CFR 47 FCC PART 15 SUBPART E

CERTIFICATION TEST REPORT

For

Integrated video conference terminal

MODEL NUMBER: UC S10, MS10B, MS**, UC******

FCC ID: 2AFG6-MS10B

REPORT NUMBER: 4789822671.2-7

ISSUE DATE: April 08, 2021

Prepared for

Guangzhou Shirui Electronics Co Ltd
192 Kezhu Road, Scientech Park, guangzhou Economic Technology Development District Guangzhou China

Prepared by

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Revision History

Rev.	Issue Date	Revisions	Revised By
V0	04/08/2021	Initial Issue	

Summary of Test Results			
Clause	Test Items	FCC Rules	Test Results
1	6dB/26dB Bandwidth and 99% Occupied Bandwidth	FCC 15.407 (a)&(e)	PASS
2	Conducted Output Power	FCC 15.407 (a)	PASS
3	Power Spectral Density	FCC 15.407 (a)	PASS
4	Radiated Bandedge and Spurious Emission	FCC 15.407 (b) FCC 15.209 FCC 15.205	PASS
5	Conducted Emission Test for AC Power Port	FCC 15.207	PASS
6	Frequency Stability	FCC 15.407 (g)	PASS
7	Antenna Requirement	FCC 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:	Guangzhou Shirui Electronics Co Ltd
Address:	192 Kezhu Road, Scientech Park, guangzhou Economic Technology Development District Guangzhou China

Manufacturer Information

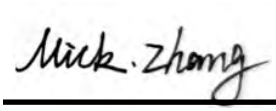
Company Name:	Guangzhou Shirui Electronics Co Ltd
Address:	192 Kezhu Road, Scientech Park, guangzhou Economic Technology Development District Guangzhou China

EUT Information

EUT Name:	Integrated video conference terminal
Model:	UC S10
Series Model:	MS10B, MS****, UC****
Model difference:	There are no difference except the model name. (*=A-Z, a-z, 0-9 "-" or blank, no other difference but model number and color just for marketing purpose)
Sample Received Date:	February 7, 2021
Sample Status:	Normal
Sample ID:	3689328
Date of Tested:	February 7, 2021~ April 7, 2021

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

Prepared By:



Kebo Zhang
Project Engineer

Check By:

Shawn Wen
Laboratory Leader

Approved By:

Stephen Guo
Laboratory Manager

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 and KDB 662911 D01 Multiple Transmitter Output v02r01,KDB 905462 D03 UNII clients without radar detection New Rules v01r02.

3. FACILITIES AND ACCREDITATION

Accreditation Certificate	**A2LA (Certificate No.: 4102.01)** UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with A2LA. **FCC (FCC Designation No.: CN1187)** UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. Has been recognized to perform compliance testing on equipment subject to the Commission's Delcaration of Conformity (DoC) and Certification rules **ISED (Company No.: 21320)** 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. **VCCI (Registration No.: G-20019, R-20004, C-20012 and T-20011)** 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

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)
Duty Cycle	±0.028%
Emission Bandwidth and 99% Occupied Bandwidth	±0.0196%
Maximum Conducted Output Power	±0.766 dB
Maximum Power Spectral Density Level	±1.22 dB
Frequency Stability	±2.76%
Conducted Band-edge Compliance	±1.328 dB
Conducted Unwanted Emissions In Non-restricted Frequency Bands	±0.746 dB (9 kHz ~ 1 GHz)
	±1.328dB (1 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

<table>
<tr><td>EUT Name</td><td colspan="4">Integrated video conference terminal</td></tr>
<tr><td>Model</td><td colspan="4">UC S10</td></tr>
<tr><td>Series Model:</td><td colspan="4">MS10B, MS****, UC****</td></tr>
<tr><td>Model difference:</td><td colspan="4">There are no difference except the model name.
(*=A-Z, a-z, 0-9 “-” or blank, no other difference but model number and color just for marketing purpose)</td></tr>
<tr><td>Radio Technology</td><td colspan="4">IEEE802.11a
IEEE802.11n HT20/n HT40
IEEE802.11ac VHT20/VHT40V/HT80</td></tr>
<tr><td>Operation frequency</td><td colspan="4">UNII-1: 5150 ~ 5250 MHz
UNII-3: 5725 ~ 5850 MHz</td></tr>
<tr><td>Modulation</td><td colspan="4">IEEE 802.11a: 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)</td></tr>
<tr><td>Wireless Module</td><td colspan="4">RTL8822CU-CG</td></tr>
<tr><td rowspan="5">Supply Voltage</td><td colspan="3">☐AC mains State</td><td></td></tr>
<tr><td rowspan="4">☒DC State</td><td>☐Internal Power Supply</td><td colspan="2"></td></tr>
<tr><td rowspan="2">☒External Power Supply or AC/DC adapter</td><td>Rate Input:</td><td>AC 100-240V~, 50/60Hz, 50/60, 1.0A Max</td></tr>
<tr><td>Rate Output:</td><td>DC 12V3A, 36.0W</td></tr>
<tr><td>☐Battery</td><td colspan="2"></td></tr>
</table>

5.2. MAXIMUM AVERAGE OUTPUT POWER

UNII-1 BAND

IEEE Std. 802.11	Frequency (MHz)	Maximum Average Conducted Power (dBm)
a 20	5150 ~ 5250	11.05
n HT20		14.10
n HT40		13.94
ac VHT20		14.18
ac VHT40		13.88
ac VHT80		13.39

UNII-3 BAND

IEEE Std. 802.11	Frequency (MHz)	Maximum Average Conducted Power (dBm)
a 20	5725 ~ 5850	11.53
n HT20		14.61
n HT40		14.44
ac VHT20		14.61
ac VHT40		14.49
ac VHT80		13.85

5.3. CHANNEL LIST

UNII-1 (For Bandwidth = 20 MHz)		UNII-1 (For Bandwidth = 40 MHz)		UNII-1 (For Bandwidth = 80 MHz)	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	38	5190	42	5210
40	5200	46	5230		
44	5220				
48	5240				

UNII-3 (For Bandwidth = 20 MHz)		UNII-3 (For Bandwidth = 40 MHz)		UNII-3 (For Bandwidth = 80 MHz)	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
149	5745	151	5755	155	5775
153	5765	159	5795		
157	5785				
161	5805				
165	5825				

5.4. TEST CHANNEL CONFIGURATION

UNII-1 Test Channel Configuration		
IEEE Std.	Test Channel Number	Frequency
802.11a 20	CH 36(Low Channel), CH 40(MID Channel), CH 48(High Channel)	5180 MHz, 5200 MHz, 5240 MHz
802.11n HT20	CH 36(Low Channel), CH 40(MID Channel), CH 48(High Channel)	5180 MHz, 5200 MHz, 5240 MHz
802.11n HT40	CH 38(Low Channel), CH 46(High Channel)	5190 MHz, 5230 MHz
802.11ac VHT20	CH 36(Low Channel), CH 40(MID Channel), CH 48(High Channel)	5180 MHz, 5200 MHz, 5240 MHz
802.11ac VHT40	CH 38(Low Channel), CH 46(High Channel)	5190 MHz, 5230 MHz
802.11ac VHT80	CH 42(Low Channel)	5210 MHz

UNII-3 Test Channel Configuration		
IEEE Std.	Test Channel Number	Frequency
802.11a 20	CH 149(Low Channel), CH 157(MID Channel), CH 165(High Channel)	5745 MHz, 5785 MHz, 5825 MHz
802.11n HT20	CH 149(Low Channel), CH 157(MID Channel), CH 165(High Channel)	5745 MHz, 5785 MHz, 5825 MHz
802.11n HT40	CH 151(Low Channel), CH 159(High Channel)	5755MHz, 5795MHz
802.11ac VHT20	CH 149(Low Channel), CH 157(MID Channel), CH 165(High Channel)	5745 MHz, 5785 MHz, 5825 MHz
802.11ac VHT40	CH 151(Low Channel), CH 159(High Channel)	5755 MHz, 5795 MHz
802.11ac VHT80	CH 155(Low Channel)	5775 MHz

5.5. DESCRIPTION OF AVAILABLE ANTENNAS

Antenna No.	Frequency (MHz)	Antenna Type	Max Antenna Gain (dBi)
1	5150-5850	FPC antenna	2.85
2	5150-5850	FPC antenna	2.85

Note: Directional gain= G_{ANT} + 10 log [N_{ANT}] = 5.86 dBi
G_{ANT}: Average of the Antenna Gain
N_{ANT}: Antenna numbers
Note: The value of the antenna gain was declared by customer.

IEE Std. 802.11	Transmit and Receive Mode	Description
802.11a 20	☒2TX, 2RX	ANT 1,2 can be used as transmitting/receiving antenna.
802.11n HT20	☒2TX, 2RX	ANT 1,2 can be used as transmitting/receiving antenna.
802.11n HT40	☒2TX, 2RX	ANT 1,2 can be used as transmitting/receiving antenna.
802.11ac VHT20	☒2TX, 2RX	ANT 1,2 can be used as transmitting/receiving antenna.
802.11ac VHT40	☒2TX, 2RX	ANT 1,2 can be used as transmitting/receiving antenna.
802.11ac VHT80	☒2TX, 2RX	ANT 1,2 can be used as transmitting/receiving antenna.
Note: Only 802.11a mode does not support MIMO mode.		

5.6. THE WORSE CASE POWER SETTING PARAMETER

The Worse Case Power Setting Parameter			
Test Software	WLAN Test Tool		
Frequency Band	mode	channel	setting
UNII-1	802.11a	5180	46
		5200	46
		5240	46
	802.11n (20M)	5180	46
		5200	46
		5240	46
	802.11ac (20M)	5180	46
		5200	46
		5240	46
	802.11n (40M)	5190	46
		5230	46
	802.11ac (40M)	5190	46
		5230	46
	802.11ac (80M)	5210	46
UNII-3	802.11a	5745	46
		5785	46
		5825	46
	802.11n (20M)	5745	46
		5785	46
		5825	46
	802.11ac (20M)	5745	46
		5785	46
		5825	46
	802.11n (40M)	5755	46
		5795	46
	802.11ac (40M)	5755	46
		5795	46
	802.11ac (80M)	5775	46

5.7. THE WORSE CASE CONFIGURATIONS

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

802.11a mode: 6 Mbps
802.11n HT20 mode: MCS0
802.11n HT40 mode: MCS0
802.11ac VHT20 mode: MCS0
802.11ac VHT40 mode: MCS0
802.11ac VHT80 mode: MCS0

802.11ac VHT20 and VHT40 mode are different from 802.11nHT20 and HT40 only in control messages and have the same power settings, so for these 4 modes, only 802.11nHT20 and 802.11nHT40 modes data are recorded in the report .

5.8. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Item	Equipment	Brand Name	Model Name	P/N
1	Laptop	ThinkPad	X230i	/
2	USB TO UART	/	/	/
3	Monitor	DELL	P2715Qt	CN-040FHF-WS200-79C-390L
4	Earphone	GIONEE	N/A	N/A
5	Mouse	Lenovo	MO28UOB	8SSM50G45918F CCC1545

I/O CABLES

Cable No	Port	Connector Type	Cable Type	Cable Length(m)	Remarks
1	USB	/	/	1.0	/
2	HDMI Cable	YES	YES	1.5	/
3	Network Cable	/	/	2.0	/

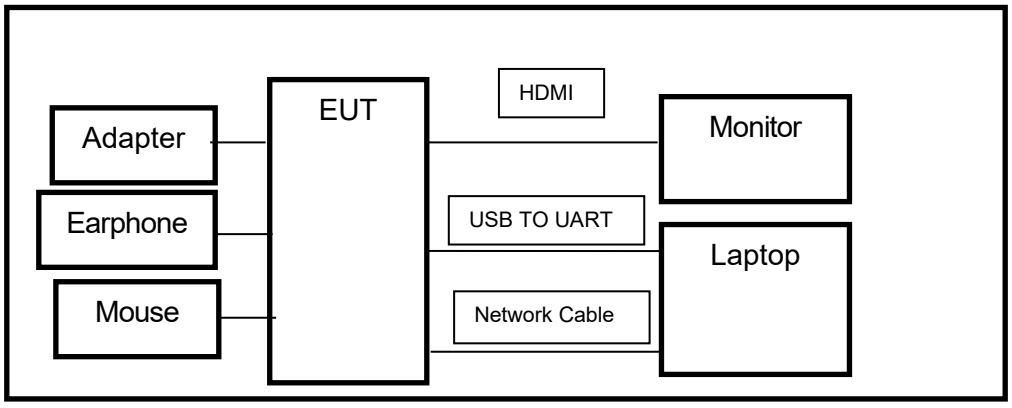
ACCESSORIES

Item	Accessory	Brand Name	Model Name	Description
1	Adapter	GangQi	GQ36-120300-AX	Input: AC 100-240V~, 50/60Hz, 50/60, 1.0A Max Output: DC 12V3A, 36.0W

TEST SETUP

The EUT can work in engineering mode with a software.

SETUP DIAGRAM FOR TESTS



6. MEASURING INSTRUMENT AND SOFTWARE USED

Conducted Emissions						
Instrument						
Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
☑	EMI Test Receiver	R&S	ESR3	101961	Nov. 12, 2020	Nov. 11, 2021
☑	Two-Line V-Network	R&S	ENV216	101983	Nov. 12, 2020	Nov. 11, 2021
Software						
Used	Description		Manufacturer	Name	Version	
☑	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.
☑	MXE EMI Receiver	KESIGHT	N9038A	MY56400036	Nov. 12, 2020	Nov. 11, 2021
☑	Hybrid Log Periodic Antenna	TDK	HLP-3003C	130960	Aug. 11, 2018	Aug. 10, 2021
☑	Preamplifier	HP	8447D	2944A09099	Nov. 12, 2020	Nov. 11, 2021
☑	EMI Measurement Receiver	R&S	ESR26	101377	Nov. 12, 2020	Nov. 11, 2021
☑	Horn Antenna	TDK	HRN-0118	130939	Sept. 17, 2018	Sept. 17, 2021
☑	Preamplifier	TDK	PA-02-0118	TRS-305-00067	Nov. 20, 2020	Nov. 19, 2021
☑	Horn Antenna	Schwarzbeck	BBHA9170	#691	Aug. 11, 2018	Aug. 11, 2021
☑	Preamplifier	TDK	PA-02-2	TRS-307-00003	Nov. 12, 2020	Nov. 11, 2021
☑	Loop antenna	Schwarzbeck	1519B	00008	Jan.17, 2019	Jan.17,2022
☑	Preamplifier	TDK	PA-02-001-3000	TRS-302-00050	Nov. 12, 2020	Nov. 11, 2021
☑	Preamplifier	Mini-Circuits	ZX60-83LN-S+	SUP01201941	Nov. 20, 2020	Nov. 19, 2021
☑	Band Reject Filter	Wainwright	WRCJV12-5695-5725-5850-5880-40SS	4	Nov. 12, 2020	Nov. 11, 2021
☑	Band Reject Filter	Wainwright	WRCJV20-5120-5150-5350-5380-60SS	2	Nov. 12, 2020	Nov. 11, 2021
☑	Highpass Filter	Wainwright	WHKX10-5850-6500-1800-40SS	4	Nov. 12, 2020	Nov. 11, 2021

Software				
Used	Description	Manufacturer	Name	Version
☑	Test Software for Radiated disturbance	Farad	EZ-EMC	Ver. UL-3A1

Other instruments						
Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
☑	Spectrum Analyzer	Keysight	N9030A	MY55410512	Nov. 20, 2020	Nov. 19, 2021
☑	Power sensor, Power Meter	Tonsend	JS0806-2	178060074	Dec.30,2020	Dec.30,2021
☑	DC power supply	Keysight	E3642A	MY55159130	Nov.24,2020	Nov.23,2021
☑	Temperature & Humidity Chamber	SANMOOD	SG-80-CC-2	2088	Nov. 20, 2020	Nov. 19, 2021

7. ANTENNA PORT TEST RESULTS

7.1. ON TIME AND DUTY CYCLE

LIMITS

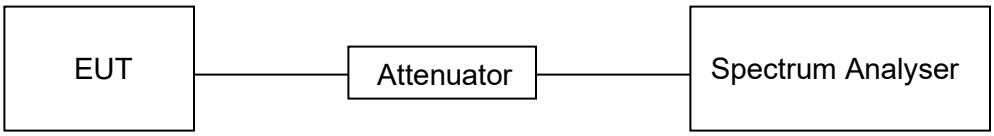
None; for reporting purposes only.

PROCEDURE

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

The zero-span mode on a spectrum analyzer or EMI receiver, if the response time and spacing between bins on the sweep are sufficient to permit accurate measurements of the on and off times of the transmitted signal. Set the center frequency of the instrument to the center frequency of the transmission. Set RBW ≥ EBW if possible; otherwise, set RBW to the largest available value. Set VBW ≥ RBW. Set detector = peak or average. The zero-span measurement method shall not be used unless both RBW and VBW are > 50/T, where T is defined in II.B.1.a), and the number of sweep points across duration T exceeds 100. (For example, if VBW and/or RBW are limited to 3 MHz, then the zero-span method of measuring duty cycle shall not be used if T ≤ 16.7 microseconds.)

TEST SETUP



TEST ENVIRONMENT

Temperature	26.5 °C	Relative Humidity	67.8 %
Atmosphere Pressure	101 kPa	Test Voltage	AC 120 V/60 Hz

RESULTS

Please refer to appendix D.

7.2. 6/26 dB EMISSION BANDWIDTH AND 99 % OCCUPIED BANDWIDTH

LIMITS

CFR 47 FCC Part15, Subpart E		
Test Item	Limit	Frequency Range (MHz)
26 dB Emission Bandwidth	For reporting purposes only.	5150 ~ 5250
26 dB Emission Bandwidth	For reporting purposes only.	5250 ~ 5350
26 dB Emission Bandwidth	For reporting purposes only.	5470 ~ 5725 (For FCC) 5470 ~ 5600 (For ISED) 5650 ~ 5725 (For ISED)
6 dB Emission Bandwidth	The minimum 6 dB emission bandwidth shall be 500 kHz.	5725 ~ 5850
99 % Occupied Bandwidth	For reporting purposes only.	5150 ~ 5825 (For ISED)

TEST PROCEDURE

ISED RSS-247 6.2.1.2 clause unwanted emission limits

For transmitters with operating frequencies in the band 5150-5250 MHz, all emissions outside the band 5150-5350 MHz shall not exceed -27 dBm/MHz e.i.r.p. Any unwanted emissions that fall into the band 5250-5350 MHz shall be attenuated below the channel power by at least 26 dB, when measured using a resolution bandwidth between 1 and 5% of the occupied bandwidth (i.e. 99% bandwidth), above 5250 MHz.

TEST PROCEDURE

Refer to KDB 789033 D02 General U-NII Test Procedures New Rules v02r01 section II.C1. for 26 dB Emission Bandwidth; section II.C2. for 6 dB Emission Bandwidth; section II.D. for 99 % Occupied Bandwidth.
Connect the EUT to the spectrum analyser and use the following settings:

Center Frequency	The center frequency of the channel under test
Detector	Peak
RBW	For 6 dB Emission Bandwidth: RBW=100 kHz For 26 dB Emission bandwidth: approximately 1 % of the EBW. For 99 % Occupied Bandwidth: approximately 1 % ~ 5 % of the OBW.
VBW	For 6 dB Bandwidth: ≥ 3*RBW For 26 dB Bandwidth: ≥ 3*RBW For 99 % Bandwidth: >3*RBW
Trace	Max hold
Sweep	Auto couple

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

b) 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 6/26 dB relative to the maximum level measured in the fundamental emission.

Calculation for 99 % Bandwidth of UNII-2C and UNII-3 Straddle Channel:

For Example: Fundamental Frequency: 5720 MHz

99 % OBW: 21.00 MHz

Turning Frequency: 5725 MHz

99 % Bandwidth of UNII-2C Band Portion = (5725-(5720-(21.00/2)) = 15.50 MHz

99 % Bandwidth of UNII-3 Band Portion = (5720+(21.00/2)-5725) = 5.50 MHz

Calculation for 26 dB Bandwidth of UNII-2C Straddle Channel:

For Example: Fundamental frequency: 5720 MHz

26 dB BW: 20.00 MHz

FL: 5710.16 MHz

FH: 5730.16 MHz

Turning Frequency: 5725 MHz

26 dB Bandwidth of UNII-2C Band Portion = 5725-5710.16=14.84 MHz

Calculation for 6dB Bandwidth of UNII-3 Straddle Channel:

For Example: Fundamental frequency: 5720 MHz

6 dB BW: 16.44 MHz

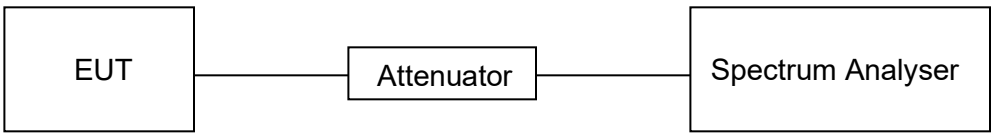
FL: 5711.76 MHz

FH: 5728.2 MHz

Turning Frequency: 5725 MHz

6 dB Bandwidth of UNII-3 band Portion = 5728.2-5725=3.2 MHz

TEST SETUP



TEST ENVIRONMENT

Temperature	26.5 °C	Relative Humidity	67.8 %
Atmosphere Pressure	101 kPa	Test Voltage	AC 120 V/60 Hz

RESULTS

Please refer to Appendix A1&A2&A3.

7.3. CONDUCTED OUTPUT POWER

LIMITS

CFR 47 FCC Part15, Subpart E		
Test Item	Limit	Frequency Range (MHz)
Conducted Output Power	☐ Outdoor Access Point: 1 W (30 dBm) ☒ Indoor Access Point: 1 W (30 dBm) ☐ Fixed Point-To-Point Access Points: 1 W (30 dBm) ☐ 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 KDB 789033 D02 General U-NII Test Procedures New Rules v02r01 section II.E.

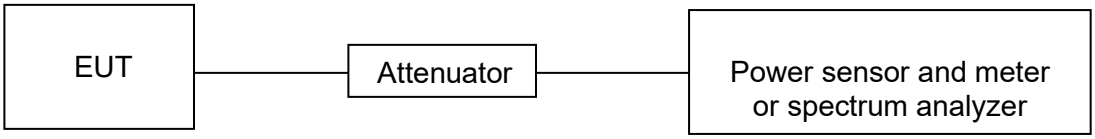
Method SA-1 (trace averaging with the EUT transmitting at full power throughout each sweep):
(i) Set span to encompass the entire emission bandwidth (EBW) (or, alternatively, the entire 99% occupied bandwidth) of the signal.
(ii) Set RBW = 1 MHz.
(iii) Set VBW ≥ 3 MHz.
(iv) Number of points in sweep ≥ 2 × span / RBW. (This ensures that bin-to-bin spacing is ≤ 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 ≥ 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.

Straddle channel power was measured using spectrum analyzer.

TEST SETUP



TEST ENVIRONMENT

Temperature	26.5 °C	Relative Humidity	67.8 %
Atmosphere Pressure	101 kPa	Test Voltage	AC 120 V/60 Hz

RESULTS

Please refer to Appendix B.

7.4. POWER SPECTRAL DENSITY

LIMITS

CFR 47 FCC Part15, Subpart E		
Test Item	Limit	Frequency Range (MHz)
Power Spectral Density	☐ Outdoor Access Point: 17 dBm/MHz ☒ Indoor Access Point: 17 dBm/MHz ☐ Fixed Point-To-Point Access Points: 17 dBm/MHz ☐ Client Devices: 11 dBm/MHz	5150 ~ 5250
	11 dBm/MHz	5250 ~ 5350 5470 ~ 5725
	30 dBm/500kHz	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, maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

TEST PROCEDURE

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

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

For U-NII-1band:

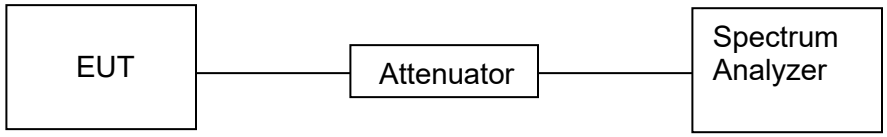
Center Frequency	The center frequency of the channel under test
Detector	RMS
RBW	1 MHz
VBW	≥3 × RBW
Span	Encompass the entire emissions bandwidth (EBW) of the signal
Trace	Max hold
Sweep time	Auto

For U-NII-3:

Center Frequency	The center frequency of the channel under test
Detector	RMS
RBW	500 kHz
VBW	≥3 × RBW
Span	Encompass the entire emissions bandwidth (EBW) of the signal
Trace	Max hold
Sweep time	Auto

Allow trace to fully stabilize and Use the peak search function on the instrument to find the peak of the spectrum and record its value.
Add 10 log (1/x), where x is the duty cycle, to the peak of the spectrum, the result is the Maximum PSD over 1 MHz / 500 kHz reference bandwidth.

TEST SETUP



TEST ENVIRONMENT

Temperature	26.5 °C	Relative Humidity	67.8 %
Atmosphere Pressure	101 kPa	Test Voltage	AC 120 V/60 Hz

RESULTS

Please refer to Appendix C.

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

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

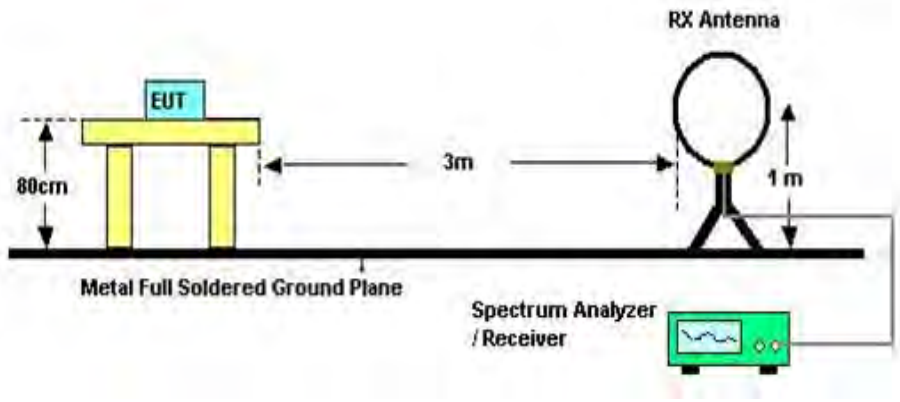
MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
[1]0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	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	([2])
13.36-13.41			

Note: [1]Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.
[2]Above 38.6c
Limits of unwanted/undesirable emission out of the restricted bands refer to CFR 47 FCC §15.407 (b).

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.

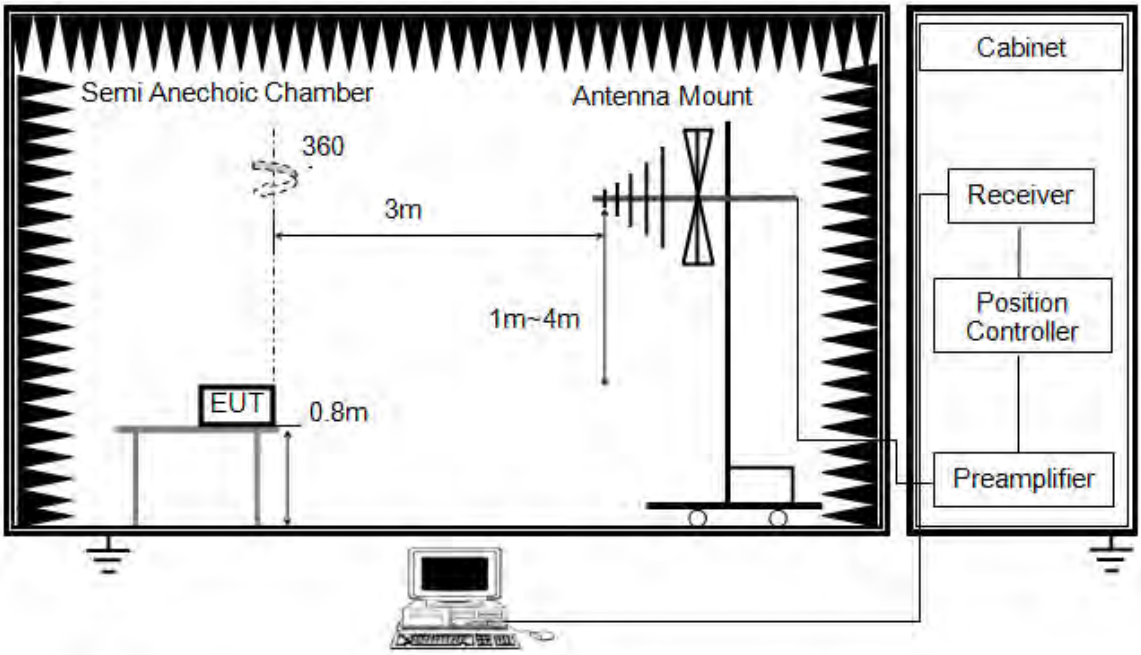
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a 1 m height antenna tower.

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.

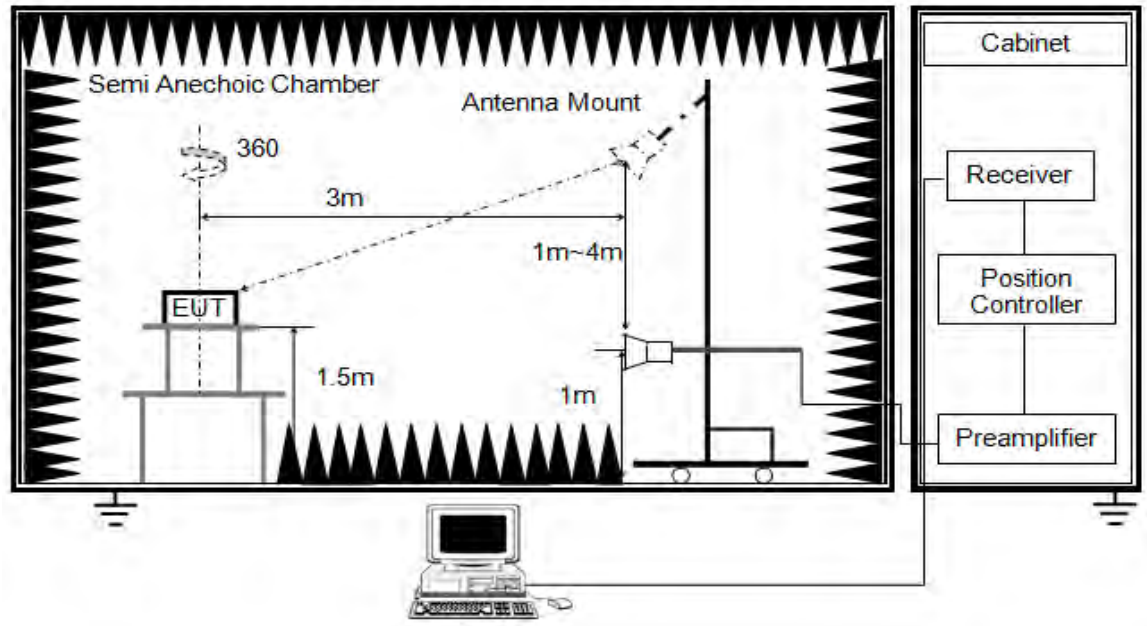
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations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

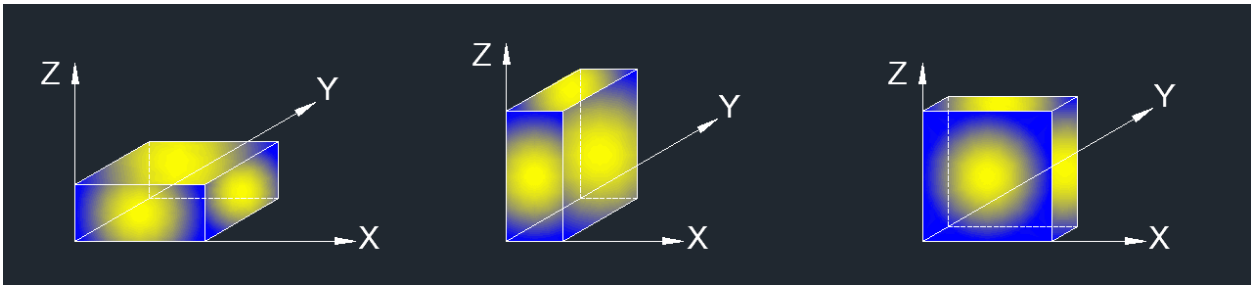
3. The EUT was placed on a turntable with 1.5 m above ground.

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: 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.

