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

TEST REPORT

For

WiFi Module

MODEL NUMBER: SI06B

REPORT NUMBER: 4790446022-2-RF-5

ISSUE DATE: July 22, 2022

FCC ID:2AFG6-SI06B
IC:22166-SI06B

Prepared for

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Prepared by

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Revision History

Rev.	Issue Date	Revisions	Revised By
V0	July 22, 2022	Initial Issue	

Summary of Test Results

Summary of Test Results			
Test Item	**Clause**	**Limit/Requirement**	**Result**
ON TIME AND DUTY CYCLE	ANSI C63.10-2013, Clause 12.2	None; for reporting purposes only.	Pass
6dB AND 26dB EMISSION BANDWIDTH AND 99% OCCUPIED BANDWIDTH	KDB 789033 D02 v02r01 Section C.1	FCC Part 15.407 (a)&(e), RSS-247 Issue 2, Clause 6.2.1.2 RSS-Gen Clause 6.6	Pass
CONDUCTED OUTPUT POWER	KDB 789033 D02 v02r01 Section E.3.a (Method PM)	FCC 15.407 (a) RSS-247 Clause 6.2	Pass
POWER SPECTRAL DENSITY	KDB 789033 D02 v02r01 Section F	FCC 15.407 (a) RSS-247 Clause 6.2	Pass
AC Power Line Conducted Emission	ANSI C63.10-2013, Clause 6.2.	FCC 15.207 RSS-GEN Clause 8.8	Pass
Radiated Emissions and Band Edge Measurement	KDB 789033 D02 v02r01 Section G.3, G.4, G.5, and G.6	FCC 15.407 (b) FCC 15.209 FCC 15.205 RSS-247 Clause 6.2 RSS-GEN Clause 8.9	Pass
FREQUENCY STABILITY	N/A	FCC 15.407 (g)	Pass
Dynamic Frequency Selection (Slave)	KDB 905462 D03 Client Without DFS New Rules v01r02	FCC Part 15.407 (h), RSS-247 Issue 2 Clause6.3	N/A
Antenna Requirement	N/A	FCC 47 CFR Part 15.203 RSS-Gen Issue 5, Clause 6.8	Pass

Note:
1. N/A: In this whole report not applicable.

*This test report is only published to and used by the applicant, and it is not for evidence purpose in China.
*The measurement result for the sample received is <Pass> according to <CFR 47 FCC PART 15 SUBPART E><ISED RSS-247 ISSUE 2> 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,Guangdong,China

Manufacturer Information

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

EUT Information

EUT Name:	WiFi Module
Model:	SI06B
Sample Received Date:	June 24, 2022
Sample Status:	Normal
Sample ID:	5161650
Date of Tested:	June 25, 2022 to July 22, 2022

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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Laboratory Manager

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.10-2013, CFR 47 FCC Part 2, CFR 47 FCC Part 15, KDB 789033 D02 v02r01, RSS-GEN Issue 5, RSS-247 Issue 2, KDB414788 D01 Radiated Test Site v01, KDB 662911 D01 Multiple Transmitter Output v02r01.

3. FACILITIES AND ACCREDITATION

Accreditation Certificate	**A2LA (Certificate No.: 4102.01)** UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with A2LA. **FCC (FCC Designation No.: CN1187)** UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. Has been recognized to perform compliance testing on equipment subject to the Commission's Delcaration of Conformity (DoC) and Certification rules **ISED (Company No.: 21320)** UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been registered and fully described in a report filed with ISED. The Company Number is 21320 and the test lab Conformity Assessment Body Identifier (CABID) is CN0046. **VCCI (Registration No.: G-20019, R-20004, C-20012 and T-20011)** UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with VCCI, the Membership No. is 3793. Facility Name: Chamber D, the VCCI registration No. is G-20019 and R-20004 Shielding Room B , the VCCI registration No. is C-20012 and T-20011

Note1:
All tests measurement facilities use to collect the measurement data are located at Building 10, Innovation Technology Park, No. 1, Li Bin Road, Song Shan Lake Hi-Tech Development Zone Dongguan, 523808, People's Republic of China.

Note2:
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.

Note3:
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 recognized national standards.

4.2. MEASUREMENT UNCERTAINTY

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

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

Description	Limit	Uncertainties
Carrier Frequencies	±1.0E-05	±2.2E-10
Occupied Channel Bandwidth	-	±1.71 %
Power	±1.5 dB	±1.15 dB
Power Density	±1.5 dB	±1.21 dB
Transmitter unwanted emissions outside the 5 GHz RLAN bands		
30 MHz to 1 GHz	±3 dB	±0.80 dB
1 GHz to 26GHz	±3 dB	±2.42 dB
Transmitter unwanted emissions inside the 5 GHz RLAN bands		
5 150 MHz to 5 350 MHz and 5 470 MHz to 5 725 MHz	±3 dB	±1.69 dB
Receiver Spurious emission		
30 MHz to 1 GHz	±3 dB	±0.80 dB
1 GHz to 26GHz	±3 dB	±2.42 dB

Test Item	Uncertainty
Radiation Emission	4.62 dB (30 MHz ~ 1 GHz)
	3.50 dB (1 GHz ~ 18 GHz)
	4.24 dB (18 GHz ~ 26 GHz)
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95 % confidence level using a coverage factor of k=2.	

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

EUT Name	WiFi Module
Model	SI06B
Power Supply	DC 12 V
Frequency Range:	5180 MHz to 5240 MHz 5 745 MHz to 5 825 MHz
Type of Modulation:	IEEE 802.11a 20: OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n: OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE 802.11ac: OFDM(256QAM, 64QAM, 16QAM, QPSK, BPSK)

Note: SI06B has two wireless modules, one is called module SKI.WB800D.3 and the other one called module SKI.W7613E.1, this report is for SKI.W7613E.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 20	5150 ~ 5250	12.29	13.99
n HT20		12.17	13.87
n HT40		12.58	14.28
ac VHT80		13.42	15.12

UNII-3 BAND

IEEE Std. 802.11	Frequency (MHz)	Maximum Average Conducted Power (dBm)
a 20	5725 ~ 5850	10.11
n HT20		13.97
n HT40		12.56
ac VHT80		13.07

5.3. CHANNEL LIST

UNII-1 (For Bandwidth=20MHz)		UNII-1 (For Bandwidth=40MHz)		UNII-1 (For Bandwidth=80MHz)	
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		UNII-3		UNII-3	
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. DESCRIPTION OF AVAILABLE ANTENNAS

Antenna No.	Frequency Band	Antenna Type	Max Antenna Gain (dBi)
1	5180~5825	PCB Antenna	1.7
2	5180~5825	PCB Antenna	1.7

The EUT support Cyclic Shift Diversity (CDD) mode.

MIMO output power port and MIMO PSD port summing was performed in accordance with KDB 662911 D01. For the CDD results the Directional Gain was calculated in accordance with the following mothed.

For output power measurements:
Directional gain= G_{ANT} + Array Gain = 1.7 dBi
G_{ANT}: equal to the gain of the antenna having the highest gain
Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$

For power spectral density (PSD) measurements:
Directional gain= G_{ANT} + Array Gain = 4.71 dBi
Array Gain = 10 log (N_{ANT}/N_{SS}) dB.
N_{ANT}: number of transmit antennas
N_{SS}: number of spatial streams, the worst case directional gain will occur when N_{SS} = 1

IEEE Std. 802.11	Transmit and Receive Mode	Description
a 20	☒2TX, 2RX	ANT 1, 2 can be used as transmitting/receiving antenna.
n HT20	☒2TX, 2RX	ANT 1, 2 can be used as transmitting/receiving antenna.
n HT40	☒2TX, 2RX	ANT 1, 2 can be used as transmitting/receiving antenna.
ac VHT20	☒2TX, 2RX	ANT 1, 2 can be used as transmitting/receiving antenna.
ac VHT40	☒2TX, 2RX	ANT 1, 2 can be used as transmitting/receiving antenna.
ac VHT80	☒2TX, 2RX	ANT 1, 2 can be used as transmitting/receiving antenna.

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

5.5. THE WORSE CASE POWER SETTING PARAMETER

The Worse Case Power Setting Parameter	
Test Software	QA tool

UNII-1

Mode	Rate	Channel	Soft set value	
			ANT 1	ANT 2
11a 20	6M	36	17	17
		40	17	17
		48	17	17
11n HT20	MCS0	36	14	14
		40	15	15
		48	17	17
11n HT40	MCS0	38	16	16
		46	16	16
11ac VHT80	MCS0	42	16	16

UNII-3

Mode	Rate	Channel	Soft set value	
			ANT 1	ANT 2
11a 20	6M	149	13	13
		157	14	14
		165	15	15
11n HT20	MCS0	149	1A	1A
		157	1B	1B
		165	1A	1A
11n HT40	MCS0	151	17	17
		159	17	17
11ac VHT80	MCS0	155	18	18

5.6. THE WORSE CASE CONFIGURATIONS

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

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

Test channels referring to section 5.3.

Maximum power setting referring to section 5.5.

Worst case Data Rates declared by the customer:

802.11a 20 mode: 6 Mbps
802.11n HT20 mode: MCS0
802.11n HT40 mode: MCS0
802.11ac VHT20 mode: MCS0
802.11ac VHT40 mode: MCS0
802.11ac VHT80 mode: MCS0

802.11a 20 only support SISO mode.
802.11n HT20/HT40/ac VHT20/VHT40/VTH80 support SISO and MIMO mode.

802.11ac VHT20 and VHT40 mode are different from 802.11n HT20 and HT40 only in control messages, so for these 4 modes, only worst mode's data was recorded in the report.

SISO mode and MIMO mode have the same power setting, so only the worst case power mode (MIMO) will be recorded in the report.

The EUT has 2 separate antennas which correspond to 2 separate antenna ports. Core 1 and Core 2 correspond to antenna 1 and antenna 2 respectively.

Antenna 1 and Antenna 2 have the same power setting, but the power test data are different. (Declared by customer.)

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

The EUT support Cyclic Shift Diversity (CDD), They use the same conducted power per chain in any given mode, so we only chose the worst-case mode CDD 2TX for final testing.

5.7. SUPPORT UNITS FOR SYSTEM TEST

SUPPORT EQUIPMENT

Item	Equipment	Brand Name	Model Name	Remarks
1	Main Board	seewo	MT61A	/
2	UART	/	/	/
3	AC Power Line	/	/	/

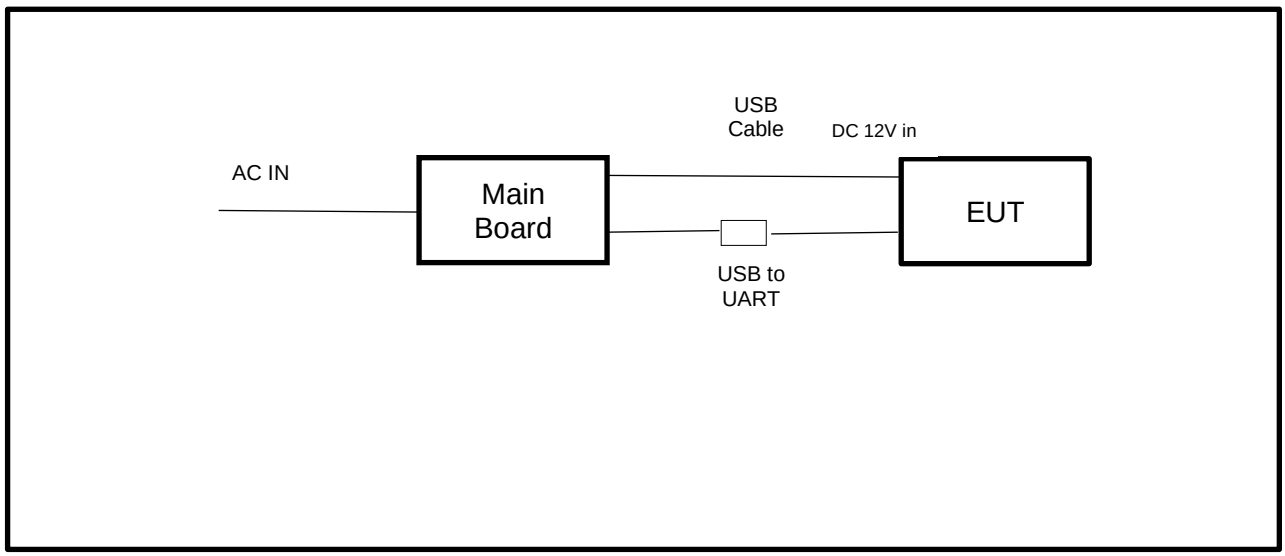
I/O CABLES

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

ACCESSORIES

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

SETUP DIAGRAM FOR TESTS



6. MEASURING EQUIPMENT AND SOFTWARE USED

R&S TS 8997 Test System					
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due. Date
Power sensor, Power Meter	R&S	OSP120	100921	Apr.02,2022	Apr.01,2023
Vector Signal Generator	R&S	SMBV100A	261637	Oct.30, 2021	Oct.29, 2022
Signal Generator	R&S	SMB100A	178553	Oct.30, 2021	Oct.29, 2022
Signal Analyzer	R&S	FSV40	101118	Oct.30, 2021	Oct.29, 2022
Software					
Description	Manufacturer	Name	Version		
For R&S TS 8997 Test System	Rohde & Schwarz	EMC 32	10.60.10		

Tonsend RF Test System					
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due. Date
Wideband Radio Communication Tester	R&S	CMW500	155523	Oct.30, 2021	Oct.29, 2022
Wireless Connectivity Tester	R&S	CMW270	1201.0002N75-102	Sep.29, 2021	Sep.28, 2022
PXA Signal Analyzer	Keysight	N9030A	MY55410512	Oct.30, 2021	Oct.29, 2022
MXG Vector Signal Generator	Keysight	N5182B	MY56200284	Oct.30, 2021	Oct.29, 2022
MXG Vector Signal Generator	Keysight	N5172B	MY56200301	Oct.30, 2021	Oct.29, 2022
DC power supply	Keysight	E3642A	MY55159130	Oct.30, 2021	Oct.29, 2022
Temperature & Humidity Chamber	SANMOOD	SG-80-CC-2	2088	Nov.20,2020	Nov.19,2022
Software					
Description	Manufacturer	Name	Version		
Tonsend SRD Test System	Tonsend	JS1120-3 RF Test System	2.6.77.0518		

Conducted Emissions					
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due Date
EMI Test Receiver	R&S	ESR3	101961	Oct.30, 2021	Oct.29, 2022
Two-Line V-Network	R&S	ENV216	101983	Oct.30, 2021	Oct.29, 2022
Artificial Mains Networks	Schwarzbeck	NSLK 8126	8126465	Oct.30, 2021	Oct.29, 2022
Software					
Description			Manufacturer	Name	Version
Test Software for Conducted Emissions			Farad	EZ-EMC	Ver. UL-3A1

Radiated Emissions					
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due Date
MXE EMI Receiver	KESIGHT	N9038A	MY56400036	Oct.30, 2021	Oct.29, 2022
Hybrid Log Periodic Antenna	TDK	HLP-3003C	130959	Aug.02, 2021	Aug.01, 2024
Preamplifier	HP	8447D	2944A09099	Oct.30, 2021	Oct.29, 2022
EMI Measurement Receiver	R&S	ESR26	101377	Oct.30, 2021	Oct.29, 2022
Horn Antenna	TDK	HRN-0118	130940	July 20, 2021	July 19, 2024
Preamplifier	TDK	PA-02-0118	TRS-305-00067	Oct.30, 2021	Oct.29, 2022
Horn Antenna	Schwarzbeck	BBHA9170	697	July 20, 2021	July 19, 2024
Preamplifier	TDK	PA-02-2	TRS-307-00003	Oct.31, 2021	Oct.30, 2022
Preamplifier	TDK	PA-02-3	TRS-308-00002	Oct.31, 2021	Oct.30, 2022
Loop antenna	Schwarzbeck	1519B	00008	Dec.14, 2021	Dec.13, 2024
Preamplifier	TDK	PA-02-001-3000	TRS-302-00050	Oct.31, 2021	Oct.30, 2022
Preamplifier	Mini-Circuits	ZX60-83LN-S+	SUP01201941	Oct.31, 2021	Oct.30, 2022
High Pass Filter	Wi	WHKX10-2700-3000-18000-40SS	23	Oct.31, 2021	Oct.30, 2022
Highpass Filter	Wainwright	WHKX10-5850-6500-1800-40SS	4	Oct.31, 2021	Oct.30, 2022
Band Reject Filter	Wainwright	WRCJV12-5695-5725-5850-5880-40SS	4	Oct.31, 2021	Oct.30, 2022
Band Reject Filter	Wainwright	WRCJV20-5120-5150-	2	Oct.31, 2021	Oct.30, 2022

		5350-5380-60SS			
Band Reject Filter	Wainwright	WRCJV20-5440-5470-5725-5755-60SS	1	Oct.31, 2021	Oct.30, 2022
Band Reject Filter	Wainwright	WRCJV8-2350-2400-2483.5-2533.5-40SS	4	Oct.31, 2021	Oct.30, 2022
Band Reject Filter	Wainwright	WRCD5-1879-1879.85-1880.15-1881-40SS	1	Oct.31, 2021	Oct.30, 2022
Notch Filter	Wainwright	WHJ10-882-980-7000-40SS	1	Oct.31, 2021	Oct.30, 2022

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

Other Instrument					
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due Date
Temperature humidity probe	OMEGA	ITHX-SD-5	18470007	Nov. 4, 2021	Nov. 3, 2022
Barometer	Yiyi	Baro	N/A	Nov. 15, 2021	Nov. 14, 2022

7. ANTENNA PORT TEST RESULTS

7.1. ON TIME AND DUTY CYCLE

LIMITS

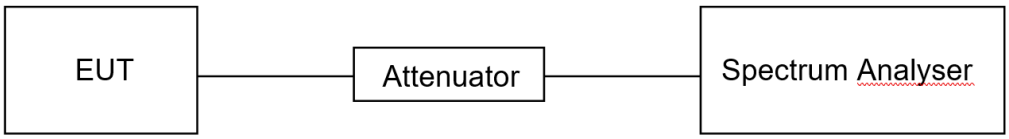
None; for reporting purposes only.

TEST 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	22.9℃	Relative Humidity	53%
Atmosphere Pressure	101kPa	Test Voltage	DC 12 V

TEST RESULTS

Please refer to section "Test Data" - Appendix E

7.2. 6DB AND 26DB 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: >3*RBW For 99 % Bandwidth: >3*RBW
Trace	Max hold
Sweep	Auto couple

a) Use the 99 % power bandwidth function of the instrument, allow the trace to stabilize and report the measured bandwidth.
b) Allow the trace to stabilize and measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6/26 dB relative to the maximum level measured in the fundamental emission.

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

For Example: Fundamental Frequency: 5720 MHz

99 % OBW: 21.00 MHz

Turning Frequency: 5725 MHz

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

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

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

For Example: Fundamental frequency: 5720 MHz

26 dB BW: 20.00 MHz

FL: 5710.16 MHz

FH: 5730.16 MHz

Turning Frequency: 5725 MHz

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

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

For Example: Fundamental frequency: 5720 MHz

6 dB BW: 16.44 MHz

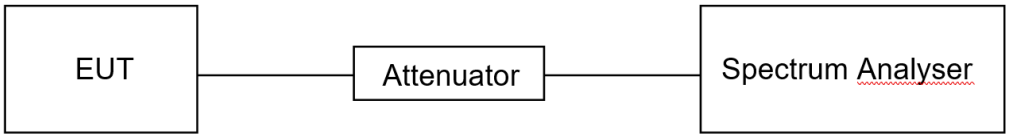
FL: 5711.76 MHz

FH: 5728.2 MHz

Turning Frequency: 5725 MHz

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

TEST SETUP



TEST ENVIRONMENT

Temperature	22.9℃	Relative Humidity	53%
Atmosphere Pressure	101kPa	Test Voltage	DC 12 V

TEST RESULTS

Please refer to section "Test Data" - 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

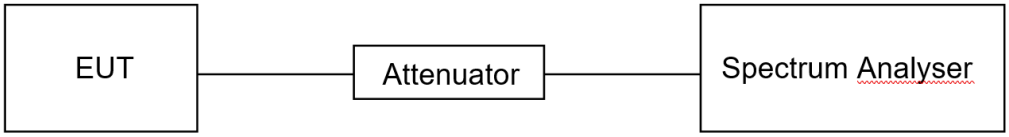
Refer to KDB 789033 D02 General U-NII Test Procedures New Rules v02r01 section II.E.

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 %).

TEST SETUP



TEST ENVIRONMENT

Temperature	22.9℃	Relative Humidity	53%
Atmosphere Pressure	101kPa	Test Voltage	DC 12 V

TEST RESULTS

Please refer to section "Test Data" - 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:

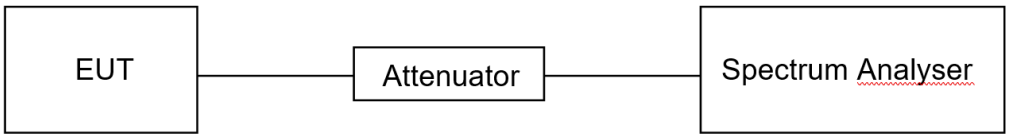
Center Frequency	The center frequency of the channel under test
Detector	RMS
RBW	1 MHz
VBW	≥3 × RBW
Span	Encompass the entire emissions bandwidth (EBW) of the signal
Trace	Max hold
Sweep time	Auto

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	22.9℃	Relative Humidity	53%
Atmosphere Pressure	101kPa	Test Voltage	DC 12 V

TEST RESULTS

Please refer to section "Test Data" - Appendix C

7.5. 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

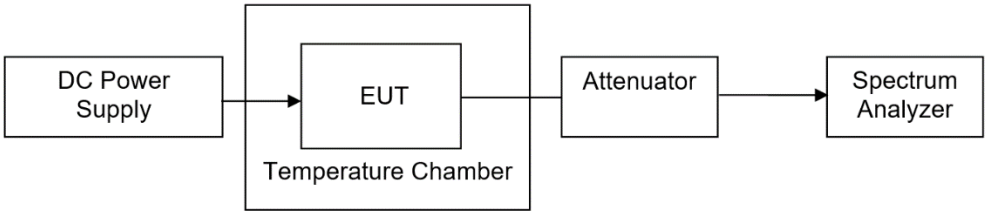
4. While maintaining a constant temperature inside the environmental chamber, turn the EUT on and record the operating frequency at startup, and at 2 minutes, 5minutes, and 10 minutes after the EUT is energized.

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

TEST ENVIRONMENT

	Normal Test Conditions	Extreme Test Conditions
Relative Humidity	20 % - 75 %	/
Atmospheric Pressure	100 kPa ~102 kPa	/
Temperature	T_N (Normal Temperature): 22.9 °C	T_L (Low Temperature): 0 °C
		T_H (High Temperature): 40 °C
Supply Voltage	V_N (Normal Voltage): DC 12 V	V_L (Low Voltage): DC 10.2 V
		V_H (High Voltage): DC 13.8 V

TEST SETUP



TEST RESULTS

Please refer to section "Test Data" - Appendix D

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 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

1. The testing follows the guidelines in ANSI C63.10-2013 clause 6.4.

2. The EUT was arranged to its worst case and then turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both Horizontal, Face-on and Face-off polarizations of the antenna are set to make the measurement.

3. The EUT was placed on a turntable with 80 cm above ground.

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

5. The radiated emission limits are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz Radiated emission limits in these three bands are based on measurements employing an average detector.

6. For measurement below 1 GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak and average detector mode re-measured. If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak and average detector and reported.

7. Although these tests were performed other than open field site, adequate comparison measurements were confirmed against 30m open field site. Therefore sufficient tests were made

to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field site based on KDB 414788.

8. The limits in CFR 47, Part 15, Subpart C, paragraph 15.209 (a), are identical to those in RSS-GEN Section 8.9, Table 6, since the measurements are performed in terms of magnetic field strength and converted to electric field strength levels (as reported in the table) using the free space impedance of 377Ω. For example, the measurement frequency X KHz resulted in a level of Y dBuV/m, which is equivalent to Y-51.5 = Z dBuA/m, which has the same margin, W dB, to the corresponding RSS-GEN Table 6 limit as it has to be 15.209(a) limit.

Below 1 GHz and above 30 MHz

The setting of the spectrum analyser

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

1. The testing follows the guidelines in ANSI C63.10-2013 clause 6.5.

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

3. The EUT was placed on a turntable with 80 cm above ground.

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

5. For measurement below 1 GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured. If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.

Above 1 GHz

The setting of the spectrum analyser

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

1. The testing follows the guidelines in KDB 789033 D02 General U-NII Test Procedures New Rules v02r01 section II.G.3 ~ II.G.6.

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

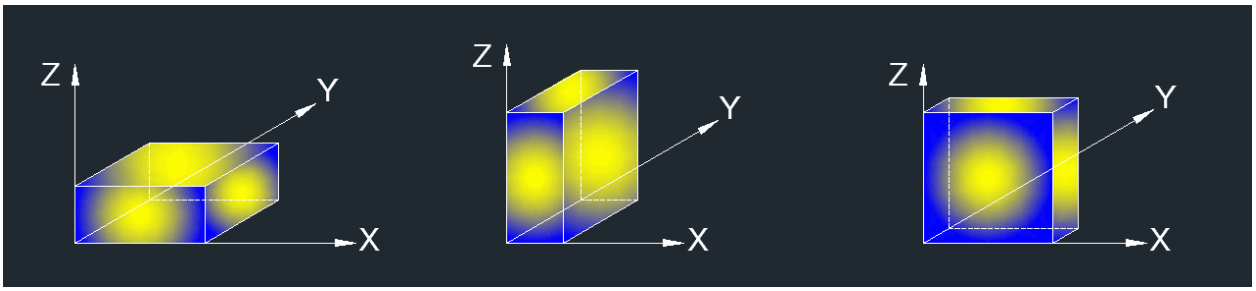
3. The EUT was placed on a turntable with 1.5 m above ground.

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

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

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

X axis, Y axis, Z axis positions:



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

For Band edge 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 7.6.
6. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.
7. Horizontal and Vertical have been tested, only the worst data was recorded in the report.
8. All modes, channels and antennas have been tested, only the worst data was recorded in the report.

For Radiate Spurious emission 1GHz-7GHz note:

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 7.6.
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
7. Proper operation of the transmitter prior to adding the filter to the measurement chain.
8. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.
9. All modes, channels and antennas have been tested, only the worst data was recorded in the report.

For Radiate Spurious emission 7GHz-18GHz note:

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 7.6.
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
7. Proper operation of the transmitter prior to adding the filter to the measurement chain.
8. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.
9. All modes, channels and antennas have been tested, only the worst data was recorded in the report.

For Radiate Spurious emission 9kHz-30MHz note:

Note: 1. Measurement = Reading Level + Correct Factor (dBuA/m= dBuV/m- 20Log10[120π] = dBuV/m- 51.5).

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

For Radiate Spurious emission 18GHz-26GHz note:

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

For Radiate Spurious emission 26GHz-40GHz note:

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

For Radiate Spurious emission 30MHz-1GHz note:

1. Result Level = Read Level + Correct Factor.

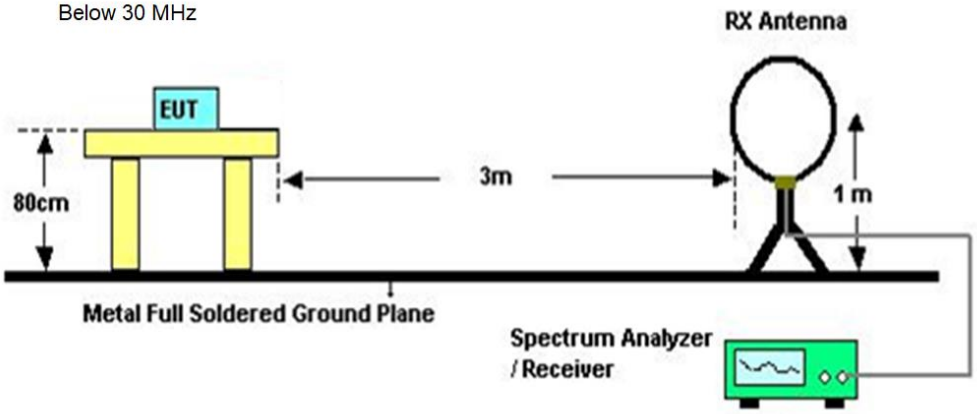
2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.

3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

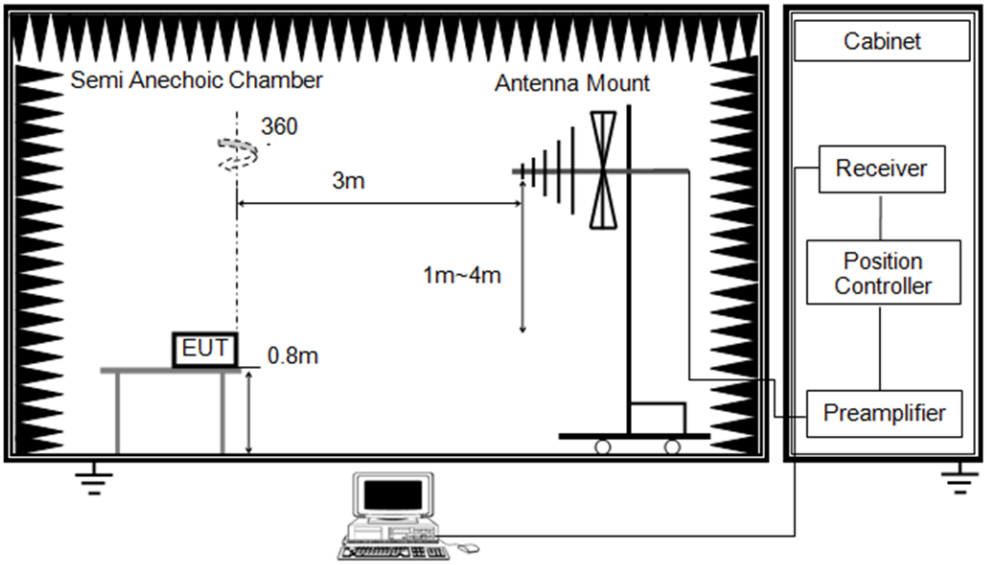
4. All modes, channels and antennas have been tested, only the worst data was recorded in the report.

TEST SETUP

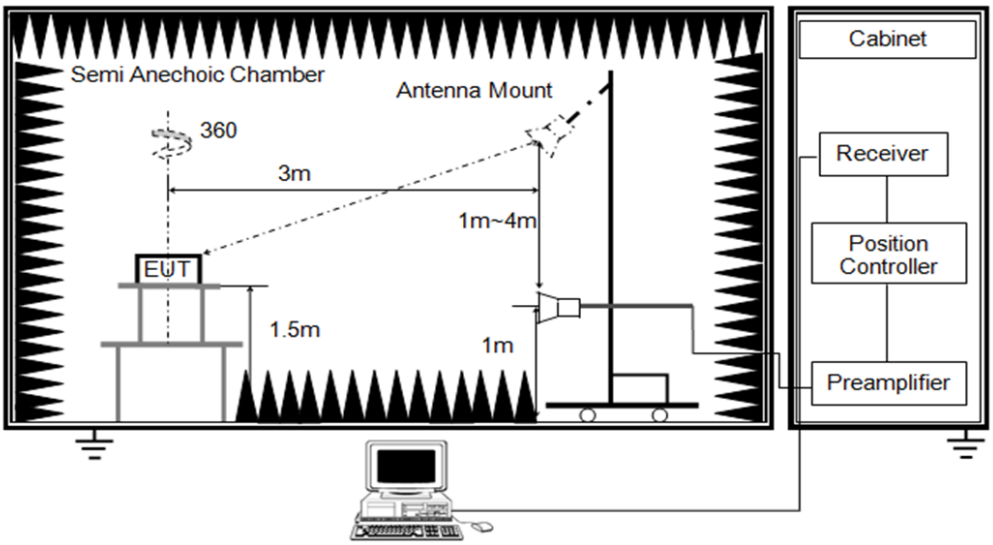
Below 30 MHz



Below 1 GHz and above 30 MHz



Above 1 GHz



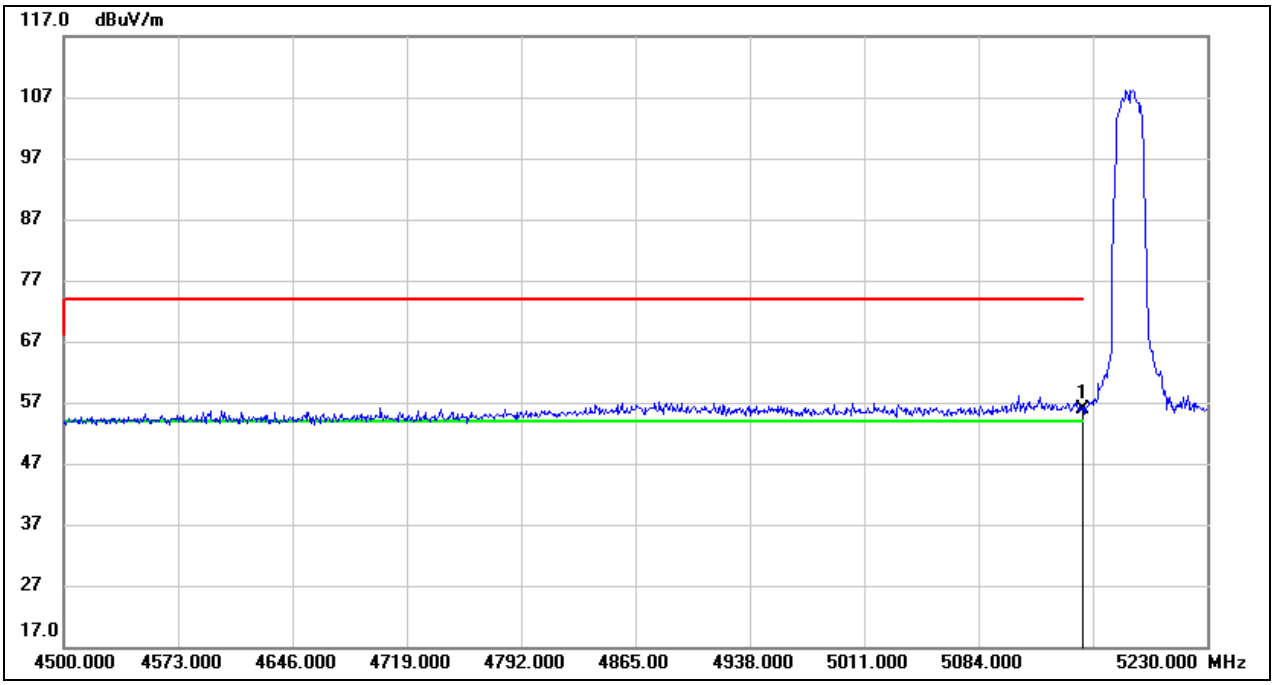
TEST ENVIRONMENT

Temperature	25.2℃	Relative Humidity	65%
Atmosphere Pressure	101kPa	Test Voltage	DC 12 V

TEST RESULTS

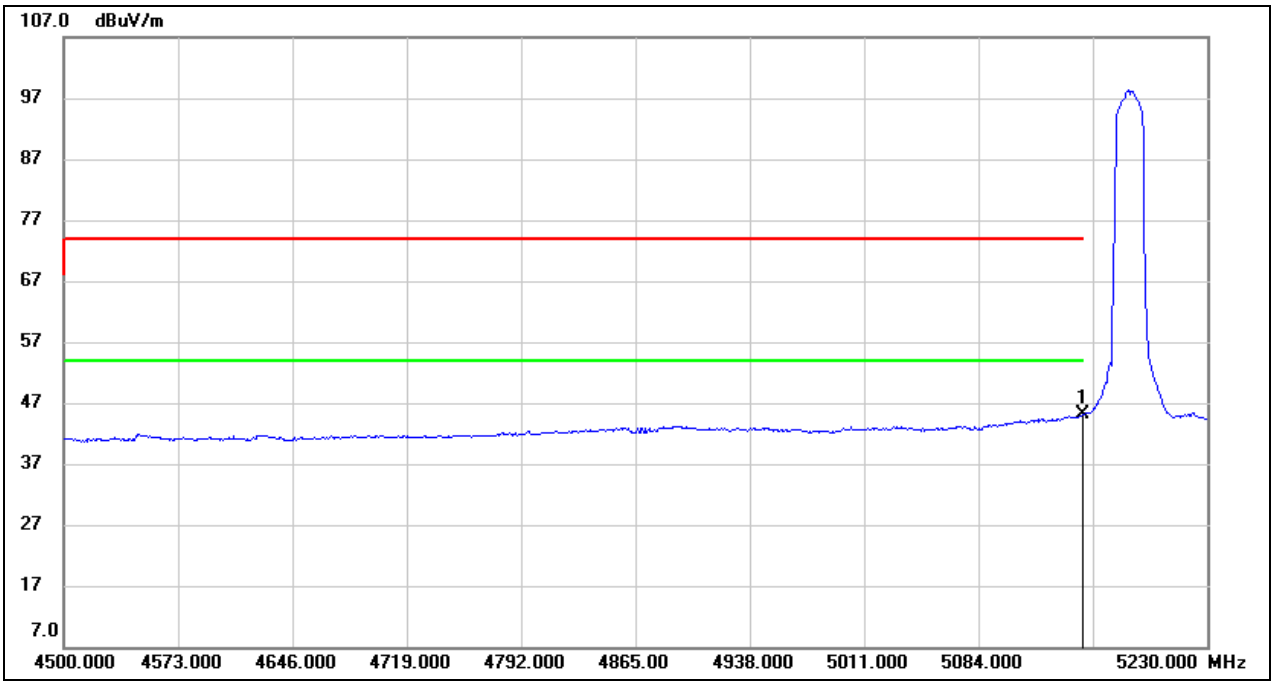
8.1. RESTRICTED BANDEDGE

Test Mode:	802.11a 20 PK	Channel:	5180
Polarity:	Horizontal		



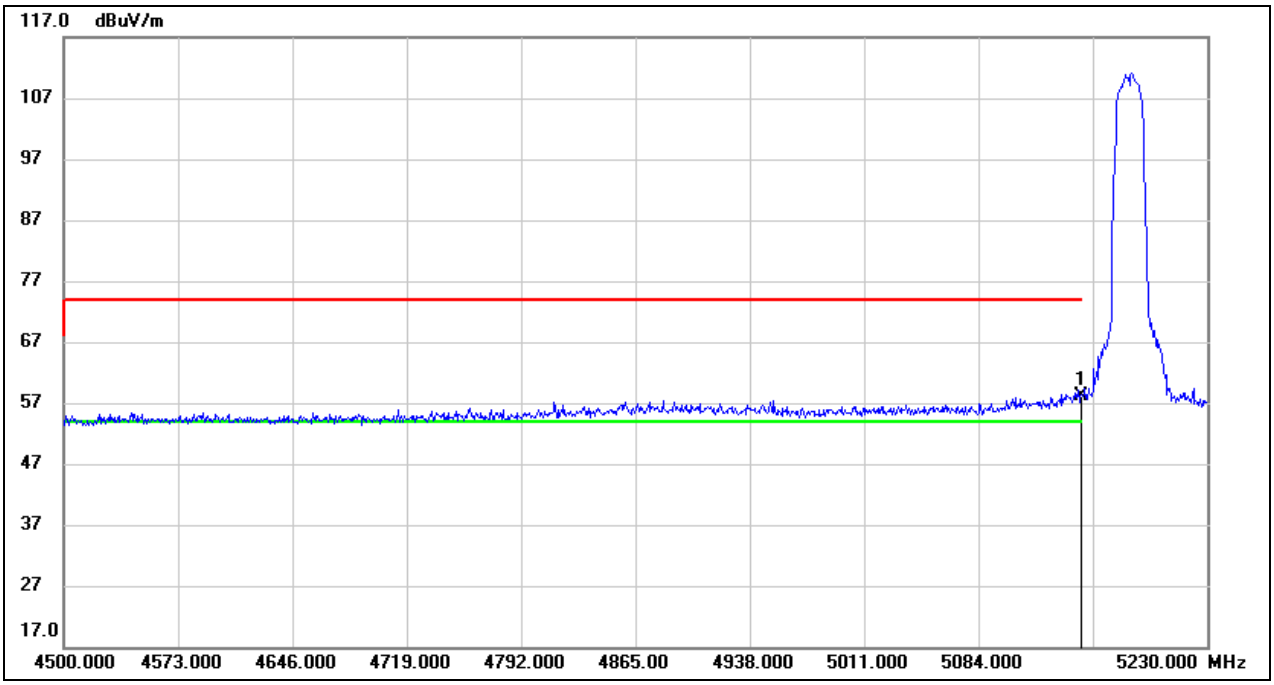
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5150.000	15.68	40.27	55.95	74.00	-18.05	peak

