

TEST REPORT

Reference No..... : WTX23X06121604W003
FCC ID : 2BAHU2023021
Applicant : DIALN PRODUCTS INC
Address : 8312 Page Ave, St. Louis, Missouri, 63130, USA
Manufacturer : The same as Applicant
Address : The same as Applicant
Product Name : Smart Phone
Model No..... : X62
Standards : FCC Part 15.407
Date of Receipt sample : 2023-06-05
Date of Test..... : 2023-06-05 to 2023-07-03
Date of Issue : 2023-07-03
Test Report Form No. : WTX_Part 15_407W
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 approver.

Prepared By:

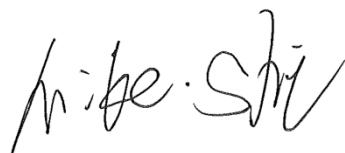
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Report version

Version No.	Date of issue	Description
Rev.00	2023-07-03	Original
/	/	/

1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

General Description of EUT	
Product Name:	Smart Phone
Trade Name:	DIALN
Model No.:	X62
Adding Model(s):	/
Rated Voltage:	DC3.8V
Battery Capacity:	/
Power Adapter:	TPA-46050200UU Input:AC100-220V 50/60Hz 0.3A Output: DC5V2000mA
<i>Note: The test data is gathered from a production sample, provided by the manufacturer.</i>	

Technical Characteristics of EUT	
Support Standards:	802.11a, 802.11n(HT20) , 802.11n-HT40, 802.11ac-VHT80
Frequency Range:	5150-5250MHz, 5250-5350MHz, 5470-5725MHz, 5725-5850MHz
RF Output Power:	9.12dBm (Conducted)
Type of Modulation:	QPSK, 16QAM, 64QAM
Type of Antenna:	Integral Antenna
Antenna Gain:	-2.2dBi
<i>Note: The Antenna Gain is provided by the customer and can affect the validity of results.</i>	

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	18	18	18	18	18	18	18	18	18	18	18	18	18
802.11n-HT20 MCS0	18	18	18	18	18	18	18	18	18	18	18	18	18
Mode	NCB: 40MHz												
	5190	5230	5270	5310	5510	5550	5670	5710	5755	5795			
802.11n-HT40 MCS0	18	18	18	18	18	18	18	18	18	18			
Mode	NCB: 80MHz												
	5210		5290		5530		5610		5690		5775		
802.11ac-VH80 MCS0/Nss2	18		18		18		18		18		18		

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 and the CAB identifier is CN0057.

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
TM4	802.11ac-VH80	5210MHz,5290MHz,5530MHz,5610MHz,5775MHz
Note: 802.11ac-VHT20, 802.11ac-VHT40 covered by 802.11n-HT20 and 802.11n-HT40.		

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

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

Auxiliary Equipment List and Details			
Description	Manufacturer	Model	Serial Number
Notebook	ASUS	FA5061C	M8NRCX057996349

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

Fixed asset Number	Description	Manufacturer	Model	Serial No.	Cal Date	Due. Date
WTXE1041A 1001	Communication Tester	Rohde & Schwarz	CMW500	148650	2023-02-25	2024-02-24
WTXE1022A 1002	GSM Tester	Rohde & Schwarz	CMU200	114403	2023-02-25	2024-02-24
WTXE1005A 1005	Spectrum Analyzer	Agilent	N9020A	US471401 02	2023-02-25	2024-02-24
WTXE1084A 1001	Spectrum Analyzer	Agilent	N9020A	MY543205 48	2023-02-25	2024-02-24
WTXE1044A 1001	Signal Generator	Agilent	83752A	3610A014 53	2023-02-25	2024-02-24
WTXE1045A 1001	Vector Signal Generator	Agilent	N5182A	MY470702 02	2023-02-25	2024-02-24
WTXE1018A 1001	Power Divider	Weinschel	1506A	PM204	2023-02-25	2024-02-24
WTXE1045A 1001	Power Divider	RF-Lambda	RFLT4W5M18G	14110400 027	2023-02-25	2024-02-24
☐ Chamber A: Below 1GHz						
WTXE1005A 1003	Spectrum Analyzer	Rohde & Schwarz	FSP30	836079/03 5	2023-02-25	2024-02-24
WTXE1007A 1001	EMI Test Receiver	Rohde & Schwarz	ESVB	825471/00 5	2023-02-25	2024-02-24
WTXE1007A 1001	Amplifier	HP	8447F	2805A034 75	2023-02-25	2024-02-24
WTXE1010A 1007	Loop Antenna	Schwarz beck	FMZB 1516	9773	2021-03-20	2024-03-19
WTXE1010A 1006	Broadband Antenna	Schwarz beck	VULB9163	9163-333	2023-03-20	2026-03-19
☐ Chamber A: Above 1GHz						
WTXE1005A 1003	Spectrum Analyzer	Rohde & Schwarz	FSP30	836079/03 5	2023-02-25	2024-02-24
WTXE1007A 1001	EMI Test Receiver	Rohde & Schwarz	ESVB	825471/00 5	2023-02-25	2024-02-24
WTXE1065A 1001	Amplifier	C&D	PAP-1G18	14918	2023-02-25	2024-02-24
WTXE1010A 1005	Horn Antenna	ETS	3117	00086197	2021-03-19	2024-03-18
WTXE1010A 1010	DRG Horn Antenna	A.H. SYSTEMS	SAS-574	571	2021-03-19	2024-03-18

WTXE1003A 1001	Pre-amplifier	Schwarzbeck	BBV 9721	9721-031	2023-02-25	2024-02-24
☐ Chamber B:Below 1GHz						
WTXE1010A 1006	Trilog Broadband Antenna	Schwarz beck	VULB9163(B)	9163-635	2021-04-09	2024-04-08
WTXE1038A 1001	Amplifier	Agilent	8447D	2944A101 79	2023-02-25	2024-02-24
WTXE1001A 1002	EMI Test Receiver	Rohde & Schwarz	ESPI	101391	2023-02-25	2024-02-24
☒ Chamber C:Below 1GHz						
WTXE1093A 1001	EMI Test Receiver	Rohde & Schwarz	ESIB 26	100401	2023-02-25	2024-02-24
WTXE1010A 1013-1	Trilog Broadband Antenna	Schwarz beck	VULB 9168	1194	2021-05-28	2024-05-27
WTXE1010A 1007	Loop Antenna	Schwarz beck	FMZB 1516	9773	2021-03-20	2024-03-19
WTXE1007A 1002	Amplifier	HP	8447F	2944A038 69	2023-02-25	2024-02-24
☒ Chamber C: Above 1GHz						
WTXE1093A 1001	EMI Test Receiver	Rohde & Schwarz	ESIB 26	100401	2023-02-25	2024-02-24
WTXE1103A 1005	Horn Antenna	POAM	RTF-11A	LP228060 221	2023-03-10	2026-03-09
WTXE1103A 1006	Amplifier	Tonscend	TAP01018050	AP22E806 235	2023-02-25	2024-02-24
☒ Conducted Room 1#						
WTXE1001A 1001	EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2023-02-25	2024-02-24
WTXE1002A 1001	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2023-02-25	2024-02-24
WTXE1003A 1001	AC LISN	Schwarz beck	NSLK8126	8126-224	2023-02-25	2024-02-24
☐ Conducted Room 2#						
WTXE1001A 1004	EMI Test Receiver	Rohde & Schwarz	ESPI	101259	2023-02-25	2024-02-24
WTXE1003A 1003	LISN	Rohde & Schwarz	ENV 216	100097	2023-02-25	2024-02-24

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 5.15-5.25GHz.

(iv) For mobile and portable client devices in the 5.15-5.25GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250mW provided the maximum antenna gain does not exceed 6dBi. In addition, the maximum power spectral density shall not exceed 11dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6dBi 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 6dBi.

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

(3) For the band 5.725-5.85GHz, 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 30dBm in any 500kHz band. If transmitting antennas of directional gain greater than 6dBi 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 6dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6dBi 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 5.15-5.25GHz, 5.25-5.35GHz, and 5.47-5.725GHz, 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 5.725-5.85GHz, the rules specify a measurement bandwidth of 500kHz. Many spectrum analyzers do not have 500kHz RBW, thus a narrower RBW may need to be used. The rules permit the use of a RBWs less than 1 MHz, or 500kHz, "provided that the measured power is integrated over the full

reference bandwidth” to show the total power over the specified measurement bandwidth (i.e., 1MHz, or 500kHz). If measurements are performed using a reduced resolution bandwidth ($< 1\text{MHz}$, or $< 500\text{kHz}$) and integrated over 1 MHz, or 500kHz bandwidth, the following adjustments to the procedures apply:

- a) Set $\text{RBW} \geq 1/T$, where T is defined in section II.B.I.a).
- b) Set $\text{VBW} \geq 3 \text{ RBW}$.
- c) If measurement bandwidth of Maximum PSD is specified in 500kHz, add $10\log(500\text{kHz}/\text{RBW})$ to the measured result, whereas $\text{RBW} (< 500\text{kHz})$ 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 $10\log(1\text{MHz}/\text{RBW})$ to the measured result, whereas $\text{RBW} (< 1\text{MHz})$ 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 100kHz for the sections 5.c) and 5.d) above, since $\text{RBW}=100\text{kHz}$ 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 5.15-5.25GHz.

(iv) For mobile and portable client devices in the 5.15-5.25GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6dBi 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 6dBi.

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

(3) For the band 5.725-5.85GHz, 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 30dBm in any 500kHz band. If transmitting antennas of directional gain greater than 6dBi 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 6dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6dBi 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 5.725-5.85GHz band, the minimum 6dB bandwidth of U-NII devices shall be at least 500kHz.

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 26dB 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 5.725-5.85GHz Section 15.407(e) specifies the minimum 6 dB emission bandwidth of at least 500KHz for the band 5.715-5.85 GHz. The following procedure shall be used for measuring this bandwidth:

- a) Set RBW = 100kHz.
- b) Set the video bandwidth (VBW) $\geq 3 \times$ RBW.
- c) Detector = Peak.
- d) Trace mode = max hold.
- e) Sweep = auto couple.
- f) Allow the trace to stabilize.
- g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6dB 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 $\geq 3 \times$ 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.

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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 5.15-5.25GHz.

(iv) For mobile and portable client devices in the 5.15-5.25GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11dBm 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 6dBi.

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

(3) For the band 5.725-5.85GHz, 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 30dBm in any 500kHz band. If transmitting antennas of directional gain greater than 6dBi 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 6dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6dBi 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 = 1MHz.
- (iii) Set VBW $\geq$ 3MHz.
- (iv) Number of points in sweep $\geq$ 2 Span / RBW. (This ensures that bin-to-bin spacing is $\leq$ RBW/2, so that

narrowband signals are not lost between frequency bins.)

(v) Sweep time = auto.

(vi) Detector = RMS (i.e., power averaging), if available. Otherwise, use sample detector mode.

(vii) If transmit duty cycle < 98 percent, use a video trigger with the trigger level set to enable triggering only on full power pulses. Transmitter must operate at maximum power control level for the entire duration of every sweep. If the EUT transmits continuously (i.e., with no off intervals) or at duty cycle $\geq$ 98 percent, and if each transmission is entirely at the maximum power control level, then the trigger shall be set to "free run".

(viii) Trace average at least 100 traces in power averaging (i.e., RMS) mode.

(ix) Compute power by integrating the spectrum across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal using the instrument's band power measurement function with band limits set equal to the EBW (or occupied bandwidth) band edges. If the instrument does not have a band power function, sum the spectrum levels (in power units) at 1MHz 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 5.15-5.25GHz band: All emissions outside of the 5.15-5.35GHz band shall not exceed an e.i.r.p. of -27dBm/MHz.
- (2) For transmitters operating in the 5.25-5.35GHz band: All emissions outside of the 5.15-5.35GHz band shall not exceed an e.i.r.p. of -27dBm/MHz.
- (3) For transmitters operating in the 5.47-5.725GHz band: All emissions outside of the 5.47-5.725GHz band shall not exceed an e.i.r.p. of -27dBm/MHz.
- (4) For transmitters operating in the 5.725-5.85GHz band:
 - (i) All emissions shall be limited to a level of -27dBm/MHz at 75MHz or more above or below the band edge increasing linearly to 10dBm/MHz at 25MHz above or below the band edge, and from 25MHz above or below the band edge increasing linearly to a level of 15.6dBm/MHz at 5MHz above or below the band edge, and from 5MHz above or below the band edge increasing linearly to a level of 27dBm/MHz at the band edge.

According to §15.407(b)(6), Unwanted emissions below 1GHz 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:

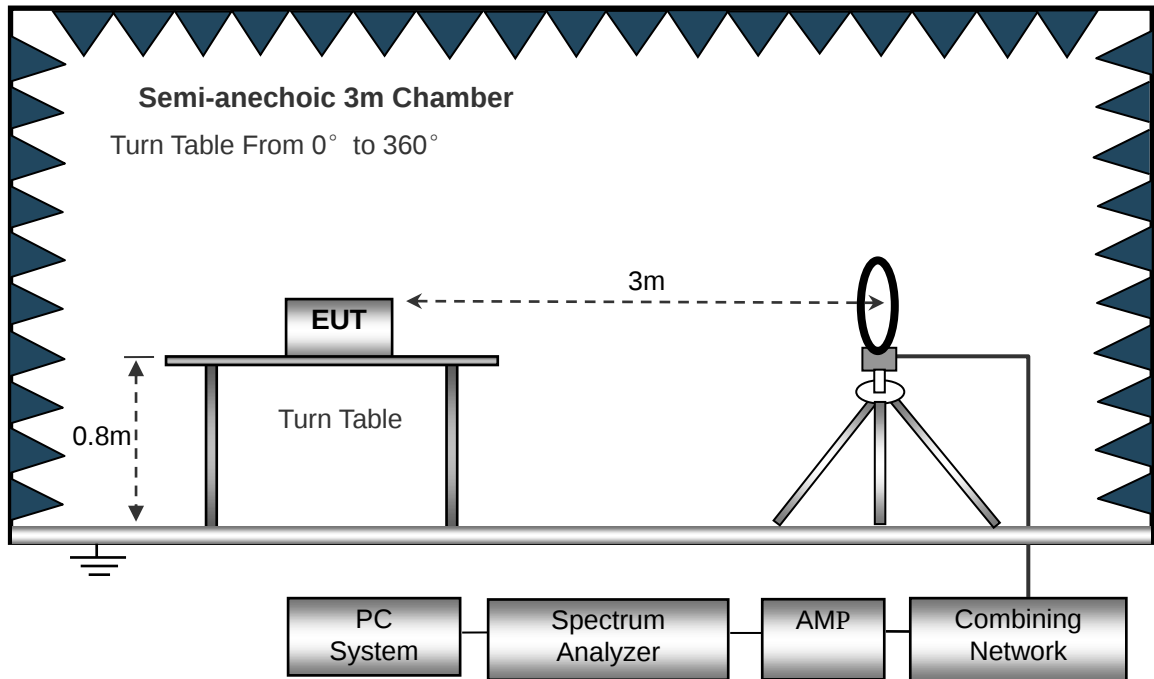
- E is the field strength in V/m;
- d is the measurement distance in meters;
- EIRP is the equivalent isotropically radiated power in watts.

8.2 Test Procedure

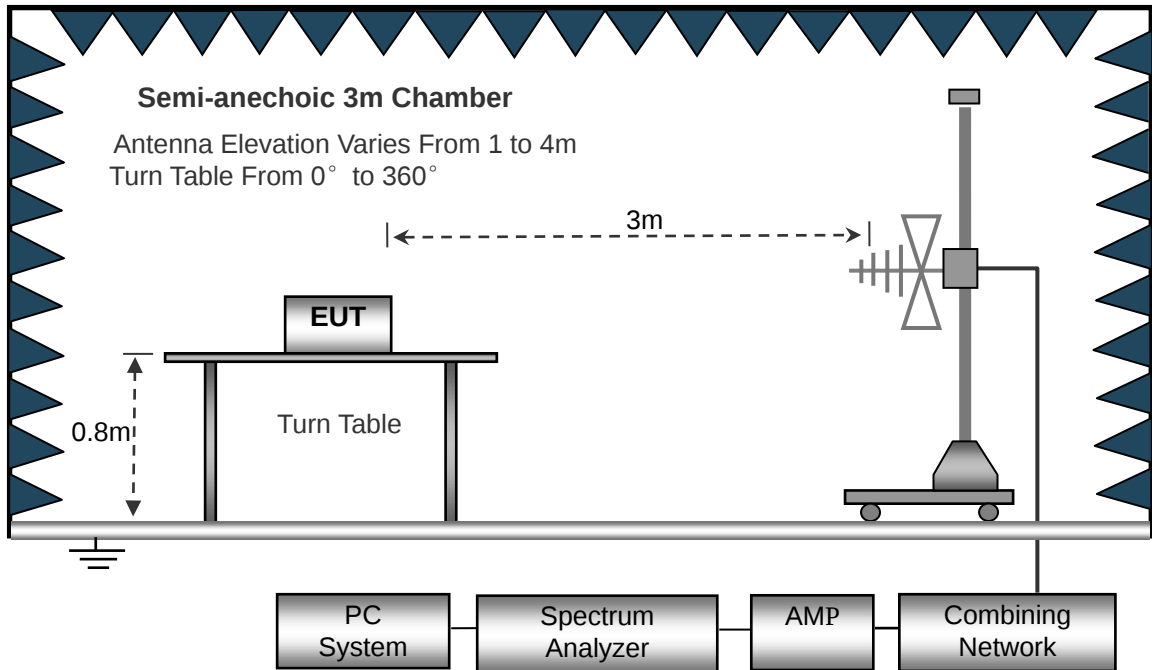
The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC Part 15.205 15.407(b)(6) and FCC Part 15.209 Limit..

The external I/O cables were draped along the test table and formed a bundle 30 to 40cm long in the middle. The spacing between the peripherals was 10cm.

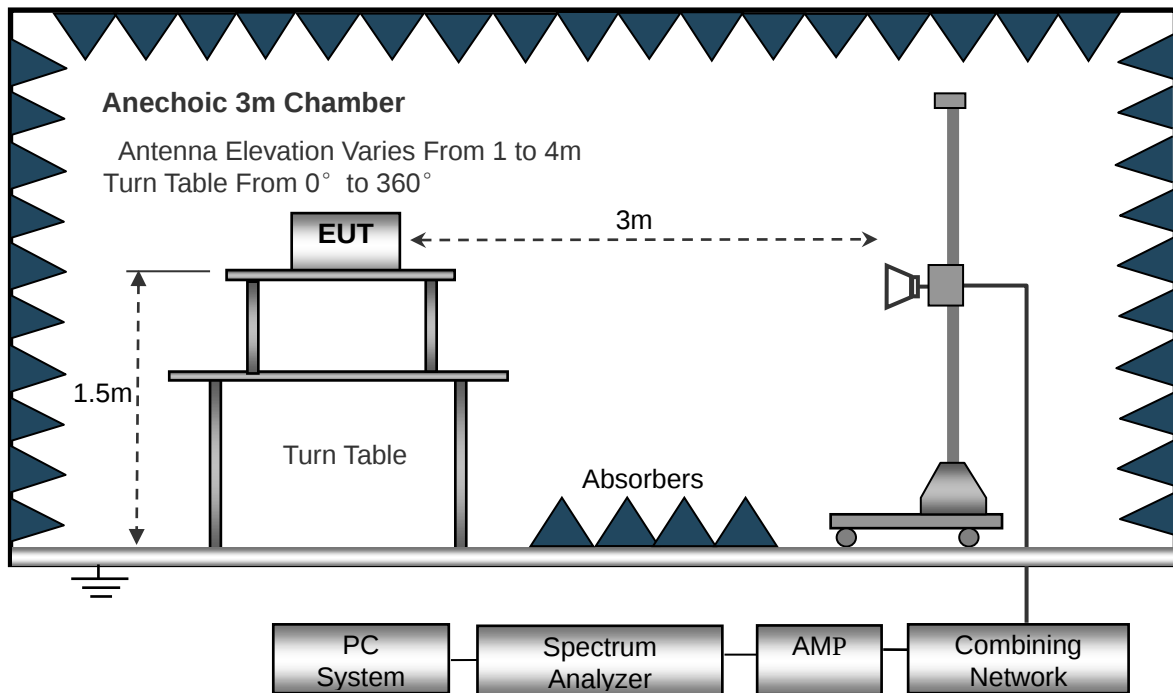
The test setup for emission measurement below 30MHz.



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



The test setup for emission measurement above 1GHz.



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 -6dB μ V means the emission is 6dB μ V below the maximum limit for Class B. The equation for margin calculation is as follows:

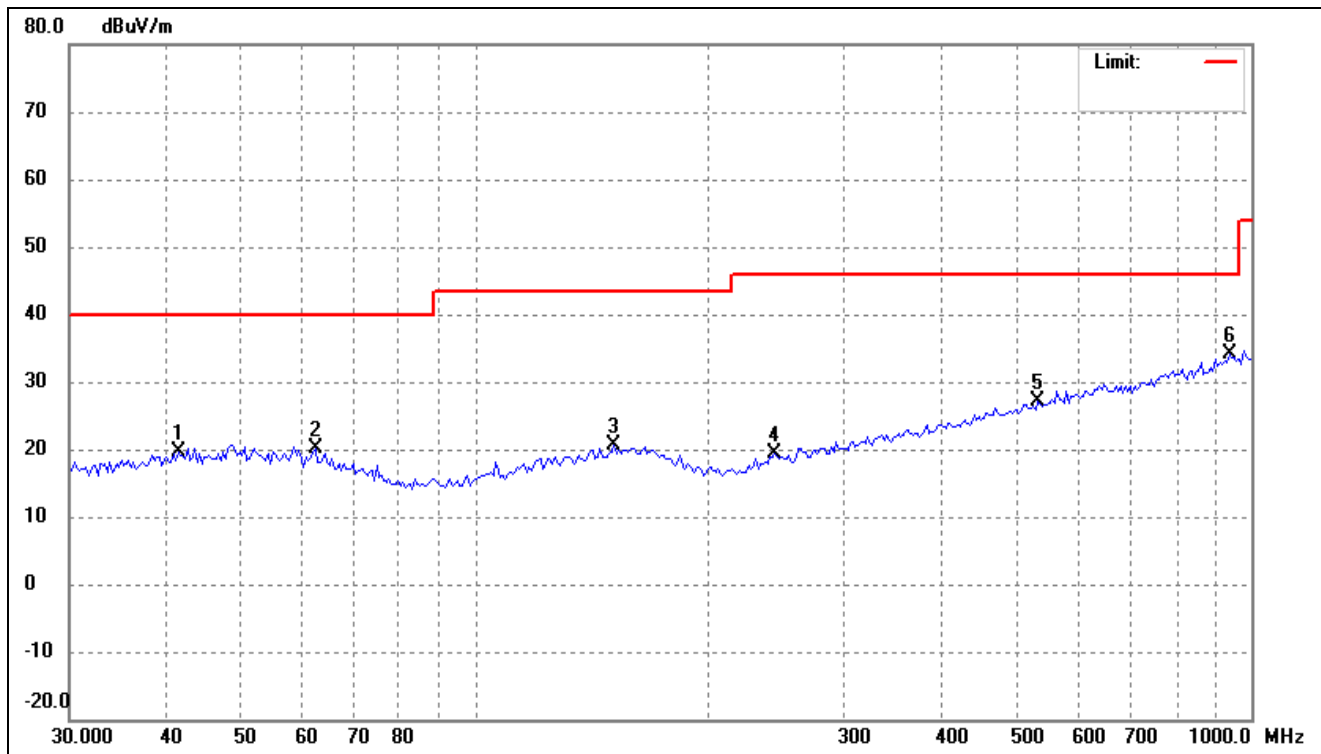
$$\text{Margin} = \text{Corr. Ampl.} - \text{FCC Part 15 Limit}$$

8.5 Summary of Test Results/Plots

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

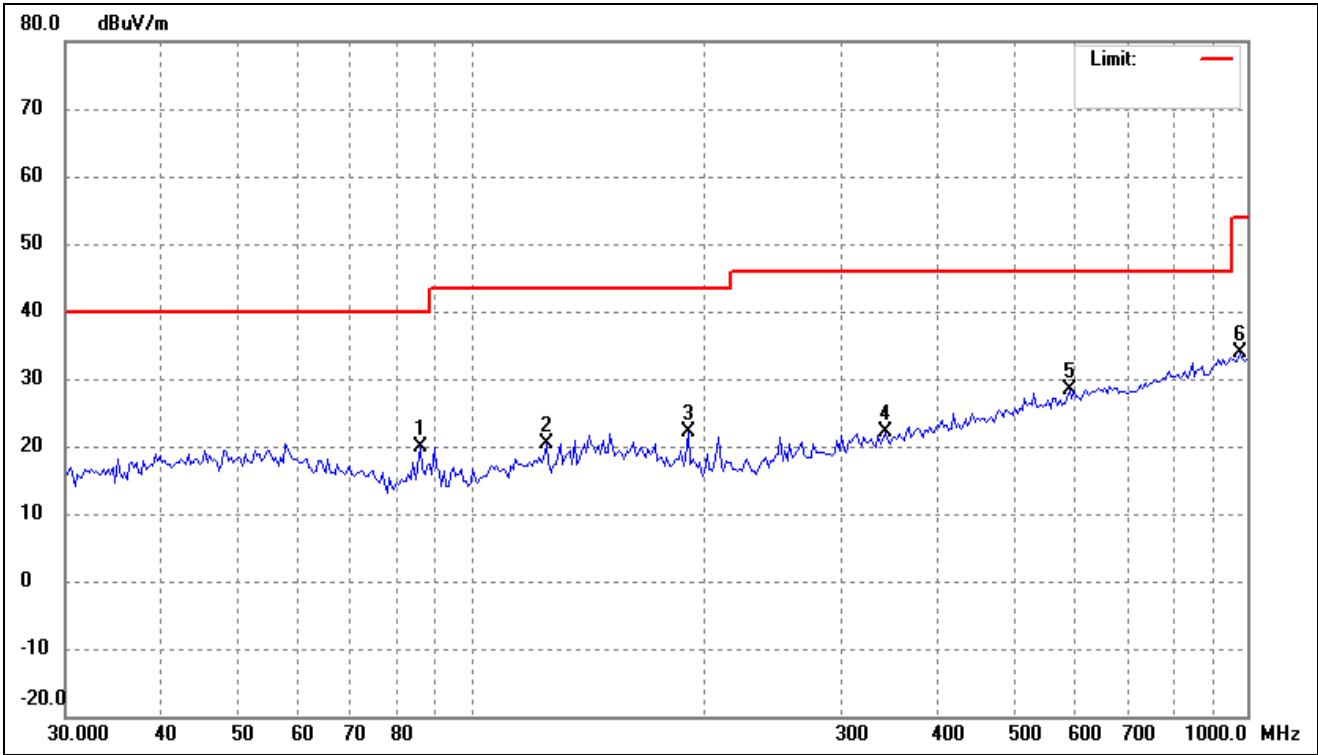
- Spurious Emission From 30MHz to 1GHz
- 5150-5250MHz

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



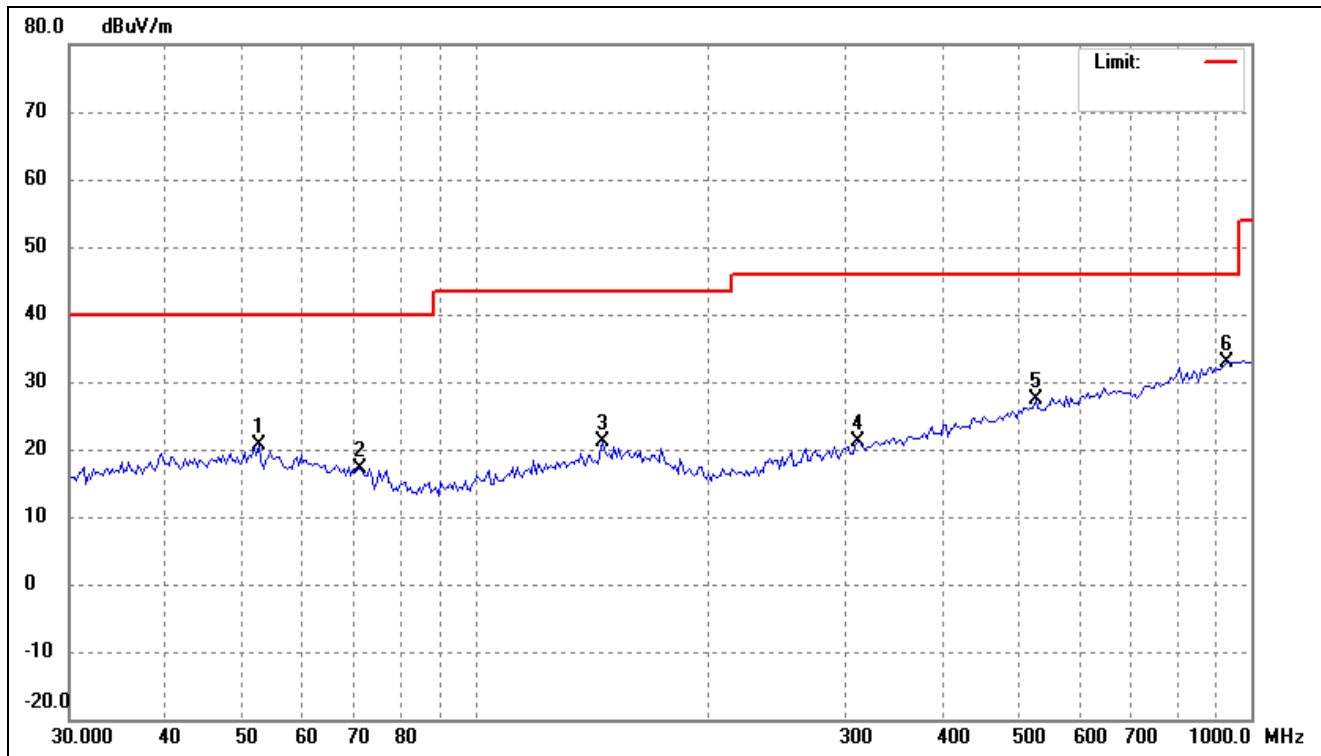
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	41.4483	28.13	-8.48	19.65	40.00	-20.35	-	-	peak
2	62.3038	29.36	-9.35	20.01	40.00	-19.99	-	-	peak
3	151.0252	29.14	-8.61	20.53	43.50	-22.97	-	-	peak
4	243.5431	29.72	-10.42	19.30	46.00	-26.70	-	-	peak
5	531.2910	30.48	-3.35	27.13	46.00	-18.87	-	-	peak
6	938.7139	32.10	2.01	34.11	46.00	-11.89	-	-	peak

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



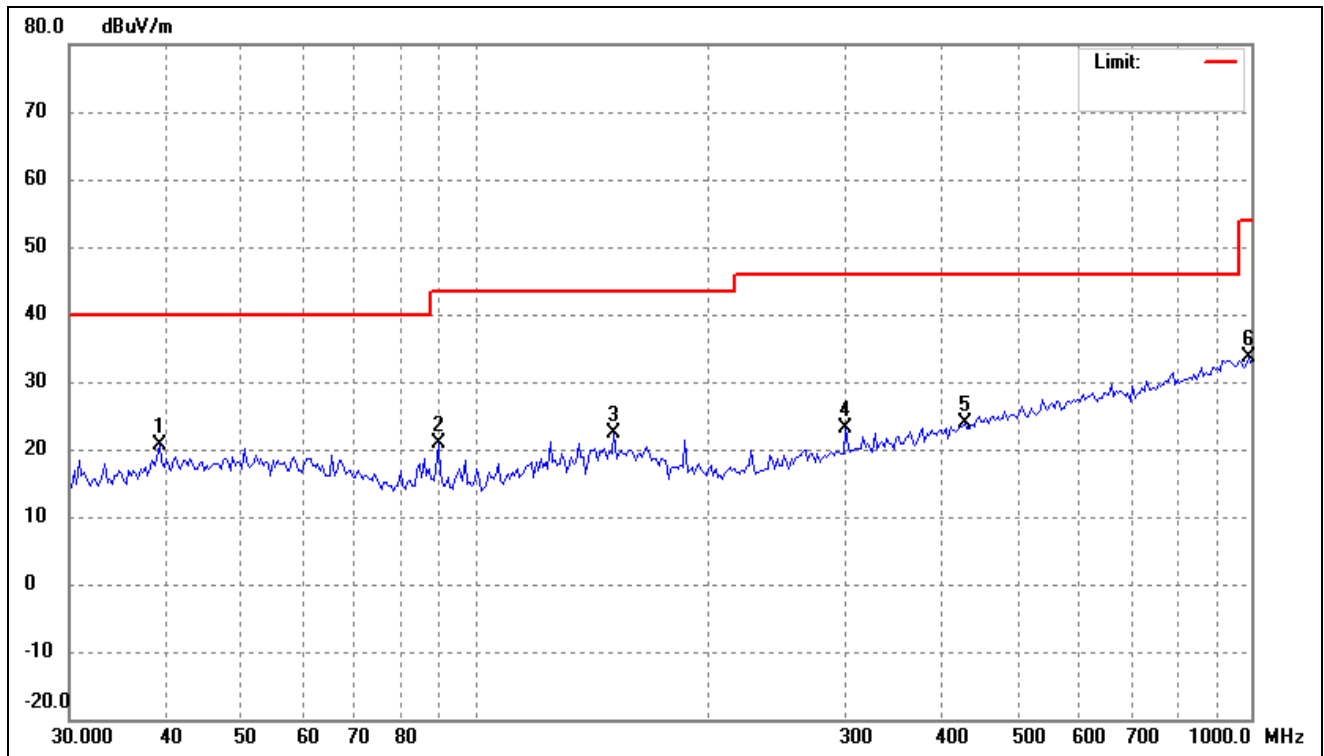
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	86.0796	32.81	-13.04	19.77	40.00	-20.23	-	-	peak
2	124.9249	30.48	-10.19	20.29	43.50	-23.21	-	-	peak
3	190.4411	33.61	-11.45	22.16	43.50	-21.34	-	-	peak
4	341.2442	29.44	-7.26	22.18	46.00	-23.82	-	-	peak
5	590.3511	30.38	-1.94	28.44	46.00	-17.56	-	-	peak
6	979.1392	31.70	2.28	33.98	54.00	-20.02	-	-	peak

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



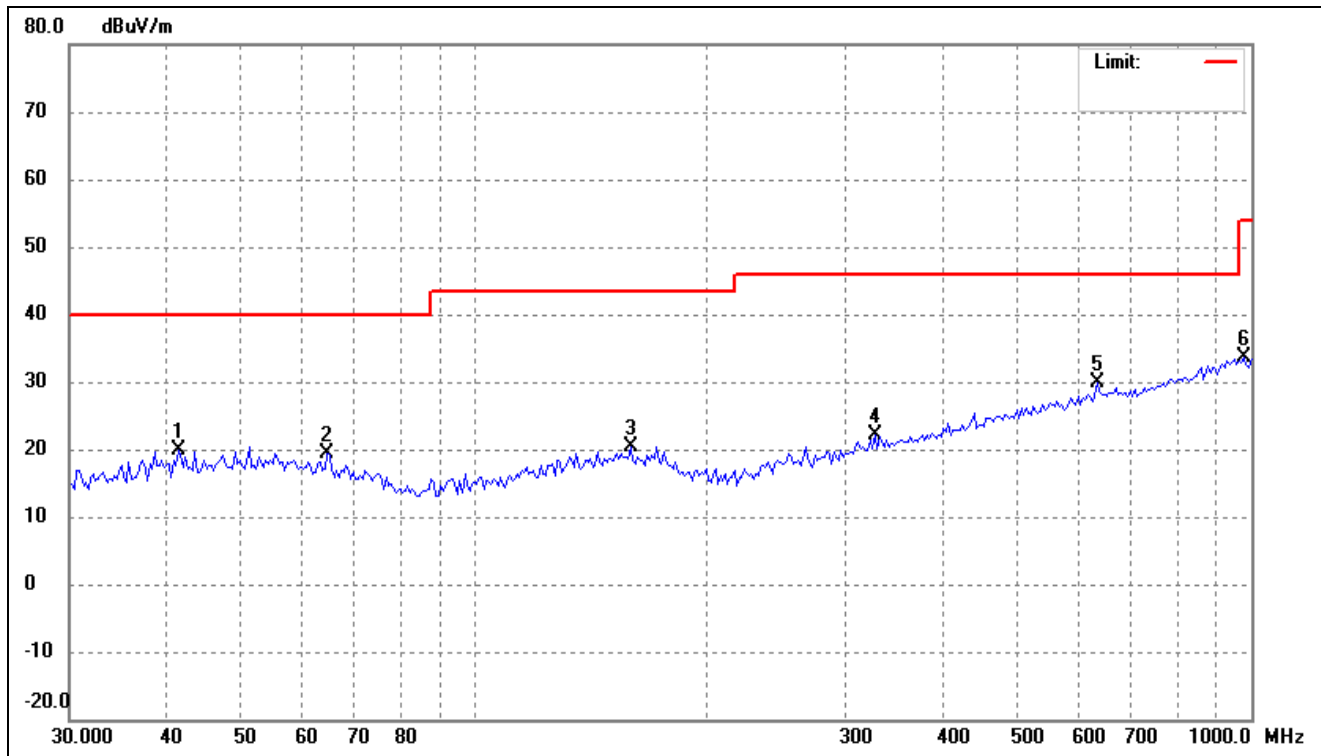
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	52.6345	29.12	-8.37	20.75	40.00	-19.25	-	-	peak
2	71.2033	28.19	-11.03	17.16	40.00	-22.84	-	-	peak
3	145.8109	29.97	-8.95	21.02	43.50	-22.48	-	-	peak
4	311.4519	29.07	-7.93	21.14	46.00	-24.86	-	-	peak
5	527.5707	30.88	-3.45	27.43	46.00	-18.57	-	-	peak
6	932.1405	31.07	1.87	32.94	46.00	-13.06	-	-	peak

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



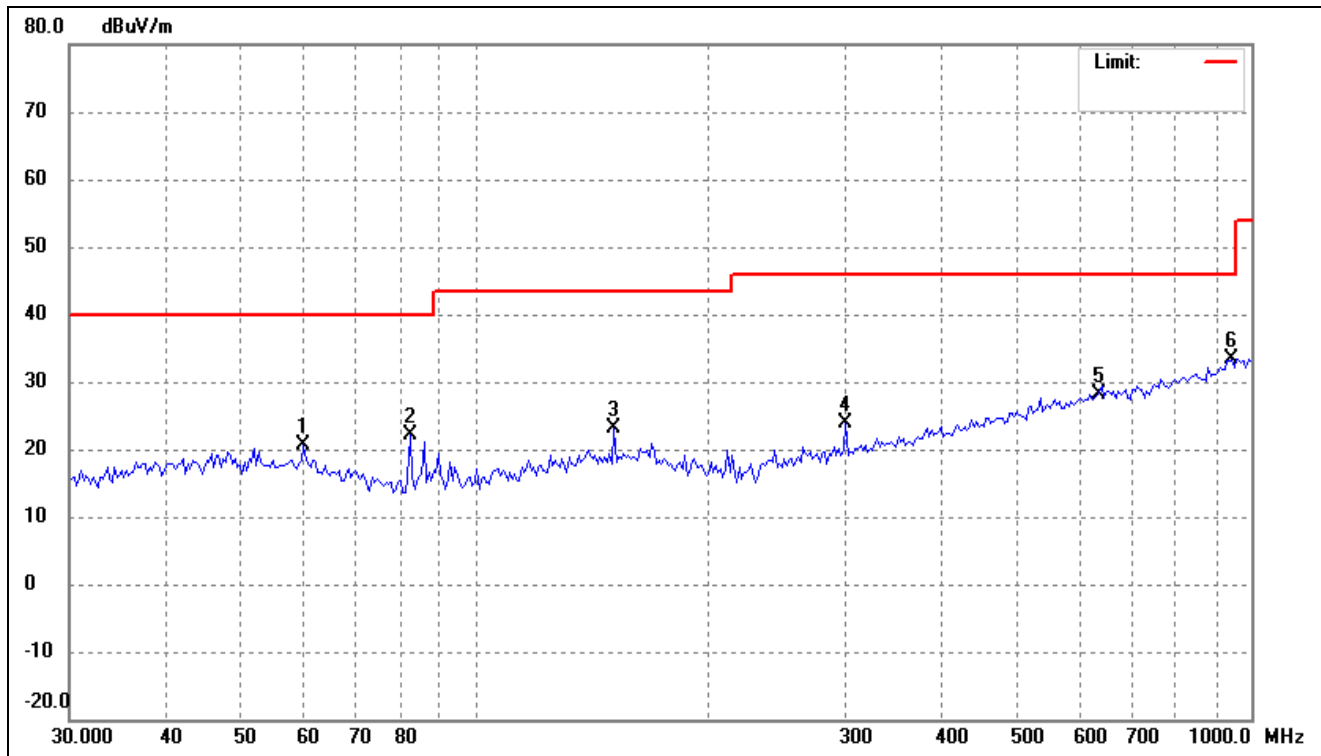
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	39.1825	29.18	-8.65	20.53	40.00	-19.47	-	-	peak
2	89.7866	33.94	-13.10	20.84	43.50	-22.66	-	-	peak
3	151.0252	31.10	-8.61	22.49	43.50	-21.01	-	-	peak
4	300.6988	31.28	-8.24	23.04	46.00	-22.96	-	-	peak
5	427.2920	29.10	-5.22	23.88	46.00	-22.12	-	-	peak
6	992.9975	31.44	2.30	33.74	54.00	-20.26	-	-	peak

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



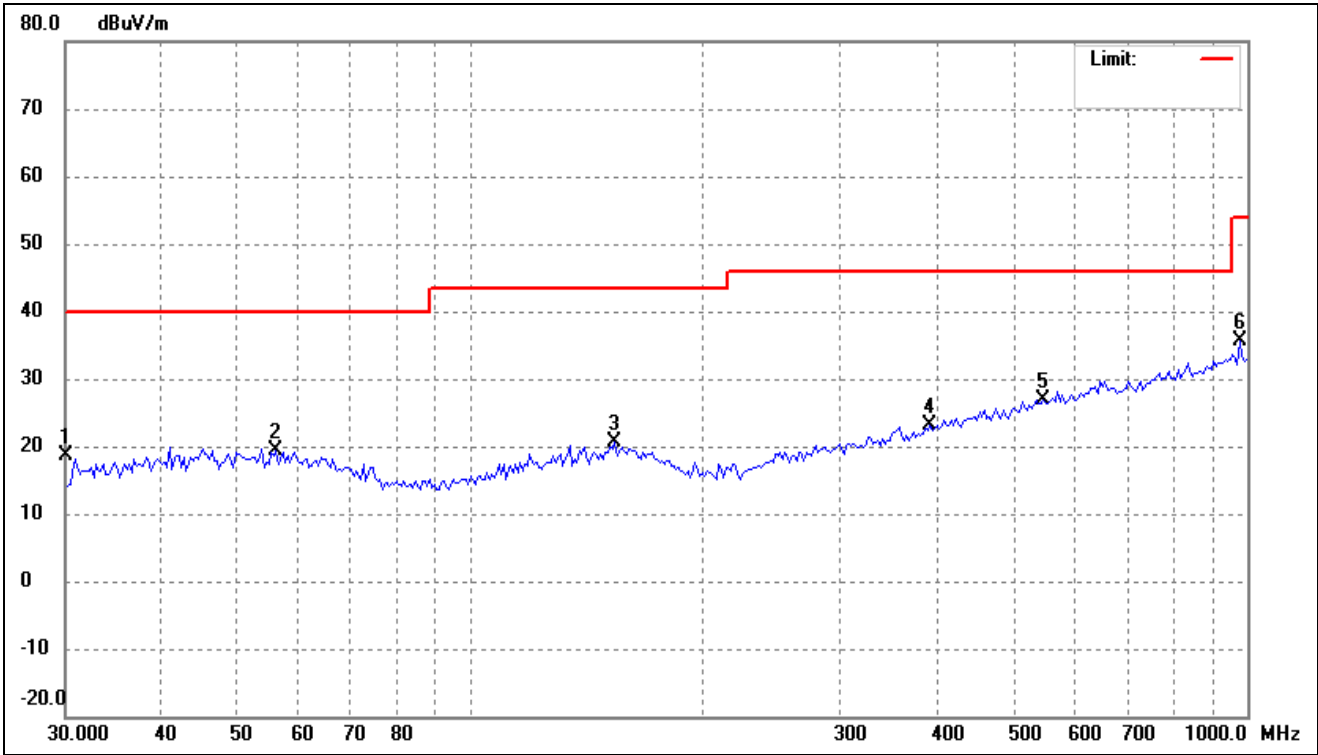
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	41.4483	28.44	-8.48	19.96	40.00	-20.04	-	-	peak
2	64.5319	29.10	-9.76	19.34	40.00	-20.66	-	-	peak
3	158.6399	28.98	-8.61	20.37	43.50	-23.13	-	-	peak
4	327.1554	29.70	-7.51	22.19	46.00	-23.81	-	-	peak
5	633.3285	31.13	-1.37	29.76	46.00	-16.24	-	-	peak
6	979.1392	31.29	2.28	33.57	54.00	-20.43	-	-	peak

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



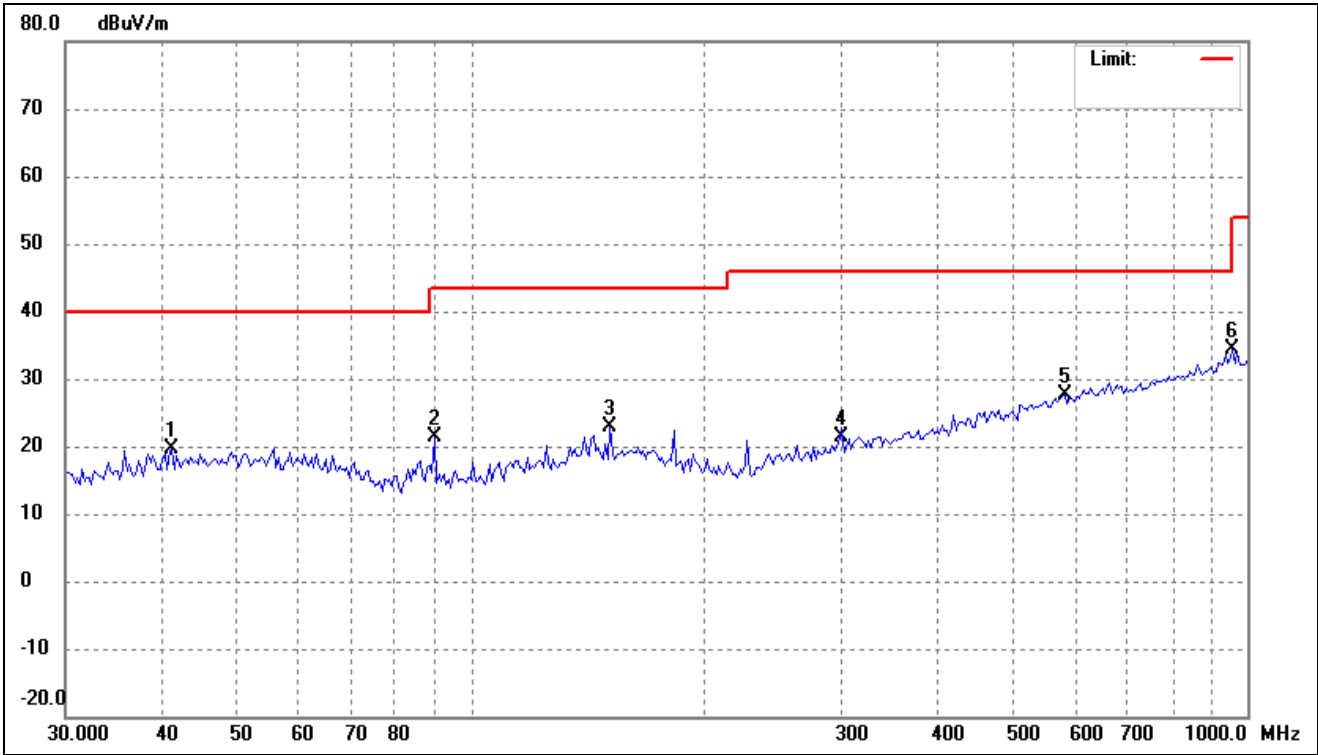
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	60.1528	29.62	-8.97	20.65	40.00	-19.35	-	-	peak
2	82.5257	35.16	-13.00	22.16	40.00	-17.84	-	-	peak
3	151.0252	31.69	-8.61	23.08	43.50	-20.42	-	-	peak
4	300.6988	32.11	-8.24	23.87	46.00	-22.13	-	-	peak
5	633.3285	29.62	-1.37	28.25	46.00	-17.75	-	-	peak
6	945.3336	31.30	2.15	33.45	46.00	-12.55	-	-	peak

802.11ac-HT80			
Test Channel	5210MHz(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	30.0000	28.91	-10.19	18.72	40.00	-21.28	-	-	peak
2	56.0708	28.11	-8.70	19.41	40.00	-20.59	-	-	peak
3	153.1627	29.13	-8.61	20.52	43.50	-22.98	-	-	peak
4	389.9874	29.35	-6.16	23.19	46.00	-22.81	-	-	peak
5	546.4368	29.92	-2.94	26.98	46.00	-19.02	-	-	peak
6	979.1392	33.41	2.28	35.69	54.00	-18.31	-	-	peak

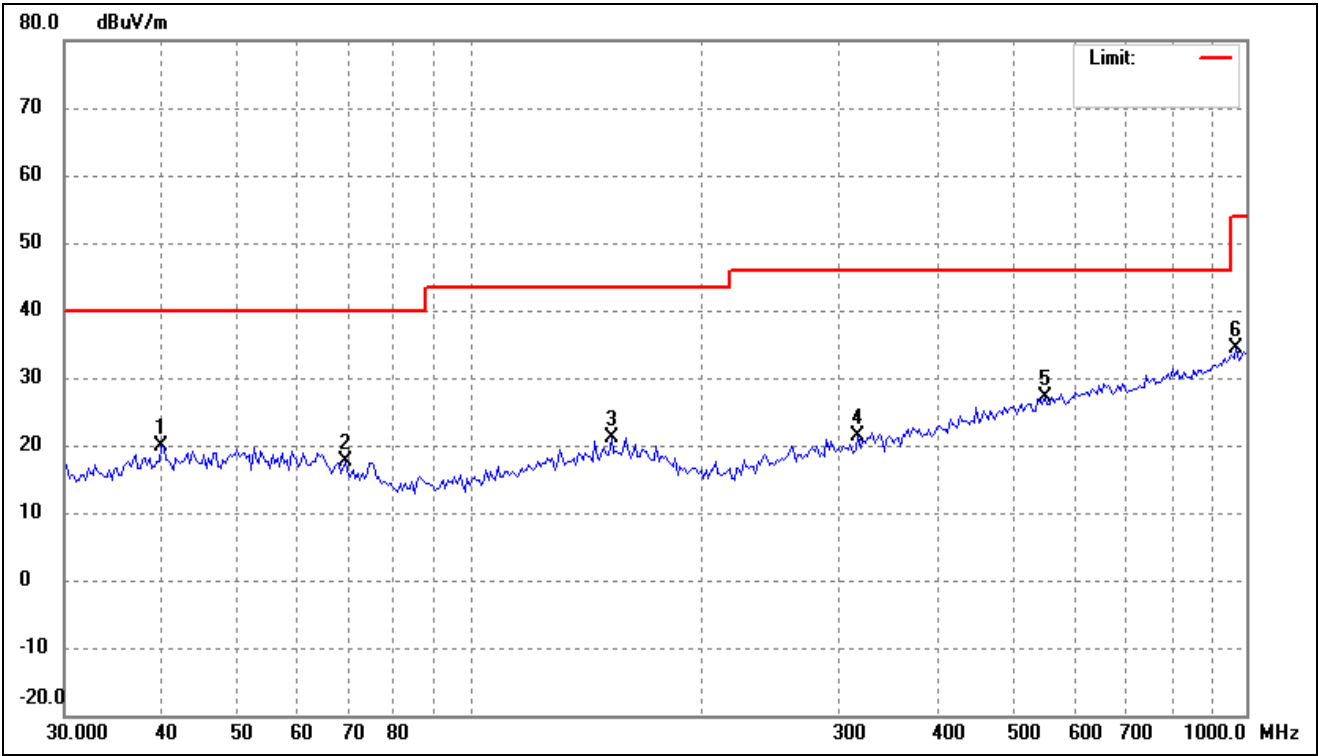
802.11ac-HT80			
Test Channel	5210MHz(worst case)	Polarity:	Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	41.1581	28.01	-8.48	19.53	40.00	-20.47	-	-	peak
2	89.7866	34.58	-13.10	21.48	43.50	-22.02	-	-	peak
3	151.0252	31.55	-8.61	22.94	43.50	-20.56	-	-	peak
4	298.5932	29.72	-8.31	21.41	46.00	-24.59	-	-	peak
5	582.1122	29.72	-2.11	27.61	46.00	-18.39	-	-	peak
6	958.7135	32.00	2.26	34.26	46.00	-11.74	-	-	peak

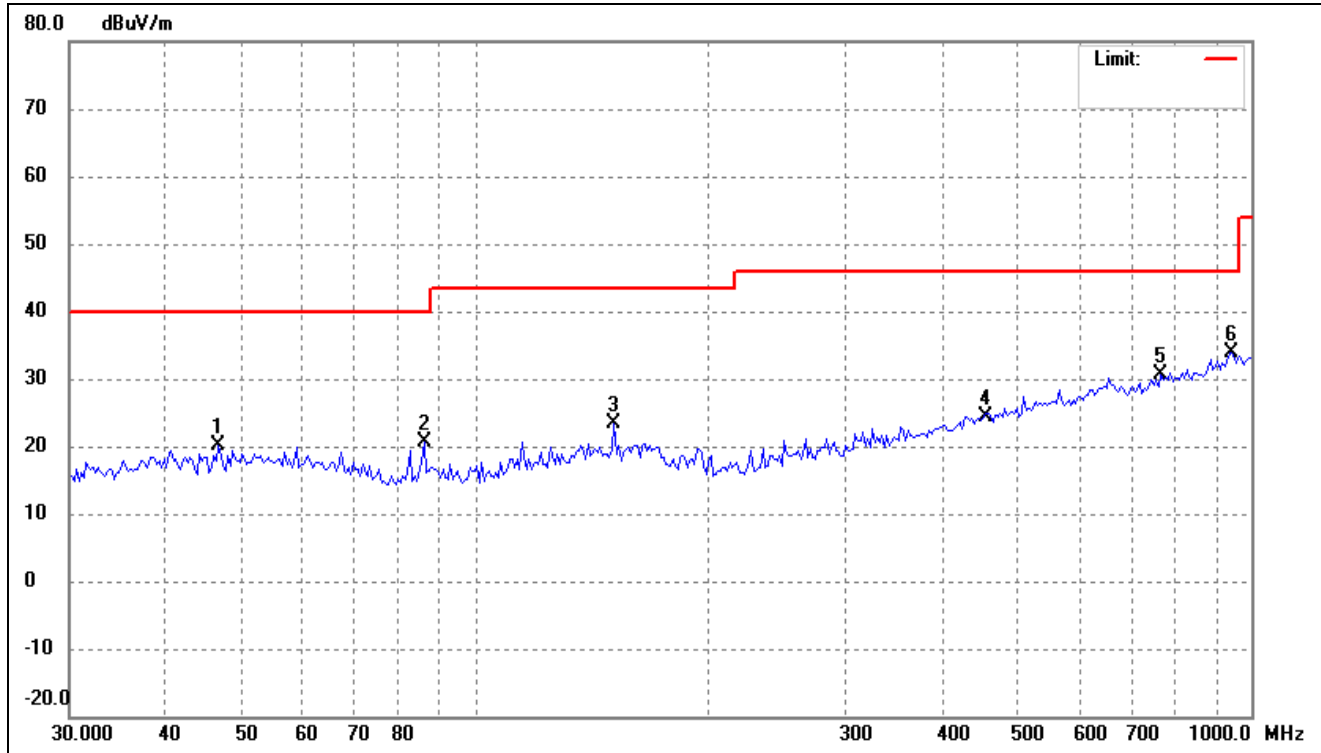
➤ 5250-5350MHz

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



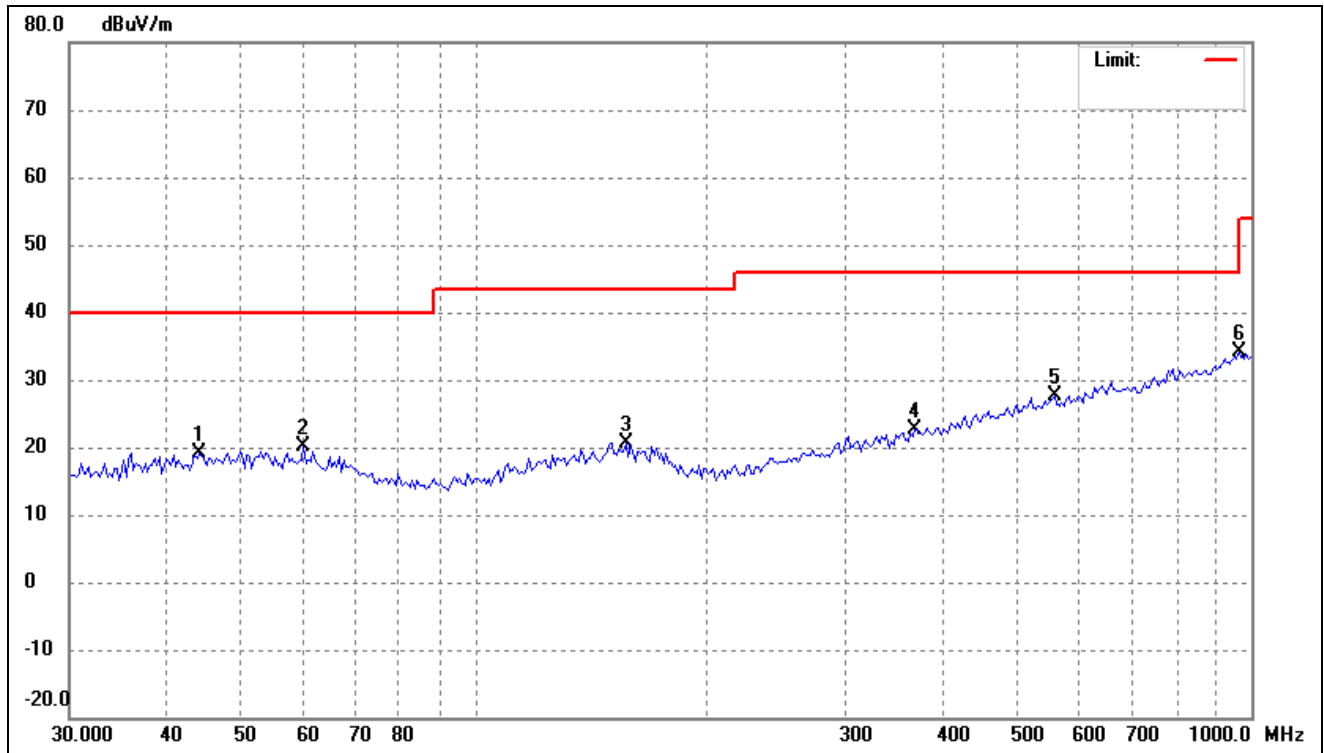
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	40.0173	28.34	-8.47	19.87	40.00	-20.13	-	-	peak
2	69.2297	28.15	-10.63	17.52	40.00	-22.48	-	-	peak
3	152.0902	29.78	-8.60	21.18	43.50	-22.32	-	-	peak
4	315.8601	29.07	-7.81	21.26	46.00	-24.74	-	-	peak
5	550.2902	30.09	-2.84	27.25	46.00	-18.75	-	-	peak
6	972.2827	32.07	2.27	34.34	54.00	-19.66	-	-	peak

