

RF Test Report

Applicant : Edimax Technology Co., Ltd.

Product Name : Industrial AC650 Dual-Band USB Adapter

Trade Name : EDIMAX

Model Number : IEW-7811UTC, EW-7811WTC

Applicable Standard : FCC 47 CFR PART 15 SUBPART E
ANSI C63.10:2013

Received Date : Nov. 14, 2022

Test Period : Nov. 29 ~ Dec. 06, 2022

Issued Date : Jan. 16, 2023

Issued by

Eurofins E&E Wireless Taiwan Co., Ltd.
No. 140-1, Changan Street, Bade District,
Taoyuan City 334025, Taiwan (R.O.C.)
Tel : +886-3-2710188 / Fax : +886-3-2710190



Taiwan Accreditation Foundation accreditation number: 1330
Frequency Range : 9 kHz to 40 GHz
Test Firm MRA designation number: TW0010

Note:

1. The test results are valid only for samples provided by customers and under the test conditions described in this report.
2. This report shall not be reproduced except in full, without the written approval of Eurofins E&E Wireless Taiwan Co., Ltd.
3. The relevant information is provided by customers in this test report. According to the correctness, appropriateness or completeness of the information provided by the customer, if there is any doubt or error in the information which affects the validity of the test results, the laboratory does not take the responsibility.

Revision History

Version	Issued Date	Revisions	Revised By
00	Jan. 07, 2023	Initial Issue	Snow Wang
01	Jan. 16, 2023	Update chapter 3.4 (P.13)	Snow Wang

Verification of Compliance

Applicant : Edimax Technology Co., Ltd.

Product Name : Industrial AC650 Dual-Band USB Adapter

Trade Name : EDIMAX

Model Number : IEW-7811UTC, EW-7811WTC

FCC ID : NDD9578112209

Applicable Standard : FCC 47 CFR PART 15 SUBPART E
ANSI C63.10:2013

Test Result : Complied

Performing Lab. : Eurofins E&E Wireless Taiwan Co., Ltd.
No. 140-1, Changan Street, Bade District,
Taoyuan City 334025, Taiwan (R.O.C.)
Tel : +886-3-2710188 / Fax : +886-3-2710190
Taiwan Accreditation Foundation accreditation number: 1330



Eurofins E&E Wireless Taiwan Co., Ltd. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by Eurofins E&E Wireless Taiwan Co., Ltd. based on interpretations and/or observations of test results. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Approved By : _____

TABLE OF CONTENTS

1	General Information	5
1.1.	Summary of Test Result	5
1.2.	Testing Location	6
1.3.	Measurement Uncertainty	6
2	EUT Description	7
3	Test Methodology	9
3.1.	Mode of Operation.....	9
3.2.	EUT Test Step.....	10
3.3.	Configuration of Test System Details.....	11
3.4.	Test Instruments	12
3.5.	Test Site Environment	13
4	Measurement Procedure	14
4.1.	AC Power Conducted Emission Measurement	14
4.2.	Transmitter Radiated Emissions Measurement.....	16
4.3.	Maximum Conducted Output Power Measurement	21
4.4.	26 dB RF Bandwidth Measurement & 99 % Occupied Bandwidth Measurement	22
4.5.	6 dB RF Bandwidth Measurement	23
4.6.	Maximum Power Spectral Density Measurement.....	24
4.7.	Automatically discontinue transmission.....	25
4.8.	Antenna Requirement	25
5	Test Results.....	26
5.1.	Conducted Emission	26
5.2.	Radiated Emission Measurement	28
5.3.	Conducted Test Results.....	110

Appendix A. Test Setup Photographs

1 General Information

1.1. Summary of Test Result

Standard	Item	Result	Remark
15.407(b)(9) 15.207	AC Power Conducted Emission	PASS	---
15.407(b) 15.205 / 15.209	Transmitter Radiated Emissions	PASS	---
15.407(a)	Maximum Conducted Output Power	PASS	---
15.407(a)	26 dB RF Bandwidth & 99 % Occupied Bandwidth	Reference	---
15.407(e)	6 dB RF Bandwidth	PASS	---
15.407(a)	Maximum Power Spectral Density	PASS	---
15.407(c)	Automatically discontinue transmission	PASS	---
15.407(a) 15.203	Antenna Requirement	PASS	---

Decision Rule

- ☒ Uncertainty is not included.
- ☐ Uncertainty is included.

Standard	Description
CFR47, Part 15, Subpart C	Intentional Radiators
CFR47, Part 15, Subpart E	Unlicensed National Information Infrastructure Devices
ANSI C63. 10: 2013	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices
KDB789033: D02	Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices Part 15, Subpart E
KDB 662911 D01 v02r01	Emissions Testing of Transmitters with Multiple Outputs in the Same Band (e.g., MIMO, Smart Antenna, etc)

1.2. Testing Location

Lab Name: Eurofins E&E Wireless Taiwan Co., Ltd.
 Site Address: ■ No. 140-1, Changan Street, Bade District, Taoyuan City 334025, Taiwan (R.O.C.)
 Site Address: ■ No. 2, Wuquan 5th Rd. Wugu Dist., New Taipei City, Taiwan (R.O.C.)

1.3. Measurement Uncertainty

Test Item	Frequency Range	Uncertainty
Conducted Emission	150 kHz ~ 30 MHz	2.7 dB
Radiated Emission	9 kHz ~ 30 MHz	2.2 dB
	30 MHz ~ 1000 MHz	5.1 dB
	1000 MHz ~ 18000 MHz	5.2 dB
	18000 MHz ~ 26500 MHz	4.6 dB
	26500 MHz ~ 40000 MHz	4.6 dB
Conducted Output Power		1.1 dB
RF Bandwidth		4.7 %
Power Spectral Density		1.1 dB
Frequency Stability		1.3×10^{-7}
Duty Cycle		1.1 %
Time Occupancy		1.5 %

2 EUT Description

Applicant	Edimax Technology Co., Ltd. No.278, Xinhu 1st Rd., Neihu Dist., Taipei City, Taiwan			
Product Name	Industrial AC650 Dual-Band USB Adapter			
Trade Name	EDIMAX			
Model Number	IEW-7811UTC, EW-7811WTC			
Difference description of model number	Different model numbers are for market purpose.			
FCC ID	NDD9578112209			
Operate Frequency	Frequency Band		Frequency Range (MHz)	Number of Channels
	IEEE 802.11a	U-NII Band 1	5180 – 5240	4
		U-NII Band 3	5745 – 5825	3
	802.11n HT20 / 802.11ac VHT20	U-NII Band 1	5180 – 5240	4
		U-NII Band 3	5745 – 5825	3
	802.11n HT40 / 802.11ac VHT40	U-NII Band 1	5190 – 5230	2
		U-NII Band 3	5755 – 5795	2
	802.11ac VHT80	U-NII Band 1	5210	1
		U-NII Band 3	5775	1
Modulation Type	OFDM			
Antenna information	ANT	Type	Max. Gain (dBi)	
	Ant-0	PIFA antenna	U-NII Band 1	2.1
			U-NII Band 3	2.5
Antenna Delivery	Reference section 3.1			
Operate Temp. Range	-20 ~ 75 ℃			
EUT Power Rating	DC 5 V, 0.5 A			

Frequency Band		RF Output Power (W)
802.11a	U-NII Band 1	0.028
	U-NII Band 3	0.037
802.11n HT20	U-NII Band 1	0.028
	U-NII Band 3	0.036
802.11n HT40	U-NII Band 1	0.029
	U-NII Band 3	0.037
802.11ac VHT20	U-NII Band 1	0.029
	U-NII Band 3	0.036
802.11ac VHT40	U-NII Band 1	0.029
	U-NII Band 3	0.037
802.11ac VHT80	U-NII Band 1	0.026
	U-NII Band 3	0.033

Equipment Type		
Outdoor access point	point-to-point	---
	point-to-multipoint	---
Indoor access point		---
Fixed point-to-point access points		---
Client devices		V

3 Test Methodology

3.1. Mode of Operation

In the test report use EUT model: IEW-7811UTC to operate testing.

Decision of Test Eurofins has verified the construction and function in typical operation. All the test modes were carried out with the EUT in normal operation, which was shown in this test report and defined as:

Pre-Test Mode
Transmit Mode
802.11a
802.11n HT20
802.11n HT40
802.11ac VHT20
802.11ac VHT40
802.11ac VHT80

Final-Test Mode
Transmit Mode
802.11a
802.11ac VHT20
802.11ac VHT40
802.11ac VHT80

Software used to control the EUT for staying in continuous transmitting mode was programmed.

After verification, all tests were carried out with the worst case test modes.

Note: Investigation has been done on all the possible configurations for searching the worst cases (VHT20/VHT40 covers HT20/HT40). The table is a list of the test modes show in this test report.

Test Mode	ANT-0
802.11a	V
802.11n HT20	V
802.11n HT40	V
802.11ac VHT20	V
802.11ac VHT40	V
802.11ac VHT80	V

Test Mode	Antenna Delivery	Data Rate (Mbps)	Band	Test Channel
802.11a	1TX	6	U-NII Band 1	36, 40, 48
			U-NII Band 3	149, 157, 165
802.11n HT20	1TX	6.5	U-NII Band 1	36, 40, 48
			U-NII Band 3	149, 157, 165
802.11n HT40	1TX	13.5	U-NII Band 1	38, 46
			U-NII Band 3	151, 159
802.11ac VHT20	1TX	6.5	U-NII Band 1	36, 40, 48
			U-NII Band 3	149, 157, 165
802.11ac VHT40	1TX	13.5	U-NII Band 1	38, 46
			U-NII Band 3	151, 159
802.11ac VHT80	1TX	29.3	U-NII Band 1	42
			U-NII Band 3	155

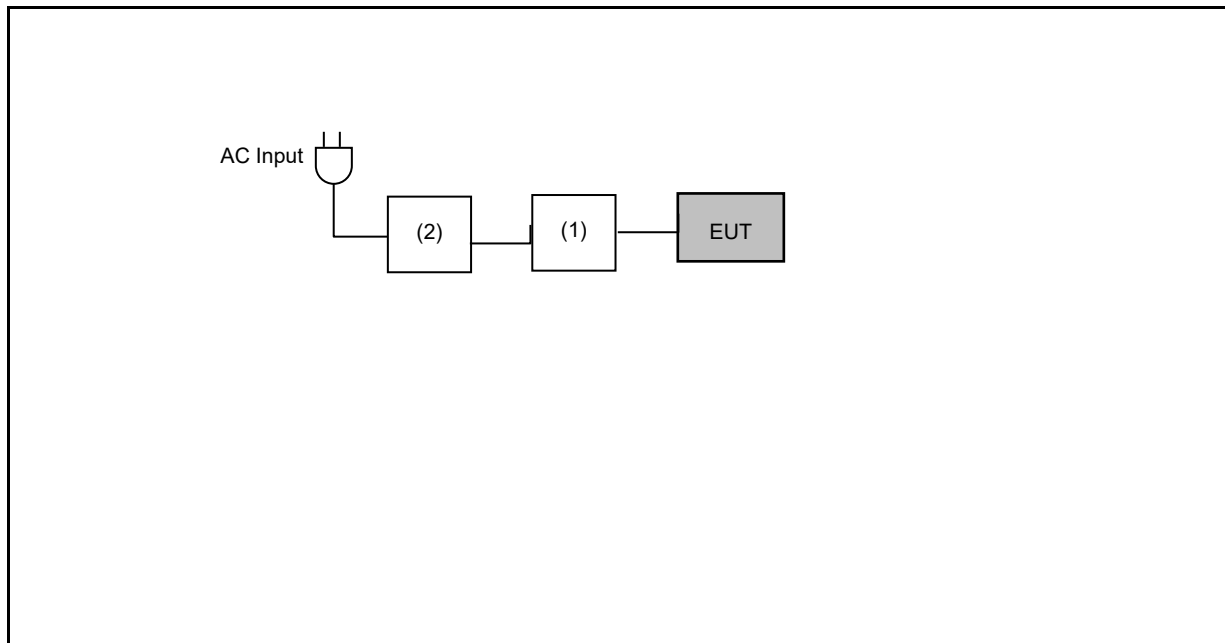
3.2. EUT Test Step

The EUT is operated in the engineering mode to fix the TX frequency for the purposes of measurement. According to its specifications, the EUT must comply with the requirements of Section 15.407 under the FCC Rules Part 15 Subpart E.

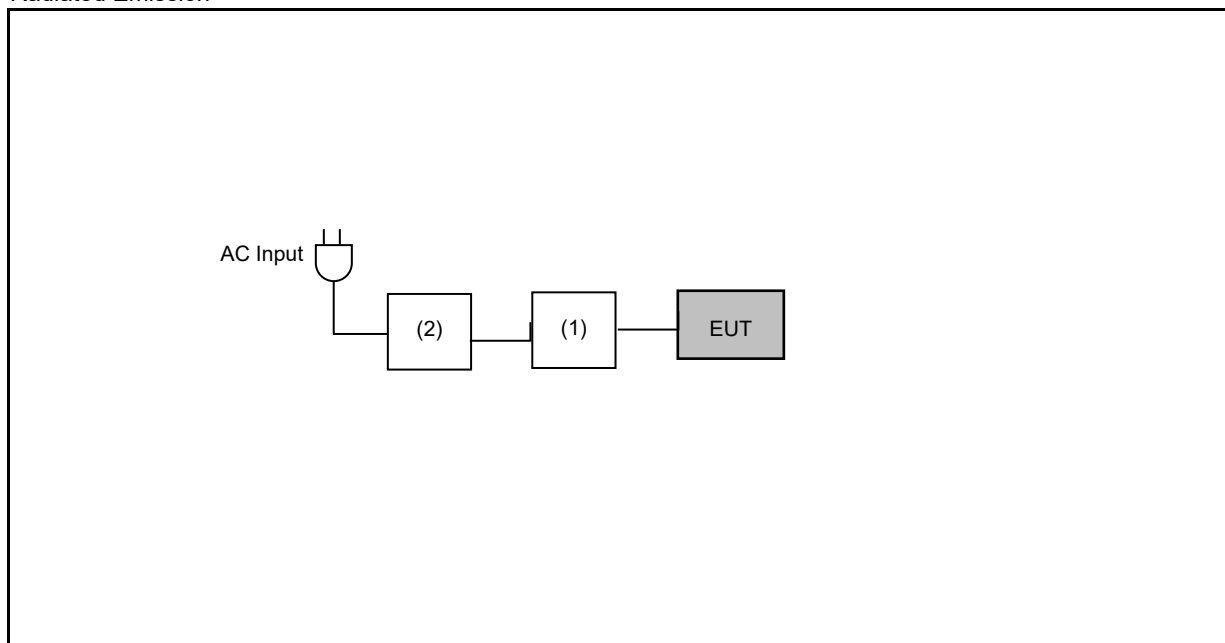
1.	Setup the EUT shown on "Configuration of Test System Details".
2.	Turn on the power of all equipment.
3.	Turn on TX function.
4.	EUT run test program.

3.3. Configuration of Test System Details

Conduction Emission



Radiated Emission



Devices Description					
	Product	Manufacturer	Model Number	Serial Number	Power Cord
(1)	Notebook	HP	HP541	CNU9181SCN	---

3.4. Test Instruments

For Conducted Emission

Test Period: Dec. 06, 2022

Testing Engineer: Jayson Hsieh

Test Site		Conduction01-BD				
Use	Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Cal. Period
☒	Test Receiver	R&S	ESCI	100367	May 19, 2022	1 year
☒	LISN	R&S	ENV216	101040	Apr. 06, 2022	1 year
☒	LISN	R&S	ENV216	101140	Jan. 25, 2022	1 year
☒	RF Cable	Woken	00100D1380194M	TE-02-03	May 27, 2022	1 year
☒	Software	EZ EMC	1.1.4.3	N/A	N.C.R.	---

For Conducted

Test Period: Nov. 29 ~ Dec. 5, 2022

Testing Engineer: An Wu

Test Site		RF01-WG				
Use	Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Cal. Period
☒	Power Sensor	Anritsu	MA24408A	11998	Feb. 08, 2022	1 year
☒	Spectrum Analyzer (10 Hz~44 GHz)	Agilent	N9020B	MY53120541	Feb. 17, 2022	1 year

Note: N.C.R. = No Calibration Request.

For Radiated Emissions
Test Period: Nov. 30 ~ Dec. 01, 2022
Testing Engineer: Kerry Xu, Andy Lu, Marc Yeh

Test Site		96603-BD				
Radiation test sites		Semi Anechoic Room				
Use	Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Cal. Period
☒	Spectrum Analyzer (2 Hz~50 GHz)	Keysight	N9030B	MY57143537	Apr. 14, 2022	1 year
☒	Amplifier (100 kHz~1.3 GHz)	Agilent	8447D	2944A11119	Jan. 14, 2022	1 year
☒	Broadband Amplifier (1 GHz~26.5 GHz)	Titan	T0912E01263025 A1F	002	Jul. 21, 2022	1 year
☒	Preamplifier (26.5 GHz~40 GHz)	EMCI	EMC2654045	980028	Sep. 02, 2022	1 year
☒	Loop Antenna (9 kHz~30 MHz)	COM-POWER CORPORATION	AL-130	121014	Mar. 28, 2022	1 year
☒	Trilog Broadband Antenna (30 MHz~1 GHz)	Schwarzbeck Mess-Elektronik	VULB9168	01146	Jul. 22, 2022	1 year
☒	Broadband Horn Antenna (1 GHz~18 GHz)	Schwarzbeck Mess-Elektronik	9120D	02207	Jul. 13, 2022	1 year
☒	Broadband Horn Antenna (18 GHz~40 GHz)	Schwarzbeck Mess-Elektronik	9170	9170-320	Aug. 25, 2022	1 year
☒	Coaxial Cable	Titan	T0710AT327A10A 100	J11005	Aug. 04, 2022	1 year
☒	Coaxial Cable	Titan	T0710AT327A10A 900	J11004	Aug. 04, 2022	1 year
☒	Coaxial Cable	Titan	CFD400NL-LW	001	Aug. 04, 2022	1 year
☒	Software	EZ EMC	1.1.4.4	N/A	N.C.R.	---

Note: N.C.R. = No Calibration Request.

3.5. Test Site Environment

Items	Required (IEC 60068-1)	Actual
Temperature (°C)	15-35	20-30
Humidity (%RH)	25-75	45-75

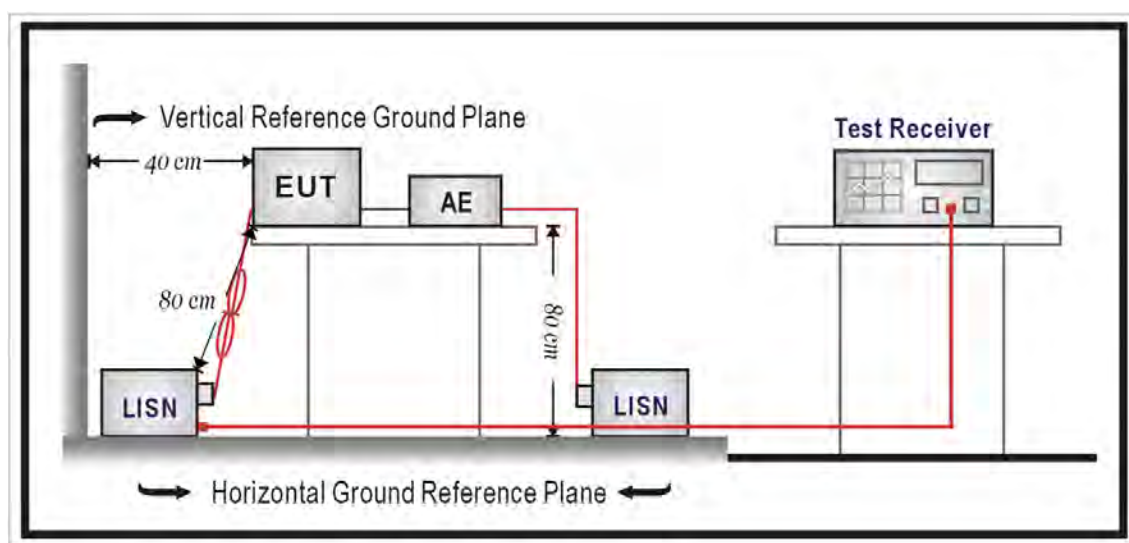
4 Measurement Procedure

4.1. AC Power Conducted Emission Measurement

■ Limit

Frequency (MHz)	Quasi-peak	Average
0.15 - 0.5	66 to 56	56 to 46
0.50 - 5.0	56	46
5.0 - 30.0	60	50

■ Test Setup



■ Test Procedure

The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a $50\ \Omega // 50\ \mu\text{H}$ coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a $50\ \Omega // 50\ \mu\text{H}$ coupling impedance with 50 ohm termination.

Tabletop device shall be placed on a non-conducting platform, of nominal size 1 m by 1.5 m, raised 80 cm above the reference ground plane. The wall of screened room shall be located 40 cm to the rear of the EUT. Other surfaces of tabletop or floor standing EUT shall be at least 80 cm from any other ground conducting surface including one or more LISNs. For floor-standing device shall be placed under the EUT with a 12 mm insulating material.

Conducted emissions were investigated over the frequency range from 0.15 MHz to 30 MHz using a resolution bandwidth of 9 kHz. The equipment under test (EUT) shall be meet the limits in section 4.1, as applicable, including the average limit and the quasi-peak limit when using respectively, an average detector and quasi-peak detector measured in accordance with the methods described of related standard. When all of peak value were complied with quasi-peak and average limit from 150 kHz to 30 MHz then quasi-peak and average measurement was unnecessary.

The AMN shall be placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for AMNs mounted on top of the ground reference plane. This distance is between the closest points of the AMN and the EUT. All other units of the EUT and associated equipment shall be at least 0.8 m from the AMN. If the mains power cable is longer than 1 m then the cable shall be folded back and forth at the centre of the lead to form a bundle no longer than 0.4 m. All of interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 cm to 40 cm long. All of EUT and AE shall be separate place more than 0.1 m. All 50 Ω ports of the LISN shall be resistively terminated into 50 Ω loads when not connected to the measuring instrument.

If the reading of the measuring receiver shows fluctuations close to the limit, the reading shall be observed for at least 15 s at each measurement frequency; the higher reading shall be recorded with the exception of any brief isolated high reading which shall be ignored

4.2. Transmitter Radiated Emissions Measurement

■ Limit

(1) Undesirable emission limits. Except as shown in paragraph (b)(9) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

(a) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

(b) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

(c) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

(d) For transmitters operating in the 5.725-5.85 GHz band:

(i) All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

EIRP (dBm)	Field Strength at 3 m(dBuV/m)
-27	68.3

(2) Limits of Radiated Emission Measurement

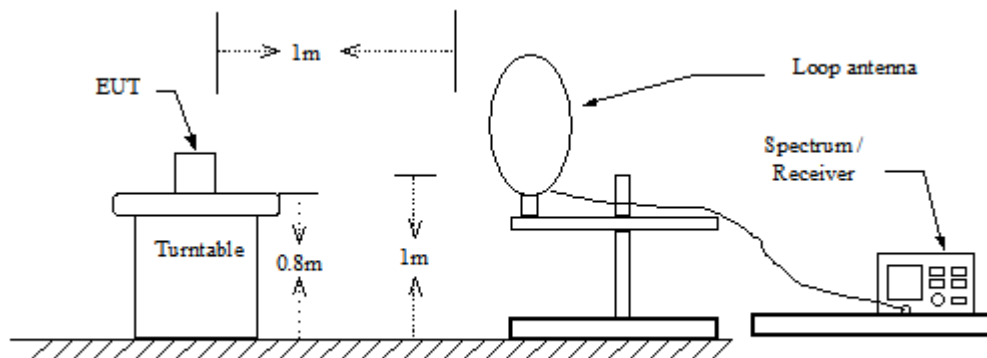
Emissions radiated outside of the specified bands, shall be according to the general radiated limits in 15.209 as following:

Frequency Range (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
30 ~ 88	10	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

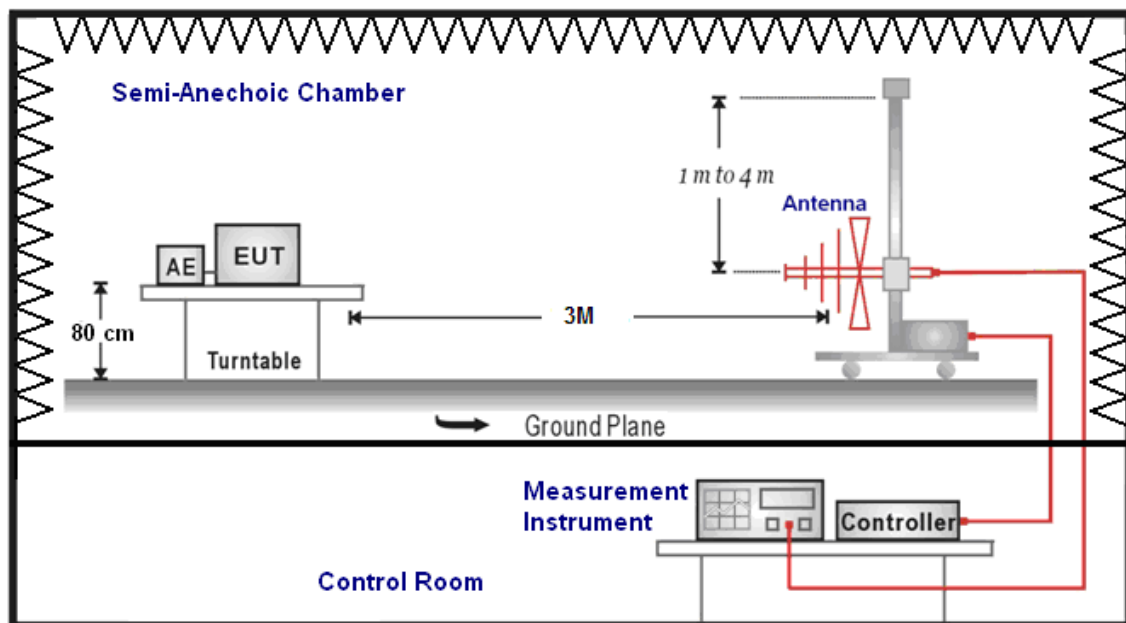
Note: 1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. As shown in 15.35(b), for frequencies above 1000 MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20 dB under any condition of modulation.

■ Setup

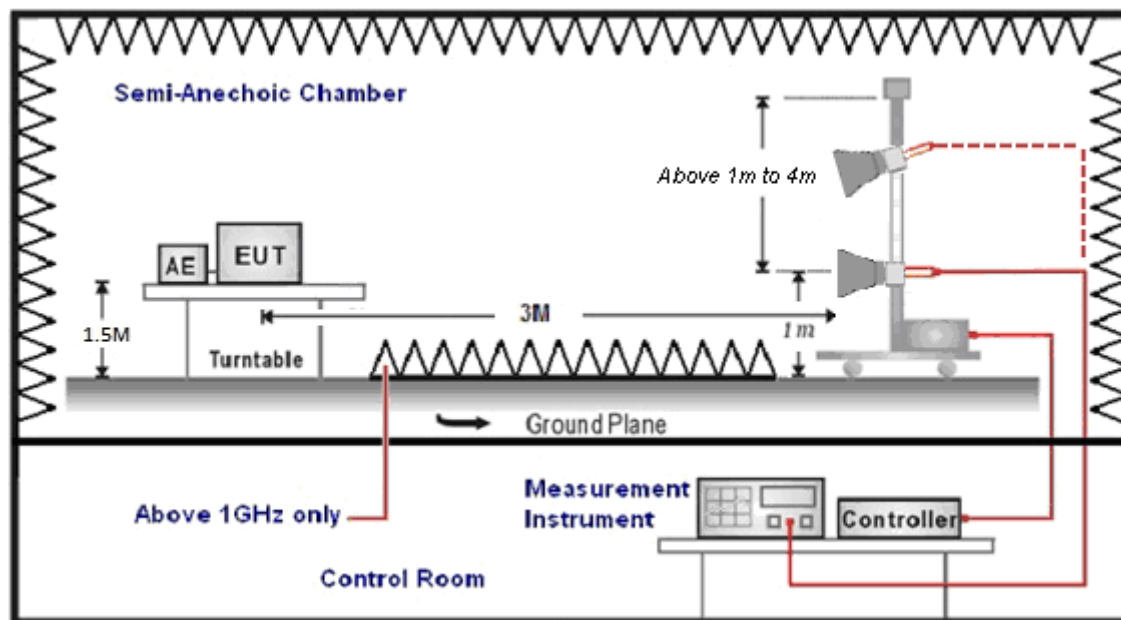
9 kHz ~ 30 MHz



30 MHz ~ 1 GHz



Above 1 GHz



■ Test Procedure

Final radiation measurements were made on a three-meter, Semi Anechoic Chamber. The EUT system was placed on a nonconductive turntable which is 0.8 or 1.5 meters height (below 1 GHz use 0.8 m turntable / above 1 GHz use 1.5 m turntable), top surface 1.0 x 1.5 meter. The spectrum was examined from 250 MHz to 2.5 GHz in order to cover the whole spectrum below 10th harmonic which could generate from the EUT. During the test, EUT was set to transmit continuously & Measurements spectrum range from 9 kHz to 40 GHz is investigated.

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

For restricted measurements above 1 GHz the resolution bandwidth is set to 1 MHz, and then the video bandwidth is set to 3 MHz for peak measurements and 10 Hz for average measurements when Duty cycle > 0.98 / 1/T for average measurements when Duty cycle < 0.98.

For out of band measurements above 1 GHz the resolution bandwidth is set to 1 MHz, and then the video bandwidth is set to 3 MHz for peak measurements.

A nonconductive material surrounded the EUT to supporting the EUT for standing on three orthogonal planes. At each condition, the EUT was rotated 360 degrees, and the antenna was raised and lowered from one to four meters to find the maximum emission levels. Measurements were taken using both horizontal and vertical antenna polarization.

SCHWARZBECK MESS-ELEKTRONIK Trilog-Broadband Antenna at 3 Meter and the ETS-Lindgren Double-Ridged Waveguide Horn antenna Schwarzbeck Mess-Elektronik Broadband Horn Antenna was used in frequencies 1 – 40 GHz at a distance of 3 meter. The antenna at an angle toward the source of the emission. All test results were extrapolated to equivalent signal at 3 meters utilizing an inverse linear distance extrapolation Factor (20 dB/decade).

For testing above 1 GHz, the emission level of the EUT in peak mode was 20 dB lower than average limit (that means the emission level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

Appropriate preamplifiers were used for improving sensitivity and precautions were taken to avoid overloading or desensitizing the spectrum analyzer. No post – detector video filters were used in the test.

The spectrum analyzer's 6 dB bandwidth was set to 1 MHz, and the analyzer was operated in the peak detection mode, for frequencies both below and up 1 GHz. The average levels were obtained by subtracting the duty cycle correction factor from the peak readings.

The following procedures were used to convert the emission levels measured in decibels referenced to 1 microvolt (dBuV) into field intensity in micro volts per meter (uV/m).

The actual field intensity in decibels referenced to 1 microvolt in to field intensity in micro volts per meter (dBuV/m).

Data of measurement within this frequency range without mark in the table above means the reading of emissions are attenuated more than 20 dB below the permissible limits or the field strength is too small to be measured.

The actual field is intensity in referenced to 1 microvolt per meter (dBuV/m) is determined by algebraically adding the measured reading in dBuV, the antenna factor (dB), and cable loss (dB) and Subtracting the gain of preamplifier (dB) is auto calculate in spectrum analyzer.

$$(1) \text{ Amplitude (dBuV/m) = FI (dBuV) + AF (dBuV) + CL (dBuV) - Gain (dB)}$$

FI= Reading of the field intensity.

AF= Antenna factor.

CL= Cable loss.

P.S Amplitude is auto calculate in spectrum analyzer.

$$(2) \text{ Actual Amplitude (dBuV/m) = Amplitude (dBuV) - Dis(dB)}$$

The FCC specified emission limits were calculated according the EUT operating frequency and by following linear interpolation equations:

(a) For fundamental frequency : Transmitter Output < +30 dBm

(b) For spurious frequency : Spurious emission limits = fundamental emission limit /10

Measuring Instruments and setting

The following table is the setting of spectrum analyzer and receiver.

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	40 GHz
RBW/VBW(Emission in restricted band)	1 MHz / 3 MHz for Peak 1 MHz / (1/T) for Average
RBW/VBW(Emission in non-restricted band)	1 MHz / 3 MHz for Peak

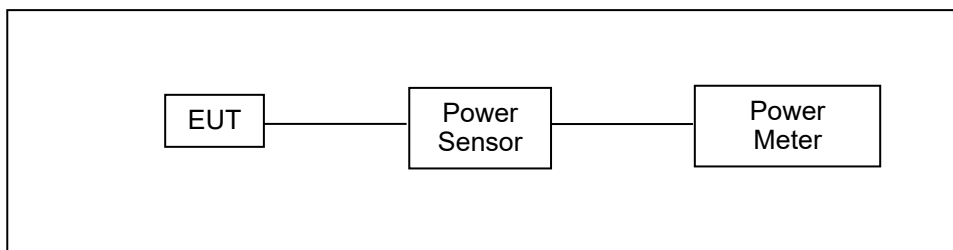
4.3. Maximum Conducted Output Power Measurement

■ Limit

Frequency Range (MHz)	FCC Maximum Conducted Output Power Limit
	Client
5.150 ~ 5.250 GHz	The lesser of 250 mW (24 dBm)
5.725 ~ 5.850 GHz	The lesser of 1 W (30 dBm)

According FCC KDB 662911 D01 v02r01 – for power measurements on IEEE802.11 devices,

■ Test Setup



■ Test Procedure

The test is performed in accordance with ANSI C63.10:2013 section 12.3.3.2, Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices

Section (E) Maximum Conducted Output Power

3. Measurement using a Power Meter (PM)

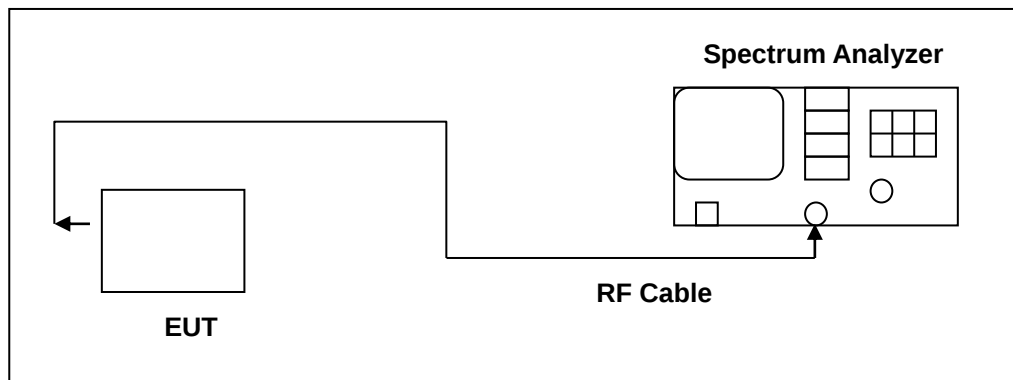
b) Method PM-G (Measurement using a gated RF average power meter)

4.4. 26 dB RF Bandwidth Measurement & 99 % Occupied Bandwidth Measurement

■ **Limit**

N/A

■ **Test Setup**



■ **Test Procedure**

The test is performed in accordance with ANSI C63.10:2013 section 12.4, Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices - Part 15, Subpart E.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	>26 dB Bandwidth
RBW	Approximately 1 % of the emission bandwidth
VBW	VBW > RBW
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

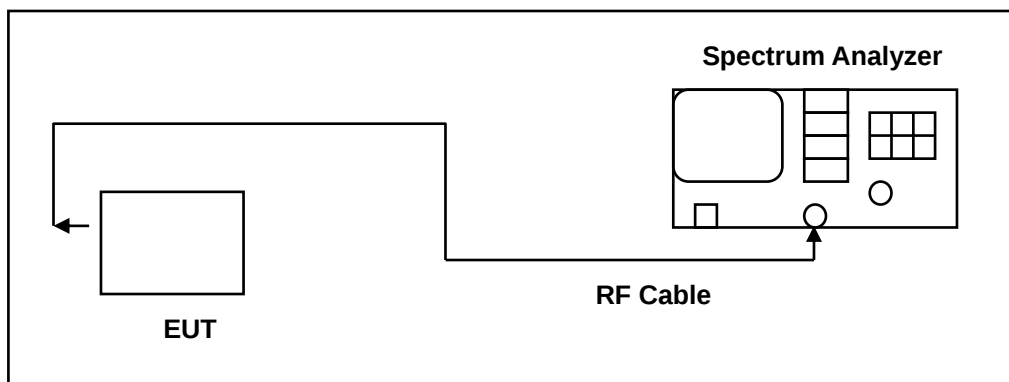
4.5. 6 dB RF Bandwidth Measurement

■ Limit

6 dB RF Bandwidth

Systems using digital modulation techniques may operate in the 5725~5850 MHz bands. The minimum 6 dB band-width shall be at least 500 kHz.

■ Test Setup



■ Test Procedure

6 dB RF Bandwidth

The EUT tested to UNII test procedure of ANSI C63.10:2013 section 6.9.2 for compliance to FCC 47CFR 15.407 requirements.

The antenna port of the EUT was connected to the input of a spectrum analyzer. Analyzer RES BW was set to 100 kHz. For each RF output channel investigated, the spectrum analyzer center frequency was set to the channel carrier. A peak output reading was taken, a DISPLAY line was drawn 6 dB lower than peak level. The 6 dB bandwidth was determined from where the channel output spectrum intersected the display line.

The test was performed at 3 channels.

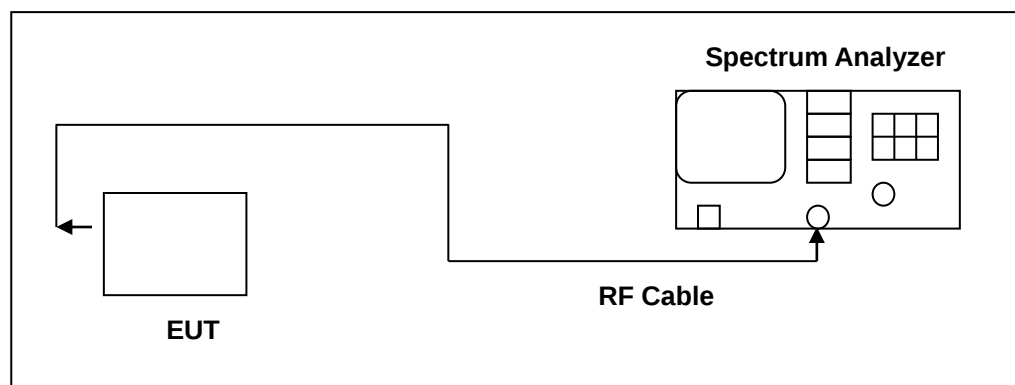
4.6. Maximum Power Spectral Density Measurement

■ Limit

Frequency Range (MHz)	FCC Limit
	Client
5.150 ~ 5.250 GHz	11 dBm/MHz
5.725 ~ 5.850 GHz	30 dBm/500 kHz

According FCC KDB 662911 D01 v02r01 – for power spectral density measurements on IEEE802.11 devices,

■ Test Setup



■ Test Procedure

The test is performed in accordance with ANSI C63.10:2013 section 12.5, Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices - Part 15, Subpart E.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Encompass the entire emissions bandwidth (EBW) of the signal
RBW	1 MHz (5725 ~ 5850 MHz use 100 kHz)
VBW	3 MHz (5725 ~ 5850 MHz use 300 kHz)
Detector	RMS
Trace	AVERAGE
Sweep Time	Auto
Trace Average	100 times
Note: If measurement bandwidth of Maximum PSD is specified in 500 kHz, add $10 \log(500 \text{ kHz}/100 \text{ kHz})$ to the measured result.	

4.7. Automatically discontinue transmission

The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. These provisions are not intended to preclude the transmission of control or signalling information or the use of repetitive codes used by certain digital technologies to complete frame or burst intervals. Applicants shall include in their application for equipment authorization a description of how this requirement is met.

■ Declare

While the EUT is not transmitting any information, the EUT can automatically discontinue transmission and become standby mode for power saving.

The EUT can detect the controlling signal of ACK message transmitting from remote device and verify whether it shall resend or discontinue transmission.

4.8. Antenna Requirement

■ Limit

For intentional device, according to 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.

And According to 15.407 (a), if transmitting antennas of directional gain greater than 6 dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

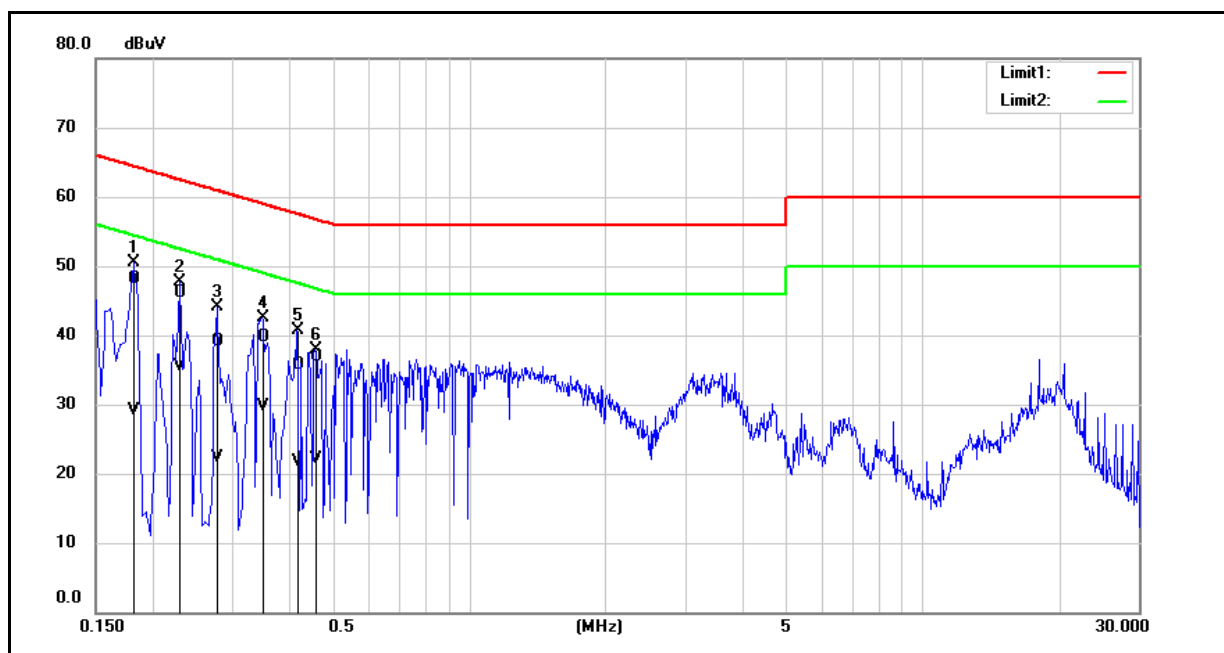
■ Antenna Connector Construction

See section 2 – antenna information.

5 Test Results

5.1. Conducted Emission

Standard:	Part 15E	Line:	L1
Test item:	Conducted Emission	Power:	AC 120 V/60 Hz
Mode:	Transmit Mode		
Description:			

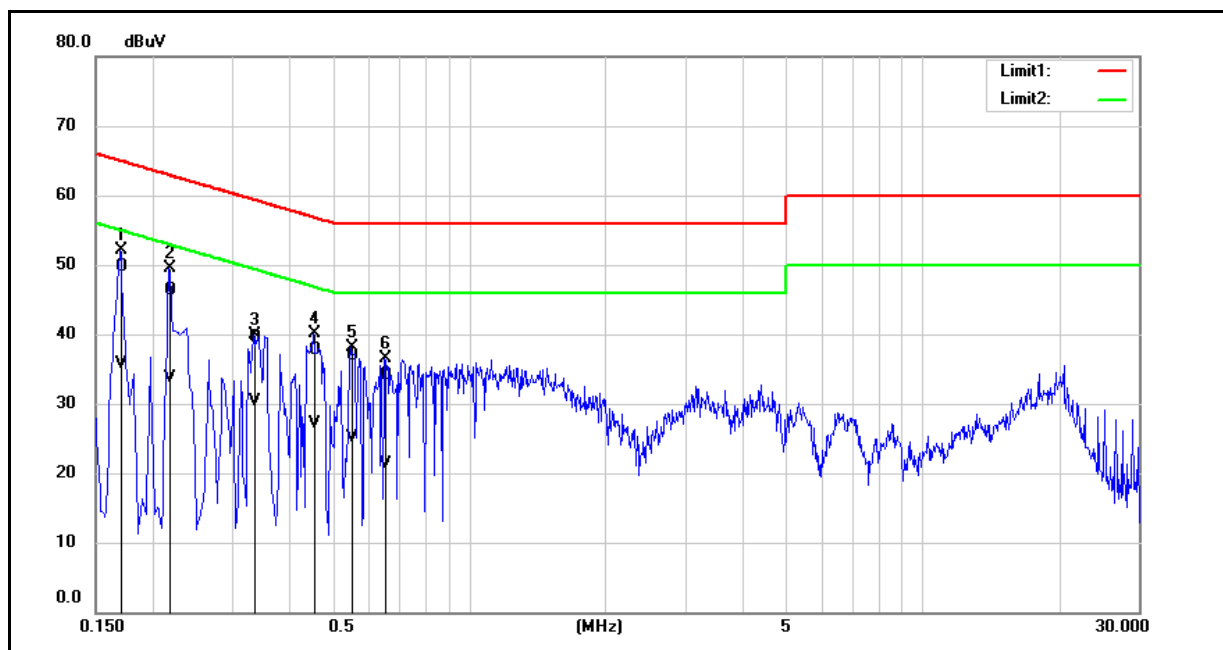


No.	Frequency (MHz)	QP reading (dBuV)	AVG reading (dBuV)	Correction factor (dB)	QP result (dBuV)	AVG result (dBuV)	QP limit (dBuV)	AVG limit (dBuV)	QP margin (dB)	AVG margin (dB)	Remark
1	0.1820	38.55	19.47	9.54	48.09	29.01	64.39	54.39	-16.30	-25.38	Pass
2	0.2300	36.58	25.89	9.54	46.12	35.43	62.45	52.45	-16.33	-17.02	Pass
3	0.2780	29.55	12.71	9.54	39.09	22.25	60.88	50.88	-21.79	-28.63	Pass
4	0.3500	30.08	20.21	9.54	39.62	29.75	58.96	48.96	-19.34	-19.21	Pass
5	0.4180	26.13	12.06	9.55	35.68	21.61	57.49	47.49	-21.81	-25.88	Pass
6	0.4580	27.39	12.49	9.55	36.94	22.04	56.73	46.73	-19.79	-24.69	Pass

Note: 1. Result (dBuV) = Correction factor (dB) + Reading(dBuV).

