




FCC Part 15E Measurement and Test Report

For

Mine Site Technologies Pty Ltd

NORTH RYDE BC, NSW, Australia

FCC ID: N73-AP60-AIR

FCC Rule(s):	<u>FCC Part 15E</u>
Product Description:	<u>AXON AIR</u>
Tested Model:	<u>A-AP60-000</u>
Report No.:	<u>WTG19G02007359W-2</u>
Sample Receipt Date:	<u>2019-02-14</u>
Tested Date:	<u>2019-02-15 to 2019-04-03</u>
Issued Date:	<u>2019-04-03</u>
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Note: This test report is limited to the above client company and the product model only. It may not be duplicated without prior permitted by Shenzhen SEM Test Technology Co., Ltd.

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1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant: Mine Site Technologies Pty Ltd
 Address of applicant: NORTH RYDE BC, NSW, Australia

Manufacturer: Mine Site Technologies China Co. Ltd
 Address of manufacturer: 4F Building-1 1413 Moganshan Road, Hangzhou, CHINA

General Description of EUT	
Product Name:	AXON AIR
Trade Name:	MINE SITE TECHNOLOGIES
Model No.:	A-AP60-000
Adding Model(s):	N/A
Rated Voltage:	Input: Power by POE+, DC 42.5-57V 6W
Power Adapter Model:	N/A
<i>Note: The test data is gathered from a production sample provided by the manufacturer.</i>	

Technical Characteristics of EUT	
Wi-Fi(5G/5.8G)	
Support Standards:	802.11a, 802.11n(HT20), 802.11n(HT40)
Frequency Range:	5180-5240MHz, 5745-5825MHz
RF Output Power:	Antenna 0: 13.49dBm (Conducted) Antenna 1: 13.85dBm (Conducted)
Type of Modulation:	BPSK, QPSK, 16QAM, 64QAM, 256QAM
Data Rate:	6-54Mbps, up to 600Mbps
Channel Separation:	20/40MHz
Type of Antenna:	Omni Antenna
Antenna Gain:	Antenna 0: 2.5dBi
	Antenna 1: 2.5dBi
	802.11n (HT20/40) MIMO
Lowest Internal Frequency	25MHz

1.2 Test Standards

The following report is prepared on behalf of the Intracom Asia. Co., Ltd. in accordance with FCC Part 15, Subpart C&E, and section 15.203, 15.205, 15.207, 15.209 and 15.407 of the Federal Communication Commissions rules.

The objective is to determine compliance with FCC Part 15, Subpart C&E, and section 15.203, 15.205, 15.207, 15.209 and 15.407 of the Federal Communication Commissions rules.

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product, which result in lowering the emission, should be checked to ensure compliance has been maintained.

1.3 Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2014, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz. The measurement guide KDB 789033 D02 v02r01 for Unlicensed National Information Infrastructure (U-NII) Devices and KDB 662911 D01 Multiple Transmitter Output v02r01 shall be performed also.

1.4 Table for parameters of Test Software setting

The test utility software used during testing was “RPTA1-71W.M4300.01.GD.2015Sep1”. During testing, Channel and Power Controlling Software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.

Mode	Test Frequency (MHz)												
	NCB: 20MHz												
	5180	5200	5240	5260	5300	5320	5500	5580	5700	5720	5745	5785	5825
802.11a 6Mbps	19	19	19	/	/	/	/	/	/	/	15	15	15
802.11n-HT20 MCS0	19	19	19	/	/	/	/	/	/	/	15	15	15
Mode	NCB: 40MHz												
	5190	5230	5270	5310	5510	5550	5670	5710	5755	5795			
802.11n-HT40 MCS0	19	19	/	/	/	/	/	/	15	15			

1.5 EUT Operating during test

EUT was programmed to be in continuously transmitting mode. During the test, EUT operation to normal function and programs under WIN XP were executed.

1.6 Test Facility

FCC – Registration No.: 125990

Shenzhen SEM Test Technology Co., Ltd. Laboratory has been recognized to perform compliance testing on equipment subject to the Commissions Declaration Of Conformity (DOC). The Designation Number is CN5010, and Test Firm Registration Number is 125990.

Industry Canada (IC) Registration No.: 11464A

The 3m Semi-anechoic chamber of Shenzhen SEM Test Technology Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 11464A.

1.7 EUT Setup and Test Mode

The EUT was operated in the engineering mode to fix the Tx frequency that was for the purpose of the measurements. All testing shall be performed under maximum output power condition, and to measure its highest possible emissions level, more detailed description as follows:

Test Mode List		
Test Mode	Description	Remark
TM1	802.11a	5180MHz,5200MHz,5240MHz, 5745MHz,5785MHz,5825MHz
TM2	802.11n-HT20	5180MHz,5200MHz,5240MHz, 5745MHz,5785MHz,5825MHz
TM3	802.11n-HT40	5190MHz,5230MHz, 5755MHz,5795MHz

Note: All test modes (different data rate and different modulation) are performed, but only the worst case is recorded in this report.

EUT Cable List and Details			
Cable Description	Length (m)	Shielded/Unshielded	With / Without Core
/	/	/	/
/	/	/	/

Special Cable List and Details			
Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite
/	/	/	/

Auxiliary Equipment List and Details			
Description	Manufacturer	Model	Serial Number
/	/	/	/

1.8 Measurement Uncertainty

Measurement uncertainty		
Parameter	Conditions	Uncertainty
RF Output Power	Conducted	$\pm 0.42\text{dB}$
Occupied Bandwidth	Conducted	$\pm 1.5\%$
Power Spectral Density	Conducted	$\pm 1.8\text{dB}$
Conducted Spurious Emission	Conducted	$\pm 2.17\text{dB}$
Conducted Emissions	Conducted	9-150kHz $\pm 3.74\text{dB}$
		0.15-30MHz $\pm 3.34\text{dB}$
Transmitter Spurious Emissions	Radiated	30-200MHz $\pm 4.52\text{dB}$
		0.2-1GHz $\pm 5.56\text{dB}$
		1-6GHz $\pm 3.84\text{dB}$
		6-18GHz $\pm 3.92\text{dB}$

1.9 Test Equipment List and Details

No.	Description	Manufacturer	Model	Serial No.	Cal Date	Due Date
SEMT-1072	Spectrum Analyzer	Agilent	E4407B	MY41440400	2018-05-22	2019-05-21
SEMT-1031	Spectrum Analyzer	Rohde & Schwarz	FSP30	836079/035	2018-05-22	2019-05-21
SEMT-1007	EMI Test Receiver	Rohde & Schwarz	ESVB	825471/005	2018-05-22	2019-05-21
SEMT-1008	Amplifier	Agilent	8447F	3113A06717	2018-05-22	2019-05-21
SEMT-1043	Amplifier	C&D	PAP-1G18	2002	2019-05-21	2020-05-20
SEMT-1011	Broadband Antenna	Schwarz beck	VULB9163	9163-333	2017-06-08	2020-06-07
SEMT-1042	Horn Antenna	ETS	3117	00086197	2017-06-08	2020-06-07
SEMT-1121	Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170582	2017-06-08	2020-06-07
SEMT-1069	Loop Antenna	Schwarz beck	FMZB 1516	9773	2017-06-08	2020-06-07
SEMT-1001	EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2018-05-22	2019-05-21
SEMT-1003	L.I.S.N	Schwarz beck	NSLK8126	8126-224	2018-05-22	2019-05-21
SEMT-1002	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2018-05-22	2019-05-21

SEMT-1168	Pre-amplifier	Direction Systems Inc.	PAP-0126	14141-12838	2018-05-22	2019-05-21
SEMT-1169	Pre-amplifier	Direction Systems Inc.	PAP-2640	14145-14153	2018-05-22	2019-05-21
SEMT-1163	Spectrum Analyzer	Rohde & Schwarz	FSP40	100612	2018-05-22	2019-05-21
SEMT-1170	DRG Horn Antenna	A.H. SYSTEMS	SAS-574	571	2018-05-22	2019-05-21
SEMT-1166	Power Limiter	Agilent	N9356B	MY45450376	2018-05-22	2019-05-21
SEMT-1048	RF Limiter	ATTEN	AT-BSF-2400~2500	/	2018-05-22	2019-05-21
SEMT-1076	RF Switcher	Top Precision	RCS03-A2	/	2018-05-22	2019-05-21
SEMT-C001	Cable	Zheng DI	LL142-07-07-10M(A)	/	2019-03-18	2020-03-17
SEMT-C002	Cable	Zheng DI	ZT40-2.92J-2.92J-6M	/	2019-03-18	2020-03-17
SEMT-C003	Cable	Zheng DI	ZT40-2.92J-2.92J-2.5M	/	2019-03-18	2020-03-17
SEMT-C004	Cable	Zheng DI	2M0RFC	/	2019-03-18	2020-03-17
SEMT-C005	Cable	Zheng DI	1M0RFC	/	2019-03-18	2020-03-17
SEMT-C006	Cable	Zheng DI	1M0RFC	/	2019-03-18	2020-03-17

2. SUMMARY OF TEST RESULTS

FCC Rules	Description of Test Item	Result
§ 15.203; § 15.405	Antenna Requirement	Compliant
§ 15.207; § 15.407(b)(6)	Conducted Emission	Compliant
§ 15.407(a)(1),(2)	Power Spectral Density	Compliant
§ 15.407(e)	Emission Bandwidth and Occupied Bandwidth	Compliant
§ 15.407(a)(1),(2)	Maximum Conducted Output Power	Compliant
§ 15.407(b)(1),(2),(3),(4)	Undesirable emission	Compliant
§ 15.205; § 15.407(b)(1),(2),(3)	Radiated Emission	Compliant
§ 15.407(g)	Frequency Stability	Compliant
§ 15.407(h)	Dynamic Frequency Selection (DFS)	N/A

N/A: not applicable

3. RF Exposure

3.1 Standard Applicable

According to § 1.1307 and § 2.1093, the portable transmitter must comply the RF exposure requirements.

3.2 Test Result

This product complied with the requirement of the RF exposure, please see the RF Exposure Report.

4. Antenna Requirement

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. 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. Systems operating in the 2400-2483.5 MHz band that are used exclusively for fixed, point-to-point operations may employ transmitting antennas with directional gain greater than 6 dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi. Systems operating in the 5725-5850 MHz band that are used exclusively for fixed, point-to-point operations may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted output power.

EUT Antenna: The Wi-Fi antenna is a fixed external antenna which is fitted and installed by a professional installer. The best-case gain of the antenna is 2.5dBi.

5. Power Spectral Density

5.1 Standard Applicable

Section 15.407(a) Power limits:

(1) For the band 5.15-5.25 GHz.

(i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

(2) For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(3) For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

5.2 Test Procedure

According to 789033 D02 v02r01 section F, the following is the measurement procedure.

For devices operating in the bands 5.15-5.25 GHz, 5.25-5.35 GHz, and 5.47-5.725 GHz, the above procedures make use of 1 MHz RBW to satisfy directly the 1 MHz reference bandwidth specified in § 15.407(a)(5). For devices operating in the band 5.725-5.85 GHz, the rules specify a measurement bandwidth of 500 kHz. Many spectrum analyzers do not have 500 kHz RBW, thus a narrower RBW may need to be used. The rules permit the use of a RBWs less than 1 MHz, or 500 kHz, “provided that the measured power is integrated over the full reference bandwidth” to show the total power over the specified measurement bandwidth (i.e., 1 MHz, or 500 kHz). If measurements are performed using a reduced resolution bandwidth (< 1 MHz, or < 500 kHz) and

integrated over 1 MHz, or 500 KHz bandwidth, the following adjustments to the procedures apply:

- a) Set $RBW \geq 1/T$, where T is defined in section II.B.1.a).
- b) Set $VBW \geq 3 RBW$.
- c) If measurement bandwidth of Maximum PSD is specified in 500 kHz, add $10\log(500\text{kHz}/RBW)$ to the measured result, whereas $RBW (< 500 \text{ KHz})$ is the reduced resolution bandwidth of the spectrum analyzer set during measurement.
- d) If measurement bandwidth of Maximum PSD is specified in 1 MHz, add $10\log(1\text{MHz}/RBW)$ to the measured result, whereas $RBW (< 1 \text{ MHz})$ is the reduced resolution bandwidth of spectrum analyzer set during measurement.
- e) Care must be taken to ensure that the measurements are performed during a period of continuous transmission or are corrected upward for duty cycle.

Note: As a practical matter, it is recommended to use reduced RBW of 100 KHz for the sections 5.c) and 5.d) above, since $RBW=100 \text{ KHz}$ is available on nearly all spectrum analyzers.

5.3 Environmental Conditions

Temperature:	20° C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

5.4 Summary of Test Results/Plots

5150-5250MHz

Operating mode	Test Channel	Power Spectral Density dBm/MHz			Limit * (dBm/MHz)
		Antenna 0	Antenna 1	Total	
802.11a	5180	8.357	8.184	/	16
	5200	9.070	7.770	/	16
	5240	9.288	8.965	/	16
802.11n-HT20	5180	7.904	8.351	11.140	16
	5200	9.123	6.721	11.100	16
	5240	7.263	7.671	10.480	16
802.11n-HT40	5190	4.532	4.621	7.590	16
	5230	4.827	4.397	7.630	16

5725-5850MHz

Operating mode	Test Channel	Power Spectral Density dBm/300kHz			Factor	Power Spectral Density* dBm/500kHz			Limit dBm/500kHz
		Antenna 0	Antenna 1	Total		Antenna 0	Antenna 1	Total	
802.11a	5745	4.014	5.116	/	2.22	6.234	7.336	/	30
	5785	4.511	2.490	/	2.22	6.731	4.710	/	30
	5825	4.376	1.560	/	2.22	6.596	3.780	/	30
802.11n-HT20	5745	2.318	4.937	6.830	2.22	4.538	7.157	9.050	30
	5785	2.822	2.656	5.750	2.22	5.042	4.876	7.970	30
	5825	3.190	2.255	5.760	2.22	5.410	4.475	7.980	30
802.11n HT40	5755	-0.195	0.912	3.400	2.22	2.025	3.132	5.620	30
	5795	0.439	-0.428	3.040	2.22	2.659	1.792	5.260	30

*Note: Maximum PSD=PSD(dBm/300kHz)+10log(500kHz/300kHz)=2.22

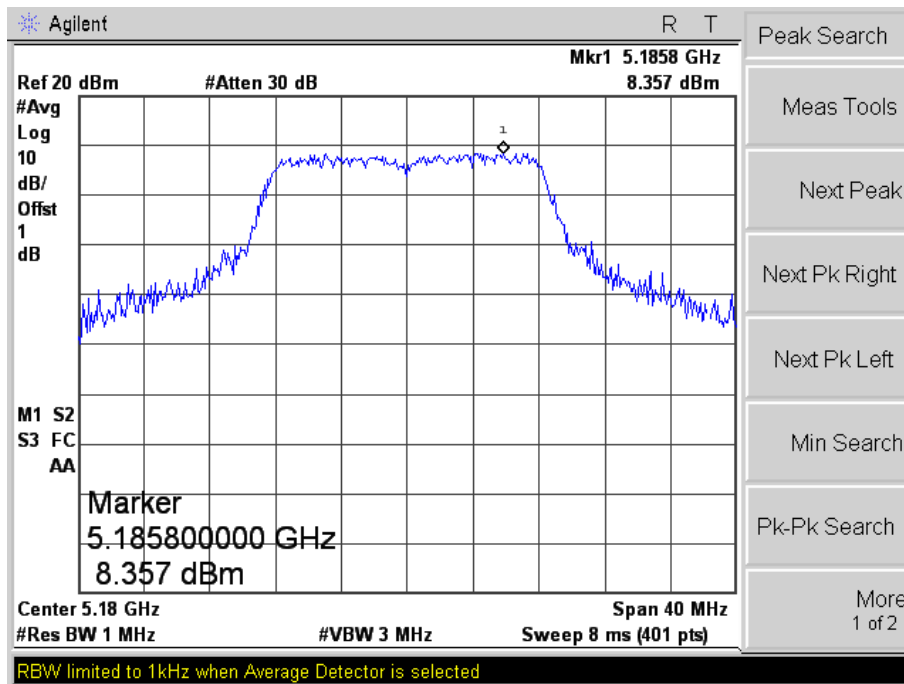
*For 5150-5250MHz: Limit=16-(2.5-6)=19.5dBm/MHz

