Regulatory Test Report

Prepared for Harman Becker Automotive Systems

This report presents detailed information on

CY20 DA LOWER

Prepared by

Aravind Buddana

Engineer II

Approved by

Jason Kanakry

General Manager

Issue date: 06/03/2022

Report No: AH22021401-HAR-004-TR2 v2

Contents

• Test Request Information

Test Request #:	7700096778
Test Requested By:	Mark Bowman Harman International Industries, Inc. 30001 Cabot Drive, Novi, MI 48377
Test item Description:	CY20 DA LOWER
Part Number:	T246
DUT Sample Number:	AH22021401-HAR-004#2, AH22021401-HAR-004#3
Hardware Version of DUT:	PV1
Software Version of DUT:	1.22.010
Component Category of DUT:	N/A
FCC ID:	2AHPN-BE2865
Type of Test:	FCC/ISED Certification
Test Method:	CFR Title 47 FCC Part 15.407, ISED Canada RSS-247 Issue 2, ISED Canada RSS-Gen Issue 5, FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01 and ANSI C63.10-2013
Deviations from standard:	None
Approved Test Plan Number:	N/A
Test Plan Revision:	N/A
Date test sample received:	02-14-2022
Date test started:	02-23-2022
Date test finished:	06-03-2022

• Test Laboratory Information

Location of Test Lab:	The radiated and conducted emissions test sites are located at Bureau Veritas 815 N. Opdyke Rd #100, Auburn Hills, MI 48326, Phone: +1-248-836-4700
Key Contact:	Jason Kanakry (General Manager) Jason.Kanakry@BureauVeritas.com Phone: +1-248-836-4747
Laboratory Accreditations:	BUREAU VERITAS CONSUMER PRODUCTS SERVICES, INC is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories.
ISO/IEC 17025:2017:	5678.01
FCC Test Site Number:	US1278 (242530)
IC Test Site Number:	US0229 (26240)

- **Statement of Conformity**

RSS-GEN	RSS 247	Part 15	Comments
6.4		15.15(b)	There are no controls accessible to the user that varies the output power to operate in violation of the regulatory requirements.
		15.19	The label is shown in the label exhibit.
		15.21	Information to the user is shown in the instruction manual exhibit.
		15.27	No special accessories are required for compliance.
3.2		15.31	The EUT was tested in accordance with the measurement standards in this section.
6.13.2		15.33	Frequency range was investigated according to this section, unless noted in specific rule section under which the equipment operates.
6.13.1		15.35	The EUT emissions were measured using the measurement detector and bandwidth specified in this section, unless noted in specific rule section under which the equipment operates.
6.8		15.203	EUT employs integrated PCB antenna with 4.25dBi (UNII-1) and 4.89dBi (UNII-3)
8.10		15.205 15.209	The fundamental is not in a Restricted band and the spurious and harmonic emissions in the Restricted bands comply with the general emission limits of 15.209 or RSS-Gen as applicable
8.8		15.207	N/A. EUT is vehicle battery powered only.

CFR Title 47 FCC Part 15.407, ISED Canada RSS-247 Issue 2

- **Conducted Testing**

Test Summary

This test report supports an application for certification of a transmitter operating pursuant to:

CFR Title 47 FCC Part 15.407, ISED Canada RSS-247 Issue 2, ISED Canada RSS-Gen Issue 5, FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01 and ANSI C63.10-2013

The product is the **CY20 DA LOWER** and it is a transmitter that operates in

UNII-1 (5.15GHz – 5.25GHz)

UNII-3 (5.725GHz – 5.85GHz)

Details	Description
Frequency Range (MHz)	UNII-1 (5.15GHz – 5.25GHz) UNII-3 (5.725GHz – 5.85GHz)
Tested Modes	802.11a 802.11n(HT20, HT40) 802.11ac (VHT20, VHT40, VHT80).
Tested Channels	UNII-1 (36-48) UNII-3 (149-165)
DUT Antenna Type	Integrated PCB antenna
DUT Antenna Gain	4.25dBi (UNII-1) 4.89dBi (UNII-3) ☒ Provided by Customer ☐ Not Provided by Customer

We found that the product met the above requirements with modification.

Test samples were received in good condition.

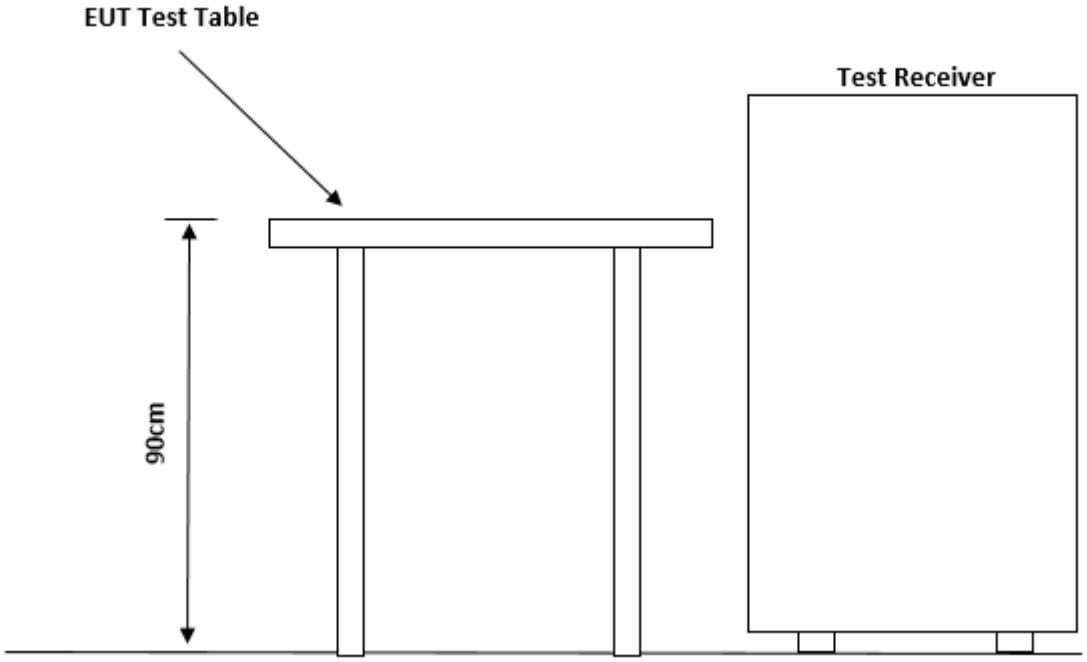
Test Item	Sample #	Result
FCC 15.407 UNII-1	AH22021401-HAR-004#2	Meets Requirements
FCC 15.407 UNII-3	AH22021401-HAR-004#2	Meets Requirements

Worst case emission obtained on low data rates so Full Testing performed on lowest data rate.

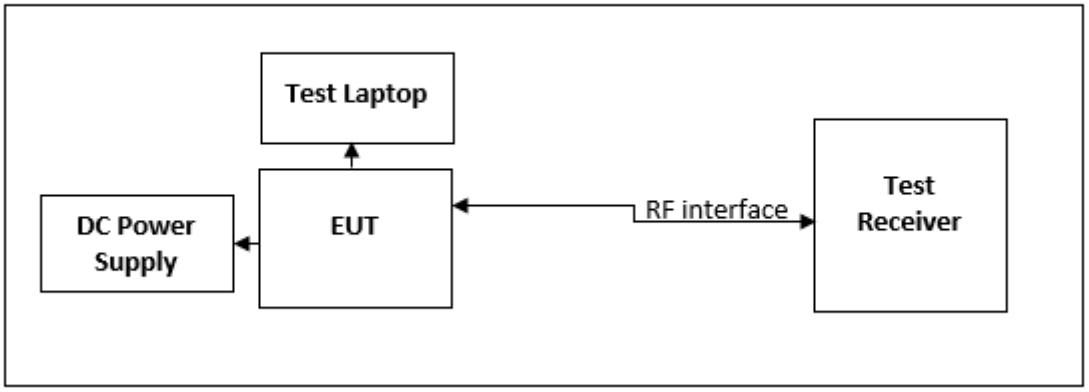
Test Setup

Conducted Test Site Description

The site is accommodated to test tabletop and floor standing test equipment.



TEST SETUP DIAGRAM



Test Equipment Used

ID #	Equipment	Manufacturer	Model #	Serial #	Cal Due
BVD0226	Spectrum Analyzer 10Hz-44GHz	Rohde & Schwarz	FSV3044	101018	01/14/2023
BVD0227	8 port switch unit for Wireless Test system	Rohde & Schwarz	OSP150	101100	12/17/2022
BVD0228	8 port switch unit for Wireless Test system	Rohde & Schwarz	OSP220	101632	12/16/2022
BVD0224	Signal Generator 100kHz-40GHz	Rohde & Schwarz	SMB100A	181741	11/19/2022
BVD0225	Signal Generator 100k-6GHz with GPS simulator	Rohde & Schwarz	SMW200A	107664	11/18/2022
BVD0250	Wireless Connectivity Tester 70M-6GHz	Rohde & Schwarz	CMW270	102113	11/18/2022
BVD0343	DC Regulated Power Supply	Circuit Specialists, INC	CSI3020X	595215	N/A
BVD0321	Fixed Attenuator 2W 20dB -40GHz	Mini-Circuits	BW-K20-2W44+	2103	03/21/2023
BVD0164	Multimeter	Fluke	287	46320236	03/06/2023
BVD0229	Temp and Humidity Meter	Fluke	971	12001009	04/25/2022
N/A	Test-PC	Lenovo ThinkPad	E560	PF0L0N9R	N/A

Customer Supplied Equipment

ID #	Equipment	Manufacturer	Model	Serial #	Version No.
N/A	Cable Harness	Harman	N/A	N/A	N/A
N/A	USB Hub	Harman	N/A	3526408	N/A
N/A	USB 2.0 Ethernet Adapter	Trendnet	TU2-ET100	RA0JU56004466	V6.0R

Equipment List (Software)

ID #	Equipment	Manufacturer	Model	Version No.	
N/A	EMC Test Software	Rodhe & Schwarz	EMC32	11.20.00	N/A

FCC 15.407 UNII-1

DUT Information

Model:	**CY20 DA LOWER**
Manufacturer:	Harman Becker Automotive Systems
Serial Number:	AH22021401-HAR-004#2

Mode	Channel	Frequency
802.11a **802.11n(HT20)** **802.11ac(VHT20)**	36	5180
802.11n(HT40) **802.11ac(VHT40)**	38	5190
802.11a **802.11n(HT20)** **802.11ac(VHT20)**	40	5200
802.11ac(VHT80)	42	5210
802.11n(HT40) **802.11ac(VHT40)**	46	5230
802.11a **802.11n(HT20)** **802.11ac(VHT20)**	48	5240

Notes

2. Channels and modes above were tested.

   2. Output power measurements were performed at the lowest and highest data rate of each supported 802.11 mode.

Antenna Gain	4.25dBi ☒ Provided by Customer ☐ Not Provided by Customer
Number of transmit chains	1
Equipment Type	Unlicensed National Information Infrastructure Device

Power settings

802.11a		802.11n (HT20)		802.11ac (VHT20)	
Channel	**Power Setting**	**Channel**	**Power Setting**	**Channel**	**Power Setting**
36	13	**36**	13	**36**	13
40	13	**40**	13	**40**	13
48	13	**48**	13	**48**	13

802.11n (HT40)		802.11ac (VHT40)	
Channel	**Power Setting**	**Channel**	**Power Setting**
38	13	**38**	13
46	13	**46**	13

802.11ac (VHT80)	
Channel	**Power Setting**
42	13

Test Results Summary

Test	Frequency (MHz)	802.11a	802.11n(HT20)	802.11ac (VHT20)
RF Output Power	**5180/5200/5240**	PASS	PASS	PASS
Power Spectral Density	**5180/5200/5240**	PASS	PASS	PASS
DTS Bandwidth (6dB)	**5180/5200/5240**	PASS	PASS	PASS
Occupied Channel Bandwidth 99%	**5180/5200/5240**	PASS	PASS	PASS
Emission Bandwidth 26 dB	**5180/5200/5240**	PASS	PASS	PASS
		802.11n(HT40)		**802.11ac(VHT40)**
RF Output Power	**5190/5230**	PASS		PASS
Power Spectral Density	**5190/5230**	PASS		PASS
DTS Bandwidth (6dB)	**5190/5230**	PASS		PASS
Occupied Channel Bandwidth 99%	**5190/5230**	PASS		PASS
Emission Bandwidth 26 dB	**5190/5230**	PASS		PASS
		802.11ac(VHT80)		
RF Output Power	**5210**	PASS		
Power Spectral Density	**5210**	PASS		
DTS Bandwidth (6dB)	**5210**	PASS		
Occupied Channel Bandwidth 99%	**5210**	PASS		
Emission Bandwidth 26 dB	**5210**	PASS		

RF output power and Duty Cycle

FCC

Test according to FCC title 47 part 15 §15.407(a), KDB 789033 D02 General U-NII Test Procedures New Rules v02r01 II.E and ANSI C63.10-2013 (In Reference to KDB 789033 E.3.B)

Measurement uncertainty calculated in accordance with ETSI TR 100 028-1.

Expanded Combined Uncertainty of absolute Level Measurement (K=2) < 1 dB

Device has both client and access point modes and has identical RF characteristics and settings for both Limits are as follows:

15.407(a)(1)(i): 1W (30dBm) for outdoor access points with antenna gains less than 6dBi.

15.407(a)(1)(iv): 250mW (23.9dBm) for client devices with antenna gains less than 6dBi.

Since client devices are subject to more stringent limits, unit was tested against the limits for a client device.

802.11a

Data Rate	Gated RMS (dBm) 5180 MHz	Gated RMS (dBm) 5200 MHz	Gated RMS (dBm) 5240 MHz	Limit (dBm)	Duty Cycle (%)
6 Mbps	5.097	5.058	6.010	23.9	98.679
54 Mbps	4.965	4.816	5.894	23.9	90.484

802.11n (HT20)

Data Rate	Gated RMS (dBm) 5180 MHz	Gated RMS (dBm) 5200 MHz	Gated RMS (dBm) 5240 MHz	Limit (dBm)	Duty Cycle (%)
MCS0	4.994	4.750	5.737	23.9	98.591
MCS7	4.996	5.023	5.886	23.9	89.885

802.11ac (VHT20)

Data Rate	Gated RMS (dBm) 5180 MHz	Gated RMS (dBm) 5200 MHz	Gated RMS (dBm) 5240 MHz	Limit (dBm)	Duty Cycle (%)
MCS0	5.090	4.743	5.881	23.9	98.598
MCS8	4.896	4.863	5.768	23.9	88.970

802.11n (HT40)

Data Rate	Gated RMS (dBm) 5190 MHz	Gated RMS (dBm) 5230 MHz	Limit (dBm)	Duty Cycle (%)
MCS0	5.019	5.934	23.9	97.200
MCS7	5.047	5.891	23.9	84.320

802.11ac (VHT40)

Data Rate	Gated RMS (dBm) 5190 MHz	Gated RMS (dBm) 5230 MHz	Limit (dBm)	Duty Cycle (%)
MCS0	4.863	6.051	23.9	97.245
MCS9	4.679	5.651	23.9	82.547

802.11ac (VHT80)

Data Rate	Gated RMS (dBm) 5210 MHz	Limit (dBm)	Duty Cycle (%)
MCS0	5.544	23.9	94.634
MCS9	5.148	23.9	77.804

RSS-247

Per RSS-247 Issue 2 Section 6.2.1.1, limit for OEM devices installed in vehicles: Maximum EIRP shall not exceed 30mW or 1.76+10*log B, dBm, whichever is less (where B is 99% OBW in MHz).
In addition devices must be capable of reducing power by a least 3dB below the maximum permitted EIRP of 30mW, which is 11.77dBm.

For modulations with less than 20MHz 99% OBW; 802.11a, 802.11n (HT20) and 802.11ac (VHT20), worst case 99% OBW of 16.6MHz is assumed with resulting conservative limit of 13.96dBm.
For modulations with more than 20MHz 99% OBW; 802.11n (HT40), 802.11ac (VHT40) and 802.11ac (VHT80), the limit is 30mW (14.77dBm)

802.11a

Data Rate	Gated RMS with TPC (dBm) 5180MHz	Antenna Gain(dBi)	EIRP (dBm)	Limit (dBm)
6 Mbps	5.097	4.25	9.347	11.77
54 Mbps	4.965	4.25	9.215	11.77
Data Rate	**Gated RMS (dBm) 5200MHz**	**Antenna Gain(dBi)**	**EIRP (dBm)**	**Limit (dBm)**
6 Mbps	5.058	4.25	9.308	11.77
54 Mbps	4.816	4.25	9.066	11.77
Data Rate	**Gated RMS (dBm) 5240MHz**	**Antenna Gain(dBi)**	**EIRP (dBm)**	**Limit (dBm)**
6 Mbps	6.010	4.25	10.26	11.77
54 Mbps	5.894	4.25	10.144	11.77

802.11n (HT20)

Data Rate	Gated RMS (dBm) 5180MHz	Antenna Gain(dBi)	EIRP (dBm)	Limit (dBm)
MCS0	4.994	4.25	9.244	11.77
MCS7	4.996	4.25	9.246	11.77
Data Rate	**Gated RMS (dBm) 5200MHz**	**Antenna Gain(dBi)**	**EIRP (dBm)**	**Limit (dBm)**
MCS0	4.750	4.25	9	11.77
MCS7	5.023	4.25	9.273	11.77
Data Rate	**Gated RMS (dBm) 5240MHz**	**Antenna Gain(dBi)**	**EIRP (dBm)**	**Limit (dBm)**
MCS0	5.737	4.25	9.987	11.77
MCS7	5.886	4.25	10.136	11.77

802.11ac (VHT20)

Data Rate	Gated RMS (dBm) 5180MHz	Antenna Gain(dBi)	EIRP (dBm)	Limit (dBm)
MCS0	5.090	4.25	9.34	11.77
MCS8	4.896	4.25	9.146	11.77
Data Rate	**Gated RMS (dBm) 5200MHz**	**Antenna Gain(dBi)**	**EIRP (dBm)**	**Limit (dBm)**
MCS0	4.743	4.25	8.993	11.77
MCS8	4.863	4.25	9.113	11.77
Data Rate	**Gated RMS (dBm) 5240MHz**	**Antenna Gain(dBi)**	**EIRP (dBm)**	**Limit (dBm)**
MCS0	5.881	4.25	10.131	11.77
MCS8	5.768	4.25	10.018	11.77

802.11n (HT40)

Data Rate	Gated RMS (dBm) 5190MHz	Antenna Gain(dBi)	EIRP (dBm)	Limit (dBm)
MCS0	5.019	4.25	9.269	11.77
MCS7	5.047	4.25	9.297	11.77
Data Rate	**Gated RMS (dBm) 5230MHz**	**Antenna Gain(dBi)**	**EIRP (dBm)**	**Limit (dBm)**
MCS0	5.934	4.25	10.184	11.77
MCS7	5.891	4.25	10.141	11.77

802.11ac (VHT40)

Data Rate	Gated RMS (dBm) 5190MHz	Antenna Gain(dBi)	EIRP (dBm)	Limit (dBm)
MCS0	4.863	4.25	9.113	11.77
MCS9	4.679	4.25	8.929	11.77
Data Rate	**Gated RMS (dBm) 5230MHz**	**Antenna Gain(dBi)**	**EIRP (dBm)**	**Limit (dBm)**
MCS0	6.051	4.25	10.301	11.77
MCS9	5.651	4.25	9.901	11.77

802.11ac (VHT80)

Data Rate	Gated RMS (dBm) 5210MHz	Antenna Gain(dBi)	EIRP (dBm)	Limit (dBm)
MCS0	5.544	4.25	9.794	11.77
MCS9	5.148	4.25	9.398	11.77

Power Spectral Density

Test according to FCC title 47 part 15 §15.407(a), KDB 789033 D02 General U-NII Test Procedures New Rules v02r01 II.F and ANSI C63.10-2013

Measurement uncertainty calculated in accordance with ETSI TR 100 028-1. Expanded Uncertainty (K=2) < 1.3 dB

FCC

Device has both client and access point modes and has identical RF characteristics and settings for both Limits are as follows:

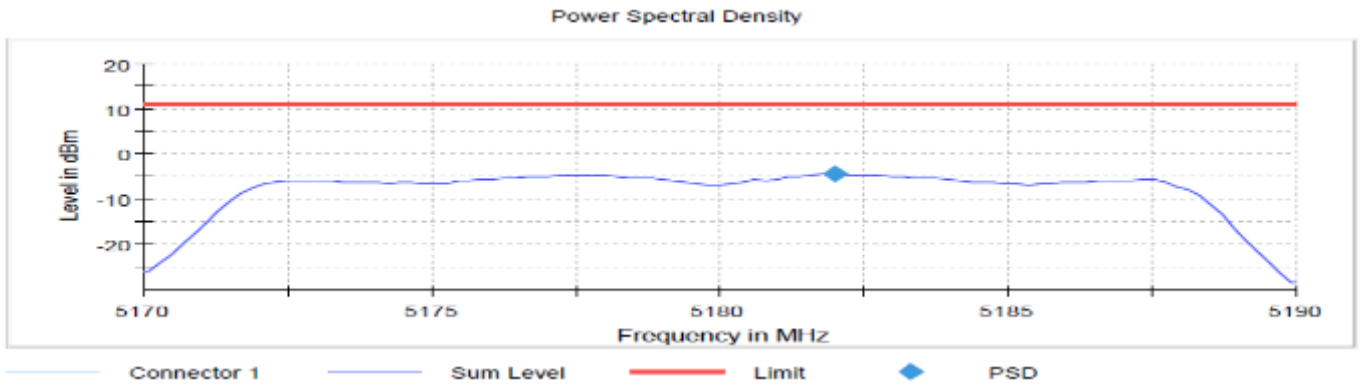
15.407(a)(1)(i): 17dBm for outdoor access points with antenna gains less than 6dBi.

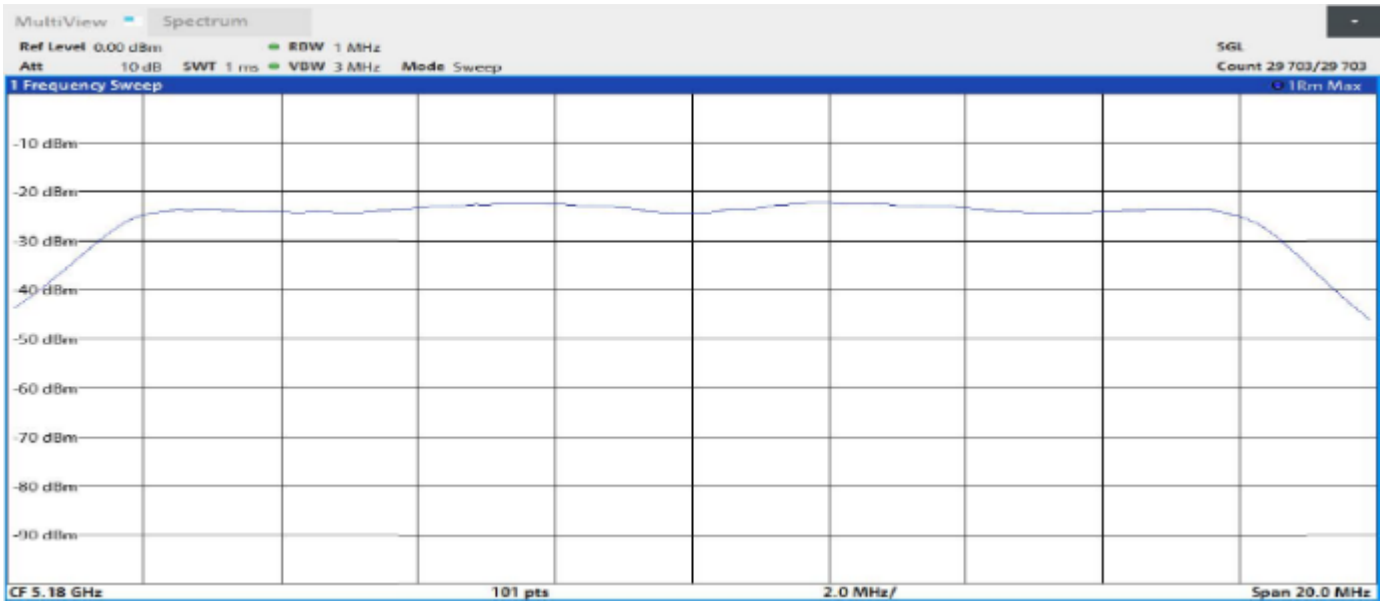
15.407(a)(1)(iv):11dBm for client devices with antenna gains less than 6dBi.

Since client devices are subject to more stringent limits, unit was tested against the limits for a client device.

Mode	Data Rate	PSD (dBm) 5180 MHz	PSD (dBm) 5200 MHz	PSD (dBm) 5240 MHz	Limit (dBm)
802.11a	**6Mbps**	-4.439	-4.655	-3.578	11.0

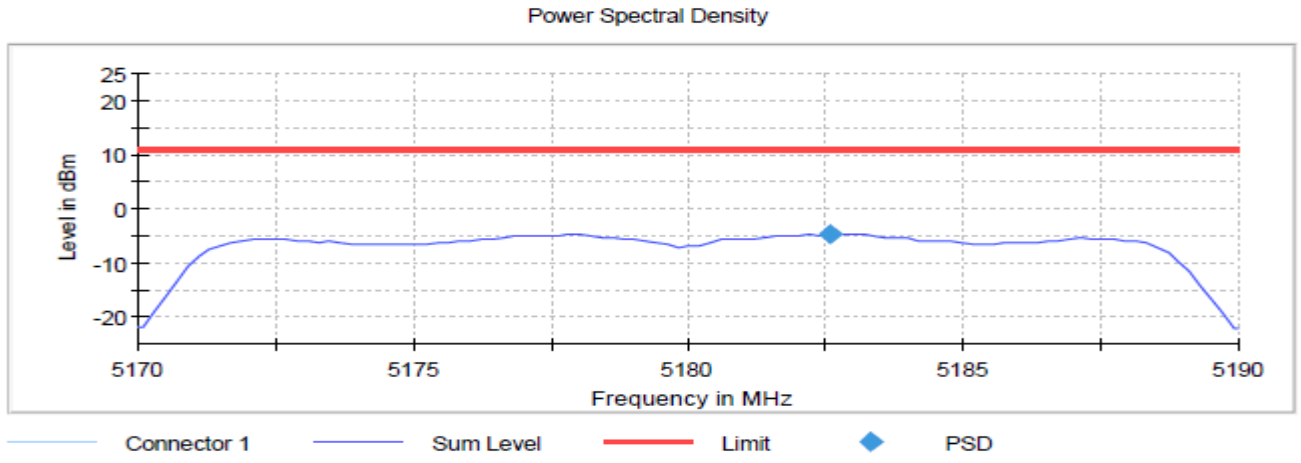
802.11a 5180 MHz 6Mbps

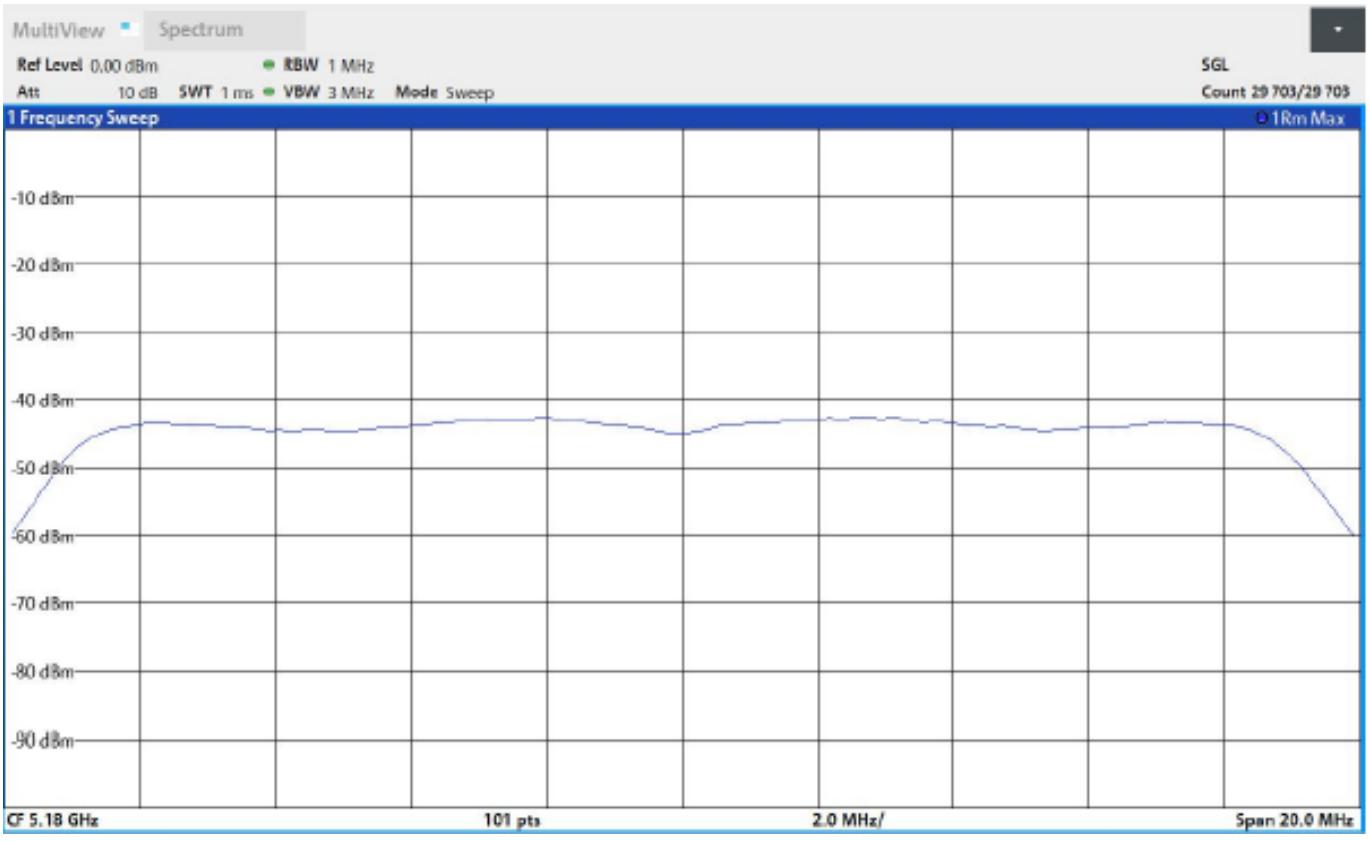




Mode	Data Rate	PSD (dBm) 5180 MHz	PSD (dBm) 5200 MHz	PSD (dBm) 5240 MHz	Limit (dBm)
802.11n (HT20)	**MCS0**	-4.544	-4.176	-3.375	11.0

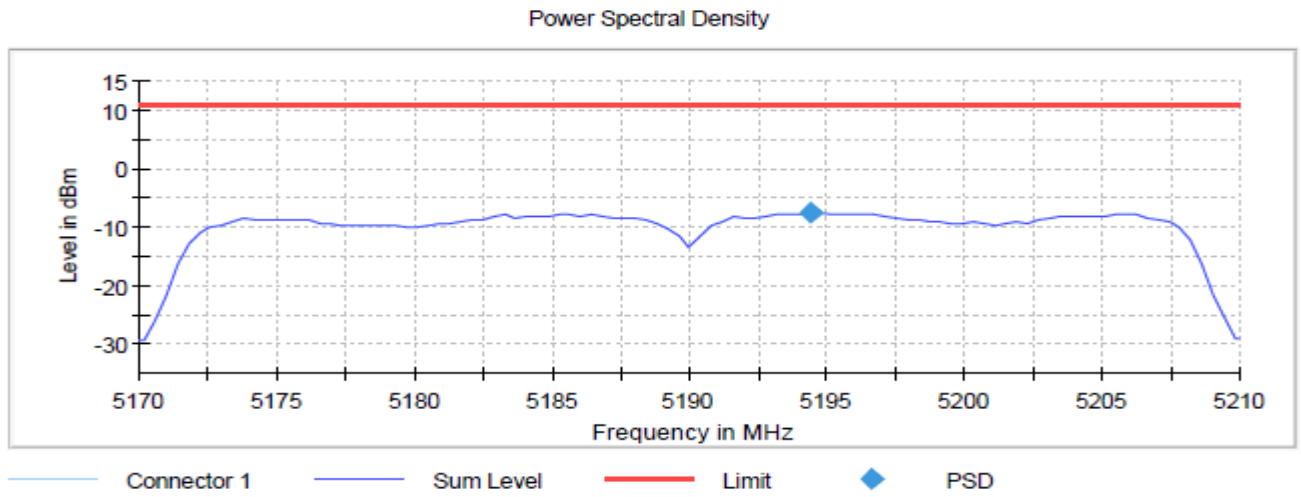
802.11n (HT20) 5180 MHz MCS0

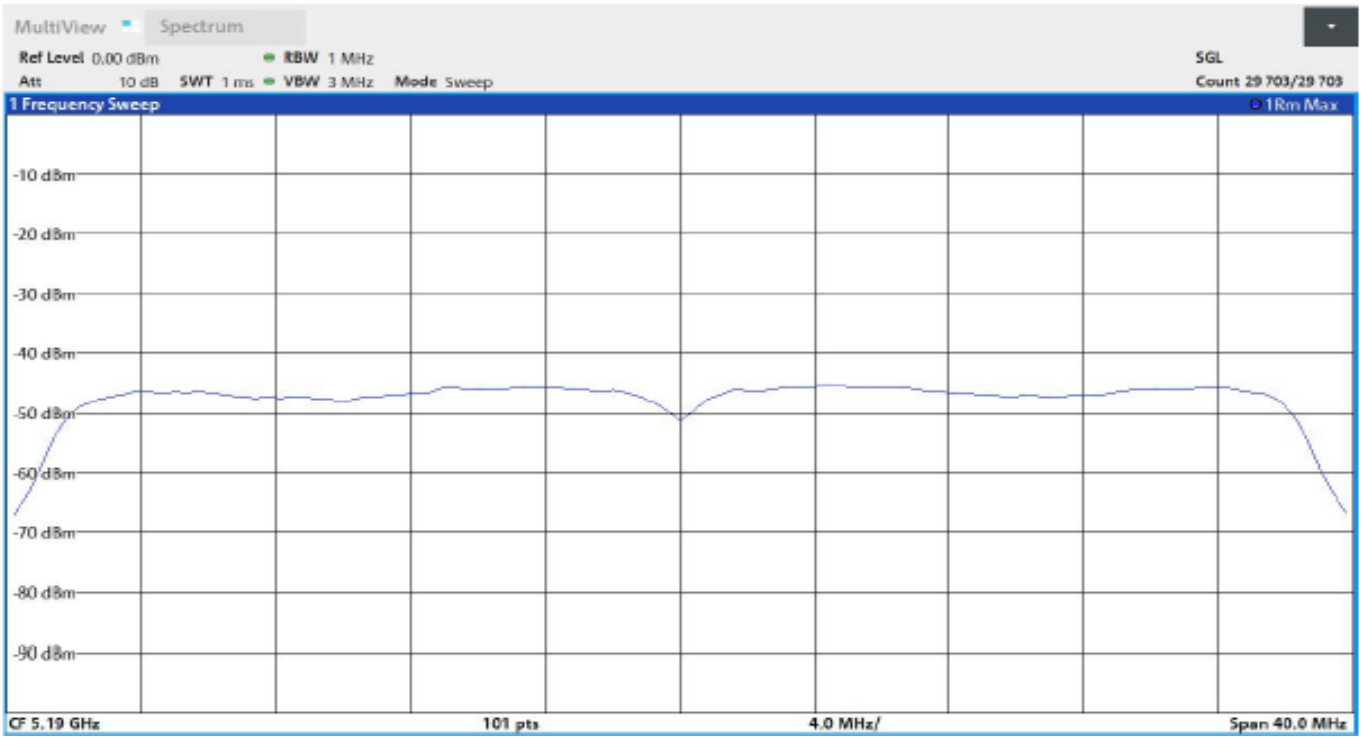




Mode	Data Rate	PSD (dBm) 5190 MHz	PSD (dBm) 5230 MHz	Limit (dBm)
802.11n (HT40)	**MCS0**	-7.465	-6.382	11.0

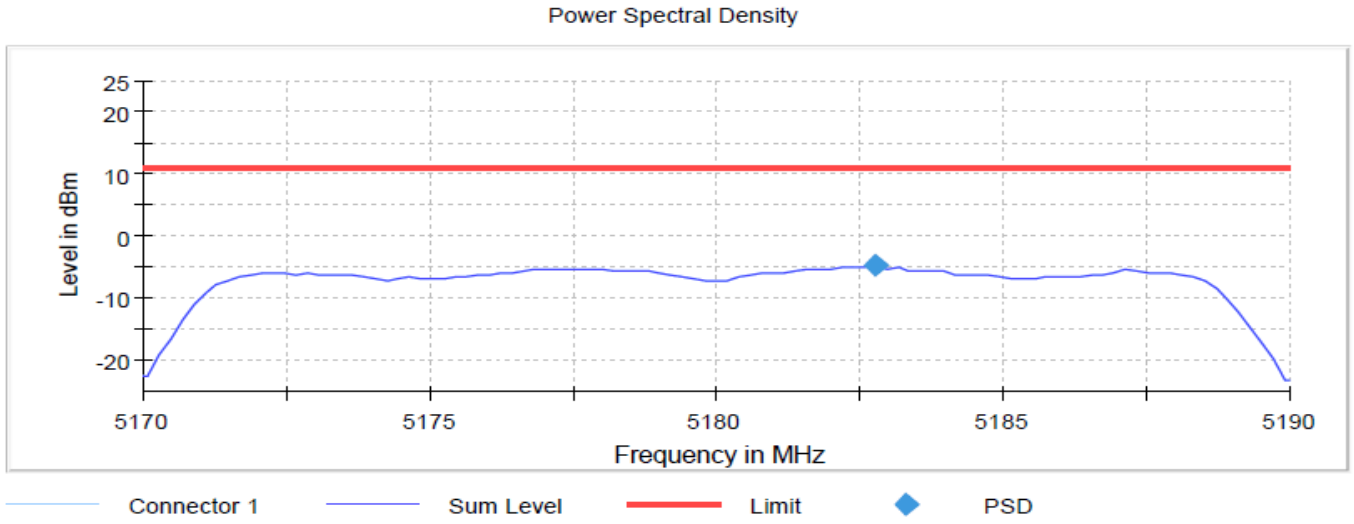
802.11n (HT40) 5190 MHz MCS0

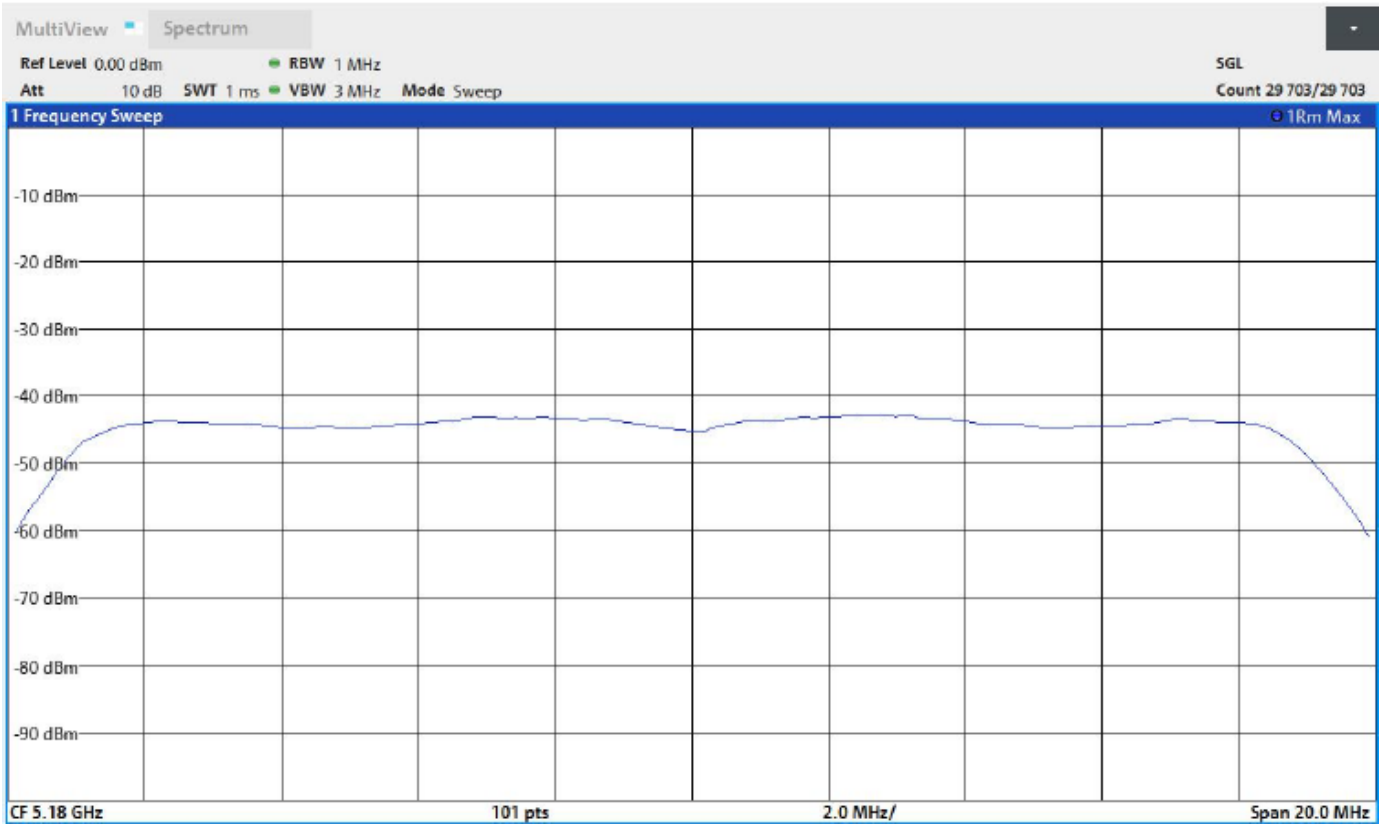




Mode	Data Rate	PSD (dBm) 5180 MHz	PSD (dBm) 5200 MHz	PSD (dBm) 5240 MHz	Limit (dBm)
802.11ac (VHT20)	MCS0	-4.840	-4.374	-3.602	11.0

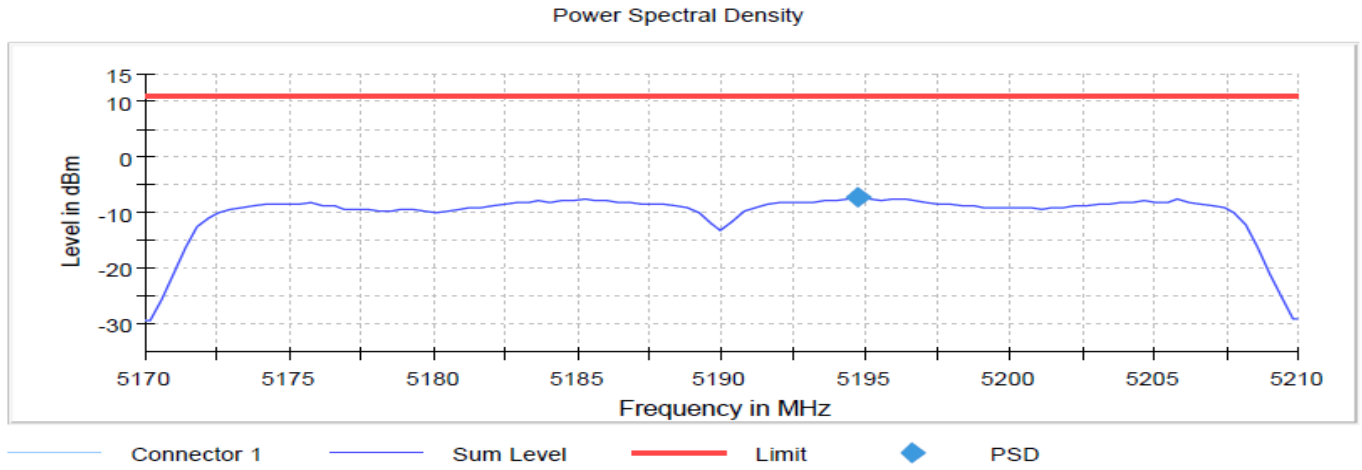
802.11ac (VHT20) 5180 MHz MCS0

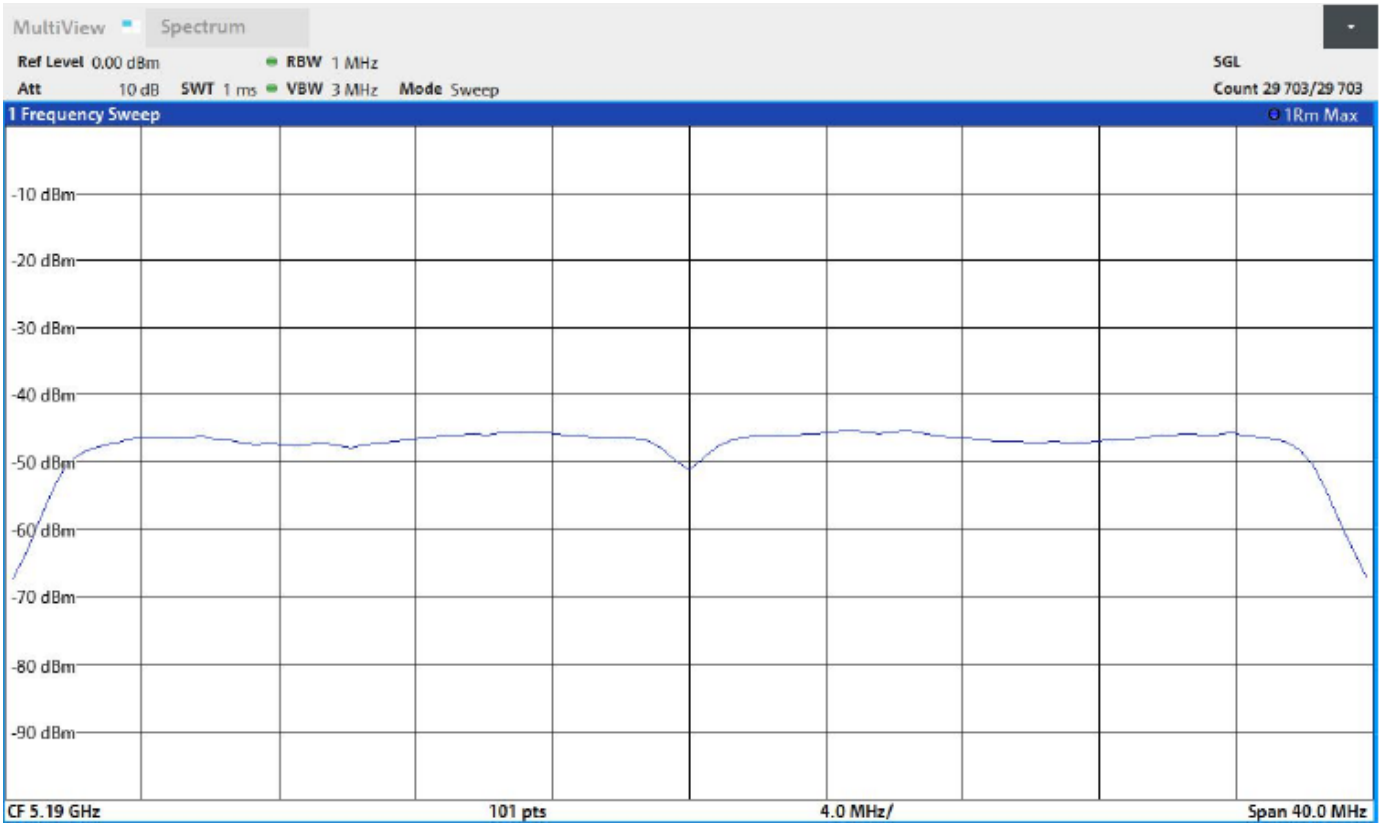




Mode	Data Rate	PSD (dBm) 5190 MHz	PSD (dBm) 5230 MHz	Limit (dBm)
802.11ac (VHT40)	MCS0	-7.337	-5.892	11.0

