

TEST REPORT

Reference No...... : WTH25X09253887W001
FCC ID : EF400265
Applicant : Nice North America LLC
Address : 5919 Sea Otter Place, Carlsbad, CA 92010 USA
Manufacturer : The same as Applicant
Address : The same as Applicant
Product Name : Wireless KVM Extender TX+RX
Model No...... : GF-EXT-WIK-5G(TX)
Standards : FCC Part 15.407
Date of Receipt sample : 2025-09-19
Date of Test..... : 2025-11-18 to 2025-12-04
Date of Issue : 2025-12-09
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.

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Report version

Version No.	Date of issue	Description
Rev.00	2025-12-09	Original
/	/	/

1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

General Description of EUT	
Product Name:	Wireless KVM Extender TX+RX
Trade Name:	/
Model No.:	GF-EXT-WIK-5G(TX)
Adding Model(s):	/
Rated Voltage:	DC5V
Battery Capacity:	/
Power Adapter:	NBS12E050200UV Input:AC100-240V 50/60Hz 0.3A Output:DC5V2.0A
<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-VHT20, 802.11ac-VHT40,802.11ac-VHT80
Frequency Range:	5180-5240MHz
Max. RF Output Power:	Antenna 1: 12.42dBm (Conducted) Antenna 2: 12.87dBm (Conducted)
Type of Modulation:	QPSK, 16QAM, 64QAM,256QAM
Type of Antenna:	External Antenna
Antenna Gain:	5.93dBi
<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 C63.10-2020: American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

KDB789033 D02 v02r01: Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-Nii) Devices Part 15, Subparte.

KDB662911 D01 Multiple Transmitter Output v02r01: Emissions Testing of Transmitters with Multiple Outputs in the Same Band.

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 C63.10-2020, 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 the fixed frequency using adb.exe, 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									
802.11a 6Mbps	13	13	13									
802.11n-HT20 MCS0	12	12	12									
802.11ac-VHT20 MCS0	12	12	12									
Mode	NCB: 40MHz											
	5190	5230										
802.11n-HT40 MCS0	12	12										
802.11ac-VHT4	12	12										

0 MCS0										
Mode	NCB: 80MHz									
	5210									
802.11ac-VHT8 0 MCS0	12									

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, Bao'an District, Shenzhen, P.R.C. (518101)

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
TM2	802.11n-HT20/802.11ac-VHT20	5180MHz,5200MHz,5240MHz
TM3	802.11n-HT40/802.11ac-VHT40	5190MHz,5230MHz
TM4	802.11ac-VHT80	5210MHz
Note1 : All test modes (different data rate and different modulation) are performed, but only the worst case is recorded in this report; 802.11ac-VHT20, 802.11ac-VHT40 covered by 802.11n-HT20 and 802.11n-HT40. Note 2: The 5GHz WIFI has two antennas and support Multiple Outputs for 802.11n/ac mode for this report; For 5180-5240MHz: Antenna 1 Gain is 5.93dBi; Antenna 2 Gain is 5.93dBi; According to KDB 662911, for same directional gain: For 5180-5240MHz: Directional gain = $G_{ANT} + 10 \log(N_{ANT})$ dBi = $5.93 + 10\log(2)$ dBi = 8.94dBi		

Test Conditions	
Temperature:	22~25 °C
Relative Humidity:	50~55 %.
ATM Pressure:	1019mbar

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

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

Auxiliary Equipment List and Details			
Description	Manufacturer	Model	Serial Number
Notebook	ASUS	FA506IC	/
Displayer	Samsung	S32BG854NC	/
HDMI Wireless Extender	Nice	GF-EXT-WIK-5G(RX)	/

1.8 Measurement Uncertainty

Measurement uncertainty		
Parameter	Conditions	Uncertainty
RF Output Power	Conducted	±0.57dB
Occupied Bandwidth	Conducted	±0.015MHz
Power Spectral Density	Conducted	±1.8dB
Conducted Spurious Emission	Conducted	±2.17dB
Conducted Emission 1#	Conducted	@9kHz to 150kHz: ±3.74dB
		@150kHz to 30MHz: ±3.34dB
Conducted Emission 2#	Conducted	@9kHz to 150kHz: ±3.74dB
		@150kHz to 30MHz: ±3.34dB
Transmitter Spurious Emissions chamber A	Radiated	@9kHz to 30MHz: ±3.0dB
		@30MHz to 1GHz: ±5.70dB
		@1GHz to 6GHz: ±5.88dB
		@6GHz to 18GHz: ±5.96dB
Transmitter Spurious Emissions chamber B	Radiated	@30MHz to 1GHz: ±5.36dB
Transmitter Spurious Emissions chamber C	Radiated	@9kHz to 30MHz: ±3.0dB
		@30MHz to 1GHz: ±5.70dB
		@1GHz to 6GHz: ±5.88dB
		@6GHz to 18GHz: ±5.96dB

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	2025-02-23	2026-02-22
WTXE1005A 1005	Spectrum Analyzer	Agilent	N9020A	US471401 02	2025-02-23	2026-02-22
WTXE1084A 1001	Spectrum Analyzer	Agilent	N9020A	MY543205 48	2025-02-23	2026-02-22
WTXE1004A 1-001	Spectrum Analyzer	Rohde & Schwarz	FSP40	100612	2025-02-23	2026-02-22
WTXE1103A 1003	Attenuator	Pasternack	PE4007-4	/	2025-02-23	2026-02-22
WTXE1003A 1-005	Coaxial Cable	/	0M4RFC	/	2025-02-23	2026-02-22
☐ Chamber A: Below 1GHz						
WTXE1005A 1003	Spectrum Analyzer	Rohde & Schwarz	FSP30	836079/03 5	2025-02-23	2026-02-22
WTXE1001A 1001	EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2025-02-23	2026-02-22
WTXE1007A 1002	Amplifier	HP	8447F	2805A034 75	2025-02-23	2026-02-22
WTXE1010A 1007	Loop Antenna	Schwarz beck	FMZB 1516	9773	2024-02-26	2026-02-25
WTXE1010A 1006	Broadband Antenna	Schwarz beck	VULB9163	9163-333	2025-02-23	2026-02-22
WTXE1104A 1032-1	Coaxial Cable	/	RC_6G-N-M	/	2025-02-23	2026-02-22
WTXE1104A 1032-2	Coaxial Cable	/	RC_6G-N-M	/	2025-02-23	2026-02-22
WTXE1104A 1032-3	Coaxial Cable	/	RC_6G-N-M	/	2025-02-23	2026-02-22
☐ Chamber A: Above 1GHz						
WTXE1005A 1003	Spectrum Analyzer	Rohde & Schwarz	FSP30	836079/03 5	2025-02-23	2026-02-22
WTXE1001A 1001	EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2025-02-23	2026-02-22
WTXE1065A 1001	Amplifier	C&D	PAP-1.0G18	14918	2025-02-23	2026-02-22
WTXE1010A 1005	Horn Antenna	ETS	3117	00086197	2025-02-23	2026-02-22

WTXE1010A 1010	DRG Horn Antenna	A.H. SYSTEMS	SAS-574	571	2024-03-17	2026-03-16
WTXE1003A 1001	Pre-amplifier	Schwarzbeck	BBV 9721	9721-031	2025-02-23	2026-02-22
WTXE1104A 1033-1	Coaxial Cable	/	C16-07-07	/	2025-02-23	2026-02-22
WTXE1104A 1033-2	Coaxial Cable	/	C16-07-07	/	2025-02-23	2026-02-22
WTXE1104A 1033-3	Coaxial Cable	/	C16-07-07	/	2025-02-23	2026-02-22
☐ Chamber B:Below 1GHz						
WTXE1010A 1006	Trilog Broadband Antenna	Schwarz beck	VULB9163(B)	9163-635	2024-03-17	2027-03-16
WTXE1038A 1001	Amplifier	Agilent	8447D	2944A104 57	2025-02-23	2026-02-22
WTXE1001A 1002	EMI Test Receiver	Rohde & Schwarz	ESPI	101391	2025-02-23	2026-02-22
WTXE1104A 1031-1	Coaxial Cable	/	1.5MRFC-LWB3	/	2025-02-23	2026-02-22
WTXE1104A 1031-2	Coaxial Cable	/	RG 316	/	2025-02-23	2026-02-22
WTXE1104A 1031-3	Coaxial Cable	/	RG 316	/	2025-02-23	2026-02-22
☒ Chamber C:Below 1GHz						
WTXE1093A 1001	EMI Test Receiver	Rohde & Schwarz	ESIB 26	100401	2025-02-23	2026-02-22
WTXE1010A 1013-1	Trilog Broadband Antenna	Schwarz beck	VULB 9168	1194	2024-04-18	2027-04-17
WTXE1010A 1007	Loop Antenna	Schwarz beck	FMZB 1516	9773	2024-02-26	2026-02-25
WTXE1007A 1003	Amplifier	HP	8447F	2944A038 69	2025-02-23	2026-02-22
WTXE1104A 1034-1	Coaxial Cable	/	RC_6G-N-M	/	2025-02-23	2026-02-22
WTXE1104A 1034-2	Coaxial Cable	/	RC_6G-N-M	/	2025-02-23	2026-02-22
WTXE1104A 1034-3	Coaxial Cable	/	RC_6G-N-M	/	2025-02-23	2026-02-22
☒ Chamber C: Above 1GHz						
WTXE1093A	EMI Test	Rohde &	ESIB 26	100401	2025-02-23	2026-02-22

1001	Receiver	Schwarz				
WTXE1103A 1005	Horn Antenna	POAM	RTF-118A	1820	2025-06-13	2027-06-12
WTXE1103A 1006	Amplifier	Tonscend	TAP01018050	AP22E806 235	2025-02-23	2026-02-22
WTXE1010A 1010	DRG Horn Antenna	A.H. SYSTEMS	SAS-574	571	2024-03-17	2026-03-16
WTXE1003A 1001	Pre-amplifier	Schwarzbeck	BBV 9721	9721-031	2025-02-23	2026-02-22
WTXE1104A 1035-1	Coaxial Cable	/	RC-18G-N-M	/	2025-02-23	2026-02-22
WTXE1104A 1035-2	Coaxial Cable	/	RC-18G-N-M	/	2025-02-23	2026-02-22
WTXE1104A 1035-3	Coaxial Cable	/	RC-18G-N-M	/	2025-02-23	2026-02-22
☐ Conducted Room 1#						
WTXE1104A 1029	EMI Test Receiver	Rohde & Schwarz	ESCI	100525	2024-12-08	2025-12-07
					2025-11-25	2026-11-24
WTXE1002A 1001	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2025-02-23	2026-02-22
WTXE1003A 1001	AC LISN	Schwarz beck	NSLK8126	8126-279	2025-02-23	2026-02-22
WTXE1104A 1036	Coaxial Cable	/	RG 316	/	2025-02-23	2026-02-22
WTXE1104A 1038	Coaxial Cable	/	6MRFC-DP	/	2025-02-23	2026-02-22
☒ Conducted Room 2#						
WTXE1001A 1004	EMI Test Receiver	Rohde & Schwarz	ESPI	101259	2025-02-23	2026-02-22
WTXE1003A 1003	LISN	Rohde & Schwarz	ENV 216	100097	2025-02-23	2026-02-22
WTXE1104A 1037	Coaxial Cable	/	RG 316	/	2025-02-23	2026-02-22

Software List			
Description	Manufacturer	Model	Version
EMI Test Software (Radiated Emission A)	Farad	EZ-EMC	RA-03A1 (1.1.4.2)
EMI Test Software (Radiated Emission B)	Farad	EZ-EMC	RA-03A1 (1.1.4.2)
EMI Test Software (Radiated Emission C)	Farad	EZ-EMC	RA-03A1-2 (1.1.4.2)
EMI Test Software (Conducted Emission Room 1#)	Farad	EZ-EMC	3A1*CE-RE 1.1.4.3
EMI Test Software (Conducted Emission Room 2#)	Farad	EZ-EMC	3A1*CE-RE 1.1.4.3

*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)	N/A

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 two External antennas, 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 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.

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 1MHz RBW to satisfy directly the 1MHz 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 1MHz, 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 1MHz, 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 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.

(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 6dB emission bandwidth of at least 500kHz for the band 5.715-5.85GHz. 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 6 dB relative to the maximum level measured in the fundamental emission.

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

D. 99 Percent Occupied Bandwidth

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

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

- 1. Set center frequency to the nominal EUT channel center frequency.
- 2. Set span = 1.5 times to 5.0 times the OBW.
- 3. Set RBW = 1 % to 5 % of the OBW
- 4. Set VBW $\geq 3 \times$ 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.

Reference No.: WTH25X09253887W001

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 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.

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 1 MHz intervals extending across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the spectrum.

7.3 Summary of Test Results/Plots

Please refer to Appendix C

8. Radiated Spurious Emissions

8.1 Standard Applicable

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

- (1) For transmitters operating in the 5.15-5.25GHz 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 75 MHz 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.

789033 D02 v02r01 General UNII Test Procedures New Rules v01

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

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

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.

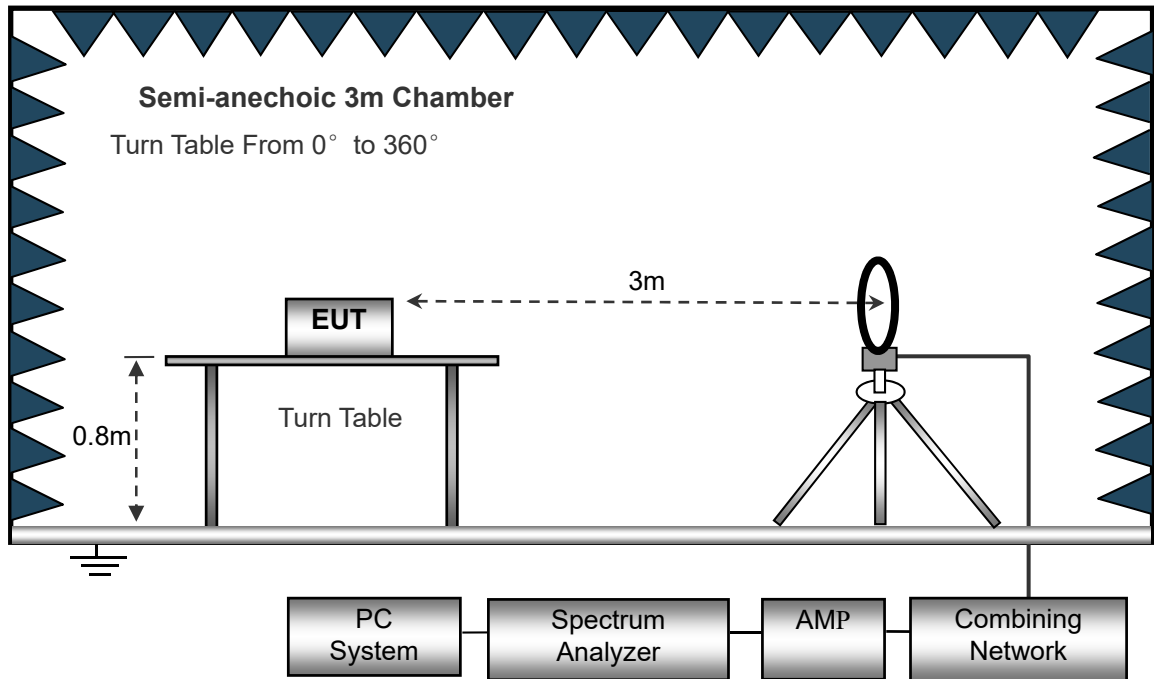
8.2 Test Procedure

The setup of EUT is according with per ANSI C63.10-2020 measurement procedure. The specification used was with the FCC Part 15.205 15.407(b)(6) and FCC Part 15.209 Limit..

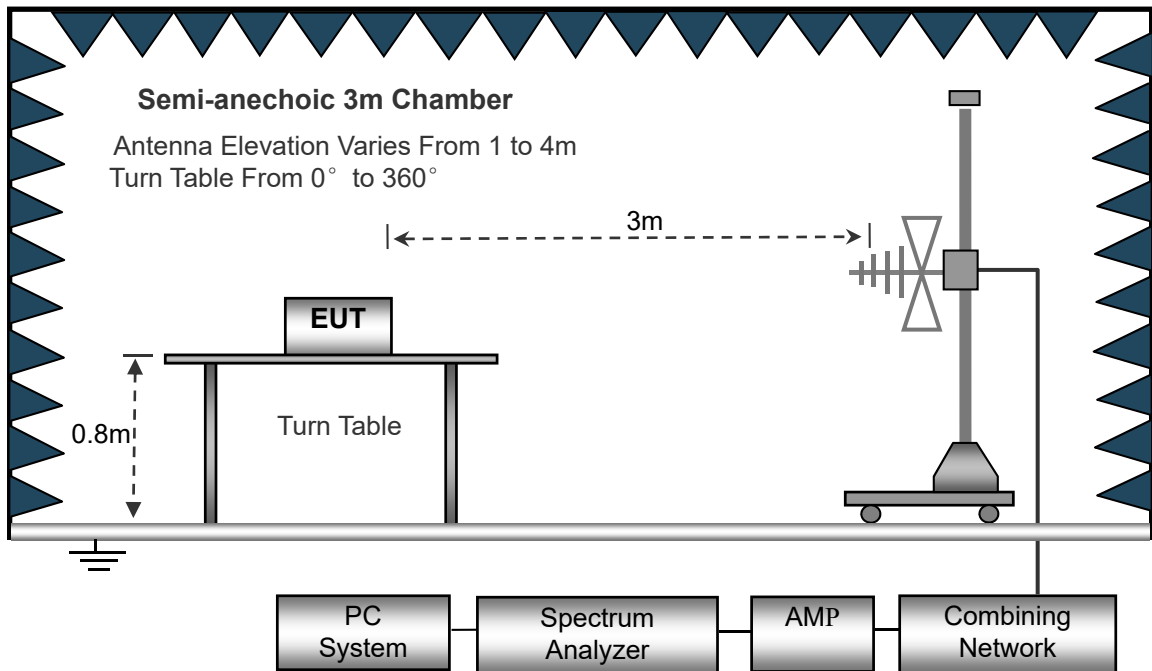
The external I/O cables were draped along the test table and formed a bundle 30 to 40cm long in the middle.

The spacing between the peripherals was 10cm.

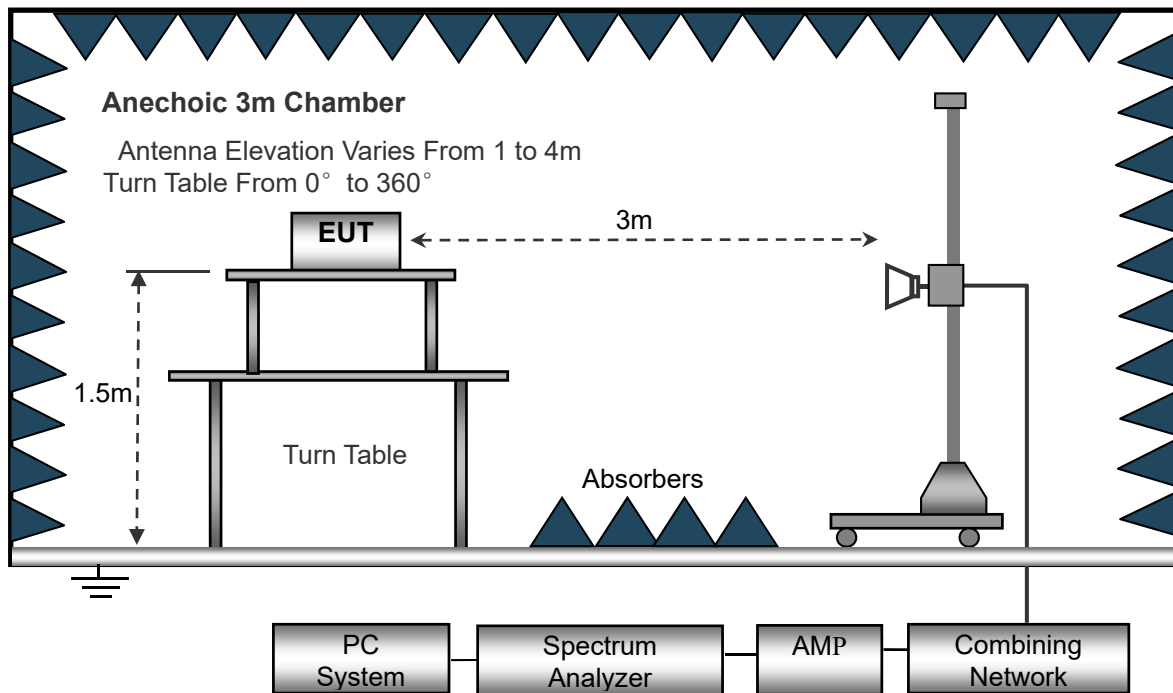
The test setup for emission measurement below 30MHz.



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



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:

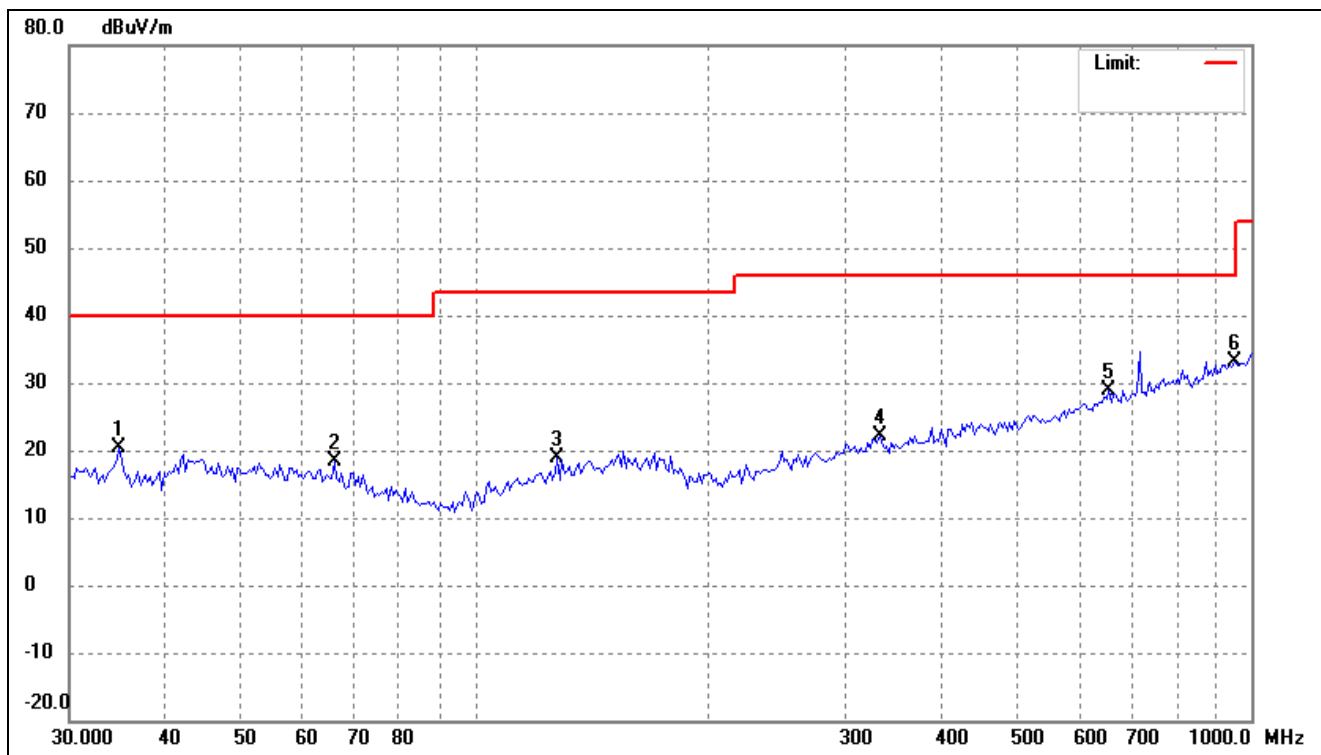
$$\text{Margin} = \text{Corr. Ampl.} - \text{FCC Part 15 Limit}$$

8.5 Summary of Test Results/Plots

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

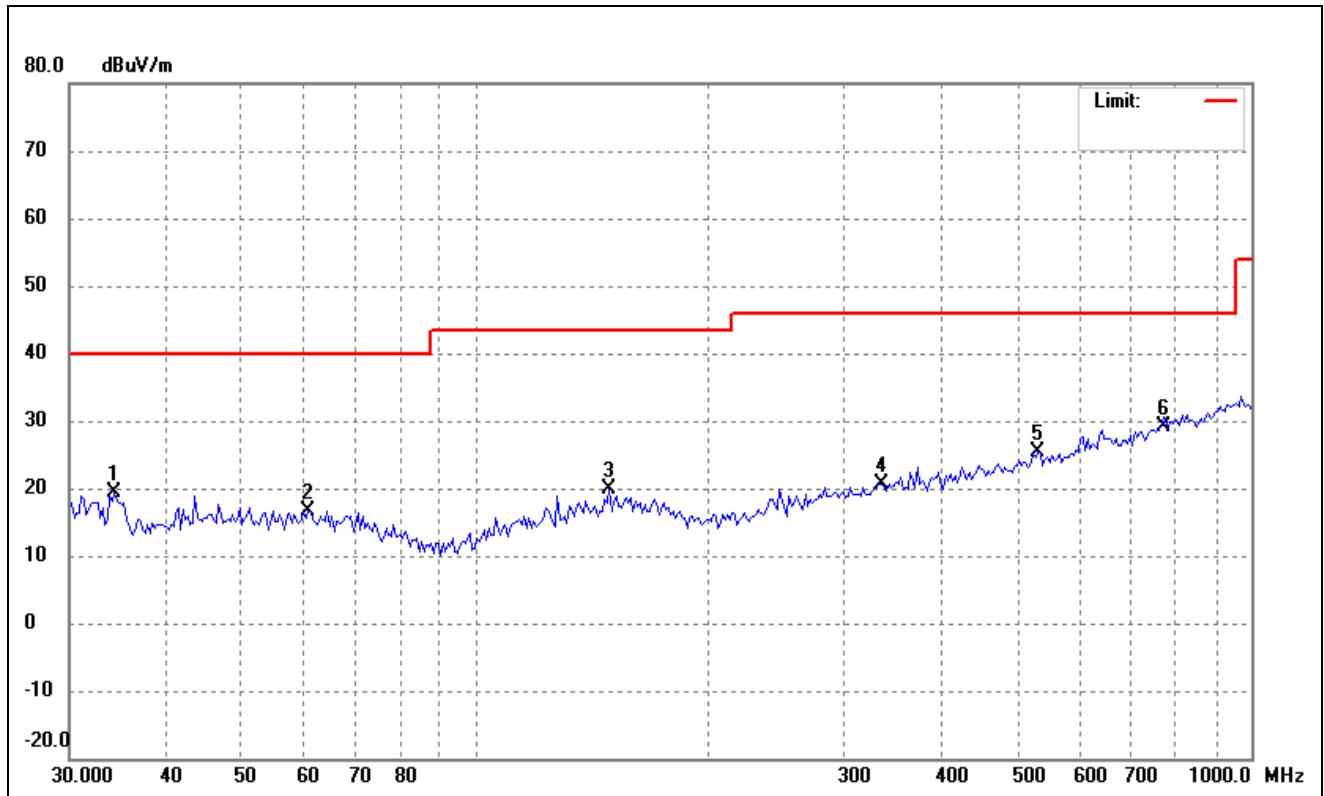
- Spurious Emission From 30MHz to 1GHz
- Antenna 1(Worst case)
- 5150-5250MHz

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



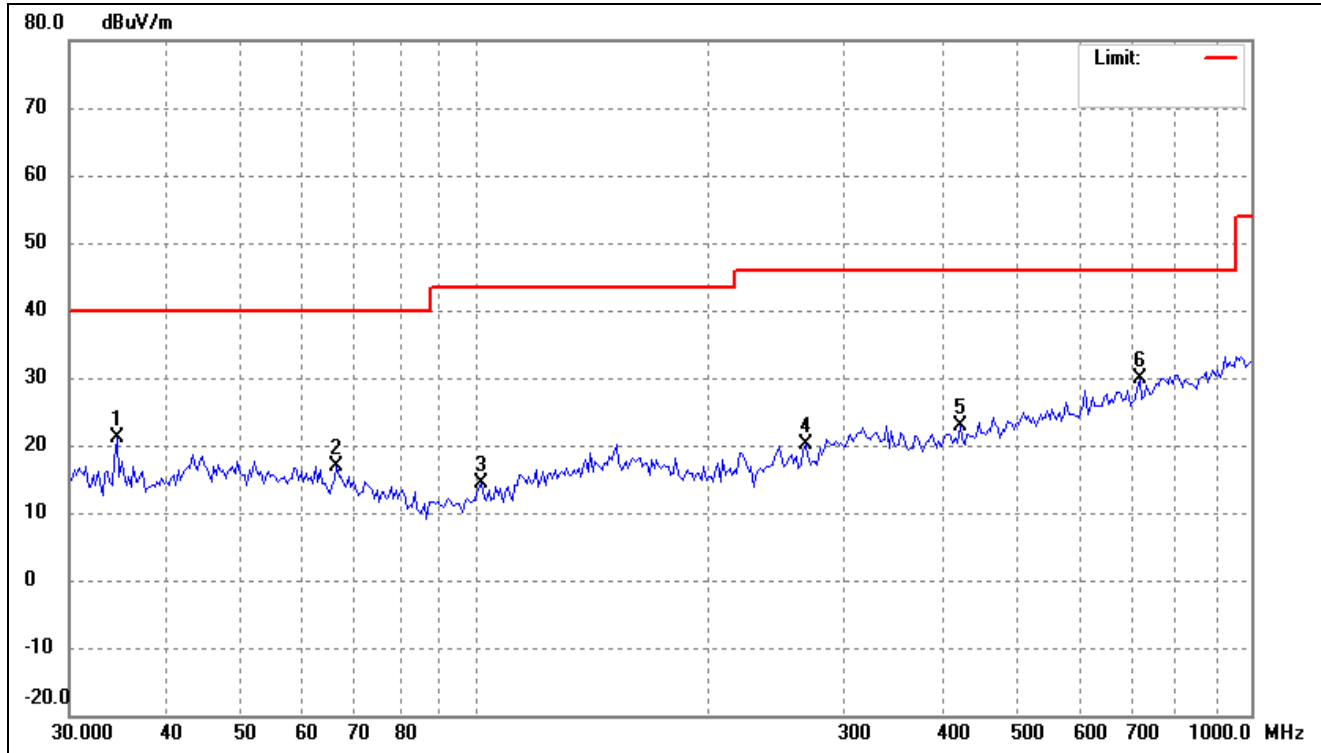
No.	Frequency (MHz)	Reading (dBuV/m)	Corr. dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Deg. ()	Height (cm)	Remark
1	34.7704	30.73	-10.27	20.46	40.00	-19.54	-	-	peak
2	65.9067	28.64	-10.34	18.30	40.00	-21.70	-	-	peak
3	127.5864	29.14	-10.22	18.92	43.50	-24.58	-	-	peak
4	331.7857	29.09	-7.08	22.01	46.00	-23.99	-	-	peak
5	655.9765	30.24	-1.30	28.94	46.00	-17.06	-	-	peak
6	952.0000	30.21	2.95	33.16	46.00	-12.84	-	-	peak