For 5725-5850MHz: Limit=30-(2.5-6)=33.5dBm/500kHz

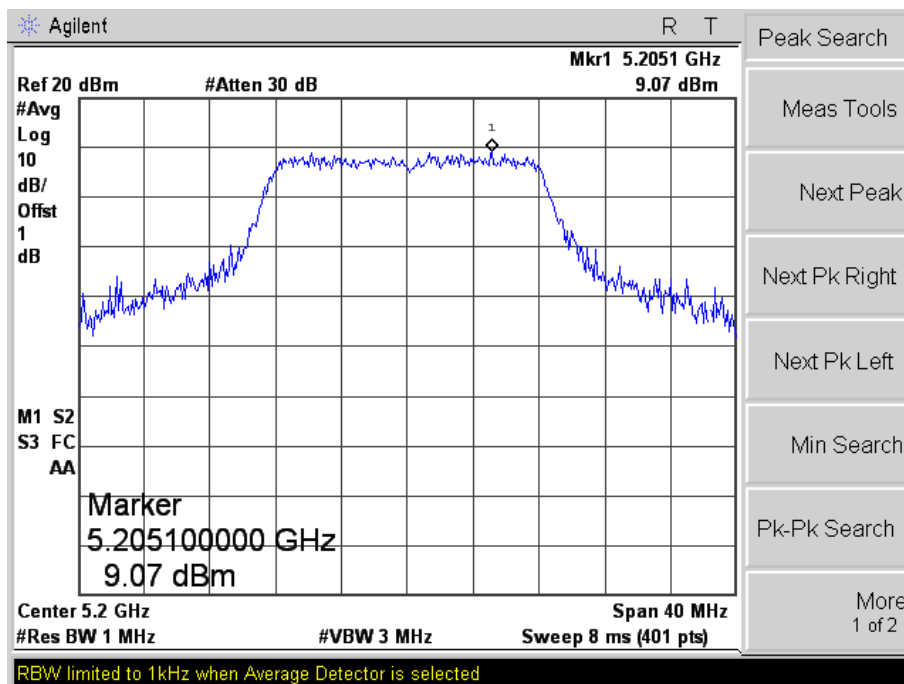
Antenna 0

Test Mode: 802.11a

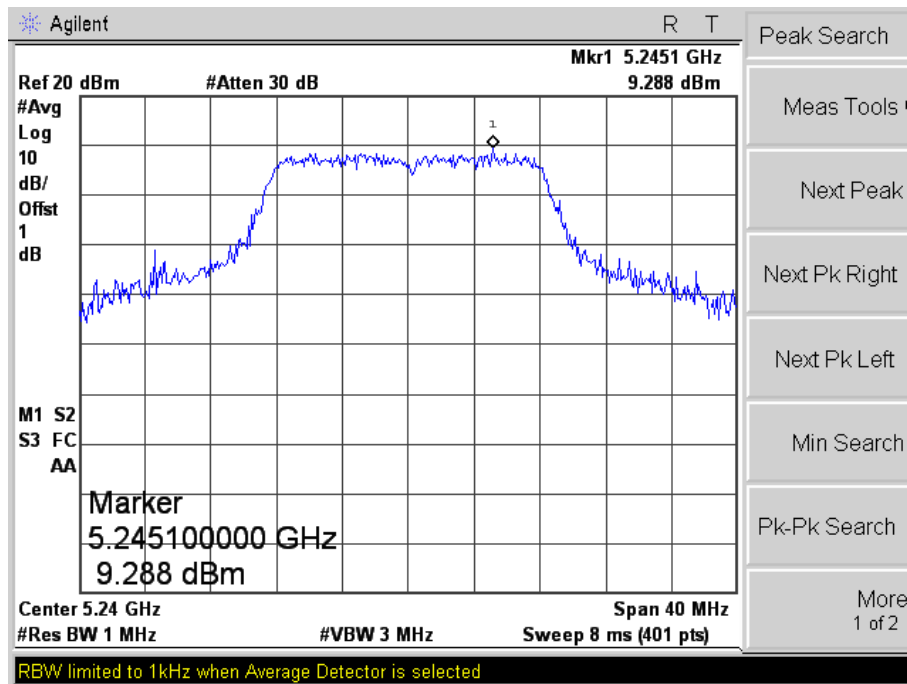
5180MHz



5200MHz

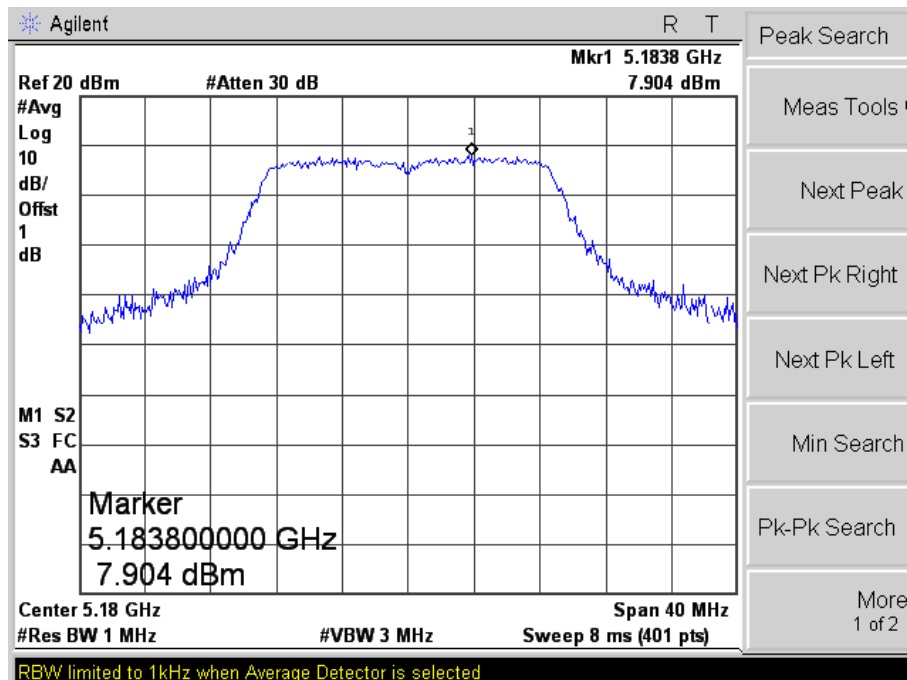


5240MHz

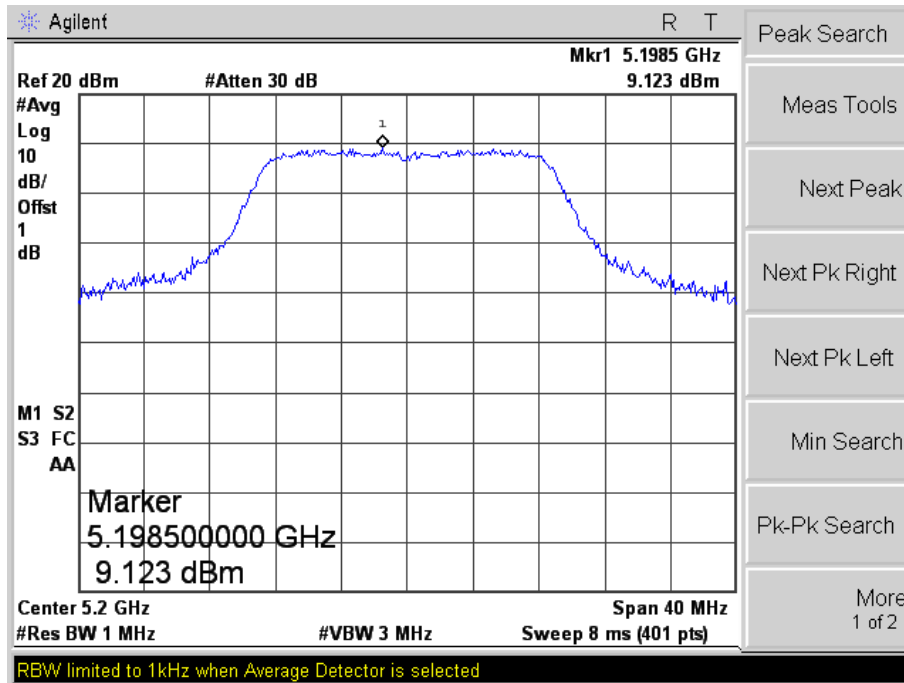


802.11n-HT20

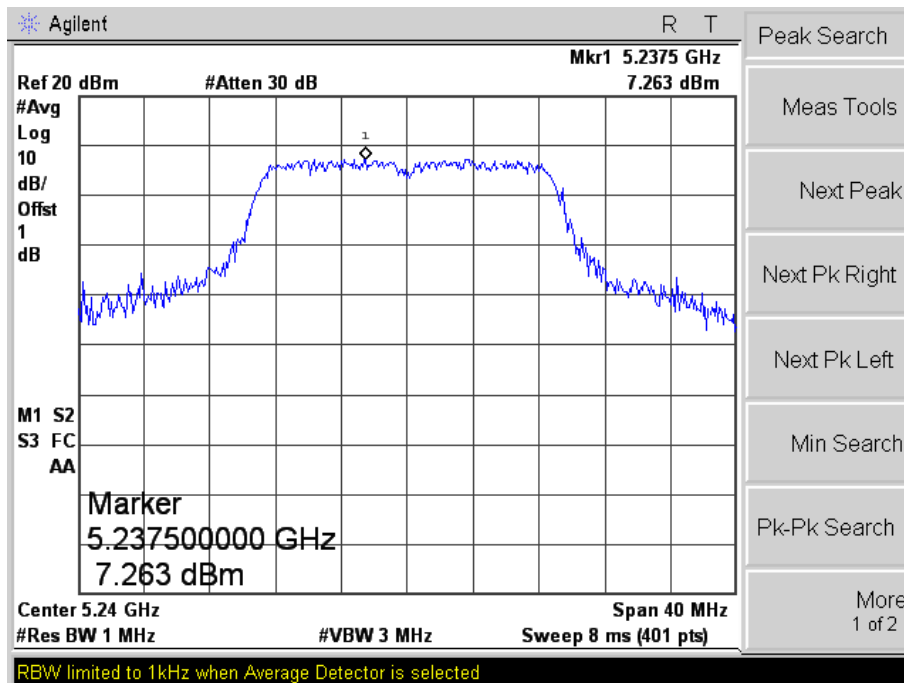
5180MHz



5200MHz

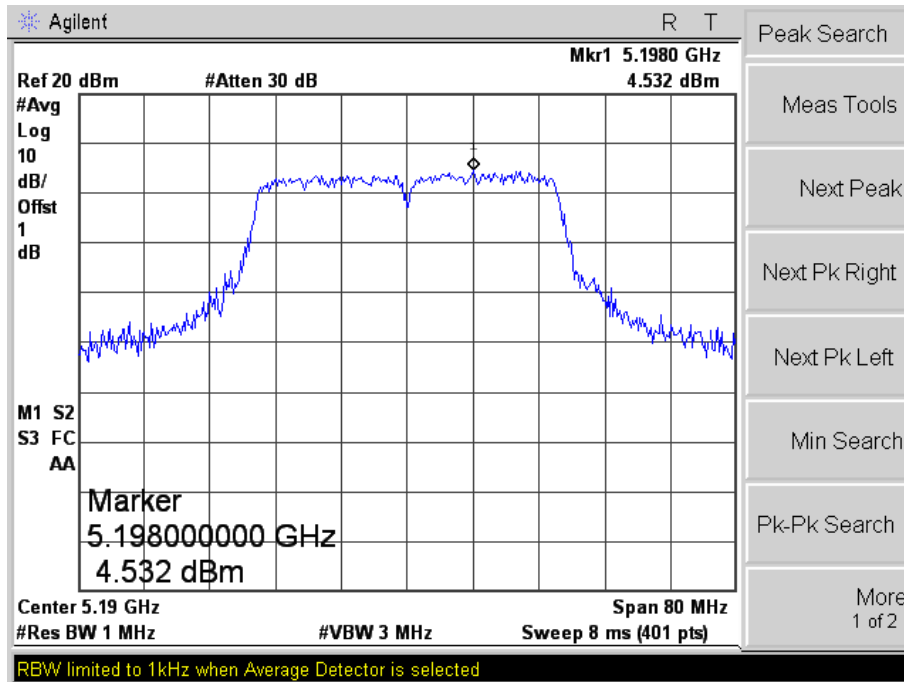


5240MHz

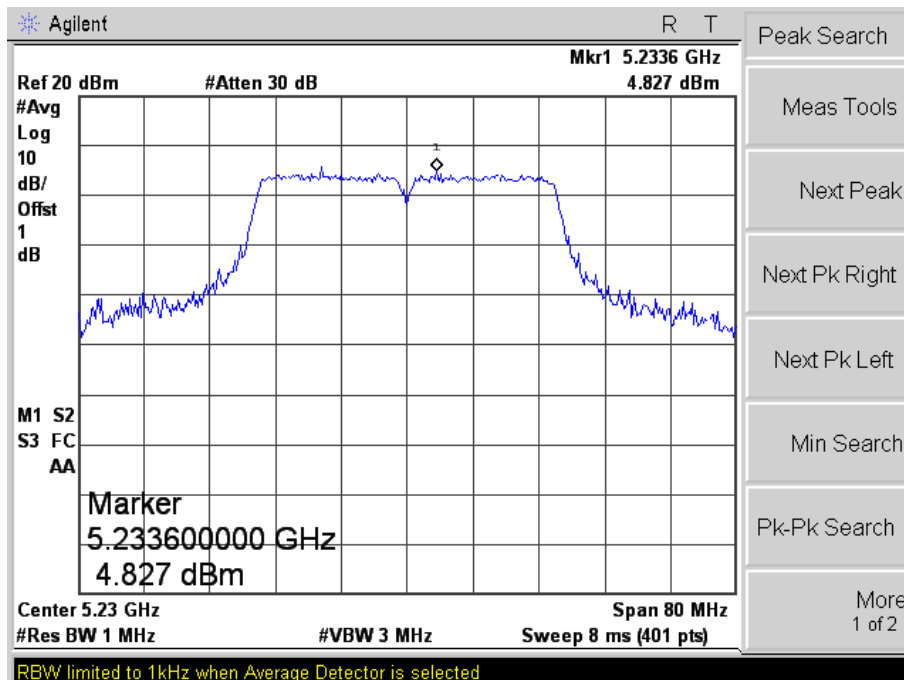


802.11n-HT40

5190MHz

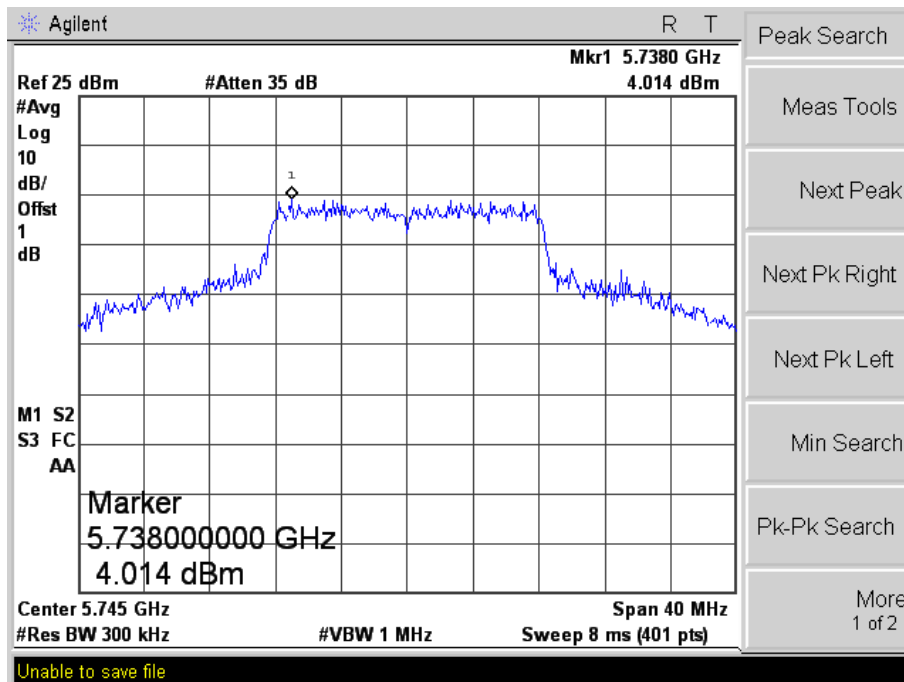


5230MHz

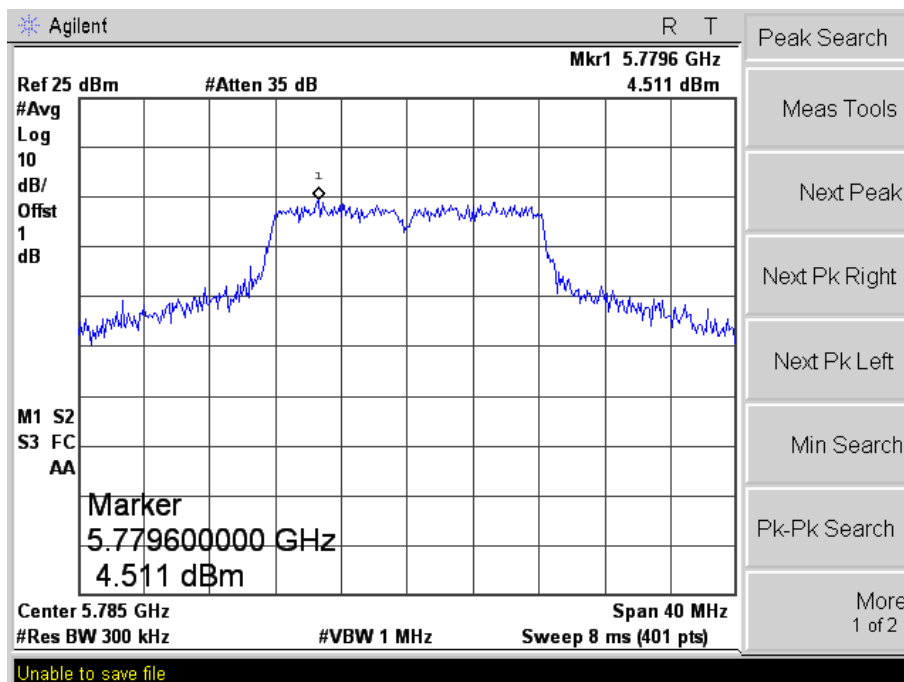


Test Mode: 802.11a

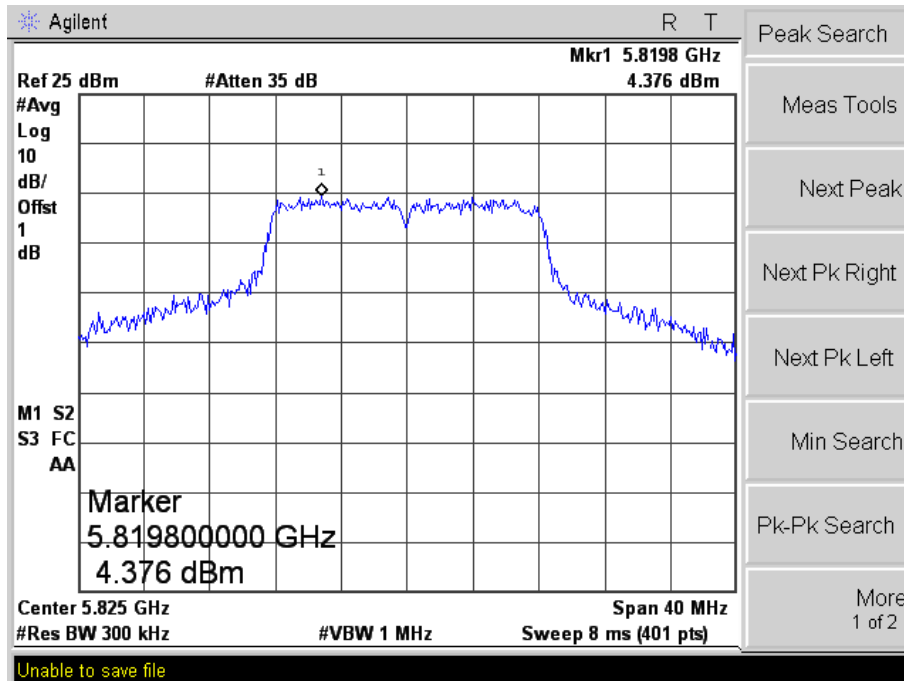
5745MHz



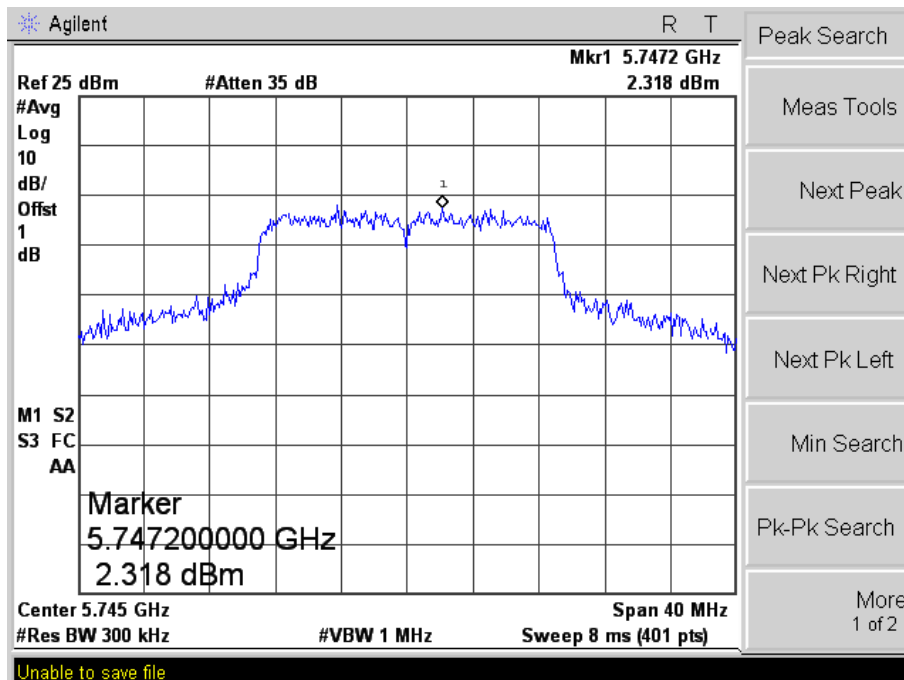
5785MHz



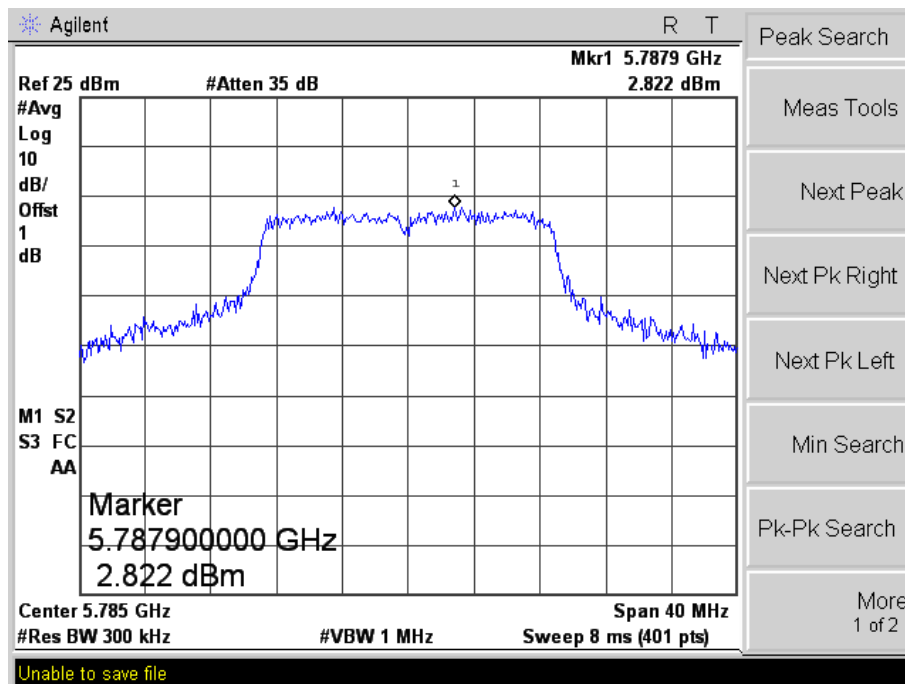
5825MHz



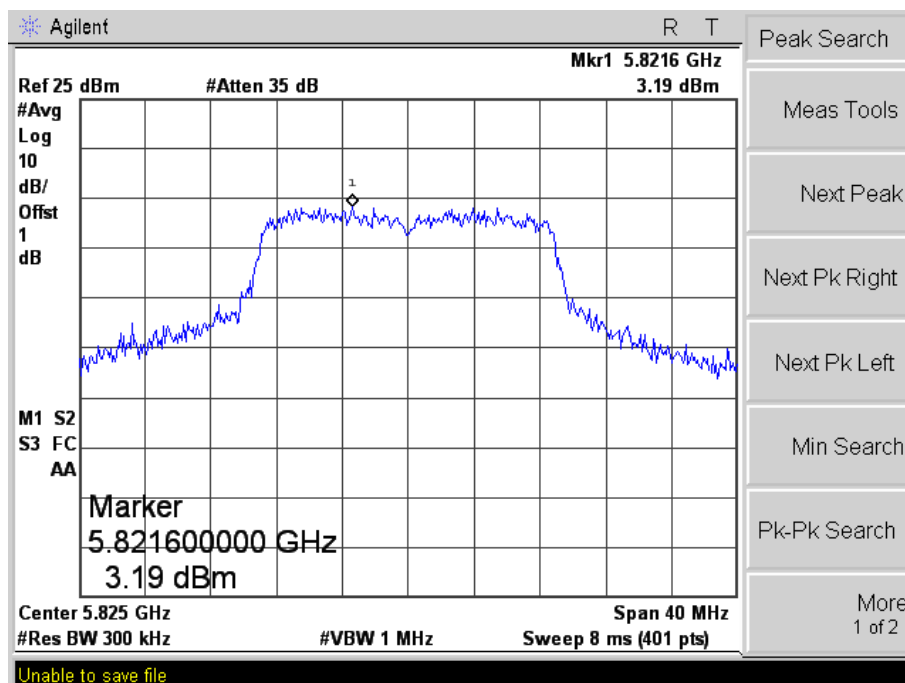
802.11n-HT20
5745MHz



5785MHz

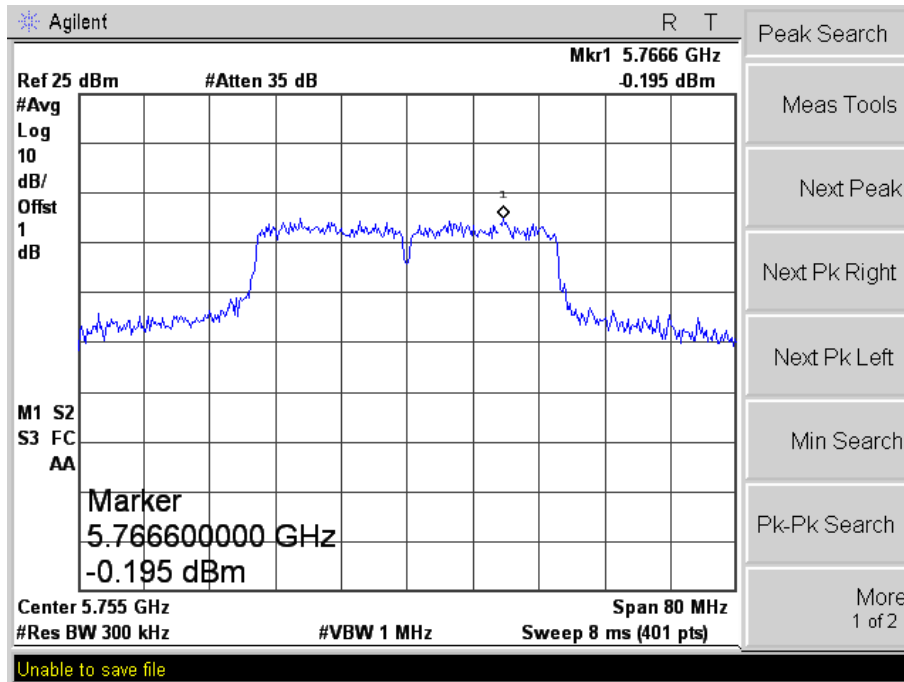


5825MHz

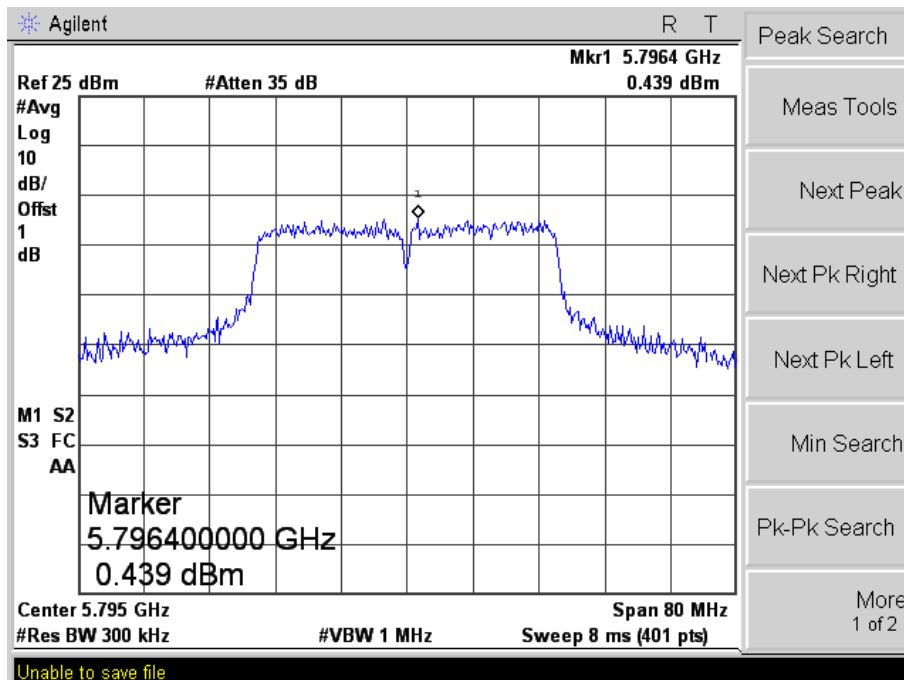


802.11n-HT40

5755MHz



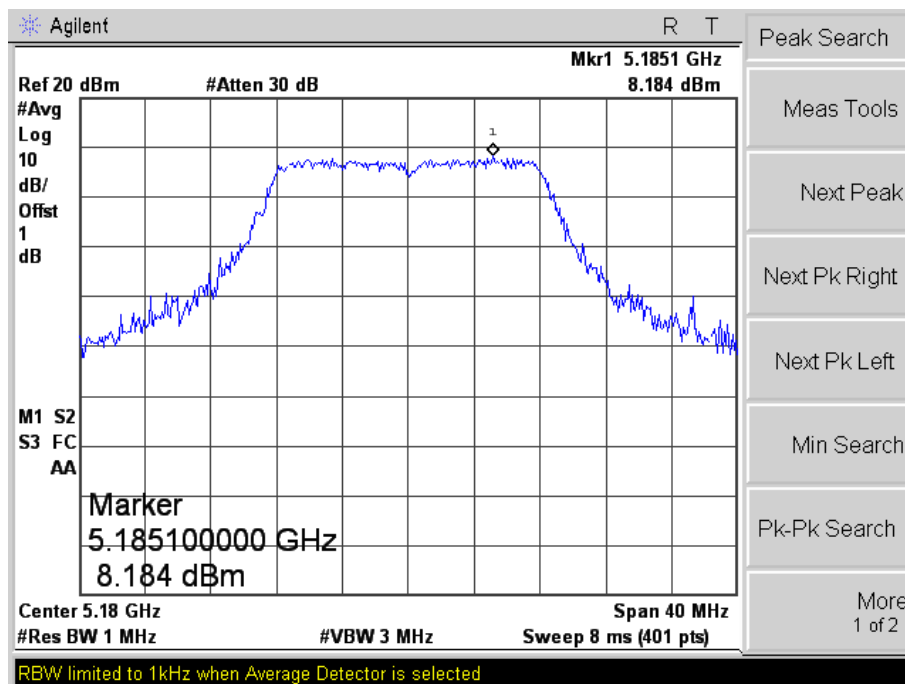
5795MHz



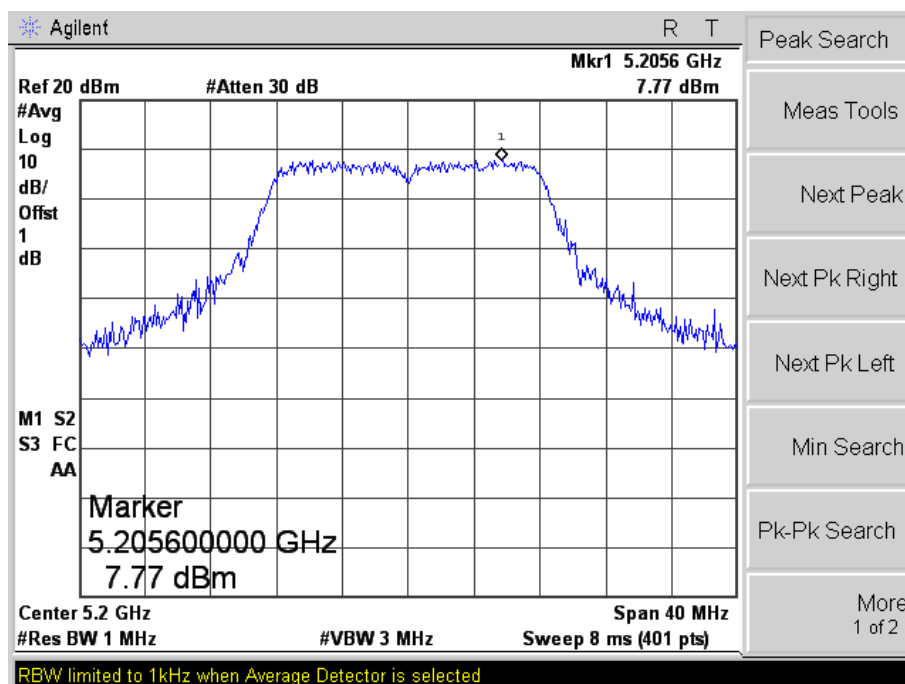
Antenna 1

Test Mode: 802.11a

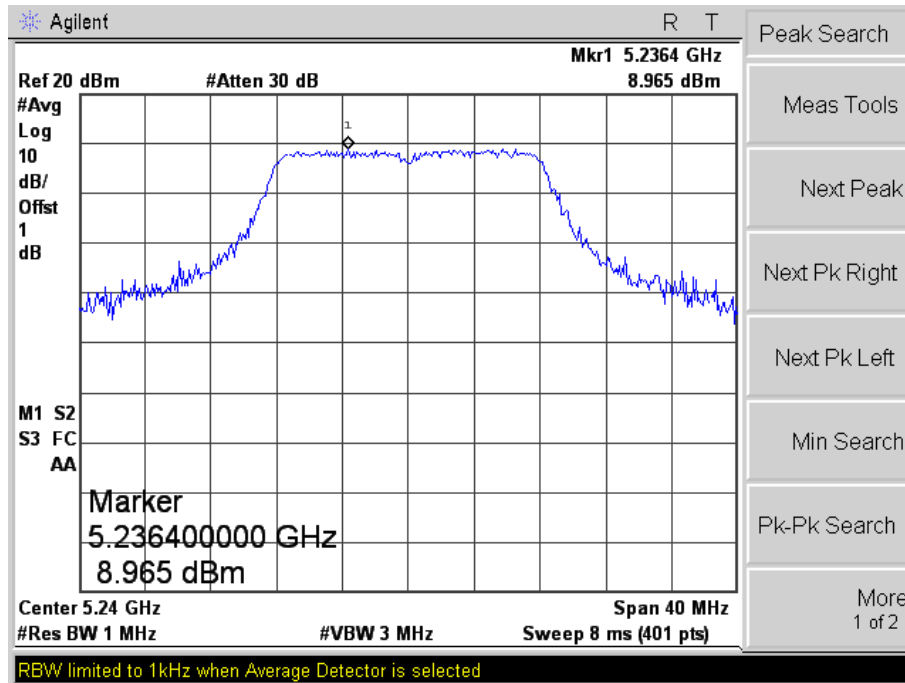
5180MHz



5200MHz

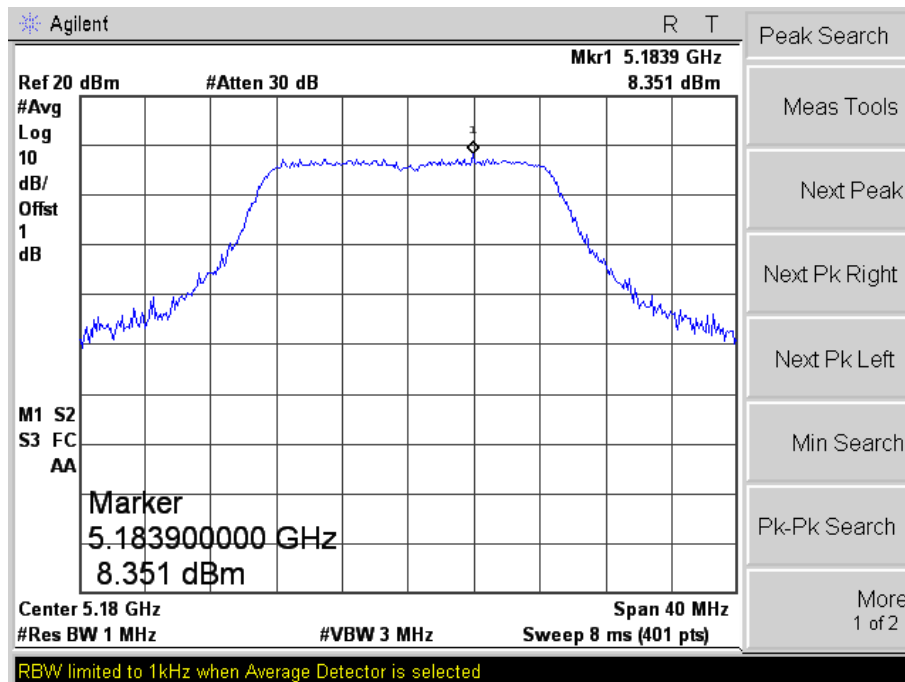


5240MHz

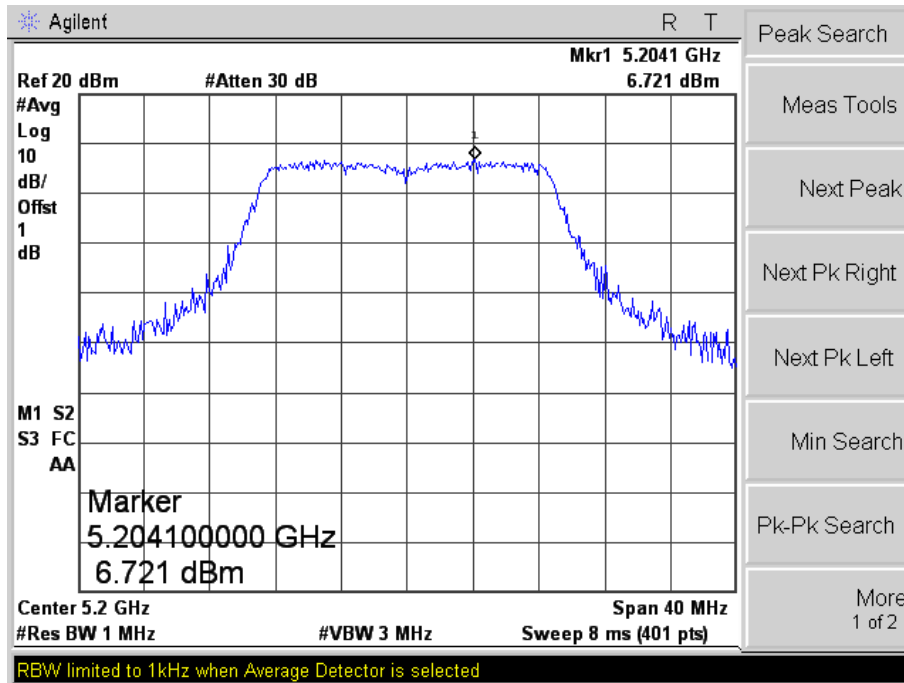


802.11n-HT20

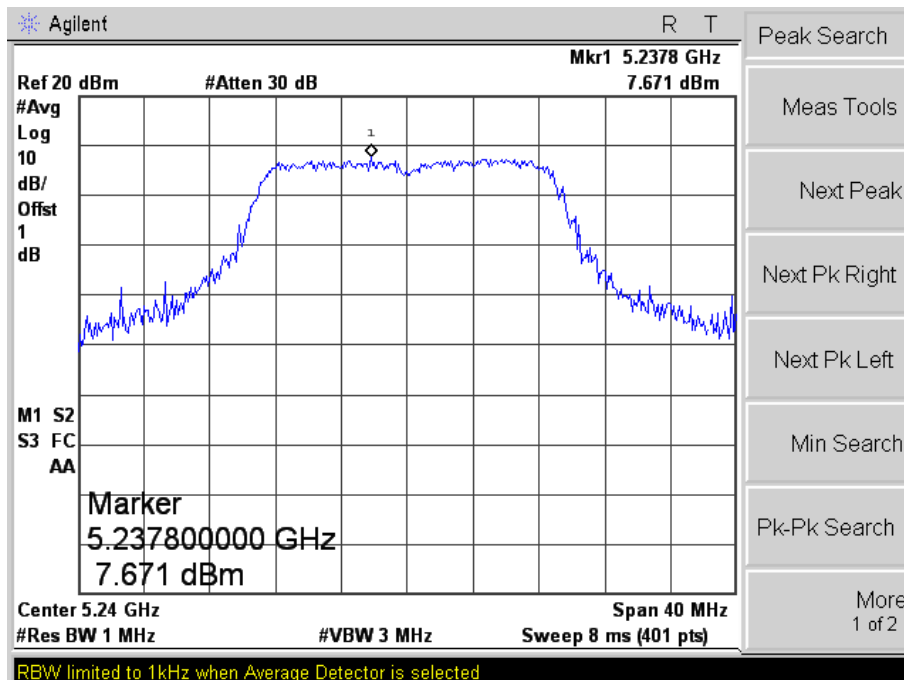
5180MHz



5200MHz

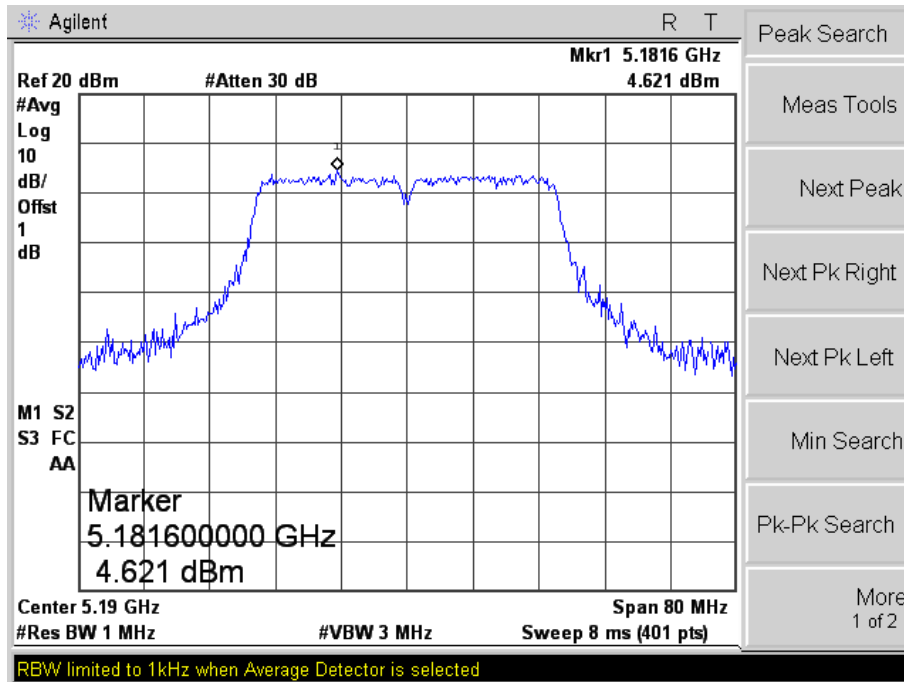


5240MHz

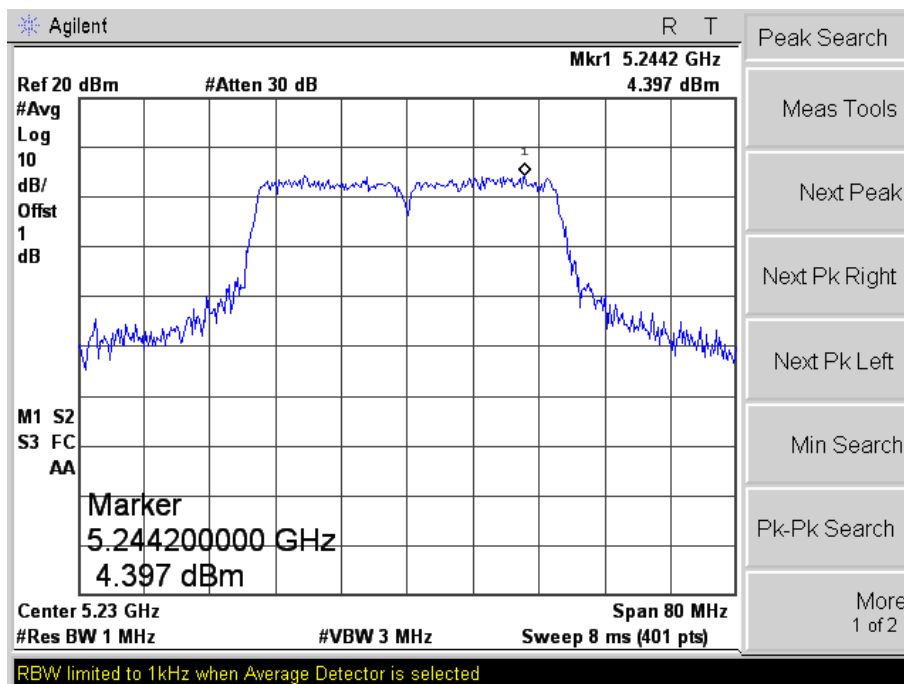


802.11n-HT40

5190MHz

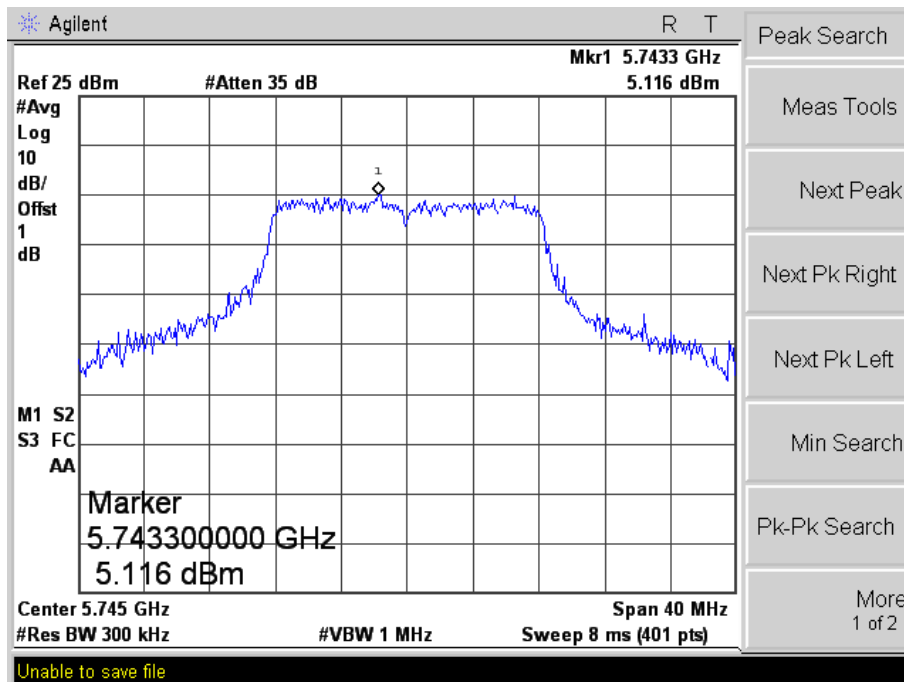


5230MHz

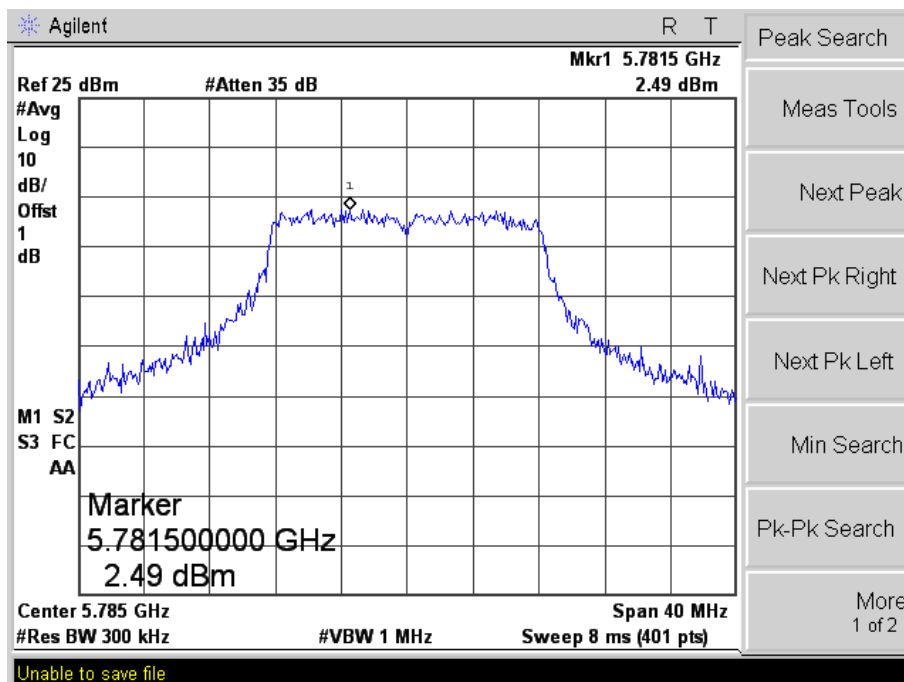


Test Mode: 802.11a

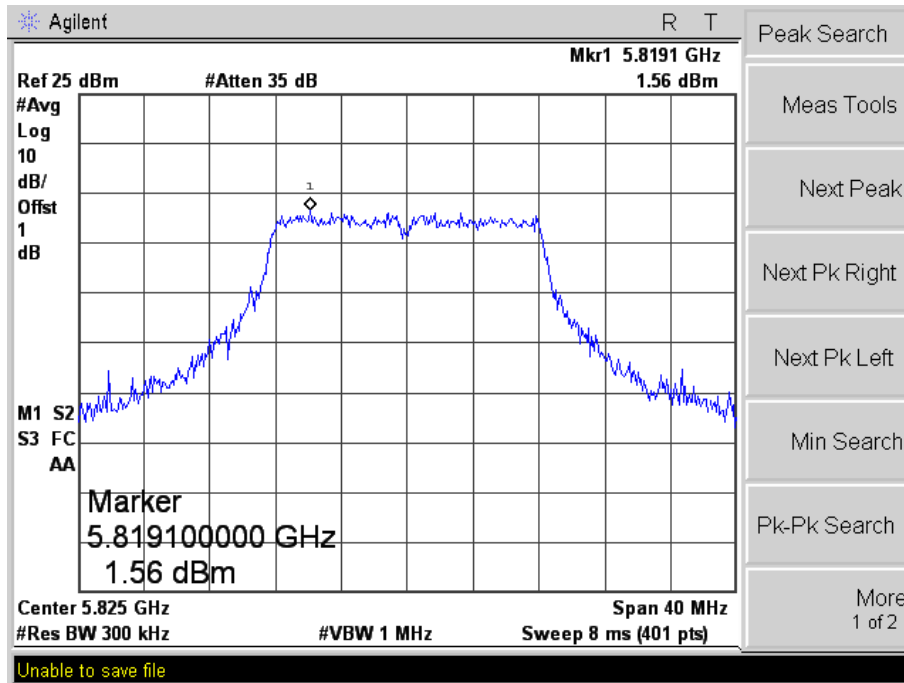
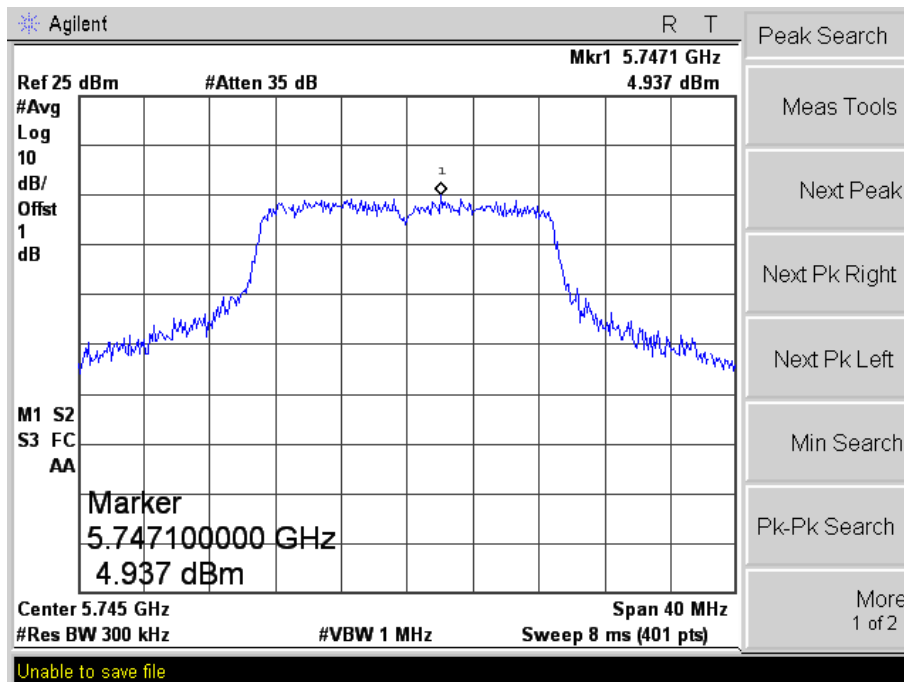
5745MHz



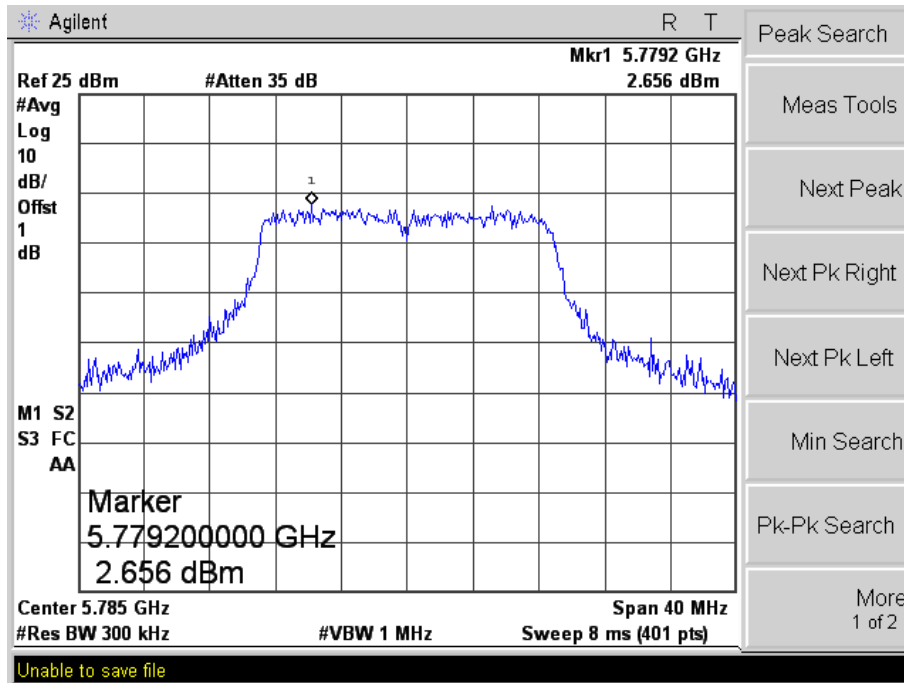
5785MHz



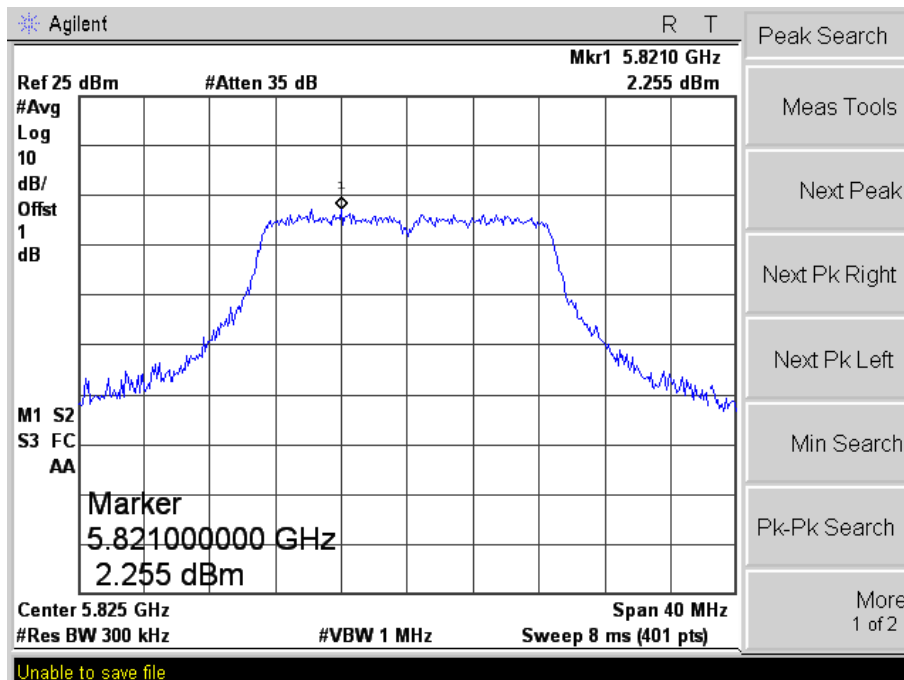
5825MHz


 802.11n-HT20
5745MHz


5785MHz

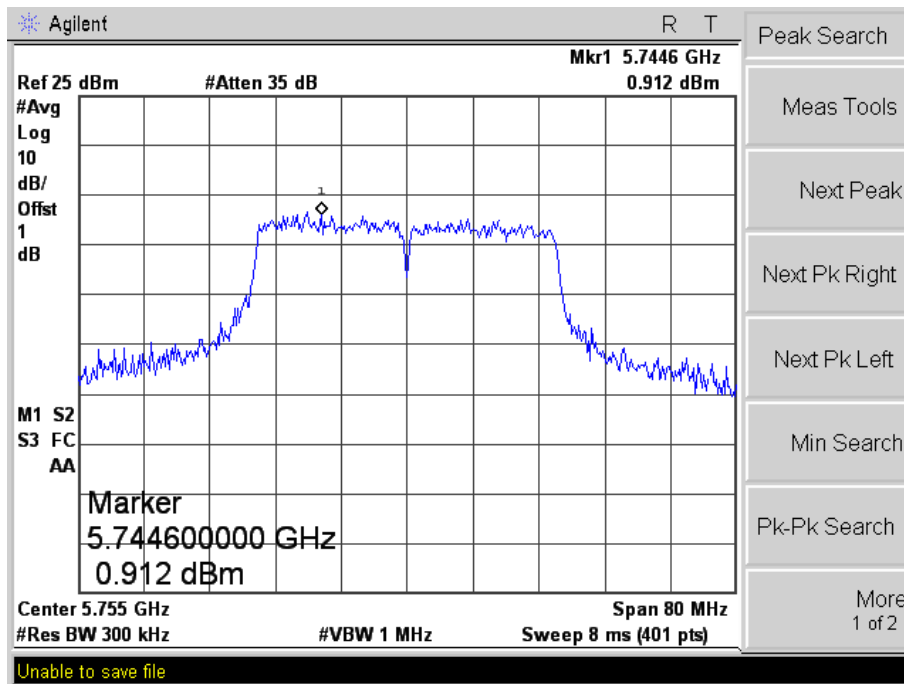


5825MHz

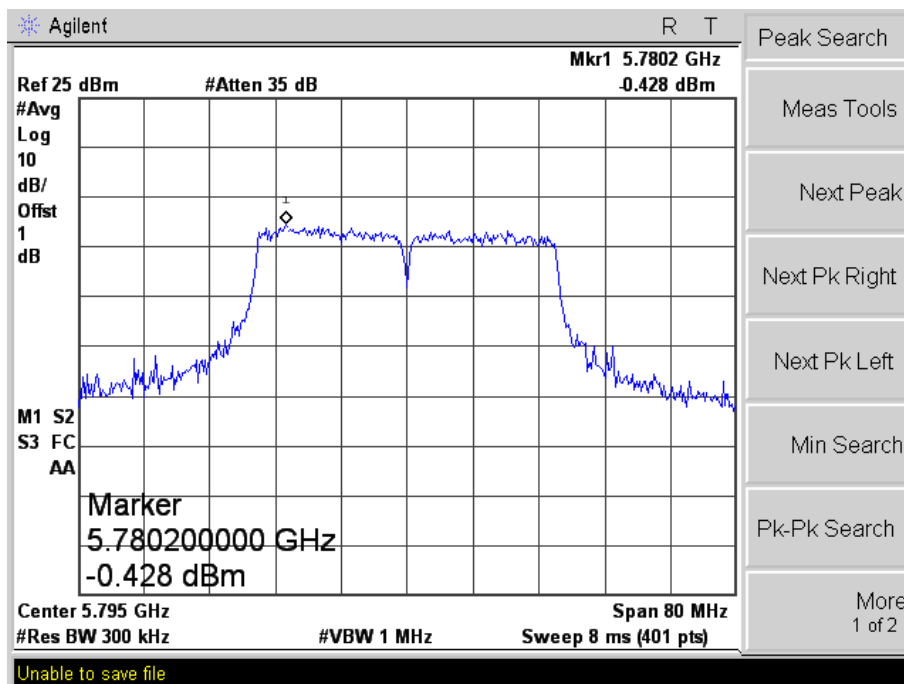


802.11n-HT40

5755MHz



5795MHz



6. Emission Bandwidth and Occupied Bandwidth

6.1 Standard Applicable

According to 15.407 (a) and (e)

(1) For the band 5.15-5.25 GHz.

(i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

(2) For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(3) For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

(e) Within the 5.725-5.85 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

6.2 Test Procedure

According to 789033 D02 v02r01 section C&D, the following is the measurement procedure.

1. Emission Bandwidth (EBW)

- a) Set RBW = approximately 1% of the emission bandwidth.
- b) Set the VBW > RBW.
- c) Detector = Peak.
- d) Trace mode = max hold.

e) Measure the maximum width of the emission that is 26 dB down from the maximum of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

2. Minimum Emission Bandwidth for the band 5.725-5.85 GHz

Section 15.407(e) specifies the minimum 6 dB emission bandwidth of at least 500 KHz for the band 5.715-5.85 GHz. The following procedure shall be used for measuring this bandwidth:

- a) Set RBW = 100 kHz.
- b) Set the video bandwidth (VBW) $\geq 3 \times$ RBW.
- c) Detector = Peak.
- d) Trace mode = max hold.
- e) Sweep = auto couple.
- f) Allow the trace to stabilize.
- g) 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 dB relative to the maximum level measured in the fundamental emission.

Note: The automatic bandwidth measurement capability of a spectrum analyzer or EMI receiver may be employed if it implements the functionality described above.

D. 99 Percent Occupied Bandwidth

The 99-percent occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers are each equal to 0.5 % of the total mean power of the given emission. Measurement of the 99-percent occupied bandwidth is required only as a condition for using the optional band-edge measurement techniques described in section II.G.3.d). Measurements of 99-percent occupied bandwidth may also optionally be used in lieu of the EBW to 789033 D02 v02r01 General UNII Test Procedures New Rules v01 define the minimum frequency range over which the spectrum is integrated when measuring maximum conducted output power as described in section II.E. However, the EBW must be measured to determine bandwidth dependent limits on maximum conducted output power in accordance with 15.407(a).

The following procedure shall be used for measuring (99 %) power bandwidth:

1. Set center frequency to the nominal EUT channel center frequency.
2. Set span = 1.5 times to 5.0 times the OBW.
3. Set RBW = 1 % to 5 % of the OBW
4. Set VBW $\geq 3 \cdot$ RBW
5. Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.
6. Use the 99 % power bandwidth function of the instrument (if available).
7. If the instrument does not have a 99 % power bandwidth function, the trace data points are recovered and directly summed in power units. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5 % of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5 % of the total is reached; that frequency is recorded as the upper frequency. The 99% occupied bandwidth is the difference between these two frequencies.

6.3 Environmental Conditions

Temperature:	24° C
Relative Humidity:	53%
ATM Pressure:	1018 mbar

6.4 Summary of Test Results/Plots

Antenna 0

5150-5250MHz

Test Mode	Test Channel MHz	26 dB Bandwidth MHz	99% Bandwidth MHz	Result
802.11a	5180	27.533	17.3521	Pass
	5200	29.381	17.3393	Pass
	5240	37.550	18.1288	Pass
802.11n-HT20	5180	25.901	18.2549	Pass
	5200	27.357	18.2759	Pass
	5240	35.639	18.4267	Pass
802.11n-HT40	5190	60.231	37.7621	Pass
	5230	70.483	38.2766	Pass

5725-5850MHz

Test Mode	Test Channel MHz	26 dB Bandwidth MHz	6 dB Bandwidth MHz	99% Bandwidth MHz	Limit kHz
802.11a	5745	40.000	16.702	28.3820	≥500
	5785	40.000	16.541	24.1726	≥500
	5825	38.269	16.538	20.5957	≥500
802.11n-HT20	5745	39.979	17.778	24.4878	≥500
	5785	38.826	17.747	20.1412	≥500
	5825	33.667	17.775	18.7174	≥500
802.11n-HT40	5755	80.000	36.697	50.6601	≥500
	5795	79.703	36.843	41.4991	≥500

Antenna 1
5150-5250MHz

Test Mode	Test Channel MHz	26 dB Bandwidth MHz	99% Bandwidth MHz	Result
802.11a	5180	24.042	17.1017	Pass
	5200	25.742	17.0881	Pass
	5240	28.371	17.1729	Pass
802.11n-HT20	5180	24.703	18.1938	Pass
	5200	24.461	18.0653	Pass
	5240	26.940	18.1899	Pass
802.11n-HT40	5190	51.337	37.9170	Pass
	5230	72.380	38.0546	Pass

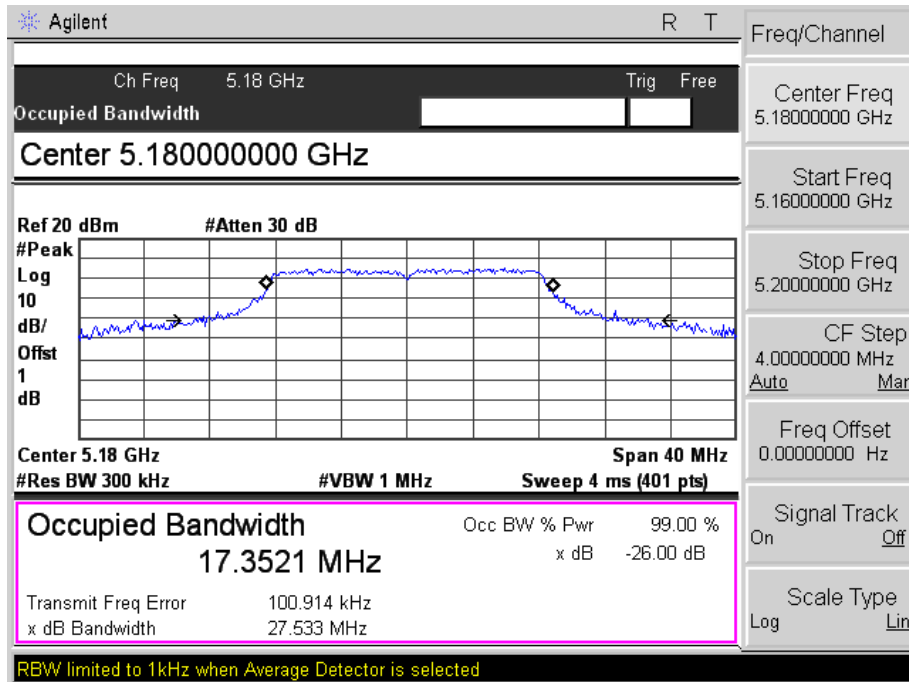
5725-5850MHz

Test Mode	Test Channel MHz	26 dB Bandwidth MHz	6 dB Bandwidth MHz	99% Bandwidth MHz	Limit kHz
802.11a	5745	28.562	16.546	17.4219	≥500
	5785	25.054	16.555	17.2507	≥500
	5825	28.841	16.621	17.4226	≥500
802.11n-HT20	5745	30.840	17.755	18.4484	≥500
	5785	24.515	17.705	18.2471	≥500
	5825	24.535	17.775	18.1799	≥500
802.11n-HT40	5755	66.549	36.702	38.1909	≥500
	5795	59.747	36.955	38.2576	≥500

