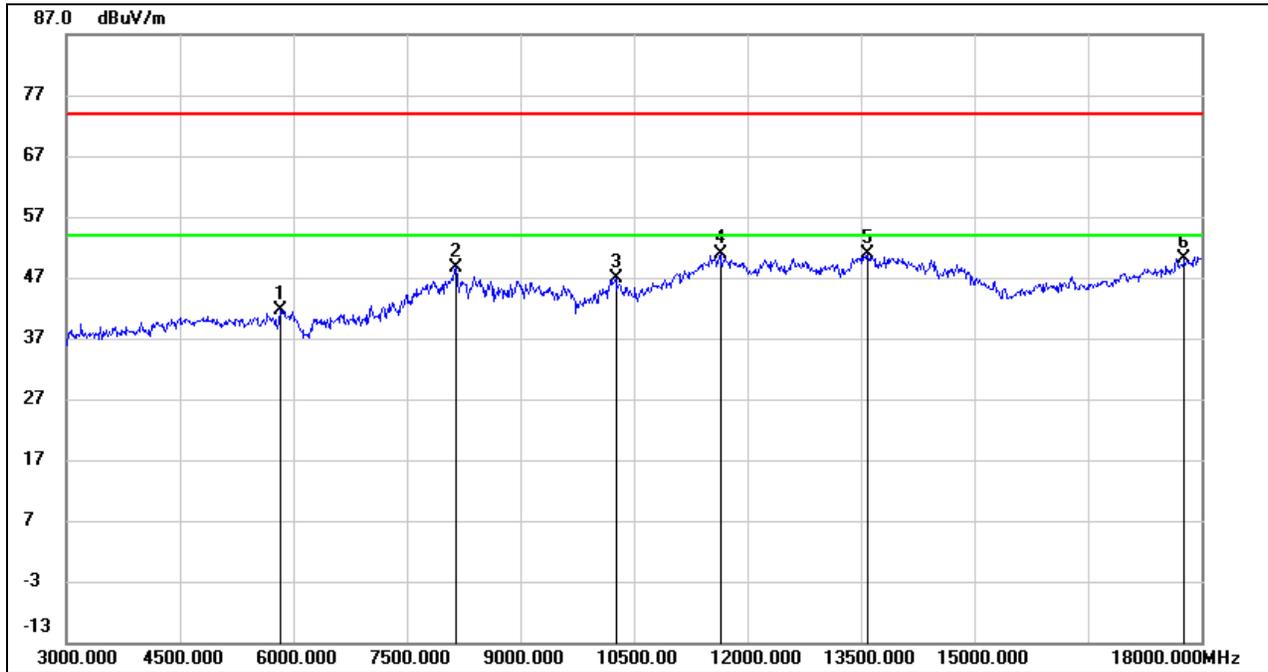
#### HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4770.000	41.03	-0.15	40.88	74.00	-33.12	peak
2	5850.000	39.82	2.93	42.75	74.00	-31.25	peak
3	8145.000	38.23	9.38	47.61	74.00	-26.39	peak
4	11415.000	33.71	16.39	50.10	74.00	-23.90	peak
5	13950.000	30.72	19.33	50.05	74.00	-23.95	peak
6	17355.000	28.56	21.21	49.77	74.00	-24.23	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.

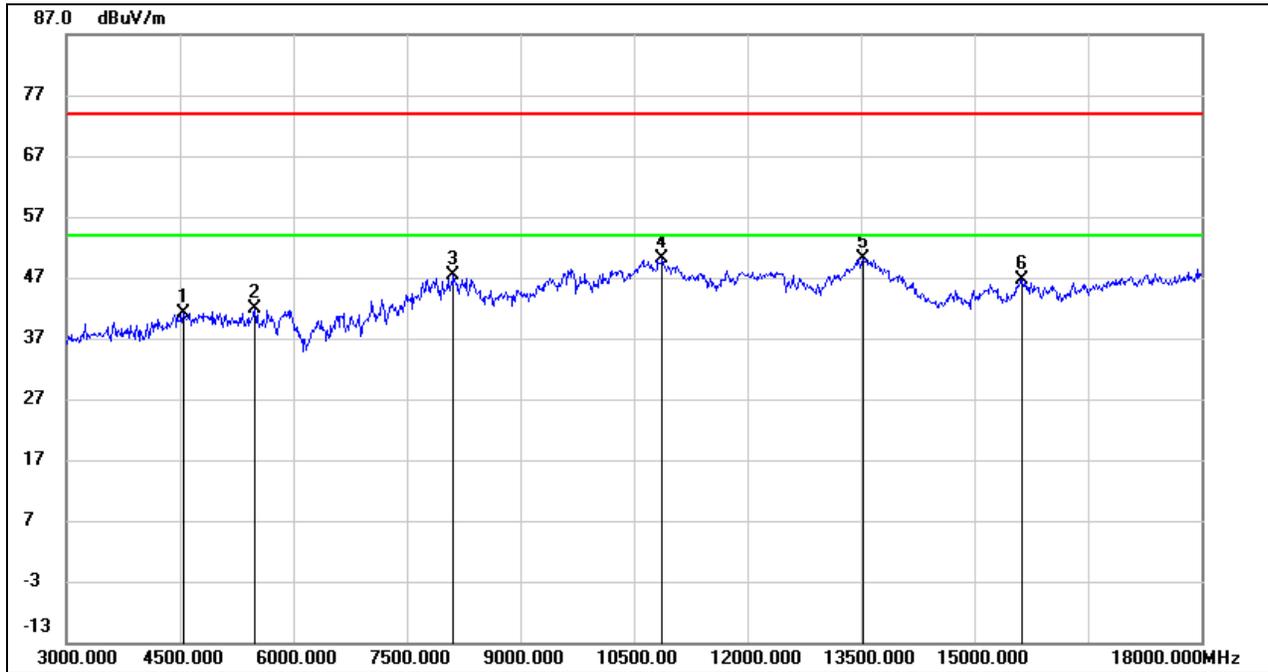
**HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)**



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5835.000	38.87	2.80	41.67	74.00	-32.33	peak
2	8145.000	39.37	9.38	48.75	74.00	-25.25	peak
3	10260.000	34.72	12.22	46.94	74.00	-27.06	peak
4	11640.000	34.24	16.74	50.98	74.00	-23.02	peak
5	13590.000	31.77	19.05	50.82	74.00	-23.18	peak
6	17775.000	26.05	23.98	50.03	74.00	-23.97	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.  
 . Proper operation of the transmitter prior to adding the filter to the measurement chain.

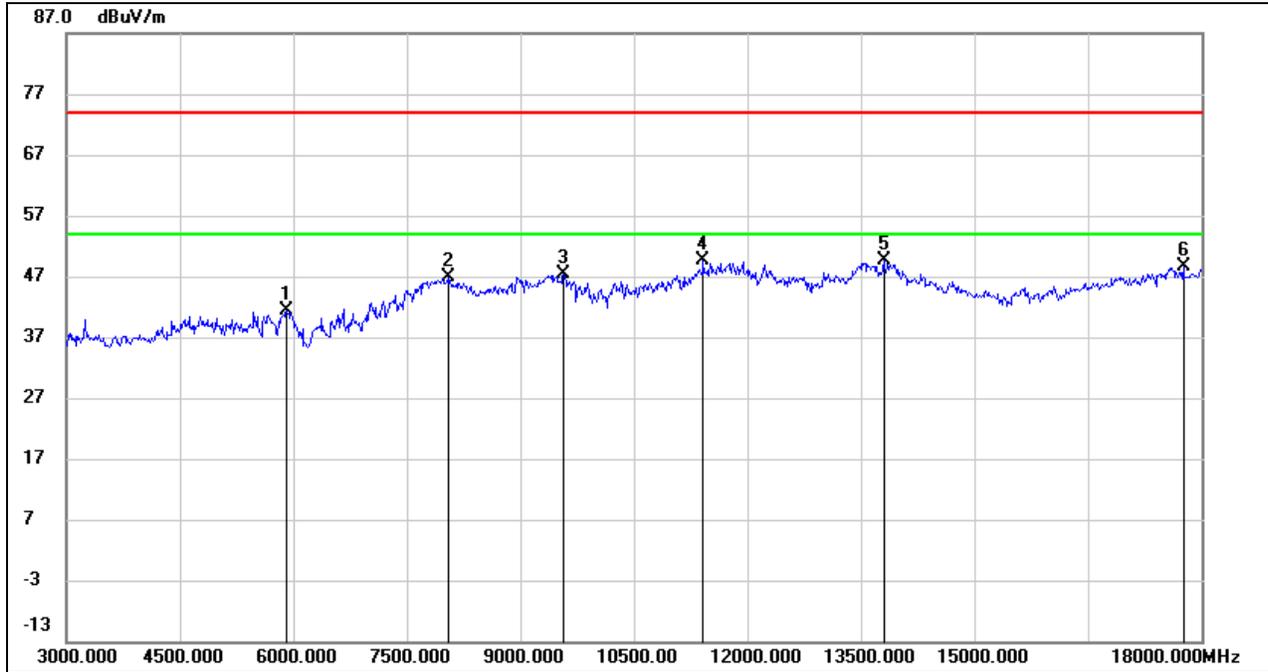
**HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)**