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



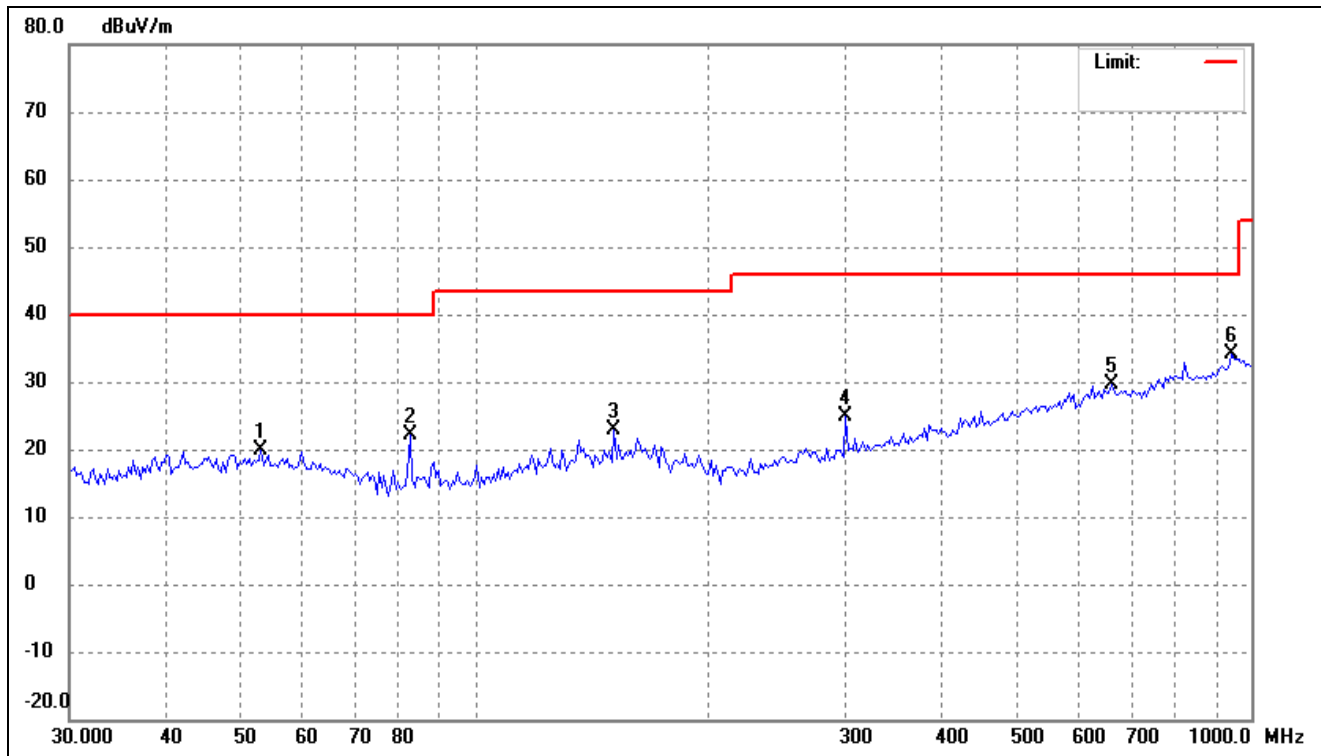
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	46.7077	28.56	-8.34	20.22	40.00	-19.78	-	-	peak
2	86.0796	33.56	-13.04	20.52	40.00	-19.48	-	-	peak
3	151.0252	32.06	-8.61	23.45	43.50	-20.05	-	-	peak
4	452.0013	29.03	-4.56	24.47	46.00	-21.53	-	-	peak
5	765.6482	30.57	-0.01	30.56	46.00	-15.44	-	-	peak
6	945.3336	31.74	2.15	33.89	46.00	-12.11	-	-	peak

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



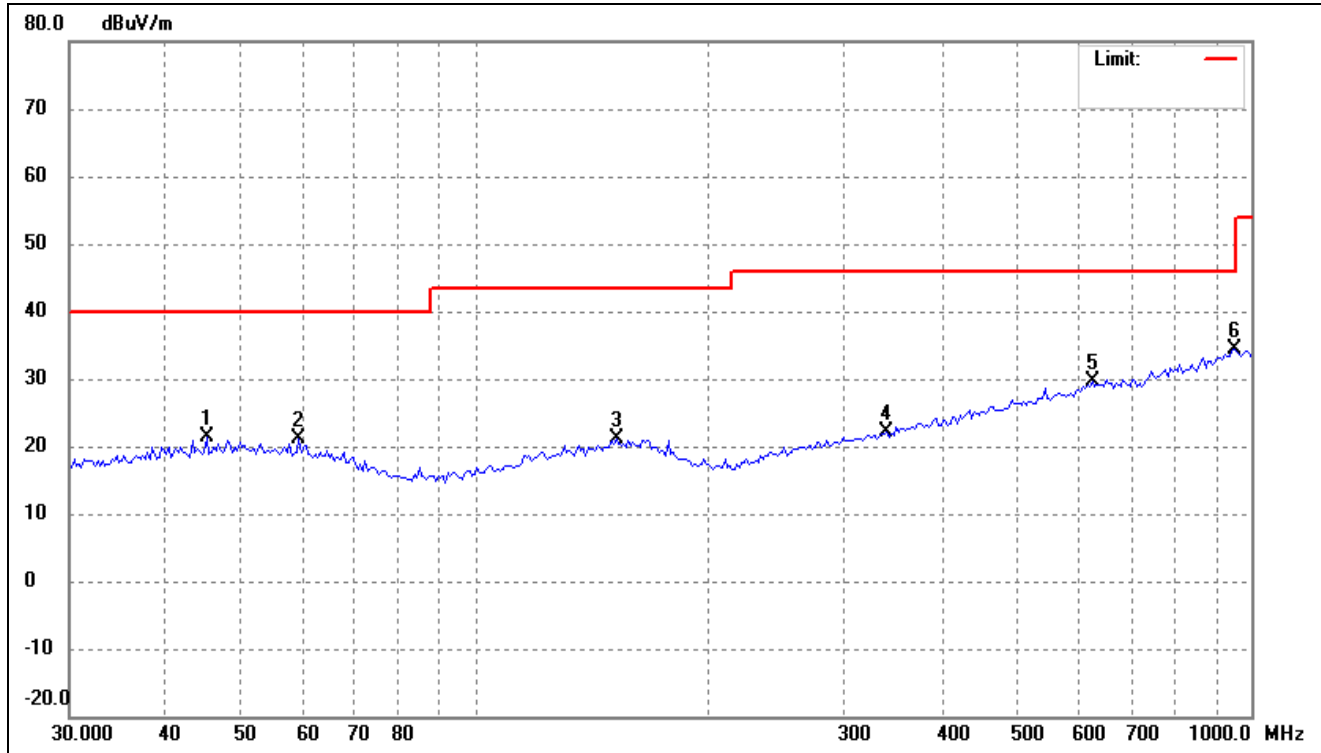
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	44.1544	27.68	-8.47	19.21	40.00	-20.79	-	-	peak
2	60.1528	29.03	-8.97	20.06	40.00	-19.94	-	-	peak
3	156.4259	29.33	-8.60	20.73	43.50	-22.77	-	-	peak
4	368.6682	29.25	-6.63	22.62	46.00	-23.38	-	-	peak
5	558.0788	30.20	-2.66	27.54	46.00	-18.46	-	-	peak
6	965.4742	31.82	2.27	34.09	54.00	-19.91	-	-	peak

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



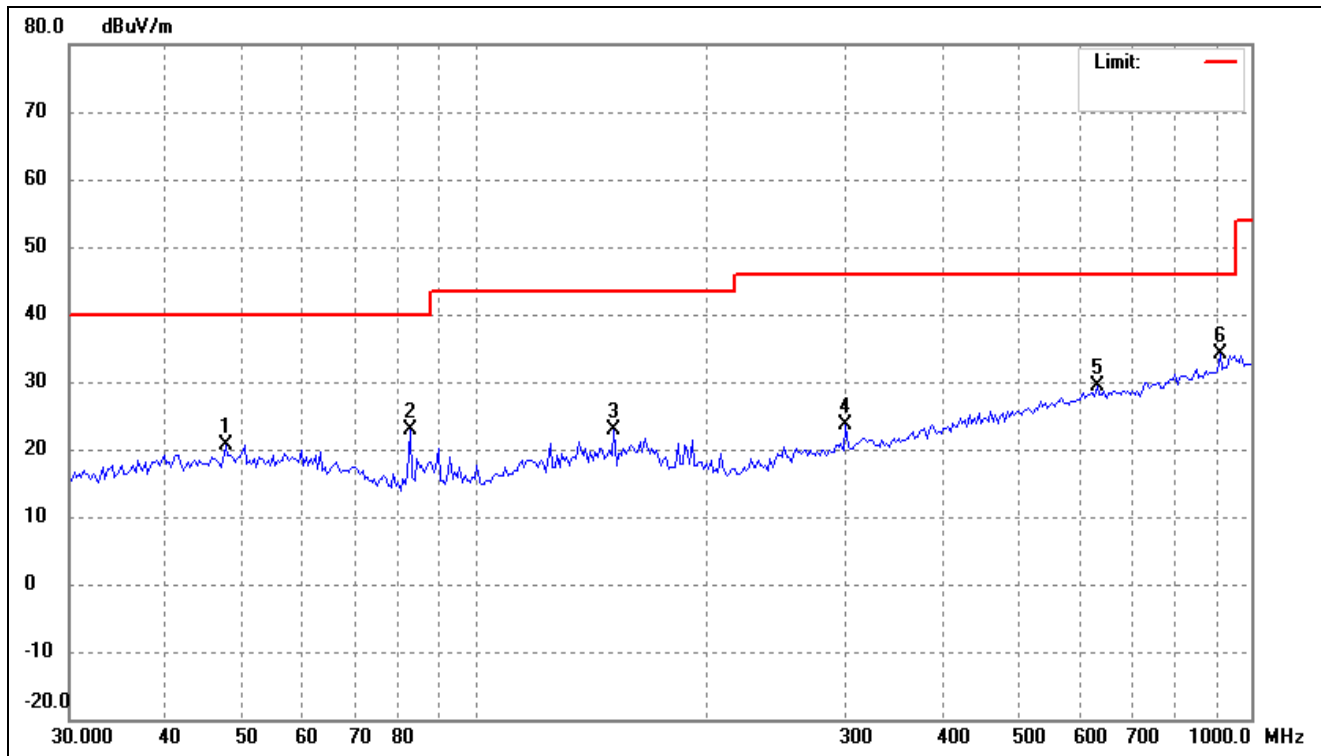
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	53.0056	28.25	-8.41	19.84	40.00	-20.16	-	-	peak
2	82.5257	35.01	-13.00	22.01	40.00	-17.99	-	-	peak
3	151.0252	31.54	-8.61	22.93	43.50	-20.57	-	-	peak
4	300.6988	33.22	-8.24	24.98	46.00	-21.02	-	-	peak
5	660.6025	30.87	-1.28	29.59	46.00	-16.41	-	-	peak
6	945.3336	31.86	2.15	34.01	46.00	-11.99	-	-	peak

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



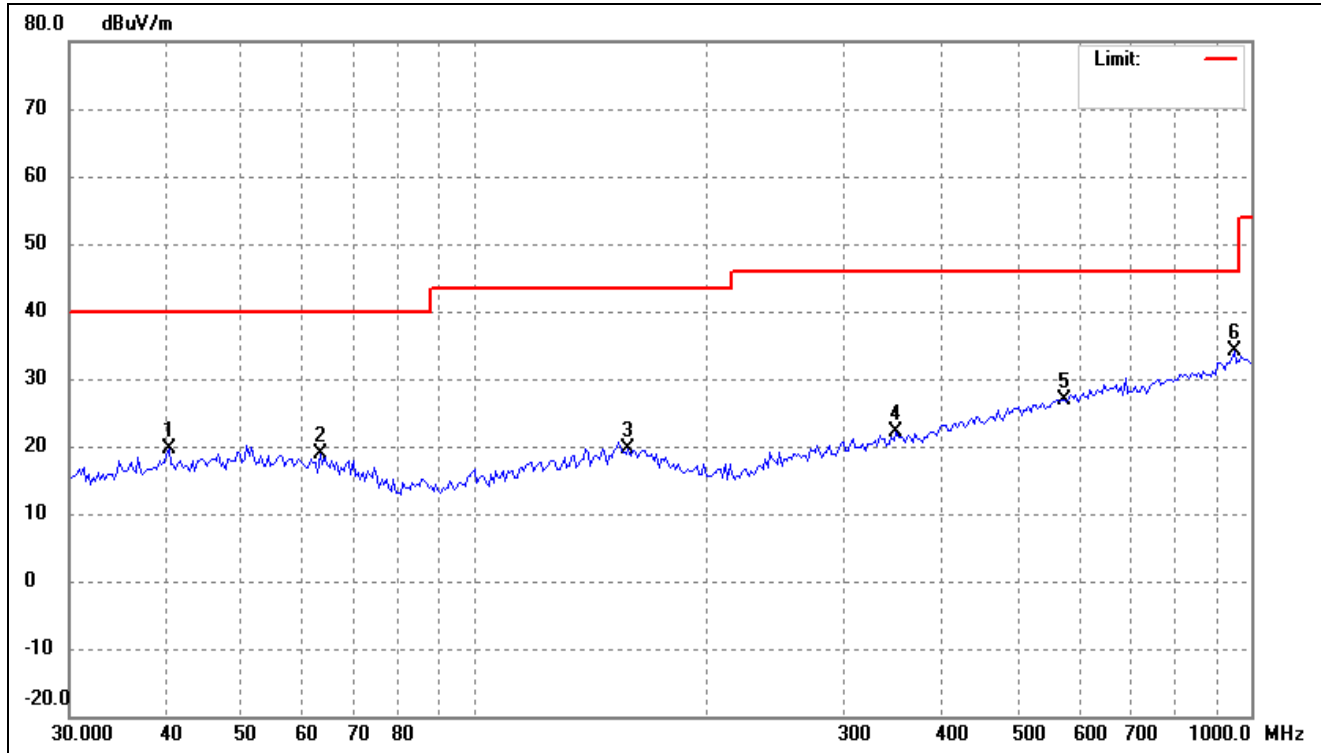
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	45.0951	29.76	-8.46	21.30	40.00	-18.70	-	-	peak
2	59.3133	29.95	-8.90	21.05	40.00	-18.95	-	-	peak
3	152.0902	29.69	-8.60	21.09	43.50	-22.41	-	-	peak
4	338.8546	29.56	-7.31	22.25	46.00	-23.75	-	-	peak
5	624.4897	31.03	-1.41	29.62	46.00	-16.38	-	-	peak
6	952.0001	32.23	2.25	34.48	46.00	-11.52	-	-	peak

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



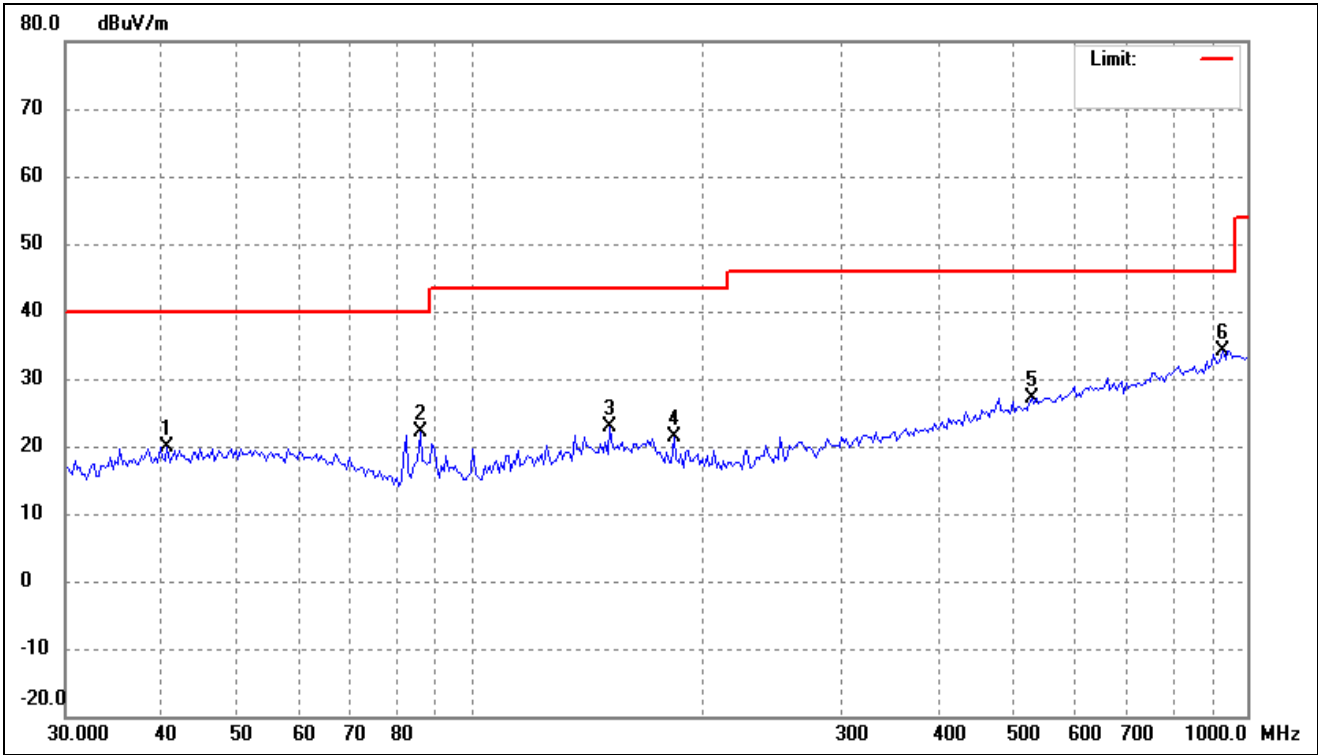
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	47.7028	28.87	-8.27	20.60	40.00	-19.40	-	-	peak
2	82.5257	35.90	-13.00	22.90	40.00	-17.10	-	-	peak
3	151.0252	31.51	-8.61	22.90	43.50	-20.60	-	-	peak
4	300.6988	31.83	-8.24	23.59	46.00	-22.41	-	-	peak
5	633.3285	30.78	-1.37	29.41	46.00	-16.59	-	-	peak
6	912.6953	32.63	1.46	34.09	46.00	-11.91	-	-	peak

802.11ac-HT80			
Test Channel	5290MHz(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	40.2995	28.16	-8.48	19.68	40.00	-20.32	-	-	peak
2	63.1857	28.49	-9.52	18.97	40.00	-21.03	-	-	peak
3	157.5290	28.14	-8.61	19.53	43.50	-23.97	-	-	peak
4	348.5145	29.17	-7.14	22.03	46.00	-23.97	-	-	peak
5	573.9882	29.26	-2.27	26.99	46.00	-19.01	-	-	peak
6	952.0001	31.95	2.25	34.20	46.00	-11.80	-	-	peak

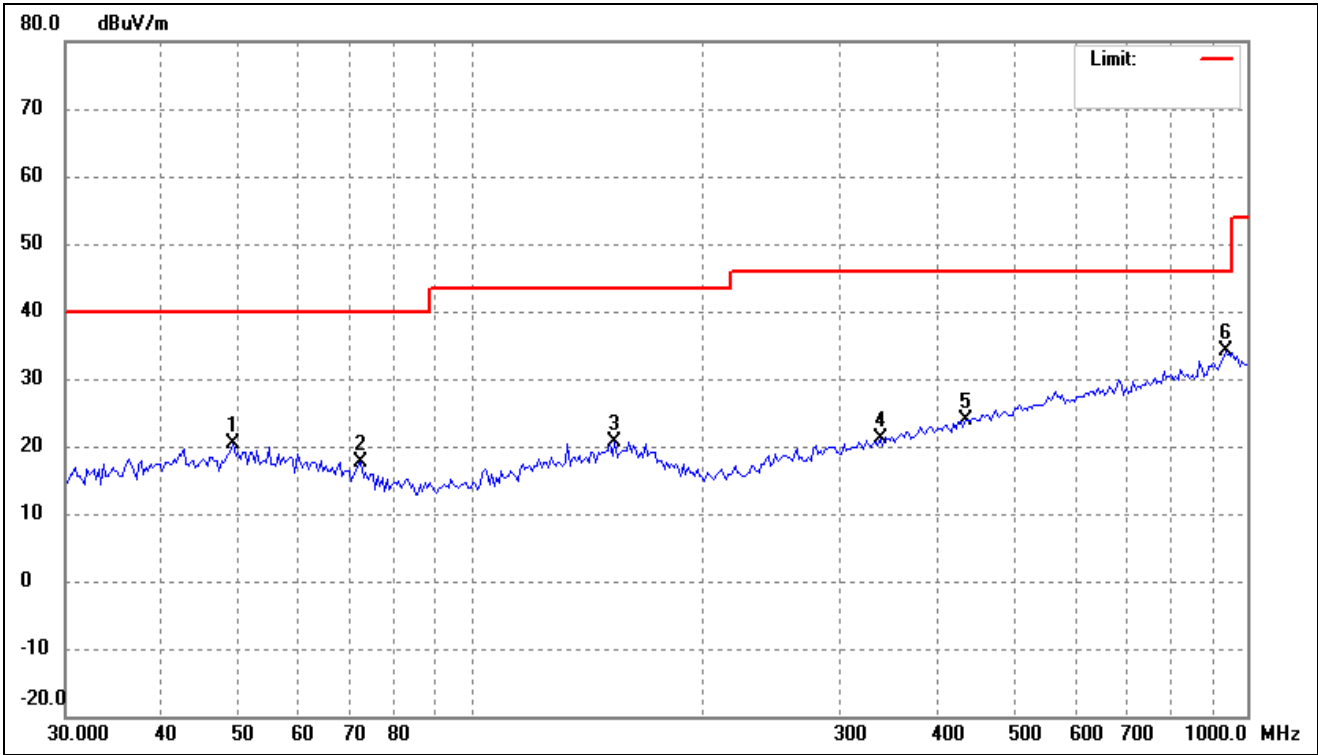
802.11ac-HT80			
Test Channel	5290MHz(worst case)	Polarity:	Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	40.5837	28.29	-8.48	19.81	40.00	-20.19	-	-	peak
2	86.0796	35.17	-13.04	22.13	40.00	-17.87	-	-	peak
3	151.0252	31.55	-8.61	22.94	43.50	-20.56	-	-	peak
4	182.5785	32.00	-10.60	21.40	43.50	-22.10	-	-	peak
5	527.5707	30.57	-3.45	27.12	46.00	-18.88	-	-	peak
6	932.1405	32.34	1.87	34.21	46.00	-11.79	-	-	peak

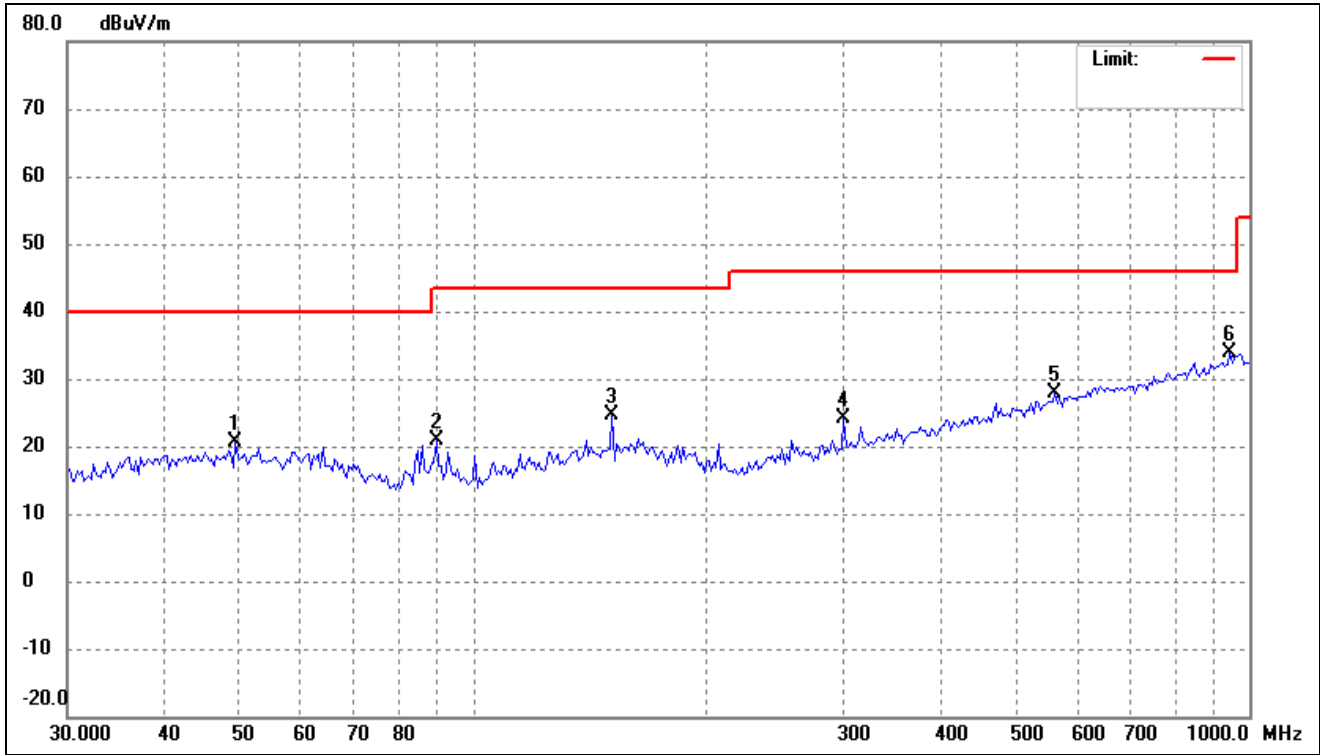
➤ 5470-5725MHz

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



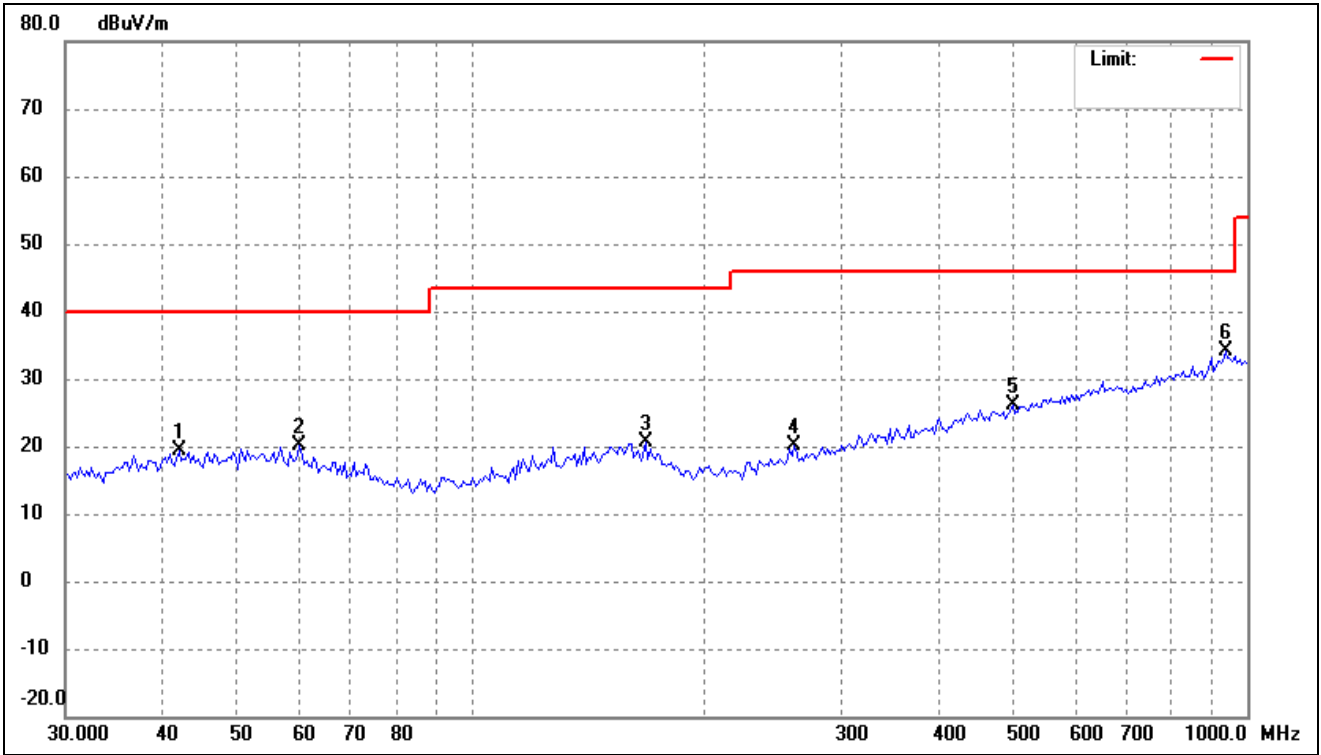
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	49.4087	28.41	-8.13	20.28	40.00	-19.72	-	-	peak
2	72.2111	28.89	-11.26	17.63	40.00	-22.37	-	-	peak
3	153.1627	29.29	-8.61	20.68	43.50	-22.82	-	-	peak
4	336.4817	28.57	-7.35	21.22	46.00	-24.78	-	-	peak
5	433.3397	28.84	-5.05	23.79	46.00	-22.21	-	-	peak
6	938.7139	32.19	2.01	34.20	46.00	-11.80	-	-	peak

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



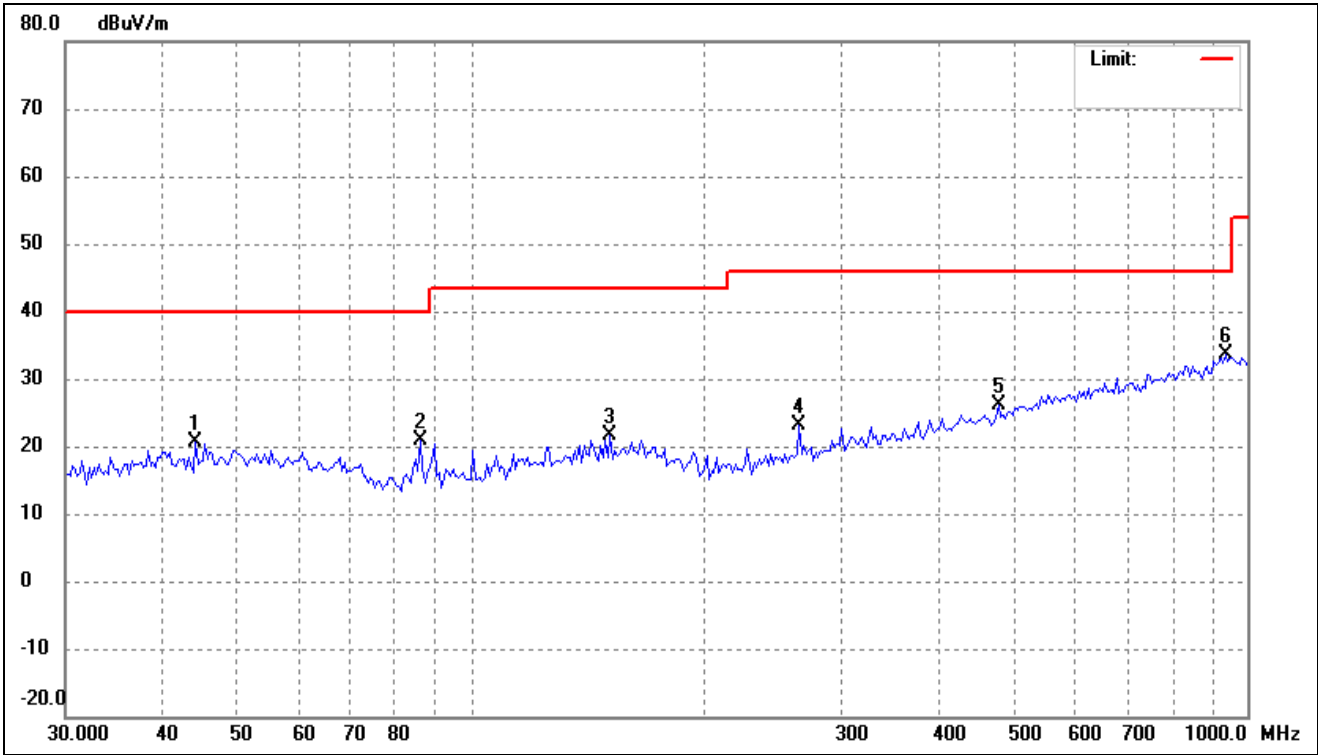
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	49.4087	28.72	-8.13	20.59	40.00	-19.41	-	-	peak
2	89.7866	34.05	-13.10	20.95	43.50	-22.55	-	-	peak
3	151.0252	33.21	-8.61	24.60	43.50	-18.90	-	-	peak
4	300.6988	32.49	-8.24	24.25	46.00	-21.75	-	-	peak
5	562.0143	30.55	-2.55	28.00	46.00	-18.00	-	-	peak
6	945.3336	31.80	2.15	33.95	46.00	-12.05	-	-	peak

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



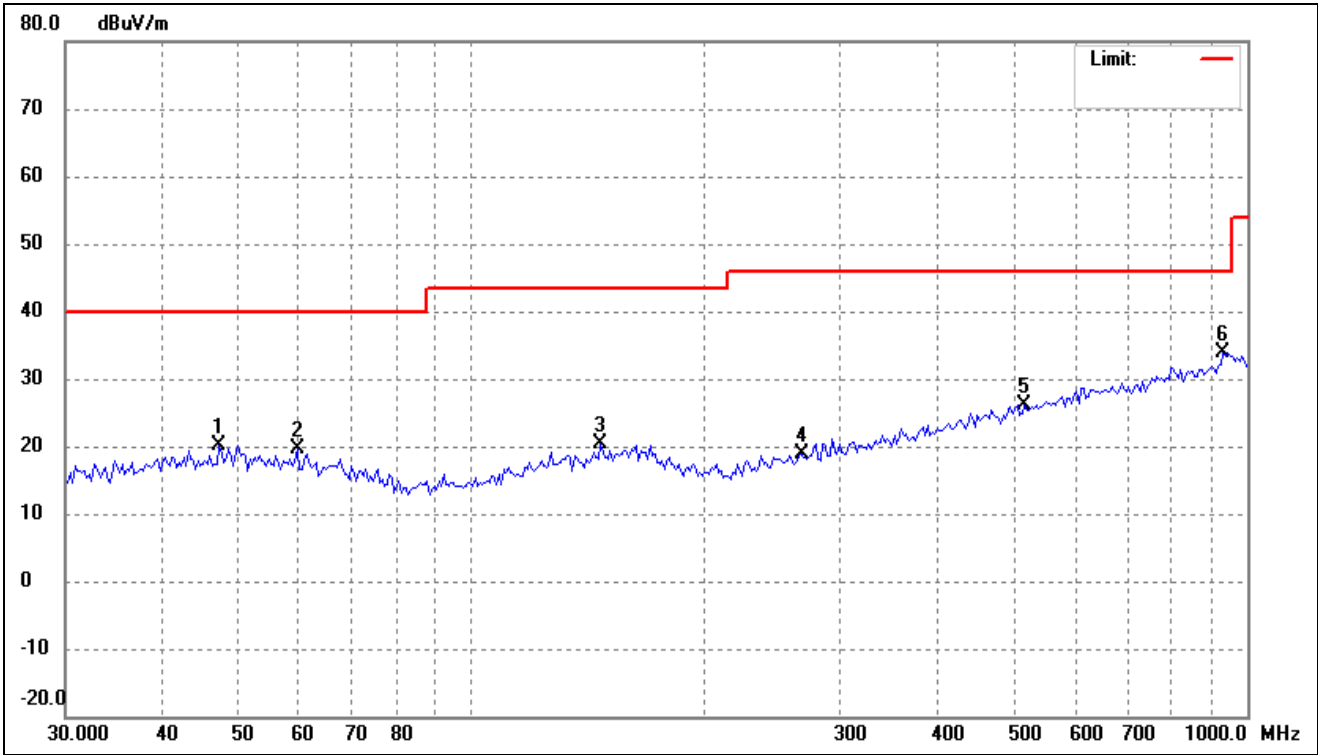
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	42.0350	27.83	-8.47	19.36	40.00	-20.64	-	-	peak
2	60.1528	29.14	-8.97	20.17	40.00	-19.83	-	-	peak
3	167.8136	29.41	-8.82	20.59	43.50	-22.91	-	-	peak
4	261.2730	29.87	-9.71	20.16	46.00	-25.84	-	-	peak
5	498.7303	30.04	-3.92	26.12	46.00	-19.88	-	-	peak
6	938.7139	32.01	2.01	34.02	46.00	-11.98	-	-	peak

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



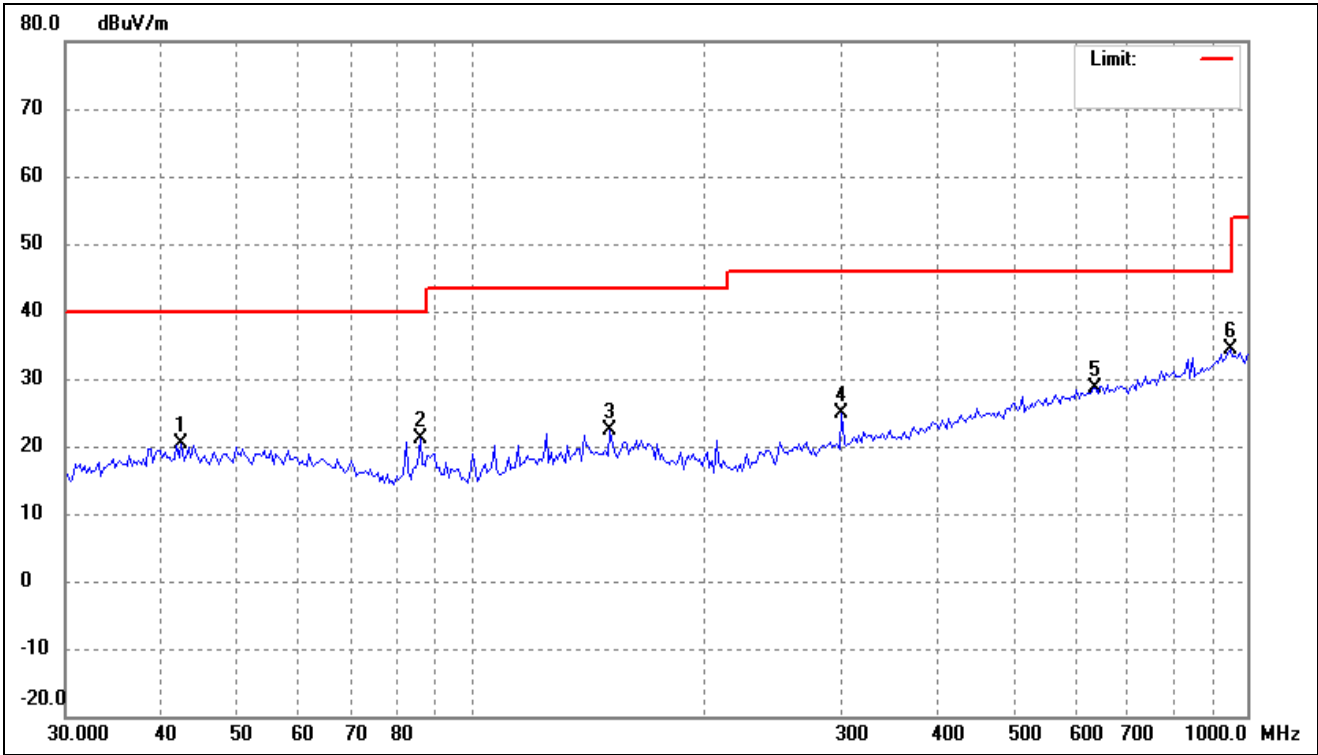
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	44.1544	29.10	-8.47	20.63	40.00	-19.37	-	-	peak
2	86.0796	33.86	-13.04	20.82	40.00	-19.18	-	-	peak
3	151.0252	30.16	-8.61	21.55	43.50	-21.95	-	-	peak
4	264.9709	32.78	-9.55	23.23	46.00	-22.77	-	-	peak
5	478.1394	30.45	-4.20	26.25	46.00	-19.75	-	-	peak
6	938.7139	31.73	2.01	33.74	46.00	-12.26	-	-	peak

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



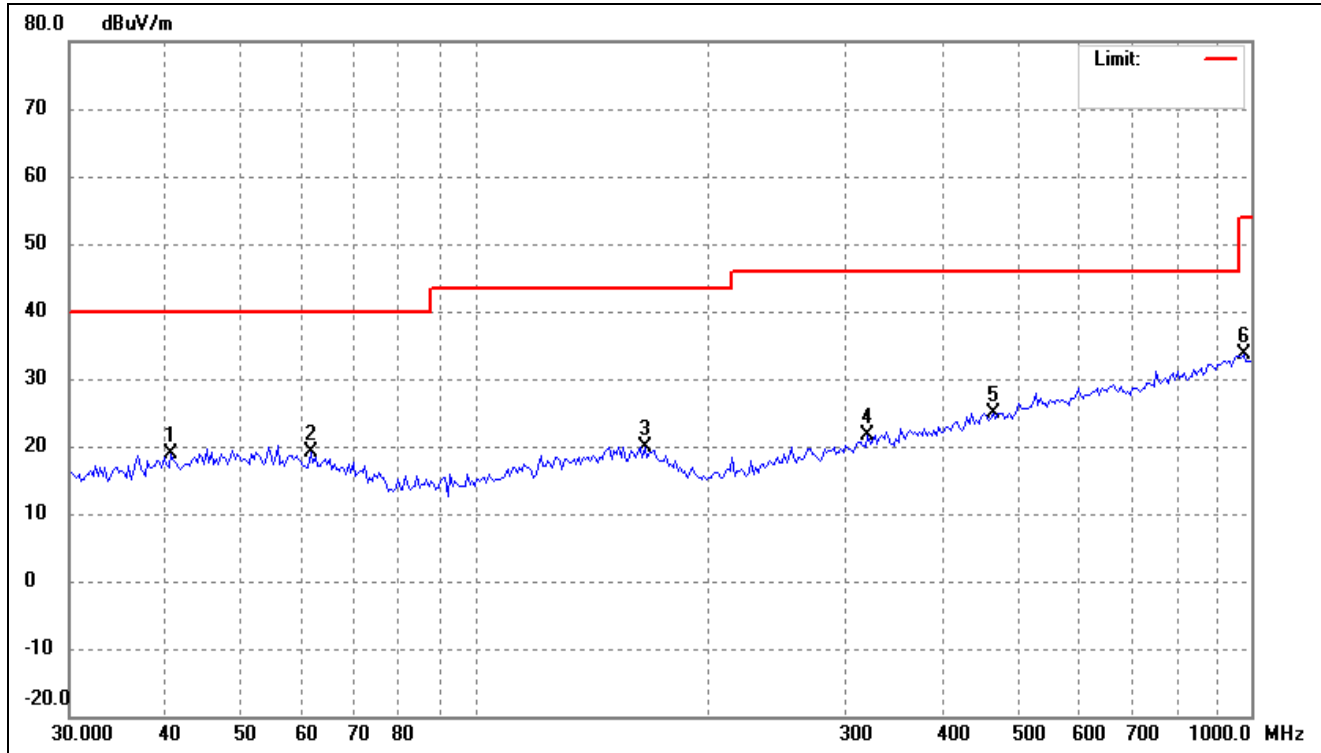
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	47.3688	28.44	-8.29	20.15	40.00	-19.85	-	-	peak
2	59.7315	28.58	-8.92	19.66	40.00	-20.34	-	-	peak
3	146.8392	29.21	-8.85	20.36	43.50	-23.14	-	-	peak
4	266.8395	28.24	-9.46	18.78	46.00	-27.22	-	-	peak
5	516.5651	29.77	-3.65	26.12	46.00	-19.88	-	-	peak
6	932.1405	32.12	1.87	33.99	46.00	-12.01	-	-	peak

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



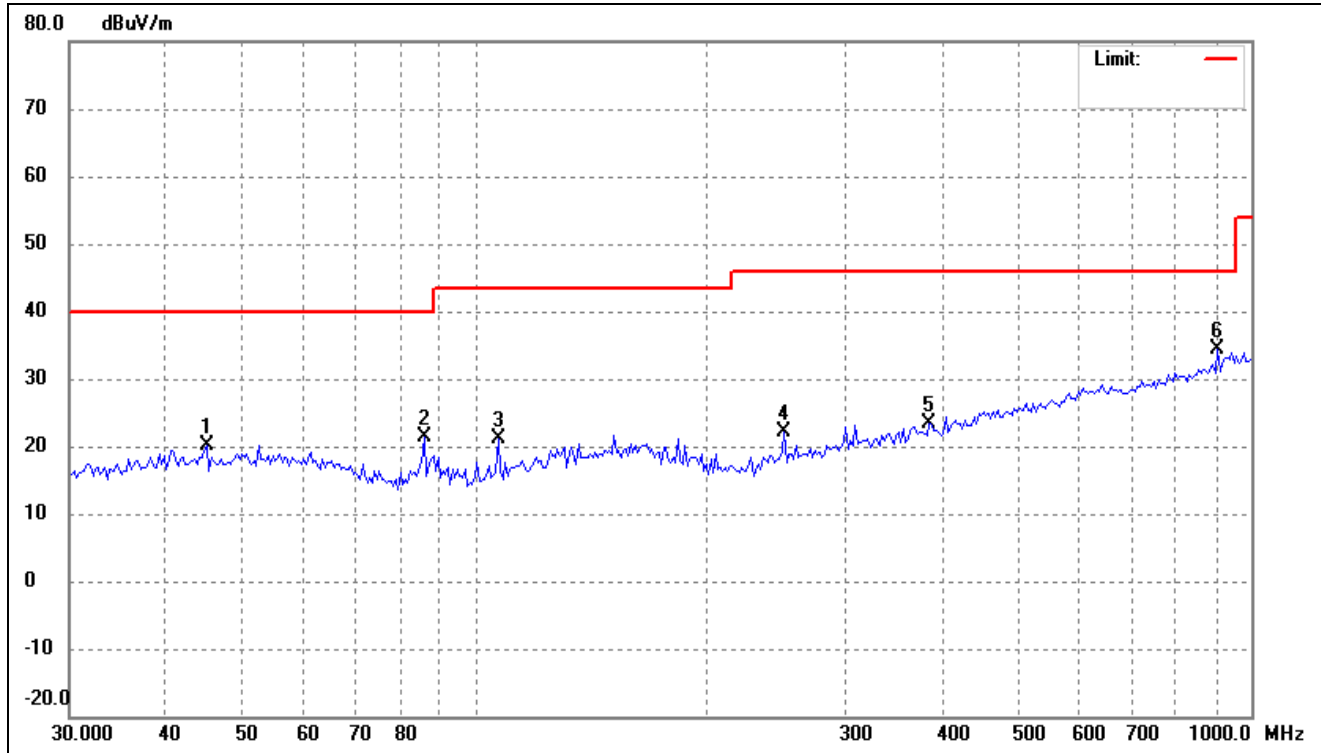
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	42.3314	28.92	-8.48	20.44	40.00	-19.56	-	-	peak
2	86.0796	34.21	-13.04	21.17	40.00	-18.83	-	-	peak
3	151.0252	31.03	-8.61	22.42	43.50	-21.08	-	-	peak
4	300.6988	33.00	-8.24	24.76	46.00	-21.24	-	-	peak
5	637.7947	29.95	-1.36	28.59	46.00	-17.41	-	-	peak
6	952.0001	32.17	2.25	34.42	46.00	-11.58	-	-	peak

802.11ac-HT80			
Test Channel	5530MHz(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	40.5837	27.40	-8.48	18.92	40.00	-21.08	-	-	peak
2	61.4343	28.26	-9.20	19.06	40.00	-20.94	-	-	peak
3	165.4716	28.70	-8.76	19.94	43.50	-23.56	-	-	peak
4	320.3306	29.29	-7.68	21.61	46.00	-24.39	-	-	peak
5	464.8867	29.31	-4.37	24.94	46.00	-21.06	-	-	peak
6	979.1392	31.34	2.28	33.62	54.00	-20.38	-	-	peak

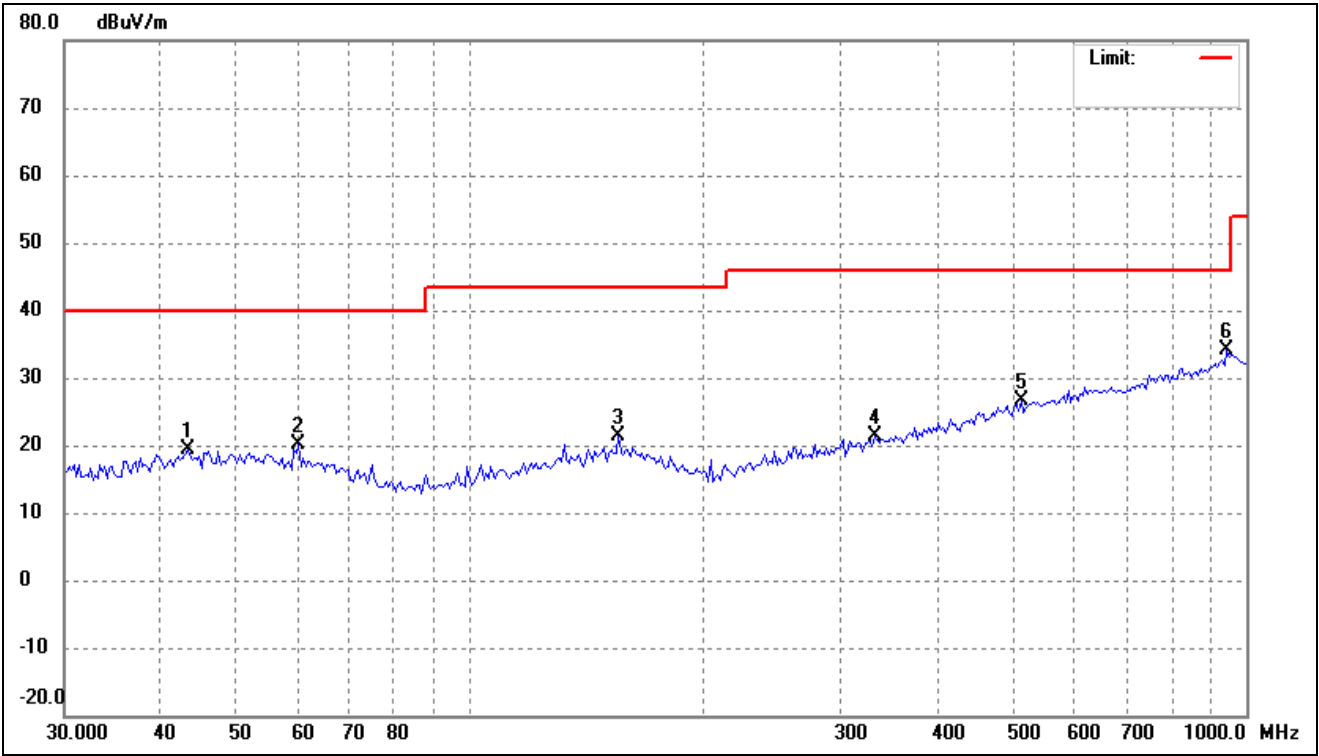
802.11ac-HT80			
Test Channel	5530MHz(worst case)	Polarity:	Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	45.0951	28.62	-8.46	20.16	40.00	-19.84	-	-	peak
2	86.0796	34.48	-13.04	21.44	40.00	-18.56	-	-	peak
3	107.0306	32.91	-11.85	21.06	43.50	-22.44	-	-	peak
4	250.4859	32.28	-10.18	22.10	46.00	-23.90	-	-	peak
5	384.5447	29.77	-6.28	23.49	46.00	-22.51	-	-	peak
6	906.3041	33.04	1.32	34.36	46.00	-11.64	-	-	peak

➤ 5725-5850MHz

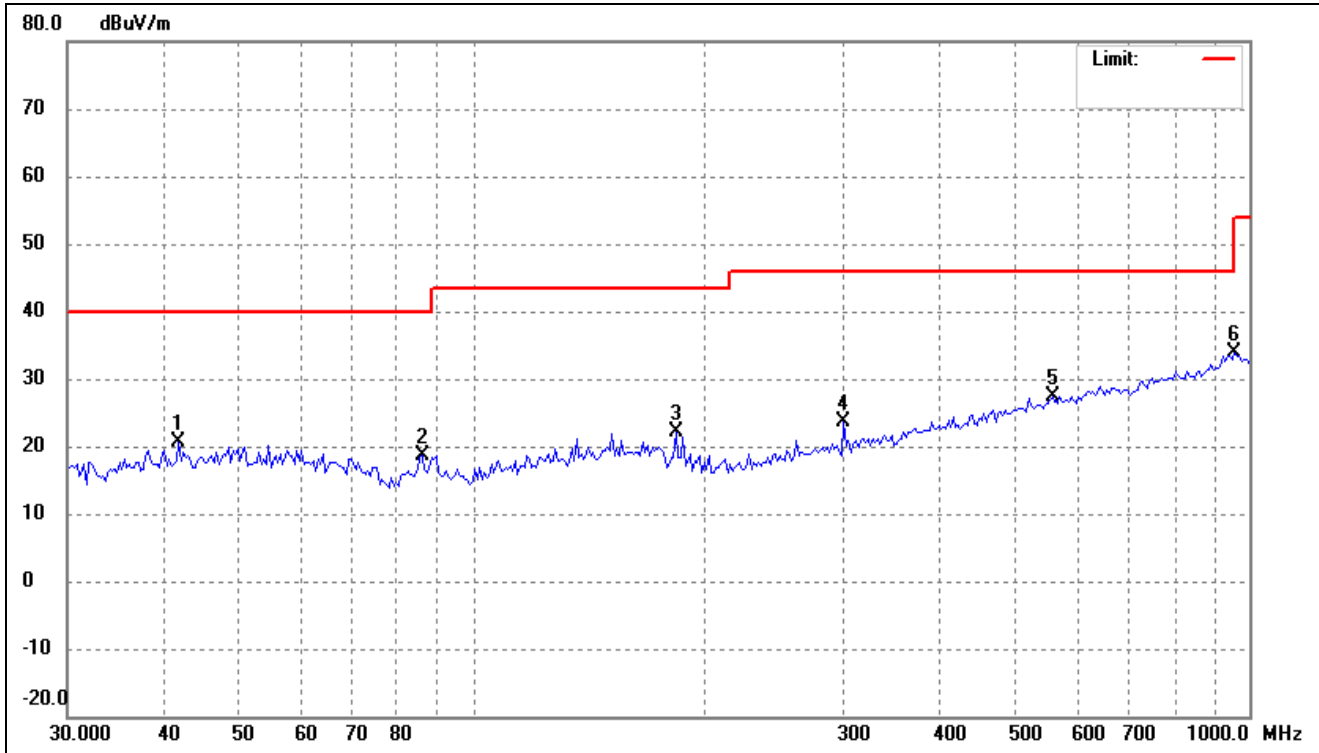
802.11a			
Test Channel	5745MHz(worst case)	Polarity:	Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	43.2333	27.80	-8.47	19.33	40.00	-20.67	-	-	peak
2	60.1528	29.04	-8.97	20.07	40.00	-19.93	-	-	peak
3	155.3305	29.97	-8.61	21.36	43.50	-22.14	-	-	peak
4	331.7858	28.89	-7.43	21.46	46.00	-24.54	-	-	peak
5	512.9478	30.30	-3.70	26.60	46.00	-19.40	-	-	peak
6	945.3336	32.03	2.15	34.18	46.00	-11.82	-	-	peak

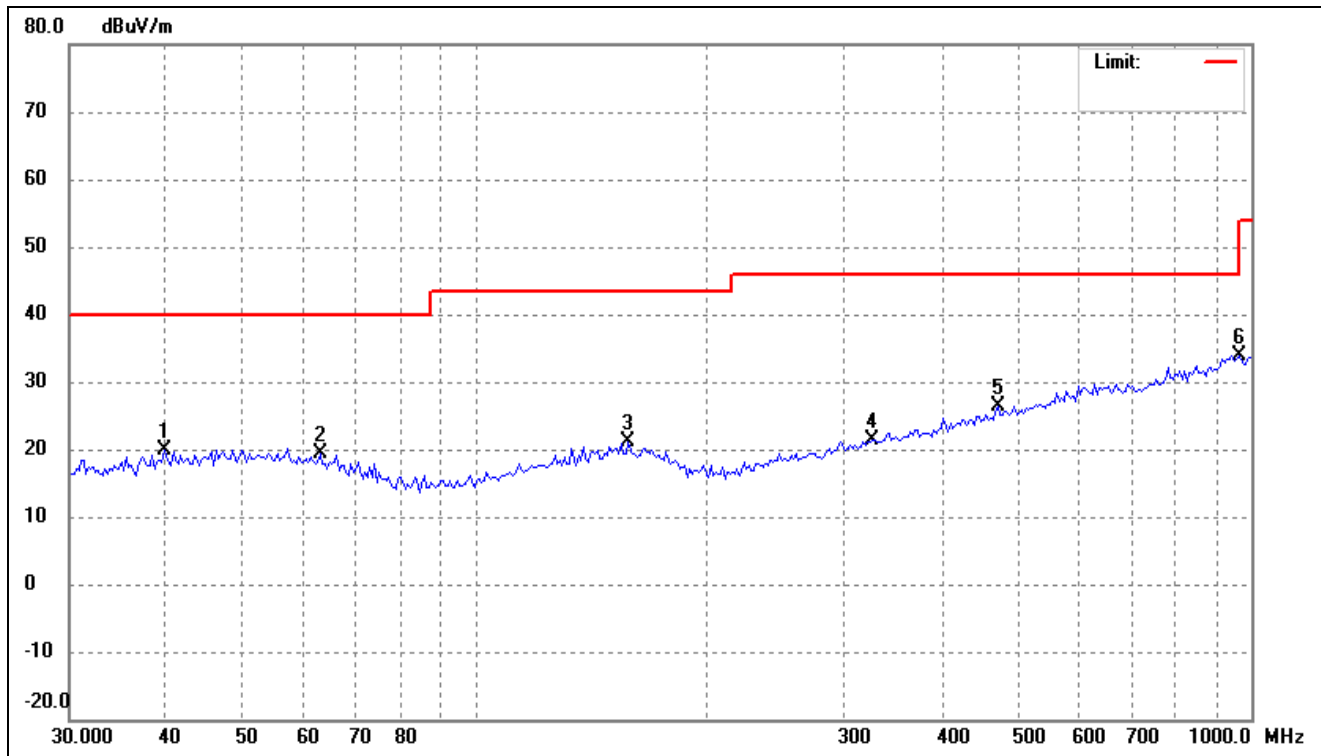
802.11a

Test Channel	5745MHz(worst case)	Polarity:	Vertical
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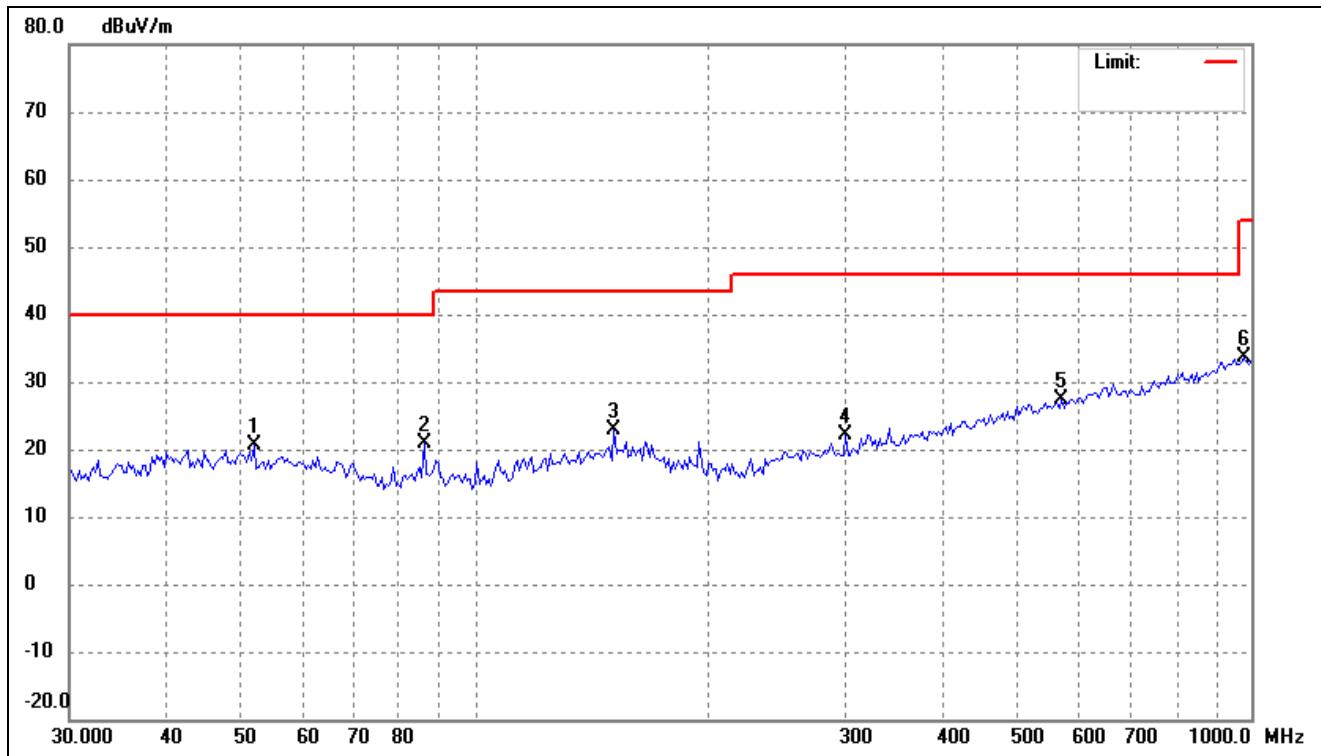
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	41.7406	29.21	-8.47	20.74	40.00	-19.26	-	-	peak
2	86.0796	31.67	-13.04	18.63	40.00	-21.37	-	-	peak
3	182.5785	32.84	-10.60	22.24	43.50	-21.26	-	-	peak
4	300.6988	31.83	-8.24	23.59	46.00	-22.41	-	-	peak
5	558.0788	30.00	-2.66	27.34	46.00	-18.66	-	-	peak
6	958.7135	31.67	2.26	33.93	46.00	-12.07	-	-	peak