TEST ENVIRONMENT

Temperature	23.2 °C	Relative Humidity	56 %
Atmosphere Pressure	101 kPa	Test Voltage	AC 120 V/60 Hz

RESULTS

8.1. RESTRICTED BANDEDGE

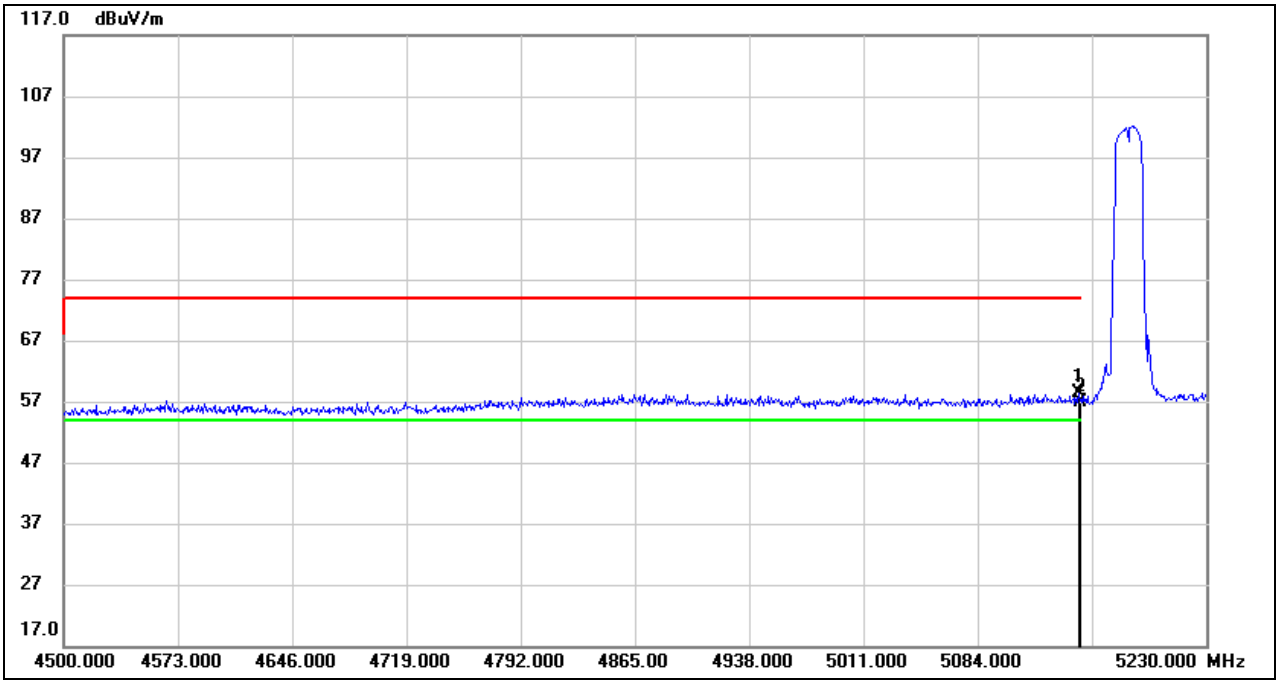
8.1.1. 802.11a SISO MODE

UNII-1 BAND

ANTENNA 2 TEST RESULTS (WORST CASE)

RESTRICTED BANDEDGE (LOW CHANNEL, Vertical)

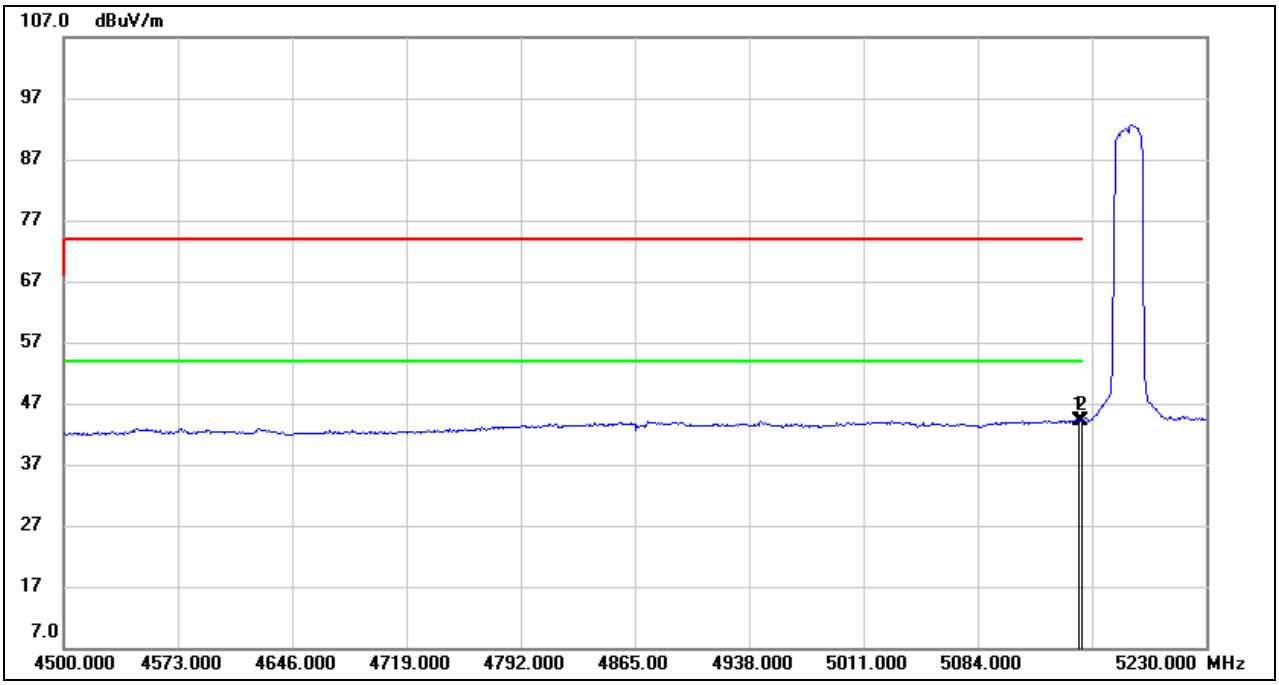
PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5148.240	17.28	41.17	58.45	74.00	-15.55	peak
2	5150.000	15.72	41.19	56.91	74.00	-17.09	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	5148.240	3.05	41.17	44.22	54.00	-9.78	AVG
2	5150.000	2.96	41.19	44.15	54.00	-9.85	AVG

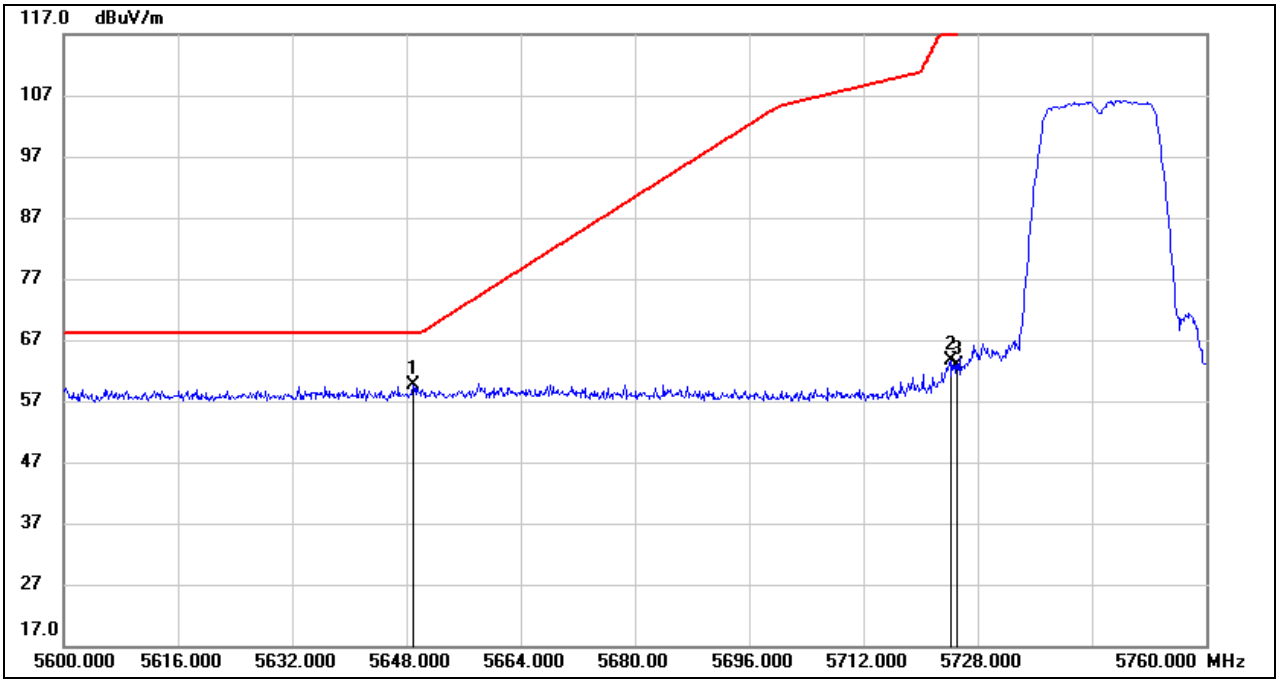
Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
4. For the transmitting duration, please refer to clause 7.1.
5. Only the worst data was recorded,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

UNII-3 BAND

ANTENNA 2 TEST RESULTS (WORST CASE)

RESTRICTED BANDEDGE (LOW CHANNEL, Vertical)

PEAK

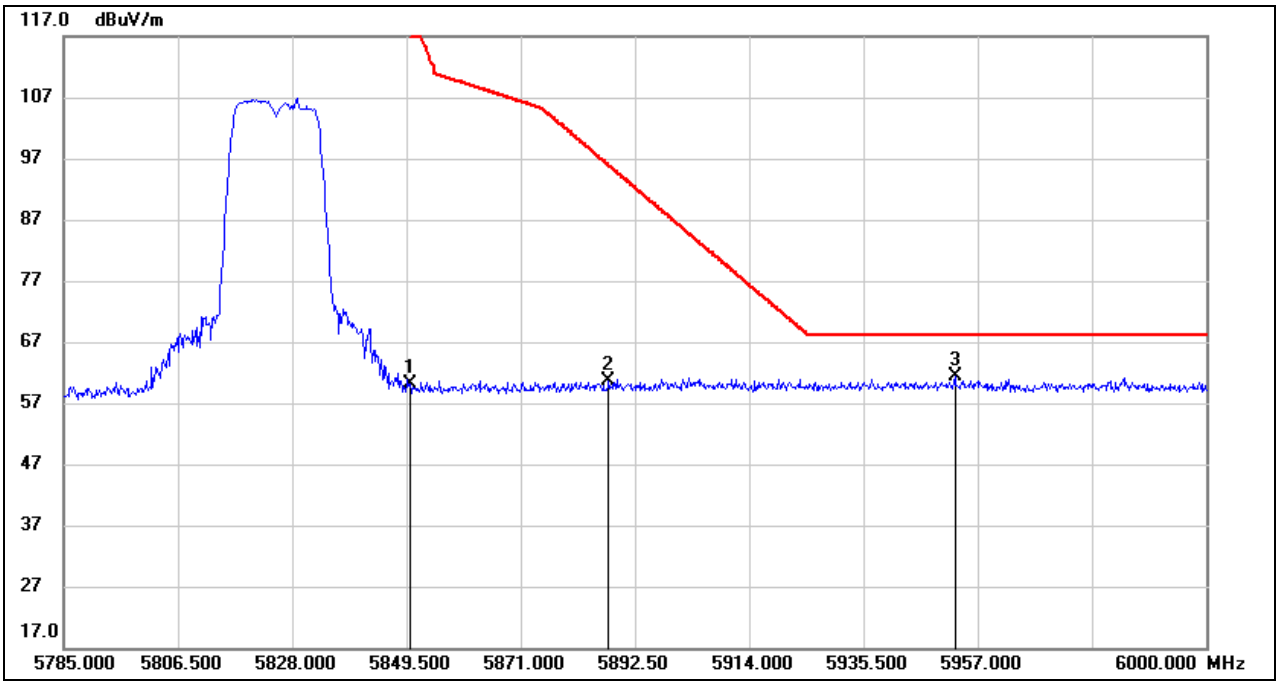


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5648.960	18.08	41.64	59.72	68.20	-8.48	peak
2	5724.160	21.86	41.66	63.52	120.29	-56.77	peak
3	5725.000	21.15	41.67	62.82	122.20	-59.38	peak

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, Vertical)

PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5850.000	17.56	42.52	60.08	122.20	-62.12	peak
2	5887.555	17.79	42.90	60.69	95.88	-35.19	peak
3	5952.700	18.49	42.78	61.27	68.20	-6.93	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 modes and antennas had been tested, but only the worst data was recorded in the report.

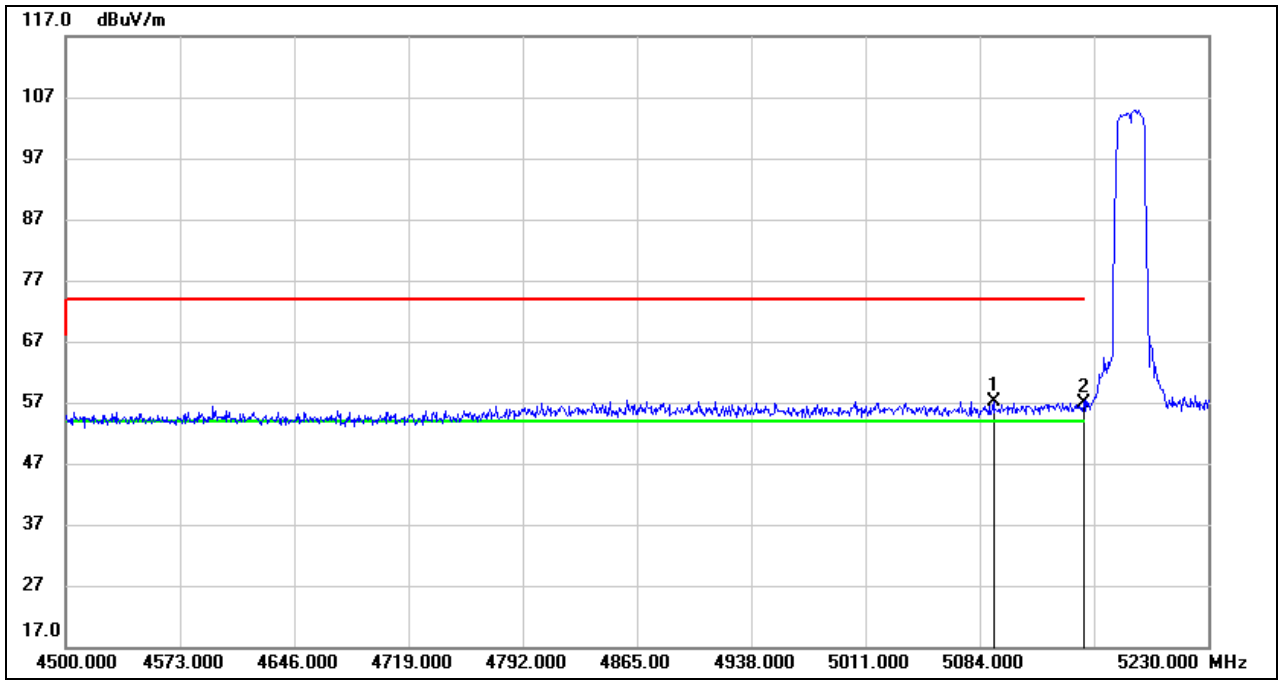
Note: Both horizontal and vertical had been tested, but only the worst data was recorded in the report.

8.1.2. 802.11ac VHT20 MIMO MODE

UNII-1 BAND

RESTRICTED BANDEDGE (LOW CHANNEL, Vertical)

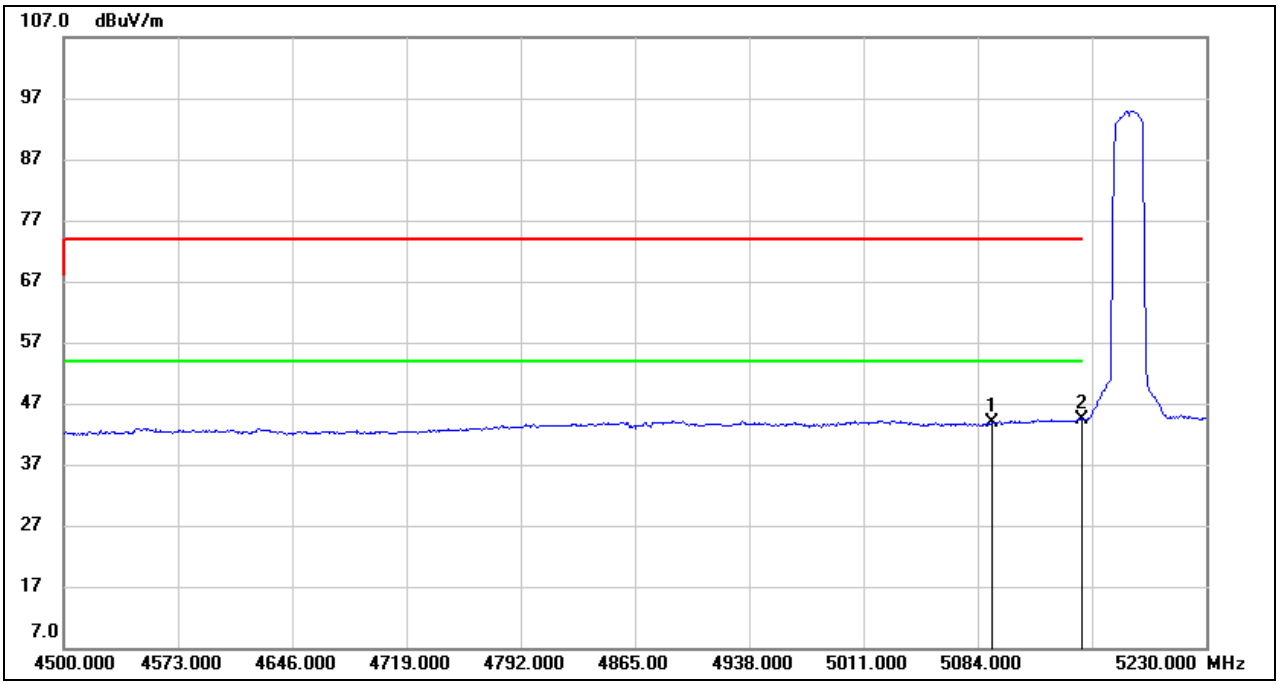
PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5092.760	16.39	40.77	57.16	74.00	-16.84	peak
2	5150.000	15.77	41.19	56.96	74.00	-17.04	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



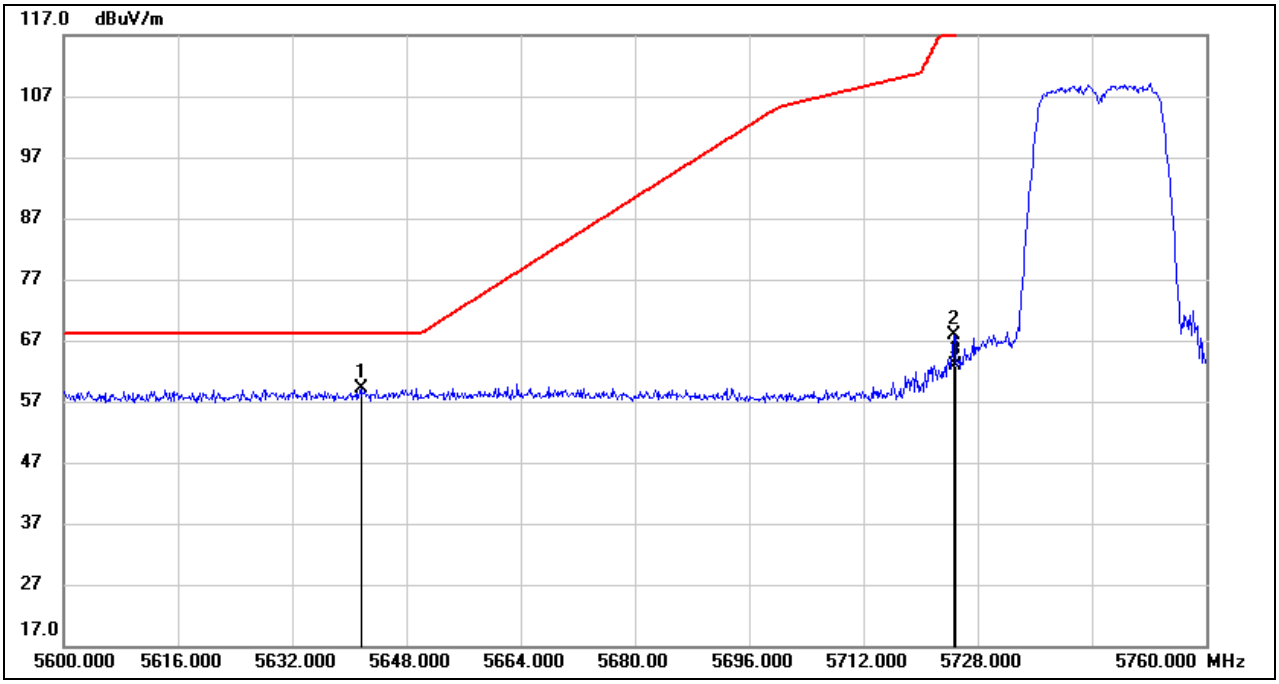
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5092.760	3.04	40.77	43.81	54.00	-10.19	AVG
2	5150.000	3.21	41.19	44.40	54.00	-9.60	AVG

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.

UNII-3 BAND

RESTRICTED BANDEDGE (LOW CHANNEL, Vertical)

PEAK

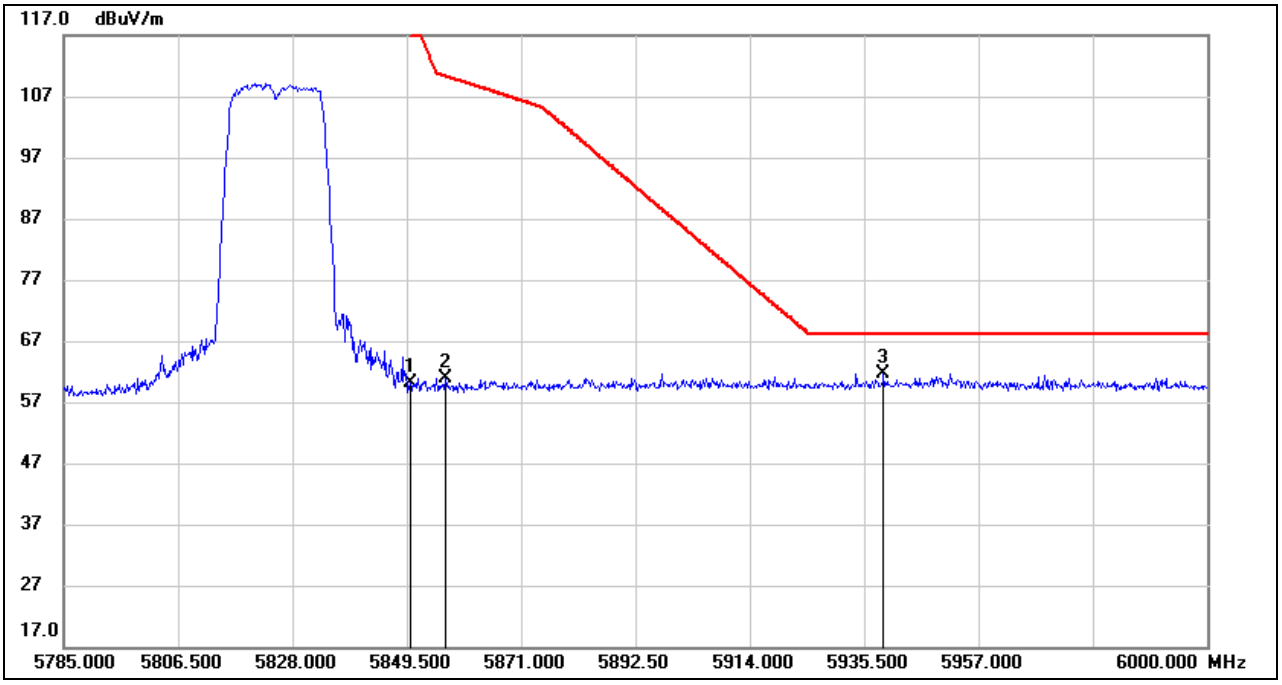


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5641.600	17.35	41.66	59.01	68.20	-9.19	peak
2	5724.640	26.14	41.67	67.81	121.38	-53.57	peak
3	5725.000	21.10	41.67	62.77	122.20	-59.43	peak

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.
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, Vertical)

PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5850.000	17.56	42.52	60.08	122.20	-62.12	peak
2	5856.810	18.31	42.60	60.91	110.29	-49.38	peak
3	5939.155	18.87	42.85	61.72	68.20	-6.48	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 modes and antennas had been tested, but only the worst data was recorded in the report.

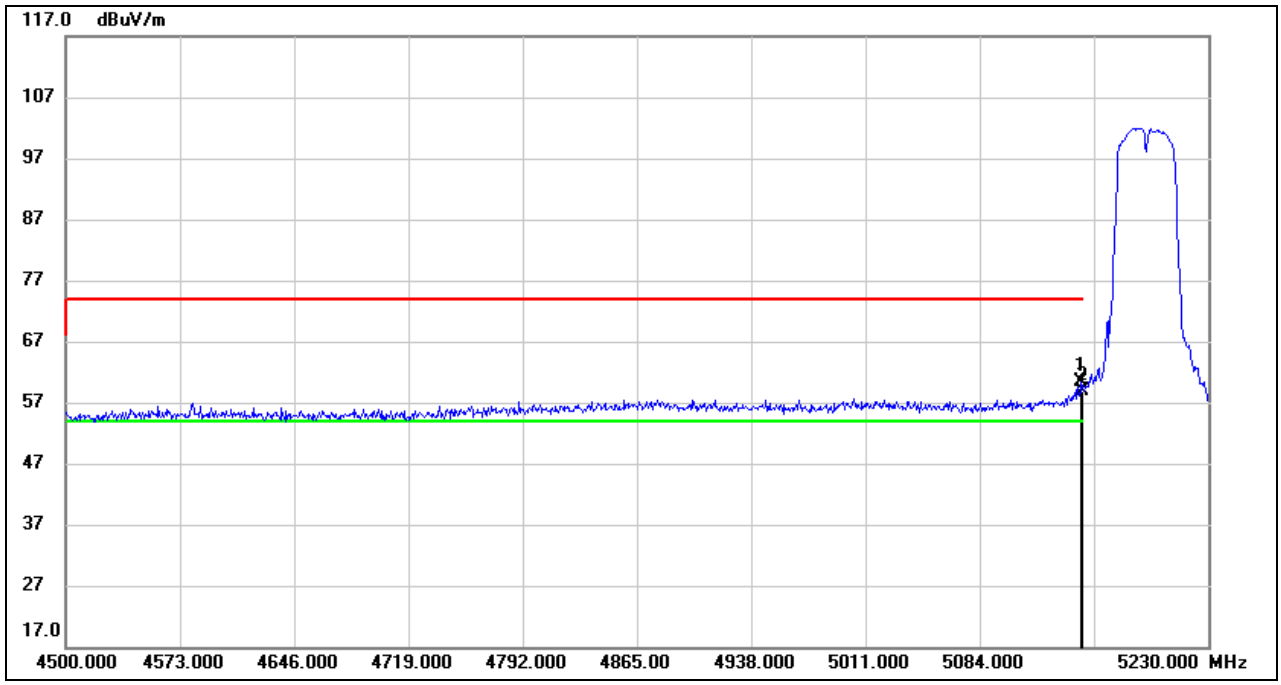
Note: Both horizontal and vertical had been tested, but only the worst data was recorded in the report.

8.1.3. 802.11ac VHT40 MIMO MODE

UNII-1 BAND

RESTRICTED BANDEDGE (LOW CHANNEL, Vertical)

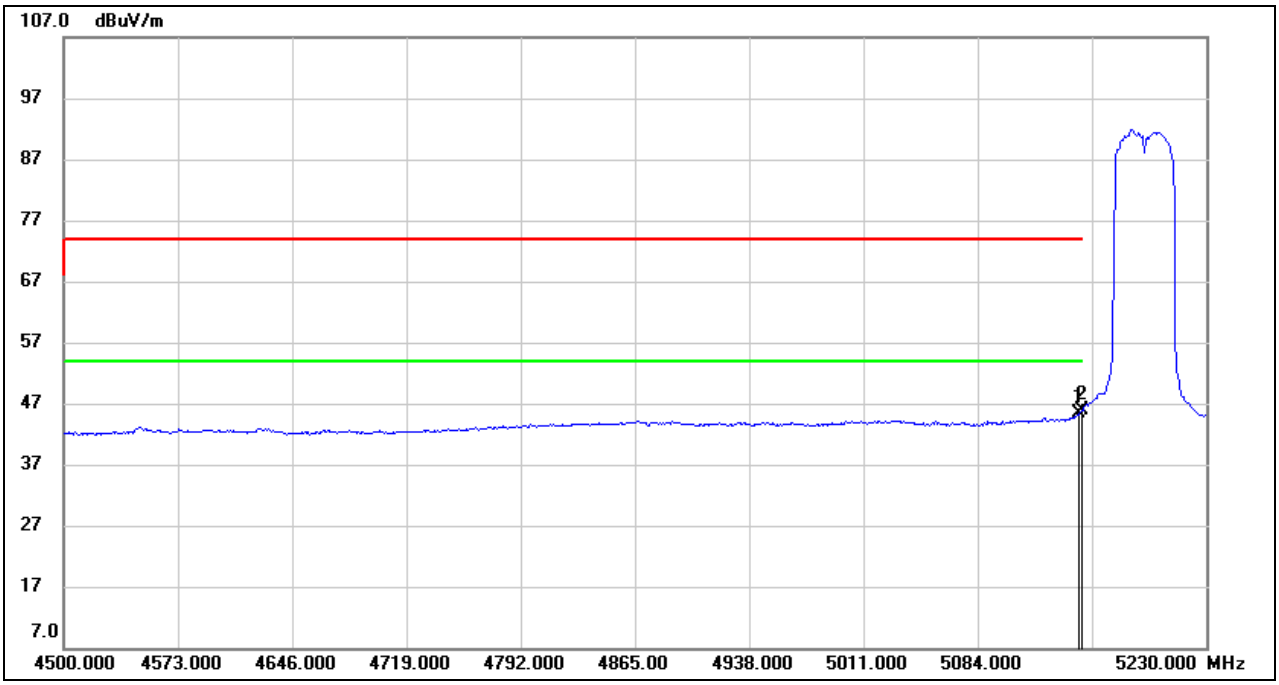
PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5148.970	19.23	41.18	60.41	74.00	-13.59	peak
2	5150.000	17.57	41.19	58.76	74.00	-15.24	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



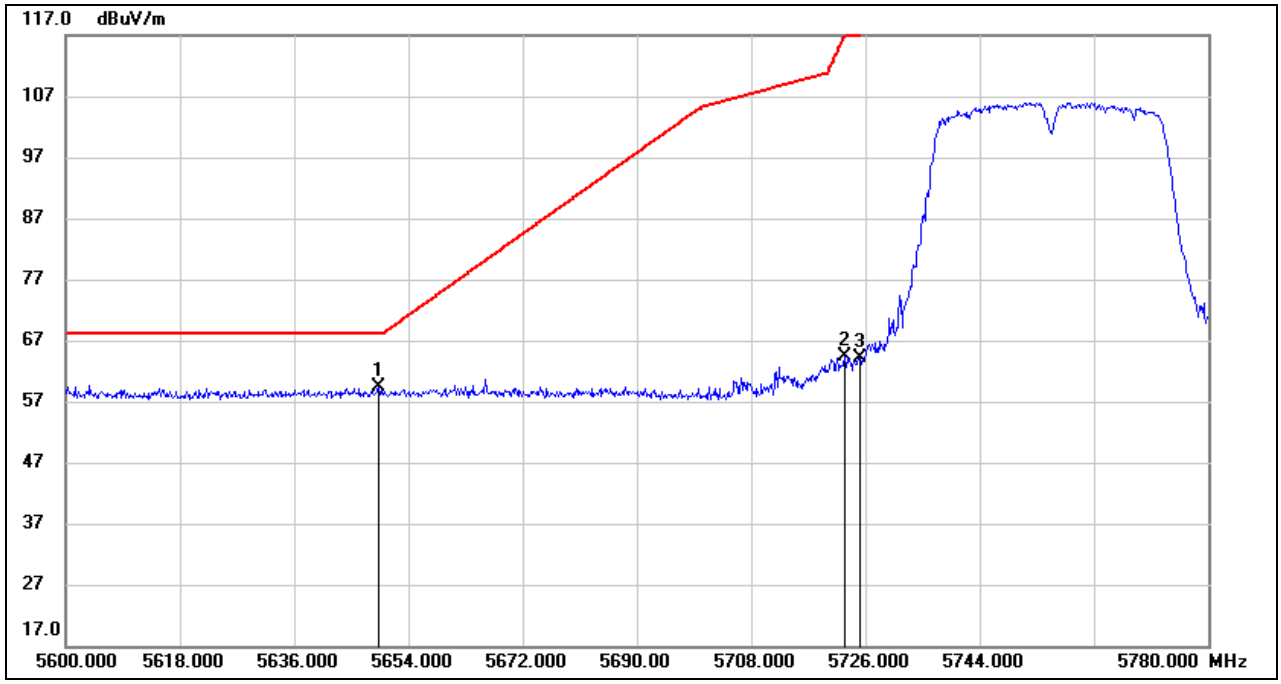
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5148.970	4.27	41.18	45.45	54.00	-8.55	AVG
2	5150.000	4.57	41.19	45.76	54.00	-8.24	AVG

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.

UNII-3 BAND

RESTRICTED BANDEDGE (LOW CHANNEL, Vertical)

PEAK

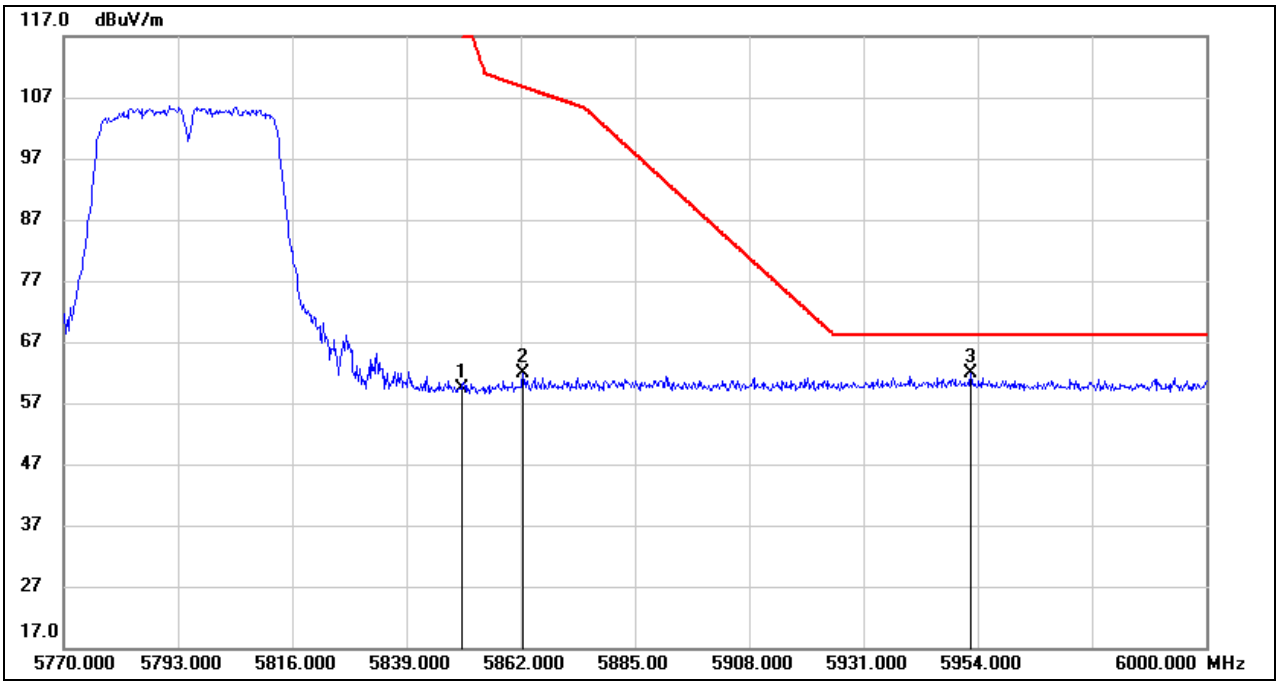


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5649.320	17.67	41.64	59.31	68.20	-8.89	peak
2	5722.760	22.72	41.66	64.38	117.09	-52.71	peak
3	5725.000	22.38	41.67	64.05	122.20	-58.15	peak

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, Vertical)

PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5850.000	16.96	42.52	59.48	122.20	-62.72	peak
2	5862.460	19.19	42.65	61.84	108.71	-46.87	peak
3	5952.620	18.98	42.78	61.76	68.20	-6.44	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 modes and antennas had been tested, but only the worst data was recorded in the report.

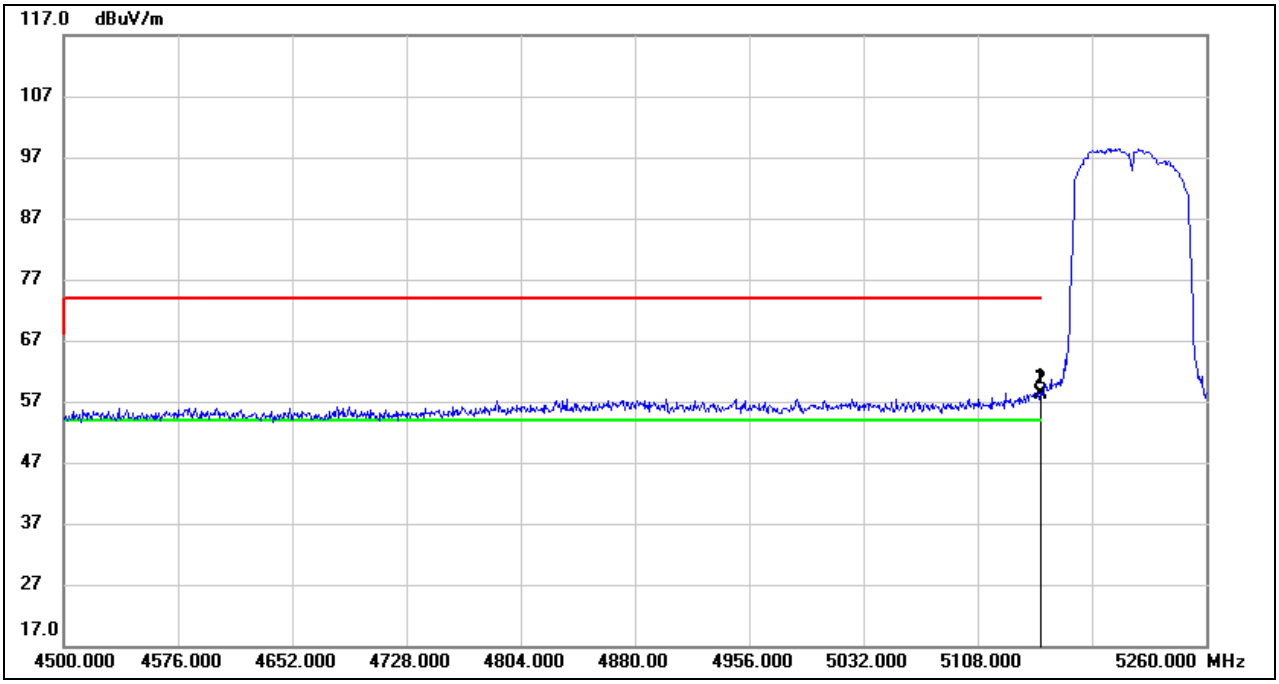
Note: Both horizontal and vertical had been tested, but only the worst data was recorded in the report.