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4545.000	42.31	-1.12	41.19	74.00	-32.81	peak
2	5490.000	39.56	2.31	41.87	74.00	-32.13	peak
3	8115.000	37.95	9.50	47.45	74.00	-26.55	peak
4	10875.000	36.01	14.06	50.07	74.00	-23.93	peak
5	13530.000	31.04	19.17	50.21	74.00	-23.79	peak
6	15630.000	31.03	15.63	46.66	74.00	-27.34	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.

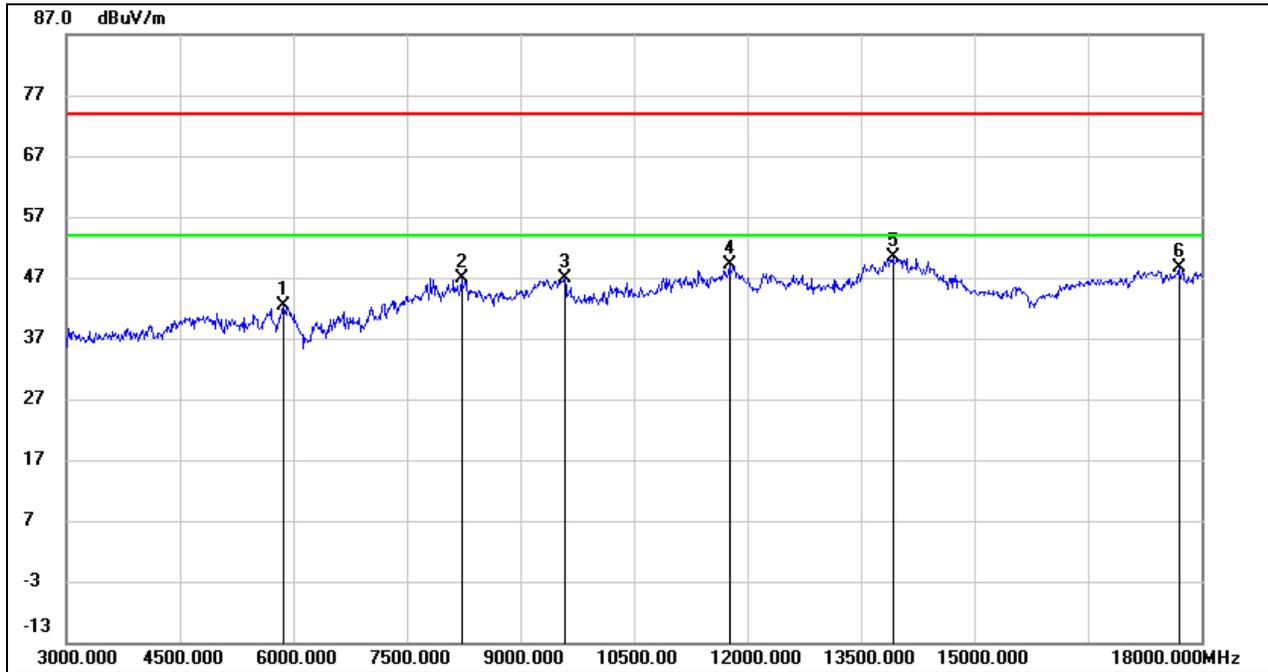
**HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, VERTICAL)**



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5910.000	38.02	3.37	41.39	74.00	-32.61	peak
2	8040.000	38.31	8.64	46.95	74.00	-27.05	peak
3	9570.000	36.48	10.88	47.36	74.00	-26.64	peak
4	11415.000	33.16	16.39	49.55	74.00	-24.45	peak
5	13800.000	30.15	19.43	49.58	74.00	-24.42	peak
6	17760.000	24.75	23.85	48.60	74.00	-25.40	peak

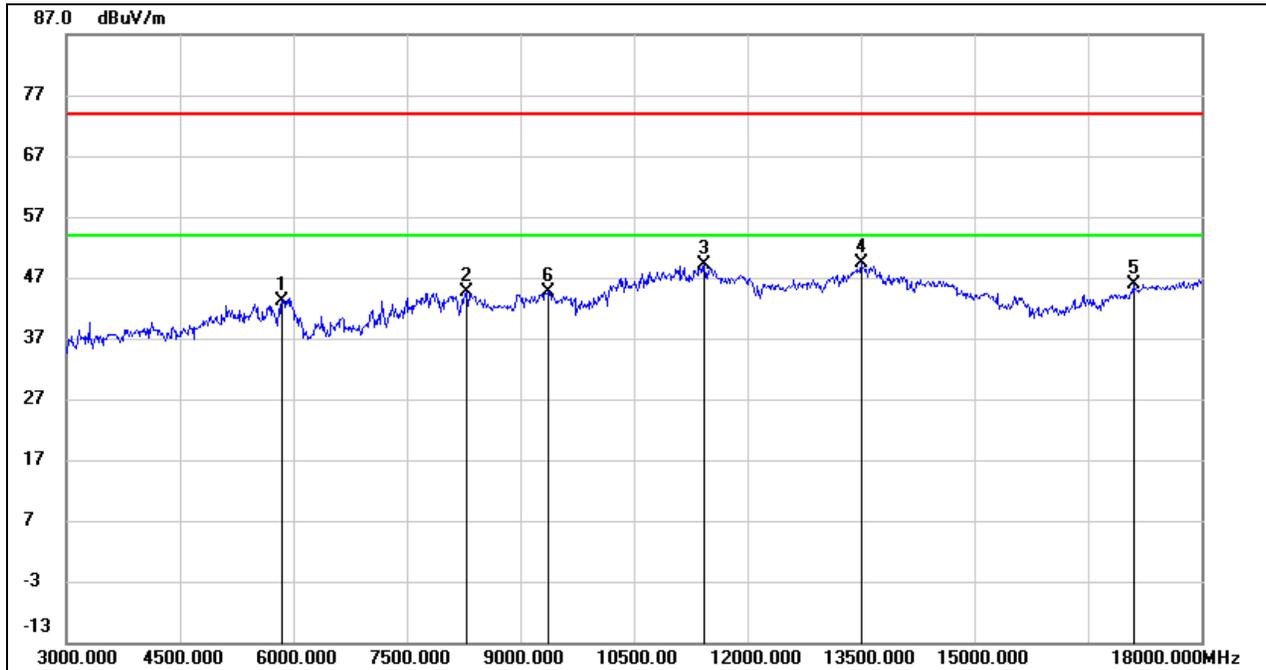
- Note: 1. Peak Result = Reading Level + Correct Factor.  
 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.  
 3. Peak: Peak detector.  
 4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass 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	5865.000	39.17	3.09	42.26	74.00	-31.74	peak
2	8220.000	37.70	9.14	46.84	74.00	-27.16	peak
3	9585.000	35.97	10.98	46.95	74.00	-27.05	peak
4	11760.000	32.09	17.04	49.13	74.00	-24.87	peak
5	13920.000	31.15	19.30	50.45	74.00	-23.55	peak
6	17700.000	25.25	23.33	48.58	74.00	-25.42	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	5850.000	40.20	2.93	43.13	74.00	-30.87	peak
2	8295.000	35.70	9.03	44.73	74.00	-29.27	peak
3	11430.000	32.74	16.40	49.14	74.00	-24.86	peak
4	13500.000	30.15	19.22	49.37	74.00	-24.63	peak
5	17100.000	25.42	20.40	45.82	74.00	-28.18	peak
6	9360.000	34.16	10.54	44.70	74.00	-29.30	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.