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



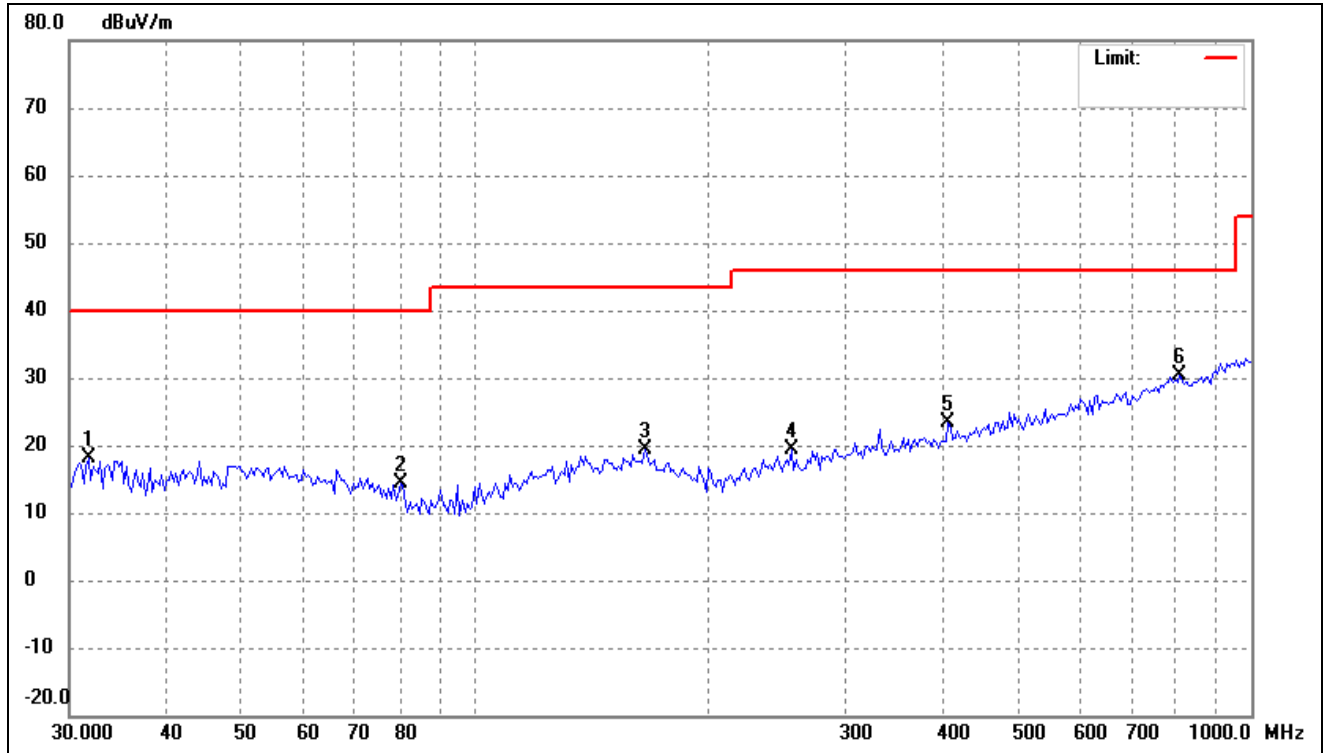
No.	Frequency (MHz)	Reading (dBuV/m)	Corr. dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Deg. ()	Height (cm)	Remark
1	34.2851	29.65	-10.30	19.35	40.00	-20.65	-	-	peak
2	61.0041	26.40	-9.69	16.71	40.00	-23.29	-	-	peak
3	148.9173	28.87	-8.91	19.96	43.50	-23.54	-	-	peak
4	334.1255	27.74	-7.08	20.66	46.00	-25.34	-	-	peak
5	531.2910	29.27	-3.80	25.47	46.00	-20.53	-	-	peak
6	765.6482	28.56	0.45	29.01	46.00	-16.99	-	-	peak

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



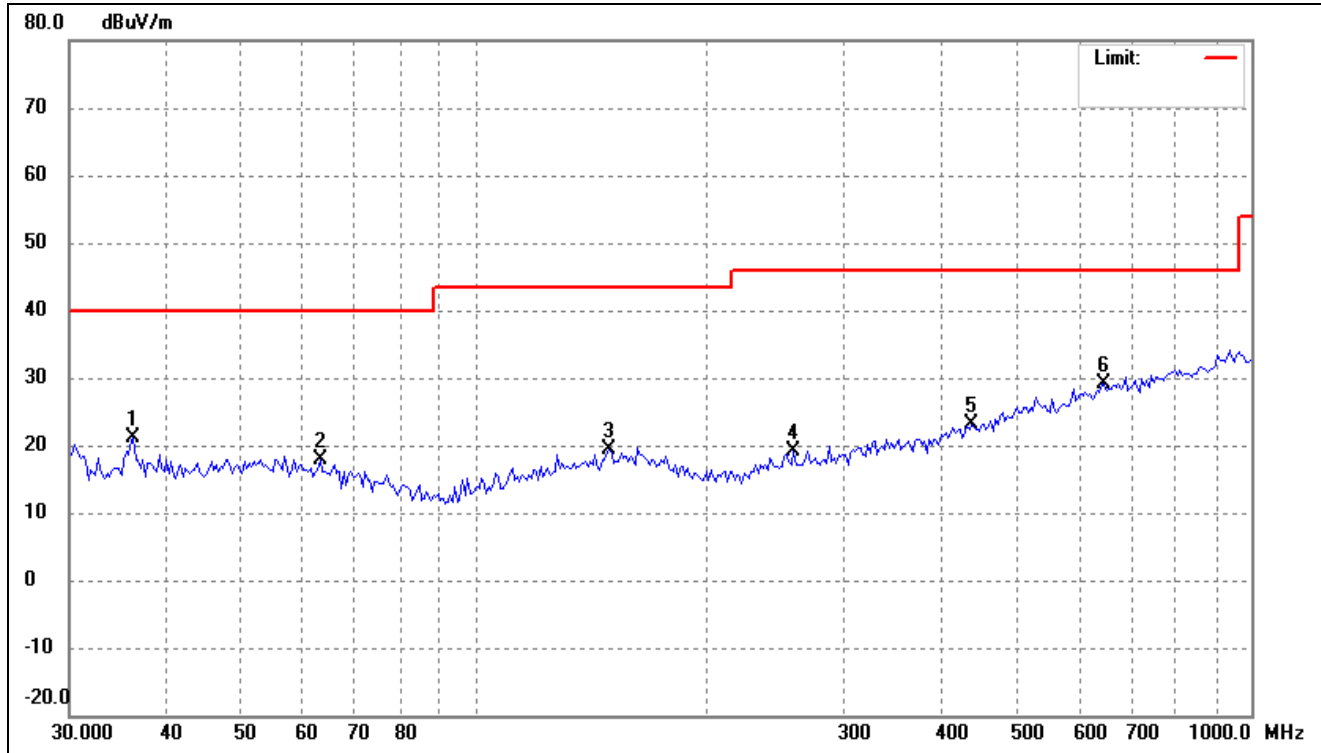
No.	Frequency (MHz)	Reading (dBuV/m)	Corr. dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Deg. ()	Height (cm)	Remark
1	34.5269	31.34	-10.28	21.06	40.00	-18.94	-	-	peak
2	66.3714	27.41	-10.41	17.00	40.00	-23.00	-	-	peak
3	101.8931	27.71	-13.23	14.48	43.50	-29.02	-	-	peak
4	266.8394	29.13	-8.96	20.17	46.00	-25.83	-	-	peak
5	421.3287	28.75	-5.82	22.93	46.00	-23.07	-	-	peak
6	718.7246	30.30	-0.53	29.77	46.00	-16.23	-	-	peak

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



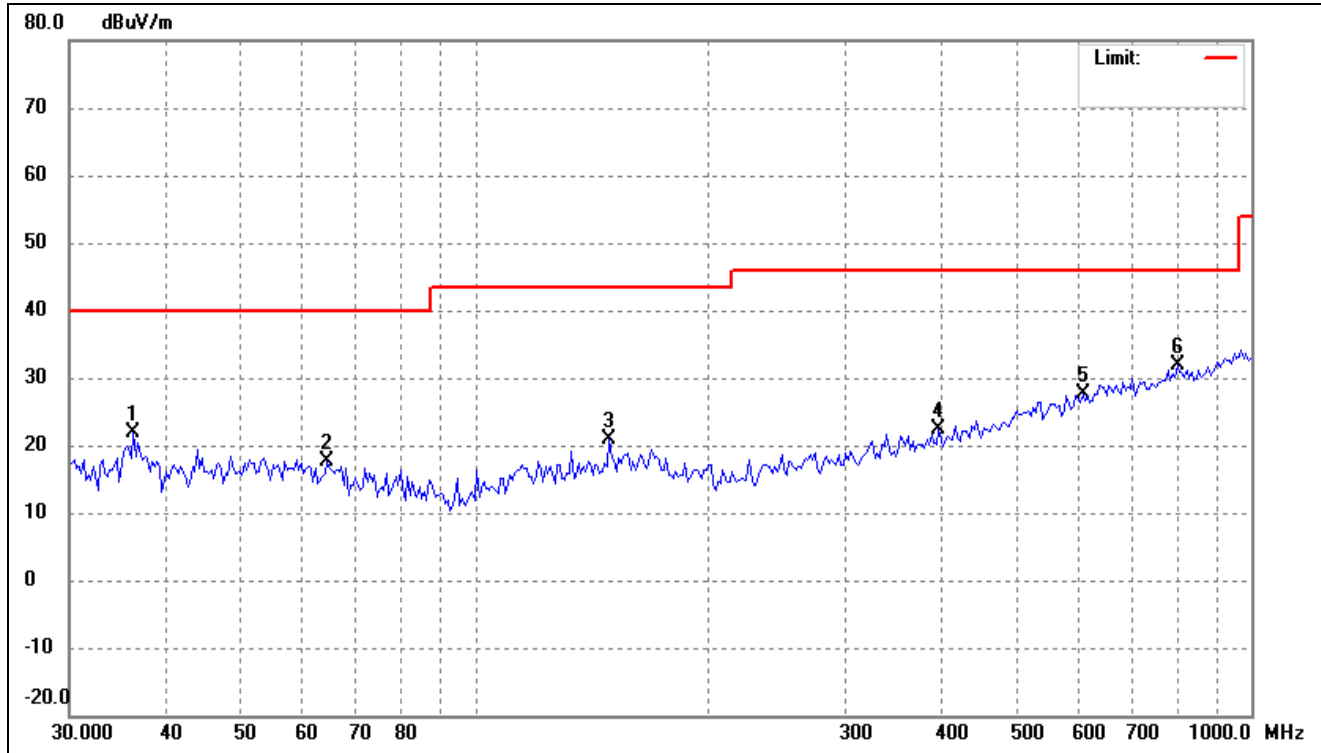
No.	Frequency (MHz)	Reading (dBuV/m)	Corr. dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Deg. ()	Height (cm)	Remark
1	31.7348	28.58	-10.37	18.21	40.00	-21.79	-	-	peak
2	80.2383	27.58	-13.08	14.50	40.00	-25.50	-	-	peak
3	165.4716	28.12	-8.71	19.41	43.50	-24.09	-	-	peak
4	255.8226	28.70	-9.38	19.32	46.00	-26.68	-	-	peak
5	406.7820	29.29	-6.01	23.28	46.00	-22.72	-	-	peak
6	809.9238	29.30	1.00	30.30	46.00	-15.70	-	-	peak

802.11ac-VHT20			
Test Channel	5180MHz(worst case)	Polarity:	Horizontal



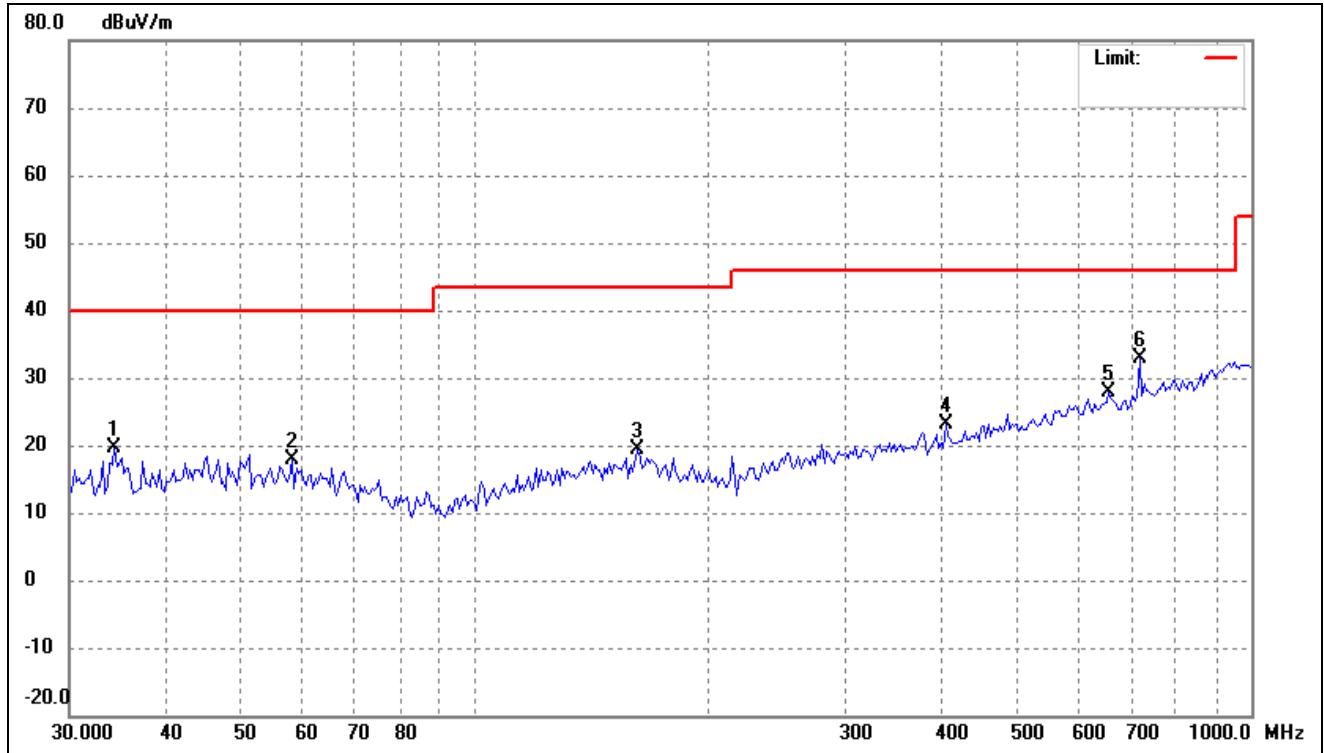
No.	Frequency (MHz)	Reading (dBuV/m)	Corr. dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Deg. ()	Height (cm)	Remark
1	36.2678	30.45	-9.34	21.11	40.00	-18.89	-	-	peak
2	63.1857	27.04	-9.28	17.76	40.00	-22.24	-	-	peak
3	148.9175	28.02	-8.57	19.45	43.50	-24.05	-	-	peak
4	257.6266	29.01	-9.77	19.24	46.00	-26.76	-	-	peak
5	436.3956	28.41	-5.23	23.18	46.00	-22.82	-	-	peak
6	646.8217	29.50	-0.26	29.24	46.00	-16.76	-	-	peak

802.11ac-VHT20			
Test Channel	5180MHz(worst case)	Polarity:	Vertical



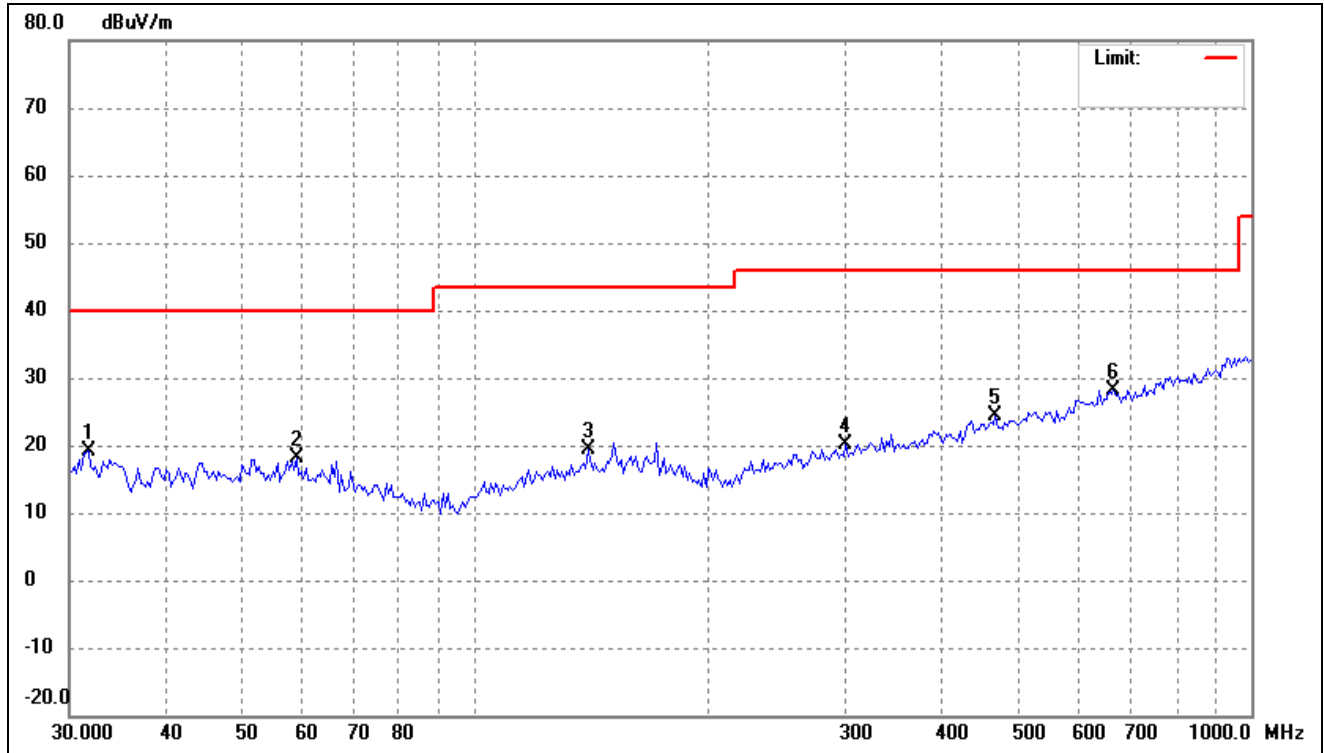
No.	Frequency (MHz)	Reading (dBuV/m)	Corr. dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Deg. ()	Height (cm)	Remark
1	36.2678	31.16	-9.34	21.82	40.00	-18.18	-	-	peak
2	64.5319	27.08	-9.45	17.63	40.00	-22.37	-	-	peak
3	148.9175	29.35	-8.57	20.78	43.50	-22.72	-	-	peak
4	395.5071	28.84	-6.38	22.46	46.00	-23.54	-	-	peak
5	607.1806	28.43	-0.87	27.56	46.00	-18.44	-	-	peak
6	804.2523	30.12	1.72	31.84	46.00	-14.16	-	-	peak

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



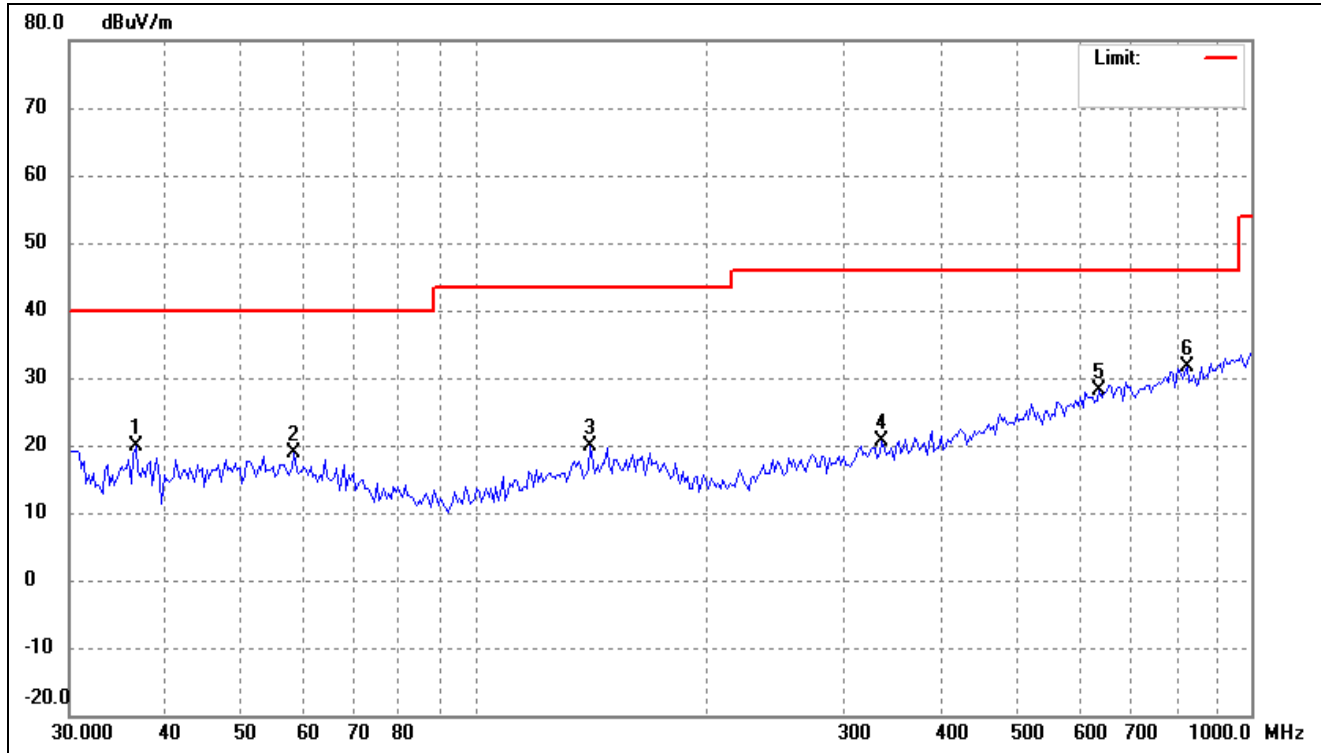
No.	Frequency (MHz)	Reading (dBuV/m)	Corr. dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Deg. ()	Height (cm)	Remark
1	34.2851	30.02	-10.30	19.72	40.00	-20.28	-	-	peak
2	58.0759	27.31	-9.39	17.92	40.00	-22.08	-	-	peak
3	162.0197	27.93	-8.53	19.40	43.50	-24.10	-	-	peak
4	403.9335	29.21	-6.03	23.18	46.00	-22.82	-	-	peak
5	655.9765	29.12	-1.30	27.82	46.00	-18.18	-	-	peak
6	718.7246	33.38	-0.53	32.85	46.00	-13.15	-	-	peak

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



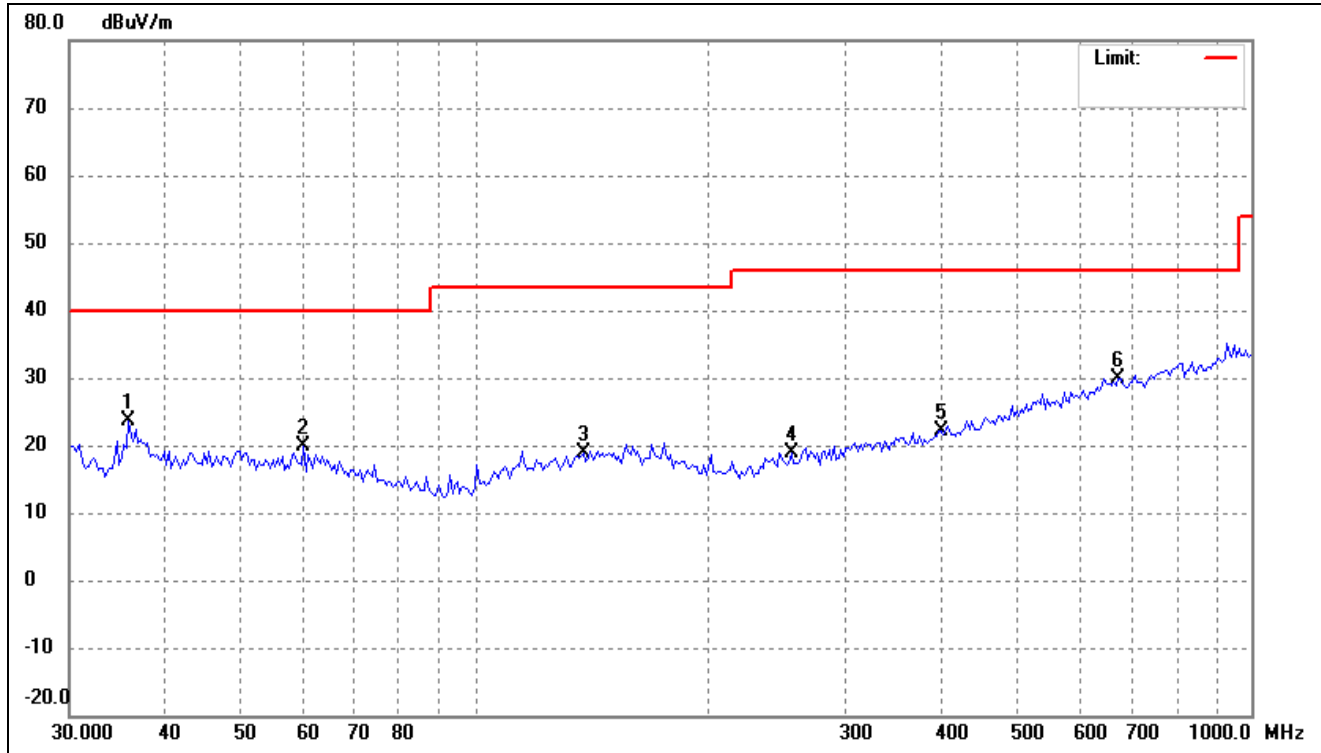
No.	Frequency (MHz)	Reading (dBuV/m)	Corr. dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Deg. ()	Height (cm)	Remark
1	31.7348	29.58	-10.37	19.21	40.00	-20.79	-	-	peak
2	58.8979	27.68	-9.43	18.25	40.00	-21.75	-	-	peak
3	139.7908	28.78	-9.40	19.38	43.50	-24.12	-	-	peak
4	300.6988	27.82	-7.73	20.09	46.00	-25.91	-	-	peak
5	468.1650	29.39	-4.89	24.50	46.00	-21.50	-	-	peak
6	665.2609	29.33	-1.22	28.11	46.00	-17.89	-	-	peak

802.11ac-VHT40			
Test Channel	5190MHz(worst case)	Polarity:	Horizontal



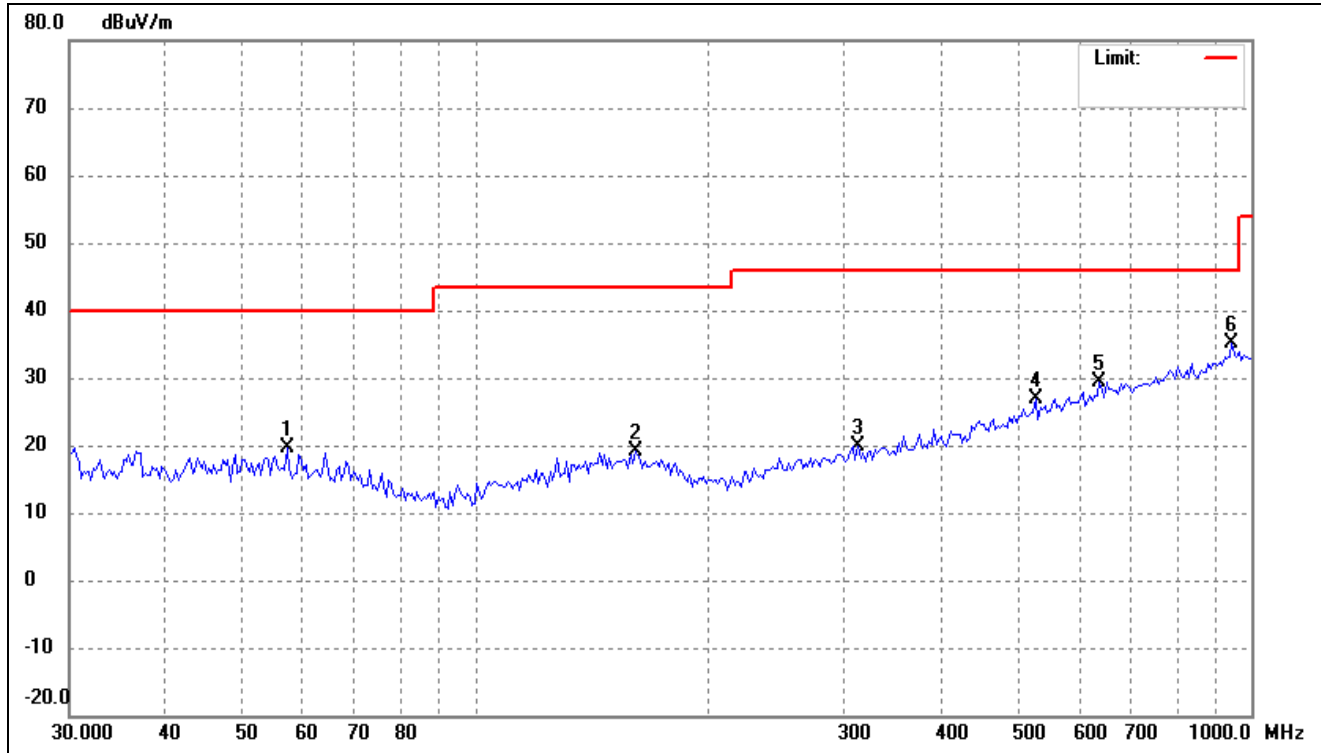
No.	Frequency (MHz)	Reading (dBuV/m)	Corr. dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Deg. ()	Height (cm)	Remark
1	36.5236	29.12	-9.30	19.82	40.00	-20.18	-	-	peak
2	58.4855	27.69	-8.72	18.97	40.00	-21.03	-	-	peak
3	140.7767	28.78	-8.90	19.88	43.50	-23.62	-	-	peak
4	334.1255	28.18	-7.51	20.67	46.00	-25.33	-	-	peak
5	637.7947	28.62	-0.54	28.08	46.00	-17.92	-	-	peak
6	827.1795	30.08	1.67	31.75	46.00	-14.25	-	-	peak

