FCC Part 15E
Measurement and Test Report

For

Sky Phone LLC

1348 Washington Av.Suite 350 Miami Beach, FL 33139

FCC ID: 2ABOSSKYELITE70

FCC Rule(s):	FCC Part 15E
Product Description:	4G Tablet
Tested Model:	Elite 7.0L
Report No.:	STR16018007I-3
Tested Date:	2016-01-11 to 2016-01-22
Issued Date:	2016-01-22
Tested By:	Lucy Wei / Engineer
Reviewed By:	Silin Chen / EMC Manager
Approved & Authorized By:	Jandy So / PSQ Manager

Prepared By:

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TABLE OF CONTENTS

1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant:	Sky Phone LLC
Address of applicant:	1348 Washington Av.Suite 350 Miami Beach, FL 33139
Manufacturer:	Shenzhen Tablet Electronics Limited
Address of manufacturer:	2F, B5b Building, Yingzhan Industrial Zone, Longtian Community, Kengzi Street, Longgang, Shenzhen, China

General Description of EUT	
Product Name:	4G Tablet
Trade Name:	SKY
Model No.:	Elite 7.0L
Adding Model:	LQ70, PLATINUM7.0, SKYPLA70
Adapter Model:	WTA0501500USB1
	INPUT:AC100-240V,50/60Hz,0.3A; OUTPUT:DC5V,1.5A
Hardware version:	S88D_MB_V1.1
Software version:	Elite_7.0L_20151202
IMEI:	358732055465047/358732055464966
Rated Voltage:	DC 3.7V Li-polymer Battery
Battery:	2800mAh
Device Category:	Portable Device
The EUT Main board support GSM850/900/DCS1800/PCS1900, WCDMA Band 1/2/4/5, LTE Band 2/4/7/17 function. It is intended for speech, Multimedia Message Service (MMS) transmission and Elite 7.0L. It is equipped with GPRS/EDGE class 12 for GSM850/900/DCS1800/PCS1900, GPS, FM, Bluetooth and Wi-Fi functions. For more information see the following datasheet	
Note: The test data is gathered from a production sample provided by the manufacturer. The appearance of others models listed in the report is different from main-test model Elite 7.0L, but the circuit and the electronic construction do not change, declared by the manufacturer.	

Technical Characteristics of EUT	
Wi-Fi(5G)	
Support Standards:	802.11a, 802.11n(HT20), 802.11n(HT40)
Frequency Range:	5150-5250MHz
RF Output Power:	6.48dBm (Conducted)
Type of Modulation:	OFDM, 64-QAM,16-QAM, QPSK, BPSK, 256-QAM
Data Rate:	6-54Mbps, up to 300Mbps
Channel Separation:	20/40MHz
Type of Antenna:	Integral Antenna
Antenna Gain:	-2.60dBi

1.2 Test Standards

The following report is prepared on behalf of the Sky Phone LLC in accordance with FCC Part 15, Subpart C, 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, 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 v01 for Unlicensed National Information Infrastructure (U-NII) Devices shall be performed also.

1.4 Test Facility

FCC – Registration No.: 934118

Shenzhen SEM.Test Technology Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files and the Registration is 934118.

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.

CNAS Registration No.: L4062

Shenzhen SEM.Test Technology Co., Ltd. is a testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L4062. All measurement facilities used to collect the measurement data are located at 1/F, Building A, Hongwei Industrial Park, Liuxian 2nd Road, Bao'an District, Shenzhen, P.R.C (518101).

1.5 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
TM2	802.11n-HT20	5180MHz,5200MHz,5240MHz
TM3	802.11n-HT40	5190MHz,5230MHz

EUT Cable List and Details			
Cable Description	Length (m)	Shielded/Unshielded	With / Without Core
USB Cable	0.86	Unshielded	Without Ferrite

Special Cable List and Details			
Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite
Earphone	1.2	Unshielded	Without Ferrite

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

1.6 Measurement Uncertainty

Measurement uncertainty		
Parameter	Conditions	Uncertainty
RF Output Power	Conducted	±0.42dB
Occupied Bandwidth	Conducted	±1.5%
Power Spectral Density	Conducted	±1.8dB
Conducted Emissions	Conducted	±2.88dB
Transmitter Spurious Emissions	Radiated	±5.1dB
Frequency Stability	Conducted	2.3%

1.7 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal Date	Due Date
Spectrum Analyzer	Agilent	E4407B	MY41440400	2015-06-17	2016-06-16
Spectrum Analyzer	Agilent	E4447A	W1312-60197	2015-06-17	2016-06-16
Spectrum Analyzer	Rohde & Schwarz	FSP	836079/035	2015-06-17	2016-06-16
EMI Test Receiver	Rohde & Schwarz	ESVB	825471/005	2015-06-17	2016-06-16
Amplifier	Agilent	8447F	3113A06717	2015-06-17	2016-06-16
Amplifier	C&D	PAP-1G18	2002	2015-06-17	2016-06-16
Broadband Antenna	Schwarz beck	VULB9163	9163-333	2015-06-17	2016-06-16
Horn Antenna	ETS	3117	00086197	2015-06-17	2016-06-16
Horn Antenna	ETS	3116B	00088203	2015-06-17	2016-06-16
Loop Antenna	Schwarz beck	FMZB 1516	9773	2015-06-17	2016-06-16
EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2015-06-17	2016-06-16
L.I.S.N	Schwarz beck	NSLK8126	8126-224	2015-06-17	2016-06-16
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2015-06-17	2016-06-16

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)	Conducted Spurious 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

4.1 Standard Applicable

According to FCC Part 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.

4.2 Evaluation Information

This product has one integral antennas, fulfill the requirement of this section.

5. Power Spectral Density

5.1 Standard Applicable

Section 15.407(a) Power limits:

(1) For the band 5.15-5.25 GHz.
(iv) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. 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.

(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 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 v01 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 ≥ 1/T, where T is defined in section II.B.l.a).
b) Set VBW ≥ 3 RBW.
c) If measurement bandwidth of Maximum PSD is specified in 500 kHz, add 10log(500kHz/RBW) to the measured result, whereas RBW (< 500 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 10log(1MHz/RBW) to the measured result, whereas RBW (< 1 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 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

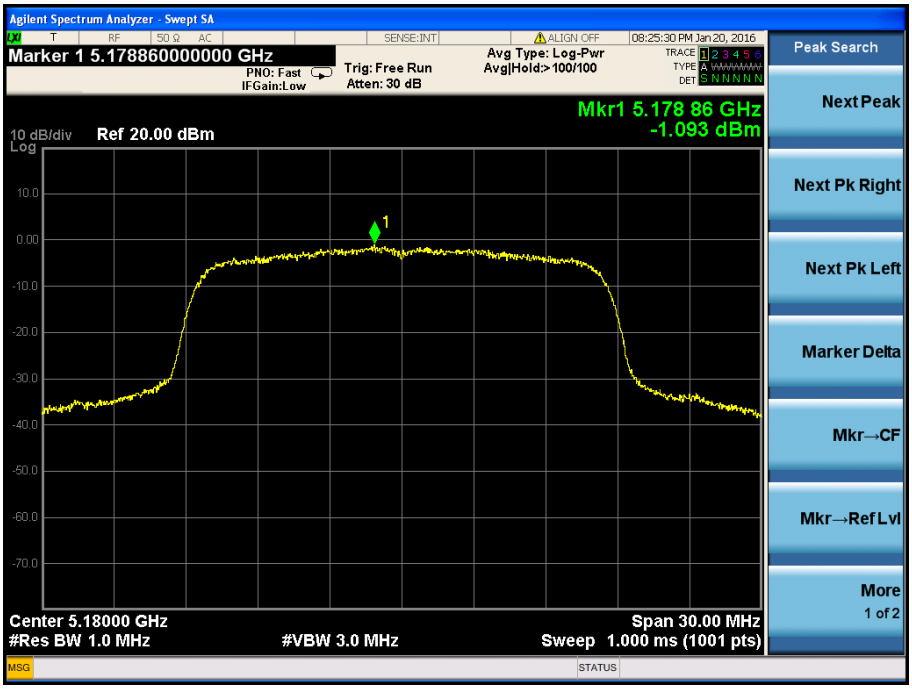
5150-5250MHz

Operating mode	Test Channel	Power Spectral Density dBm/MHz	Limit (dBm/MHz)
802.11a	5180	-1.093	11
	5200	-1.146	11
	5240	-1.719	11
802.11n-HT20	5180	-1.545	11
	5200	-1.619	11
	5240	-2.051	11
802.11n-HT40	5190	-4.669	11
	5230	-5.681	11

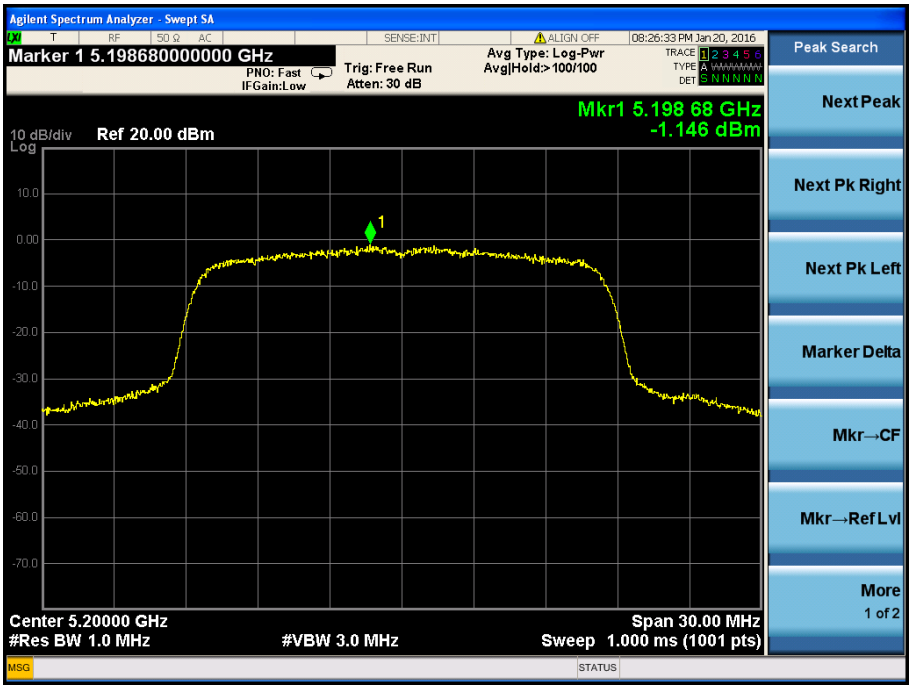
Note: If measurement bandwidth of Maximum PSD is specified in 500 kHz, add 10log(500kHz/RBW) to the measured result, whereas RBW (< 500 KHz) is the reduced resolution bandwidth of the spectrum analyzer set during measurement.

Test Mode: 802.11a

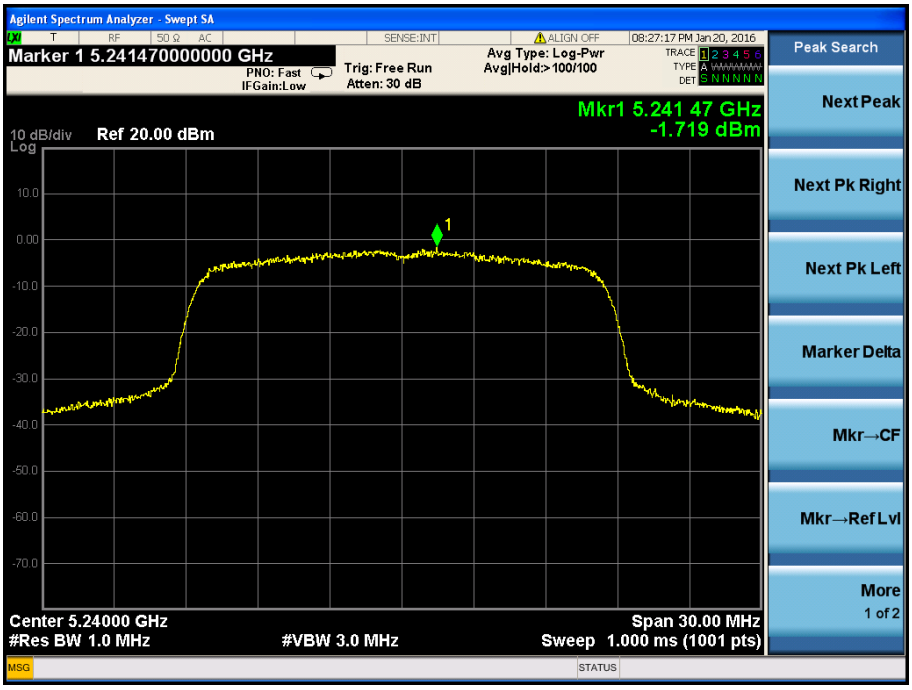
5180MHz



5200MHz

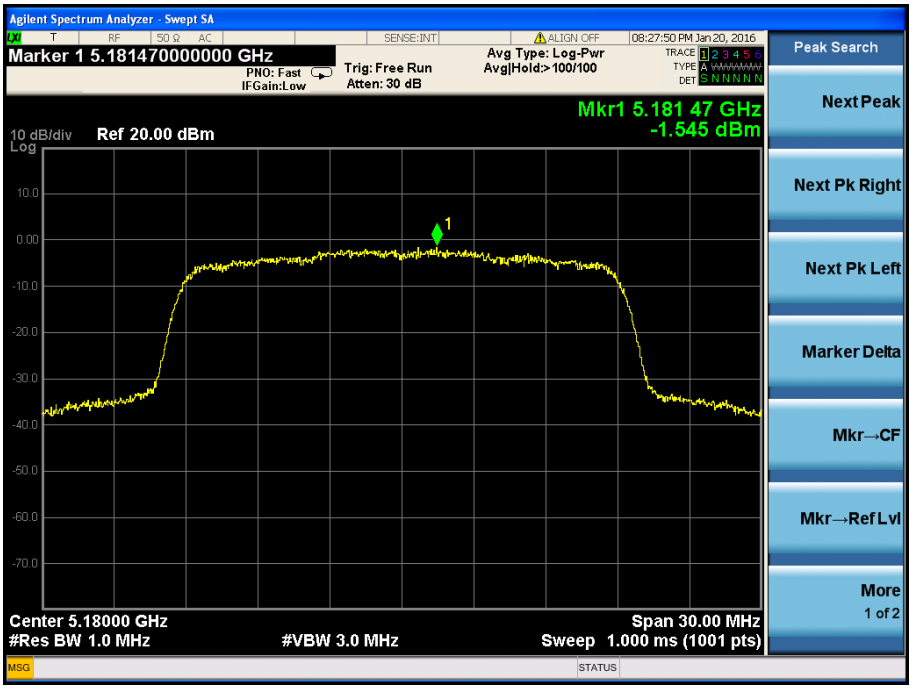


5240MHz

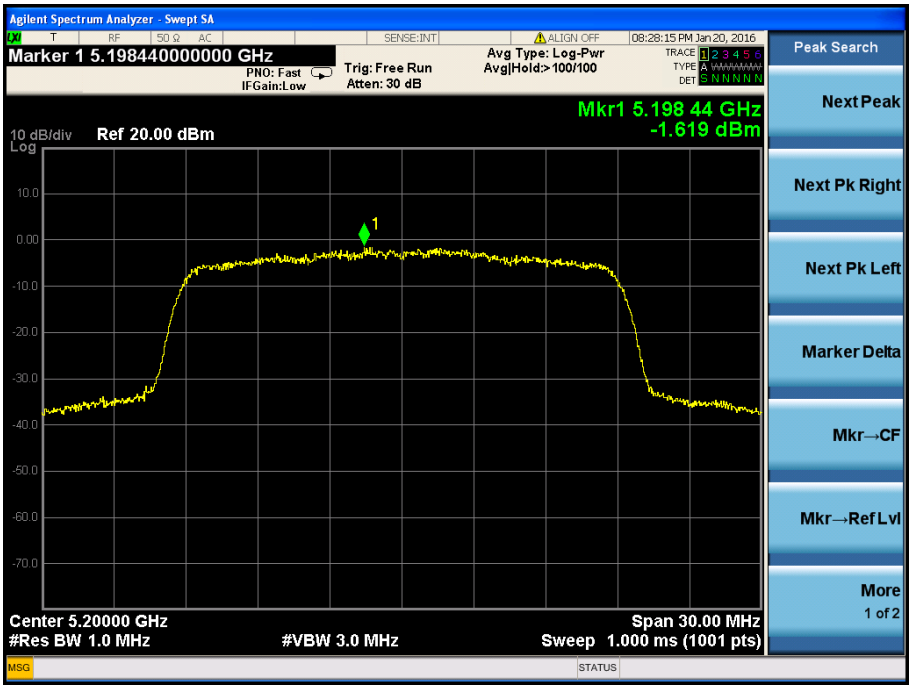

Agilent Spectrum Analyzer - Swept SA
Marker 1 5.241470000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
08:27:17 PM Jan 20, 2016
Mkr1 5.241 47 GHz
-1.719 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.24000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Span 30.00 MHz
Sweep 1.000 ms (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
MSG
STATUS

Test Mode: 802.11n-HT20

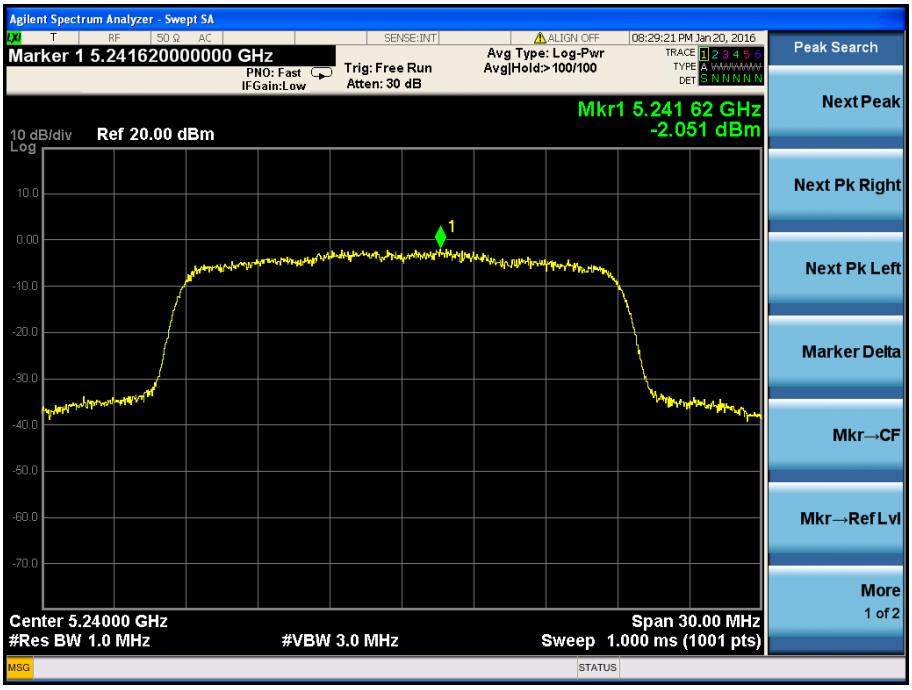
5180MHz



5200MHz

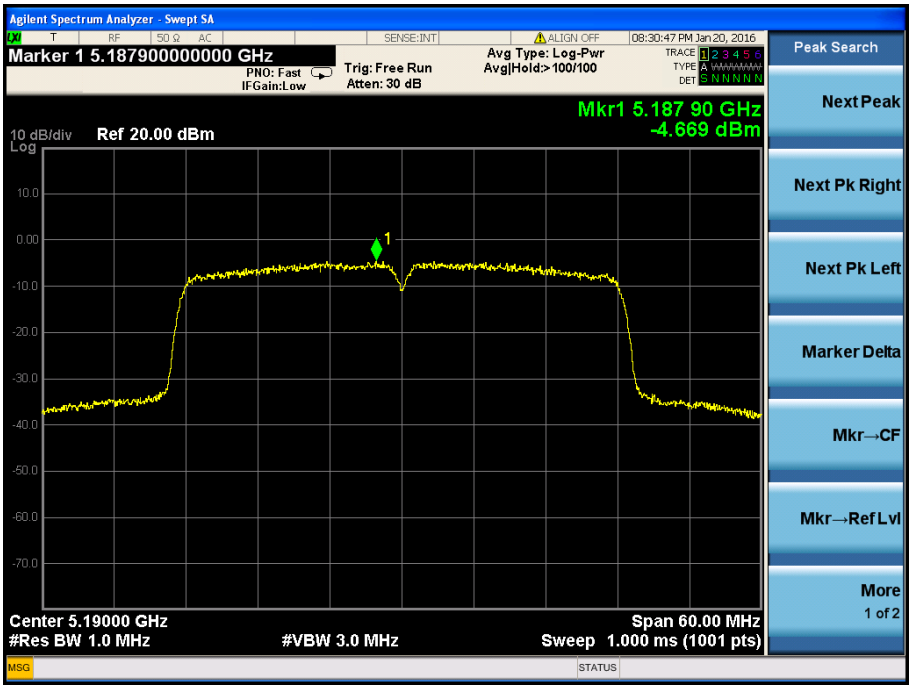


5240MHz

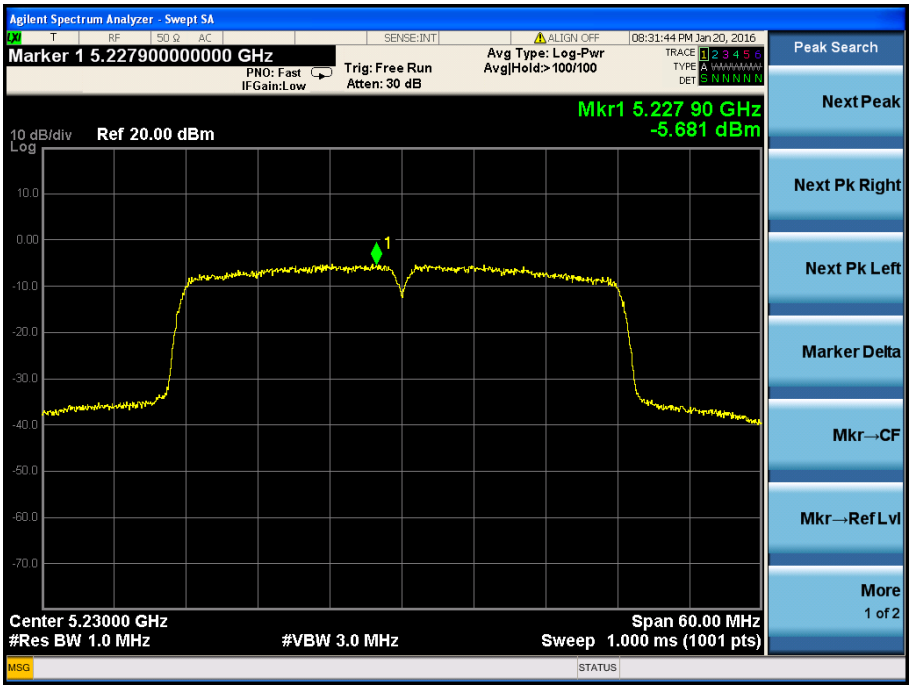

Agilent Spectrum Analyzer - Swept SA
Marker 1 5.241620000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
08:29:21 PM Jan 20, 2016
Mkr1 5.241 62 GHz
-2.051 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.24000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Span 30.00 MHz
Sweep 1.000 ms (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
MSG
STATUS

Test Mode: 802.11n-HT40

5190MHz



5230MHz



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.
(iv) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. 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.

(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 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 v01 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) ≥ 3 × 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 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 ≥ 3 • 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

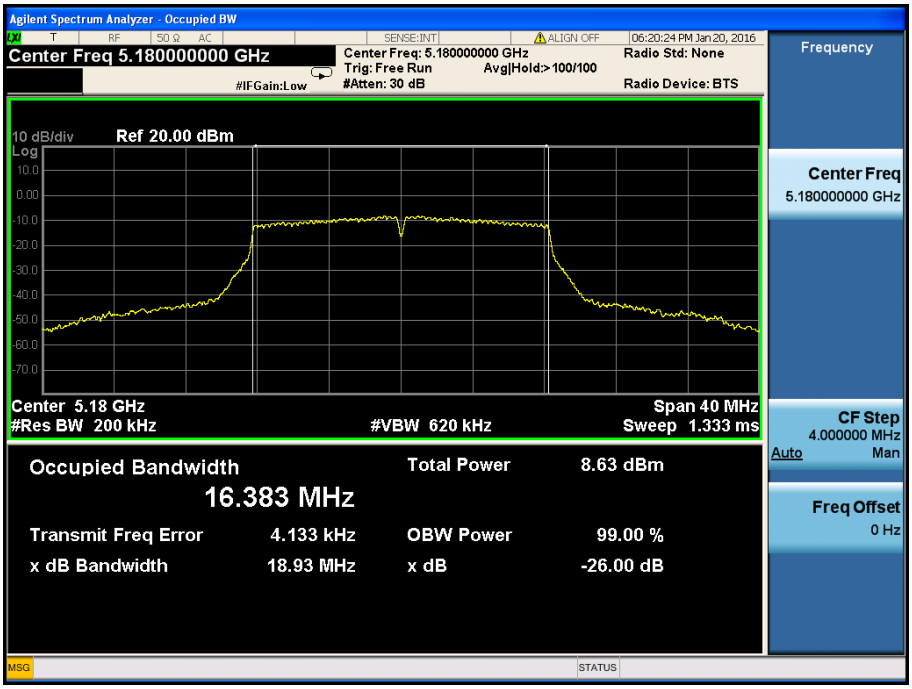
6.4 Summary of Test Results/Plots

5150-5250MHz

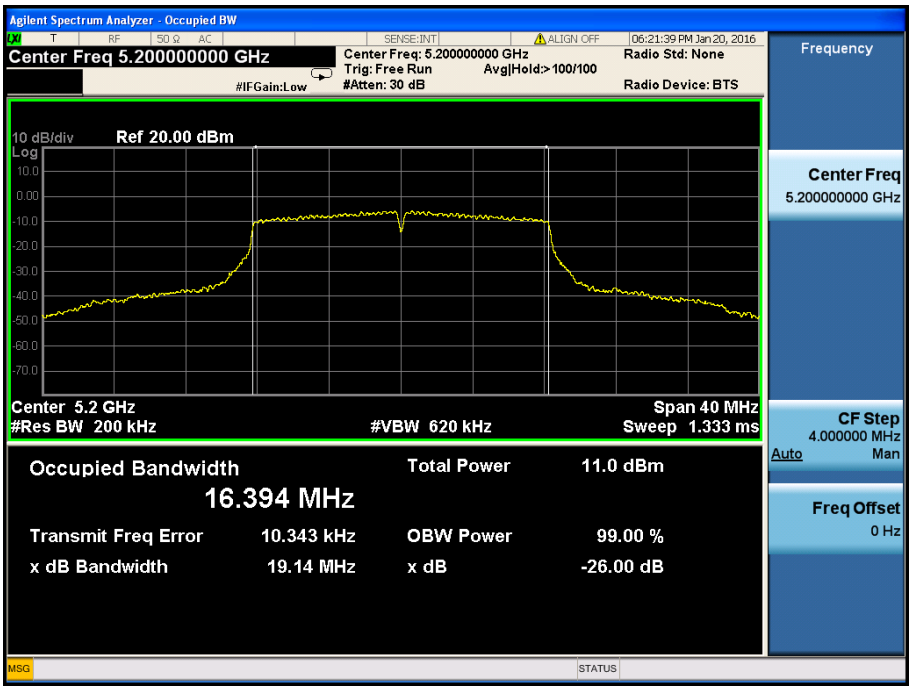
Test Mode	Test Channel MHz	26 dB Bandwidth MHz	99% Bandwidth MHz	Result
802.11a	5180	18.93	16.383	Pass
	5200	19.14	16.394	Pass
	5240	19.02	16.406	Pass
802.11n-HT20	5180	19.51	17.602	Pass
	5200	19.55	17.597	Pass
	5240	19.53	17.605	Pass
802.11n-HT40	5190	38.95	35.964	Pass
	5230	39.07	35.962	Pass

