CFR 47 FCC PART 15 SUBPART E
ISED RSS-247 ISSUE 2

CERTIFICATION TEST REPORT

For

WiFi Module

MODEL NUMBER: SI07

FCC ID: 2AFG6-SI07

IC: 22166-SI07

REPORT NUMBER: 4789708215-9

ISSUE DATE: November 30, 2020

Prepared for

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Prepared by

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Revision History

Rev.	Issue Date	Revisions	Revised By
V0	11/30/2020	Initial Issue	

Summary of Test Results			
Clause	Test Items	FCC/IC Rules	Test Results
1	6dB/26dB Bandwidth	FCC 15.407 (a)&(e) RSS-247 Clause 6.2	PASS
2	99% Occupied Bandwidth	RSS-Gen Clause 6.6	PASS
3	Conducted Output Power	FCC 15.407 (a) RSS-247 Clause 6.2	PASS
4	Power Spectral Density	FCC 15.407 (a) RSS-247 Clause 6.2	PASS
5	Radiated Bandedge and Spurious Emission	FCC 15.407 (b) FCC 15.209 FCC 15.205 RSS-247 Clause 6.2 RSS-GEN Clause 8.9	PASS
6	Conducted Emission Test for AC Power Port	FCC 15.207 RSS-GEN Clause 8.8	PASS
7	Frequency Stability	FCC 15.407 (g)	PASS
8	Antenna Requirement	FCC 15.203 RSS-GEN Clause 6.8	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 >< ISED RSS-247 > 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:	WiFi Module
Model:	SI07
Sample Received Date:	October 29, 2020
Sample Status:	Normal
Sample ID:	3437335
Date of Tested:	October 29, 2020~ November 28, 2020

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
CFR 47 FCC PART 15 SUBPART E	PASS
ISED RSS-247 Issue 2	PASS
ISED RSS-GEN Issue 5	PASS

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2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.10-2013, CFR 47 FCC Part 2, CFR 47 FCC Part 15, KDB 789033 D02 v02r01, RSS-GEN Issue 5, RSS-247 Issue 2, KDB414788 D01 Radiated Test Site v01, KDB 662911 D01 Multiple Transmitter Output v02r01, KDB 905462 D02 UNII DFS Compliance Procedures New Rules v02, KDB 905462 D03 UNII clients without radar detection New Rules v01r02 and KDB 905462 D04 Operational Modes for DFS Testing New Rules v01.

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. **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 40 GHz)	5.78 dB (1 GHz-18 GHz)
	5.23dB (18 GHz-26 GHz)
	5.64 dB (26 GHz-40 GHz)
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95 % confidence level using a coverage factor of k=2.	

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

EUT Name	WiFi Module		
Model	SI07		
Radio Technology	WLAN (IEEE 802.11a/n HT20/n HT40/ac VHT20/VHT 40/VHT 80)		
Operation frequency	UNII-1: 5150 ~ 5250 MHz UNII-3: 5725 ~ 5850 MHz		
Modulation	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)		
Power Supply	DC State	Rate Input:	DC 5 V
Wireless Module	SKI.WB7668CU.1		

5.2. MAXIMUM OUTPUT POWER

UNII-1 BAND

IEEE Std. 802.11	Frequency (MHz)	Maximum Average Conducted Power (dBm)	Max Average EIRP (dBm)
a	5150 ~ 5250	14.03	18.39
n HT20		13.24	20.04
n HT40		15.57	22.37
ac VHT20		12.94	19.74
ac VHT40		15.39	22.19
ac VHT80		15.18	21.98

UNII-3 BAND

IEEE Std. 802.11	Frequency (MHz)	Max Power (dBm)
a	5725 ~ 5850	14.83
n HT20		16.59
n HT40		17.10
ac VHT20		16.60
ac VHT40		16.98
ac VHT80		15.01

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	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	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	4.36
2	5150-5850	FPC antenna	3.17

Note: Directional gain= 10 log $[(10^{G1/20} + 10^{G2/20})^2/N_{ANT}]$ = 6.8 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	☒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: 1. WLAN 2.4G & WLAN 5G can't transmit simultaneously. (declared by client)		

5.6. THE WORSE CASE POWER SETTING PARAMETER

The Worse Case Power Setting Parameter			
Test Software	QATool_Dbg		
Frequency Band	mode	channel	setting
UNII-1	802.11a	5180	1B
		5200	1B
		5240	1B
	802.11n (20M)	5180	15
		5200	15
		5240	14
	802.11ac (20M)	5180	15
		5200	15
		5240	14
	802.11n (40M)	5190	19
		5230	18
	802.11ac (40M)	5190	19
		5230	18
	802.11ac (80M)	5210	1B
UNII-3	802.11a	5745	1B
		5785	1B
		5825	1D
	802.11n (20M)	5745	1B
		5785	1B
		5825	1D
	802.11ac (20M)	5745	1B
		5785	1B
		5825	1D
	802.11n (40M)	5755	1B
		5795	1B
	802.11ac (40M)	5755	1B
		5795	1B
	802.11ac (80M)	5775	1B

5.7. THE WORSE CASE CONFIGURATIONS

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

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

Test channels referring to section 5.4.

Maximum power setting referring to section 5.6.

Worst case Data Rates declared by the customer:

IEEE 802.11a / SISO – BPSK / 6 Mbps
IEEE 802.11n HT20 / MIMO – BPSK / MCS0
IEEE 802.11n HT40 / MIMO – BPSK / MCS0
IEEE 802.11ac VHT20 / MIMO – BPSK / MCS0
IEEE 802.11ac VHT40 / MIMO – BPSK / MCS0
IEEE 802.11ac VHT80 / MIMO – BPSK / MCS0

Since 802.11ac VHT20/VHT40 mode are different from 802.11n HT20/HT40 only in control messages, so all the tests (except conducted output power and power spectral density) were performed on the worst case (802.11n HT20/802.11n HT40) mode between these 4 modes and only the worst data was recorded in this report.

Note: The EUT have two wireless modules, one is called module SKI.WB7668CU.1 and the other one called module SKI.WB8822CU.1.

Simultaneously transmission condition.

Condition	Technology				Support (YES/NO)
1 (Module SKI.WB7668CU.1)	WLAN(2.4G)		WLAN(5G)		NO
2 (Module SKI.WB8822CU.1)	BT	BLE	WLAN(2.4G)	WLAN(5G)	NO

Co-Location condition.

Condition	Technology (Module SKI.WB7668CU.1)	Technology (Module SKI.WB8822CU.1)	Support (YES/NO)
1	WLAN(2.4G)	BT	YES
2	WLAN(2.4G)	BLE	YES
3	WLAN(2.4G)	WLAN (2.4G)	YES
4	WLAN(2.4G)	WLAN (5G)	YES
5	WLAN (5G)	BT	YES
6	WLAN (5G)	BLE	YES
7	WLAN (5G)	WLAN (2.4G)	YES
8	WLAN (5G)	WLAN (5G)	YES

Note: For the Co-Location test result please refer to test report 4789708215-10.

5.8. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Item	Equipment	Brand Name	Model Name	P/N
1	PC	Dell	Vostro 3902	8KNDDB2

I/O CABLES

Cable No	Port	Connector Type	Cable Type	Cable Length(m)	Remarks
1	Ribbon cable	/	/	1.0	/

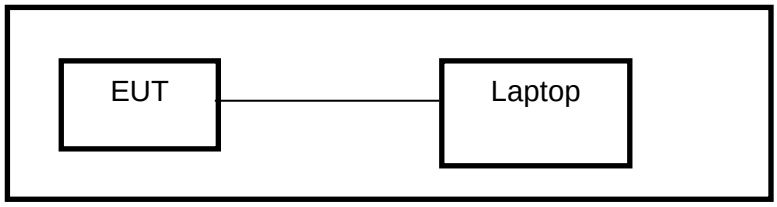
ACCESSORIES

Item	Accessory	Brand Name	Model Name	Description
/	/	/	/	/

TEST SETUP

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

SETUP DIAGRAM FOR TESTS



6. MEASURING INSTRUMENT AND SOFTWARE USED

Conducted Emissions						
Instrument						
Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
☑	EMI Test Receiver	R&S	ESR3	101961	Dec.05,2019	Dec.05,2020
☑	Two-Line V-Network	R&S	ENV216	101983	Dec.05,2019	Dec.05,2020
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	Dec.06,2019	Dec.06,2020
☑	Hybrid Log Periodic Antenna	TDK	HLP-3003C	130960	Sep.17, 2018	Sep.17, 2021
☑	Preamplifier	HP	8447D	2944A09099	Dec.05,2019	Dec.05,2020
☑	EMI Measurement Receiver	R&S	ESR26	101377	Dec.05,2019	Dec.05,2020
☑	Horn Antenna	TDK	HRN-0118	130939	Sep.17, 2018	Sep.17, 2021
☑	High Gain Horn Antenna	Schwarzbeck	BBHA-9170	691	Aug.11, 2018	Aug.11, 2021
☑	Preamplifier	TDK	PA-02-0118	TRS-305-00066	Dec.05,2019	Dec.05,2020
☑	Preamplifier	TDK	PA-02-2	TRS-307-00003	Dec.05,2019	Dec.05,2020
☑	Preamplifier	TDK	PA-02-3	TRS-308-00002	Dec.05,2019	Dec.05,2020
☑	Loop antenna	Schwarzbeck	1519B	00008	Jan.07, 2019	Jan.07, 2022
☑	Band Reject Filter	Wainwright	WRCJV12-5695-5725-5850-5880-40SS	4	Dec.05,2019	Dec.05,2020
☑	Band Reject Filter	Wainwright	WRCJV20-5120-5150-5350-5380-60SS	2	Dec.05,2019	Dec.05,2020
☑	High Pass Filter	Wainwright	WHKX10-5850-6500-1800-40SS	4	Dec.05,2019	Dec.05,2020
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	Dec.06,2019	Dec.06,2020
☑	Power sensor, Power Meter	R&S	OSP120	100921	Dec.06,2019	Dec.06,2020
☑	Temperature & Humidity Chamber	SANMOOD	SG-80-CC-2	2088	Dec.06,2019	Dec.06,2020
☑	DC power supply	Array	3662A	A1512015	Dec.05,2019	Dec.05,2020
☑	Power sensor, Power Meter	R&S	OSP120	100921	Mar.13,2020	Mar.13,2021
☑	Vector Signal Generator	R&S	SMBV100A	261637	Dec.06,2019	Dec.06,2020
☑	Signal Generator	R&S	SMB100A	178553	Dec.06,2019	Dec.06,2020
☑	Signal Analyzer	R&S	FSV40	A1512015	Dec.06,2019	Dec.06,2020
☑	Attenuator	Weinschel	3M-10	T9692	Dec.06,2019	Dec.06,2020
Software				
Used	Description	Manufacturer	Name	Version
☑	Test Software for RF Conducted Test	Tonscend	JS1120-3 RF Test System	2.6.77.0518
☑	Test Software for DFS Test	R&S	EMC 32	10.60.10

7. ANTENNA PORT TEST RESULTS

7.1. ON TIME AND DUTY CYCLE

LIMITS

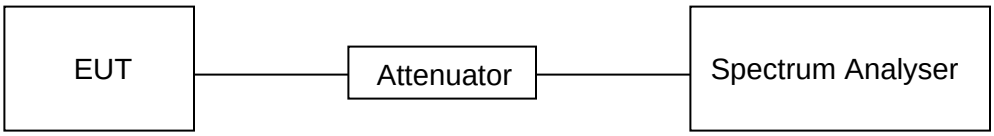
None; for reporting purposes only.

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	24.1 °C	Relative Humidity	48.1 %
Atmosphere Pressure	101 kPa	Test Voltage	DC 5 V

RESULTS

Please refer to appendix D.

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

LIMITS

CFR 47 FCC Part15, Subpart E ISED RSS-247 ISSUE 2		
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

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: > 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

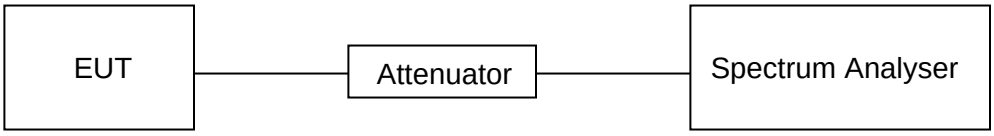
FL: 5711.76 MHz

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	24.1 °C	Relative Humidity	48.1 %
Atmosphere Pressure	101 kPa	Test Voltage	DC 5 V

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

ISED RSS-247 ISSUE 2		
Test Item	Limit	Frequency Range (MHz)
Conducted Output Power or e.i.r.p.	The maximum e.i.r.p. shall not exceed 200 mW (23 dBm) or 10 + 10 $\log_{10}$B, dBm, whichever power is less. B is the 99 % emission bandwidth in megahertz.	5150 ~ 5250
	a. The maximum conducted output power shall not exceed 250 mW (24 dBm) or 11 + 10 $\log_{10}$B dBm, whichever is less. b. The maximum e.i.r.p. shall not exceed 1.0 W (30 dBm) or 17 + 10 $\log_{10}$B dBm, whichever is less. B is the 99 % emission bandwidth in megahertz. Note that devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.	5250 ~ 5350 5470 ~ 5600 5650 ~ 5725
	Shall not exceed 1 Watt (30 dBm). The e.i.r.p. shall not exceed 4 W	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.

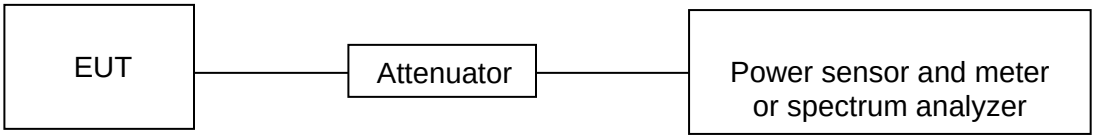
Method SA-1 (trace averaging with the EUT transmitting at full power throughout each sweep):
(i) Set span to encompass the entire emission bandwidth (EBW) (or, alternatively, the entire 99% occupied bandwidth) of the signal.
(ii) Set RBW = 1 MHz.
(iii) Set VBW ≥ 3 MHz.
(iv) Number of points in sweep ≥ 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	24.1 °C	Relative Humidity	48.1 %
Atmosphere Pressure	101 kPa	Test Voltage	DC 5 V

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

ISED RSS-247 ISSUE 2		
Test Item	Limit	Frequency Range (MHz)
Power Spectral Density	The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.	5150 ~ 5250
	The power spectral density shall not exceed 11 dBm inany 1.0 MHz band.	5250 ~ 5350 5470 ~ 5600 5650 ~ 5725
	30 dBm / 500 kHz	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-1, U-NII-2A and U-NII-2C band:

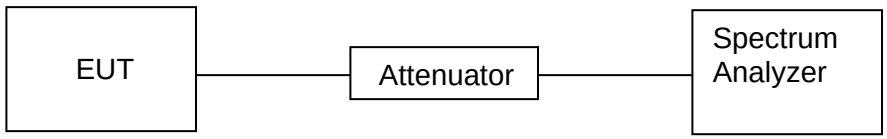
Center Frequency	The center frequency of the channel under test
Detector	RMS
RBW	1 MHz
VBW	≥3 × RBW
Span	Encompass the entire emissions bandwidth (EBW) of the signal
Trace	Max hold
Sweep time	Auto

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	23.2 °C	Relative Humidity	64.1 %
Atmosphere Pressure	101 kPa	Test Voltage	DC 5 V

RESULTS

Please refer to Appendix C.

8. RADIATED TEST RESULTS

LIMITS

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

Refer to ISED RSS-GEN Clause 8.9, Clause 8.10 and ISED RSS-247 6.2.

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

ISED General field strength limits at frequencies below 30 MHz

Table 6 – General field strength limits at frequencies below 30 MHz

Frequency	Magnetic field strength (H-Field) (µA/m)	Measurement distance (m)
9 - 490 kHz[Note 1]	6.37/F (F in kHz)	300
490 - 1705 kHz	63.7/F (F in kHz)	30
1.705 - 30 MHz	0.08	30

Note 1: The emission limits for the ranges 9-90 kHz and 110-490 kHz are based on measurements employing a linear average detector.

ISED Restricted bands refer to ISED RSS-GEN Clause 8.10

Table 7 – Restricted frequency bands[Note 1]		
MHz	MHz	GHz
0.090 - 0.110	149.9 - 150.05	9.0 - 9.2
0.495 - 0.505	156.52475 - 156.52525	9.3 - 9.5
2.1735 - 2.1905	156.7 - 156.9	10.6 - 12.7
3.020 - 3.026	162.0125 - 167.17	13.25 - 13.4
4.125 - 4.128	167.72 - 173.2	14.47 - 14.5
4.17725 - 4.17775	240 – 285	15.35 - 16.2
4.20725 - 4.20775	322 - 335.4	17.7 - 21.4
5.677 - 5.683	399.9 - 410	22.01 - 23.12
6.215 - 6.218	608 - 614	23.6 - 24.0
6.26775 - 6.26825	960 - 1427	31.2 - 31.8
6.31175 - 6.31225	1435 - 1626.5	36.43 - 36.5
8.291 - 8.294	1645.5 - 1646.5	Above 38.6
8.362 - 8.366	1660 - 1710	
8.37625 - 8.38675	1718.8 - 1722.2	
8.41425 - 8.41475	2200 - 2300	
12.29 - 12.293	2310 - 2390	
12.51975 - 12.52025	2483.5 - 2500	
12.57675 - 12.57725	2655 - 2900	
13.36 - 13.41	3260 – 3267	
16.42 - 16.423	3332 - 3339	
16.69475 - 16.69525	3345.8 - 3358	
16.80425 - 16.80475	3500 - 4400	
25.5 - 25.67	4500 - 5150	
37.5 - 38.25	5350 - 5460	
73 - 74.6	7250 - 7750	
74.8 - 75.2	8025 – 8500	
108 – 138		

Note 1: Certain frequency bands listed in table 7 and in bands above 38.6 GHz are designated for licence-exempt applications. These frequency bands and the requirements that apply to related devices are set out in the 200 and 300 series of RSSs.

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			

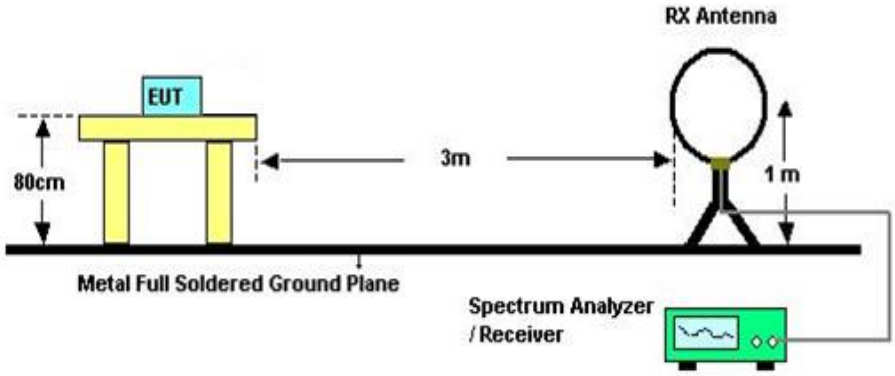
Note: [1]Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.
[2]Above 38.6c

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

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1GHz)		
Frequency Range (MHz)	EIRP Limit	Field Strength Limit (dBuV/m) at 3 m
5150~5250 MHz	PK: -27 (dBm/MHz)	PK:68.2(dBμV/m)
5250~5350 MHz		
5470~5725 MHz		
5725~5850 MHz	PK: -27 (dBm/MHz) *1 PK: 10 (dBm/MHz) *2 PK: 15.6 (dBm/MHz) *3 PK: 27 (dBm/MHz) *4	PK: 68.2(dBμV/m) *1 PK: 105.2 (dBμV/m) *2 PK: 110.8(dBμV/m) *3 PK: 122.2 (dBμV/m) *4
Note: *1 beyond 75 MHz or more above of the band edge. *2 below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above. *3 below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above. *4 from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.		

TEST SETUP AND PROCEDURE

Below 30 MHz



The setting of the spectrum analyser

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

1. The testing follows the guidelines in ANSI C63.10-2013 clause 11.11.

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.

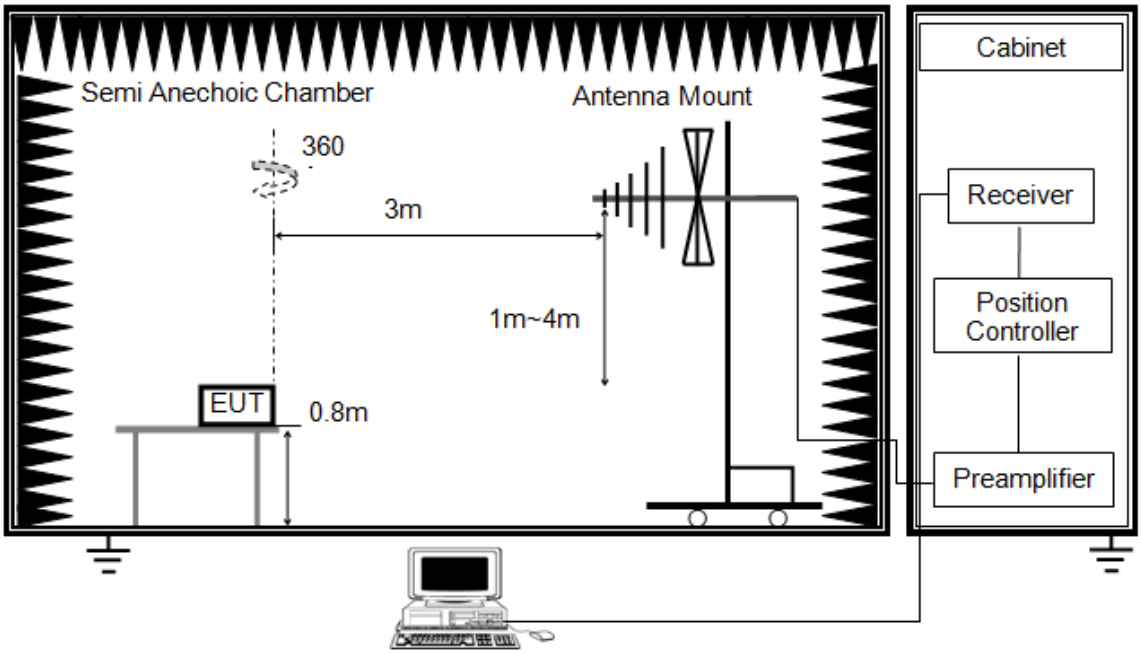
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a 1 m height antenna tower.

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 11.11.

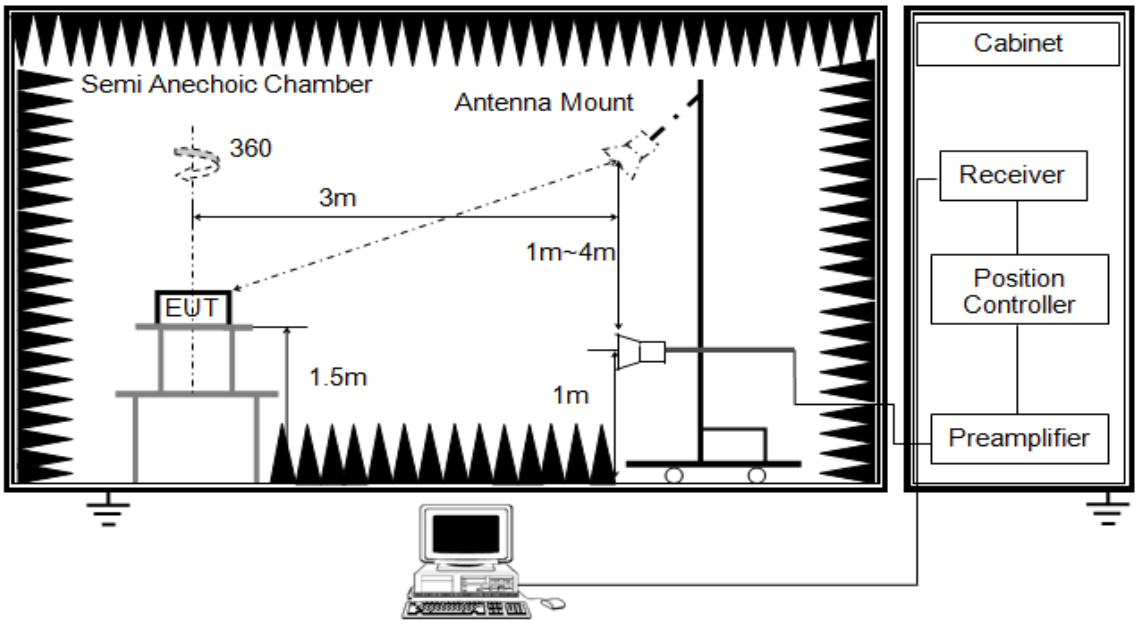
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations 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 (1.5 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

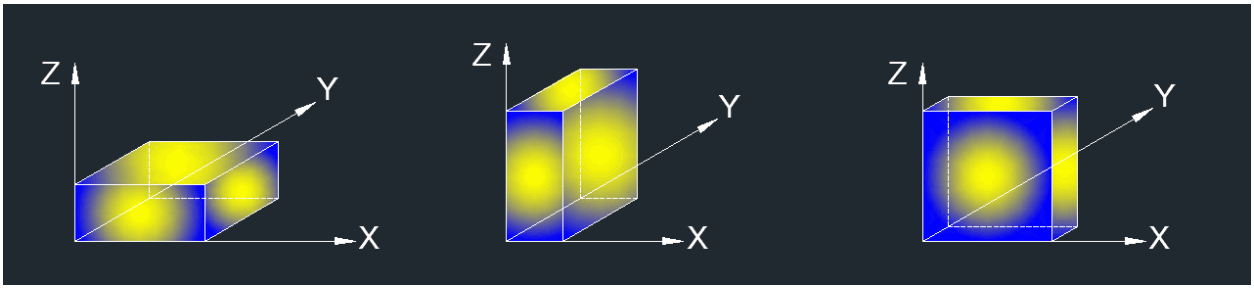
3. The EUT was placed on a turntable with 1.5 m above ground.

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

5. For measurement above 1 GHz, the emission measurement will be measured by the peak detector. This peak level, once corrected, must comply with the limit specified in Section 15.209.

6. For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 3 MHz for peak measurements and 1 MHz resolution bandwidth with 1/T video bandwidth with peak detector for average measurements. For the Duty Cycle please refer to clause 7.1.ON TIME AND DUTY CYCLE.

X axis, Y axis, Z axis positions:



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

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

TEST ENVIRONMENT

Temperature	24.9 °C	Relative Humidity	57 %
Atmosphere Pressure	101 kPa	Test Voltage	DC 5 V

RESULTS

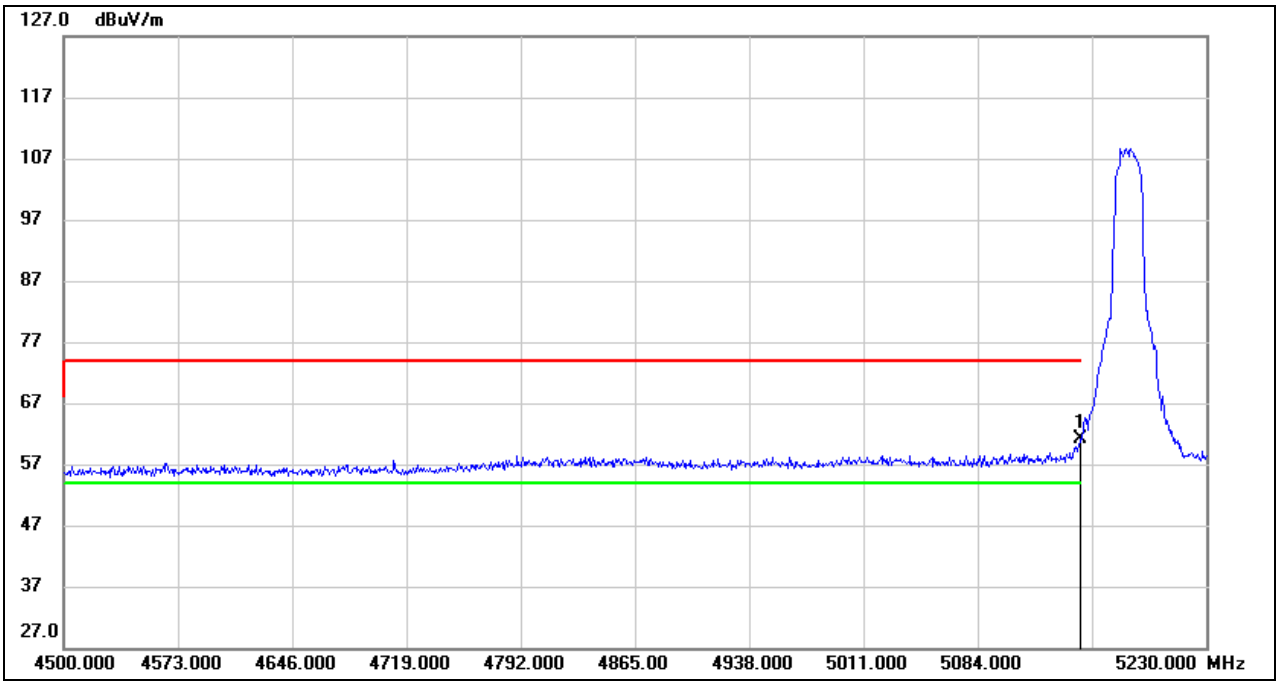
8.1. RESTRICTED BANDEDGE

8.1.1. 802.11a SISO MODE

UNII-1 BAND

RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)

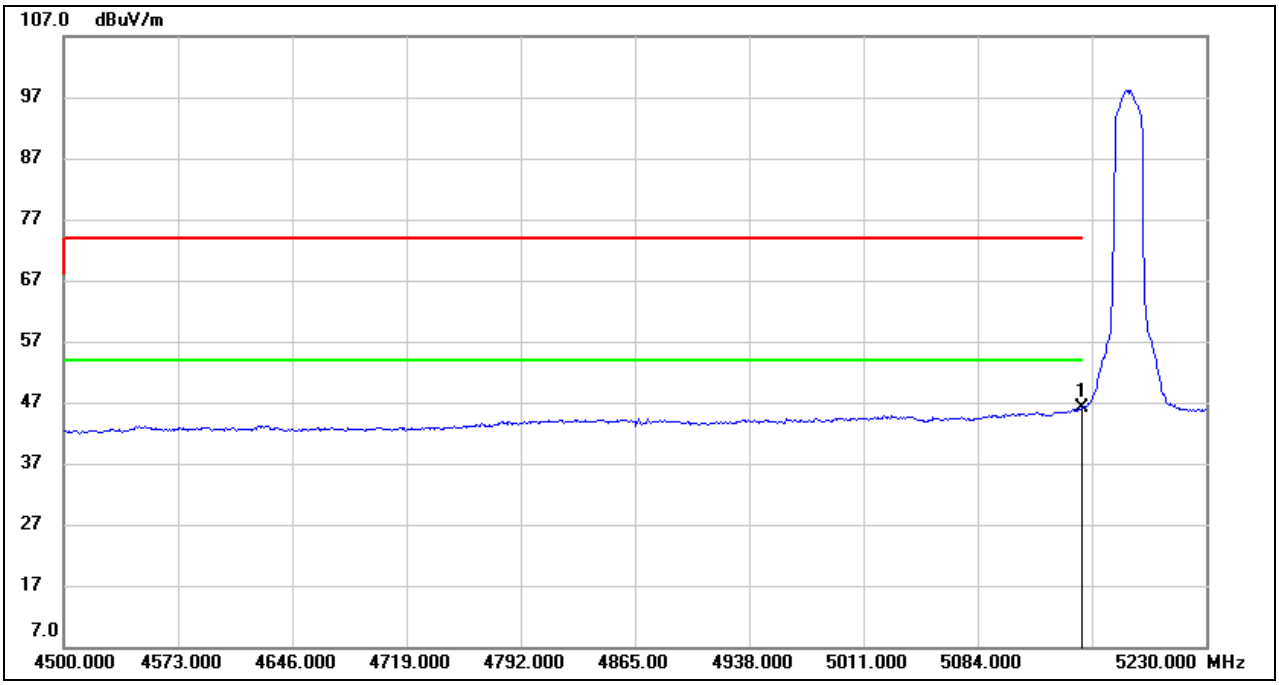
PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5150.000	39.63	21.39	61.02	74.00	-12.98	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



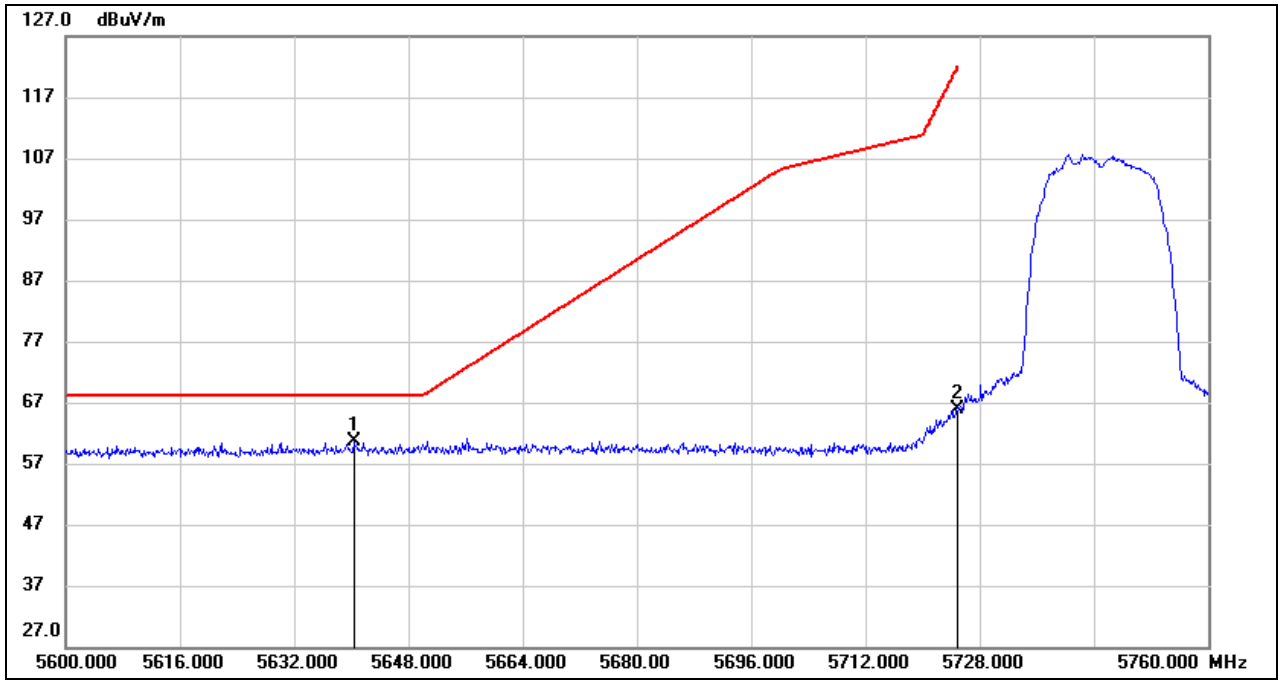
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5150.000	24.82	21.39	46.21	54.00	-7.79	AVG

