

TEST REPORT

Reference No...... : WTH26X04103020W001
FCC ID..... : 2AA3I-0024
Applicant..... : StarTech.com Ltd.
Address..... : 45 Artisans Crescent London, ON N5V 5E9 Canada
Manufacturer..... : The same as Applicant
Address..... : The same as Applicant
Product Name..... : HDMI Over Wireless Extender 4K60Hz 20m(65ft)
Model No...... : 4KHDMI-WIRELESS-65FT-RX
Standards..... : FCC Part 15.407
Date of Receipt sample..... : 2026-04-16
Date of Test..... : 2026-05-07 to 2026-05-30
Date of Issue..... : 2026-06-10
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.

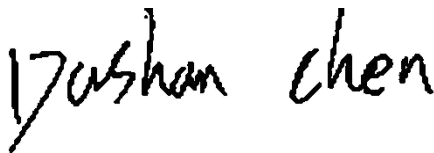
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Report version

Version No.	Date of issue	Description
Rev.00	2026-06-10	Original
/	/	/

1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

General Description of EUT	
Product Name:	HDMI Over Wireless Extender 4K60Hz 20m(65ft)
Trade Name:	StarTech.com
Model No.:	4KHDMI-WIRELESS-65FT-RX
Adding Model(s):	/
Rated Voltage:	DC5V
Battery Capacity:	/
Power Adapter:	/
<i>Note: The sample information is provided by the customer.</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 0:16.23dBm (Conducted) Antenna 1:14.73dBm (Conducted) MIMO:17.51dBm (Conducted)
Type of Modulation:	QPSK, 16QAM, 64QAM, 256QAM
Type of Antenna:	FPC Antenna
Antenna Gain:	Antenna 0:1.76dBi Antenna 1:2.86dBi
<i>Note: 1: The Antenna Gain is provided by the customer and can affect the validity of results.</i> <i>2: The data 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	15	15	15									
802.11n-HT20 MCS0	13	13	13									
802.11ac-VHT2 0MCS0	13	13	13									
Mode	NCB: 40MHz											
	5190	5230										
802.11n-HT40 MCS0	13	13										
802.11ac-VHT4	12	12										

0MCS0										
Mode	NCB: 80MHz									
	5210									
802.11ac-VHT8 0MCS0/Nss2	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, 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
Note 1: All test modes (different data rate and different modulation) are performed, but only the worst case is recorded in this report. Note 2: The 5GHz WIFI has two antennas and support Multiple Outputs for 802.11n/ac mode for this report; Antenna 0 Gain is 1.76dBi; Antenna 1 Gain is 2.86dBi; According to KDB 662911, Directional gain = $10 \log[(10^{G_0/20} + 10^{G_1/20} + \dots + 10^{G_N/20})^2 / N_{ANT}]$ dBi=5.34dBi		

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

EUT Cable List and Details			
Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite
DC Cable	0.95	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	Lenkeng	4KHDMI-WIRELESS-65FT-TX	/
HDMI Wireless Extender	Lenkeng	4KUSBC-WIRELESS-65FT-TX	/

1.8 Measurement Uncertainty

Measurement uncertainty		
Parameter	Conditions	Uncertainty
RF Output Power	Conducted	$\pm 0.57\text{dB}$
Occupied Bandwidth	Conducted	$\pm 0.015\text{MHz}$
Power Spectral Density	Conducted	$\pm 1.8\text{dB}$
Conducted Spurious Emission	Conducted	$\pm 2.17\text{dB}$
Conducted Emission 1#	Conducted	@9kHz to 150kHz: $\pm 3.74\text{dB}$
		@150kHz to 30MHz: $\pm 3.34\text{dB}$
Conducted Emission 2#	Conducted	@9kHz to 150kHz: $\pm 3.74\text{dB}$
		@150kHz to 30MHz: $\pm 3.34\text{dB}$
Transmitter Spurious Emissions chamber A	Radiated	@9kHz to 30MHz: $\pm 3.0\text{dB}$
		@30MHz to 1GHz: $\pm 5.70\text{dB}$
		@1GHz to 6GHz: $\pm 5.88\text{dB}$
		@6GHz to 18GHz: $\pm 5.96\text{dB}$
		@18GHz to 40GHz: $\pm 6.12\text{dB}$
Transmitter Spurious Emissions chamber B	Radiated	@30MHz to 1GHz: $\pm 5.36\text{dB}$
Transmitter Spurious Emissions chamber C	Radiated	@9kHz to 30MHz: $\pm 3.0\text{dB}$
		@30MHz to 1GHz: $\pm 5.28\text{dB}$
		@1GHz to 6GHz: $\pm 5.56\text{dB}$
		@6GHz to 18GHz: $\pm 5.72\text{dB}$
		@18GHz to 40GHz: $\pm 6.12\text{dB}$

1.9 Test Equipment List and Details

Internal No.	Description	Manufacturer	Model	Serial No.	Cal Date	Due. Date
WTXE1041A 1002	Communication Tester	Rohde & Schwarz	CMW500	1201.0002 k50-14865 0-FB	2026-03-25	2027-03-24
WTXE1005A 1005	MXA Signal Analyzer	Agilent	N9020A	US471401 02	2026-03-25	2027-03-24
WTXE1084A 1001	MXA Signal Analyzer	KEYSIGHT	N9020A	MY543205 48	2026-02-06	2027-02-05
WTXE1005A 1006	Spectrum Analyzer	Rohde & Schwarz	FSP40	1164.4391 K38Ser. 100368	2026-04-29	2027-04-28
WTXW1105A 1010	MXA signal Analyzer	KEYSIGHT	N9020A	MY512856 78	2026-02-06	2027-02-05
WTXE1105A 1008	RF Control Unit	Tonscend	JS0806-2	/	2026-02-06	2027-02-05
WTXW1105A 1136	RF ATTENUATOR	FEIYANG	N-JK	/	2026-02-06	2027-02-05
WTXE1003A 1-005	Coaxial Cable	/	0M4RFC	/	2026-02-23	2027-02-22
☐ Chamber A: Below 1GHz						
WTXE1005A 1003	Spectrum Analyzer	Rohde & Schwarz	FSP30	836079/03 5	2026-02-05	2027-02-04
WTXE1001A 1001	EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2026-02-05	2027-02-04
WTXE1007A 1002	Amplifier	HP	8447F	2805A034 75	2026-02-05	2027-02-04
WTXE1010A 1007	Loop Antenna	Schwarz beck	FMZB 1516	9773	2026-02-05	2027-02-04
WTXE1010A 1006	Broadband Antenna	Schwarz beck	VULB9163	9163-333	2026-03-11	2029-03-10
WTXE1104A 1032-1	Coaxial Cable	/	RC_6G-N-M	/	2026-02-23	2027-02-22
WTXE1104A 1032-2	Coaxial Cable	/	RC_6G-N-M	/	2026-02-23	2027-02-22
WTXE1104A 1032-3	Coaxial Cable	/	RC_6G-N-M	/	2026-02-23	2027-02-22
☐ Chamber A: Above 1GHz						
WTXE1005A 1003	Spectrum Analyzer	Rohde & Schwarz	FSP30	836079/03 5	2026-02-05	2027-02-04
WTXE1001A	EMI Test	Rohde &	ESPI	101611	2026-02-05	2027-02-04

1001	Receiver	Schwarz				
WTXE1065A 1001	Amplifier	C&D	PAP-1.0G18	14918	2026-02-05	2027-02-04
WTXE1010A 1005	Horn Antenna	ETS	3117	00086197	2026-02-05	2027-02-04
WTXE1010A 1010	DRG Horn Antenna	A.H. SYSTEMS	SAS-574	571	2026-02-10	2027-02-09
WTXE1003A 1001	Pre-amplifier	Schwarzbeck	BBV 9721	9721-031	2026-02-05	2027-02-04
WTXE1104A 1033-1	Coaxial Cable	/	C16-07-07	/	2026-02-23	2027-02-22
WTXE1104A 1033-2	Coaxial Cable	/	C16-07-07	/	2026-02-23	2027-02-22
WTXE1104A 1033-3	Coaxial Cable	/	C16-07-07	/	2026-02-23	2027-02-22
☐ 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	2026-02-05	2027-02-04
WTXE1001A 1002	EMI Test Receiver	Rohde & Schwarz	ESPI	101391	2026-02-05	2027-02-04
WTXE1104A 1031-1	Coaxial Cable	/	1.5MRFC-LWB3	/	2026-02-23	2027-02-22
WTXE1104A 1031-2	Coaxial Cable	/	RG 316	/	2026-02-23	2027-02-22
WTXE1104A 1031-3	Coaxial Cable	/	RG 316	/	2026-02-23	2027-02-22
☒ Chamber C:Below 1GHz						
WTXE1093A 1001	EMI Test Receiver	Rohde & Schwarz	ESIB 26	100401	2026-02-05	2027-02-04
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	2026-02-05	2027-02-04
WTXE1007A 1003	Amplifier	HP	8447F	2944A038 69	2026-02-05	2027-02-04
WTXE1104A 1034-1	Coaxial Cable	/	RC_6G-N-M	/	2026-02-23	2027-02-22
WTXE1104A	Coaxial Cable	/	RC_6G-N-M	/	2026-02-23	2027-02-22

1034-2						
WTXE1104A 1034-3	Coaxial Cable	/	RC_6G-N-M	/	2026-02-23	2027-02-22
☒ Chamber C: Above 1GHz						
WTXE1093A 1001	EMI Test Receiver	Rohde & Schwarz	ESIB 26	100401	2026-02-05	2027-02-04
WTXE1103A 1005	Horn Antenna	POAM	RTF-118A	1820	2025-06-13	2027-06-12
WTXE1103A 1006	Amplifier	Tonscend	TAP01018050	AP22E806 235	2026-02-05	2027-02-04
WTXE1010A 1010	DRG Horn Antenna	A.H. SYSTEMS	SAS-574	571	2026-02-10	2027-02-09
WTXE1003A 1001	Pre-amplifier	Schwarzbeck	BBV 9721	9721-031	2026-02-05	2027-02-04
WTXE1104A 1035-1	Coaxial Cable	/	RC-18G-N-M	/	2026-02-23	2027-02-22
WTXE1104A 1035-2	Coaxial Cable	/	RC-18G-N-M	/	2026-02-23	2027-02-22
WTXE1104A 1035-3	Coaxial Cable	/	RC-18G-N-M	/	2026-02-23	2027-02-22
☐ Conducted Room 1#						
WTXE1104A 1029	EMI Test Receiver	Rohde & Schwarz	ESCI	100525	2025-11-25	2026-11-24
WTXE1002A 1001	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2026-02-05	2027-02-04
WTXE1003A 1001	AC LISN	Schwarz beck	NSLK8126	8126-279	2026-02-05	2027-02-04
WTXE1104A 1036	Coaxial Cable	/	RG 316	/	2026-02-23	2027-02-22
WTXE1104A 1038	Coaxial Cable	/	6MRFC-DP	/	2026-02-23	2027-02-22
☒ Conducted Room 2#						
WTXE1001A 1004	EMI Test Receiver	Rohde & Schwarz	ESPI	101259	2026-02-05	2027-02-04
WTXE1003A 1003	LISN	Rohde & Schwarz	ENV 216	100097	2026-02-05	2027-02-04
WTXE1104A 1037	Coaxial Cable	/	RG 316	/	2026-02-23	2027-02-22

Software List			
Description	Manufacturer	Model	Version
EMI Test Software/EZ-EMC (Radiated Emission A)	Farad	RA-03A1	1.1.4.2
EMI Test Software/EZ-EMC (Radiated Emission B)	Farad	RA-03A1	1.1.4.2
EMI Test Software/EZ-EMC (Radiated Emission C)	Farad	RA-03A1-2	1.1.4.2
EMI Test Software/EZ-EMC (Conducted Emission Room 1#)	Farad	3A1*CE-RE	1.1.4.3
EMI Test Software/EZ-EMC (Conducted Emission Room 2#)	Farad	3A1*CE-RE	1.1.4.3
RF Test System	Tonscend	JS1120-3	V3.5.39

*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 FPC 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 D

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.: WTH26X04103020W001

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 A

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 colocated 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.

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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.

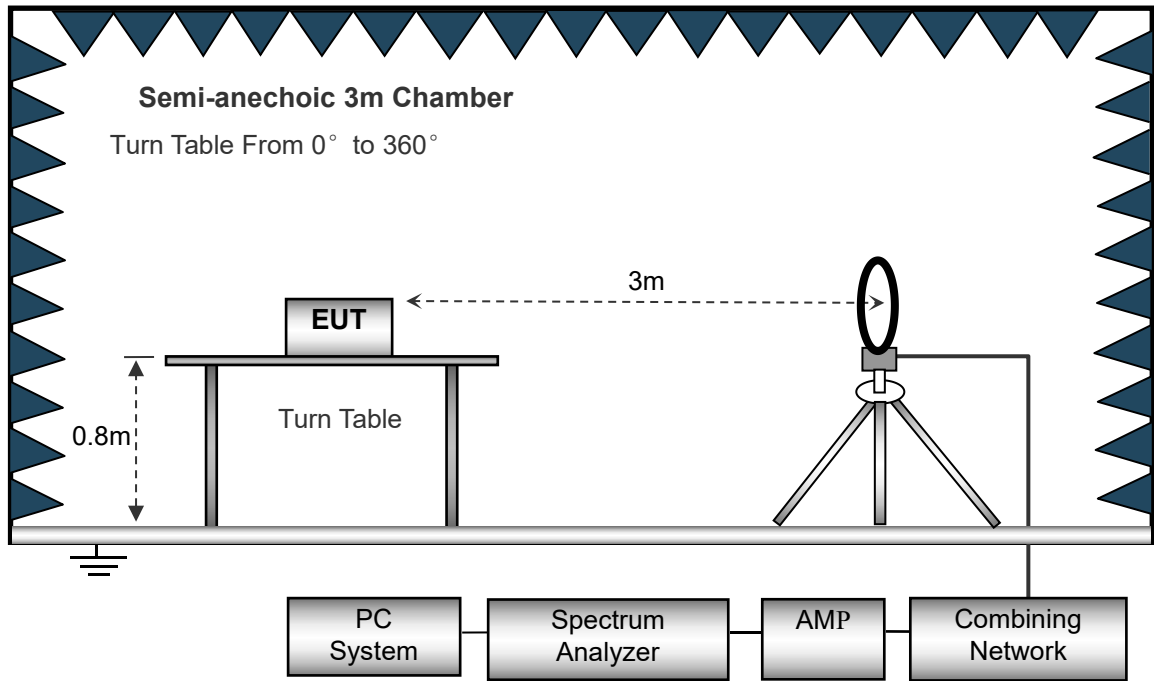
8.2 Test Procedure

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

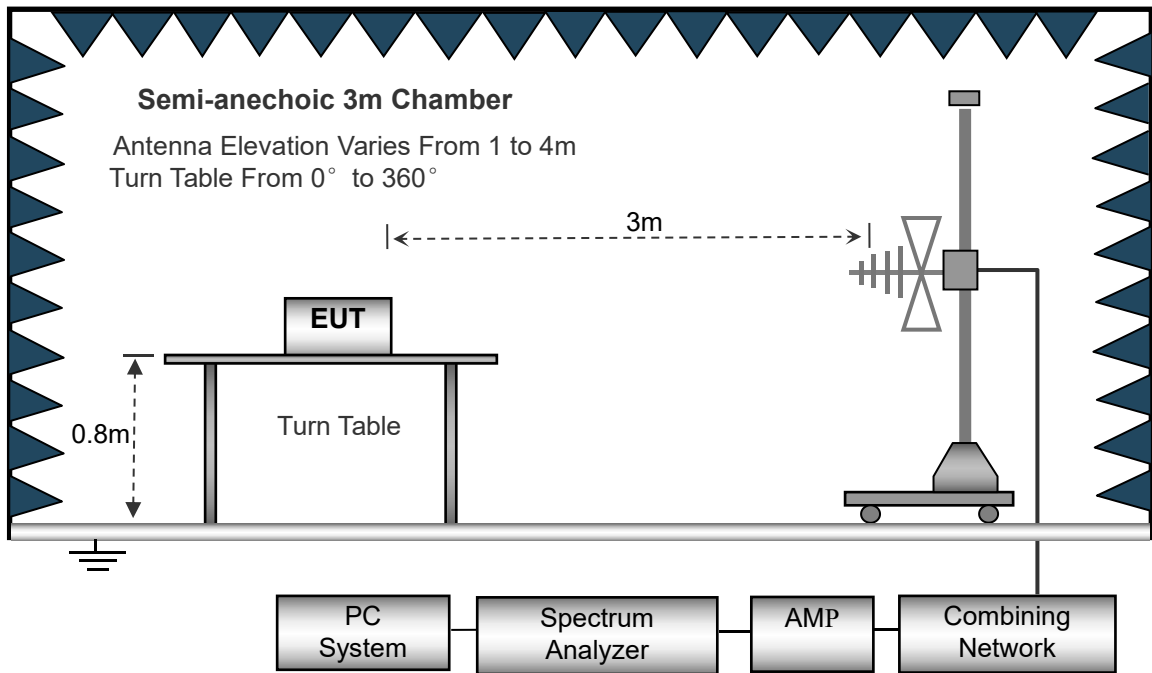
The external I/O cables were draped along the test table and formed a bundle 30 to 40cm long in the middle.

The spacing between the peripherals was 10cm.

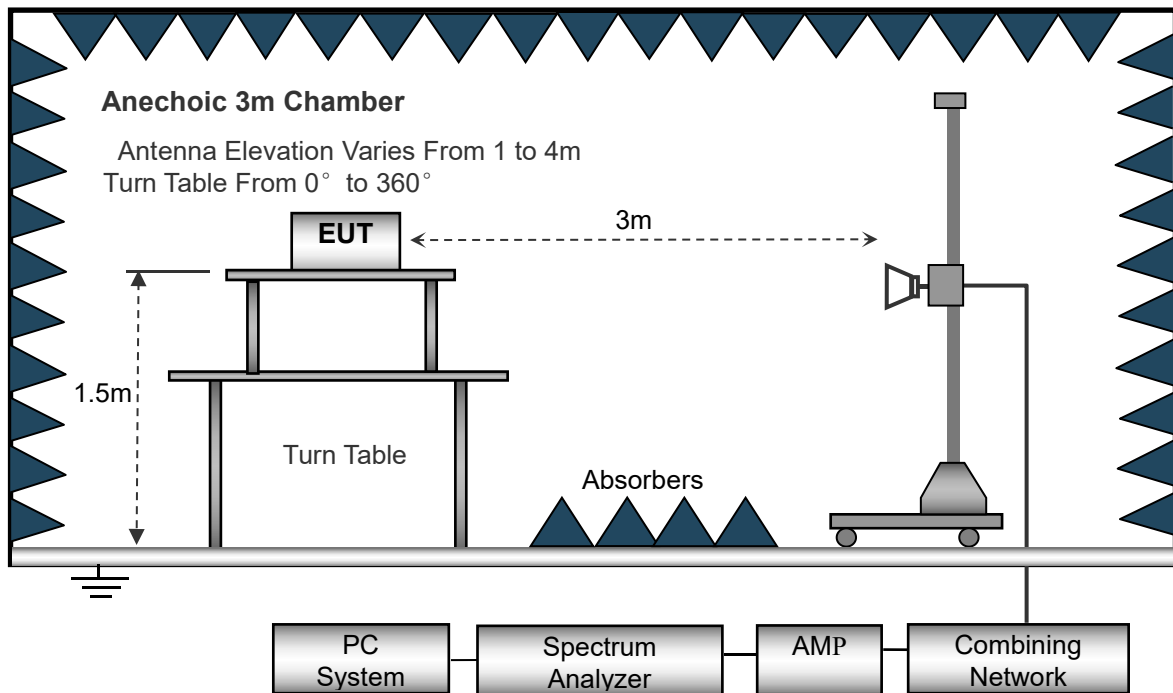
The test setup for emission measurement below 30MHz.