Test mode：802.11a

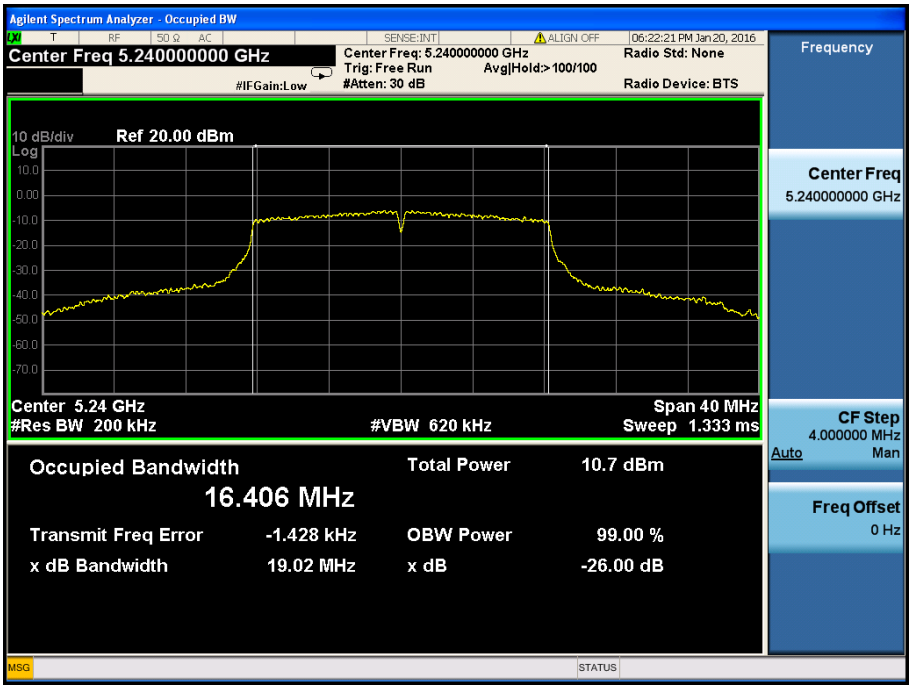
5180MHz



5200MHz



5240MHz


Agilent Spectrum Analyzer - Occupied BW
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Center Freq: 5.240000000 GHz
Trig: Free Run
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#IFGain:Low
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
06:22:21 PM Jan 20, 2016
Frequency
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.24 GHz
#Res BW 200 kHz
#VBW 620 kHz
Span 40 MHz
Sweep 1.333 ms
Occupied Bandwidth
16.406 MHz
Total Power
10.7 dBm
Transmit Freq Error
-1.428 kHz
OBW Power
99.00 %
x dB Bandwidth
19.02 MHz
x dB
-26.00 dB
Center Freq
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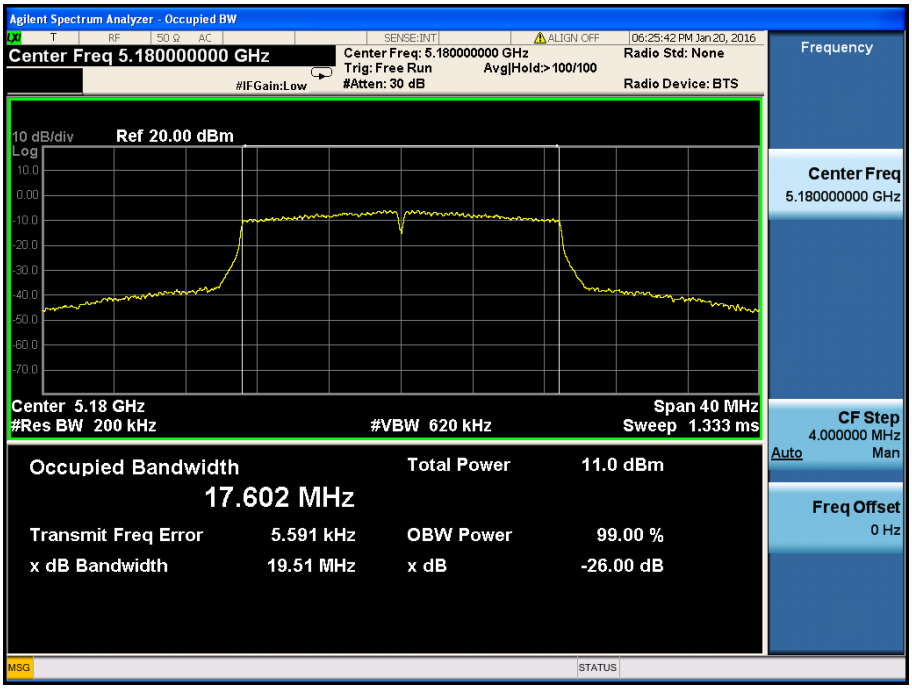
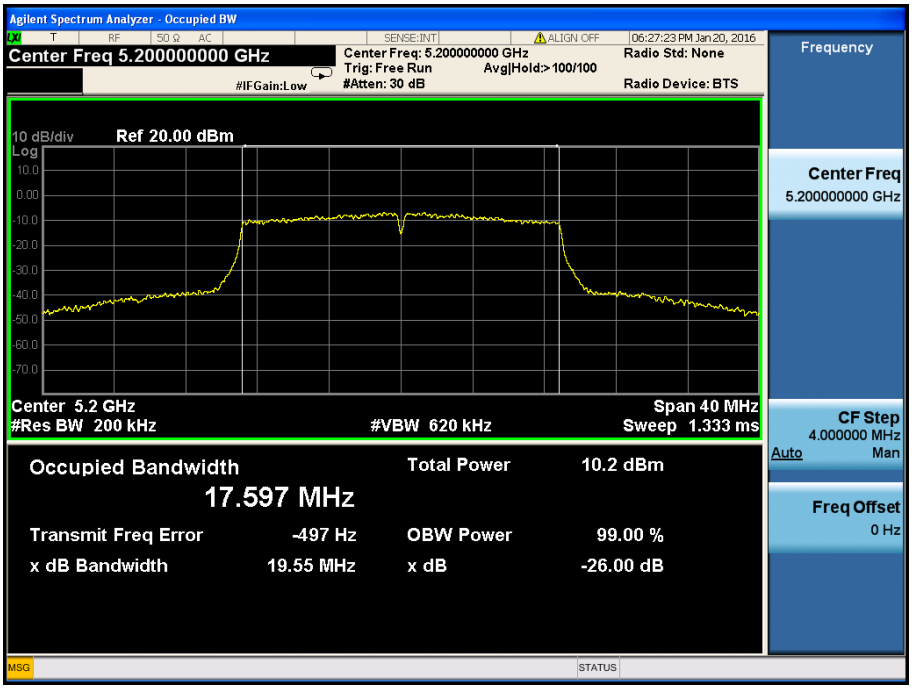
CF Step
4.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

Test mode：802.11n-HT20

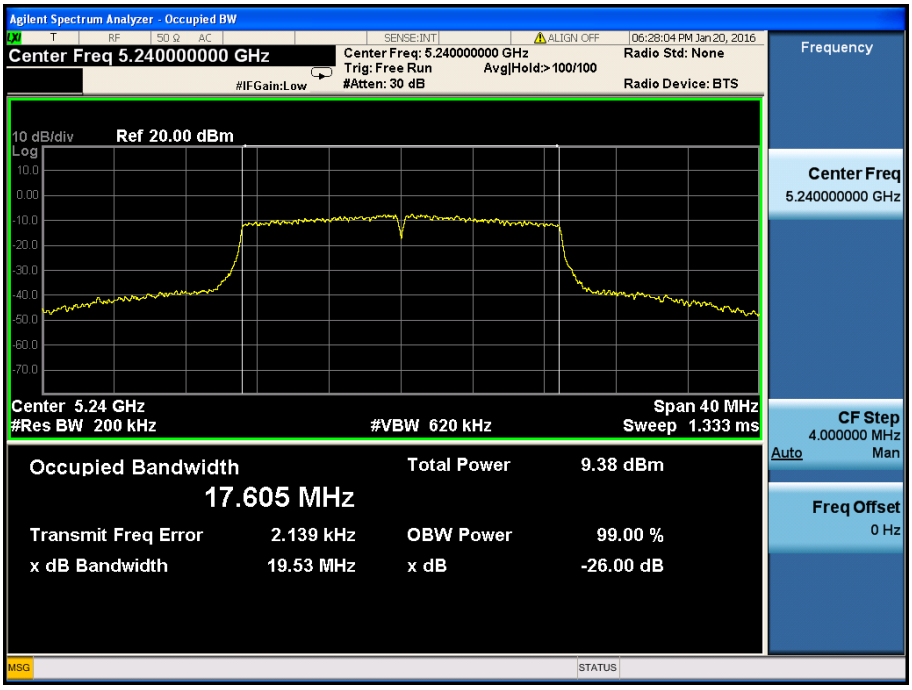
5180MHz



5200MHz

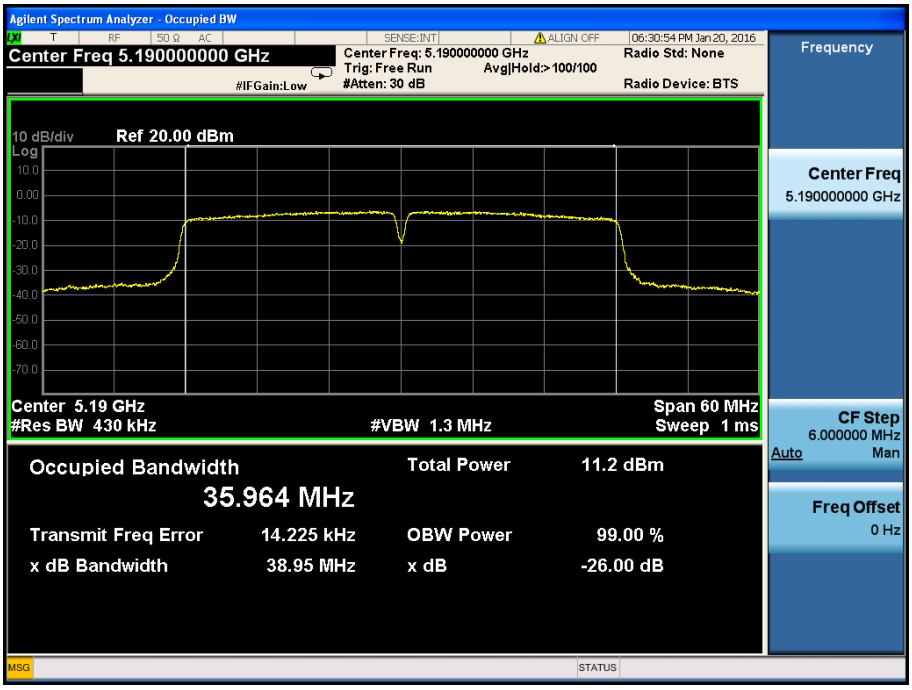


5240MHz

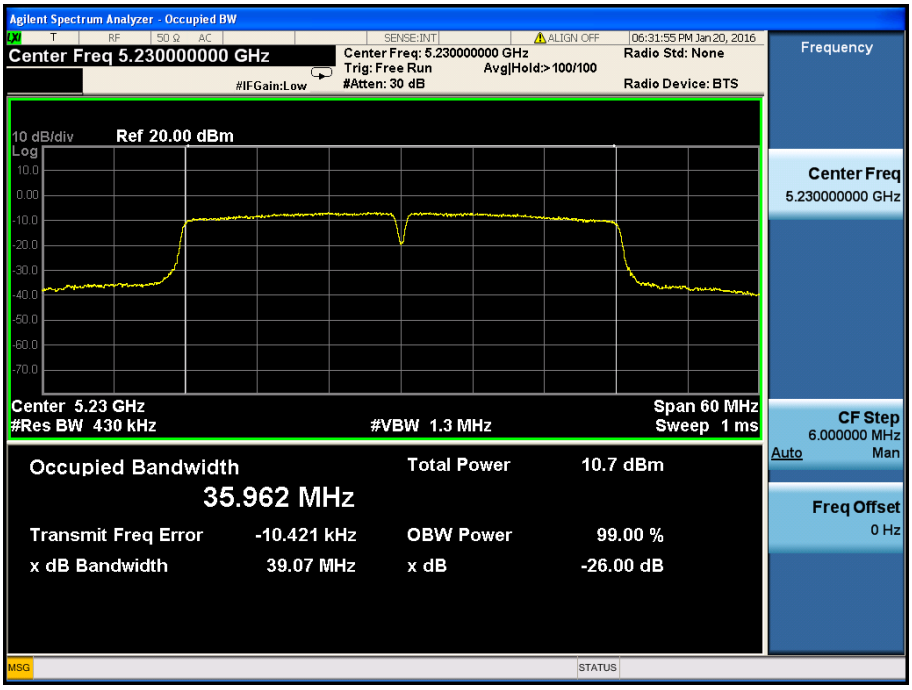

Agilent Spectrum Analyzer - Occupied BW
Center Freq 5.240000000 GHz
Center Freq: 5.240000000 GHz
Trig: Free Run
Avg|Hold:>100/100
#IFGain:Low
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
10 dB/div
Log
Ref 20.00 dBm
Center 5.24 GHz
#Res BW 200 kHz
#VBW 620 kHz
Span 40 MHz
Sweep 1.333 ms
Occupied Bandwidth
17.605 MHz
Total Power 9.38 dBm
Transmit Freq Error 2.139 kHz
OBW Power 99.00 %
x dB Bandwidth 19.53 MHz
x dB -26.00 dB
Frequency
Center Freq
5.240000000 GHz
CF Step
4.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

Test mode：802.11n-HT40

5190MHz



5230MHz



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.
(iv) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. 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.

(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 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 v01 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 ≥ 3 MHz.

(iv) Number of points in sweep ≥ 2 Span / RBW. (This ensures that bin-to-bin spacing is ≤ RBW/2, so that narrowband signals are not lost between frequency bins.)

(v) Sweep time = auto.

(vi) Detector = 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 ≥ 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

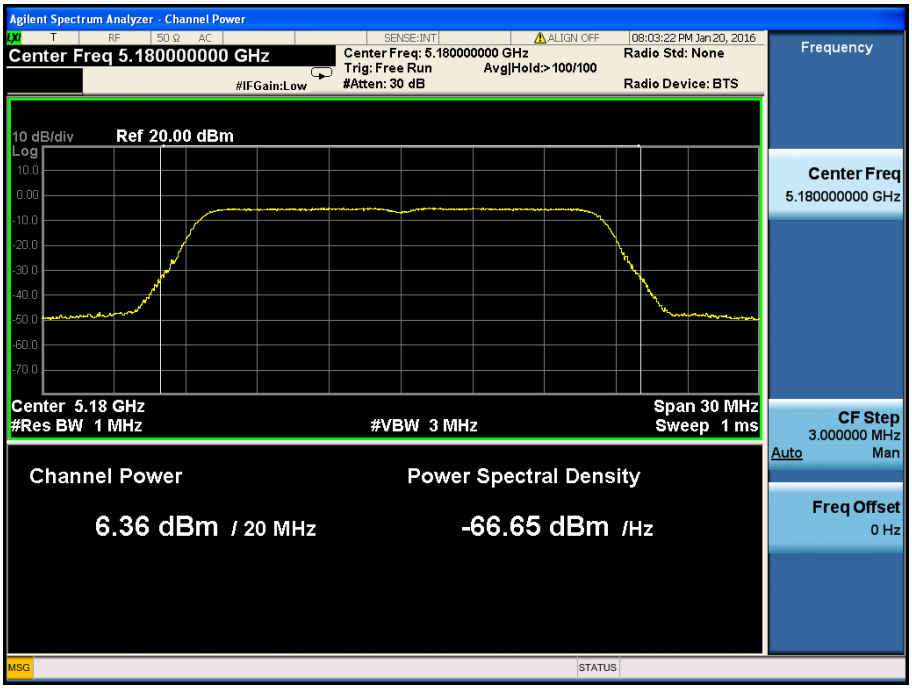
7.4 Summary of Test Results/Plots

For the frequency band 5.15-5.25GHz

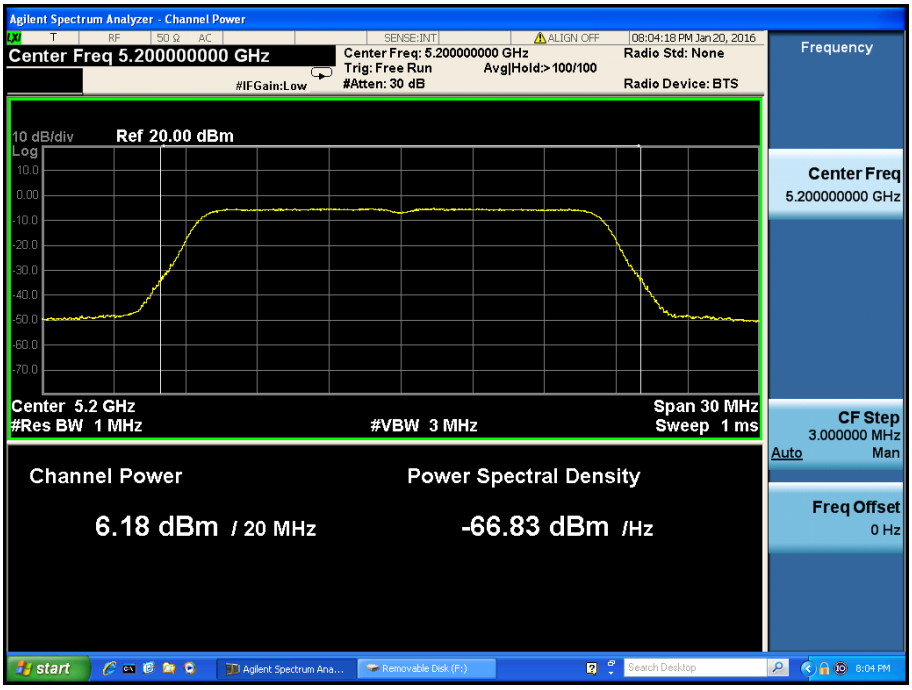
Test mode	Frequency MHz	Output Power dBm	Output Power mW	Limit mW
802.11a	5180	6.36	4.33	250
	5200	6.18	4.15	250
	5240	5.94	3.93	250
802.11n-HT20	5180	6.48	4.45	250
	5200	6.39	4.36	250
	5240	5.96	3.94	250
802.11n-HT40	5190	6.38	4.35	250
	5230	6.36	4.33	250

Test Mode: 802.11a

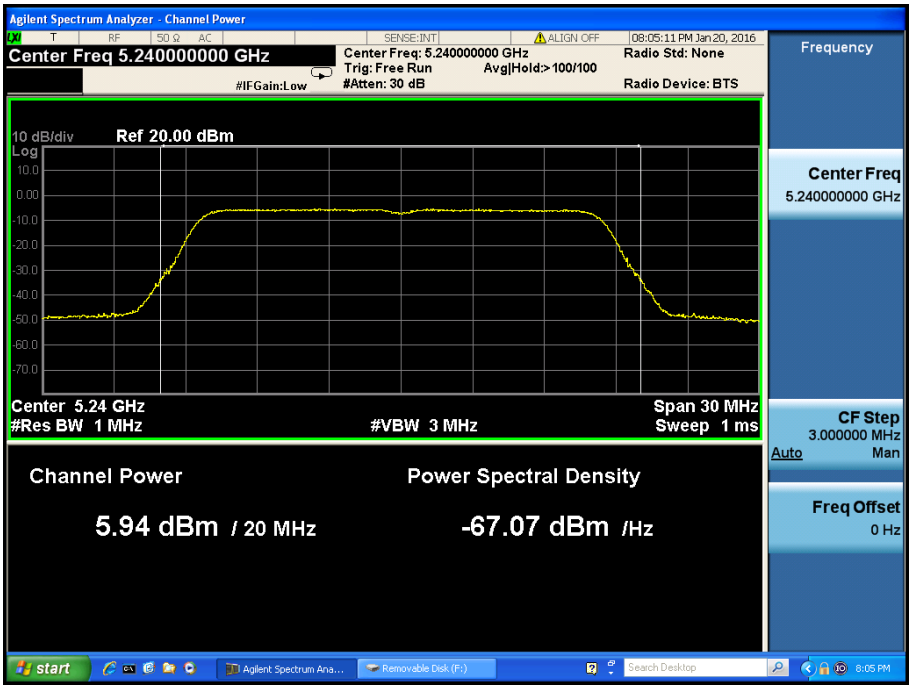
5180MHz



5200MHz

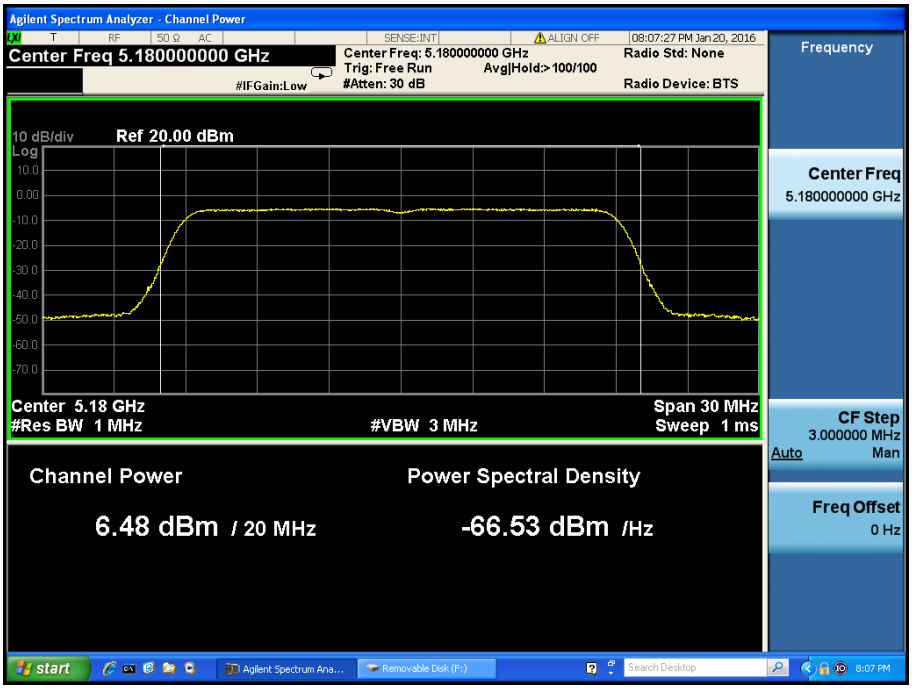


5240MHz

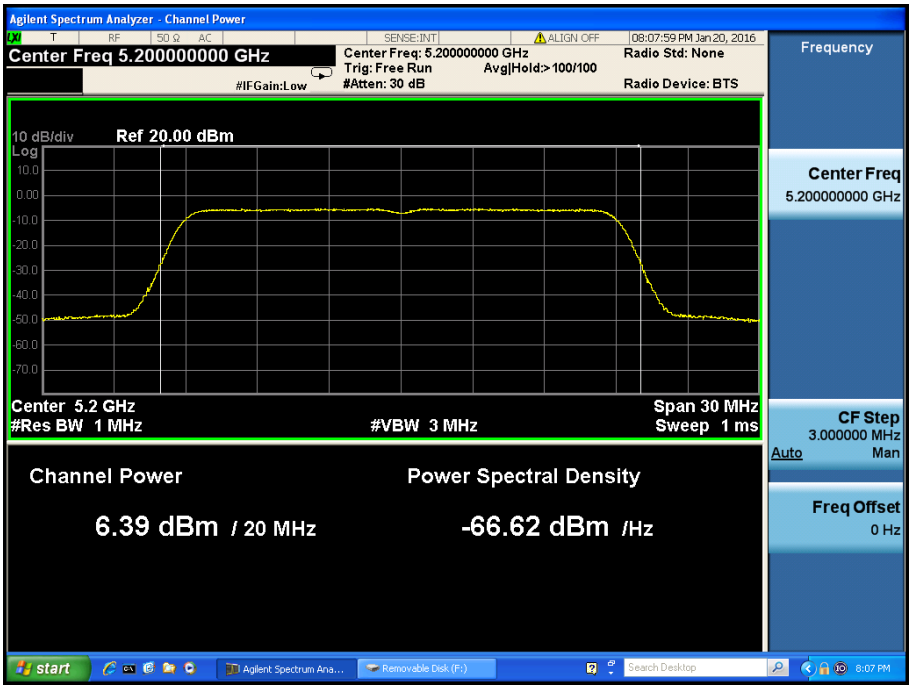

Agilent Spectrum Analyzer - Channel Power
Center Freq 5.240000000 GHz
Center Freq: 5.240000000 GHz
Trig: Free Run
Avg|Hold:>100/100
#Atten: 30 dB
#IFGain:Low
Radio Std: None
Radio Device: BTS
08:05:11 PM Jan 20, 2016
Frequency
10 dB/div
Log
Ref 20.00 dBm
Center 5.24 GHz
#Res BW 1 MHz
#VBW 3 MHz
Span 30 MHz
Sweep 1 ms
Channel Power
5.94 dBm / 20 MHz
Power Spectral Density
-67.07 dBm /Hz
Center Freq
5.240000000 GHz
CF Step
3.000000 MHz
Auto
Man
Freq Offset
0 Hz
start
8:05 PM

Test Mode: 802.11n-HT20

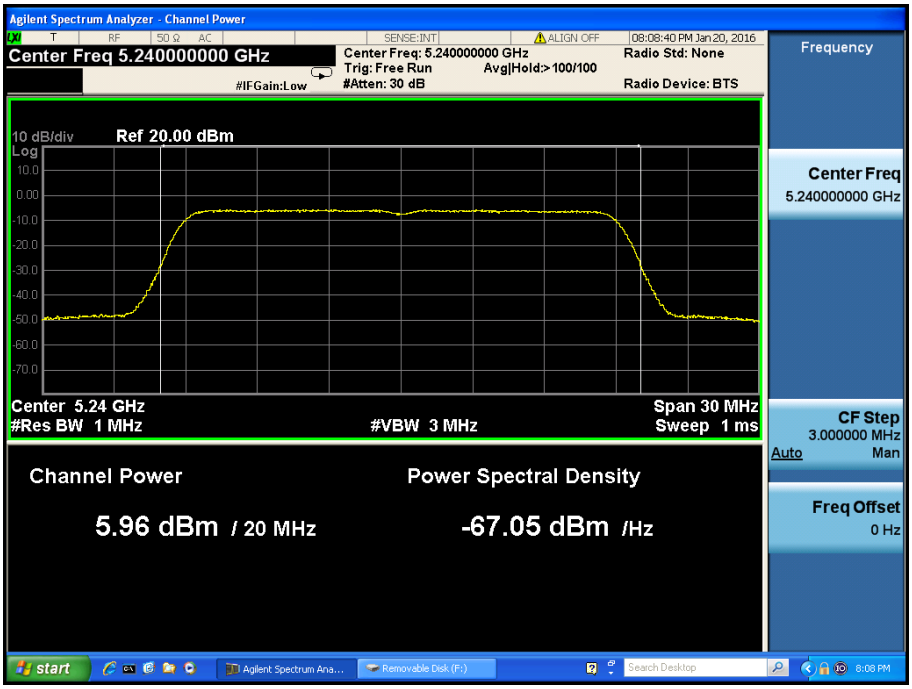
5180MHz



5200MHz

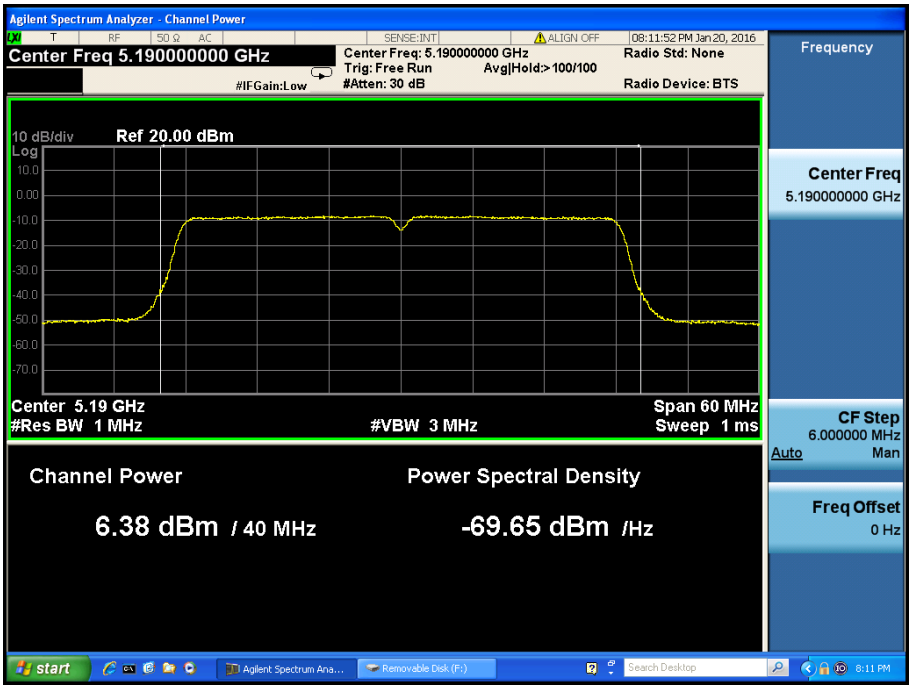


5240MHz

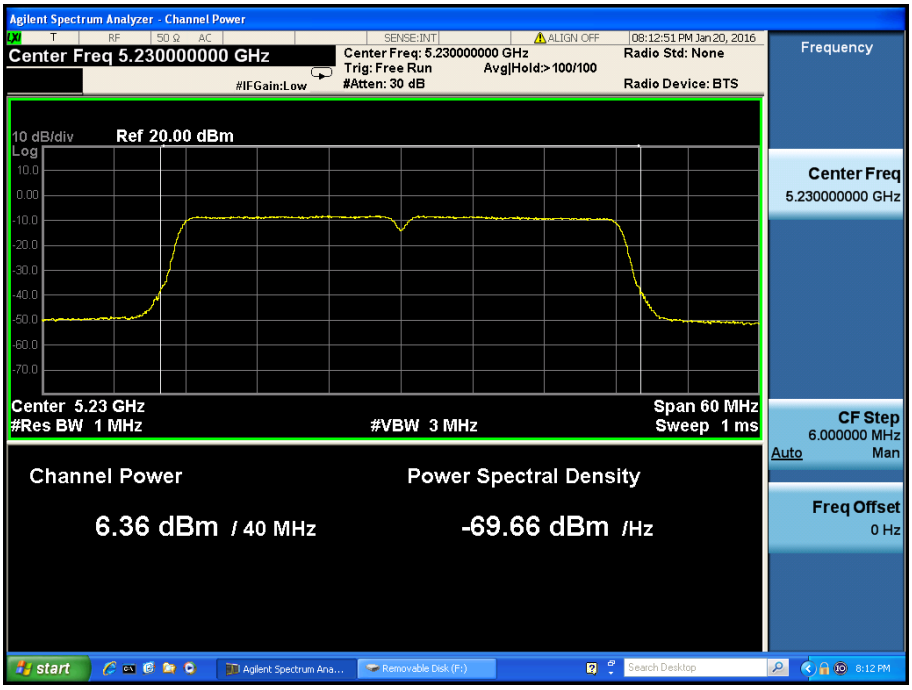

Agilent Spectrum Analyzer - Channel Power
Center Freq 5.240000000 GHz
Center Freq: 5.240000000 GHz
Trig: Free Run
Avg|Hold:>100/100
#Atten: 30 dB
#IFGain:Low
Radio Std: None
Radio Device: BTS
08:08:40 PM Jan 20, 2016
Frequency
10 dB/div
Log
Ref 20.00 dBm
Center 5.24 GHz
#Res BW 1 MHz
#VBW 3 MHz
Span 30 MHz
Sweep 1 ms
Channel Power
5.96 dBm / 20 MHz
Power Spectral Density
-67.05 dBm /Hz
Center Freq
5.240000000 GHz
CF Step
3.000000 MHz
Auto
Man
Freq Offset
0 Hz

Test Mode: 802.11n-HT40

5190MHz



5230MHz



8. Conducted Spurious Emissions

8.1 Standard Applicable

According to §15.407 (b) (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: All emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an e.i.r.p. of −17 dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an e.i.r.p. of −27 dBm/MHz.