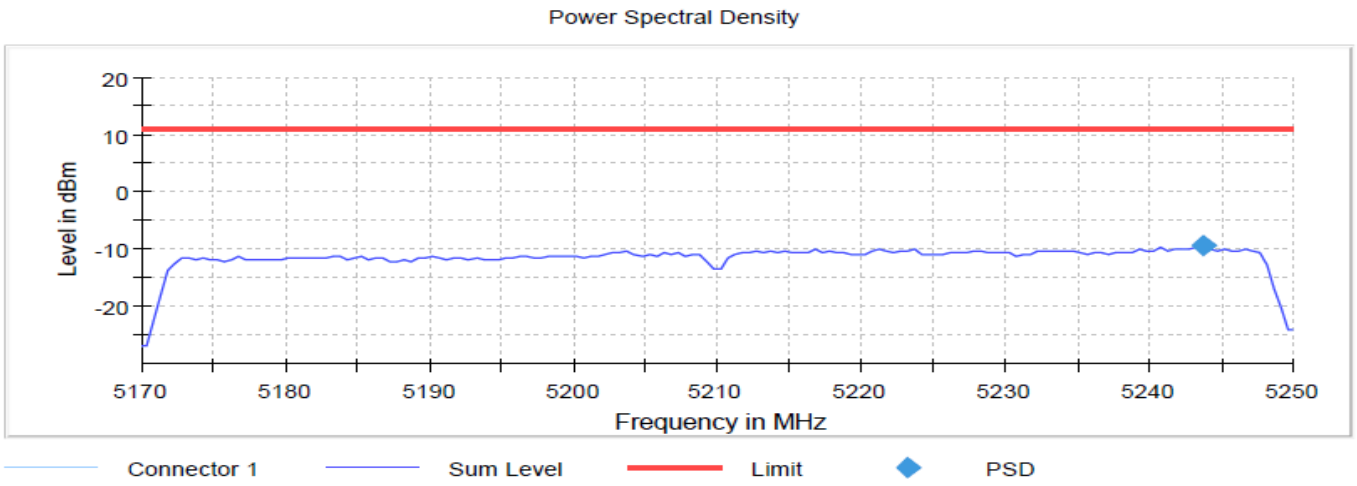
802.11ac (VHT40) 5190 MHz MCS0

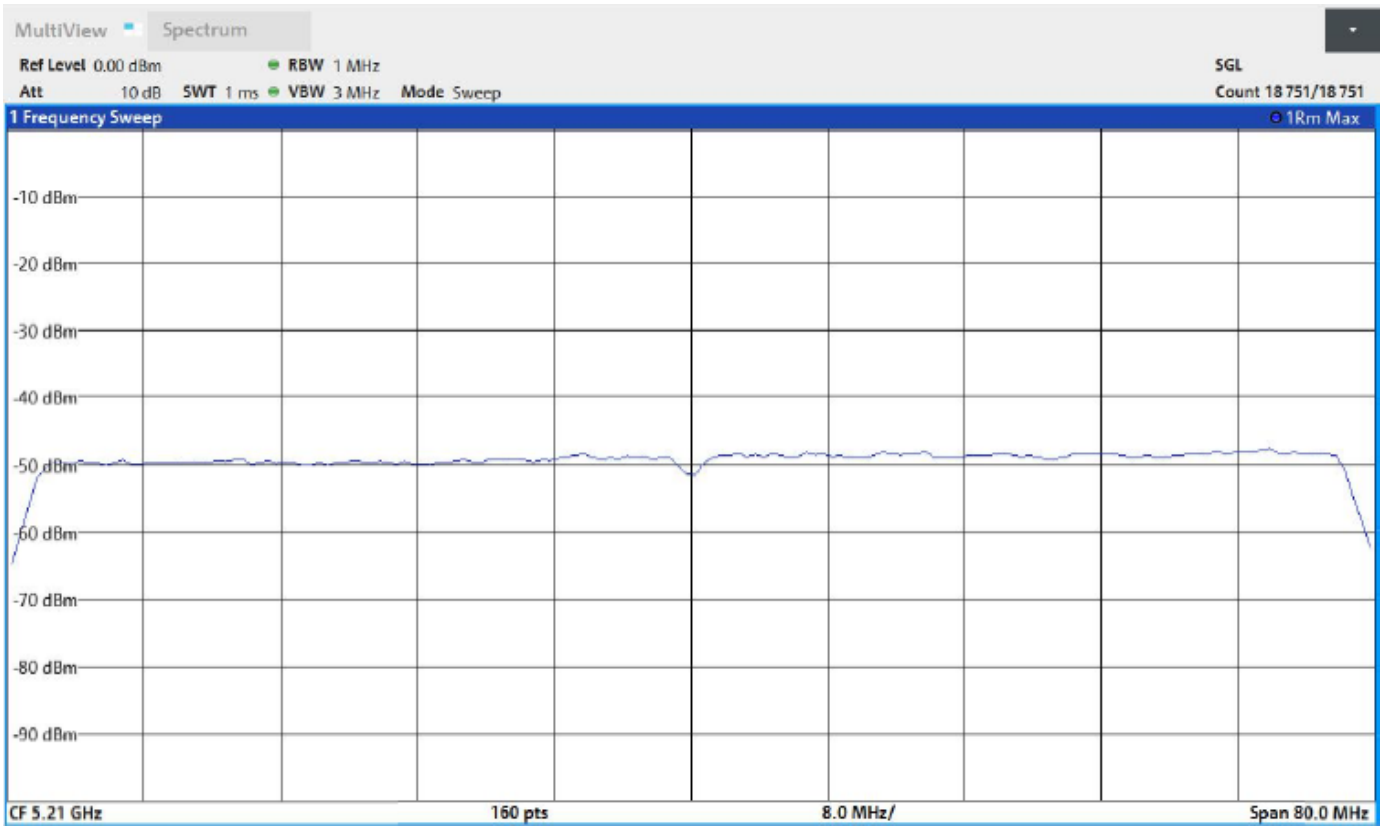




Mode	Data Rate	PSD (dBm) 5210 MHz	Limit (dBm)
802.11ac (VHT80)	MCS0	-9.414	11.0

802.11ac (VHT80) 5210 MHz MCS0





RSS-247

802.11a

Data Rate	PSD(dBm) 5180MHz	Antenna Gain (dBi)	EIRP PSD (dBm)	Limit (dBm)
6 Mbps	-4.439	4.25	-0.189	10.0
Data Rate	**PSD(dBm) 5200MHz**	**Antenna Gain (dBi)**	**EIRP PSD (dBm)**	**Limit (dBm)**
6 Mbps	-4.655	4.25	-0.405	10.0
Data Rate	**PSD(dBm) 5240MHz**	**Antenna Gain (dBi)**	**EIRP PSD (dBm)**	**Limit (dBm)**
6 Mbps	-3.578	4.25	0.672	10.0

802.11n (HT20)

Data Rate	PSD(dBm) 5180MHz	Antenna Gain (dBi)	EIRP PSD (dBm)	Limit (dBm)
MCS0	-4.544	4.25	-0.294	10.0
Data Rate	**PSD(dBm) 5200MHz**	**Antenna Gain (dBi)**	**EIRP PSD (dBm)**	**Limit (dBm)**
MCS0	-4.176	4.25	0.074	10.0
Data Rate	**PSD(dBm) 5240MHz**	**Antenna Gain (dBi)**	**EIRP PSD (dBm)**	**Limit (dBm)**
MCS0	-3.375	4.25	0.875	10.0

802.11n (HT40)

Data Rate	PSD(dBm) 5190MHz	Antenna Gain (dBi)	EIRP PSD (dBm)	Limit (dBm)
MCS0	-7.465	4.25	-3.215	10.0
Data Rate	**PSD(dBm) 5230MHz**	**Antenna Gain (dBi)**	**EIRP PSD (dBm)**	**Limit (dBm)**
MCS0	-6.382	4.25	-2.132	10.0

802.11ac (VHT20)

Data Rate	PSD(dBm) 5180MHz	Antenna Gain (dBi)	EIRP PSD (dBm)	Limit (dBm)
MCS0	-4.840	4.25	-0.59	10.0
Data Rate	**PSD(dBm) 5200MHz**	**Antenna Gain (dBi)**	**EIRP PSD (dBm)**	**Limit (dBm)**
MCS0	-4.374	4.25	-0.124	10.0
Data Rate	**PSD(dBm) 5240MHz**	**Antenna Gain (dBi)**	**EIRP PSD (dBm)**	**Limit (dBm)**
MCS0	-3.602	4.25	0.648	10.0

802.11ac (VHT40)

Data Rate	PSD(dBm) 5190MHz	Antenna Gain (dBi)	EIRP PSD (dBm)	Limit (dBm)
MCS0	-7.337	4.25	-3.087	10.0
Data Rate	**PSD(dBm) 5230MHz**	**Antenna Gain (dBi)**	**EIRP PSD (dBm)**	**Limit (dBm)**
MCS0	-5.892	4.25	-1.642	10.0

802.11ac (VHT80)

Data Rate	PSD(dBm) 5210MHz	Antenna Gain (dBi)	EIRP PSD (dBm)	Limit (dBm)
MCS0	-9.414	4.25	-5.164	10.0

DTS Bandwidth 6dB

FCC and RSS-247

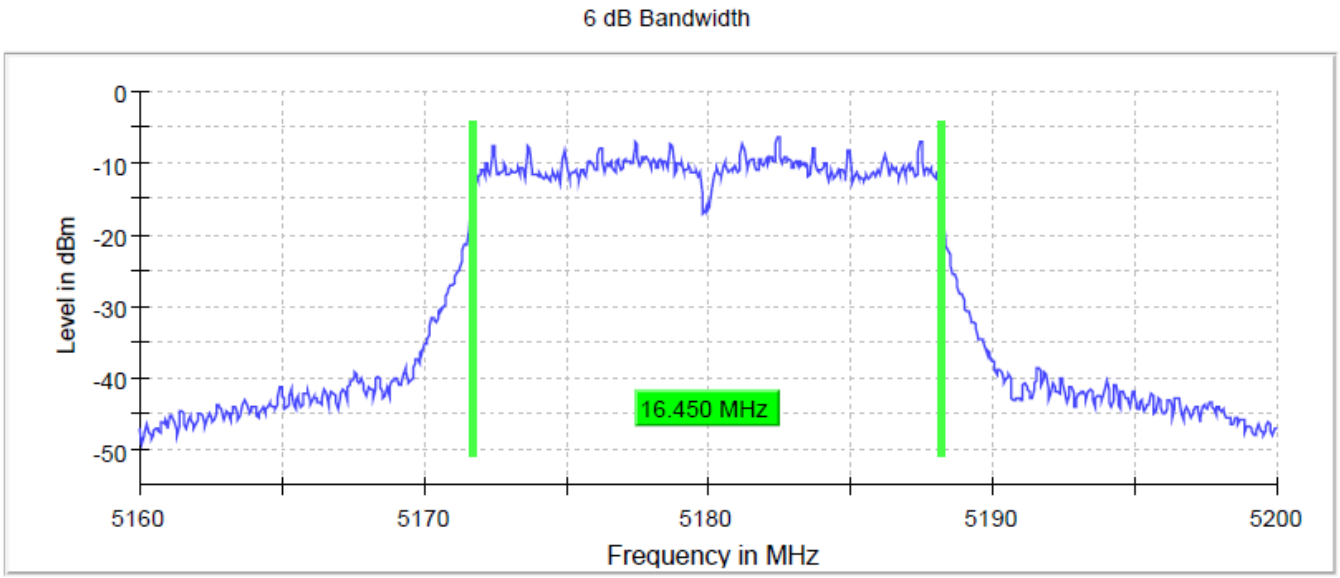
Test according to FCC title 47 part 15 §15.407(a),€, KDB 789033 D02 General U-NII Test Procedures

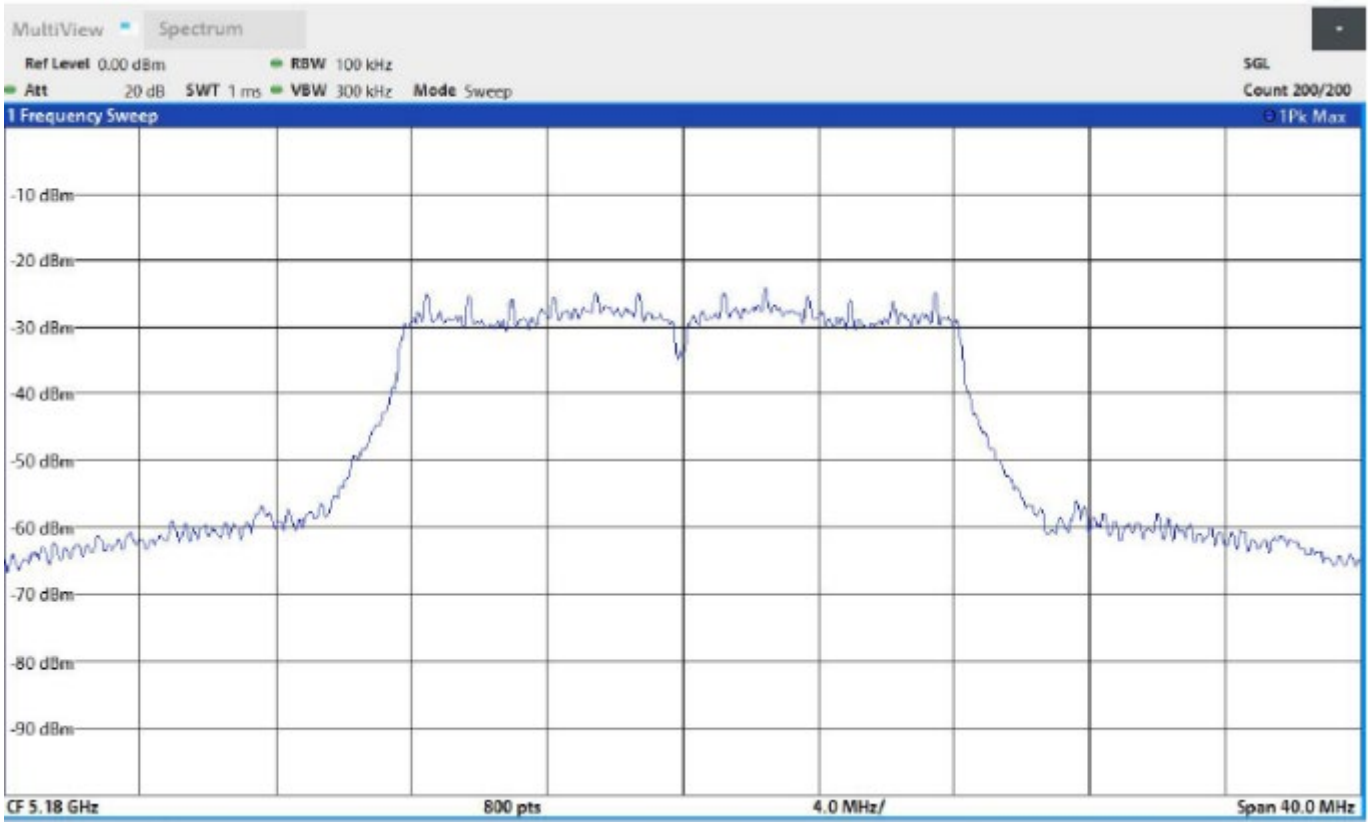
New Rules v02r01 D and ANSI C63.10-2013

Measurement uncertainty calculated in accordance with ETSI TR 100 028-1. Expanded Uncertainty (K=2) < 2%

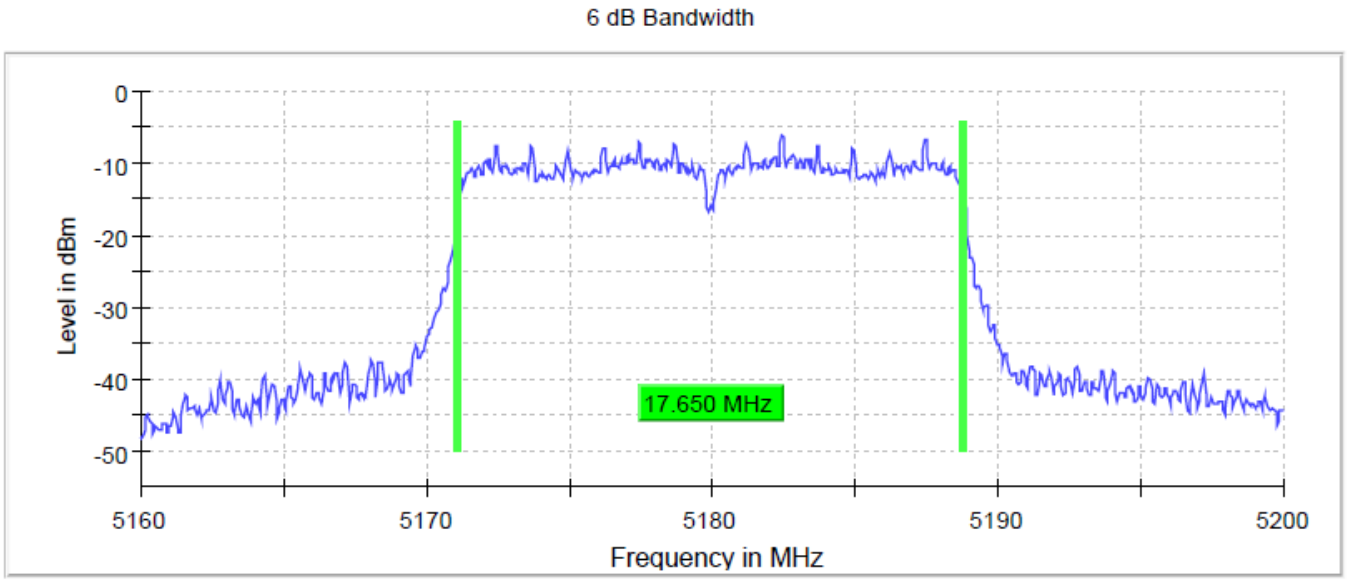
Data Rate	DUT Frequency (MHz)	Bandwidth (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)	Minimum Limit (MHz)
802.11a 6Mbps	5180.000000	16.450000	5171.725000	5188.175000	0.5
802.11n (HT20) MCS0	5180.000000	17.650000	5171.125000	5188.775000	0.5
802.11ac (VHT20) MCS0	5180.000000	17.650000	5171.125000	5188.775000	0.5
802.11n (HT40) MCS0	5190.000000	35.750000	5172.175000	5207.925000	0.5
802.11ac (VHT40) MCS0	5190.000000	35.750000	5172.175000	5207.925000	0.5
802.11ac (VHT80) MCS0	5210.000000	76.150000	5172.025000	5248.175000	0.5
802.11a 6Mbps	5200.000000	16.450000	5191.725000	5208.175000	0.5
802.11n (HT20) MCS0	5200.000000	17.400000	5191.375000	5208.775000	0.5
802.11ac (VHT20) MCS0	5200.000000	17.400000	5191.375000	5208.775000	0.5
802.11n (HT40) MCS0	5230.000000	35.750000	5212.175000	5247.925000	0.5
802.11ac (VHT40) MCS0	5230.000000	35.750000	5212.175000	5247.925000	0.5
802.11a 6Mbps	5240.000000	16.450000	5231.725000	5248.175000	0.5
802.11n (HT20) MCS0	5240.000000	17.650000	5231.125000	5248.775000	0.5
802.11ac (VHT20) MCS0	5240.000000	17.650000	5231.125000	5248.775000	0.5

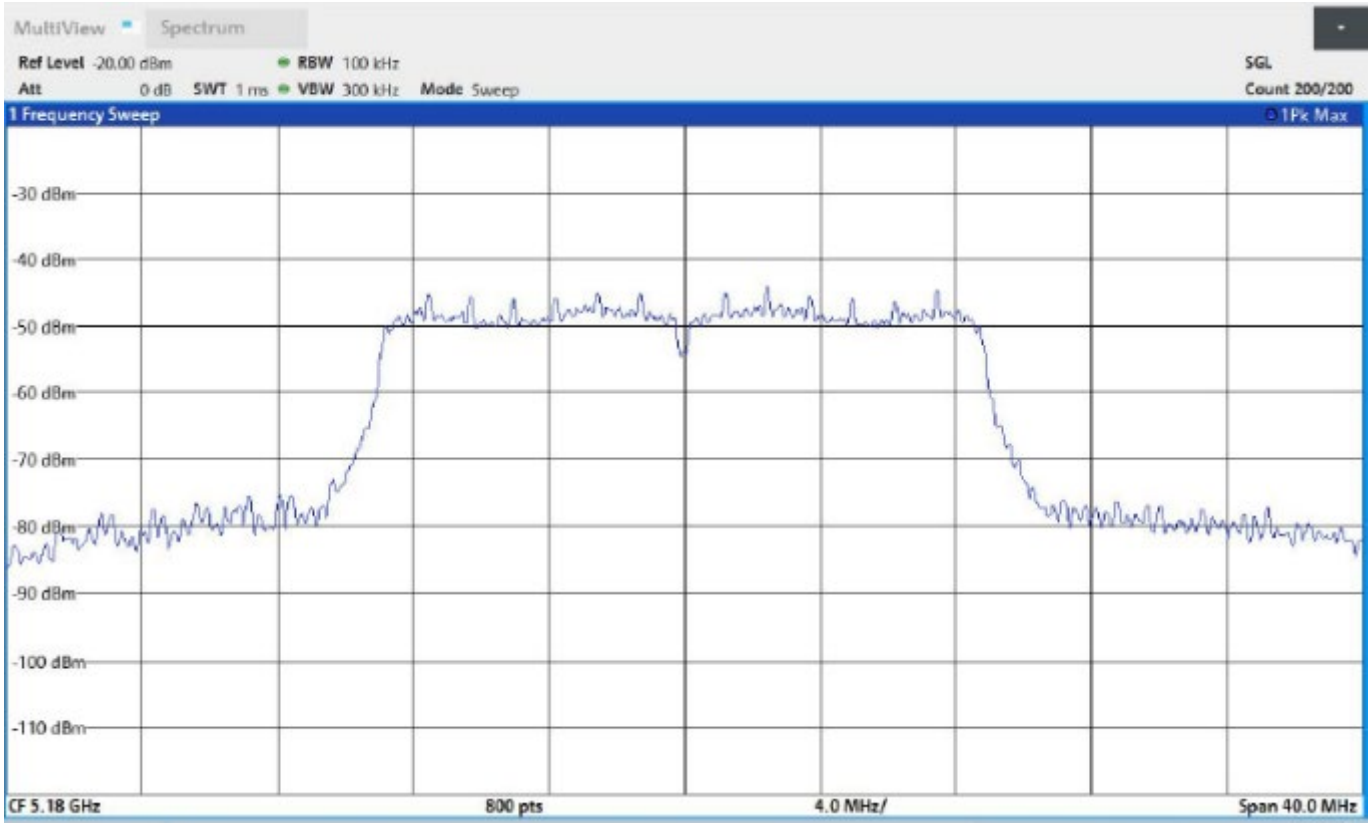
802.11a 5180MHz 6Mbps



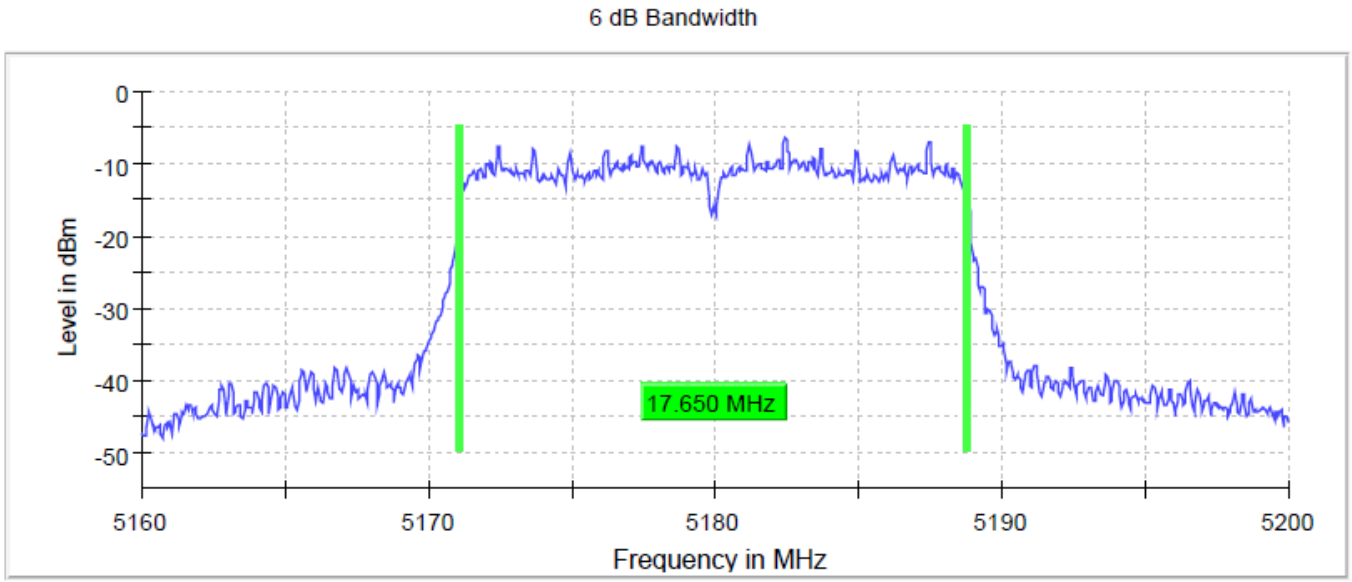


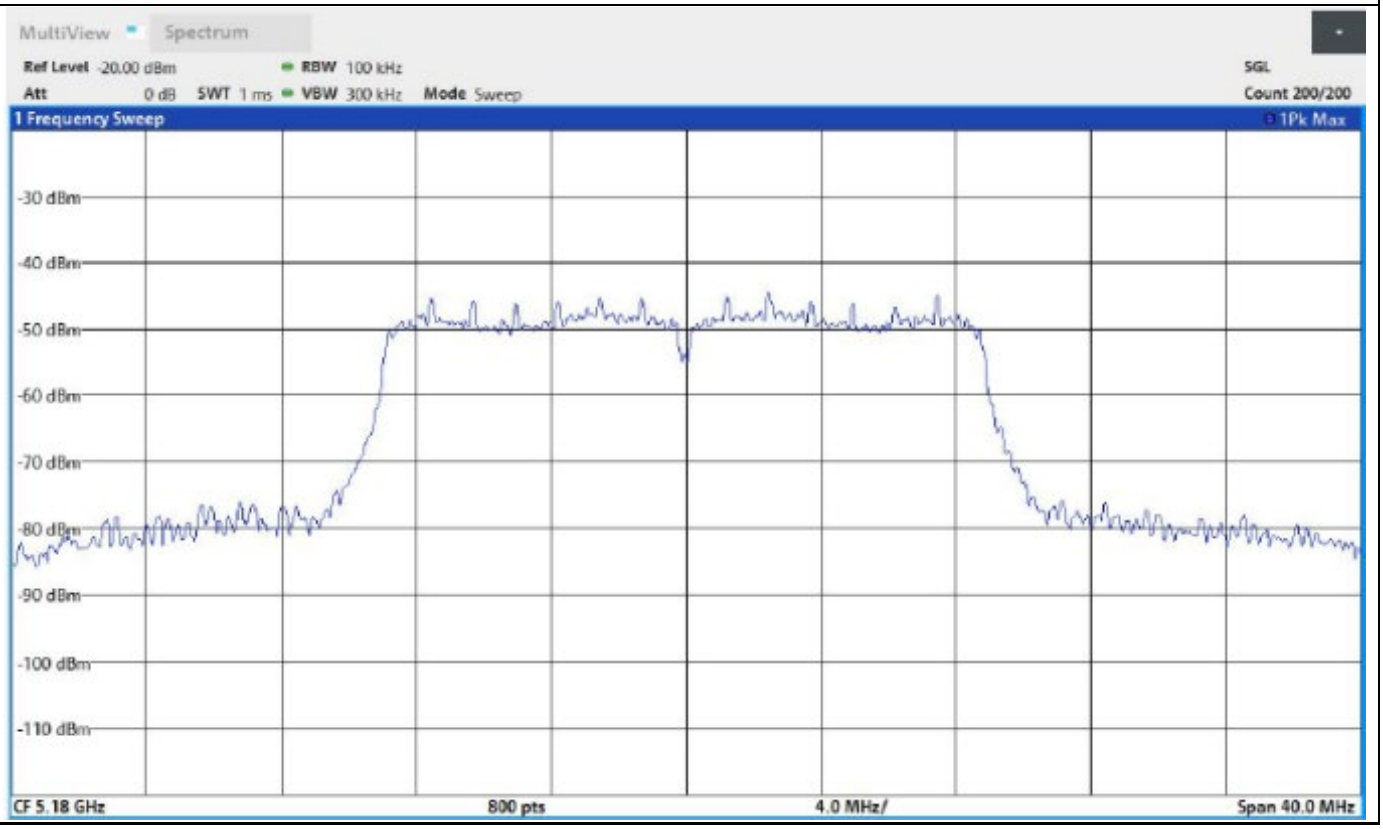
802.11n 5180MHz MCS0





802.11ac 5180MHz MCS0





Occupied Channel Bandwidth

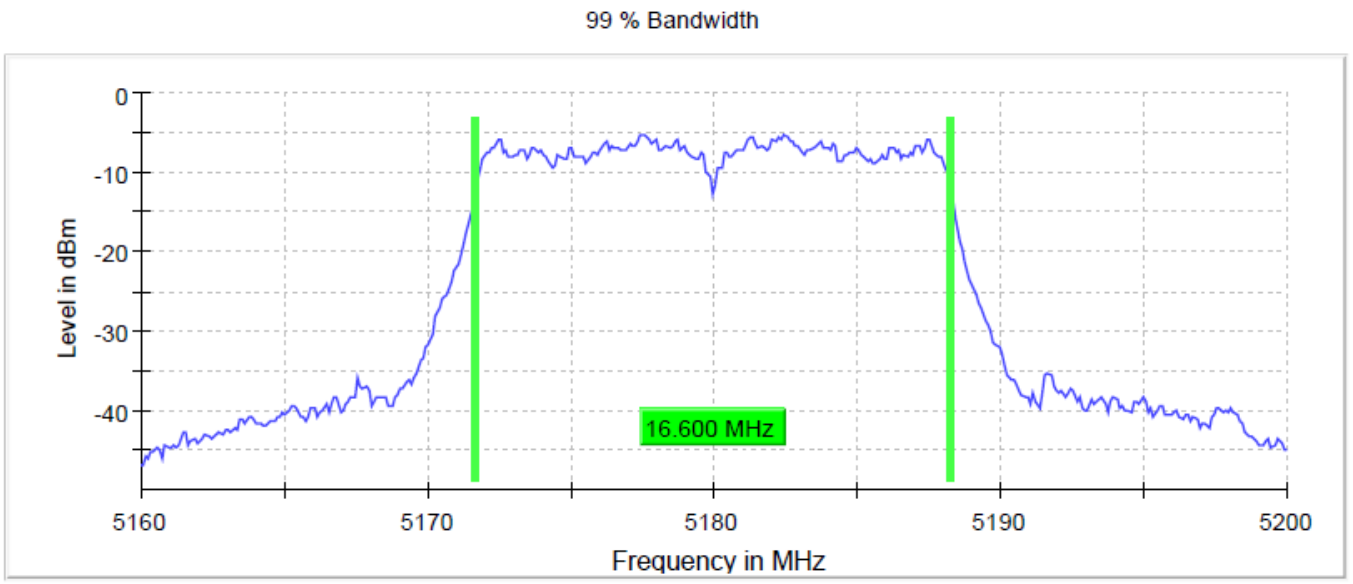
Test according to FCC title 47 part 15 §15.407(a),€, KDB 789033 D02 General U-NII Test Procedures

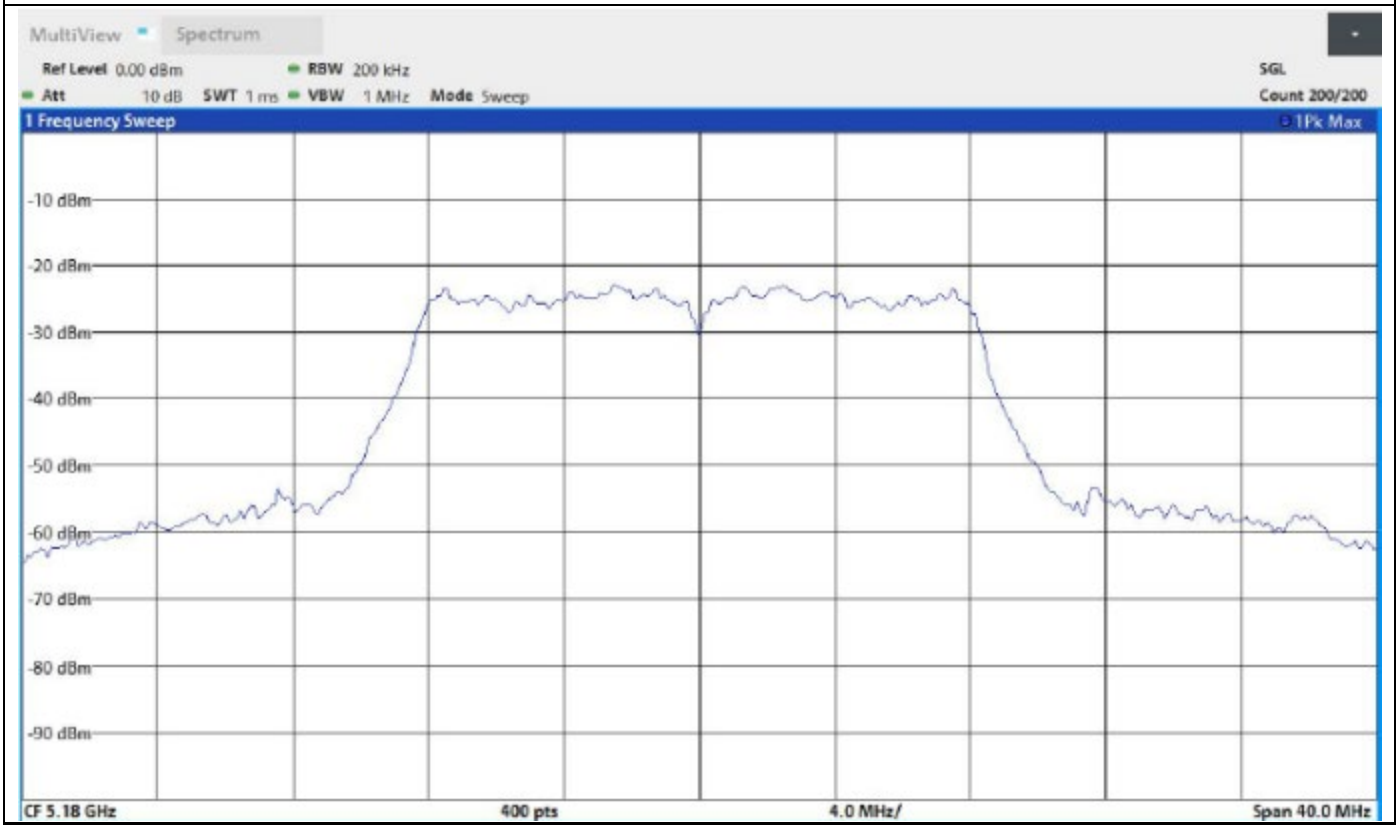
New Rules v02r01 D and ANSI C63.10-2013

Measurement uncertainty calculated in accordance with ETSI TR 100 028-1. Expanded Uncertainty (K=2) < 2%

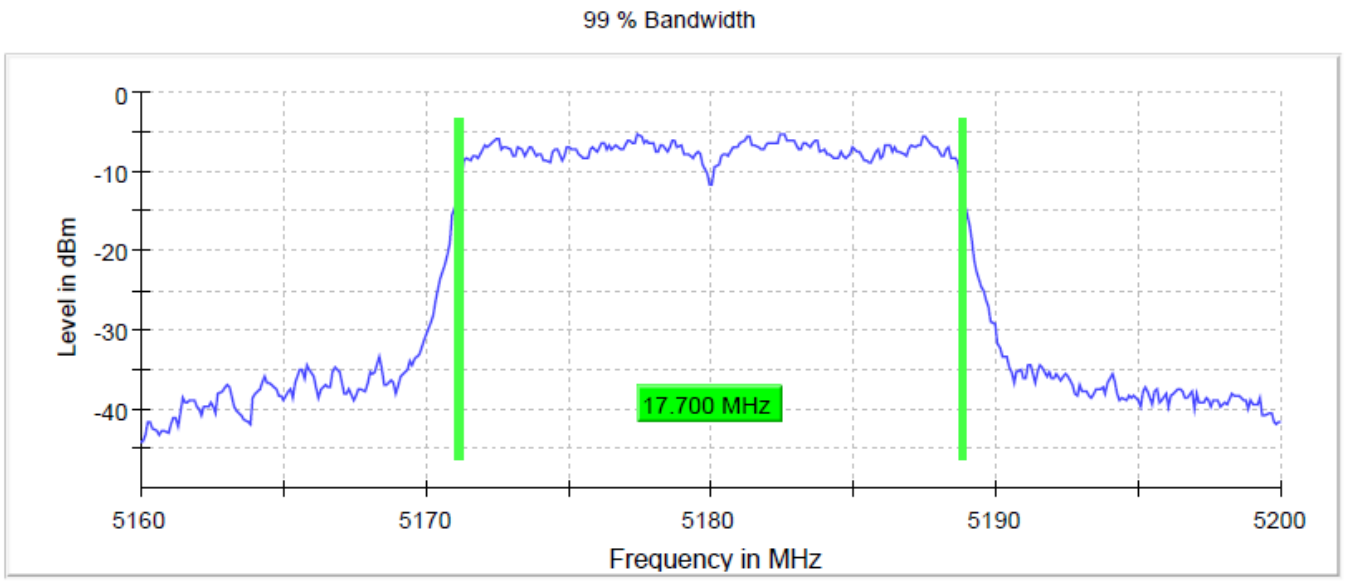
Data Rate	DUT Frequency (MHz)	Bandwidth (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)	Band Limit (MHz)
802.11a 6Mbps	5180.000000	16.600000	5171.650000	5188.250000	5150-5250
802.11n (HT20) MCS0	5180.000000	17.700000	5171.150000	5188.850000	5150-5250
802.11ac (VHT20) MCS0	5180.000000	17.700000	5171.150000	5188.850000	5150-5250
802.11n (HT40) MCS0	5190.000000	36.500000	5171.875000	5208.375000	5150-5250
802.11ac (VHT40) MCS0	5190.000000	36.500000	5171.875000	5208.375000	5150-5250
802.11ac (VHT80) MCS0	5210.000000	78.500000	5171.250000	5249.750000	5150-5250
802.11a 6Mbps	5200.000000	16.700000	5191.650000	5208.350000	5150-5250
802.11n (HT20) MCS0	5200.000000	17.700000	5191.150000	5208.850000	5150-5250
802.11ac (VHT20) MCS0	5200.000000	17.700000	5191.150000	5208.850000	5150-5250
802.11n (HT40) MCS0	5230.000000	36.500000	5211.875000	5248.375000	5150-5250
802.11ac (VHT40) MCS0	5230.000000	36.250000	5211.875000	5248.125000	5150-5250
802.11a 6Mbps	5240.000000	16.700000	5231.650000	5248.350000	5150-5250
802.11n (HT20) MCS0	5240.000000	17.700000	5231.150000	5248.850000	5150-5250
802.11ac (VHT20) MCS0	5240.000000	17.700000	5231.150000	5248.850000	5150-5250