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, HORIZONTAL)

PEAK

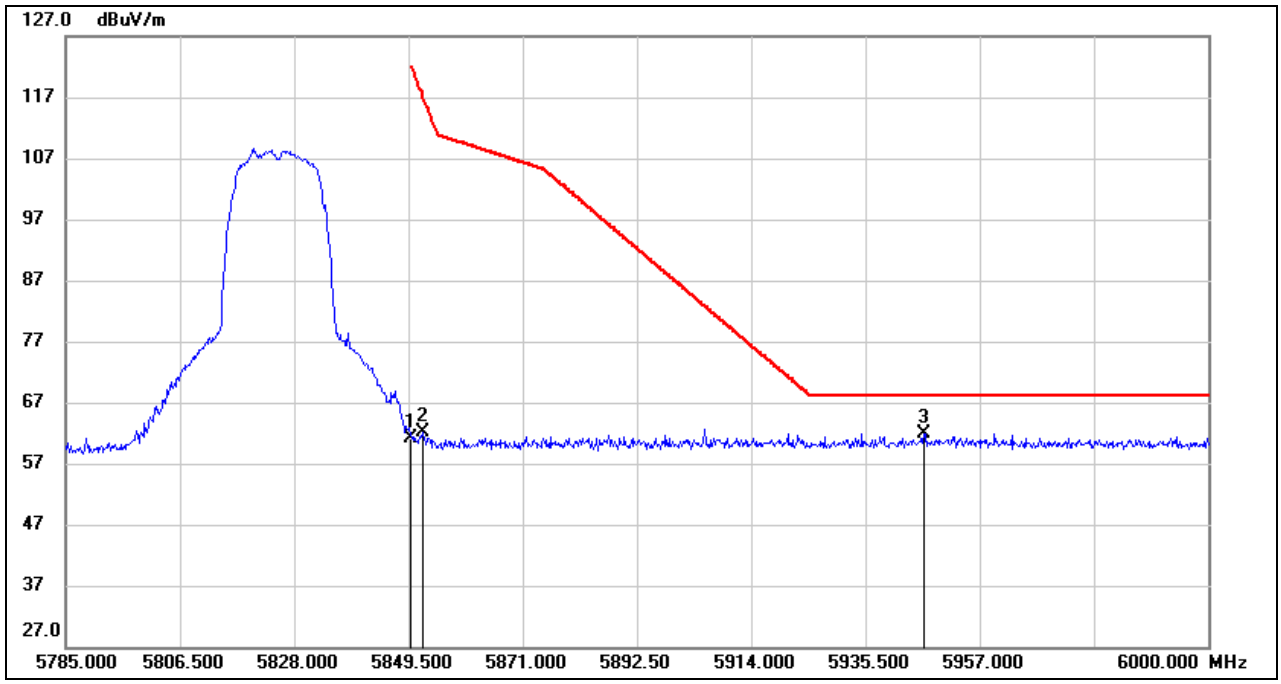


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5640.320	38.28	22.29	60.57	68.20	-7.63	peak
2	5725.000	43.55	22.28	65.83	122.20	-56.37	peak

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. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)

PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5850.000	38.13	23.06	61.19	122.20	-61.01	peak
2	5852.080	39.12	23.08	62.20	117.46	-55.26	peak
3	5946.465	38.59	23.35	61.94	68.20	-6.26	peak

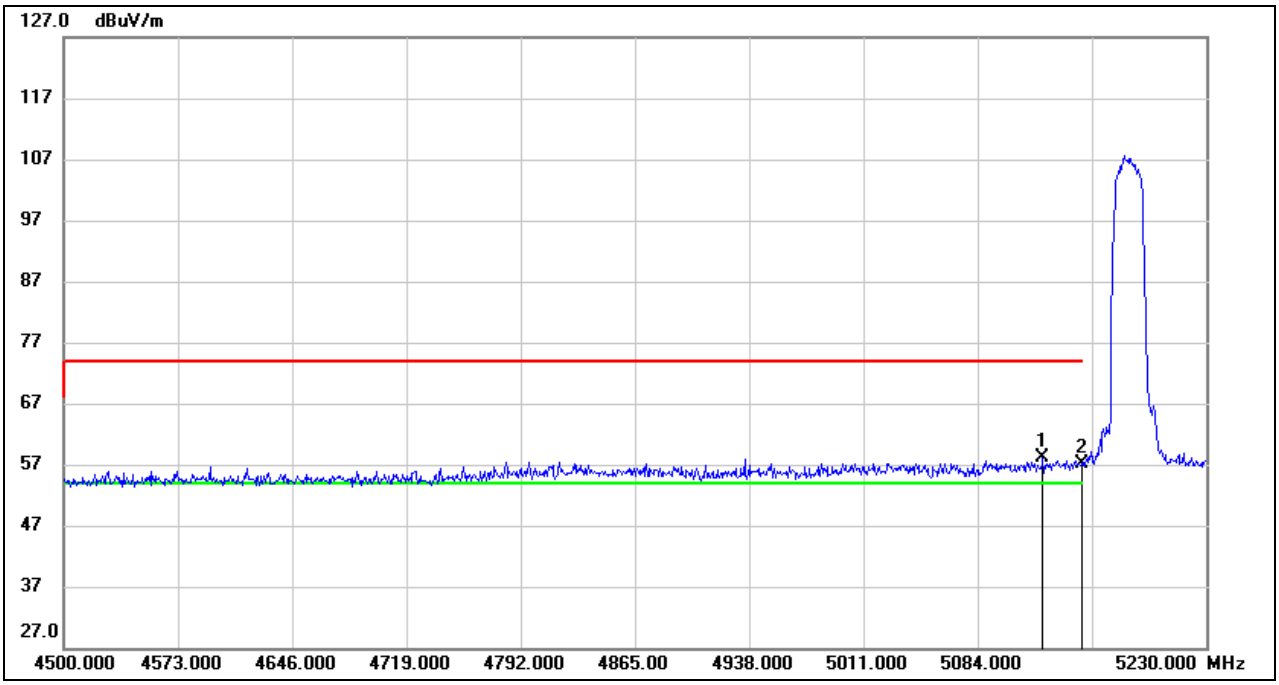
Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

8.1.2. 802.11ac VHT20 MIMO MODE

UNII-1 BAND

RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)

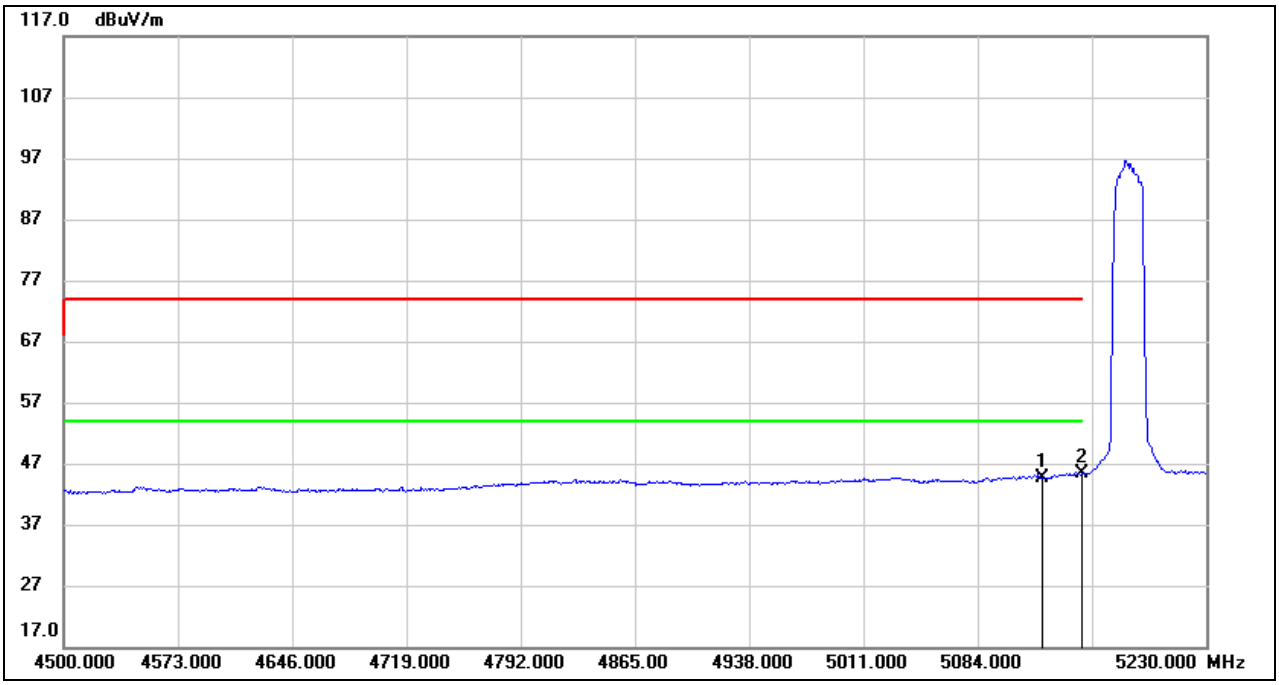
PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5125.610	36.88	21.21	58.09	74.00	-15.91	peak
2	5150.000	35.66	21.39	57.05	74.00	-16.95	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



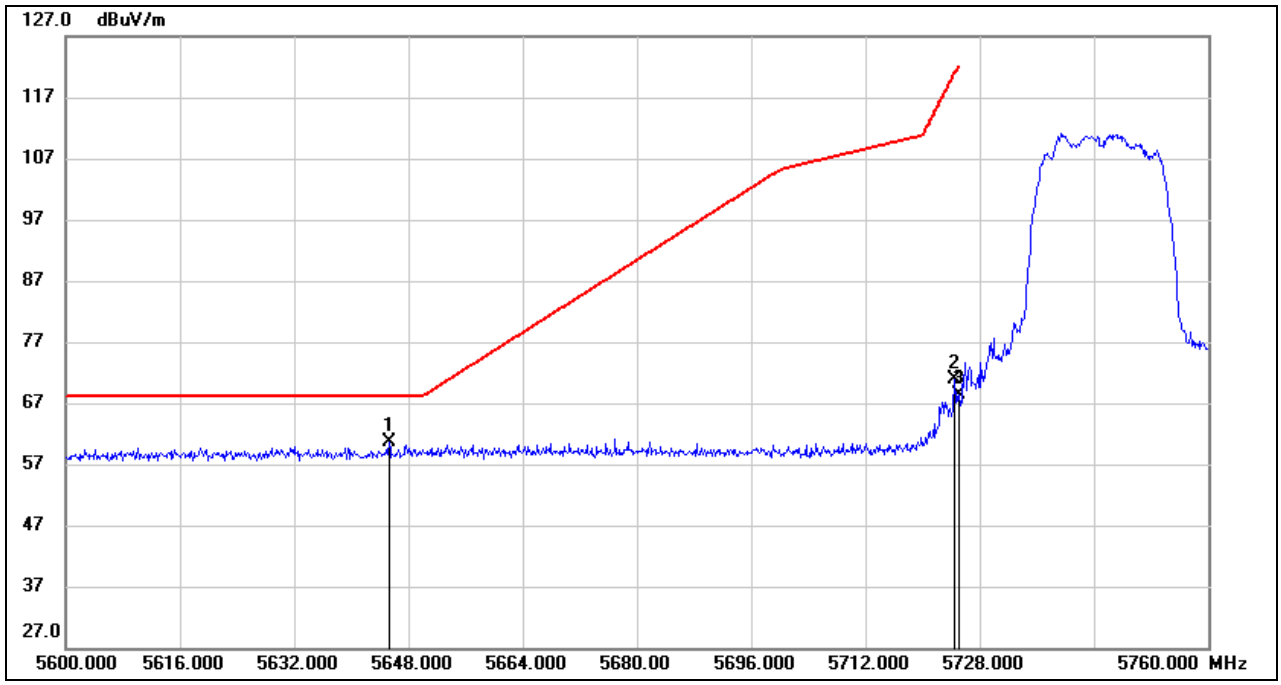
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5125.610	23.53	21.21	44.74	54.00	-9.26	AVG
2	5150.000	24.06	21.39	45.45	54.00	-8.55	AVG

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, HORIZONTAL)

PEAK

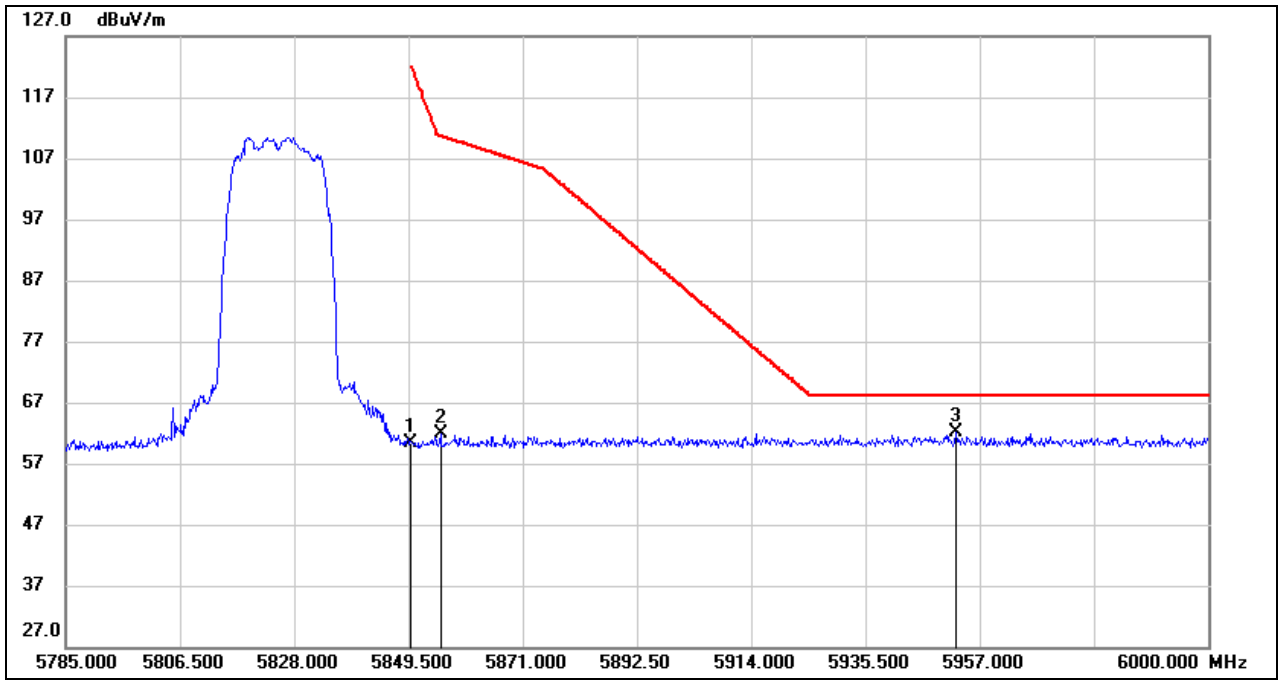


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5645.280	38.39	22.27	60.66	68.20	-7.54	peak
2	5724.480	48.54	22.28	70.82	121.01	-50.19	peak
3	5725.000	45.99	22.28	68.27	122.20	-53.93	peak

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.

RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)

PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5850.000	37.42	23.06	60.48	122.20	-61.72	peak
2	5855.520	38.86	23.11	61.97	110.65	-48.68	peak
3	5952.485	38.81	23.32	62.13	68.20	-6.07	peak

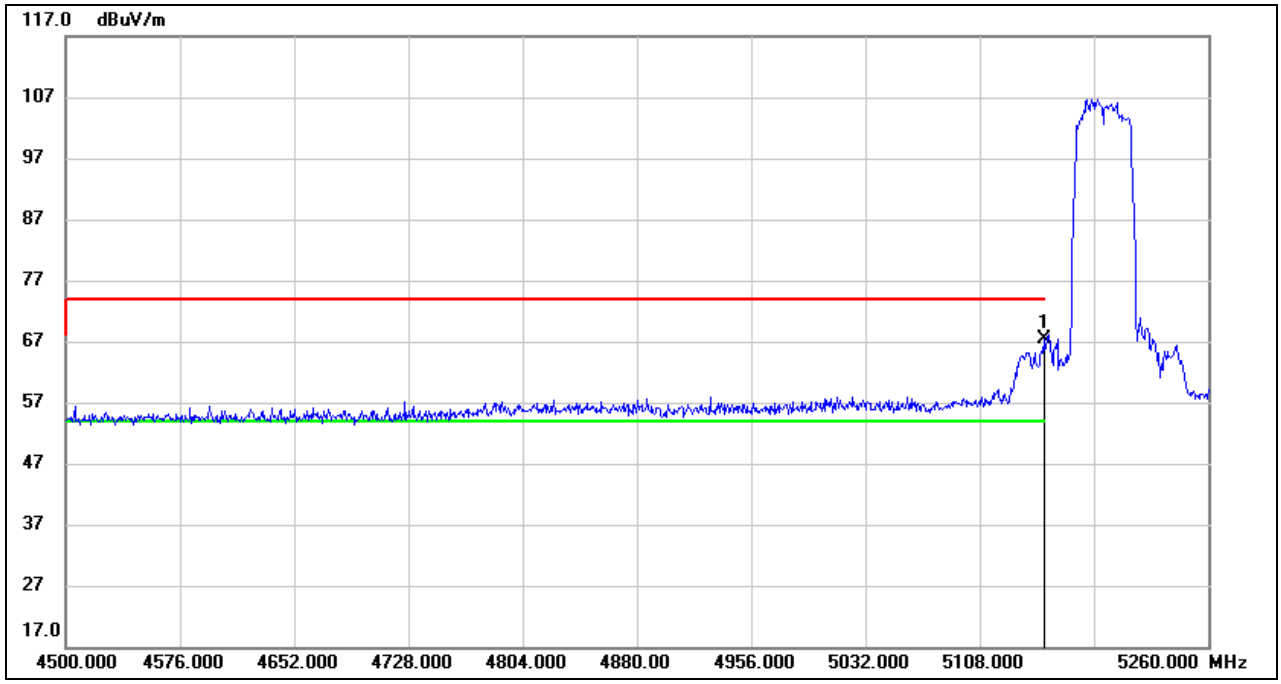
Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

8.1.3. 802.11ac VHT40 MIMO MODE

UNII-1 BAND

RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)

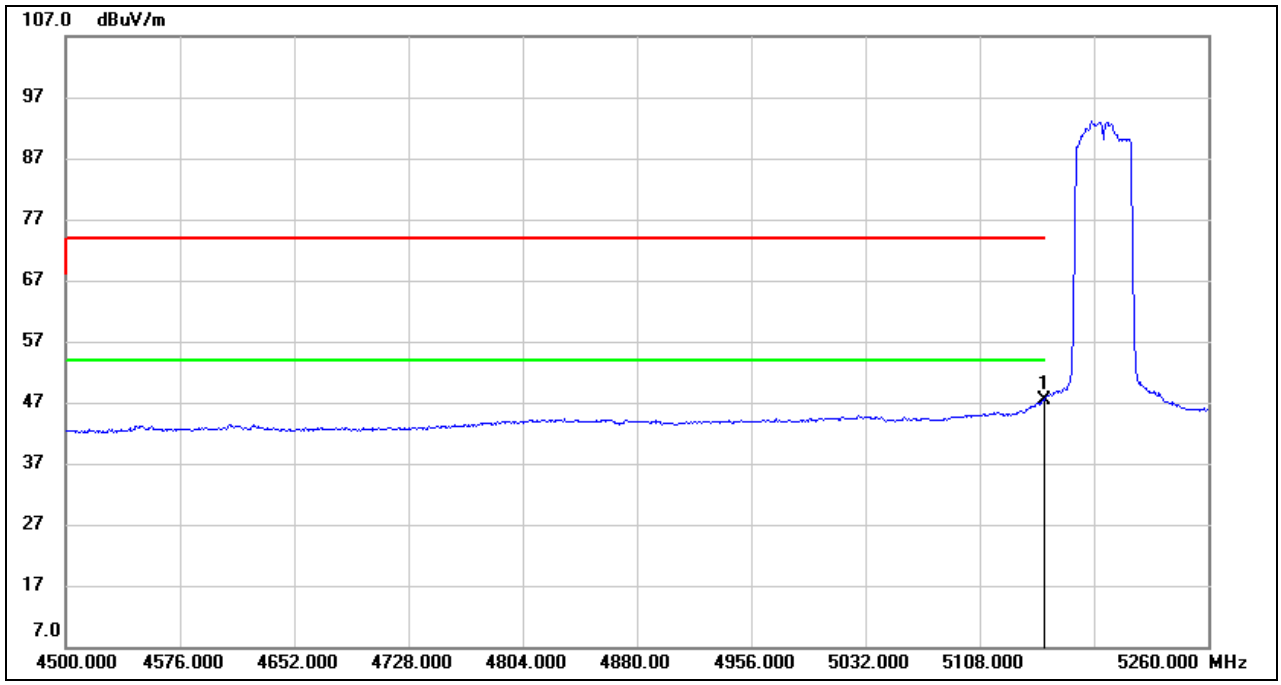
PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5150.000	46.00	21.39	67.39	74.00	-6.61	peak

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

AVG



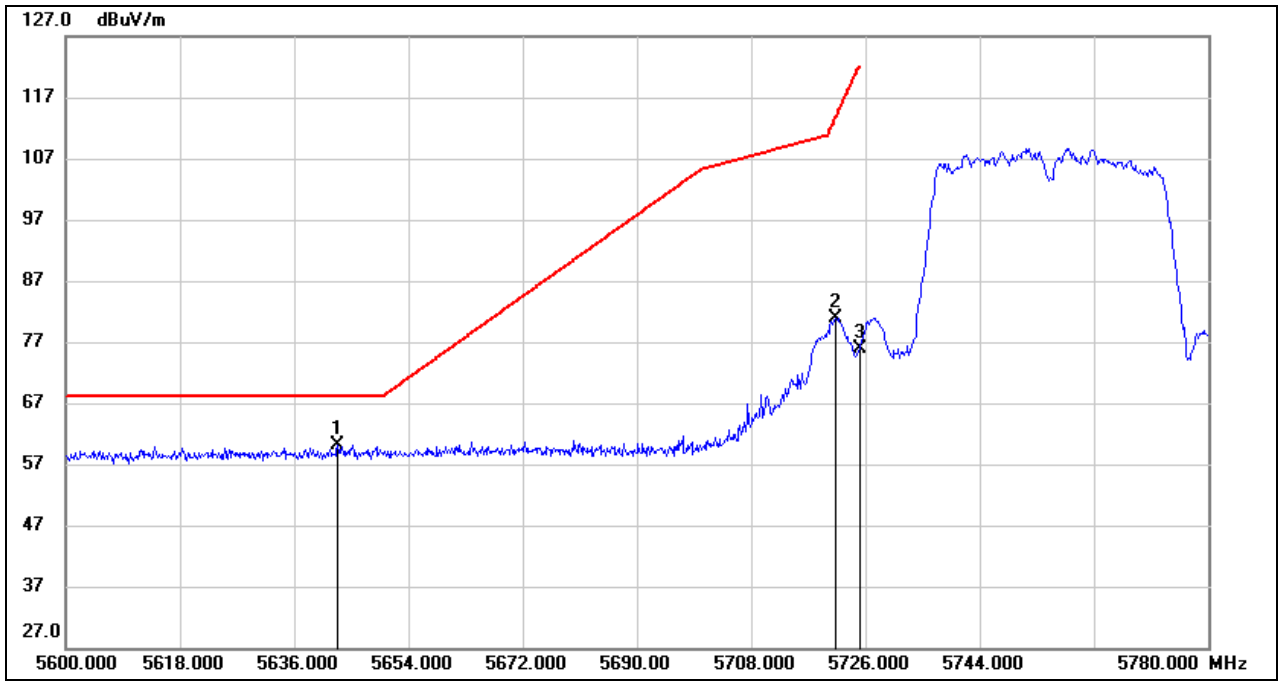
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5150.000	26.00	21.39	47.39	54.00	-6.61	AVG

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, HORIZONTAL)

PEAK

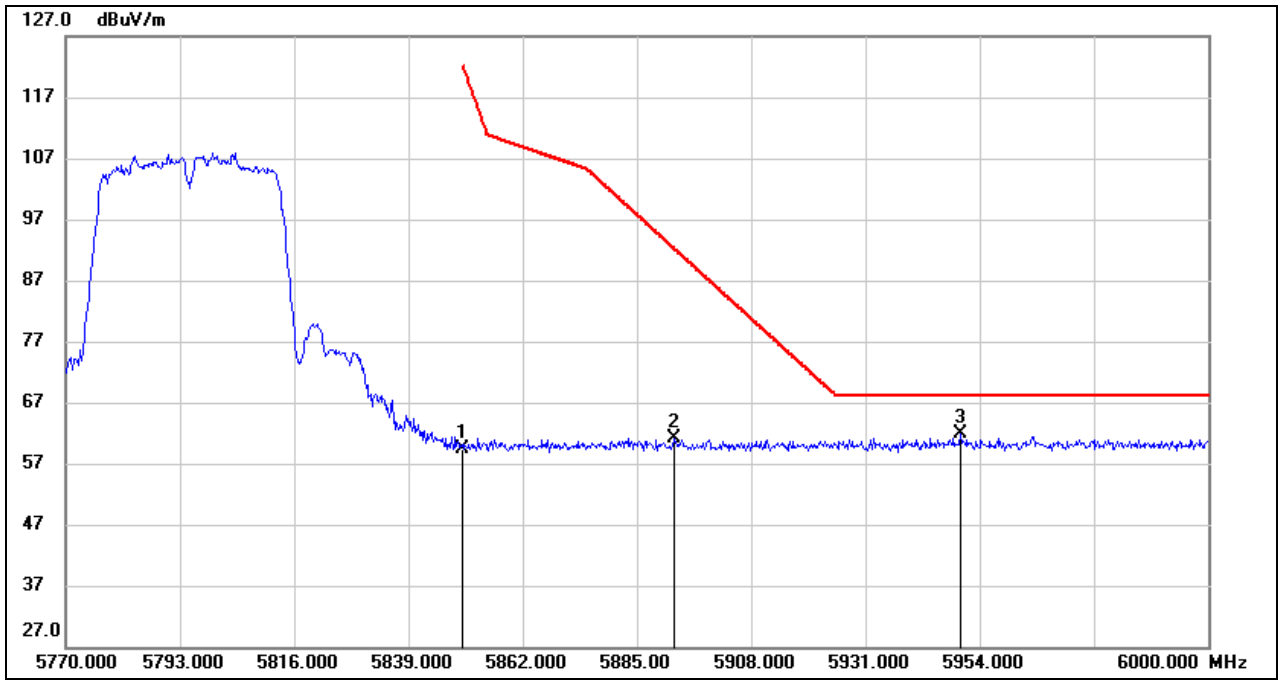


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5642.840	37.90	22.28	60.18	68.20	-8.02	peak
2	5721.320	58.55	22.26	80.81	113.81	-33.00	peak
3	5725.000	53.65	22.28	75.93	122.20	-46.27	peak

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. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)

PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5850.000	36.30	23.06	59.36	122.20	-62.84	peak
2	5892.360	37.75	23.41	61.16	92.32	-31.16	peak
3	5950.090	38.55	23.33	61.88	68.20	-6.32	peak

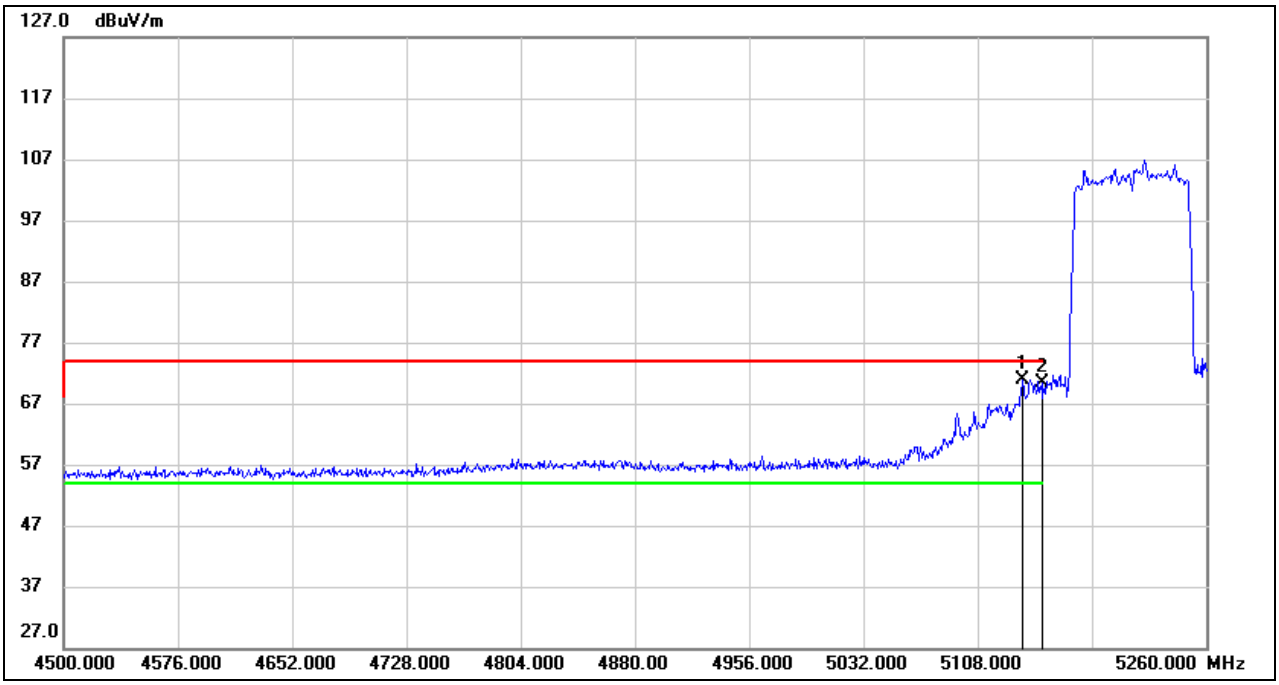
Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

8.1.4. 802.11ac VHT80 MIMO MODE

UNII-1 BAND

RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)

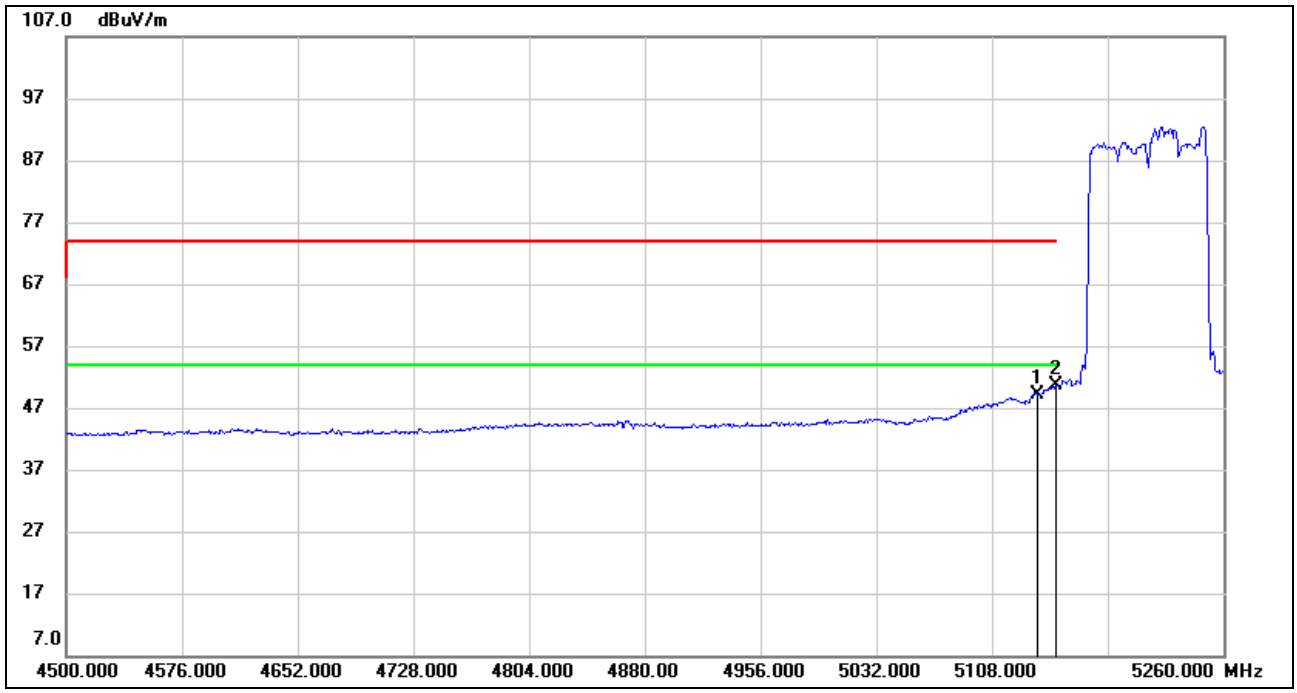
PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5137.640	49.60	21.29	70.89	74.00	-3.11	peak
2	5150.000	48.89	21.39	70.28	74.00	-3.72	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. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

AVG

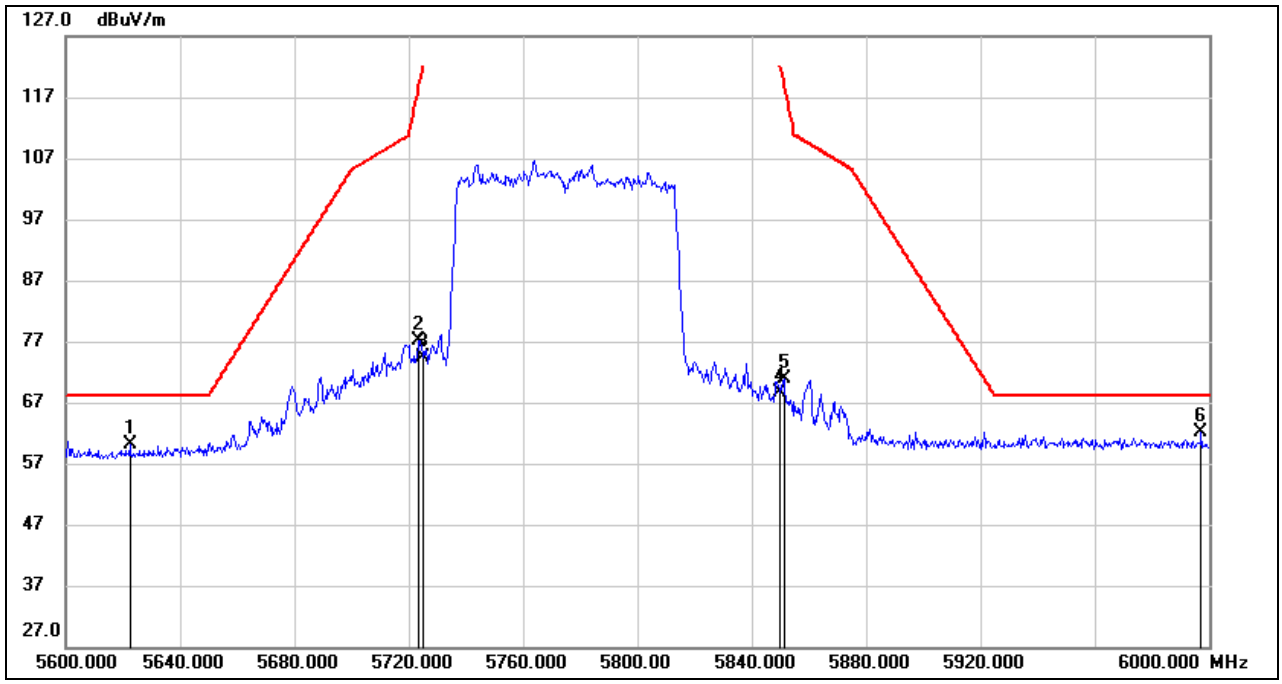


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5137.640	27.89	21.29	49.18	54.00	-4.82	AVG
2	5150.000	29.13	21.39	50.52	54.00	-3.48	AVG

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, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5622.400	37.84	22.33	60.17	68.20	-8.03	peak
2	5723.600	54.97	22.27	77.24	119.01	-41.77	peak
3	5725.000	52.03	22.28	74.31	122.20	-47.89	peak
4	5850.000	45.54	23.06	68.60	122.20	-53.60	peak
5	5851.200	47.71	23.07	70.78	119.46	-48.68	peak
6	5997.200	38.82	23.20	62.02	68.20	-6.18	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.

