

TEST REPORT

Reference No..... : WTX21X04033440W-3
FCC ID : 2AMDJ-TC50
Applicant : Tersus GNSS Inc
Address : Room 305, Building 1, No.1228 Jinhu Road, China (Shanghai) Pilot Free Trade Zone
Product Name : TD-LTE Wireless Data Terminal
Test Model. : TC50
Standards : FCC Part 15.407
Date of Receipt sample : Apr.15, 2021
Date of Test..... : Apr.15, 2021 to May.13, 2021
Date of Issue : May.13, 2021
Test Result..... : Pass

Remarks:

The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

Prepared By:

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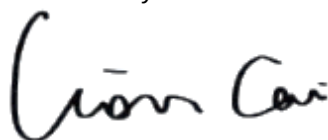
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Report version

Version No.	Date of issue	Description
Rev.00	May.13, 2021	Original
/	/	/

1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant: Tersus GNSS Inc
Address of applicant: Room 305, Building 1, No.1228 Jinhu Road, China
(Shanghai) Pilot Free Trade Zone

Manufacturer: Tersus GNSS Inc
Address of manufacturer: Room 305, Building 1, No.1228 Jinhu Road, China
(Shanghai) Pilot Free Trade Zone

General Description of EUT	
Product Name:	TD-LTE Wireless Data Terminal
Trade Name:	Tersus
Model No.:	TC50
Adding Model(s):	/
Rated Voltage:	DC3.8V
Battery Capacity:	7000mAh
Power Adapter:	GQ24-090200-AX INPUT:AC100-240V, 50/60Hz, 1.0A Output:DC9V, 2.0A
Software Version:	V.SN50.2.1.26.2021041411
Hardware Version:	SD55-D3_Main board_Rev.A1
Note: The test data is gathered from a production sample, provided by the manufacturer.	

Technical Characteristics of EUT	
Support Standards:	802.11a, 802.11n(HT20) , 802.11n-HT40
Frequency Range:	5150-5250MHz, 5250-5350MHz, 5470-5725MHz, 5725-5850MHz
RF Output Power:	15.60dBm (Conducted)
Type of Modulation:	BPSK, QPSK,16QAM,64QAM
Type of Antenna:	Integral Antenna
Antenna Gain:	0.74dBi

1.2 Test Standards

The tests were performed according to following standards:

FCC Rules Part 15.407: General technical requirements.

ANSI C63.10-2013: American National Standard for Testing Unlicensed Wireless Devices.

KDB789033 D02 v02r01: GUIDELINES FOR COMPLIANCE TESTING OF UNLICENSED NATIONAL INFORMATION INFRASTRUCTURE (U-NII) DEVICES PART 15, SUBPARTE.

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 C63.10-2013, KDB789033 D02 v02r01. The equipment under test (EUT) was configured to measure its highest possible emission level. The test modes were adapted accordingly in reference to the Operating Instructions.

1.4 Table for parameters of Test Software setting

Enter *****3646633***** into the calculator to enter the engineer mode, you can start to test. 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	17	17	17	17	17	17	17	17	17	17	16	16	16
802.11n-HT20 MCS0	17	17	17	17	17	17	17	17	17	17	16	16	16
Mode	NCB: 40MHz												
	5190	5230	5270	5310	5510	5550	5670	5710	5755	5795			
802.11n-HT40 MCS0	17	17	17	17	17	17	17	17	16	16			

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 Android were executed.

1.6 Test Facility

Address of the test laboratory

Laboratory: Waltek Testing Group (Shenzhen) Co., Ltd.

Address: 1/F., Room 101, Building 1, Hongwei Industrial Park, Liuxian 2nd Road, Block 70 Bao'an District, Shenzhen, Guangdong, China

FCC – Registration No.: 125990

Waltek Testing Group (Shenzhen) 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. The Designation Number is CN5010, and Test Firm Registration Number is 125990.

Industry Canada (IC) Registration No.: 11464A

The 3m Semi-anechoic chamber of Waltek Testing Group (Shenzhen) 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, with a duty cycle equal to 100%, 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,5260MHz,5280MHz,5320MHz,5500MHz,5600MHz,5700MHz,5745MHz, 5785MHz,5825MHz
TM2	802.11n-HT20	5180MHz,5200MHz,5240MHz,5260MHz,5280MHz,5320MHz,5500MHz,5600MHz,5700MHz,5745MHz, 5785MHz,5825MHz
TM3	802.11n-HT40	5190MHz,5230MHz,5270MHz,5310MHz,5510MHz,5590MHz,5670MHz,5755MHz,5795MHz
Note: All test modes (different data rate and different modulation) are performed, but only the worst case is recorded in this report.		

Test Conditions	
Temperature:	22~25 °C
Relative Humidity:	45~55 %.
ATM Pressure:	1019 mbar

EUT Cable List and Details			
Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite
USB Cable	1.0	Shielded	Without Ferrite
DC Cable	1.0	Unshielded	Without Ferrite

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

Auxiliary Equipment List and Details			
Description	Manufacturer	Model	Serial Number
Notebook	Lenovo	TianYi310-14ISK	/
Router	LINKSYS	WRT32X	/

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-1075	Communication Tester	Rohde & Schwarz	CMW500	148650	2021-03-27	2022-03-26
SEMT-1063	GSM Tester	Rohde & Schwarz	CMU200	114403	2021-03-27	2022-03-26
SEMT-1072	Spectrum Analyzer	Agilent	E4407B	MY41440400	2021-03-27	2022-03-26
SEMT-1079	Spectrum Analyzer	Agilent	N9020A	US47140102	2021-03-27	2022-03-26
SEMT-1080	Signal Generator	Agilent	83752A	3610A01453	2021-03-27	2022-03-26
SEMT-1081	Vector Signal Generator	Agilent	N5182A	MY47070202	2021-03-27	2022-03-26
SEMT-1028	Power Divider	Weinschel	1506A	PM204	2021-03-27	2022-03-26
SEMT-1082	Power Divider	RF-Lambda	RFLT4W5M18G	14110400027	2021-03-27	2022-03-26
SEMT-1031	Spectrum Analyzer	Rohde & Schwarz	FSP30	836079/035	2021-03-27	2022-03-26
SEMT-1007	EMI Test Receiver	Rohde & Schwarz	ESVB	825471/005	2021-03-27	2022-03-26
SEMT-1008	Amplifier	Agilent	8447F	3113A06717	2021-04-12	2022-04-11
SEMT-1043	Amplifier	C&D	PAP-1G18	2002	2021-04-12	2022-04-11
SEMT-1069	Loop Antenna	Schwarz beck	FMZB 1516	9773	2021-03-19	2023-03-18
SEMT-1068	Broadband Antenna	Schwarz beck	VULB9163	9163-333	2021-03-19	2023-03-18
SEMT-1042	Horn Antenna	ETS	3117	00086197	2021-03-19	2023-03-18
SEMT-1121	Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170582	2021-04-27	2023-04-26
SEMT-1169	Pre-amplifier	Direction Systems Inc.	PAP-2640	14145-14153	2021-04-27	2022-04-26
SEMT-1163	Spectrum Analyzer	Rohde & Schwarz	FSP40	100612	2021-03-27	2022-03-26
SEMT-1166	Power Limiter	Agilent	N9356B	MY45450376	2021-03-27	2022-03-26
SEMT-1076	RF Switcher	Top Precision	RCS03-A2	/	2021-03-19	2023-03-18
SEMT-C001	Cable	Zheng DI	LL142-07-07-10M(A)	/	/	/
SEMT-C002	Cable	Zheng DI	ZT40-2.92J-2.92J-6M	/	/	/
SEMT-C003	Cable	Zheng DI	ZT40-2.92J-2.92J-2.5M	/	/	/
SEMT-C004	Cable	Zheng DI	2M0RFC	/	/	/
SEMT-C005	Cable	Zheng DI	1M0RFC	/	/	/
SEMT-C006	Cable	Zheng DI	1M0RFC	/	/	/

Software List			
Description	Manufacturer	Model	Version
EMI Test Software (Radiated Emission)*	Farad	EZ-EMC	RA-03A1
EMI Test Software (Conducted Emission)*	Farad	EZ-EMC	RA-03A1

*Remark: indicates software version used in the compliance certification testing

2. SUMMARY OF TEST RESULTS

FCC Rules	Description of Test Item	Result
§15.203; §15.405	Antenna Requirement	Compliant
15.407 (c)	Automatically Discontinue Transmission	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)	Compliant

N/A: Not applicable

3. Antenna Requirement

3.1 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.

3.2 Evaluation Information

This product has an integral antenna, fulfill the requirement of this section.

4. Automatically Discontinue Transmission

4.1 Standard Applicable

According to FCC Part 15.407(c), the device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. These provisions are not intended to preclude the transmission of control or signaling information or the use of repetitive codes used by certain digital technologies to complete frame or burst intervals. Applicants shall include in their application for equipment authorization to describe how this requirement is met.

4.2 Summary of Test Results

While the EUT is not transmitting any information, the EUT can automatically discontinue transmission and become standby mode for power saving. The EUT can detect the controlling signal of ACK message transmitting from remote device and verify whether it shall resend or discontinue transmission.

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 $11 \text{ dBm} + 10 \log B$, 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 General UNII Test Procedures New Rules v02, 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 500kHz 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 Summary of Test Results/Plots

Please refer to Appendix A

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 $11 \text{ dBm} + 10 \log B$, 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 v02r0r 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) $\geq 3 \times \text{RBW}$.
- 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 $\geq 3 * \text{RBW}$
- 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 Summary of Test Results/Plots

Please refer to Appendix B

7. Maximum Conducted Output Power

7.1 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 $11 \text{ dBm} + 10 \log B$, 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.)

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- (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 Summary of Test Results/Plots

Please refer to Appendix C

8. Radiated Spurious Emissions

8.1 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.
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If radiated measurements are performed, field strength is then converted to EIRP as follows:

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

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.

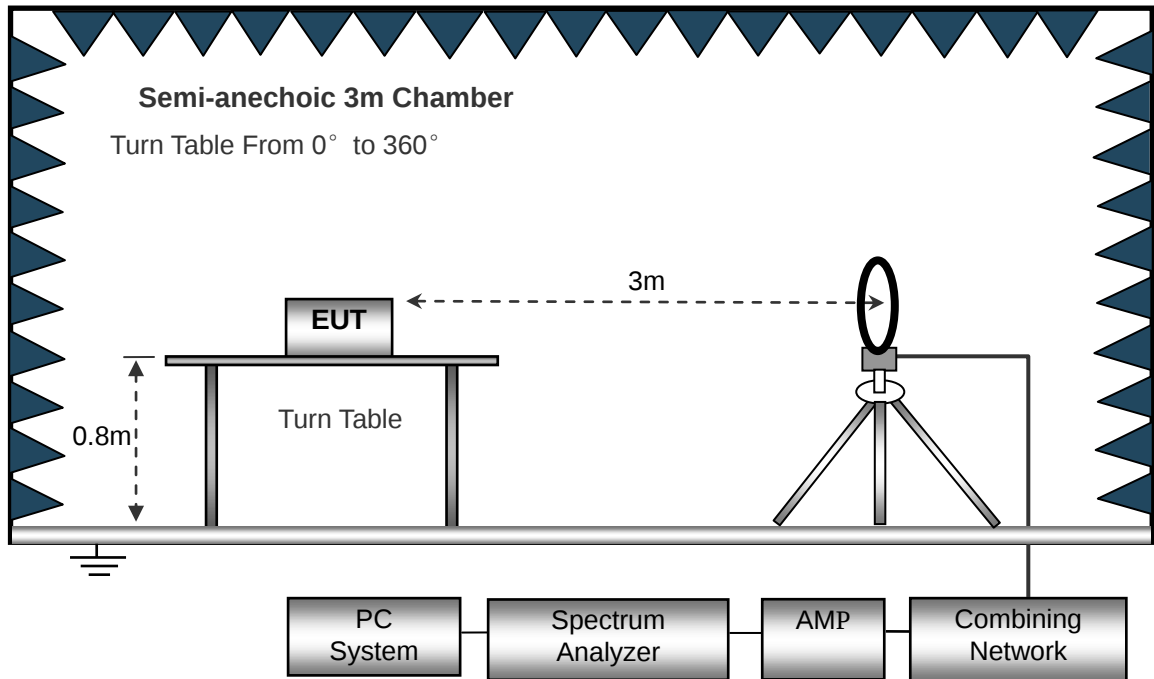
8.2 Test Procedure

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..

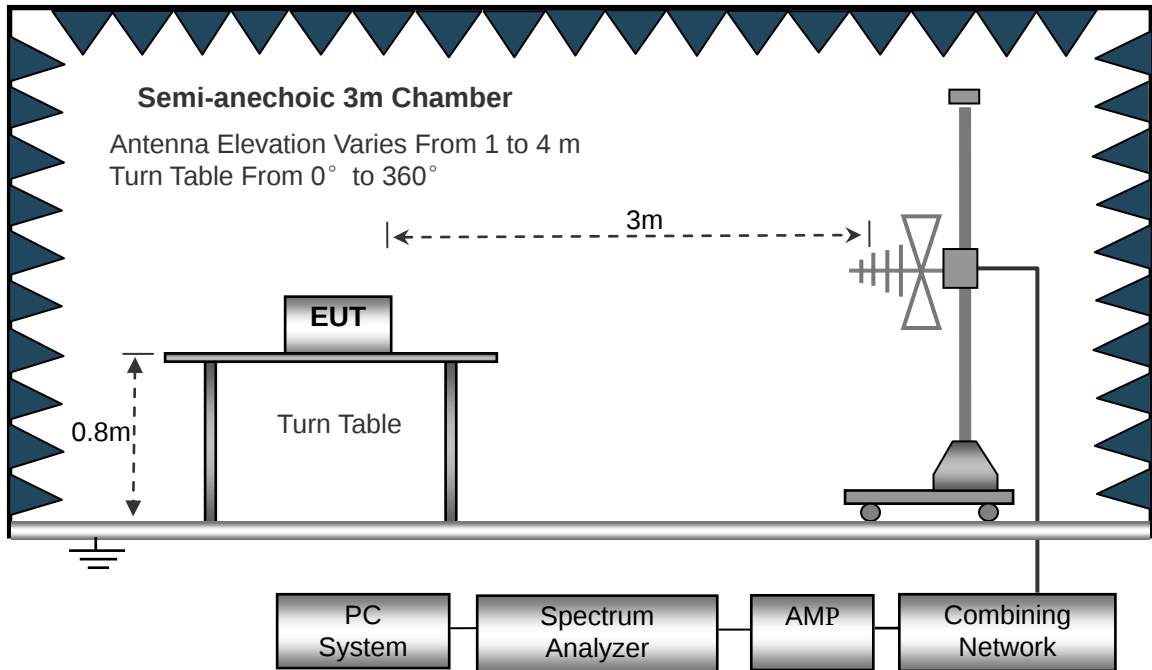
The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.

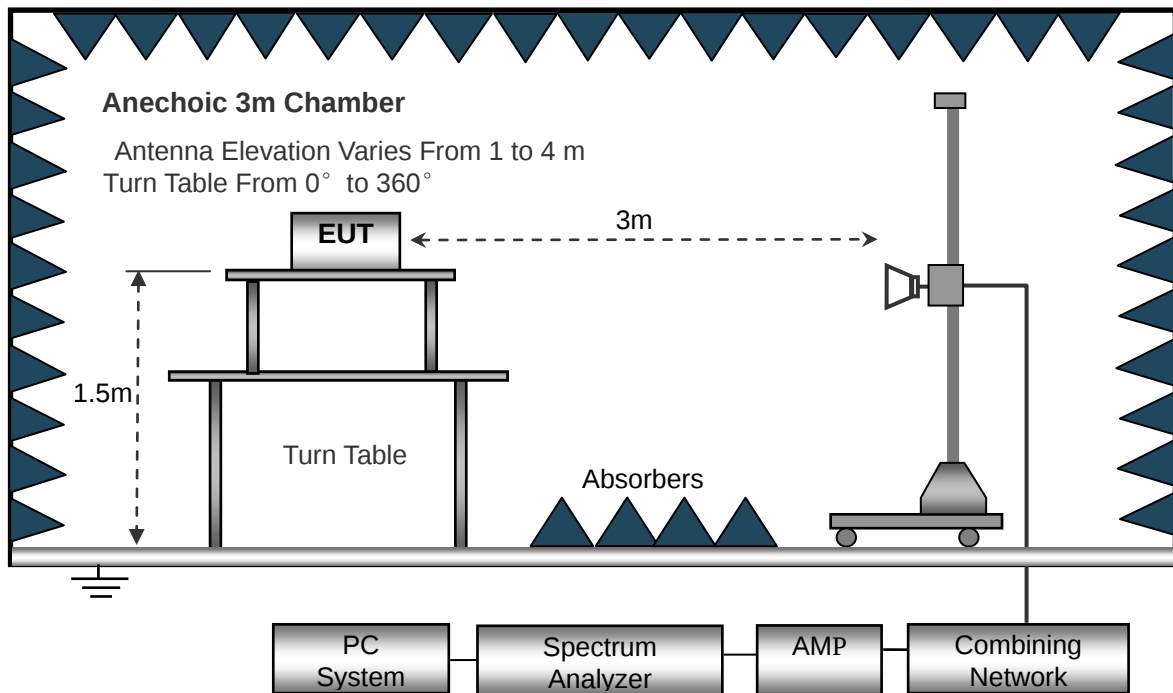
The test setup for emission measurement below 30MHz..



The test setup for emission measurement from 30 MHz to 1 GHz..



The test setup for emission measurement above 1 GHz..



8.3 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

8.4 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:

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

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

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

8.5 Summary of Test Results/Plots

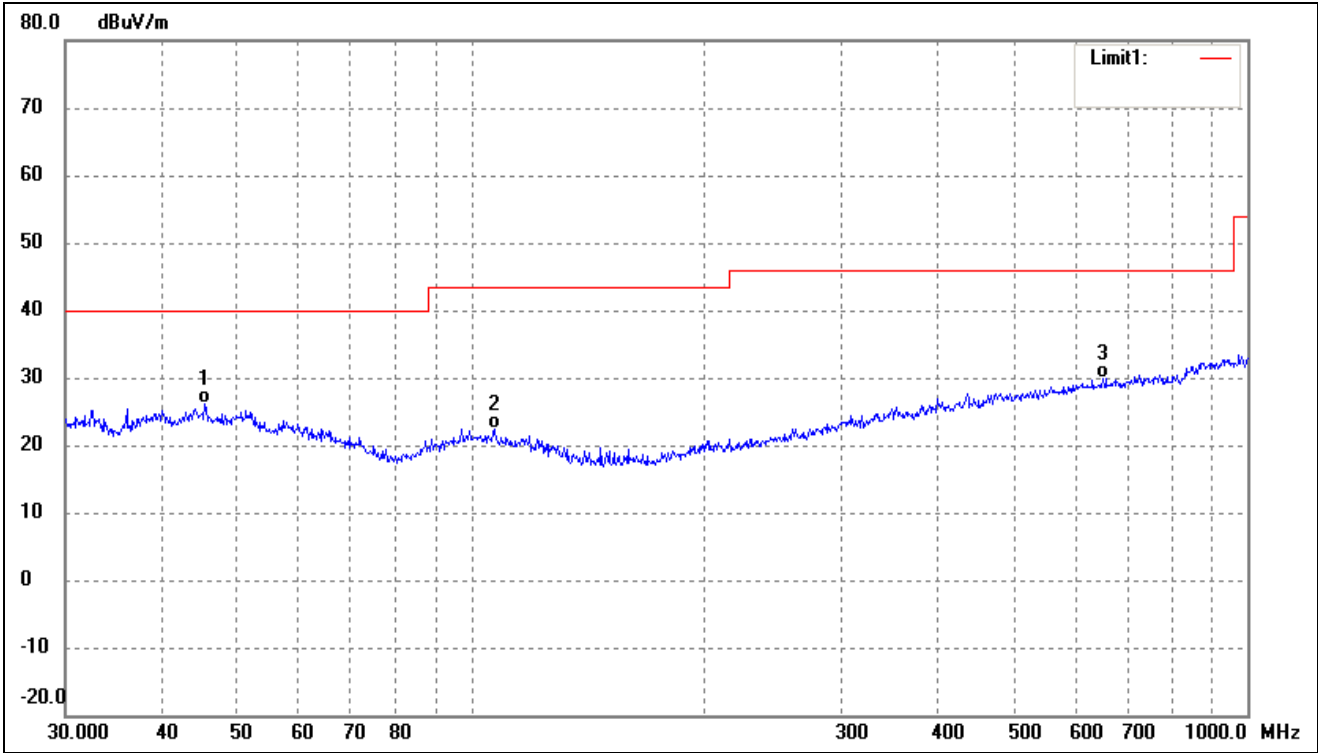
Note: this EUT was tested in 3 orthogonal positions and the worst case position data was reported.

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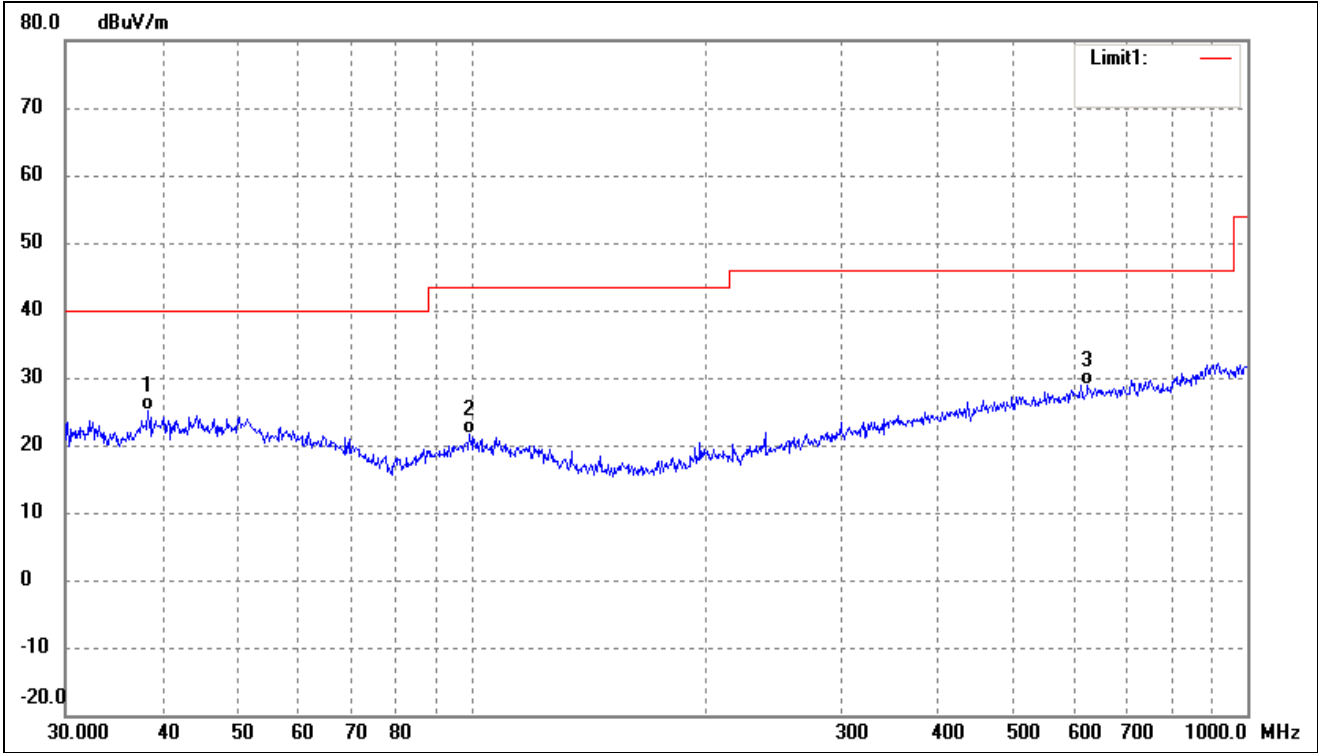
- Spurious Emission From 30 MHz to 1 GHz
- 5150-5250MHz

802.11a			
Test Channel	5180MHz(worst case)	Polarity:	Horizontal



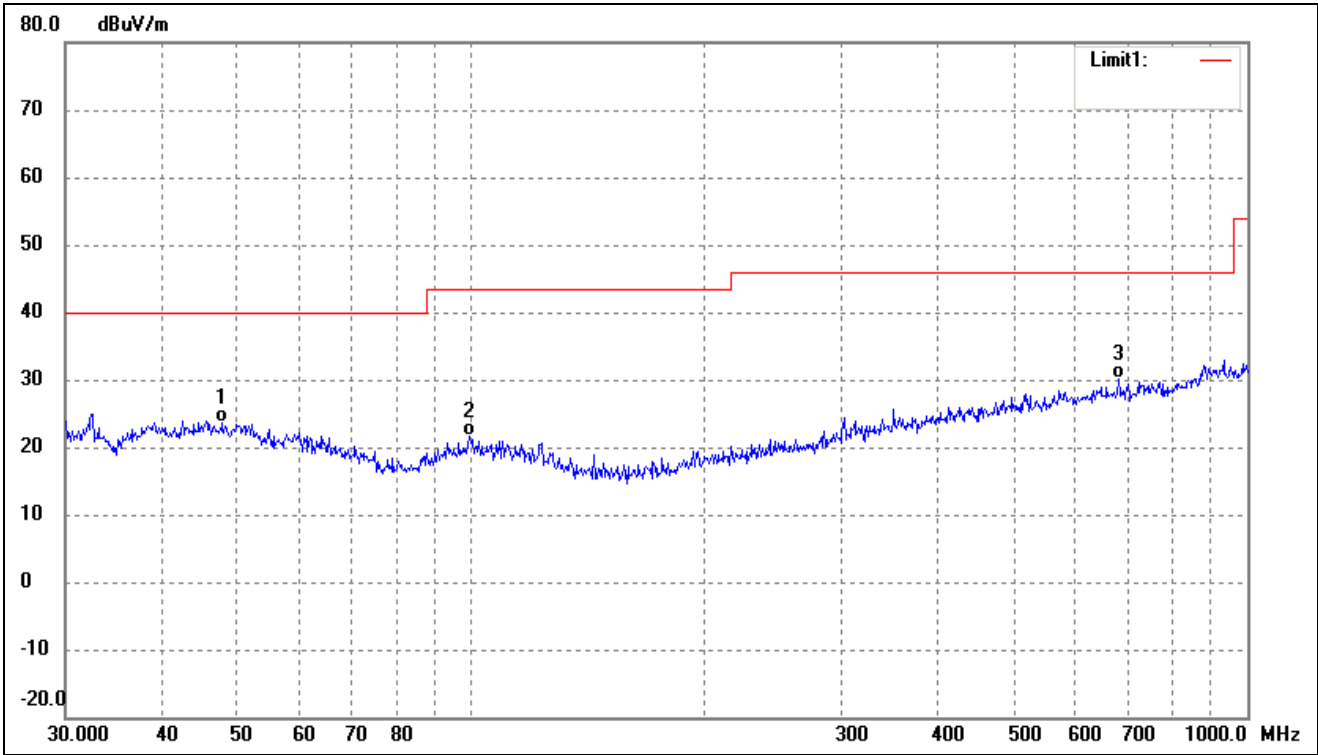
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	45.3755	37.85	-11.78	26.07	40.00	-13.93	-	-	QP
2	107.1337	35.57	-13.31	22.26	43.50	-21.24	-	-	QP
3	651.9417	32.26	-2.33	29.93	46.00	-16.07	-	-	QP