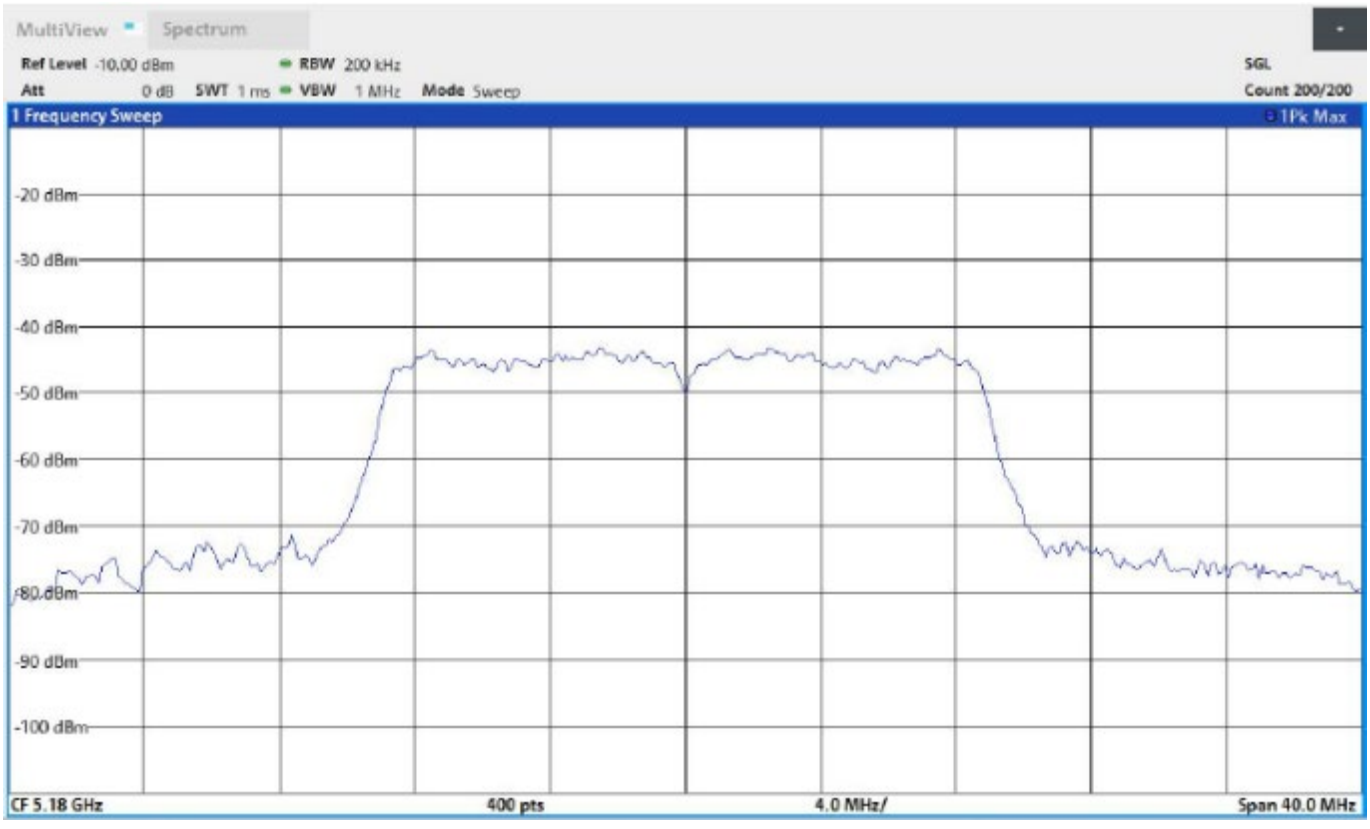
802.11a 5180MHz 6Mbps



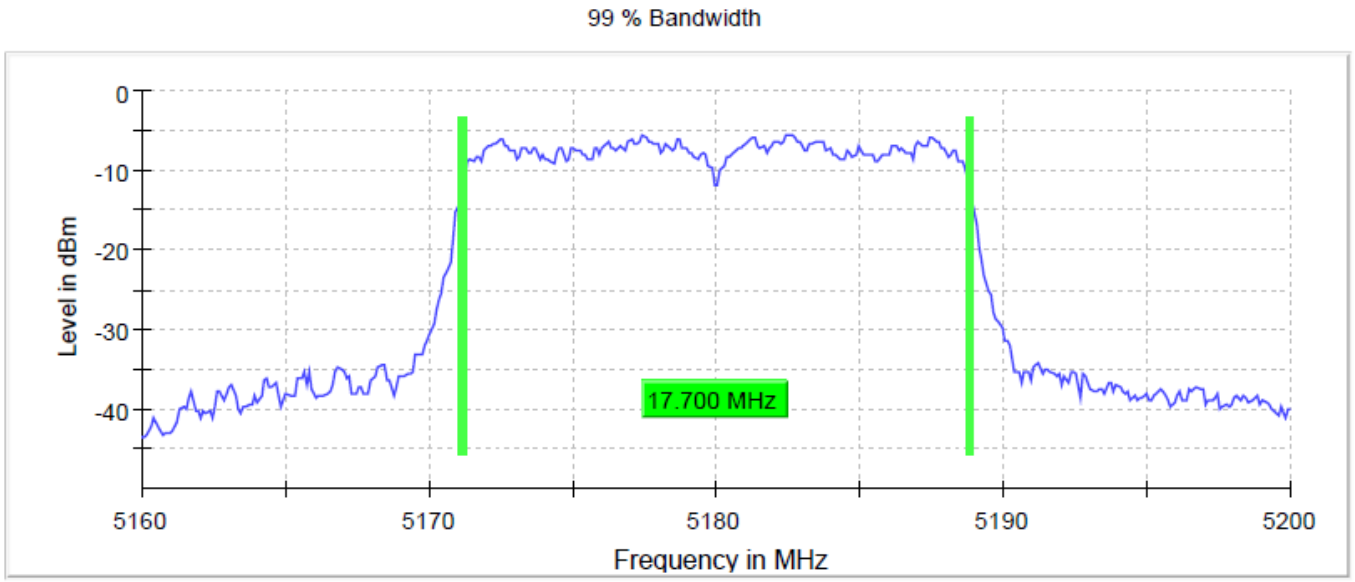


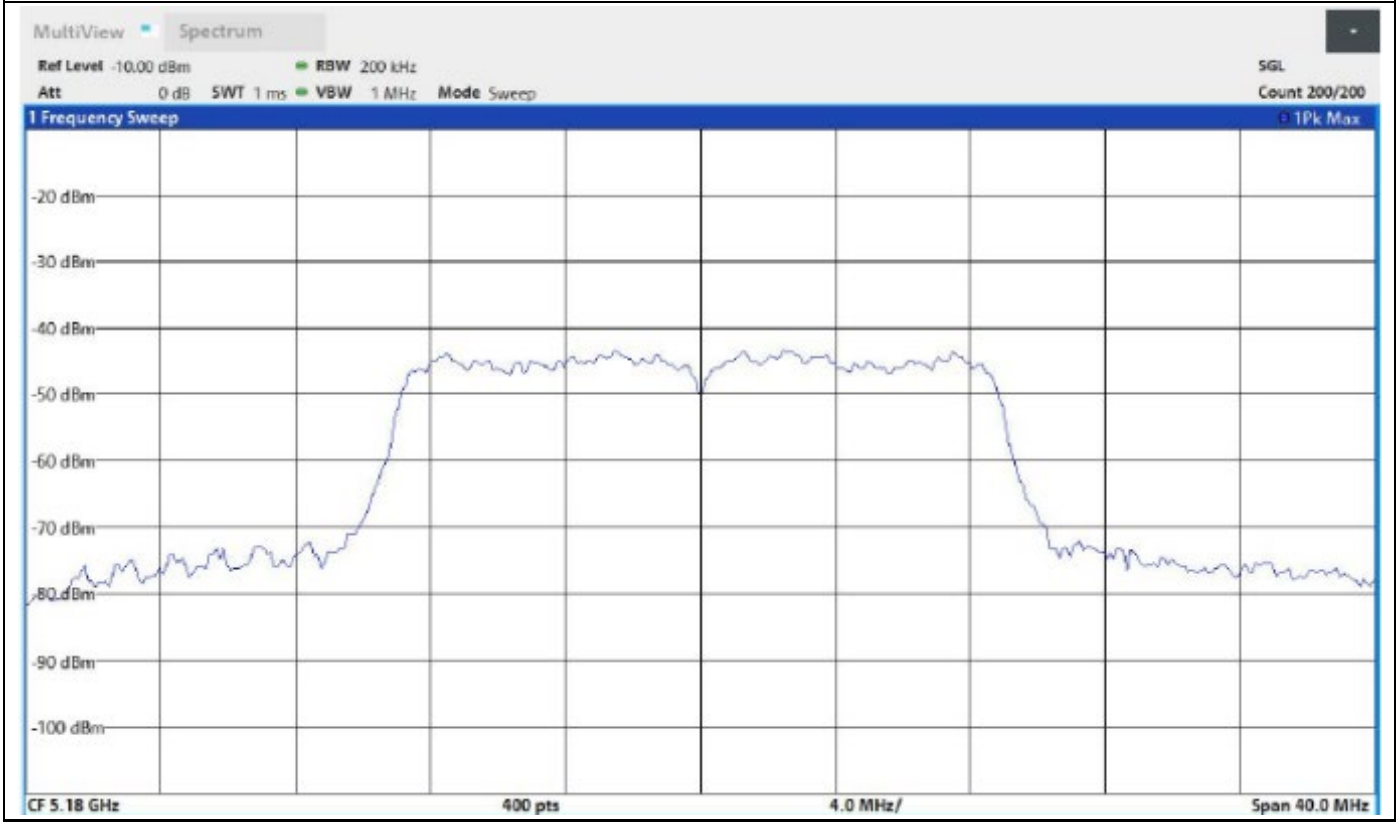
802.11n (HT20) 5180MHz MCS0





802.11ac (VHT20) 5180MHz MCS0





Emission Bandwidth 26 dB

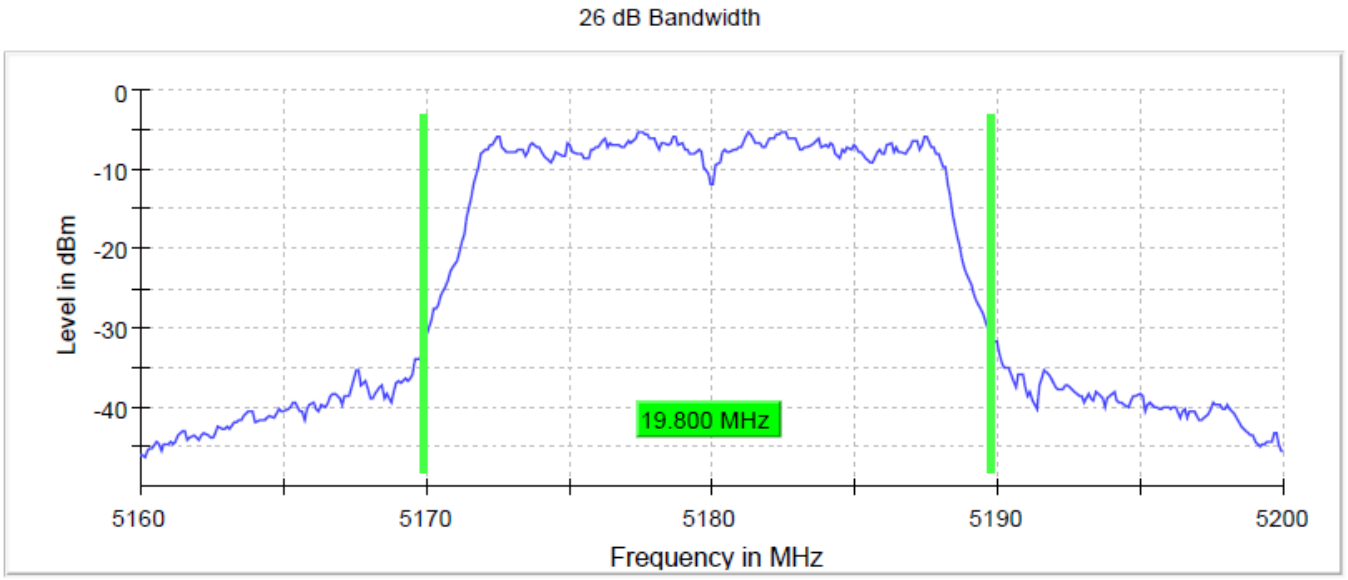
Test according to FCC title 47 part 15 §15.407(a),€, KDB 789033 D02 General U-NII Test Procedures

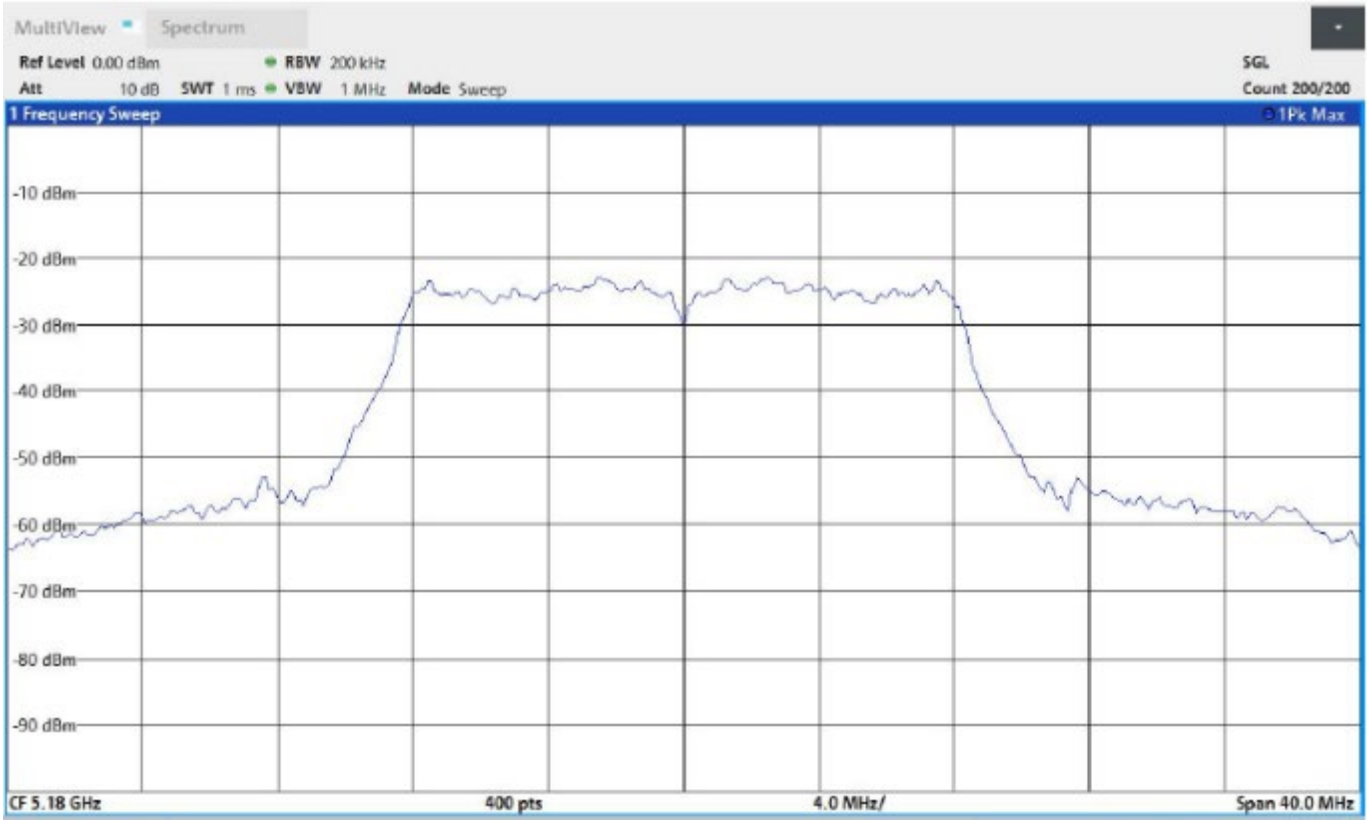
New Rules v02r01 D and ANSI C63.10-2013

Measurement uncertainty calculated in accordance with ETSI TR 100 028-1. Expanded Uncertainty (K=2) < 2%

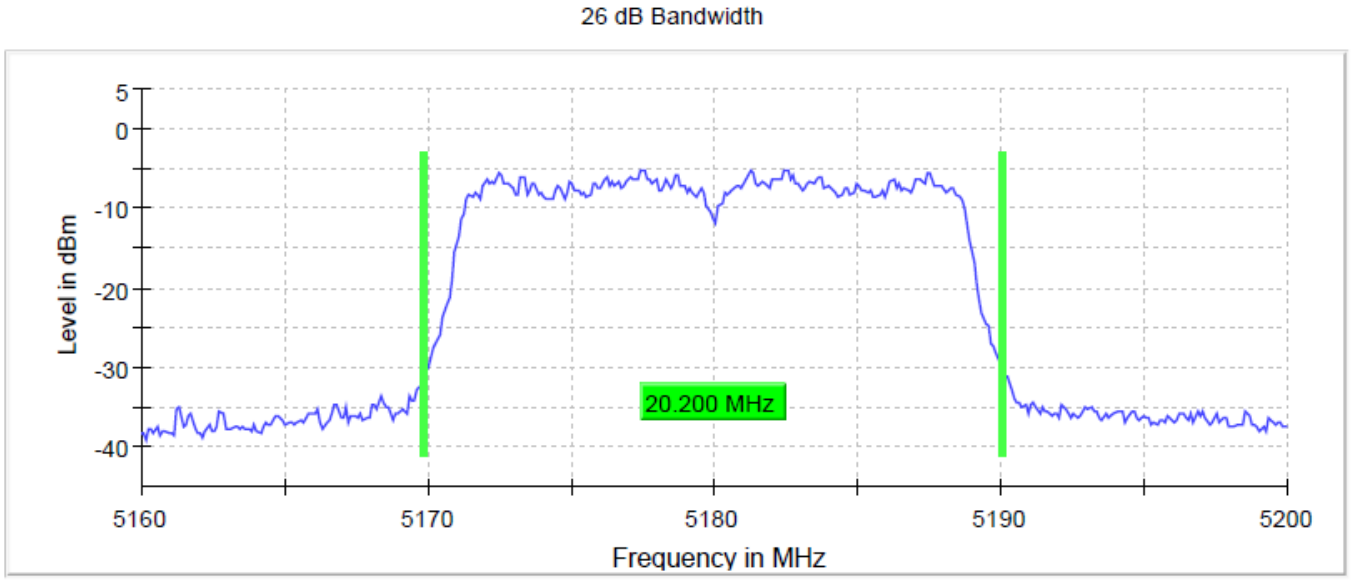
Data Rate	DUT Frequency (MHz)	Bandwidth (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)
802.11a 6Mbps	5180.000000	19.800000	5169.950000	5189.750000
802.11n (HT20) MCS0	5180.000000	20.200000	5169.850000	5190.050000
802.11ac (VHT20) MCS0	5180.000000	20.400000	5169.750000	5190.150000
802.11n (HT40) MCS0	5190.000000	61.838649	5165.984991	5227.823640
802.11ac (VHT40) MCS0	5190.000000	45.478424	5169.587242	5215.065666
802.11ac (VHT80) MCS0	5210.000000	160.000000	5130.000000	5290.000000
802.11a 6Mbps	5200.000000	20.000000	5189.950000	5209.950000
802.11n (HT20) MCS0	5200.000000	20.500000	5189.750000	5210.250000
802.11ac (VHT20) MCS0	5200.000000	20.300000	5189.850000	5210.150000
802.11n (HT40) MCS0	5230.000000	57.185741	5209.587242	5266.772983
802.11ac (VHT40) MCS0	5230.000000	40.975610	5209.587242	5250.562852
802.11a 6Mbps	5240.000000	19.800000	5230.050000	5249.850000
802.11n (HT20) MCS0	5240.000000	20.400000	5229.750000	5250.150000
802.11ac (VHT20) MCS0	5240.000000	20.500000	5229.650000	5250.150000

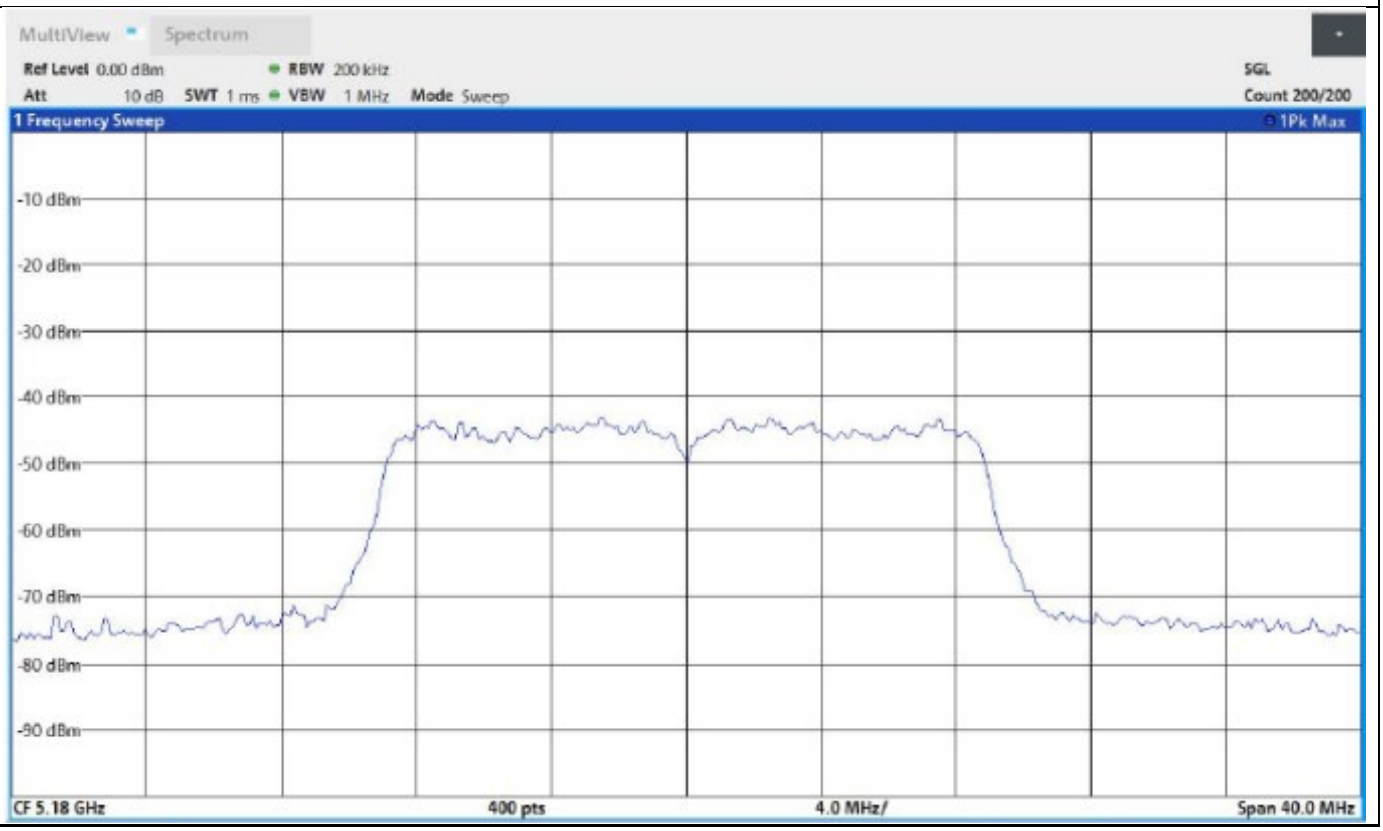
802.11a 5180MHz 6Mbps



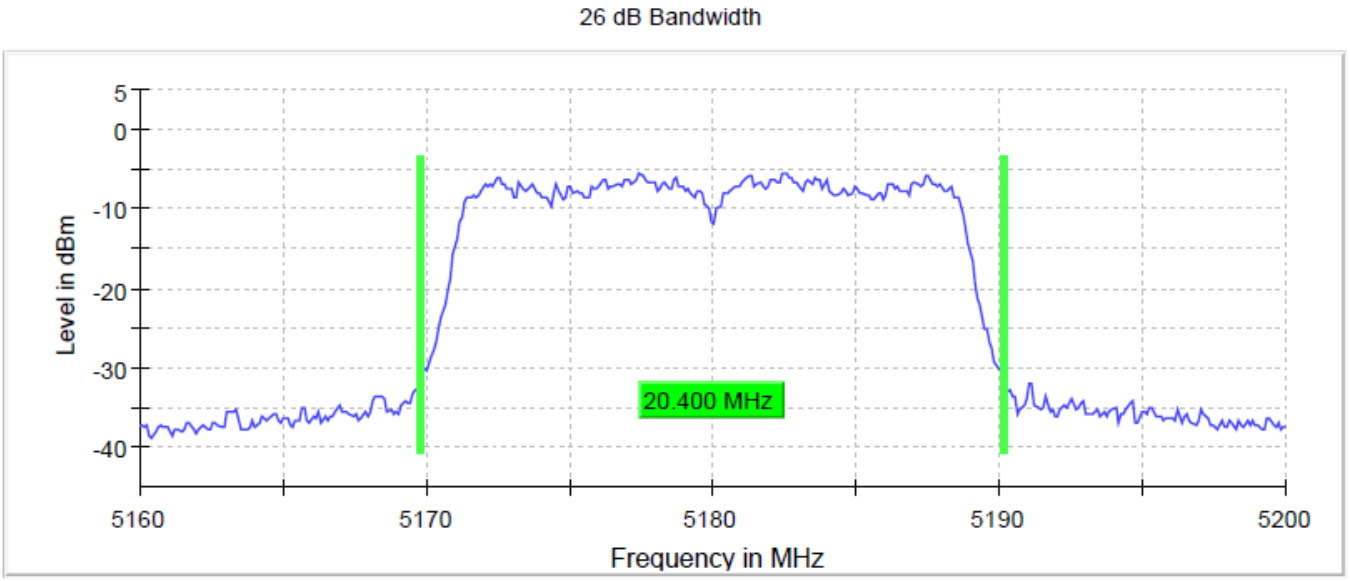


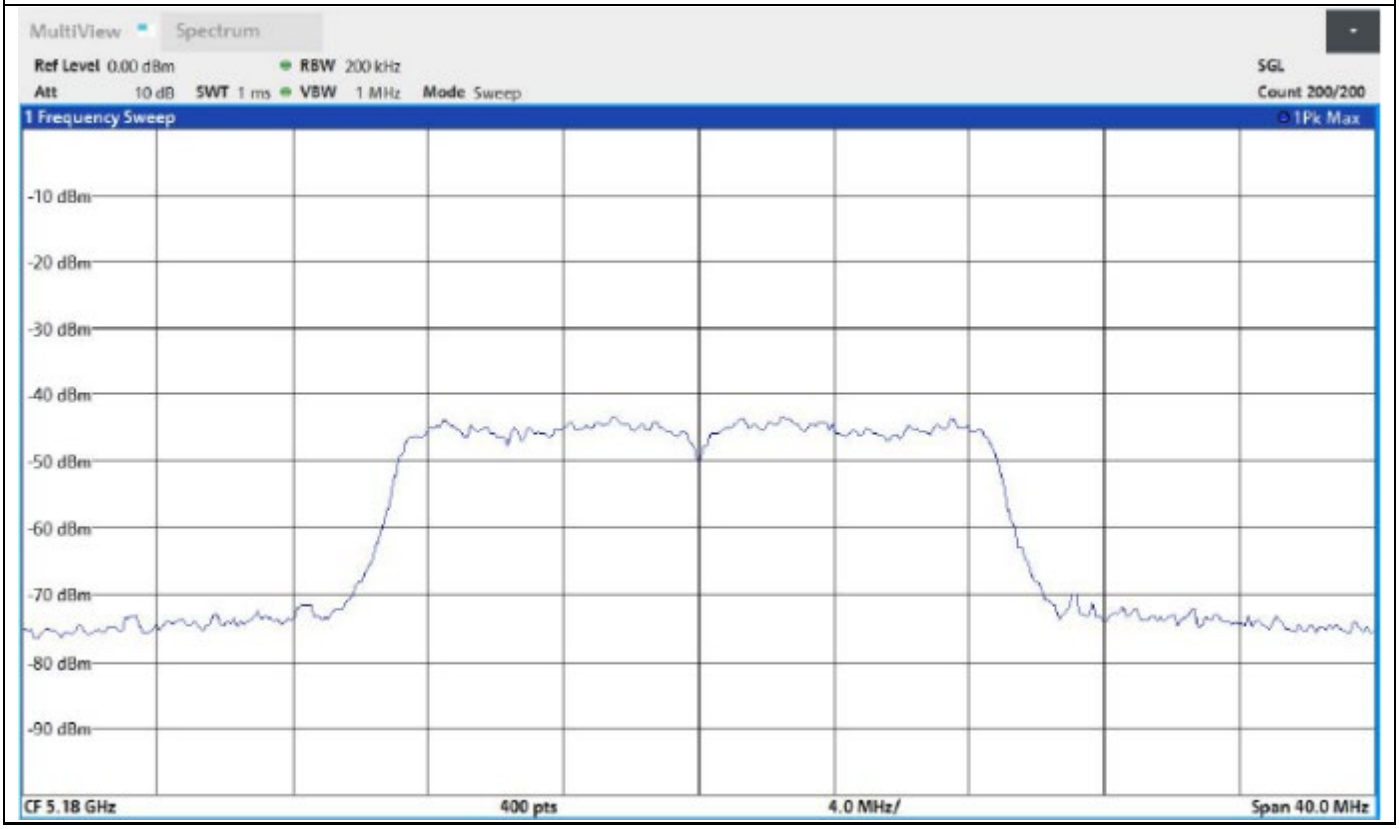
802.11n (HT20) 5180MHz MCS0





802.11ac (VHT20) 5180MHz MCS0





FCC 15.407 UNII-3

DUT Information:

Model:	CY20 DA LOWER
Manufacturer:	Harman Becker Automotive Systems
Serial Number:	AH22021401-HAR-004#2

UNII-3		
Mode	**Channel**	**Frequency**
802.11a **802.11n(HT20)** **802.11ac(VHT20)**	149	5745
802.11n(HT40) **802.11ac(VHT40)**	151	5755
802.11ac(VHT80)	155	5775
802.11a **802.11n(HT20)** **802.11ac(VHT20)**	157	5785
802.11n(HT40) **802.11ac(VHT40)**	159	5795
802.11a **802.11n(HT20)** **802.11ac(VHT20)**	165	5825

Notes:-

1. Channels and modes above were tested.
2. Output power measurements were performed at the lowest and highest data rate of each supported 802.11 mode.

Antenna Gain	4.89dBi ☒ Provided by Customer ☐ Not Provided by Customer
Number of transmit chains	1
Equipment Type	Unlicensed National Information Infrastructure Device

Power Settings

802.11a		802.11n (HT20)		802.11ac (VHT20)	
Channel	**Power Setting**	**Channel**	**Power Setting**	**Channel**	**Power Setting**
149	13	**149**	13	**149**	13
157	13	**157**	13	**157**	13
165	13	**165**	13	**165**	13

802.11n (HT40)		802.11ac (VHT40)	
Channel	**Power Setting**	**Channel**	**Power Setting**
151	13	**151**	13
159	13	**159**	13

802.11ac (VHT80)	
Channel	**Power Setting**
155	13

Test Results Summary

Test	Frequency (MHz)	802.11a	802.11n(HT20)	802.11ac (VHT20)
RF Output Power	**5745/5785/5825**	PASS	PASS	PASS
Power Spectral Density	**5745/5785/5825**	PASS	PASS	PASS
DTS Bandwidth (6dB)	**5745/5785/5825**	PASS	PASS	PASS
Occupied Channel Bandwidth 99%	**5745/5785/5825**	PASS	PASS	PASS
		802.11n(HT40)		**802.11ac(VHT40)**
RF Output Power	**5755/5795**	PASS		PASS
Power Spectral Density	**5755/5795**	PASS		PASS
DTS Bandwidth (6dB)	**5755/5795**	PASS		PASS
Occupied Channel Bandwidth 99%	**5755/5795**	PASS		PASS
		802.11ac(VHT80)		
RF Output Power	**5775**	PASS		
Power Spectral Density	**5775**	PASS		
DTS Bandwidth (6dB)	**5775**	PASS		
Occupied Channel Bandwidth 99%	**5775**	PASS		

RF output power and Duty-Cycle

FCC and RSS-247

Test according to FCC title 47 part 15 §15.407(a), KDB 789033 D02 General U-NII Test Procedures New Rules v02r01 II.E and ANSI C63.10-2013 (In Reference to KDB 789033 E.3.B)

Measurement uncertainty calculated in accordance with ETSI TR 100 028-1. Expanded Combined Uncertainty of absolute Level Measurement (K=2) < 1 dB

802.11a

Data Rate	Gated RMS (dBm) 5745 MHz	Gated RMS (dBm) 5785 MHz	Gated RMS (dBm) 5825 MHz	Limit (dBm)	Duty Cycle (%)
6 Mbps	4.153	3.725	4.157	30.0	98.693
54 Mbps	3.882	4.088	3.729	30.0	90.585

802.11n (HT20)

Data Rate	Gated RMS (dBm) 5745 MHz	Gated RMS (dBm) 5785 MHz	Gated RMS (dBm) 5825 MHz	Limit (dBm)	Duty Cycle (%)
MCS0	3.669	3.938	3.789	30.0	98.602
MCS7	3.803	4.194	3.864	30.0	89.971

802.11ac (VHT20)

Data Rate	Gated RMS (dBm) 5745 MHz	Gated RMS (dBm) 5785 MHz	Gated RMS (dBm) 5825 MHz	Limit (dBm)	Duty Cycle (%)
MCS0	3.746	3.811	3.900	30.0	98.610
MCS8	3.776	3.986	4.212	30.0	89.048

802.11n (HT40)

Data Rate	Gated RMS (dBm) 5755 MHz	Gated RMS (dBm) 5795 MHz	Limit (dBm)	Duty Cycle (%)
MCS0	4.242	4.284	30.0	97.227
MCS7	4.202	4.216	30.0	84.370

802.11ac (VHT40)

Data Rate	Gated RMS (dBm) 5755 MHz	Gated RMS (dBm) 5795 MHz	Limit (dBm)	Duty Cycle (%)
MCS0	4.118	4.323	30.0	97.261
MCS9	4.285	3.943	30.0	82.637

802.11ac (VHT80)

Data Rate	Gated RMS (dBm) 5775 MHz	Limit (dBm)	Duty Cycle (%)
MCS0	4.310	30.0	94.702
MCS9	3.920	30.0	78.041

Power Spectral Density

FCC and RSS-247

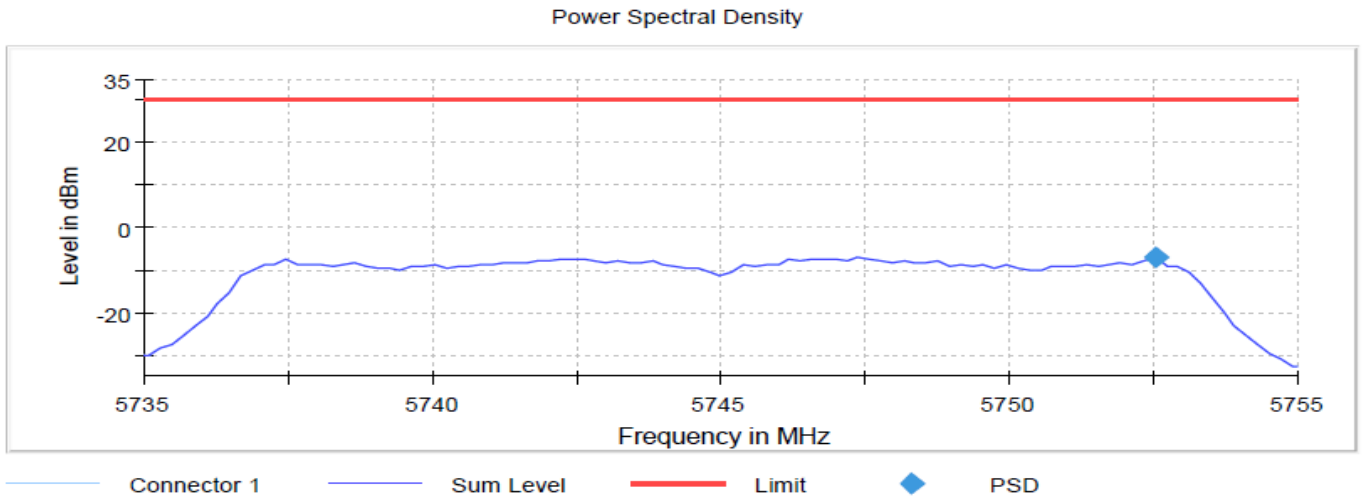
Test according to FCC title 47 part 15 §15.407(a), KDB 789033 D02 General U-NII Test Procedures New Rules v02r01 II.F and ANSI C63.10-2013

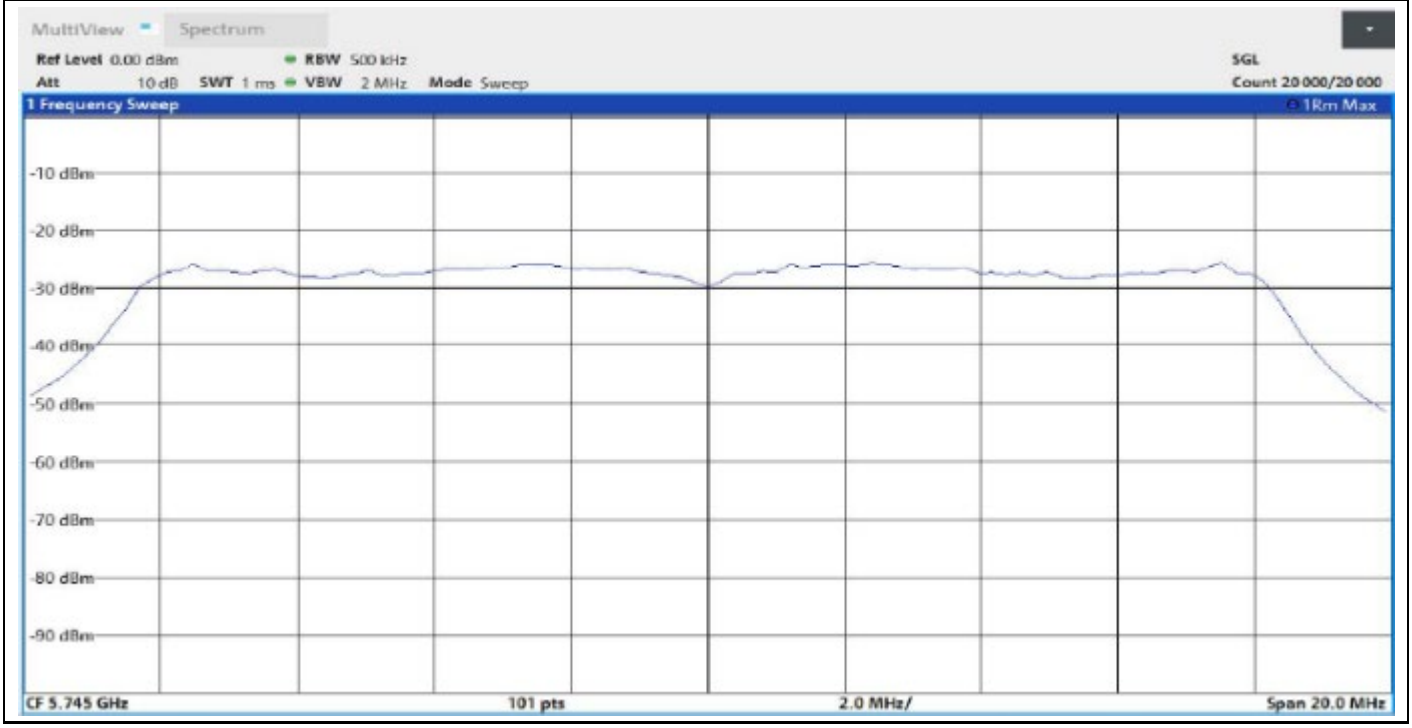
Measurement uncertainty calculated in accordance with ETSI TR 100 028-1. Expanded Uncertainty (K=2) < 1.3 dB

802.11a 6Mbps

Data Rate	PSD (dBm) 5745 MHz	PSD (dBm) 5785 MHz	PSD (dBm) 5825 MHz	Limit (dBm)
6Mbps	-7.113	-7.142	-7.339	30.0

802.11a 5745 MHz 6Mbps





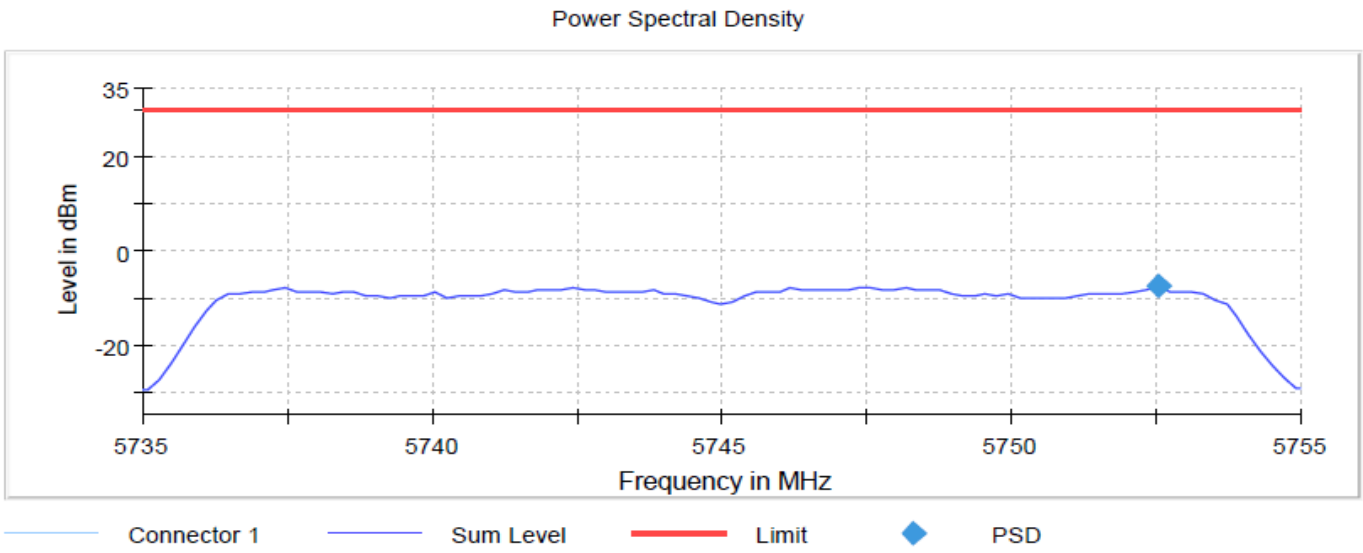
802.11n (HT20)

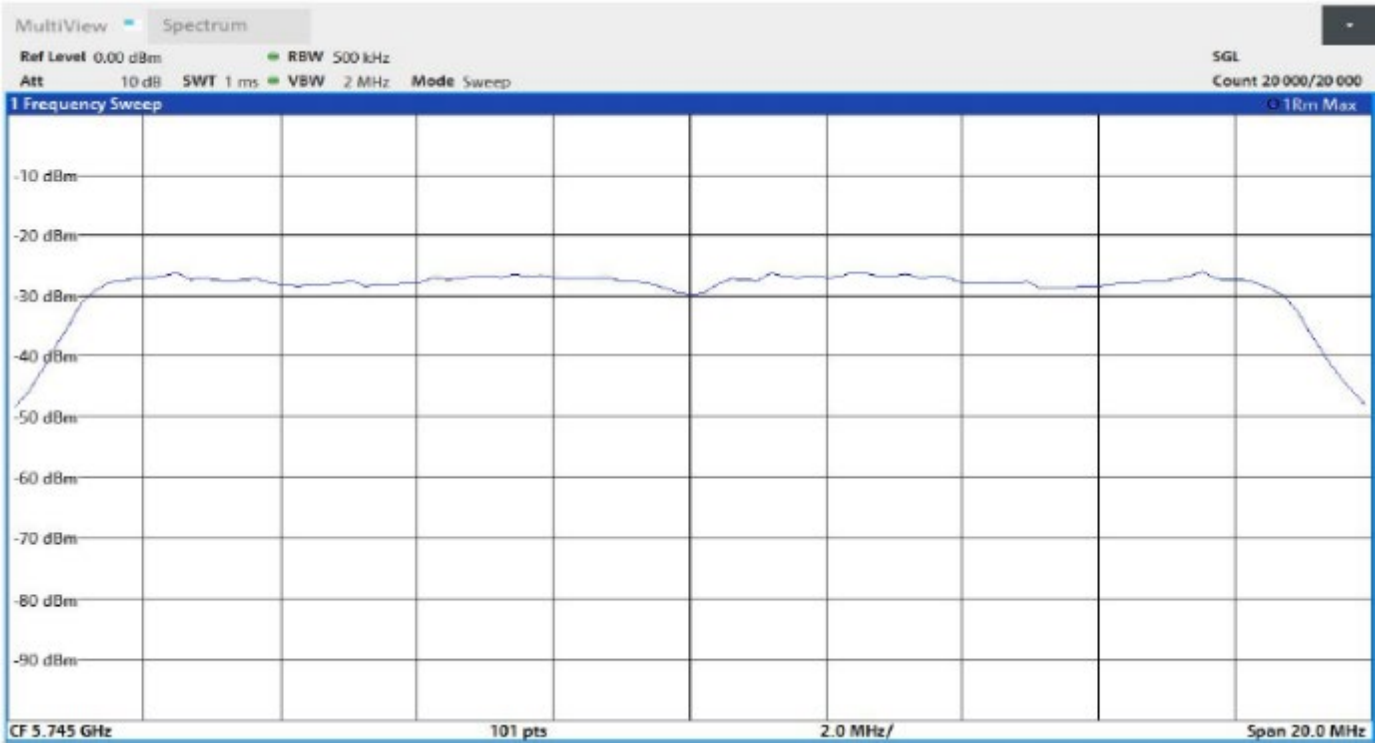
Data Rate	PSD (dBm) 5745 MHz	PSD (dBm) 5785 MHz	PSD (dBm) 5825 MHz	Limit (dBm)
MCS0	-7.542	-7.276	-7.547	30.0

802.11n (HT40)

Data Rate	PSD (dBm) 5755 MHz	PSD (dBm) 5795 MHz	Limit (dBm)
MCS0	-9.318	-9.498	30.0

802.11n (HT20) 5745 MHz MCS0





802.11ac (VHT20)

Data Rate	PSD (dBm) 5745 MHz	PSD (dBm) 5785 MHz	PSD (dBm) 5825 MHz	Limit (dBm)
MCS0	-7.340	-7.271	-7.629	30.0

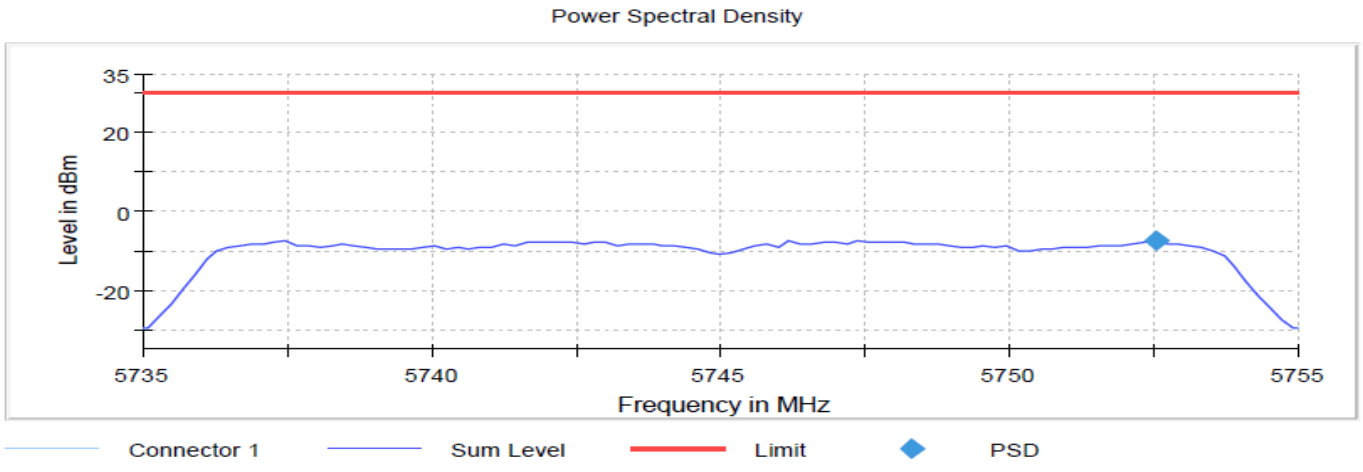
802.11ac (VHT40)