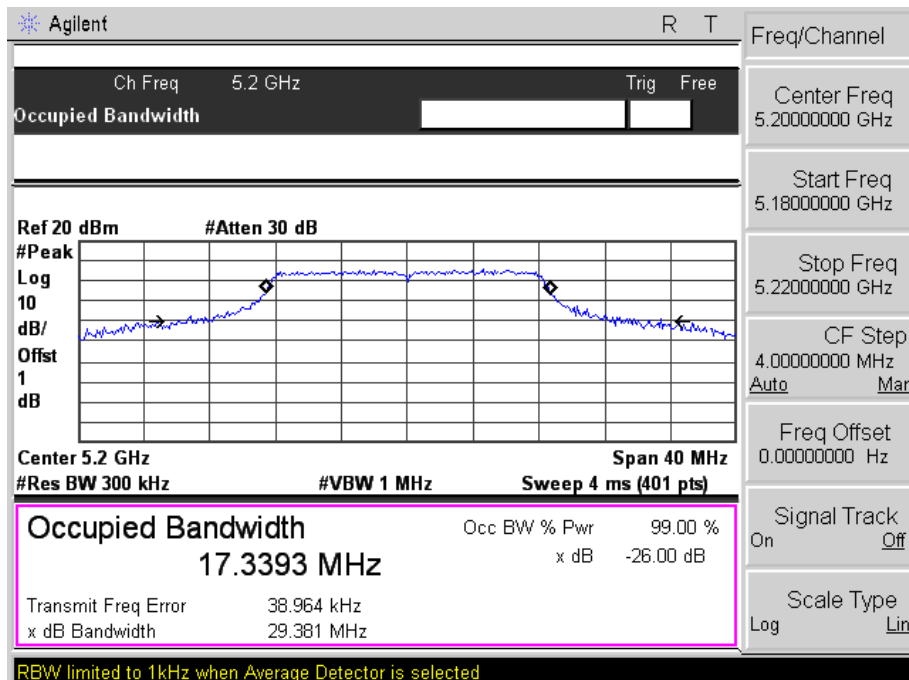
Antenna 0

Test mode: 802.11a

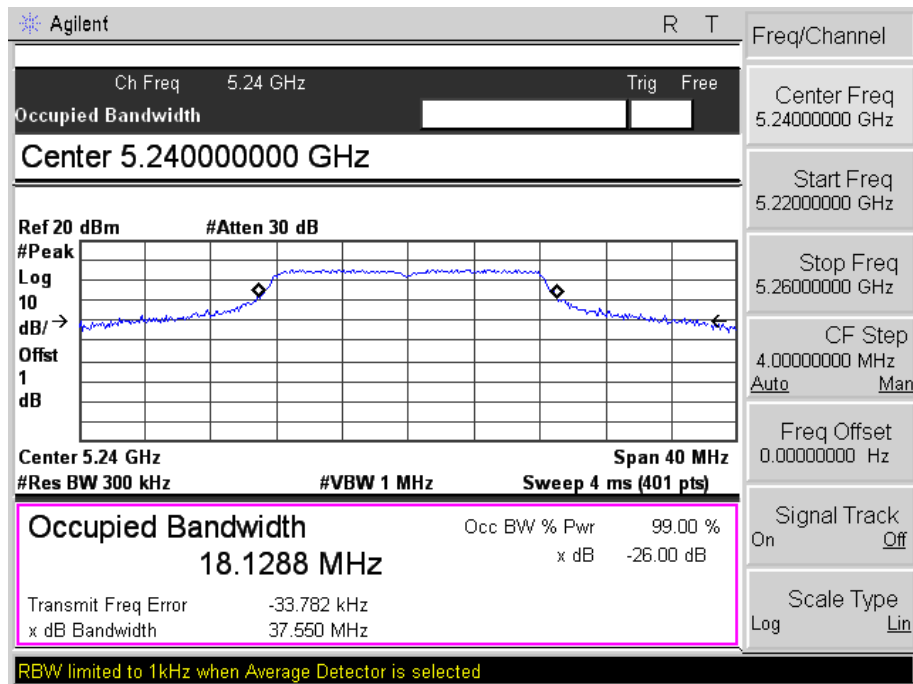
5180MHz



5200MHz

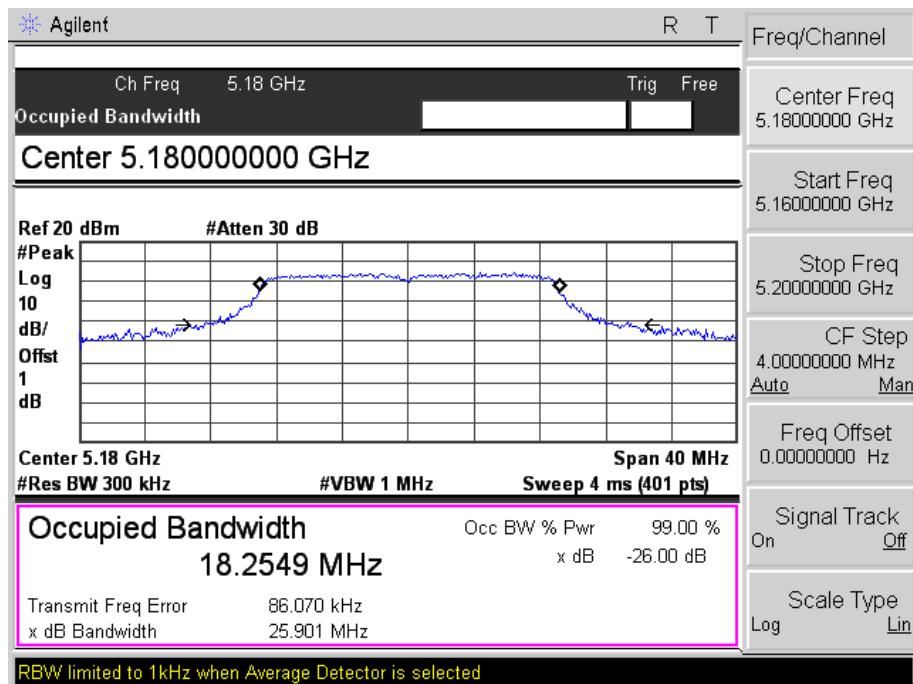


5240MHz

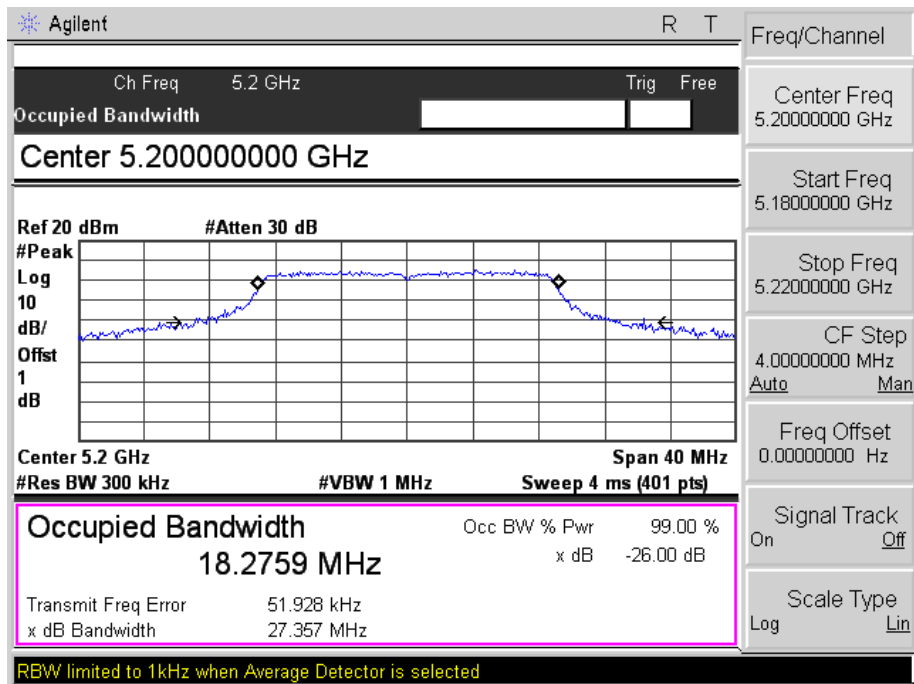


Test mode: 802.11n-HT20

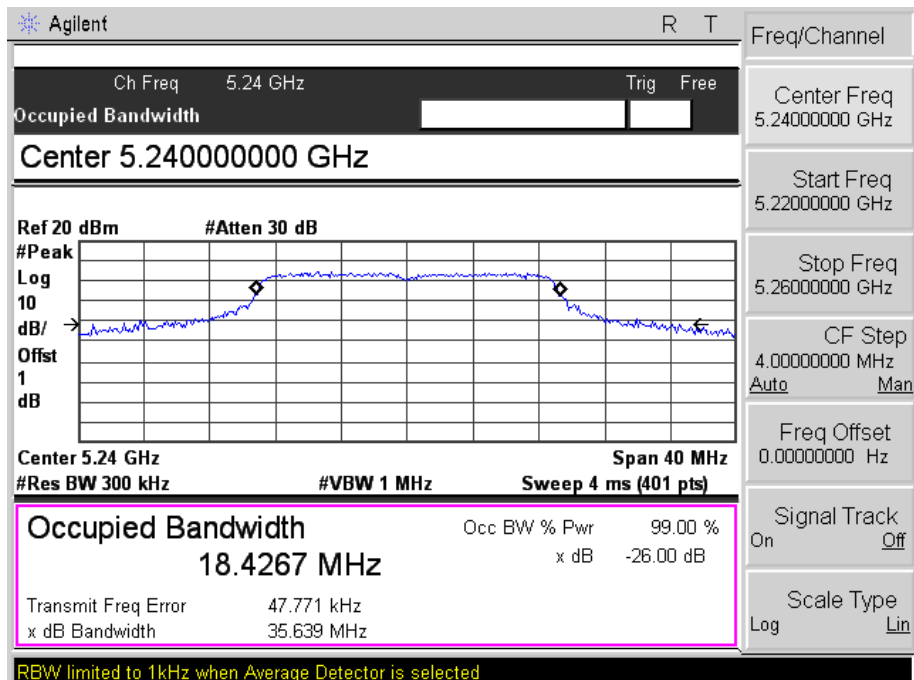
5180MHz



5200MHz

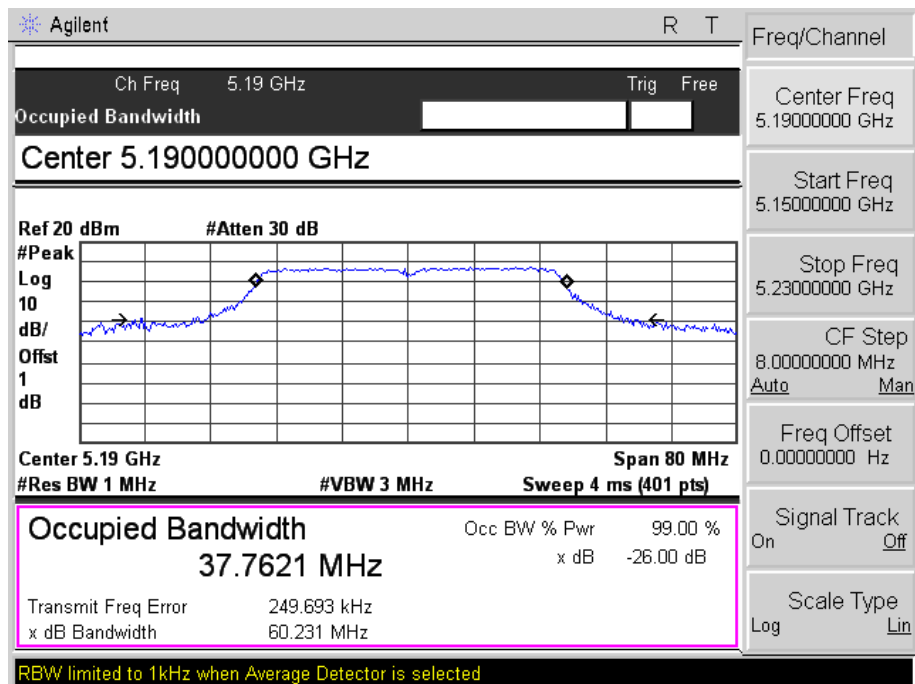


5240MHz

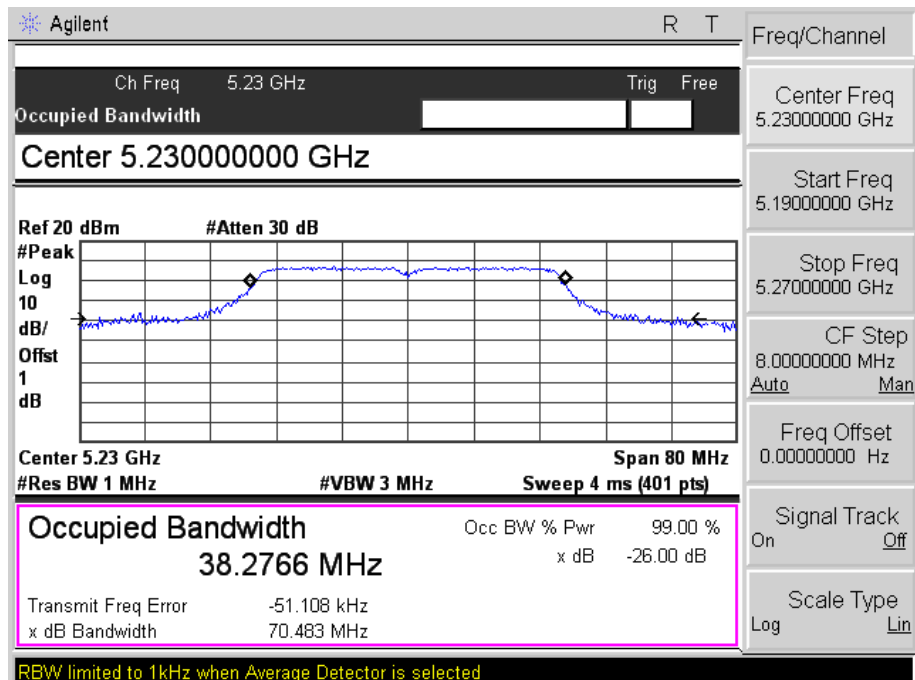


Test mode: 802.11n-HT40

5190MHz



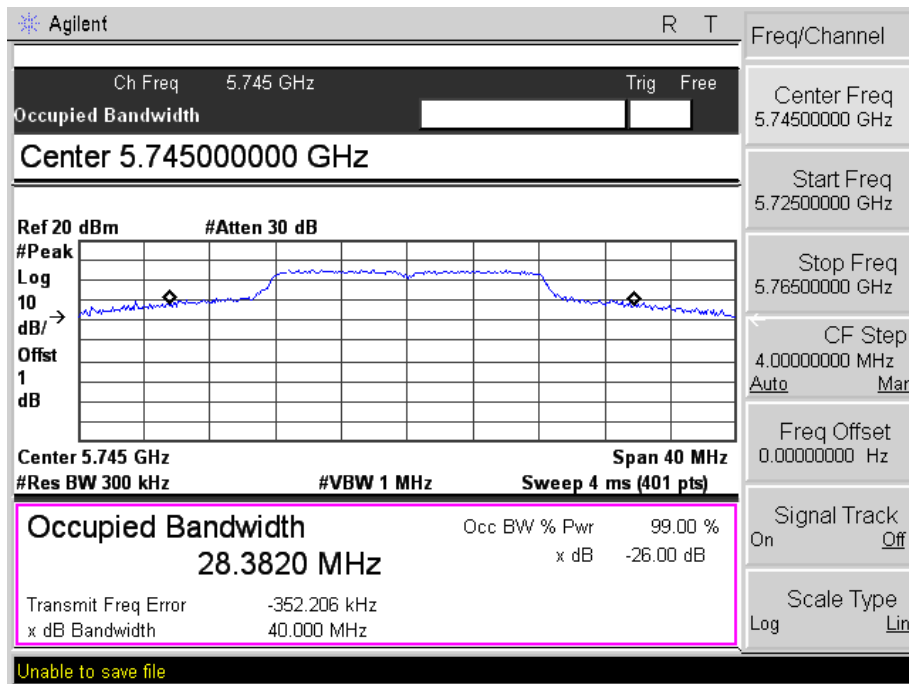
5230MHz



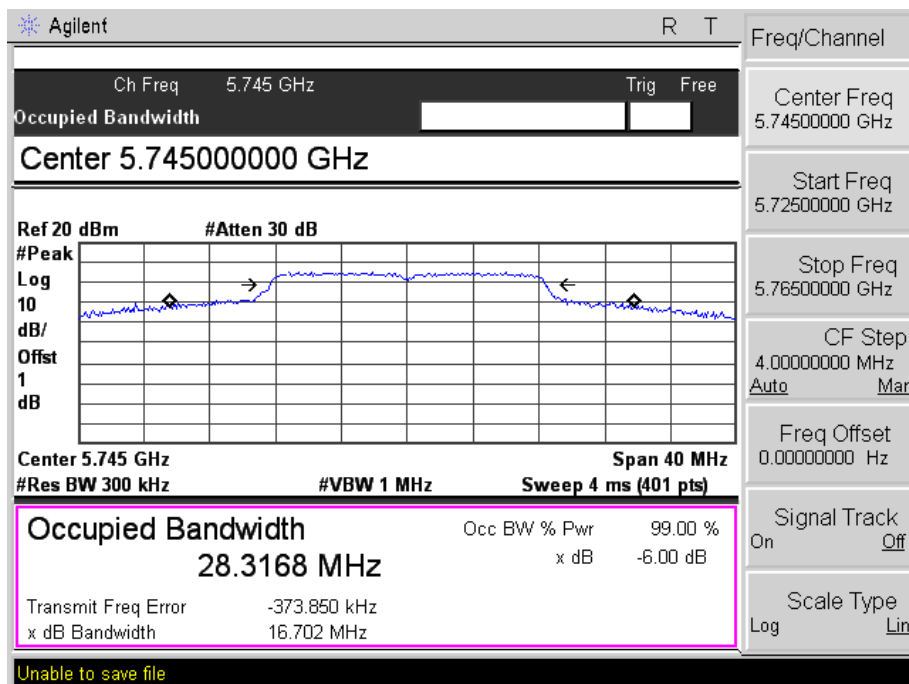
Test mode: 802.11a

5745MHz

26dB and 99% bandwidth

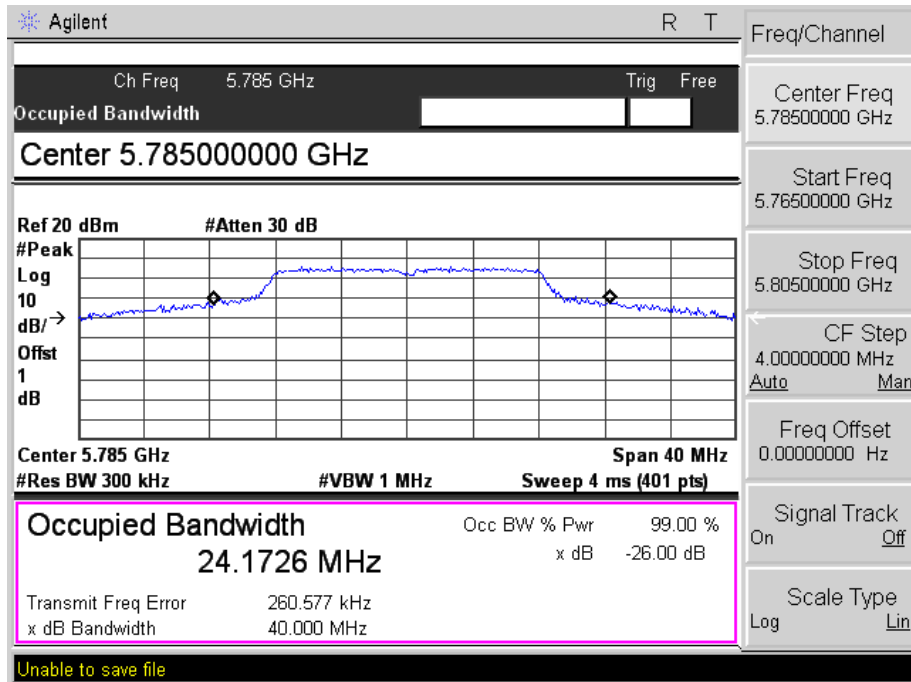


6dB bandwidth

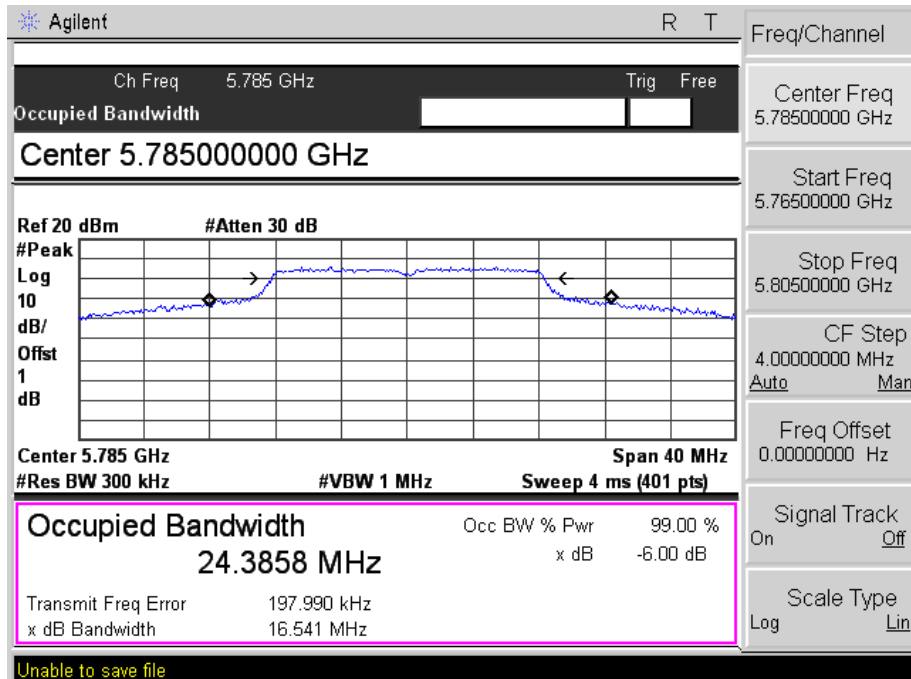


5785MHz

26dB and 99% bandwidth

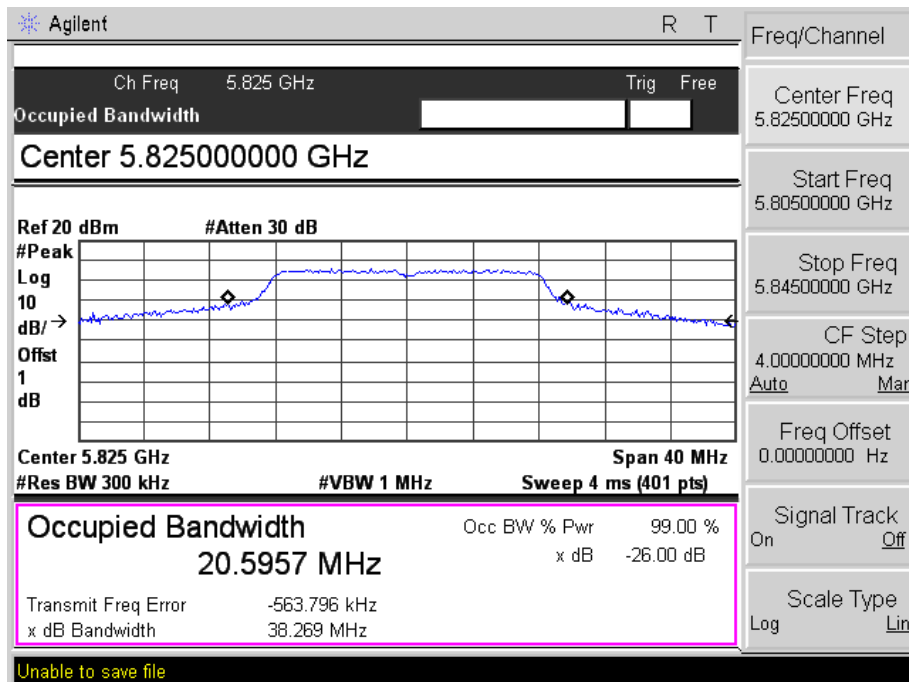


6dB bandwidth

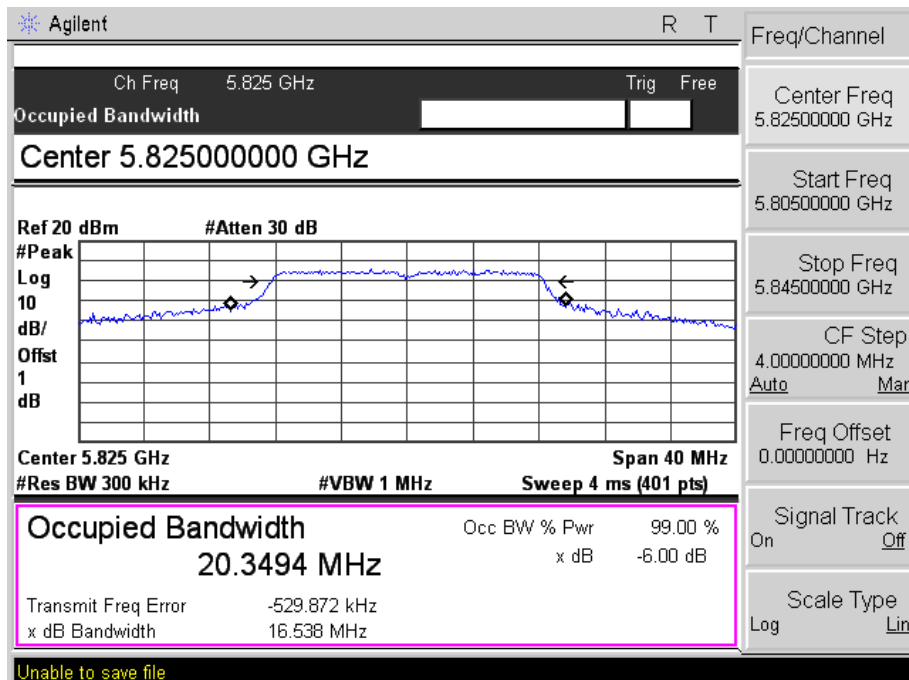


5825MHz

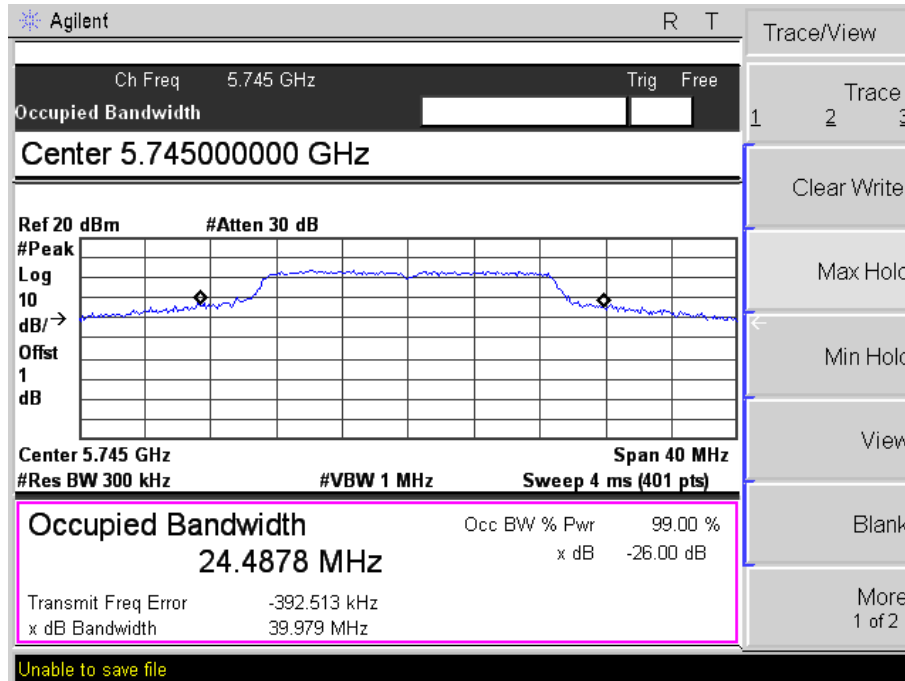
26dB and 99% bandwidth



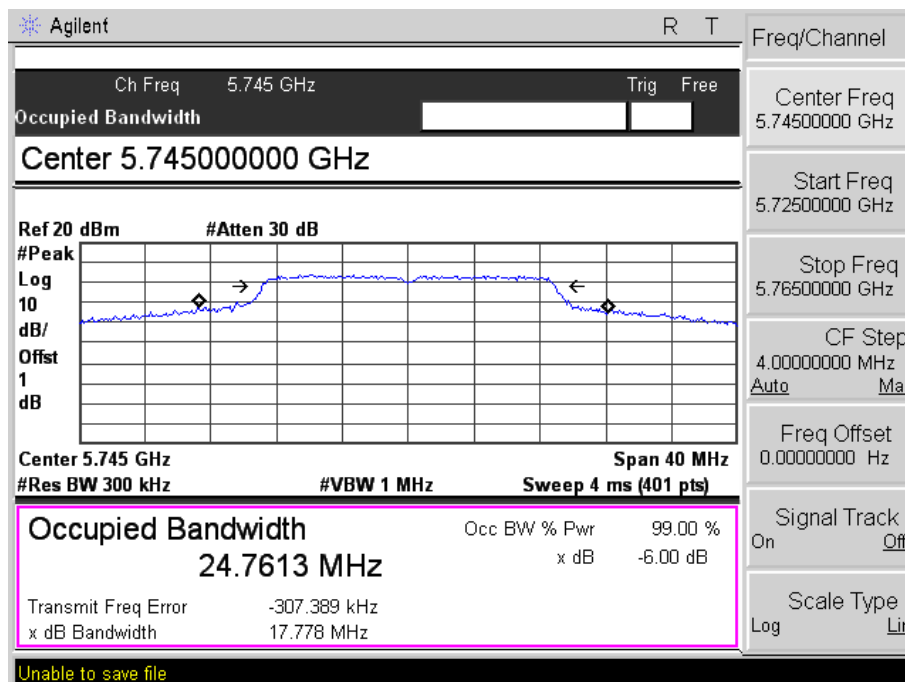
6dB bandwidth



Test mode: 802.11n-HT20
 5745MHz
 26dB and 99% bandwidth

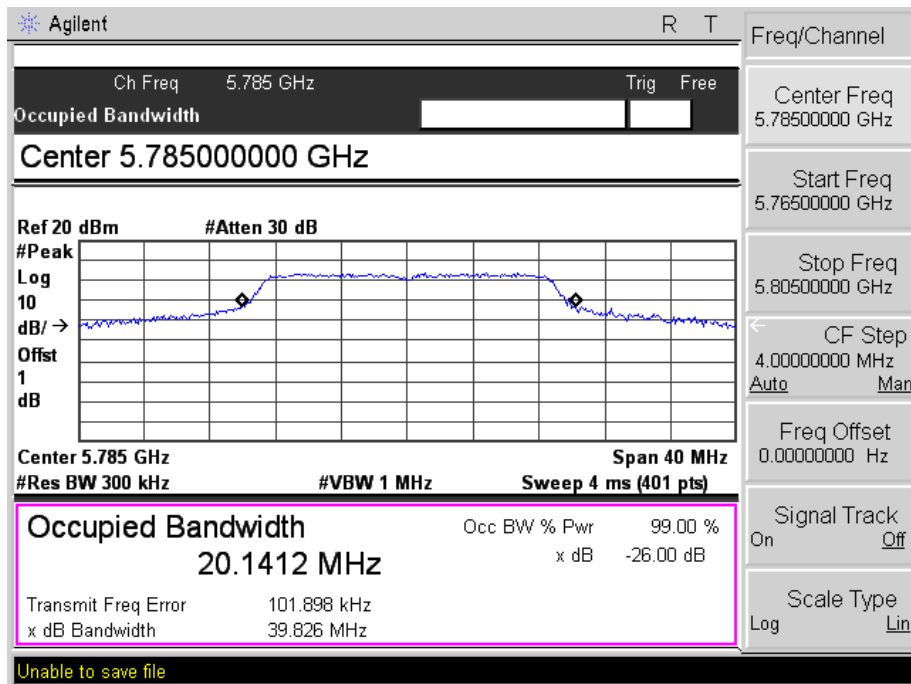


6dB bandwidth

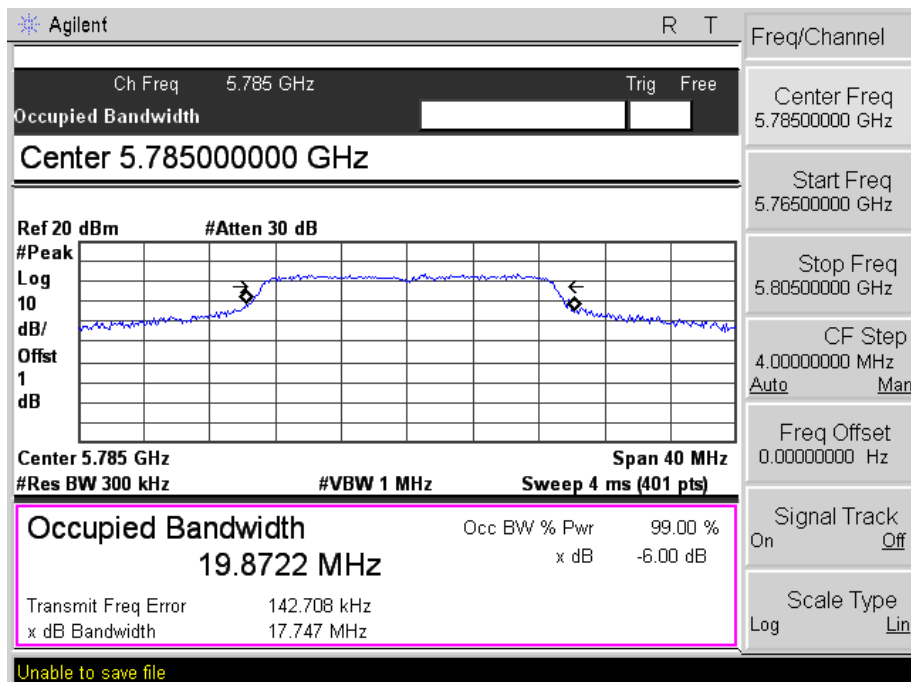


5785MHz

26dB and 99% bandwidth

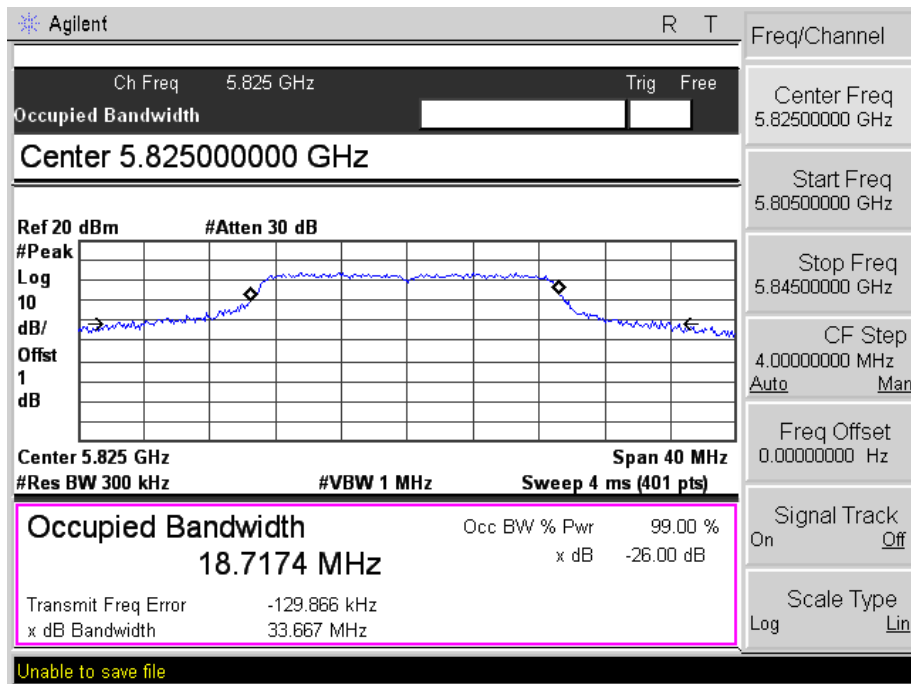


6dB bandwidth

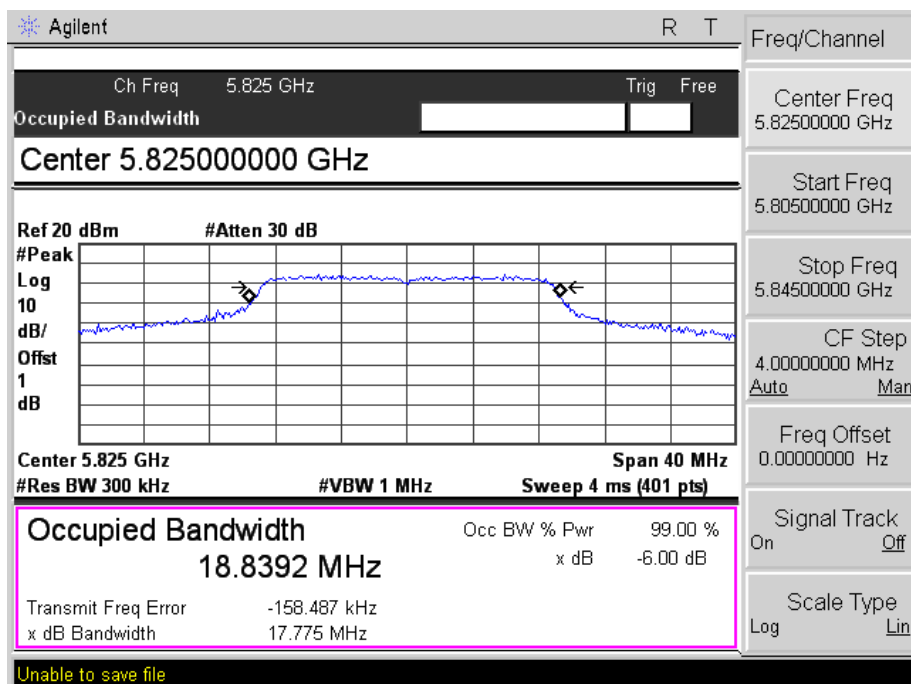


5825MHz

26dB and 99% bandwidth



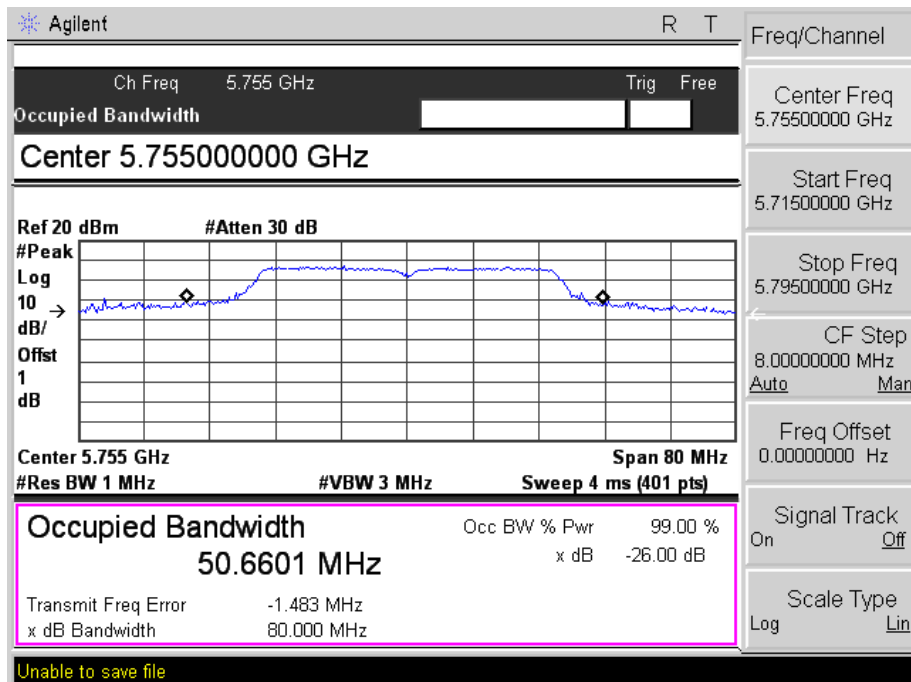
6dB bandwidth



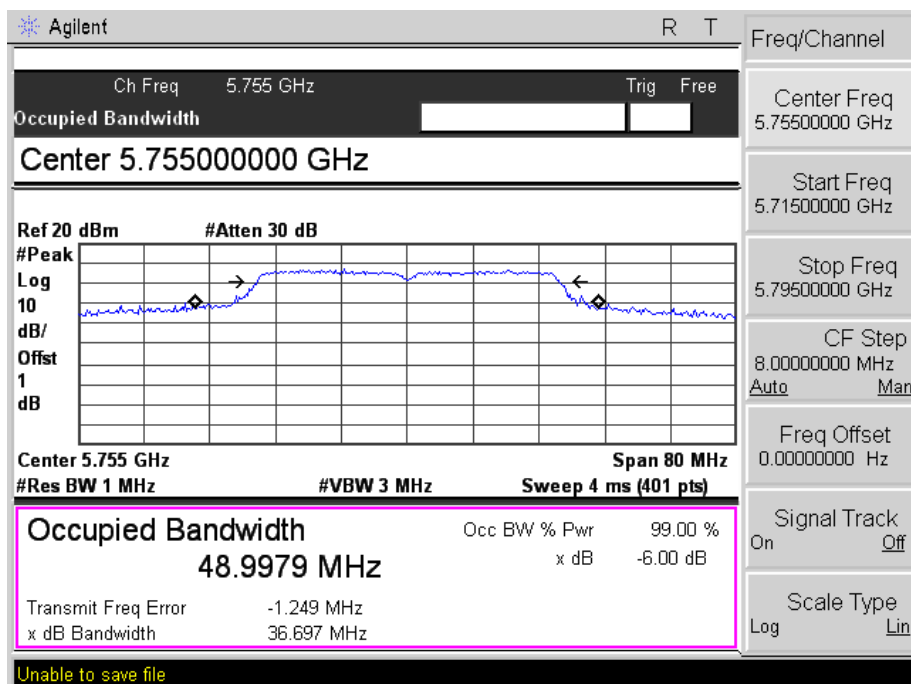
Test mode: 802.11n-HT40

5755MHz

26dB and 99% bandwidth

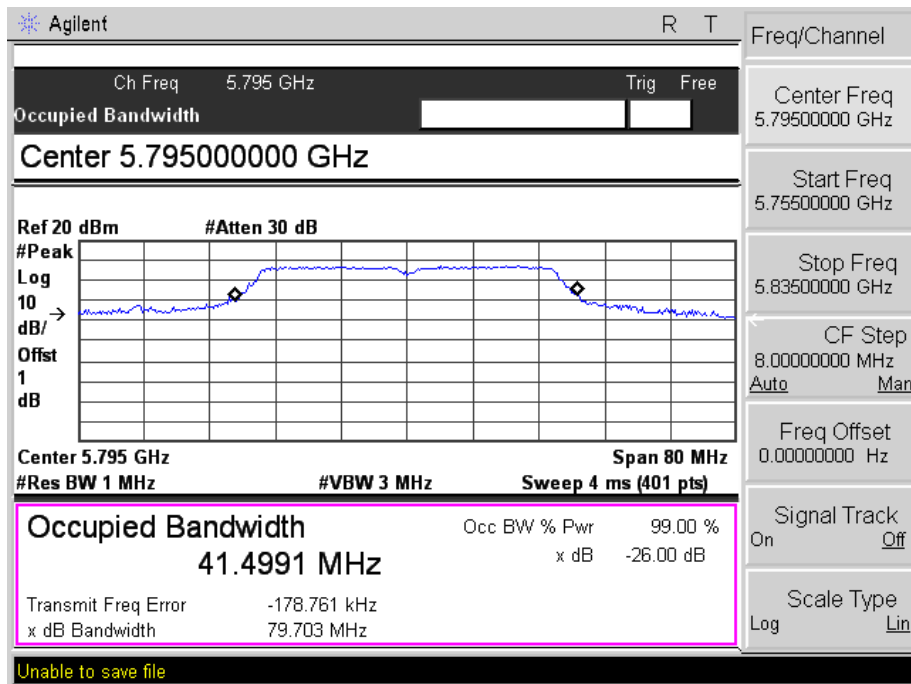


6dB bandwidth

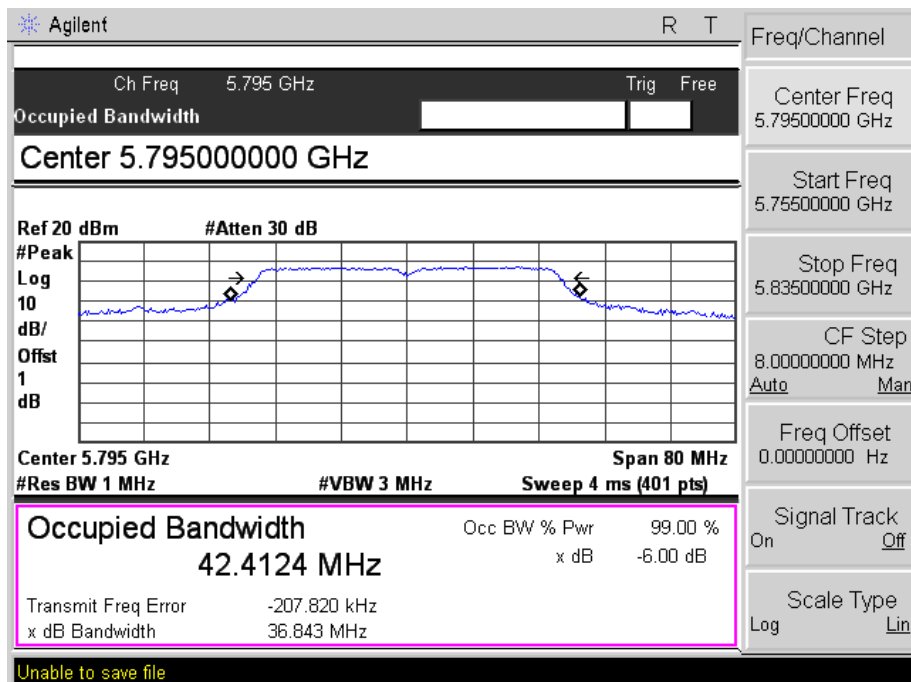


5795MHz

26dB and 99% bandwidth



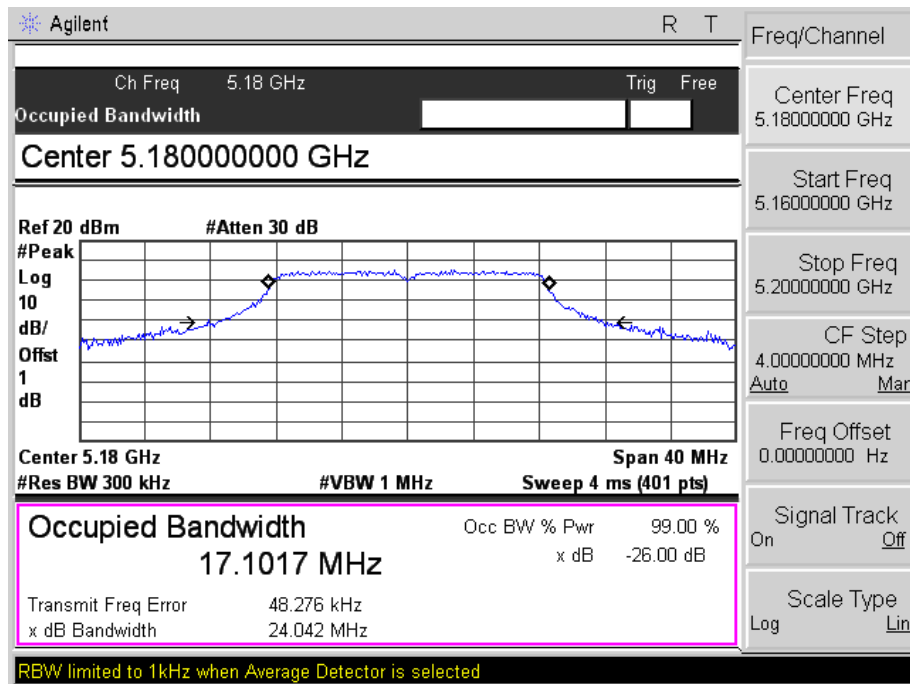
6dB bandwidth



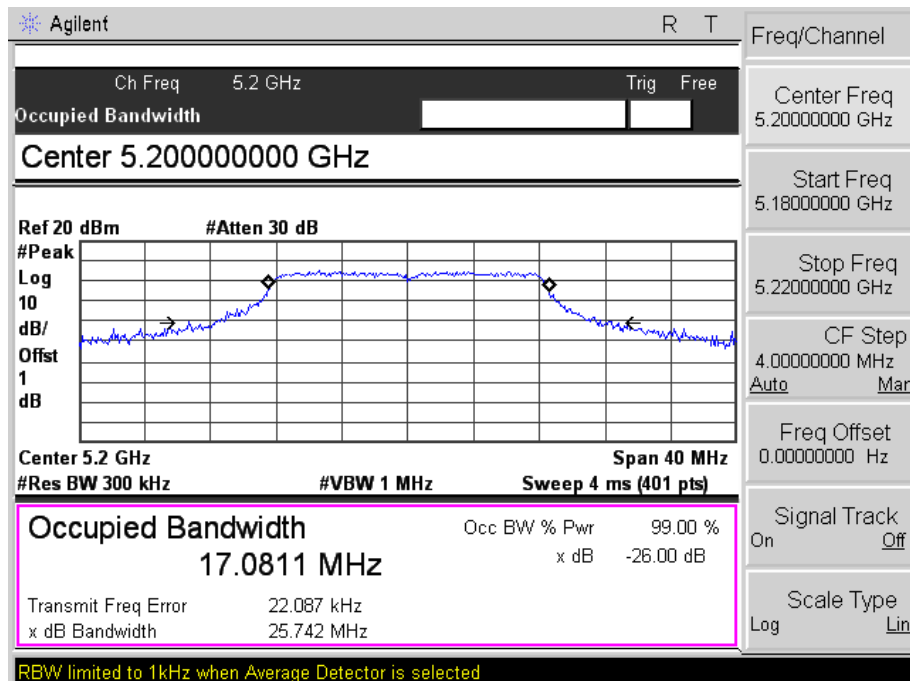
Antenna 1

Test mode: 802.11a

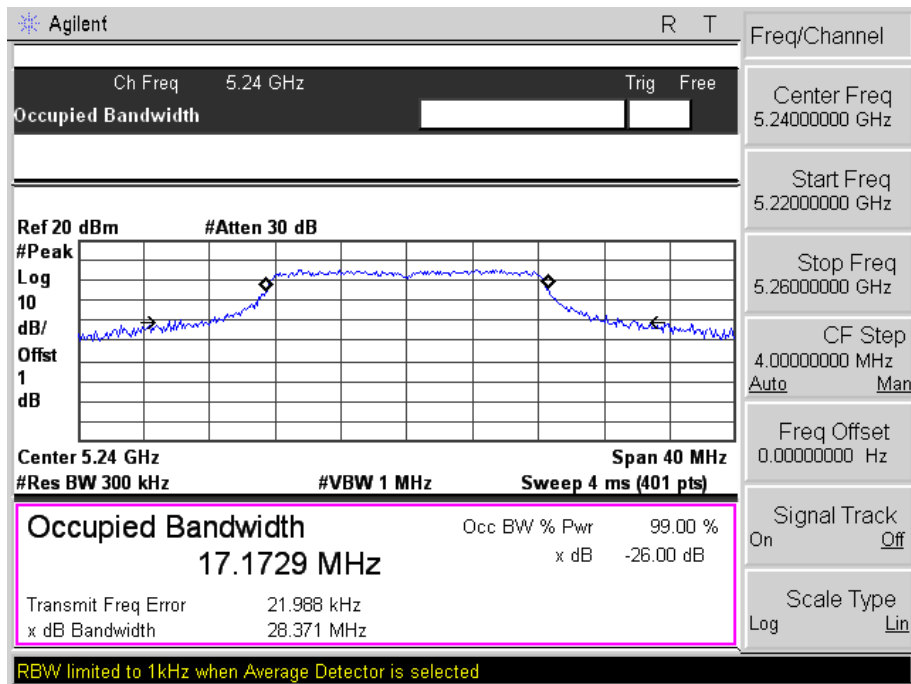
5180MHz



5200MHz

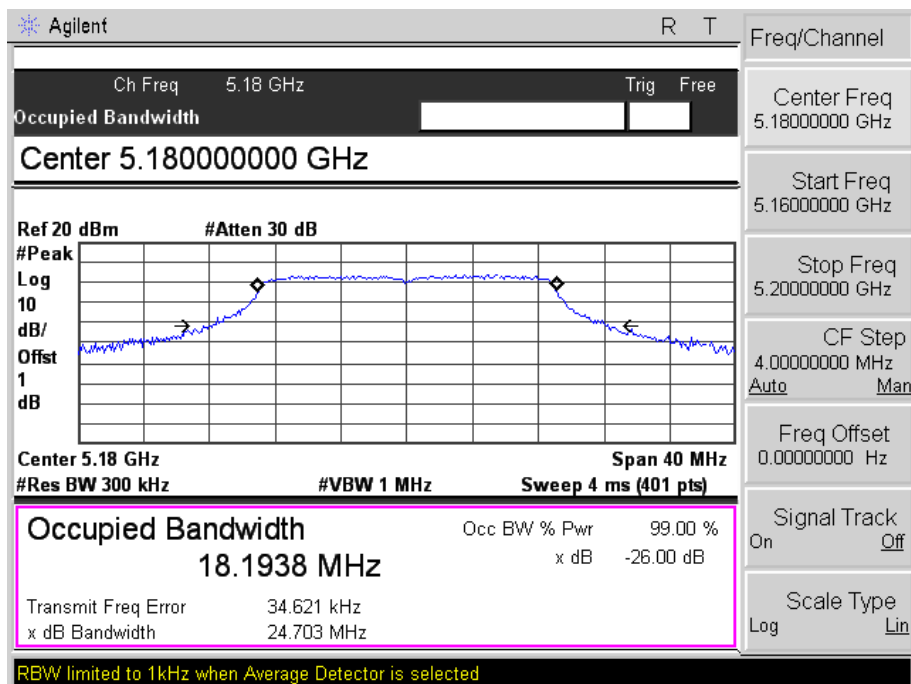


5240MHz

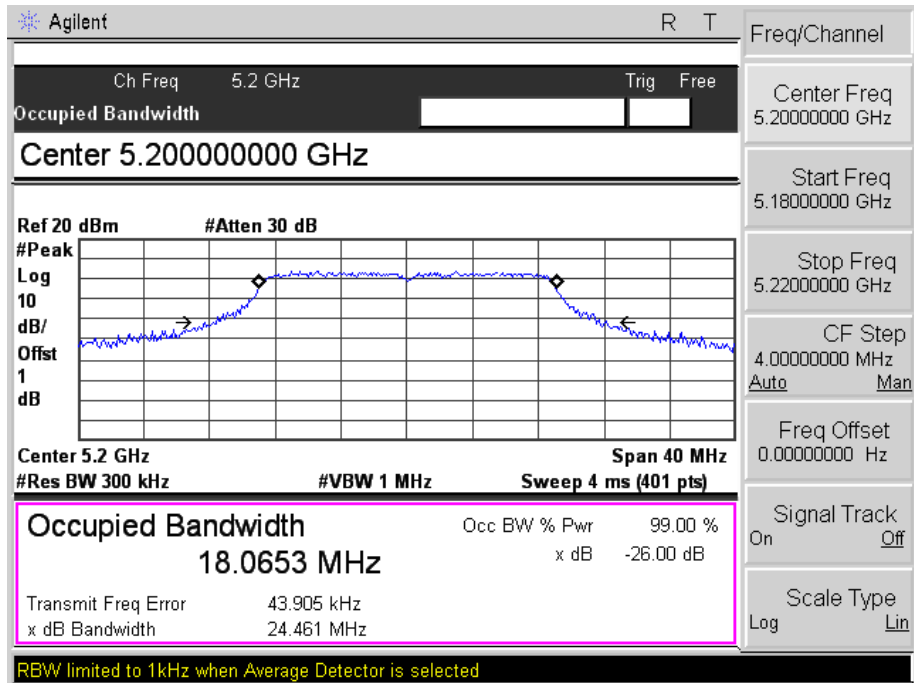


Test mode: 802.11n-HT20

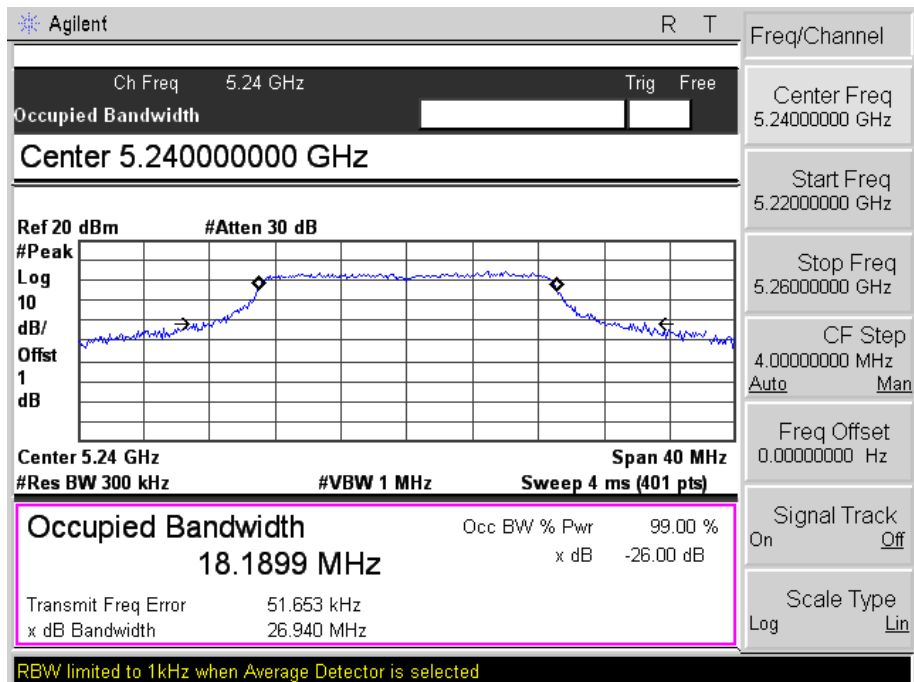
5180MHz



5200MHz

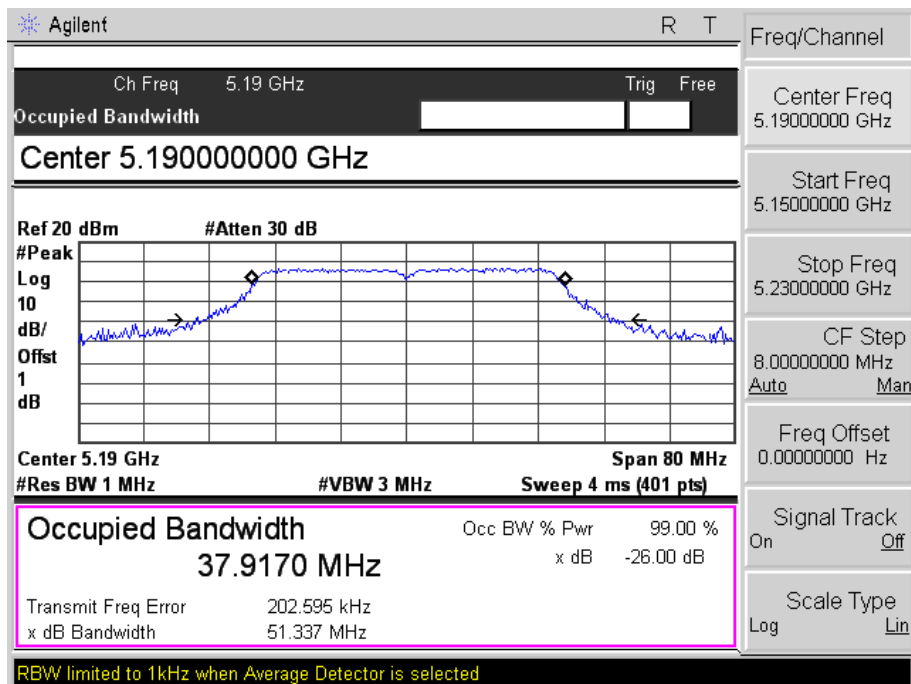


5240MHz

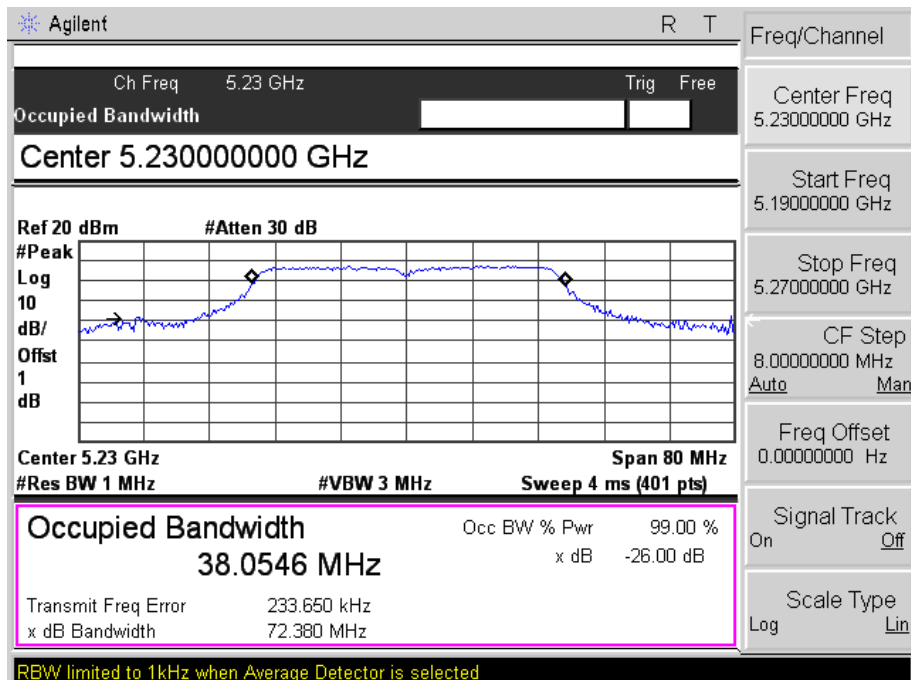


Test mode: 802.11n-HT40

5190MHz

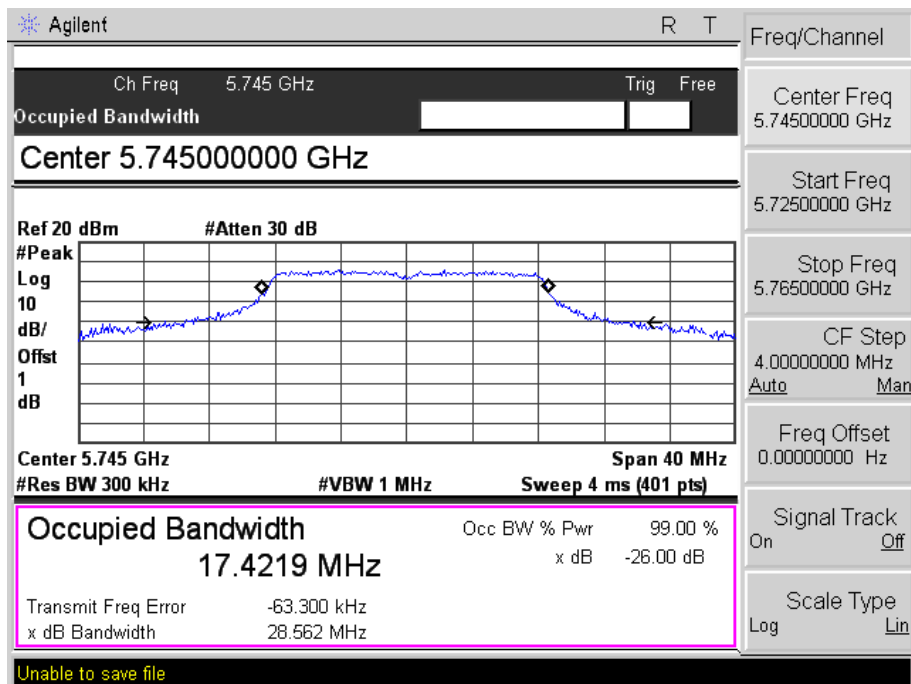


5230MHz

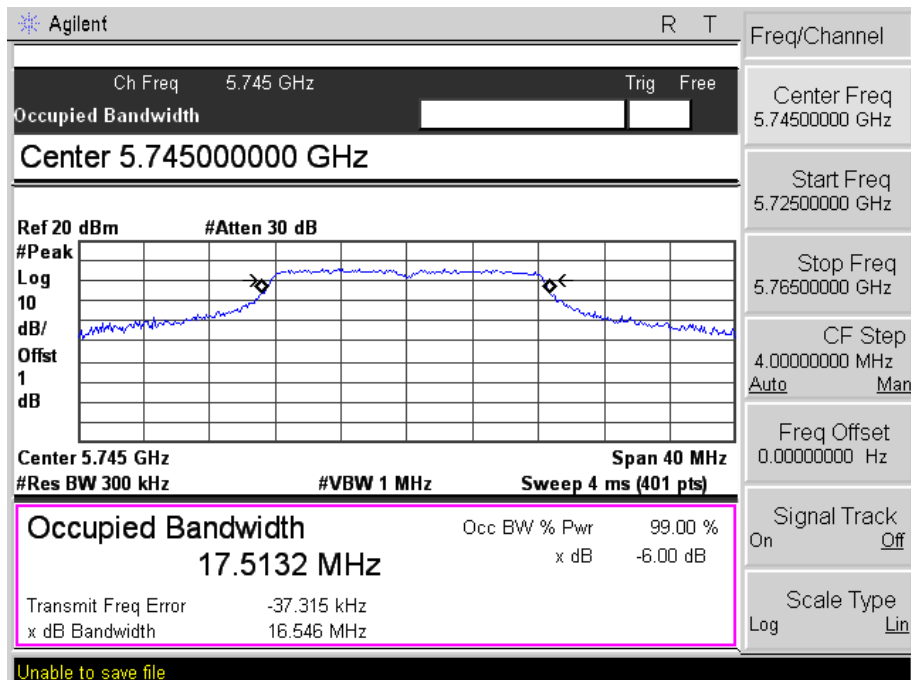


5745MHz

26dB and 99% bandwidth

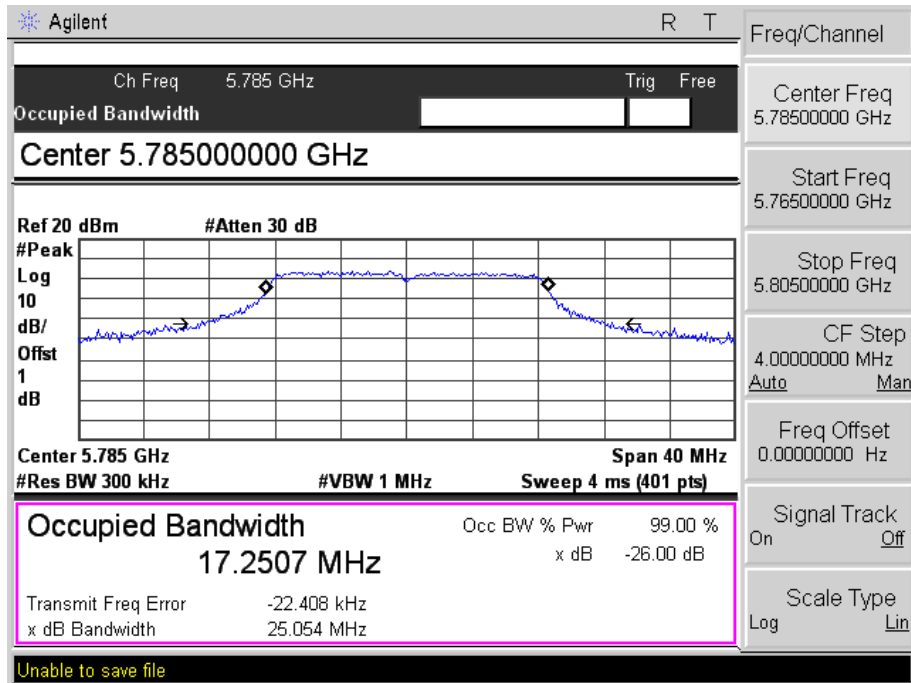


6dB bandwidth

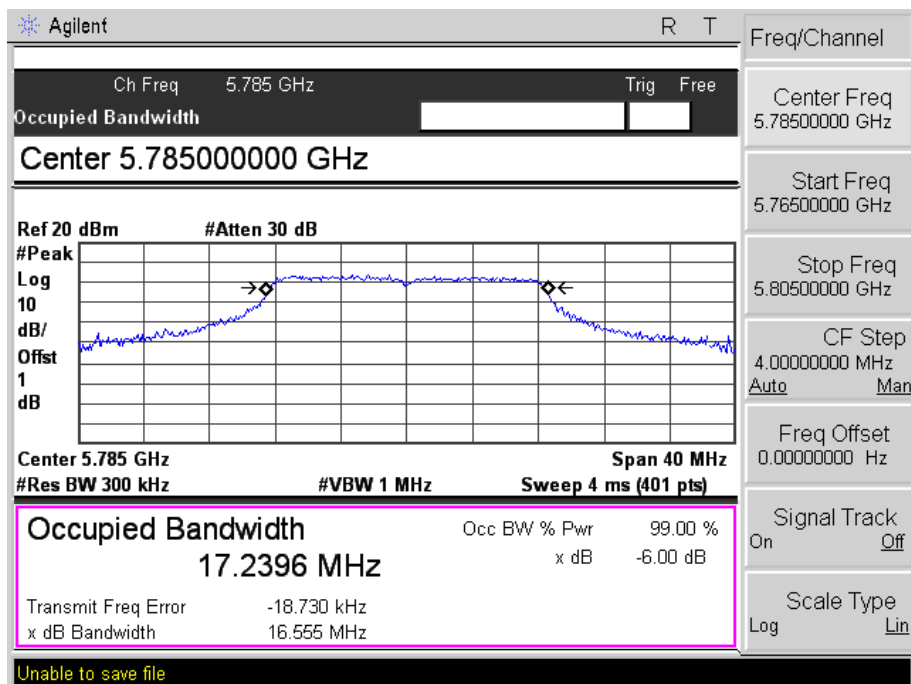


5785MHz

26dB and 99% bandwidth

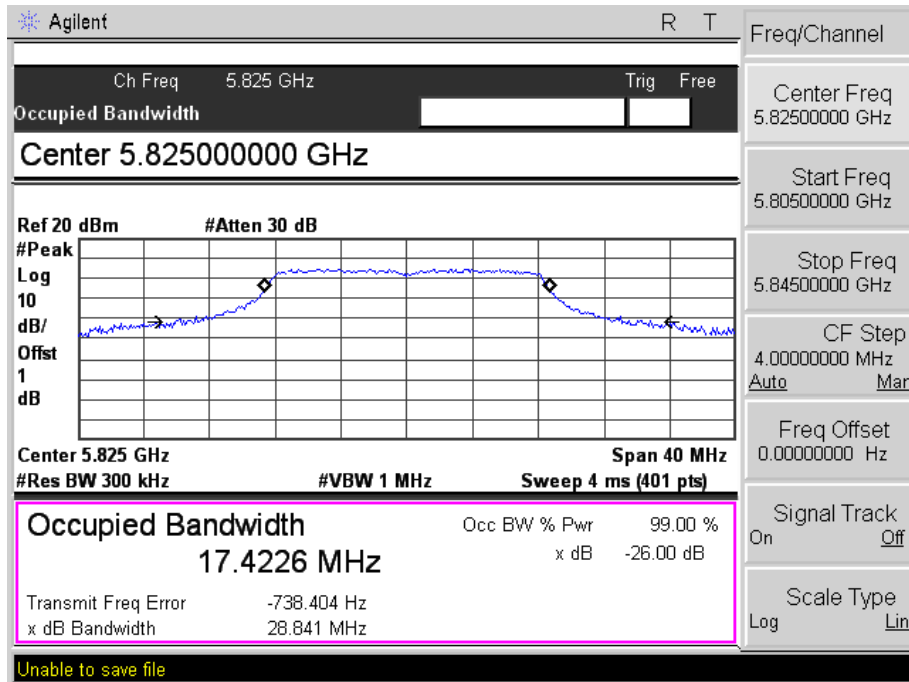


6dB bandwidth

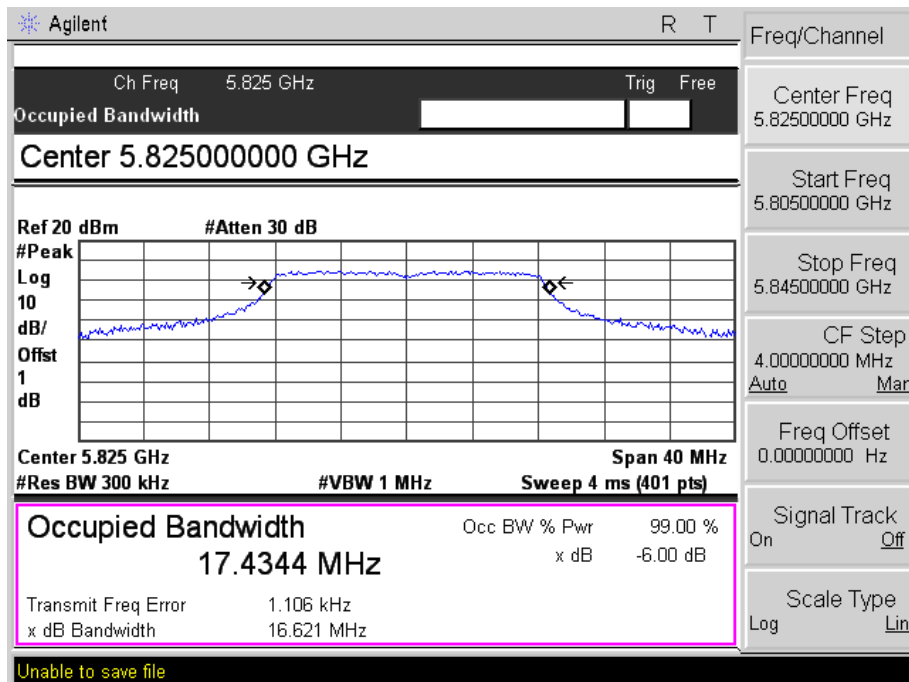


5825MHz

26dB and 99% bandwidth



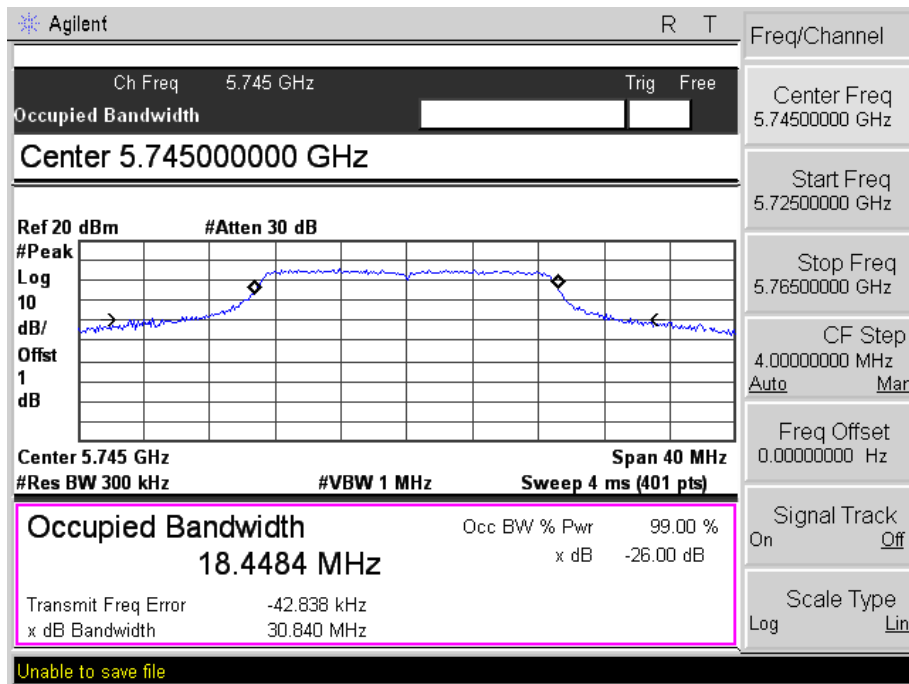
6dB bandwidth



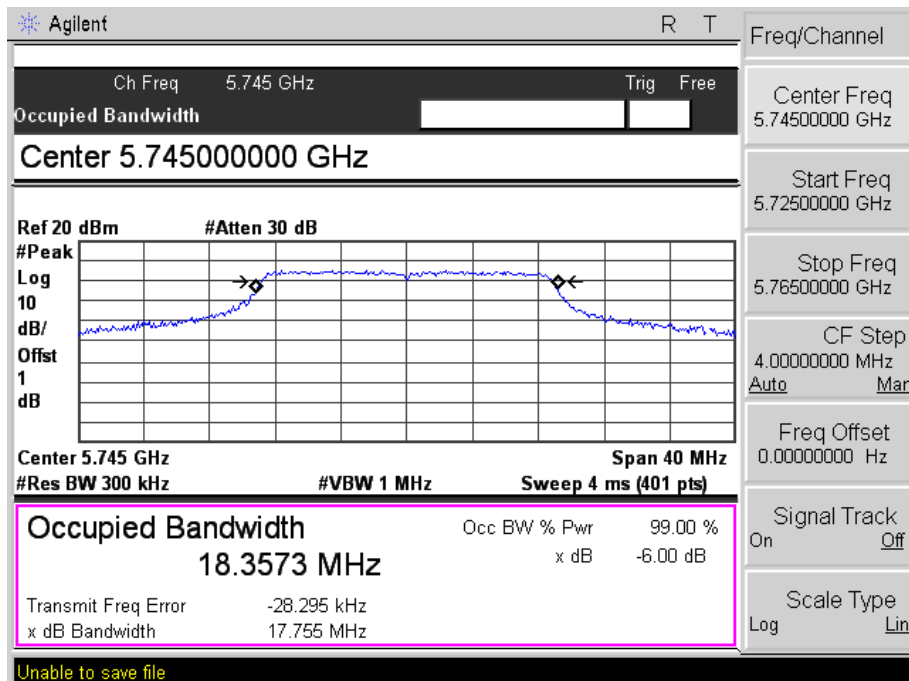
Test mode: 802.11n-HT20

5745MHz

26dB and 99% bandwidth

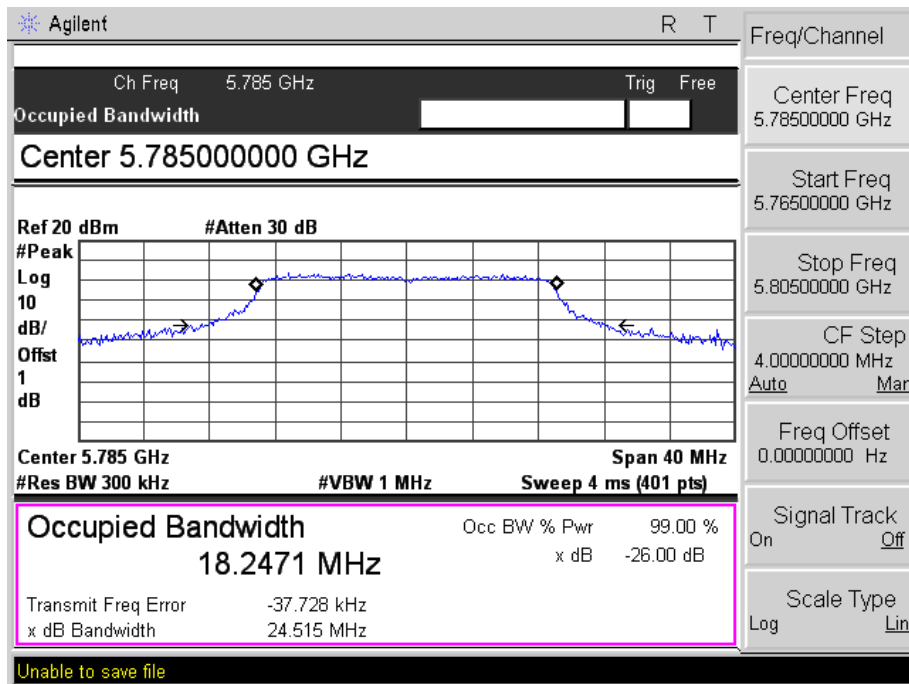


6dB bandwidth

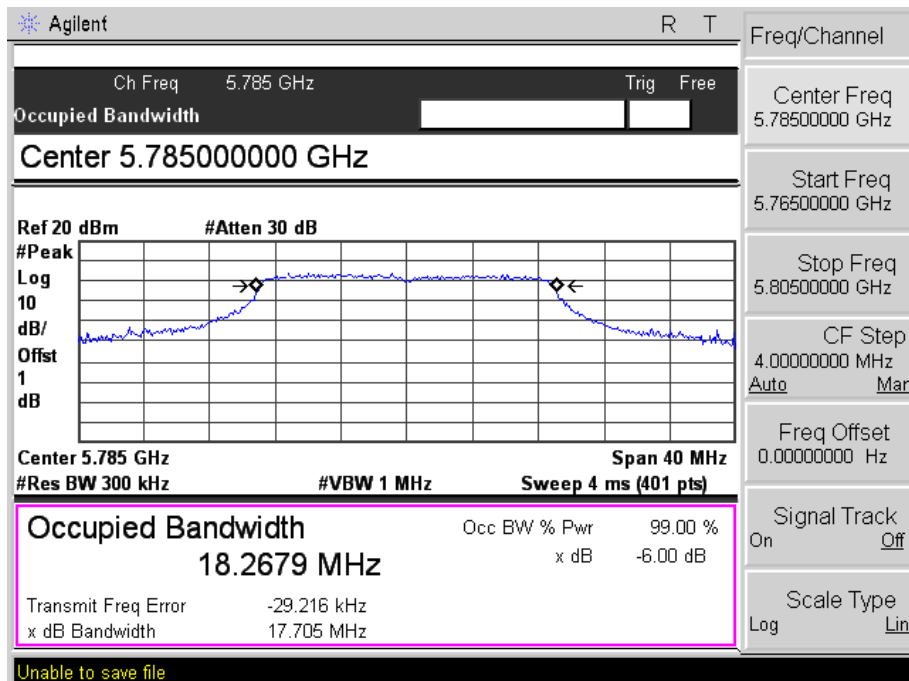


5785MHz

26dB and 99% bandwidth

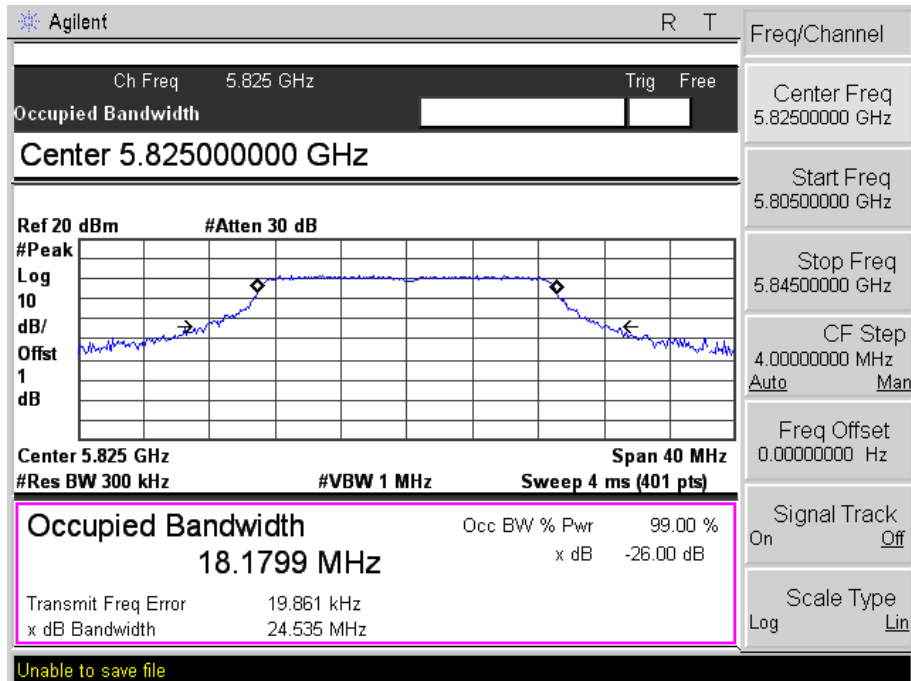


6dB bandwidth

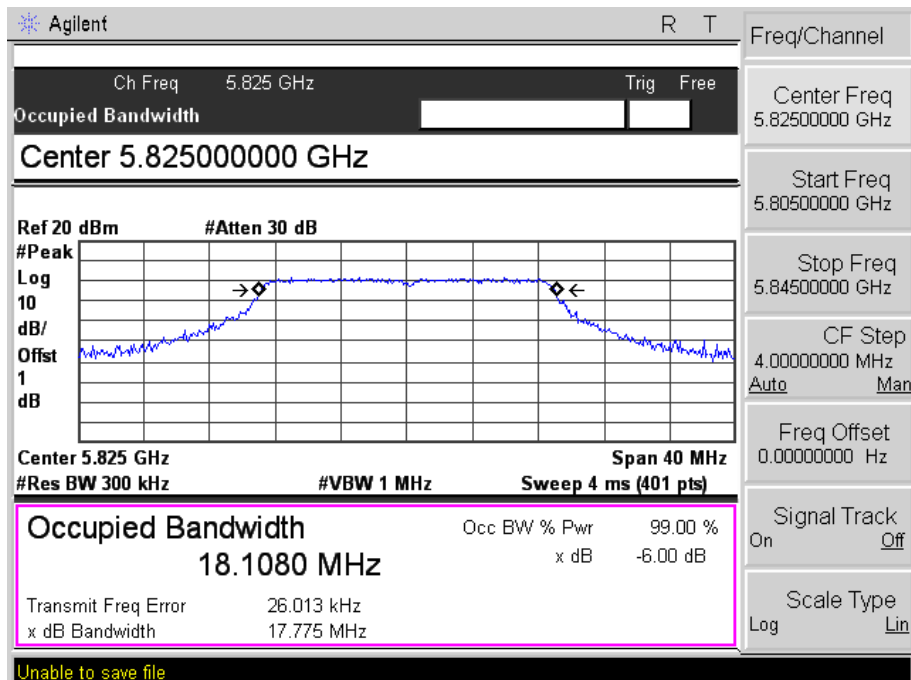


5825MHz

26dB and 99% bandwidth

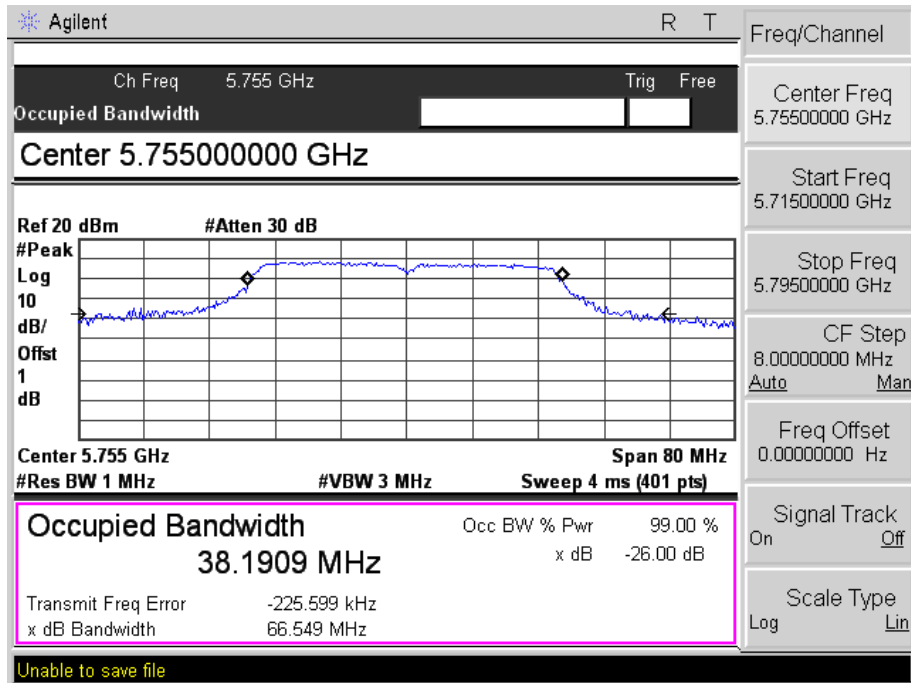


6dB bandwidth

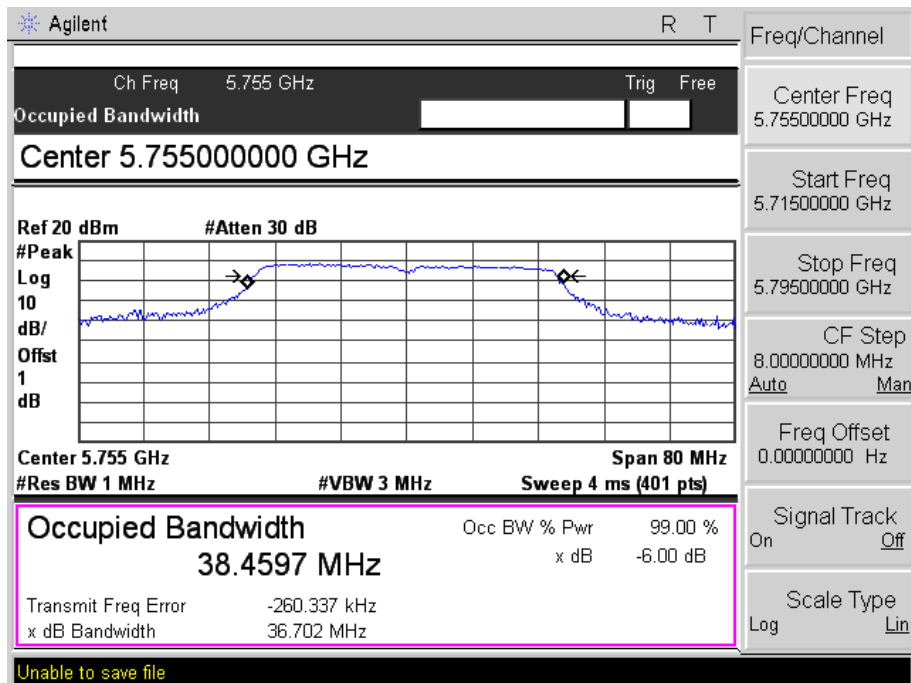


5775MHz

26dB and 99% bandwidth

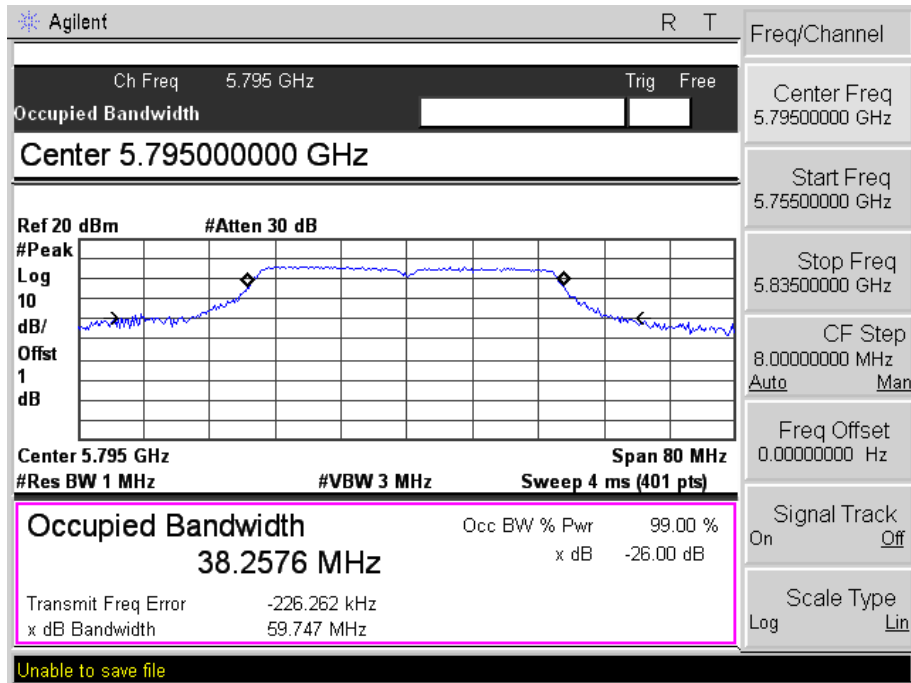


6dB bandwidth

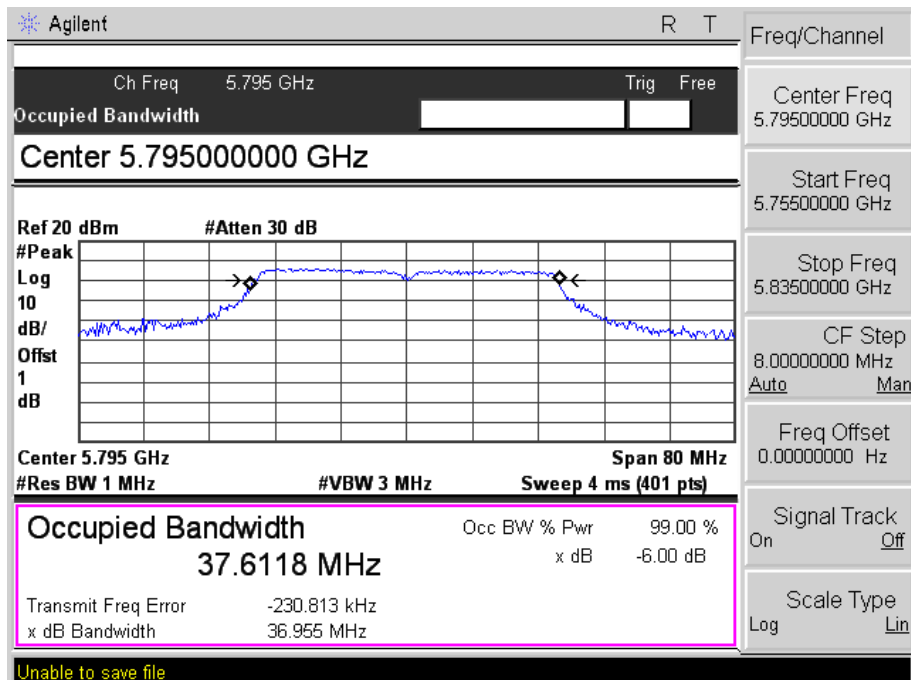


5795MHz

26dB and 99% bandwidth



6dB bandwidth



7. Maximum Conducted Output Power

7.1 Standard Applicable

According to 15.407(a) Power limits:

(1) For the band 5.15-5.25 GHz.