802.11a			
Test Channel	5180MHz(worst case)	Polarity:	Vertical



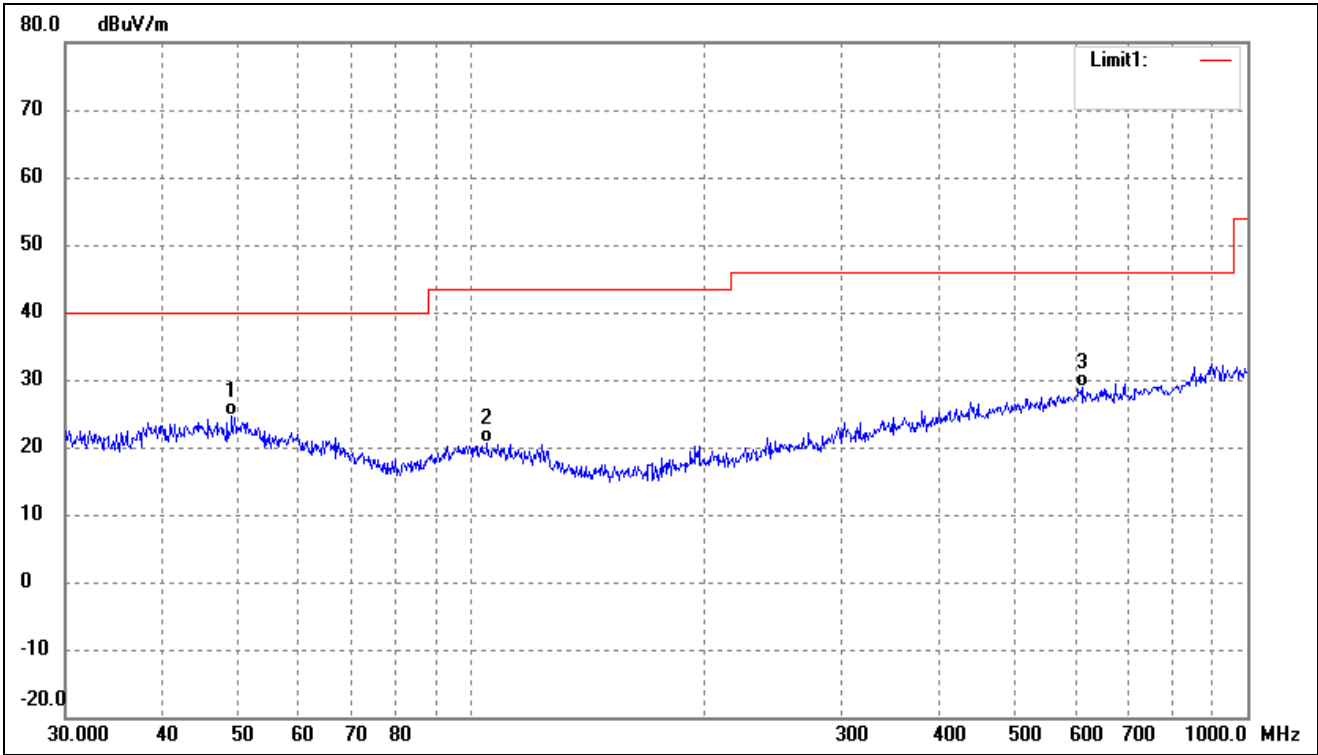
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	38.3462	37.71	-12.61	25.10	40.00	-14.90	-	-	QP
2	99.5281	35.13	-13.39	21.74	43.50	-21.76	-	-	QP
3	622.8900	31.09	-2.14	28.95	46.00	-17.05	-	-	QP

802.11n-HT20			
Test Channel	5180MHz(worst case)	Polarity:	Horizontal



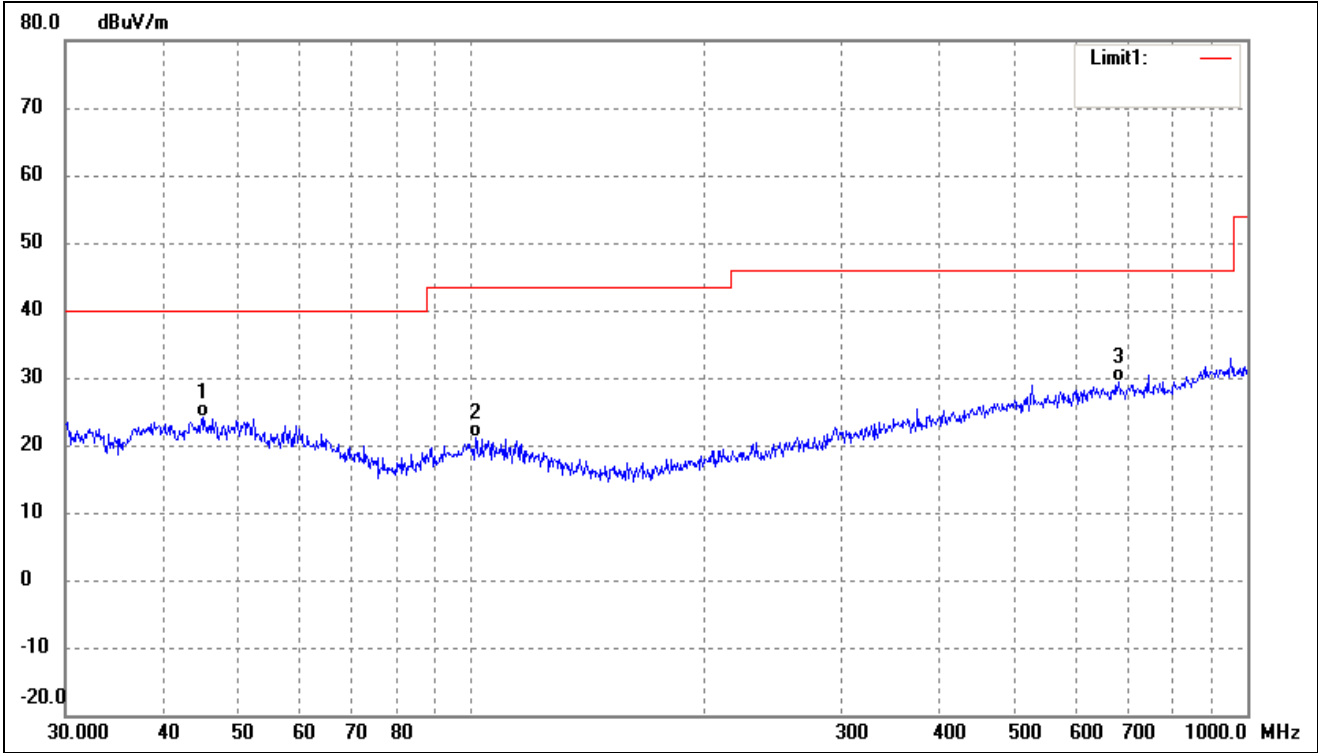
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	47.8260	35.37	-11.64	23.73	40.00	-16.27	-	-	QP
2	99.5281	35.10	-13.39	21.71	43.50	-21.79	-	-	QP
3	682.3485	31.92	-1.87	30.05	46.00	-15.95	-	-	QP

802.11n-HT20			
Test Channel	5180MHz(worst case)	Polarity:	Vertical



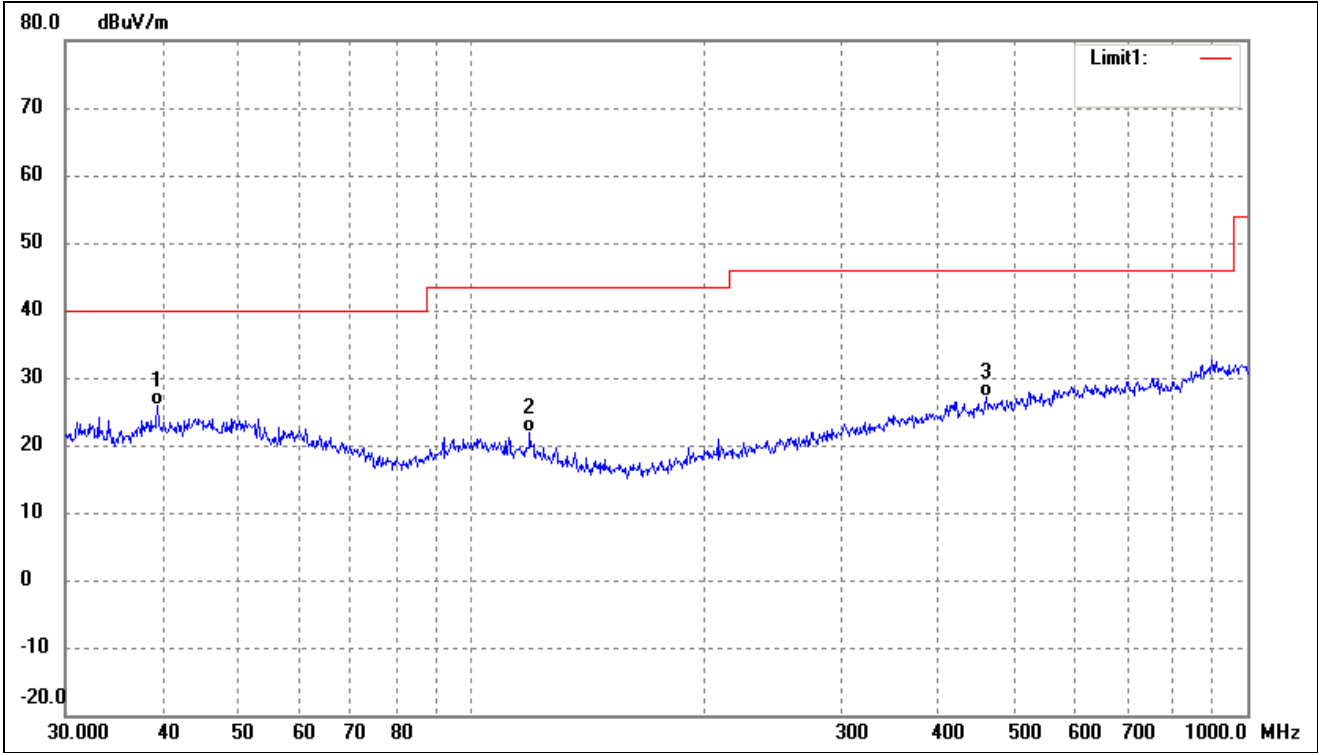
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	49.1866	36.13	-11.58	24.55	40.00	-15.45	-	-	QP
2	104.9033	34.01	-13.32	20.69	43.50	-22.81	-	-	QP
3	612.0642	30.94	-2.04	28.90	46.00	-17.10	-	-	QP

802.11n-HT40			
Test Channel	5190MHz(worst case)	Polarity:	Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	45.0583	35.85	-11.80	24.05	40.00	-15.95	-	-	QP
2	101.2885	34.46	-13.31	21.15	43.50	-22.35	-	-	QP
3	682.3485	31.32	-1.87	29.45	46.00	-16.55	-	-	QP

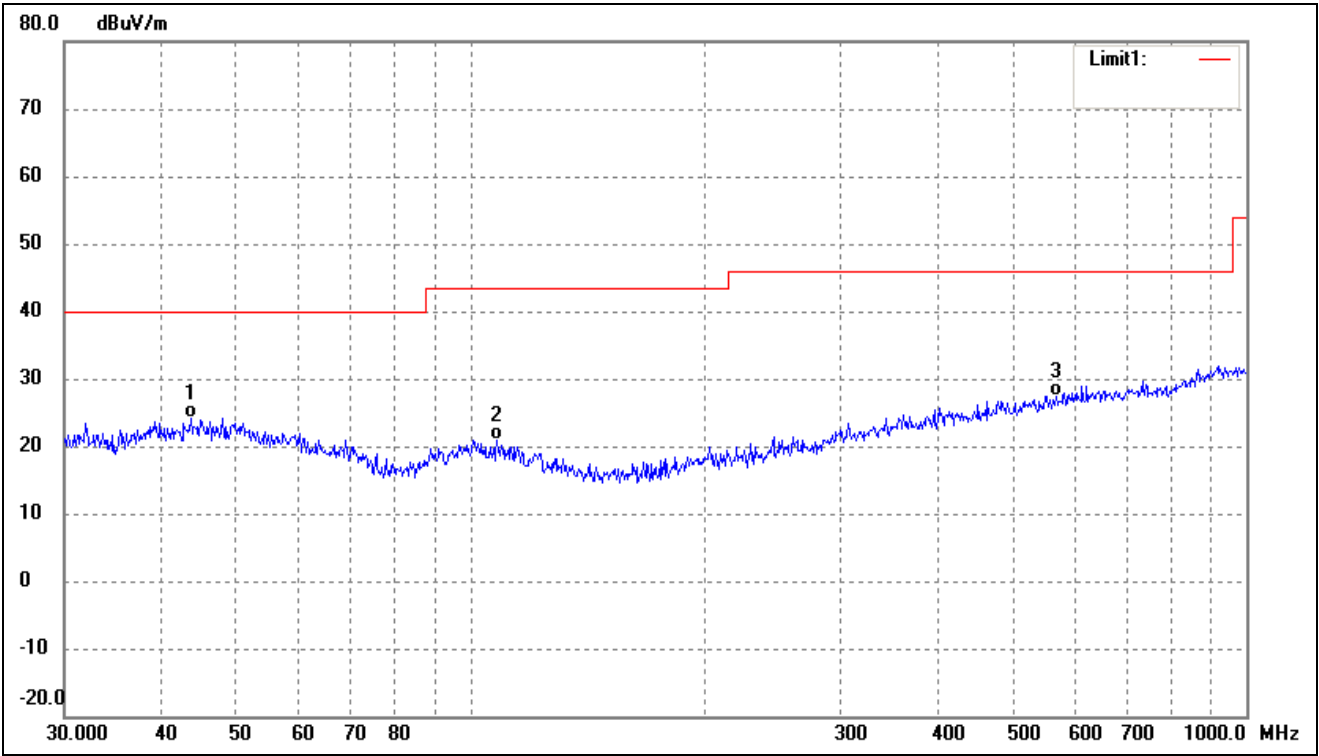
802.11n-HT40			
Test Channel	5190MHz(worst case)	Polarity:	Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	39.4372	38.19	-12.19	26.00	40.00	-14.00	-	-	QP
2	119.0180	35.97	-14.20	21.77	43.50	-21.73	-	-	QP
3	460.7271	32.28	-5.27	27.01	46.00	-18.99	-	-	QP

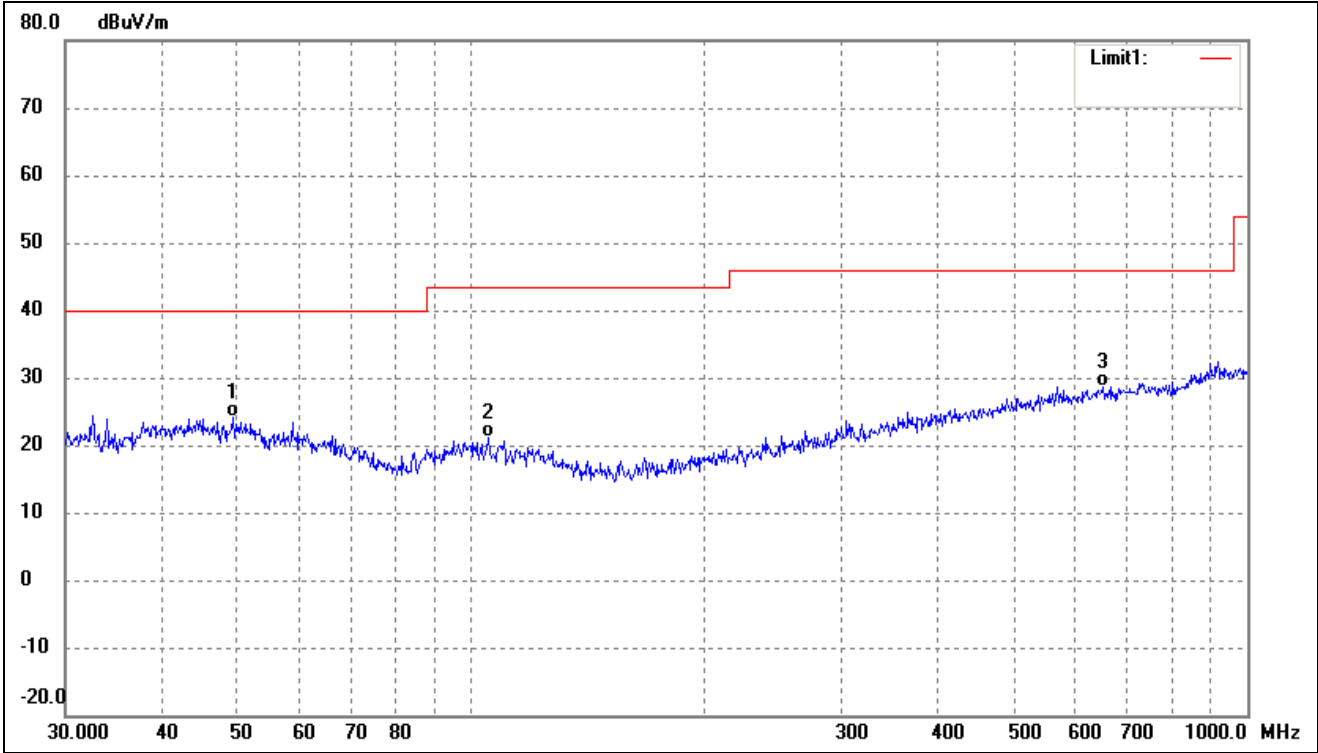
➤ 5250-5350MHz

802.11a			
Test Channel	5260MHz(worst case)	Polarity:	Horizontal



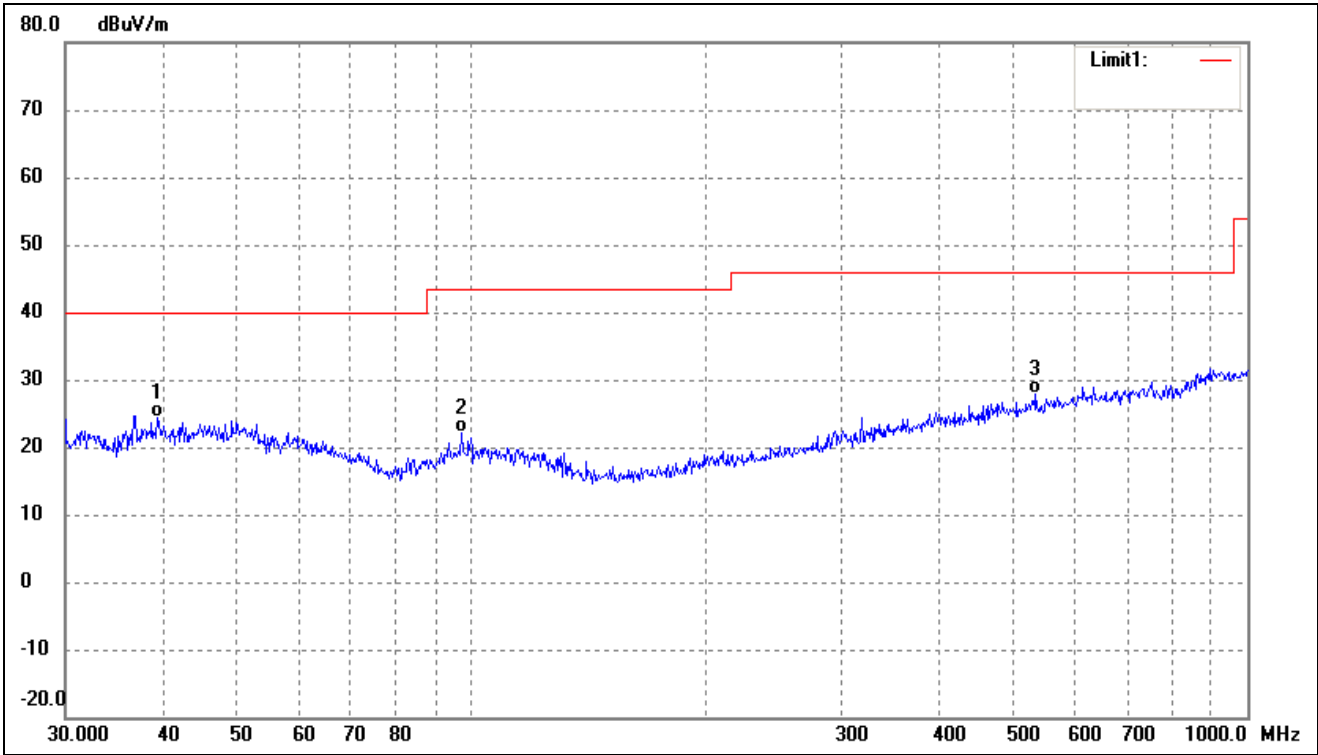
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	43.6584	35.86	-11.84	24.02	40.00	-15.98	-	-	QP
2	108.2667	34.27	-13.31	20.96	43.50	-22.54	-	-	QP
3	568.6127	30.29	-2.88	27.41	46.00	-18.59	-	-	QP

802.11a			
Test Channel	5260MHz(worst case)	Polarity:	Vertical



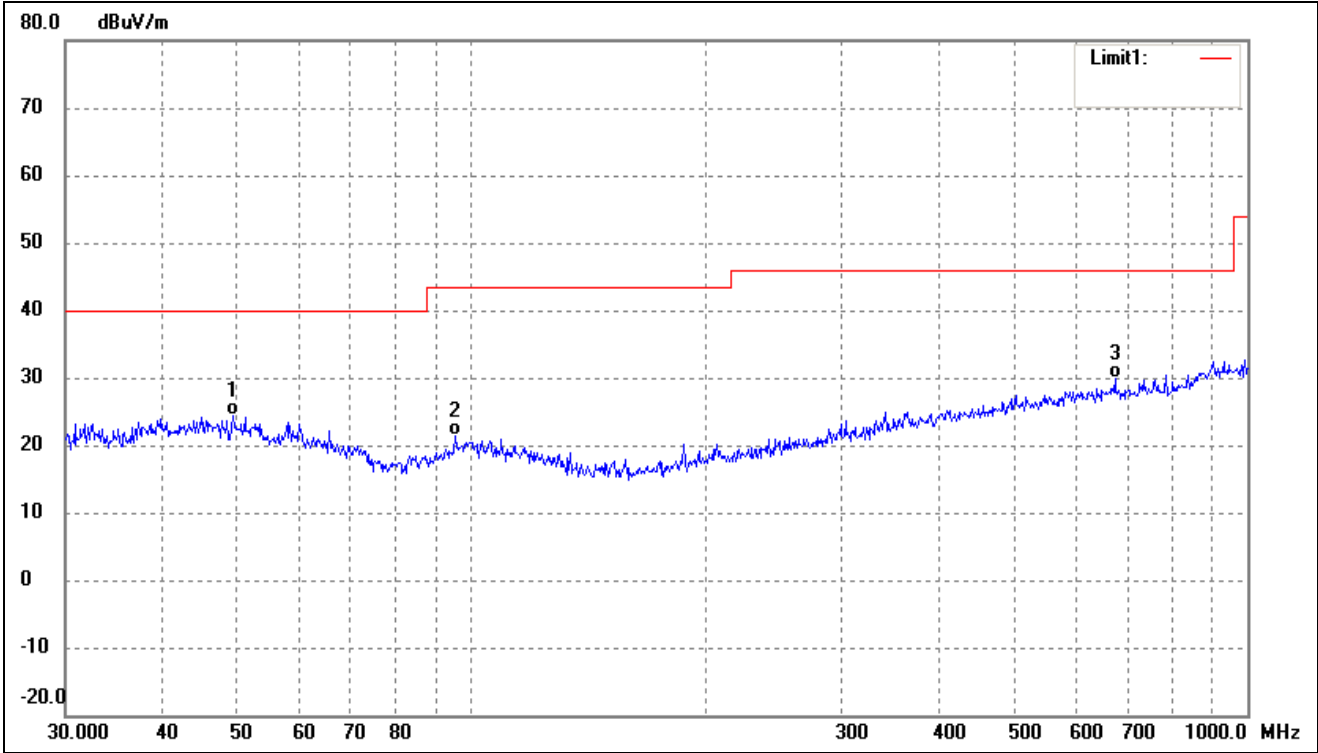
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	49.3594	35.81	-11.57	24.24	40.00	-15.76	-	-	QP
2	105.2718	34.49	-13.32	21.17	43.50	-22.33	-	-	QP
3	651.9417	30.87	-2.33	28.54	46.00	-17.46	-	-	QP

802.11n-HT20			
Test Channel	5260MHz(worst case)	Polarity:	Horizontal



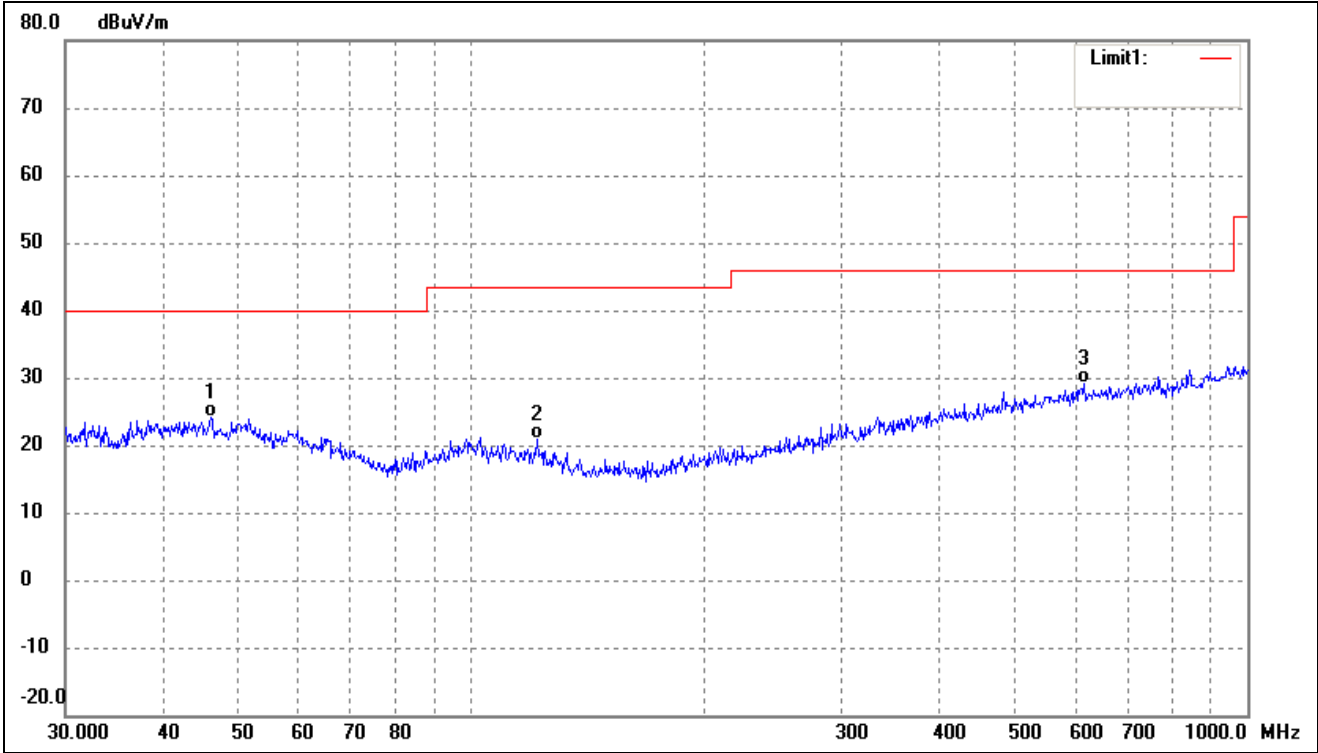
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	39.4372	36.51	-12.19	24.32	40.00	-15.68	-	-	QP
2	97.1148	35.86	-13.80	22.06	43.50	-21.44	-	-	QP
3	533.8321	31.95	-4.04	27.91	46.00	-18.09	-	-	QP