8.1.4. 802.11ac VHT80 MIMO MODE

UNII-1 BAND

RESTRICTED BANDEDGE (LOW CHANNEL, Vertical)

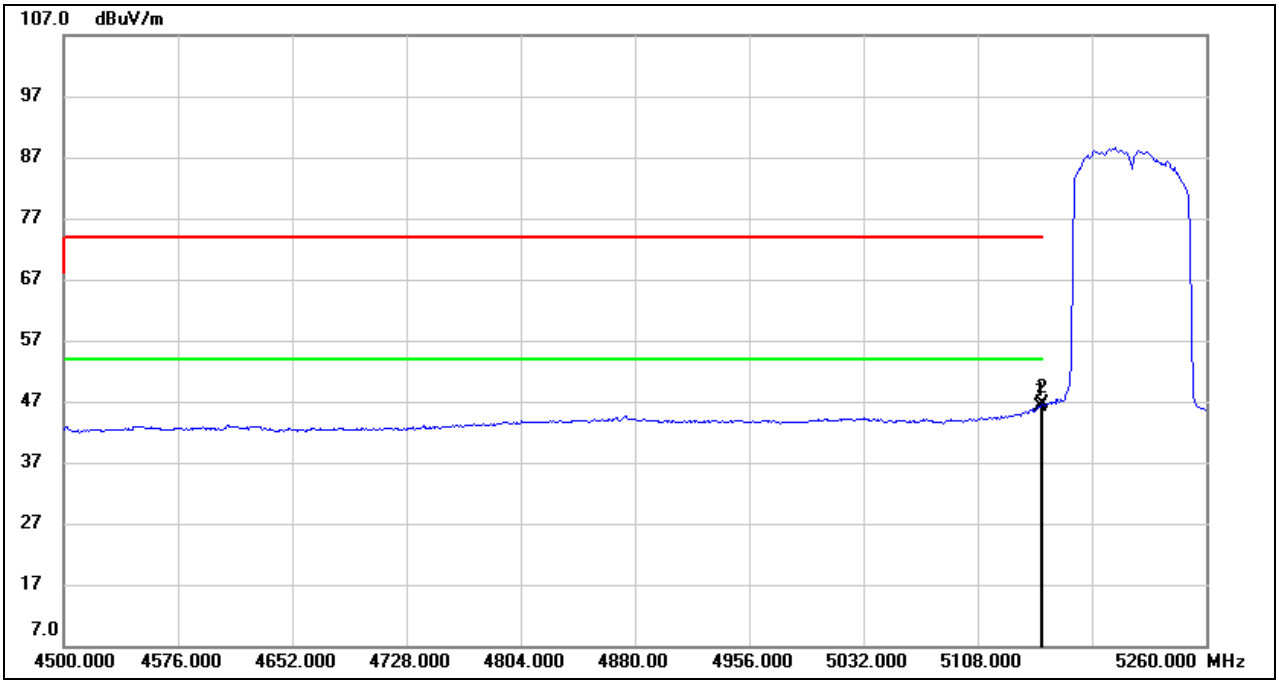
PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5149.800	17.25	41.18	58.43	74.00	-15.57	peak
2	5150.000	16.99	41.19	58.18	74.00	-15.82	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

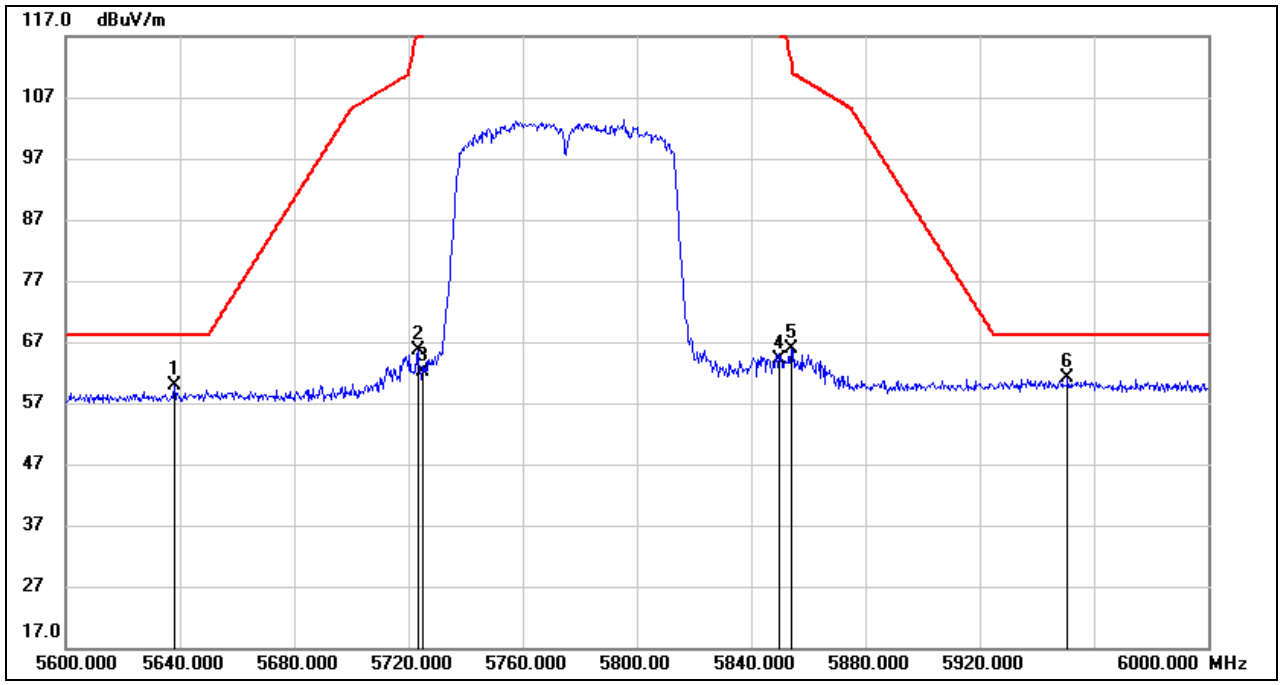


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5149.800	5.00	41.18	46.18	54.00	-7.82	AVG
2	5150.000	5.41	41.19	46.60	54.00	-7.40	AVG

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.

UNII-3 BAND

RESTRICTED BANDEDGE (LOW CHANNEL, Vertical)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5638.000	18.17	41.67	59.84	68.20	-8.36	peak
2	5723.200	23.89	41.66	65.55	118.10	-52.55	peak
3	5725.000	20.52	41.67	62.19	122.20	-60.01	peak
4	5850.000	21.71	42.52	64.23	122.20	-57.97	peak
5	5854.000	23.44	42.56	66.00	113.08	-47.08	peak
6	5950.800	18.28	42.79	61.07	68.20	-7.13	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 modes and antennas had been tested, but only the worst data was recorded in the report.

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

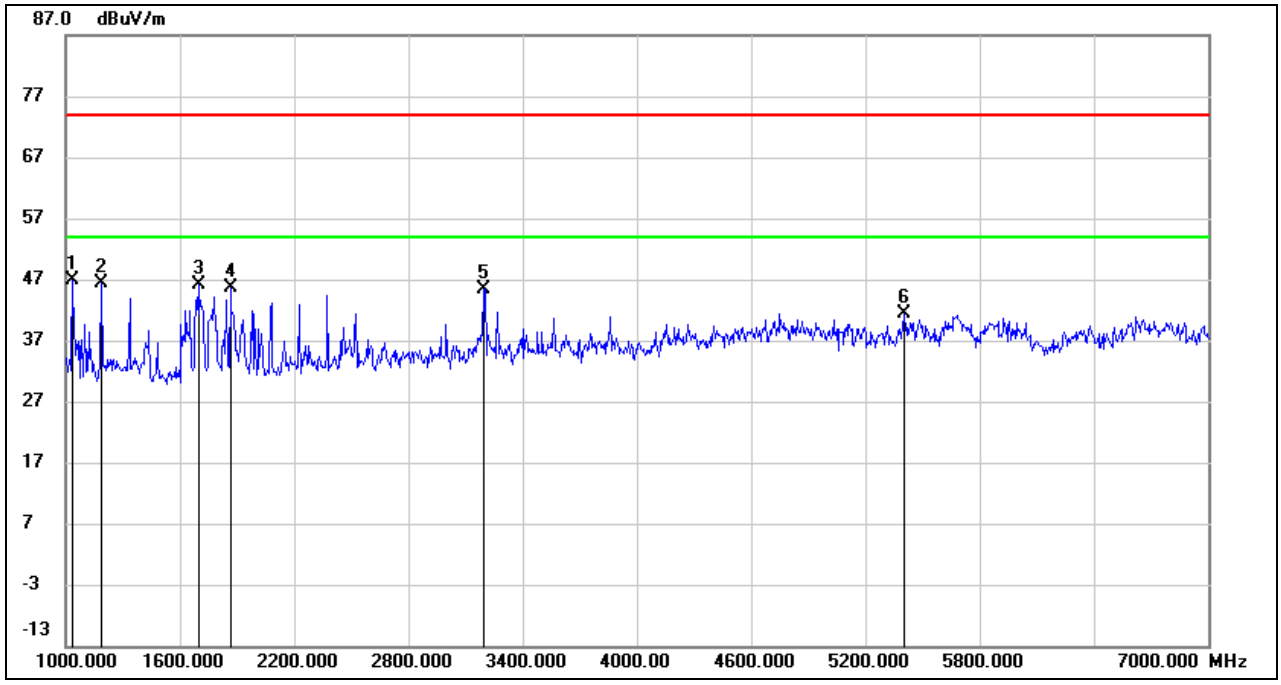
8.2. SPURIOUS EMISSIONS (1 GHz ~ 7 GHz)

8.2.1. 802.11a SISO MODE

ANTENNA 2 TEST RESULTS (WORST CASE)

UNII-1 BAND

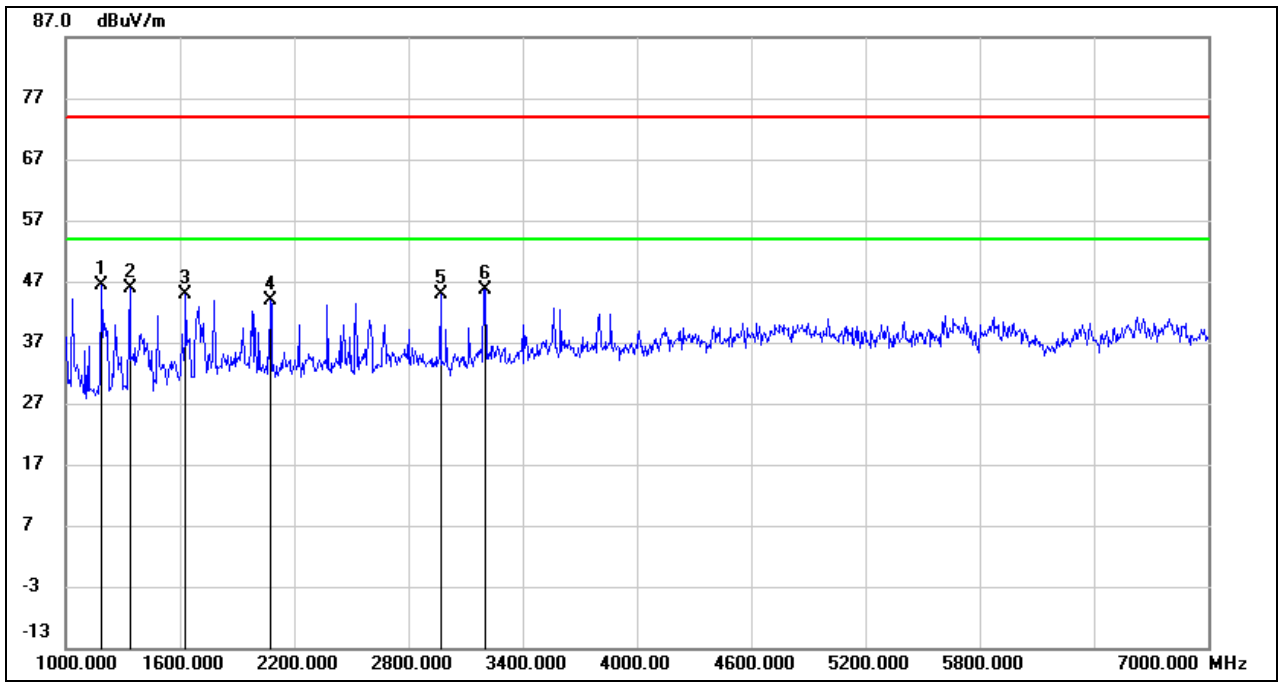
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1036.000	60.75	-13.81	46.94	74.00	-27.06	peak
2	1186.000	59.52	-13.07	46.45	74.00	-27.55	peak
3	1696.000	56.97	-10.84	46.13	74.00	-27.87	peak
4	1864.000	55.65	-10.10	45.55	74.00	-28.45	peak
5	3196.000	50.63	-5.25	45.38	74.00	-28.62	peak
6	5404.000	39.40	1.89	41.29	74.00	-32.71	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. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.
6. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit..

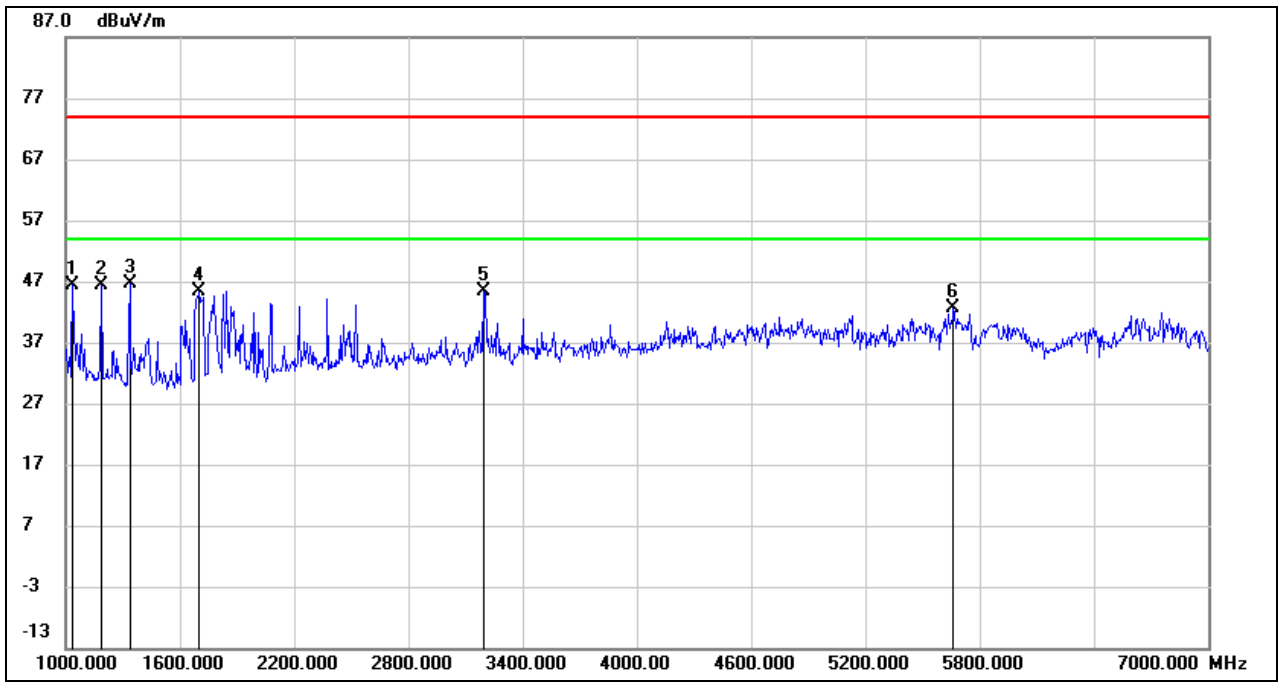
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1186.000	59.41	-13.07	46.34	74.00	-27.66	peak
2	1336.000	58.62	-12.80	45.82	74.00	-28.18	peak
3	1630.000	56.16	-11.33	44.83	74.00	-29.17	peak
4	2074.000	53.56	-9.77	43.79	74.00	-30.21	peak
5	2968.000	50.63	-5.75	44.88	74.00	-29.12	peak
6	3202.000	50.98	-5.25	45.73	74.00	-28.27	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. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.
6. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.

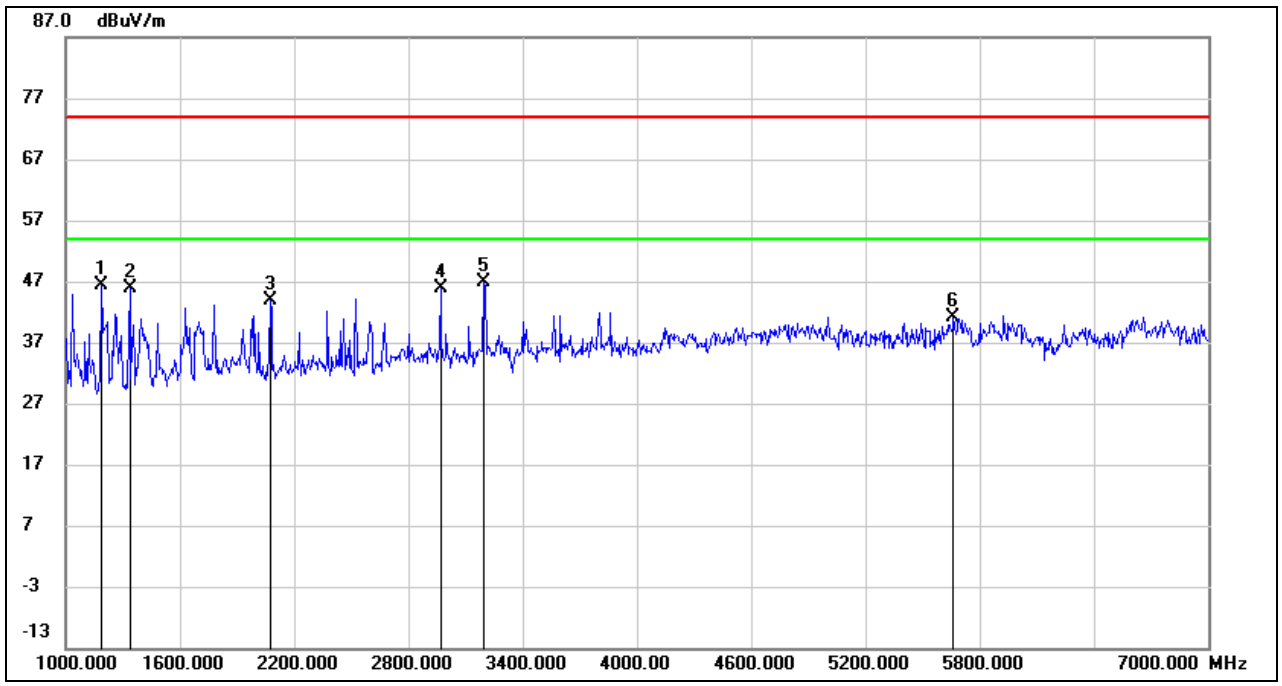
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1036.000	60.14	-13.81	46.33	74.00	-27.67	peak
2	1186.000	59.42	-13.07	46.35	74.00	-27.65	peak
3	1336.000	59.39	-12.80	46.59	74.00	-27.41	peak
4	1702.000	56.14	-10.79	45.35	74.00	-28.65	peak
5	3196.000	50.56	-5.25	45.31	74.00	-28.69	peak
6	5662.000	40.10	2.47	42.57	74.00	-31.43	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.
4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.
6. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.

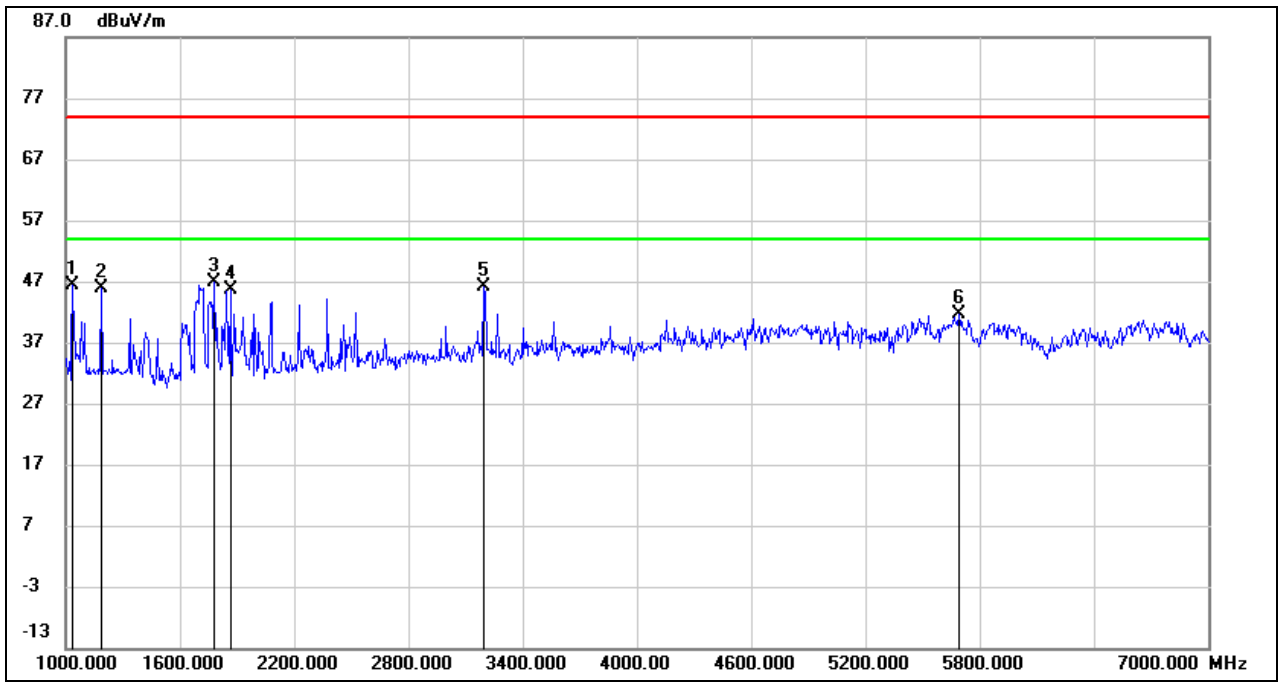
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1186.000	59.52	-13.07	46.45	74.00	-27.55	peak
2	1336.000	58.67	-12.80	45.87	74.00	-28.13	peak
3	2074.000	53.62	-9.77	43.85	74.00	-30.15	peak
4	2968.000	51.74	-5.75	45.99	74.00	-28.01	peak
5	3196.000	52.18	-5.25	46.93	74.00	-27.07	peak
6	5662.000	38.76	2.47	41.23	74.00	-32.77	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. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.
6. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.

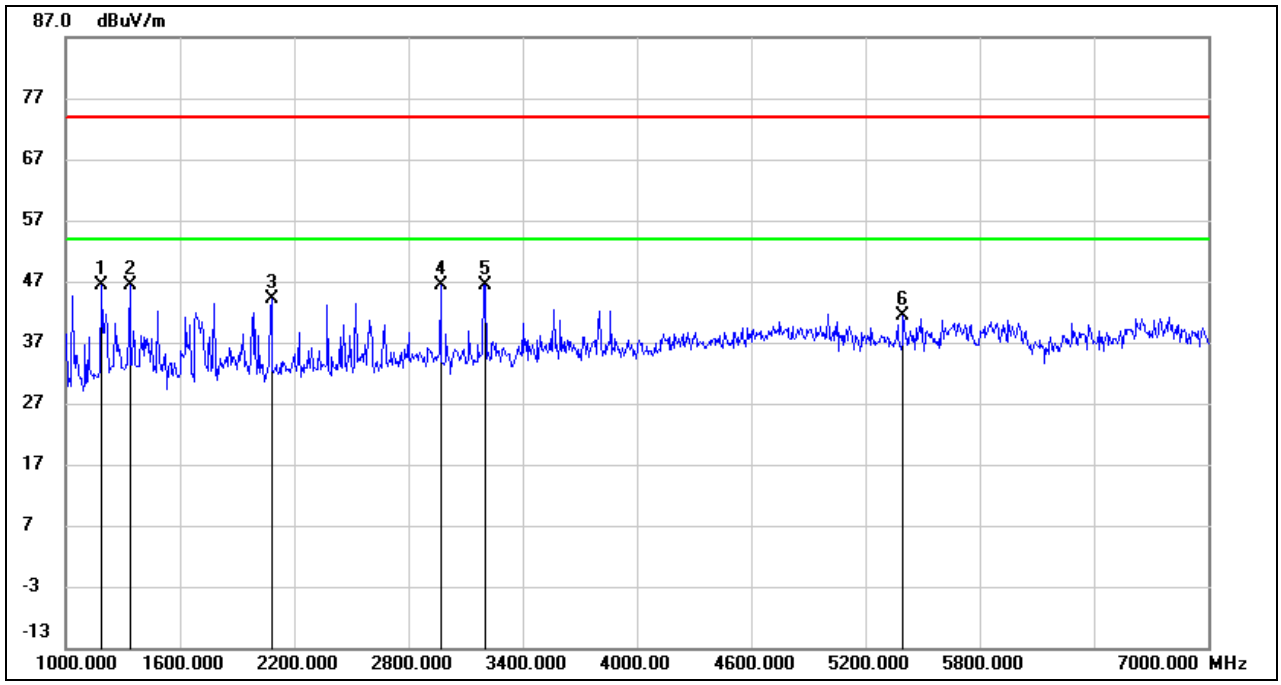
HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1036.000	60.24	-13.81	46.43	74.00	-27.57	peak
2	1186.000	58.94	-13.07	45.87	74.00	-28.13	peak
3	1780.000	57.11	-10.20	46.91	74.00	-27.09	peak
4	1864.000	55.78	-10.10	45.68	74.00	-28.32	peak
5	3196.000	51.40	-5.25	46.15	74.00	-27.85	peak
6	5692.000	39.15	2.47	41.62	74.00	-32.38	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. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.
6. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.

HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, VERTICAL)



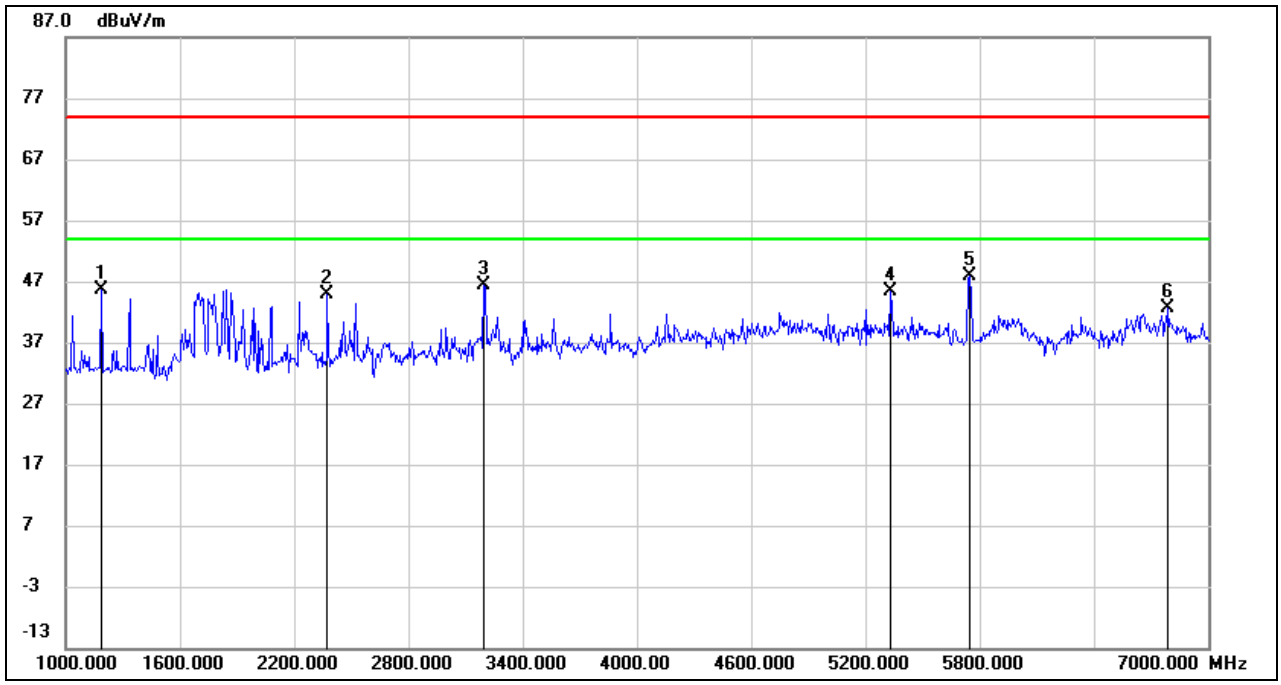
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1186.000	59.52	-13.07	46.45	74.00	-27.55	peak
2	1336.000	59.10	-12.80	46.30	74.00	-27.70	peak
3	2080.000	53.79	-9.73	44.06	74.00	-29.94	peak
4	2968.000	52.02	-5.75	46.27	74.00	-27.73	peak
5	3202.000	51.56	-5.25	46.31	74.00	-27.69	peak
6	5398.000	39.50	1.88	41.38	74.00	-32.62	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. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.
6. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.

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

UNII-3 BAND

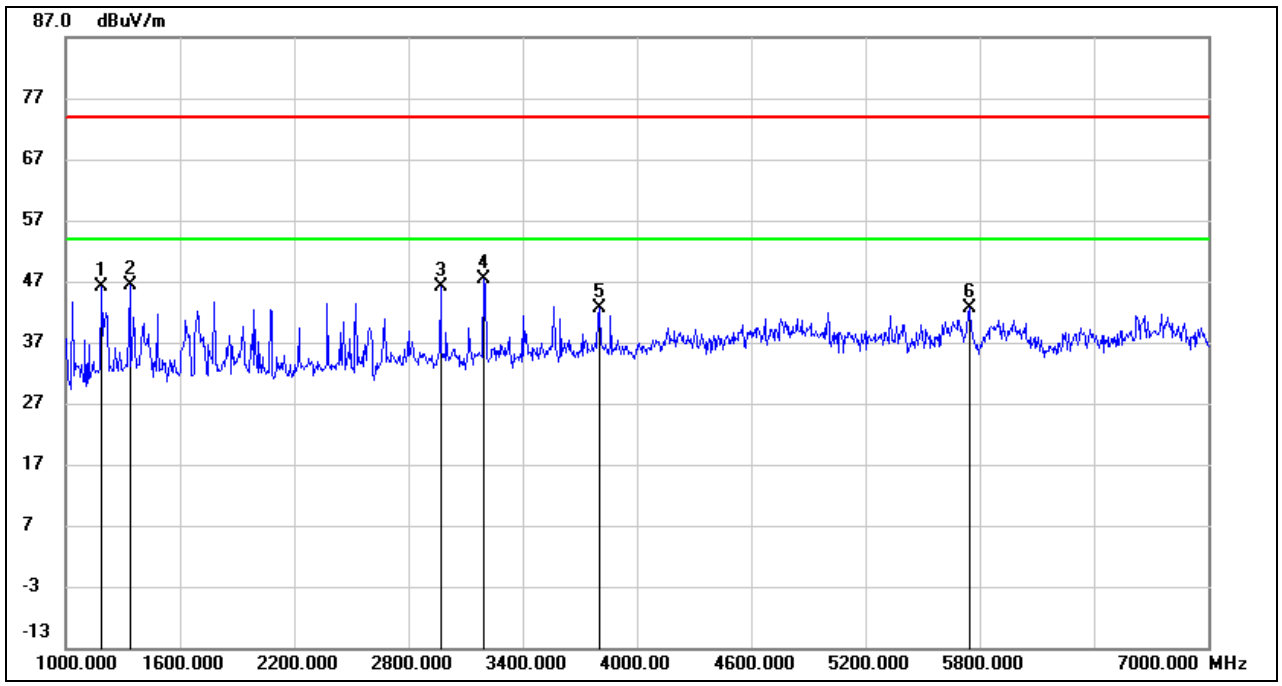
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1186.000	58.61	-13.07	45.54	74.00	-28.46	peak
2	2374.000	53.43	-8.48	44.95	74.00	-29.05	peak
3	3196.000	51.70	-5.25	46.45	74.00	-27.55	peak
4	5332.000	43.52	1.95	45.47	74.00	-28.53	peak
5	5745.000	45.45	2.49	47.94	74.00	-26.06	peak
6	6790.000	37.06	5.57	42.63	74.00	-31.37	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. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.
6. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.

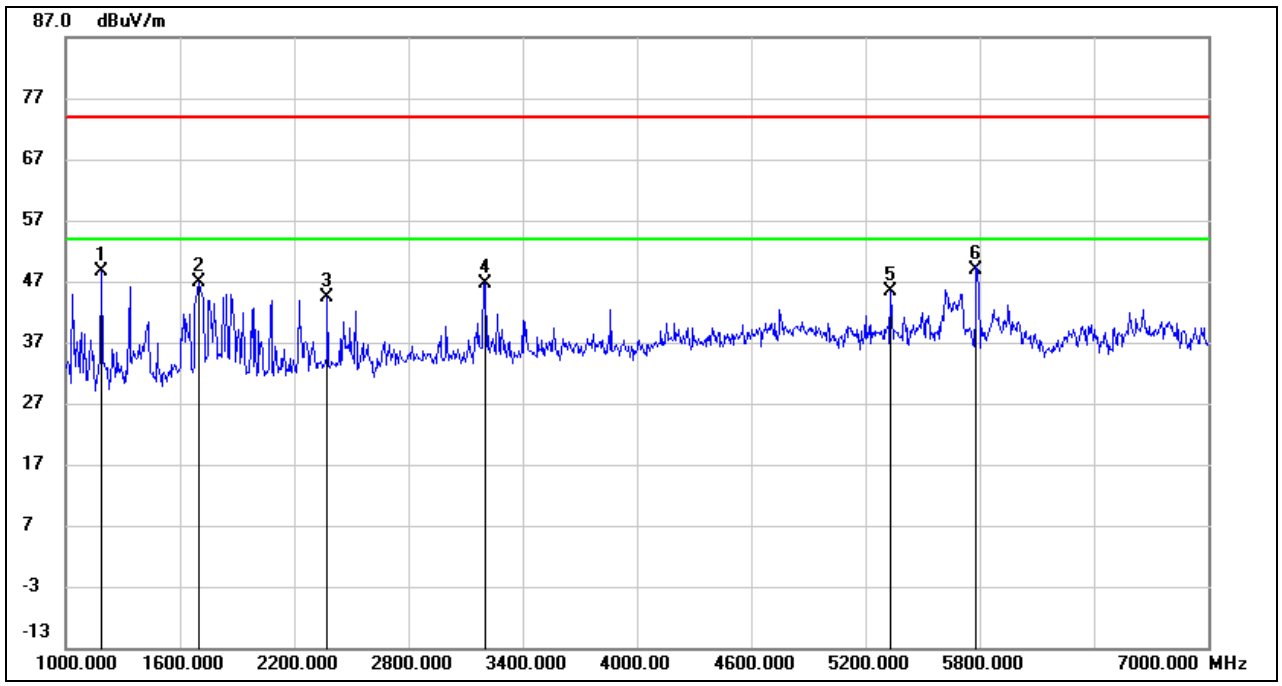
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1186.000	59.31	-13.07	46.24	74.00	-27.76	peak
2	1336.000	59.21	-12.80	46.41	74.00	-27.59	peak
3	2968.000	51.89	-5.75	46.14	74.00	-27.86	peak
4	3196.000	52.64	-5.25	47.39	74.00	-26.61	peak
5	3802.000	45.83	-3.27	42.56	74.00	-31.44	peak
6	5746.000	40.08	2.50	42.58	74.00	-31.42	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. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.
6. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.

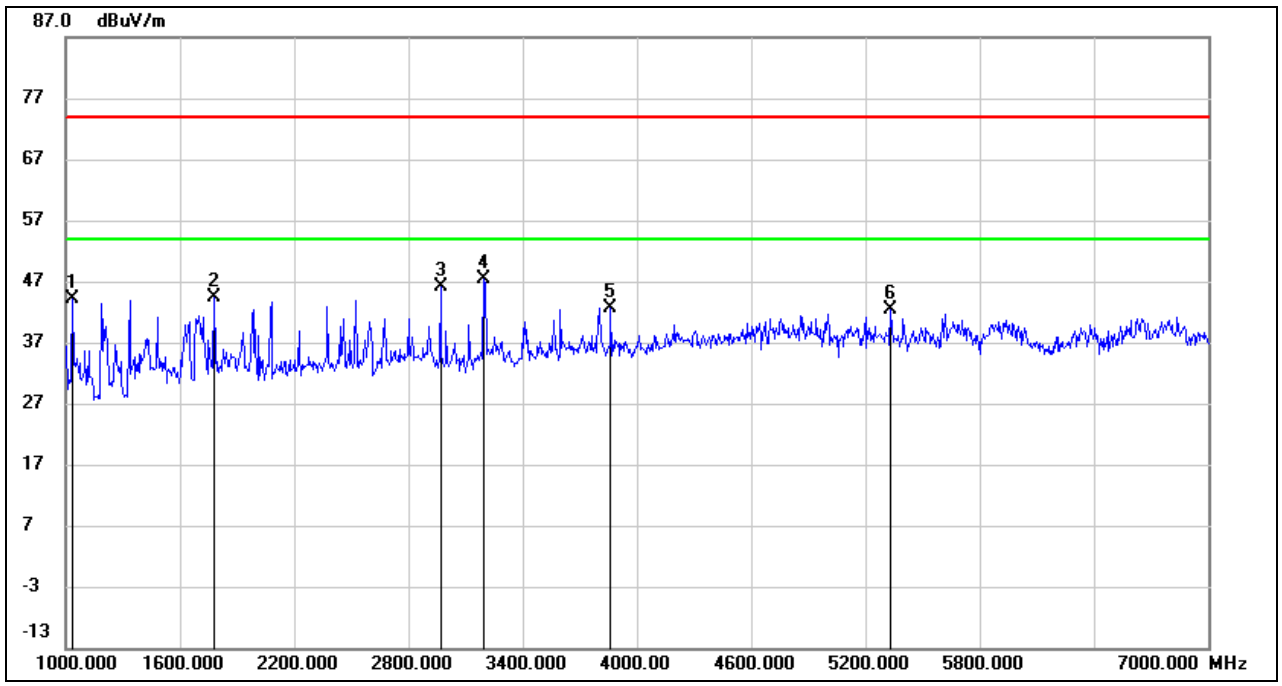
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1186.000	61.73	-13.07	48.66	74.00	-25.34	peak
2	1696.000	57.69	-10.84	46.85	74.00	-27.15	peak
3	2374.000	52.88	-8.48	44.40	74.00	-29.60	peak
4	3202.000	51.83	-5.25	46.58	74.00	-27.42	peak
5	5332.000	43.51	1.95	45.46	74.00	-28.54	peak
6	5785.000	46.41	2.50	48.91	74.00	-25.09	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. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.
6. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.