Test Mode:	802.11a 20 AV	Channel:	5180
Polarity:	Horizontal		



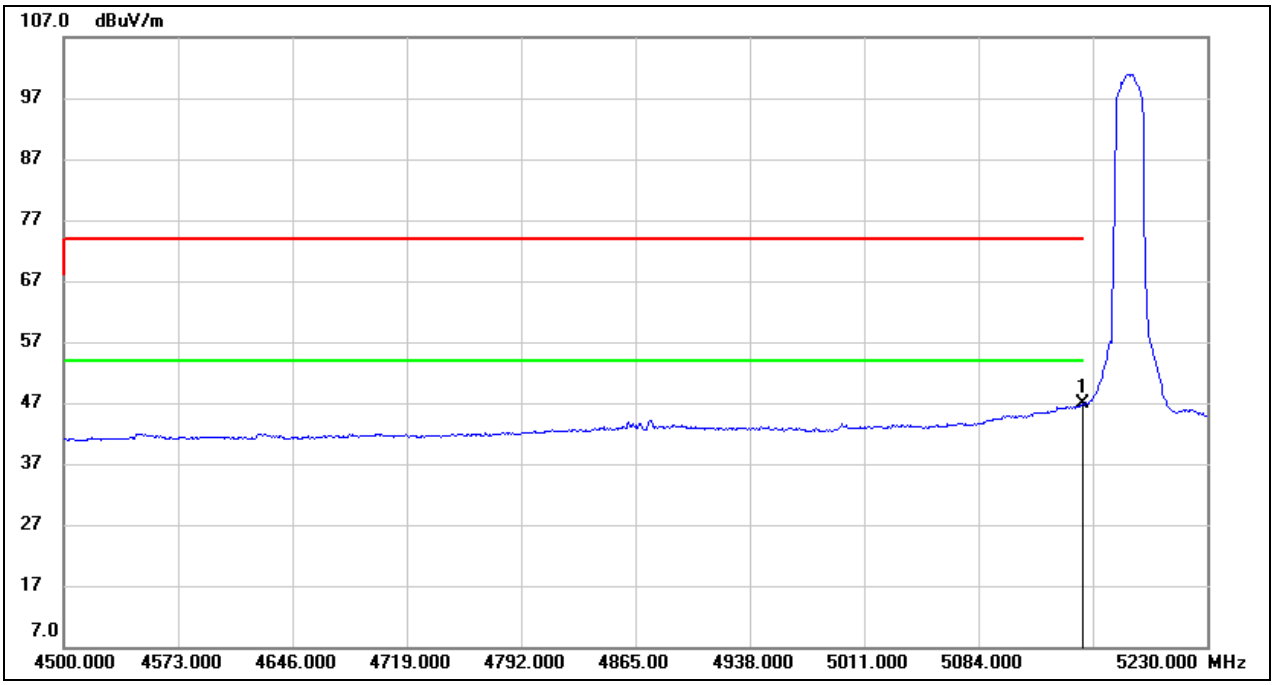
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5150.000	4.82	40.27	45.09	54.00	-8.91	AVG

Test Mode:	802.11a 20 PK	Channel:	5180
Polarity:	Vertical		



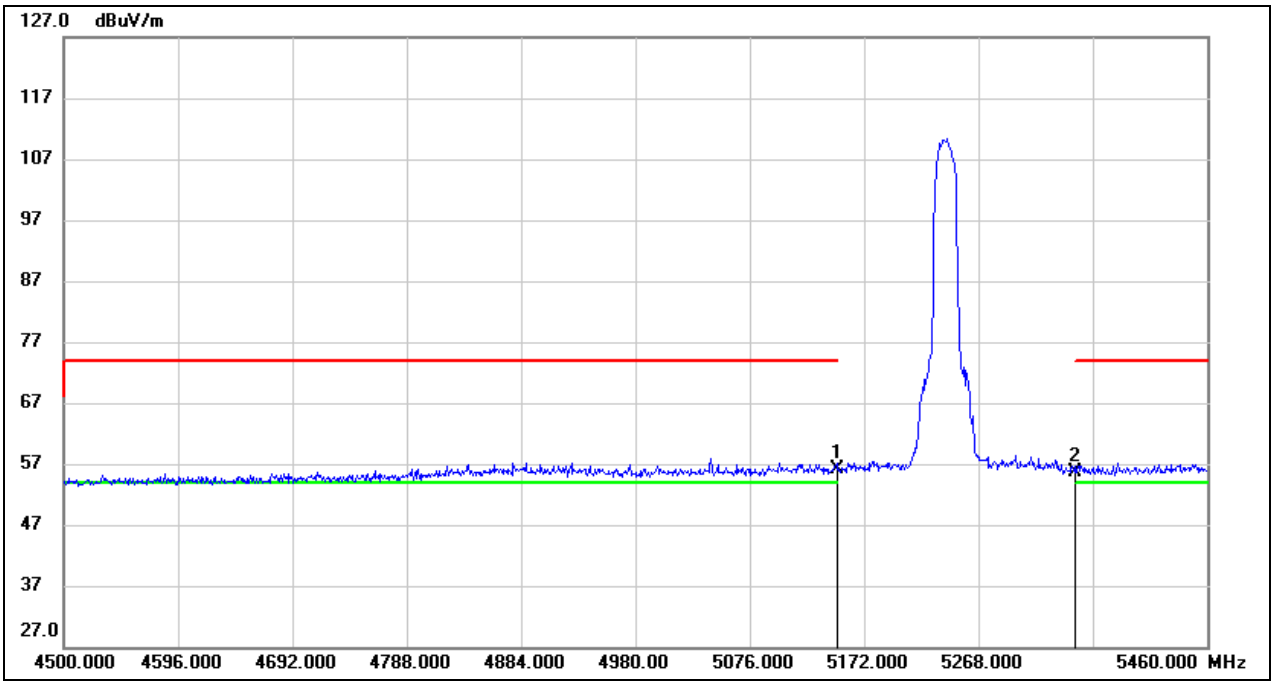
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5150.000	17.92	40.27	58.19	74.00	-15.81	peak

Test Mode:	802.11a 20 AV	Channel:	5180
Polarity:	Vertical		



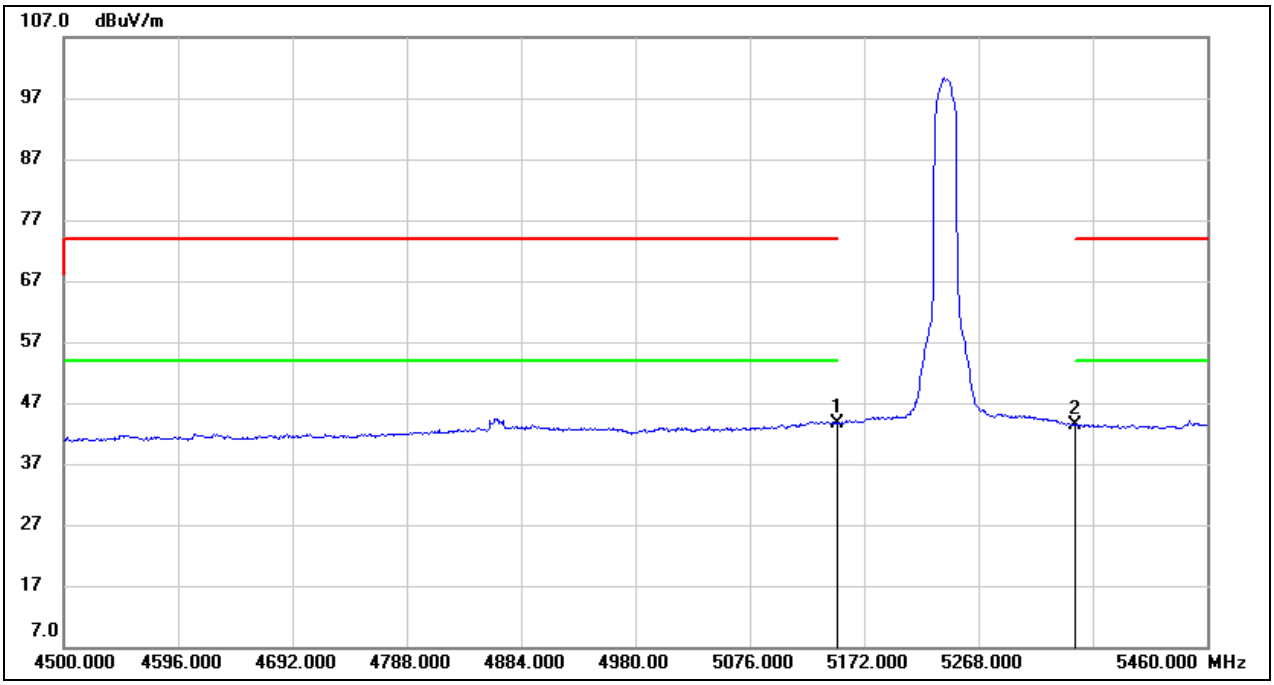
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5150.000	6.52	40.27	46.79	54.00	-7.21	AVG

Test Mode:	802.11a 20 PK	Channel:	5240
Polarity:	Vertical		



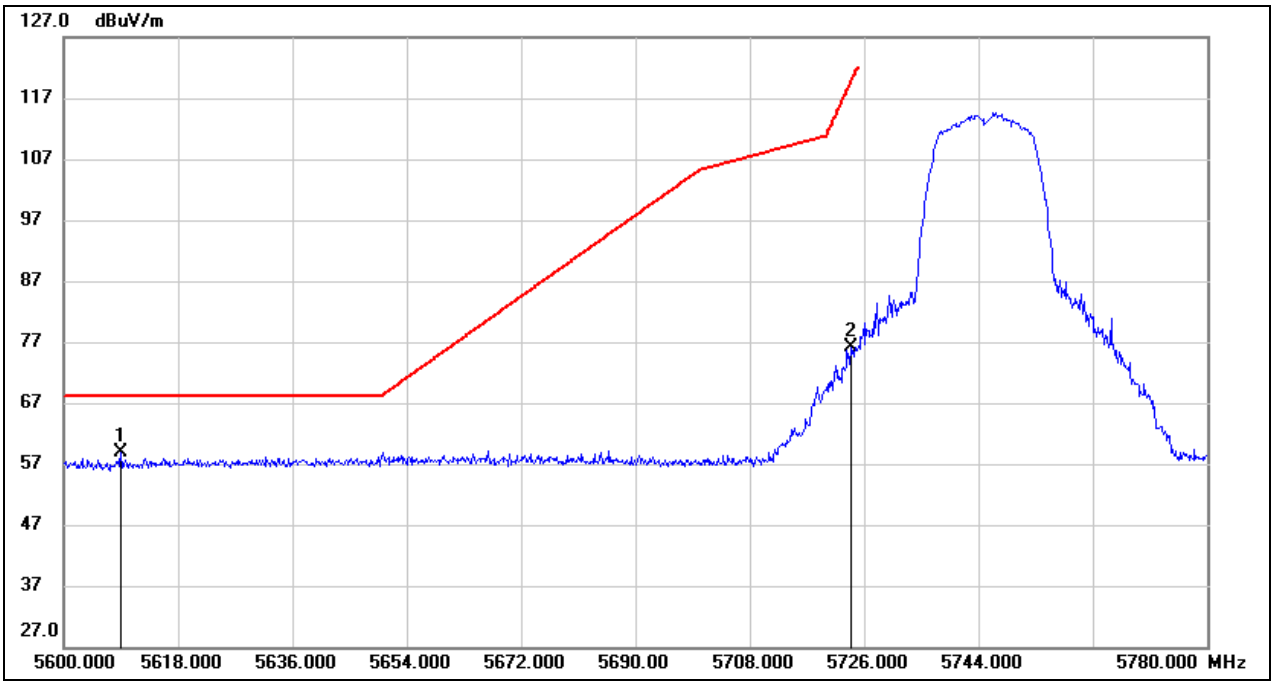
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5150.000	15.97	40.27	56.24	74.00	-17.76	peak
2	5350.000	15.21	40.49	55.70	74.00	-18.30	peak

Test Mode:	802.11a 20 AV	Channel:	5240
Polarity:	Vertical		



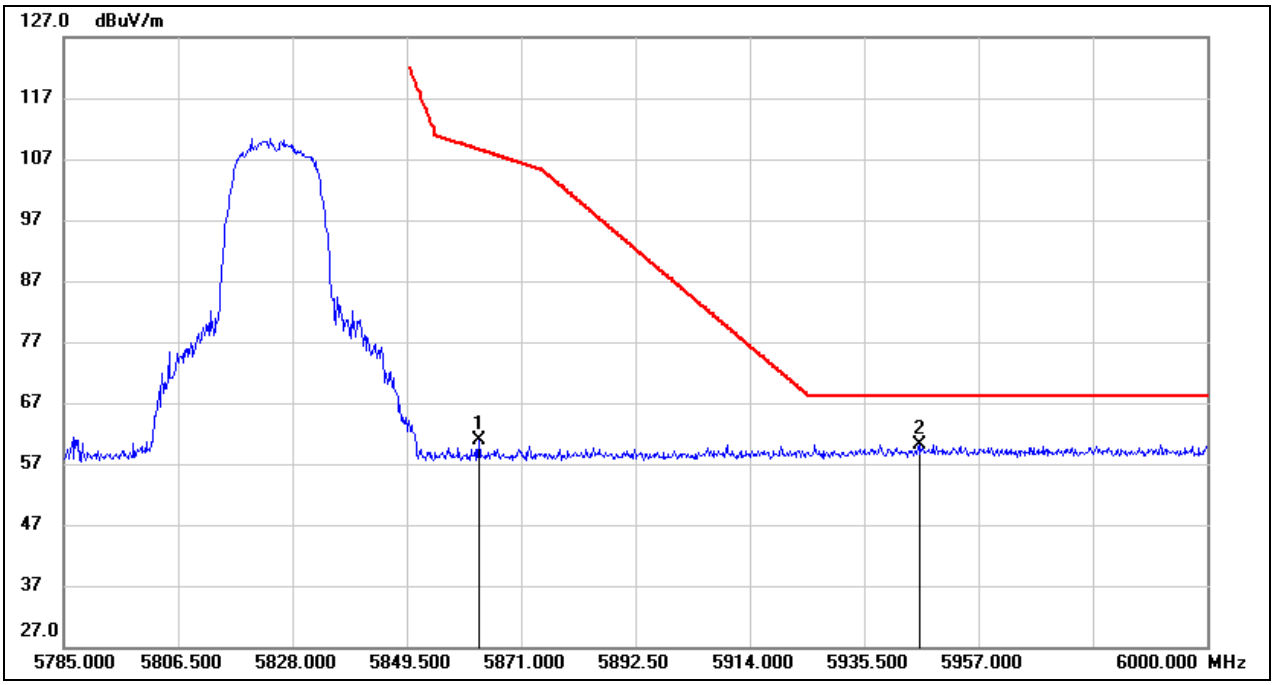
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5150.000	3.48	40.27	43.75	54.00	-10.25	AVG
2	5350.000	2.96	40.49	43.45	54.00	-10.55	AVG

Test Mode:	802.11a 20 PK	Channel:	5745
Polarity:	Vertical		



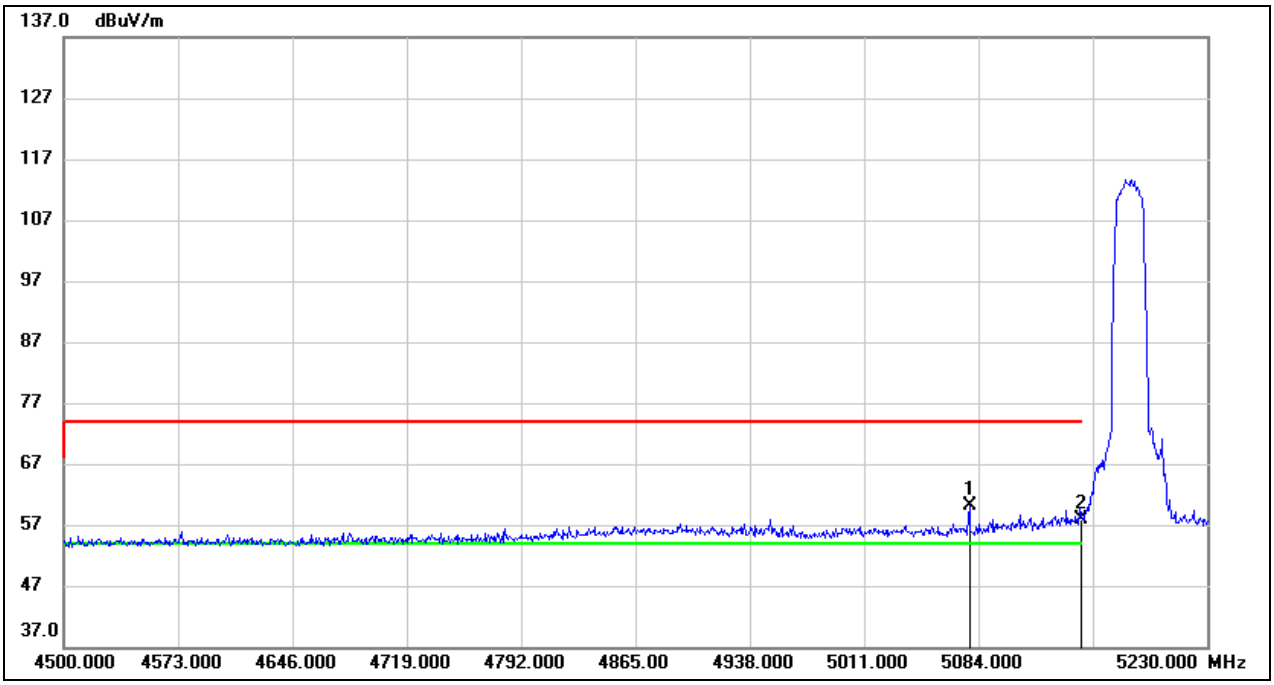
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5609.000	17.91	40.95	58.86	68.20	-9.34	peak
2	5723.840	34.84	41.26	76.10	119.56	-43.46	peak

Test Mode:	802.11a 20 PK	Channel:	5825
Polarity:	Vertical		



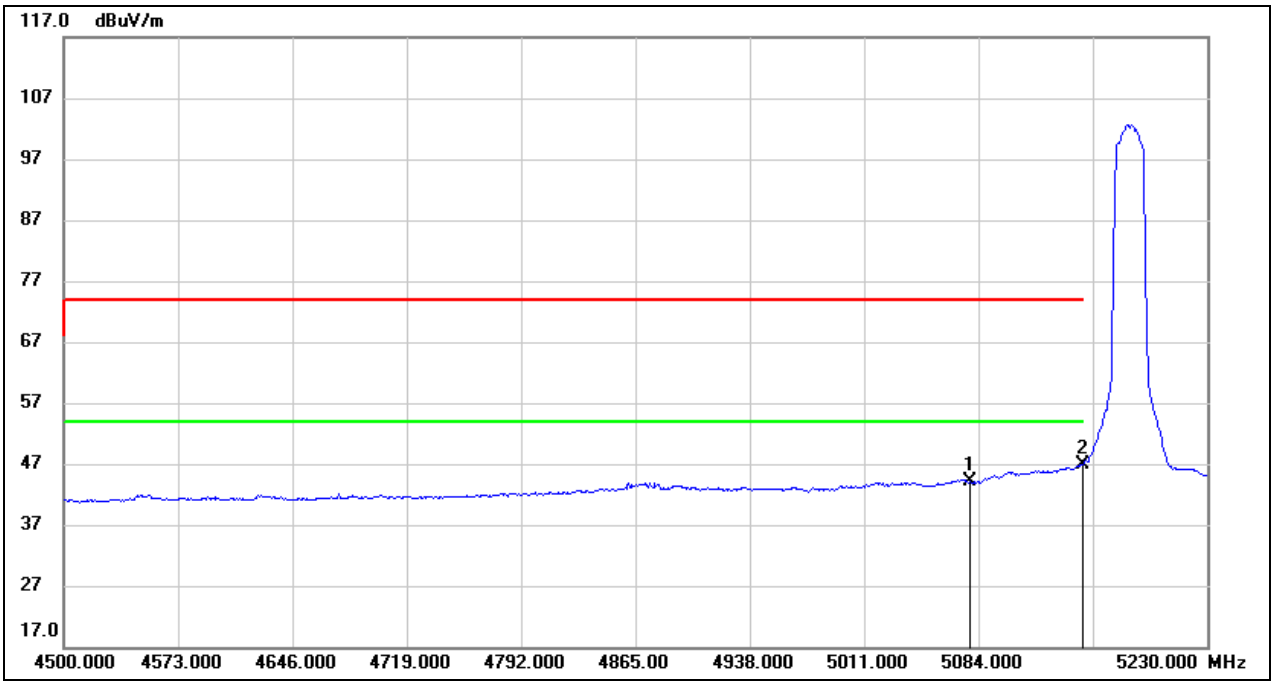
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5863.045	19.32	41.63	60.95	108.54	-47.59	peak
2	5945.820	18.38	41.86	60.24	68.20	-7.96	peak

Test Mode:	802.11n HT20 PK	Channel:	5180
Polarity:	Vertical		



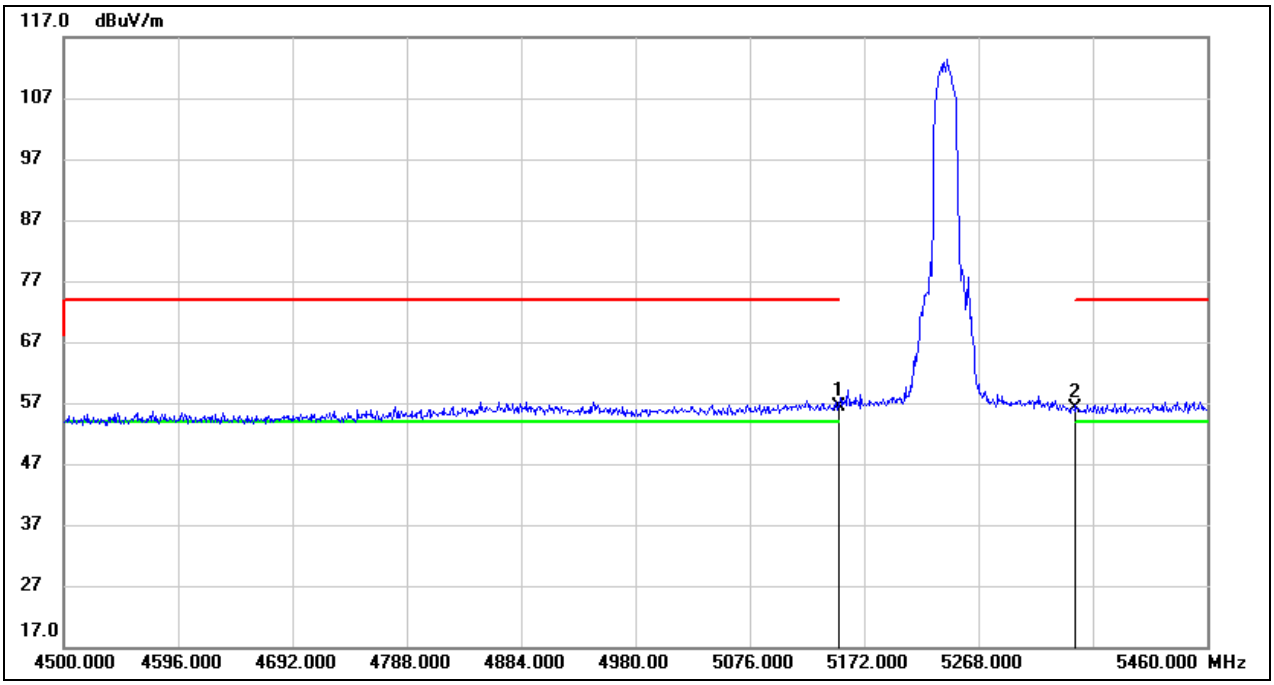
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5078.160	20.00	40.20	60.20	74.00	-13.80	peak
2	5150.000	17.59	40.27	57.86	74.00	-16.14	peak

Test Mode:	802.11n HT20 AV	Channel:	5180
Polarity:	Vertical		



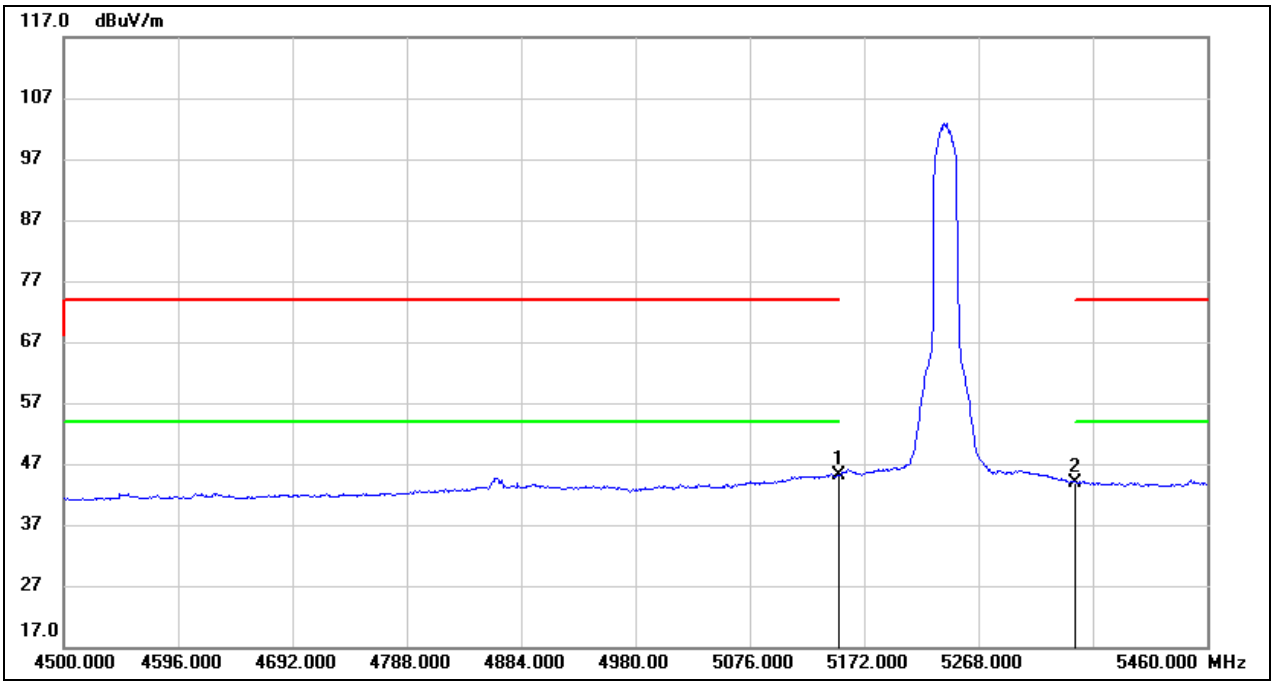
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5078.160	3.86	40.20	44.06	54.00	-9.94	AVG
2	5150.000	6.66	40.27	46.93	54.00	-7.07	AVG

Test Mode:	802.11n HT20 PK	Channel:	5240
Polarity:	Vertical		



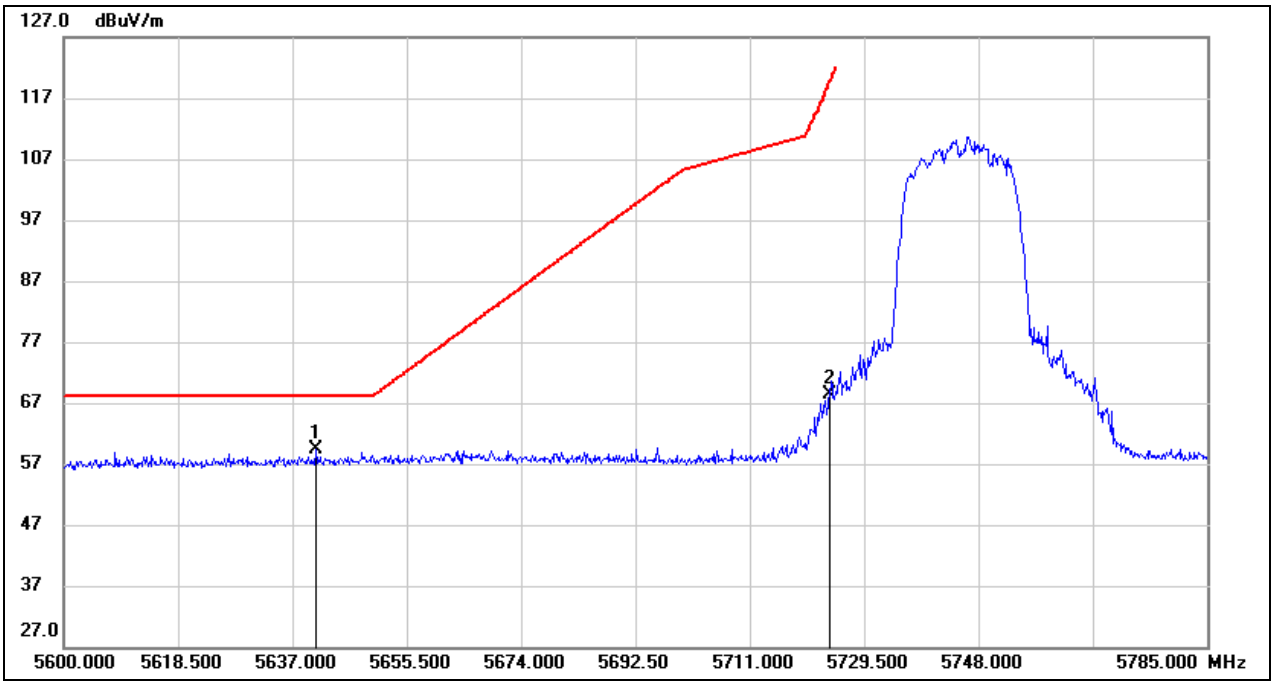
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5150.000	16.11	40.27	56.38	74.00	-17.62	peak
2	5350.000	15.52	40.49	56.01	74.00	-17.99	peak

Test Mode:	802.11n HT20 AV	Channel:	5240
Polarity:	Vertical		



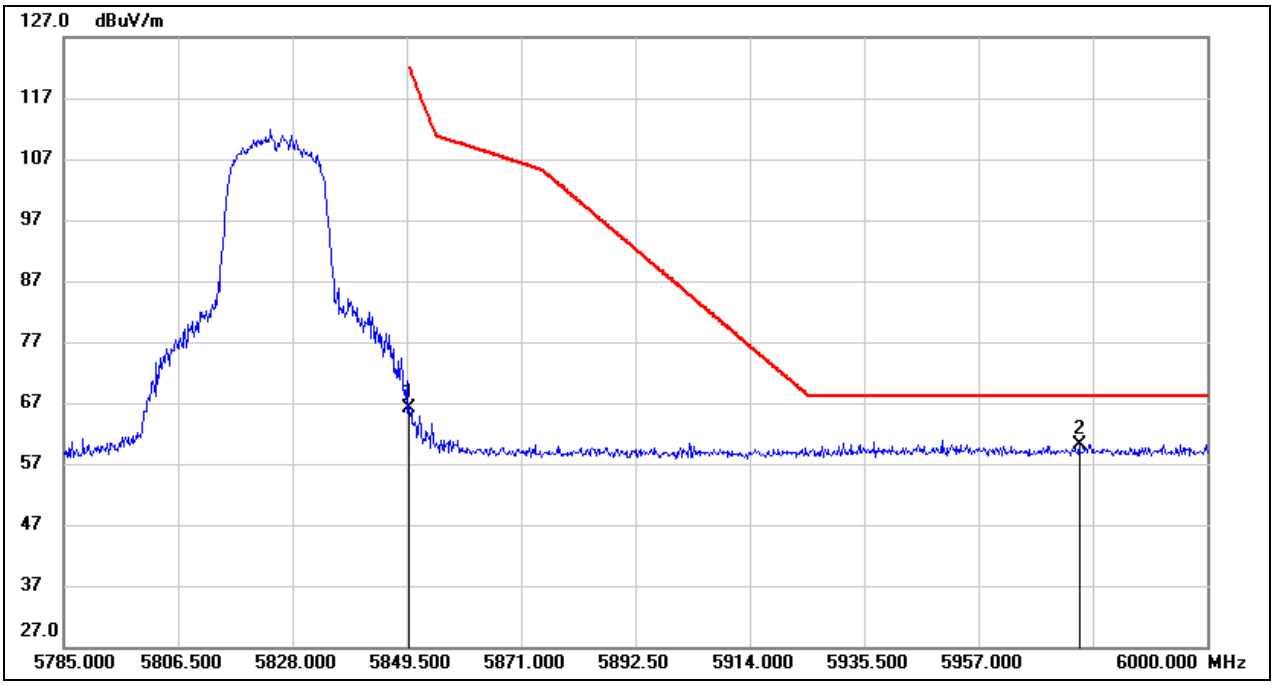
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5150.000	4.84	40.27	45.11	54.00	-8.89	AVG
2	5350.000	3.47	40.49	43.96	54.00	-10.04	AVG

Test Mode:	802.11n HT20 PK	Channel:	5745
Polarity:	Vertical		



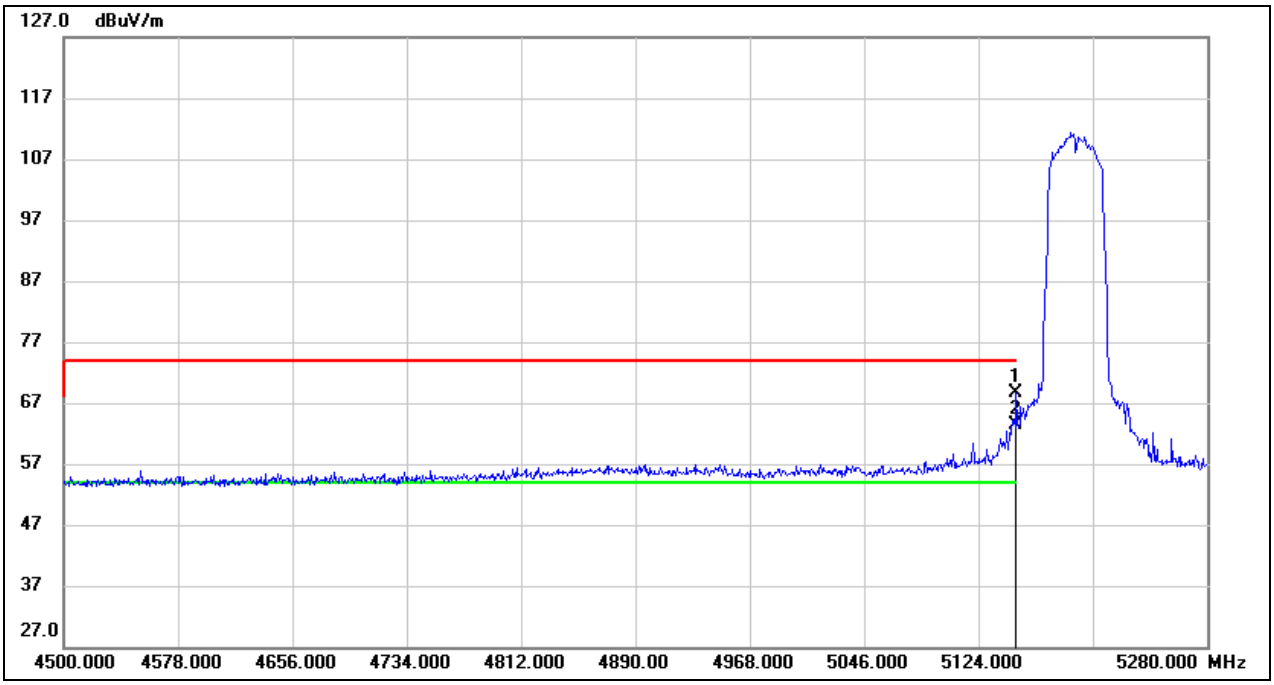
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5640.885	18.42	41.04	59.46	68.20	-8.74	peak
2	5723.950	27.05	41.26	68.31	119.81	-51.50	peak

Test Mode:	802.11n HT20 PK	Channel:	5825
Polarity:	Vertical		



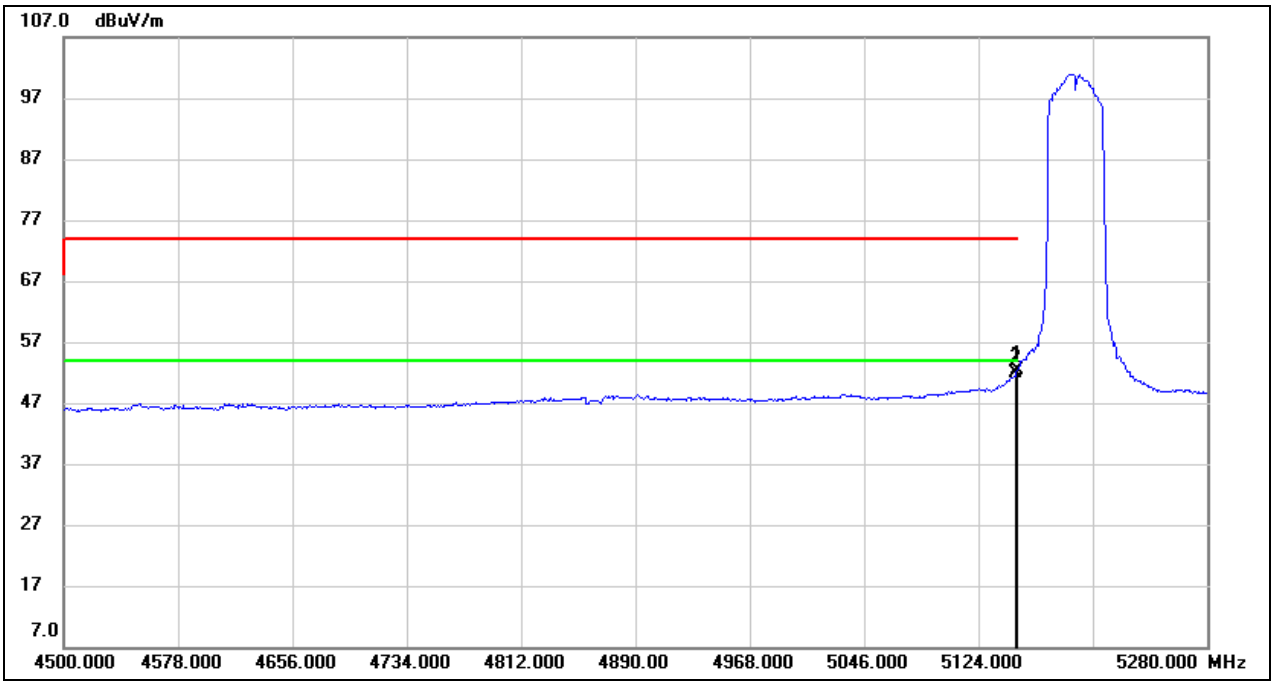
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5849.930	24.54	41.60	66.14			peak
2	5975.920	18.26	41.94	60.20	68.20	-8.00	peak

Test Mode:	802.11n HT40 PK	Channel:	5190
Polarity:	Vertical		



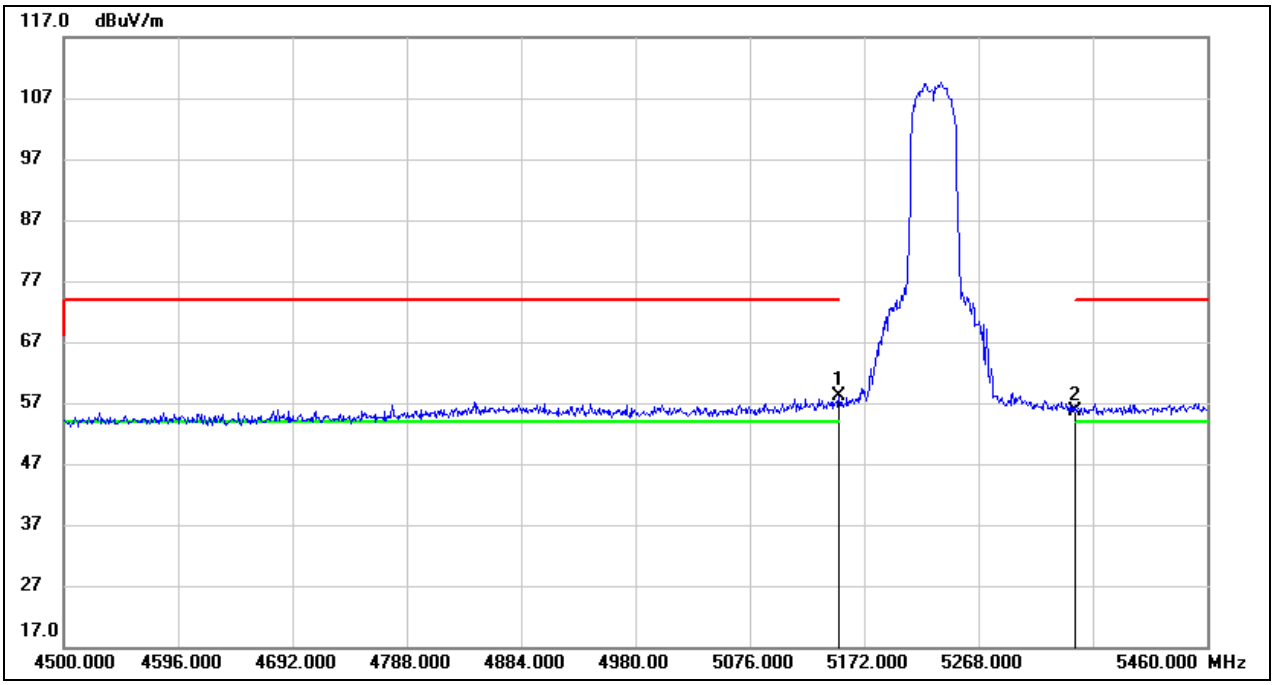
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5149.740	28.29	40.28	68.57	74.00	-5.43	peak
2	5150.000	23.12	40.27	63.39	74.00	-10.61	peak