8.2 Test Procedure

1. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer via a RF combiner.
2. Set the spectrum analyzer as RBW = 100kHz/1MHz, VBW=300kHz/3MHz, Sweep = auto
3. Set the Lowest, Middle and Highest Transmitting Channel, observed the outside band of 30MHz to 40GHz, then mark the higher-level emission for comparing with the FCC rules.

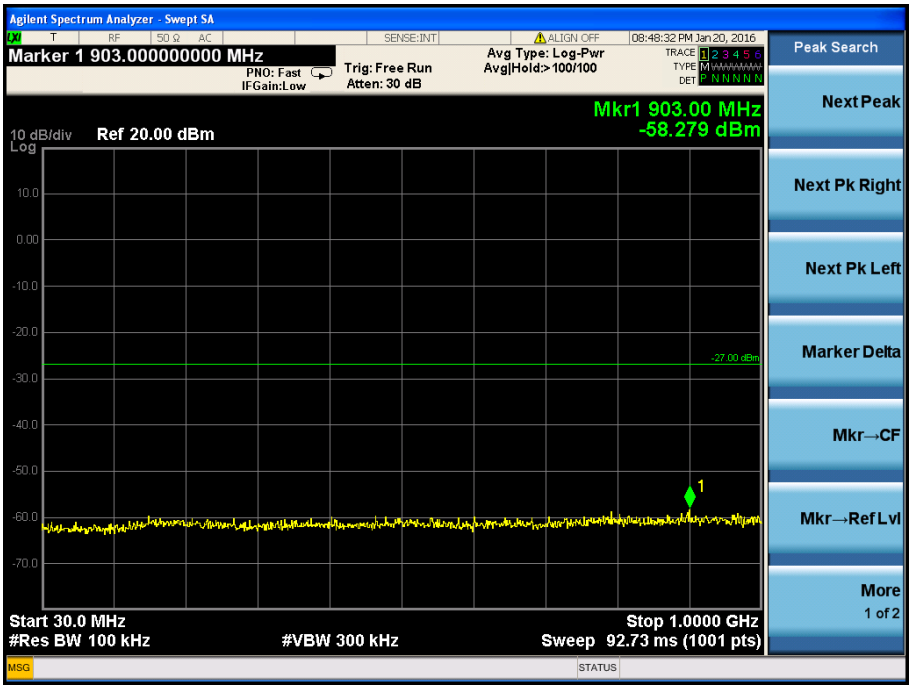
8.3 Environmental Conditions

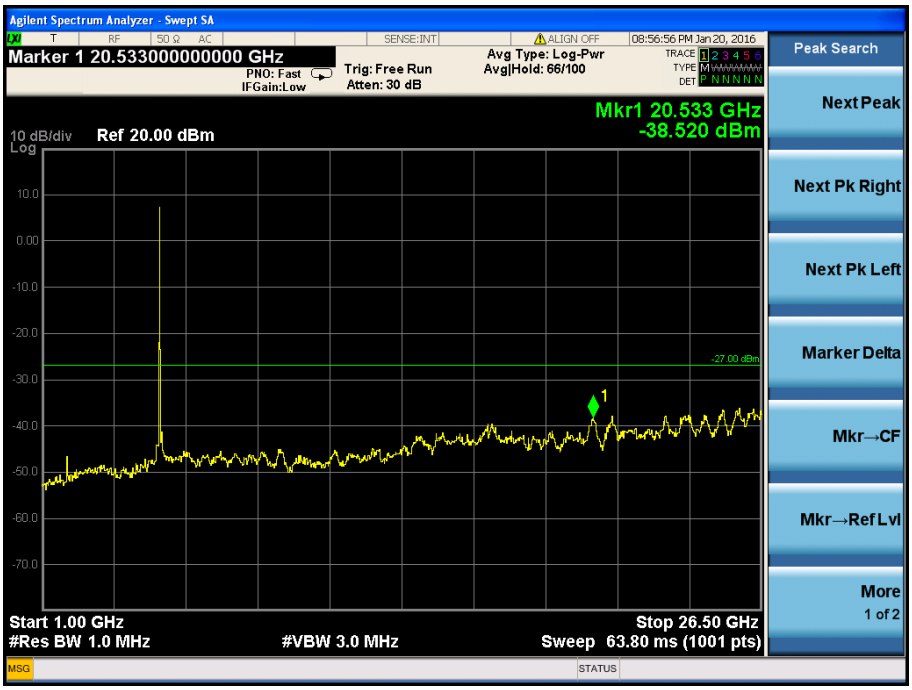
Temperature:	21° C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

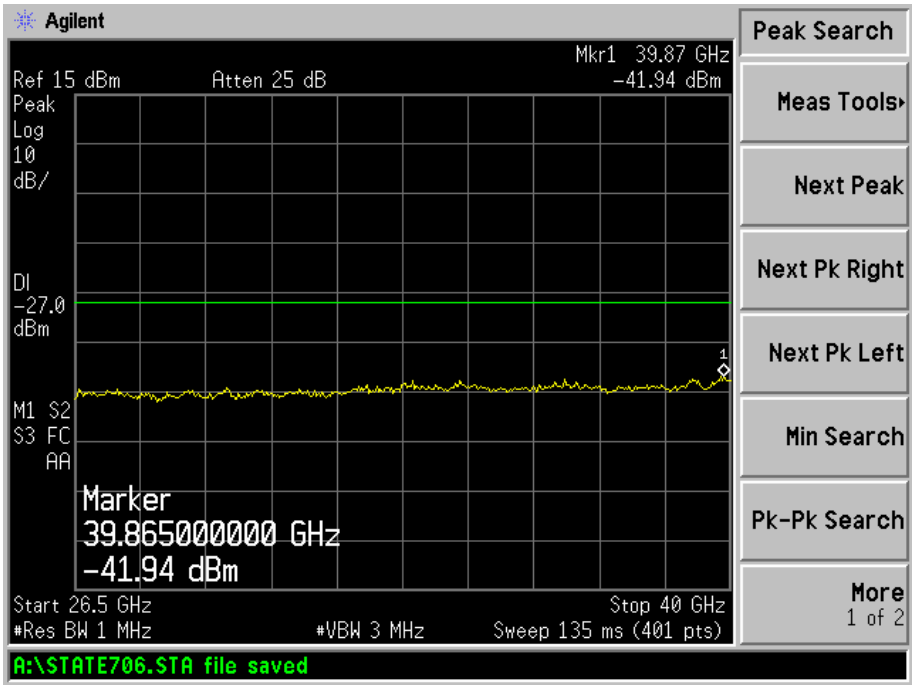
8.4 Summary of Test Results/Plots

802.11a

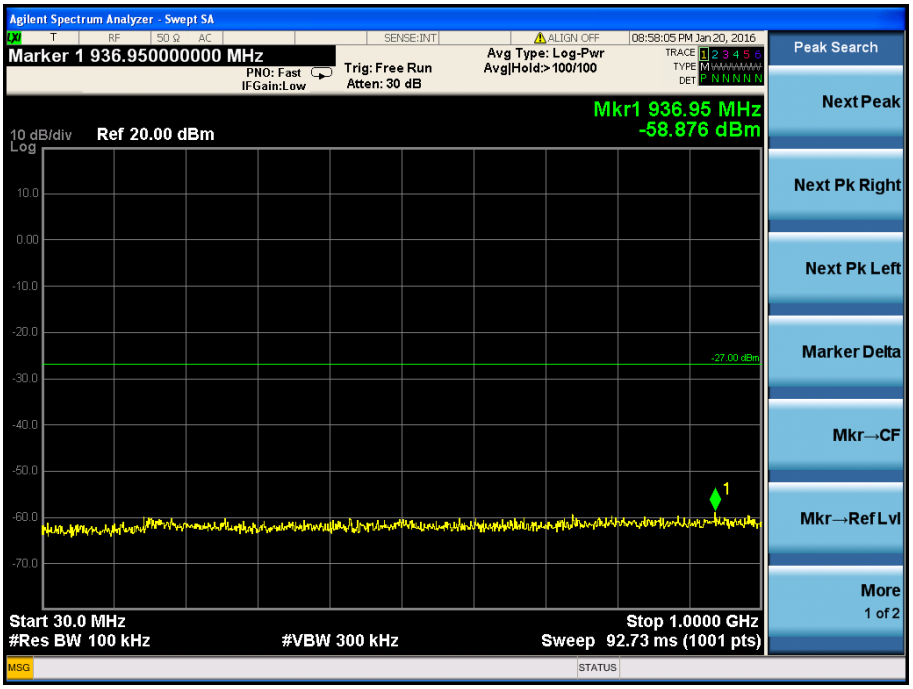
5180MHz

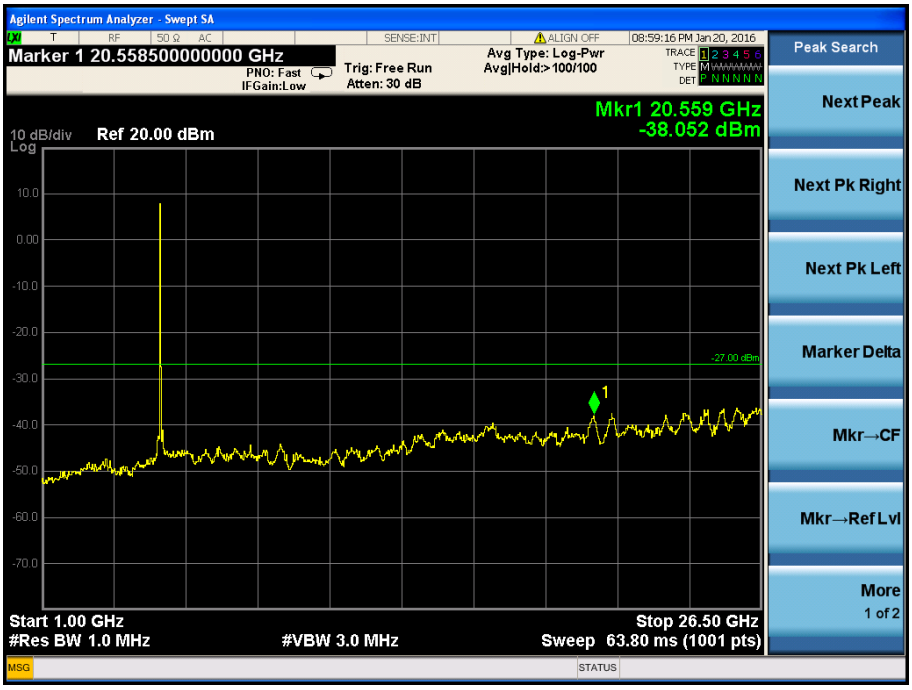


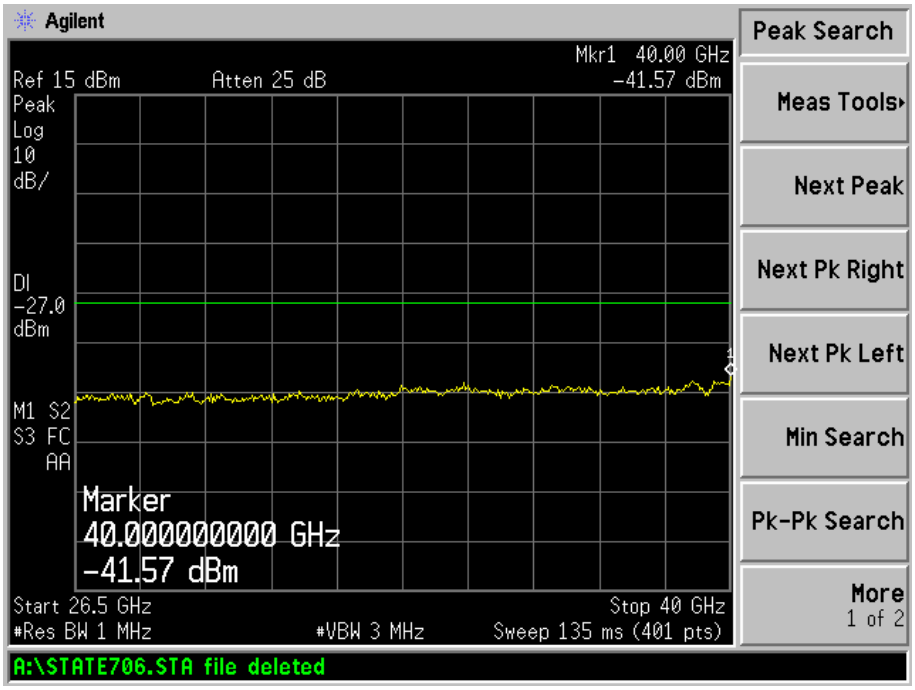



Agilent
Mkr1 39.87 GHz
Ref 15 dBm
Atten 25 dB
-41.94 dBm
Peak
Log
10
dB/
DI
-27.0
dBm
M1 S2
S3 FC
AA
Marker
39.865000000 GHz
-41.94 dBm
Start 26.5 GHz
#Res BW 1 MHz
#VBW 3 MHz
Stop 40 GHz
Sweep 135 ms (401 pts)
A:\STATE706.STA file saved
Peak Search
Meas Tools
Next Peak
Next Pk Right
Next Pk Left
Min Search
Pk-Pk Search
More
1 of 2

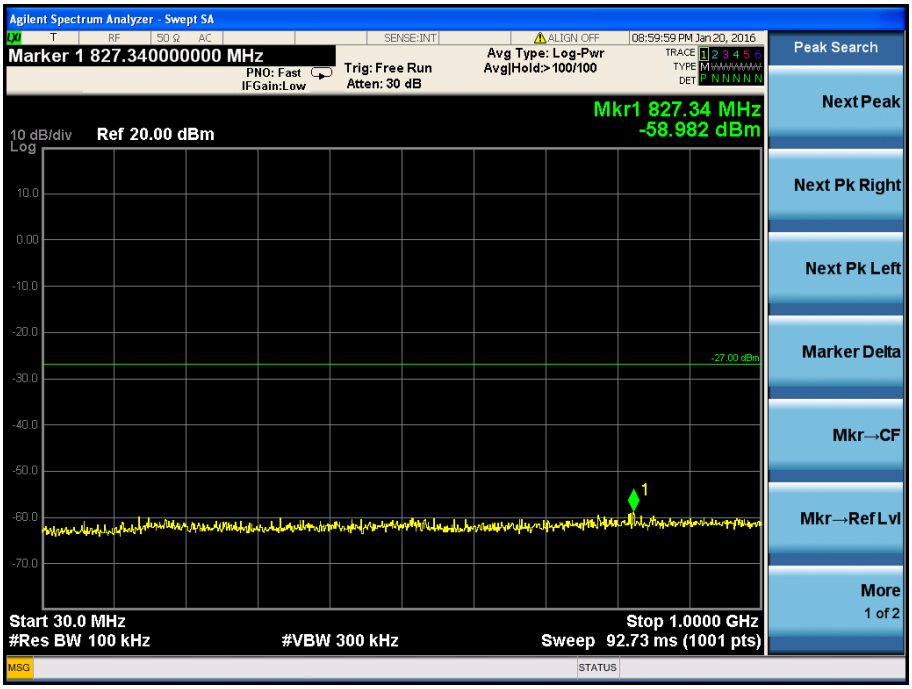
5200MHz

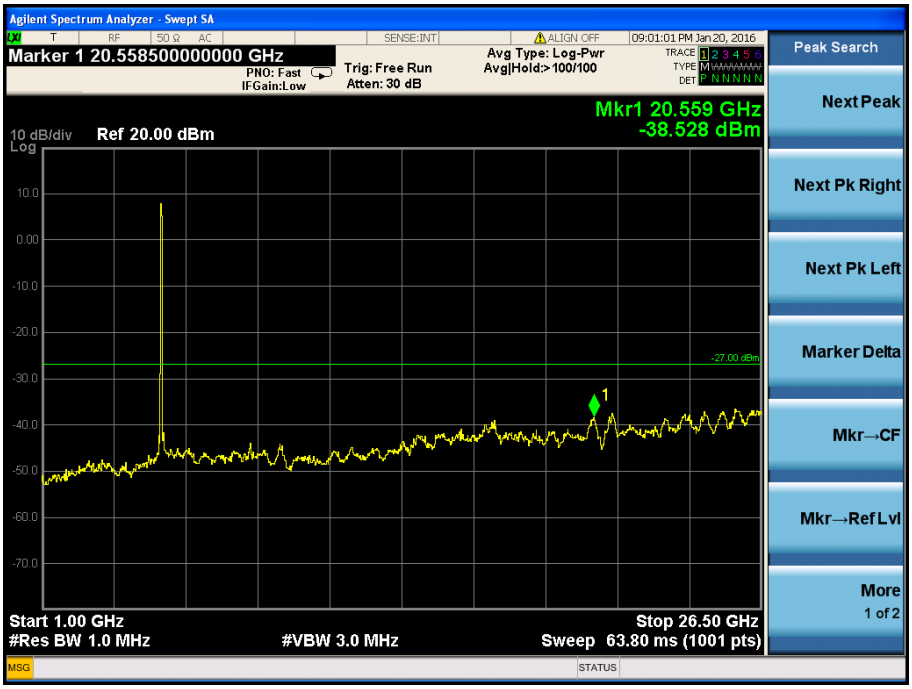

Agilent Spectrum Analyzer - Swept SA
Marker 1 936.950000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
08:58:05 PM Jan 20, 2016
Mkr1 936.95 MHz
-58.876 dBm
10 dB/div
Log
Ref 20.00 dBm
-27.00 dBm
Start 30.0 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 1.0000 GHz
Sweep 92.73 ms (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

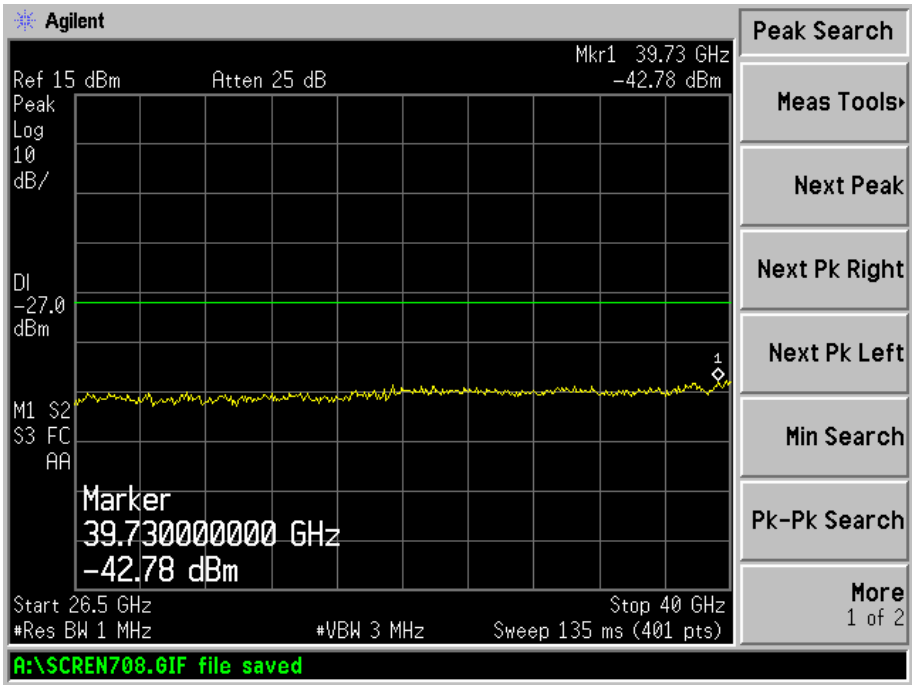

Agilent Spectrum Analyzer - Swept SA
Marker 1 20.558500000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
08:59:16 PM Jan 20, 2016
Mkr1 20.559 GHz
-38.052 dBm
10 dB/div
Log
Ref 20.00 dBm
-27.00 dBm
Start 1.00 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 26.50 GHz
Sweep 63.80 ms (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2


Agilent
Mkr1 40.00 GHz
-41.57 dBm
Ref 15 dBm
Atten 25 dB
Peak
Log
10
dB/
Dl
-27.0
dBm
M1 S2
S3 FC
AA
Marker
40.000000000 GHz
-41.57 dBm
Start 26.5 GHz
#Res BW 1 MHz
#VBW 3 MHz
Stop 40 GHz
Sweep 135 ms (401 pts)
A:\STATE706.STA file deleted
Peak Search
Meas Tools
Next Peak
Next Pk Right
Next Pk Left
Min Search
Pk-Pk Search
More
1 of 2

5240MHz

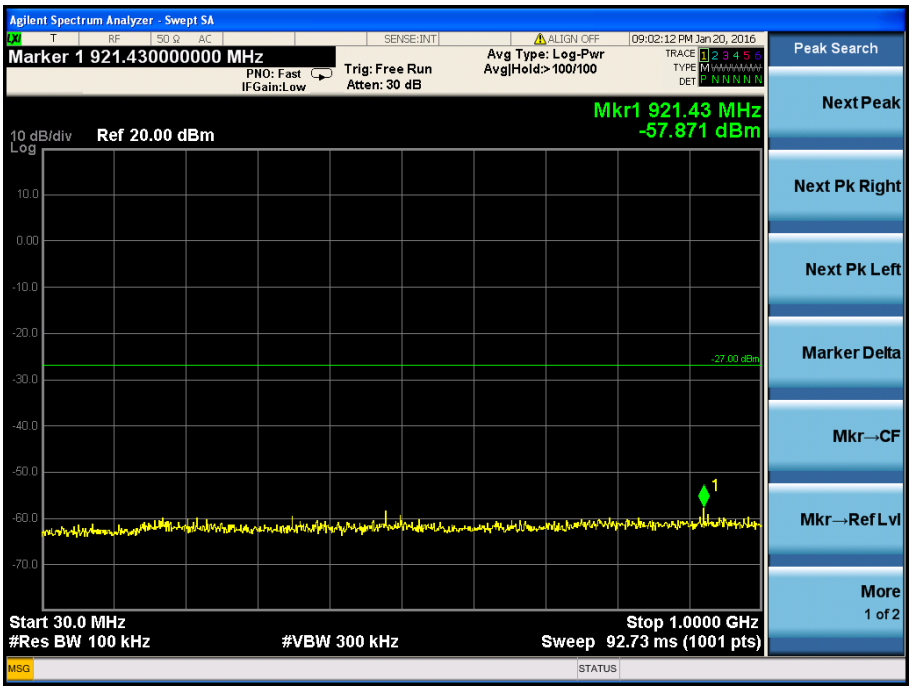

Agilent Spectrum Analyzer - Swept SA
Marker 1 827.340000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
08:59:59 PM Jan 20, 2016
Mkr1 827.34 MHz
-58.982 dBm
10 dB/div
Log
Ref 20.00 dBm
-27.00 dBm
Start 30.0 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 1.0000 GHz
Sweep 92.73 ms (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
MSG
STATUS

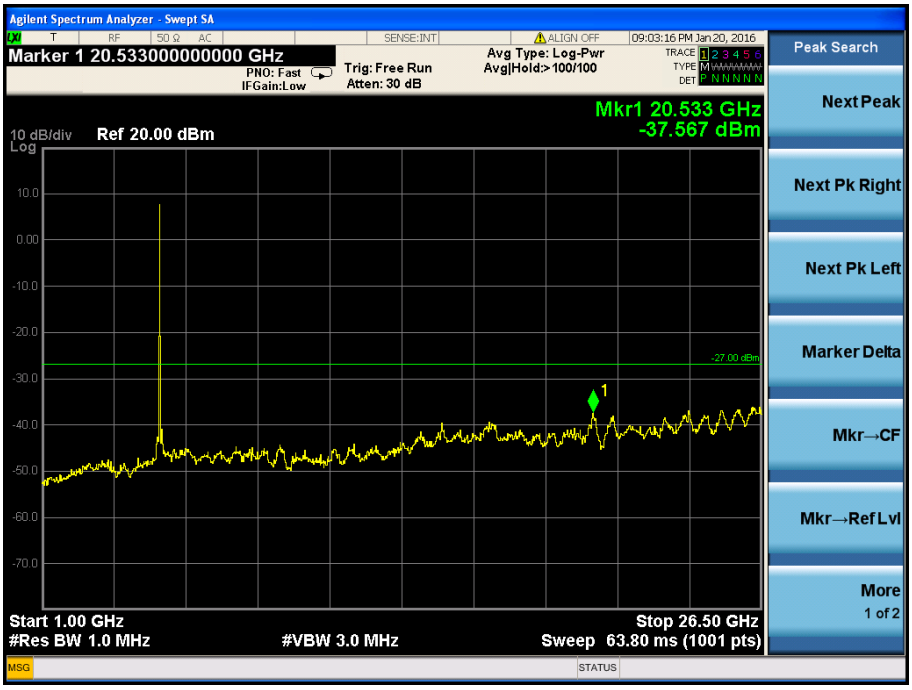

Agilent Spectrum Analyzer - Swept SA
Marker 1 20.558500000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
09:01:01 PM Jan 20, 2016
Mkr1 20.559 GHz
-38.528 dBm
10 dB/div
Log
Ref 20.00 dBm
-27.00 dBm
Start 1.00 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 26.50 GHz
Sweep 63.80 ms (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
MSG
STATUS