2. Correction factor (dB) = Cable loss (dB) + L.I.S.N. factor (dB).

Standard:	Part 15E	Line:	N
Test item:	Conducted Emission	Power:	AC 120 V/60 Hz
Mode:	Transmit Mode		
Description:			



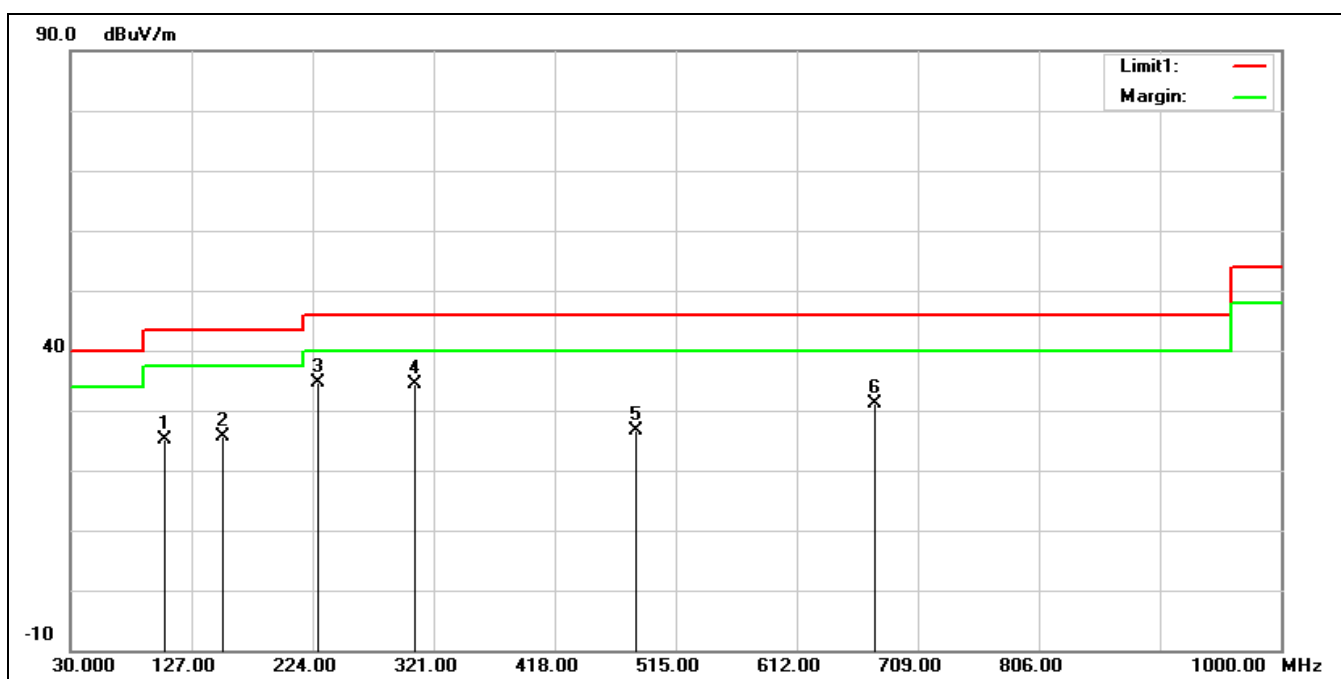
No.	Frequency (MHz)	QP reading (dBuV)	AVG reading (dBuV)	Correction factor (dB)	QP result (dBuV)	AVG result (dBuV)	QP limit (dBuV)	AVG limit (dBuV)	QP margin (dB)	AVG margin (dB)	Remark
1	0.1700	40.18	26.02	9.60	49.78	35.62	64.96	54.96	-15.18	-19.34	Pass
2	0.2180	36.72	24.19	9.60	46.32	33.79	62.89	52.89	-16.57	-19.10	Pass
3	0.3340	29.85	20.67	9.60	39.45	30.27	59.35	49.35	-19.90	-19.08	Pass
4	0.4540	28.17	17.47	9.61	37.78	27.08	56.80	46.80	-19.02	-19.72	Pass
5	0.5500	27.21	15.40	9.61	36.82	25.01	56.00	46.00	-19.18	-20.99	Pass
6	0.6540	24.41	11.65	9.62	34.03	21.27	56.00	46.00	-21.97	-24.73	Pass

Note: 1. Result (dBuV) = Correction factor (dB) + Reading(dBuV).
 2. Correction factor (dB) = Cable loss (dB) + L.I.S.N. factor (dB).

5.2. Radiated Emission Measurement

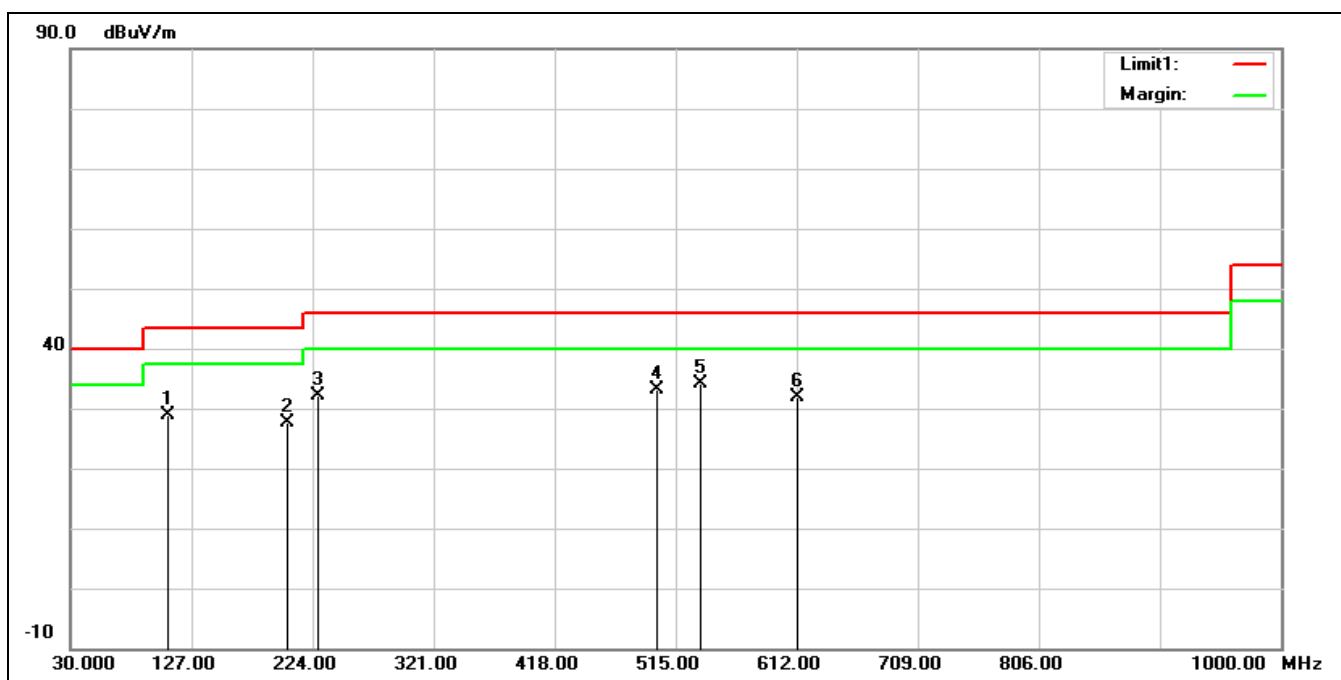
Below 1 GHz

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	Transmit mode		
Remark:			



No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	105.6600	36.61	-11.38	25.23	43.50	-18.27	QP
2	152.2200	32.48	-6.85	25.63	43.50	-17.87	QP
3*	228.8500	43.03	-8.51	34.52	46.00	-11.48	QP
4	305.4800	40.37	-6.11	34.26	46.00	-11.74	QP
5	482.9900	28.63	-2.07	26.56	46.00	-19.44	QP
6	675.0500	29.57	1.52	31.09	46.00	-14.91	QP

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Vertical		
Test Mode:	Transmit mode		
Remark:			

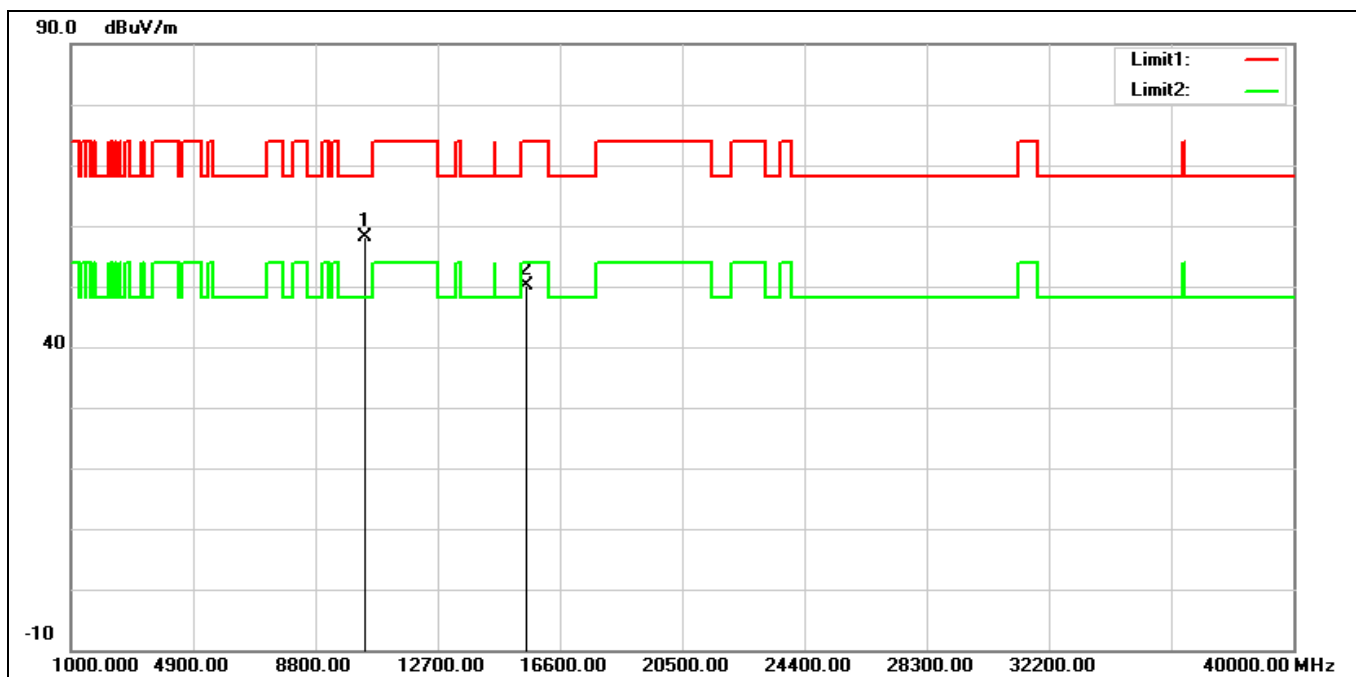


No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	107.6000	39.84	-11.07	28.77	43.50	-14.73	QP
2	203.6300	37.12	-9.37	27.75	43.50	-15.75	QP
3	228.8500	40.67	-8.51	32.16	46.00	-13.84	QP
4	499.4800	35.05	-1.83	33.22	46.00	-12.78	QP
5*	535.3700	35.13	-1.08	34.05	46.00	-11.95	QP
6	612.0000	31.06	0.71	31.77	46.00	-14.23	QP

Harmonic

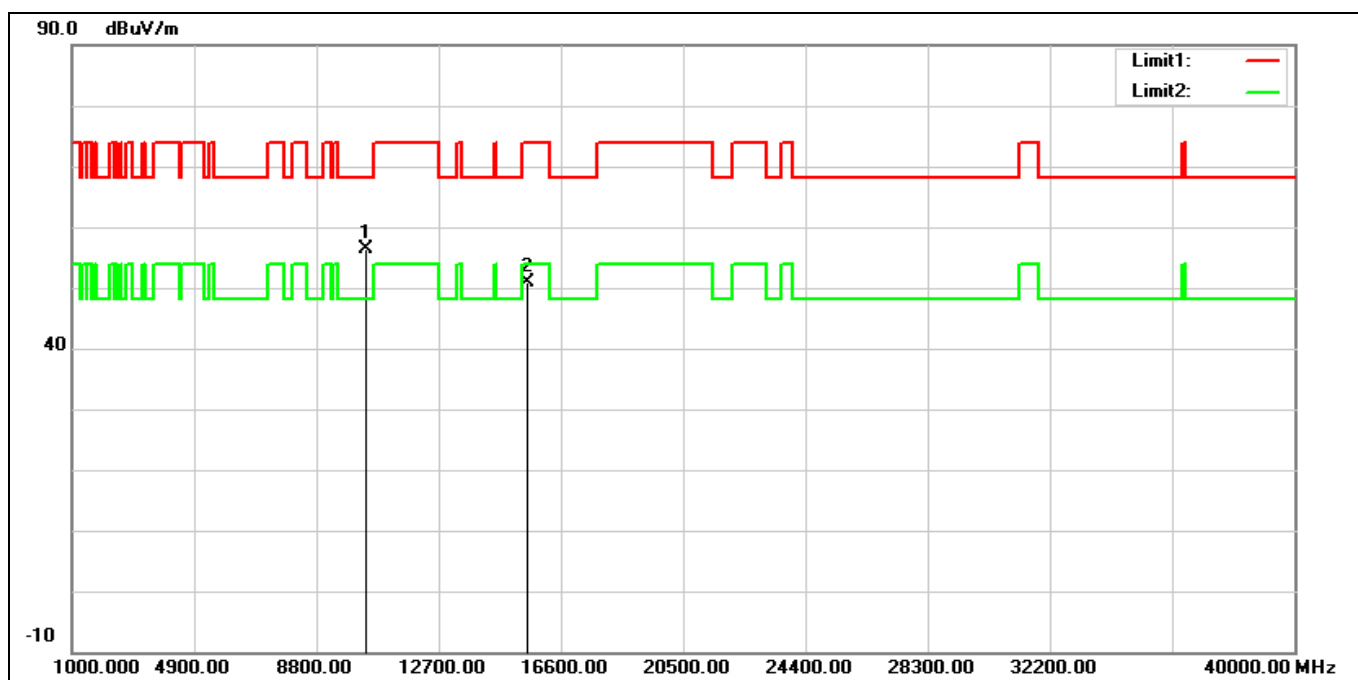
Above 1 GHz

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	802.11a 5180 MHz		
Remark:			



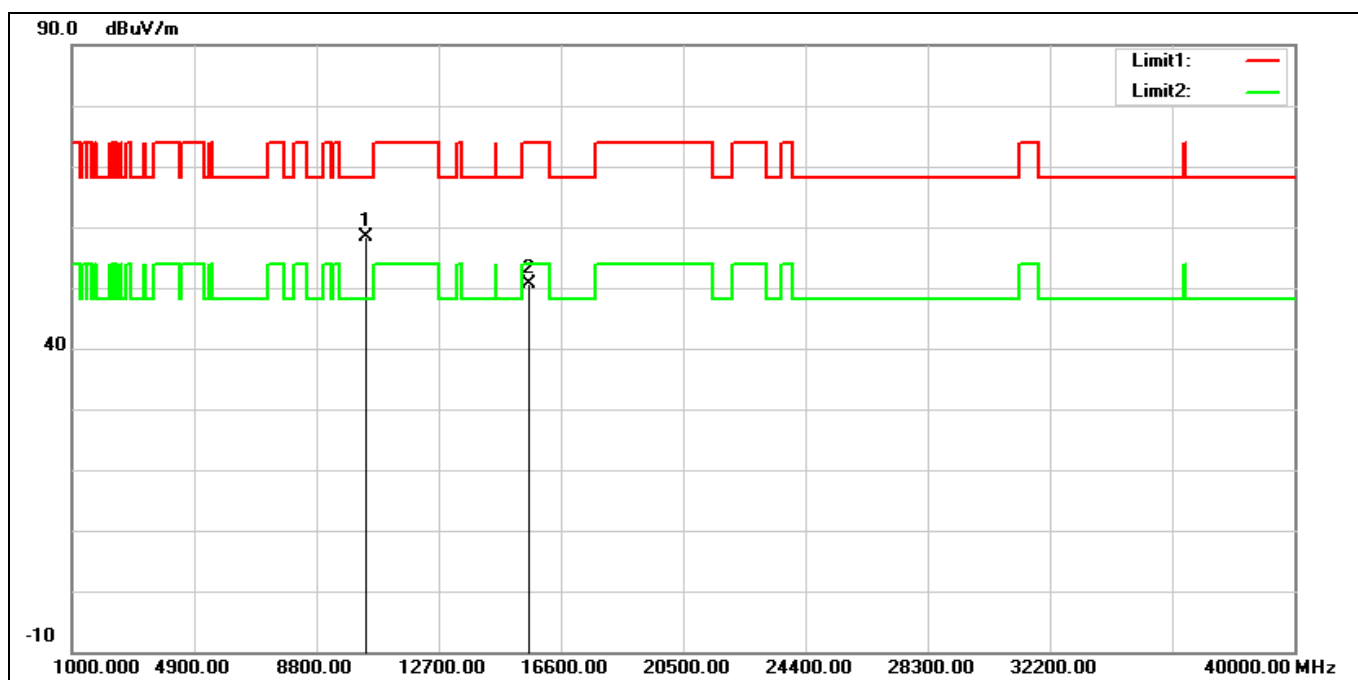
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1*	10360.000	44.05	13.99	58.04	68.20	-10.16	peak
2	15540.000	32.82	17.31	50.13	74.00	-23.87	peak

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Vertical		
Test Mode:	802.11a 5180 MHz		
Remark:			



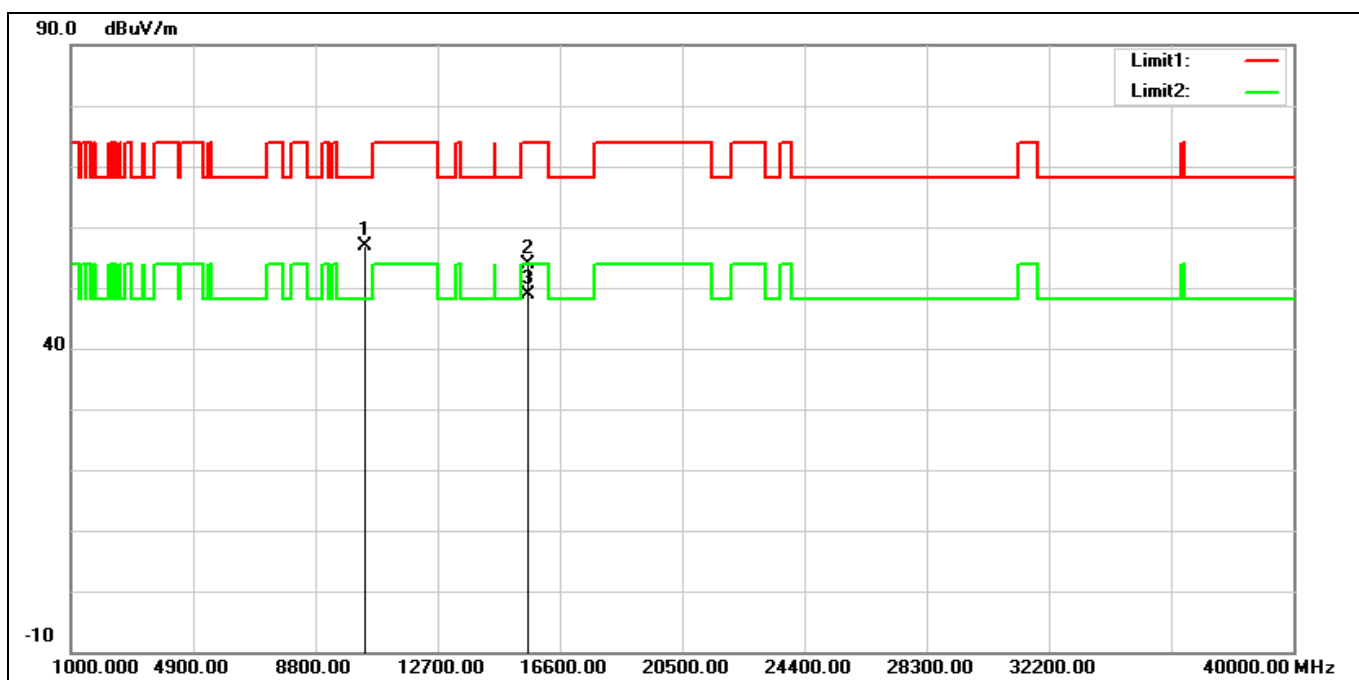
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1*	10360.000	42.33	13.99	56.32	68.20	-11.88	peak
2	15540.000	33.58	17.31	50.89	74.00	-23.11	peak

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	802.11a 5200 MHz		
Remark:			



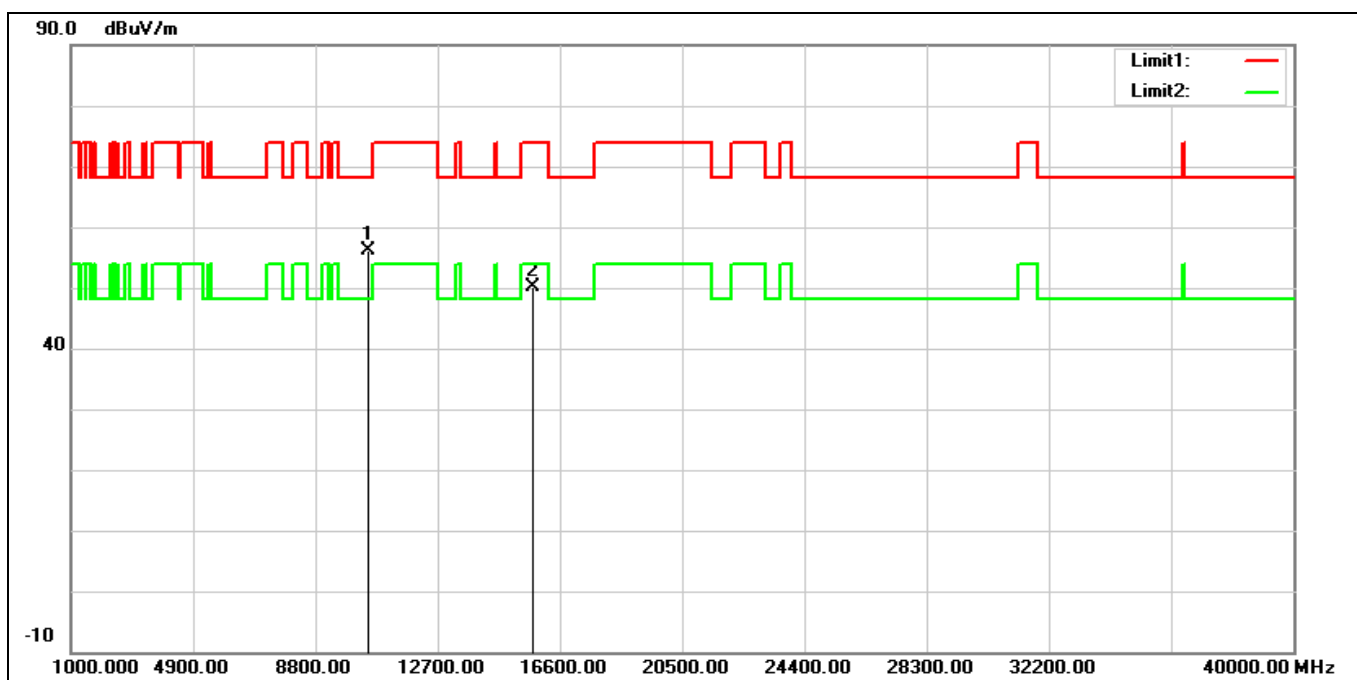
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1*	10400.000	44.36	14.10	58.46	68.20	-9.74	peak
2	15600.000	33.72	17.01	50.73	74.00	-23.27	peak

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Vertical		
Test Mode:	802.11a 5200 MHz		
Remark:			



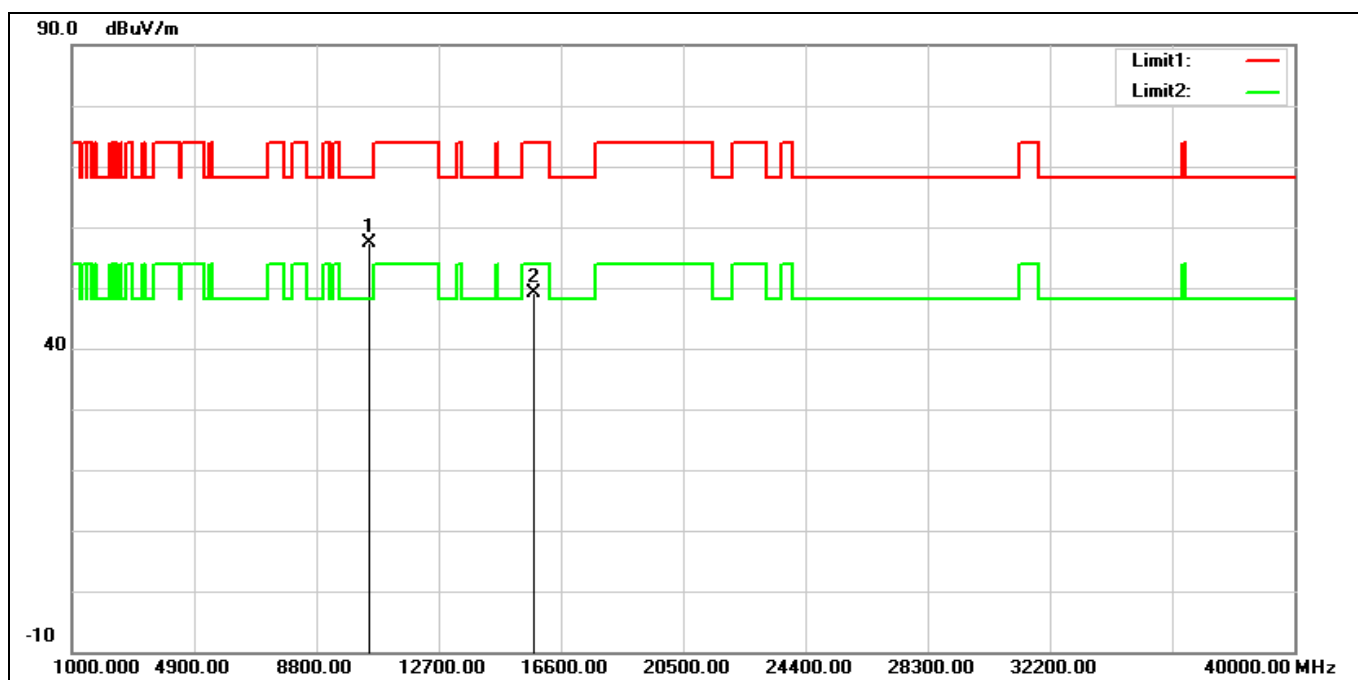
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	10400.000	42.69	14.10	56.79	68.20	-11.41	peak
2	15600.000	36.96	17.01	53.97	74.00	-20.03	peak
3*	15600.000	31.86	17.01	48.87	54.00	-5.13	AVG

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	802.11a 5240 MHz		
Remark:			



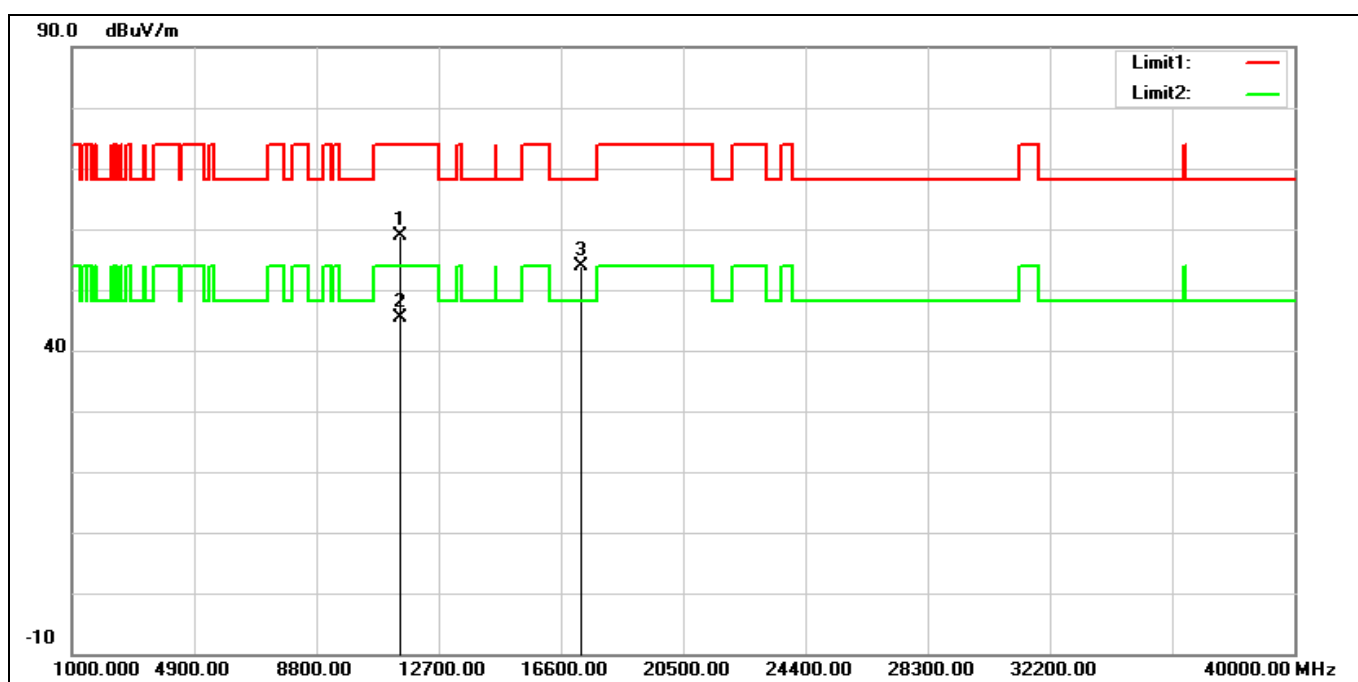
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1*	10480.000	41.68	14.54	56.22	68.20	-11.98	peak
2	15720.000	32.71	17.34	50.05	74.00	-23.95	peak

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Vertical		
Test Mode:	802.11a 5240 MHz		
Remark:			



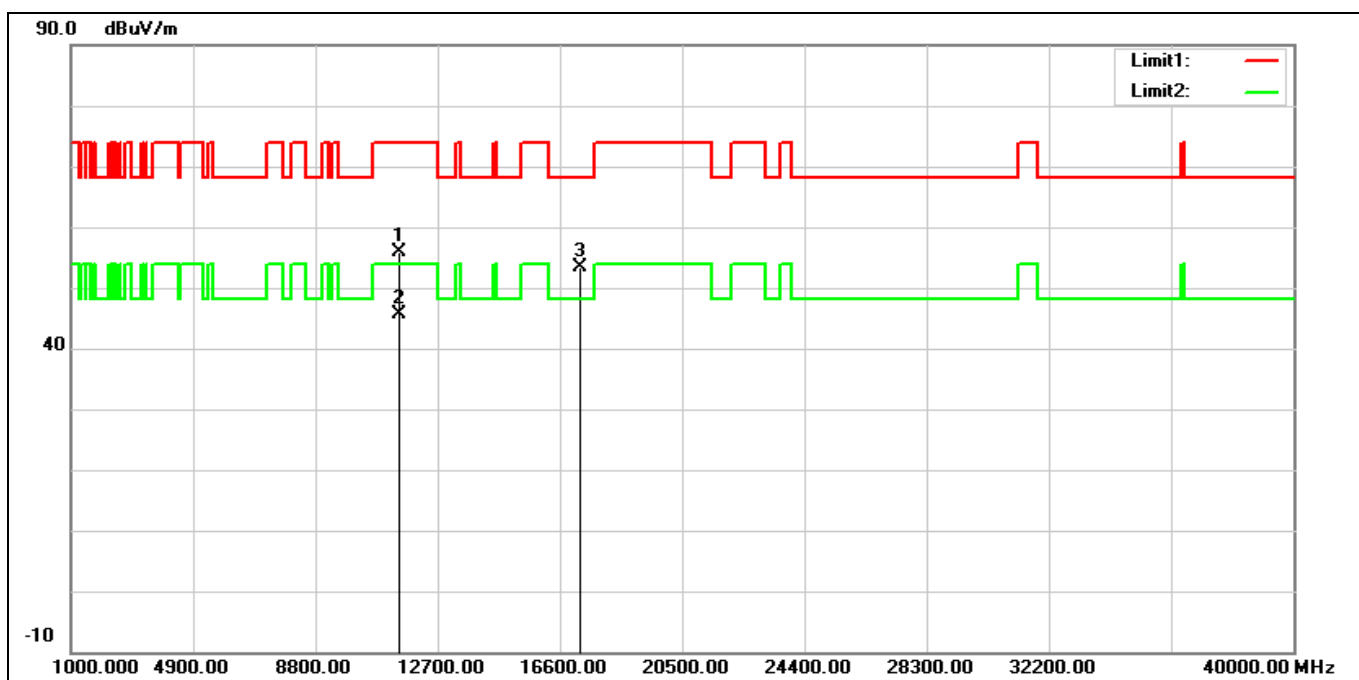
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1*	10480.000	42.82	14.54	57.36	68.20	-10.84	peak
2	15720.000	31.87	17.34	49.21	74.00	-24.79	peak

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	802.11a 5745 MHz		
Remark:			



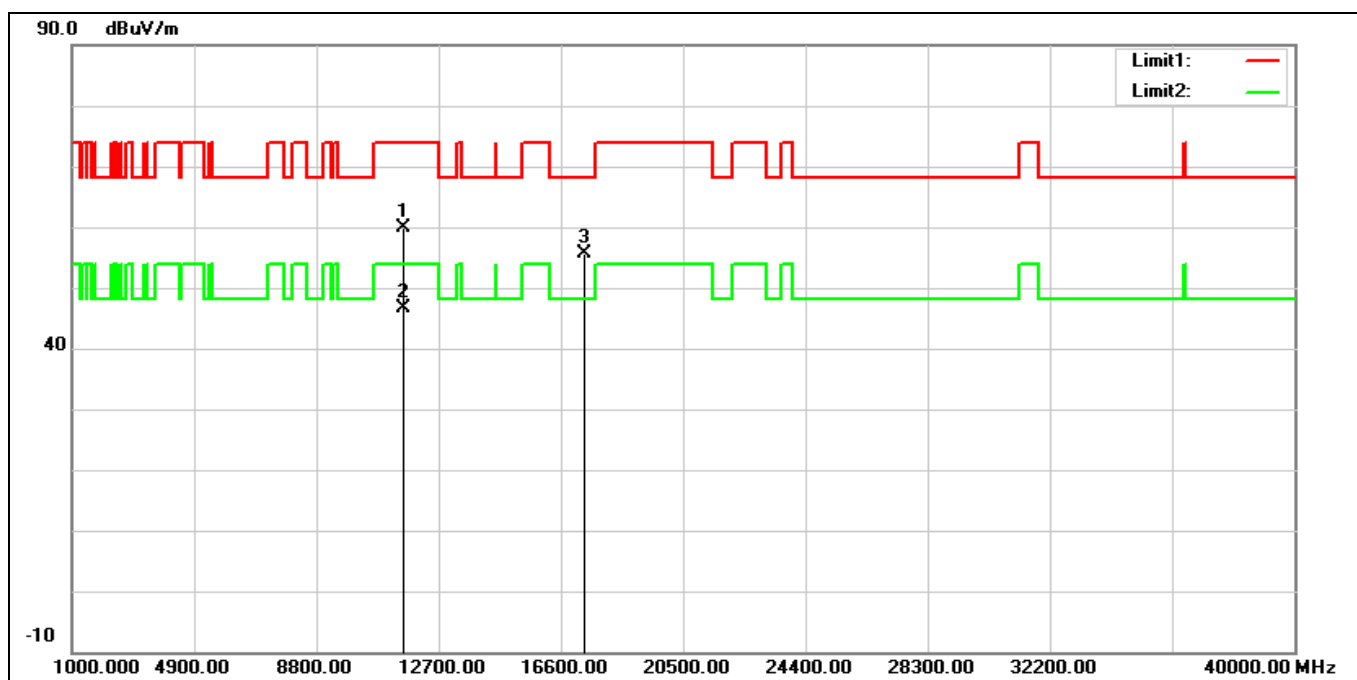
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11489.000	43.47	15.42	58.89	74.00	-15.11	peak
2*	11489.000	29.86	15.42	45.28	54.00	-8.72	AVG
3	17235.000	31.95	22.01	53.96	68.20	-14.24	peak

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Vertical		
Test Mode:	802.11a 5745 MHz		
Remark:			



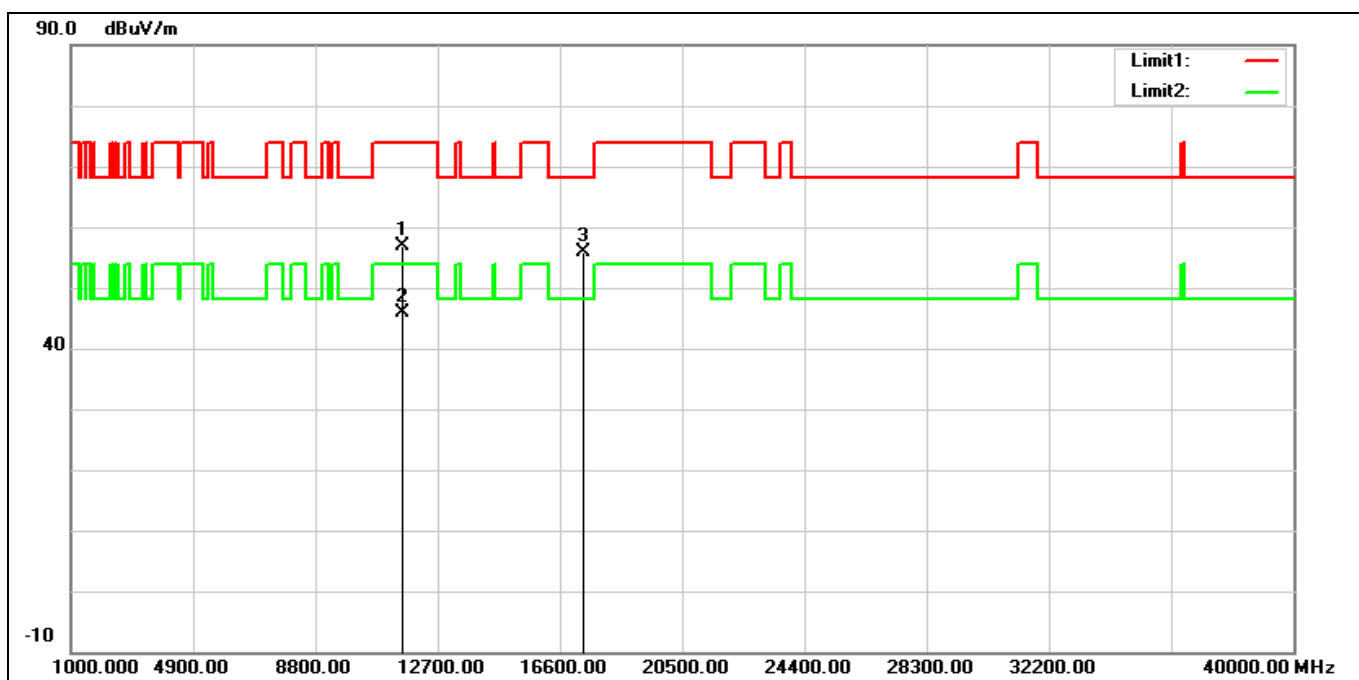
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11490.000	40.40	15.42	55.82	74.00	-18.18	peak
2*	11490.000	30.18	15.42	45.60	54.00	-8.40	AVG
3	17235.000	31.43	22.01	53.44	68.20	-14.76	peak

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	802.11a 5785 MHz		
Remark:			



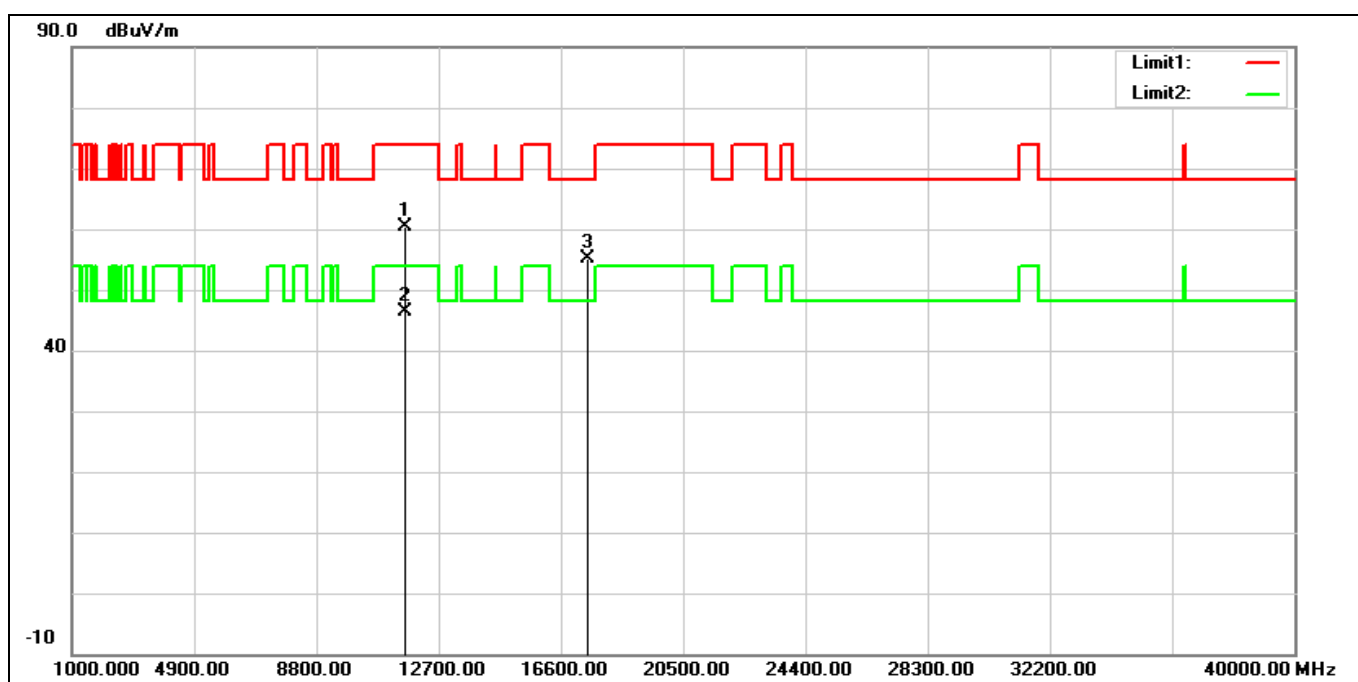
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11570.000	44.72	15.21	59.93	74.00	-14.07	peak
2*	11570.000	31.30	15.21	46.51	54.00	-7.49	AVG
3	17355.000	32.63	22.96	55.59	68.20	-12.61	peak

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Vertical		
Test Mode:	802.11a 5785 MHz		
Remark:			



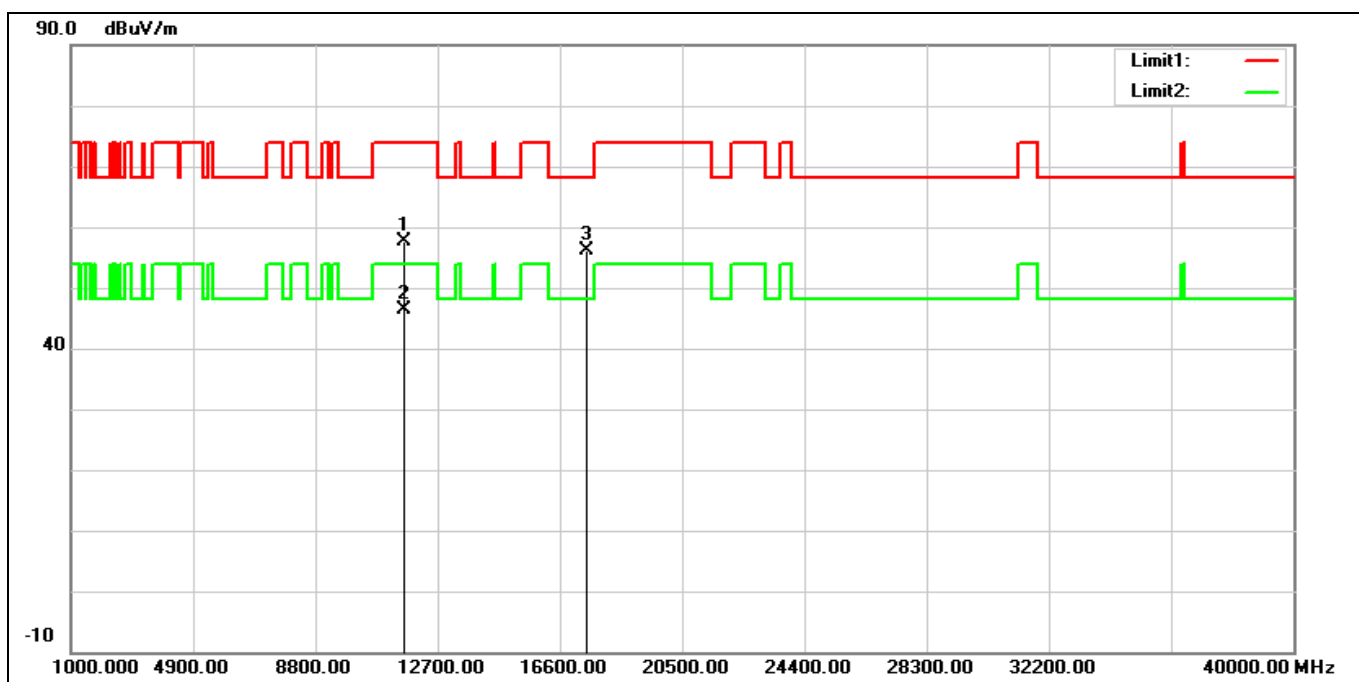
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11570.000	41.75	15.21	56.96	74.00	-17.04	peak
2*	11570.000	30.69	15.21	45.90	54.00	-8.10	AVG
3	17355.000	33.02	22.96	55.98	68.20	-12.22	peak