Test Mode:	802.11n HT40 AV	Channel:	5190
Polarity:	Vertical		



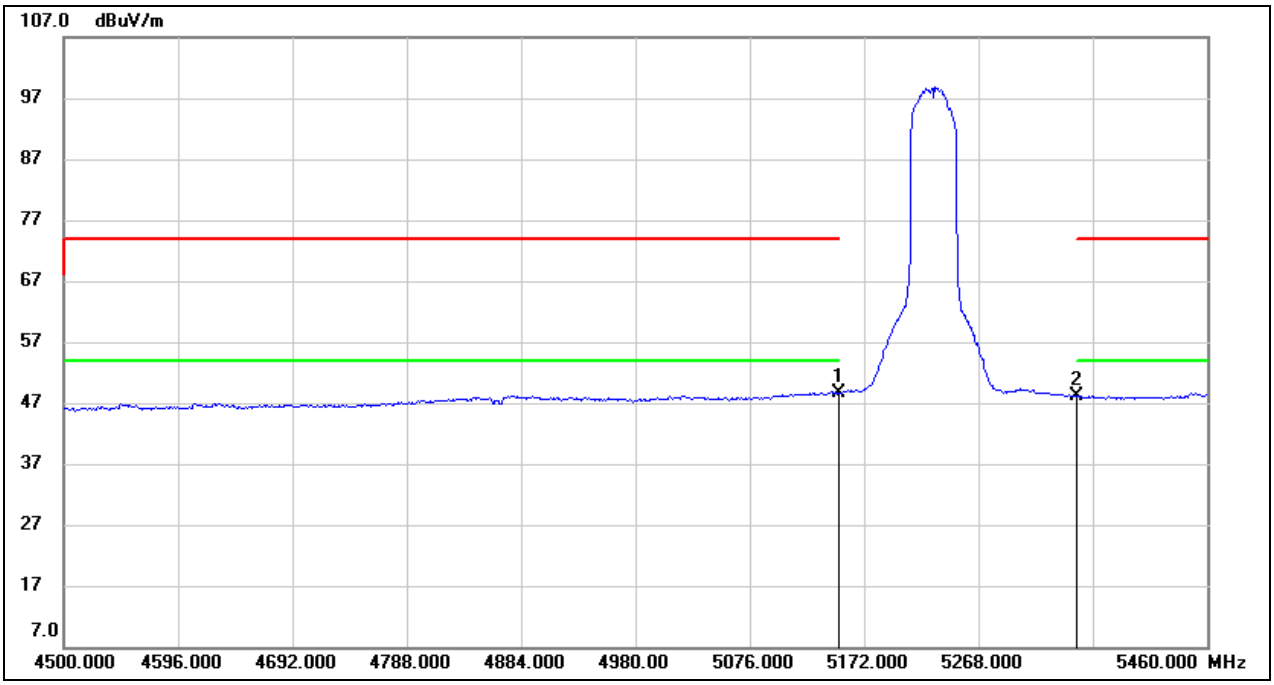
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5150.000	12.09	40.27	52.36	54.00	-1.64	AVG
2	5149.740	11.72	40.28	52.00	54.00	-2.00	AVG

Test Mode:	802.11n HT40 PK	Channel:	5230
Polarity:	Vertical		



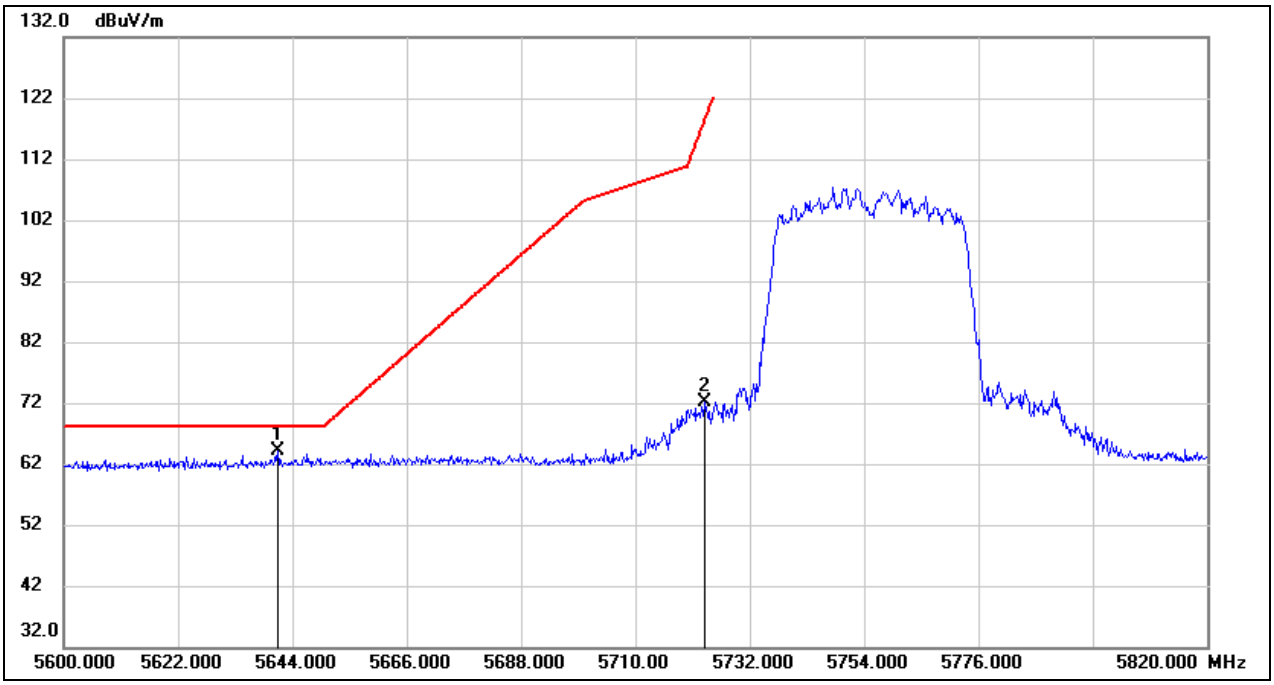
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5150.000	17.75	40.27	58.02	74.00	-15.98	peak
2	5350.000	15.15	40.49	55.64	74.00	-18.36	peak

Test Mode:	802.11n HT40 AV	Channel:	5230
Polarity:	Vertical		



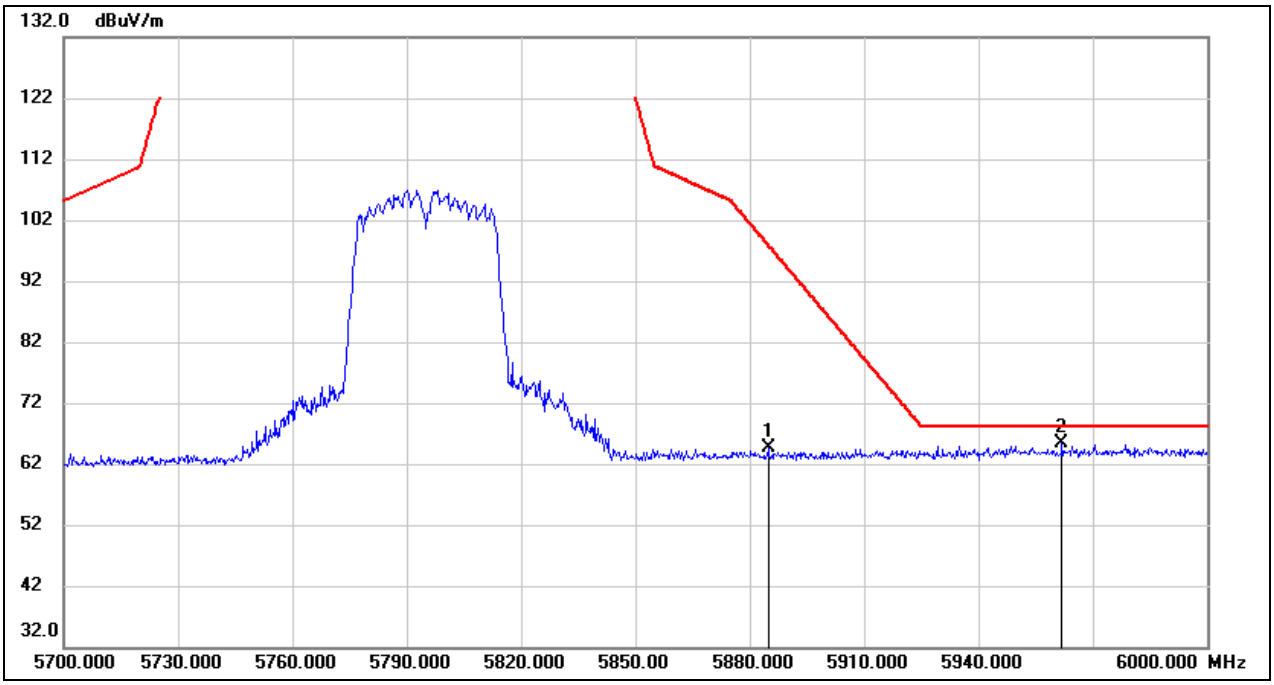
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5150.000	8.39	40.27	48.66	54.00	-5.34	AVG
2	5350.000	7.67	40.49	48.16	54.00	-5.84	AVG

Test Mode:	802.11n HT40 PK	Channel:	5755
Polarity:	Vertical		



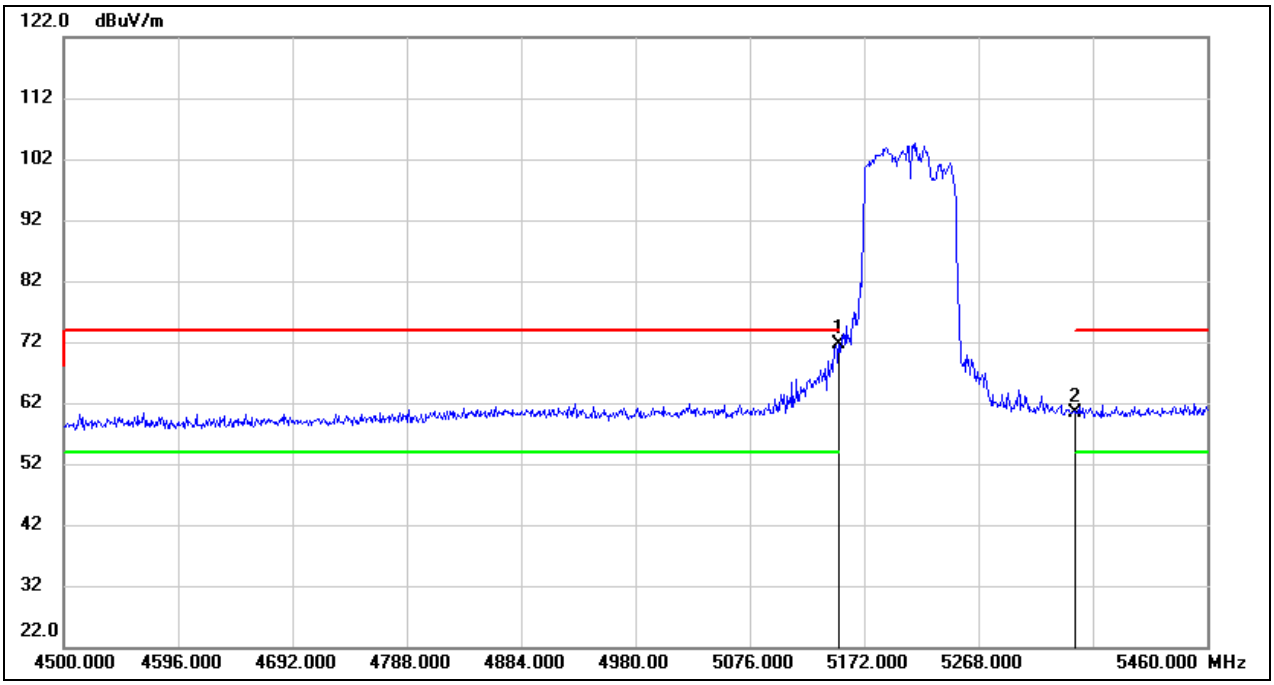
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5641.140	22.98	41.04	64.02	68.20	-4.18	peak
2	5723.200	30.98	41.25	72.23	118.10	-45.87	peak

Test Mode:	802.11n HT40 PK	Channel:	5795
Polarity:	Vertical		



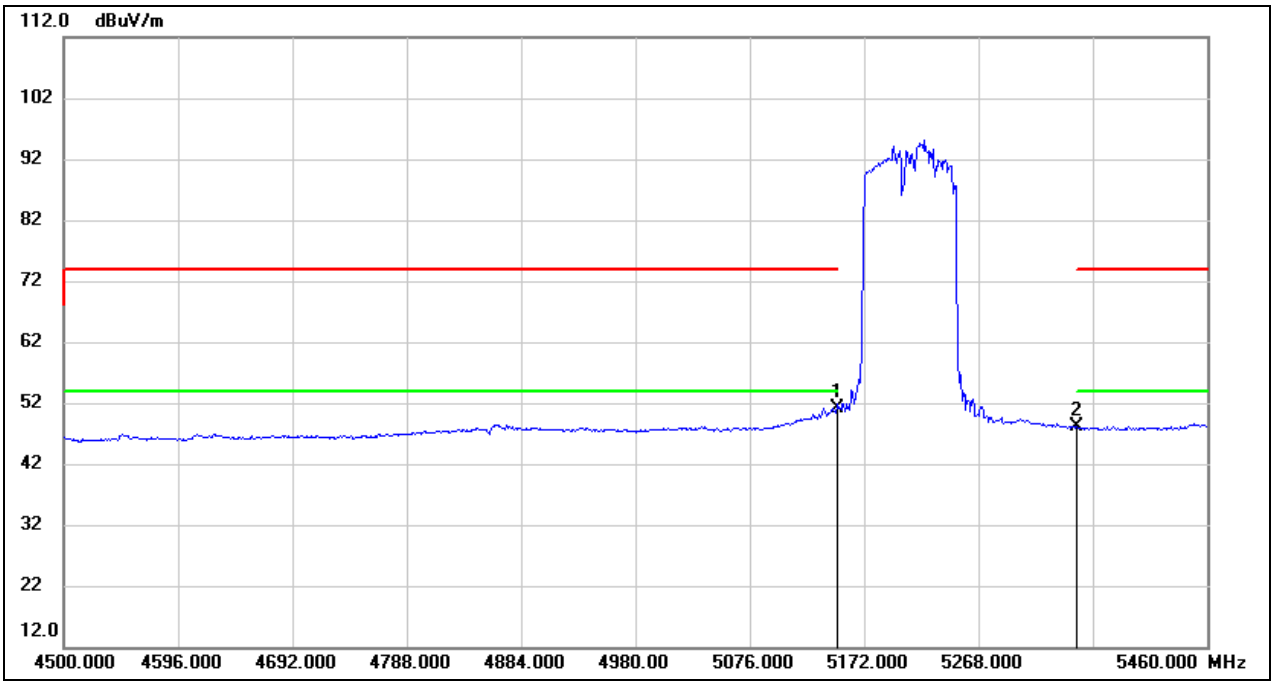
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5884.800	22.87	41.69	64.56	97.92	-33.36	peak
2	5961.900	23.37	41.90	65.27	68.20	-2.93	peak

Test Mode:	802.11ac VHT80 PK	Channel:	5210
Polarity:	Vertical		



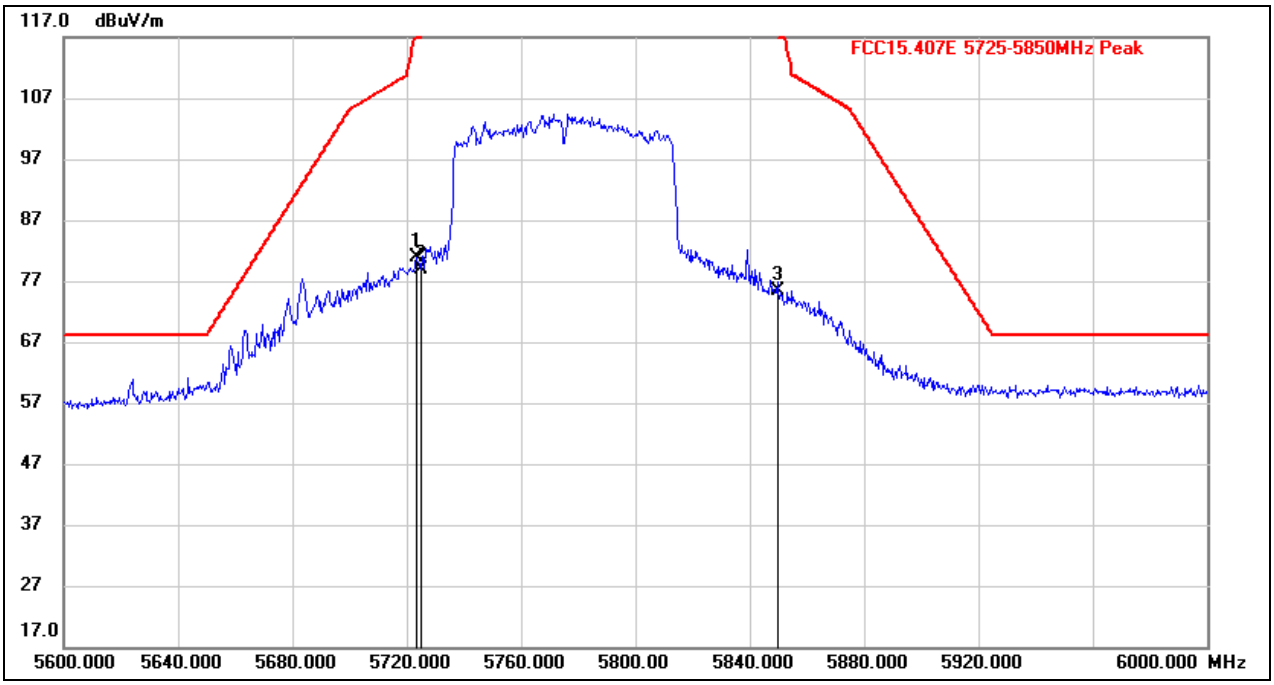
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5150.000	31.39	40.27	71.66	74.00	-2.34	peak
2	5350.000	19.79	40.49	60.28	74.00	-13.72	peak

Test Mode:	802.11ac VHT80 AV	Channel:	5210
Polarity:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5150.000	10.86	40.27	51.13	54.00	-2.87	AVG
2	5350.000	7.62	40.49	48.11	54.00	-5.89	AVG

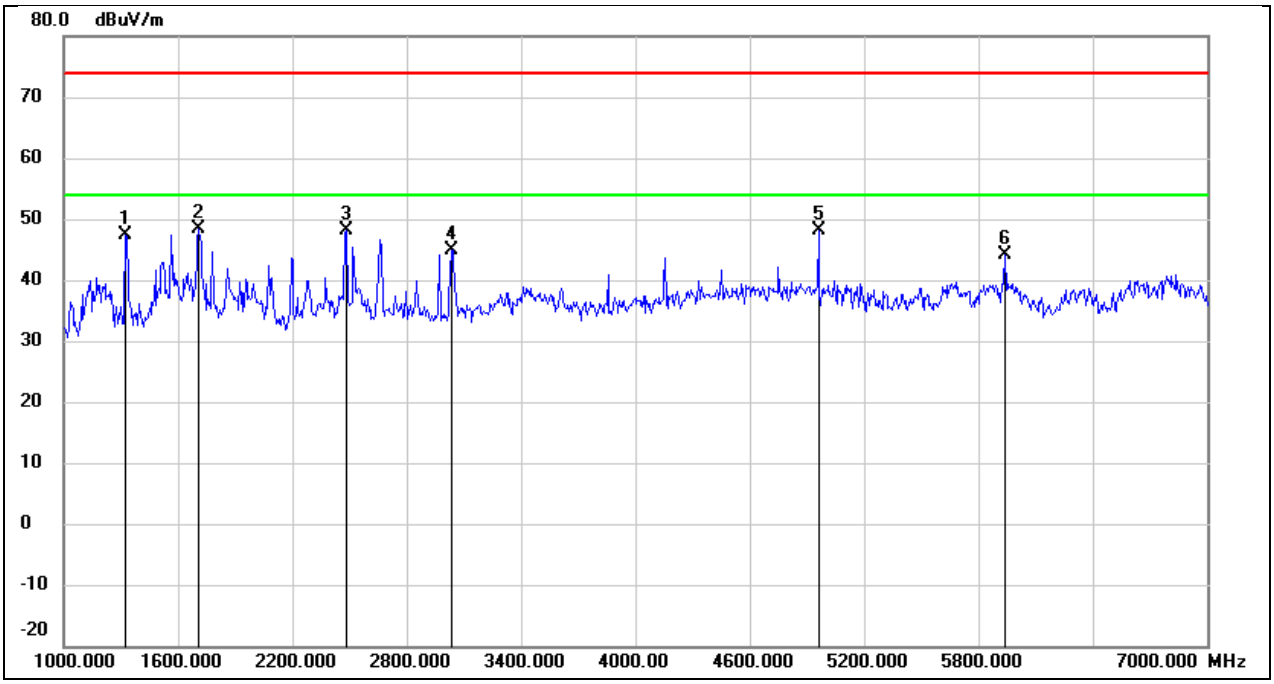
Test Mode:	802.11ac VHT80 PK	Channel:	5775
Polarity:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5723.200	39.66	41.25	80.91	118.10	-37.19	peak
2	5725.000	37.54	41.27	78.81	122.20	-43.39	peak
3	5850.000	33.90	41.60	75.50	122.20	-46.70	peak

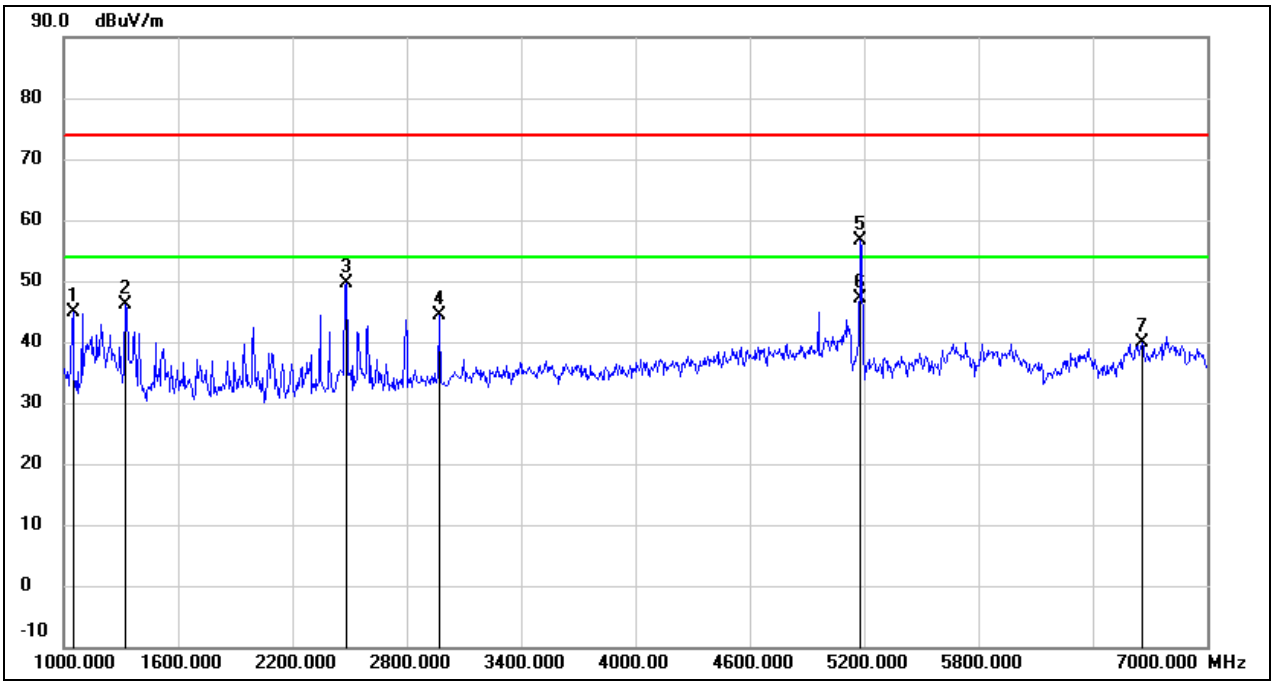
8.2. SPURIOUS EMISSIONS(1 GHZ~7 GHZ)

Test Mode:	802.11a 20	Channel:	5180
Polarity:	Horizontal		



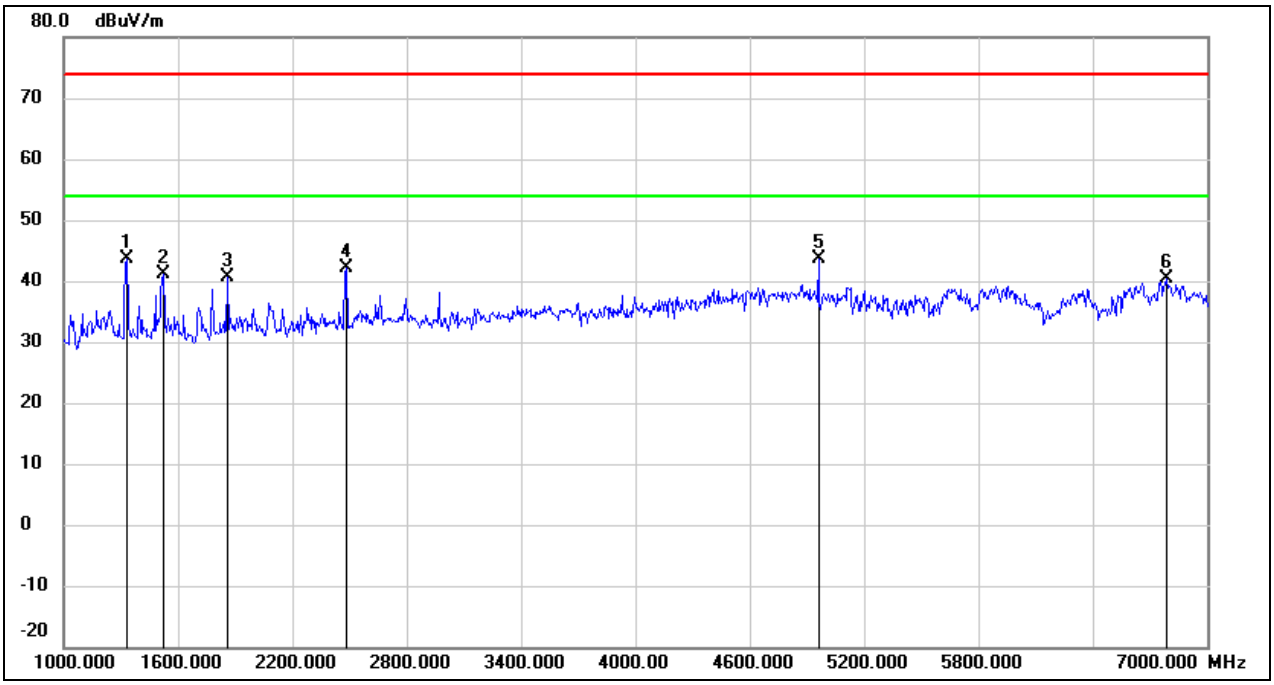
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1324.000	60.92	-13.53	47.39	74.00	-26.61	peak
2	1708.000	60.48	-12.02	48.46	74.00	-25.54	peak
3	2482.000	56.76	-8.58	48.18	74.00	-25.82	peak
4	3034.000	51.80	-6.91	44.89	74.00	-29.11	peak
5	4960.000	48.50	-0.32	48.18	74.00	-25.82	peak
6	5938.000	42.49	1.67	44.16	74.00	-29.84	peak

Test Mode:	802.11a 20	Channel:	5180
Polarity:	Vertical		



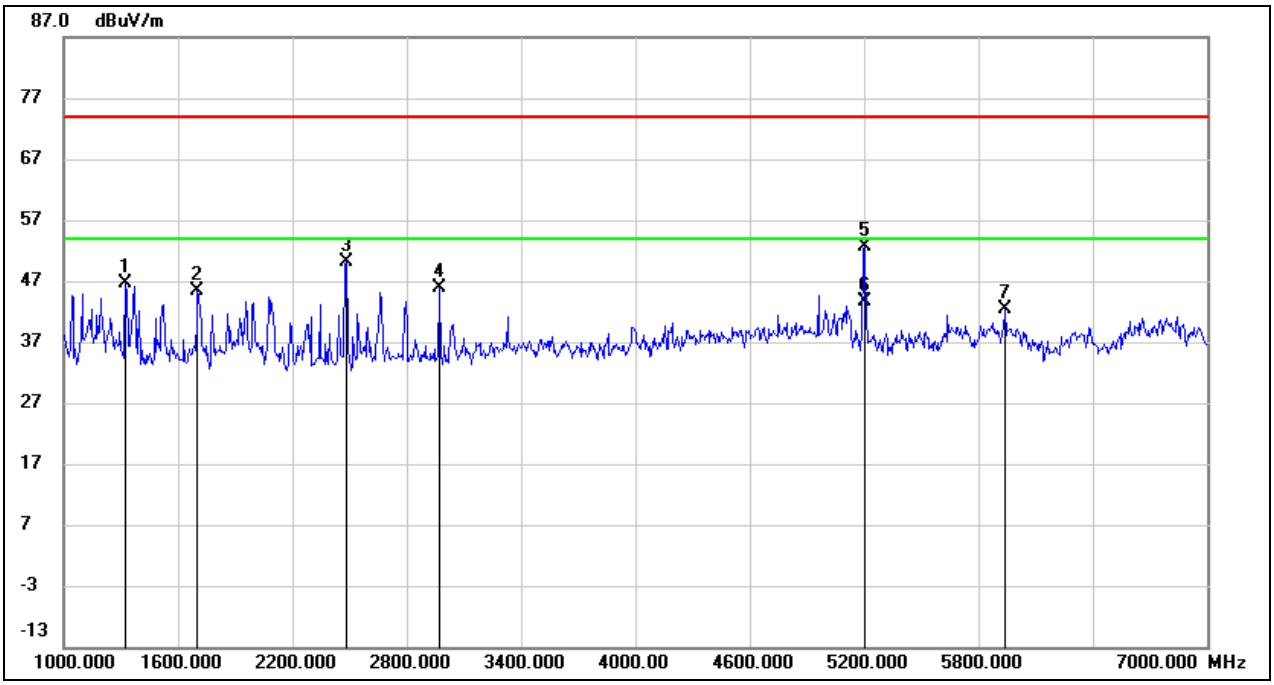
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1048.000	59.67	-14.81	44.86	74.00	-29.14	peak
2	1324.000	59.63	-13.53	46.10	74.00	-27.90	peak
3	2482.000	58.26	-8.58	49.68	74.00	-24.32	peak
4	2968.000	51.46	-7.08	44.38	74.00	-29.62	peak
5	5182.000	56.54	0.06	56.60	74.00	-17.40	peak
6	5182.000	47.00	0.06	47.06	54.00	-6.94	AVG
7	6658.000	35.46	4.49	39.95	74.00	-34.05	peak

Test Mode:	802.11a 20	Channel:	5200
Polarity:	Horizontal		



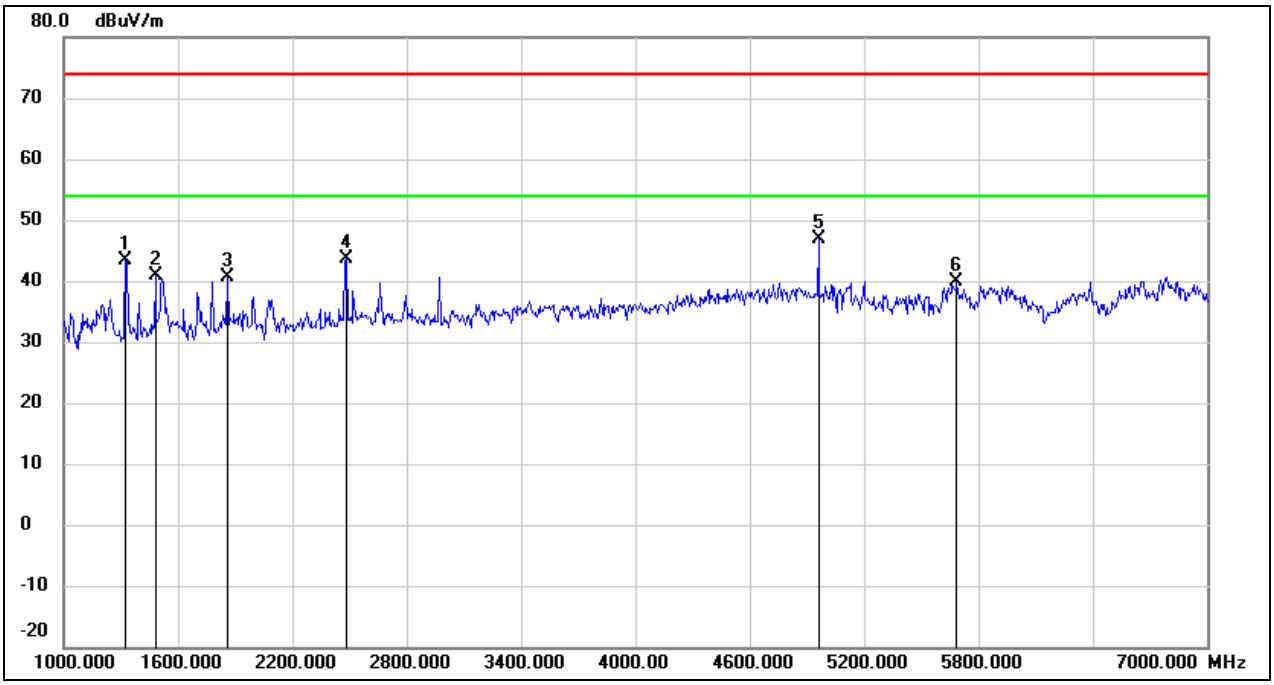
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1330.000	57.07	-13.50	43.57	74.00	-30.43	peak
2	1522.000	53.80	-12.64	41.16	74.00	-32.84	peak
3	1858.000	52.14	-11.53	40.61	74.00	-33.39	peak
4	2482.000	50.76	-8.58	42.18	74.00	-31.82	peak
5	4960.000	43.95	-0.32	43.63	74.00	-30.37	peak
6	6790.000	35.22	5.15	40.37	74.00	-33.63	peak

Test Mode:	802.11a 20	Channel:	5200
Polarity:	Vertical		



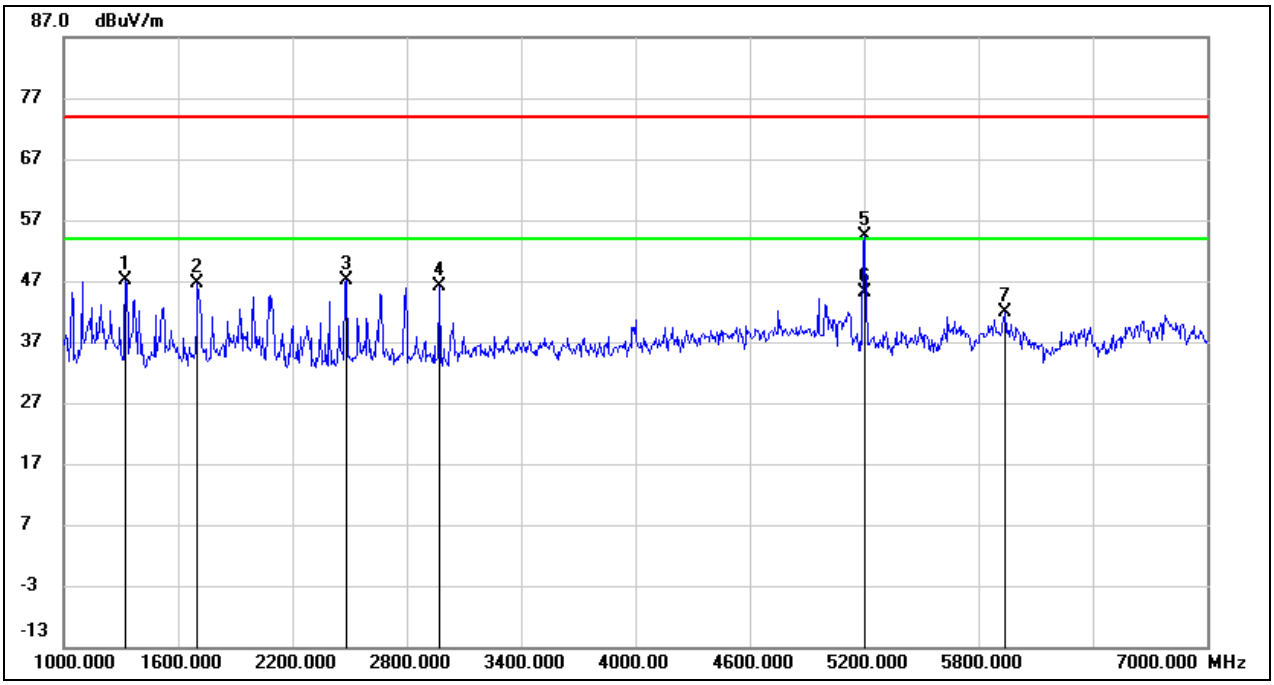
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1324.000	60.07	-13.53	46.54	74.00	-27.46	peak
2	1702.000	57.35	-12.05	45.30	74.00	-28.70	peak
3	2482.000	58.76	-8.58	50.18	74.00	-23.82	peak
4	2968.000	53.01	-7.08	45.93	74.00	-28.07	peak
5	5200.000	52.64	0.08	52.72	74.00	-21.28	peak
6	5200.000	43.62	0.08	43.70	54.00	-10.30	AVG
7	5938.000	40.62	1.67	42.29	74.00	-31.71	peak

Test Mode:	802.11a 20	Channel:	5240
Polarity:	Horizontal		



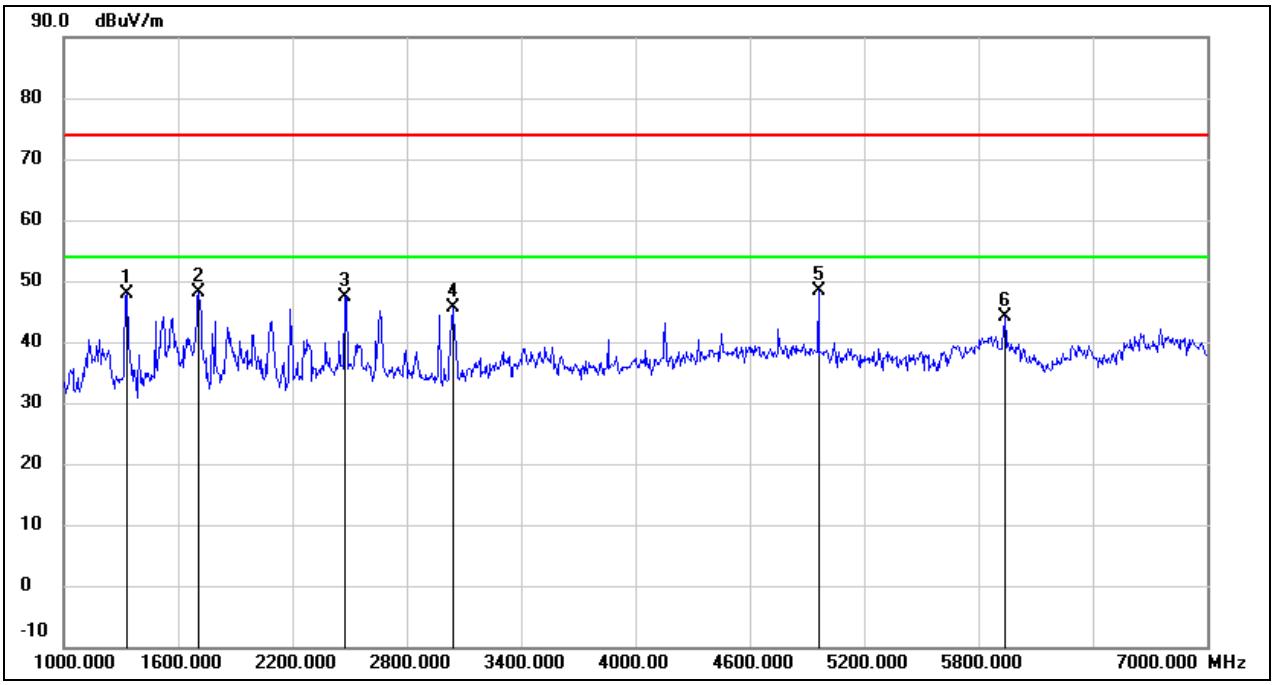
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1324.000	57.00	-13.53	43.47	74.00	-30.53	peak
2	1480.000	53.62	-12.80	40.82	74.00	-33.18	peak
3	1858.000	52.04	-11.53	40.51	74.00	-33.49	peak
4	2482.000	52.26	-8.58	43.68	74.00	-30.32	peak
5	4960.000	47.22	-0.32	46.90	74.00	-27.10	peak
6	5686.000	38.99	0.96	39.95	74.00	-34.05	peak