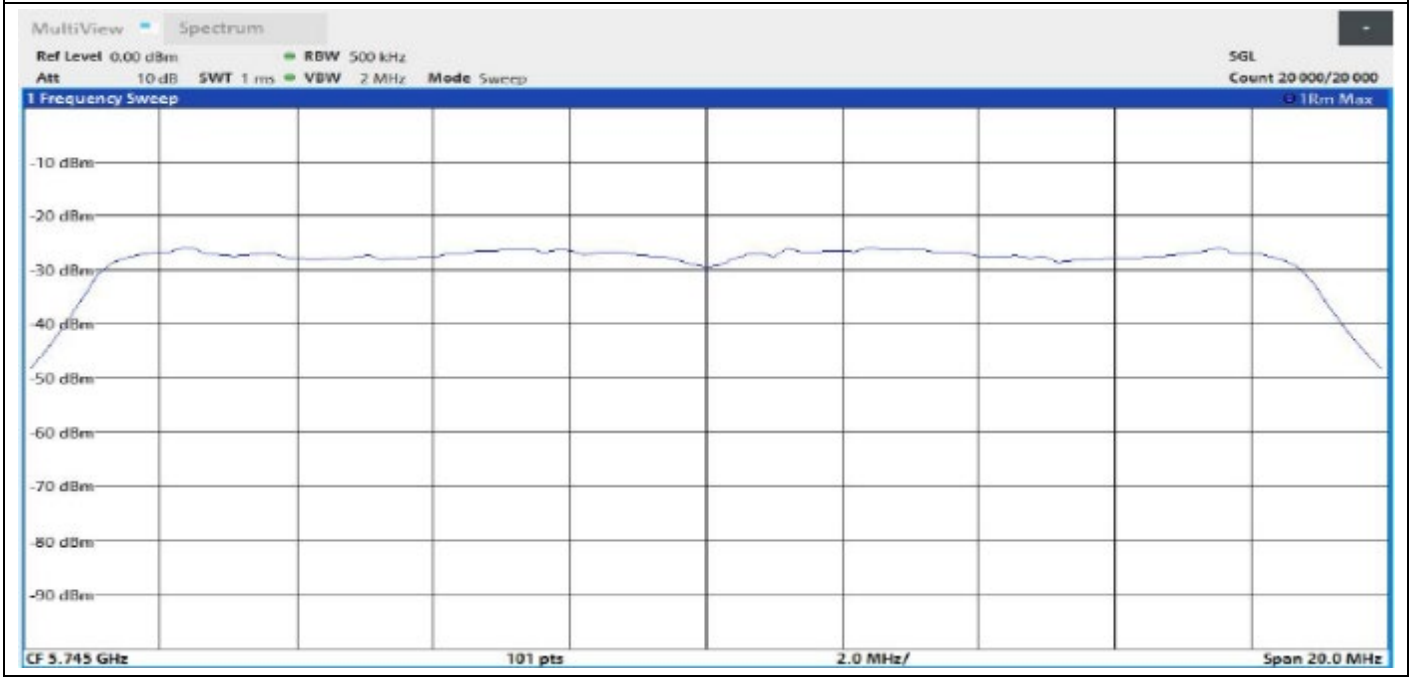
Data Rate	PSD (dBm) 5755 MHz	PSD (dBm) 5795 MHz	Limit (dBm)
MCS0	-8.785	-9.197	30.0

802.11ac (VHT80)

Data Rate	PSD (dBm) 5775 MHz	Limit (dBm)
MCS0	-11.304	30.0

802.11a (VHT20) 5745 MHz MCS0





DTS Bandwidth 6dB

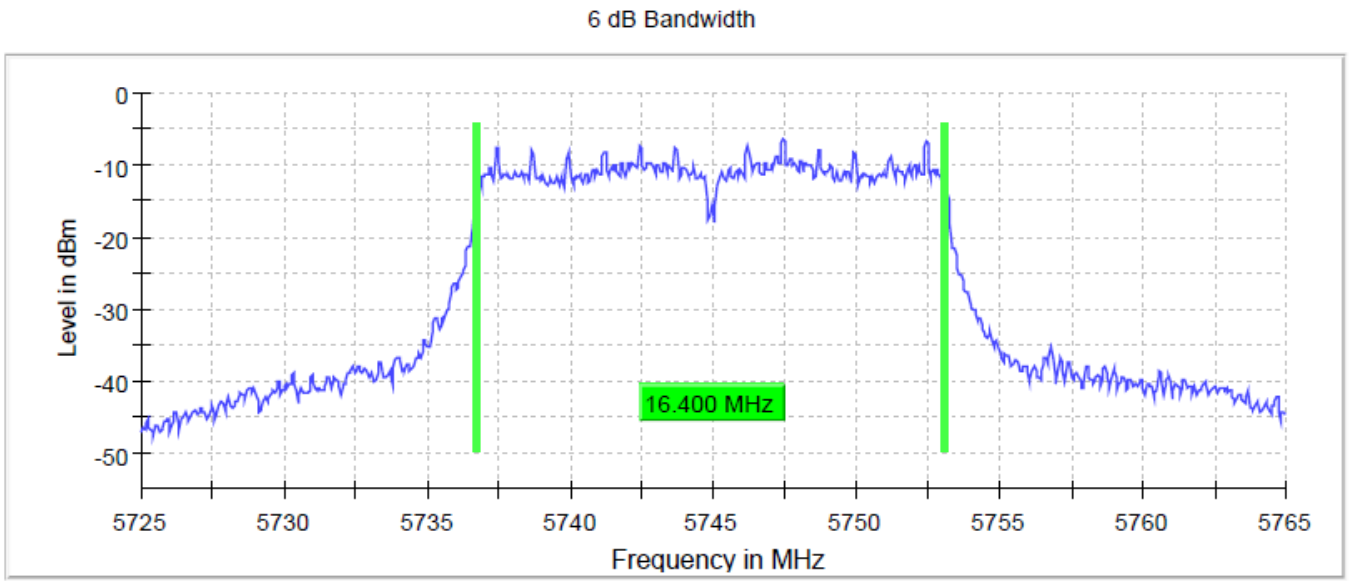
FCC and RSS-247

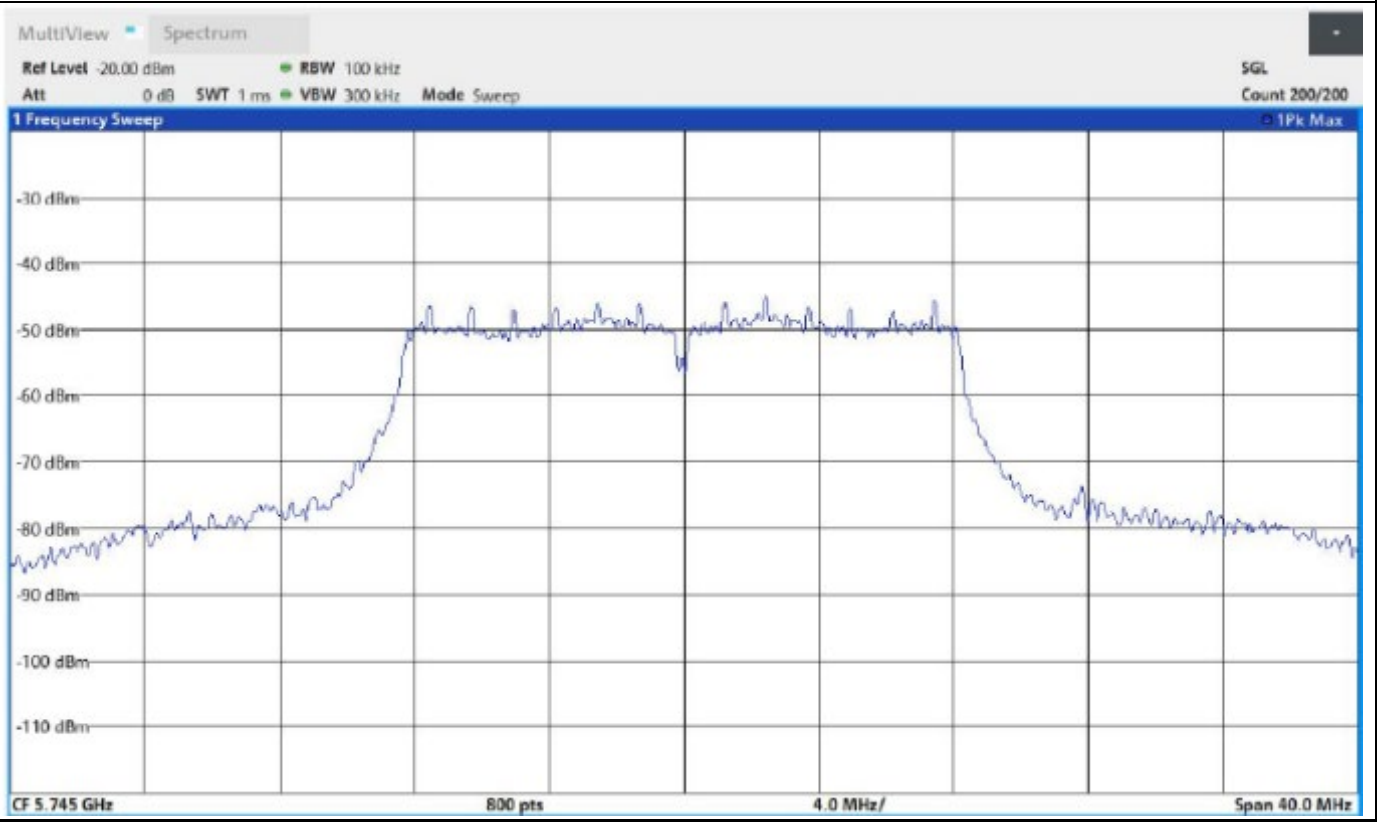
Test according to FCC title 47 part 15 §15.407(a),€, KDB 789033 D02 General U-NII Test Procedures New Rules v02r01 D and ANSI C63.10-2013

Measurement uncertainty calculated in accordance with ETSI TR 100 028-1. Expanded Uncertainty (K=2) < 2%

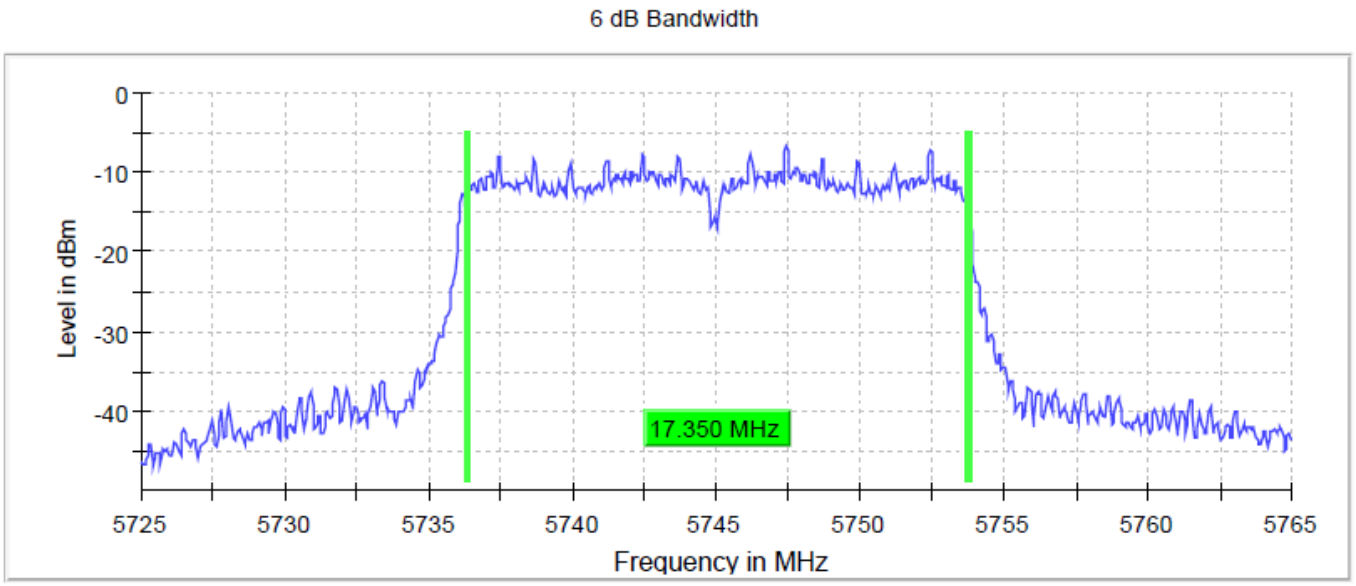
Data Rate	DUT Frequency (MHz)	Bandwidth (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)	Minimum Band Limit (MHz)
802.11a 6Mbps	5745.000000	16.400000	5736.725000	5753.125000	0.500000
802.11n (HT20) MCS0	5745.000000	17.350000	5736.375000	5753.725000	0.500000
802.11ac (VHT20) MCS0	5745.000000	17.350000	5736.375000	5753.725000	0.500000
802.11n (HT40) MCS0	5755.000000	35.750000	5737.175000	5772.925000	0.500000
802.11ac (VHT40) MCS0	5755.000000	35.750000	5737.175000	5772.925000	0.500000
802.11ac (VHT80) MCS0	5775.000000	76.400000	5736.775000	5813.175000	0.500000
802.11a 6Mbps	5785.000000	16.450000	5776.725000	5793.175000	0.500000
802.11n (HT20) MCS0	5785.000000	17.350000	5776.375000	5793.725000	0.500000
802.11ac (VHT20) MCS0	5785.000000	17.350000	5776.375000	5793.725000	0.500000
802.11n (HT40) MCS0	5795.000000	35.750000	5777.175000	5812.925000	0.500000
802.11ac (VHT40) MCS0	5795.000000	35.600000	5777.175000	5812.775000	0.500000
802.11a 6Mbps	5825.000000	16.450000	5816.725000	5833.175000	0.500000
802.11n (HT20) MCS0	5825.000000	17.450000	5816.325000	5833.775000	0.500000
802.11ac (VHT20) MCS0	5825.000000	17.450000	5816.325000	5833.775000	0.500000

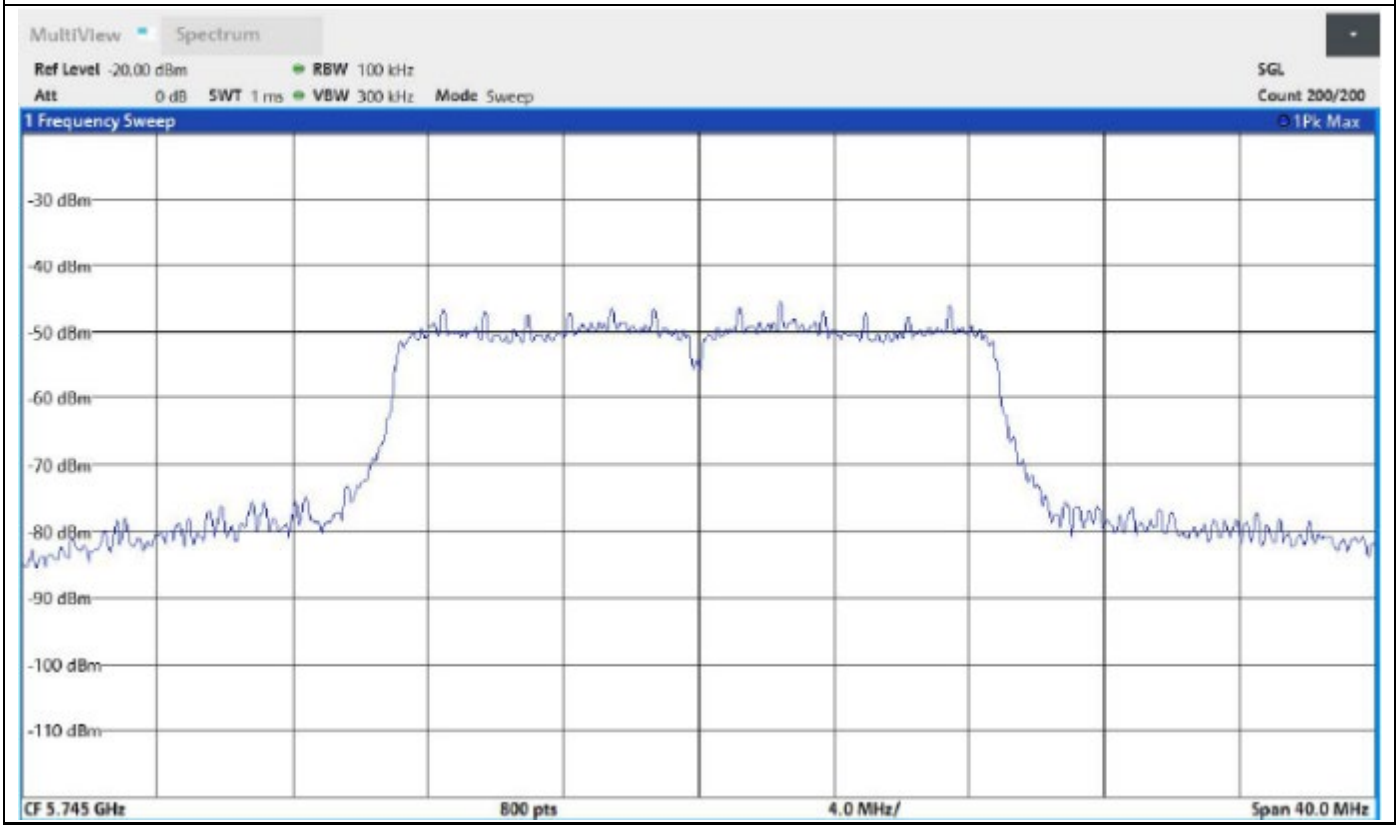
802.11a 5745MHz 6Mbps



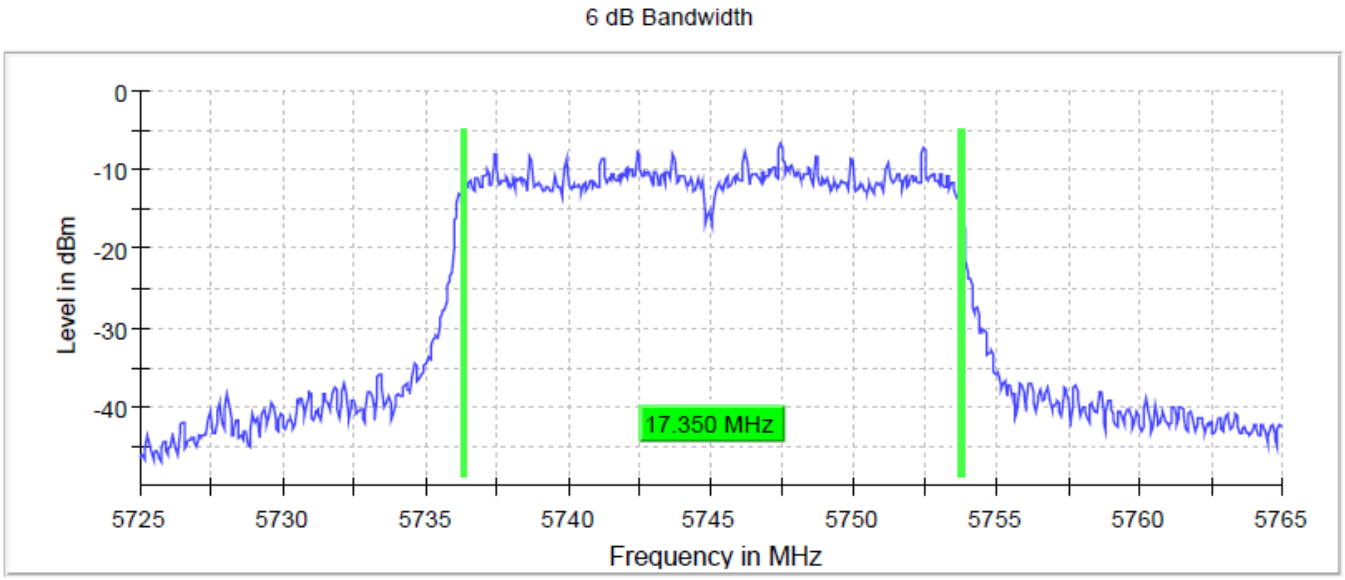


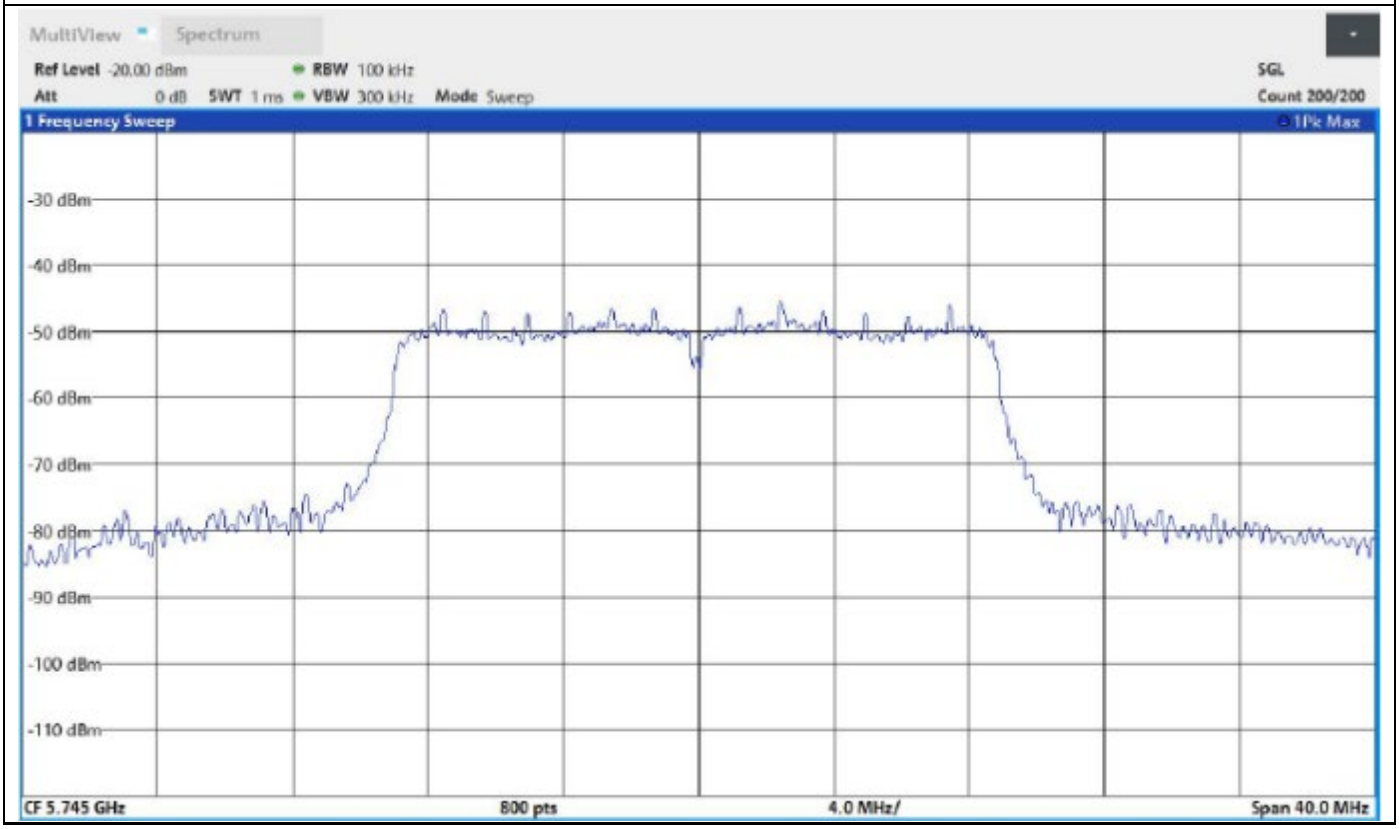
802.11n (HT20) 5745MHz MCS0





802.11ac (VHT20) 5745MHz MCS0





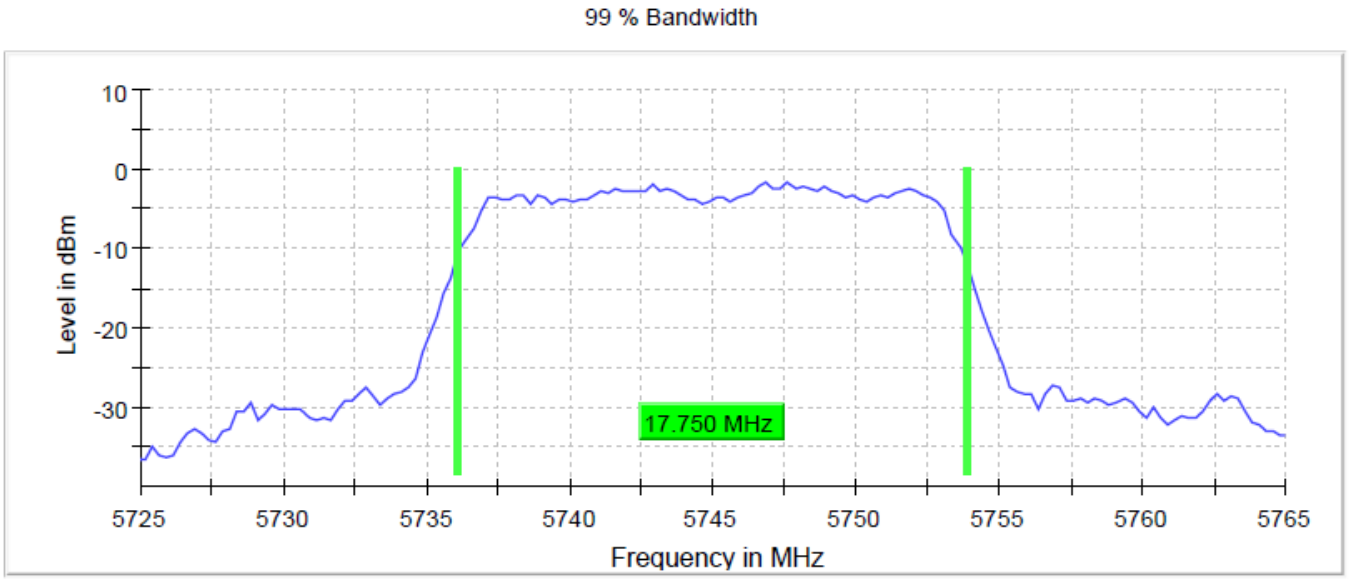
Occupied Channel Bandwidth

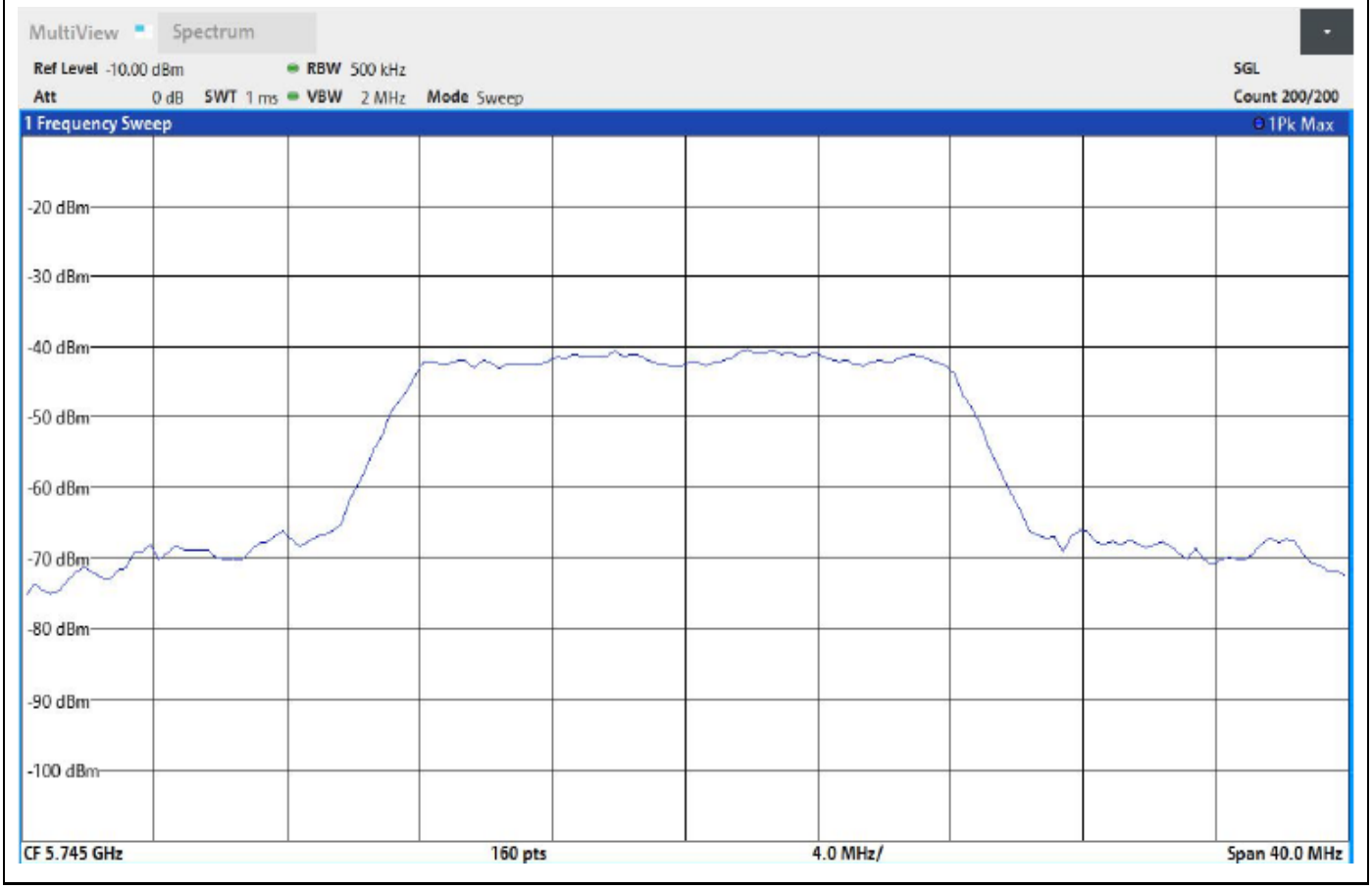
Test according to FCC title 47 part 15 §15.407(a),€, KDB 789033 D02 General U-NII Test Procedures New Rules v02r01 D and ANSI C63.10-2013

Measurement uncertainty calculated in accordance with ETSI TR 100 028-1. Expanded Uncertainty (K=2) < 2%

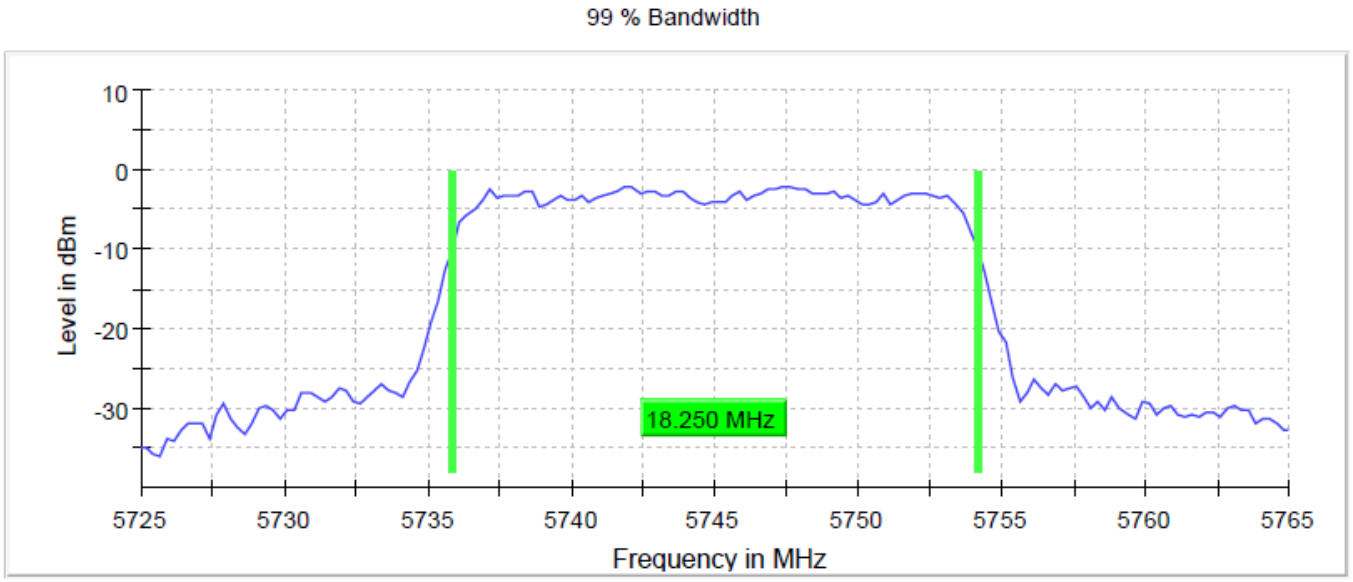
Data Rate	DUT Frequency (MHz)	Bandwidth (MHz)	Band Edge Left (MHz)	Band Edge Right (MHz)	Band Limit (MHz)
802.11a 6Mbps	5745.000000	17.750000	5736.125000	5753.875000	5725-5850
802.11n (HT20) MCS0	5745.000000	18.250000	5735.875000	5754.125000	5725-5850
802.11ac (VHT20) MCS0	5745.000000	18.250000	5735.875000	5754.125000	5725-5850
802.11n (HT40) MCS0	5755.000000	37.500000	5736.250000	5773.750000	5725-5850
802.11ac (VHT40) MCS0	5755.000000	37.500000	5736.250000	5773.750000	5725-5850
802.11ac (VHT80) MCS0	5775.000000	80.000000	5734.500000	5814.500000	5725-5850
802.11a 6Mbps	5785.000000	17.500000	5776.125000	5793.625000	5725-5850
802.11n (HT20) MCS0	5785.000000	18.250000	5775.875000	5794.125000	5725-5850
802.11ac (VHT20) MCS0	5785.000000	18.250000	5775.875000	5794.125000	5725-5850
802.11n (HT40) MCS0	5795.000000	37.500000	5776.250000	5813.750000	5725-5850
802.11ac (VHT40) MCS0	5795.000000	37.500000	5776.250000	5813.750000	5725-5850
802.11a 6Mbps	5825.000000	17.750000	5816.125000	5833.875000	5725-5850
802.11n (HT20) MCS0	5825.000000	18.250000	5815.875000	5834.125000	5725-5850
802.11ac (VHT20) MCS0	5825.000000	18.250000	5815.875000	5834.125000	5725-5850

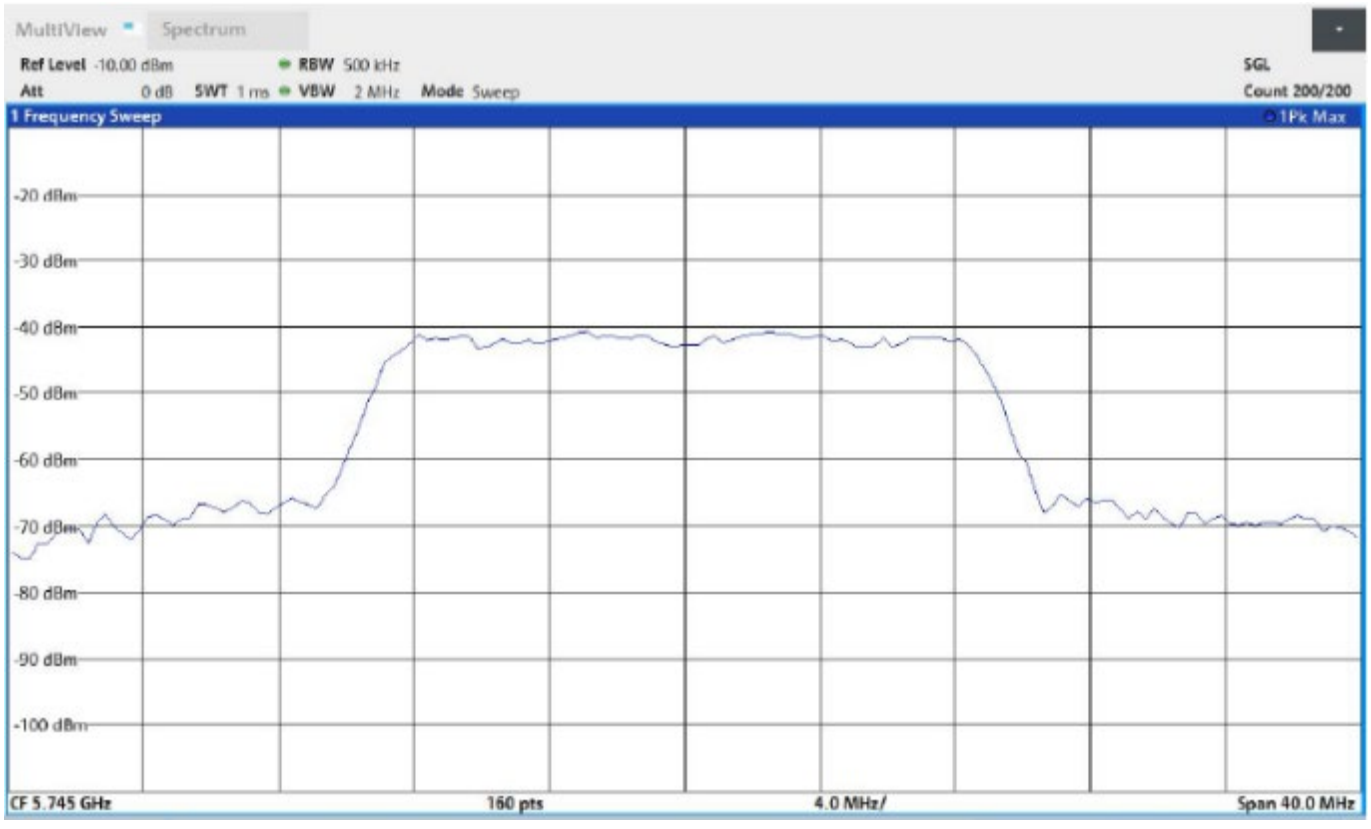
802.11a 5745MHz 6Mbps



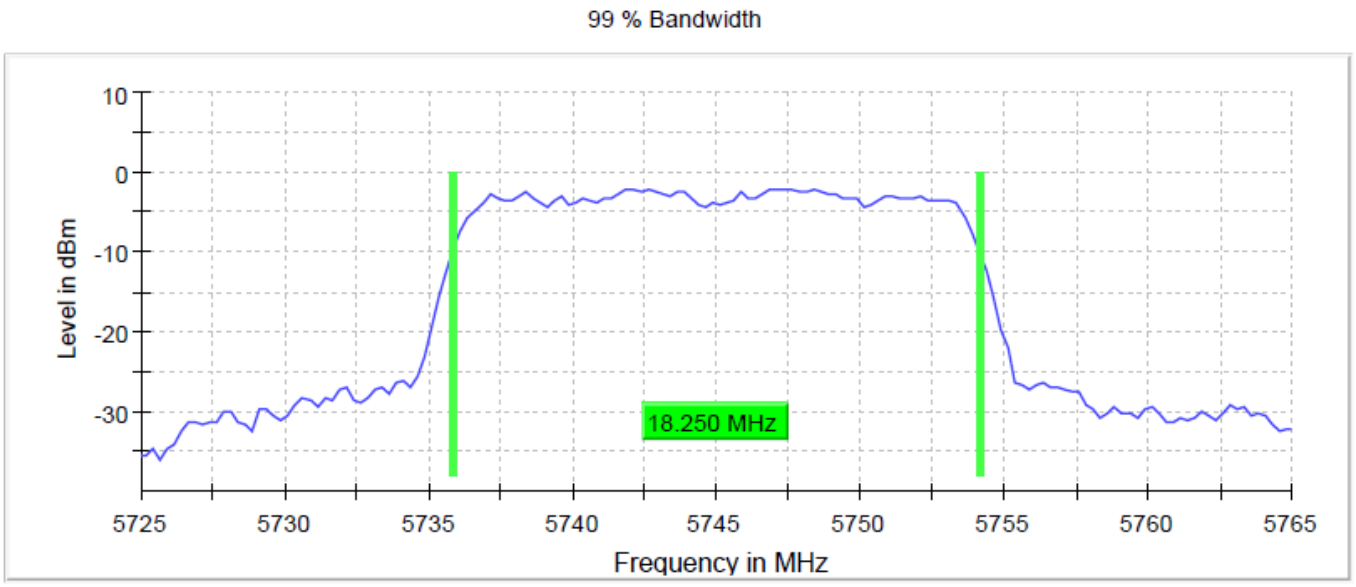


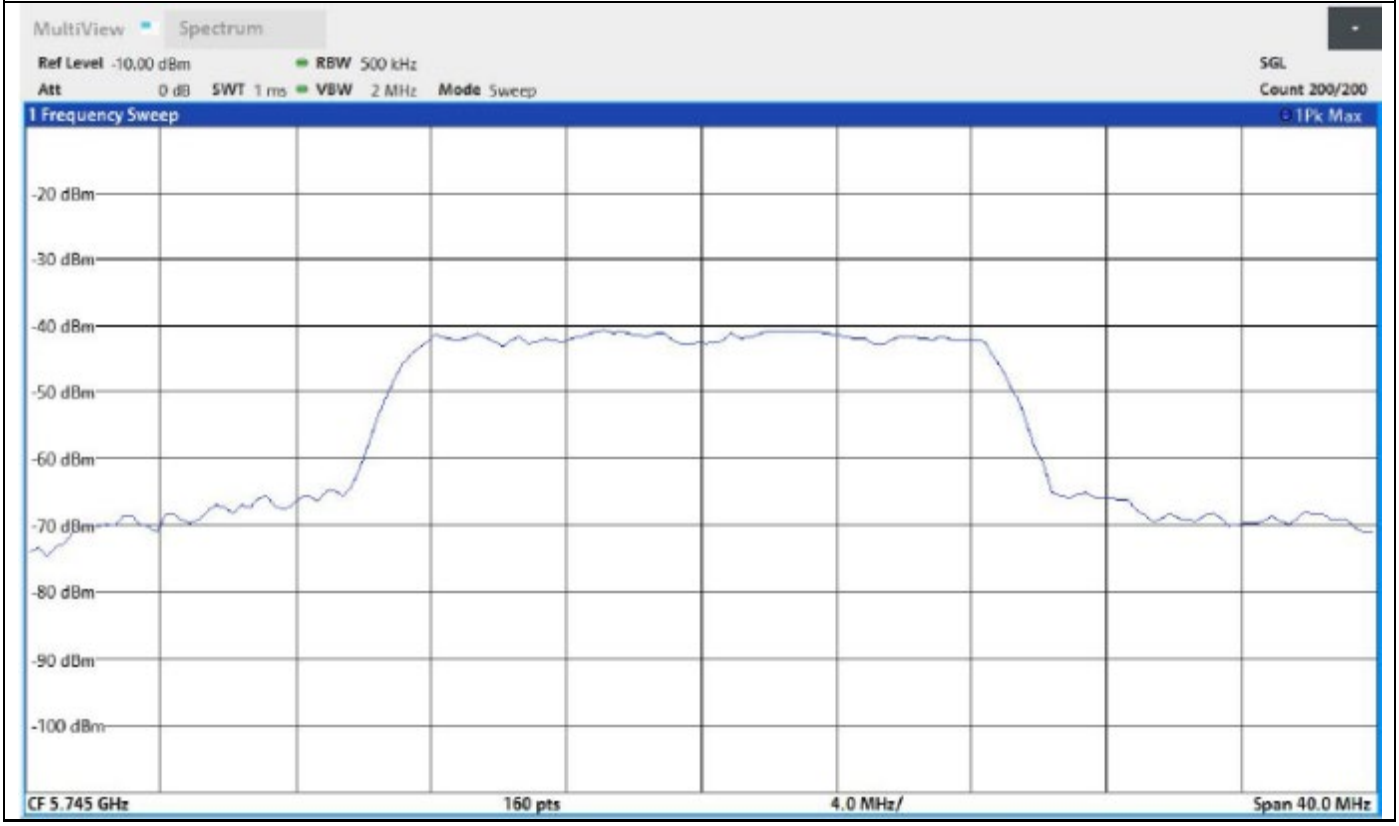
802.11n (HT20) 5745MHz MCS0





802.11ac (VHT20) 5745MHz MCS0





- **Radiated Testing**

Test Summary

Start: 03/08/2022	End: 06/03/2022	Temperature: 23.3°C Humidity:20.3 %R.H.	Initials: RP/AB

DUT S/N	AH22021401-HAR-004#03		DUT Operating Mode		UNII-1 WLAN
Comment	802.11a 6Mbps, 802.11n MCS0, 802.11ac MCS0				
Antenna	Frequency Range	Polarization	Result Over/Under Limit		Notes
Loop	9kHz-30MHz	Parallel	☐Over	☒Under	√
		Perpendicular	☐Over	☒Under	√
		Ground-Parallel	☐Over	☒Under	√
Log Periodic	30MHz-1GHz	Horizontal	☐Over	☒Under	√
		Vertical	☐Over	☒Under	√
Horn	1GHz-18GHz	Horizontal	☐Over	☒Under	√
		Vertical	☐Over	☒Under	√
Horn	18GHz-40GHz	Horizontal	☐Over	☒Under	√
		Vertical	☐Over	☒Under	√

Notes: √ meets the requirements of the acceptance criteria.