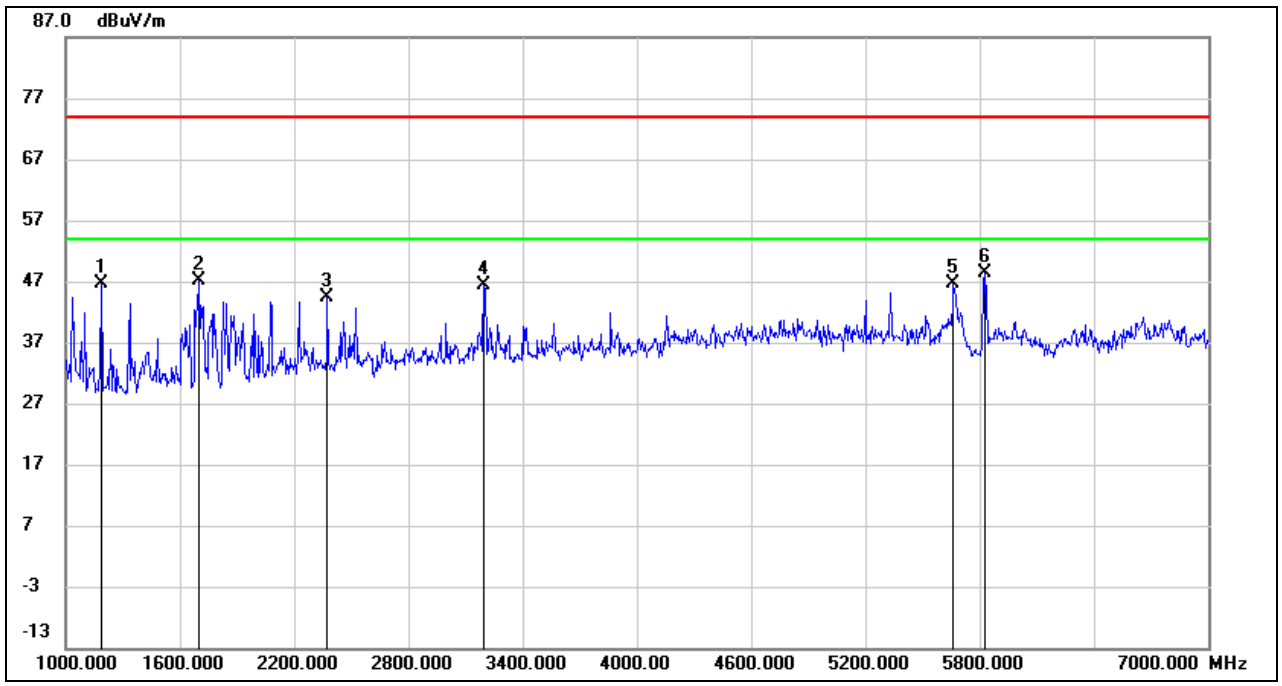
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1036.000	57.92	-13.81	44.11	74.00	-29.89	peak
2	1780.000	54.65	-10.20	44.45	74.00	-29.55	peak
3	2968.000	51.97	-5.75	46.22	74.00	-27.78	peak
4	3196.000	52.57	-5.25	47.32	74.00	-26.68	peak
5	3862.000	46.09	-3.37	42.72	74.00	-31.28	peak
6	5332.000	40.54	1.95	42.49	74.00	-31.51	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. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.
6. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.

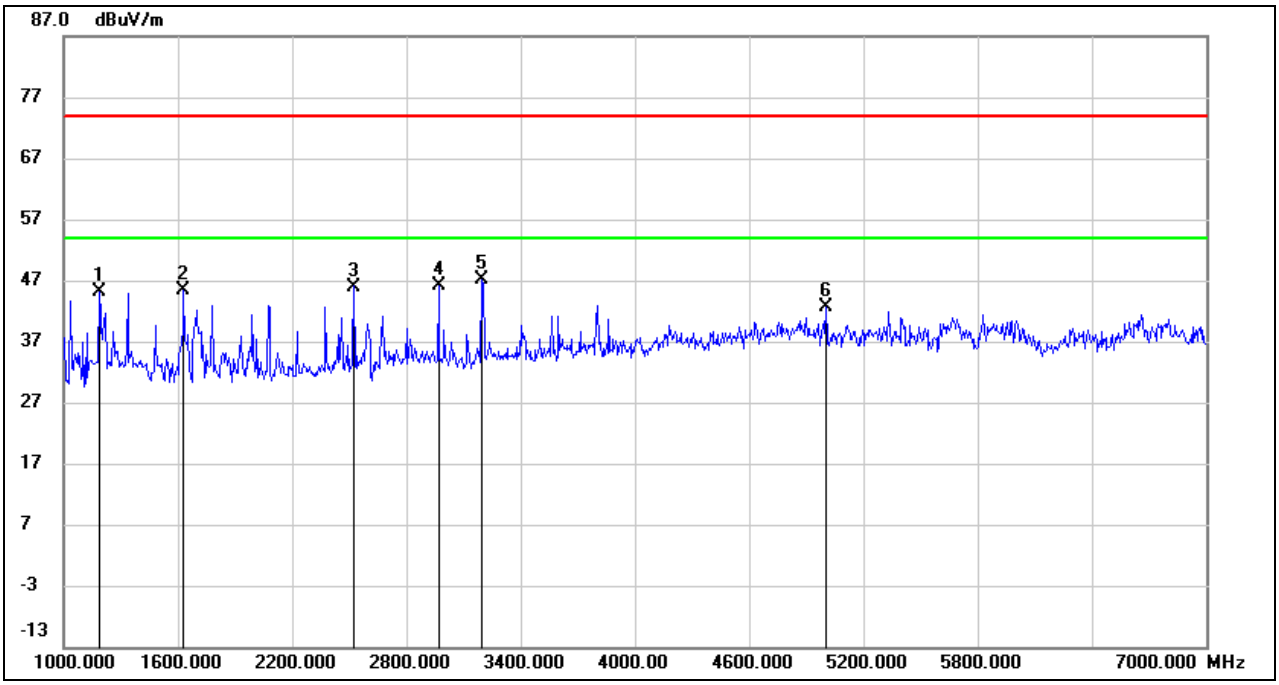
HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1186.000	59.66	-13.07	46.59	74.00	-27.41	peak
2	1702.000	57.92	-10.79	47.13	74.00	-26.87	peak
3	2374.000	52.93	-8.48	44.45	74.00	-29.55	peak
4	3196.000	51.67	-5.25	46.42	74.00	-27.58	peak
5	5662.000	44.09	2.47	46.56	74.00	-27.44	peak
6	5825.000	45.65	2.61	48.26	74.00	-25.74	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. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.
6. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.

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	1186.000	58.10	-13.07	45.03	74.00	-28.97	peak
2	1630.000	56.59	-11.33	45.26	74.00	-28.74	peak
3	2524.000	54.13	-8.13	46.00	74.00	-28.00	peak
4	2968.000	51.97	-5.75	46.22	74.00	-27.78	peak
5	3196.000	52.35	-5.25	47.10	74.00	-26.90	peak
6	5002.000	41.76	0.91	42.67	74.00	-31.33	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. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.
6. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.

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

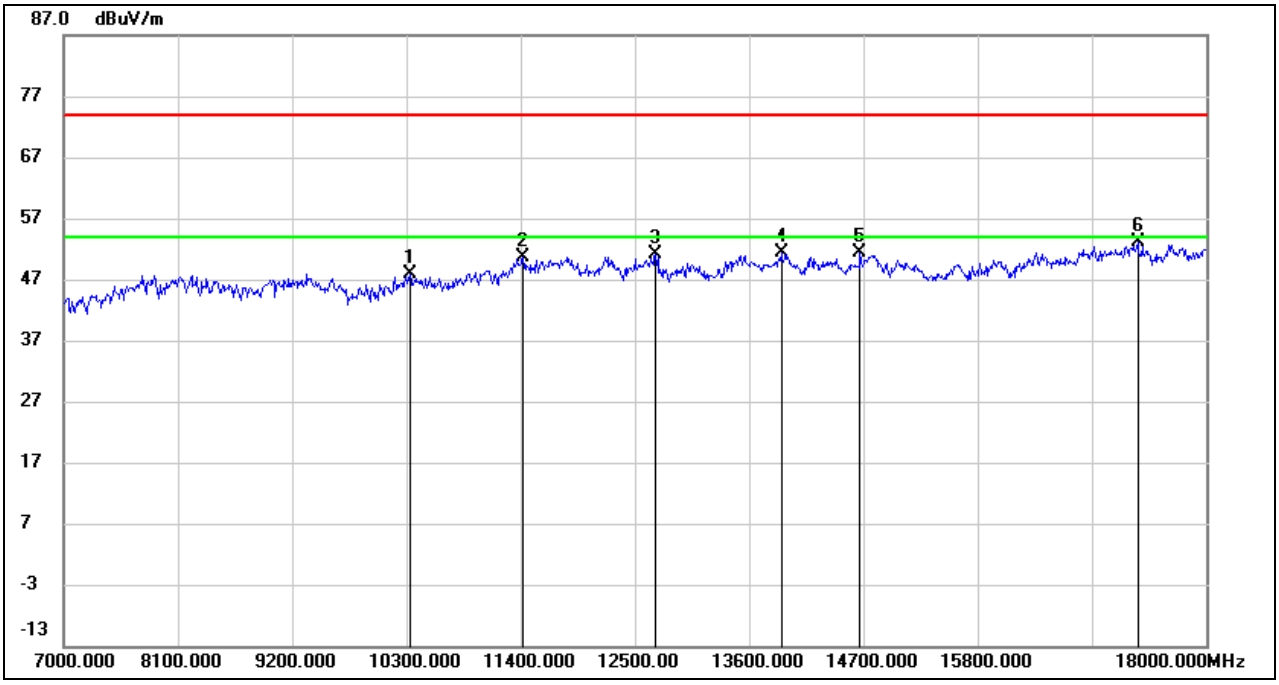
8.3. SPURIOUS EMISSIONS (7 GHz ~ 18 GHz)

8.3.1. 802.11a SISO MODE

ANTENNA 2 TEST RESULTS (WORST CASE)

UNII-1 BAND

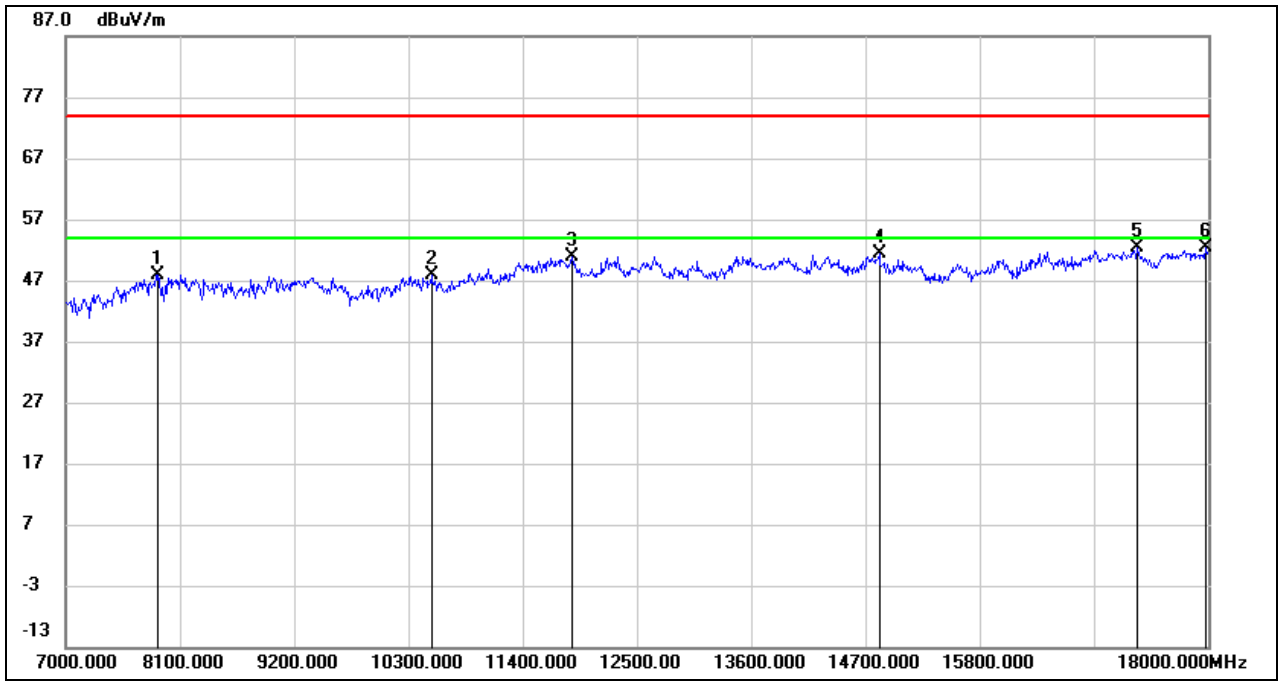
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10333.000	35.96	11.94	47.90	74.00	-26.10	peak
2	11422.000	35.84	14.73	50.57	74.00	-23.43	peak
3	12698.000	35.60	15.62	51.22	74.00	-22.78	peak
4	13908.000	33.84	17.54	51.38	74.00	-22.62	peak
5	14667.000	33.83	17.58	51.41	74.00	-22.59	peak
6	17340.000	30.73	22.31	53.04	74.00	-20.96	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. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.

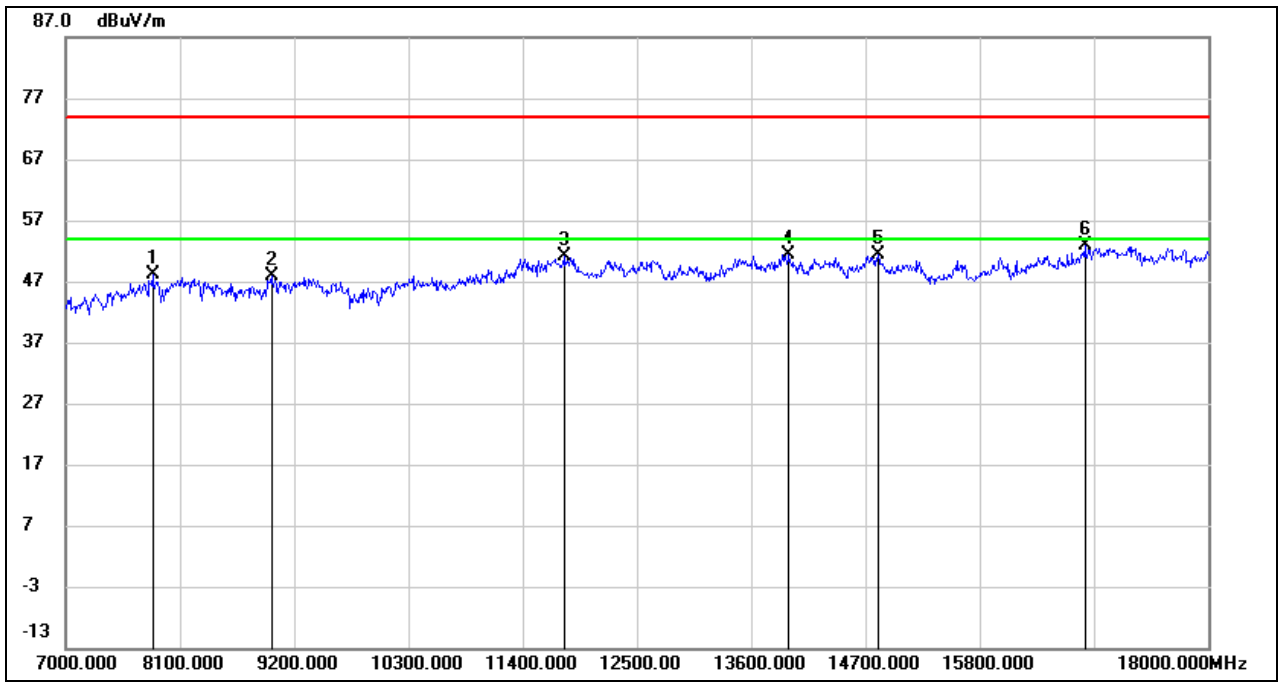
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7891.000	39.04	8.90	47.94	74.00	-26.06	peak
2	10520.000	35.33	12.43	47.76	74.00	-26.24	peak
3	11873.000	35.42	15.44	50.86	74.00	-23.14	peak
4	14832.000	33.54	17.83	51.37	74.00	-22.63	peak
5	17318.000	29.90	22.47	52.37	74.00	-21.63	peak
6	17978.000	28.26	24.19	52.45	74.00	-21.55	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. 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. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.

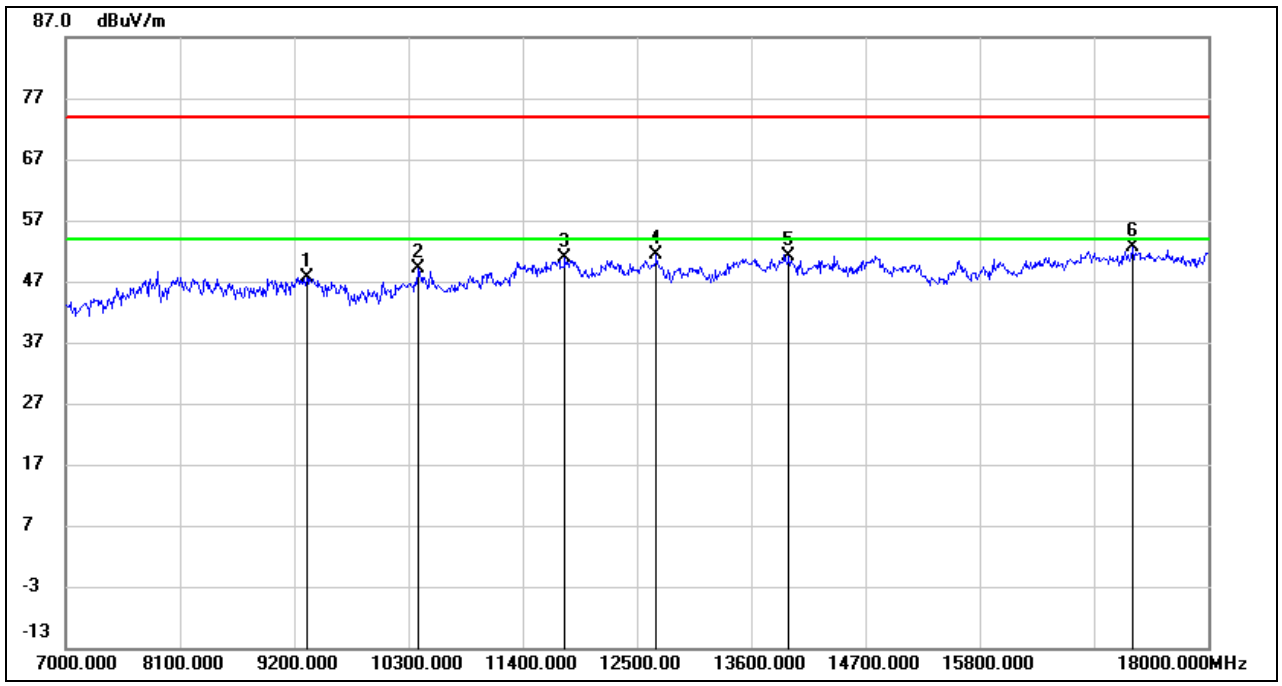
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7836.000	39.02	9.17	48.19	74.00	-25.81	peak
2	8980.000	36.99	10.89	47.88	74.00	-26.12	peak
3	11796.000	35.81	15.25	51.06	74.00	-22.94	peak
4	13963.000	33.83	17.61	51.44	74.00	-22.56	peak
5	14821.000	33.40	17.90	51.30	74.00	-22.70	peak
6	16812.000	32.17	20.81	52.98	74.00	-21.02	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. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.

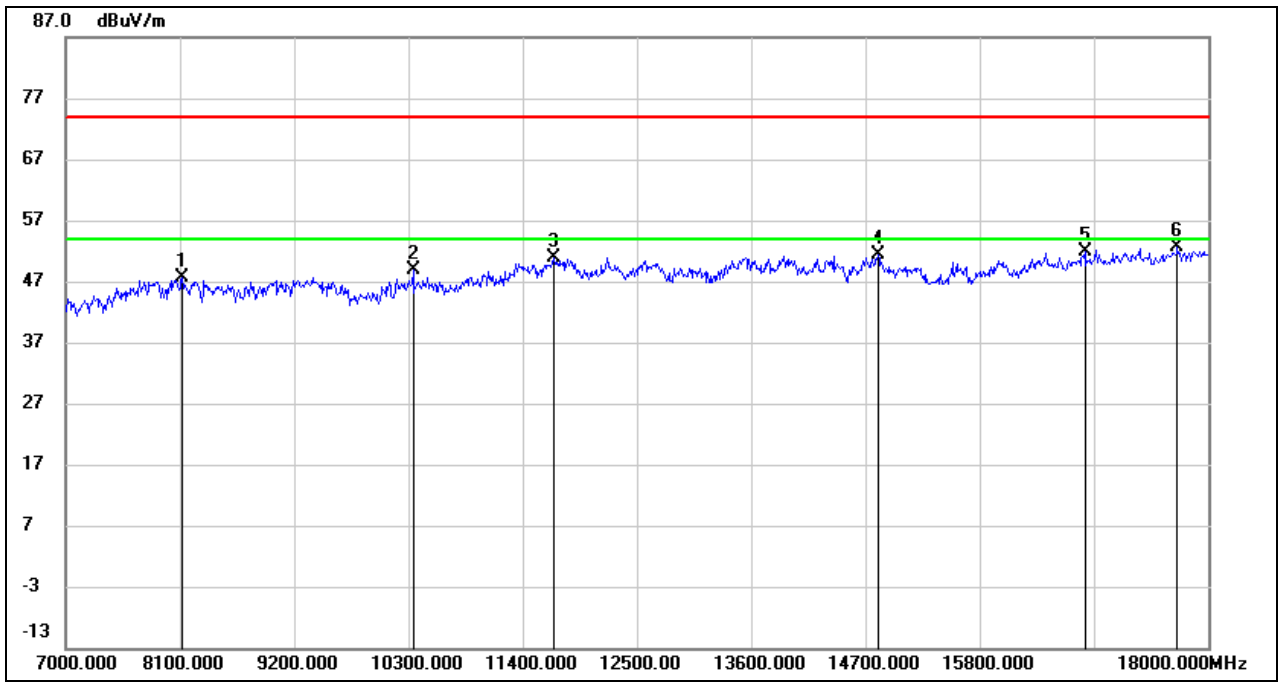
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	9321.000	37.23	10.52	47.75	74.00	-26.25	peak
2	10399.000	37.01	12.23	49.24	74.00	-24.76	peak
3	11807.000	35.50	15.27	50.77	74.00	-23.23	peak
4	12687.000	35.79	15.64	51.43	74.00	-22.57	peak
5	13963.000	33.58	17.61	51.19	74.00	-22.81	peak
6	17274.000	30.19	22.45	52.64	74.00	-21.36	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.
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. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.

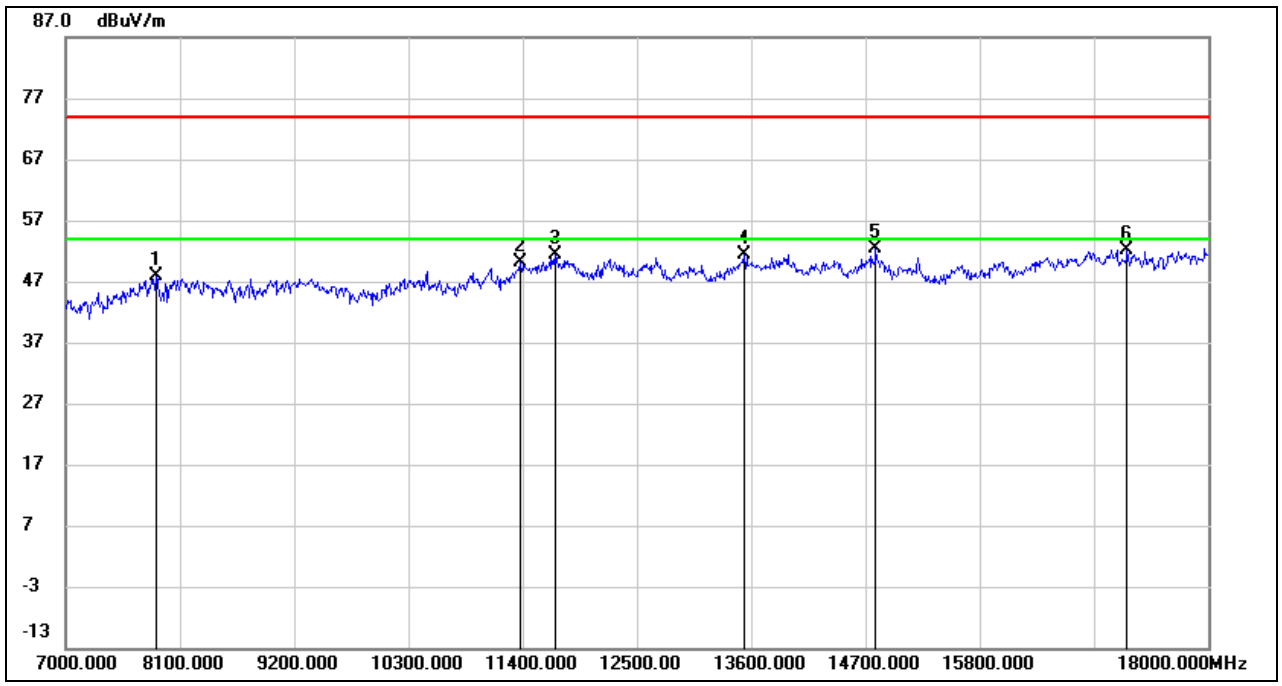
HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	8122.000	37.50	10.10	47.60	74.00	-26.40	peak
2	10344.000	36.85	11.99	48.84	74.00	-25.16	peak
3	11697.000	35.65	15.34	50.99	74.00	-23.01	peak
4	14821.000	33.40	17.90	51.30	74.00	-22.70	peak
5	16812.000	31.03	20.81	51.84	74.00	-22.16	peak
6	17703.000	29.14	23.49	52.63	74.00	-21.37	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. 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. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.

HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, VERTICAL)

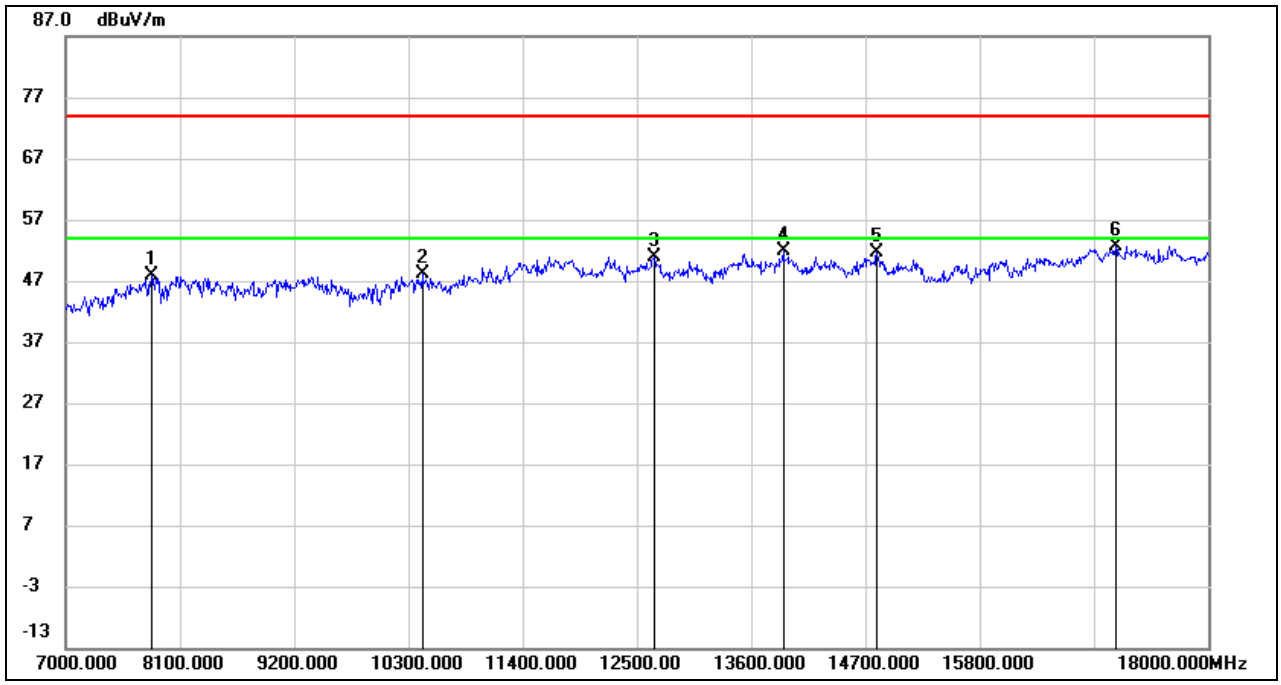


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7869.000	38.85	9.02	47.87	74.00	-26.13	peak
2	11378.000	35.46	14.55	50.01	74.00	-23.99	peak
3	11708.000	35.97	15.34	51.31	74.00	-22.69	peak
4	13534.000	34.20	17.18	51.38	74.00	-22.62	peak
5	14799.000	34.22	18.04	52.26	74.00	-21.74	peak
6	17219.000	29.93	22.11	52.04	74.00	-21.96	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. 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. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.

UNII-3 BAND

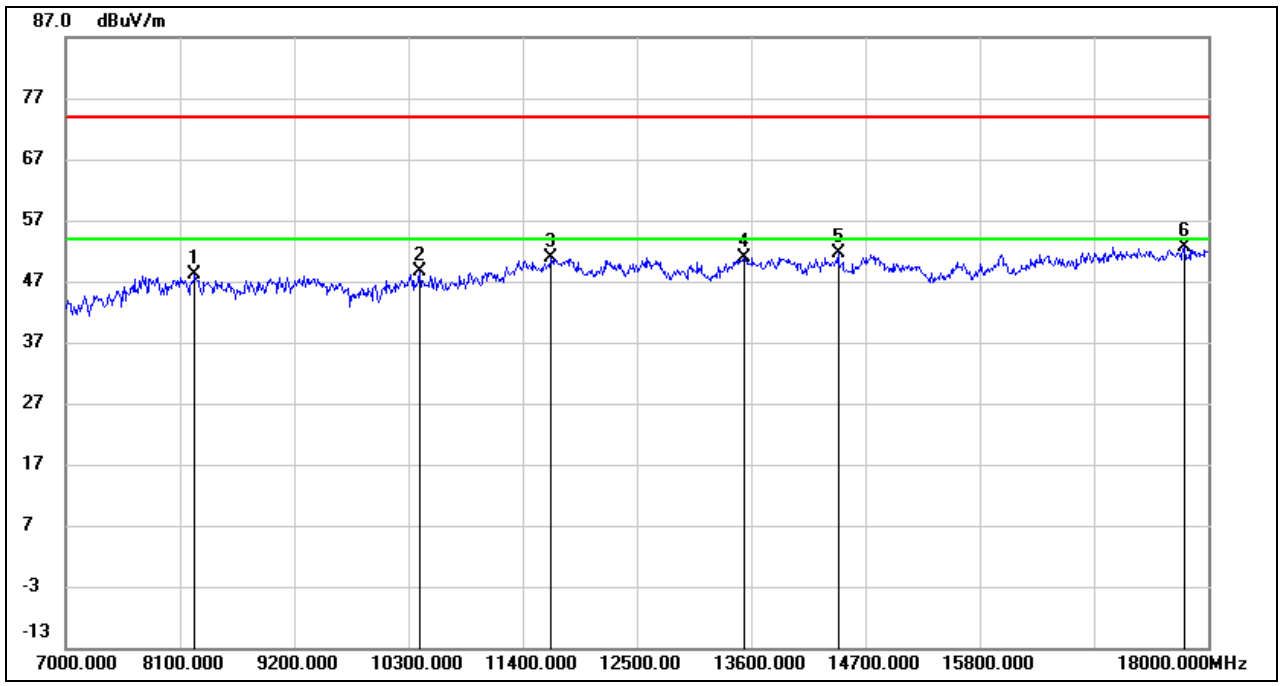
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7825.000	38.53	9.23	47.76	74.00	-26.24	peak
2	10432.000	35.78	12.27	48.05	74.00	-25.95	peak
3	12665.000	35.27	15.68	50.95	74.00	-23.05	peak
4	13908.000	34.43	17.54	51.97	74.00	-22.03	peak
5	14810.000	33.57	17.97	51.54	74.00	-22.46	peak
6	17109.000	30.77	21.91	52.68	74.00	-21.32	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. 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. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.

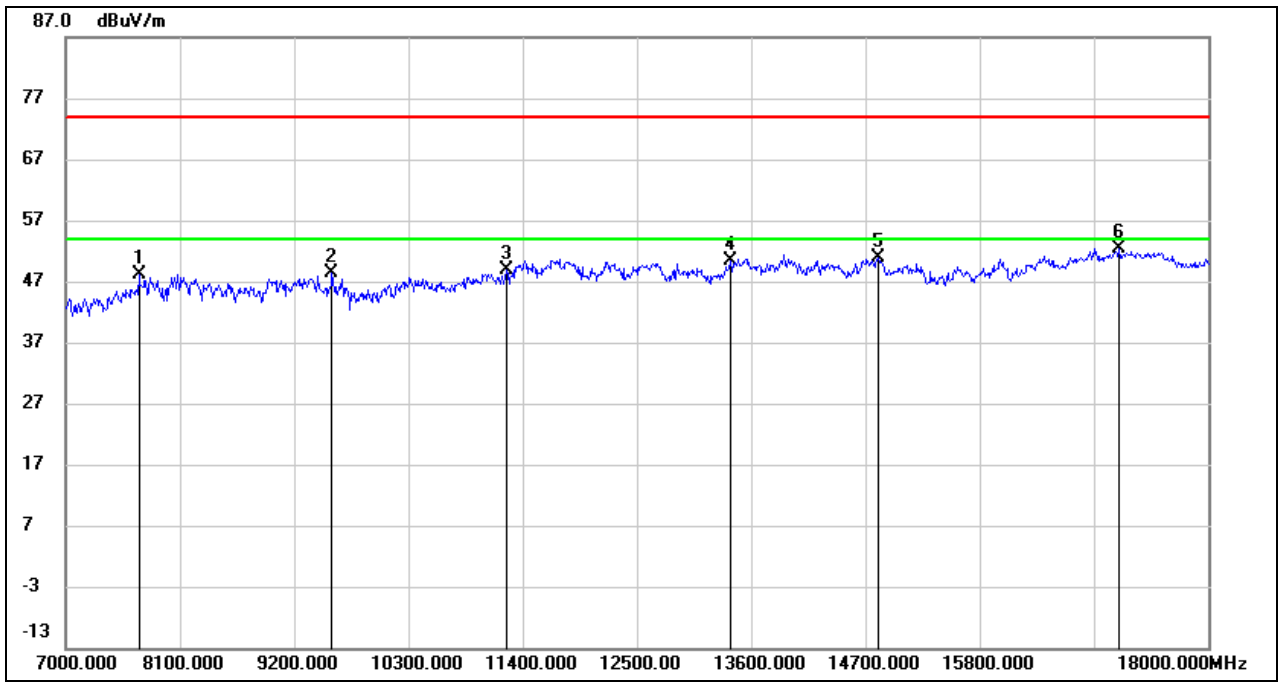
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	8243.000	38.48	9.76	48.24	74.00	-25.76	peak
2	10410.000	36.26	12.25	48.51	74.00	-25.49	peak
3	11675.000	35.73	15.18	50.91	74.00	-23.09	peak
4	13534.000	33.71	17.18	50.89	74.00	-23.11	peak
5	14436.000	34.30	17.33	51.63	74.00	-22.37	peak
6	17769.000	28.87	23.87	52.74	74.00	-21.26	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. 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. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.

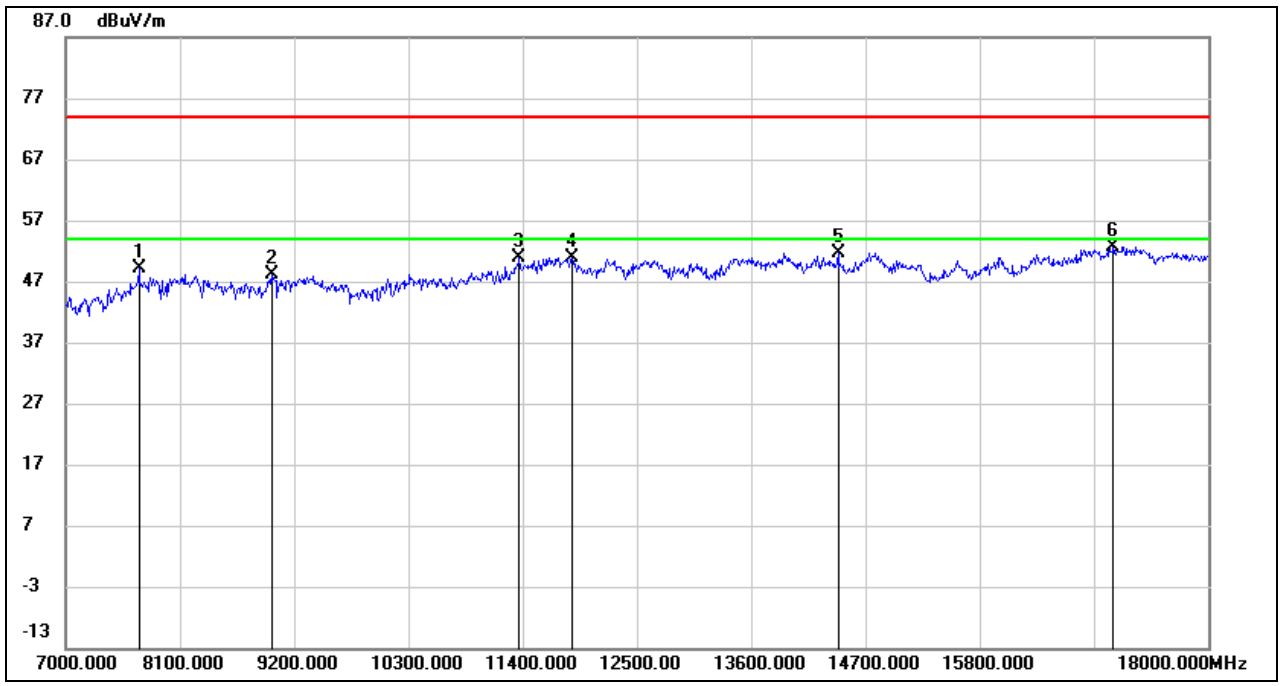
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7704.000	39.65	8.48	48.13	74.00	-25.87	peak
2	9563.000	37.43	10.83	48.26	74.00	-25.74	peak
3	11246.000	35.02	13.82	48.84	74.00	-25.16	peak
4	13402.000	33.28	17.02	50.30	74.00	-23.70	peak
5	14821.000	33.01	17.90	50.91	74.00	-23.09	peak
6	17142.000	30.41	21.93	52.34	74.00	-21.66	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. 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. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.