802.11ac-VHT40			
Test Channel	5190MHz(worst case)	Polarity:	Vertical



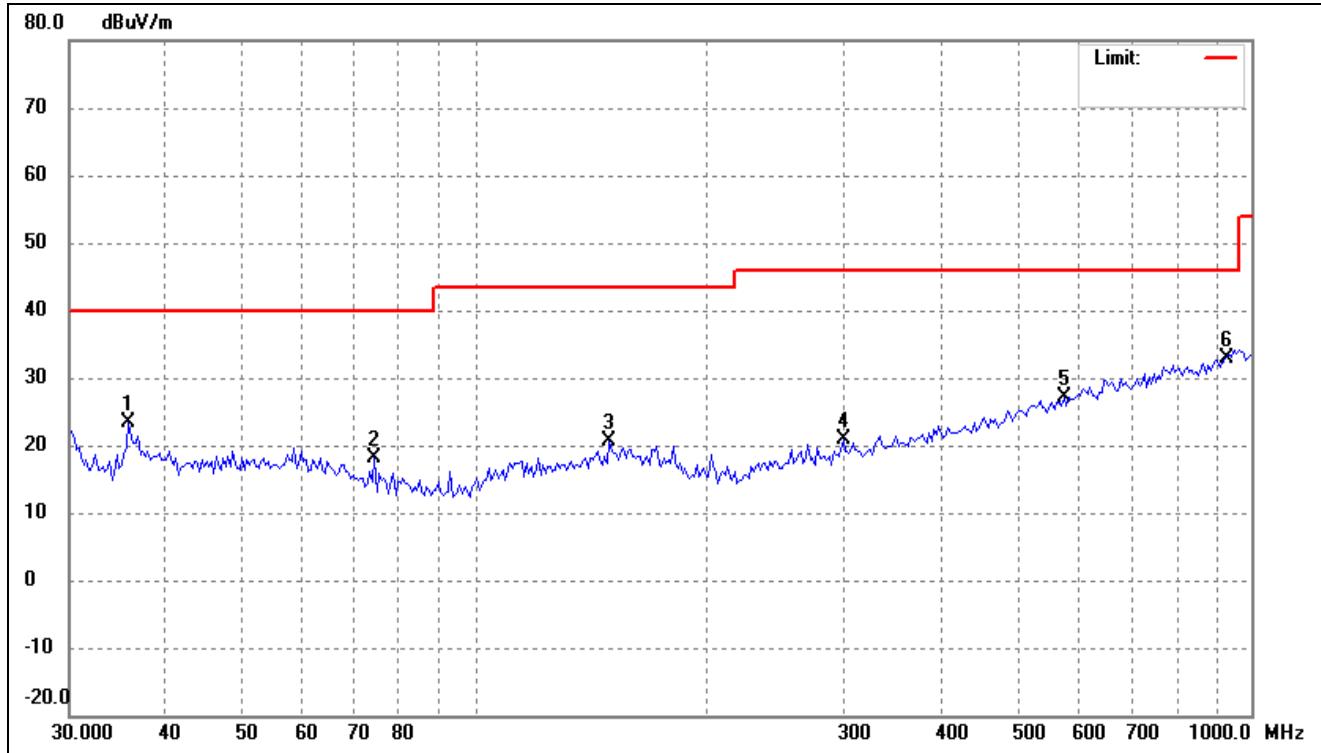
No.	Frequency (MHz)	Reading (dBuV/m)	Corr. dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Deg. ()	Height (cm)	Remark
1	35.7617	33.10	-9.42	23.68	40.00	-16.32	-	-	peak
2	60.1528	28.81	-8.89	19.92	40.00	-20.08	-	-	peak
3	137.8400	27.88	-9.08	18.80	43.50	-24.70	-	-	peak
4	255.8226	28.72	-9.80	18.92	46.00	-27.08	-	-	peak
5	398.2962	28.48	-6.29	22.19	46.00	-23.81	-	-	peak
6	674.6768	29.85	0.04	29.89	46.00	-16.11	-	-	peak

802.11ac-VHT80			
Test Channel	5210MHz(worst case)	Polarity:	Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Corr. dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Deg. ()	Height (cm)	Remark
1	57.2654	28.35	-8.64	19.71	40.00	-20.29	-	-	peak
2	160.8852	27.39	-8.27	19.12	43.50	-24.38	-	-	peak
3	311.4519	27.88	-8.00	19.88	46.00	-26.12	-	-	peak
4	527.5707	29.89	-2.90	26.99	46.00	-19.01	-	-	peak
5	637.7947	29.90	-0.54	29.36	46.00	-16.64	-	-	peak
6	945.3336	31.52	3.50	35.02	46.00	-10.98	-	-	peak

802.11ac-VHT80			
Test Channel	5210MHz(worst case)	Polarity:	Vertical

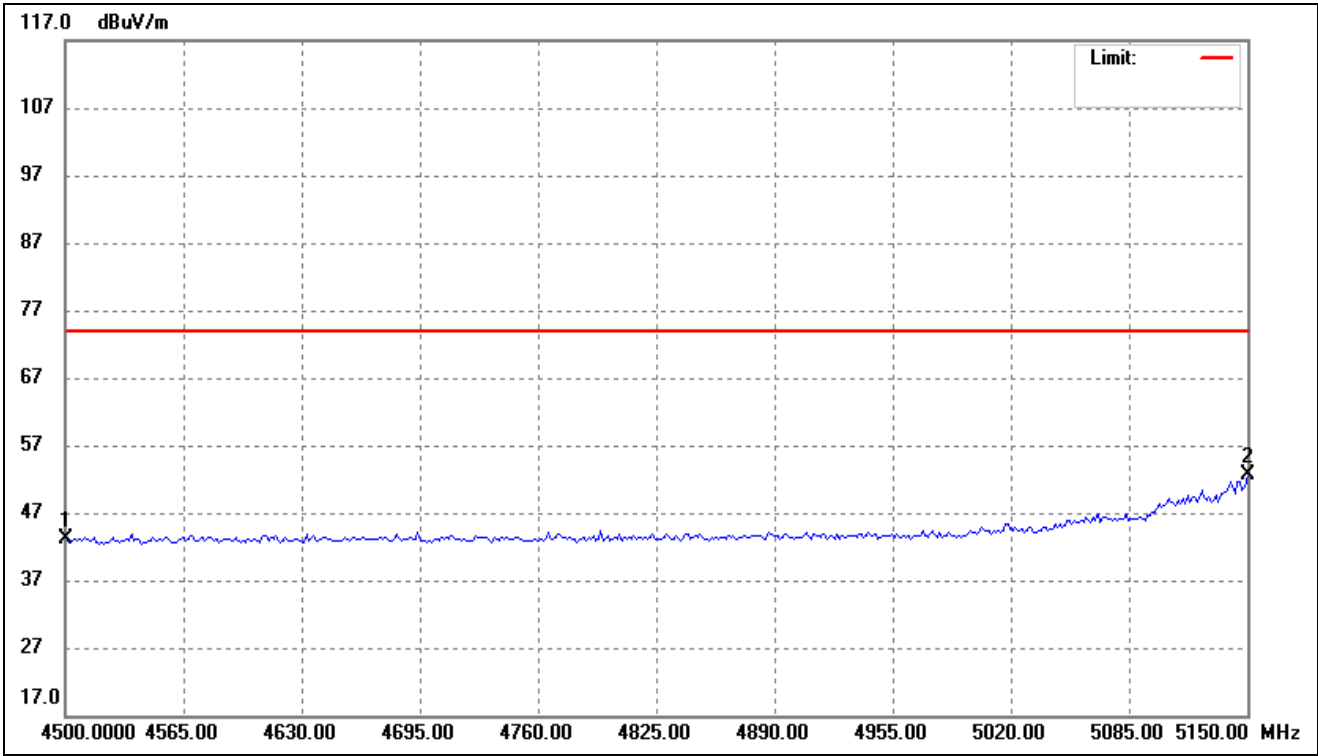


No.	Frequency (MHz)	Reading (dBuV/m)	Corr. dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Deg. ()	Height (cm)	Remark
1	35.7617	32.79	-9.42	23.37	40.00	-16.63	-	-	peak
2	74.2696	29.27	-11.23	18.04	40.00	-21.96	-	-	peak
3	148.9175	29.09	-8.57	20.52	43.50	-22.98	-	-	peak
4	298.5932	29.32	-8.32	21.00	46.00	-25.00	-	-	peak
5	573.9882	28.91	-1.79	27.12	46.00	-18.88	-	-	peak
6	925.6132	29.76	3.12	32.88	46.00	-13.12	-	-	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.

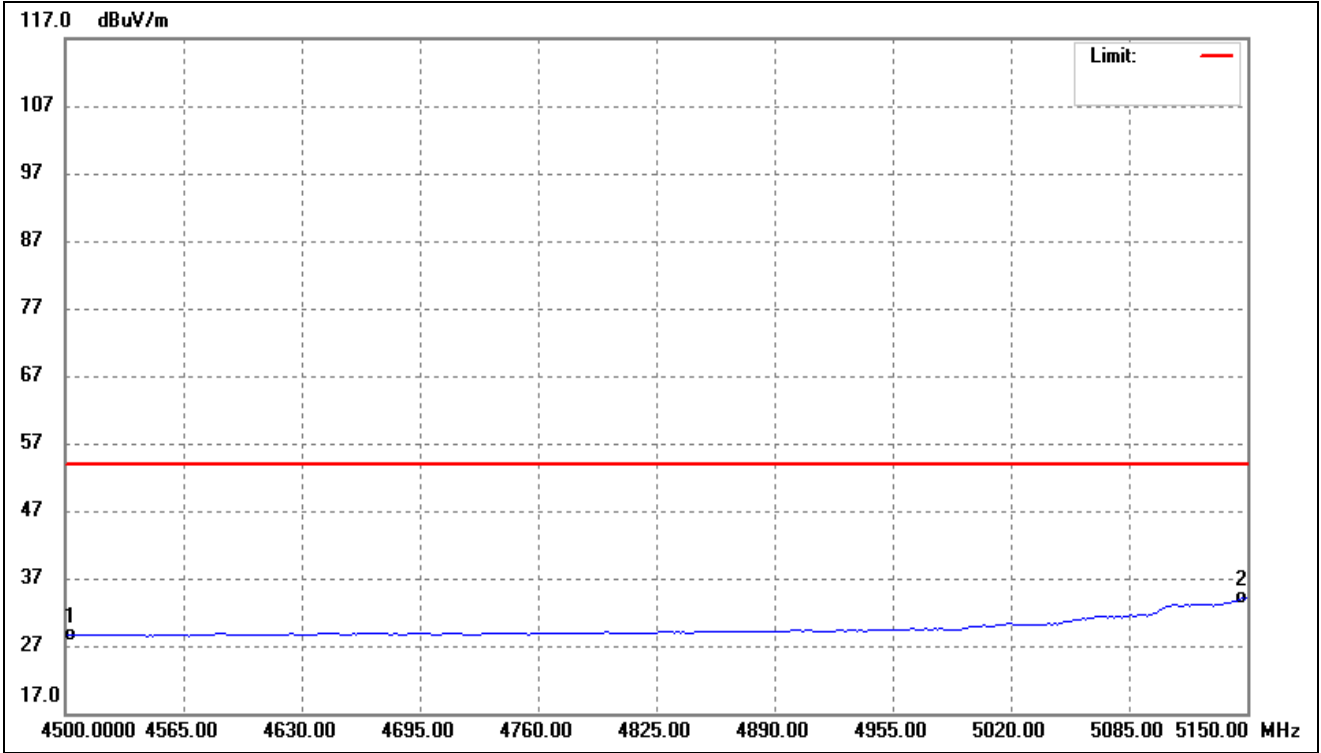
- Spurious Emission above 1GHz
- Antenna 1(worst case)

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



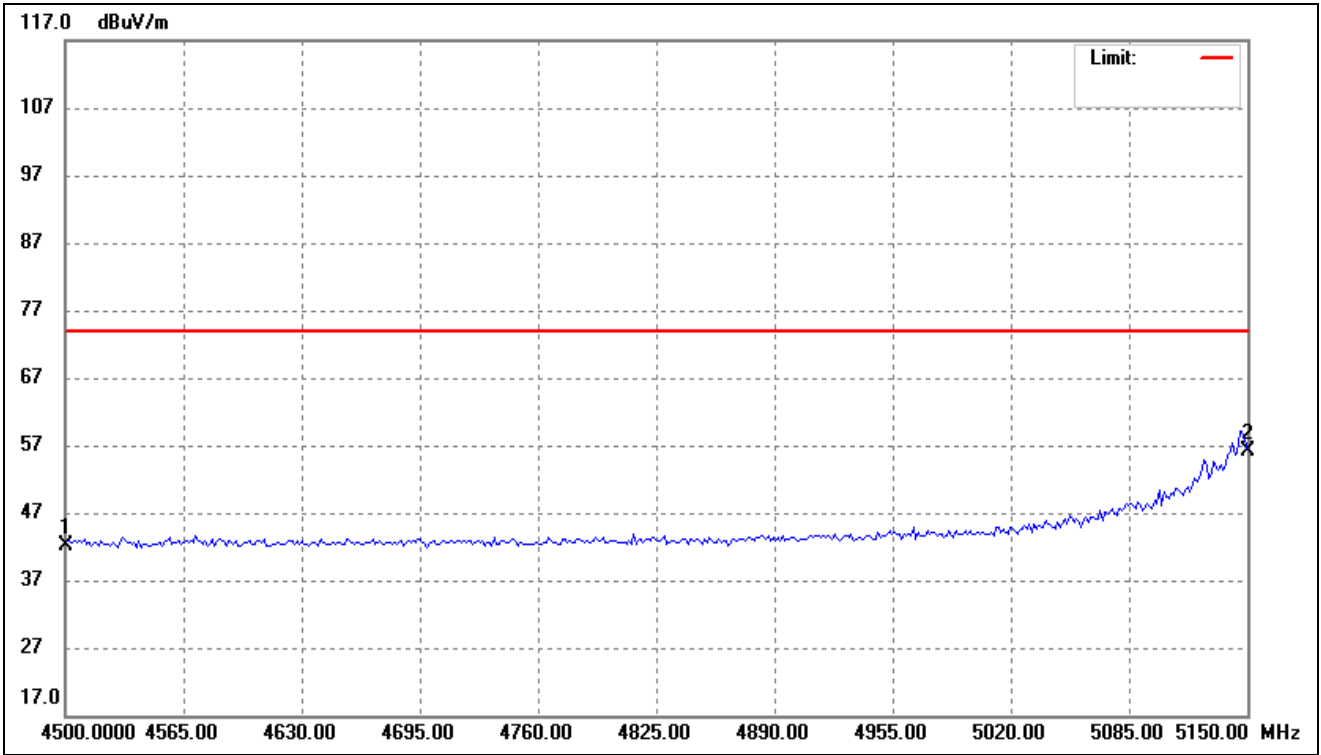
No.	Frequency (MHz)	Reading (dBuV/m)	Corr. dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Deg. ()	Height (cm)	Remark
1	4500.000	56.73	-13.60	43.13	74.00	-30.87	-	-	peak
2	5150.000	64.89	-12.21	52.68	74.00	-21.32	-	-	peak

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



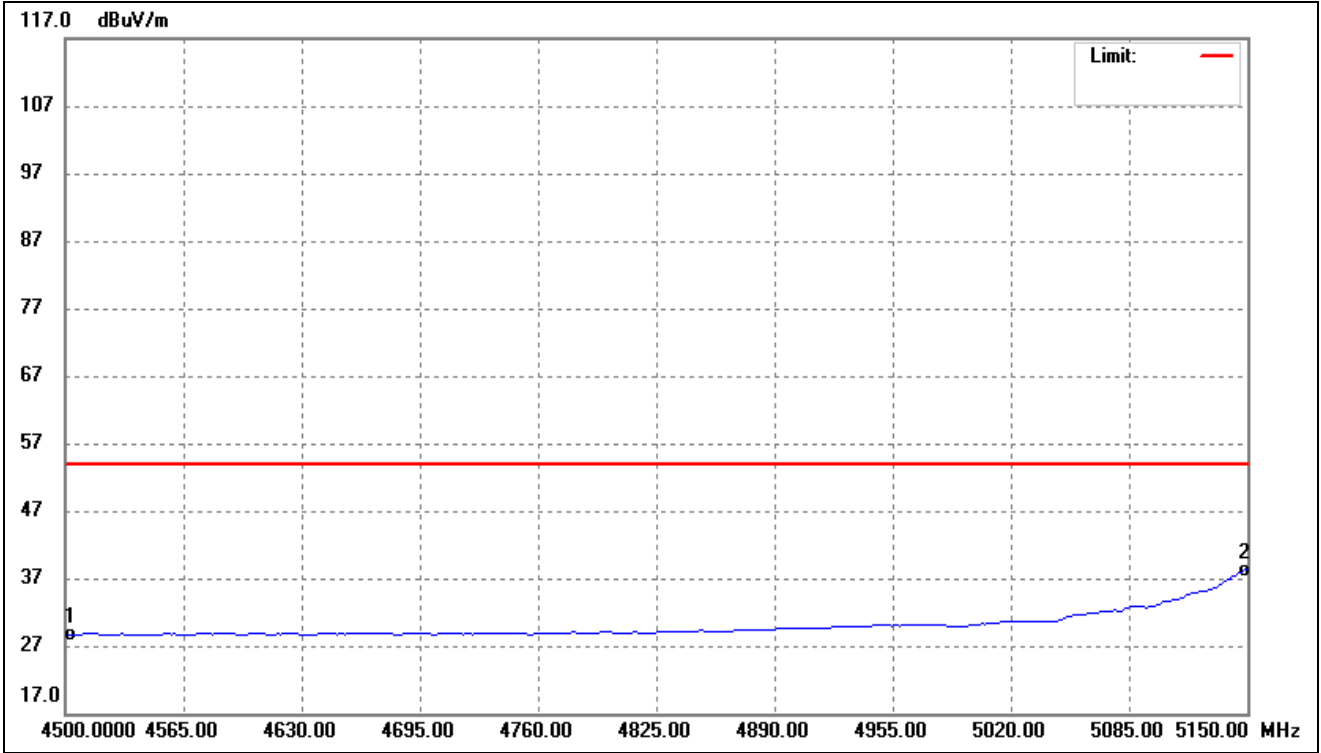
No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	4500.000	42.12	-13.60	28.52	54.00	-25.48	-	-	AVG
2	5150.000	46.35	-12.21	34.14	54.00	-19.86	-	-	AVG

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



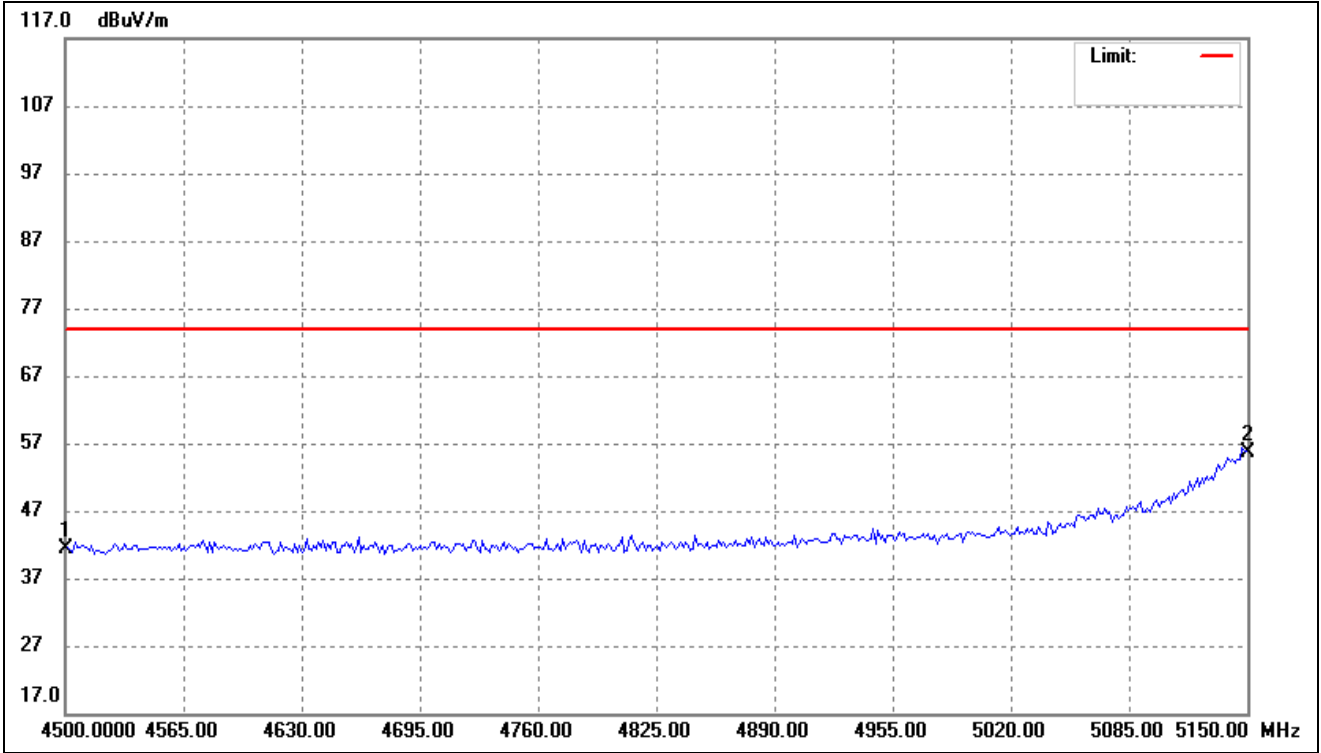
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	4500.000	55.67	-13.60	42.07	74.00	-31.93	-	-	peak
2	5150.000	68.35	-12.21	56.14	74.00	-17.86	-	-	peak

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



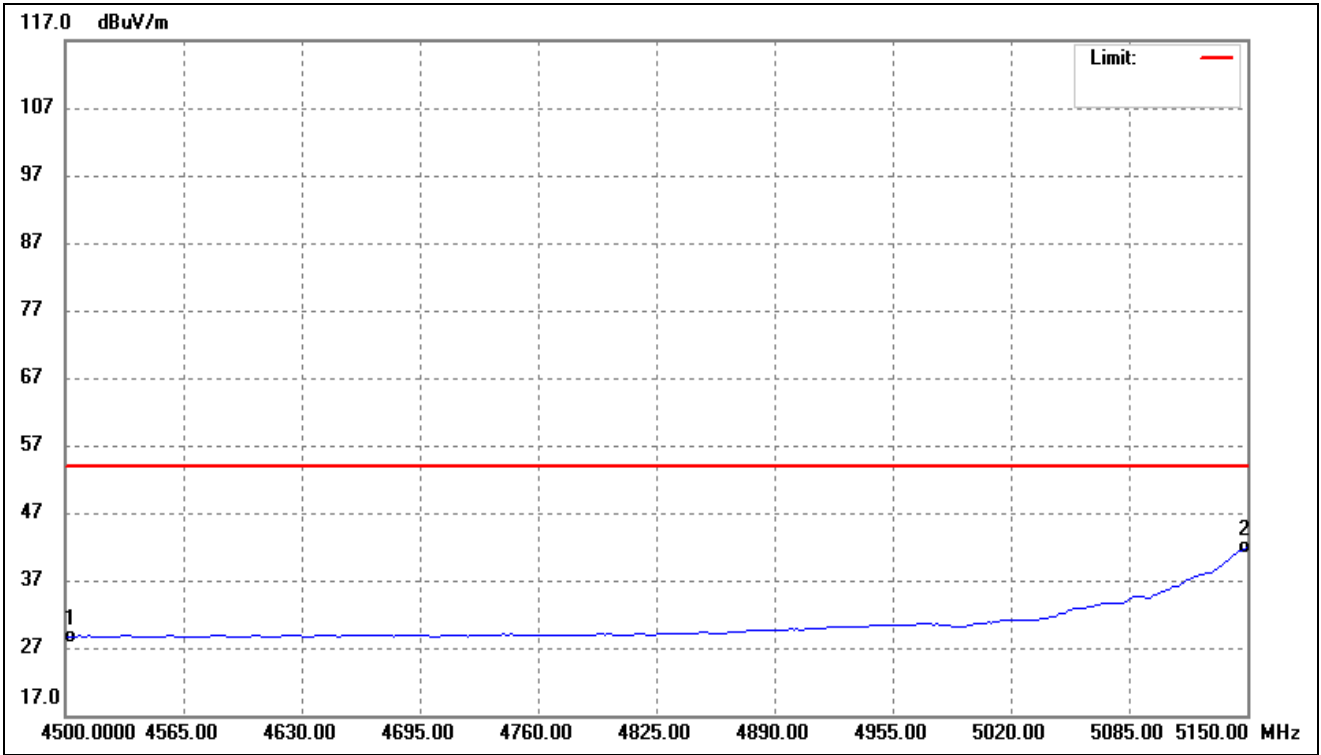
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	4500.000	42.28	-13.60	28.68	54.00	-25.32	-	-	AVG
2	5150.000	50.43	-12.21	38.22	54.00	-15.78	-	-	AVG

802.11ac-VHT20- Restricted Bandedge			
Test Channel	band 5.15-5.25GHz	Polarity:	Horizontal(worst case)



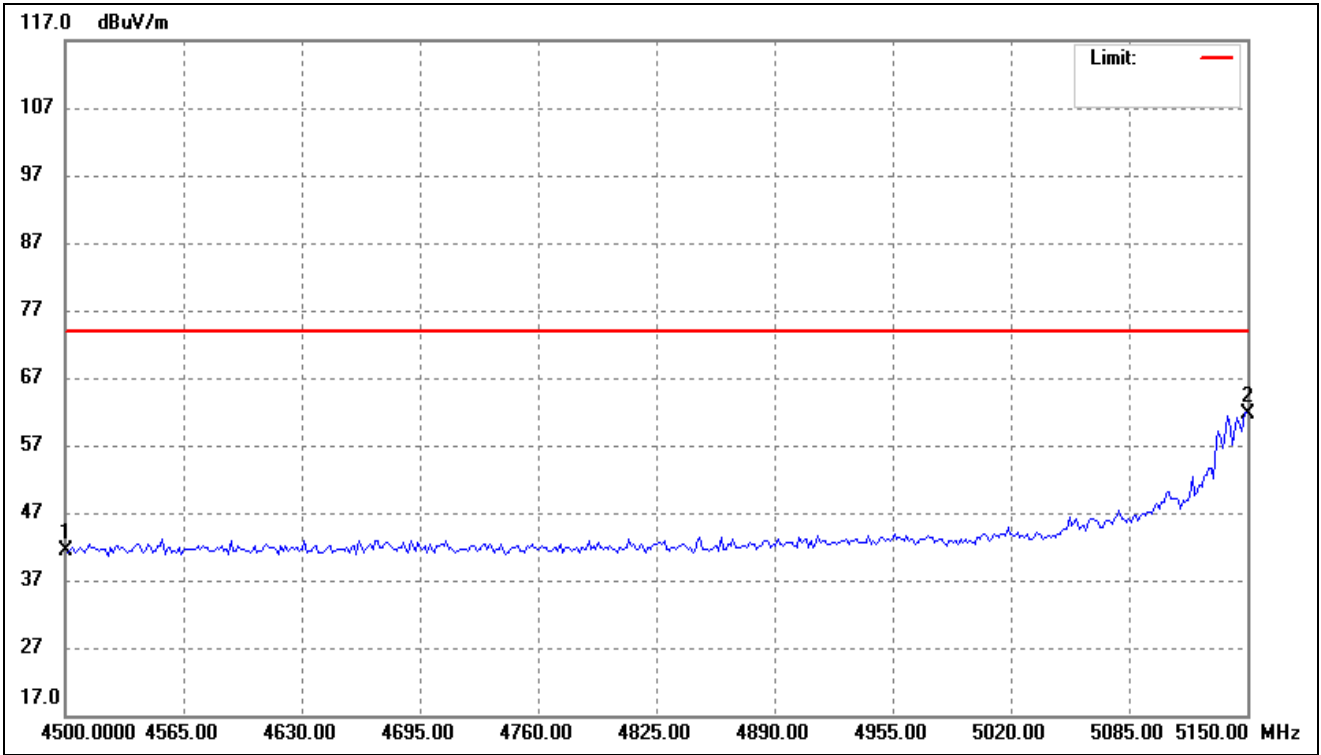
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	4500.000	55.04	-13.60	41.44	74.00	-32.56	-	-	peak
2	5150.000	67.74	-12.21	55.53	74.00	-18.47	-	-	peak

802.11ac-VHT20- Restricted Bandedge			
Test Channel	band 5.15-5.25GHz	Polarity:	Horizontal(worst case)