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 $-6\text{dB}\mu\text{V}$ means the emission is $6\text{dB}\mu\text{V}$ below the maximum limit for Class B. The equation for margin calculation is as follows:

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

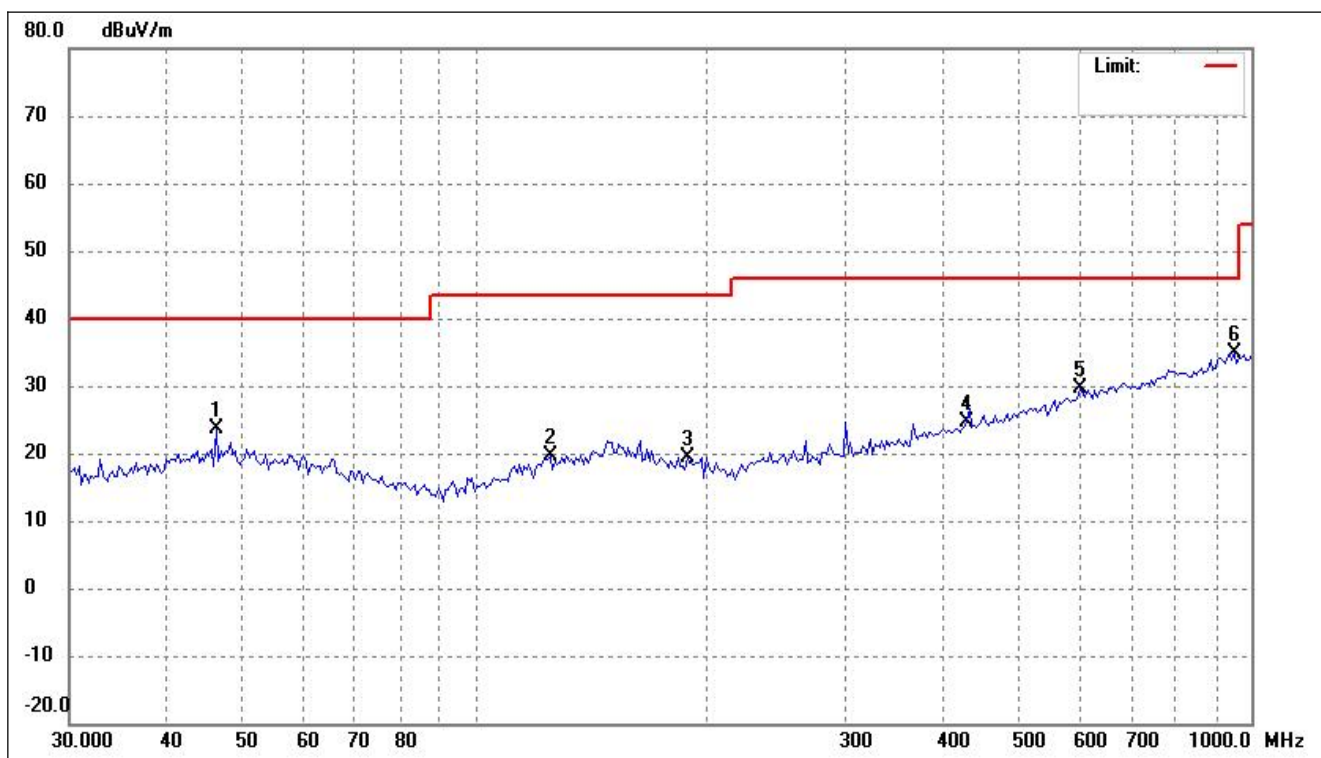
8.5 Summary of Test Results/Plots

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

- Spurious Emission From 30MHz to 1GHz
- Antenna 0(worst case)
- 5150-5250MHz

802.11a

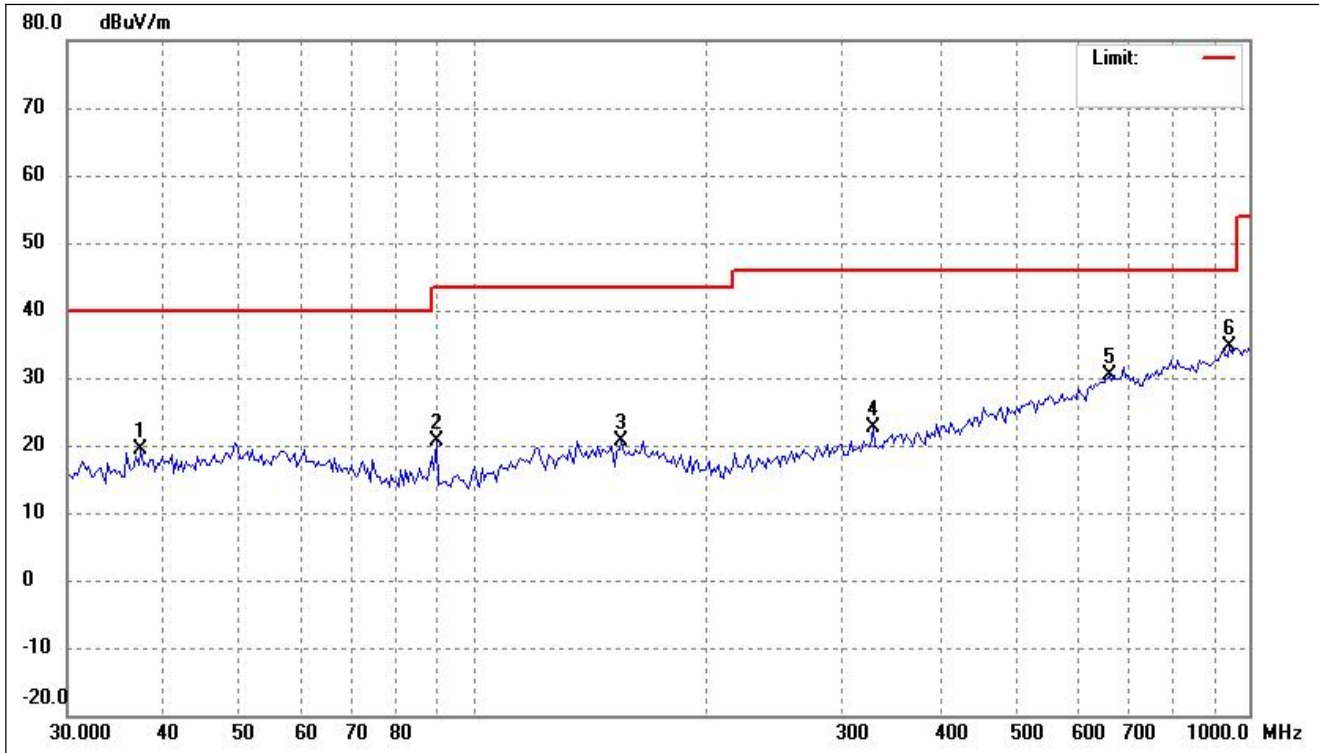
Test Channel	5180MHz(worst case)	Polarity:	Horizontal
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No.	Frequency (MHz)	Reading (dBuV/m)	Corr. dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Deg. ()	Height (cm)	Remark
1	46.3806	31.99	-8.32	23.67	40.00	-16.33	-	-	peak
2	124.9249	29.64	-9.97	19.67	43.50	-23.83	-	-	peak
3	187.7833	30.36	-10.86	19.50	43.50	-24.00	-	-	peak
4	430.3052	30.14	-5.48	24.66	46.00	-21.34	-	-	peak
5	602.9287	30.55	-0.84	29.71	46.00	-16.29	-	-	peak
6	952.0000	31.33	3.60	34.93	46.00	-11.07	-	-	peak

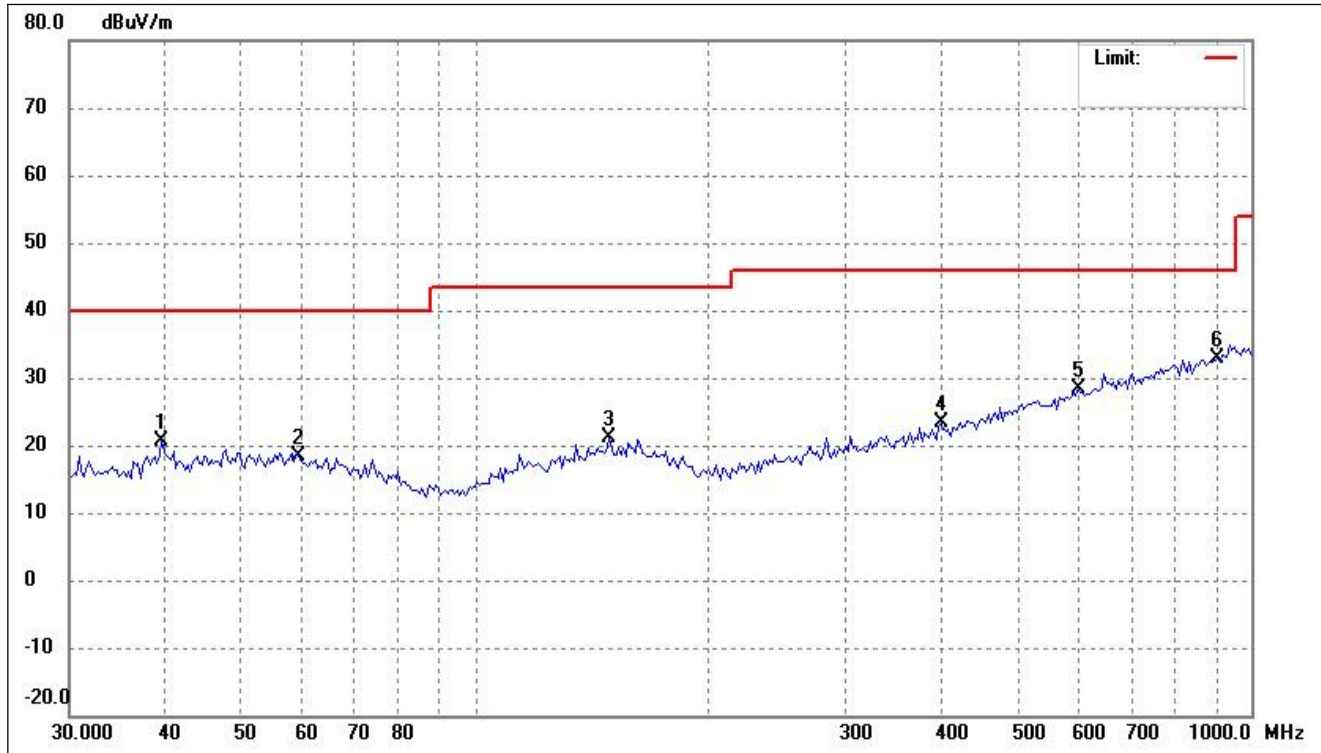
802.11a

Test Channel	5180MHz(worst case)	Polarity:	Vertical
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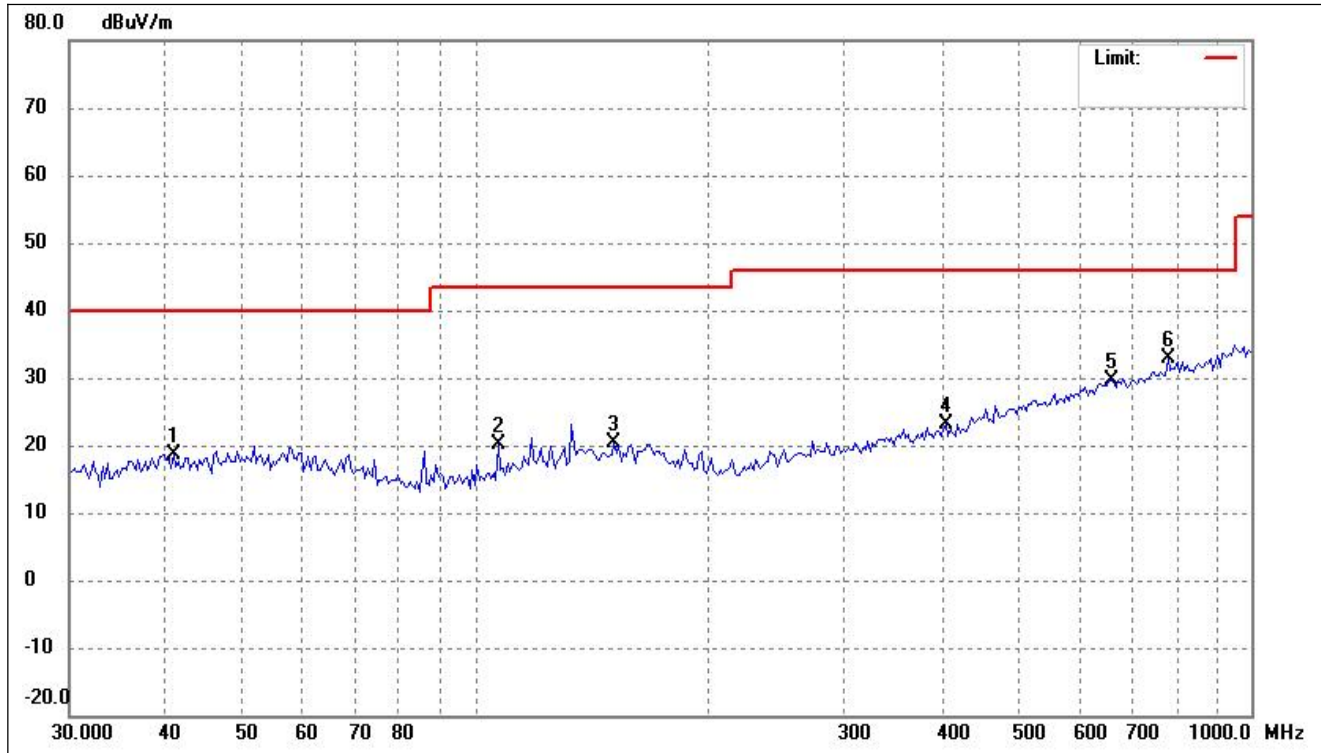
No.	Frequency (MHz)	Reading (dBuV/m)	Corr. dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Deg. ()	Height (cm)	Remark
1	37.3017	28.44	-9.18	19.26	40.00	-20.74	-	-	peak
2	89.7866	34.38	-13.68	20.70	43.50	-22.80	-	-	peak
3	155.3305	29.05	-8.33	20.72	43.50	-22.78	-	-	peak
4	327.1553	30.32	-7.60	22.72	46.00	-23.28	-	-	peak
5	660.6024	30.36	-0.07	30.29	46.00	-15.71	-	-	peak
6	945.3336	31.12	3.50	34.62	46.00	-11.38	-	-	peak

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



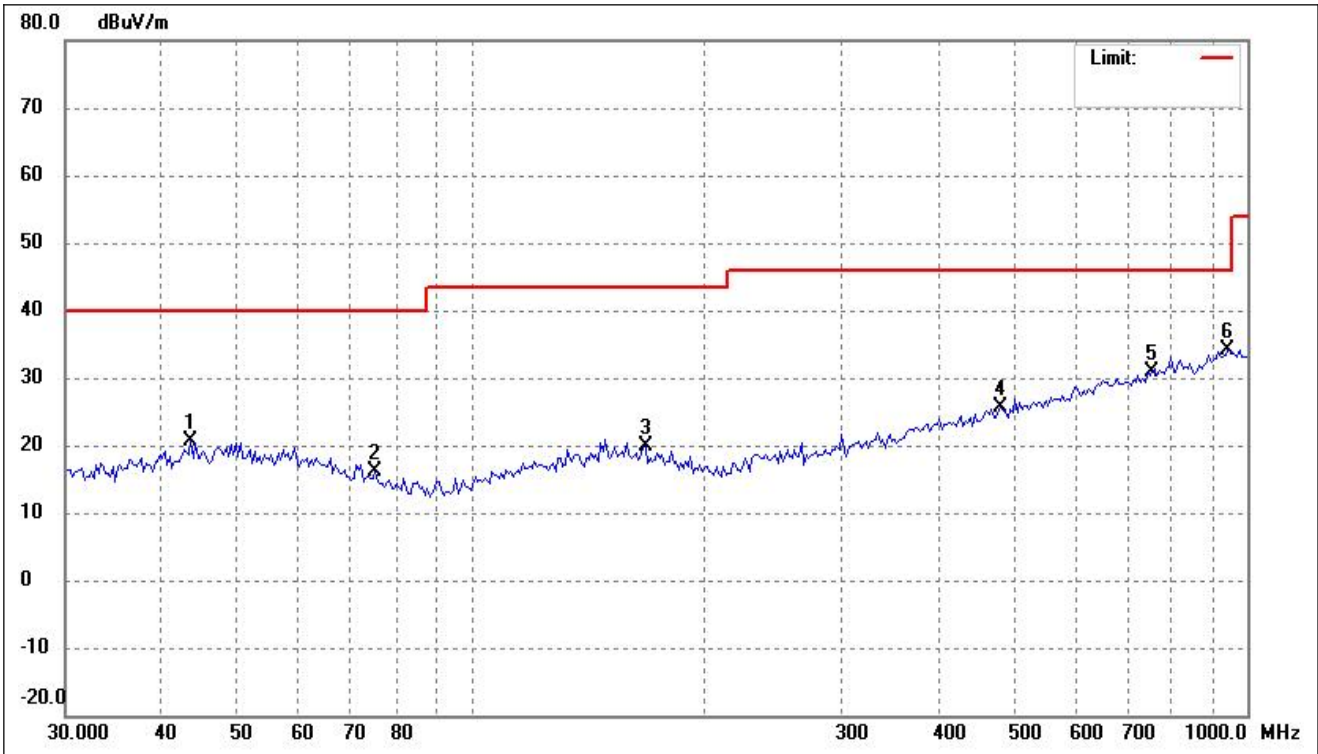
No.	Frequency (MHz)	Reading (dBuV/m)	Corr. dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Deg. ()	Height (cm)	Remark
1	39.4587	29.43	-8.92	20.51	40.00	-19.49	-	-	peak
2	59.3132	27.07	-8.79	18.28	40.00	-21.72	-	-	peak
3	148.9173	29.74	-8.57	21.17	43.50	-22.33	-	-	peak
4	398.2962	29.71	-6.29	23.42	46.00	-22.58	-	-	peak
5	598.7067	29.17	-0.88	28.29	46.00	-17.71	-	-	peak
6	906.3040	30.05	2.74	32.79	46.00	-13.21	-	-	peak