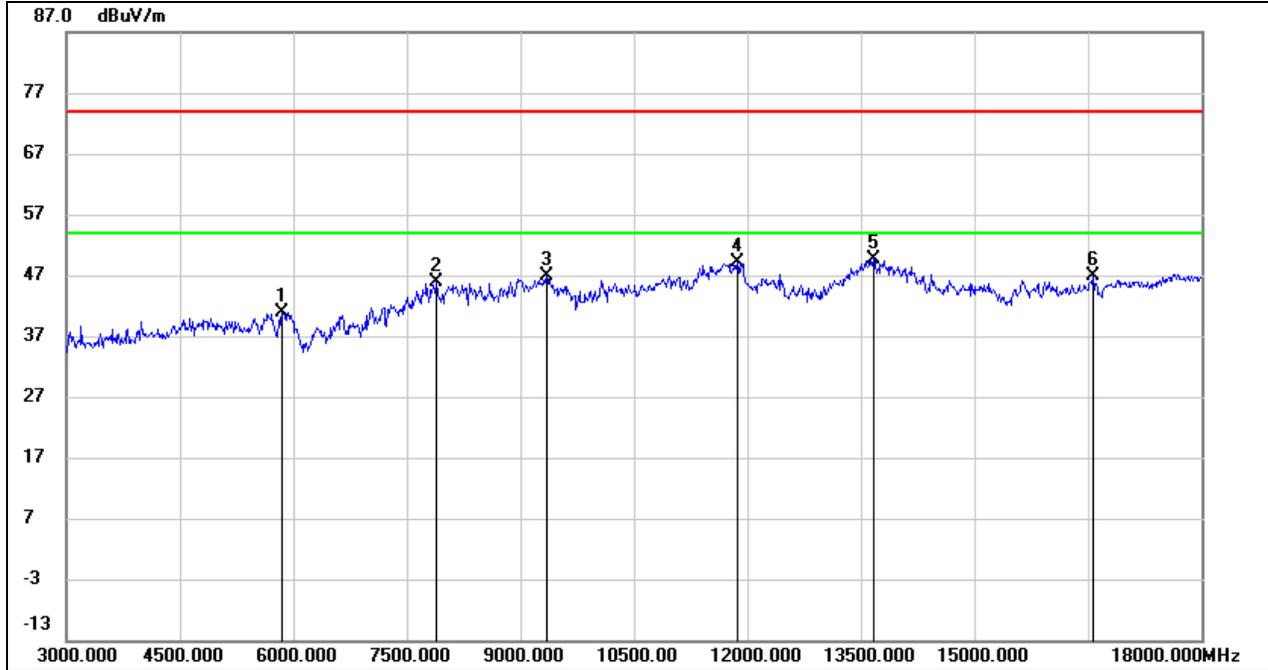
3. Peak: Peak detector.

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.

### 8.2.1. BLE 1M MODE

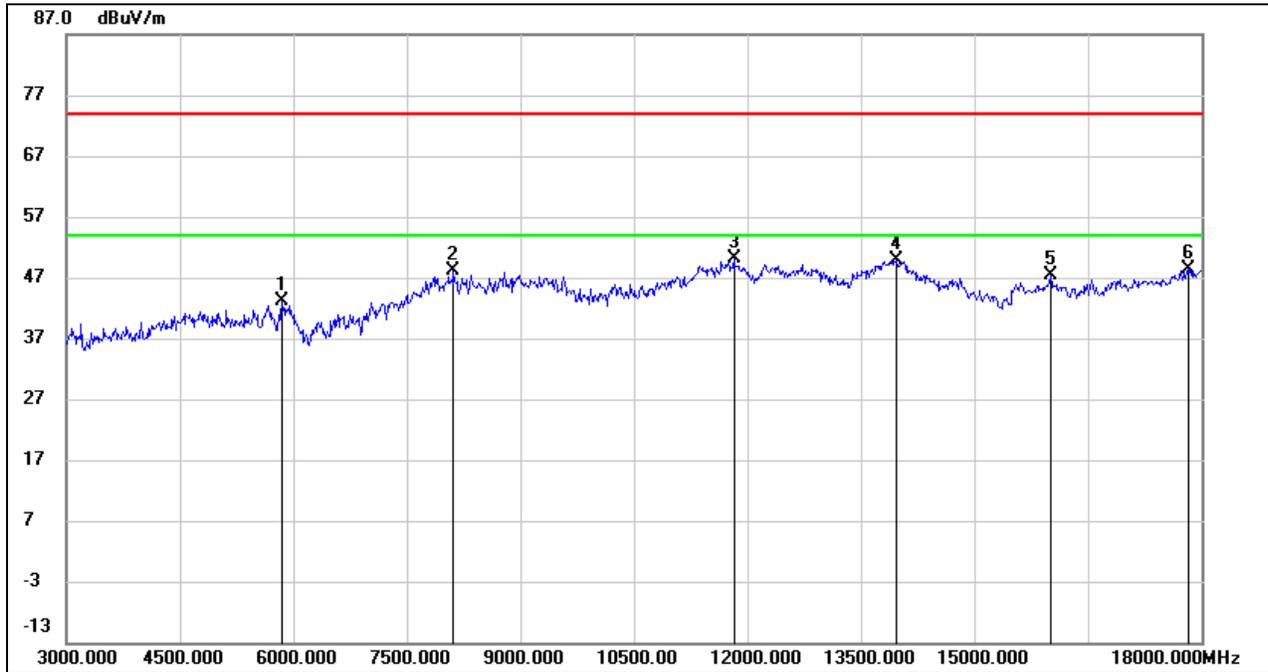
#### HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5850.000	37.84	2.93	40.77	74.00	-33.23	peak
2	7890.000	37.54	8.28	45.82	74.00	-28.18	peak
3	9345.000	36.33	10.43	46.76	74.00	-27.24	peak
4	11865.000	31.96	17.14	49.10	74.00	-24.90	peak
5	13665.000	30.42	19.33	49.75	74.00	-24.25	peak
6	16575.000	29.29	17.63	46.92	74.00	-27.08	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.  
 6. The marked point was the worst results in the tested frequency range.

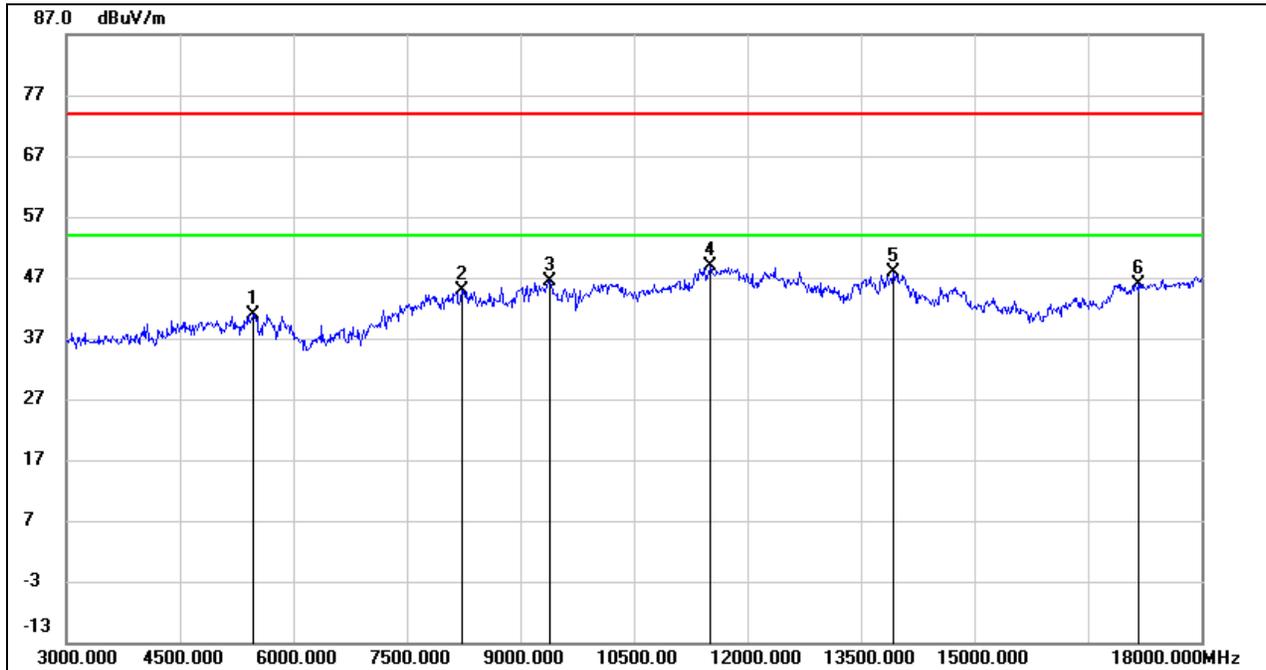
**HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)**