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



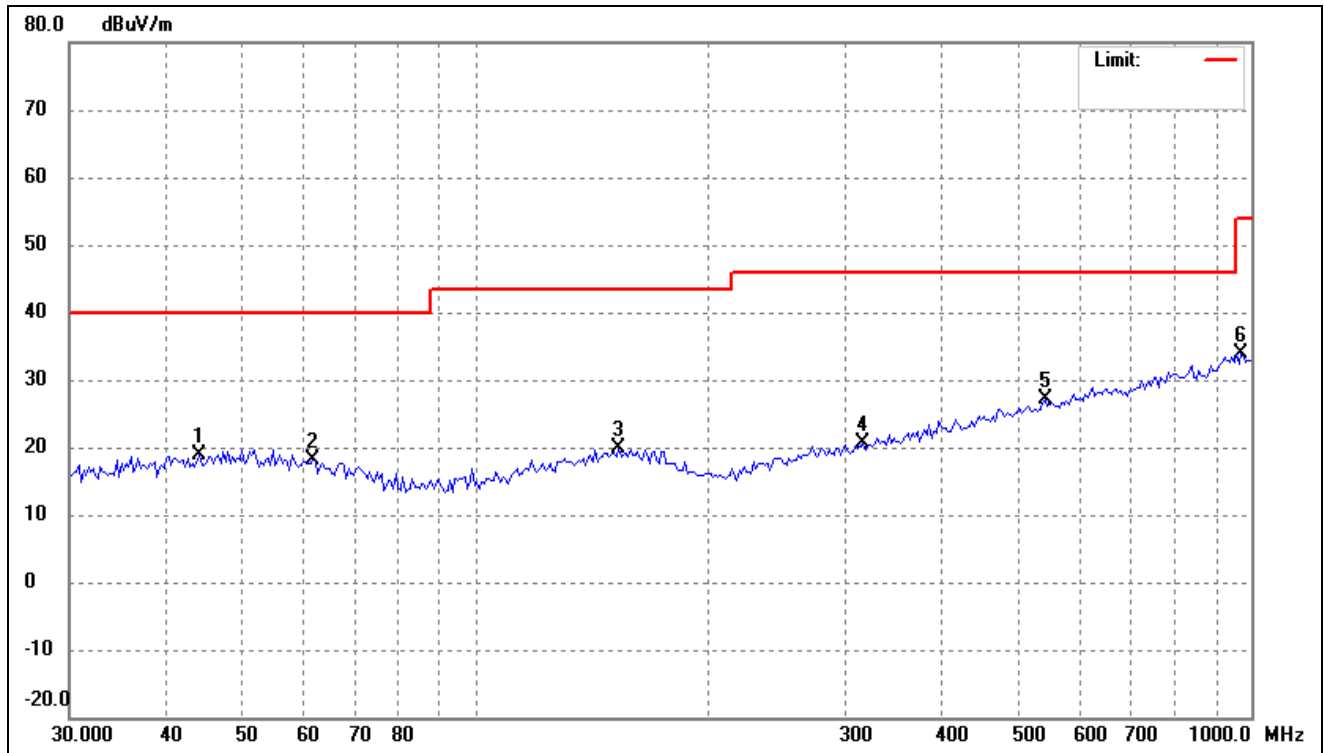
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	39.7371	28.40	-8.54	19.86	40.00	-20.14	-	-	peak
2	63.1857	29.01	-9.52	19.49	40.00	-20.51	-	-	peak
3	157.5290	29.84	-8.61	21.23	43.50	-22.27	-	-	peak
4	324.8645	28.98	-7.55	21.43	46.00	-24.57	-	-	peak
5	471.4665	30.63	-4.29	26.34	46.00	-19.66	-	-	peak
6	965.4742	31.51	2.27	33.78	54.00	-20.22	-	-	peak

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



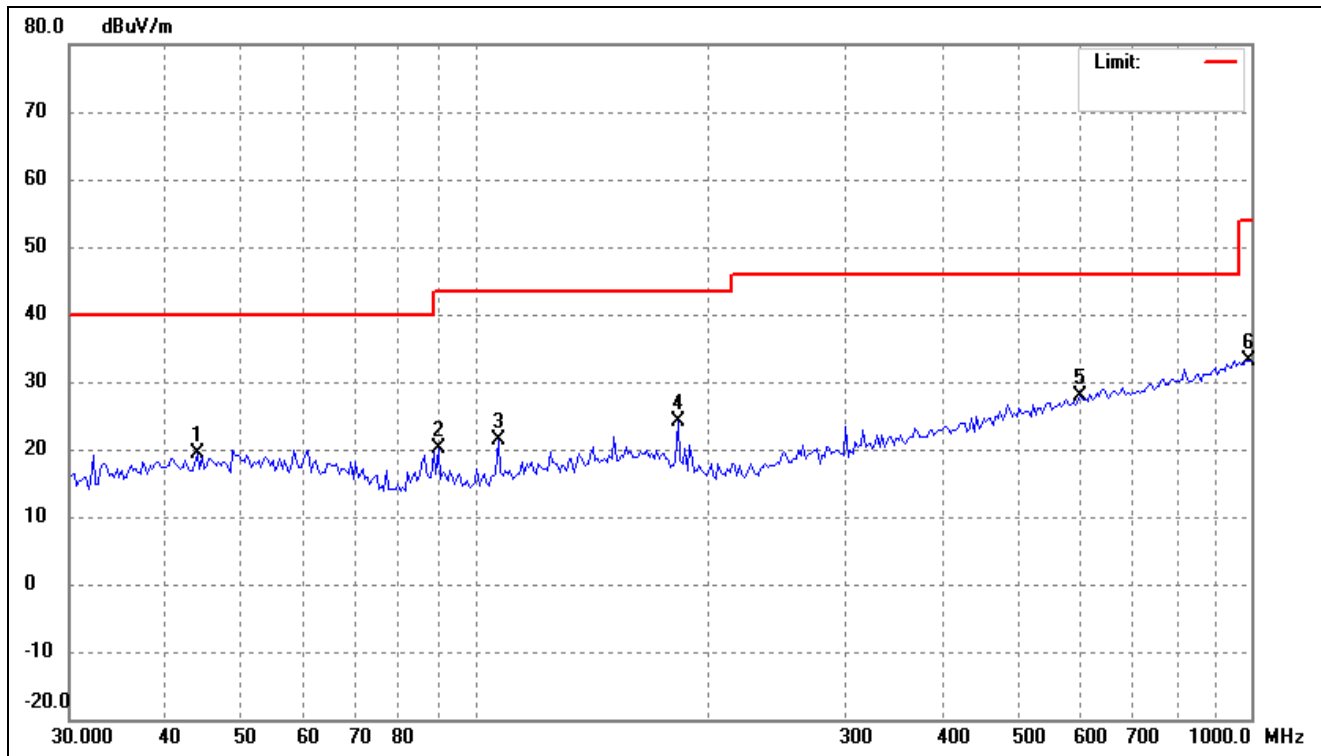
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	51.8999	29.03	-8.29	20.74	40.00	-19.26	-	-	peak
2	86.0796	34.02	-13.04	20.98	40.00	-19.02	-	-	peak
3	151.0252	31.55	-8.61	22.94	43.50	-20.56	-	-	peak
4	300.6988	30.34	-8.24	22.10	46.00	-23.90	-	-	peak
5	569.9688	29.68	-2.36	27.32	46.00	-18.68	-	-	peak
6	979.1392	31.47	2.28	33.75	54.00	-20.25	-	-	peak

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



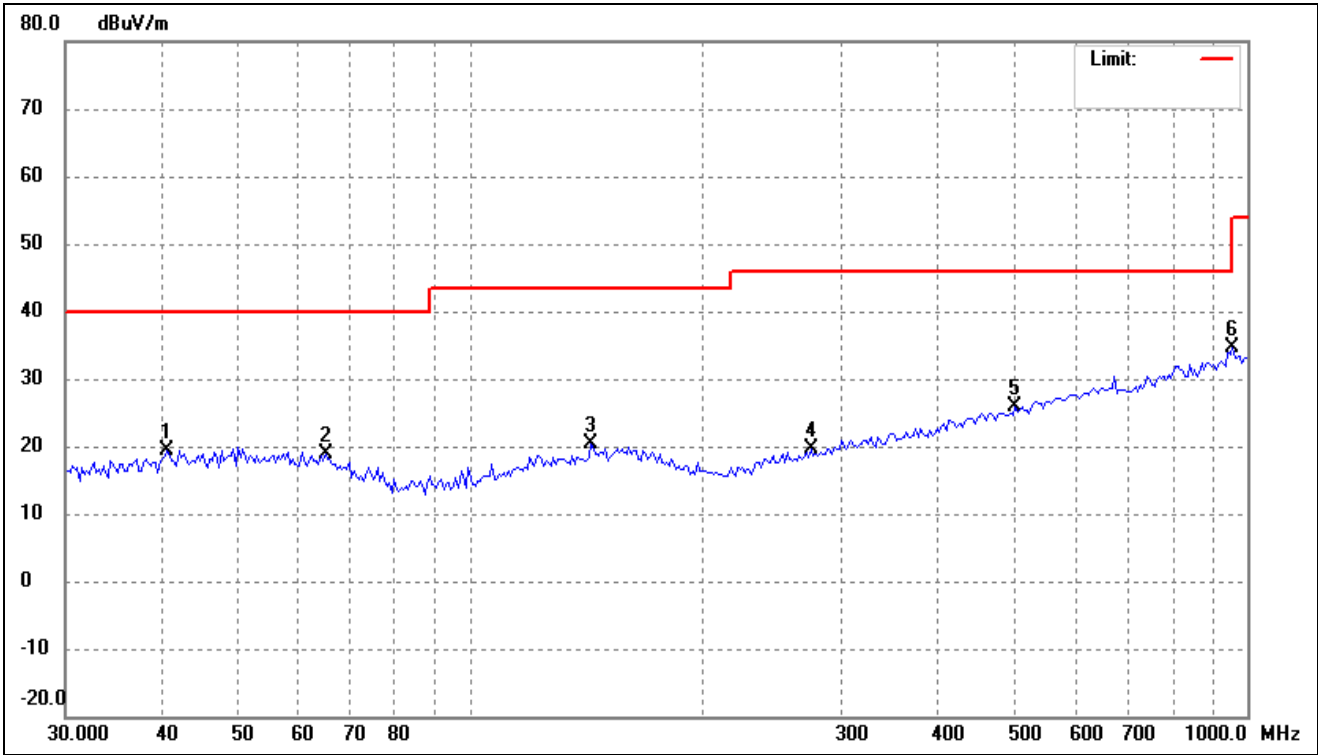
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	44.1544	27.30	-8.47	18.83	40.00	-21.17	-	-	peak
2	61.8676	27.49	-9.28	18.21	40.00	-21.79	-	-	peak
3	153.1627	28.57	-8.61	19.96	43.50	-23.54	-	-	peak
4	315.8601	28.51	-7.81	20.70	46.00	-25.30	-	-	peak
5	542.6104	30.11	-3.05	27.06	46.00	-18.94	-	-	peak
6	972.2827	31.70	2.27	33.97	54.00	-20.03	-	-	peak

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



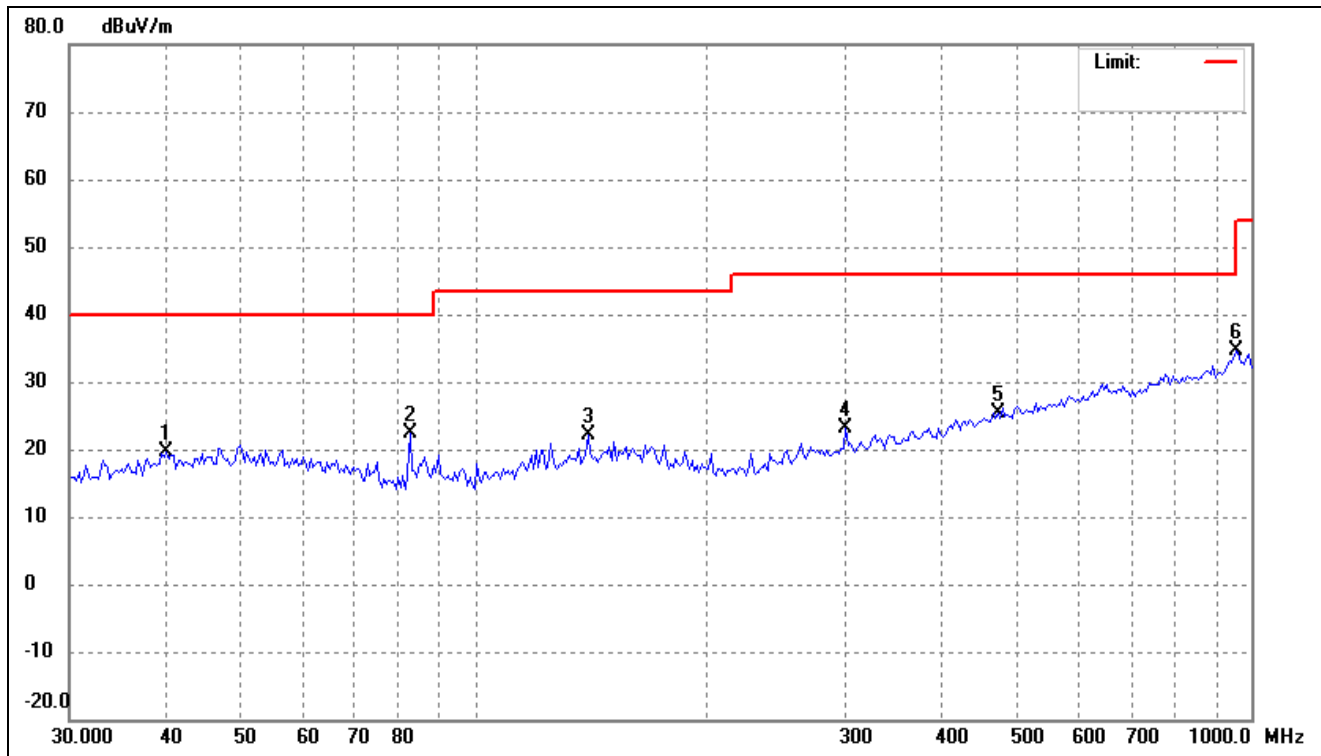
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	43.8452	27.96	-8.48	19.48	40.00	-20.52	-	-	peak
2	89.7866	33.22	-13.10	20.12	43.50	-23.38	-	-	peak
3	107.0306	33.17	-11.85	21.32	43.50	-22.18	-	-	peak
4	182.5785	34.85	-10.60	24.25	43.50	-19.25	-	-	peak
5	602.9287	29.50	-1.71	27.79	46.00	-18.21	-	-	peak
6	992.9975	30.95	2.30	33.25	54.00	-20.75	-	-	peak

802.11ac-HT80			
Test Channel	5775MHz(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	40.5837	27.93	-8.48	19.45	40.00	-20.55	-	-	peak
2	64.9869	28.69	-9.84	18.85	40.00	-21.15	-	-	peak
3	142.7692	29.55	-9.20	20.35	43.50	-23.15	-	-	peak
4	274.4464	28.86	-9.13	19.73	46.00	-26.27	-	-	peak
5	502.2473	29.66	-3.87	25.79	46.00	-20.21	-	-	peak
6	958.7135	32.25	2.26	34.51	46.00	-11.49	-	-	peak

802.11ac-HT80			
Test Channel	5775MHz(worst case)	Polarity:	Vertical

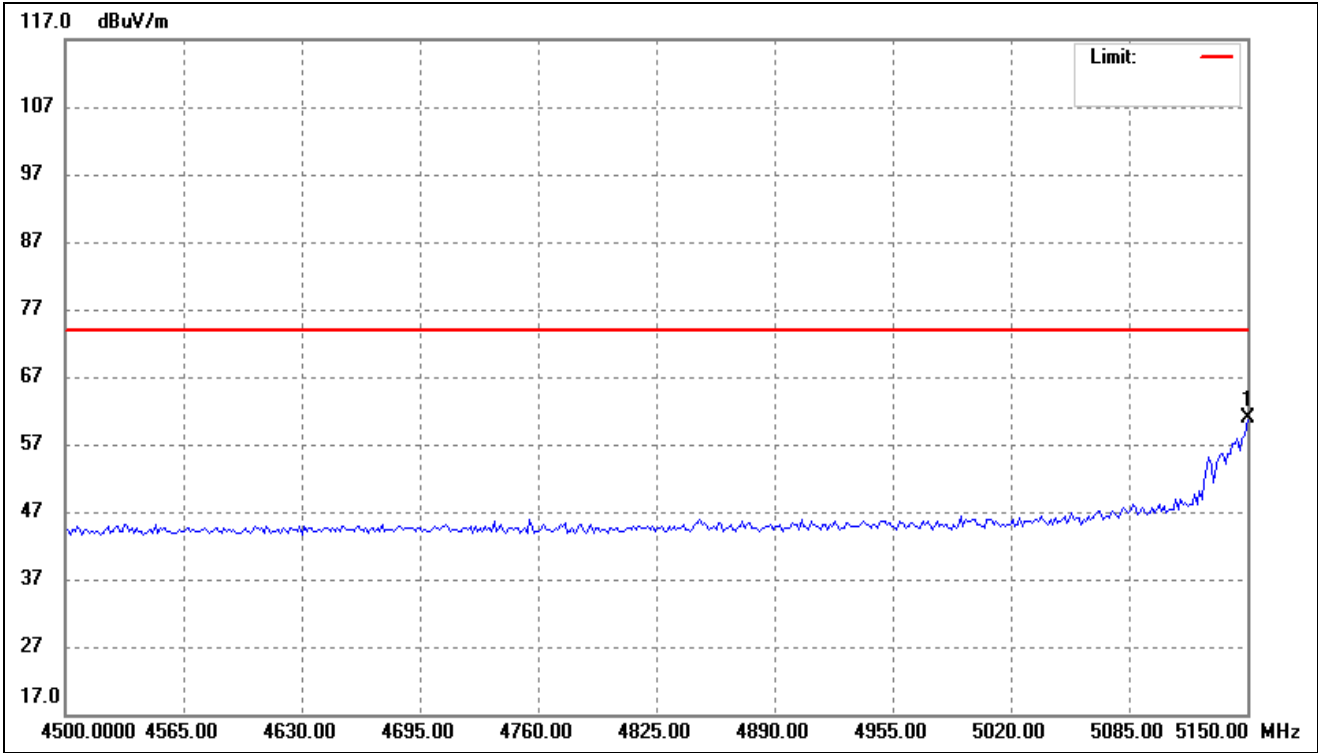


No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	40.0173	28.20	-8.47	19.73	40.00	-20.27	-	-	peak
2	82.5257	35.37	-13.00	22.37	40.00	-17.63	-	-	peak
3	139.7909	31.64	-9.44	22.20	43.50	-21.30	-	-	peak
4	300.6988	31.29	-8.24	23.05	46.00	-22.95	-	-	peak
5	471.4665	29.74	-4.29	25.45	46.00	-20.55	-	-	peak
6	958.7135	32.37	2.26	34.63	46.00	-11.37	-	-	peak

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

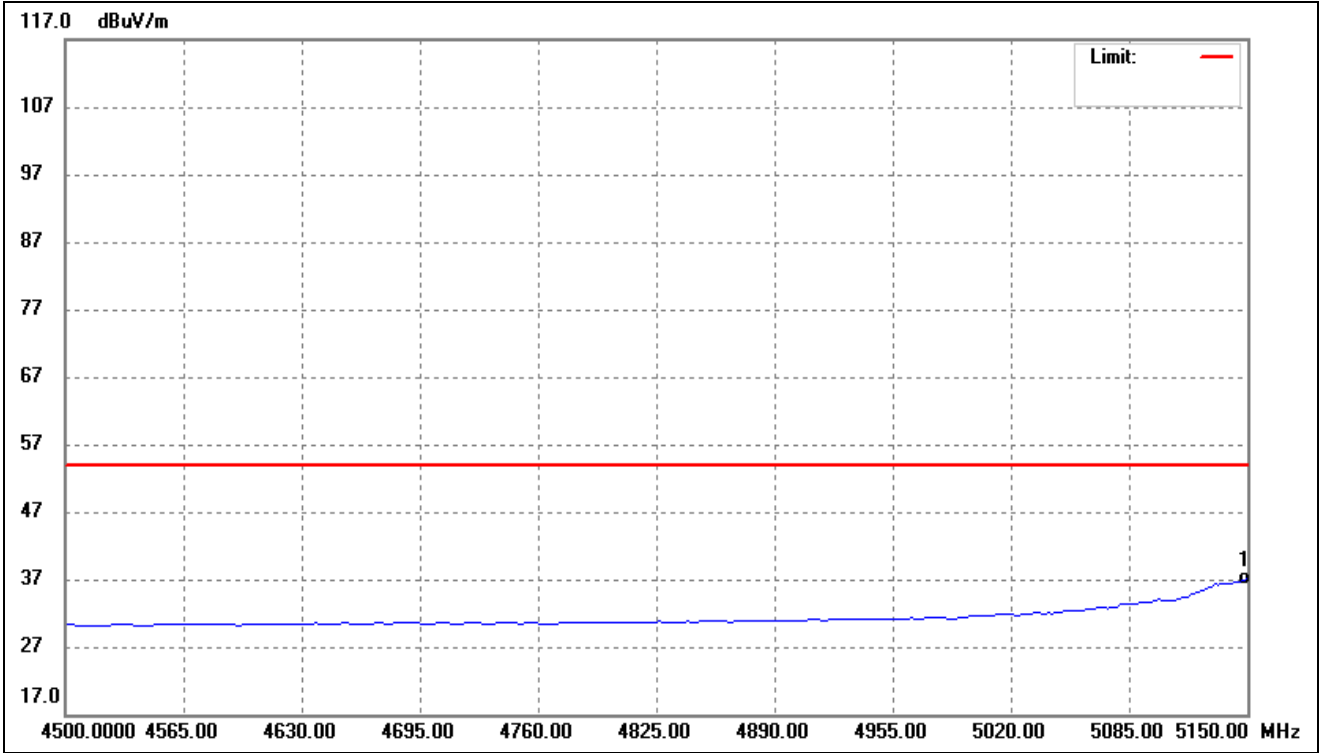
➤ Spurious Emission above 1GHz

802.11a- Restricted Bandedge			
Test Channel	band 5.15-5.25GHz	Polarity:	Horizontal(worst case)



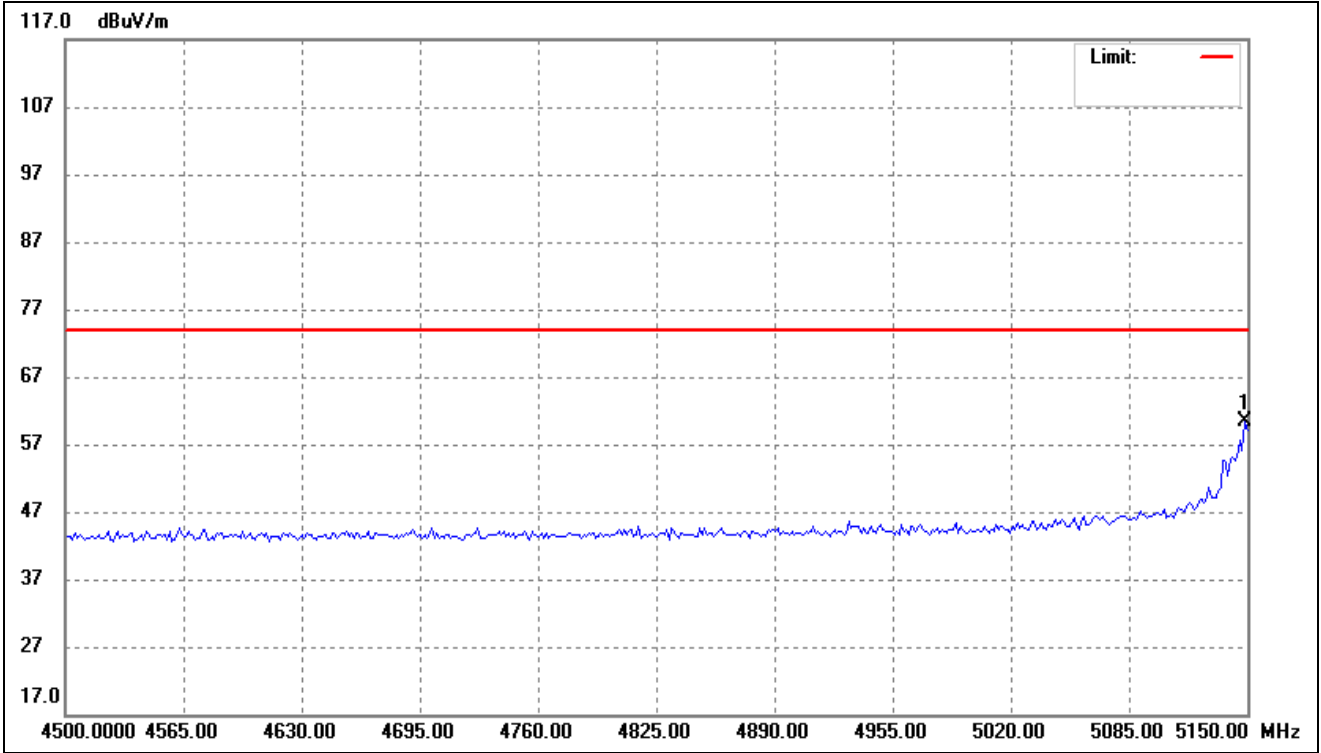
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	5150.000	72.46	-11.65	60.81	74.00	-13.19	-	-	peak

802.11a- Restricted Bandedge			
Test Channel	band 5.15-5.25GHz	Polarity:	Horizontal(worst case)



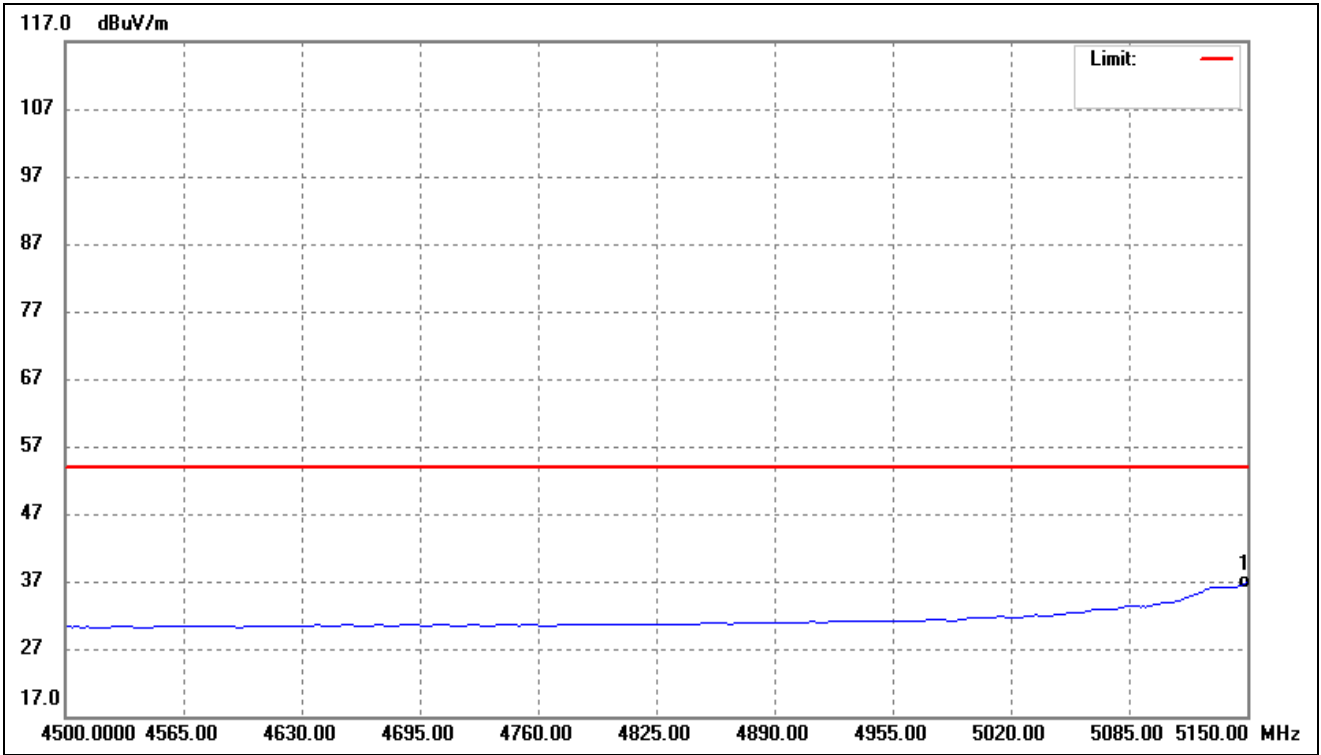
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	5150.000	48.69	-11.65	37.04	54.00	-16.96	-	-	AVG

802.11n-HT20- Restricted Bandedge			
Test Channel	band 5.15-5.25GHz	Polarity:	Horizontal(worst case)



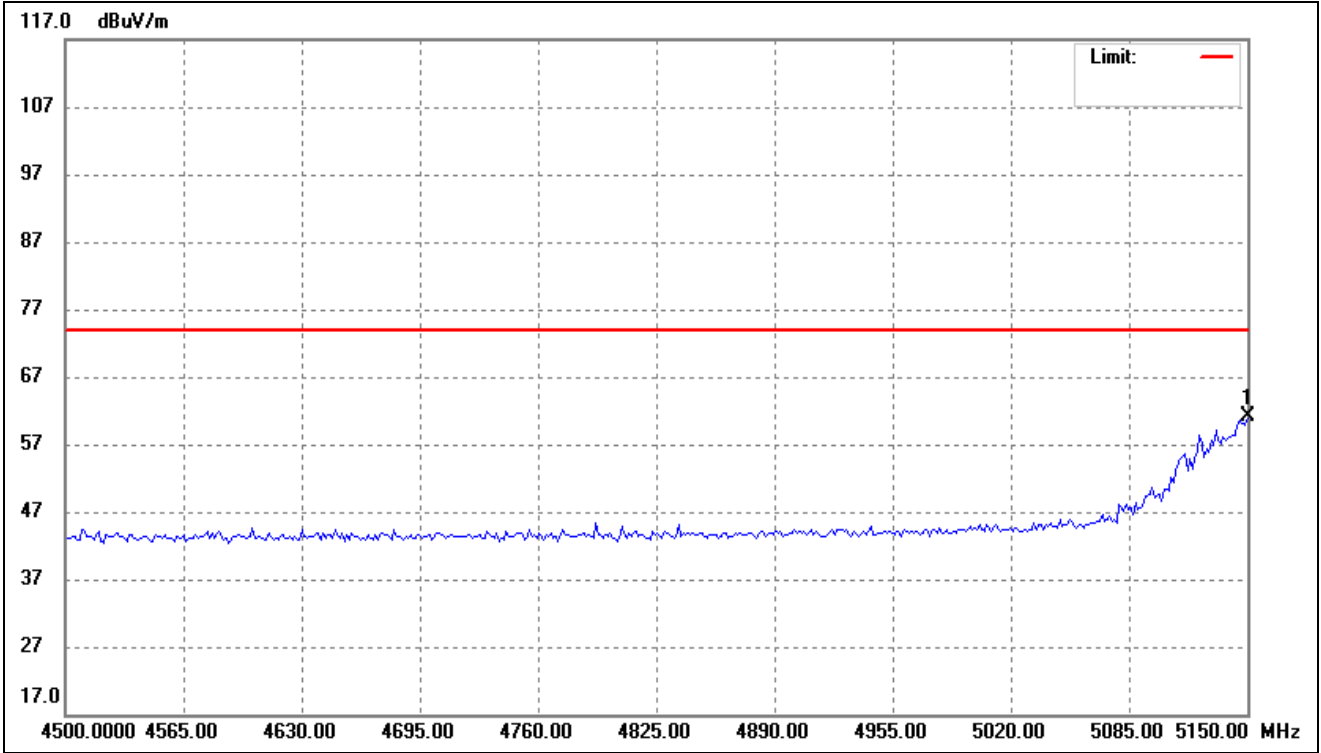
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	5148.697	71.92	-11.66	60.26	74.00	-13.74	-	-	peak

802.11n-HT20- Restricted Bandedge			
Test Channel	band 5.15-5.25GHz	Polarity:	Horizontal(worst case)



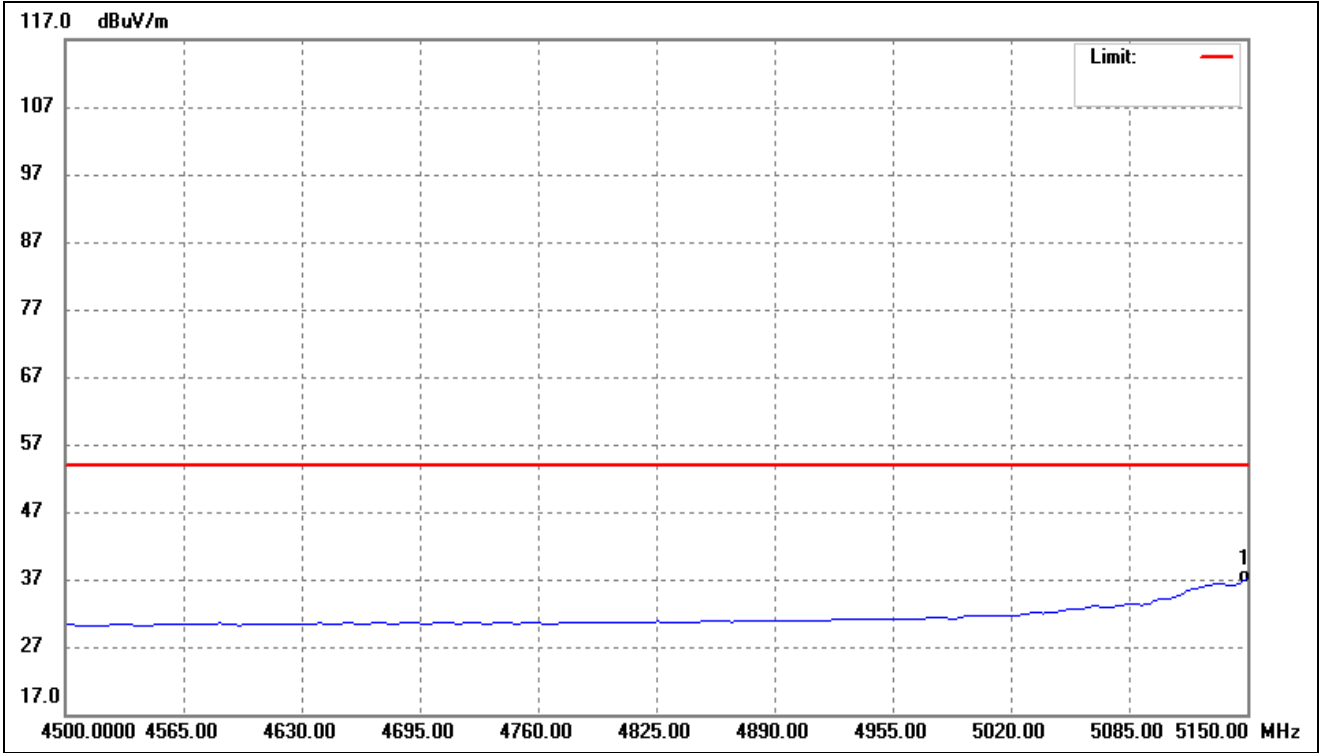
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	5150.000	48.44	-11.66	36.78	54.00	-17.22	-	-	AVG

802.11n-HT40- Restricted Bandedge			
Test Channel	band 5.15-5.25GHz	Polarity:	Horizontal(worst case)



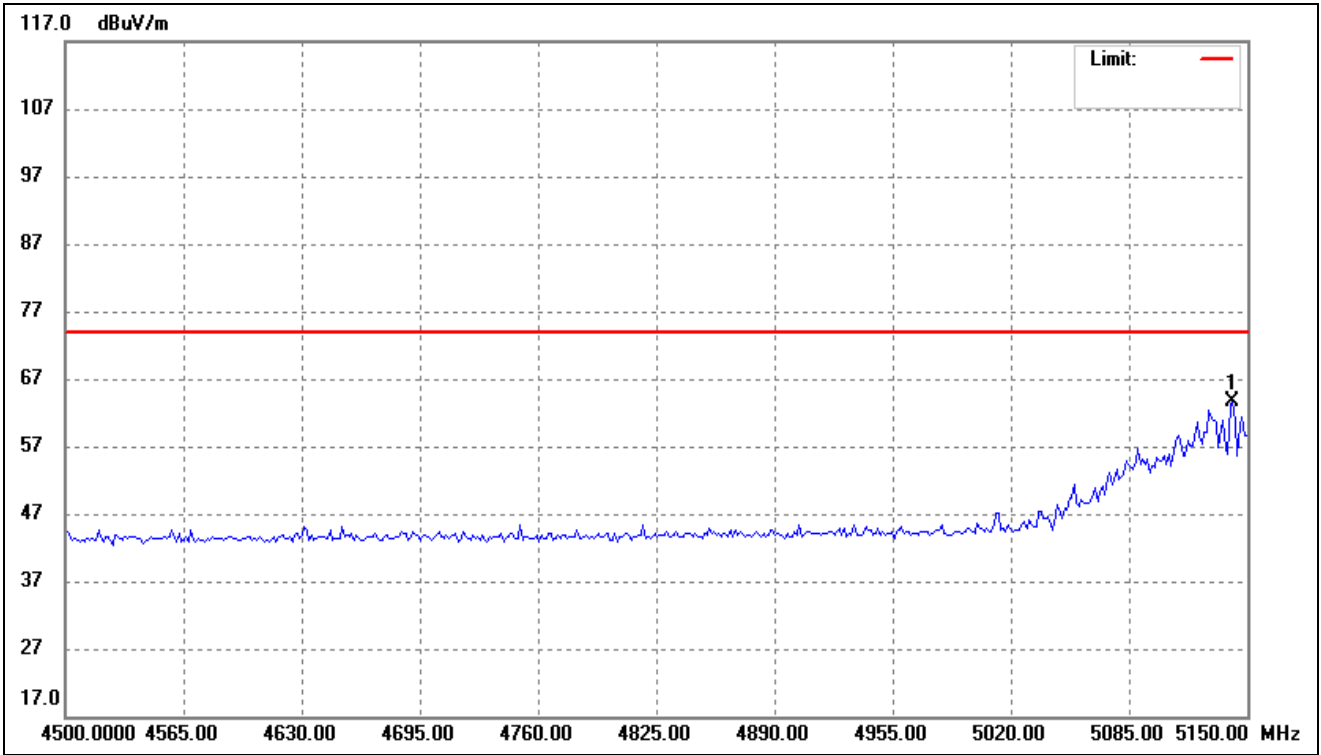
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	5150.000	72.87	-11.65	61.22	74.00	-12.78	-	-	peak

802.11n-HT40- Restricted Bandedge			
Test Channel	band 5.15-5.25GHz	Polarity:	Horizontal(worst case)



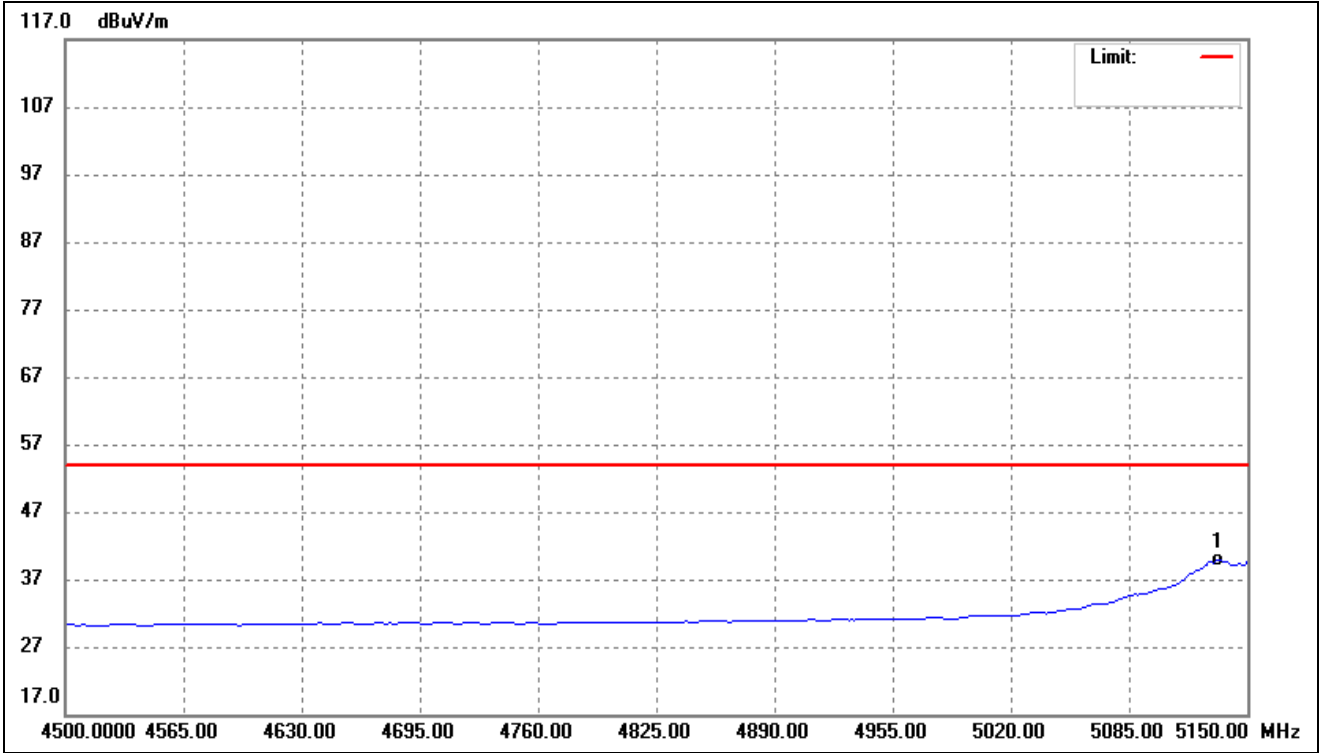
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	5150.000	48.91	-11.65	37.26	54.00	-16.74	-	-	AVG

802.11ac-HT80- Restricted Bandedge			
Test Channel	band 5.15-5.25GHz	Polarity:	Horizontal(worst case)



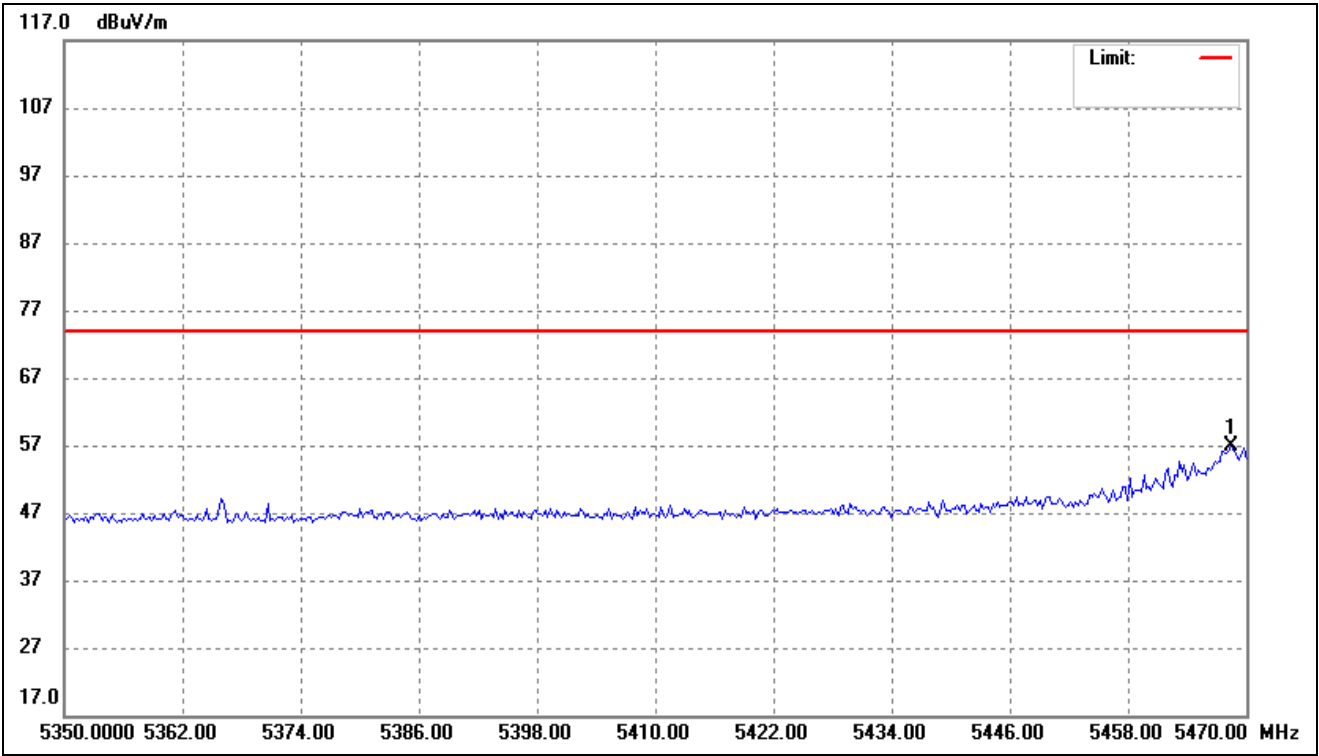
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	5142.184	75.41	-11.70	63.71	74.00	-10.29	-	-	peak

802.11ac-HT80- Restricted Bandedge			
Test Channel	band 5.15-5.25GHz	Polarity:	Horizontal(worst case)



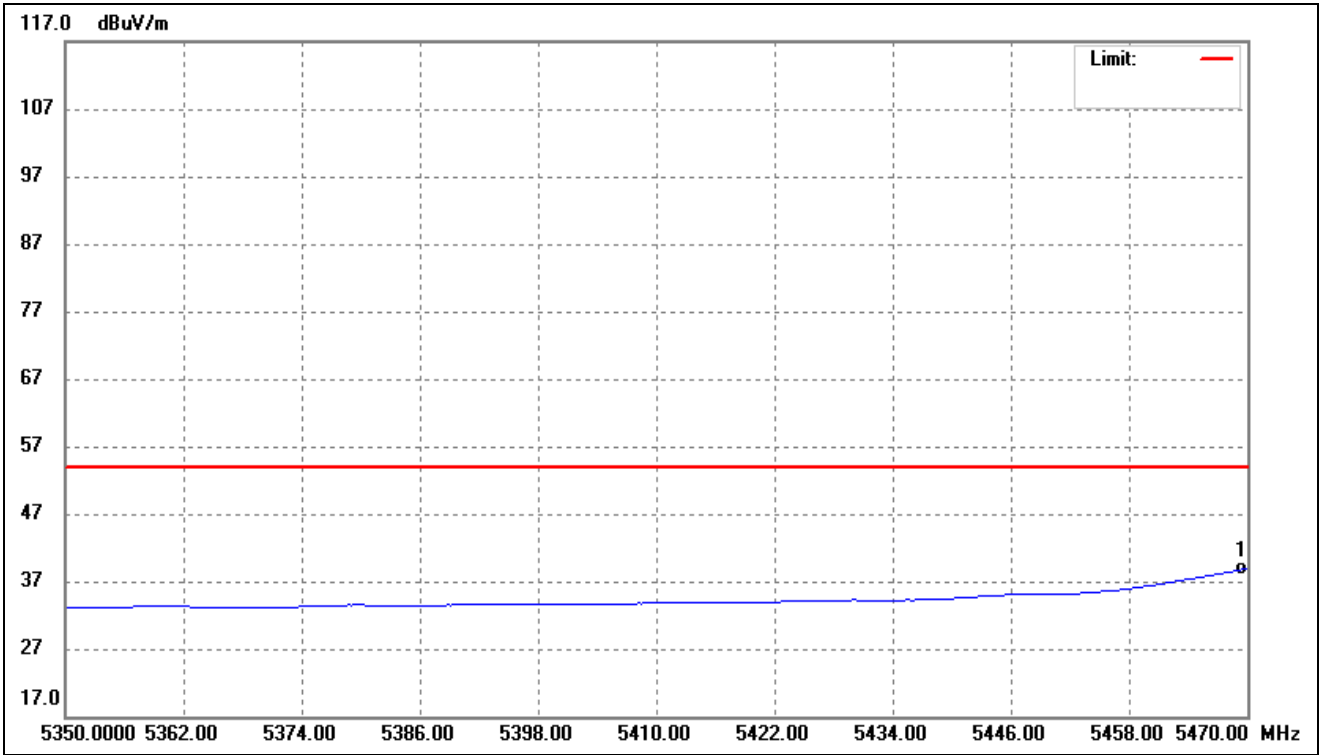
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	5134.369	51.67	-11.73	39.94	54.00	-14.06	-	-	AVG

802.11a- Restricted Bandedge			
Test Channel	band 5.35-5.47GHz	Polarity:	Horizontal(worst case)



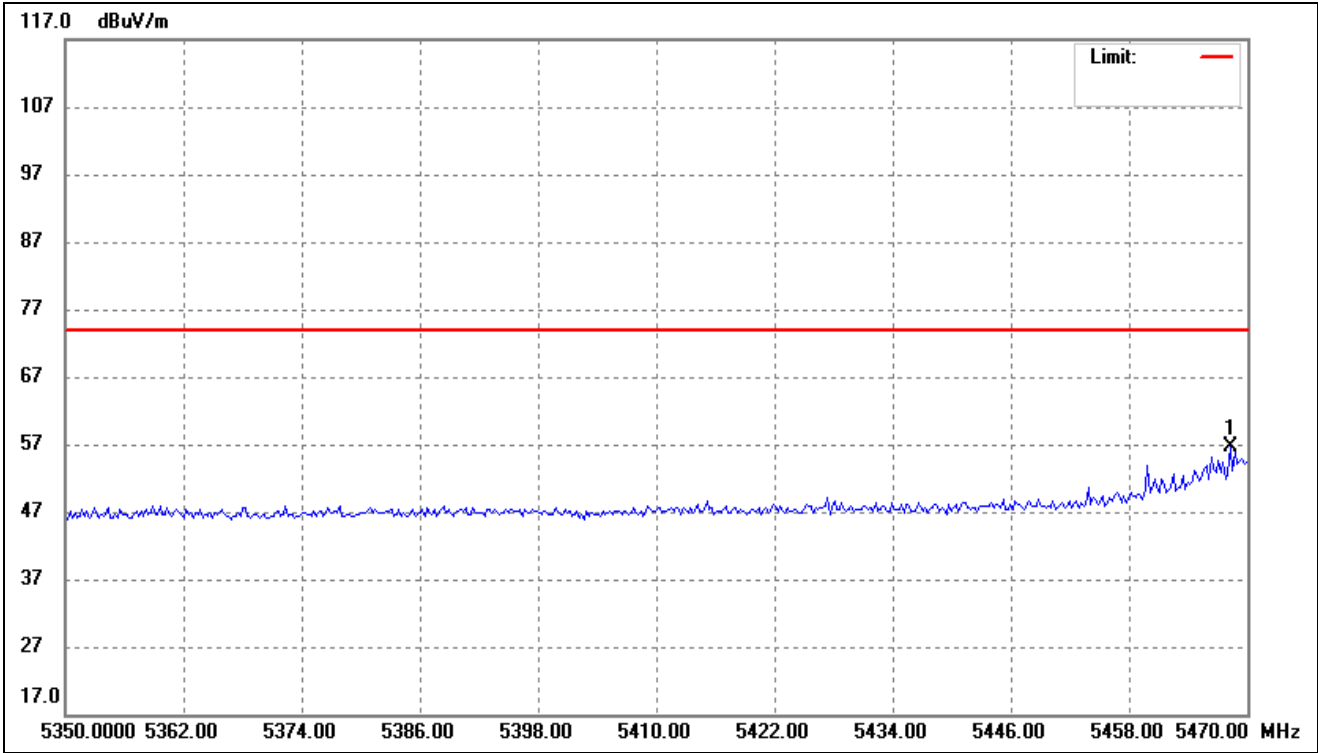
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	5468.557	66.87	-10.09	56.78	74.00	-17.22	-	-	peak

802.11a- Restricted Bandedge			
Test Channel	band 5.35-5.47GHz	Polarity:	Horizontal(worst case)



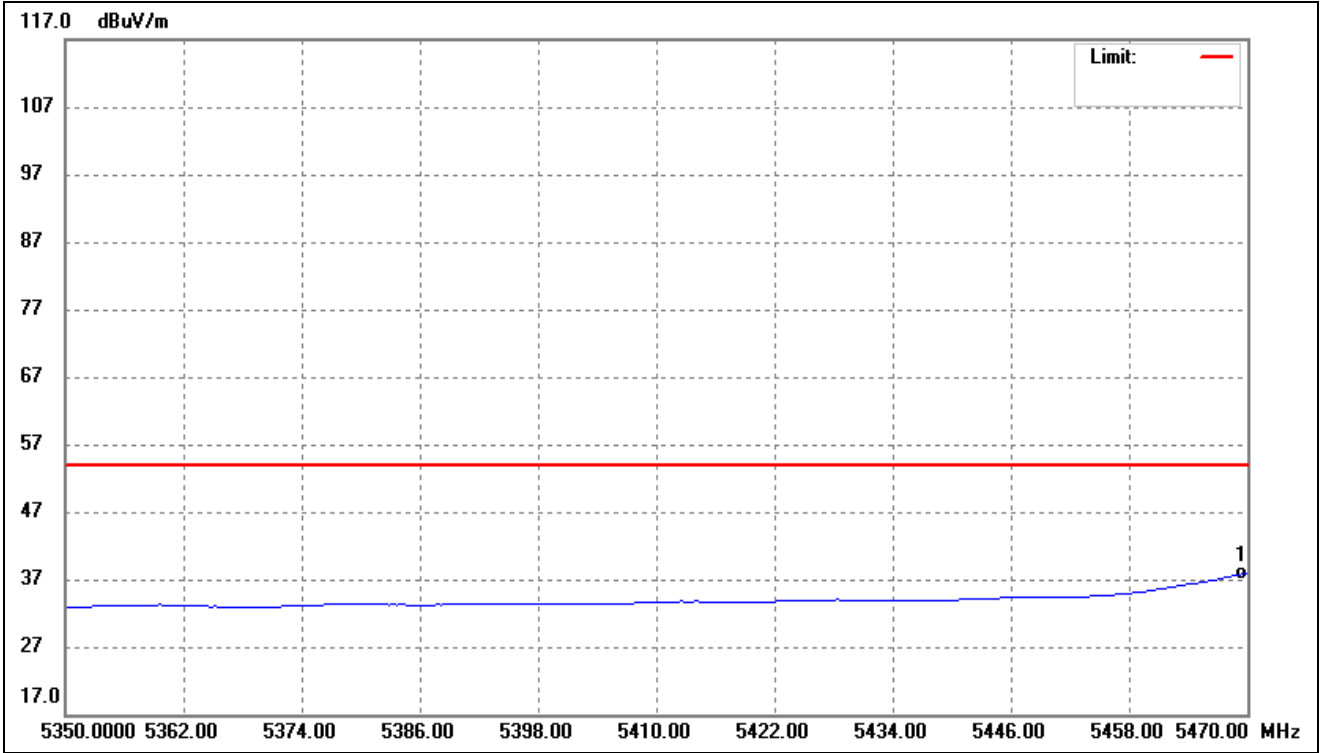
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	5470.000	49.00	-10.08	38.92	54.00	-15.08	-	-	AVG

802.11n-HT20- Restricted Bandedge			
Test Channel	band 5.35-5.47GHz	Polarity:	Horizontal(worst case)



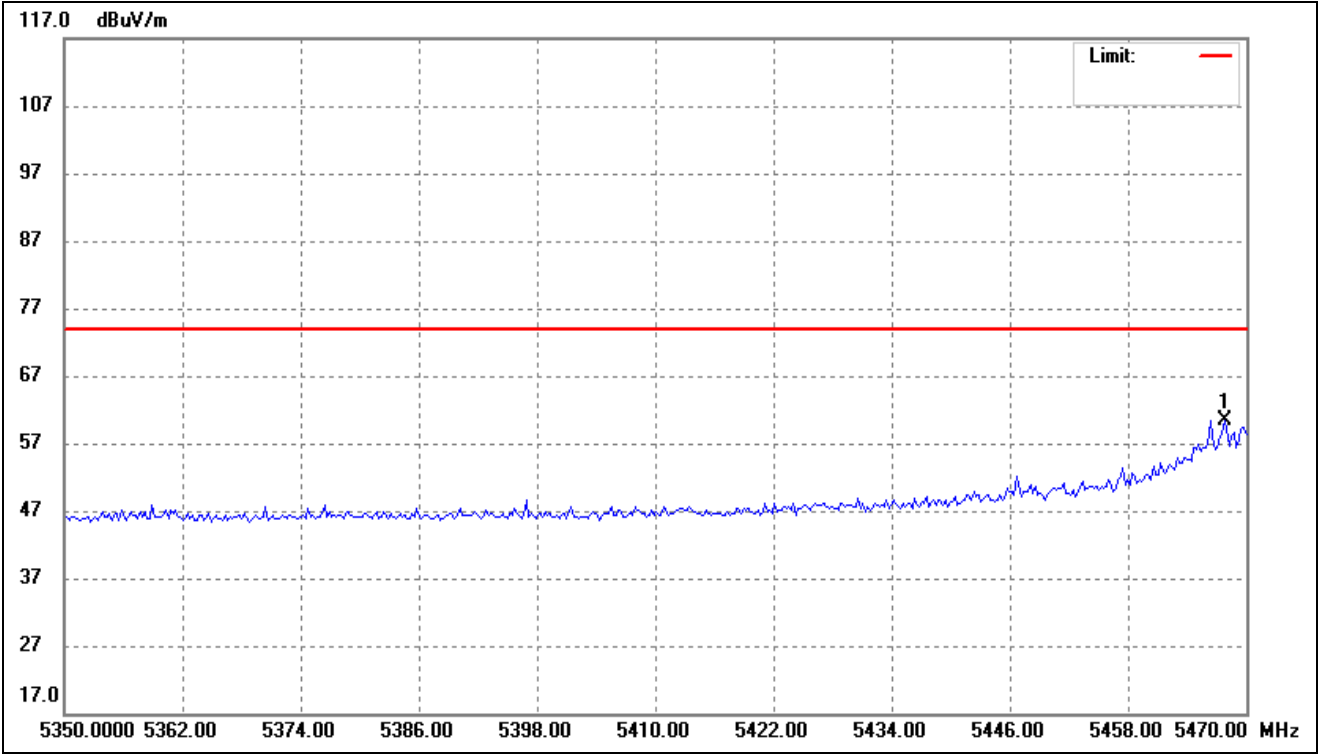
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	5468.317	66.71	-10.09	56.62	74.00	-17.38	-	-	peak

802.11n-HT20- Restricted Bandedge			
Test Channel	band 5.35-5.47GHz	Polarity:	Horizontal(worst case)