802.11n-HT20			
Test Channel	5260MHz(worst case)	Polarity:	Vertical



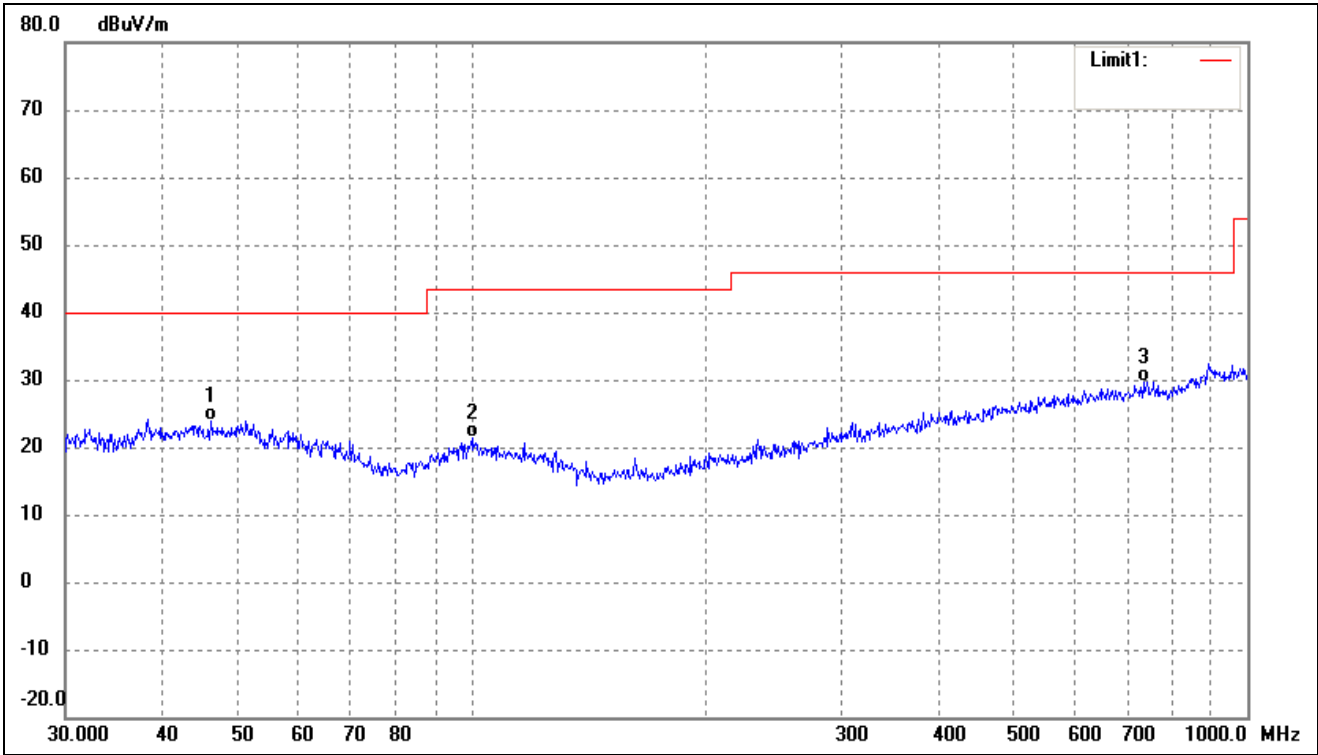
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	49.3594	35.97	-11.57	24.40	40.00	-15.60	-	-	QP
2	95.4270	35.52	-14.08	21.44	43.50	-22.06	-	-	QP
3	675.2080	31.64	-1.87	29.77	46.00	-16.23	-	-	QP

802.11n-HT40			
Test Channel	5270MHz(worst case)	Polarity:	Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	46.1780	35.74	-11.73	24.01	40.00	-15.99	-	-	QP
2	121.5486	35.58	-14.71	20.87	43.50	-22.63	-	-	QP
3	616.3718	31.09	-2.07	29.02	46.00	-16.98	-	-	QP

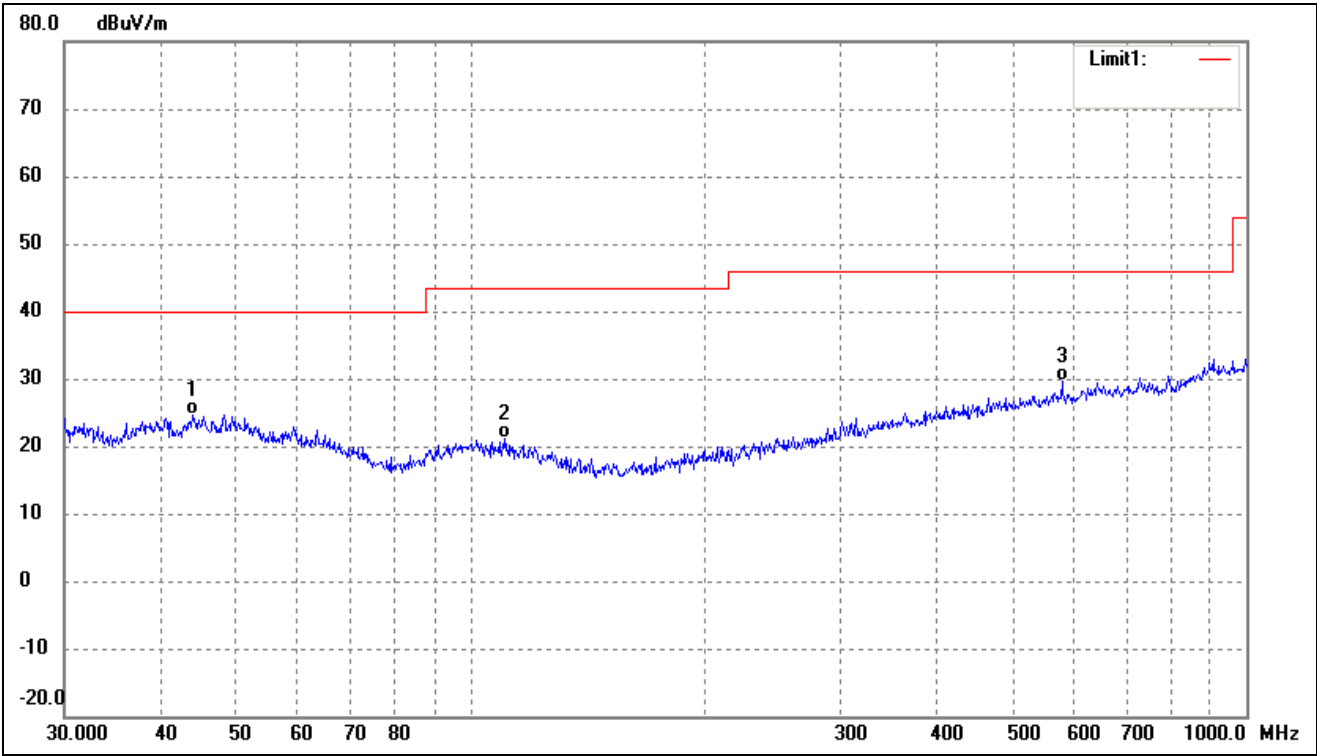
802.11n-HT40			
Test Channel	5270MHz(worst case)	Polarity:	Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	46.1780	35.64	-11.73	23.91	40.00	-16.09	-	-	QP
2	100.2286	34.58	-13.32	21.26	43.50	-22.24	-	-	QP
3	734.4913	30.71	-1.10	29.61	46.00	-16.39	-	-	QP

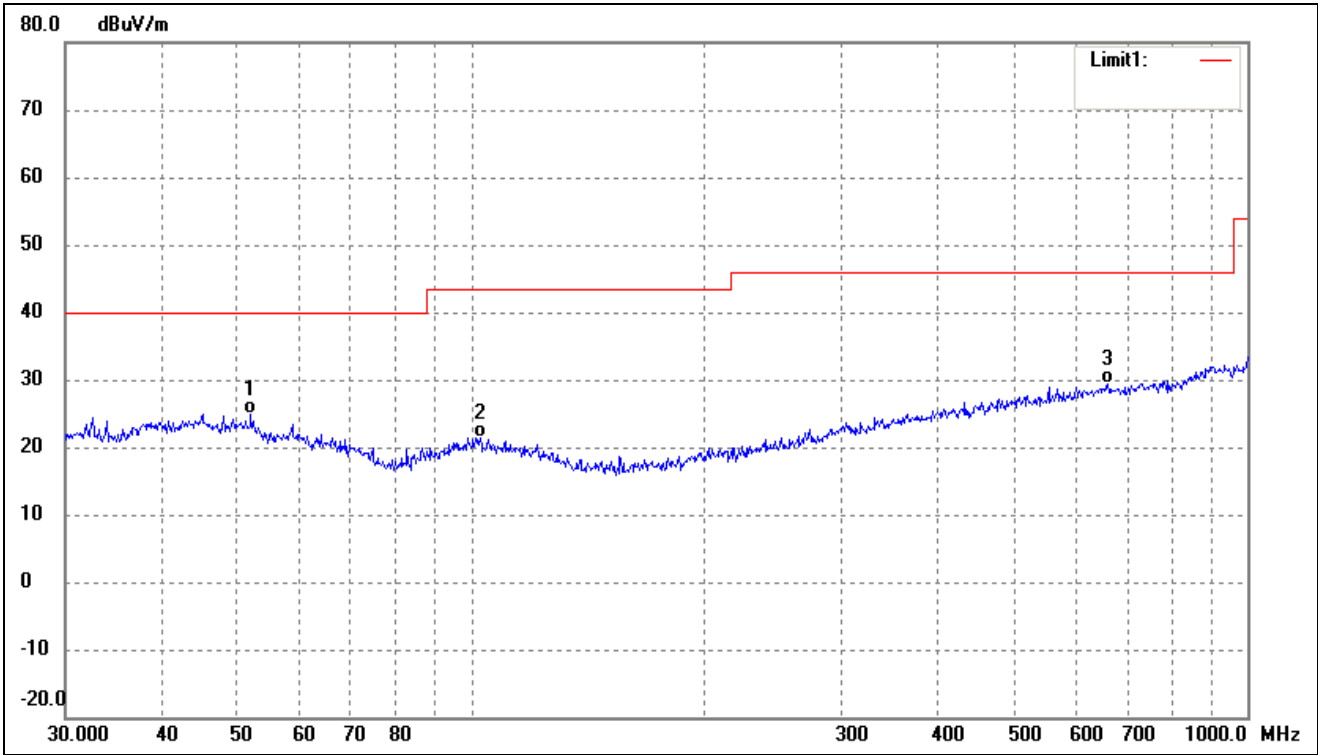
➤ 5470-5725MHz

802.11a			
Test Channel	5500MHz(worst case)	Polarity:	Horizontal



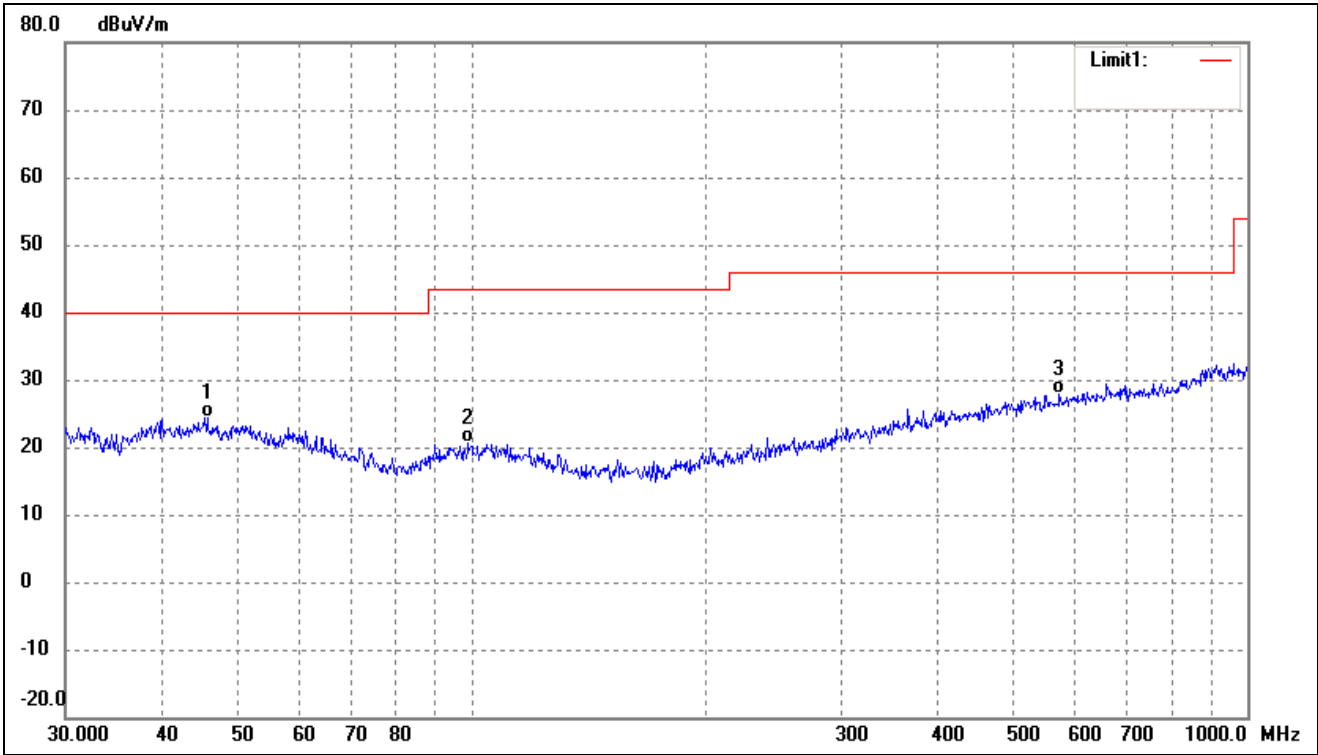
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	43.8119	36.55	-11.84	24.71	40.00	-15.29	-	-	QP
2	110.9571	34.45	-13.41	21.04	43.50	-22.46	-	-	QP
3	578.6699	32.01	-2.47	29.54	46.00	-16.46	-	-	QP

802.11a			
Test Channel	5500MHz(worst case)	Polarity:	Vertical



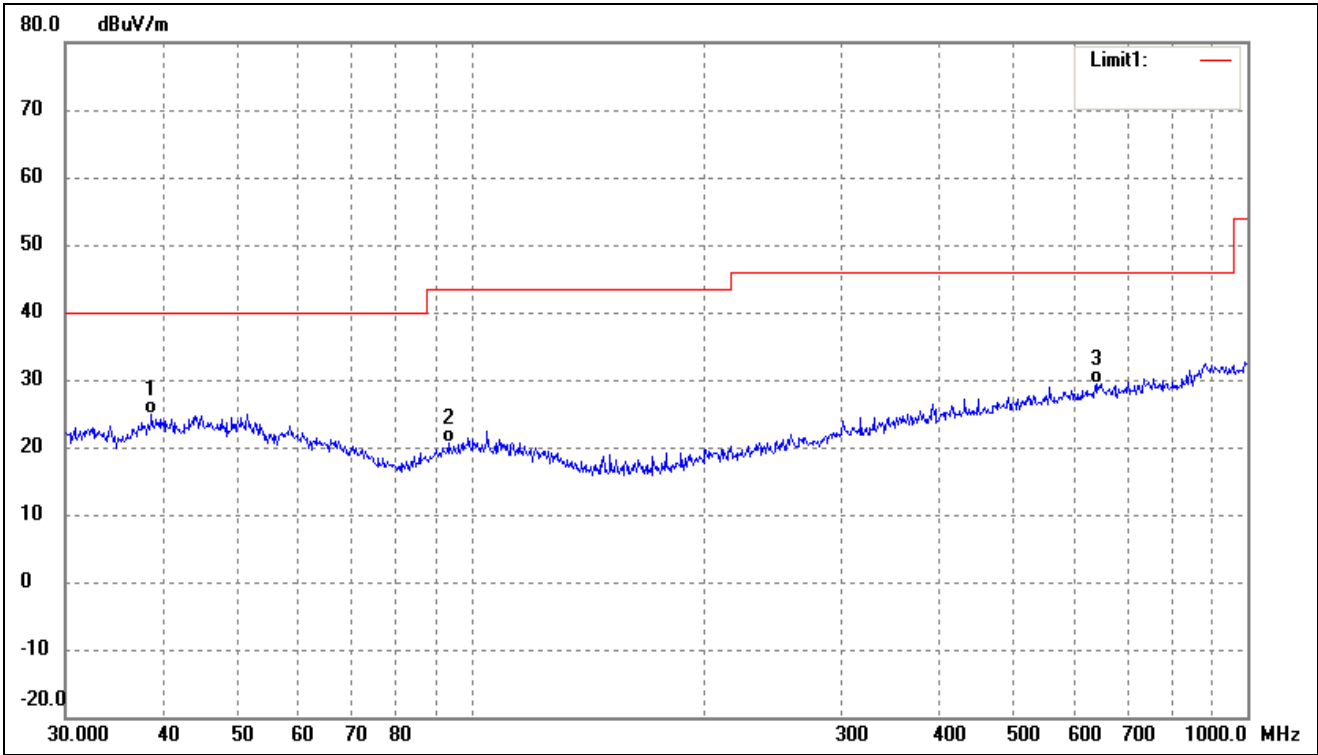
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	52.0251	36.97	-12.10	24.87	40.00	-15.13	-	-	QP
2	102.7192	34.71	-13.32	21.39	43.50	-22.11	-	-	QP
3	661.1505	31.46	-2.15	29.31	46.00	-16.69	-	-	QP

802.11n-HT20			
Test Channel	5500MHz(worst case)	Polarity:	Horizontal



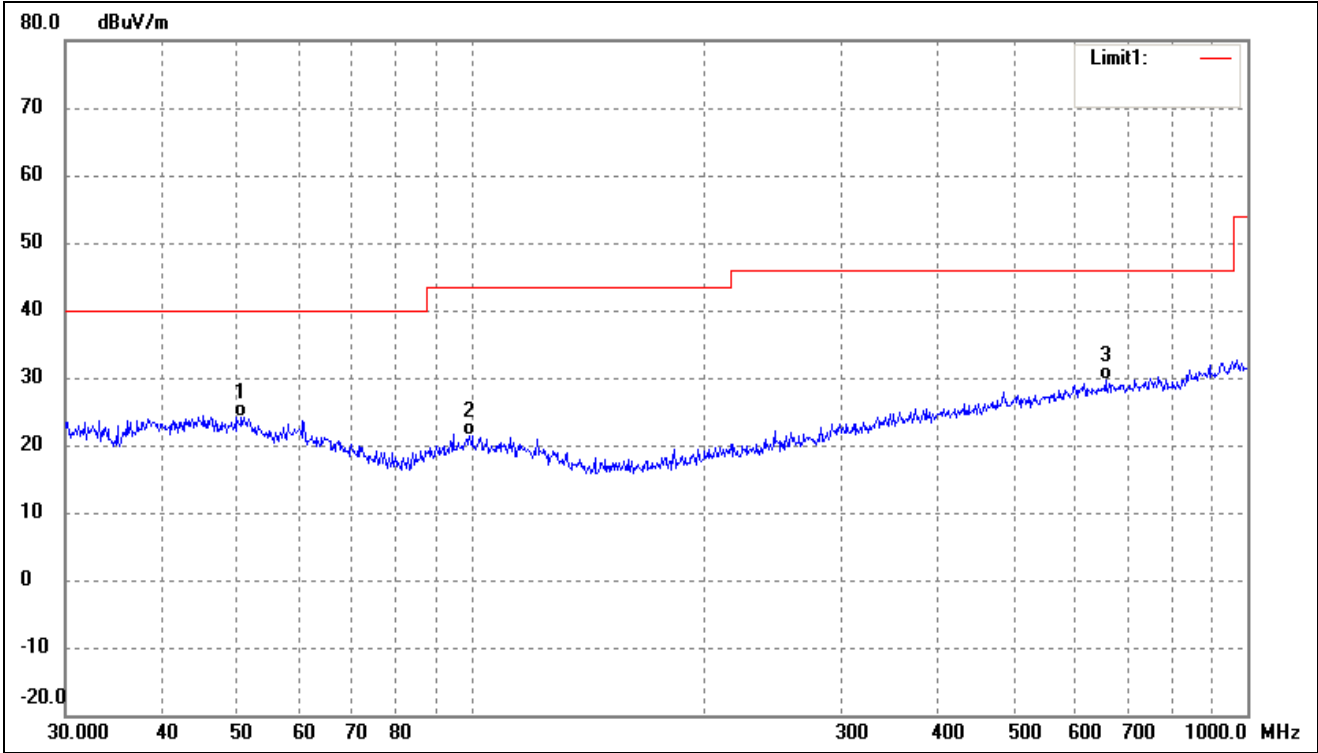
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	45.6948	36.21	-11.76	24.45	40.00	-15.55	-	-	QP
2	99.1797	34.02	-13.45	20.57	43.50	-22.93	-	-	QP
3	572.6144	30.59	-2.67	27.92	46.00	-18.08	-	-	QP

802.11n-HT20			
Test Channel	5500MHz(worst case)	Polarity:	Vertical



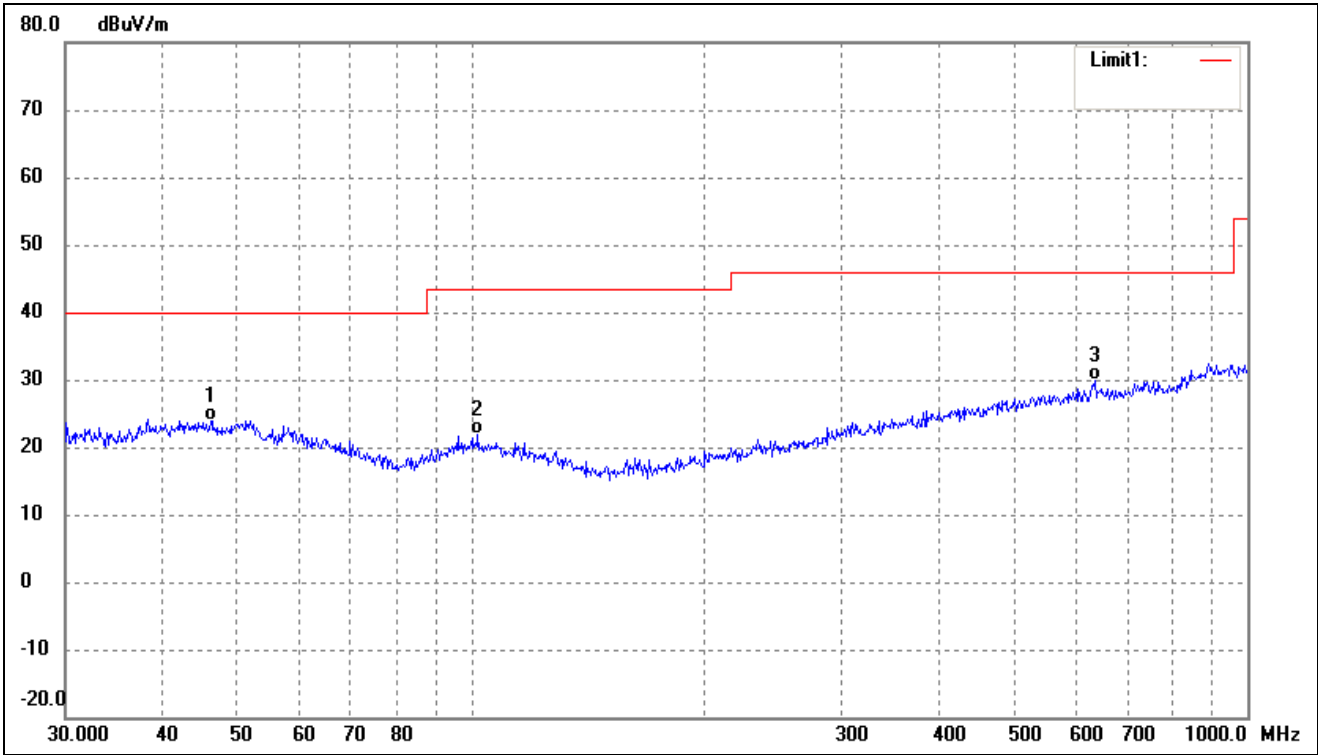
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	38.7518	37.37	-12.45	24.92	40.00	-15.08	-	-	QP
2	93.4402	35.01	-14.40	20.61	43.50	-22.89	-	-	QP
3	638.3686	31.65	-2.27	29.38	46.00	-16.62	-	-	QP

802.11n-HT40			
Test Channel	5510MHz(worst case)	Polarity:	Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	50.5860	35.94	-11.69	24.25	40.00	-15.75	-	-	QP
2	99.5281	34.69	-13.39	21.30	43.50	-22.20	-	-	QP
3	656.5300	31.84	-2.24	29.60	46.00	-16.40	-	-	QP

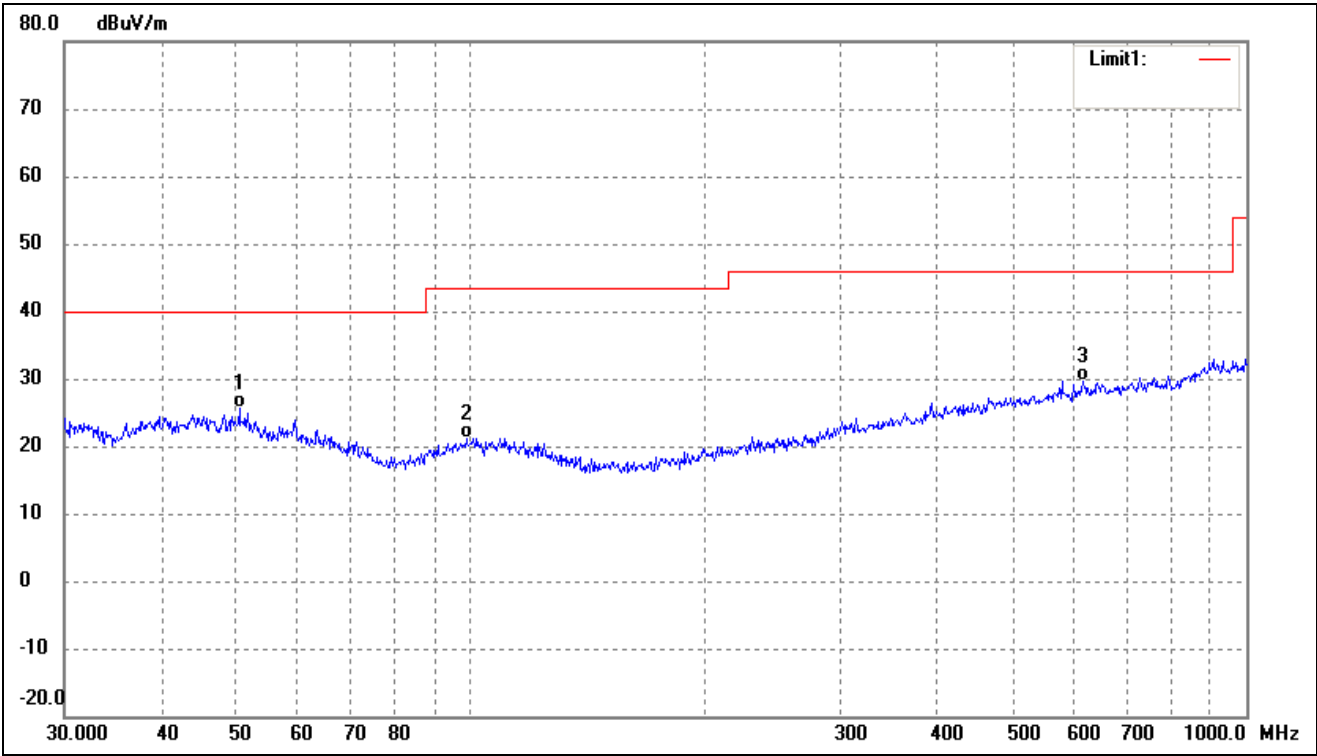
802.11n-HT40			
Test Channel	5510MHz(worst case)	Polarity:	Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	46.1780	35.64	-11.73	23.91	40.00	-16.09	-	-	QP
2	102.0014	35.27	-13.32	21.95	43.50	-21.55	-	-	QP
3	636.1340	32.03	-2.24	29.79	46.00	-16.21	-	-	QP