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5850.000	40.13	2.93	43.06	74.00	-30.94	peak
2	8115.000	38.72	9.50	48.22	74.00	-25.78	peak
3	11820.000	33.11	17.03	50.14	74.00	-23.86	peak
4	13965.000	30.62	19.34	49.96	74.00	-24.04	peak
5	16005.000	31.59	15.73	47.32	74.00	-26.68	peak
6	17835.000	24.17	24.23	48.40	74.00	-25.60	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	5460.000	38.84	2.14	40.98	74.00	-33.02	peak
2	8235.000	35.83	9.12	44.95	74.00	-29.05	peak
3	9390.000	35.72	10.73	46.45	74.00	-27.55	peak
4	11505.000	32.45	16.45	48.90	74.00	-25.10	peak
5	13935.000	28.67	19.32	47.99	74.00	-26.01	peak
6	17160.000	25.30	20.58	45.88	74.00	-28.12	peak

Note: 1. Peak Result = Reading Level + Correct Factor.

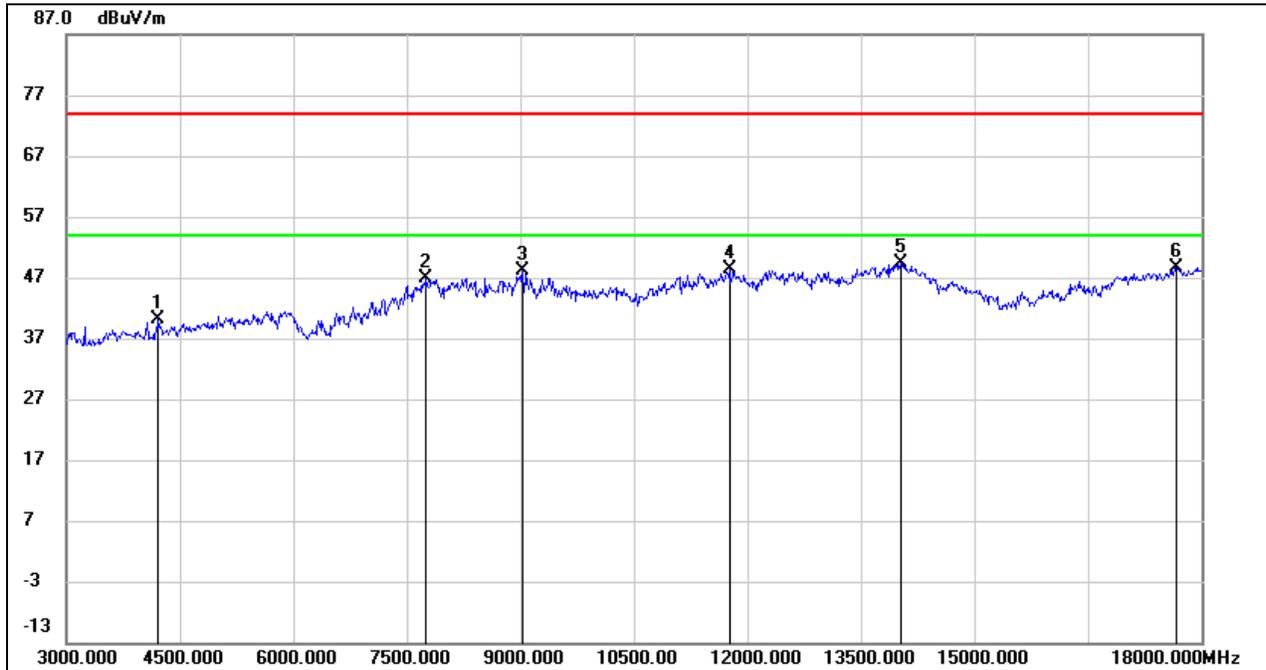
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

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	4215.000	42.43	-2.21	40.22	74.00	-33.78	peak
2	7755.000	38.68	8.29	46.97	74.00	-27.03	peak
3	9030.000	37.72	10.46	48.18	74.00	-25.82	peak
4	11760.000	31.22	17.04	48.26	74.00	-25.74	peak
5	14025.000	30.22	19.24	49.46	74.00	-24.54	peak
6	17670.000	25.71	23.02	48.73	74.00	-25.27	peak

Note: 1. Peak Result = Reading Level + Correct Factor.

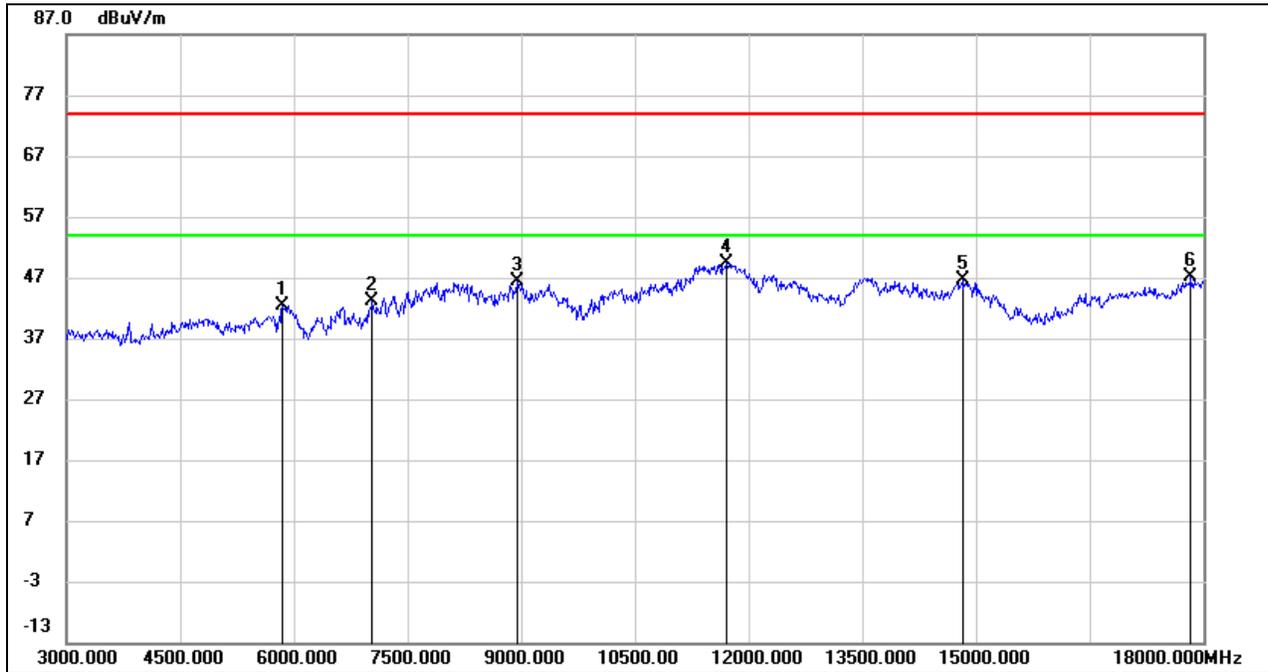
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

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.