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



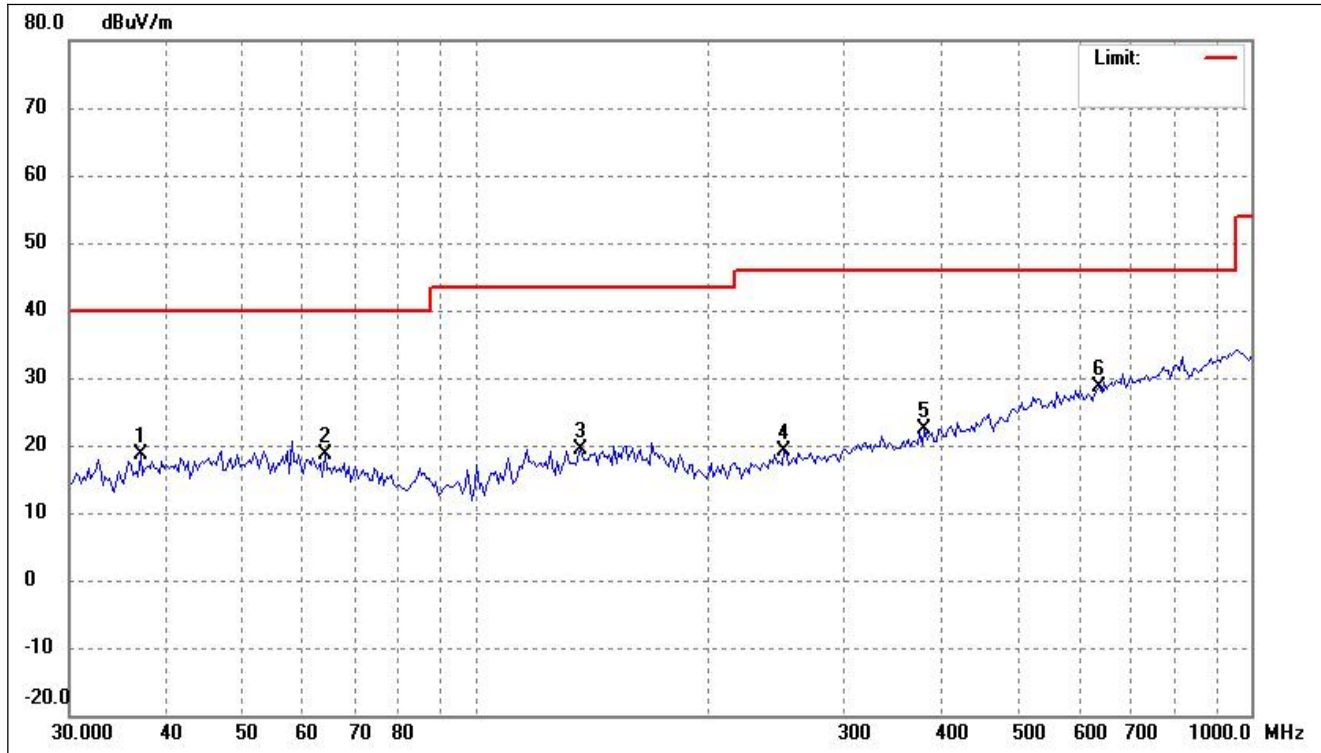
No.	Frequency (MHz)	Reading (dBuV/m)	Corr. dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Deg. ()	Height (cm)	Remark
1	40.8698	27.55	-8.80	18.75	40.00	-21.25	-	-	peak
2	107.0306	31.90	-11.73	20.17	43.50	-23.33	-	-	peak
3	151.0251	29.05	-8.57	20.48	43.50	-23.02	-	-	peak
4	403.9335	29.19	-6.16	23.03	46.00	-22.97	-	-	peak
5	660.6024	29.73	-0.07	29.66	46.00	-16.34	-	-	peak
6	781.9605	31.26	1.51	32.77	46.00	-13.23	-	-	peak

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



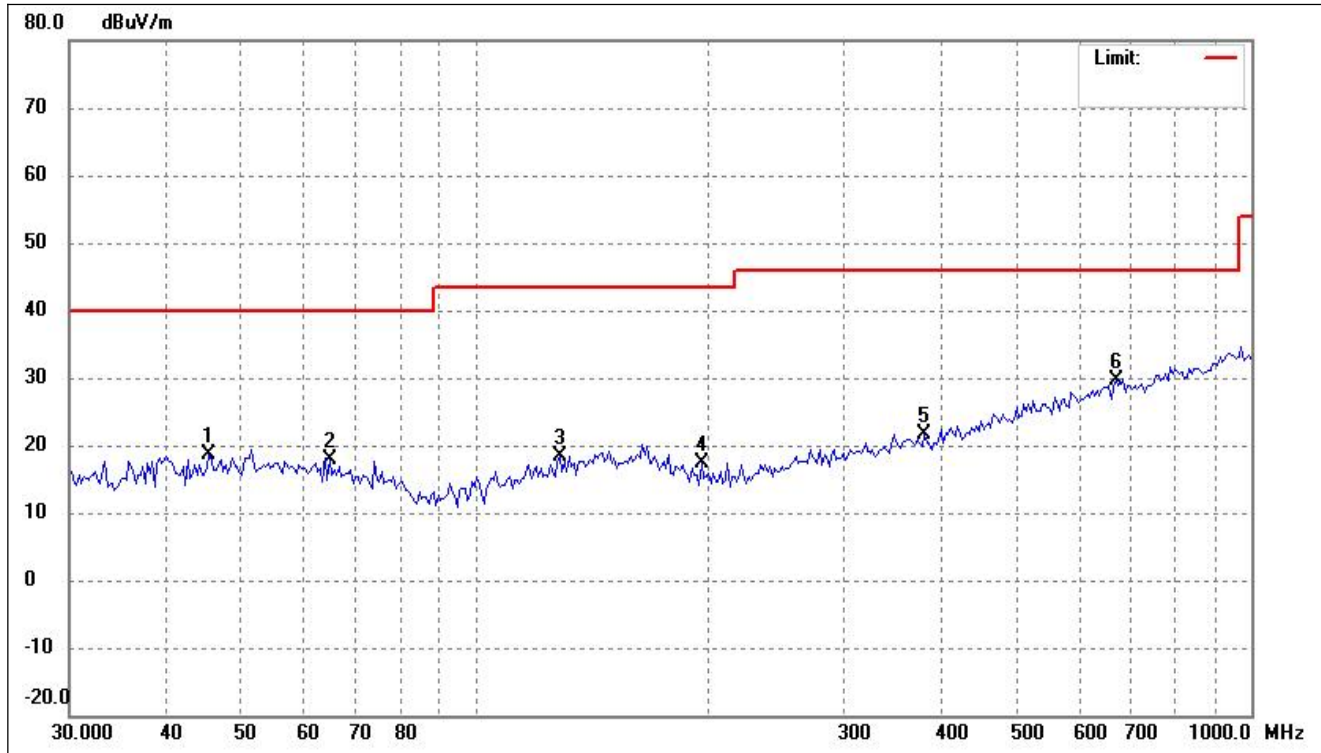
No.	Frequency (MHz)	Reading (dBuV/m)	Corr. dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Deg. ()	Height (cm)	Remark
1	43.5380	29.08	-8.49	20.59	40.00	-19.41	-	-	peak
2	75.3208	27.65	-11.46	16.19	40.00	-23.81	-	-	peak
3	167.8136	28.49	-8.60	19.89	43.50	-23.61	-	-	peak
4	481.5112	29.71	-4.10	25.61	46.00	-20.39	-	-	peak
5	754.9627	29.61	1.19	30.80	46.00	-15.20	-	-	peak
6	945.3336	30.68	3.50	34.18	46.00	-11.82	-	-	peak

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



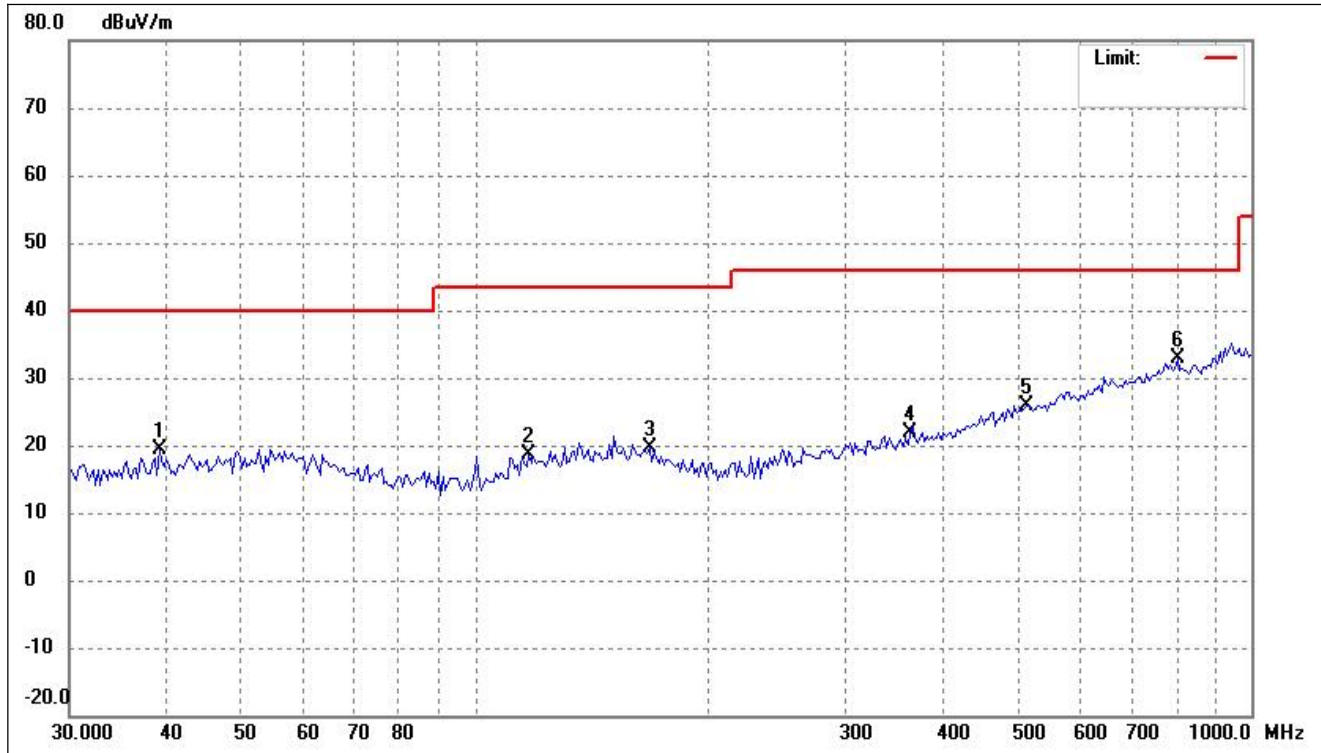
No.	Frequency (MHz)	Reading (dBuV/m)	Corr. dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Deg. ()	Height (cm)	Remark
1	37.0405	27.95	-9.21	18.74	40.00	-21.26	-	-	peak
2	64.0798	28.14	-9.39	18.75	40.00	-21.25	-	-	peak
3	136.8746	28.55	-9.12	19.43	43.50	-24.07	-	-	peak
4	250.4858	28.98	-9.97	19.01	46.00	-26.99	-	-	peak
5	379.1779	29.19	-6.76	22.43	46.00	-23.57	-	-	peak
6	637.7945	29.29	-0.54	28.75	46.00	-17.25	-	-	peak

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



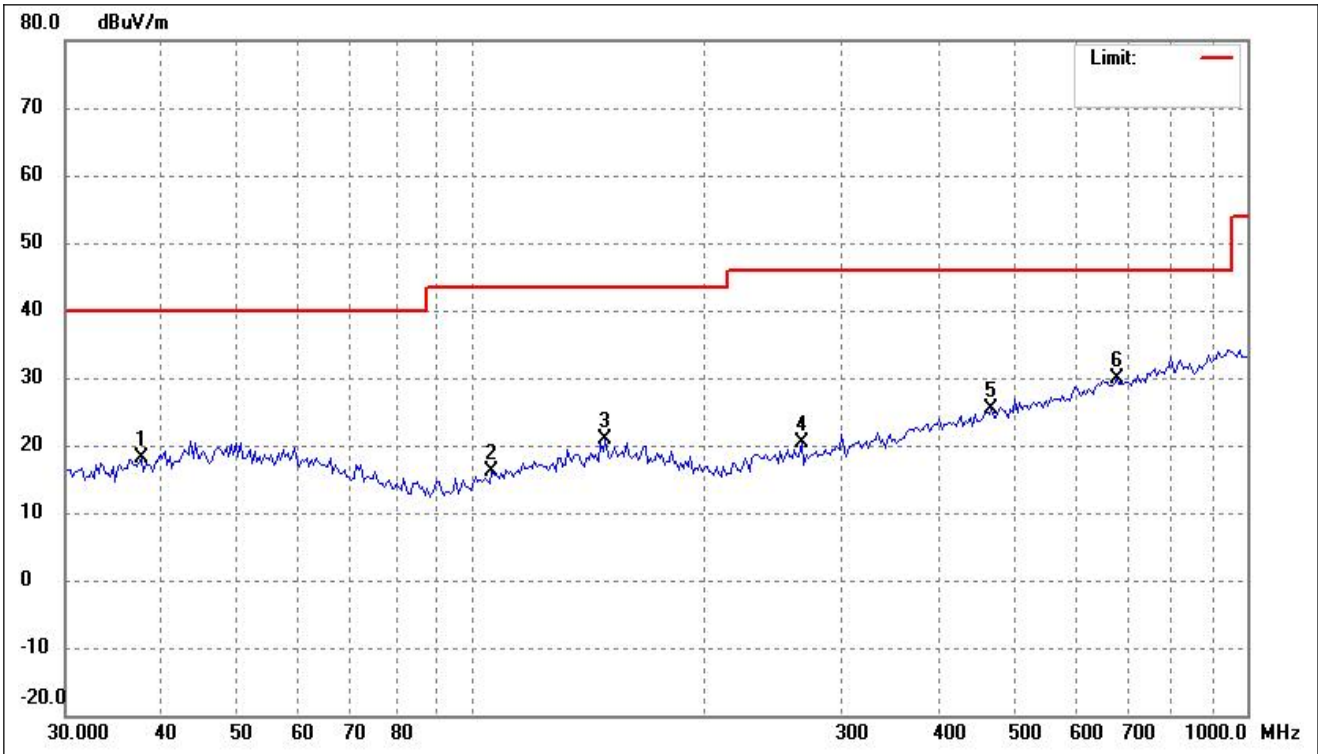
No.	Frequency (MHz)	Reading (dBuV/m)	Corr. dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Deg. ()	Height (cm)	Remark
1	45.4130	26.88	-8.34	18.54	40.00	-21.46	-	-	peak
2	64.9869	27.43	-9.51	17.92	40.00	-22.08	-	-	peak
3	128.4861	27.94	-9.65	18.29	43.50	-25.21	-	-	peak
4	195.8701	28.98	-11.62	17.36	43.50	-26.14	-	-	peak
5	379.1780	28.33	-6.76	21.57	46.00	-24.43	-	-	peak
6	669.9523	29.61	0.00	29.61	46.00	-16.39	-	-	peak

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



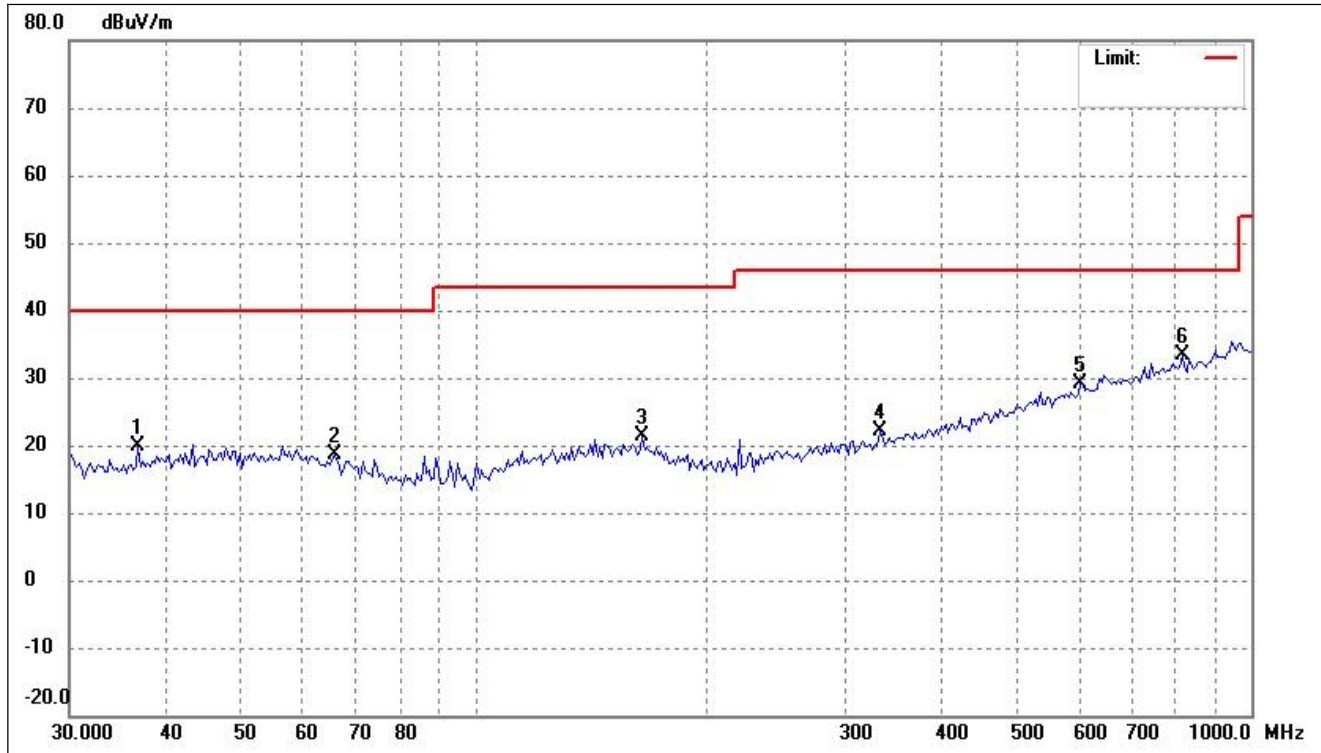
No.	Frequency (MHz)	Reading (dBuV/m)	Corr. dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Deg. ()	Height (cm)	Remark
1	39.1824	28.23	-8.95	19.28	40.00	-20.72	-	-	peak
2	117.2687	29.30	-10.55	18.75	43.50	-24.75	-	-	peak
3	167.8136	28.13	-8.60	19.53	43.50	-23.97	-	-	peak
4	363.5230	29.02	-7.10	21.92	46.00	-24.08	-	-	peak
5	512.9477	29.20	-3.23	25.97	46.00	-20.03	-	-	peak
6	804.2522	31.09	1.72	32.81	46.00	-13.19	-	-	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	37.5647	27.37	-9.15	18.22	40.00	-21.78	-	-	peak
2	106.2811	27.99	-11.85	16.14	43.50	-27.36	-	-	peak
3	148.9173	29.44	-8.57	20.87	43.50	-22.63	-	-	peak
4	266.8394	29.76	-9.42	20.34	46.00	-25.66	-	-	peak
5	468.1650	29.68	-4.40	25.28	46.00	-20.72	-	-	peak
6	679.4345	29.76	0.07	29.83	46.00	-16.17	-	-	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	36.7811	29.09	-9.26	19.83	40.00	-20.17	-	-	peak
2	65.9067	28.34	-9.65	18.69	40.00	-21.31	-	-	peak
3	164.3129	29.73	-8.45	21.28	43.50	-22.22	-	-	peak
4	331.7857	29.64	-7.52	22.12	46.00	-23.88	-	-	peak
5	602.9287	30.05	-0.84	29.21	46.00	-16.79	-	-	peak
6	815.6352	31.80	1.70	33.50	46.00	-12.50	-	-	peak