Start: 03/09/2022	End: 06/03/2022	Temperature: 23.5°C Humidity:24.2 %R.H.	Initials: RP/AB

DUT S/N	AH22021401-HAR-004#03		DUT Operating Mode		UNII-3 WLAN
Comment	802.11a 6Mbps, 802.11n MCS0, 802.11ac MCS0				
Antenna	Frequency Range	Polarization	Result Over/Under Limit		Notes
Loop	9kHz-30MHz	Parallel	☐Over	☒Under	√
		Perpendicular	☐Over	☒Under	√
		Ground-Parallel	☐Over	☒Under	√
Log Periodic	30MHz-1GHz	Horizontal	☐Over	☒Under	√
		Vertical	☐Over	☒Under	√
Horn	1GHz-18GHz	Horizontal	☐Over	☒Under	√
		Vertical	☐Over	☒Under	√
Horn	18GHz-40GHz	Horizontal	☐Over	☒Under	√
		Vertical	☐Over	☒Under	√

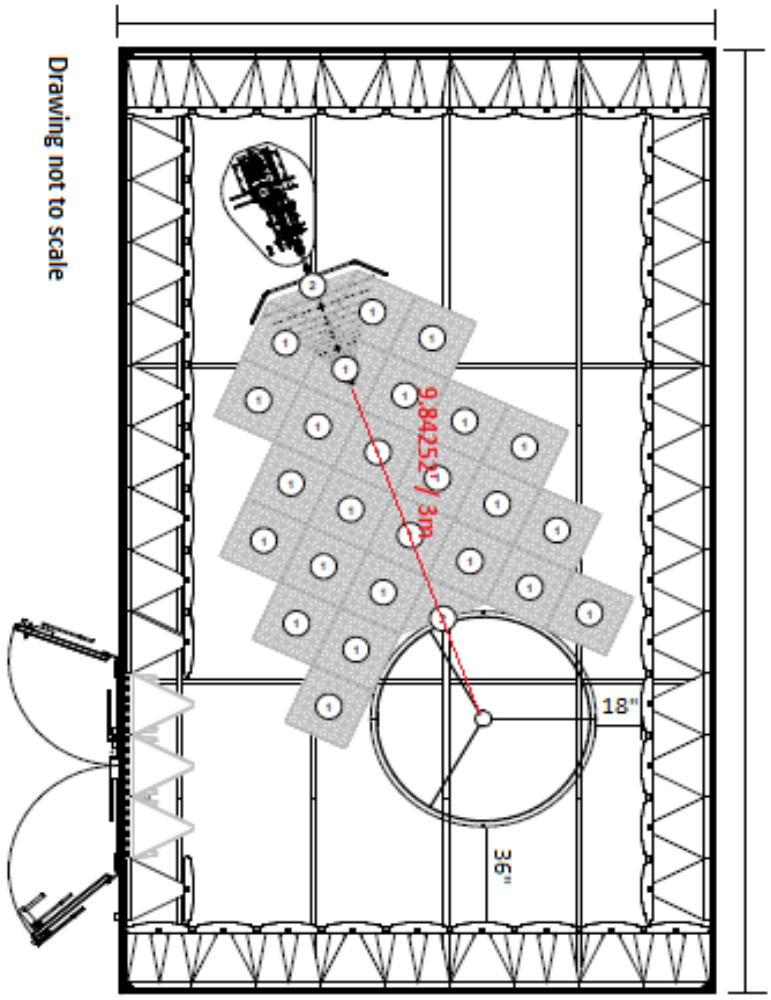
Notes: √ meets the requirements of the acceptance criteria.

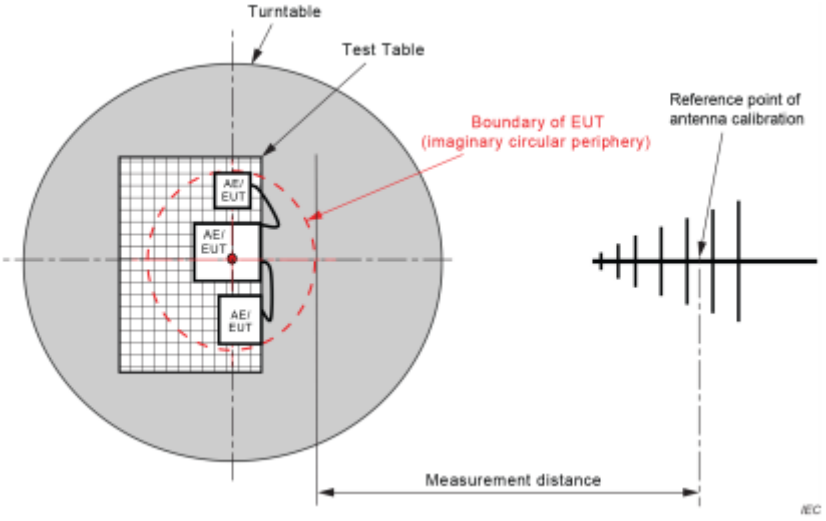
Test Setup

Semi-Anechoic Chamber Test Site-3 meter

Chamber Location	815 N Opdyke Rd Auburn Hills, Michigan 48326
Chamber Manufacturer:	ETS-Lindgren
Chamber Type	Semi-Anechoic
Model	FACT™ 3-2.0 Plus
Chamber Dimensions (L x W x H)	18'x18'x30'
Quiet Zone Diameter	2.0 meters
Quiet Zone Test Heights	1 & 2 meters (front only)
Test Distance	3.0 meters
Test Frequency Range	1-40 GHz
Measured Performance	4.87 dB Site *s*VSWR

Chamber Dimensions




Turntable
Test Table
Boundary of EUT
(imaginary circular periphery)
Reference point of
antenna calibration
AE/
EUT
AE/
EUT
AE/
EUT
Measurement distance
IEC

Test Equipment Used

ID #	Equipment	Manufacturer	Model	Serial #	Cal Due
BVD0217	Receiver 2Hz-44GHz	Rohde & Schwarz	ESW44	101871	04/20/2023
BVD0398	Double Shielded N-Type Cable 2 Meter	Rohde & Schwarz	N-Type	N/A	12/29/2022
BVD0407	Double Shielded N-Type Cable 410mm (For PreAmp)	Rohde & Schwarz	N-Type	N/A	08/05/2022
BVD0394	Double Shielded N-Type Cable 6.9 Meter	Rohde & Schwarz	N-Type	N/A	03/04/2023
BVD0184	Preamplifier 29dB 1-18GHz	Rohde & Schwarz	TS-PR18	101646	05/06/2023
BVD0480	Band Reject Filter 50dB from 2400 to 2500MHz	Micro-Tronics	BRM50702	G482	04/11/2023
BVD0481	Band Reject Filter 40dB from 5150 to 5880MHz	Micro-Tronics	BRM50716	G336	04/11/2023
BVD0267	Double Ridge Waveguide 800MHz-18GHz	Rohde & Schwarz	HF907	102832	09/09/2022
BVD0486	Sucoflex K-Type Coaxial Cable 5 Meter	Huber+Suhner, inc	K-Type Coaxial	474343	03/07/2023
BVD0185	Preamplifier 45dB 18-40GHz	Rohde & Schwarz	TS-PR1840	100064	04/06/2023
BVD0320	18-40GHz Horn Antenna	L3 Narda ATM	PNR 180-442-KF	136164-01	04/04/2023
BVD0186	Preamplifier 25dB cal to 100kHz-1GHz	Rohde & Schwarz	TS-PR1	102080	04/01/2023
BVD0405	Double Shielded N-Type Cable 440mm (For PreAmp)	Rohde & Schwarz	N-Type	N/A	08/10/2022
BVD0021	UltraLog Antenna 30-6000 MHz	Rohde & Schwarz	HL562E	101113	07/23/2022
BVD0118	Antenna Mast Position Controller	ETS	7006-001	00214778/00214648	N/A
BVD0112	Equipment Chamber for 3 Meter Chamber	ETS	N/A	N/A	N/A
BVD0111	3 Meter Anechoic Chamber	ETS	N/A	N/A	10/16/2022
BVD0247	Turn Table	ETS	920250	N/A	N/A
BVD0323	Foam Test Table For 3 Meter Chamber	ETS-Lindgren	LDT-1.5	N/A	N/A
BVD0069	Bore Sight Tower	ETS	2171B	226732	N/A
BVD0258	Optima 12V Blue top Marine battery	Optima	D34M	N/A	N/A
BVD0011	Loop Antenna 9kHz-30MHz	Rohde & Schwarz	FMZB1519B	145	5/4/2023
BVD0341	Temp and Humidity Chart Recorder	Omega	ITHX-SD	M20150306	N/A
BVD0394	Double Shielded N-Type Cable 6.9 Meter	Rohde & Schwarz	N-Type	N/A	3/4/2023
BVD0218	Receiver 2Hz-44GHz	Rohde & Schwarz	ESW44	101870	4/21/2023

Equipment List (Software)

Equipment	Manufacturer	Model	Version No.
EMC Test Software	Nexio	BAT-EMC	3.21.0.18

Customer Supplied Equipment

ID #	Equipment	Manufacturer	Model	Serial #	Version No.
N/A	Cable Harness	Harman	1.7m	N/A	N/A
N/A	USB Hub	Harman	N/A	3526408	N/A
N/A	USB 2.0 Ethernet Adapter	Trendnet	TU2-ET100	RA0JU56004466	V6.0R

Test Plots

Uncertainty

Radiated Emissions (30MHz to 18GHz)

Test Engineer: Ryan Phillips

The test is to measure the radiated emissions of the EUT. Some error sources that can contribute to the total uncertainty:

- Uncertainty of the receiver
- Uncertainty of the antenna
- Uncertainty of cables
- Uncertainty due to the mismatches
- NSA Calibration
- Etc., details see the below table

30MHz to 1GHZ

Source of Uncertainty	Value(dB)	Probability Distribution	Division	Sensitivity Coefficient	Expanded Uncertainty
Receiver Reading	0.12	Rectangular	1.732	1	0.069284
Cable Insertion Loss	0.21	Normal	2	1	0.105
Filter Insertion Loss	0.25	Normal	2	1	0.125
Antenna Factor	0.65	Normal	2	1	0.325
Receiver CW accuracy	0.5	Rectangular	1.732	1	0.2886836
Pulse Amplitude Response	1.5	Rectangular	1.732	1	0.86605081
PRF Response	1.5	Rectangular	1.732	1	0.86605081
Mismatch Filter – Receiver	0.25	U-Shape	2.449	1	0.1768033
NSA Calibration	4.0	Triangular	1.414	1	1.633332
ETS Foam Table (LDT-1.5)	1.8	Rectangular	1.732	1	1.039261
Combined Standard Uncertainty (square root of the sum of the squares)					2.113781
Expanded Uncertainty (K=2)					**4.227562**

The total derived measurement uncertainty is +/- 4.228 dB

1GHz to 40GHz

Source of Uncertainty	Value (dB)	Probability Distribution	Division	Sensitivity Coefficient	Expanded Uncertainty
Receiver Reading	0.12	Rectangular	1.732	1	0.069284
Cable Insertion Loss	0.21	Normal	2	1	0.105000
Filter Insertion Loss	0.25	Normal	2	1	0.125000
Antenna Factor	0.65	Normal	2	1	0.325000
Receiver CW accuracy	0.5	Rectangular	1.732	1	0.2886836
Pulse Amplitude Response	1.5	Rectangular	1.732	1	0.866051
PRF Response	1.5	Rectangular	1.732	1	0.866051
Mismatch Filter – Receiver	0.25	U-Shape	1.414	1	0.176803
VSWR Calibration	2.0	Triangular	2.449	1	0.816659
ETS Foam Table (LDT-1.5)	1.8	Rectangular	1.732	1	1.039261
Combined Standard Uncertainty (square root of the sum of the squares)					1.869213
Expanded Uncertainty (K=2)					**3.738426**

The total derived measurement uncertainty is +/- 3.738 dB.

Remarks:

1. Level Q-Peak Reading (dBµV/m) = Raw Q-Peak Level + Correction Factor
2. Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain
3. Margin = Level Q-Peak Reading – Limit

Remarks:

1. Level Peak Reading (dBµV/m) = Raw Peak Level + Correction Factor
2. Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain
3. Margin = Level Peak Reading – Limit

Remarks:

1. Level Average Reading (dBµV/m) = Raw Average Level + Correction Factor
2. Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain
3. Margin = Level Average Reading – Limit

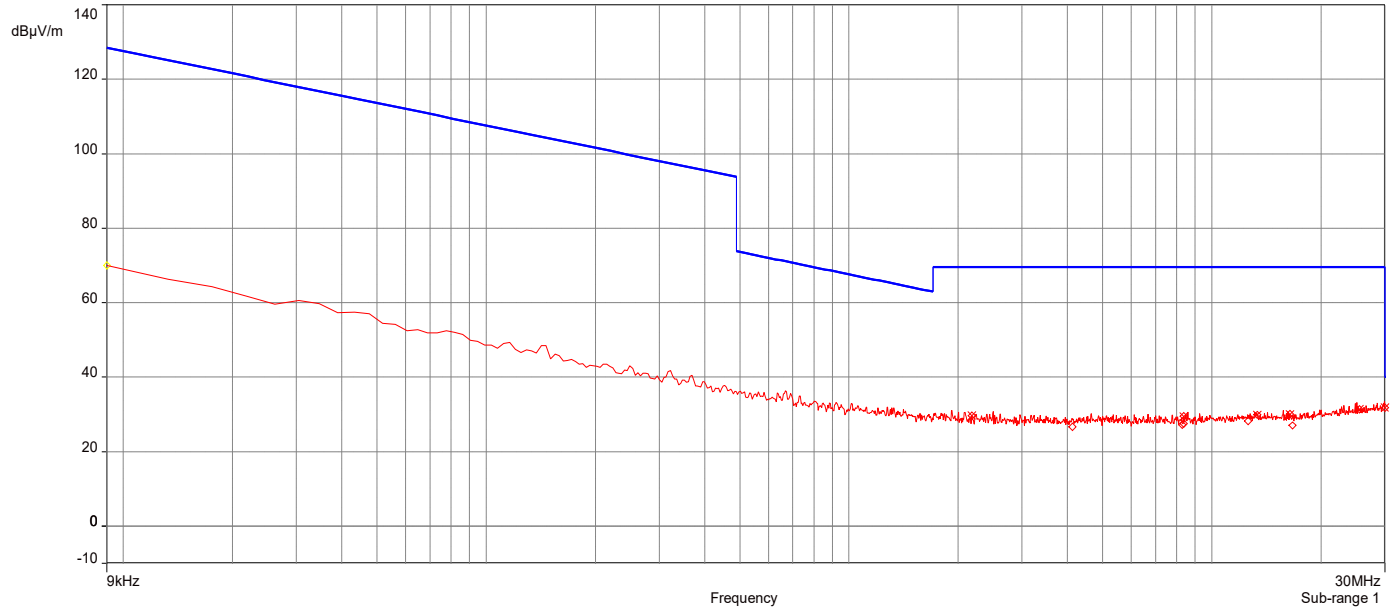
UNII-1

AH22021401-HAR-004#3_5G UNII-1 802.11a_Ch 40_9kHz-30MHz_Ground-Parallel

3/19/2022 8:42:37 PM

No	Frequency (MHz)	Level Q-Peak Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1.	2.181516MHz	29.61	19.21	69.54	-39.93	1.00	193.60	H/V	Passed
2.	8.38197MHz	29.51	19.28	69.54	-40.03	1.00	49.90	H/V	Passed
3.	13.361187MHz	29.90	19.85	69.54	-39.64	1.00	290.50	H/V	Passed
4.	16.420706MHz	30.12	19.84	69.54	-39.42	1.00	102.00	H/V	Passed
5.	25.530703MHz	31.41	20.88	69.54	-38.13	1.00	185.40	H/V	Passed
6.	30MHz	31.76	21.95	40.00	-8.24	1.00	0.10	H/V	Passed

Overall Graphs:



Remarks:

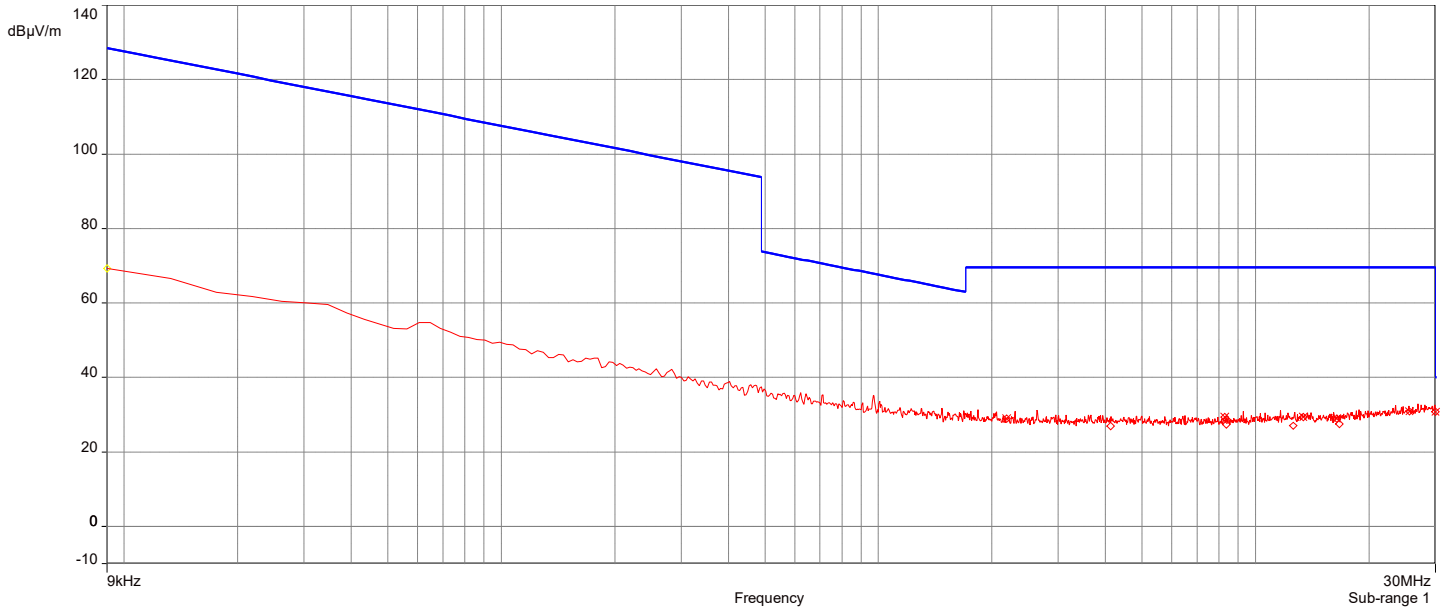
1. Level Q-Peak Reading (dBµV/m) = Raw Q-Peak Level + Correction Factor
2. Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain
3. Margin = Level Q-Peak Reading – Limit

AH22021401-HAR-004#3_5G UNII-1 802.11a_Ch 40_9kHz-30MHz_Parallel

3/19/2022 8:39:08 PM

No	Frequency (MHz)	Level Q-Peak Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1	2.185801MHz	28.91	19.21	69.54	-40.63	1.00	46.20	H/V	Passed
2	8.291984MHz	29.39	19.28	69.54	-40.15	1.00	42.00	H/V	Passed
3	13.369757MHz	29.38	19.85	69.54	-40.16	1.00	288.80	H/V	Passed
4	16.420706MHz	28.89	19.84	69.54	-40.65	1.00	185.90	H/V	Passed
5	25.577838MHz	30.95	20.88	69.54	-38.59	1.00	112.50	H/V	Passed
6	30MHz	30.77	21.95	40.00	-9.23	1.00	267.30	H/V	Passed

Overall Graphs:



Remarks:

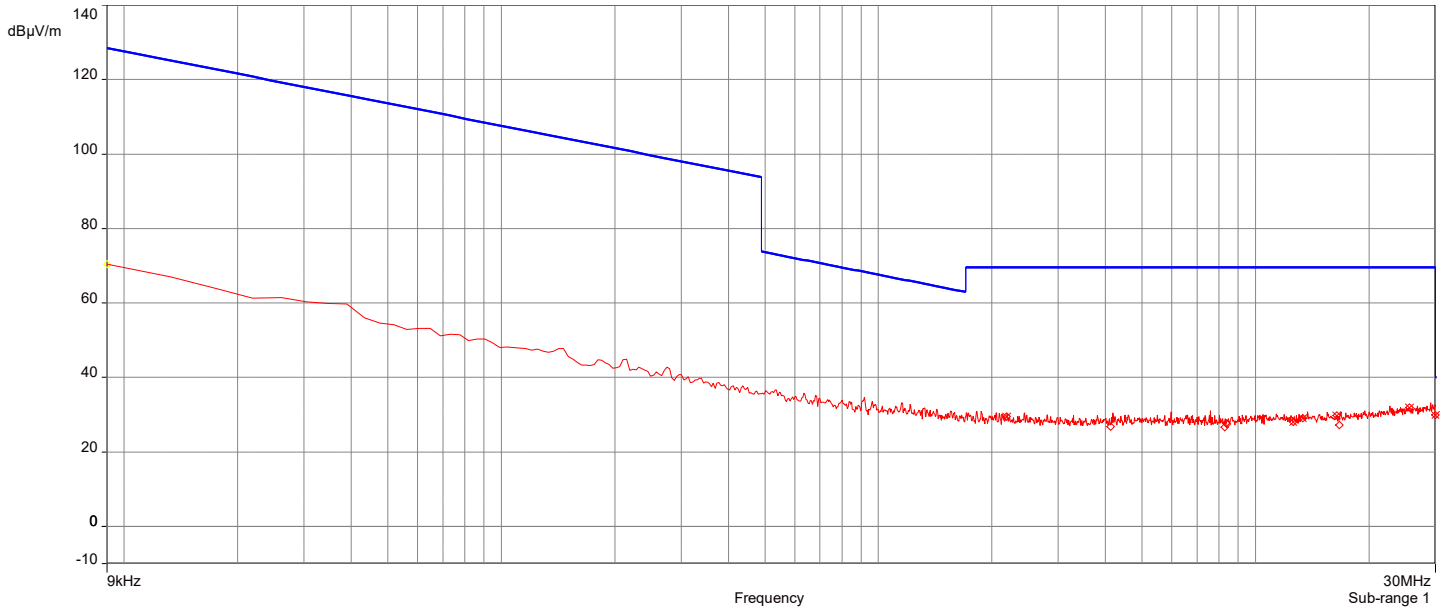
1. Level Q-Peak Reading (dBµV/m) = Raw Q-Peak Level + Correction Factor
2. Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain
3. Margin = Level Q-Peak Reading – Limit

AH22021401-HAR-004#3_5G UNII-1 802.11a_Ch 40_9kHz-30MHz_Perpendicular

3/19/2022 8:35:55 PM

No	Frequency (MHz)	Level Q-Peak Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1	2.185801MHz	29.45	19.21	69.54	-40.09	1.00	173.90	H/V	Passed
2	12.577024MHz	28.14	19.83	69.54	-41.40	1.00	319.20	H/V	Passed
3	13.365472MHz	29.08	19.85	69.54	-40.46	1.00	0.10	H/V	Passed
4	16.420706MHz	29.76	19.84	69.54	-39.78	1.00	270.20	H/V	Passed
5	25.590693MHz	31.99	20.89	69.54	-37.55	1.00	207.10	H/V	Passed
6	30MHz	29.97	21.95	40.00	-10.03	1.00	62.80	H/V	Passed

Overall Graphs:



Remarks:

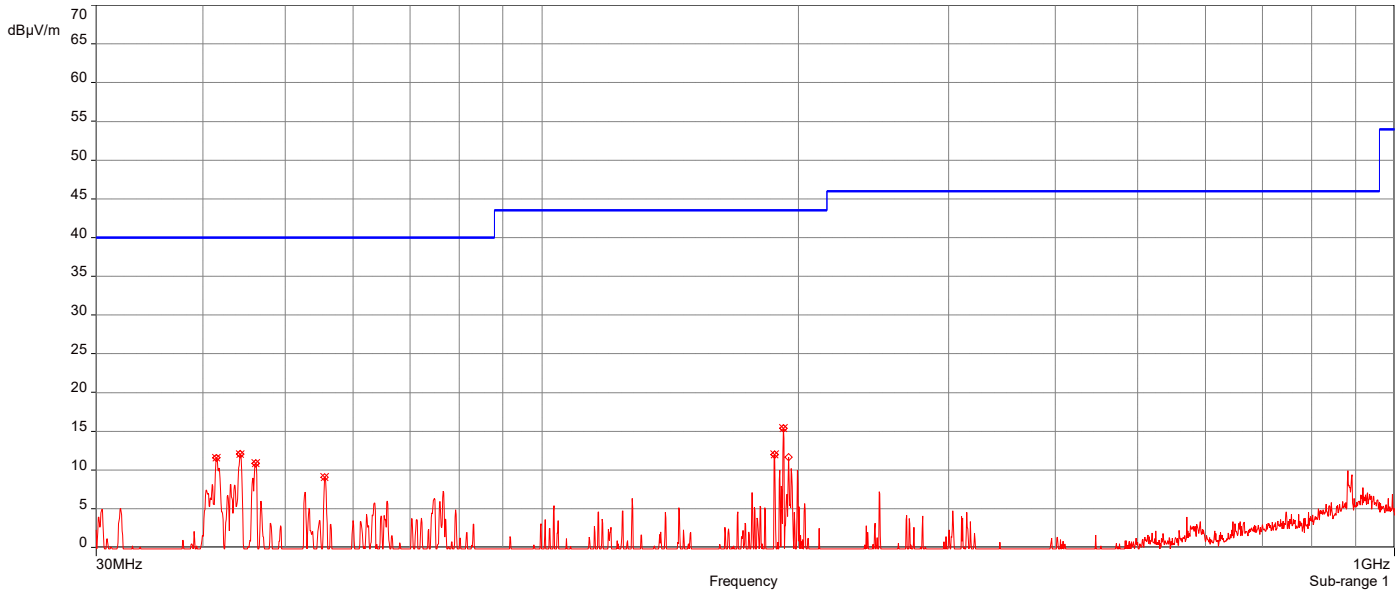
1. Level Q-Peak Reading (dBµV/m) = Raw Q-Peak Level + Correction Factor
2. Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain
3. Margin = Level Q-Peak Reading – Limit

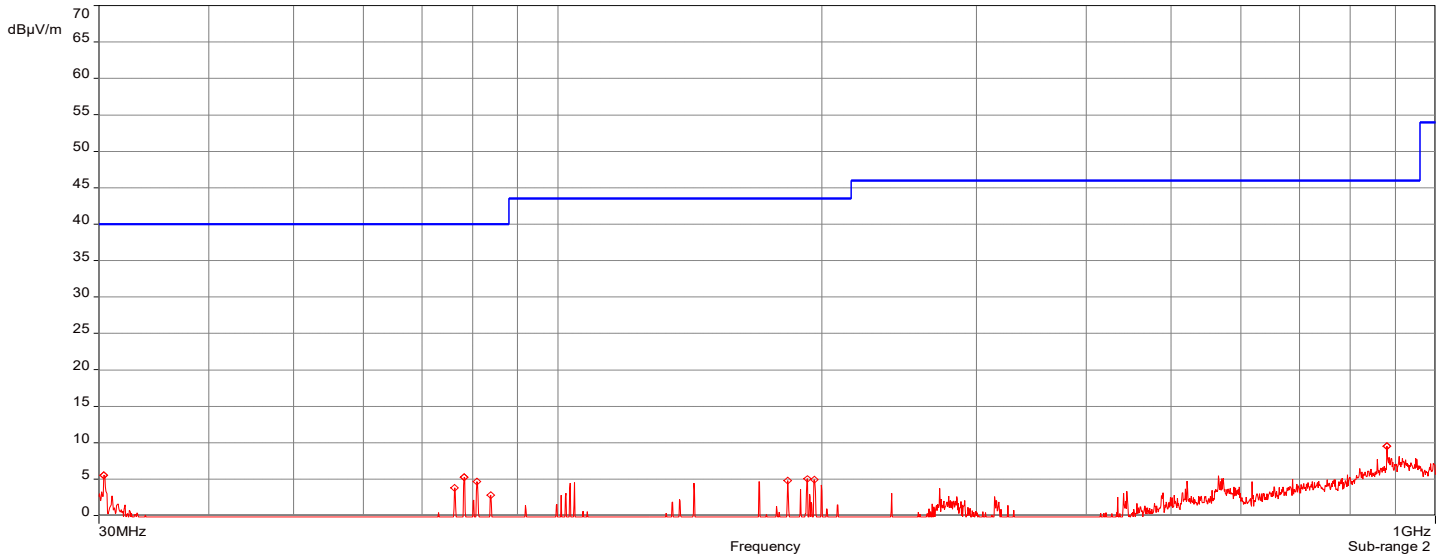
AH22021401-HAR-004#3_5G UNII-1 802.11a_Ch 36_30MHz-1GHz

3/8/2022 5:43:18 PM

No	Frequency (MHz)	Level Q-Peak Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1.	41.52656MHz	11.58	-13.25	40.00	-28.42	2.75	28.40	Vertical	Passed
2.	44.265545MHz	12.02	-14.94	40.00	-27.98	3.50	85.30	Vertical	Passed
3.	46.148597MHz	10.86	-16.06	40.00	-29.14	3.75	324.20	Vertical	Passed
4.	55.620919MHz	9.06	-19.52	40.00	-30.94	1.50	151.10	Vertical	Passed
5.	187.37749MHz	11.97	-15.59	43.50	-31.53	1.50	152.80	Vertical	Passed
6.	191.99953MHz	15.40	-15.41	43.50	-28.10	1.50	174.90	Vertical	Passed

Overall Graphs:





Remarks:

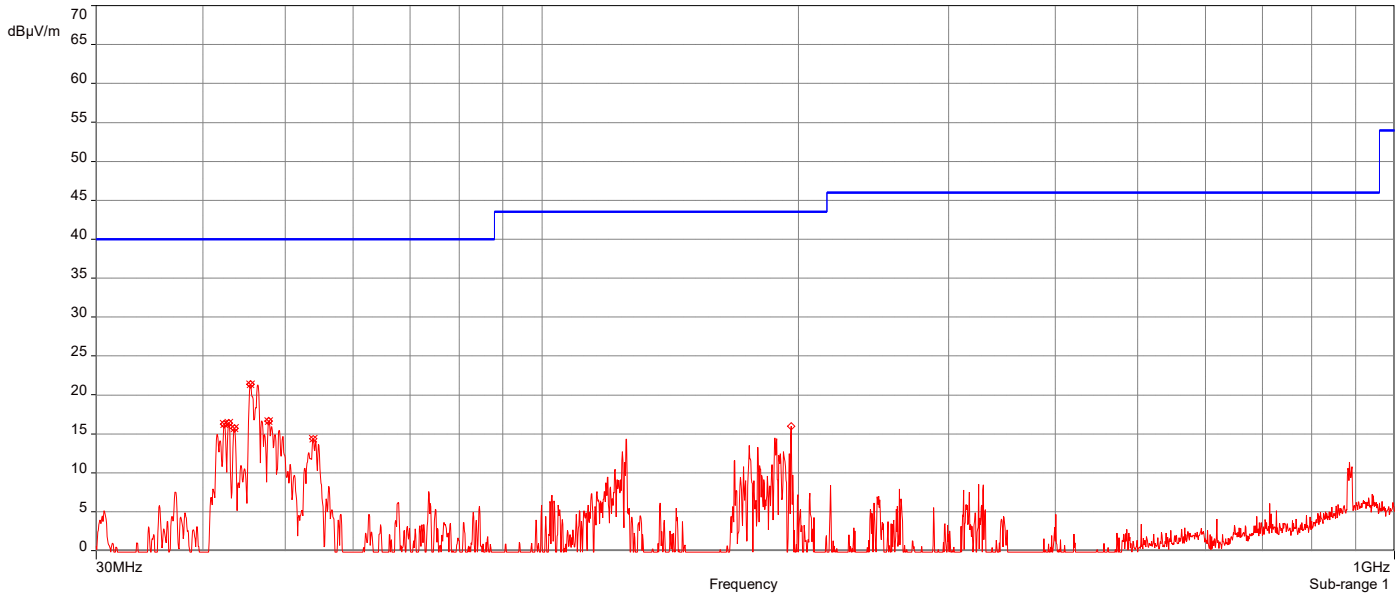
1. Level Q-Peak Reading (dBµV/m) = Raw Q-Peak Level + Correction Factor
2. Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain
3. Margin = Level Q-Peak Reading – Limit

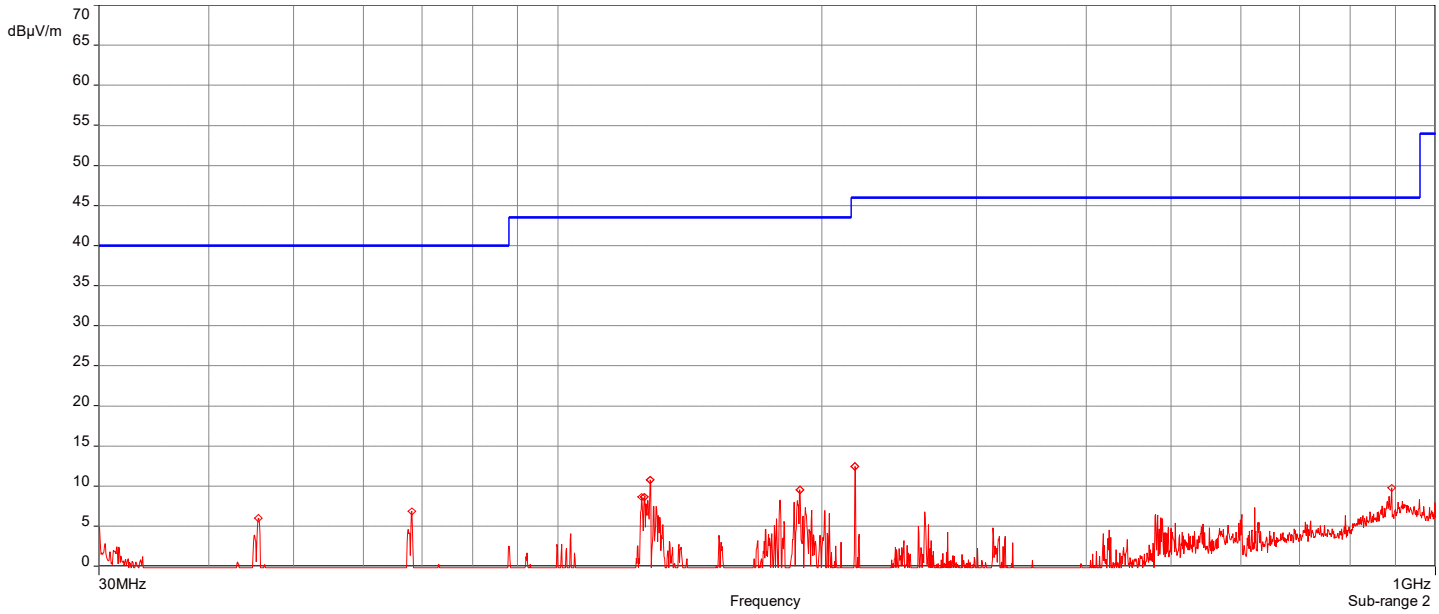
AH22021401-HAR-004#3_5G UNII-1 802.11a_Ch 40_30MHz-1GHz

3/9/2022 10:11:02 AM

No	Frequency (MHz)	Level Q-Peak Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1.	42.382493MHz	16.21	-13.76	40.00	-23.79	2.00	233.80	Vertical	Passed
2.	42.896053MHz	16.39	-14.09	40.00	-23.61	2.00	205.10	Vertical	Passed
3.	43.580799MHz	15.74	-14.52	40.00	-24.26	3.50	286.50	Vertical	Passed
4.	45.520913MHz	21.36	-15.72	40.00	-18.64	2.00	217.80	Vertical	Passed
5.	47.8034MHz	16.65	-16.81	40.00	-23.35	2.00	222.90	Vertical	Passed
6.	53.909053MHz	14.37	-18.84	40.00	-25.63	3.75	81.90	Vertical	Passed

Overall Graphs:





Remarks:

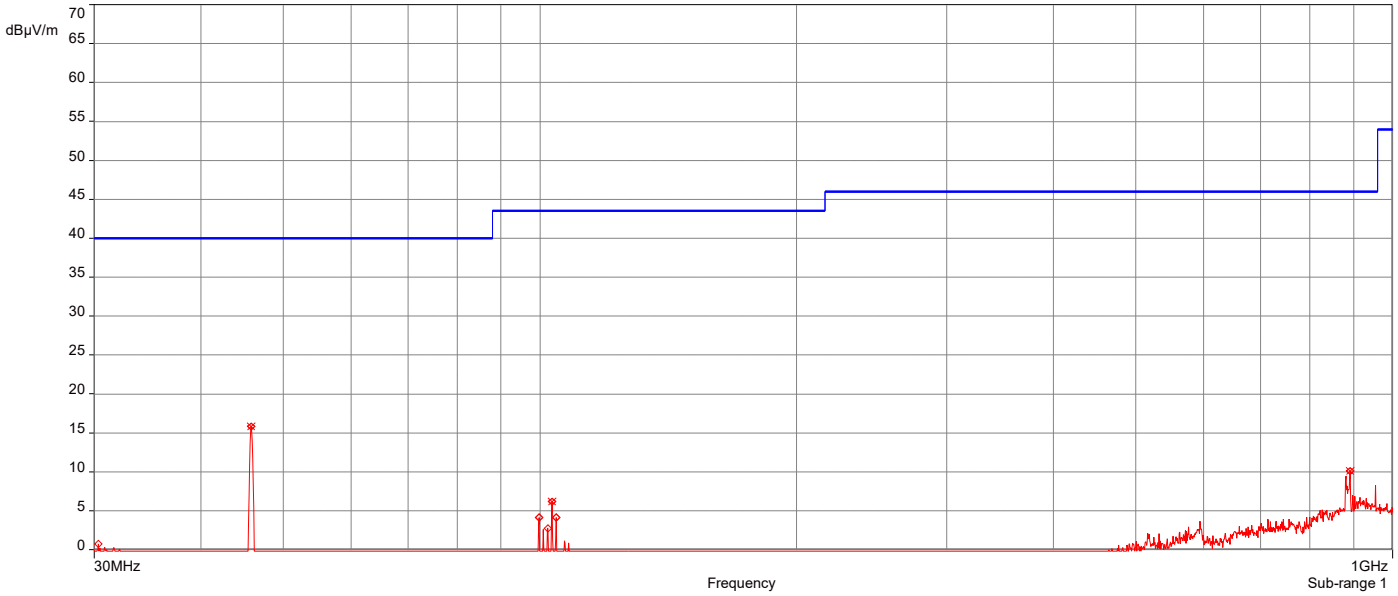
1. Level Q-Peak Reading (dBµV/m) = Raw Q-Peak Level + Correction Factor
2. Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain
3. Margin = Level Q-Peak Reading – Limit

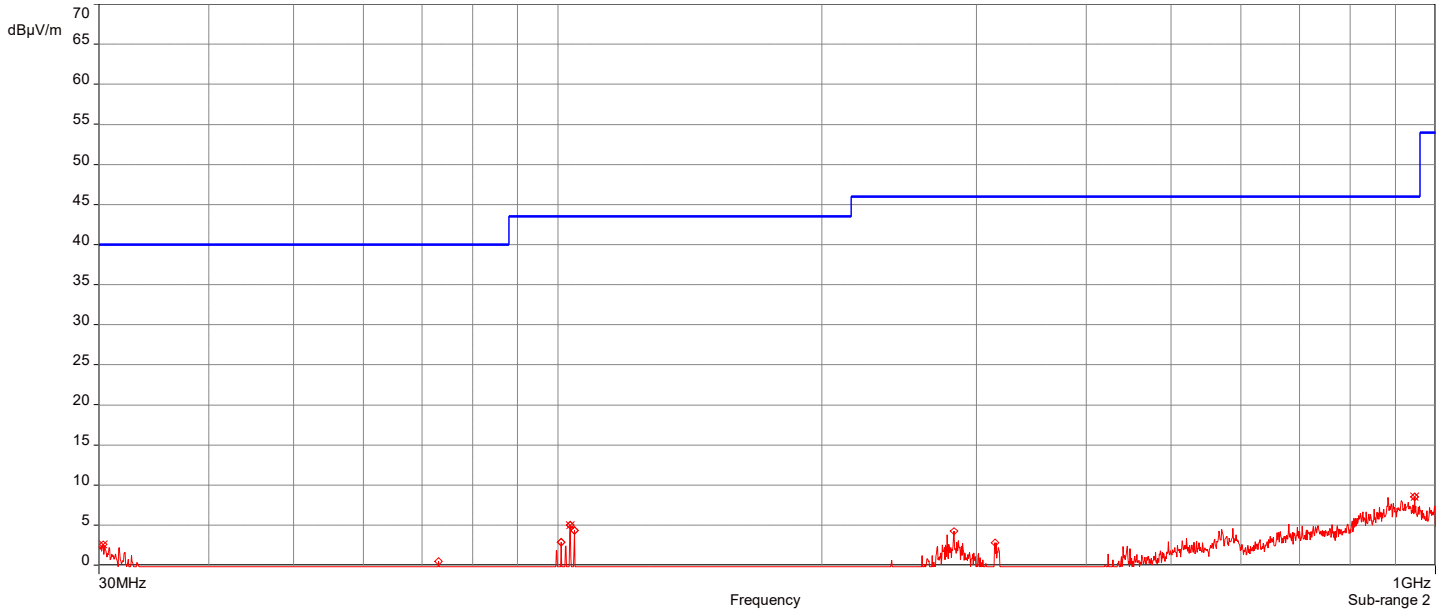
AH22021401-HAR-004#3_5G UNII-1 802.11a_Ch 48_30MHz-1GHz

3/9/2022 11:12:02 AM

No	Frequency (MHz)	Level Q-Peak Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1.	45.806224MHz	15.81	-15.88	40.00	-24.19	1.00	116.60	Vertical	Passed
2.	103.26784MHz	6.22	-12.88	43.50	-37.28	1.00	307.20	Vertical	Passed
3.	891.58186MHz	10.10	-1.36	46.00	-35.90	1.25	13.00	Vertical	Passed
4.	30.342373MHz	2.58	-5.03	40.00	-37.42	2.25	77.40	Horizontal	Passed
5.	103.26784MHz	4.98	-13.58	43.50	-38.52	3.00	11.90	Horizontal	Passed
6.	947.44573MHz	8.54	0.34	46.00	-37.46	2.75	175.00	Horizontal	Passed

Overall Graphs:





Remarks:

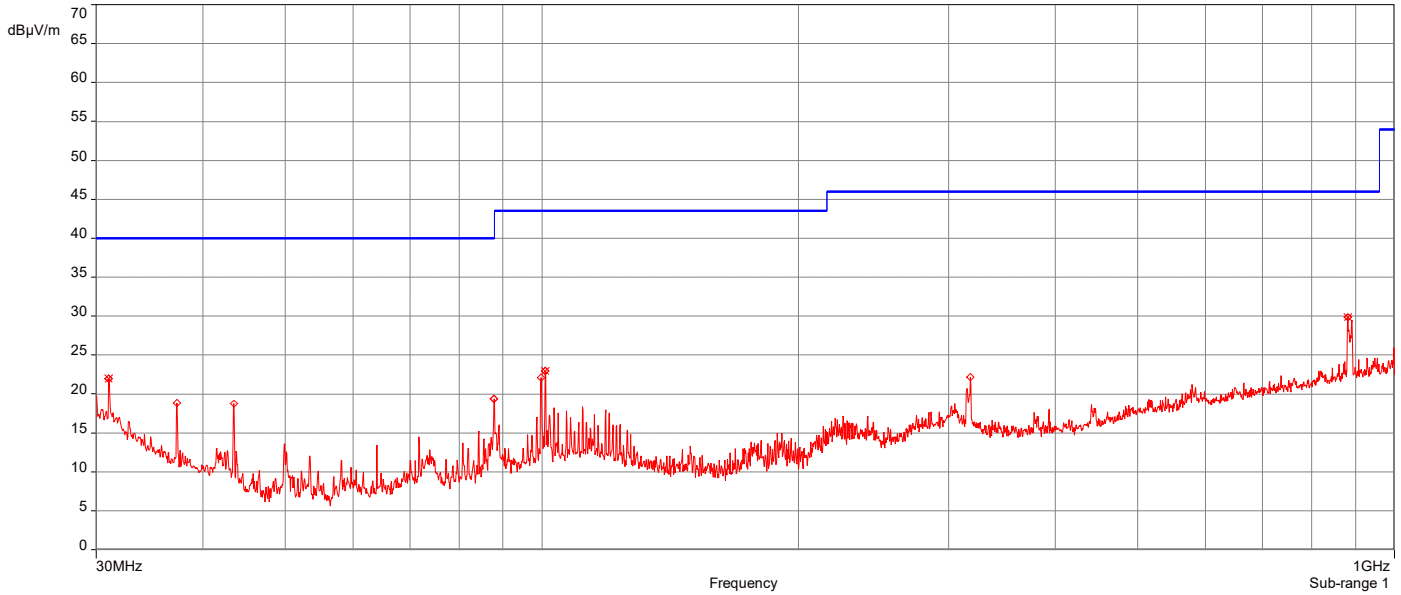
1. Level Q-Peak Reading (dBµV/m) = Raw Q-Peak Level + Correction Factor
2. Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain
3. Margin = Level Q-Peak Reading – Limit

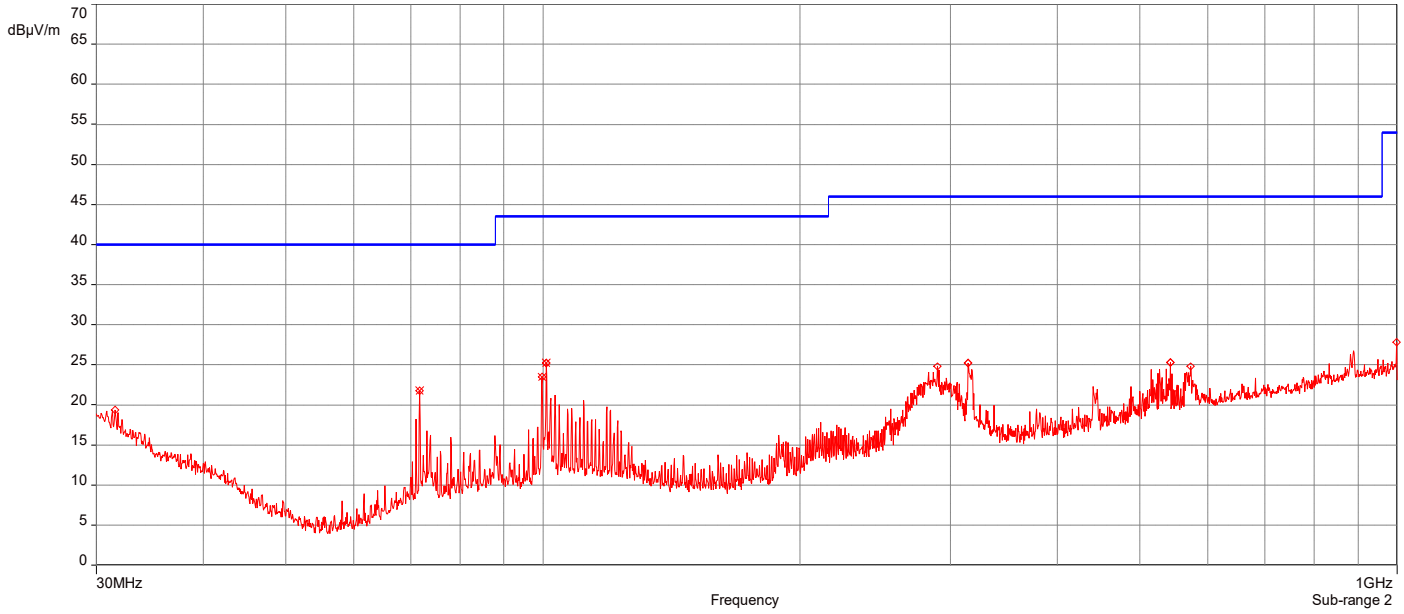
AH22021401-HAR-004#3_5G UNII-1 802.11ac_Ch 38_30MHz-1GHz