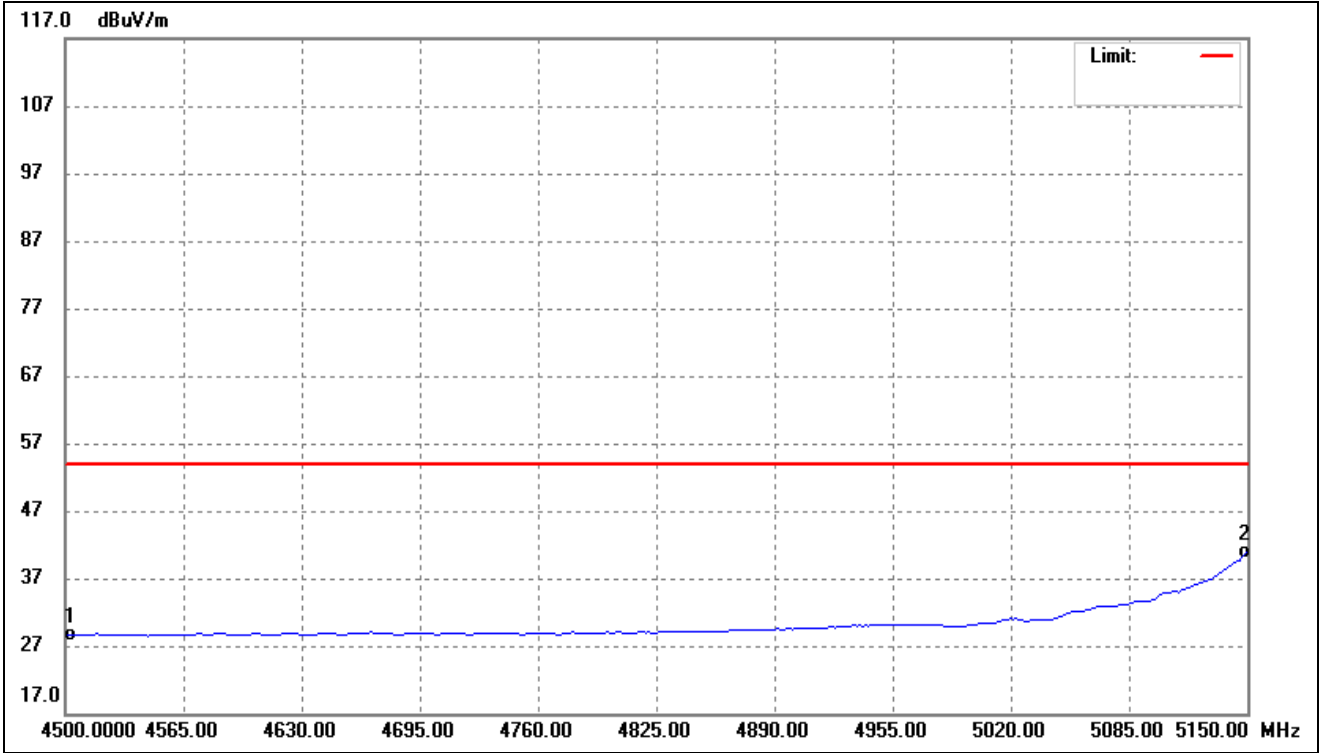
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	4500.000	42.22	-13.60	28.62	54.00	-25.38	-	-	AVG
2	5150.000	54.11	-12.21	41.90	54.00	-12.10	-	-	AVG

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



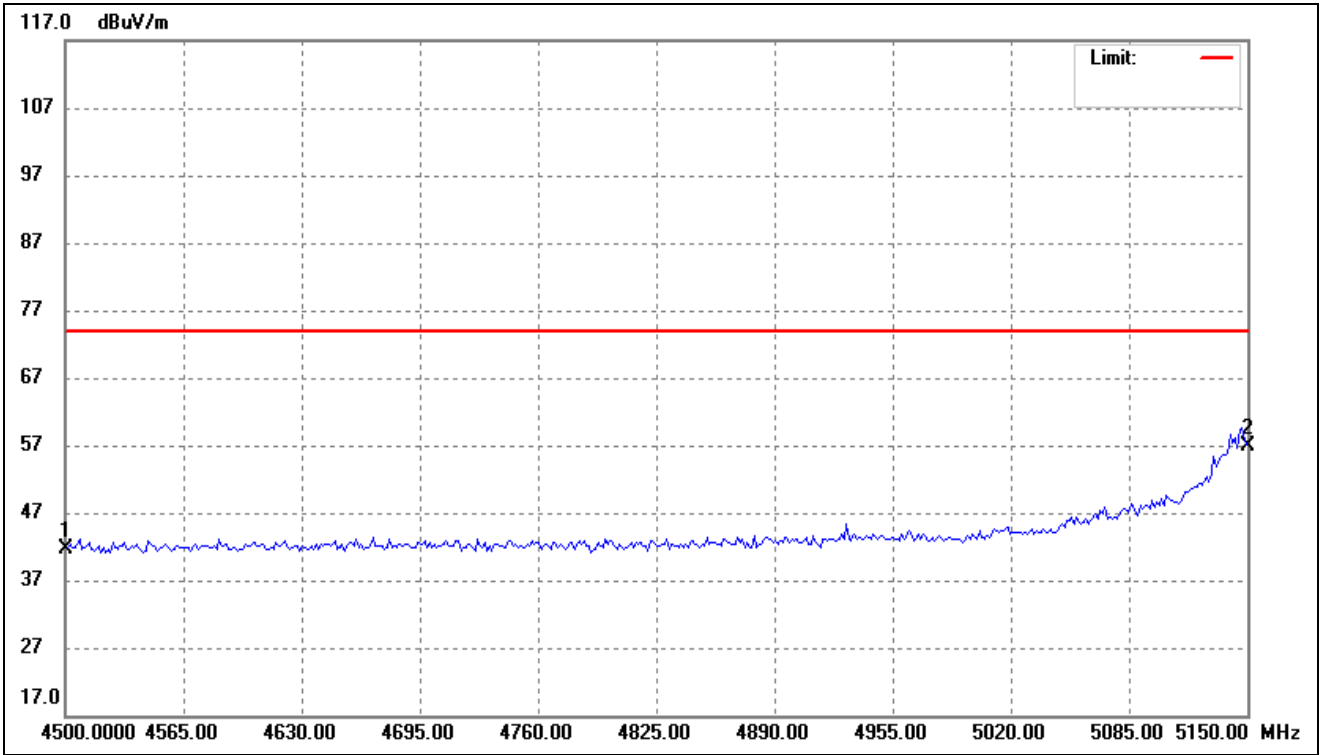
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	4500.000	54.96	-13.60	41.36	74.00	-32.64	-	-	peak
2	5150.000	73.92	-12.21	61.71	74.00	-12.29	-	-	peak

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



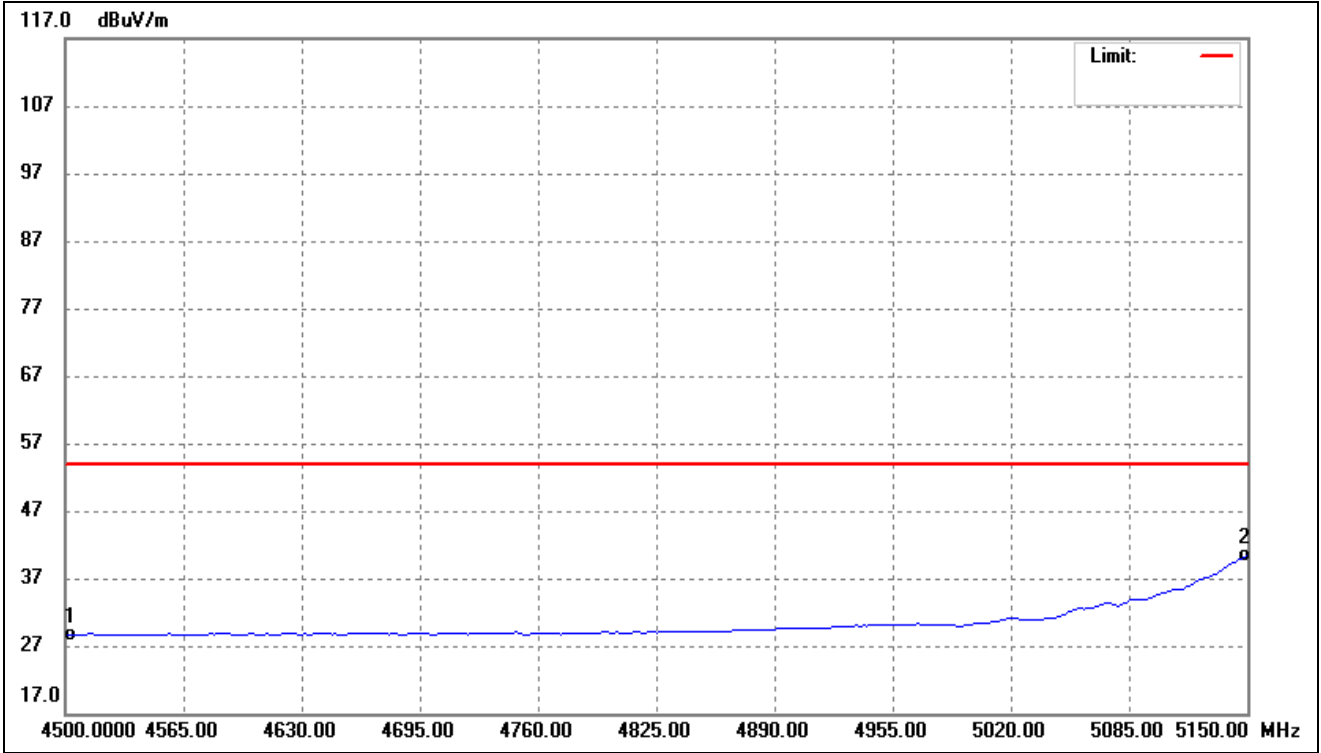
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	4500.000	42.28	-13.60	28.68	54.00	-25.32	-	-	AVG
2	5150.000	53.20	-12.21	40.99	54.00	-13.01	-	-	AVG

802.11ac-VHT40- Restricted Bandedge			
Test Channel	band 5.15-5.25GHz	Polarity:	Horizontal(worst case)



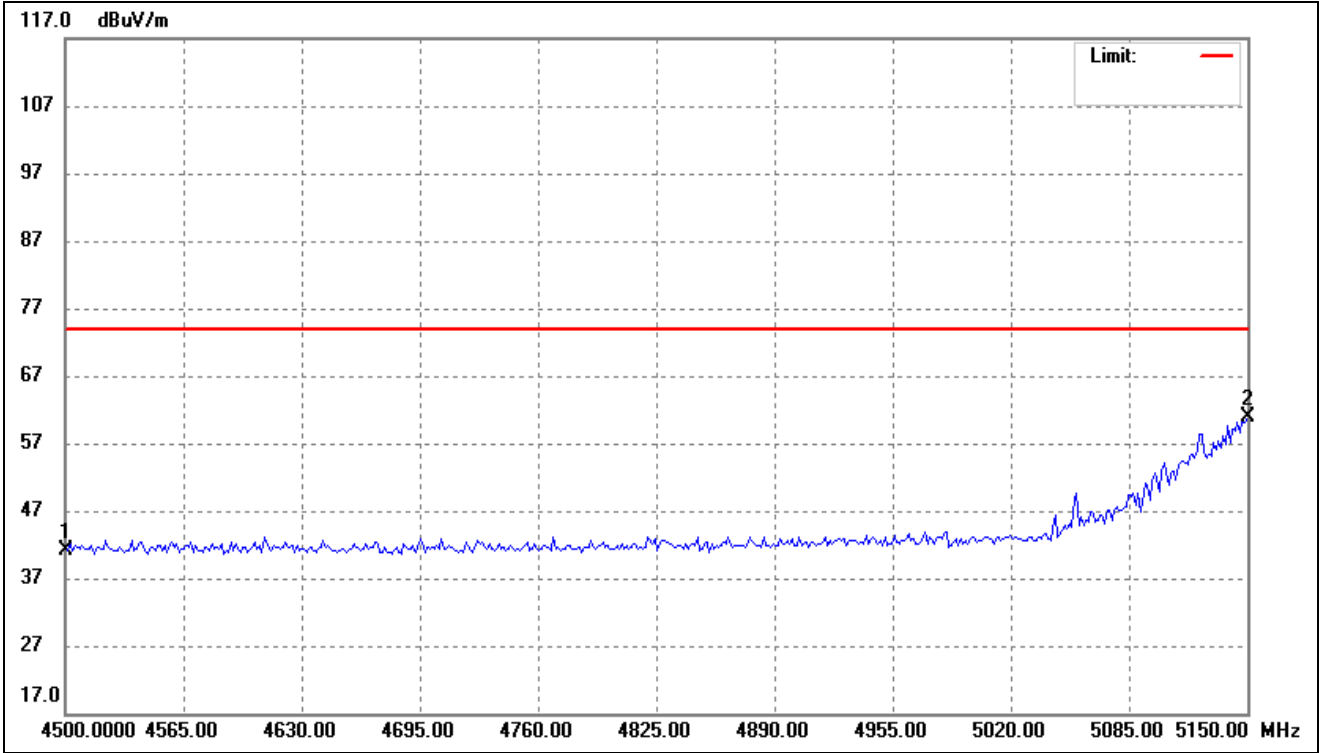
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	4500.000	55.16	-13.60	41.56	74.00	-32.44	-	-	peak
2	5150.000	69.00	-12.21	56.79	74.00	-17.21	-	-	peak

802.11ac-VHT40- Restricted Bandedge			
Test Channel	band 5.15-5.25GHz	Polarity:	Horizontal(worst case)



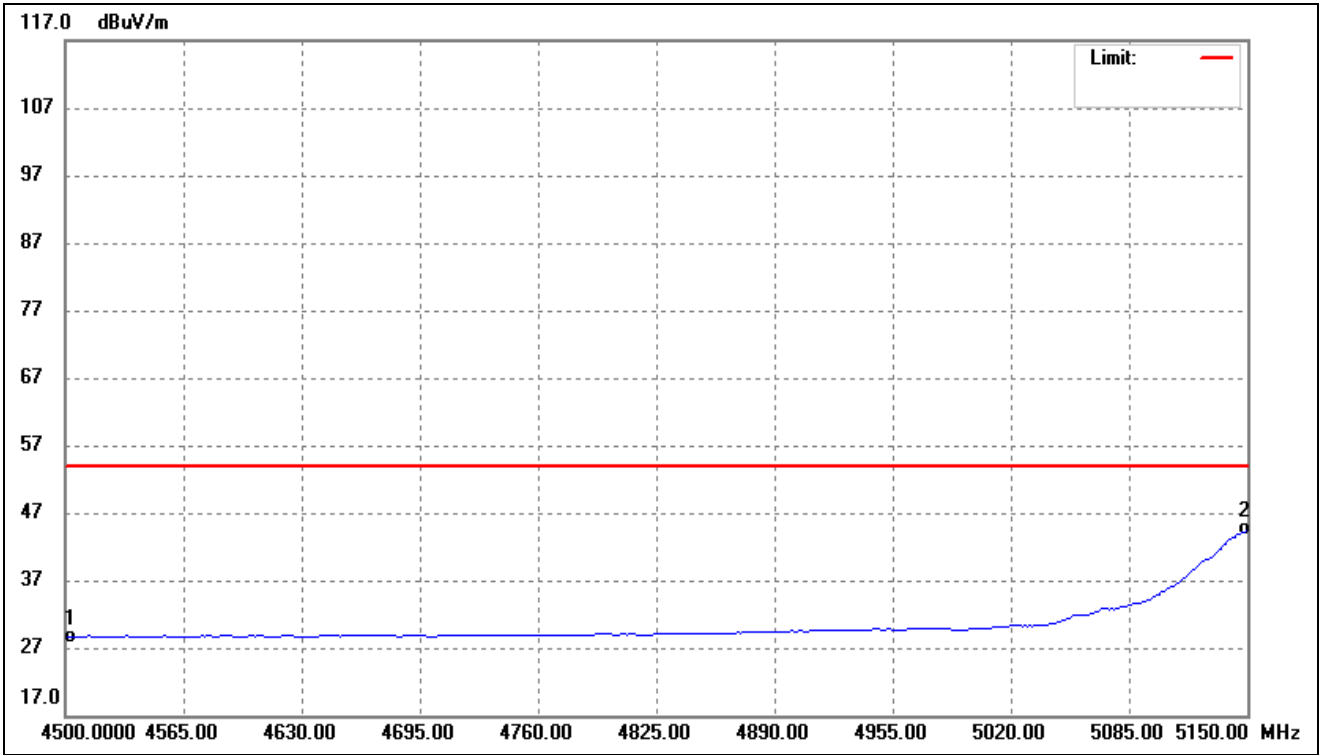
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	4500.000	42.25	-13.60	28.65	54.00	-25.35	-	-	AVG
2	5150.000	52.63	-12.21	40.42	54.00	-13.58	-	-	AVG

802.11ac-VHT80- 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	4500.000	54.72	-13.60	41.12	74.00	-32.88	-	-	peak
2	5150.000	73.10	-12.21	60.89	74.00	-13.11	-	-	peak

802.11ac-VHT80- Restricted Bandedge			
Test Channel	band 5.15-5.25GHz	Polarity:	Horizontal(worst case)



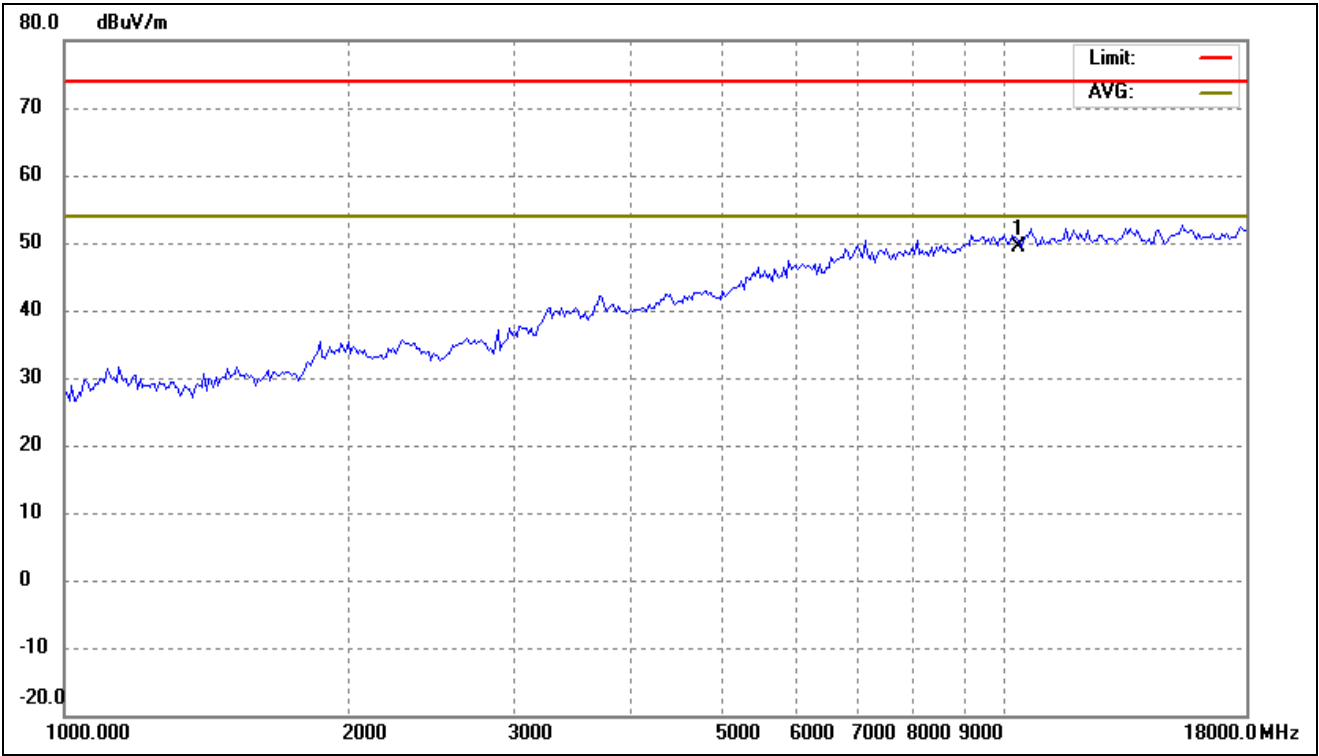
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	4500.000	42.26	-13.60	28.66	54.00	-25.34	-	-	AVG
2	5150.000	56.72	-12.21	44.51	54.00	-9.49	-	-	AVG

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.

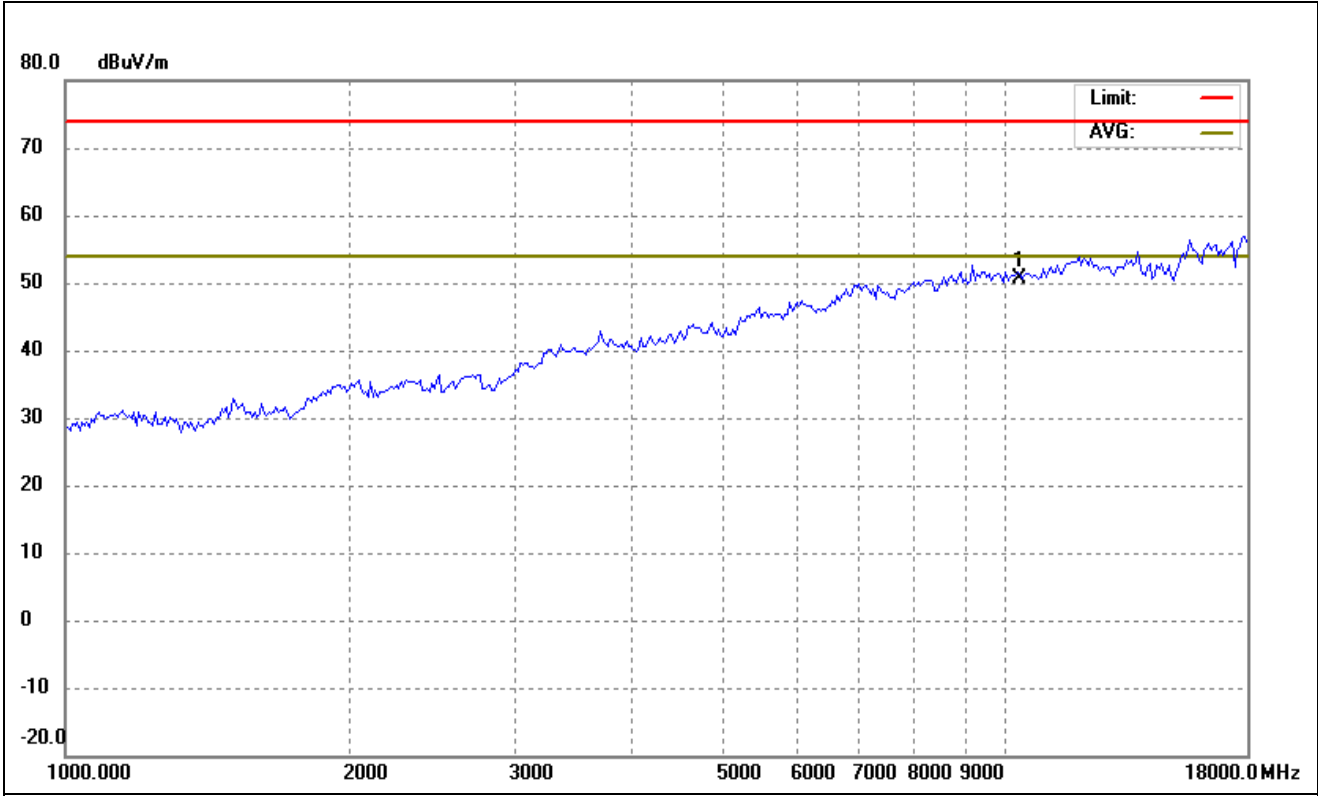
- Antenna 1(worst case)
- For the frequency band 5.15-5.25GHz (802.11a)
- Harmonics And Spurious Emissions(worst case 802.11a)

802.11a			
Test Channel	5180MHz	Polarity:	Horizontal



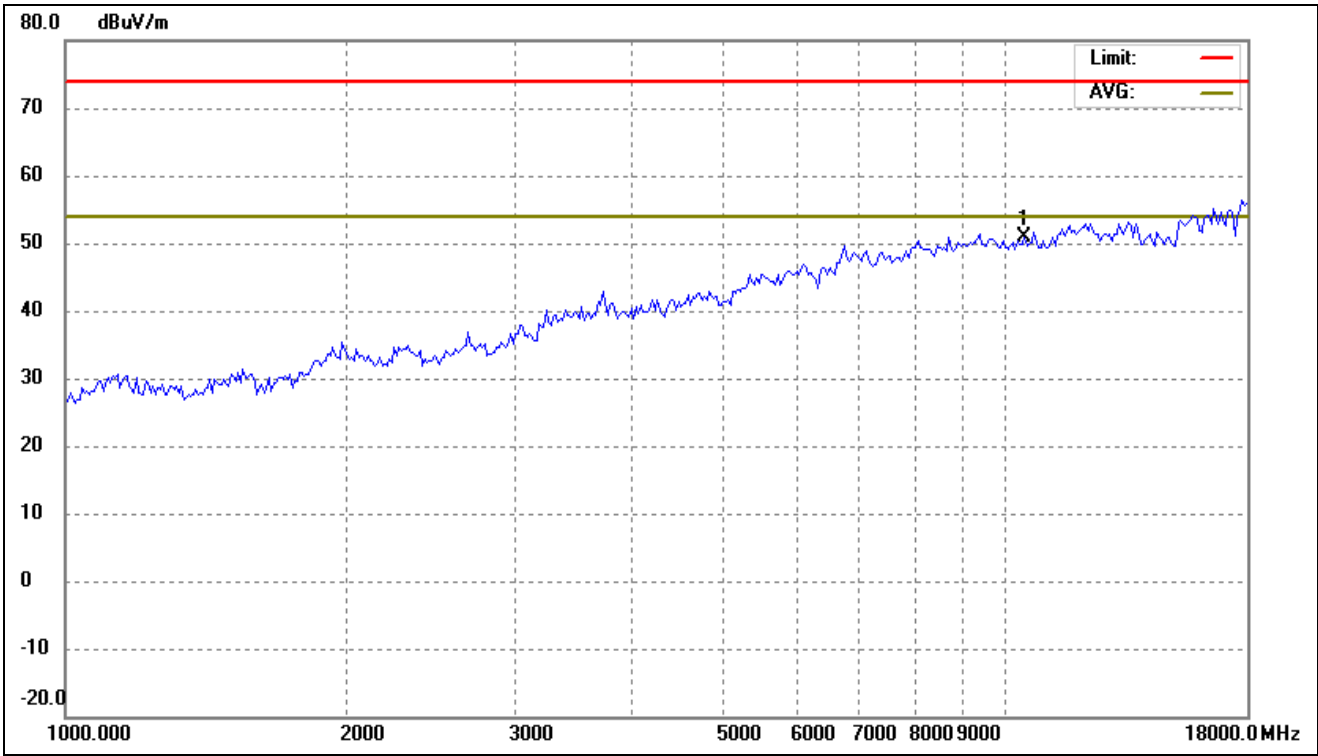
No.	Frequency (MHz)	Reading (dBuV/m)	Corr. dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Deg. ()	Height (cm)	Remark
1	10360.000	52.74	-3.24	49.50	74.00	-24.50	-	-	peak

802.11a			
Test Channel	5180MHz	Polarity:	Vertical



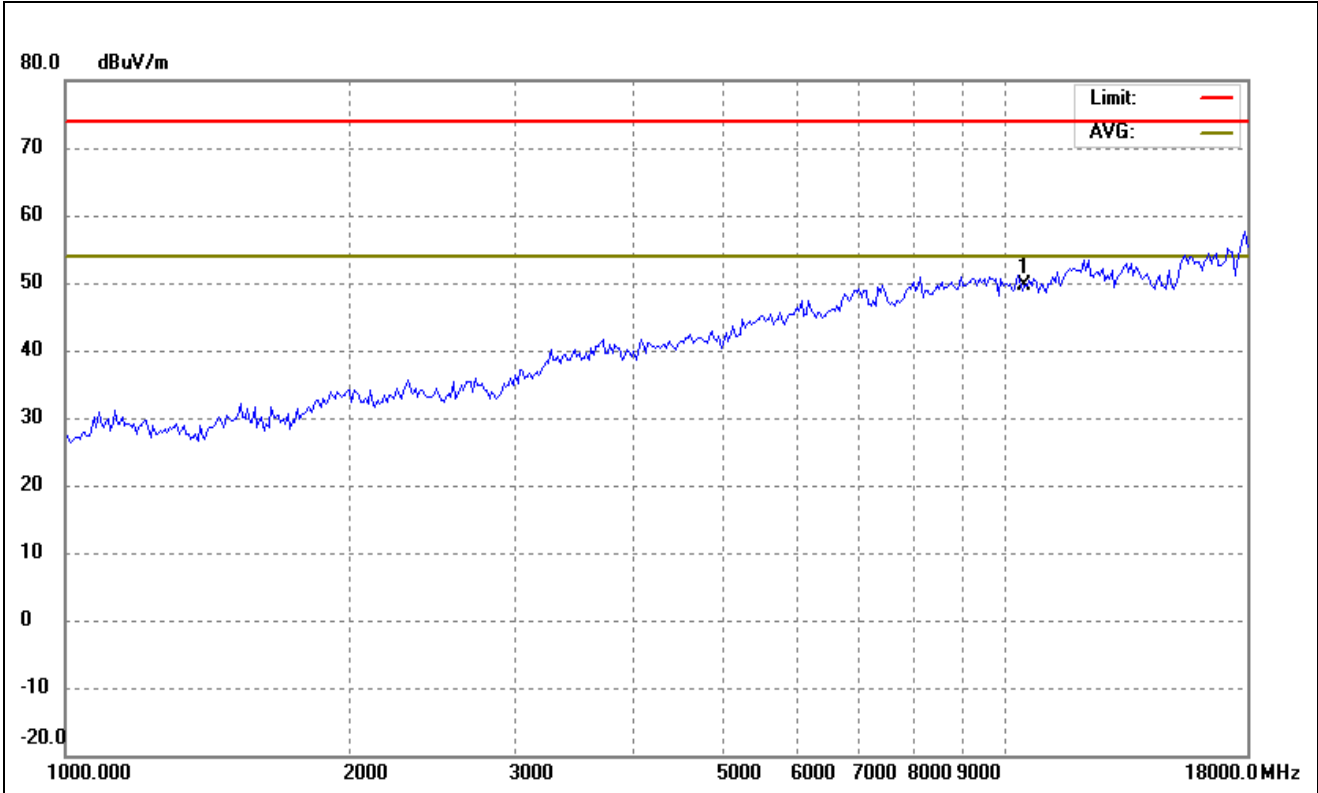
No.	Frequency (MHz)	Reading (dBuV/m)	Corr. dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Deg. ()	Height (cm)	Remark
1	10360.000	53.78	-3.24	50.54	74.00	-23.46	-	-	peak