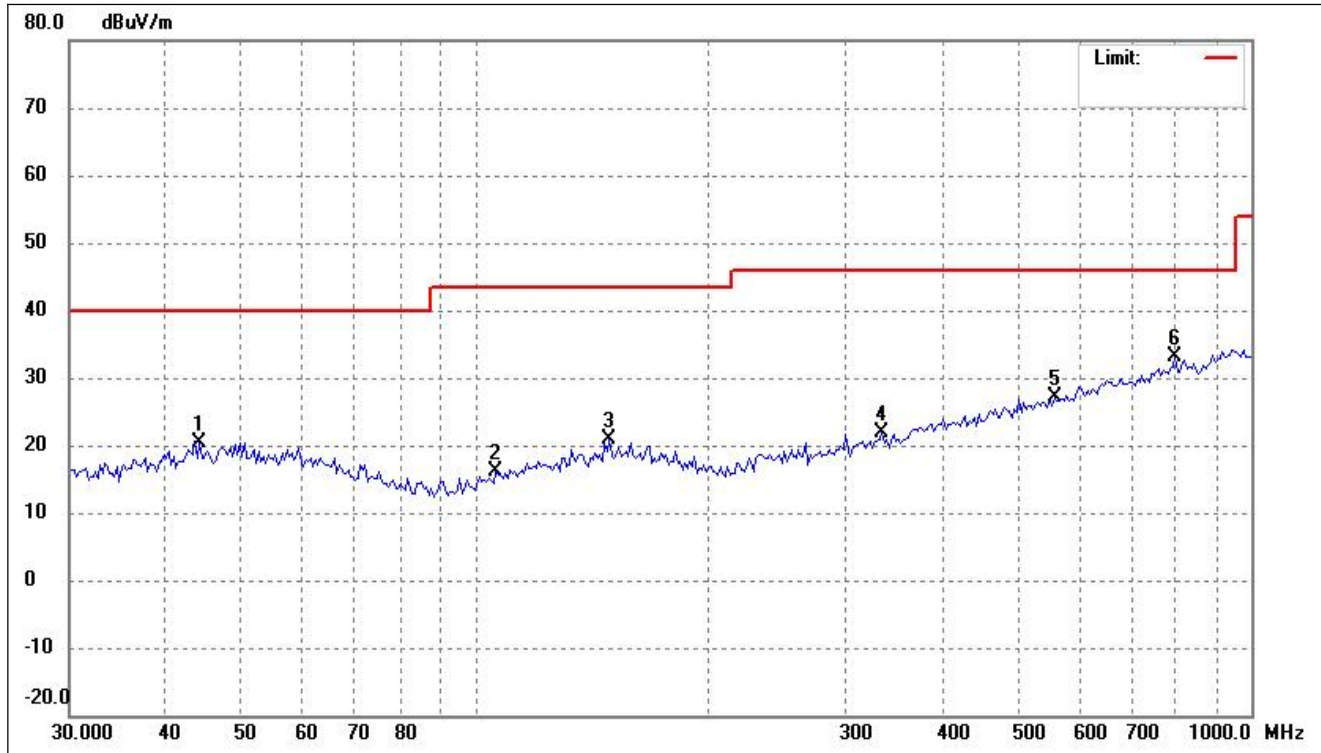
802.11ac-VHT80

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	44.1543	28.81	-8.42	20.39	40.00	-19.61	-	-	peak
2	106.2811	27.99	-11.85	16.14	43.50	-27.36	-	-	peak
3	148.9173	29.44	-8.57	20.87	43.50	-22.63	-	-	peak
4	334.1255	29.45	-7.51	21.94	46.00	-24.06	-	-	peak
5	558.0787	29.61	-2.45	27.16	46.00	-18.84	-	-	peak
6	798.6204	31.31	1.70	33.01	46.00	-12.99	-	-	peak

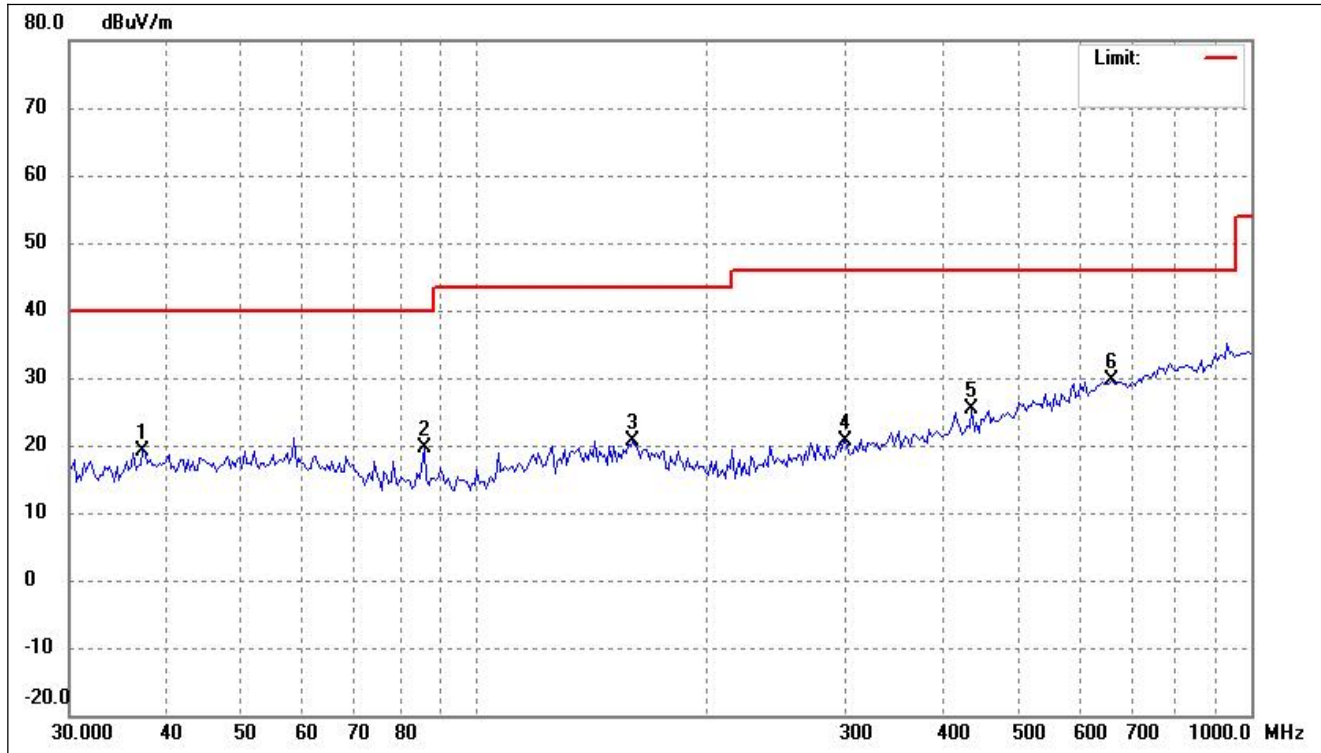
802.11ac-VHT80

Test Channel

5210MHz(worst case)

Polarity:

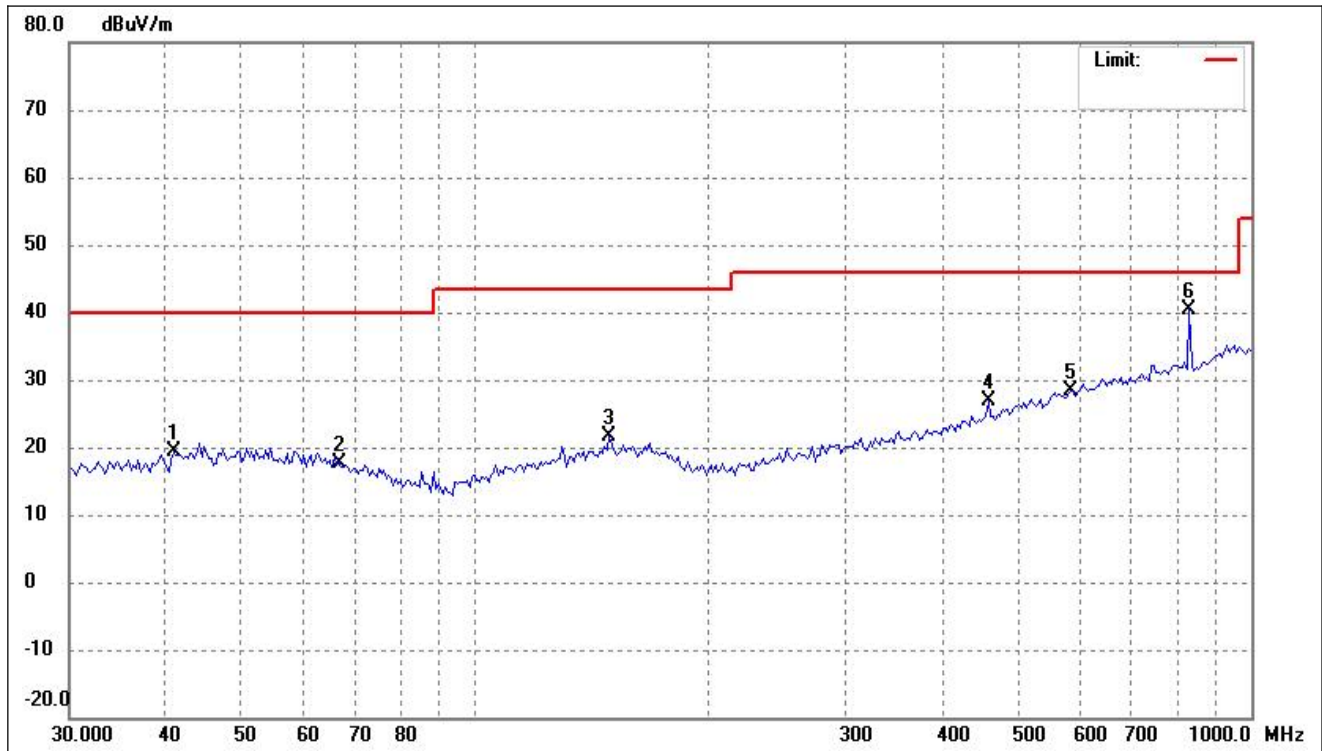
Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Corr. dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Deg. ()	Height (cm)	Remark
1	37.3016	28.38	-9.18	19.20	40.00	-20.80	-	-	peak
2	86.0795	33.11	-13.38	19.73	40.00	-20.27	-	-	peak
3	159.7584	28.95	-8.29	20.66	43.50	-22.84	-	-	peak
4	300.6988	28.89	-8.28	20.61	46.00	-25.39	-	-	peak
5	436.3956	30.52	-5.23	25.29	46.00	-20.71	-	-	peak
6	660.6023	29.58	-0.07	29.51	46.00	-16.49	-	-	peak

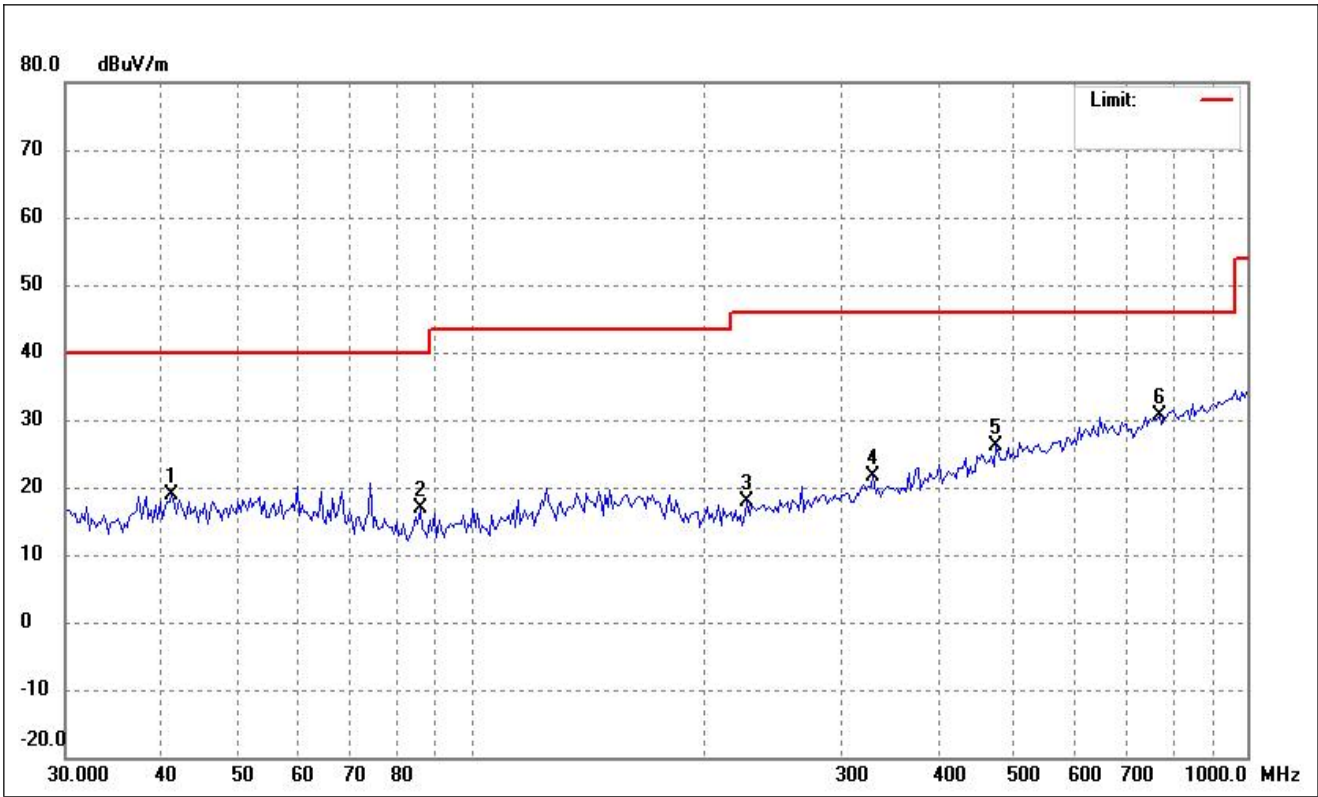
- MIMO mode(worst case 11a)
- 5150-5250MHz

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	40.8698	28.11	-8.78	19.33	40.00	-20.67	-	-	peak
2	66.8395	27.32	-9.80	17.52	40.00	-22.48	-	-	peak
3	148.9173	30.21	-8.54	21.67	43.50	-21.83	-	-	peak
4	458.3987	31.36	-4.51	26.85	46.00	-19.15	-	-	peak
5	586.2171	29.71	-1.33	28.38	46.00	-17.62	-	-	peak
6	833.0126	38.58	1.69	40.27	46.00	-5.73	-	-	peak

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

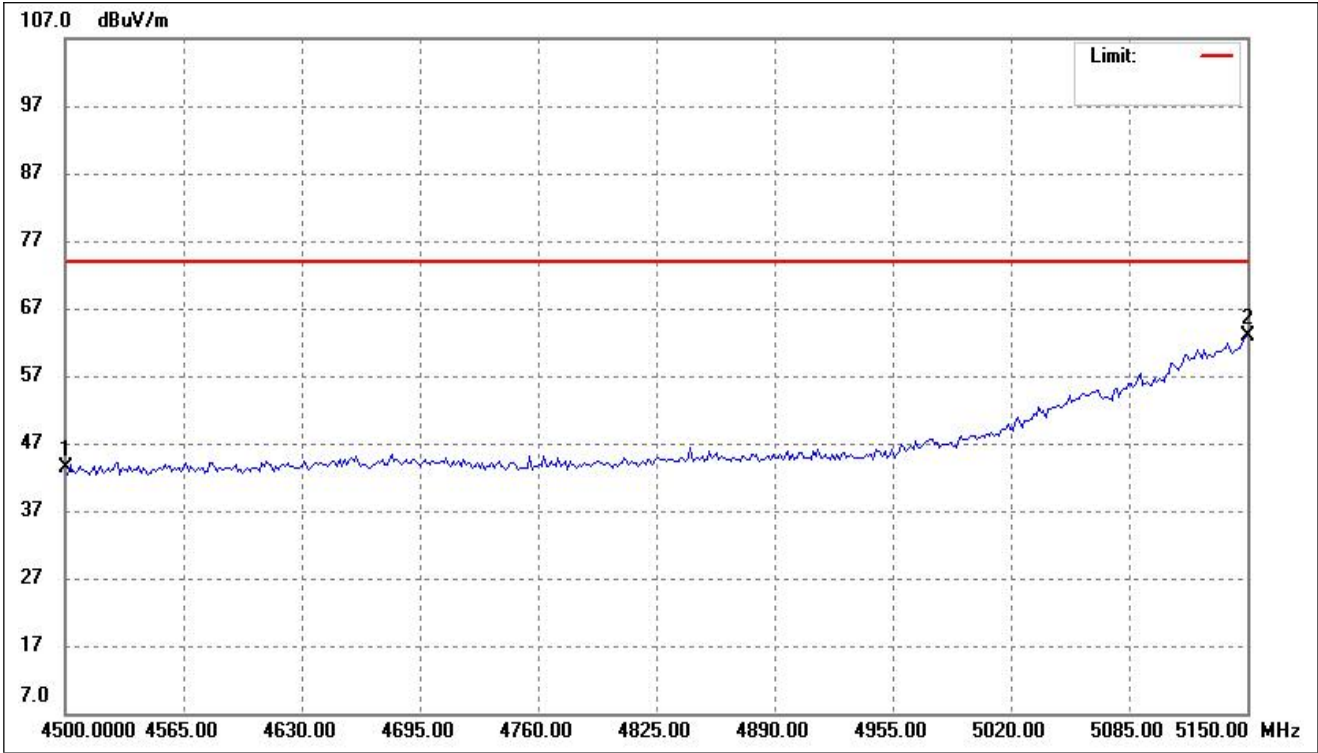


No.	Frequency (MHz)	Reading (dBuV/m)	Corr. dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Deg. ()	Height (cm)	Remark
1	41.1580	27.58	-8.76	18.82	40.00	-21.18	-	-	peak
2	86.0795	30.34	-13.38	16.96	40.00	-23.04	-	-	peak
3	227.0164	29.37	-11.45	17.92	46.00	-28.08	-	-	peak
4	329.4624	29.08	-7.56	21.52	46.00	-24.48	-	-	peak
5	474.7912	30.52	-4.30	26.22	46.00	-19.78	-	-	peak
6	771.0475	29.14	1.37	30.51	46.00	-15.49	-	-	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.