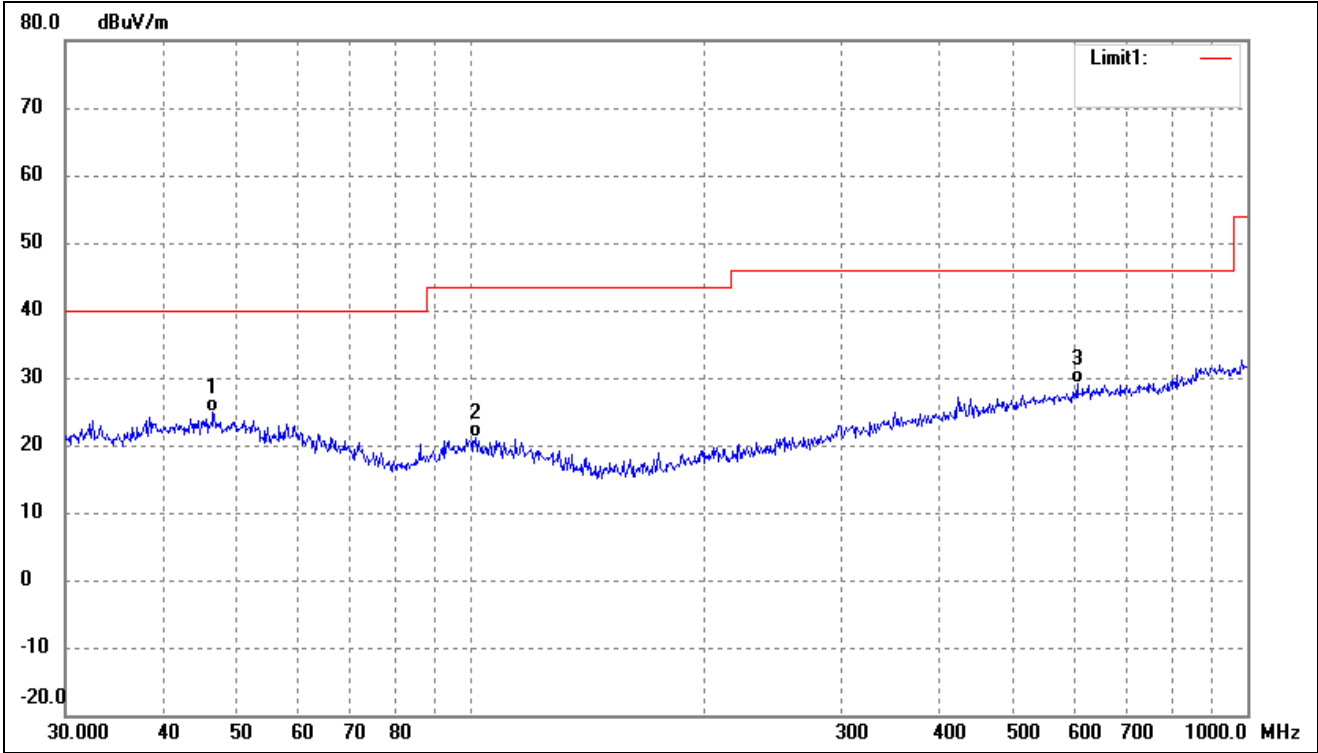
➤ 5725-5850MHz

802.11a			
Test Channel	5745MHz(worst case)	Polarity:	Horizontal



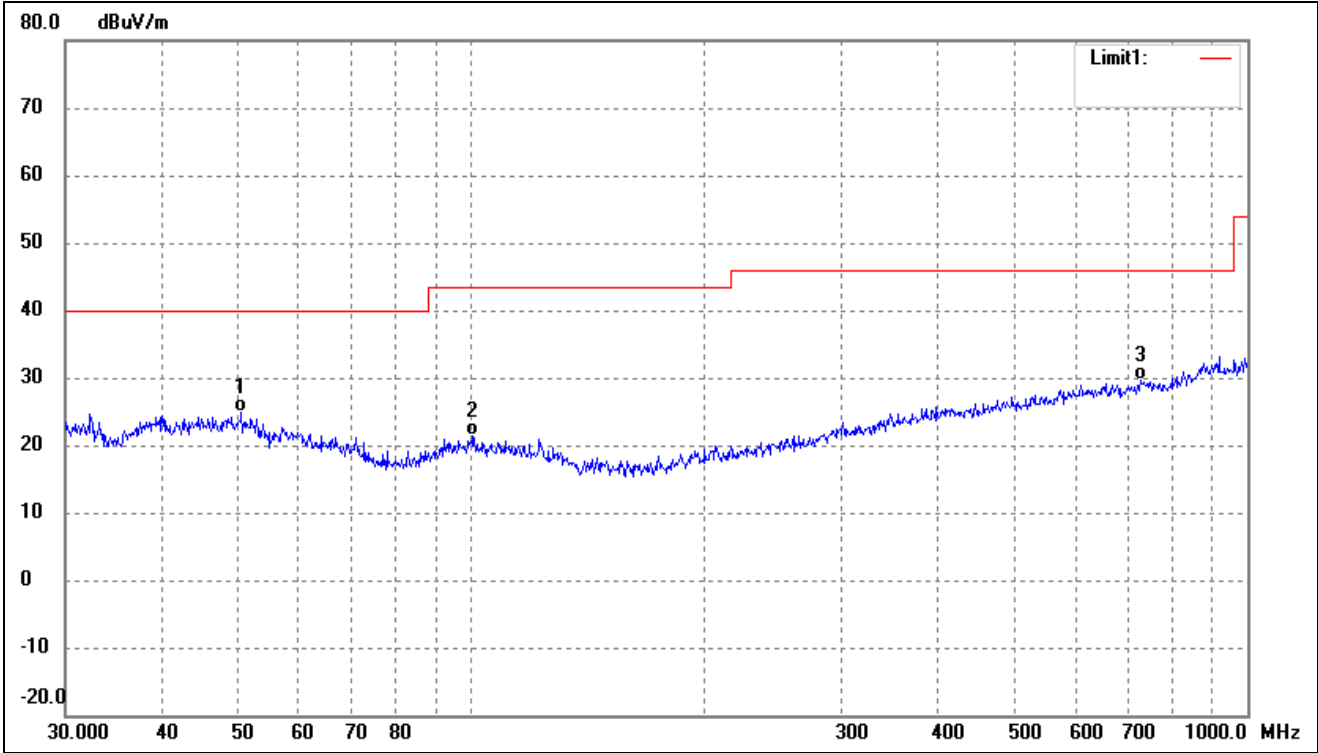
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	50.4089	37.35	-11.65	25.70	40.00	-14.30	-	-	QP
2	98.8326	34.77	-13.52	21.25	43.50	-22.25	-	-	QP
3	616.3718	31.66	-2.07	29.59	46.00	-16.41	-	-	QP

802.11a			
Test Channel	5745MHz(worst case)	Polarity:	Vertical



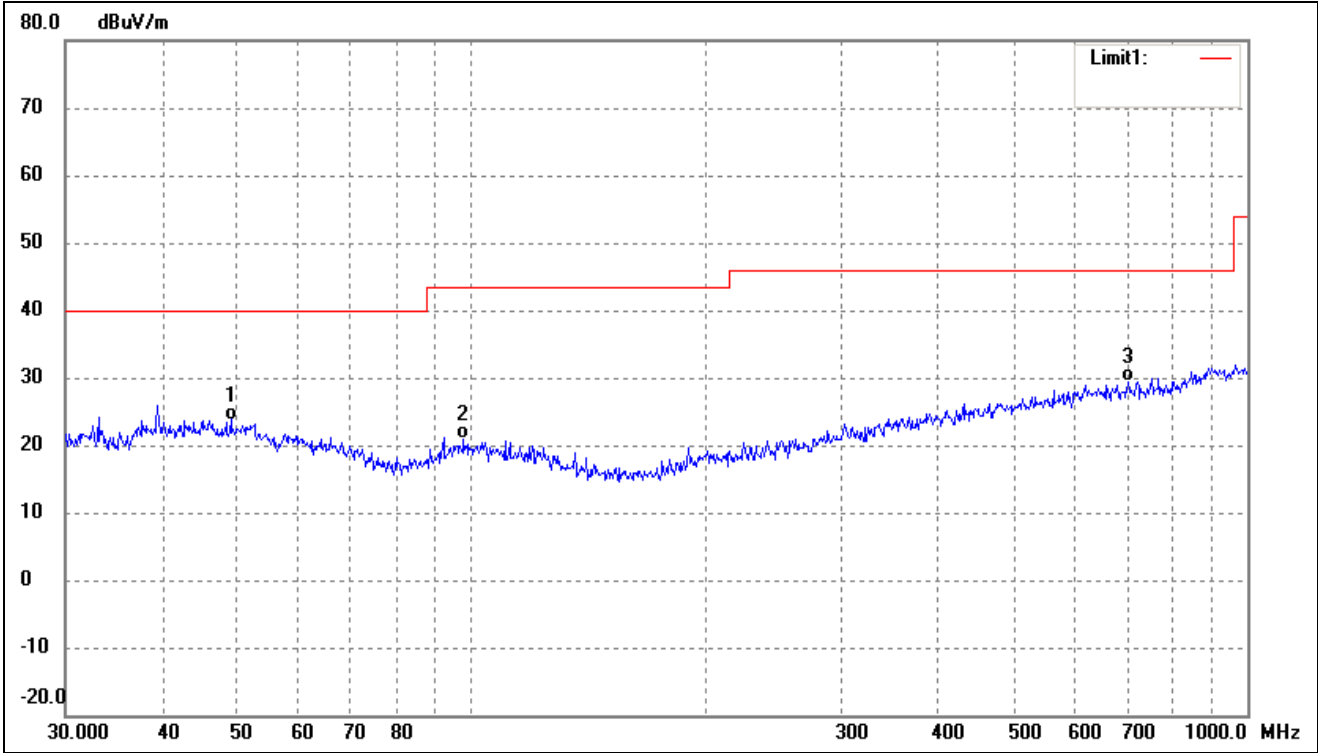
No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	46.5030	36.64	-11.72	24.92	40.00	-15.08	-	-	QP
2	101.2885	34.38	-13.31	21.07	43.50	-22.43	-	-	QP
3	603.5392	30.99	-1.97	29.02	46.00	-16.98	-	-	QP

802.11n-HT20			
Test Channel	5745MHz(worst case)	Polarity:	Horizontal



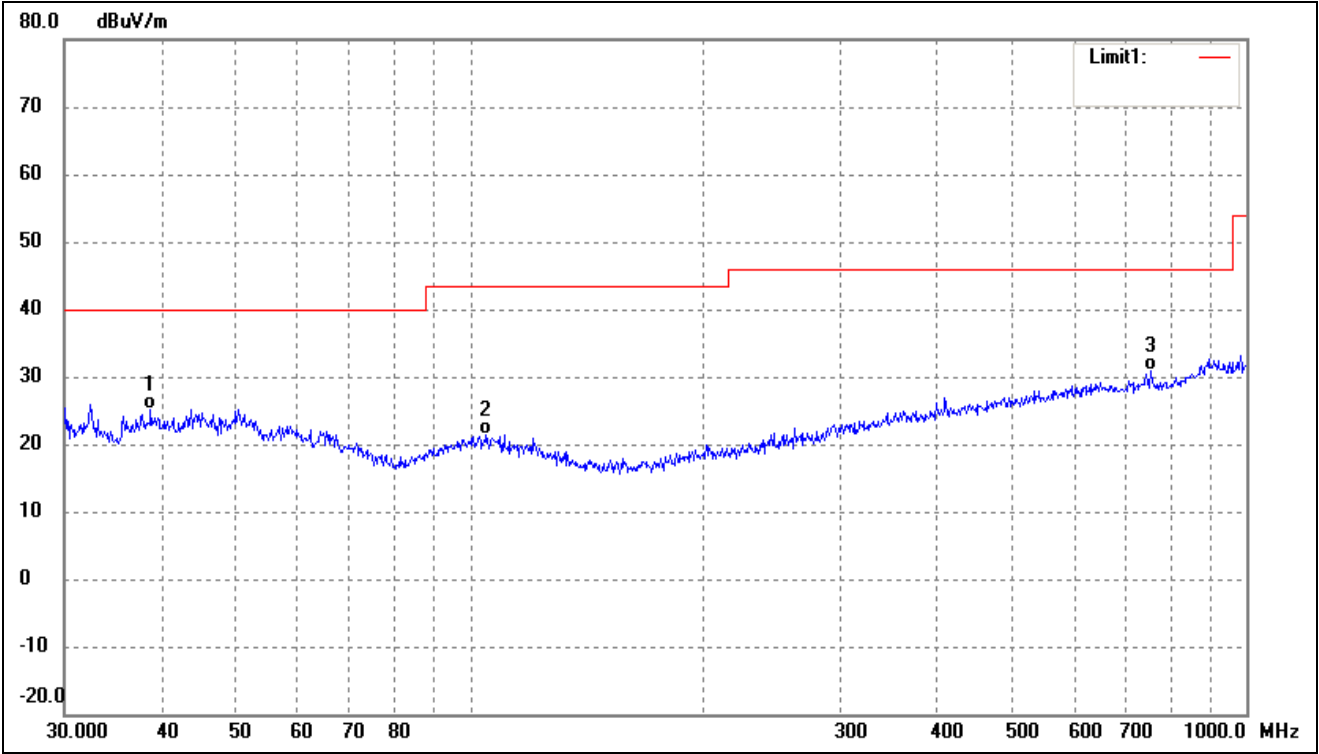
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	50.5860	36.66	-11.69	24.97	40.00	-15.03	-	-	QP
2	100.5806	34.61	-13.33	21.28	43.50	-22.22	-	-	QP
3	729.3583	30.54	-1.03	29.51	46.00	-16.49	-	-	QP

802.11n-HT20			
Test Channel	5745MHz(worst case)	Polarity:	Vertical



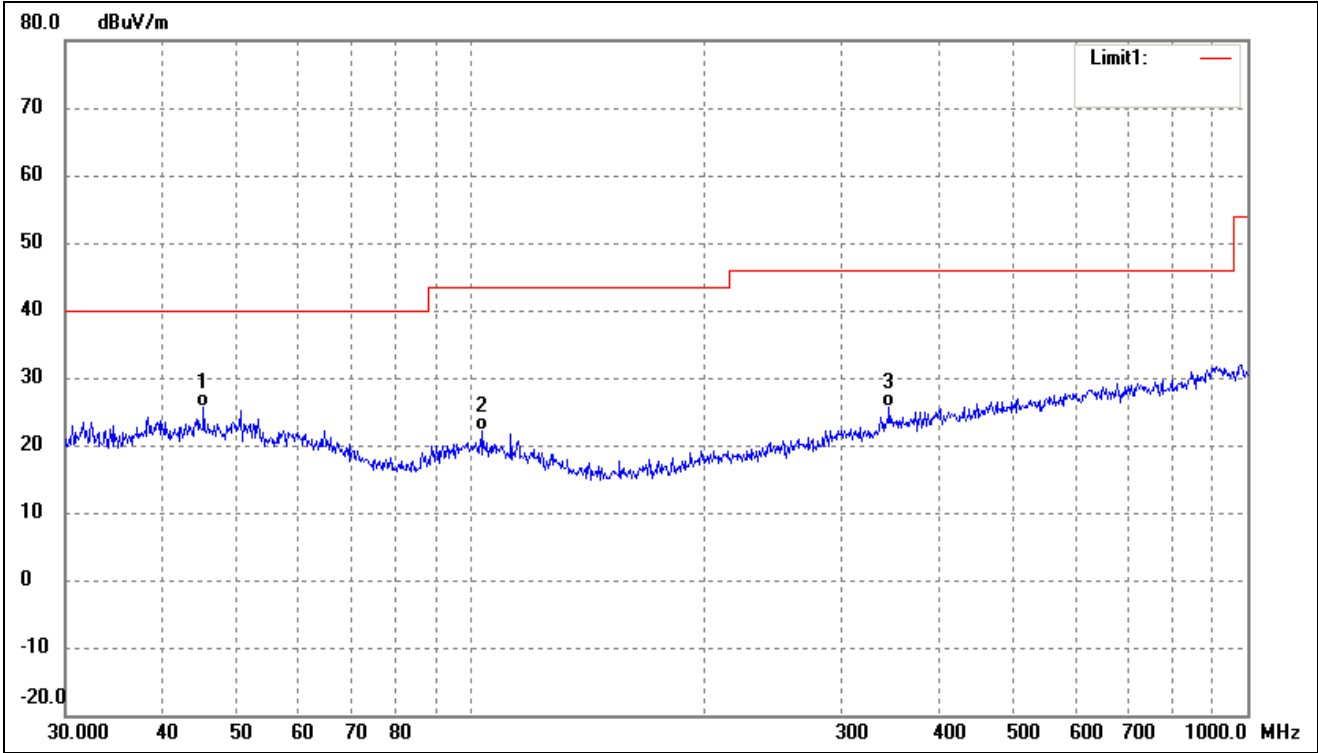
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	49.0145	35.34	-11.59	23.75	40.00	-16.25	-	-	QP
2	97.7983	34.46	-13.69	20.77	43.50	-22.73	-	-	QP
3	701.7610	31.30	-1.81	29.49	46.00	-16.51	-	-	QP

802.11n-HT40			
Test Channel	5755MHz(worst case)	Polarity:	Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	38.7518	37.62	-12.45	25.17	40.00	-14.83	-	-	QP
2	104.9033	34.73	-13.32	21.41	43.50	-22.09	-	-	QP
3	752.7432	32.21	-1.27	30.94	46.00	-15.06	-	-	QP

802.11n-HT40			
Test Channel	5755MHz(worst case)	Polarity:	Vertical

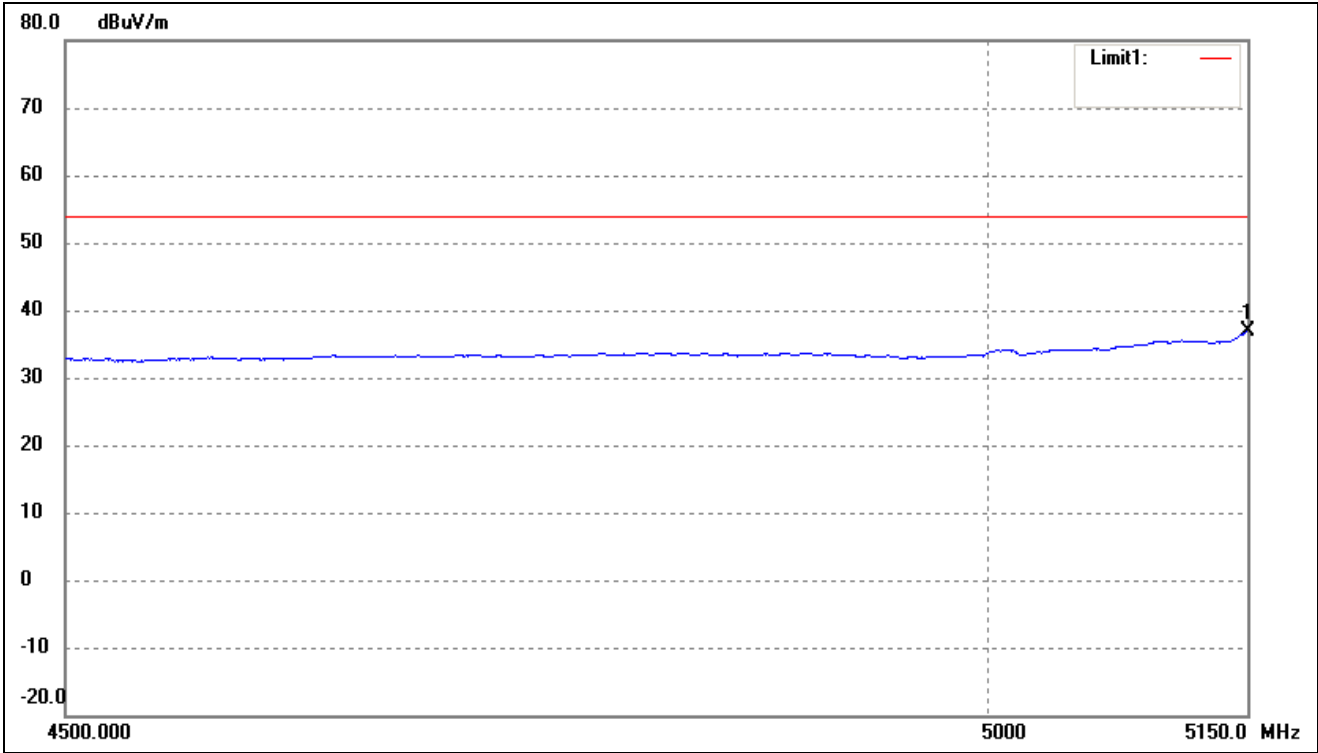


No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	45.2166	37.33	-11.79	25.54	40.00	-14.46	-	-	QP
2	103.4421	35.46	-13.31	22.15	43.50	-21.35	-	-	QP
3	345.5952	33.43	-7.70	25.73	46.00	-20.27	-	-	QP

Remark: ‘-’Means’ the test Degree and Height are not recorded by the test software and only show the worst case in the test report.

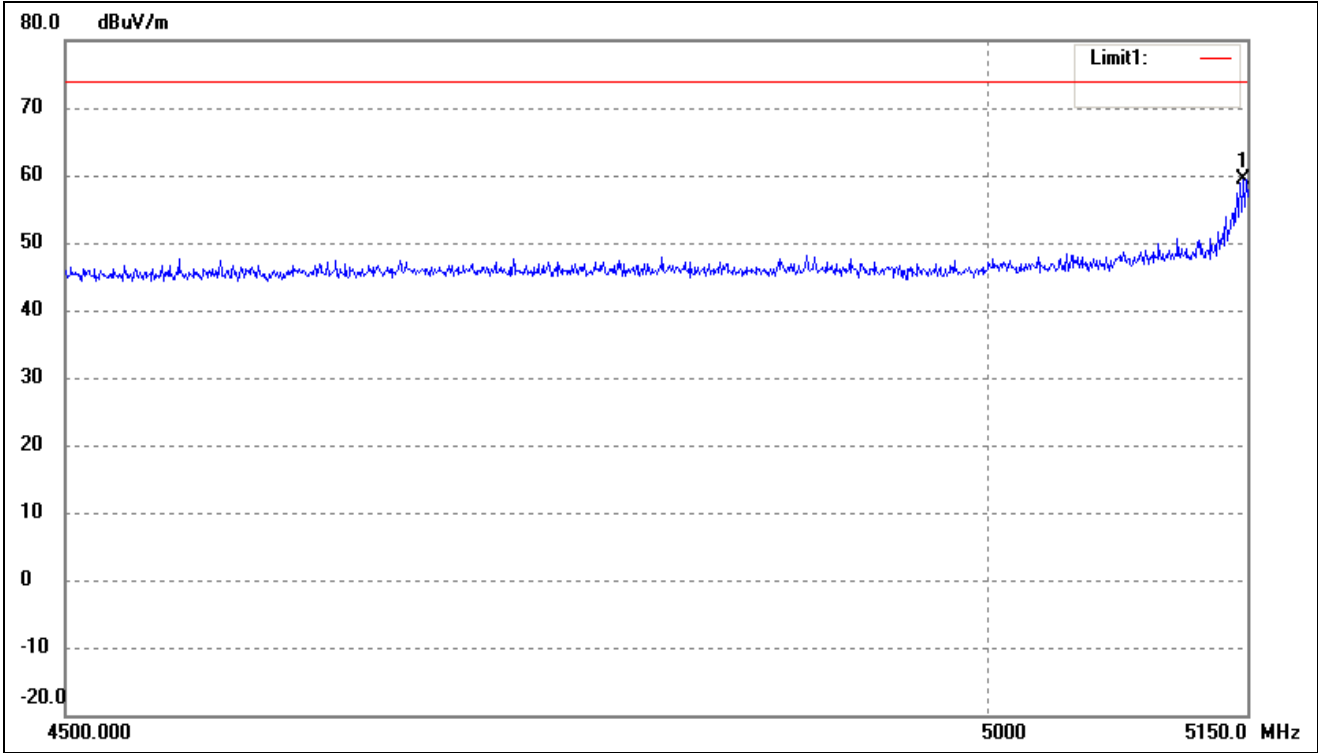
➤ Spurious Emission above 1GHz

802.11a- Restricted Bandedge			
Test Channel	band 5.18-5.24GHz	Polarity:	Vertical(worst case)



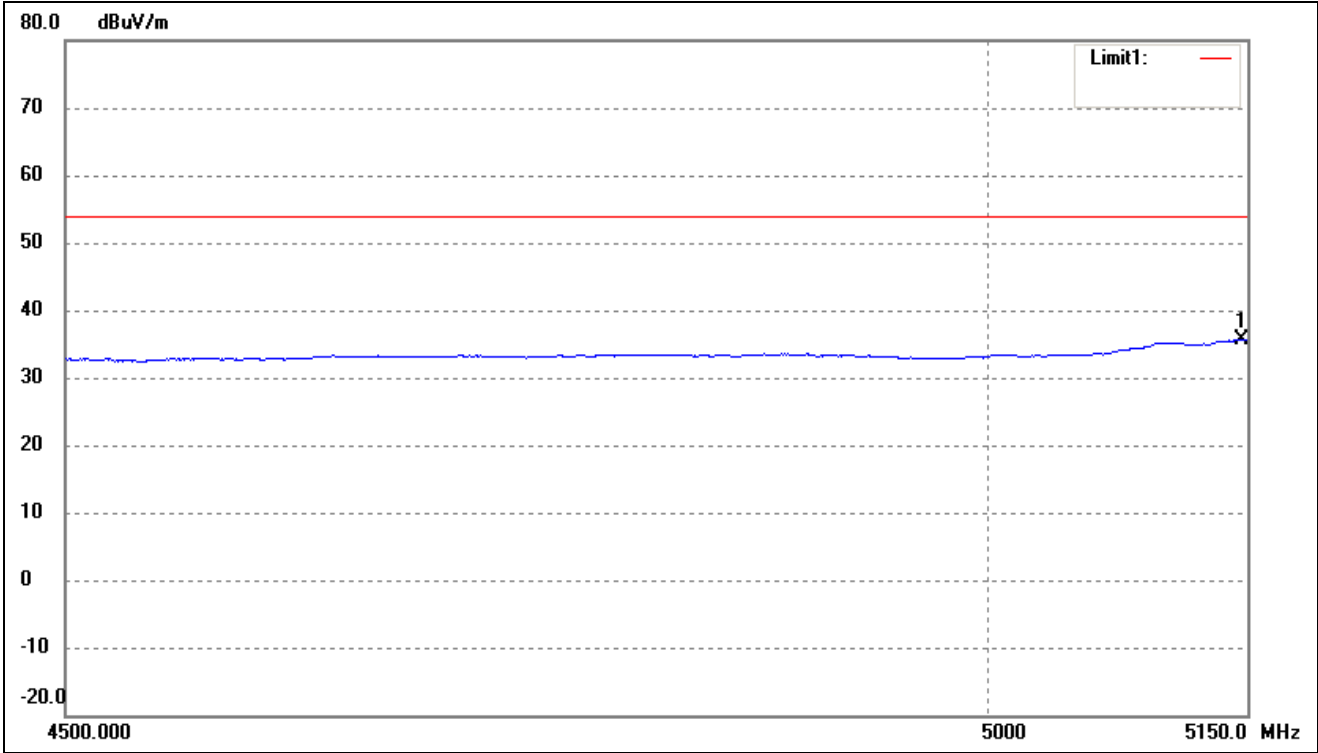
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	()	(cm)	
1	5150.000	41.10	-4.32	36.78	54.00	-17.22	-	-	peak