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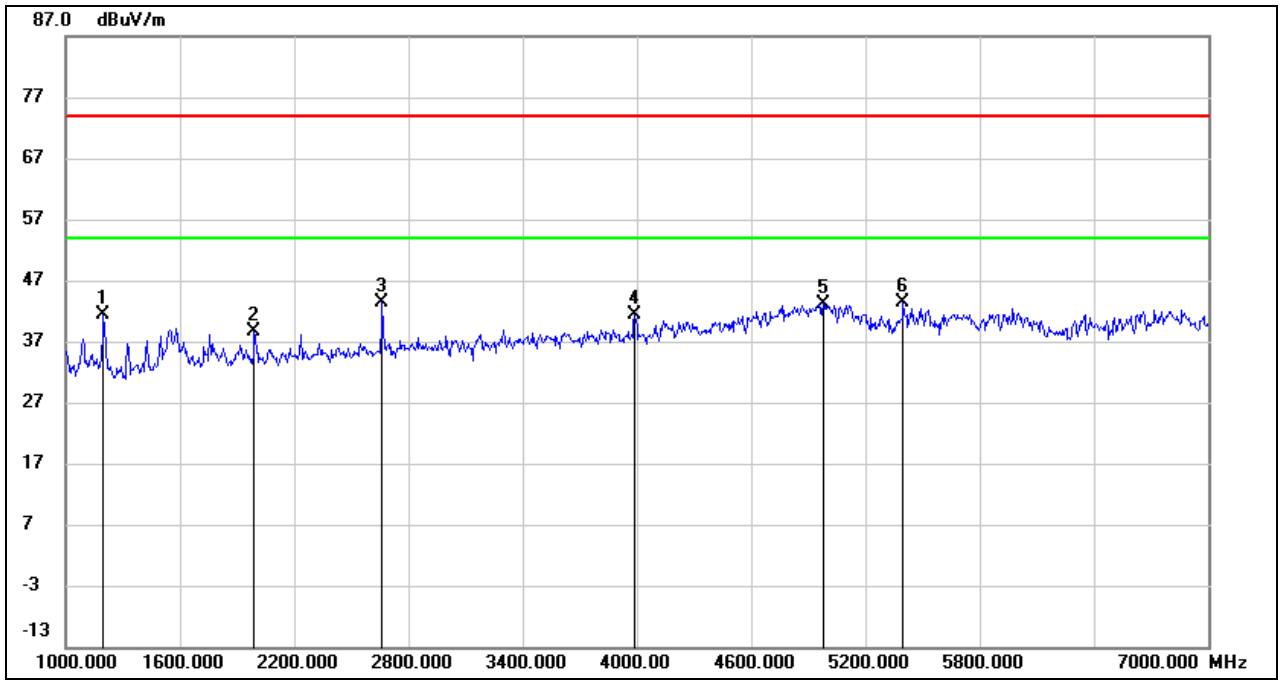
8.2. SPURIOUS EMISSIONS (1 GHz ~ 7 GHz)

8.2.1. 802.11a SISO MODE

UNII-1 BAND

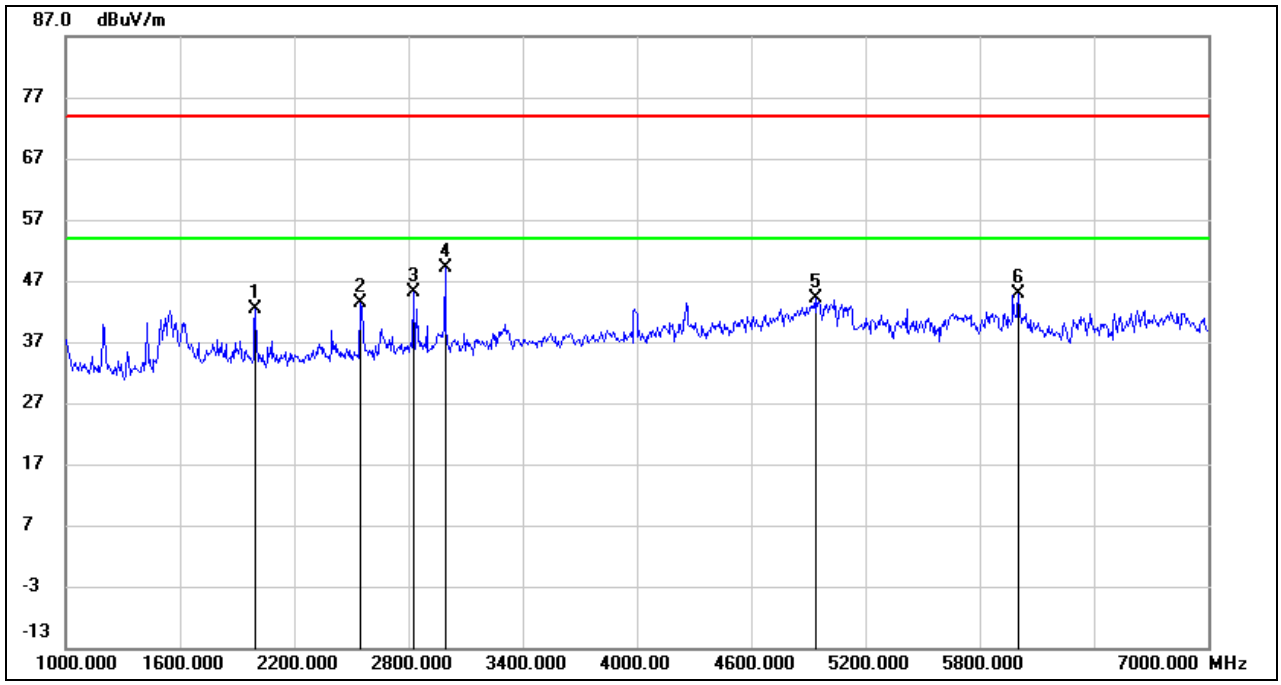
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1198.000	54.51	-13.08	41.43	74.00	-32.57	peak
2	1990.000	48.89	-10.24	38.65	74.00	-35.35	peak
3	2662.000	51.08	-7.80	43.28	74.00	-30.72	peak
4	3988.000	45.08	-3.72	41.36	74.00	-32.64	peak
5	4978.000	42.44	0.81	43.25	74.00	-30.75	peak
6	5398.000	41.84	1.58	43.42	74.00	-30.58	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 Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.
6. Owing to the highest peak level of unwanted emission out of the restricted bands are lower than the line(54dBuV/m) in the graph, so all the peak test point was deemed to comply with the limits -27dBm/MHz (68.2dBuV/m) list in the standard.

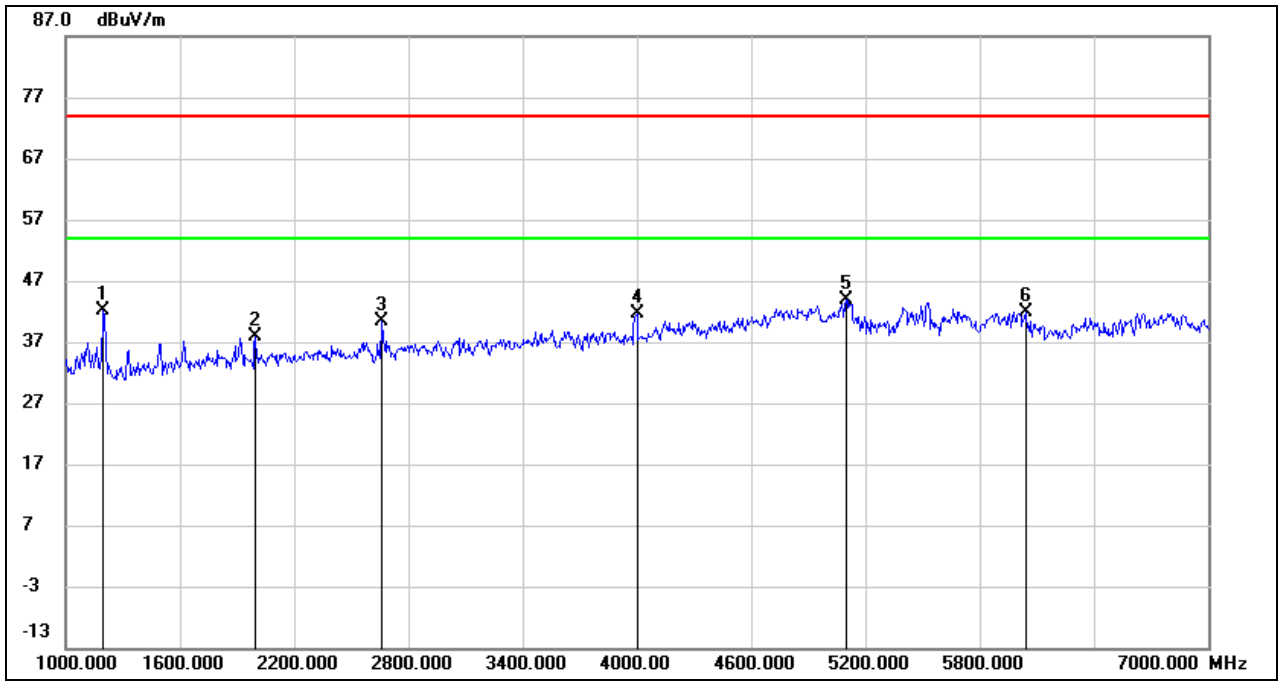
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1996.000	52.59	-10.24	42.35	74.00	-31.65	peak
2	2548.000	51.61	-8.34	43.27	74.00	-30.73	peak
3	2824.000	52.02	-6.83	45.19	74.00	-28.81	peak
4	2992.000	55.22	-6.10	49.12	74.00	-24.88	peak
5	4942.000	43.39	0.76	44.15	74.00	-29.85	peak
6	6004.000	42.30	2.61	44.91	74.00	-29.09	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. Owing to the highest peak level of unwanted emission out of the restricted bands are lower than the line(54dBuV/m) in the graph, so all the peak test point was deemed to comply with the limits -27dBm/MHz (68.2dBuV/m) list in the standard.

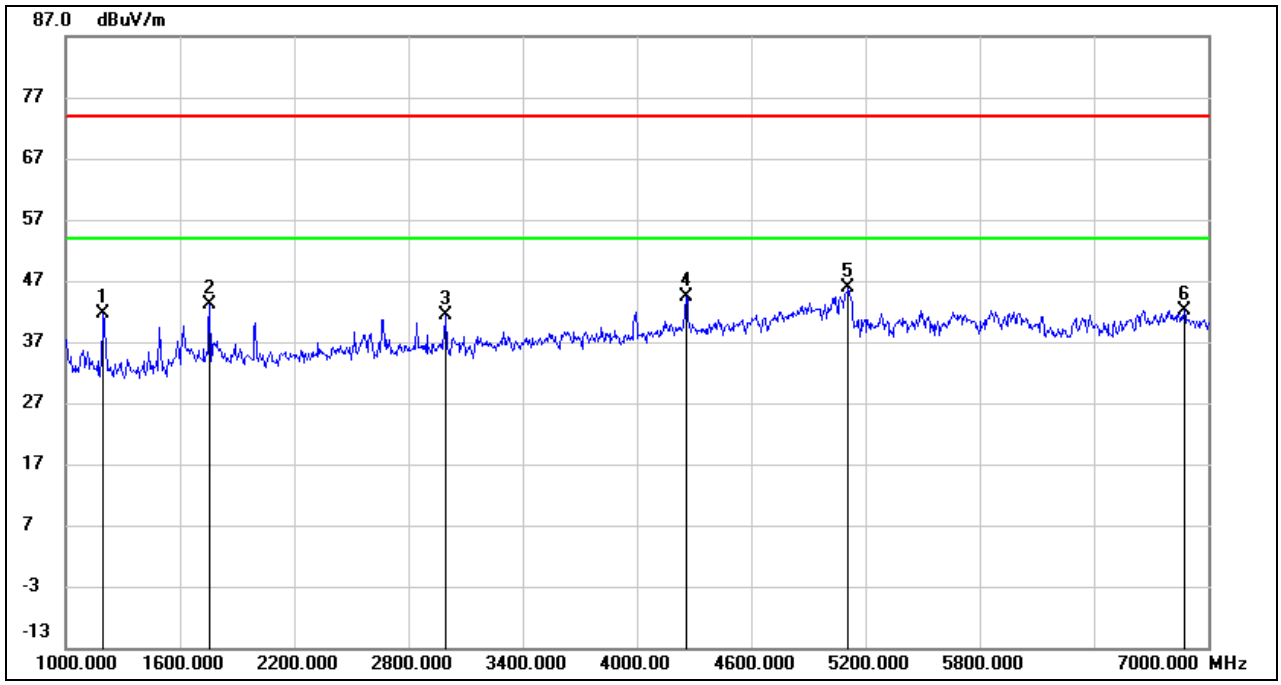
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1198.000	55.29	-13.08	42.21	74.00	-31.79	peak
2	1996.000	48.19	-10.24	37.95	74.00	-36.05	peak
3	2662.000	48.16	-7.80	40.36	74.00	-33.64	peak
4	4000.000	45.25	-3.74	41.51	74.00	-32.49	peak
5	5098.000	42.62	1.38	44.00	74.00	-30.00	peak
6	6040.000	39.28	2.57	41.85	74.00	-32.15	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. 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. Owing to the highest peak level of unwanted emission out of the restricted bands are lower than the line(54dBuV/m) in the graph, so all the peak test point was deemed to comply with the limits -27dBm/MHz (68.2dBuV/m) list in the standard.

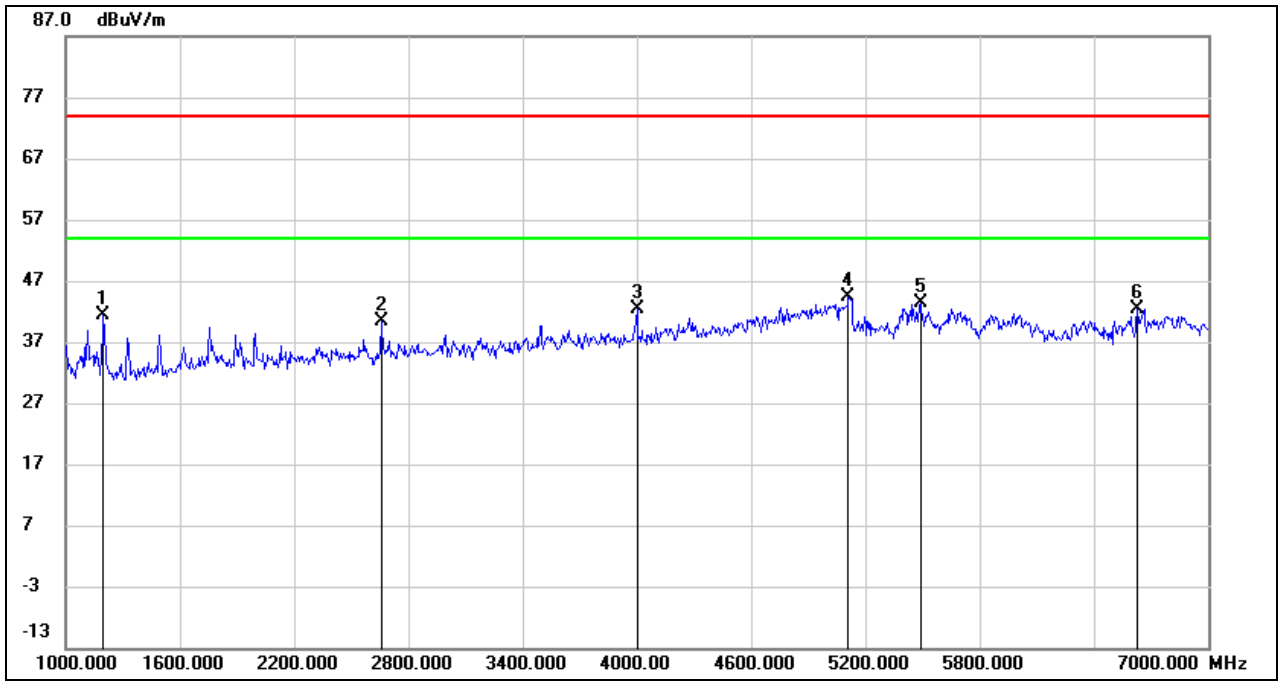
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1198.000	54.80	-13.08	41.72	74.00	-32.28	peak
2	1756.000	53.49	-10.44	43.05	74.00	-30.95	peak
3	2998.000	47.51	-6.08	41.43	74.00	-32.57	peak
4	4258.000	46.30	-1.84	44.46	74.00	-29.54	peak
5	5110.000	44.42	1.43	45.85	74.00	-28.15	peak
6	6874.000	37.59	4.61	42.20	74.00	-31.80	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. Owing to the highest peak level of unwanted emission out of the restricted bands are lower than the line(54dBuV/m) in the graph, so all the peak test point was deemed to comply with the limits -27dBm/MHz (68.2dBuV/m) list in the standard.

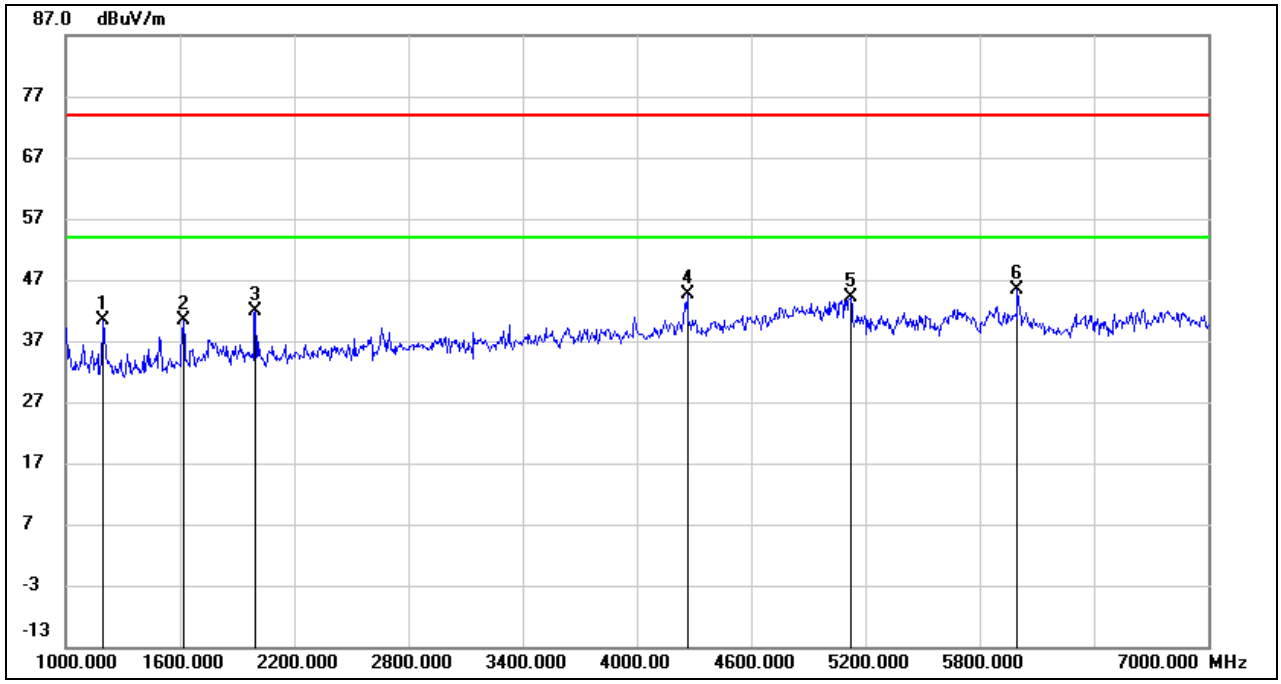
HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1198.000	54.47	-13.08	41.39	74.00	-32.61	peak
2	2656.000	48.22	-7.83	40.39	74.00	-33.61	peak
3	4000.000	46.17	-3.74	42.43	74.00	-31.57	peak
4	5110.000	42.88	1.43	44.31	74.00	-29.69	peak
5	5488.000	41.60	1.77	43.37	74.00	-30.63	peak
6	6628.000	37.93	4.47	42.40	74.00	-31.60	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. 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. Owing to the highest peak level of unwanted emission out of the restricted bands are lower than the line(54dBuV/m) in the graph, so all the peak test point was deemed to comply with the limits -27dBm/MHz (68.2dBuV/m) list in the standard.

HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1198.000	53.57	-13.08	40.49	74.00	-33.51	peak
2	1618.000	51.91	-11.48	40.43	74.00	-33.57	peak
3	1996.000	52.05	-10.24	41.81	74.00	-32.19	peak
4	4264.000	46.51	-1.84	44.67	74.00	-29.33	peak
5	5122.000	42.73	1.51	44.24	74.00	-29.76	peak
6	5998.000	42.71	2.60	45.31	74.00	-28.69	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. Owing to the highest peak level of unwanted emission out of the restricted bands are lower than the line(54dBuV/m) in the graph, so all the peak test point was deemed to comply with the limits -27dBm/MHz (68.2dBuV/m) list in the standard.

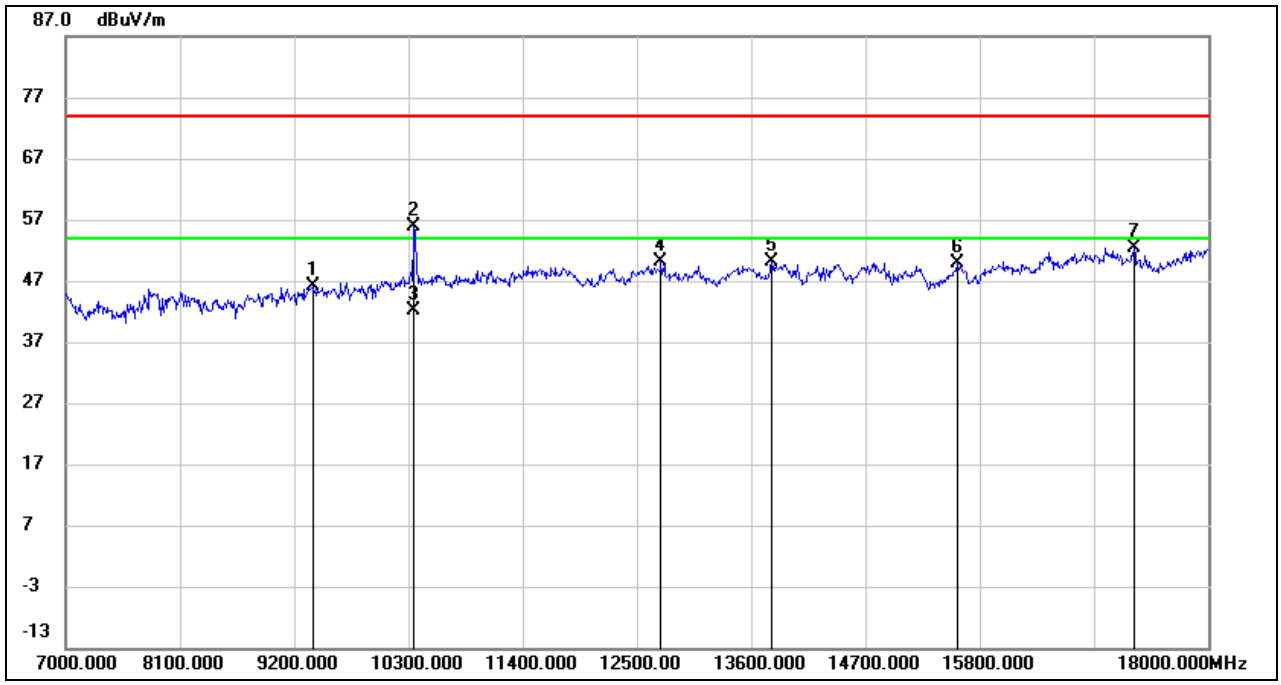
Note: All the modes, bands and antennas had been tested, but only the worst data was recorded in the report.

8.3. SPURIOUS EMISSIONS (7 GHz ~ 18 GHz)

8.3.1. 802.11a SISO MODE

UNII-1 BAND

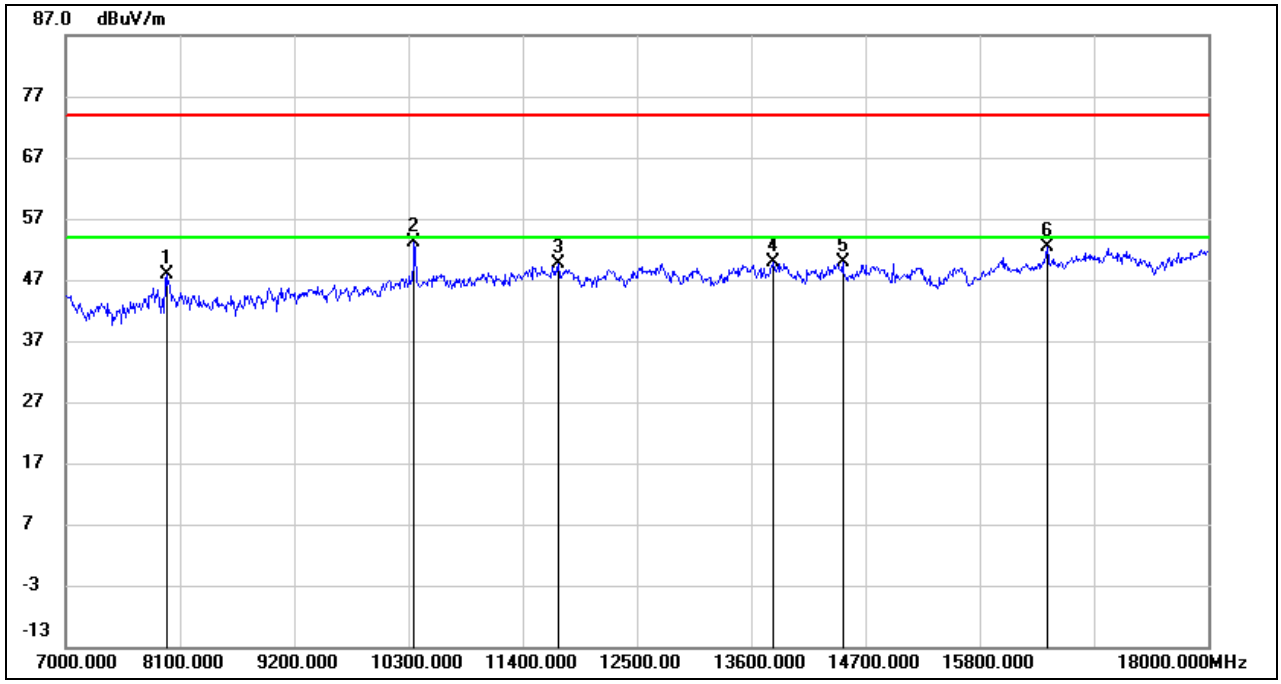
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	9376.000	36.27	9.79	46.06	74.00	-27.94	peak
2	10355.000	44.59	11.23	55.82	74.00	-18.18	peak
3	10355.000	30.95	11.23	42.18	54.00	-11.82	AVG
4	12731.000	35.04	14.97	50.01	74.00	-23.99	peak
5	13798.000	33.06	17.05	50.11	74.00	-23.89	peak
6	15580.000	32.95	17.00	49.95	74.00	-24.05	peak
7	17285.000	30.50	21.79	52.29	74.00	-21.71	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. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
5. For the transmitting duration, please refer to clause 7.1.
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
7. Proper operation of the transmitter prior to adding the filter to the measurement chain.
8. Owing to the highest peak level of unwanted emission out of the restricted bands are lower than the line(54dBuV/m) in the graph, so all the peak test point was deemed to comply with the limits -27dBm/MHz (68.2dBuV/m) list in the standard.

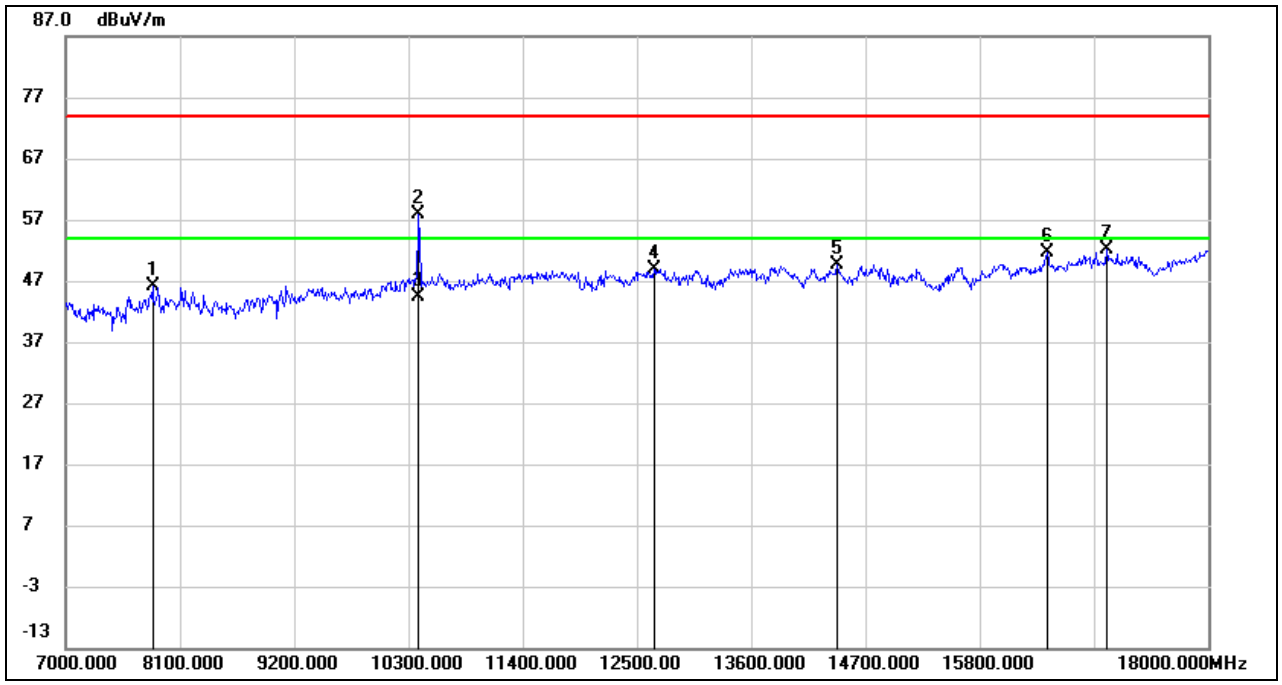
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7968.000	40.43	7.49	47.92	74.00	-26.08	peak
2	10355.000	41.82	11.23	53.05	74.00	-20.95	peak
3	11741.000	36.47	13.13	49.60	74.00	-24.40	peak
4	13809.000	32.98	16.99	49.97	74.00	-24.03	peak
5	14480.000	33.18	16.59	49.77	74.00	-24.23	peak
6	16449.000	32.82	19.45	52.27	74.00	-21.73	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. 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. Owing to the highest peak level of unwanted emission out of the restricted bands are lower than the line(54dBuV/m) in the graph, so all the peak test point was deemed to comply with the limits -27dBm/MHz (68.2dBuV/m) list in the standard.