(i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

(2) For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(3) For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

7.2 Test Procedure

According to KDB789033 D02 v02r01 section E, the following is the measurement procedure.

- (i) Set span to encompass the entire emission bandwidth (EBW) (or, alternatively, the entire 99% occupied bandwidth) of the signal.
- (ii) Set RBW = 1 MHz.
- (iii) Set VBW \geq 3 MHz.
- (iv) Number of points in sweep \geq 2 Span / RBW. (This ensures that bin-to-bin spacing is \leq RBW/2, so that narrowband signals are not lost between frequency bins.)

- (v) Sweep time = auto.
- (vi) Detector = RMS (i.e., power averaging), if available. Otherwise, use sample detector mode.
- (vii) If transmit duty cycle < 98 percent, use a video trigger with the trigger level set to enable triggering only on full power pulses. Transmitter must operate at maximum power control level for the entire duration of every sweep. If the EUT transmits continuously (i.e., with no off intervals) or at duty cycle \geq 98 percent, 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 (i.e., 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.

7.3 Environmental Conditions

Temperature:	26° C
Relative Humidity:	65%
ATM Pressure:	1011 mbar

7.4 Summary of Test Results/Plots

Antenna 0

For the frequency band 5.15-5.25GHz, 5.275-5.850GHz

Test mode	Frequency MHz	Output Power dBm	Output Power mW	Limit* mW
802.11a	5180	12.99	19.90	794
	5200	13.49	22.30	794
	5240	13.29	21.30	794
	5745	12.80	19.10	794
	5785	13.04	20.10	794
	5825	13.21	20.90	794
802.11n-HT20	5180	12.20	16.60	794
	5200	12.59	18.20	794
	5240	12.23	16.70	794
	5745	12.17	16.50	794
	5785	12.34	17.10	794
	5825	12.19	16.60	794
802.11n-HT40	5190	12.19	16.60	794
	5230	12.01	15.90	794
	5755	11.60	14.50	794
	5795	11.66	14.70	794

Antenna 1

For the frequency band 5.15-5.25GHz, 5.275-5.850GHz

Test mode	Frequency MHz	Output Power dBm	Output Power mW	Limit* mW
802.11a	5180	13.06	20.20	794
	5200	13.71	23.50	794
	5240	13.85	24.30	794
	5745	13.45	22.10	794
	5785	13.03	20.10	794
	5825	13.02	20.00	794
802.11n-HT20	5180	12.10	16.20	794
	5200	12.30	17.00	794
	5240	12.54	17.90	794
	5745	12.29	16.90	794
	5785	12.38	17.30	794
	5825	11.47	14.00	794
802.11n-HT40	5190	12.01	15.90	794
	5230	12.11	16.30	794
	5755	12.51	17.80	794
	5795	12.27	16.90	794

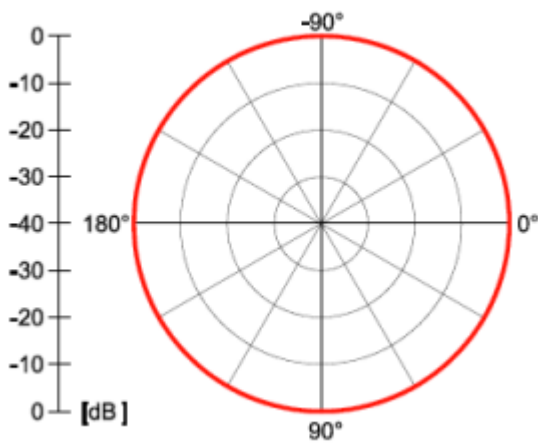
*For 5150-5250MHz: Limit=30-(2.5-6) =33.5dBm

For 5745-5850MHz: Limit=30-(2.5-6) =33.5dBm

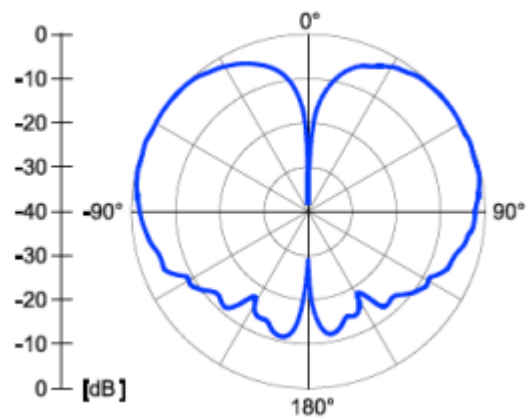
The antenna always vertical install with the elevation plane

Elevation angle above 30 degree Max Gain(dBi)					
Frequency MHz	5250	Elevation Angle Define	Frequency MHz	5250	Elevation Angle Define
H-Plan angle(Degree)	Gain(dBi)		H-Plan angle(Degree)	Gain(dBi)	
90	2.0	0° ~30°	356	-14.6	Above 30°
82	1.3		348	-8.3	
72	0.9		340	-4.7	
64	0.3		332	-3.4	
60	0	Above 30°	328	-2.3	
52	-0.3		320	-1.3	
44	-1.1		312	-0.8	
36	-2.2		304	0.1	
28	-3.6		296	0.7	0° ~30°
20	-5.6		288	1.2	
12	-8.4		280	1.8	
4	-20.3		272	-2.1	
0	-21.2		268	-3.4	

Horizontal 5250 MHz



Vertical 5250 MHz



EIRP

Antenna 0

Test mode	Frequency MHz	Conducted Output Power dBm	Max. Antenna Gain dBi	EIRP dBm	EIRP mW	Limit* mW
802.11a	5180	12.99	2.5	15.49	35.40	125
	5200	13.49	2.5	15.99	39.70	125
	5240	13.29	2.5	15.79	37.90	125
	5745	12.80	2.5	15.3	33.90	125
	5785	13.04	2.5	15.54	35.80	125
	5825	13.21	2.5	15.71	37.20	125
802.11n-HT20	5180	12.20	2.5	14.7	29.50	125
	5200	12.59	2.5	15.09	32.30	125
	5240	12.23	2.5	14.73	29.70	125
	5745	12.17	2.5	14.67	29.30	125
	5785	12.34	2.5	14.84	30.50	125
	5825	12.19	2.5	14.69	29.40	125
802.11n-HT40	5190	12.19	2.5	14.69	29.40	125
	5230	12.01	2.5	14.51	28.20	125
	5755	11.60	2.5	14.1	25.70	125
	5795	11.66	2.5	14.16	26.10	125

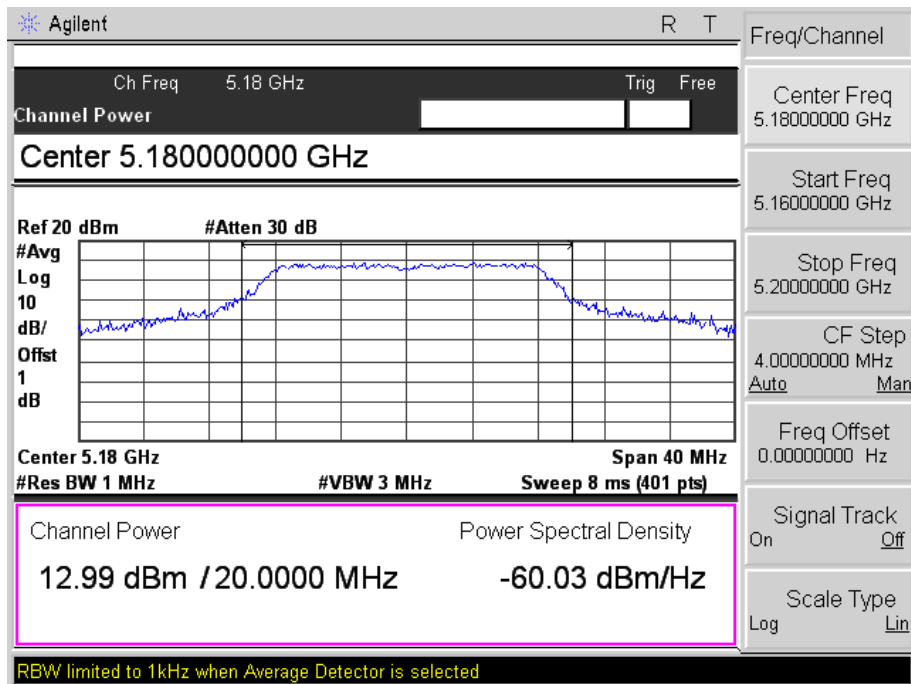
Antenna 1

Test mode	Frequency MHz	Conducted Output Power dBm	Max. Antenna Gain dBi	EIRP dBm	EIRP mW	Limit* mW
802.11a	5180	13.06	2.5	15.56	36.00	125
	5200	13.71	2.5	16.21	41.80	125
	5240	13.85	2.5	16.35	43.20	125
	5745	13.45	2.5	15.95	39.40	125
	5785	13.03	2.5	15.53	35.70	125
	5825	13.02	2.5	15.52	35.60	125
802.11n-HT20	5180	12.10	2.5	14.6	28.80	125
	5200	12.30	2.5	14.8	30.20	125
	5240	12.54	2.5	15.04	31.90	125
	5745	12.29	2.5	14.79	30.10	125
	5785	12.38	2.5	14.88	30.80	125
	5825	11.47	2.5	13.97	24.90	125
802.11n-HT40	5190	12.01	2.5	14.51	28.20	125
	5230	12.11	2.5	14.61	28.90	125
	5755	12.51	2.5	15.01	31.70	125
	5795	12.27	2.5	14.77	30.00	125