802.11a			
Test Channel	5200MHz	Polarity:	Horizontal



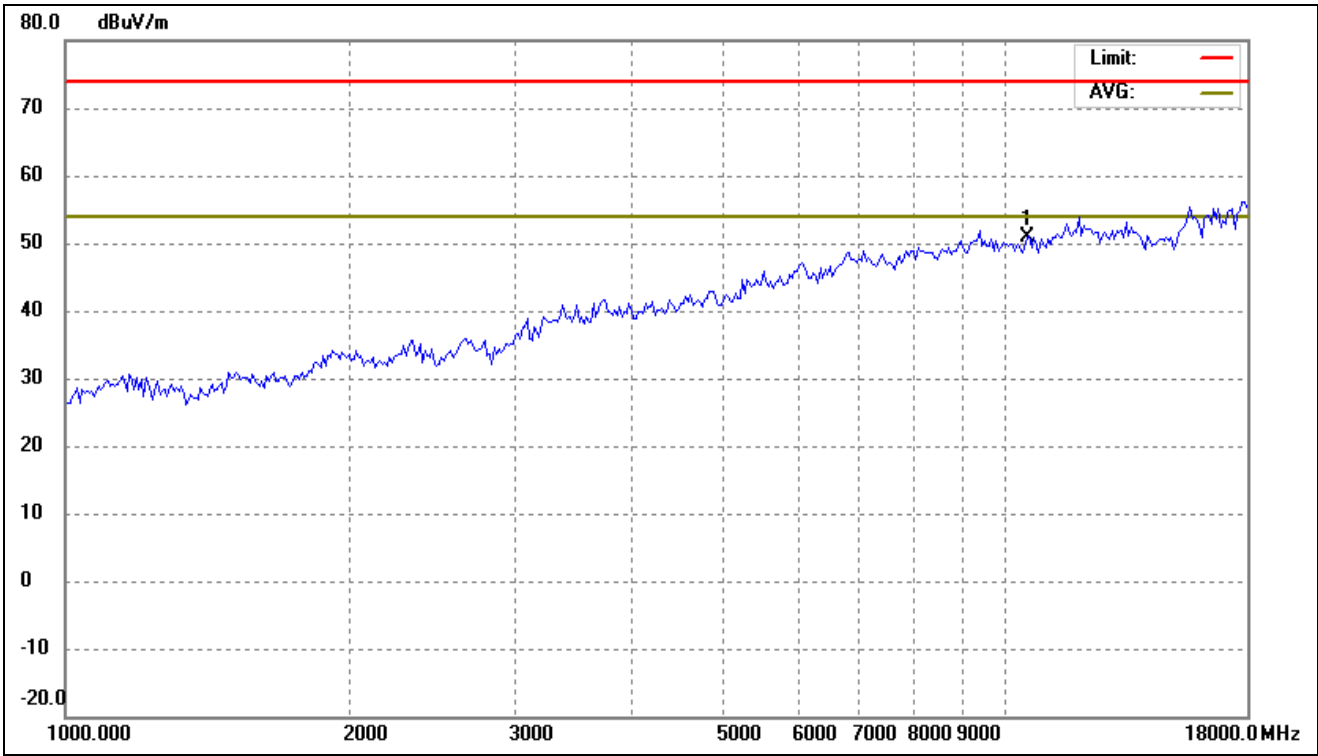
No.	Frequency (MHz)	Reading (dBuV/m)	Corr. dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Deg. ()	Height (cm)	Remark
1	10400.000	54.18	-3.31	50.87	74.00	-23.13	-	-	peak

802.11a			
Test Channel	5200MHz	Polarity:	Vertical



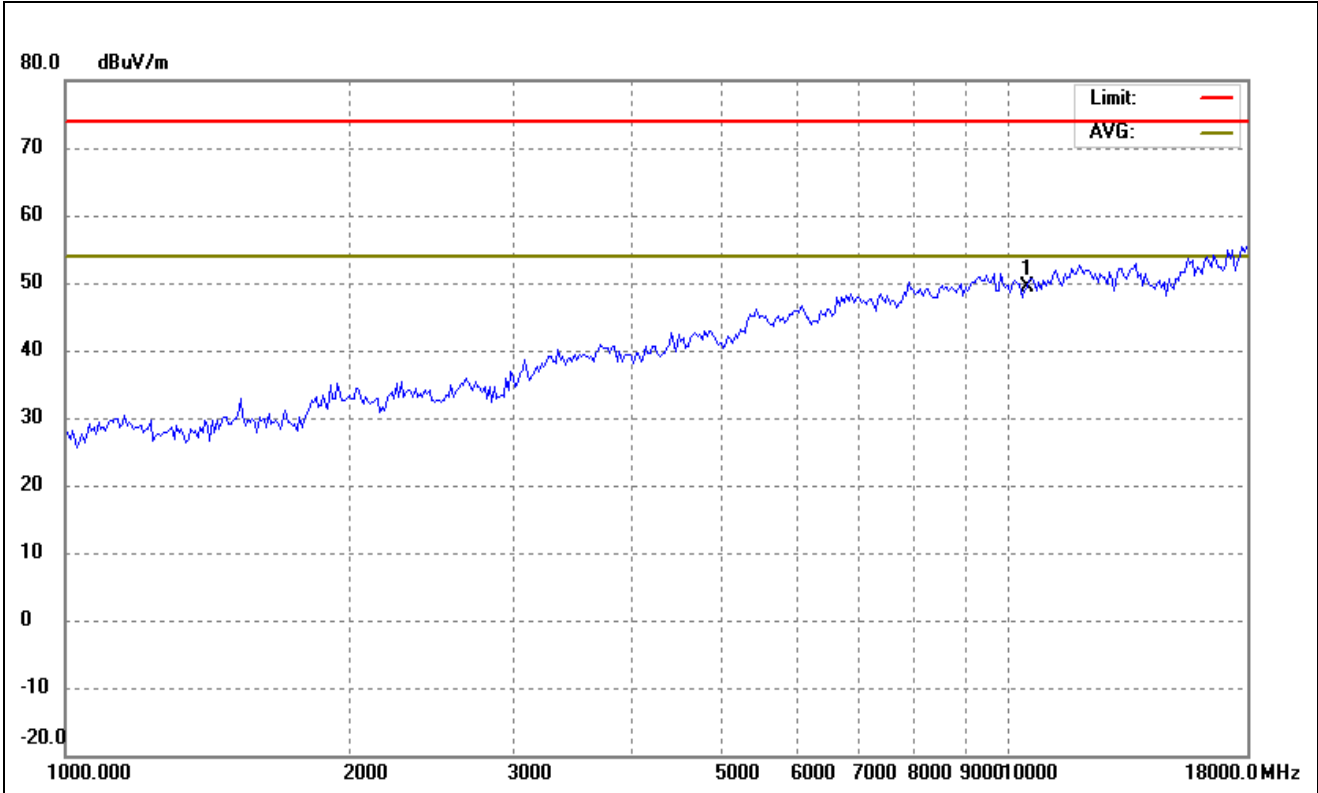
No.	Frequency (MHz)	Reading (dBuV/m)	Corr. dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Deg. ()	Height (cm)	Remark
1	10400.000	53.02	-3.31	49.71	74.00	-24.29	-	-	peak

802.11a			
Test Channel	5240MHz	Polarity:	Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Corr. dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Deg. ()	Height (cm)	Remark
1	10480.000	53.77	-2.96	50.81	74.00	-23.19	-	-	peak

802.11a			
Test Channel	5240MHz	Polarity:	Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Corr. dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Deg. ()	Height (cm)	Remark
1	10480.000	52.29	-2.96	49.33	74.00	-24.67	-	-	peak

➤ Out of Band edge for 5150-5250MHz

Test CH.	Test Segment	Result	Limit
	MHz	dBm/MHz	dBm/MHz
Lowest	Below 5150	-42.12	-27
Highest	Above 5350	-43.76	-27
Note: the data just list the worst cases			

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

➤ Out of Band edge 5150-5250MHz

Test CH.	Test Segment	Result	Limit
	MHz	dBm/MHz	dBm/MHz
Lowest	Below 5150	-38.71	-27
Highest	Above 5350	-39.52	-27
Note: the data just list the worst cases			

➤ For the frequency band 5.15-5.25GHz (802.11ac VHT20)

➤ Out of Band edge 5150-5250MHz

Test CH.	Test Segment	Result	Limit
	MHz	dBm/MHz	dBm/MHz
Lowest	Below 5150	-38.76	-27
Highest	Above 5350	-39.10	-27
Note: the data just list the worst cases			

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

➤ Out of Band edge for 5150-5250MHz

Test CH.	Test Segment	Result	Limit
	MHz	dBm/MHz	dBm/MHz
Lowest	Below 5150	-38.21	-27
Highest	Above 5350	-37.63	-27
Note: the data just list the worst cases			

- For the frequency band 5.15-5.25GHz (802.11ac VHT40)
- Out of Band edge for 5150-5250MHz

Test CH.	Test Segment	Result	Limit
	MHz	dBm/MHz	dBm/MHz
Lowest	Below 5150	-38.11	-27
Highest	Above 5350	-37.67	-27
Note: the data just list the worst cases			

- For the frequency band 5.15-5.25GHz (802.11ac VHT80)
- Out of Band edge for 5150-5250MHz

Test CH.	Test Segment	Result	Limit
	MHz	dBm/MHz	dBm/MHz
Lowest	Below 5150	-37.46	-27
Highest	Above 5350	-36.72	-27
Note: the data just list the worst cases			

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

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

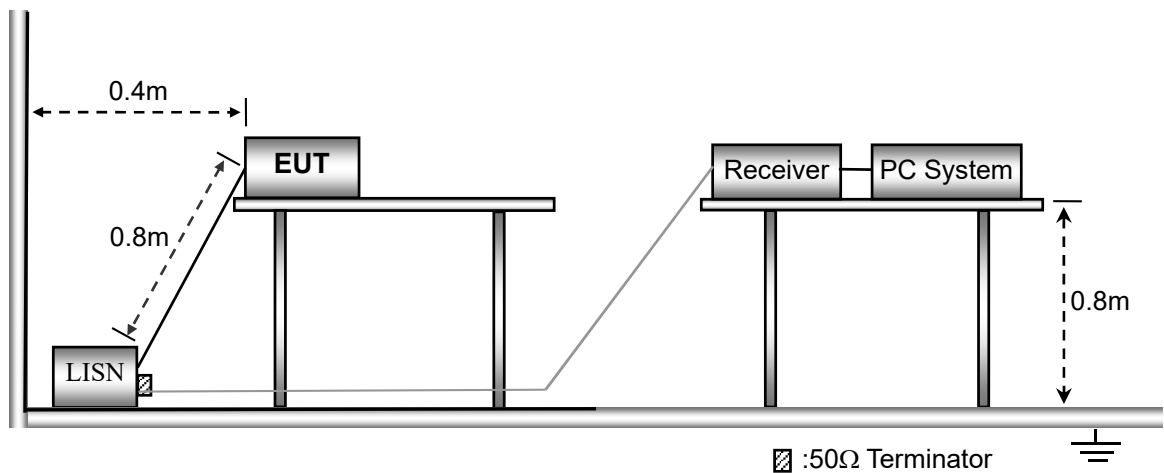
10 Conducted Emissions

10.1 Test Procedure

The setup of EUT is according with per ANSI C63.10-2020 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



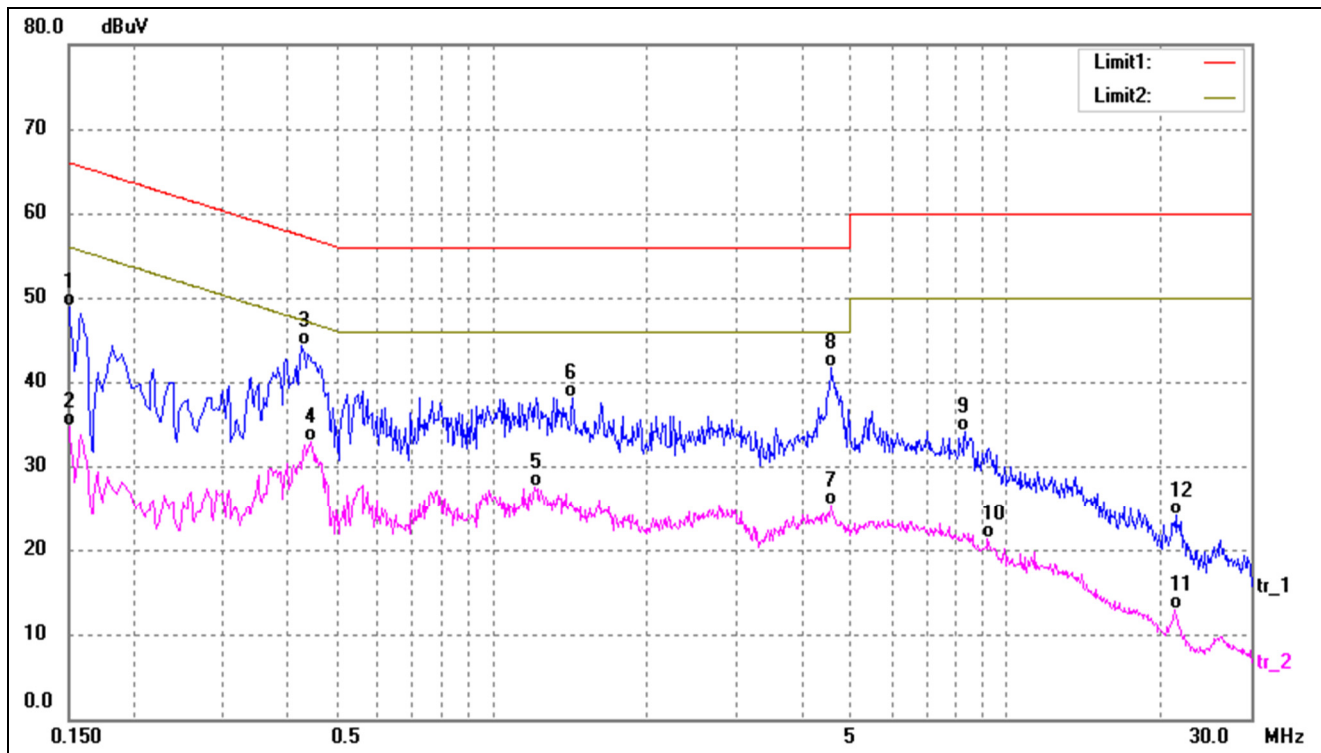
10.3 Test Receiver Setup

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

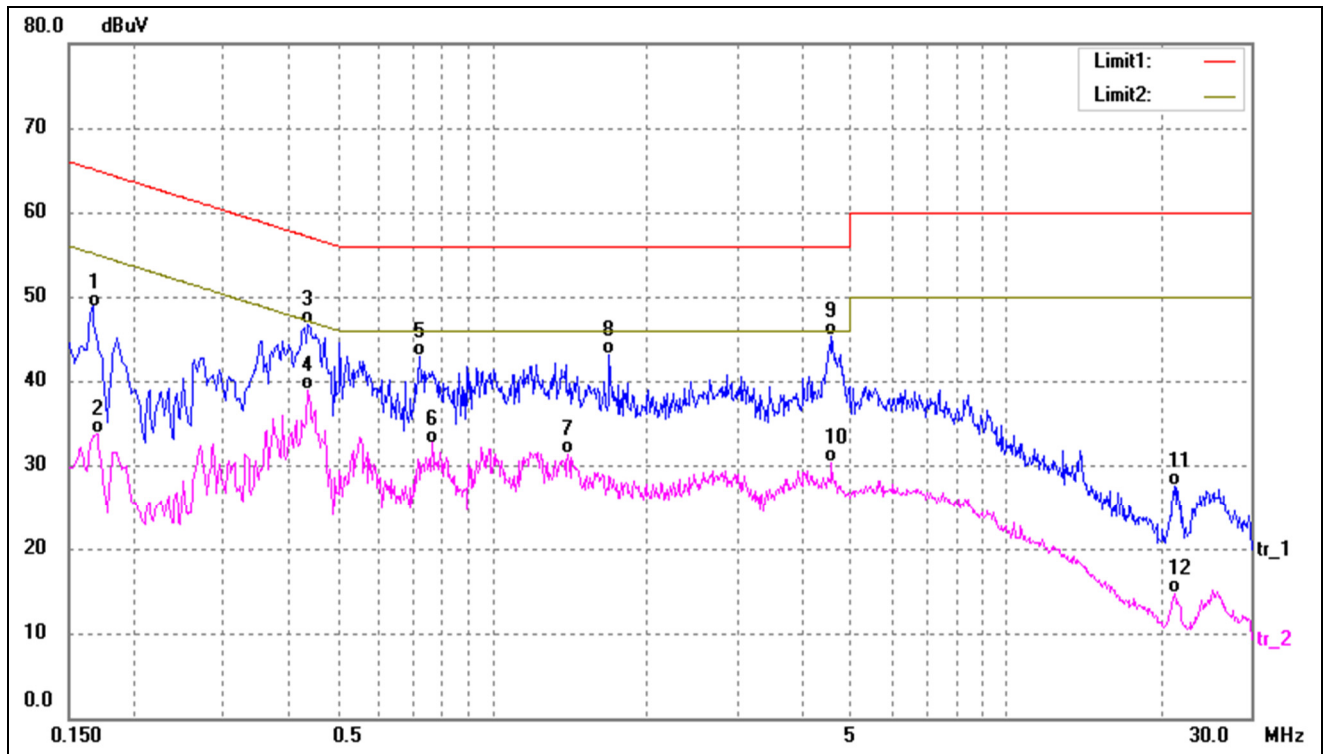
10.4 Summary of Test Results/Plots

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	0.1500	39.56	9.43	48.99	65.99	-17.00	QP
2	0.1500	25.34	9.43	34.77	55.99	-21.22	AVG
3*	0.4260	34.73	9.64	44.37	57.33	-12.96	QP
4	0.4420	23.21	9.64	32.85	47.02	-14.17	AVG
5	1.2100	17.73	9.68	27.41	46.00	-18.59	AVG
6	1.4340	28.61	9.59	38.20	56.00	-17.80	QP
7	4.5700	15.69	9.53	25.22	46.00	-20.78	AVG
8	4.5900	32.13	9.53	41.66	56.00	-14.34	QP
9	8.3260	24.31	9.80	34.11	60.00	-25.89	QP
10	9.2180	11.57	9.80	21.37	50.00	-28.63	AVG
11	21.3500	3.33	9.54	12.87	50.00	-37.13	AVG
12	21.3860	14.47	9.54	24.01	60.00	-35.99	QP

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	0.1660	39.30	9.49	48.79	65.15	-16.36	QP
2	0.1700	24.26	9.51	33.77	54.96	-21.19	AVG
3	0.4380	37.14	9.64	46.78	57.10	-10.32	QP
4*	0.4380	29.26	9.64	38.90	47.10	-8.20	AVG
5	0.7260	33.22	9.74	42.96	56.00	-13.04	QP
6	0.7660	22.86	9.74	32.60	46.00	-13.40	AVG
7	1.4100	21.67	9.60	31.27	46.00	-14.73	AVG
8	1.6940	33.69	9.48	43.17	56.00	-12.83	QP
9	4.5739	35.70	9.53	45.23	56.00	-10.77	QP
10	4.5739	20.78	9.53	30.31	46.00	-15.69	AVG
11	21.2740	17.96	9.54	27.50	60.00	-32.50	QP
12	21.2740	5.23	9.54	14.77	50.00	-35.23	AVG

APPENDIX SUMMARY

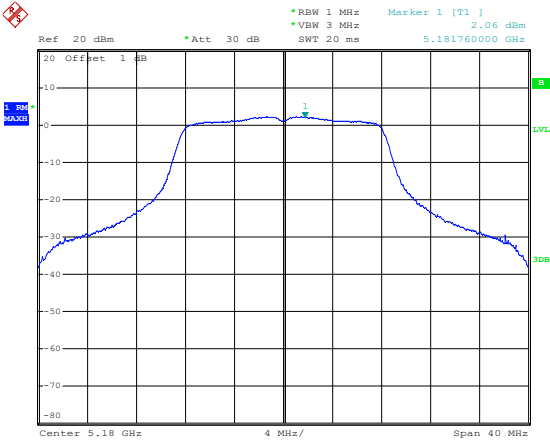
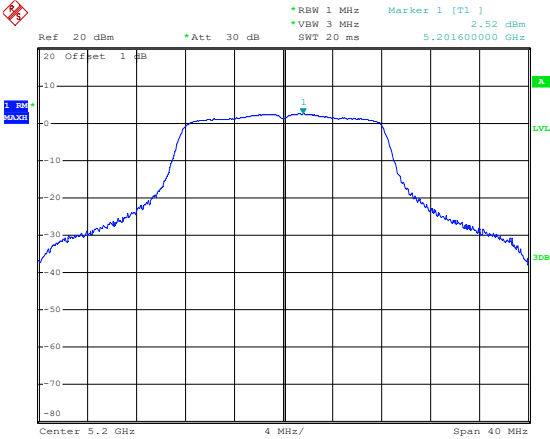
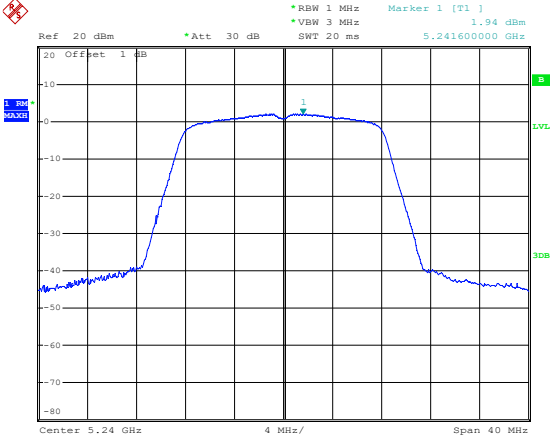
Project No.	WTH25X09253887W001	Test Engineer	BAldi Zhong
Start date	2025/11/22	Finish date	2025/12/4
Temperature	23.6℃	Humidity	38%
RF specifications	U-NII		

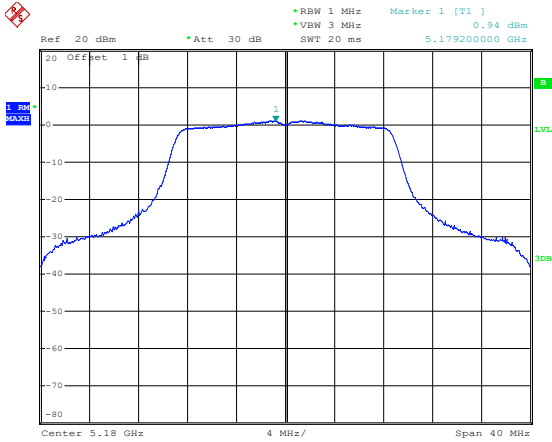
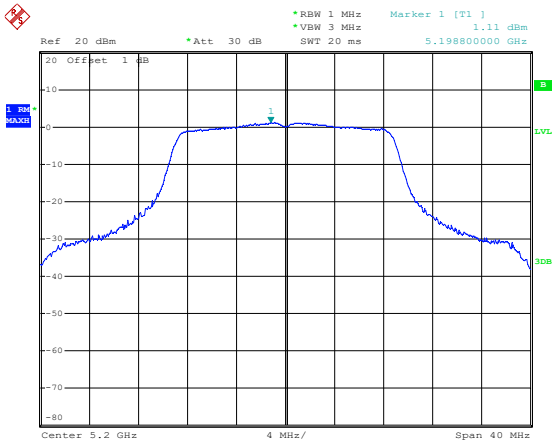
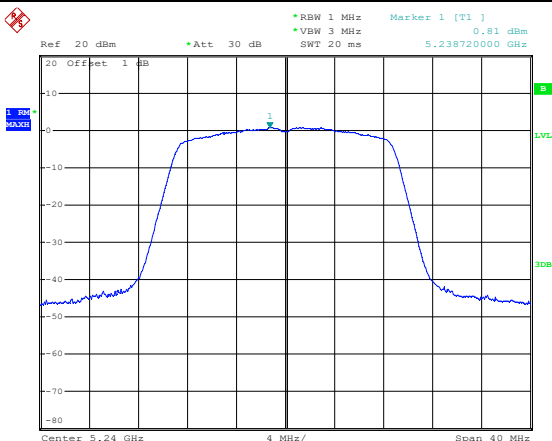
APPENDIX	Description of Test Item	Result
A	Power Spectral Density	Compliant
B	Emission Bandwidth and Occupied Bandwidth	Compliant
C	Maximum Conducted Output Power	Compliant
D	Frequency Stability	Compliant

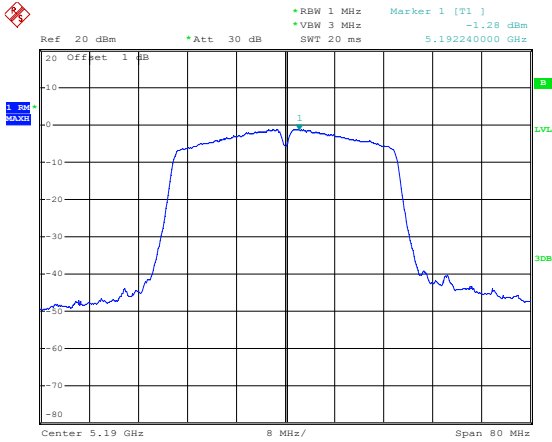
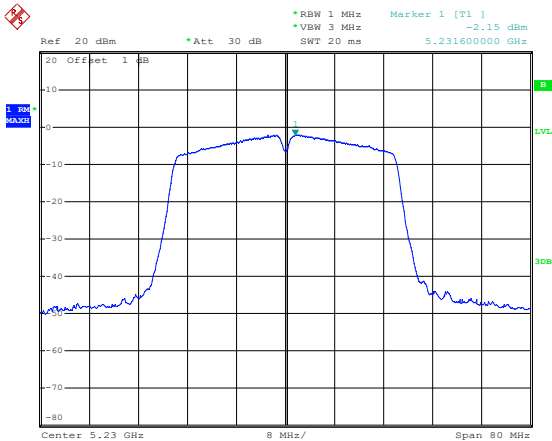
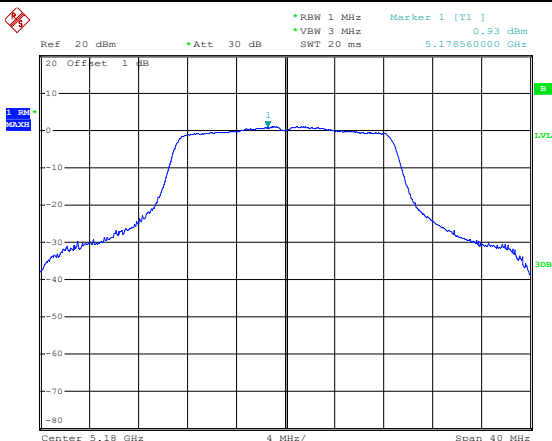
APPENDIX A

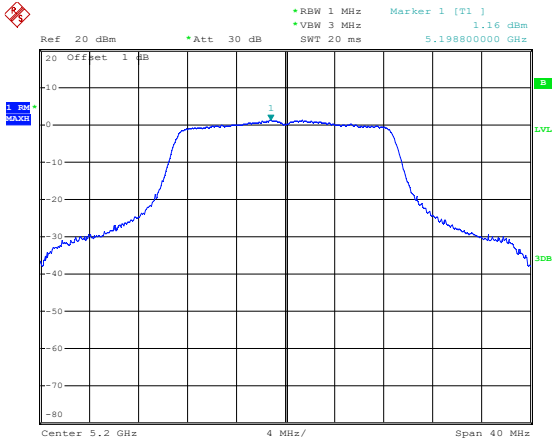
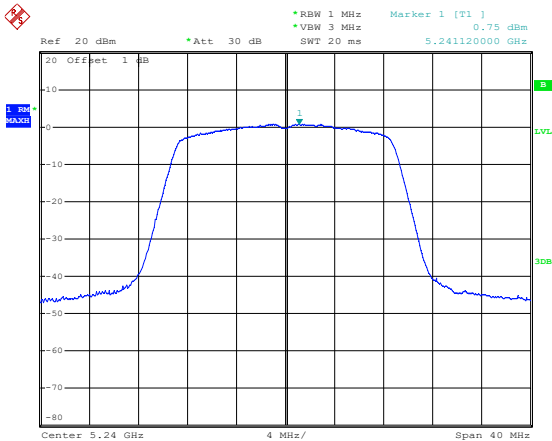
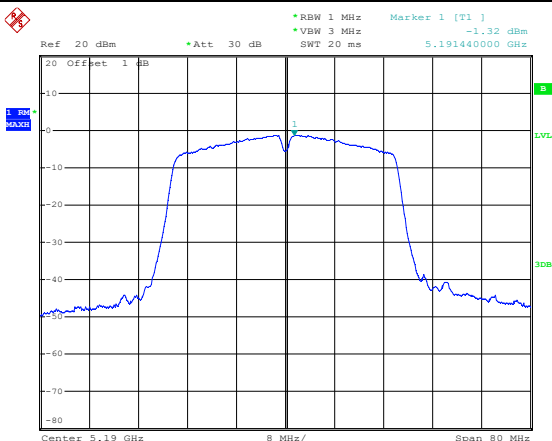
Power Spectral Density					
U-NII-1:5150-5250MHz					
Operating mode	Test Channel	ANT 1 dBm/MHz	ANT 2 dBm/MHz	Total dBm/MHz	Limit (dBm/MHz)
802.11a	5180	2.06	2.23	/	11
	5200	2.52	2.53	/	11
	5240	1.94	2.07	/	11
802.11n-HT20	5180	0.94	0.48	3.73	11
	5200	1.11	0.65	3.90	11
	5240	0.81	0.68	3.76	11
802.11n-HT40	5190	-1.28	-1.18	1.78	11
	5230	-2.15	-1.13	1.40	11
802.11ac-VHT20	5180	0.93	0.54	3.75	11
	5200	1.16	0.60	3.90	11
	5240	0.75	0.78	3.78	11
802.11ac-VHT40	5190	-1.32	-1.24	1.73	11
	5230	-2.03	-1.10	1.47	11
802.11ac-VHT80	5210	-4.73	-4.96	-1.83	11