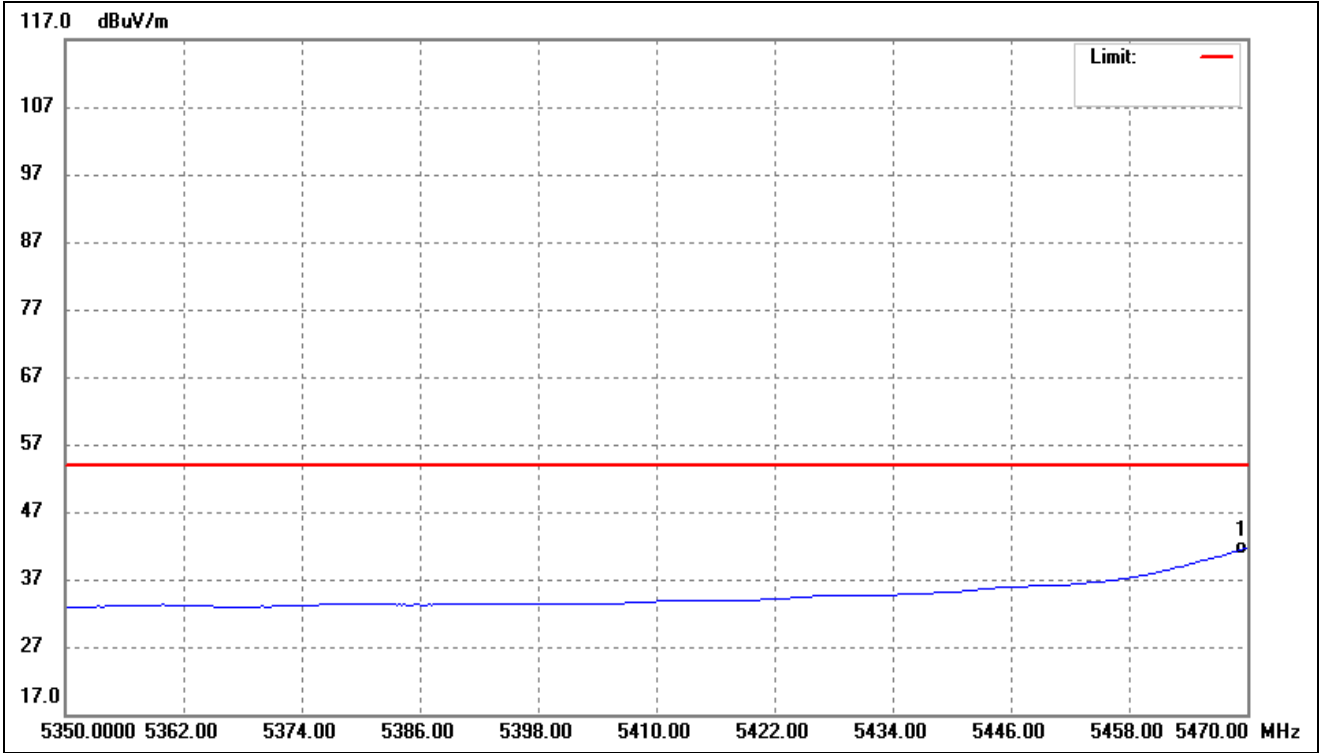
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	5470.000	48.08	-10.08	38.00	54.00	-16.00	-	-	AVG

802.11n-HT40- Restricted Bandedge			
Test Channel	band 5.35-5.47GHz	Polarity:	Horizontal(worst case)



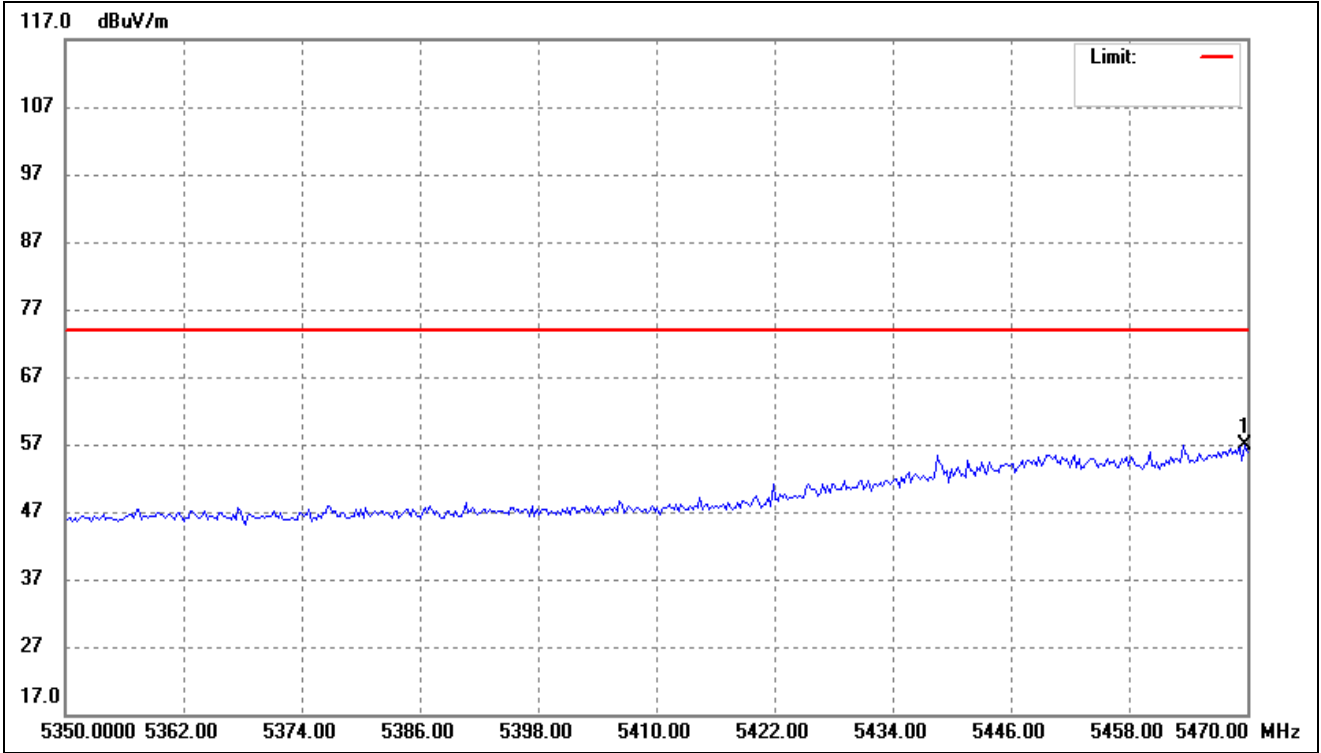
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	5467.836	70.39	-10.09	60.30	74.00	-13.70	-	-	peak

802.11n-HT40- Restricted Bandedge			
Test Channel	band 5.35-5.47GHz	Polarity:	Horizontal(worst case)



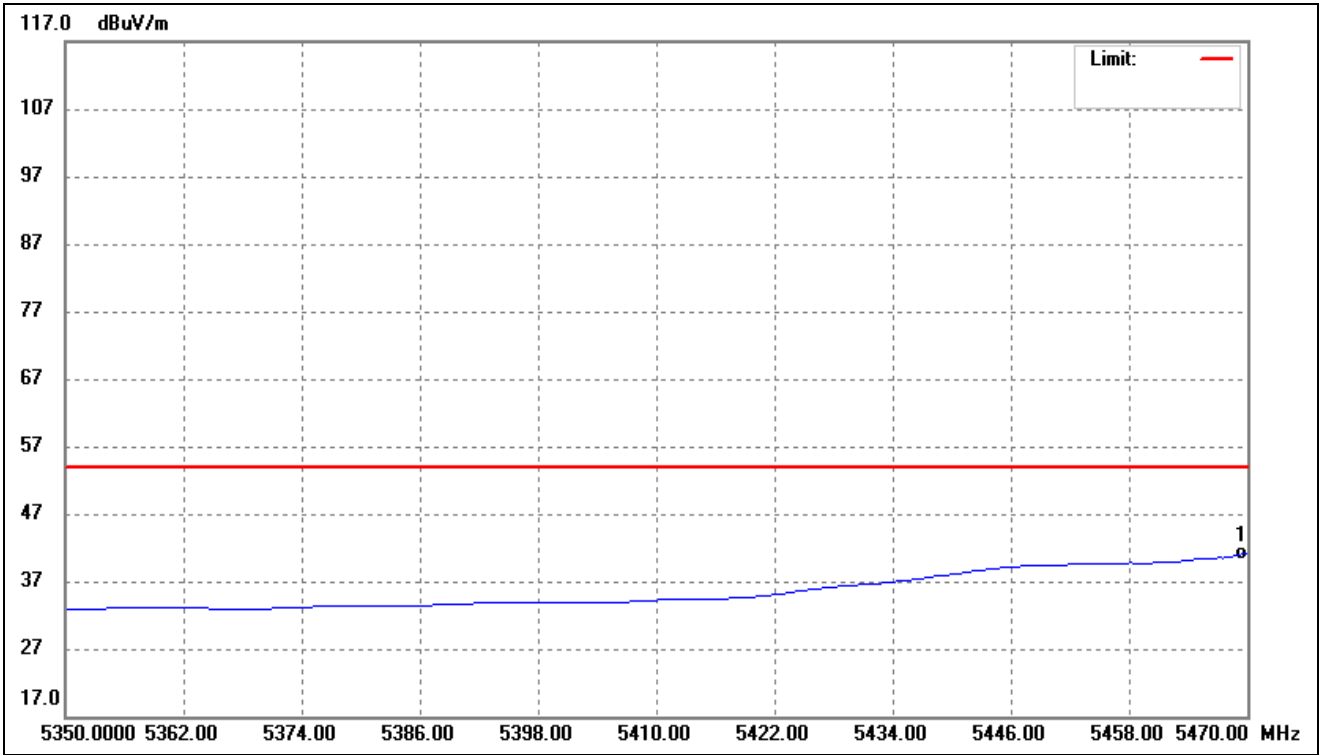
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	5470.000	51.74	-10.08	41.66	54.00	-12.34	-	-	AVG

802.11ac-HT80- Restricted Bandedge			
Test Channel	band 5.35-5.47GHz	Polarity:	Horizontal(worst case)



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	5469.760	66.99	-10.09	56.90	74.00	-17.10	-	-	peak

802.11ac-HT80- Restricted Bandedge			
Test Channel	band 5.35-5.47GHz	Polarity:	Horizontal(worst case)



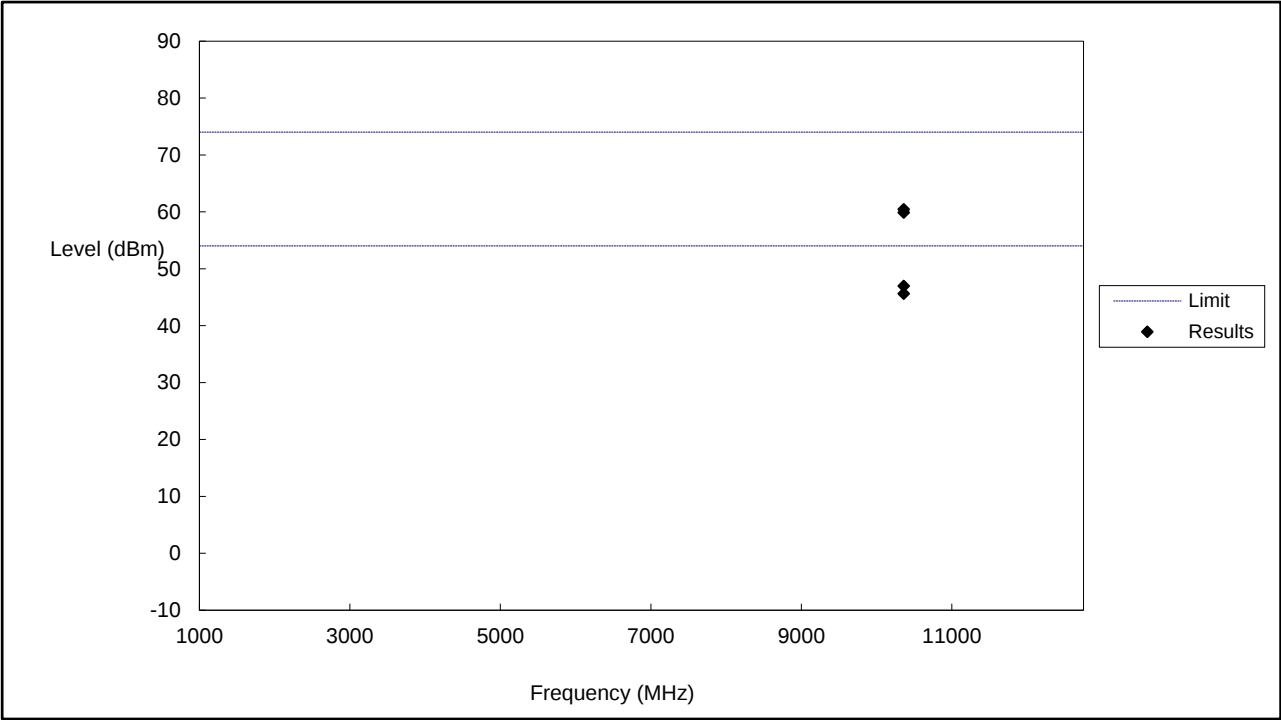
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	5470.000	51.24	-10.08	41.16	54.00	-12.84	-	-	AVG

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.

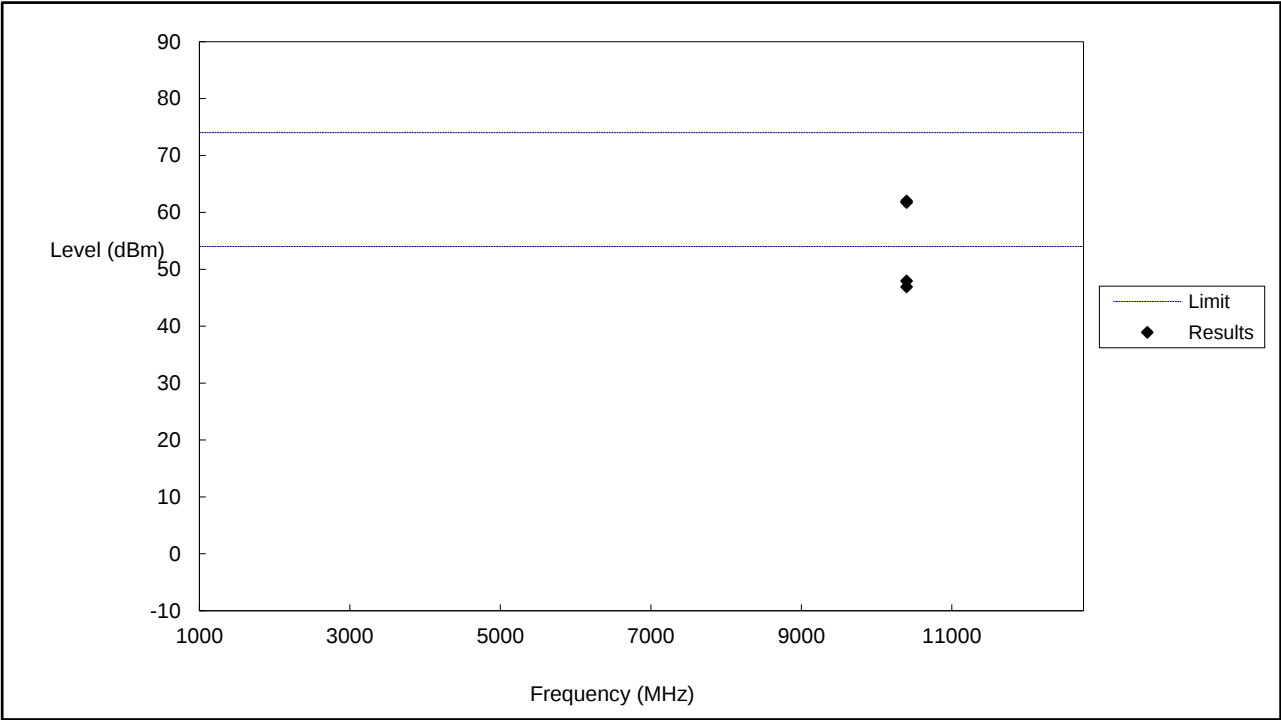
- For the frequency band 5.15-5.25GHz, 5.250-5.350GHz, 5.470-5.725GHz, 5.725-5.850GHz (802.11a)
- Harmonics And Spurious Emissions

Low Channel (5180MHz)



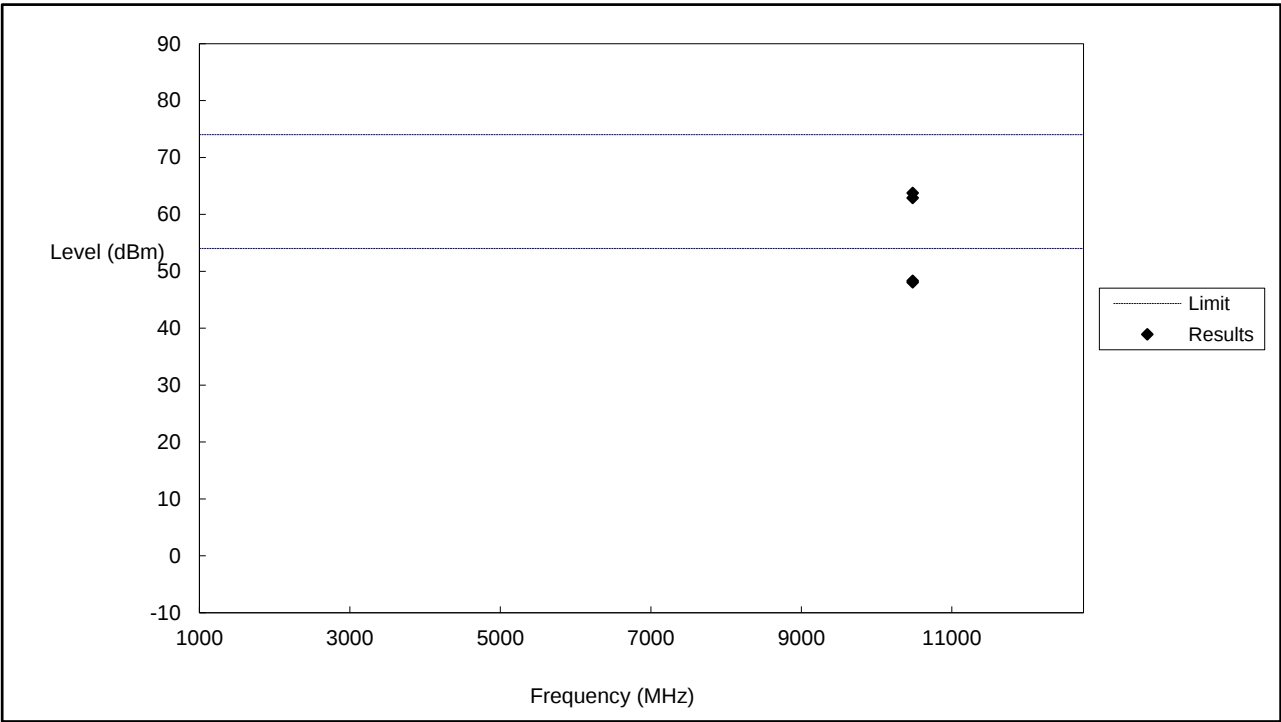
No.	Frequency	Result	Limit	Margin	Polarity	Remark
	(MHz)	(dBm)	(dBm)	(dB)		
1	10360	59.87	74	-14.13	H	RMS
2	10360	46.97	54	-7.03	H	RMS
1	10360	60.45	74	-13.55	V	RMS
2	10360	45.63	54	-8.37	V	RMS

Middle Channel (5200MHz)



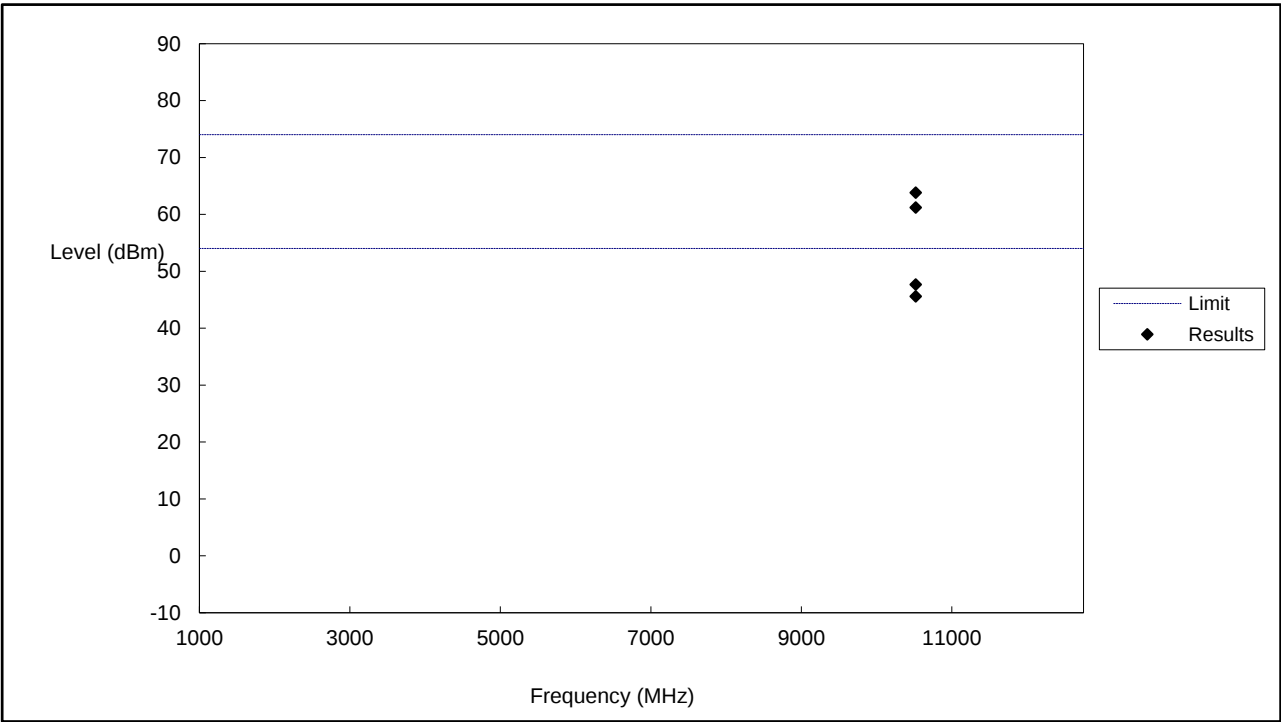
No.	Frequency	Result	Limit	Margin	Polarity	Remark
	(MHz)	(dBm)	(dBm)	(dB)		
1	10400	61.73	74	-12.27	H	RMS
2	10400	46.92	54	-7.08	H	RMS
1	10400	61.98	74	-12.02	V	RMS
2	10400	47.96	54	-6.04	V	RMS

High Channel (5240MHz)



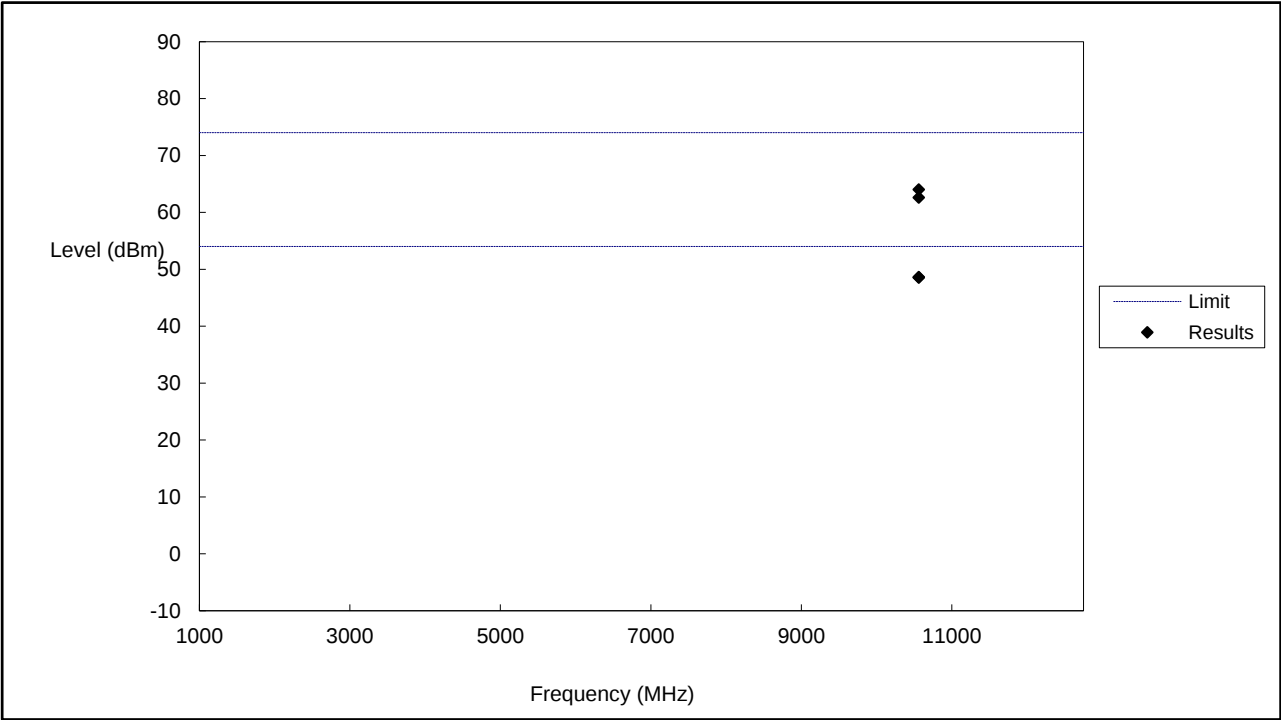
No.	Frequency	Result	Limit	Margin	Polarity	Remark
	(MHz)	(dBm)	(dBm)	(dB)		
1	10480	63.76	74	-10.24	H	RMS
2	10480	48.33	54	-5.67	H	RMS
1	10480	62.89	74	-11.11	V	RMS
2	10480	48.07	54	-5.93	V	RMS

Low Channel (5260MHz)



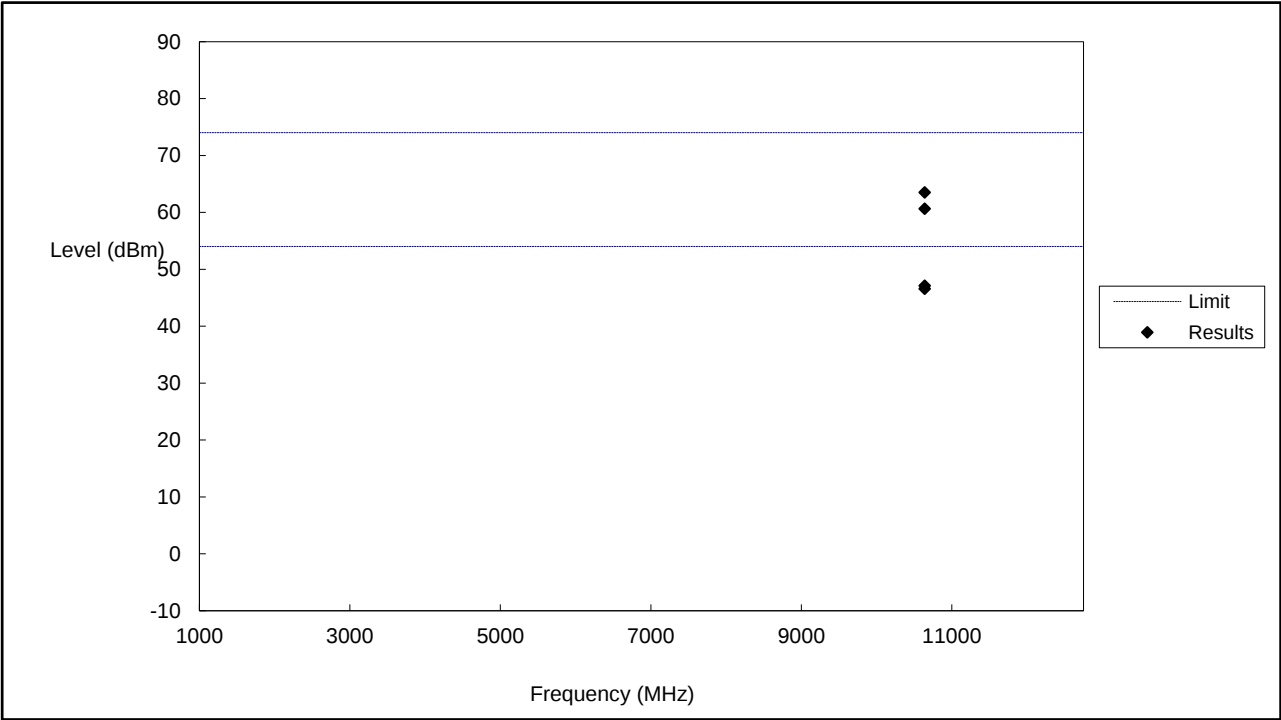
No.	Frequency	Result	Limit	Margin	Polarity	Remark
	(MHz)	(dBm)	(dBm)	(dB)		
1	10520	63.81	74	-10.19	H	RMS
2	10520	47.66	54	-6.34	H	RMS
1	10520	61.21	74	-12.79	V	RMS
2	10520	45.59	54	-8.41	V	RMS

Middle Channel (5280MHz)



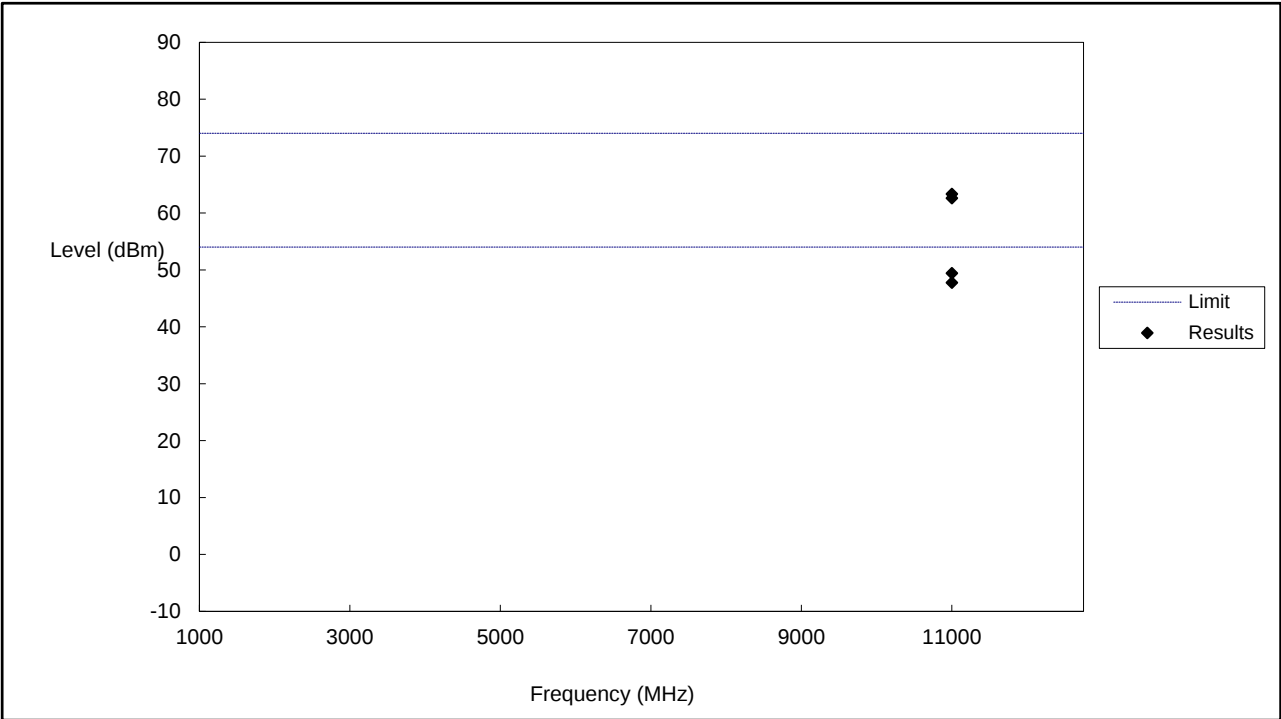
No.	Frequency	Result	Limit	Margin	Polarity	Remark
	(MHz)	(dBm)	(dBm)	(dB)		
1	10560	64.01	74	-9.99	H	RMS
2	10560	48.64	54	-5.36	H	RMS
1	10560	62.61	74	-11.39	V	RMS
2	10560	48.54	54	-5.46	V	RMS

High Channel (5320MHz)



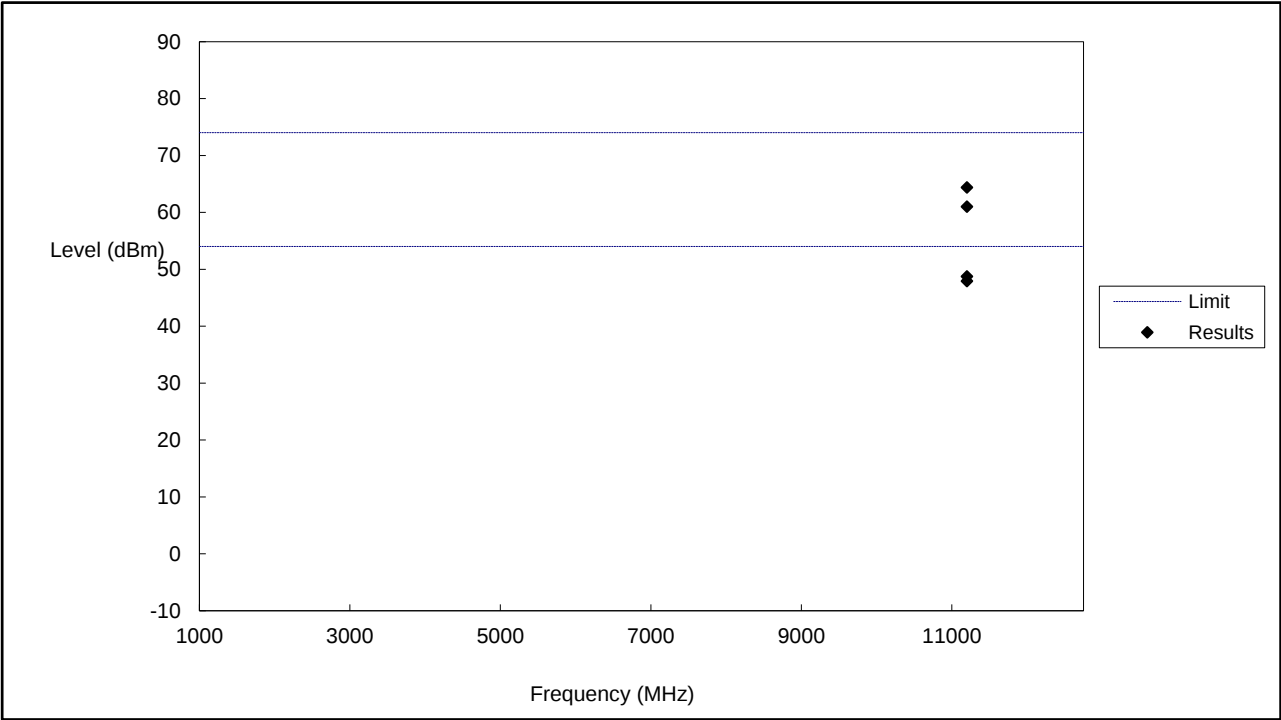
No.	Frequency	Result	Limit	Margin	Polarity	Remark
	(MHz)	(dBm)	(dBm)	(dB)		
1	10640	63.51	74	-10.49	H	RMS
2	10640	46.58	54	-7.42	H	RMS
1	10640	60.64	74	-13.36	V	RMS
2	10640	47.10	54	-6.90	V	RMS

Low Channel (5500MHz)



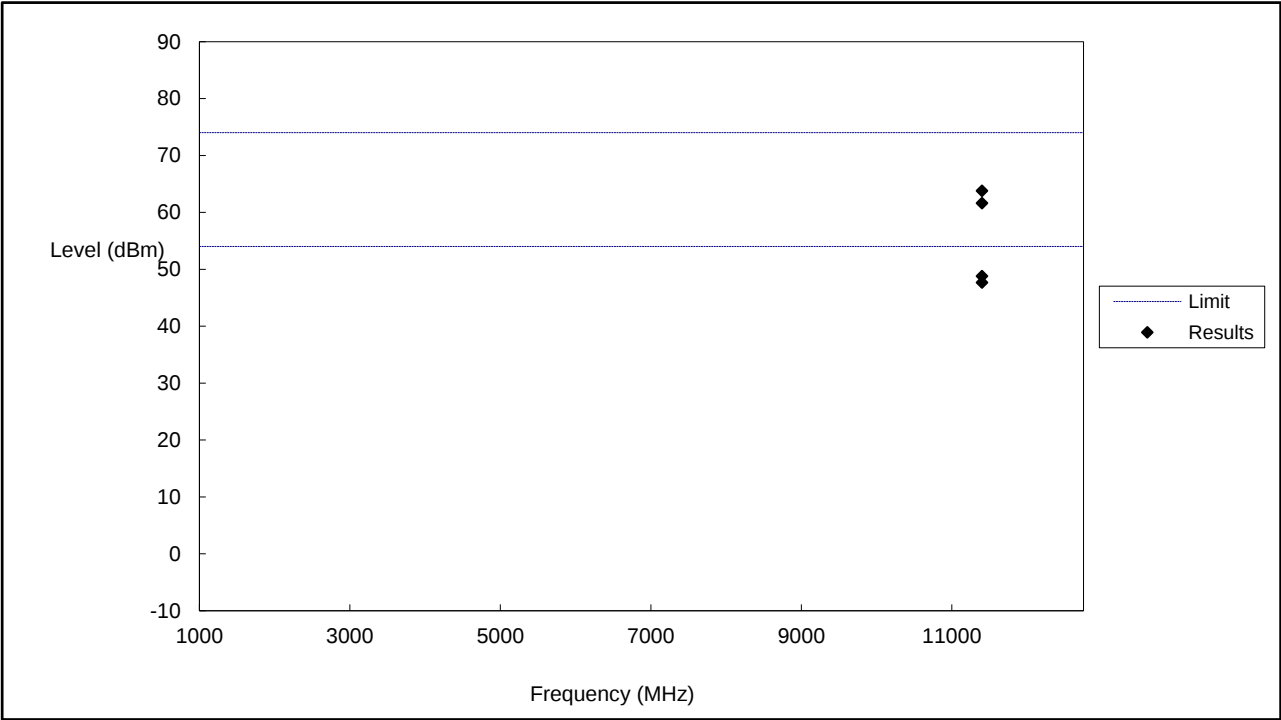
No.	Frequency	Result	Limit	Margin	Polarity	Remark
	(MHz)	(dBm)	(dBm)	(dB)		
1	11000	63.33	74	-10.67	H	RMS
2	11000	49.40	54	-4.60	H	RMS
1	11000	62.62	74	-11.38	V	RMS
2	11000	47.75	54	-6.25	V	RMS

Middle Channel (5600MHz)



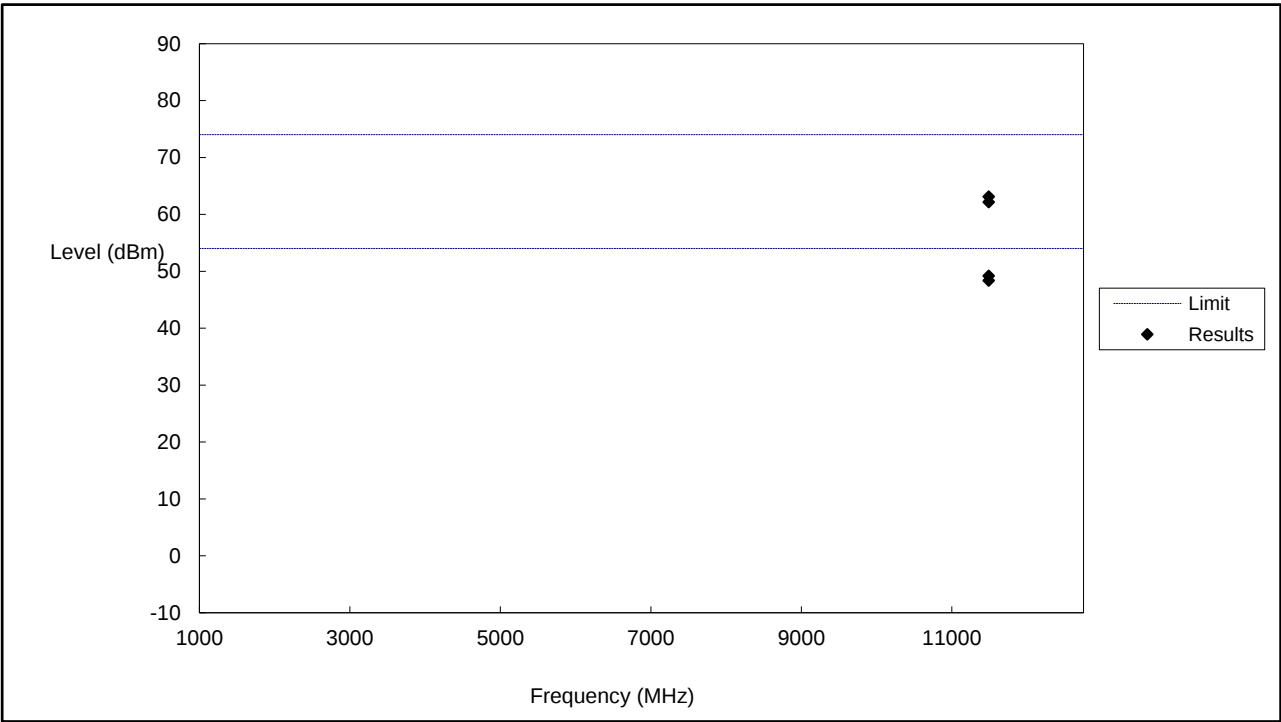
No.	Frequency	Result	Limit	Margin	Polarity	Remark
	(MHz)	(dBm)	(dBm)	(dB)		
1	11200	64.37	74	-9.63	H	RMS
2	11200	47.93	54	-6.07	H	RMS
1	11200	61.00	74	-13.00	V	RMS
2	11200	48.74	54	-5.26	V	RMS

High Channel (5700MHz)



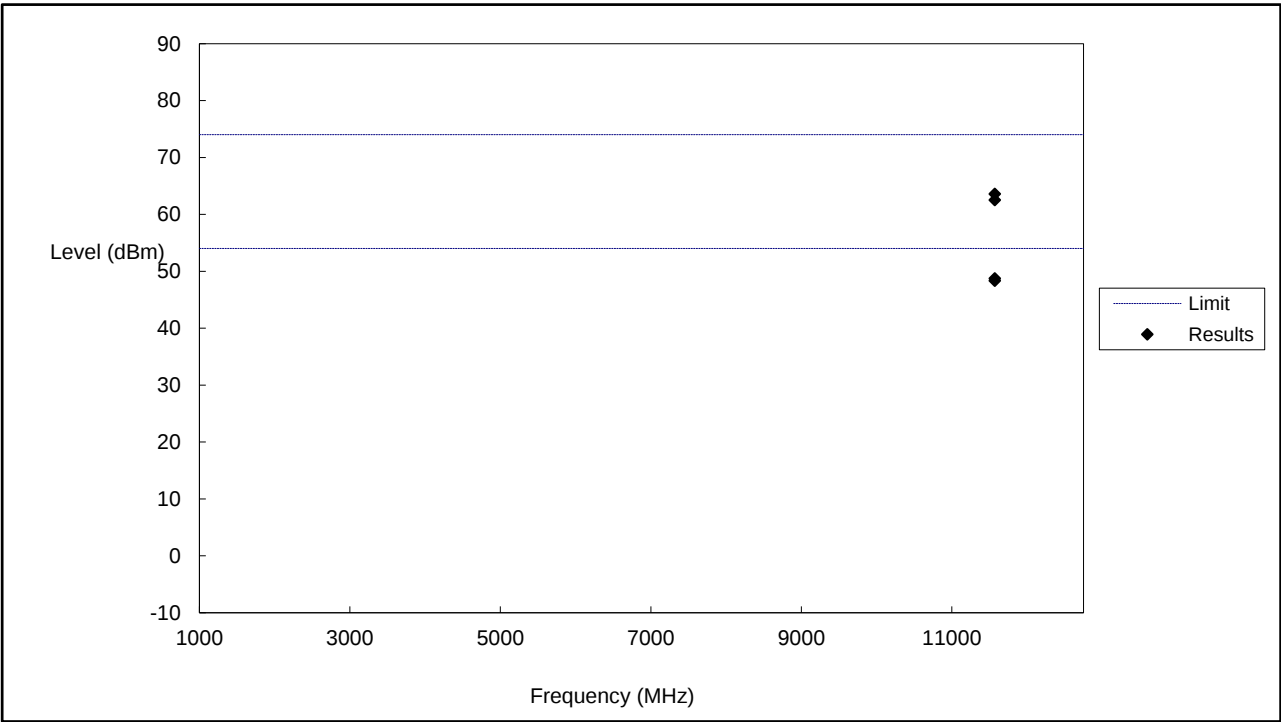
No.	Frequency	Result	Limit	Margin	Polarity	Remark
	(MHz)	(dBm)	(dBm)	(dB)		
1	11400	63.78	74	-10.22	H	RMS
2	11400	47.67	54	-6.33	H	RMS
1	11400	61.63	74	-12.37	V	RMS
2	11400	48.80	54	-5.20	V	RMS

Low Channel (5745MHz)



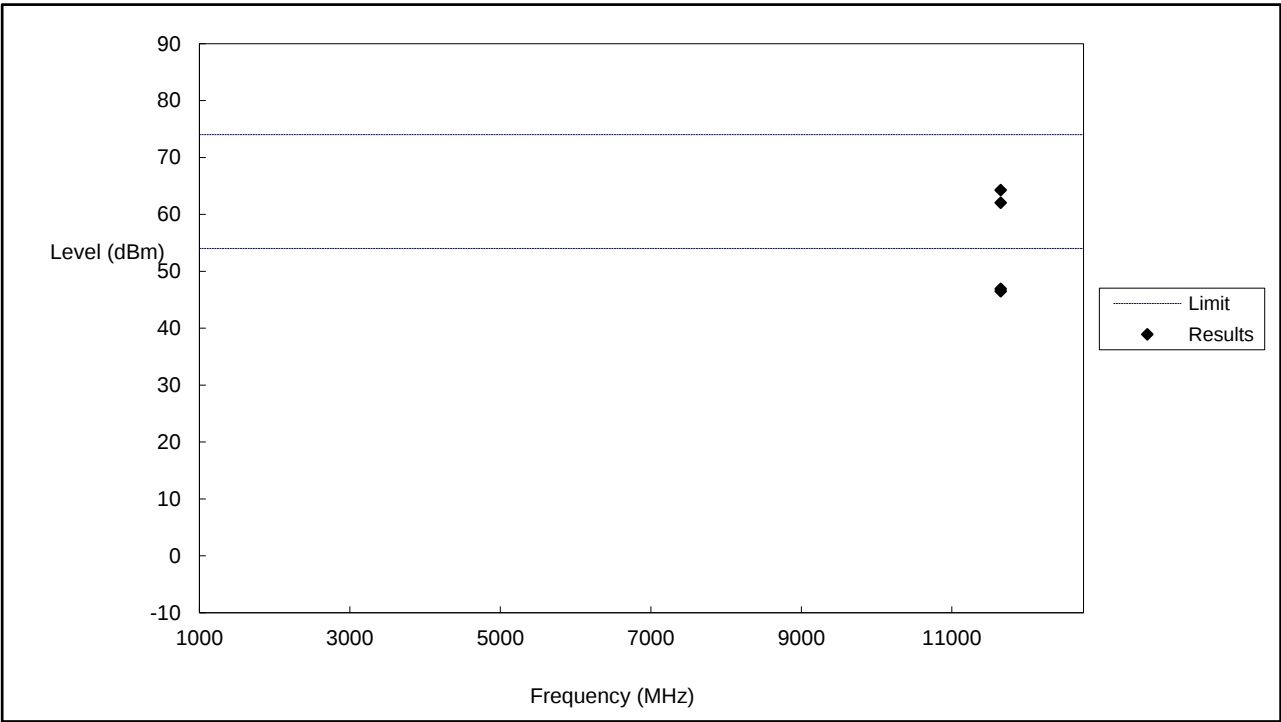
No.	Frequency	Result	Limit	Margin	Polarity	Remark
	(MHz)	(dBm)	(dBm)	(dB)		
1	11490	62.17	74	-11.83	H	RMS
2	11490	48.36	54	-5.64	H	RMS
1	11490	63.12	74	-10.88	V	RMS
2	11490	49.19	54	-4.81	V	RMS

Middle Channel (5785MHz)



No.	Frequency	Result	Limit	Margin	Polarity	Remark
	(MHz)	(dBm)	(dBm)	(dB)		
1	11570	62.52	74	-11.48	H	RMS
2	11570	48.74	54	-5.26	H	RMS
1	11570	63.59	74	-10.41	V	RMS
2	11570	48.34	54	-5.66	V	RMS

High Channel (5825MHz)



No.	Frequency	Result	Limit	Margin	Polarity	Remark
	(MHz)	(dBm)	(dBm)	(dB)		
1	11650	64.26	74	-9.74	H	RMS
2	11650	46.50	54	-7.50	H	RMS
1	11650	62.04	74	-11.96	V	RMS
2	11650	46.92	54	-7.08	V	RMS

➤ Out of Band edge for 5150-5250MHz

Test CH.	Test Segment	Result	Limit
	MHz	dBm/MHz	dBm/MHz
Lowest	Below 5150	-41.28	-27
Highest	Above 5350	-40.96	-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	-42.57	-27
Highest	Above 5350	-41.87	-27
Note: the data just list the worst cases			

➤ Out of Band edge for 5470-5725MHz

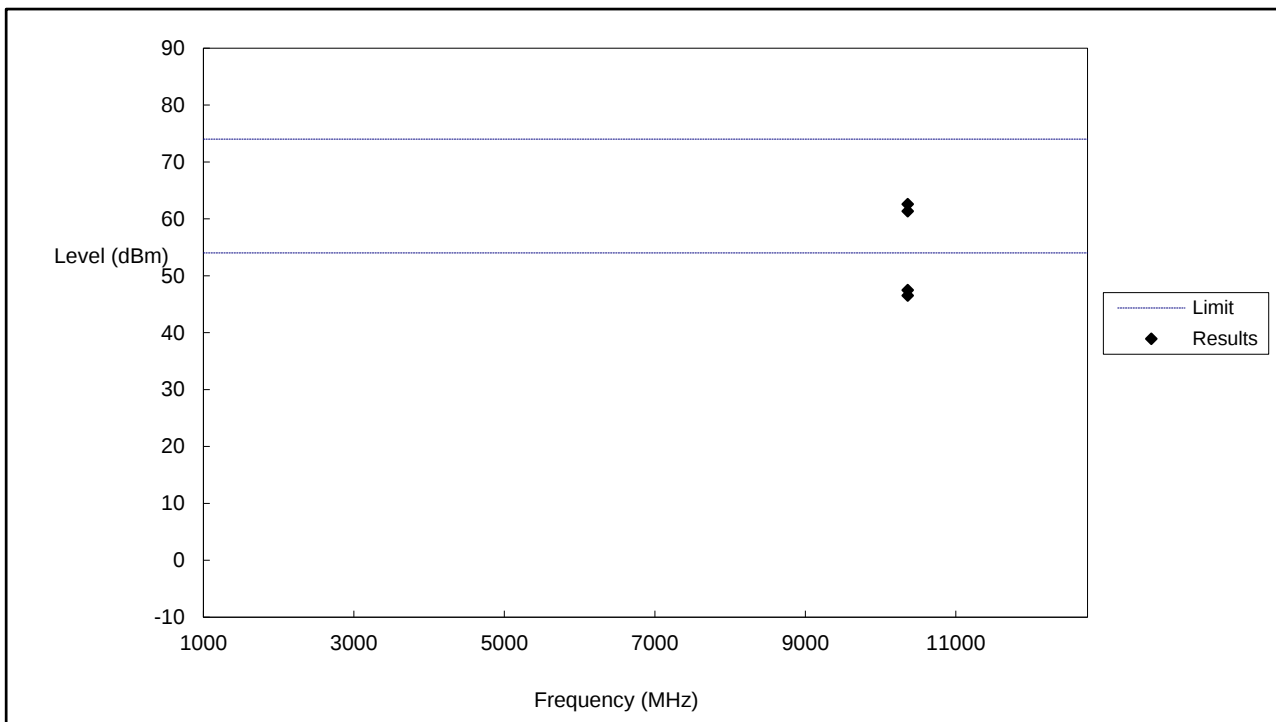
Test CH.	Test Segment	Result	Limit
	MHz	dBm/MHz	dBm/MHz
Lowest	Below 5470	-39.32	-27
Highest	Above 5725	-39.87	-27
Note: the data just list the worst cases			

➤ Out of Band edge for 5725-5850MHz

Test CH.	Test Segment	Result	Limit
	MHz	dBm/MHz	dBm/MHz
Lowest	Below 5715	-36.52	-27
	5715 to 5725	-39.41	-17
Highest	5850 to 5860	-38.19	-17
	Above 5860	-37.41	-27
Note: the data just list the worst cases			

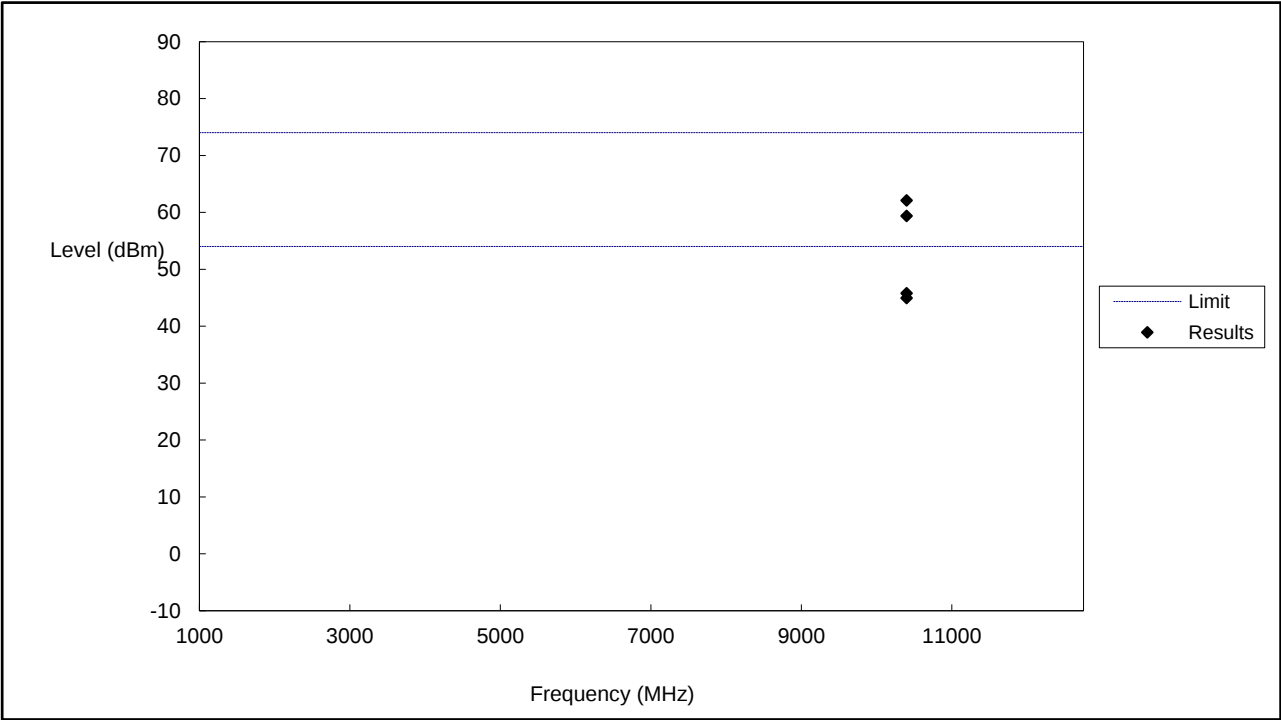
- For the frequency band 5.15-5.25GHz, 5.250-5.350GHz, 5.470-5.725GHz, 5.725-5.850GHz (802.11n HT20)
- Harmonics And Spurious Emissions

Low Channel (5180MHz)



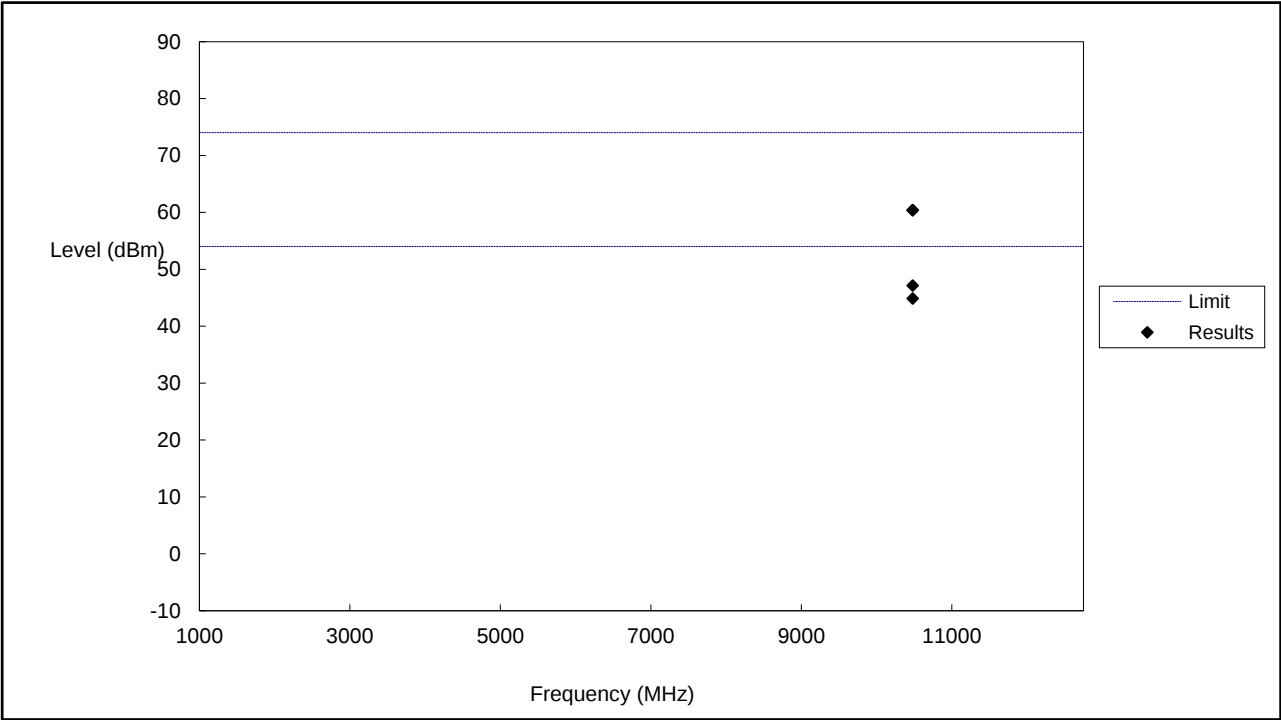
No.	Frequency	Result	Limit	Margin	Polarity	Remark
	(MHz)	(dBm)	(dBm)	(dB)		
1	10360	61.35	74	-12.65	H	RMS
2	10360	46.51	54	-7.49	H	RMS
1	10360	62.59	74	-11.41	V	RMS
2	10360	47.48	54	-6.52	V	RMS

Middle Channel (5200MHz)



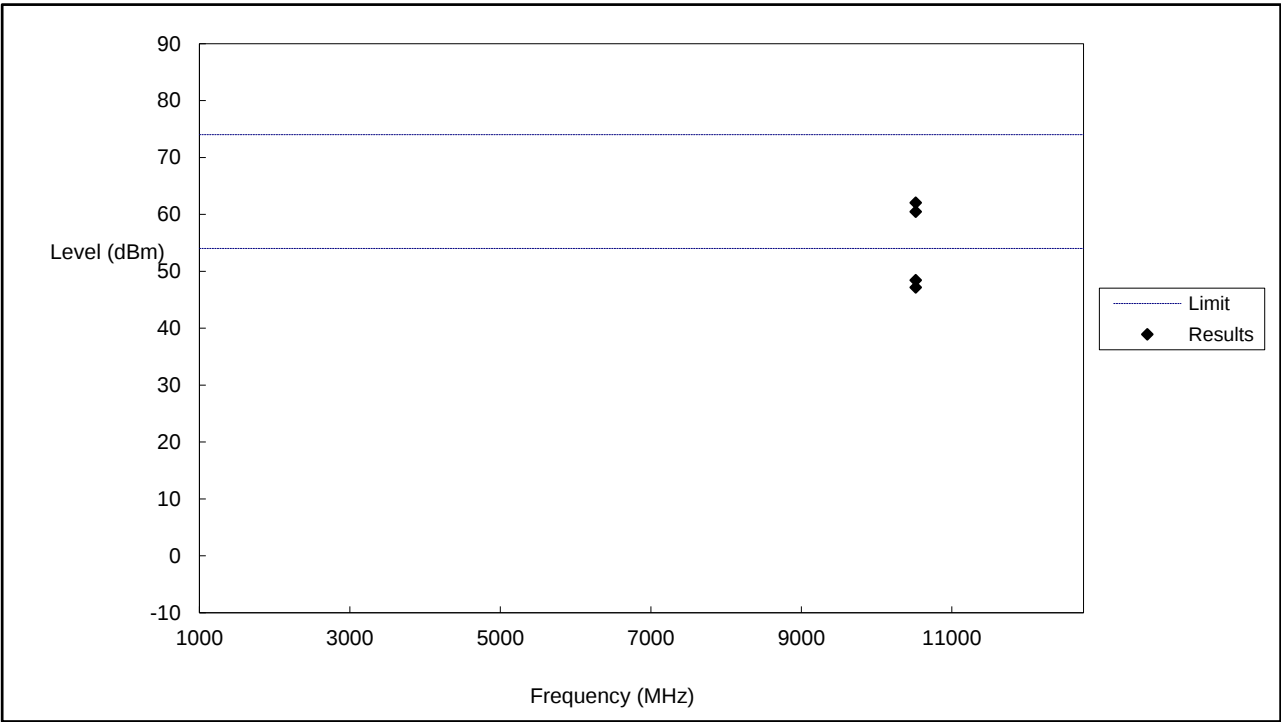
No.	Frequency	Result	Limit	Margin	Polarity	Remark
	(MHz)	(dBm)	(dBm)	(dB)		
1	10400	62.10	74	-11.90	H	RMS
2	10400	44.93	54	-9.07	H	RMS
1	10400	59.37	74	-14.63	V	RMS
2	10400	45.79	54	-8.21	V	RMS