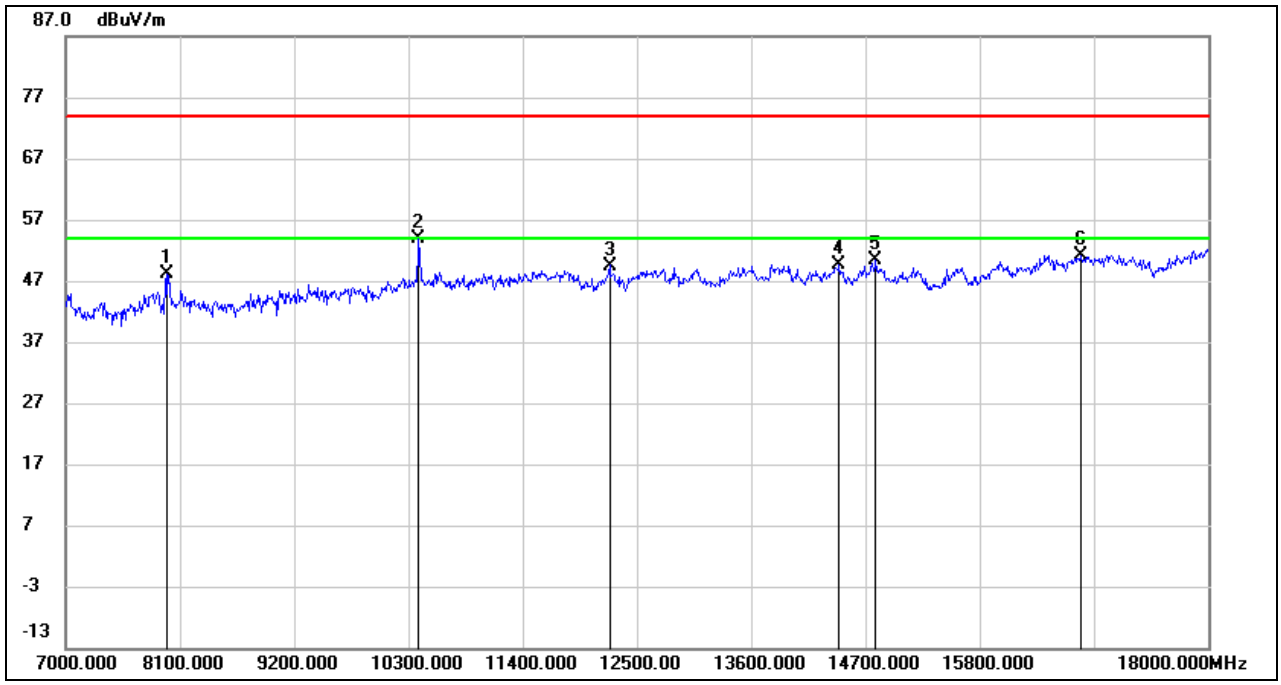
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7836.000	38.10	7.96	46.06	74.00	-27.94	peak
2	10399.000	46.78	11.17	57.95	74.00	-16.05	peak
3	10399.000	33.22	11.17	44.39	54.00	-9.61	AVG
4	12665.000	34.46	14.35	48.81	74.00	-25.19	peak
5	14425.000	32.87	16.65	49.52	74.00	-24.48	peak
6	16449.000	32.18	19.45	51.63	74.00	-22.37	peak
7	17021.000	31.52	20.69	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. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
5. For the transmitting duration, please refer to clause 7.1.
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
7. Proper operation of the transmitter prior to adding the filter to the measurement chain.
8. Owing to the highest peak level of unwanted emission out of the restricted bands are lower than the line(54dBuV/m) in the graph, so all the peak test point was deemed to comply with the limits -27dBm/MHz (68.2dBuV/m) list in the standard.

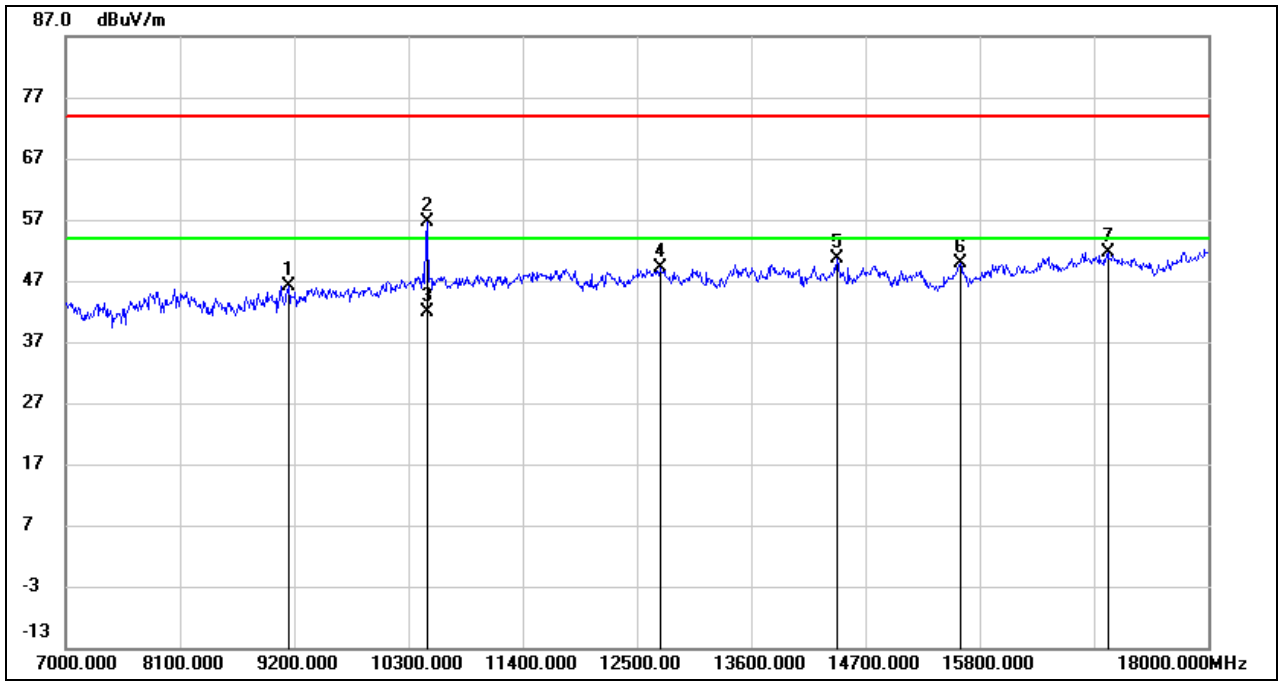
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7968.000	40.65	7.49	48.14	74.00	-25.86	peak
2	10399.000	42.62	11.17	53.79	74.00	-20.21	peak
3	12236.000	35.36	14.14	49.50	74.00	-24.50	peak
4	14447.000	32.97	16.63	49.60	74.00	-24.40	peak
5	14799.000	34.26	16.06	50.32	74.00	-23.68	peak
6	16779.000	31.03	20.16	51.19	74.00	-22.81	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. Owing to the highest peak level of unwanted emission out of the restricted bands are lower than the line(54dBuV/m) in the graph, so all the peak test point was deemed to comply with the limits -27dBm/MHz (68.2dBuV/m) list in the standard.

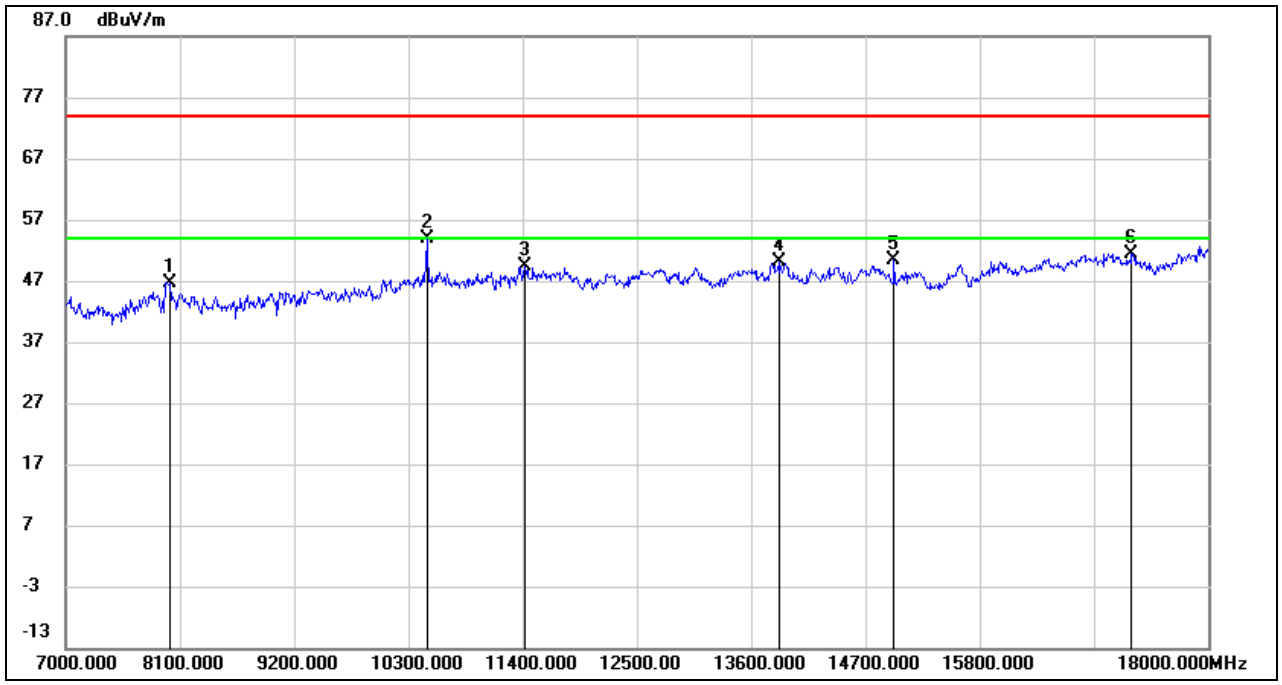
HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	9145.000	36.88	9.22	46.10	74.00	-27.90	peak
2	10476.000	45.38	11.31	56.69	74.00	-17.31	peak
3	10476.000	30.66	11.31	41.97	54.00	-12.03	AVG
4	12720.000	34.34	14.79	49.13	74.00	-24.87	peak
5	14425.000	34.00	16.65	50.65	74.00	-23.35	peak
6	15613.000	32.89	17.09	49.98	74.00	-24.02	peak
7	17032.000	31.01	20.72	51.73	74.00	-22.27	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. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
5. For the transmitting duration, please refer to clause 7.1.
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
7. Proper operation of the transmitter prior to adding the filter to the measurement chain.
8. Owing to the highest peak level of unwanted emission out of the restricted bands are lower than the line(54dBuV/m) in the graph, so all the peak test point was deemed to comply with the limits -27dBm/MHz (68.2dBuV/m) list in the standard.

HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, VERTICAL)

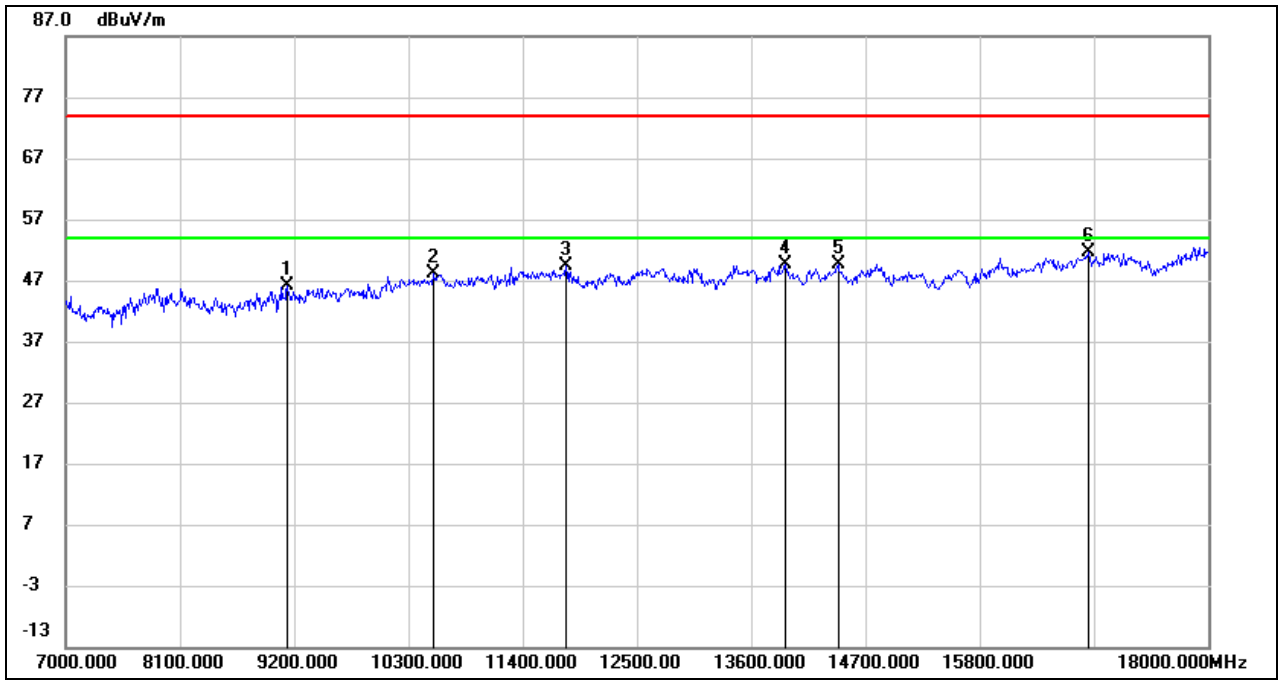


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	8001.000	39.29	7.44	46.73	74.00	-27.27	peak
2	10476.000	42.46	11.31	53.77	74.00	-20.23	peak
3	11422.000	36.53	12.88	49.41	74.00	-24.59	peak
4	13864.000	33.58	16.48	50.06	74.00	-23.94	peak
5	14975.000	34.39	16.06	50.45	74.00	-23.55	peak
6	17263.000	29.79	21.64	51.43	74.00	-22.57	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. Owing to the highest peak level of unwanted emission out of the restricted bands are lower than the line(54dBuV/m) in the graph, so all the peak test point was deemed to comply with the limits -27dBm/MHz (68.2dBuV/m) list in the standard.

UNII-3 BAND

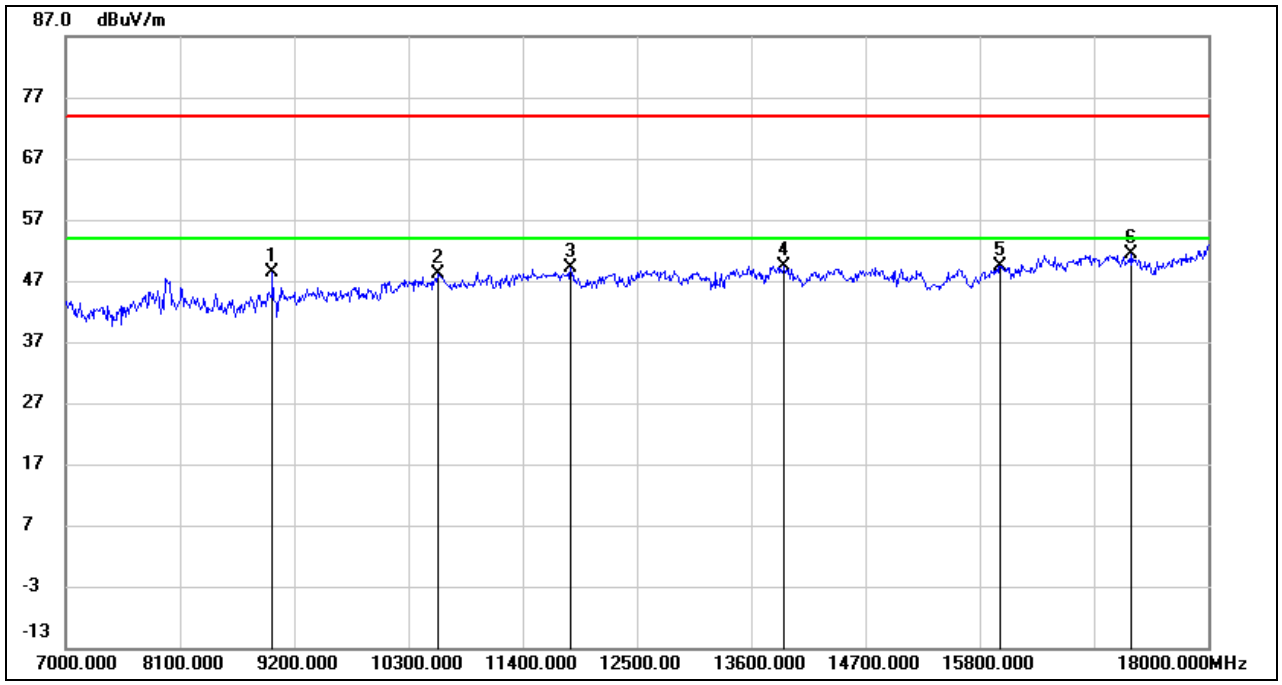
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	9134.000	36.74	9.28	46.02	74.00	-27.98	peak
2	10542.000	36.29	11.83	48.12	74.00	-25.88	peak
3	11818.000	36.04	13.29	49.33	74.00	-24.67	peak
4	13930.000	33.53	16.17	49.70	74.00	-24.30	peak
5	14436.000	33.01	16.64	49.65	74.00	-24.35	peak
6	16845.000	31.49	20.15	51.64	74.00	-22.36	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. Owing to the highest peak level of unwanted emission out of the restricted bands are lower than the line(54dBuV/m) in the graph, so all the peak test point was deemed to comply with the limits -27dBm/MHz (68.2dBuV/m) list in the standard.

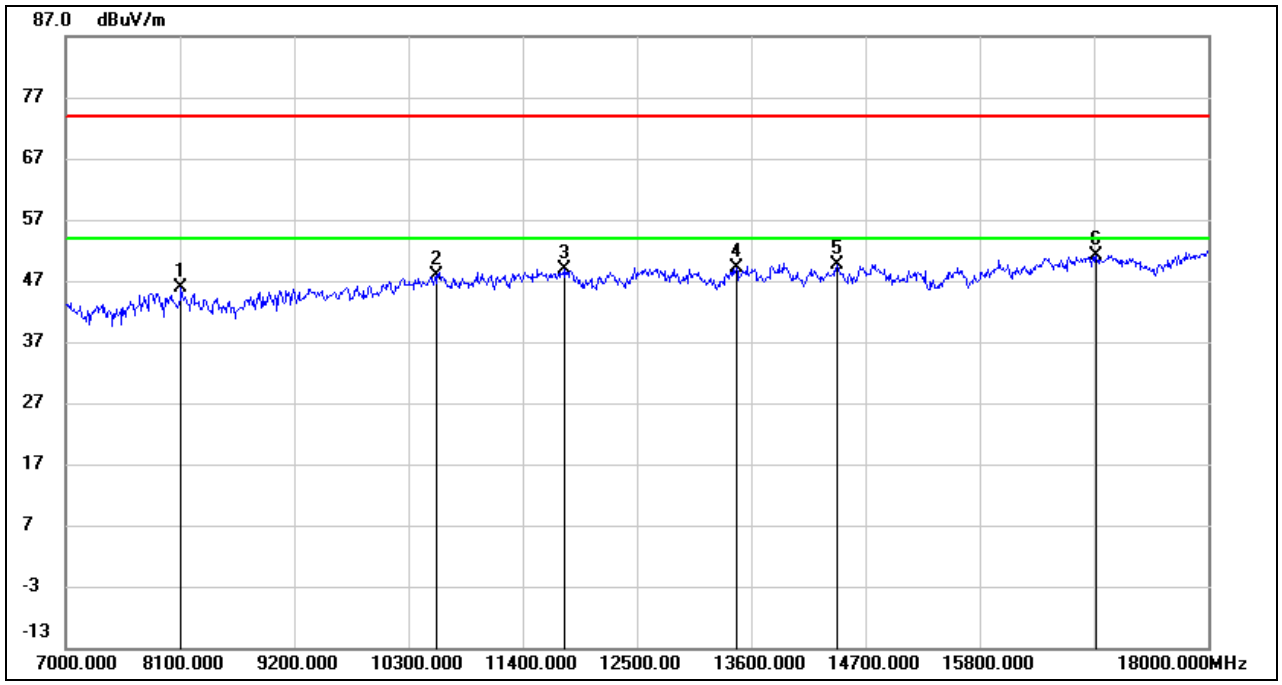
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	8991.000	39.10	9.31	48.41	74.00	-25.59	peak
2	10586.000	35.80	12.30	48.10	74.00	-25.90	peak
3	11862.000	35.73	13.35	49.08	74.00	-24.92	peak
4	13919.000	33.28	16.16	49.44	74.00	-24.56	peak
5	15998.000	31.62	17.80	49.42	74.00	-24.58	peak
6	17263.000	29.70	21.64	51.34	74.00	-22.66	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. Owing to the highest peak level of unwanted emission out of the restricted bands are lower than the line(54dBuV/m) in the graph, so all the peak test point was deemed to comply with the limits -27dBm/MHz (68.2dBuV/m) list in the standard.

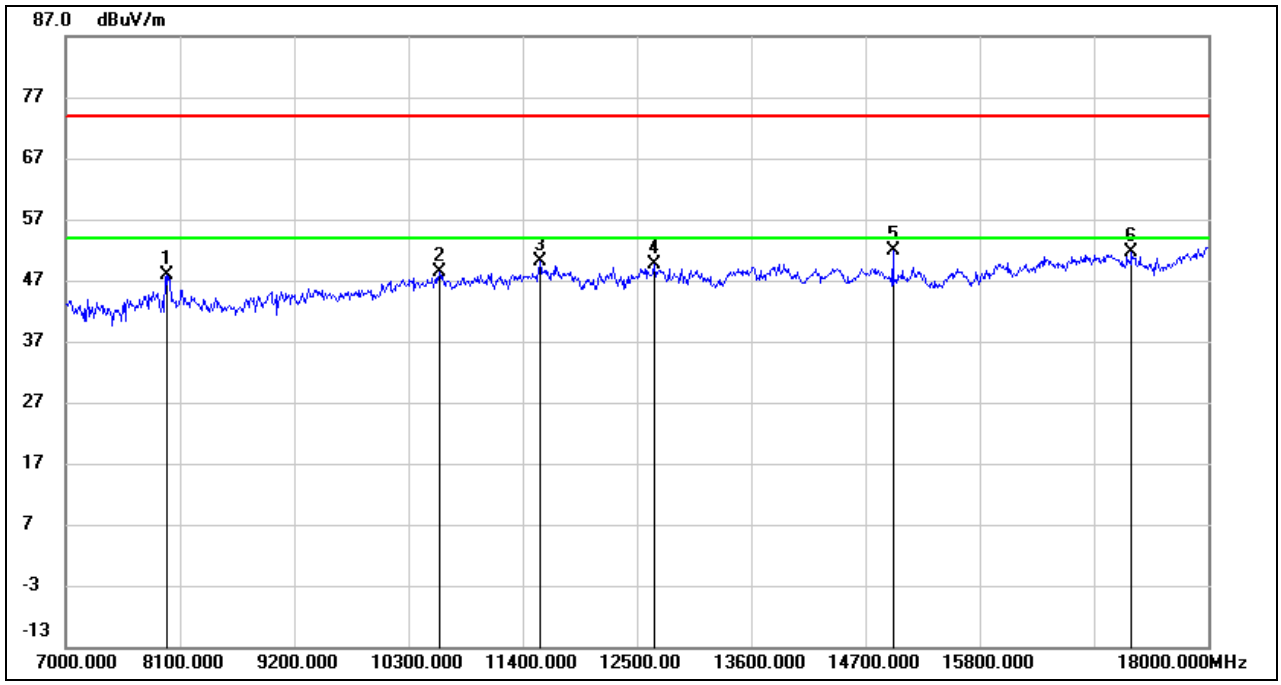
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	8111.000	37.63	8.21	45.84	74.00	-28.16	peak
2	10564.000	35.81	12.06	47.87	74.00	-26.13	peak
3	11807.000	35.68	13.27	48.95	74.00	-25.05	peak
4	13457.000	33.08	16.02	49.10	74.00	-24.90	peak
5	14425.000	33.04	16.65	49.69	74.00	-24.31	peak
6	16922.000	30.89	20.22	51.11	74.00	-22.89	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. Owing to the highest peak level of unwanted emission out of the restricted bands are lower than the line(54dBuV/m) in the graph, so all the peak test point was deemed to comply with the limits -27dBm/MHz (68.2dBuV/m) list in the standard.

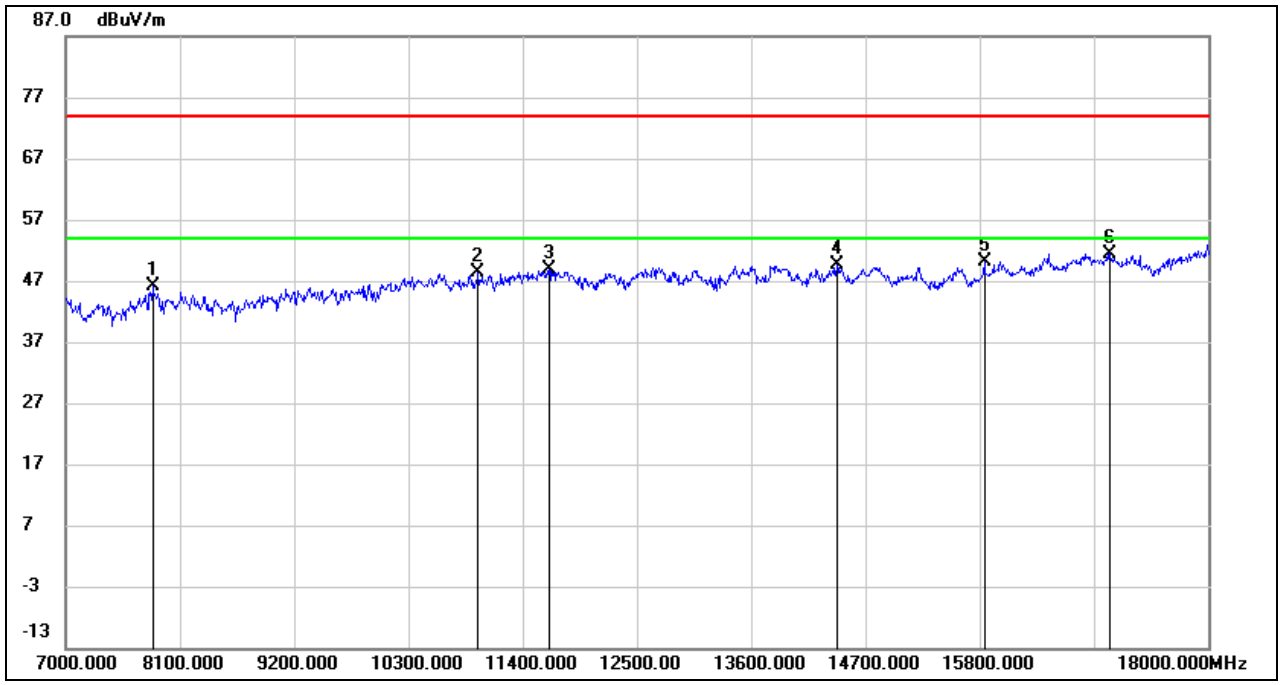
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7968.000	40.48	7.49	47.97	74.00	-26.03	peak
2	10597.000	35.88	12.43	48.31	74.00	-25.69	peak
3	11565.000	36.57	13.47	50.04	74.00	-23.96	peak
4	12665.000	35.26	14.35	49.61	74.00	-24.39	peak
5	14964.000	35.84	16.09	51.93	74.00	-22.07	peak
6	17263.000	30.09	21.64	51.73	74.00	-22.27	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. Owing to the highest peak level of unwanted emission out of the restricted bands are lower than the line(54dBuV/m) in the graph, so all the peak test point was deemed to comply with the limits -27dBm/MHz (68.2dBuV/m) list in the standard.

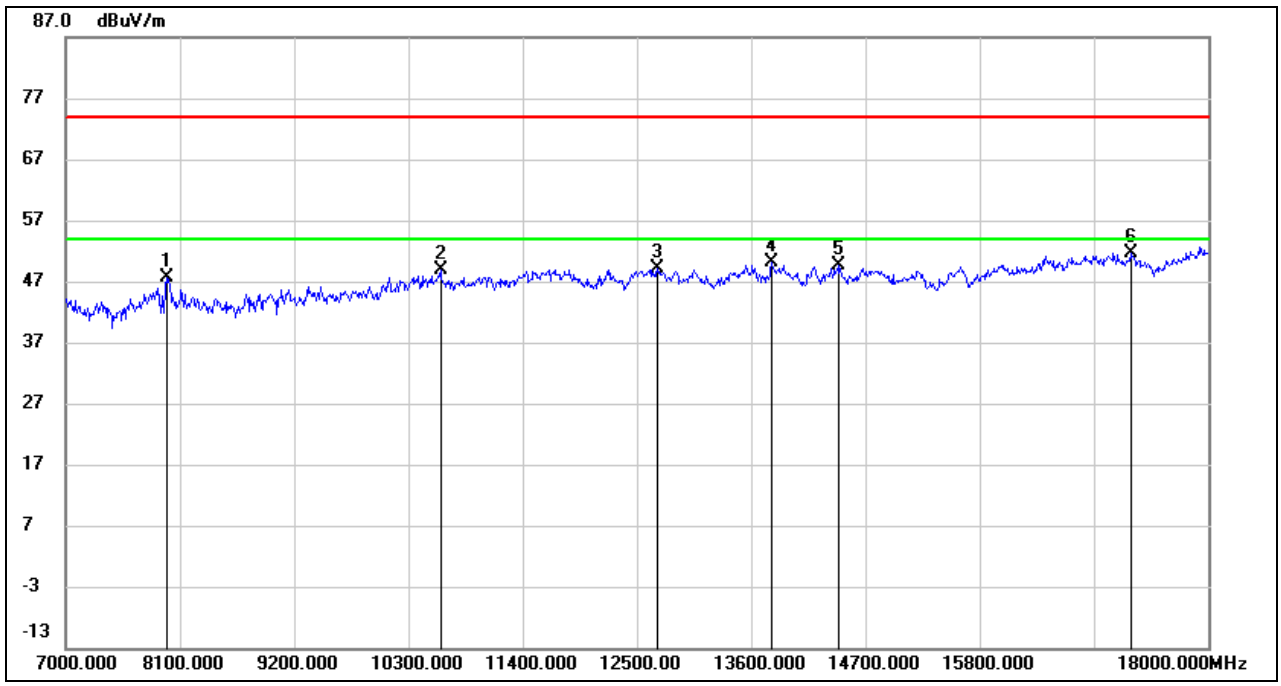
HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7836.000	38.05	7.96	46.01	74.00	-27.99	peak
2	10971.000	35.93	12.39	48.32	74.00	-25.68	peak
3	11653.000	35.66	13.28	48.94	74.00	-25.06	peak
4	14425.000	33.00	16.65	49.65	74.00	-24.35	peak
5	15844.000	32.66	17.40	50.06	74.00	-23.94	peak
6	17054.000	30.63	20.76	51.39	74.00	-22.61	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. Owing to the highest peak level of unwanted emission out of the restricted bands are lower than the line(54dBuV/m) in the graph, so all the peak test point was deemed to comply with the limits -27dBm/MHz (68.2dBuV/m) list in the standard.

HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, VERTICAL)



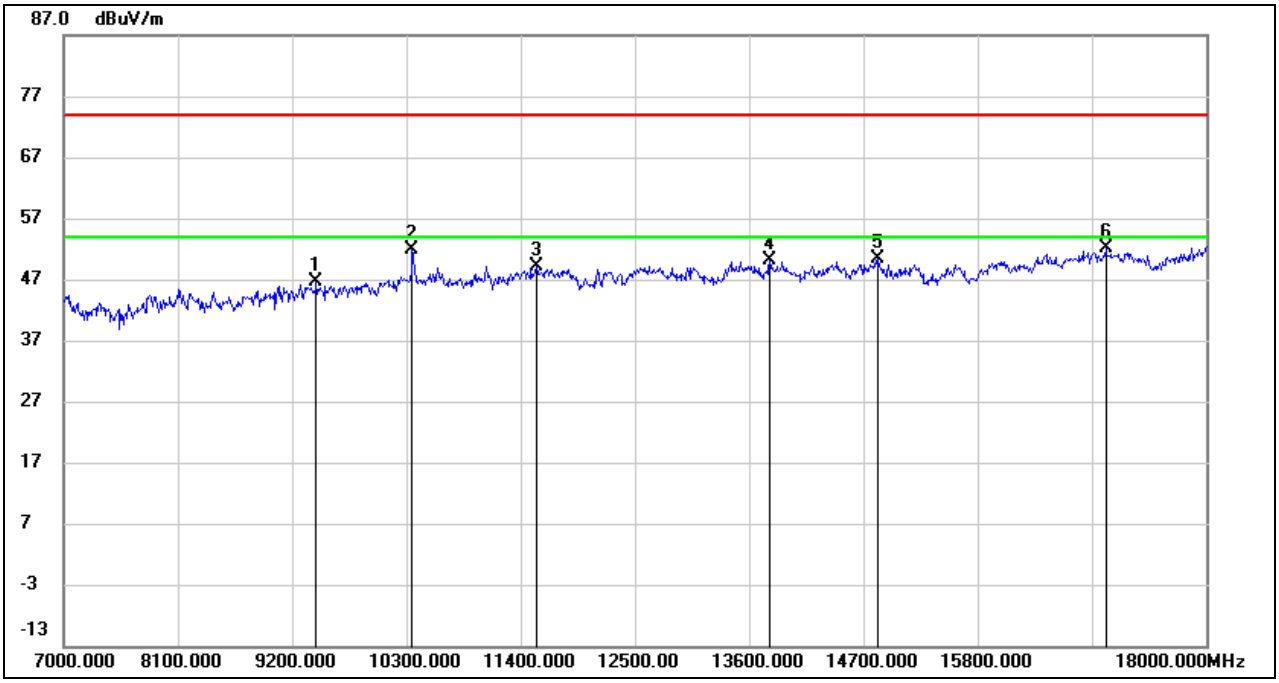
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7968.000	40.18	7.49	47.67	74.00	-26.33	peak
2	10608.000	36.39	12.39	48.78	74.00	-25.22	peak
3	12698.000	34.63	14.44	49.07	74.00	-24.93	peak
4	13798.000	32.99	17.05	50.04	74.00	-23.96	peak
5	14436.000	32.97	16.64	49.61	74.00	-24.39	peak
6	17252.000	29.97	21.56	51.53	74.00	-22.47	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. 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. Owing to the highest peak level of unwanted emission out of the restricted bands are lower than the line(54dBuV/m) in the graph, so all the peak test point was deemed to comply with the limits -27dBm/MHz (68.2dBuV/m) list in the standard.