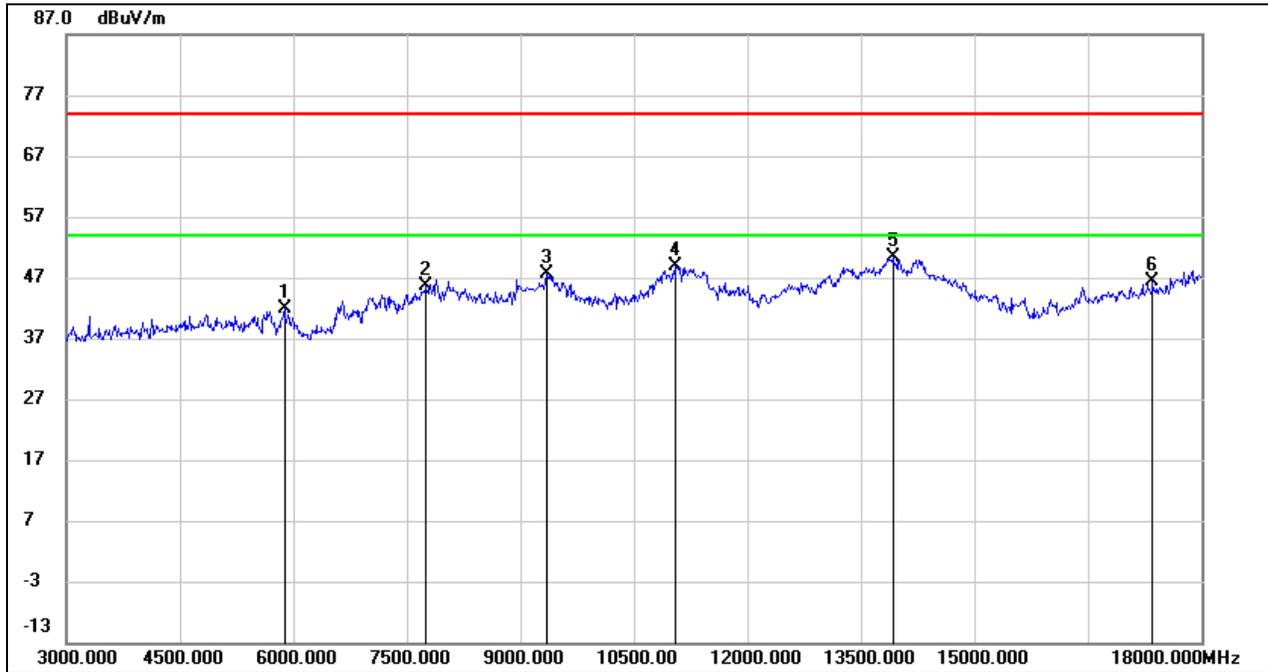
**HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)**



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5850.000	39.43	2.93	42.36	74.00	-31.64	peak
2	7035.000	36.50	6.64	43.14	74.00	-30.86	peak
3	8955.000	36.51	9.90	46.41	74.00	-27.59	peak
4	11715.000	32.40	17.09	49.49	74.00	-24.51	peak
5	14820.000	29.29	17.38	46.67	74.00	-27.33	peak
6	17835.000	22.98	24.23	47.21	74.00	-26.79	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)**



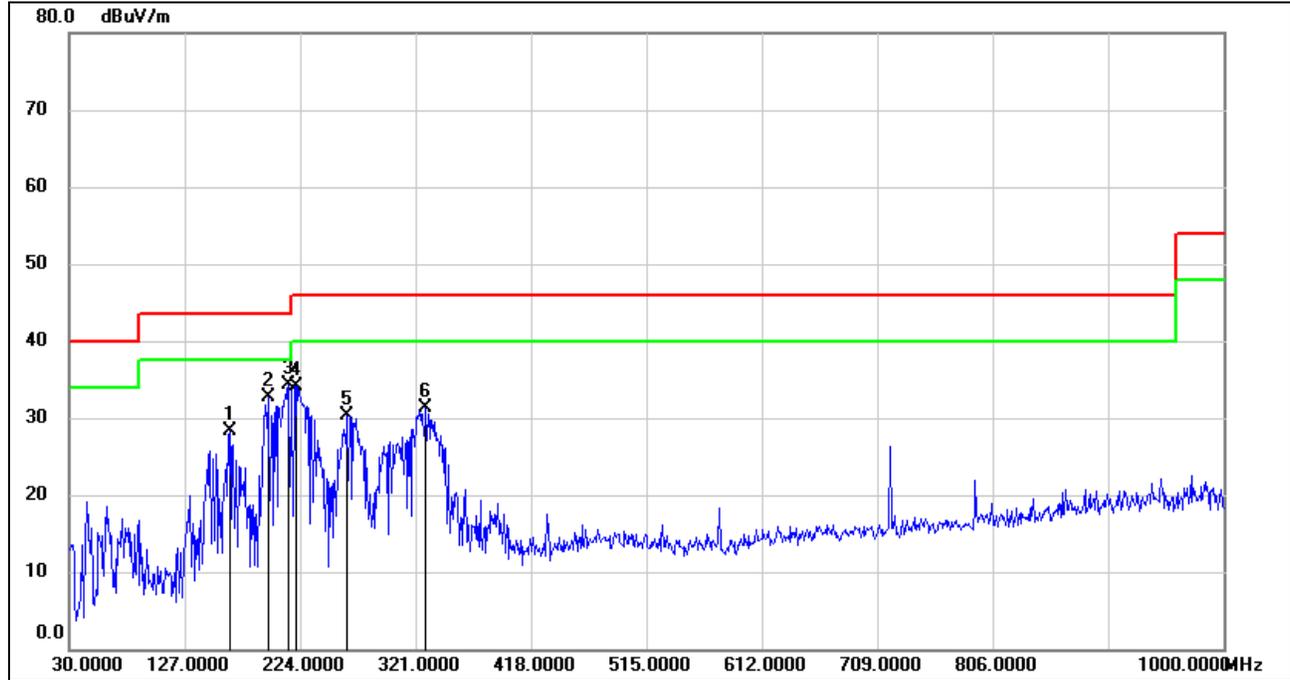
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5880.000	38.77	3.23	42.00	74.00	-32.00	peak
2	7755.000	37.44	8.29	45.73	74.00	-28.27	peak
3	9345.000	37.11	10.43	47.54	74.00	-26.46	peak
4	11055.000	34.18	14.58	48.76	74.00	-25.24	peak
5	13920.000	31.17	19.30	50.47	74.00	-23.53	peak
6	17355.000	25.09	21.21	46.30	74.00	-27.70	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. SPURIOUS EMISSIONS (30 MHz ~ 1 GHz)

#### 8.3.1. 802.11n HT40 MIMO MODE

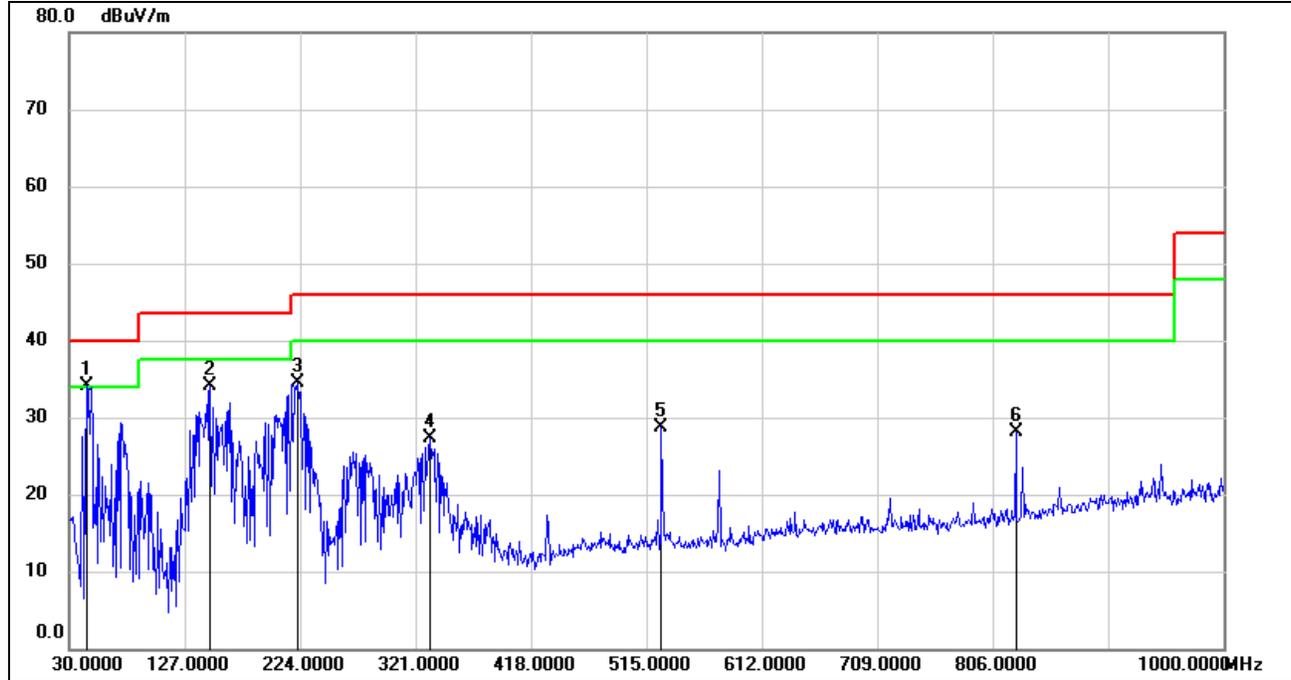
#### SPURIOUS EMISSIONS (UNII1 BAND LOW CHANNEL, HORIZONTAL, WORST-CASE CONFIGURATION)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	164.8300	45.92	-17.55	28.37	43.50	-15.13	QP
2	196.8400	49.21	-16.45	32.76	43.50	-10.74	QP
3	214.3000	51.94	-17.66	34.28	43.50	-9.22	QP
4	220.1200	52.32	-18.19	34.13	46.00	-11.87	QP
5	263.7700	48.61	-18.25	30.36	46.00	-15.64	QP
6	329.7300	46.00	-14.69	31.31	46.00	-14.69	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 (UNII-1 BAND LOW CHANNEL, VERTICAL, WORST-CASE CONFIGURATION)**