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	802.11a 5825 MHz		
Remark:			



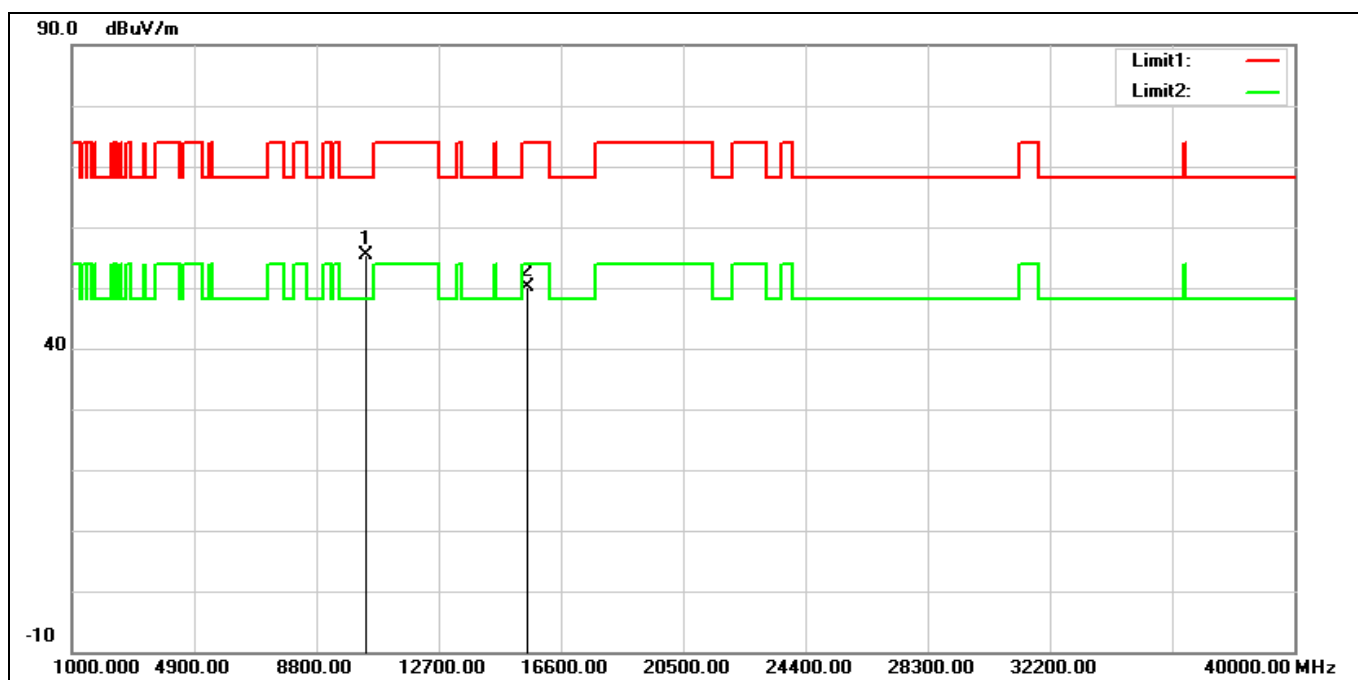
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11650.000	45.30	15.04	60.34	74.00	-13.66	peak
2*	11650.000	31.39	15.04	46.43	54.00	-7.57	AVG
3	17475.000	31.17	23.95	55.12	68.20	-13.08	peak

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Vertical		
Test Mode:	802.11a 5825 MHz		
Remark:			



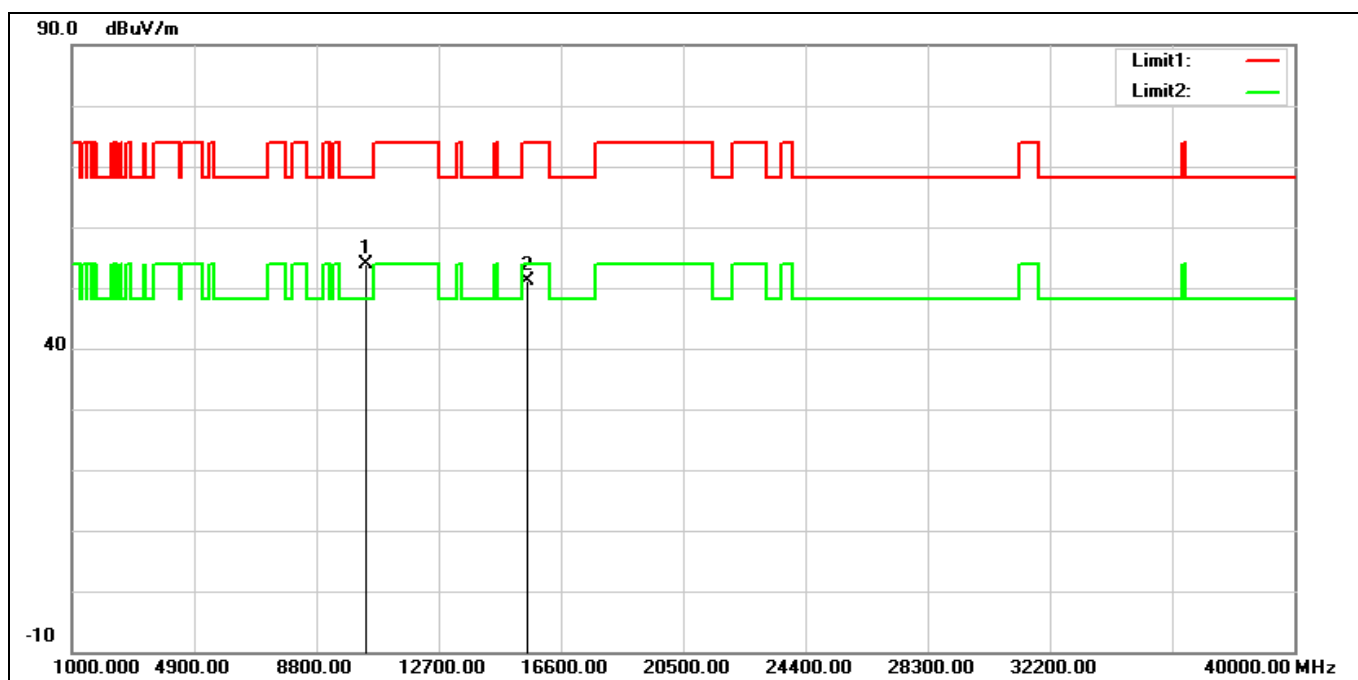
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11650.000	42.64	15.04	57.68	74.00	-16.32	peak
2*	11650.000	31.35	15.04	46.39	54.00	-7.61	AVG
3	17475.000	32.18	23.95	56.13	68.20	-12.07	peak

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	802.11ac VHT20 5180 MHz		
Remark:			



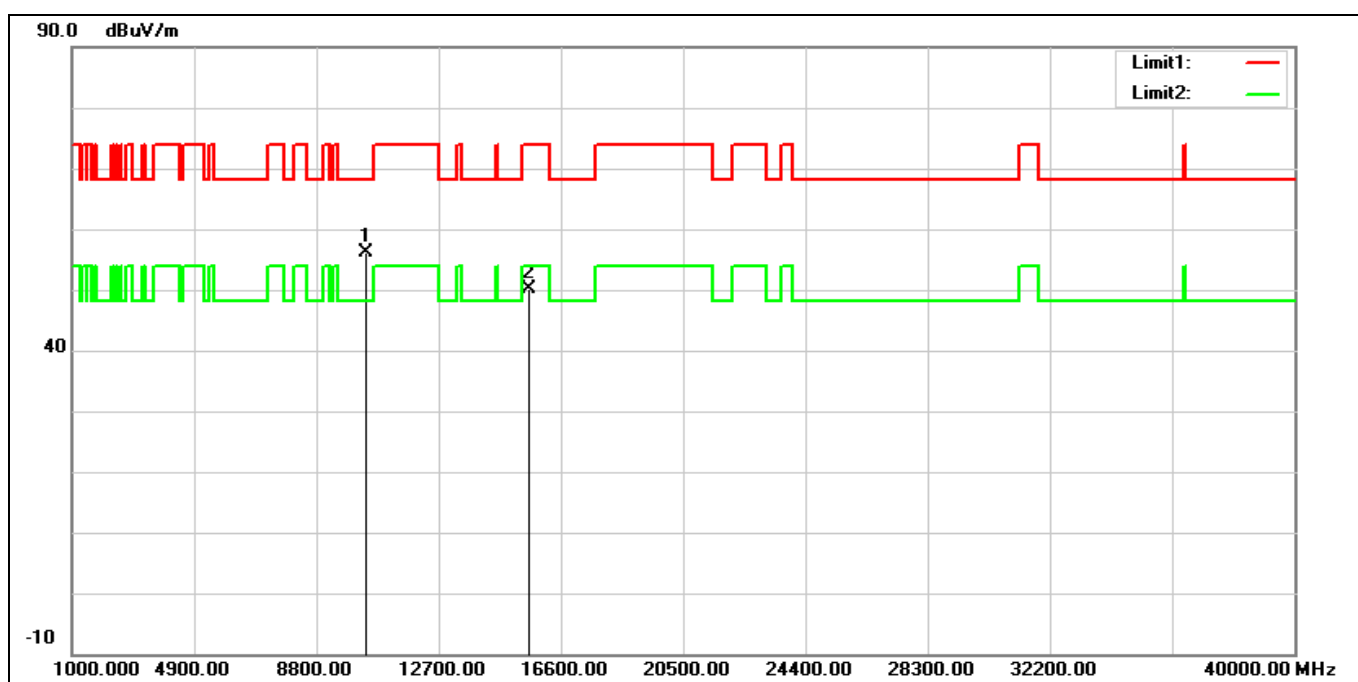
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1*	10360.000	41.28	13.99	55.27	68.20	-12.93	peak
2	15540.000	32.81	17.31	50.12	74.00	-23.88	peak

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Vertical		
Test Mode:	802.11ac VHT20 5180 MHz		
Remark:			



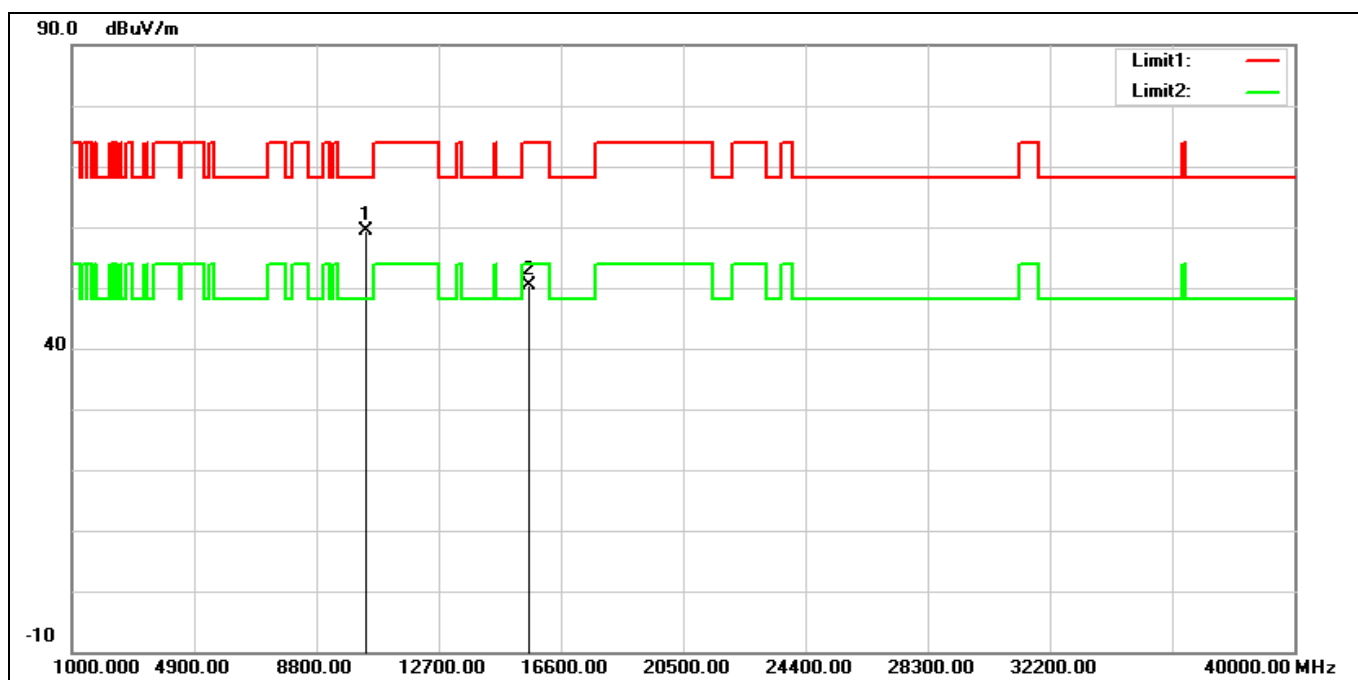
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1*	10360.000	39.93	13.99	53.92	68.20	-14.28	peak
2	15540.000	33.81	17.31	51.12	74.00	-22.88	peak

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	802.11ac VHT20 5200 MHz		
Remark:			



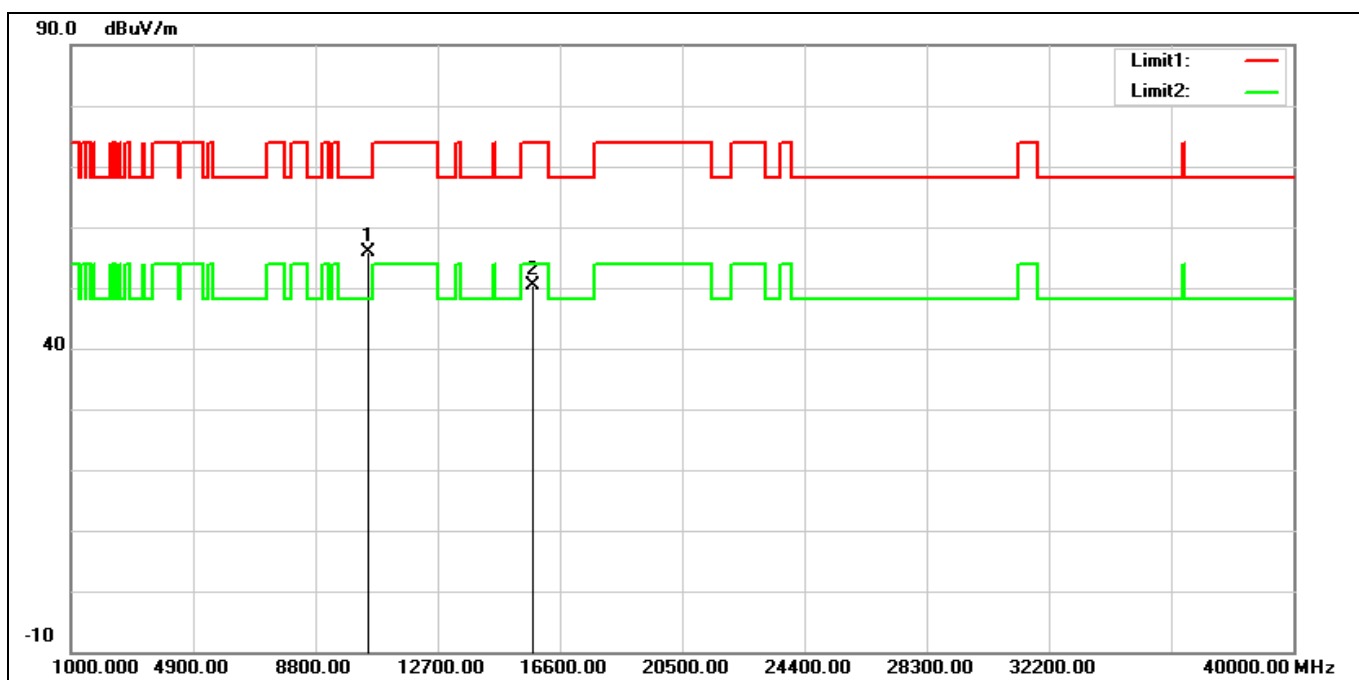
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1*	10400.000	41.98	14.10	56.08	68.20	-12.12	peak
2	15600.000	33.18	17.01	50.19	74.00	-23.81	peak

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Vertical		
Test Mode:	802.11ac VHT20 5200 MHz		
Remark:			



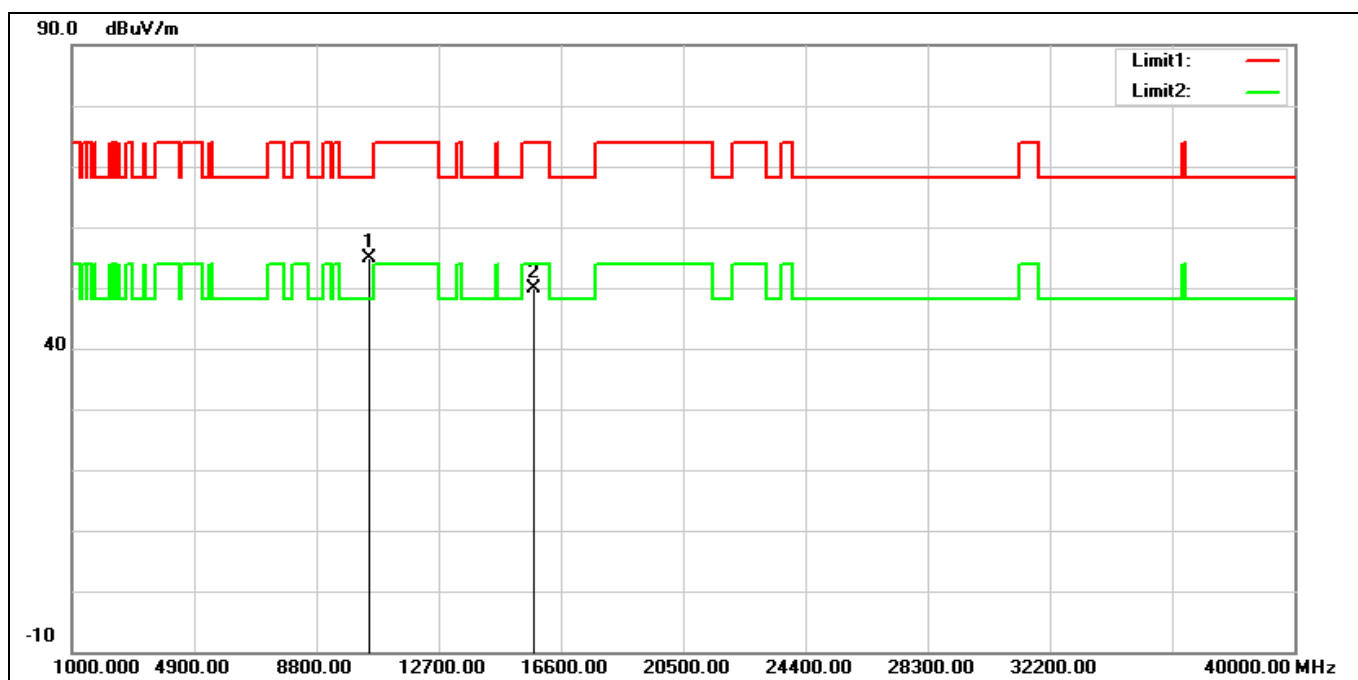
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1*	10400.000	45.31	14.10	59.41	68.20	-8.79	peak
2	15600.000	33.37	17.01	50.38	74.00	-23.62	peak

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	802.11ac VHT20 5240 MHz		
Remark:			



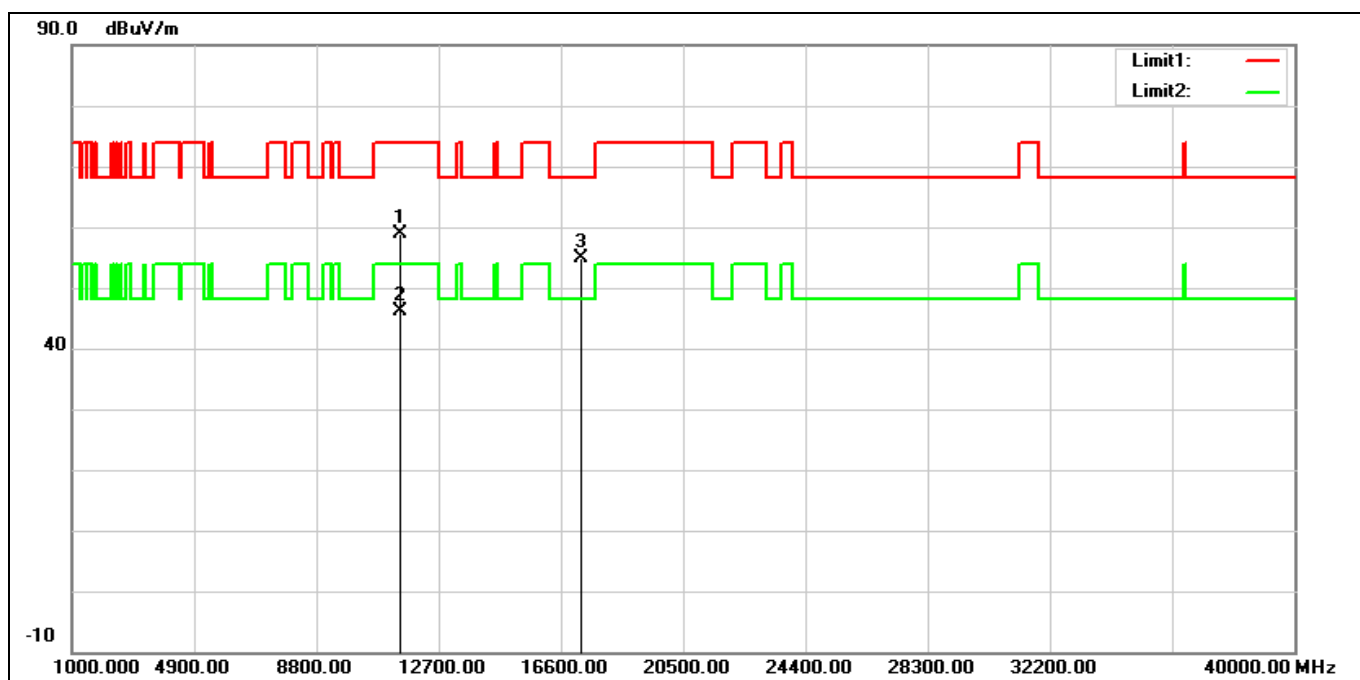
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1*	10480.000	41.25	14.54	55.79	68.20	-12.41	peak
2	15720.000	32.98	17.34	50.32	74.00	-23.68	peak

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Vertical		
Test Mode:	802.11ac VHT20 5240 MHz		
Remark:			



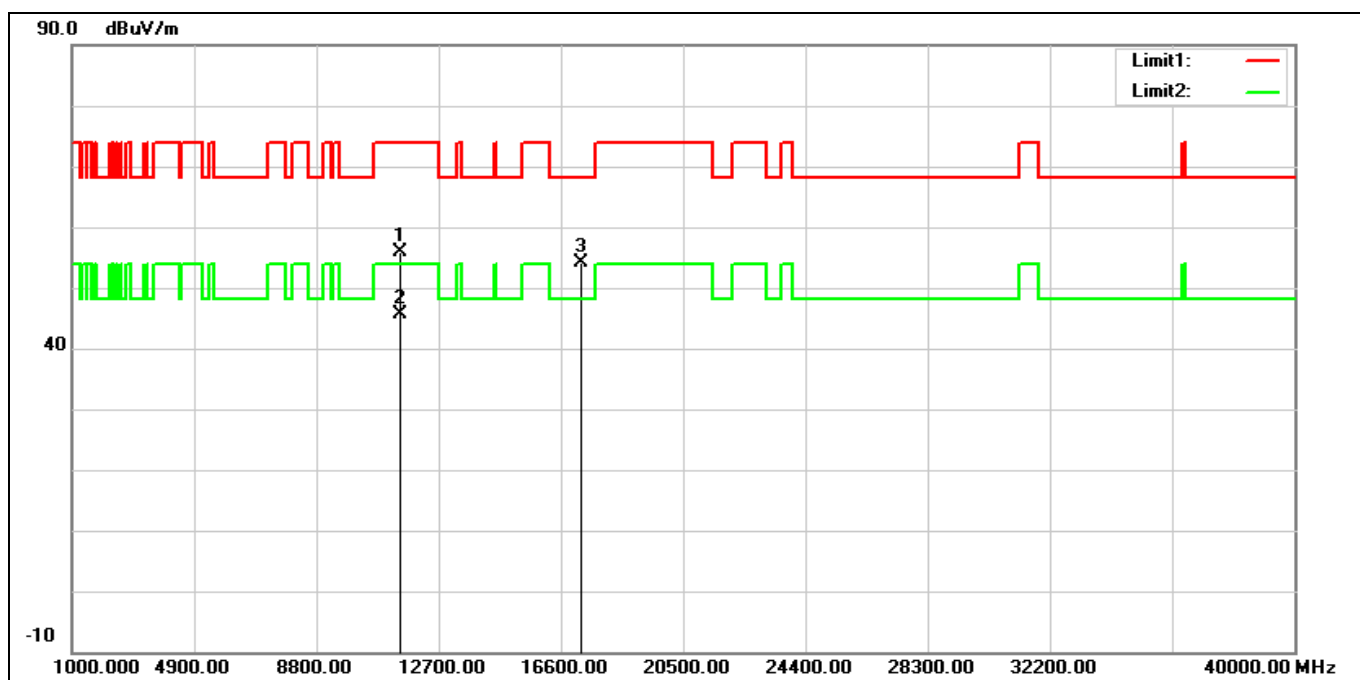
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1*	10480.000	40.42	14.54	54.96	68.20	-13.24	peak
2	15720.000	32.48	17.34	49.82	74.00	-24.18	peak

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	802.11ac VHT20 5745 MHz		
Remark:			



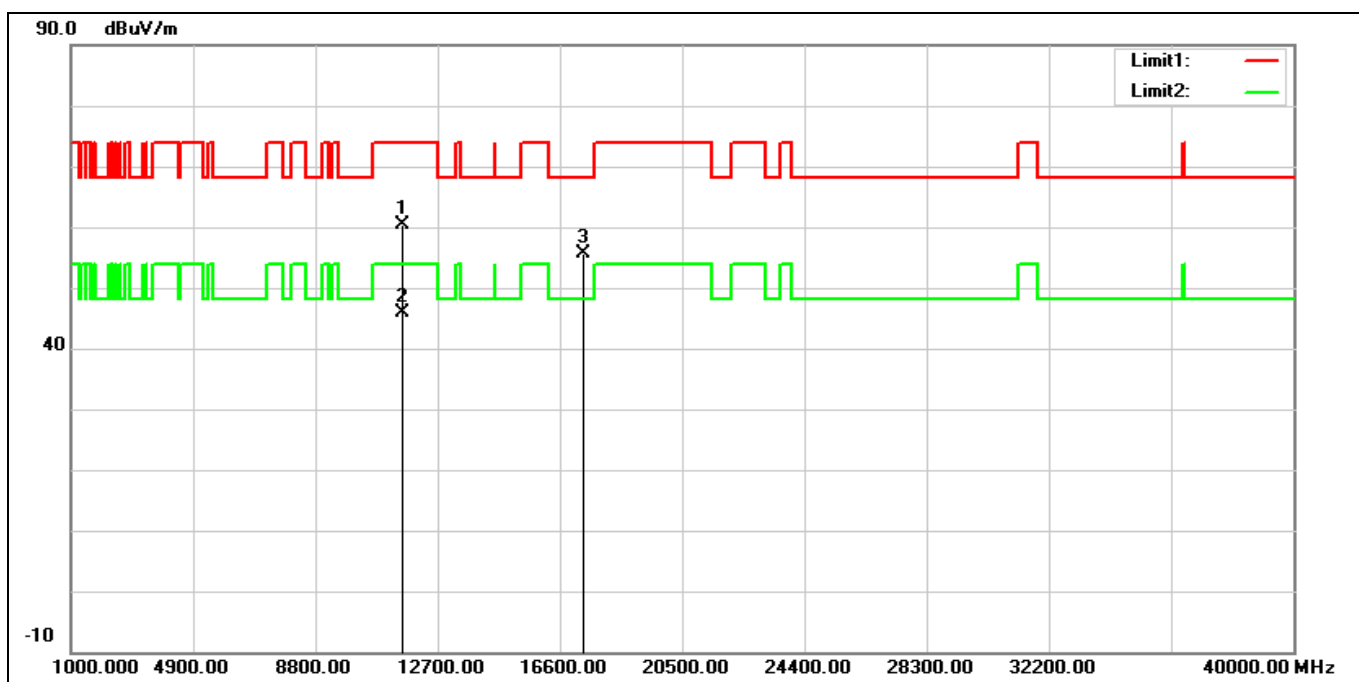
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11490.000	43.45	15.42	58.87	74.00	-15.13	peak
2*	11490.000	30.68	15.42	46.10	54.00	-7.90	AVG
3	17235.000	32.78	22.01	54.79	68.20	-13.41	peak

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Vertical		
Test Mode:	802.11ac VHT20 5745 MHz		
Remark:			



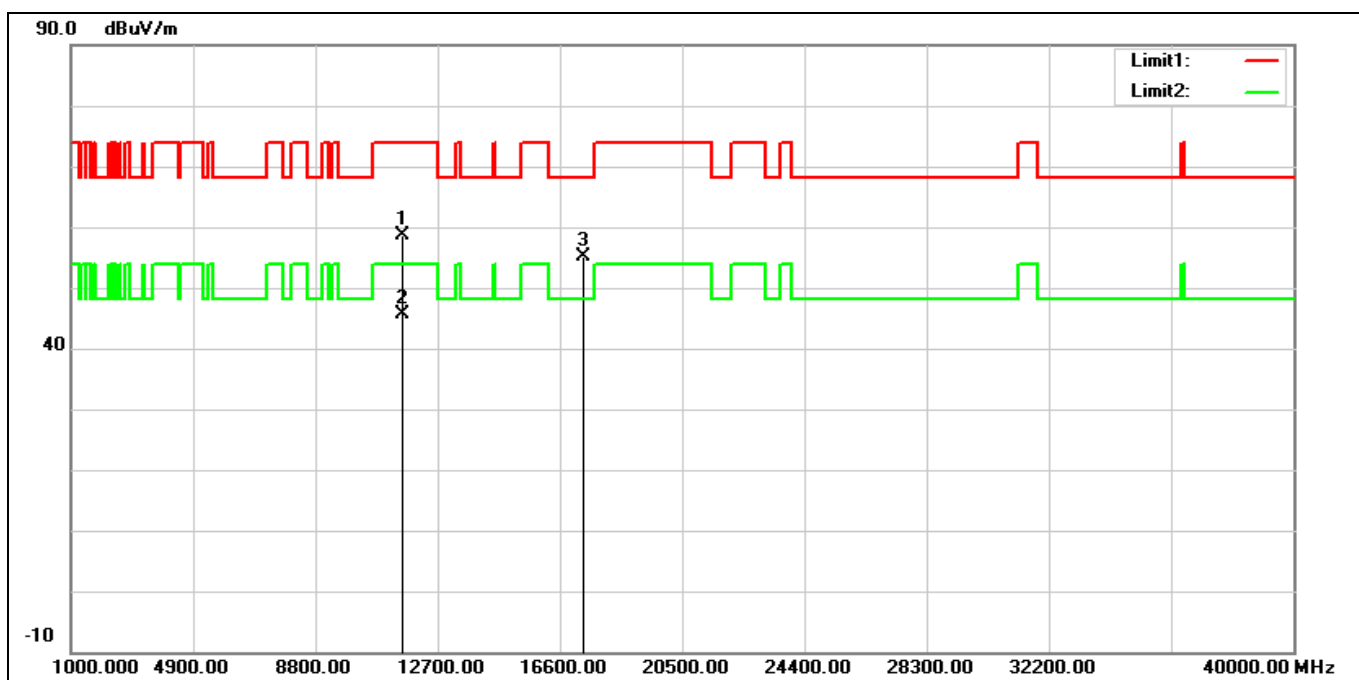
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11490.000	40.44	15.42	55.86	74.00	-18.14	peak
2*	11490.000	30.29	15.42	45.71	54.00	-8.29	AVG
3	17235.000	32.12	22.01	54.13	68.20	-14.07	peak

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	802.11ac VHT20 5785 MHz		
Remark:			



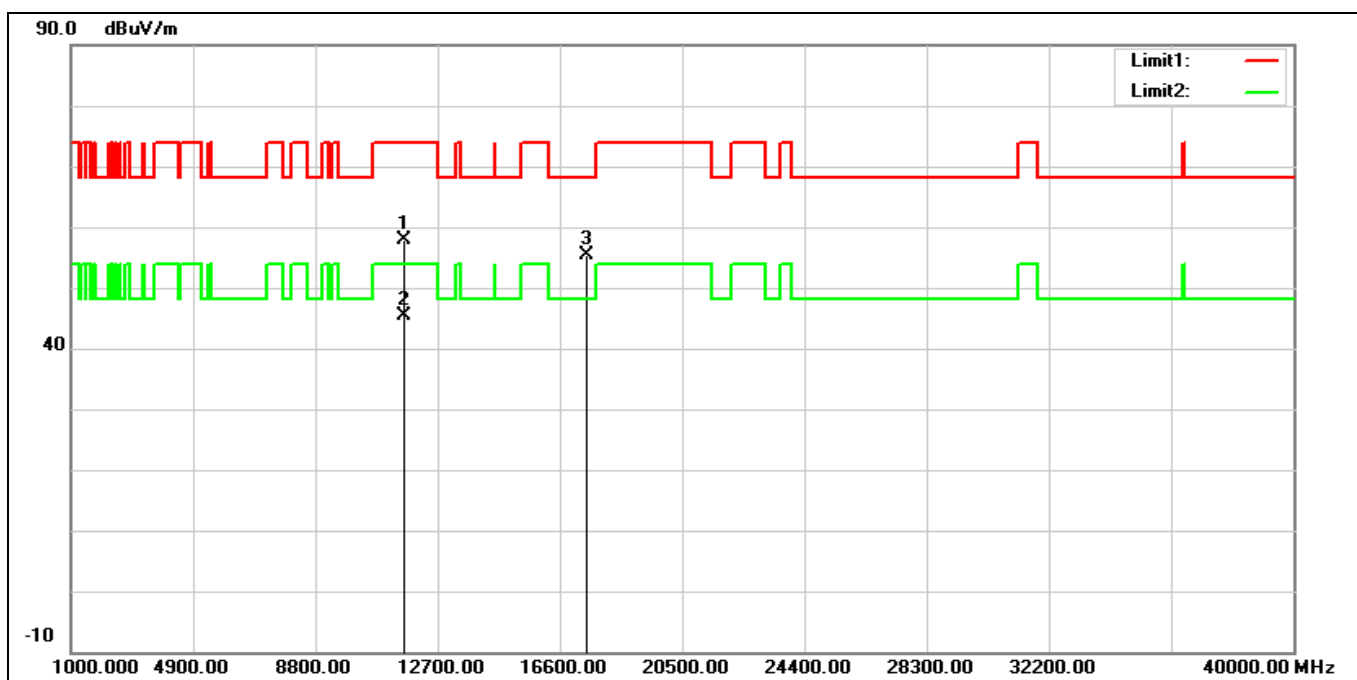
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11570.000	45.13	15.21	60.34	74.00	-13.66	peak
2*	11570.000	30.65	15.21	45.86	54.00	-8.14	AVG
3	17355.000	32.72	22.96	55.68	68.20	-12.52	peak

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Vertical		
Test Mode:	802.11ac VHT20 5785 MHz		
Remark:			



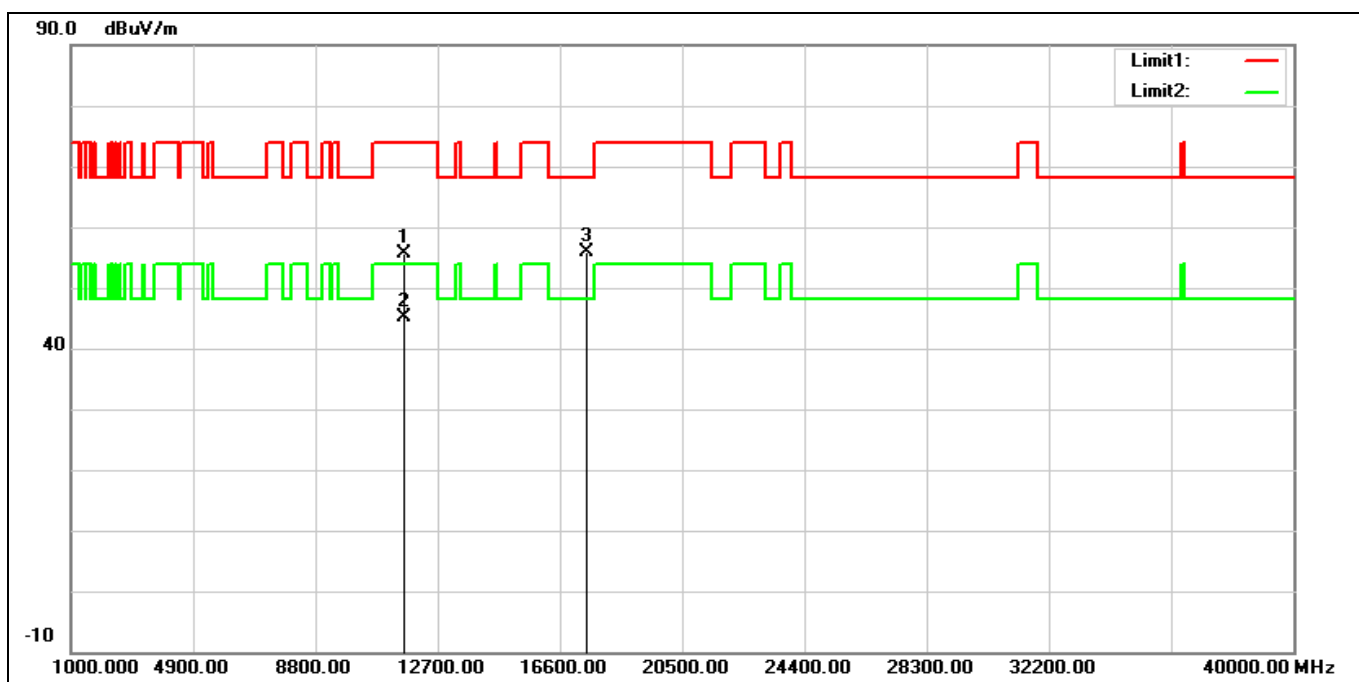
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11570.000	43.35	15.21	58.56	74.00	-15.44	peak
2*	11570.000	30.35	15.21	45.56	54.00	-8.44	AVG
3	17355.000	32.19	22.96	55.15	68.20	-13.05	peak

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	802.11ac VHT20 5825 MHz		
Remark:			



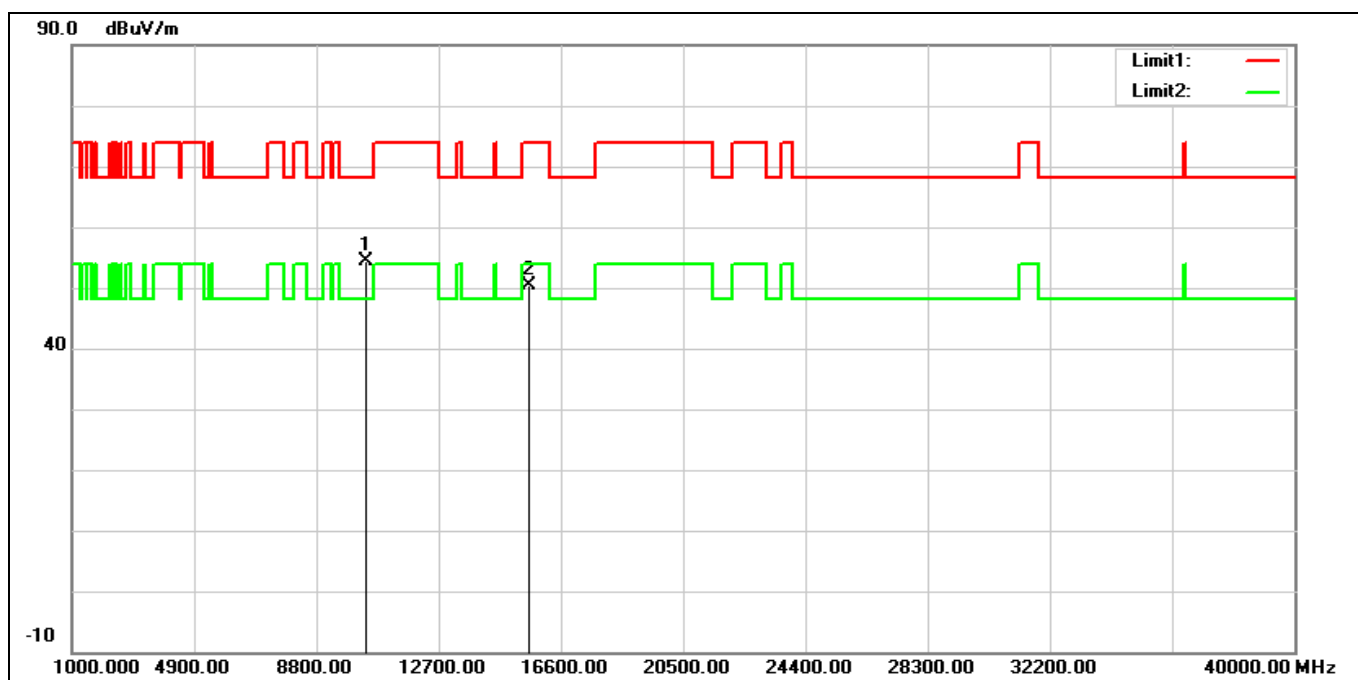
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11650.000	42.80	15.04	57.84	74.00	-16.16	peak
2*	11650.000	30.35	15.04	45.39	54.00	-8.61	AVG
3	17475.000	31.41	23.95	55.36	68.20	-12.84	peak

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Vertical		
Test Mode:	802.11ac VHT20 5825 MHz		
Remark:			



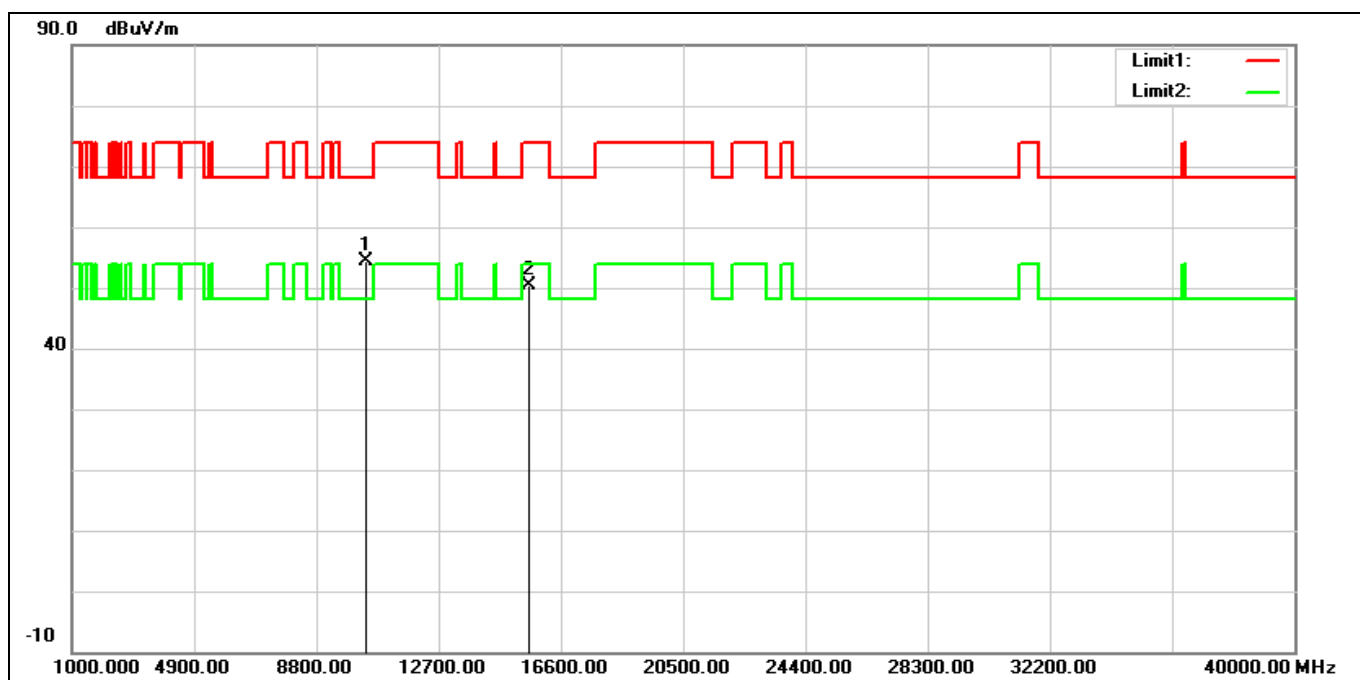
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11650.000	40.54	15.04	55.58	74.00	-18.42	peak
2*	11650.000	30.21	15.04	45.25	54.00	-8.75	AVG
3	17475.000	31.97	23.95	55.92	68.20	-12.28	peak

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	802.11ac VHT40 5190 MHz		
Remark:			