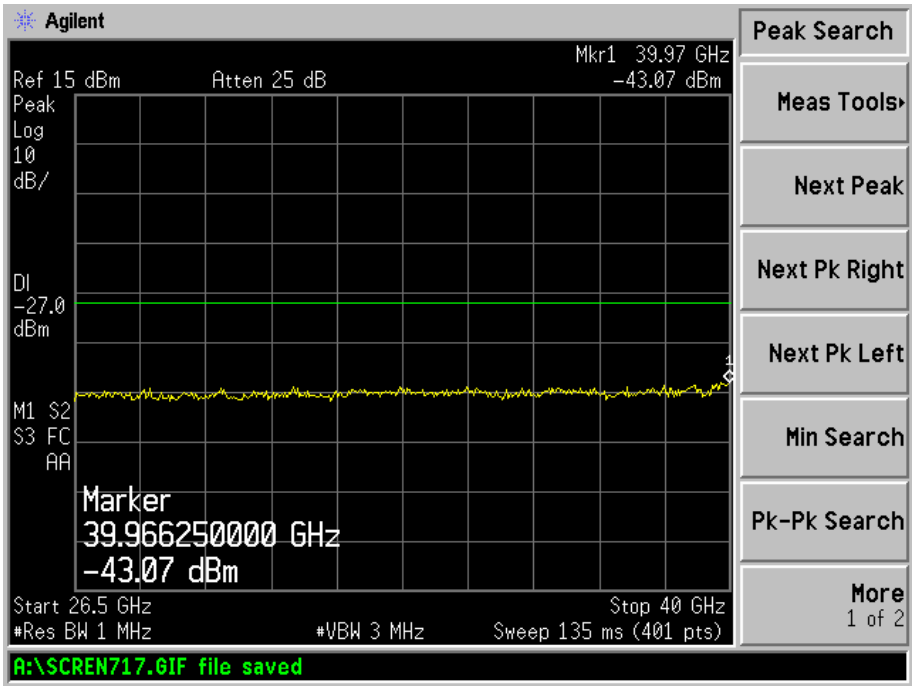


802.11n HT20

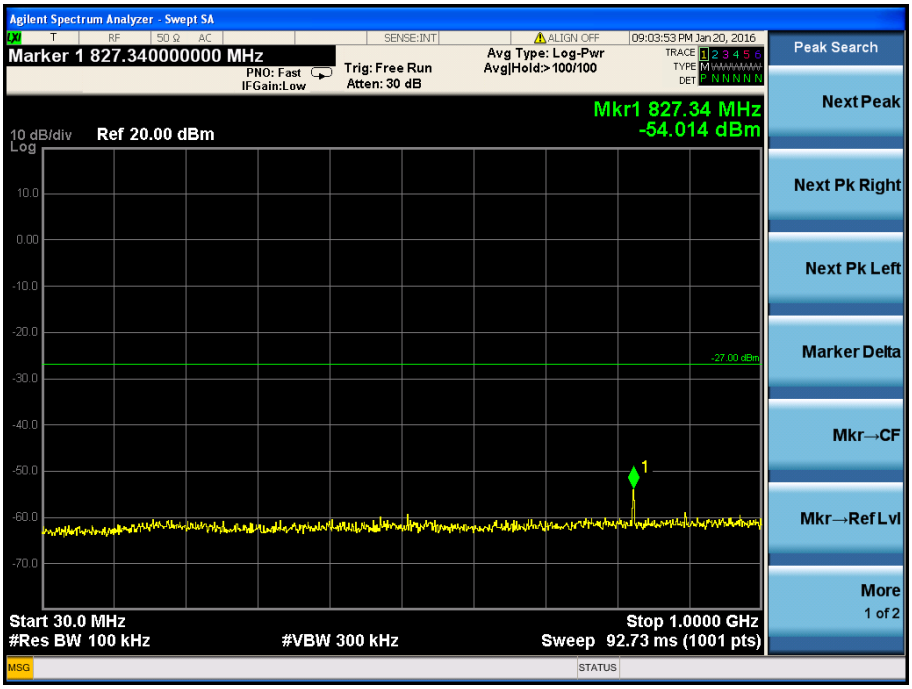
5180MHz

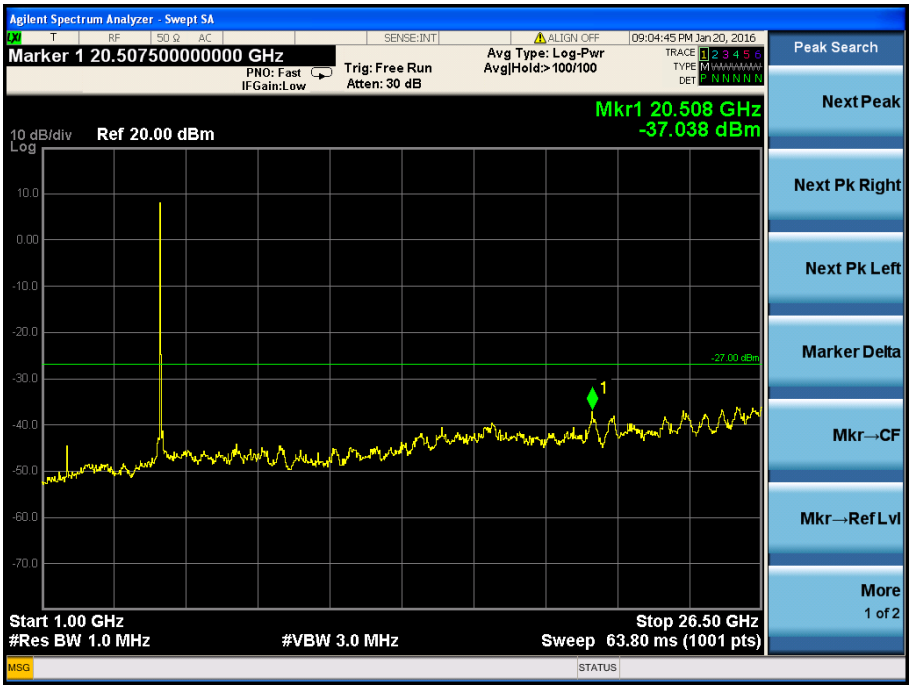


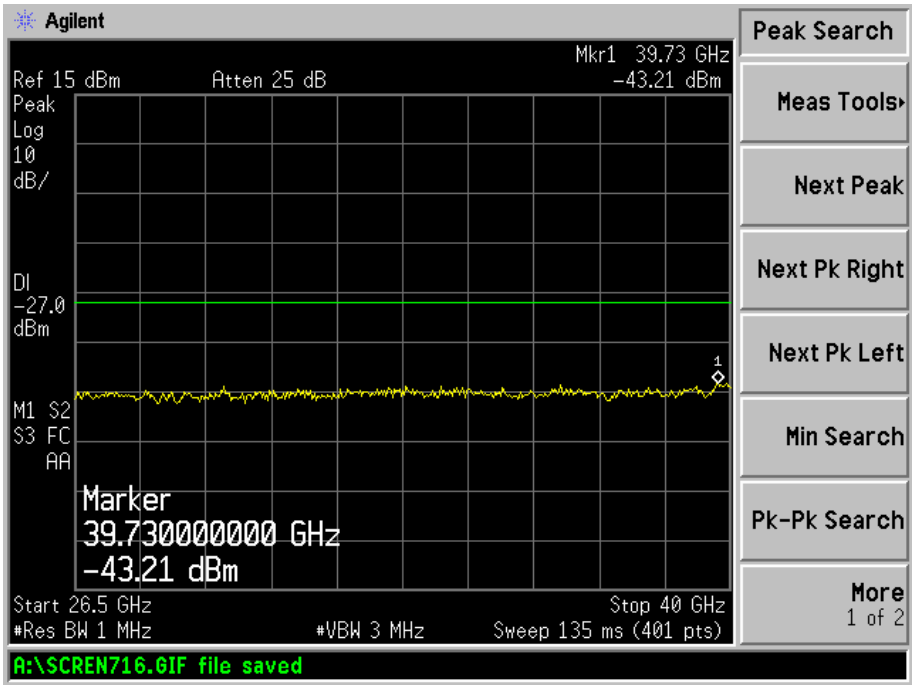

Agilent Spectrum Analyzer - Swept SA
Marker 1 20.533000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
09:03:16 PM Jan 20, 2016
Mkr1 20.533 GHz
-37.567 dBm
10 dB/div
Log
Ref 20.00 dBm
-27.00 dBm
Start 1.00 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 26.50 GHz
Sweep 63.80 ms (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2


Agilent
Mkr1 39.97 GHz
-43.07 dBm
Ref 15 dBm
Atten 25 dB
Peak
Log
10
dB/
Dl
-27.0
dBm
M1 S2
S3 FC
AA
Marker
39.966250000 GHz
-43.07 dBm
Start 26.5 GHz
#Res BW 1 MHz
#VBW 3 MHz
Stop 40 GHz
Sweep 135 ms (401 pts)
A:\SCREN717.GIF file saved
Peak Search
Meas Tools
Next Peak
Next Pk Right
Next Pk Left
Min Search
Pk-Pk Search
More
1 of 2

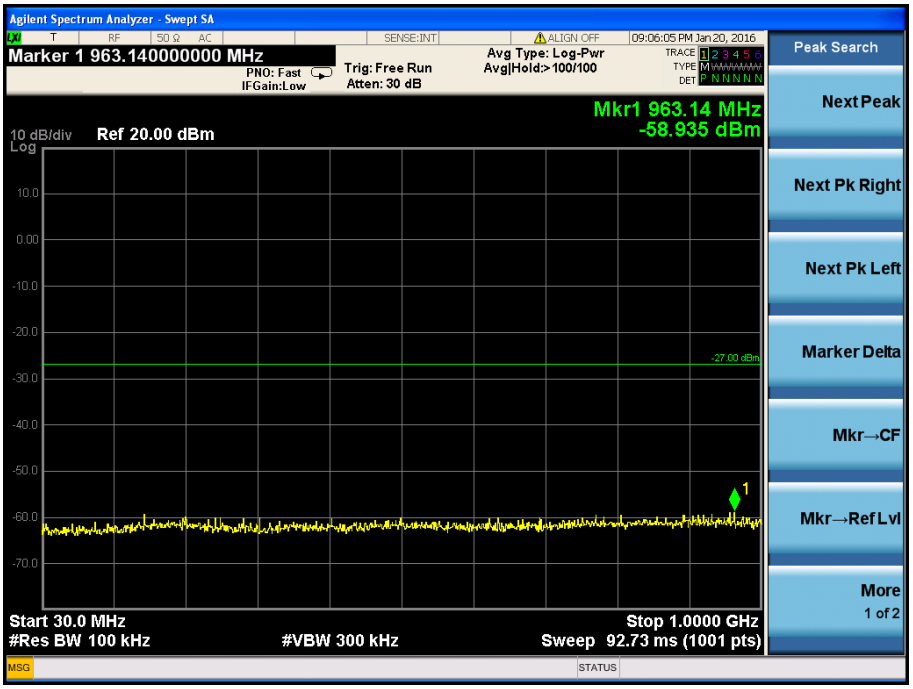
5200MHz

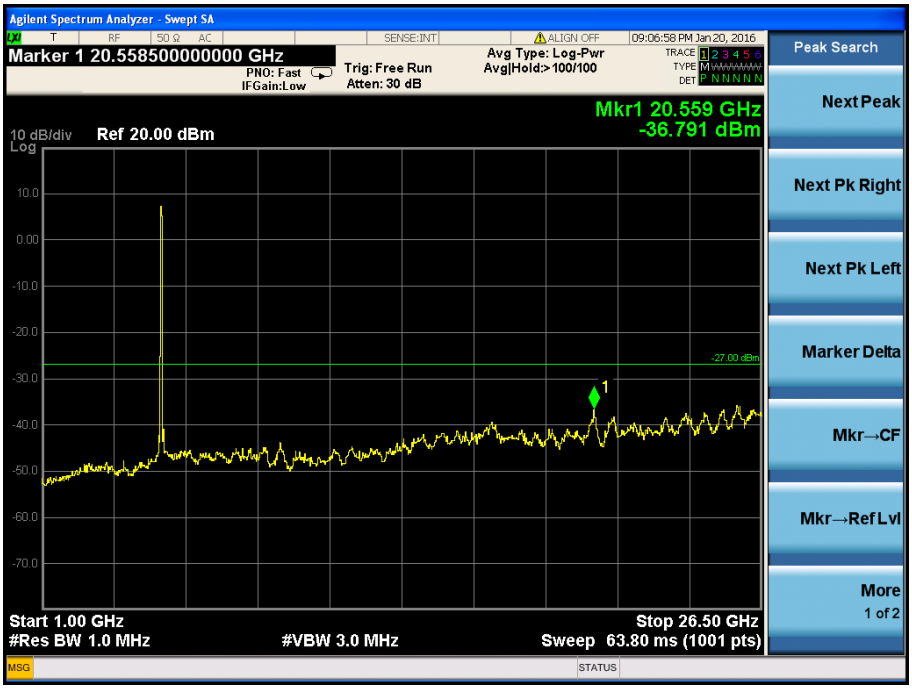

Agilent Spectrum Analyzer - Swept SA
Marker 1 827.340000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
09:03:53 PM Jan 20, 2016
Mkr1 827.34 MHz
-54.014 dBm
10 dB/div
Log
Ref 20.00 dBm
-27.00 dBm
Start 30.0 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 1.0000 GHz
Sweep 92.73 ms (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
MSG
STATUS

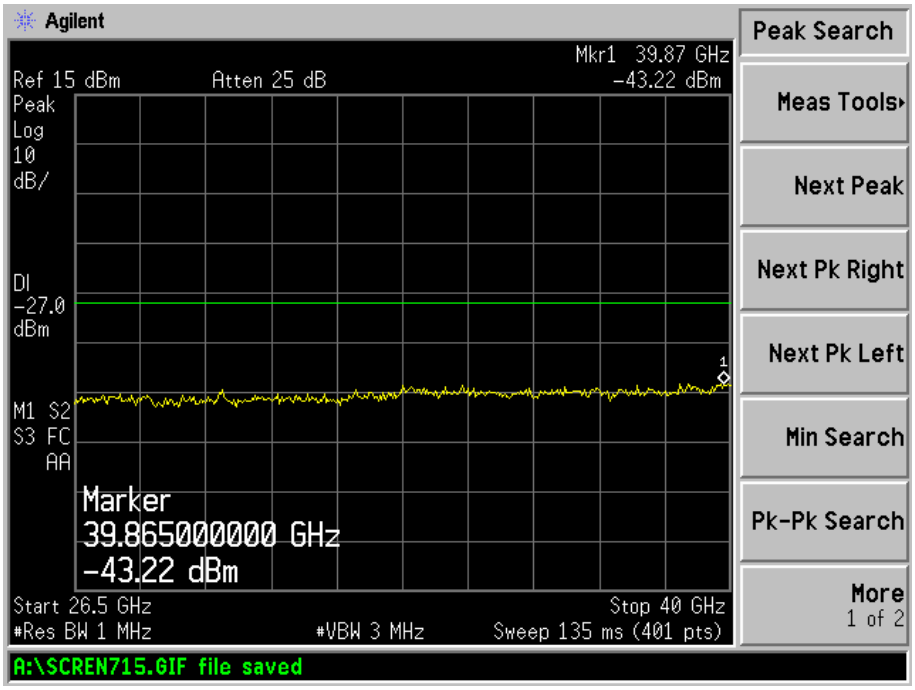

Agilent Spectrum Analyzer - Swept SA
Marker 1 20.507500000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
09:04:45 PM Jan 20, 2016
Mkr1 20.508 GHz
-37.038 dBm
10 dB/div
Log
Ref 20.00 dBm
-27.00 dBm
Start 1.00 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 26.50 GHz
Sweep 63.80 ms (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
MSG
STATUS


Agilent
Mkr1 39.73 GHz
Ref 15 dBm
Atten 25 dB
-43.21 dBm
Peak
Log
10
dB/
DI
-27.0
dBm
M1 S2
S3 FC
AA
Marker
39.730000000 GHz
-43.21 dBm
Start 26.5 GHz
Stop 40 GHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 135 ms (401 pts)
A:\SCREN716.GIF file saved
Peak Search
Meas Tools
Next Peak
Next Pk Right
Next Pk Left
Min Search
Pk-Pk Search
More
1 of 2

5240MHz

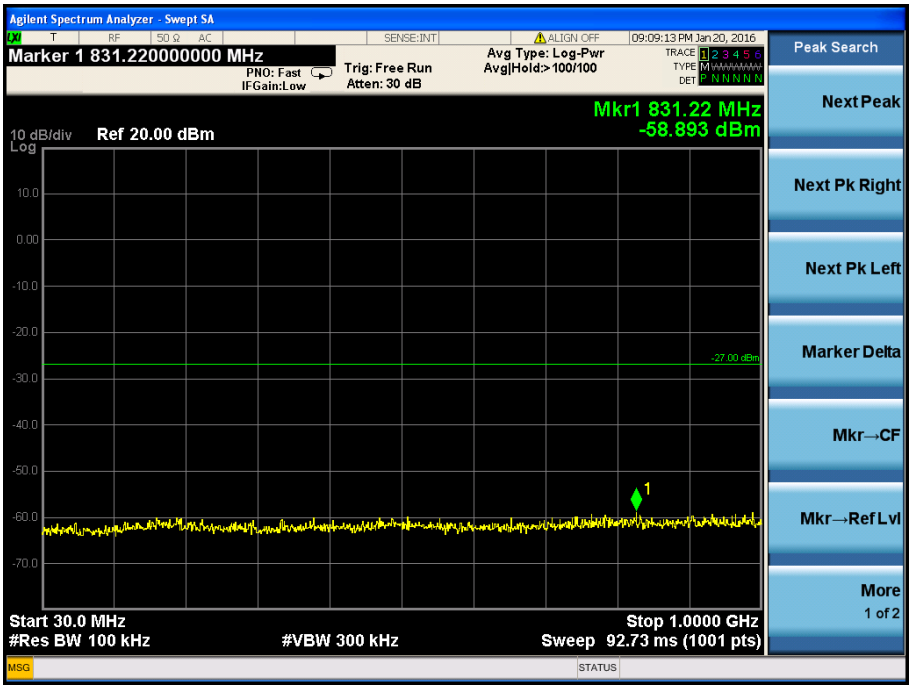

Agilent Spectrum Analyzer - Swept SA
Marker 1 963.140000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
09:06:05 PM Jan 20, 2016
Mkr1 963.14 MHz
-58.935 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-27.00 dBm
-30.0
-40.0
-50.0
-60.0
-70.0
Start 30.0 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 1.0000 GHz
Sweep 92.73 ms (1001 pts)
MSG
STATUS
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

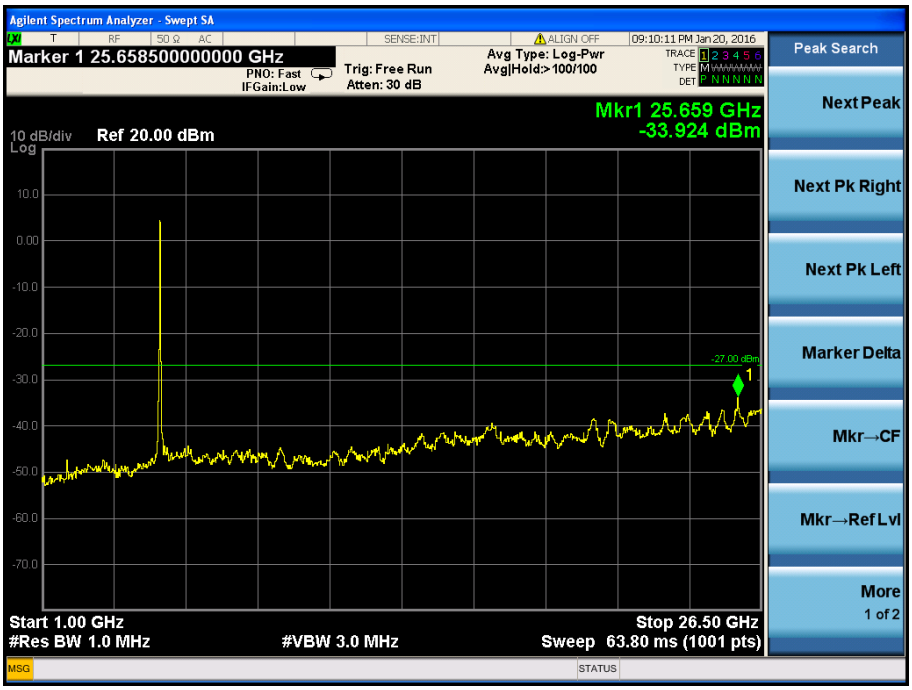

Agilent Spectrum Analyzer - Swept SA
Marker 1 20.558500000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
09:06:58 PM Jan 20, 2016
Mkr1 20.559 GHz
-36.791 dBm
10 dB/div
Log
Ref 20.00 dBm
-27.00 dBm
Start 1.00 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 26.50 GHz
Sweep 63.80 ms (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

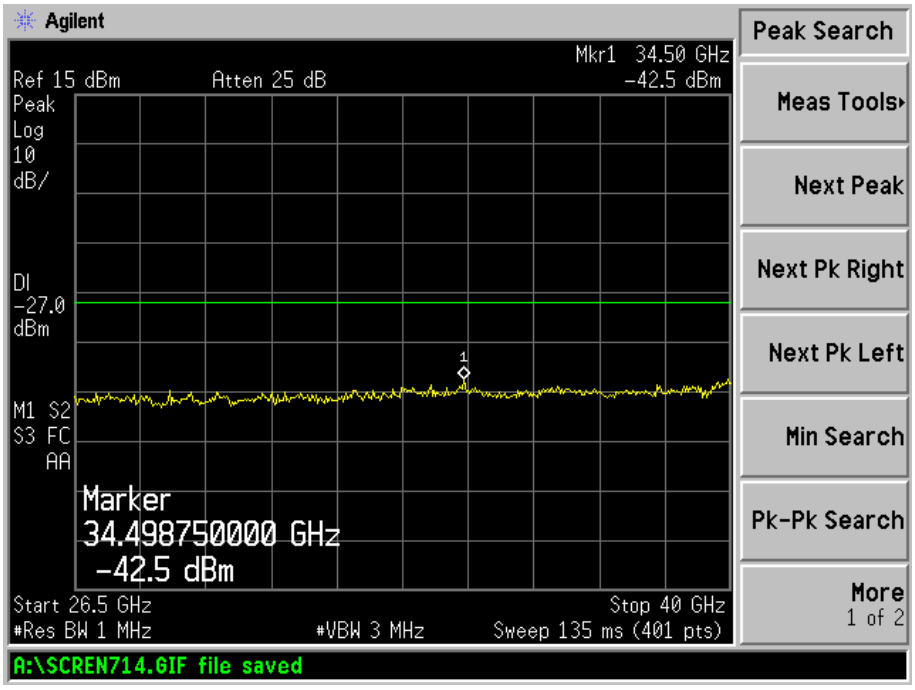

Agilent
Mkr1 39.87 GHz
-43.22 dBm
Ref 15 dBm
Atten 25 dB
Peak
Log
10
dB/
Dl
-27.0
dBm
M1 S2
S3 FC
AA
Marker
39.865000000 GHz
-43.22 dBm
Start 26.5 GHz
#Res BW 1 MHz
#VBW 3 MHz
Stop 40 GHz
Sweep 135 ms (401 pts)
A:\SCREN715.GIF file saved
Peak Search
Meas Tools
Next Peak
Next Pk Right
Next Pk Left
Min Search
Pk-Pk Search
More
1 of 2

802.11n HT40

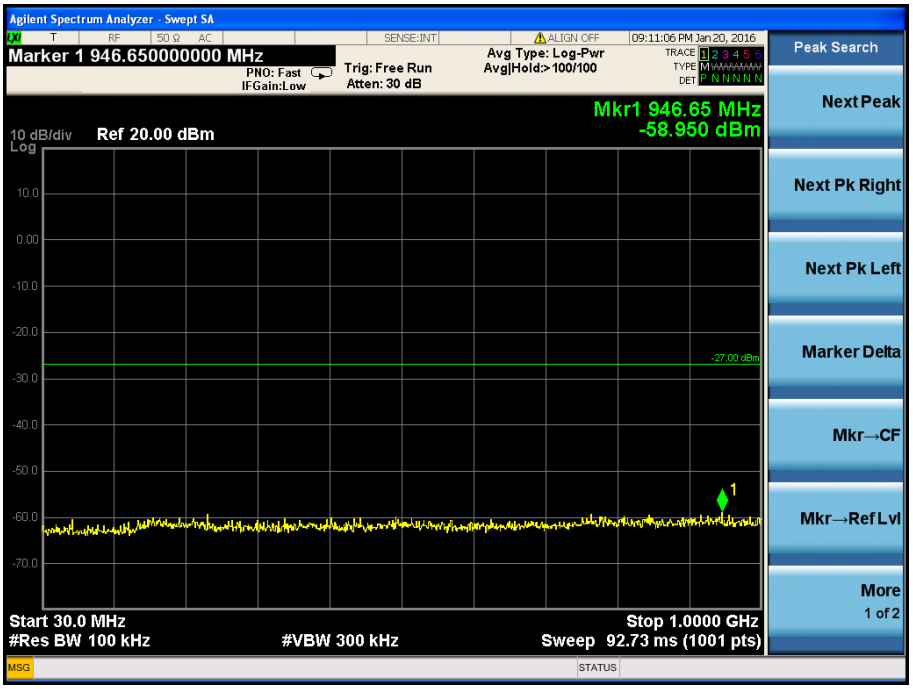
5190MHz

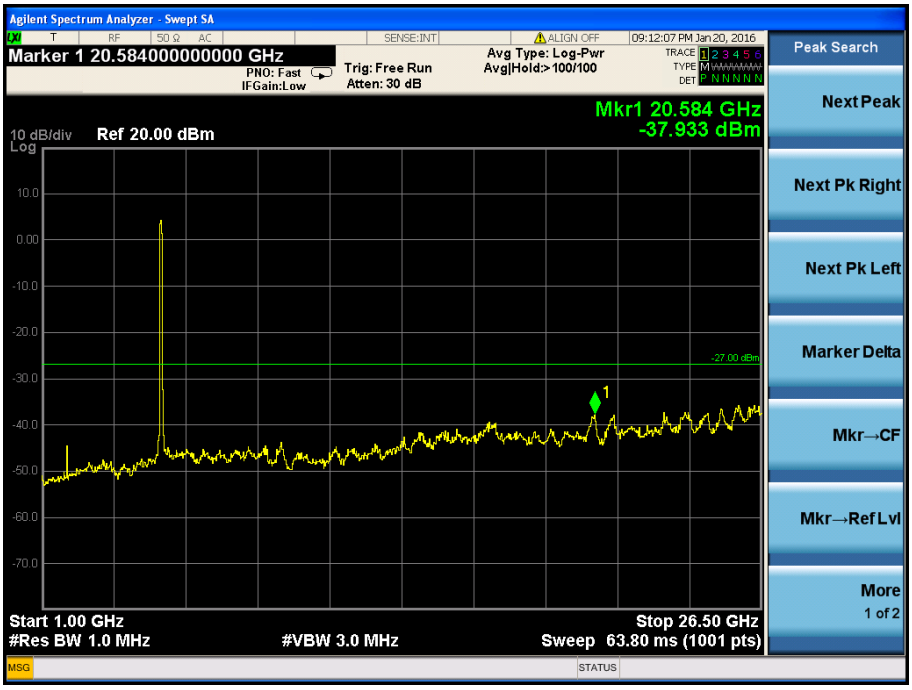


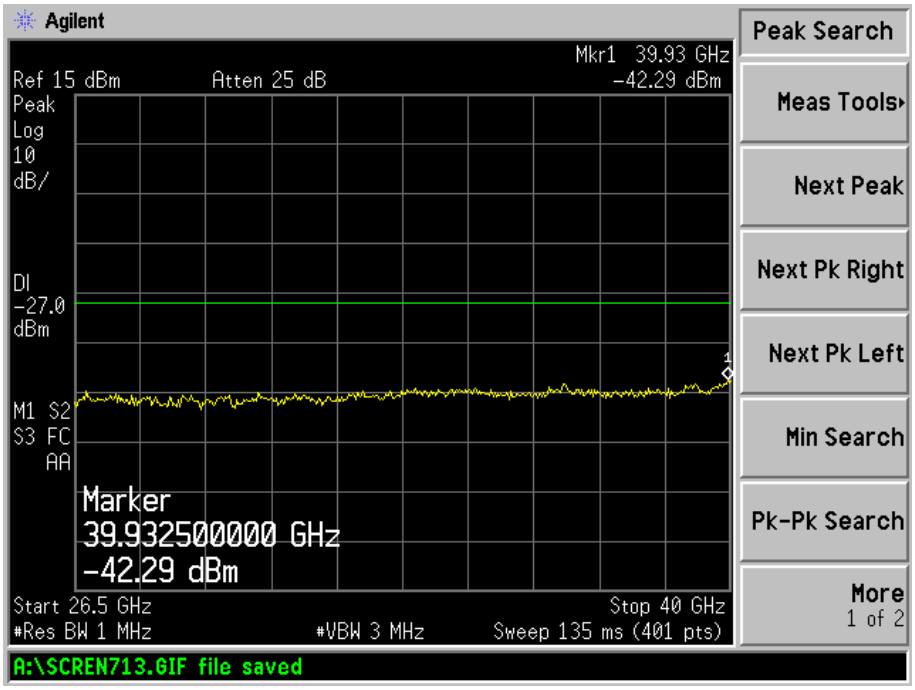



Agilent
Mkr1 34.50 GHz
Ref 15 dBm
Atten 25 dB
-42.5 dBm
Peak
Log
10
dB/
DI
-27.0
dBm
M1 S2
S3 FC
AA
Marker
34.498750000 GHz
-42.5 dBm
Start 26.5 GHz
Stop 40 GHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 135 ms (401 pts)
A:\SCREN714.GIF file saved
Peak Search
Meas Tools
Next Peak
Next Pk Right
Next Pk Left
Min Search
Pk-Pk Search
More
1 of 2