802.11a- Restricted Bandedge			
Test Channel	band 5.18-5.24GHz	Polarity:	Vertical(worst case)



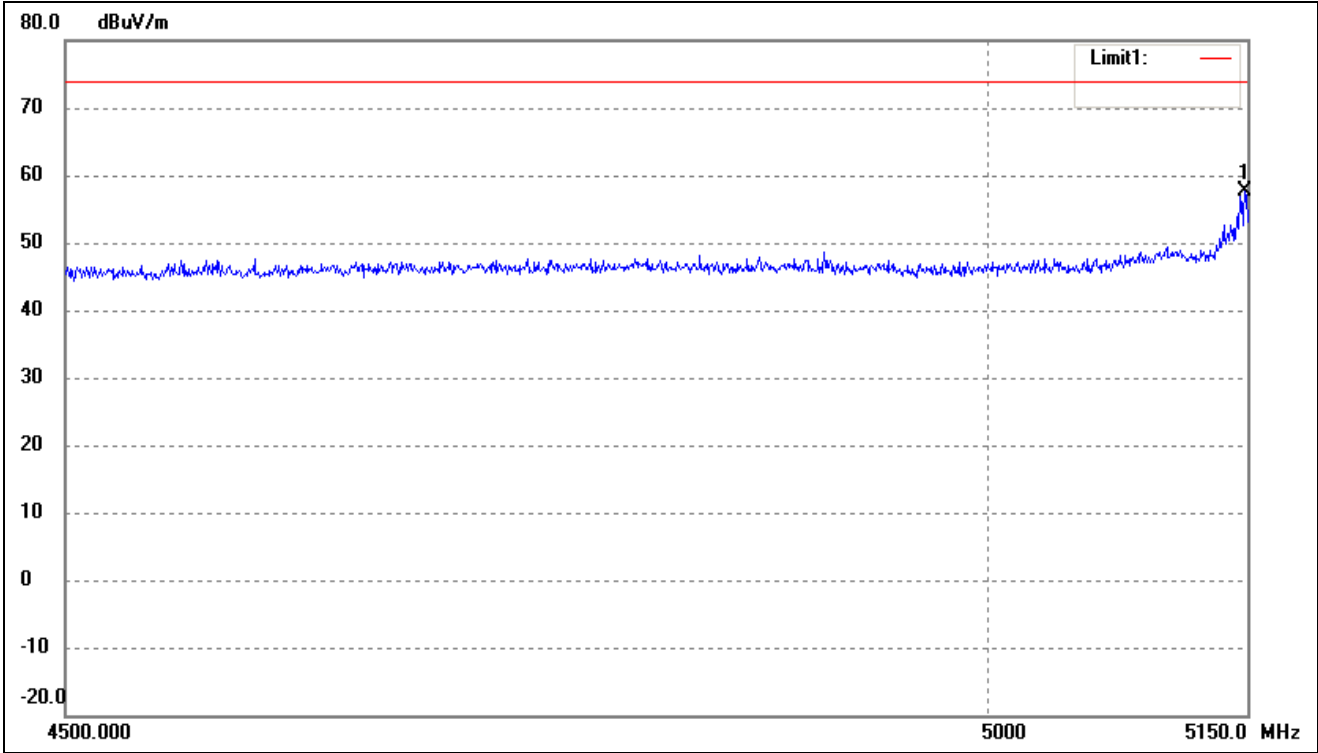
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	5147.221	63.73	-4.32	59.41	74.00	-14.59	-	-	peak

802.11n-HT20- Restricted Bandedge			
Test Channel	band 5.18-5.24GHz	Polarity:	Vertical(worst case)



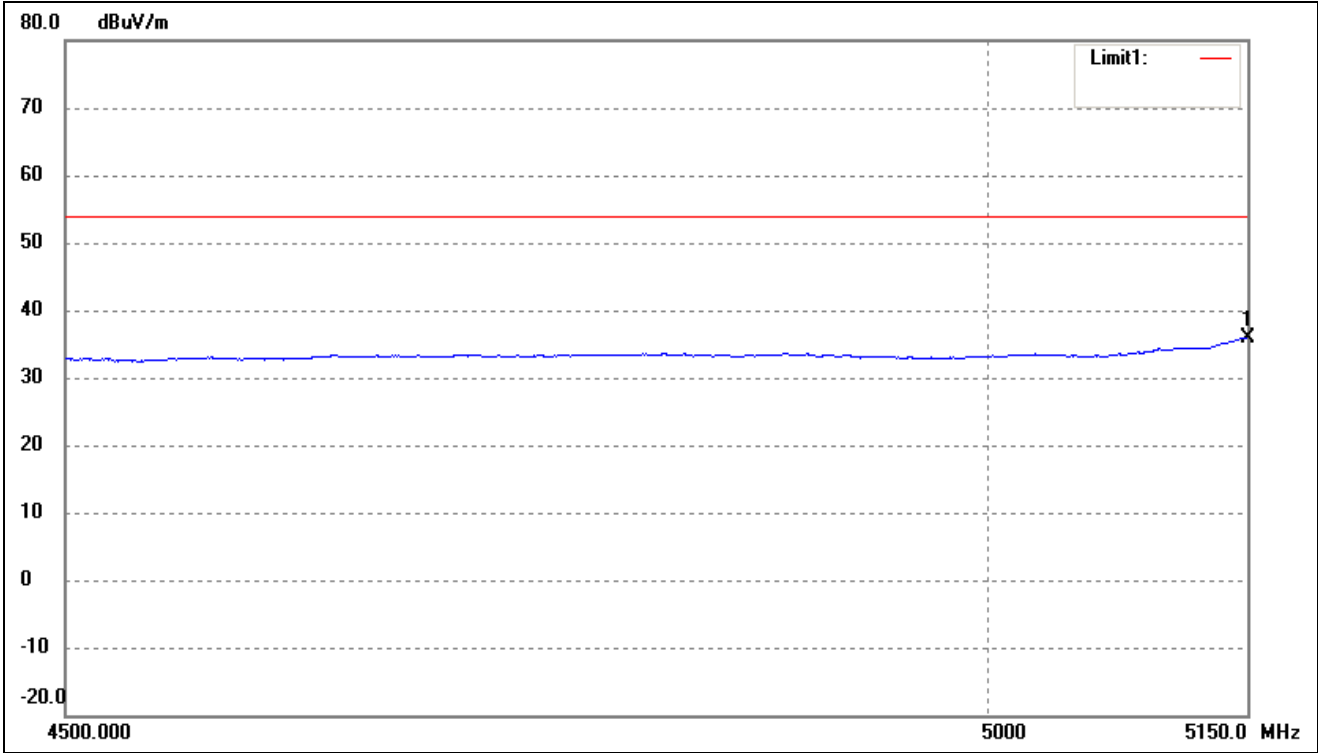
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	()	(cm)	
1	5146.527	40.04	-4.32	35.72	54.00	-18.28	-	-	peak

802.11n-HT20- Restricted Bandedge			
Test Channel	band 5.18-5.24GHz	Polarity:	Vertical(worst case)



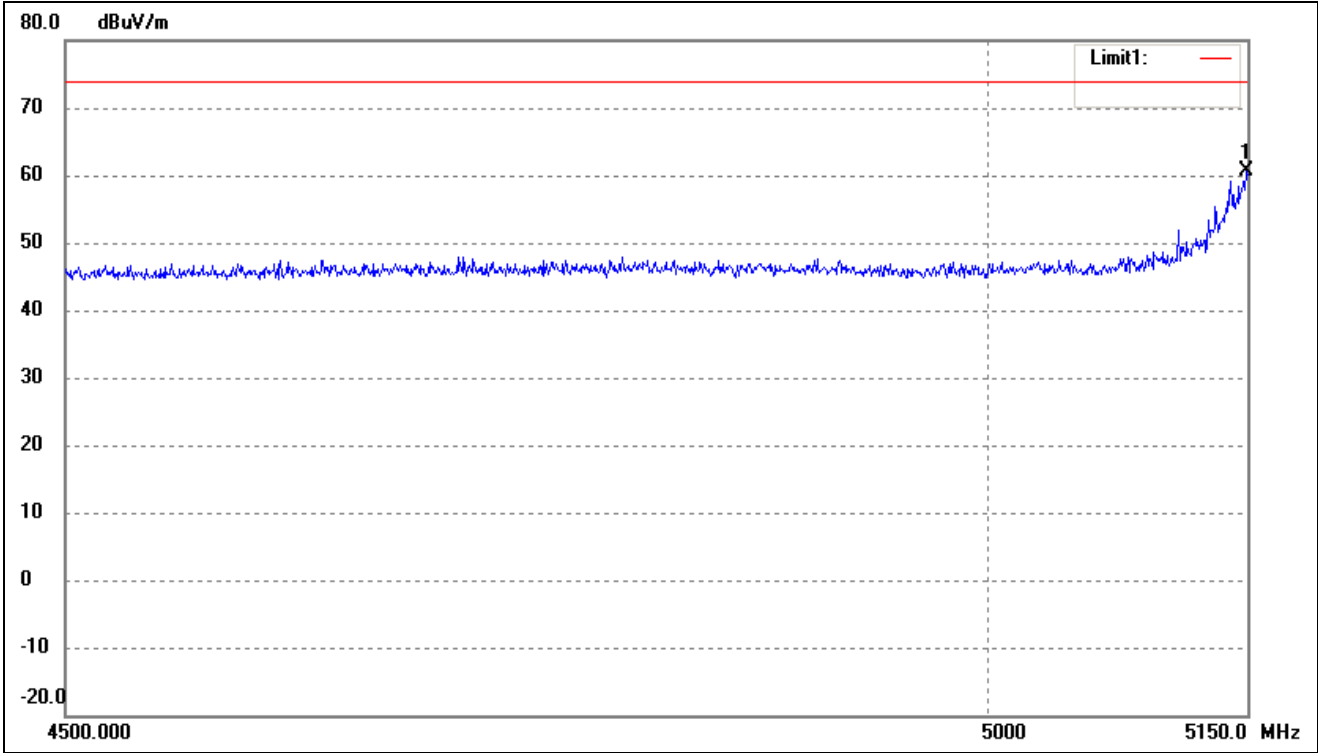
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	5148.610	62.05	-4.32	57.73	74.00	-16.27	-	-	peak

802.11n-HT40- Restricted Bandedge			
Test Channel	band 5.19-5.27GHz	Polarity:	Vertical(worst case)



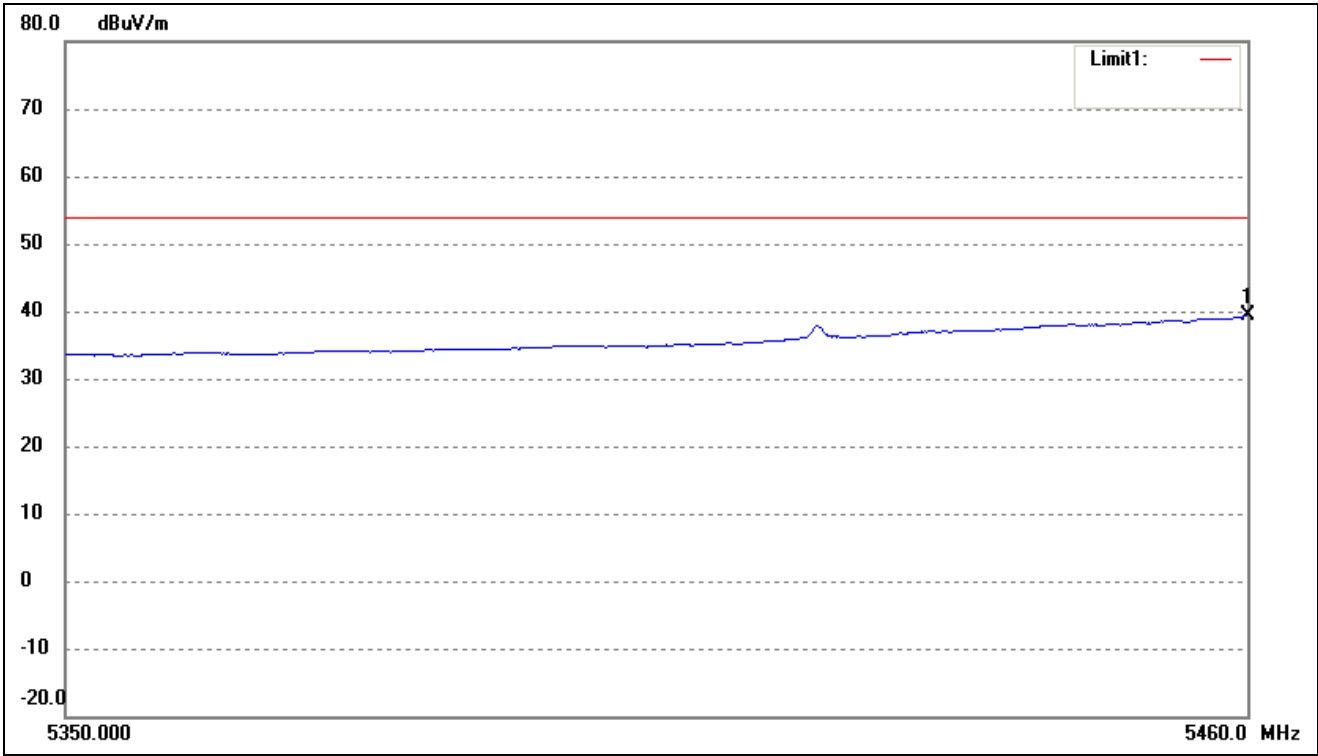
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	5150.000	40.27	-4.32	35.95	54.00	-18.05	-	-	peak

802.11n-HT40- Restricted Bandedge			
Test Channel	band 5.19-5.27GHz	Polarity:	Vertical(worst case)



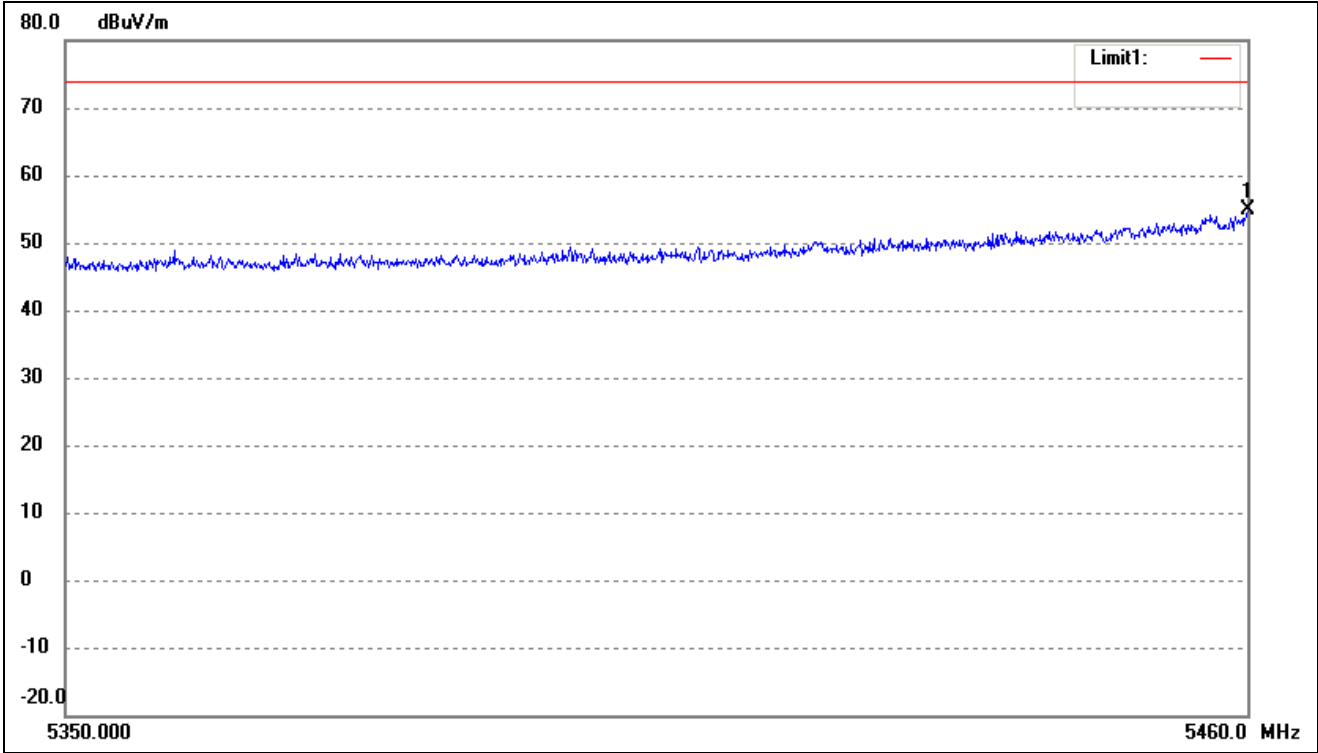
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	5149.305	65.01	-4.32	60.69	74.00	-13.31	-	-	peak

802.11a- Restricted Bandedge			
Test Channel	band 5.50-5.70GHz	Polarity:	Vertical(worst case)



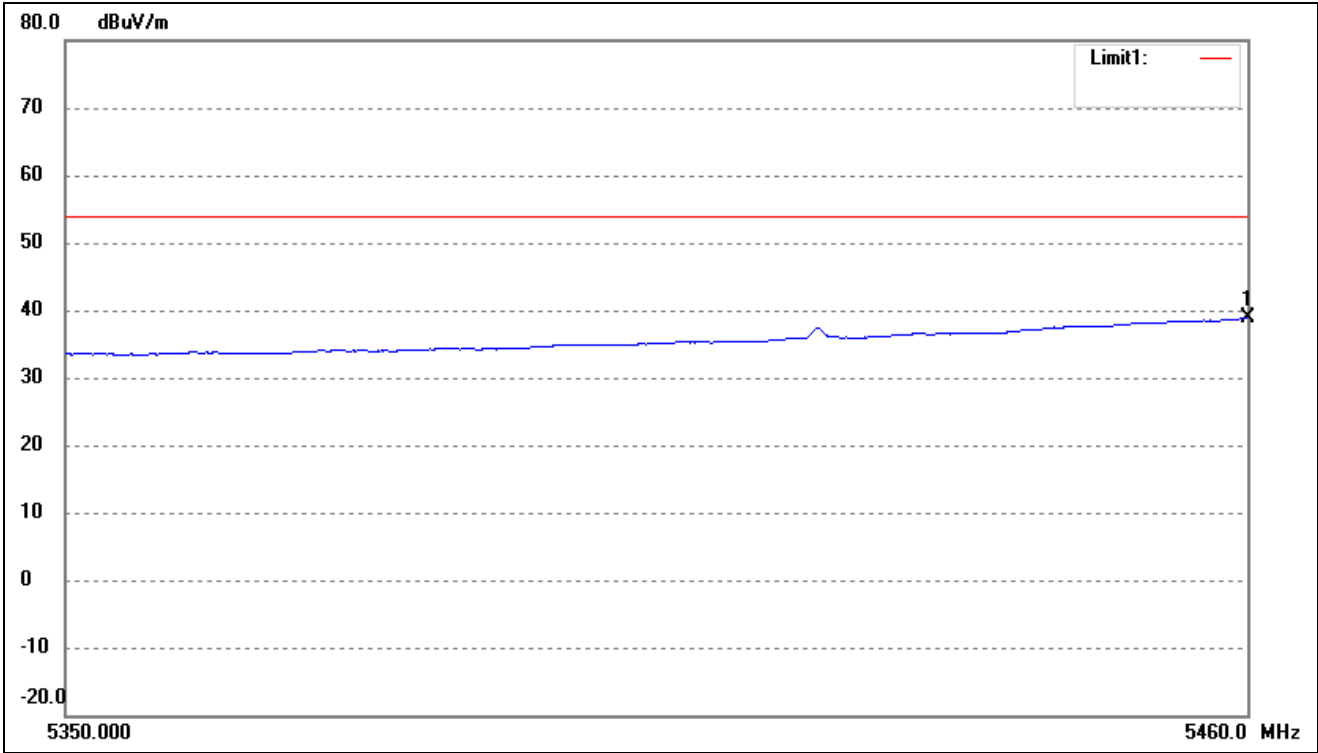
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	5460.000	43.47	-4.16	39.31	54.00	-14.69	-	-	peak

802.11a- Restricted Bandedge			
Test Channel	band 5.50-5.70GHz	Polarity:	Vertical(worst case)



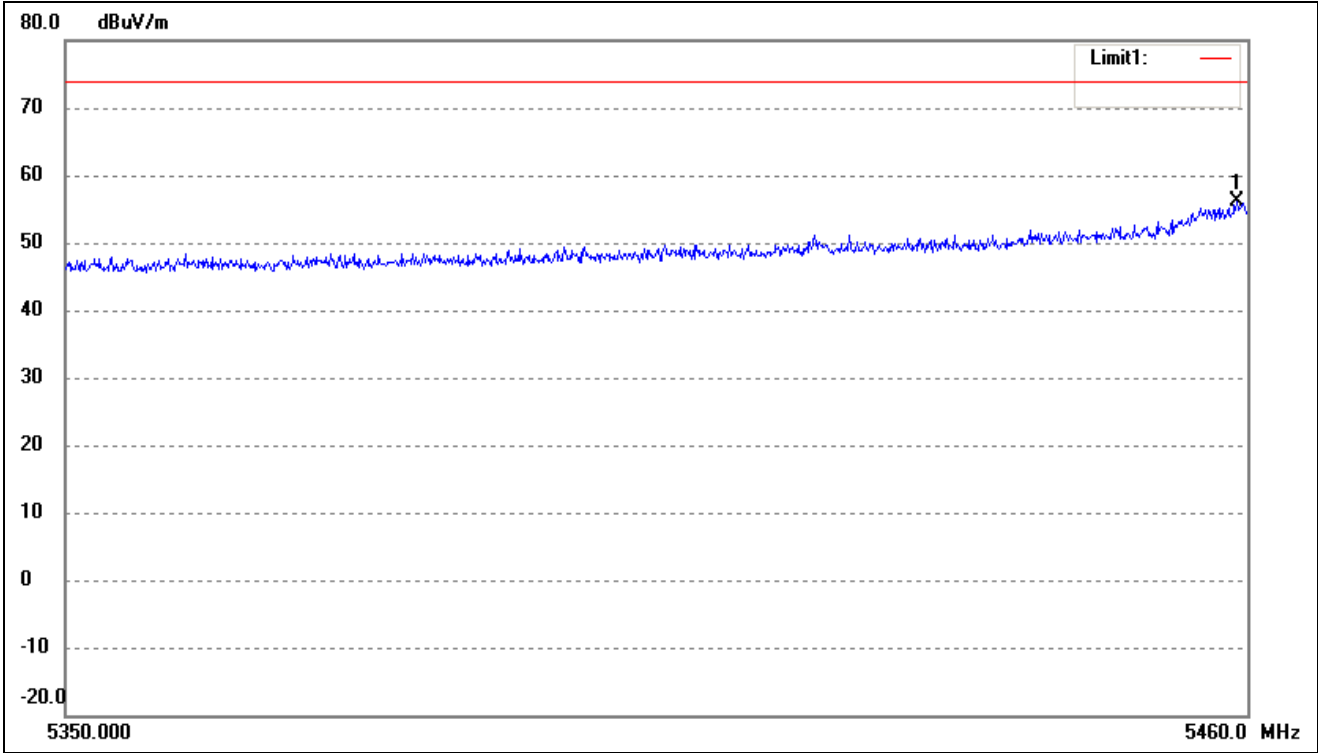
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	5460.000	58.96	-4.16	54.80	74.00	-19.20	-	-	peak

802.11n-HT20- Restricted Bandedge			
Test Channel	band 5.50-5.70GHz	Polarity:	Vertical(worst case)



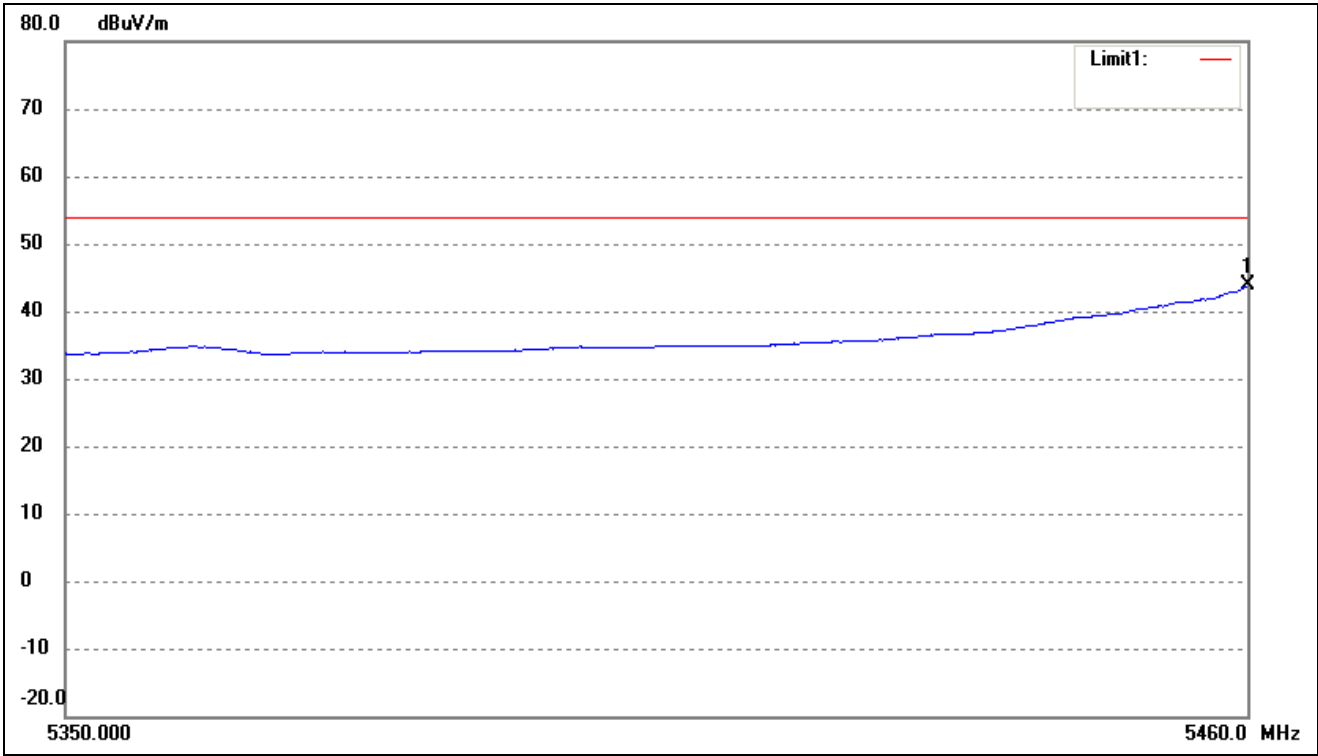
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	()	(cm)	
1	5460.000	43.14	-4.16	38.98	54.00	-15.02	-	-	peak

802.11n-HT20- Restricted Bandedge			
Test Channel	band 5.50-5.70GHz	Polarity:	Vertical(worst case)



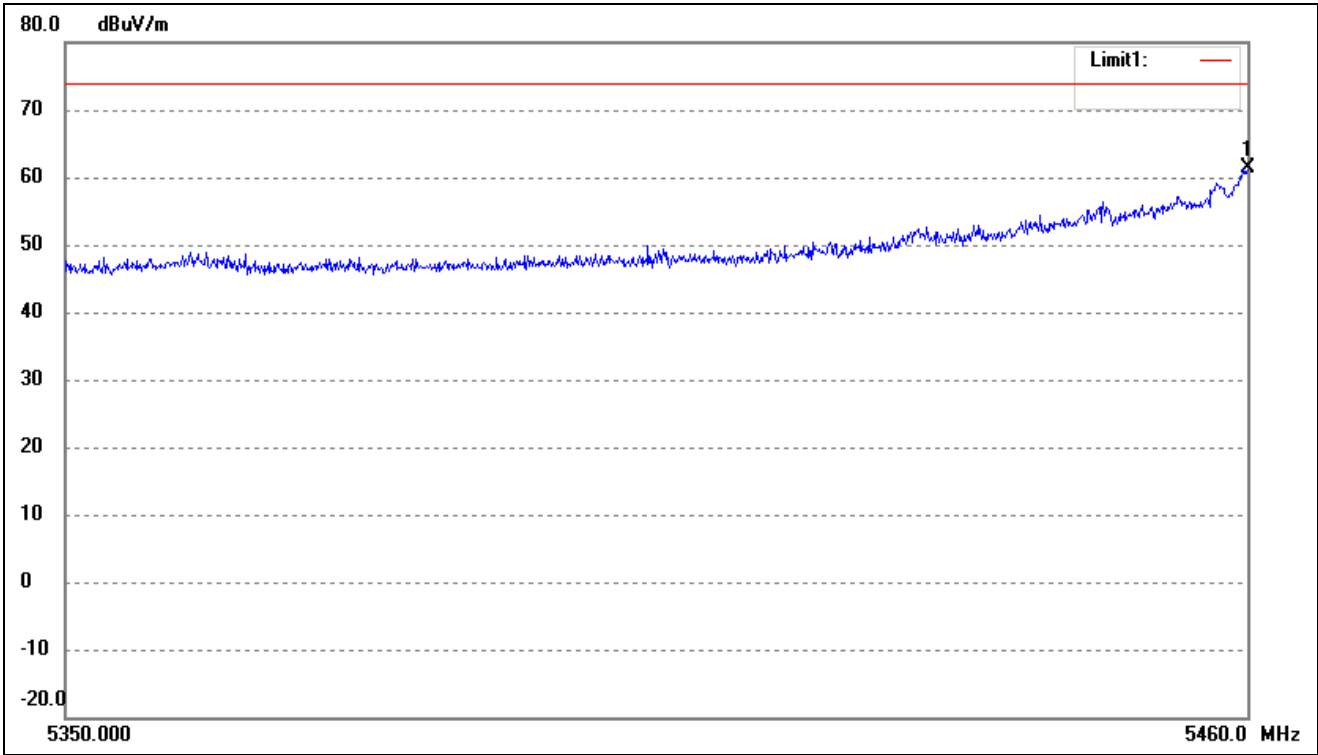
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	5459.000	60.20	-4.16	56.04	74.00	-17.96	-	-	peak

802.11n-HT40- Restricted Bandedge			
Test Channel	band 5.31-5.59GHz	Polarity:	Vertical(worst case)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	()	(cm)	
1	5460.000	47.93	-4.16	43.77	54.00	-10.23	-	-	peak

802.11n-HT40- Restricted Bandedge			
Test Channel	band 5.31-5.59GHz	Polarity:	Vertical(worst case)



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	5460.000	65.45	-4.16	61.29	74.00	-12.71	-	-	peak

Note: The Restricted Bandedge was tested in Horizontal /Vertical and the worst case position data was reported.