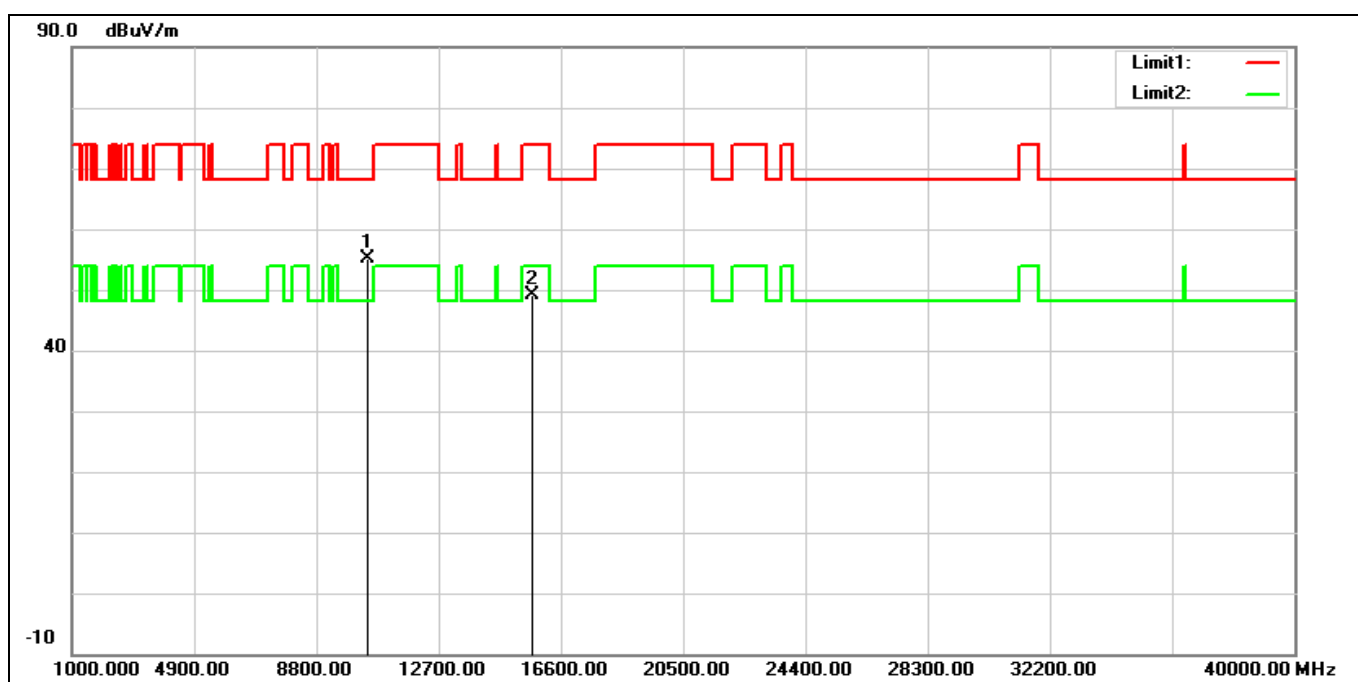
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1*	10380.000	40.29	14.04	54.33	68.20	-13.87	peak
2	15570.000	33.32	17.16	50.48	74.00	-23.52	peak

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Vertical		
Test Mode:	802.11ac VHT40 5190 MHz		
Remark:			



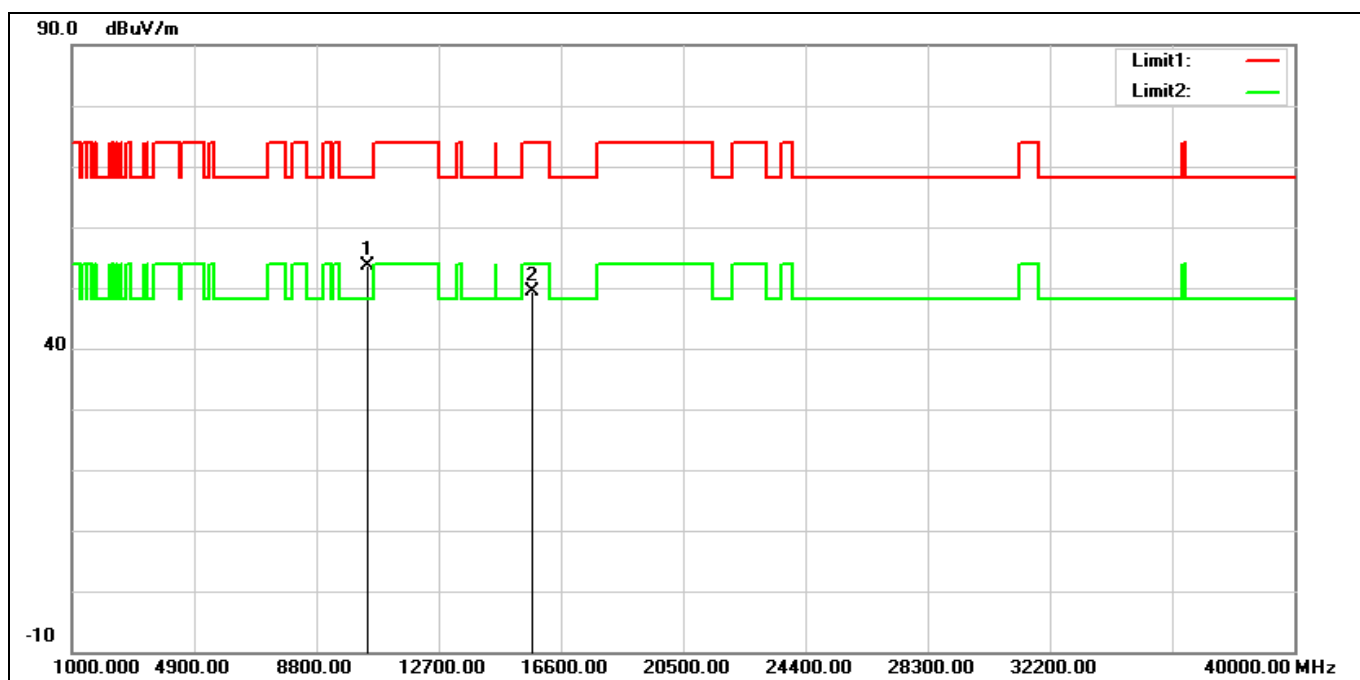
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1*	10380.000	40.29	14.04	54.33	68.20	-13.87	peak
2	15570.000	33.32	17.16	50.48	74.00	-23.52	peak

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	802.11ac VHT40 5230 MHz		
Remark:			



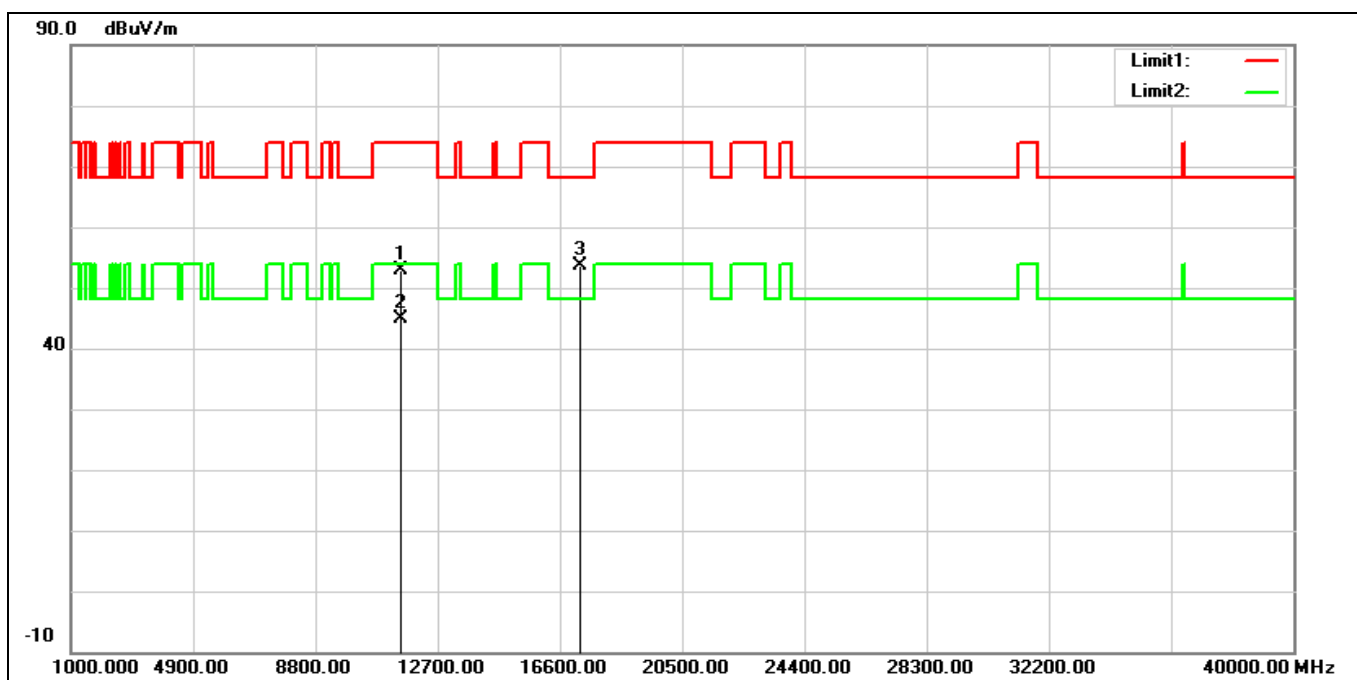
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1*	10460.000	40.79	14.43	55.22	68.20	-12.98	peak
2	15690.000	31.85	17.37	49.22	74.00	-24.78	peak

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Vertical		
Test Mode:	802.11ac VHT40 5230 MHz		
Remark:			



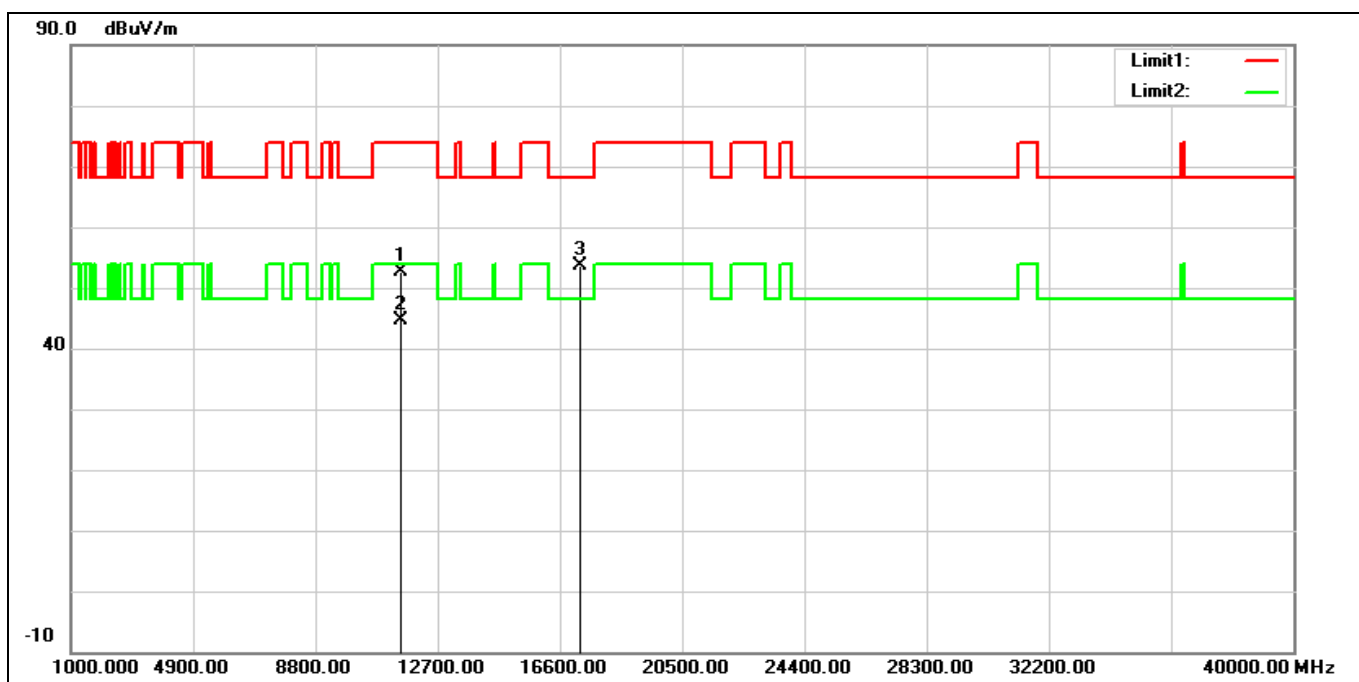
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1*	10460.000	39.10	14.43	53.53	68.20	-14.67	peak
2	15690.000	31.99	17.37	49.36	74.00	-24.64	peak

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	802.11ac VHT40 5755 MHz		
Remark:			



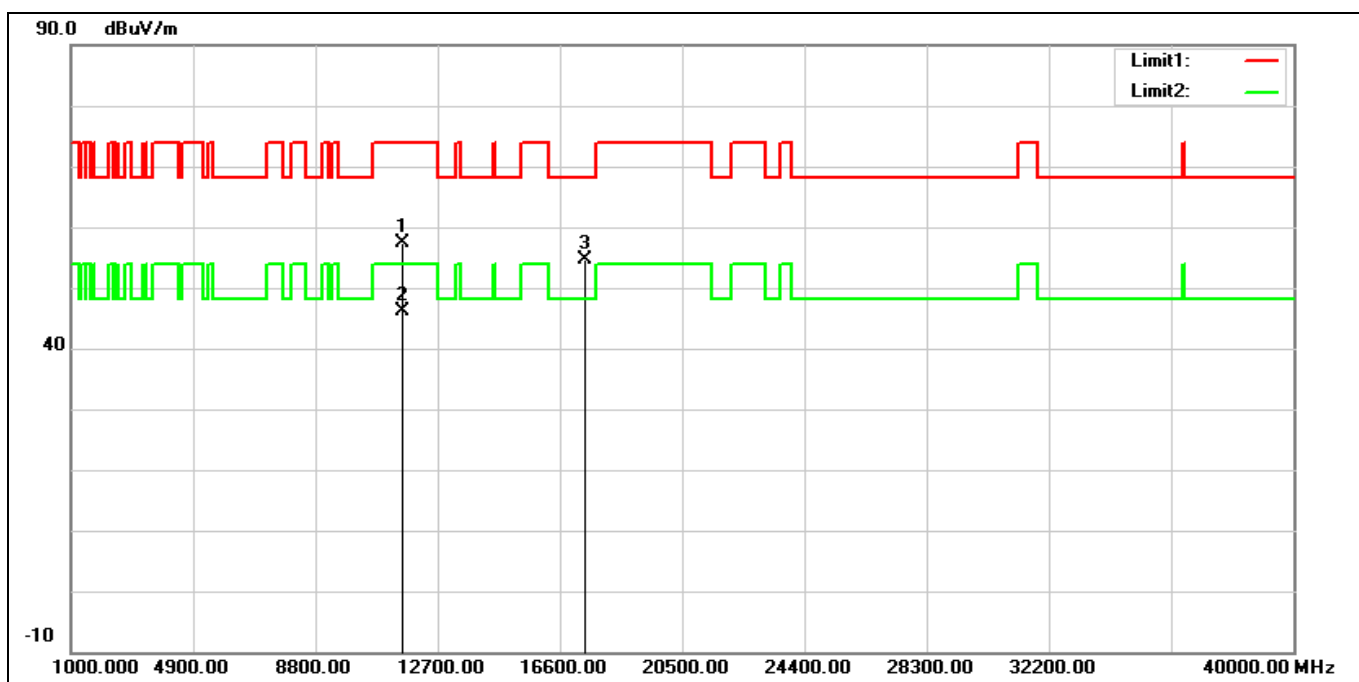
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11510.000	37.43	15.42	52.85	74.00	-21.15	peak
2*	11510.000	29.47	15.42	44.89	54.00	-9.11	AVG
3	17265.000	31.36	22.32	53.68	68.20	-14.52	peak

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Vertical		
Test Mode:	802.11ac VHT40 5755 MHz		
Remark:			



No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11510.000	37.30	15.42	52.72	74.00	-21.28	peak
2*	11510.000	29.23	15.42	44.65	54.00	-9.35	AVG
3	17265.000	31.30	22.32	53.62	68.20	-14.58	peak

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	802.11ac VHT40 5795 MHz		
Remark:			



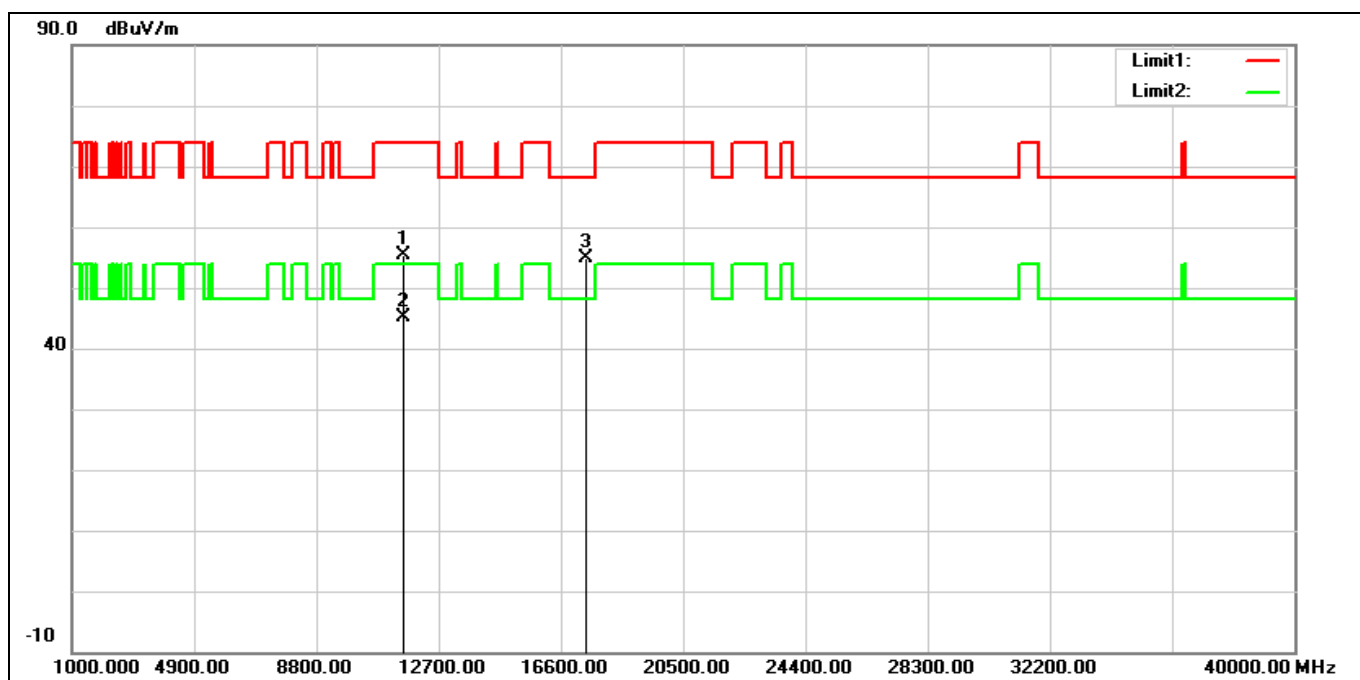
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11590.000	42.20	15.14	57.34	74.00	-16.66	peak
2*	11590.000	30.91	15.14	46.05	54.00	-7.95	AVG
3	17385.000	31.52	23.11	54.63	68.20	-13.57	peak

Standard: Part 15E Test Site: 966 Chamber

Polarization: Vertical

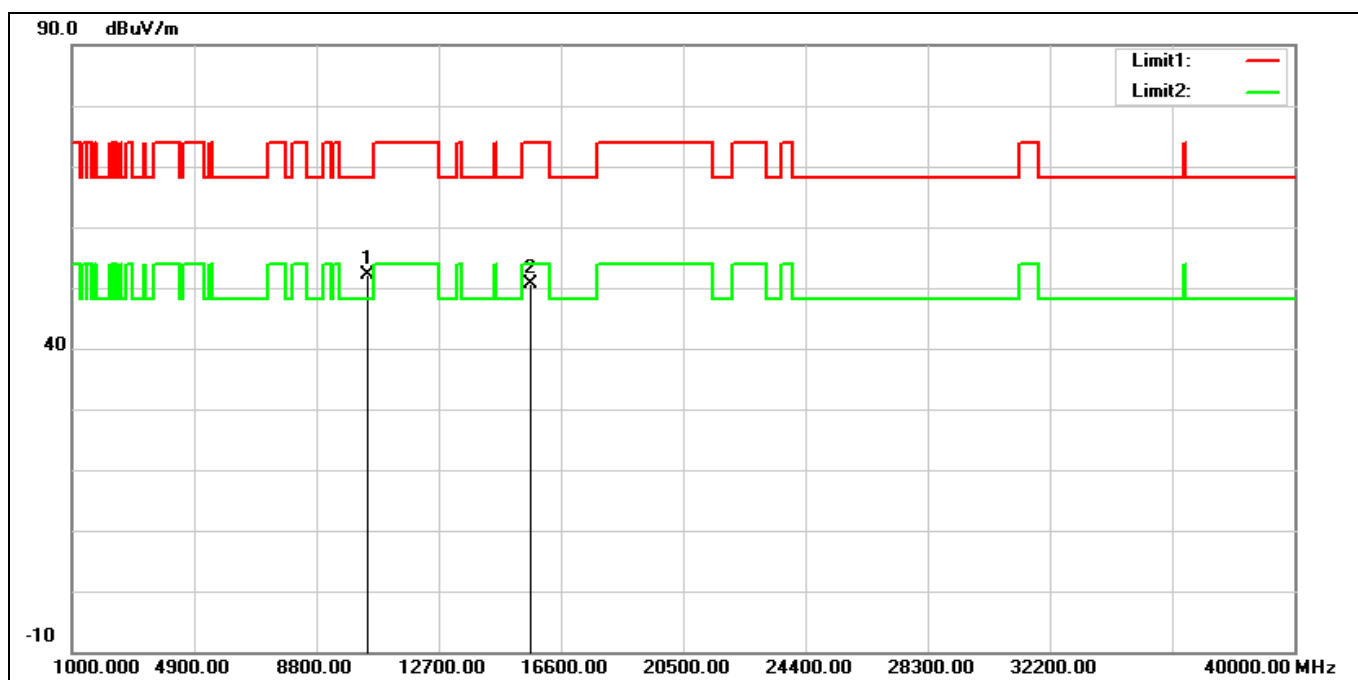
Test Mode: 802.11ac VHT40 5795 MHz

Remark:



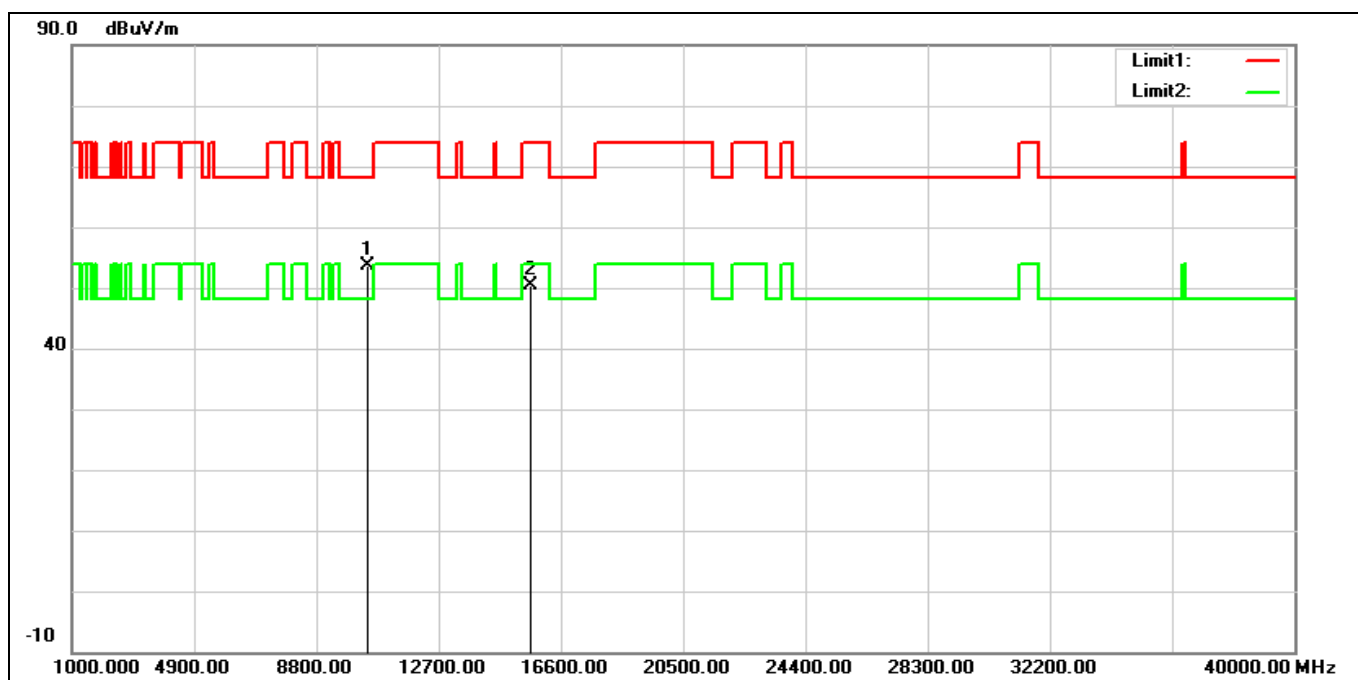
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11590.000	40.28	15.14	55.42	74.00	-18.58	peak
2*	11590.000	29.98	15.14	45.12	54.00	-8.88	AVG
3	17385.000	31.76	23.11	54.87	68.20	-13.33	peak

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	802.11ac VHT80 5210 MHz		
Remark:			



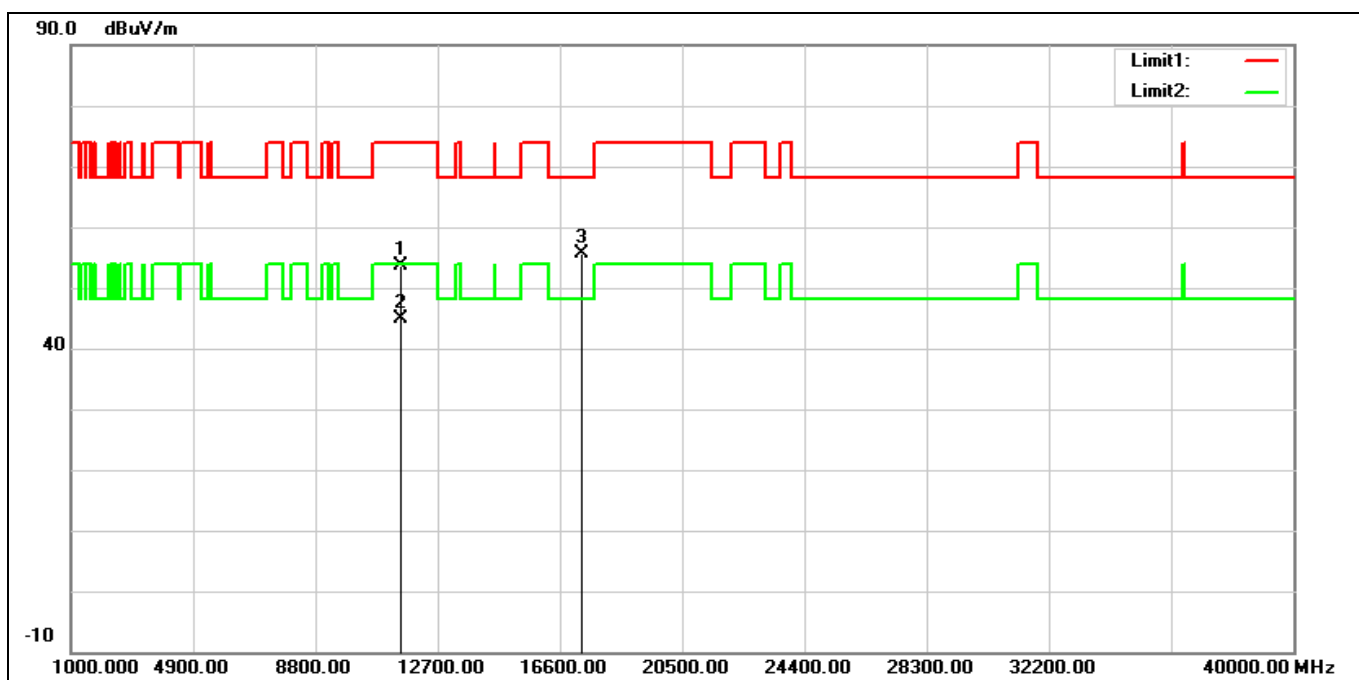
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1*	10420.000	37.99	14.20	52.19	68.20	-16.01	peak
2	15630.000	33.55	17.14	50.69	74.00	-23.31	peak

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Vertical		
Test Mode:	802.11ac VHT80 5210 MHz		
Remark:			



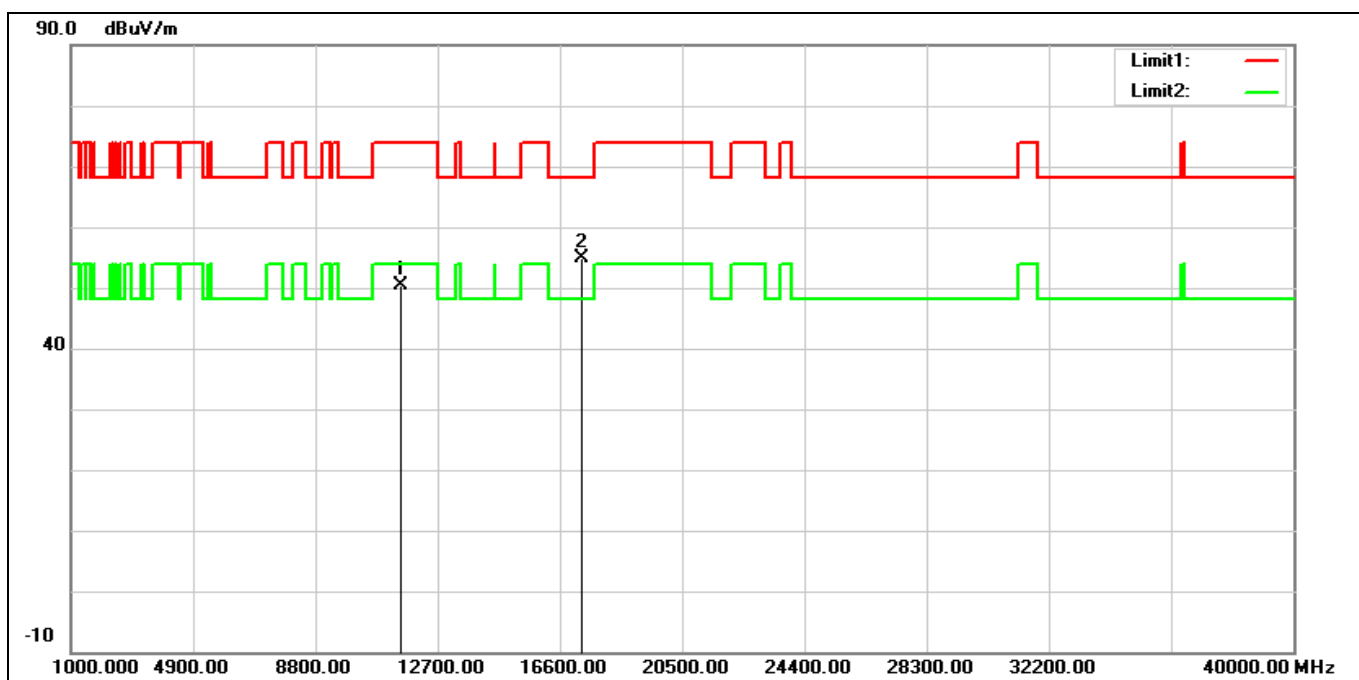
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1*	10420.000	39.32	14.20	53.52	68.20	-14.68	peak
2	15630.000	33.31	17.14	50.45	74.00	-23.55	peak

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	802.11ac VHT80 5775 MHz		
Remark:			



No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11550.000	38.33	15.28	53.61	74.00	-20.39	peak
2*	11550.000	29.68	15.28	44.96	54.00	-9.04	AVG
3	17325.000	32.83	22.79	55.62	68.20	-12.58	peak

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Vertical		
Test Mode:	802.11ac VHT80 5775 MHz		
Remark:			

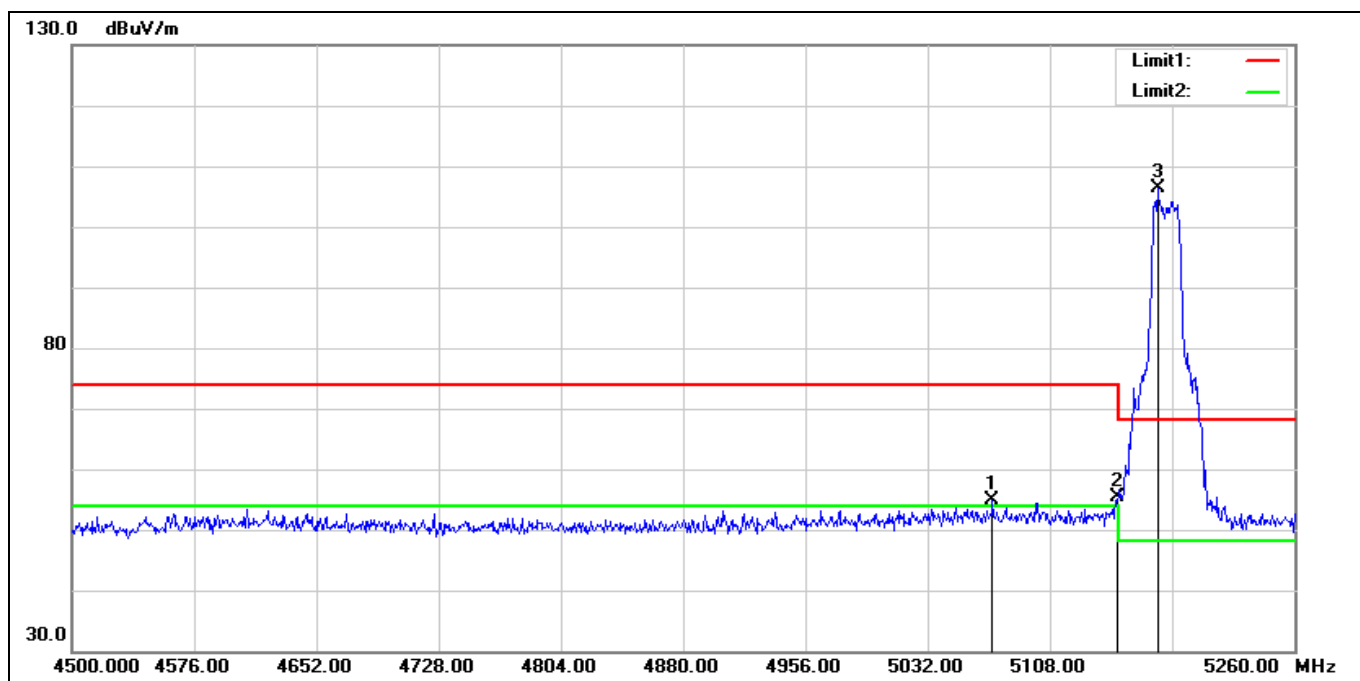


No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	11550.000	35.12	15.28	50.40	74.00	-23.60	peak
2*	17325.000	32.17	22.79	54.96	68.20	-13.24	peak

Band Edge

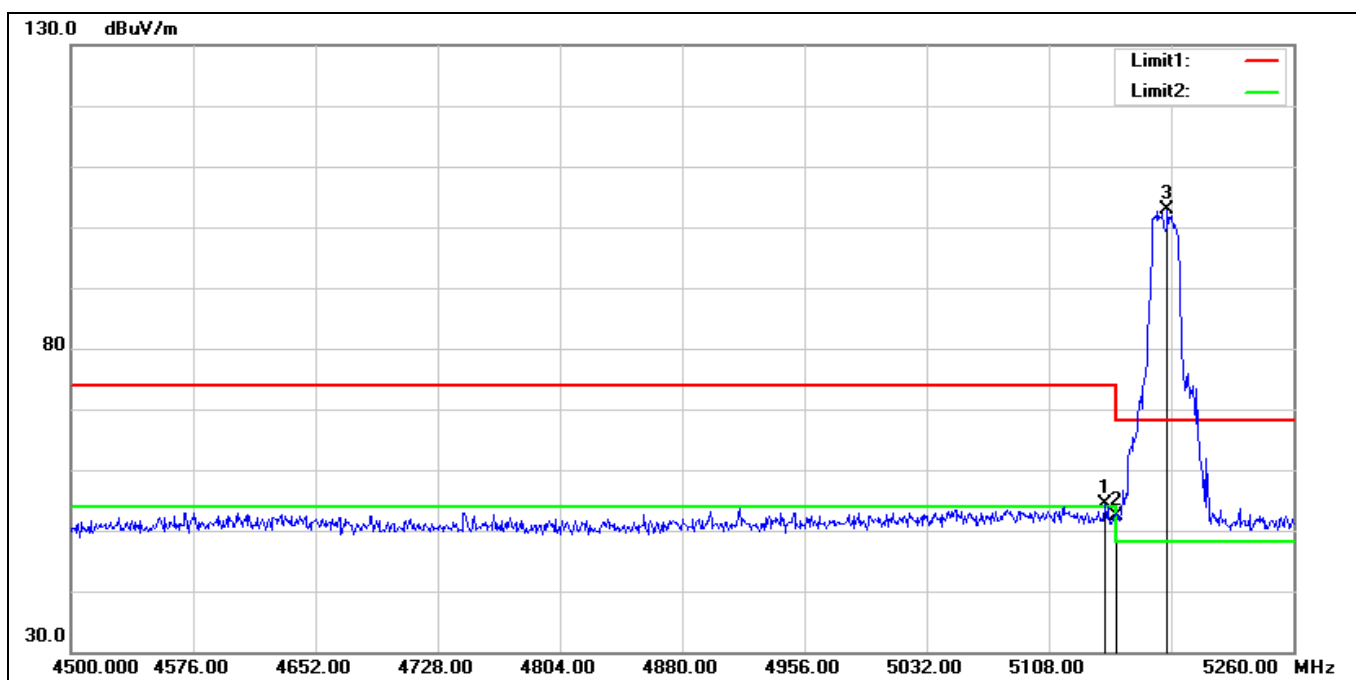
Peak

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	802.11a 5180 MHz		
Remark:			



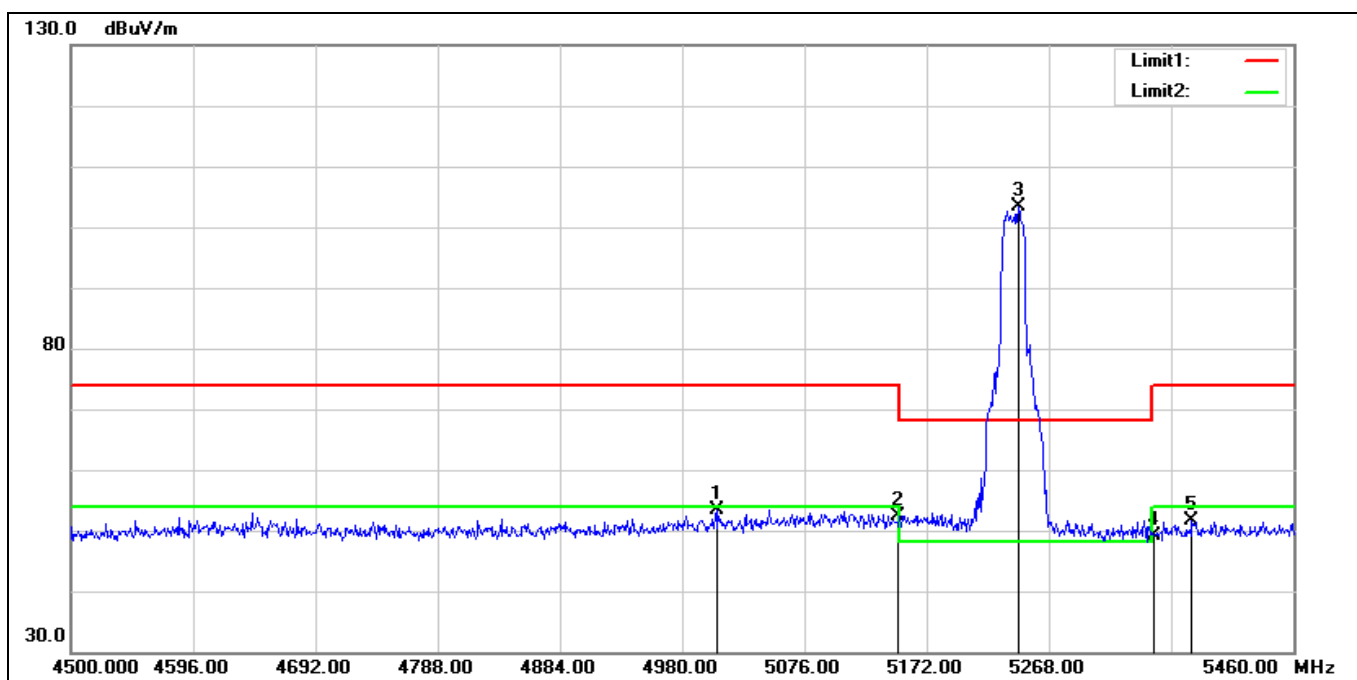
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5072.280	53.76	1.20	54.96	74.00	-19.04	peak
2	5150.000	53.98	1.42	55.40	74.00	-18.60	peak
3*	5174.880	105.04	1.35	106.39	68.20	38.19	peak

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Vertical		
Test Mode:	802.11a 5180 MHz		
Remark:			



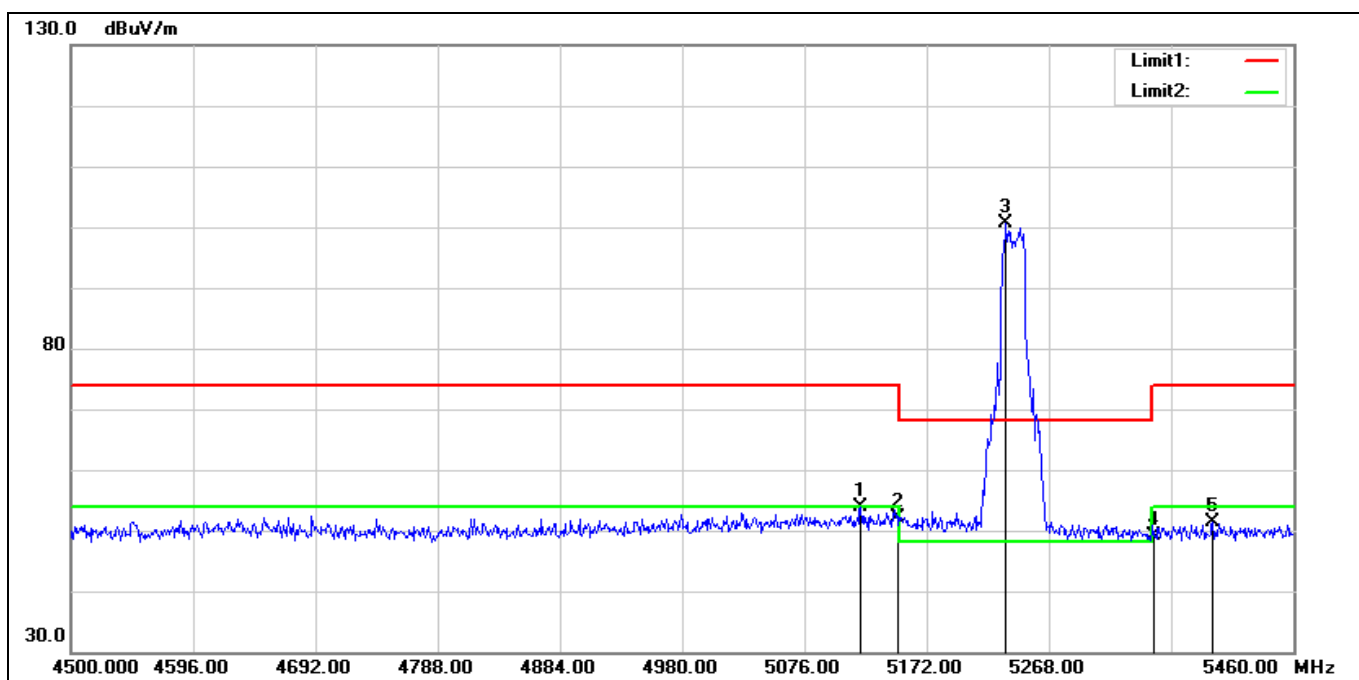
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5142.960	53.00	1.41	54.41	74.00	-19.59	peak
2	5150.000	50.92	1.42	52.34	74.00	-21.66	peak
3*	5181.720	101.45	1.33	102.78	68.20	34.58	peak

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	802.11a 5240 MHz		
Remark:			