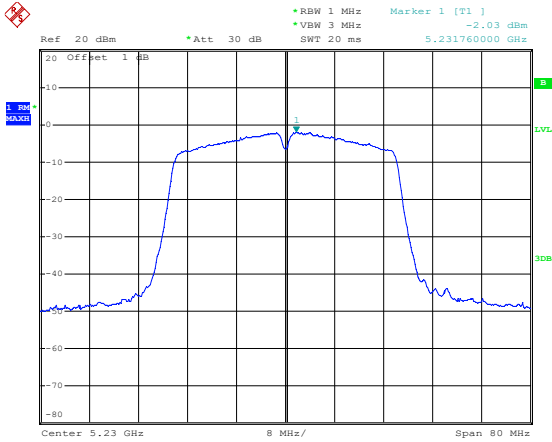
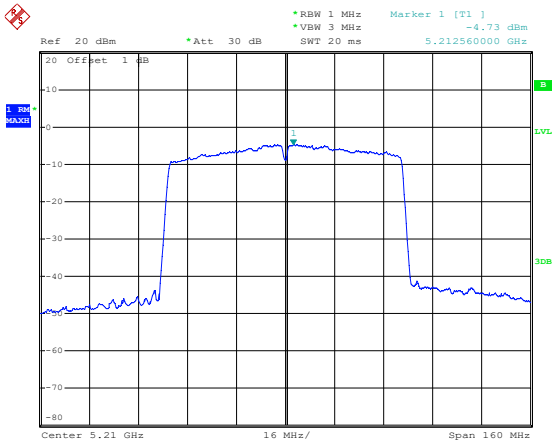
ANT 1
5150-5250MHz

802.11a-Low	 Date: 4.DEC.2025 13:53:22
802.11a-Middle	 Date: 4.DEC.2025 11:37:41
802.11a-High	 Date: 4.DEC.2025 13:54:15

802.11n-HT20-Low	 Date: 4.DEC.2025 13:55:04
802.11n-HT20-Middle	 Date: 4.DEC.2025 13:55:40
802.11n-HT20-High	 Date: 4.DEC.2025 13:56:03

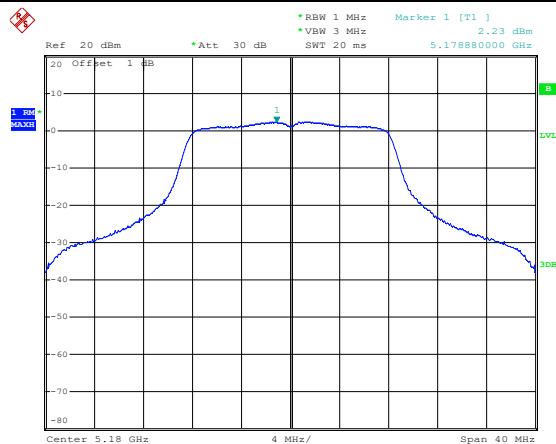
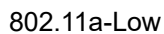
802.11n-HT40-Low	 Ref 20 dBm *Att 30 dB RBW 1 MHz Marker 1 [T1] -1.28 dBm VBW 3 MHz SWT 20 ms 5.192240000 GHz 20 Offset 1 dB Center 5.19 GHz 8 MHz/ Span 80 MHz Date: 4.DEC.2025 13:57:46
802.11n-HT40-High	 Ref 20 dBm *Att 30 dB RBW 1 MHz Marker 1 [T1] -2.15 dBm VBW 3 MHz SWT 20 ms 5.231600000 GHz 20 Offset 1 dB Center 5.23 GHz 8 MHz/ Span 80 MHz Date: 4.DEC.2025 13:58:13
802.11ac-VHT20-Low	 Ref 20 dBm *Att 30 dB RBW 1 MHz Marker 1 [T1] 0.93 dBm VBW 3 MHz SWT 20 ms 5.178560000 GHz 20 Offset 1 dB Center 5.18 GHz 4 MHz/ Span 40 MHz Date: 4.DEC.2025 13:56:26

802.11ac-VHT20-Middle	 Ref 20 dBm *Att 30 dB *RBW 1 MHz *VBW 3 MHz Marker 1 [T1] 1.16 dBm SWT 20 ms 5.19880000 GHz 20 Offset 1 dB Center 5.2 GHz 4 MHz/ Span 40 MHz Date: 4.DEC.2025 13:56:51
802.11ac-VHT20-High	 Ref 20 dBm *Att 30 dB *RBW 1 MHz *VBW 3 MHz Marker 1 [T1] 0.75 dBm SWT 20 ms 5.24112000 GHz 20 Offset 1 dB Center 5.24 GHz 4 MHz/ Span 40 MHz Date: 4.DEC.2025 13:57:15
802.11ac-VHT40-Low	 Ref 20 dBm *Att 30 dB *RBW 1 MHz *VBW 3 MHz Marker 1 [T1] -1.32 dBm SWT 20 ms 5.19144000 GHz 20 Offset 1 dB Center 5.19 GHz 8 MHz/ Span 80 MHz Date: 4.DEC.2025 13:58:50

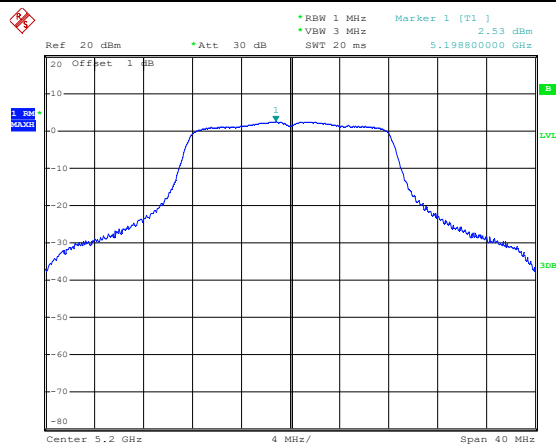
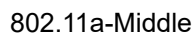
802.11ac-VHT40-High	 Date: 4.DEC.2025 13:59:17
802.11ac-VHT80	 Date: 4.DEC.2025 13:59:53

ANT 2

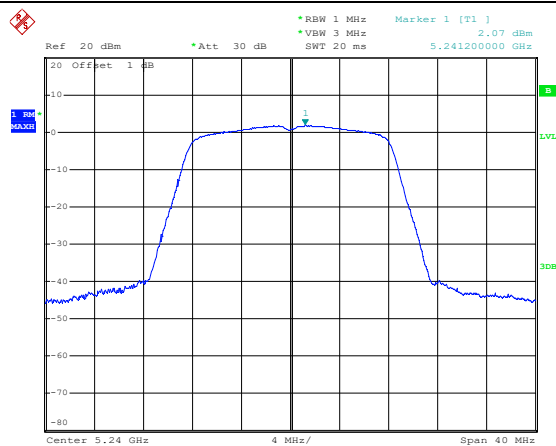
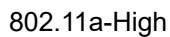
5150-5250MHz



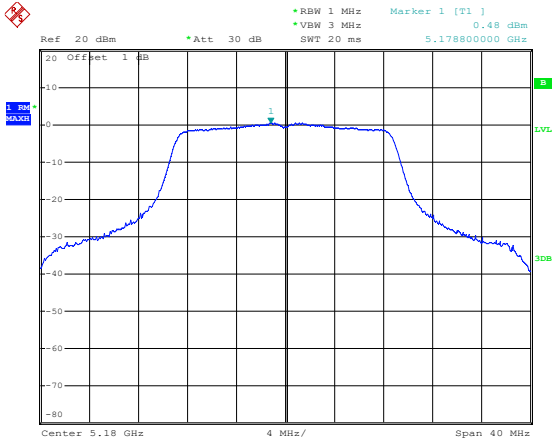
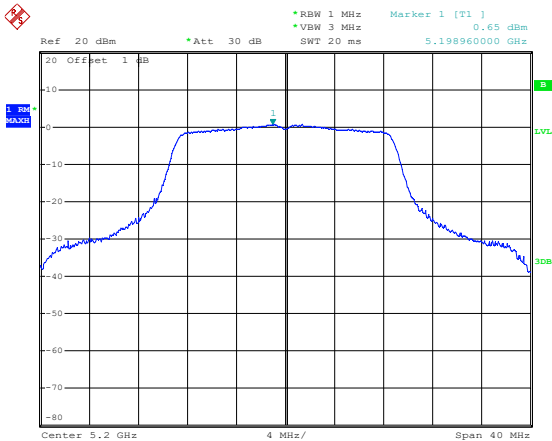
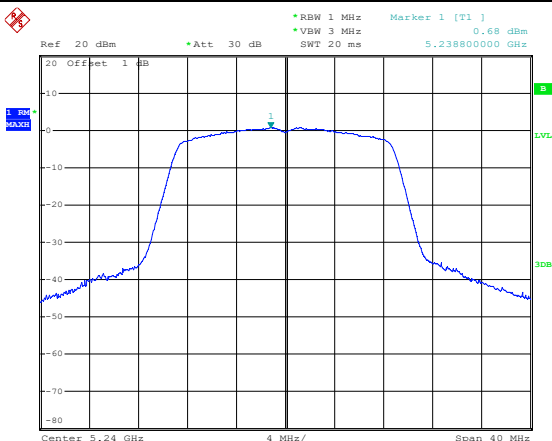
Date: 4.DEC.2025 14:01:09

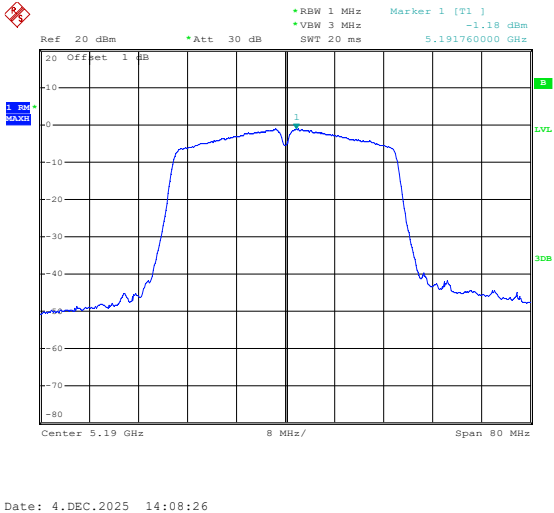
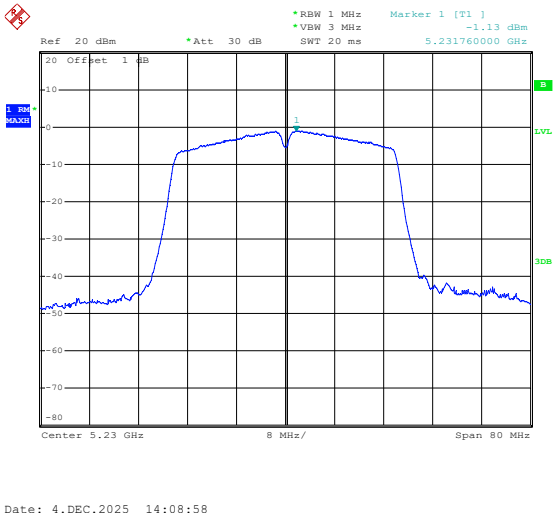
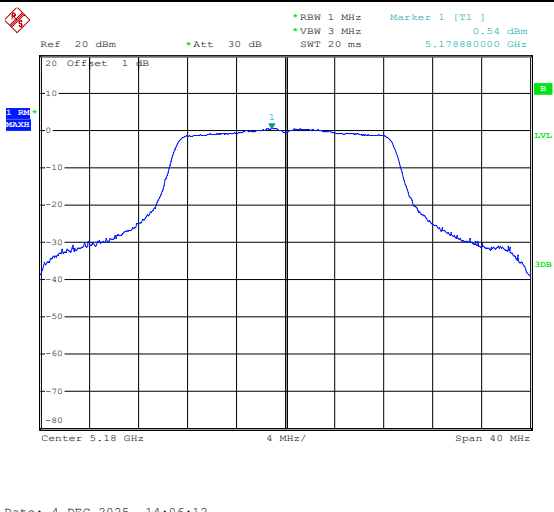


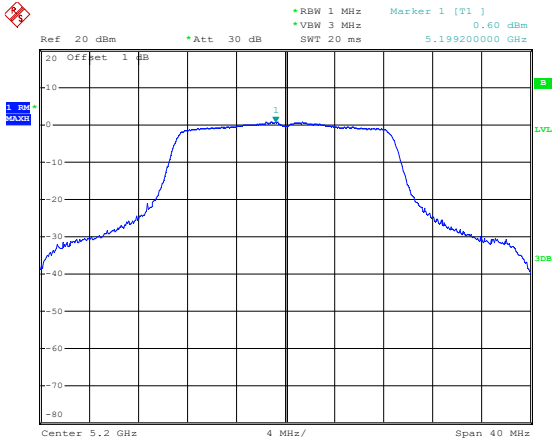
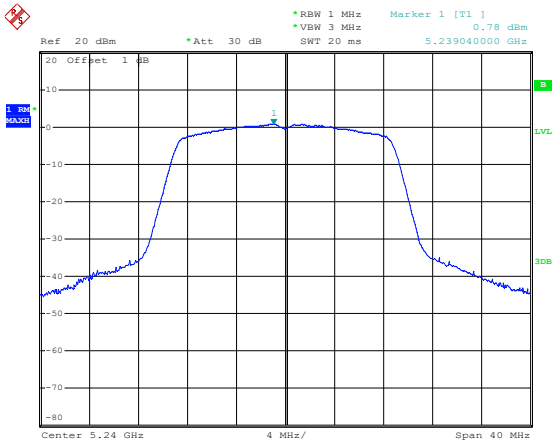
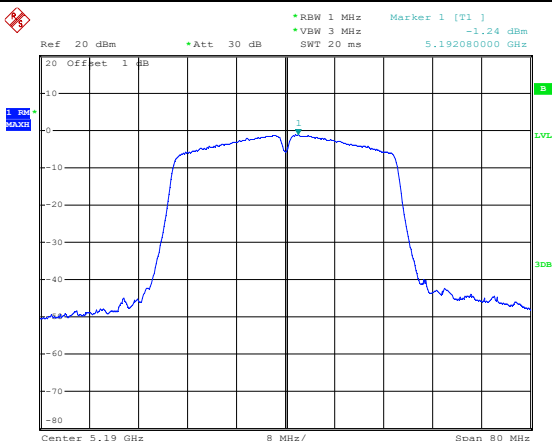
Date: 4.DEC.2025 14:01:54

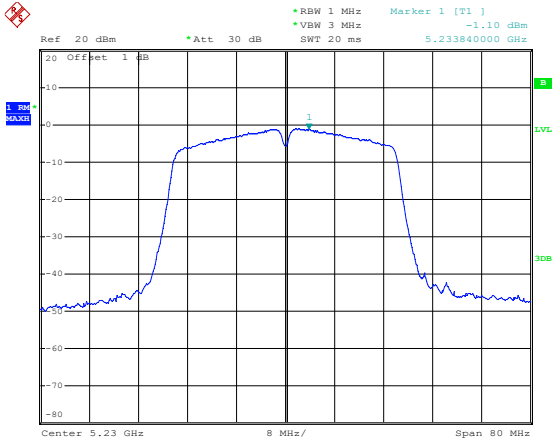
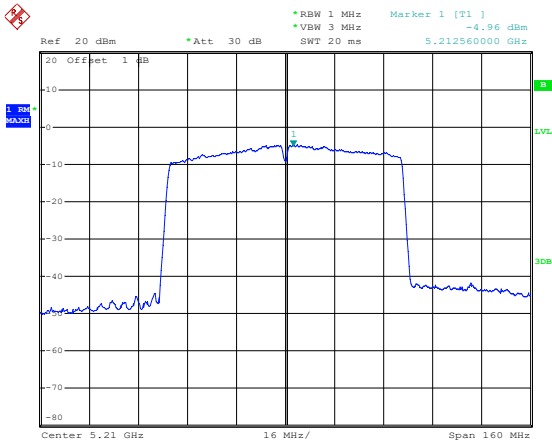


Date: 4.DEC.2025 14:02:18

802.11n-HT20-Low	 Date: 4.DEC.2025 14:04:47
802.11n-HT20-Middle	 Date: 4.DEC.2025 14:05:14
802.11n-HT20-High	 Date: 4.DEC.2025 14:05:45

802.11n-HT40-Low	 Date: 4.DEC.2025 14:08:26
802.11n-HT40-High	 Date: 4.DEC.2025 14:08:58
802.11ac-VHT20-Low	 Date: 4.DEC.2025 14:06:12

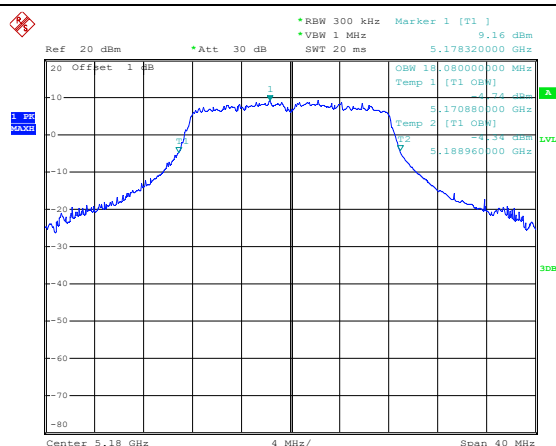
802.11ac-VHT20-Middle	 Ref 20 dBm *Att 30 dB *RBW 1 MHz Marker 1 [T1] 0.60 dBm *VBW 3 MHz SWT 20 ms 5.19200000 GHz 20 Offset 1 dB Center 5.2 GHz 4 MHz/ Span 40 MHz Date: 4.DEC.2025 14:06:36
802.11ac-VHT20-High	 Ref 20 dBm *Att 30 dB *RBW 1 MHz Marker 1 [T1] 0.78 dBm *VBW 3 MHz SWT 20 ms 5.239040000 GHz 20 Offset 1 dB Center 5.24 GHz 4 MHz/ Span 40 MHz Date: 4.DEC.2025 14:07:24
802.11ac-VHT40-Low	 Ref 20 dBm *Att 30 dB *RBW 1 MHz Marker 1 [T1] -1.24 dBm *VBW 3 MHz SWT 20 ms 5.192080000 GHz 20 Offset 1 dB Center 5.19 GHz 8 MHz/ Span 80 MHz Date: 4.DEC.2025 14:09:22

802.11ac-VHT40-High	 Ref 20 dBm *Att 30 dB RBW 1 MHz Marker 1 [T1] -1.10 dBm VBW 3 MHz SWT 20 ms 5.233840000 GHz 20 Offset 1 dB Center 5.23 GHz 8 MHz/ Span 80 MHz Date: 4.DEC.2025 14:09:46
802.11ac-VHT80	 Ref 20 dBm *Att 30 dB RBW 1 MHz Marker 1 [T1] -4.96 dBm VBW 3 MHz SWT 20 ms 5.212560000 GHz 20 Offset 1 dB Center 5.21 GHz 16 MHz/ Span 160 MHz Date: 4.DEC.2025 14:10:20

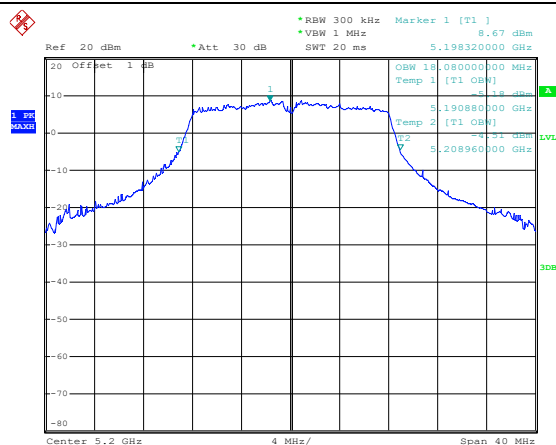
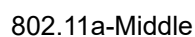
APPENDIX B

Emission Bandwidth and Occupied Bandwidth

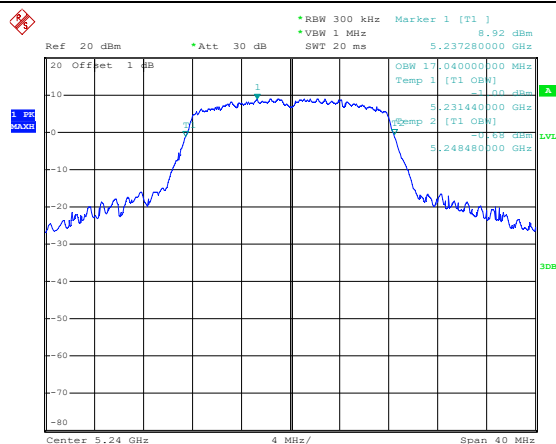
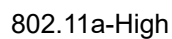
U-NII-1:5150-5250MHz						
Test Mode	Test Channel MHz	ANT 1		ANT 2		Result
		26 dB Bandwidth MHz	99% Bandwidth MHz	26 dB Bandwidth MHz	99% Bandwidth MHz	
802.11a	5180	26.88	18.08	26.52	18.08	Pass
	5200	26.04	18.08	26.64	18.08	Pass
	5240	20.64	17.04	20.88	17.12	Pass
802.11n-HT20	5180	27.72	18.72	27.84	18.64	Pass
	5200	27.96	18.72	27.72	18.72	Pass
	5240	21.12	17.84	21.00	17.84	Pass
802.11n-HT40	5190	41.20	36.16	41.20	36.32	Pass
	5230	41.40	36.32	41.20	36.32	Pass
802.11ac-VHT20	5180	28.08	18.64	27.36	18.64	Pass
	5200	27.12	18.64	27.00	18.72	Pass
	5240	20.64	17.84	20.64	17.84	Pass
802.11ac-VHT40	5190	41.20	36.16	41.20	36.16	Pass
	5230	41.40	36.32	41.40	36.00	Pass
802.11ac-VHT80	5210	81.00	76.16	81.00	76.16	Pass



Date: 22.NOV.2025 14:33:07

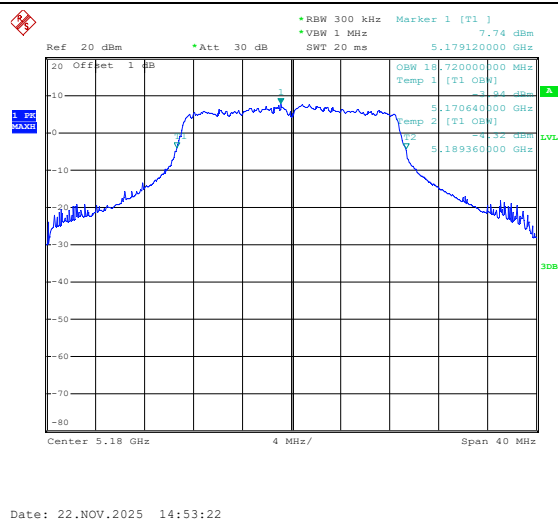


Date: 22.NOV.2025 14:33:51

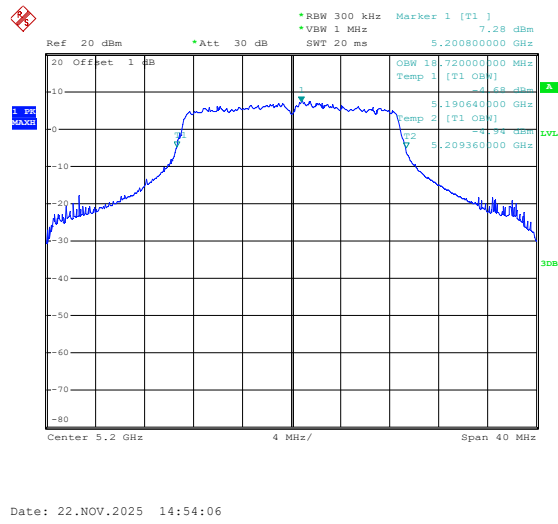


Date: 22.NOV.2025 14:52:34

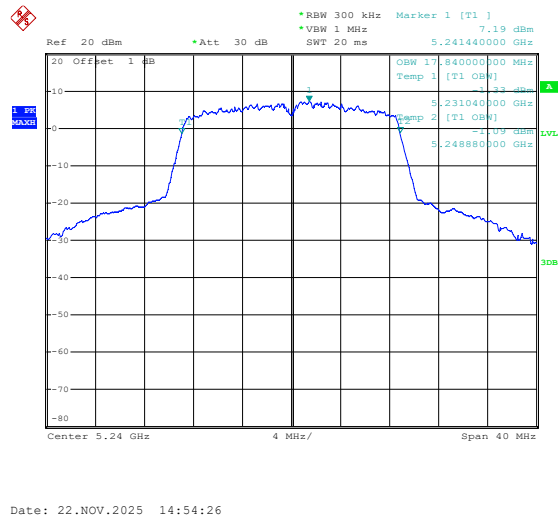
802.11n-HT20-Low

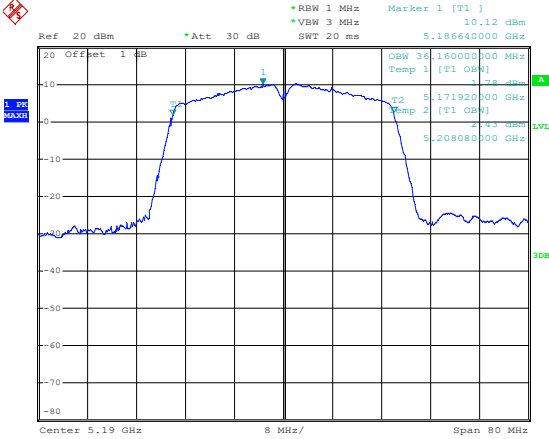
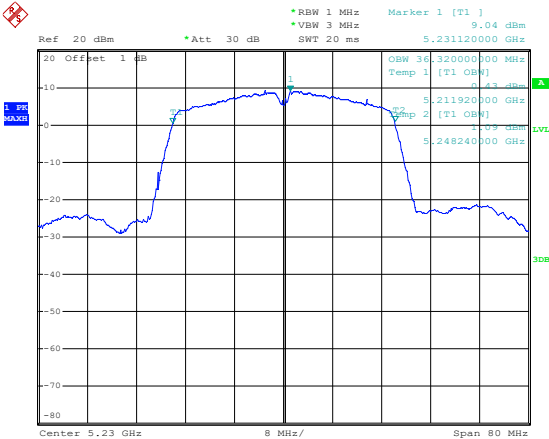
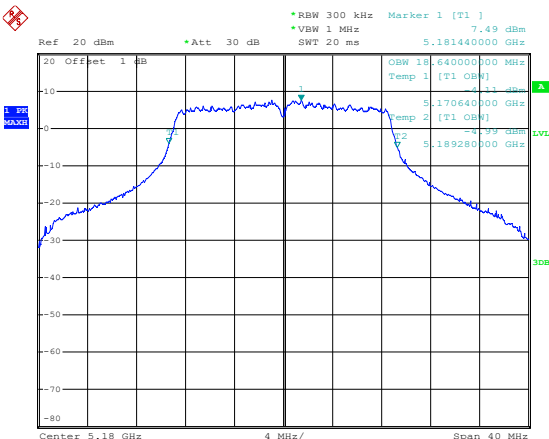


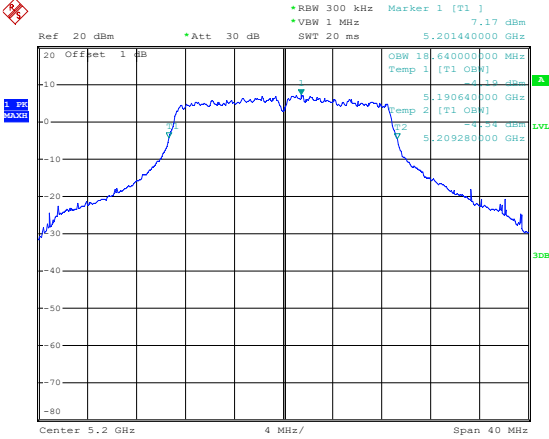
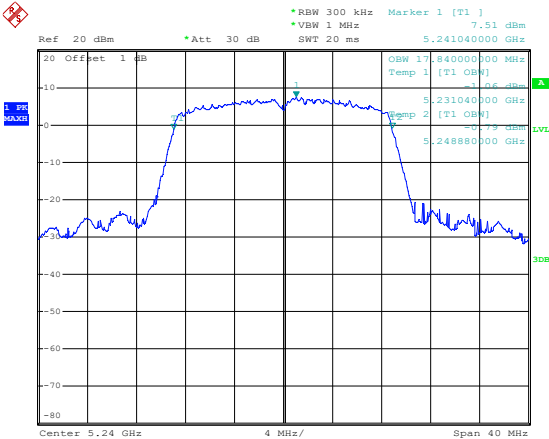
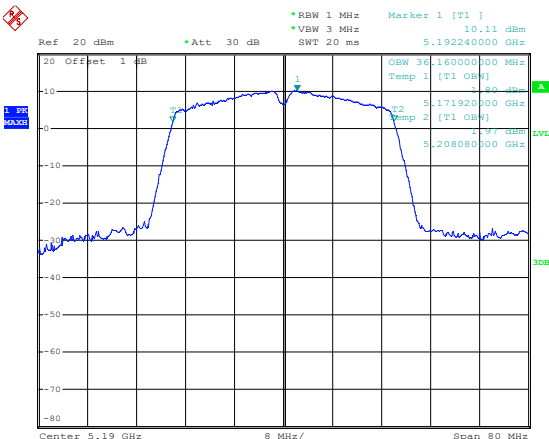
802.11n-HT20-Middle