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	44.5500	54.35	-20.28	34.07	40.00	-5.93	QP
2	148.3400	52.43	-18.36	34.07	43.50	-9.43	QP
3	222.0600	52.71	-18.27	34.44	46.00	-11.56	QP
4	333.6099	41.98	-14.59	27.39	46.00	-18.61	QP
5	527.6100	39.52	-10.88	28.64	46.00	-17.36	QP
6	825.4000	34.94	-6.78	28.16	46.00	-17.84	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

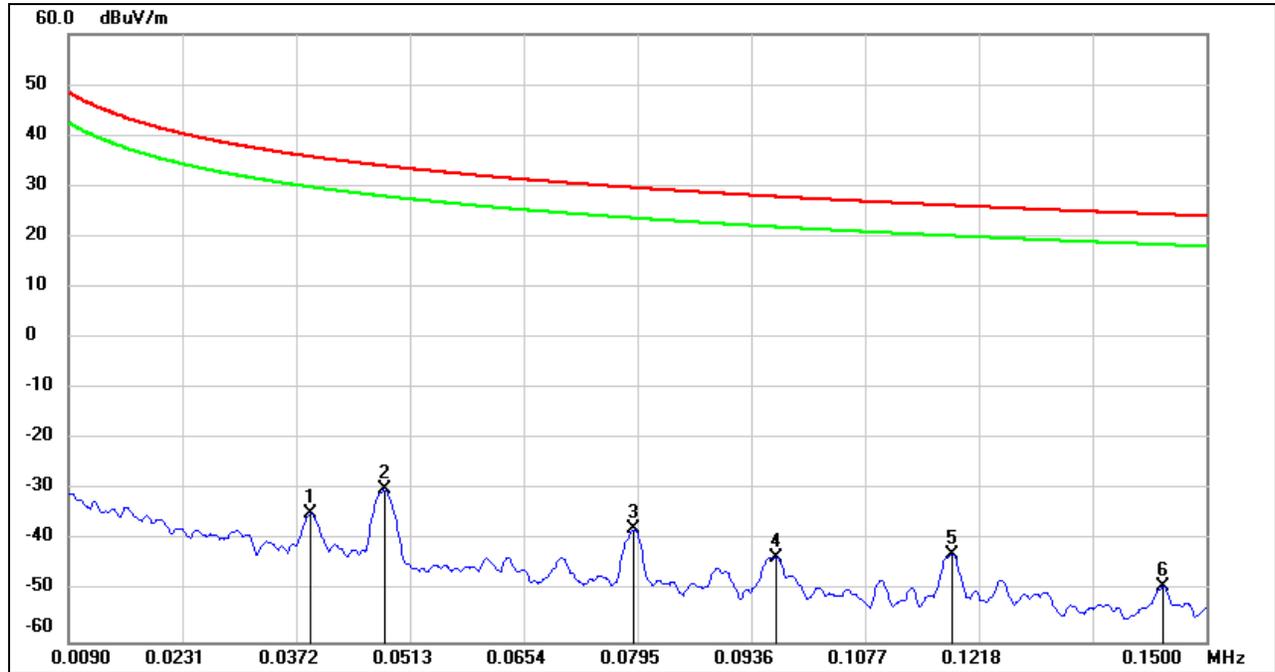
Note: All the channels and modes antennas had been tested, but only the worst data was recorded in the report.

## 8.4. SPURIOUS EMISSIONS BELOW 30 MHz

### 8.4.1. NFC MODE

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

9 kHz~ 150 kHz



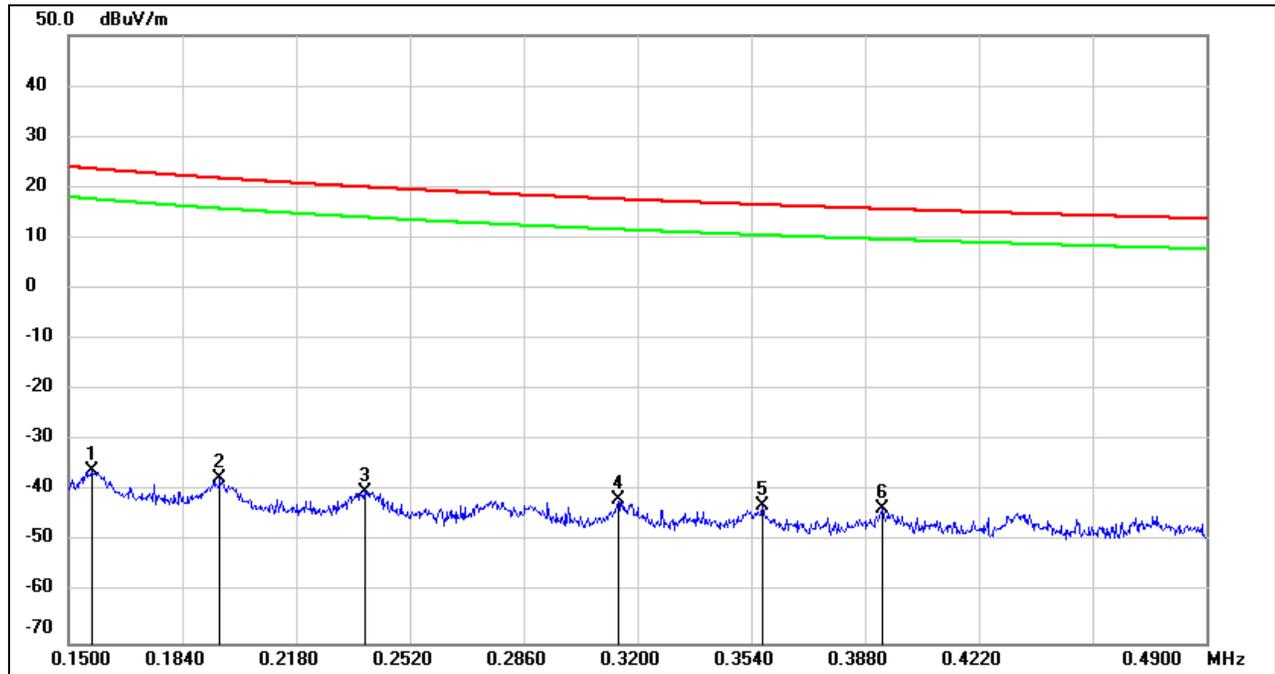
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	0.0390	66.57	-101.23	-34.66	35.78	-70.44	peak
2	0.0481	71.36	-101.35	-29.99	33.96	-63.95	peak
3	0.0791	63.15	-100.95	-37.80	29.64	-67.44	peak
4	0.0967	57.97	-101.23	-43.26	27.89	-71.15	peak
5	0.1184	58.74	-101.51	-42.77	26.14	-68.91	peak
6	0.1446	52.72	-101.83	-49.11	24.40	-73.51	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.