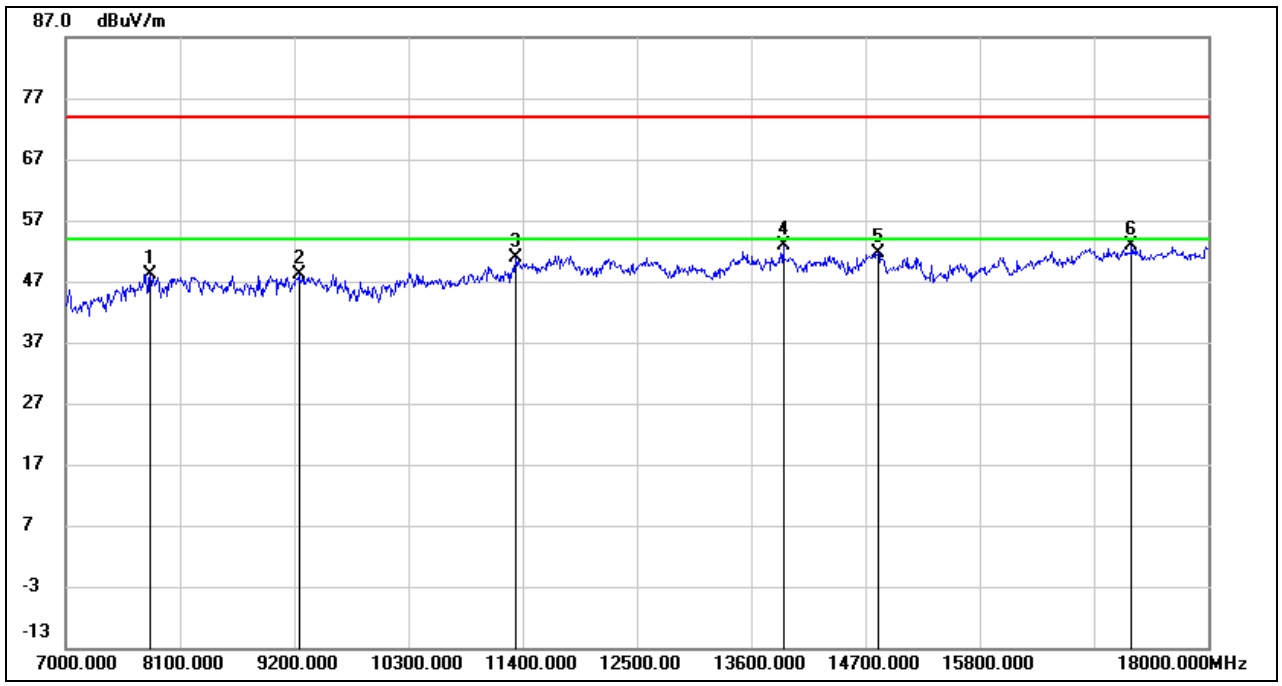
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7704.000	40.74	8.48	49.22	74.00	-24.78	peak
2	8980.000	37.27	10.89	48.16	74.00	-25.84	peak
3	11367.000	36.49	14.45	50.94	74.00	-23.06	peak
4	11873.000	35.44	15.44	50.88	74.00	-23.12	peak
5	14436.000	34.40	17.33	51.73	74.00	-22.27	peak
6	17087.000	30.89	21.81	52.70	74.00	-21.30	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. 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. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.

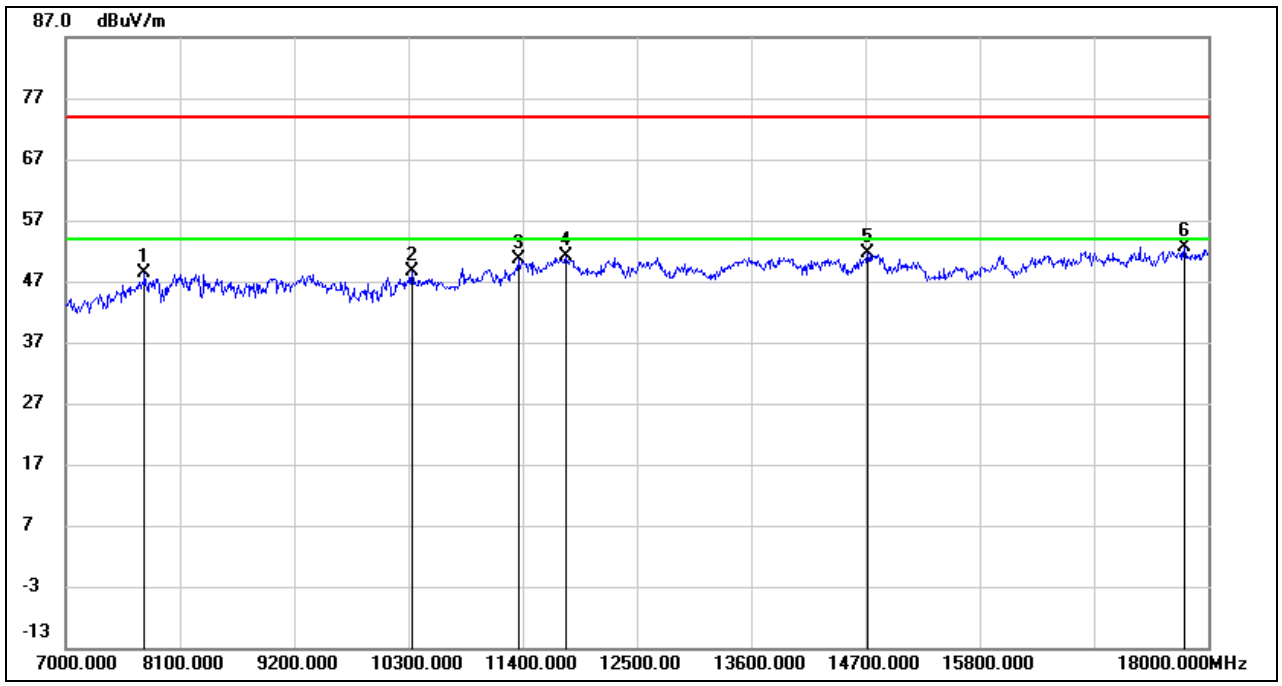
HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7814.000	38.87	9.28	48.15	74.00	-25.85	peak
2	9244.000	38.03	10.12	48.15	74.00	-25.85	peak
3	11334.000	36.62	14.15	50.77	74.00	-23.23	peak
4	13908.000	35.43	17.54	52.97	74.00	-21.03	peak
5	14821.000	33.76	17.90	51.66	74.00	-22.34	peak
6	17263.000	30.40	22.38	52.78	74.00	-21.22	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. 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. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.

HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, VERTICAL)



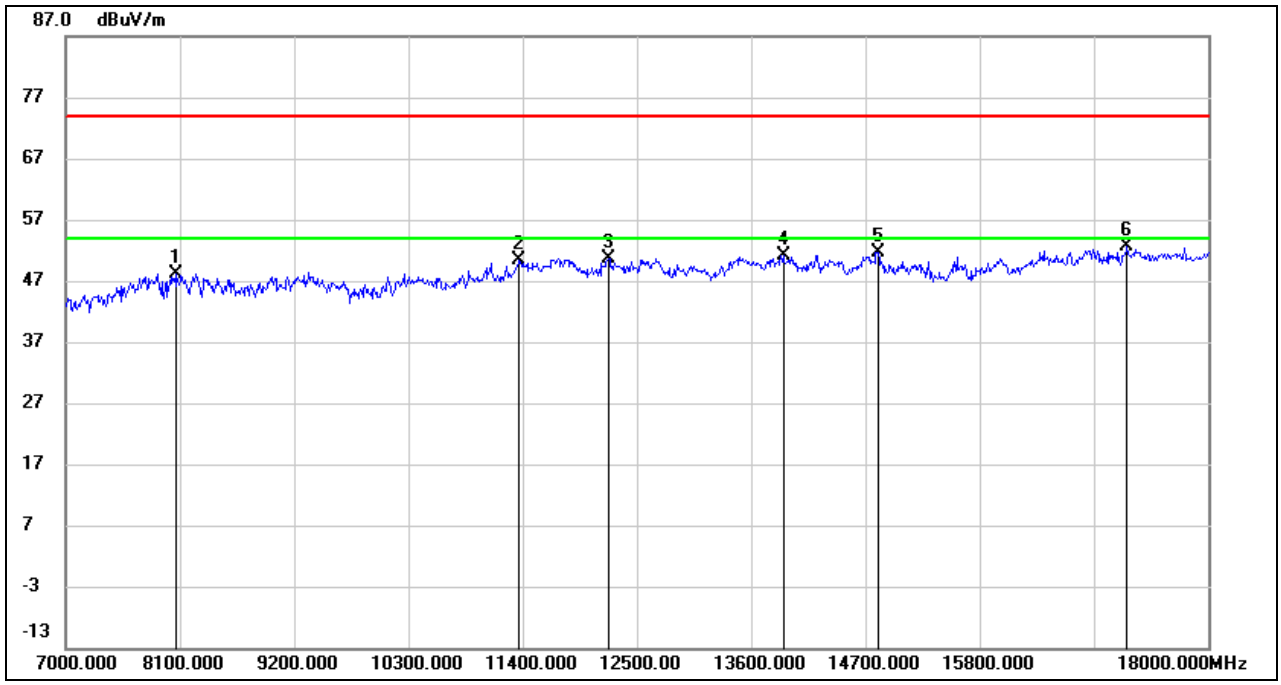
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7759.000	39.50	8.98	48.48	74.00	-25.52	peak
2	10333.000	36.70	11.94	48.64	74.00	-25.36	peak
3	11356.000	36.39	14.35	50.74	74.00	-23.26	peak
4	11818.000	35.72	15.29	51.01	74.00	-22.99	peak
5	14722.000	33.95	17.77	51.72	74.00	-22.28	peak
6	17769.000	28.83	23.87	52.70	74.00	-21.30	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. 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. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.

8.3.2. 802.11ac VHT20 MIMO MODE

UNII-1 BAND

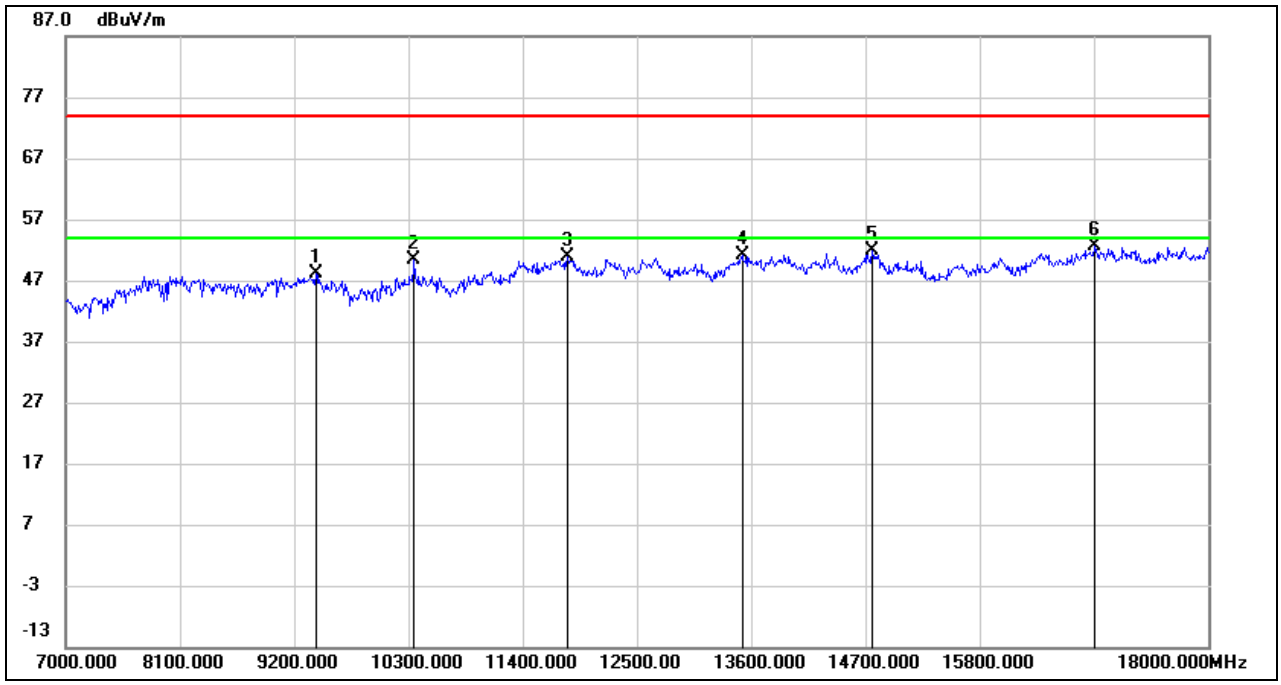
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	8056.000	38.69	9.50	48.19	74.00	-25.81	peak
2	11367.000	35.98	14.45	50.43	74.00	-23.57	peak
3	12225.000	34.71	15.99	50.70	74.00	-23.30	peak
4	13908.000	33.52	17.54	51.06	74.00	-22.94	peak
5	14821.000	33.79	17.90	51.69	74.00	-22.31	peak
6	17219.000	30.43	22.11	52.54	74.00	-21.46	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. 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. *-indicates frequency is out of the restricted bands, the AVG result only for reference.
7. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.

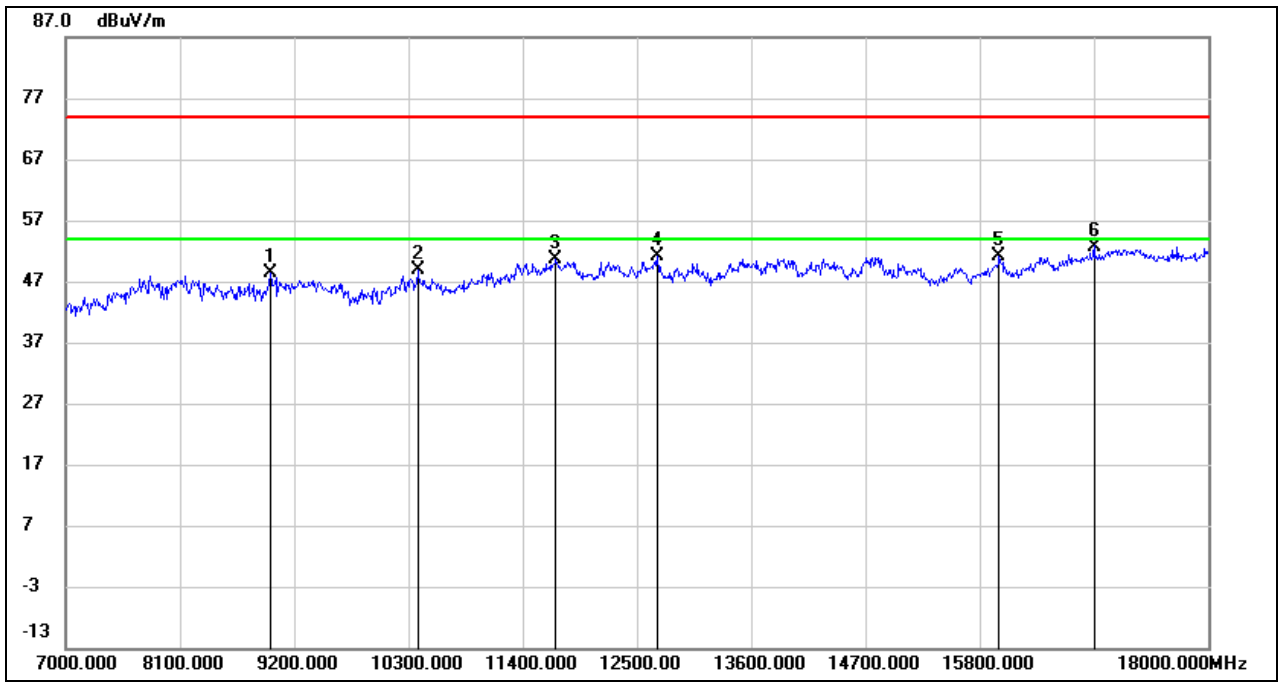
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	9409.000	37.19	10.94	48.13	74.00	-25.87	peak
2	10355.000	38.23	12.04	50.27	74.00	-23.73	peak
3	11829.000	35.49	15.32	50.81	74.00	-23.19	peak
4	13512.000	33.90	17.20	51.10	74.00	-22.90	peak
5	14766.000	33.90	17.92	51.82	74.00	-22.18	peak
6	16911.000	31.05	21.54	52.59	74.00	-21.41	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. 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. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.

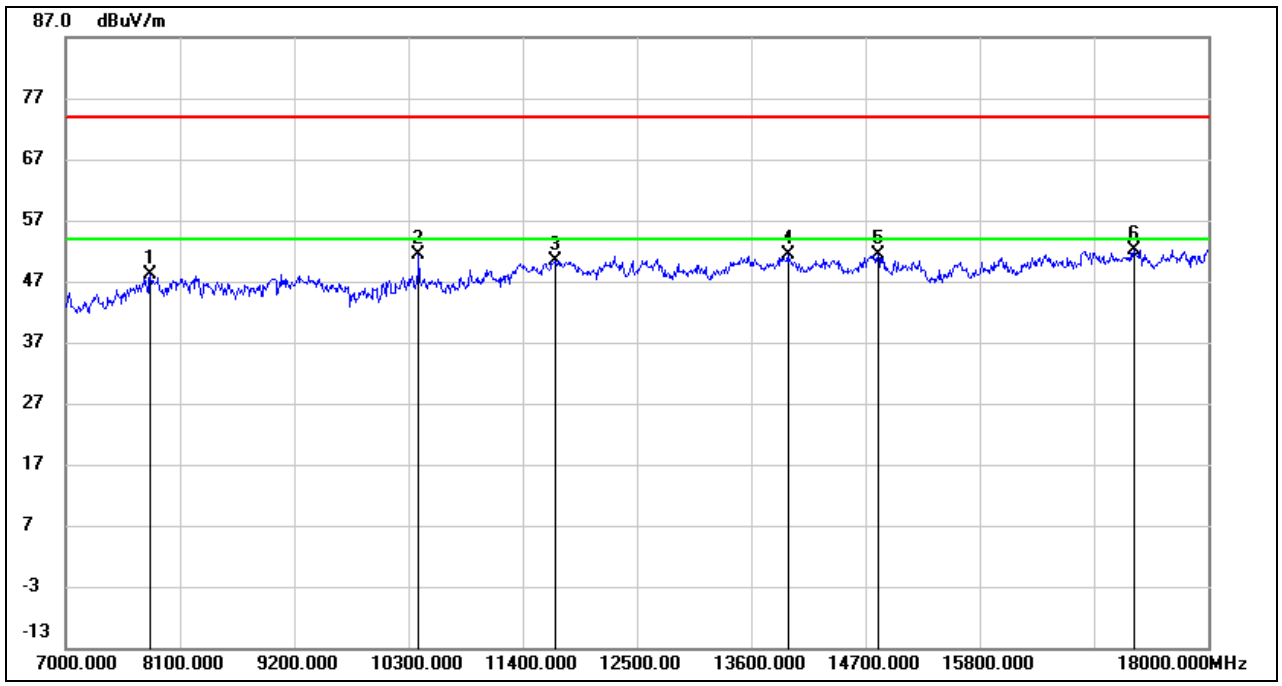
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	8969.000	37.61	10.69	48.30	74.00	-25.70	peak
2	10388.000	36.81	12.18	48.99	74.00	-25.01	peak
3	11719.000	35.37	15.33	50.70	74.00	-23.30	peak
4	12698.000	35.41	15.62	51.03	74.00	-22.97	peak
5	15987.000	32.88	18.37	51.25	74.00	-22.75	peak
6	16900.000	31.18	21.57	52.75	74.00	-21.25	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. 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. *-indicates frequency is out of the restricted bands, the AVG result only for reference.
7. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.

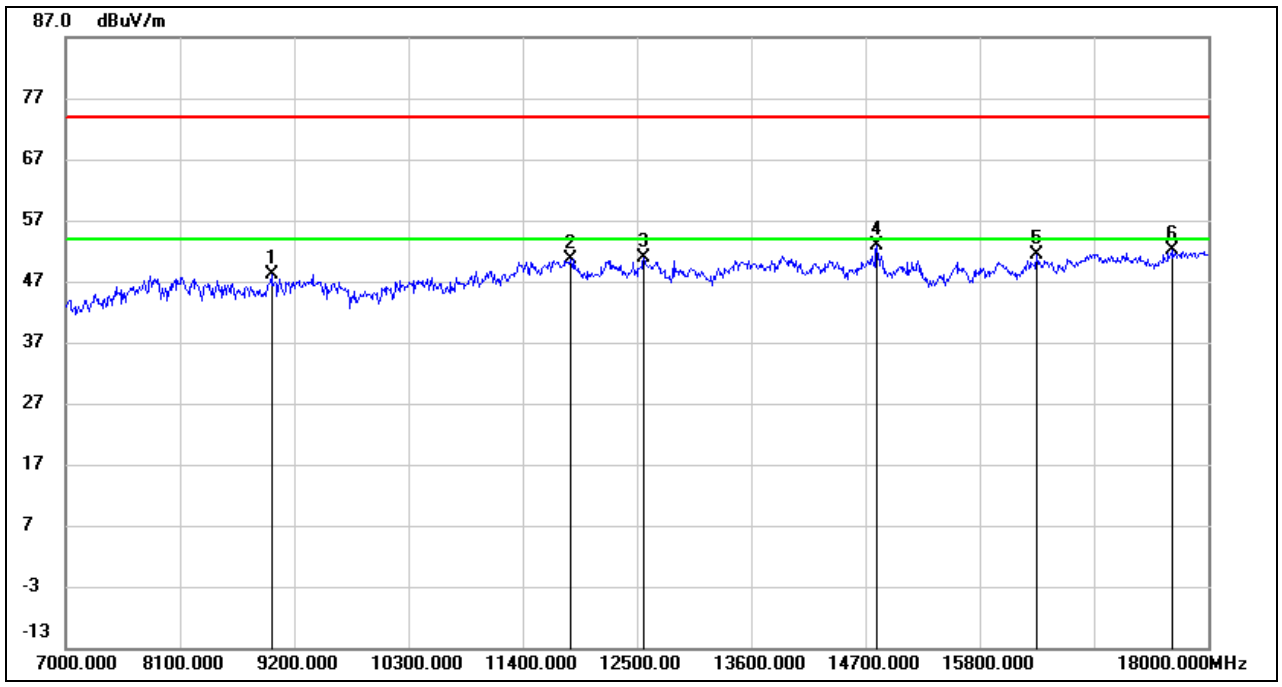
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7814.000	38.74	9.28	48.02	74.00	-25.98	peak
2	10399.000	39.10	12.23	51.33	74.00	-22.67	peak
3	11708.000	34.95	15.34	50.29	74.00	-23.71	peak
4	13952.000	33.86	17.60	51.46	74.00	-22.54	peak
5	14821.000	33.41	17.90	51.31	74.00	-22.69	peak
6	17285.000	29.69	22.52	52.21	74.00	-21.79	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. 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. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.

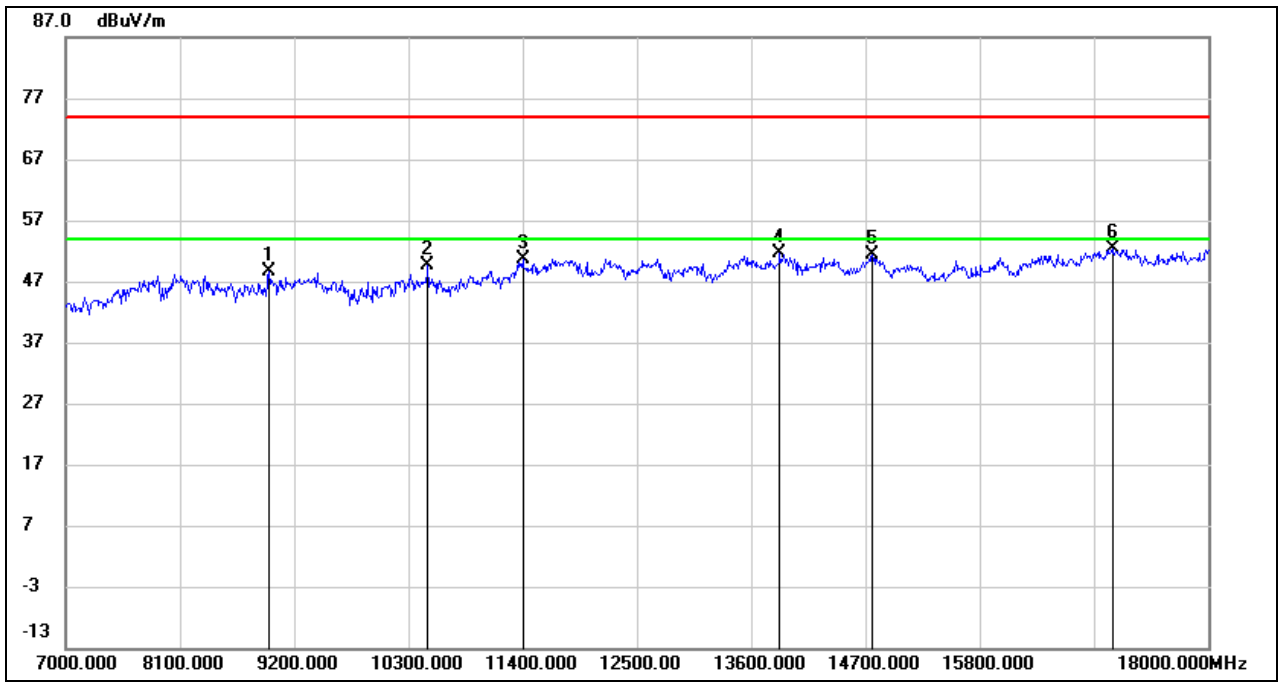
HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	8980.000	37.28	10.89	48.17	74.00	-25.83	peak
2	11862.000	35.16	15.41	50.57	74.00	-23.43	peak
3	12566.000	35.07	15.74	50.81	74.00	-23.19	peak
4	14810.000	34.88	17.97	52.85	74.00	-21.15	peak
5	16350.000	31.65	19.65	51.30	74.00	-22.70	peak
6	17648.000	28.96	23.08	52.04	74.00	-21.96	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. 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. *-indicates frequency is out of the restricted bands, the AVG result only for reference.
7. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.

HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, VERTICAL)

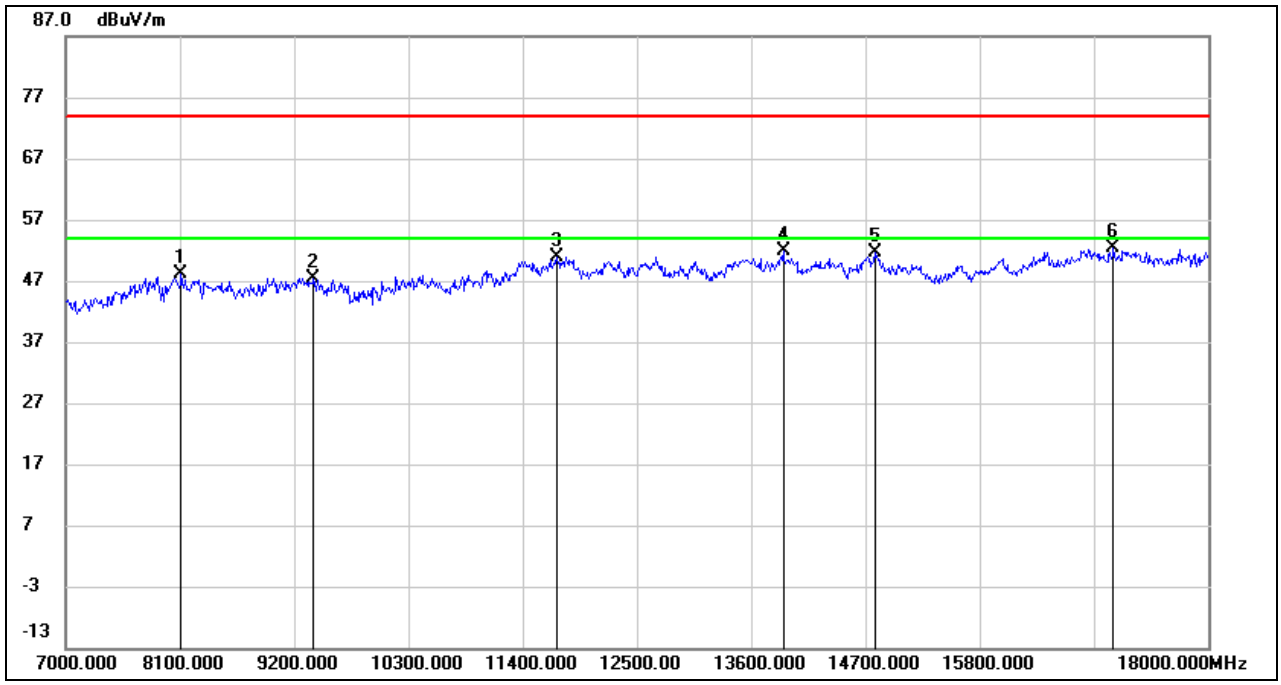


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	8958.000	38.07	10.48	48.55	74.00	-25.45	peak
2	10487.000	37.25	12.35	49.60	74.00	-24.40	peak
3	11400.000	35.95	14.76	50.71	74.00	-23.29	peak
4	13875.000	33.96	17.55	51.51	74.00	-22.49	peak
5	14766.000	33.58	17.92	51.50	74.00	-22.50	peak
6	17076.000	30.68	21.74	52.42	74.00	-21.58	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. 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. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.

UNII-3 BAND

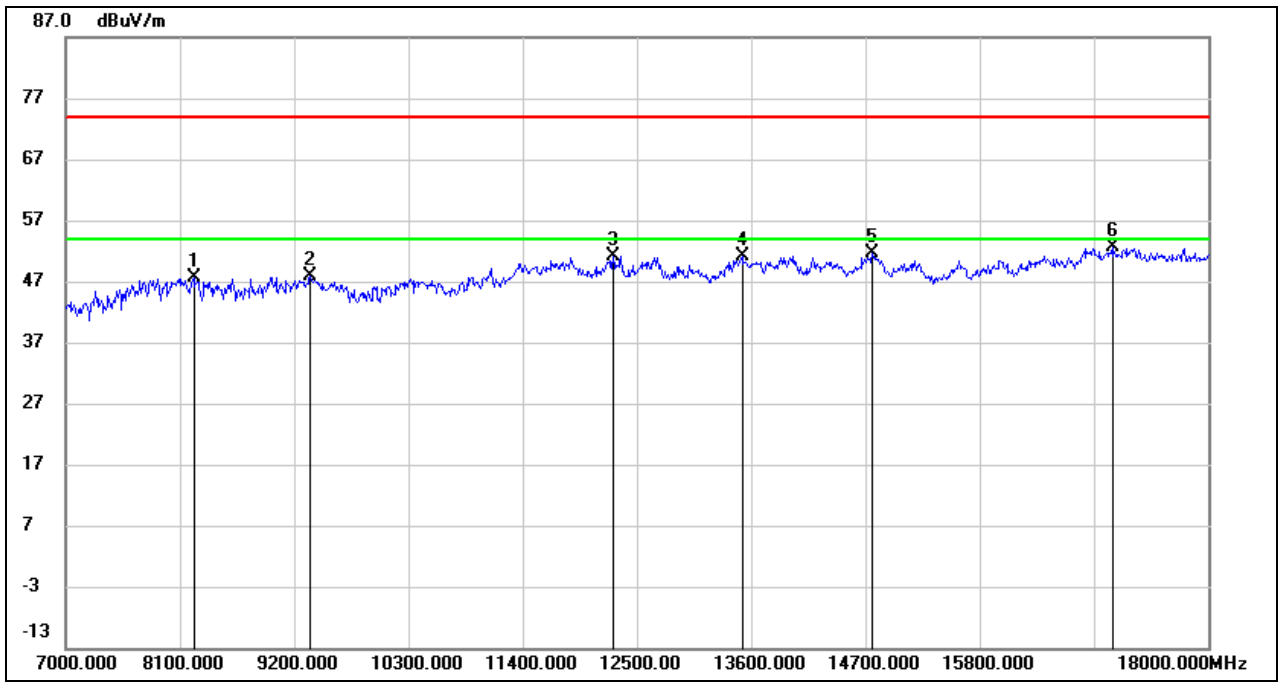
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	8111.000	37.92	10.14	48.06	74.00	-25.94	peak
2	9387.000	36.61	10.89	47.50	74.00	-26.50	peak
3	11730.000	35.44	15.32	50.76	74.00	-23.24	peak
4	13908.000	34.38	17.54	51.92	74.00	-22.08	peak
5	14788.000	33.70	18.00	51.70	74.00	-22.30	peak
6	17087.000	30.58	21.81	52.39	74.00	-21.61	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. 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. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.

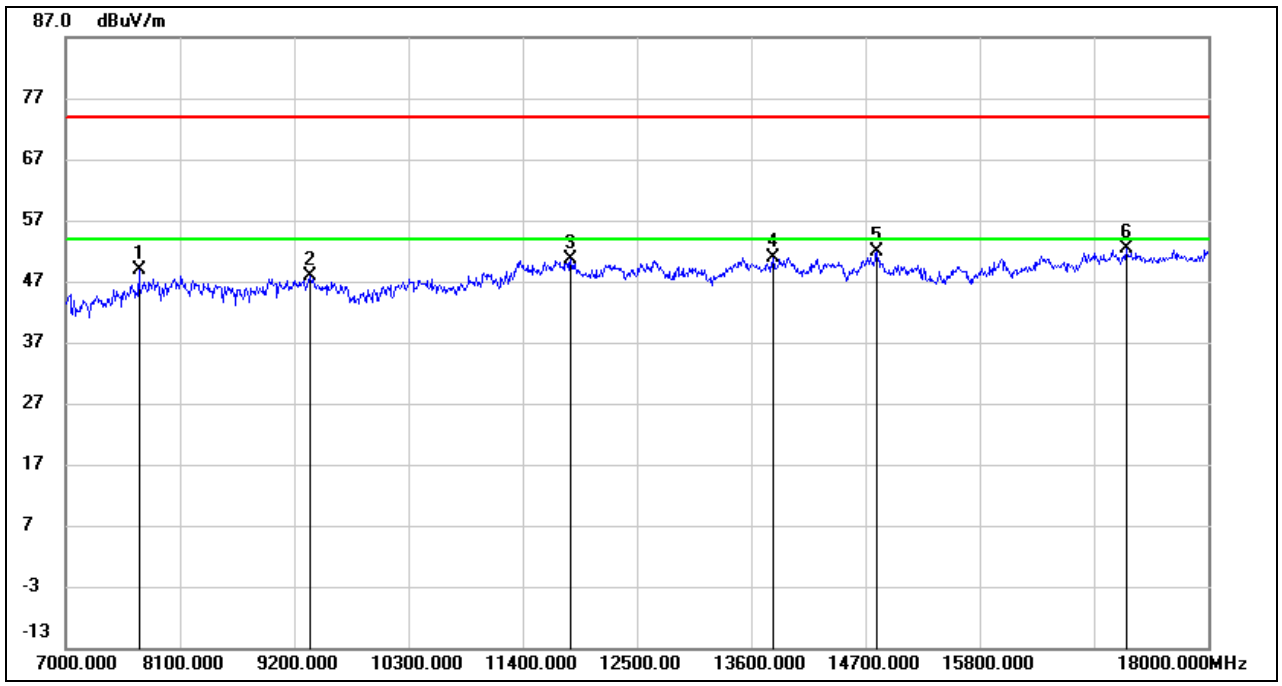
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	8232.000	37.75	9.77	47.52	74.00	-26.48	peak
2	9354.000	37.09	10.70	47.79	74.00	-26.21	peak
3	12269.000	35.08	16.04	51.12	74.00	-22.88	peak
4	13512.000	33.96	17.20	51.16	74.00	-22.84	peak
5	14766.000	33.63	17.92	51.55	74.00	-22.45	peak
6	17076.000	30.95	21.74	52.69	74.00	-21.31	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. 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. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.