5230MHz


Agilent Spectrum Analyzer - Swept SA
Marker 1 946.650000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
09:11:06 PM Jan 20, 2016
Mkr1 946.65 MHz
-58.950 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-27.00 dBm
-30.0
-40.0
-50.0
-60.0
-70.0
Start 30.0 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 1.0000 GHz
Sweep 92.73 ms (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2


Agilent Spectrum Analyzer - Swept SA
Marker 1 20.584000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
09:12:07 PM Jan 20, 2016
Mkr1 20.584 GHz
-37.933 dBm
10 dB/div
Log
Ref 20.00 dBm
-27.00 dBm
Start 1.00 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 26.50 GHz
Sweep 63.80 ms (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2


Agilent
Mkr1 39.93 GHz
-42.29 dBm
Ref 15 dBm
Atten 25 dB
Peak
Log
10
dB/
Dl
-27.0
dBm
M1 S2
S3 FC
AA
Marker
39.932500000 GHz
-42.29 dBm
Start 26.5 GHz
#Res BW 1 MHz
#VBW 3 MHz
Stop 40 GHz
Sweep 135 ms (401 pts)
A:\SCREN713.GIF file saved
Peak Search
Meas Tools
Next Peak
Next Pk Right
Next Pk Left
Min Search
Pk-Pk Search
More
1 of 2

9. Radiated Spurious Emissions

9.1 Standard Applicable

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 General UNII Test Procedures New Rules v01
If radiated measurements are performed, field strength is then converted to EIRP as follows:

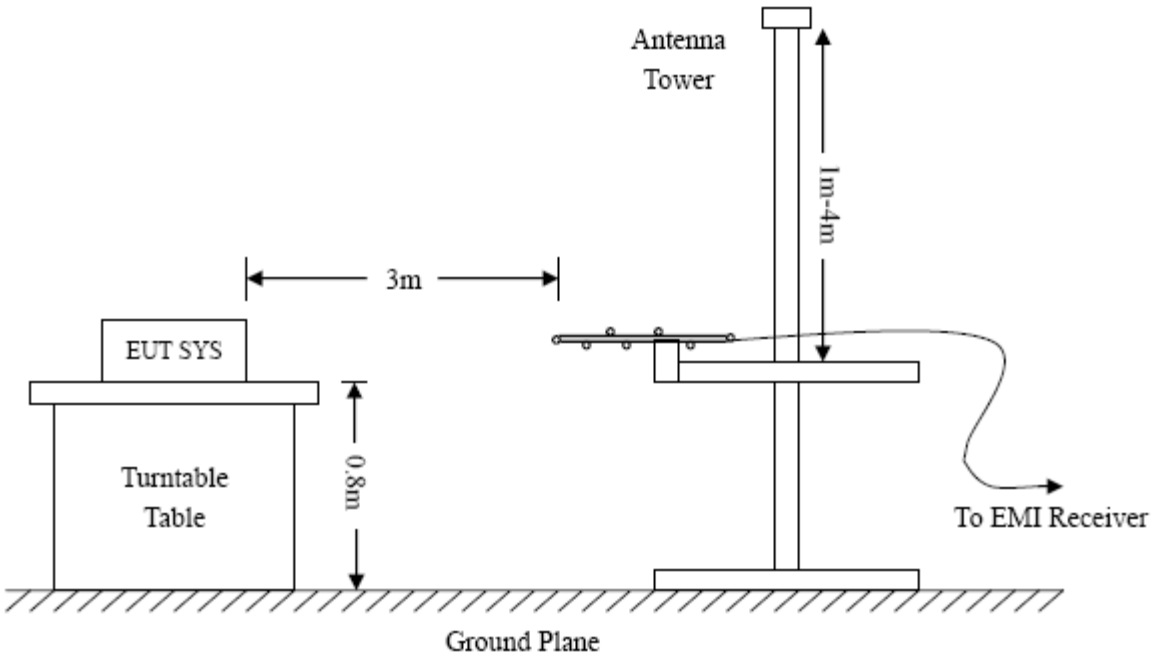
EIRP = ((E*d)^2) / 30

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.

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 15.205 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.



9.3 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

9.4 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:

Corr. Ampl. = Indicated Reading + Ant. Factor + Cable Loss – Ampl. Gain

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

Margin = Corr. Ampl. – FCC Part 15 Limit

9.5 Environmental Conditions

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

9.6 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:

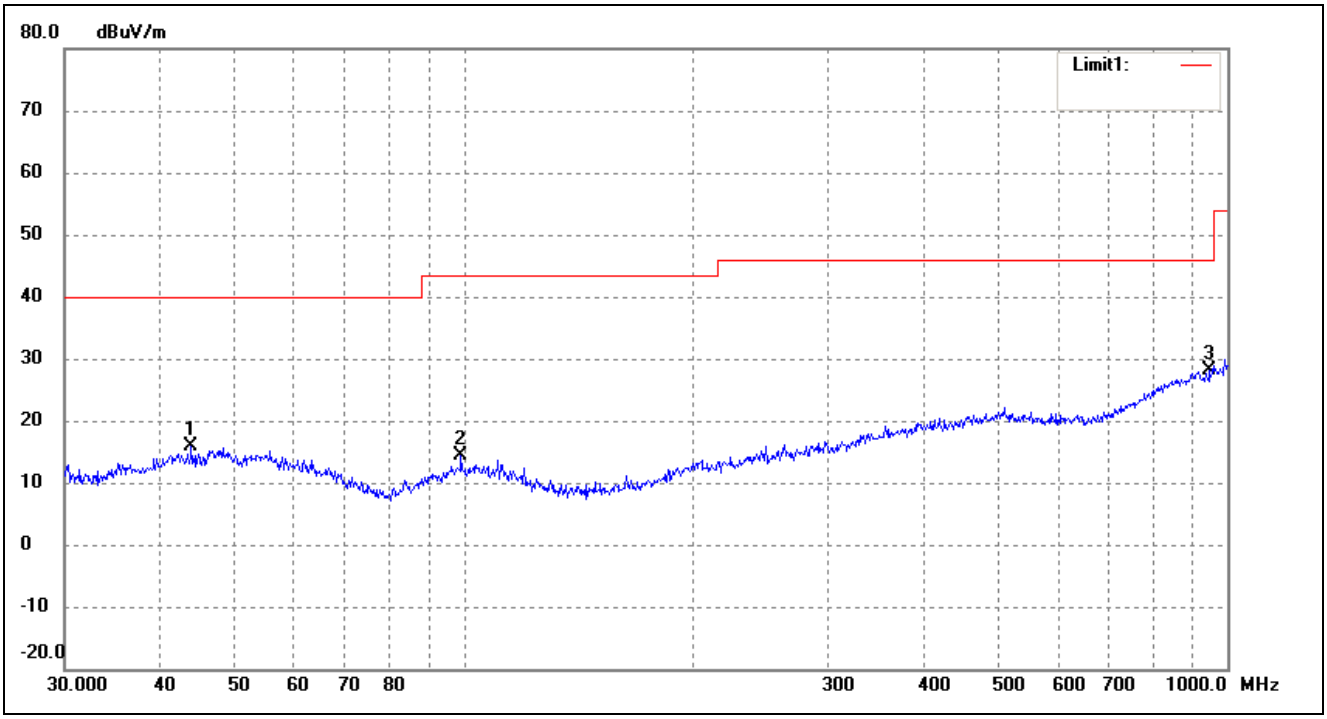
Note: *this EUT was tested in 3 orthogonal positions and the worst case position data was reported.*

For 802.11a

Spurious Emission From 30 MHz to 1 GHz

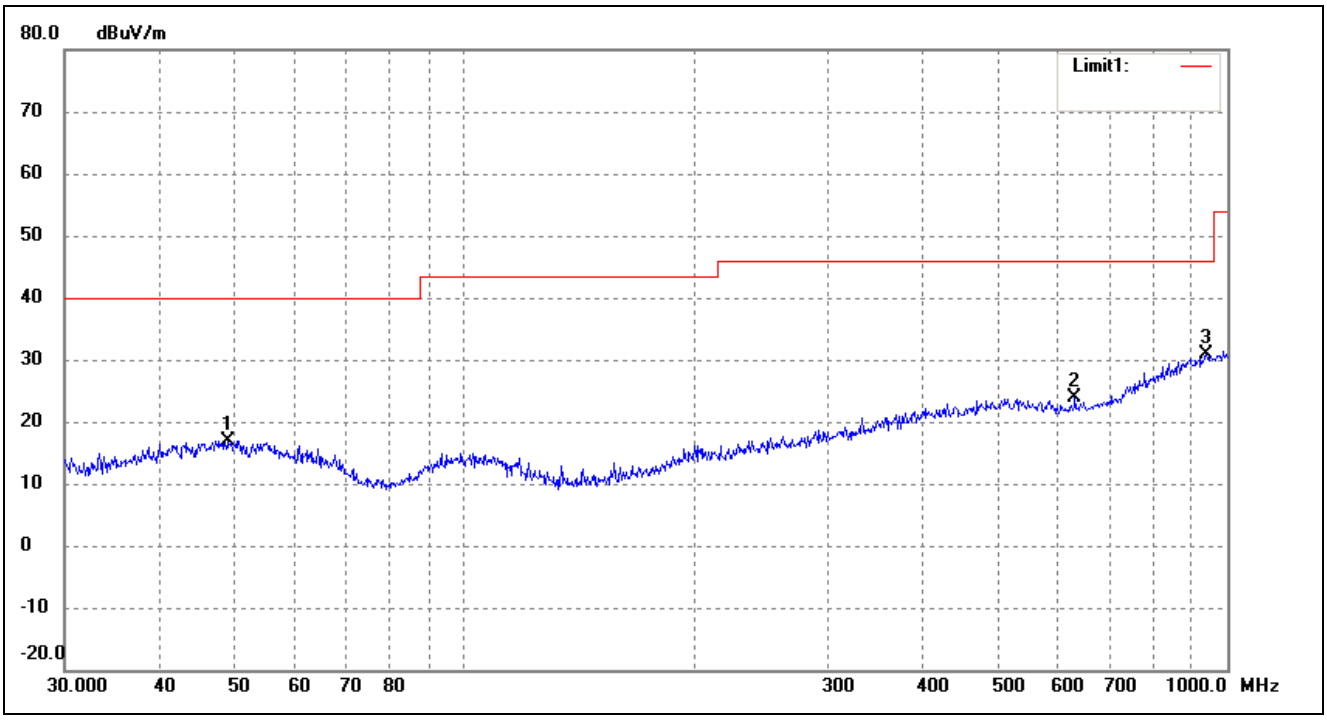
Test mode: Transmitting Channel 5180MHz

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	43.9658	23.55	-7.68	15.87	40.00	-24.13	54	100	peak
2	99.1797	23.95	-9.66	14.29	43.50	-29.21	95	100	peak
3	948.7610	22.21	5.92	28.13	46.00	-17.87	176	100	peak

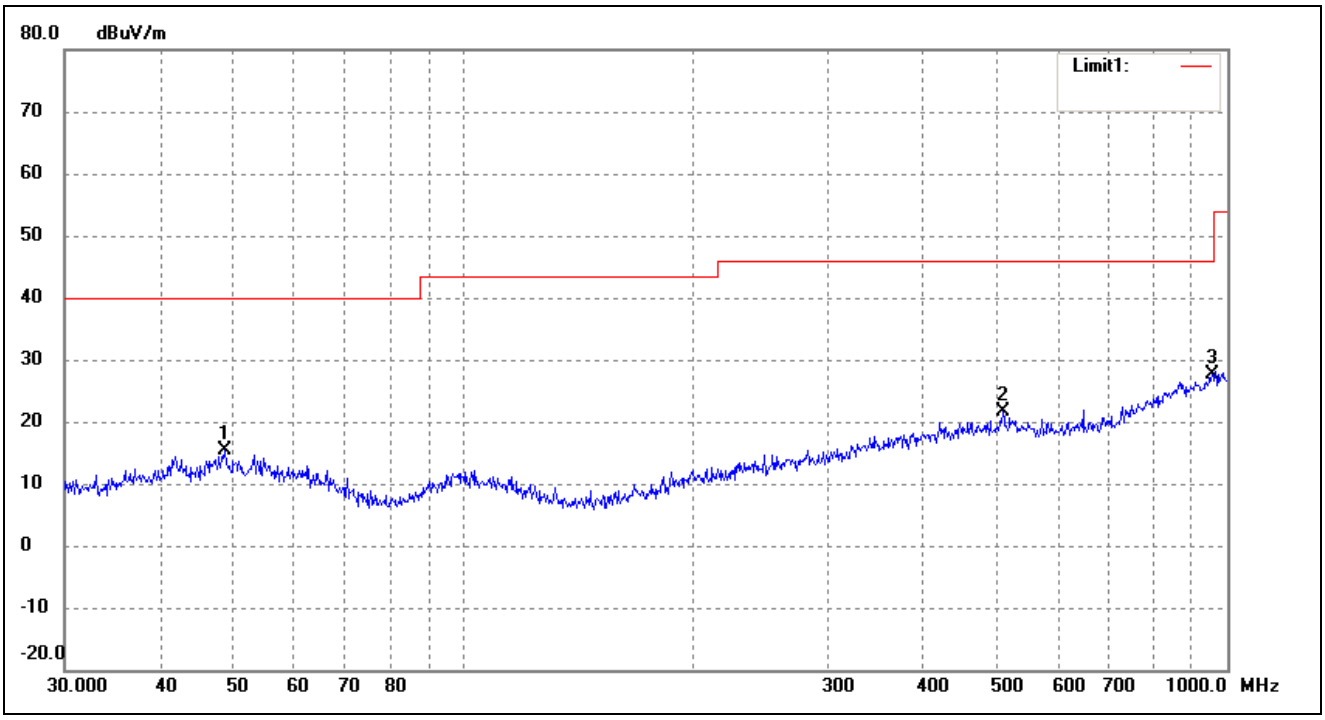
Test Specification: *Vertical*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	49.0145	24.42	-7.44	16.98	40.00	-23.02	97	100	peak
2	631.6884	22.27	1.59	23.86	46.00	-22.14	132	100	peak
3	938.8326	24.96	5.81	30.77	46.00	-15.23	195	100	peak

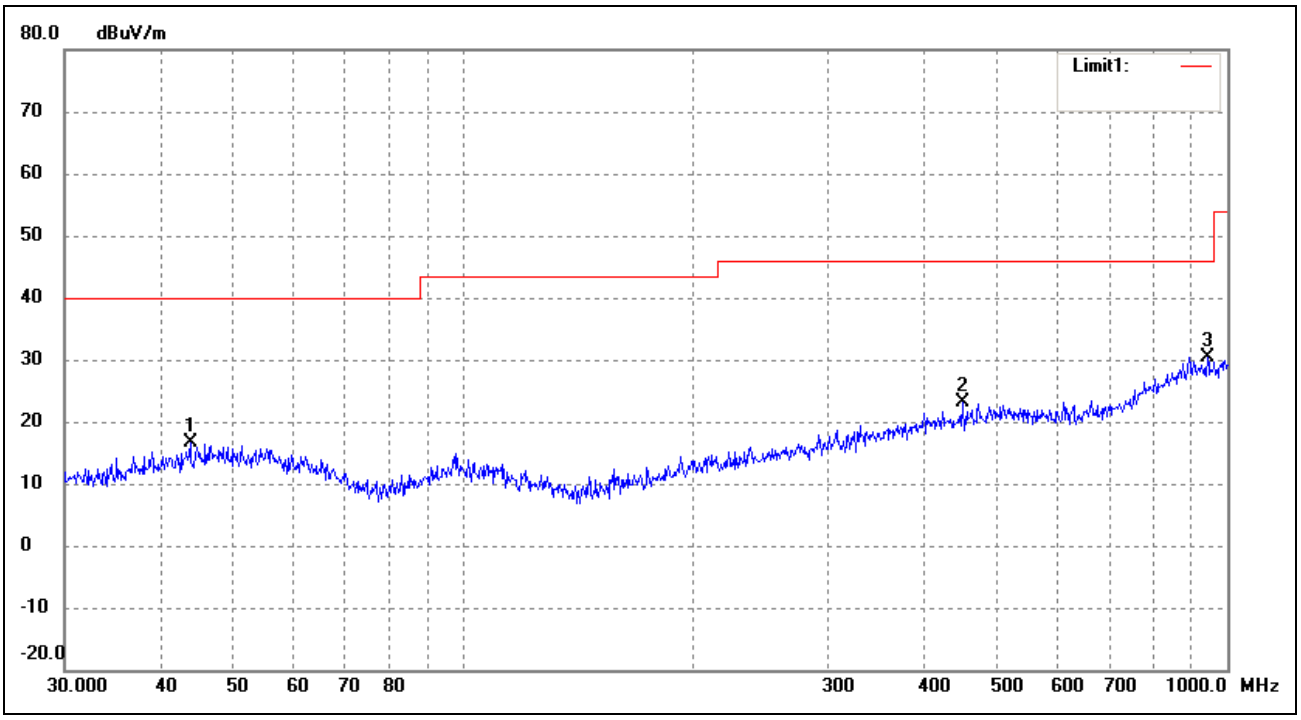
Test mode: Transmitting Channel 5200MHz

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	48.6719	22.73	-7.45	15.28	40.00	-24.72	61	100	peak
2	508.2582	22.70	-1.17	21.53	46.00	-24.47	79	100	peak
3	955.4381	21.63	6.01	27.64	46.00	-18.36	96	100	peak

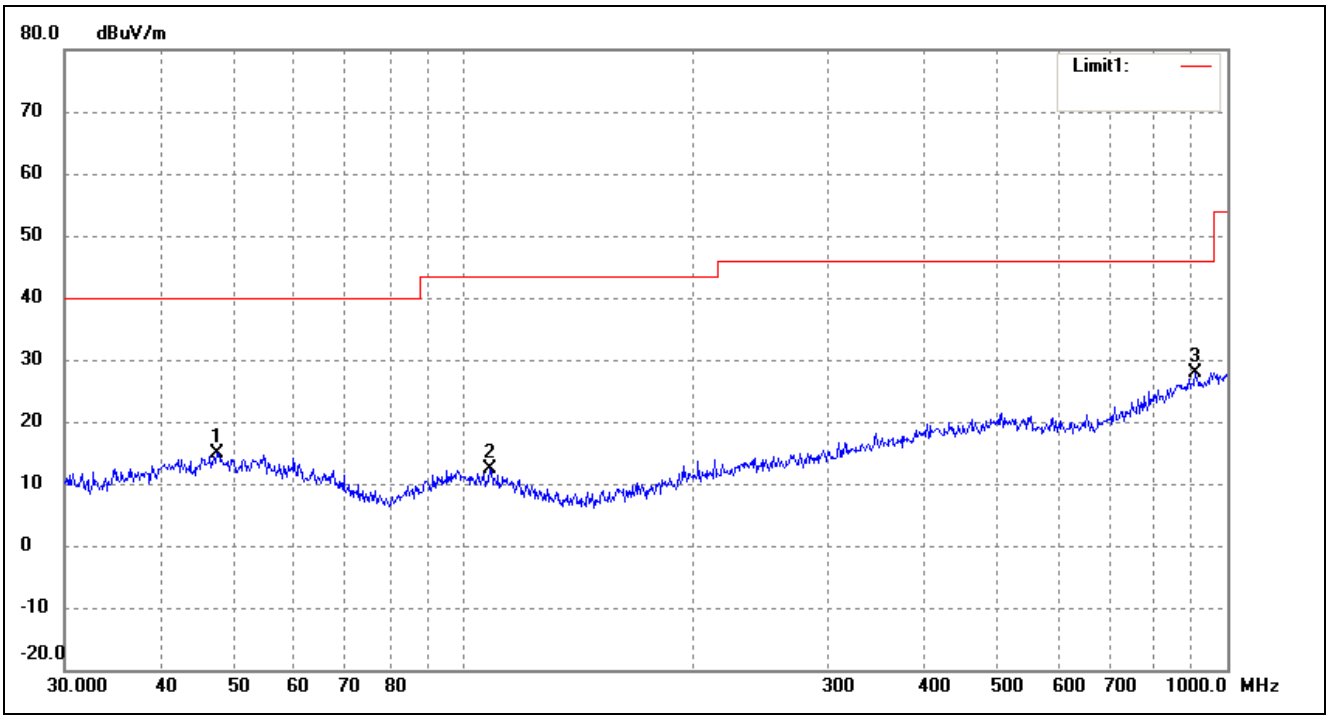
Test Specification: *Vertical*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	43.8119	24.38	-7.71	16.67	40.00	-23.33	42	100	peak
2	449.5558	25.41	-2.17	23.24	46.00	-22.76	90	100	peak
3	942.1305	24.54	5.84	30.38	46.00	-15.62	124	100	peak

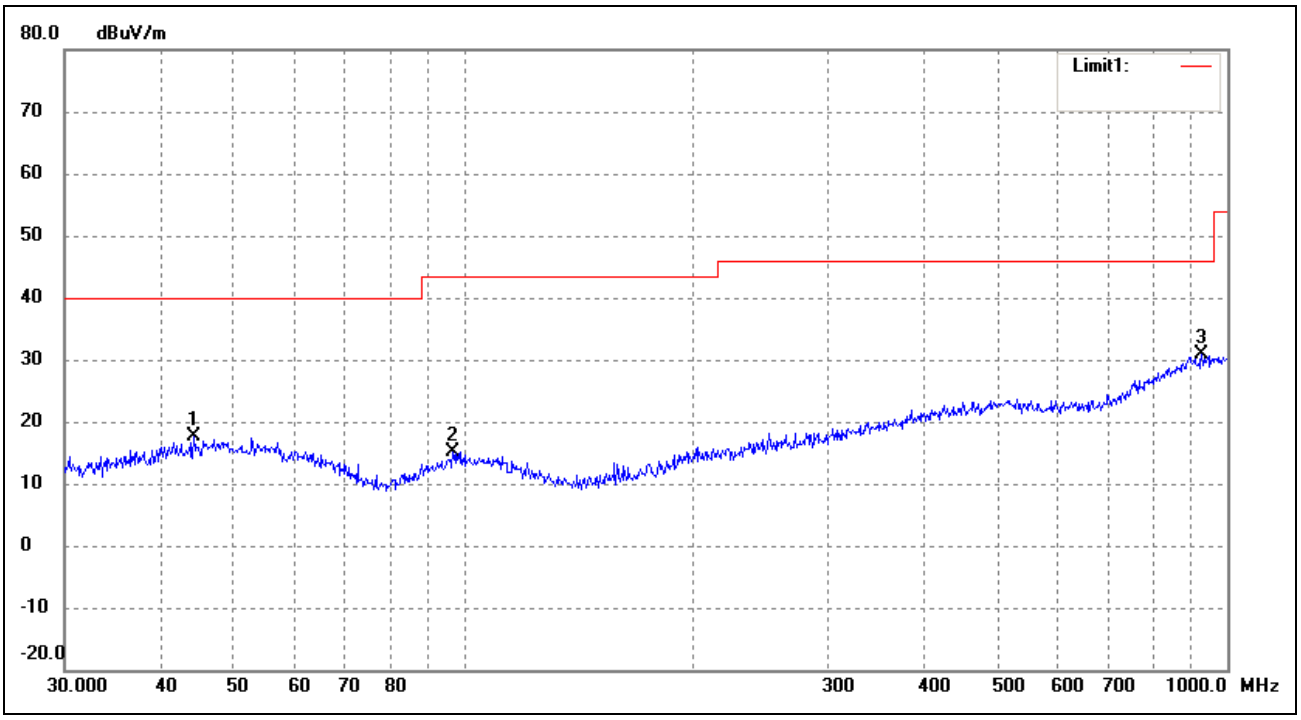
Test mode: Transmitting Channel 5240MHz

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	47.4918	22.38	-7.45	14.93	40.00	-25.07	65	100	peak
2	108.2667	21.86	-9.59	12.27	43.50	-31.23	124	100	peak
3	906.4824	22.37	5.45	27.82	46.00	-18.18	185	100	peak