High Channel (5240MHz)



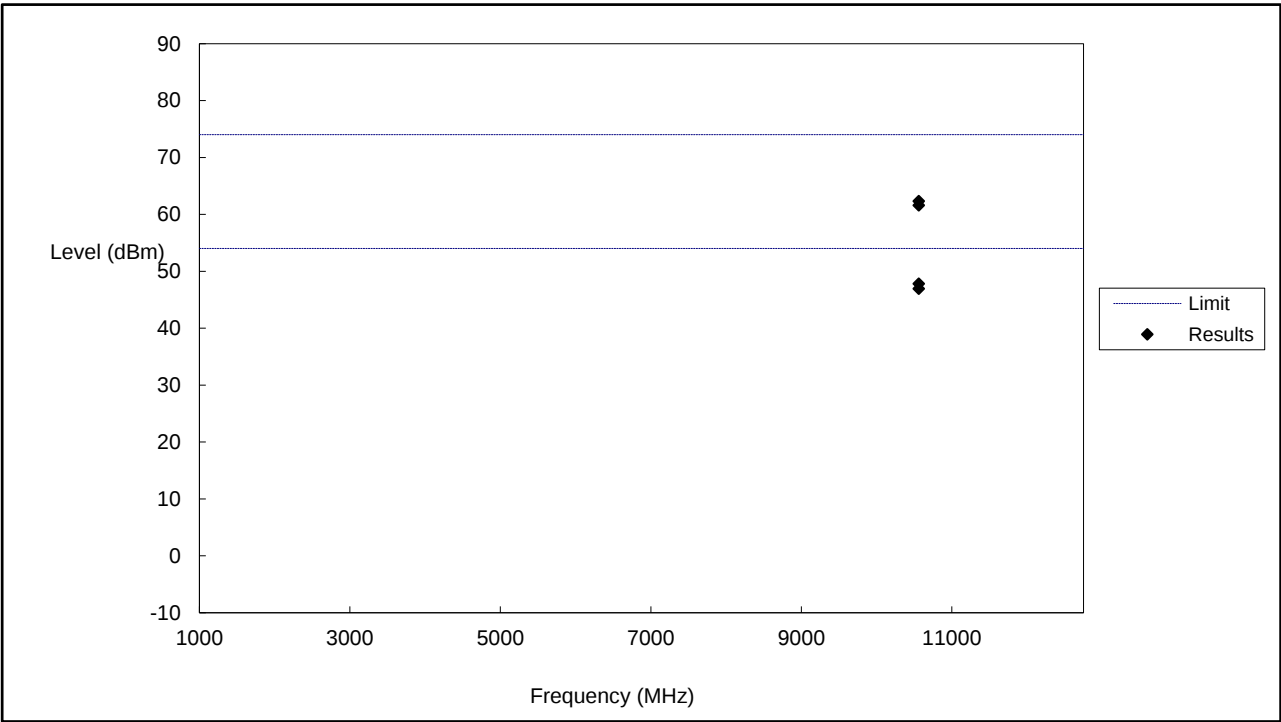
No.	Frequency	Result	Limit	Margin	Polarity	Remark
	(MHz)	(dBm)	(dBm)	(dB)		
1	10480	60.37	74	-13.63	H	RMS
2	10480	47.14	54	-6.86	H	RMS
1	10480	60.38	74	-13.62	V	RMS
2	10480	44.87	54	-9.13	V	RMS

Low Channel (5260MHz)



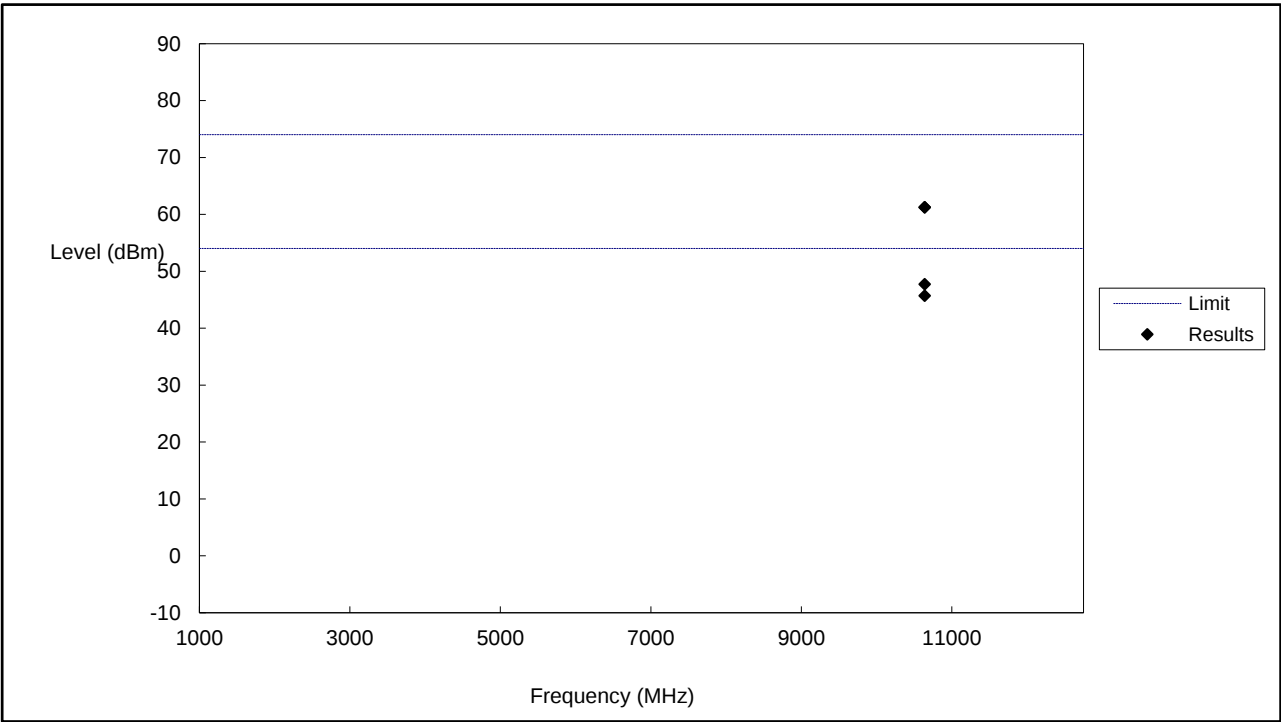
No.	Frequency	Result	Limit	Margin	Polarity	Remark
	(MHz)	(dBm)	(dBm)	(dB)		
1	10520	62.03	74	-11.97	H	RMS
2	10520	47.15	54	-6.85	H	RMS
1	10520	60.46	74	-13.54	V	RMS
2	10520	48.43	54	-5.57	V	RMS

Middle Channel (5280MHz)



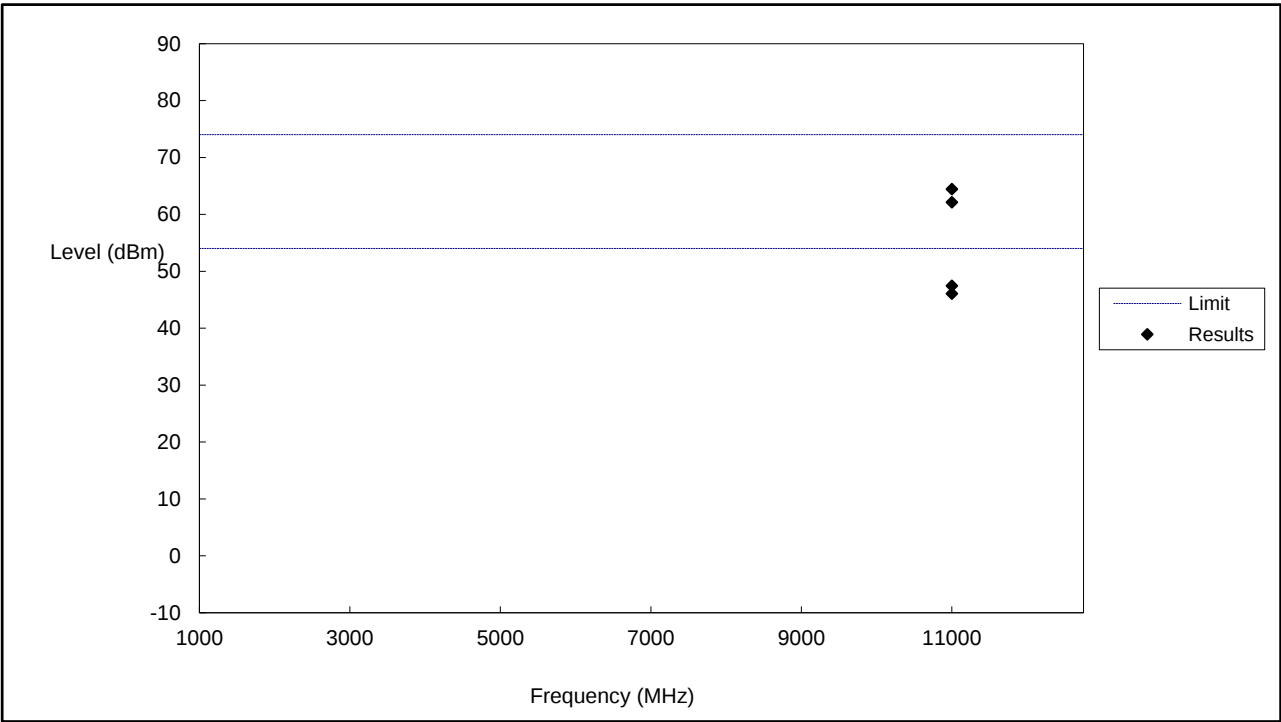
No.	Frequency	Result	Limit	Margin	Polarity	Remark
	(MHz)	(dBm)	(dBm)	(dB)		
1	10560	62.32	74	-11.68	H	RMS
2	10560	46.93	54	-7.07	H	RMS
1	10560	61.58	74	-12.42	V	RMS
2	10560	47.82	54	-6.18	V	RMS

High Channel (5320MHz)



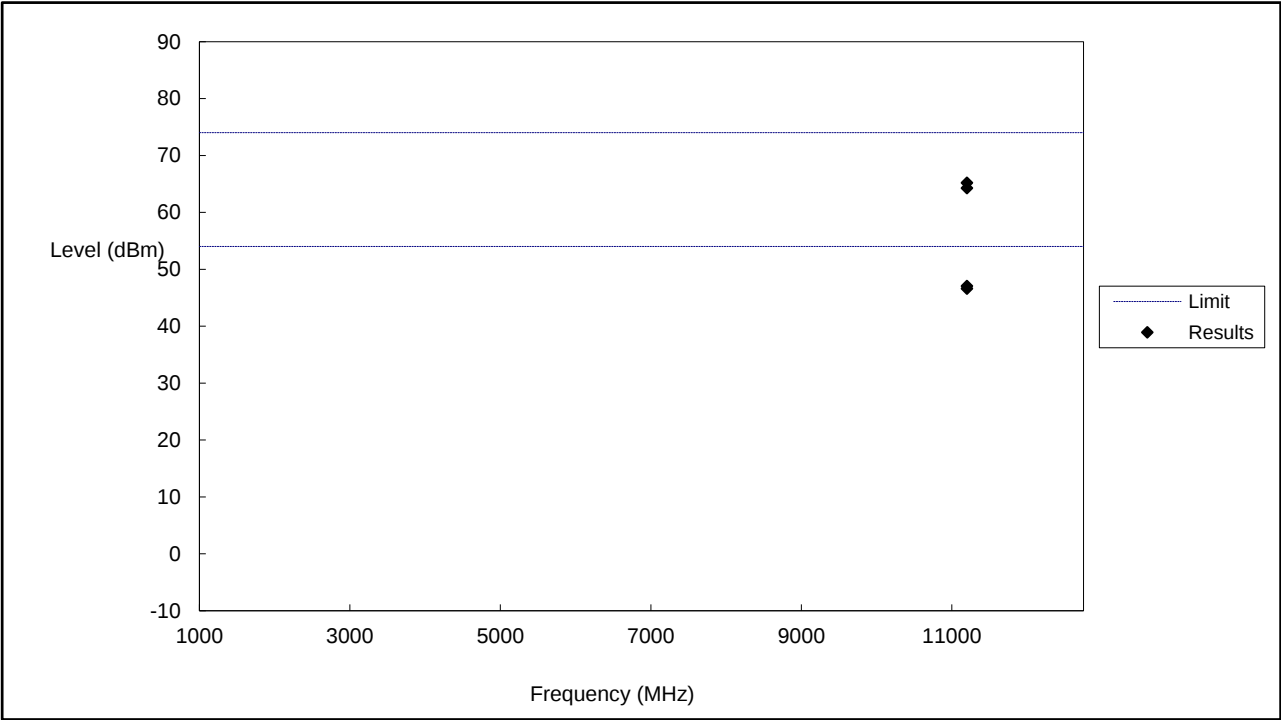
No.	Frequency	Result	Limit	Margin	Polarity	Remark
	(MHz)	(dBm)	(dBm)	(dB)		
1	10640	61.23	74	-12.77	H	RMS
2	10640	45.69	54	-8.31	H	RMS
1	10640	61.25	74	-12.75	V	RMS
2	10640	47.74	54	-6.26	V	RMS

Low Channel (5500MHz)



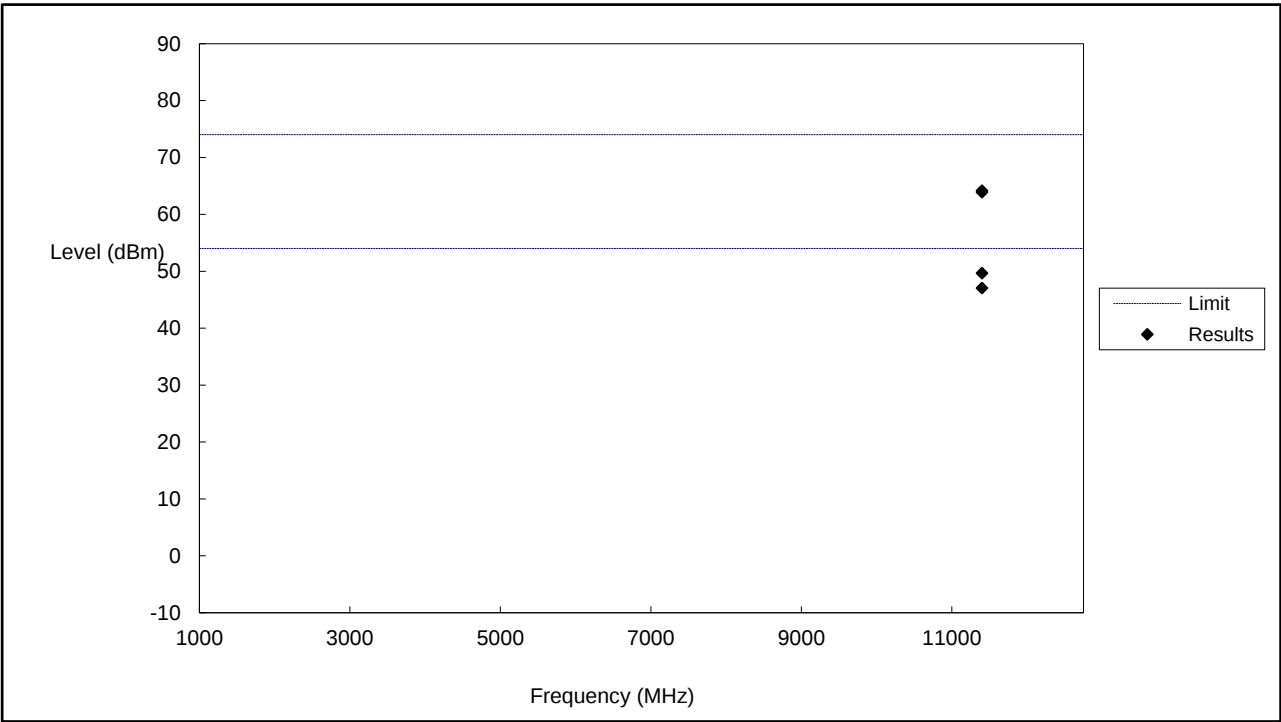
No.	Frequency	Result	Limit	Margin	Polarity	Remark
	(MHz)	(dBm)	(dBm)	(dB)		
1	11000	64.44	74	-9.56	H	RMS
2	11000	46.06	54	-7.94	H	RMS
1	11000	62.14	74	-11.86	V	RMS
2	11000	47.44	54	-6.56	V	RMS

Middle Channel (5600MHz)



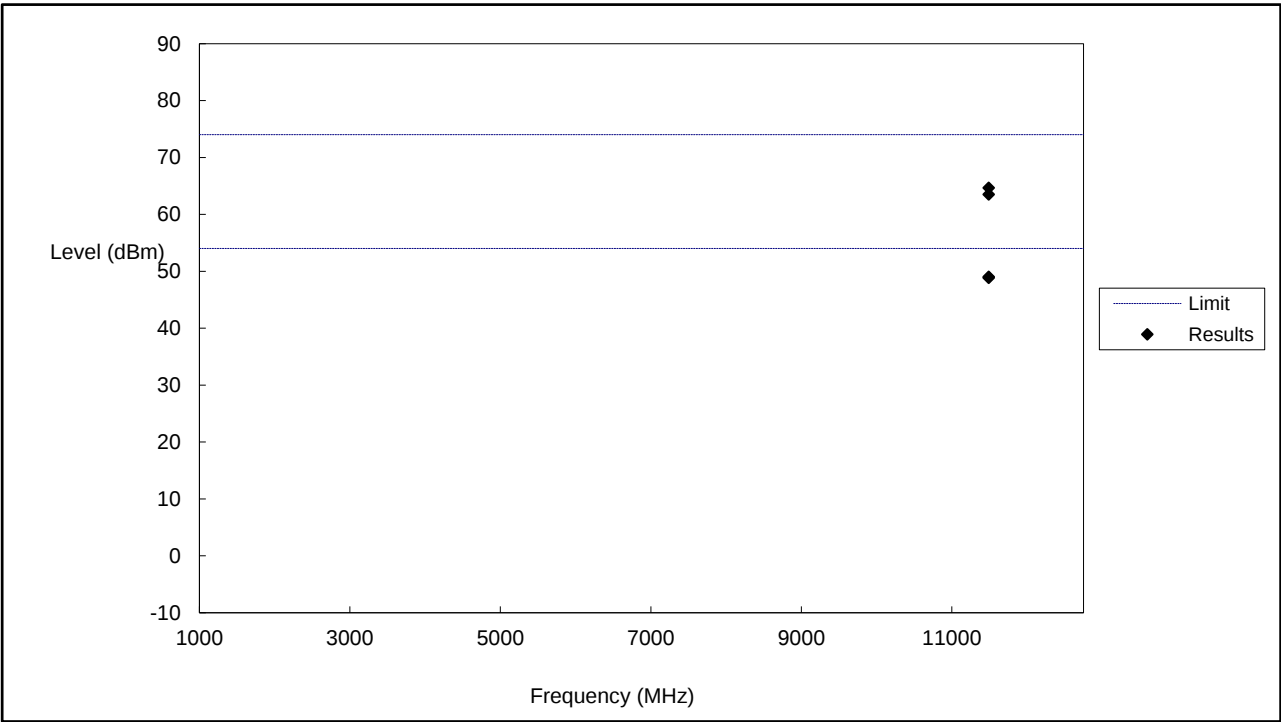
No.	Frequency	Result	Limit	Margin	Polarity	Remark
	(MHz)	(dBm)	(dBm)	(dB)		
1	11200	65.20	74	-8.80	H	RMS
2	11200	46.61	54	-7.39	H	RMS
1	11200	64.27	74	-9.73	V	RMS
2	11200	47.05	54	-6.95	V	RMS

High Channel (5700MHz)



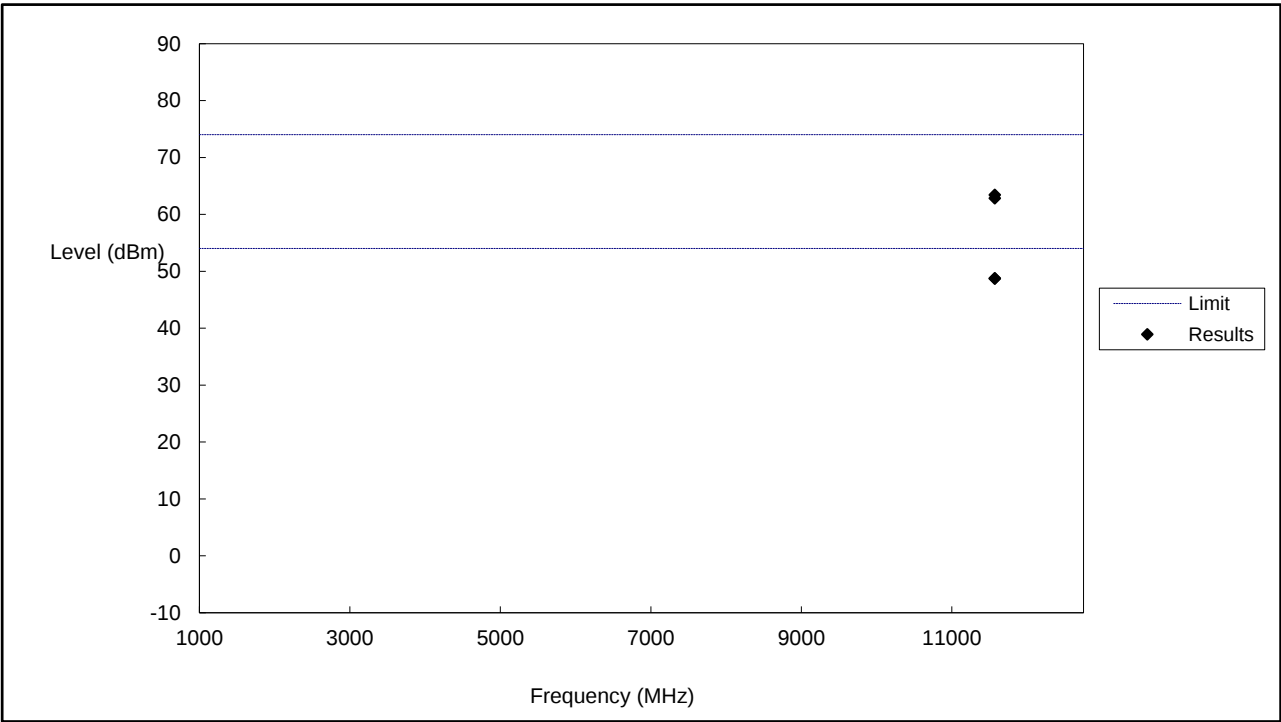
No.	Frequency	Result	Limit	Margin	Polarity	Remark
	(MHz)	(dBm)	(dBm)	(dB)		
1	11400	63.90	74	-10.10	H	RMS
2	11400	49.68	54	-4.32	H	RMS
1	11400	64.14	74	-9.86	V	RMS
2	11400	47.06	54	-6.94	V	RMS

Low Channel (5745MHz)



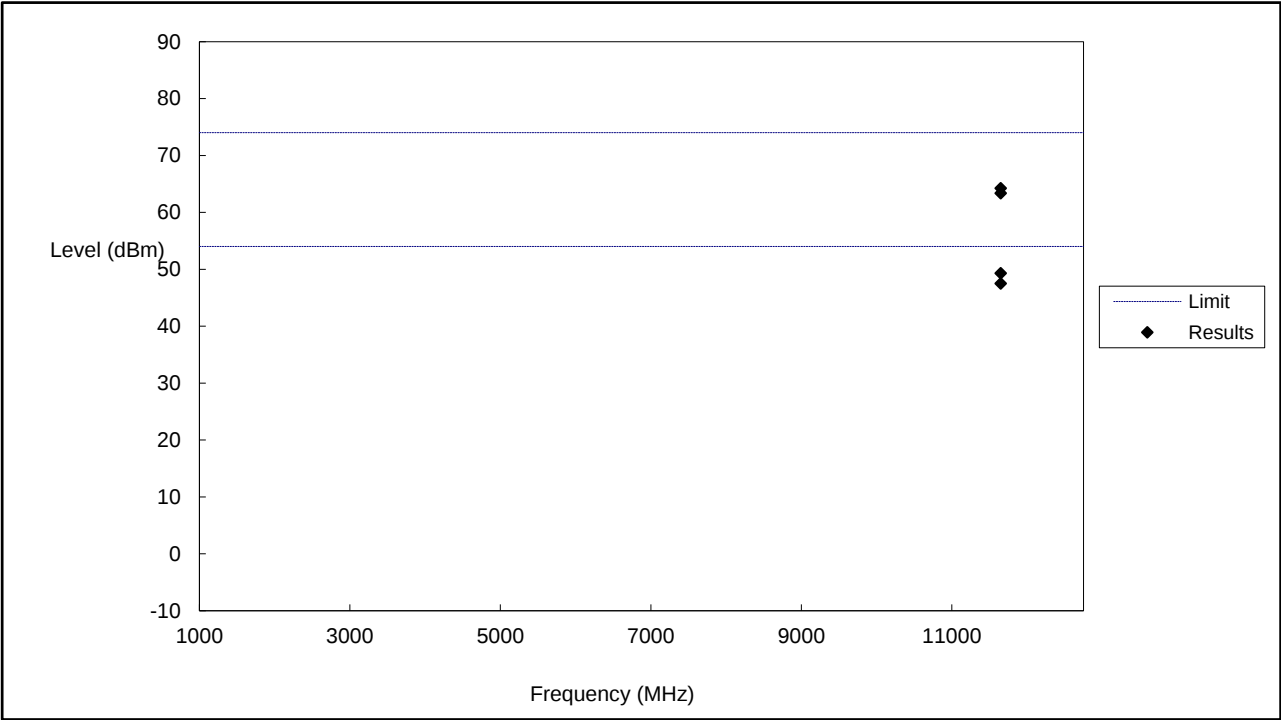
No.	Frequency	Result	Limit	Margin	Polarity	Remark
	(MHz)	(dBm)	(dBm)	(dB)		
1	11490	64.65	74	-9.35	H	RMS
2	11490	48.85	54	-5.15	H	RMS
1	11490	63.50	74	-10.50	V	RMS
2	11490	49.02	54	-4.98	V	RMS

Middle Channel (5785MHz)



No.	Frequency	Result	Limit	Margin	Polarity	Remark
	(MHz)	(dBm)	(dBm)	(dB)		
1	11570	63.42	74	-10.58	H	RMS
2	11570	48.72	54	-5.28	H	RMS
1	11570	62.83	74	-11.17	V	RMS
2	11570	48.77	54	-5.23	V	RMS

High Channel (5825MHz)



No.	Frequency	Result	Limit	Margin	Polarity	Remark
	(MHz)	(dBm)	(dBm)	(dB)		
1	11650	63.36	74	-10.64	H	RMS
2	11650	47.50	54	-6.50	H	RMS
1	11650	64.24	74	-9.76	V	RMS
2	11650	49.30	54	-4.70	V	RMS

➤ Out of Band edge 5150-5250MHz

Test CH.	Test Segment	Result	Limit
	MHz	dBm/MHz	dBm/MHz
Lowest	Below 5150	-40.15	-27
Highest	Above 5350	-39.52	-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	-41.27	-27
Highest	Above 5350	-40.21	-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	-38.45	-27
Highest	Above 5725	-39.32	-27
Note: the data just list the worst cases			

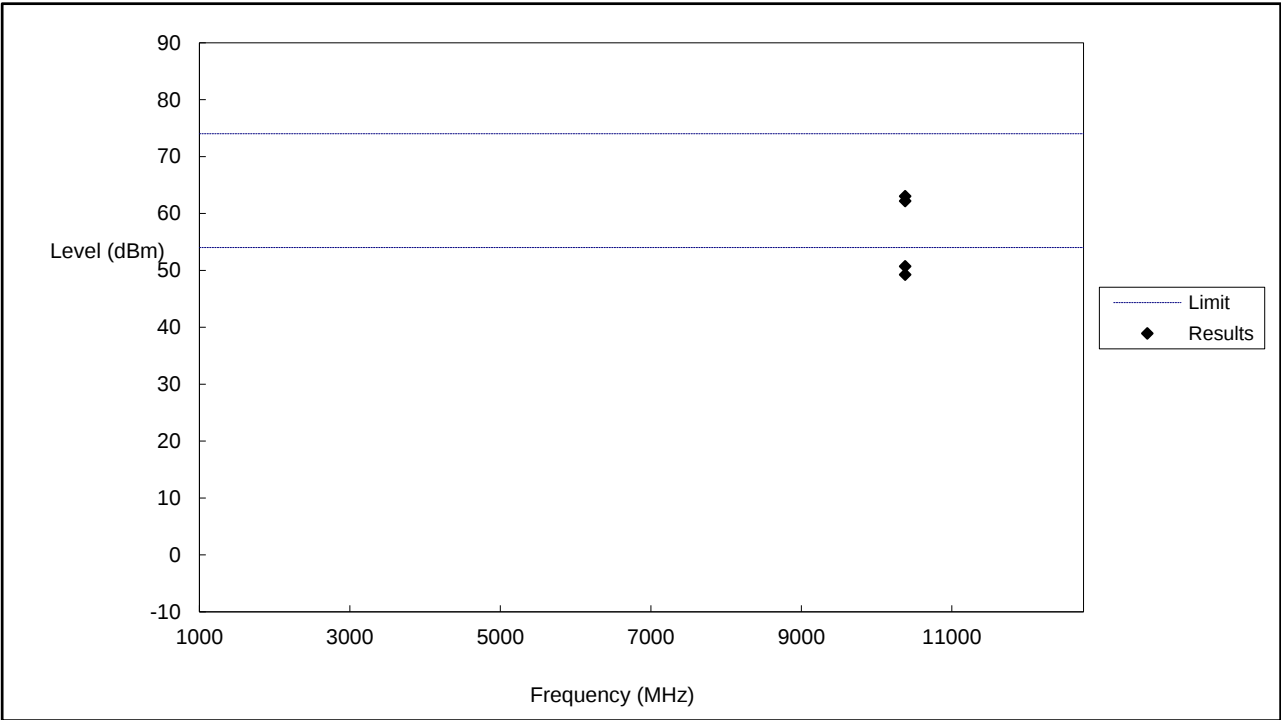
➤ Out of Band edge for 5725-5850MHz

Test CH.	Test Segment	Result	Limit
	MHz	dBm/MHz	dBm/MHz
Lowest	Below 5715	-39.54	-27
	5715 to 5725	-36.42	-17
Highest	5850 to 5860	-35.15	-17
	Above 5860	-40.18	-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.

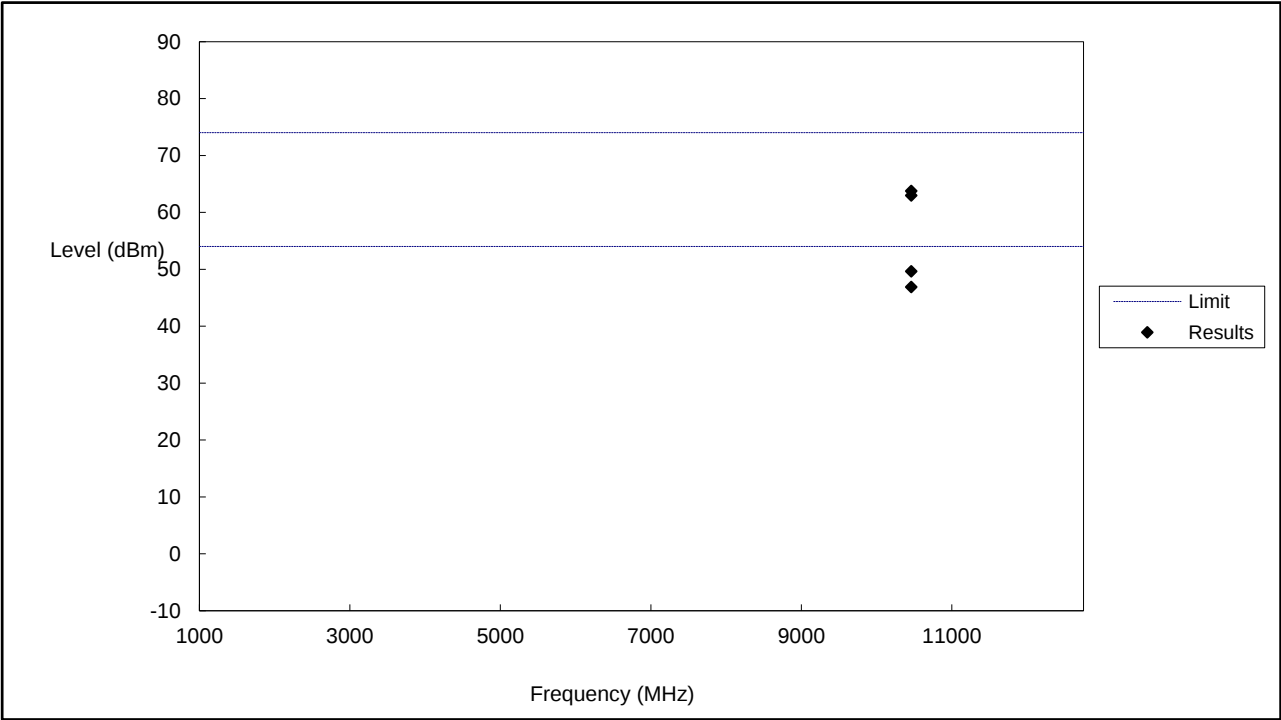
- For the frequency band 5.15-5.25GHz, 5.250-5.350GHz, 5.470-5.725GHz, 5.725-5.850GHz (802.11n HT40)
- Harmonics And Spurious Emissions

Low Channel (5190MHz)



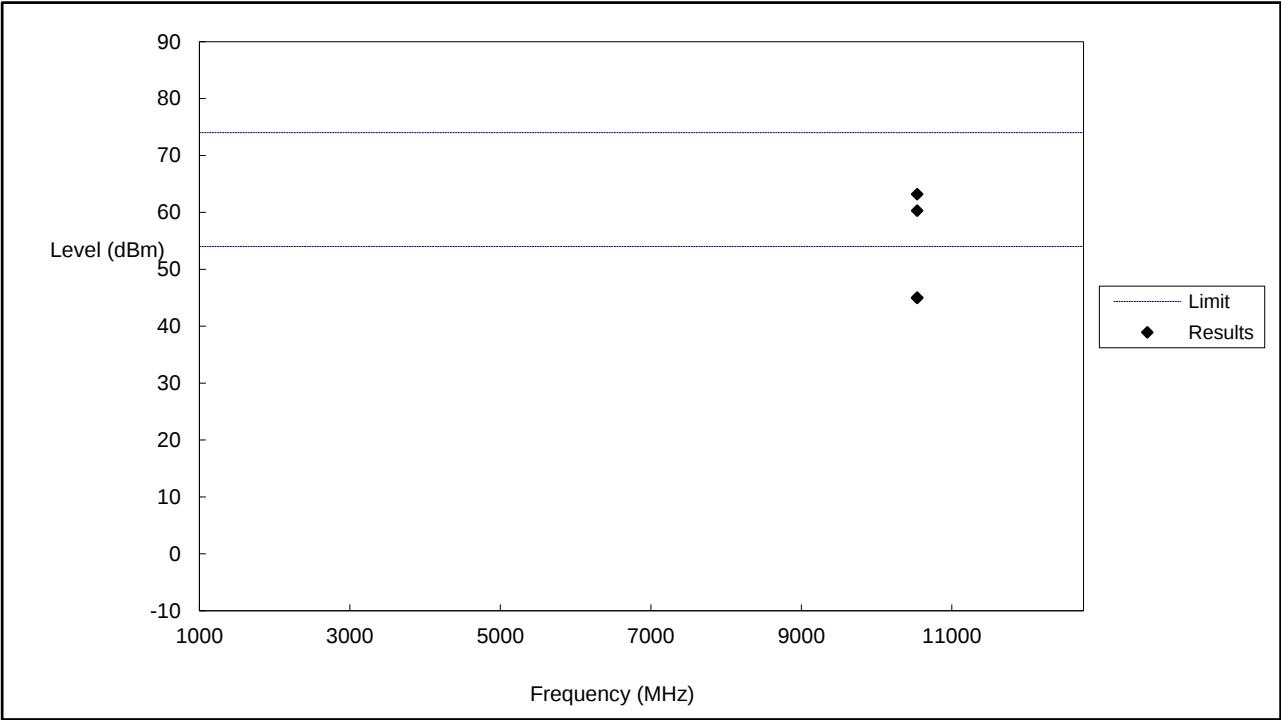
No.	Frequency	Result	Limit	Margin	Polarity	Remark
	(MHz)	(dBm)	(dBm)	(dB)		
1	10380	62.18	74	-11.82	H	RMS
2	10380	50.71	54	-3.29	H	RMS
1	10380	63.03	74	-10.97	V	RMS
2	10380	49.25	54	-4.75	V	RMS

High Channel (5825MHz)



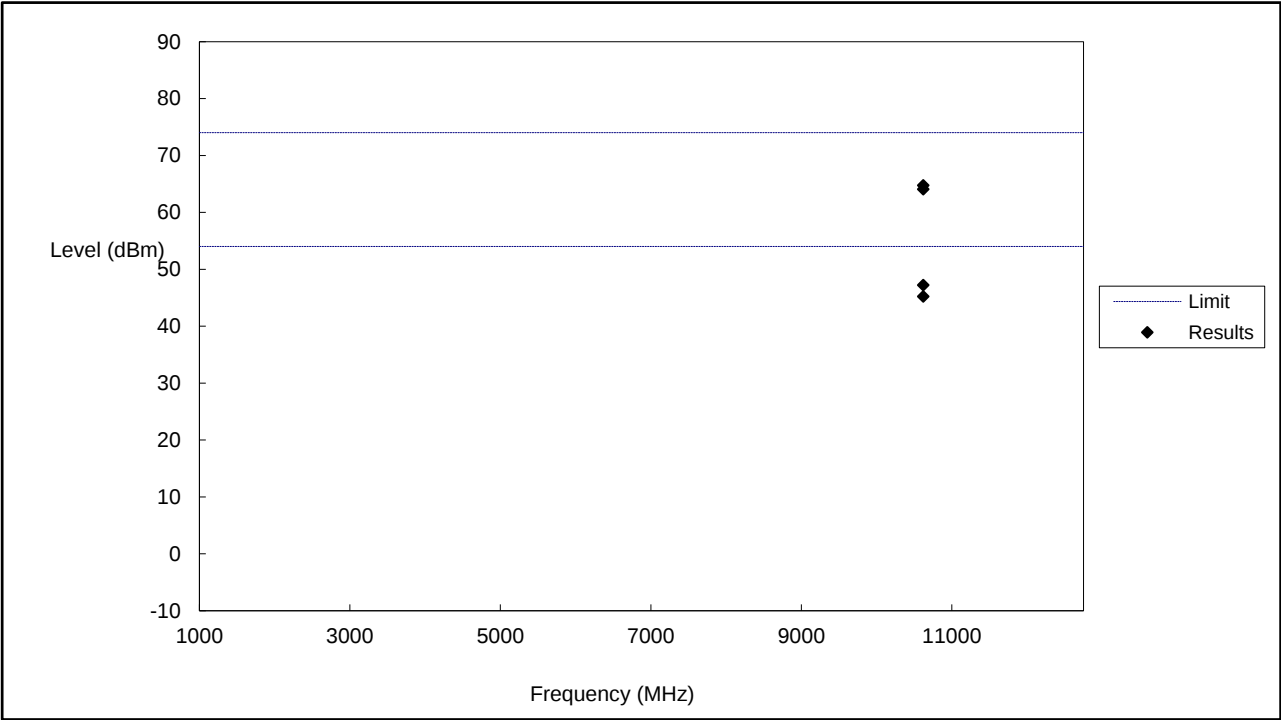
No.	Frequency	Result	Limit	Margin	Polarity	Remark
	(MHz)	(dBm)	(dBm)	(dB)		
1	10460	63.77	74	-10.23	H	RMS
2	10460	49.65	54	-4.35	H	RMS
1	10460	62.97	74	-11.03	V	RMS
2	10460	46.87	54	-7.13	V	RMS

Low Channel (5270MHz)



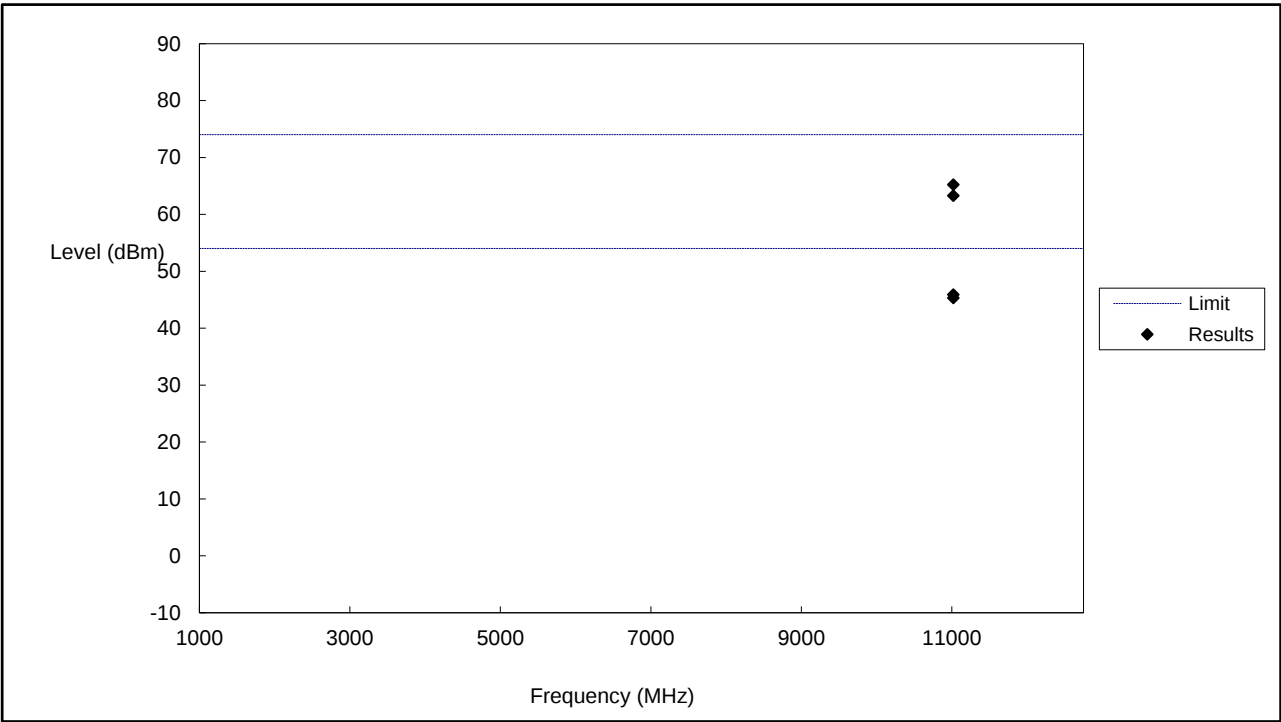
No.	Frequency	Result	Limit	Margin	Polarity	Remark
	(MHz)	(dBm)	(dBm)	(dB)		
1	10540	63.19	74	-10.81	H	RMS
2	10540	45.00	54	-9.00	H	RMS
1	10540	60.31	74	-13.69	V	RMS
2	10540	44.97	54	-9.03	V	RMS

High Channel (5310MHz)



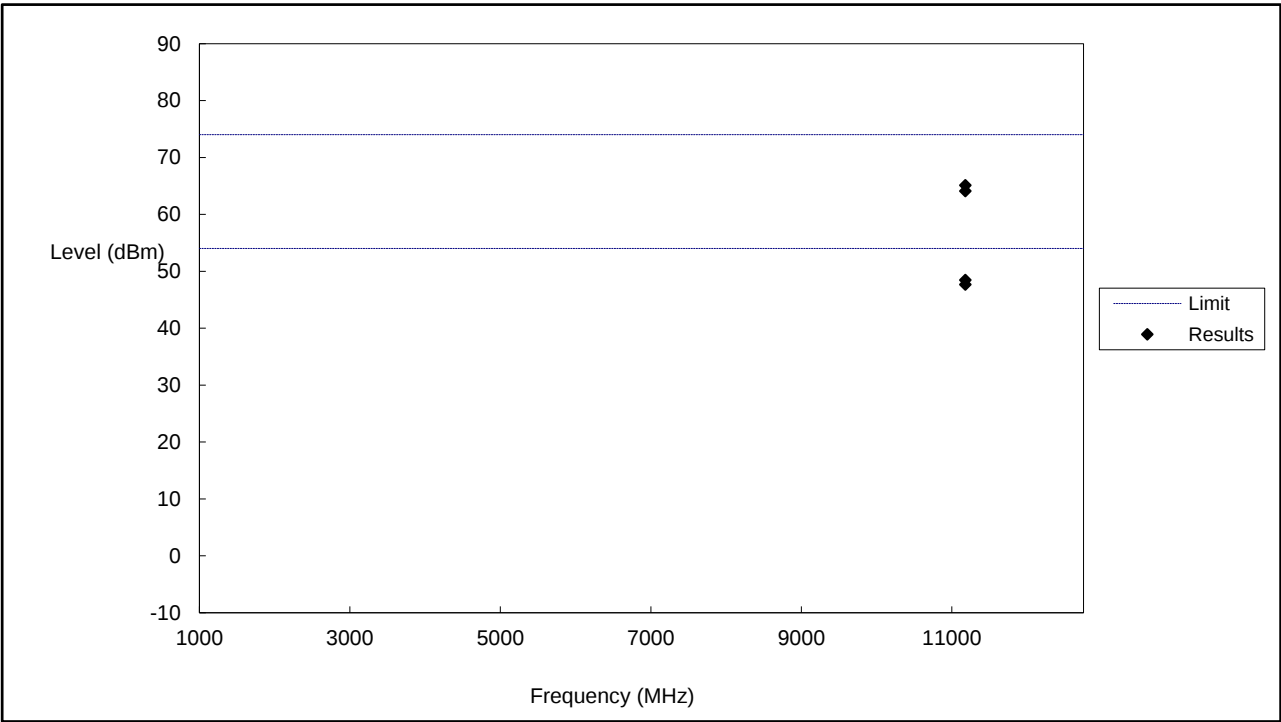
No.	Frequency	Result	Limit	Margin	Polarity	Remark
	(MHz)	(dBm)	(dBm)	(dB)		
1	10620	64.73	74	-9.27	H	RMS
2	10620	45.21	54	-8.79	H	RMS
1	10620	64.08	74	-9.92	V	RMS
2	10620	47.22	54	-6.78	V	RMS

Low Channel (5510MHz)



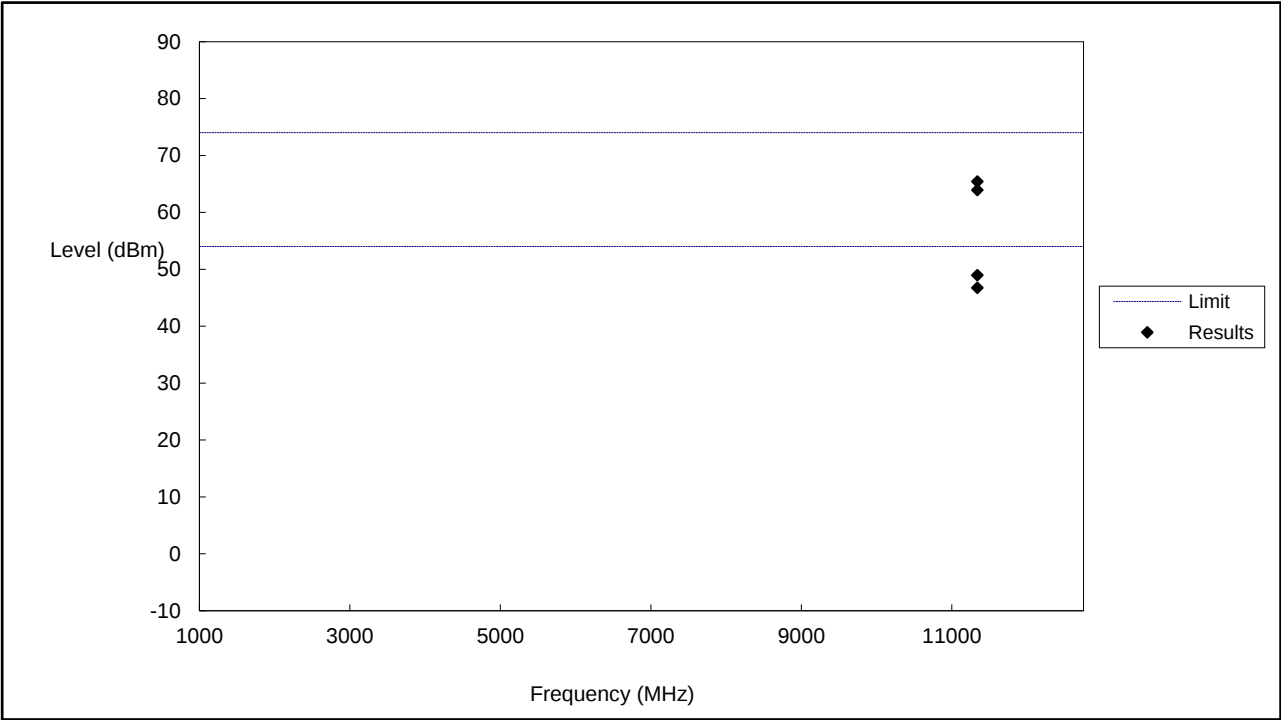
No.	Frequency	Result	Limit	Margin	Polarity	Remark
	(MHz)	(dBm)	(dBm)	(dB)		
1	11020	65.21	74	-8.79	H	RMS
2	11020	45.30	54	-8.70	H	RMS
1	11020	63.29	74	-10.71	V	RMS
2	11020	45.91	54	-8.09	V	RMS

Middle Channel (5590MHz)



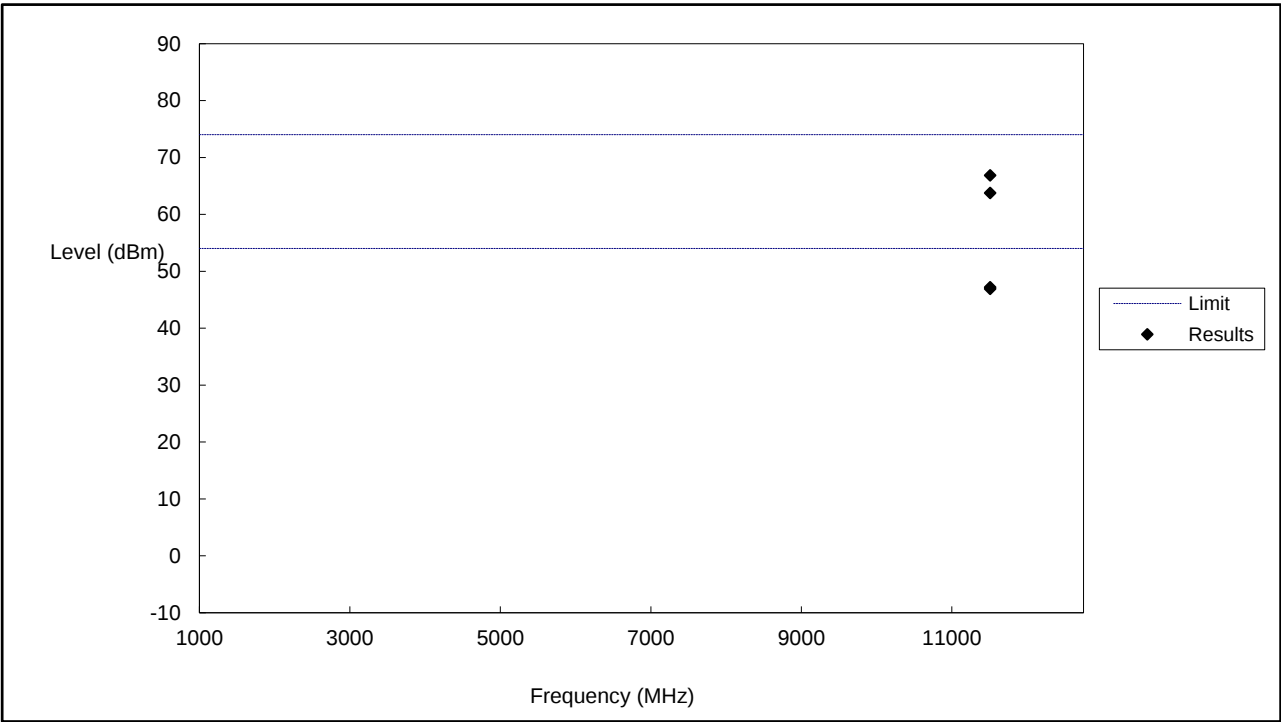
No.	Frequency	Result	Limit	Margin	Polarity	Remark
	(MHz)	(dBm)	(dBm)	(dB)		
1	11180	64.09	74	-9.91	H	RMS
2	11180	48.45	54	-5.55	H	RMS
1	11180	65.12	74	-8.88	V	RMS
2	11180	47.68	54	-6.32	V	RMS

High Channel (5670MHz)



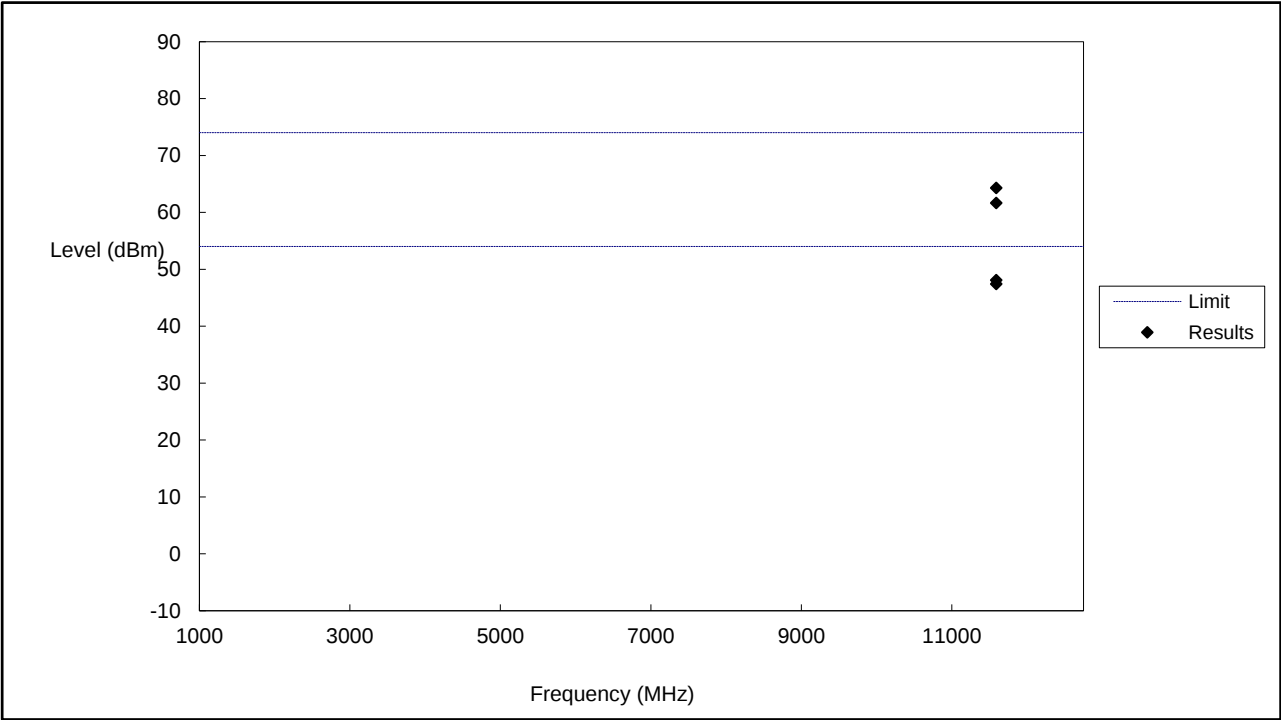
No.	Frequency	Result	Limit	Margin	Polarity	Remark
	(MHz)	(dBm)	(dBm)	(dB)		
1	11340	63.93	74	-10.07	H	RMS
2	11340	48.96	54	-5.04	H	RMS
1	11340	65.42	74	-8.58	V	RMS
2	11340	46.74	54	-7.26	V	RMS

Low Channel (5755MHz)



No.	Frequency	Result	Limit	Margin	Polarity	Remark
	(MHz)	(dBm)	(dBm)	(dB)		
1	11510	66.86	74	-7.14	H	RMS
2	11510	47.19	54	-6.81	H	RMS
1	11510	63.75	74	-10.25	V	RMS
2	11510	46.91	54	-7.09	V	RMS

High Channel (5795MHz)



No.	Frequency	Result	Limit	Margin	Polarity	Remark
	(MHz)	(dBm)	(dBm)	(dB)		
1	11590	64.28	74	-9.72	H	RMS
2	11590	47.41	54	-6.59	H	RMS
1	11590	61.64	74	-12.36	V	RMS
2	11590	48.08	54	-5.92	V	RMS

➤ Out of Band edge for 5150-5250MHz

Test CH.	Test Segment	Result	Limit
	MHz	dBm/MHz	dBm/MHz
Lowest	Below 5150	-41.02	-27
Highest	Above 5350	-39.52	-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	-39.97	-27
Highest	Above 5350	-40.24	-27
Note: the data just list the worst cases			

➤ Out of Band edge for 5470-5725MHz

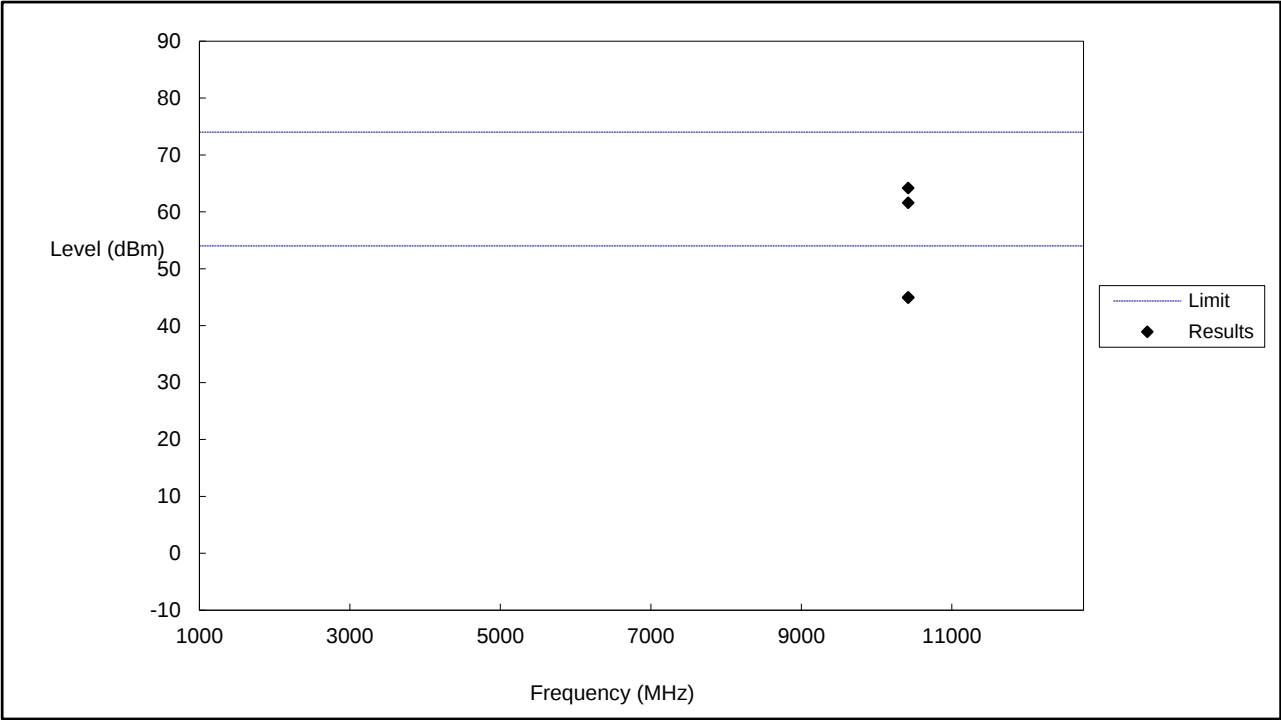
Test CH.	Test Segment	Result	Limit
	MHz	dBm/MHz	dBm/MHz
Lowest	Below 5470	-41.14	-27
Highest	Above 5725	-38.62	-27
Note: the data just list the worst cases			