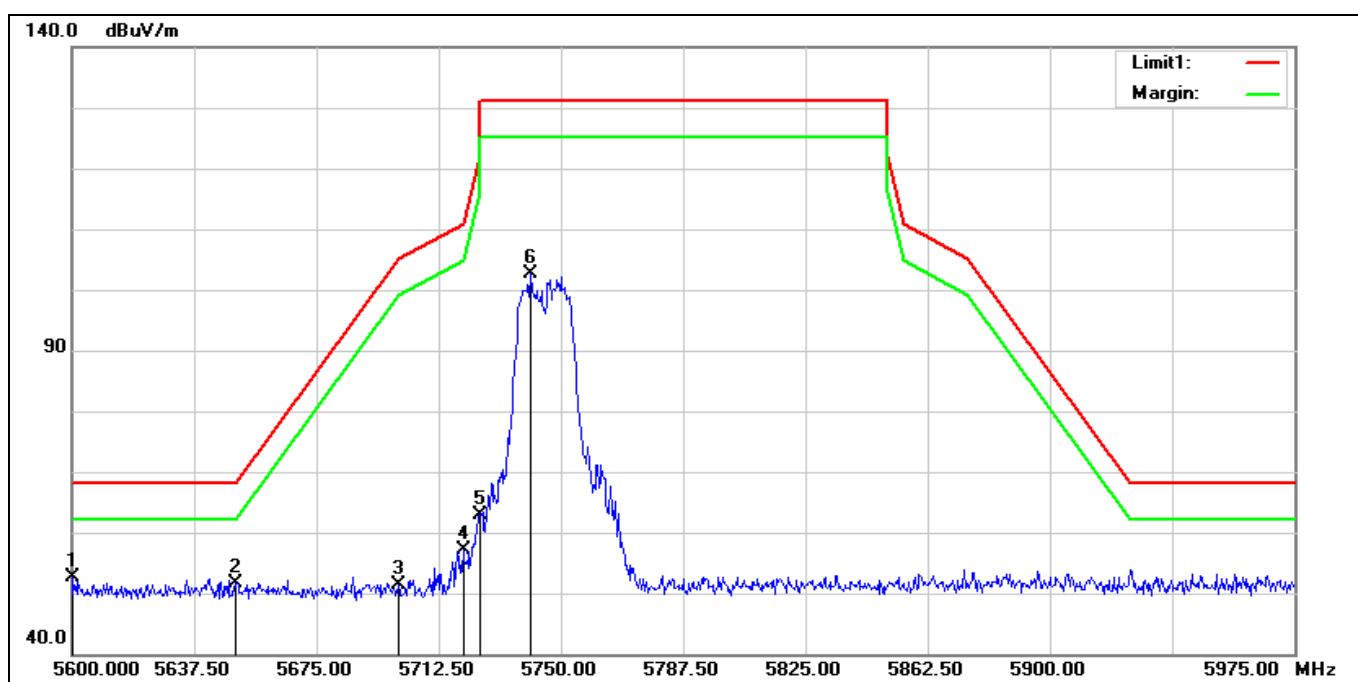
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5006.880	52.61	0.76	53.37	74.00	-20.63	peak
2	5150.000	50.92	1.42	52.34	74.00	-21.66	peak
3*	5244.000	102.23	1.09	103.32	68.20	35.12	peak
4	5350.000	48.09	1.08	49.17	74.00	-24.83	peak
5	5380.320	50.24	1.36	51.60	74.00	-22.40	peak

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Vertical		
Test Mode:	802.11a 5240 MHz		
Remark:			



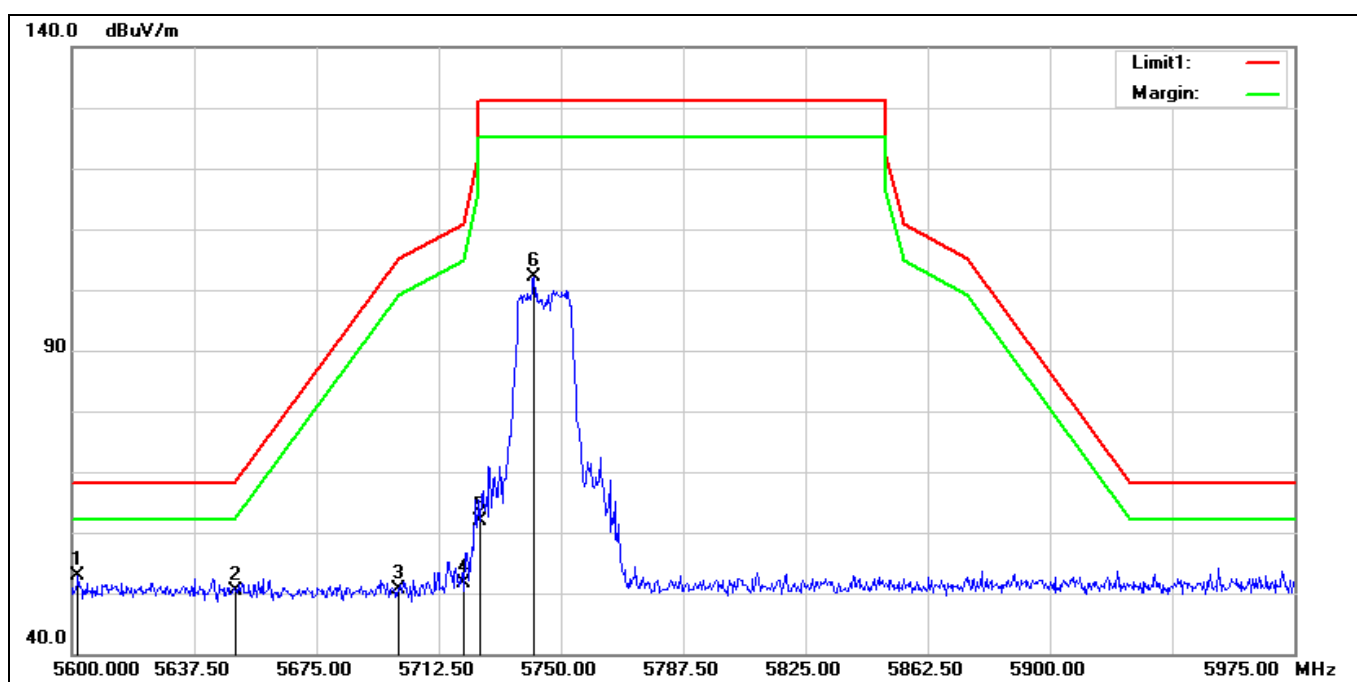
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5120.160	52.41	1.38	53.79	74.00	-20.21	peak
2	5150.000	50.76	1.42	52.18	74.00	-21.82	peak
3*	5234.400	99.44	1.12	100.56	68.20	32.36	peak
4	5350.000	48.03	1.08	49.11	74.00	-24.89	peak
5	5396.640	49.74	1.52	51.26	74.00	-22.74	peak

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	802.11a 5745 MHz		
Remark:			



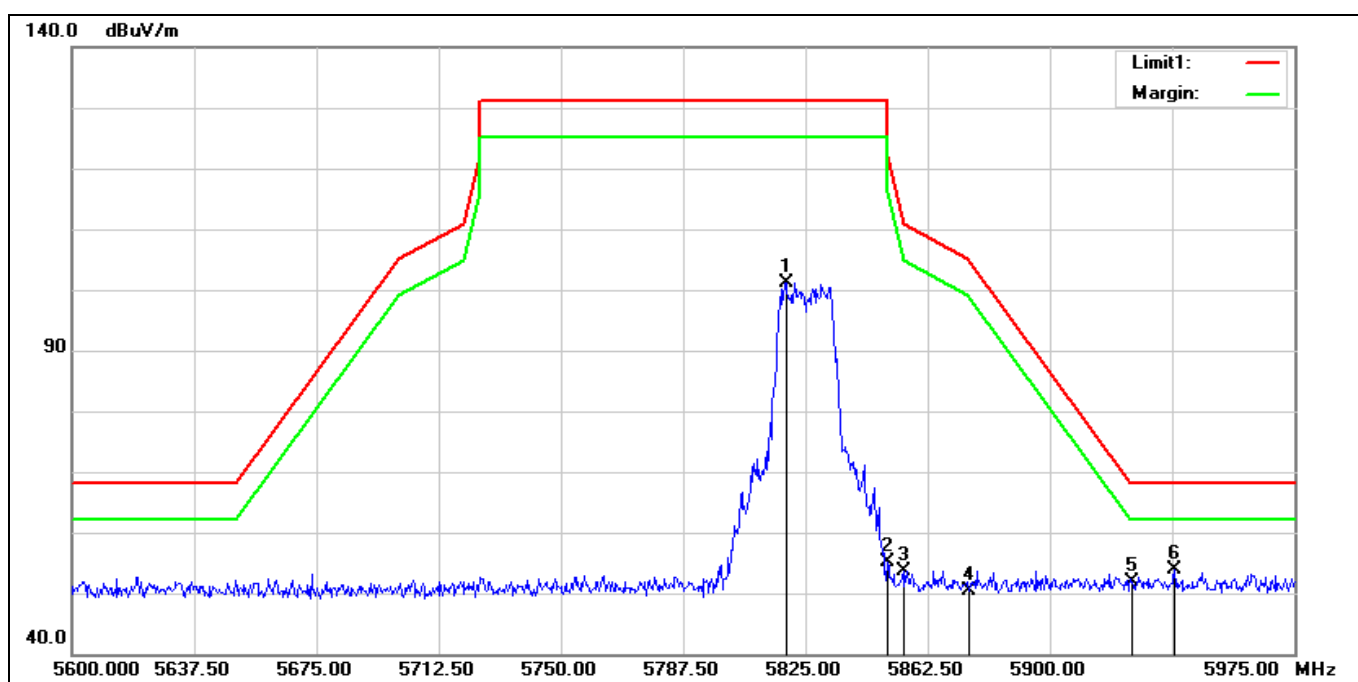
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1*	5600.375	50.57	2.02	52.59	68.20	-15.61	peak
2	5650.000	49.72	1.90	51.62	68.20	-16.58	peak
3	5700.000	49.33	2.06	51.39	105.20	-53.81	peak
4	5720.000	54.77	2.26	57.03	110.80	-53.77	peak
5	5725.000	60.68	2.30	62.98	122.20	-59.22	peak
6	5740.625	100.28	2.44	102.72	131.20	-28.48	peak

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Vertical		
Test Mode:	802.11a 5745 MHz		
Remark:			



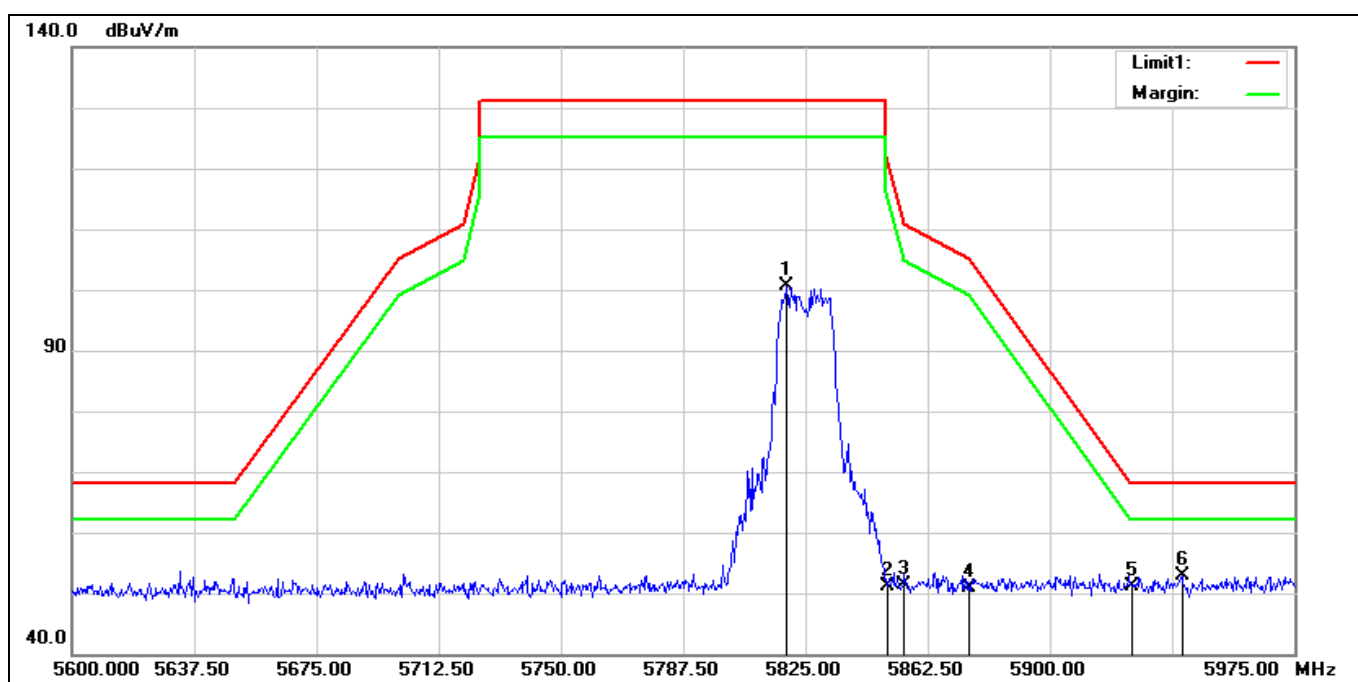
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1*	5601.875	50.93	2.01	52.94	68.20	-15.26	peak
2	5650.000	48.41	1.90	50.31	68.20	-17.89	peak
3	5700.000	48.62	2.06	50.68	105.20	-54.52	peak
4	5720.000	49.37	2.26	51.63	110.80	-59.17	peak
5	5725.000	59.62	2.30	61.92	122.20	-60.28	peak
6	5741.750	99.63	2.45	102.08	131.20	-29.12	peak

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	802.11a 5825 MHz		
Remark:			



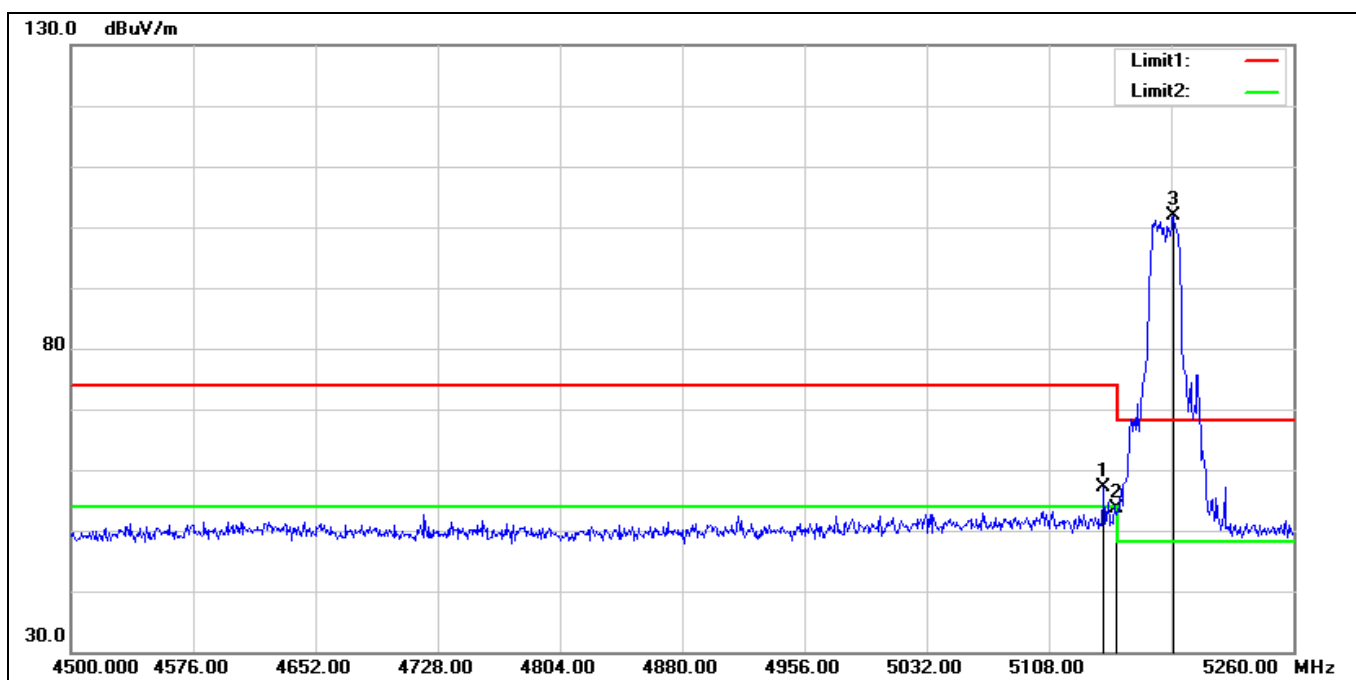
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5819.000	98.29	2.88	101.17	131.20	-30.03	peak
2	5850.000	52.04	2.98	55.02	122.20	-67.18	peak
3	5855.000	50.68	3.01	53.69	110.80	-57.11	peak
4	5875.000	47.24	3.07	50.31	105.20	-54.89	peak
5	5925.000	48.70	3.10	51.80	68.20	-16.40	peak
6*	5938.250	50.85	3.07	53.92	68.20	-14.28	peak

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Vertical		
Test Mode:	802.11a 5825 MHz		
Remark:			



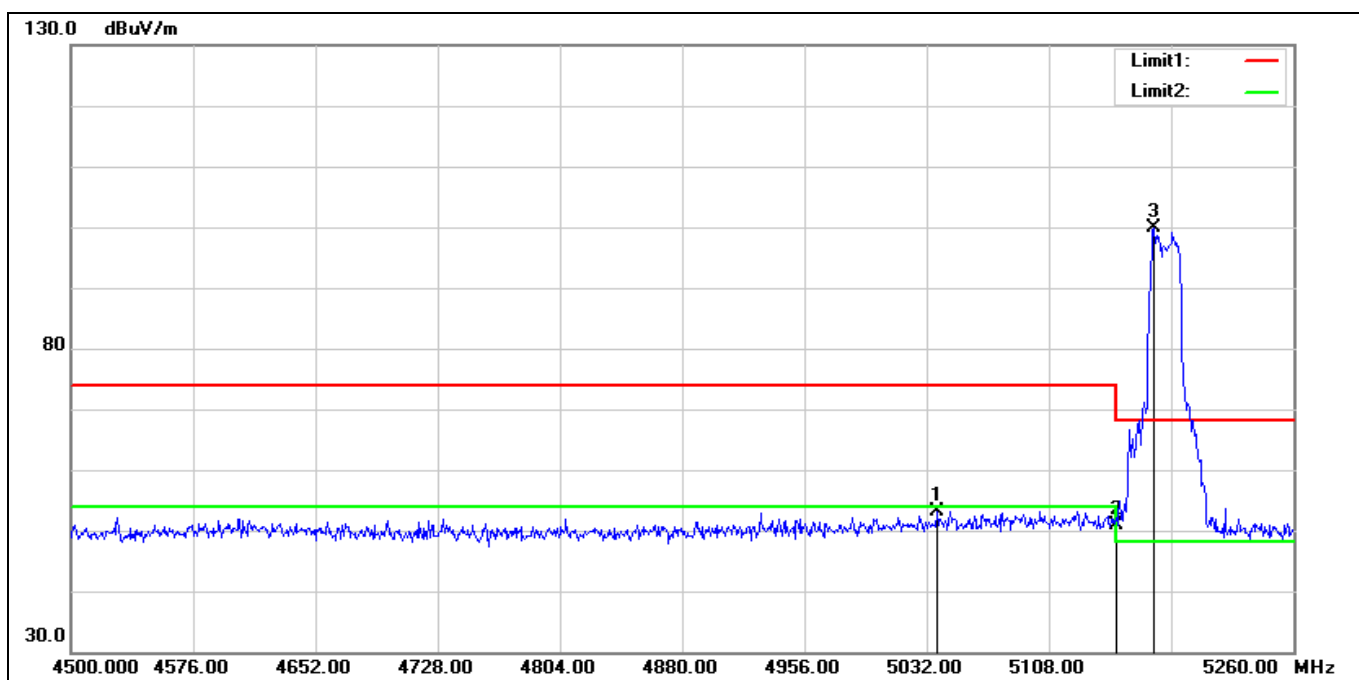
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5819.375	97.78	2.88	100.66	131.20	-30.54	peak
2	5850.000	48.12	2.98	51.10	122.20	-71.10	peak
3	5855.000	48.41	3.01	51.42	110.80	-59.38	peak
4	5875.000	47.84	3.07	50.91	105.20	-54.29	peak
5	5925.000	48.09	3.10	51.19	68.20	-17.01	peak
6*	5940.500	49.72	3.06	52.78	68.20	-15.42	peak

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	802.11ac VHT20 5180 MHz		
Remark:			



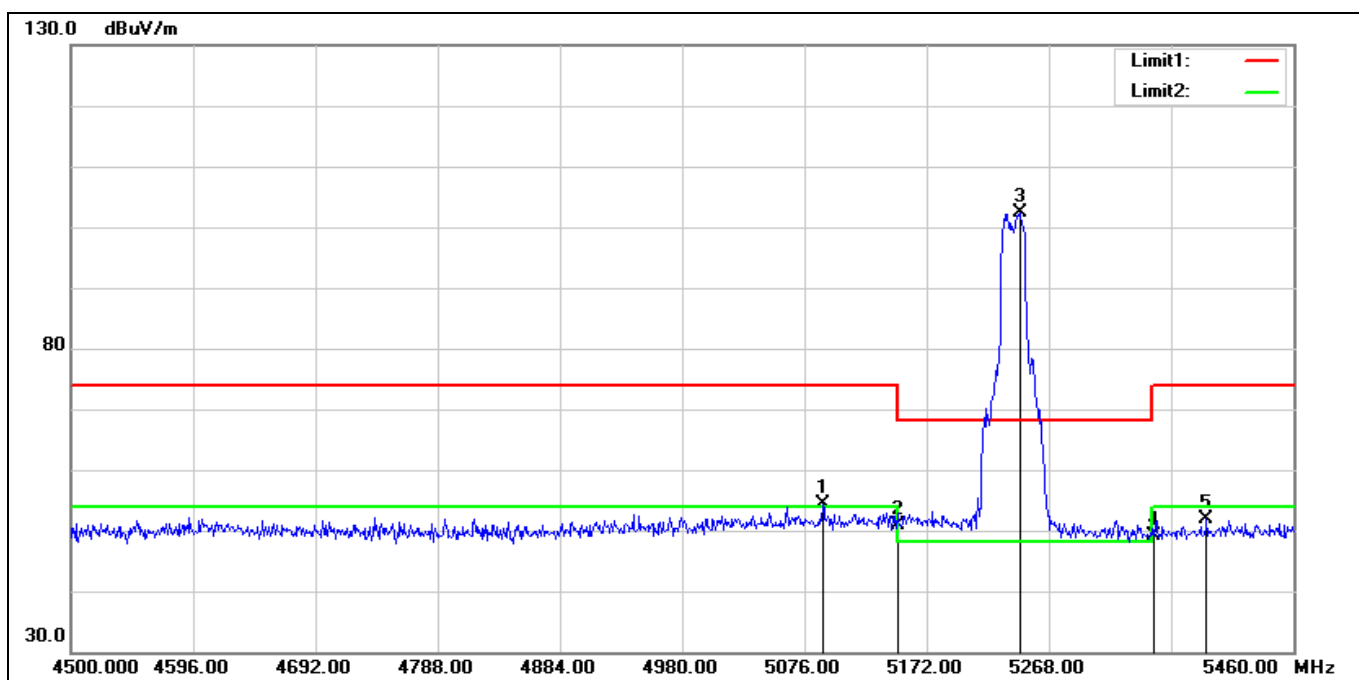
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5142.200	55.74	1.41	57.15	74.00	-16.85	peak
2	5150.000	52.21	1.42	53.63	74.00	-20.37	peak
3*	5185.520	100.62	1.32	101.94	68.20	33.74	peak

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Vertical		
Test Mode:	802.11ac VHT20 5180 MHz		
Remark:			



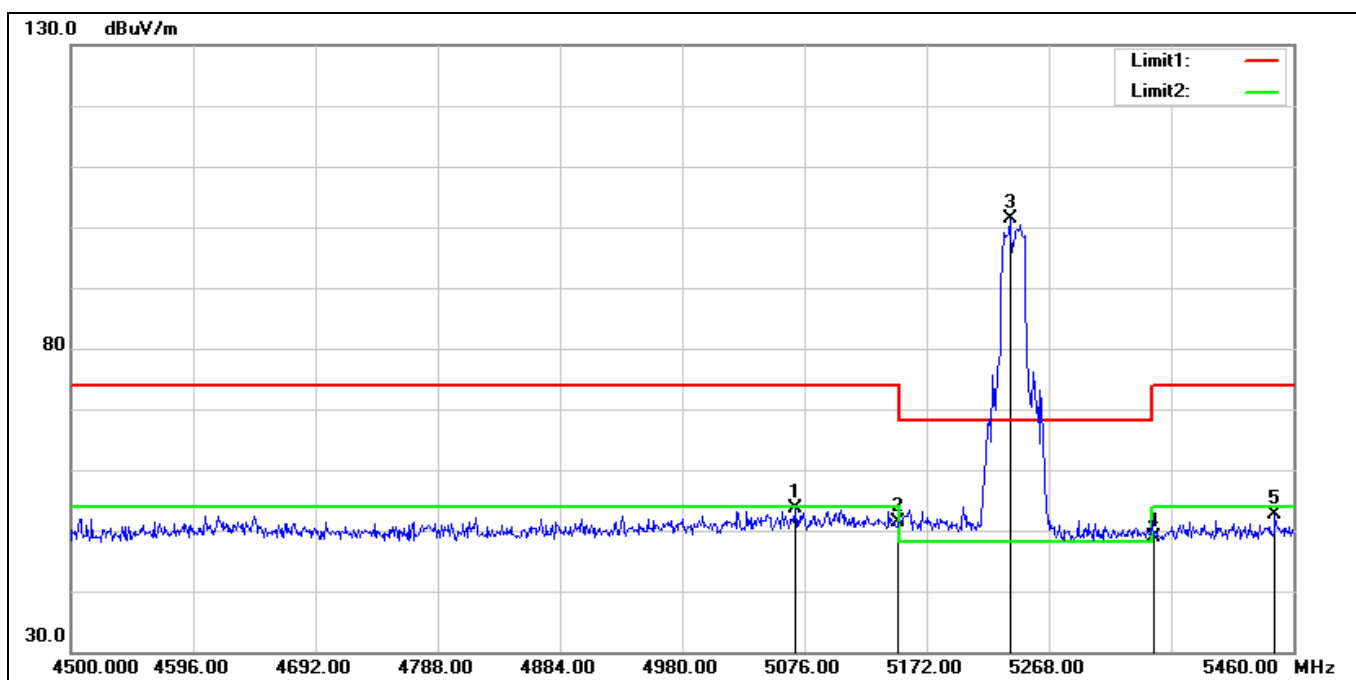
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5038.840	52.16	1.00	53.16	74.00	-20.84	peak
2	5150.000	49.50	1.42	50.92	74.00	-23.08	peak
3*	5173.360	98.48	1.35	99.83	68.20	31.63	peak

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	802.11ac VHT20 5240 MHz		
Remark:			



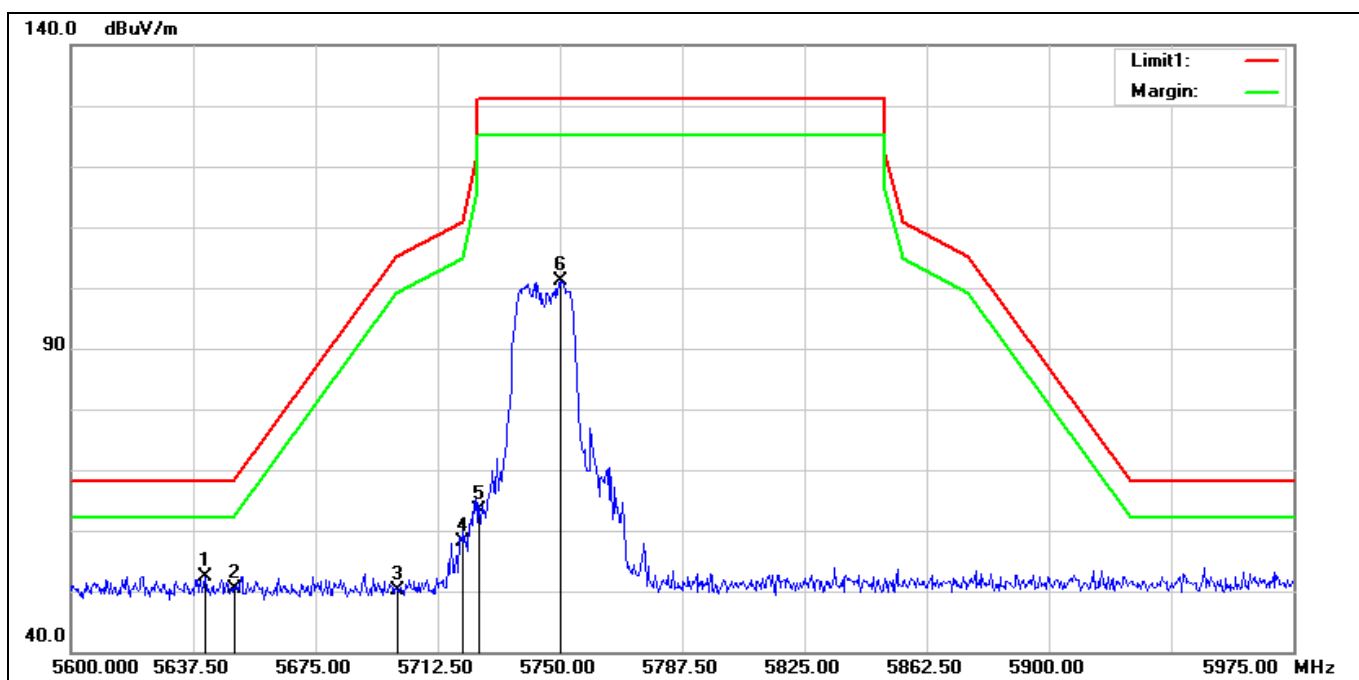
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5090.400	53.00	1.30	54.30	74.00	-19.70	peak
2	5150.000	49.51	1.42	50.93	74.00	-23.07	peak
3*	5244.960	101.32	1.08	102.40	68.20	34.20	peak
4	5350.000	48.17	1.08	49.25	74.00	-24.75	peak
5	5391.840	50.34	1.47	51.81	74.00	-22.19	peak

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Vertical		
Test Mode:	802.11ac VHT20 5240 MHz		
Remark:			



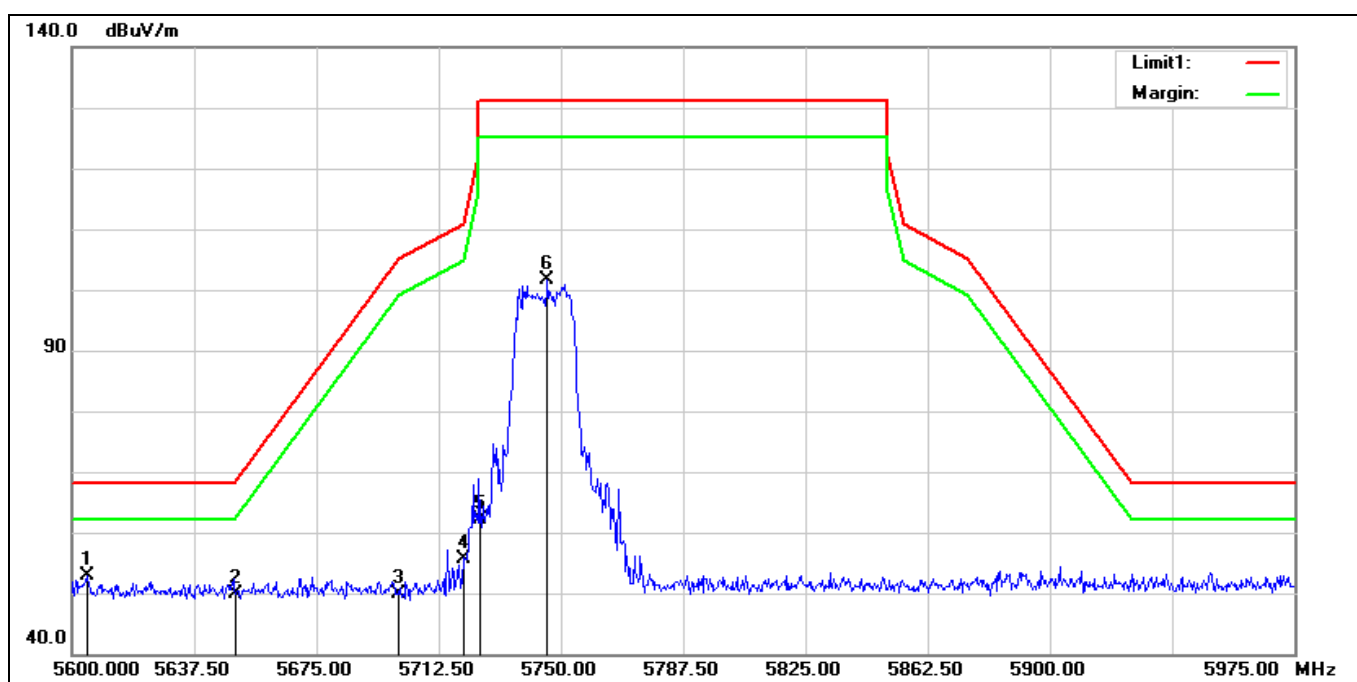
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5069.280	52.33	1.19	53.52	74.00	-20.48	peak
2	5150.000	50.08	1.42	51.50	74.00	-22.50	peak
3*	5237.280	100.23	1.11	101.34	68.20	33.14	peak
4	5350.000	47.89	1.08	48.97	74.00	-25.03	peak
5	5445.600	50.89	1.70	52.59	74.00	-21.41	peak

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	802.11ac VHT20 5745 MHz		
Remark:			



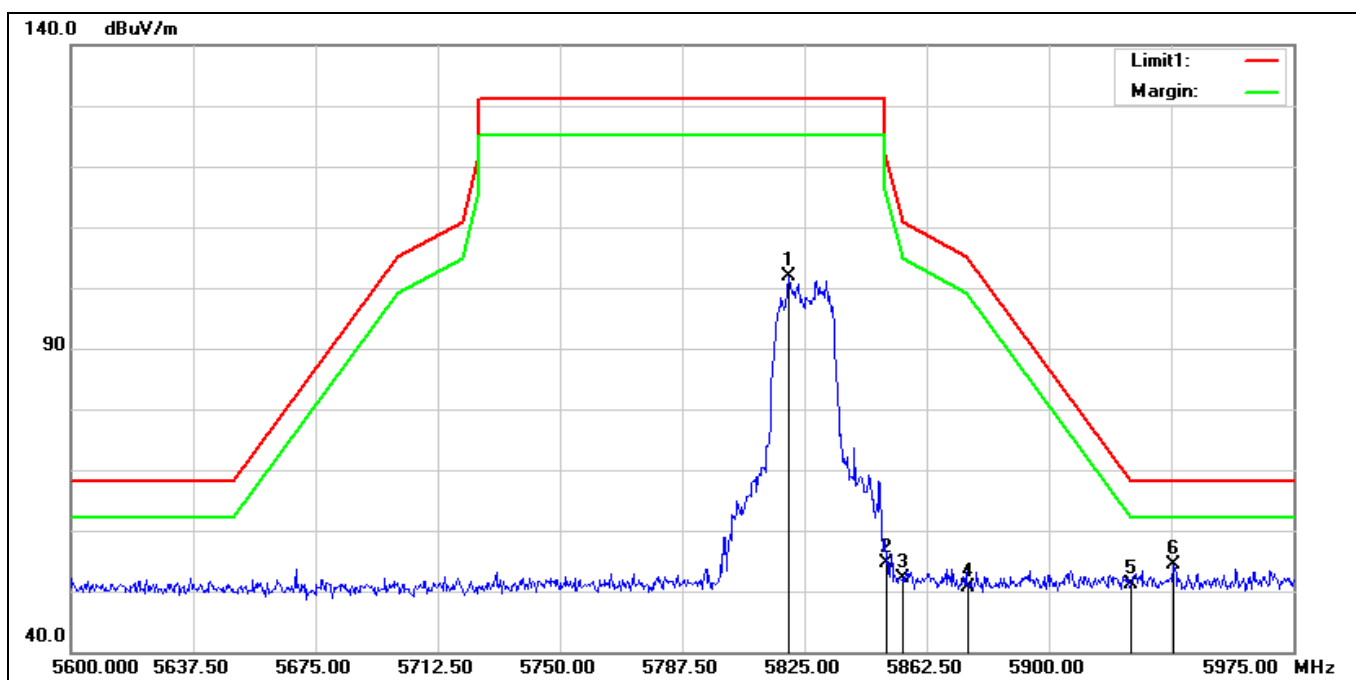
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1*	5641.250	50.53	1.92	52.45	68.20	-15.75	peak
2	5650.000	48.48	1.90	50.38	68.20	-17.82	peak
3	5700.000	48.11	2.06	50.17	105.20	-55.03	peak
4	5720.000	55.86	2.26	58.12	110.80	-52.68	peak
5	5725.000	61.15	2.30	63.45	122.20	-58.75	peak
6	5750.000	98.54	2.54	101.08	131.20	-30.12	peak

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Vertical		
Test Mode:	802.11ac VHT20 5745 MHz		
Remark:			



No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1*	5604.500	50.98	2.02	53.00	68.20	-15.20	peak
2	5650.000	47.97	1.90	49.87	68.20	-18.33	peak
3	5700.000	47.79	2.06	49.85	105.20	-55.35	peak
4	5720.000	53.36	2.26	55.62	110.80	-55.18	peak
5	5725.000	59.81	2.30	62.11	122.20	-60.09	peak
6	5745.875	99.21	2.51	101.72	131.20	-29.48	peak

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	802.11ac VHT20 5825 MHz		
Remark:			



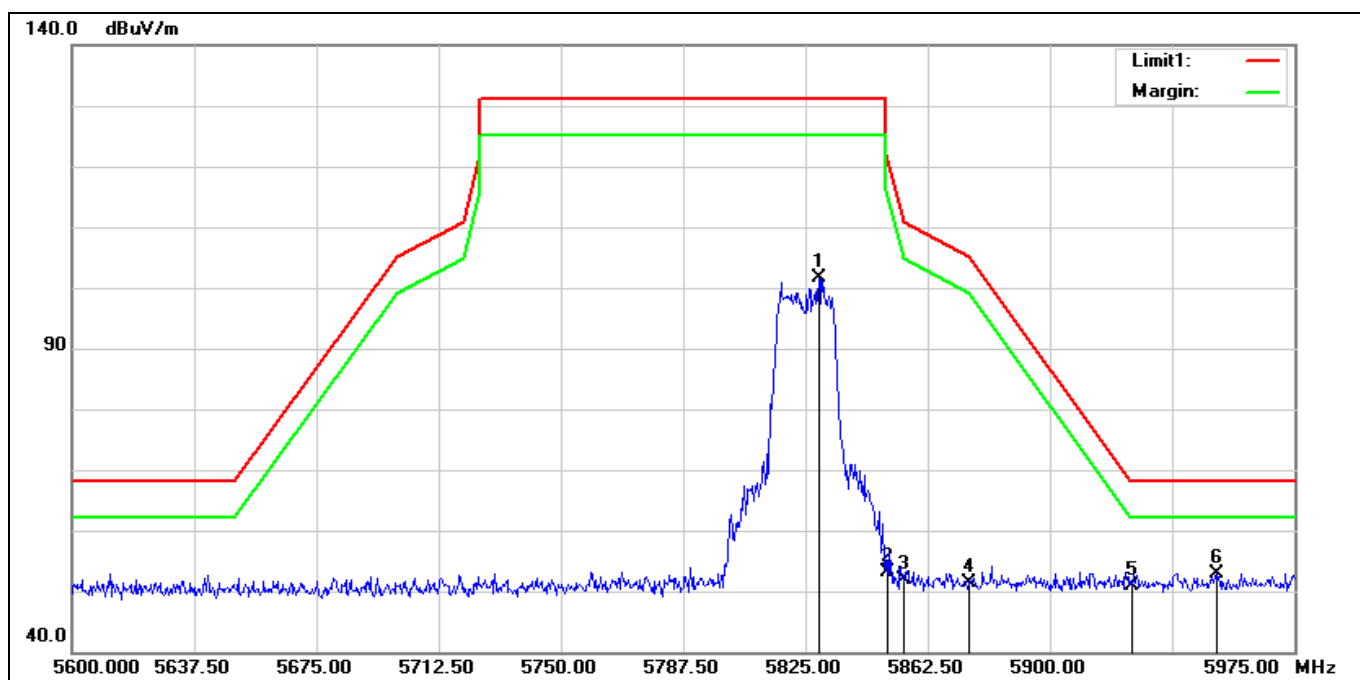
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5820.125	98.94	2.88	101.82	131.20	-29.38	peak
2	5850.000	51.69	2.98	54.67	122.20	-67.53	peak
3	5855.000	49.05	3.01	52.06	110.80	-58.74	peak
4	5875.000	47.54	3.07	50.61	105.20	-54.59	peak
5	5925.000	47.98	3.10	51.08	68.20	-17.12	peak
6*	5938.250	51.28	3.07	54.35	68.20	-13.85	peak

Standard: Part 15E Test Site: 966 Chamber

Polarization: Vertical

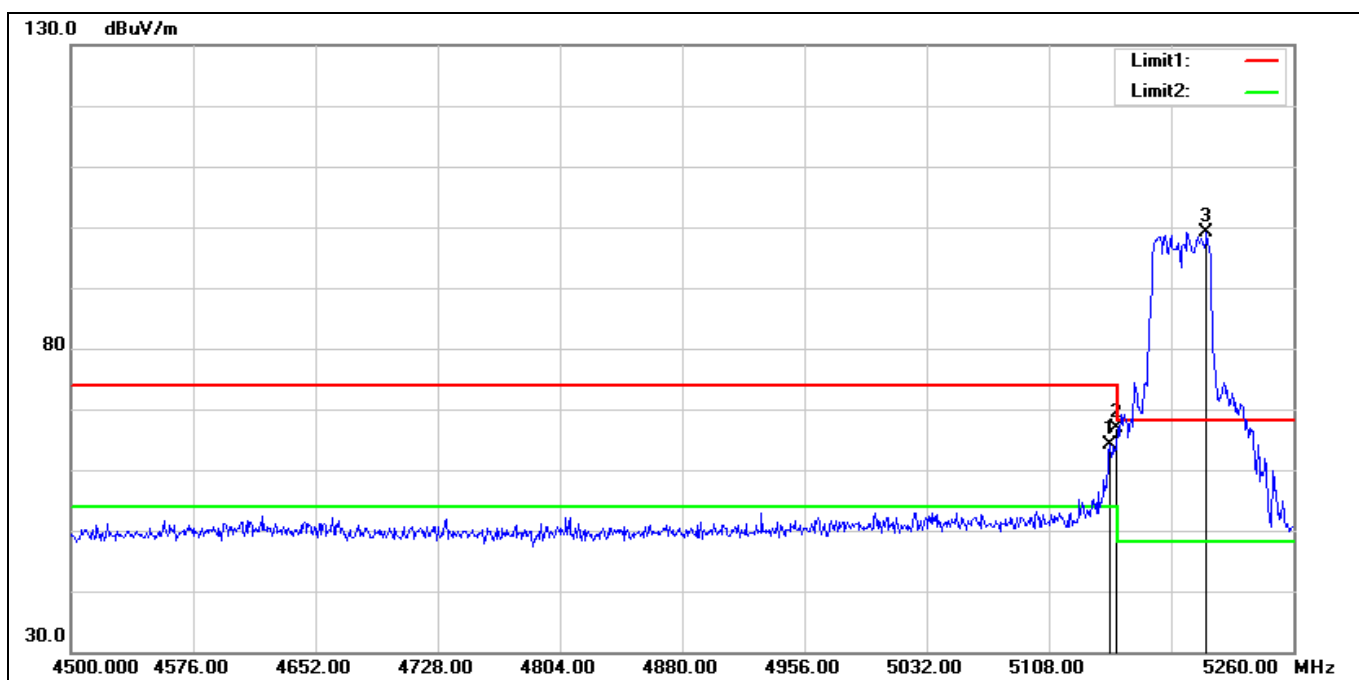
Test Mode: 802.11ac VHT20 5825 MHz

Remark:



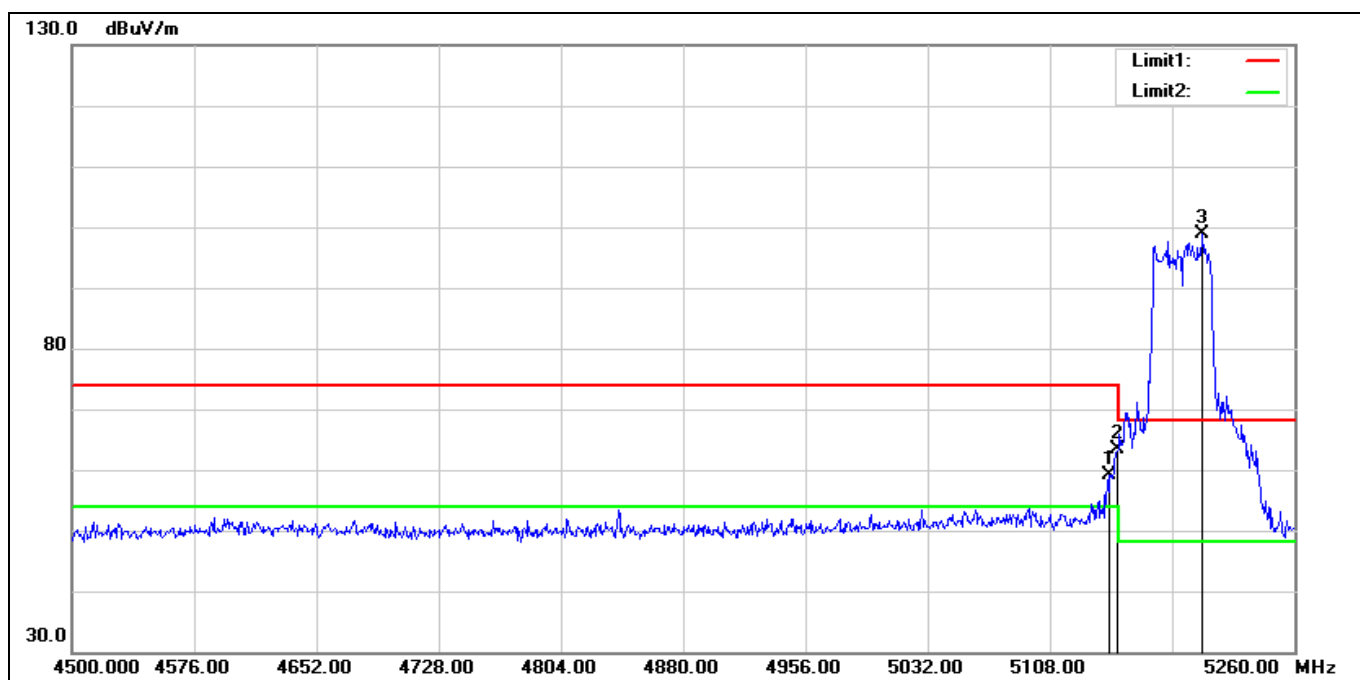
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5829.125	98.69	2.92	101.61	131.20	-29.59	peak
2	5850.000	50.14	2.98	53.12	122.20	-69.08	peak
3	5855.000	48.97	3.01	51.98	110.80	-58.82	peak
4	5875.000	48.19	3.07	51.26	105.20	-53.94	peak
5	5925.000	47.70	3.10	50.80	68.20	-17.40	peak
6*	5951.000	49.94	3.02	52.96	68.20	-15.24	peak