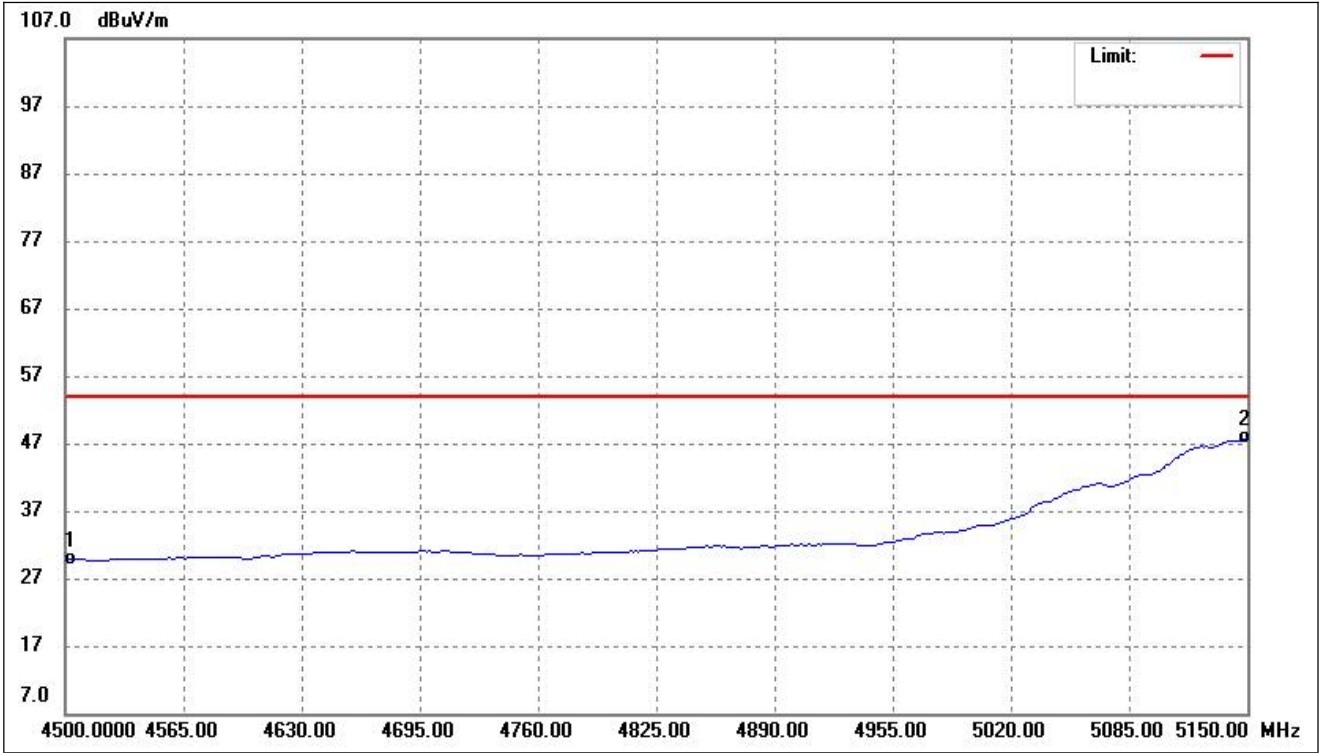
- Spurious Emission above 1GHz
- Antenna 0(worst case)

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



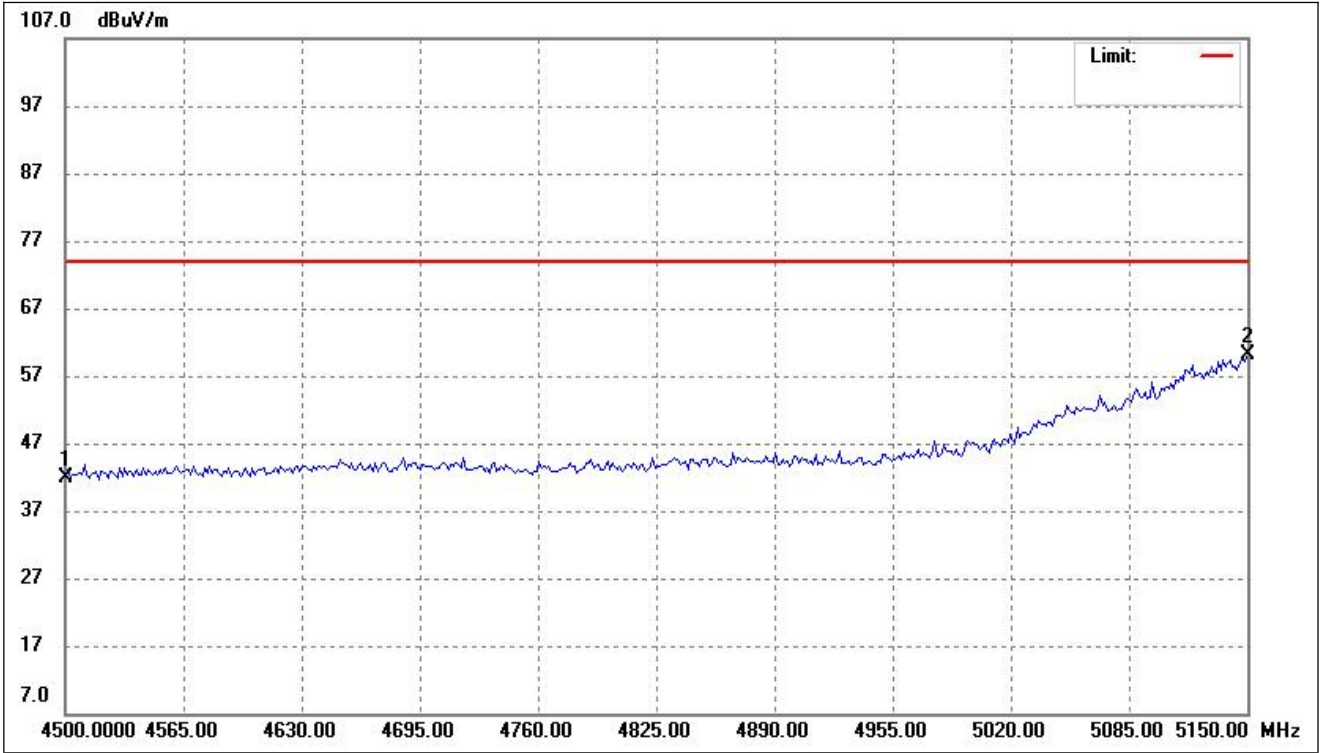
No.	Frequency (MHz)	Reading (dBuV/m)	Corr. dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Deg. ()	Height (cm)	Remark
1	4500.000	56.49	-12.99	43.50	74.00	-30.50	-	-	peak
2	5150.000	74.37	-11.49	62.88	74.00	-11.12	-	-	peak

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



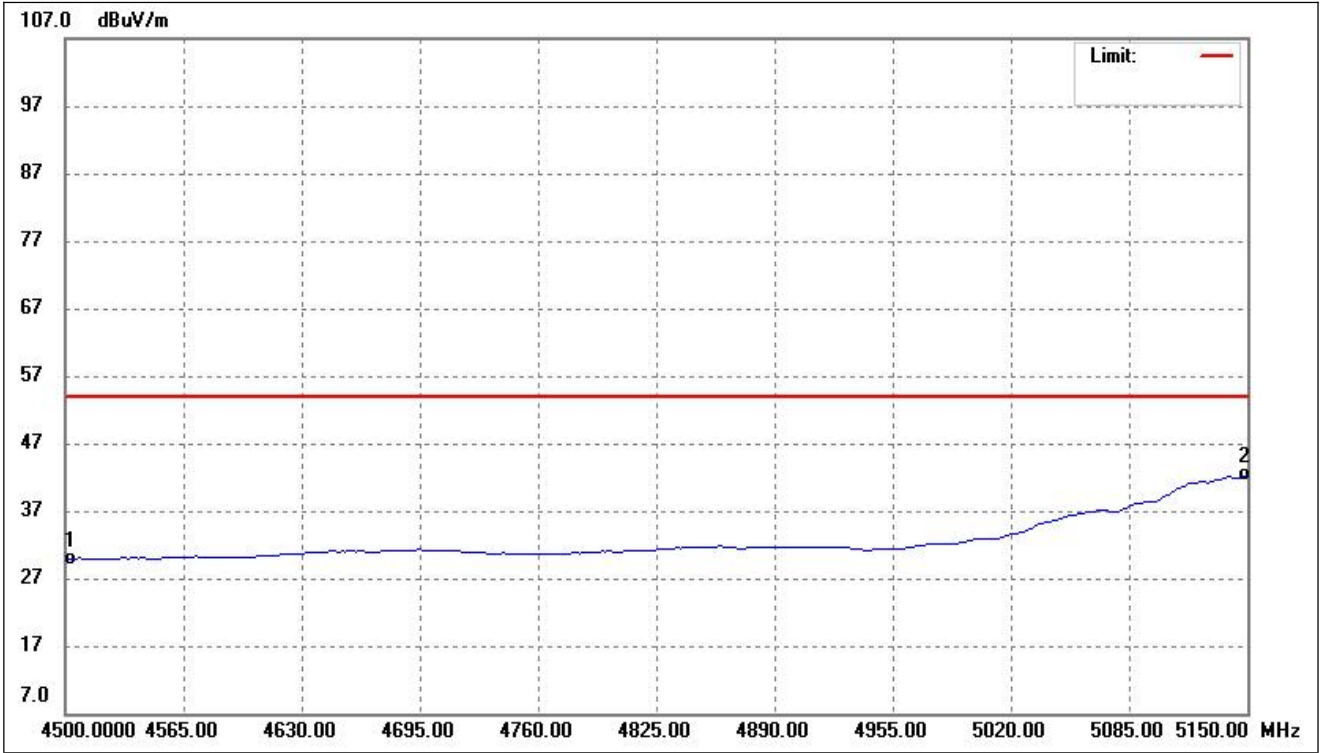
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	4500.000	42.77	-12.99	29.78	54.00	-24.22	-	-	AVG
2	5150.000	59.40	-11.49	47.91	54.00	-6.09	-	-	AVG

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



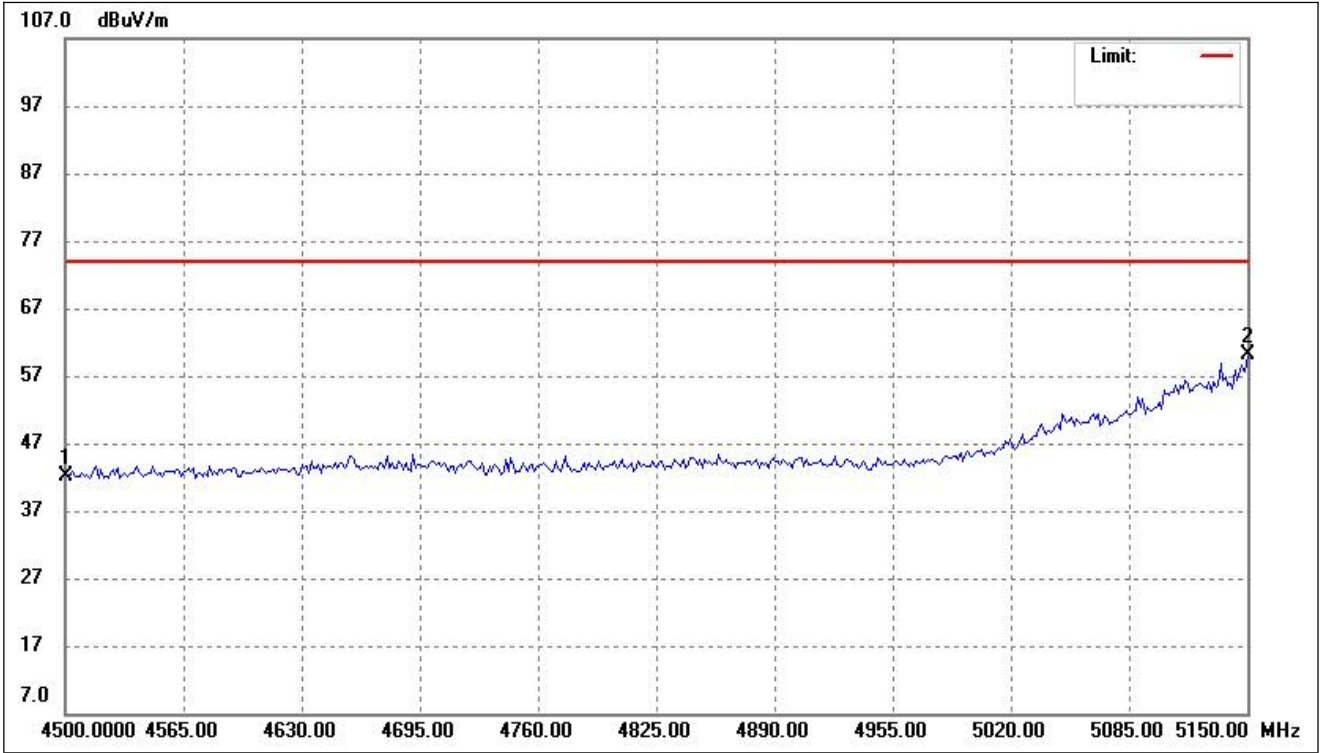
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	4500.000	54.85	-12.99	41.86	74.00	-32.14	-	-	peak
2	5150.000	71.60	-11.49	60.11	74.00	-13.89	-	-	peak

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



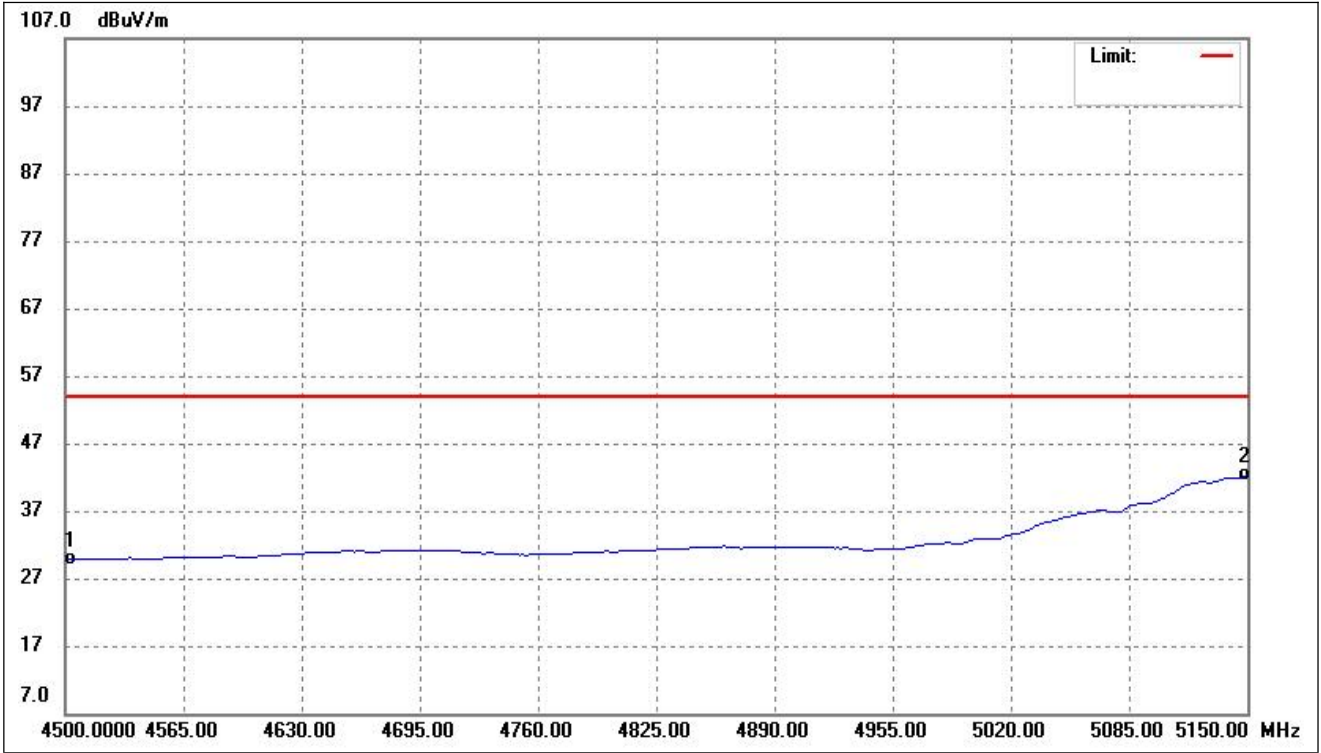
No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	4500.0000	42.93	-12.99	29.94	54.00	-24.06	-	-	AVG
2	5150.0000	53.83	-11.49	42.34	54.00	-11.66	-	-	AVG

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



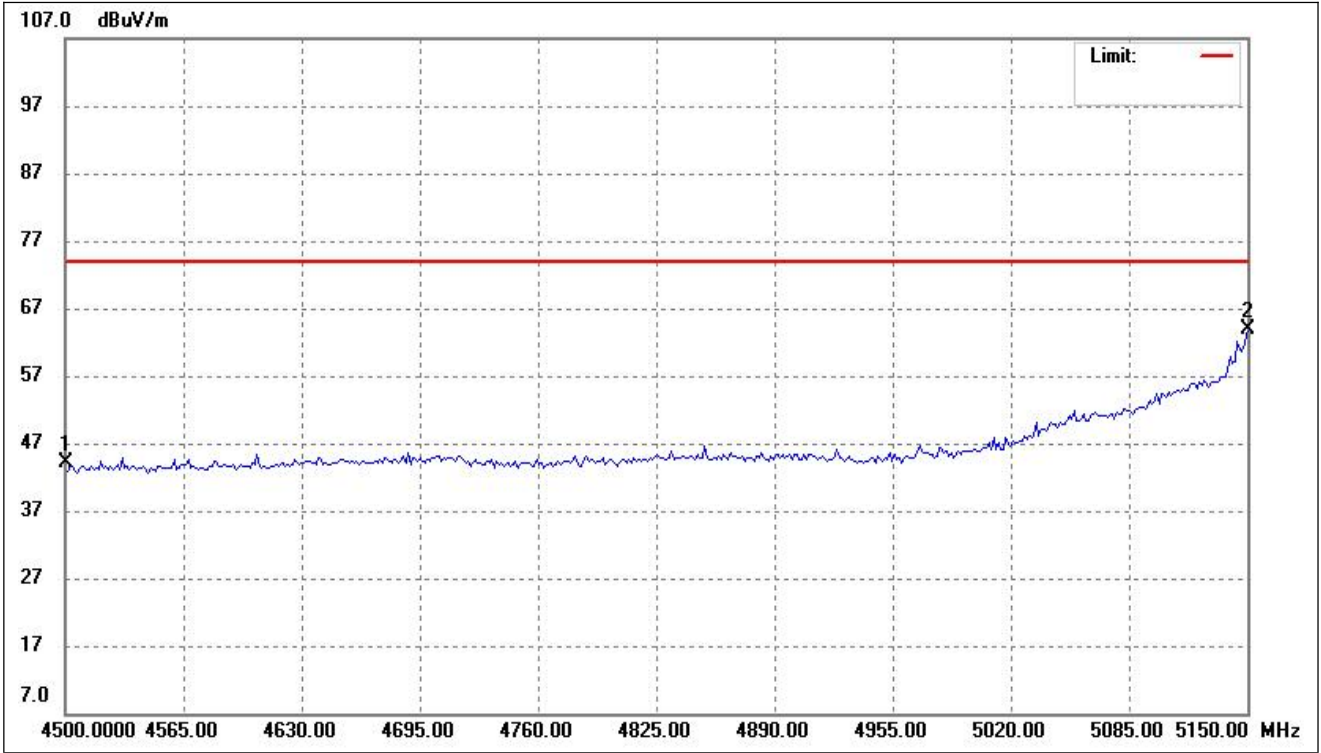
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	4500.000	55.18	-12.99	42.19	74.00	-31.81	-	-	peak
2	5150.000	71.62	-11.49	60.13	74.00	-13.87	-	-	peak