➤ Out of Band edge for 5725-5850MHz

Test CH.	Test Segment	Result	Limit
	MHz	dBm/MHz	dBm/MHz
Lowest	Below 5715	-40.28	-27
	5715 to 5725	-36.45	-17
Highest	5850 to 5860	-41.24	-17
	Above 5860	-37.98	-27
Note: the data just list the worst cases			

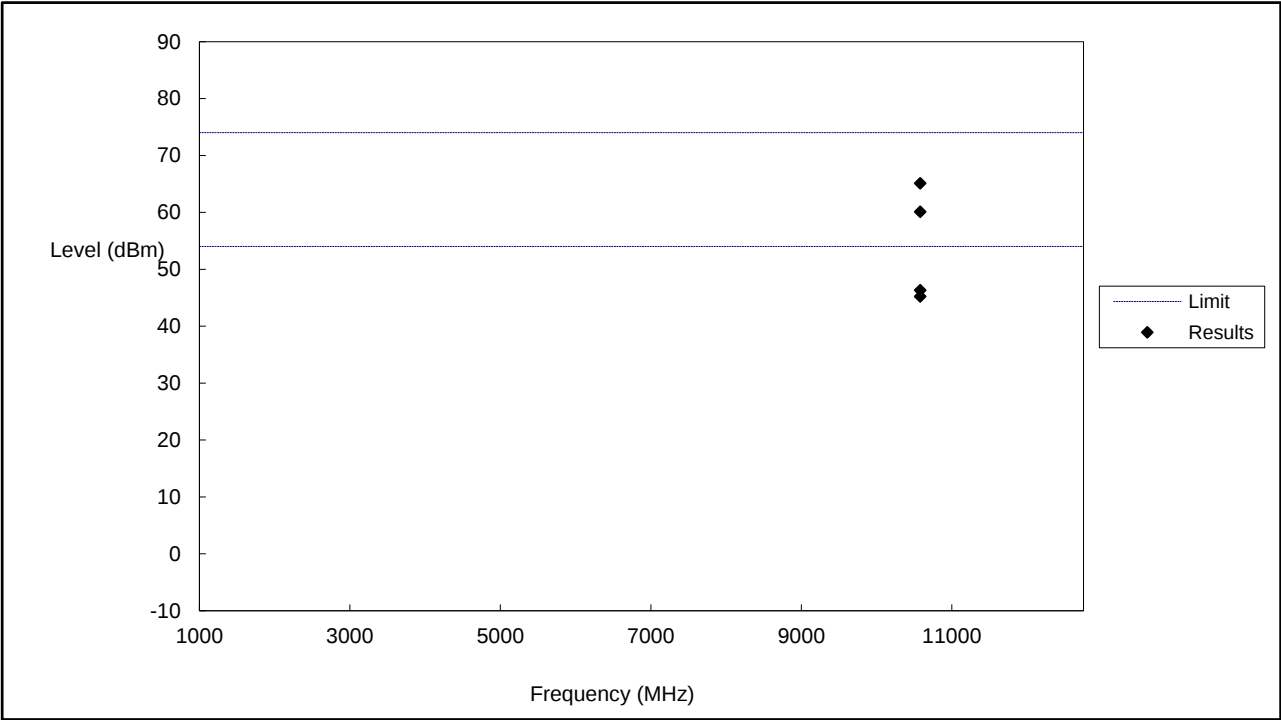
- For the frequency band 5.15-5.25GHz, 5.250-5.350GHz, 5.470-5.725GHz, 5.725-5.850GHz (802.11ac VH80)
- Harmonics And Spurious Emissions

5210MHz



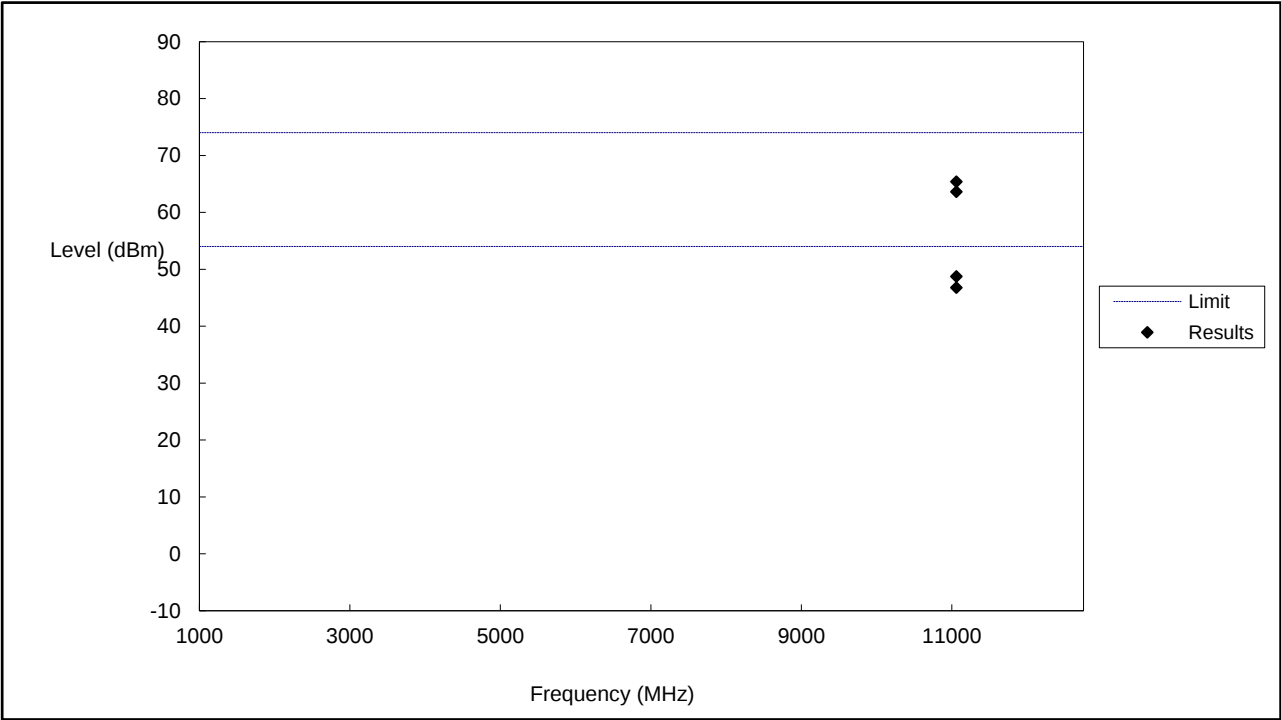
No.	Frequency	Result	Limit	Margin	Polarity	Remark
	(MHz)	(dBm)	(dBm)	(dB)		
1	10420	64.17	74	-9.83	H	RMS
2	10420	44.95	54	-9.05	H	RMS
1	10420	61.59	74	-12.41	V	RMS
2	10420	44.94	54	-9.06	V	RMS

5290MHz



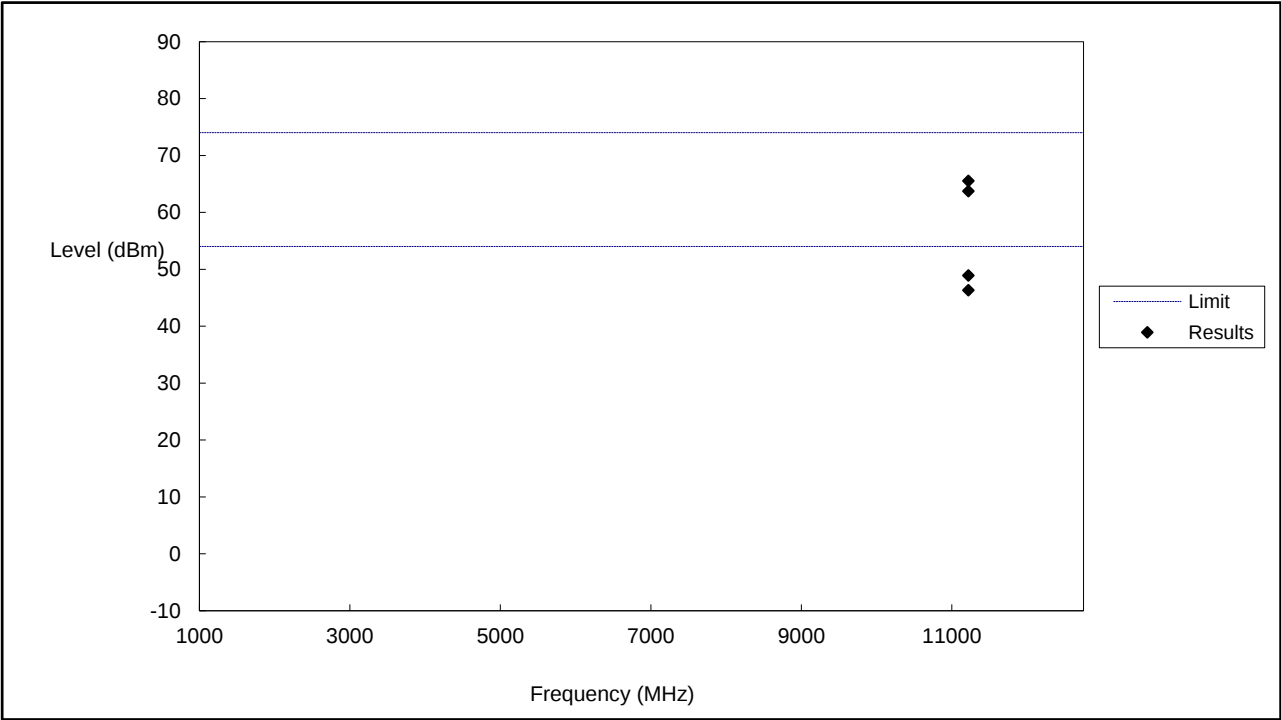
No.	Frequency	Result	Limit	Margin	Polarity	Remark
	(MHz)	(dBm)	(dBm)	(dB)		
1	10580	65.11	74	-8.89	H	RMS
2	10580	46.32	54	-7.68	H	RMS
1	10580	60.11	74	-13.89	V	RMS
2	10580	45.21	54	-8.79	V	RMS

Low Channel (5530MHz)



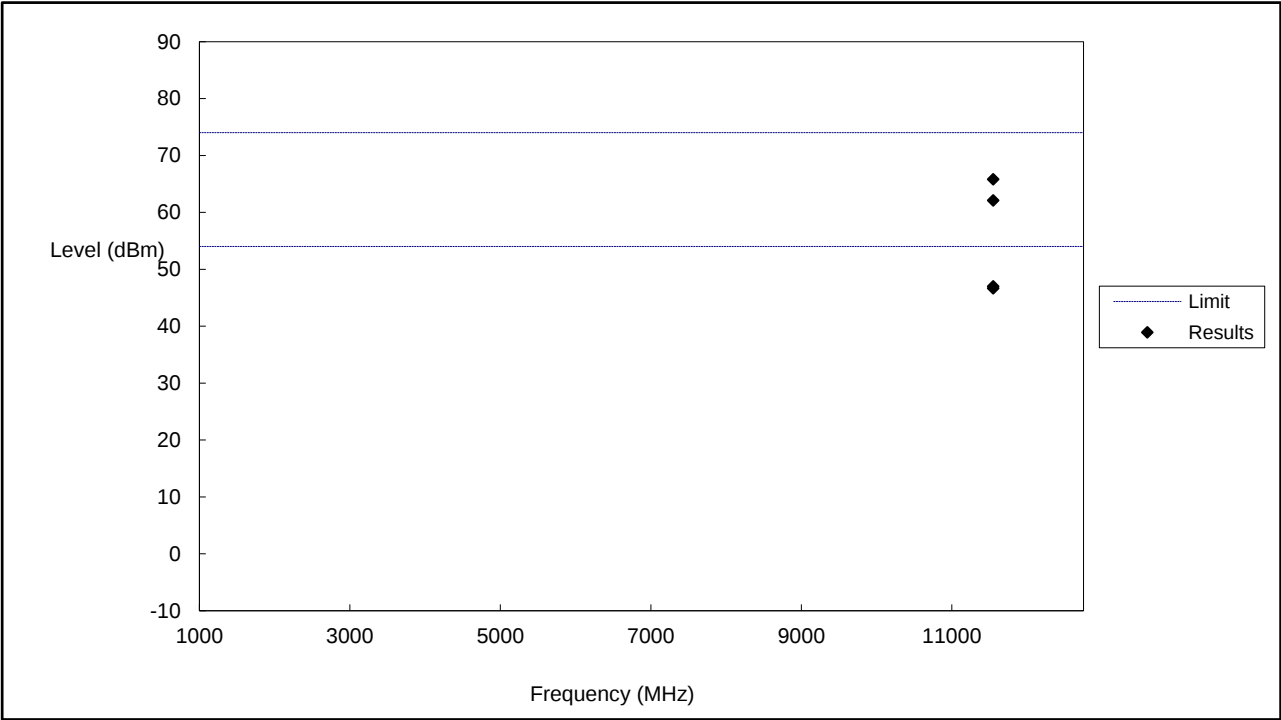
No.	Frequency	Result	Limit	Margin	Polarity	Remark
	(MHz)	(dBm)	(dBm)	(dB)		
1	11060	65.40	74	-8.60	H	RMS
2	11060	46.77	54	-7.23	H	RMS
1	11060	63.62	74	-10.38	V	RMS
2	11060	48.75	54	-5.25	V	RMS

High Channel (5610MHz)



No.	Frequency	Result	Limit	Margin	Polarity	Remark
	(MHz)	(dBm)	(dBm)	(dB)		
1	11220	65.52	74	-8.48	H	RMS
2	11220	48.90	54	-5.10	H	RMS
1	11220	63.73	74	-10.27	V	RMS
2	11220	46.32	54	-7.68	V	RMS

5775MHz



No.	Frequency	Result	Limit	Margin	Polarity	Remark
	(MHz)	(dBm)	(dBm)	(dB)		
1	11550	65.82	74	-8.18	H	RMS
2	11550	46.65	54	-7.35	H	RMS
1	11550	62.11	74	-11.89	V	RMS
2	11550	47.00	54	-7.00	V	RMS

➤ Out of Band edge for 5150-5250MHz

Test CH.	Test Segment	Result	Limit
	MHz	dBm/MHz	dBm/MHz
Lowest	Below 5150	-41.25	-27
Highest	Above 5350	-38.74	-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	-42.35	-27
Highest	Above 5350	-39.47	-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	-39.85	-27
Highest	Above 5725	-38.12	-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	-39.65	-27
	5715 to 5725	-35.47	-17
Highest	5850 to 5860	-35.31	-17
	Above 5860	-39.64	-27
Note: the data just list the worst cases			

Note: Testing is carried out with frequency rang 9kHz to 40Ghz, 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

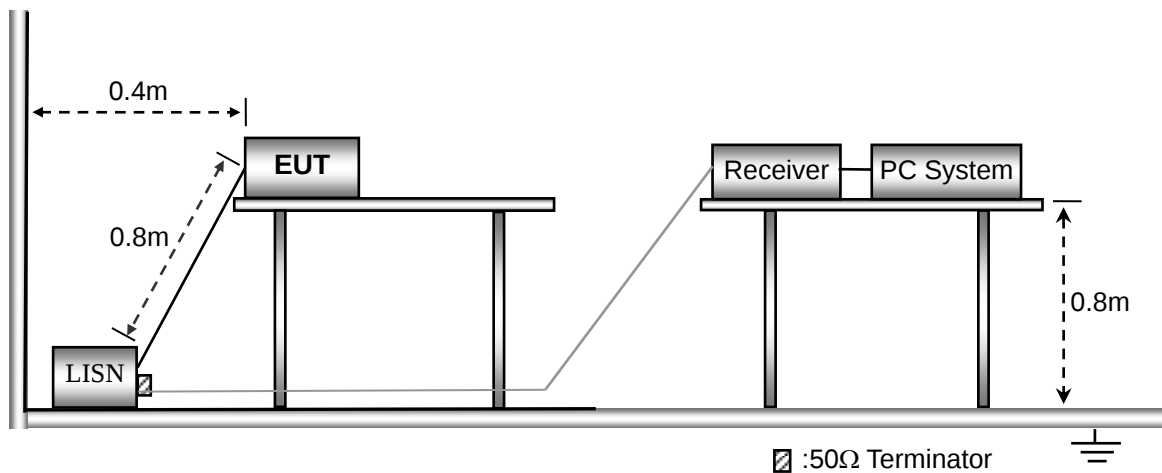
10. Conducted Emissions

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 40cm long in the middle. The spacing between the peripherals was 10cm.

10.2 Basic Test Setup Block Diagram



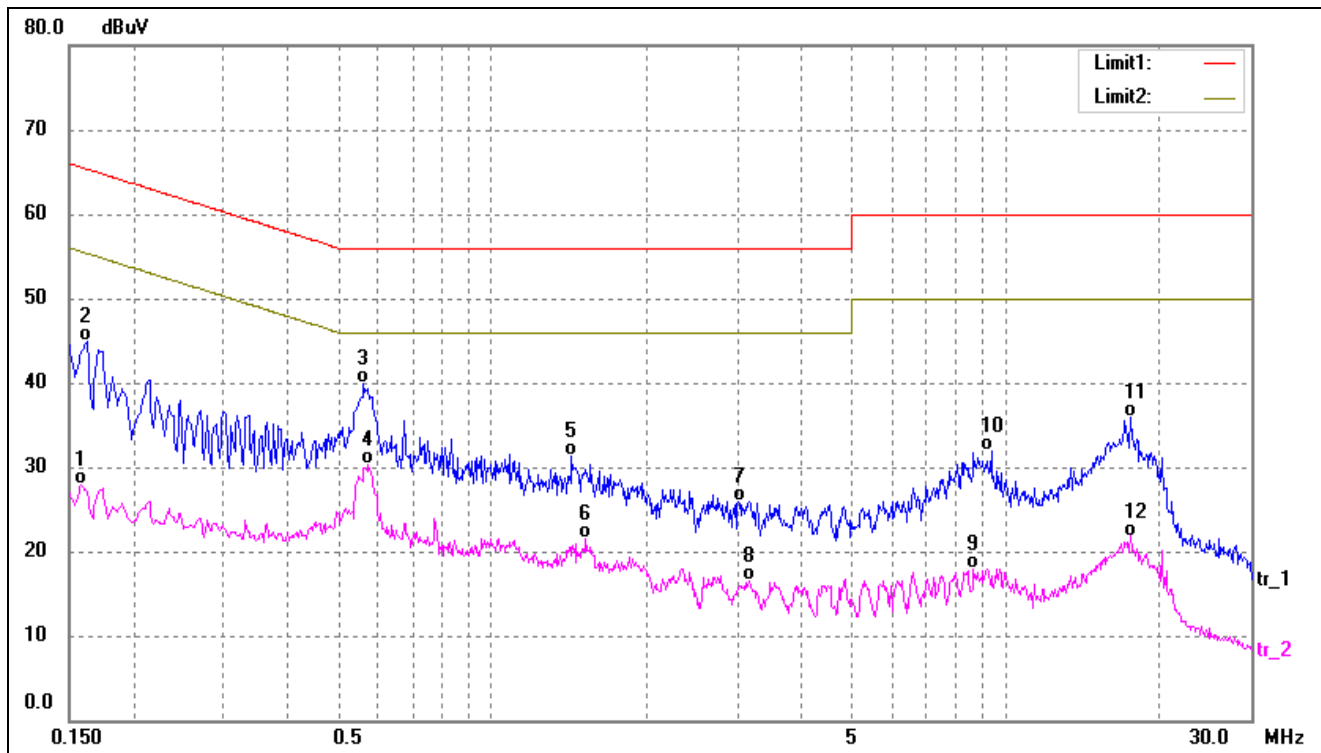
10.3 Test Receiver Setup

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

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

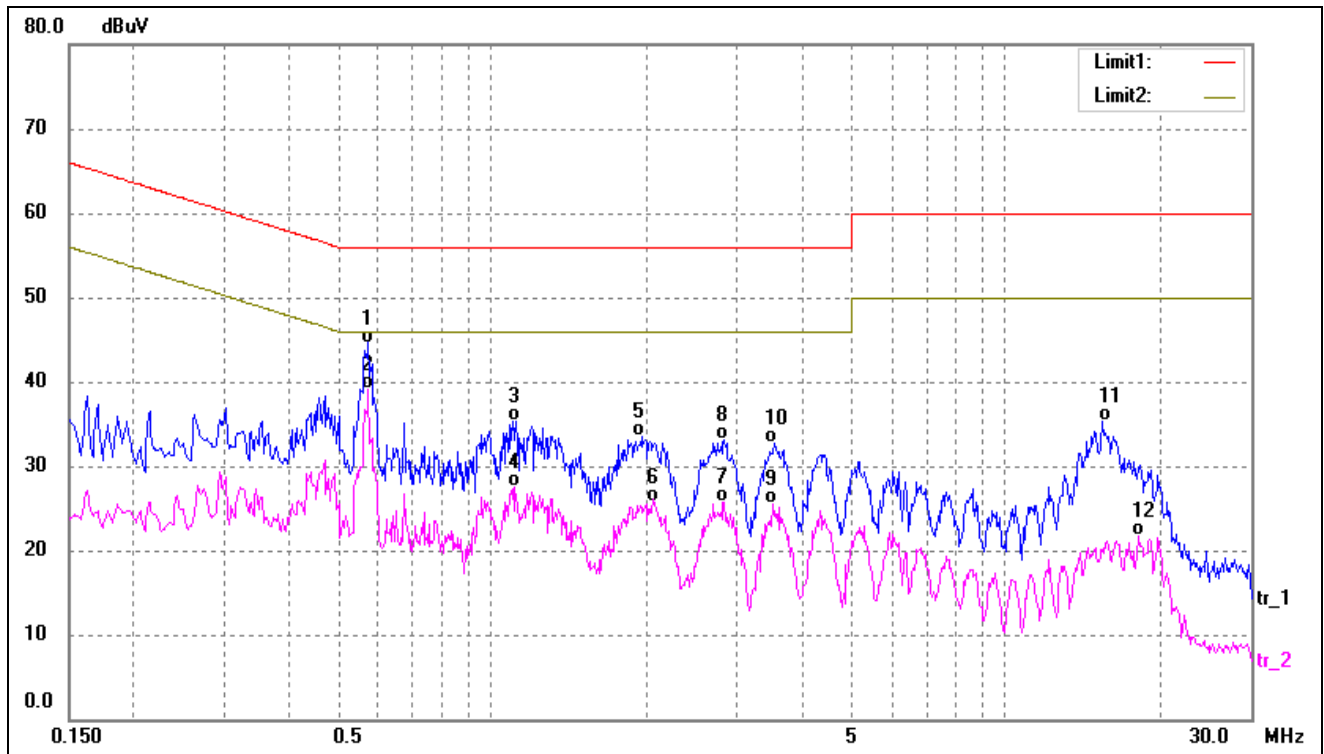
10.4 Summary of Test Results/Plots

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	0.1580	17.51	10.40	27.91	55.56	-27.65	AVG
2	0.1620	34.44	10.40	44.84	65.36	-20.52	QP
3	0.5620	29.61	10.22	39.83	56.00	-16.17	QP
4*	0.5740	20.13	10.22	30.35	46.00	-15.65	AVG
5	1.4260	21.05	10.22	31.27	56.00	-24.73	QP
6	1.5260	11.27	10.24	21.51	46.00	-24.49	AVG
7	3.0140	15.48	10.35	25.83	56.00	-30.17	QP
8	3.1660	6.07	10.35	16.42	46.00	-29.58	AVG
9	8.6820	7.58	10.38	17.96	50.00	-32.04	AVG
10	9.3860	21.47	10.38	31.85	60.00	-28.15	QP
11	17.5419	25.56	10.30	35.86	60.00	-24.14	QP
12	17.5419	11.50	10.30	21.80	50.00	-28.20	AVG

Test Mode	Communication	AC120V 60Hz	Polarity:	Line
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No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.5738	34.38	10.22	44.60	56.00	-11.40	QP
2*	0.5738	28.88	10.22	39.10	46.00	-6.90	AVG
3	1.0980	25.20	10.16	35.36	56.00	-20.64	QP
4	1.1060	17.28	10.16	27.44	46.00	-18.56	AVG
5	1.9539	23.11	10.33	33.44	56.00	-22.56	QP
6	2.0619	15.43	10.33	25.76	46.00	-20.24	AVG
7	2.8179	15.42	10.34	25.76	46.00	-20.24	AVG
8	2.8260	22.75	10.34	33.09	56.00	-22.91	QP
9	3.5219	15.07	10.36	25.43	46.00	-20.57	AVG
10	3.5379	22.35	10.36	32.71	56.00	-23.29	QP
11	15.4299	25.06	10.24	35.30	60.00	-24.70	QP
12	18.1419	11.31	10.32	21.63	50.00	-28.37	AVG

APPENDIX SUMMARY

Project No.	WTX23X06121604W	Test Engineer	Timi Huang
Start date	2023/6/25	Finish date	2023/6/25
Temperature	23℃	Humidity	46%
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

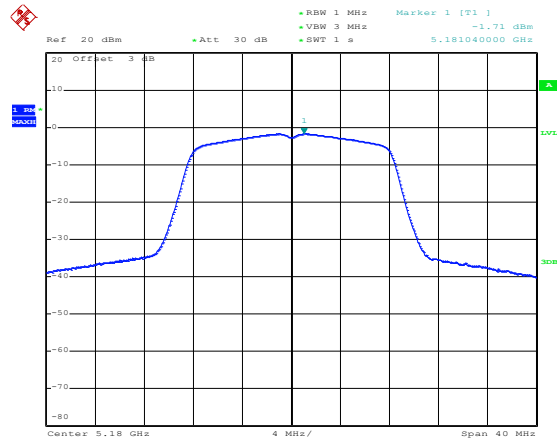
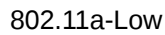
Power Spectral Density			
U-NII-1:5150-5250MHz			
Operating mode	Test Channel	Power Spectral Density dBm/MHz	Limit (dBm/MHz)
802.11a	5180	-1.71	11
	5200	-1.72	11
	5240	-2.03	11
802.11n-HT20	5180	-1.82	11
	5200	-2.04	11
	5240	-2.38	11
802.11n-HT40	5190	-5.05	11
	5230	-5.39	11
802.11ac-HT80	5210	-8.63	11

U-NII-2A: 5250-5350MHz			
Operating mode	Test Channel	Power Spectral Density dBm/MHz	Limit (dBm/MHz)
802.11a	5260	-2.43	11
	5280	-2.53	11
	5320	-3.34	11
802.11n-HT20	5260	-2.81	11
	5280	-2.89	11
	5320	-3.72	11
802.11n-HT40	5270	-5.88	11
	5310	-6.50	11
802.11ac-HT80	5290	-9.47	11

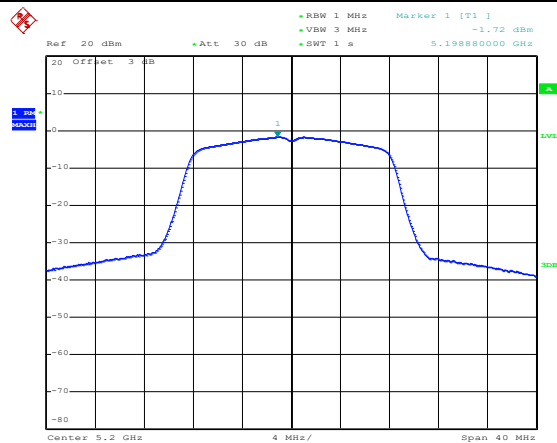
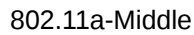
U-NII-2C: 5470-5725MHz			
Operating mode	Test Channel	Power Spectral Density dBm/MHz	Limit (dBm/MHz)
802.11a	5500	-3.69	11
	5600	-3.35	11
	5700	-3.39	11
802.11n-HT20	5500	-3.93	11
	5600	-3.70	11
	5700	-3.84	11
802.11n-HT40	5510	-6.75	11
	5590	-6.46	11
	5670	-6.67	11
802.11ac-HT80	5530	-10.12	11
	5610	-9.62	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	-3.16	2.22	-0.94	30
	5785	-2.66	2.22	-0.44	30
	5825	-2.25	2.22	-0.03	30
802.11n-HT20	5745	-3.45	2.22	-1.23	30
	5785	-3.06	2.22	-0.84	30
	5825	-2.47	2.22	-0.25	30
802.11n HT40	5755	-6.49	2.22	-4.27	30
	5795	-5.91	2.22	-3.69	30
802.11ac VH80	5775	-10.0	2.22	-7.78	30
*Note: Maximum PSD=PSD(dBm/300kHz)+10log(500kHz/300kHz)=2.22					

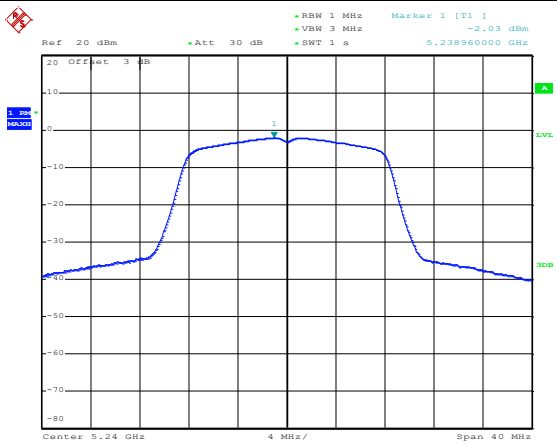
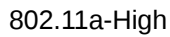
5150-5250MHz



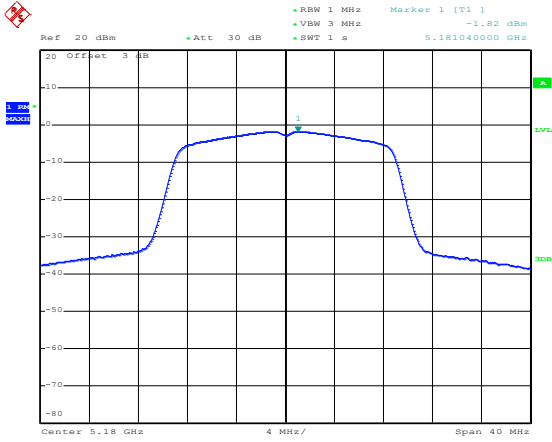
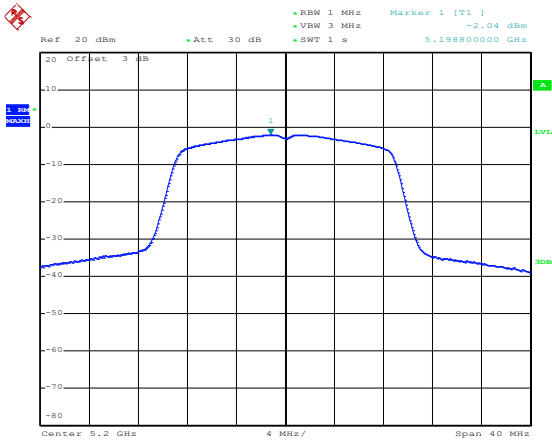
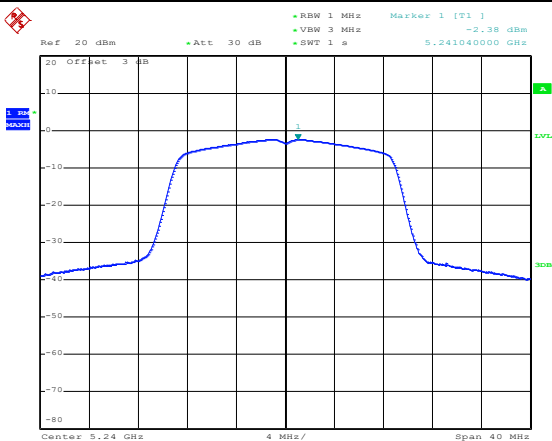
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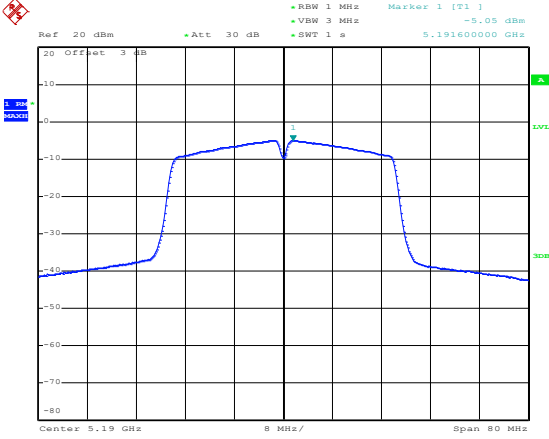
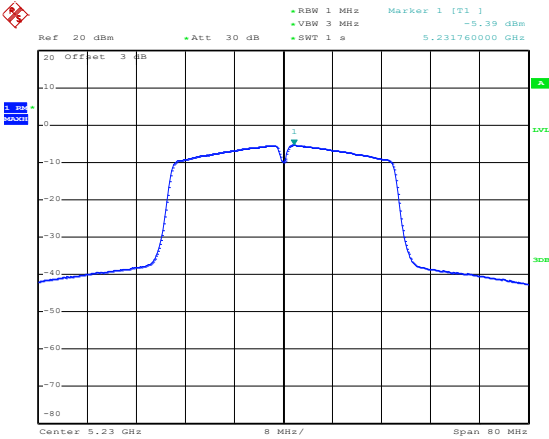
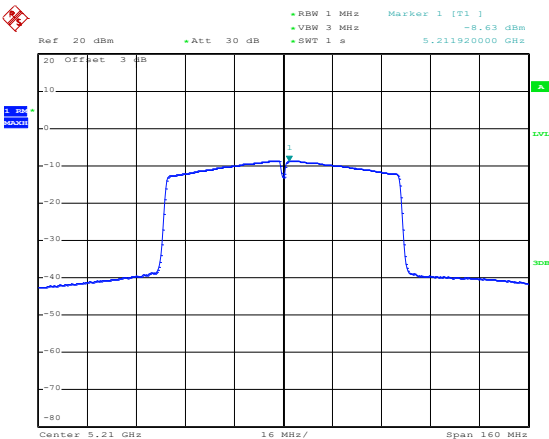


Date: 25.JUN.2023 14:08:26

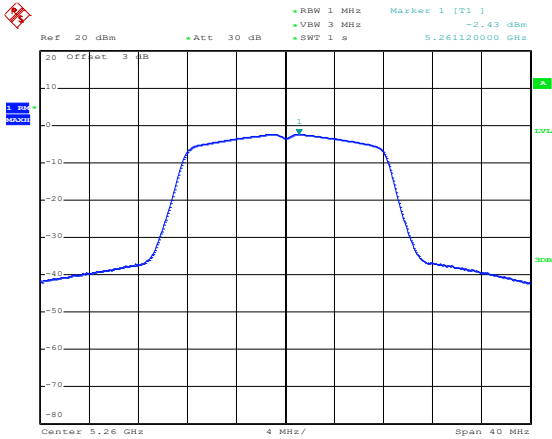
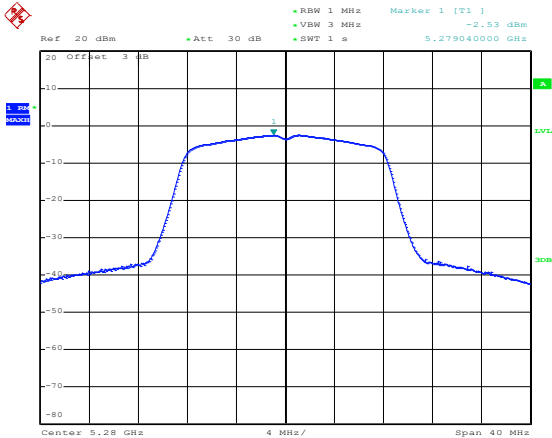
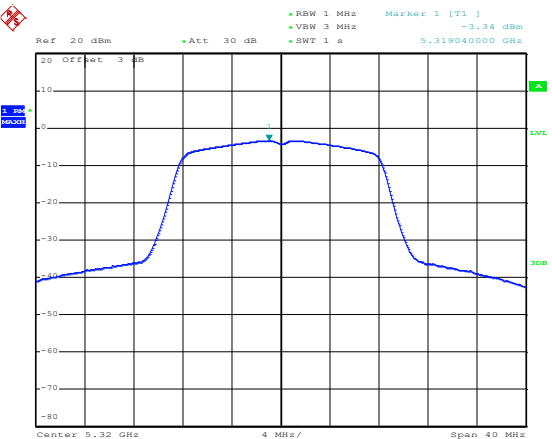


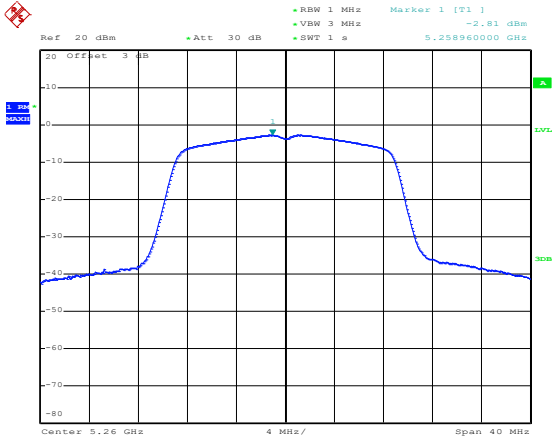
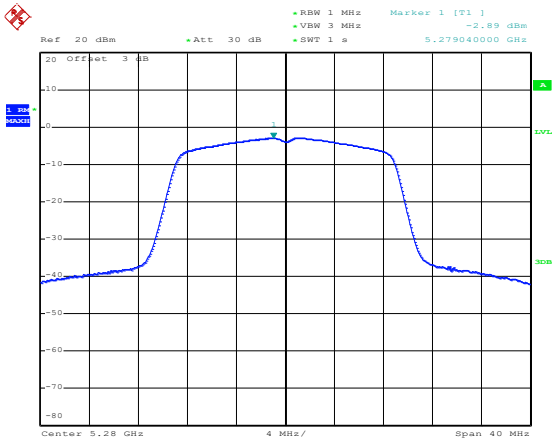
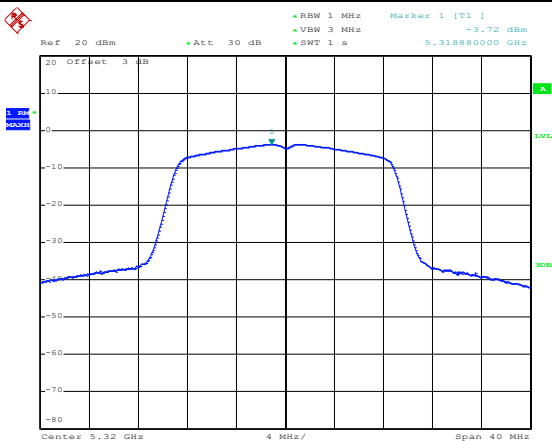
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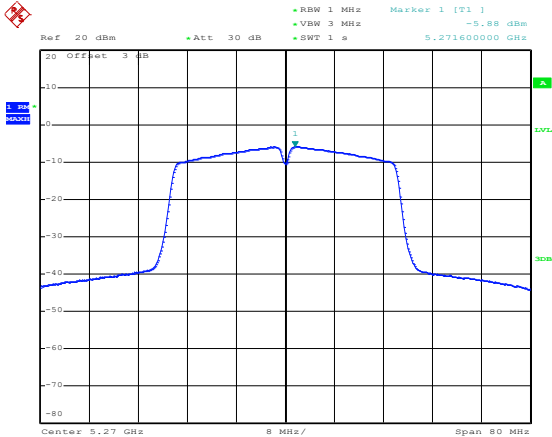
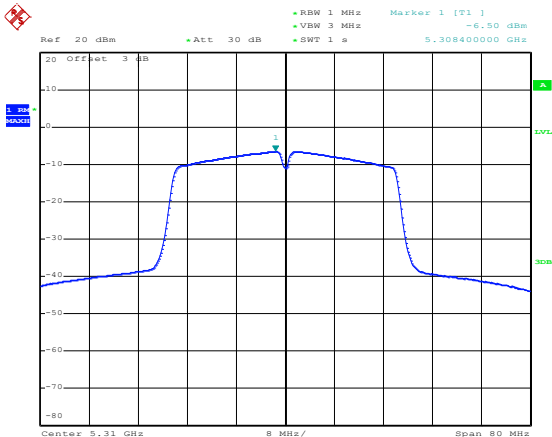
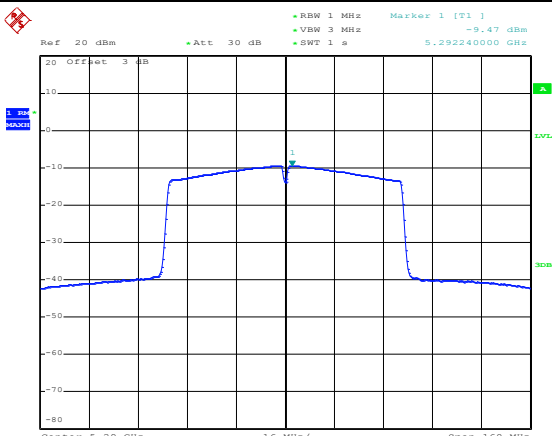
802.11n-HT20-Low	 Ref: 20 dBm, Att: 30 dB, RBW: 1 MHz, VBW: 3 MHz, SWT: 1 s, Marker 1 [T1]: -1.82 dBm, 5.181040000 GHz Center: 5.18 GHz, Span: 40 MHz Date: 25.JUN.2023 14:07:09
802.11n-HT20-Middle	 Ref: 20 dBm, Att: 30 dB, RBW: 1 MHz, VBW: 3 MHz, SWT: 1 s, Marker 1 [T1]: -2.04 dBm, 5.198800000 GHz Center: 5.2 GHz, Span: 40 MHz Date: 25.JUN.2023 14:07:24
802.11n-HT20-High	 Ref: 20 dBm, Att: 30 dB, RBW: 1 MHz, VBW: 3 MHz, SWT: 1 s, Marker 1 [T1]: -2.38 dBm, 5.241040000 GHz Center: 5.24 GHz, Span: 40 MHz Date: 25.JUN.2023 14:07:43

802.11n-HT40-Low	 Ref: 20 dBm, Att: 30 dB, RBW: 1 MHz, VSW: 3 MHz, SWT: 1 s, Marker 1 [T1]: -5.05 dBm, 5.19160000 GHz Center: 5.19 GHz, Span: 80 MHz Date: 25.JUN.2023 14:06:24
802.11n-HT40-High	 Ref: 20 dBm, Att: 30 dB, RBW: 1 MHz, VSW: 3 MHz, SWT: 1 s, Marker 1 [T1]: -5.39 dBm, 5.23176000 GHz Center: 5.23 GHz, Span: 80 MHz Date: 25.JUN.2023 14:06:43
802.11ac-HT80-Low	 Ref: 20 dBm, Att: 30 dB, RBW: 1 MHz, VSW: 3 MHz, SWT: 1 s, Marker 1 [T1]: -8.63 dBm, 5.21192000 GHz Center: 5.21 GHz, Span: 160 MHz Date: 25.JUN.2023 14:05:39

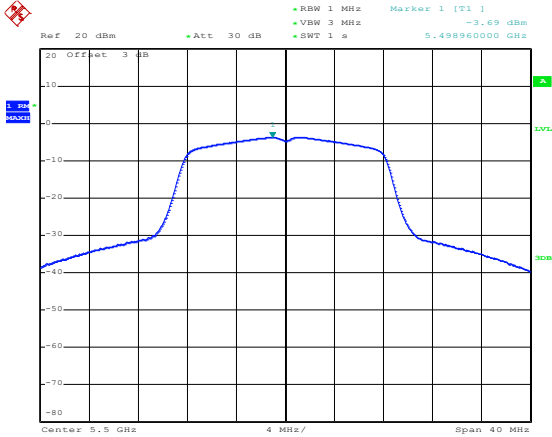
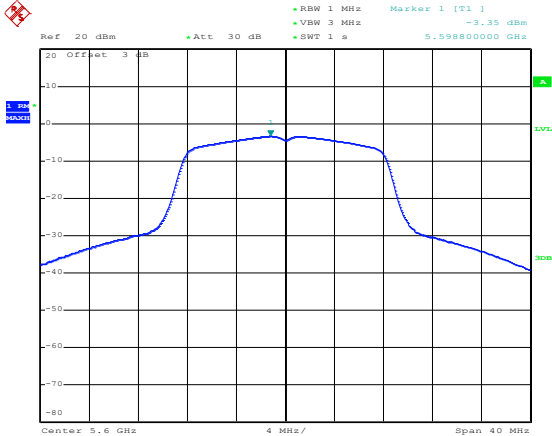
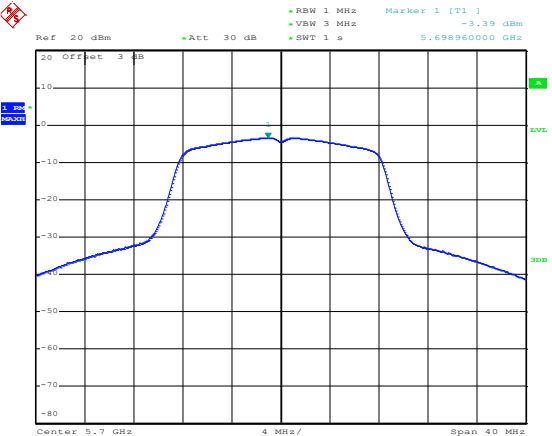
5250-5350MHz

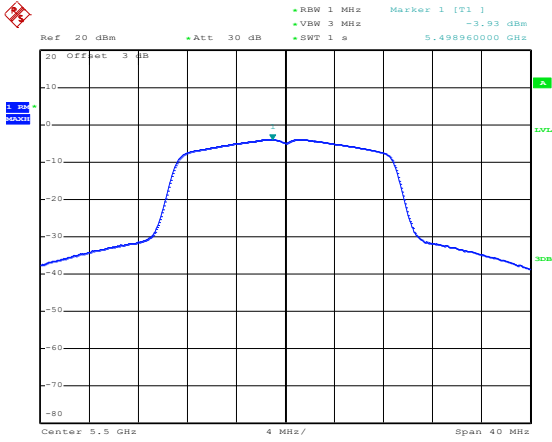
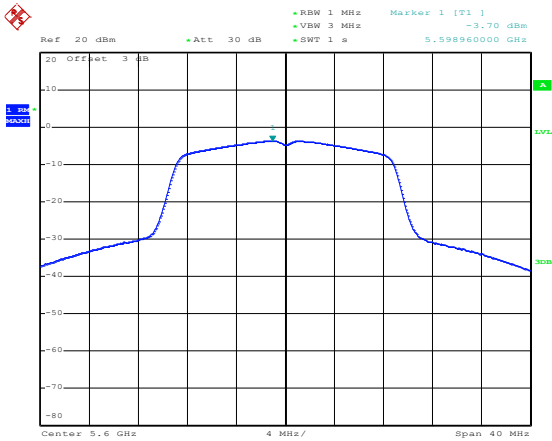
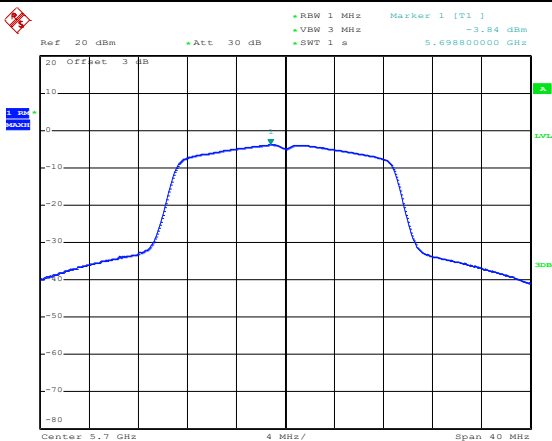
802.11a-Low	 Date: 25.JUN.2023 13:59:11
802.11a-Middle	 Date: 25.JUN.2023 13:59:36
802.11a-High	 Date: 25.JUN.2023 14:00:18

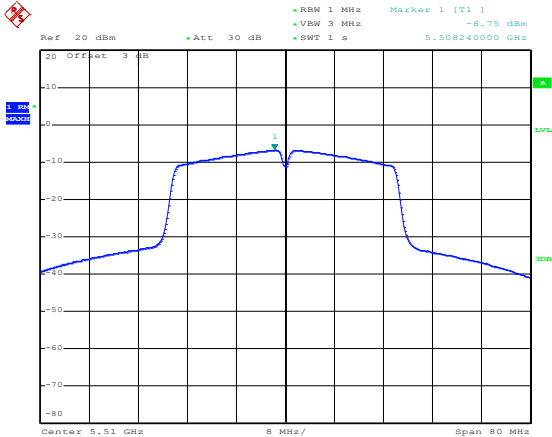
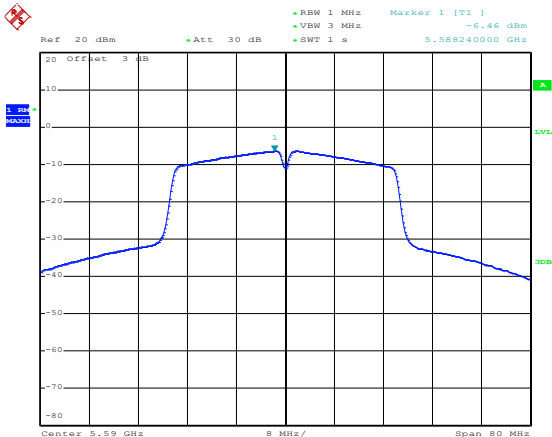
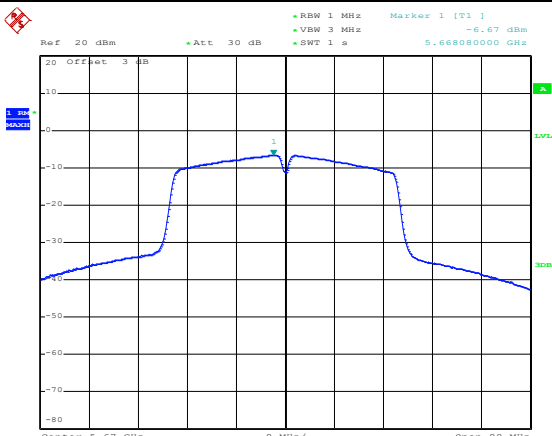
802.11n-HT20-Low	 Ref: 20 dBm, Att: 30 dB, RBW: 1 MHz, VBW: 3 MHz, SWT: 1 s, Marker 1 [F1]: -2.81 dBm, 5.258960000 GHz Center: 5.26 GHz, 4 MHz/, Span: 40 MHz Date: 25.JUN.2023 14:00:49
802.11n-HT20-Middle	 Ref: 20 dBm, Att: 30 dB, RBW: 1 MHz, VBW: 3 MHz, SWT: 1 s, Marker 1 [F1]: -2.89 dBm, 5.279040000 GHz Center: 5.28 GHz, 4 MHz/, Span: 40 MHz Date: 25.JUN.2023 14:01:10
802.11n-HT20-High	 Ref: 20 dBm, Att: 30 dB, RBW: 1 MHz, VBW: 3 MHz, SWT: 1 s, Marker 1 [F1]: -3.72 dBm, 5.318880000 GHz Center: 5.32 GHz, 4 MHz/, Span: 40 MHz Date: 25.JUN.2023 14:01:28

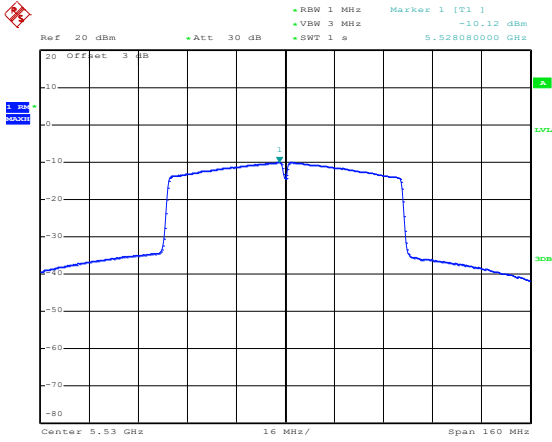
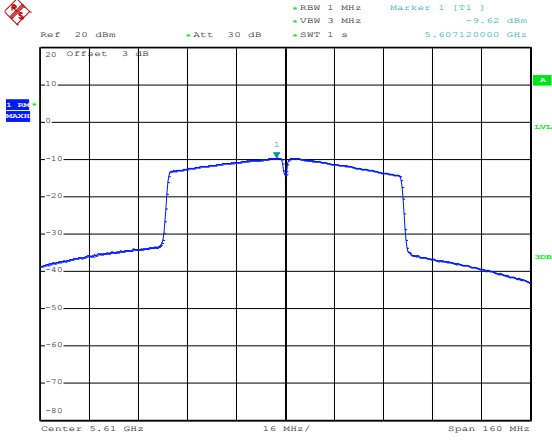
802.11n-HT40-Low	 Ref: 20 dBm, Att: 30 dB, RBW: 1 MHz, VSW: 3 MHz, SWT: 1 s, Marker 1 [F1]: -5.88 dBm, 5.27160000 GHz Center: 5.27 GHz, Span: 80 MHz Date: 25.JUN.2023 14:01:56
802.11n-HT40-High	 Ref: 20 dBm, Att: 30 dB, RBW: 1 MHz, VSW: 3 MHz, SWT: 1 s, Marker 1 [F1]: -6.50 dBm, 5.30840000 GHz Center: 5.31 GHz, Span: 80 MHz Date: 25.JUN.2023 14:03:11
802.11ac-HT80-Low	 Ref: 20 dBm, Att: 30 dB, RBW: 1 MHz, VSW: 3 MHz, SWT: 1 s, Marker 1 [F1]: -9.47 dBm, 5.29224000 GHz Center: 5.29 GHz, Span: 160 MHz Date: 25.JUN.2023 14:03:49

5470-5725MHz

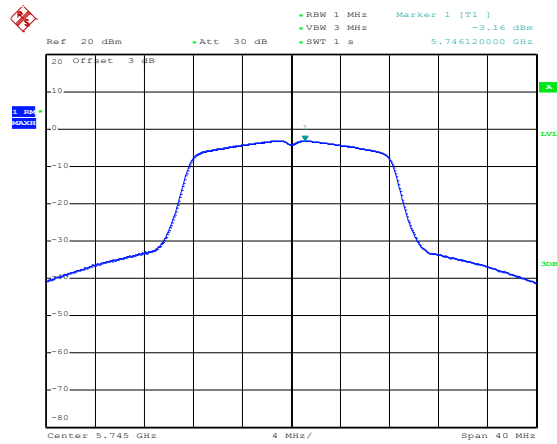
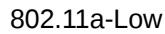
802.11a-Low	 Date: 25.JUN.2023 10:59:16
802.11a-Middle	 Date: 25.JUN.2023 10:59:39
802.11a-High	 Date: 25.JUN.2023 10:59:58

802.11n-HT20-Low	 Ref 20 dBm Att 30 dB RBW 1 MHz Marker 1 [T1] -3.93 dBm VBW 3 MHz SWT 1 s 5.498960000 GHz Center 5.5 GHz 4 MHz/ Span 40 MHz Date: 25.JUN.2023 11:00:28
802.11n-HT20-Middle	 Ref 20 dBm Att 30 dB RBW 1 MHz Marker 1 [T1] -3.70 dBm VBW 3 MHz SWT 1 s 5.598960000 GHz Center 5.6 GHz 4 MHz/ Span 40 MHz Date: 25.JUN.2023 11:00:49
802.11n-HT20-High	 Ref 20 dBm Att 30 dB RBW 1 MHz Marker 1 [T1] -3.84 dBm VBW 3 MHz SWT 1 s 5.698800000 GHz Center 5.7 GHz 4 MHz/ Span 40 MHz Date: 25.JUN.2023 11:01:08

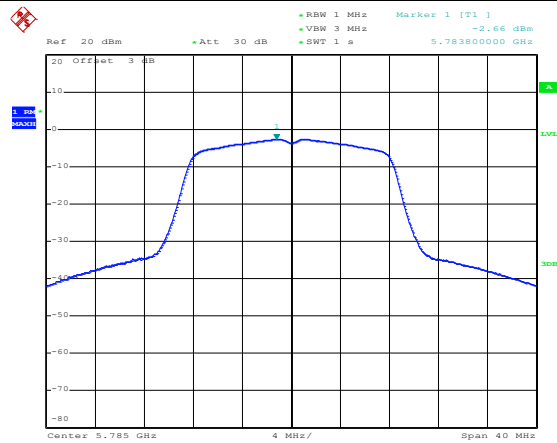
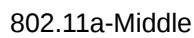
802.11n-HT40-Low	 Ref: 20 dBm, Att: 30 dB, RBW: 1 MHz, VBW: 3 MHz, SWT: 1 s, Marker 1 [T1]: -6.75 dBm, 5.508240000 GHz Center: 5.51 GHz, Span: 80 MHz Date: 25.JUN.2023 11:01:43
802.11n-HT40- Middle	 Ref: 20 dBm, Att: 30 dB, RBW: 1 MHz, VBW: 3 MHz, SWT: 1 s, Marker 1 [T1]: -6.46 dBm, 5.588240000 GHz Center: 5.59 GHz, Span: 80 MHz Date: 25.JUN.2023 11:02:09
802.11n-HT40-High	 Ref: 20 dBm, Att: 30 dB, RBW: 1 MHz, VBW: 3 MHz, SWT: 1 s, Marker 1 [T1]: -6.67 dBm, 5.668080000 GHz Center: 5.67 GHz, Span: 80 MHz Date: 25.JUN.2023 11:02:29

802.11ac-HT80-Low	 Ref 20 dBm •Att 30 dB •RBW 1 MHz Marker 1 [T1] -10.12 dBm •VSW 3 MHz •SWT 1 s 5.528080000 GHz 20 Offset 3 dB 1 Center 5.53 GHz 16 MHz/ Span 160 MHz Date: 25.JUN.2023 11:03:01
802.11ac-HT80-High	 Ref 20 dBm •Att 30 dB •RBW 1 MHz Marker 1 [T1] -9.62 dBm •VSW 3 MHz •SWT 1 s 5.607120000 GHz 20 Offset 3 dB 1 Center 5.61 GHz 16 MHz/ Span 160 MHz Date: 25.JUN.2023 11:03:23

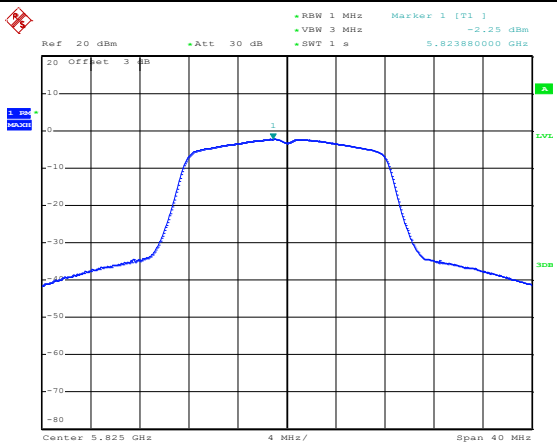
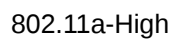
5725-5850MHz