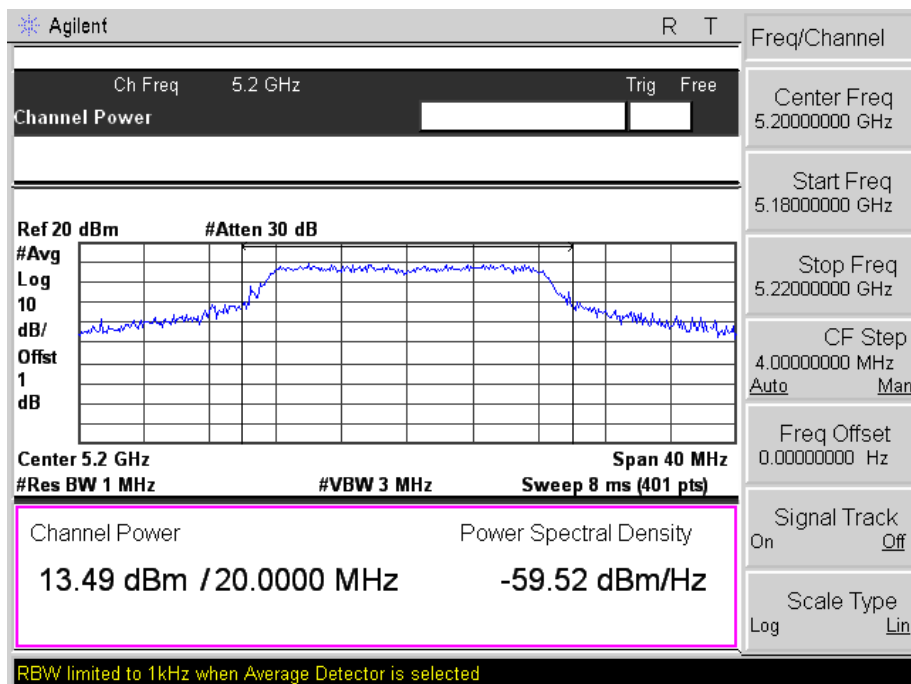
Antenna 0

Test Mode: 802.11a

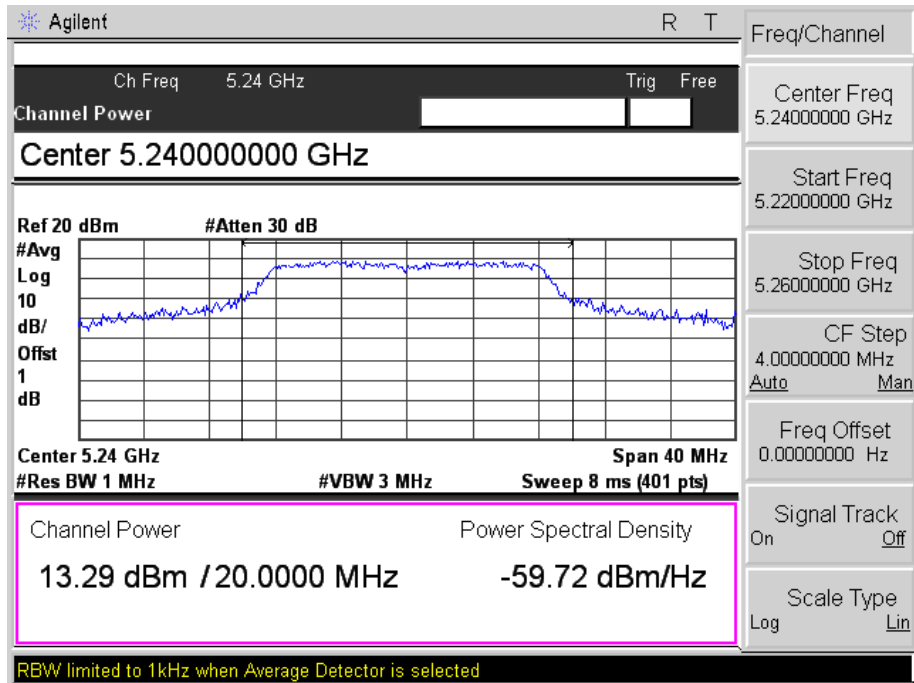
5180MHz



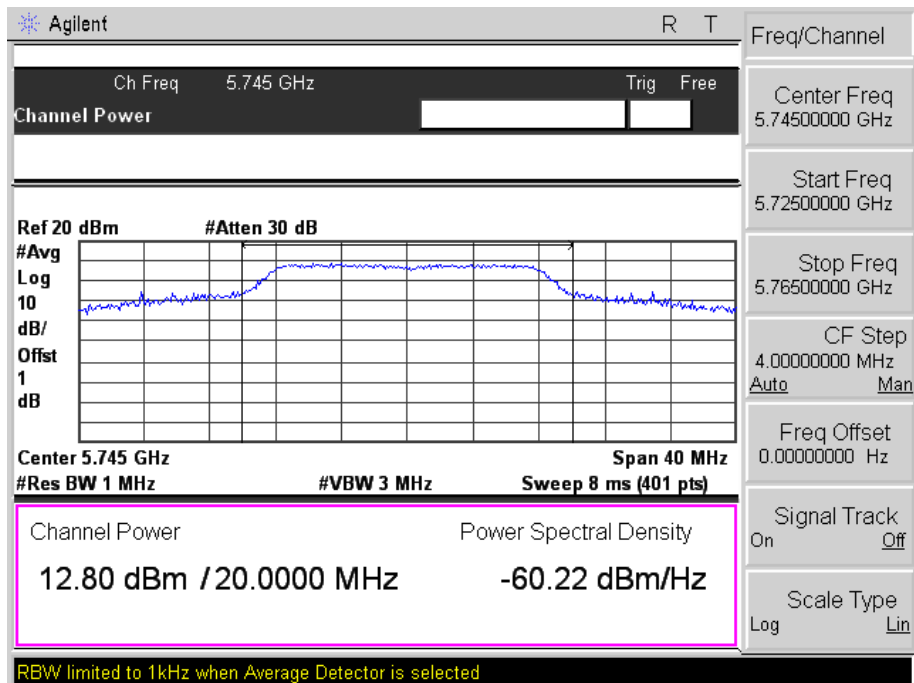
5200MHz



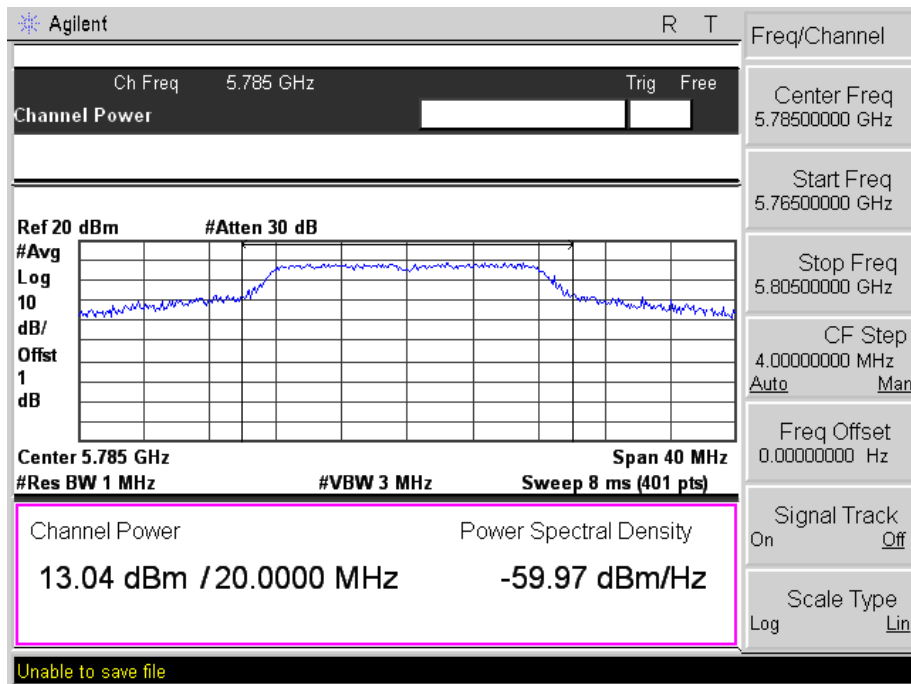
5240MHz



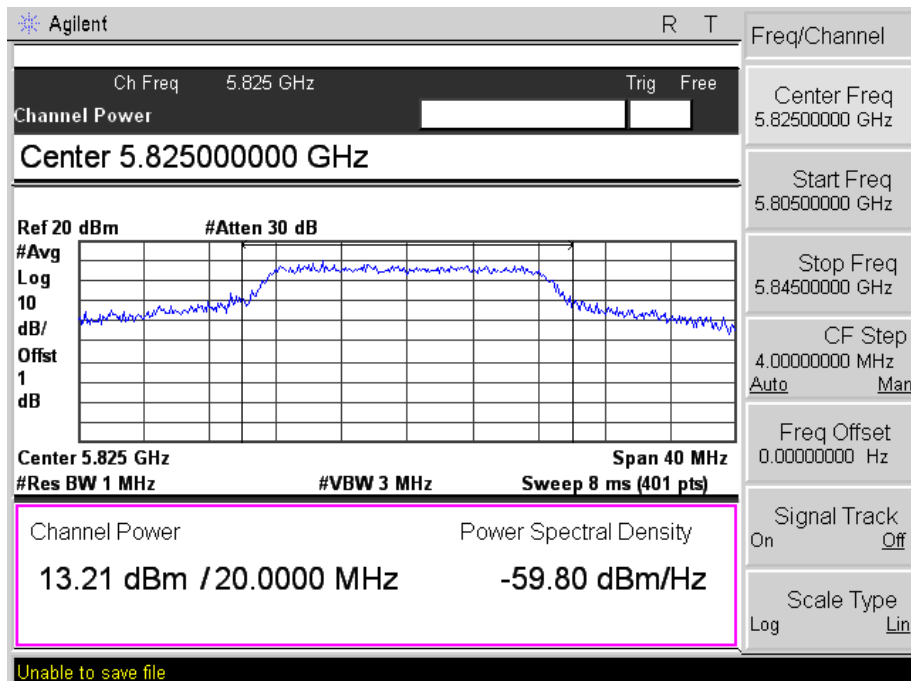
5745MHz



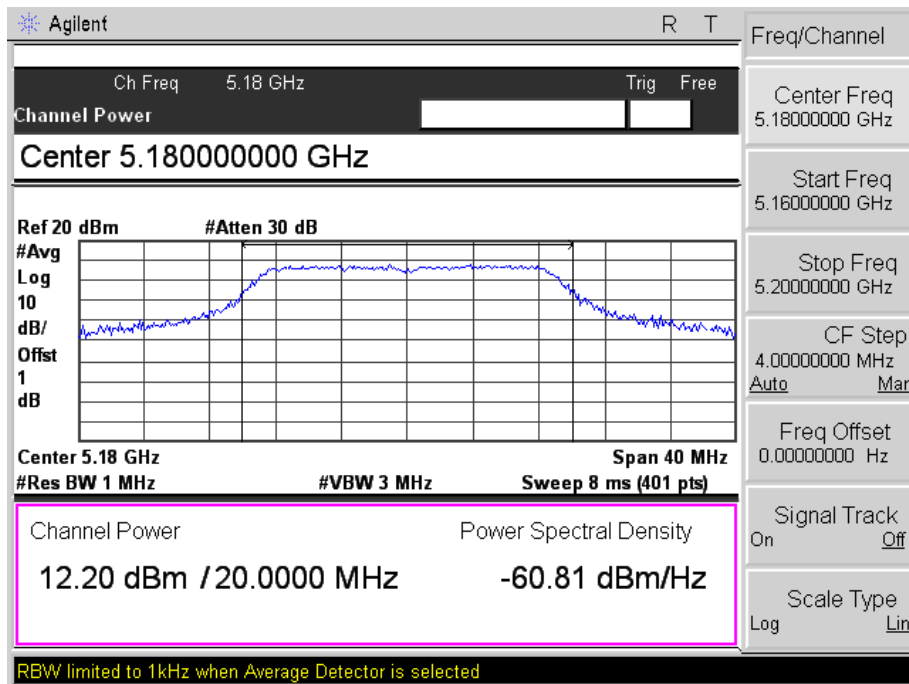
5785MHz



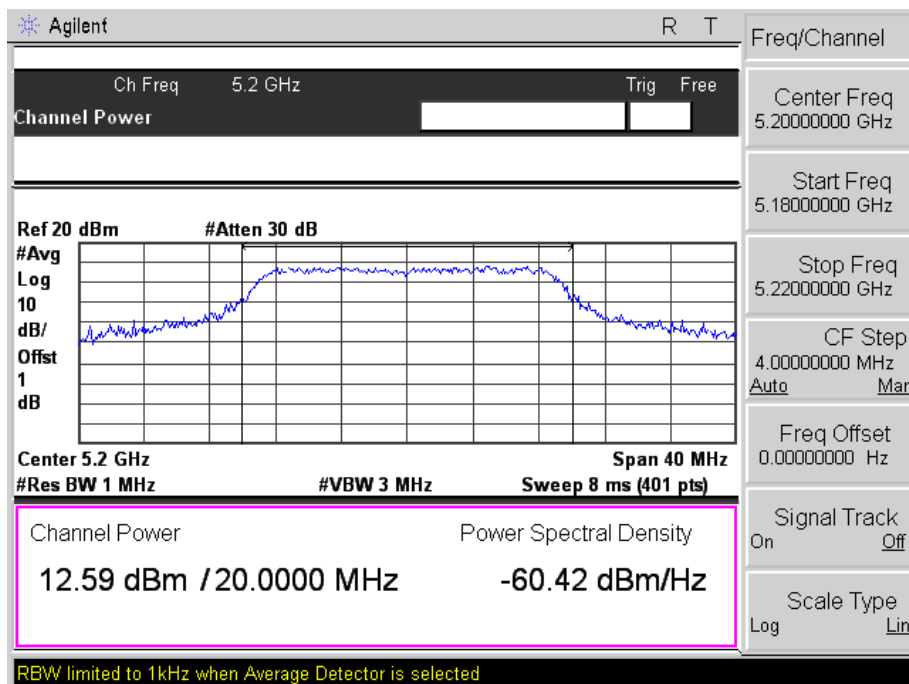
5825MHz



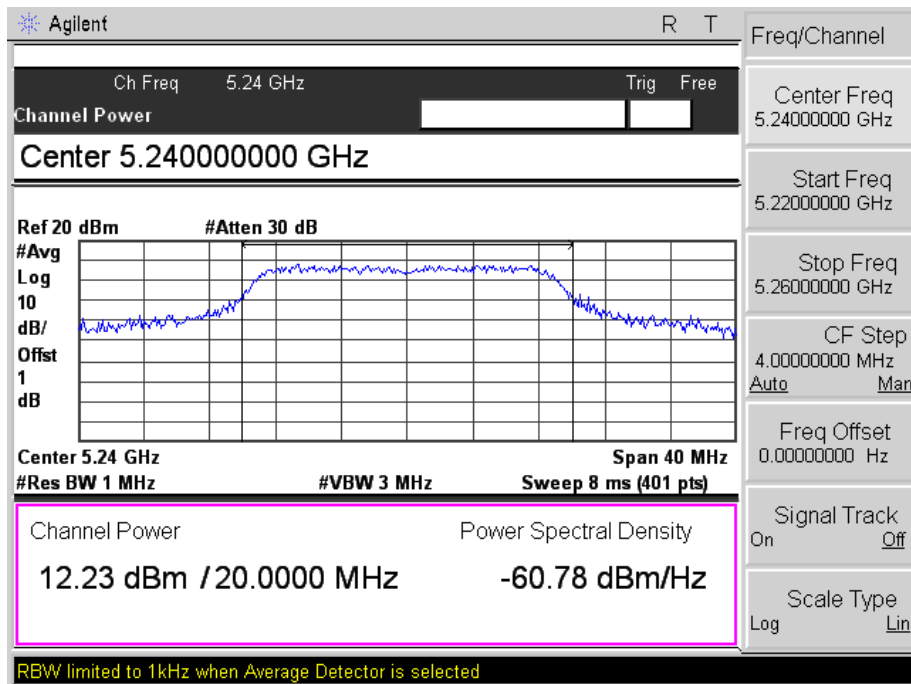
Test Mode: 802.11n-HT20
5180MHz



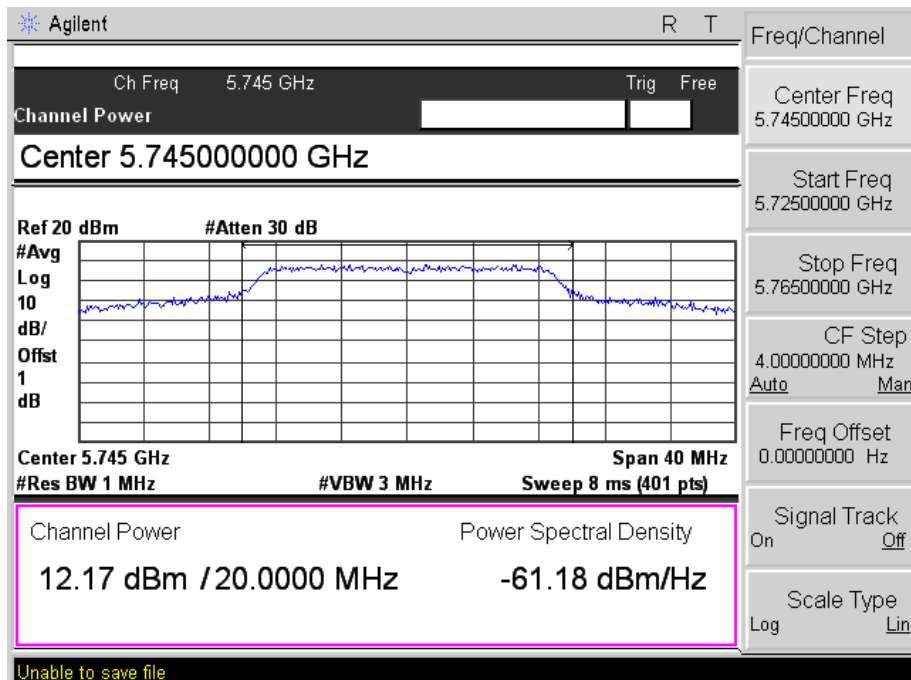
5200MHz



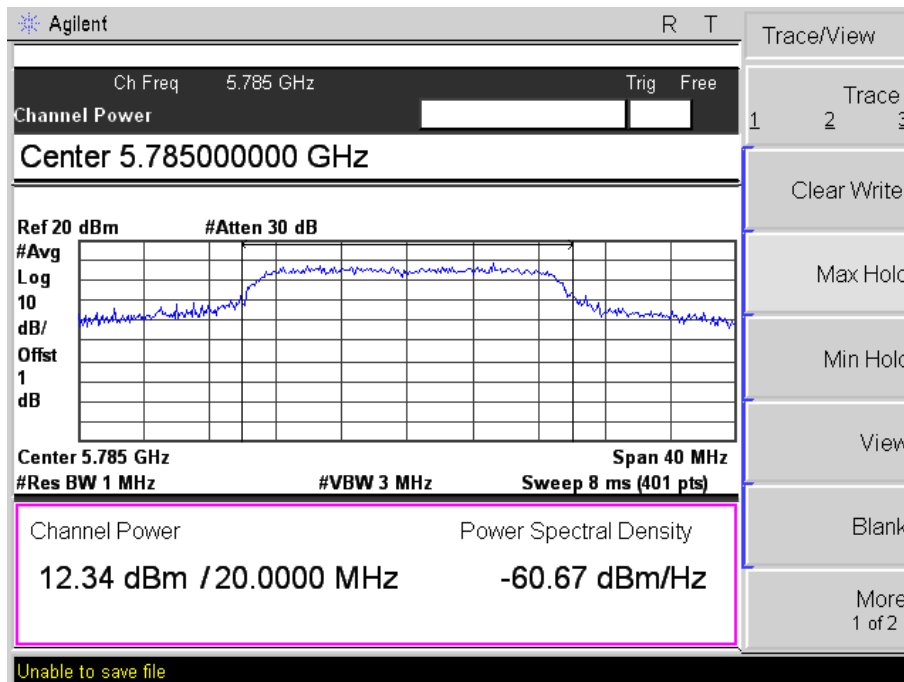
5240MHz



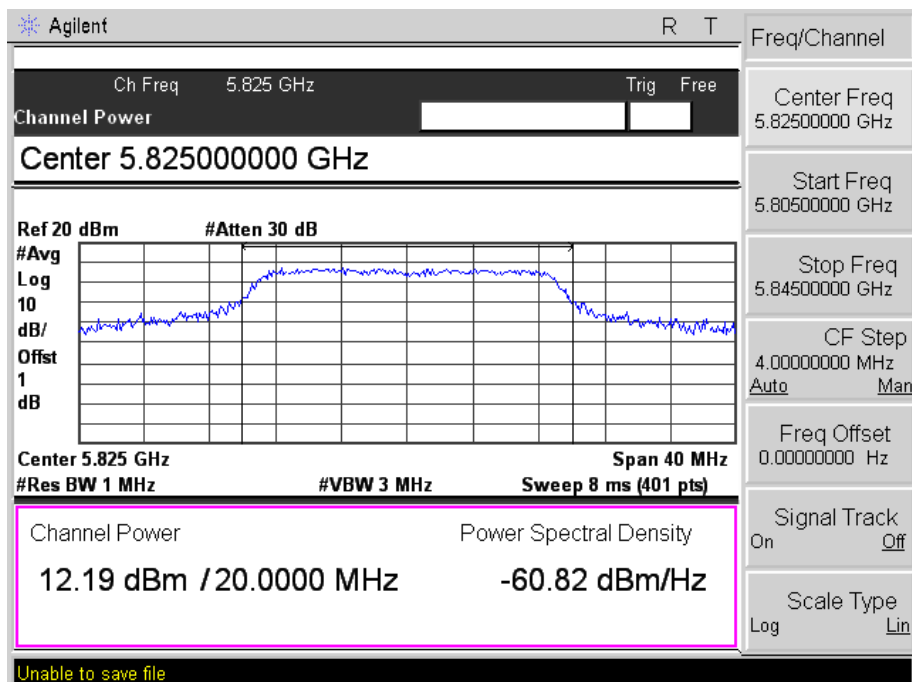
5745MHz



5785MHz

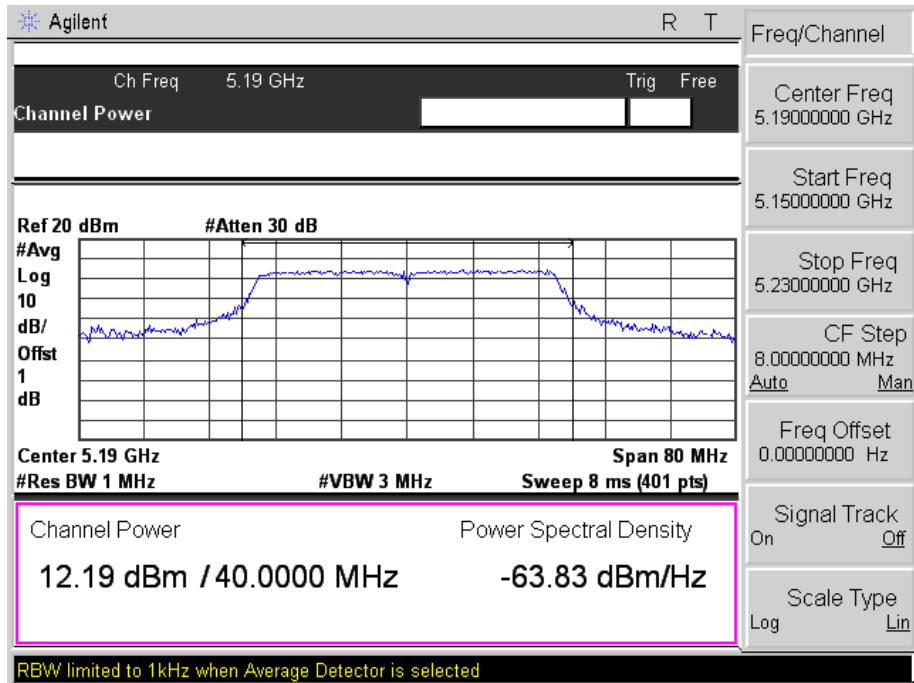


5825MHz

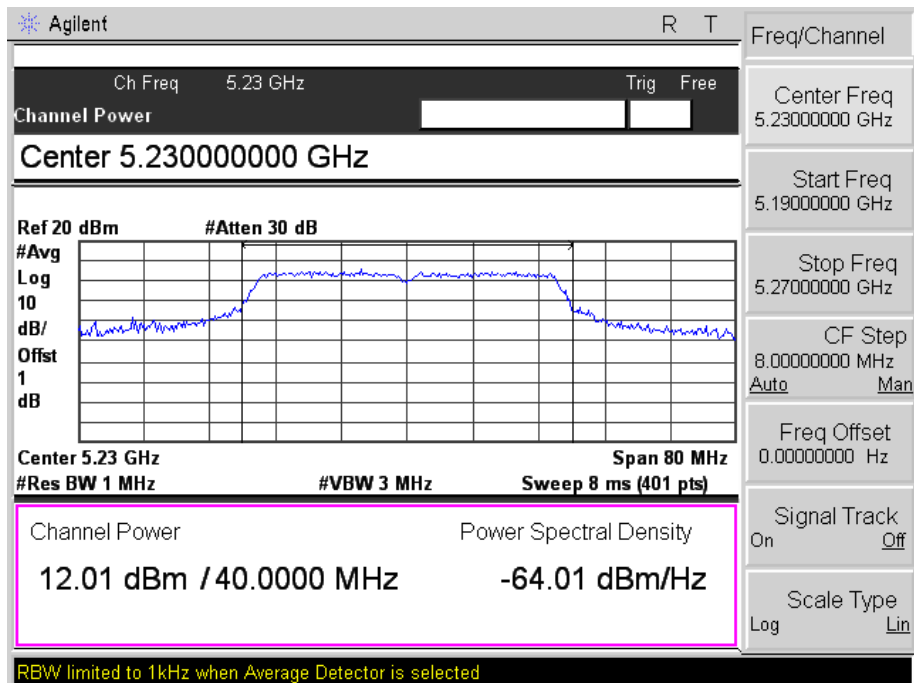


Test Mode: 802.11n-HT40

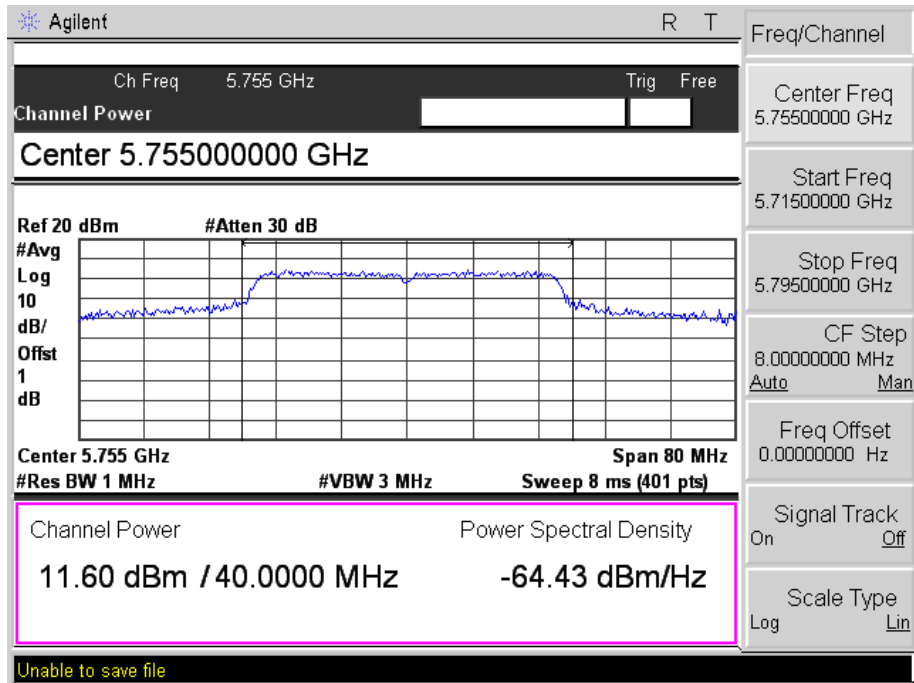
5190MHz



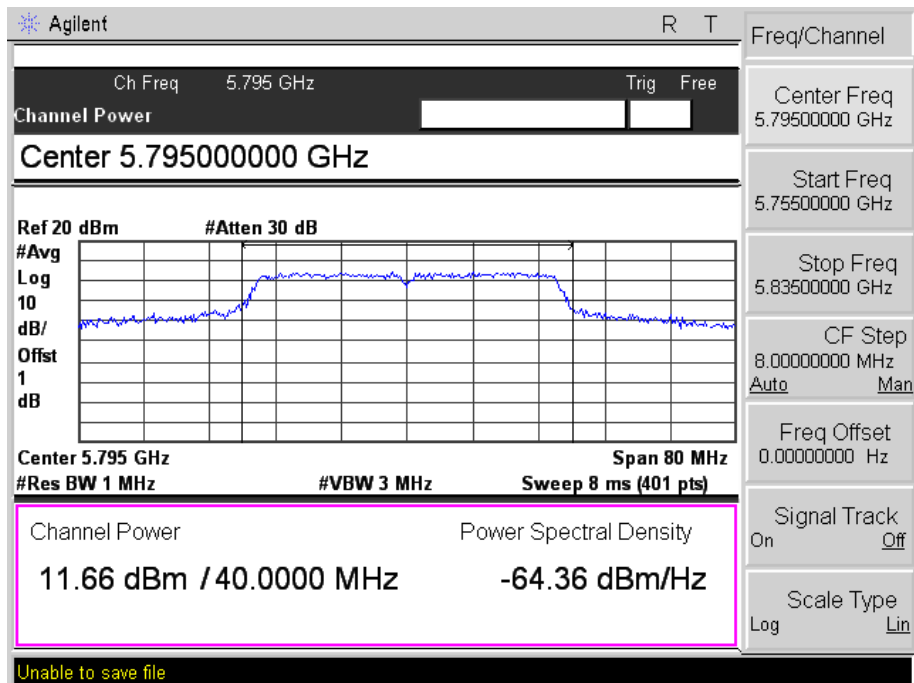
5230MHz



5755MHz



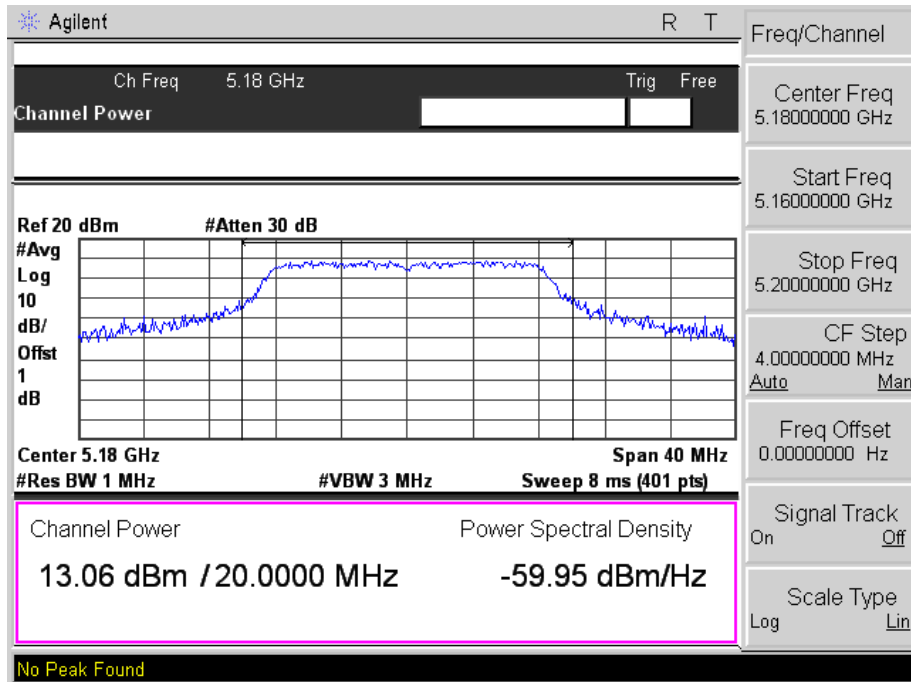
5795MHz



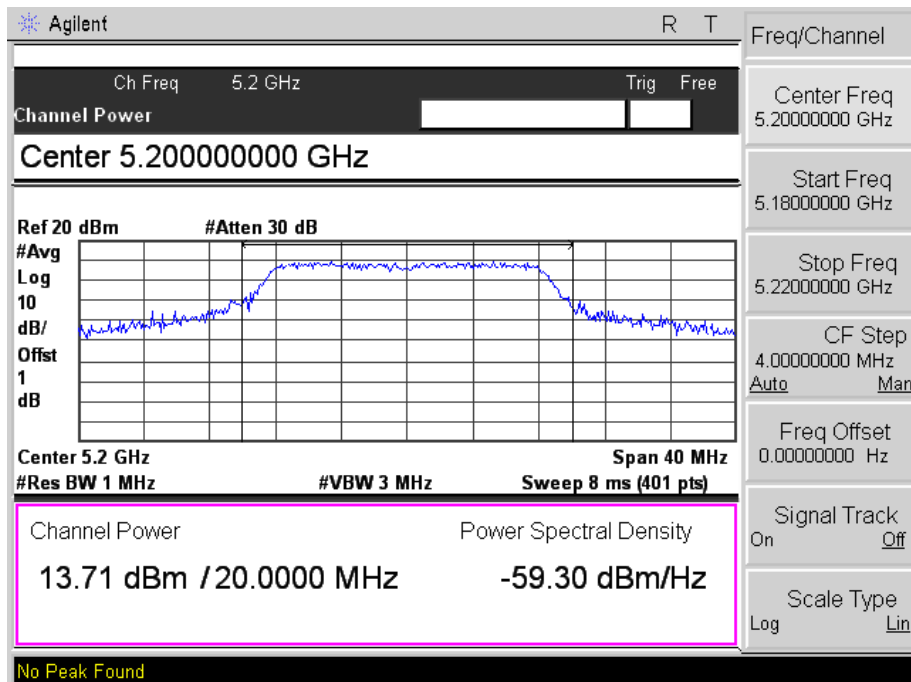
Antenna 1

Test Mode: 802.11a

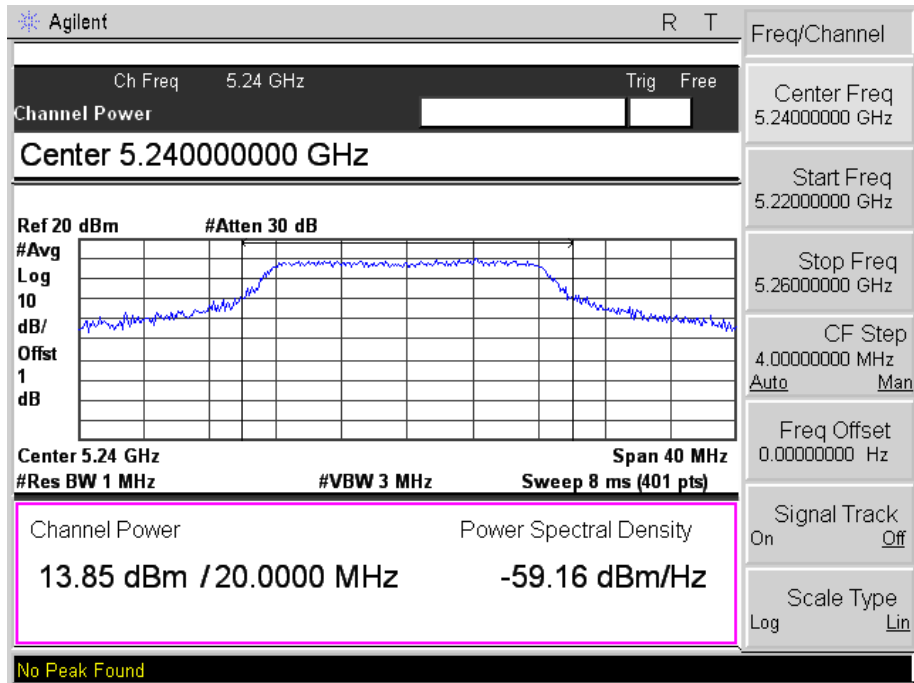
5180MHz



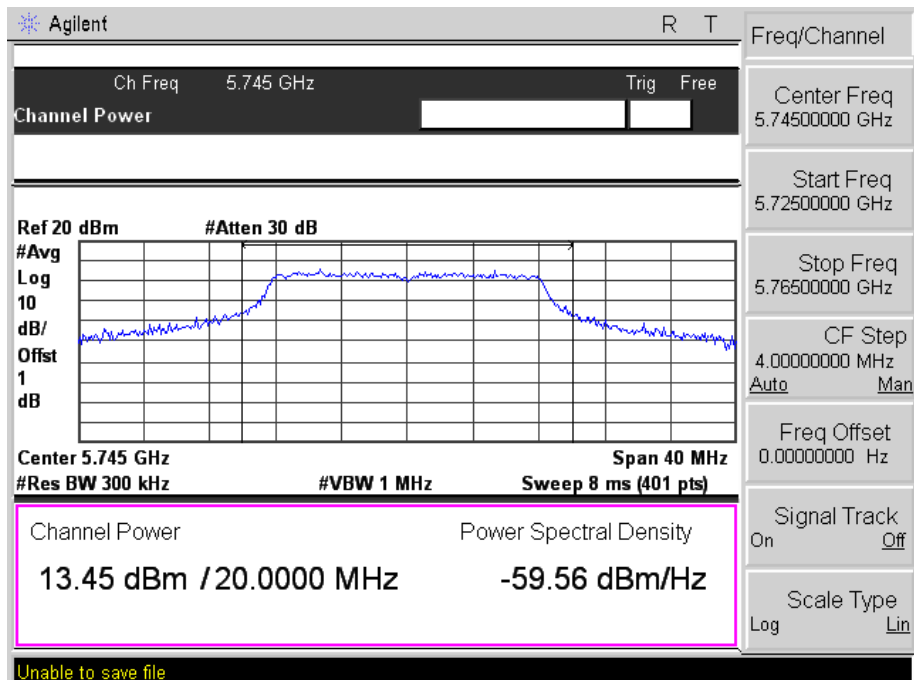
5200MHz



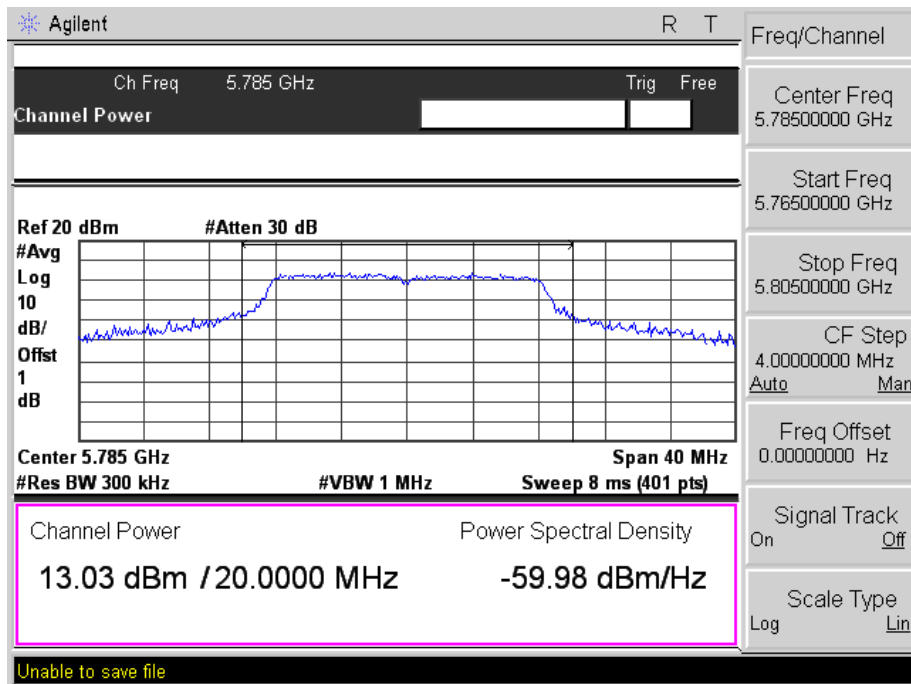
5240MHz



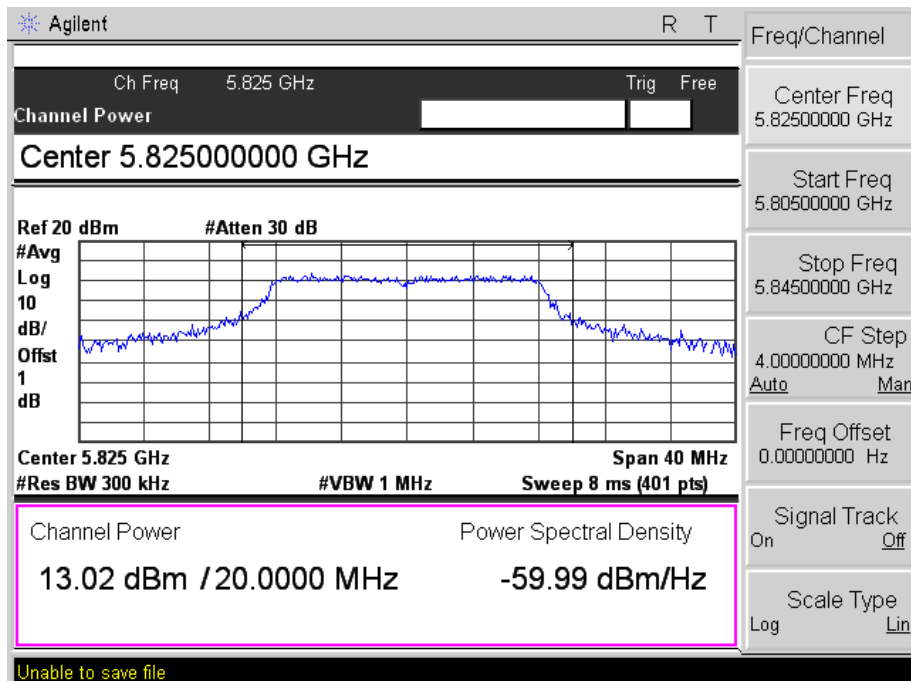
5745MHz



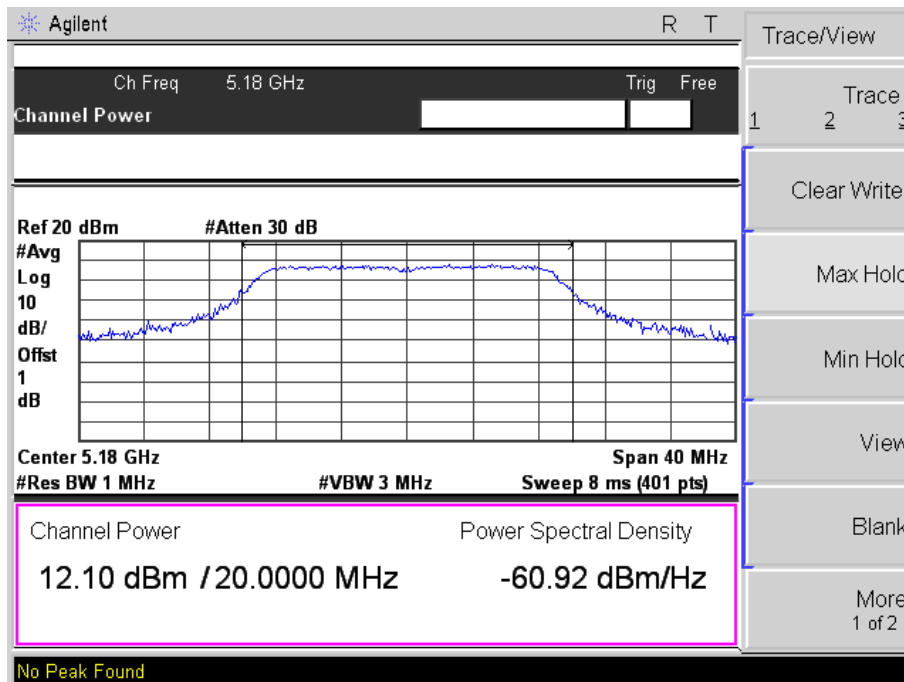
5785MHz



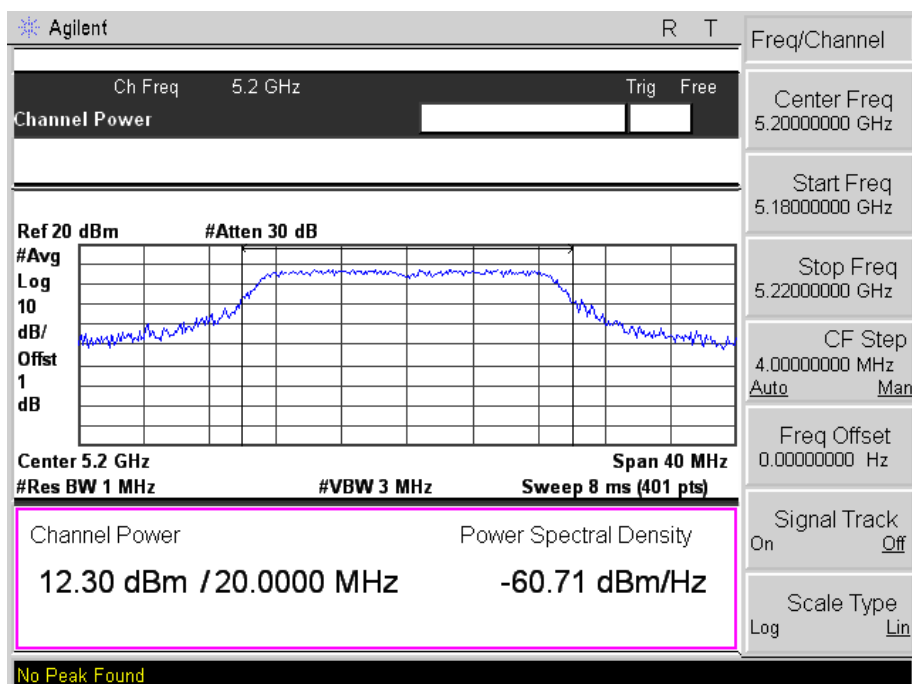
5825MHz



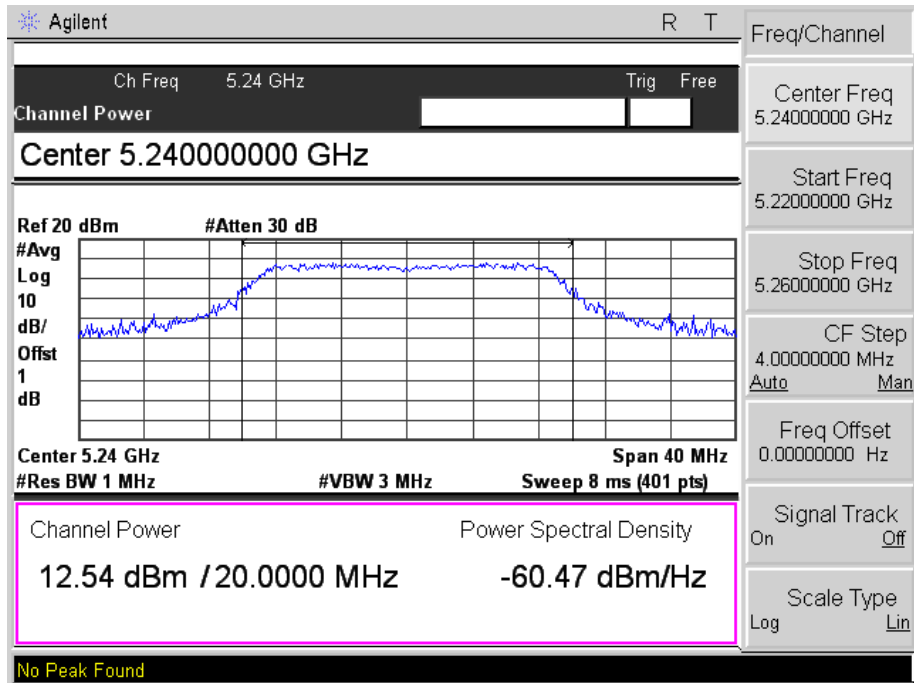
Test Mode: 802.11n-HT20
5180MHz



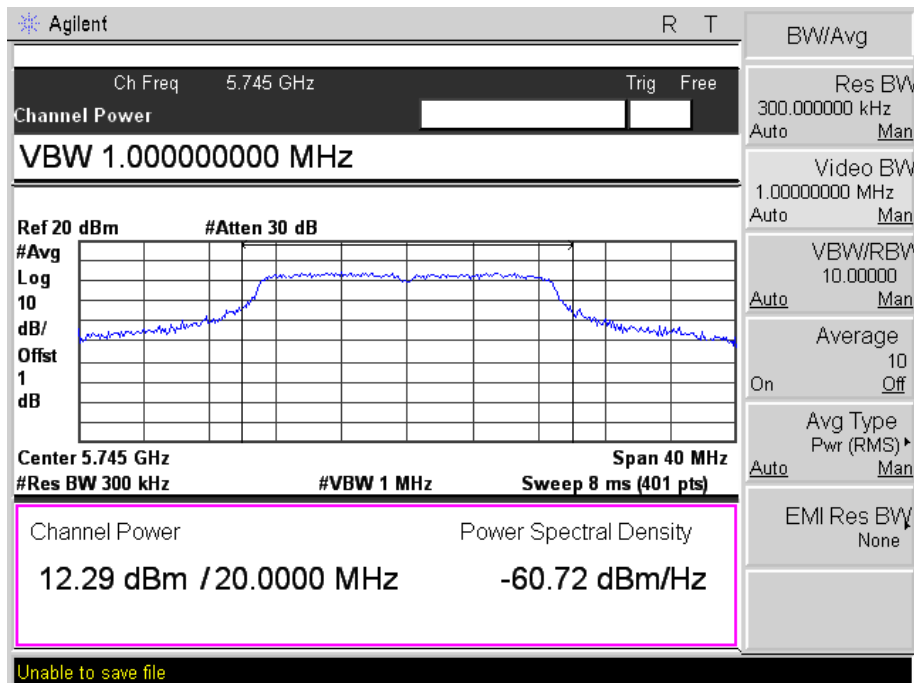
5200MHz



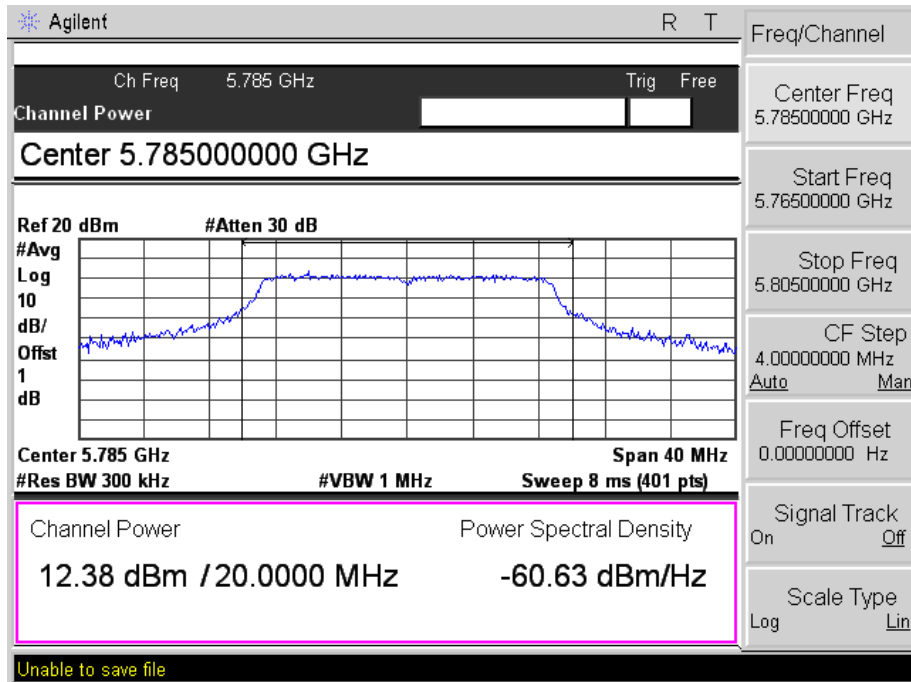
5240MHz



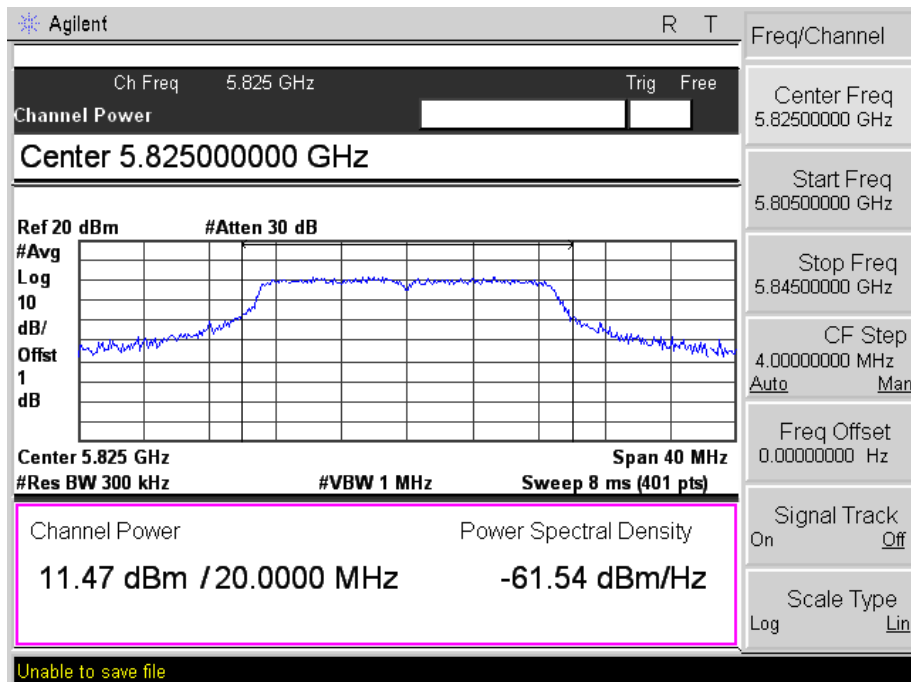
5745MHz



5785MHz

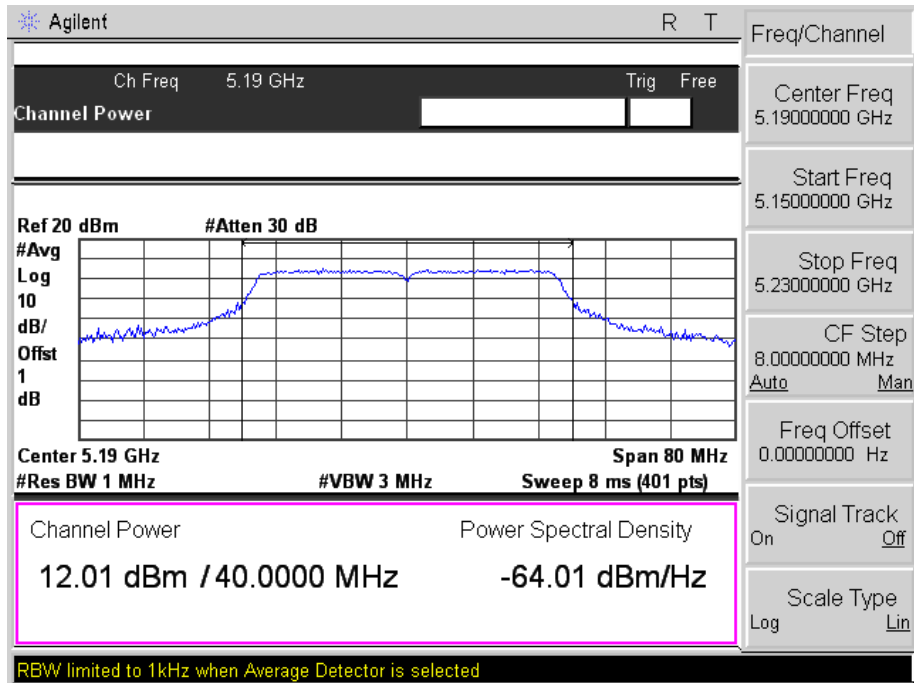


5825MHz

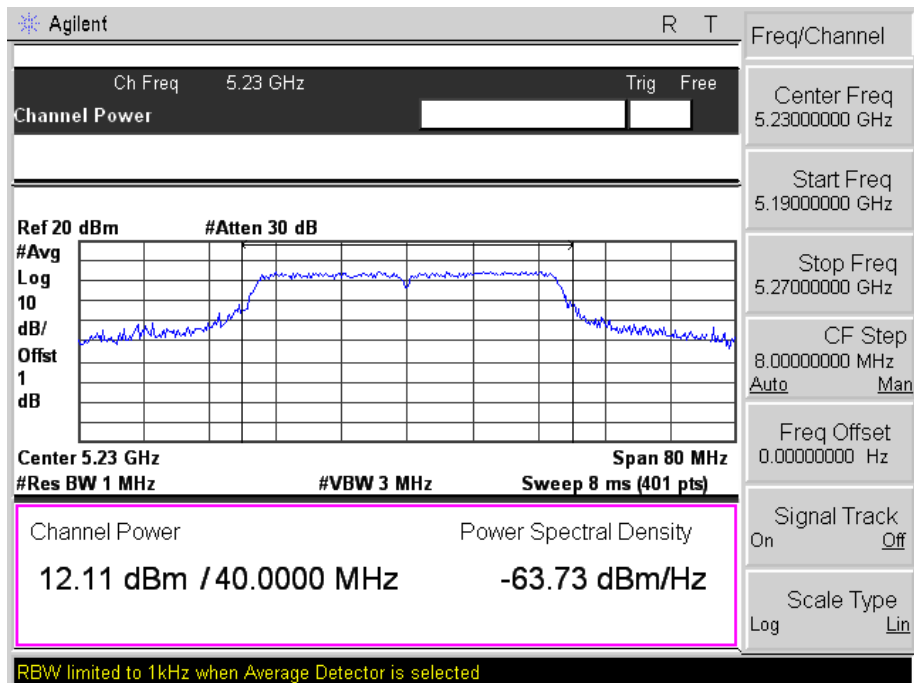


Test Mode: 802.11n-HT40

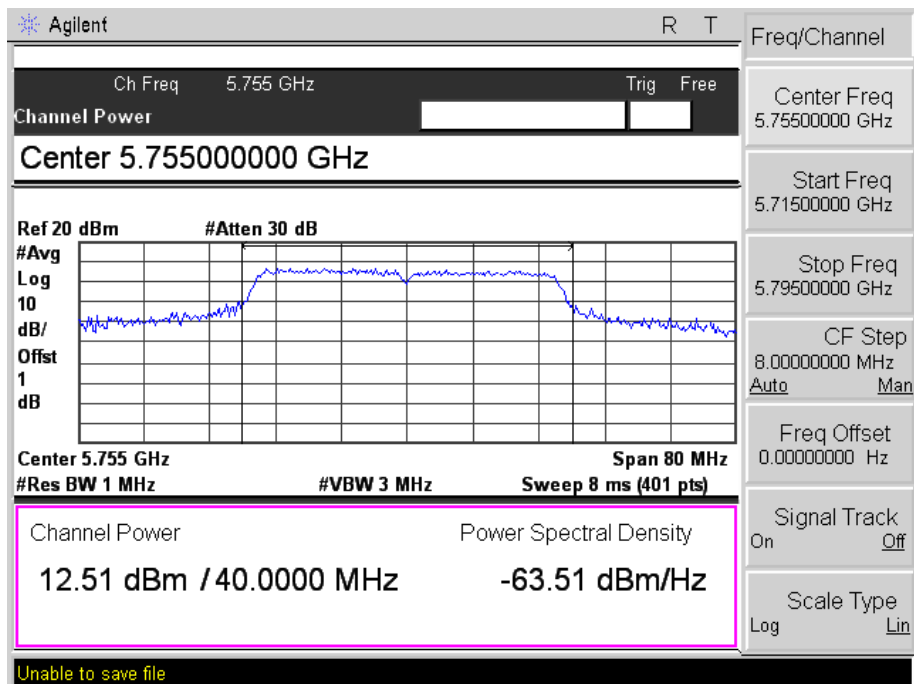
5190MHz



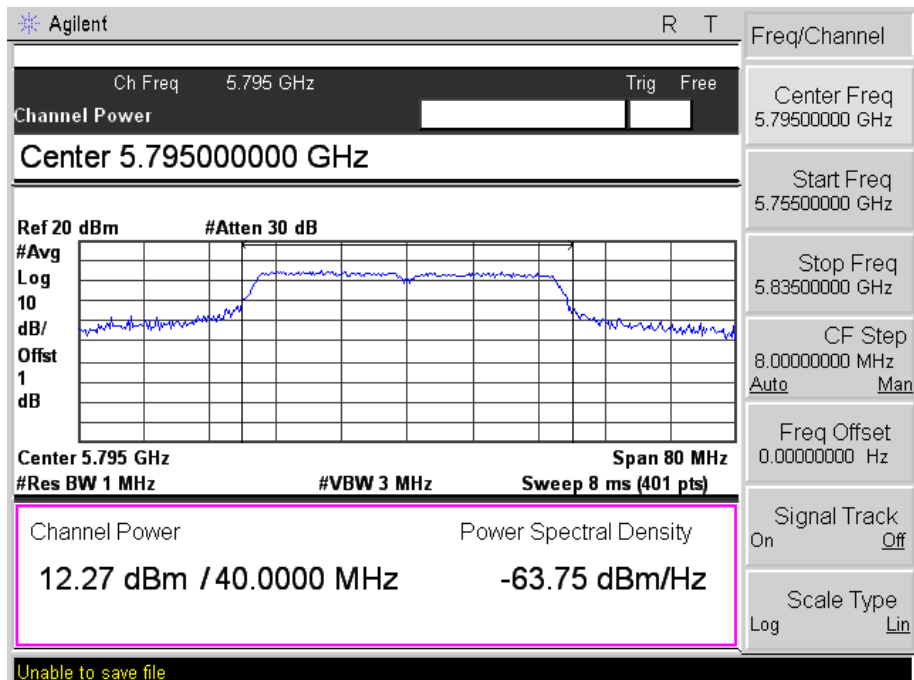
5230MHz



5755MHz



5795MHz



8. Radiated Spurious Emissions

8.1 Measurement Uncertainty

Based on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of a radiation emissions measurement is ± 5.10 dB.

8.2 Standard Applicable

According to §15.407(b), Undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

- (1) 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.
- (2) 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.
- (3) 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.
- (4) 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.

According to §15.407(b)(6), Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209. Further, any U-NII devices using an AC power line are required to comply also with the conducted limits set forth in §15.207.

According to §15.407(b)(7), The provisions of §15.205 apply to intentional radiators operating under this section.
789033 D02 v02r01 General UNII Test Procedures New Rules v01

If radiated measurements are performed, field strength is then converted to EIRP as follows:

$$\text{EIRP} = ((E*d)^2) / 30$$

where:

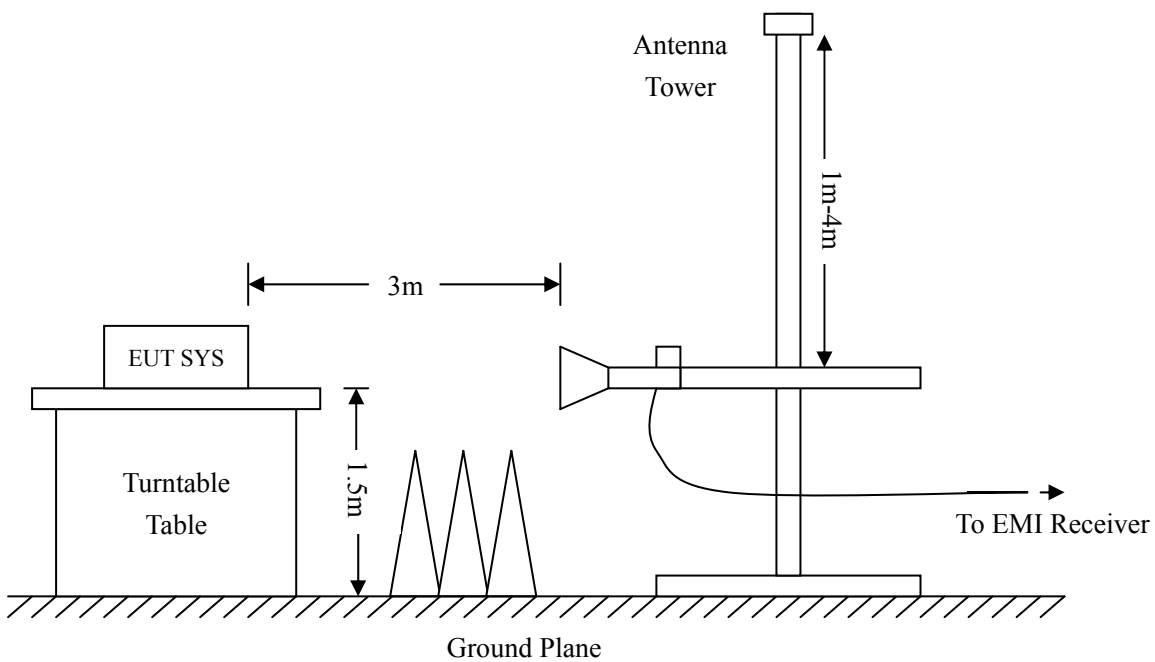
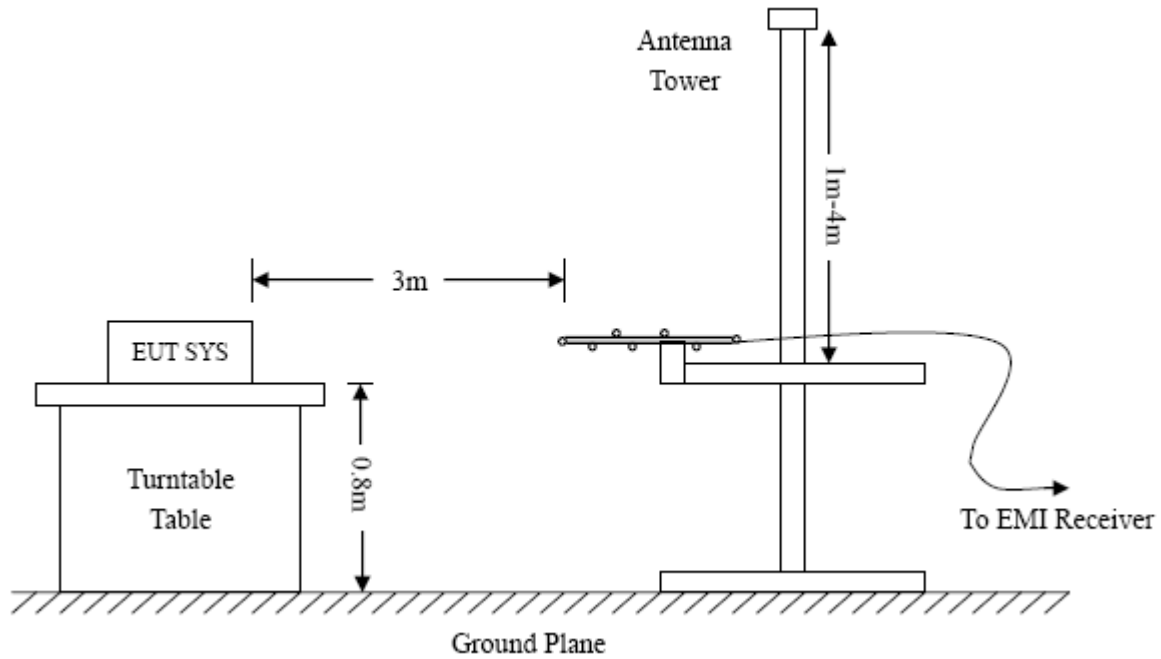
- E is the field strength in V/m;
- d is the measurement distance in meters;
- EIRP is the equivalent isotropically radiated power in watts.

8.3 Test Procedure

The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC Part 15.205 15.407(b)(6) and FCC Part 15.209 Limit..

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.



8.4 Test Receiver Setup

During the radiated emission test for above 1GHz, the test receiver was set with the following configurations:

For peak detector:

RBW = 1000kHz, VBW = 3000kHz, Sweep Time = Auto

For average detector:

RBW = 1000kHz, VBW = 10Hz, Sweep Time = Auto

8.5 Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated adding the Antenna Factor and the Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

$$\text{Corr. Ampl.} = \text{Indicated Reading} + \text{Ant. Factor} + \text{Cable Loss} - \text{Ampl. Gain}$$

The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -6dB μ V means the emission is 6dB μ V below the maximum limit. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Corr. Ampl.} - \text{FCC Part 15 Limit}$$

8.6 Environmental Conditions

Temperature:	22° C
Relative Humidity:	52%
ATM Pressure:	1012 mbar

8.7 Summary of Test Results/Plots

According to the data below, the FCC Part 15.205, 15.209 and 15.407(b)(6) standards, and had the worst margin of:

Note: this EUT was tested in 3 orthogonal positions and the worst case position data was reported.

Antenna 0

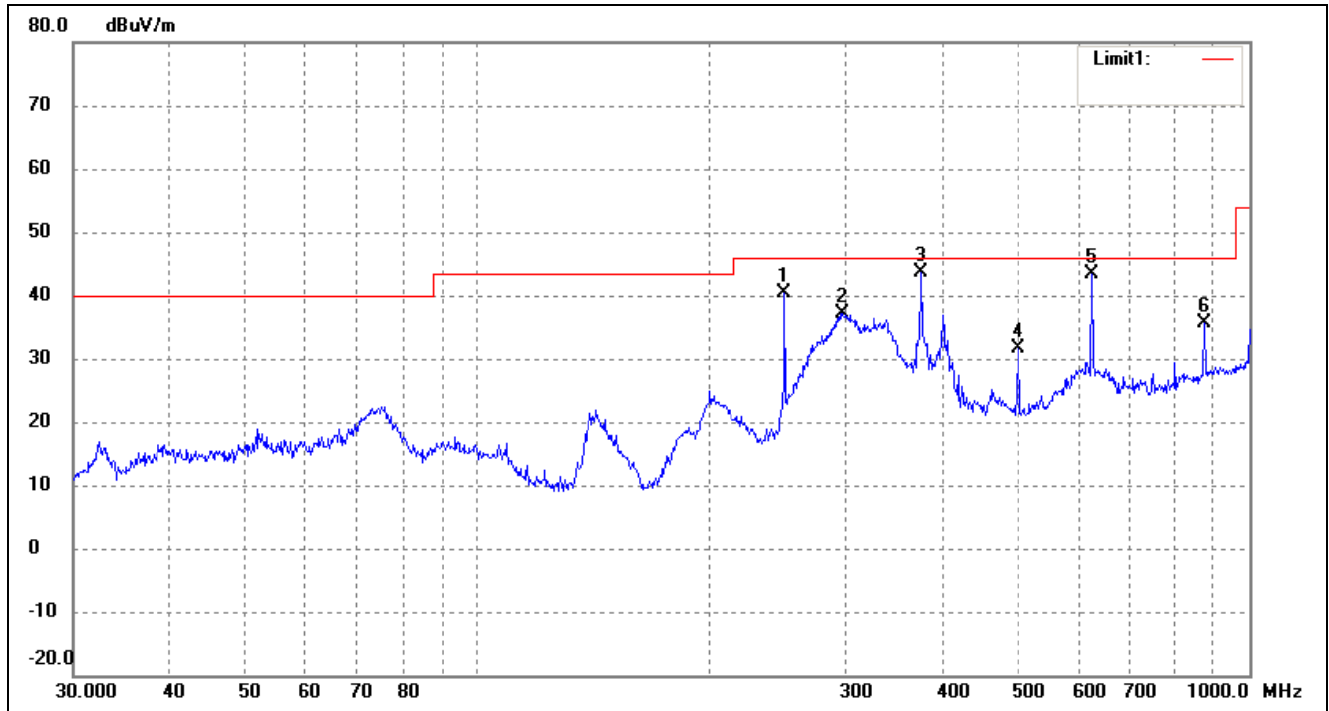
For 802.11a

5150-5250MHz band

Spurious Emission From 30 MHz to 1 GHz

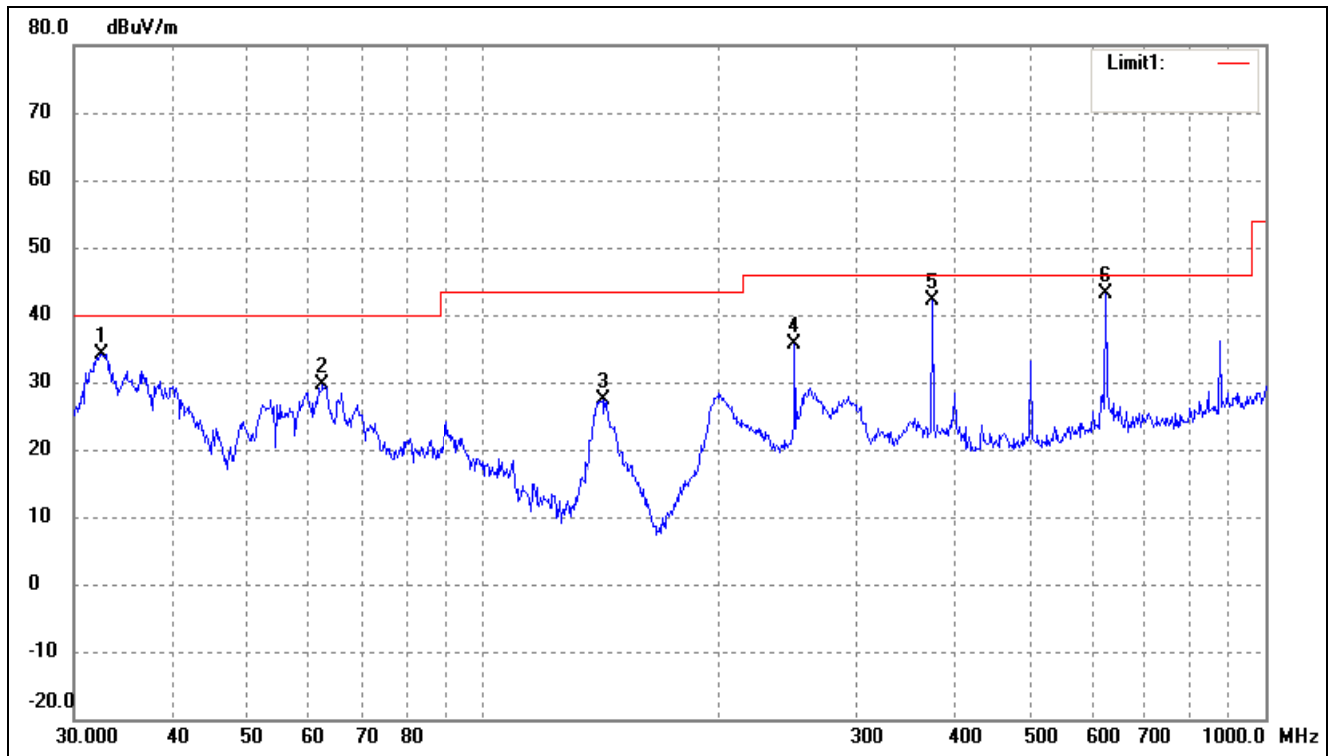
Test mode: Transmitting Low Channel 5180MHz

Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	250.3012	50.21	-9.79	40.42	46.00	-5.58	peak
2	297.2241	45.26	-8.16	37.10	46.00	-8.90	peak
3	375.9385	50.79	-7.11	43.68	46.00	-2.32	peak
4	501.1790	37.09	-5.42	31.67	46.00	-14.33	peak
5	625.0780	46.33	-2.89	43.44	46.00	-2.56	peak
6	875.2470	35.15	0.51	35.66	46.00	-10.34	peak

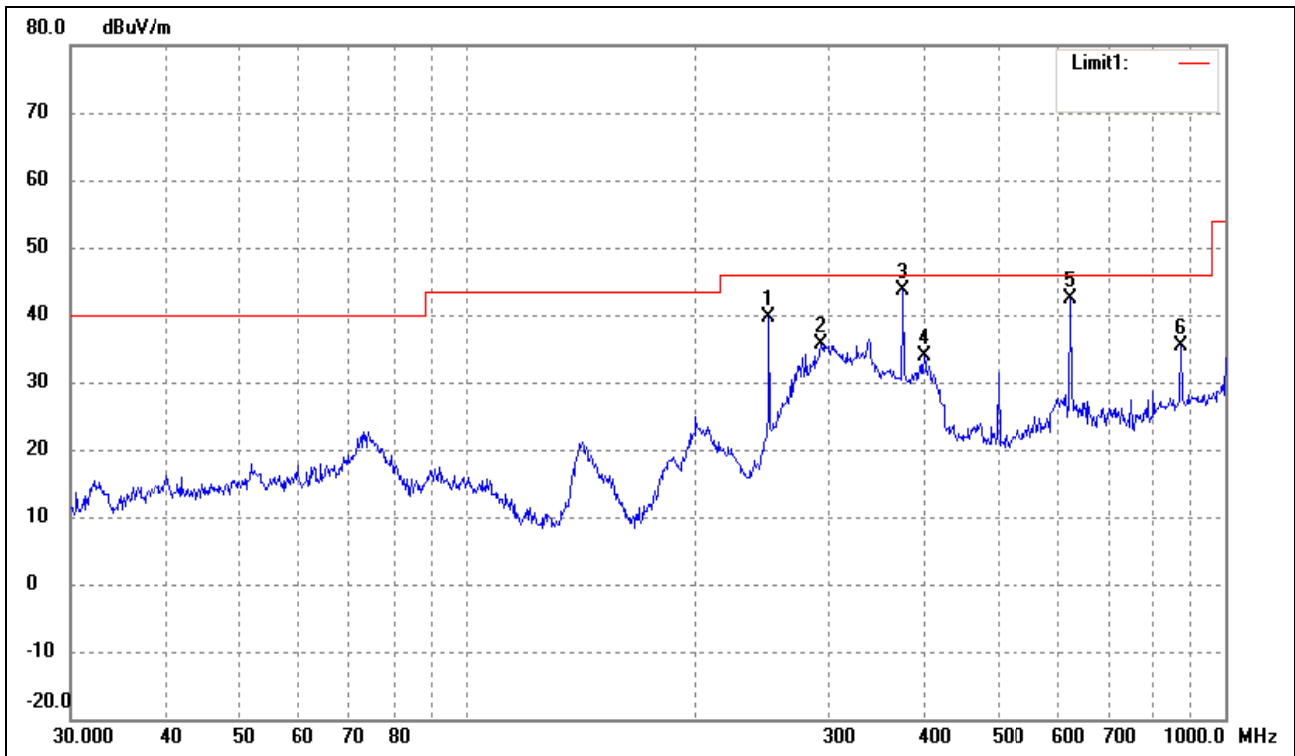
Test Specification: Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	32.5198	48.96	-14.83	34.13	40.00	-5.87	peak
2	62.4314	43.19	-13.66	29.53	40.00	-10.47	peak
3	142.3244	44.85	-17.37	27.48	43.50	-16.02	peak
4	250.3012	45.43	-9.79	35.64	46.00	-10.36	peak
5	375.9385	49.30	-7.11	42.19	46.00	-3.81	peak
6	625.0780	46.12	-2.89	43.23	46.00	-2.77	peak

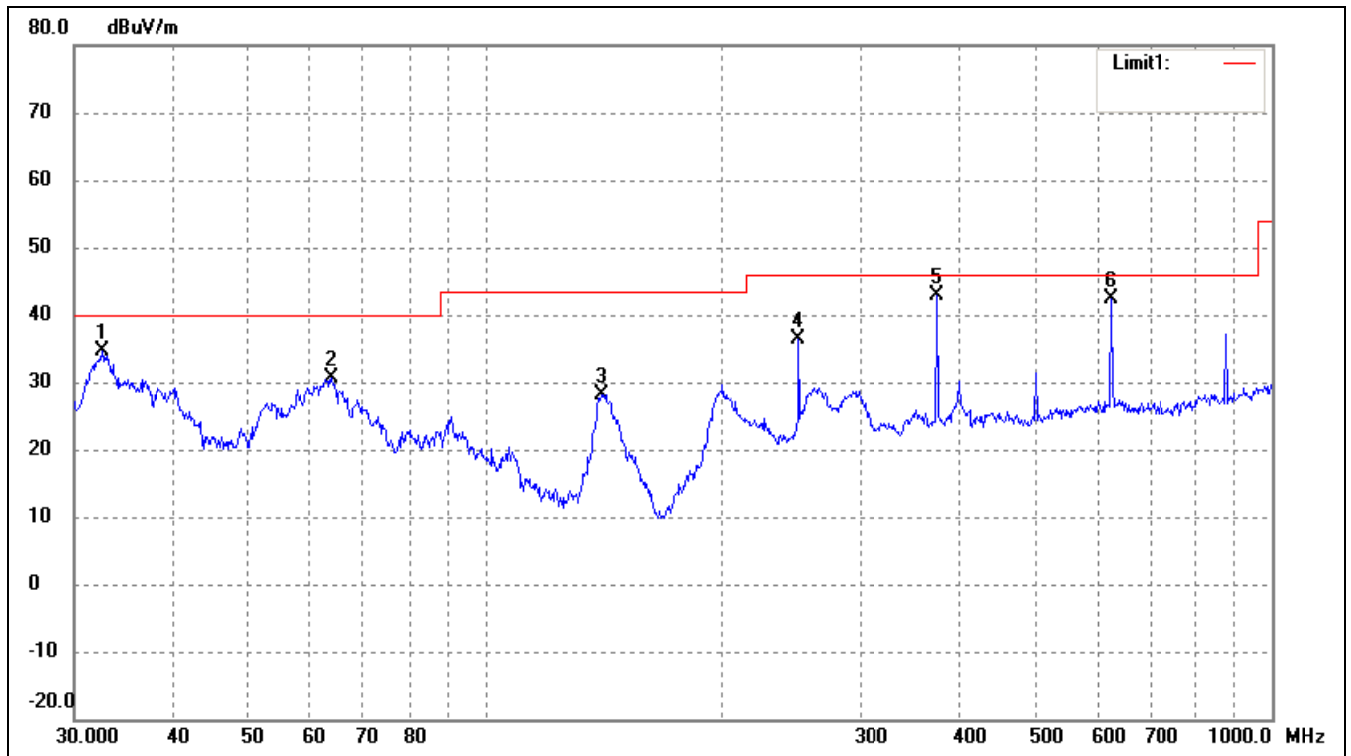
Test mode: Transmitting Middle Channel 5200MHz

Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	250.3012	49.45	-9.79	39.66	46.00	-6.34	peak
2	293.0842	43.93	-8.30	35.63	46.00	-10.37	peak
3	375.9385	50.78	-7.11	43.67	46.00	-2.33	peak
4	400.4319	40.68	-6.74	33.94	46.00	-12.06	peak
5	625.0780	45.21	-2.89	42.32	46.00	-3.68	peak
6	875.2470	34.79	0.51	35.30	46.00	-10.70	peak

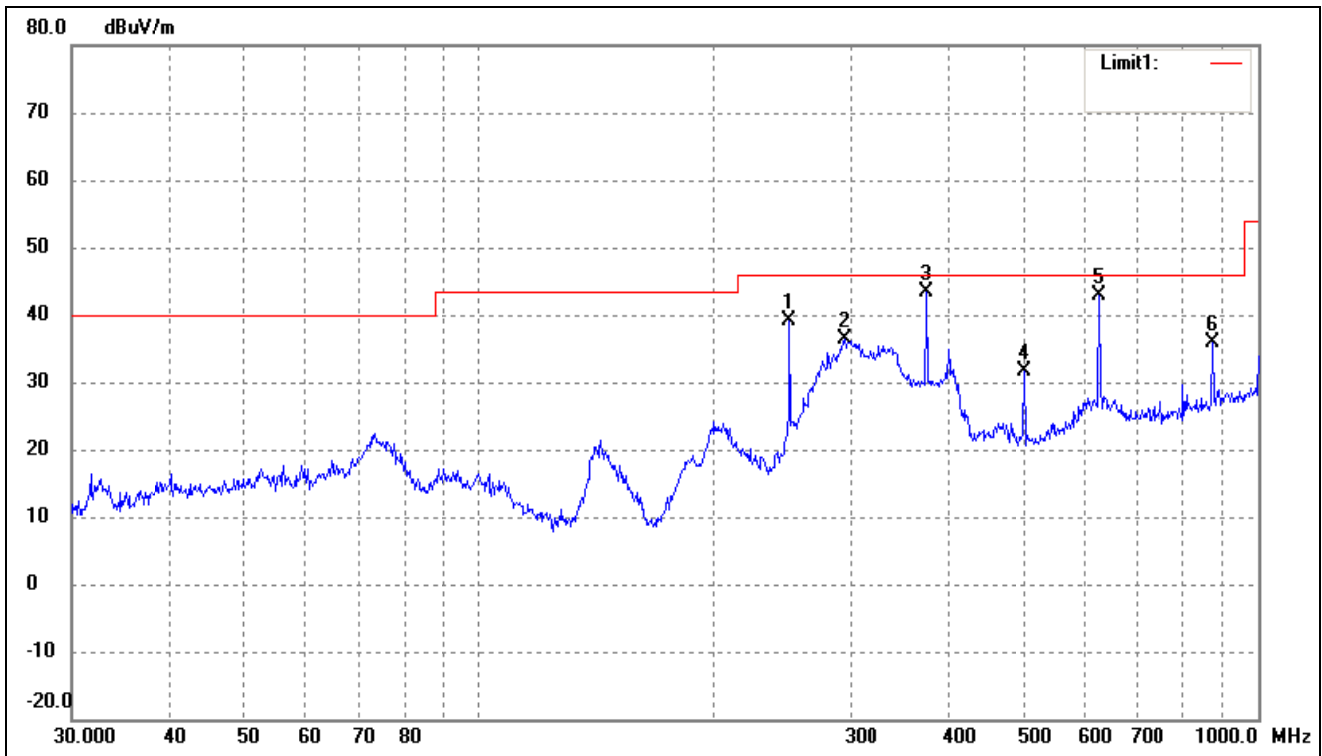
Test Specification: Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	32.5198	49.35	-14.83	34.52	40.00	-5.48	peak
2	63.7588	44.39	-13.84	30.55	40.00	-9.45	peak
3	140.8351	45.53	-17.29	28.24	43.50	-15.26	peak
4	250.3012	46.06	-9.79	36.27	46.00	-9.73	peak
5	375.9385	49.90	-7.11	42.79	46.00	-3.21	peak
6	625.0780	45.36	-2.89	42.47	46.00	-3.53	peak

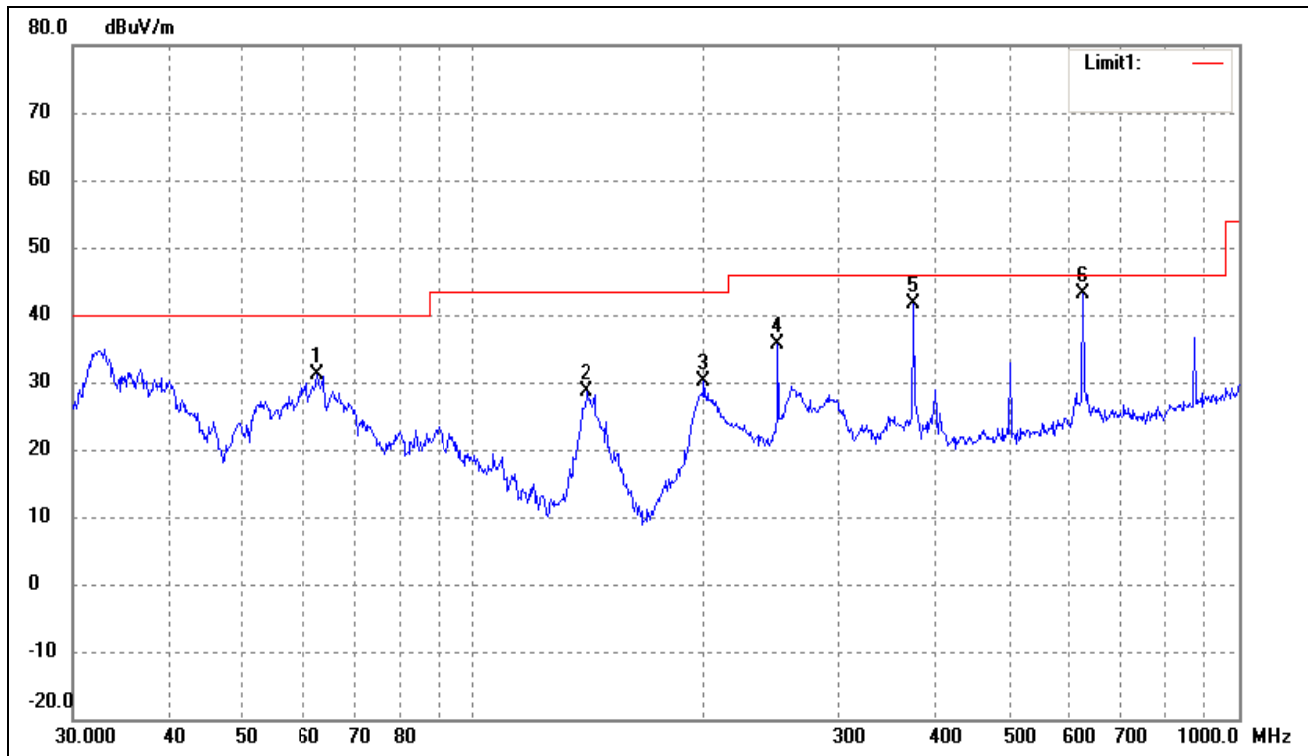
Test mode: Transmitting High Channel 5240MHz

Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	250.3012	48.99	-9.79	39.20	46.00	-6.80	peak
2	294.1137	44.61	-8.23	36.38	46.00	-9.62	peak
3	375.9385	50.48	-7.11	43.37	46.00	-2.63	peak
4	501.1790	37.09	-5.42	31.67	46.00	-14.33	peak
5	625.0780	45.81	-2.89	42.92	46.00	-3.08	peak
6	875.2470	35.44	0.51	35.95	46.00	-10.05	peak

Test Specification: Vertical

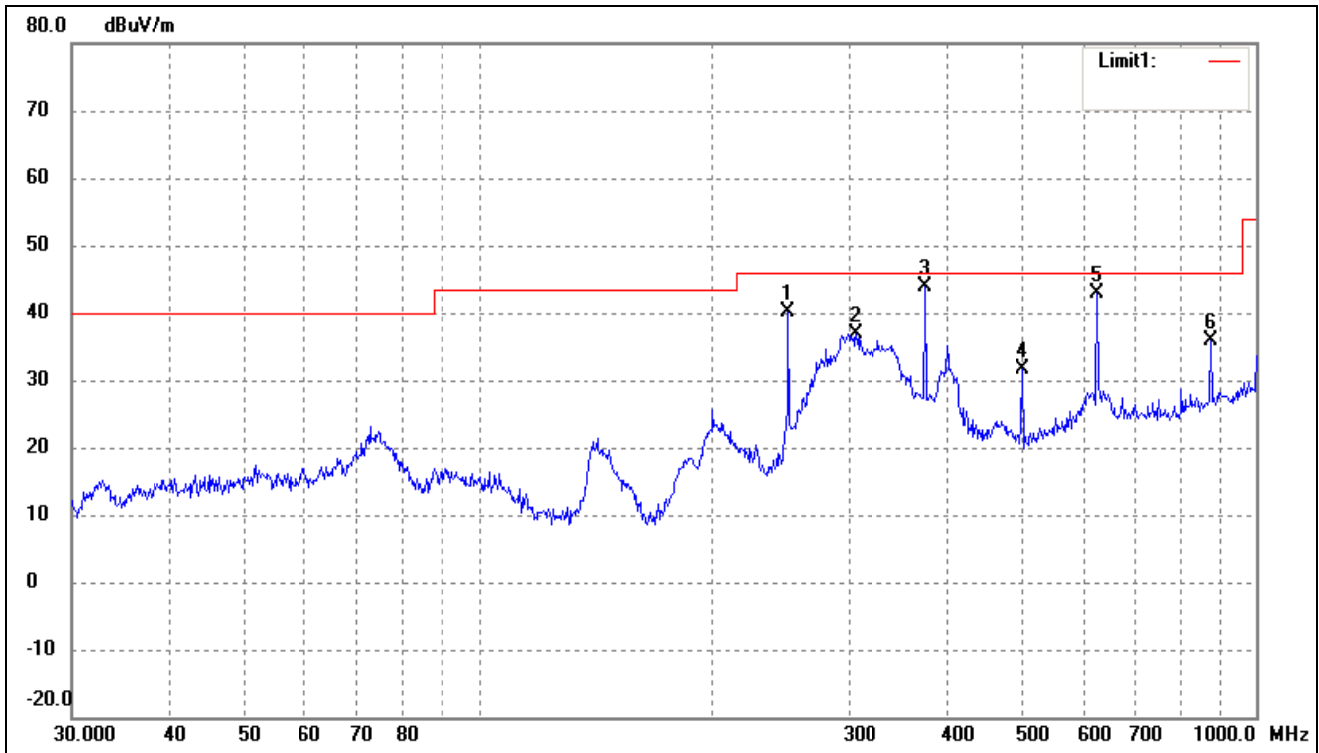


No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	62.6507	44.86	-13.69	31.17	40.00	-8.83	peak
2	140.8351	45.80	-17.29	28.51	43.50	-14.99	peak
3	199.9856	43.40	-13.20	30.20	43.50	-13.30	peak
4	250.3012	45.49	-9.79	35.70	46.00	-10.30	peak
5	375.9385	48.63	-7.11	41.52	46.00	-4.48	peak
6	625.0780	46.10	-2.89	43.21	46.00	-2.79	peak

5725-5850MHz band

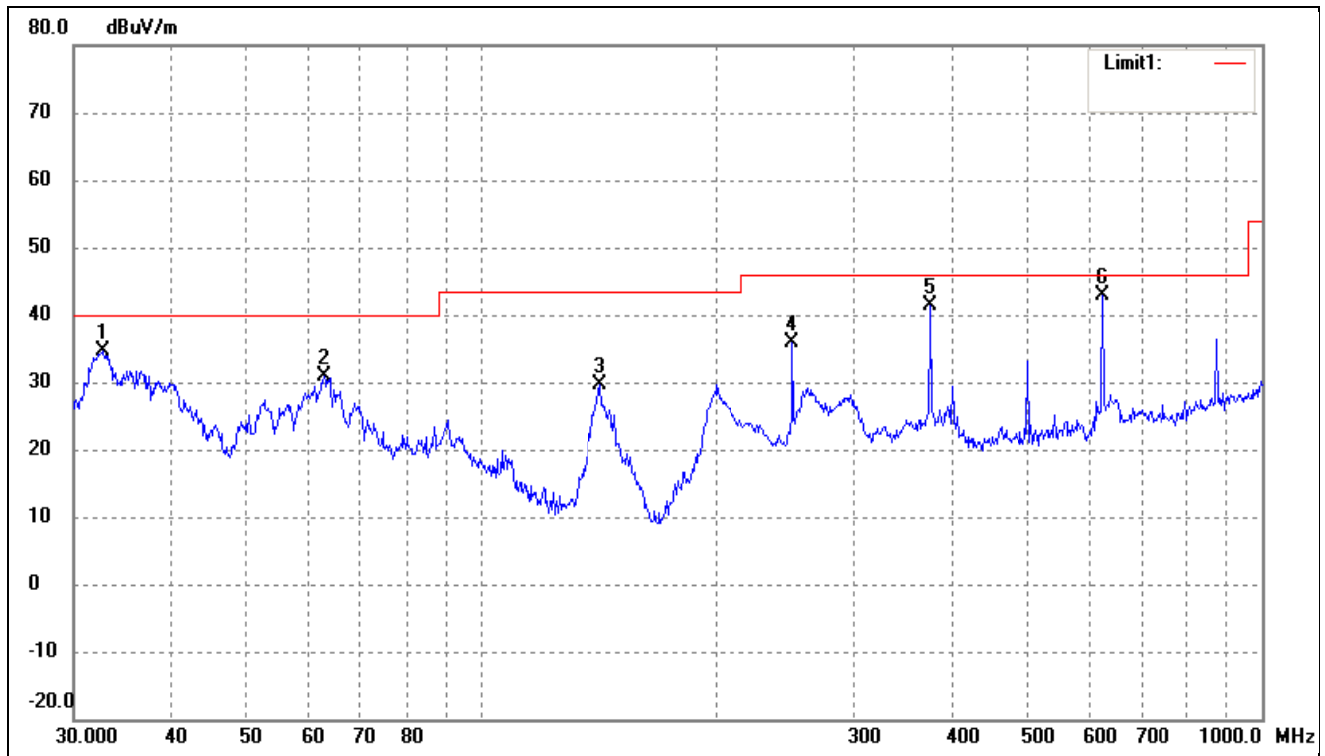
Test mode: Transmitting Low Channel 5745MHz

Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	250.3012	49.95	-9.79	40.16	46.00	-5.84	peak
2	305.6800	45.22	-8.24	36.98	46.00	-9.02	peak
3	375.9385	50.88	-7.11	43.77	46.00	-2.23	peak
4	501.1790	36.93	-5.42	31.51	46.00	-14.49	peak
5	625.0780	45.73	-2.89	42.84	46.00	-3.16	peak
6	875.2470	35.48	0.51	35.99	46.00	-10.01	peak

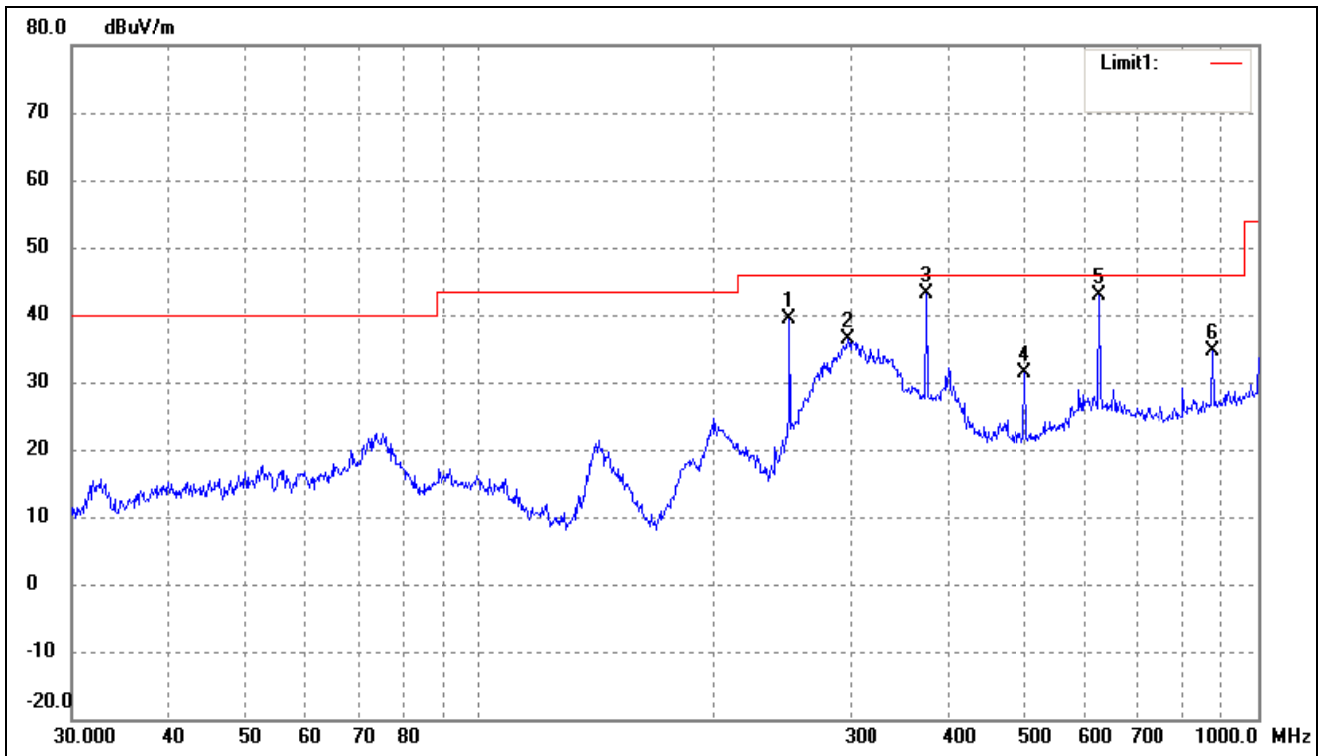
Test Specification: Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	32.7486	49.53	-14.83	34.70	40.00	-5.30	peak
2	62.8708	44.54	-13.71	30.83	40.00	-9.17	peak
3	141.8262	47.02	-17.34	29.68	43.50	-13.82	peak
4	250.3012	45.74	-9.79	35.95	46.00	-10.05	peak
5	375.9385	48.45	-7.11	41.34	46.00	-4.66	peak
6	625.0780	45.71	-2.89	42.82	46.00	-3.18	peak