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



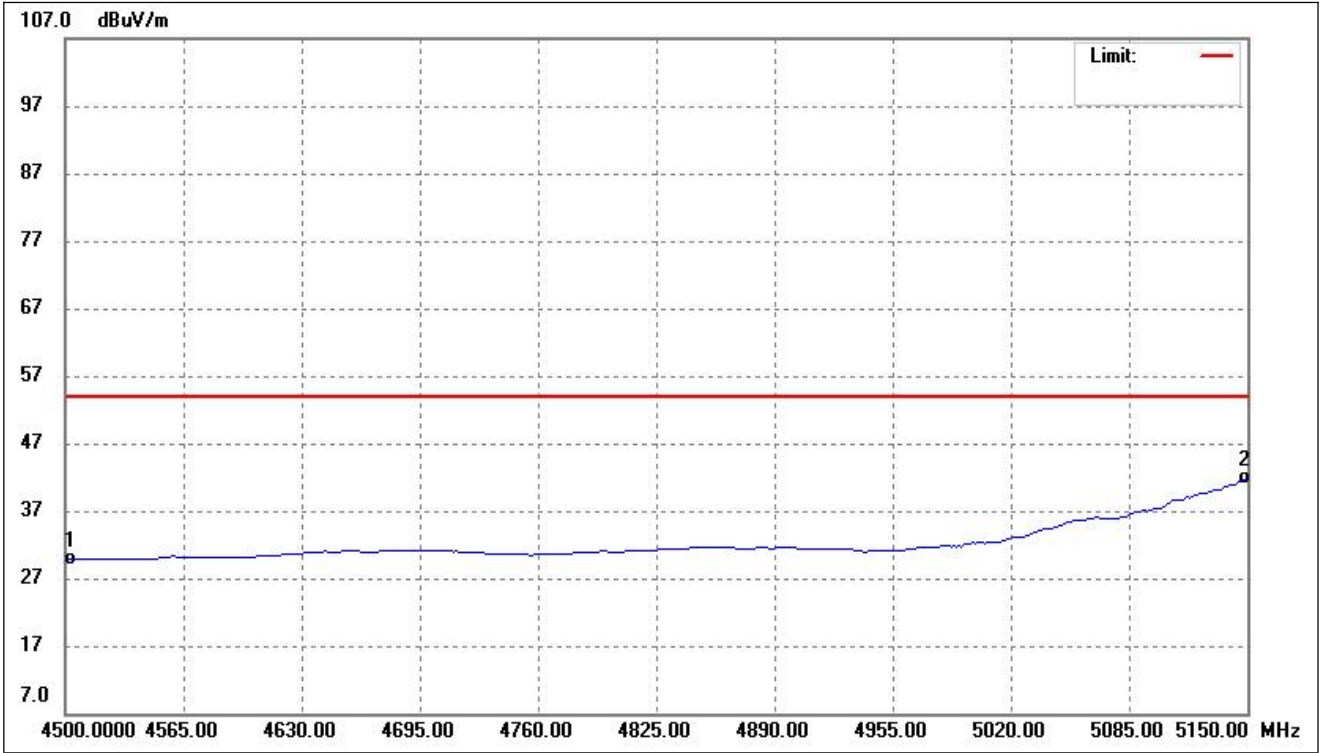
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	4500.000	42.93	-12.99	29.94	54.00	-24.06	-	-	AVG
2	5150.000	53.78	-11.49	42.29	54.00	-11.71	-	-	AVG

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



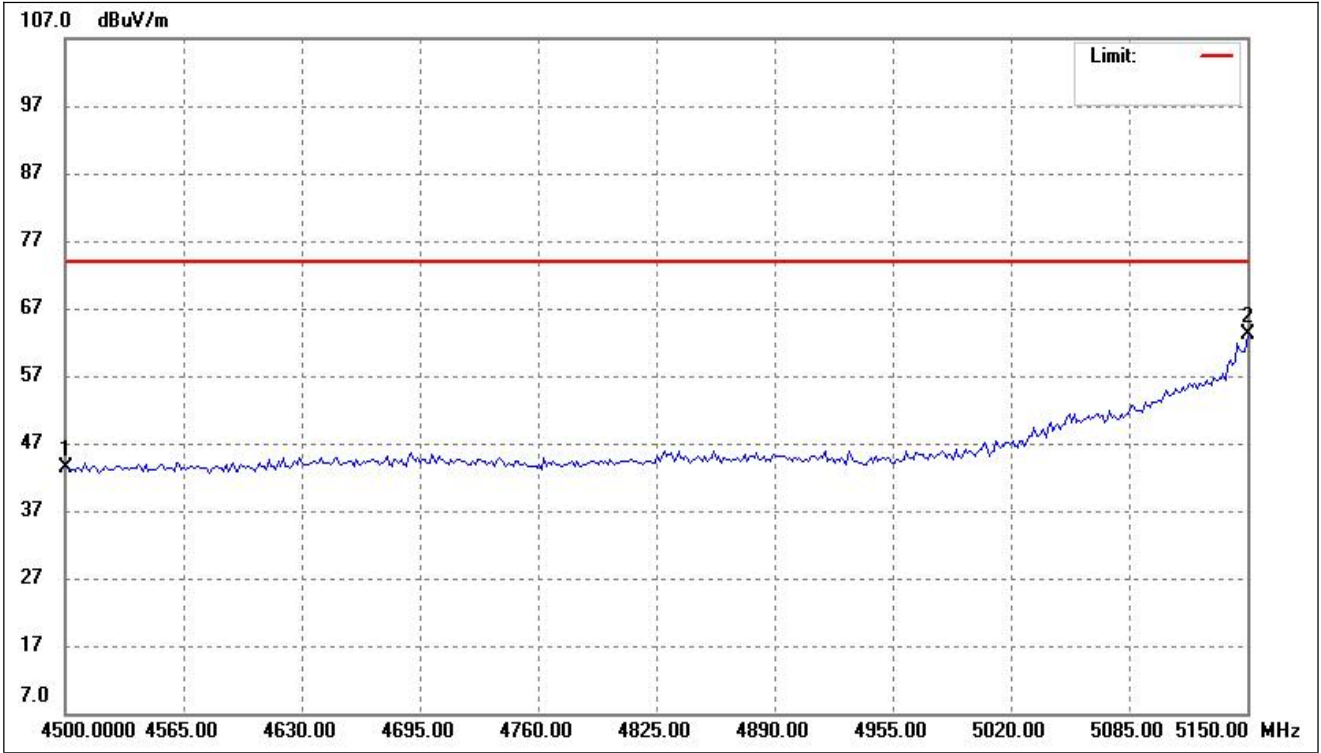
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	4500.000	57.05	-12.99	44.06	74.00	-29.94	-	-	peak
2	5150.000	75.33	-11.49	63.84	74.00	-10.16	-	-	peak

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



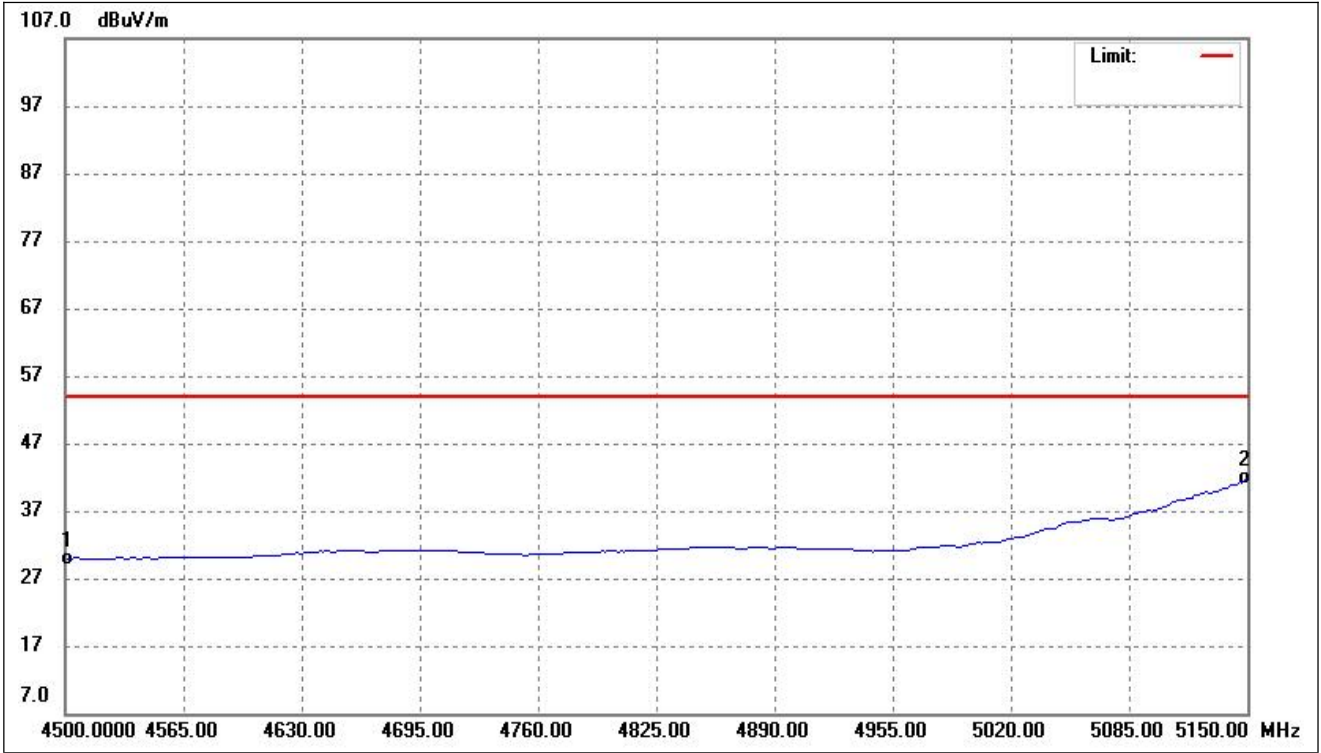
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	4500.000	42.94	-12.99	29.95	54.00	-24.05	-	-	AVG
2	5150.000	53.28	-11.49	41.79	54.00	-12.21	-	-	AVG

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



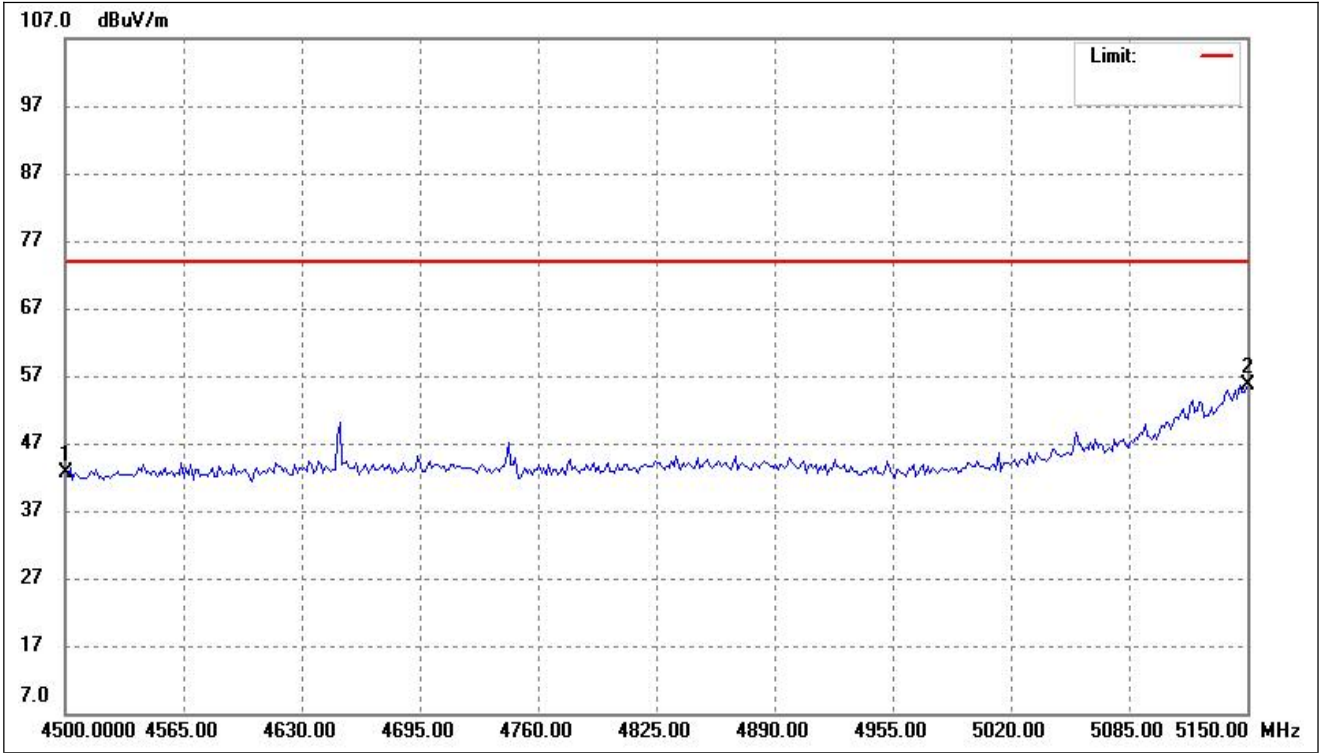
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	4500.000	56.26	-12.99	43.27	74.00	-30.73	-	-	peak
2	5150.000	74.60	-11.49	63.11	74.00	-10.89	-	-	peak

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



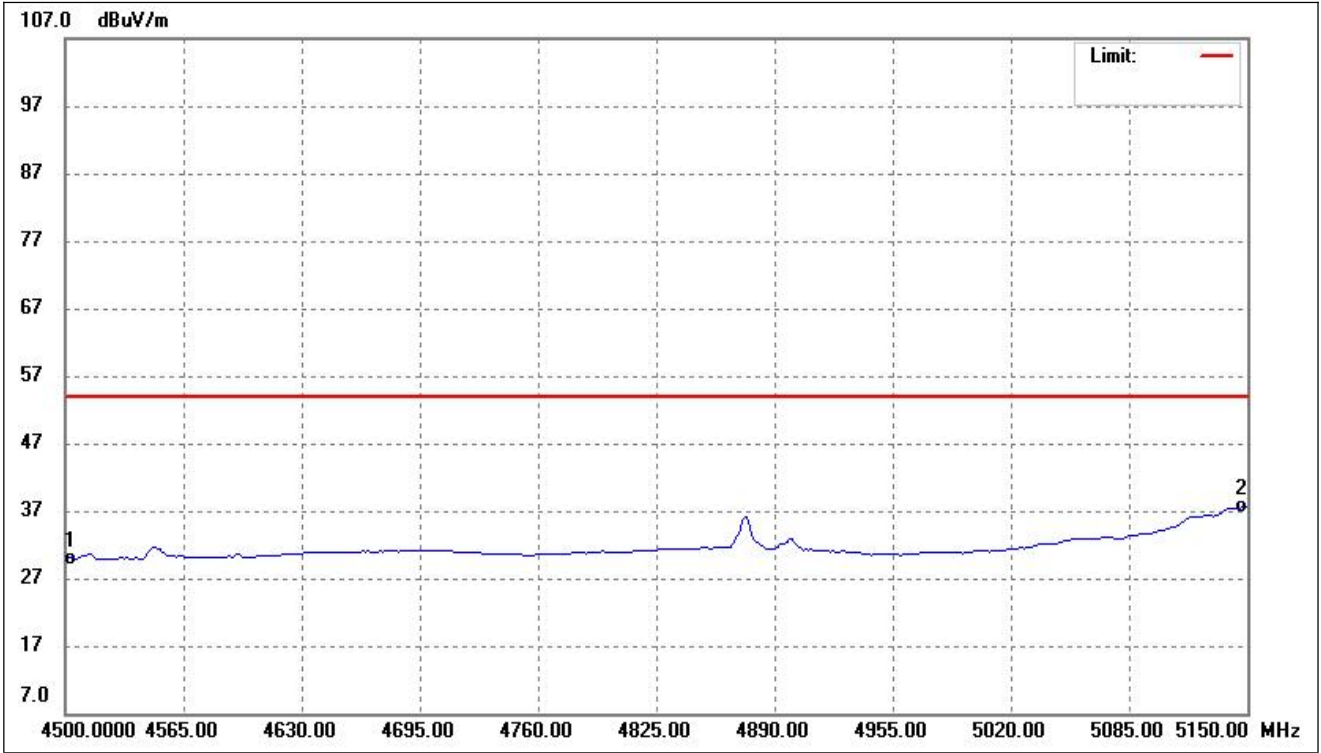
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	4500.000	42.93	-12.99	29.94	54.00	-24.06	-	-	AVG
2	5150.000	53.32	-11.49	41.83	54.00	-12.17	-	-	AVG

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	55.51	-12.99	42.52	74.00	-31.48	-	-	peak
2	5150.000	67.11	-11.49	55.62	74.00	-18.38	-	-	peak

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



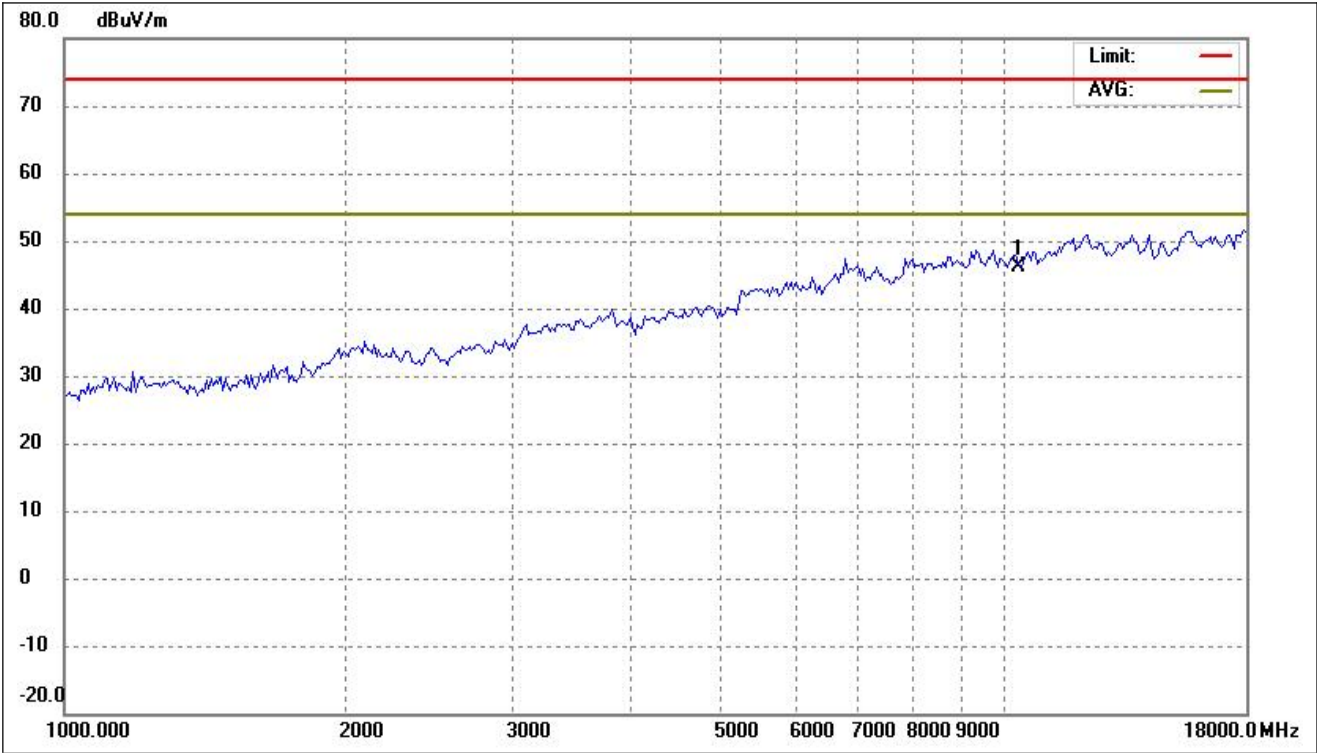
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	4500.000	42.96	-12.99	29.97	54.00	-24.03	-	-	AVG
2	5150.000	49.04	-11.49	37.55	54.00	-16.45	-	-	AVG

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.