Test Specification: *Vertical*

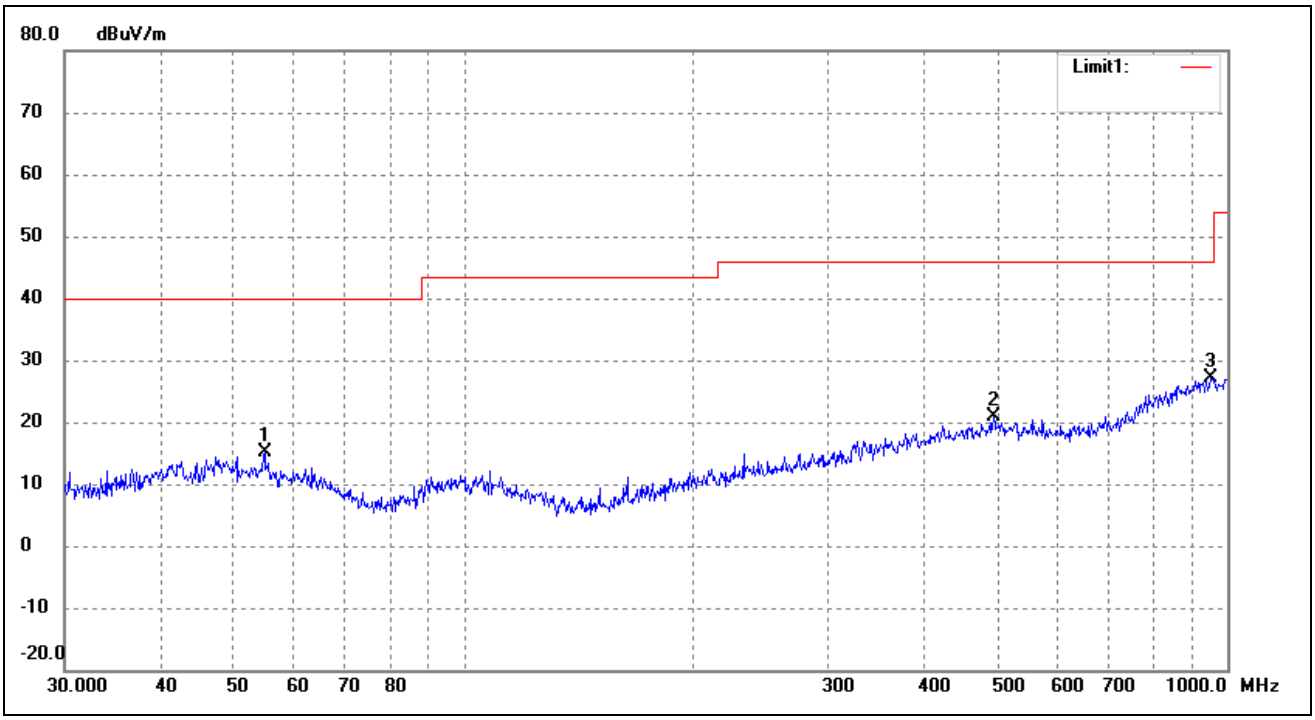


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	44.2752	25.36	-7.61	17.75	40.00	-22.25	55	100	peak
2	96.7749	24.98	-9.95	15.03	43.50	-28.47	126	100	peak
3	925.7563	25.24	5.66	30.90	46.00	-15.10	58	100	peak

For 802.11n-HT20

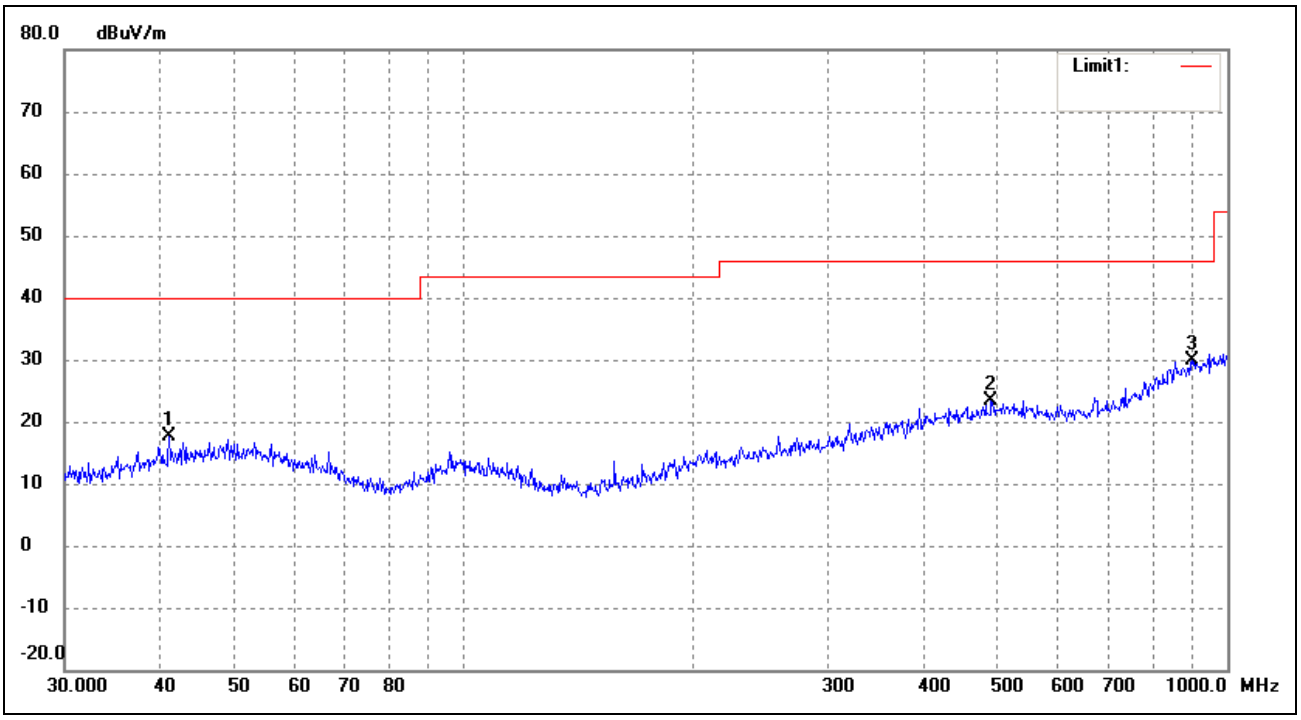
Test mode: Transmitting Channel 5180MHz

Horizontal:



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	54.8348	23.04	-7.93	15.11	40.00	-24.89	67	100	peak
2	494.1984	22.02	-1.26	20.76	46.00	-25.24	105	100	peak
3	952.0937	21.23	5.96	27.19	46.00	-18.81	183	100	peak

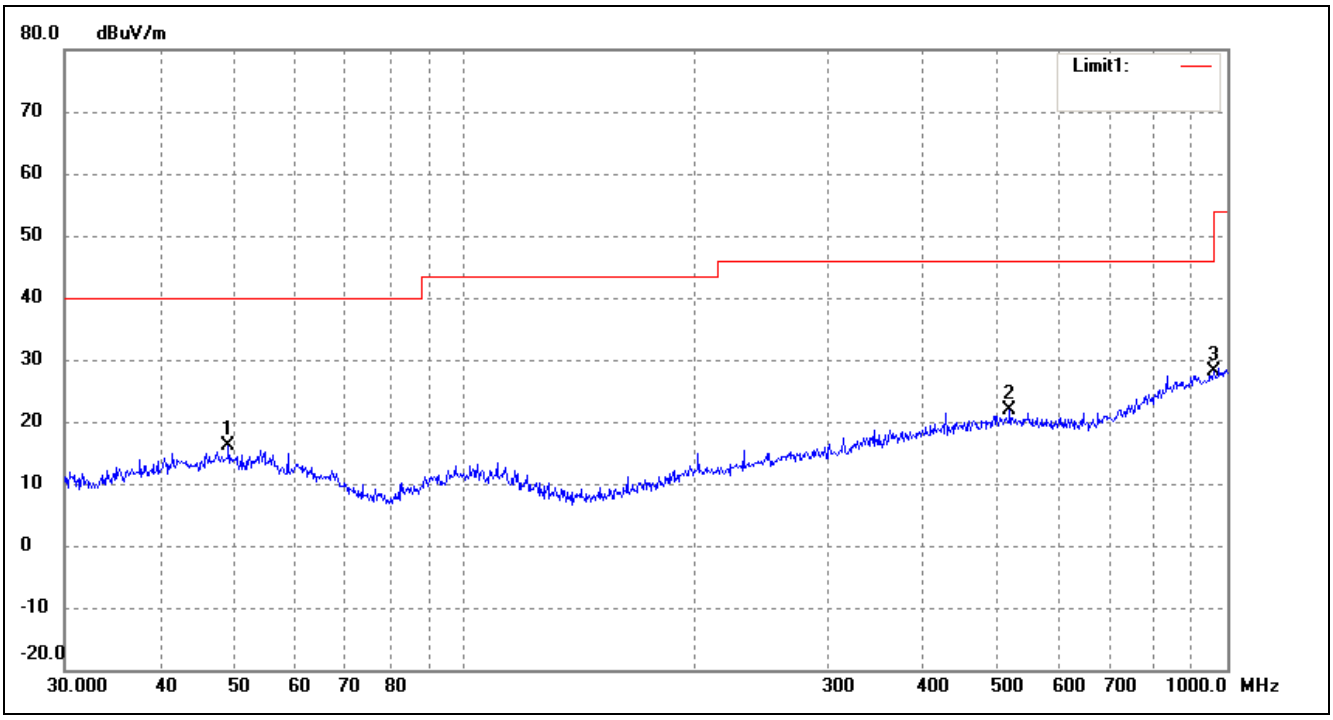
Test Specification: *Vertical*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	41.1320	25.84	-8.21	17.63	40.00	-22.37	61	100	peak
2	490.7447	24.76	-1.33	23.43	46.00	-22.57	80	100	peak
3	900.1474	24.56	5.38	29.94	46.00	-16.06	139	100	peak

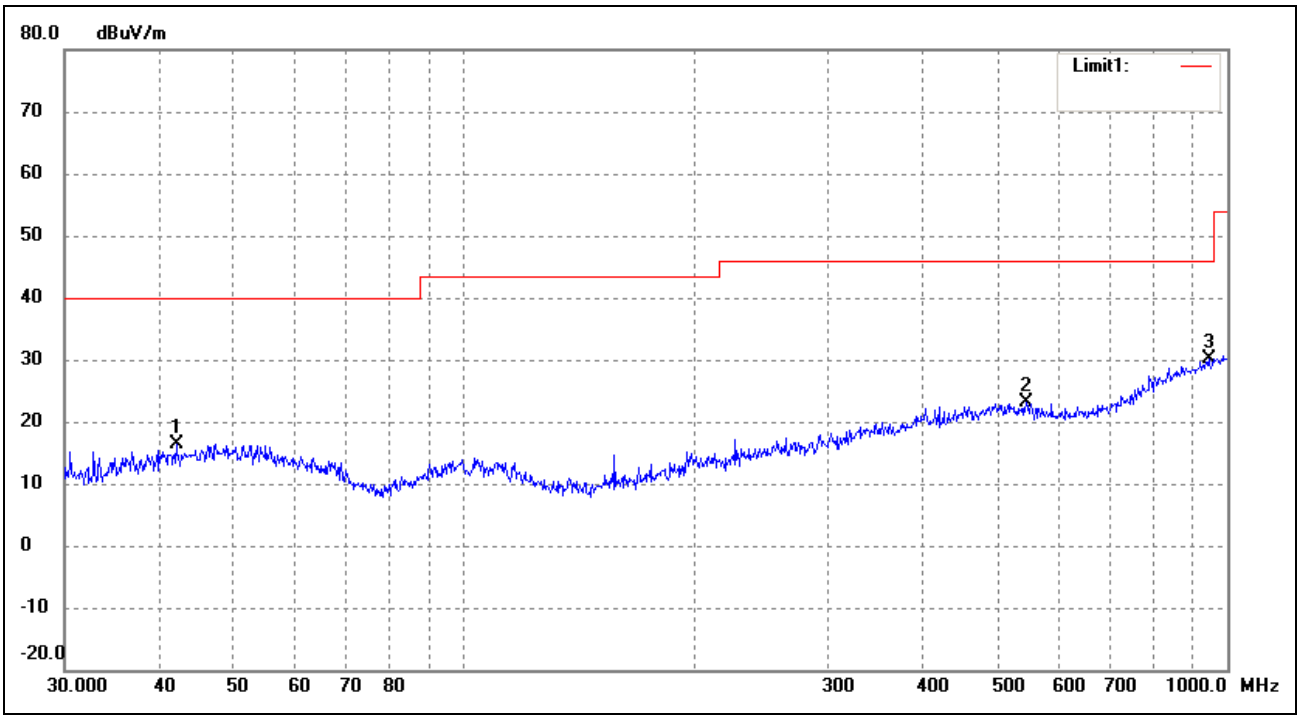
Test mode: Transmitting Channel 5200MHz

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	49.1866	23.48	-7.45	16.03	40.00	-23.97	94	100	peak
2	519.0649	23.02	-1.22	21.80	46.00	-24.20	135	100	peak
3	958.7943	22.08	6.06	28.14	46.00	-17.86	191	100	peak

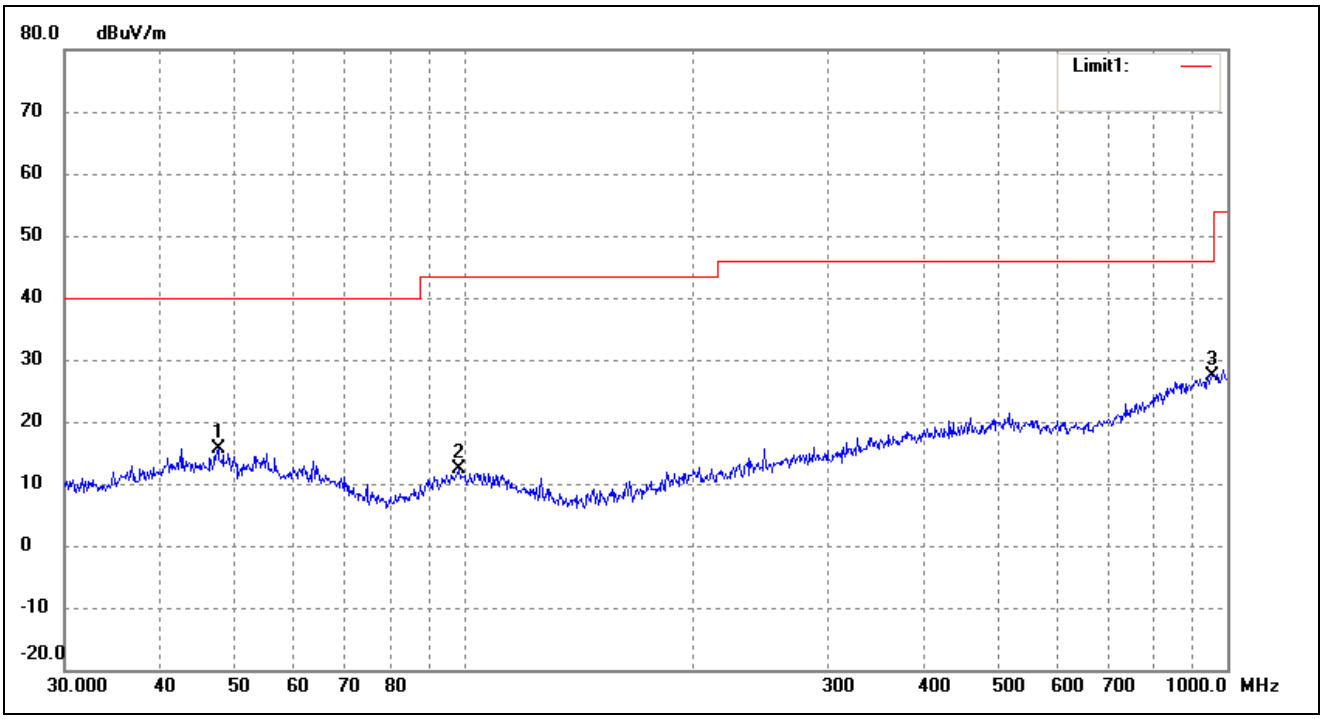
Test Specification: *Vertical*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	42.0066	24.55	-8.05	16.50	40.00	-23.50	36	100	peak
2	545.1826	23.10	0.02	23.12	46.00	-22.88	125	100	peak
3	945.4399	24.13	5.88	30.01	46.00	-15.99	166	200	peak

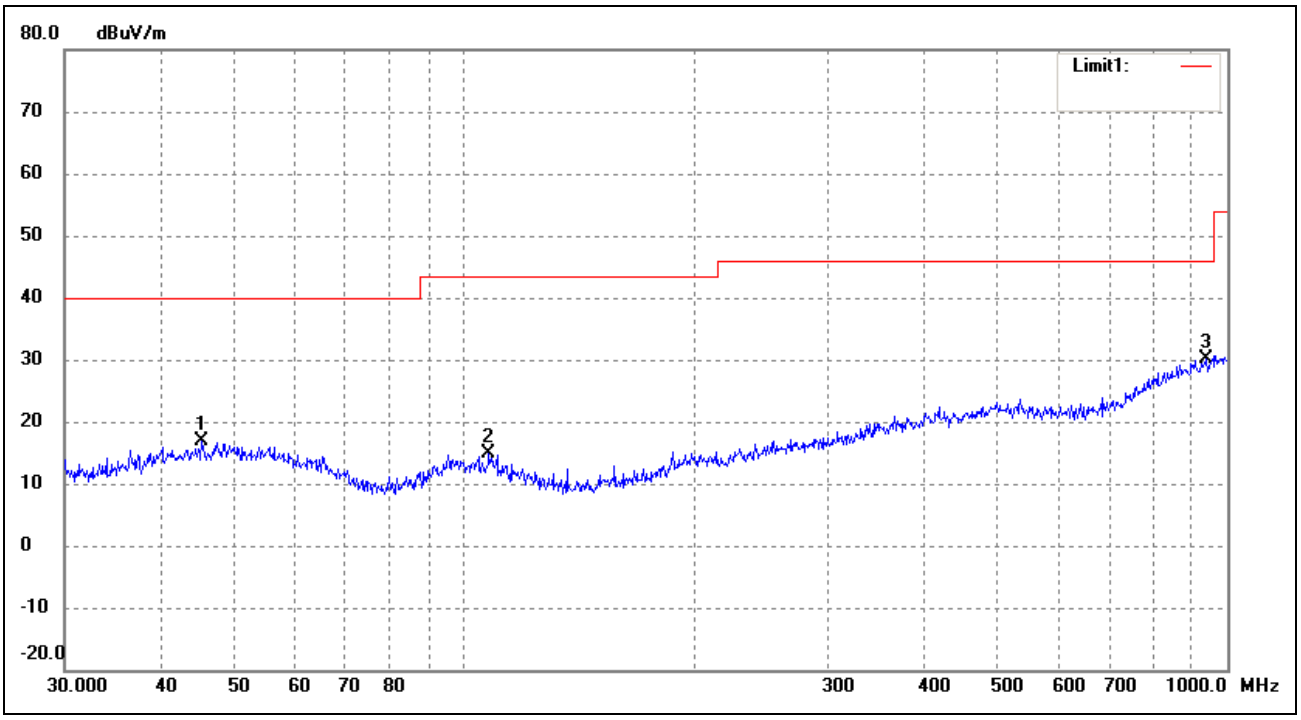
Test mode: Transmitting Channel 5240MHz

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	47.6586	23.20	-7.46	15.74	40.00	-24.26	99	100	peak
2	98.4866	22.11	-9.75	12.36	43.50	-31.14	168	100	peak
3	955.4381	21.45	6.01	27.46	46.00	-18.54	216	100	peak

Test Specification: *Vertical*

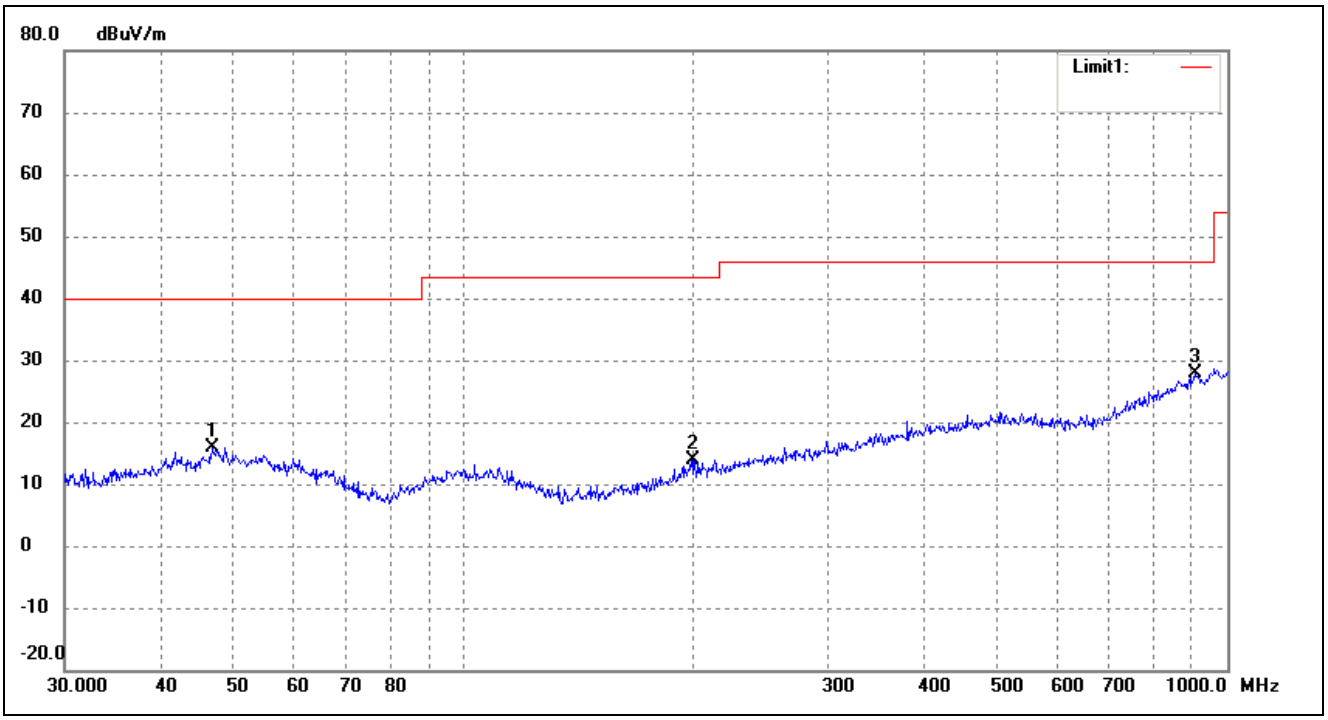


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	45.3755	24.37	-7.46	16.91	40.00	-23.09	52	100	peak
2	107.8877	24.55	-9.59	14.96	43.50	-28.54	135	100	peak
3	938.8326	24.35	5.81	30.16	46.00	-15.84	188	200	peak

For 802.11n-HT40

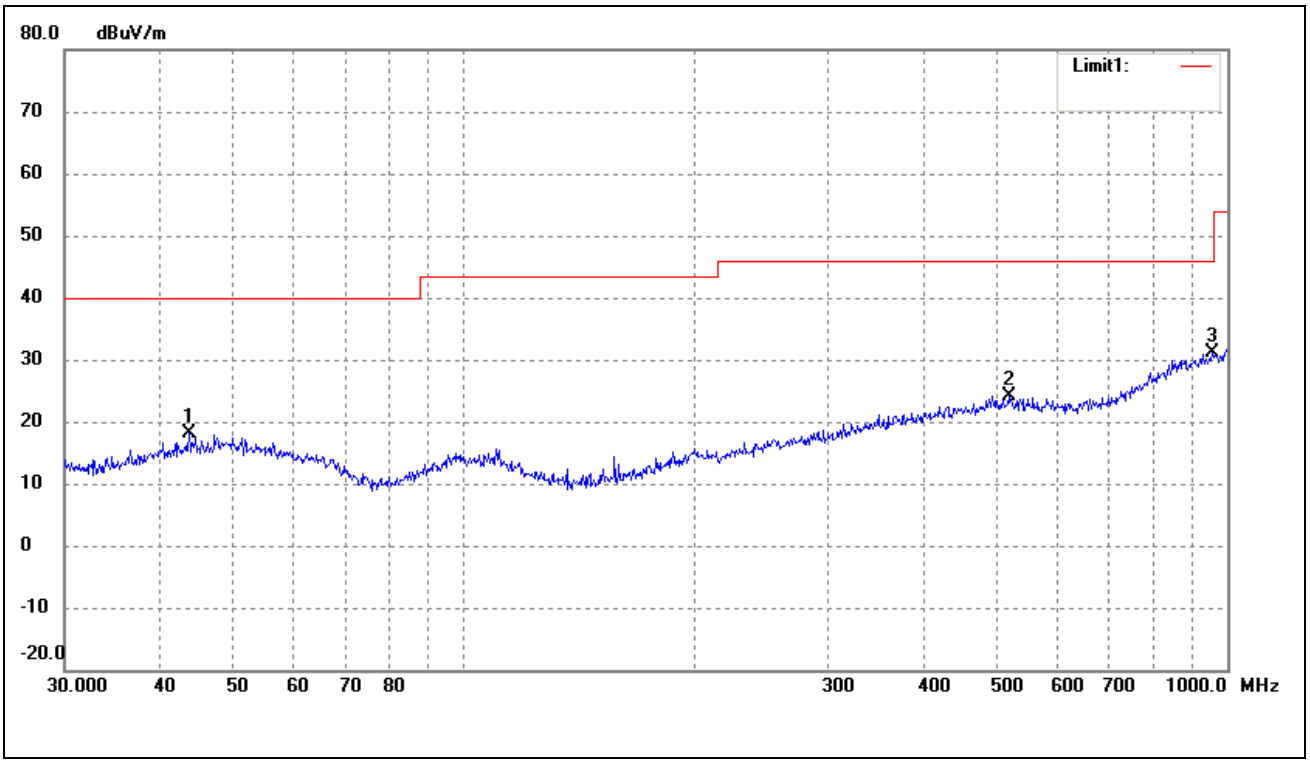
Test mode: Transmitting Channel 5190MHz

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	46.8303	23.34	-7.45	15.89	40.00	-24.11	76	100	peak
2	199.9856	23.06	-9.06	14.00	43.50	-29.50	113	100	peak
3	906.4824	22.37	5.45	27.82	46.00	-18.18	284	100	peak

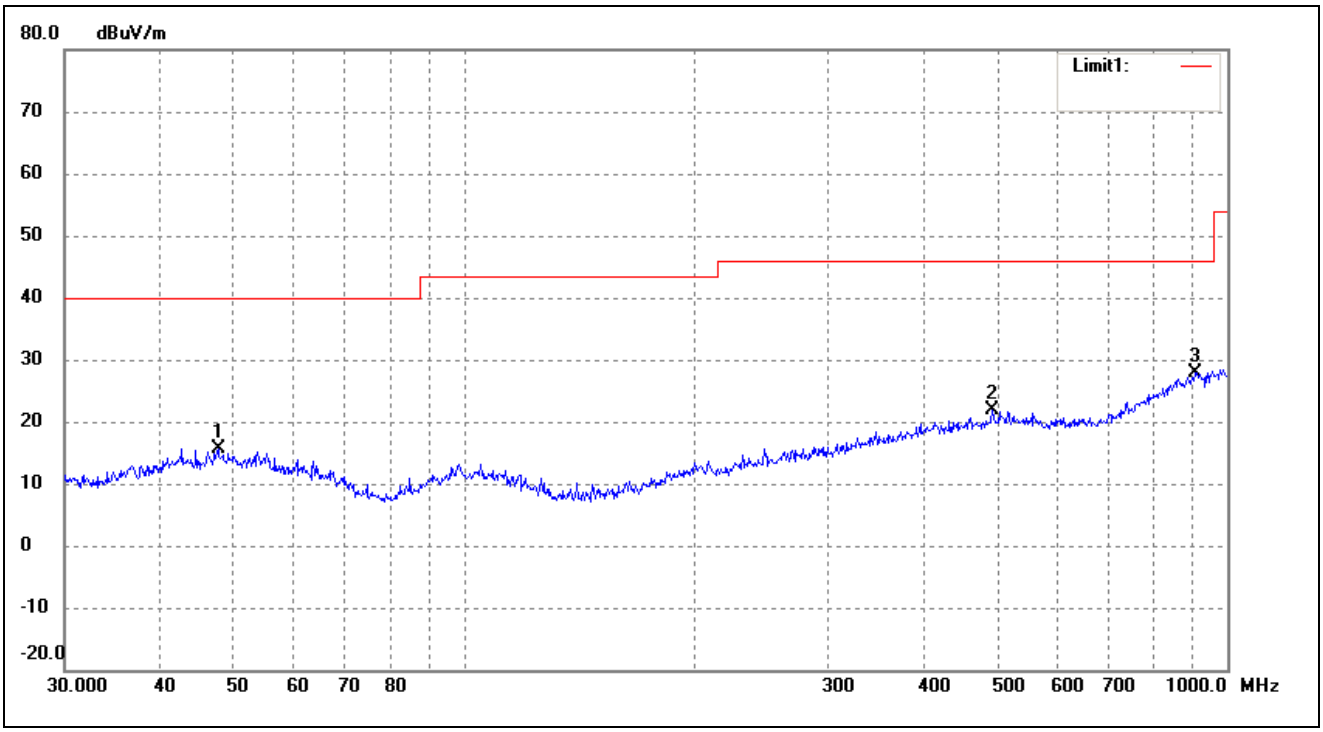
Test Specification: *Vertical*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	43.6585	25.89	-7.73	18.16	40.00	-21.84	46	100	peak
2	517.2480	24.85	-0.68	24.17	46.00	-21.83	170	100	peak
3	955.4381	25.13	6.01	31.14	46.00	-14.86	260	100	peak