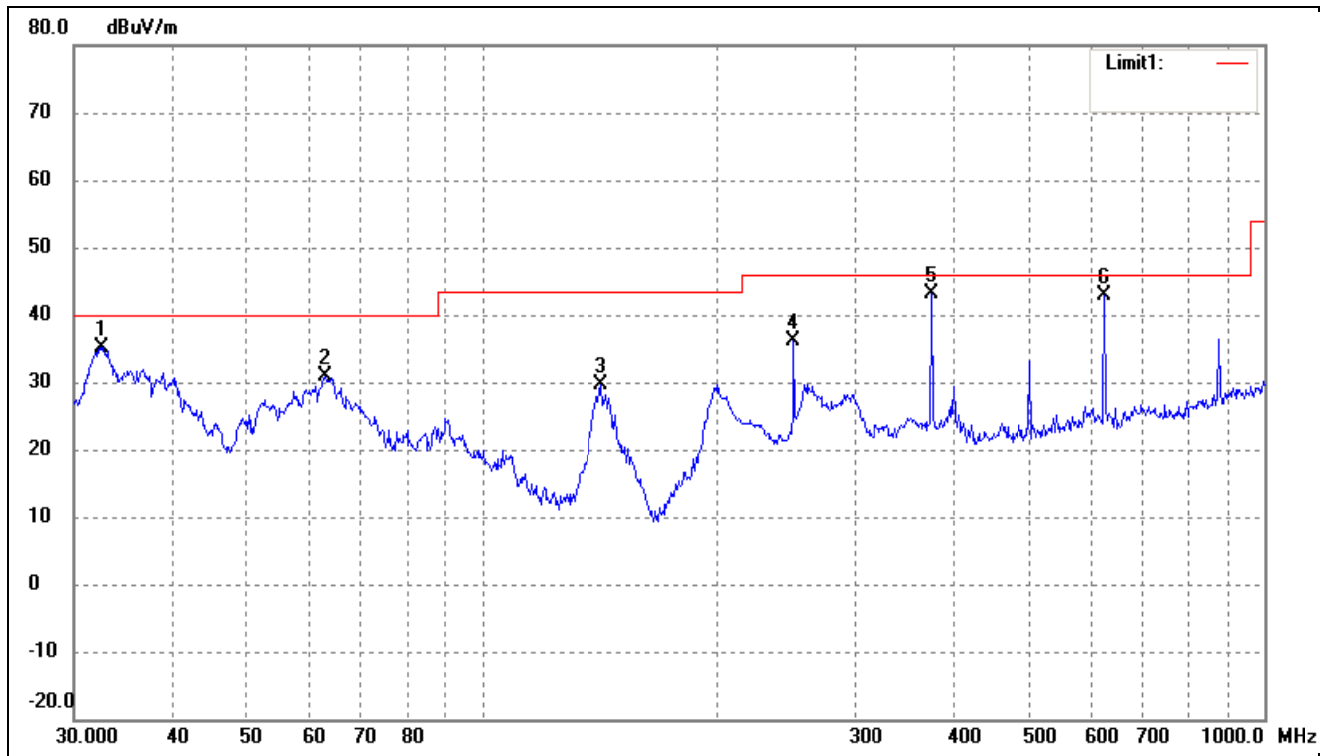
Test mode: Transmitting Middle Channel 5785MHz

Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	250.3012	49.10	-9.79	39.31	46.00	-6.69	peak
2	297.2241	44.43	-8.16	36.27	46.00	-9.73	peak
3	375.9385	50.33	-7.11	43.22	46.00	-2.78	peak
4	501.1790	36.76	-5.42	31.34	46.00	-14.66	peak
5	625.0780	45.81	-2.89	42.92	46.00	-3.08	peak
6	875.2470	34.00	0.51	34.51	46.00	-11.49	peak

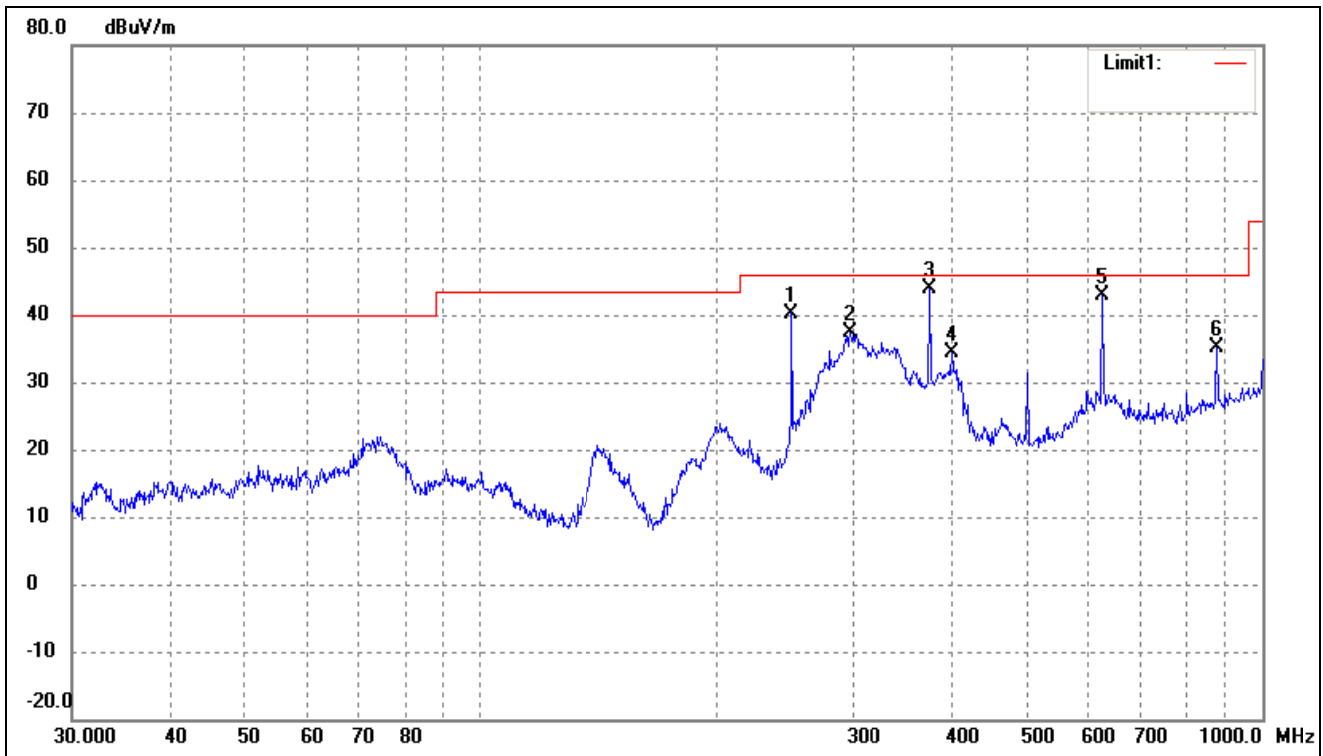
Test Specification: Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	32.5198	50.03	-14.83	35.20	40.00	-4.80	peak
2	62.8708	44.54	-13.71	30.83	40.00	-9.17	peak
3	141.8262	47.02	-17.34	29.68	43.50	-13.82	peak
4	250.3012	45.95	-9.79	36.16	46.00	-9.84	peak
5	375.9385	50.32	-7.11	43.21	46.00	-2.79	peak
6	625.0780	45.71	-2.89	42.82	46.00	-3.18	peak

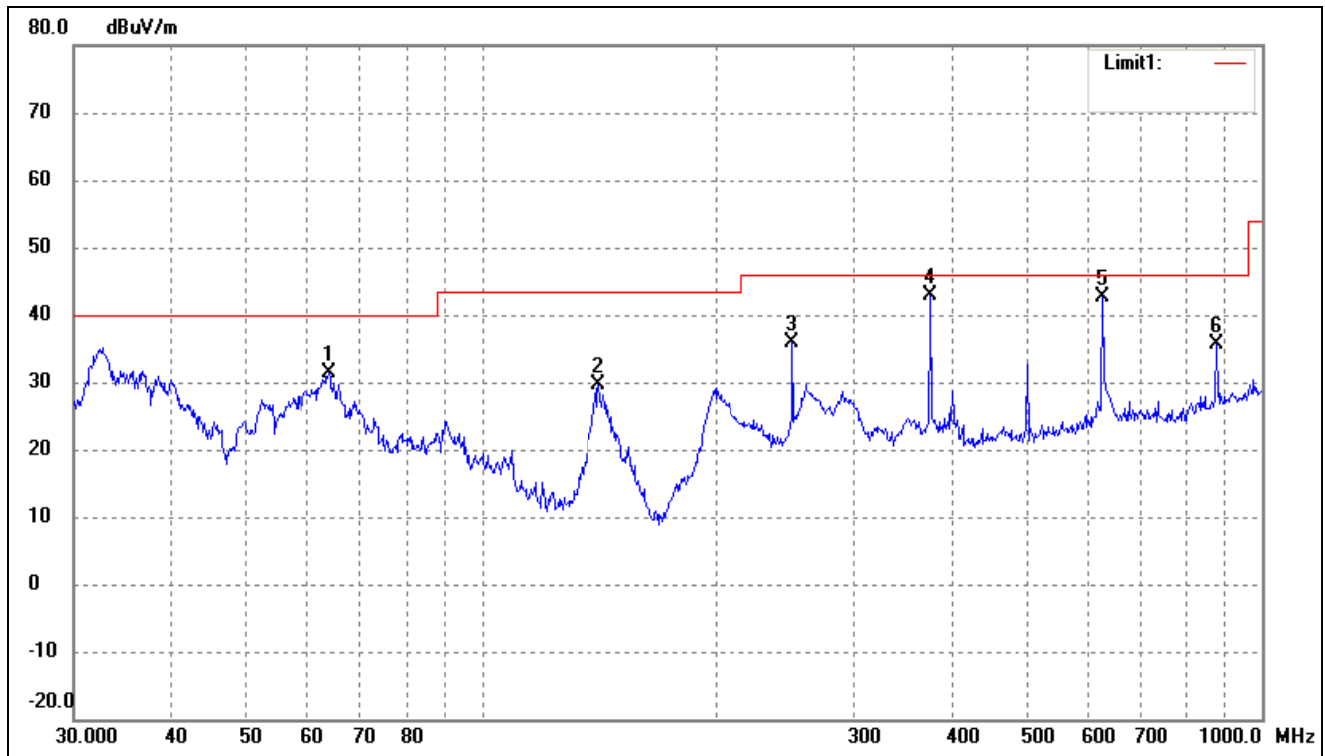
Test mode: Transmitting High Channel 5825MHz

Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	250.3012	50.04	-9.79	40.25	46.00	-5.75	peak
2	297.2241	45.61	-8.16	37.45	46.00	-8.55	peak
3	375.9385	51.00	-7.11	43.89	46.00	-2.11	peak
4	400.4319	41.04	-6.74	34.30	46.00	-11.70	peak
5	625.0780	45.66	-2.89	42.77	46.00	-3.23	peak
6	875.2470	34.50	0.51	35.01	46.00	-10.99	peak

Test Specification: Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	63.7588	45.18	-13.84	31.34	40.00	-8.66	peak
2	141.3298	46.96	-17.31	29.65	43.50	-13.85	peak
3	250.3012	45.64	-9.79	35.85	46.00	-10.15	peak
4	375.9385	50.01	-7.11	42.90	46.00	-3.10	peak
5	625.0780	45.63	-2.89	42.74	46.00	-3.26	peak
6	875.2470	35.14	0.51	35.65	46.00	-10.35	peak

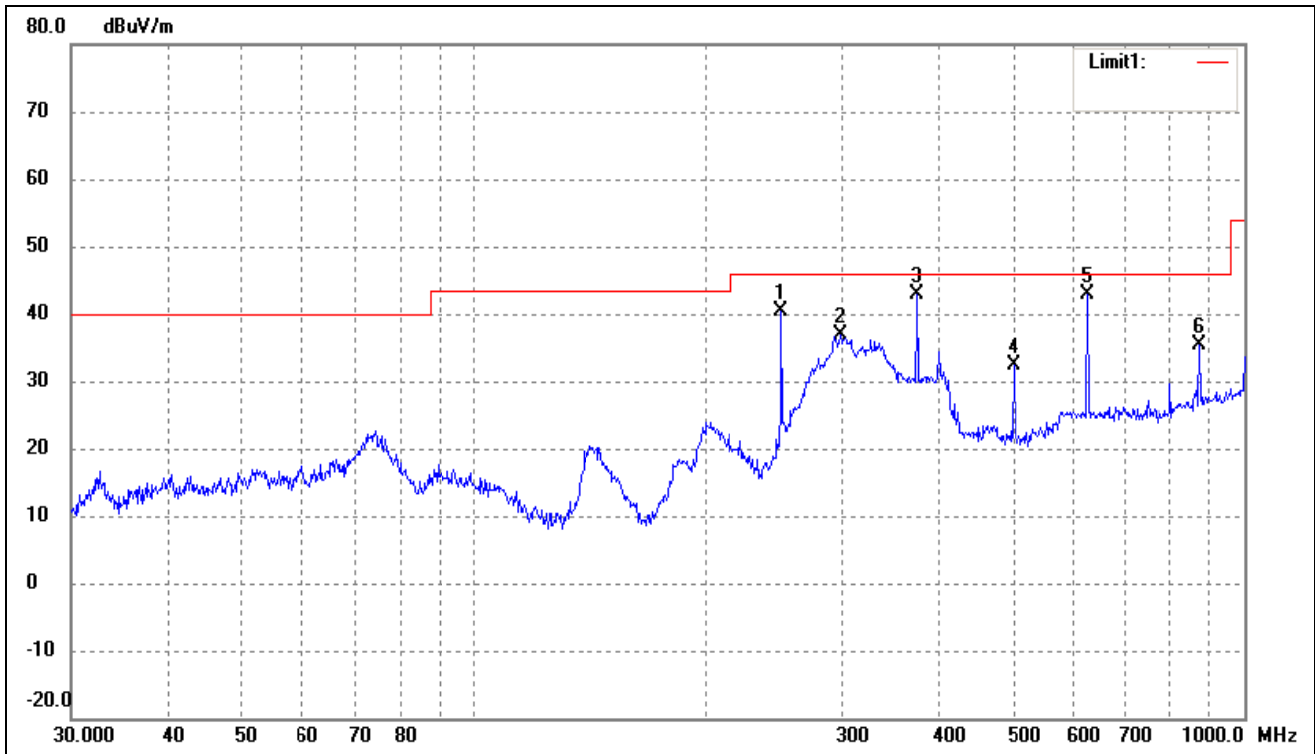
Antenna 1

For 802.11a

5150-5250MHz band

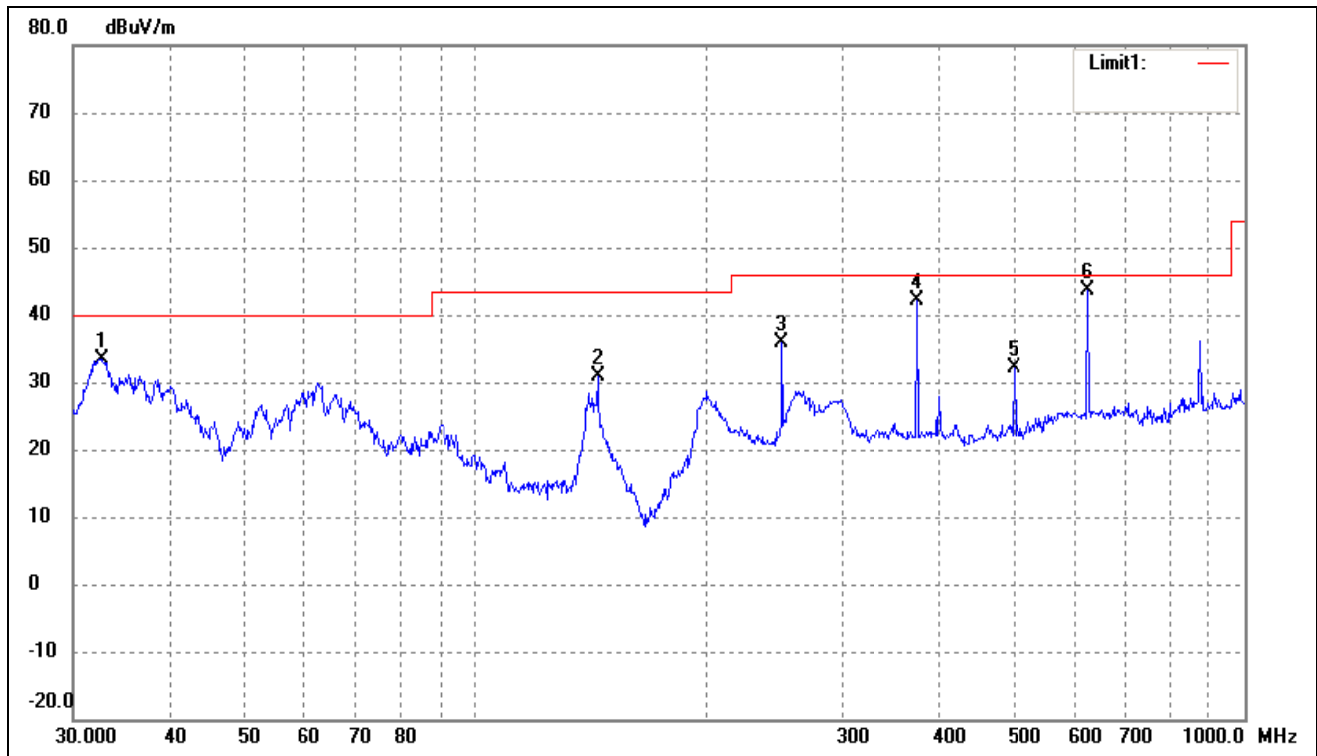
Test mode: Transmitting Low Channel 5180MHz

Horizontal:



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	250.3012	50.16	-9.79	40.37	46.00	-5.63	peak
2	298.2681	44.98	-8.16	36.82	46.00	-9.18	peak
3	375.9385	49.95	-7.11	42.84	46.00	-3.16	peak
4	501.1790	37.68	-5.42	32.26	46.00	-13.74	peak
5	625.0780	45.74	-2.89	42.85	46.00	-3.15	peak
6	875.2470	34.93	0.51	35.44	46.00	-10.56	peak

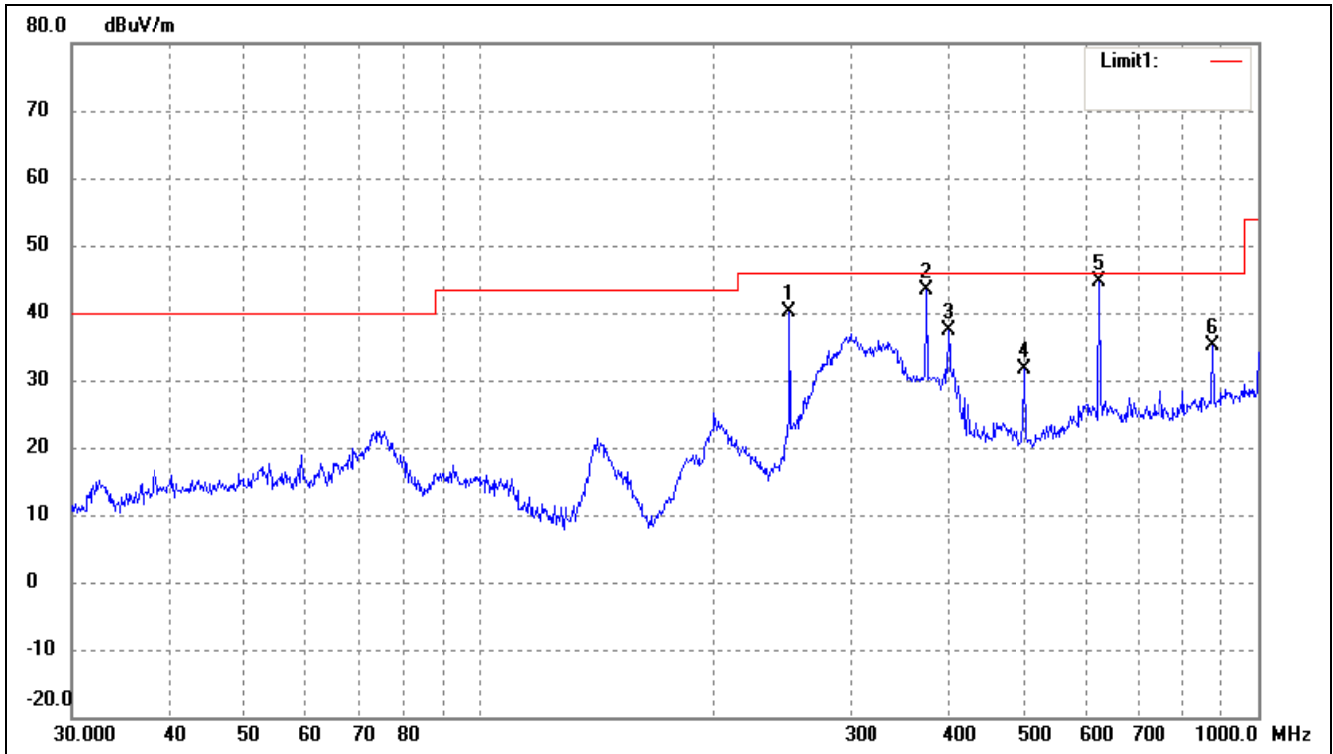
Test Specification: Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	32.6340	48.31	-14.83	33.48	40.00	-6.52	peak
2	144.3348	48.33	-17.48	30.85	43.50	-12.65	peak
3	250.3012	45.67	-9.79	35.88	46.00	-10.12	peak
4	375.9385	49.19	-7.11	42.08	46.00	-3.92	peak
5	501.1790	37.57	-5.42	32.15	46.00	-13.85	peak
6	625.0780	46.59	-2.89	43.70	46.00	-2.30	peak

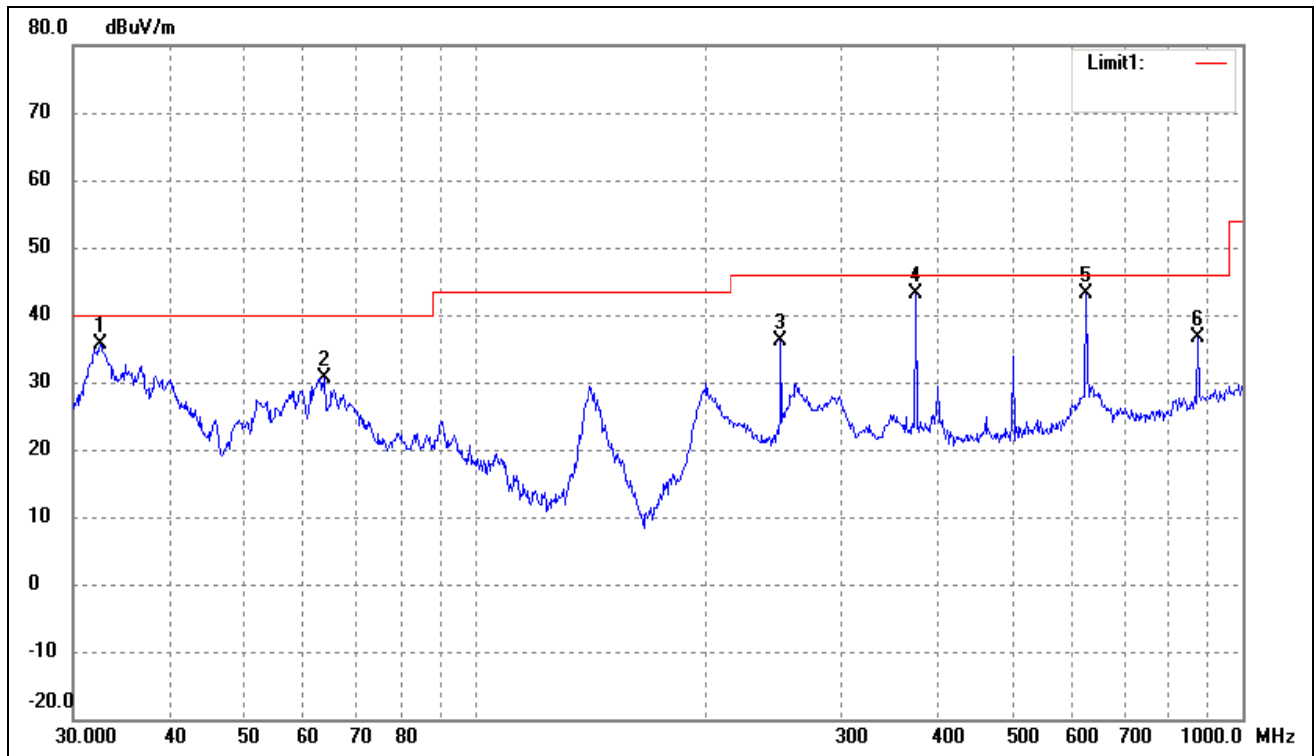
Test mode: Transmitting Middle Channel 5200MHz

Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	250.3012	50.01	-9.79	40.22	46.00	-5.78	peak
2	375.9385	50.55	-7.11	43.44	46.00	-2.56	peak
3	400.4319	44.18	-6.74	37.44	46.00	-8.56	peak
4	501.1790	37.00	-5.42	31.58	46.00	-14.42	peak
5	625.0780	47.41	-2.89	44.52	46.00	-1.48	peak
6	875.2470	34.51	0.51	35.02	46.00	-10.98	peak

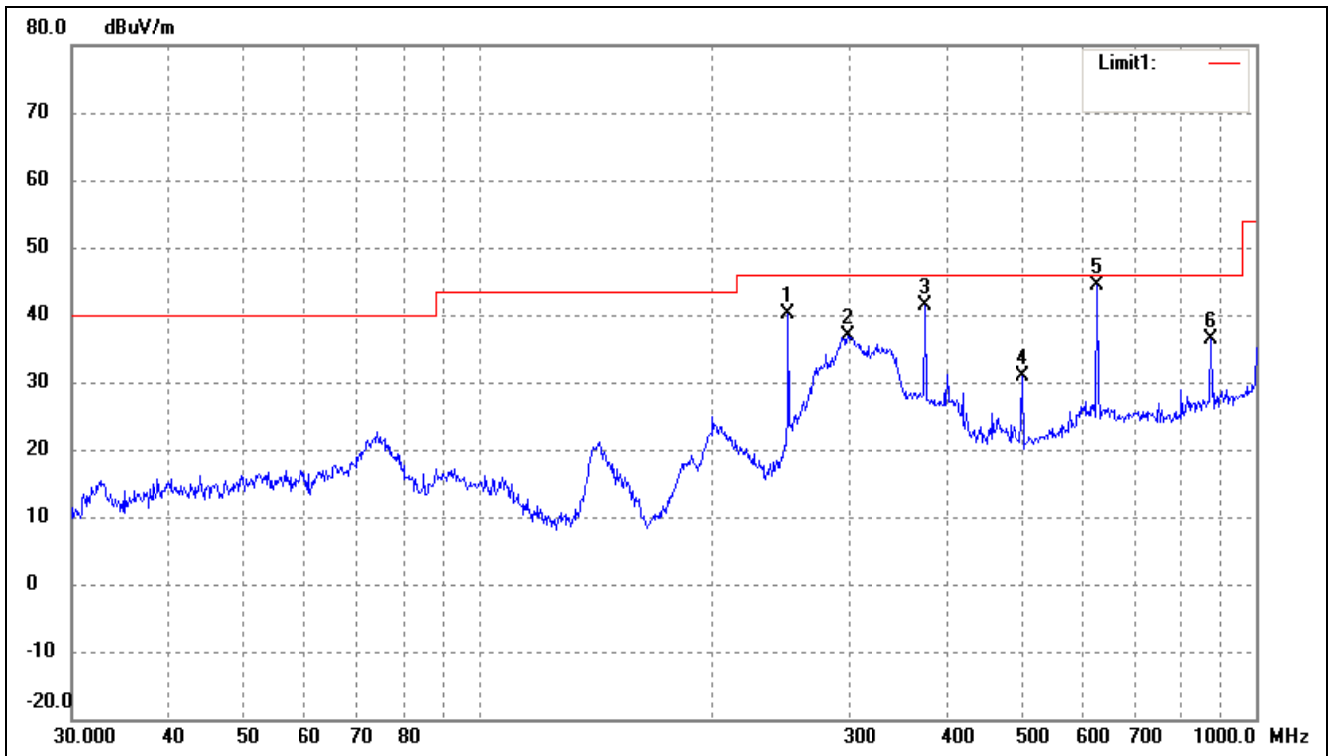
Test Specification: Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	32.5198	50.34	-14.83	35.51	40.00	-4.49	peak
2	63.7588	44.41	-13.84	30.57	40.00	-9.43	peak
3	250.3012	45.85	-9.79	36.06	46.00	-9.94	peak
4	375.9385	50.28	-7.11	43.17	46.00	-2.83	peak
5	625.0780	46.05	-2.89	43.16	46.00	-2.84	peak
6	875.2470	36.21	0.51	36.72	46.00	-9.28	peak

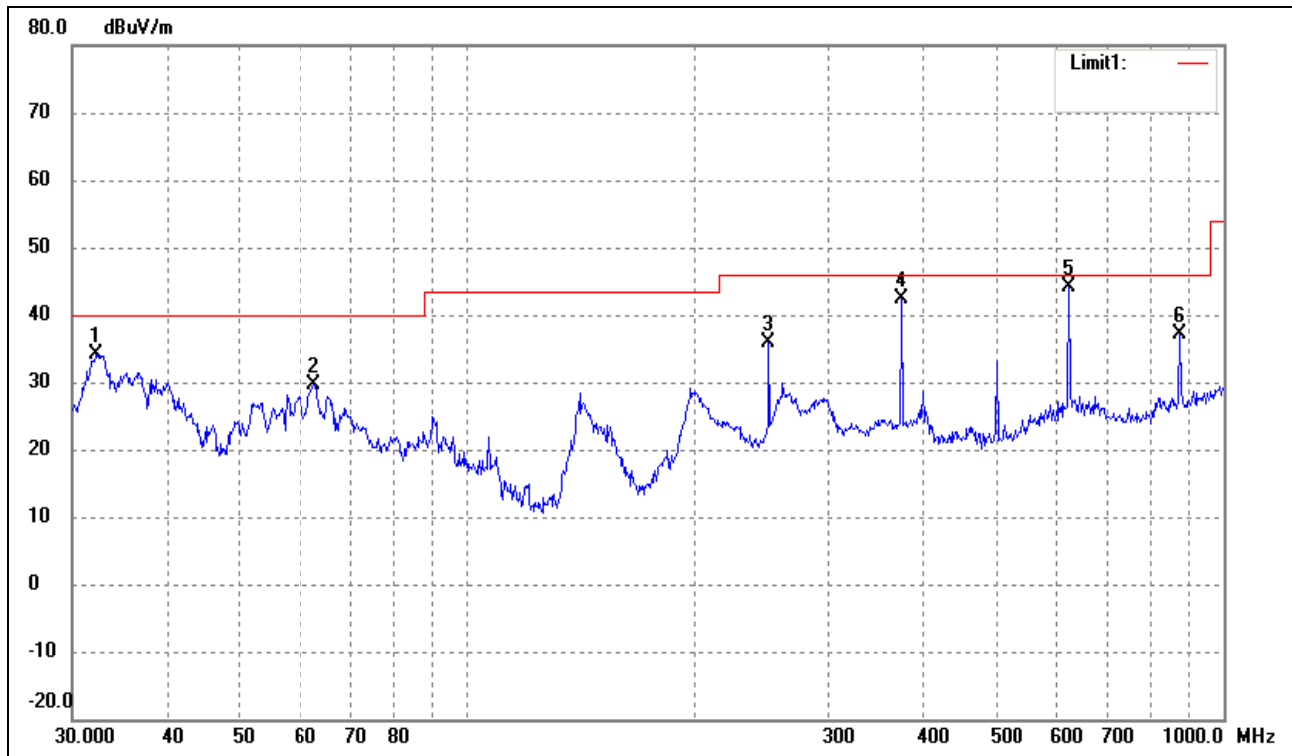
Test mode: Transmitting High Channel 5240MHz

Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	250.3012	49.88	-9.79	40.09	46.00	-5.91	peak
2	298.2681	44.95	-8.16	36.79	46.00	-9.21	peak
3	375.9385	48.60	-7.11	41.49	46.00	-4.51	peak
4	501.1790	36.30	-5.42	30.88	46.00	-15.12	peak
5	625.0780	47.35	-2.89	44.46	46.00	-1.54	peak
6	875.2470	35.76	0.51	36.27	46.00	-9.73	peak

Test Specification: Vertical

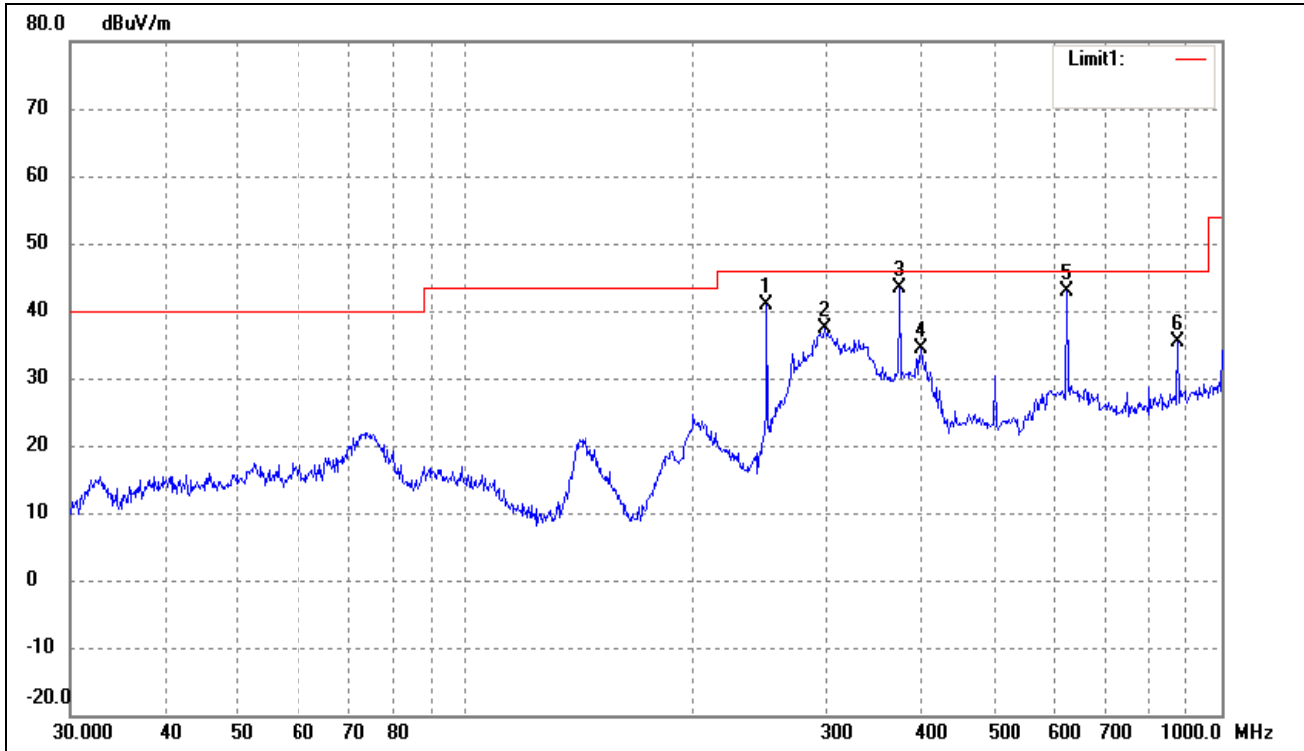


No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	32.2925	49.06	-14.83	34.23	40.00	-5.77	peak
2	62.6507	43.38	-13.69	29.69	40.00	-10.31	peak
3	250.3012	45.78	-9.79	35.99	46.00	-10.01	peak
4	375.9385	49.56	-7.11	42.45	46.00	-3.55	peak
5	625.0780	46.94	-2.89	44.05	46.00	-1.95	peak
6	875.2470	36.65	0.51	37.16	46.00	-8.84	peak

5725-5850MHz band

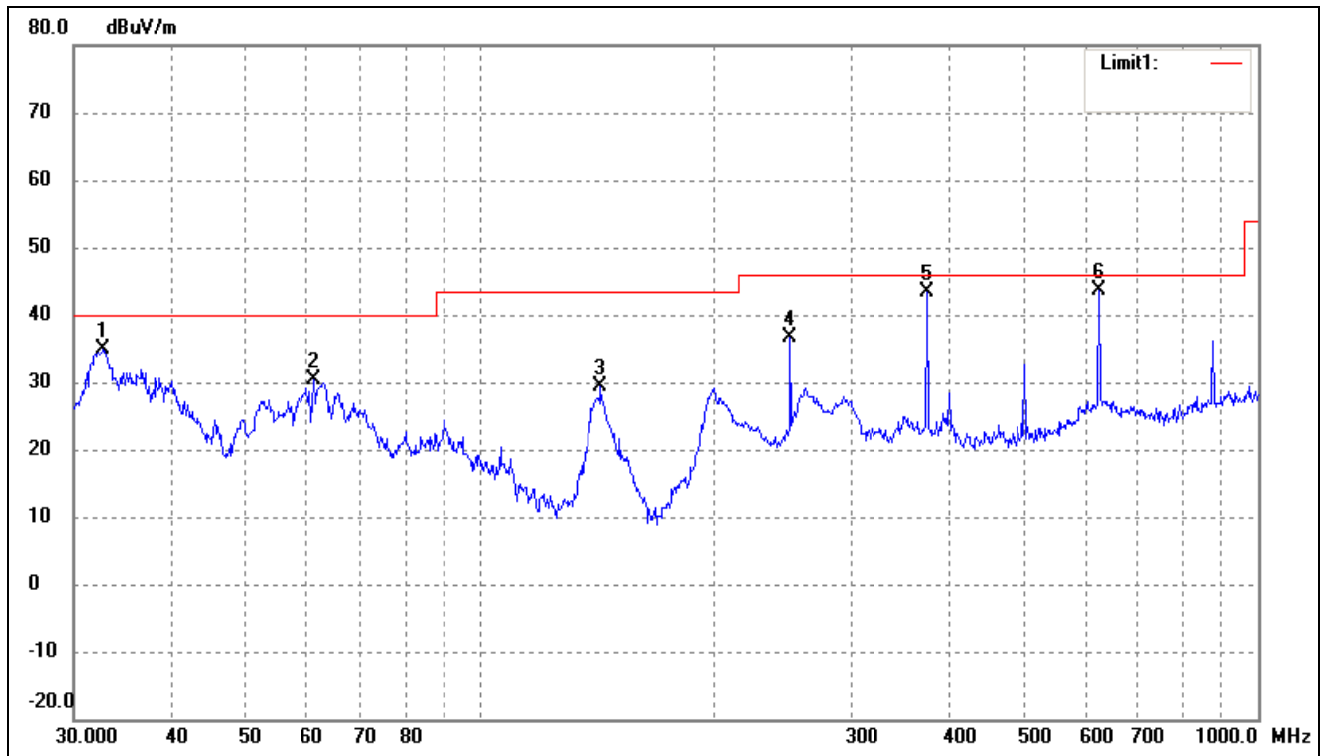
Test mode: Transmitting Low Channel 5745MHz

Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	250.3012	50.60	-9.79	40.81	46.00	-5.19	peak
2	298.2681	45.56	-8.16	37.40	46.00	-8.60	peak
3	375.9385	50.44	-7.11	43.33	46.00	-2.67	peak
4	400.4319	41.04	-6.74	34.30	46.00	-11.70	peak
5	625.0780	45.70	-2.89	42.81	46.00	-3.19	peak
6	875.2470	34.87	0.51	35.38	46.00	-10.62	peak

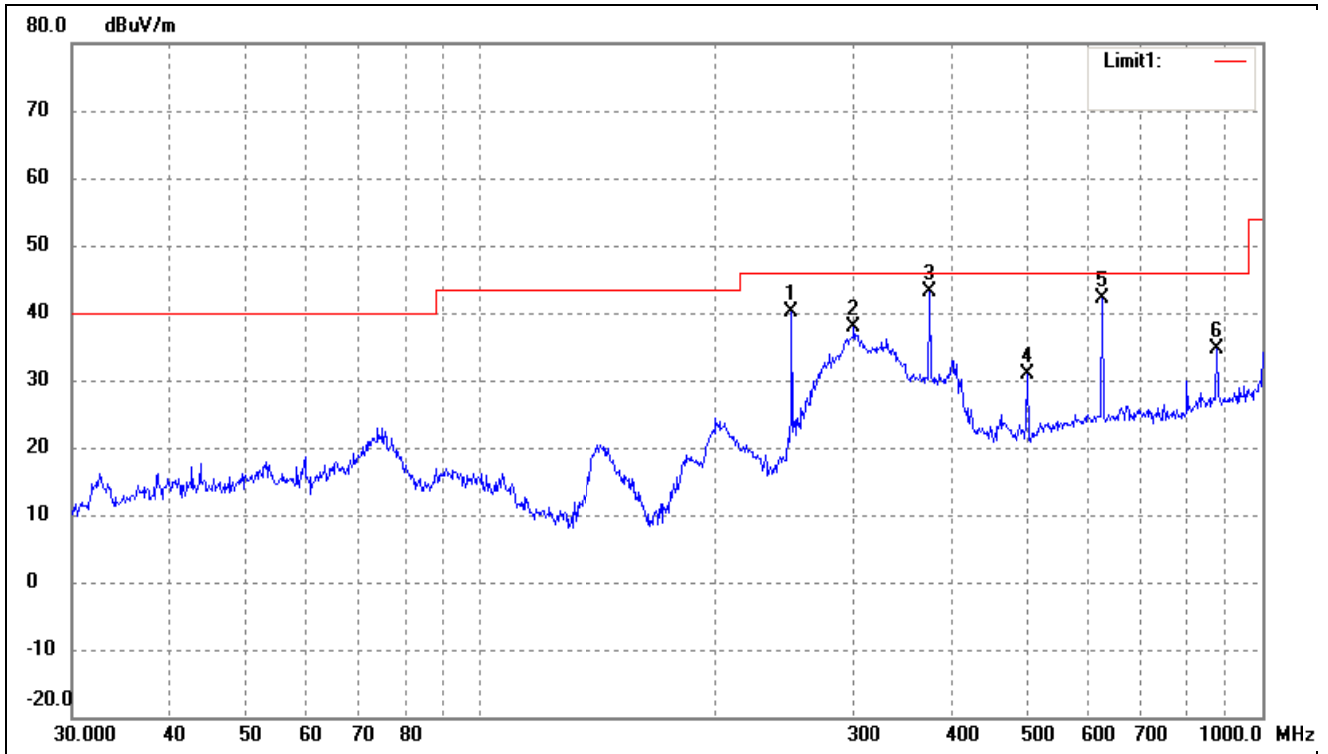
Test Specification: Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	32.7486	49.65	-14.83	34.82	40.00	-5.18	peak
2	61.1316	43.79	-13.49	30.30	40.00	-9.70	peak
3	142.8244	46.88	-17.40	29.48	43.50	-14.02	peak
4	250.3012	46.45	-9.79	36.66	46.00	-9.34	peak
5	375.9385	50.42	-7.11	43.31	46.00	-2.69	peak
6	625.0780	46.49	-2.89	43.60	46.00	-2.40	peak

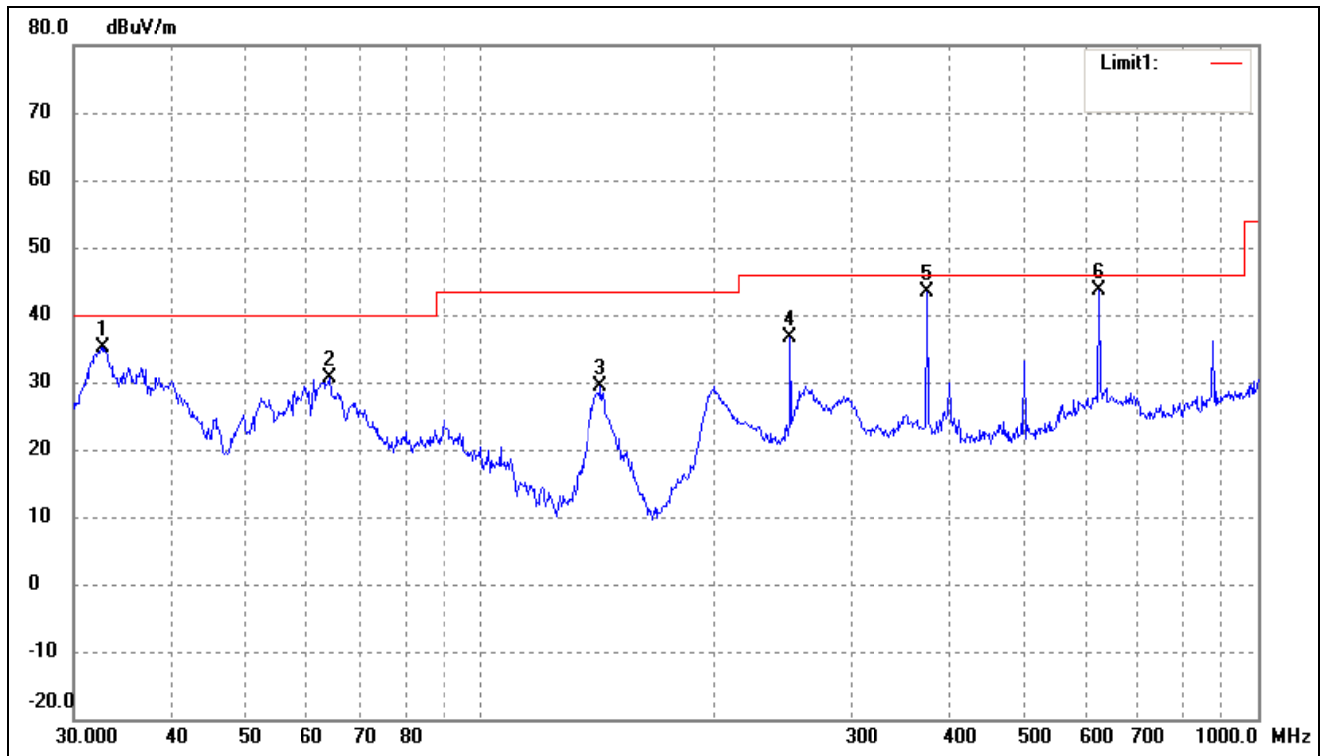
Test mode: Transmitting Middle Channel 5785MHz

Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	250.3012	49.90	-9.79	40.11	46.00	-5.89	peak
2	300.3673	46.11	-8.15	37.96	46.00	-8.04	peak
3	375.9385	50.35	-7.11	43.24	46.00	-2.76	peak
4	501.1790	36.23	-5.42	30.81	46.00	-15.19	peak
5	625.0780	45.09	-2.89	42.20	46.00	-3.80	peak
6	875.2470	34.07	0.51	34.58	46.00	-11.42	peak

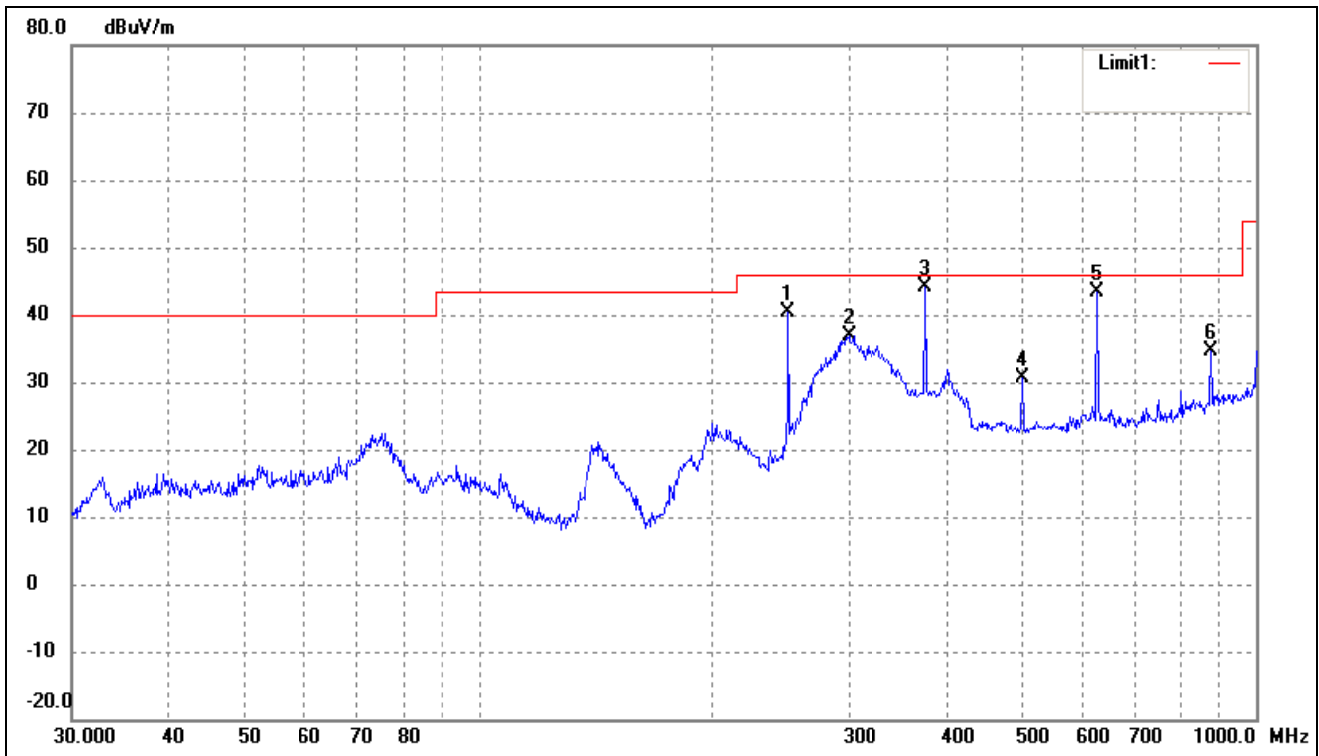
Test Specification: Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	32.7486	49.94	-14.83	35.11	40.00	-4.89	peak
2	64.2075	44.57	-13.90	30.67	40.00	-9.33	peak
3	142.8244	46.88	-17.40	29.48	43.50	-14.02	peak
4	250.3012	46.45	-9.79	36.66	46.00	-9.34	peak
5	375.9385	50.42	-7.11	43.31	46.00	-2.69	peak
6	625.0780	46.57	-2.89	43.68	46.00	-2.32	peak

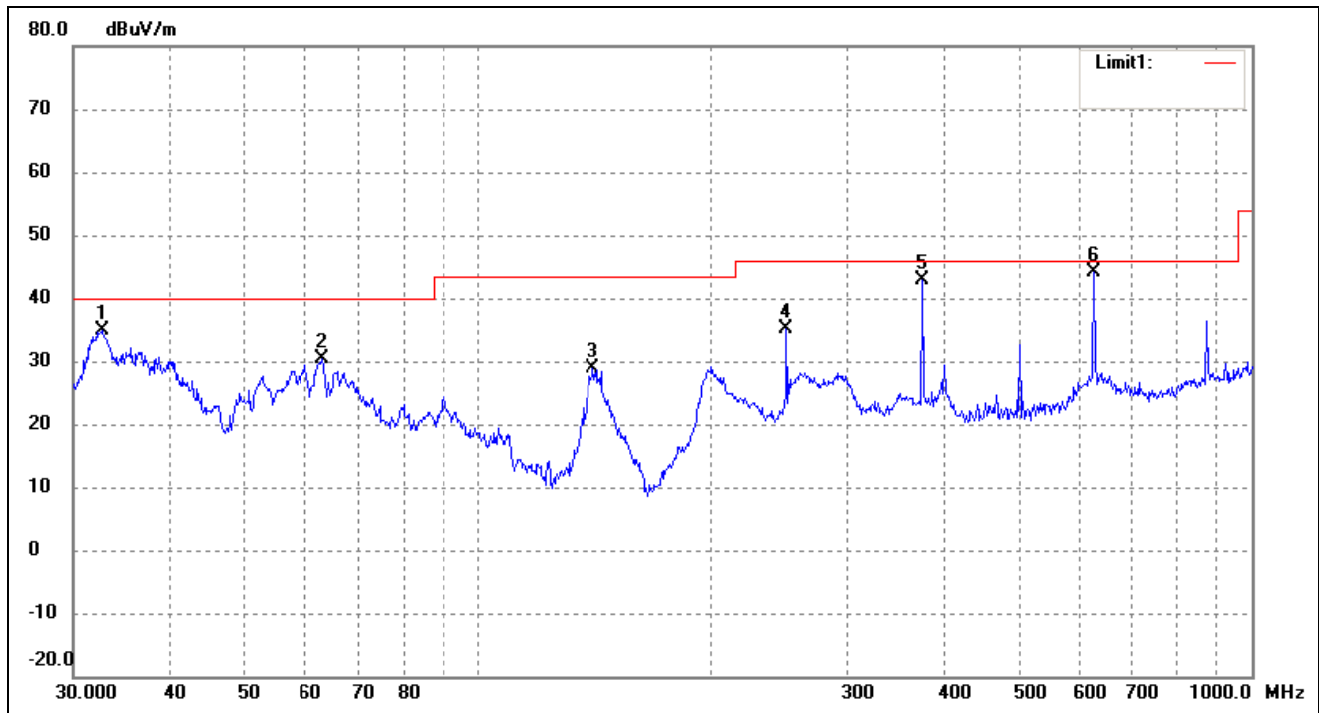
Test mode: Transmitting High Channel 5825MHz

Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	250.3012	50.09	-9.79	40.30	46.00	-5.70	peak
2	299.3158	44.98	-8.15	36.83	46.00	-9.17	peak
3	375.9385	51.15	-7.11	44.04	46.00	-1.96	peak
4	501.1790	36.09	-5.42	30.67	46.00	-15.33	peak
5	625.0780	46.31	-2.89	43.42	46.00	-2.58	peak
6	875.2470	34.22	0.51	34.73	46.00	-11.27	peak

Test Specification: Vertical



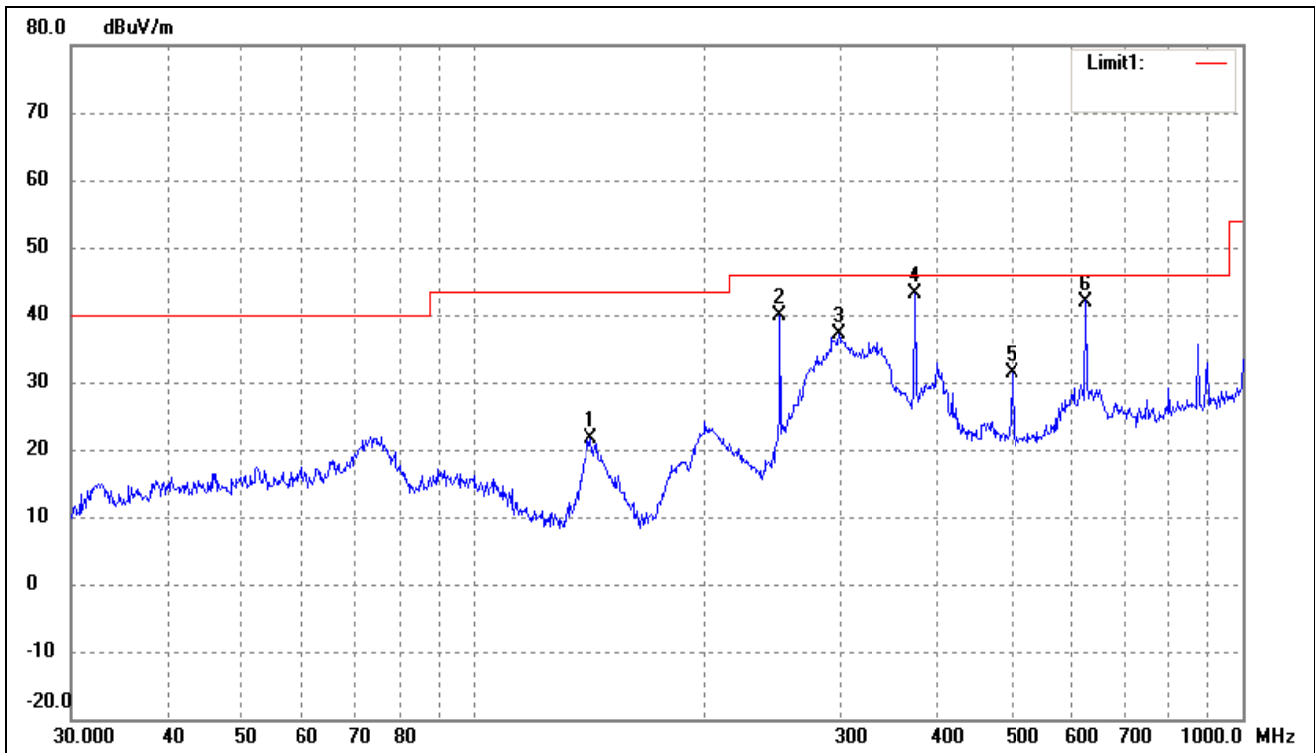
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	32.6340	49.59	-14.83	34.76	40.00	-5.24	peak
2	62.8708	44.16	-13.71	30.45	40.00	-9.55	peak
3	140.8351	46.26	-17.29	28.97	43.50	-14.53	peak
4	250.3012	44.88	-9.79	35.09	46.00	-10.91	peak
5	375.9385	49.89	-7.11	42.78	46.00	-3.22	peak
6	625.0780	47.03	-2.89	44.14	46.00	-1.86	peak