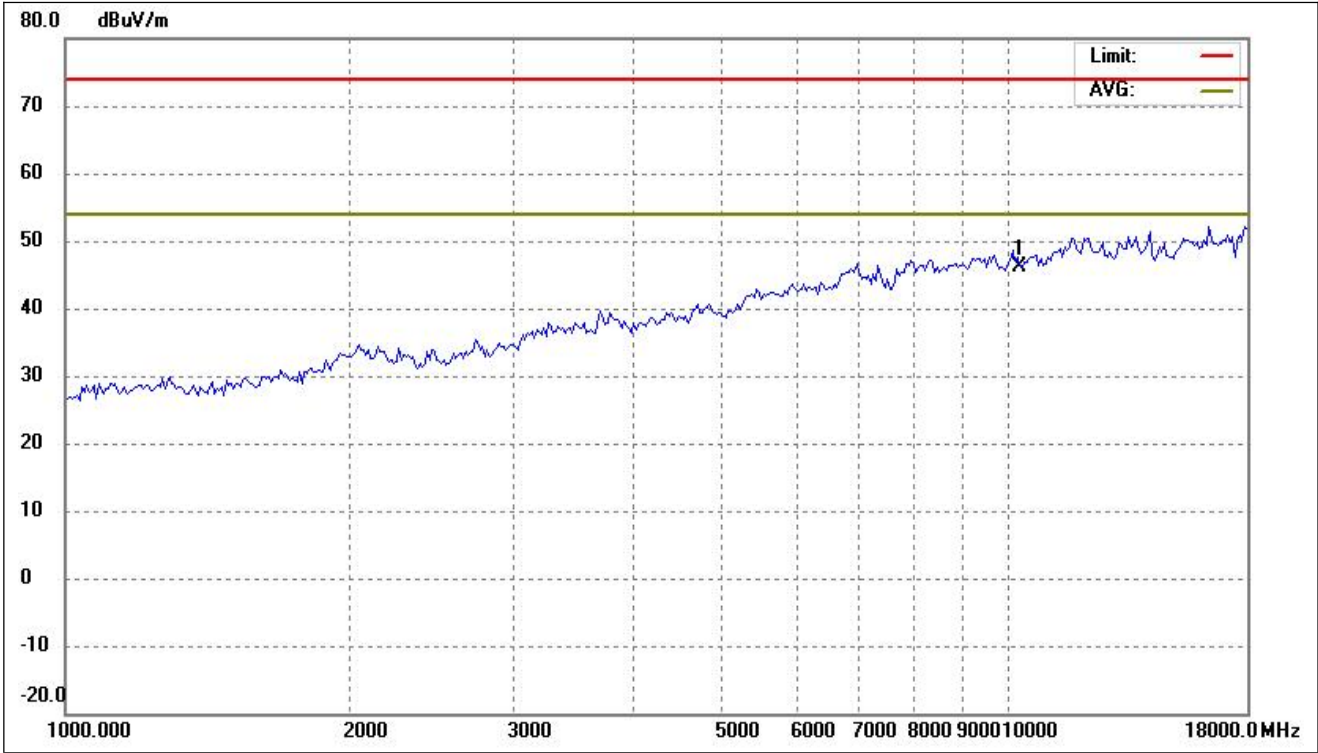
- For the frequency band 5.15-5.25GHz, (802.11a)
- Antenna 0(worst case)
- Harmonics And Spurious Emissions

802.11a(worst case)			
Test Channel	Low Channel	Polarity:	Horizontal



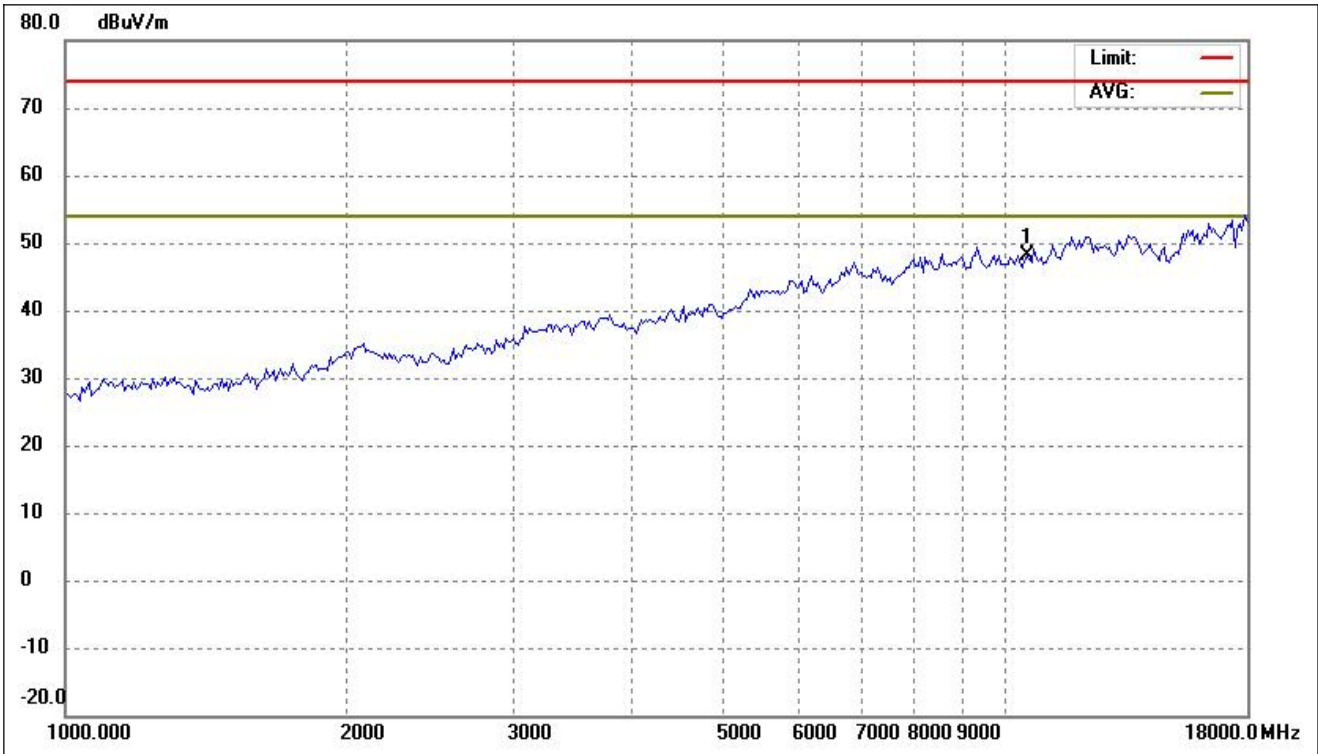
No.	Frequency (MHz)	Reading (dBuV/m)	Corr. dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Deg. ()	Height (cm)	Remark
1	10360.000	49.26	-3.24	46.02	74.00	-27.98	-	-	peak

802.11a(worst case)			
Test Channel	Low Channel	Polarity:	Vertical



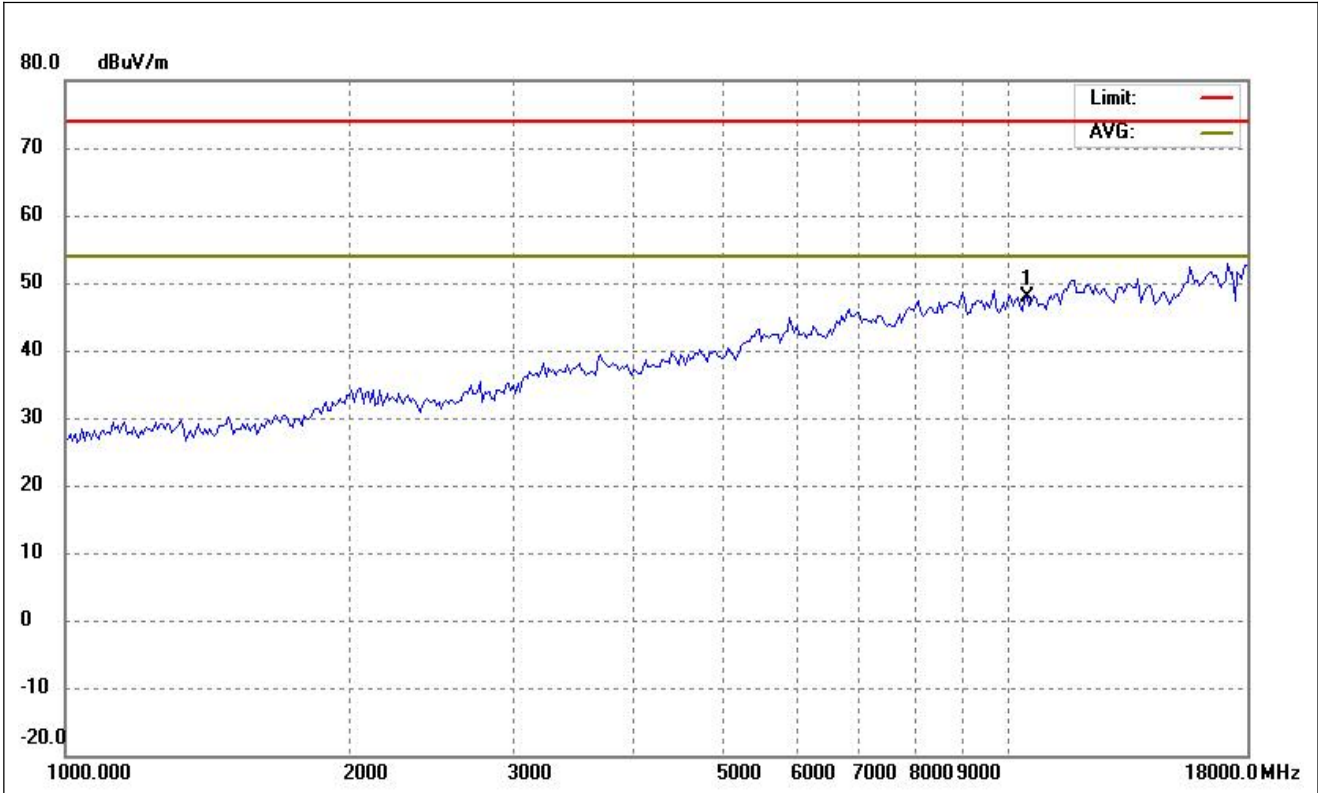
No.	Frequency (MHz)	Reading (dBuV/m)	Corr. dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Deg. ()	Height (cm)	Remark
1	10360.000	49.36	-3.24	46.12	74.00	-27.88	-	-	peak

802.11a(worst case)			
Test Channel	Middle Channel	Polarity:	Horizontal



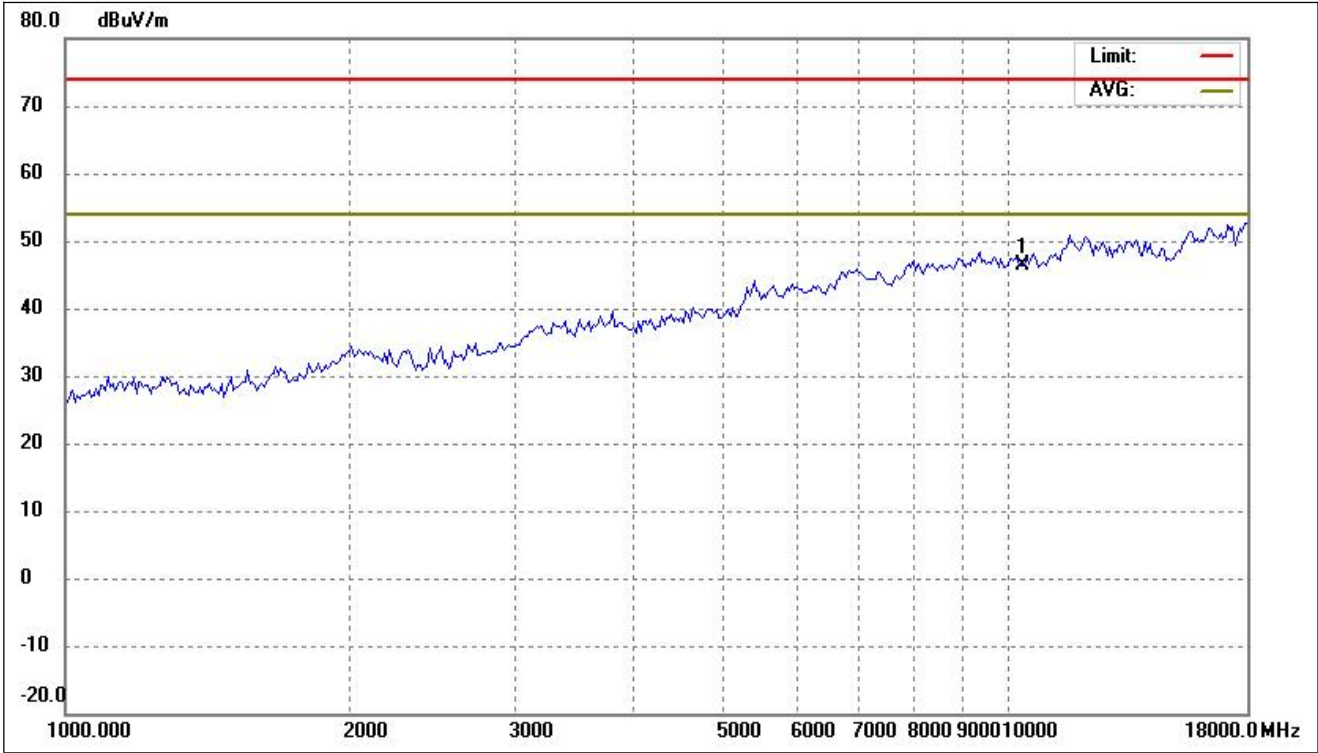
No.	Frequency (MHz)	Reading (dBuV/m)	Corr. dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Deg. ()	Height (cm)	Remark
1	10480.000	50.97	-2.96	48.01	74.00	-25.99	-	-	peak

802.11a(worst case)			
Test Channel	Middle Channel	Polarity:	Vertical



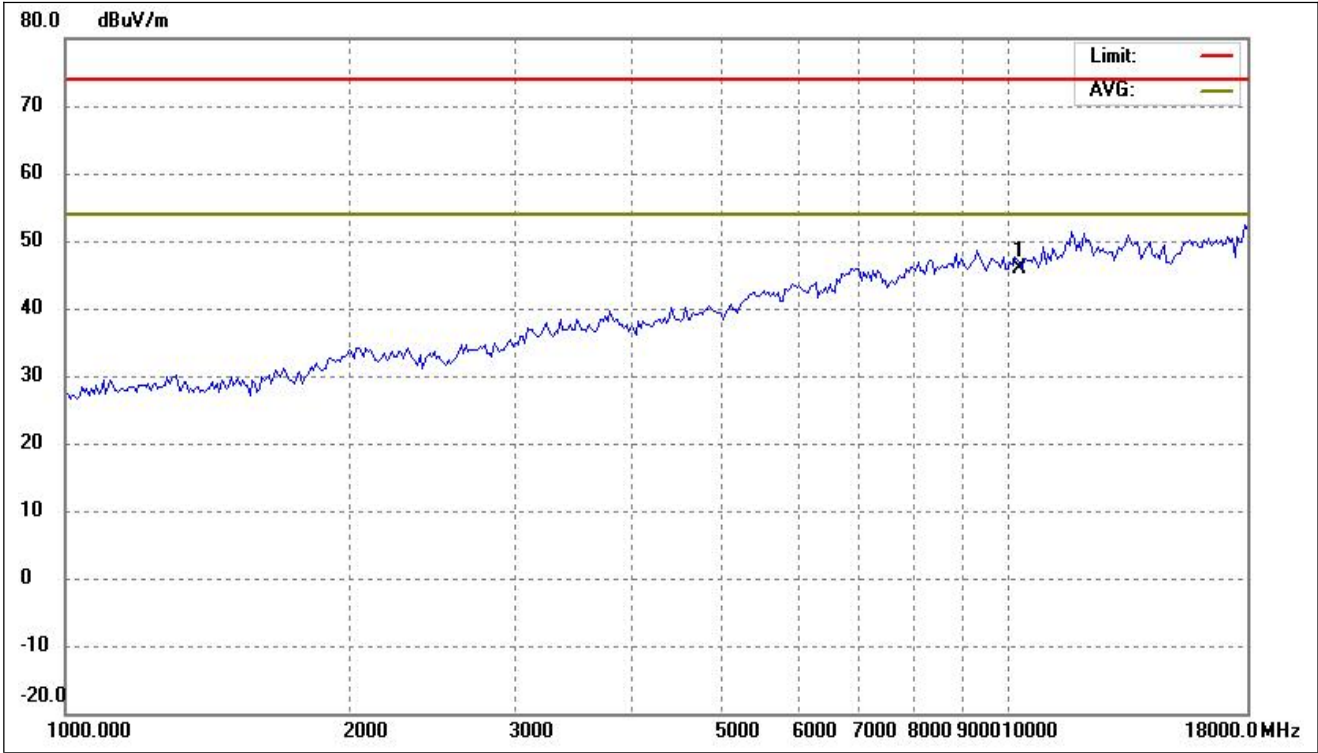
No.	Frequency (MHz)	Reading (dBuV/m)	Corr. dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Deg. ()	Height (cm)	Remark
1	10480.000	50.72	-2.96	47.76	74.00	-26.24	-	-	peak

802.11a(worst case)			
Test Channel	High Channel	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	49.69	-3.24	46.45	74.00	-27.55	-	-	peak

802.11a(worst case)			
Test Channel	High Channel	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	49.01	-3.24	45.77	74.00	-28.23	-	-	peak

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

Test CH.	Test Segment	Result	Limit
	MHz	dBm/MHz	dBm/MHz
Lowest	Below 5150	-42.76	-27
Highest	Above 5350	-43.84	-27
Note: the data just list the worst cases			

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

Test CH.	Test Segment	Result	Limit
	MHz	dBm/MHz	dBm/MHz
Lowest	Below 5150	-38.43	-27
Highest	Above 5350	-39.59	-27
Note: the data just list the worst cases			

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

Test CH.	Test Segment	Result	Limit
	MHz	dBm/MHz	dBm/MHz
Lowest	Below 5150	-38.12	-27
Highest	Above 5350	-39.47	-27
Note: the data just list the worst cases			

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

Test CH.	Test Segment	Result	Limit
	MHz	dBm/MHz	dBm/MHz
Lowest	Below 5150	-38.59	-27
Highest	Above 5350	-37.72	-27
Note: the data just list the worst cases			

- For the frequency band 5.15-5.25GHz (802.11ac VHT40)

Test CH.	Test Segment	Result	Limit
	MHz	dBm/MHz	dBm/MHz
Lowest	Below 5150	-38.33	-27
Highest	Above 5350	-37.48	-27
Note: the data just list the worst cases			

- For the frequency band 5.15-5.25GHz (802.11ac VHT80)

Test CH.	Test Segment	Result	Limit
	MHz	dBm/MHz	dBm/MHz
Lowest	Below 5150	-37.82	-27
Highest	Above 5350	-36.60	-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 E