Test Mode:	802.11a 20	Channel:	5240
Polarity:	Vertical		



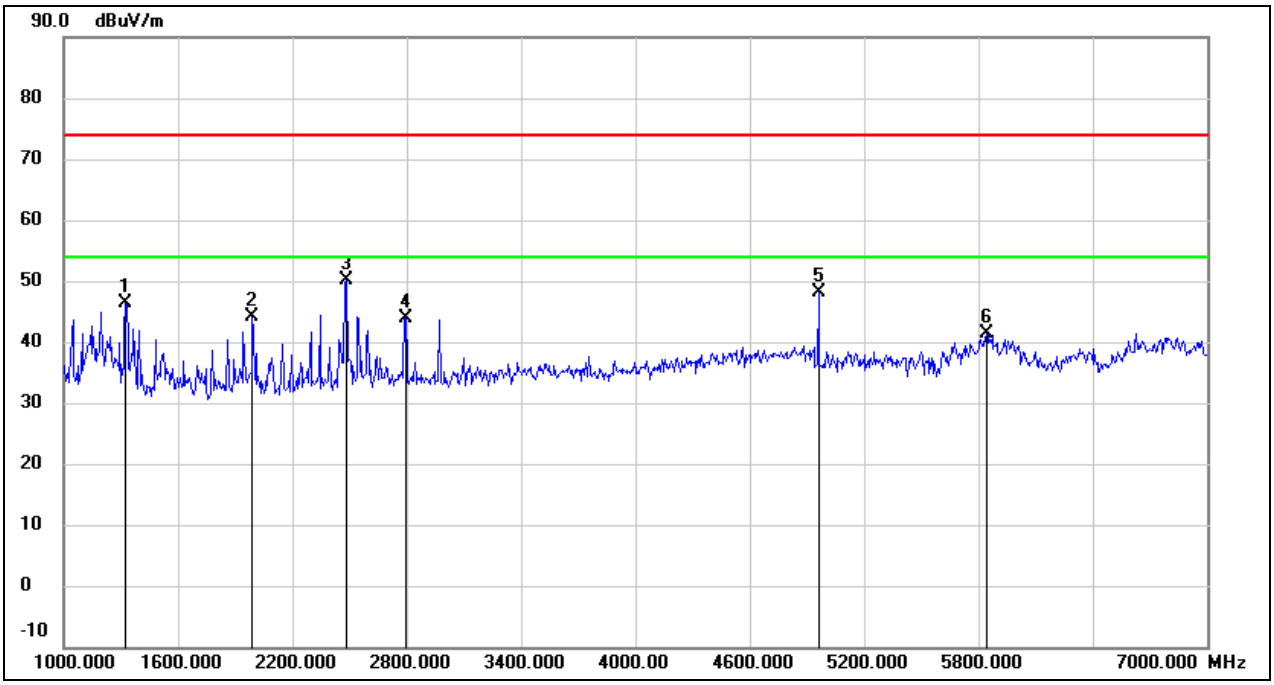
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1324.000	60.73	-13.53	47.20	74.00	-26.80	peak
2	1702.000	58.65	-12.05	46.60	74.00	-27.40	peak
3	2482.000	55.76	-8.58	47.18	74.00	-26.82	peak
4	2968.000	53.22	-7.08	46.14	74.00	-27.86	peak
5	5200.000	54.35	0.08	54.43	74.00	-19.57	peak
6	5200.000	45.02	0.08	45.10	54.00	-8.90	AVG
7	5938.000	40.09	1.67	41.76	74.00	-32.24	peak

Test Mode:	802.11a 20	Channel:	5745
Polarity:	Horizontal		



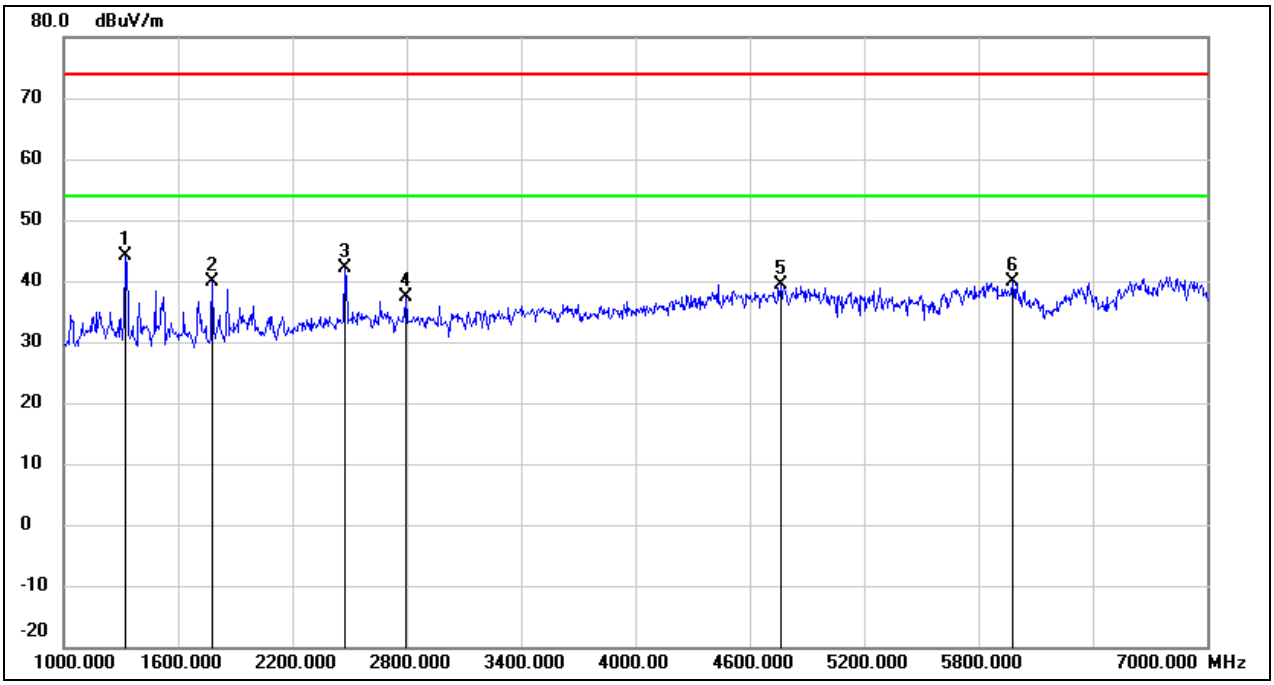
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1330.000	61.39	-13.50	47.89	74.00	-26.11	peak
2	1708.000	60.08	-12.02	48.06	74.00	-25.94	peak
3	2476.000	56.09	-8.61	47.48	74.00	-26.52	peak
4	3040.000	52.51	-6.89	45.62	74.00	-28.38	peak
5	4960.000	48.67	-0.32	48.35	74.00	-25.65	peak
6	5938.000	42.51	1.67	44.18	74.00	-29.82	peak

Test Mode:	802.11a 20	Channel:	5745
Polarity:	Vertical		



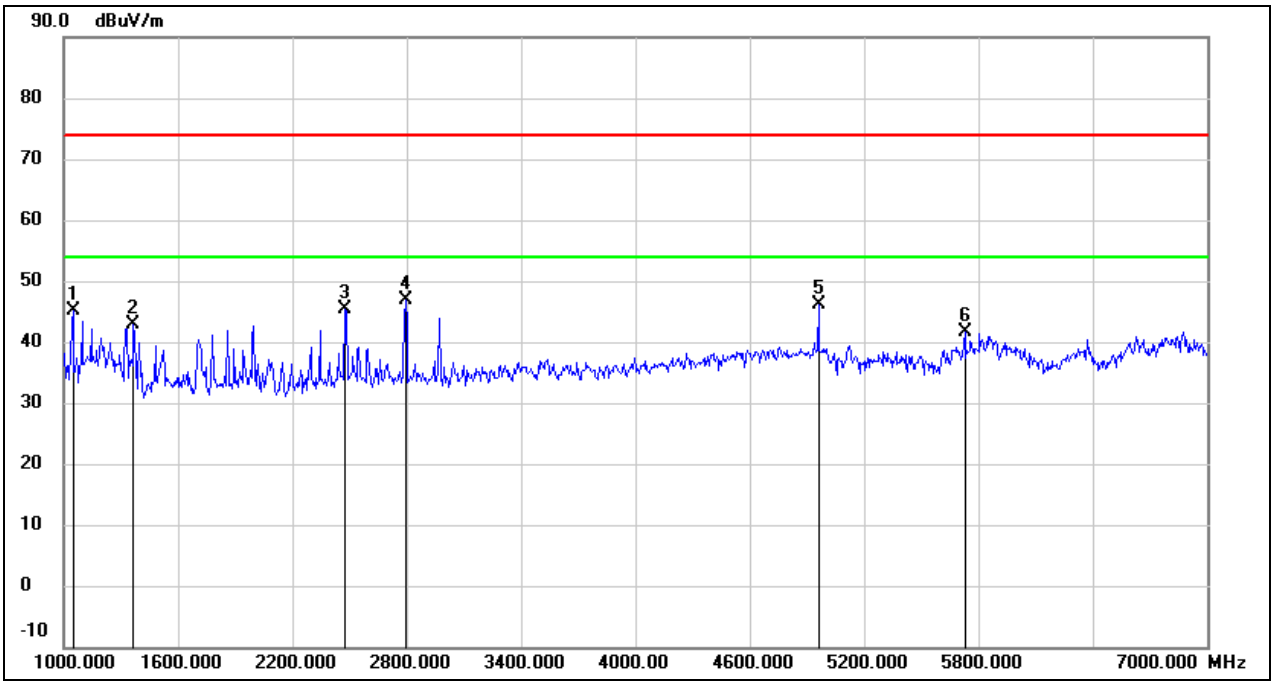
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1324.000	59.82	-13.53	46.29	74.00	-27.71	peak
2	1990.000	55.34	-11.09	44.25	74.00	-29.75	peak
3	2482.000	58.76	-8.58	50.18	74.00	-23.82	peak
4	2794.000	51.50	-7.60	43.90	74.00	-30.10	peak
5	4960.000	48.44	-0.32	48.12	74.00	-25.88	peak
6	5842.000	40.05	1.39	41.44	74.00	-32.56	peak

Test Mode:	802.11a 20	Channel:	5785
Polarity:	Horizontal		



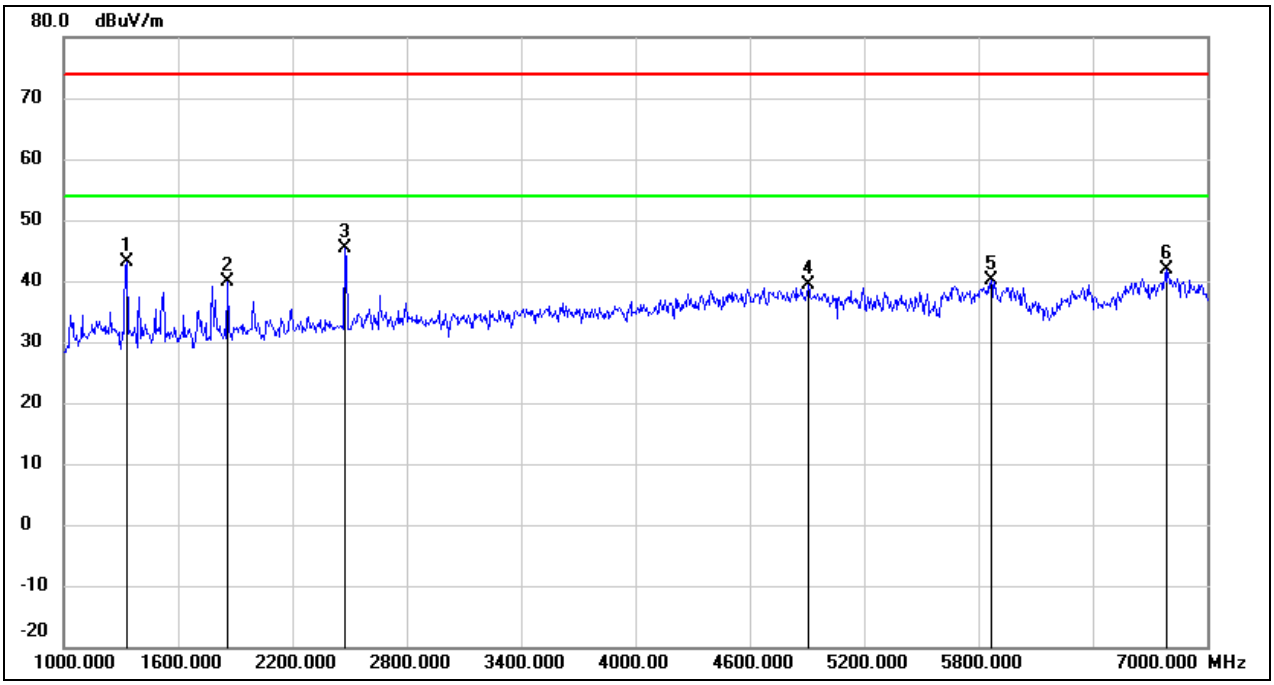
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1324.000	57.75	-13.53	44.22	74.00	-29.78	peak
2	1780.000	51.62	-11.79	39.83	74.00	-34.17	peak
3	2476.000	50.81	-8.61	42.20	74.00	-31.80	peak
4	2794.000	44.98	-7.60	37.38	74.00	-36.62	peak
5	4762.000	40.39	-1.10	39.29	74.00	-34.71	peak
6	5980.000	38.12	1.79	39.91	74.00	-34.09	peak

Test Mode:	802.11a 20	Channel:	5785
Polarity:	Vertical		



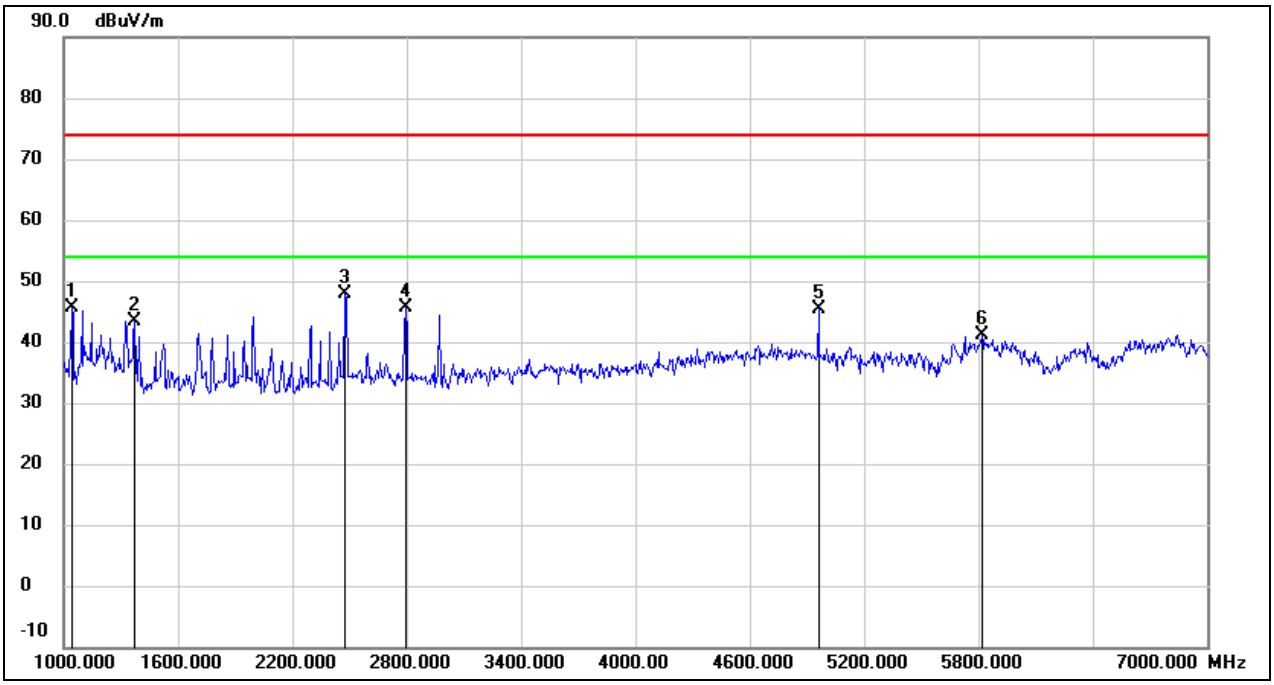
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1048.000	59.89	-14.81	45.08	74.00	-28.92	peak
2	1366.000	56.12	-13.34	42.78	74.00	-31.22	peak
3	2476.000	54.09	-8.61	45.48	74.00	-28.52	peak
4	2794.000	54.57	-7.60	46.97	74.00	-27.03	peak
5	4960.000	46.51	-0.32	46.19	74.00	-27.81	peak
6	5728.000	40.46	1.07	41.53	74.00	-32.47	peak

Test Mode:	802.11a 20	Channel:	5825
Polarity:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1330.000	56.60	-13.50	43.10	74.00	-30.90	peak
2	1858.000	51.45	-11.53	39.92	74.00	-34.08	peak
3	2476.000	54.05	-8.61	45.44	74.00	-28.56	peak
4	4906.000	40.00	-0.53	39.47	74.00	-34.53	peak
5	5866.000	38.77	1.47	40.24	74.00	-33.76	peak
6	6784.000	36.73	5.13	41.86	74.00	-32.14	peak

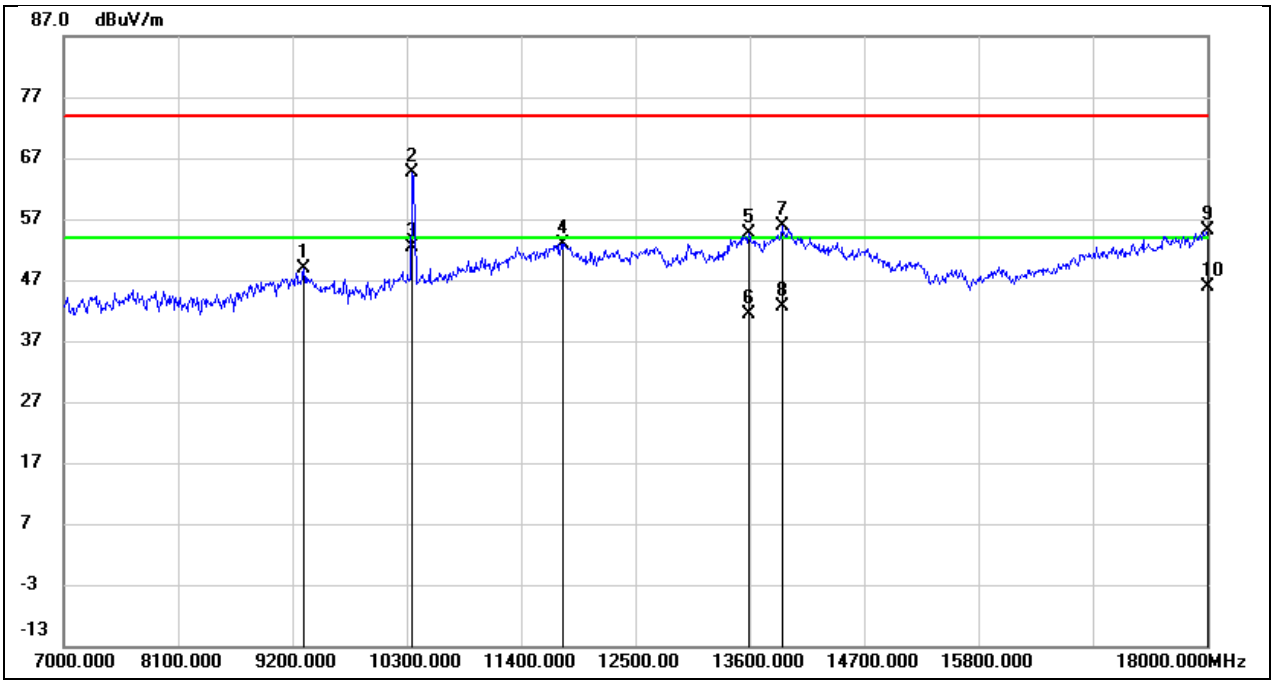
Test Mode:	802.11a 20	Channel:	5825
Polarity:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1042.000	60.59	-14.84	45.75	74.00	-28.25	peak
2	1372.000	56.67	-13.31	43.36	74.00	-30.64	peak
3	2476.000	56.59	-8.61	47.98	74.00	-26.02	peak
4	2794.000	53.12	-7.60	45.52	74.00	-28.48	peak
5	4960.000	45.75	-0.32	45.43	74.00	-28.57	peak
6	5818.000	39.72	1.33	41.05	74.00	-32.95	peak

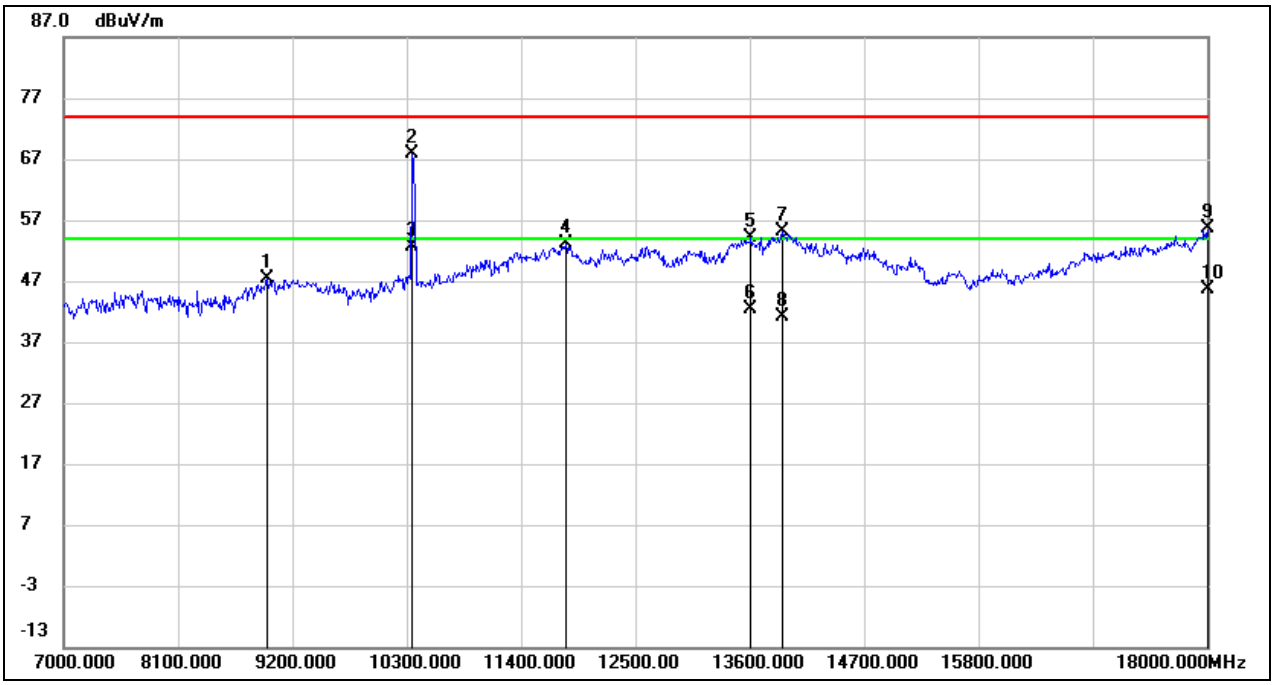
8.3. SPURIOUS EMISSIONS(7 GHZ~18 GHZ)

Test Mode:	802.11a 20	Channel:	5180
Polarity:	Horizontal		



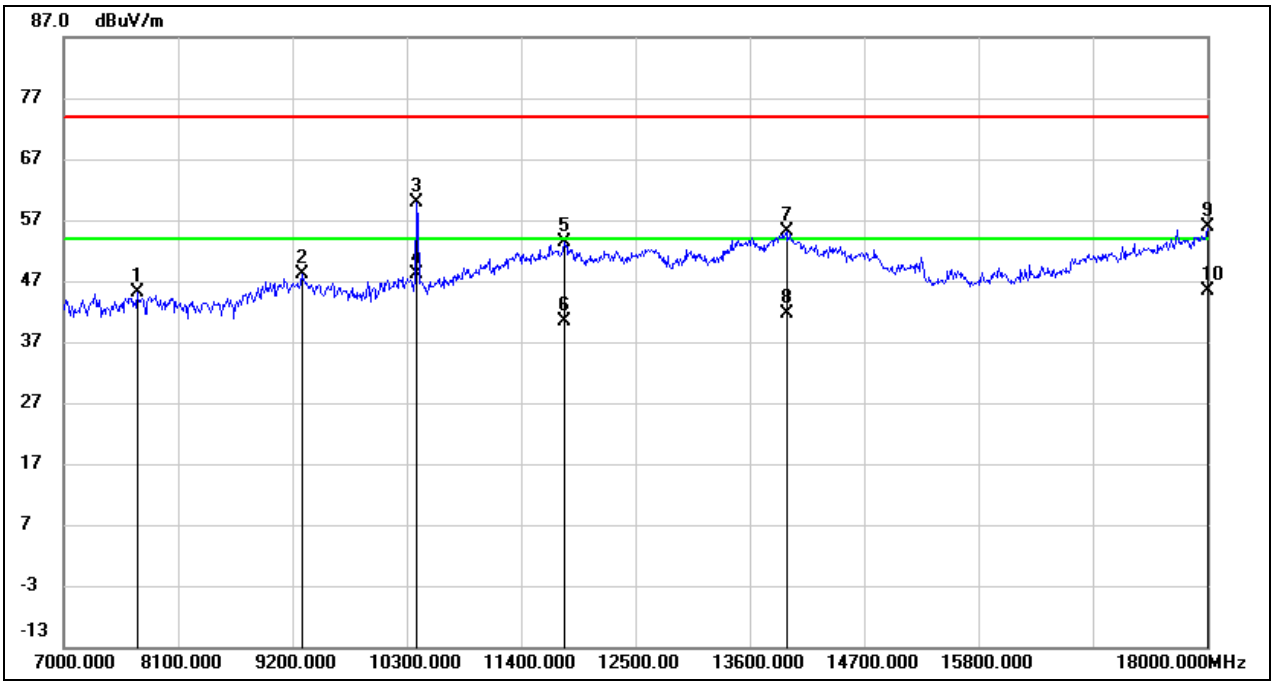
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	9310.000	38.32	10.54	48.86	74.00	-25.14	peak
2	10355.000	52.23	12.52	64.75	74.00	-9.25	peak
3	10355.000	39.80	12.52	52.32	54.00	-1.68	AVG
4	11796.000	35.67	17.32	52.99	74.00	-21.01	peak
5	13589.000	33.88	20.86	54.74	74.00	-19.26	peak
6	13589.000	20.43	20.86	41.29	54.00	-12.71	AVG
7	13908.000	34.11	21.66	55.77	74.00	-18.23	peak
8	13908.000	20.95	21.66	42.61	54.00	-11.39	AVG
9	18000.000	29.04	26.12	55.16	74.00	-18.84	peak
10	18000.000	19.70	26.12	45.82	54.00	-8.18	AVG

Test Mode:	802.11a 20	Channel:	5180
Polarity:	Vertical		



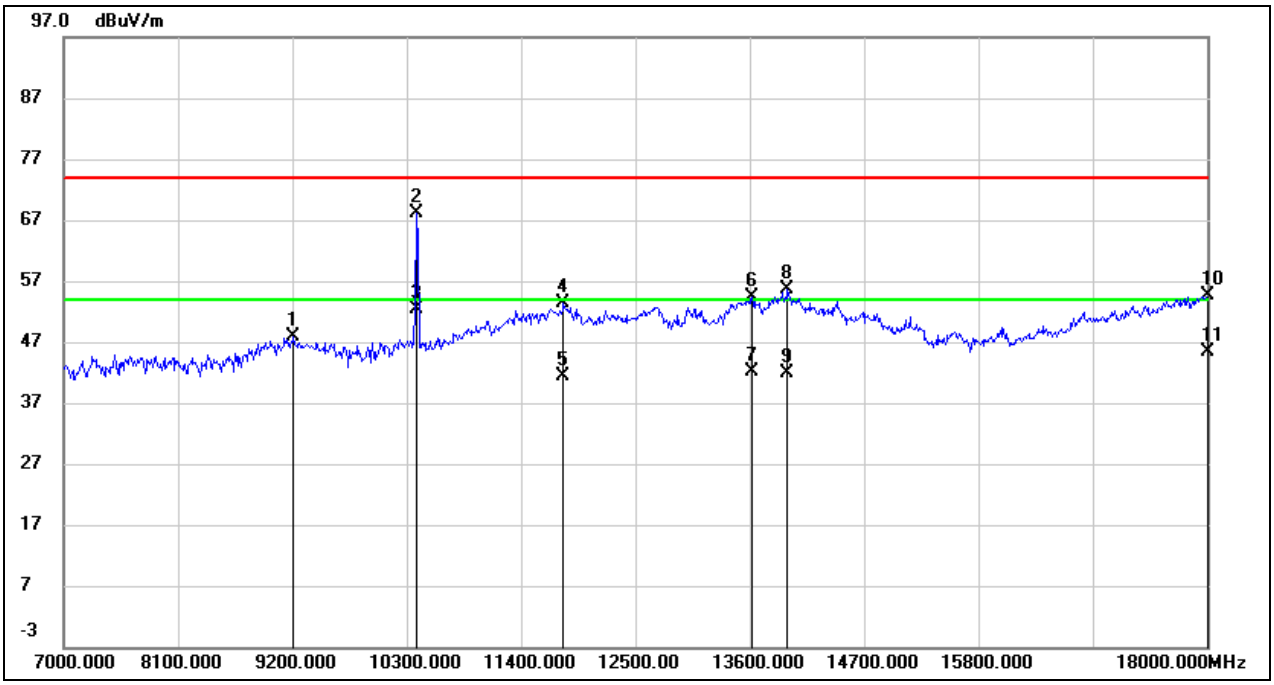
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	8958.000	37.40	10.05	47.45	74.00	-26.55	peak
2	10355.000	55.31	12.52	67.83	74.00	-6.17	peak
3	10355.000	40.22	12.52	52.74	54.00	-1.26	AVG
4	11829.000	35.64	17.38	53.02	74.00	-20.98	peak
5	13611.000	33.10	20.92	54.02	74.00	-19.98	peak
6	13611.000	21.36	20.92	42.28	54.00	-11.72	AVG
7	13908.000	33.45	21.66	55.11	74.00	-18.89	peak
8	13908.000	19.51	21.66	41.17	54.00	-12.83	AVG
9	18000.000	29.57	26.12	55.69	74.00	-18.31	peak
10	18000.000	19.50	26.12	45.62	54.00	-8.38	AVG

Test Mode:	802.11a 20	Channel:	5200
Polarity:	Horizontal		



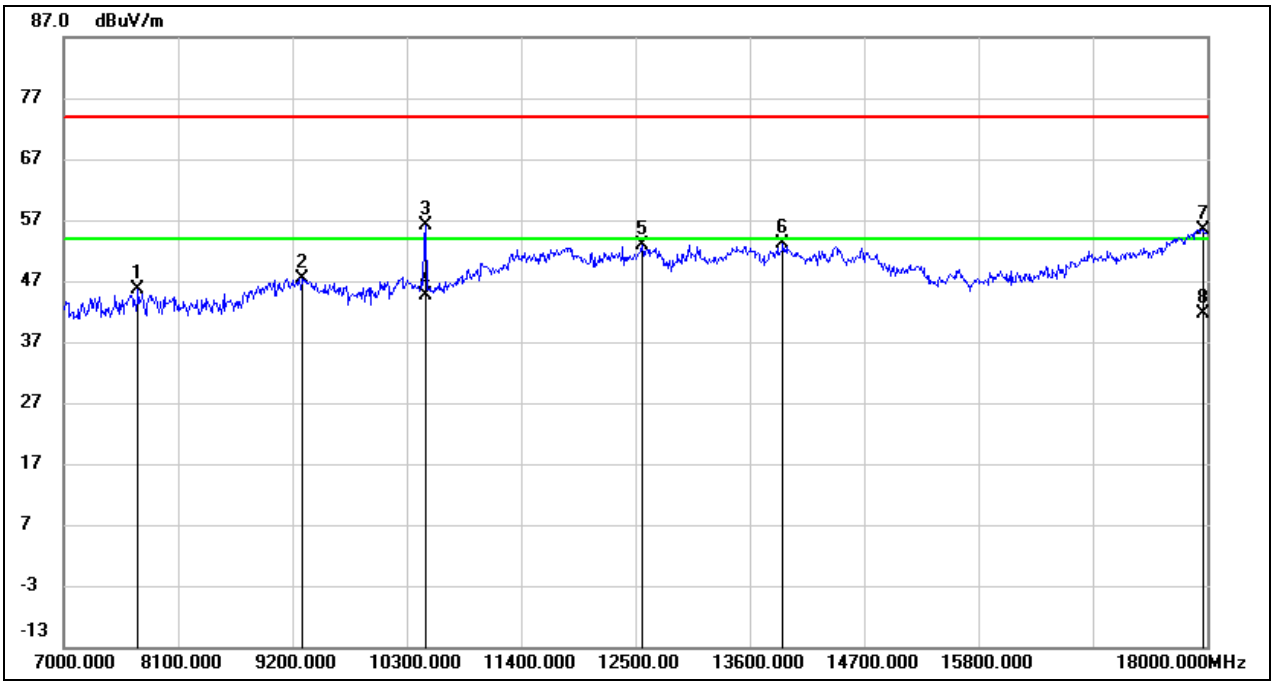
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7704.000	38.37	6.69	45.06	74.00	-28.94	peak
2	9288.000	37.57	10.52	48.09	74.00	-25.91	peak
3	10399.000	47.33	12.61	59.94	74.00	-14.06	peak
4	10399.000	35.64	12.61	48.25	54.00	-5.75	AVG
5	11818.000	36.04	17.36	53.40	74.00	-20.60	peak
6	11818.000	23.02	17.36	40.38	54.00	-13.62	AVG
7	13952.000	33.30	21.76	55.06	74.00	-18.94	peak
8	13952.000	19.98	21.76	41.74	54.00	-12.26	AVG
9	18000.000	29.84	26.12	55.96	74.00	-18.04	peak
10	18000.000	19.21	26.12	45.33	54.00	-8.67	AVG

Test Mode:	802.11a 20	Channel:	5200
Polarity:	Vertical		



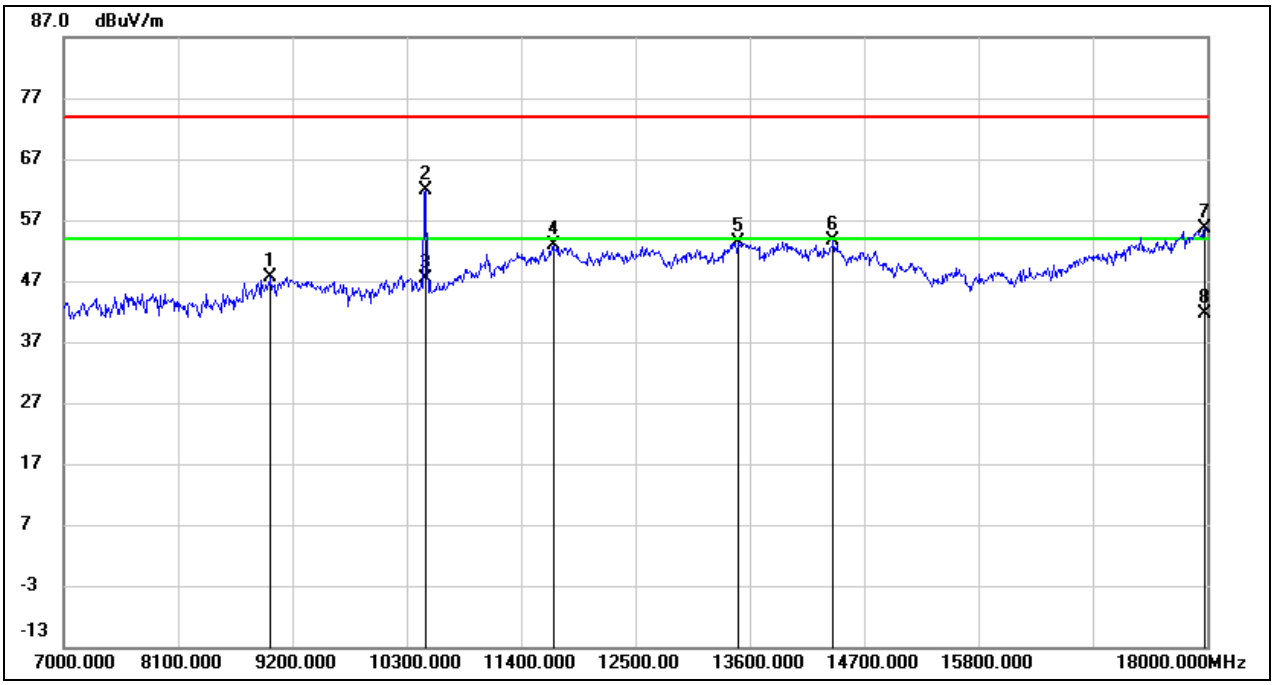
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	9211.000	37.29	10.47	47.76	74.00	-26.24	peak
2	10388.000	55.44	12.59	68.03	74.00	-5.97	peak
3	10388.000	39.67	12.59	52.26	54.00	-1.74	AVG
4	11807.000	36.04	17.34	53.38	74.00	-20.62	peak
5	11807.000	23.95	17.34	41.29	54.00	-12.71	AVG
6	13622.000	33.50	20.95	54.45	74.00	-19.55	peak
7	13622.000	21.29	20.95	42.24	54.00	-11.76	AVG
8	13963.000	33.96	21.78	55.74	74.00	-18.26	peak
9	13963.000	19.99	21.78	41.77	54.00	-12.23	AVG
10	18000.000	28.61	26.12	54.73	74.00	-19.27	peak
11	18000.000	19.14	26.12	45.26	54.00	-8.74	AVG

Test Mode:	802.11a 20	Channel:	5240
Polarity:	Horizontal		



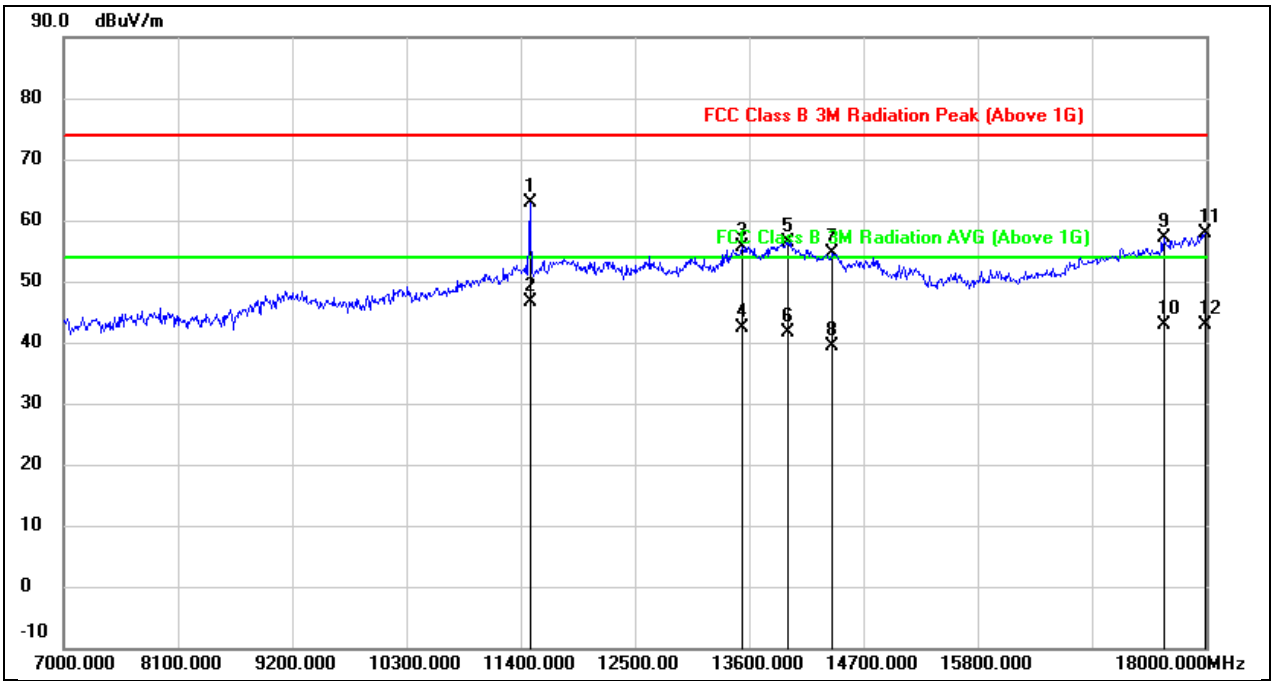
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7715.000	38.83	6.68	45.51	74.00	-28.49	peak
2	9299.000	36.92	10.53	47.45	74.00	-26.55	peak
3	10476.000	43.33	12.77	56.10	74.00	-17.90	peak
4	10476.000	31.97	12.77	44.74	54.00	-9.26	AVG
5	12566.000	35.00	17.91	52.91	74.00	-21.09	peak
6	13919.000	31.51	21.68	53.19	74.00	-20.81	peak
7	17956.000	29.62	25.82	55.44	74.00	-18.56	peak
8	17956.000	15.91	25.82	41.73	54.00	-12.27	AVG