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	802.11ac VHT40 5190 MHz		
Remark:			



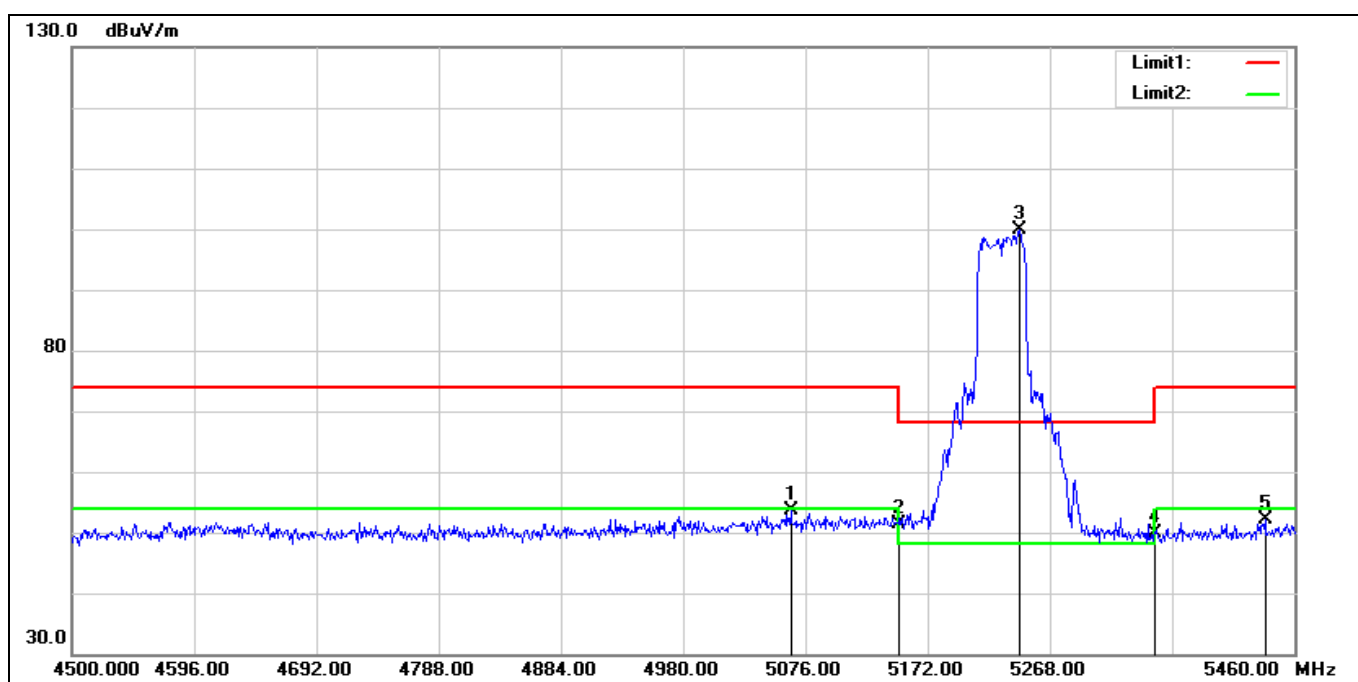
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5146.000	62.73	1.42	64.15	74.00	-9.85	peak
2	5150.000	65.46	1.42	66.88	74.00	-7.12	peak
3*	5206.040	97.88	1.25	99.13	68.20	30.93	peak

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Vertical		
Test Mode:	802.11ac VHT40 5190 MHz		
Remark:			



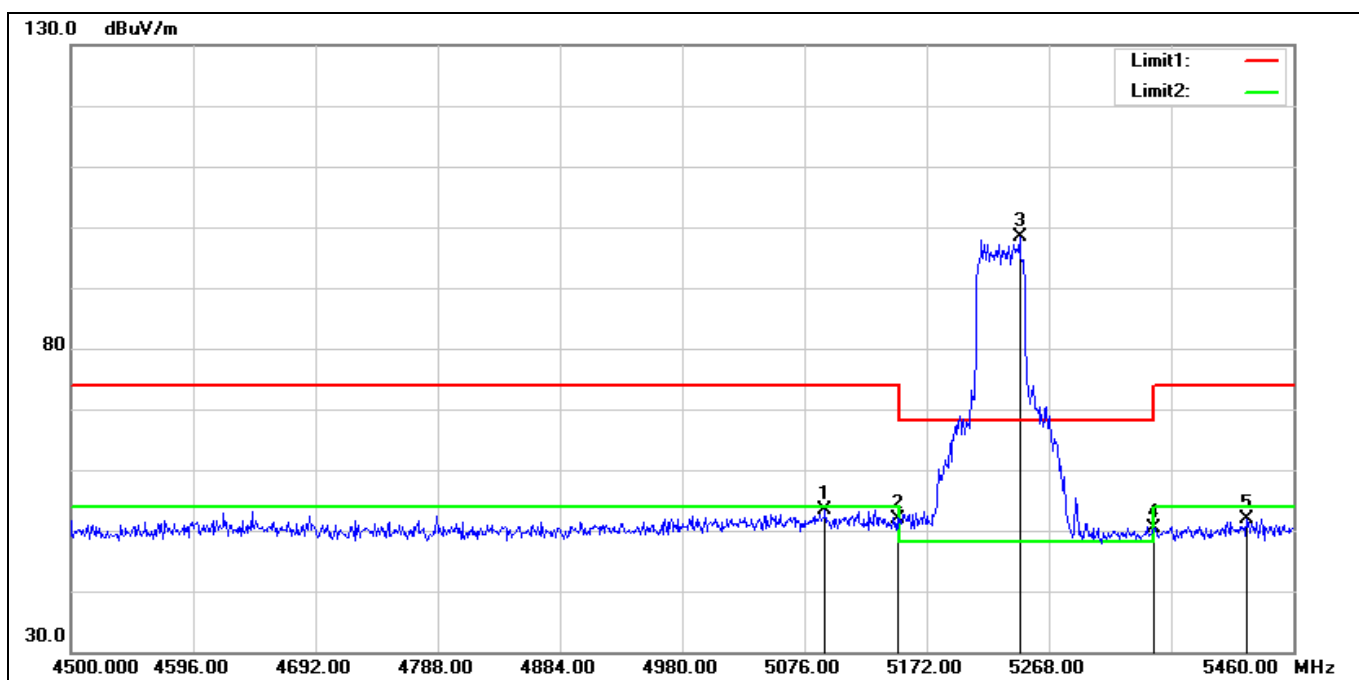
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5145.240	57.68	1.41	59.09	74.00	-14.91	peak
2	5150.000	61.84	1.42	63.26	74.00	-10.74	peak
3*	5203.000	97.66	1.27	98.93	68.20	30.73	peak

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	802.11ac VHT40 5230 MHz		
Remark:			



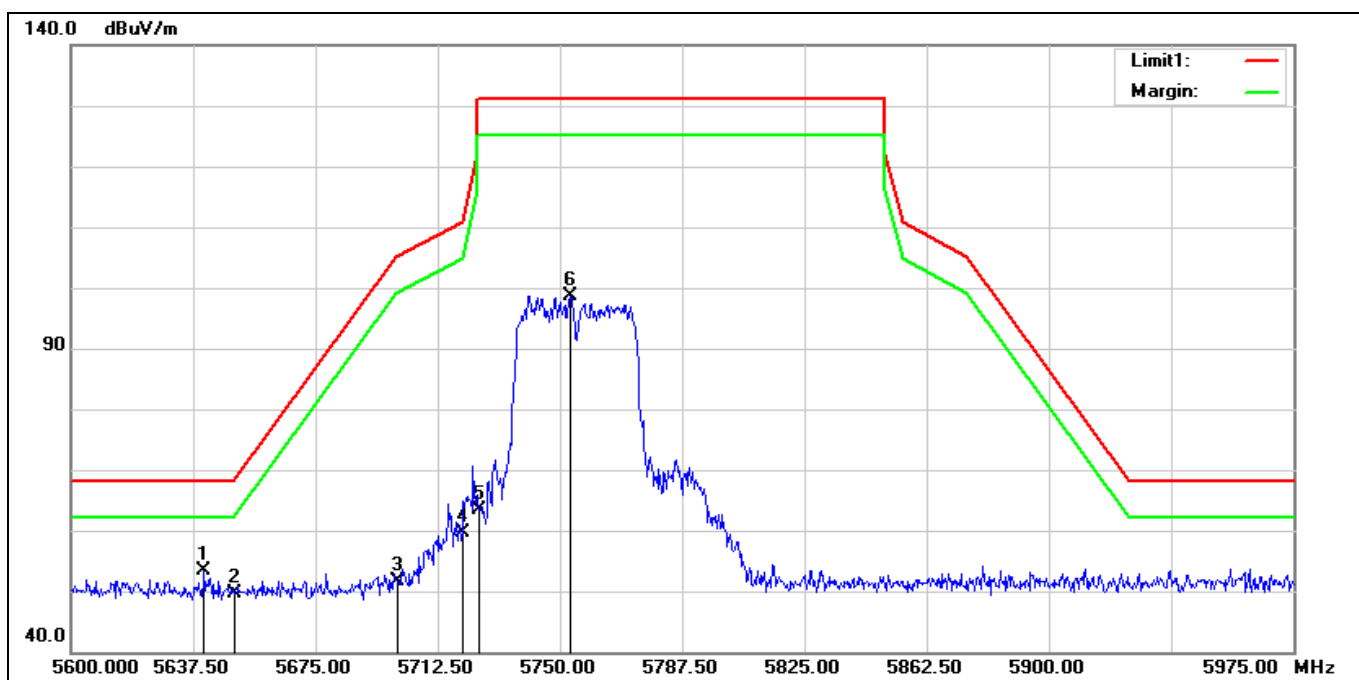
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5064.480	52.52	1.17	53.69	74.00	-20.31	peak
2	5150.000	49.89	1.42	51.31	74.00	-22.69	peak
3*	5244.000	98.74	1.09	99.83	68.20	31.63	peak
4	5350.000	48.69	1.08	49.77	74.00	-24.23	peak
5	5436.960	50.57	1.66	52.23	74.00	-21.77	peak

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Vertical		
Test Mode:	802.11ac VHT40 5230 MHz		
Remark:			



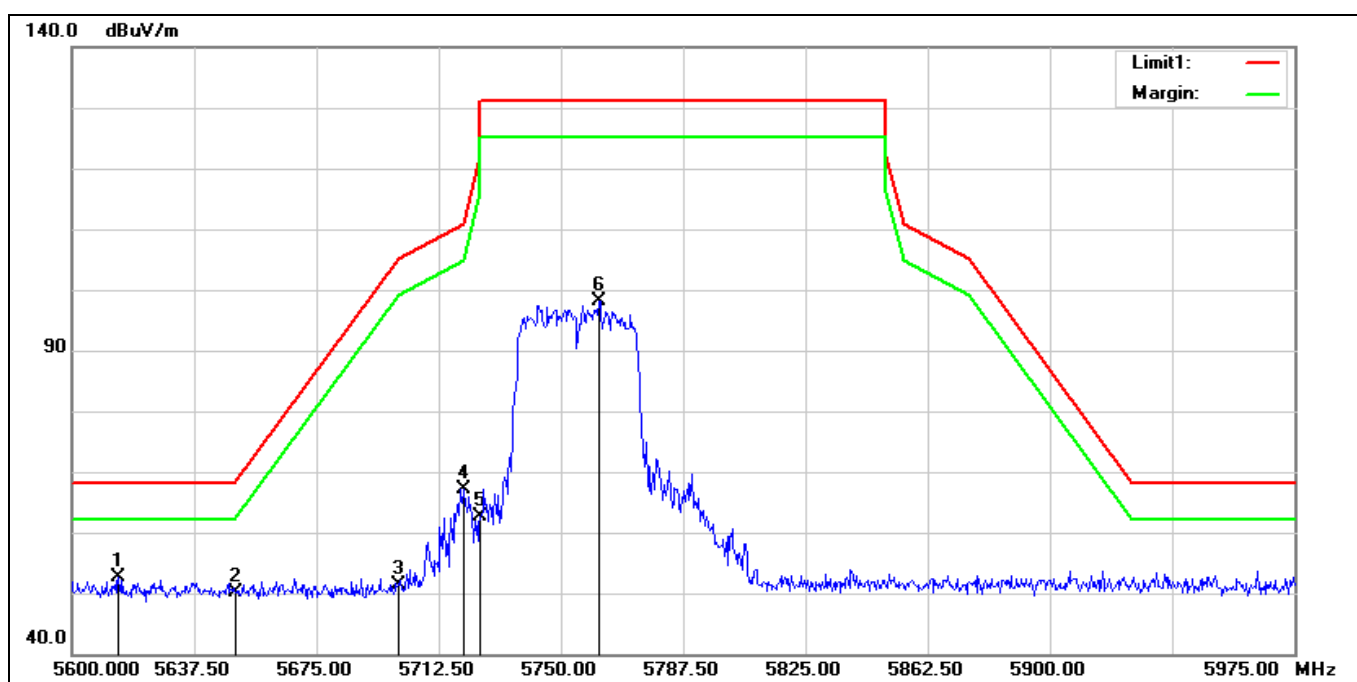
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5092.320	52.15	1.32	53.47	74.00	-20.53	peak
2	5150.000	50.41	1.42	51.83	74.00	-22.17	peak
3*	5244.960	97.26	1.08	98.34	68.20	30.14	peak
4	5350.000	49.26	1.08	50.34	74.00	-23.66	peak
5	5423.520	50.29	1.62	51.91	74.00	-22.09	peak

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	802.11ac VHT40 5755 MHz		
Remark:			



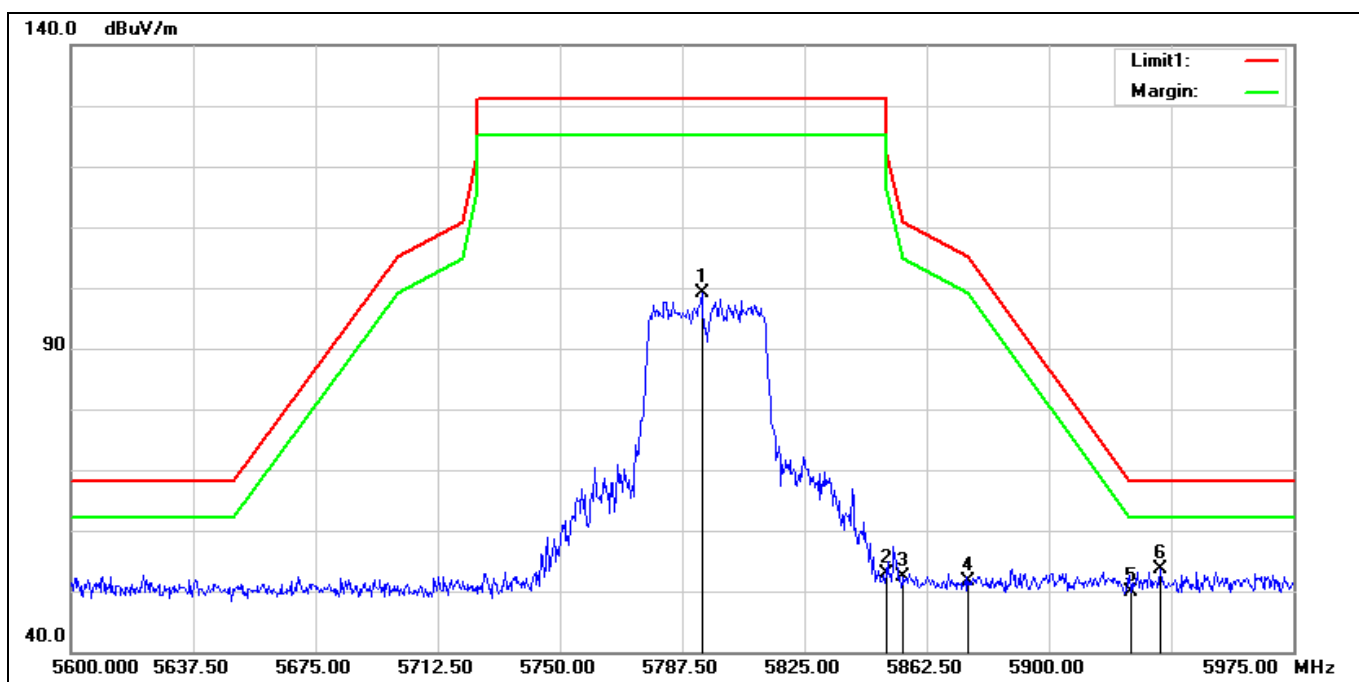
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1*	5640.875	51.51	1.92	53.43	68.20	-14.77	peak
2	5650.000	47.67	1.90	49.57	68.20	-18.63	peak
3	5700.000	49.59	2.06	51.65	105.20	-53.55	peak
4	5720.000	57.48	2.26	59.74	110.80	-51.06	peak
5	5725.000	61.07	2.30	63.37	122.20	-58.83	peak
6	5753.375	96.10	2.55	98.65	131.20	-32.55	peak

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Vertical		
Test Mode:	802.11ac VHT40 5755 MHz		
Remark:			



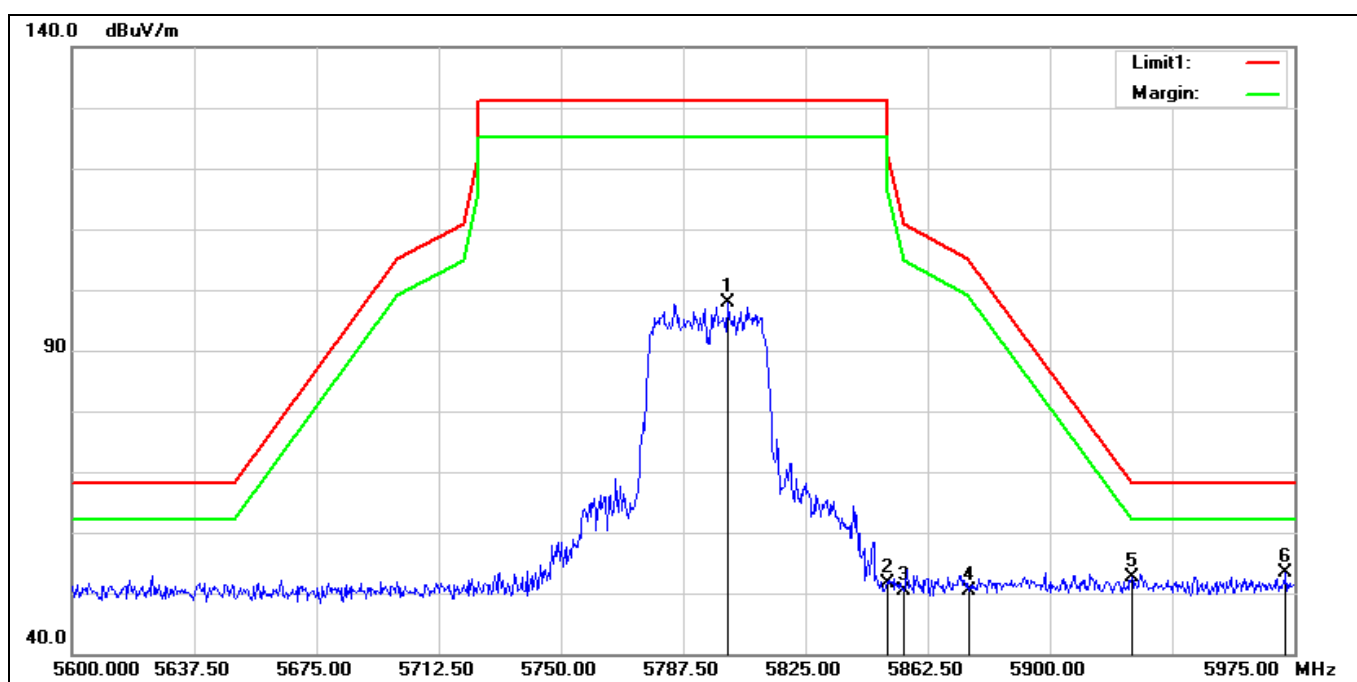
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1*	5614.250	50.74	1.98	52.72	68.20	-15.48	peak
2	5650.000	48.31	1.90	50.21	68.20	-17.99	peak
3	5700.000	49.29	2.06	51.35	105.20	-53.85	peak
4	5720.000	64.83	2.26	67.09	110.80	-43.71	peak
5	5725.000	60.43	2.30	62.73	122.20	-59.47	peak
6	5761.625	95.43	2.61	98.04	131.20	-33.16	peak

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	802.11ac VHT40 5795 MHz		
Remark:			



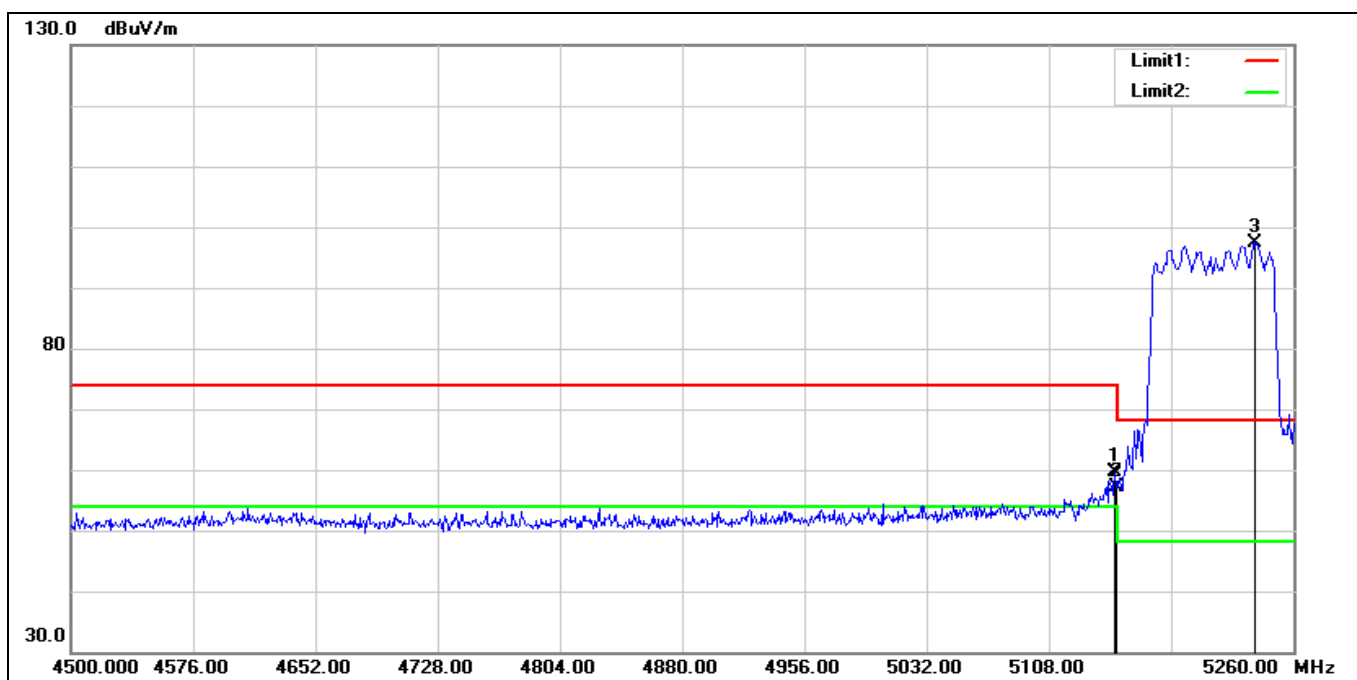
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5793.500	96.37	2.77	99.14	131.20	-32.06	peak
2	5850.000	49.93	2.98	52.91	122.20	-69.29	peak
3	5855.000	49.30	3.01	52.31	110.80	-58.49	peak
4	5875.000	48.68	3.07	51.75	105.20	-53.45	peak
5	5925.000	46.90	3.10	50.00	68.20	-18.20	peak
6*	5934.125	50.64	3.06	53.70	68.20	-14.50	peak

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Vertical		
Test Mode:	802.11ac VHT40 5795 MHz		
Remark:			



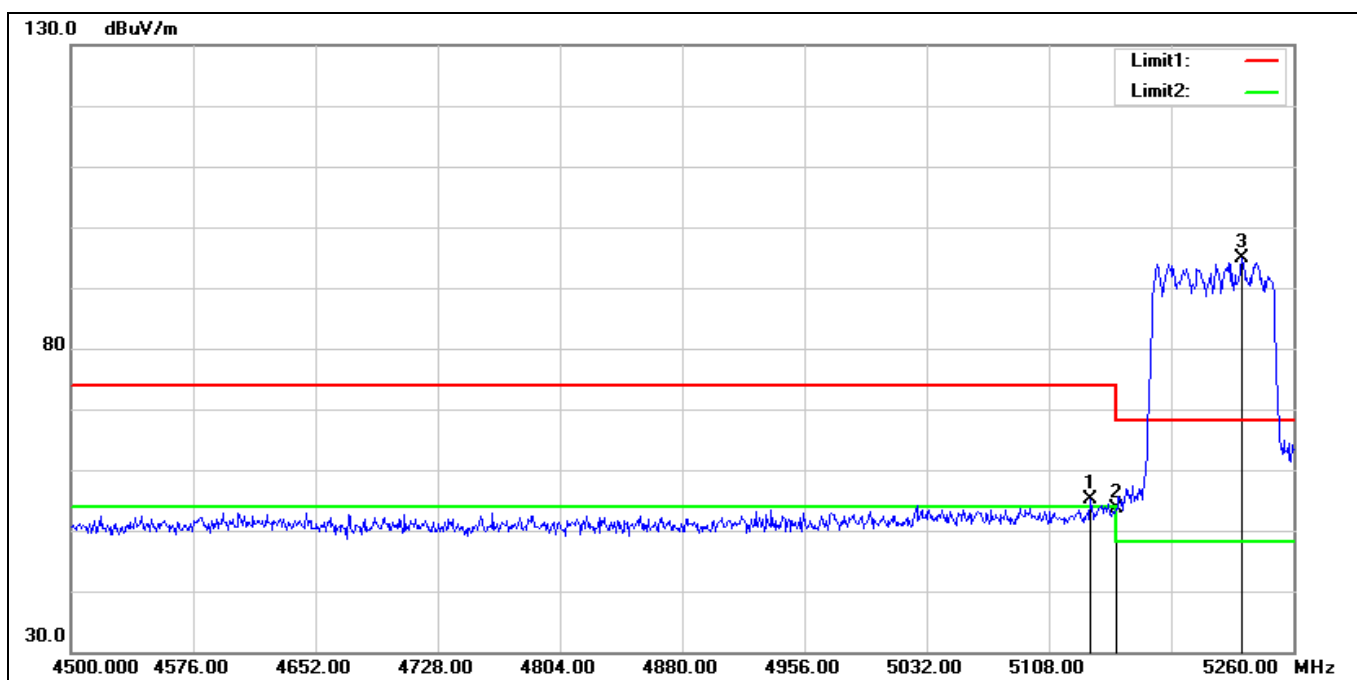
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5801.000	95.06	2.82	97.88	131.20	-33.32	peak
2	5850.000	48.74	2.98	51.72	122.20	-70.48	peak
3	5855.000	47.34	3.01	50.35	110.80	-60.45	peak
4	5875.000	47.43	3.07	50.50	105.20	-54.70	peak
5	5925.000	49.48	3.10	52.58	68.20	-15.62	peak
6*	5972.375	50.35	3.15	53.50	68.20	-14.70	peak

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	802.11ac VHT80 5210 MHz		
Remark:			



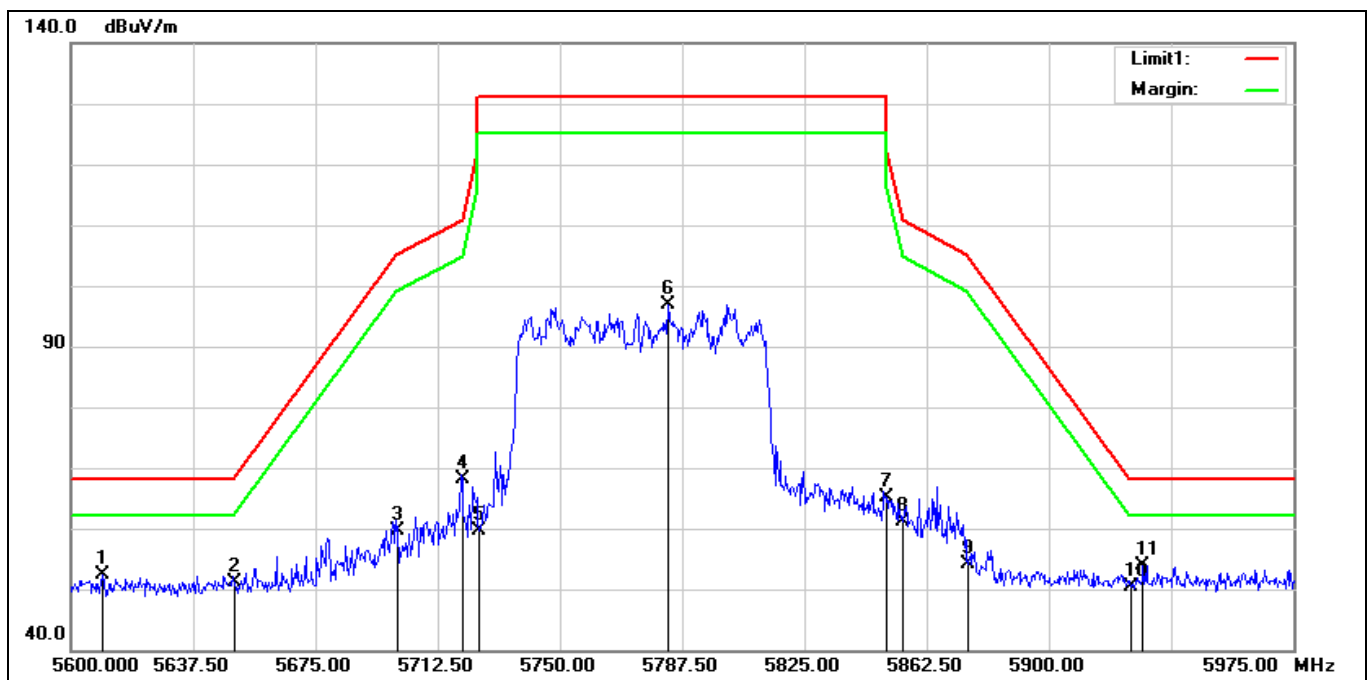
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5149.040	58.16	1.42	59.58	74.00	-14.42	peak
2	5150.000	55.70	1.42	57.12	74.00	-16.88	peak
3*	5236.440	96.23	1.11	97.34	68.20	29.14	peak

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Vertical		
Test Mode:	802.11ac VHT80 5210 MHz		
Remark:			



No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5133.840	53.81	1.40	55.21	74.00	-18.79	peak
2	5150.000	52.17	1.42	53.59	74.00	-20.41	peak
3*	5228.080	93.80	1.15	94.95	68.20	26.75	peak

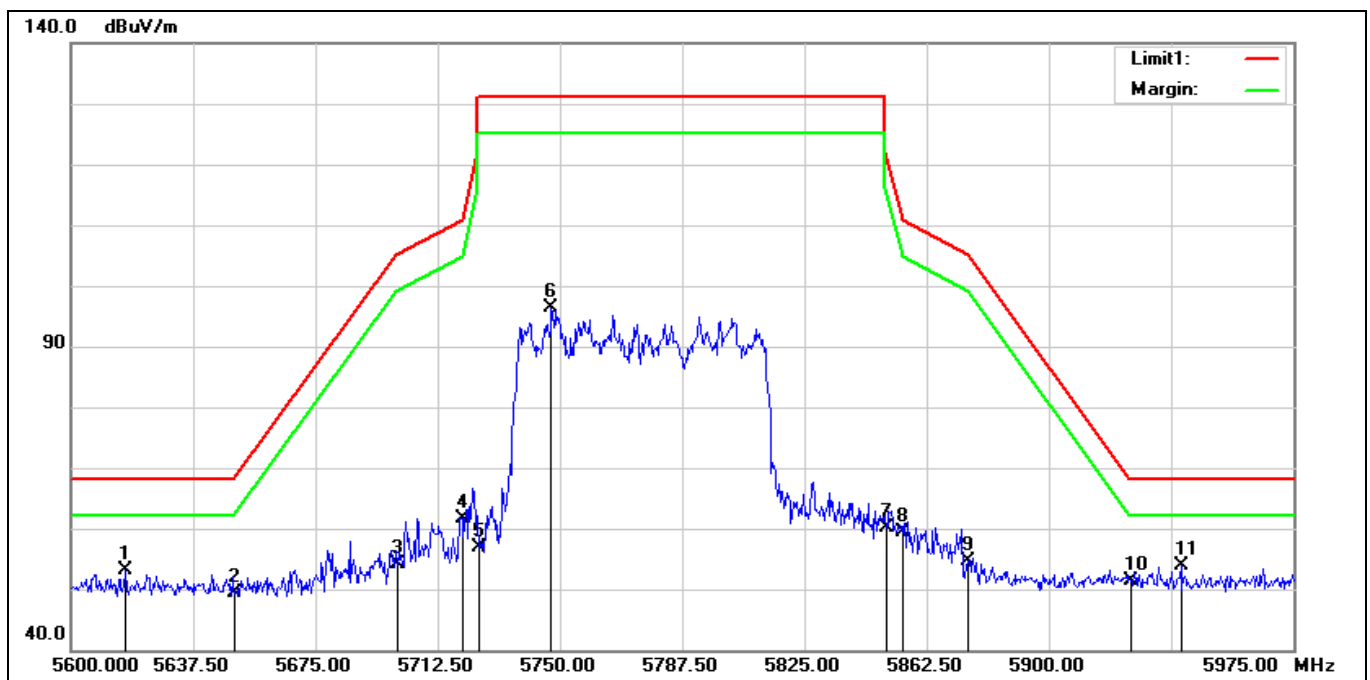
Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	802.11ac VHT80 5775 MHz		
Remark:			



Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	802.11ac VHT80 5775 MHz		
Remark:			

No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5609.750	50.43	2.00	52.43	68.20	-15.77	peak
2	5650.000	49.23	1.90	51.13	68.20	-17.07	peak
3	5700.000	57.65	2.06	59.71	105.20	-45.49	peak
4	5720.000	65.95	2.26	68.21	110.80	-42.59	peak
5	5725.000	57.22	2.30	59.52	122.20	-62.68	peak
6	5783.375	94.28	2.71	96.99	131.20	-34.21	peak
7	5850.000	62.17	2.98	65.15	122.20	-57.05	peak
8	5855.000	58.10	3.01	61.11	110.80	-49.69	peak
9	5875.000	51.01	3.07	54.08	105.20	-51.12	peak
10	5925.000	47.17	3.10	50.27	68.20	-17.93	peak
11*	5928.875	50.91	3.08	53.99	68.20	-14.21	peak

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Vertical		
Test Mode:	802.11ac VHT80 5775 MHz		
Remark:			

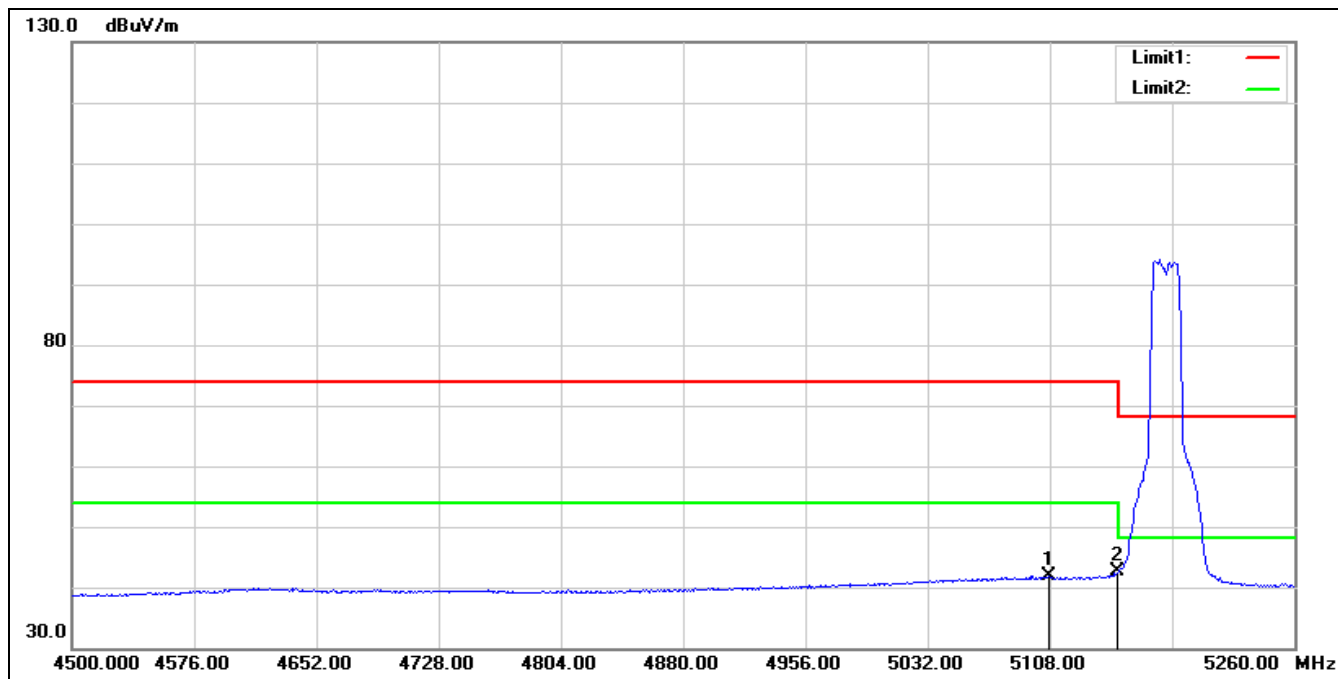


Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Vertical		
Test Mode:	802.11ac VHT80 5775 MHz		
Remark:			

No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5616.875	51.27	1.97	53.24	68.20	-14.96	peak
2	5650.000	47.39	1.90	49.29	68.20	-18.91	peak
3	5700.000	51.98	2.06	54.04	105.20	-51.16	peak
4	5720.000	59.36	2.26	61.62	110.80	-49.18	peak
5	5725.000	54.67	2.30	56.97	122.20	-65.23	peak
6	5747.375	93.92	2.52	96.44	131.20	-34.76	peak
7	5850.000	57.10	2.98	60.08	122.20	-62.12	peak
8	5855.000	56.30	3.01	59.31	110.80	-51.49	peak
9	5875.000	51.62	3.07	54.69	105.20	-50.51	peak
10	5925.000	48.25	3.10	51.35	68.20	-16.85	peak
11*	5940.500	50.73	3.06	53.79	68.20	-14.41	peak

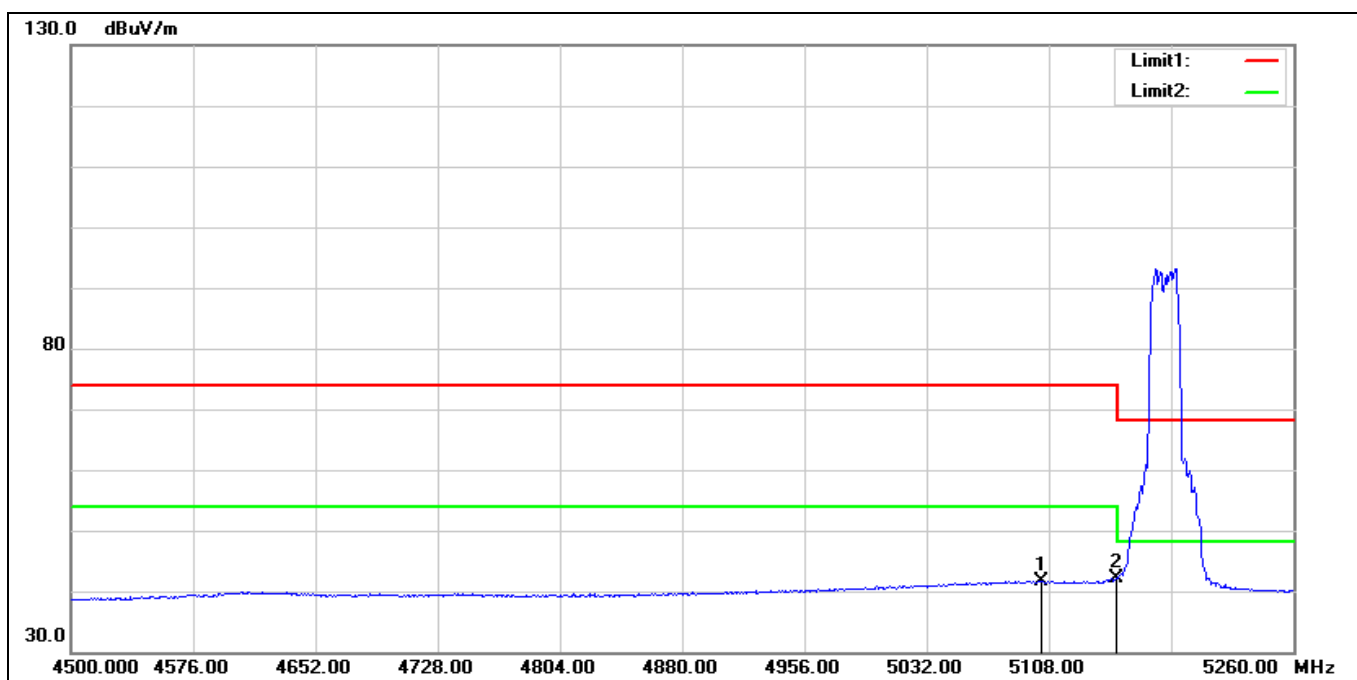
Average

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	802.11a 5180 MHz		
Remark:			



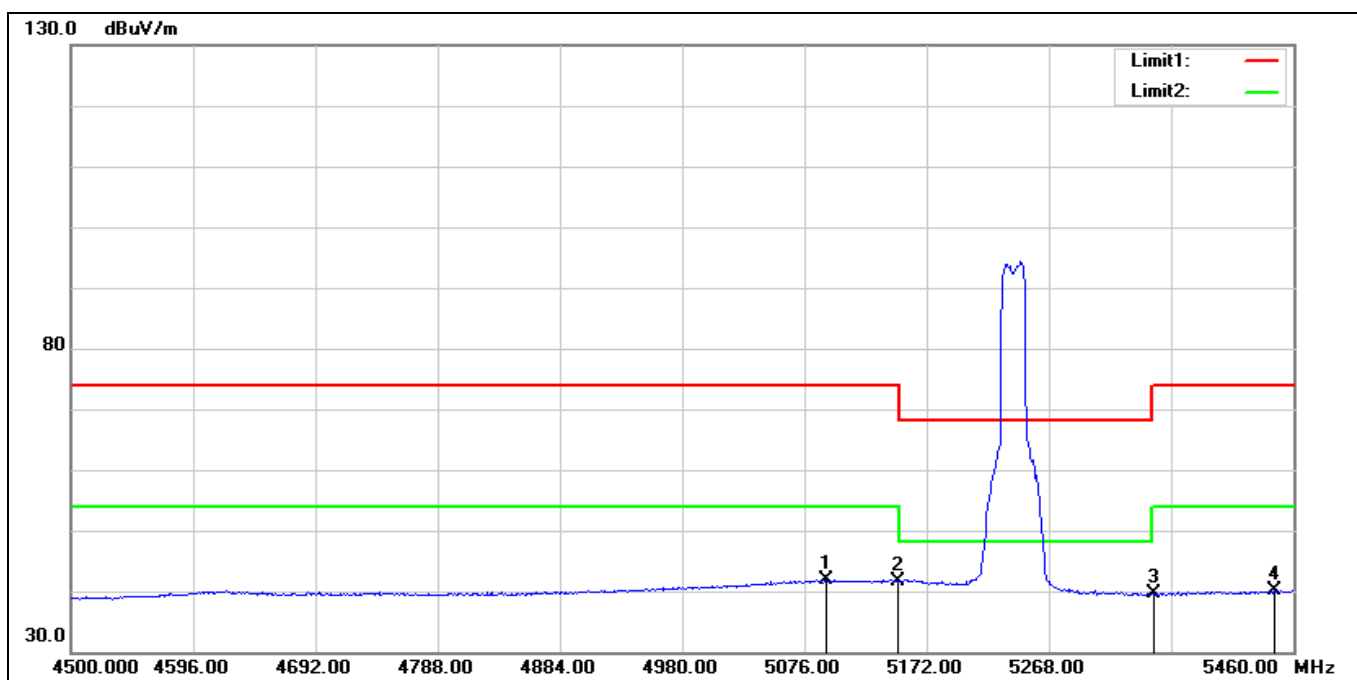
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5107.240	40.50	1.36	41.86	54.00	-12.14	AVG
2*	5150.000	41.09	1.42	42.51	54.00	-11.49	AVG

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Vertical		
Test Mode:	802.11a 5180 MHz		
Remark:			