8.3.2. 802.11ac VHT20 MIMO MODE

UNII-1 BAND

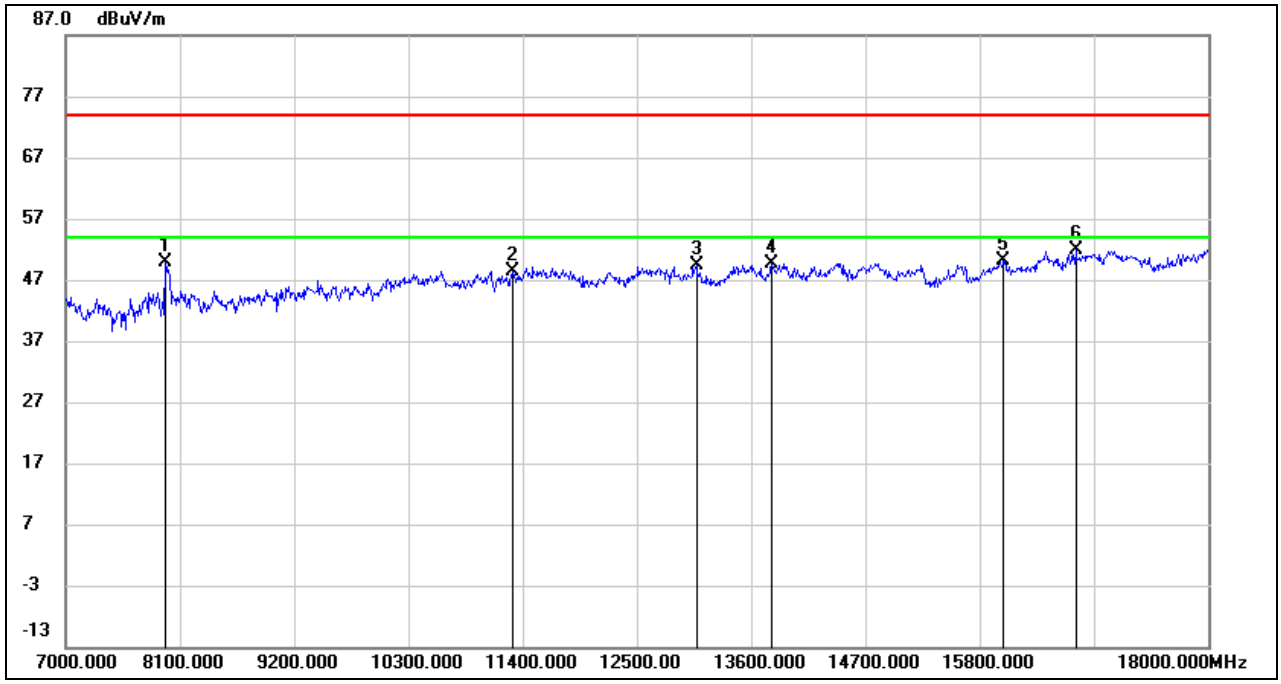
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	9431.000	36.64	9.87	46.51	74.00	-27.49	peak
2	10355.000	40.65	11.23	51.88	74.00	-22.12	peak
3	11554.000	35.66	13.45	49.11	74.00	-24.89	peak
4	13798.000	33.05	17.05	50.10	74.00	-23.90	peak
5	14843.000	34.17	16.11	50.28	74.00	-23.72	peak
6	17032.000	31.44	20.72	52.16	74.00	-21.84	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. Owing to the highest peak level of unwanted emission out of the restricted bands are lower than the line(54dBuV/m) in the graph, so all the peak test point was deemed to comply with the limits -27dBm/MHz (68.2dBuV/m) list in the standard.

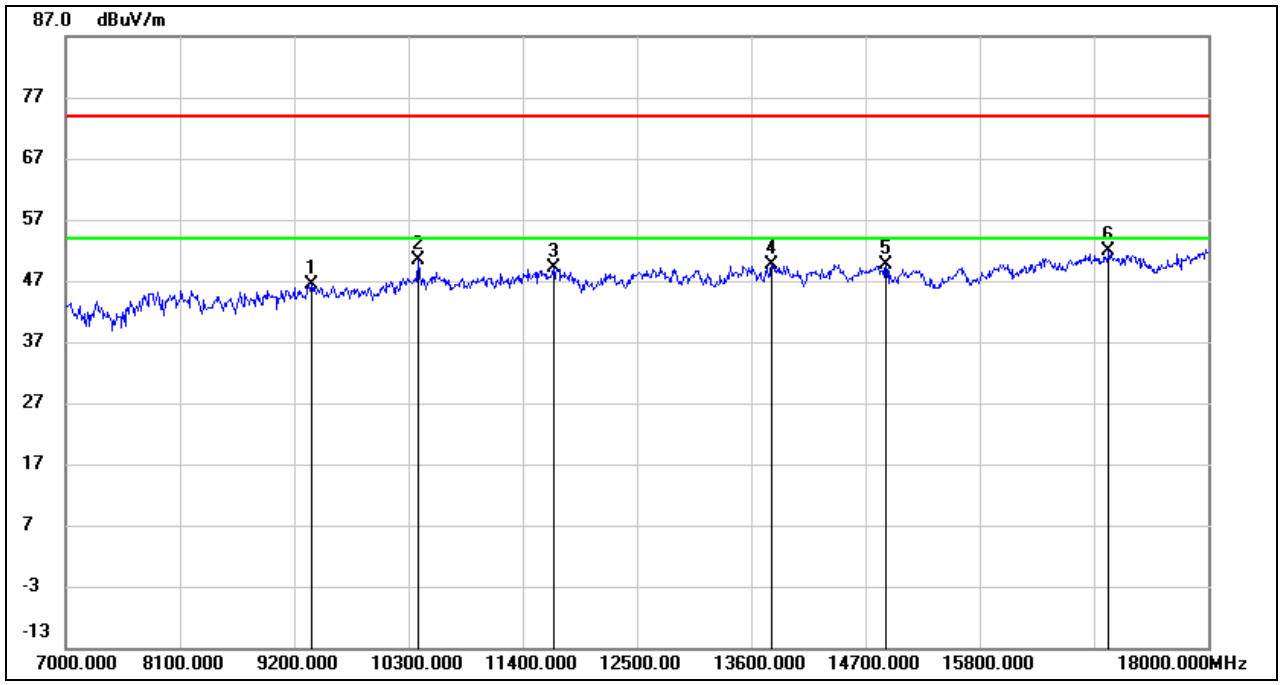
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7957.000	42.34	7.50	49.84	74.00	-24.16	peak
2	11301.000	36.22	12.25	48.47	74.00	-25.53	peak
3	13072.000	34.00	15.28	49.28	74.00	-24.72	peak
4	13798.000	32.69	17.05	49.74	74.00	-24.26	peak
5	16031.000	32.21	17.97	50.18	74.00	-23.82	peak
6	16724.000	31.79	20.09	51.88	74.00	-22.12	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. Owing to the highest peak level of unwanted emission out of the restricted bands are lower than the line(54dBuV/m) in the graph, so all the peak test point was deemed to comply with the limits -27dBm/MHz (68.2dBuV/m) list in the standard.

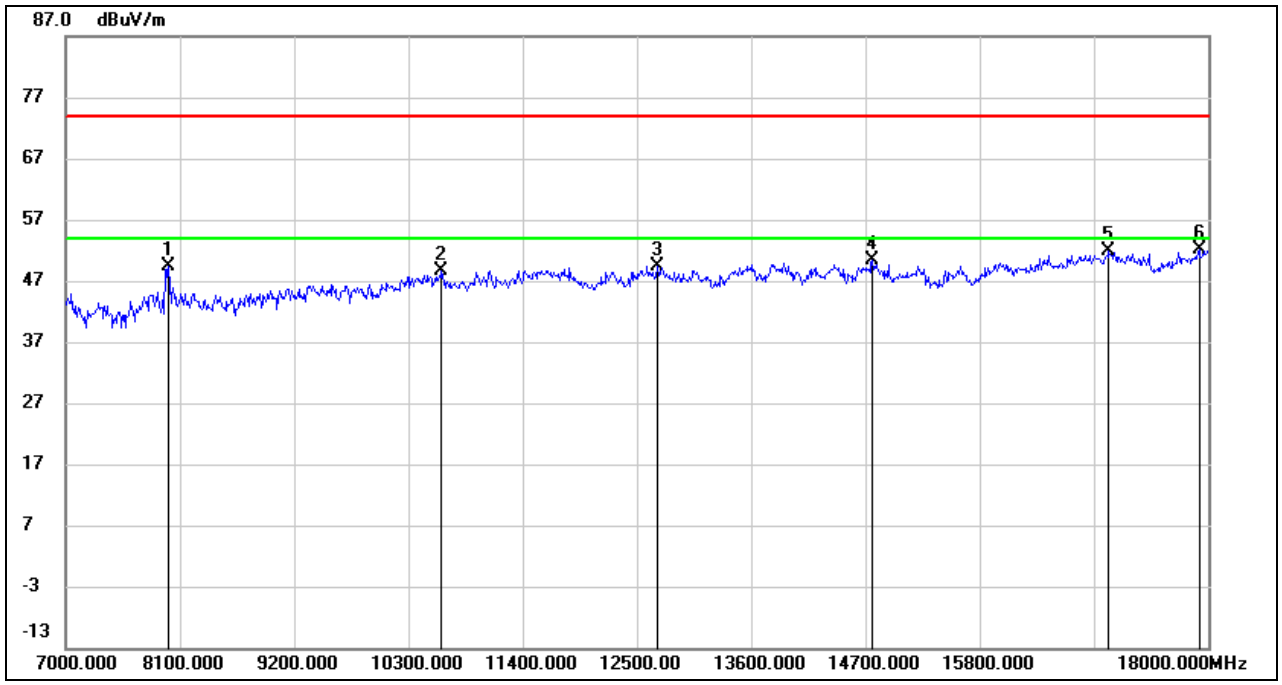
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	9365.000	36.56	9.72	46.28	74.00	-27.72	peak
2	10388.000	39.27	11.18	50.45	74.00	-23.55	peak
3	11697.000	35.96	13.06	49.02	74.00	-24.98	peak
4	13798.000	32.52	17.05	49.57	74.00	-24.43	peak
5	14898.000	33.51	16.18	49.69	74.00	-24.31	peak
6	17043.000	31.18	20.74	51.92	74.00	-22.08	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. Owing to the highest peak level of unwanted emission out of the restricted bands are lower than the line(54dBuV/m) in the graph, so all the peak test point was deemed to comply with the limits -27dBm/MHz (68.2dBuV/m) list in the standard.

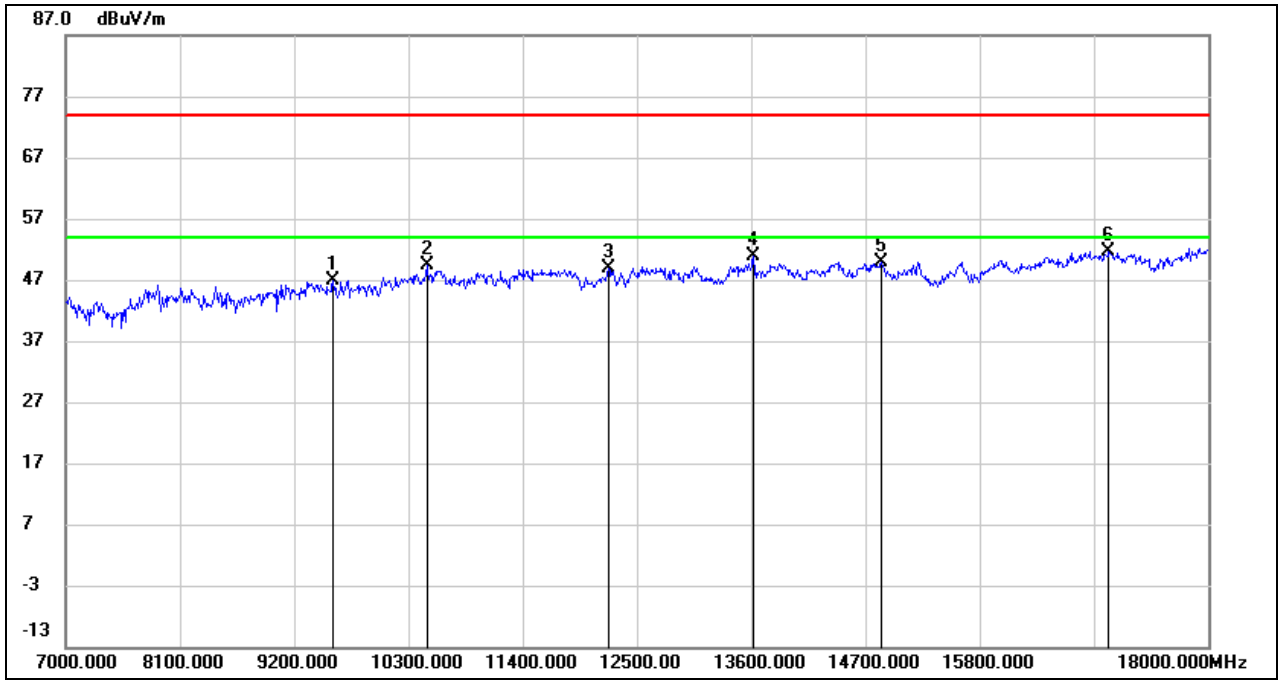
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7990.000	41.95	7.45	49.40	74.00	-24.60	peak
2	10619.000	36.40	12.32	48.72	74.00	-25.28	peak
3	12698.000	35.03	14.44	49.47	74.00	-24.53	peak
4	14766.000	34.30	16.11	50.41	74.00	-23.59	peak
5	17043.000	31.12	20.74	51.86	74.00	-22.14	peak
6	17912.000	28.64	23.42	52.06	74.00	-21.94	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. Owing to the highest peak level of unwanted emission out of the restricted bands are lower than the line(54dBuV/m) in the graph, so all the peak test point was deemed to comply with the limits -27dBm/MHz (68.2dBuV/m) list in the standard.

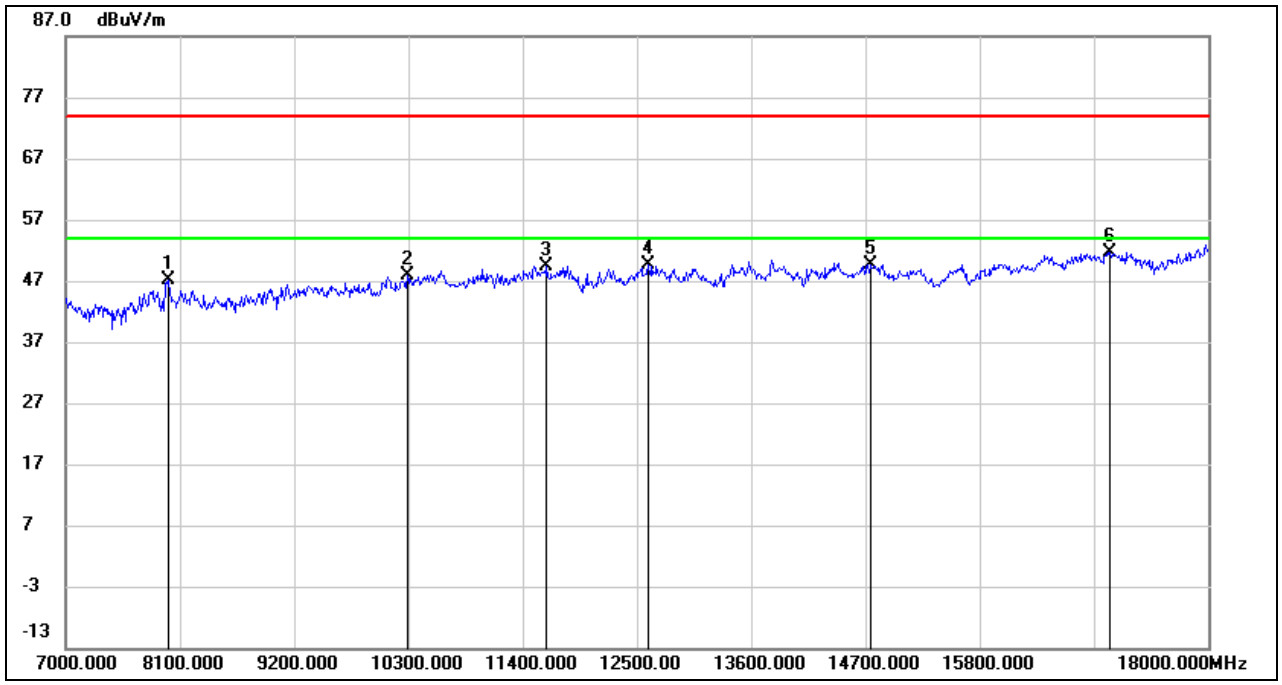
HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	9574.000	37.16	9.66	46.82	74.00	-27.18	peak
2	10476.000	38.11	11.31	49.42	74.00	-24.58	peak
3	12225.000	34.65	14.13	48.78	74.00	-25.22	peak
4	13622.000	34.73	16.08	50.81	74.00	-23.19	peak
5	14854.000	33.83	16.13	49.96	74.00	-24.04	peak
6	17043.000	30.88	20.74	51.62	74.00	-22.38	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 High Pass Filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.
6. Owing to the highest peak level of unwanted emission out of the restricted bands are lower than the line(54dBuV/m) in the graph, so all the peak test point was deemed to comply with the limits -27dBm/MHz (68.2dBuV/m) list in the standard.

HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, VERTICAL)

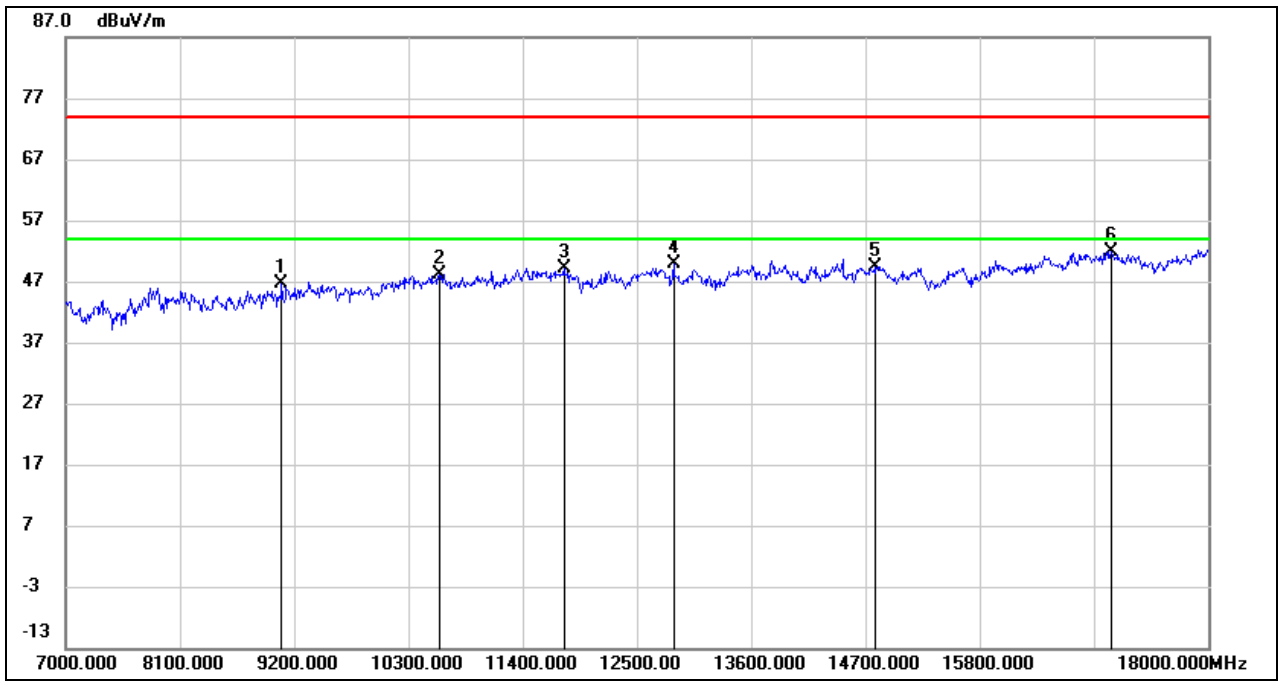


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7990.000	39.68	7.45	47.13	74.00	-26.87	peak
2	10289.000	36.56	11.20	47.76	74.00	-26.24	peak
3	11631.000	36.10	13.38	49.48	74.00	-24.52	peak
4	12610.000	35.45	14.21	49.66	74.00	-24.34	peak
5	14744.000	33.54	16.16	49.70	74.00	-24.30	peak
6	17054.000	30.79	20.76	51.55	74.00	-22.45	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. 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. Owing to the highest peak level of unwanted emission out of the restricted bands are lower than the line(54dBuV/m) in the graph, so all the peak test point was deemed to comply with the limits -27dBm/MHz (68.2dBuV/m) list in the standard.

UNII-3 BAND

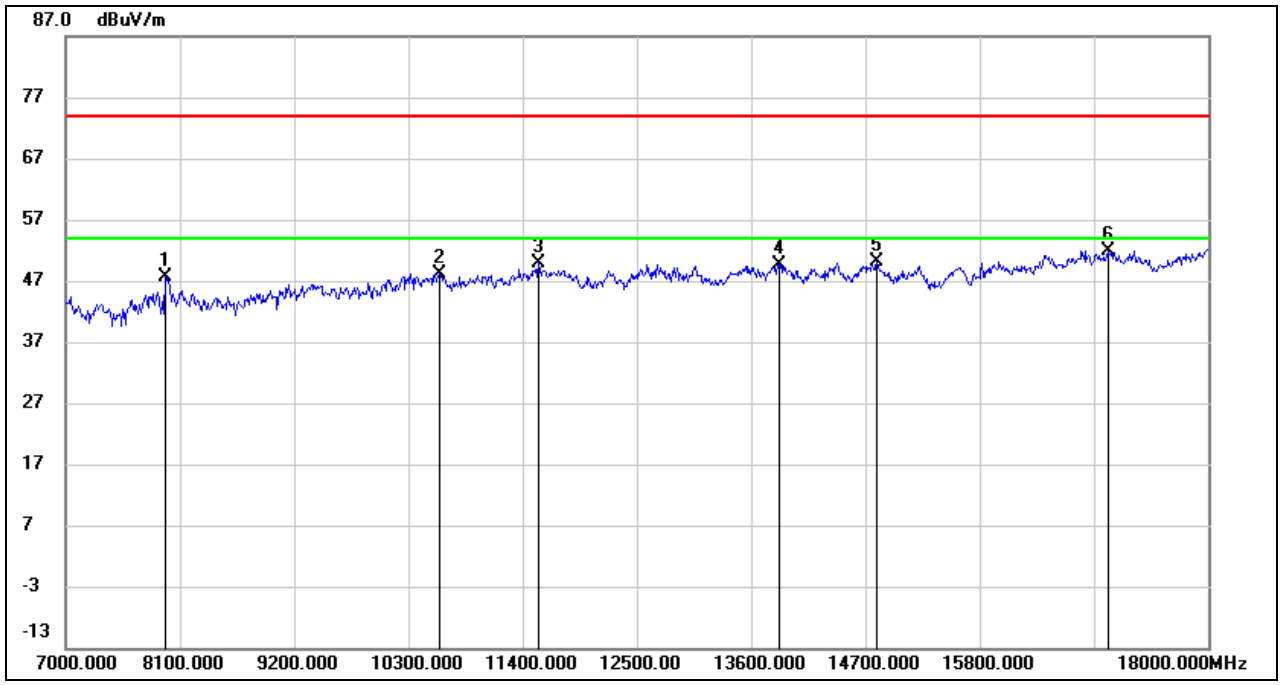
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	9079.000	37.06	9.45	46.51	74.00	-27.49	peak
2	10597.000	35.69	12.43	48.12	74.00	-25.88	peak
3	11796.000	35.89	13.26	49.15	74.00	-24.85	peak
4	12852.000	34.26	15.61	49.87	74.00	-24.13	peak
5	14799.000	33.41	16.06	49.47	74.00	-24.53	peak
6	17065.000	30.99	20.79	51.78	74.00	-22.22	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. Owing to the highest peak level of unwanted emission out of the restricted bands are lower than the line(54dBuV/m) in the graph, so all the peak test point was deemed to comply with the limits -27dBm/MHz (68.2dBuV/m) list in the standard.

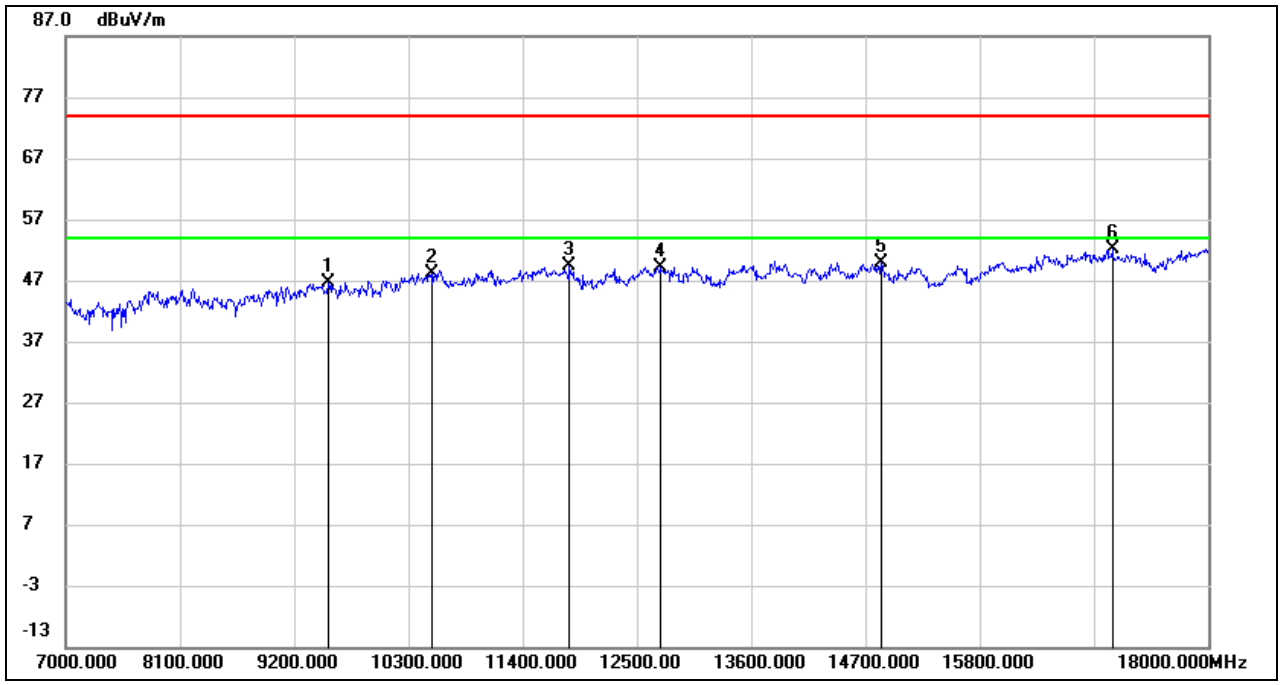
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7957.000	40.08	7.50	47.58	74.00	-26.42	peak
2	10597.000	35.71	12.43	48.14	74.00	-25.86	peak
3	11554.000	36.40	13.45	49.85	74.00	-24.15	peak
4	13864.000	33.14	16.48	49.62	74.00	-24.38	peak
5	14810.000	34.05	16.07	50.12	74.00	-23.88	peak
6	17032.000	31.24	20.72	51.96	74.00	-22.04	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. 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. Owing to the highest peak level of unwanted emission out of the restricted bands are lower than the line(54dBuV/m) in the graph, so all the peak test point was deemed to comply with the limits -27dBm/MHz (68.2dBuV/m) list in the standard.

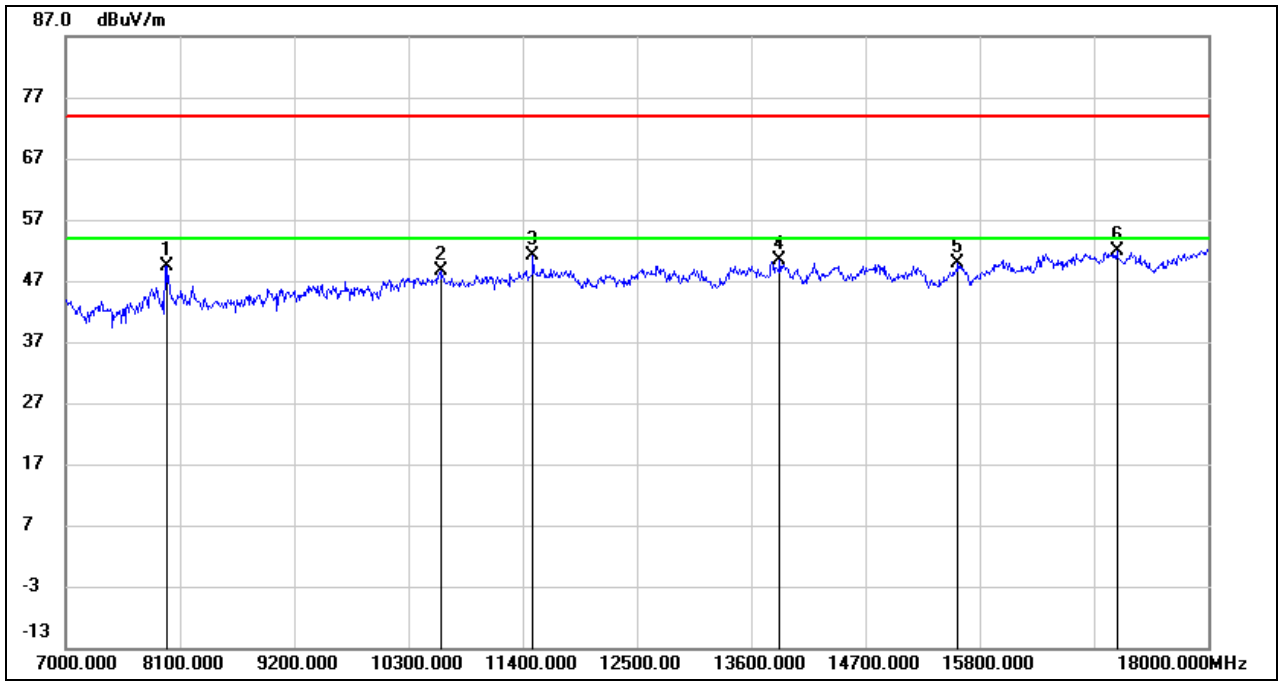
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	9530.000	36.97	9.71	46.68	74.00	-27.32	peak
2	10520.000	36.49	11.57	48.06	74.00	-25.94	peak
3	11851.000	36.09	13.34	49.43	74.00	-24.57	peak
4	12731.000	34.27	14.97	49.24	74.00	-24.76	peak
5	14854.000	33.81	16.13	49.94	74.00	-24.06	peak
6	17076.000	31.37	20.82	52.19	74.00	-21.81	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. Owing to the highest peak level of unwanted emission out of the restricted bands are lower than the line(54dBuV/m) in the graph, so all the peak test point was deemed to comply with the limits -27dBm/MHz (68.2dBuV/m) list in the standard.

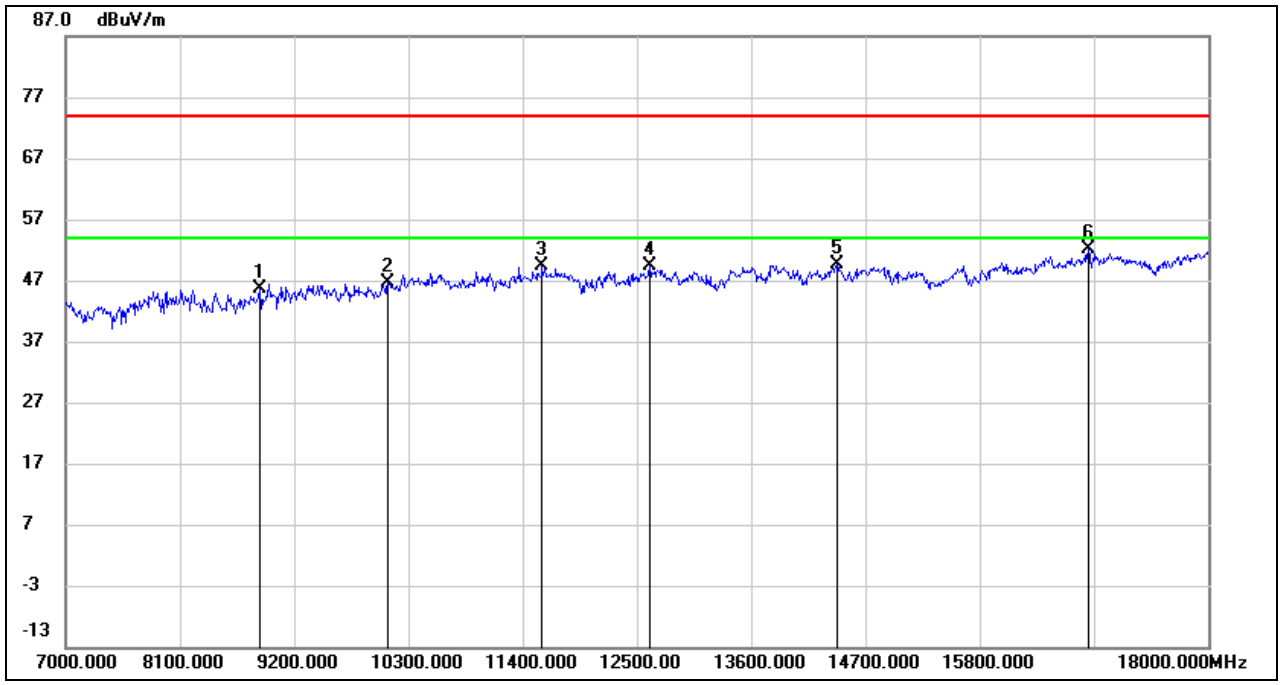
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7968.000	41.97	7.49	49.46	74.00	-24.54	peak
2	10608.000	36.21	12.39	48.60	74.00	-25.40	peak
3	11499.000	37.69	13.35	51.04	74.00	-22.96	peak
4	13875.000	34.01	16.39	50.40	74.00	-23.60	peak
5	15591.000	32.75	17.07	49.82	74.00	-24.18	peak
6	17120.000	30.93	20.95	51.88	74.00	-22.12	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. Owing to the highest peak level of unwanted emission out of the restricted bands are lower than the line(54dBuV/m) in the graph, so all the peak test point was deemed to comply with the limits -27dBm/MHz (68.2dBuV/m) list in the standard.