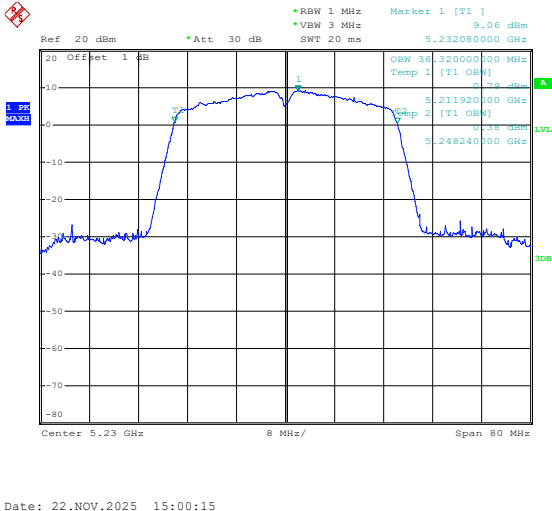
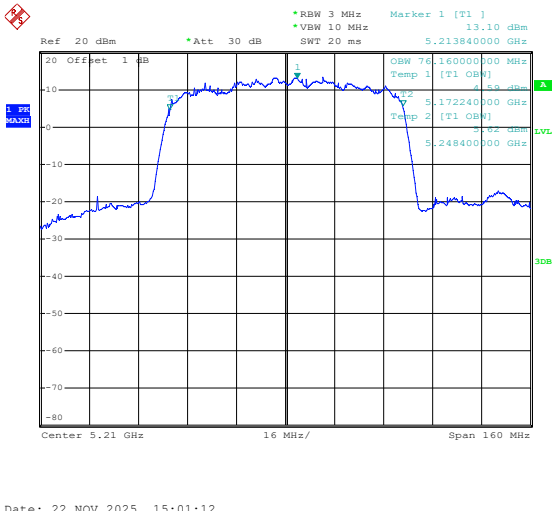


802.11n-HT20-High

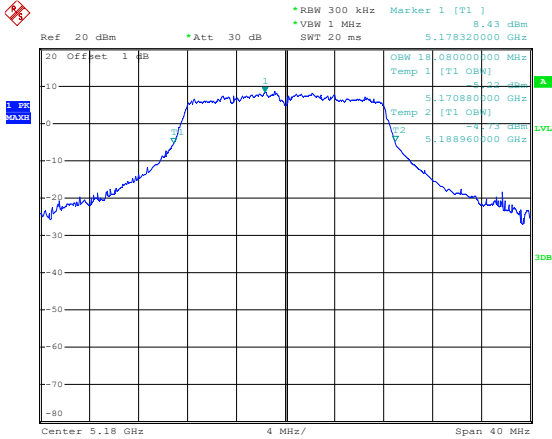
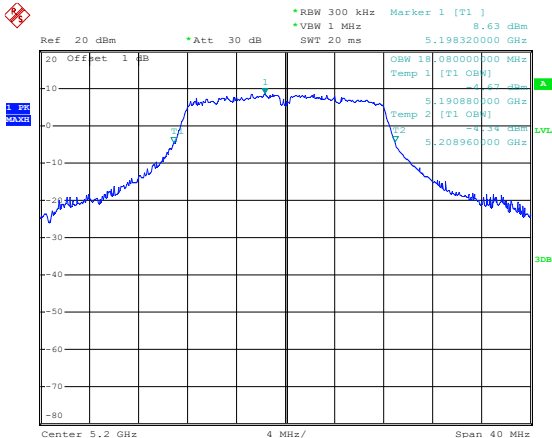
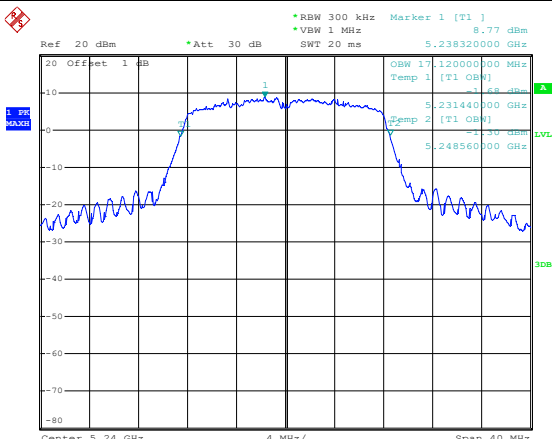


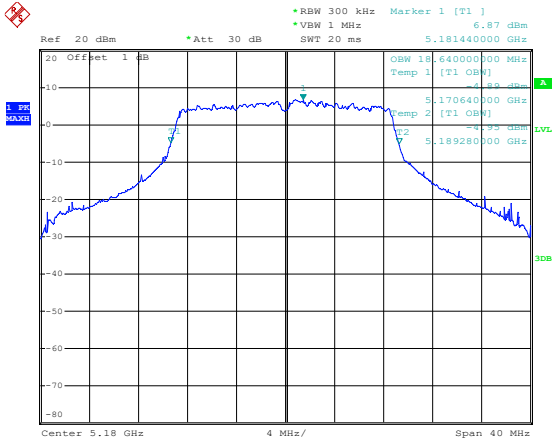
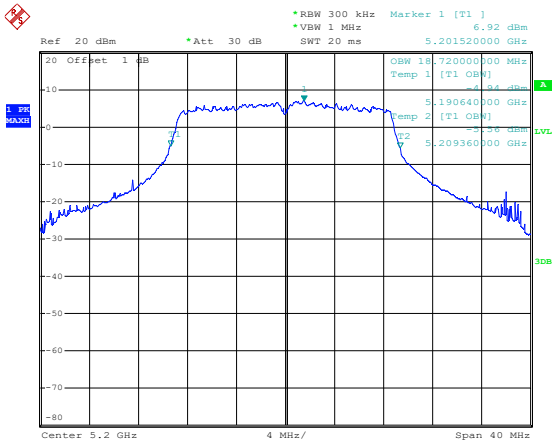
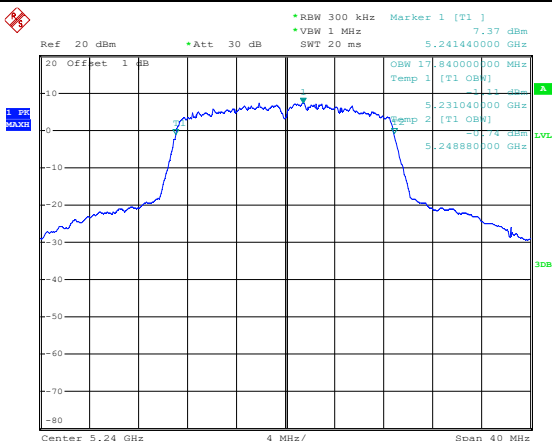
802.11n-HT40-Low	 Ref 20 dBm *Att 30 dB SWT 20 ms Marker 1 [T1] 10.12 dBm OSW 36.16000000 MHz Temp 1 [T1 OBW] 1.12 dBm Temp 2 [T1 OBW] 5.171920000 GHz Temp 2 [T1 OBW] 2.43 dBm Temp 2 [T1 OBW] 5.208080000 GHz Center 5.19 GHz 8 MHz/ Span 80 MHz Date: 22.NOV.2025 14:57:06
802.11n-HT40-High	 Ref 20 dBm *Att 30 dB SWT 20 ms Marker 1 [T1] 9.04 dBm OSW 36.32000000 MHz Temp 1 [T1 OBW] 0.43 dBm Temp 2 [T1 OBW] 5.211920000 GHz Temp 2 [T1 OBW] 1.09 dBm Temp 2 [T1 OBW] 5.248240000 GHz Center 5.23 GHz 8 MHz/ Span 80 MHz Date: 22.NOV.2025 14:57:57
802.11ac-VHT20-Low	 Ref 20 dBm *Att 30 dB SWT 20 ms Marker 1 [T1] 7.49 dBm OSW 18.64000000 MHz Temp 1 [T1 OBW] 4.11 dBm Temp 2 [T1 OBW] 5.170640000 GHz Temp 2 [T1 OBW] 4.99 dBm Temp 2 [T1 OBW] 5.189280000 GHz Center 5.18 GHz 4 MHz/ Span 40 MHz Date: 22.NOV.2025 14:54:44

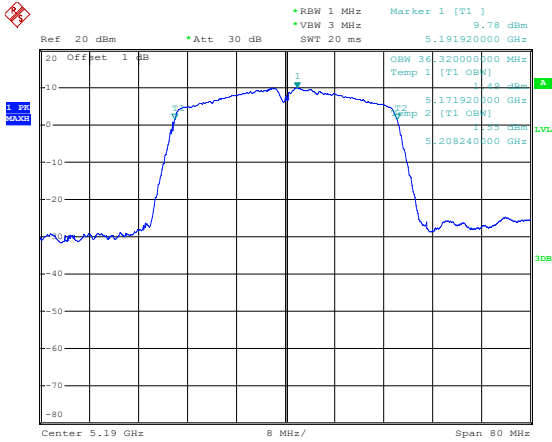
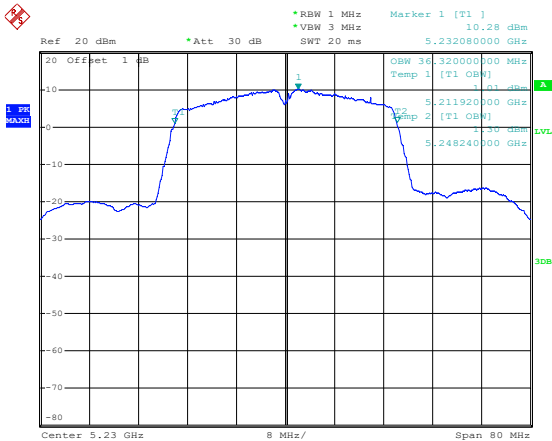
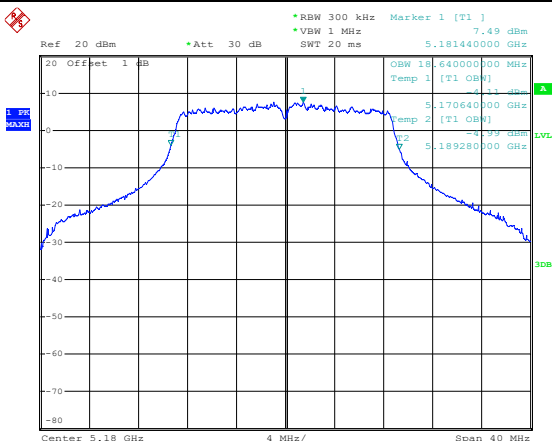
802.11ac-VHT20-Middle	 Date: 22.NOV.2025 14:55:06
802.11ac-VHT20-High	 Date: 22.NOV.2025 14:56:07
802.11ac-VHT40-Low	 Date: 22.NOV.2025 14:59:14

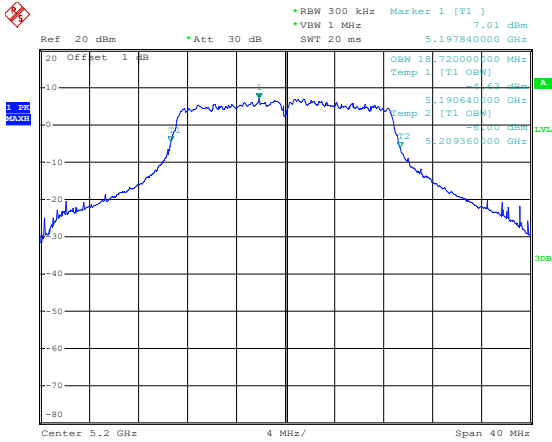
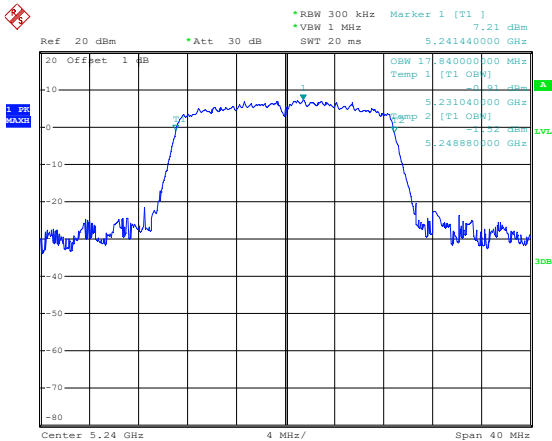
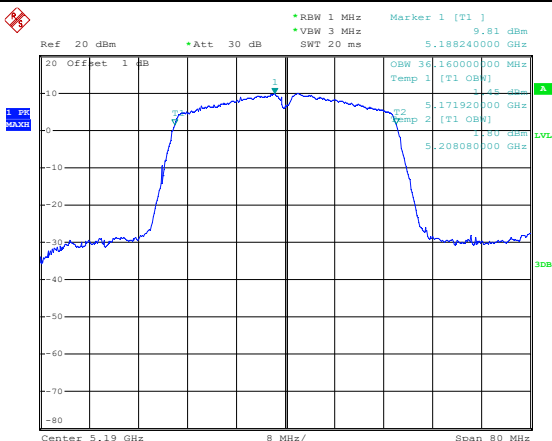
802.11ac-VHT40-High	 Date: 22.NOV.2025 15:00:15
802.11ac-VHT80	 Date: 22.NOV.2025 15:01:12

5150-5250MHz

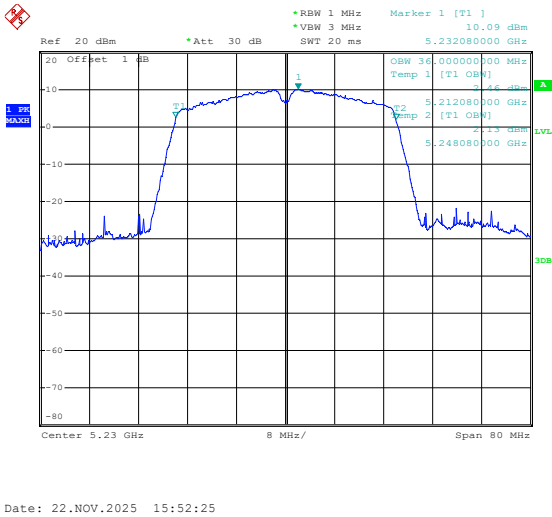
802.11a-Low	 Date: 22.NOV.2025 15:46:21
802.11a-Middle	 Date: 22.NOV.2025 15:48:03
802.11a-High	 Date: 22.NOV.2025 15:48:25

802.11n-HT20-Low	 Date: 22.NOV.2025 15:48:39
802.11n-HT20-Middle	 Date: 22.NOV.2025 15:49:15
802.11n-HT20-High	 Date: 22.NOV.2025 15:49:36

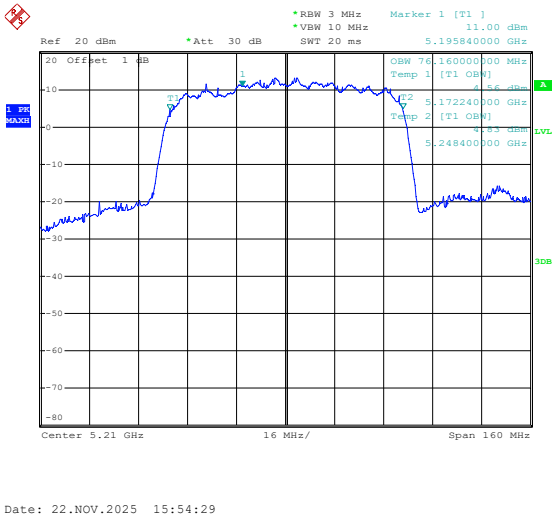
802.11n-HT40-Low	 Ref 20 dBm *Att 30 dB SWT 20 ms Marker 1 [T1] 5.191920000 GHz 9.78 dBm OSW 36.320000000 MHz Temp 1 [T1 OBW] 1.42 dBm Temp 2 [T1 OBW] 5.171920000 GHz 1.33 dBm Temp 3 [T1 OBW] 5.208240000 GHz 1.33 dBm Center 5.19 GHz 8 MHz/ Span 80 MHz Date: 22.NOV.2025 15:51:00
802.11n-HT40-High	 Ref 20 dBm *Att 30 dB SWT 20 ms Marker 1 [T1] 5.232080000 GHz 10.28 dBm OSW 36.320000000 MHz Temp 1 [T1 OBW] 1.01 dBm Temp 2 [T1 OBW] 5.211920000 GHz 1.30 dBm Temp 3 [T1 OBW] 5.248240000 GHz 1.30 dBm Center 5.23 GHz 8 MHz/ Span 80 MHz Date: 22.NOV.2025 15:51:29
802.11ac-VHT20-Low	 Ref 20 dBm *Att 30 dB SWT 20 ms Marker 1 [T1] 5.181440000 GHz 7.49 dBm OSW 18.640000000 MHz Temp 1 [T1 OBW] 1.11 dBm Temp 2 [T1 OBW] 5.170640000 GHz 1.19 dBm Temp 3 [T1 OBW] 5.189280000 GHz 1.19 dBm Center 5.18 GHz 4 MHz/ Span 40 MHz Date: 22.NOV.2025 14:54:44

802.11ac-VHT20-Middle	 Date: 22.NOV.2025 15:50:06
802.11ac-VHT20-High	 Date: 22.NOV.2025 15:50:21
802.11ac-VHT40-Low	 Date: 22.NOV.2025 15:52:03

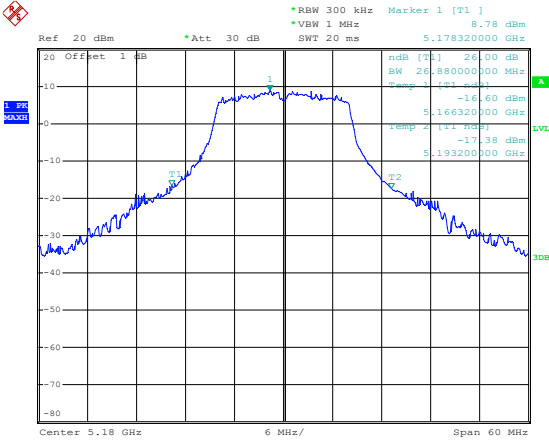
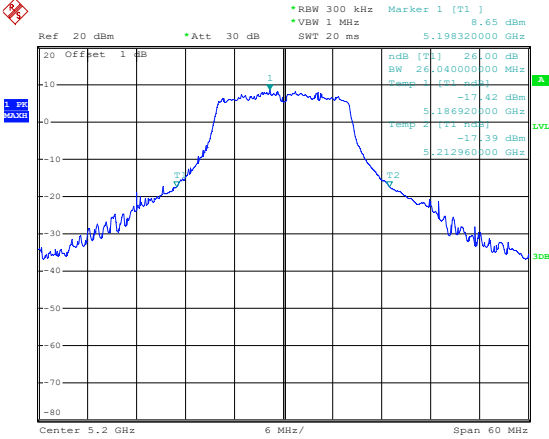
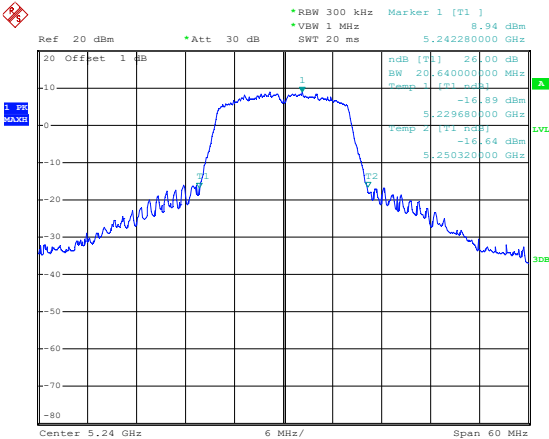
802.11ac-VHT40-High



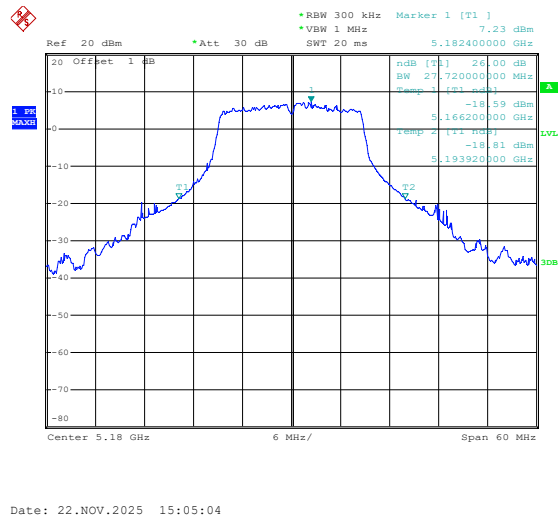
802.11ac-VHT80



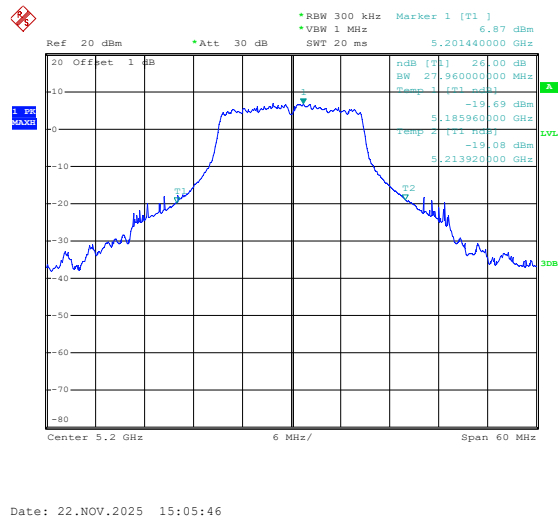
ANT 2
-26dBm Bandwidth MHz
5150-5250MHz

802.11a-Low	 Date: 22.NOV.2025 15:02:43
802.11a-Middle	 Date: 22.NOV.2025 15:03:09
802.11a-High	 Date: 22.NOV.2025 15:04:32

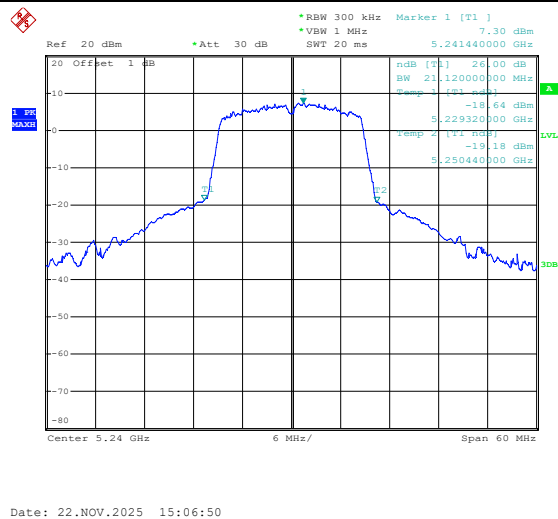
802.11n-HT20-Low



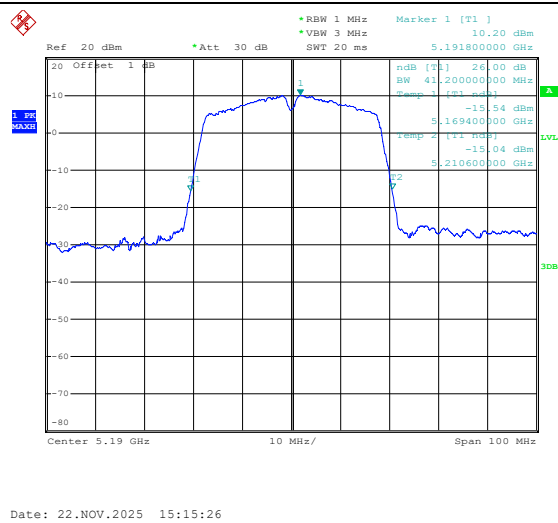
802.11n-HT20-Middle



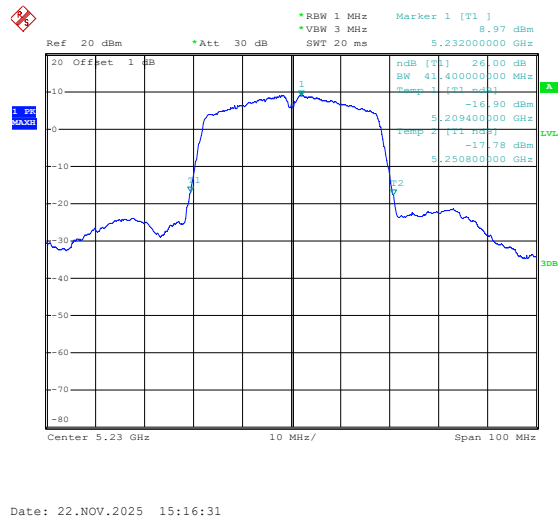
802.11n-HT20-High



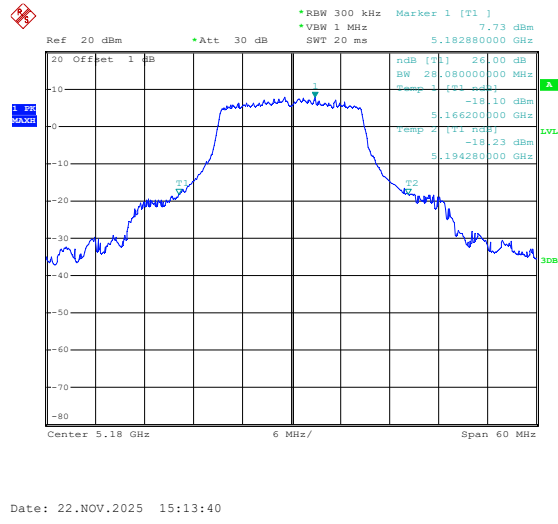
802.11n-HT40-Low

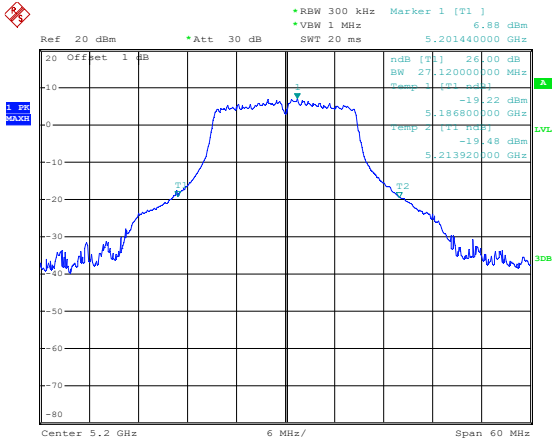
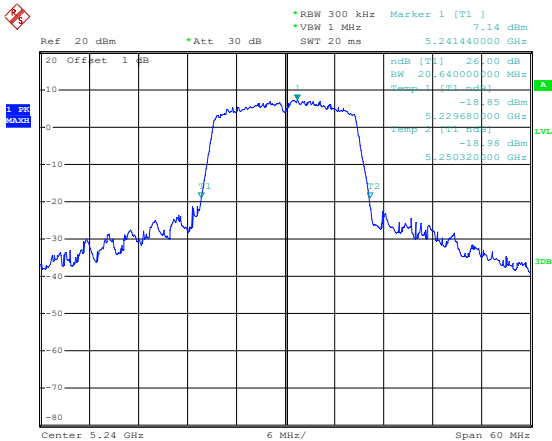
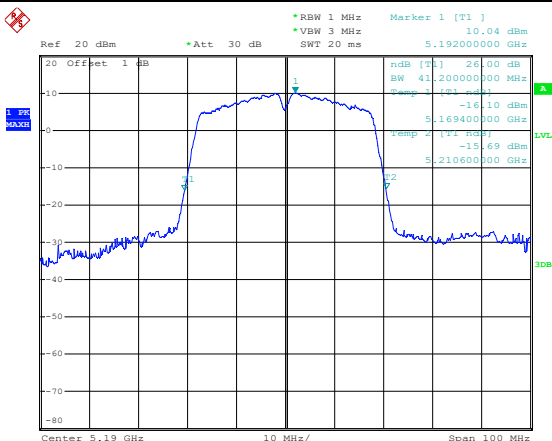


802.11n-HT40-High

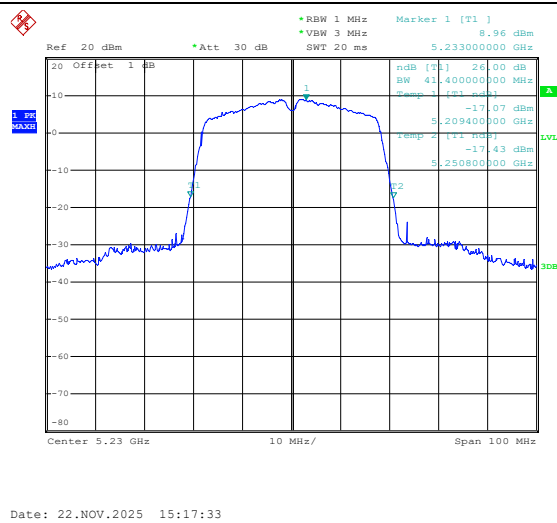


802.11ac-VHT20-Low

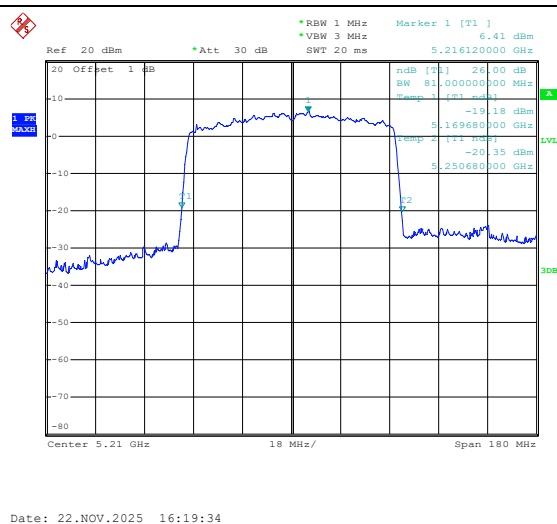


802.11ac-VHT20-Middle	 Ref 20 dBm *Att 30 dB SWT 20 ms 5.201440000 GHz ndB [T1] 26.00 dB BW 20.120000000 MHz Temp 1 [T1] -19.22 dBm Temp 2 [T2] -19.48 dBm Center 5.2 GHz 6 MHz/ Span 60 MHz Date: 22.NOV.2025 15:14:00
802.11ac-VHT20-High	 Ref 20 dBm *Att 30 dB SWT 20 ms 5.241440000 GHz ndB [T1] 26.00 dB BW 20.164000000 MHz Temp 1 [T1] -18.85 dBm Temp 2 [T2] -18.98 dBm Center 5.24 GHz 6 MHz/ Span 60 MHz Date: 22.NOV.2025 15:14:31
802.11ac-VHT40-Low	 Ref 20 dBm *Att 30 dB SWT 20 ms 5.192000000 GHz ndB [T1] 26.00 dB BW 41.200000000 MHz Temp 1 [T1] -16.10 dBm Temp 2 [T2] -15.69 dBm Center 5.19 GHz 10 MHz/ Span 100 MHz Date: 22.NOV.2025 15:16:54