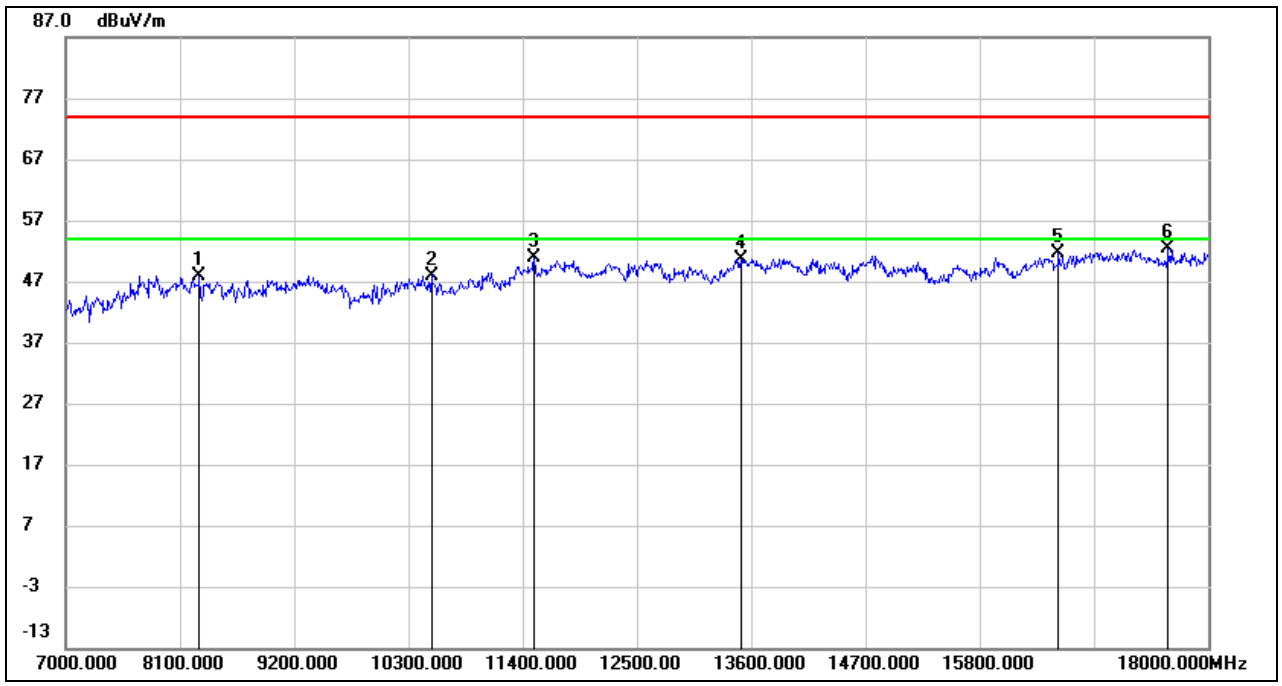
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7704.000	40.36	8.48	48.84	74.00	-25.16	peak
2	9354.000	37.28	10.70	47.98	74.00	-26.02	peak
3	11862.000	35.18	15.41	50.59	74.00	-23.41	peak
4	13809.000	33.40	17.60	51.00	74.00	-23.00	peak
5	14810.000	33.86	17.97	51.83	74.00	-22.17	peak
6	17208.000	30.29	22.04	52.33	74.00	-21.67	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. 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. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.

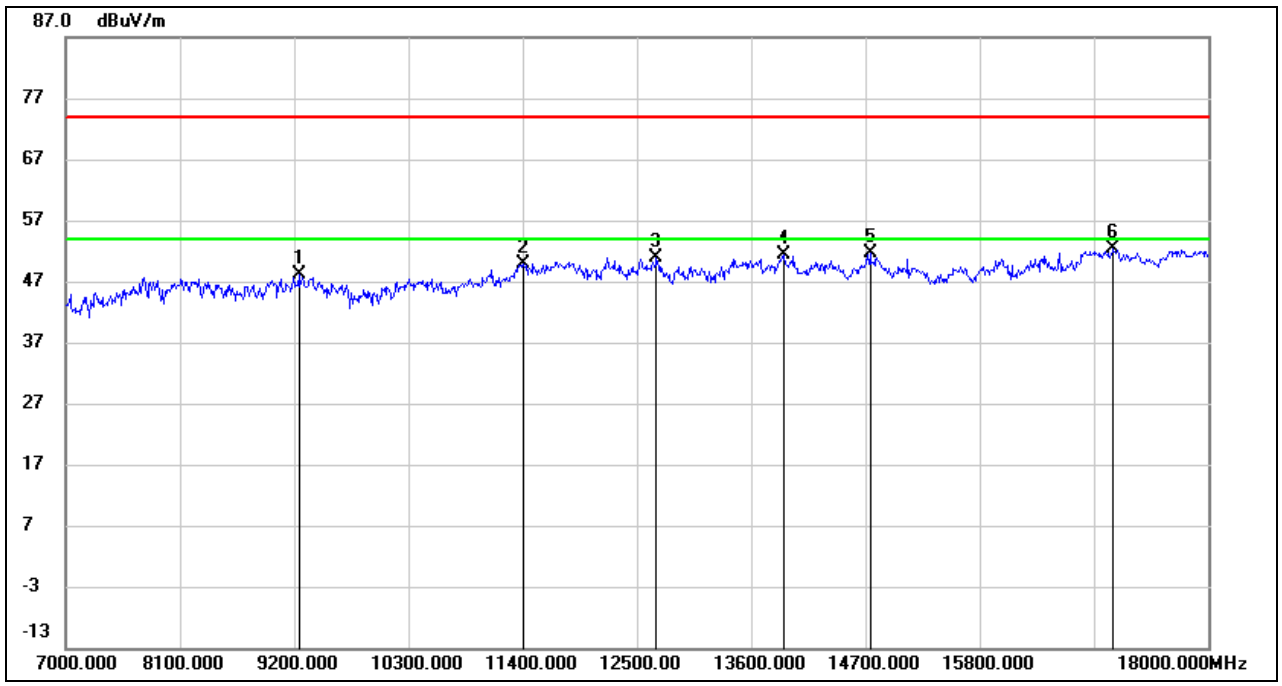
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	8287.000	38.17	9.70	47.87	74.00	-26.13	peak
2	10520.000	35.57	12.43	48.00	74.00	-26.00	peak
3	11510.000	36.33	14.66	50.99	74.00	-23.01	peak
4	13501.000	33.50	17.22	50.72	74.00	-23.28	peak
5	16559.000	31.75	19.88	51.63	74.00	-22.37	peak
6	17615.000	29.49	22.84	52.33	74.00	-21.67	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. 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. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.

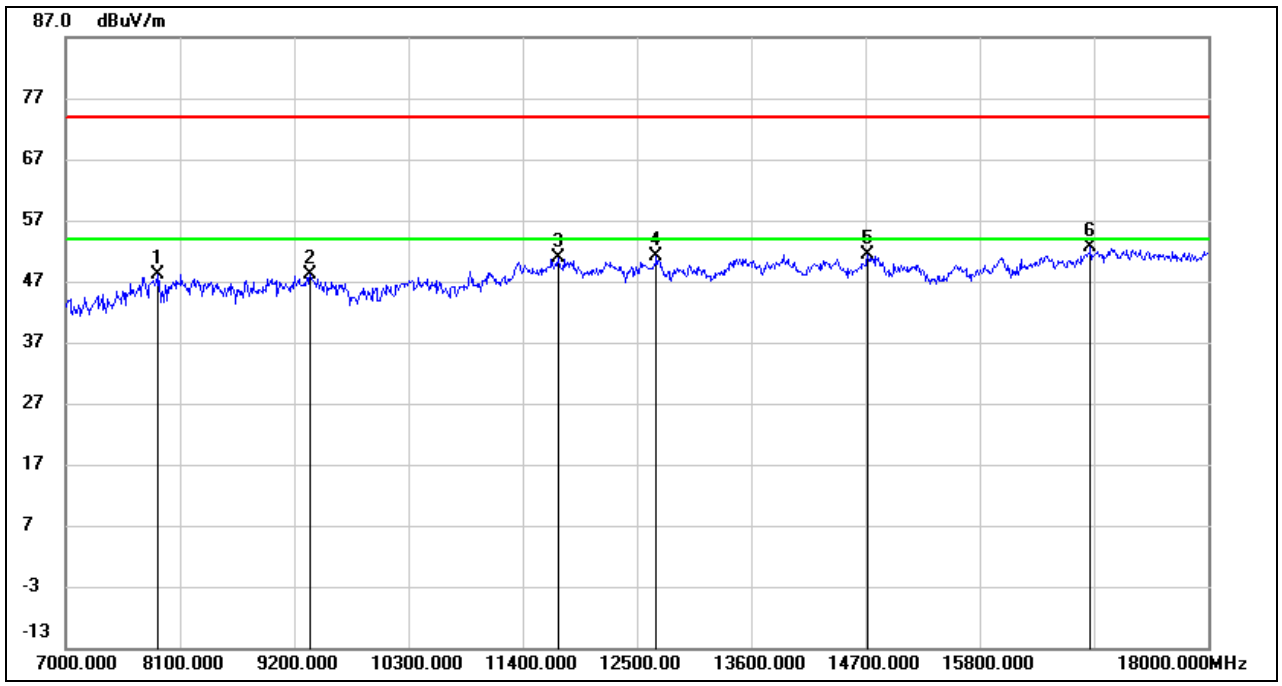
HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	9244.000	37.89	10.12	48.01	74.00	-25.99	peak
2	11400.000	35.16	14.76	49.92	74.00	-24.08	peak
3	12687.000	35.27	15.64	50.91	74.00	-23.09	peak
4	13919.000	33.93	17.55	51.48	74.00	-22.52	peak
5	14744.000	33.69	17.84	51.53	74.00	-22.47	peak
6	17087.000	30.53	21.81	52.34	74.00	-21.66	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. 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. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.

HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, VERTICAL)



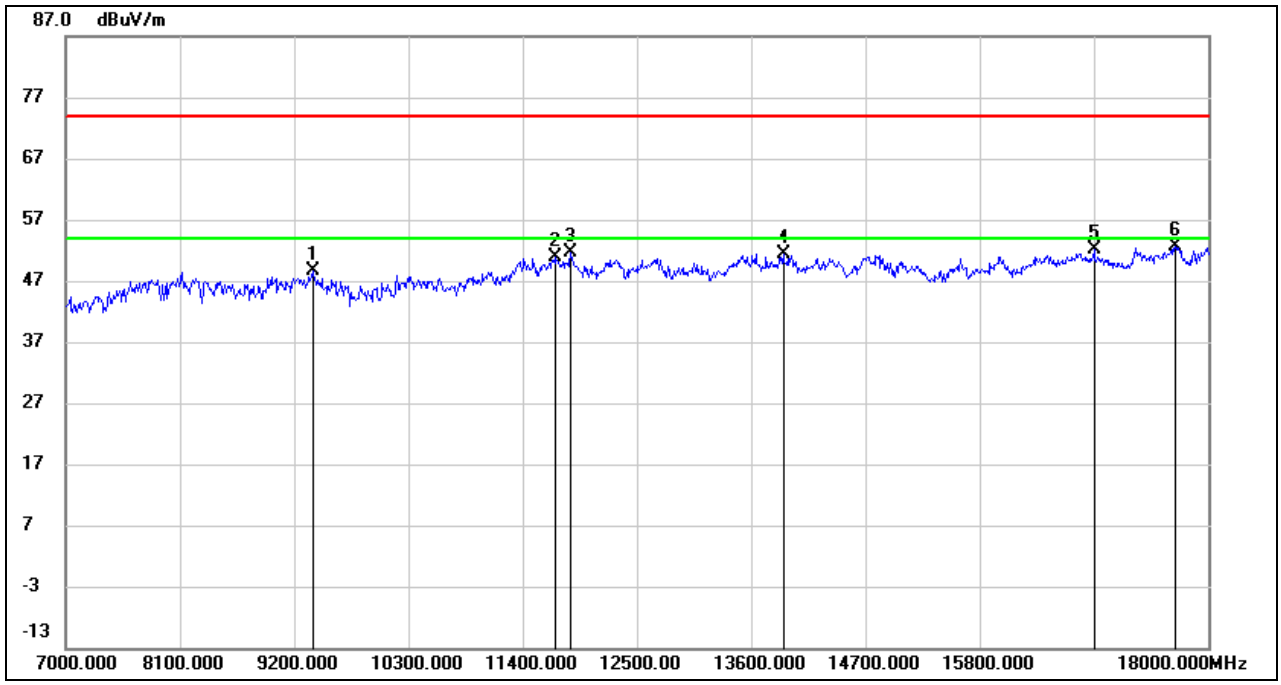
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7880.000	39.20	8.95	48.15	74.00	-25.85	peak
2	9354.000	37.49	10.70	48.19	74.00	-25.81	peak
3	11741.000	35.51	15.30	50.81	74.00	-23.19	peak
4	12687.000	35.37	15.64	51.01	74.00	-22.99	peak
5	14722.000	33.50	17.77	51.27	74.00	-22.73	peak
6	16867.000	31.23	21.29	52.52	74.00	-21.48	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. 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. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.

8.3.3. 802.11ac VHT40 MIMO MODE

UNII-1 BAND

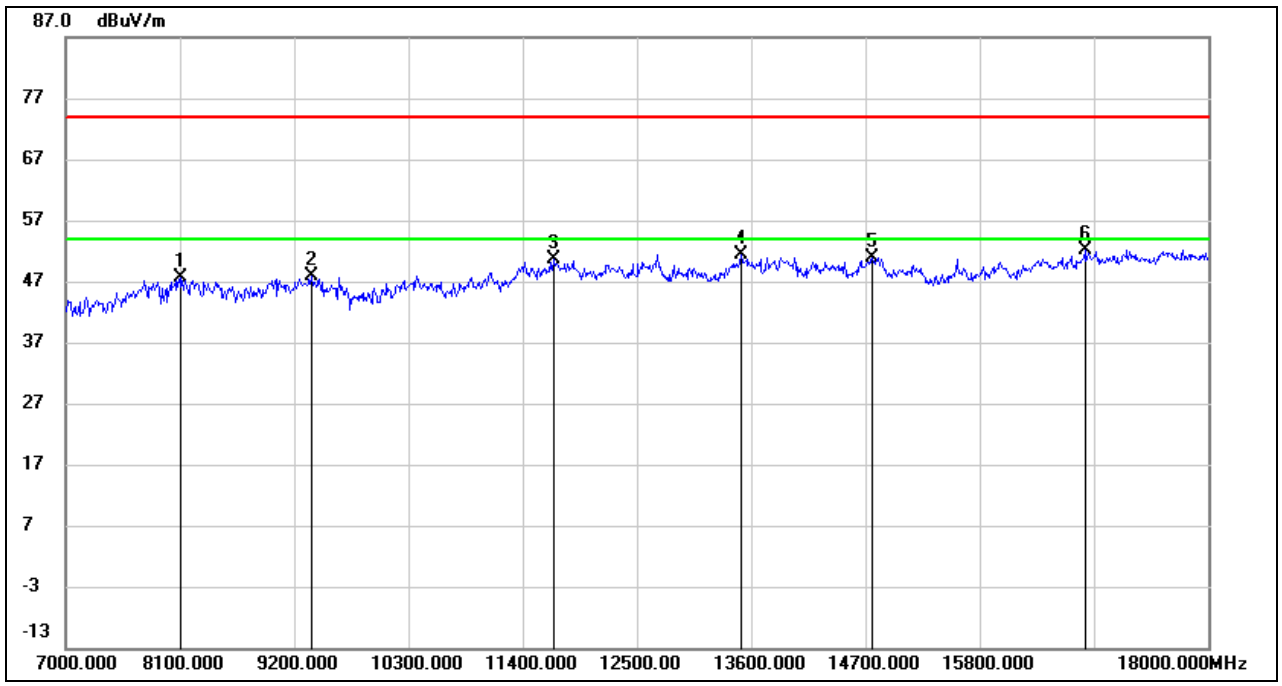
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	9376.000	37.71	10.84	48.55	74.00	-25.45	peak
2	11719.000	35.61	15.33	50.94	74.00	-23.06	peak
3	11862.000	36.17	15.41	51.58	74.00	-22.42	peak
4	13908.000	33.83	17.54	51.37	74.00	-22.63	peak
5	16900.000	30.49	21.57	52.06	74.00	-21.94	peak
6	17681.000	29.25	23.33	52.58	74.00	-21.42	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. 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. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.

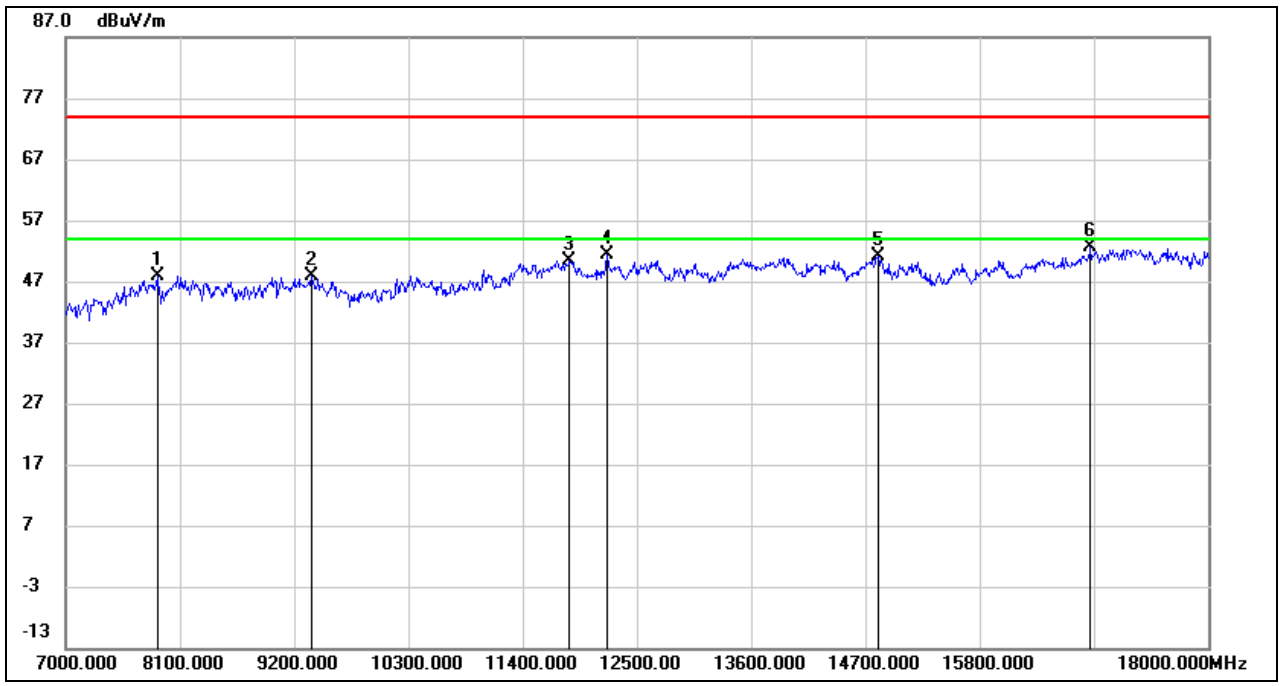
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	8111.000	37.60	10.14	47.74	74.00	-26.26	peak
2	9365.000	37.23	10.77	48.00	74.00	-26.00	peak
3	11697.000	35.30	15.34	50.64	74.00	-23.36	peak
4	13501.000	34.24	17.22	51.46	74.00	-22.54	peak
5	14766.000	33.04	17.92	50.96	74.00	-23.04	peak
6	16812.000	31.41	20.81	52.22	74.00	-21.78	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. 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. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.

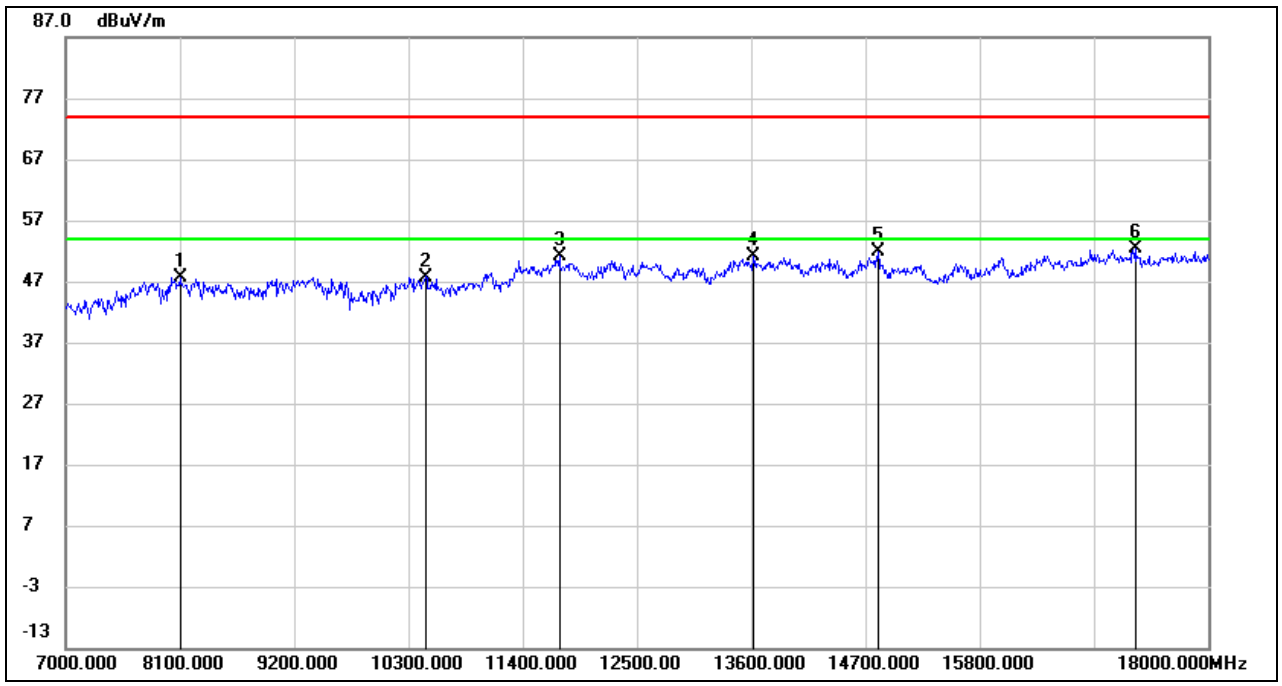
HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7880.000	38.85	8.95	47.80	74.00	-26.20	peak
2	9365.000	37.20	10.77	47.97	74.00	-26.03	peak
3	11851.000	35.09	15.38	50.47	74.00	-23.53	peak
4	12214.000	35.31	15.97	51.28	74.00	-22.72	peak
5	14821.000	33.22	17.90	51.12	74.00	-22.88	peak
6	16867.000	31.44	21.29	52.73	74.00	-21.27	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. 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. *-indicates frequency is out of the restricted bands, the AVG result only for reference.
7. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.

HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, VERTICAL)

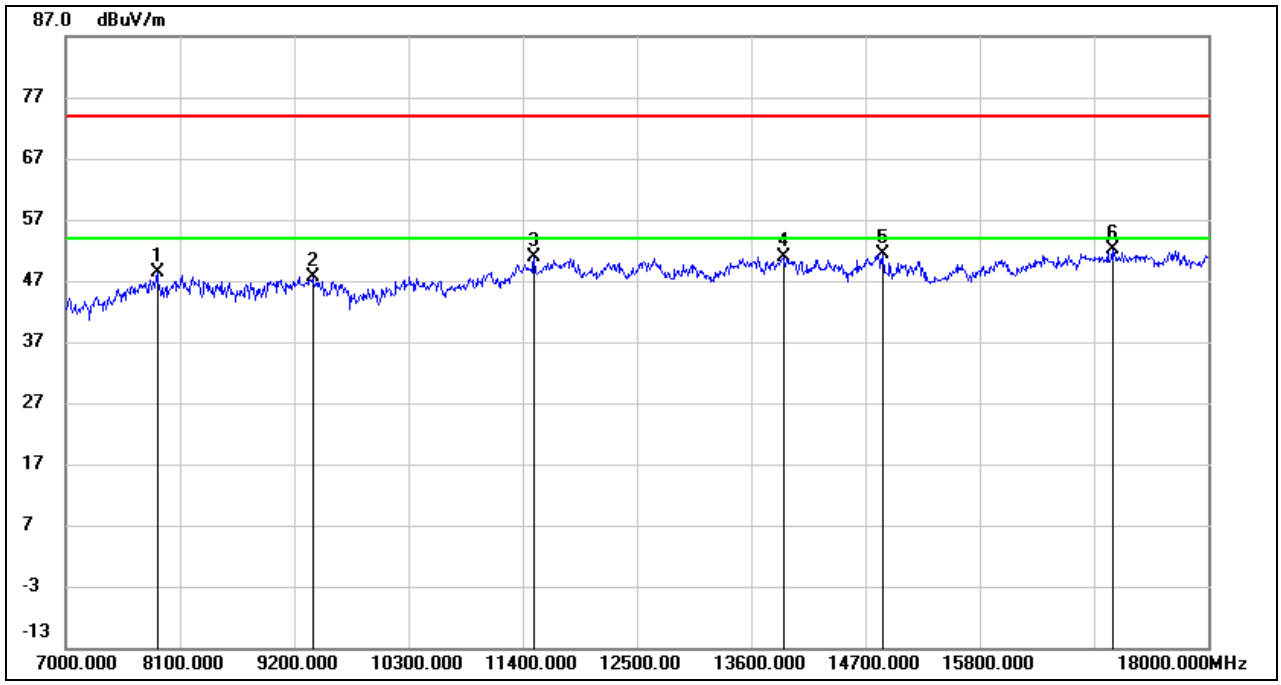


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	8100.000	37.55	10.18	47.73	74.00	-26.27	peak
2	10465.000	35.43	12.32	47.75	74.00	-26.25	peak
3	11752.000	35.74	15.29	51.03	74.00	-22.97	peak
4	13622.000	33.83	17.20	51.03	74.00	-22.97	peak
5	14821.000	33.94	17.90	51.84	74.00	-22.16	peak
6	17296.000	29.69	22.59	52.28	74.00	-21.72	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. 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. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.

UNII-3 BAND

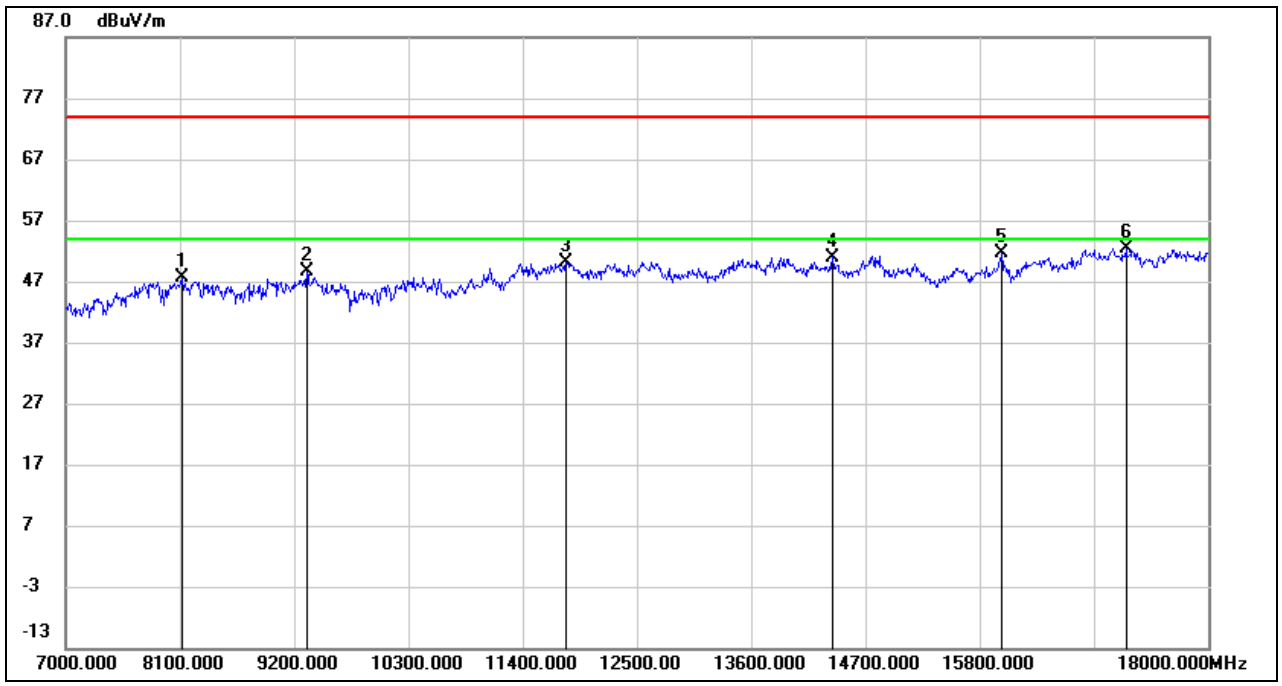
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7880.000	39.33	8.95	48.28	74.00	-25.72	peak
2	9376.000	36.82	10.84	47.66	74.00	-26.34	peak
3	11510.000	36.34	14.66	51.00	74.00	-23.00	peak
4	13908.000	33.39	17.54	50.93	74.00	-23.07	peak
5	14865.000	33.84	17.61	51.45	74.00	-22.55	peak
6	17076.000	30.34	21.74	52.08	74.00	-21.92	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. 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. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.

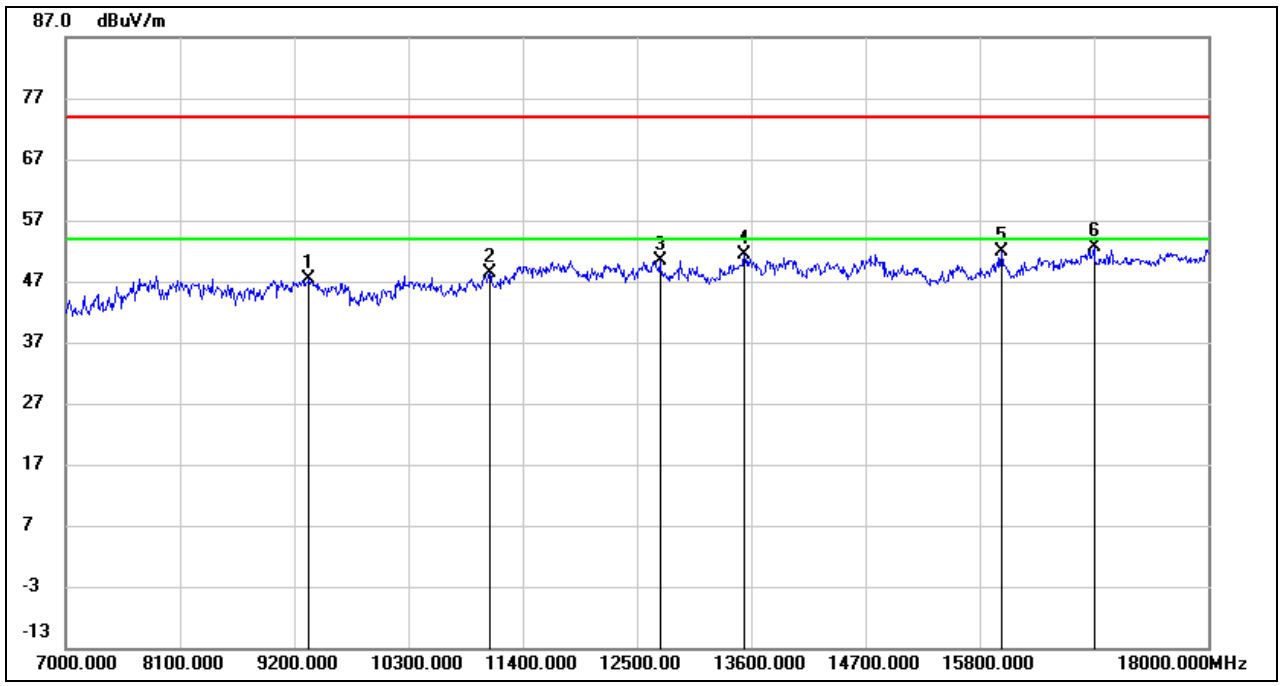
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	8122.000	37.62	10.10	47.72	74.00	-26.28	peak
2	9321.000	38.02	10.52	48.54	74.00	-25.46	peak
3	11818.000	34.84	15.29	50.13	74.00	-23.87	peak
4	14381.000	33.47	17.53	51.00	74.00	-23.00	peak
5	16009.000	33.21	18.41	51.62	74.00	-22.38	peak
6	17208.000	30.30	22.04	52.34	74.00	-21.66	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. 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. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.

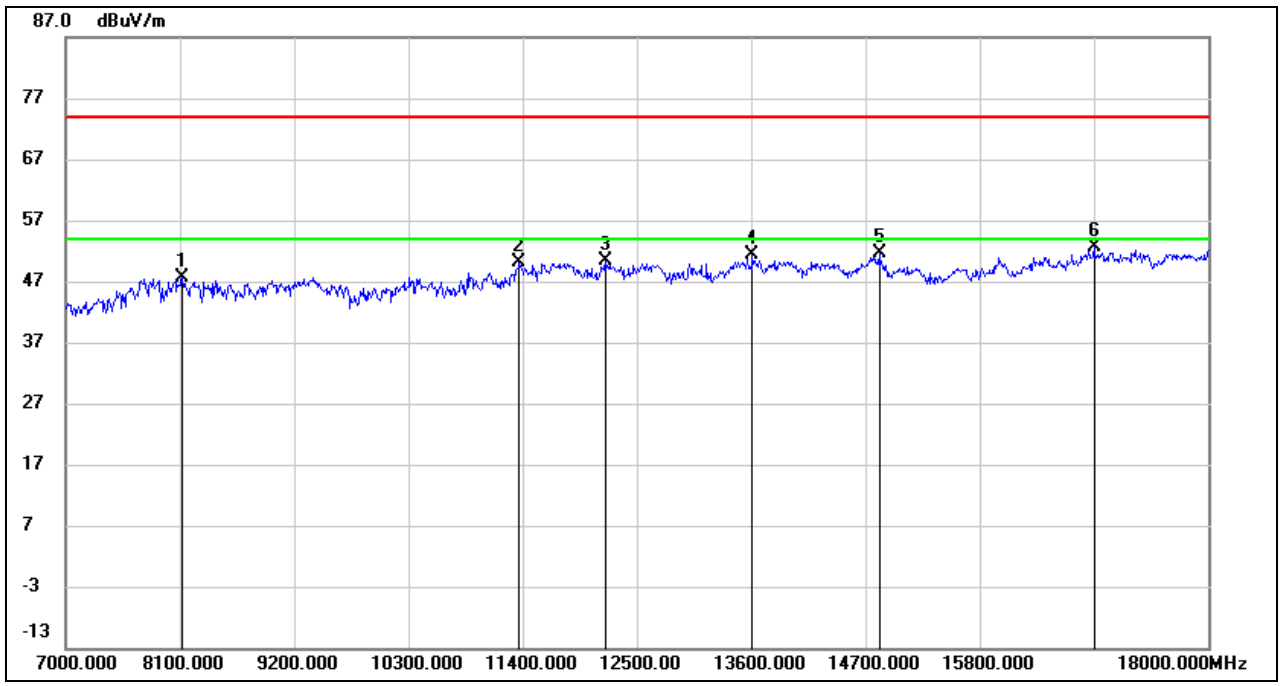
HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	9343.000	36.77	10.64	47.41	74.00	-26.59	peak
2	11081.000	34.67	13.70	48.37	74.00	-25.63	peak
3	12720.000	34.80	15.70	50.50	74.00	-23.50	peak
4	13534.000	34.25	17.18	51.43	74.00	-22.57	peak
5	16009.000	33.39	18.41	51.80	74.00	-22.20	peak
6	16900.000	30.97	21.57	52.54	74.00	-21.46	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. 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. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.

HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, VERTICAL)



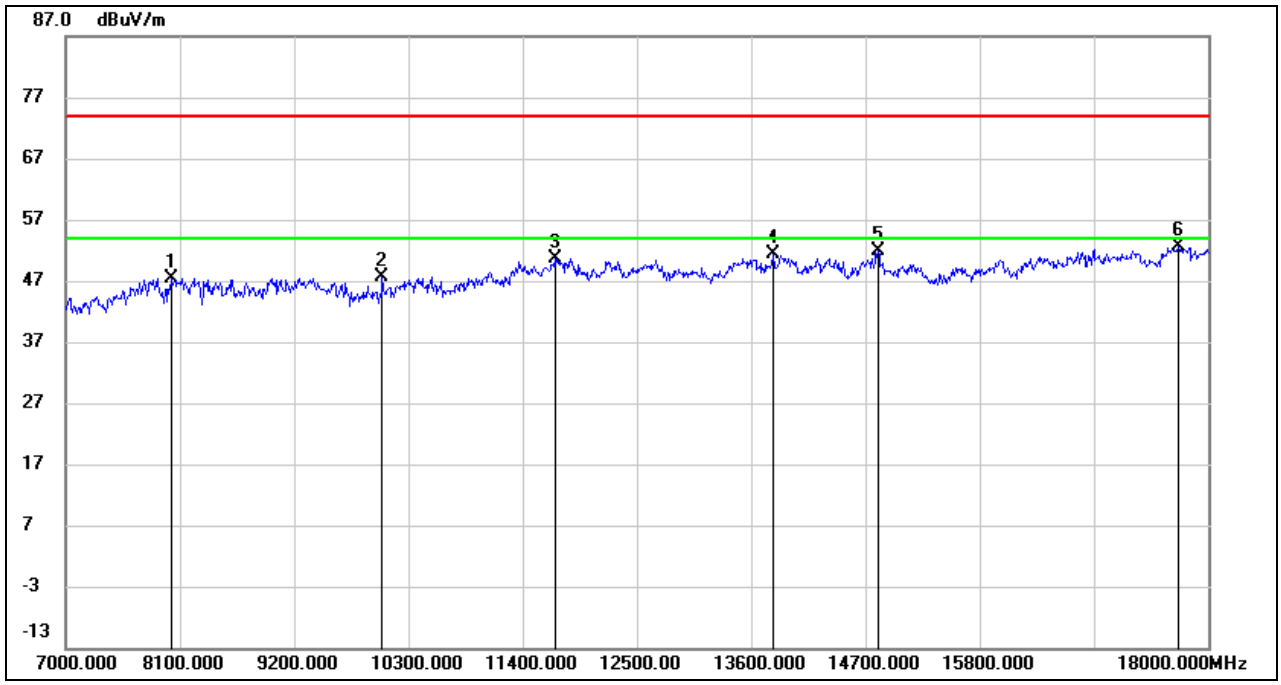
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	8122.000	37.63	10.10	47.73	74.00	-26.27	peak
2	11367.000	35.69	14.45	50.14	74.00	-23.86	peak
3	12192.000	34.36	15.91	50.27	74.00	-23.73	peak
4	13611.000	34.29	17.15	51.44	74.00	-22.56	peak
5	14832.000	33.84	17.83	51.67	74.00	-22.33	peak
6	16900.000	30.97	21.57	52.54	74.00	-21.46	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. 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. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.