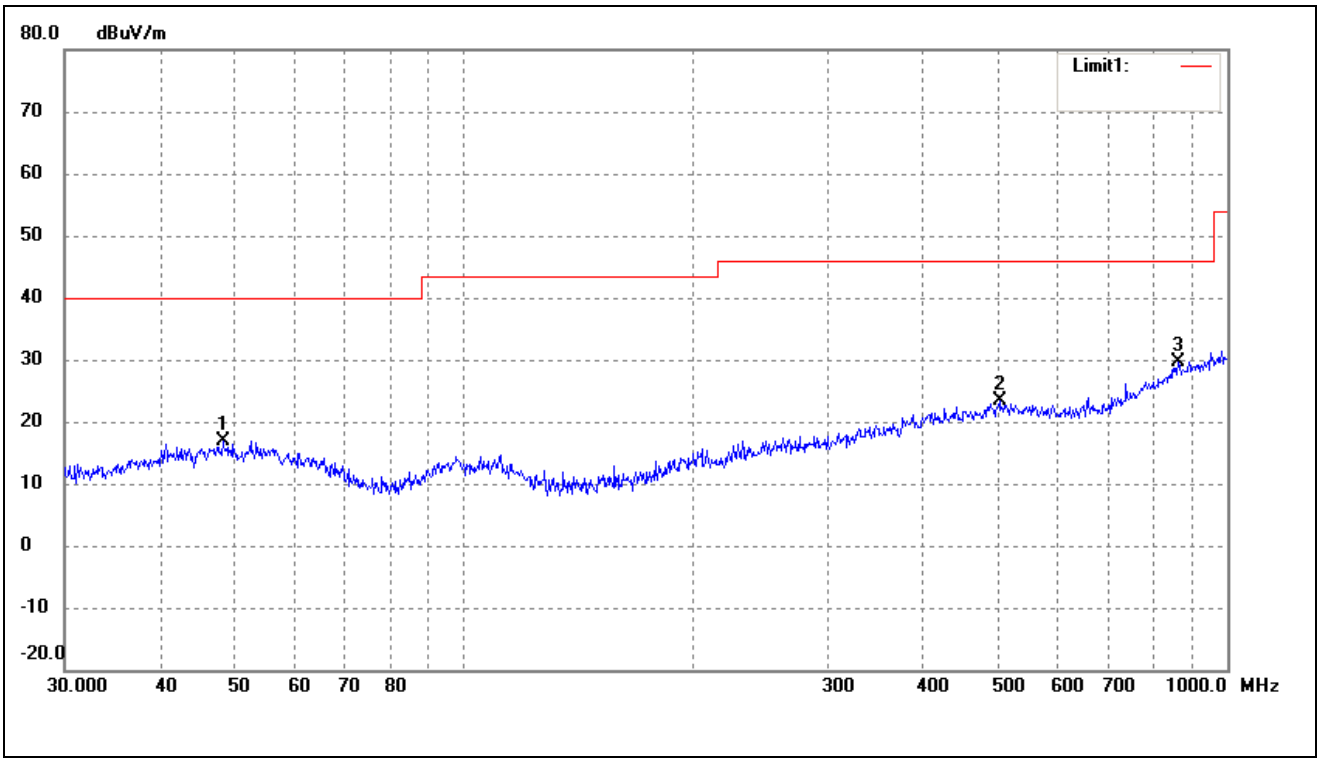
Test mode: Transmitting Channel 5230MHz

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	47.6586	23.20	-7.46	15.74	40.00	-24.26	37	100	peak
2	492.4685	23.09	-1.29	21.80	46.00	-24.20	124	100	peak
3	909.6667	22.45	5.49	27.94	46.00	-18.06	160	100	peak

Test Specification: *Vertical*



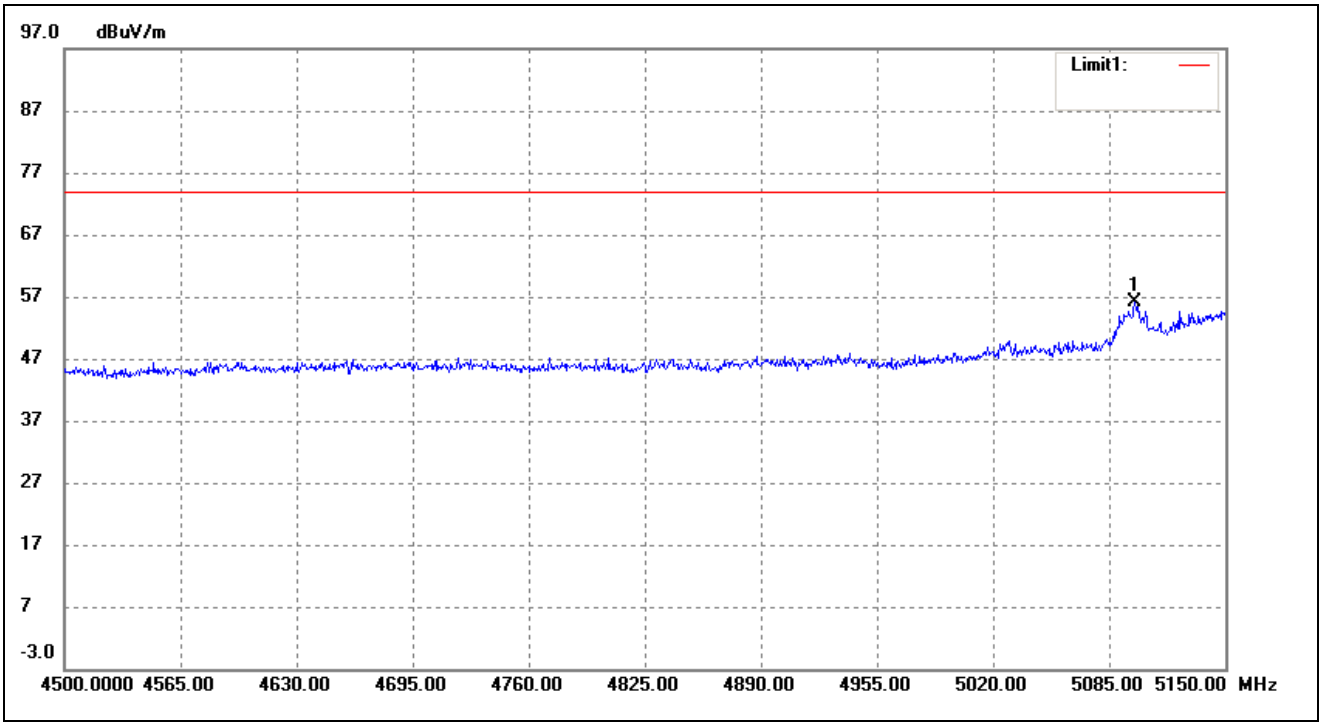
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(•)	(cm)	
1	48.3318	24.38	-7.45	16.93	40.00	-23.07	38	100	peak
2	502.9395	24.35	-1.05	23.30	46.00	-22.70	124	100	peak
3	863.0562	25.03	4.65	29.68	46.00	-16.32	168	100	peak

For 802.11a

Spurious Emission above 1GHz

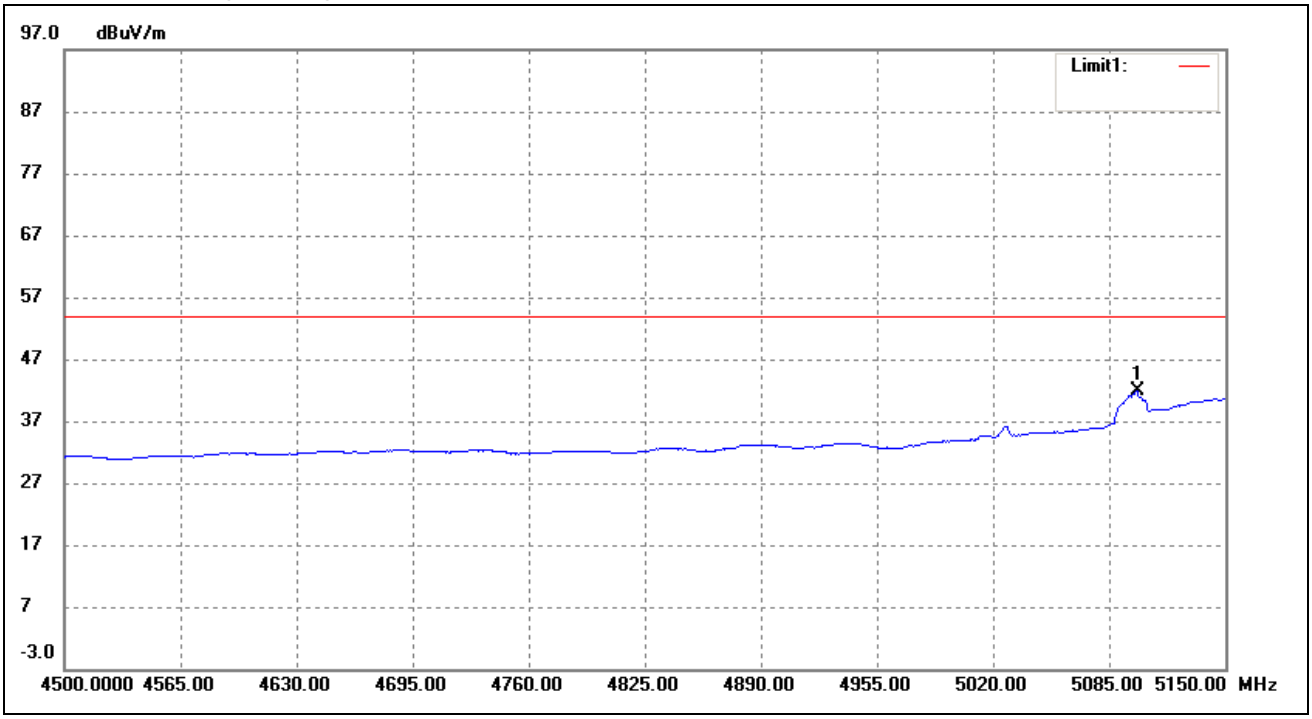
For the frequency band 5.15-5.25GHz(802.11a)

Restricted Bandedge Peak



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	5099.300	56.47	-0.25	56.22	74.00	-17.78	360	100	peak

Restricted Bandedge Average

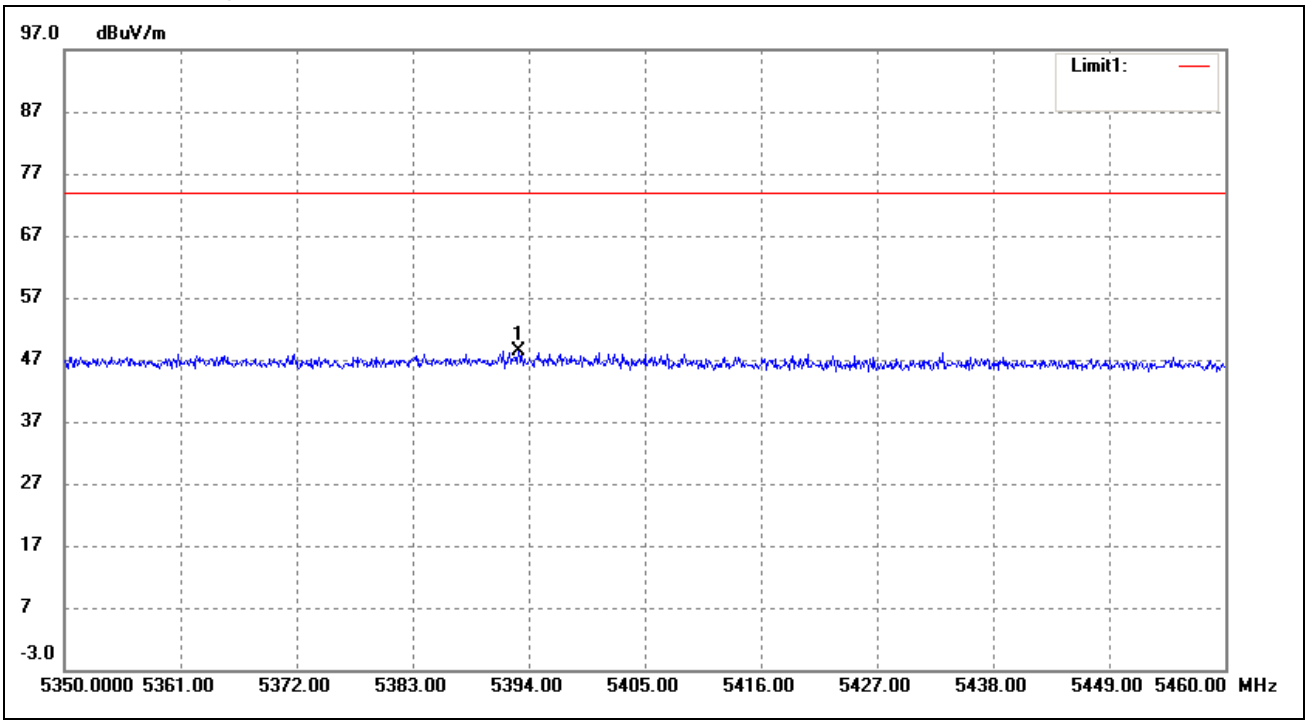


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	5100.600	42.14	-0.25	41.89	54.00	-12.11	360	100	Ave

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

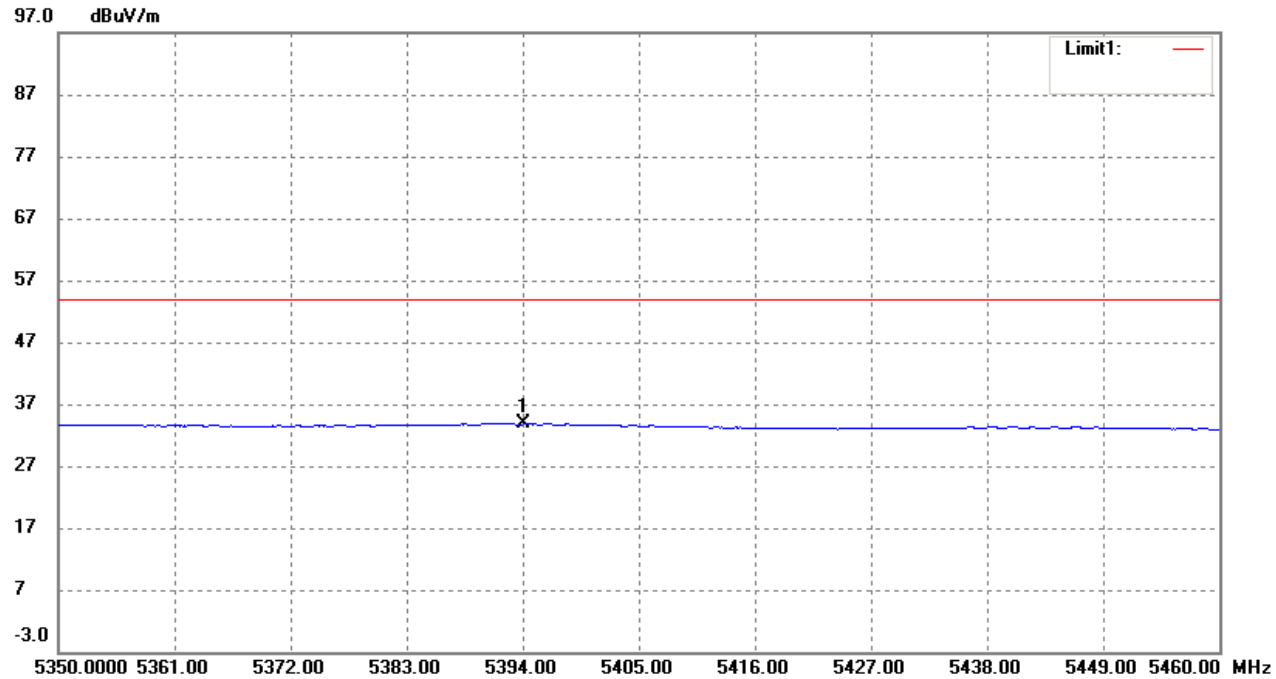
For the frequency band 5.15-5.25GHz (802.11a)

Restricted Bandedge Peak



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	5393.010	53.45	-5.06	48.39	74.00	-25.61	55	100	peak

Restricted Bandedge Average



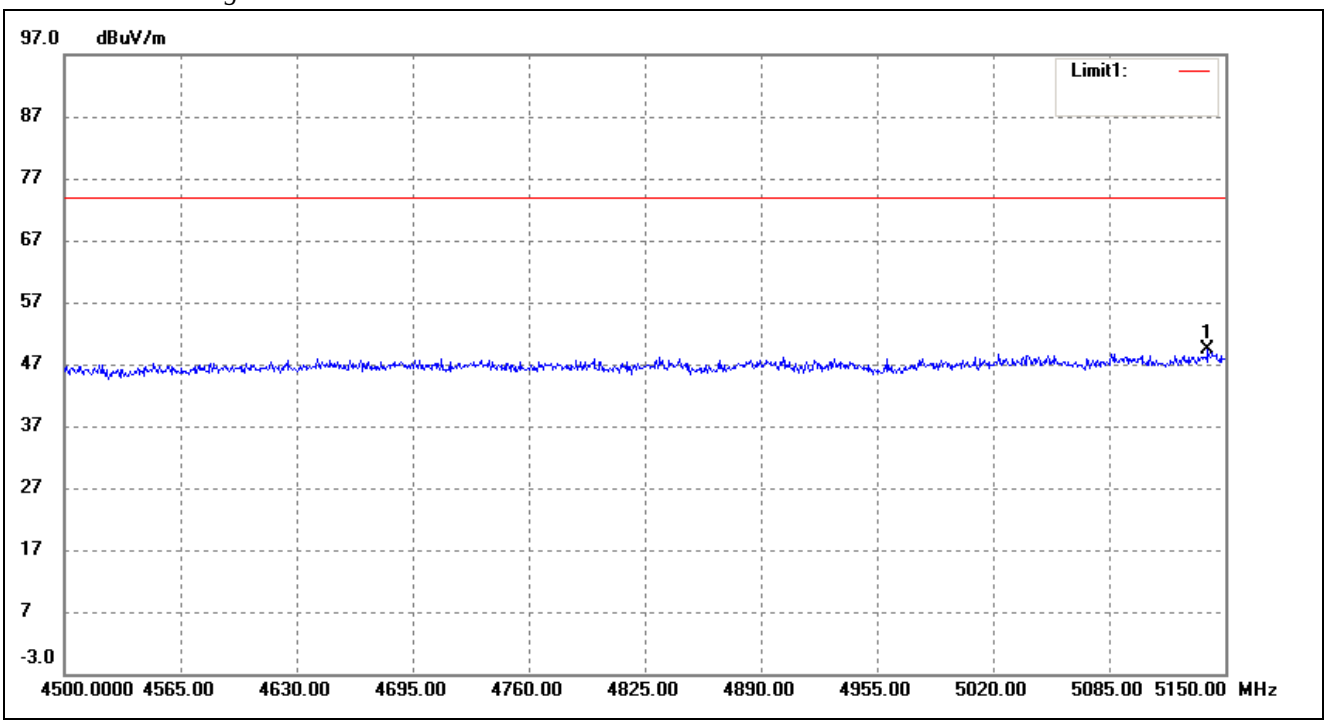
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	5394.110	38.90	-5.06	33.84	54.00	-20.16	55	100	Ave

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

802.11n HT20

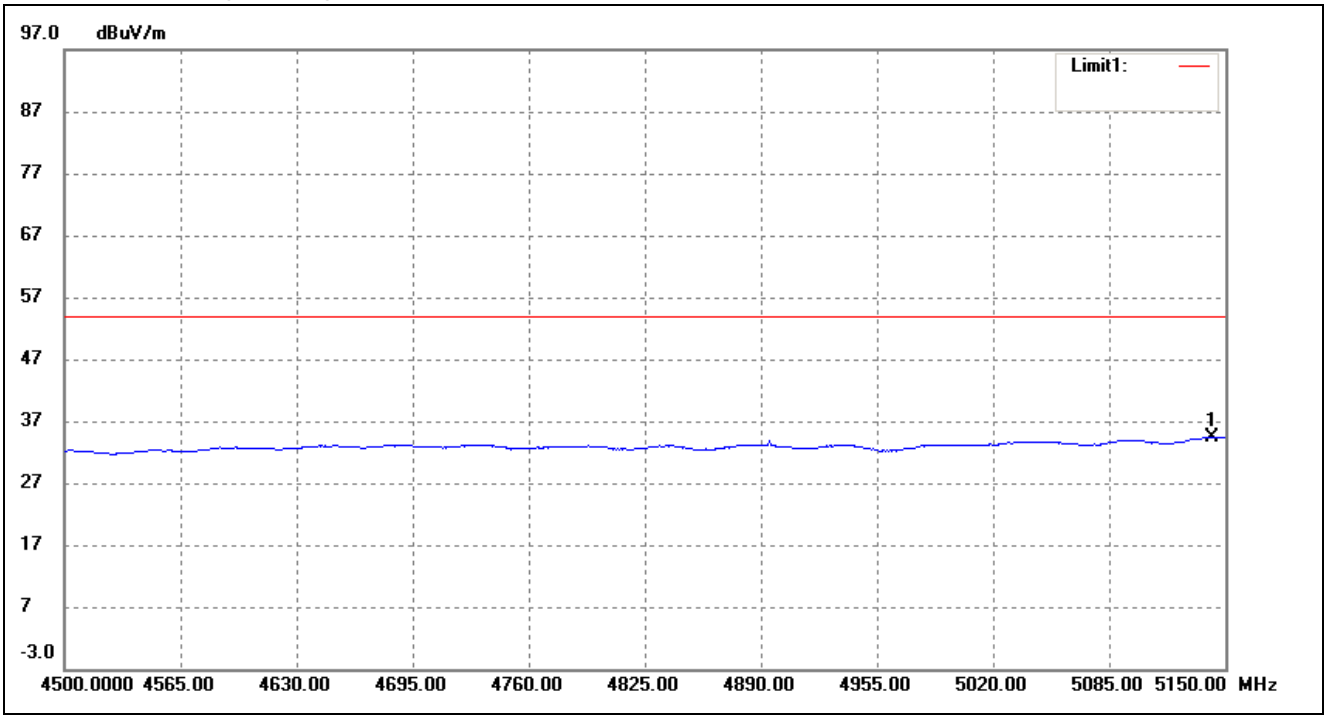
For the frequency band 5.15-5.25GHz(802.11n HT20)

Restricted Bandedge Peak



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	5140.250	49.61	-0.16	49.45	74.00	-24.55	360	100	peak

Restricted Bandedge Average

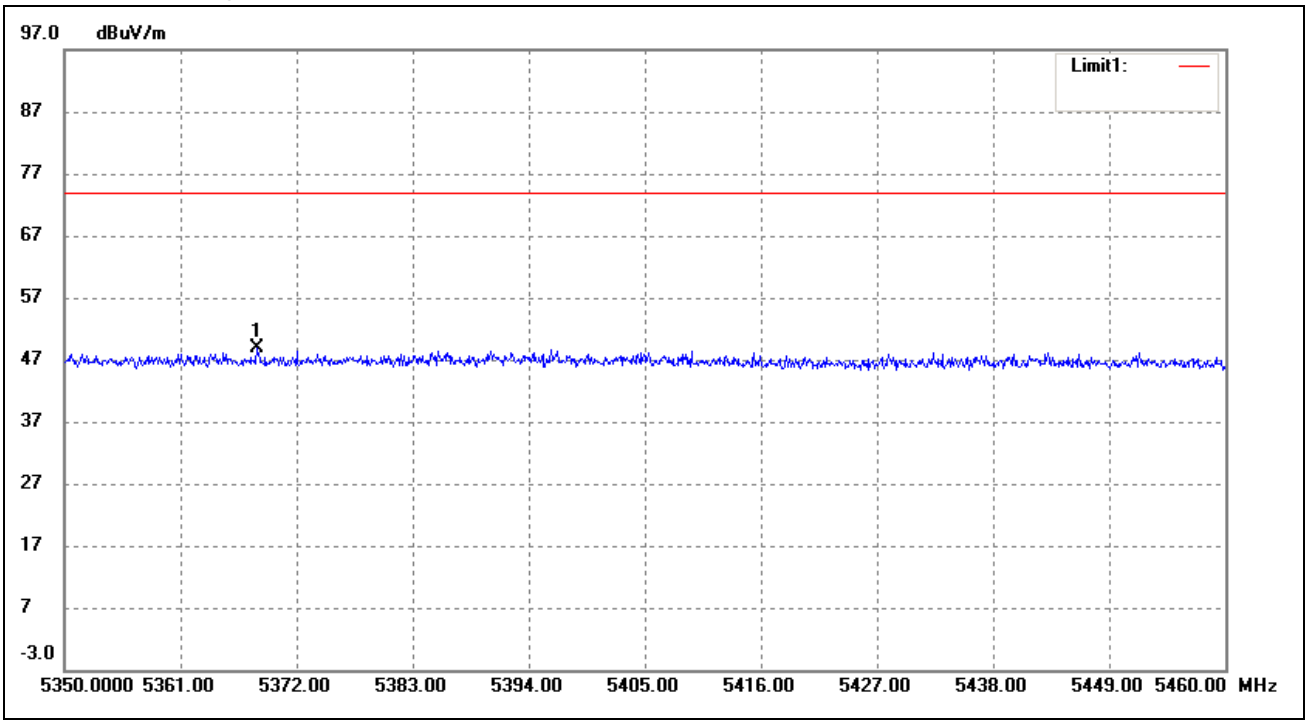


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	5142.850	34.54	-0.14	34.40	54.00	-19.60	360	100	Ave

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

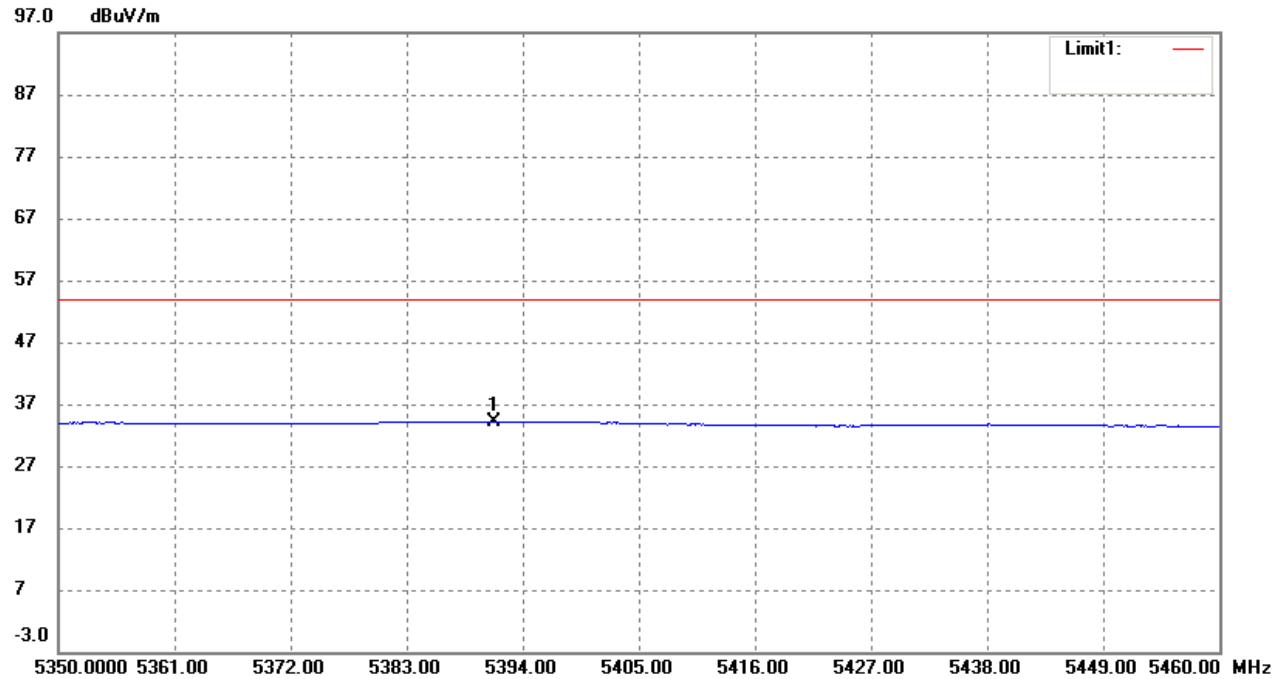
For the frequency band 5.15-5.25GHz (802.11n HT20)