Test Mode:	802.11a 20	Channel:	5240
Polarity:	Vertical		



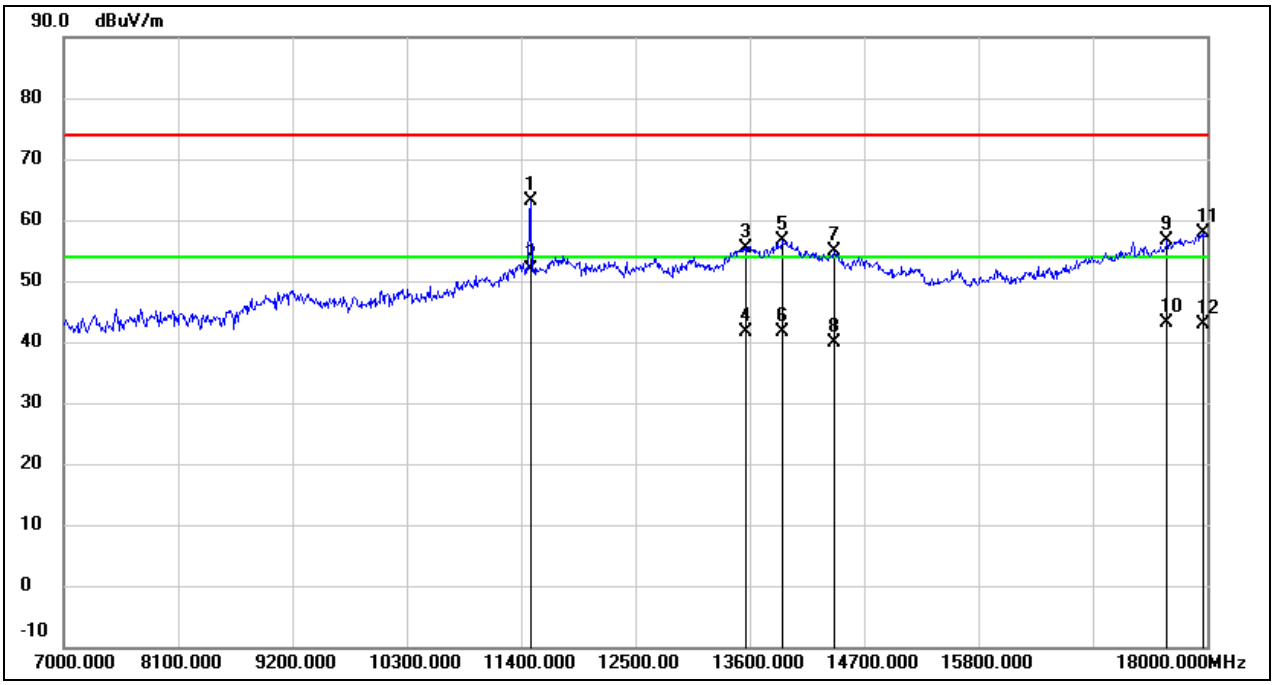
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	8991.000	37.29	10.28	47.57	74.00	-26.43	peak
2	10476.000	49.18	12.77	61.95	74.00	-12.05	peak
3	10476.000	34.49	12.77	47.26	54.00	-6.74	AVG
4	11708.000	35.64	17.16	52.80	74.00	-21.20	peak
5	13490.000	32.87	20.60	53.47	74.00	-20.53	peak
6	14403.000	33.43	20.19	53.62	74.00	-20.38	peak
7	17978.000	29.77	25.97	55.74	74.00	-18.26	peak
8	17978.000	15.63	25.97	41.60	54.00	-12.40	AVG

Test Mode:	802.11a 20	Channel:	5745
Polarity:	Horizontal		



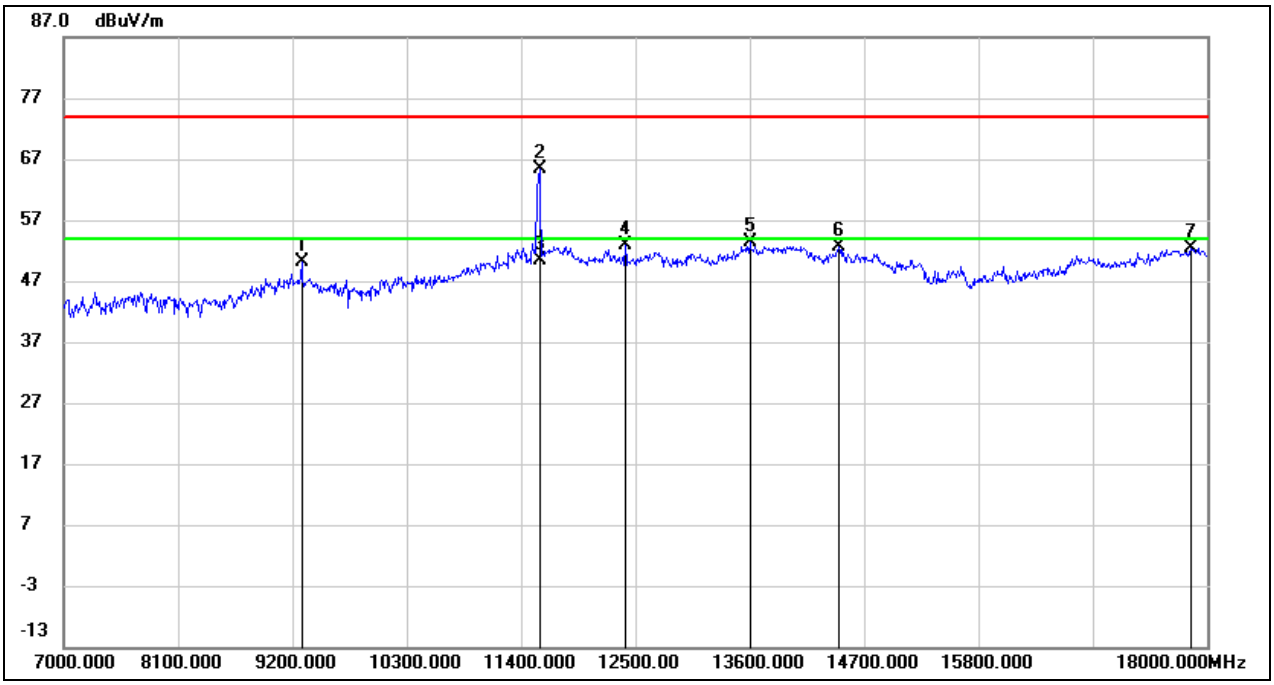
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11488.000	46.44	16.56	63.00	74.00	-11.00	peak
2	11488.000	30.14	16.56	46.70	54.00	-7.30	AVG
3	13534.000	34.64	20.97	55.61	74.00	-18.39	peak
4	13534.000	21.39	20.97	42.36	54.00	-11.64	AVG
5	13974.000	34.37	21.91	56.28	74.00	-17.72	peak
6	13974.000	19.66	21.91	41.57	54.00	-12.43	AVG
7	14403.000	34.25	20.31	54.56	74.00	-19.44	peak
8	14403.000	18.98	20.31	39.29	54.00	-14.71	AVG
9	17593.000	33.87	23.28	57.15	74.00	-16.85	peak
10	17593.000	19.59	23.28	42.87	54.00	-11.13	AVG
11	17989.000	32.32	25.62	57.94	74.00	-16.06	peak
12	17989.000	17.24	25.62	42.86	54.00	-11.14	AVG

Test Mode:	802.11a 20	Channel:	5745
Polarity:	Vertical		



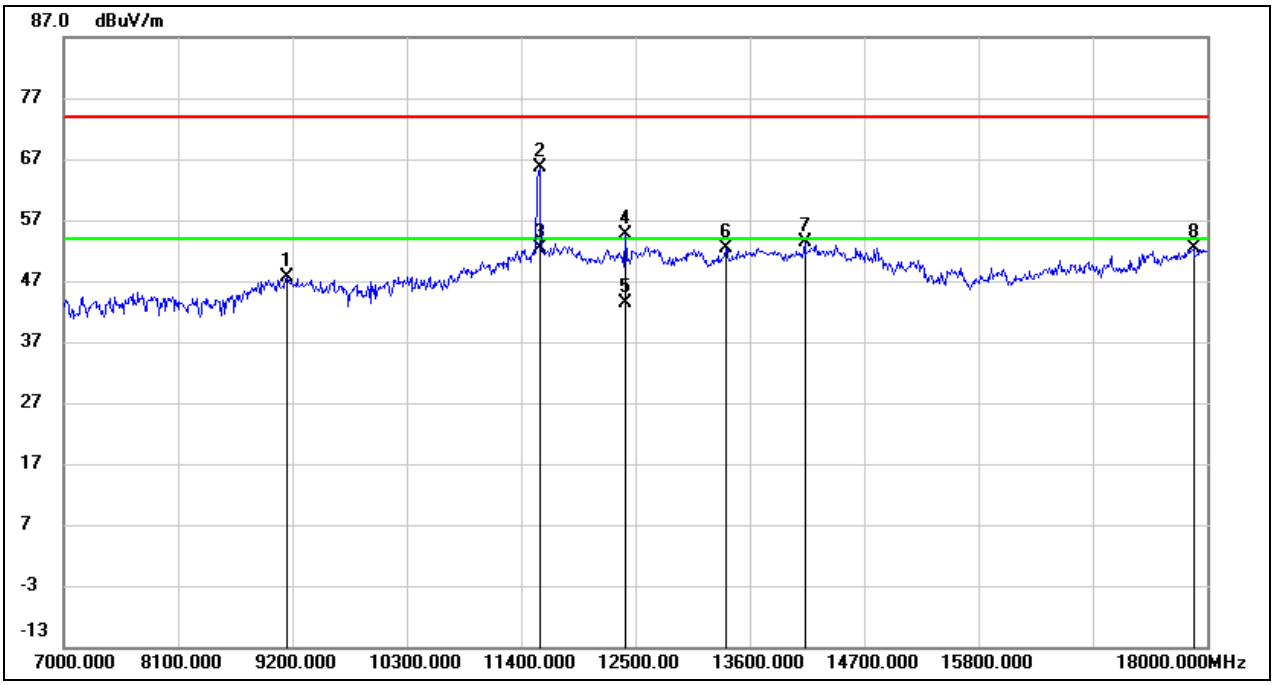
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11488.000	46.57	16.56	63.13	74.00	-10.87	peak
2	11488.000	35.34	16.56	51.90	54.00	-2.10	AVG
3	13567.000	34.27	21.04	55.31	74.00	-18.69	peak
4	13567.000	20.56	21.04	41.60	54.00	-12.40	AVG
5	13919.000	34.73	21.79	56.52	74.00	-17.48	peak
6	13919.000	19.77	21.79	41.56	54.00	-12.44	AVG
7	14414.000	34.60	20.26	54.86	74.00	-19.14	peak
8	14414.000	19.50	20.26	39.76	54.00	-14.24	AVG
9	17615.000	33.16	23.41	56.57	74.00	-17.43	peak
10	17615.000	19.69	23.41	43.10	54.00	-10.90	AVG
11	17956.000	32.43	25.43	57.86	74.00	-16.14	peak
12	17956.000	17.40	25.43	42.83	54.00	-11.17	AVG

Test Mode:	802.11a 20	Channel:	5785
Polarity:	Horizontal		



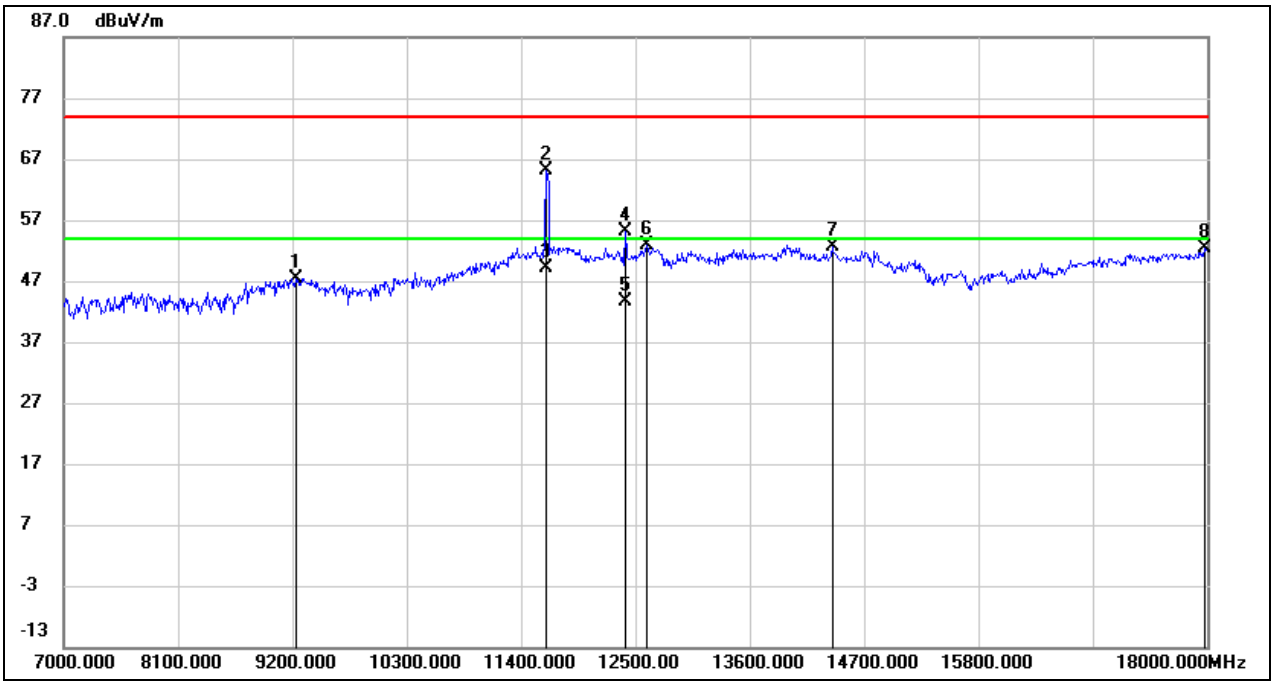
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	9288.000	39.72	10.52	50.24	74.00	-23.76	peak
2	11576.000	48.57	16.91	65.48	74.00	-8.52	peak
3	11576.000	33.53	16.91	50.44	54.00	-3.56	AVG
4	12401.000	35.14	17.81	52.95	74.00	-21.05	peak
5	13600.000	32.55	20.89	53.44	74.00	-20.56	peak
6	14458.000	32.65	19.95	52.60	74.00	-21.40	peak
7	17846.000	27.38	25.08	52.46	74.00	-21.54	peak

Test Mode:	802.11a 20	Channel:	5785
Polarity:	Vertical		



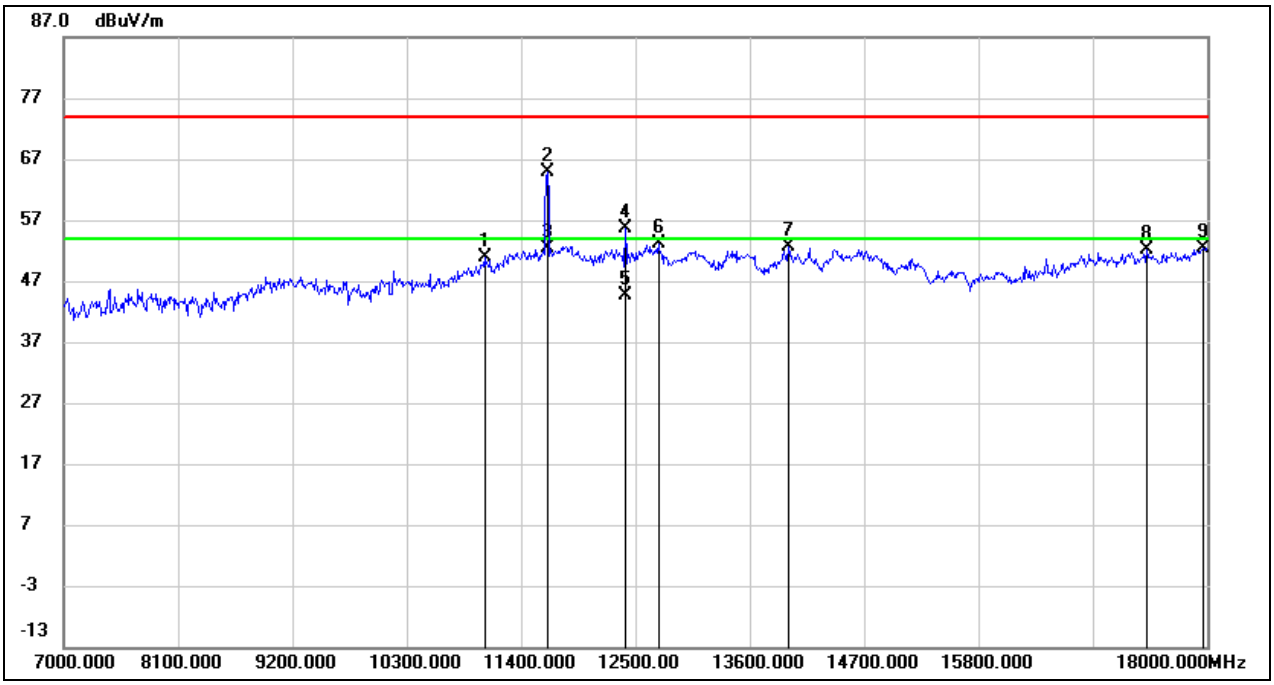
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	9145.000	37.19	10.43	47.62	74.00	-26.38	peak
2	11576.000	48.73	16.91	65.64	74.00	-8.36	peak
3	11576.000	35.45	16.91	52.36	54.00	-1.64	AVG
4	12401.000	36.80	17.81	54.61	74.00	-19.39	peak
5	12401.000	25.58	17.81	43.39	54.00	-10.61	AVG
6	13369.000	32.43	20.06	52.49	74.00	-21.51	peak
7	14128.000	31.94	21.34	53.28	74.00	-20.72	peak
8	17868.000	27.06	25.22	52.28	74.00	-21.72	peak

Test Mode:	802.11a 20	Channel:	5825
Polarity:	Horizontal		



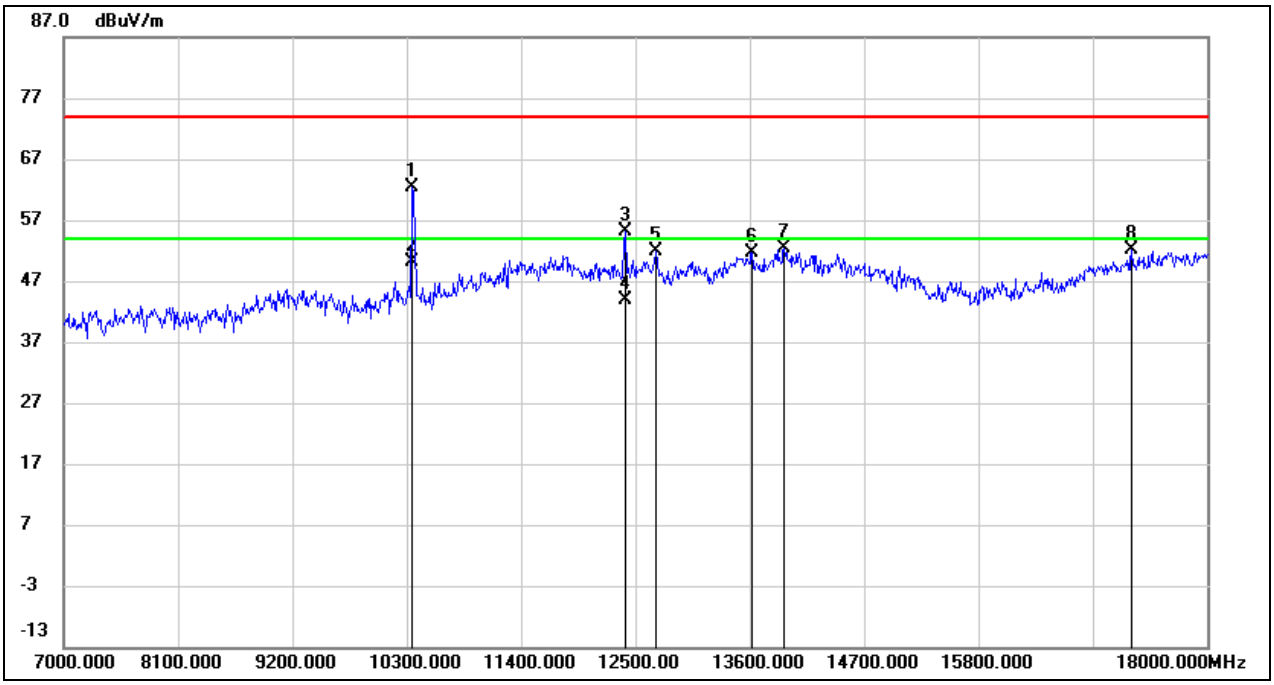
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	9233.000	37.02	10.48	47.50	74.00	-26.50	peak
2	11642.000	48.03	17.03	65.06	74.00	-8.94	peak
3	11642.000	32.21	17.03	49.24	54.00	-4.76	AVG
4	12401.000	37.28	17.81	55.09	74.00	-18.91	peak
5	12401.000	25.74	17.81	43.55	54.00	-10.45	AVG
6	12610.000	34.82	17.97	52.79	74.00	-21.21	peak
7	14392.000	32.43	20.24	52.67	74.00	-21.33	peak
8	17978.000	26.42	25.97	52.39	74.00	-21.61	peak

Test Mode:	802.11a 20	Channel:	5825
Polarity:	Vertical		



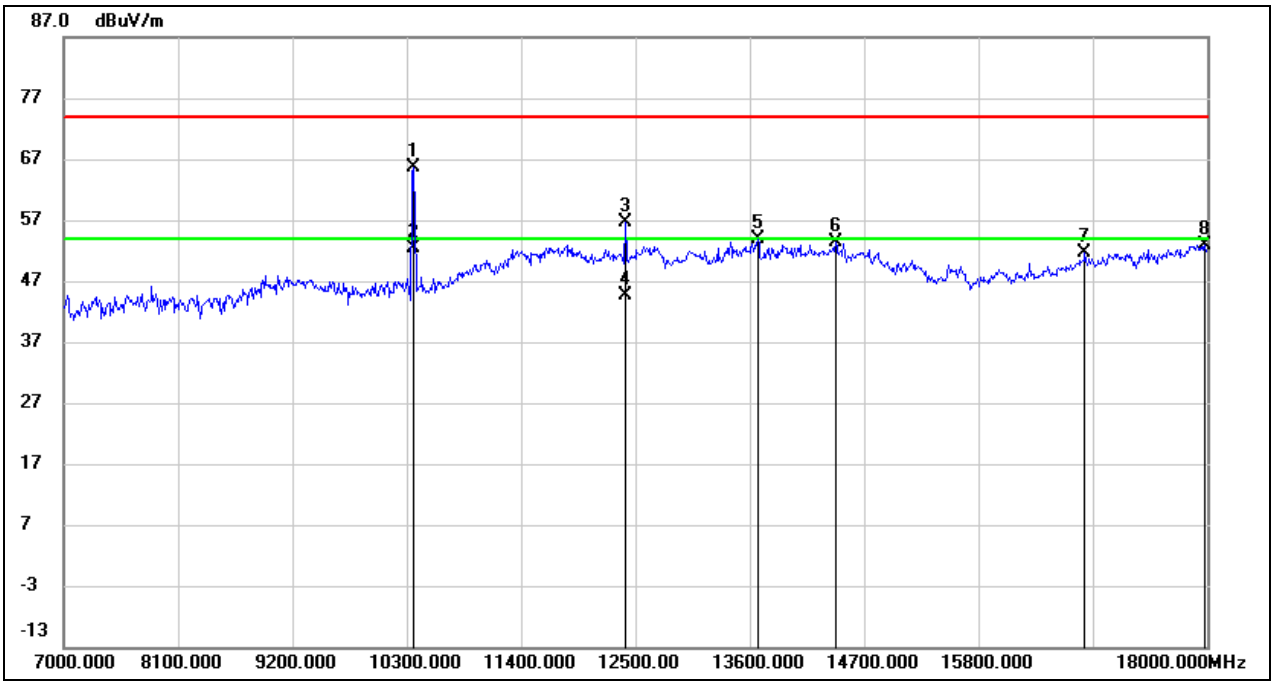
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11048.000	36.04	14.91	50.95	74.00	-23.05	peak
2	11653.000	47.94	17.05	64.99	74.00	-9.01	peak
3	11653.000	35.21	17.05	52.26	54.00	-1.74	AVG
4	12401.000	37.85	17.81	55.66	74.00	-18.34	peak
5	12401.000	26.88	17.81	44.69	54.00	-9.31	AVG
6	12720.000	34.93	18.09	53.02	74.00	-20.98	peak
7	13974.000	30.69	21.82	52.51	74.00	-21.49	peak
8	17417.000	29.88	22.36	52.24	74.00	-21.76	peak
9	17967.000	26.61	25.89	52.50	74.00	-21.50	peak

Test Mode:	802.11n HT20	Channel:	5180
Polarity:	Horizontal		



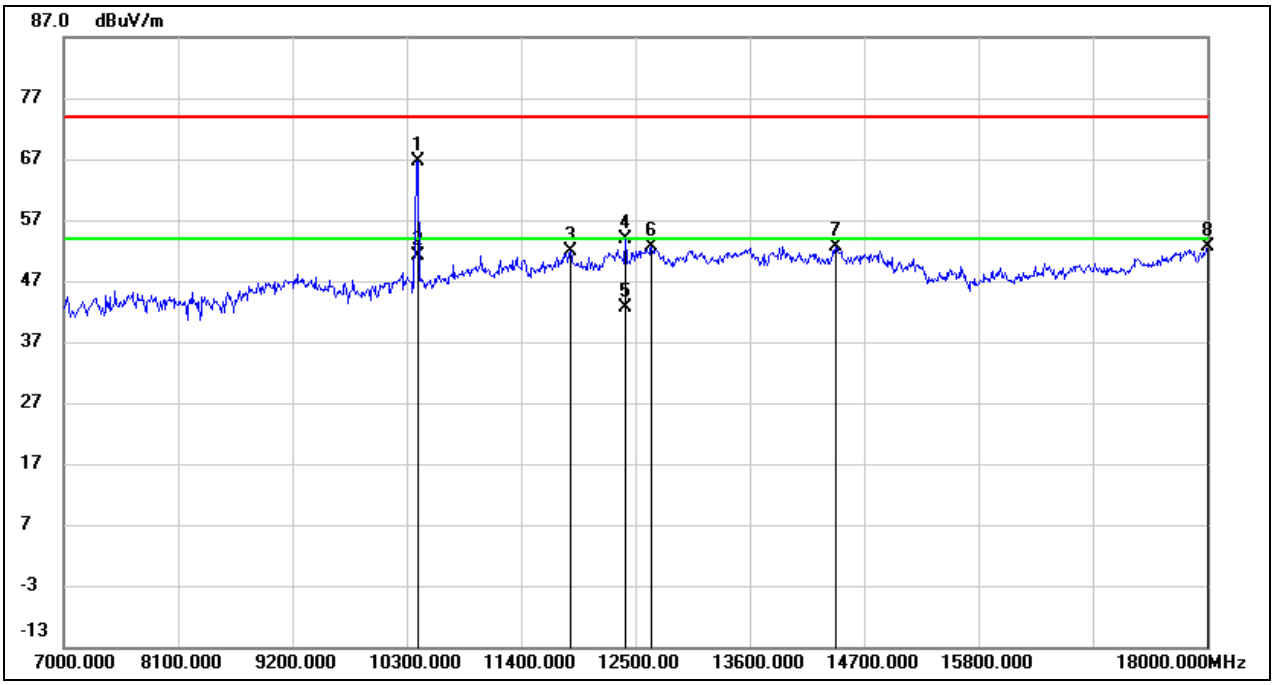
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10355.000	49.92	12.52	62.44	74.00	-11.56	peak
2	10355.000	37.61	12.52	50.13	54.00	-3.87	AVG
3	12401.000	37.26	17.81	55.07	74.00	-18.93	peak
4	12401.000	26.06	17.81	43.87	54.00	-10.13	AVG
5	12698.000	33.70	18.08	51.78	74.00	-22.22	peak
6	13622.000	30.71	20.94	51.65	74.00	-22.35	peak
7	13930.000	30.61	21.71	52.32	74.00	-21.68	peak
8	17274.000	30.43	21.76	52.19	74.00	-21.81	peak

Test Mode:	802.11n HT20	Channel:	5180
Polarity:	Vertical		



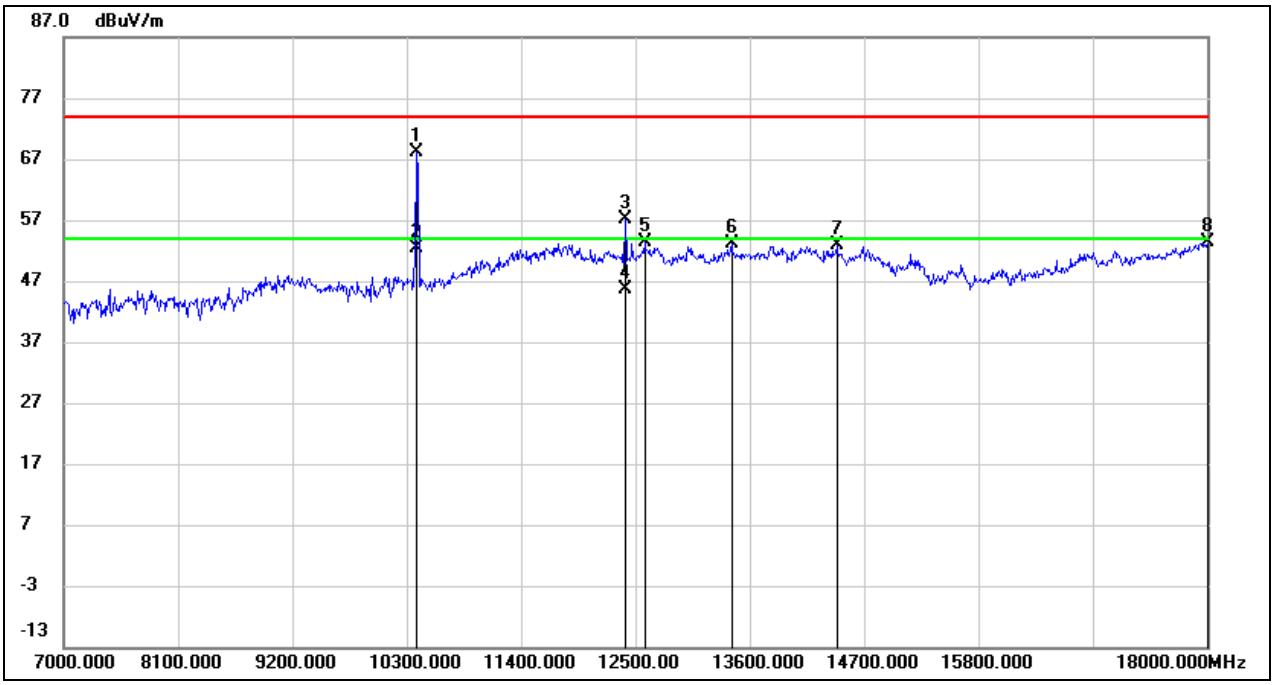
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10366.000	53.17	12.54	65.71	74.00	-8.29	peak
2	10366.000	39.95	12.54	52.49	54.00	-1.51	AVG
3	12401.000	38.92	17.81	56.73	74.00	-17.27	peak
4	12401.000	26.70	17.81	44.51	54.00	-9.49	AVG
5	13677.000	32.90	21.08	53.98	74.00	-20.02	peak
6	14425.000	33.38	20.09	53.47	74.00	-20.53	peak
7	16823.000	31.71	19.81	51.52	74.00	-22.48	peak
8	17978.000	26.85	25.97	52.82	74.00	-21.18	peak

Test Mode:	802.11n HT20	Channel:	5200
Polarity:	Horizontal		



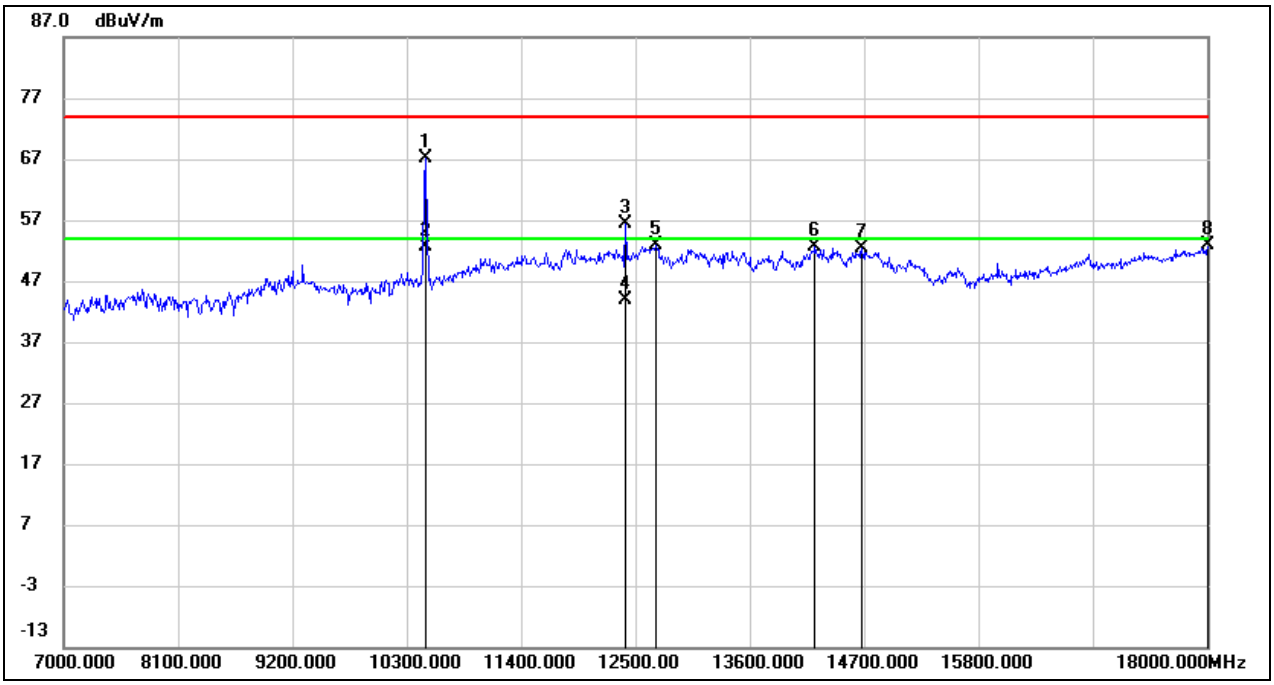
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10410.000	54.02	12.62	66.64	74.00	-7.36	peak
2	10410.000	38.51	12.62	51.13	54.00	-2.87	AVG
3	11873.000	34.38	17.46	51.84	74.00	-22.16	peak
4	12401.000	36.18	17.81	53.99	74.00	-20.01	peak
5	12401.000	24.74	17.81	42.55	54.00	-11.45	AVG
6	12654.000	34.52	18.01	52.53	74.00	-21.47	peak
7	14425.000	32.55	20.09	52.64	74.00	-21.36	peak
8	18000.000	26.47	26.12	52.59	74.00	-21.41	peak

Test Mode:	802.11n HT20	Channel:	5200
Polarity:	Vertical		



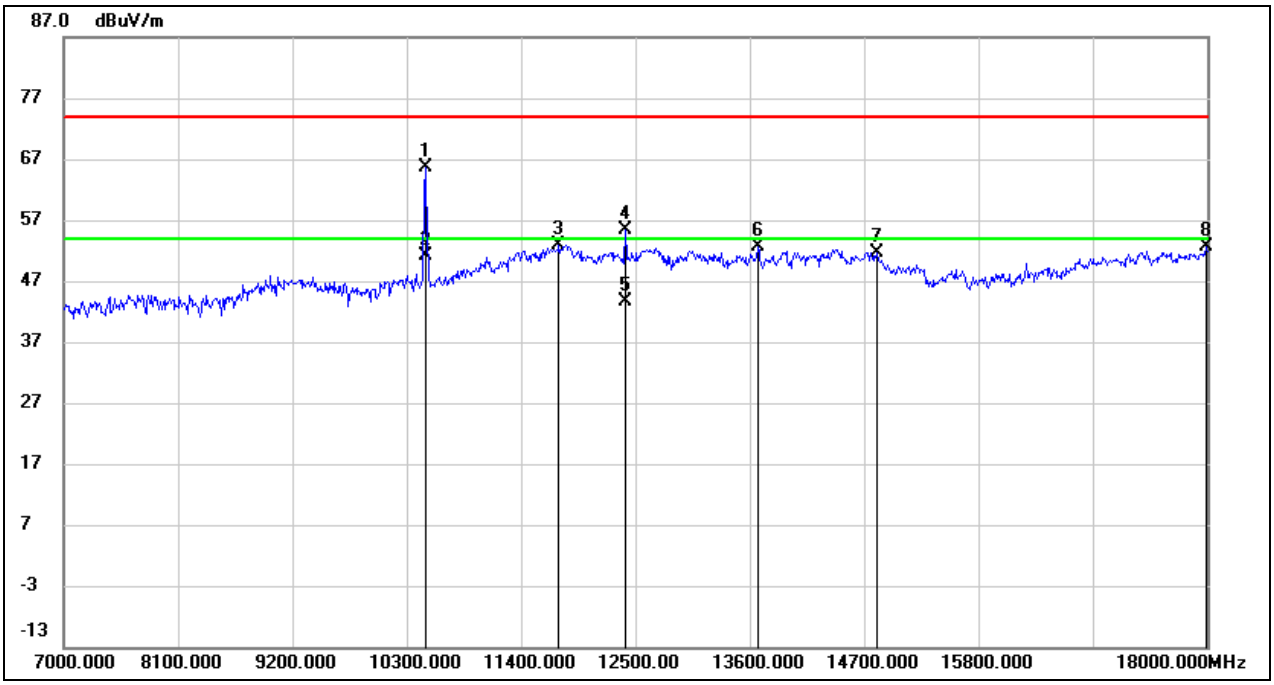
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10399.000	55.52	12.61	68.13	74.00	-5.87	peak
2	10399.000	39.75	12.61	52.36	54.00	-1.64	AVG
3	12401.000	39.32	17.81	57.13	74.00	-16.87	peak
4	12401.000	27.86	17.81	45.67	54.00	-8.33	AVG
5	12588.000	35.32	17.94	53.26	74.00	-20.74	peak
6	13424.000	32.91	20.30	53.21	74.00	-20.79	peak
7	14436.000	32.72	20.05	52.77	74.00	-21.23	peak
8	18000.000	27.35	26.12	53.47	74.00	-20.53	peak

Test Mode:	802.11n HT20	Channel:	5240
Polarity:	Horizontal		



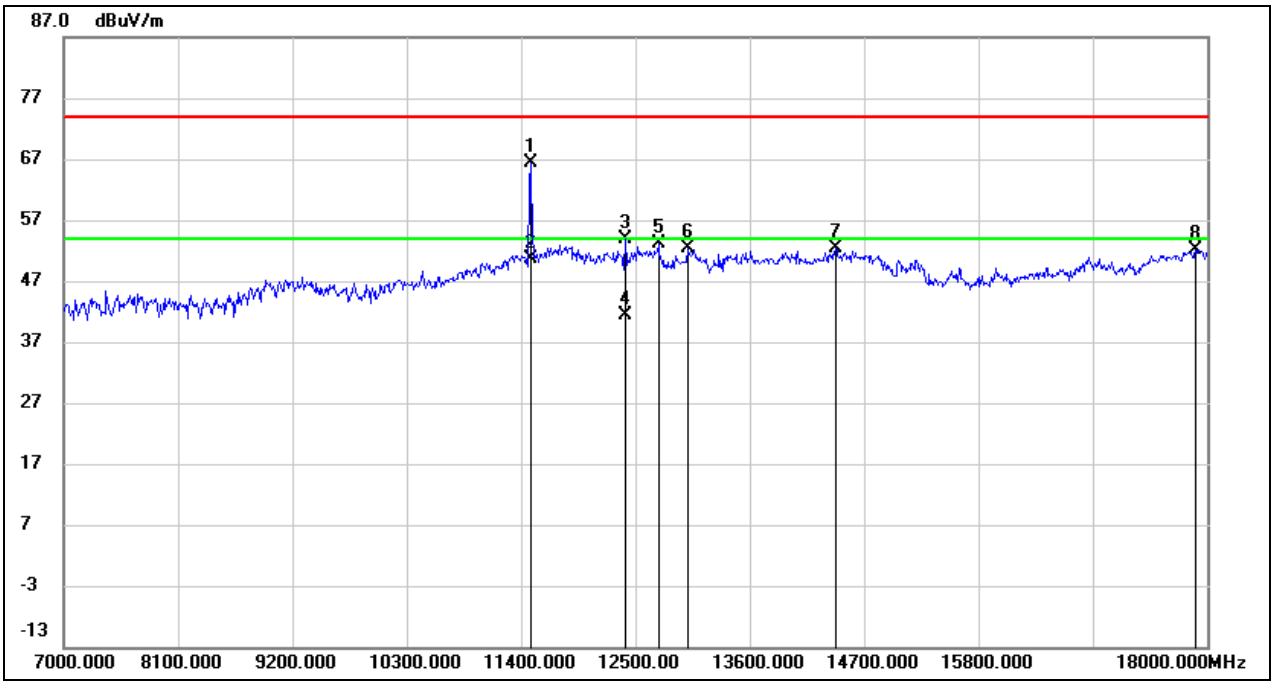
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10476.000	54.32	12.77	67.09	74.00	-6.91	peak
2	10476.000	39.89	12.77	52.66	54.00	-1.34	AVG
3	12401.000	38.51	17.81	56.32	74.00	-17.68	peak
4	12401.000	26.08	17.81	43.89	54.00	-10.11	AVG
5	12698.000	34.76	18.08	52.84	74.00	-21.16	peak
6	14227.000	31.64	20.93	52.57	74.00	-21.43	peak
7	14678.000	33.31	19.03	52.34	74.00	-21.66	peak
8	18000.000	26.71	26.12	52.83	74.00	-21.17	peak