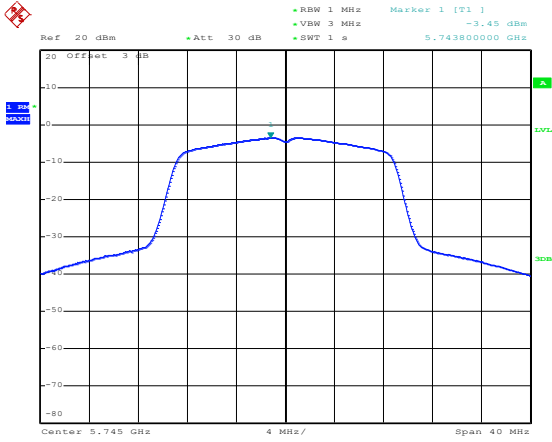
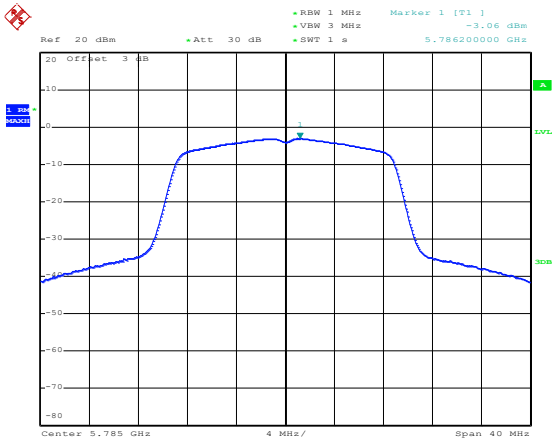
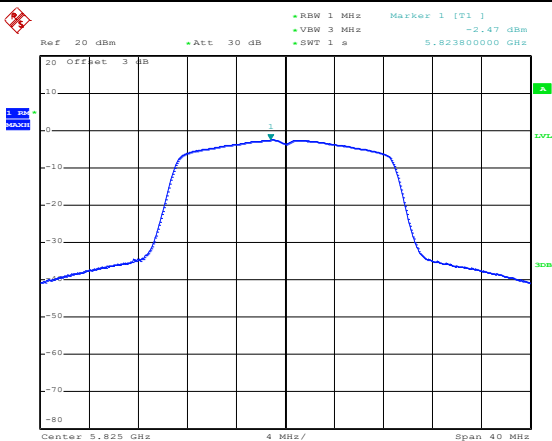
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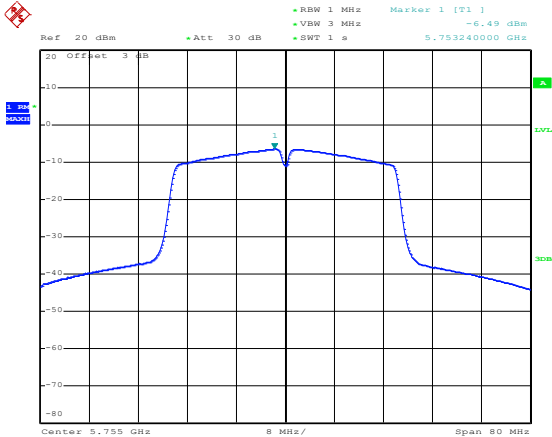
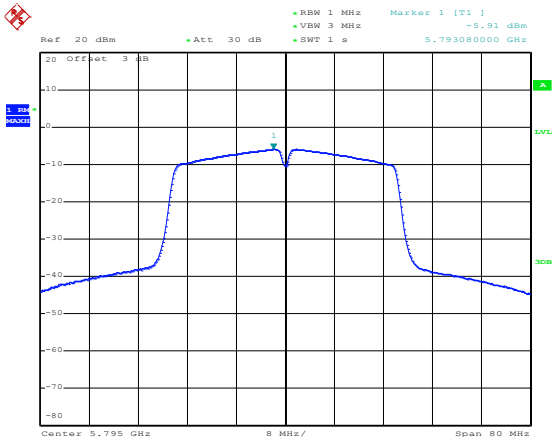
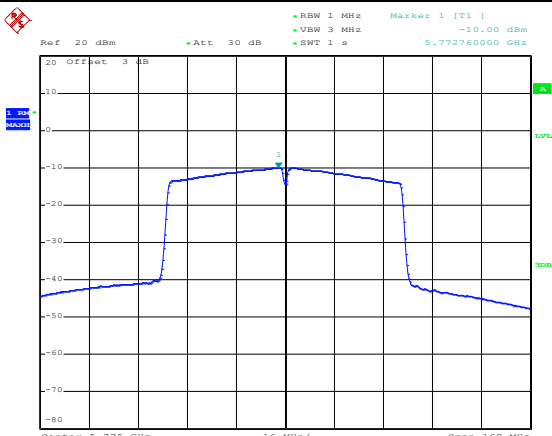


Date: 25.JUN.2023 10:56:17



Date: 25.JUN.2023 10:56:45

802.11n-HT20-Low	 Ref: 20 dBm, Att: 30 dB, RBW: 1 MHz, VSW: 3 MHz, SWT: 1 s, Marker 1 [T1]: -3.45 dBm, 5.74380000 GHz Center: 5.745 GHz, 4 MHz/, Span: 40 MHz Date: 25.JUN.2023 10:54:29
802.11n-HT20-Middle	 Ref: 20 dBm, Att: 30 dB, RBW: 1 MHz, VSW: 3 MHz, SWT: 1 s, Marker 1 [T1]: -3.06 dBm, 5.78620000 GHz Center: 5.785 GHz, 4 MHz/, Span: 40 MHz Date: 25.JUN.2023 10:54:52
802.11n-HT20-High	 Ref: 20 dBm, Att: 30 dB, RBW: 1 MHz, VSW: 3 MHz, SWT: 1 s, Marker 1 [T1]: -2.47 dBm, 5.82380000 GHz Center: 5.825 GHz, 4 MHz/, Span: 40 MHz Date: 25.JUN.2023 10:55:15

802.11n-HT40-Low	 Ref: 20 dBm, Att: 30 dB, RBW: 1 MHz, VBW: 3 MHz, SWT: 1 s, Marker 1 [T1]: -6.49 dBm, 5.753240000 GHz Center: 5.755 GHz, Span: 80 MHz Date: 25.JUN.2023 10:53:20
802.11n-HT40-High	 Ref: 20 dBm, Att: 30 dB, RBW: 1 MHz, VBW: 3 MHz, SWT: 1 s, Marker 1 [T1]: -5.91 dBm, 5.793080000 GHz Center: 5.795 GHz, Span: 80 MHz Date: 25.JUN.2023 10:53:44
802.11ac-HT80-Low	 Ref: 20 dBm, Att: 30 dB, RBW: 1 MHz, VBW: 3 MHz, SWT: 1 s, Marker 1 [T1]: -10.00 dBm, 5.772760000 GHz Center: 5.775 GHz, Span: 160 MHz Date: 25.JUN.2023 10:51:59

APPENDIX B

Emission Bandwidth and Occupied Bandwidth

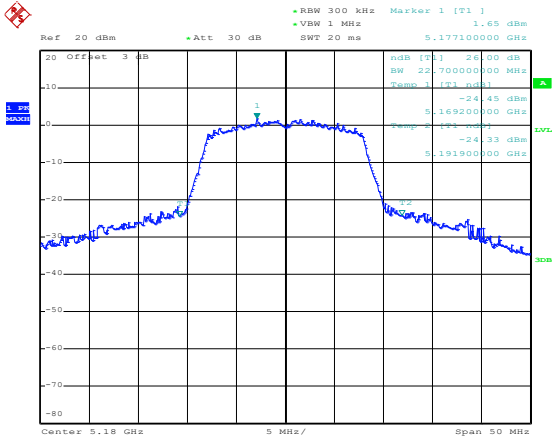
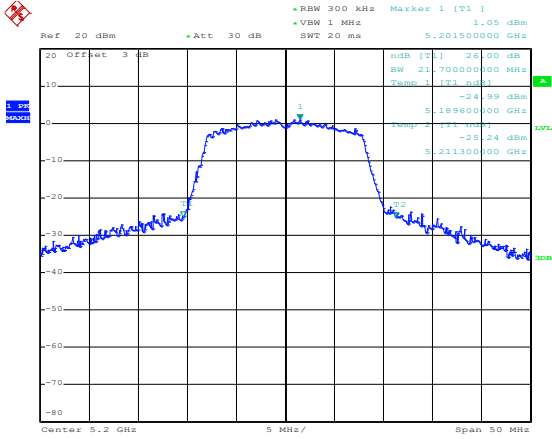
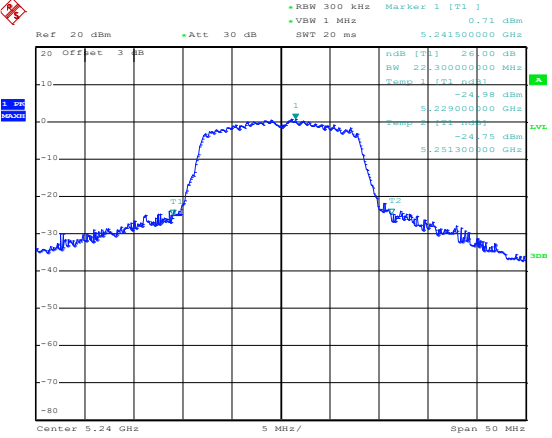
U-NII-1:5150-5250MHz				
Test Mode	Test Channel MHz	26 dB Bandwidth MHz	99% Bandwidth MHz	Limit MHz
802.11a	5180	22.7	17.2	Pass
	5200	21.7	17.2	Pass
	5240	22.3	17.2	Pass
802.11n-HT20	5180	23.9	18.1	Pass
	5200	21.5	18.1	Pass
	5240	22.6	18.0	Pass
802.11n-HT40	5190	40.6	37.2	Pass
	5230	40.4	37.2	Pass
802.11ac-HT80	5210	82.4	76.0	Pass

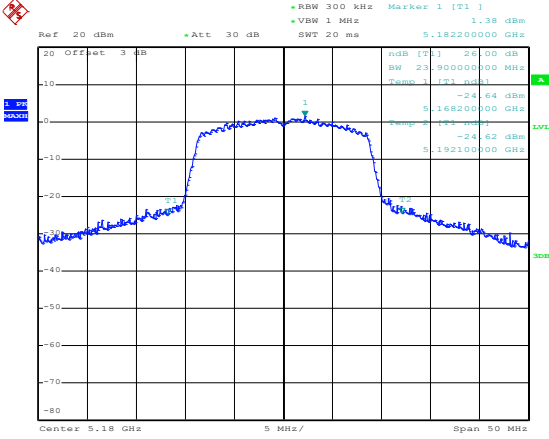
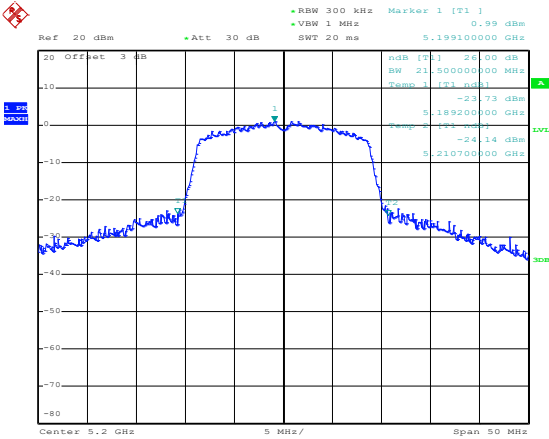
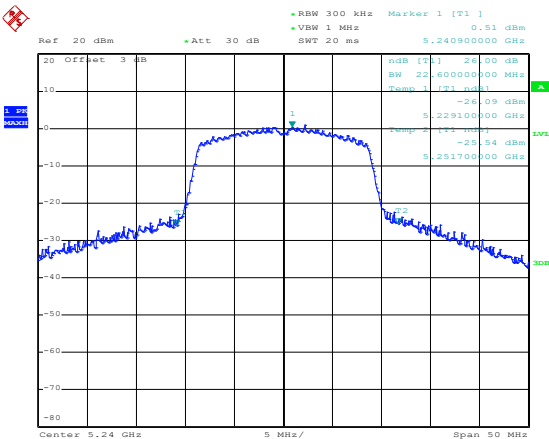
U-NII-2A: 5250-5350MHz				
Test Mode	Test Channel MHz	26 dB Bandwidth MHz	99% Bandwidth MHz	Limit MHz
802.11a	5260	22.0	17.3	Pass
	5280	22.6	17.2	Pass
	5320	21.3	17.2	Pass
802.11n-HT20	5260	23.2	18.1	Pass
	5280	21.9	18.1	Pass
	5320	21.4	18.2	Pass
802.11n-HT40	5270	40.6	37.2	Pass
	5310	41.2	37.2	Pass
802.11ac-HT80	5290	82.0	76.0	Pass

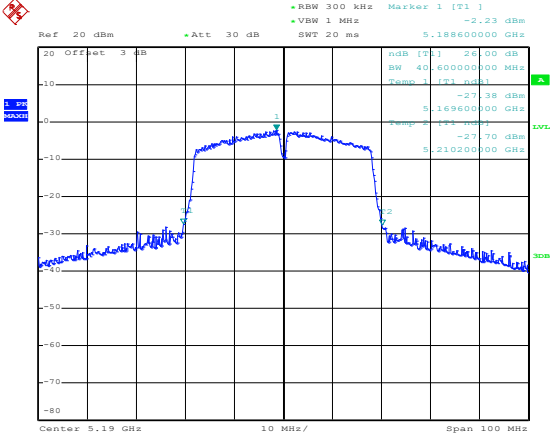
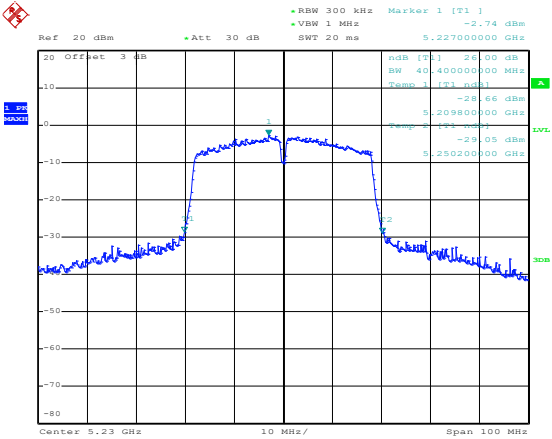
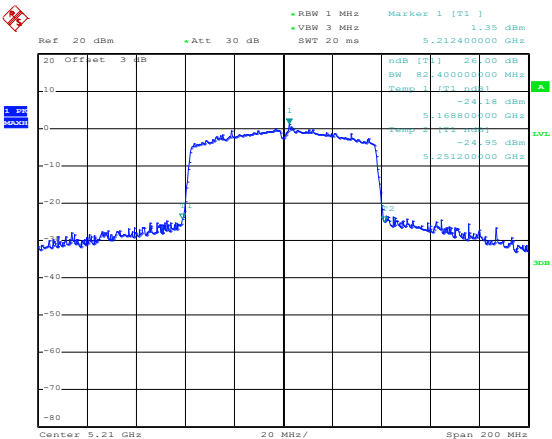
U-NII-2C: 5470-5725MHz				
Test Mode	Test Channel MHz	26 dB Bandwidth MHz	99% Bandwidth MHz	Limit MHz
802.11a	5500	28.92	17.6	Pass
	5600	28.92	17.6	Pass
	5700	26.52	17.3	Pass
802.11n-HT20	5500	32.48	18.6	Pass
	5600	29.44	18.5	Pass
	5700	25.60	18.3	Pass
802.11n-HT40	5510	53.76	38.2	Pass
	5590	54.00	38.2	Pass
	5670	45.84	37.4	Pass
802.11ac-HT80	5530	129.92	77.6	Pass
	5610	136.64	78.0	Pass

U-NII-3: 5725-5850MHz				
Test Mode	Test Channel MHz	6 dB Bandwidth MHz	99% Bandwidth MHz	Limit MHz
802.11a	5745	16.5	17.3	≥500
	5785	16.6	17.1	≥500
	5825	16.5	17.2	≥500
802.11n-HT20	5745	17.8	18.1	≥500
	5785	17.6	18.0	≥500
	5825	17.7	18.0	≥500
802.11n-HT40	5755	36.6	37.2	≥500
	5795	36.6	37.2	≥500
802.11ac VH80	5775	77.6	76.0	≥500

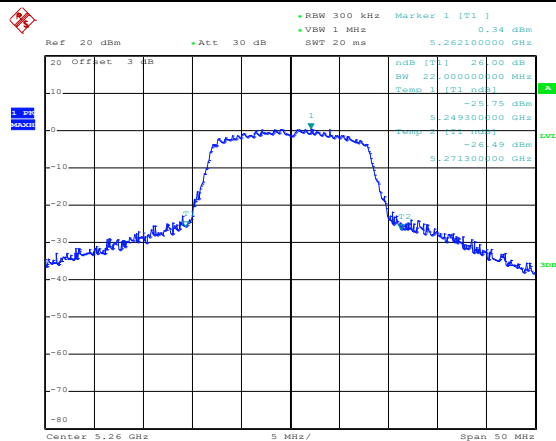
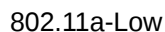
26 dB BandwidthMHz
5150-5250MHz

802.11a-Low	 Date: 25.JUN.2023 14:29:55
802.11a-Middle	 Date: 25.JUN.2023 14:30:19
802.11a-High	 Date: 25.JUN.2023 14:30:49

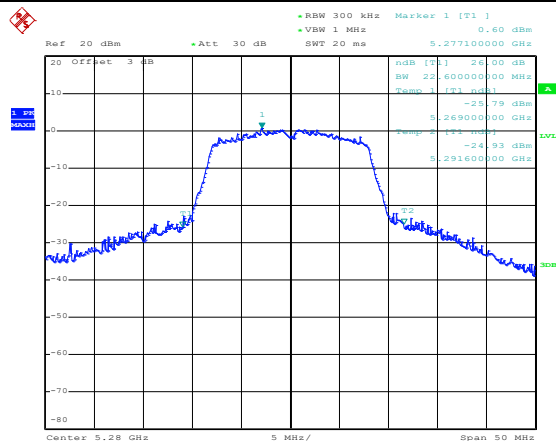
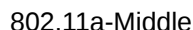
802.11n-HT20-Low	 Ref 20 dBm Att 30 dB RBW 300 kHz Marker 1 [T1] 1.38 dBm VSW 1 MHz SWT 20 ms 5.182200000 GHz Offset 3 dB nBW [T1] 20.00 dB BW 21.900000000 MHz Temp 1 [T1] nBW -24.64 dBm 5.168200000 GHz -24.62 dBm 5.192100000 GHz Center 5.18 GHz 5 MHz/ Span 50 MHz Date: 25.JUN.2023 14:27:39
802.11n-HT20-Middle	 Ref 20 dBm Att 30 dB RBW 300 kHz Marker 1 [T1] 0.99 dBm VSW 1 MHz SWT 20 ms 5.199100000 GHz Offset 3 dB nBW [T1] 20.00 dB BW 21.500000000 MHz Temp 1 [T1] nBW -23.73 dBm 5.189200000 GHz -24.14 dBm 5.210700000 GHz Center 5.2 GHz 5 MHz/ Span 50 MHz Date: 25.JUN.2023 14:28:20
802.11n-HT20-High	 Ref 20 dBm Att 30 dB RBW 300 kHz Marker 1 [T1] 0.51 dBm VSW 1 MHz SWT 20 ms 5.240900000 GHz Offset 3 dB nBW [T1] 20.00 dB BW 22.600000000 MHz Temp 1 [T1] nBW -26.09 dBm 5.229100000 GHz -25.54 dBm 5.251700000 GHz Center 5.24 GHz 5 MHz/ Span 50 MHz Date: 25.JUN.2023 14:29:02

802.11n-HT40-Low	 Ref 20 dBm •Att 30 dB •RBW 300 kHz Marker 1 [T1] -2.23 dBm •VSW 1 MHz SWT 20 ms 5.188600000 GHz ndB [T1] -26.00 dB BW 40.60000000 MHz Temp 1 [T1] ndB -27.38 dBm 5.169600000 GHz -27.70 dBm 5.210200000 GHz Center 5.19 GHz 10 MHz/ Span 100 MHz Date: 25.JUN.2023 14:26:04
802.11n-HT40-High	 Ref 20 dBm •Att 30 dB •RBW 300 kHz Marker 1 [T1] -2.74 dBm •VSW 1 MHz SWT 20 ms 5.227000000 GHz ndB [T1] -26.00 dB BW 40.40000000 MHz Temp 1 [T1] ndB -28.66 dBm 5.209800000 GHz -29.05 dBm 5.250200000 GHz Center 5.23 GHz 10 MHz/ Span 100 MHz Date: 25.JUN.2023 14:26:29
802.11ac-HT80-Low	 Ref 20 dBm •Att 30 dB •RBW 1 MHz Marker 1 [T1] 1.35 dBm •VSW 3 MHz SWT 20 ms 5.212400000 GHz ndB [T1] -26.00 dB BW 82.40000000 MHz Temp 1 [T1] ndB -24.18 dBm 5.169800000 GHz -24.95 dBm 5.251200000 GHz Center 5.21 GHz 20 MHz/ Span 200 MHz Date: 25.JUN.2023 14:25:03

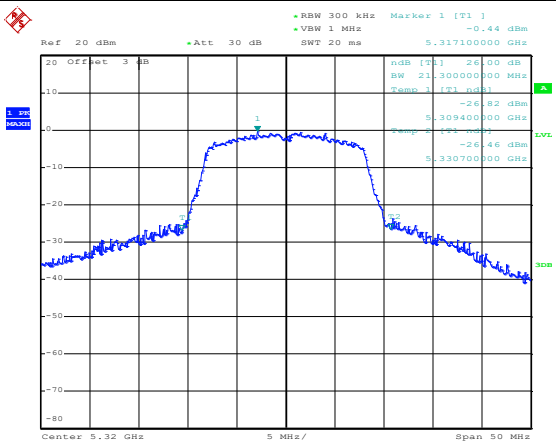
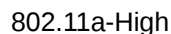
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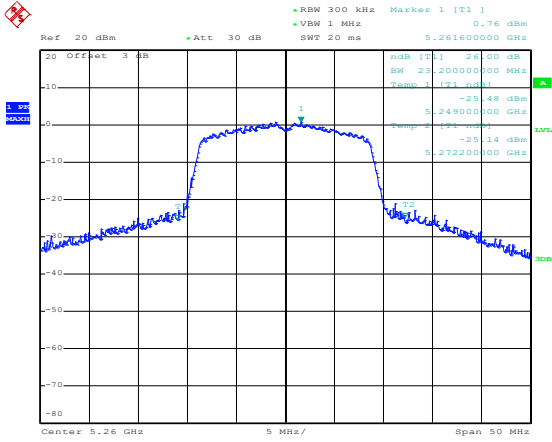
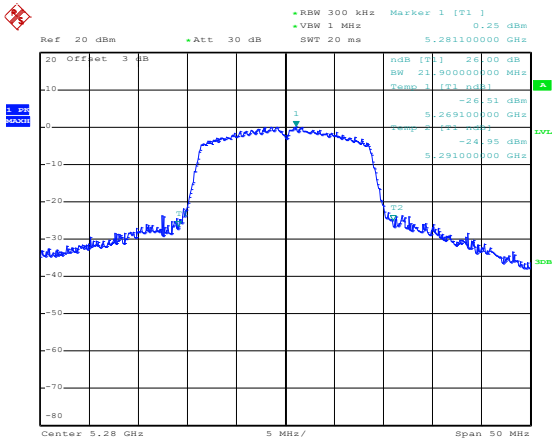
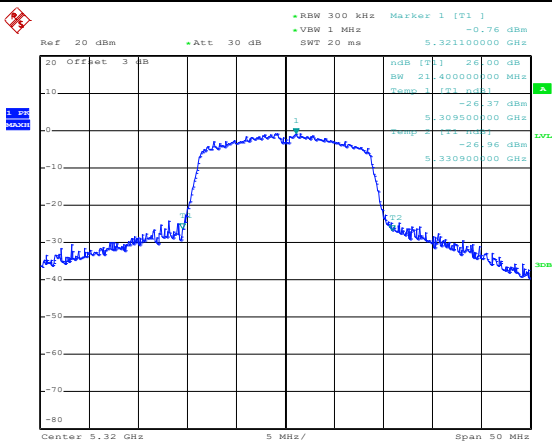
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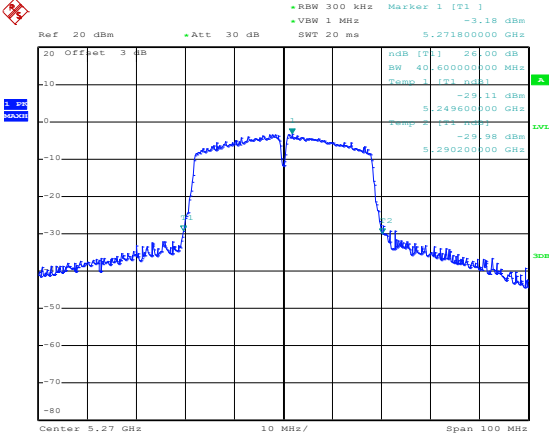
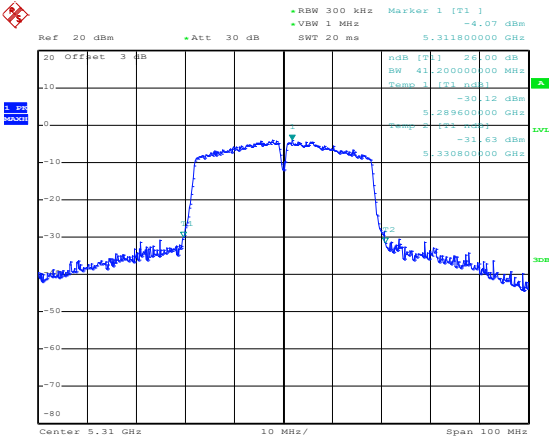
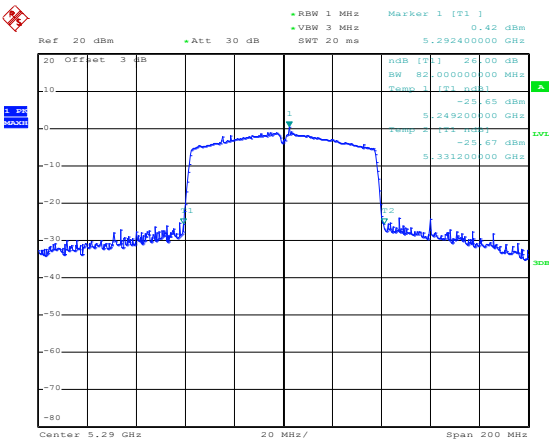


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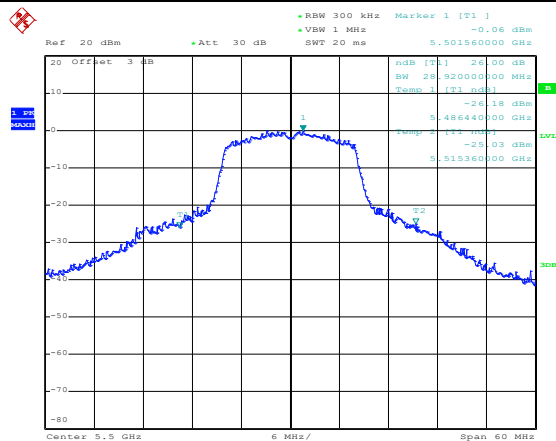
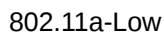


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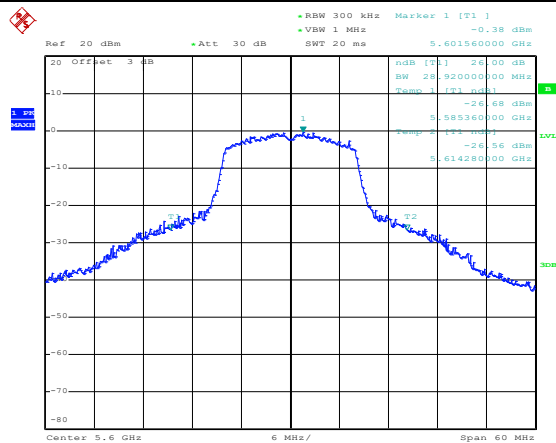
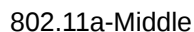
802.11n-HT20-Low	 Ref 20 dBm Att 30 dB RBW 300 kHz Marker 1 [T1] 0.76 dBm VSW 1 MHz SWT 20 ms 5.261600000 GHz ndB [T1] -25.00 dB BW 21.200000000 MHz Temp 1 [T1] ndB -25.48 dBm 5.249000000 GHz -25.14 dBm 5.272000000 GHz Center 5.26 GHz 5 MHz/ Span 50 MHz Date: 25.JUN.2023 14:38:17
802.11n-HT20-Middle	 Ref 20 dBm Att 30 dB RBW 300 kHz Marker 1 [T1] 0.25 dBm VSW 1 MHz SWT 20 ms 5.281100000 GHz ndB [T1] -26.00 dB BW 21.900000000 MHz Temp 1 [T1] ndB -26.51 dBm 5.269100000 GHz -24.95 dBm 5.291000000 GHz Center 5.28 GHz 5 MHz/ Span 50 MHz Date: 25.JUN.2023 14:38:44
802.11n-HT20-High	 Ref 20 dBm Att 30 dB RBW 300 kHz Marker 1 [T1] -0.76 dBm VSW 1 MHz SWT 20 ms 5.321100000 GHz ndB [T1] -26.00 dB BW 21.400000000 MHz Temp 1 [T1] ndB -26.37 dBm 5.309500000 GHz -26.96 dBm 5.330900000 GHz Center 5.32 GHz 5 MHz/ Span 50 MHz Date: 25.JUN.2023 14:39:05

802.11n-HT40-Low	 Ref 20 dBm +Att 30 dB RBW 300 kHz Marker 1 [T1] -3.18 dBm VSW 1 MHz SWT 20 ms 5.271800000 GHz ndB [T1] 26.00 dB BW 40.60000000 MHz Temp 1 [T1] ndB -29.11 dBm 5.249600000 GHz -29.98 dBm 5.290200000 GHz Center 5.27 GHz 10 MHz/ Span 100 MHz Date: 25.JUN.2023 14:39:37
802.11n-HT40-High	 Ref 20 dBm +Att 30 dB RBW 300 kHz Marker 1 [T1] -4.07 dBm VSW 1 MHz SWT 20 ms 5.311800000 GHz ndB [T1] 26.00 dB BW 41.20000000 MHz Temp 1 [T1] ndB -30.12 dBm 5.289600000 GHz -31.63 dBm 5.330800000 GHz Center 5.31 GHz 10 MHz/ Span 100 MHz Date: 25.JUN.2023 14:39:58
802.11ac-HT80-Low	 Ref 20 dBm +Att 30 dB RBW 1 MHz Marker 1 [T1] 0.42 dBm VSW 3 MHz SWT 20 ms 5.292400000 GHz ndB [T1] 26.00 dB BW 82.00000000 MHz Temp 1 [T1] ndB -25.65 dBm 5.249200000 GHz -25.67 dBm 5.331200000 GHz Center 5.29 GHz 20 MHz/ Span 200 MHz Date: 25.JUN.2023 14:40:39

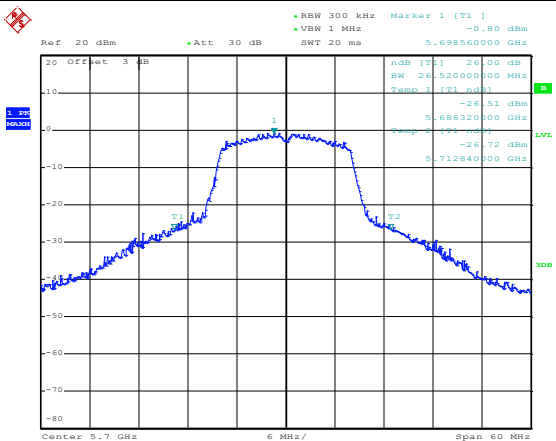
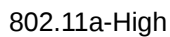
5470-5725MHz



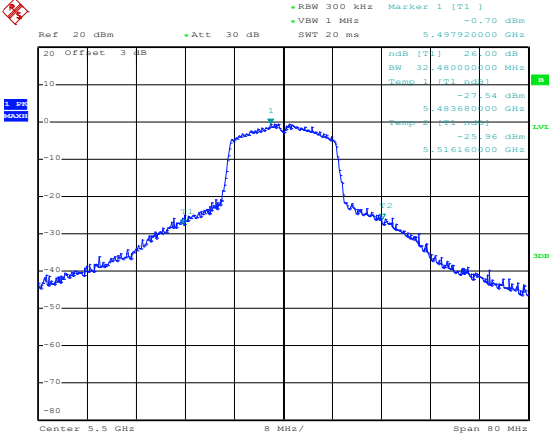
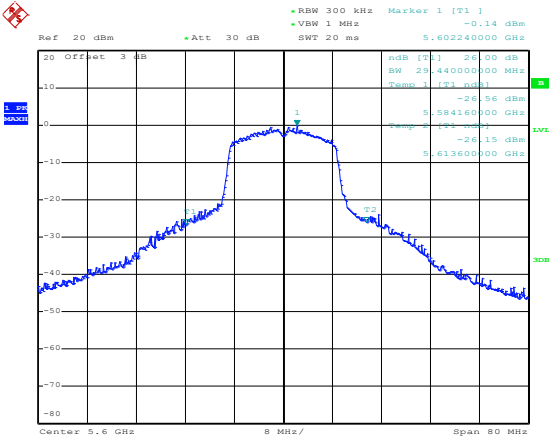
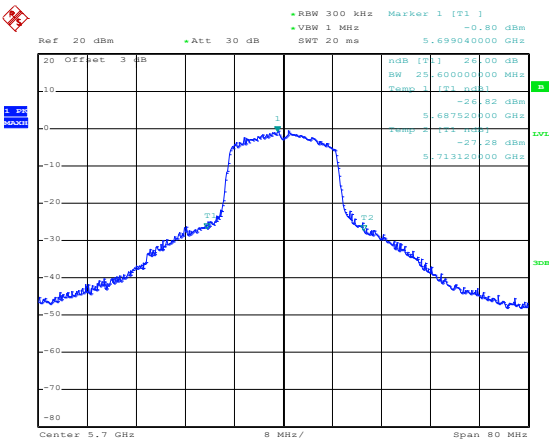
Date: 25.JUN.2023 15:25:21

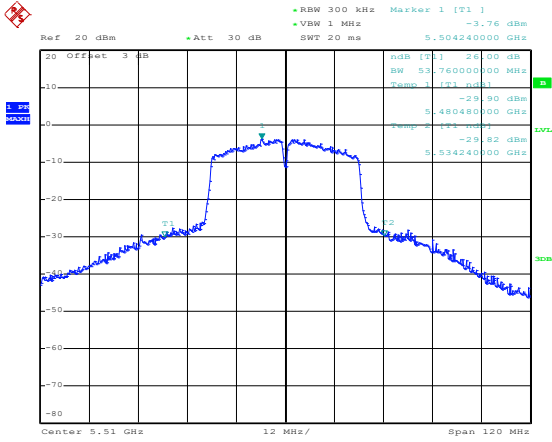
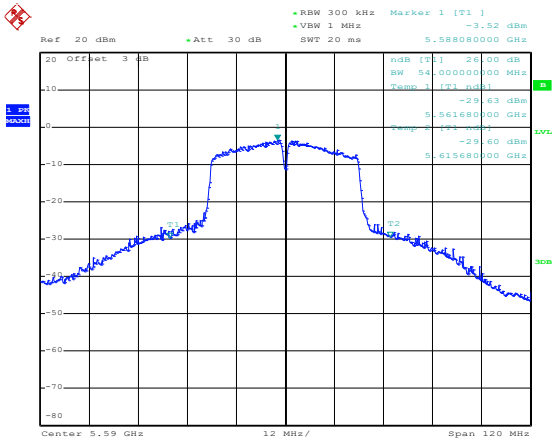
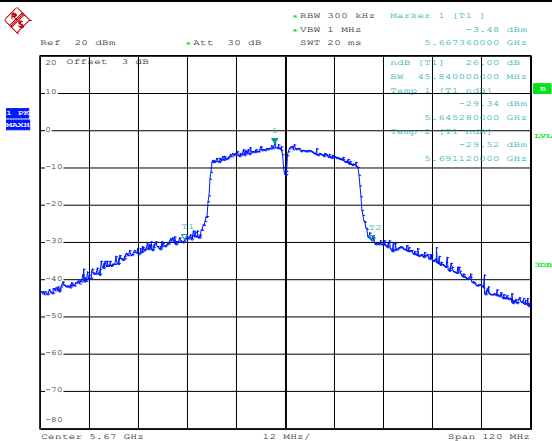


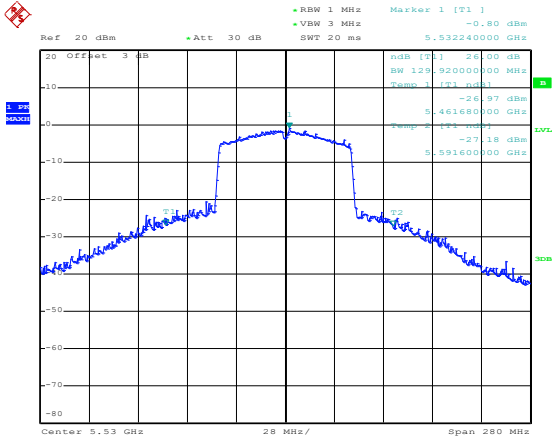
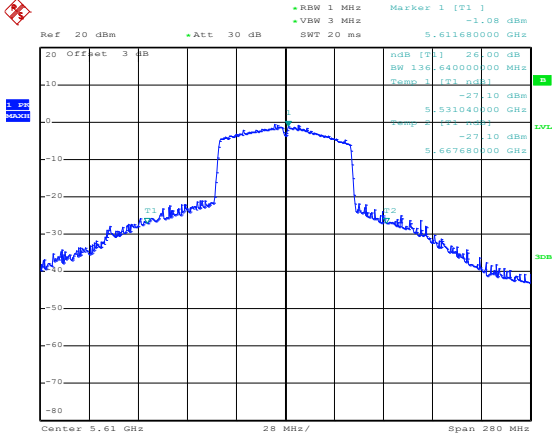
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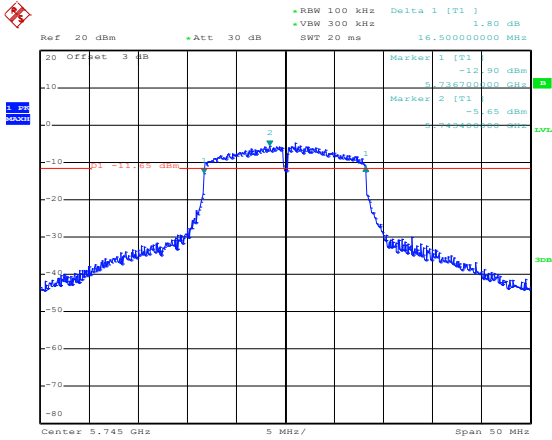
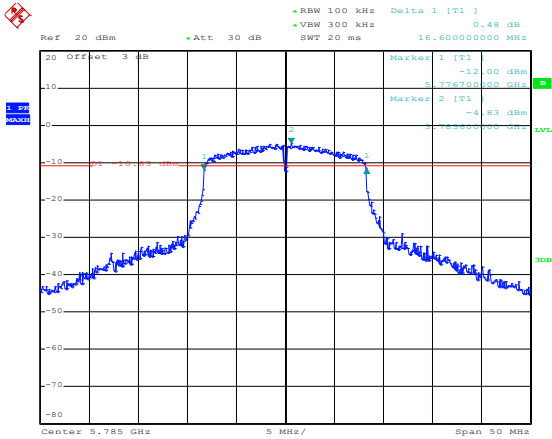
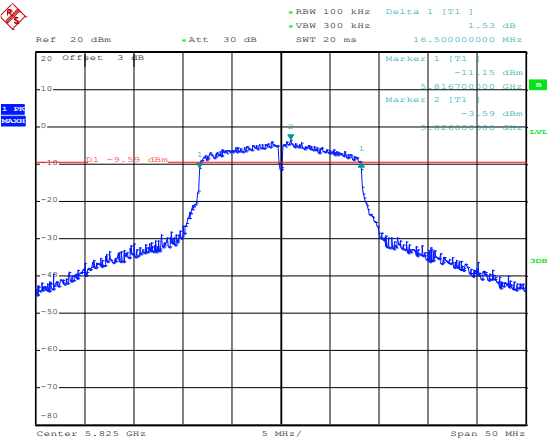
Date: 25.JUN.2023 15:26:27

802.11n-HT20-Low	 Ref 20 dBm Att 30 dB RBW 300 kHz Marker 1 [T1] -0.70 dBm VSW 1 MHz SWT 20 ms 5.497920000 GHz Center 5.5 GHz 8 MHz/ Span 80 MHz Date: 25.JUN.2023 15:27:35
802.11n-HT20-Middle	 Ref 20 dBm Att 30 dB RBW 300 kHz Marker 1 [T1] -0.14 dBm VSW 1 MHz SWT 20 ms 5.602240000 GHz Center 5.6 GHz 8 MHz/ Span 80 MHz Date: 25.JUN.2023 15:28:24
802.11n-HT20-High	 Ref 20 dBm Att 30 dB RBW 300 kHz Marker 1 [T1] -0.80 dBm VSW 1 MHz SWT 20 ms 5.699040000 GHz Center 5.7 GHz 8 MHz/ Span 80 MHz Date: 25.JUN.2023 15:39:21

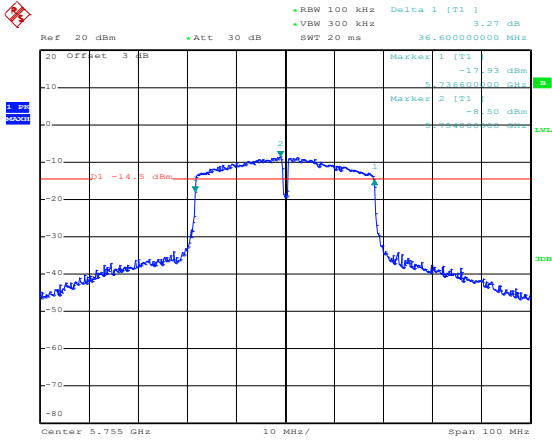
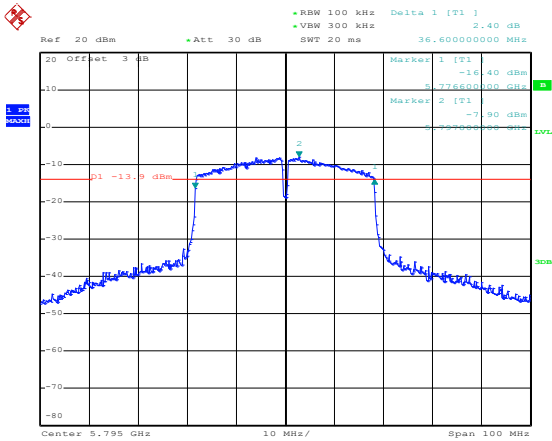
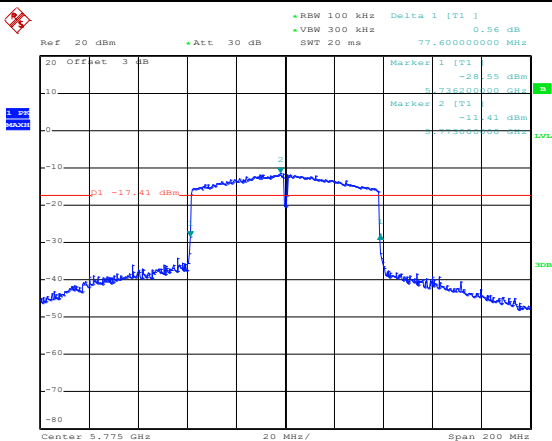
802.11n-HT40-Low	 Ref 20 dBm Att 30 dB RBW 300 kHz Marker 1 [T1] -3.76 dBm VSW 1 MHz SWT 20 ms 5.504240000 GHz ndB [T1] -29.90 dBm BW 53.760000000 MHz Temp 1 [T1] -29.90 dBm 5.480480000 GHz 5.534240000 GHz Center 5.51 GHz 12 MHz/ Span 120 MHz Date: 25.JUN.2023 15:32:55
802.11n-HT40- Middle	 Ref 20 dBm Att 30 dB RBW 300 kHz Marker 1 [T1] -3.52 dBm VSW 1 MHz SWT 20 ms 5.588080000 GHz ndB [T1] -29.63 dBm BW 54.000000000 MHz Temp 1 [T1] -29.63 dBm 5.561680000 GHz 5.615680000 GHz Center 5.59 GHz 12 MHz/ Span 120 MHz Date: 25.JUN.2023 15:33:24
802.11n-HT40-High	 Ref 20 dBm Att 30 dB RBW 300 kHz Marker 1 [T1] -3.48 dBm VSW 1 MHz SWT 20 ms 5.667360000 GHz ndB [T1] -29.34 dBm BW 45.840000000 MHz Temp 1 [T1] -29.34 dBm 5.645280000 GHz 5.691320000 GHz Center 5.67 GHz 12 MHz/ Span 120 MHz Date: 25.JUN.2023 15:33:52

802.11ac-HT80-Low	 Ref: 20 dBm, Att: 30 dB, RBW: 1 MHz, VSW: 3 MHz, SWT: 20 ms, Marker 1 [T1]: -26.97 dBm, BW: 129.92000000 MHz, Span: 280 MHz, Center: 5.53 GHz Date: 25.JUN.2023 15:35:20
802.11ac-HT80-High	 Ref: 20 dBm, Att: 30 dB, RBW: 1 MHz, VSW: 3 MHz, SWT: 20 ms, Marker 1 [T1]: -27.10 dBm, BW: 136.64000000 MHz, Span: 280 MHz, Center: 5.61 GHz Date: 25.JUN.2023 15:35:50

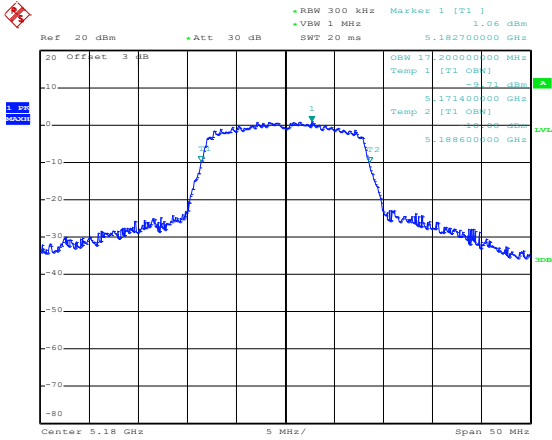
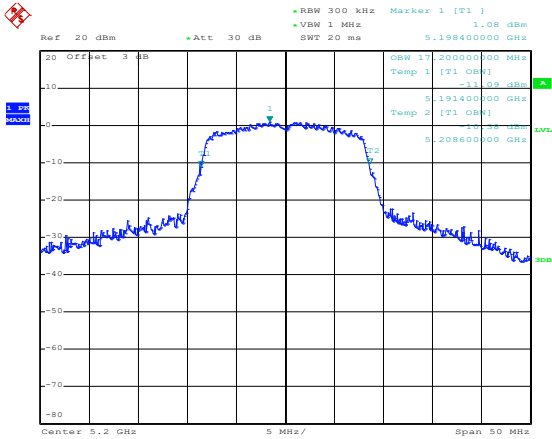
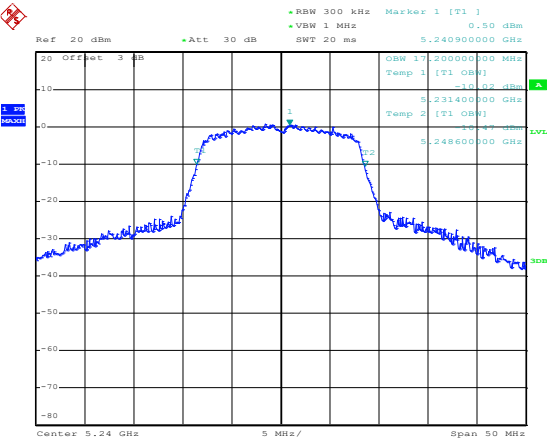
6 dB BandwidthMHz
5725-5850MHz

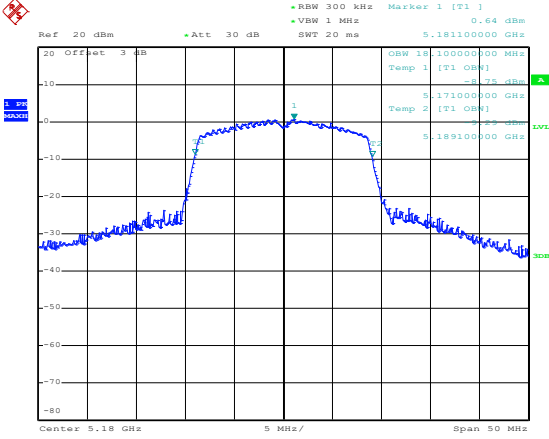
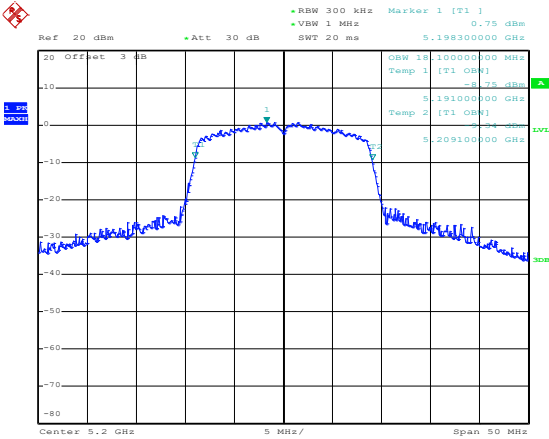
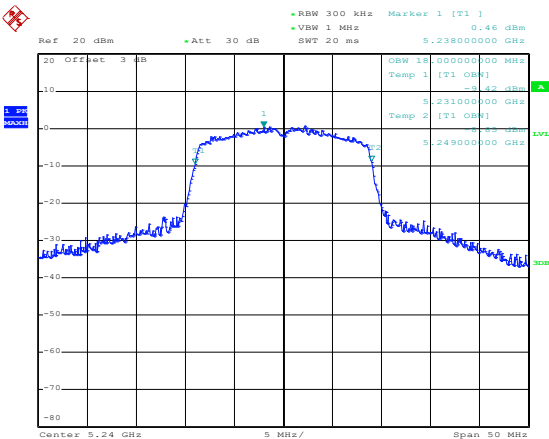
802.11a-Low	 Date: 25.JUN.2023 15:54:05
802.11a-Middle	 Date: 25.JUN.2023 15:54:52
802.11a-High	 Date: 25.JUN.2023 15:55:46

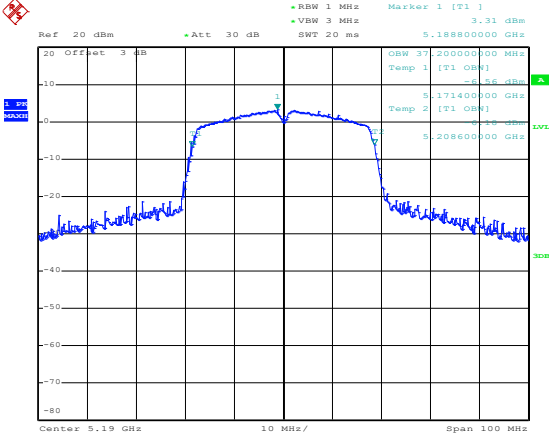
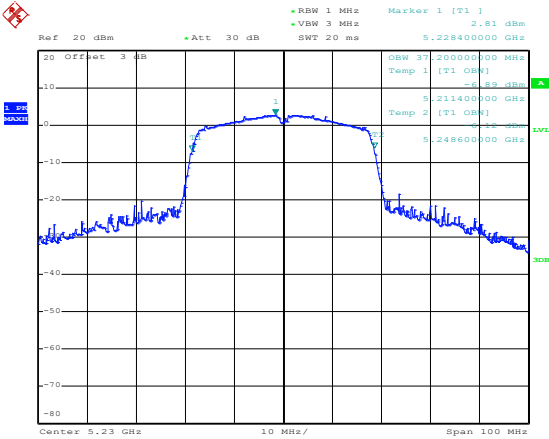
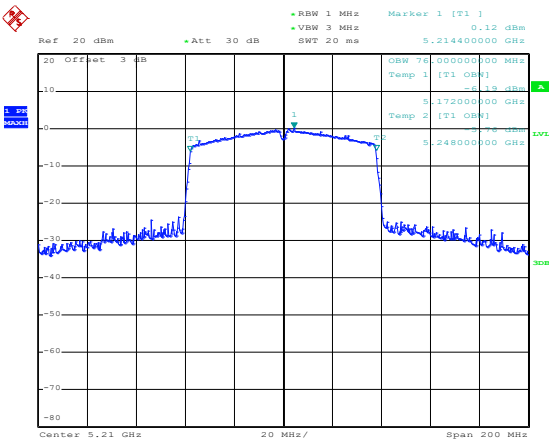
802.11n-HT20-Low	Ref 20 dBm Att 30 dB RBW 100 kHz VSW 300 kHz Delta 1 [T1] 0.37 dB SWT 20 ms 17.800000000 MHz Marker 1 [T1] -13.31 dBm Marker 2 [T1] -11.31 dBm Center 5.745 GHz 5 MHz/ Span 50 MHz Date: 25.JUN.2023 15:51:49
802.11n-HT20-Middle	Ref 20 dBm Att 30 dB RBW 100 kHz VSW 300 kHz Delta 1 [T1] 1.34 dB SWT 20 ms 17.600000000 MHz Marker 1 [T1] -12.48 dBm Marker 2 [T1] -15.17 dBm Center 5.785 GHz 5 MHz/ Span 50 MHz Date: 25.JUN.2023 15:52:34
802.11n-HT20-High	Ref 20 dBm Att 30 dB RBW 100 kHz VSW 300 kHz Delta 1 [T1] 2.13 dB SWT 20 ms 17.700000000 MHz Marker 1 [T1] -11.87 dBm Marker 2 [T1] -14.46 dBm Center 5.825 GHz 5 MHz/ Span 50 MHz Date: 25.JUN.2023 15:53:15

802.11n-HT40-Low	 Ref 20 dBm Att 30 dB RBW 100 kHz VSW 300 kHz Delta 1 [T1] 3.27 dB SWT 20 ms 36.60000000 MHz Marker 1 [T1] -17.93 dBm Marker 2 [T1] -8.50 dBm Center 5.755 GHz 10 MHz/ Span 100 MHz Date: 25.JUN.2023 15:49:31
802.11n-HT40-High	 Ref 20 dBm Att 30 dB RBW 100 kHz VSW 300 kHz Delta 1 [T1] 2.40 dB SWT 20 ms 36.60000000 MHz Marker 1 [T1] -16.40 dBm Marker 2 [T1] -7.90 dBm Center 5.795 GHz 10 MHz/ Span 100 MHz Date: 25.JUN.2023 15:50:30
802.11ac-HT80-Low	 Ref 20 dBm Att 30 dB RBW 100 kHz VSW 300 kHz Delta 1 [T1] 0.56 dB SWT 20 ms 77.60000000 MHz Marker 1 [T1] -28.55 dBm Marker 2 [T1] -11.41 dBm Center 5.775 GHz 20 MHz/ Span 200 MHz Date: 25.JUN.2023 15:47:58

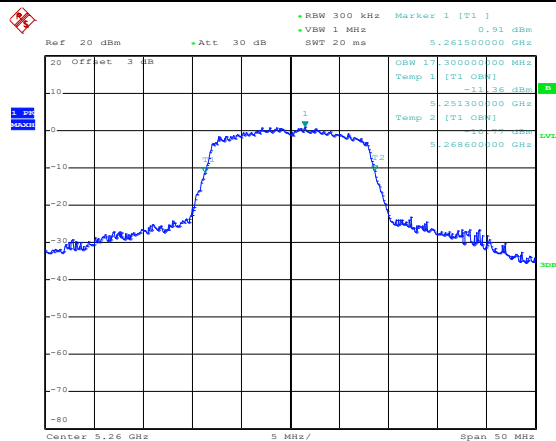
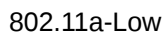
99% BandwidthMHz
5150-5250MHz

802.11a-Low	 Ref: 20 dBm Att: 30 dB RBW: 300 kHz VBW: 1 MHz SWT: 20 ms Marker 1 [T1] 5.182700000 GHz 1.06 dBm Offset: 3 dB OSW: 17.200000000 MHz Temp 1 [T1] -25.71 dBm 5.171400000 GHz 5.188600000 GHz Center: 5.18 GHz 5 MHz/ Span: 50 MHz Date: 25.JUN.2023 14:18:06
802.11a-Middle	 Ref: 20 dBm Att: 30 dB RBW: 300 kHz VBW: 1 MHz SWT: 20 ms Marker 1 [T1] 5.198400000 GHz 1.08 dBm Offset: 3 dB OSW: 17.200000000 MHz Temp 1 [T1] -41.09 dBm 5.191400000 GHz 5.208600000 GHz Center: 5.2 GHz 5 MHz/ Span: 50 MHz Date: 25.JUN.2023 14:18:38
802.11a-High	 Ref: 20 dBm Att: 30 dB RBW: 300 kHz VBW: 1 MHz SWT: 20 ms Marker 1 [T1] 5.240900000 GHz 0.50 dBm Offset: 3 dB OSW: 17.200000000 MHz Temp 1 [T1] -10.52 dBm 5.231400000 GHz 5.248600000 GHz Center: 5.24 GHz 5 MHz/ Span: 50 MHz Date: 25.JUN.2023 14:19:03

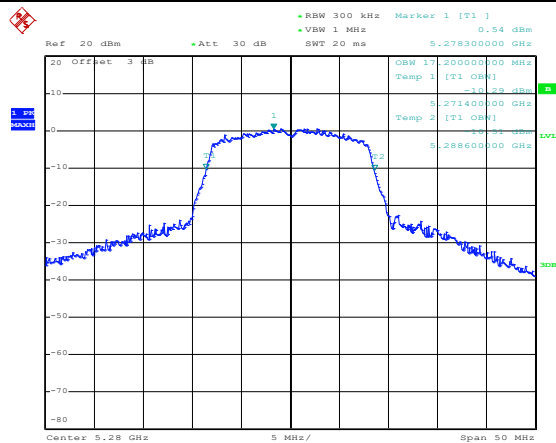
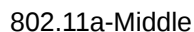
802.11n-HT20-Low	 Date: 25.JUN.2023 14:19:34
802.11n-HT20-Middle	 Date: 25.JUN.2023 14:20:00
802.11n-HT20-High	 Date: 25.JUN.2023 14:20:22

802.11n-HT40-Low	 Ref 20 dBm •Att 30 dB •RBW 1 MHz Marker 1 [T1] 3.31 dBm •VSW 3 MHz 5.188800000 GHz SWT 20 ms OSW 37.200000000 MHz Temp 1 [T1 OBW] -5.86 dBm 5.171400000 GHz Temp 2 [T1 OBW] -6.18 dBm 5.208600000 GHz Center 5.19 GHz 10 MHz/ Span 100 MHz Date: 25.JUN.2023 14:21:54
802.11n-HT40-High	 Ref 20 dBm •Att 30 dB •RBW 1 MHz Marker 1 [T1] 2.81 dBm •VSW 3 MHz 5.228400000 GHz SWT 20 ms OSW 37.200000000 MHz Temp 1 [T1 OBW] -5.89 dBm 5.211400000 GHz Temp 2 [T1 OBW] -6.18 dBm 5.248600000 GHz Center 5.23 GHz 10 MHz/ Span 100 MHz Date: 25.JUN.2023 14:22:25
802.11ac-HT80-Low	 Ref 20 dBm •Att 30 dB •RBW 1 MHz Marker 1 [T1] 0.12 dBm •VSW 3 MHz 5.214400000 GHz SWT 20 ms OSW 76.000000000 MHz Temp 1 [T1 OBW] -5.19 dBm 5.172000000 GHz Temp 2 [T1 OBW] -5.19 dBm 5.248000000 GHz Center 5.21 GHz 20 MHz/ Span 200 MHz Date: 25.JUN.2023 14:22:56

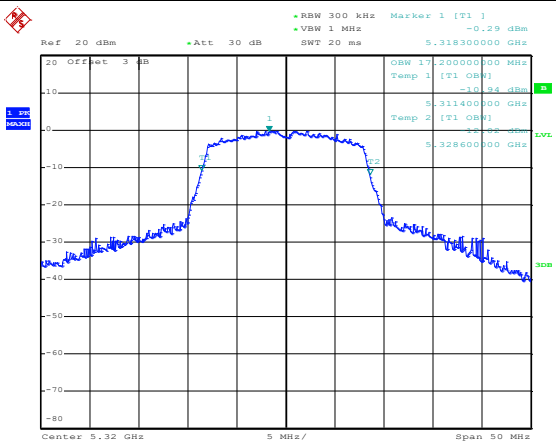
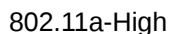
5250-5350MHz