6/3/2022 13:17:50

No	Frequency (MHz)	Level Q-Peak Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1.	31.027119MHz	21.96	-7.22	40.00	-18.04	1.00	341.50	Vertical	Passed
2.	100.87123MHz	22.95	-12.75	43.50	-20.55	4.00	108.60	Vertical	Passed
3.	881.53891MHz	29.91	-1.55	46.00	-16.09	3.50	187.40	Vertical	Passed
4.	71.712454MHz	21.78	-15.66	40.00	-18.22	3.00	0.10	Horizontal	Passed
5.	99.729984MHz	23.47	-13.63	43.50	-20.03	3.25	22.70	Horizontal	Passed
6.	100.92829MHz	25.20	-13.56	43.50	-18.30	3.50	21.80	Horizontal	Passed

Overall Graphs:





Remarks:

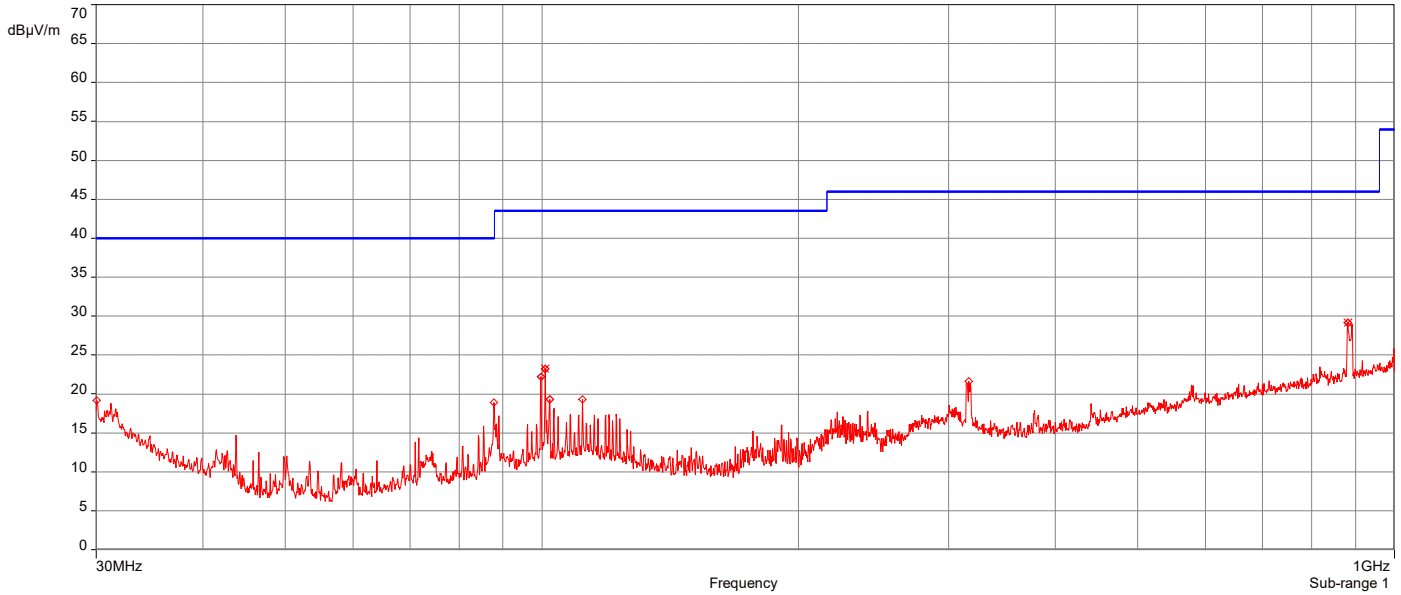
1. Level Q-Peak Reading (dBµV/m) = Raw Q-Peak Level + Correction Factor
2. Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain
3. Margin = Level Q-Peak Reading – Limit

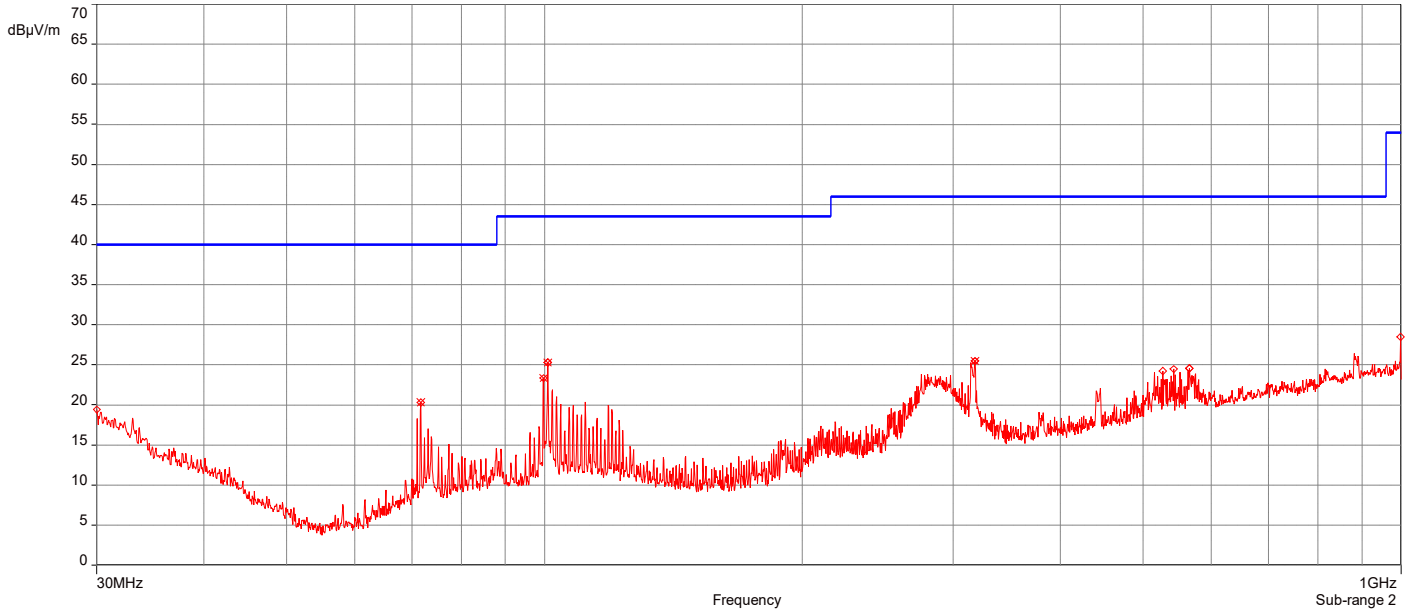
AH22021401-HAR-004#3_5G UNII-1 802.11ac_Ch 46_30MHz-1GHz

6/3/2022 13:45:44

No	Frequency (MHz)	Level Q-Peak Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1	100.87123MHz	23.26	-12.75	43.50	-20.24	3.50	124.30	Vertical	Passed
2	881.42479MHz	29.16	-1.55	46.00	-16.84	3.50	175.70	Vertical	Passed
3	71.712454MHz	20.31	-15.66	40.00	-19.69	3.50	0.10	Horizontal	Passed
4	99.729984MHz	23.34	-13.63	43.50	-20.16	3.25	11.80	Horizontal	Passed
5	100.87123MHz	25.30	-13.57	43.50	-18.20	4.00	2.40	Horizontal	Passed
6	318.10695MHz	25.49	-10.41	46.00	-20.51	1.25	249.50	Horizontal	Passed

Overall Graphs:





Remarks:

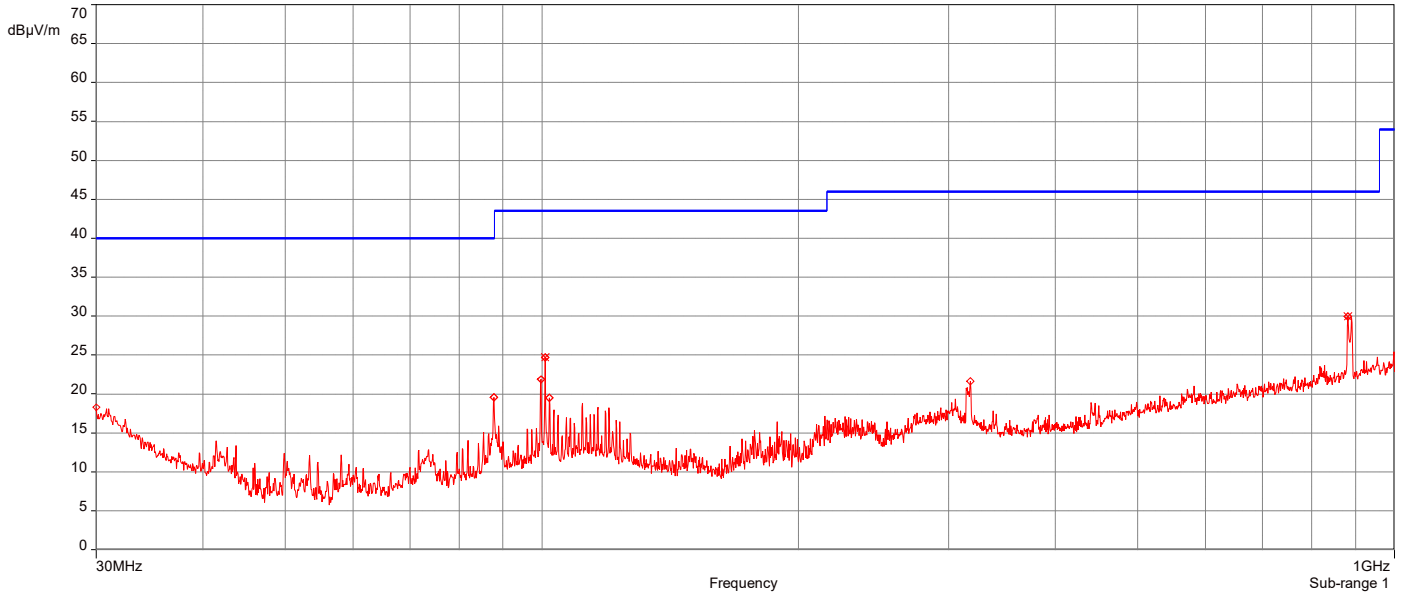
1. Level Q-Peak Reading (dBµV/m) = Raw Q-Peak Level + Correction Factor
2. Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain
3. Margin = Level Q-Peak Reading – Limit

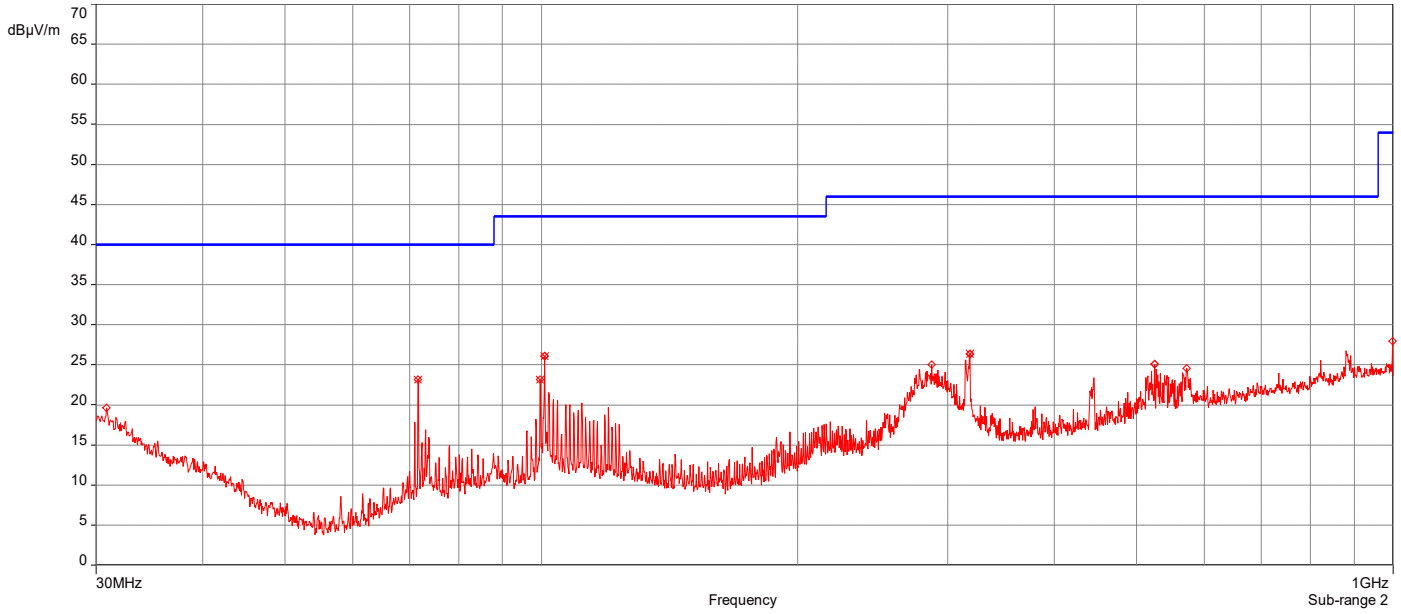
AH22021401-HAR-004#3_5G UNII-1 802.11ac_Ch 42_30MHz-1GHz

6/3/2022 14:07:32

No	Frequency (MHz)	Level Q-Peak Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1	100.81417MHz	24.71	-12.75	43.50	-18.79	4.00	97.80	Vertical	Passed
2	881.53891MHz	29.95	-1.55	46.00	-16.05	2.25	184.50	Vertical	Passed
3	71.655391MHz	23.16	-15.67	40.00	-16.84	3.00	0.10	Horizontal	Passed
4	99.672922MHz	23.18	-13.63	43.50	-20.32	3.25	34.60	Horizontal	Passed
5	100.87123MHz	26.06	-13.57	43.50	-17.44	3.75	13.00	Horizontal	Passed
6	318.39226MHz	26.34	-10.41	46.00	-19.66	1.00	283.00	Horizontal	Passed

Overall Graphs:





Remarks:

1. Level Q-Peak Reading (dBµV/m) = Raw Q-Peak Level + Correction Factor
2. Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain
3. Margin = Level Q-Peak Reading – Limit

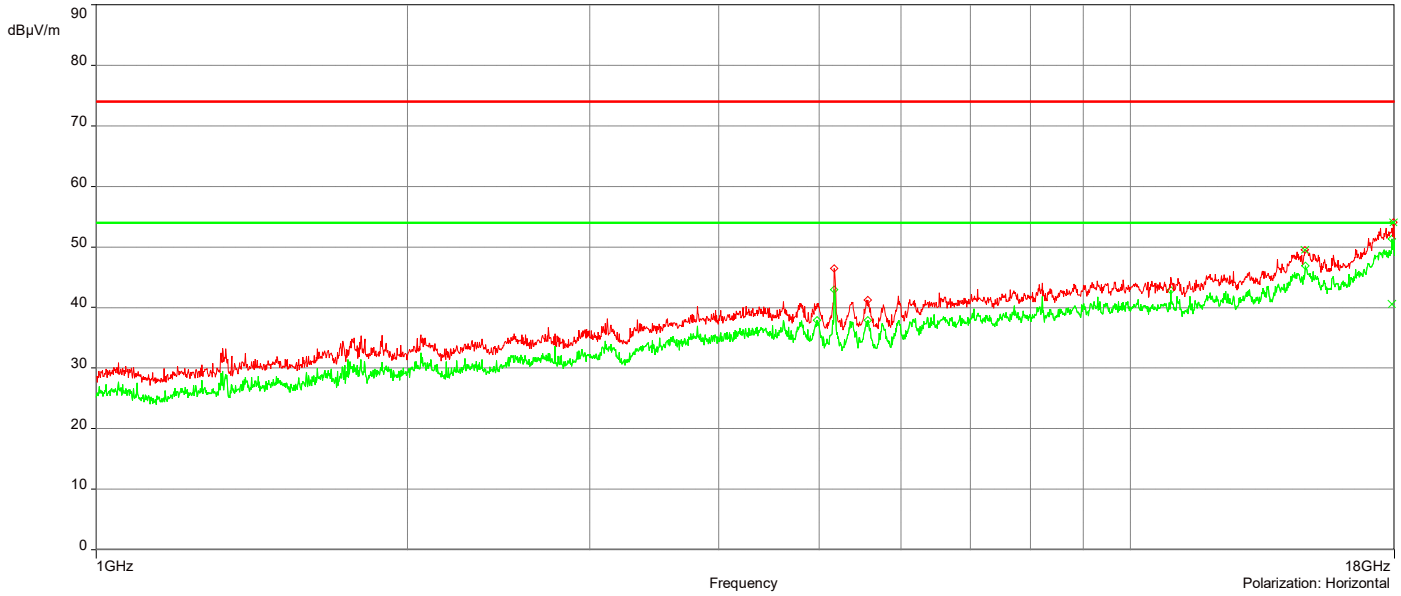
AH22021401-HAR-004#3_5G UNII-1 802.11a_Ch 36_1-18GHz

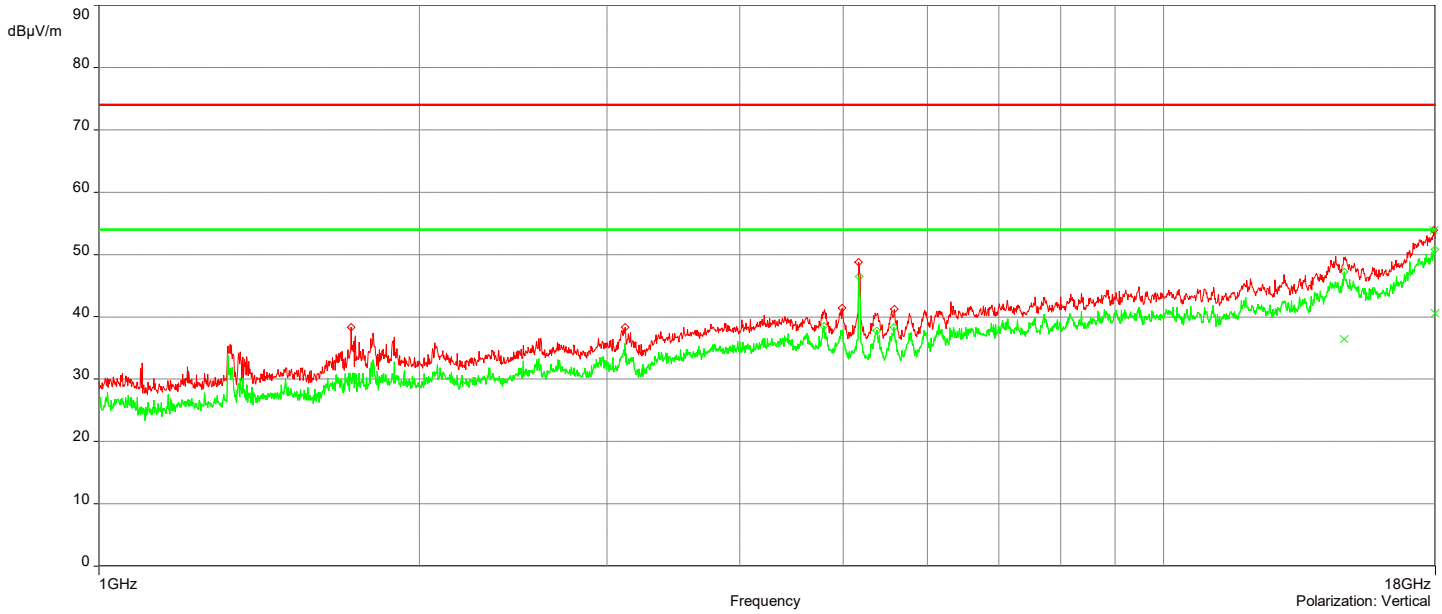
3/11/2022 4:19:24 PM

No	Frequency (MHz)	Level Peak Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1.	17.948498GHz	53.94	18.94	74.00	-20.06	4.00	250.10	Vertical	Passed
2.	14.737904GHz	49.55	14.20	74.00	-24.45	3.50	121.80	Horizontal	Passed
3.	17.963999GHz	54.07	19.04	74.00	-19.93	4.00	1.10	Horizontal	Passed

No	Frequency (MHz)	Level Average Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgment
1.	14.775405GHz	36.44	14.63	54.00	-17.56	3.50	114.10	Vertical	Passed
2.	17.981499GHz	40.55	19.30	54.00	-13.45	2.50	165.10	Vertical	Passed
3.	17.896997GHz	40.59	18.32	54.00	-13.41	1.50	208.10	Horizontal	Passed

Overall Graphs:





Remarks:

1 Level Peak Reading (dBµV/m) = Raw Peak Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Peak Reading – Limit

Remarks:

1 Level Average Reading (dBµV/m) = Raw Average Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Average Reading – Limit

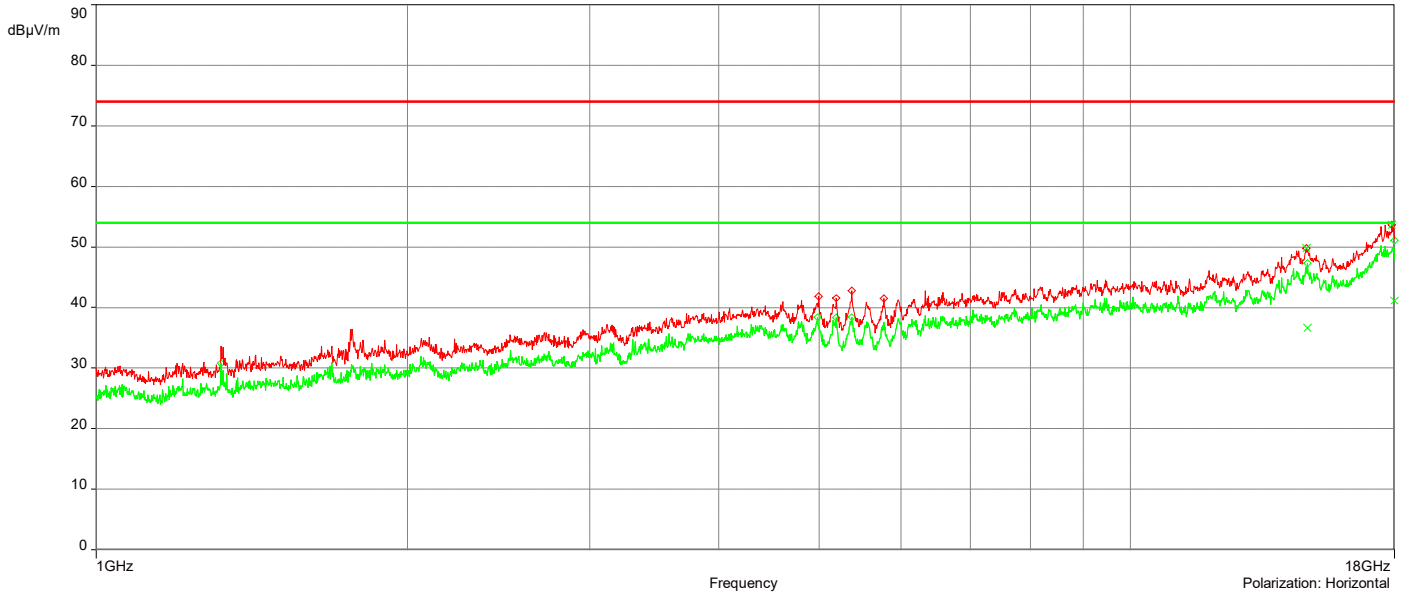
AH22021401-HAR-004#3_5G UNII-1 802.11a_Ch 40_1-18GHz

3/11/2022 5:23:03 PM

No	Frequency (MHz)	Level Peak Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1	17.976499GHz	54.34	19.27	74.00	-19.66	4.00	56.80	Vertical	Passed
2	14.801906GHz	49.77	14.92	74.00	-24.23	1.50	228.50	Horizontal	Passed
3	17.896997GHz	53.68	18.32	74.00	-20.32	1.00	45.20	Horizontal	Passed

No	Frequency (MHz)	Level Average Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgment
1	17.9895GHz	40.93	19.52	54.00	-13.07	3.00	355.90	Vertical	Passed
2	14.825407GHz	36.62	15.18	54.00	-17.38	2.50	10.10	Horizontal	Passed
3	17.992GHz	41.15	19.60	54.00	-12.85	3.00	105.10	Horizontal	Passed

Overall Graphs:



Remarks:

1 Level Peak Reading (dBµV/m) = Raw Peak Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Peak Reading – Limit

Remarks:

1 Level Average Reading (dBµV/m) = Raw Average Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Average Reading – Limit

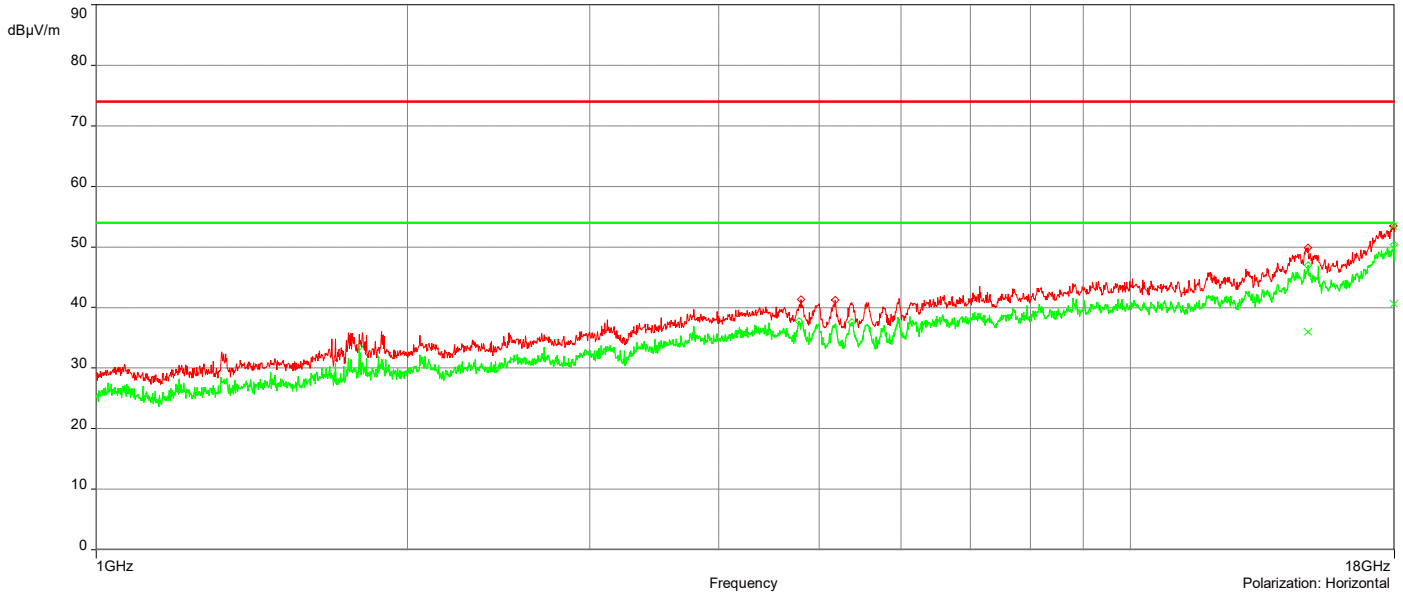
AH22021401-HAR-004#3_5G UNII-1 802.11a_Ch 48_1-18GHz

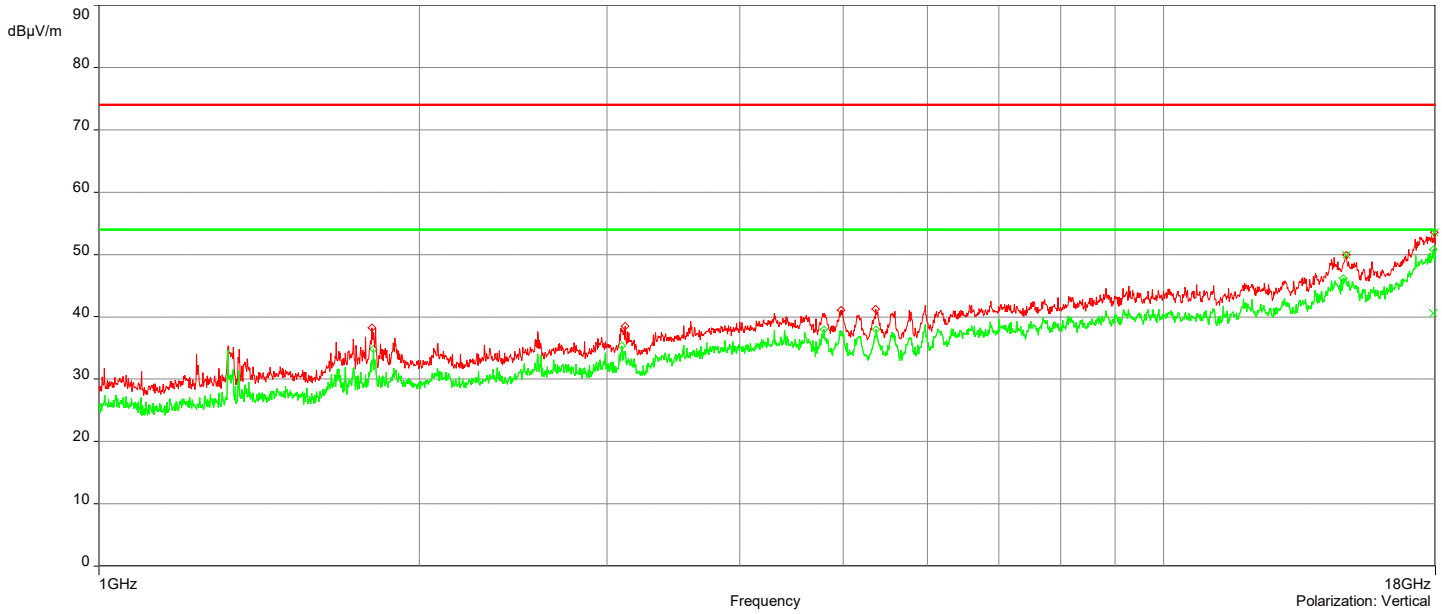
3/11/2022 5:50:29 PM

No	Frequency (MHz)	Level Peak Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1	14.851407GHz	50.00	14.75	74.00	-24.00	4.00	315.90	Vertical	Passed
2	17.964999GHz	53.55	19.13	74.00	-20.45	2.00	62.80	Vertical	Passed
3	17.957499GHz	53.47	18.95	74.00	-20.53	1.50	325.60	Horizontal	Passed

No	Frequency (MHz)	Level Average Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgment
1	17.921498GHz	40.52	18.60	54.00	-13.48	3.00	67.90	Vertical	Passed
2	14.841907GHz	36.04	14.90	54.00	-17.96	2.00	351.90	Horizontal	Passed
3	17.975999GHz	40.62	19.26	54.00	-13.38	1.00	346.90	Horizontal	Passed

Overall Graphs:





Remarks:

1 Level Peak Reading (dBµV/m) = Raw Peak Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Peak Reading – Limit

Remarks:

1 Level Average Reading (dBµV/m) = Raw Average Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Average Reading – Limit

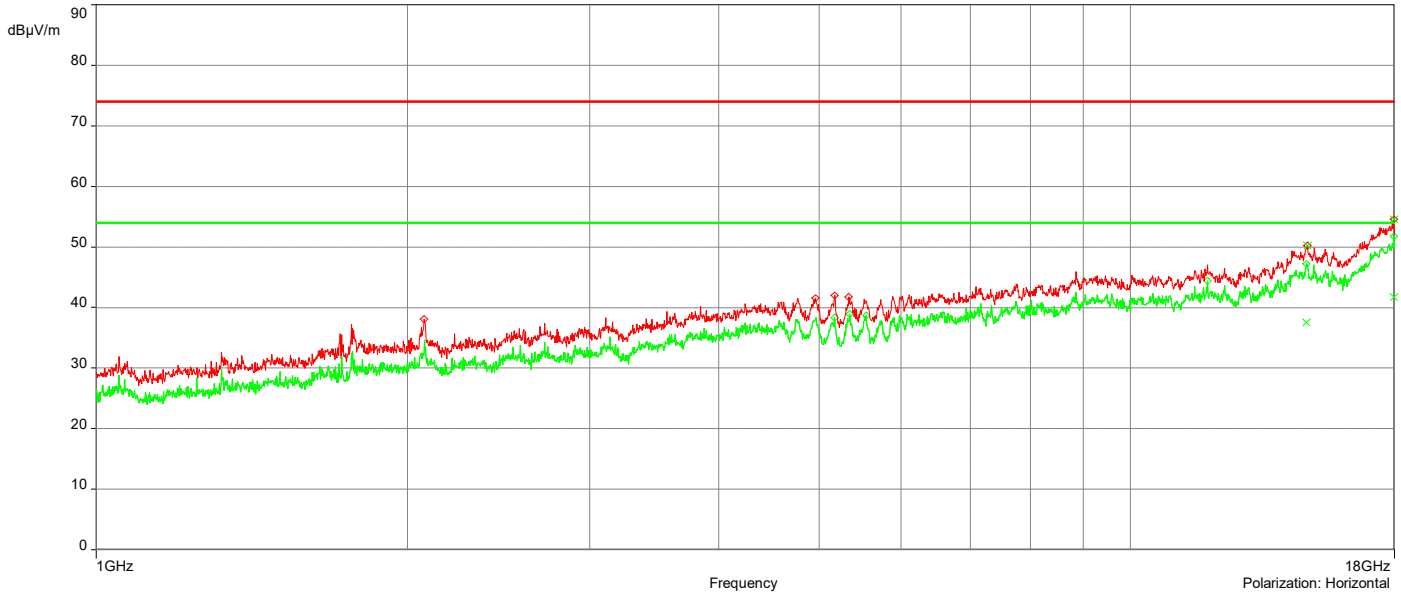
AH22021401-HAR-004#3_5G UNII-1 802.11ac_Ch 38_1-18GHz

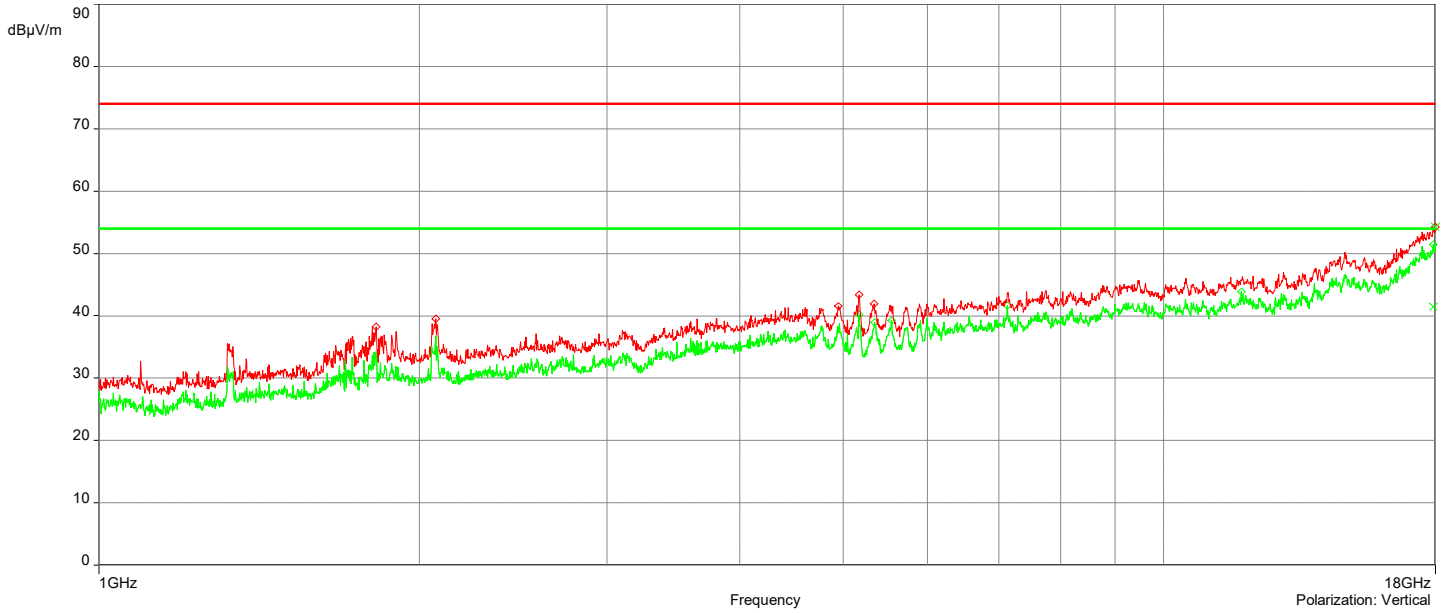
6/2/2022 11:38:14

No	Frequency (MHz)	Level Peak Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1	17.994GHz	54.27	20.42	74.00	-19.73	3.50	42.70	Vertical	Passed
2	14.827907GHz	50.26	15.36	74.00	-23.74	3.00	132.40	Horizontal	Passed
3	17.978499GHz	54.61	20.29	74.00	-19.39	4.00	242.80	Horizontal	Passed

No	Frequency (MHz)	Level Average Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgment
1	17.927498GHz	41.54	20.08	54.00	-12.46	1.00	72.90	Vertical	Passed
2	14.799906GHz	37.56	14.93	54.00	-16.44	1.50	337.90	Horizontal	Passed
3	17.980499GHz	41.72	20.34	54.00	-12.28	1.50	176.10	Horizontal	Passed

Overall Graphs:





Remarks:

1 Level Peak Reading (dBµV/m) = Raw Peak Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Peak Reading – Limit

Remarks:

1 Level Average Reading (dBµV/m) = Raw Average Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Average Reading – Limit

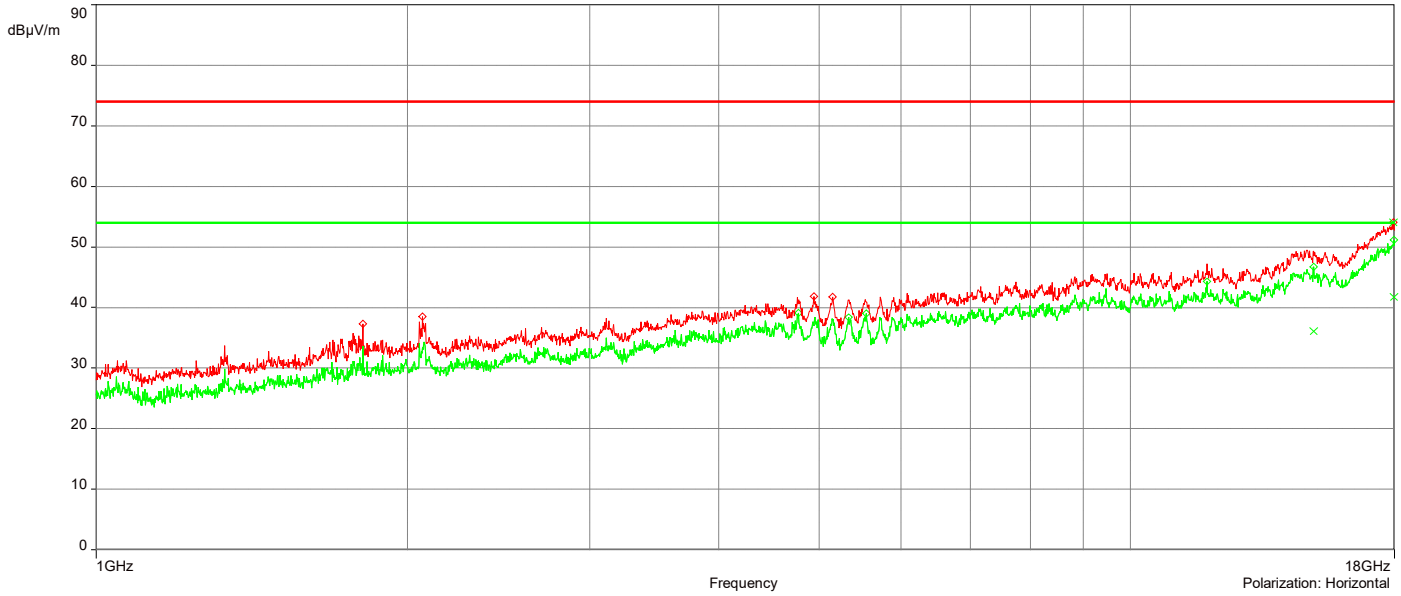
AH22021401-HAR-004#3_5G UNII-1 802.11ac_Ch 46_1-18GHz

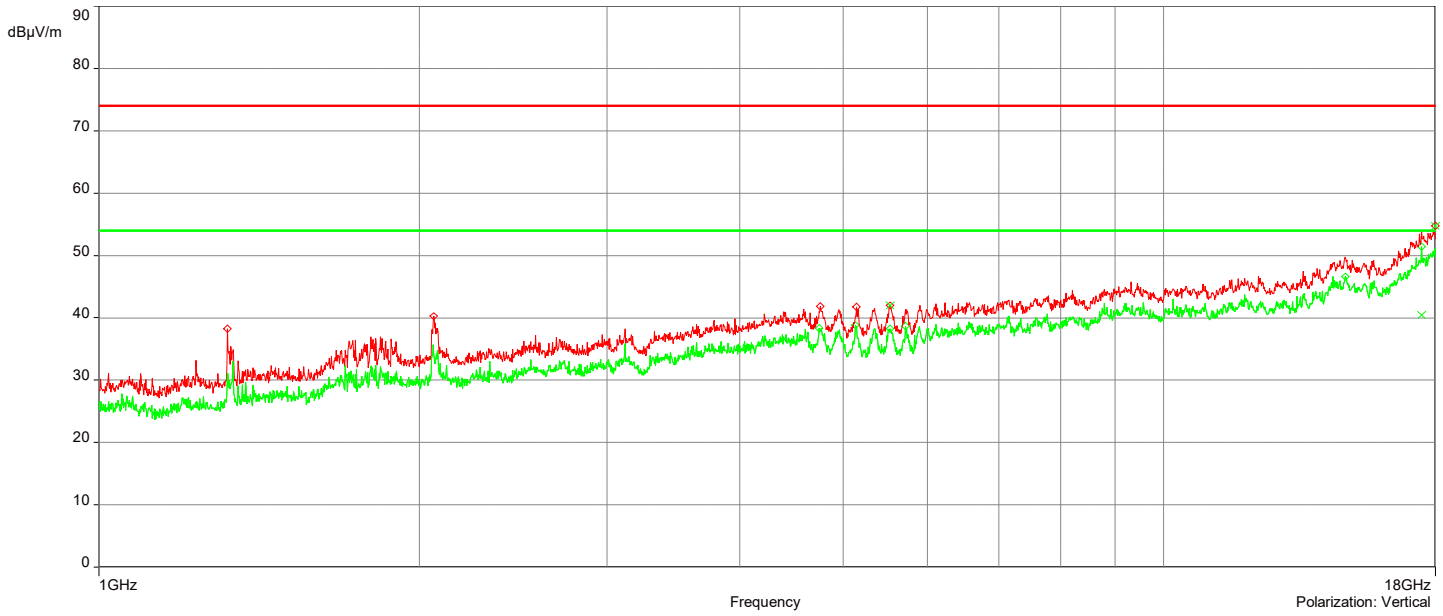
6/2/2022 12:00:33

No	Frequency (MHz)	Level Peak Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1	5.5361334GHz	42.03	5.44	74.00	-31.97	3.50	117.40	Vertical	Passed
2	17.998GHz	54.77	20.44	74.00	-19.23	2.00	191.20	Vertical	Passed
3	17.963999GHz	54.09	20.19	74.00	-19.91	2.00	190.40	Horizontal	Passed

No	Frequency (MHz)	Level Average Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgment
1	17.478485GHz	40.50	18.39	54.00	-13.50	1.00	201.90	Vertical	Passed
2	15.034413GHz	36.09	13.92	54.00	-17.91	3.50	255.90	Horizontal	Passed
3	17.975999GHz	41.76	20.31	54.00	-12.24	3.00	176.10	Horizontal	Passed

Overall Graphs:





Remarks:

1 Level Peak Reading (dBµV/m) = Raw Peak Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Peak Reading – Limit

Remarks:

1 Level Average Reading (dBµV/m) = Raw Average Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Average Reading – Limit