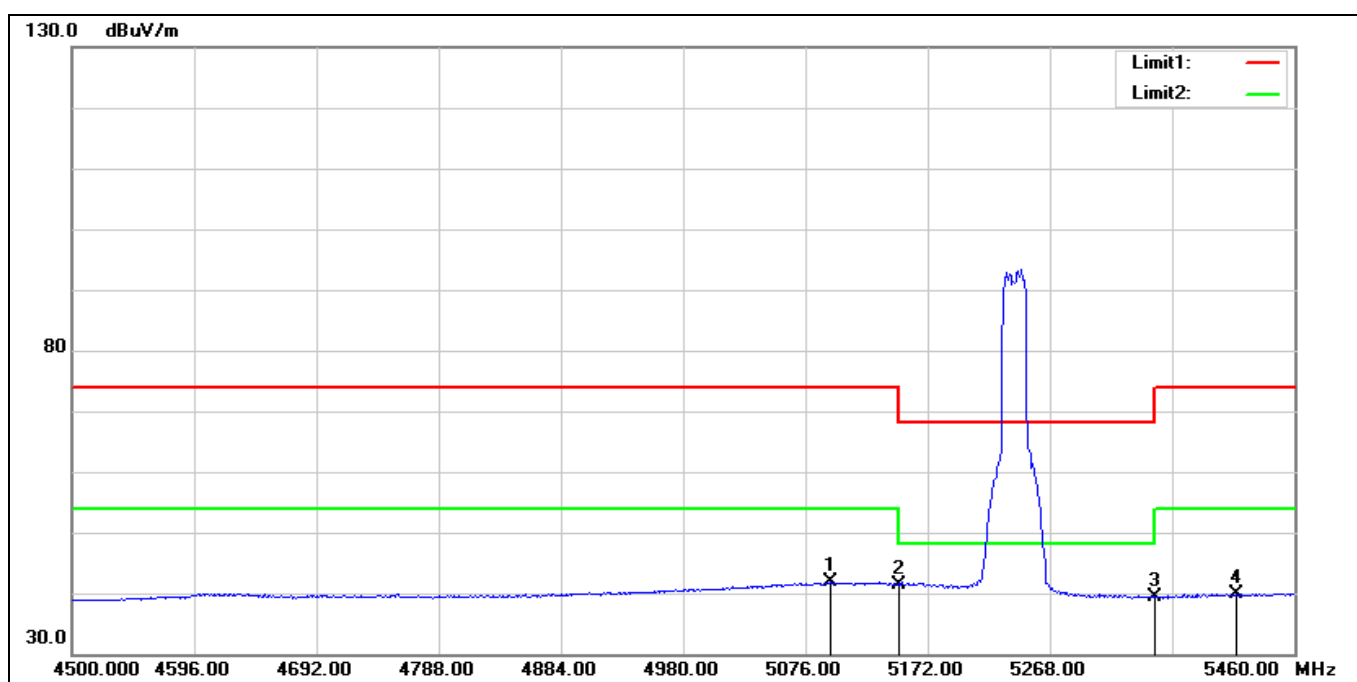
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5103.440	40.30	1.35	41.65	54.00	-12.35	AVG
2*	5150.000	40.68	1.42	42.10	54.00	-11.90	AVG

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	802.11a 5240 MHz		
Remark:			



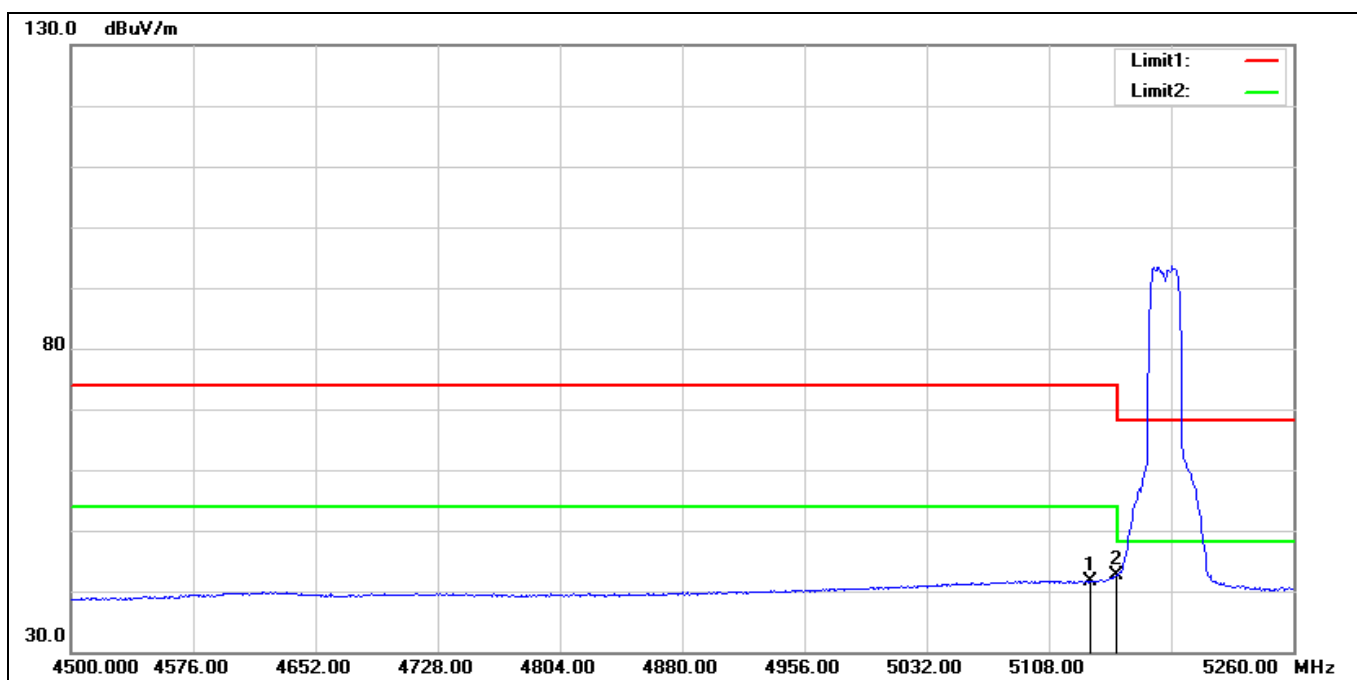
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1*	5093.280	40.64	1.32	41.96	54.00	-12.04	AVG
2	5150.000	40.26	1.42	41.68	54.00	-12.32	AVG
3	5350.000	38.47	1.08	39.55	54.00	-14.45	AVG
4	5444.640	38.34	1.70	40.04	54.00	-13.96	AVG

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Vertical		
Test Mode:	802.11a 5240 MHz		
Remark:			



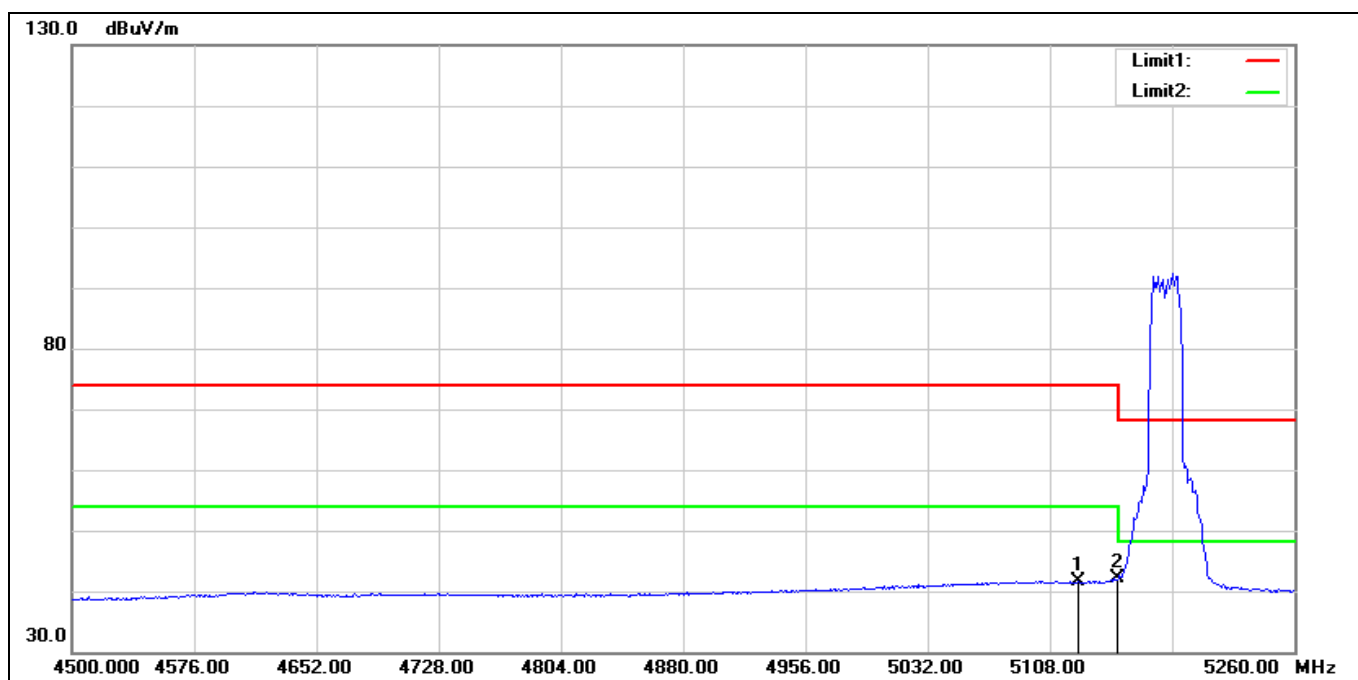
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1*	5096.160	40.44	1.33	41.77	54.00	-12.23	AVG
2	5150.000	40.01	1.42	41.43	54.00	-12.57	AVG
3	5350.000	38.26	1.08	39.34	54.00	-14.66	AVG
4	5413.920	38.33	1.60	39.93	54.00	-14.07	AVG

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	802.11ac VHT20 5180 MHz		
Remark:			



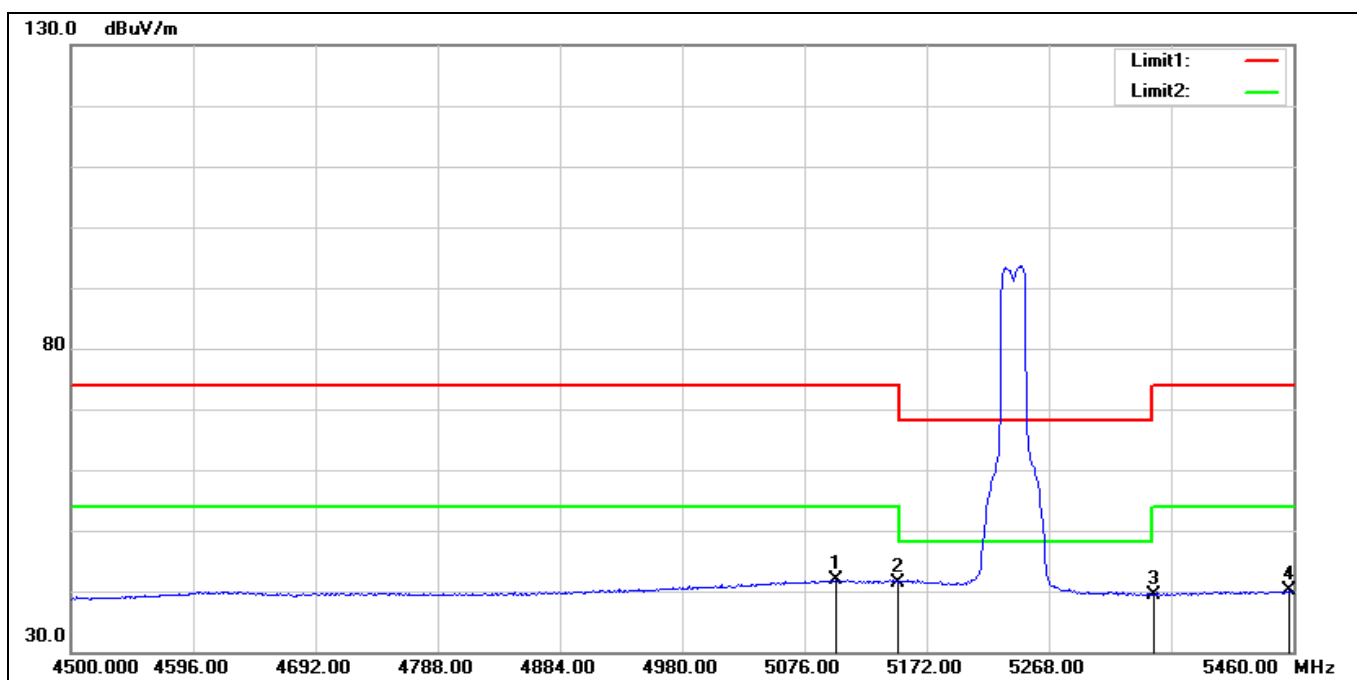
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5133.840	40.29	1.40	41.69	54.00	-12.31	AVG
2*	5150.000	41.14	1.42	42.56	54.00	-11.44	AVG

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Vertical		
Test Mode:	802.11ac VHT20 5180 MHz		
Remark:			



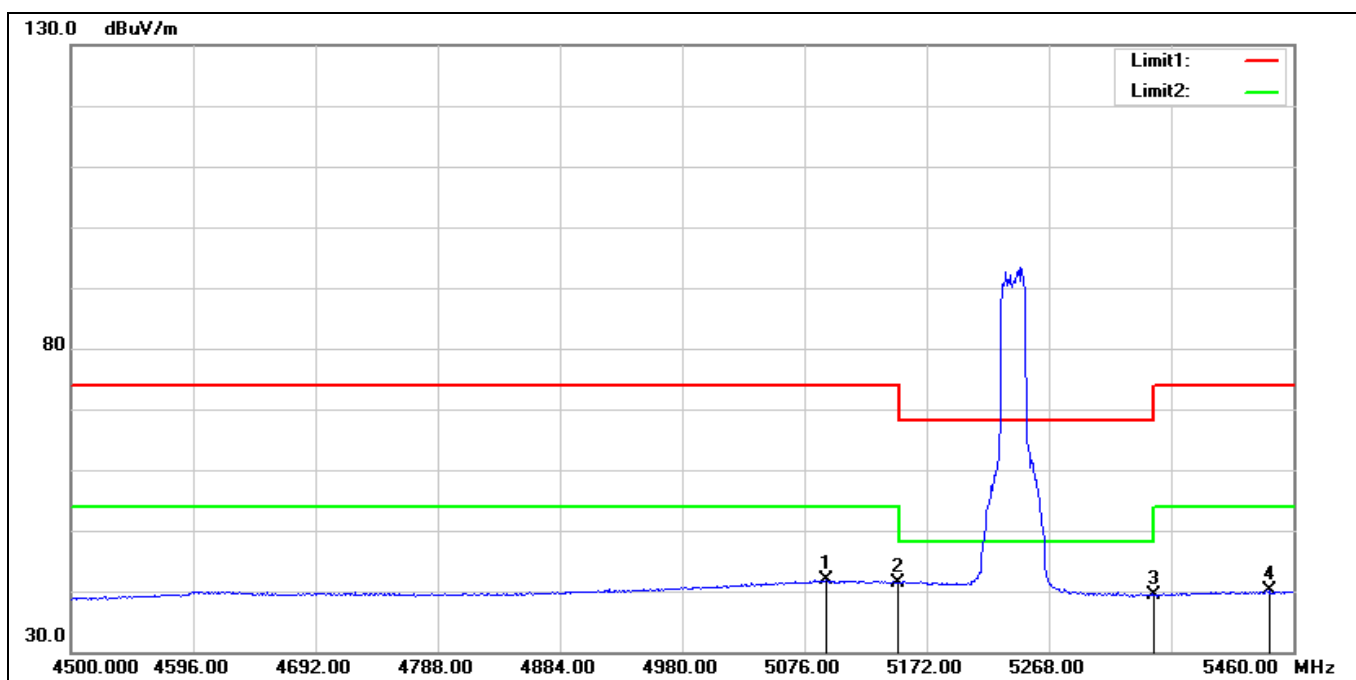
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5125.480	40.31	1.39	41.70	54.00	-12.30	AVG
2*	5150.000	40.72	1.42	42.14	54.00	-11.86	AVG

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	802.11ac VHT20 5240 MHz		
Remark:			



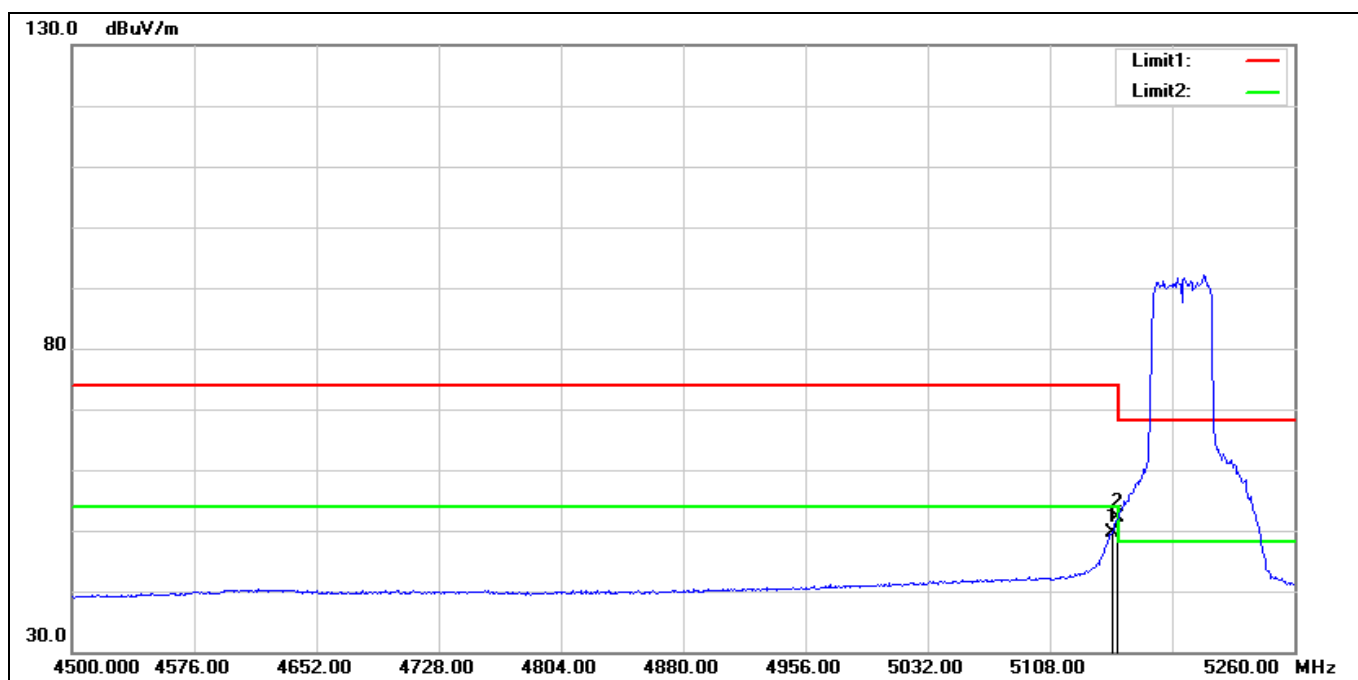
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1*	5100.960	40.65	1.35	42.00	54.00	-12.00	AVG
2	5150.000	40.07	1.42	41.49	54.00	-12.51	AVG
3	5350.000	38.34	1.08	39.42	54.00	-14.58	AVG
4	5456.160	38.32	1.72	40.04	54.00	-13.96	AVG

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Vertical		
Test Mode:	802.11ac VHT20 5240 MHz		
Remark:			



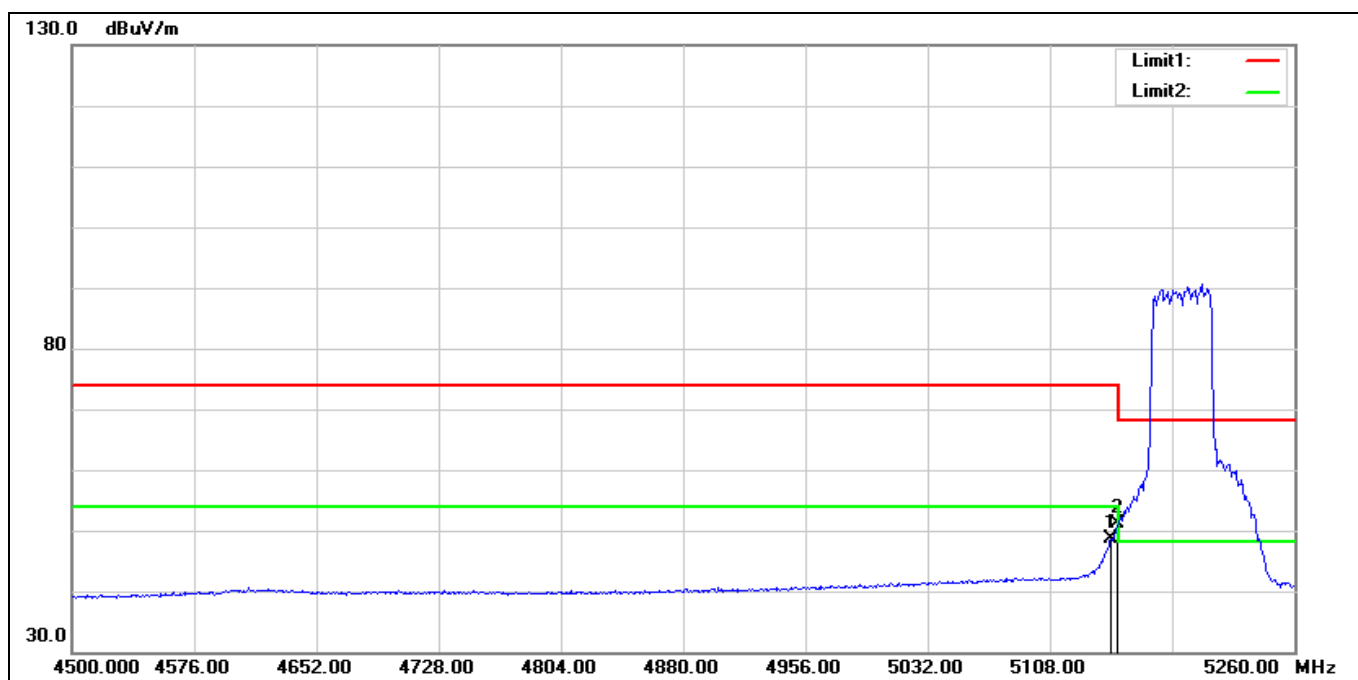
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1*	5093.280	40.51	1.32	41.83	54.00	-12.17	AVG
2	5150.000	39.95	1.42	41.37	54.00	-12.63	AVG
3	5350.000	38.28	1.08	39.36	54.00	-14.64	AVG
4	5441.760	38.36	1.69	40.05	54.00	-13.95	AVG

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	802.11ac VHT40 5190 MHz		
Remark:			



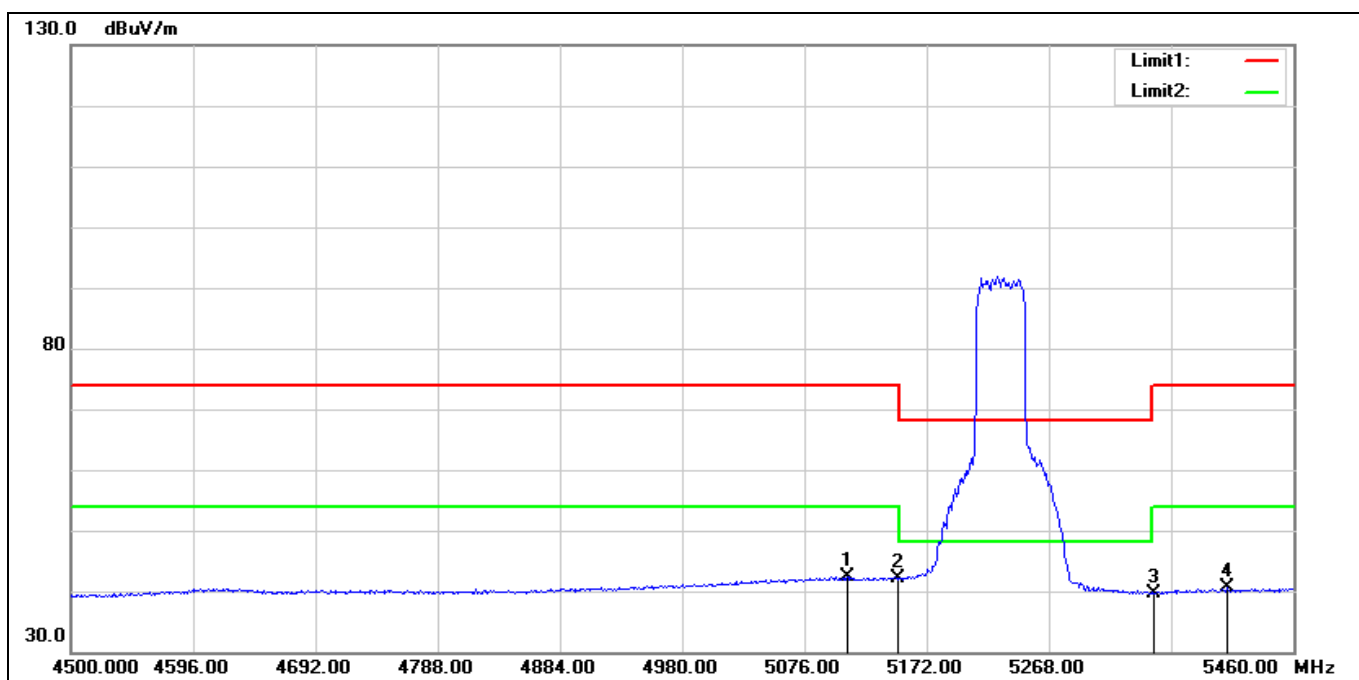
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5146.760	48.26	1.42	49.68	54.00	-4.32	AVG
2*	5150.000	50.67	1.42	52.09	54.00	-1.91	AVG

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Vertical		
Test Mode:	802.11ac VHT40 5190 MHz		
Remark:			



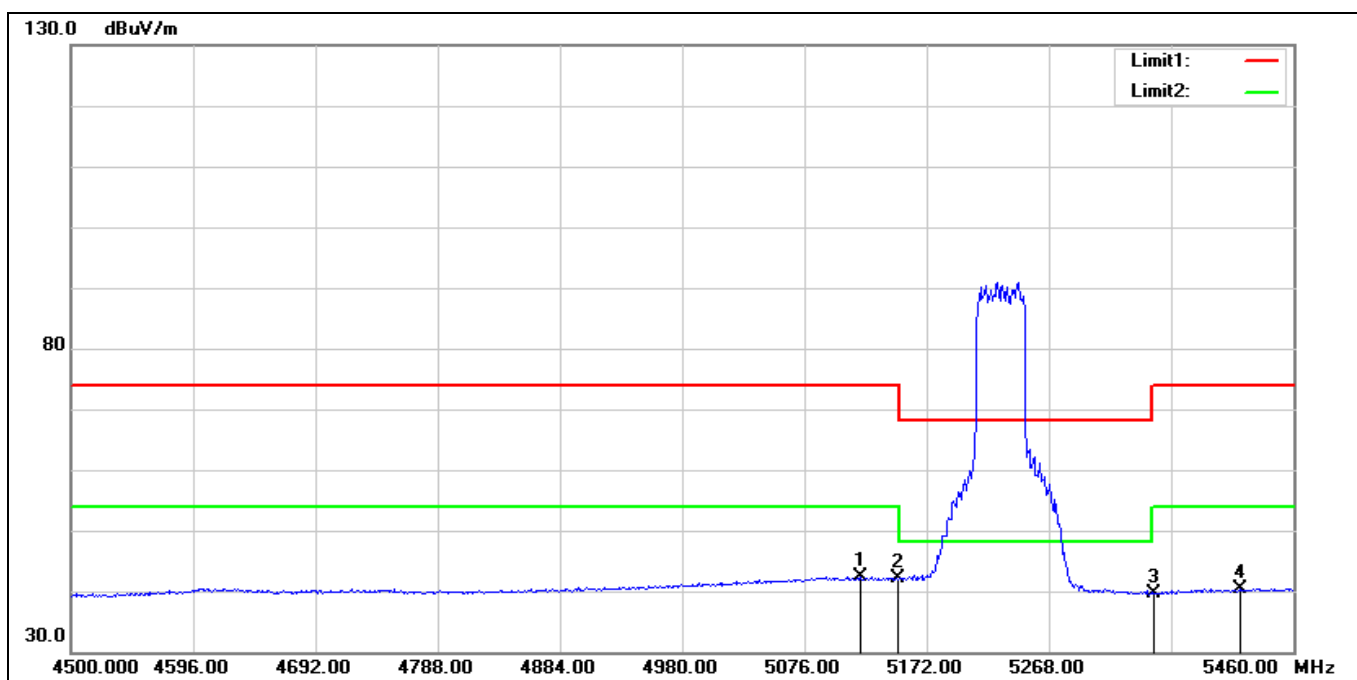
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5146.000	47.32	1.42	48.74	54.00	-5.26	AVG
2*	5150.000	49.74	1.42	51.16	54.00	-2.84	AVG

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	802.11ac VHT40 5230 MHz		
Remark:			



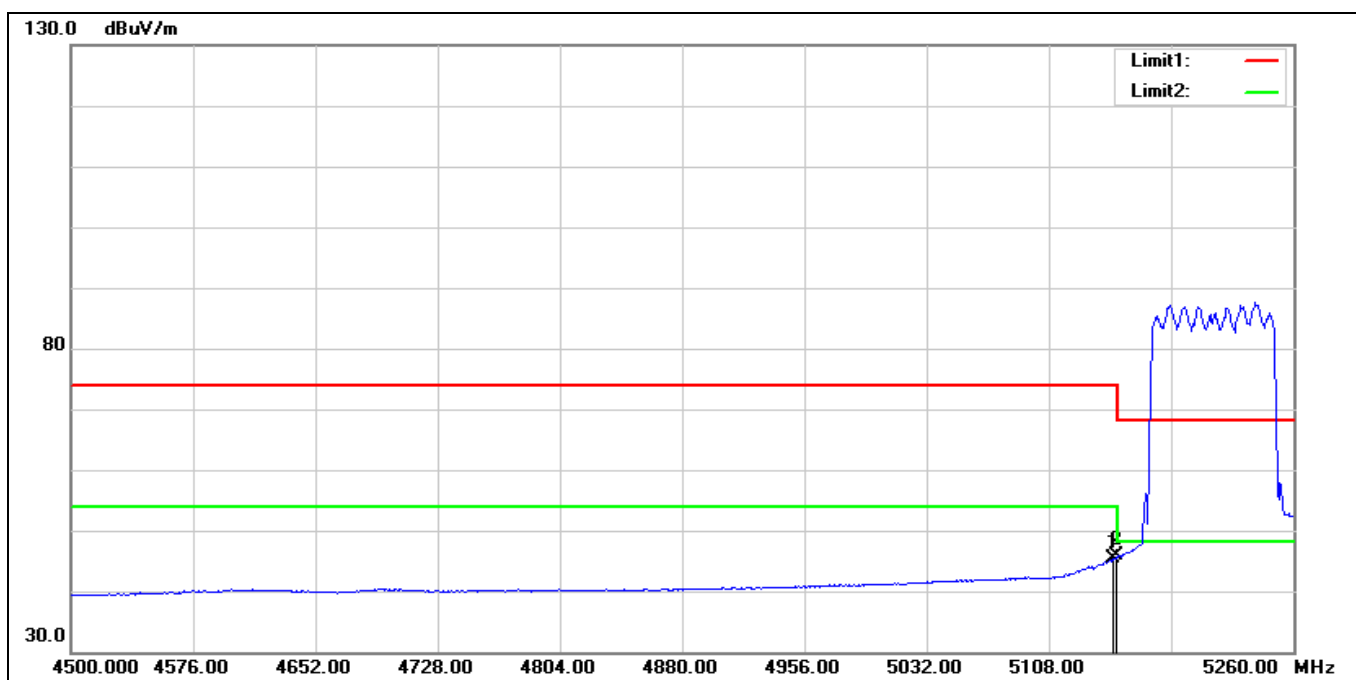
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1*	5109.600	40.96	1.37	42.33	54.00	-11.67	AVG
2	5150.000	40.73	1.42	42.15	54.00	-11.85	AVG
3	5350.000	38.61	1.08	39.69	54.00	-14.31	AVG
4	5408.160	39.03	1.57	40.60	54.00	-13.40	AVG

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Vertical		
Test Mode:	802.11ac VHT40 5230 MHz		
Remark:			



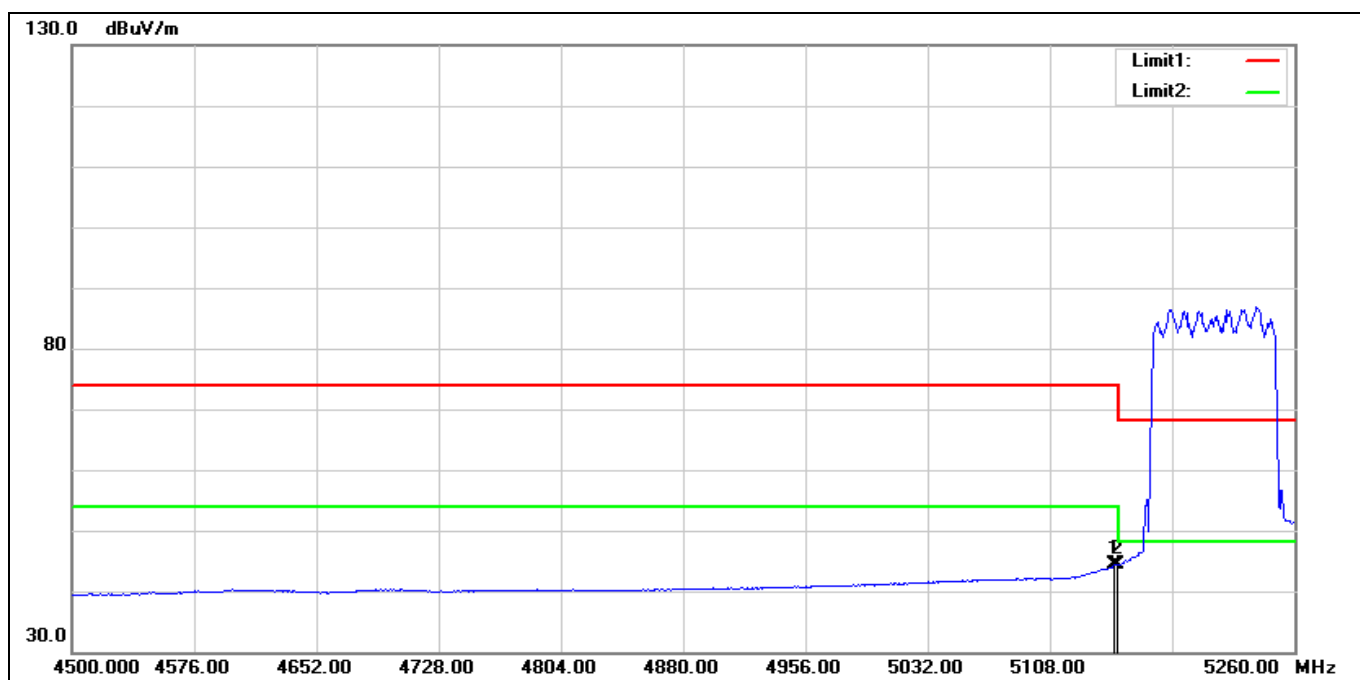
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1*	5120.160	40.92	1.38	42.30	54.00	-11.70	AVG
2	5150.000	40.65	1.42	42.07	54.00	-11.93	AVG
3	5350.000	38.49	1.08	39.57	54.00	-14.43	AVG
4	5417.760	38.77	1.61	40.38	54.00	-13.62	AVG

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	802.11ac VHT80 5210 MHz		
Remark:			



No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5147.520	43.85	1.42	45.27	54.00	-8.73	AVG
2*	5150.000	44.39	1.42	45.81	54.00	-8.19	AVG

Standard:	Part 15E	Test Site:	966 Chamber
Polarization:	Vertical		
Test Mode:	802.11ac VHT80 5210 MHz		
Remark:			



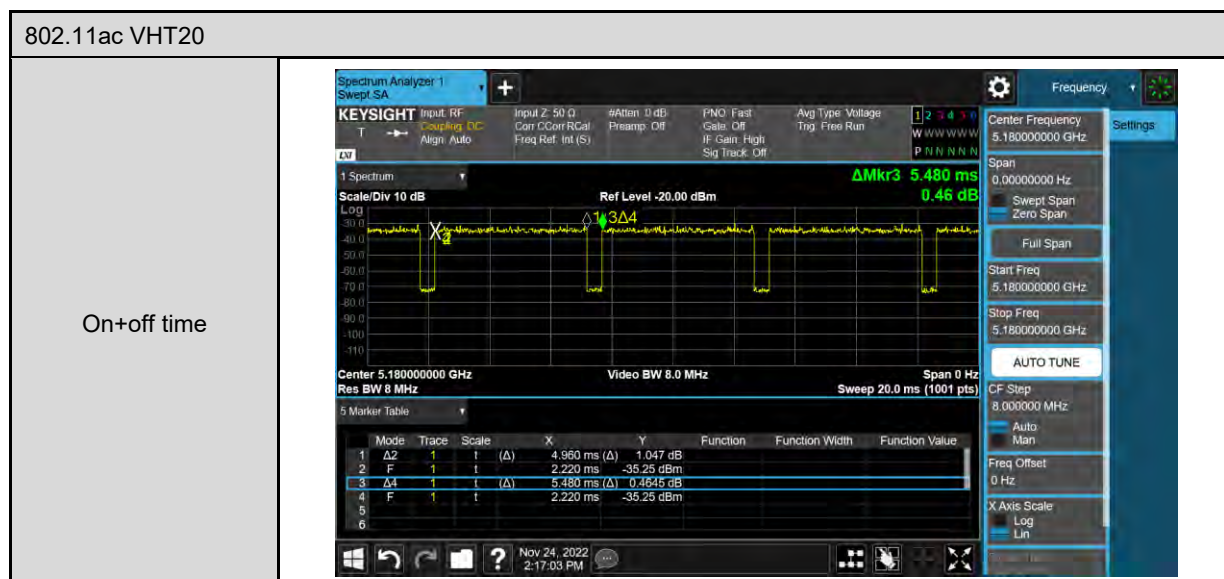
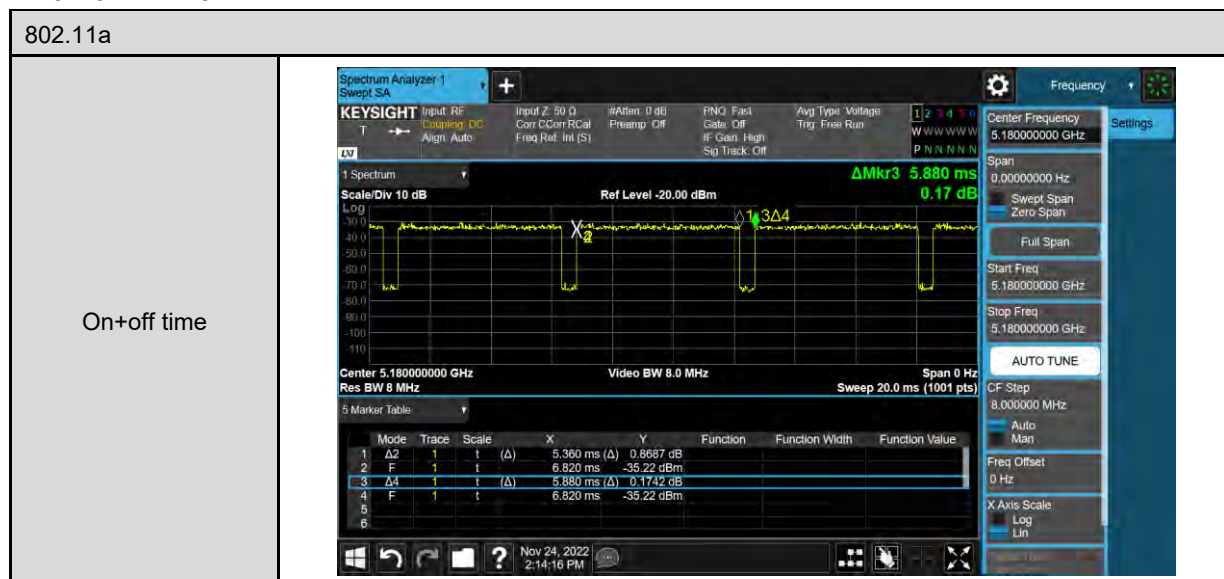
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5147.520	42.92	1.42	44.34	74.00	-29.66	peak
2*	5150.000	43.04	1.42	44.46	74.00	-29.54	peak

5.3. Conducted Test Results

Duty cycle

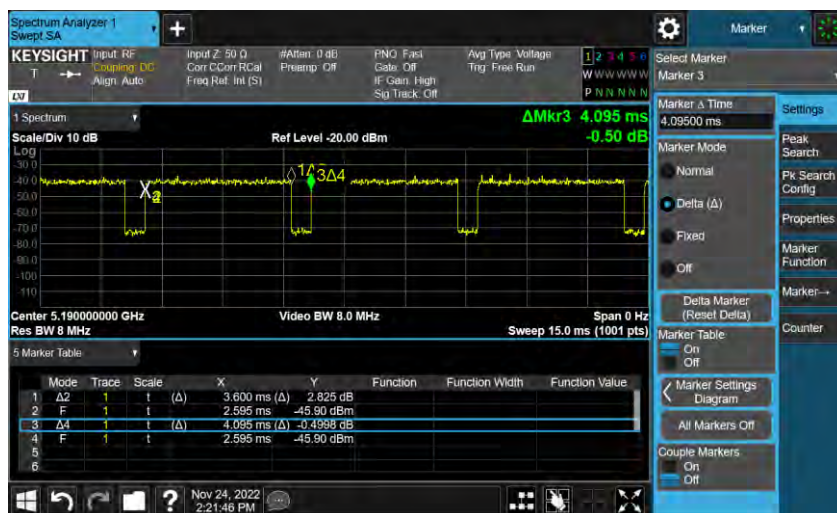
Test Mode	Frequency (MHz)	on time (ms)	on+off time (ms)	Duty cycle	Duty Factor (dB)	1/T Minimum VBW (kHz)
802.11a	5180	5.360	5.880	0.912	0.402	0.187
802.11ac VHT20	5180	4.960	5.480	0.905	0.433	0.202
802.11ac VHT40	5190	3.600	4.095	0.879	0.560	0.278
802.11ac VHT80	5210	3.315	3.825	0.867	0.621	0.302

Duty Cycle Graphs



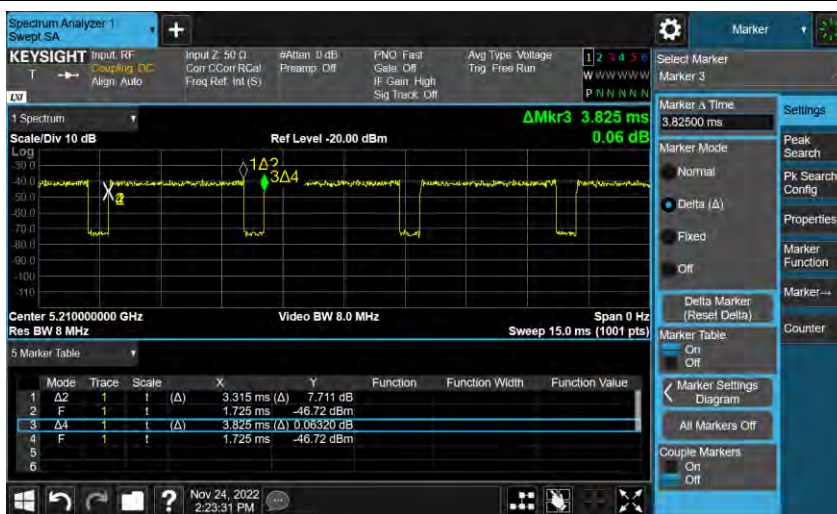
802.11ac VHT40

On+off time



802.11ac VHT80

On+off time



Maximum Conducted Output Power Measurement

RF power setting in Test SW				
Mode	CH	Frequency (MHz)	Ant 0	Test SW Version
802.11a	36	5180	41.00	MP Tool / 0.0003.08.20190211
	40	5200	41.00	
	48	5240	41.00	
	149	5745	43.00	
	157	5785	43.00	
	165	5825	43.00	
802.11n HT20	36	5180	41.00	MP Tool / 0.0003.08.20190211
	40	5200	41.00	
	48	5240	41.00	
	149	5745	43.00	
	157	5785	43.00	
	165	5825	43.00	
802.11n HT40	38	5190	41.00	MP Tool / 0.0003.08.20190211
	46	5230	41.00	
	151	5755	43.00	
	159	5795	43.00	
802.11ac VHT20	36	5180	41.00	MP Tool / 0.0003.08.20190211
	40	5200	41.00	
	48	5240	41.00	
	149	5745	43.00	
	157	5785	43.00	
	165	5825	43.00	
802.11ac VHT40	38	5190	41.00	MP Tool / 0.0003.08.20190211
	46	5230	41.00	
	151	5755	43.00	
	159	5795	43.00	
802.11ac VHT80	42	5210	41.00	MP Tool / 0.0003.08.20190211
	155	5775	43.00	

Band	Date Rate or Sub-test	CH	Frequency (MHz)	Ant-0		Limit
				Average power		
				dBm	W	dBm
802.11a	6 M	36	5180	14.46	0.028	24.00
		40	5200	14.42	0.028	24.00
		48	5240	14.45	0.028	24.00
		149	5745	15.51	0.036	30.00
		157	5785	15.63	0.037	30.00
		165	5825	15.56	0.036	30.00
802.11n HT20	6.5 M	36	5180	14.53	0.028	24.00
		40	5200	14.40	0.028	24.00
		48	5240	14.34	0.027	24.00
		149	5745	15.35	0.034	30.00
		157	5785	15.57	0.036	30.00
		165	5825	15.42	0.035	30.00
802.11n HT40	13.5 M	38	5190	14.58	0.029	24.00
		46	5230	14.56	0.029	24.00
		151	5755	15.44	0.035	30.00
		159	5795	15.66	0.037	30.00
802.11ac VHT20	6.5 M	36	5180	14.57	0.029	24.00
		40	5200	14.43	0.028	24.00
		48	5240	14.37	0.027	24.00
		149	5745	15.37	0.034	30.00
		157	5785	15.60	0.036	30.00
		165	5825	15.45	0.035	30.00
802.11ac VHT40	13.5 M	38	5190	14.65	0.029	24.00
		46	5230	14.58	0.029	24.00
		151	5755	15.48	0.035	30.00
		159	5795	15.71	0.037	30.00
802.11ac VHT80	29.3 M	42	5210	14.17	0.026	24.00
		155	5775	15.21	0.033	30.00