Test Mode:	802.11n HT20	Channel:	5240
Polarity:	Vertical		



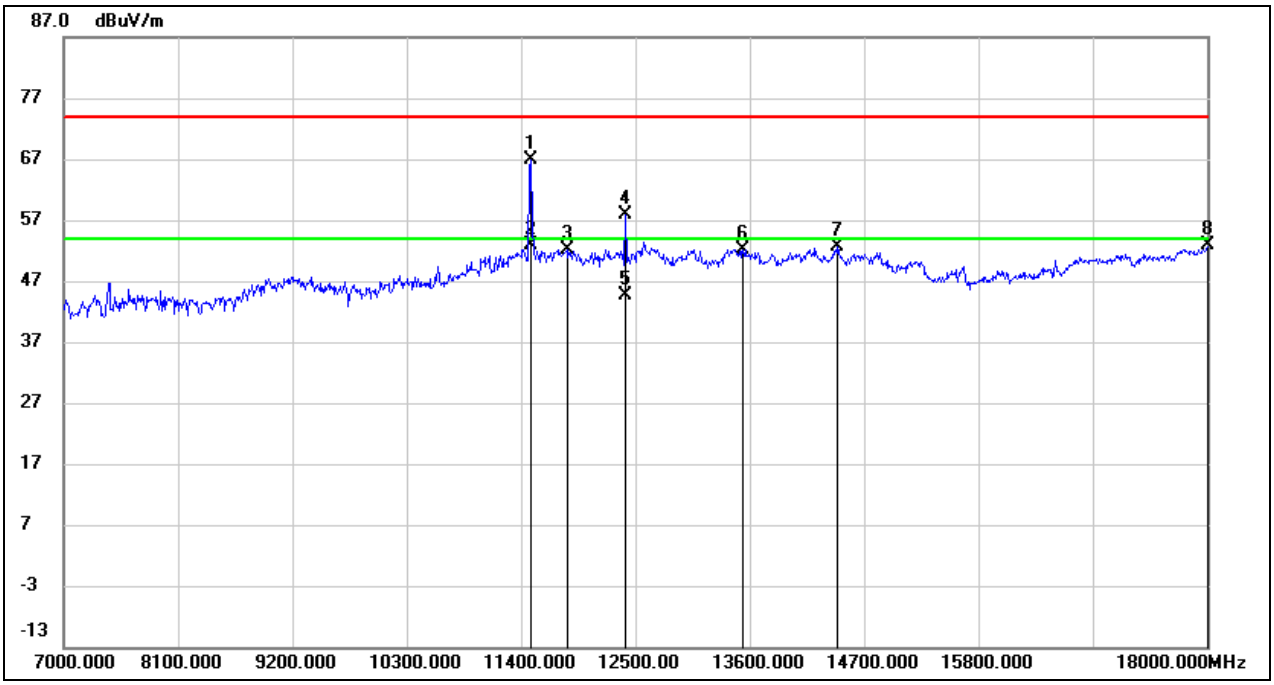
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10476.000	52.88	12.77	65.65	74.00	-8.35	peak
2	10476.000	38.47	12.77	51.24	54.00	-2.76	AVG
3	11763.000	35.70	17.26	52.96	74.00	-21.04	peak
4	12401.000	37.48	17.81	55.29	74.00	-18.71	peak
5	12401.000	25.70	17.81	43.51	54.00	-10.49	AVG
6	13677.000	31.47	21.08	52.55	74.00	-21.45	peak
7	14821.000	33.25	18.42	51.67	74.00	-22.33	peak
8	17989.000	26.71	26.04	52.75	74.00	-21.25	peak

Test Mode:	802.11n HT20	Channel:	5745
Polarity:	Horizontal		



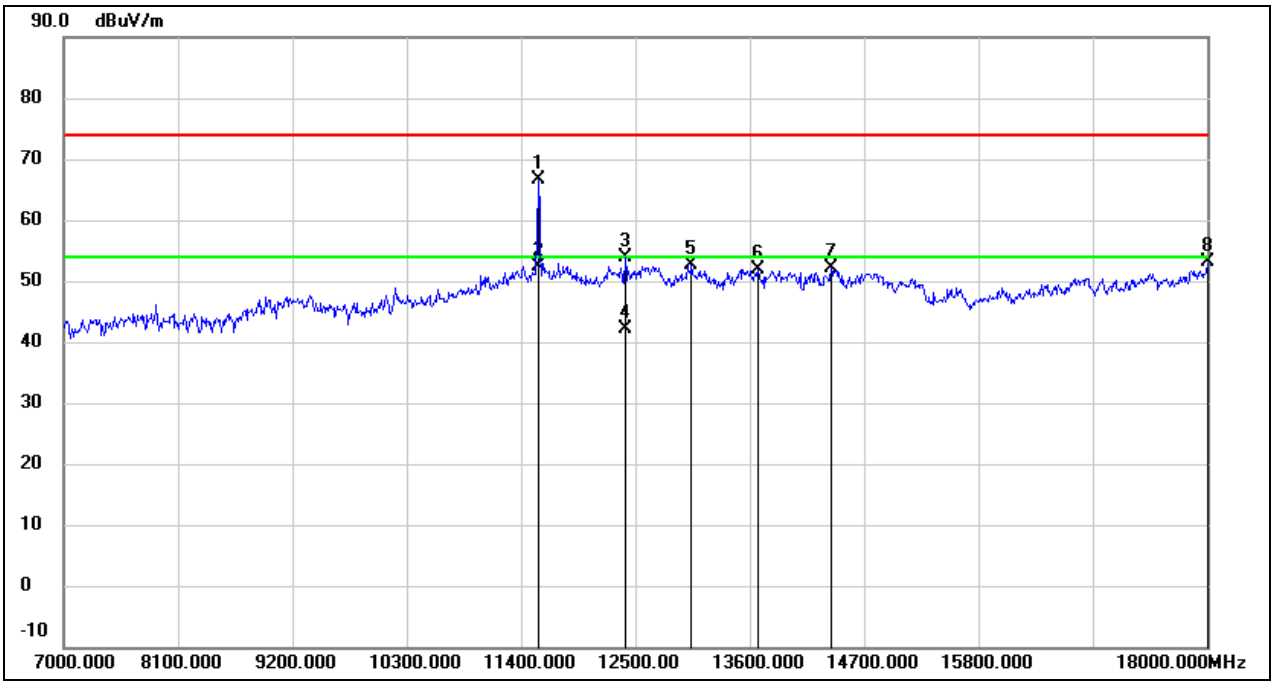
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11488.000	49.65	16.72	66.37	74.00	-7.63	peak
2	11488.000	33.94	16.72	50.66	54.00	-3.34	AVG
3	12401.000	36.04	17.81	53.85	74.00	-20.15	peak
4	12401.000	23.66	17.81	41.47	54.00	-12.53	AVG
5	12720.000	34.97	18.09	53.06	74.00	-20.94	peak
6	13006.000	33.80	18.47	52.27	74.00	-21.73	peak
7	14425.000	32.30	20.09	52.39	74.00	-21.61	peak
8	17890.000	26.85	25.37	52.22	74.00	-21.78	peak

Test Mode:	802.11n HT20	Channel:	5745
Polarity:	Vertical		



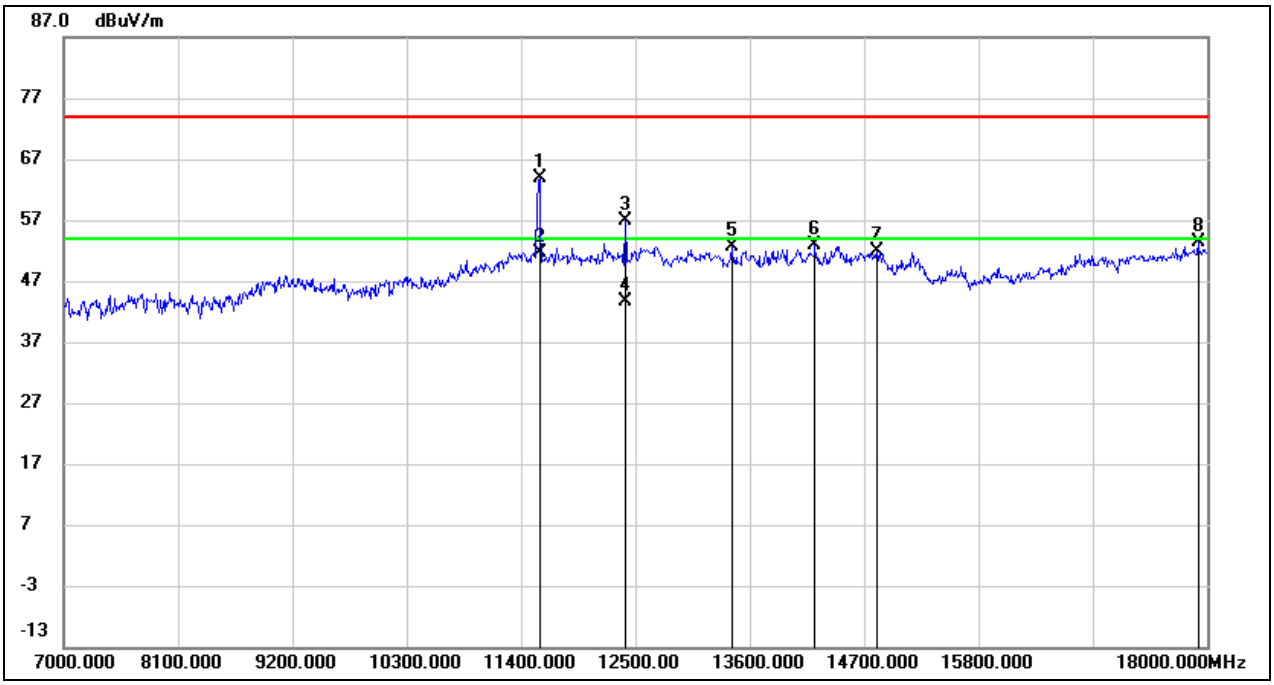
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11488.000	50.22	16.72	66.94	74.00	-7.06	peak
2	11488.000	36.06	16.72	52.78	54.00	-1.22	AVG
3	11840.000	34.83	17.40	52.23	74.00	-21.77	peak
4	12401.000	39.98	17.81	57.79	74.00	-16.21	peak
5	12401.000	26.90	17.81	44.71	54.00	-9.29	AVG
6	13534.000	31.48	20.73	52.21	74.00	-21.79	peak
7	14447.000	32.74	20.00	52.74	74.00	-21.26	peak
8	18000.000	26.86	26.12	52.98	74.00	-21.02	peak

Test Mode:	802.11n HT20	Channel:	5785
Polarity:	Horizontal		



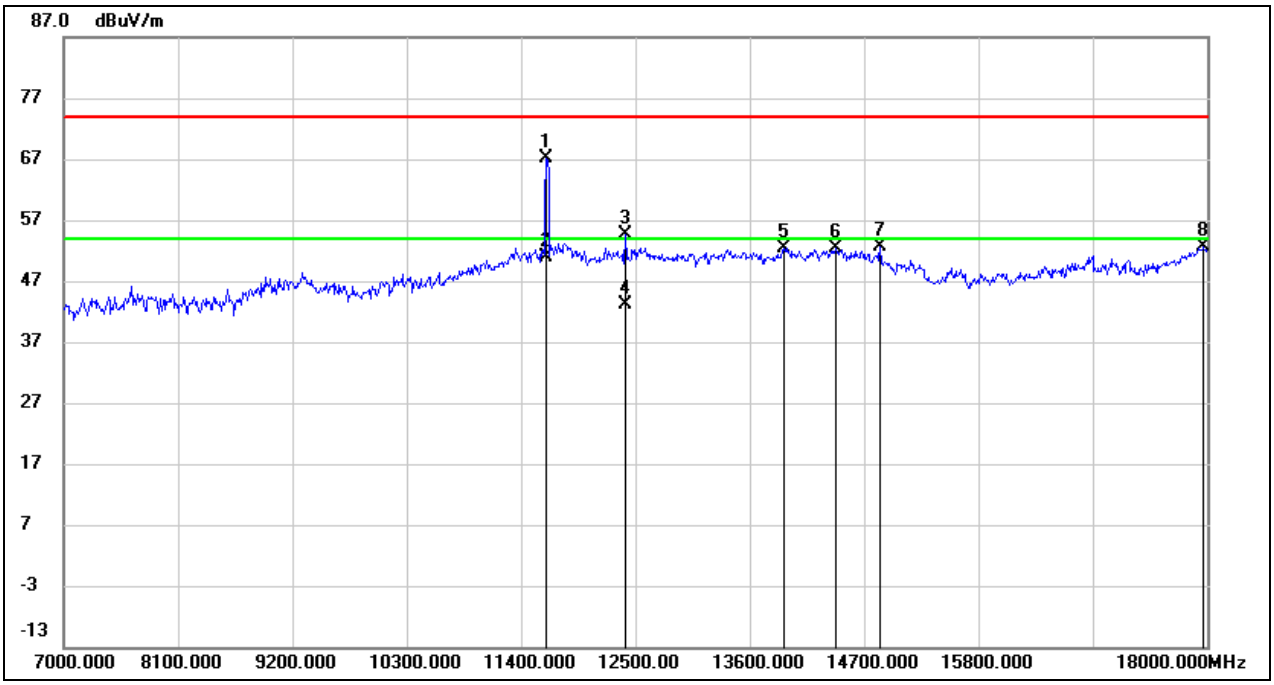
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11565.000	49.72	16.89	66.61	74.00	-7.39	peak
2	11565.000	35.53	16.89	52.42	54.00	-1.58	AVG
3	12401.000	36.10	17.81	53.91	74.00	-20.09	peak
4	12401.000	24.27	17.81	42.08	54.00	-11.92	AVG
5	13039.000	33.90	18.62	52.52	74.00	-21.48	peak
6	13677.000	30.75	21.08	51.83	74.00	-22.17	peak
7	14381.000	31.87	20.28	52.15	74.00	-21.85	peak
8	18000.000	27.13	26.12	53.25	74.00	-20.75	peak

Test Mode:	802.11n HT20	Channel:	5785
Polarity:	Vertical		



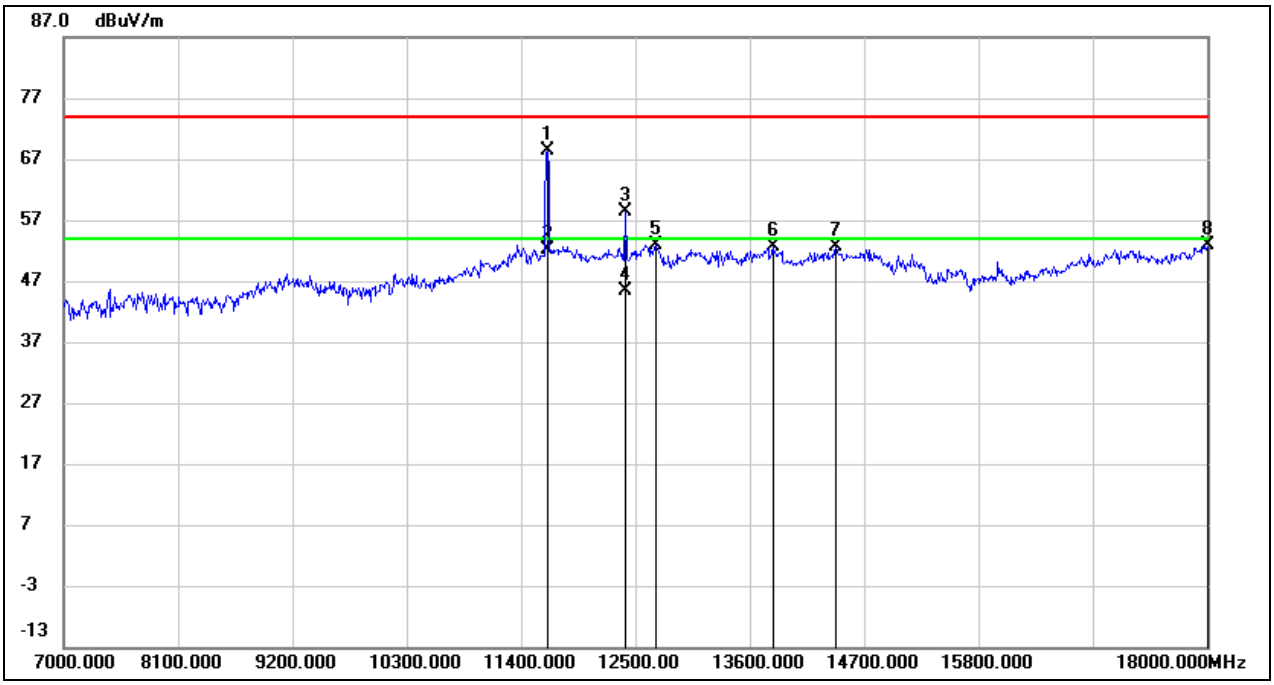
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11576.000	46.86	16.91	63.77	74.00	-10.23	peak
2	11576.000	34.78	16.91	51.69	54.00	-2.31	AVG
3	12401.000	39.09	17.81	56.90	74.00	-17.10	peak
4	12401.000	25.94	17.81	43.75	54.00	-10.25	AVG
5	13424.000	32.35	20.30	52.65	74.00	-21.35	peak
6	14227.000	31.92	20.93	52.85	74.00	-21.15	peak
7	14821.000	33.53	18.42	51.95	74.00	-22.05	peak
8	17912.000	27.89	25.52	53.41	74.00	-20.59	peak

Test Mode:	802.11n HT20	Channel:	5825
Polarity:	Horizontal		



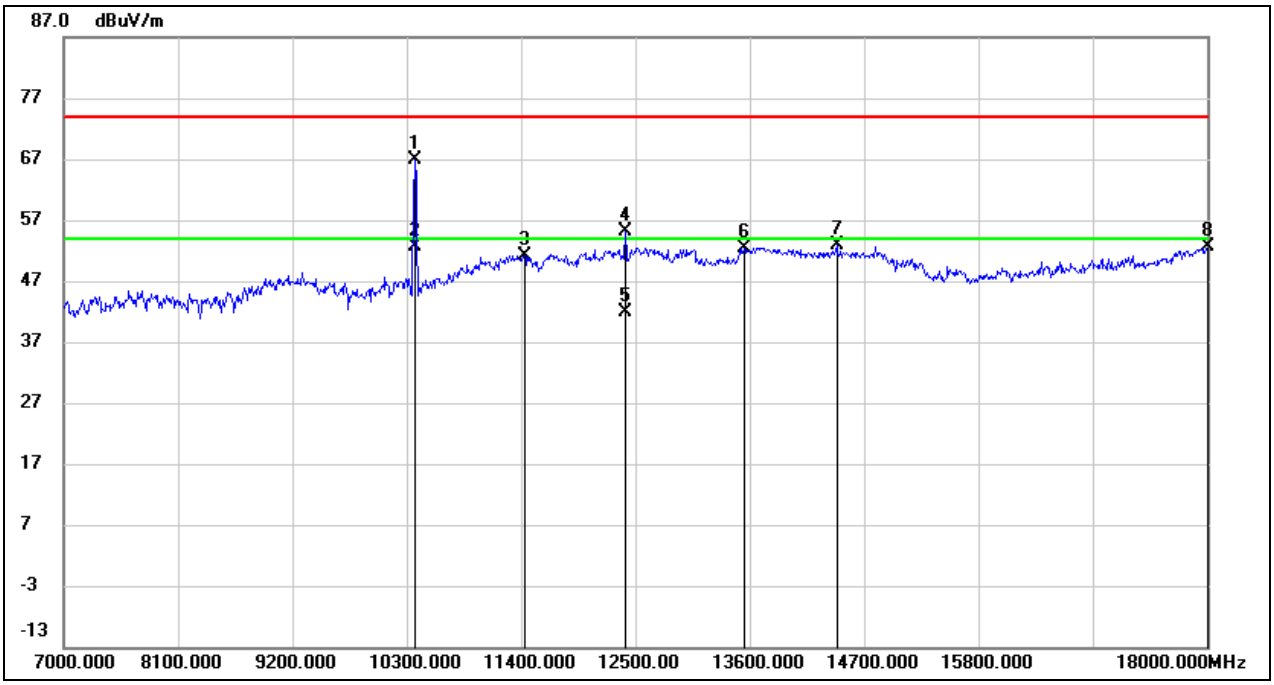
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11642.000	50.17	17.03	67.20	74.00	-6.80	peak
2	11642.000	33.83	17.03	50.86	54.00	-3.14	AVG
3	12401.000	36.89	17.81	54.70	74.00	-19.30	peak
4	12401.000	25.23	17.81	43.04	54.00	-10.96	AVG
5	13930.000	30.65	21.71	52.36	74.00	-21.64	peak
6	14425.000	32.21	20.09	52.30	74.00	-21.70	peak
7	14854.000	34.29	18.29	52.58	74.00	-21.42	peak
8	17967.000	26.71	25.89	52.60	74.00	-21.40	peak

Test Mode:	802.11n HT20	Channel:	5825
Polarity:	Vertical		



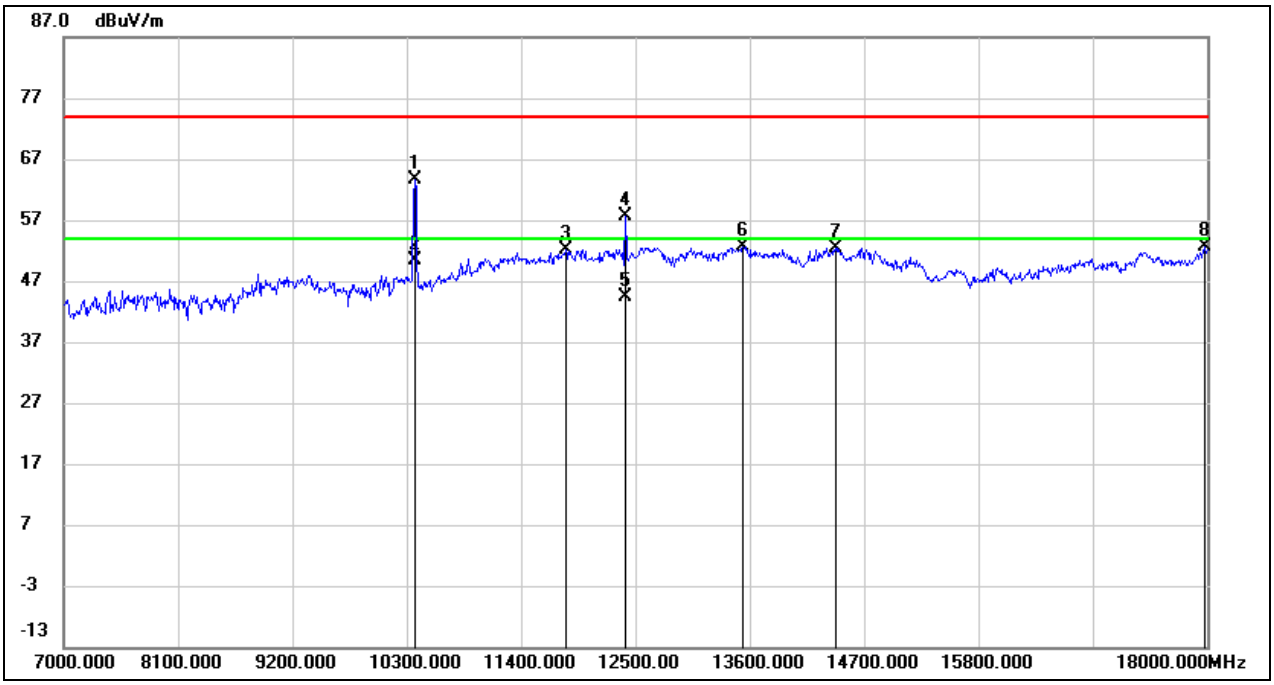
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11653.000	51.29	17.05	68.34	74.00	-5.66	peak
2	11653.000	35.18	17.05	52.23	54.00	-1.77	AVG
3	12401.000	40.56	17.81	58.37	74.00	-15.63	peak
4	12401.000	27.53	17.81	45.34	54.00	-8.66	AVG
5	12698.000	34.90	18.08	52.98	74.00	-21.02	peak
6	13820.000	31.23	21.43	52.66	74.00	-21.34	peak
7	14425.000	32.48	20.09	52.57	74.00	-21.43	peak
8	18000.000	26.82	26.12	52.94	74.00	-21.06	peak

Test Mode:	802.11n HT40	Channel:	5190.
Polarity:	Horizontal		



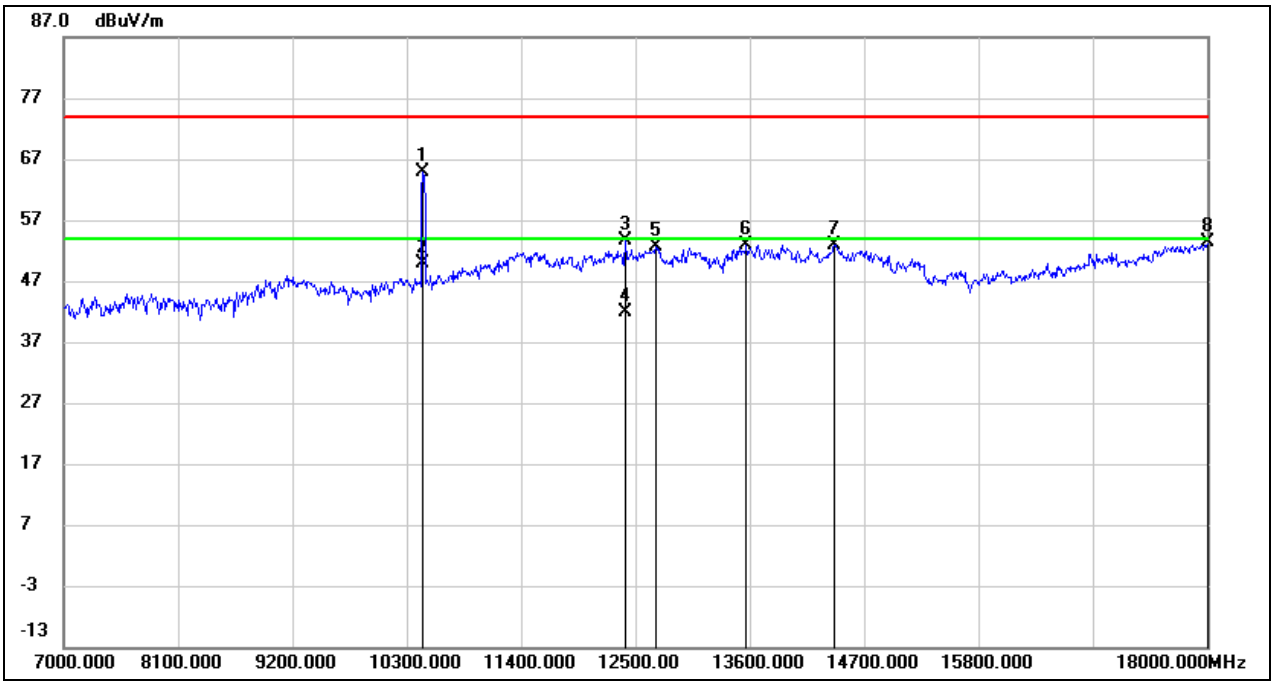
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10377.000	54.32	12.56	66.88	74.00	-7.12	peak
2	10377.000	40.17	12.56	52.73	54.00	-1.27	AVG
3	11433.000	34.75	16.50	51.25	74.00	-22.75	peak
4	12401.000	37.20	17.81	55.01	74.00	-18.99	peak
5	12401.000	24.12	17.81	41.93	54.00	-12.07	AVG
6	13545.000	31.74	20.74	52.48	74.00	-21.52	peak
7	14436.000	32.82	20.05	52.87	74.00	-21.13	peak
8	18000.000	26.41	26.12	52.53	74.00	-21.47	peak

Test Mode:	802.11n HT40	Channel:	5190.
Polarity:	Vertical		



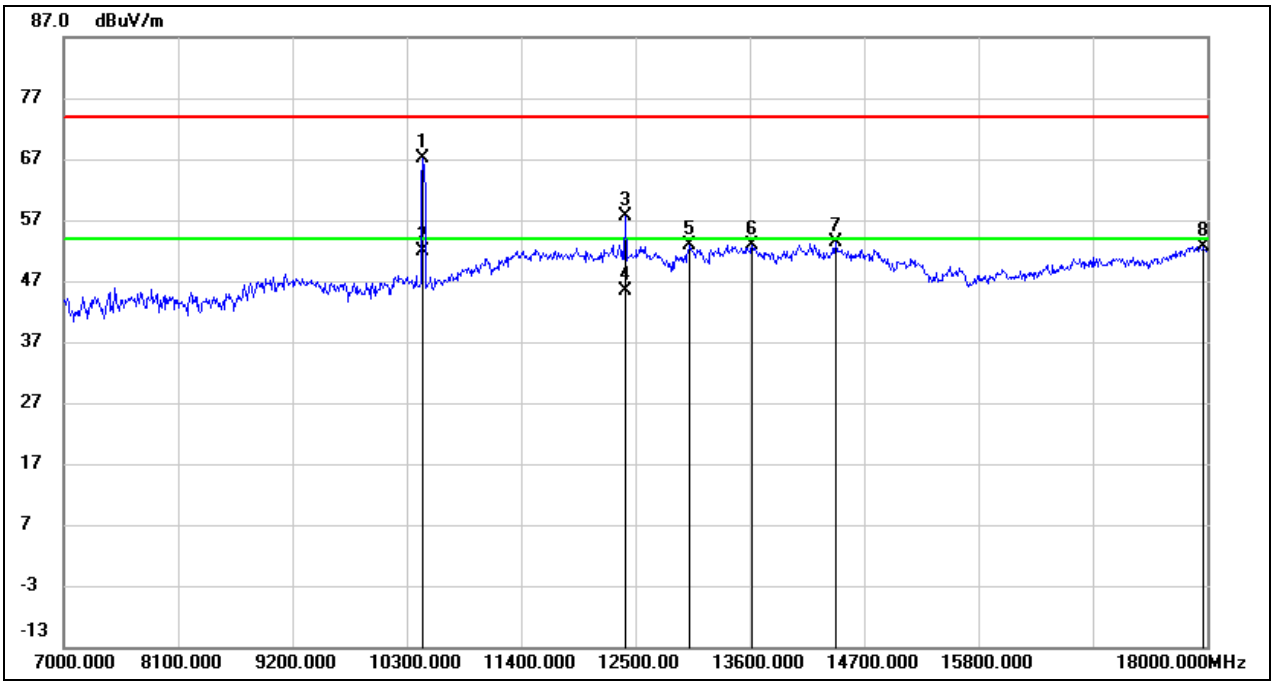
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10377.000	50.96	12.56	63.52	74.00	-10.48	peak
2	10377.000	37.77	12.56	50.33	54.00	-3.67	AVG
3	11829.000	34.78	17.38	52.16	74.00	-21.84	peak
4	12401.000	39.94	17.81	57.75	74.00	-16.25	peak
5	12401.000	26.51	17.81	44.32	54.00	-9.68	AVG
6	13534.000	31.91	20.73	52.64	74.00	-21.36	peak
7	14425.000	32.31	20.09	52.40	74.00	-21.60	peak
8	17978.000	26.76	25.97	52.73	74.00	-21.27	peak

Test Mode:	802.11n HT40	Channel:	5230
Polarity:	Horizontal		



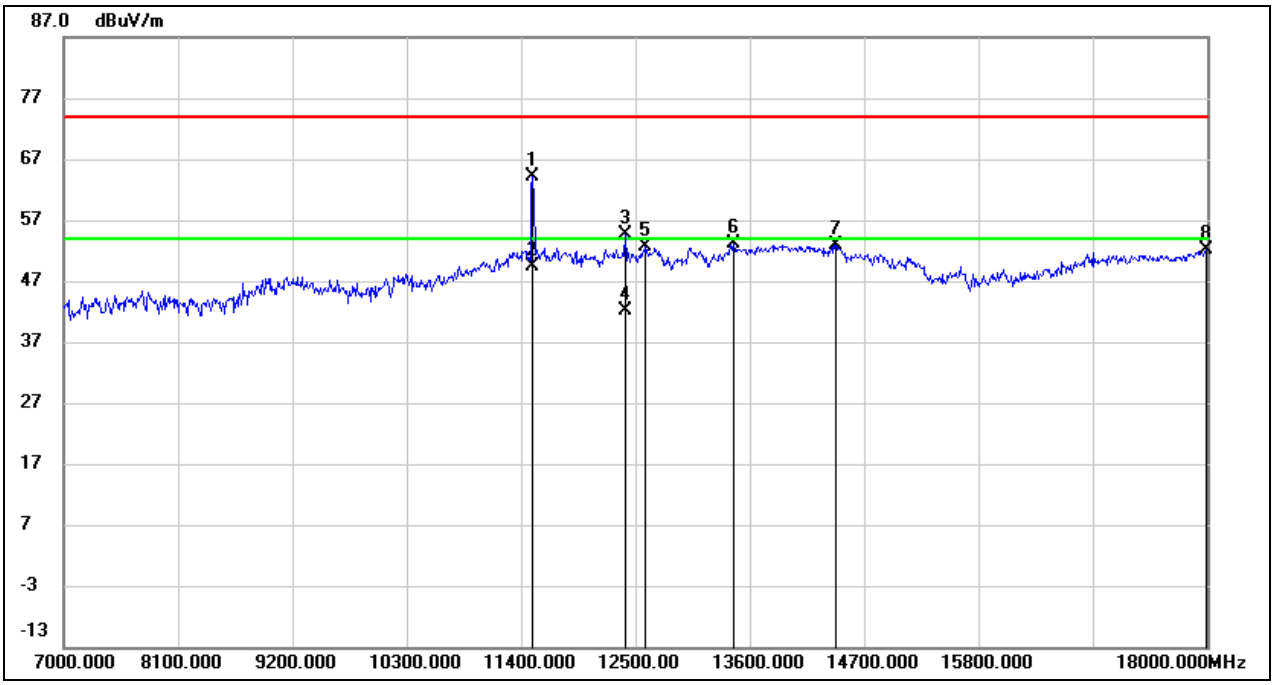
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10454.000	52.12	12.73	64.85	74.00	-9.15	peak
2	10454.000	37.04	12.73	49.77	54.00	-4.23	AVG
3	12401.000	35.92	17.81	53.73	74.00	-20.27	peak
4	12401.000	24.05	17.81	41.86	54.00	-12.14	AVG
5	12698.000	34.45	18.08	52.53	74.00	-21.47	peak
6	13567.000	32.08	20.80	52.88	74.00	-21.12	peak
7	14414.000	32.68	20.14	52.82	74.00	-21.18	peak
8	18000.000	27.37	26.12	53.49	74.00	-20.51	peak

Test Mode:	802.11n HT40	Channel:	5230
Polarity:	Vertical		



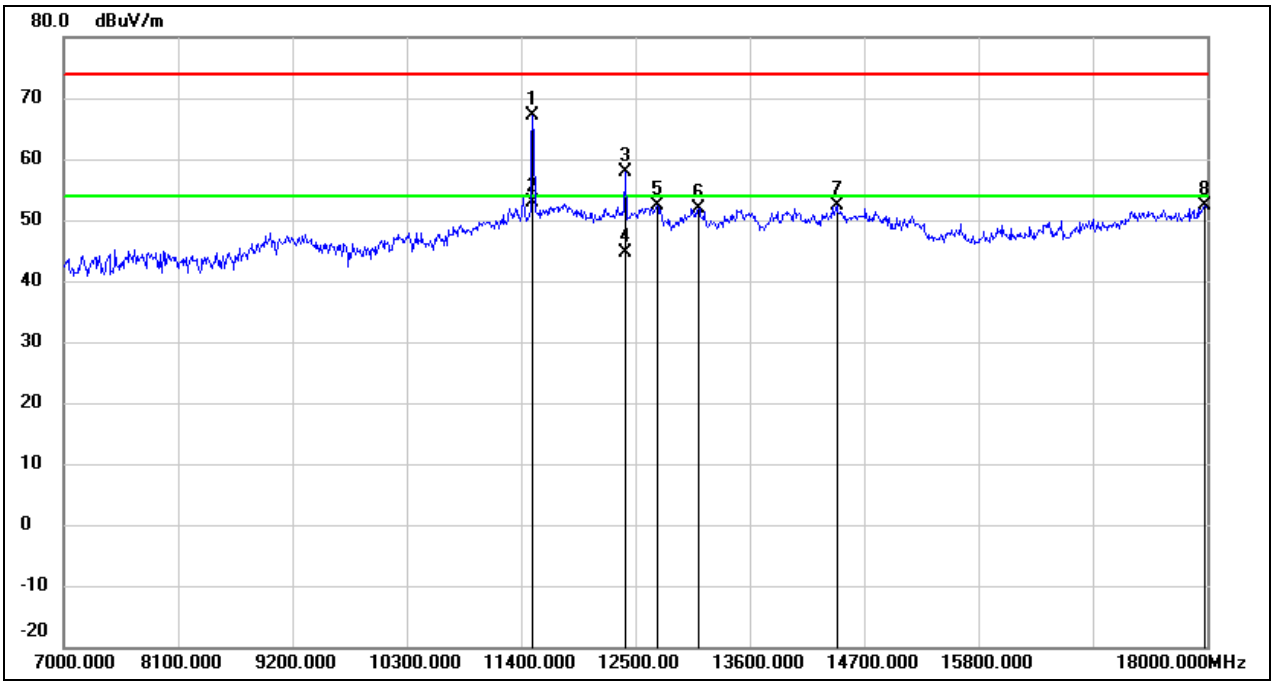
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10454.000	54.49	12.73	67.22	74.00	-6.78	peak
2	10454.000	39.16	12.73	51.89	54.00	-2.11	AVG
3	12401.000	39.87	17.81	57.68	74.00	-16.32	peak
4	12401.000	27.61	17.81	45.42	54.00	-8.58	AVG
5	13017.000	34.23	18.53	52.76	74.00	-21.24	peak
6	13622.000	31.94	20.94	52.88	74.00	-21.12	peak
7	14425.000	33.18	20.09	53.27	74.00	-20.73	peak
8	17967.000	26.76	25.89	52.65	74.00	-21.35	peak

Test Mode:	802.11n HT40	Channel:	5755
Polarity:	Horizontal		



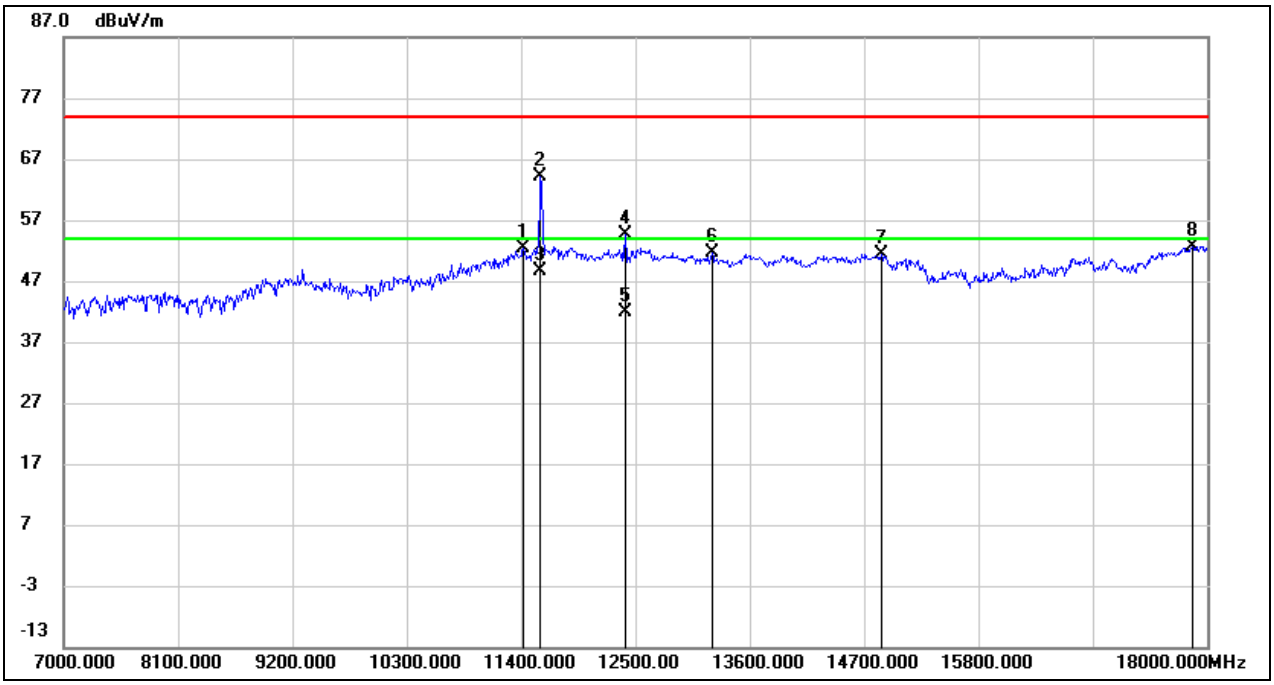
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11510.000	47.38	16.79	64.17	74.00	-9.83	peak
2	11510.000	32.61	16.79	49.40	54.00	-4.60	AVG
3	12401.000	36.78	17.81	54.59	74.00	-19.41	peak
4	12401.000	24.24	17.81	42.05	54.00	-11.95	AVG
5	12599.000	34.59	17.95	52.54	74.00	-21.46	peak
6	13446.000	32.67	20.41	53.08	74.00	-20.92	peak
7	14425.000	32.82	20.09	52.91	74.00	-21.09	peak
8	17989.000	26.04	26.04	52.08	74.00	-21.92	peak