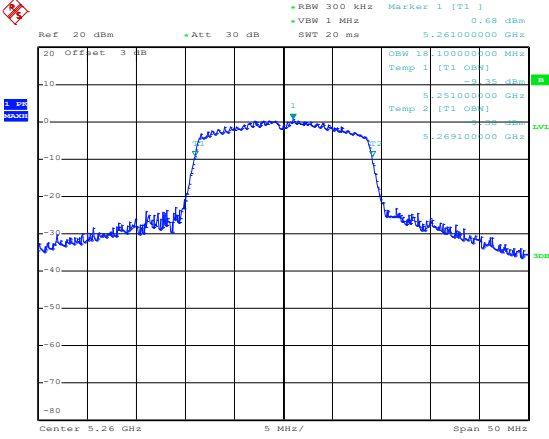
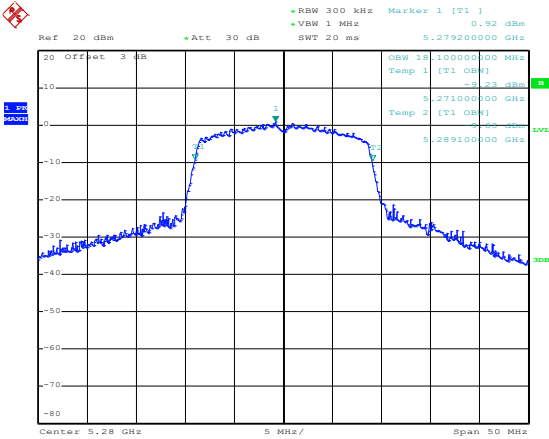
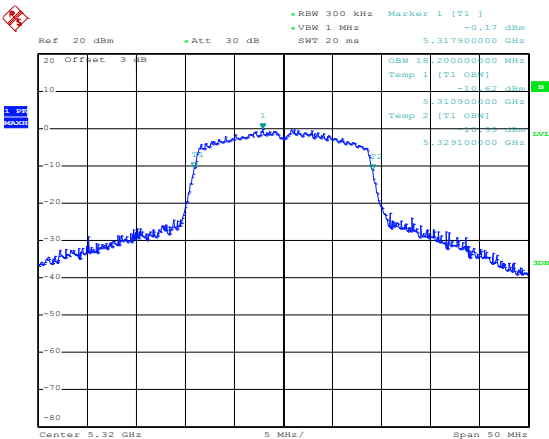
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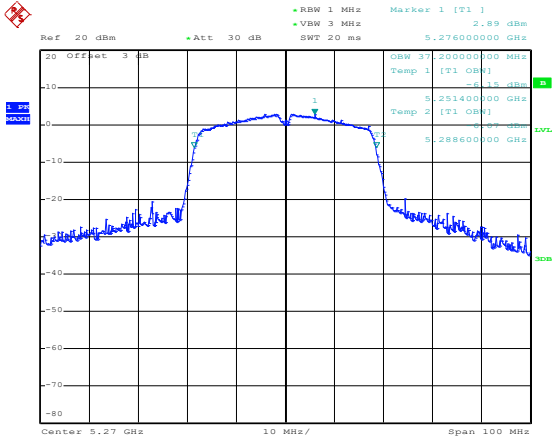
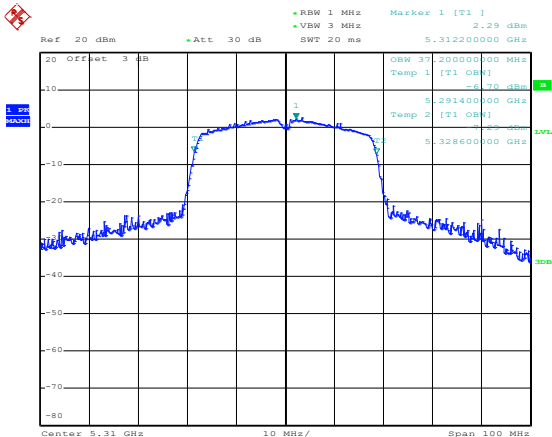
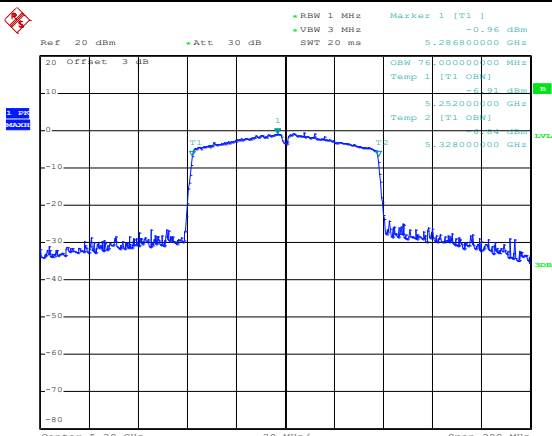


Date: 25.JUN.2023 15:03:15

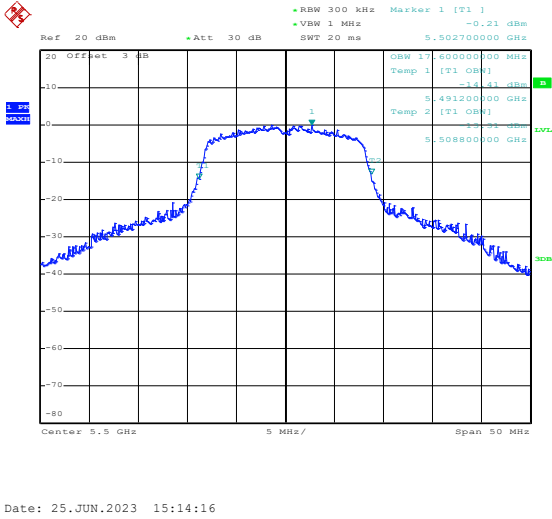
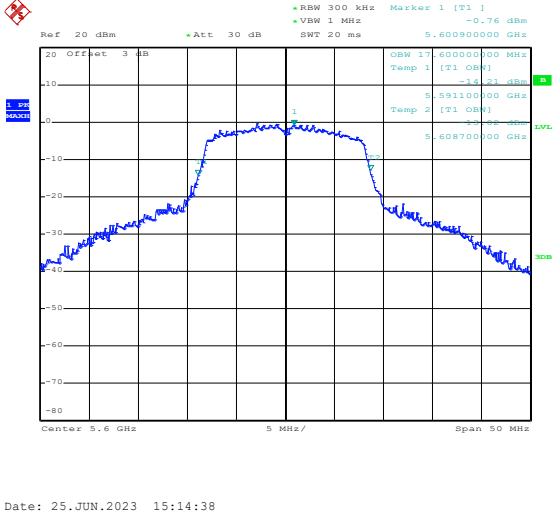
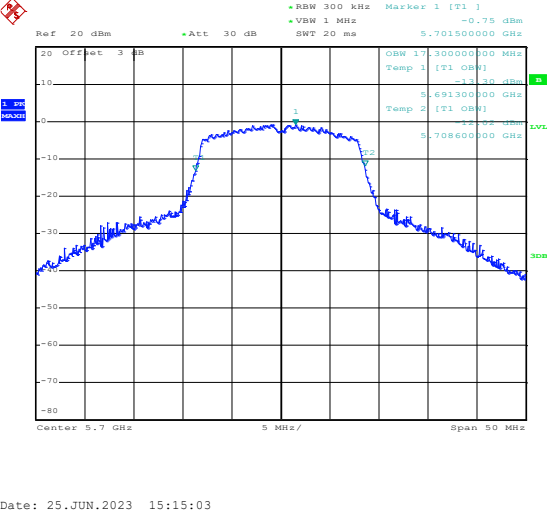


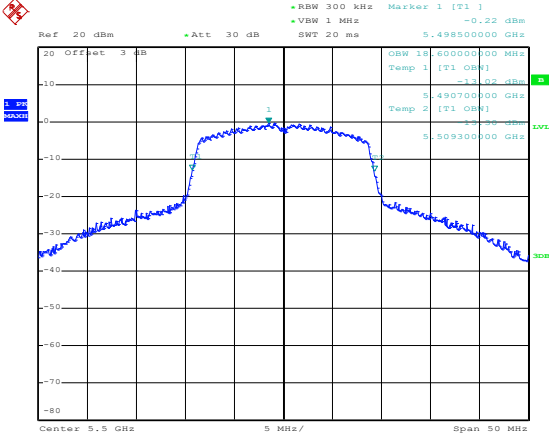
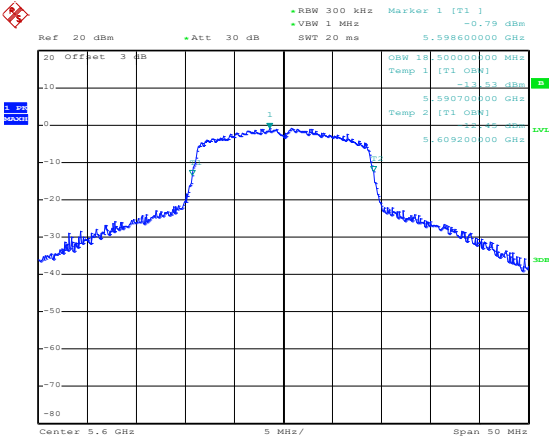
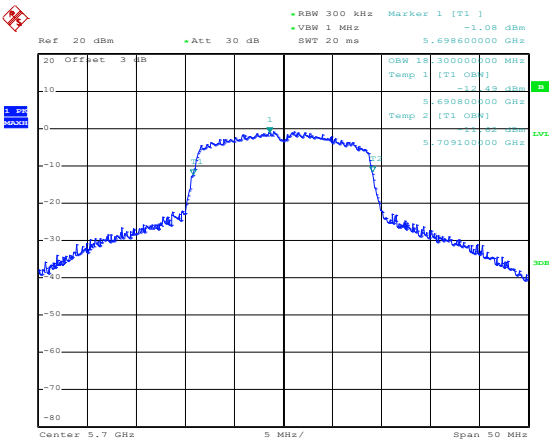
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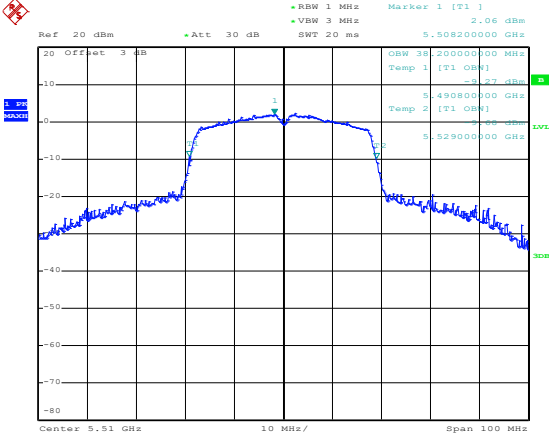
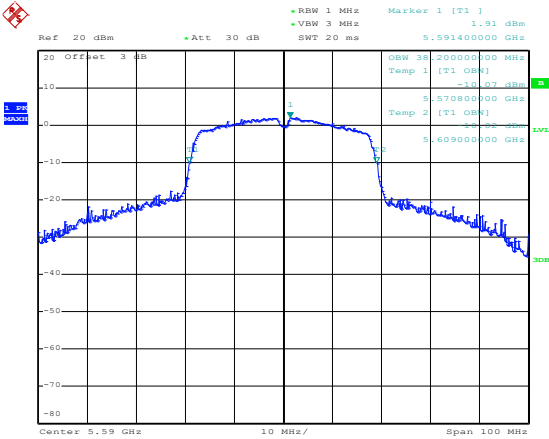
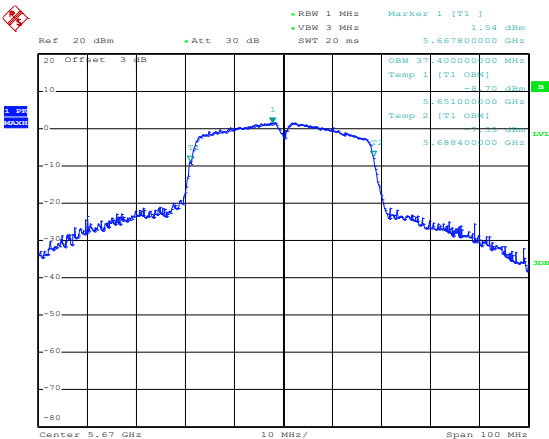
802.11n-HT20-Low	 Ref 20 dBm Att 30 dB RBW 300 kHz Marker 1 [T1] 0.68 dBm VSW 1 MHz SWT 20 ms 5.261000000 GHz OSW 10.100000000 MHz Temp 1 [T1] 0.68 dBm Temp 2 [T1] 0.68 dBm Center 5.26 GHz 5 MHz/ Span 50 MHz Date: 25.JUN.2023 15:04:07
802.11n-HT20-Middle	 Ref 20 dBm Att 30 dB RBW 300 kHz Marker 1 [T1] 0.92 dBm VSW 1 MHz SWT 20 ms 5.279200000 GHz OSW 10.100000000 MHz Temp 1 [T1] 0.92 dBm Temp 2 [T1] 0.92 dBm Center 5.28 GHz 5 MHz/ Span 50 MHz Date: 25.JUN.2023 15:04:38
802.11n-HT20-High	 Ref 20 dBm Att 30 dB RBW 300 kHz Marker 1 [T1] -0.17 dBm VSW 1 MHz SWT 20 ms 5.317900000 GHz OSW 10.200000000 MHz Temp 1 [T1] -0.17 dBm Temp 2 [T1] -0.17 dBm Center 5.32 GHz 5 MHz/ Span 50 MHz Date: 25.JUN.2023 15:05:05

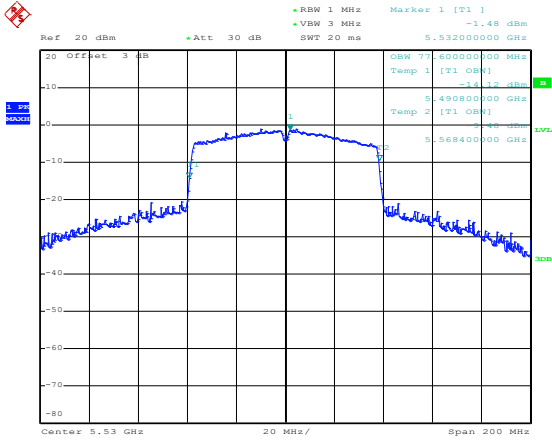
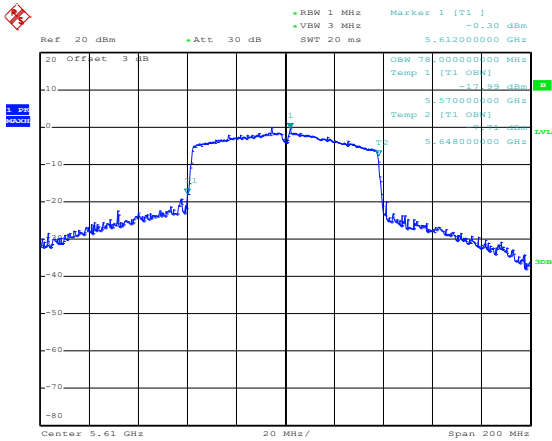
802.11n-HT40-Low	 Ref 20 dBm +Att 30 dB RBW 1 MHz VSW 3 MHz SWT 20 ms Marker 1 [T1] 2.89 dBm 5.276000000 GHz OSW 37.200000000 MHz Temp 1 [T1 OBW] -5.15 dBm 5.251400000 GHz Temp 2 [T1 OBW] -5.89 dBm 5.288600000 GHz Center 5.27 GHz 10 MHz/ Span 100 MHz Date: 25.JUN.2023 15:05:44
802.11n-HT40-High	 Ref 20 dBm +Att 30 dB RBW 1 MHz VSW 3 MHz SWT 20 ms Marker 1 [T1] 2.29 dBm 5.312200000 GHz OSW 37.200000000 MHz Temp 1 [T1 OBW] -5.70 dBm 5.291400000 GHz Temp 2 [T1 OBW] -5.89 dBm 5.328600000 GHz Center 5.31 GHz 10 MHz/ Span 100 MHz Date: 25.JUN.2023 15:06:12
802.11ac-HT80-Low	 Ref 20 dBm +Att 30 dB RBW 1 MHz VSW 3 MHz SWT 20 ms Marker 1 [T1] -0.96 dBm 5.286800000 GHz OSW 76.000000000 MHz Temp 1 [T1 OBW] -5.91 dBm 5.252000000 GHz Temp 2 [T1 OBW] -5.84 dBm 5.328000000 GHz Center 5.29 GHz 20 MHz/ Span 200 MHz Date: 25.JUN.2023 15:06:45

5470-5725MHz

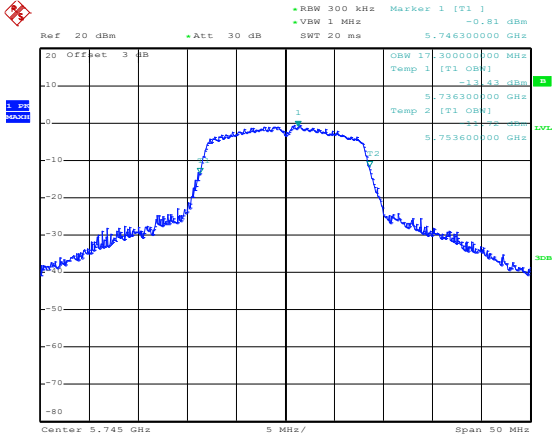
802.11a-Low	 Ref 20 dBm +Att 30 dB RBW 300 kHz Marker 1 [T1] -0.21 dBm +VSW 1 MHz SWT 20 ms 5.502700000 GHz OSW 17.600000000 MHz Temp 1 [T1] OSW] -13.41 dBm 5.491200000 GHz Temp 2 [T1] OSW] -13.41 dBm 5.508800000 GHz Center 5.5 GHz 5 MHz/ Span 50 MHz Date: 25.JUN.2023 15:14:16
802.11a-Middle	 Ref 20 dBm +Att 30 dB RBW 300 kHz Marker 1 [T1] -0.76 dBm +VSW 1 MHz SWT 20 ms 5.600900000 GHz OSW 17.600000000 MHz Temp 1 [T1] OSW] -13.41 dBm 5.591100000 GHz Temp 2 [T1] OSW] -13.41 dBm 5.608700000 GHz Center 5.6 GHz 5 MHz/ Span 50 MHz Date: 25.JUN.2023 15:14:38
802.11a-High	 Ref 20 dBm +Att 30 dB RBW 300 kHz Marker 1 [T1] -0.75 dBm +VSW 1 MHz SWT 20 ms 5.701500000 GHz OSW 17.300000000 MHz Temp 1 [T1] OSW] -13.41 dBm 5.691300000 GHz Temp 2 [T1] OSW] -13.41 dBm 5.708600000 GHz Center 5.7 GHz 5 MHz/ Span 50 MHz Date: 25.JUN.2023 15:15:03

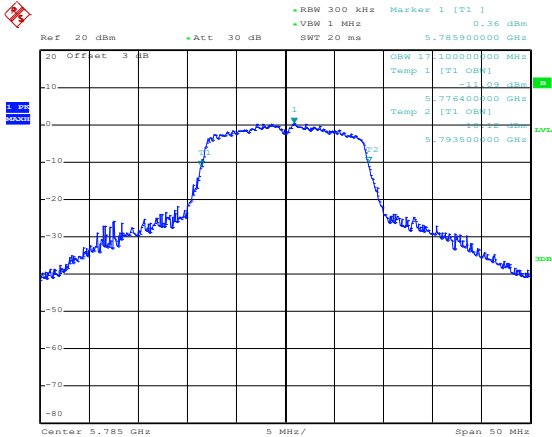
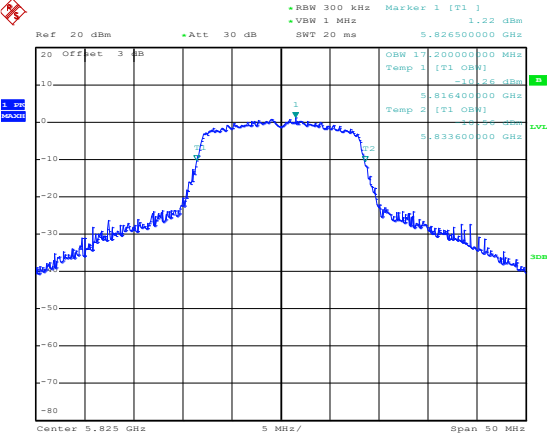
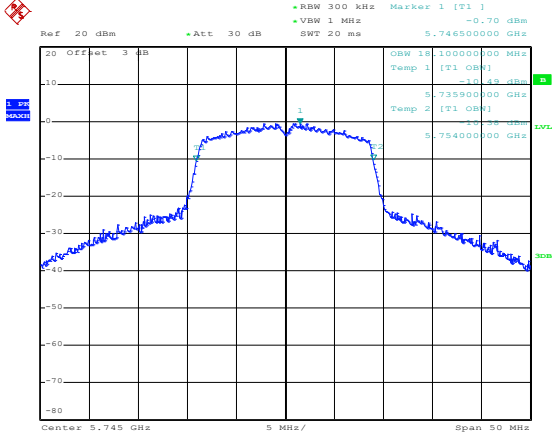
802.11n-HT20-Low	 Date: 25.JUN.2023 15:13:04
802.11n-HT20-Middle	 Date: 25.JUN.2023 15:13:25
802.11n-HT20-High	 Date: 25.JUN.2023 15:13:48

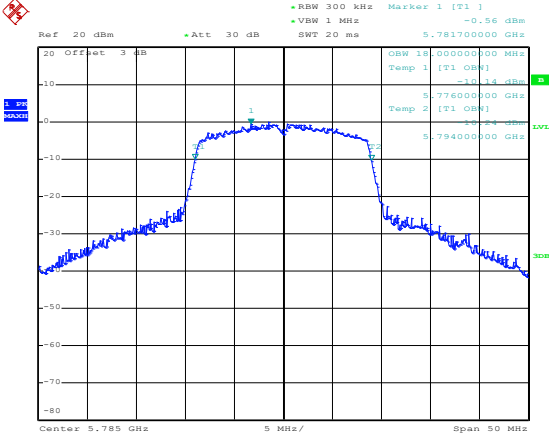
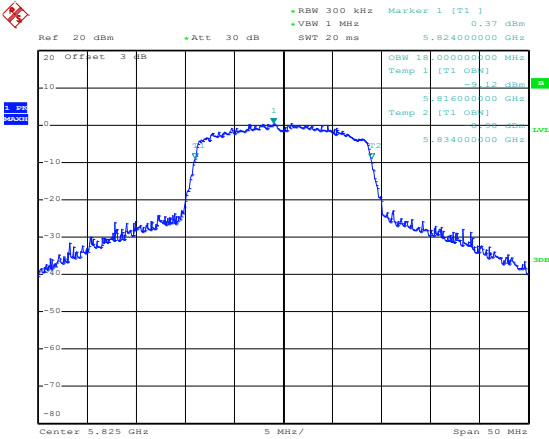
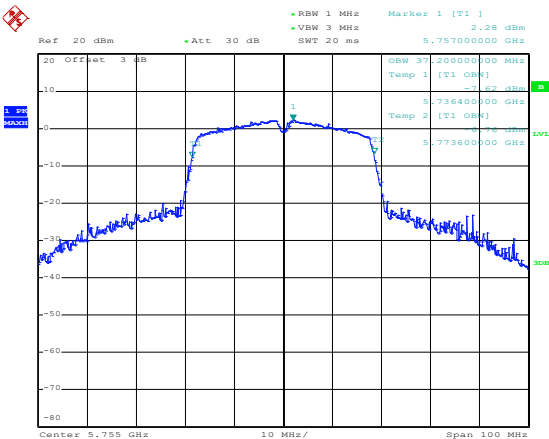
802.11n-HT40-Low	 Ref 20 dBm •Att 30 dB •RBW 1 MHz Marker 1 [T1] 2.06 dBm •VSW 3 MHz SWT 20 ms 5.508200000 GHz OSW 30.200000000 MHz Temp 1 [T1] 0dBm -3.27 dBm 5.490800000 GHz Temp 2 [T1] 0dBm -3.68 dBm 5.529000000 GHz Center 5.51 GHz 10 MHz/ Span 100 MHz Date: 25.JUN.2023 15:11:12
802.11n-HT40- Middle	 Ref 20 dBm •Att 30 dB •RBW 1 MHz Marker 1 [T1] 1.91 dBm •VSW 3 MHz SWT 20 ms 5.591400000 GHz OSW 30.200000000 MHz Temp 1 [T1] 0dBm -3.27 dBm 5.570800000 GHz Temp 2 [T1] 0dBm -3.68 dBm 5.609000000 GHz Center 5.59 GHz 10 MHz/ Span 100 MHz Date: 25.JUN.2023 15:11:44
802.11n-HT40-High	 Ref 20 dBm •Att 30 dB •RBW 1 MHz Marker 1 [T1] 1.54 dBm •VSW 3 MHz SWT 20 ms 5.667800000 GHz OSW 37.400000000 MHz Temp 1 [T1] 0dBm -3.79 dBm 5.651000000 GHz Temp 2 [T1] 0dBm -3.88 dBm 5.688400000 GHz Center 5.67 GHz 10 MHz/ Span 100 MHz Date: 25.JUN.2023 15:12:03

802.11ac-HT80-Low	 Ref 20 dBm +Att 30 dB +RBW 1 MHz Marker 1 [T1] -1.48 dBm +VSW 3 MHz 5.532000000 GHz SWT 20 ms OSW 77.600000000 MHz Temp 1 [T1 OBW] -14.12 dBm 5.490800000 GHz Temp 2 [T1 OBW] -14.48 dBm 5.568400000 GHz Center 5.53 GHz 20 MHz/ Span 200 MHz Date: 25.JUN.2023 15:09:24
802.11ac-HT80-High	 Ref 20 dBm +Att 30 dB +RBW 1 MHz Marker 1 [T1] -0.30 dBm +VSW 3 MHz 5.612000000 GHz SWT 20 ms OSW 78.000000000 MHz Temp 1 [T1 OBW] -17.89 dBm 5.570000000 GHz Temp 2 [T1 OBW] -18.48 dBm 5.648000000 GHz Center 5.61 GHz 20 MHz/ Span 200 MHz Date: 25.JUN.2023 15:10:01

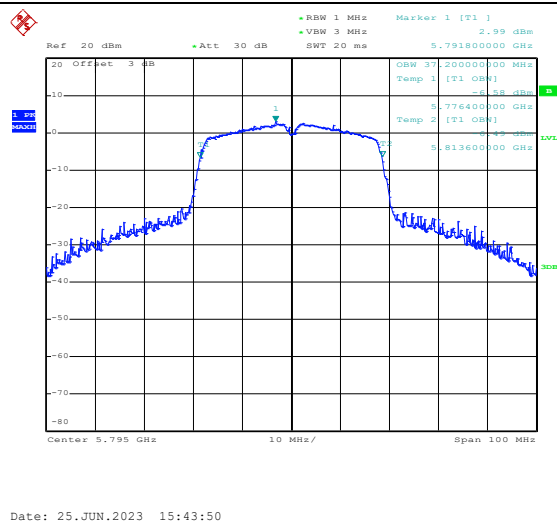
5725-5850MHz

802.11a-Low	 Ref 20 dBm +Att 30 dB +RBW 300 kHz Marker 1 [T1] -0.81 dBm +VSW 1 MHz 5.746300000 GHz SWT 20 ms OSW 17.300000000 MHz Temp 1 [T1 OBW] -13.43 dBm 5.736300000 GHz Temp 2 [T1 OBW] -14.08 dBm 5.753600000 GHz Center 5.745 GHz 5 MHz/ Span 50 MHz Date: 25.JUN.2023 15:41:07
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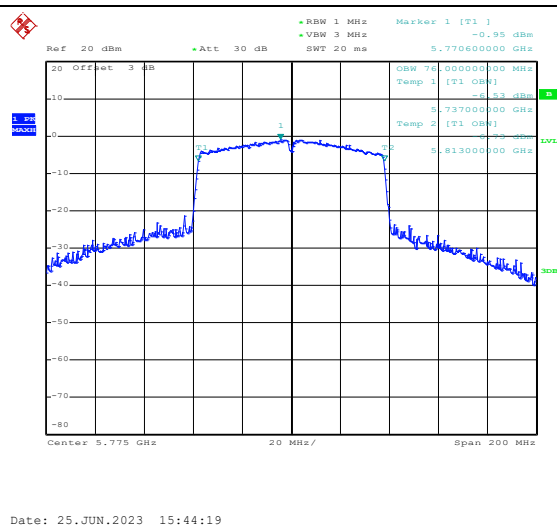
802.11a-Middle	 Ref 20 dBm +Att 30 dB RBW 300 kHz Marker 1 [T1] 0.36 dBm VSW 1 MHz SWT 20 ms 5.785900000 GHz OSW 17.100000000 MHz Temp 1 [T1 OBW] -11.02 dBm 5.776400000 GHz Temp 2 [T1 OBW] -10.12 dBm 5.793500000 GHz Center 5.785 GHz 5 MHz/ Span 50 MHz Date: 25.JUN.2023 15:41:32
802.11a-High	 Ref 20 dBm +Att 30 dB RBW 300 kHz Marker 1 [T1] 1.22 dBm VSW 1 MHz SWT 20 ms 5.826500000 GHz OSW 17.100000000 MHz Temp 1 [T1 OBW] -10.26 dBm 5.816400000 GHz Temp 2 [T1 OBW] -10.00 dBm 5.833600000 GHz Center 5.825 GHz 5 MHz/ Span 50 MHz Date: 25.JUN.2023 15:41:54
802.11n-HT20-Low	 Ref 20 dBm +Att 30 dB RBW 300 kHz Marker 1 [T1] -0.70 dBm VSW 1 MHz SWT 20 ms 5.746500000 GHz OSW 18.100000000 MHz Temp 1 [T1 OBW] -10.42 dBm 5.735900000 GHz Temp 2 [T1 OBW] -10.18 dBm 5.754000000 GHz Center 5.745 GHz 5 MHz/ Span 50 MHz Date: 25.JUN.2023 15:42:19

802.11n-HT20-Middle	 Ref 20 dBm Att 30 dB RBW 300 kHz VSW 1 MHz Marker 1 [T1] -0.56 dBm 5.781700000 GHz Center 5.785 GHz 5 MHz/ Span 50 MHz Date: 25.JUN.2023 15:42:36
802.11n-HT20-High	 Ref 20 dBm Att 30 dB RBW 300 kHz VSW 1 MHz Marker 1 [T1] 0.37 dBm 5.824000000 GHz Center 5.825 GHz 5 MHz/ Span 50 MHz Date: 25.JUN.2023 15:42:51
802.11n-HT40-Low	 Ref 20 dBm Att 30 dB RBW 1 MHz VSW 3 MHz Marker 1 [T1] 2.28 dBm 5.757000000 GHz Center 5.755 GHz 10 MHz/ Span 100 MHz Date: 25.JUN.2023 15:43:30

802.11n-HT40-High



802.11ac-HT80-Low



APPENDIX C

Maximum Conducted Output Power

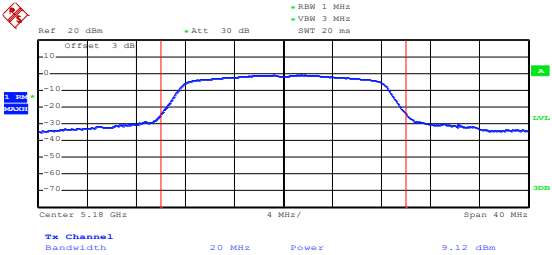
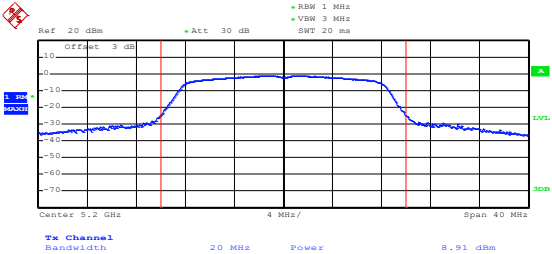
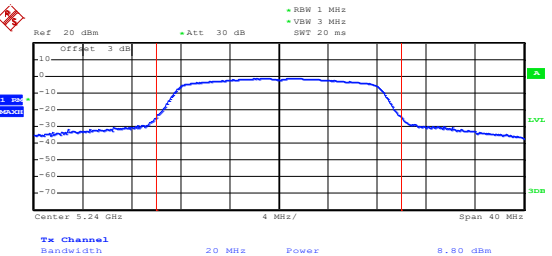
U-NII-1:5150-5250MHz			
Test mode	Frequency MHz	Output Power dBm	Limit dBm
802.11a	5180	9.12	23.98
	5200	8.91	23.98
	5240	8.80	23.98
802.11n-HT20	5180	9.05	23.98
	5200	8.78	23.98
	5240	8.62	23.98
802.11n-HT40	5190	8.79	23.98
	5230	8.11	23.98
802.11ac VH80	5210	8.49	23.98

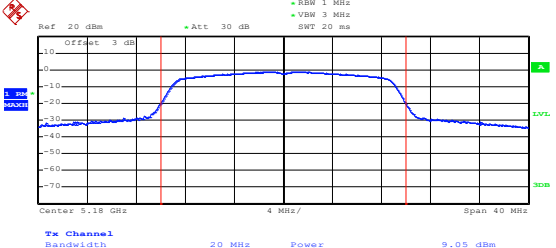
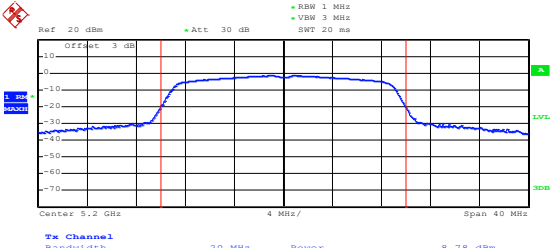
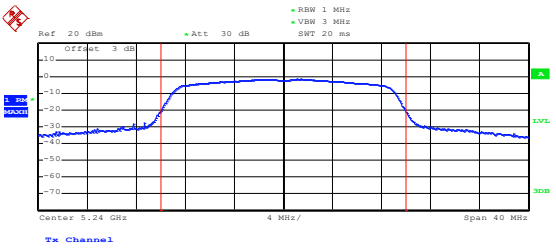
U-NII-2A: 5250-5350MHz			
Test mode	Frequency MHz	Output Power dBm	Limit dBm
802.11a	5260	8.32	23.98
	5280	8.15	23.98
	5320	7.25	23.98
802.11n-HT20	5260	8.20	23.98
	5280	8.01	23.98
	5320	7.12	23.98
802.11n-HT40	5270	7.91	23.98
	5310	7.21	23.98
802.11ac VH80	5290	7.46	23.98

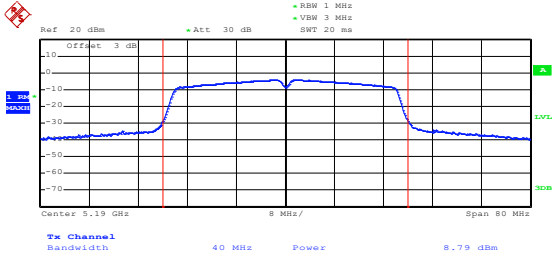
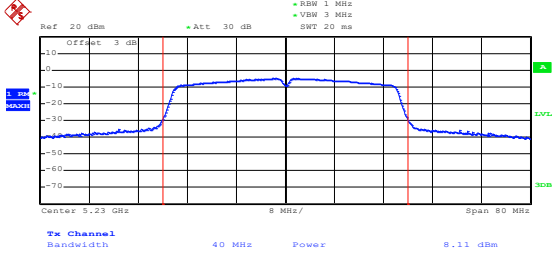
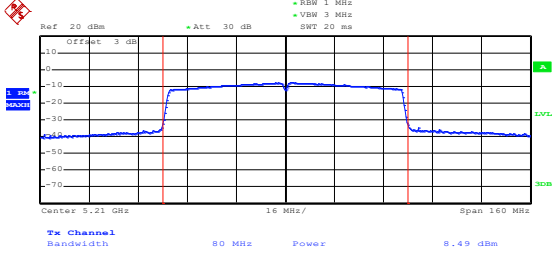
U-NII-2C: 5470-5725MHz			
Test mode	Frequency MHz	Output Power dBm	Limit dBm
802.11a	5500	7.12	23.98
	5600	7.20	23.98
	5700	7.12	23.98
802.11n-HT20	5500	6.93	23.98
	5600	7.22	23.98
	5700	7.01	23.98
802.11n-HT40	5510	7.00	23.98
	5590	7.35	23.98
	5670	7.02	23.98
802.11ac VH80	5530	7.09	23.98
	5610	7.16	23.98

U-NII-3: 5725-5850MHz			
Test mode	Frequency MHz	Output Power dBm	Limit dBm
802.11a	5745	7.42	30.00
	5785	8.11	30.00
	5825	8.48	30.00
802.11n-HT20	5745	7.31	30.00
	5785	7.83	30.00
	5825	8.40	30.00
802.11n-HT40	5755	7.35	30.00
	5795	8.07	30.00
802.11ac VH80	5775	7.47	30.00

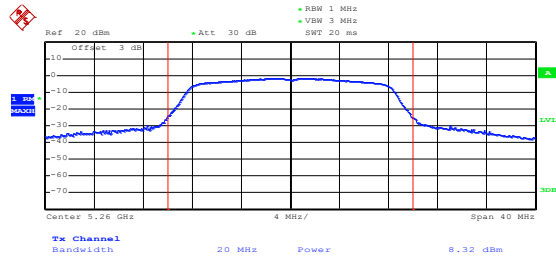
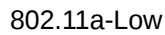
5150-5250MHz

802.11a-Low	 Ref: 20 dBm • Att: 30 dB • RBW: 1 MHz • VSW: 3 MHz • SWT: 20 ms Offset: 3 dB Center: 5.18 GHz 4 MHz/ Span: 40 MHz Tx Channel Bandwidth: 20 MHz Power: 9.12 dBm Date: 25.JUN.2023 09:40:10
802.11a-Middle	 Ref: 20 dBm • Att: 30 dB • RBW: 1 MHz • VSW: 3 MHz • SWT: 20 ms Offset: 3 dB Center: 5.2 GHz 4 MHz/ Span: 40 MHz Tx Channel Bandwidth: 20 MHz Power: 8.91 dBm Date: 25.JUN.2023 09:40:59
802.11a-High	 Ref: 20 dBm • Att: 30 dB • RBW: 1 MHz • VSW: 3 MHz • SWT: 20 ms Offset: 3 dB Center: 5.24 GHz 4 MHz/ Span: 40 MHz Tx Channel Bandwidth: 20 MHz Power: 8.80 dBm Date: 25.JUN.2023 09:41:27

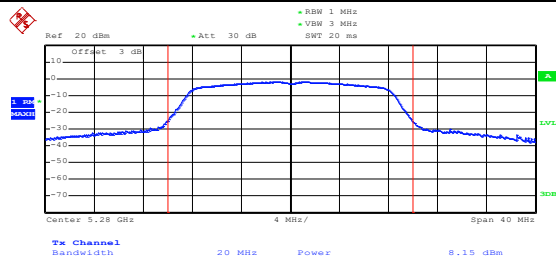
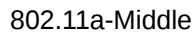
802.11n-HT20-Low	 Date: 25.JUN.2023 09:42:53
802.11n-HT20-Middle	 Date: 25.JUN.2023 09:43:28
802.11n-HT20-High	 Date: 25.JUN.2023 09:44:04

802.11n-HT40-Low	 Date: 25.JUN.2023 09:44:55
802.11n-HT40-High	 Date: 25.JUN.2023 09:45:19
802.11ac-HT80-Low	 Date: 25.JUN.2023 09:45:56

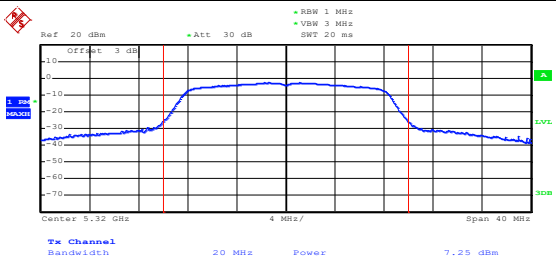
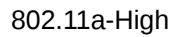
5250-5350MHz



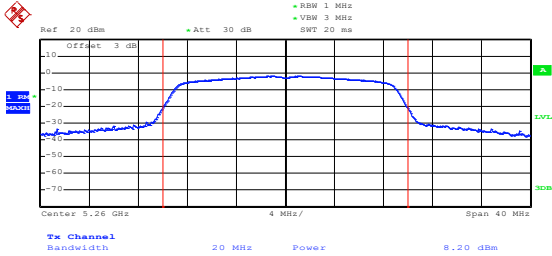
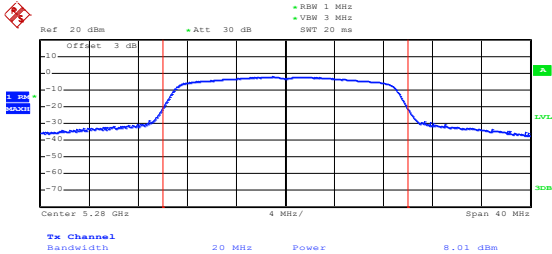
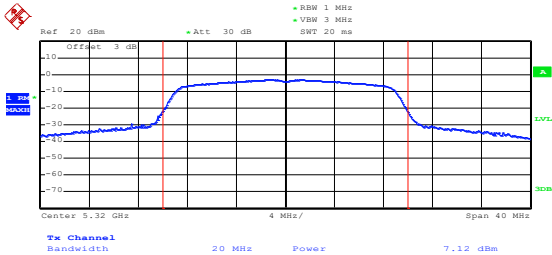
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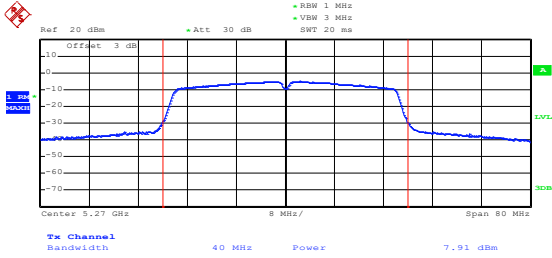
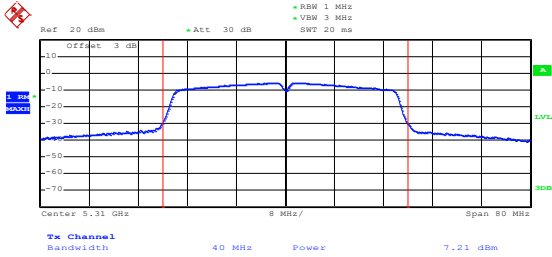
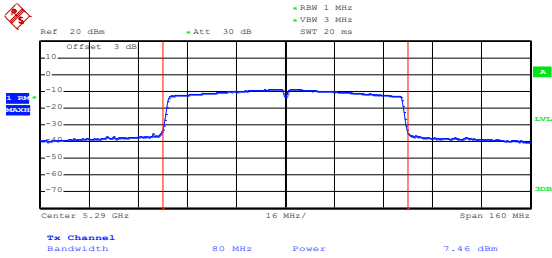


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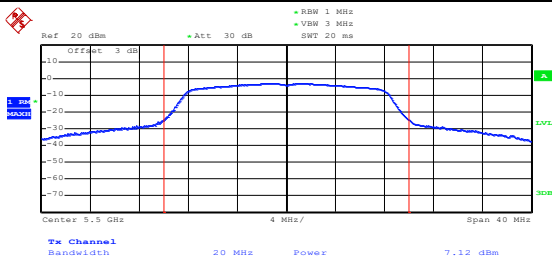
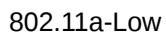


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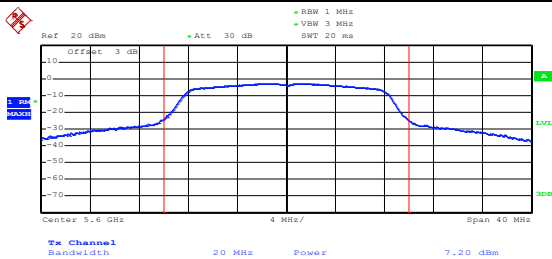
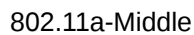
802.11n-HT20-Low	 Ref: 20 dBm • Att: 30 dB • RBW: 1 MHz • VBW: 3 MHz • SWT: 20 ms Offset: 3 dB Center: 5.26 GHz 4 MHz/ Span: 40 MHz Tx Channel Bandwidth: 20 MHz Power: 8.20 dBm Date: 25.JUN.2023 09:50:36
802.11n-HT20-Middle	 Ref: 20 dBm • Att: 30 dB • RBW: 1 MHz • VBW: 3 MHz • SWT: 20 ms Offset: 3 dB Center: 5.28 GHz 4 MHz/ Span: 40 MHz Tx Channel Bandwidth: 20 MHz Power: 8.01 dBm Date: 25.JUN.2023 09:50:56
802.11n-HT20-High	 Ref: 20 dBm • Att: 30 dB • RBW: 1 MHz • VBW: 3 MHz • SWT: 20 ms Offset: 3 dB Center: 5.32 GHz 4 MHz/ Span: 40 MHz Tx Channel Bandwidth: 20 MHz Power: 7.12 dBm Date: 25.JUN.2023 09:51:20

802.11n-HT40-Low	 Ref: 20 dBm Offset: 3 dB Att: 30 dB RBW: 1 MHz VBW: 3 MHz SWT: 20 ms Center: 5.27 GHz Span: 80 MHz Tx Channel Bandwidth: 40 MHz Power: 7.91 dBm Date: 25.JUN.2023 09:52:09
802.11n-HT40-High	 Ref: 20 dBm Offset: 3 dB Att: 30 dB RBW: 1 MHz VBW: 3 MHz SWT: 20 ms Center: 5.31 GHz Span: 80 MHz Tx Channel Bandwidth: 40 MHz Power: 7.21 dBm Date: 25.JUN.2023 09:52:46
802.11ac-HT80-Low	 Ref: 20 dBm Offset: 3 dB Att: 30 dB RBW: 1 MHz VBW: 3 MHz SWT: 20 ms Center: 5.29 GHz Span: 160 MHz Tx Channel Bandwidth: 80 MHz Power: 7.46 dBm Date: 25.JUN.2023 09:53:43

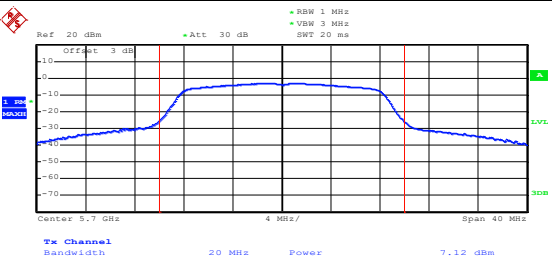
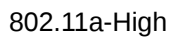
5470-5725MHz



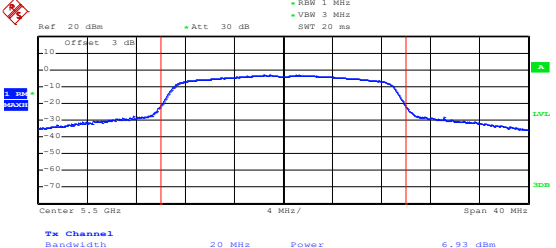
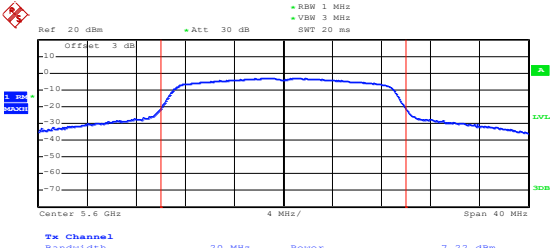
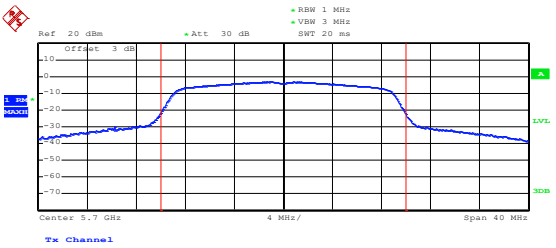
Date: 25.JUN.2023 10:01:29

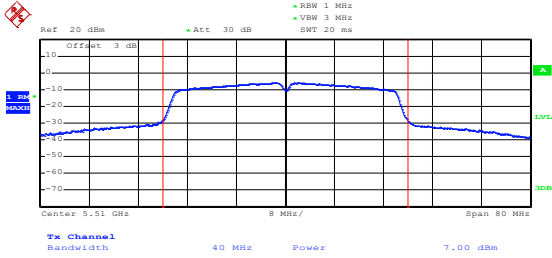
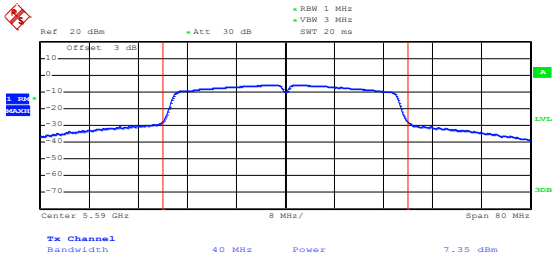
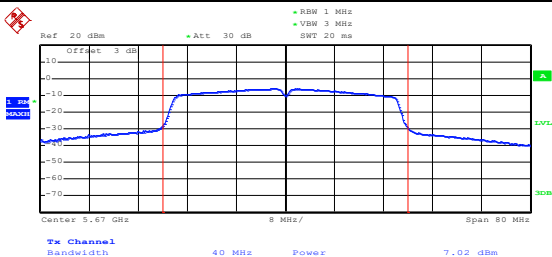


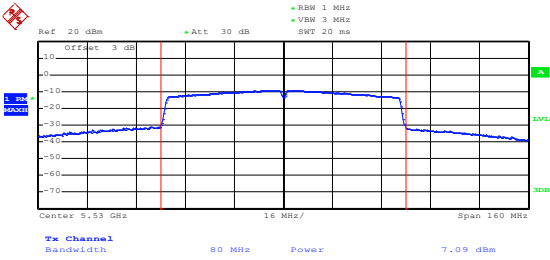
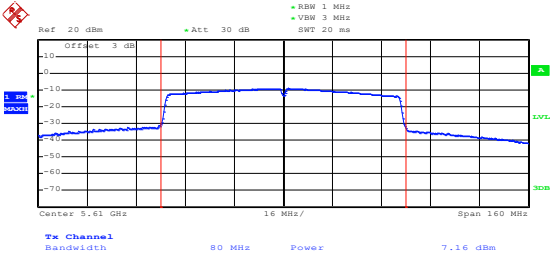
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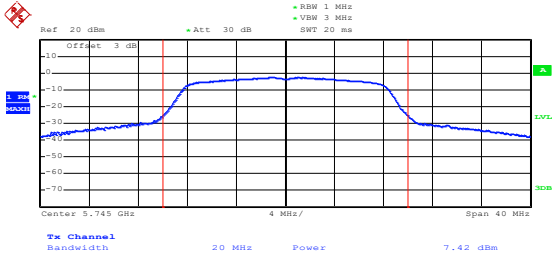
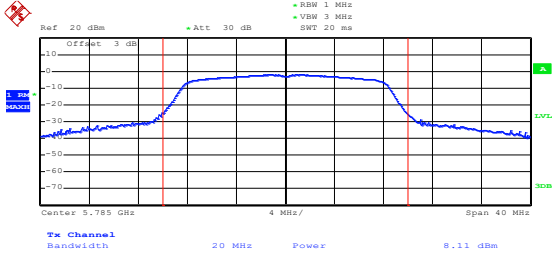
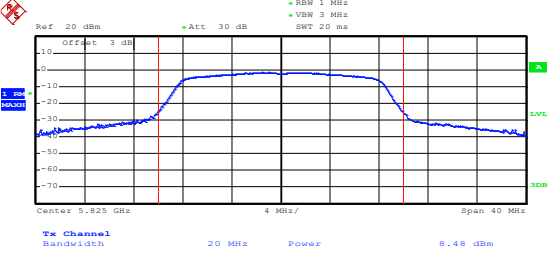
Date: 25.JUN.2023 10:02:09

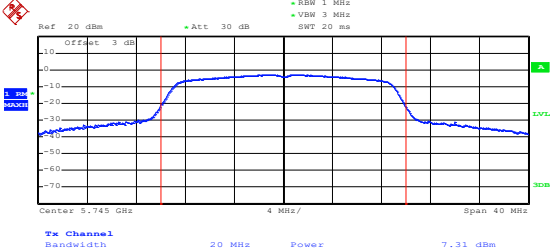
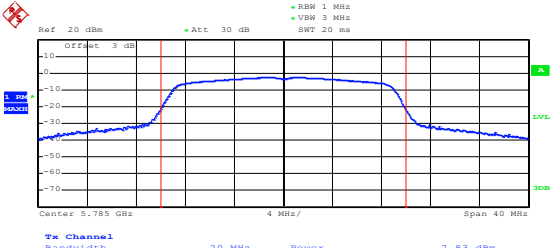
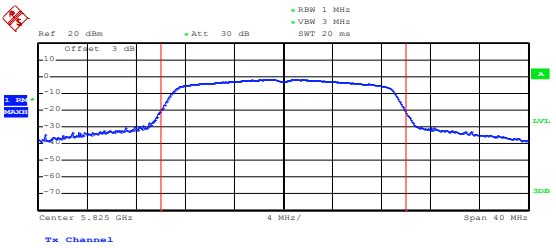
802.11n-HT20-Low	 Date: 25.JUN.2023 09:59:51
802.11n-HT20-Middle	 Date: 25.JUN.2023 10:00:19
802.11n-HT20-High	 Date: 25.JUN.2023 10:00:47

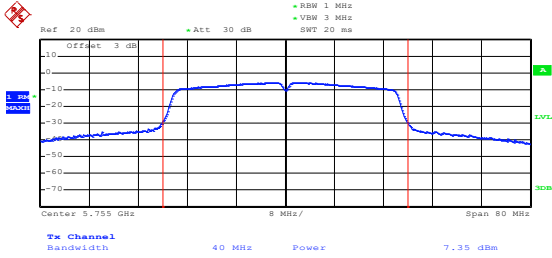
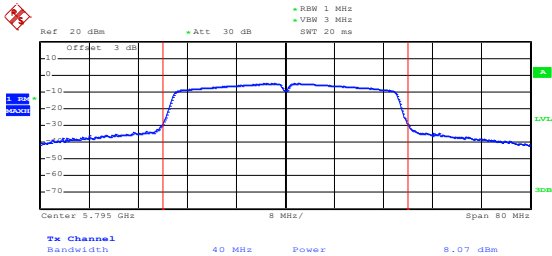
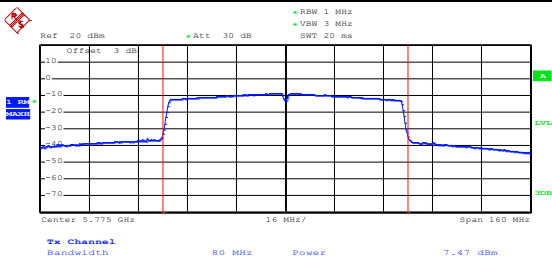
802.11n-HT40-Low	 Ref: 20 dBm Offset: 3 dB Att: 30 dB RBW: 1 MHz VBW: 3 MHz SWT: 20 ms Center: 5.51 GHz Span: 80 MHz 8 MHz/ Ts Channel Bandwidth 40 MHz Power 7.00 dBm Date: 25.JUN.2023 09:58:04
802.11n-HT40- Middle	 Ref: 20 dBm Offset: 3 dB Att: 30 dB RBW: 1 MHz VBW: 3 MHz SWT: 20 ms Center: 5.59 GHz Span: 80 MHz 8 MHz/ Ts Channel Bandwidth 40 MHz Power 7.35 dBm Date: 25.JUN.2023 09:58:33
802.11n-HT40-High	 Ref: 20 dBm Offset: 3 dB Att: 30 dB RBW: 1 MHz VBW: 3 MHz SWT: 20 ms Center: 5.67 GHz Span: 80 MHz 8 MHz/ Ts Channel Bandwidth 40 MHz Power 7.02 dBm Date: 25.JUN.2023 09:58:58

802.11ac-HT80-Low	 Date: 25.JUN.2023 09:56:46
802.11ac-HT80-High	 Date: 25.JUN.2023 09:57:11

5725-5850MHz

802.11a-Low	 Ref: 20 dBm Att: 30 dB RBW: 1 MHz VSW: 3 MHz SWT: 20 ms Offset: 3 dB Center: 5.745 GHz Span: 40 MHz Tx Channel Bandwidth: 20 MHz Power: 7.42 dBm Date: 25.JUN.2023 10:04:56
802.11a-Middle	 Ref: 20 dBm Att: 30 dB RBW: 1 MHz VSW: 3 MHz SWT: 20 ms Offset: 3 dB Center: 5.785 GHz Span: 40 MHz Tx Channel Bandwidth: 20 MHz Power: 8.11 dBm Date: 25.JUN.2023 10:05:17
802.11a-High	 Ref: 20 dBm Att: 30 dB RBW: 1 MHz VSW: 3 MHz SWT: 20 ms Offset: 3 dB Center: 5.825 GHz Span: 40 MHz Tx Channel Bandwidth: 20 MHz Power: 8.48 dBm Date: 25.JUN.2023 10:05:40

802.11n-HT20-Low	 Ref: 20 dBm Offset: 3 dB Att: 30 dB RBW: 1 MHz VBW: 3 MHz SWT: 20 ms Center: 5.745 GHz Span: 40 MHz Ts Channel Bandwidth: 20 MHz Power: 7.31 dBm Date: 25.JUN.2023 10:06:06
802.11n-HT20-Middle	 Ref: 20 dBm Offset: 3 dB Att: 30 dB RBW: 1 MHz VBW: 3 MHz SWT: 20 ms Center: 5.785 GHz Span: 40 MHz Ts Channel Bandwidth: 20 MHz Power: 7.83 dBm Date: 25.JUN.2023 10:06:23
802.11n-HT20-High	 Ref: 20 dBm Offset: 3 dB Att: 30 dB RBW: 1 MHz VBW: 3 MHz SWT: 20 ms Center: 5.825 GHz Span: 40 MHz Ts Channel Bandwidth: 20 MHz Power: 8.40 dBm Date: 25.JUN.2023 10:06:46

802.11n-HT40-Low	 Ref: 20 dBm Offset: 3 dB Att: 30 dB RBW: 1 MHz VBW: 3 MHz SWT: 20 ms Center: 5.775 GHz Span: 80 MHz Tx Channel Bandwidth: 40 MHz Power: 7.35 dBm Date: 25.JUN.2023 10:07:29
802.11n-HT40-High	 Ref: 20 dBm Offset: 3 dB Att: 30 dB RBW: 1 MHz VBW: 3 MHz SWT: 20 ms Center: 5.775 GHz Span: 80 MHz Tx Channel Bandwidth: 40 MHz Power: 8.07 dBm Date: 25.JUN.2023 10:07:51
802.11ac-HT80-Low	 Ref: 20 dBm Offset: 3 dB Att: 30 dB RBW: 1 MHz VBW: 3 MHz SWT: 20 ms Center: 5.775 GHz Span: 160 MHz Tx Channel Bandwidth: 80 MHz Power: 7.47 dBm Date: 25.JUN.2023 10:08:35

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	109	0.0210
100%		-20	121	0.0233
100%		-10	115	0.0221
100%		0	126	0.0242
100%		+10	147	0.0283
100%		+20	167	0.0321
100%		+30	151	0.0290
100%		+40	137	0.0263
100%		+50	138	0.0265
Low Battery power	3.55	+20	119	0.0229
High Battery power	4.35	+20	131	0.0252

U-NII-2A: 5250-5350MHz worst case at 802.11a middle channel				
Voltage(%)	Power(VDC)	TEMP(°C)	Freq.Dev(Hz)	Deviation
100%	3.8	-30	174	0.0328
100%		-20	133	0.0251
100%		-10	138	0.0260
100%		0	125	0.0236
100%		+10	144	0.0272
100%		+20	170	0.0321
100%		+30	135	0.0255
100%		+40	130	0.0245
100%		+50	149	0.0281
Low Battery power	3.55	+20	151	0.0285
High Battery power	4.35	+20	167	0.0315

U-NII-2C: 5470-5725MHz worst case at 802.11a middle channel				
Voltage(%)	Power(VDC)	TEMP(°C)	Freq.Dev(Hz)	Deviation
100%	3.8	-30	149	0.0267
100%		-20	159	0.0285
100%		-10	113	0.0203
100%		0	134	0.0240
100%		+10	176	0.0315
100%		+20	156	0.0280
100%		+30	136	0.0244
100%		+40	120	0.0215
100%		+50	169	0.0303
Low Battery power	3.55	+20	108	0.0194
High Battery power	4.35	+20	156	0.0280

U-NII-3:5725-5850MHz worst case at 802.11a middle channel				
Voltage(%)	Power(VDC)	TEMP(°C)	Freq.Dev(Hz)	Deviation
100%	3.8	-30	103	0.0178
100%		-20	116	0.0201
100%		-10	151	0.0261
100%		0	145	0.0251
100%		+10	169	0.0292
100%		+20	113	0.0195
100%		+30	169	0.0292
100%		+40	155	0.0268
100%		+50	180	0.0311
Low Battery power	3.55	+20	156	0.0270
High Battery power	4.35	+20	178	0.0308

APPENDIX PHOTOGRAPHS

Please refer to “ANNEX”

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