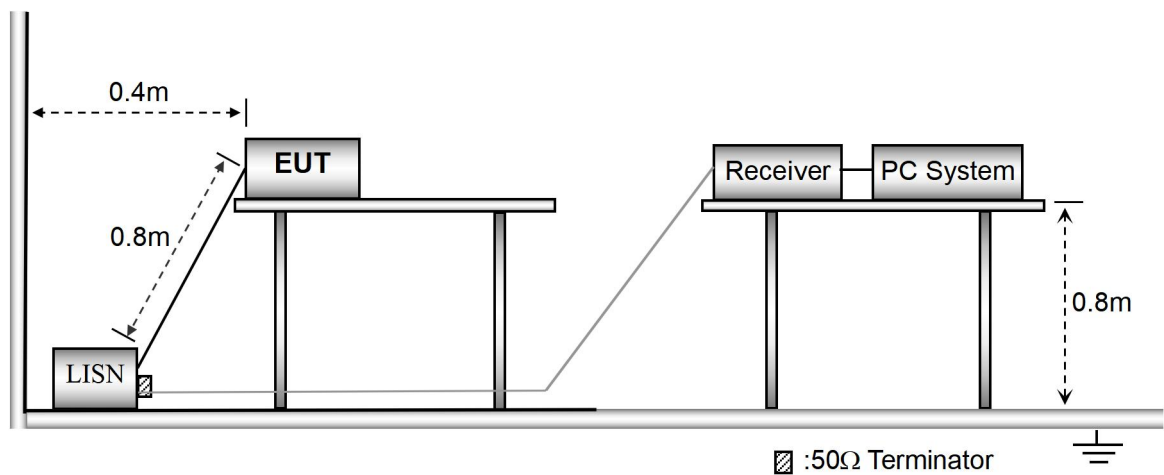
10 Conducted Emissions

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



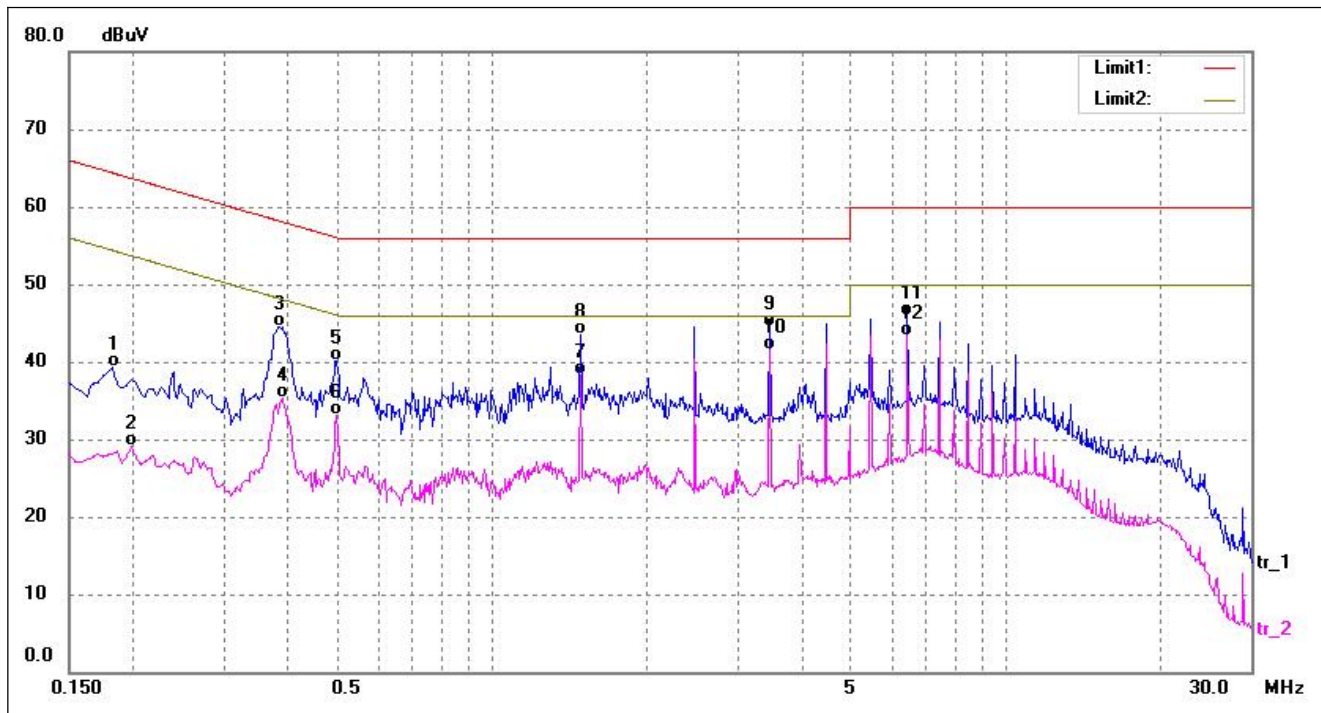
10.3 Test Receiver Setup

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

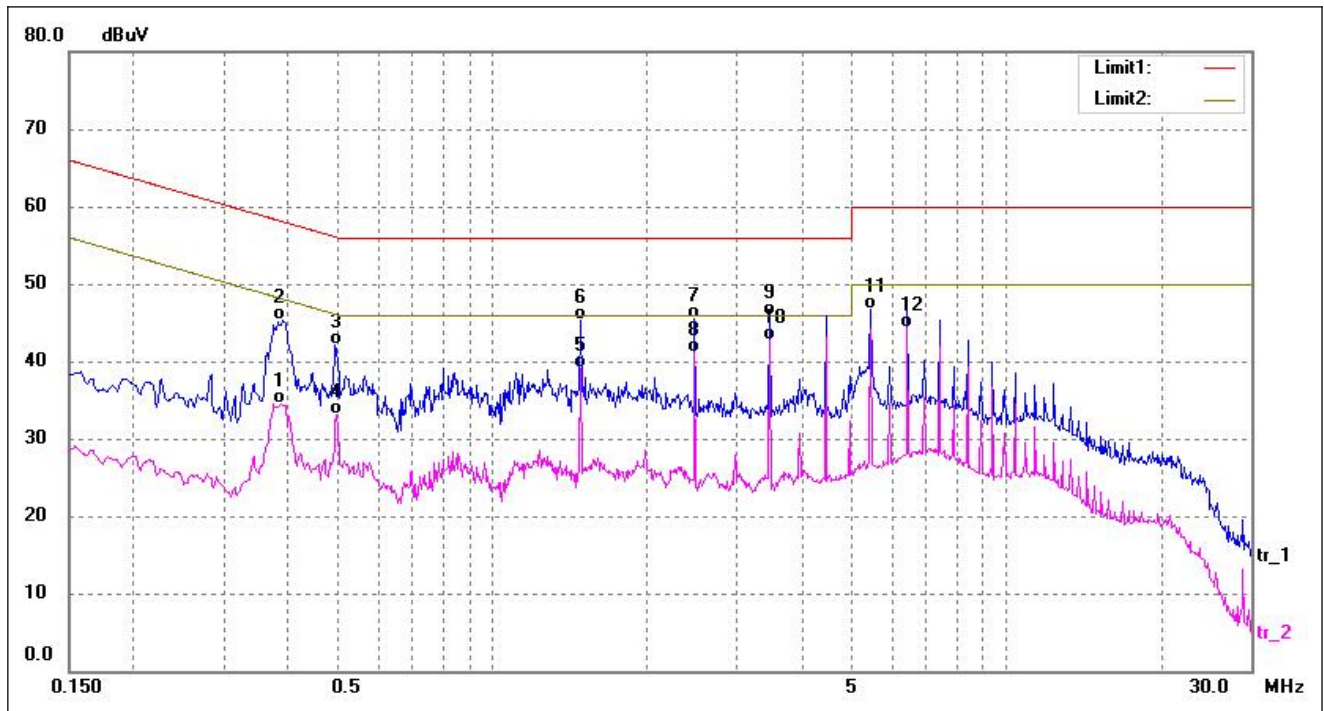
10.4 Summary of Test Results/Plots

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	0.1819	28.95	10.26	39.21	64.40	-25.19	QP
2	0.1980	18.76	10.26	29.02	53.69	-24.67	AVG
3	0.3820	34.39	10.19	44.58	58.24	-13.66	QP
4	0.3899	25.14	10.18	35.32	48.07	-12.75	AVG
5	0.4940	29.94	10.21	40.15	56.10	-15.95	QP
6	0.4980	22.91	10.21	33.12	46.03	-12.91	AVG
7	1.4860	28.12	10.28	38.40	46.00	-7.60	AVG
8	1.4900	33.17	10.28	43.45	56.00	-12.55	QP
9	3.4700	34.36	10.12	44.48	56.00	-11.52	QP
10*	3.4700	31.35	10.12	41.47	46.00	-4.53	AVG
11	6.4460	35.83	10.00	45.83	60.00	-14.17	QP
12	6.4460	33.37	10.00	43.37	50.00	-6.63	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	0.3860	24.25	10.19	34.44	48.15	-13.71	AVG
2	0.3899	35.21	10.18	45.39	58.07	-12.68	QP
3	0.4940	31.95	10.21	42.16	56.10	-13.94	QP
4	0.4980	22.96	10.21	33.17	46.03	-12.86	AVG
5	1.4860	28.81	10.28	39.09	46.00	-6.91	AVG
6	1.4900	34.97	10.28	45.25	56.00	-10.75	QP
7	2.4780	35.21	10.22	45.43	56.00	-10.57	QP
8	2.4780	30.83	10.22	41.05	46.00	-4.95	AVG
9	3.4700	35.79	10.12	45.91	56.00	-10.09	QP
10*	3.4700	32.64	10.12	42.76	46.00	-3.24	AVG
11	5.4540	36.60	10.02	46.62	60.00	-13.38	QP
12	6.4460	34.40	10.00	44.40	50.00	-5.60	AVG

APPENDIX SUMMARY

Project No.	WTH26X04103020W001	Test Engineer	BAldi zhong
Start date	2026/5/7	Finish date	2026/5/30
Temperature	22.6℃	Humiditdy	57%
RF specifications	WiFi-5G		

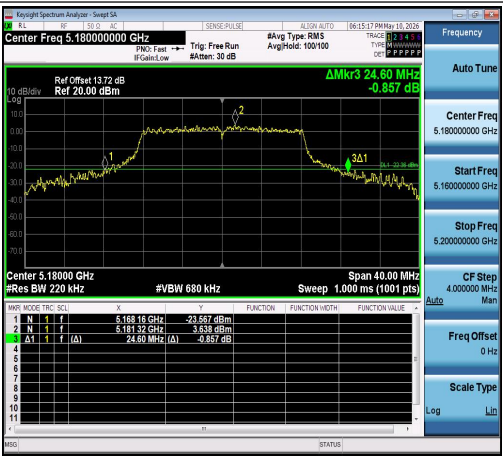
APPENDIX	Description of Test Item	Result
A	Emission Bandwidth& Occupied channel bandwidth& Min emission bandwidth	Compliant
B	Duty Cycle	Compliant
C	Maximum conducted output power	Compliant
D	Maximum power spectral density	Compliant
E	Frequency Stability	Compliant

Appendix A1: Emission Bandwidth

Test Result

TestMode	Antenna	Frequency[MHz]	26db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5180	24.600	5168.160	5192.760	---	---
11A	Ant0	5180	27.320	5165.560	5192.880	---	---
11A	Ant1	5200	23.280	5188.680	5211.960	---	---
11A	Ant0	5200	24.840	5187.000	5211.840	---	---
11A	Ant1	5240	19.720	5230.080	5249.800	---	---
11A	Ant0	5240	26.400	5226.480	5252.880	---	---
11N20MIMO	Ant1	5180	24.680	5167.880	5192.560	---	---
11N20MIMO	Ant0	5180	27.360	5165.720	5193.080	---	---
11N20MIMO	Ant1	5200	26.120	5186.320	5212.440	---	---
11N20MIMO	Ant0	5200	25.600	5186.640	5212.240	---	---
11N20MIMO	Ant1	5240	20.000	5230.040	5250.040	---	---
11N20MIMO	Ant0	5240	31.080	5224.640	5255.720	---	---
11N40MIMO	Ant1	5190	39.520	5170.400	5209.920	---	---
11N40MIMO	Ant0	5190	39.840	5170.000	5209.840	---	---
11N40MIMO	Ant1	5230	38.880	5210.640	5249.520	---	---
11N40MIMO	Ant0	5230	47.280	5206.160	5253.440	---	---
11AC20MIMO	Ant1	5180	23.760	5168.520	5192.280	---	---
11AC20MIMO	Ant0	5180	25.560	5166.560	5192.120	---	---
11AC20MIMO	Ant1	5200	23.000	5188.640	5211.640	---	---
11AC20MIMO	Ant0	5200	25.840	5187.120	5212.960	---	---
11AC20MIMO	Ant1	5240	20.040	5229.960	5250.000	---	---
11AC20MIMO	Ant0	5240	23.560	5229.320	5252.880	---	---
11AC40MIMO	Ant1	5190	39.040	5170.480	5209.520	---	---
11AC40MIMO	Ant0	5190	40.080	5170.000	5210.080	---	---
11AC40MIMO	Ant1	5230	38.880	5210.640	5249.520	---	---
11AC40MIMO	Ant0	5230	40.000	5210.000	5250.000	---	---
11AC80MIMO	Ant1	5210	78.880	5170.800	5249.680	---	---
11AC80MIMO	Ant0	5210	80.160	5170.160	5250.320	---	---

Test Graphs



11A-Ant1-5180



11A-Ant0-5180



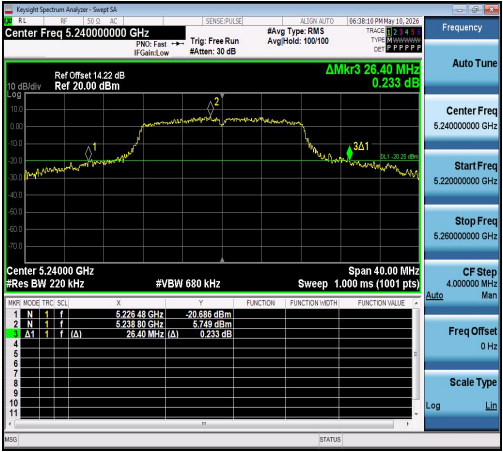
11A-Ant1-5200



11A-Ant0-5200



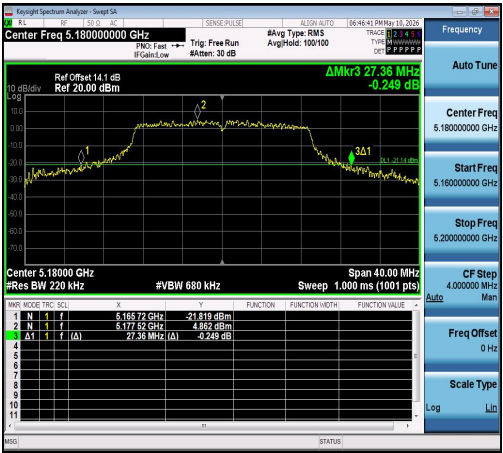
11A-Ant1-5240



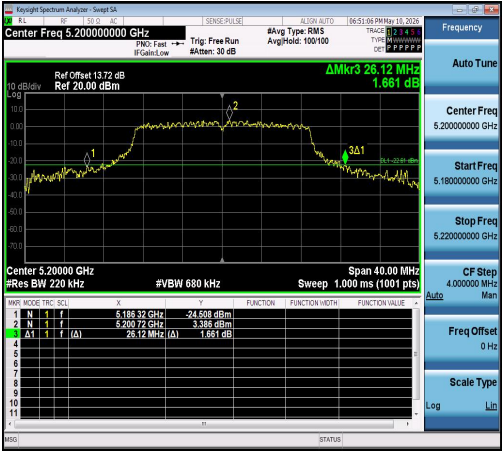
11A-Ant0-5240



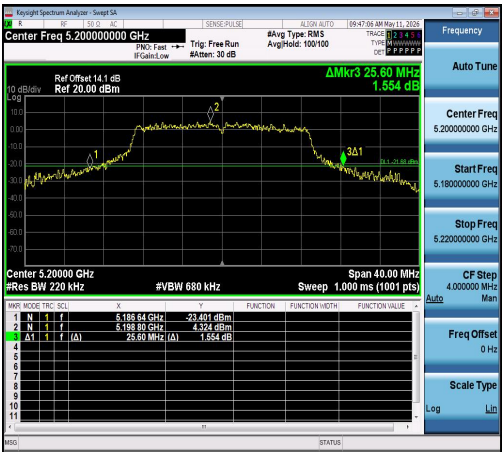
11N20MIMO-Ant1-5180



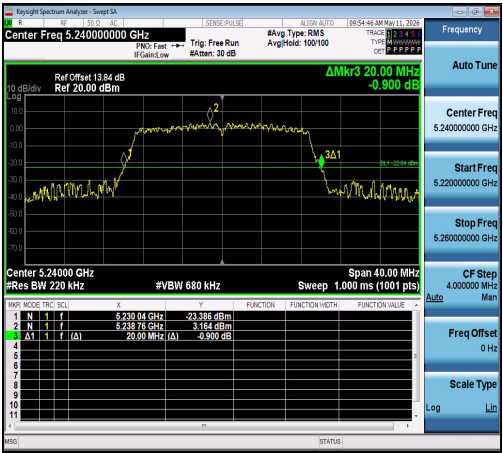
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11N20MIMO-Ant1-5200



11N20MIMO-Ant0-5200



11N20MIMO-Ant1-5240



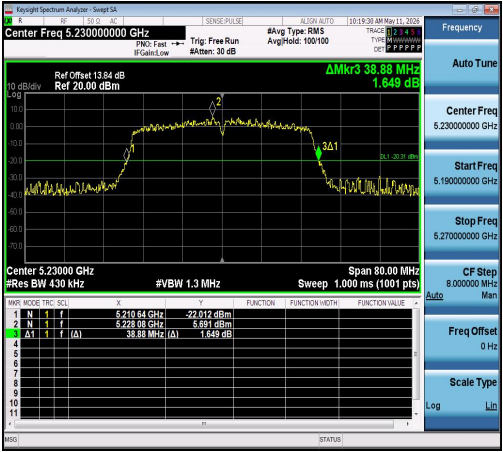
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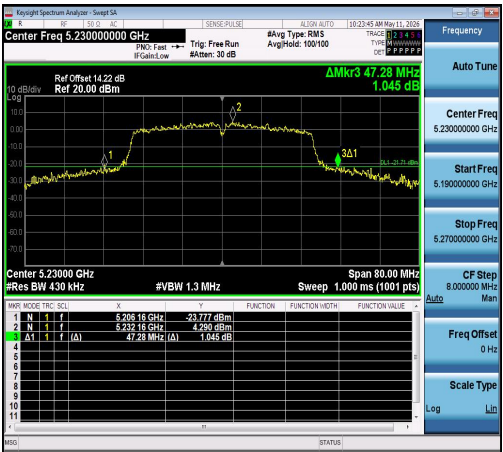
11N40MIMO-Ant1-5190



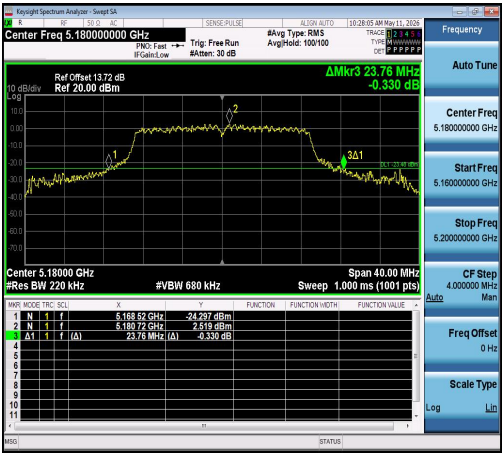
11N40MIMO-Ant0-5190



11N40MIMO-Ant1-5230



11N40MIMO-Ant0-5230



11AC20MIMO-Ant1-5180



11AC20MIMO-Ant0-5180