Remark: ‘-’Means’ the test Degree and Height is not recorded by the test software and only show the worst case in the test report.

- For the frequency band 5.15-5.25GHz, 5.250-5.350GHz, 5.470-5.725GHz, 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 (5180MHz)							
10360	55.09	7.11	62.20	74	-11.80	H	PK
15540	37.01	7.11	44.12	54	-9.88	H	AV
10360	52.36	7.11	59.47	74	-14.53	V	PK
15540	37.56	7.11	44.67	54	-9.33	V	AV
Middle Channel (5200MHz)							
10400	55.18	7.22	62.40	74	-11.60	H	PK
15600	39.49	7.22	46.71	54	-7.29	H	AV
10400	52.37	7.22	59.59	74	-14.41	V	PK
15600	39.87	7.22	47.09	54	-6.91	V	AV
High Channel (5240MHz)							
10480	53.87	7.69	61.56	74	-12.44	H	PK
15720	37.22	7.69	44.91	54	-9.09	H	AV
10480	54.51	7.69	62.20	74	-11.80	V	PK
15720	38.01	7.69	45.70	54	-8.30	V	AV

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
(MHz)	(dBuV/m)	dB	(dBuV/m)	(dBuV/m)	(dB)	H/V	
Low Channel (5260MHz)							
10520	52.78	7.96	60.74	74	-13.26	H	PK
15780	37.28	7.96	45.24	54	-8.76	H	AV
10520	52.11	7.96	60.07	74	-13.93	V	PK
15780	38.50	7.96	46.46	54	-7.54	V	AV
Middle Channel (5280MHz)							
10560	52.75	8.02	60.77	74	-13.23	H	PK
15840	40.05	8.02	48.07	54	-5.93	H	AV
10560	55.36	8.02	63.38	74	-10.62	V	PK
15840	38.45	8.02	46.47	54	-7.53	V	AV
High Channel (5320MHz)							
10640	55.38	8.35	63.73	74	-10.27	H	PK
15960	37.73	8.35	46.08	54	-7.92	H	AV
10640	52.07	8.35	60.42	74	-13.58	V	PK
15960	37.27	8.35	45.62	54	-8.38	V	AV

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
(MHz)	(dBuV/m)	dB	(dBuV/m)	(dBuV/m)	(dB)	H/V	
Low Channel (5500MHz)							
11000	53.20	8.82	62.02	74	-11.98	H	PK
16500	39.14	8.82	47.96	54	-6.04	H	AV
11000	53.74	8.82	62.56	74	-11.44	V	PK
16500	38.55	8.82	47.37	54	-6.63	V	AV
Middle Channel (5600MHz)							
11200	53.24	8.92	62.16	74	-11.84	H	PK
16800	37.72	8.92	46.64	54	-7.36	H	AV
11200	52.27	8.92	61.19	74	-12.81	V	PK
16800	40.64	8.92	49.56	54	-4.44	V	AV
High Channel (5700MHz)							
11400	53.89	9.36	63.25	74	-10.75	H	PK
17100	38.58	9.36	47.94	54	-6.06	H	AV
11400	55.14	9.36	64.50	74	-9.50	V	PK
17100	40.90	9.36	50.26	54	-3.74	V	AV

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
(MHz)	(dBuV/m)	dB	(dBuV/m)	(dBuV/m)	(dB)	H/V	
Low Channel (5745MHz)							
11490	52.84	9.45	62.29	74	-11.71	H	PK
17235	39.69	9.45	49.14	54	-4.86	H	AV
11490	55.55	9.45	65.00	74	-9.00	V	PK
17235	38.39	9.45	47.84	54	-6.16	V	AV
Middle Channel (5785MHz)							
11570	55.52	9.62	65.14	74	-8.86	H	PK
17355	37.20	9.62	46.82	54	-7.18	H	AV
11570	52.58	9.62	62.20	74	-11.80	V	PK
17355	37.76	9.62	47.38	54	-6.62	V	AV
High Channel (5825MHz)							
11650	56.24	9.84	66.08	74	-7.92	H	PK
17475	40.74	9.84	50.58	54	-3.42	H	AV
11650	55.50	9.84	65.34	74	-8.66	V	PK
17475	40.20	9.84	50.04	54	-3.96	V	AV

➤ Out of Band edge for 5150-5250MHz

Test CH.	Test Segment	Result	Limit
	MHz	dBm/MHz	dBm/MHz
Lowest	Below 5150	-36.68	-27
Highest	Above 5350	-41.24	-27
Note: the data just list the worst cases			

➤ Out of Band edge for 5250-5350MHz

Test CH.	Test Segment	Result	Limit
	MHz	dBm/MHz	dBm/MHz
Lowest	Below 5150	-39.64	-27
Highest	Above 5350	-40.13	-27
Note: the data just list the worst cases			

➤ Out of Band edge for 5470-5725MHz

Test CH.	Test Segment	Result	Limit
	MHz	dBm/MHz	dBm/MHz
Lowest	Below 5470	-40.98	-27
Highest	Above 5725	-38.41	-27
Note: the data just list the worst cases			

➤ Out of Band edge for 5725-5850MHz

Test CH.	Test Segment	Result	Limit
	MHz	dBm/MHz	dBm/MHz
Lowest	Below 5715	-41.32	-27
	5715 to 5725	-35.40	-17
Highest	5850 to 5860	-34.14	-17
	Above 5860	-40.47	-27
Note: the data just list the worst cases			

- For the frequency band 5.15-5.25GHz, 5.250-5.350GHz, 5.470-5.725GHz, 5.725-5.850GHz (802.11n HT20)
- 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	55.20	7.11	62.31	74	-11.69	H	PK
10360	38.64	7.11	45.75	54	-8.25	H	AV
10360	54.21	7.11	61.32	74	-12.68	V	PK
10360	38.56	7.11	45.67	54	-8.33	V	AV
Middle Channel (5200MHz)							
10400	53.37	7.22	60.59	74	-13.41	H	PK
10400	37.34	7.22	44.56	54	-9.44	H	AV
10400	54.12	7.22	61.34	74	-12.66	V	PK
10400	37.84	7.22	45.06	54	-8.94	V	AV
High Channel (5240MHz)							
10480	53.60	7.69	61.29	74	-12.71	H	PK
10480	37.69	7.69	45.38	54	-8.62	H	AV
10480	53.32	7.69	61.01	74	-12.99	V	PK
10480	37.17	7.69	44.86	54	-9.14	V	AV

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
(MHz)	(dBuV/m)	dB	(dBuV/m)	(dBuV/m)	(dB)	H/V	
Low Channel (5260MHz)							
10520	55.27	7.96	63.23	74	-10.77	H	PK
10520	39.97	7.96	47.93	54	-6.07	H	AV
10520	55.29	7.96	63.25	74	-10.75	V	PK
10520	40.99	7.96	48.95	54	-5.05	V	AV
Middle Channel (5280MHz)							
10560	53.95	8.02	61.97	74	-12.03	H	PK
10560	38.42	8.02	46.44	54	-7.56	H	AV
10560	53.72	8.02	61.74	74	-12.26	V	PK
10560	38.45	8.02	46.47	54	-7.53	V	AV
High Channel (5320MHz)							
10640	55.36	8.35	63.71	74	-10.29	H	PK
10640	37.80	8.35	46.15	54	-7.85	H	AV
10640	55.24	8.35	63.59	74	-10.41	V	PK
10640	40.73	8.35	49.08	54	-4.92	V	AV

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
(MHz)	(dBuV/m)	dB	(dBuV/m)	(dBuV/m)	(dB)	H/V	
Low Channel (5500MHz)							
11000	53.85	8.82	62.67	74	-11.33	H	PK
11000	40.37	8.82	49.19	54	-4.81	H	AV
11000	54.05	8.82	62.87	74	-11.13	V	PK
11000	37.26	8.82	46.08	54	-7.92	V	AV
Middle Channel (5600MHz)							
11200	54.23	8.92	63.15	74	-10.85	H	PK
11200	40.64	8.92	49.56	54	-4.44	H	AV
11200	54.63	8.92	63.55	74	-10.45	V	PK
11200	39.75	8.92	48.67	54	-5.33	V	AV
High Channel (5700MHz)							
11400	54.64	9.36	64.00	74	-10.00	H	PK
11400	35.97	9.36	45.33	54	-8.67	H	AV
11400	54.78	9.36	64.14	74	-9.86	V	PK
11400	37.03	9.36	46.39	54	-7.61	V	AV

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
(MHz)	(dBuV/m)	dB	(dBuV/m)	(dBuV/m)	(dB)	H/V	
Low Channel (5745MHz)							
11490	56.18	9.45	65.63	74	-8.37	H	PK
11490	38.90	9.45	48.35	54	-5.65	H	AV
11490	55.96	9.45	65.41	74	-8.59	V	PK
11490	39.93	9.45	49.38	54	-4.62	V	AV
Middle Channel (5785MHz)							
11570	53.28	9.62	62.90	74	-11.10	H	PK
11570	40.71	9.62	50.33	54	-3.67	H	AV
11570	53.93	9.62	63.55	74	-10.45	V	PK
11570	38.61	9.62	48.23	54	-5.77	V	AV
High Channel (5825MHz)							
11650	54.97	9.84	64.81	74	-9.19	H	PK
11650	38.47	9.84	48.31	54	-5.69	H	AV
11650	52.77	9.84	62.61	74	-11.39	V	PK
11650	38.58	9.84	48.42	54	-5.58	V	AV

➤ Out of Band edge 5150-5250MHz

Test CH.	Test Segment	Result	Limit
	MHz	dBm/MHz	dBm/MHz
Lowest	Below 5150	-38.42	-27
Highest	Above 5350	-36.98	-27
Note: the data just list the worst cases			

➤ Out of Band edge for 5250-5350MHz

Test CH.	Test Segment	Result	Limit
	MHz	dBm/MHz	dBm/MHz
Lowest	Below 5150	-37.42	-27
Highest	Above 5350	-42.53	-27
Note: the data just list the worst cases			

➤ Out of Band edge for 5470-5725MHz

Test CH.	Test Segment	Result	Limit
	MHz	dBm/MHz	dBm/MHz
Lowest	Below 5470	-41.13	-27
Highest	Above 5725	-38.61	-27
Note: the data just list the worst cases			

➤ Out of Band edge for 5725-5850MHz

Test CH.	Test Segment	Result	Limit
	MHz	dBm/MHz	dBm/MHz
Lowest	Below 5715	-40.65	-27
	5715 to 5725	-36.17	-17
Highest	5850 to 5860	-37.46	-17
	Above 5860	-35.69	-27
Note: the data just list the worst cases			

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, 5.250-5.350GHz, 5.470-5.725GHz, 5.725-5.850GHz (802.11n HT40)
- 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	56.19	7.89	64.08	74	-9.92	H	PK
10380	39.37	7.89	47.26	54	-6.74	H	AV
10380	55.71	7.89	63.60	74	-10.40	V	PK
10380	38.35	7.89	46.24	54	-7.76	V	AV
High Channel (5230MHz)							
10460	54.45	7.97	62.42	74	-11.58	H	PK
10460	40.32	7.97	48.29	54	-5.71	H	AV
10460	54.72	7.97	62.69	74	-11.31	V	PK
10460	40.45	7.97	48.42	54	-5.58	V	AV

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
(MHz)	(dBuV/m)	dB	(dBuV/m)	(dBuV/m)	(dB)	H/V	
Low Channel (5270MHz)							
10540	53.92	8.16	62.08	74	-11.92	H	PK
10540	40.20	8.16	48.36	54	-5.64	H	AV
10540	54.37	8.16	62.53	74	-11.47	V	PK
10540	37.86	8.16	46.02	54	-7.98	V	AV
High Channel (5310MHz)							
10620	54.79	8.57	63.36	74	-10.64	H	PK
10620	38.06	8.57	46.63	54	-7.37	H	AV
10620	55.27	8.57	63.84	74	-10.16	V	PK
10620	40.36	8.57	48.93	54	-5.07	V	AV

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
(MHz)	(dBuV/m)	dB	(dBuV/m)	(dBuV/m)	(dB)	H/V	
Low Channel (5510MHz)							
11020	53.70	9.16	62.86	74	-11.14	H	PK
11020	38.76	9.16	47.92	54	-6.08	H	AV
11020	54.76	9.16	63.92	74	-10.08	V	PK
11020	40.43	9.16	49.59	54	-4.41	V	AV
Middle Channel (5590MHz)							
11180	52.62	9.08	61.70	74	-12.30	H	PK
11180	37.52	9.08	46.60	54	-7.40	H	AV
11180	54.52	9.08	63.60	74	-10.40	V	PK
11180	40.91	9.08	49.99	54	-4.01	V	AV
High Channel (5670MHz)							
11340	53.66	9.43	63.09	74	-10.91	H	PK
11340	37.27	9.43	46.70	54	-7.30	H	AV
11340	53.47	9.43	62.90	74	-11.10	V	PK
11340	40.34	9.43	49.77	54	-4.23	V	AV

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
(MHz)	(dBuV/m)	dB	(dBuV/m)	(dBuV/m)	(dB)	H/V	
Low Channel (5755MHz)							
11510	53.82	9.45	63.27	74	-10.73	H	PK
11510	38.25	9.45	47.70	54	-6.30	H	AV
11510	52.49	9.45	61.94	74	-12.06	V	PK
11510	39.66	9.45	49.11	54	-4.89	V	AV
High Channel (5795MHz)							
11590	53.26	9.27	62.53	74	-11.47	H	PK
11590	37.63	9.27	46.90	54	-7.10	H	AV
11590	55.99	9.27	65.26	74	-8.74	V	PK
11590	36.28	9.27	45.55	54	-8.45	V	AV

➤ Out of Band edge for 5150-5250MHz

Test CH.	Test Segment	Result	Limit
	MHz	dBm/MHz	dBm/MHz
Lowest	Below 5150	-40.38	-27
Highest	Above 5350	-37.71	-27
Note: the data just list the worst cases			

➤ Out of Band edge for 5250-5350MHz

Test CH.	Test Segment	Result	Limit
	MHz	dBm/MHz	dBm/MHz
Lowest	Below 5150	-42.18	-27
Highest	Above 5350	-36.39	-27
Note: the data just list the worst cases			

➤ Out of Band edge for 5470-5725MHz

Test CH.	Test Segment	Result	Limit
	MHz	dBm/MHz	dBm/MHz
Lowest	Below 5470	-36.75	-27
Highest	Above 5725	-39.31	-27
Note: the data just list the worst cases			

➤ Out of Band edge for 5725-5850MHz

Test CH.	Test Segment	Result	Limit
	MHz	dBm/MHz	dBm/MHz
Lowest	Below 5715	-44.35	-27
	5715 to 5725	-39.41	-17
Highest	5850 to 5860	-35.13	-17
	Above 5860	-42.21	-27
Note: the data just list the worst cases			

Note: Testing is carried out with frequency rang 9kHz to the tenth harmonics, other than listed in the table above are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

9. Frequency Stability

9.1 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.

9.2 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.

9.3 Summary of Test Results/Plots

Please refer to Appendix D

10. Conducted Emissions

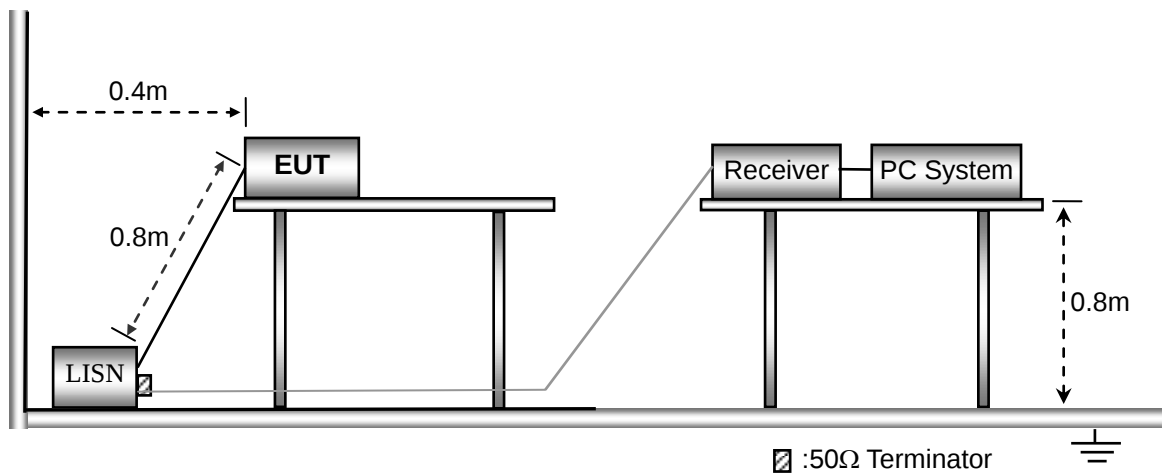
10.1 Test Procedure

The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC Part 15.207 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



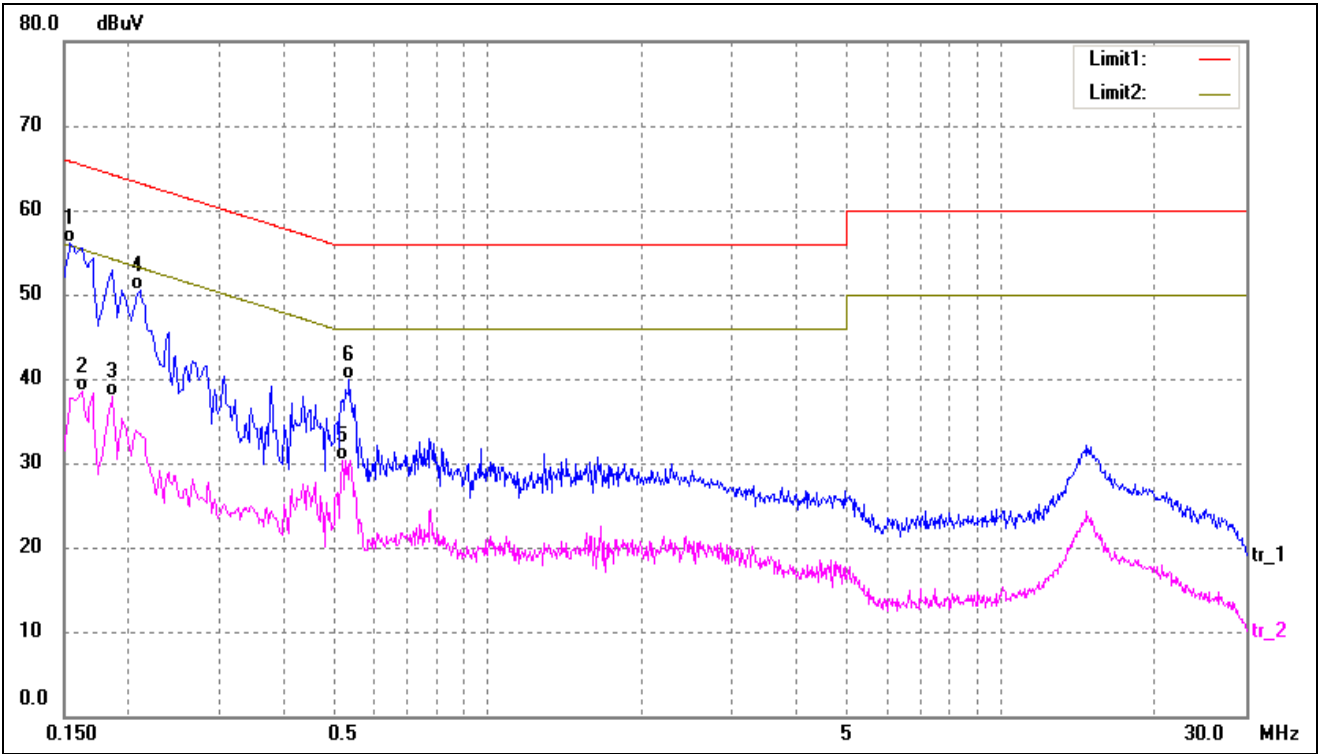
10.3 Test Receiver Setup

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

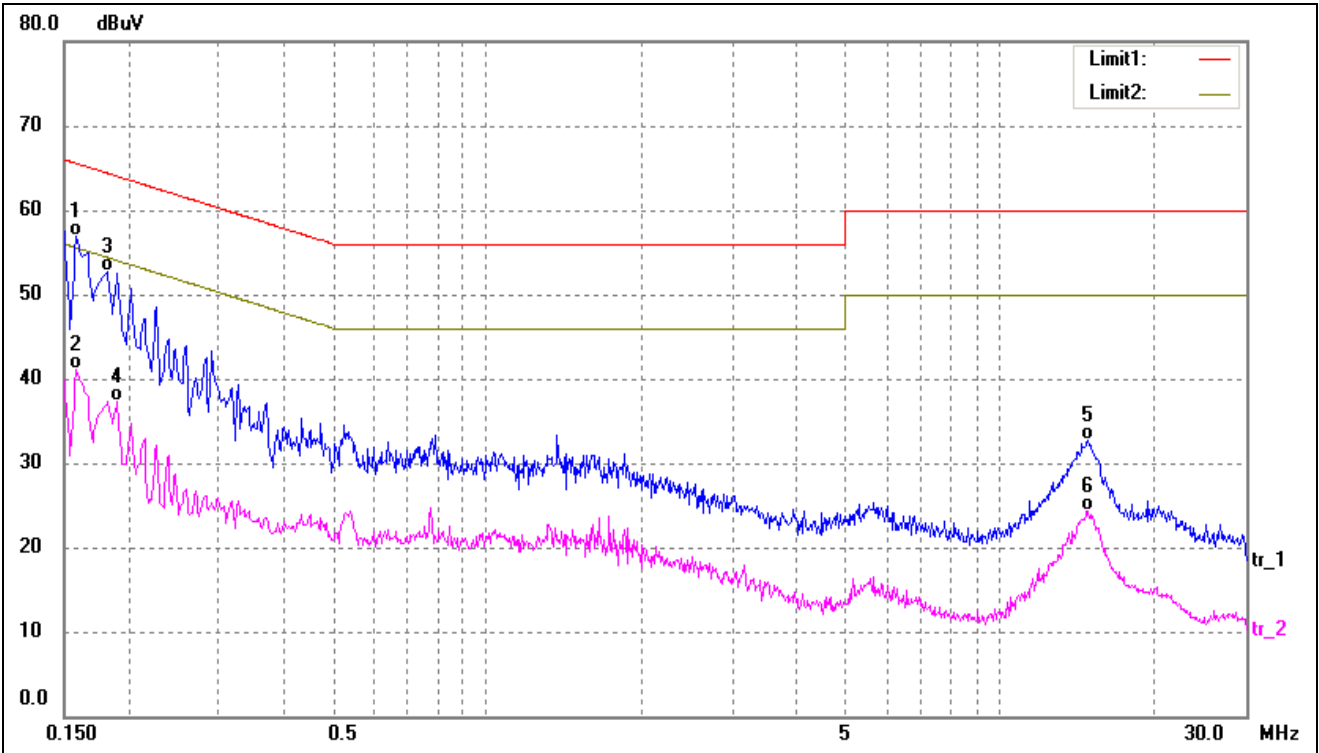
10.4 Summary of Test Results/Plots

Test Mode	Communication	AC120V 60Hz	Polarity:	Neutral
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No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1*	0.1540	45.94	10.25	56.19	65.78	-9.59	QP
2	0.1620	28.27	10.26	38.53	55.36	-16.83	AVG
3	0.1860	27.72	10.26	37.98	54.21	-16.23	AVG
4	0.2100	40.29	10.27	50.56	63.21	-12.65	QP
5	0.5220	20.17	10.22	30.39	46.00	-15.61	AVG
6	0.5380	29.76	10.21	39.97	56.00	-16.03	QP

Test Mode	Communication	AC120V 60Hz	Polarity:	Line
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No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dB)	
1*	0.1580	46.59	10.25	56.84	65.57	-8.73	QP
2	0.1580	30.79	10.25	41.04	55.57	-14.53	AVG
3	0.1820	42.41	10.26	52.67	64.39	-11.72	QP
4	0.1900	27.09	10.26	37.35	54.04	-16.69	AVG
5	14.8020	22.11	10.57	32.68	60.00	-27.32	QP
6	14.8020	13.76	10.57	24.33	50.00	-25.67	AVG