Test Mode:	802.11n HT40	Channel:	5755
Polarity:	Vertical		



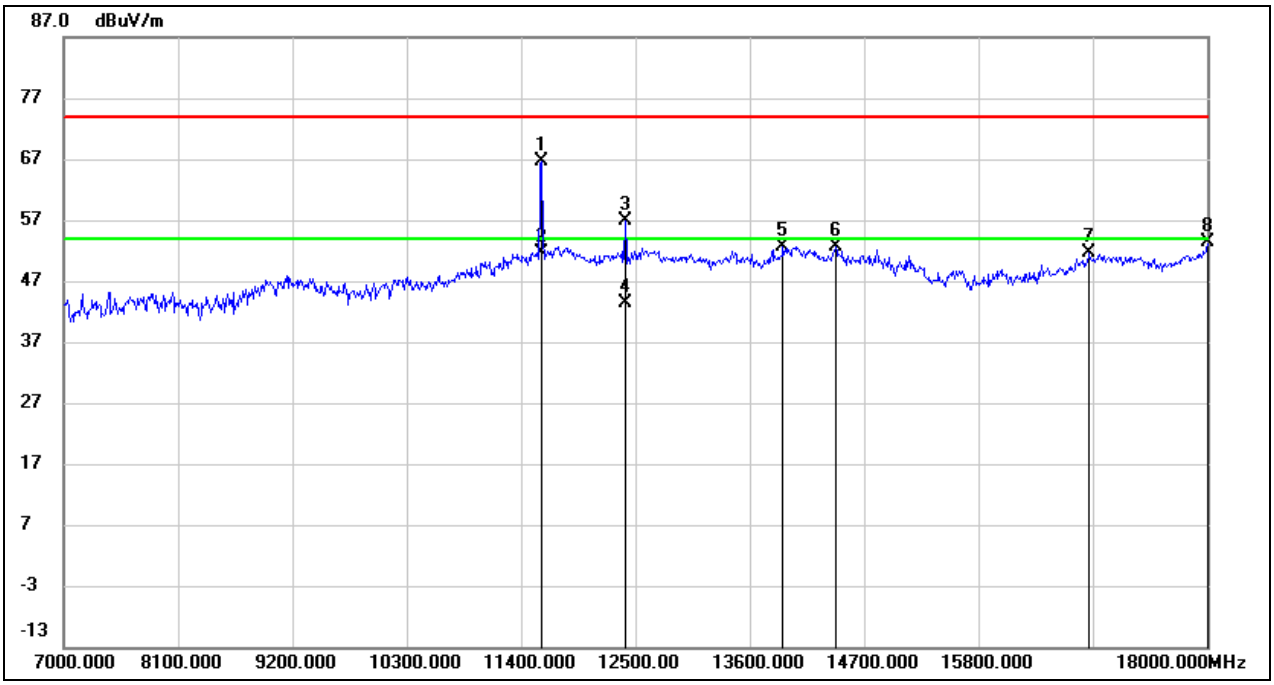
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11510.000	50.25	16.79	67.04	74.00	-6.96	peak
2	11510.000	36.11	16.79	52.90	54.00	-1.10	AVG
3	12401.000	40.07	17.81	57.88	74.00	-16.12	peak
4	12401.000	26.94	17.81	44.75	54.00	-9.25	AVG
5	12709.000	34.29	18.09	52.38	74.00	-21.62	peak
6	13105.000	33.06	18.91	51.97	74.00	-22.03	peak
7	14436.000	32.44	20.05	52.49	74.00	-21.51	peak
8	17978.000	26.50	25.97	52.47	74.00	-21.53	peak

Test Mode:	802.11n HT40	Channel:	5795
Polarity:	Horizontal		



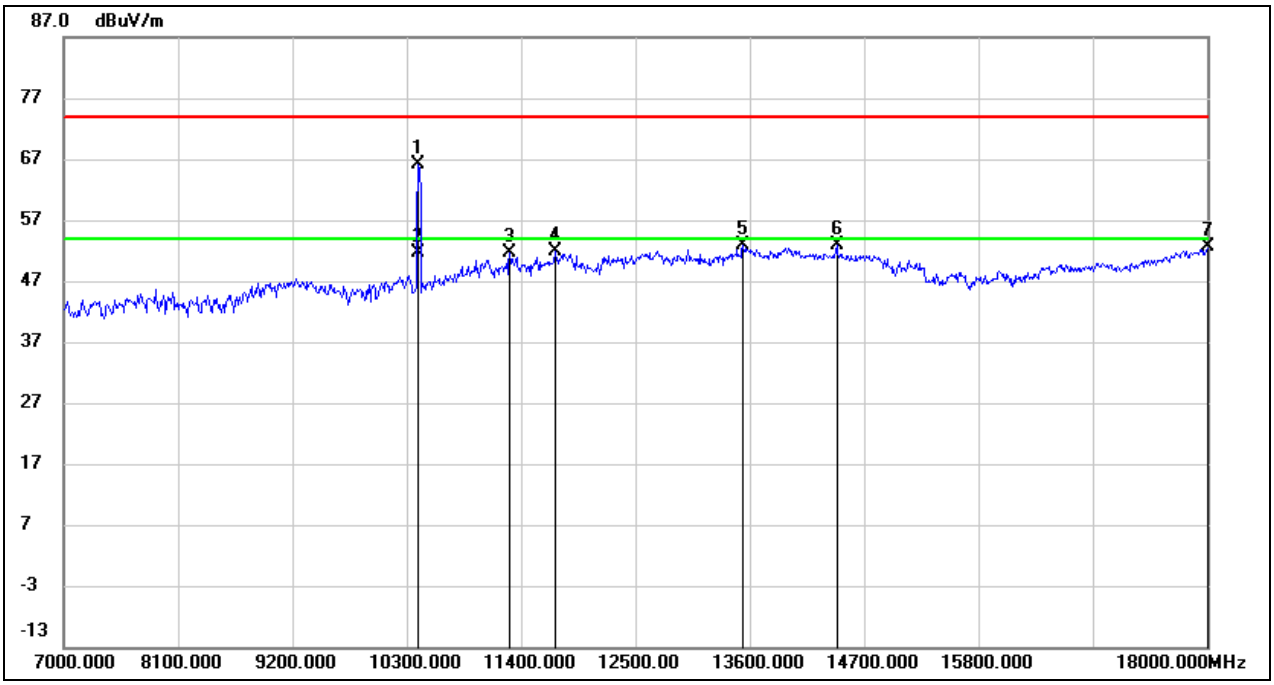
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11422.000	35.85	16.46	52.31	74.00	-21.69	peak
2	11587.000	47.08	16.93	64.01	74.00	-9.99	peak
3	11587.000	31.70	16.93	48.63	54.00	-5.37	AVG
4	12401.000	36.89	17.81	54.70	74.00	-19.30	peak
5	12401.000	24.07	17.81	41.88	54.00	-12.12	AVG
6	13237.000	32.06	19.49	51.55	74.00	-22.45	peak
7	14865.000	33.19	18.24	51.43	74.00	-22.57	peak
8	17857.000	27.61	25.14	52.75	74.00	-21.25	peak

Test Mode:	802.11n HT40	Channel:	5795
Polarity:	Vertical		



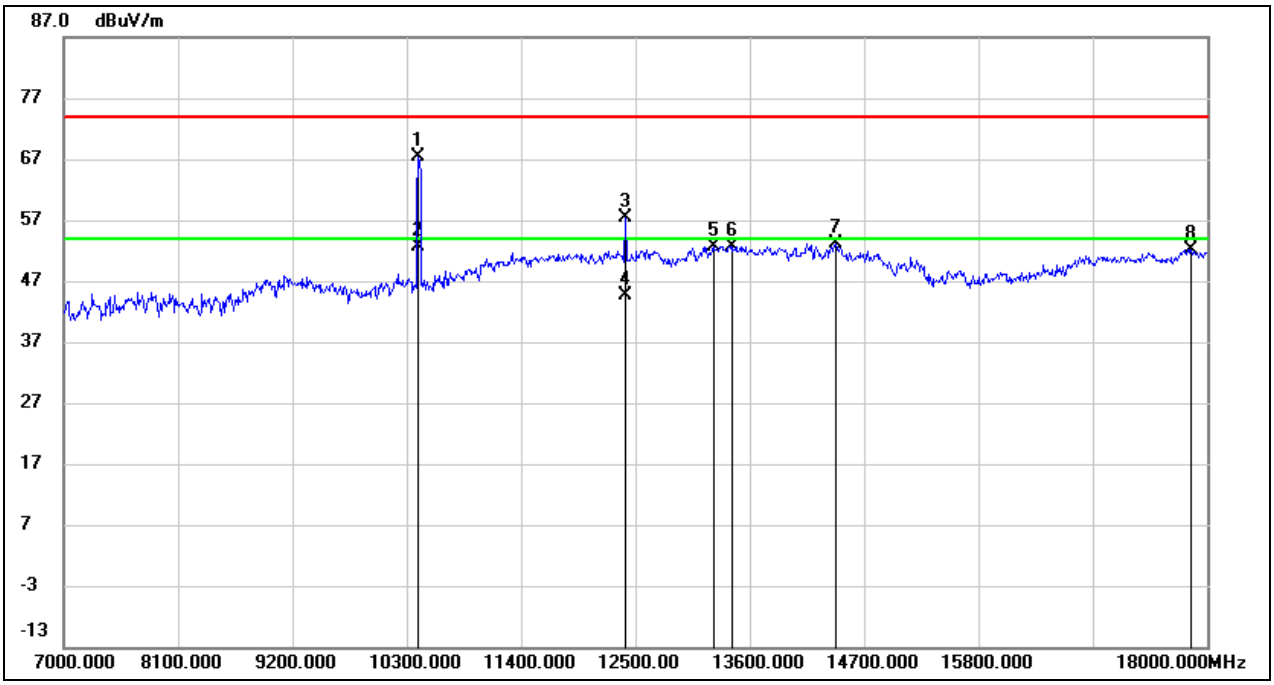
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11598.000	49.69	16.96	66.65	74.00	-7.35	peak
2	11598.000	34.67	16.96	51.63	54.00	-2.37	AVG
3	12401.000	39.09	17.81	56.90	74.00	-17.10	peak
4	12401.000	25.64	17.81	43.45	54.00	-10.55	AVG
5	13919.000	30.88	21.68	52.56	74.00	-21.44	peak
6	14425.000	32.45	20.09	52.54	74.00	-21.46	peak
7	16867.000	31.74	20.00	51.74	74.00	-22.26	peak
8	18000.000	27.30	26.12	53.42	74.00	-20.58	peak

Test Mode:	802.11ac VHT80	Channel:	5210
Polarity:	Horizontal		



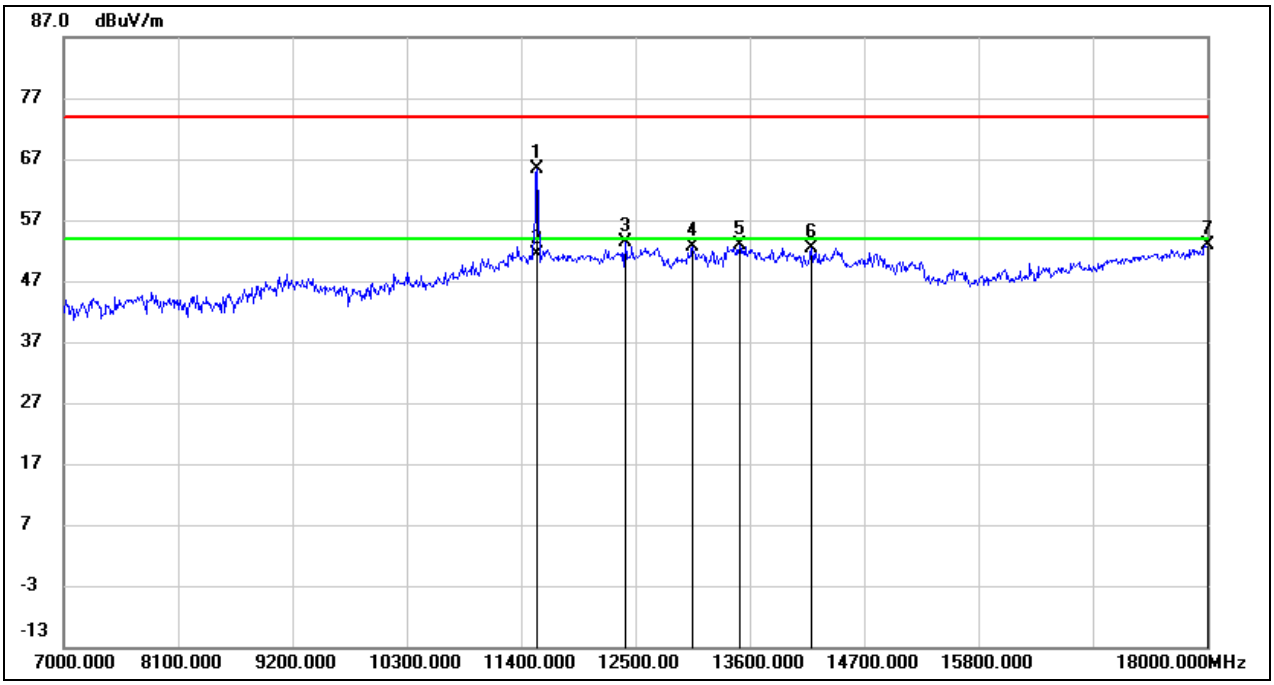
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10410.000	53.47	12.62	66.09	74.00	-7.91	peak
2	10410.000	38.98	12.62	51.60	54.00	-2.40	AVG
3	11290.000	35.73	15.90	51.63	74.00	-22.37	peak
4	11730.000	34.61	17.19	51.80	74.00	-22.20	peak
5	13534.000	32.23	20.73	52.96	74.00	-21.04	peak
6	14436.000	32.74	20.05	52.79	74.00	-21.21	peak
7	18000.000	26.47	26.12	52.59	74.00	-21.41	peak

Test Mode:	802.11ac VHT80	Channel:	5210
Polarity:	Vertical		



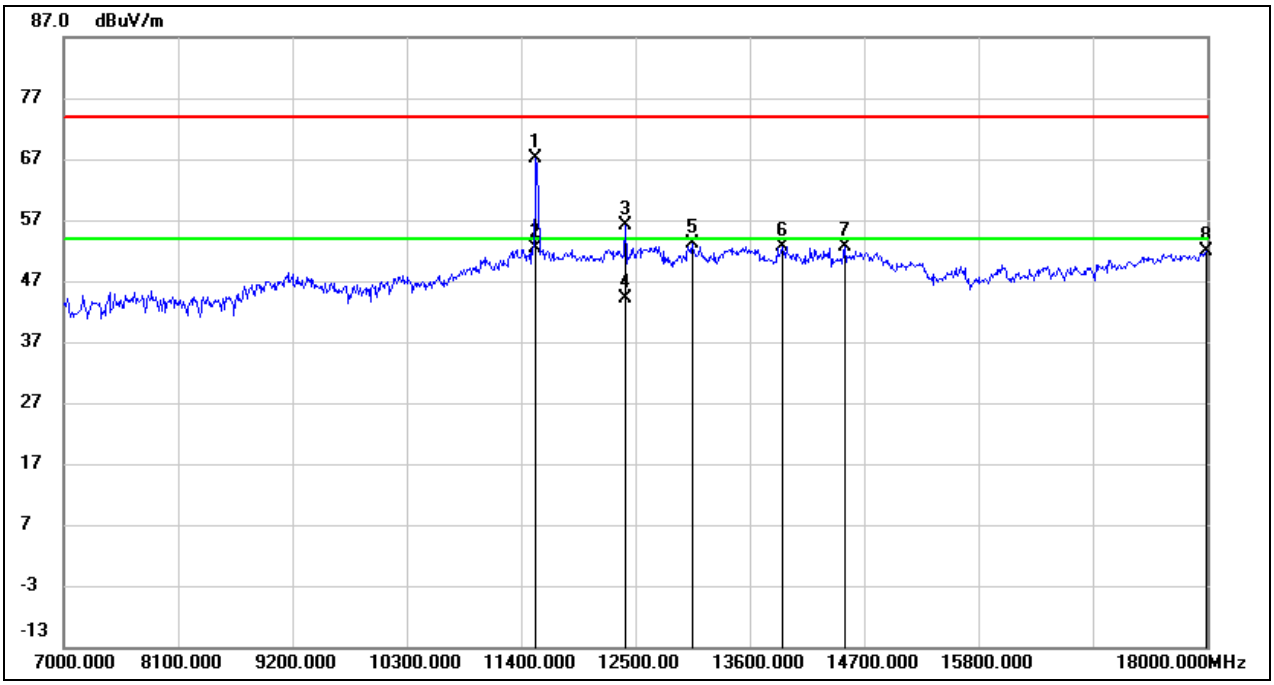
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10410.000	54.74	12.62	67.36	74.00	-6.64	peak
2	10410.000	39.98	12.62	52.60	54.00	-1.40	AVG
3	12401.000	39.59	17.81	57.40	74.00	-16.60	peak
4	12401.000	26.87	17.81	44.68	54.00	-9.32	AVG
5	13248.000	33.15	19.54	52.69	74.00	-21.31	peak
6	13435.000	32.40	20.35	52.75	74.00	-21.25	peak
7	14425.000	33.10	20.09	53.19	74.00	-20.81	peak
8	17846.000	27.12	25.08	52.20	74.00	-21.80	peak

Test Mode:	802.11ac VHT80	Channel:	5775
Polarity:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11554.000	48.50	16.87	65.37	74.00	-8.63	peak
2	11554.000	34.61	16.87	51.48	54.00	-2.52	AVG
3	12401.000	35.57	17.81	53.38	74.00	-20.62	peak
4	13050.000	33.96	18.66	52.62	74.00	-21.38	peak
5	13501.000	32.13	20.64	52.77	74.00	-21.23	peak
6	14194.000	31.42	21.07	52.49	74.00	-21.51	peak
7	18000.000	26.74	26.12	52.86	74.00	-21.14	peak

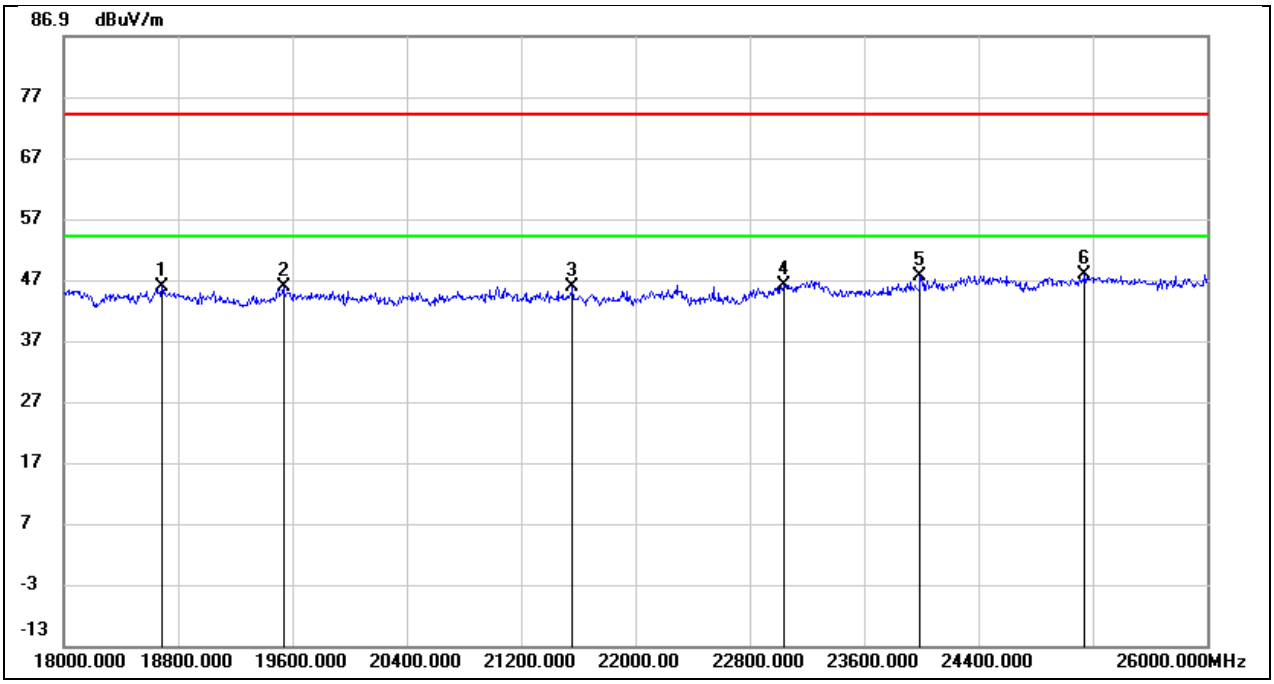
Test Mode:	802.11ac VHT80	Channel:	5775
Polarity:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11543.000	50.22	16.84	67.06	74.00	-6.94	peak
2	11543.000	35.42	16.84	52.26	54.00	-1.74	AVG
3	12401.000	38.27	17.81	56.08	74.00	-17.92	peak
4	12401.000	26.31	17.81	44.12	54.00	-9.88	AVG
5	13050.000	34.40	18.66	53.06	74.00	-20.94	peak
6	13908.000	30.90	21.66	52.56	74.00	-21.44	peak
7	14513.000	32.80	19.72	52.52	74.00	-21.48	peak
8	17989.000	25.73	26.04	51.77	74.00	-22.23	peak

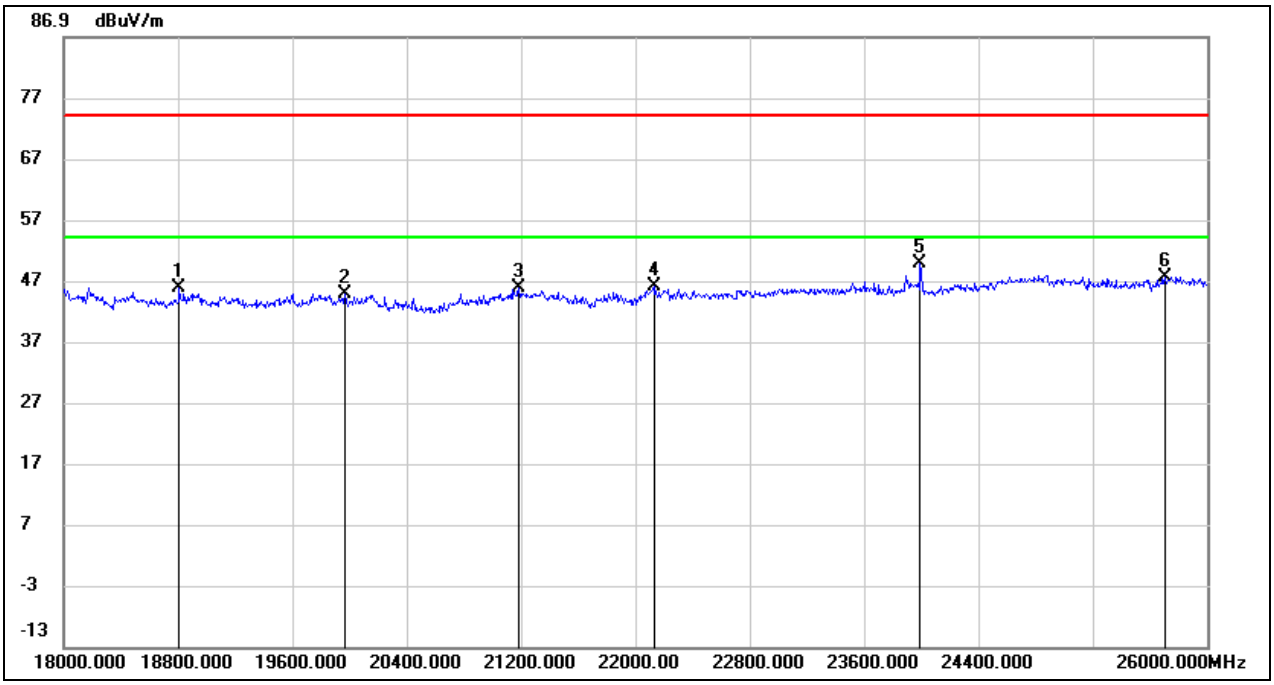
8.4. SPURIOUS EMISSIONS(18 GHZ~26 GHZ)

Test Mode:	802.11a 20	Channel:	5180
Polarity:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	18688.000	50.62	-4.72	45.90	74.00	-28.10	peak
2	19536.000	50.40	-4.73	45.67	74.00	-28.33	peak
3	21560.000	51.56	-5.77	45.79	74.00	-28.21	peak
4	23040.000	51.58	-5.55	46.03	74.00	-27.97	peak
5	23992.000	51.66	-4.03	47.63	74.00	-26.37	peak
6	25144.000	48.89	-1.14	47.75	74.00	-26.25	peak

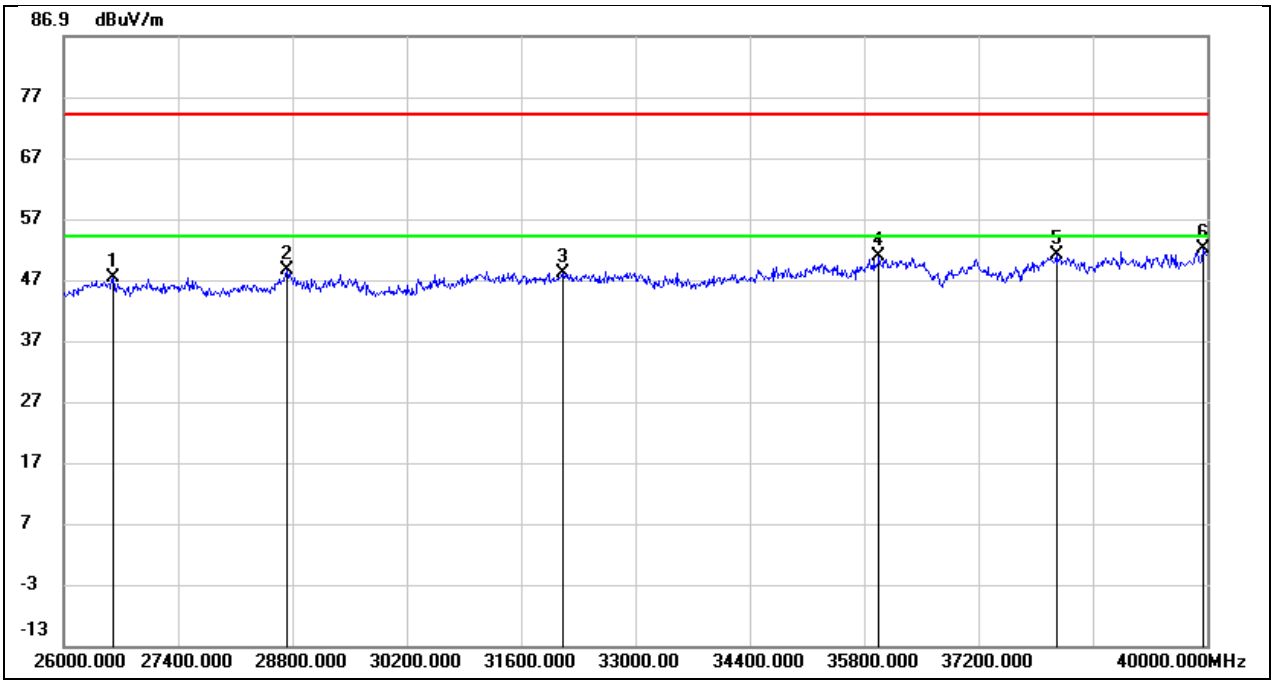
Test Mode:	802.11a 20	Channel:	5180
Polarity:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	18808.000	50.55	-4.85	45.70	74.00	-28.30	peak
2	19968.000	49.23	-4.36	44.87	74.00	-29.13	peak
3	21184.000	51.17	-5.45	45.72	74.00	-28.28	peak
4	22128.000	52.24	-6.15	46.09	74.00	-27.91	peak
5	23992.000	53.72	-4.03	49.69	74.00	-24.31	peak
6	25704.000	48.97	-1.42	47.55	74.00	-26.45	peak

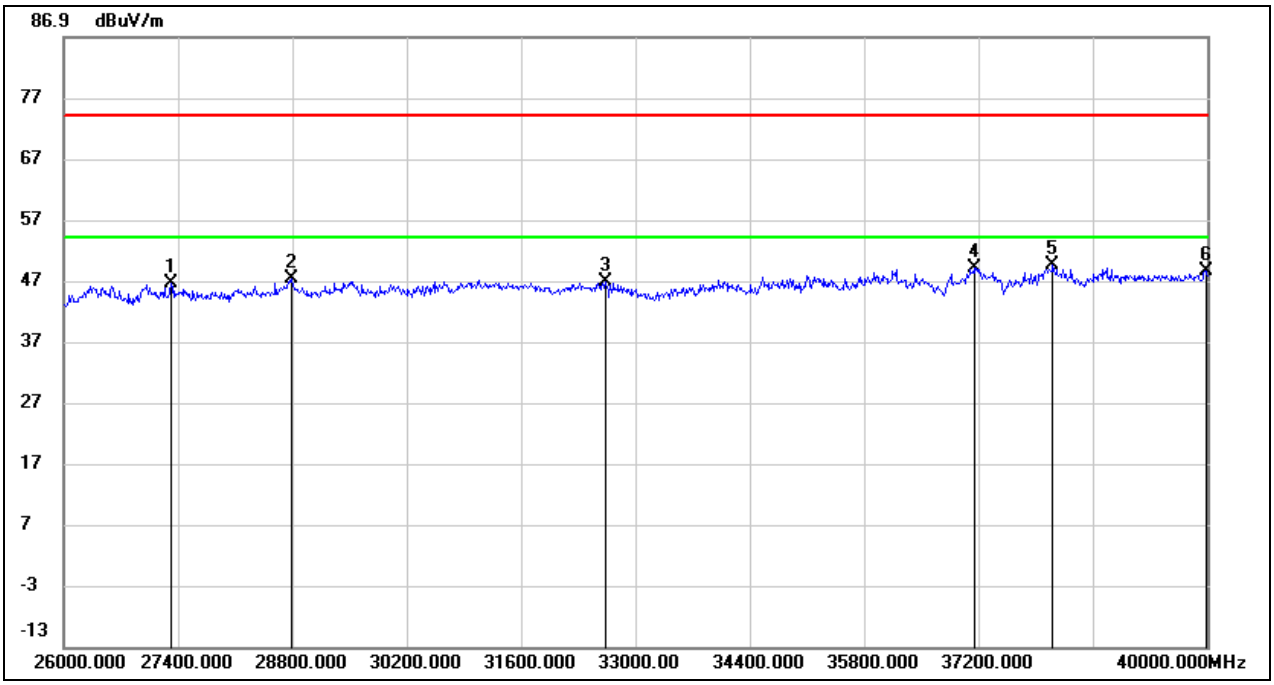
8.5. SPURIOUS EMISSIONS(26 GHZ~40 GHZ)

Test Mode:	802.11a 20	Channel:	5180
Polarity:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	26602.000	52.09	-4.80	47.29	74.00	-26.71	peak
2	28730.000	49.22	-0.69	48.53	74.00	-25.47	peak
3	32104.000	49.70	-1.75	47.95	74.00	-26.05	peak
4	35982.000	46.79	4.01	50.80	74.00	-23.20	peak
5	38152.000	47.28	3.63	50.91	74.00	-23.09	peak
6	39944.000	47.03	5.09	52.12	74.00	-21.88	peak

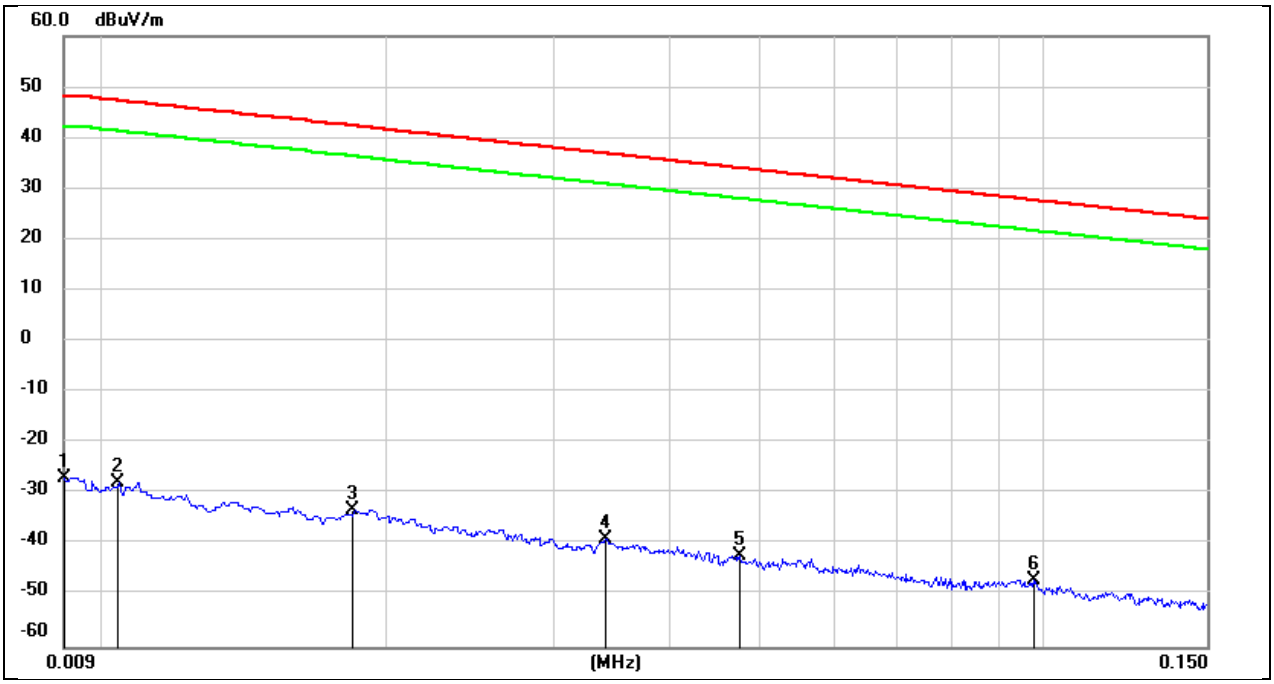
Test Mode:	802.11a 20	Channel:	5180
Polarity:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	27316.000	50.69	-4.11	46.58	74.00	-27.42	peak
2	28786.000	47.80	-0.64	47.16	74.00	-26.84	peak
3	32636.000	48.23	-1.36	46.87	74.00	-27.13	peak
4	37144.000	45.92	3.17	49.09	74.00	-24.91	peak
5	38110.000	46.07	3.53	49.60	74.00	-24.40	peak
6	39986.000	43.44	5.17	48.61	74.00	-25.39	peak

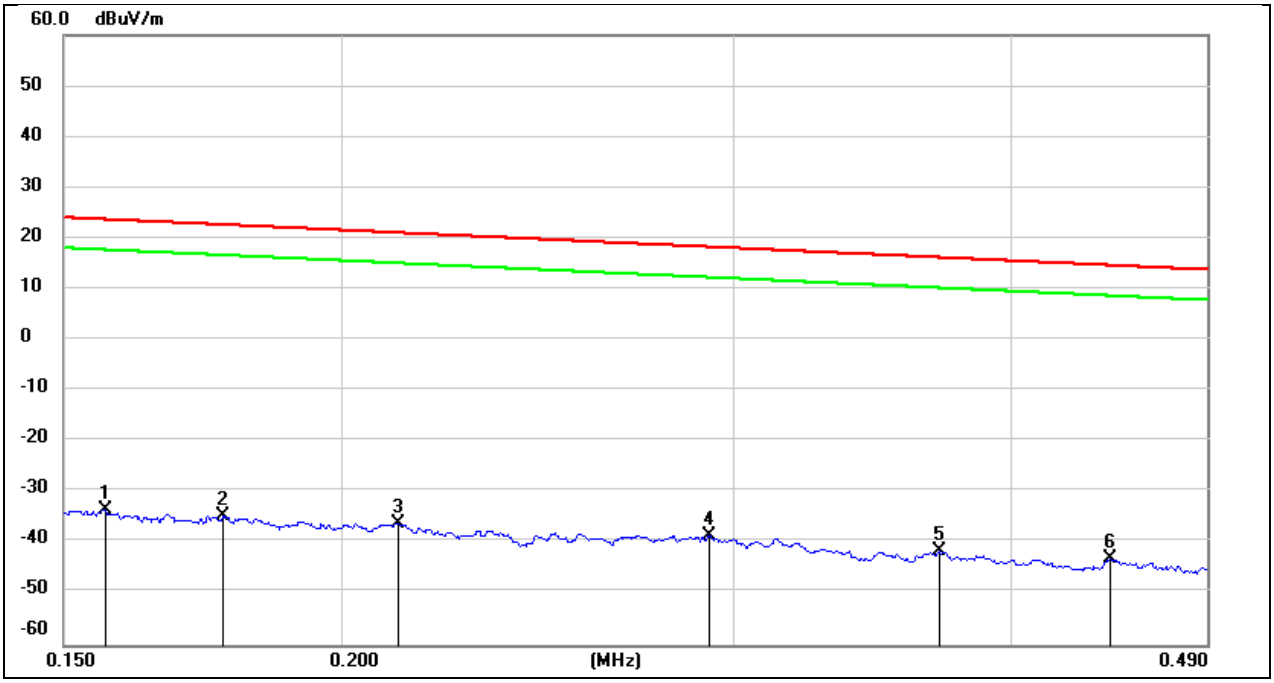
8.6. SPURIOUS EMISSIONS(9 KHZ~30 MHZ)

Test Mode:	802.11a 20	Channel:	5180
Polarity:	FACE ON TO THE EUT		



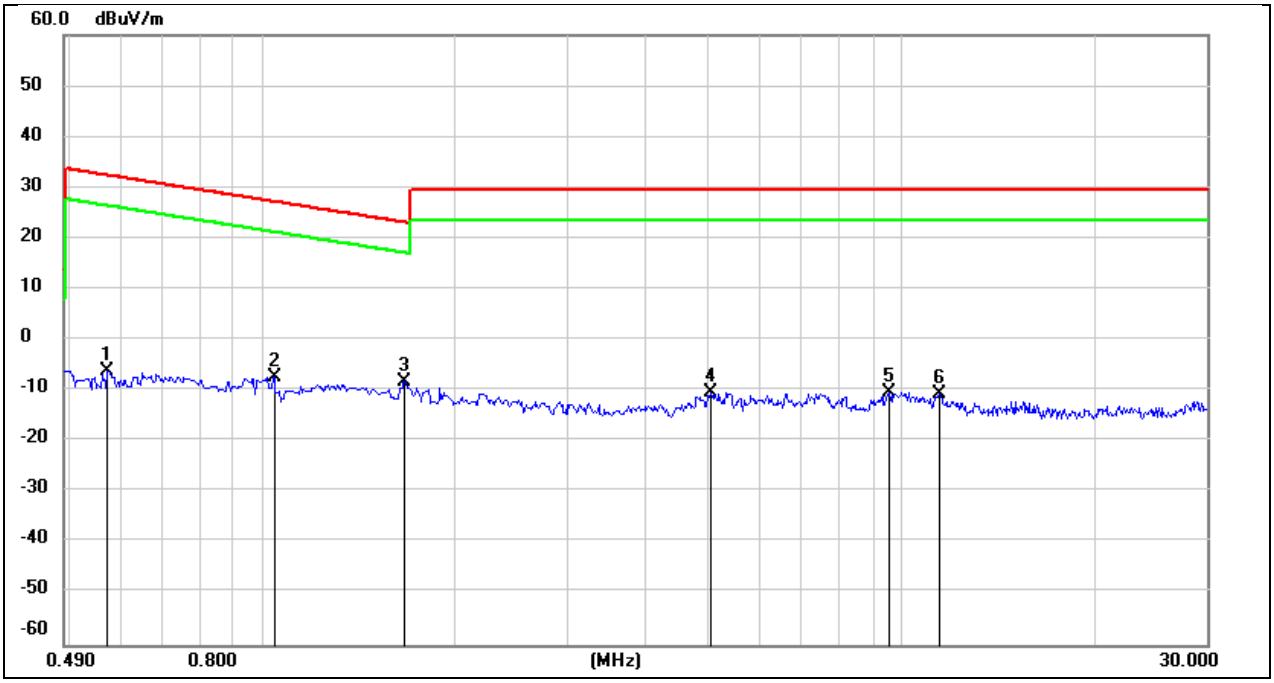
No.	Frequency	Reading	Correct	FCC Result	FCC Limit	ISED Result	ISED Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuA/m)	(dBuA/m)	(dB)	
1	0.0090	74.34	-101.32	-26.98	48.36	-78.48	-3.14	-75.34	peak
2	0.0103	73.68	-101.40	-27.72	47.34	-79.22	-4.16	-75.06	peak
3	0.0183	68.31	-101.36	-33.05	42.35	-84.55	-9.15	-75.40	peak
4	0.0342	62.43	-101.41	-38.98	36.92	-90.48	-14.58	-75.90	peak
5	0.0475	59.18	-101.47	-42.29	34.07	-93.79	-17.43	-76.36	peak
6	0.0980	54.87	-101.78	-46.91	27.78	-98.41	-23.72	-74.69	peak