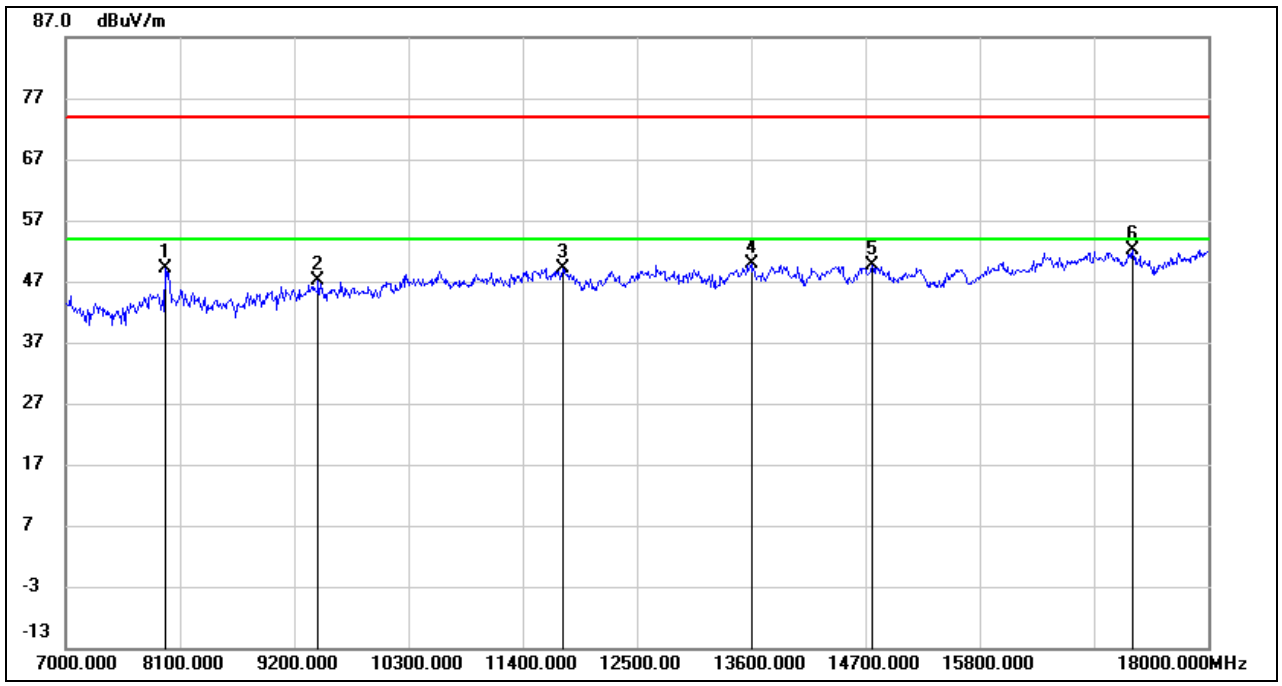
HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	8870.000	37.14	8.58	45.72	74.00	-28.28	peak
2	10102.000	35.87	10.78	46.65	74.00	-27.35	peak
3	11587.000	35.75	13.52	49.27	74.00	-24.73	peak
4	12621.000	35.19	14.25	49.44	74.00	-24.56	peak
5	14425.000	33.06	16.65	49.71	74.00	-24.29	peak
6	16845.000	31.93	20.15	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. Owing to the highest peak level of unwanted emission out of the restricted bands are lower than the line(54dBuV/m) in the graph, so all the peak test point was deemed to comply with the limits -27dBm/MHz (68.2dBuV/m) list in the standard.

HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, VERTICAL)



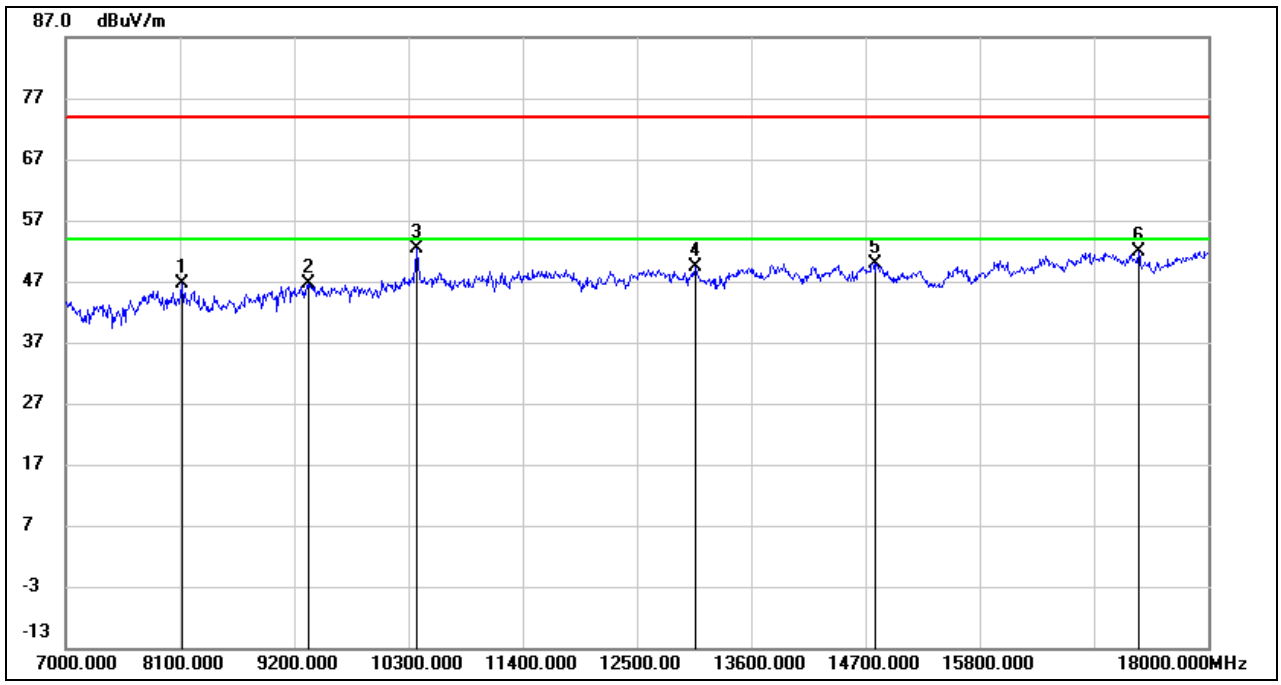
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7957.000	41.63	7.50	49.13	74.00	-24.87	peak
2	9431.000	37.18	9.87	47.05	74.00	-26.95	peak
3	11785.000	35.91	13.22	49.13	74.00	-24.87	peak
4	13600.000	33.67	16.10	49.77	74.00	-24.23	peak
5	14766.000	33.45	16.11	49.56	74.00	-24.44	peak
6	17274.000	30.44	21.71	52.15	74.00	-21.85	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. Owing to the highest peak level of unwanted emission out of the restricted bands are lower than the line(54dBuV/m) in the graph, so all the peak test point was deemed to comply with the limits -27dBm/MHz (68.2dBuV/m) list in the standard.

8.3.3. 802.11ac VHT40 MIMO MODE

UNII-1 BAND

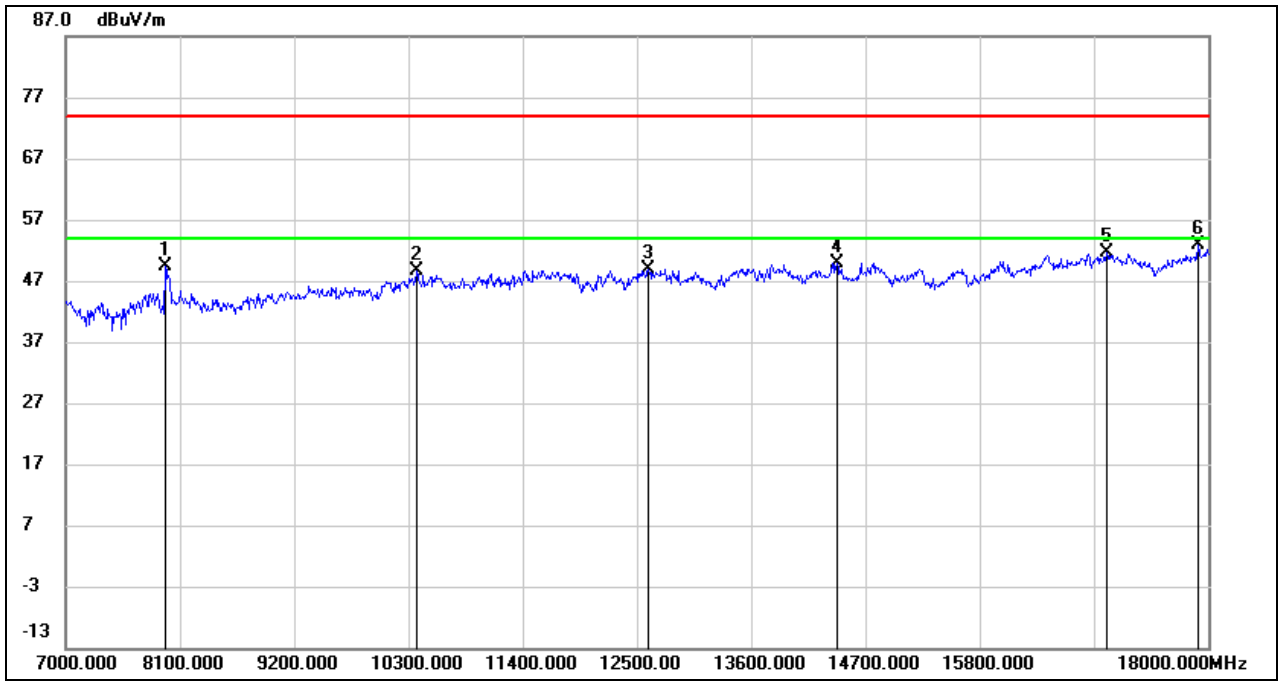
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	8122.000	38.23	8.29	46.52	74.00	-27.48	peak
2	9332.000	37.14	9.51	46.65	74.00	-27.35	peak
3	10377.000	41.30	11.20	52.50	74.00	-21.50	peak
4	13061.000	34.16	15.23	49.39	74.00	-24.61	peak
5	14799.000	33.86	16.06	49.92	74.00	-24.08	peak
6	17329.000	30.06	21.78	51.84	74.00	-22.16	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. Owing to the highest peak level of unwanted emission out of the restricted bands are lower than the line(54dBuV/m) in the graph, so all the peak test point was deemed to comply with the limits -27dBm/MHz (68.2dBuV/m) list in the standard.

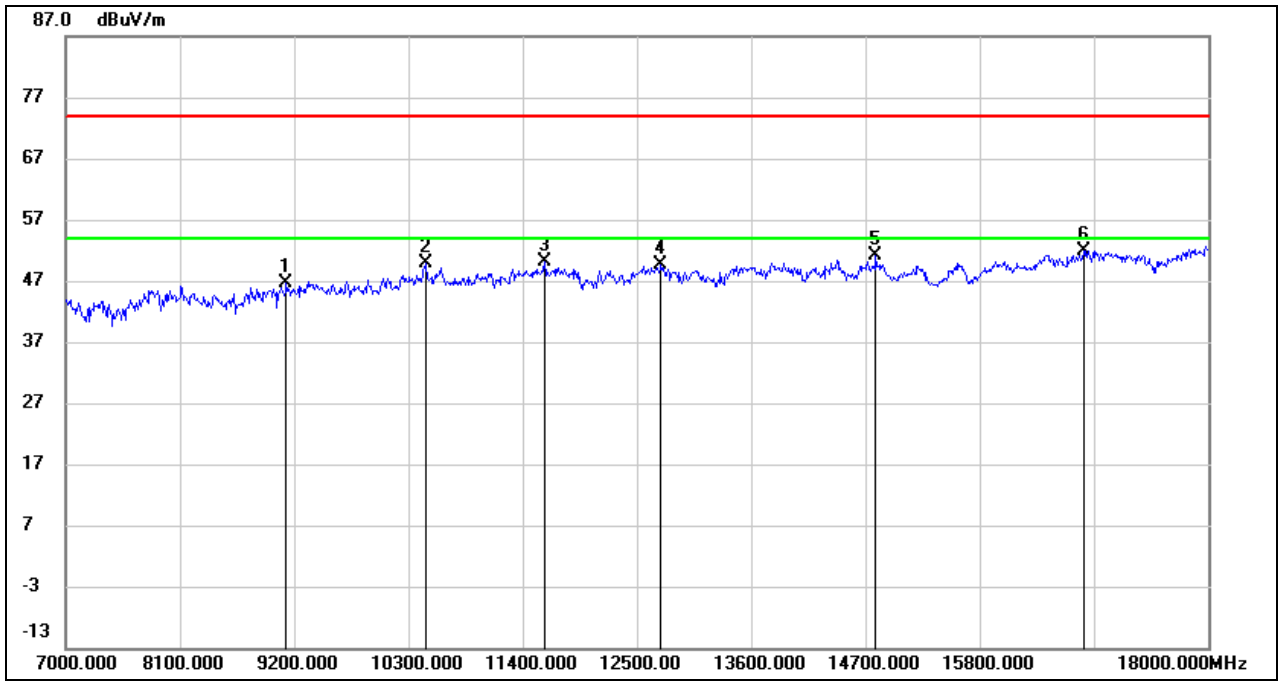
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7957.000	41.97	7.50	49.47	74.00	-24.53	peak
2	10377.000	37.43	11.20	48.63	74.00	-25.37	peak
3	12610.000	34.76	14.21	48.97	74.00	-25.03	peak
4	14425.000	33.28	16.65	49.93	74.00	-24.07	peak
5	17021.000	31.00	20.69	51.69	74.00	-22.31	peak
6	17901.000	29.42	23.40	52.82	74.00	-21.18	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. Owing to the highest peak level of unwanted emission out of the restricted bands are lower than the line(54dBuV/m) in the graph, so all the peak test point was deemed to comply with the limits -27dBm/MHz (68.2dBuV/m) list in the standard.

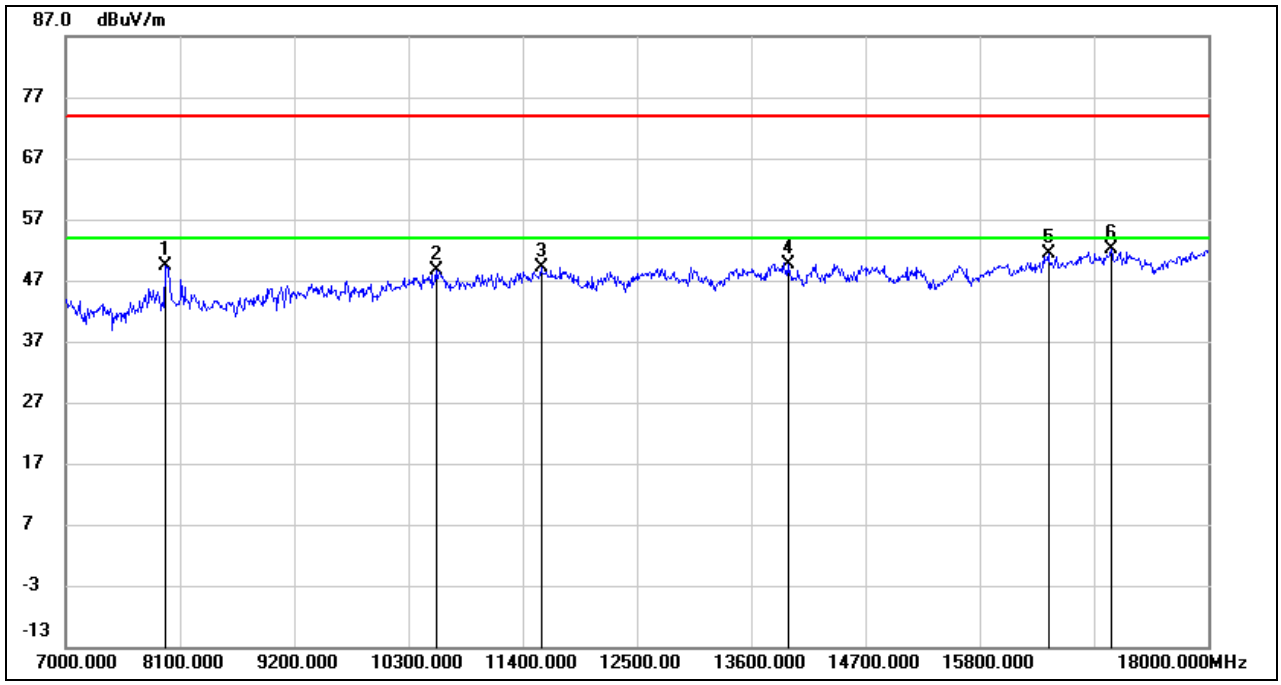
HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	9123.000	37.19	9.35	46.54	74.00	-27.46	peak
2	10465.000	38.51	11.28	49.79	74.00	-24.21	peak
3	11609.000	36.71	13.50	50.21	74.00	-23.79	peak
4	12731.000	34.64	14.97	49.61	74.00	-24.39	peak
5	14799.000	34.96	16.06	51.02	74.00	-22.98	peak
6	16801.000	31.76	20.19	51.95	74.00	-22.05	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. Owing to the highest peak level of unwanted emission out of the restricted bands are lower than the line(54dBuV/m) in the graph, so all the peak test point was deemed to comply with the limits -27dBm/MHz (68.2dBuV/m) list in the standard.

HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, VERTICAL)

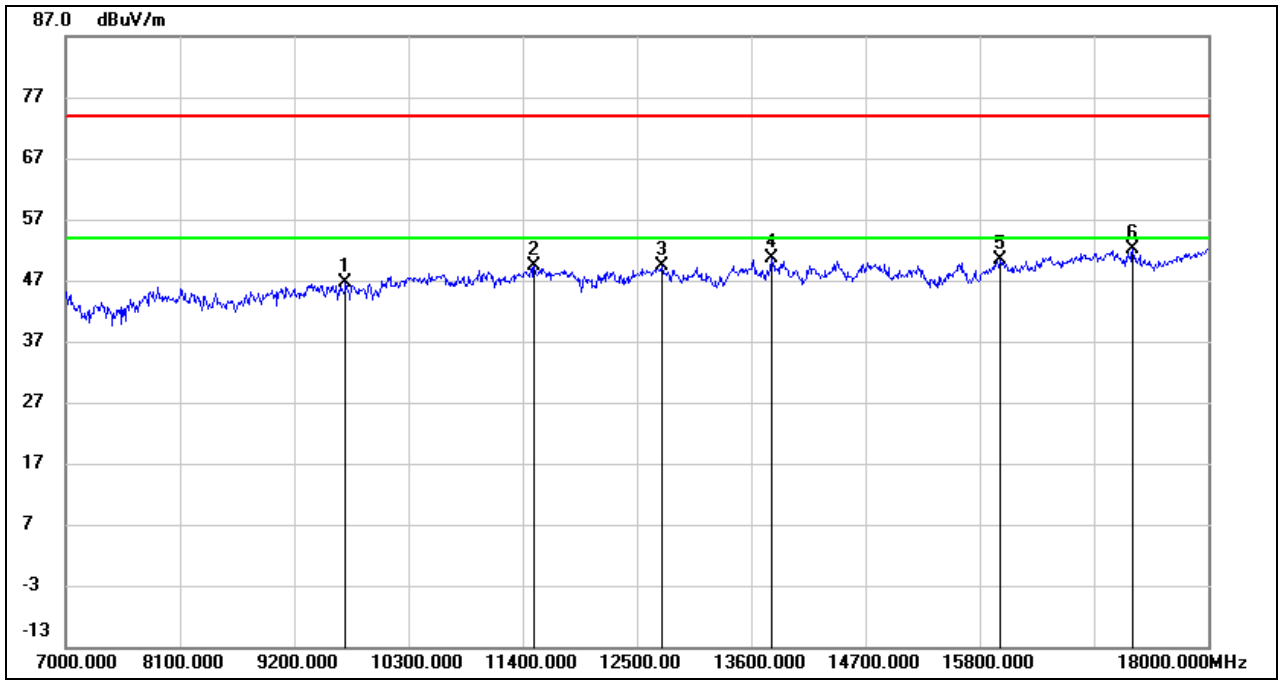


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7957.000	41.86	7.50	49.36	74.00	-24.64	peak
2	10564.000	36.46	12.06	48.52	74.00	-25.48	peak
3	11576.000	35.73	13.51	49.24	74.00	-24.76	peak
4	13952.000	33.45	16.16	49.61	74.00	-24.39	peak
5	16460.000	31.80	19.49	51.29	74.00	-22.71	peak
6	17065.000	31.34	20.79	52.13	74.00	-21.87	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. Owing to the highest peak level of unwanted emission out of the restricted bands are lower than the line(54dBuV/m) in the graph, so all the peak test point was deemed to comply with the limits -27dBm/MHz (68.2dBuV/m) list in the standard.

UNII-3 BAND

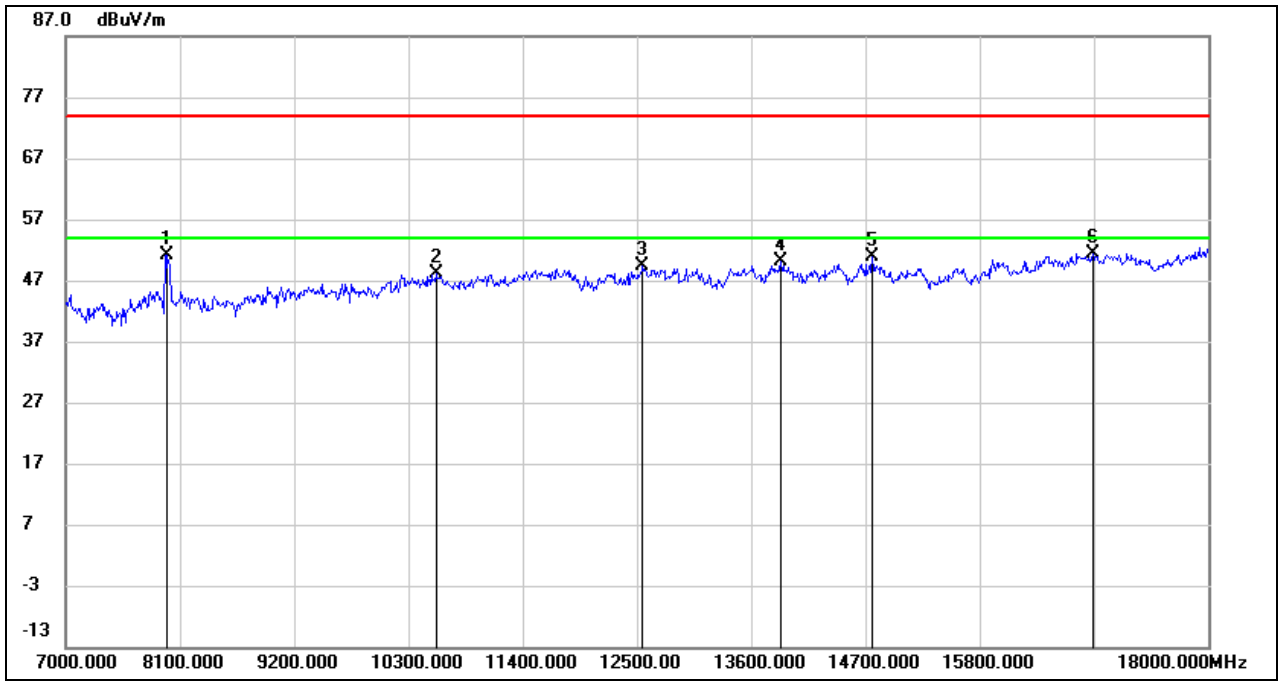
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	9695.000	36.75	9.83	46.58	74.00	-27.42	peak
2	11510.000	35.89	13.39	49.28	74.00	-24.72	peak
3	12742.000	34.11	15.16	49.27	74.00	-24.73	peak
4	13798.000	33.68	17.05	50.73	74.00	-23.27	peak
5	15998.000	32.54	17.80	50.34	74.00	-23.66	peak
6	17274.000	30.46	21.71	52.17	74.00	-21.83	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. Owing to the highest peak level of unwanted emission out of the restricted bands are lower than the line(54dBuV/m) in the graph, so all the peak test point was deemed to comply with the limits -27dBm/MHz (68.2dBuV/m) list in the standard.

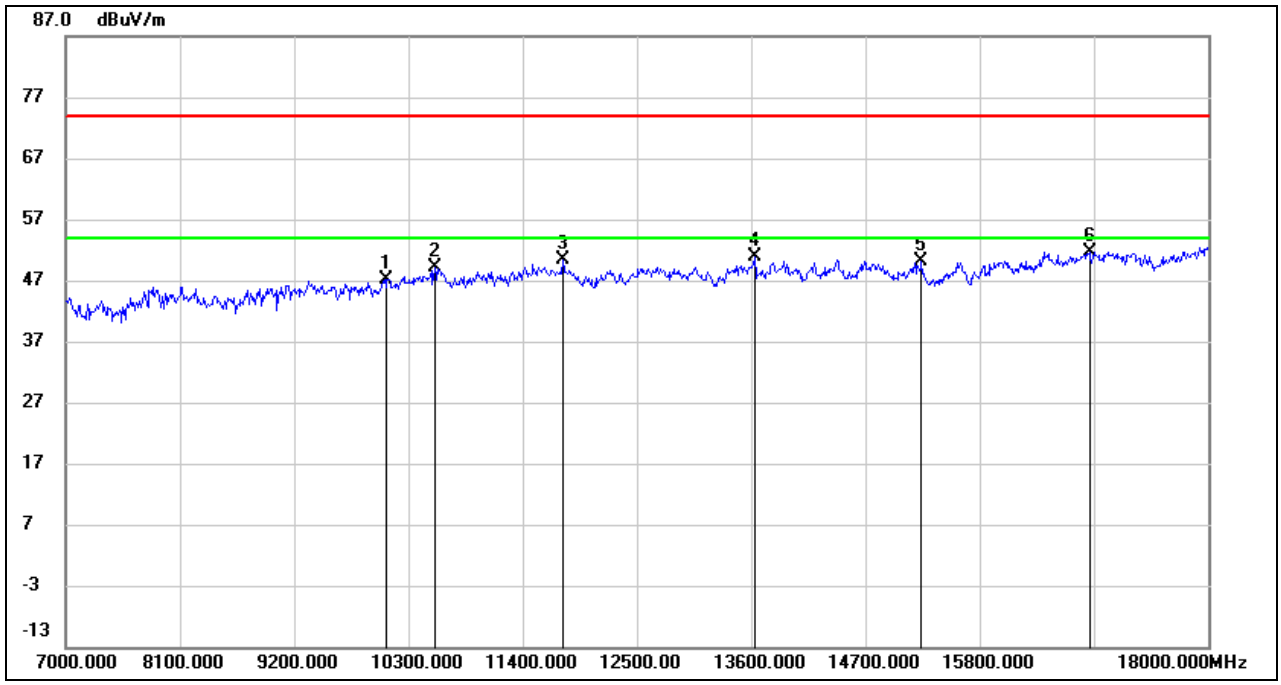
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7968.000	43.68	7.49	51.17	74.00	-22.83	peak
2	10564.000	35.99	12.06	48.05	74.00	-25.95	peak
3	12555.000	34.99	14.49	49.48	74.00	-24.52	peak
4	13886.000	33.86	16.30	50.16	74.00	-23.84	peak
5	14766.000	34.73	16.11	50.84	74.00	-23.16	peak
6	16889.000	31.38	20.11	51.49	74.00	-22.51	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 High Pass Filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.
6. Owing to the highest peak level of unwanted emission out of the restricted bands are lower than the line(54dBuV/m) in the graph, so all the peak test point was deemed to comply with the limits -27dBm/MHz (68.2dBuV/m) list in the standard.

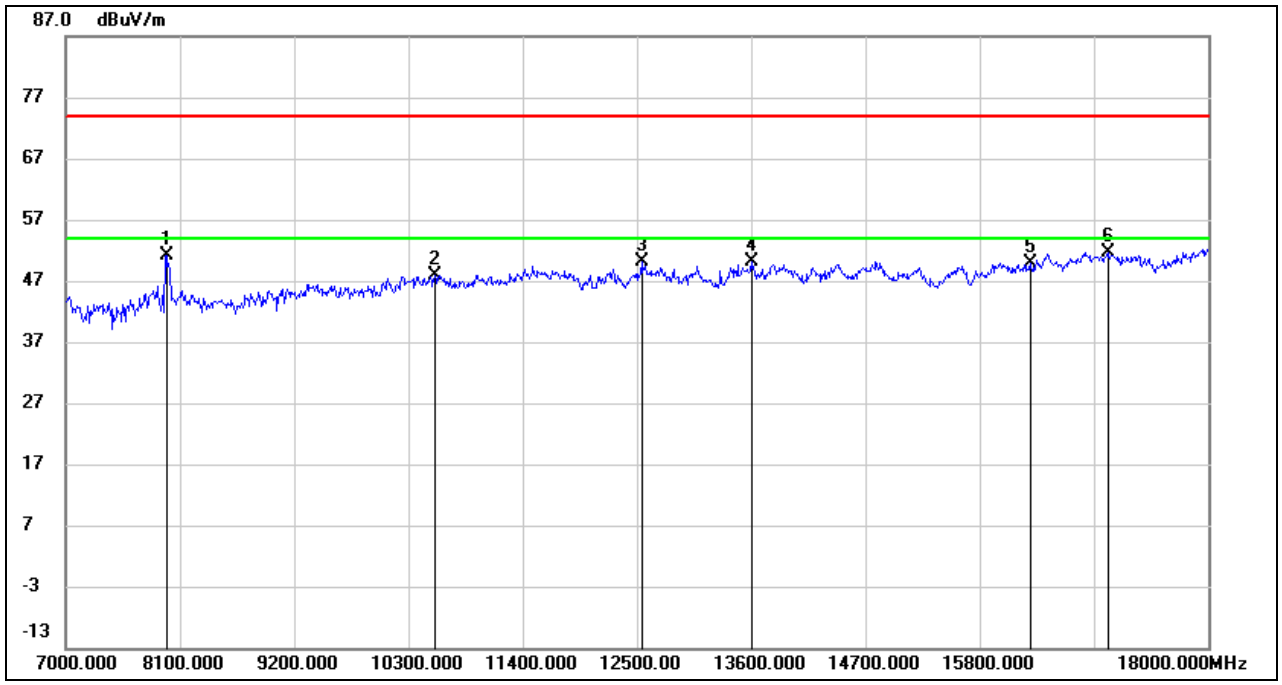
HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10091.000	36.49	10.73	47.22	74.00	-26.78	peak
2	10553.000	37.14	11.93	49.07	74.00	-24.93	peak
3	11785.000	37.15	13.22	50.37	74.00	-23.63	peak
4	13633.000	34.69	16.09	50.78	74.00	-23.22	peak
5	15239.000	34.14	16.10	50.24	74.00	-23.76	peak
6	16856.000	31.61	20.13	51.74	74.00	-22.26	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. Owing to the highest peak level of unwanted emission out of the restricted bands are lower than the line(54dBuV/m) in the graph, so all the peak test point was deemed to comply with the limits -27dBm/MHz (68.2dBuV/m) list in the standard.

HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, VERTICAL)



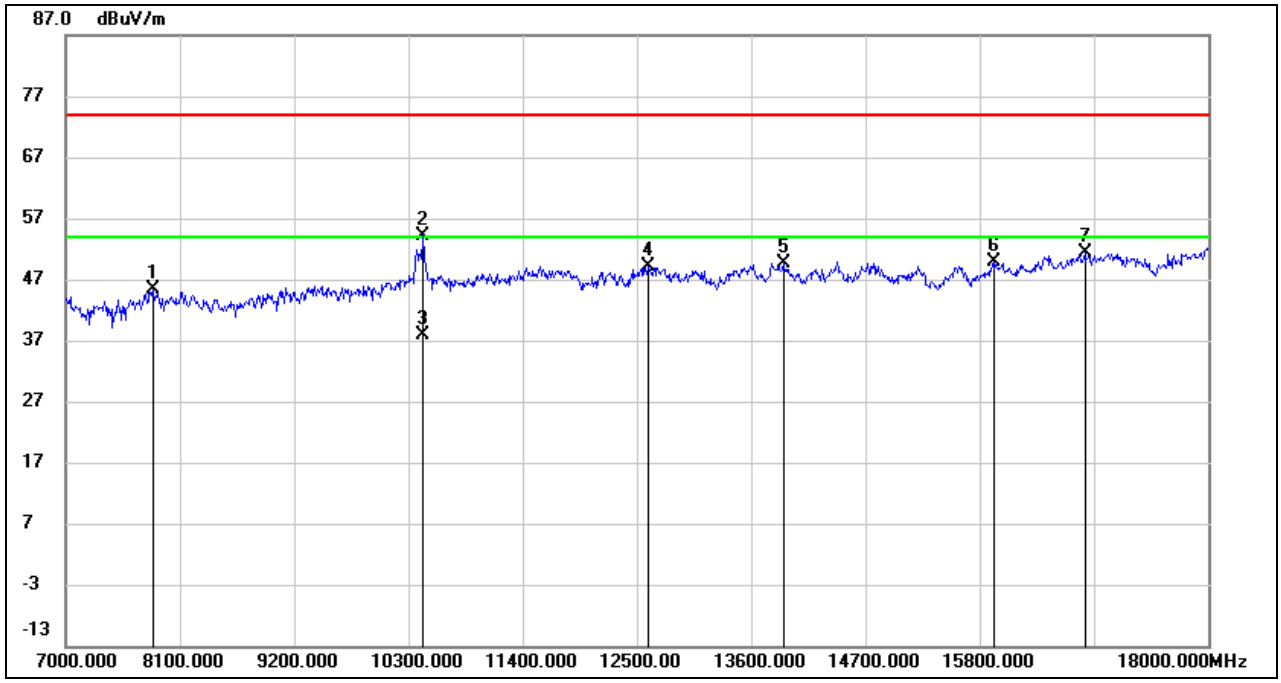
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7968.000	43.67	7.49	51.16	74.00	-22.84	peak
2	10553.000	35.97	11.93	47.90	74.00	-26.10	peak
3	12544.000	35.67	14.57	50.24	74.00	-23.76	peak
4	13600.000	34.05	16.10	50.15	74.00	-23.85	peak
5	16284.000	31.45	18.46	49.91	74.00	-24.09	peak
6	17032.000	31.00	20.72	51.72	74.00	-22.28	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. Owing to the highest peak level of unwanted emission out of the restricted bands are lower than the line(54dBuV/m) in the graph, so all the peak test point was deemed to comply with the limits -27dBm/MHz (68.2dBuV/m) list in the standard.