APPENDIX SUMMARY

Project No.	WTX21X04033440W	Test Engineer	Combat
Start date	2021/04/28	Finish date	2021/04/30
Temperature	23℃	Humidity	52%
RF specifications	U-NII		

APPENDIX	Description of Test Item	Result
A	Power Spectral Density	Compliant
B	Emission Bandwidth and Occupied Bandwidth	Compliant
C	Maximum Conducted Output Power	Compliant
D	Frequency Stability	Compliant

APPENDIX A

Power Spectral Density			
U-NII-1:5150-5250MHz			
Operating mode	Test Channel	Power Spectral Density dBm/MHz	Limit (dBm/MHz)
802.11a	5180	8.883	11
	5200	8.894	11
	5240	9.127	11
802.11n-HT20	5180	9.071	11
	5200	9.518	11
	5240	8.962	11
802.11n-HT40	5190	5.970	11
	5230	6.143	11

U-NII-2A: 5250-5350MHz			
Operating mode	Test Channel	Power Spectral Density dBm/MHz	Limit (dBm/MHz)
802.11a	5260	9.311	11
	5280	8.876	11
	5320	9.549	11
802.11n-HT20	5260	8.527	11
	5280	9.285	11
	5320	9.573	11
802.11n-HT40	5270	6.564	11
	5310	6.157	11

U-NII-2C: 5470-5725MHz			
Operating mode	Test Channel	Power Spectral Density dBm/MHz	Limit (dBm/MHz)
802.11a	5500	9.151	11
	5600	9.26	11
	5700	8.436	11
802.11n-HT20	5500	9.263	11
	5600	9.061	11
	5700	9.418	11
802.11n-HT40	5510	8.562	11
	5550	7.468	11
	5670	5.587	11

U-NII-3: 5725-5850MHz					
Operating mode	Test Channel	Power Spectral Density dBm/300kHz	Factor	Power Spectral Density* dBm/500kHz	Limit dBm/500kHz
802.11a	5745	3.323	2.22	5.543	30
	5785	2.886	2.22	5.106	30
	5825	3.738	2.22	5.958	30
802.11n-HT20	5745	3.133	2.22	5.353	30
	5785	2.302	2.22	4.522	30
	5825	1.595	2.22	3.815	30
802.11n HT40	5755	0.014	2.22	2.234	30
	5795	-0.245	2.22	1.975	30
*Note: Maximum PSD=PSD(dBm/300kHz)+10log(500kHz/300kHz)=2.22					

5150-5250MHz

802.11a-Low	Agilent R T Ref 20 dBm Atten 30 dB Mkr1 5.17820 GHz 8.883 dBm #Avg Log 10 dB/ Offst 1 dB M1 S2 S3 FC AA Marker 5.17820000 GHz 8.883 dBm Center 5.18 GHz Span 40 MHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Peak Search Meas Tools ▾ Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2
802.11a-Middle	Agilent R T Ref 20 dBm Atten 30 dB Mkr1 5.19904 GHz 8.894 dBm #Avg Log 10 dB/ Offst 1 dB M1 S2 S3 FC AA Center 5.2 GHz Span 40 MHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Peak Search Meas Tools ▾ Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2
802.11a-High	Agilent R T Ref 20 dBm Atten 30 dB Mkr1 5.23876 GHz 9.127 dBm #Avg Log 10 dB/ Offst 1 dB M1 S2 S3 FC AA Marker 5.23876000 GHz 9.127 dBm Center 5.24 GHz Span 40 MHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Peak Search Meas Tools ▾ Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2

802.11n-HT20-Low	Agilent Ref 20 dBm Atten 30 dB Mkr1 5.18144 GHz 9.071 dBm #Avg Log 10 dB/ Offset 1 dB M1 S2 S3 FC AA Marker 5.181440000 GHz 9.071 dBm Center 5.18 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 40 MHz Peak Search Meas Tools ▶ Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2
802.11n-HT20-Middle	Agilent Ref 20 dBm Atten 30 dB Mkr1 5.19880 GHz 9.518 dBm #Avg Log 10 dB/ Offset 1 dB M1 S2 S3 FC AA Marker 5.198800000 GHz 9.518 dBm Center 5.2 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 40 MHz Peak Search Meas Tools ▶ Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2
802.11n-HT20-High	Agilent Ref 20 dBm Atten 30 dB Mkr1 5.24120 GHz 8.962 dBm #Avg Log 10 dB/ Offset 1 dB M1 S2 S3 FC AA Marker 5.241200000 GHz 8.962 dBm Center 5.24 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 40 MHz Peak Search Meas Tools ▶ Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2

802.11n-HT40-Low	Agilent R T Ref 20 dBm Atten 30 dB Mkr1 5.18384 GHz 5.97 dBm #Avg Log 10 dB/ Offset 1 dB M1 S2 S3 FC AA Marker 5.183840000 GHz 5.97 dBm Center 5.19 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 80 MHz Peak Search Meas Tools ▶ Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2
802.11n-HT40-High	Agilent R T Ref 20 dBm Atten 30 dB Mkr1 5.22576 GHz 6.143 dBm #Avg Log 10 dB/ Offset 1 dB M1 S2 S3 FC AA Marker 5.225760000 GHz 6.143 dBm Center 5.23 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 80 MHz Peak Search Meas Tools ▶ Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2

5250-5350MHz

802.11a-Low	Agilent Ref 20 dBm Atten 30 dB Mkr1 5.25828 GHz 9.311 dBm #Avg Log 10 dB/ Offset 1 dB M1 S2 S3 FC AA Marker 5.258280000 GHz 9.311 dBm Center 5.26 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 40 MHz Peak Search Meas Tools ▾ Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2
802.11a-Middle	Agilent Ref 20 dBm Atten 30 dB Mkr1 5.27852 GHz 8.876 dBm #Avg Log 10 dB/ Offset 1 dB M1 S2 S3 FC AA Marker 5.278520000 GHz 8.876 dBm Center 5.28 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 40 MHz Peak Search Meas Tools ▾ Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2
802.11a-High	Agilent Ref 20 dBm Atten 30 dB Mkr1 5.31748 GHz 9.549 dBm #Avg Log 10 dB/ Offset 1 dB M1 S2 S3 FC AA Marker 5.317480000 GHz 9.549 dBm Center 5.32 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 40 MHz Peak Search Meas Tools ▾ Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2

802.11n-HT20-Low	Agilent Ref 20 dBm Atten 30 dB Mkr1 5.25880 GHz 8.527 dBm #Avg Log 10 dB/ Offset 1 dB M1 S2 S3 FC AA Marker 5.258800000 GHz 8.527 dBm Center 5.26 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 40 MHz Peak Search Meas Tools ▶ Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2
802.11n-HT20-Middle	Agilent Ref 20 dBm Atten 30 dB Mkr1 5.28156 GHz 9.285 dBm #Avg Log 10 dB/ Offset 1 dB M1 S2 S3 FC AA Marker 5.281560000 GHz 9.285 dBm Center 5.28 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 40 MHz Peak Search Meas Tools ▶ Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2
802.11n-HT20-High	Agilent Ref 20 dBm Atten 30 dB Mkr1 5.31916 GHz 9.573 dBm #Avg Log 10 dB/ Offset 1 dB M1 S2 S3 FC AA Marker 5.319160000 GHz 9.573 dBm Center 5.32 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 40 MHz Peak Search Meas Tools ▶ Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2

802.11n-HT40-Low	Agilent R T Ref 20 dBm Atten 30 dB Mkr1 5.27672 GHz 6.564 dBm #Avg Log 10 dB/ Offset 1 dB M1 S2 S3 FC AA Marker 5.276720000 GHz 6.564 dBm Center 5.27 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 80 MHz Peak Search Meas Tools ▶ Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2
802.11n-HT40-High	Agilent R T Ref 20 dBm Atten 30 dB Mkr1 5.31704 GHz 6.157 dBm #Avg Log 10 dB/ Offset 1 dB M1 S2 S3 FC AA Marker 5.317040000 GHz 6.157 dBm Center 5.31 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 80 MHz Peak Search Meas Tools ▶ Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2

5470-5725MHz

802.11a-Low	Agilent R T Ref 20 dBm Atten 30 dB Mkr1 5.49916 GHz 9.151 dBm #Avg Log 10 dB/ Offset 1 dB M1 S2 S3 FC AA Marker 5.499160000 GHz 9.151 dBm Center 5.5 GHz Span 40 MHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Peak Search Meas Tools ▾ Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2
802.11a-Middle	Agilent R T Ref 20 dBm Atten 30 dB Mkr1 5.59876 GHz 9.26 dBm #Avg Log 10 dB/ Offset 1 dB M1 S2 S3 FC AA Marker 5.598760000 GHz 9.26 dBm Center 5.6 GHz Span 40 MHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Peak Search Meas Tools ▾ Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2
802.11a-High	Agilent R T Ref 20 dBm Atten 30 dB Mkr1 5.69632 GHz 8.436 dBm #Avg Log 10 dB/ Offset 1 dB M1 S2 S3 FC AA Center 5.7 GHz Span 40 MHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Peak Search Meas Tools ▾ Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2

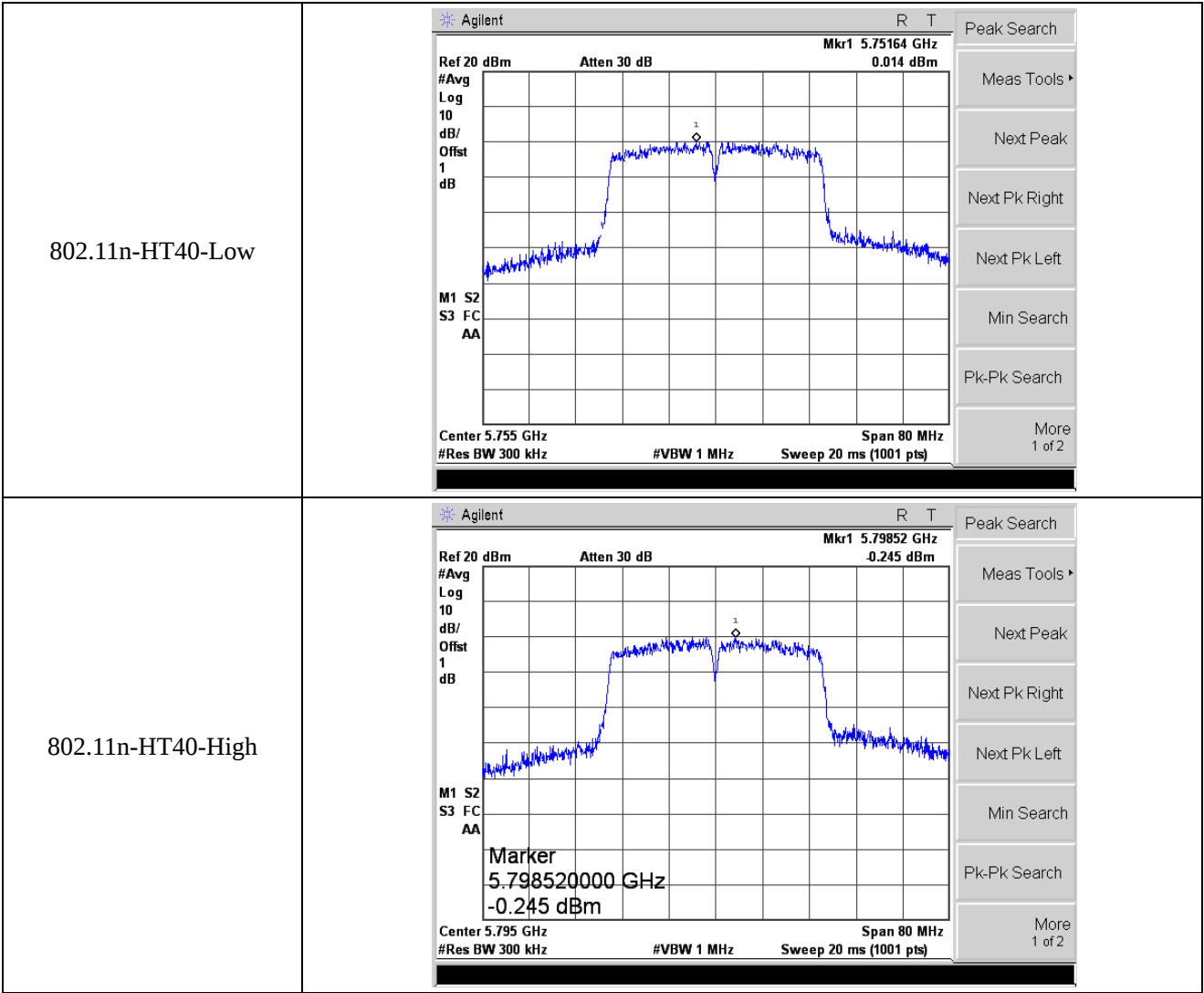
802.11n-HT20-Low	Agilent Ref 20 dBm Atten 30 dB Mkr1 5.49880 GHz 9.263 dBm #Avg Log 10 dB/ Offset 1 dB M1 S2 S3 FC AA Marker 5.498800000 GHz 9.263 dBm Center 5.5 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 40 MHz Peak Search Meas Tools ▶ Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2
802.11n-HT20-Middle	Agilent Ref 20 dBm Atten 30 dB Mkr1 5.59908 GHz 9.061 dBm #Avg Log 10 dB/ Offset 1 dB M1 S2 S3 FC AA Marker 5.599080000 GHz 9.061 dBm Center 5.6 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 40 MHz Peak Search Meas Tools ▶ Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2
802.11n-HT20-High	Agilent Ref 20 dBm Atten 30 dB Mkr1 5.69884 GHz 9.418 dBm #Avg Log 10 dB/ Offset 1 dB M1 S2 S3 FC AA Marker 5.698840000 GHz 9.418 dBm Center 5.7 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 40 MHz Peak Search Meas Tools ▶ Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2

802.11n-HT40-Low	Agilent Ref 20 dBm Atten 30 dB Mkr1 5.50792 GHz 8.562 dBm #Avg Log 10 dB/ Offset 1 dB M1 S2 S3 FC AA Marker 5.507920000 GHz 8.562 dBm Center 5.51 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 80 MHz Peak Search Meas Tools ▶ Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2
802.11n-HT40- Middle	Agilent Ref 20 dBm Atten 30 dB Mkr1 5.60016 GHz 7.468 dBm #Avg Log 10 dB/ Offset 1 dB M1 S2 S3 FC AA Marker 5.600160000 GHz 7.468 dBm Center 5.59 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 80 MHz Peak Search Meas Tools ▶ Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2
802.11n-HT40-High	Agilent Ref 20 dBm Atten 30 dB Mkr1 5.66776 GHz 5.587 dBm #Avg Log 10 dB/ Offset 1 dB M1 S2 S3 FC AA Marker 5.667760000 GHz 5.587 dBm Center 5.67 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 80 MHz Peak Search Meas Tools ▶ Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2

5725-5850MHz

802.11a-Low	Agilent Ref 20 dBm Atten 30 dB Mkr1 5.74600 GHz 3.323 dBm #Avg Log 10 dB/ Offset 1 dB M1 S2 S3 FC AA Marker 5.74600000 GHz 3.323 dBm Center 5.745 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 20 ms (1001 pts) Span 40 MHz Peak Search Meas Tools Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2
802.11a-Middle	Agilent Ref 20 dBm Atten 30 dB Mkr1 5.78284 GHz 2.886 dBm #Avg Log 10 dB/ Offset 1 dB M1 S2 S3 FC AA Marker 5.78284000 GHz 2.886 dBm Center 5.785 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 20 ms (1001 pts) Span 40 MHz Peak Search Meas Tools Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2
802.11a-High	Agilent Ref 20 dBm Atten 30 dB Mkr1 5.82276 GHz 3.738 dBm #Avg Log 10 dB/ Offset 1 dB M1 S2 S3 FC AA Marker 5.82276000 GHz 3.738 dBm Center 5.825 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 20 ms (1001 pts) Span 40 MHz Peak Search Meas Tools Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2

802.11n-HT20-Low	Agilent Ref 20 dBm Atten 30 dB Mkr1 5.74376 GHz 3.133 dBm #Avg Log 10 dB/ Offset 1 dB M1 S2 S3 FC AA Marker 5.743760000 GHz 3.133 dBm Center 5.745 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 20 ms (1001 pts) Span 40 MHz Peak Search Meas Tools ▶ Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2
802.11n-HT20-Middle	Agilent Ref 20 dBm Atten 30 dB Mkr1 5.78412 GHz 2.302 dBm #Avg Log 10 dB/ Offset 1 dB M1 S2 S3 FC AA Marker 5.784120000 GHz 2.302 dBm Center 5.785 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 20 ms (1001 pts) Span 40 MHz Peak Search Meas Tools ▶ Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2
802.11n-HT20-High	Agilent Ref 20 dBm Atten 30 dB Mkr1 5.82424 GHz 1.595 dBm #Avg Log 10 dB/ Offset 1 dB M1 S2 S3 FC AA Marker 5.824240000 GHz 1.595 dBm Center 5.825 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 20 ms (1001 pts) Span 40 MHz Peak Search Meas Tools ▶ Next Peak Next Pk Right Next Pk Left Min Search Pk-Pk Search More 1 of 2



APPENDIX B

Emission Bandwidth and Occupied Bandwidth

U-NII-1:5150-5250MHz				
Test Mode	Test Channel MHz	26 dB Bandwidth MHz	99% Bandwidth MHz	Limit MHz
802.11a	5180	21.481	16.9751	Pass
	5200	23.517	16.8275	Pass
	5240	24.610	16.8369	Pass
802.11n-HT20	5180	24.515	17.7429	Pass
	5200	24.528	17.7342	Pass
	5240	24.373	17.7550	Pass
802.11n-HT40	5190	48.094	35.9886	Pass
	5230	51.858	36.0025	Pass

U-NII-2A: 5250-5350MHz				
Test Mode	Test Channel MHz	26 dB Bandwidth MHz	99% Bandwidth MHz	Limit MHz
802.11a	5260	21.198	16.8774	Pass
	5280	23.667	16.8252	Pass
	5320	23.303	16.7986	Pass
802.11n-HT20	5260	20.115	17.7203	Pass
	5280	20.153	17.7367	Pass
	5320	20.157	17.7135	Pass
802.11n-HT40	5270	41.894	35.8997	Pass
	5310	39.588	35.8680	Pass

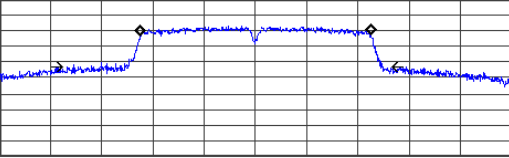
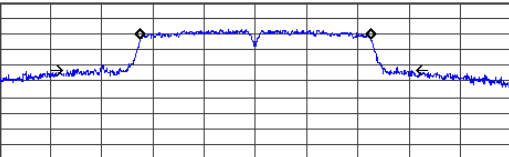
U-NII-2C: 5470-5725MHz				
Test Mode	Test Channel MHz	26 dB Bandwidth MHz	99% Bandwidth MHz	Limit MHz
802.11a	5500	21.141	16.8833	Pass
	5600	20.153	16.8298	Pass
	5700	21.062	16.8739	Pass
802.11n-HT20	5500	20.094	17.7329	Pass
	5600	20.048	17.7251	Pass
	5700	21.182	17.7542	Pass
802.11n-HT40	5510	39.746	35.8795	Pass
	5550	39.740	35.8740	Pass
	5670	39.932	35.9531	Pass

U-NII-3: 5725-5850MHz				
Test Mode	Test Channel MHz	6 dB Bandwidth MHz	99% Bandwidth MHz	Limit MHz
802.11a	5745	16.372	16.5754	≥500
	5785	16.342	16.5462	≥500
	5825	16.360	16.6034	≥500
802.11n-HT20	5745	17.629	17.6878	≥500
	5785	17.605	17.6561	≥500
	5825	17.619	17.7047	≥500
802.11n-HT40	5755	36.323	36.0528	≥500
	5795	36.353	36.0611	≥500

5150-5250MHz

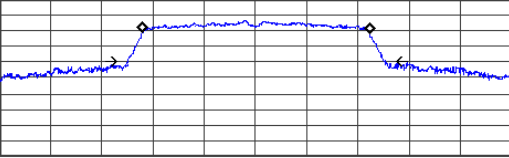
802.11a-Low	Agilent Ch Freq 5.18 GHz Trig Free Occupied Bandwidth Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offset 1 dB Center 5.18 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 16.9751 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -72.797 kHz x dB Bandwidth 21.481 MHz Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11a-Middle	Agilent Ch Freq 5.2 GHz Trig Free Occupied Bandwidth Center 5.20000000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offset 1 dB Center 5.2 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 16.8275 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -3.941 kHz x dB Bandwidth 23.517 MHz Freq/Channel Center Freq 5.20000000 GHz Start Freq 5.18000000 GHz Stop Freq 5.22000000 GHz CF Step 4.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin
802.11a-High	Agilent Ch Freq 5.24 GHz Trig Free Occupied Bandwidth Center 5.24000000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offset 1 dB Center 5.24 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 16.8369 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -11.828 kHz x dB Bandwidth 24.610 MHz Freq/Channel Center Freq 5.24000000 GHz Start Freq 5.22000000 GHz Stop Freq 5.26000000 GHz CF Step 4.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin

802.11n-HT20-Low	Agilent Ch Freq 5.18 GHz Trig Free Occupied Bandwidth Center 5.180000000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offset 1 dB Center 5.18 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 17.7429 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 10.583 kHz x dB Bandwidth 24.515 MHz Freq/Channel Center Freq 5.18000000 GHz Start Freq 5.16000000 GHz Stop Freq 5.20000000 GHz CF Step 4.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin
802.11n-HT20-Middle	Agilent Ch Freq 5.2 GHz Trig Free Occupied Bandwidth Center 5.200000000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offset 1 dB Center 5.2 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 17.7342 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 17.522 kHz x dB Bandwidth 24.528 MHz Freq/Channel Center Freq 5.20000000 GHz Start Freq 5.18000000 GHz Stop Freq 5.22000000 GHz CF Step 4.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin
802.11n-HT20-High	Agilent Ch Freq 5.24 GHz Trig Free Occupied Bandwidth Center 5.240000000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offset 1 dB Center 5.24 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 17.7550 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 17.902 kHz x dB Bandwidth 24.373 MHz Trace/View 1 2 3 Trace Clear Write Max Hold Min Hold View Blank More 1 of 2

802.11n-HT40-Low	Agilent Ch Freq 5.19 GHz Trig Free Occupied Bandwidth Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offset 1 dB  Center 5.19 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts) Span 80 MHz Occupied Bandwidth 35.9886 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 18.445 kHz x dB Bandwidth 48.094 MHz Freq/Channel Center Freq 5.19000000 GHz Start Freq 5.15000000 GHz Stop Freq 5.23000000 GHz CF Step 8.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin
802.11n-HT40-High	Agilent Ch Freq 5.23 GHz Trig Free Occupied Bandwidth Center 5.23000000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offset 1 dB  Center 5.23 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts) Span 80 MHz Occupied Bandwidth 36.0025 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 26.011 kHz x dB Bandwidth 51.858 MHz Freq/Channel Center Freq 5.23000000 GHz Start Freq 5.19000000 GHz Stop Freq 5.27000000 GHz CF Step 8.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin

5250-5350MHz

802.11a-Low	Agilent Ch Freq 5.26 GHz Occupied Bandwidth Center 5.260000000 GHz Ref 20 dBm #Peak Log dB/ Offst 1 dB Center 5.26 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 16.8774 MHz Transmit Freq Error 15.626 kHz x dB Bandwidth 21.198 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Freq/Channel Center Freq 5.26000000 GHz Start Freq 5.24000000 GHz Stop Freq 5.28000000 GHz CF Step 4.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin
802.11a-Middle	Agilent Ch Freq 5.28 GHz Occupied Bandwidth Center 5.280000000 GHz Ref 20 dBm #Peak Log dB/ Offst 1 dB Center 5.28 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 16.8252 MHz Transmit Freq Error -4.718 kHz x dB Bandwidth 23.667 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Freq/Channel Center Freq 5.28000000 GHz Start Freq 5.26000000 GHz Stop Freq 5.30000000 GHz CF Step 4.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin
802.11a-High	Agilent Ch Freq 5.32 GHz Occupied Bandwidth Center 5.32 GHz Ref 20 dBm #Peak Log dB/ Offst 1 dB Center 5.32 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 16.7986 MHz Transmit Freq Error -17.748 kHz x dB Bandwidth 23.303 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2

802.11n-HT20-Low	Agilent R T Ch Freq 5.26 GHz Trig Free Occupied Bandwidth Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offset 1 dB  Center 5.26 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 17.7203 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 28.296 kHz x dB Bandwidth 20.115 MHz Freq/Channel Center Freq 5.26000000 GHz Start Freq 5.24000000 GHz Stop Freq 5.28000000 GHz CF Step 4.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin
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802.11n-HT40-Low	Agilent Ch Freq5.27 GHz TrigFree Occupied Bandwidth Center 5.270000000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offset 1 dB Center 5.27 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts) Span 60 MHz Occupied Bandwidth 35.8997 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 73.738 kHz x dB Bandwidth 41.894 MHz Freq/Channel Center Freq5.27000000 GHz Start Freq5.24000000 GHz Stop Freq5.30000000 GHz CF Step6.00000000 MHz AutoMan Freq Offset0.00000000 Hz Signal TrackOnOff Scale TypeLogLin
802.11n-HT40-High	Agilent Ch Freq5.31 GHz TrigFree Occupied Bandwidth VBW 1.000000000 MHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offset 1 dB Center 5.31 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts) Span 60 MHz Occupied Bandwidth 35.8680 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 60.142 kHz x dB Bandwidth 39.588 MHz Trace/View 1Trace23 Clear Write Max Hold Min Hold View Blank More1 of 2

5470-5725MHz

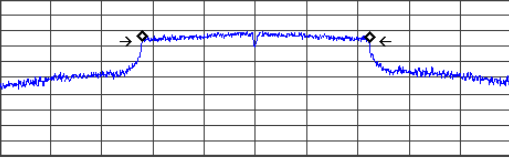
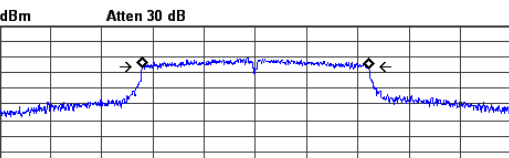
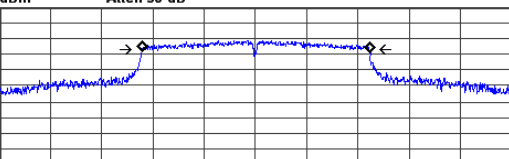
802.11a-Low	Agilent Ch Freq 5.5 GHz Trig Free Occupied Bandwidth Center 5.50000000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offset 1 dB Center 5.5 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 16.8833 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -52.604 kHz x dB Bandwidth 21.141 MHz Freq/Channel Center Freq 5.50000000 GHz Start Freq 5.48000000 GHz Stop Freq 5.52000000 GHz CF Step 4.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin
802.11a-Middle	Agilent Ch Freq 5.6 GHz Trig Free Occupied Bandwidth Center 5.60000000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offset 1 dB Center 5.6 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 16.8298 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -45.624 kHz x dB Bandwidth 20.153 MHz Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11a-High	Agilent Ch Freq 5.7 GHz Trig Free Occupied Bandwidth Center 5.70000000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offset 1 dB Center 5.7 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 16.8739 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -28.981 kHz x dB Bandwidth 21.062 MHz Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2