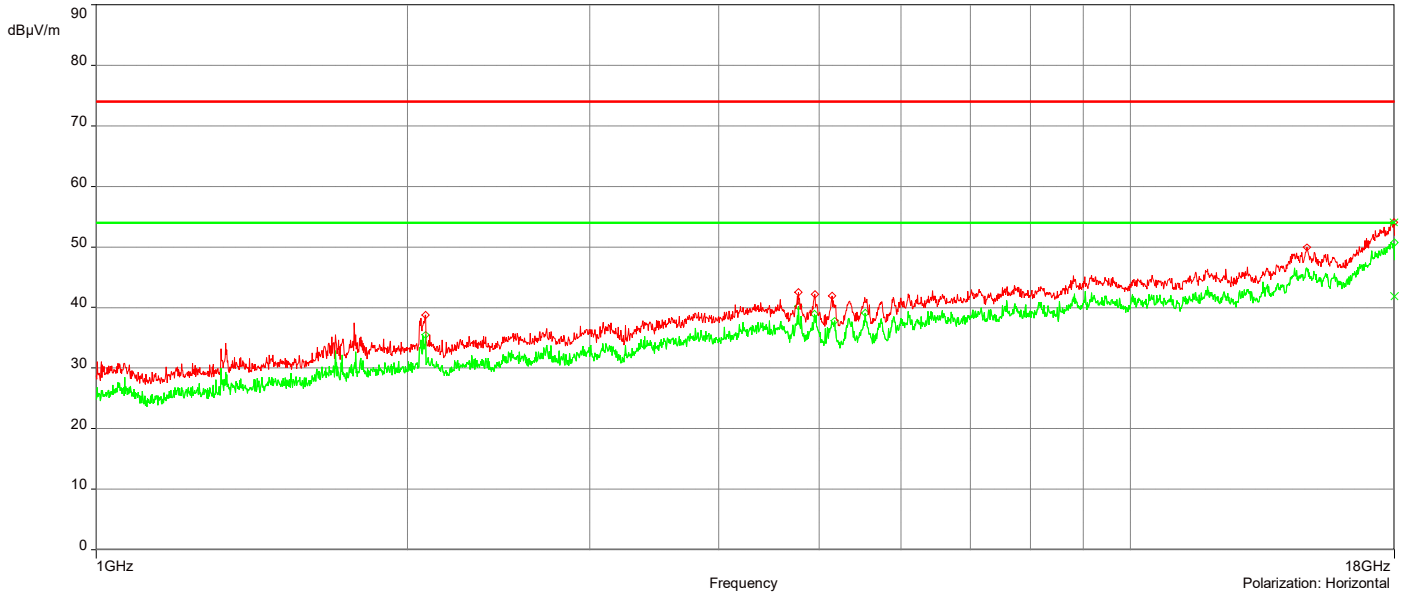
AH22021401-HAR-004#3_5G UNII-1 802.11ac_Ch 42_1-18GHz

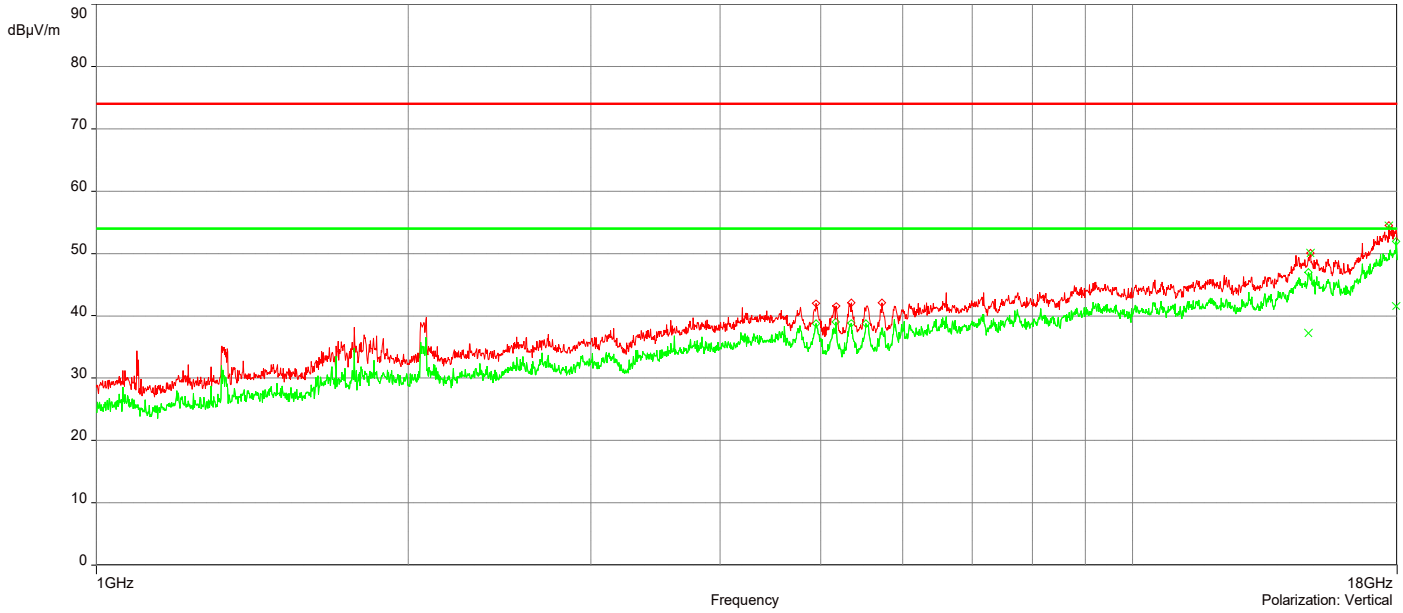
6/2/2022 12:25:32

No	Frequency (MHz)	Level Peak Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1	14.840407GHz	50.06	15.15	74.00	-23.94	4.00	0.10	Vertical	Passed
2	17.66699GHz	54.47	18.80	74.00	-19.53	3.00	355.20	Vertical	Passed
3	17.99GHz	54.06	20.36	74.00	-19.94	3.50	182.80	Horizontal	Passed

No	Frequency (MHz)	Level Average Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgment
1	14.781905GHz	37.22	14.73	54.00	-16.78	4.00	359.90	Vertical	Passed
2	17.956499GHz	41.56	20.20	54.00	-12.44	4.00	262.90	Vertical	Passed
3	17.9935GHz	41.87	20.41	54.00	-12.13	2.00	356.10	Horizontal	Passed

Overall Graphs:





Remarks:

1 Level Peak Reading (dBµV/m) = Raw Peak Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Peak Reading – Limit

Remarks:

1 Level Average Reading (dBµV/m) = Raw Average Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Average Reading – Limit

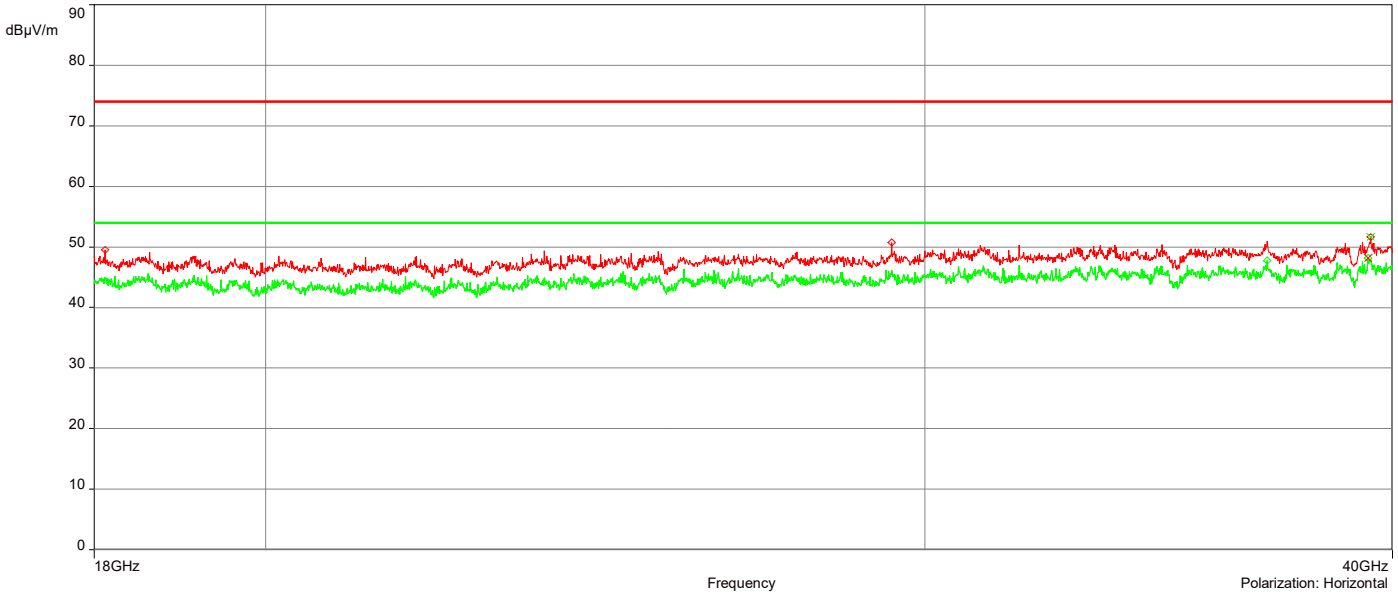
AH22021401-HAR-004#3_5G UNII-1 802.11a_Ch 36_18-40GHz

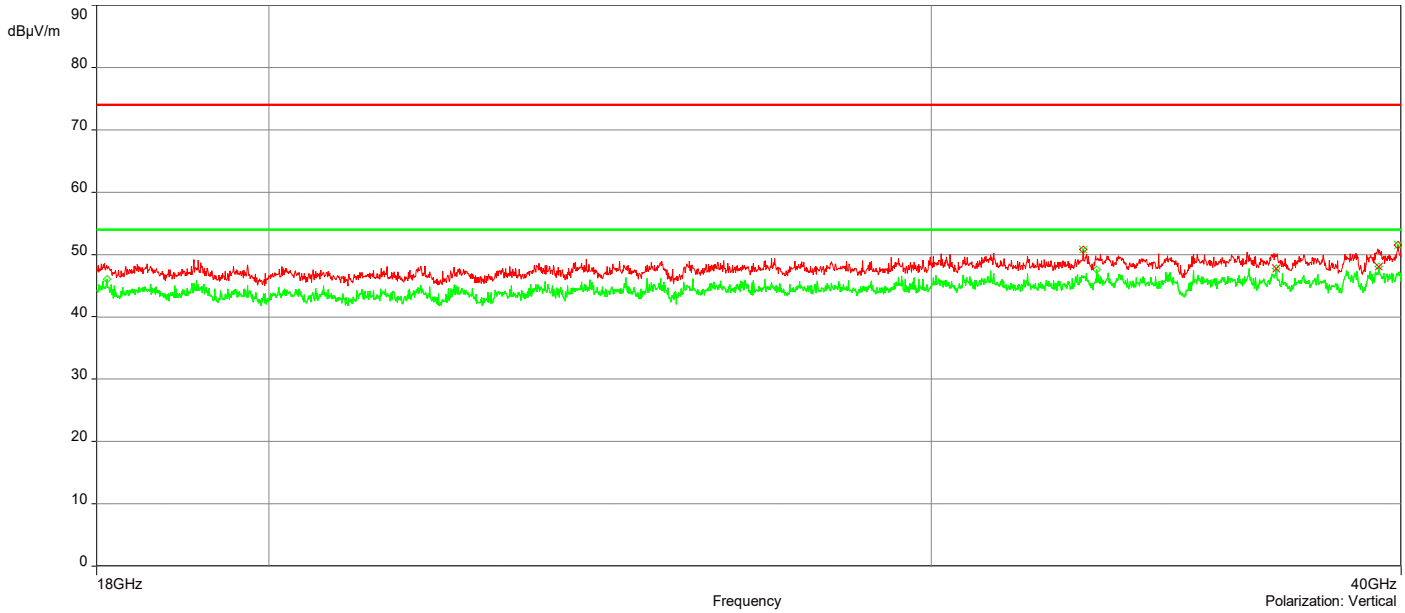
3/17/2022 4:37:19 PM

No	Frequency (MHz)	Level Peak Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1	32.926339GHz	50.79	5.88	74.00	-23.21	3.02	337.40	Vertical	Passed
2	39.927498GHz	51.53	5.72	74.00	-22.47	3.12	225.10	Vertical	Passed
3	39.462988GHz	51.70	5.84	74.00	-22.30	1.33	315.10	Horizontal	Passed

No	Frequency (MHz)	Level Average Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgment
1	37.055933GHz	47.79	2.87	54.00	-6.21	3.35	157.50	Vertical	Passed
2	39.455988GHz	48.10	5.95	54.00	-5.90	1.00	45.10	Vertical	Passed
3	39.409987GHz	48.18	5.38	54.00	-5.82	1.02	315.10	Horizontal	Passed

Overall Graphs:





Remarks:

1 Level Peak Reading (dBµV/m) = Raw Peak Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Peak Reading – Limit

Remarks:

1 Level Average Reading (dBµV/m) = Raw Average Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Average Reading – Limit

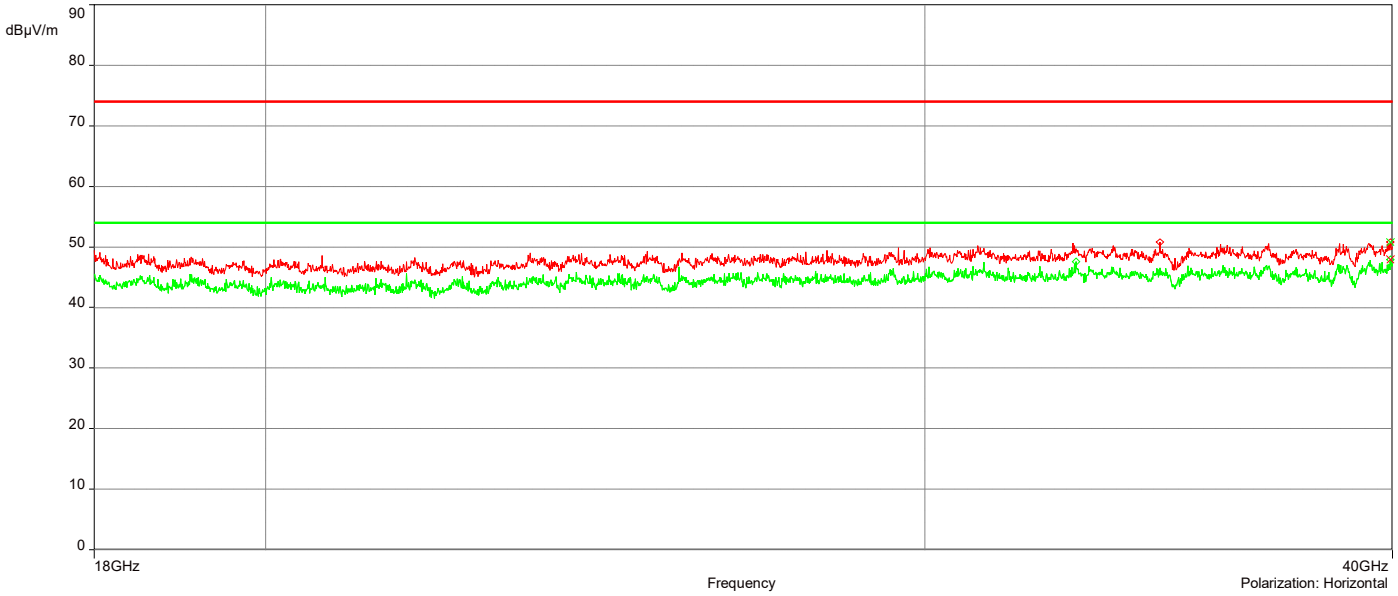
AH22021401-HAR-004#3_5G UNII-1 802.11a_Ch 40_18-40GHz

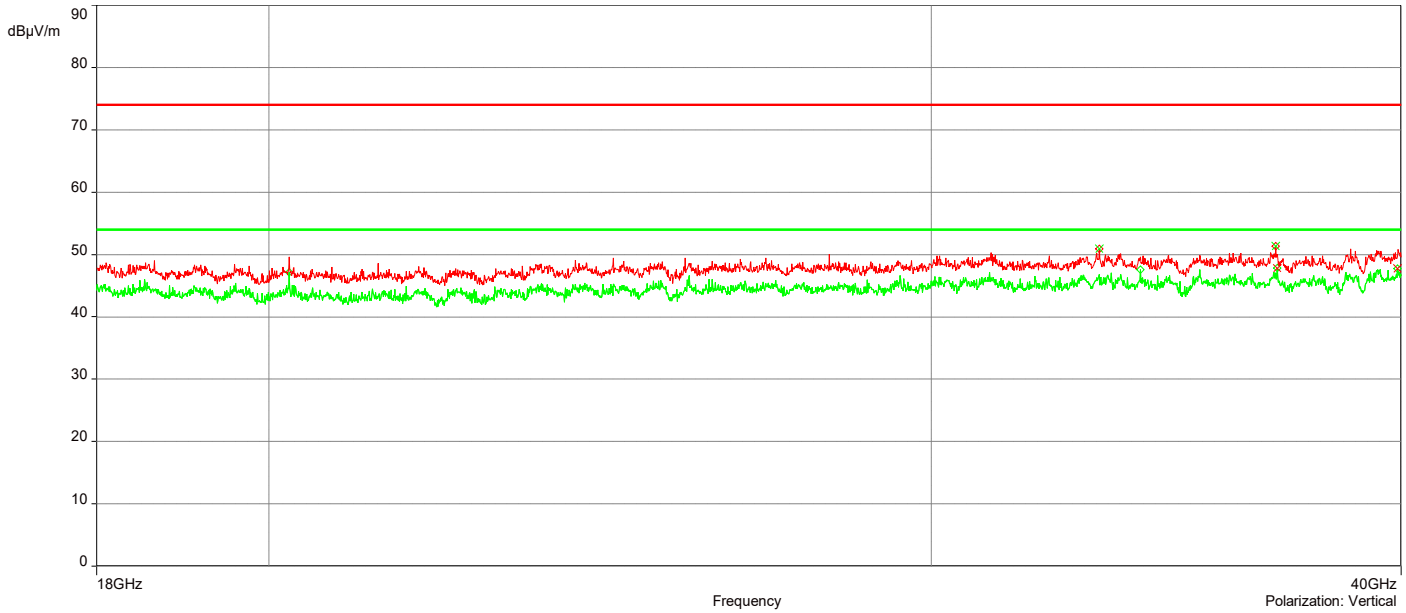
3/17/2022 5:06:32 PM

No	Frequency (MHz)	Level Peak Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1	33.258847GHz	50.87	6.01	74.00	-23.13	2.70	314.90	Vertical	Passed
2	37.044433GHz	51.36	2.89	74.00	-22.64	2.96	157.40	Vertical	Passed
3	39.955999GHz	50.85	5.63	74.00	-23.15	4.00	292.40	Horizontal	Passed

No	Frequency (MHz)	Level Average Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgment
1	37.085934GHz	47.83	2.84	54.00	-6.17	2.14	22.40	Vertical	Passed
2	39.909998GHz	47.74	5.65	54.00	-6.26	4.00	134.90	Vertical	Passed
3	39.955999GHz	47.89	5.63	54.00	-6.11	4.00	292.40	Horizontal	Passed

Overall Graphs:





Remarks:

1 Level Peak Reading (dBµV/m) = Raw Peak Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Peak Reading – Limit

Remarks:

1 Level Average Reading (dBµV/m) = Raw Average Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Average Reading – Limit

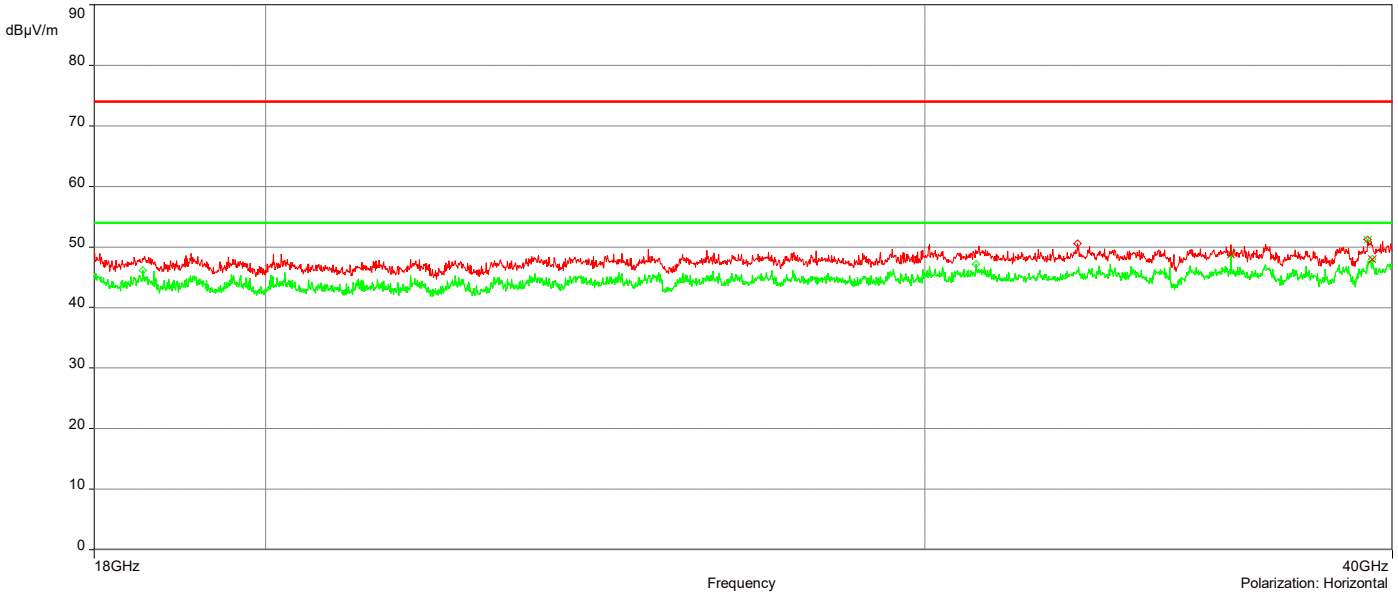
AH22021401-HAR-004#3_5G UNII-1 802.11a_Ch 48_18-40GHz

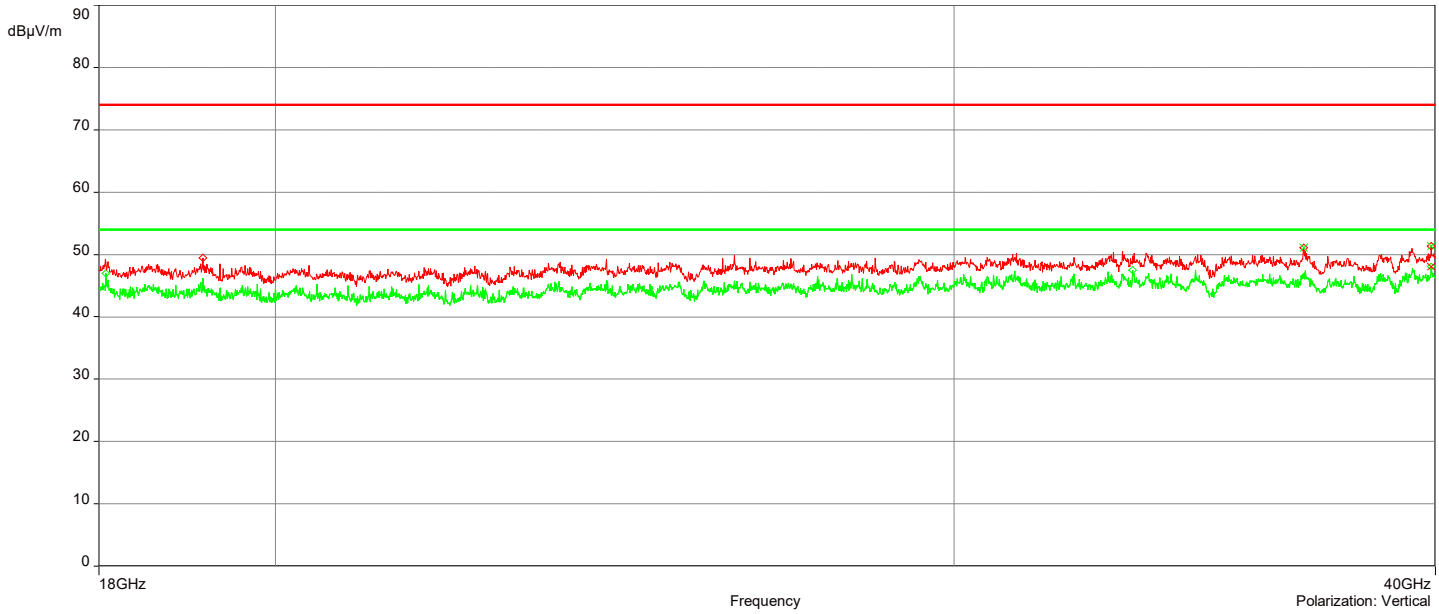
3/17/2022 5:31:13 PM

No	Frequency (MHz)	Level Peak Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1	36.977931GHz	51.07	3.01	74.00	-22.93	4.00	247.60	Vertical	Passed
2	39.895998GHz	51.35	5.59	74.00	-22.65	1.02	202.60	Vertical	Passed
3	39.391486GHz	51.28	5.00	74.00	-22.72	1.65	292.60	Horizontal	Passed

No	Frequency (MHz)	Level Average Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgment
1	39.895998GHz	48.11	5.59	54.00	-5.89	1.02	202.60	Vertical	Passed
2	36.216414GHz	48.78	3.07	54.00	-5.22	1.48	90.10	Horizontal	Passed
3	39.507989GHz	48.03	5.70	54.00	-5.97	3.80	157.70	Horizontal	Passed

Overall Graphs:





Remarks:

1 Level Peak Reading (dBµV/m) = Raw Peak Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Peak Reading – Limit

Remarks:

1 Level Average Reading (dBµV/m) = Raw Average Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Average Reading – Limit

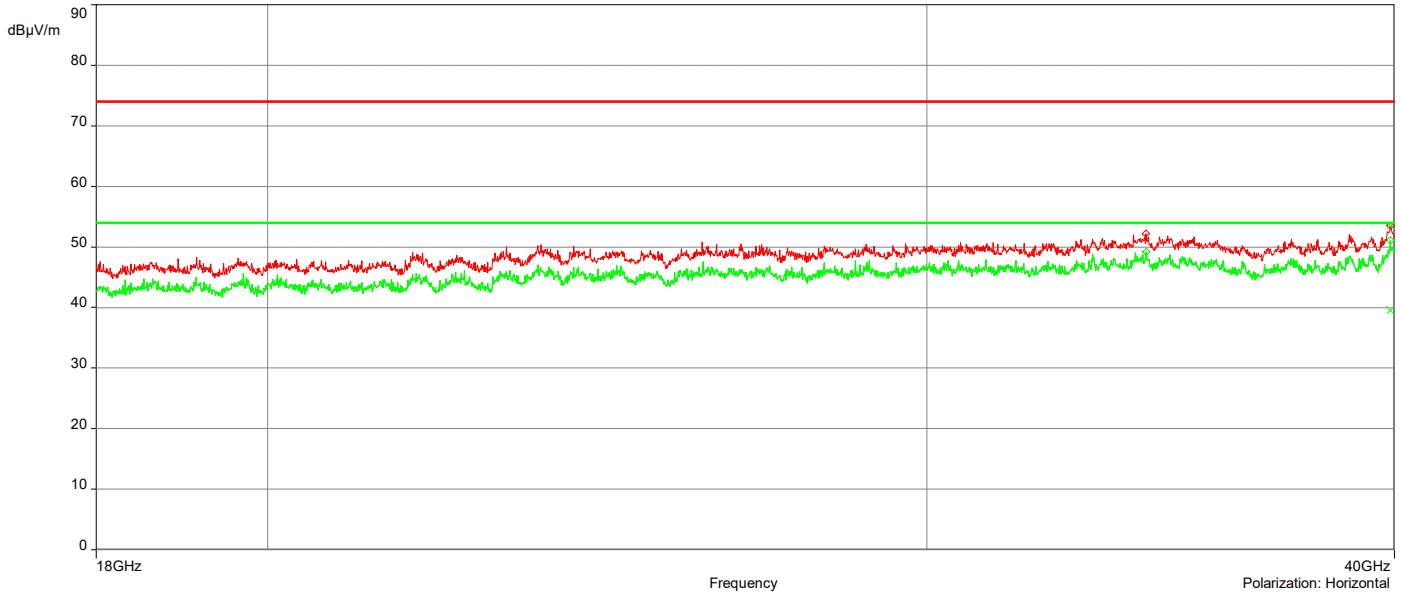
AH22021401-HAR-004#3_5G UNII-1 802.11ac_Ch 38_18-40GHz

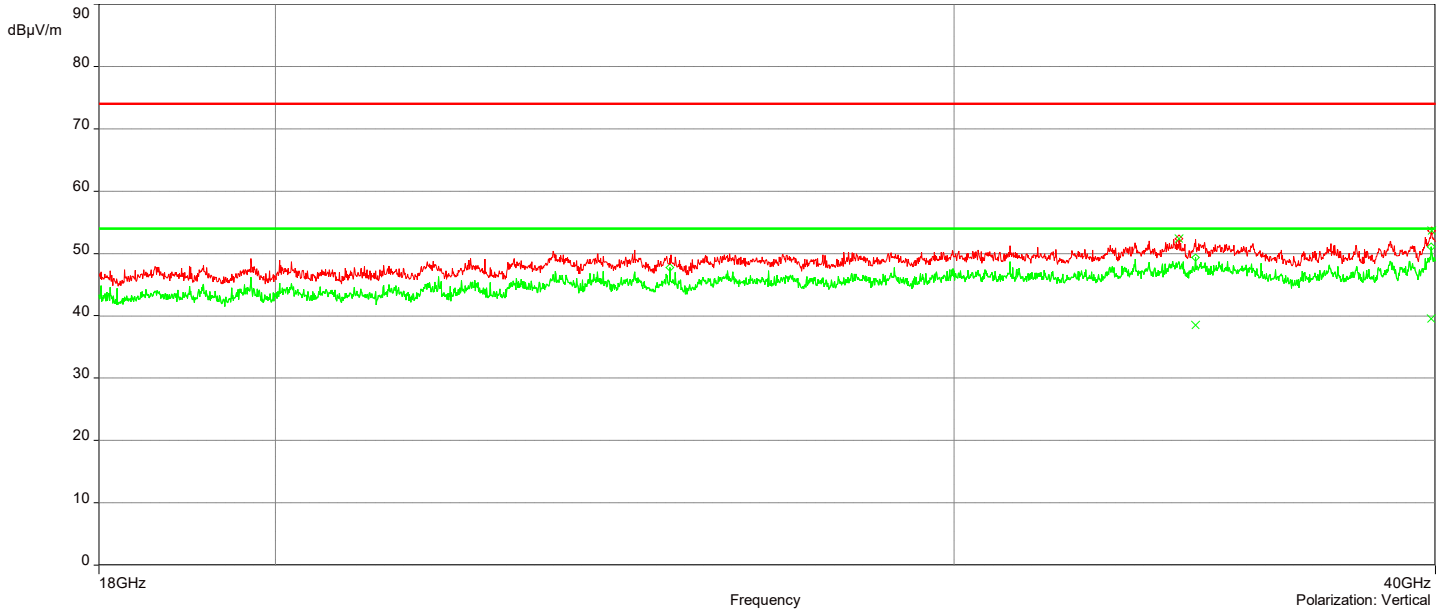
6/2/2022 17:32:58

No	Frequency (MHz)	Level Peak Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1	34.315371GHz	52.34	5.52	74.00	-21.66	3.50	337.40	Vertical	Passed
2	39.905998GHz	53.67	6.49	74.00	-20.33	3.27	135.00	Vertical	Passed
3	39.903498GHz	53.59	6.63	74.00	-20.41	1.95	90.00	Horizontal	Passed

No	Frequency (MHz)	Level Average Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgment
1	34.663879GHz	38.47	4.54	54.00	-15.53	1.03	202.90	Vertical	Passed
2	39.899498GHz	39.52	6.48	54.00	-14.48	4.00	292.90	Vertical	Passed
3	39.903498GHz	39.49	6.63	54.00	-14.51	1.95	90.00	Horizontal	Passed

Overall Graphs:





Remarks:

1 Level Peak Reading (dBµV/m) = Raw Peak Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Peak Reading – Limit

Remarks:

1 Level Average Reading (dBµV/m) = Raw Average Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Average Reading – Limit

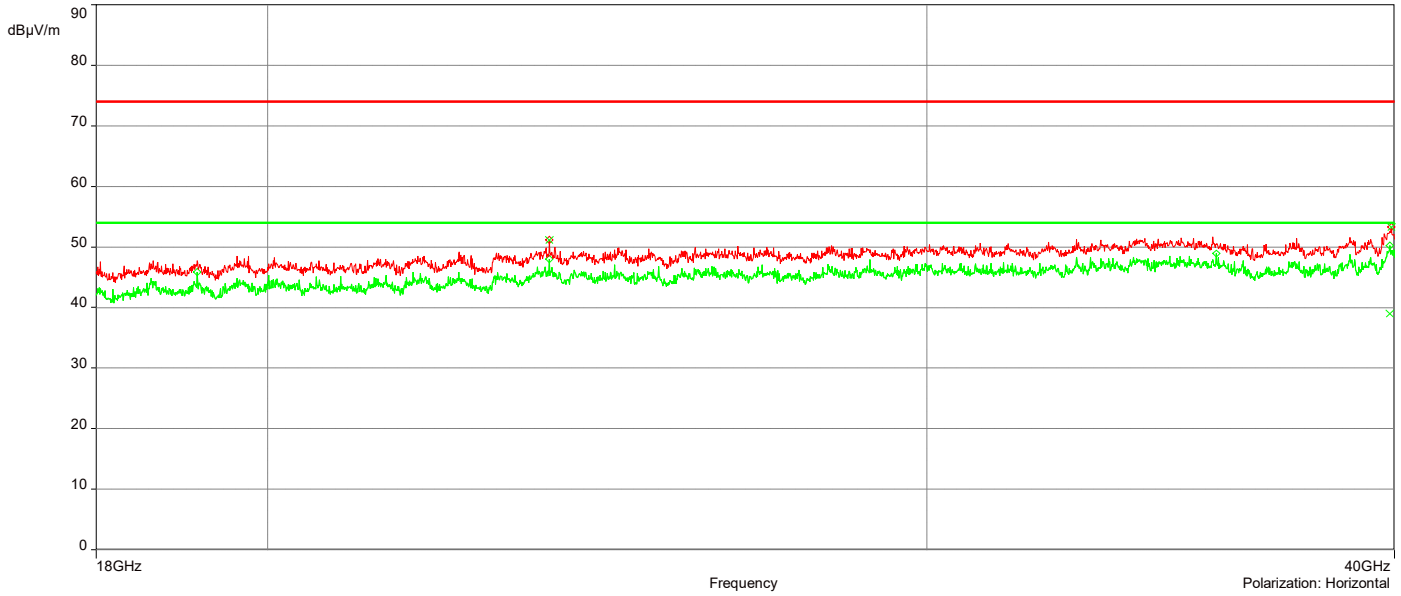
AH22021401-HAR-004#3_5G UNII-1 802.11ac_Ch 46_18-40GHz

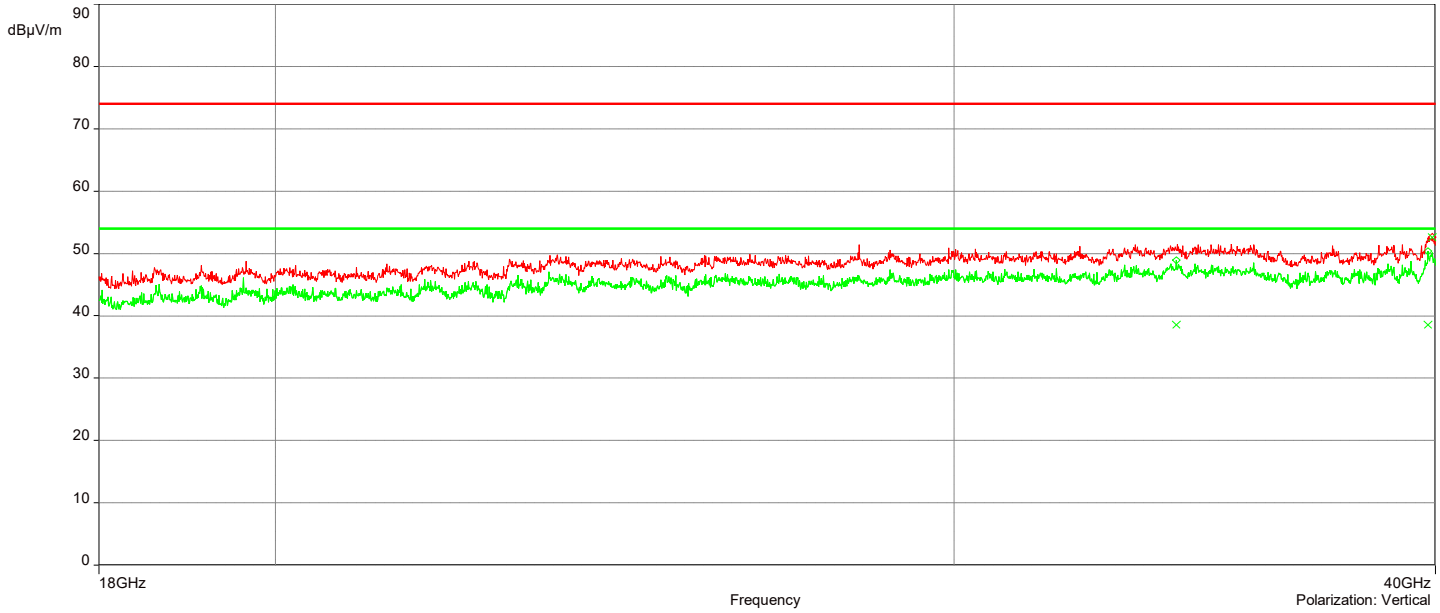
6/2/2022 18:17:15

No	Frequency (MHz)	Level Peak Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1	39.918498GHz	52.64	6.53	74.00	-21.36	2.30	67.40	Vertical	Passed
2	23.788632GHz	51.16	3.02	74.00	-22.84	3.97	44.90	Horizontal	Passed
3	39.928498GHz	53.34	6.70	74.00	-20.66	2.24	112.40	Horizontal	Passed

No	Frequency (MHz)	Level Average Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgment
1	34.26287GHz	38.62	5.55	54.00	-15.38	3.61	337.40	Vertical	Passed
2	39.825996GHz	38.61	6.70	54.00	-15.39	3.52	45.10	Vertical	Passed
3	39.881997GHz	39.00	6.43	54.00	-15.00	1.03	336.90	Horizontal	Passed

Overall Graphs:





Remarks:

1 Level Peak Reading (dBµV/m) = Raw Peak Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Peak Reading – Limit

Remarks:

1 Level Average Reading (dBµV/m) = Raw Average Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Average Reading – Limit

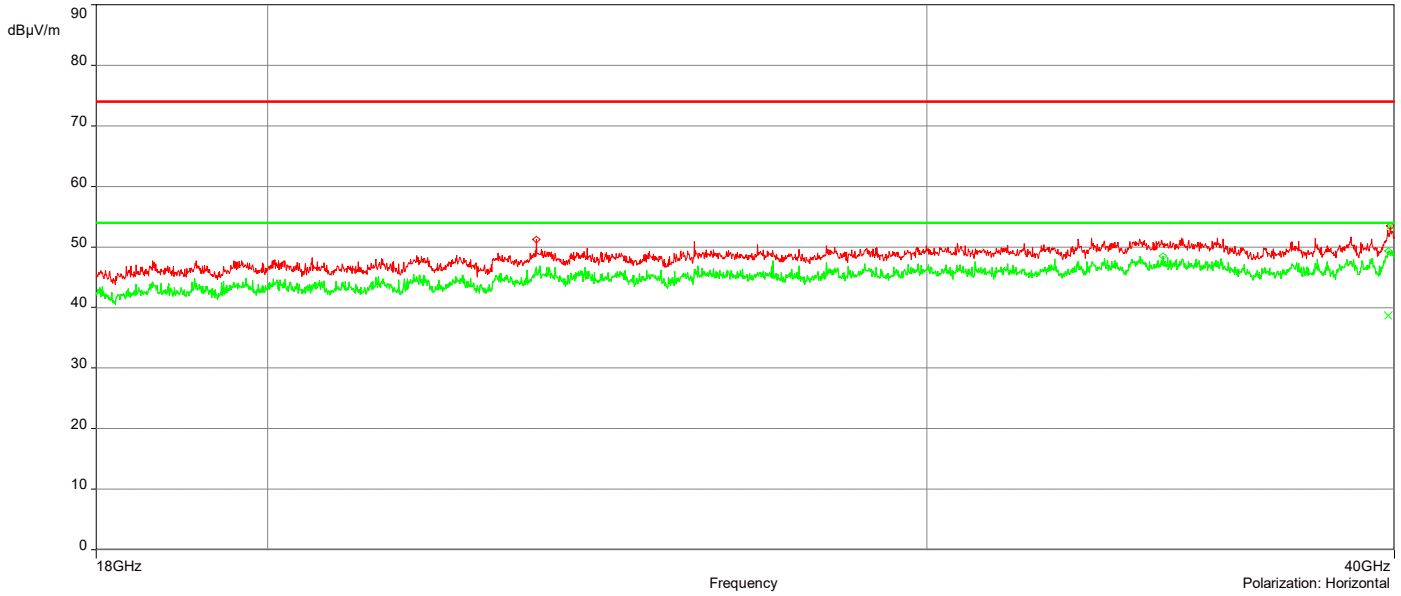
AH22021401-HAR-004#3_5G UNII-1 802.11ac_Ch 42_18-40GHz

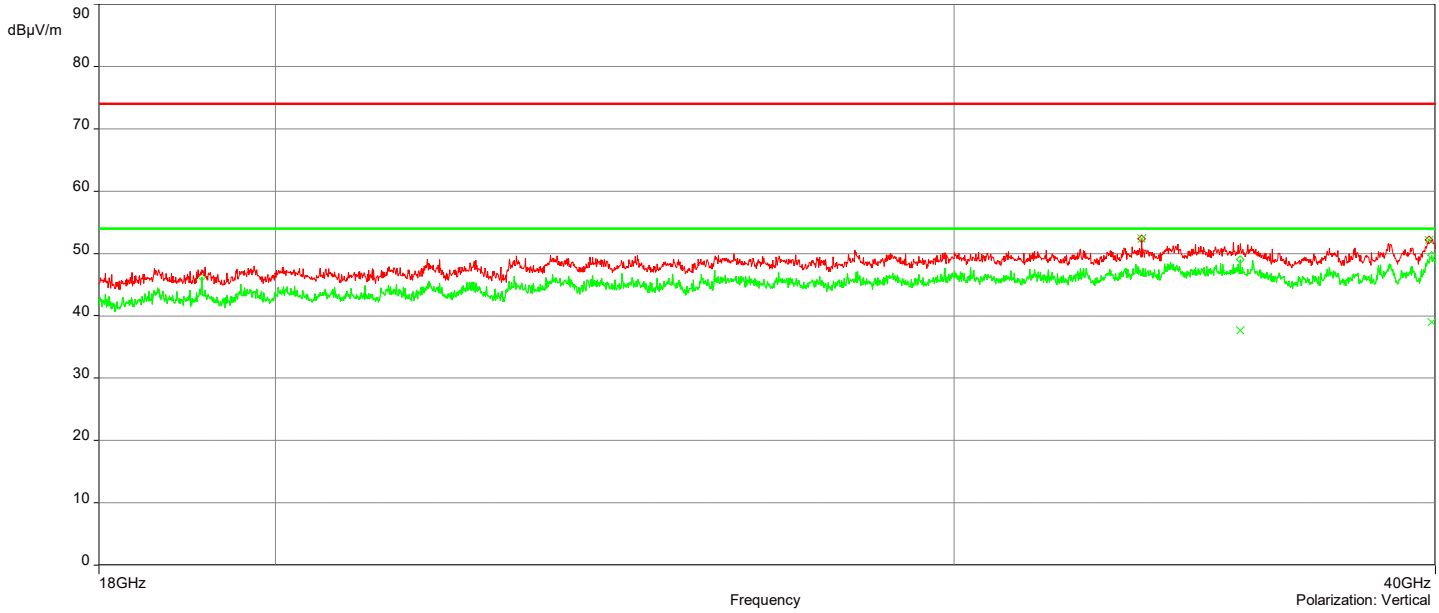
6/2/2022 18:48:02

No	Frequency (MHz)	Level Peak Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1	33.558854GHz	52.38	5.14	74.00	-21.62	3.71	22.50	Vertical	Passed
2	39.851497GHz	52.20	6.49	74.00	-21.80	3.03	202.60	Vertical	Passed
3	39.897498GHz	53.51	6.61	74.00	-20.49	1.35	202.60	Horizontal	Passed

No	Frequency (MHz)	Level Average Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgment
1	35.5974GHz	37.69	4.61	54.00	-16.31	2.29	269.90	Vertical	Passed
2	39.911498GHz	38.98	6.51	54.00	-15.02	4.00	22.10	Vertical	Passed
3	39.850497GHz	38.65	6.49	54.00	-15.35	3.52	314.90	Horizontal	Passed

Overall Graphs:





Remarks:

1 Level Peak Reading (dBµV/m) = Raw Peak Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Peak Reading – Limit

Remarks:

1 Level Average Reading (dBµV/m) = Raw Average Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Average Reading – Limit