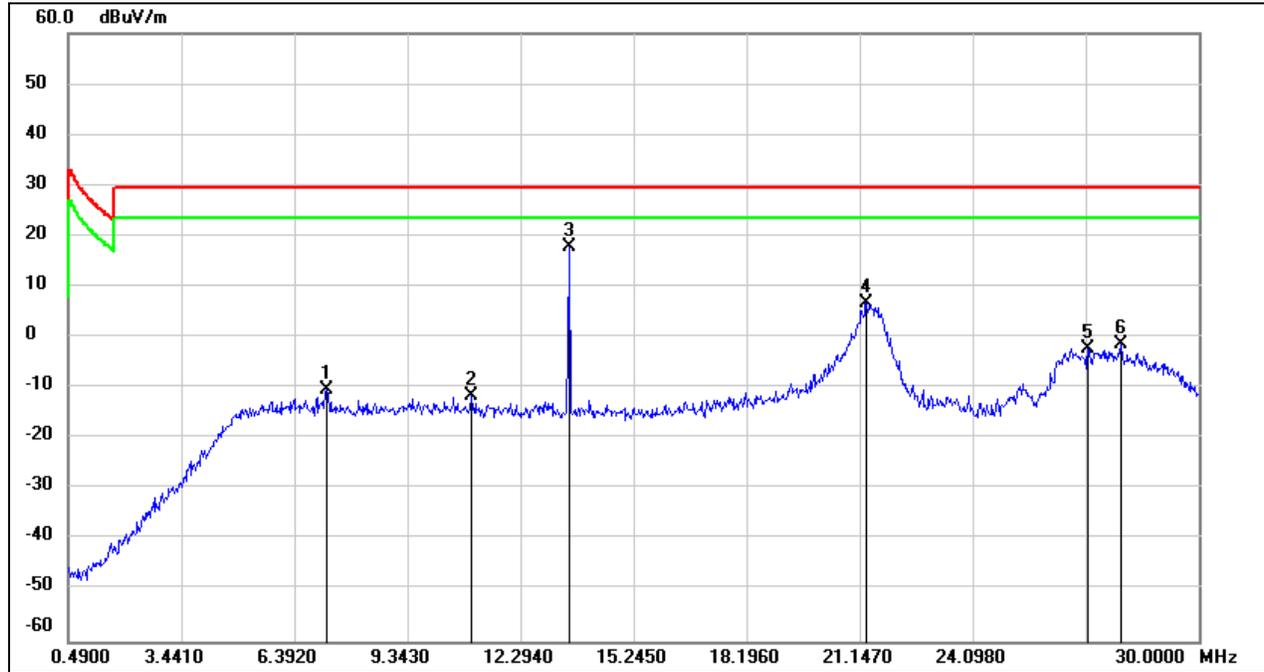
**150 kHz ~ 490 kHz**



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	0.1568	65.96	-101.88	-35.92	23.70	-59.62	peak
2	0.1952	64.38	-101.84	-37.46	21.79	-59.25	peak
3	0.2384	61.80	-101.80	-40.00	20.06	-60.06	peak
4	0.3141	59.97	-101.77	-41.80	17.66	-59.46	peak
5	0.3574	58.91	-101.76	-42.85	16.54	-59.39	peak
6	0.3930	58.31	-101.74	-43.43	15.71	-59.14	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.  
 4. About the Fundamental emission test result please refer to section 7.1.

**490 kHz ~ 30 MHz**



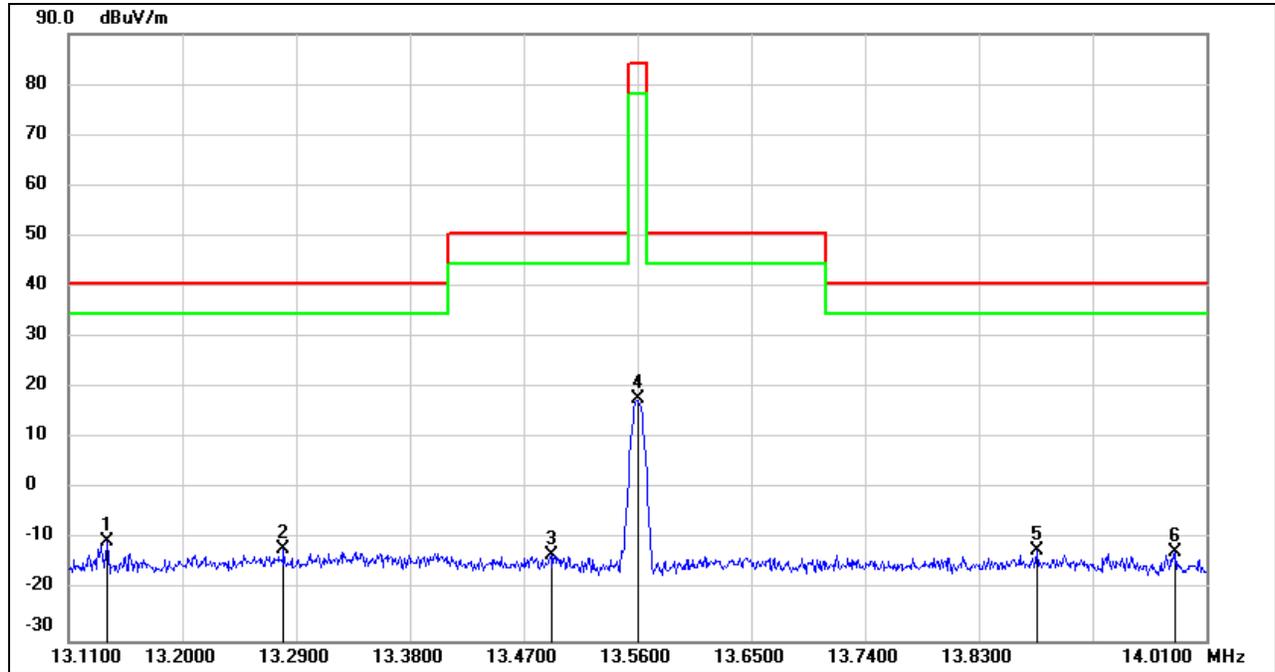
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7.2183	51.22	-61.60	-10.38	29.54	-39.92	peak
2	10.9956	49.68	-61.26	-11.58	29.54	-41.12	peak
3	13.5629	79.22	-61.41	17.81	29.54	-11.73	peak
4	21.3240	67.80	-61.06	6.74	29.54	-22.80	peak
5	27.1080	58.57	-60.84	-2.27	29.54	-31.81	peak
6	27.9638	59.36	-60.78	-1.42	29.54	-30.96	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 channels and modes antennas had been tested, but only the worst data was recorded in the report.

## 8.5. NFC FIELD STRENGTH OF INTENTIONAL EMISSIONS

### FIELD STRENGTH OF INTENTIONAL EMISSIONS (LOOP ANTENNA FACE ON TO THE EUT)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	13.1405	51.11	-61.38	-10.27	40.51	-50.78	peak
2	13.2800	49.50	-61.40	-11.90	40.51	-52.41	peak
3	13.4916	48.42	-61.41	-12.99	50.47	-63.46	peak
4	13.5600	79.26	-61.41	17.85	84.00	-66.15	peak
5	13.8758	49.18	-61.43	-12.25	40.51	-52.76	peak
6	13.9856	49.08	-61.44	-12.36	40.51	-52.87	peak

Note: 1. Result Level = Read Level + Correct Factor.

2. 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.

## 9. AC POWER LINE CONDUCTED EMISSIONS

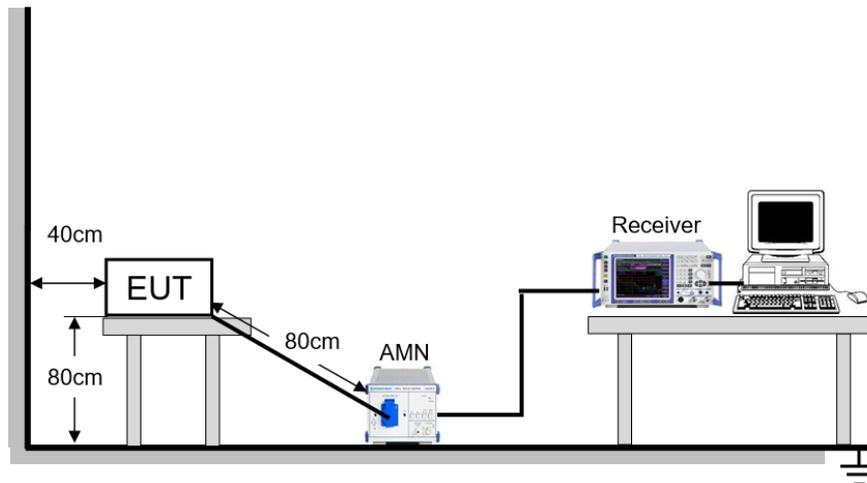
### LIMITS

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.