8.3.4. 802.11ac VHT80 MIMO MODE

UNII-1 BAND

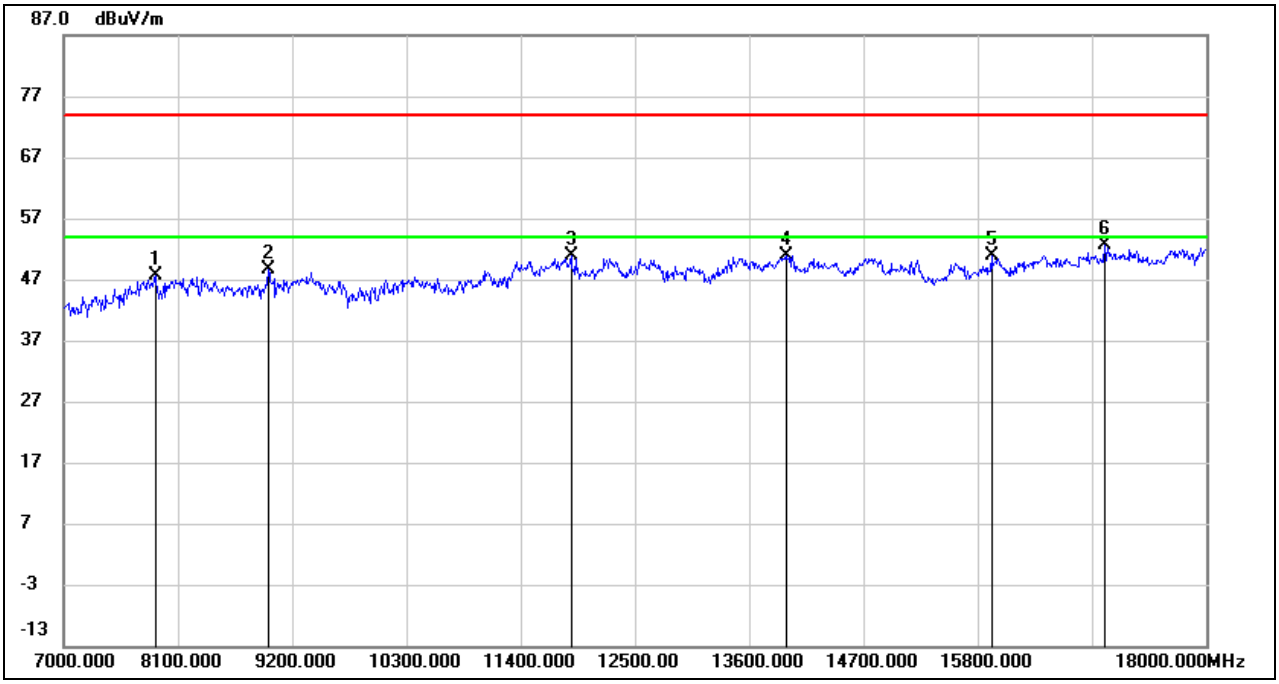
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	8012.000	38.58	8.82	47.40	74.00	-26.60	peak
2	10047.000	36.72	11.02	47.74	74.00	-26.26	peak
3	11708.000	35.26	15.34	50.60	74.00	-23.40	peak
4	13809.000	33.69	17.60	51.29	74.00	-22.71	peak
5	14821.000	33.89	17.90	51.79	74.00	-22.21	peak
6	17714.000	29.11	23.55	52.66	74.00	-21.34	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. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.

HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)

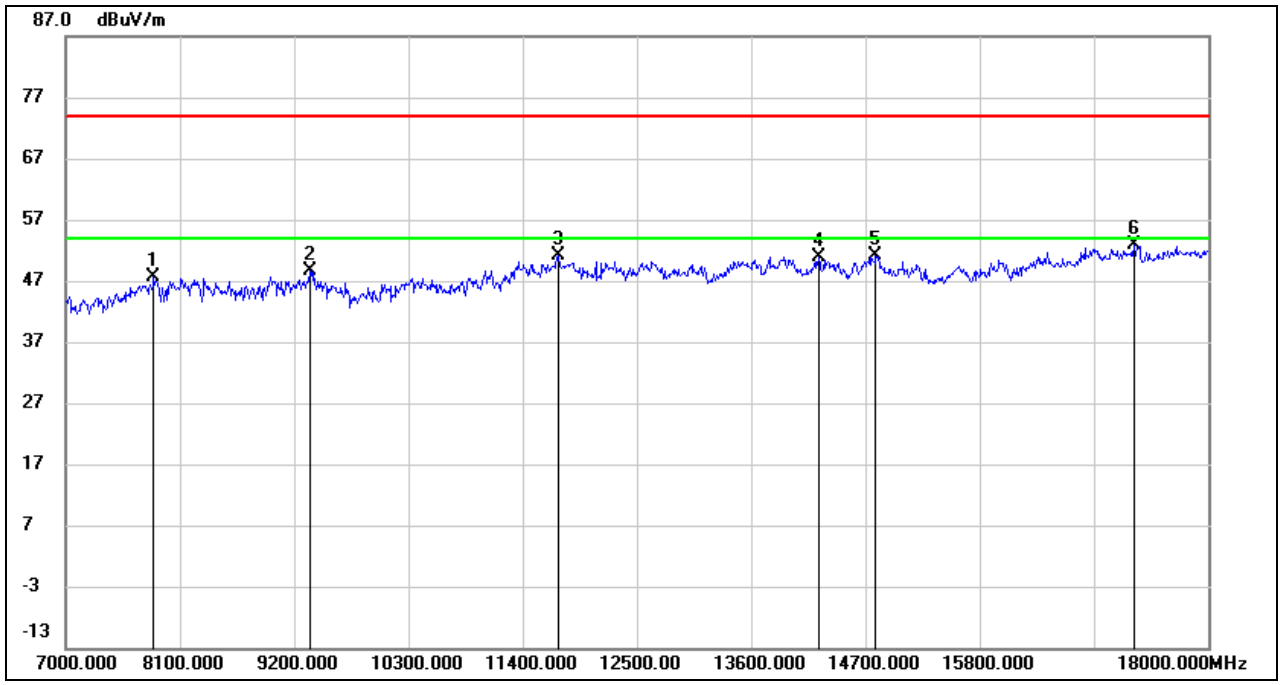


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7880.000	38.67	8.95	47.62	74.00	-26.38	peak
2	8969.000	37.95	10.69	48.64	74.00	-25.36	peak
3	11884.000	35.29	15.47	50.76	74.00	-23.24	peak
4	13952.000	33.29	17.60	50.89	74.00	-23.11	peak
5	15932.000	32.65	18.17	50.82	74.00	-23.18	peak
6	17021.000	31.29	21.38	52.67	74.00	-21.33	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. 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. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.

UNII-3 BAND

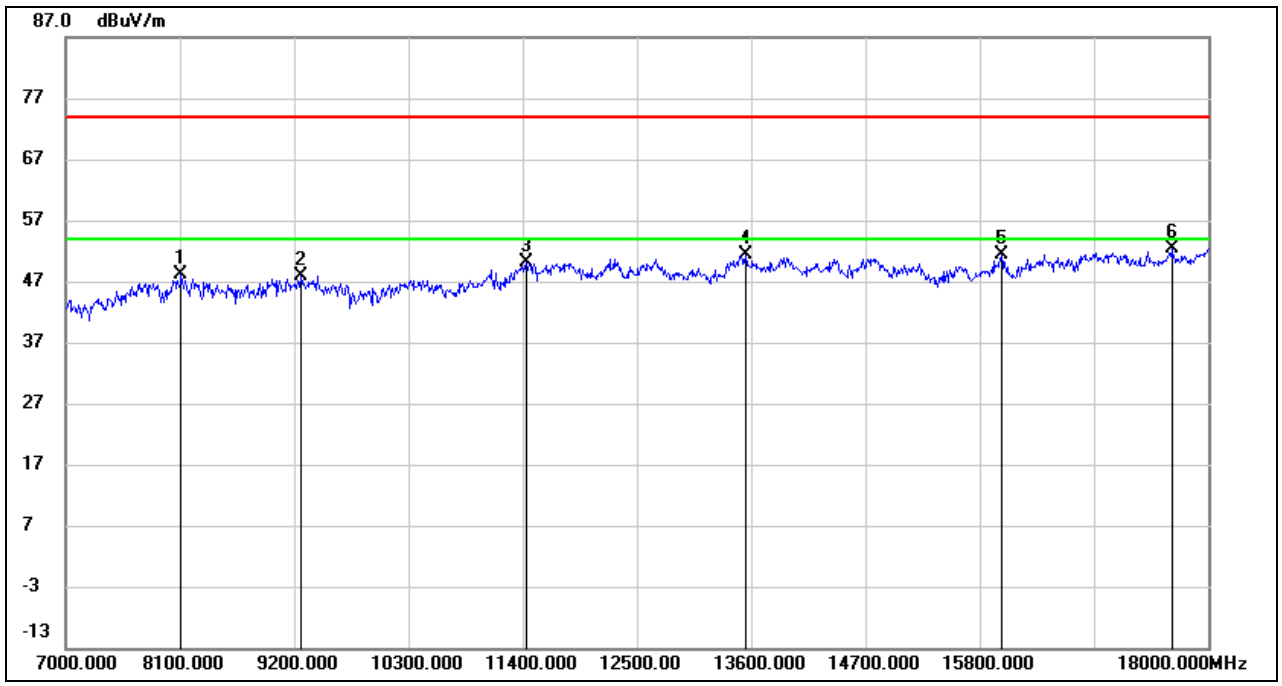
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7847.000	38.47	9.12	47.59	74.00	-26.41	peak
2	9354.000	38.02	10.70	48.72	74.00	-25.28	peak
3	11741.000	35.86	15.30	51.16	74.00	-22.84	peak
4	14249.000	32.92	17.96	50.88	74.00	-23.12	peak
5	14799.000	32.97	18.04	51.01	74.00	-22.99	peak
6	17285.000	30.25	22.52	52.77	74.00	-21.23	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. 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. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.

HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)



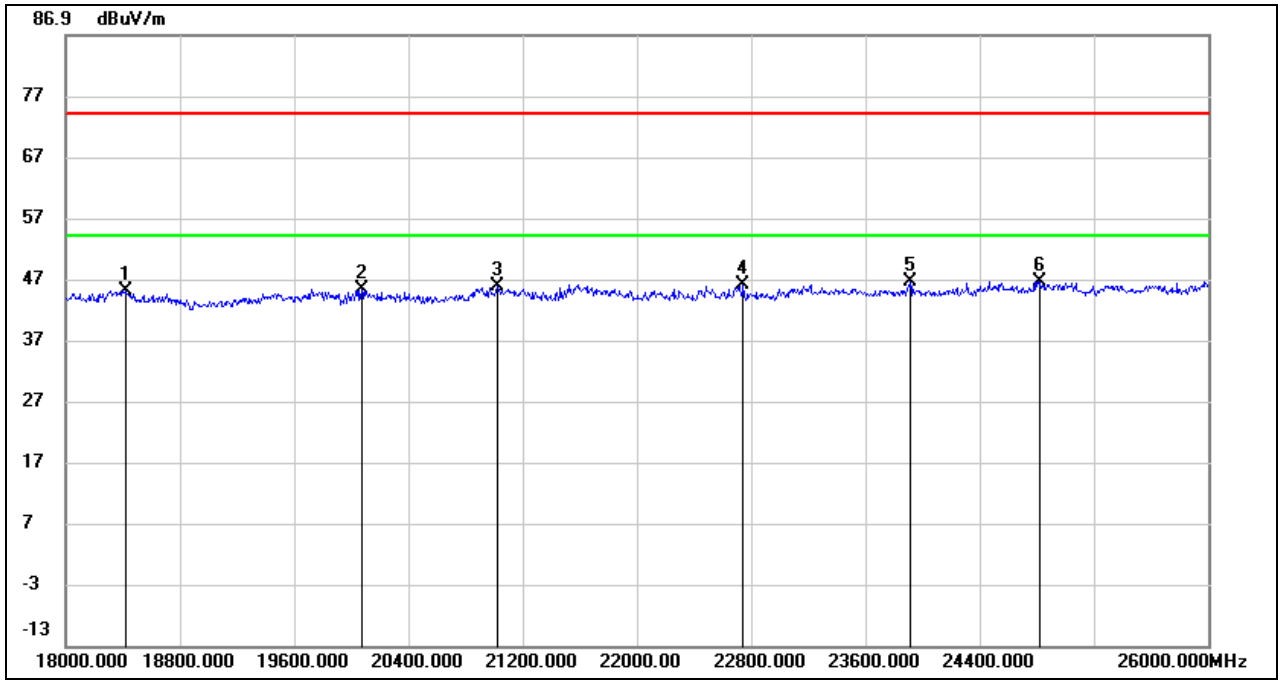
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	8111.000	38.06	10.14	48.20	74.00	-25.80	peak
2	9266.000	37.71	10.23	47.94	74.00	-26.06	peak
3	11433.000	35.43	14.73	50.16	74.00	-23.84	peak
4	13545.000	34.30	17.16	51.46	74.00	-22.54	peak
5	16009.000	32.86	18.41	51.27	74.00	-22.73	peak
6	17648.000	29.26	23.08	52.34	74.00	-21.66	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. 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. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.

8.4. SPURIOUS EMISSIONS (18 GHz ~ 26 GHz)

8.4.1. 802.11ac VHT20 MIMO MODE

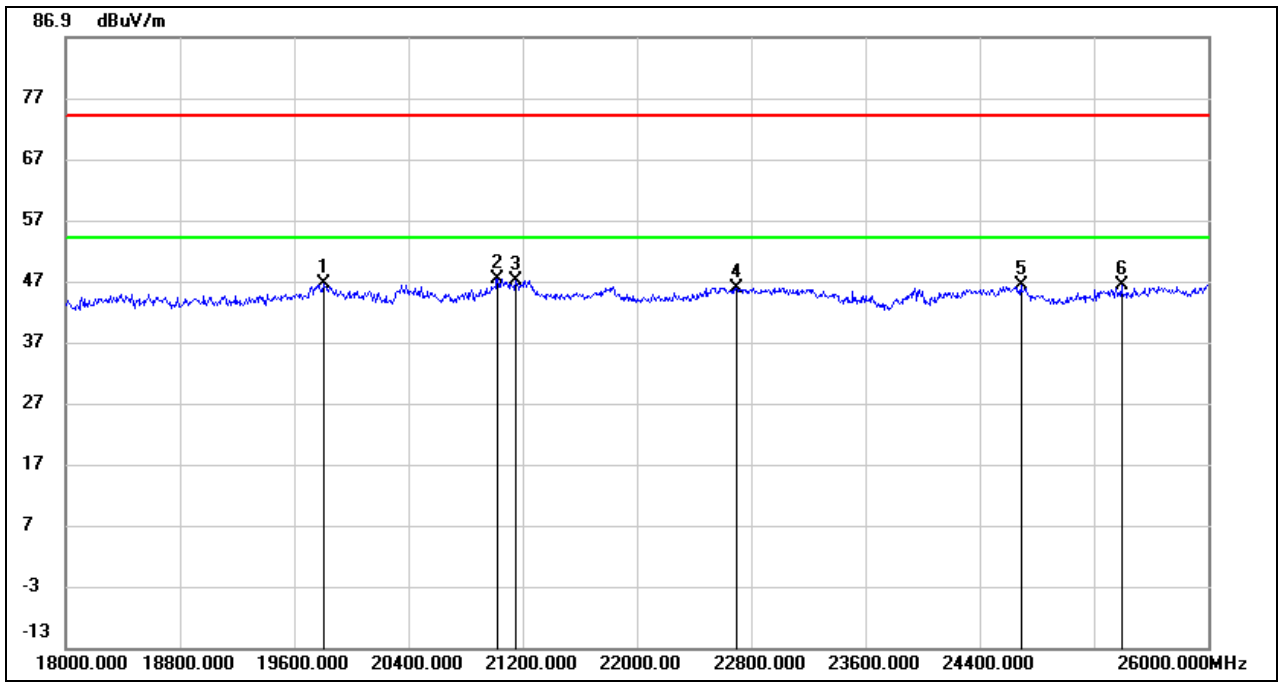
SPURIOUS EMISSIONS (UNII-3 BAND LOW CHANNEL, HORIZONTAL, WORST-CASE CONFIGURATION)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	18424.000	49.41	-4.38	45.03	74.00	-28.97	peak
2	20072.000	49.84	-4.51	45.33	74.00	-28.67	peak
3	21024.000	51.12	-5.30	45.82	74.00	-28.18	peak
4	22744.000	51.68	-5.74	45.94	74.00	-28.06	peak
5	23912.000	50.82	-4.23	46.59	74.00	-27.41	peak
6	24824.000	48.27	-1.69	46.58	74.00	-27.42	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. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.

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



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	19808.000	50.83	-4.34	46.49	74.00	-27.51	peak
2	21024.000	52.64	-5.30	47.34	74.00	-26.66	peak
3	21152.000	52.56	-5.42	47.14	74.00	-26.86	peak
4	22696.000	51.63	-5.75	45.88	74.00	-28.12	peak
5	24688.000	48.39	-2.11	46.28	74.00	-27.72	peak
6	25392.000	47.82	-1.55	46.27	74.00	-27.73	peak

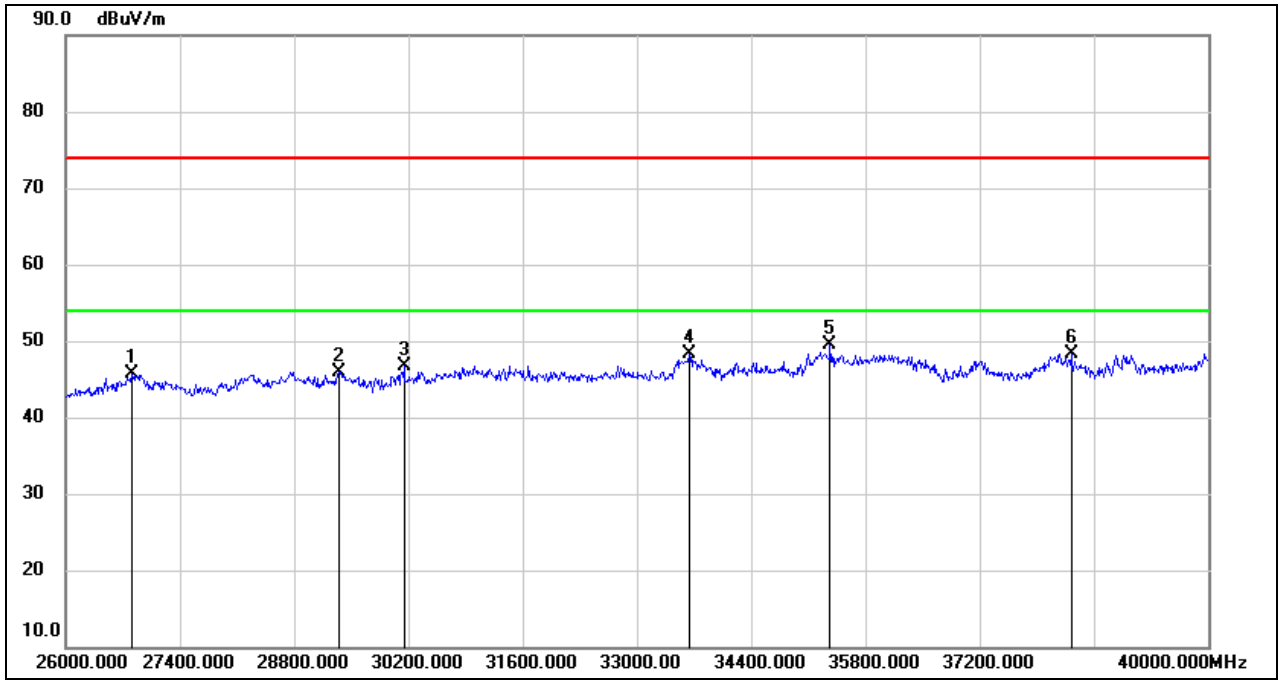
Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.

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

8.5. SPURIOUS EMISSIONS (26 GHz ~ 40 GHz)

8.5.1. 802.11ac VHT20 MIMO MODE

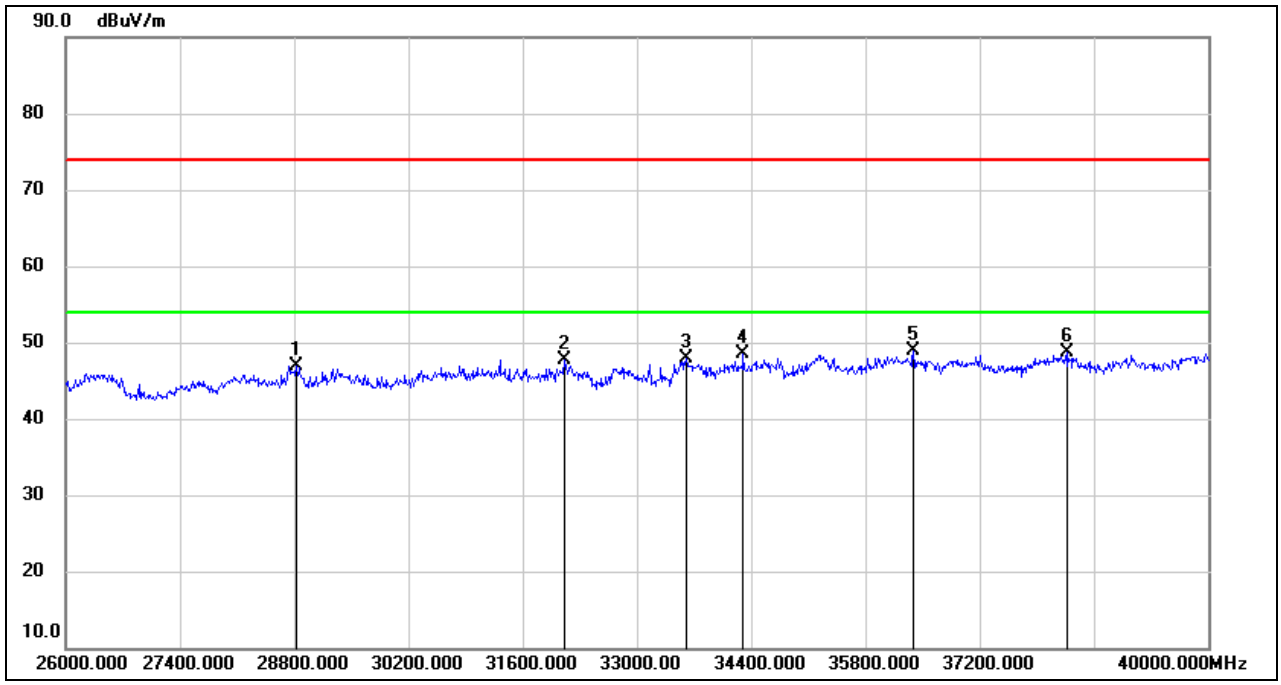
SPURIOUS EMISSIONS (UNII-3 BAND LOW CHANNEL, HORIZONTAL, WORST-CASE CONFIGURATION)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	26812.000	50.28	-4.62	45.66	74.00	-28.34	peak
2	29346.000	46.88	-0.91	45.97	74.00	-28.03	peak
3	30144.000	47.96	-1.30	46.66	74.00	-27.34	peak
4	33644.000	47.81	0.42	48.23	74.00	-25.77	peak
5	35366.000	46.90	2.59	49.49	74.00	-24.51	peak
6	38320.000	44.56	3.77	48.33	74.00	-25.67	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. Proper operation of the transmitter prior to adding the filter to the measurement chain.
5. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.

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



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	28828.000	47.63	-0.79	46.84	74.00	-27.16	peak
2	32104.000	49.49	-1.75	47.74	74.00	-26.26	peak
3	33602.000	47.51	0.46	47.97	74.00	-26.03	peak
4	34302.000	47.45	1.10	48.55	74.00	-25.45	peak
5	36388.000	45.32	3.52	48.84	74.00	-25.16	peak
6	38278.000	44.82	3.82	48.64	74.00	-25.36	peak

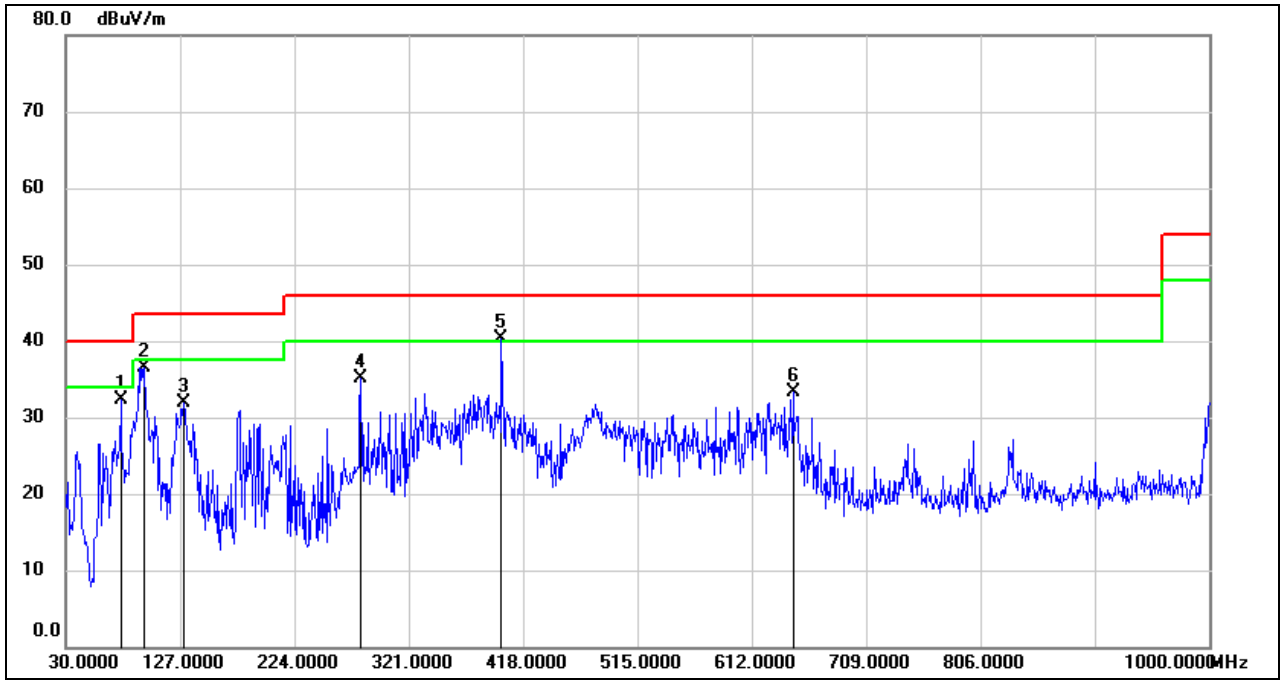
Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Proper operation of the transmitter prior to adding the filter to the measurement chain.
5. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.

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

8.6. SPURIOUS EMISSIONS (30 MHz ~ 1 GHz)

8.6.1. 802.11ac VHT20 MIMO MODE

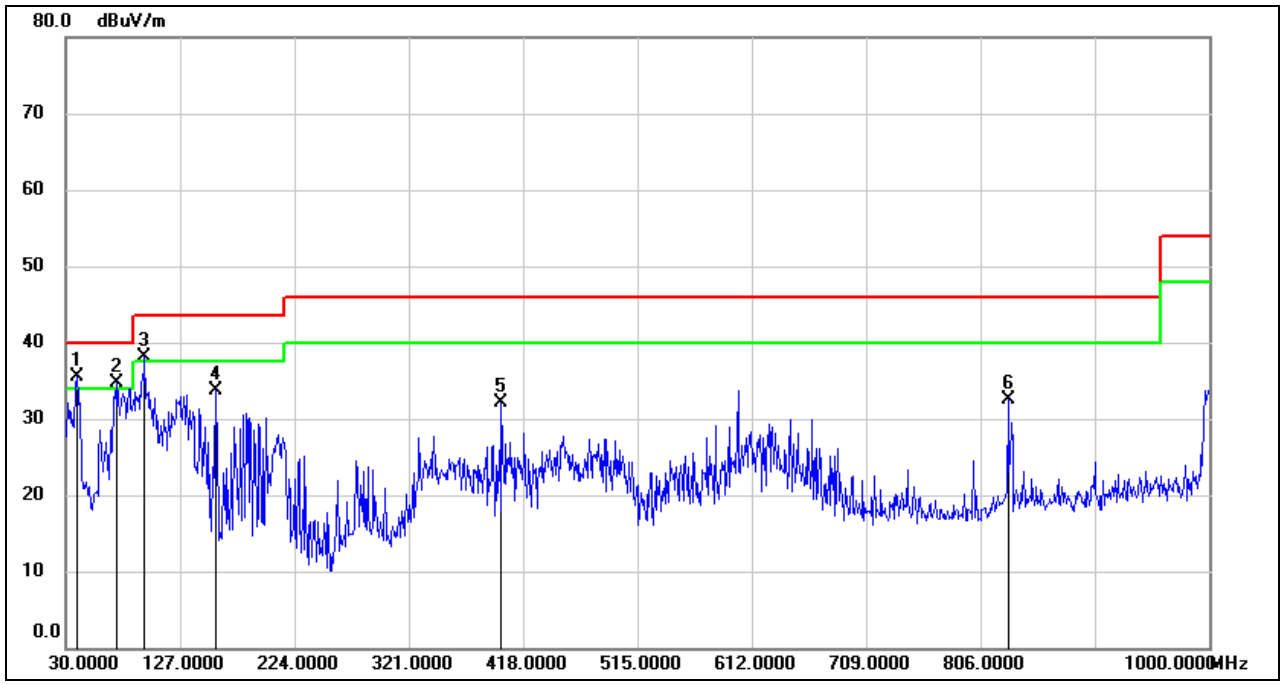
SPURIOUS EMISSIONS (UNII-3 BAND LOW CHANNEL, HORIZONTAL, WORST-CASE CONFIGURATION)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	76.5600	53.43	-21.07	32.36	40.00	-7.64	QP
2	96.9300	57.97	-21.38	36.59	43.50	-6.91	QP
3	129.9100	51.23	-19.36	31.87	43.50	-11.63	QP
4	280.2600	51.76	-16.66	35.10	46.00	-10.90	QP
5	399.5700	53.67	-13.37	40.30	46.00	-5.70	QP
6	646.9200	42.41	-9.06	33.35	46.00	-12.65	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-3 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	39.7000	55.48	-19.96	35.52	40.00	-4.48	QP
2	73.6500	55.56	-20.84	34.72	40.00	-5.28	QP
3	96.9300	59.55	-21.38	38.17	43.50	-5.33	QP
4	157.0700	51.66	-17.92	33.74	43.50	-9.76	QP
5	399.5700	45.39	-13.37	32.02	46.00	-13.98	QP
6	829.2800	39.21	-6.69	32.52	46.00	-13.48	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

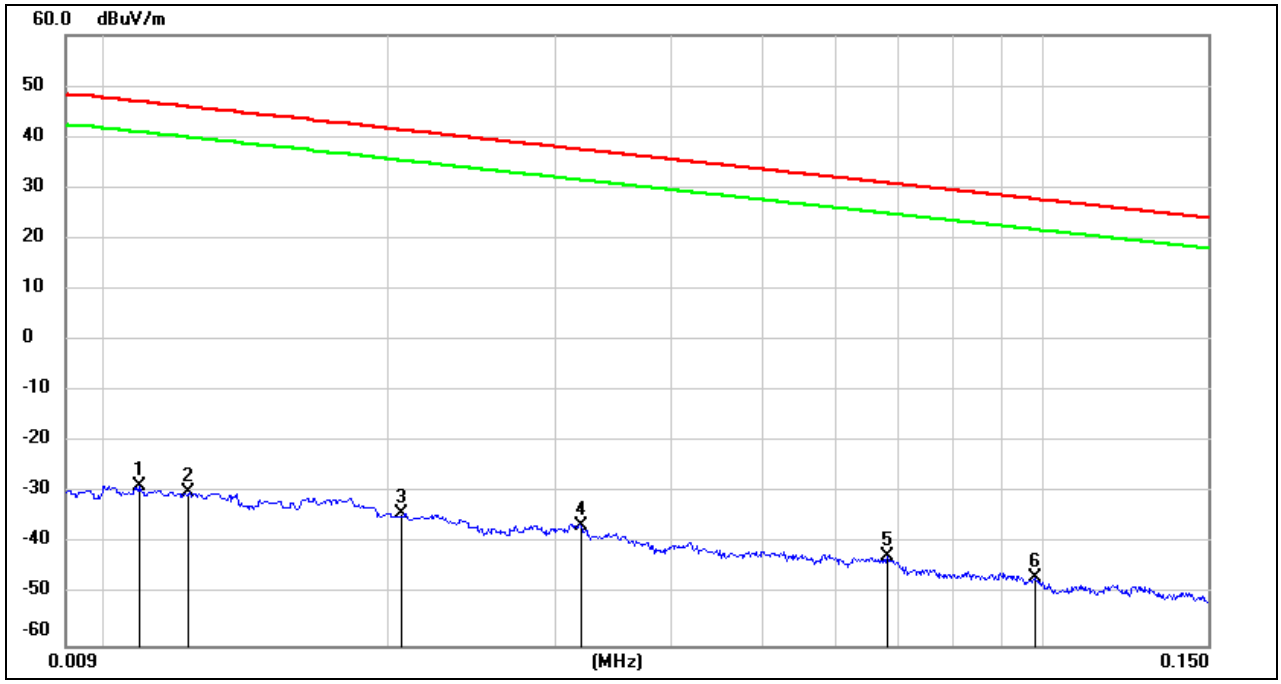
Note: All the modes and antennas had been tested, but only the worst data was recorded in the report.

8.7. SPURIOUS EMISSIONS BELOW 30 MHz

8.7.1. 802.11ac VHT20 MIMO MODE

SPURIOUS EMISSIONS (UNII-3 BAND LOW CHANNEL, LOOP ANTENNA FACE ON TO THE EUT, WORST-CASE CONFIGURATION)

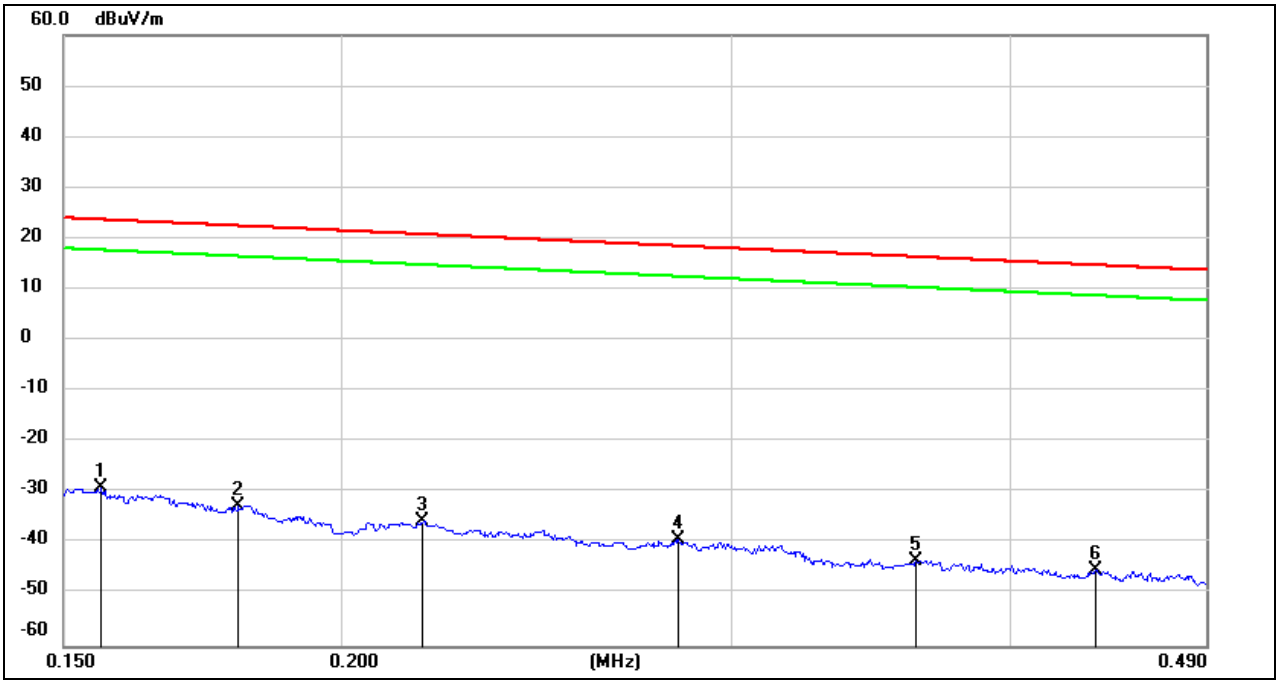
9 kHz~ 150 kHz



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	FCC Result (dBuV/m)	FCC Limit (dBuV/m)	Margin (dB)	Remark
1	0.0108	72.78	-101.39	-28.61	46.93	-75.54	peak
2	0.0122	71.50	-101.39	-29.89	45.87	-75.76	peak
3	0.0206	67.42	-101.35	-33.93	41.32	-75.25	peak
4	0.0320	64.84	-101.40	-36.56	37.5	-74.06	peak
5	0.0680	59.04	-101.56	-42.52	30.95	-73.47	peak
6	0.0981	55.27	-101.78	-46.51	27.77	-74.28	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.