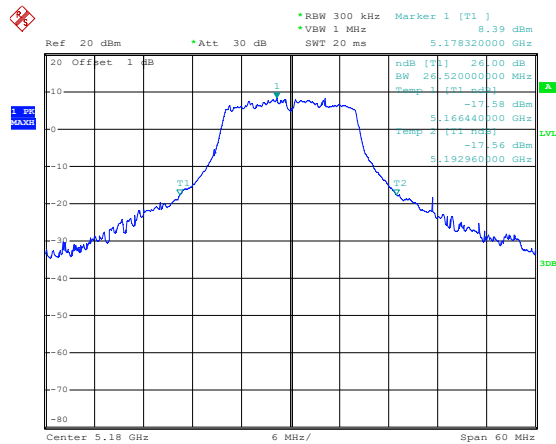
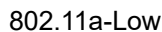
802.11ac-VHT40-High



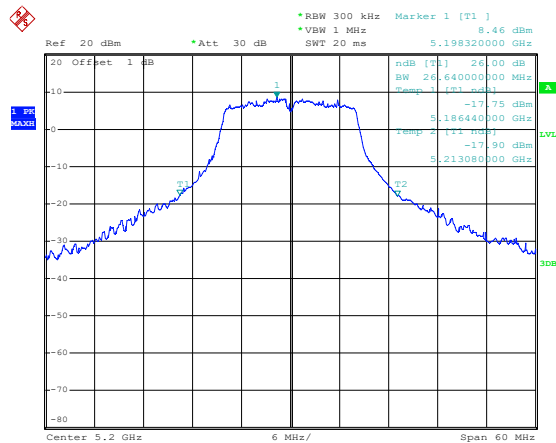
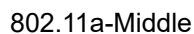
802.11ac-VHT80



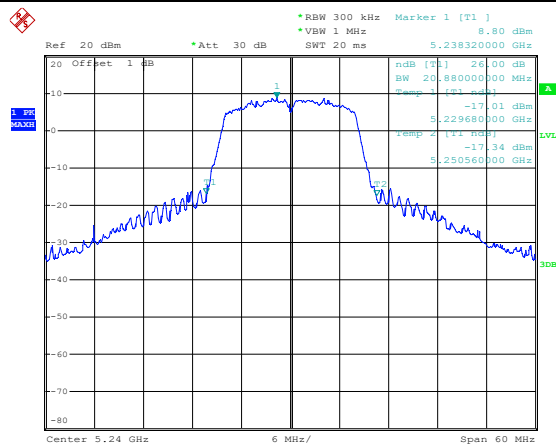
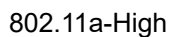
5150-5250MHz



Date: 22.NOV.2025 15:55:32

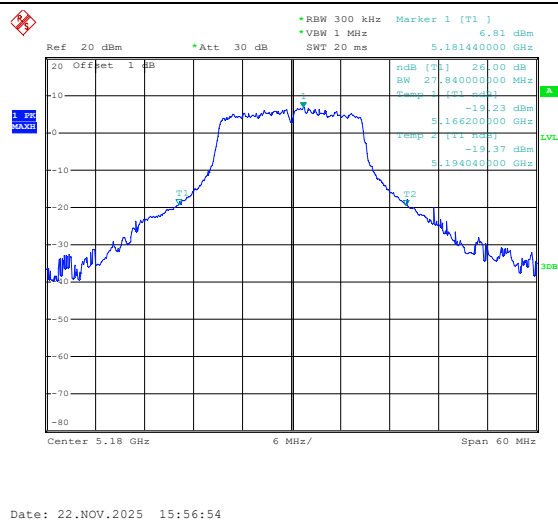


Date: 22.NOV.2025 15:55:58

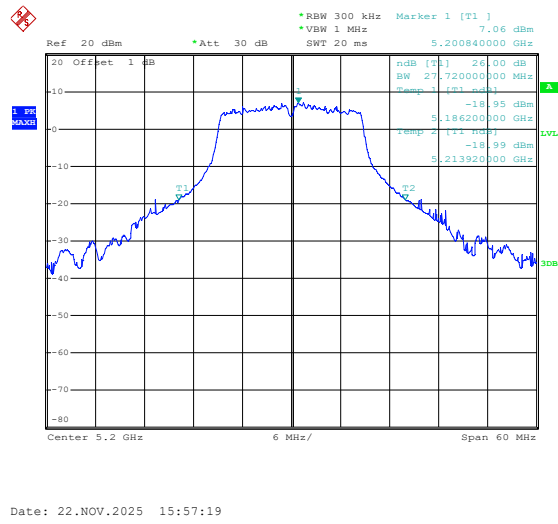


Date: 22.NOV.2025 15:56:28

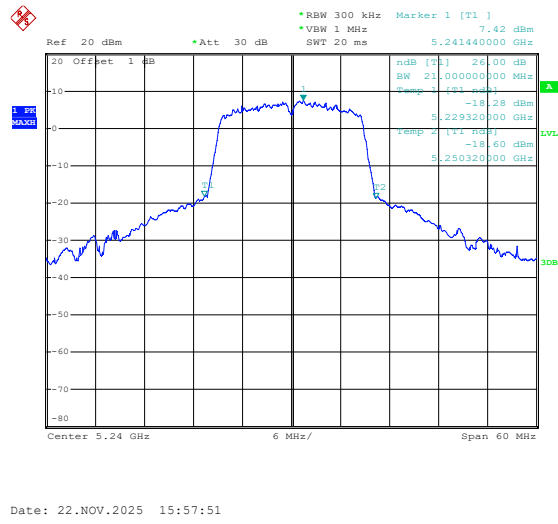
802.11n-HT20-Low

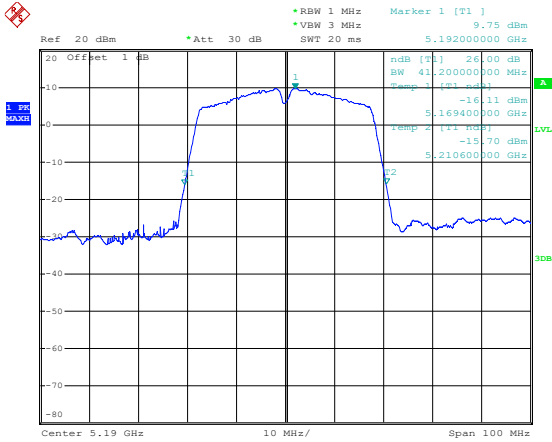
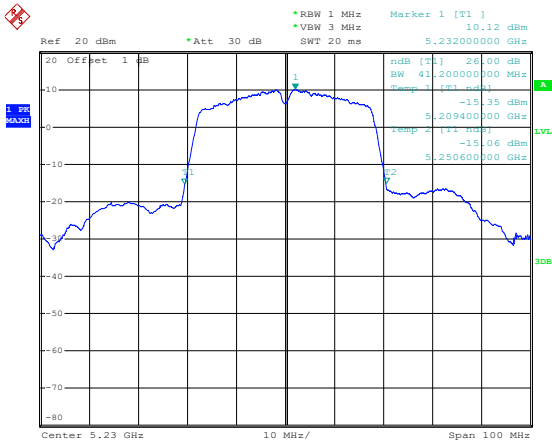
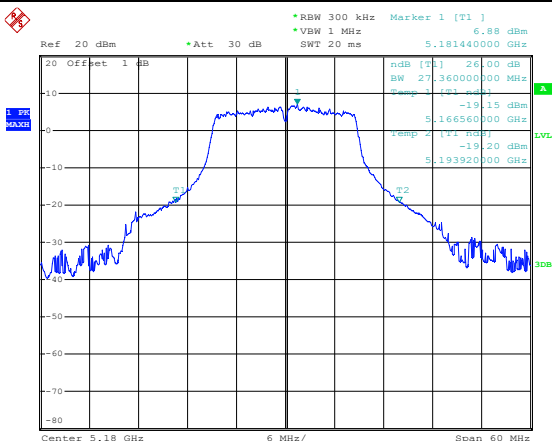


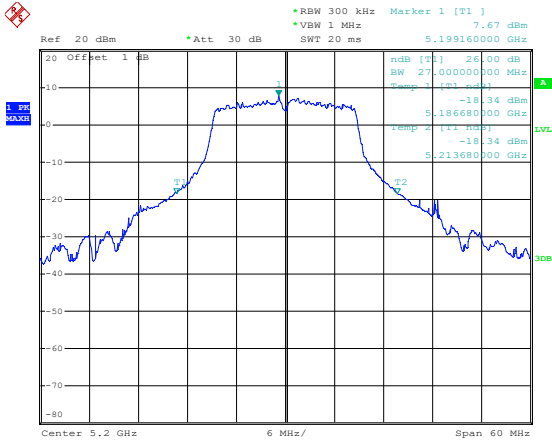
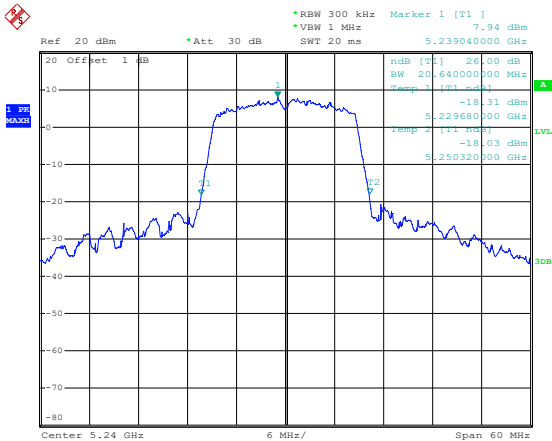
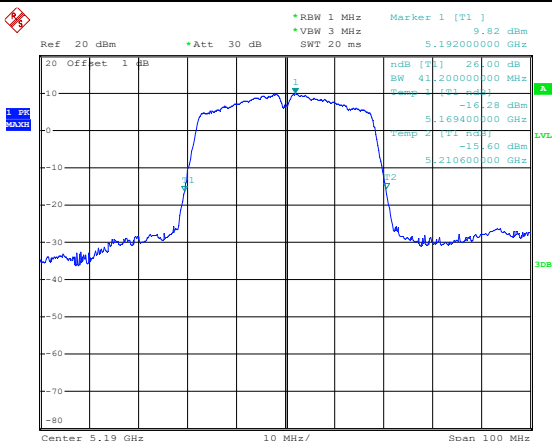
802.11n-HT20-Middle

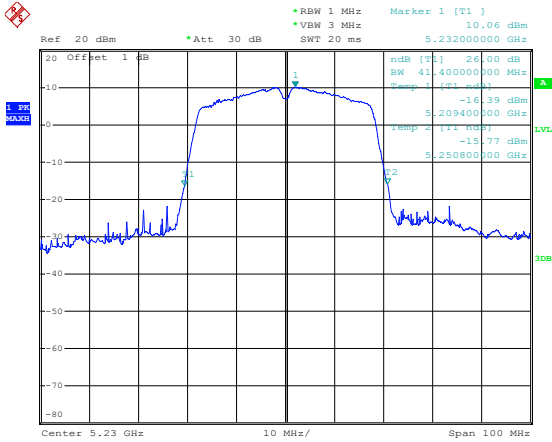
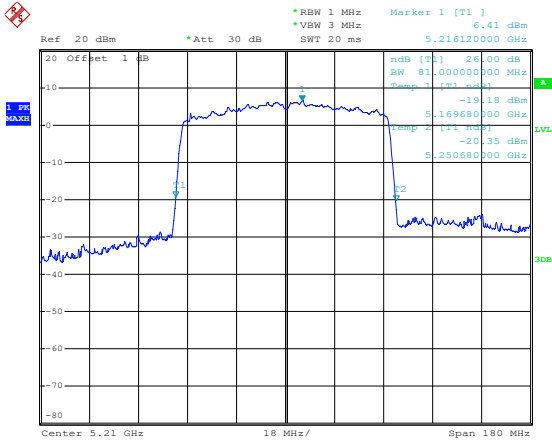


802.11n-HT20-High



802.11n-HT40-Low	 Date: 22.NOV.2025 16:02:03
802.11n-HT40-High	 Date: 22.NOV.2025 16:02:28
802.11ac-VHT20-Low	 Date: 22.NOV.2025 15:58:12

802.11ac-VHT20-Middle	 Date: 22.NOV.2025 15:58:50
802.11ac-VHT20-High	 Date: 22.NOV.2025 15:59:32
802.11ac-VHT40-Low	 Date: 22.NOV.2025 16:02:55

802.11ac-VHT40-High	 Ref 20 dBm *Att 30 dB SWT 20 ms 5.232000000 GHz Marker 1 [T1] 10.06 dBm ndB [T1] 26.00 dB BW 41.40000000 MHz Sweep 1 [T1] 5.232000000 GHz -16.39 dBm 5.209400000 GHz Temp 2 [T1] 5.250800000 GHz -15.77 dBm Center 5.23 GHz 10 MHz/ Span 100 MHz Date: 22.NOV.2025 16:03:39
802.11ac-VHT80	 Ref 20 dBm *Att 30 dB SWT 20 ms 5.216120000 GHz Marker 1 [T1] 6.41 dBm ndB [T1] 26.00 dB BW 81.00000000 MHz Sweep 1 [T1] 5.216120000 GHz -19.18 dBm 5.169680000 GHz Temp 2 [T1] 5.250680000 GHz -20.35 dBm Center 5.21 GHz 18 MHz/ Span 180 MHz Date: 22.NOV.2025 16:19:34

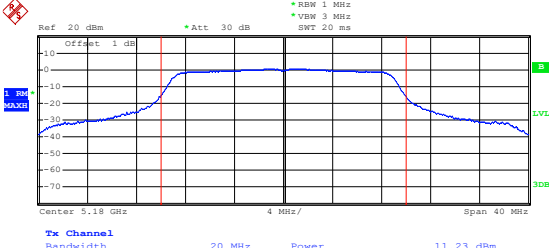
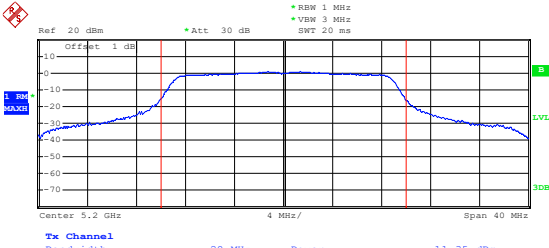
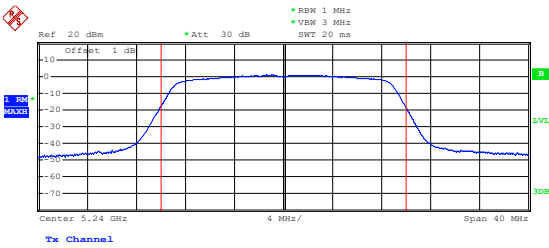
APPENDIX C

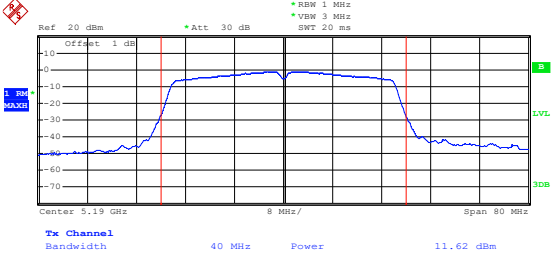
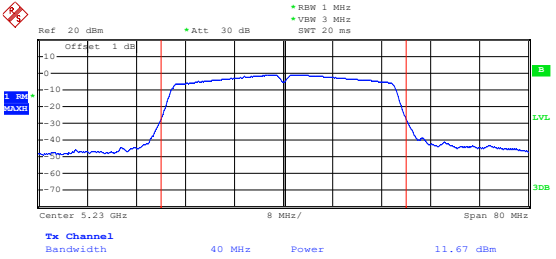
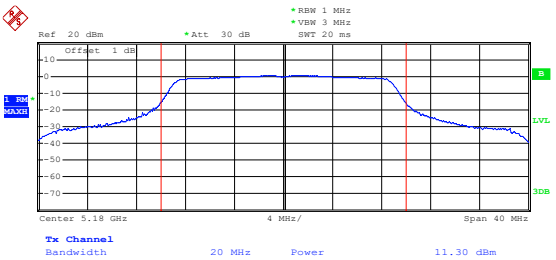
Maximum Conducted Output Power

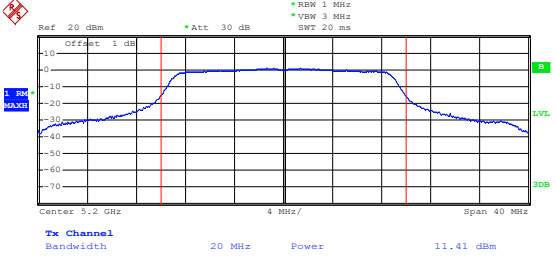
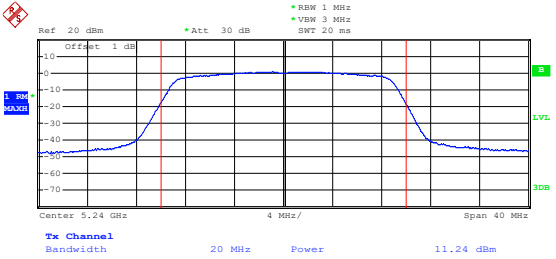
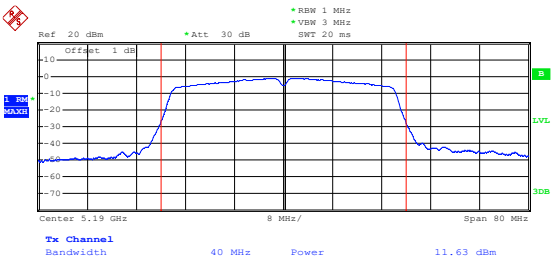
U-NII-1:5150-5250MHz					
Test mode	Frequency MHz	Output Power dBm		Total dBm	Limit dBm
		ANT 1	ANT 2		
802.11a	5180	12.31	12.87	/	23.98
	5200	12.42	12.83	/	23.98
	5240	12.30	12.38	/	23.98
802.11n-HT20	5180	11.23	11.69	14.48	23.98
	5200	11.35	11.84	14.61	23.98
	5240	11.21	11.28	14.26	23.98
802.11n-HT40	5190	11.62	11.50	14.57	23.98
	5230	11.67	10.71	14.23	23.98
802.11ac-VHT20	5180	11.30	11.70	14.51	23.98
	5200	11.41	11.82	14.63	23.98
	5240	11.24	11.28	14.27	23.98
802.11ac-VHT40	5190	11.63	11.57	14.61	23.98
	5230	11.70	10.67	14.23	23.98
802.11ac VH80	5210	11.49	11.58	14.55	23.98

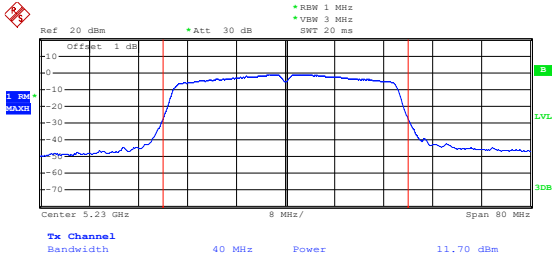
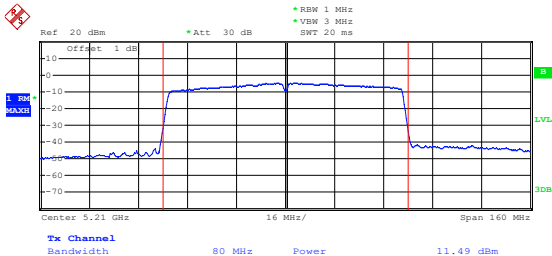
ANT 1
5150-5250MHz

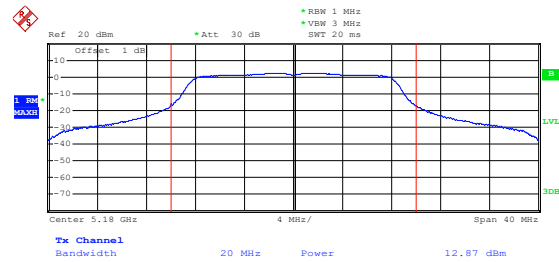
802.11a-Low	Date: 4.DEC.2025 14:13:43
802.11a-Middle	Date: 4.DEC.2025 14:14:10
802.11a-High	Date: 4.DEC.2025 14:14:39

802.11n-HT20-Low	 Ref 20 dBm *Att 30 dB RBW 1 MHz Offset 1 dB VBW 3 MHz SWT 20 ms Center 5.18 GHz 4 MHz/ Span 40 MHz Tx Channel Bandwidth 20 MHz Power 11.23 dBm Date: 4.DEC.2025 14:15:33
802.11n-HT20-Middle	 Ref 20 dBm *Att 30 dB RBW 1 MHz Offset 1 dB VBW 3 MHz SWT 20 ms Center 5.2 GHz 4 MHz/ Span 40 MHz Tx Channel Bandwidth 20 MHz Power 11.35 dBm Date: 4.DEC.2025 14:16:01
802.11n-HT20-High	 Ref 20 dBm *Att 30 dB RBW 1 MHz Offset 1 dB VBW 3 MHz SWT 20 ms Center 5.24 GHz 4 MHz/ Span 40 MHz Tx Channel Bandwidth 20 MHz Power 11.21 dBm Date: 4.DEC.2025 14:16:27

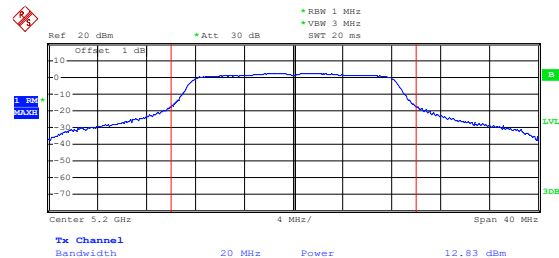
802.11n-HT40-Low	 Ref 20 dBm *Att 30 dB RBW 1 MHz VBW 3 MHz SWT 20 ms Offset 1 dB Center 5.19 GHz 8 MHz/ Span 80 MHz Tx Channel Bandwidth 40 MHz Power 11.62 dBm 1 dB 3 dB 30 dB Date: 4.DEC.2025 14:19:01
802.11n-HT40-High	 Ref 20 dBm *Att 30 dB RBW 1 MHz VBW 3 MHz SWT 20 ms Offset 1 dB Center 5.23 GHz 8 MHz/ Span 80 MHz Tx Channel Bandwidth 40 MHz Power 11.67 dBm 1 dB 3 dB 30 dB Date: 4.DEC.2025 14:20:46
802.11ac-VHT20-Low	 Ref 20 dBm *Att 30 dB RBW 1 MHz VBW 3 MHz SWT 20 ms Offset 1 dB Center 5.18 GHz 4 MHz/ Span 40 MHz Tx Channel Bandwidth 20 MHz Power 11.30 dBm 1 dB 3 dB 30 dB Date: 4.DEC.2025 14:17:14

802.11ac-VHT20-Middle	 Date: 4.DEC.2025 14:17:46
802.11ac-VHT20-High	 Date: 4.DEC.2025 14:18:08
802.11ac-VHT40-Low	 Date: 4.DEC.2025 14:21:19

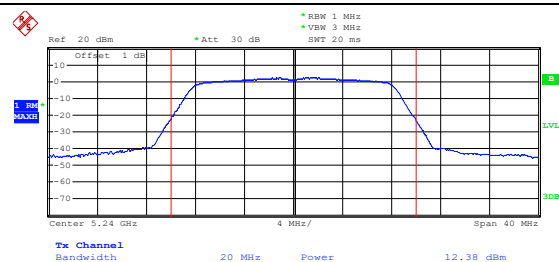
802.11ac-VHT40-High	 Date: 4.DEC.2025 14:21:51
802.11ac-VHT80	 Date: 4.DEC.2025 14:22:34



802.11a-Middle

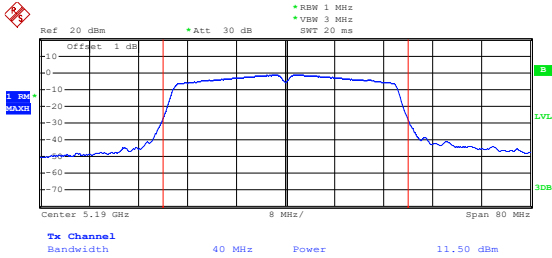
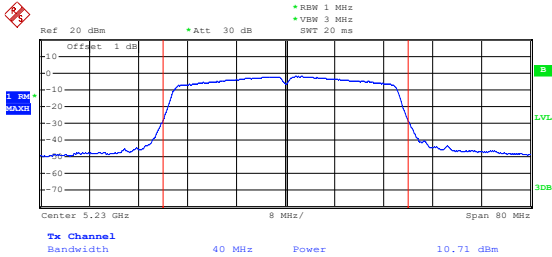
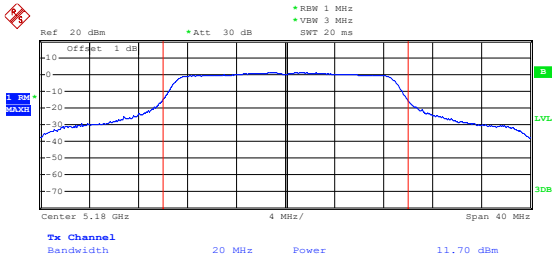


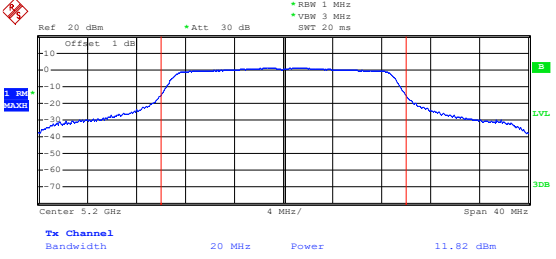
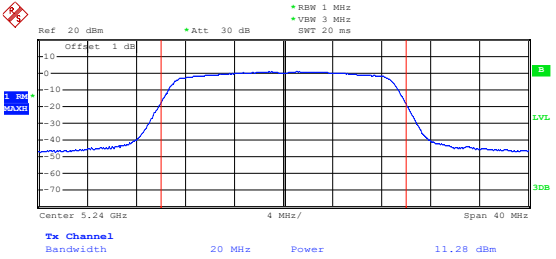
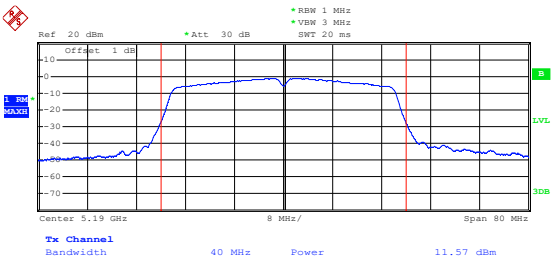
802.11a-High

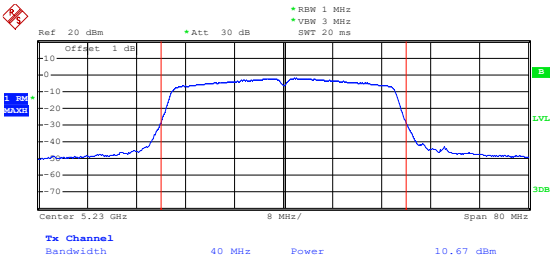
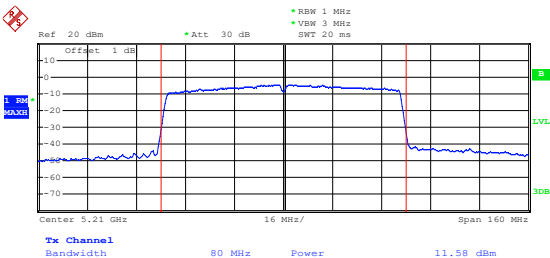


Waltek Testing Group (Shenzhen) Co., Ltd.
Http://www.waltek.com.cn

802.11n-HT20-Low	Date: 4.DEC.2025 14:31:03
802.11n-HT20-Middle	Date: 4.DEC.2025 14:31:26
802.11n-HT20-High	Date: 4.DEC.2025 14:31:49

802.11n-HT40-Low	 Ref 20 dBm *Att 30 dB *RBW 1 MHz *VBW 3 MHz *SWT 20 ms Offset 1 dB Center 5.19 GHz 8 MHz/ Span 80 MHz Tx Channel Bandwidth 40 MHz Power 11.50 dBm Date: 4.DEC.2025 14:37:13
802.11n-HT40-High	 Ref 20 dBm *Att 30 dB *RBW 1 MHz *VBW 3 MHz *SWT 20 ms Offset 1 dB Center 5.23 GHz 8 MHz/ Span 80 MHz Tx Channel Bandwidth 40 MHz Power 10.71 dBm Date: 4.DEC.2025 14:37:46
802.11ac-VHT20-Low	 Ref 20 dBm *Att 30 dB *RBW 1 MHz *VBW 3 MHz *SWT 20 ms Offset 1 dB Center 5.18 GHz 4 MHz/ Span 40 MHz Tx Channel Bandwidth 20 MHz Power 11.70 dBm Date: 4.DEC.2025 14:33:51

802.11ac-VHT20-Middle	 Date: 4.DEC.2025 14:34:19
802.11ac-VHT20-High	 Date: 4.DEC.2025 14:35:10
802.11ac-VHT40-Low	 Date: 4.DEC.2025 14:38:11

802.11ac-VHT40-High	 Ref 20 dBm *Att 30 dB *RBW 1 MHz Offset 1 dB *VBW 3 MHz SWT 20 ms 1 dB 3 dB 10 dB Center 5.23 GHz 8 MHz/ Span 80 MHz Tx Channel Bandwidth 40 MHz Power 10.67 dBm Date: 4.DEC.2025 14:38:30
802.11ac-VHT80	 Ref 20 dBm *Att 30 dB *RBW 1 MHz Offset 1 dB *VBW 3 MHz SWT 20 ms 1 dB 3 dB 10 dB Center 5.21 GHz 16 MHz/ Span 160 MHz Tx Channel Bandwidth 80 MHz Power 11.58 dBm Date: 4.DEC.2025 14:38:57

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%	5.0	-30	491	0.094
100%		-20	492	0.095
100%		-10	504	0.097
100%		0	492	0.095
100%		+10	493	0.095
100%		+20	507	0.098
100%		+30	502	0.097
100%		+40	491	0.094
100%		+50	506	0.097
Low Battery power	4.25	+20	492	0.095
High Battery power	5.75	+20	509	0.098

APPENDIX PHOTOGRAPHS

Please refer to “ANNEX”

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