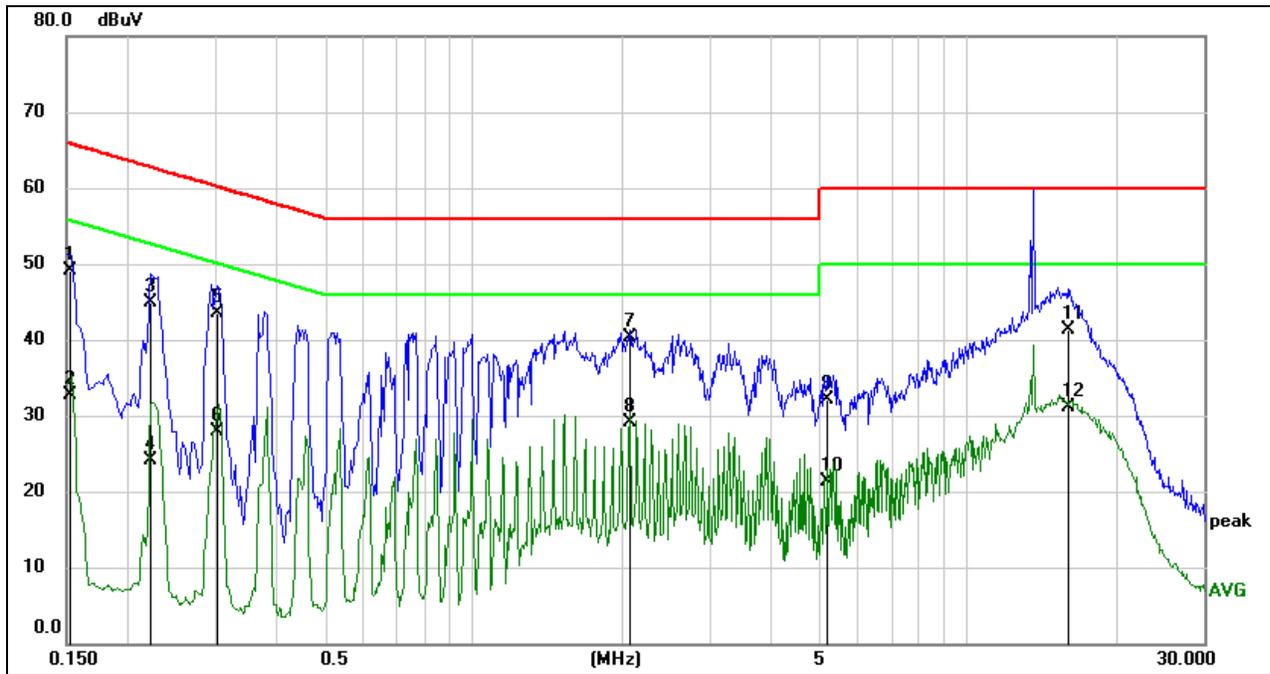
### TEST ENVIRONMENT

Temperature	22.4 °C	Relative Humidity	53.7 %
Atmosphere Pressure	101 kPa	Test Voltage	AC 120V_60Hz

**RESULTS**

**9.1.1. 802.11n HT40 MIMO MODE**

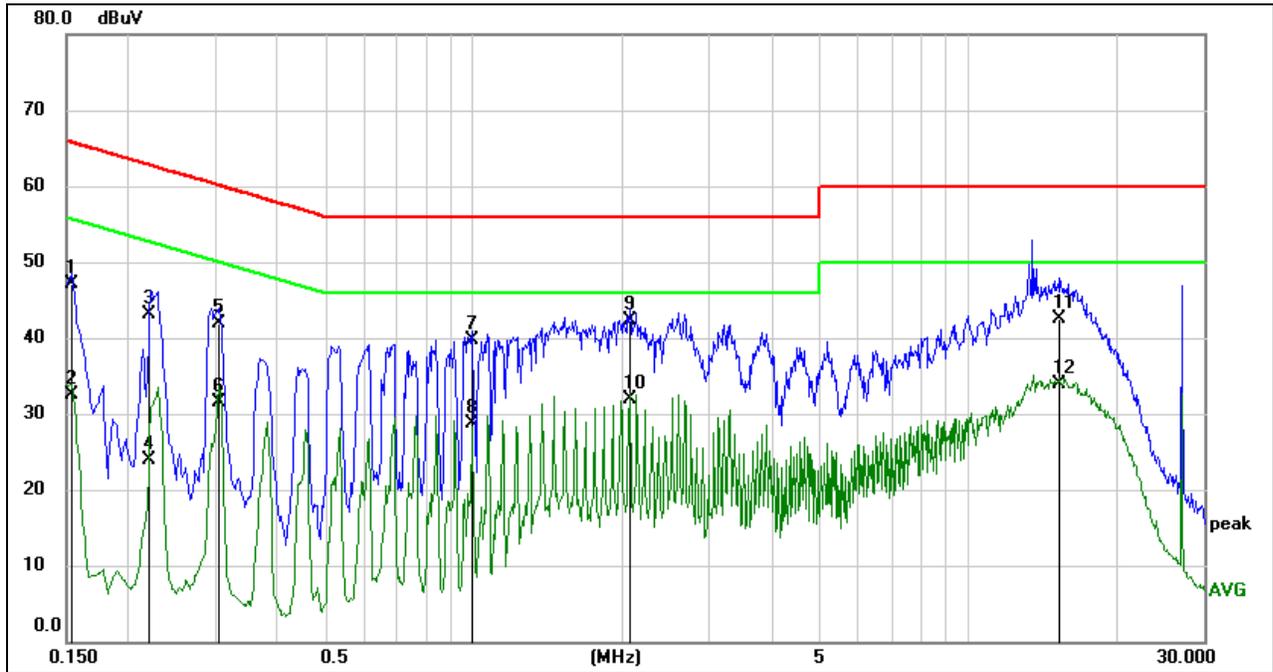
**LINE L RESULTS (LOW CHANNEL, WORST-CASE CONFIGURATION)**



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1528	39.42	9.59	49.01	65.85	-16.84	QP
2	0.1528	23.08	9.59	32.67	55.85	-23.18	AVG
3	0.2208	35.42	9.57	44.99	62.79	-17.80	QP
4	0.2208	14.57	9.57	24.14	52.79	-28.65	AVG
5	0.3014	33.93	9.49	43.42	60.20	-16.78	QP
6	0.3014	18.48	9.49	27.97	50.20	-22.23	AVG
7	2.0660	30.60	9.63	40.23	56.00	-15.77	QP
8	2.0660	19.39	9.63	29.02	46.00	-16.98	AVG
9	5.2020	22.50	9.62	32.12	60.00	-27.88	QP
10	5.2020	11.60	9.62	21.22	50.00	-28.78	AVG
11	15.9160	31.61	9.73	41.34	60.00	-18.66	QP
12	15.9160	21.40	9.73	31.13	50.00	-18.87	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 N RESULTS (LOW CHANNEL, WORST-CASE CONFIGURATION)**



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1528	37.47	9.59	47.06	65.85	-18.79	QP
2	0.1528	22.93	9.59	32.52	55.85	-23.33	AVG
3	0.2201	33.48	9.57	43.05	62.82	-19.77	QP
4	0.2201	14.32	9.57	23.89	52.82	-28.93	AVG
5	0.3058	32.47	9.48	41.95	60.08	-18.13	QP
6	0.3058	21.95	9.48	31.43	50.08	-18.65	AVG
7	0.9960	30.13	9.61	39.74	56.00	-16.26	QP
8	0.9960	19.06	9.61	28.67	46.00	-17.33	AVG
9	2.0673	32.58	9.63	42.21	56.00	-13.79	QP
10	2.0673	22.25	9.63	31.88	46.00	-14.12	AVG
11	15.3881	32.84	9.74	42.58	60.00	-17.42	QP
12	15.3881	24.14	9.74	33.88	50.00	-16.12	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

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**END OF REPORT**