26 dB RF Bandwidth Measurement & 99 % Occupied Bandwidth Measurement

Band	CH	Freq. (MHz)	99% Bandwidth	26dB Bandwidth
			ANT-0	ANT-0
			MHz	MHz
802.11a	36	5180	16.929	21.190
	40	5200	17.007	21.540
	48	5240	16.967	21.350
802.11ac VHT20	36	5180	17.937	21.780
	40	5200	17.966	22.010
	48	5240	17.947	21.510
802.11ac VHT40	38	5190	36.409	42.890
	46	5230	36.566	42.760
802.11ac VHT80	42	5210	75.973	82.030

■ Test Graphs

26 dB RF Bandwidth

802.11a ANT-0



802.11ac VHT20_ ANT-0

5180 MHz



5200 MHz



5240 MHz



802.11ac VHT40_ ANT-0

5190 MHz



5230 MHz

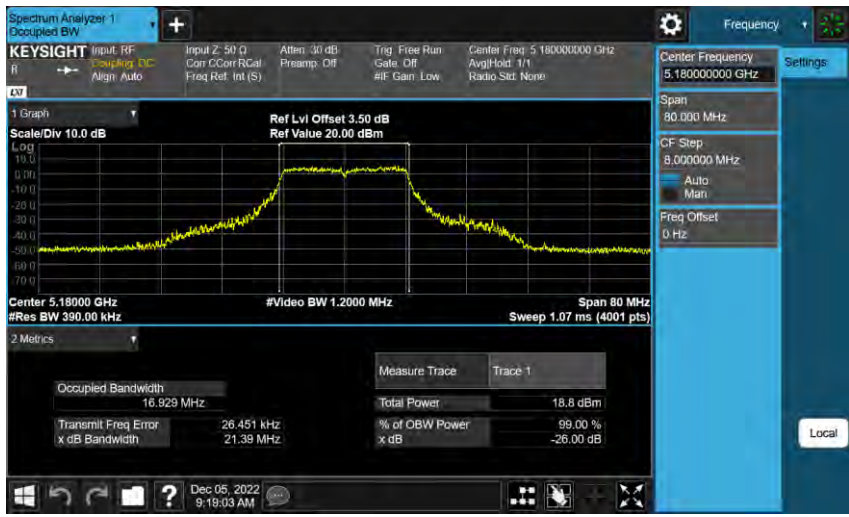
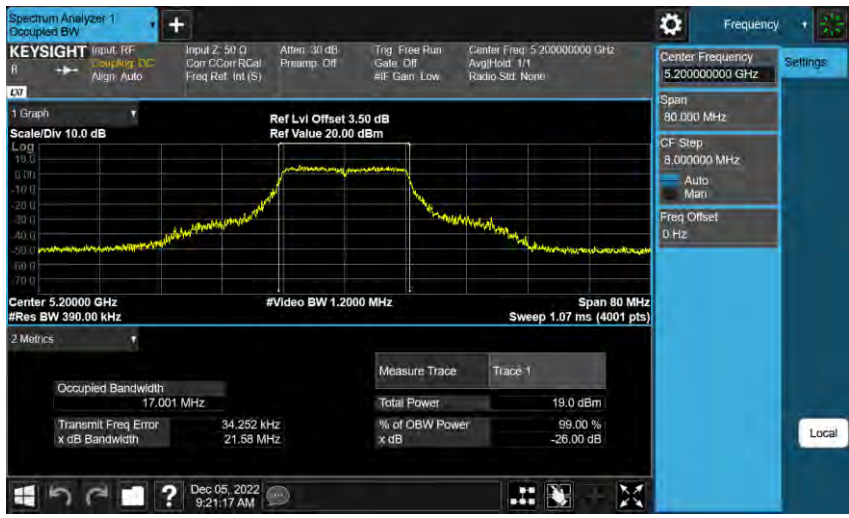


802.11ac VHT80_ ANT-0

5210 MHz

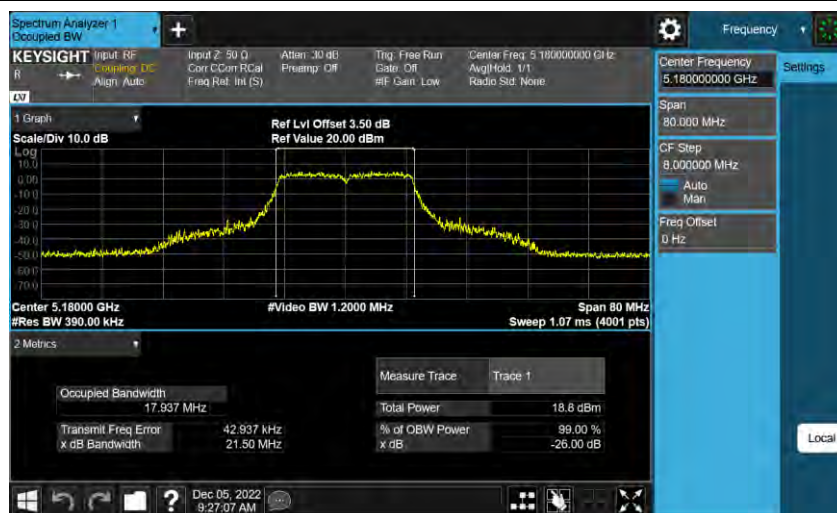


99 % Occupied Bandwidth

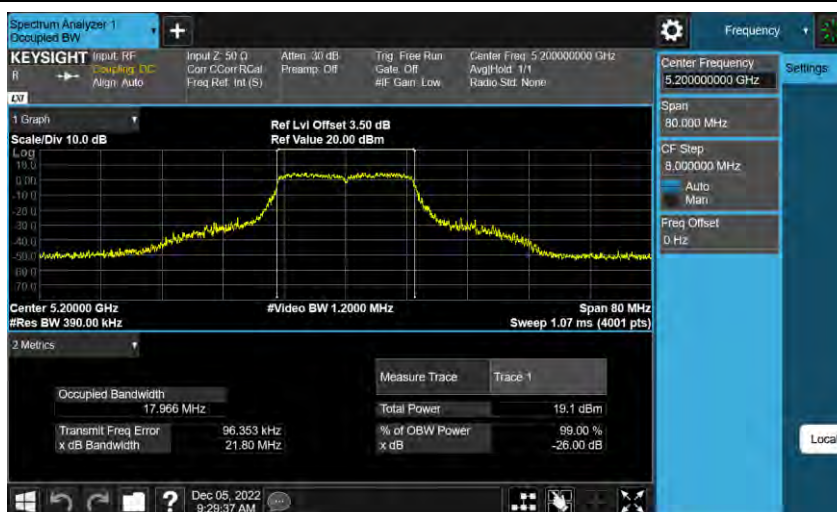
802.11a_ANT-0	 5180 MHz
5200 MHz	 5200 MHz
5240 MHz	 5240 MHz

802.11ac VHT20_ ANT-0

5180 MHz



5200 MHz



5240 MHz



802.11ac VHT40_ ANT-0

5190 MHz



5230 MHz



802.11ac VHT80_ ANT-0

5210 MHz



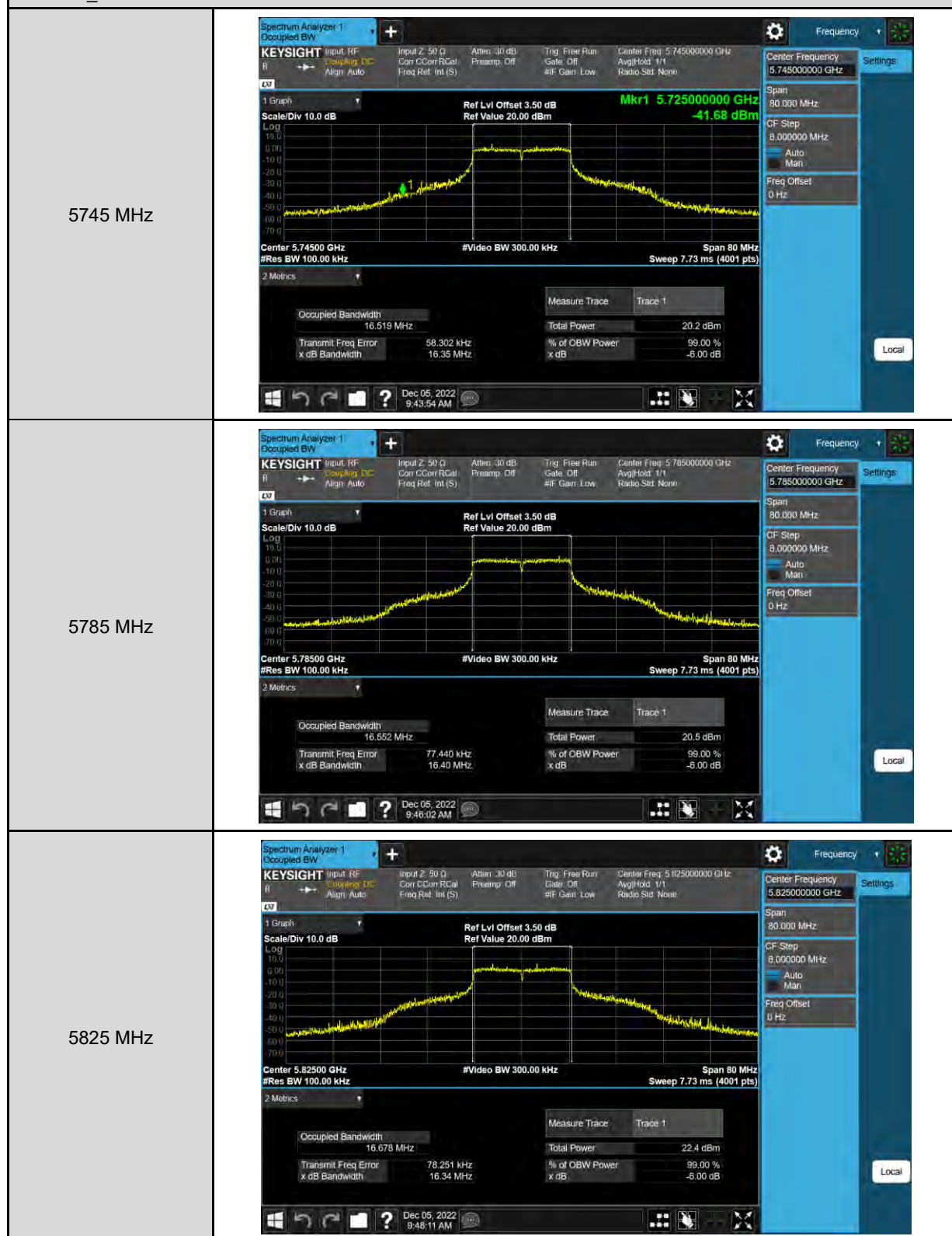
6 dB RF Bandwidth Measurement

Band	CH	Freq. (MHz)	99% Bandwidth	6dB Bandwidth	6dB Limit
			ANT-0	ANT-0	
			MHz	kHz	kHz
802.11a	149	5745	17.241	16350	≥ 500
	157	5785	17.325	16400	
	165	5825	17.584	16340	
802.11ac VHT20	149	5745	18.257	17560	≥ 500
	157	5785	18.312	17680	
	165	5825	18.191	16720	
802.11ac VHT40	151	5755	36.864	35320	≥ 500
	159	5795	36.841	35770	
802.11ac VHT80	155	5775	75.894	74780	≥ 500

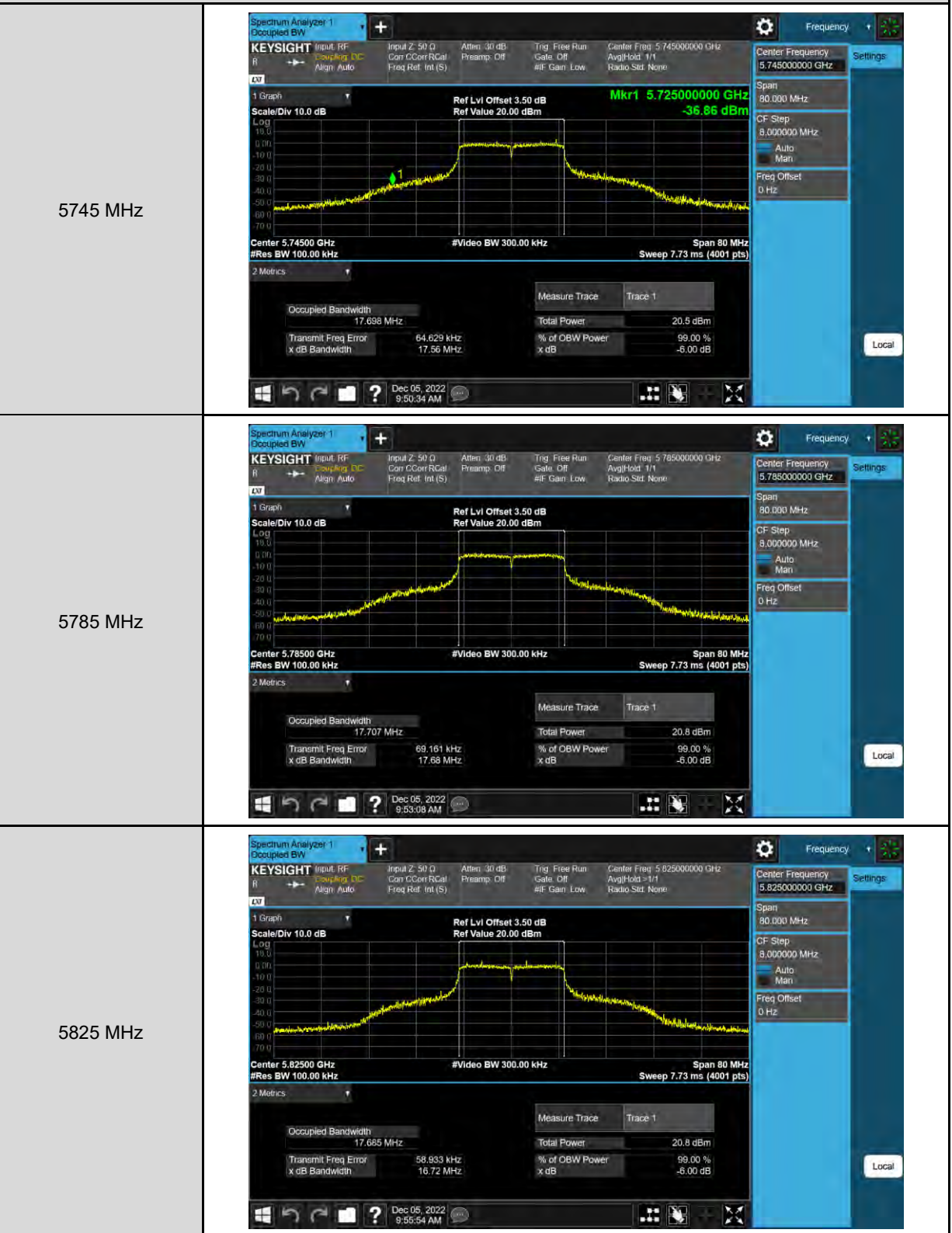
■ Test Graphs

6 dB RF Bandwidth

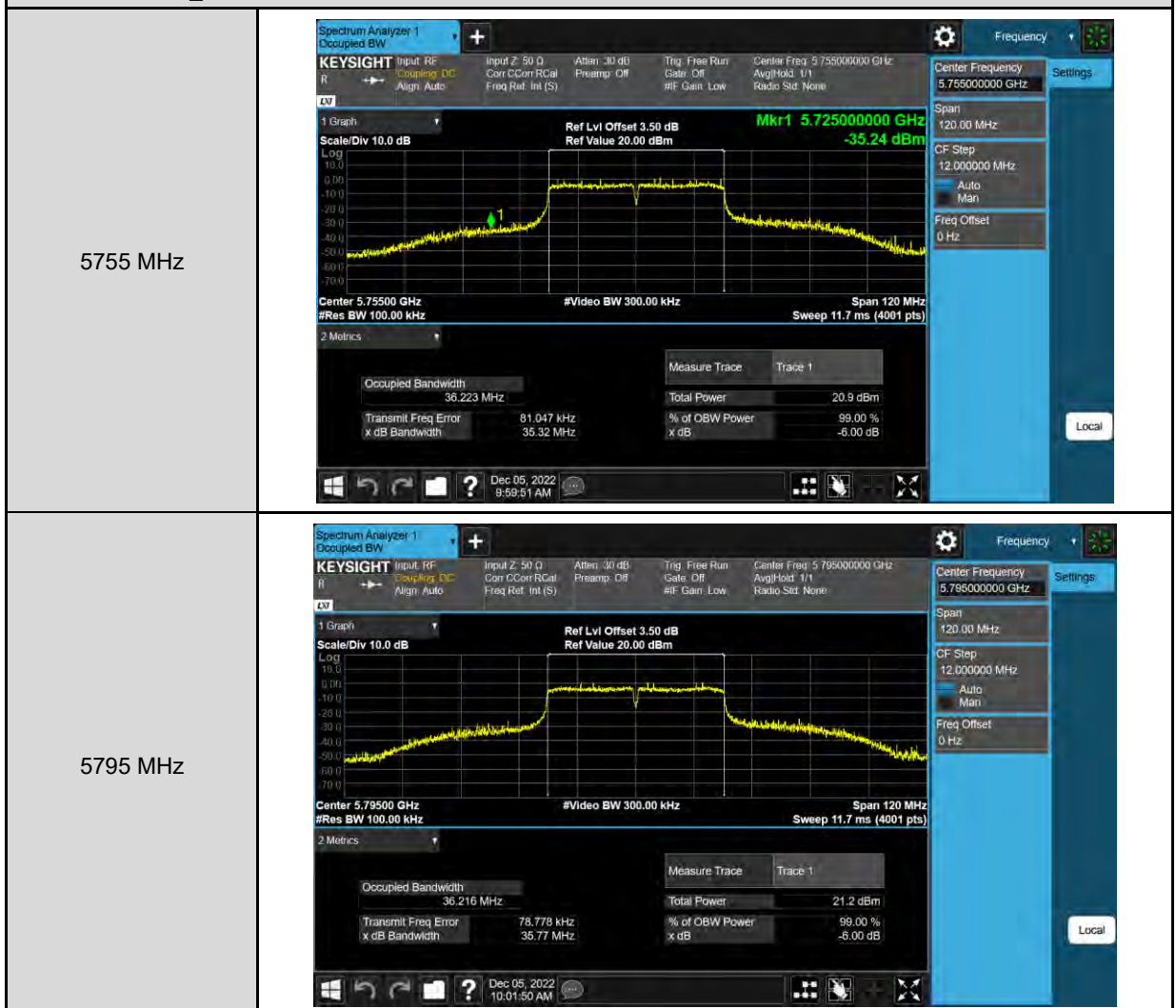
802.11a ANT-0



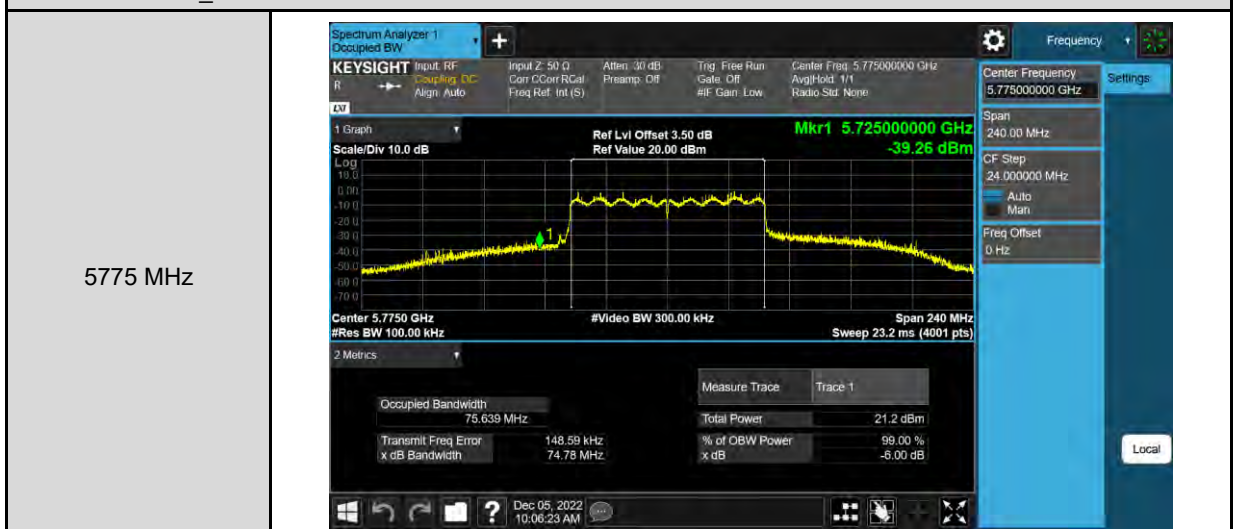
802.11ac VHT20_ANT-0



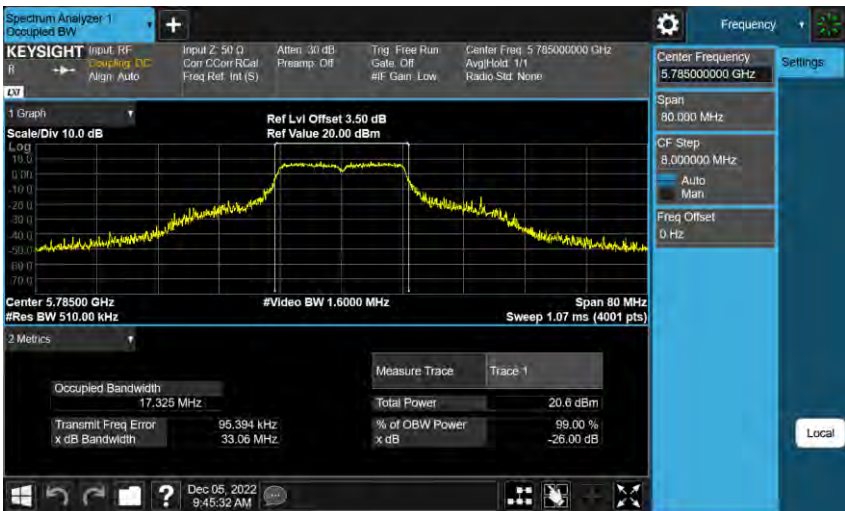
802.11ac VHT40_ANT-0



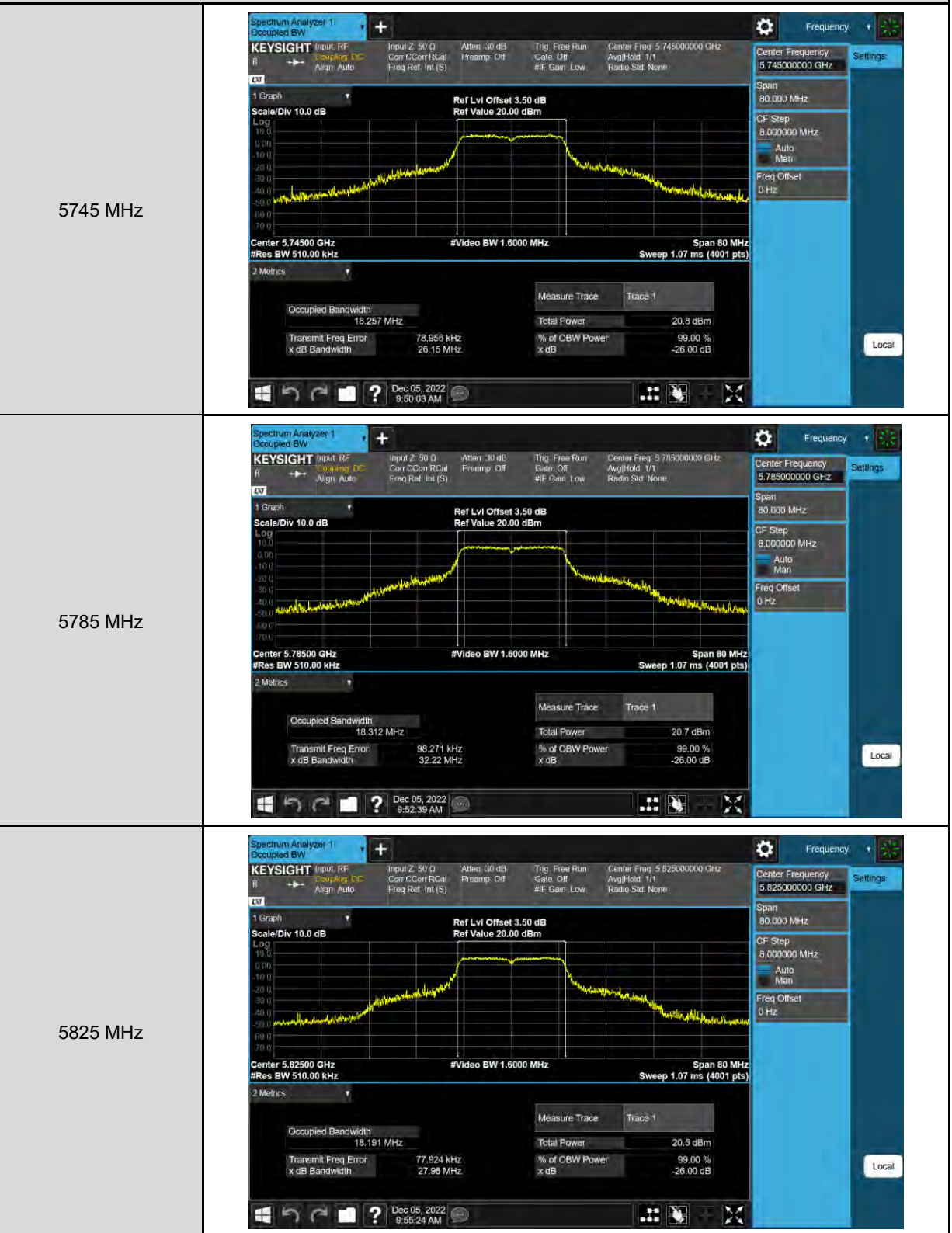
802.11ac VHT80_ANT-0



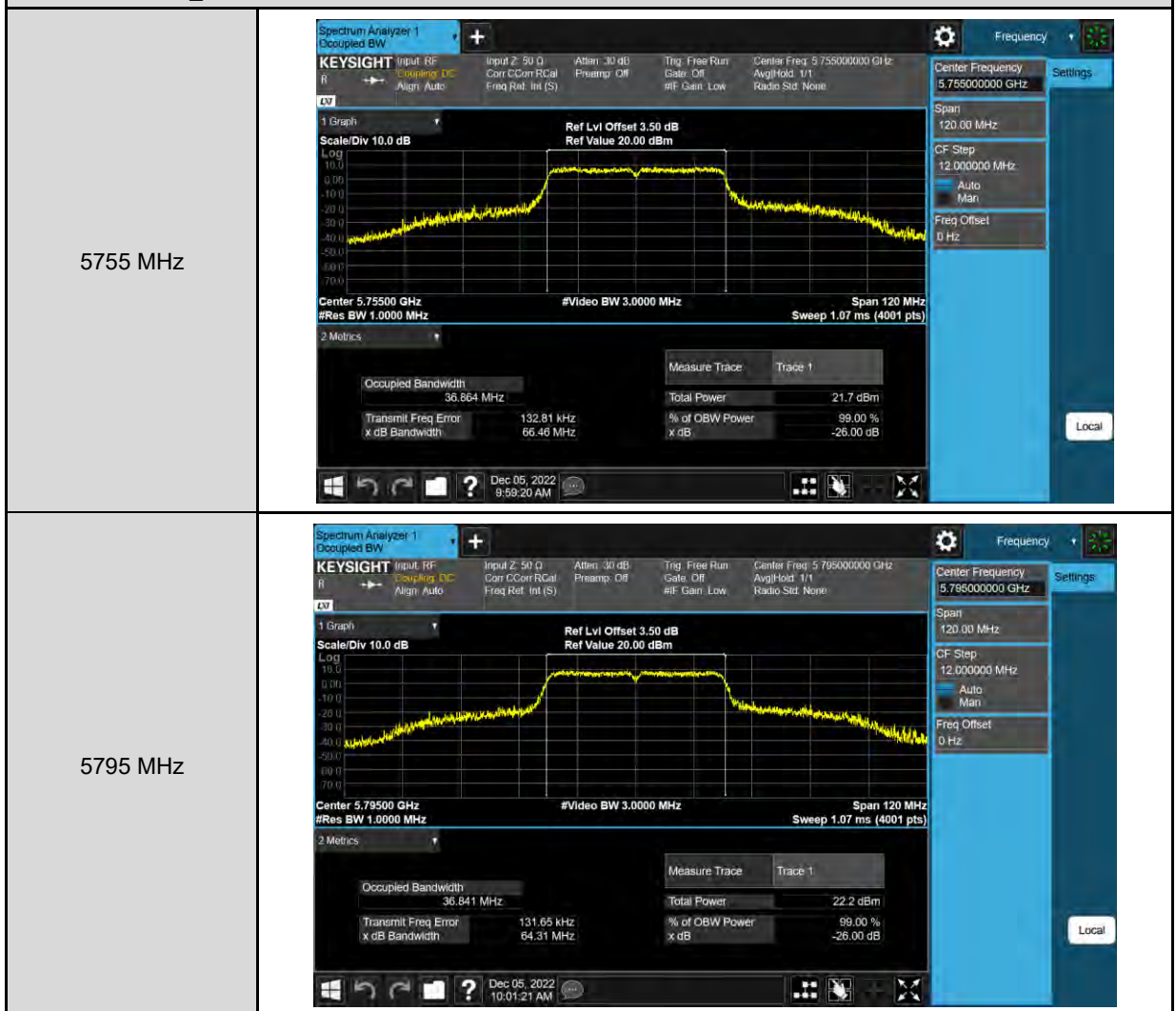
99 % Occupied Bandwidth

802.11a_ANT-0 5745 MHz	
5785 MHz	
5825 MHz	

802.11ac VHT20_ANT-0



802.11ac VHT40_ANT-0



802.11ac VHT80_ANT-0



Maximum Power Spectral Density Measurement

Power spectral density					
Test Mode	Frequency (MHz)	ANT-0			
		Measurement (dBm/MHz)	Duty Factor (dB)	Calculated (dBm/MHz)	Limit (dBm/MHz)
802.11a	5180	1.650	0.402	2.052	11.00
	5200	2.194	0.402	2.596	11.00
	5240	1.911	0.402	2.313	11.00
802.11ac VHT20	5180	1.400	0.433	1.833	11.00
	5200	1.695	0.433	2.128	11.00
	5240	2.172	0.433	2.605	11.00
802.11ac VHT40	5190	-0.800	0.560	-0.240	11.00
	5230	-1.000	0.560	-0.440	11.00
802.11ac VHT80	5210	-2.456	0.621	-1.835	11.00

Note: Method SA-2, Power density = measured result + 10 log(1/duty cycle) + Conversion ratio = measured result + duty factor.

Power spectral density					
Test Mode	Frequency (MHz)	ANT-0			
		Measurement (dBm/100 kHz)	Duty Factor (dB)	Calculated (dBm/500 kHz)	Limit (dBm/500 kHz)
802.11a	5745	-5.982	0.402	1.410	30.00
	5785	-5.742	0.402	1.650	30.00
	5825	-6.001	0.402	1.391	30.00
802.11ac VHT20	5745	-5.777	0.433	1.646	30.00
	5785	-5.635	0.433	1.788	30.00
	5825	-6.167	0.433	1.256	30.00
802.11ac VHT40	5755	-9.256	0.560	-1.707	30.00
	5795	-9.089	0.560	-1.540	30.00
802.11ac VHT80	5775	-11.106	0.621	-3.495	30.00

Note: Method SA-2, Power density = measured result + 10 log(1/duty cycle) + Conversion ratio = measured result + duty factor.

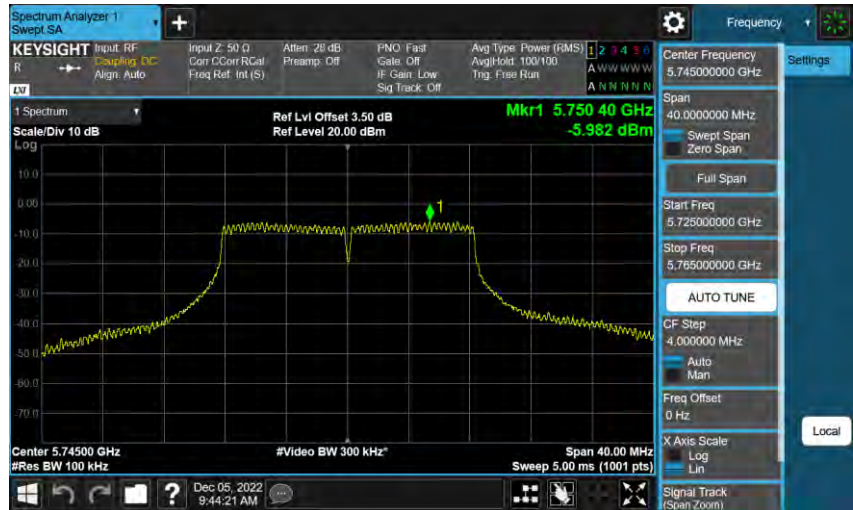
Conversion ratio = 10*Log(500 k/100 k)

Test Graphs

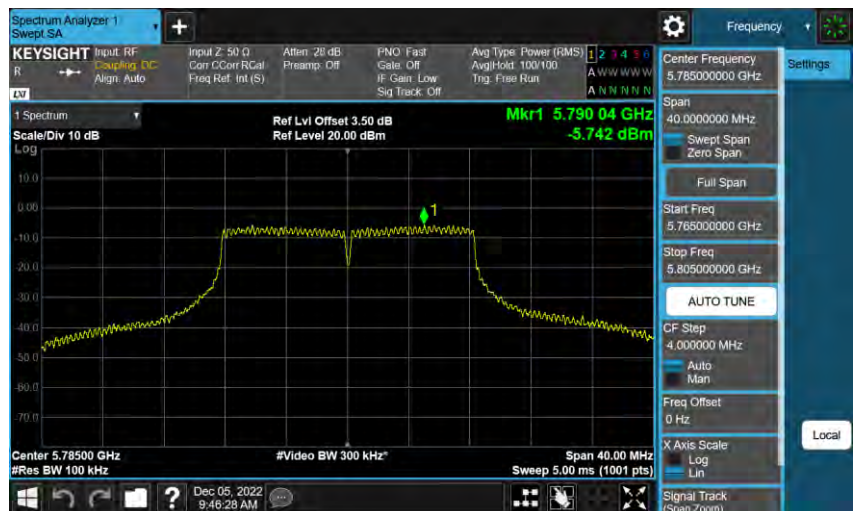
802.11a_ ANT-0	
5200 MHz	
5240 MHz	

802.11a_ANT-0

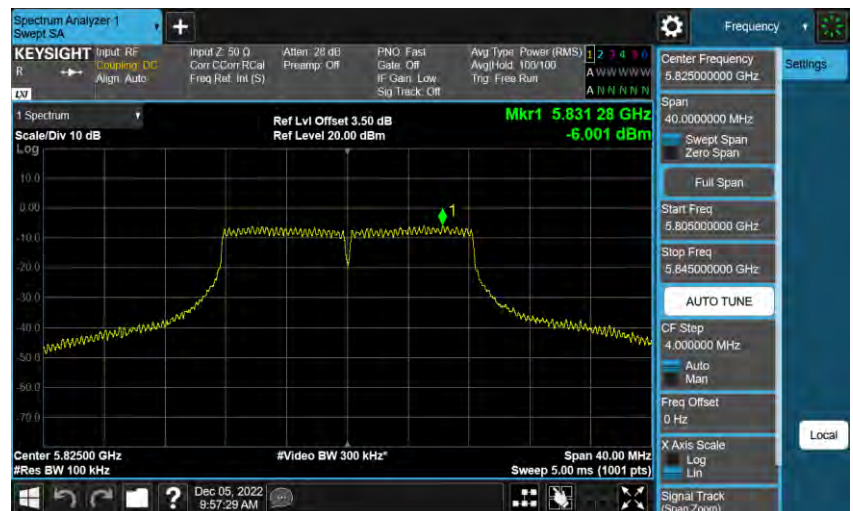
5745 MHz



5785 MHz



5825 MHz

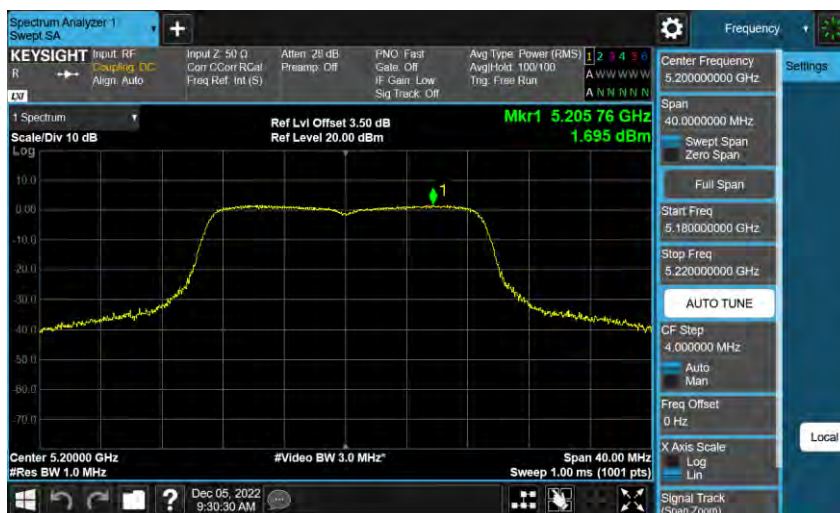


802.11ac VHT20 _ ANT-0

5180 MHz



5200 MHz

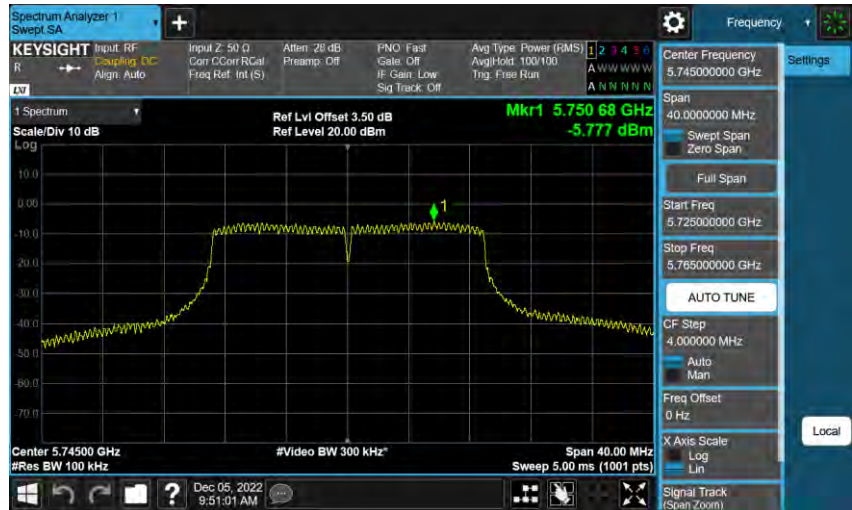


5240 MHz

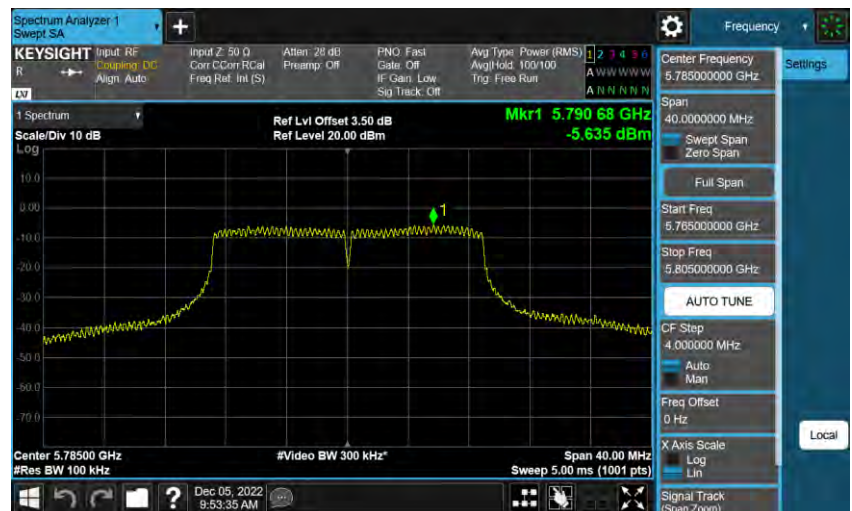


802.11ac VHT20 _ ANT-0

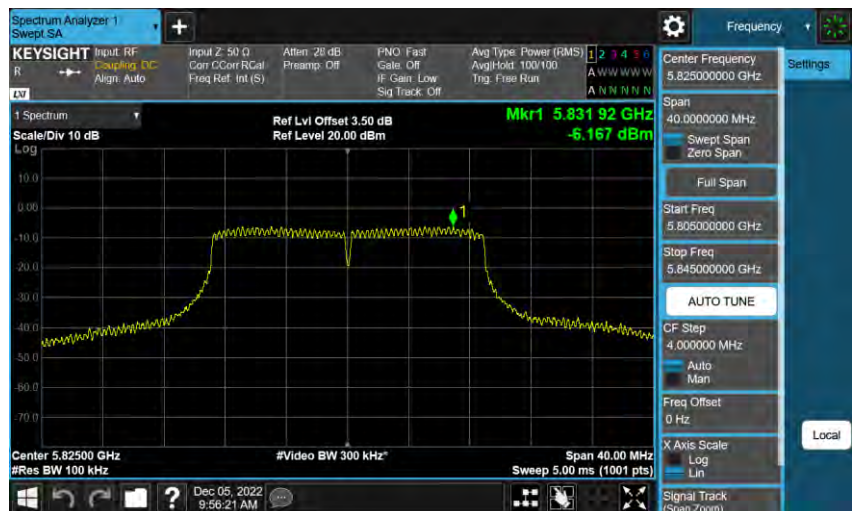
5745 MHz



5785 MHz



5825 MHz



802.11ac VHT40_ ANT-0

5190 MHz

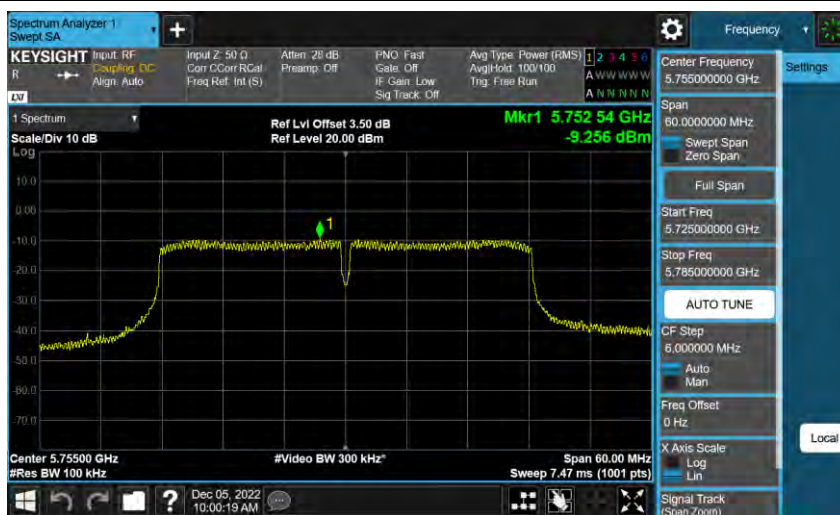


5230 MHz

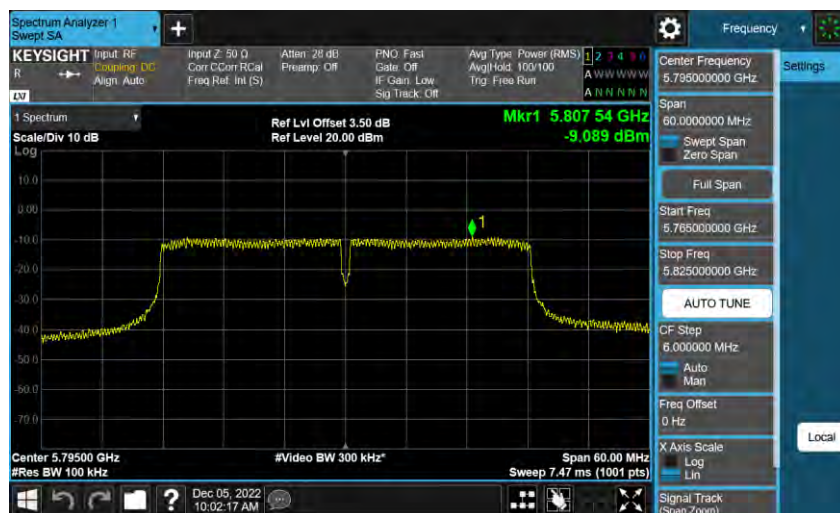


802.11ac VHT40_ ANT-0

5755 MHz

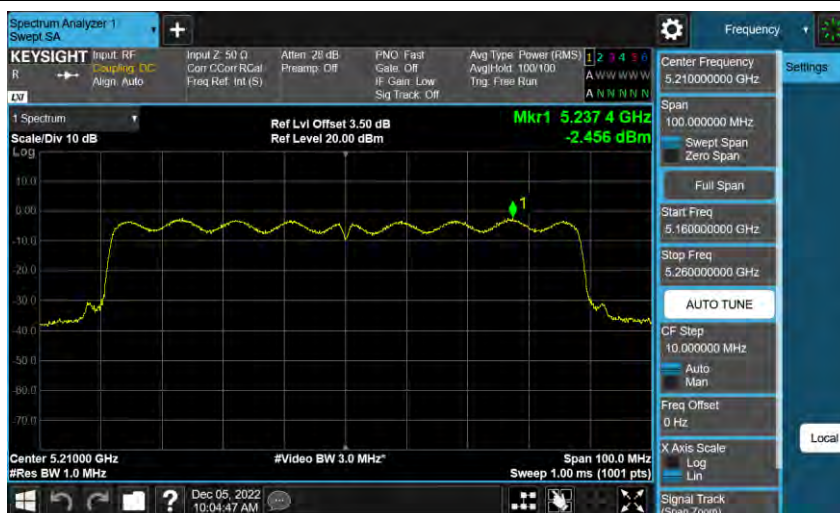


5795 MHz



802.11ac VHT80 _ ANT-0

5210 MHz



802.11ac VHT80 _ ANT-0

5775 MHz



---END---