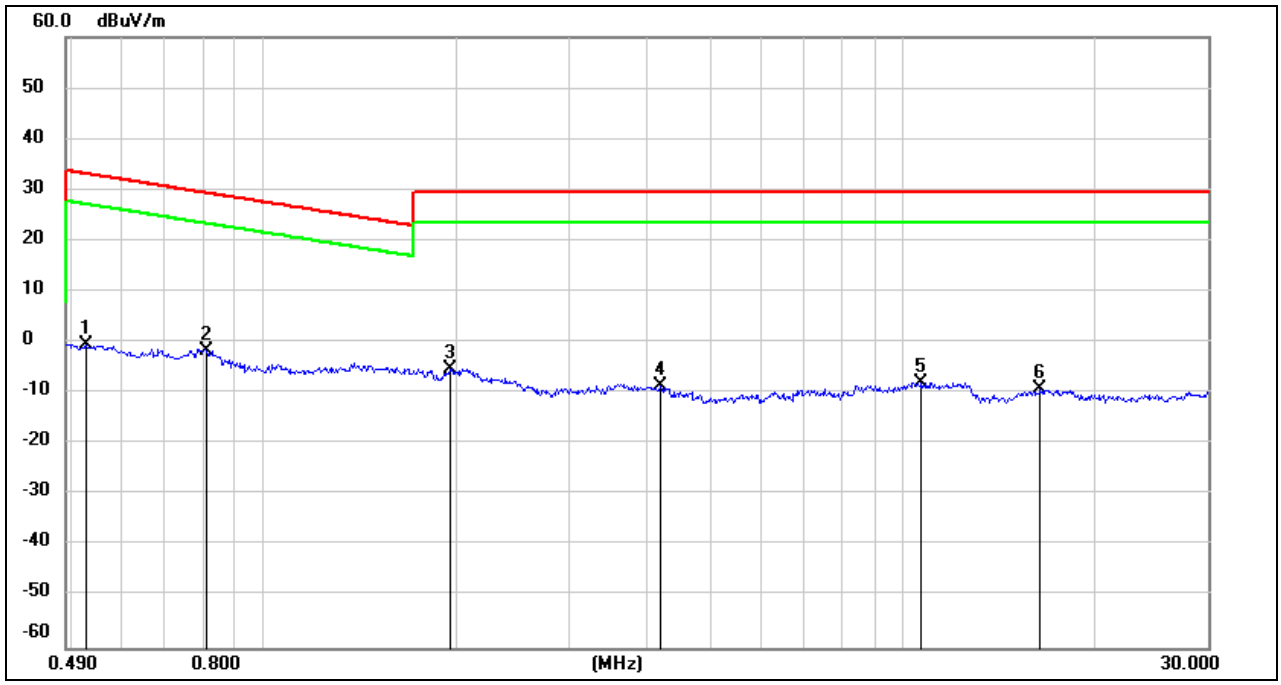
150 kHz ~ 490 kHz



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	FCC Result (dBuV/m)	FCC Limit (dBuV/m)	Margin (dB)	Remark
1	0.1559	72.65	-101.65	-29	23.74	-52.74	peak
2	0.1800	69.15	-101.68	-32.53	22.5	-55.03	peak
3	0.2177	66.12	-101.75	-35.63	20.84	-56.47	peak
4	0.2836	62.71	-101.83	-39.12	18.55	-57.67	peak
5	0.3628	58.60	-101.93	-43.33	16.41	-59.74	peak
6	0.4369	56.85	-102.00	-45.15	14.79	-59.94	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	0.5272	61.54	-62.07	-0.53	33.16	-33.69	peak
2	0.8145	60.52	-62.16	-1.64	29.38	-31.02	peak
3	1.9516	56.61	-61.84	-5.23	29.54	-34.77	peak
4	4.1801	52.82	-61.35	-8.53	29.54	-38.07	peak
5	10.7004	52.86	-60.83	-7.97	29.54	-37.51	peak
6	16.3959	51.67	-60.96	-9.29	29.54	-38.83	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 and antennas had been tested, but only the worst data was recorded in the report.

9. AC POWER LINE CONDUCTED EMISSIONS

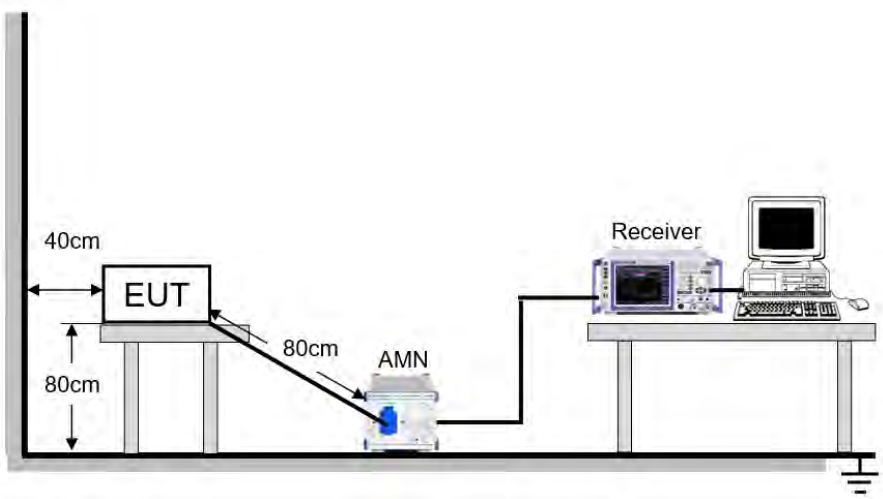
LIMITS

Please refer to CFR 47 FCC §15.207 (a)

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.

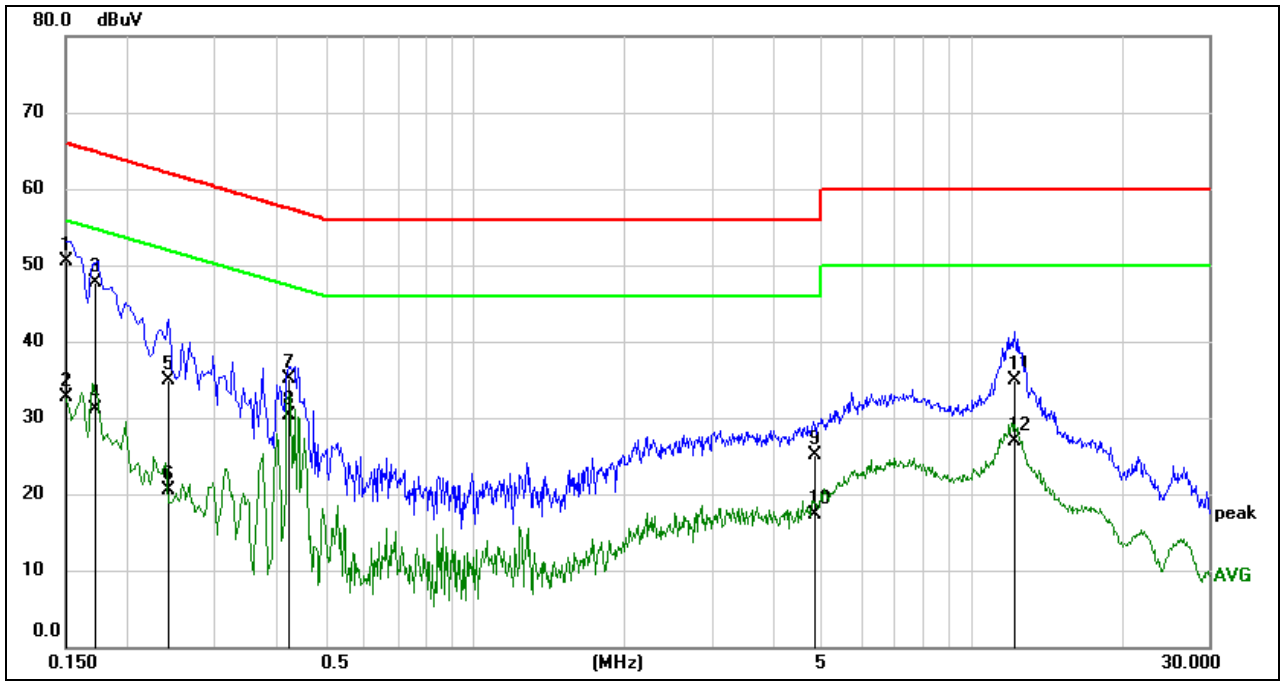
TEST ENVIRONMENT

Temperature	24.6 °C	Relative Humidity	65.1 %
Atmosphere Pressure	101 kPa	Test Voltage	AC 120 V,60Hz

RESULTS

9.1. 802.11ac VHT20 MODE

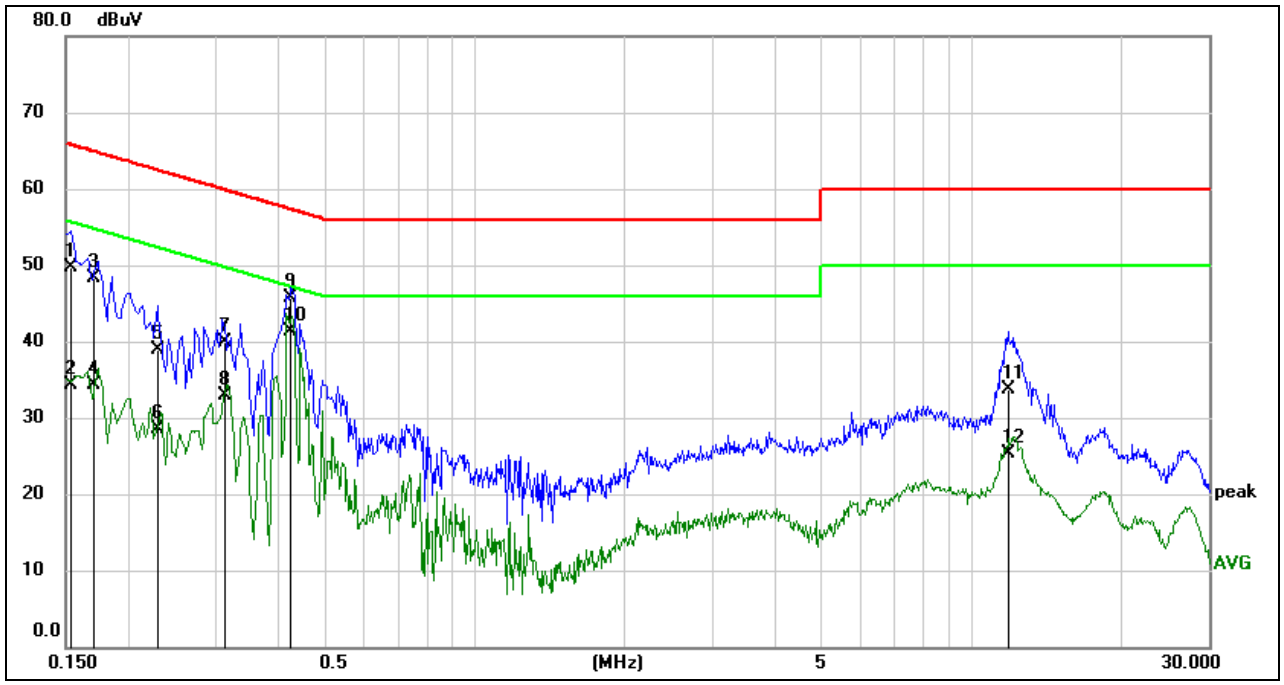
LINE N RESULTS (UNII-3 BAND LOW CHANNEL, WORST-CASE CONFIGURATION)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1507	40.94	9.59	50.53	65.96	-15.43	QP
2	0.1507	23.10	9.59	32.69	55.96	-23.27	AVG
3	0.1719	38.18	9.59	47.77	64.87	-17.10	QP
4	0.1719	21.46	9.59	31.05	54.87	-23.82	AVG
5	0.2418	25.23	9.59	34.82	62.03	-27.21	QP
6	0.2418	10.85	9.59	20.44	52.03	-31.59	AVG
7	0.4224	25.49	9.60	35.09	57.40	-22.31	QP
8	0.4224	20.78	9.60	30.38	47.40	-17.02	AVG
9	4.8463	15.46	9.61	25.07	56.00	-30.93	QP
10	4.8463	7.72	9.61	17.33	46.00	-28.67	AVG
11	12.1985	25.17	9.66	34.83	60.00	-25.17	QP
12	12.1985	17.28	9.66	26.94	50.00	-23.06	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 (UNII-3 BAND LOW CHANNEL, WORST-CASE CONFIGURATION)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1539	40.04	9.59	49.63	65.79	-16.16	QP
2	0.1539	24.78	9.59	34.37	55.79	-21.42	AVG
3	0.1707	38.72	9.59	48.31	64.93	-16.62	QP
4	0.1707	24.70	9.59	34.29	54.93	-20.64	AVG
5	0.2296	29.29	9.59	38.88	62.46	-23.58	QP
6	0.2296	18.86	9.59	28.45	52.46	-24.01	AVG
7	0.3143	30.22	9.59	39.81	59.86	-20.05	QP
8	0.3143	23.33	9.59	32.92	49.86	-16.94	AVG
9	0.4259	36.14	9.60	45.74	57.33	-11.59	QP
10	0.4259	31.68	9.60	41.28	47.33	-6.05	AVG
11	11.8938	24.01	9.65	33.66	60.00	-26.34	QP
12	11.8938	15.64	9.65	25.29	50.00	-24.71	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. FREQUENCY STABILITY

LIMITS

The frequency of the carrier signal shall be maintained within band of operation.

TEST PROCEDURE

1. The EUT was placed inside an environmental chamber as the temperature in the chamber was varied between 0 °C ~ 40 °C (declared by customer).

2. The temperature was incremented by 10 °C intervals and the unit allowed to stabilize at each temperature before each measurement. The center frequency of the transmitting channel was evaluated at each temperature and the frequency deviation from the channel's center frequency was recorded.

3. The primary supply voltage is varied from 85 % to 115 % of the nominal value for non hand-carried battery and AC powered equipment. For hand-carried, battery-powered equipment, primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacturer.

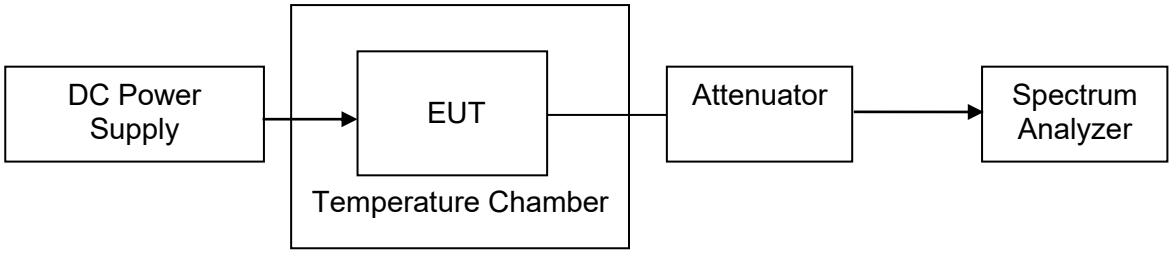
Connect the EUT to the spectrum analyser and use the following settings:

Center Frequency	The center frequency of the channel under test
Detector	Peak
RBW	10 kHz
VBW	≥3 × RBW
Span	Encompass the entire emissions bandwidth (EBW) of the signal
Trace	Max hold
Sweep time	Auto

4. While maintaining a constant temperature inside the environmental chamber, turn the EUT on and record the operating frequency at startup, and at 2 minutes, 5minutes, and 10 minutes after the EUT is energized.

5. Allow the trace to stabilize, find the peak value of the power envelope and record the frequency, then calculated the frequency drift.

TEST SETUP



TEST ENVIRONMENT

	Normal Test Conditions	Extreme Test Conditions
Temperature	NT(Normal Temperature): 23.5°C	LT(Low Temperature): 0°C
		HT(High Temperature): 40°C
Supply Voltage	NV(Normal Voltage): AC 120 V/60 Hz	LT(Low Voltage): AC 102 V/60 Hz
		HT(High Voltage): AC 136 V/60 Hz

RESULTS

Frequency Error vs. Voltage									
802.11a:5200MHz									
Temp.	Volt.	0 Minute		2 Minute		5 Minute		10 Minute	
		Freq.Error (MHz)	Tolerance (ppm)	Freq.Error (MHz)	Tolerance (ppm)	Freq.Error (MHz)	Tolerance (ppm)	Freq.Error (MHz)	Tolerance (ppm)
TN	VL	5199.9970	-0.59	5199.9773	-4.36	5199.9783	-4.18	5199.9923	-1.48
TN	VN	5199.9917	-1.60	5200.0002	0.03	5199.9903	-1.86	5200.0190	3.65
TN	VH	5199.9812	-3.61	5199.9865	-2.60	5199.9771	-4.41	5199.9816	-3.54
Frequency Error vs. Temperature									
802.11a:5200MHz									
Temp.	Volt.	0 Minute		2 Minute		5 Minute		10 Minute	
		Freq.Error (MHz)	Tolerance (ppm)	Freq.Error (MHz)	Tolerance (ppm)	Freq.Error (MHz)	Tolerance (ppm)	Freq.Error (MHz)	Tolerance (ppm)
40	VN	5199.9888	-2.15	5199.9791	-4.02	5199.9752	-4.76	5199.9857	-2.75
30	VN	5200.0162	3.12	5199.9899	-1.94	5200.0139	2.67	5199.9974	-0.50
20	VN	5200.0102	1.97	5199.9882	-2.26	5200.0247	4.75	5200.0123	2.37
10	VN	5199.9866	-2.57	5200.0060	1.16	5199.9956	-0.85	5199.9757	-4.67
0	VN	5200.0117	2.24	5200.0038	0.74	5199.9910	-1.74	5199.9914	-1.66

Frequency Error vs. Voltage									
802.11a:5825MHz									
Temp.	Volt.	0 Minute		2 Minute		5 Minute		10 Minute	
		Freq.Error (MHz)	Tolerance (ppm)	Freq.Error (MHz)	Tolerance (ppm)	Freq.Error (MHz)	Tolerance (ppm)	Freq.Error (MHz)	Tolerance (ppm)
TN	VL	5824.9824	-3.02	5824.9775	-3.87	5825.0065	1.12	5825.0062	1.07
TN	VN	5824.9804	-3.37	5824.9971	-0.50	5824.9975	-0.42	5825.0144	2.47
TN	VH	5824.9919	-1.40	5825.0249	4.27	5824.9753	-4.25	5824.9890	-1.89
Frequency Error vs. Temperature									
802.11a:5825MHz									
Temp.	Volt.	0 Minute		2 Minute		5 Minute		10 Minute	

		Freq.Error (MHz)	Tolerance (ppm)	Freq.Error (MHz)	Tolerance (ppm)	Freq.Error (MHz)	Tolerance (ppm)	Freq.Error (MHz)	Tolerance (ppm)
40	VN	5824.9824	-3.02	5824.9775	-3.87	5825.0065	1.12	5825.0062	1.07
30	VN	5824.9804	-3.37	5824.9971	-0.50	5824.9975	-0.42	5825.0144	2.47
20	VN	5824.9919	-1.40	5825.0249	4.27	5824.9753	-4.25	5824.9890	-1.89
10	VN	5824.9824	-3.02	5824.9775	-3.87	5825.0065	1.12	5825.0062	1.07
0	VN	5824.9804	-3.37	5824.9971	-0.50	5824.9975	-0.42	5825.0144	2.47

Note: All antennas and test modes have been tested, only the worst data record in the report.

11. 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 §15.407(a)
If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

RESULTS

Complies

11.1. Appendix A1: Emission Bandwidth

11.1.1. Test Result

Test Mode	Antenna	Channel	26db EBW [MHz]	FL[MHz]	FH[MHz]	Verdict
11A	Ant1	5180	18.160	5170.960	5189.120	PASS
	Ant2	5180	18.160	5171.000	5189.160	PASS
	Ant1	5200	18.240	5190.960	5209.200	PASS
	Ant2	5200	18.600	5190.720	5209.320	PASS
	Ant1	5240	18.320	5230.920	5249.240	PASS
	Ant2	5240	18.240	5230.920	5249.160	PASS
	Ant1	5745	18.160	5736.040	5754.200	PASS
	Ant2	5745	18.400	5735.720	5754.120	PASS
	Ant1	5785	18.160	5775.960	5794.120	PASS
	Ant2	5785	18.320	5775.960	5794.280	PASS
	Ant1	5825	18.080	5815.920	5834.000	PASS
	Ant2	5825	18.080	5815.880	5833.960	PASS
11N20MIMO	Ant1	5180	19.000	5170.600	5189.600	PASS
	Ant2	5180	19.200	5170.560	5189.760	PASS
	Ant1	5200	19.280	5190.400	5209.680	PASS
	Ant2	5200	19.360	5190.360	5209.720	PASS
	Ant1	5240	19.440	5230.320	5249.760	PASS
	Ant2	5240	19.240	5230.480	5249.720	PASS
	Ant1	5745	19.320	5735.400	5754.720	PASS
	Ant2	5745	19.200	5735.440	5754.640	PASS
	Ant1	5785	19.400	5775.440	5794.840	PASS
	Ant2	5785	19.240	5775.400	5794.640	PASS
	Ant1	5825	19.320	5815.520	5834.840	PASS
	Ant2	5825	19.240	5815.480	5834.720	PASS
11N40MIMO	Ant1	5190	40.880	5169.200	5210.080	PASS
	Ant2	5190	40.320	5169.840	5210.160	PASS
	Ant1	5230	40.000	5210.320	5250.320	PASS
	Ant2	5230	40.320	5209.920	5250.240	PASS
	Ant1	5755	39.120	5735.720	5774.840	PASS
	Ant2	5755	40.160	5735.160	5775.320	PASS
	Ant1	5795	39.680	5775.080	5814.760	PASS
	Ant2	5795	40.240	5774.600	5814.840	PASS
11AC20MIMO	Ant1	5180	19.480	5170.480	5189.960	PASS
	Ant2	5180	19.440	5170.320	5189.760	PASS
	Ant1	5200	19.440	5190.360	5209.800	PASS
	Ant2	5200	19.080	5190.520	5209.600	PASS
	Ant1	5240	19.320	5230.320	5249.640	PASS
	Ant2	5240	19.200	5230.320	5249.520	PASS
	Ant1	5745	19.000	5735.520	5754.520	PASS
	Ant2	5745	19.240	5735.440	5754.680	PASS
	Ant1	5785	19.200	5775.400	5794.600	PASS
	Ant2	5785	19.320	5775.320	5794.640	PASS
	Ant1	5825	19.160	5815.480	5834.640	PASS
	Ant2	5825	19.120	5815.560	5834.680	PASS
11AC40MIMO	Ant1	5190	40.480	5169.680	5210.160	PASS
	Ant2	5190	40.880	5169.760	5210.640	PASS
	Ant1	5230	40.240	5209.920	5250.160	PASS
	Ant2	5230	39.680	5210.400	5250.080	PASS
	Ant1	5755	40.400	5735.160	5775.560	PASS
	Ant2	5755	40.080	5735.000	5775.080	PASS
	Ant1	5795	40.240	5775.000	5815.240	PASS
	Ant2	5795	40.240	5775.320	5815.560	PASS
11AC80MIMO	Ant1	5210	80.000	5170.160	5250.160	PASS
	Ant2	5210	79.520	5170.160	5249.680	PASS

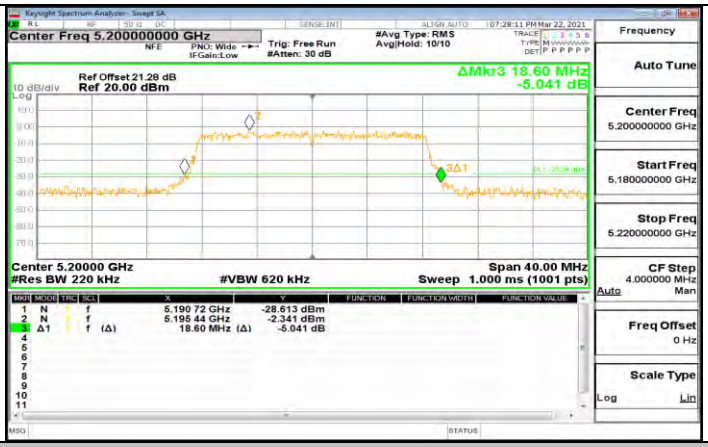
	Ant1	5775	80.000	5735.000	5815.000	PASS
	Ant2	5775	80.160	5734.680	5814.840	PASS

11.1.2. Test Graphs

11A_Ant1_5180

11A_Ant2_5180

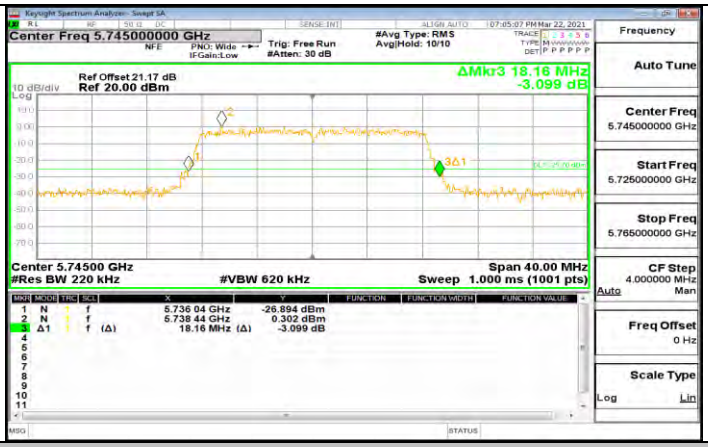
11A_Ant1_5200



11A_Ant2_5200

11A_Ant1_5240

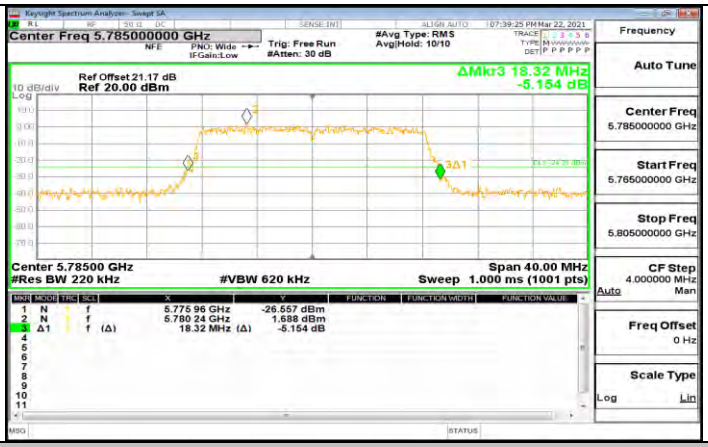
11A_Ant2_5240



11A_Ant1_5745

11A_Ant2_5745

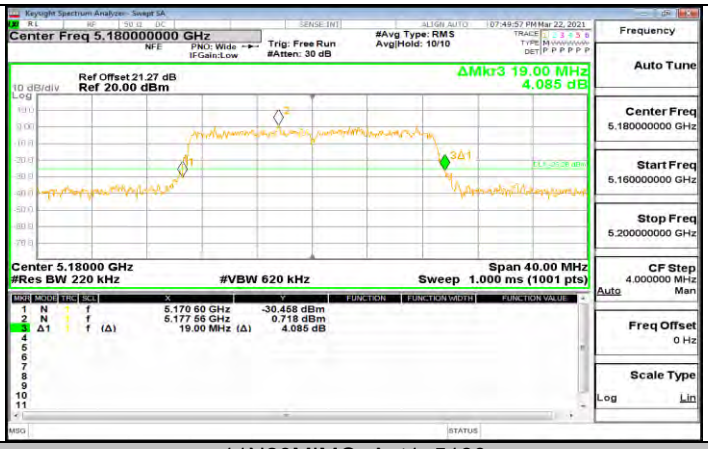
11A_Ant1_5785



11A_Ant2_5785

11A_Ant1_5825

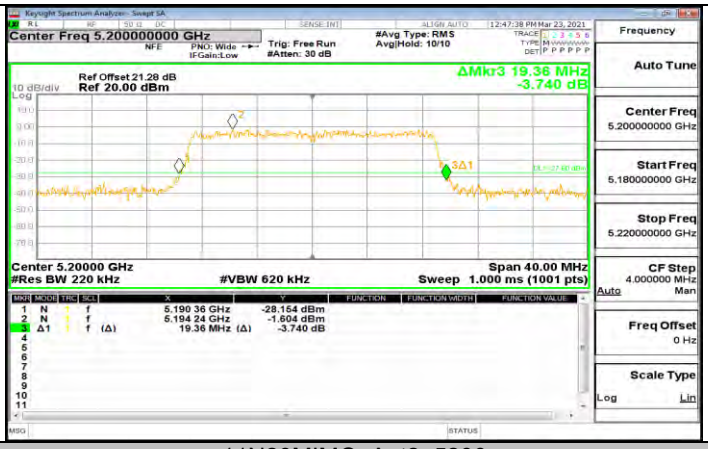
11A_Ant2_5825



11N20MIMO_Ant1_5180

11N20MIMO_Ant2_5180

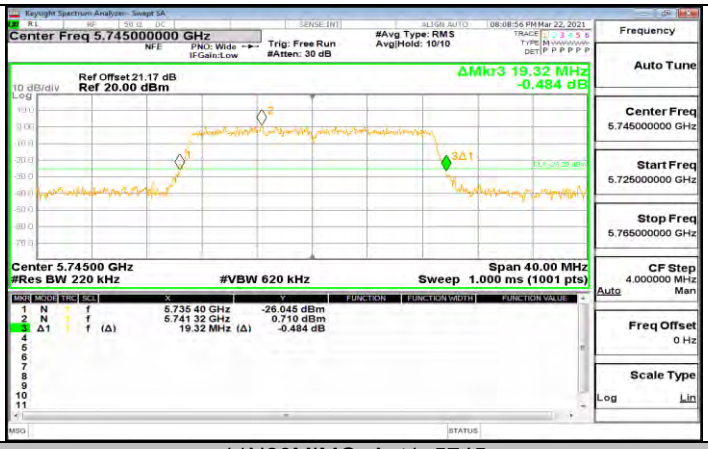
11N20MIMO_Ant1_5200



11N20MIMO_Ant2_5200

11N20MIMO_Ant1_5240

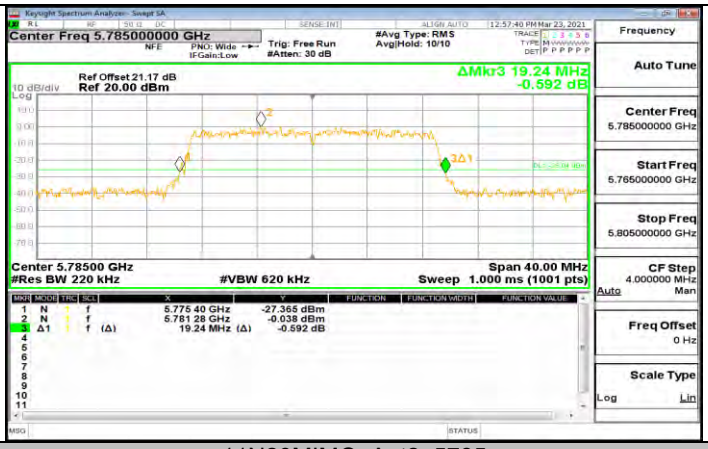
11N20MIMO_Ant2_5240



11N20MIMO_Ant1_5745

11N20MIMO_Ant2_5745

11N20MIMO_Ant1_5785

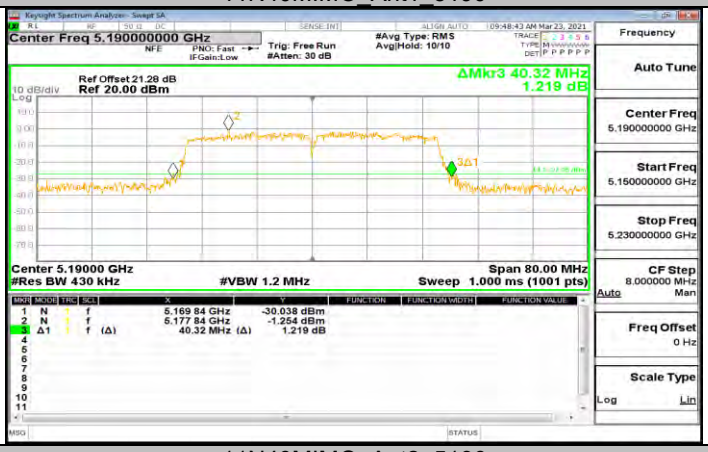


11N20MIMO_Ant2_5785

11N20MIMO_Ant1_5825

11N20MIMO_Ant2_5825

11N40MIMO_Ant1_5190



11N40MIMO_Ant2_5190

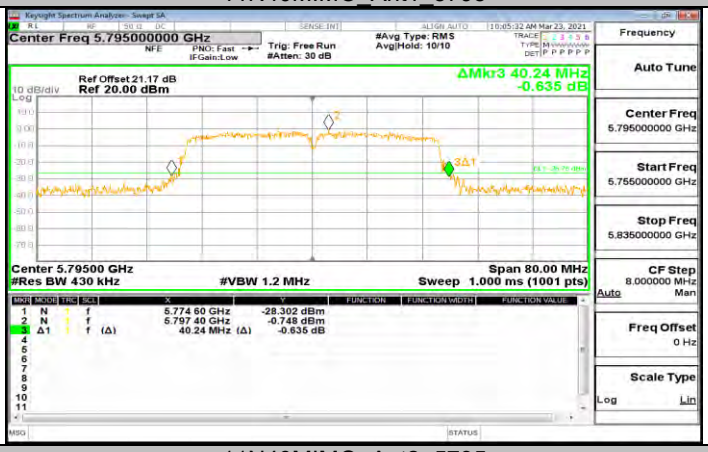
11N40MIMO_Ant1_5230

11N40MIMO_Ant2_5230

11N40MIMO_Ant1_5755

11N40MIMO_Ant2_5755

11N40MIMO_Ant1_5795



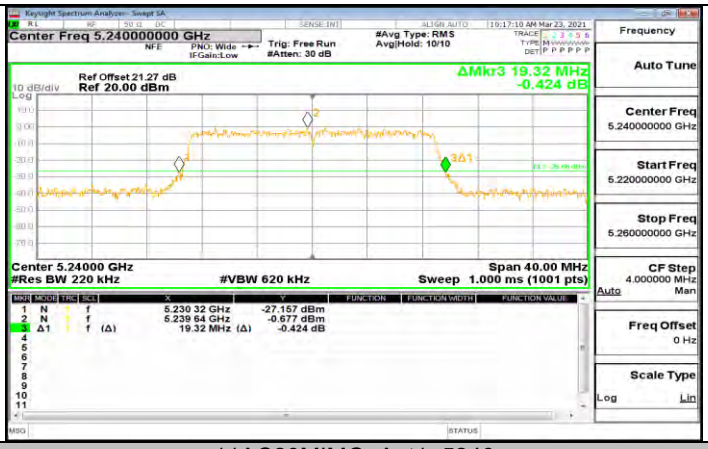
11N40MIMO_Ant2_5795

11AC20MIMO_Ant1_5180

11AC20MIMO_Ant2_5180

11AC20MIMO_Ant1_5200

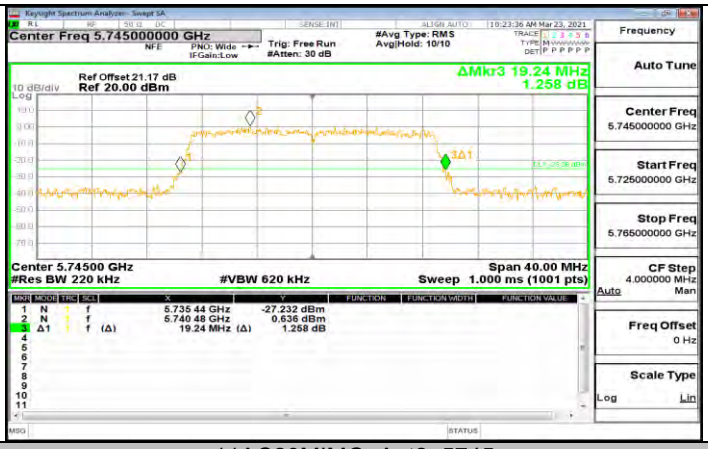
11AC20MIMO_Ant2_5200



11AC20MIMO_Ant1_5240

11AC20MIMO_Ant2_5240

11AC20MIMO_Ant1_5745



11AC20MIMO_Ant2_5745

11AC20MIMO_Ant1_5785

11AC20MIMO_Ant2_5785