Test Mode:	802.11a 20	Channel:	5180
Polarity:	FACE ON TO THE EUT		



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	0.1567	68.21	-101.65	-33.44	23.70	-84.94	-27.80	-57.14	peak
2	0.1768	67.05	-101.68	-34.63	22.66	-86.13	-28.84	-57.29	peak
3	0.2121	65.59	-101.73	-36.14	21.07	-87.64	-30.43	-57.21	peak
4	0.2928	63.29	-101.85	-38.56	18.27	-90.06	-33.23	-56.83	peak
5	0.3714	60.25	-101.93	-41.68	16.20	-93.18	-35.30	-57.88	peak
6	0.4434	58.87	-102.01	-43.14	14.67	-94.64	-36.83	-57.81	peak

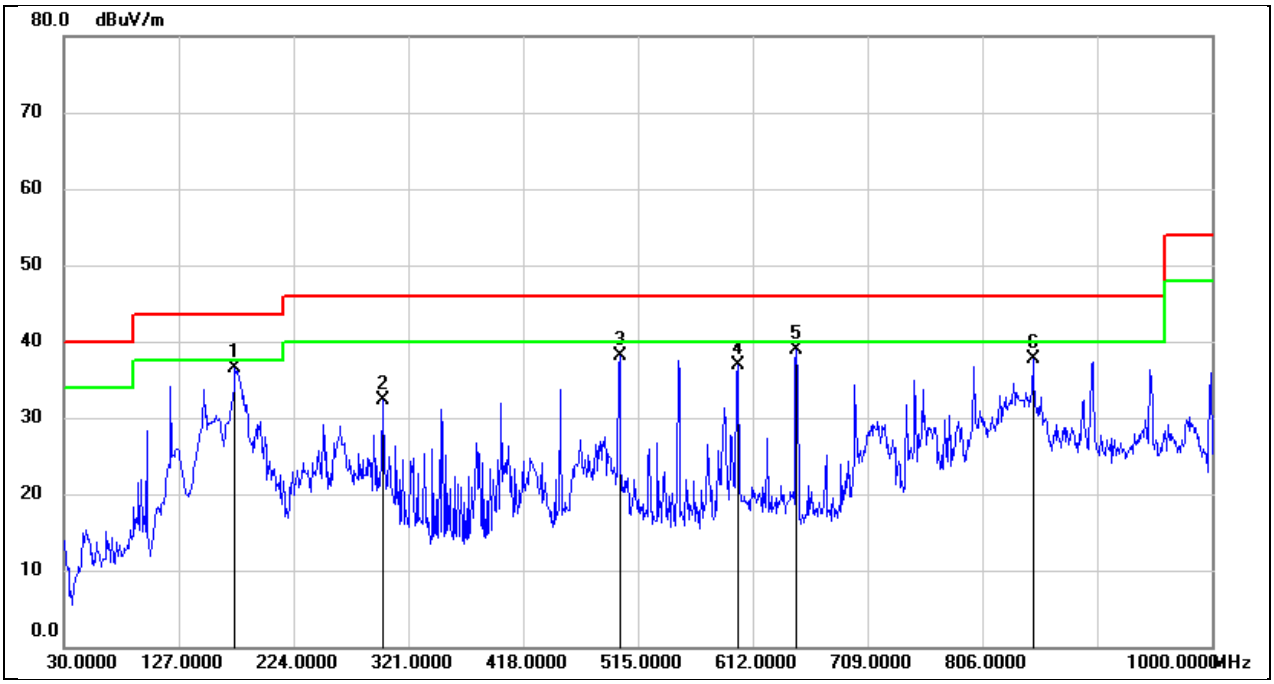
Test Mode:	802.11a 20	Channel:	5180
Polarity:	FACE ON TO THE EUT		



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	0.5725	56.03	-62.07	-6.04	32.45	-57.54	-19.05	-38.49	peak
2	1.0443	54.89	-62.25	-7.36	27.23	-58.86	-24.27	-34.59	peak
3	1.6704	53.72	-61.97	-8.25	23.15	-59.75	-28.35	-31.40	peak
4	5.0345	51.06	-61.49	-10.43	29.54	-61.93	-21.96	-39.97	peak
5	9.5791	50.62	-60.86	-10.24	29.54	-61.74	-21.96	-39.78	peak
6	11.4677	50.13	-60.86	-10.73	29.54	-62.23	-21.96	-40.27	peak

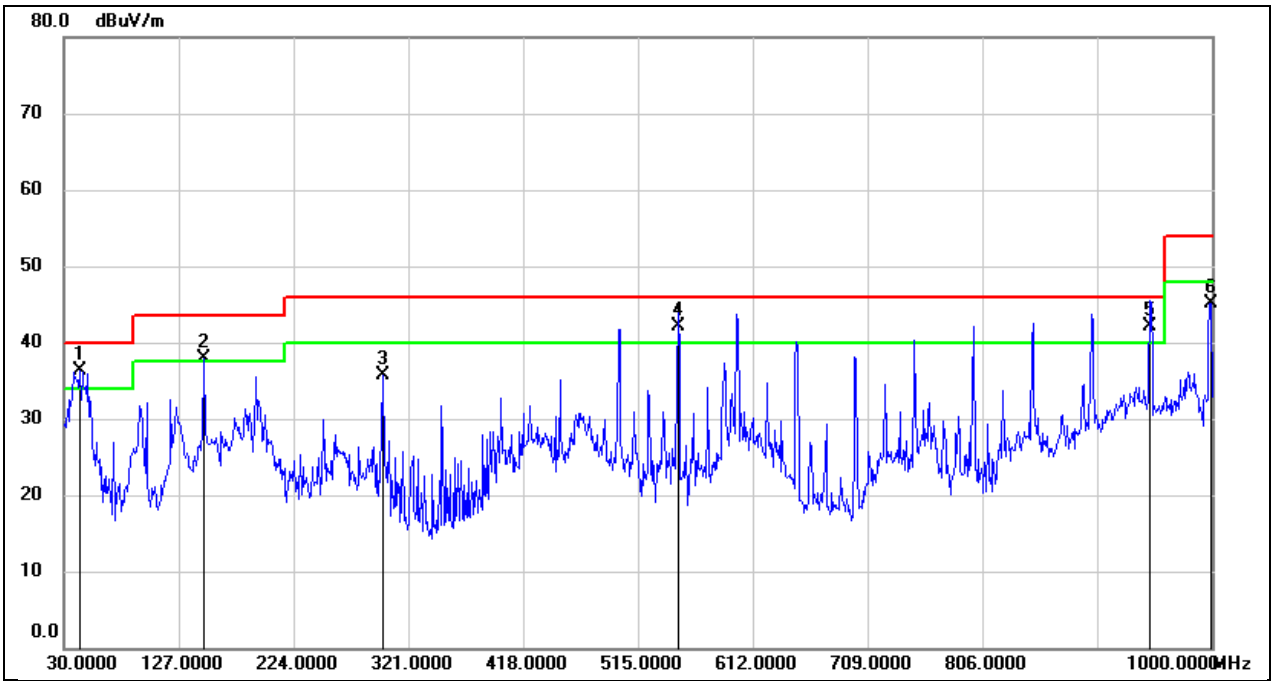
8.7. SPURIOUS EMISSIONS(30 MHZ~1 GHZ)

Test Mode:	802.11a 20	Channel:	5180
Polarity:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	174.5300	53.71	-17.12	36.59	43.50	-6.91	QP
2	299.6600	47.64	-15.32	32.32	46.00	-13.68	QP
3	499.4800	49.53	-11.48	38.05	46.00	-7.95	QP
4	599.3900	46.39	-9.56	36.83	46.00	-9.17	QP
5	648.8600	48.03	-9.05	38.98	46.00	-7.02	QP
6	848.6800	44.06	-6.29	37.77	46.00	-8.23	QP

Test Mode:	802.11a 20	Channel:	5180
Polarity:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	43.5800	56.42	-20.21	36.21	40.00	-3.79	QP
2	148.3400	56.35	-18.36	37.99	43.50	-5.51	QP
3	299.6600	51.05	-15.32	35.73	46.00	-10.27	QP
4	548.9500	52.64	-10.49	42.15	46.00	-3.85	QP
5	947.6200	46.62	-4.43	42.19	46.00	-3.81	QP
6	999.0300	49.28	-4.16	45.12	54.00	-8.88	QP

9. AC POWER LINE CONDUCTED EMISSION

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

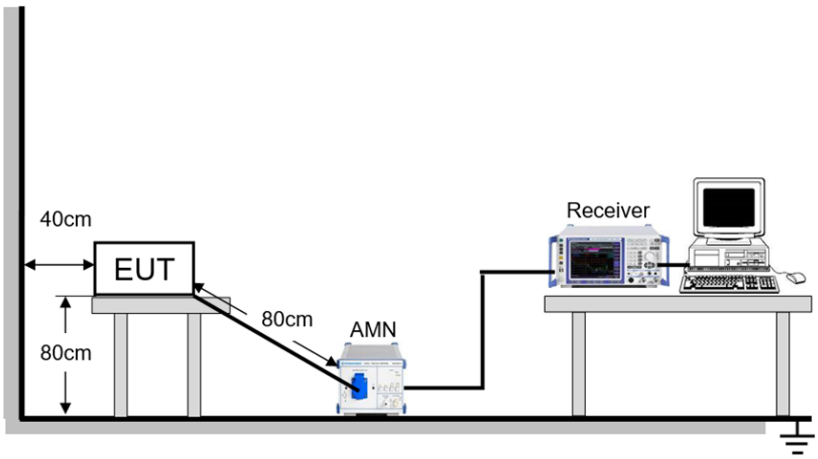
TEST PROCEDURE

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 SETUP

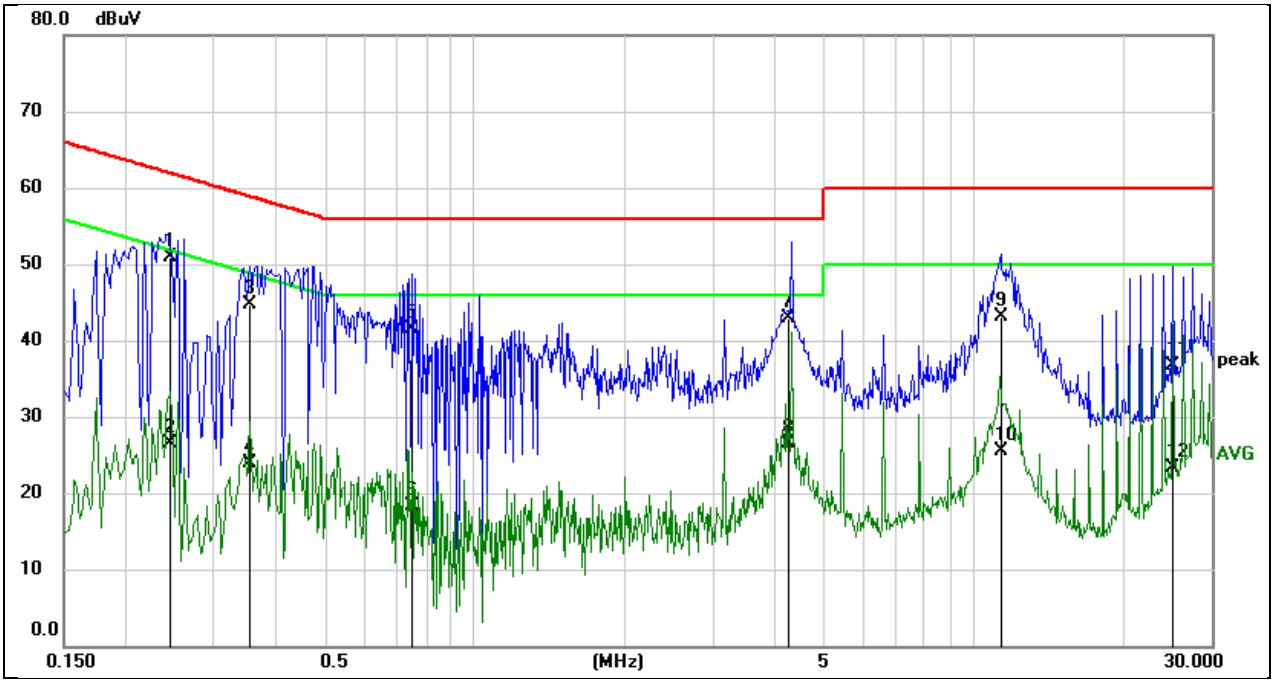


TEST ENVIRONMENT

Temperature	22.7℃	Relative Humidity	63.8%
Atmosphere Pressure	101kPa	Test Voltage	AC 120 V, 60 Hz

TEST RESULTS

Test Mode:	802.11a	Channel:	5180
Line:	Line		

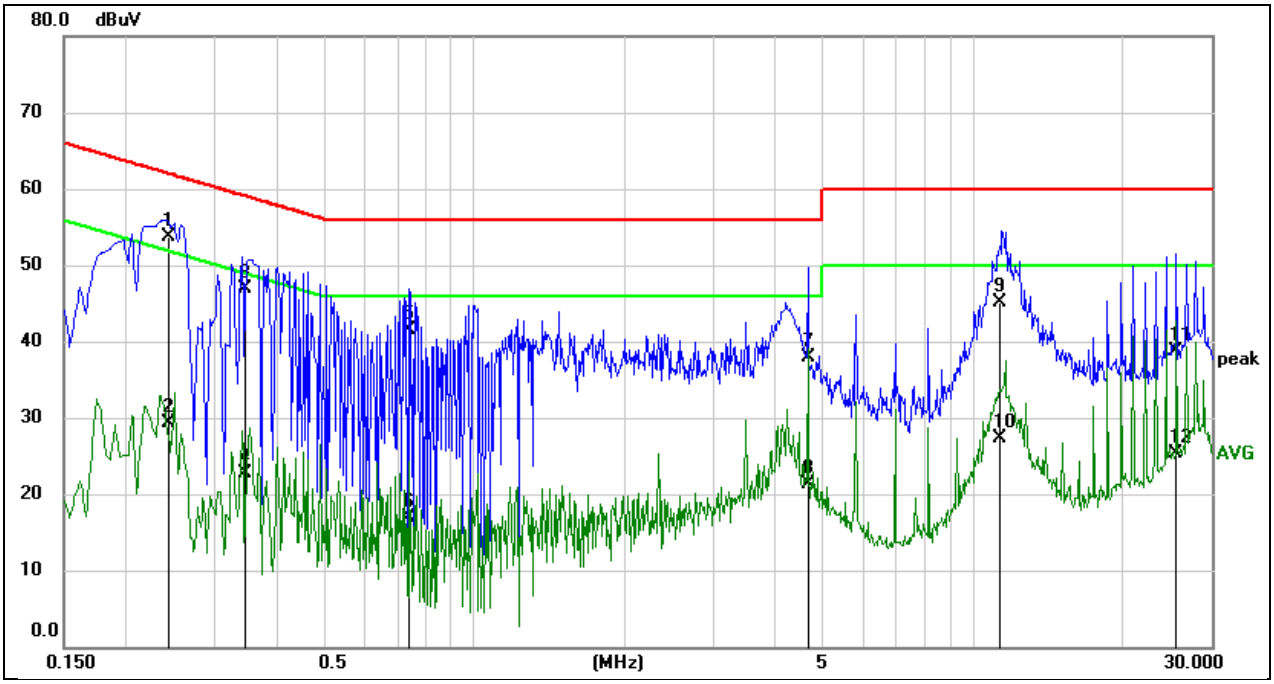


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.2461	41.38	9.54	50.92	61.89	-10.97	QP
2	0.2461	17.06	9.54	26.60	51.89	-25.29	AVG
3	0.3556	35.23	9.43	44.66	58.83	-14.17	QP
4	0.3556	14.44	9.43	23.87	48.83	-24.96	AVG
5	0.7506	31.84	9.60	41.44	56.00	-14.56	QP
6	0.7506	8.80	9.60	18.40	46.00	-27.60	AVG
7	4.2454	33.39	9.60	42.99	56.00	-13.01	QP
8	4.2454	16.85	9.60	26.45	46.00	-19.55	AVG
9	11.3179	33.38	9.74	43.12	60.00	-16.88	QP
10	11.3179	15.67	9.74	25.41	50.00	-24.59	AVG
11	25.1629	27.05	9.70	36.75	60.00	-23.25	QP
12	25.1629	13.70	9.70	23.40	50.00	-26.60	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 have been tested, only the worst data was recorded in the report.

Test Mode:	802.11a	Channel:	5180
Line:	Neutral		



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.2440	44.10	9.58	53.68	61.96	-8.28	QP
2	0.2440	19.66	9.58	29.24	51.96	-22.72	AVG
3	0.3461	37.28	9.54	46.82	59.06	-12.24	QP
4	0.3461	13.11	9.54	22.65	49.06	-26.41	AVG
5	0.7372	32.04	9.50	41.54	56.00	-14.46	QP
6	0.7372	7.46	9.50	16.96	46.00	-29.04	AVG
7	4.6430	28.43	9.48	37.91	56.00	-18.09	QP
8	4.6430	11.92	9.48	21.40	46.00	-24.60	AVG
9	11.3249	35.52	9.64	45.16	60.00	-14.84	QP
10	11.3249	17.60	9.64	27.24	50.00	-22.76	AVG
11	25.5673	28.91	9.75	38.66	60.00	-21.34	QP
12	25.5673	15.57	9.75	25.32	50.00	-24.68	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 have been tested, only the worst data was recorded in the report.

10. ANTENNA REQUIREMENT

REQUIREMENT

Please refer to FCC §15.203
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

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

RESULTS

Complies

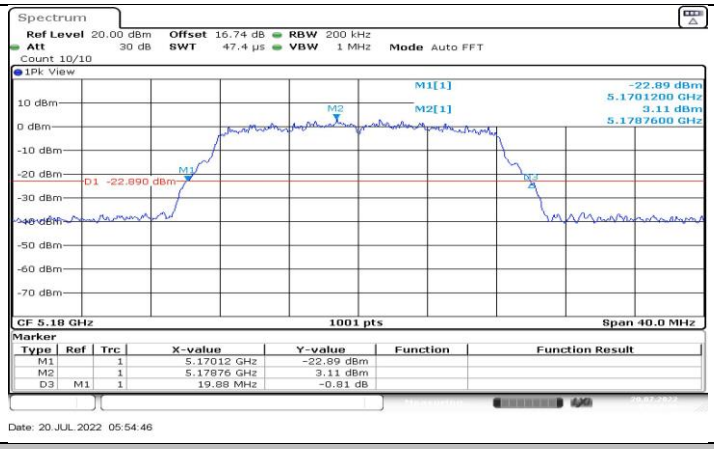
11. TEST DATA

11.1. APPENDIX A1: EMISSION BANDWIDTH

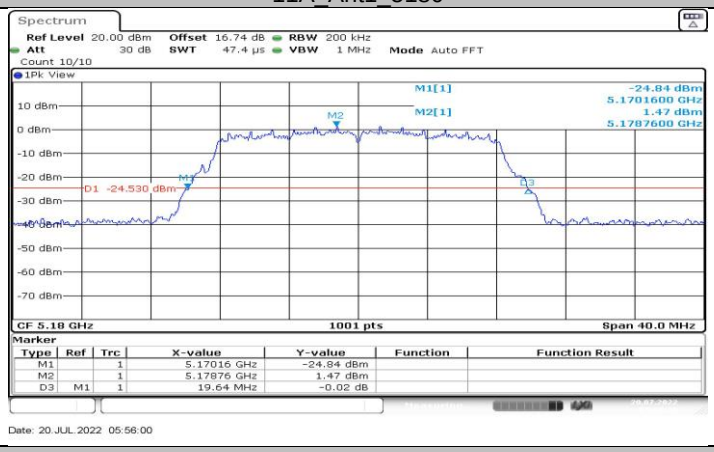
11.1.1. Test Result

Test Mode	Antenna	Channel	26db EBW [MHz]	FL[MHz]	FH[MHz]
11A	Ant1	5180	19.88	5170.12	5190.00
	Ant2	5180	19.64	5170.16	5189.80
	Ant1	5200	19.92	5190.00	5209.92
	Ant2	5200	20.04	5190.08	5210.12
	Ant1	5240	19.96	5230.08	5250.04
	Ant2	5240	19.72	5230.16	5249.88
	Ant1	5745	19.80	5735.16	5754.96
	Ant2	5745	19.84	5735.12	5754.96
	Ant1	5785	20.00	5775.08	5795.08
	Ant2	5785	19.72	5775.20	5794.92
	Ant1	5825	19.76	5814.96	5834.72
	Ant2	5825	19.48	5815.32	5834.80
11N20MIMO	Ant1	5180	20.16	5169.92	5190.08
	Ant2	5180	19.88	5169.96	5189.84
	Ant1	5200	20.08	5189.88	5209.96
	Ant2	5200	19.88	5190.04	5209.92
	Ant1	5240	20.08	5230.08	5250.16
	Ant2	5240	19.92	5230.08	5250.00
	Ant1	5745	20.12	5734.88	5755.00
	Ant2	5745	20.16	5735.04	5755.20
	Ant1	5785	20.20	5774.96	5795.16
	Ant2	5785	20.12	5775.00	5795.12
	Ant1	5825	20.08	5815.00	5835.08
	Ant2	5825	20.32	5814.92	5835.24
11N40MIMO	Ant1	5190	41.28	5169.36	5210.64
	Ant2	5190	40.48	5169.76	5210.24
	Ant1	5230	41.60	5209.36	5250.96
	Ant2	5230	40.56	5209.84	5250.40
	Ant1	5755	41.60	5734.20	5775.80
	Ant2	5755	40.80	5734.84	5775.64
	Ant1	5795	41.36	5774.44	5815.80
	Ant2	5795	40.64	5774.60	5815.24
11AC80MIMO	Ant1	5210	82.08	5169.04	5251.12
	Ant2	5210	81.44	5169.36	5250.80
	Ant1	5775	82.24	5734.04	5816.28
	Ant2	5775	81.44	5734.36	5815.80

11.1.2. Test Graphs



11A_Ant1_5180



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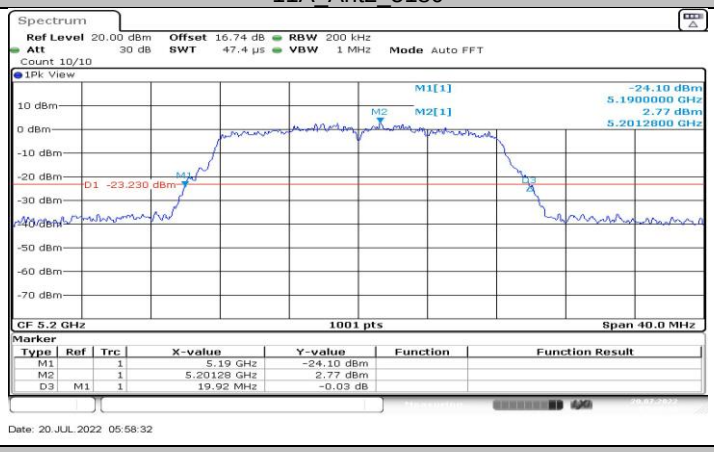

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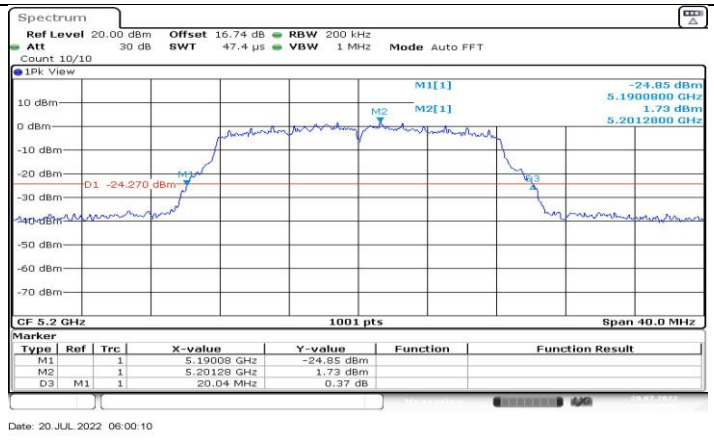

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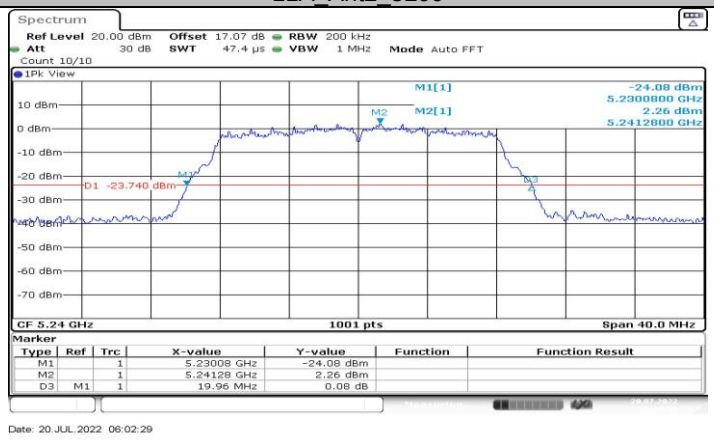

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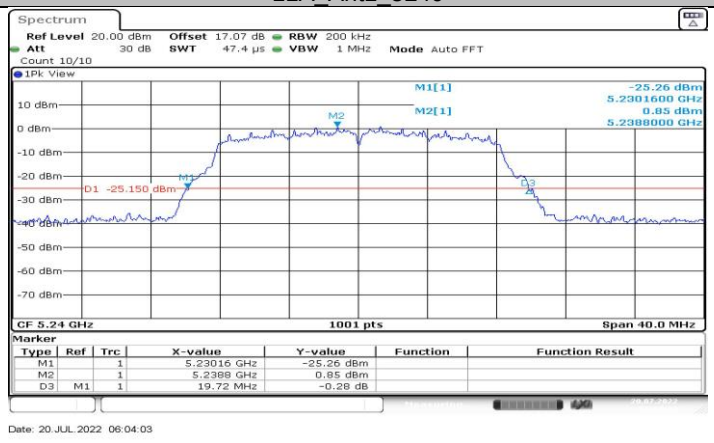

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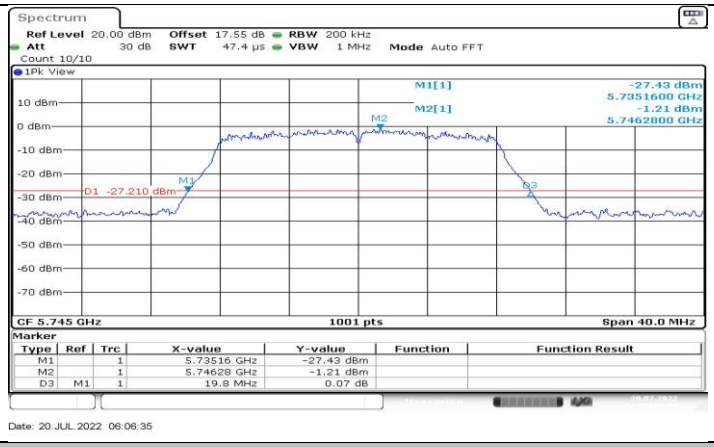

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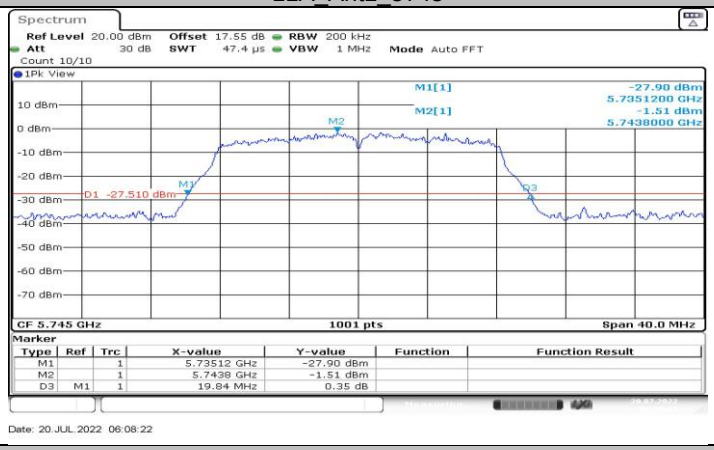

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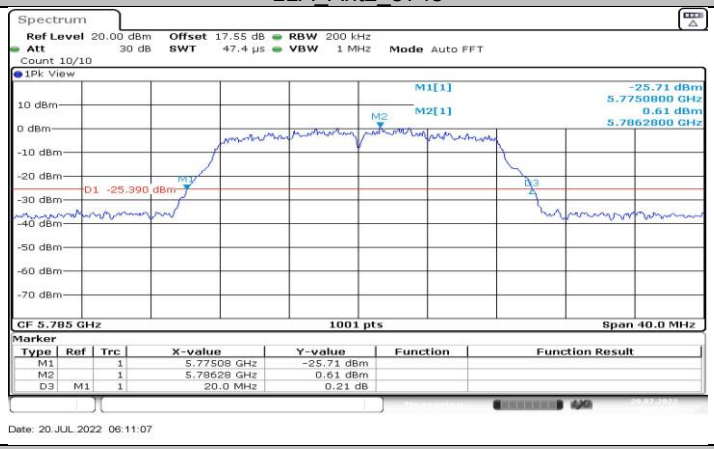

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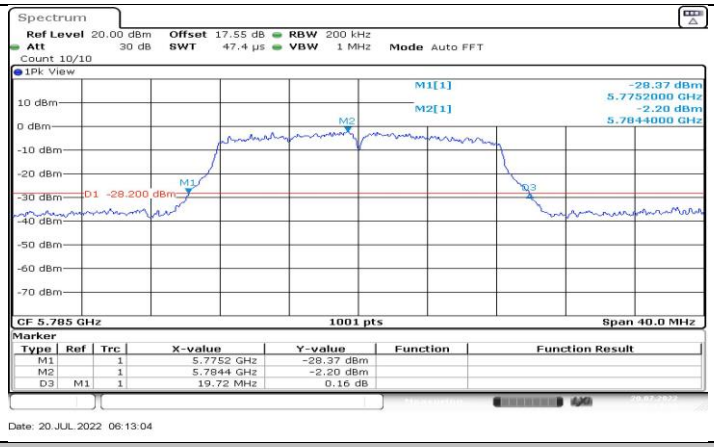

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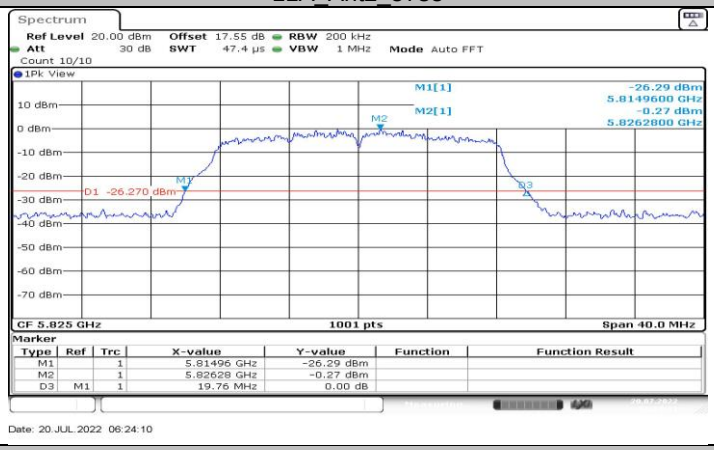

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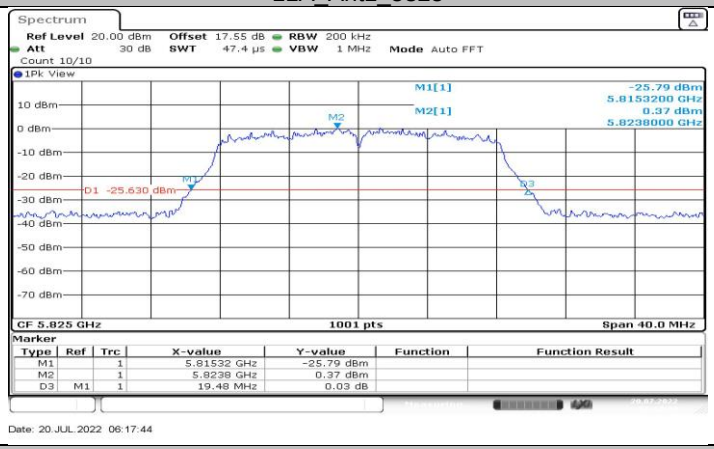

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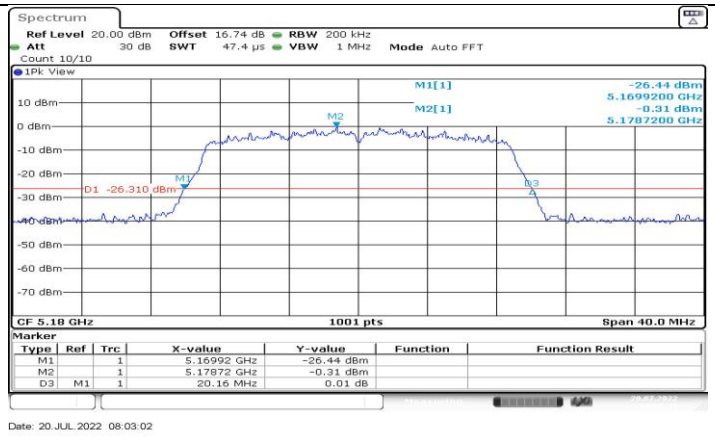

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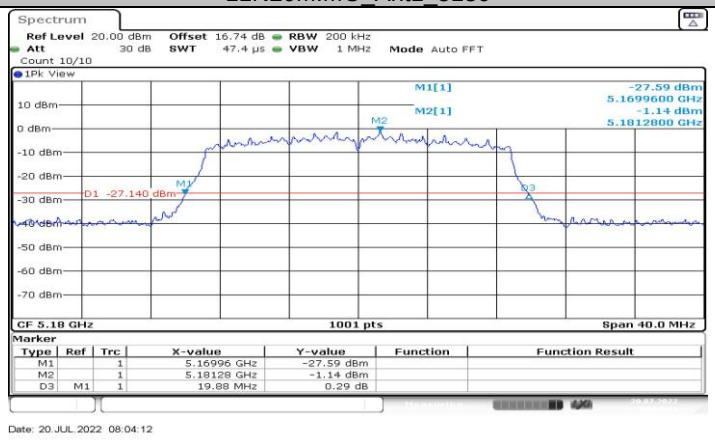

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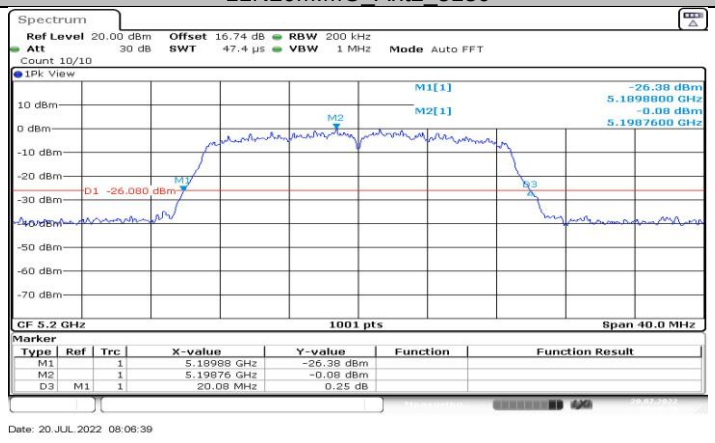

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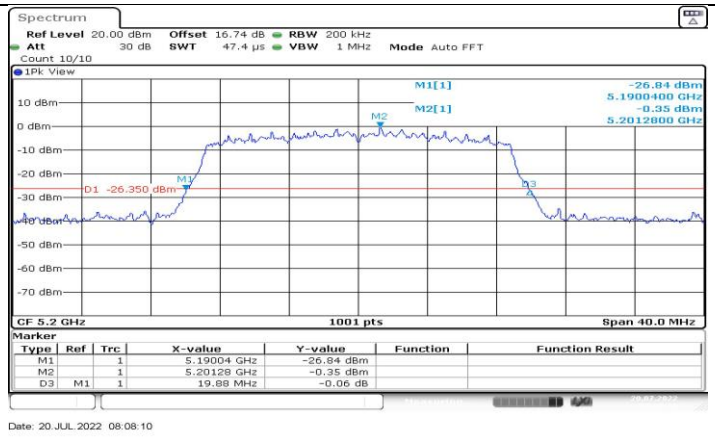

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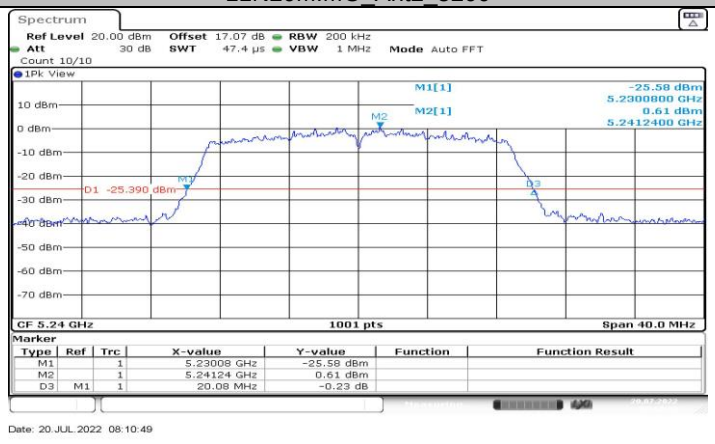

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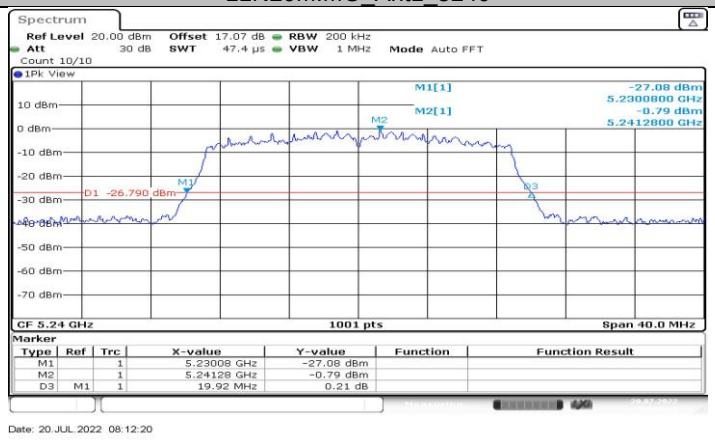

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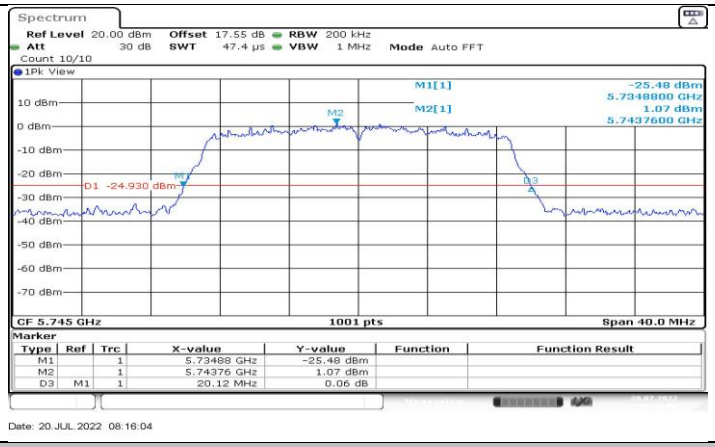

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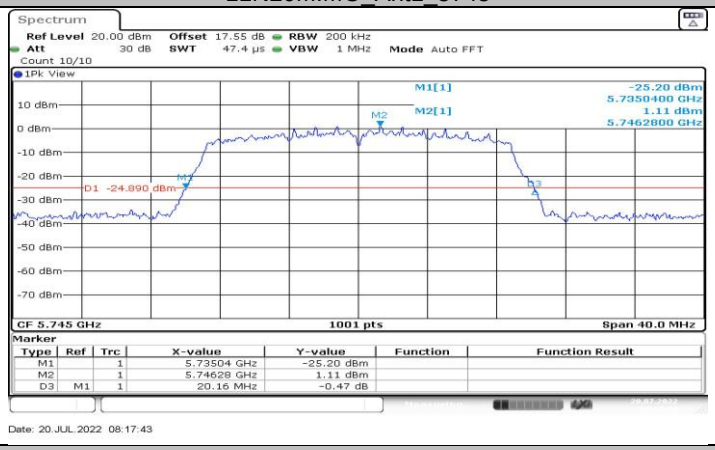

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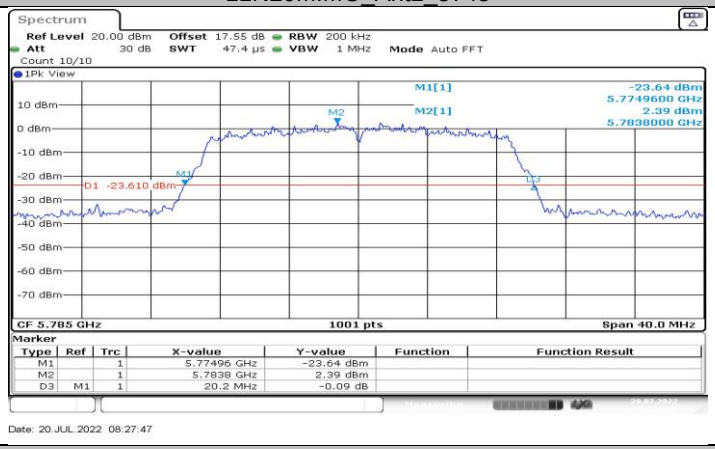

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