8.3.4. 802.11ac VHT80 MIMO MODE

UNII-1 BAND

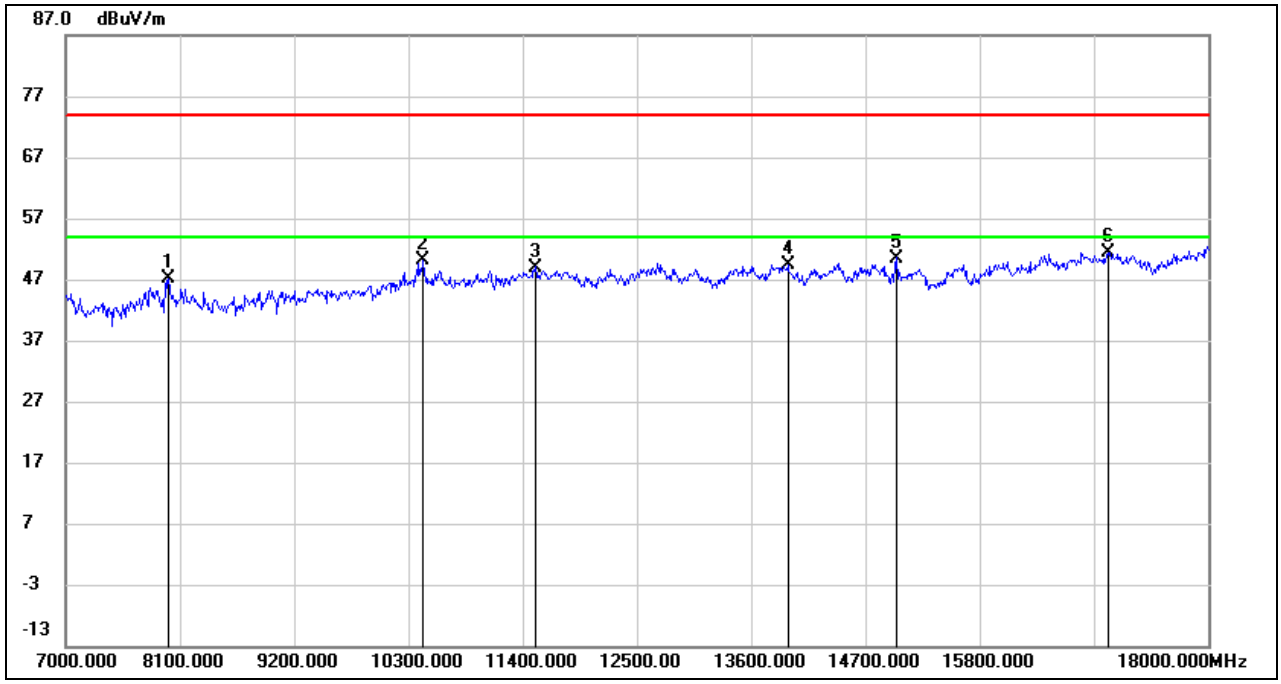
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7836.000	37.36	7.96	45.32	74.00	-28.68	peak
2	10443.000	42.94	11.25	54.19	74.00	-19.81	peak
3	10443.000	26.55	11.25	37.80	54.00	-16.20	AVG
4	12610.000	34.98	14.21	49.19	74.00	-24.81	peak
5	13908.000	33.43	16.16	49.59	74.00	-24.41	peak
6	15943.000	32.07	17.73	49.80	74.00	-24.20	peak
7	16812.000	31.13	20.18	51.31	74.00	-22.69	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
5. For the transmitting duration, please refer to clause 7.1.
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
7. Proper operation of the transmitter prior to adding the filter to the measurement chain.
8. Owing to the highest peak level of unwanted emission out of the restricted bands are lower than the line(54dBuV/m) in the graph, so all the peak test point was deemed to comply with the limits -27dBm/MHz (68.2dBuV/m) list in the standard.

HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)

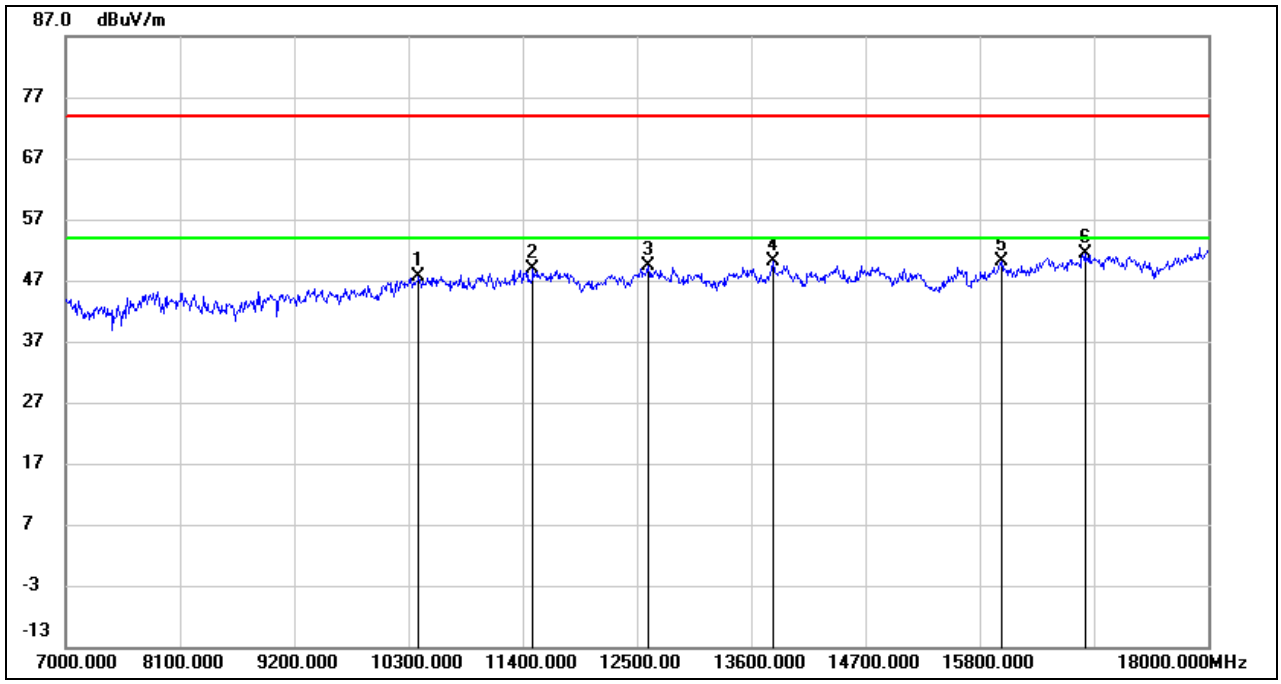


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	7990.000	39.76	7.45	47.21	74.00	-26.79	peak
2	10443.000	38.94	11.25	50.19	74.00	-23.81	peak
3	11521.000	35.60	13.40	49.00	74.00	-25.00	peak
4	13952.000	33.31	16.16	49.47	74.00	-24.53	peak
5	14997.000	34.47	16.03	50.50	74.00	-23.50	peak
6	17032.000	30.70	20.72	51.42	74.00	-22.58	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. Owing to the highest peak level of unwanted emission out of the restricted bands are lower than the line(54dBuV/m) in the graph, so all the peak test point was deemed to comply with the limits -27dBm/MHz (68.2dBuV/m) list in the standard.

UNII-3 BAND

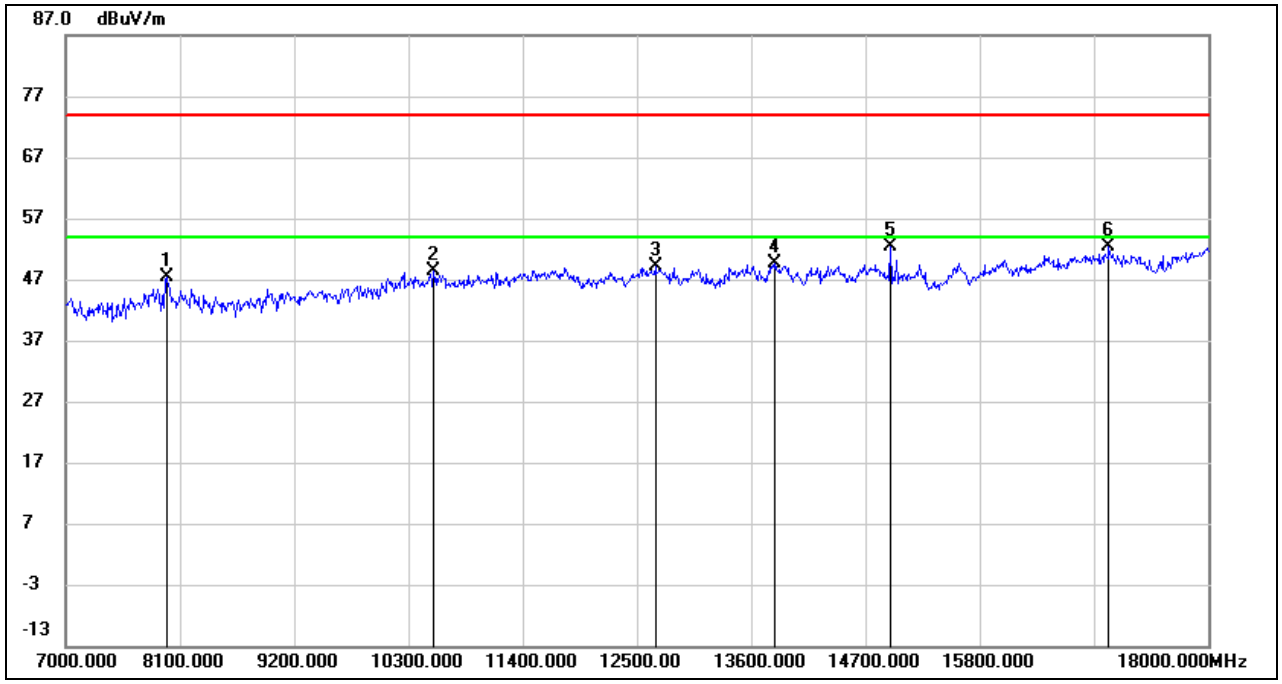
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10399.000	36.43	11.17	47.60	74.00	-26.40	peak
2	11499.000	35.63	13.35	48.98	74.00	-25.02	peak
3	12610.000	35.11	14.21	49.32	74.00	-24.68	peak
4	13809.000	33.07	16.99	50.06	74.00	-23.94	peak
5	16009.000	32.33	17.85	50.18	74.00	-23.82	peak
6	16812.000	31.09	20.18	51.27	74.00	-22.73	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. 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. Owing to the highest peak level of unwanted emission out of the restricted bands are lower than the line(54dBuV/m) in the graph, so all the peak test point was deemed to comply with the limits -27dBm/MHz (68.2dBuV/m) list in the standard.

HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)



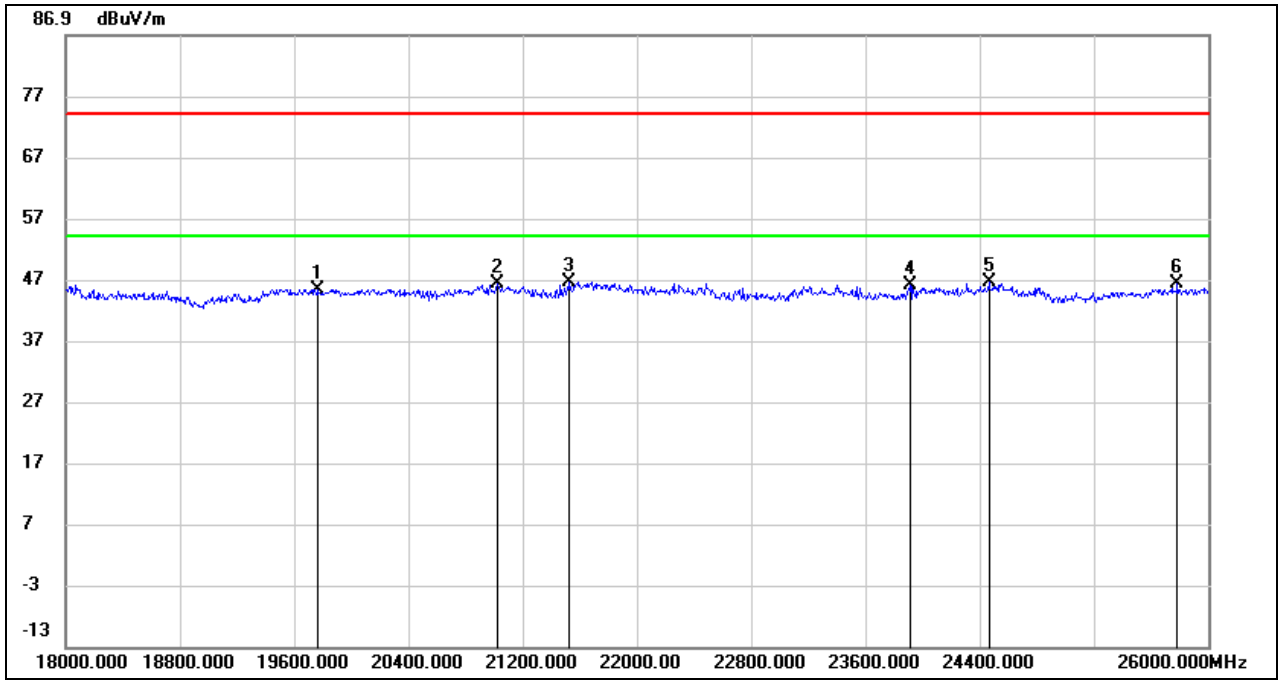
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7968.000	39.77	7.49	47.26	74.00	-26.74	peak
2	10542.000	36.52	11.83	48.35	74.00	-25.65	peak
3	12676.000	34.69	14.38	49.07	74.00	-24.93	peak
4	13831.000	32.85	16.79	49.64	74.00	-24.36	peak
5	14942.000	36.30	16.12	52.42	74.00	-21.58	peak
6	17043.000	31.75	20.74	52.49	74.00	-21.51	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 High Pass Filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.
6. Owing to the highest peak level of unwanted emission out of the restricted bands are lower than the line(54dBuV/m) in the graph, so all the peak test point was deemed to comply with the limits -27dBm/MHz (68.2dBuV/m) list in the standard.

8.4. SPURIOUS EMISSIONS (18 GHz ~ 26 GHz)

8.4.1. 802.11n HT40 MODE

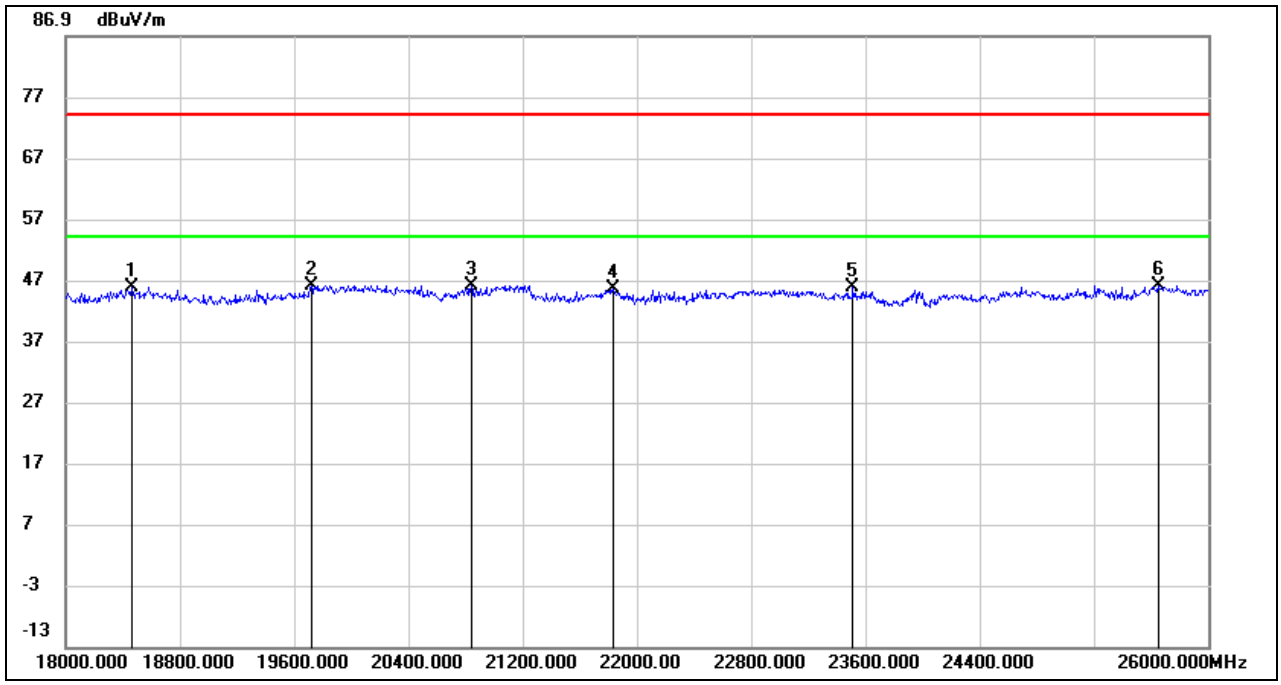
SPURIOUS EMISSIONS (UNII-3 BAND LOW CHANNEL, HORIZONTAL, WORST-CASE CONFIGURATION)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	19760.000	49.73	-4.34	45.39	74.00	-28.61	peak
2	21024.000	51.62	-5.30	46.32	74.00	-27.68	peak
3	21528.000	52.42	-5.78	46.64	74.00	-27.36	peak
4	23912.000	50.32	-4.23	46.09	74.00	-27.91	peak
5	24464.000	49.28	-2.74	46.54	74.00	-27.46	peak
6	25784.000	47.73	-1.49	46.24	74.00	-27.76	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.

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



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	18464.000	50.20	-4.39	45.81	74.00	-28.19	peak
2	19720.000	50.50	-4.39	46.11	74.00	-27.89	peak
3	20840.000	51.27	-5.18	46.09	74.00	-27.91	peak
4	21832.000	51.53	-5.92	45.61	74.00	-28.39	peak
5	23512.000	50.51	-4.76	45.75	74.00	-28.25	peak
6	25648.000	47.62	-1.53	46.09	74.00	-27.91	peak

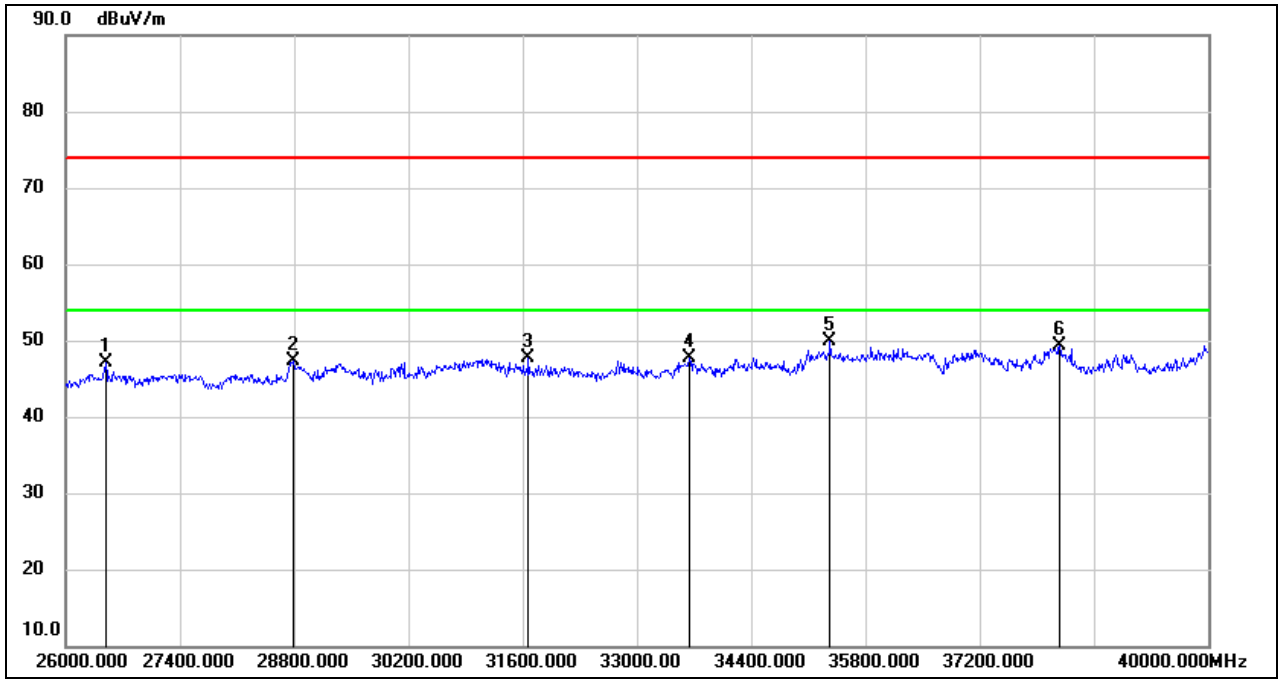
Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.

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. 802.11n HT40 MODE

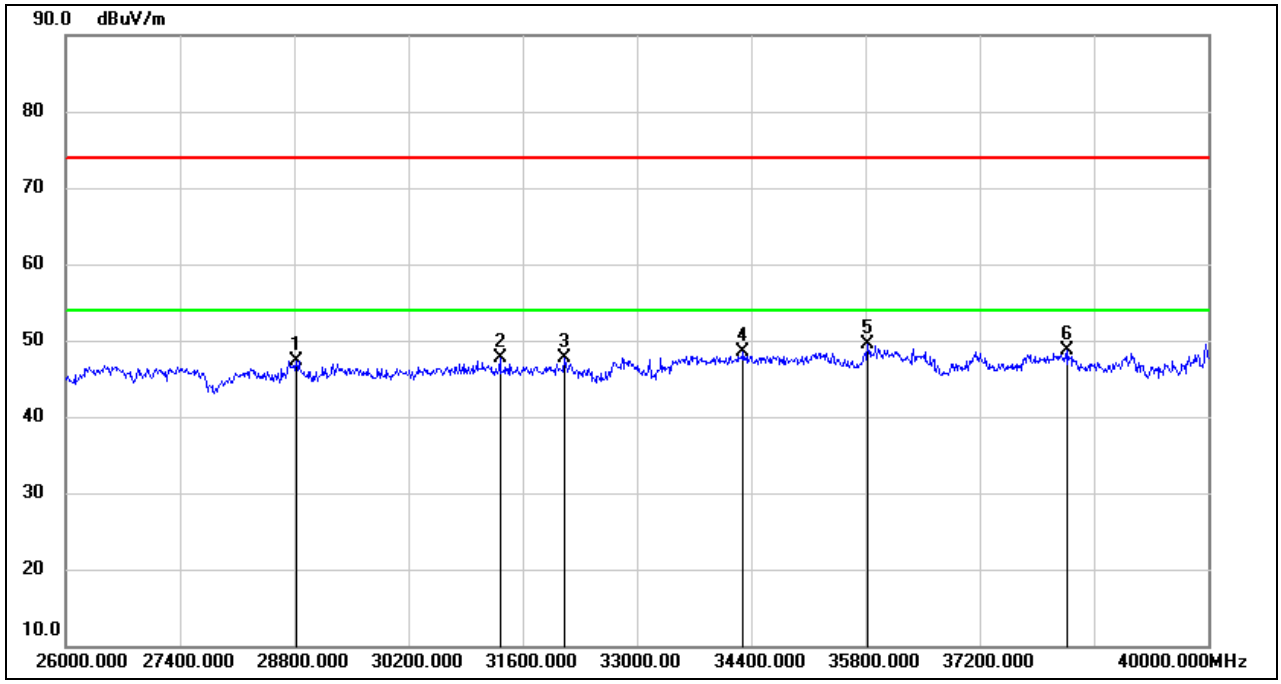
SPURIOUS EMISSIONS (UNII-3 BAND LOW CHANNEL, HORIZONTAL, WORST-CASE CONFIGURATION)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	26490.000	51.79	-4.74	47.05	74.00	-26.95	peak
2	28786.000	47.99	-0.64	47.35	74.00	-26.65	peak
3	31670.000	48.86	-1.21	47.65	74.00	-26.35	peak
4	33644.000	47.31	0.42	47.73	74.00	-26.27	peak
5	35366.000	47.40	2.59	49.99	74.00	-24.01	peak
6	38180.000	45.64	3.69	49.33	74.00	-24.67	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.

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



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	28828.000	48.13	-0.79	47.34	74.00	-26.66	peak
2	31320.000	48.61	-0.93	47.68	74.00	-26.32	peak
3	32104.000	49.49	-1.75	47.74	74.00	-26.26	peak
4	34302.000	47.45	1.10	48.55	74.00	-25.45	peak
5	35828.000	45.75	3.67	49.42	74.00	-24.58	peak
6	38278.000	44.82	3.82	48.64	74.00	-25.36	peak

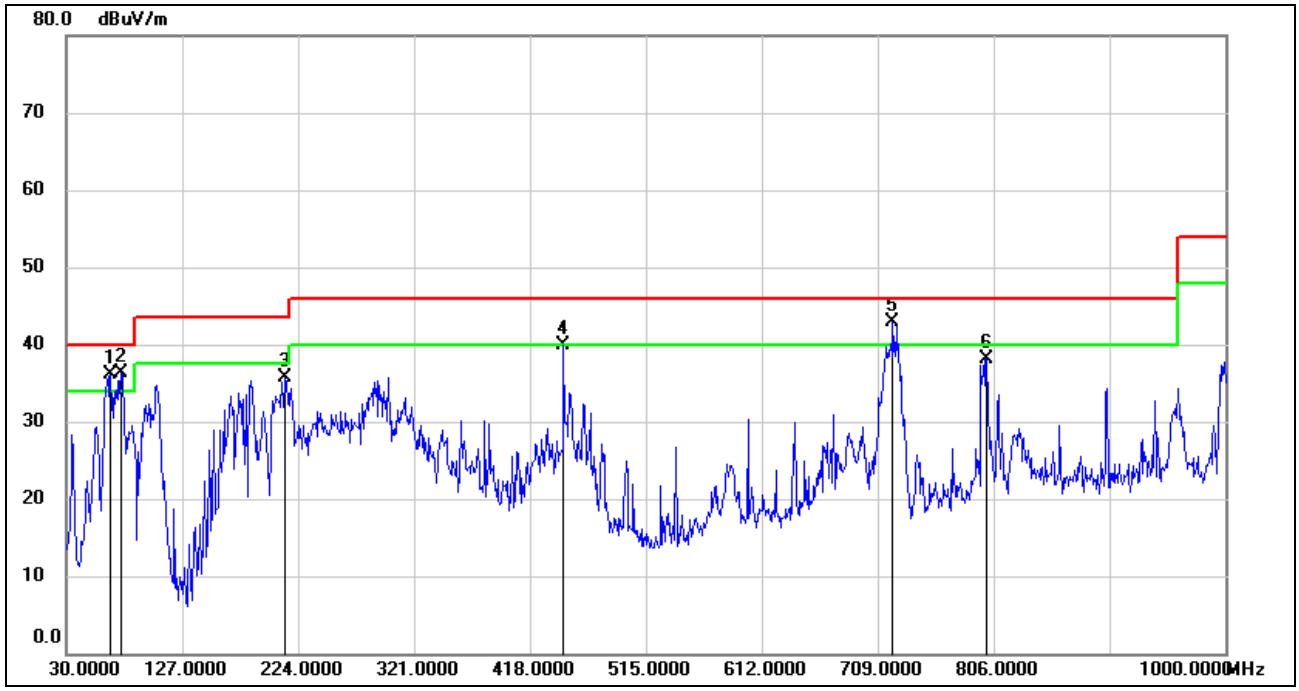
Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Proper operation of the transmitter prior to adding the filter to the measurement chain.

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. 802.11n HT40 MODE

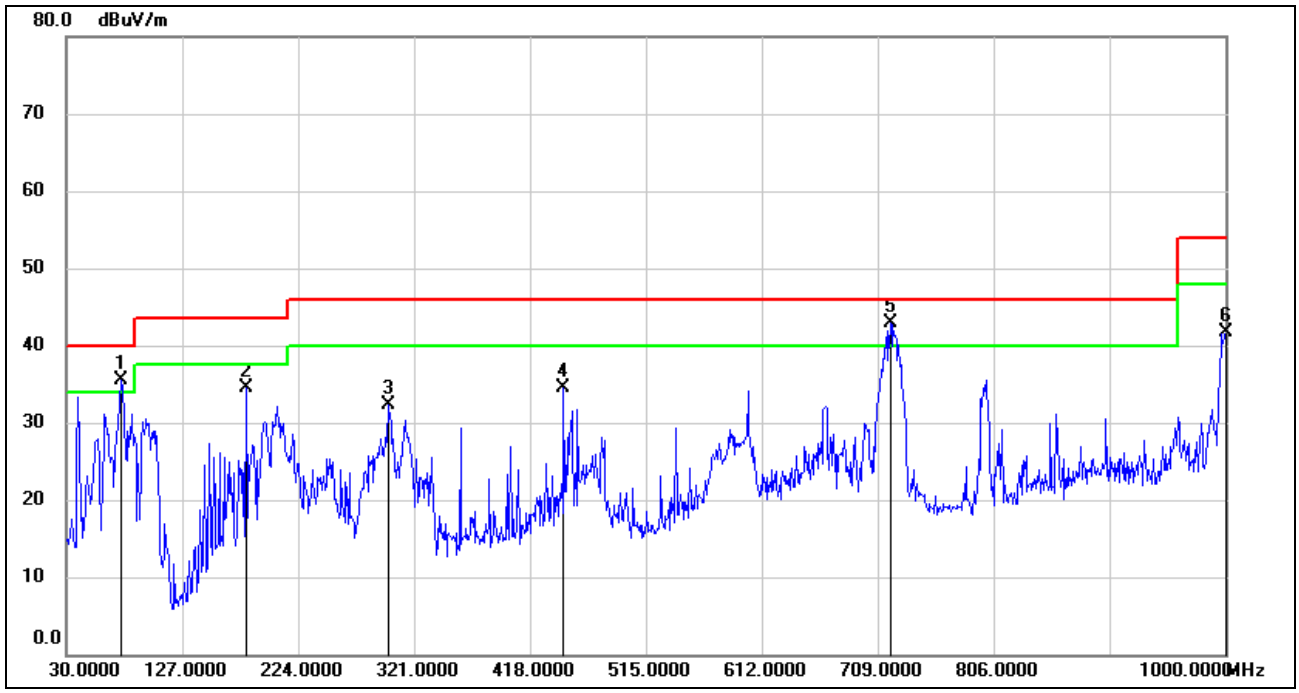
SPURIOUS EMISSIONS (UNII-3 BAND LOW CHANNEL, HORIZONTAL, WORST-CASE CONFIGURATION)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	66.8600	55.80	-19.67	36.13	40.00	-3.87	QP
2	75.5899	56.64	-20.35	36.29	40.00	-3.71	QP
3	212.3600	52.70	-17.03	35.67	43.50	-7.83	QP
4	446.1300	51.75	-11.89	39.86	46.00	-6.14	QP
5	721.6100	49.35	-6.47	42.88	46.00	-3.12	QP
6	800.1800	43.70	-5.51	38.19	46.00	-7.81	QP

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

SPURIOUS EMISSIONS (UNII-1 BAND LOW CHANNEL, VERTICAL, WORST-CASE CONFIGURATION)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	75.5899	55.82	-20.35	35.47	40.00	-4.53	QP
2	180.3500	51.03	-16.53	34.50	43.50	-9.00	QP
3	299.6600	46.63	-14.39	32.24	46.00	-13.76	QP
4	446.1300	46.37	-11.89	34.48	46.00	-11.52	QP
5	719.6700	49.37	-6.45	42.92	46.00	-3.08	QP
6	1000.0000	45.03	-3.24	41.79	54.00	-12.21	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

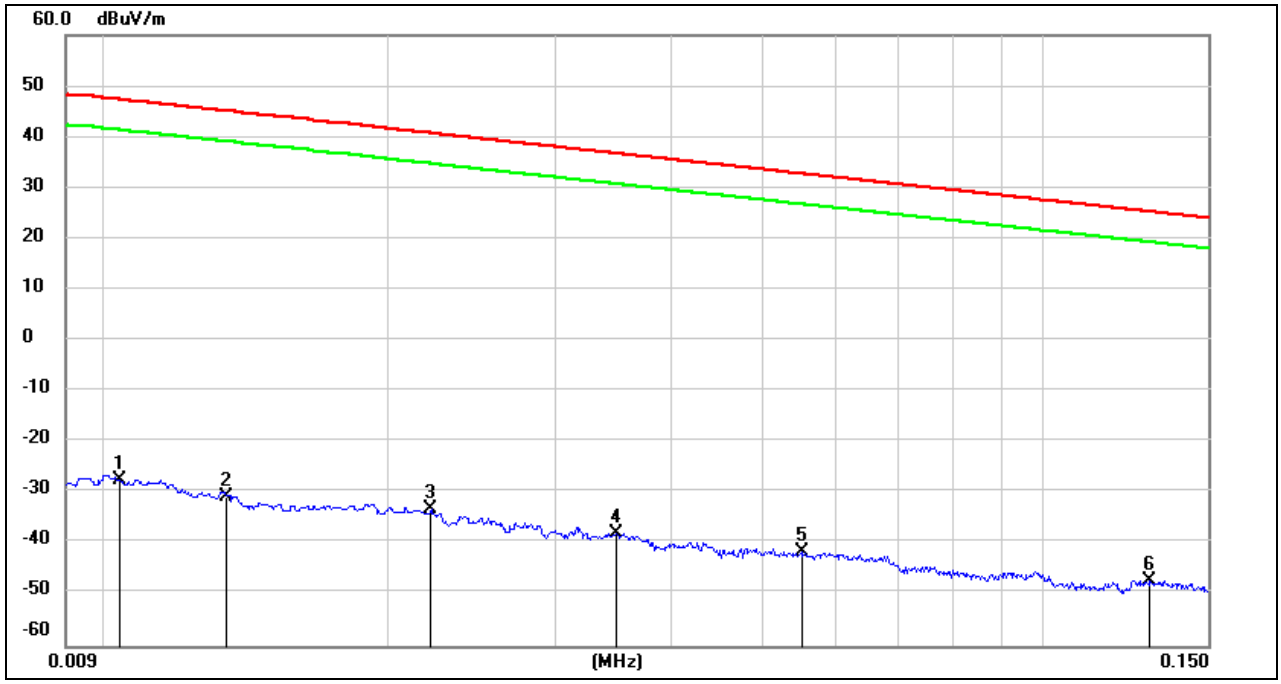
Note: All the modes and antennas had been tested, but only the worst data was recorded in the report.