ANT 0 +ANT 1

5150-5250MHz band

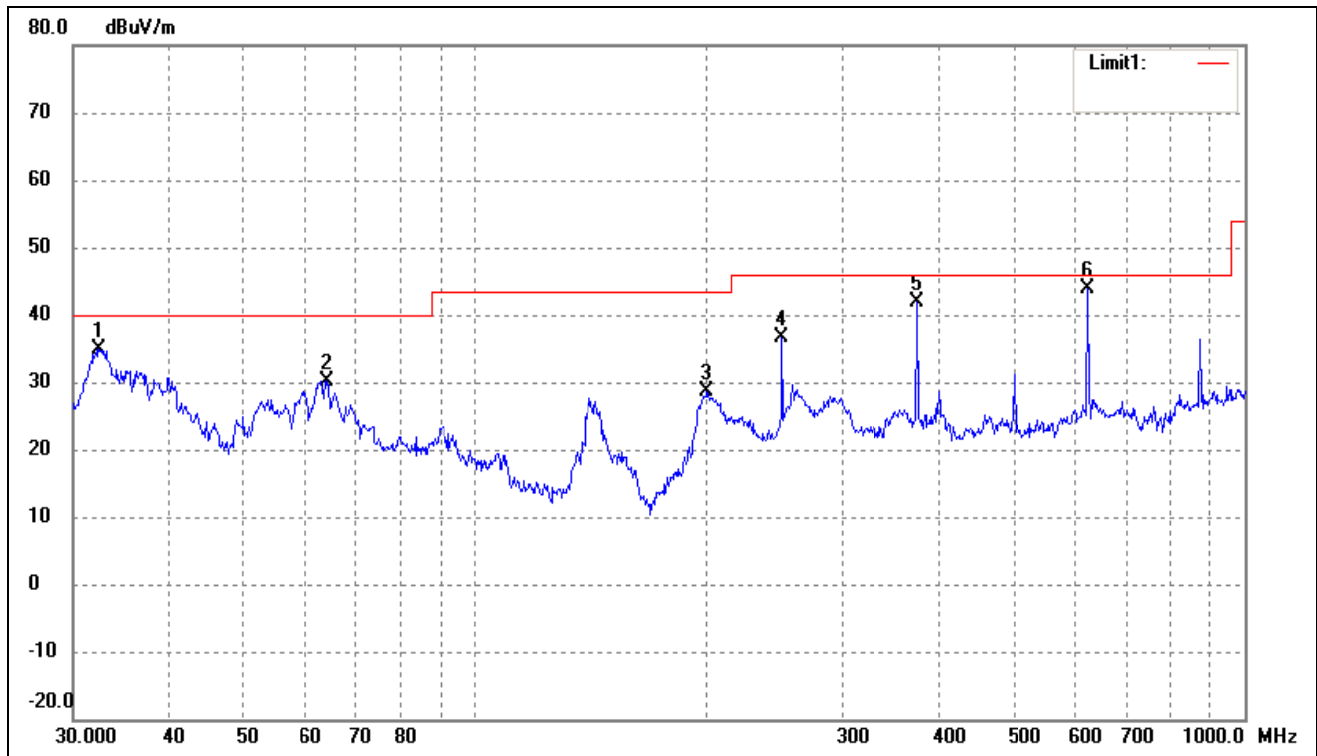
Test mode: Transmitting Low Channel 5180MHz

Horizontal:



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	141.8262	38.98	-17.34	21.64	43.50	-21.86	peak
2	250.3012	49.69	-9.79	39.90	46.00	-6.10	peak
3	298.2681	45.34	-8.16	37.18	46.00	-8.82	peak
4	375.9385	50.18	-7.11	43.07	46.00	-2.93	peak
5	501.1790	36.89	-5.42	31.47	46.00	-14.53	peak
6	625.0780	44.89	-2.89	42.00	46.00	-4.00	peak

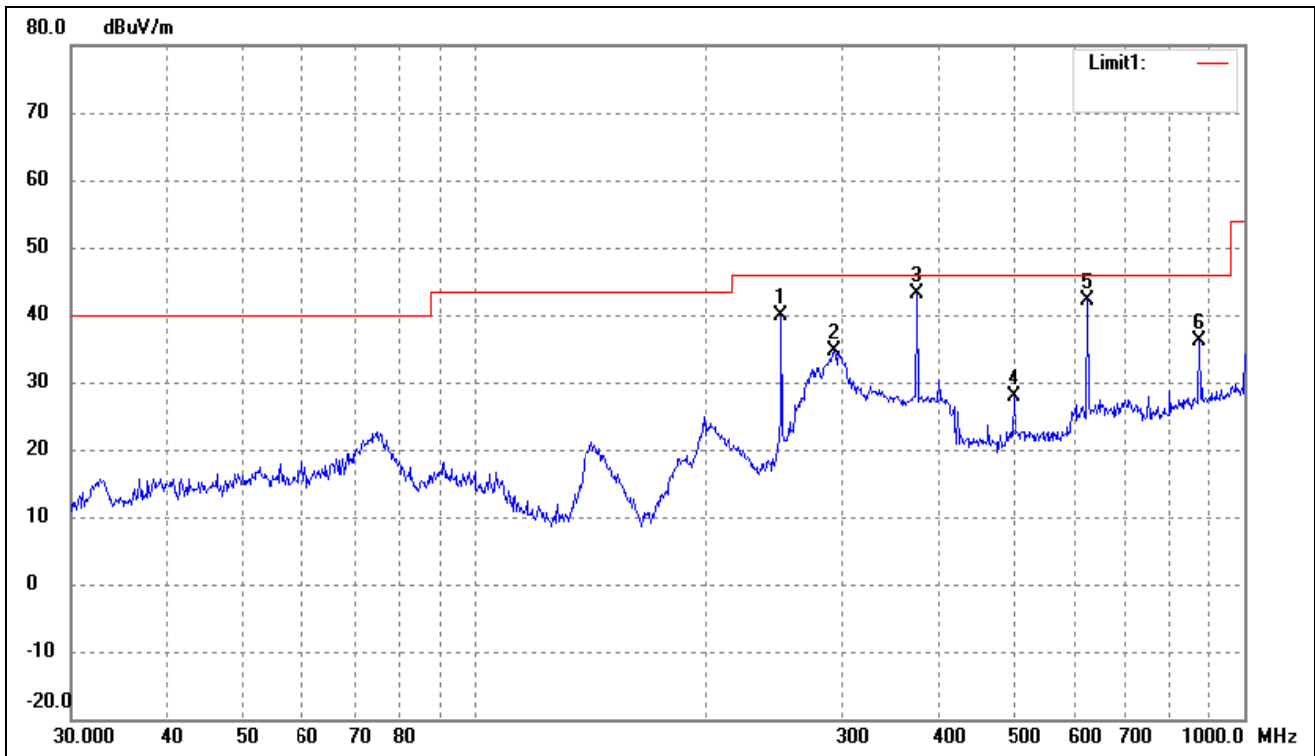
Test Specification: Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	32.4059	49.80	-14.83	34.97	40.00	-5.03	peak
2	64.2075	44.15	-13.90	30.25	40.00	-9.75	peak
3	199.9856	41.88	-13.20	28.68	43.50	-14.82	peak
4	250.3012	46.34	-9.79	36.55	46.00	-9.45	peak
5	375.9385	49.07	-7.11	41.96	46.00	-4.04	peak
6	625.0780	46.78	-2.89	43.89	46.00	-2.11	peak

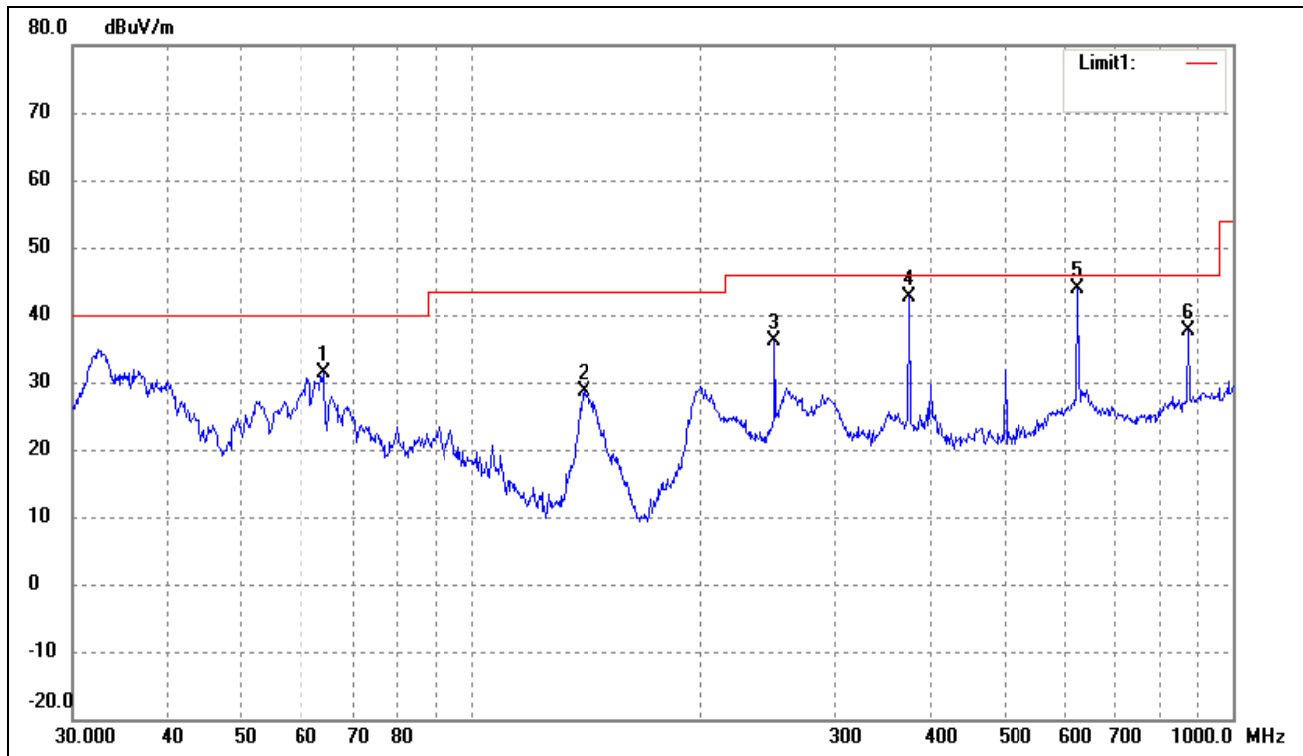
Test mode: Transmitting Middle Channel 5200MHz

Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	250.3012	49.72	-9.79	39.93	46.00	-6.07	peak
2	293.0842	43.00	-8.30	34.70	46.00	-11.30	peak
3	375.9385	50.14	-7.11	43.03	46.00	-2.97	peak
4	501.1790	33.34	-5.42	27.92	46.00	-18.08	peak
5	625.0780	45.13	-2.89	42.24	46.00	-3.76	peak
6	875.2470	35.70	0.51	36.21	46.00	-9.79	peak

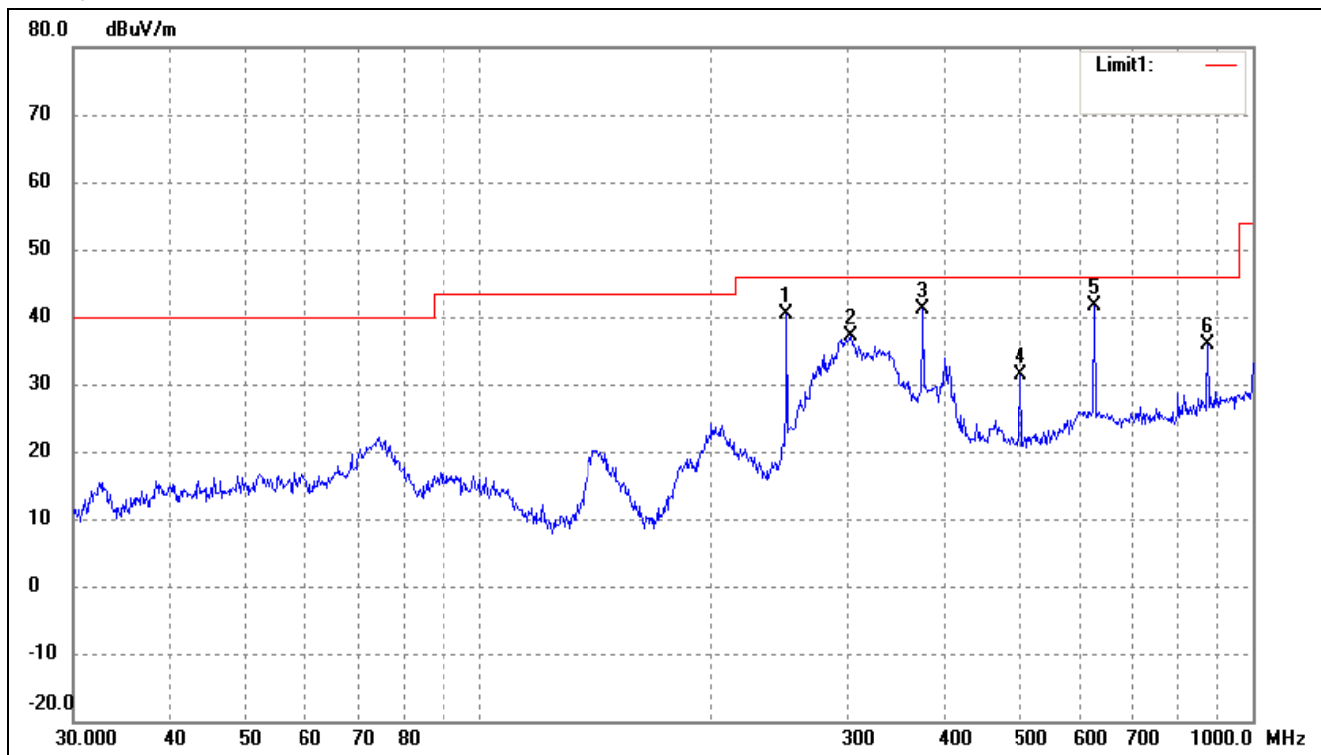
Test Specification: Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	63.9828	45.17	-13.87	31.30	40.00	-8.70	peak
2	140.8351	45.86	-17.29	28.57	43.50	-14.93	peak
3	250.3012	46.01	-9.79	36.22	46.00	-9.78	peak
4	375.9385	49.65	-7.11	42.54	46.00	-3.46	peak
5	625.0780	46.80	-2.89	43.91	46.00	-2.09	peak
6	875.2470	37.07	0.51	37.58	46.00	-8.42	peak

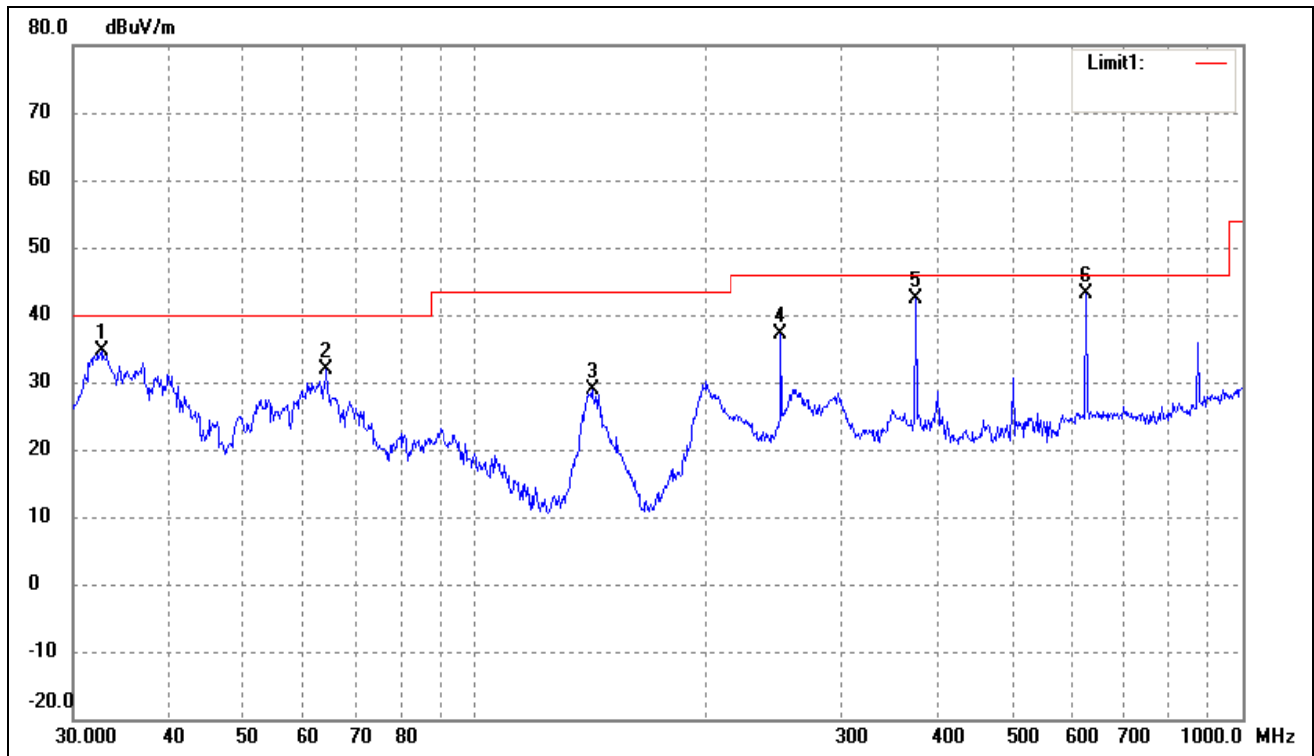
Test mode: Transmitting High Channel 5240MHz

Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	250.3012	50.07	-9.79	40.28	46.00	-5.72	peak
2	302.4812	45.37	-8.19	37.18	46.00	-8.82	peak
3	375.9385	48.30	-7.11	41.19	46.00	-4.81	peak
4	501.1790	36.85	-5.42	31.43	46.00	-14.57	peak
5	625.0780	44.47	-2.89	41.58	46.00	-4.42	peak
6	875.2470	35.29	0.51	35.80	46.00	-10.20	peak

Test Specification: Vertical

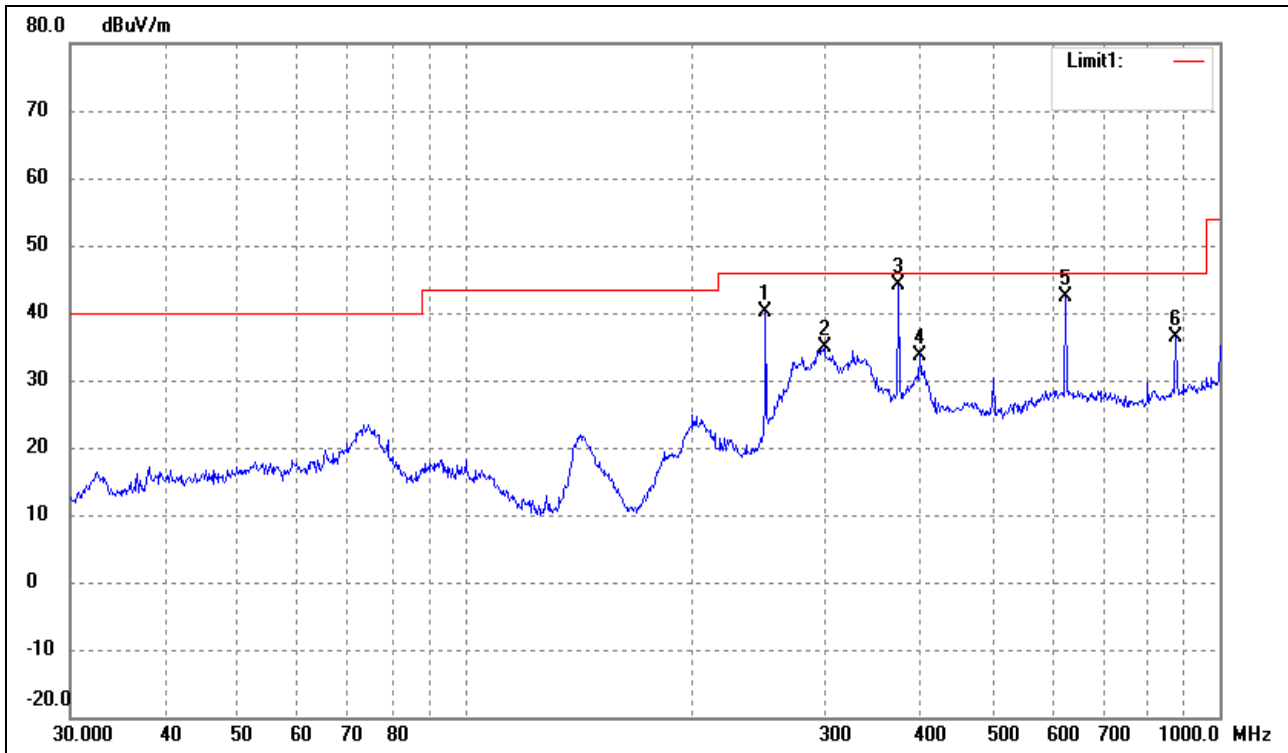


No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	32.6340	49.38	-14.83	34.55	40.00	-5.45	peak
2	64.2075	45.81	-13.90	31.91	40.00	-8.09	peak
3	142.3244	46.36	-17.37	28.99	43.50	-14.51	peak
4	250.3012	46.80	-9.79	37.01	46.00	-8.99	peak
5	375.9385	49.39	-7.11	42.28	46.00	-3.72	peak
6	625.0780	45.90	-2.89	43.01	46.00	-2.99	peak

5725-5850MHz band

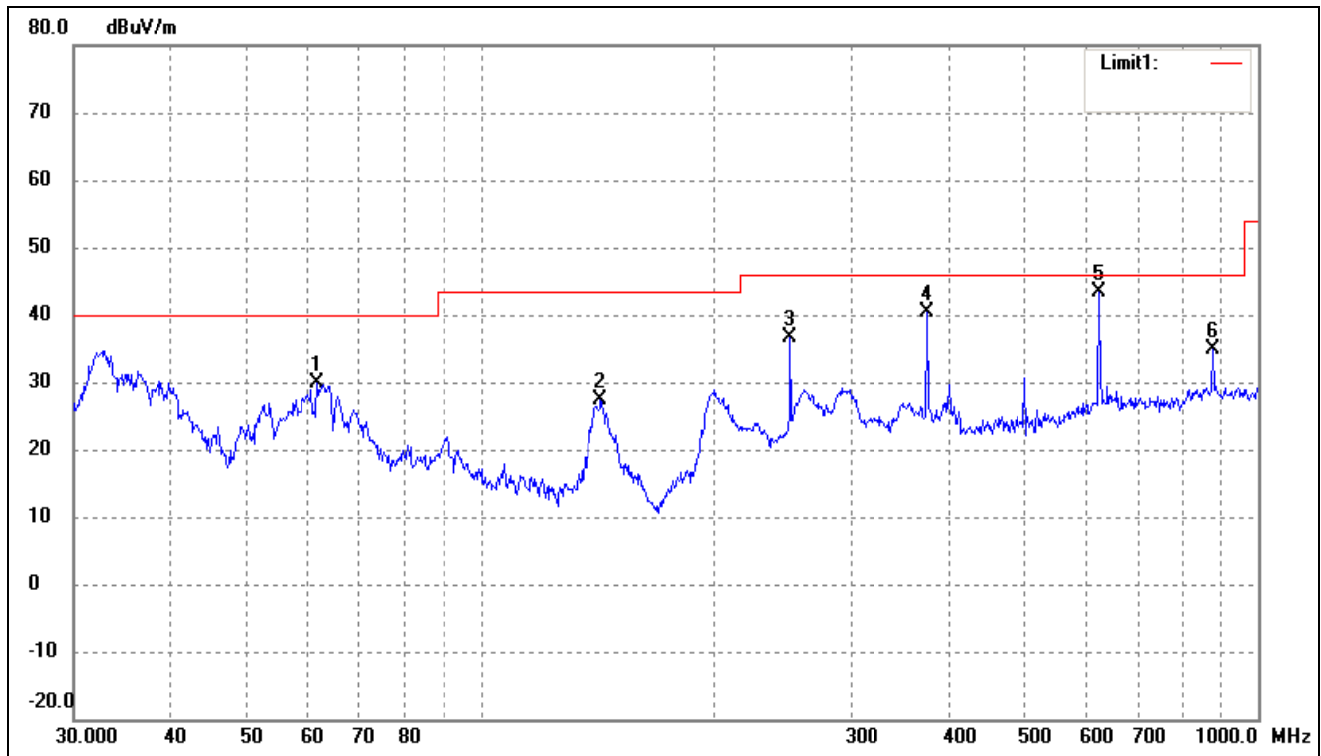
Test mode: Transmitting Low Channel 5745MHz

Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	250.3012	50.04	-9.79	40.25	46.00	-5.75	peak
2	299.3158	42.95	-8.15	34.80	46.00	-11.20	peak
3	375.9385	51.17	-7.11	44.06	46.00	-1.94	peak
4	400.4319	40.49	-6.74	33.75	46.00	-12.25	peak
5	625.0780	45.19	-2.89	42.30	46.00	-3.70	peak
6	875.2470	35.88	0.51	36.39	46.00	-9.61	peak

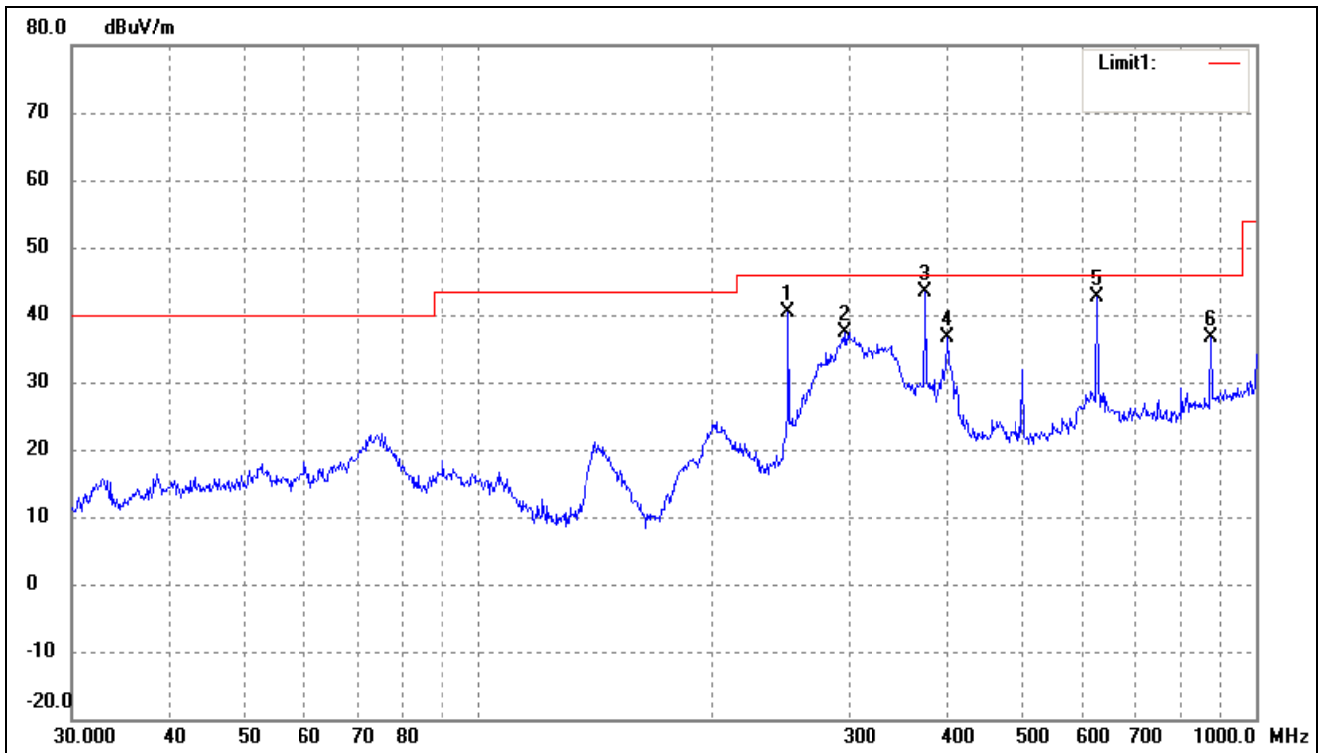
Test Specification: Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	61.7781	43.37	-13.57	29.80	40.00	-10.20	peak
2	142.8244	44.77	-17.40	27.37	43.50	-16.13	peak
3	250.3012	46.52	-9.79	36.73	46.00	-9.27	peak
4	375.9385	47.60	-7.11	40.49	46.00	-5.51	peak
5	625.0780	46.38	-2.89	43.49	46.00	-2.51	peak
6	875.2470	34.41	0.51	34.92	46.00	-11.08	peak

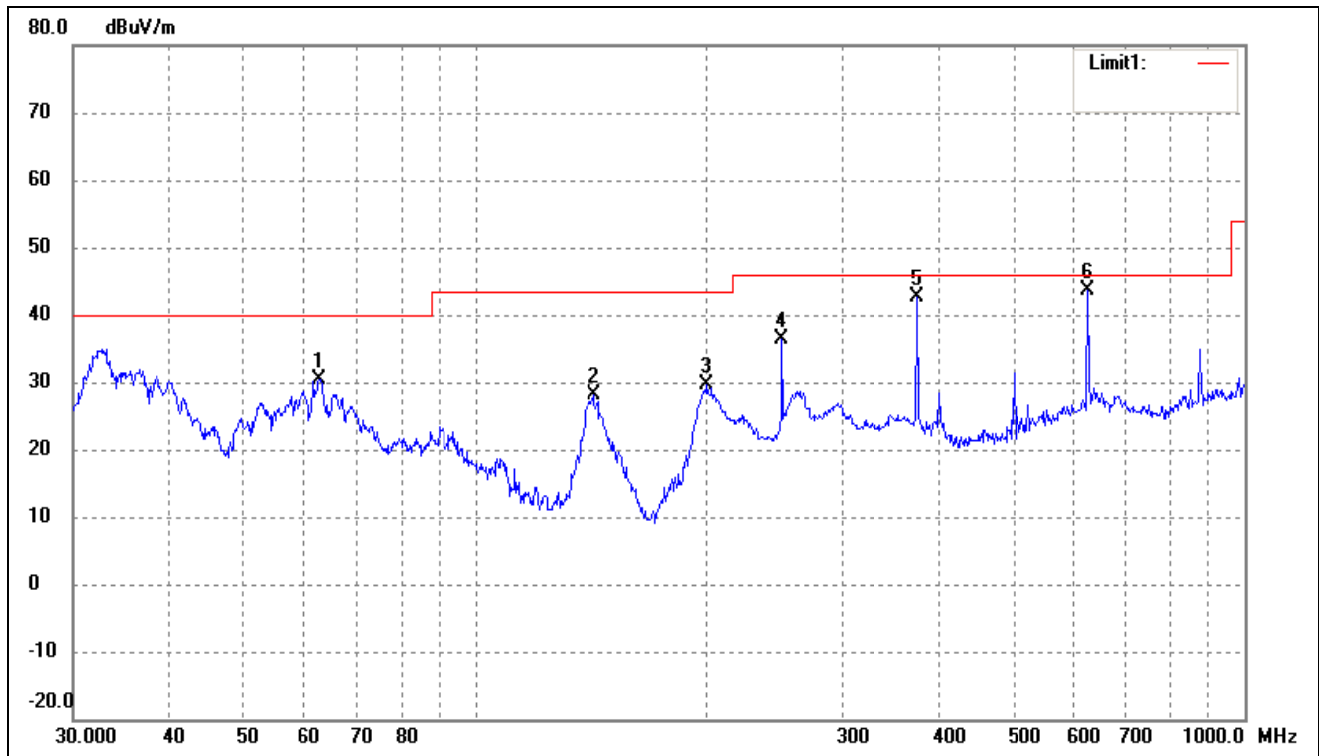
Test mode: Transmitting Middle Channel 5785MHz

Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	250.3012	50.16	-9.79	40.37	46.00	-5.63	peak
2	296.1836	45.50	-8.17	37.33	46.00	-8.67	peak
3	375.9385	50.45	-7.11	43.34	46.00	-2.66	peak
4	400.4319	43.40	-6.74	36.66	46.00	-9.34	peak
5	625.0780	45.57	-2.89	42.68	46.00	-3.32	peak
6	875.2470	36.02	0.51	36.53	46.00	-9.47	peak

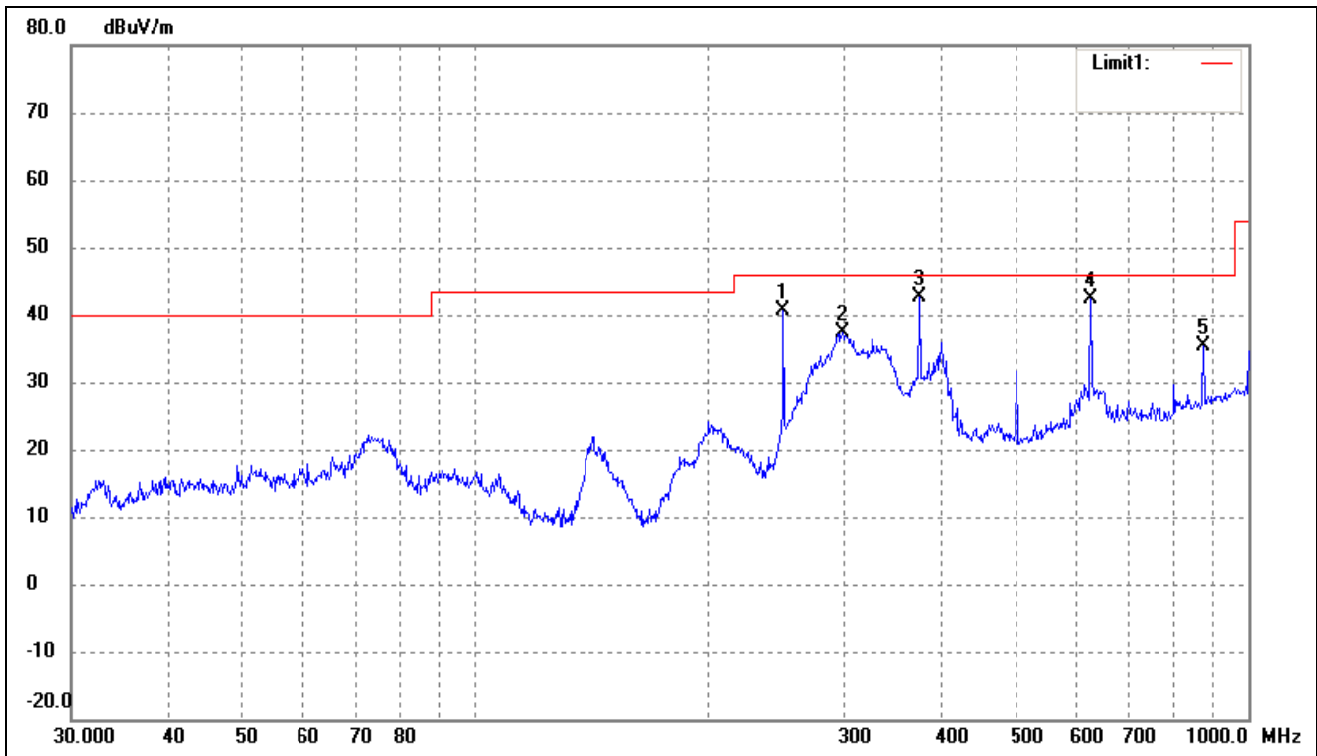
Test Specification: Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	62.6507	44.11	-13.69	30.42	40.00	-9.58	peak
2	142.3244	45.47	-17.37	28.10	43.50	-15.40	peak
3	199.9856	42.84	-13.20	29.64	43.50	-13.86	peak
4	250.3012	46.10	-9.79	36.31	46.00	-9.69	peak
5	375.9385	49.85	-7.11	42.74	46.00	-3.26	peak
6	625.0780	46.42	-2.89	43.53	46.00	-2.47	peak

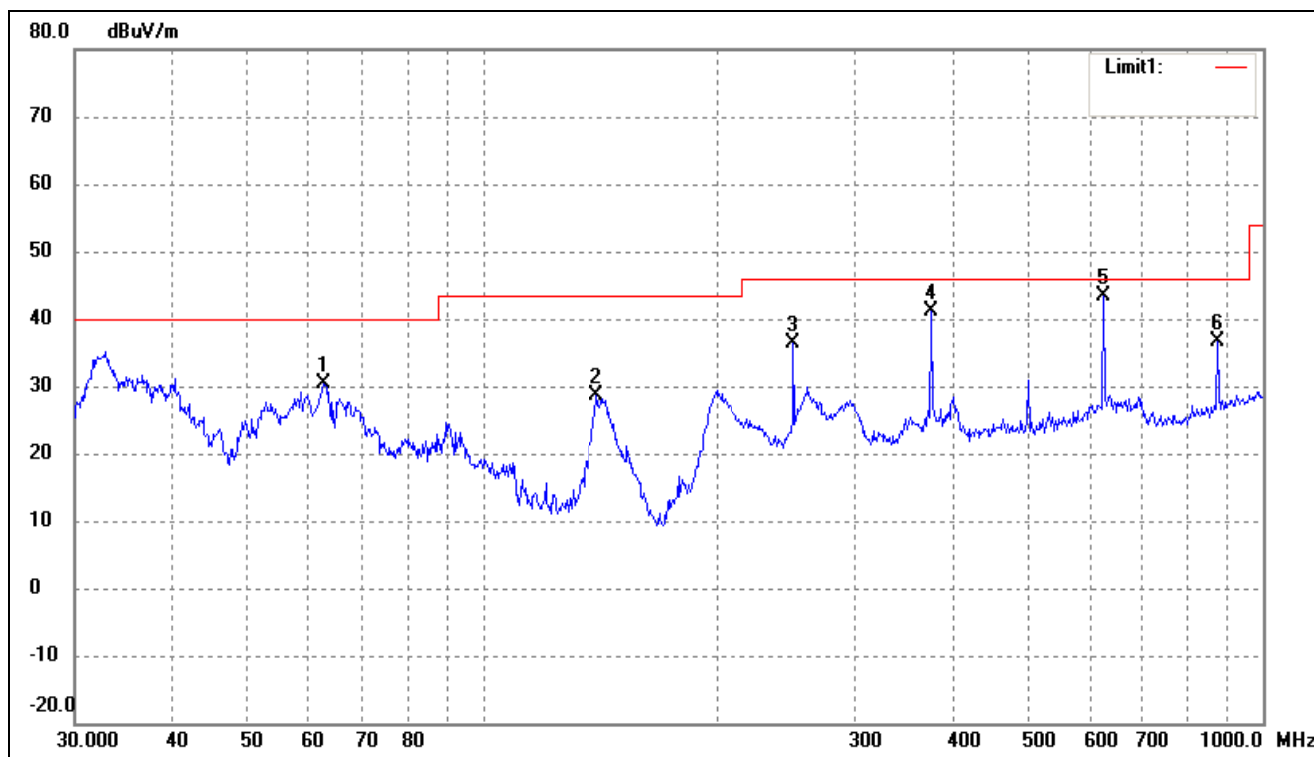
Test mode: Transmitting High Channel 5825MHz

Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	250.3012	50.33	-9.79	40.54	46.00	-5.46	peak
2	298.2681	45.51	-8.16	37.35	46.00	-8.65	peak
3	375.9385	49.80	-7.11	42.69	46.00	-3.31	peak
4	625.0780	45.24	-2.89	42.35	46.00	-3.65	peak
5	875.2470	34.82	0.51	35.33	46.00	-10.67	peak

Test Specification: Vertical



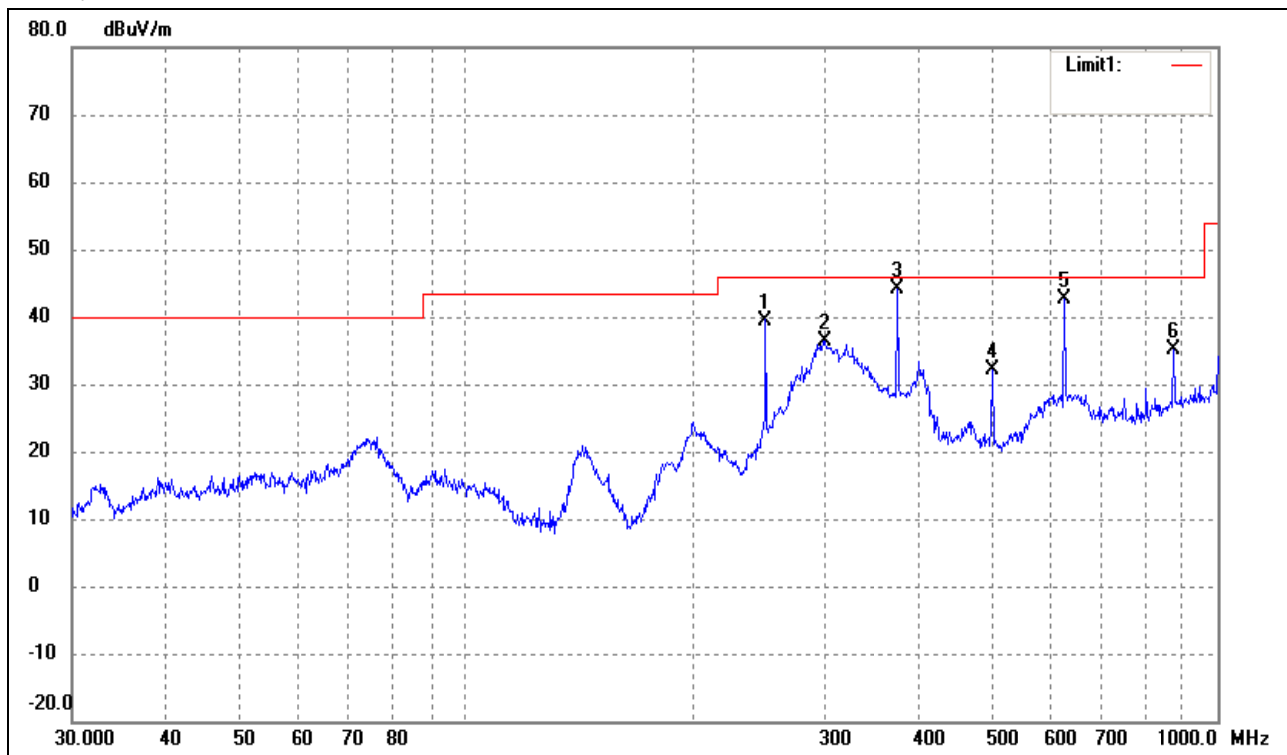
No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	62.6507	44.13	-13.69	30.44	40.00	-9.56	peak
2	139.8508	45.93	-17.24	28.69	43.50	-14.81	peak
3	250.3012	46.26	-9.79	36.47	46.00	-9.53	peak
4	375.9385	48.27	-7.11	41.16	46.00	-4.84	peak
5	625.0780	46.33	-2.89	43.44	46.00	-2.56	peak
6	875.2470	36.00	0.51	36.51	46.00	-9.49	peak

For 802.11n-HT40

5150-5250MHz band

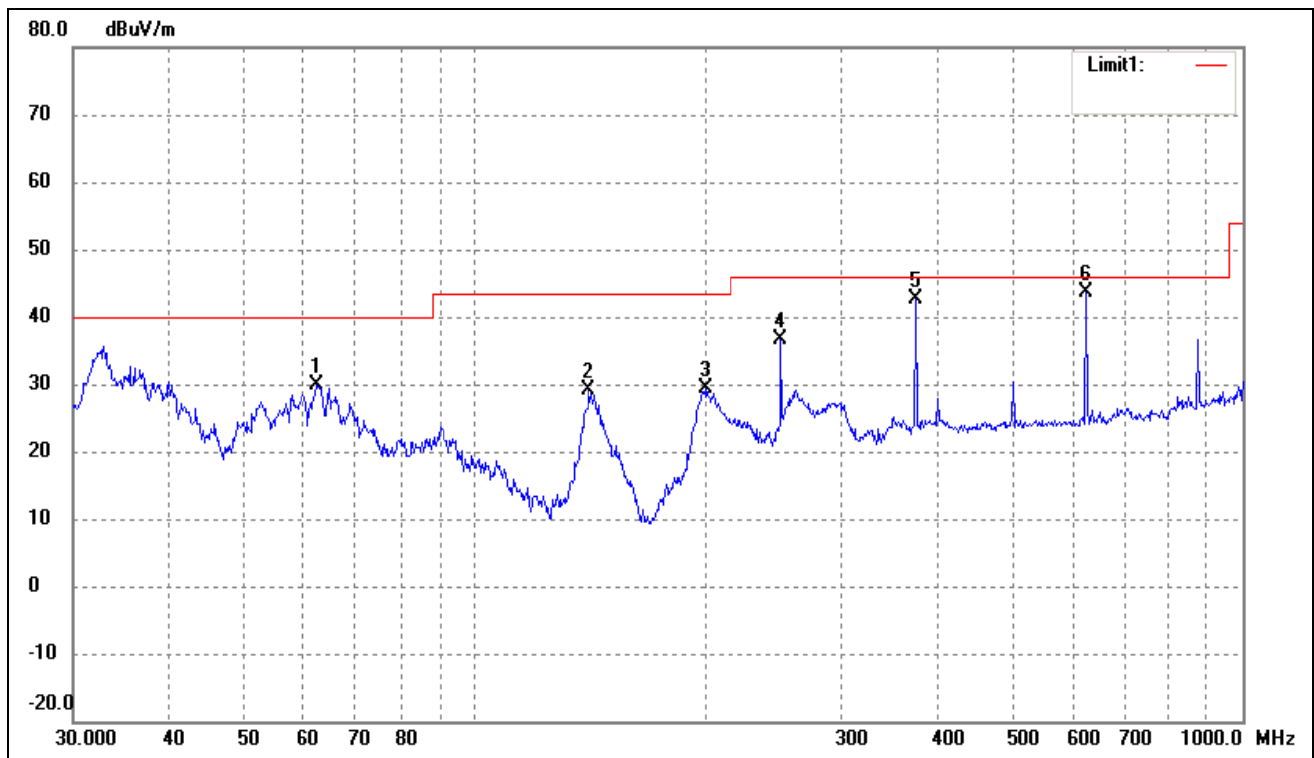
Test mode: Transmitting Low Channel 5190MHz

Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	250.3012	49.29	-9.79	39.50	46.00	-6.50	peak
2	300.3673	44.46	-8.15	36.31	46.00	-9.69	peak
3	375.9385	51.32	-7.11	44.21	46.00	-1.79	peak
4	501.1790	37.61	-5.42	32.19	46.00	-13.81	peak
5	625.0780	45.44	-2.89	42.55	46.00	-3.45	peak
6	875.2470	34.54	0.51	35.05	46.00	-10.95	peak

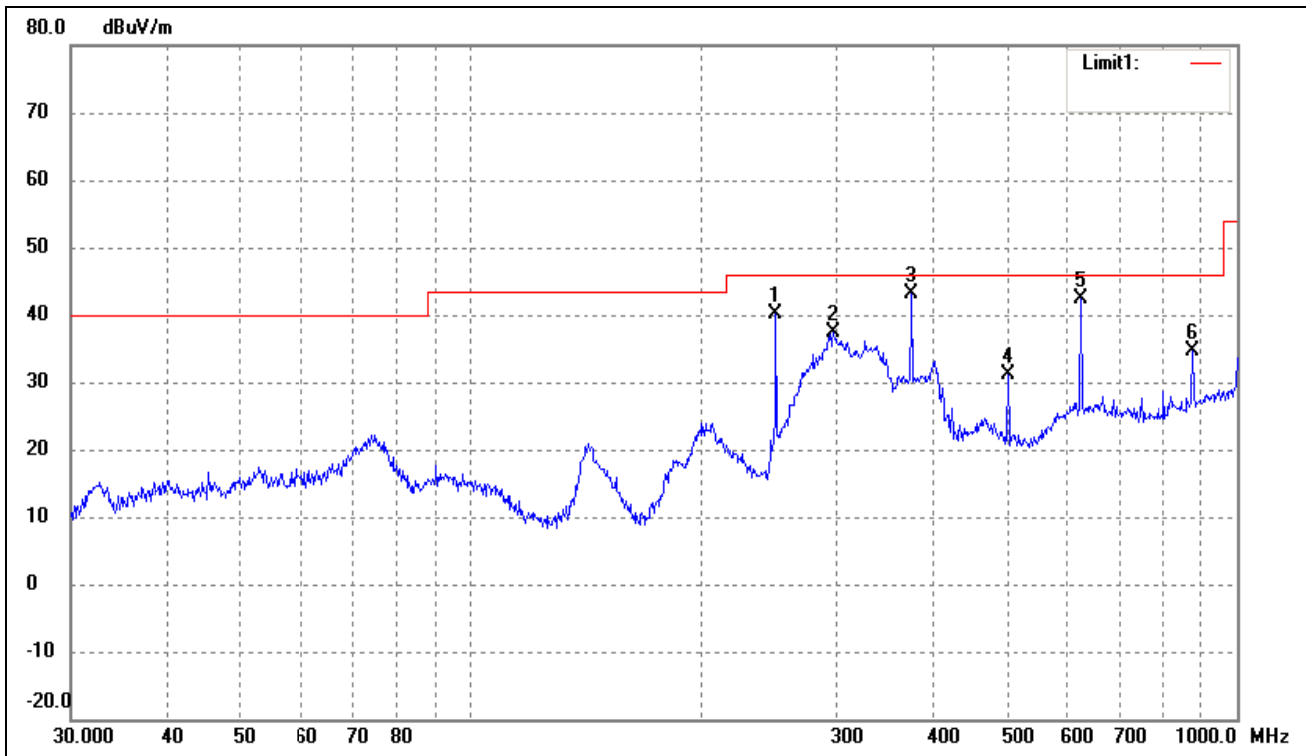
Test Specification: Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	62.2128	43.52	-13.63	29.89	40.00	-10.11	peak
2	140.8351	46.35	-17.29	29.06	43.50	-14.44	peak
3	199.9856	42.62	-13.20	29.42	43.50	-14.08	peak
4	250.3012	46.43	-9.79	36.64	46.00	-9.36	peak
5	375.9385	49.68	-7.11	42.57	46.00	-3.43	peak
6	625.0780	46.52	-2.89	43.63	46.00	-2.37	peak

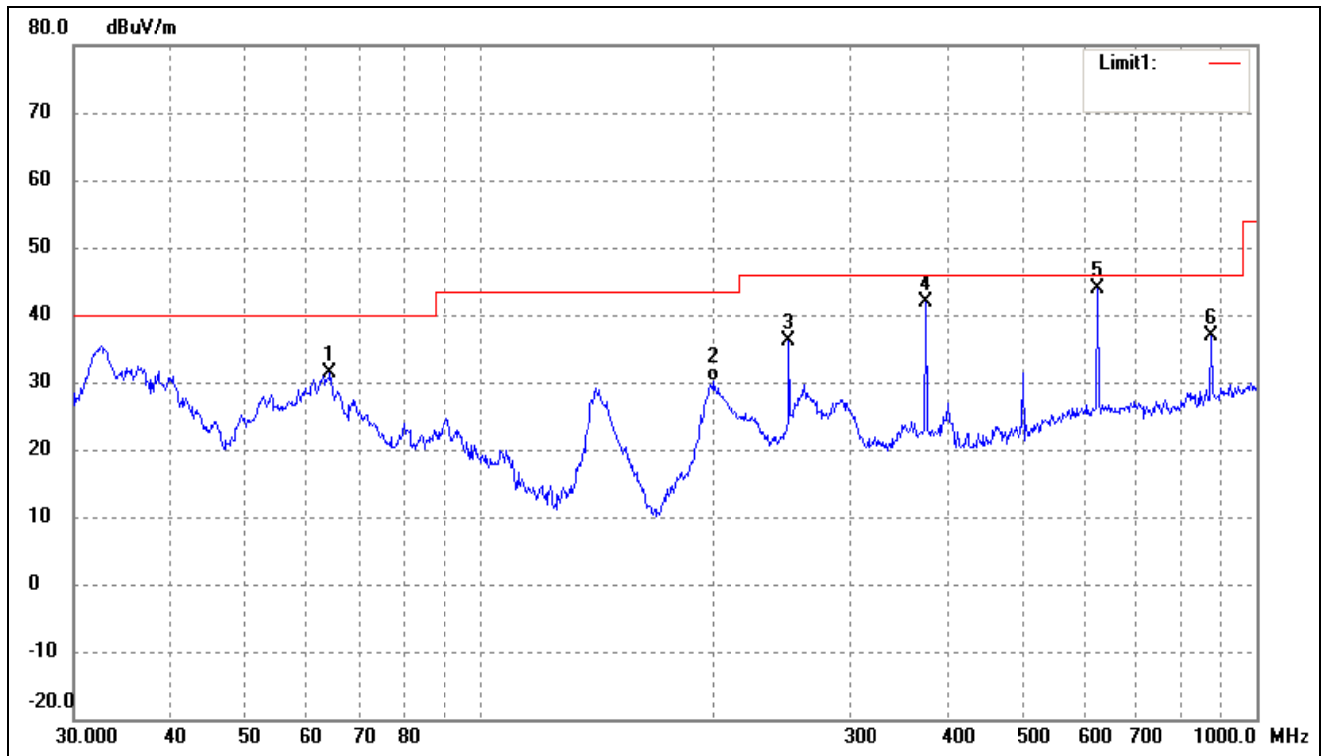
Test mode: Transmitting High Channel 5230MHz

Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	250.3012	50.04	-9.79	40.25	46.00	-5.75	peak
2	297.2241	45.49	-8.16	37.33	46.00	-8.67	peak
3	375.9385	50.32	-7.11	43.21	46.00	-2.79	peak
4	501.1790	36.46	-5.42	31.04	46.00	-14.96	peak
5	625.0780	45.19	-2.89	42.30	46.00	-3.70	peak
6	875.2470	34.20	0.51	34.71	46.00	-11.29	peak

Test Specification: Vertical

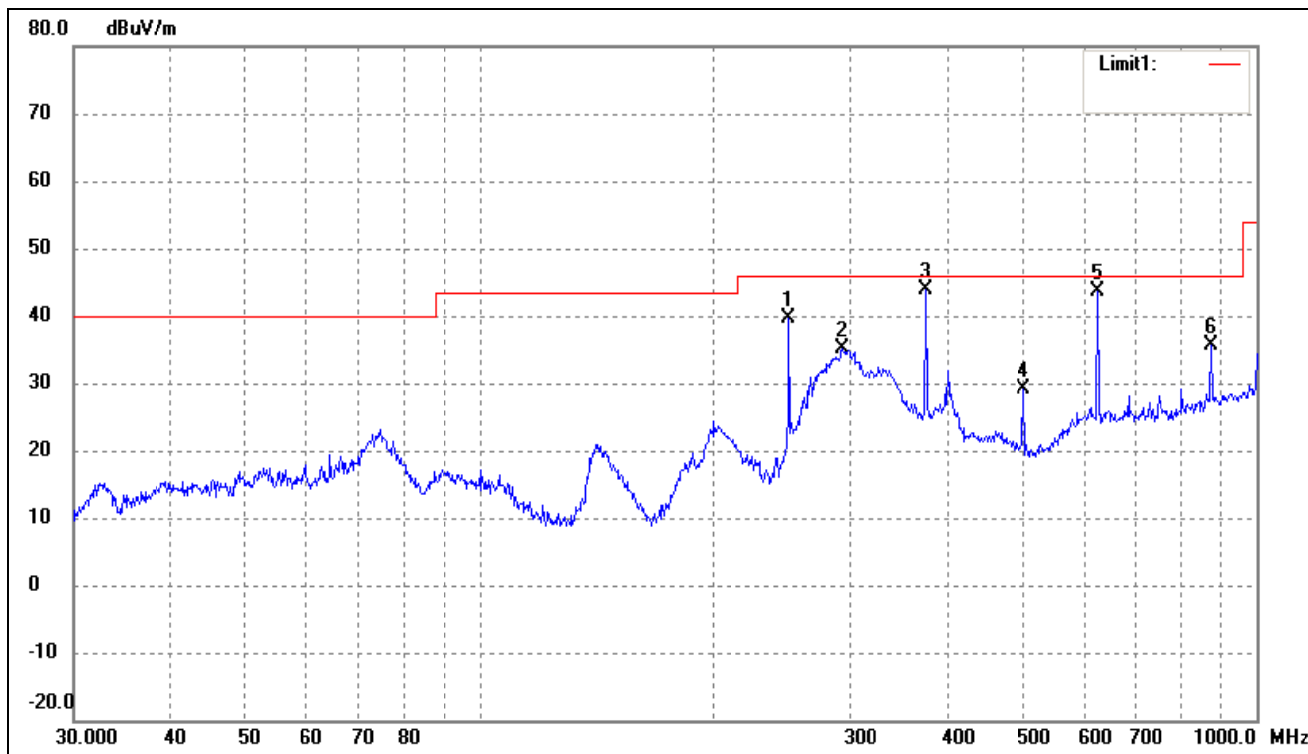


No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	64.2075	45.23	-13.90	31.33	40.00	-8.67	peak
2	199.9856	43.28	-13.20	30.08	43.50	-13.42	QP
3	250.3012	46.02	-9.79	36.23	46.00	-9.77	peak
4	375.9385	49.02	-7.11	41.91	46.00	-4.09	peak
5	625.0780	46.65	-2.89	43.76	46.00	-2.24	peak
6	875.2470	36.47	0.51	36.98	46.00	-9.02	peak