Restricted Bandedge Peak



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	5368.260	48.85	-0.09	48.76	74.00	-25.24	55	100	peak

Restricted Bandedge Average



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	5391.250	34.32	-0.09	34.23	54.00	-19.77	55	100	Ave

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

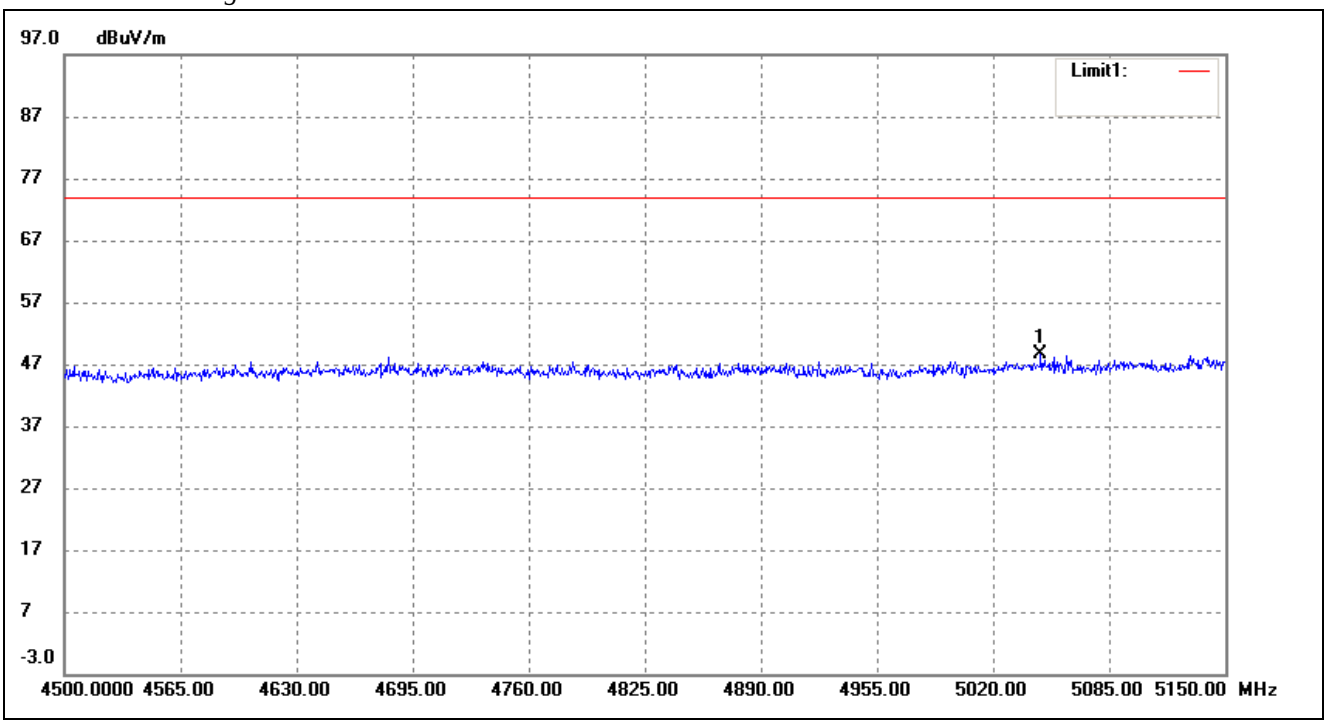
Restricted Band, Hormonics And Spurious Emissions

Frequency MHz	Detector	Meter Reading dBuV	Direction Degree	Polar H / V	Antenna Loss dB	Cable loss dB	Amplifier dB	Correction Amplitude dBuV/m	Limit dBuV/m	Margin dB
Low Channel (5180MHz)										
15540	PK	49.5	360	V	40.7	10.9	39.6	61.5	74	-12.5
15540	PK	45.2	360	H	40.7	10.9	39.6	57.2	74	-16.8
15540	AV	38.4	360	V	40.7	10.9	39.6	50.4	54	-3.6
15540	AV	32.3	360	H	40.7	10.9	39.6	44.3	54	-9.7
High Channel (5240MHz)										
15720	PK	50.6	360	V	40.7	10.9	39.6	62.6	74	-11.4
15720	PK	46.1	360	H	40.7	10.9	39.6	58.1	74	-15.9
15720	AV	35.9	360	V	40.7	10.9	39.6	47.9	54	-6.1
15720	AV	31.8	360	H	40.7	10.9	39.6	43.8	54	-10.2

802.11n HT40

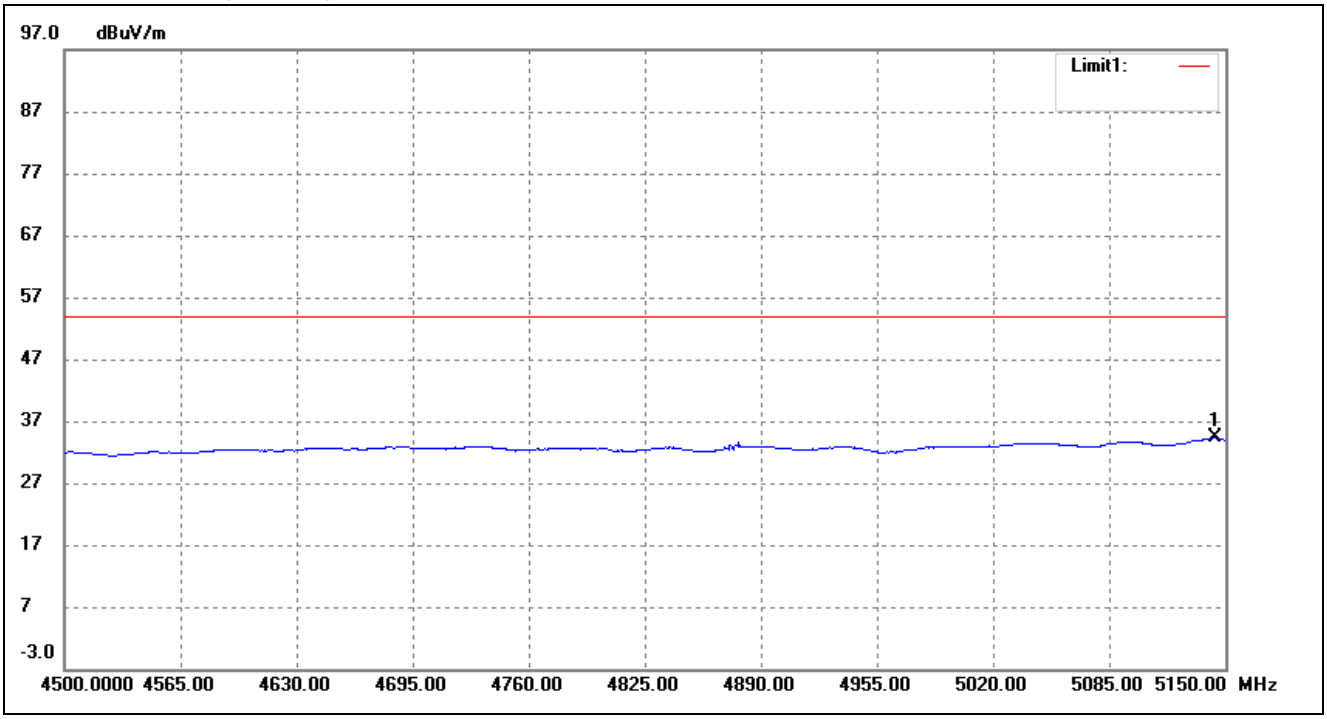
For the frequency band 5.15-5.25GHz

Restricted Bandedge Peak



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	5046.650	48.94	-0.37	48.57	74.00	-25.43	360	100	peak

Restricted Bandedge Average

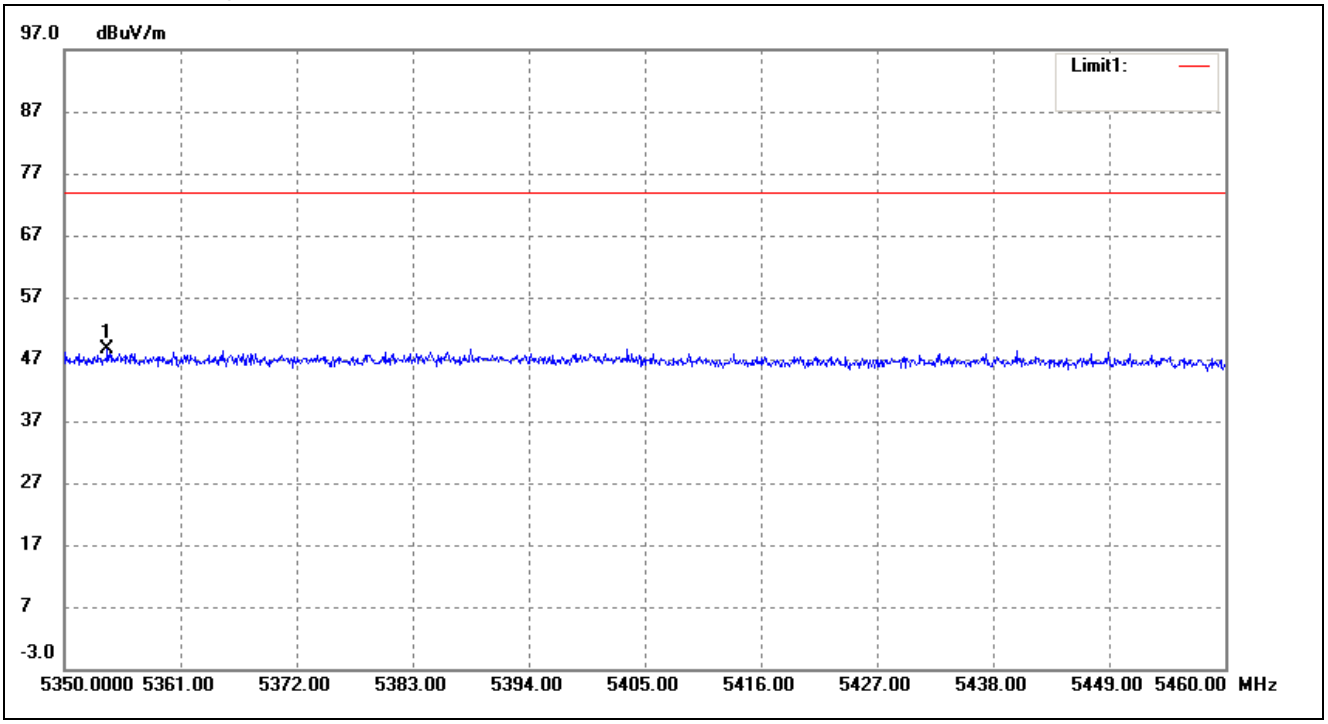


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	5144.150	34.42	-0.14	34.28	54.00	-19.72	360	100	Ave

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

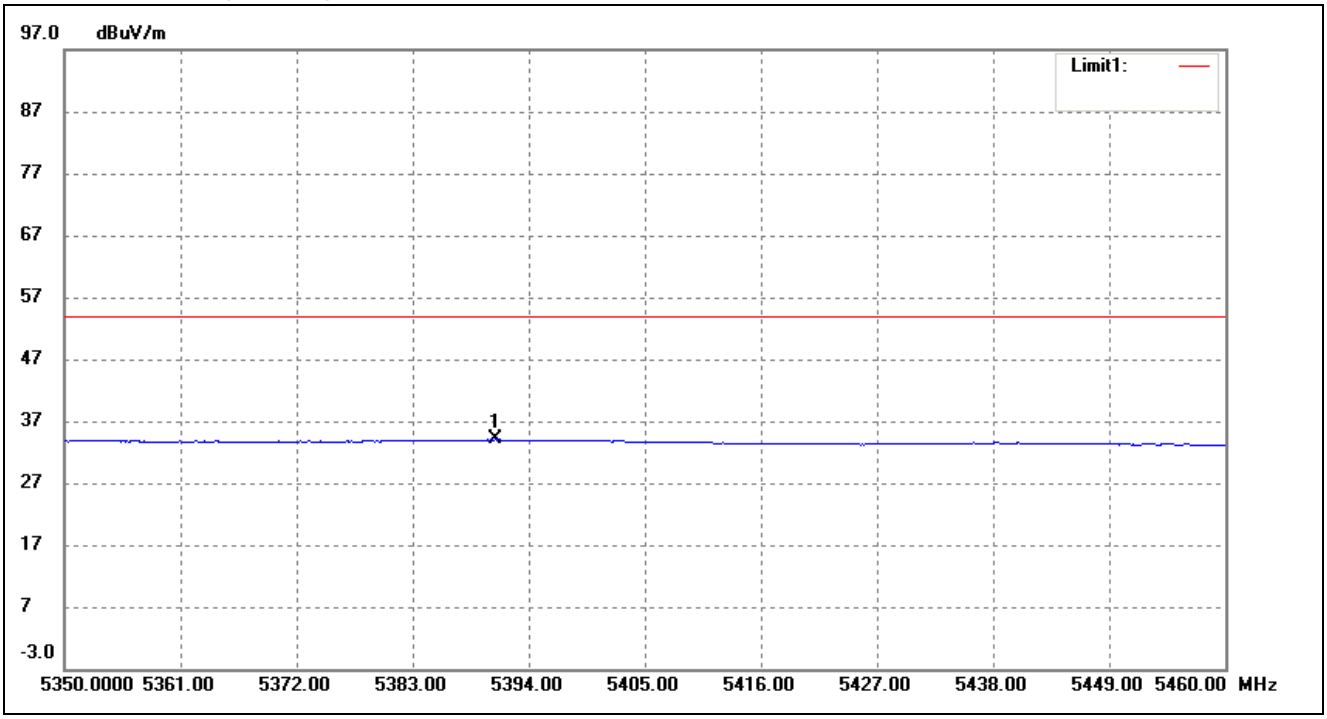
For the frequency band 5.15-5.25GHz(802.11n HT40)

Restricted Bandedge Peak



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	5354.070	48.79	-0.09	48.70	74.00	-25.30	345	100	peak

Restricted Bandedge Average



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	5390.810	34.11	-0.09	34.02	54.00	-19.98	345	100	Ave

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

Restricted Band, Hormonics And Spurious Emissions

Frequency MHz	Detector	Meter Reading dBuV	Direction Degree	Polar H / V	Antenna Loss dB	Cable loss dB	Amplifier dB	Correction Amplitude dBuV/m	Limit dBuV/m	Margin dB
Low Channel (5190MHz)										
15570	PK	47.3	360	V	40.7	10.9	39.6	59.3	74	-14.7
15570	PK	46.9	360	H	40.7	10.9	39.6	58.9	74	-15.1
15570	AV	30.4	360	V	40.7	10.9	39.6	42.4	54	-11.6
15570	AV	29.7	360	H	40.7	10.9	39.6	41.7	54	-12.3
High Channel (5230MHz)										
15690	PK	47.5	360	V	40.7	10.9	39.6	59.5	74	-14.5
15690	PK	46.7	360	H	40.7	10.9	39.6	58.7	74	-15.3
15690	AV	31.2	360	V	40.7	10.9	39.6	43.2	54	-10.8
15690	AV	30.2	360	H	40.7	10.9	39.6	42.2	54	-11.8

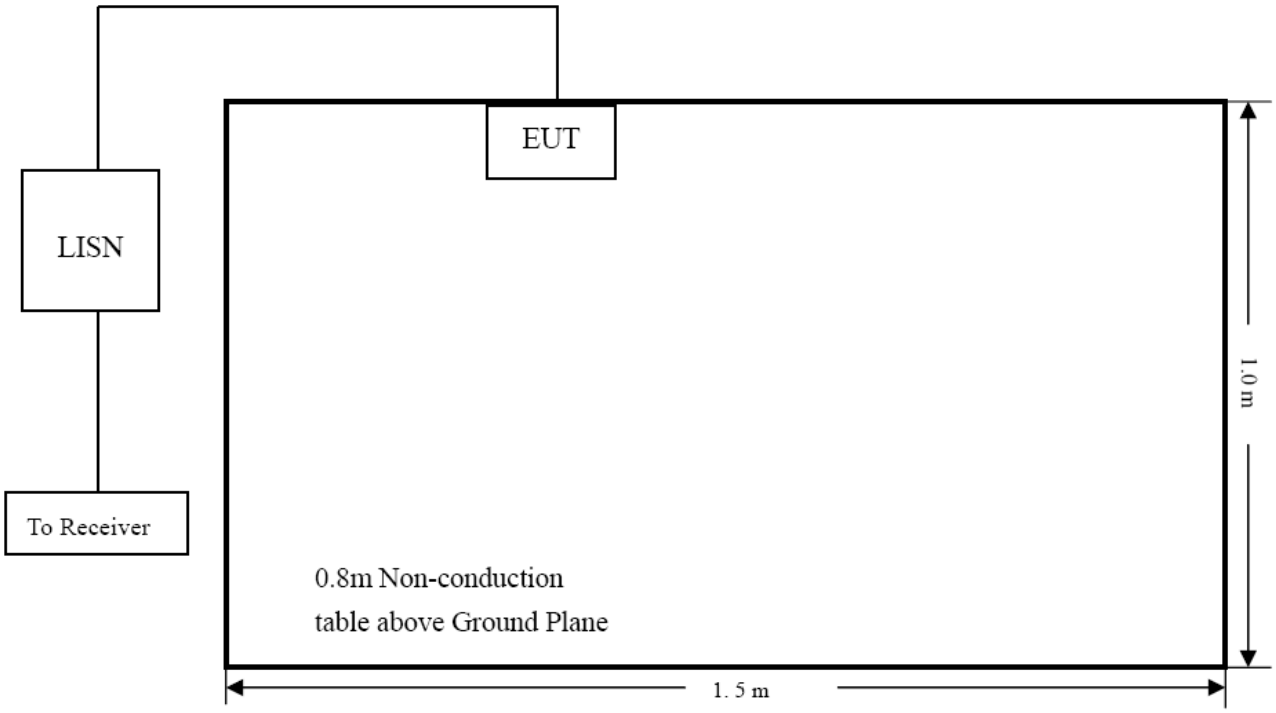
Note: Testing is carried out with frequency rang 9kHz to 40GHz, which above 3th Harmonics are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
The measurements greater than 20dB below the limit from 9kHz to 30MHz.

10. Conducted Emissions

10.1 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.

10.2 Basic Test Setup Block Diagram



10.3 Environmental Conditions

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

10.4 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

10.5 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:

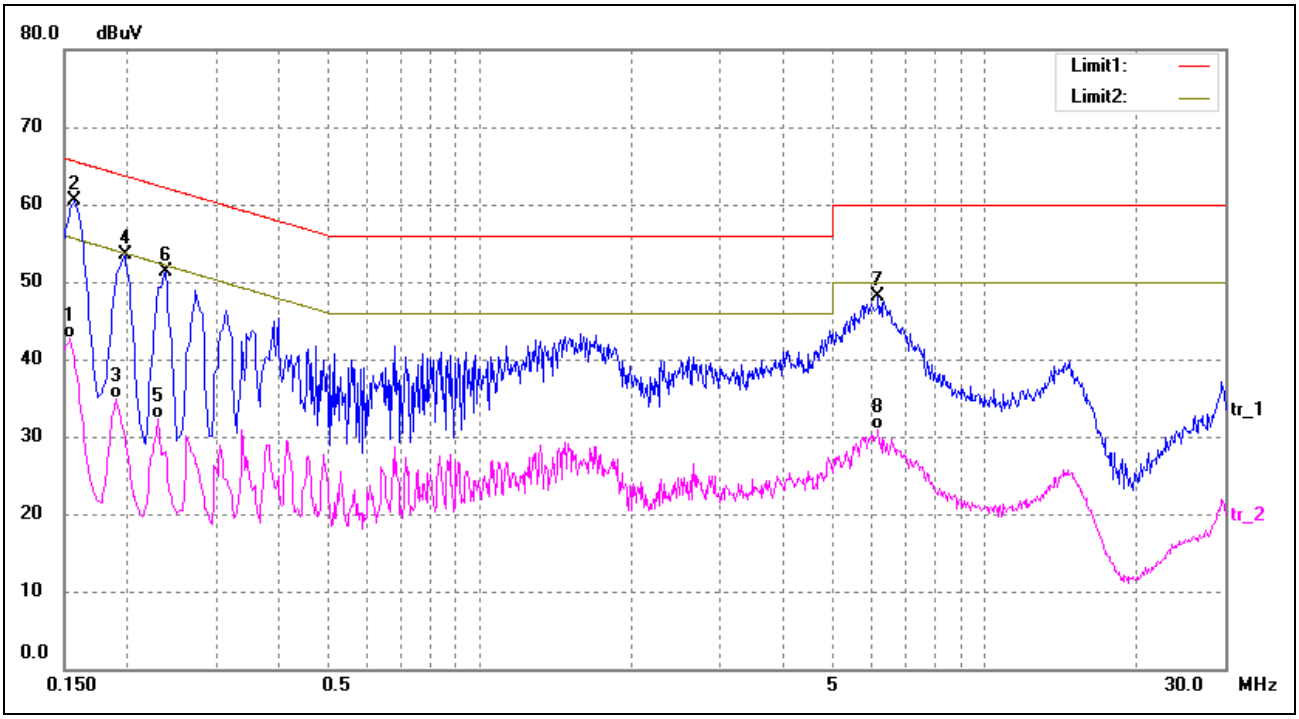
-3.49 dB at **0.1500 MHz** in the **Line, peak** detector, 0.15-30MHz

10.6 Conducted Emissions Test Data

Plot of Conducted Emissions Test Data

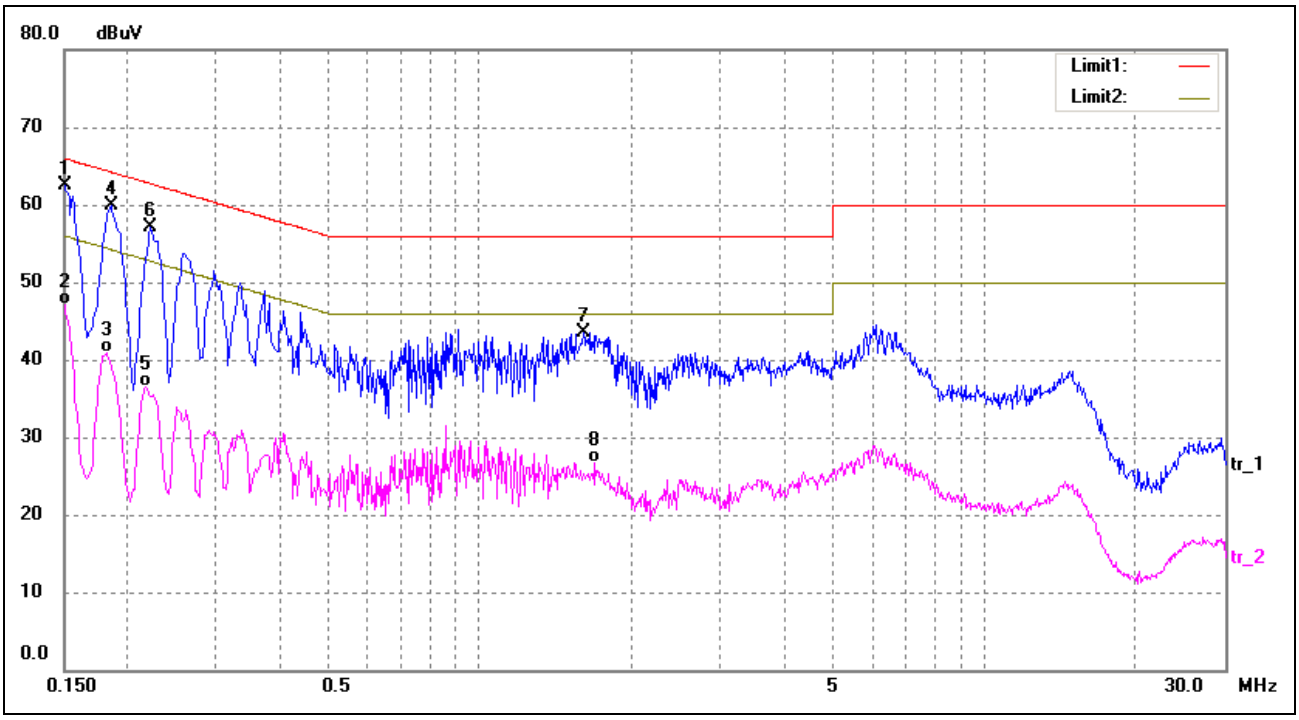
EUT: *4G Tablet*
Tested Model: *Elite 7.0L*
Operating Condition: *Transmitting*
Comment: *AC 120V/60Hz*

Test Specification: *Neutral*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dB)	
1*	0.1540	32.38	10.25	42.63	55.78	-13.15	AVG
2	0.1580	50.50	10.01	60.51	65.57	-5.06	peak
3	0.1900	26.73	8.10	34.83	54.04	-19.21	AVG
4	0.1980	45.80	7.62	53.42	63.69	-10.27	peak
5	0.2300	24.78	7.50	32.28	52.45	-20.17	AVG
6	0.2380	43.83	7.50	51.33	62.17	-10.84	peak
7	6.1820	35.57	12.53	48.10	60.00	-11.90	peak
8	6.1820	18.32	12.53	30.85	50.00	-19.15	AVG

Test Specification: *Line*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dB)	
1	0.1500	52.01	10.49	62.50	65.99	-3.49	peak
2	0.1500	36.57	10.49	47.06	55.99	-8.93	AVG
3	0.1819	32.24	8.58	40.82	54.39	-13.57	AVG
4*	0.1860	51.53	8.34	59.87	64.21	-4.34	peak
5	0.2180	28.94	7.50	36.44	52.89	-16.45	AVG
6	0.2220	49.57	7.50	57.07	62.74	-5.67	peak
7	1.6019	32.45	11.00	43.45	56.00	-12.55	peak
8	1.6980	15.73	11.00	26.73	46.00	-19.27	AVG

11. Frequency Stability

11.1 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.

11.2 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

11.3 Environmental Conditions

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

11.4 Summary of Test Results/Plots

5150-5250MHz

802.11a

Reference Frequency(Middle Channel): 5200 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	3.7	118	0.0227
40	3.7	114	0.0219
30	3.7	109	0.0210
20	3.7	107	0.0206
10	3.7	112	0.0215
0	3.7	106	0.0204
-10	3.7	91	0.0175
-20	3.7	102	0.0196
-30	3.7	99	0.0190

802.11n_HT20

Reference Frequency(Middle Channel): 5200 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	3.7	124	0.0238
40	3.7	120	0.0231
30	3.7	115	0.0221
20	3.7	113	0.0217
10	3.7	118	0.0227
0	3.7	112	0.0215
-10	3.7	97	0.0187
-20	3.7	108	0.0208
-30	3.7	105	0.0202

802.11n_HT40

Reference Frequency(High Channel): 5230 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	3.7	114	0.0218
40	3.7	121	0.0231
30	3.7	124	0.0237
20	3.7	110	0.0210
10	3.7	129	0.0247
0	3.7	134	0.0256
-10	3.7	123	0.0235
-20	3.7	119	0.0228
-30	3.7	140	0.0268

So, Frequency Stability Versus Input Voltage is:

5150-5250MHz

802.11a

Reference Frequency(Middle Channel): 5200 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	3.1	131	0.0252
	3.7	142	0.0273
	4.3	139	0.0267

802.11n_HT20

Reference Frequency(Middle Channel): 5200 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	3.1	147	0.0283
	3.7	152	0.0292
	4.3	146	0.0281

802.11n_HT40

Reference Frequency(High Channel): 5230 MHz			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	3.1	152	0.0291
	3.7	148	0.0283
	4.3	146	0.0279

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