8.7. SPURIOUS EMISSIONS BELOW 30 MHz

8.7.1. 802.11n HT40 MODE

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

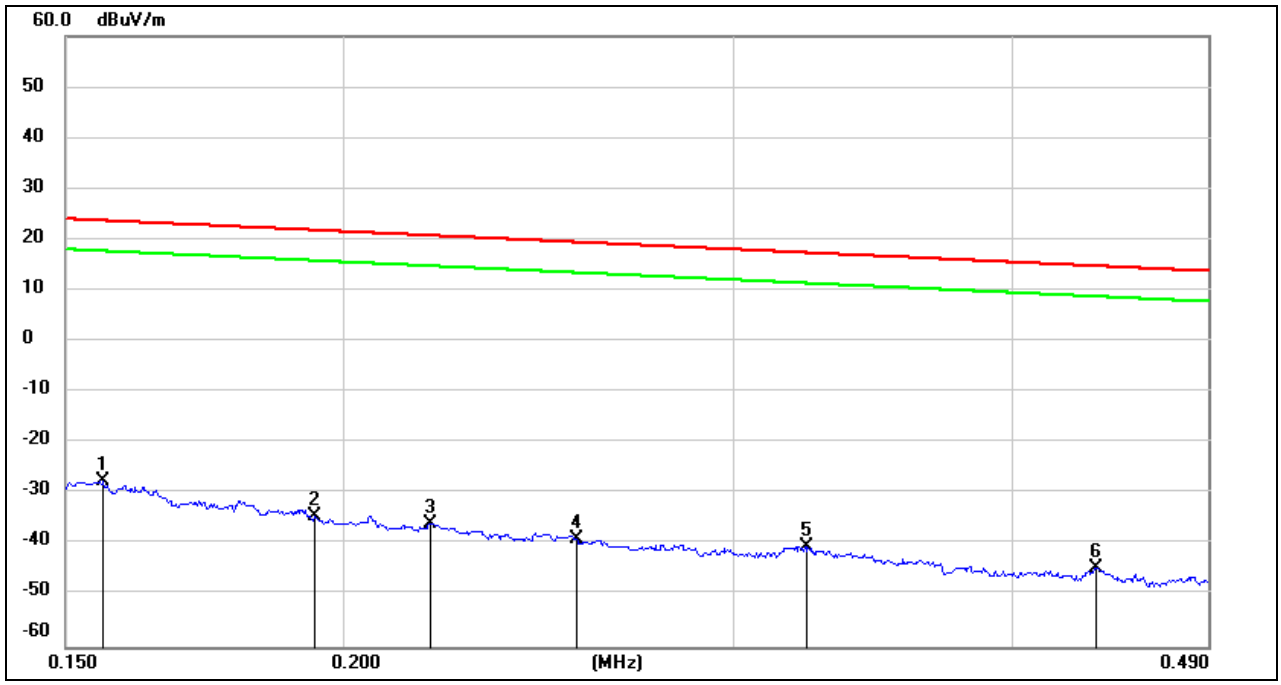
9 kHz~ 150 kHz



No.	Frequency	Reading	Correct	FCC Result	FCC Limit	ISED Result	ISED Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuA/m)	(dBuA/m)	(dB)	
1	0.0103	74.05	-101.40	-27.35	47.34	-78.85	-4.16	-74.69	peak
2	0.0134	70.73	-101.39	-30.66	45.06	-82.16	-6.44	-75.72	peak
3	0.0221	68.13	-101.35	-33.22	40.71	-84.72	-10.79	-73.93	peak
4	0.0349	63.53	-101.41	-37.88	36.75	-89.38	-14.75	-74.63	peak
5	0.0551	59.95	-101.50	-41.55	32.78	-93.05	-18.72	-74.33	peak
6	0.1300	54.43	-101.70	-47.27	25.33	-98.77	-26.17	-72.60	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.
3. All 3 polarizations (Horizontal, Face-on and Face-off) of the loop antenna had been tested, but only the worst data recorded in the report.
4. dBuA/m = dBuV/m – 20log10(120π) = dBuV/m -51.5.

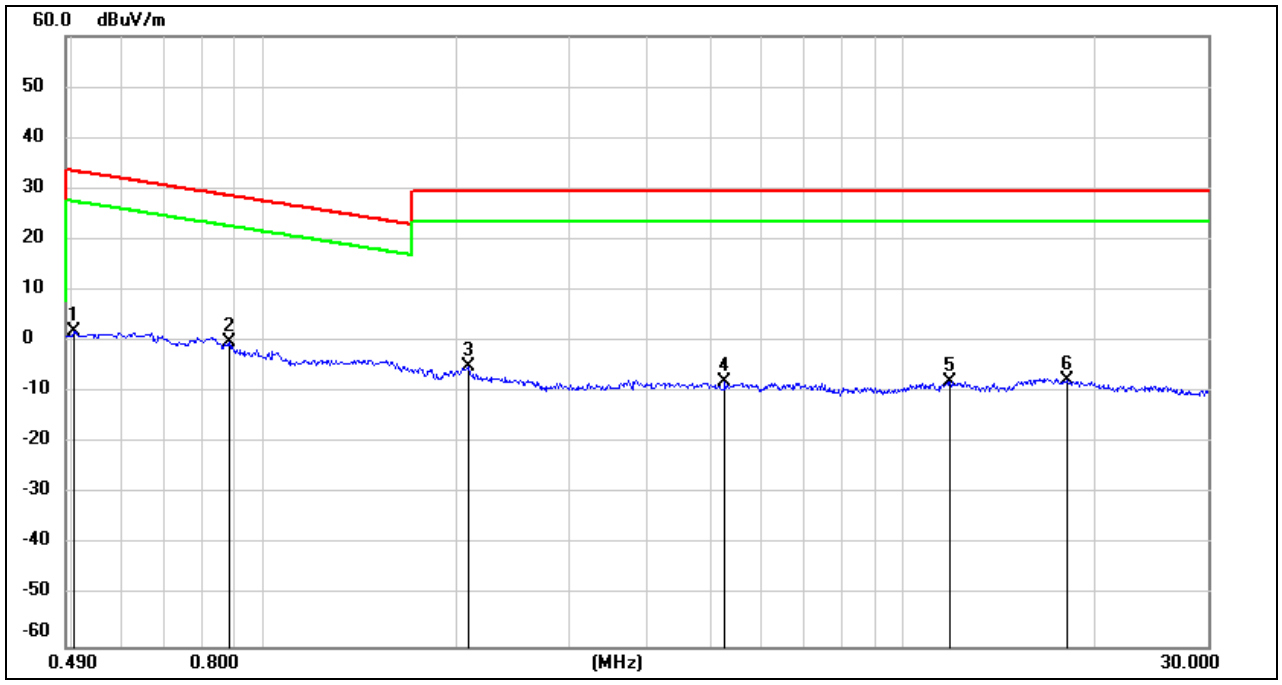
150 kHz ~ 490 kHz



No.	Frequency	Reading	Correct	FCC Result	FCC Limit	ISED Result	ISED Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuA/m)	(dBuA/m)	(dB)	
1	0.1559	74.15	-101.65	-27.5	23.74	-79.00	-27.76	-51.24	peak
2	0.1942	67.31	-101.70	-34.39	21.84	-85.89	-29.66	-56.23	peak
3	0.2190	65.77	-101.75	-35.98	20.79	-87.48	-30.71	-56.77	peak
4	0.2545	62.90	-101.80	-38.9	19.49	-90.40	-32.01	-58.39	peak
5	0.3234	61.48	-101.88	-40.4	17.41	-91.90	-34.09	-57.81	peak
6	0.4364	57.36	-101.99	-44.63	14.8	-96.13	-36.70	-59.43	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.
3. All 3 polarizations (Horizontal, Face-on and Face-off) of the loop antenna had been tested, but only the worst data recorded in the report.
4. dBuA/m = dBuV/m – 20log10(120π) = dBuV/m -51.5.

490 kHz ~ 30 MHz



No.	Frequency	Reading	Correct	FCC Result	FCC Limit	ISED Result	ISED Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuA/m)	(dBuA/m)	(dB)	
1	0.5039	63.94	-62.07	1.87	33.56	-49.63	-17.94	-31.69	peak
2	0.8820	62.18	-62.19	-0.01	28.69	-51.51	-22.81	-28.70	peak
3	2.0939	56.89	-61.79	-4.9	29.54	-56.40	-21.96	-34.44	peak
4	5.2705	53.54	-61.45	-7.91	29.54	-59.41	-21.96	-37.45	peak
5	11.8513	53.06	-60.88	-7.82	29.54	-59.32	-21.96	-37.36	peak
6	18.0181	53.19	-60.91	-7.72	29.54	-59.22	-21.96	-37.26	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.
3. All 3 polarizations (Horizontal, Face-on and Face-off) of the loop antenna had been tested, but only the worst data recorded in the report.
4. dBuA/m = dBuV/m – 20log10(120π) = dBuV/m -51.5.

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

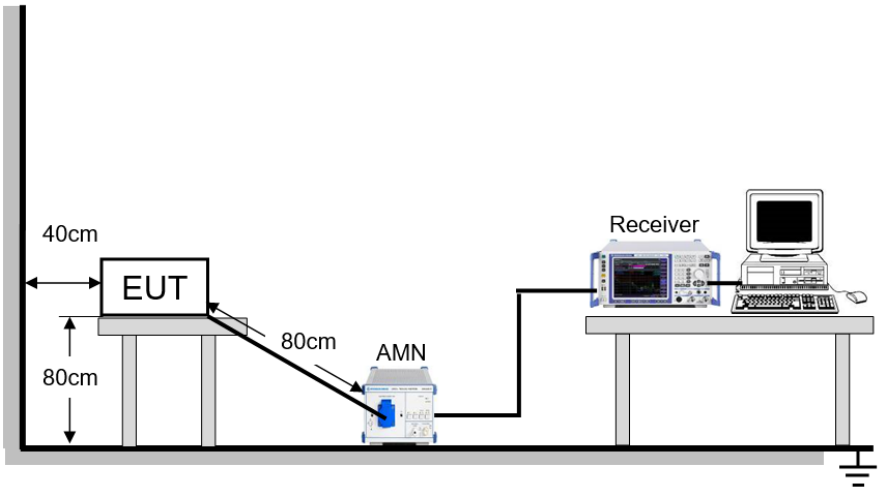
LIMITS

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

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

TEST SETUP AND PROCEDURE

Refer to ANSI C63.10-2013 clause 6.2.



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

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

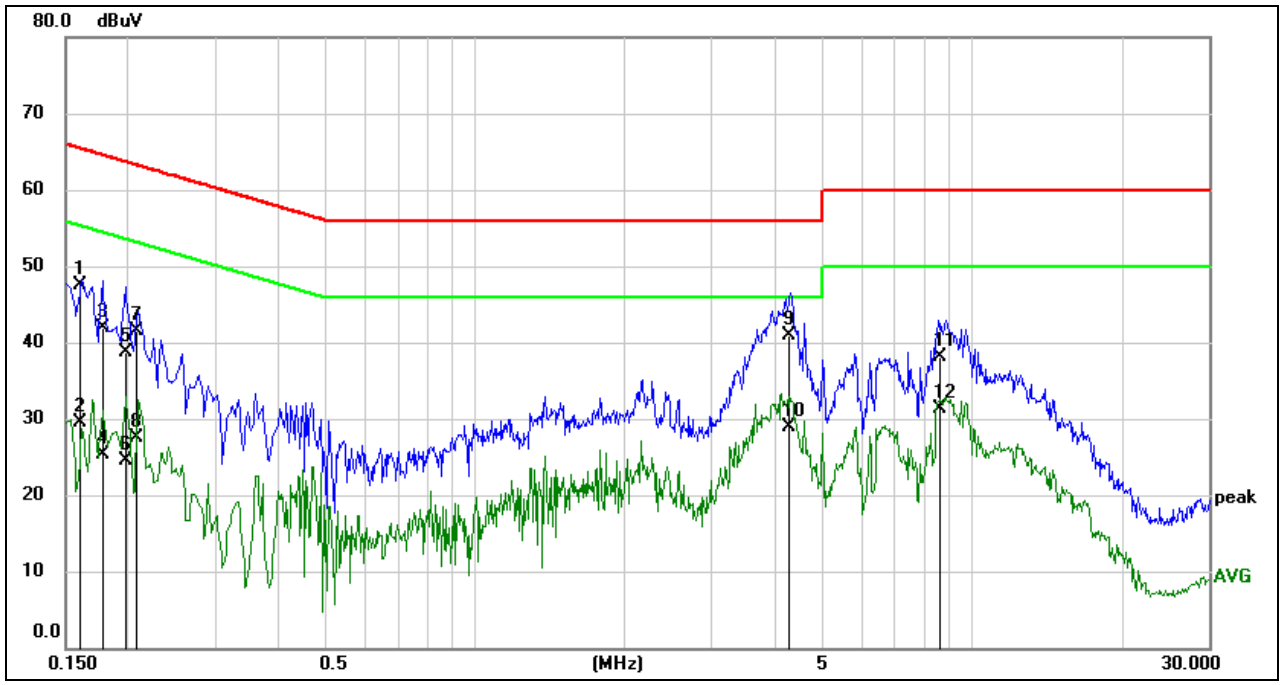
TEST ENVIRONMENT

Temperature	22 °C	Relative Humidity	68.9 %
Atmosphere Pressure	101 kPa	Test Voltage	DC 5 V

RESULTS

9.1. 802.11n HT40 MODE

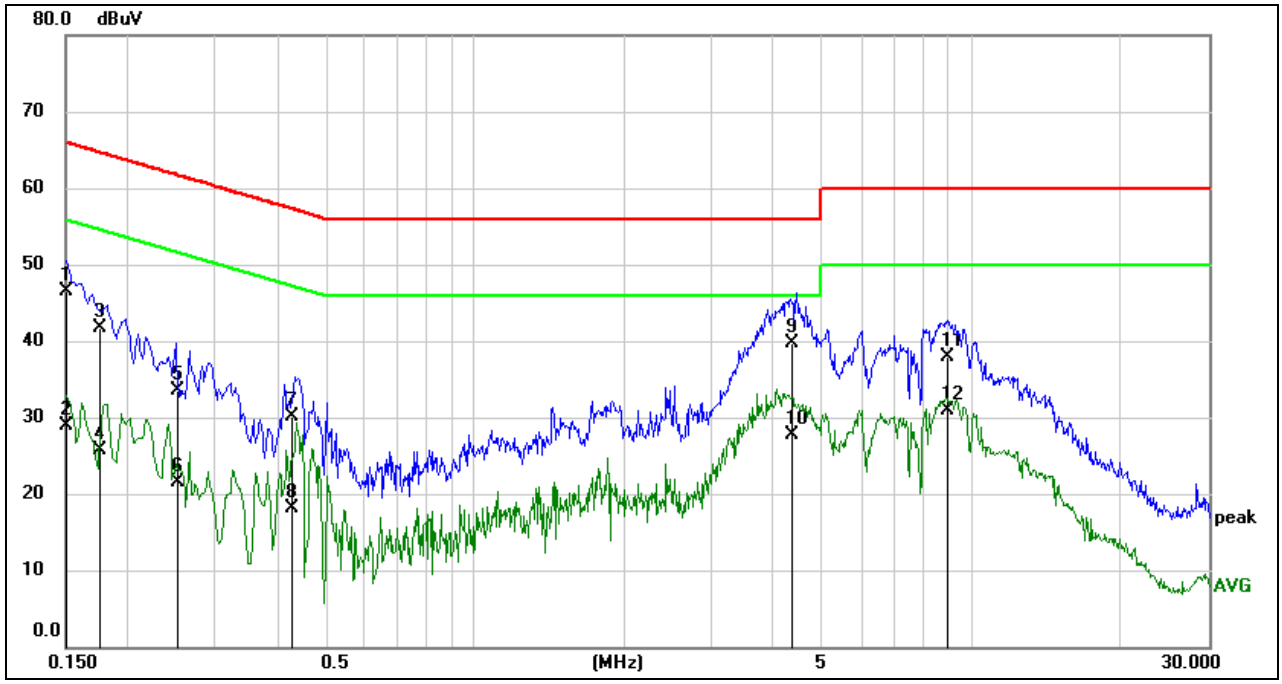
LINE N RESULTS (UNII-3 BAND LOW CHANNEL, WORST-CASE CONFIGURATION)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1601	37.97	9.60	47.57	65.46	-17.89	QP
2	0.1601	19.87	9.60	29.47	55.46	-25.99	AVG
3	0.1776	32.34	9.60	41.94	64.60	-22.66	QP
4	0.1776	15.75	9.60	25.35	54.60	-29.25	AVG
5	0.1988	29.06	9.60	38.66	63.66	-25.00	QP
6	0.1988	14.98	9.60	24.58	53.66	-29.08	AVG
7	0.2078	31.84	9.60	41.44	63.29	-21.85	QP
8	0.2078	17.92	9.60	27.52	53.29	-25.77	AVG
9	4.2708	31.34	9.66	41.00	56.00	-15.00	QP
10	4.2708	19.29	9.66	28.95	46.00	-17.05	AVG
11	8.6467	28.29	9.74	38.03	60.00	-21.97	QP
12	8.6467	21.62	9.74	31.36	50.00	-18.64	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-1 BAND LOW CHANNEL, WORST-CASE CONFIGURATION)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1515	36.95	9.61	46.56	65.92	-19.36	QP
2	0.1515	19.31	9.61	28.92	55.92	-27.00	AVG
3	0.1760	32.04	9.61	41.65	64.67	-23.02	QP
4	0.1760	16.15	9.61	25.76	54.67	-28.91	AVG
5	0.2522	23.83	9.60	33.43	61.68	-28.25	QP
6	0.2522	11.99	9.60	21.59	51.68	-30.09	AVG
7	0.4299	20.54	9.60	30.14	57.25	-27.11	QP
8	0.4299	8.44	9.60	18.04	47.25	-29.21	AVG
9	4.3614	30.04	9.66	39.70	56.00	-16.30	QP
10	4.3614	18.07	9.66	27.73	46.00	-18.27	AVG
11	8.9180	28.27	9.73	38.00	60.00	-22.00	QP
12	8.9180	21.26	9.73	30.99	50.00	-19.01	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.

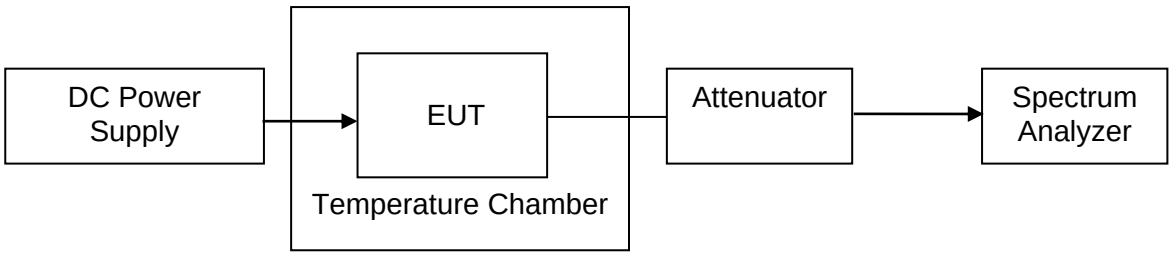
Connect the EUT to the spectrum analyser and use the following settings:

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
Relative Humidity	20 % - 75 %	/
Atmospheric Pressure	100 kPa ~102 kPa	/
Temperature	T_N (Normal Temperature): 22 °C – 28 °C	T_L (Low Temperature): 0 °C
		T_H (High Temperature): 40 °C
Supply Voltage	V_N (Normal Voltage): DC 5 V	V_L (Low Voltage): DC 4.25 V
		V_H (High Voltage): DC 5.75 V

RESULTS

Please refer to Appendix E.

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 §15.247(b)(4)
The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

RESULTS

Complies

Appendix

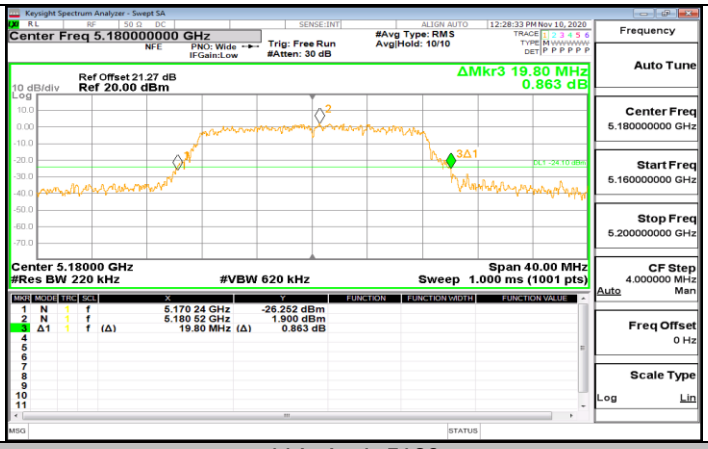
Appendix A1: Emission Bandwidth

Test Result

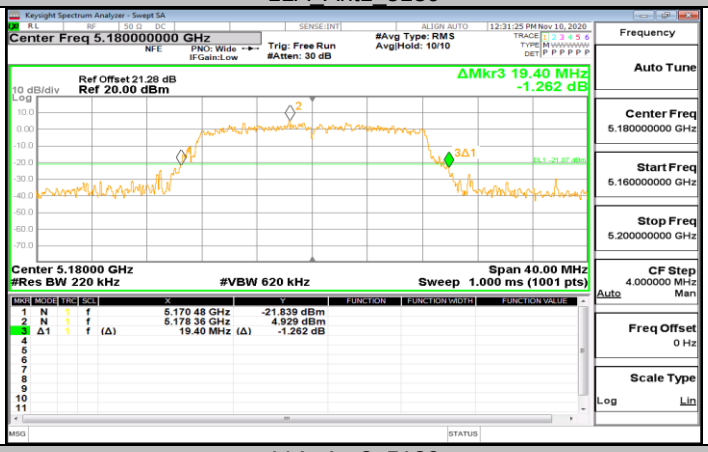
Test Mode	Antenna	Channel	26db EBW [MHz]	FL[MHz]	FH[MHz]	Verdict
11A	Ant1	5180	19.800	5170.240	5190.040	PASS
	Ant2	5180	19.400	5170.480	5189.880	PASS
	Ant1	5200	19.440	5190.360	5209.800	PASS
	Ant2	5200	19.480	5190.240	5209.720	PASS
	Ant1	5240	19.240	5230.280	5249.520	PASS
	Ant2	5240	19.360	5230.360	5249.720	PASS
	Ant1	5745	19.760	5735.240	5755.000	PASS
	Ant2	5745	19.200	5735.360	5754.560	PASS
	Ant1	5785	19.640	5775.160	5794.800	PASS
	Ant2	5785	19.600	5775.120	5794.720	PASS
	Ant1	5825	19.040	5815.600	5834.640	PASS
	Ant2	5825	19.520	5815.160	5834.680	PASS
11N20MIMO	Ant1	5180	20.480	5169.960	5190.440	PASS
	Ant2	5180	19.760	5170.120	5189.880	PASS
	Ant1	5200	19.800	5190.120	5209.920	PASS
	Ant2	5200	20.280	5189.640	5209.920	PASS
	Ant1	5240	19.960	5230.160	5250.120	PASS
	Ant2	5240	19.800	5230.280	5250.080	PASS
	Ant1	5745	19.840	5735.040	5754.880	PASS
	Ant2	5745	20.880	5734.080	5754.960	PASS
	Ant1	5785	20.280	5774.880	5795.160	PASS
	Ant2	5785	19.880	5775.120	5795.000	PASS
	Ant1	5825	19.760	5815.000	5834.760	PASS
	Ant2	5825	19.960	5815.200	5835.160	PASS
11N40MIMO	Ant1	5190	39.920	5170.160	5210.080	PASS
	Ant2	5190	39.600	5170.080	5209.680	PASS
	Ant1	5230	40.880	5209.520	5250.400	PASS
	Ant2	5230	39.200	5210.480	5249.680	PASS
	Ant1	5755	40.560	5735.160	5775.720	PASS
	Ant2	5755	39.920	5735.080	5775.000	PASS
	Ant1	5795	44.560	5771.000	5815.560	PASS
	Ant2	5795	39.760	5775.160	5814.920	PASS
11AC20MIMO	Ant1	5180	19.600	5170.160	5189.760	PASS
	Ant2	5180	20.080	5170.120	5190.200	PASS
	Ant1	5200	19.640	5190.240	5209.880	PASS
	Ant2	5200	19.480	5190.320	5209.800	PASS
	Ant1	5240	19.680	5230.240	5249.920	PASS
	Ant2	5240	20.080	5230.080	5250.160	PASS
	Ant1	5745	19.760	5735.120	5754.880	PASS
	Ant2	5745	19.600	5735.240	5754.840	PASS
	Ant1	5785	19.600	5775.280	5794.880	PASS
	Ant2	5785	19.480	5775.320	5794.800	PASS
	Ant1	5825	19.840	5815.000	5834.840	PASS
	Ant2	5825	19.680	5815.240	5834.920	PASS
11AC40MIMO	Ant1	5190	39.840	5170.320	5210.160	PASS
	Ant2	5190	39.040	5170.560	5209.600	PASS
	Ant1	5230	40.080	5209.920	5250.000	PASS
	Ant2	5230	40.000	5210.000	5250.000	PASS
	Ant1	5755	40.000	5734.920	5774.920	PASS
	Ant2	5755	39.840	5735.320	5775.160	PASS
	Ant1	5795	40.480	5775.160	5815.640	PASS
	Ant2	5795	40.000	5775.240	5815.240	PASS

11AC80MIMO	Ant1	5210	79.200	5170.320	5249.520	PASS
	Ant2	5210	79.520	5170.480	5250.000	PASS
	Ant1	5775	80.320	5734.840	5815.160	PASS
	Ant2	5775	79.360	5735.640	5815.000	PASS

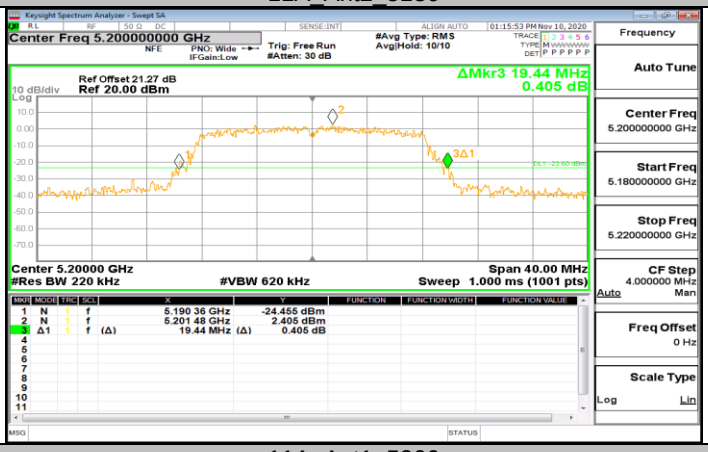
Test Graphs



11A_Ant1_5180



11A_Ant2_5180



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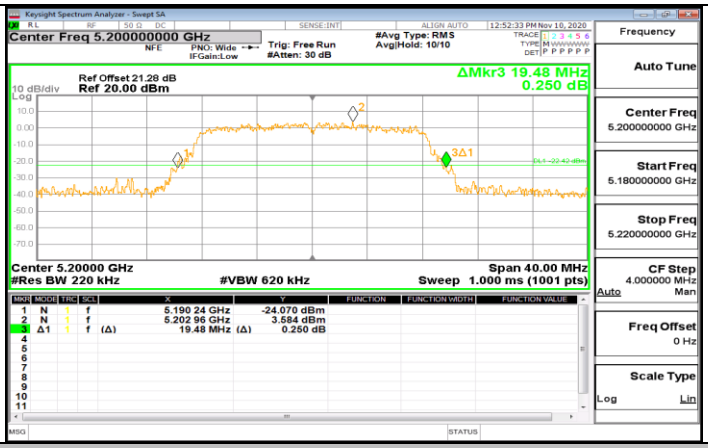
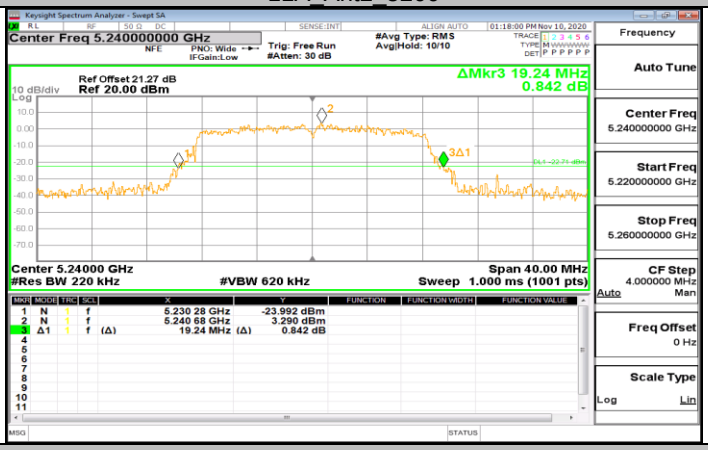
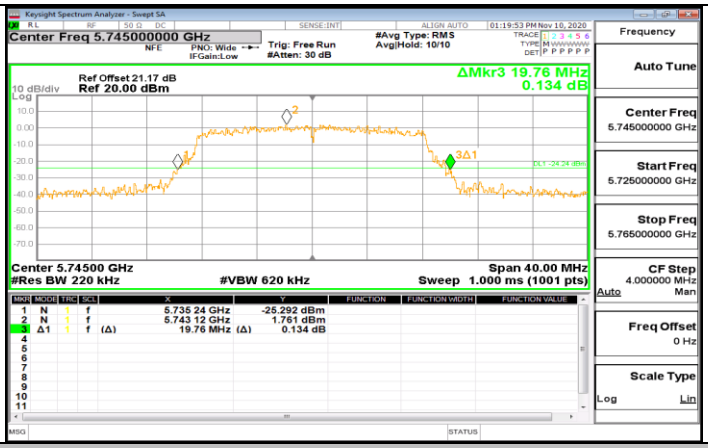


11A_Ant2_5200



11A_Ant1_5240

11A_Ant2_5240



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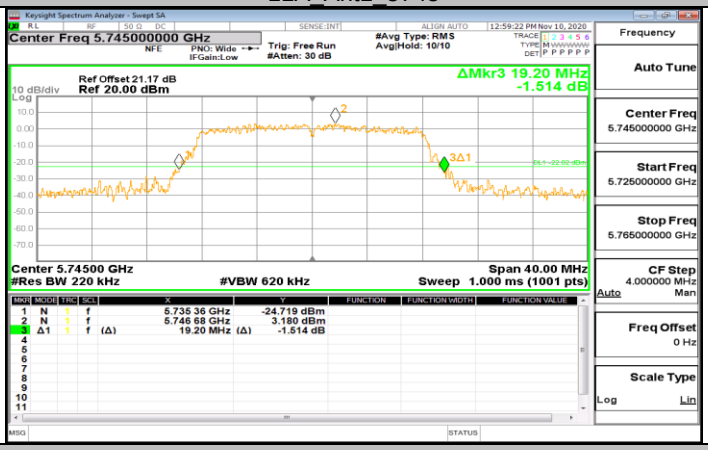
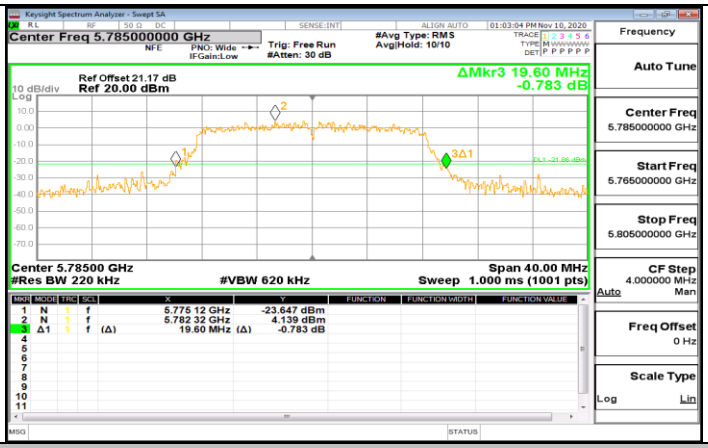


11A_Ant2_5745

11A_Ant1_5785



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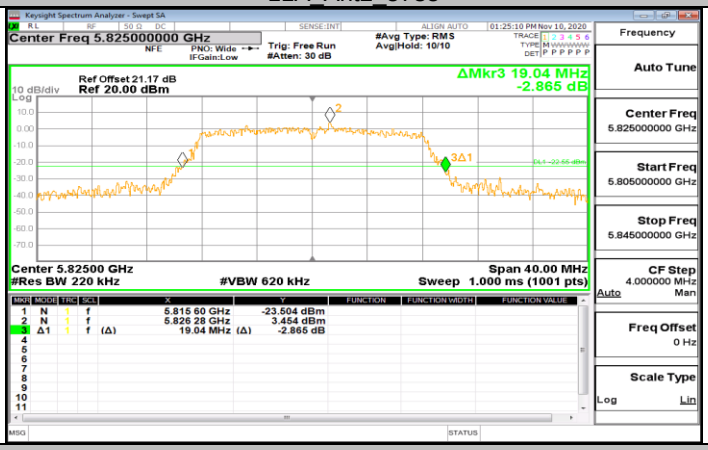
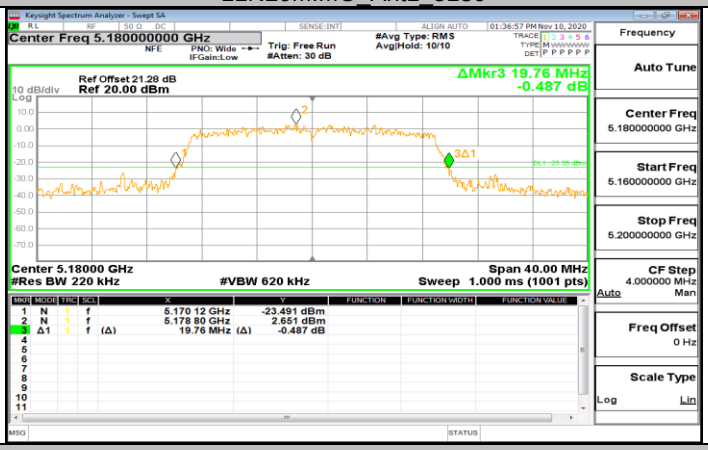


11A_Ant1_5825

11A_Ant2_5825

11N20MIMO_Ant1_5180



11N20MIMO_Ant2_5180

11N20MIMO_Ant1_5200