5725-5850MHz band

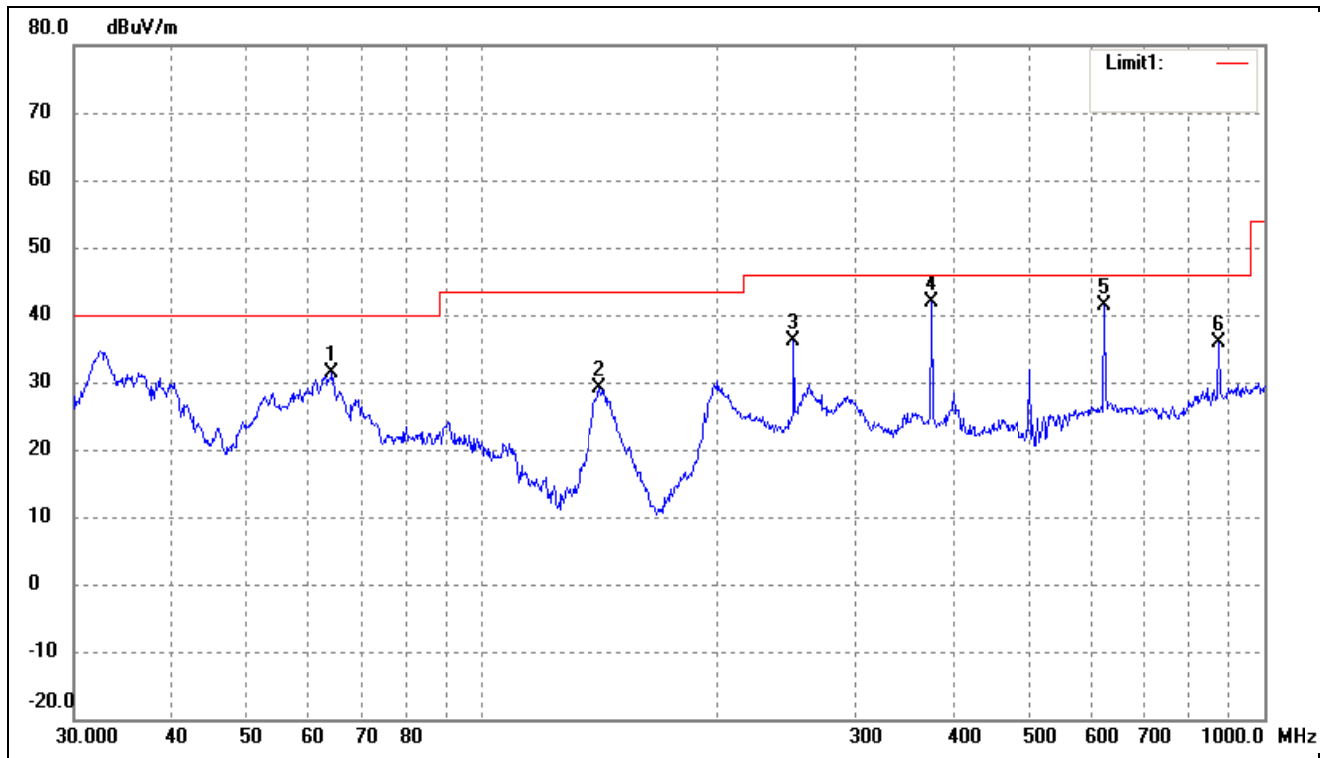
Test mode: Transmitting Low Channel 5755MHz

Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	250.3012	49.50	-9.79	39.71	46.00	-6.29	peak
2	293.0842	43.46	-8.30	35.16	46.00	-10.84	peak
3	375.9385	50.92	-7.11	43.81	46.00	-2.19	peak
4	501.1790	34.43	-5.42	29.01	46.00	-16.99	peak
5	625.0780	46.40	-2.89	43.51	46.00	-2.49	peak
6	875.2470	35.15	0.51	35.66	46.00	-10.34	peak

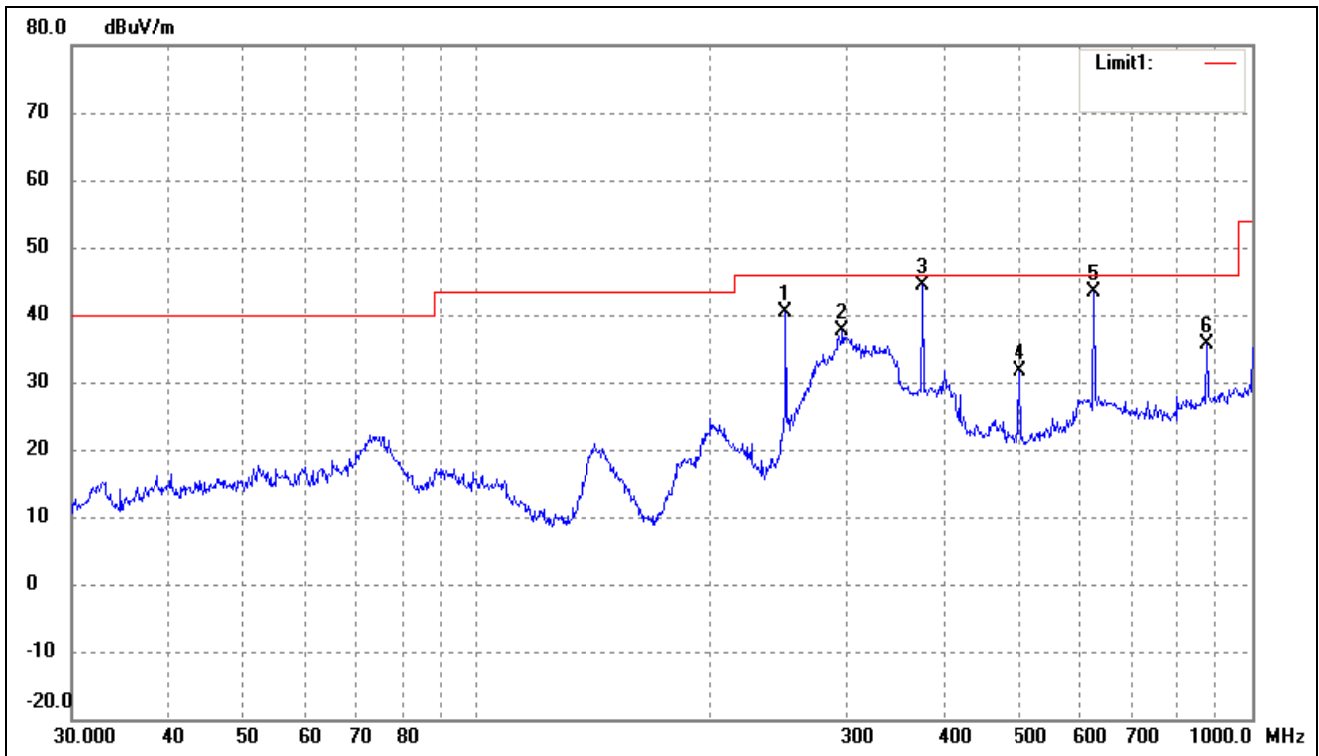
Test Specification: Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	64.2075	45.23	-13.90	31.33	40.00	-8.67	peak
2	141.3298	46.40	-17.31	29.09	43.50	-14.41	peak
3	250.3012	46.02	-9.79	36.23	46.00	-9.77	peak
4	375.9385	49.02	-7.11	41.91	46.00	-4.09	peak
5	625.0780	44.15	-2.89	41.26	46.00	-4.74	peak
6	875.2470	35.47	0.51	35.98	46.00	-10.02	peak

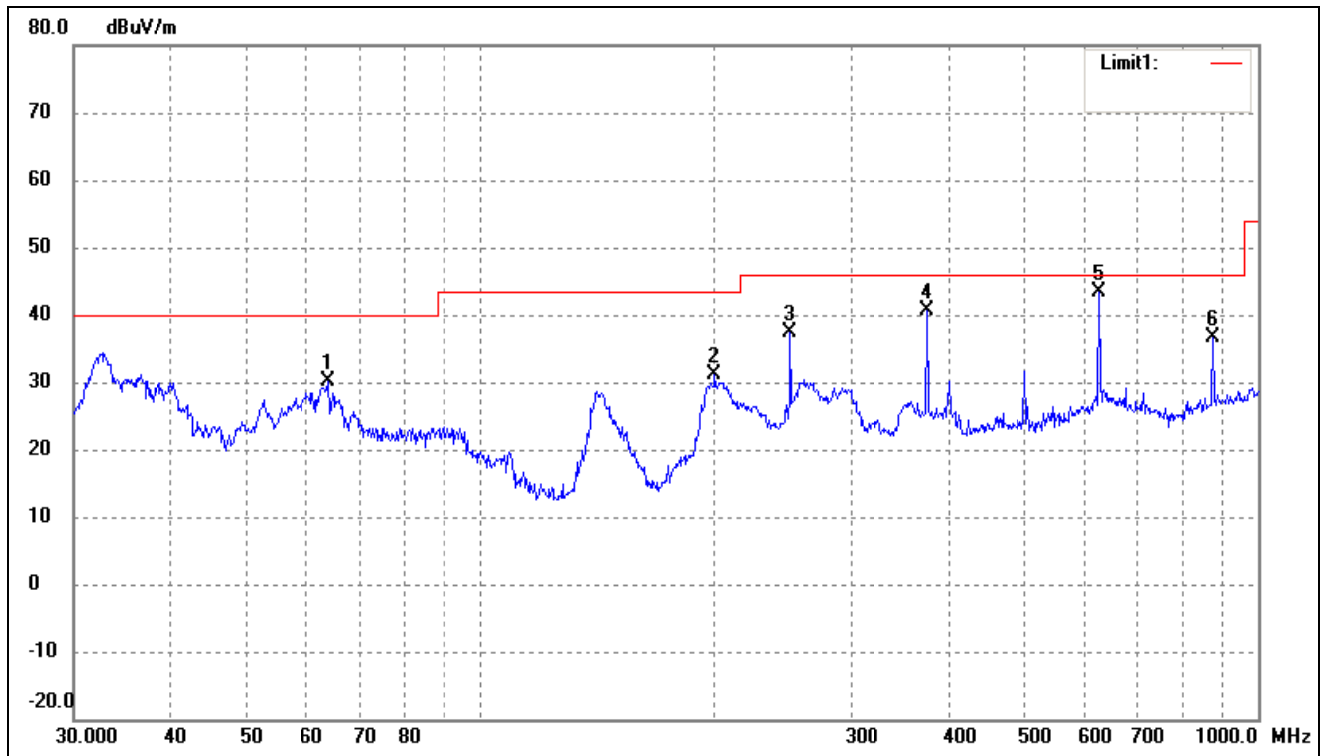
Test mode: Transmitting High Channel 5795MHz

Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	250.3012	50.28	-9.79	40.49	46.00	-5.51	peak
2	296.1836	45.87	-8.17	37.70	46.00	-8.30	peak
3	375.9385	51.47	-7.11	44.36	46.00	-1.64	peak
4	501.1790	36.97	-5.42	31.55	46.00	-14.45	peak
5	625.0780	46.16	-2.89	43.27	46.00	-2.73	peak
6	875.2470	35.18	0.51	35.69	46.00	-10.31	peak

Test Specification: Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	63.7588	43.87	-13.84	30.03	40.00	-9.97	peak
2	199.9856	44.25	-13.20	31.05	43.50	-12.45	peak
3	250.3012	47.07	-9.79	37.28	46.00	-8.72	peak
4	375.9385	47.72	-7.11	40.61	46.00	-5.39	peak
5	625.0780	46.22	-2.89	43.33	46.00	-2.67	peak
6	875.2470	36.07	0.51	36.58	46.00	-9.42	peak

Antenna 0

For the frequency band 5.125-5.250GHz (802.11a)

Harmonics And Spurious Emissions

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
(MHz)	(dBuV/m)	dB	(dBuV/m)	(dBuV/m)	(dB)	H/V	
Low Channel (5180MHz)							
10360	58.50	9.80	68.30	74	-5.70	H	PK
10360	41.17	9.80	50.97	54	-3.03	H	AV
10360	52.86	9.80	62.66	74	-11.34	H	PK
10360	38.66	9.80	48.46	54	-5.54	H	AV
Middle Channel (5200MHz)							
10400	58.37	9.80	68.17	74	-5.83	H	PK
10400	42.45	9.80	52.25	54	-1.75	H	AV
10400	53.14	9.80	62.94	74	-11.06	H	PK
10400	39.11	9.80	48.91	54	-5.09	H	AV
High Channel (5240MHz)							
10480	58.49	9.80	68.29	74	-5.71	H	PK
10480	42.08	9.80	51.88	54	-2.12	H	AV
10480	54.78	9.80	64.58	74	-9.42	H	PK
10480	39.66	9.80	49.46	54	-4.54	H	AV

For the frequency band 5.725-5.850GHz (802.11a)

Harmonics And Spurious Emissions

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
(MHz)	(dBuV/m)	dB	(dBuV/m)	(dBuV/m)	(dB)	H/V	
Low Channel (5745MHz)							
11490	61.96	9.80	71.76	74	-2.24	H	PK
11490	41.43	9.80	51.23	54	-2.77	H	AV
11490	54.74	9.80	64.54	74	-9.46	H	PK
11490	40.58	9.80	50.38	54	-3.62	H	AV
Middle Channel (5785MHz)							
11570	61.02	9.80	70.82	74	-3.18	H	PK
11570	43.18	9.80	52.98	54	-1.02	H	AV
11570	54.80	9.80	64.6	74	-9.4	H	PK
11570	39.75	9.80	49.55	54	-4.45	H	AV
High Channel (5825MHz)							
11650	58.91	9.80	68.71	74	-5.29	H	PK
11650	42.22	9.80	52.02	54	-1.98	H	AV
11650	53.82	9.80	63.62	74	-10.38	H	PK
11650	39.52	9.80	49.32	54	-4.68	H	AV

Antenna 1

For the frequency band 5.125-5.250GHz (802.11a)

Harmonics And Spurious Emissions

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
(MHz)	(dBuV/m)	dB	(dBuV/m)	(dBuV/m)	(dB)	H/V	
Low Channel (5180MHz)							
10360	59.41	9.80	69.21	74	-4.79	H	PK
10360	43.81	9.80	53.61	54	-0.39	H	AV
10360	55.69	9.80	65.49	74	-8.51	H	PK
10360	38.50	9.80	48.3	54	-5.7	H	AV
Middle Channel (5200MHz)							
10400	58.32	9.80	68.12	74	-5.88	H	PK
10400	41.57	9.80	51.37	54	-2.63	H	AV
10400	53.57	9.80	63.37	74	-10.63	H	PK
10400	40.71	9.80	50.51	54	-3.49	H	AV
High Channel (5240MHz)							
10480	59.62	9.80	69.42	74	-4.58	H	PK
10480	41.77	9.80	51.57	54	-2.43	H	AV
10480	53.08	9.80	62.88	74	-11.12	H	PK
10480	40.02	9.80	49.82	54	-4.18	H	AV

For the frequency band 5.725-5.850GHz (802.11a)

Harmonics And Spurious Emissions

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
(MHz)	(dBuV/m)	dB	(dBuV/m)	(dBuV/m)	(dB)	H/V	
Low Channel (5745MHz)							
11490	60.76	9.80	70.56	74	-3.44	H	PK
11490	42.24	9.80	52.04	54	-1.96	H	AV
11490	52.58	9.80	62.38	74	-11.62	H	PK
11490	39.02	9.80	48.82	54	-5.18	H	AV
Middle Channel (5785MHz)							
11570	61.11	9.80	70.91	74	-3.09	H	PK
11570	43.37	9.80	53.17	54	-0.83	H	AV
11570	53.94	9.80	63.74	74	-10.26	H	PK
11570	38.99	9.80	48.79	54	-5.21	H	AV
High Channel (5825MHz)							
11650	58.36	9.80	68.16	74	-5.84	H	PK
11650	41.46	9.80	51.26	54	-2.74	H	AV
11650	55.46	9.80	65.26	74	-8.74	H	PK
11650	38.16	9.80	47.96	54	-6.04	H	AV

Antenna 0+1

For the frequency band 5.125-5.250GHz (802.11n20)

Harmonics And Spurious Emissions

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
(MHz)	(dBuV/m)	dB	(dBuV/m)	(dBuV/m)	(dB)	H/V	
Low Channel (5180MHz)							
10360	59.80	9.80	69.6	74	-4.4	H	PK
10360	42.21	9.80	52.01	54	-1.99	H	AV
10360	54.69	9.80	64.49	74	-9.51	H	PK
10360	40.97	9.80	50.77	54	-3.23	H	AV
Middle Channel (5200MHz)							
10400	60.83	9.80	70.63	74	-3.37	H	PK
10400	42.50	9.80	52.3	54	-1.7	H	AV
10400	53.42	9.80	63.22	74	-10.78	H	PK
10400	40.91	9.80	50.71	54	-3.29	H	AV
High Channel (5240MHz)							
10480	60.33	9.80	70.13	74	-3.87	H	PK
10480	41.08	9.80	50.88	54	-3.12	H	AV
10480	55.27	9.80	65.07	74	-8.93	H	PK
10480	40.51	9.80	50.31	54	-3.69	H	AV

For the frequency band 5.725-5.850GHz (802.11n20)

Harmonics And Spurious Emissions

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
(MHz)	(dBuV/m)	dB	(dBuV/m)	(dBuV/m)	(dB)	H/V	
Low Channel (5745MHz)							
11490	61.81	9.80	71.61	74	-2.39	H	PK
11490	42.44	9.80	52.24	54	-1.76	H	AV
11490	52.63	9.80	62.43	74	-11.57	H	PK
11490	40.74	9.80	50.54	54	-3.46	H	AV
Middle Channel (5785MHz)							
11570	58.47	9.80	68.27	74	-5.73	H	PK
11570	42.36	9.80	52.16	54	-1.84	H	AV
11570	53.41	9.80	63.21	74	-10.79	H	PK
11570	38.81	9.80	48.61	54	-5.39	H	AV
High Channel (5825MHz)							
11650	61.42	9.80	71.22	74	-2.78	H	PK
11650	41.12	9.80	50.92	54	-3.08	H	AV
11650	54.78	9.80	64.58	74	-9.42	H	PK
11650	38.45	9.80	48.25	54	-5.75	H	AV

Antenna 0+1

For the frequency band 5.125-5.250GHz (802.11n40)

Harmonics And Spurious Emissions

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
(MHz)	(dBuV/m)	dB	(dBuV/m)	(dBuV/m)	(dB)	H/V	
Low Channel (5190MHz)							
10380	61.29	9.80	71.09	74	-2.91	H	PK
10380	41.45	9.80	51.25	54	-2.75	H	AV
10380	55.95	9.80	65.75	74	-8.25	H	PK
10380	40.80	9.80	50.6	54	-3.4	H	AV
Middle Channel (5230MHz)							
10460	59.96	9.80	69.76	74	-4.24	H	PK
10460	43.79	9.80	53.59	54	-0.41	H	AV
10460	52.55	9.80	62.35	74	-11.65	H	PK
10460	38.02	9.80	47.82	54	-6.18	H	AV

For the frequency band 5.725-5.850GHz (802.11n40)

Harmonics And Spurious Emissions

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
(MHz)	(dBuV/m)	dB	(dBuV/m)	(dBuV/m)	(dB)	H/V	
Low Channel (5755MHz)							
11510	59.30	9.80	69.1	74	-4.9	H	PK
11510	43.59	9.80	53.39	54	-0.61	H	AV
11510	54.37	9.80	64.17	74	-9.83	H	PK
11510	38.96	9.80	48.76	54	-5.24	H	AV
Middle Channel (5795MHz)							
11590	60.77	9.80	70.57	74	-3.43	H	PK
11590	42.84	9.80	52.64	54	-1.36	H	AV
11590	53.82	9.80	63.62	74	-10.38	H	PK
11590	38.06	9.80	47.86	54	-6.14	H	AV

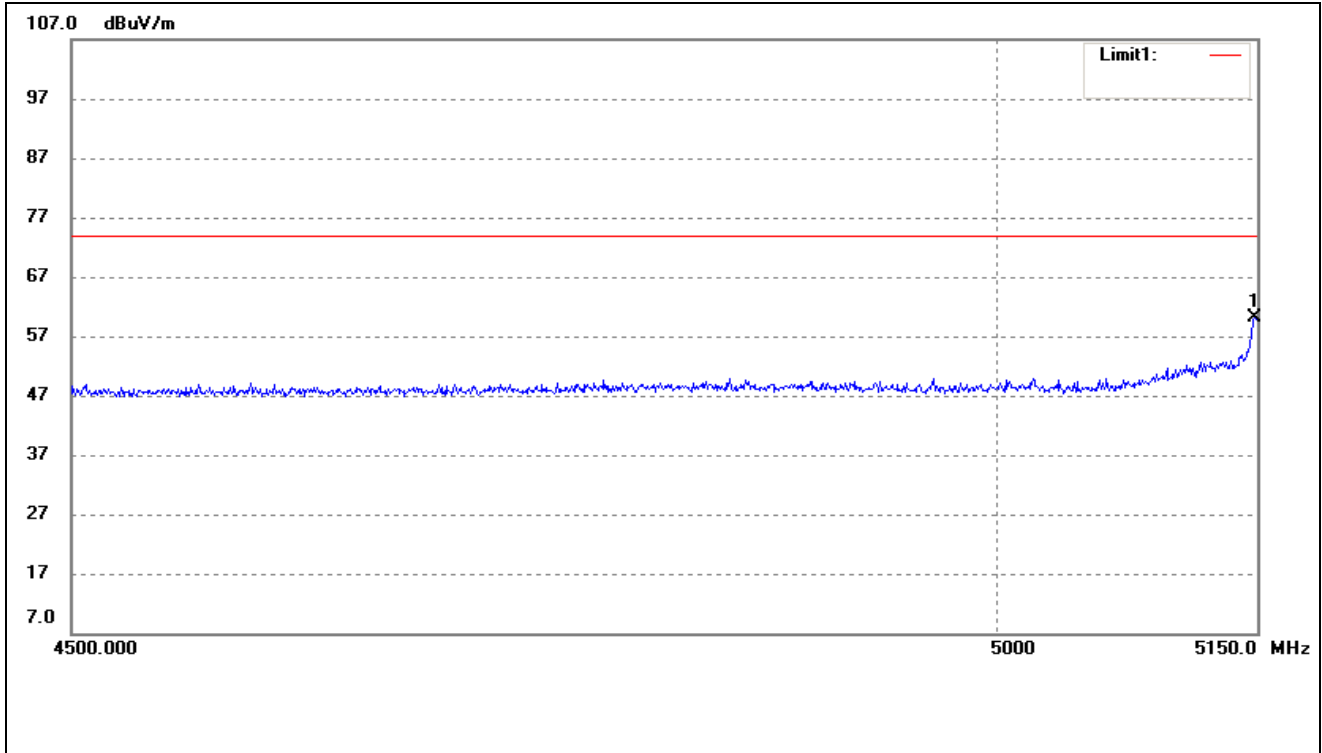
ANT 0

For 802.11a

Spurious Emission above 1GHz

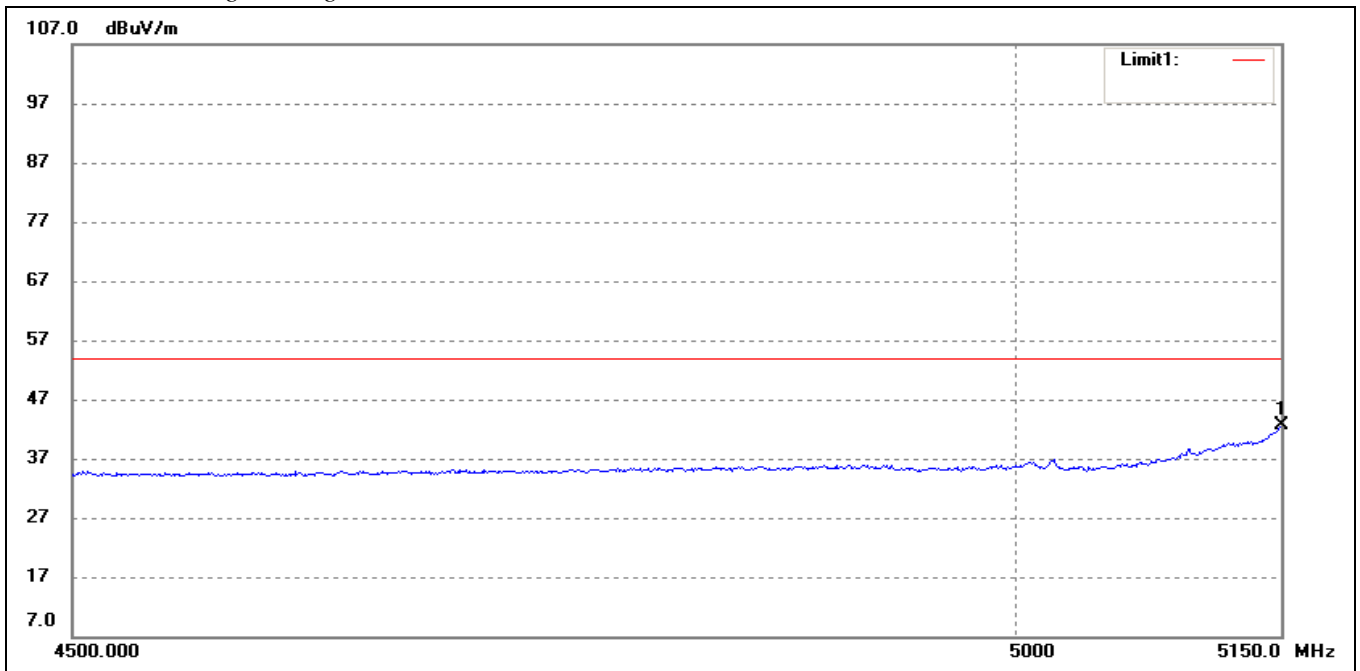
For the frequency band 5.15-5.25GHz

Restricted Bandedge Peak



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5148.610	63.14	-2.99	60.15	74.00	-13.85	peak

Restricted Bandedge Average



No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5150.000	45.67	-2.99	42.68	54.00	-11.32	peak

Note: this EUT was tested in the low, high channel and the worst case position data was reported.

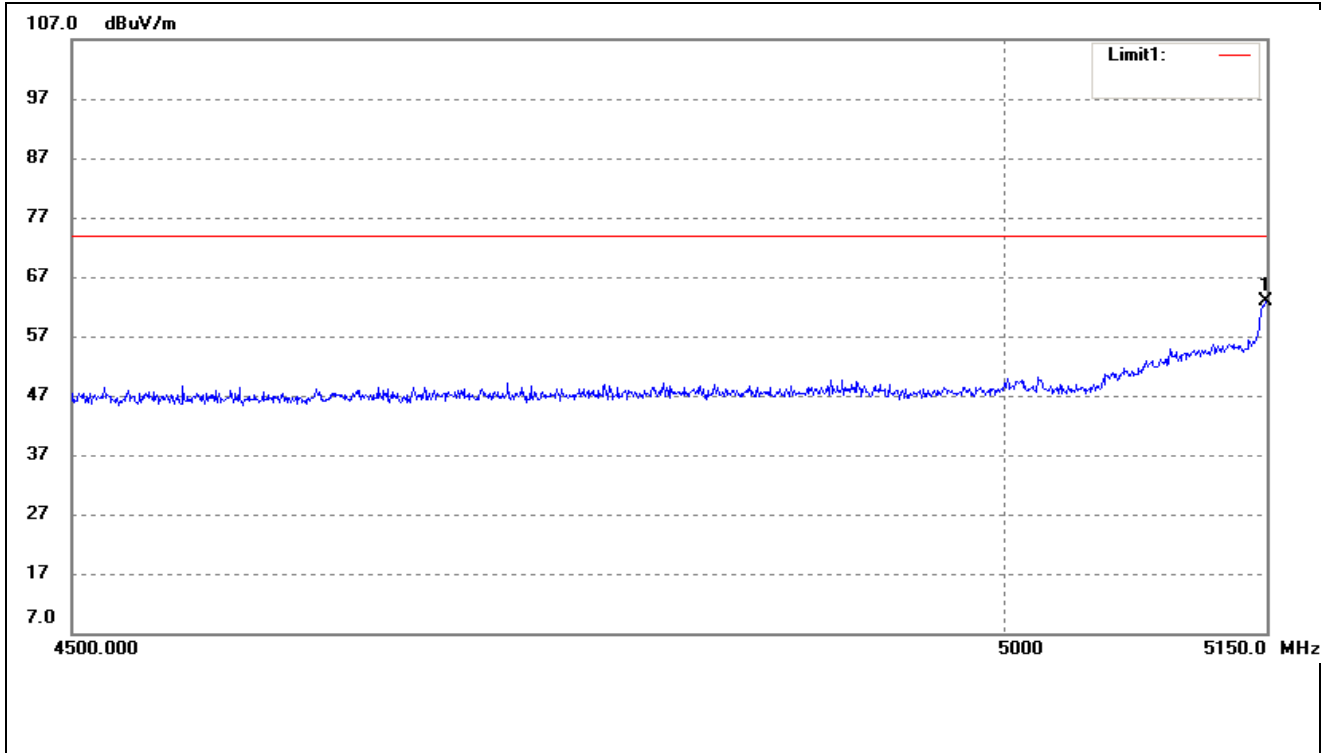
ANT 1

For 802.11a

Spurious Emission above 1GHz

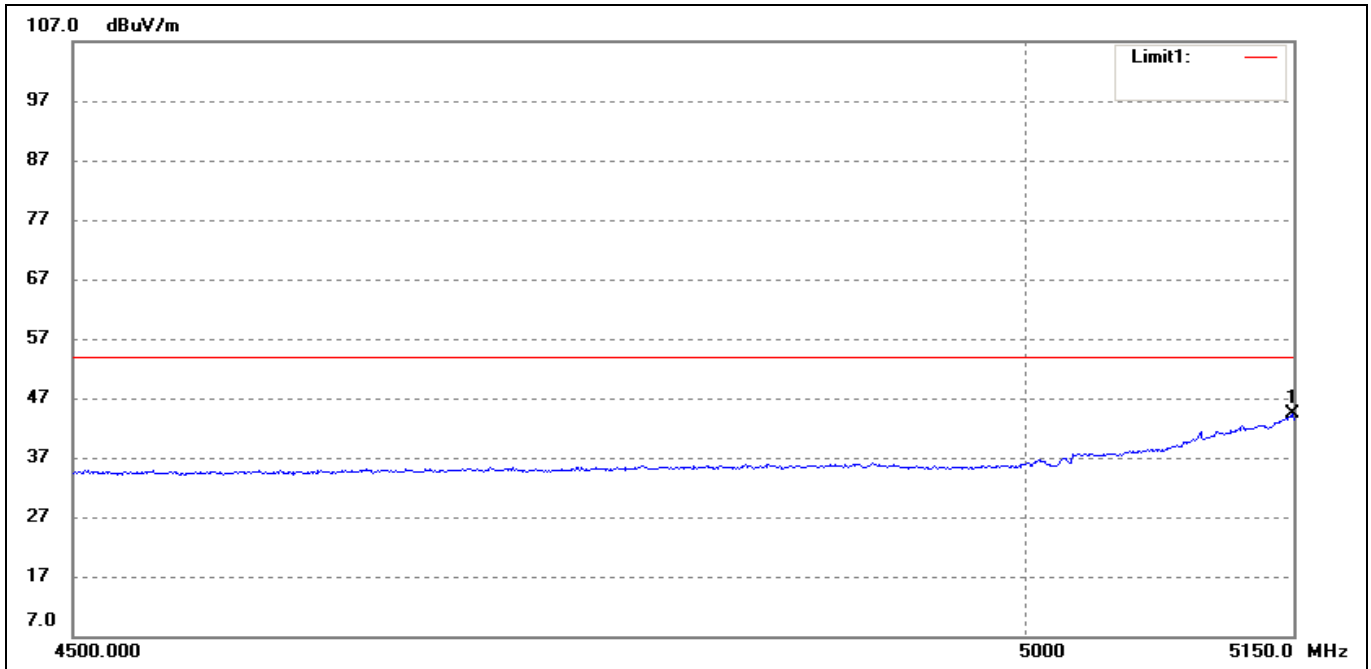
For the frequency band 5.15-5.25GHz

Restricted Bandedge Peak



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5149.305	65.92	-2.99	62.93	74.00	-11.07	peak

Restricted Bandedge Average



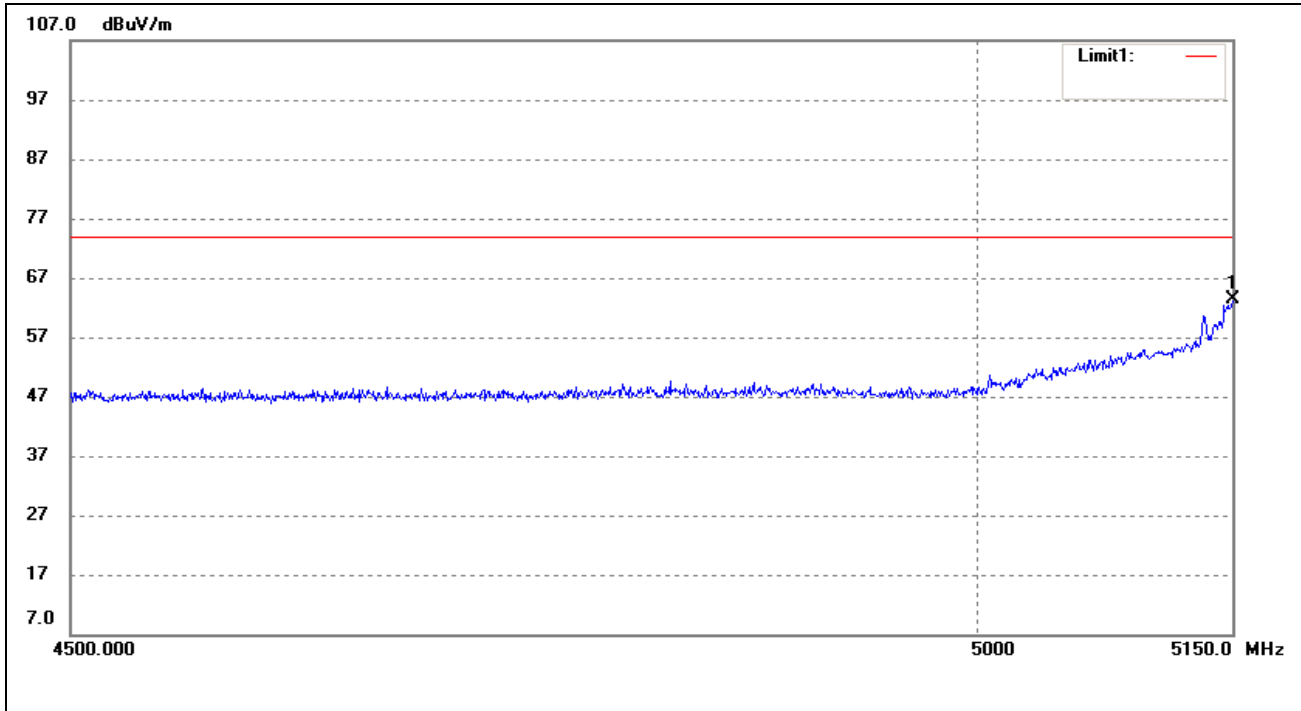
No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5149.305	47.26	-2.99	44.27	54.00	-9.73	peak

Note: this EUT was tested in the low, high channel and the worst case position data was reported.

802.11n HT20

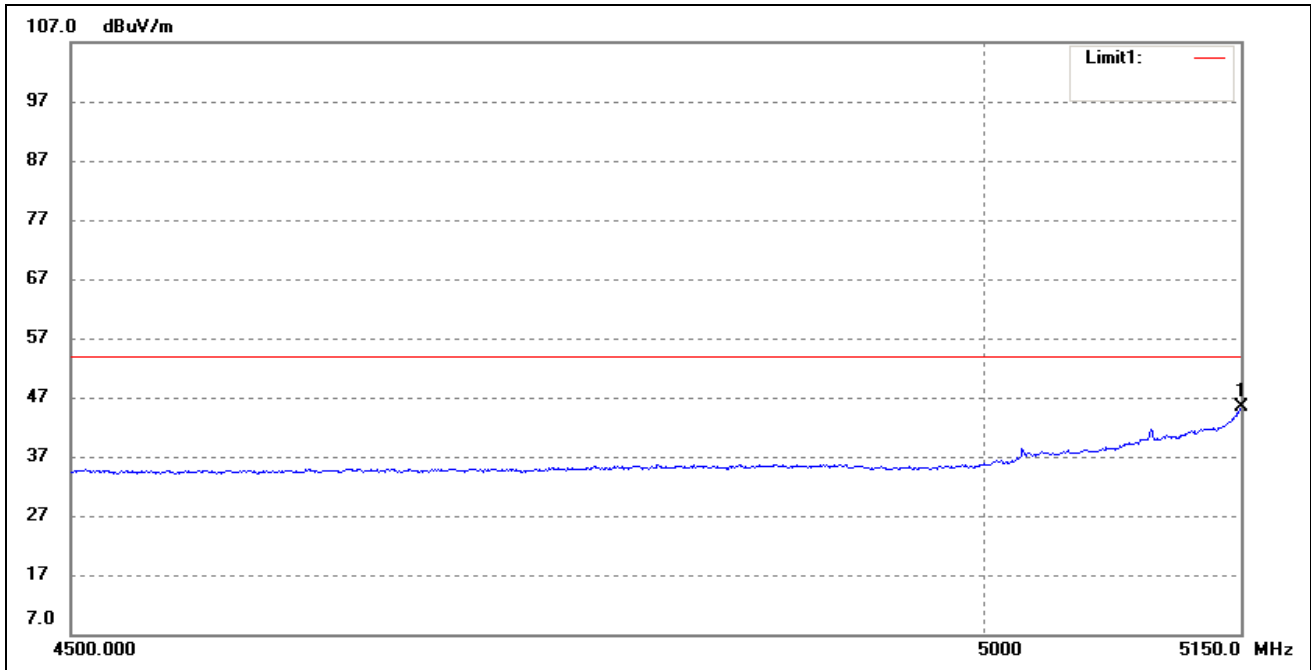
For the frequency band 5.15-5.25GHz

Restricted Bandedge Peak



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5150.000	66.34	-2.99	63.35	74.00	-10.65	peak

Restricted Bandedge Average



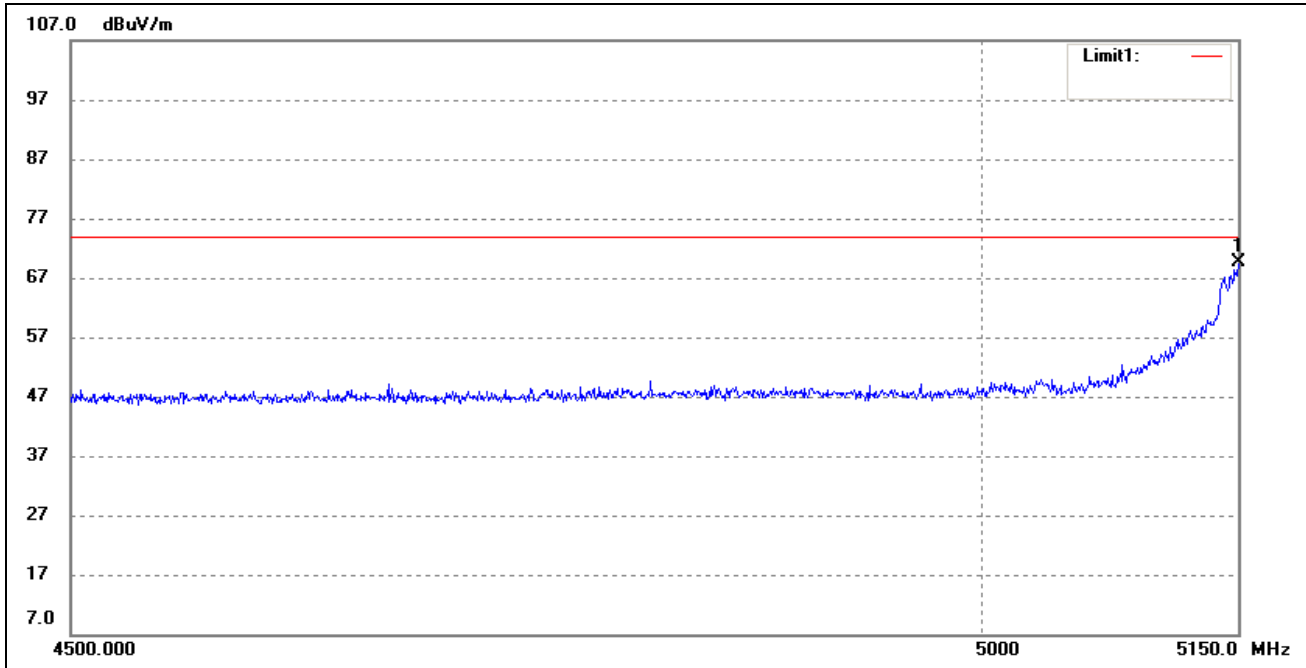
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5150.000	48.34	-2.99	45.35	54.00	-8.65	peak

Note: this EUT was tested in the low, high channel and the worst case position data was reported.

802.11n HT40

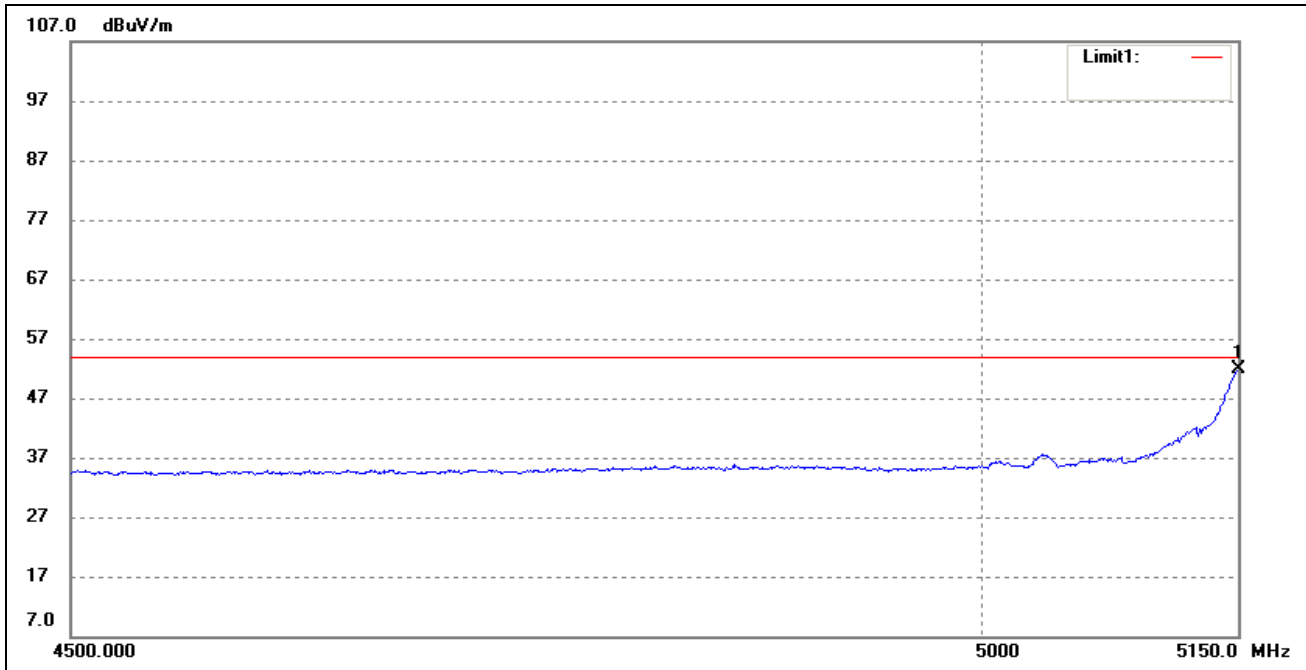
For the frequency band 5.15-5.25GHz

Restricted Bandedge Peak



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5150.000	72.63	-2.99	69.64	74.00	-4.36	peak

Restricted Bandedge Average



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5150.000	54.97	-2.99	51.98	54.00	-2.02	peak

Note: this EUT was tested in the low, high channel and the worst case position data was reported.

9. Conducted Emissions

9.1 Measurement Uncertainty

Base on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement is ± 2.88 dB.

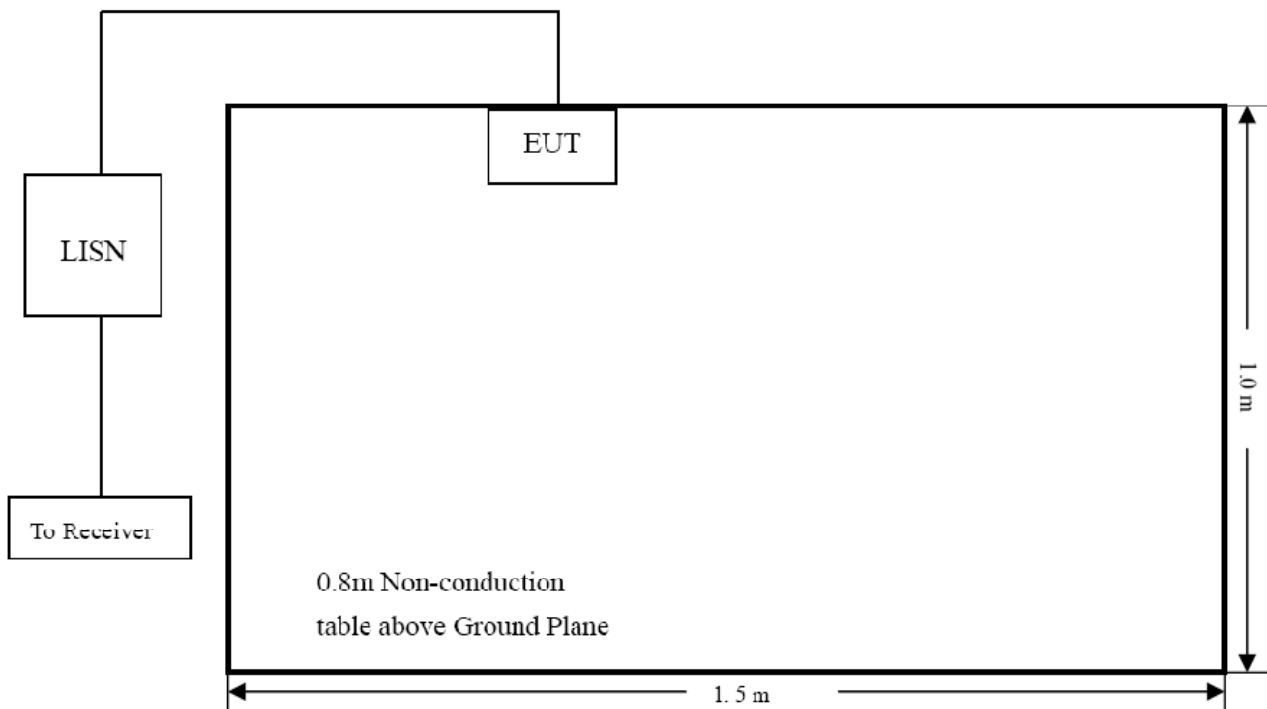
9.2 Test Procedure

The setup of EUT is according with per ANSI C63.4-2014 measurement procedure. The specification used was with the FCC Part 15.207 Limit.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.

9.3 Basic Test Setup Block Diagram



9.4 Environmental Conditions

Temperature:	25 °C
Relative Humidity:	52%
ATM Pressure:	1012 mbar

9.5 Test Receiver Setup

During the conducted emission test, the test receiver was set with the following configurations:

Start Frequency 150 kHz
Stop Frequency 30 MHz
Sweep Speed Auto
IF Bandwidth..... 10 kHz
Quasi-Peak Adapter Bandwidth 9 kHz
Quasi-Peak Adapter Mode Normal

9.6 Summary of Test Results/Plots

According to the data in section 5.7, the EUT complied with the FCC Part 15.207 Conducted margin for this device, with the *worst* margin reading of:

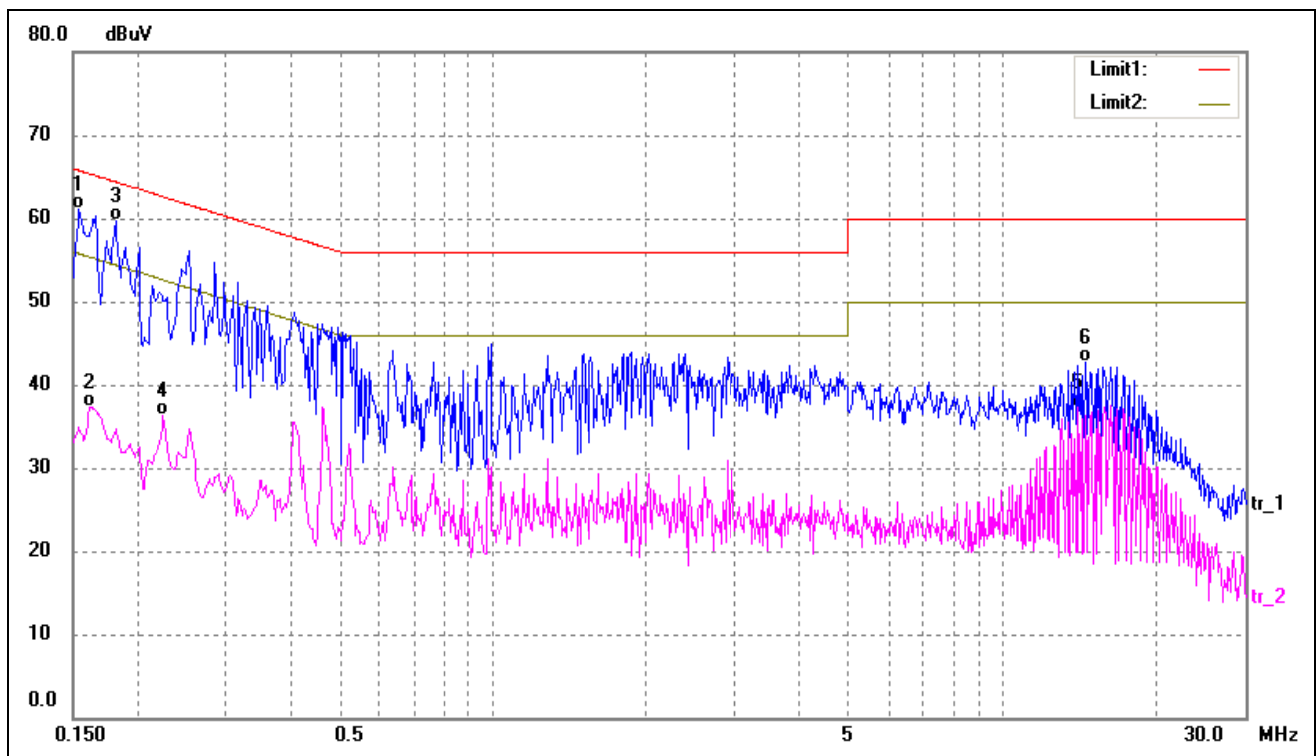
-1.7 dB at 4.3100 MHz in the **Line, Average** detector, 0.15-30MHz

9.7 Conducted Emissions Test Data

Plot of Conducted Emissions Test Data

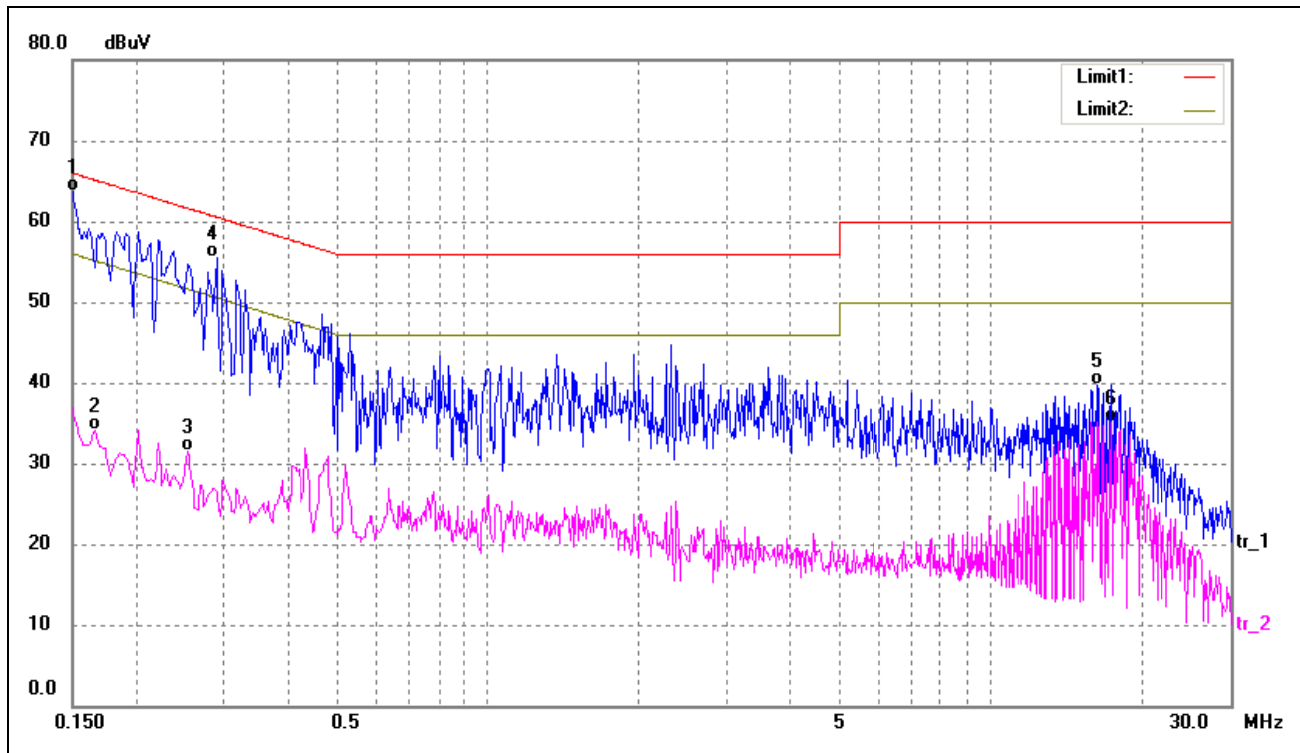
EUT: AXON AIR
 Tested Model: A-AP60-000
 Operating Condition: Transmitting
 Comment: DC 48V from of POE+

Test Specification: Neutral



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1*	0.1539	51.09	10.10	61.19	65.78	-4.59	QP
2	0.1620	27.30	10.10	37.40	55.36	-17.96	AVG
3	0.1820	49.66	10.11	59.77	64.39	-4.62	QP
4	0.2260	26.18	10.14	36.32	52.59	-16.27	AVG
5	14.0179	26.35	11.02	37.37	50.00	-12.63	AVG
6	14.5259	31.68	11.02	42.70	60.00	-17.30	QP

Test Specification: Line



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1*	0.1499	53.56	10.10	63.66	66.00	-2.34	QP
2	0.1660	24.07	10.11	34.18	55.15	-20.97	AVG
3	0.2540	21.29	10.16	31.45	51.62	-20.17	AVG
4	0.2900	45.29	10.18	55.47	60.52	-5.05	QP
5	16.3179	28.67	11.07	39.74	60.00	-20.26	QP
6	17.4619	23.94	11.10	35.04	50.00	-14.96	AVG

10. Frequency Stability

10.1 Standard Applicable

According to §15.407(g), Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the users manual.

10.2 Test Procedure

According to §2.1055, the following test procedure was performed.

The Frequency Stability is measured directly with a Frequency Domain Analyzer. Frequency Deviation in ppm is calculated from the measured peak to peak value.

The Carrier Frequency Stability over Power Supply Voltage and over Temperature is measured with a Frequency Domain Analyzer in histogram mode

Temperature:	Supply Voltage
20°C	85-115% of declared nominal voltage
-30°C to +50°C	Normal

10.3 Environmental Conditions

Temperature:	20°C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

10.4 Summary of Test Results/Plots

5150-5250MHz

802.11a_20MHz

Reference Frequency(Middle Channel): 5240 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	48	122	0.0233
40	48	119	0.0227
30	48	117	0.0223
20	48	125	0.0239
10	48	137	0.0261
0	48	142	0.0271
-10	48	134	0.0256
-20	48	129	0.0246
-30	48	145	0.0277

802.11n_HT20

Reference Frequency(Middle Channel): 5240 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	48	142	0.0271
40	48	129	0.0246
30	48	125	0.0239
20	48	155	0.0296
10	48	115	0.0219
0	48	135	0.0258
-10	48	148	0.0282
-20	48	119	0.0227
-30	48	127	0.0242

802.11n_HT40

Reference Frequency(Middle Channel): 5230 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	48	142	0.0272
40	48	146	0.0279
30	48	142	0.0272
20	48	132	0.0252
10	48	149	0.0285
0	48	153	0.0293
-10	48	159	0.0304
-20	48	152	0.0291
-30	48	150	0.0287

5725-5850MHz

802.11a_HT20

Reference Frequency(Middle Channel): 5785MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	48	119	0.0206
40	48	125	0.0216
30	48	135	0.0233
20	48	126	0.0218
10	48	117	0.0202
0	48	148	0.0256
-10	48	158	0.0273
-20	48	185	0.0320
-30	48	165	0.0285

802.11n_HT20

Reference Frequency(Middle Channel): 5785MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	48	118	0.0204
40	48	128	0.0221
30	48	146	0.0252
20	48	155	0.0268
10	48	166	0.0287
0	48	186	0.0322
-10	48	155	0.0268
-20	48	182	0.0315
-30	48	158	0.0273

802.11n_HT40

Reference Frequency(Fixed Channel): 5755 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	48	156	0.0271
40	48	163	0.0283
30	48	162	0.0281
20	48	149	0.0259
10	48	130	0.0226
0	48	201	0.0349
-10	48	170	0.0295
-20	48	168	0.0292
-30	48	160	0.0278

So, Frequency Stability Versus Input Voltage is:

5150-5250MHz

802.11a_HT20

Reference Frequency(Middle Channel): 5240 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	48	140	0.0267
	42.5	137	0.0261
	57	134	0.0256

802.11n_HT20

Reference Frequency(Middle Channel): 5240 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	48	146	0.0279
	42.5	149	0.0284
	57	153	0.0292

802.11n_HT40

Reference Frequency(Middle Channel): 5230 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	48	153	0.0293
	42.5	149	0.0285
	57	147	0.0281

5725-5850MHz

802.11a_HT20

Reference Frequency(Middle Channel): 5785 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	48	148	0.0256
	42.5	155	0.0268
	57	187	0.0323

802.11n_HT20

Reference Frequency(Middle Channel): 5785 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	48	185	0.0320
	42.5	150	0.0259
	57	159	0.0275

802.11n_HT40

Reference Frequency(Fixed Channel): 5755 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	48	168	0.0292
	42.5	151	0.0262
	57	153	0.0266

***** END OF REPORT *****