802.11n-HT20-Low	Agilent Ch Freq 5.5 GHz Trig Free Occupied Bandwidth Center 5.50000000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offset 1 dB Center 5.5 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 17.7329 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 36.519 kHz x dB Bandwidth 20.094 MHz Freq/Channel Center Freq 5.50000000 GHz Start Freq 5.48000000 GHz Stop Freq 5.52000000 GHz CF Step 4.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin
802.11n-HT20-Middle	Agilent Ch Freq 5.6 GHz Trig Free Occupied Bandwidth Center 5.60000000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offset 1 dB Center 5.6 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 17.7251 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 12.858 kHz x dB Bandwidth 20.048 MHz Freq/Channel Center Freq 5.60000000 GHz Start Freq 5.58000000 GHz Stop Freq 5.62000000 GHz CF Step 4.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin
802.11n-HT20-High	Agilent Ch Freq 5.7 GHz Trig Free Occupied Bandwidth Center 5.7 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offset 1 dB Center 5.7 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 17.7542 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 36.298 kHz x dB Bandwidth 21.182 MHz Trace/View 1 2 3 Trace Clear Write Max Hold Min Hold View Blank More 1 of 2

802.11n-HT40-Low	Agilent Ch Freq 5.51 GHz Trig Free Occupied Bandwidth Center 5.51000000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offset 1 dB Center 5.51 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts) Span 80 MHz Occupied Bandwidth 35.8795 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 53.197 kHz x dB Bandwidth 39.746 MHz Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11n-HT40- Middle	Agilent Ch Freq 5.59 GHz Trig Free Occupied Bandwidth Center 5.59000000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offset 1 dB Center 5.59 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts) Span 80 MHz Occupied Bandwidth 35.8740 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 27.303 kHz x dB Bandwidth 39.740 MHz Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11n-HT40-High	Agilent Ch Freq 5.67 GHz Trig Free Occupied Bandwidth Center 5.67000000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offset 1 dB Center 5.67 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts) Span 80 MHz Occupied Bandwidth 35.9531 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 63.578 kHz x dB Bandwidth 39.932 MHz Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2

5725-5850MHz

802.11a-Low	Agilent Ch Freq 5.745 GHz Occupied Bandwidth Center 5.74500000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offset 1 dB Center 5.745 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts) Occupied Bandwidth 16.5754 MHz Transmit Freq Error 34.742 kHz x dB Bandwidth 16.372 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB Freq/Channel Center Freq 5.74500000 GHz Start Freq 5.72500000 GHz Stop Freq 5.76500000 GHz CF Step 4.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin
802.11a-Middle	Agilent Ch Freq 5.785 GHz Occupied Bandwidth Center 5.78500000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offset 1 dB Center 5.785 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts) Occupied Bandwidth 16.5462 MHz Transmit Freq Error 17.194 kHz x dB Bandwidth 16.342 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB Freq/Channel Center Freq 5.78500000 GHz Start Freq 5.76500000 GHz Stop Freq 5.80500000 GHz CF Step 4.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin
802.11a-High	Agilent Ch Freq 5.825 GHz Occupied Bandwidth Center 5.82500000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offset 1 dB Center 5.825 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts) Occupied Bandwidth 16.6034 MHz Transmit Freq Error 14.763 kHz x dB Bandwidth 16.360 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB Freq/Channel Center Freq 5.82500000 GHz Start Freq 5.80500000 GHz Stop Freq 5.84500000 GHz CF Step 4.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin

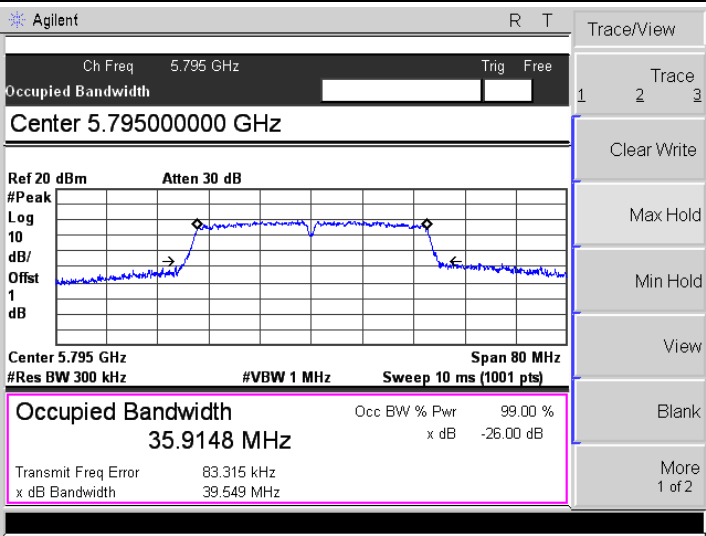
802.11n-HT20-Low	Agilent R T Ch Freq 5.745 GHz Trig Free Occupied Bandwidth Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offset 1 dB  Center 5.745 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 17.6878 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB Transmit Freq Error 22.334 kHz x dB Bandwidth 17.629 MHz Trace/View 1 2 3 Trace Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11n-HT20-Middle	Agilent R T Ch Freq 5.785 GHz Trig Free Occupied Bandwidth Center 5.78500000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offset 1 dB  Center 5.785 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 17.6561 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB Transmit Freq Error 22.953 kHz x dB Bandwidth 17.605 MHz Freq/Channel Center Freq 5.78500000 GHz Start Freq 5.76500000 GHz Stop Freq 5.80500000 GHz CF Step 4.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin
802.11n-HT20-High	Agilent R T Ch Freq 5.825 GHz Trig Free Occupied Bandwidth Center 5.82500000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offset 1 dB  Center 5.825 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 17.7047 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB Transmit Freq Error 16.659 kHz x dB Bandwidth 17.619 MHz Freq/Channel Center Freq 5.82500000 GHz Start Freq 5.80500000 GHz Stop Freq 5.84500000 GHz CF Step 4.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin

802.11n-HT40-Low	Agilent Ch Freq 5.755 GHz Trig Free Occupied Bandwidth Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offset 1 dB Center 5.755 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts) Span 80 MHz Occupied Bandwidth 36.0528 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB Transmit Freq Error 34.859 kHz x dB Bandwidth 36.323 MHz Freq/Channel Center Freq 5.75500000 GHz Start Freq 5.71500000 GHz Stop Freq 5.79500000 GHz CF Step 8.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin
802.11n-HT40-High	Agilent Ch Freq 5.795 GHz Trig Free Occupied Bandwidth Center 5.795000000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offset 1 dB Center 5.795 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 10 ms (1001 pts) Span 80 MHz Occupied Bandwidth 36.0611 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB Transmit Freq Error 30.961 kHz x dB Bandwidth 36.353 MHz Freq/Channel Center Freq 5.79500000 GHz Start Freq 5.75500000 GHz Stop Freq 5.83500000 GHz CF Step 8.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin
5725-5850MHz	
802.11a-Low	Agilent Ch Freq 5.745 GHz Trig Free Occupied Bandwidth Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offset 1 dB Center 5.745 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 17.0183 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -8.773 kHz x dB Bandwidth 22.843 MHz Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2

802.11a-Middle	Agilent Ch Freq 5.785 GHz Trig Free Occupied Bandwidth Center 5.785000000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offset 1 dB Center 5.785 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 16.8036 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 5.417 kHz x dB Bandwidth 20.824 MHz Freq/Channel Center Freq 5.78500000 GHz Start Freq 5.76500000 GHz Stop Freq 5.80500000 GHz CF Step 4.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin
802.11a-High	Agilent Ch Freq 5.825 GHz Trig Free Occupied Bandwidth Center 5.825000000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offset 1 dB Center 5.825 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 16.9073 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -26.666 kHz x dB Bandwidth 21.893 MHz Freq/Channel Center Freq 5.82500000 GHz Start Freq 5.80500000 GHz Stop Freq 5.84500000 GHz CF Step 4.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin
802.11n-HT20-Low	Agilent Ch Freq 5.745 GHz Trig Free Occupied Bandwidth Center 5.745000000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offset 1 dB Center 5.745 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 17.8044 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 51.856 kHz x dB Bandwidth 24.792 MHz Freq/Channel Center Freq 5.74500000 GHz Start Freq 5.72500000 GHz Stop Freq 5.76500000 GHz CF Step 4.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin

802.11n-HT20-Middle	Agilent Ch Freq 5.785 GHz Trig Free Occupied Bandwidth Center 5.785000000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offset 1 dB Center 5.785 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 17.7889 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 44.920 kHz x dB Bandwidth 24.393 MHz Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11n-HT20-High	Agilent Ch Freq 5.825 GHz Trig Free Occupied Bandwidth Center 5.825000000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offset 1 dB Center 5.825 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts) Span 40 MHz Occupied Bandwidth 17.7312 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 20.080 kHz x dB Bandwidth 22.169 MHz Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11n-HT40-Low	Agilent Ch Freq 5.755 GHz Trig Free Occupied Bandwidth Center 5.755000000 GHz Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Offset 1 dB Center 5.755 GHz #Res BW 300 kHz #VBW 1 MHz Sweep 10 ms (1001 pts) Span 80 MHz Occupied Bandwidth 35.9090 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 90.084 kHz x dB Bandwidth 39.681 MHz Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2

802.11n-HT40-High



APPENDIX C

Maximum Conducted Output Power

U-NII-1:5150-5250MHz			
Test mode	Frequency MHz	Output Power dBm	Limit dBm
802.11a	5180	13.35	23.98
	5200	12.87	23.98
	5240	12.97	23.98
802.11n-HT20	5180	12.18	23.98
	5200	12.82	23.98
	5240	12.46	23.98
802.11n-HT40	5190	12.71	23.98
	5230	13.06	23.98

U-NII-2A: 5250-5350MHz			
Test mode	Frequency MHz	Output Power dBm	Limit dBm
802.11a	5260	12.85	23.98
	5280	13.72	23.98
	5320	14.10	23.98
802.11n-HT20	5260	14.21	23.98
	5280	14.18	23.98
	5320	14.76	23.98
802.11n-HT40	5270	13.18	23.98
	5310	13.74	23.98

U-NII-2C: 5470-5725MHz			
Test mode	Frequency MHz	Output Power dBm	Limit dBm
802.11a	5500	15.23	23.98
	5580	14.77	23.98
	5700	13.37	23.98
802.11n-HT20	5500	14.62	23.98
	5580	14.52	23.98
	5700	13.01	23.98
802.11n-HT40	5510	15.60	23.98
	5550	14.53	23.98
	5670	13.56	23.98

U-NII-3: 5725-5850MHz			
Test mode	Frequency MHz	Output Power dBm	Limit dBm
802.11a	5745	11.21	30.00
	5785	11.03	30.00
	5825	10.24	30.00
802.11n-HT20	5745	11.14	30.00
	5785	11.95	30.00
	5825	11.50	30.00
802.11n-HT40	5755	11.14	30.00
	5795	10.90	30.00

5150-5250MHz

802.11a-Low	Agilent Ch Freq 5.18 GHz Channel Power Ref 20 dBm Atten 30 dB #Avg Log dB/ Offset 1 dB Center 5.18 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 40 MHz Channel Power 13.35 dBm / 20.0000 MHz Power Spectral Density -59.66 dBm/Hz Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11a-Middle	Agilent Ch Freq 5.2 GHz Channel Power Center 5.200000000 GHz Ref 20 dBm Atten 30 dB #Avg Log dB/ Offset 1 dB Center 5.2 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 40 MHz Channel Power 12.87 dBm / 20.0000 MHz Power Spectral Density -60.14 dBm/Hz Freq/Channel Center Freq 5.20000000 GHz Start Freq 5.18000000 GHz Stop Freq 5.22000000 GHz CF Step 4.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin
802.11a-High	Agilent Ch Freq 5.24 GHz Channel Power Center 5.240000000 GHz Ref 20 dBm Atten 30 dB #Avg Log dB/ Offset 1 dB Center 5.24 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 40 MHz Channel Power 12.97 dBm / 20.0000 MHz Power Spectral Density -60.04 dBm/Hz Freq/Channel Center Freq 5.24000000 GHz Start Freq 5.22000000 GHz Stop Freq 5.26000000 GHz CF Step 4.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin

802.11n-HT20-Low	Agilent R T Ch Freq 5.18 GHz Trig Free Channel Power Center 5.180000000 GHz Ref 20 dBm Atten 30 dB #Avg Log 10 dB/ Offset 1 dB Center 5.18 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 40 MHz Channel Power Power Spectral Density 12.18 dBm / 20.0000 MHz -60.83 dBm/Hz Freq/Channel Center Freq 5.18000000 GHz Start Freq 5.16000000 GHz Stop Freq 5.20000000 GHz CF Step 4.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin
802.11n-HT20-Middle	Agilent R T Ch Freq 5.2 GHz Trig Free Channel Power Center 5.200000000 GHz Ref 20 dBm Atten 30 dB #Avg Log 10 dB/ Offset 1 dB Center 5.2 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 40 MHz Channel Power Power Spectral Density 12.82 dBm / 20.0000 MHz -60.19 dBm/Hz Freq/Channel Center Freq 5.20000000 GHz Start Freq 5.18000000 GHz Stop Freq 5.22000000 GHz CF Step 4.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin
802.11n-HT20-High	Agilent R T Ch Freq 5.24 GHz Trig Free Channel Power Ref 20 dBm Atten 30 dB #Avg Log 10 dB/ Offset 1 dB Center 5.24 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 40 MHz Channel Power Power Spectral Density 12.46 dBm / 20.0000 MHz -60.55 dBm/Hz Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2

802.11n-HT40-Low	Agilent Ch Freq 5.19 GHz Trig Free Channel Power Ref 20 dBm Atten 30 dB #Avg Log 10 dB/ Offset 1 dB Center 5.19 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 80 MHz Channel Power Power Spectral Density 12.71 dBm / 40.0000 MHz -63.32 dBm/Hz Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11n-HT40-High	Agilent Ch Freq 5.23 GHz Trig Free Channel Power Center 5.23000000 GHz Ref 20 dBm Atten 30 dB #Avg Log 10 dB/ Offset 1 dB Center 5.23 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 80 MHz Channel Power Power Spectral Density 13.06 dBm / 40.0000 MHz -62.96 dBm/Hz Freq/Channel Center Freq 5.23000000 GHz Start Freq 5.19000000 GHz Stop Freq 5.27000000 GHz CF Step 8.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin

5250-5350MHz

802.11a-Low	Agilent Ch Freq 5.26 GHz Channel Power Ref 20 dBm Atten 30 dB #Avg Log 10 dB/ Offst 1 dB Center 5.26 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 40 MHz Channel Power 12.85 dBm / 20.0000 MHz Power Spectral Density -60.16 dBm/Hz Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11a-Middle	Agilent Ch Freq 5.28 GHz Channel Power Center 5.280000000 GHz Ref 20 dBm Atten 30 dB #Avg Log 10 dB/ Offst 1 dB Center 5.28 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 40 MHz Channel Power 13.72 dBm / 20.0000 MHz Power Spectral Density -59.29 dBm/Hz Freq/Channel Center Freq 5.28000000 GHz Start Freq 5.26000000 GHz Stop Freq 5.30000000 GHz CF Step 4.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin
802.11a-High	Agilent Ch Freq 5.32 GHz Channel Power Center 5.320000000 GHz Ref 20 dBm Atten 30 dB #Avg Log 10 dB/ Offst 1 dB Center 5.32 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 40 MHz Channel Power 14.10 dBm / 20.0000 MHz Power Spectral Density -58.91 dBm/Hz Freq/Channel Center Freq 5.32000000 GHz Start Freq 5.30000000 GHz Stop Freq 5.34000000 GHz CF Step 4.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin

802.11n-HT20-Low	Agilent Ch Freq 5.26 GHz Trig Free Channel Power Center 5.260000000 GHz Ref 20 dBm Atten 30 dB #Avg Log 10 dB/ Offset 1 dB Center 5.26 GHz #Res BW 300 kHz #VBW 3 MHz Sweep 8 ms (401 pts) Span 40 MHz Channel Power Power Spectral Density 14.21 dBm / 20.0000 MHz -58.80 dBm/Hz Freq/Channel Center Freq 5.26000000 GHz Start Freq 5.24000000 GHz Stop Freq 5.28000000 GHz CF Step 4.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin
802.11n-HT20-Middle	Agilent Ch Freq 5.28 GHz Trig Free Channel Power Center 5.280000000 GHz Ref 20 dBm Atten 30 dB #Avg Log 10 dB/ Offset 1 dB Center 5.28 GHz #Res BW 300 kHz #VBW 3 MHz Sweep 8 ms (401 pts) Span 40 MHz Channel Power Power Spectral Density 14.18 dBm / 20.0000 MHz -58.83 dBm/Hz Freq/Channel Center Freq 5.28000000 GHz Start Freq 5.26000000 GHz Stop Freq 5.30000000 GHz CF Step 4.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin
802.11n-HT20-High	Agilent Ch Freq 5.32 GHz Trig Free Channel Power Center 5.320000000 GHz Ref 20 dBm Atten 30 dB #Avg Log 10 dB/ Offset 1 dB Center 5.32 GHz #Res BW 300 kHz #VBW 3 MHz Sweep 8 ms (401 pts) Span 40 MHz Channel Power Power Spectral Density 14.76 dBm / 20.0000 MHz -58.25 dBm/Hz Trace/View 1 Trace 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2

802.11n-HT40-Low	Agilent Ch Freq 5.27 GHz Channel Power Ref 20 dBm Atten 30 dB #Avg 10 Log dB/Offset 1 dB Center 5.27 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 80 MHz Channel Power Power Spectral Density 13.18 dBm / 40.0000 MHz -62.84 dBm/Hz Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11n-HT40-High	Agilent Ch Freq 5.31 GHz Channel Power Center 5.310000000 GHz Ref 20 dBm Atten 30 dB #Avg 10 Log dB/Offset 1 dB Center 5.31 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 80 MHz Channel Power Power Spectral Density 13.74 dBm / 40.0000 MHz -62.28 dBm/Hz Freq/Channel Center Freq 5.310000000 GHz Start Freq 5.270000000 GHz Stop Freq 5.350000000 GHz CF Step 8.000000000 MHz Auto Man Freq Offset 0.000000000 Hz Signal Track On Off Scale Type Log Lin

5470-5725MHz

802.11a-Low	Agilent Ch Freq 5.5 GHz Channel Power Ref 20 dBm Atten 30 dB #Avg Log dB/ Offset 1 dB Center 5.5 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 40 MHz Channel Power 15.23 dBm / 20.0000 MHz Power Spectral Density -57.78 dBm/Hz Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11a-Middle	Agilent Ch Freq 5.6 GHz Channel Power Ref 20 dBm Atten 30 dB #Avg Log dB/ Offset 1 dB Center 5.6 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 40 MHz Channel Power 14.77 dBm / 20.0000 MHz Power Spectral Density -58.24 dBm/Hz Freq/Channel Center Freq 5.60000000 GHz Start Freq 5.58000000 GHz Stop Freq 5.62000000 GHz CF Step 4.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin
802.11a-High	Agilent Ch Freq 5.7 GHz Channel Power Center 5.700000000 GHz Ref 20 dBm Atten 30 dB #Avg Log dB/ Offset 1 dB Center 5.7 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 40 MHz Channel Power 13.37 dBm / 20.0000 MHz Power Spectral Density -59.64 dBm/Hz Freq/Channel Center Freq 5.70000000 GHz Start Freq 5.68000000 GHz Stop Freq 5.72000000 GHz CF Step 4.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin

802.11n-HT20-Low	Agilent Ch Freq 5.5 GHz Trig Free Channel Power Center 5.500000000 GHz Ref 20 dBm Atten 30 dB #Avg Log 10 dB/ Offset 1 dB Center 5.5 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 40 MHz Channel Power Power Spectral Density 14.62 dBm / 20.0000 MHz -58.39 dBm/Hz Freq/Channel Center Freq 5.50000000 GHz Start Freq 5.48000000 GHz Stop Freq 5.52000000 GHz CF Step 4.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin
802.11n-HT20-Middle	Agilent Ch Freq 5.6 GHz Trig Free Channel Power Center 5.600000000 GHz Ref 20 dBm Atten 30 dB #Avg Log 10 dB/ Offset 1 dB Center 5.6 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 40 MHz Channel Power Power Spectral Density 14.52 dBm / 20.0000 MHz -58.49 dBm/Hz Trace/View 1 2 3 Trace Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11n-HT20-High	Agilent Ch Freq 5.7 GHz Trig Free Channel Power Center 5.700000000 GHz Ref 20 dBm Atten 30 dB #Avg Log 10 dB/ Offset 1 dB Center 5.7 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 40 MHz Channel Power Power Spectral Density 13.01 dBm / 20.0000 MHz -60.01 dBm/Hz Trace/View 1 2 3 Trace Clear Write Max Hold Min Hold View Blank More 1 of 2

802.11n-HT40-Low	Agilent R T Ch Freq 5.51 GHz Trig Free Channel Power Center 5.51000000 GHz Ref 20 dBm Atten 30 dB #Avg Log 10 dB/ Offset 1 dB Center 5.51 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 80 MHz Channel Power Power Spectral Density 15.60 dBm / 40.0000 MHz -60.42 dBm/Hz Freq/Channel Center Freq 5.51000000 GHz Start Freq 5.47000000 GHz Stop Freq 5.55000000 GHz CF Step 8.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin
802.11n-HT40- Middle	Agilent R T Ch Freq 5.59 GHz Trig Free Channel Power Center 5.59 GHz Ref 20 dBm Atten 30 dB #Avg Log 10 dB/ Offset 1 dB Center 5.59 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 80 MHz Channel Power Power Spectral Density 14.53 dBm / 40.0000 MHz -61.49 dBm/Hz Trace/View 1 2 3 Trace Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11n-HT40-High	Agilent R T Ch Freq 5.67 GHz Trig Free Channel Power Center 5.67000000 GHz Ref 20 dBm Atten 30 dB #Avg Log 10 dB/ Offset 1 dB Center 5.67 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 80 MHz Channel Power Power Spectral Density 13.56 dBm / 40.0000 MHz -62.46 dBm/Hz Freq/Channel Center Freq 5.67000000 GHz Start Freq 5.63000000 GHz Stop Freq 5.71000000 GHz CF Step 8.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin

5725-5850MHz

802.11a-Low	Agilent Ch Freq 5.745 GHz Channel Power Ref 20 dBm Atten 30 dB #Avg Log 10 dB/Offset 1 dB Center 5.745 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Channel Power Power Spectral Density 11.21 dBm / 20.0000 MHz -61.80 dBm/Hz Freq/Channel Center Freq 5.74500000 GHz Start Freq 5.72500000 GHz Stop Freq 5.76500000 GHz CF Step 4.00000000 MHz Freq Offset 0.00000000 Hz Signal Track On Scale Type Log
802.11a-Middle	Agilent Ch Freq 5.785 GHz Channel Power Ref 20 dBm Atten 30 dB #Avg Log 10 dB/Offset 1 dB Center 5.785 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Channel Power Power Spectral Density 11.03 dBm / 20.0000 MHz -61.98 dBm/Hz Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11a-High	Agilent Ch Freq 5.825 GHz Channel Power Center 5.825000000 GHz Ref 20 dBm Atten 30 dB #Avg Log 10 dB/Offset 1 dB Center 5.825 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Channel Power Power Spectral Density 10.24 dBm / 20.0000 MHz -62.77 dBm/Hz Freq/Channel Center Freq 5.82500000 GHz Start Freq 5.80500000 GHz Stop Freq 5.84500000 GHz CF Step 4.00000000 MHz Freq Offset 0.00000000 Hz Signal Track On Scale Type Log

802.11n-HT20-Low	Agilent Ch Freq 5.745 GHz Channel Power Center 5.745000000 GHz Ref 20 dBm Atten 30 dB #Avg Log 10 dB/ Offset 1 dB Center 5.745 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 40 MHz Channel Power 11.95 dBm / 20.0000 MHz Power Spectral Density -61.06 dBm/Hz Freq/Channel Center Freq 5.74500000 GHz Start Freq 5.72500000 GHz Stop Freq 5.76500000 GHz CF Step 4.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Scale Type Log Lin
802.11n-HT20-Middle	Agilent Ch Freq 5.785 GHz Channel Power Center 5.785000000 GHz Ref 20 dBm Atten 30 dB #Avg Log 10 dB/ Offset 1 dB Center 5.785 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 40 MHz Channel Power 11.02 dBm / 20.0000 MHz Power Spectral Density -61.99 dBm/Hz Trace/View 1 Trace 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11n-HT20-High	Agilent Ch Freq 5.825 GHz Channel Power Center 5.825 GHz Ref 20 dBm Atten 30 dB #Avg Log 10 dB/ Offset 1 dB Center 5.825 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 40 MHz Channel Power 11.50 dBm / 20.0000 MHz Power Spectral Density -61.51 dBm/Hz Trace/View 1 Trace 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2

802.11n-HT40-Low	Agilent Ch Freq 5.755 GHz Trig Free Channel Power Center 5.755000000 GHz Ref 20 dBm Atten 30 dB #Avg Log 10 dB/ Offset 1 dB Center 5.755 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 80 MHz Channel Power Power Spectral Density 11.14 dBm / 40.0000 MHz -64.88 dBm/Hz Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2
802.11n-HT40-High	Agilent Ch Freq 5.795 GHz Trig Free Channel Power Center 5.795000000 GHz Ref 20 dBm Atten 30 dB #Avg Log 10 dB/ Offset 1 dB Center 5.795 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 20 ms (1001 pts) Span 80 MHz Channel Power Power Spectral Density 10.90 dBm / 40.0000 MHz -65.12 dBm/Hz Trace/View Trace 1 2 3 Clear Write Max Hold Min Hold View Blank More 1 of 2

APPENDIX D

Frequency Stability

U-NII-1:5150-5250MHz worst case at 802.11a middle channel				
Voltage(%)	Power(VDC)	TEMP(°C)	Freq.Dev(Hz)	Deviation
100%	3.8	-30	165	0.0317
100%		-20	144	0.0277
100%		-10	165	0.0317
100%		0	176	0.0338
100%		+10	175	0.0337
100%		+20	117	0.0225
100%		+30	159	0.0306
100%		+40	131	0.0252
100%		+50	140	0.0269
Low Battery power	3.5	+20	106	0.0204
High Battery power	4.35	+20	109	0.0210

U-NII-1: 5250-5350MHz worst case at 802.11a middle channel				
Voltage(%)	Power(VDC)	TEMP(°C)	Freq.Dev(Hz)	Deviation
100%	3.8	-30	144	0.0273
100%		-20	119	0.0225
100%		-10	130	0.0246
100%		0	134	0.0254
100%		+10	150	0.0284
100%		+20	160	0.0303
100%		+30	175	0.0331
100%		+40	173	0.0328
100%		+50	134	0.0254
Low Battery power	3.5	+20	117	0.0222
High Battery power	4.35	+20	161	0.0305

U-NII-1: 5470-5725MHz worst case at 802.11a middle channel				
Voltage(%)	Power(VDC)	TEMP(°C)	Freq.Dev(Hz)	Deviation
100%	3.8	-30	160	0.0286
100%		-20	157	0.0280
100%		-10	178	0.0318
100%		0	101	0.0180
100%		+10	136	0.0243
100%		+20	110	0.0196
100%		+30	147	0.0263
100%		+40	137	0.0245
100%		+50	141	0.0252
Low Battery power	3.5	+20	141	0.0252
High Battery power	4.35	+20	107	0.0191

U-NII-1:5725-5850MHz worst case at 802.11a middle channel				
Voltage(%)	Power(VDC)	TEMP(°C)	Freq.Dev(Hz)	Deviation
100%	3.8	-30	129	0.0223
100%		-20	137	0.0237
100%		-10	173	0.0299
100%		0	156	0.0270
100%		+10	146	0.0252
100%		+20	147	0.0254
100%		+30	169	0.0292
100%		+40	173	0.0299
100%		+50	149	0.0258
Low Battery power	3.5	+20	157	0.0271
High Battery power	4.35	+20	165	0.0285

APPENDIX PHOTOGRAPHS

Please refer to “ANNEX”

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