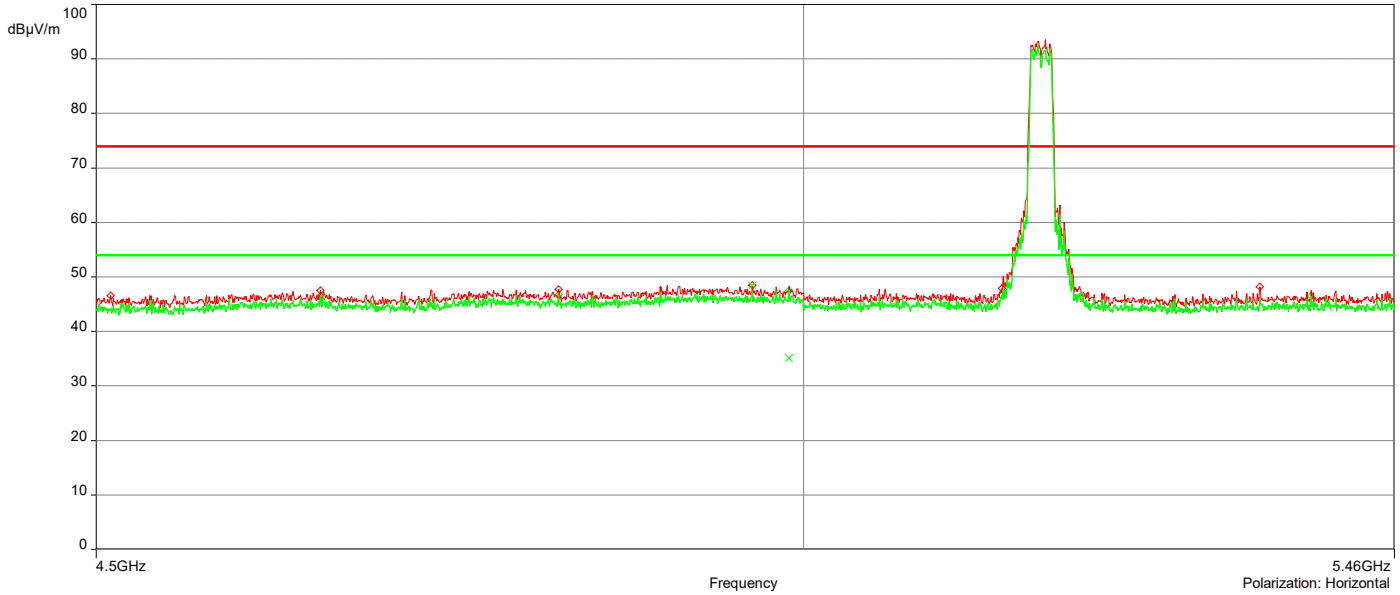
AH22021401-HAR-004#3_Restricted Bandedge_5G UNII-1 802.11a_Ch 36

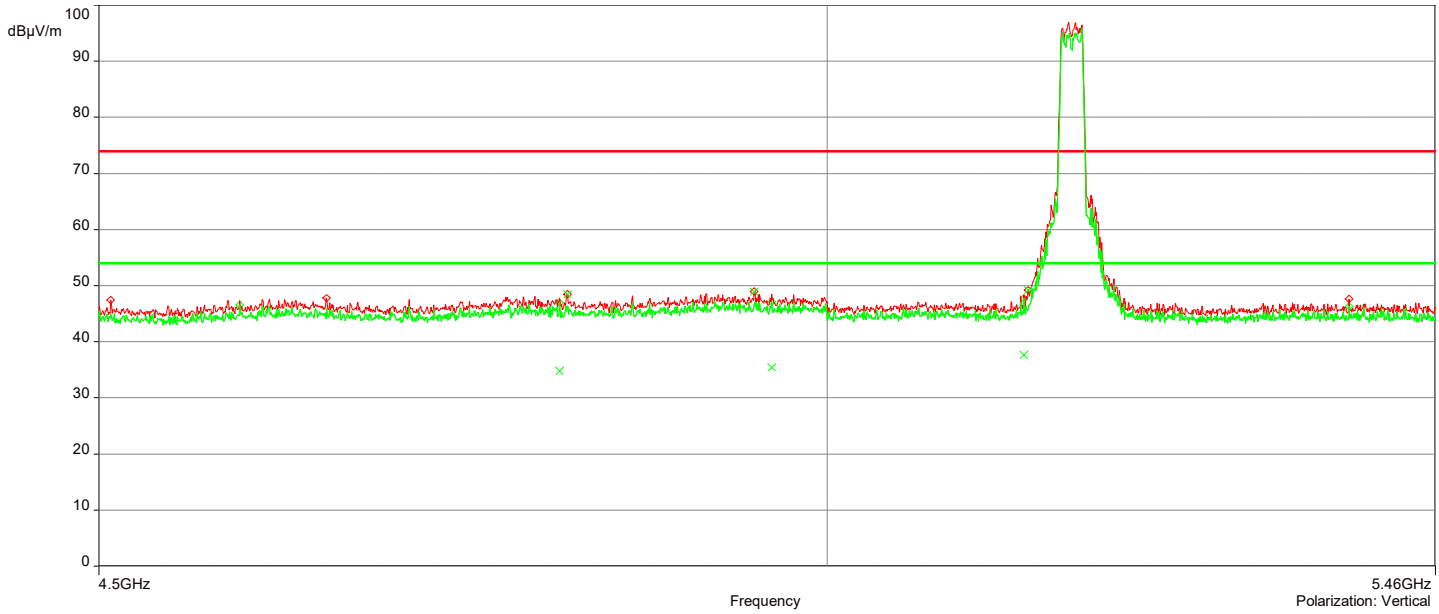
3/15/2022 10:27:17 AM

No	Frequency (MHz)	Level Peak Reading (dBuV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1.	4.961991GHz	48.51	4.17	74.00	-25.49	3.00	146.60	Horizontal	Passed
2.	4.8155178GHz	48.46	3.94	74.00	-25.54	3.00	265.30	Vertical	Passed
3.	4.9475838GHz	49.00	4.10	74.00	-25.00	2.00	55.30	Vertical	Passed
4.	5.1473637GHz	49.23	3.78	74.00	-24.77	3.00	128.00	Vertical	Passed

No	Frequency (MHz)	Level Average Reading (dBuV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgment
1.	4.9893647GHz	35.05	4.05	54.00	-18.95	1.50	261.90	Horizontal	Passed
2.	4.8102351GHz	34.84	3.92	54.00	-19.16	2.00	273.90	Vertical	Passed
3.	4.96007GHz	35.48	4.05	54.00	-18.52	3.00	163.10	Vertical	Passed
4.	5.1444822GHz	37.64	3.80	54.00	-16.36	3.00	128.90	Vertical	Passed

Overall Graphs:





Remarks:

1 Level Peak Reading (dBµV/m)= Raw Peak Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Peak Reading – Limit

Remarks:

1 Level Average Reading (dBµV/m)= Raw Average Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Average Reading – Limit

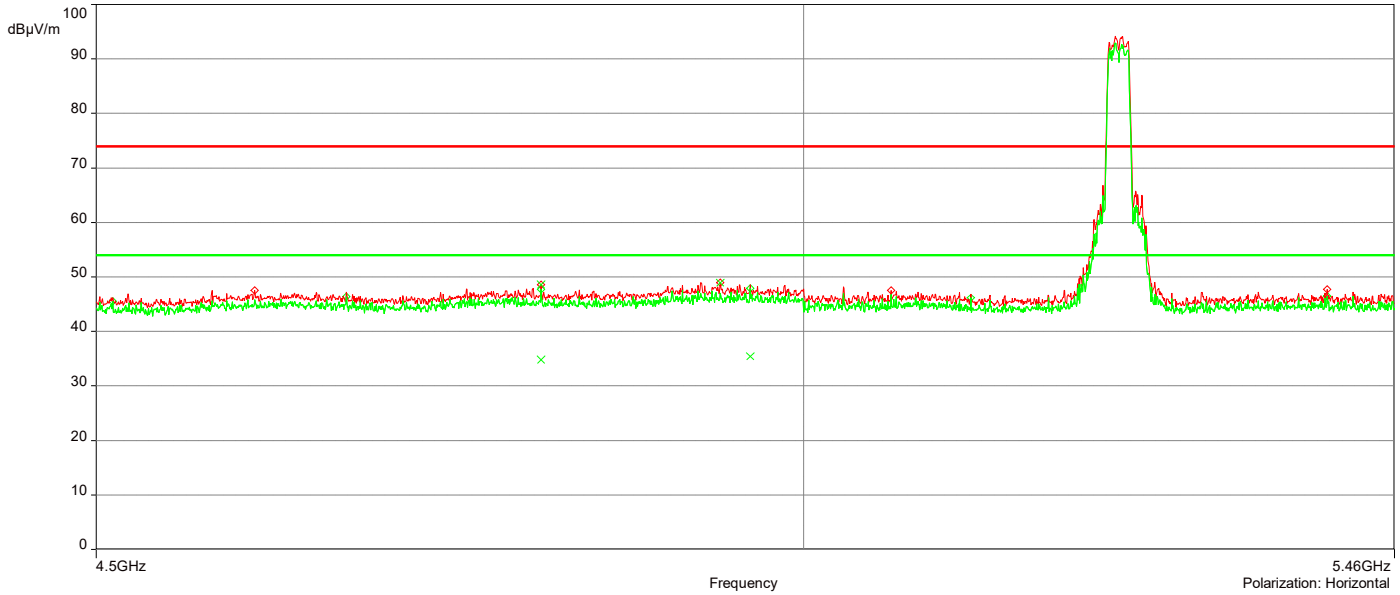
AH22021401-HAR-004#3_Restricted Bandedge_5G UNII-1 802.11a_Ch 48

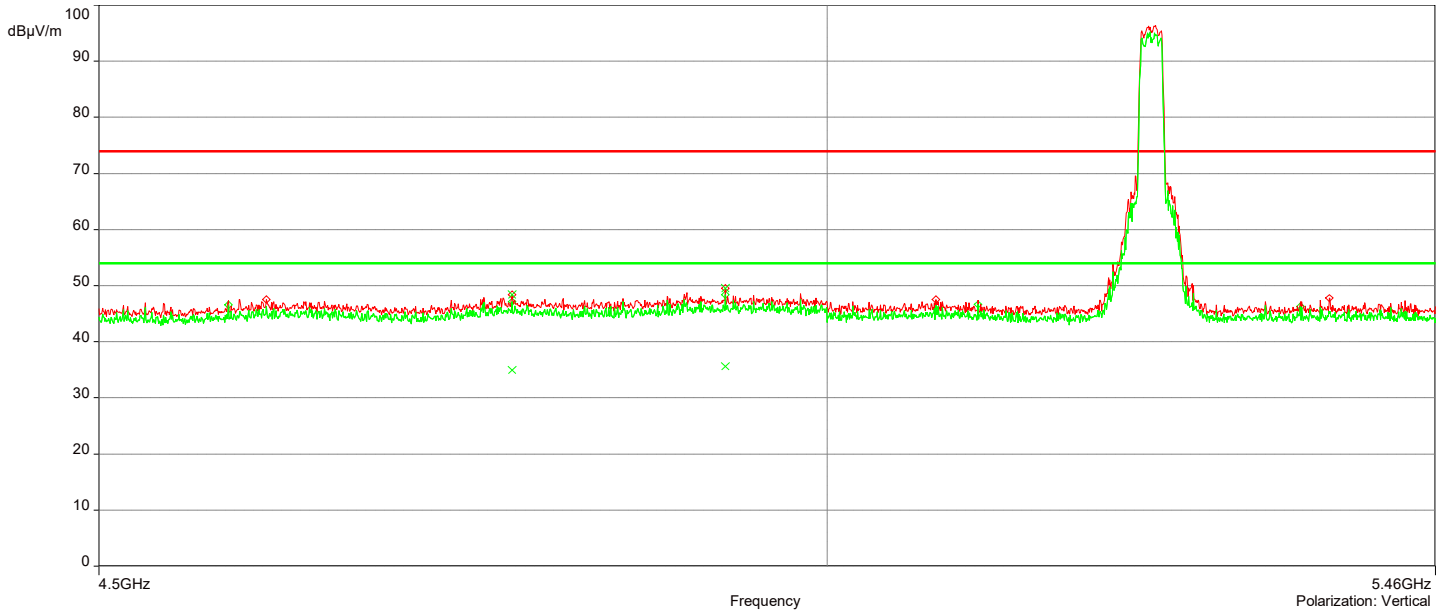
3/15/2022 3:28:55 PM

No	Frequency (MHz)	Level Peak Reading (dBuV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1	4.8083142GHz	48.59	3.93	74.00	-25.41	1.00	16.70	Horizontal	Passed
2	4.9384592GHz	48.99	4.24	74.00	-25.01	1.50	250.60	Horizontal	Passed
3	4.7770985GHz	48.38	3.74	74.00	-25.62	4.00	167.30	Vertical	Passed
4	4.9269335GHz	49.49	4.20	74.00	-24.51	1.50	92.50	Vertical	Passed

No	Frequency (MHz)	Level Average Reading (dBuV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgment
1	4.8083142GHz	34.84	3.93	54.00	-19.16	1.00	16.70	Horizontal	Passed
2	4.9605503GHz	35.43	4.05	54.00	-18.57	4.00	335.90	Horizontal	Passed
3	4.7770985GHz	34.98	3.74	54.00	-19.02	4.00	167.30	Vertical	Passed
4	4.9269335GHz	35.61	4.20	54.00	-18.39	1.50	92.50	Vertical	Passed

Overall Graphs:





Remarks:

1 Level Peak Reading (dBµV/m)= Raw Peak Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Peak Reading – Limit

Remarks:

1 Level Average Reading (dBµV/m)= Raw Average Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Average Reading – Limit

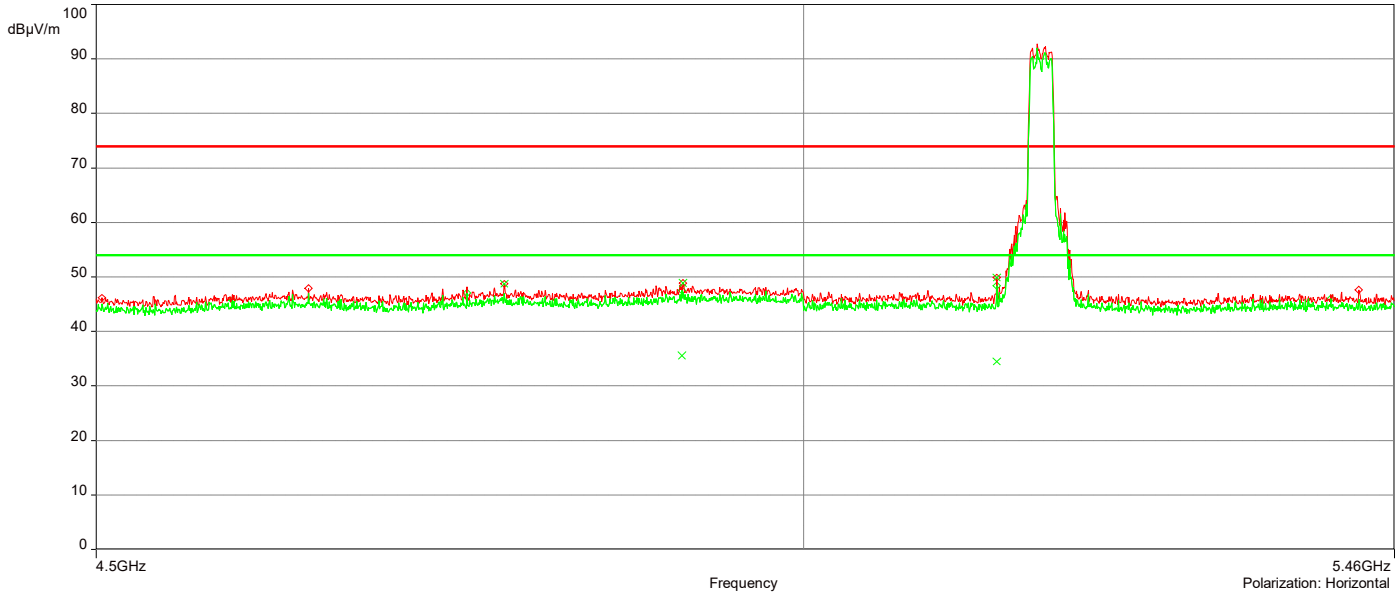
AH22021401-HAR-004#3_Restricted Bandedge_5G UNII-1 802.11n_Ch 36

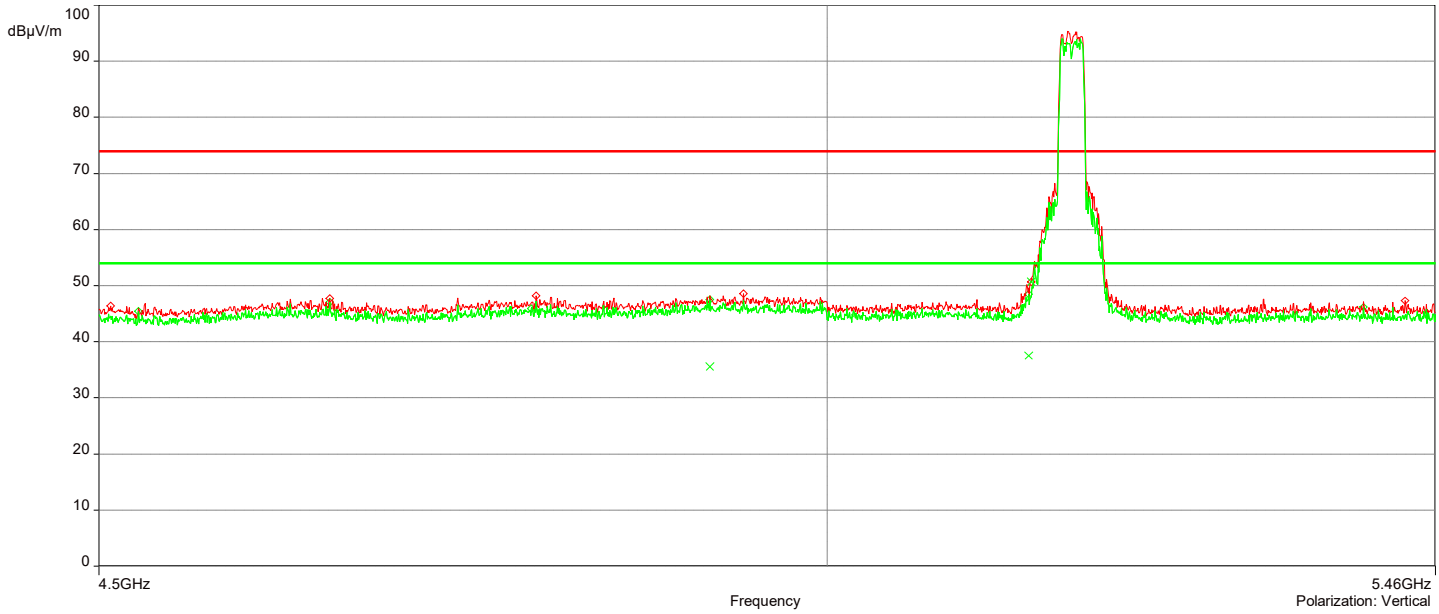
3/15/2022 3:46:30 PM

No	Frequency (MHz)	Level Peak Reading (dBuV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1	4.7819009GHz	48.75	3.79	74.00	-25.25	3.00	321.30	Horizontal	Passed
2	4.9110855GHz	48.90	4.26	74.00	-25.10	2.00	112.30	Horizontal	Passed
3	5.145923GHz	49.89	3.85	74.00	-24.11	3.50	222.20	Horizontal	Passed
4	5.1497649GHz	50.63	3.77	74.00	-23.37	3.00	113.20	Vertical	Passed

No	Frequency (MHz)	Level Average Reading (dBuV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgment
1	4.9101251GHz	35.59	4.27	54.00	-18.41	4.00	80.10	Horizontal	Passed
2	5.145923GHz	34.51	3.85	54.00	-19.49	3.50	222.20	Horizontal	Passed
3	4.9158879GHz	35.59	4.24	54.00	-18.41	3.00	266.90	Vertical	Passed
4	5.1478439GHz	37.51	3.78	54.00	-16.49	3.50	117.90	Vertical	Passed

Overall Graphs:





Remarks:

1 Level Peak Reading (dBµV/m)= Raw Peak Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Peak Reading – Limit

Remarks:

1 Level Average Reading (dBµV/m)= Raw Average Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Average Reading – Limit

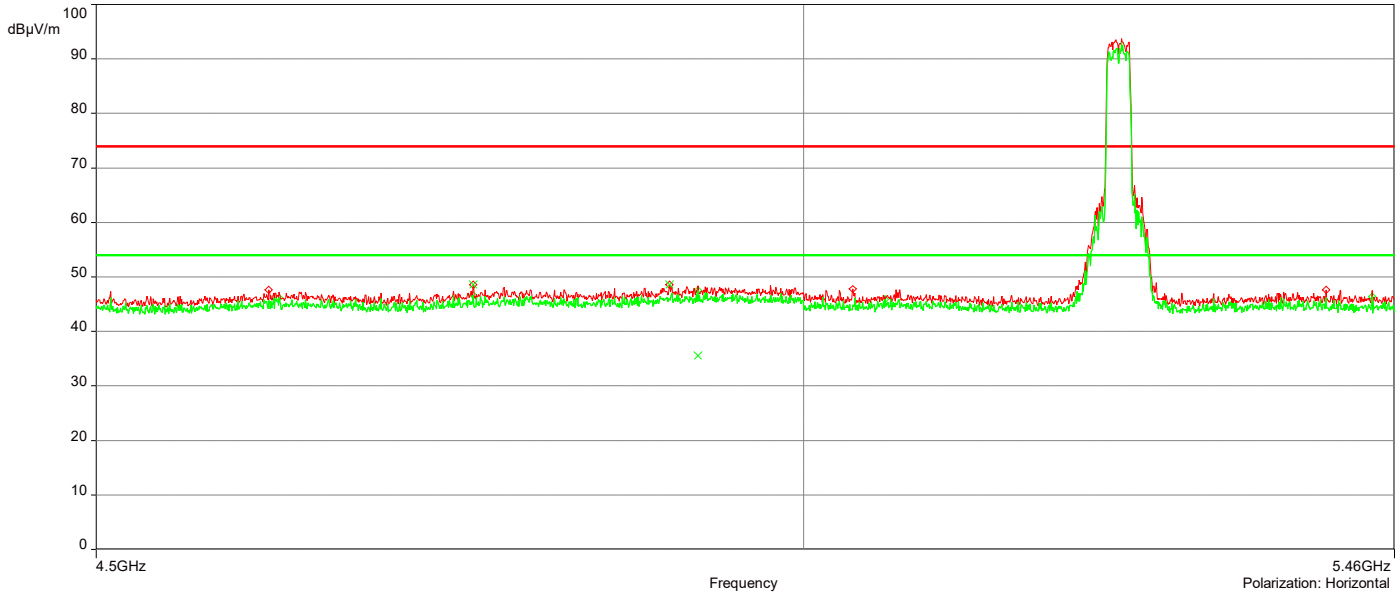
AH22021401-HAR-004#3_Restricted Bandedge_5G UNII-1 802.11n_Ch 48

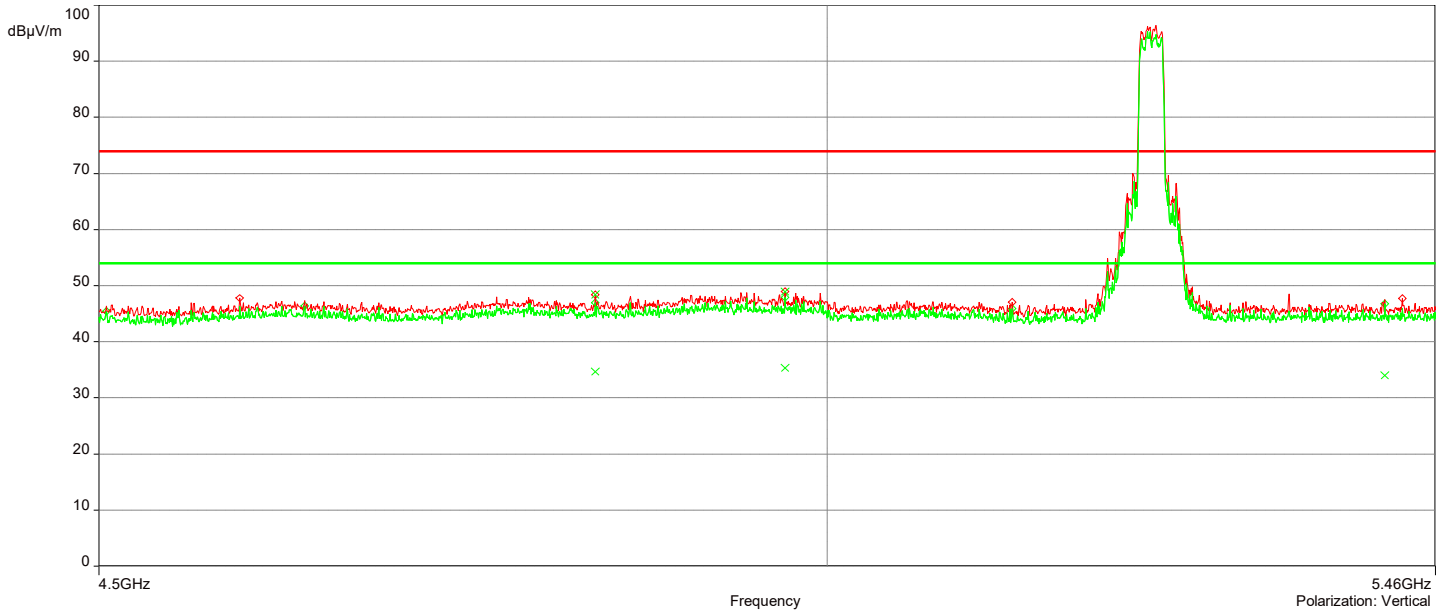
3/15/2022 4:24:41 PM

No	Frequency (MHz)	Level Peak Reading (dBuV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1	4.7598099GHz	48.62	3.67	74.00	-25.38	1.50	115.90	Horizontal	Passed
2	4.9010005GHz	48.54	4.27	74.00	-25.46	2.50	324.50	Horizontal	Passed
3	4.8352076GHz	48.36	4.05	74.00	-25.64	1.00	243.00	Vertical	Passed
4	4.9696748GHz	48.94	4.04	74.00	-25.06	3.00	223.90	Vertical	Passed

No	Frequency (MHz)	Level Average Reading (dBuV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgment
1	4.9221311GHz	35.57	4.22	54.00	-18.43	2.50	210.10	Horizontal	Passed
2	4.8352076GHz	34.68	4.05	54.00	-19.32	1.00	243.00	Vertical	Passed
3	4.9696748GHz	35.38	4.04	54.00	-18.62	3.00	223.90	Vertical	Passed
4	5.4201401GHz	34.06	4.27	54.00	-19.94	1.00	20.10	Vertical	Passed

Overall Graphs:





Remarks:

1 Level Peak Reading (dBµV/m)= Raw Peak Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Peak Reading – Limit

Remarks:

1 Level Average Reading (dBµV/m)= Raw Average Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Average Reading – Limit

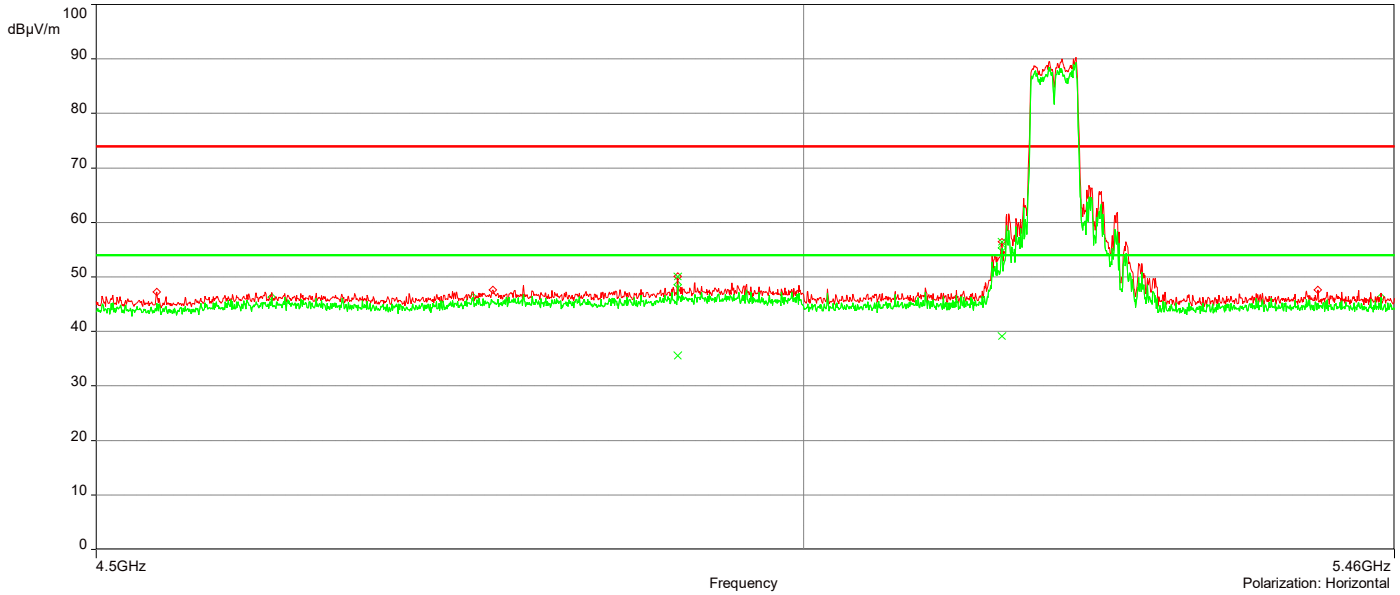
AH22021401-HAR-004#3_Restricted Bandedge_5G UNII-1 802.11n_Ch 38

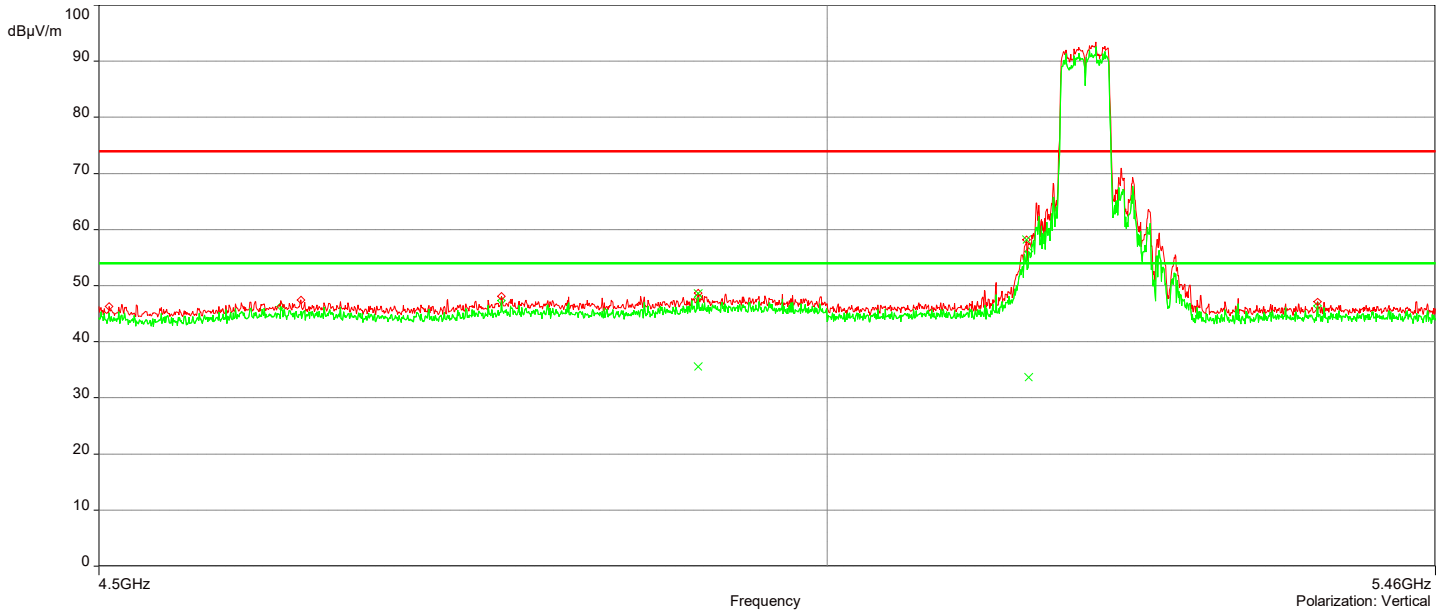
3/15/2022 5:25:54 PM

No	Frequency (MHz)	Level Peak Reading (dBuV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1	4.9072436GHz	50.09	4.27	74.00	-23.91	1.50	180.10	Horizontal	Passed
2	5.1497649GHz	56.46	3.82	74.00	-17.54	3.50	227.30	Horizontal	Passed
3	4.9077239GHz	48.66	4.27	74.00	-25.34	4.00	325.00	Vertical	Passed
4	5.1464032GHz	58.15	3.79	74.00	-15.85	3.00	125.70	Vertical	Passed

No	Frequency (MHz)	Level Average Reading (dBuV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgment
1	4.9072436GHz	35.55	4.27	54.00	-18.45	1.50	180.10	Horizontal	Passed
2	5.1497649GHz	39.19	3.82	54.00	-14.81	3.50	227.30	Horizontal	Passed
3	4.9077239GHz	35.57	4.27	54.00	-18.43	4.00	325.00	Vertical	Passed
4	5.1478439GHz	33.63	3.78	54.00	-20.37	1.99	0.10	Vertical	Passed

Overall Graphs:





Remarks:

1 Level Peak Reading (dBµV/m)= Raw Peak Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Peak Reading – Limit

Remarks:

1 Level Average Reading (dBµV/m)= Raw Average Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Average Reading – Limit

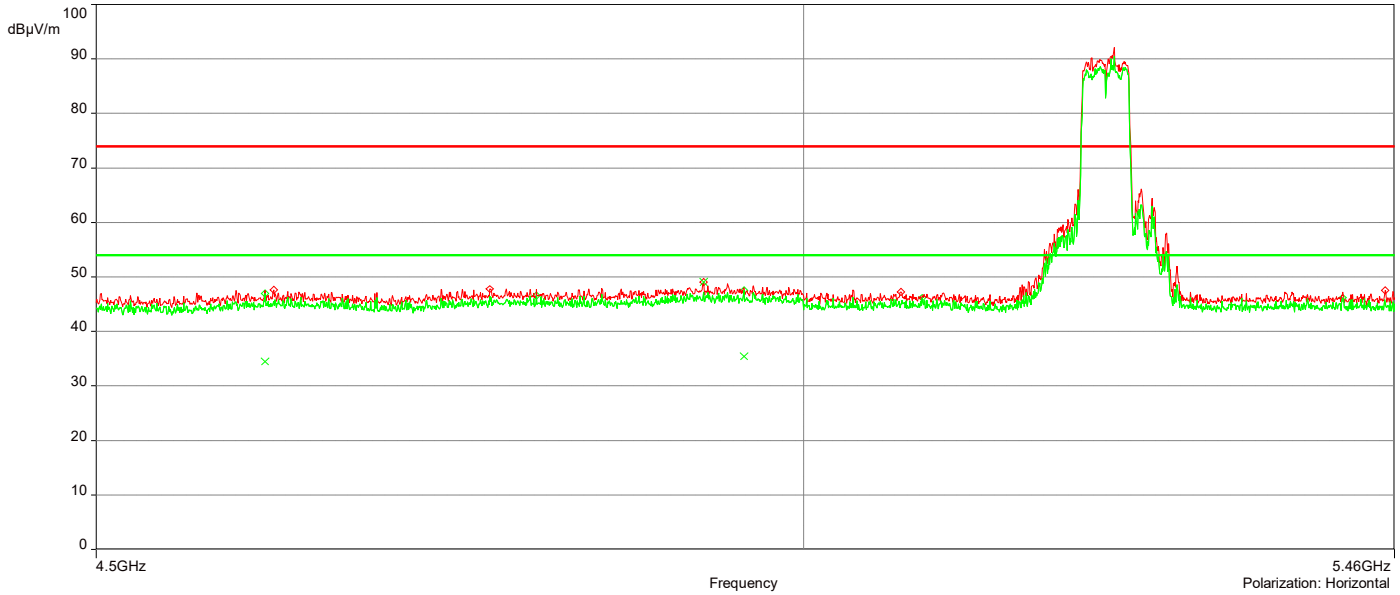
AH22021401-HAR-004#3_Restricted Bandedge_5G UNII-1 802.11n_Ch 46

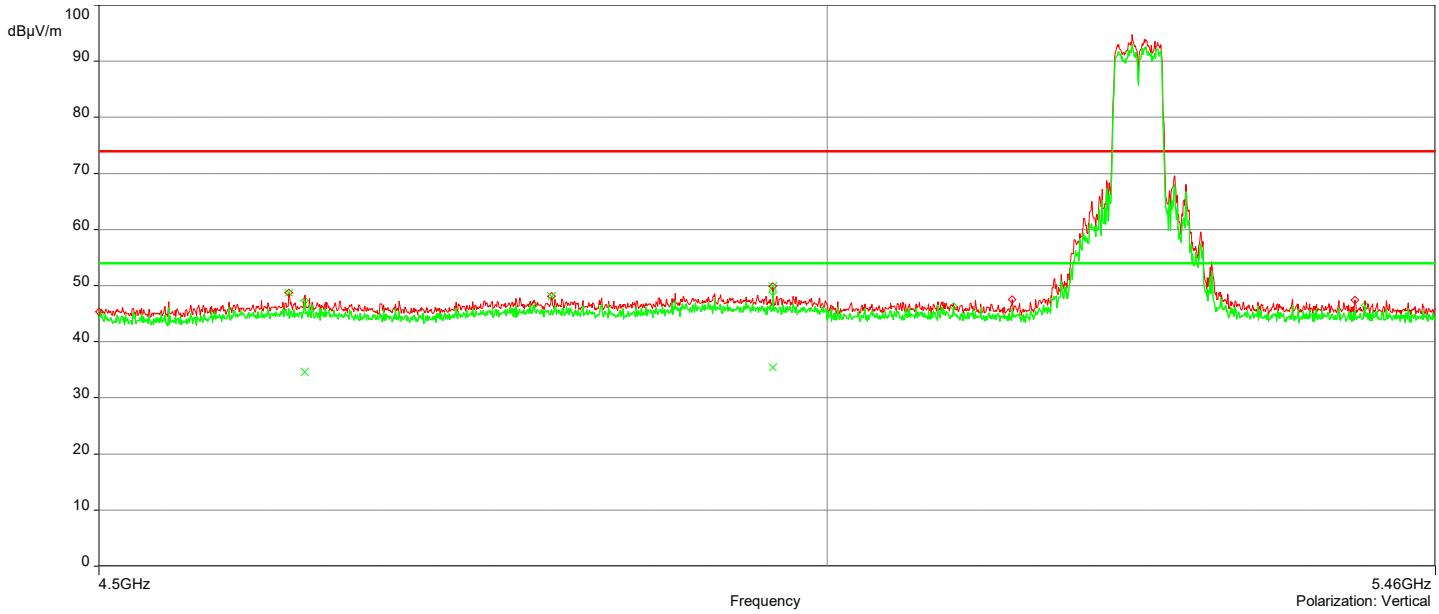
3/16/2022 9:58:53 AM

No	Frequency (MHz)	Level Peak Reading (dBuV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1	4.925973GHz	49.05	4.25	74.00	-24.95	3.00	214.90	Horizontal	Passed
2	4.6253427GHz	48.79	3.14	74.00	-25.21	4.00	159.10	Vertical	Passed
3	4.8044722GHz	48.11	3.90	74.00	-25.89	2.00	275.70	Vertical	Passed
4	4.9610305GHz	49.90	4.05	74.00	-24.10	2.50	331.20	Vertical	Passed

No	Frequency (MHz)	Level Average Reading (dBuV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgment
1	4.6147774GHz	34.51	3.15	54.00	-19.49	1.00	73.90	Horizontal	Passed
2	4.9557479GHz	35.46	4.07	54.00	-18.54	3.00	204.10	Horizontal	Passed
3	4.635908GHz	34.58	3.17	54.00	-19.42	1.50	69.10	Vertical	Passed
4	4.9610305GHz	35.43	4.05	54.00	-18.57	2.50	331.20	Vertical	Passed

Overall Graphs:





Remarks:

1 Level Peak Reading (dBµV/m)= Raw Peak Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Peak Reading – Limit

Remarks:

1 Level Average Reading (dBµV/m)= Raw Average Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Average Reading – Limit

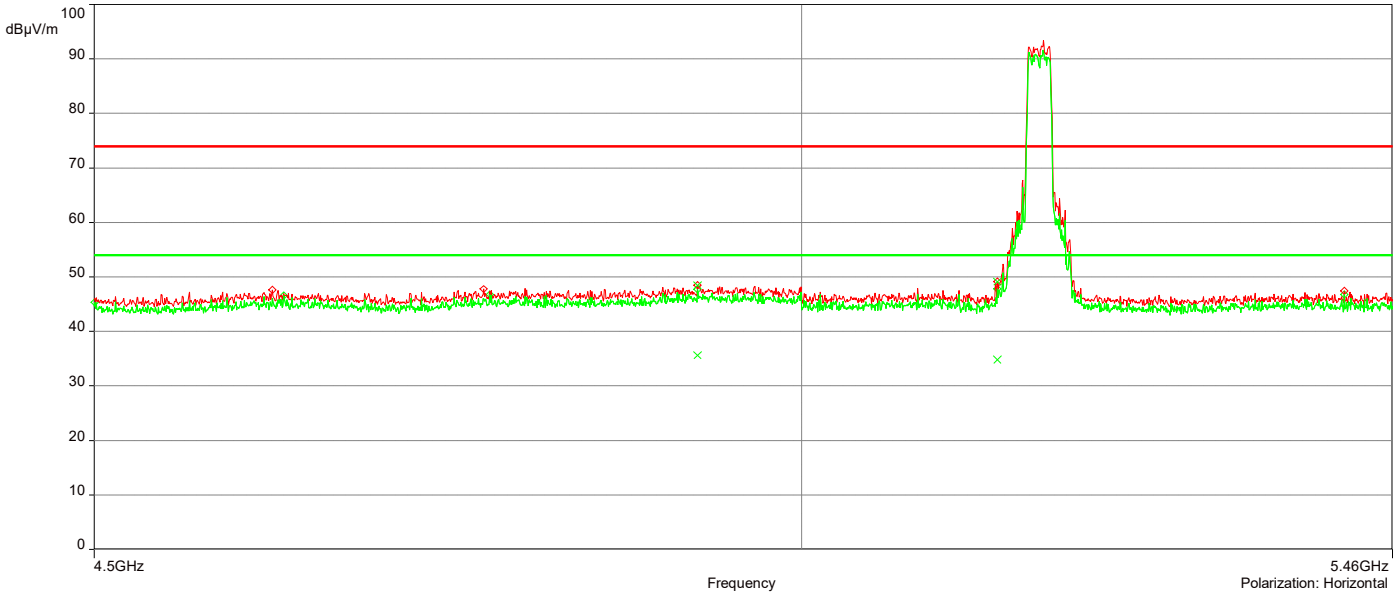
AH22021401-HAR-004#3_Restricted Bandedge_5G UNII-1 802.11ac_Ch 36

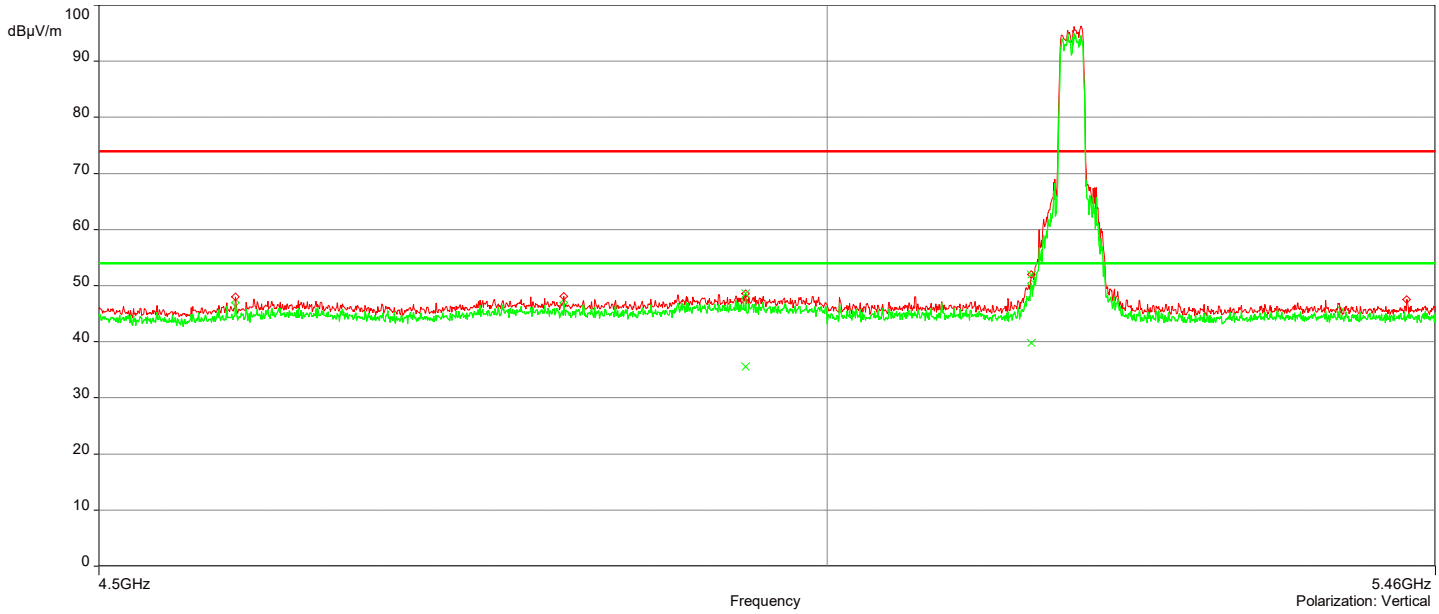
3/16/2022 10:29:44 AM

No	Frequency (MHz)	Level Peak Reading (dBuV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1	4.9230915GHz	48.49	4.26	74.00	-25.51	2.00	49.10	Horizontal	Passed
2	5.1478439GHz	49.20	3.84	74.00	-24.80	1.00	288.80	Horizontal	Passed
3	4.9413407GHz	48.56	4.13	74.00	-25.44	1.00	55.00	Vertical	Passed
4	5.1497649GHz	52.03	3.77	74.00	-21.97	3.00	124.10	Vertical	Passed

No	Frequency (MHz)	Level Average Reading (dBuV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgment
1	4.9230915GHz	35.61	4.26	54.00	-18.39	2.00	49.10	Horizontal	Passed
2	5.1478439GHz	34.77	3.84	54.00	-19.23	1.00	288.80	Horizontal	Passed
3	4.9413407GHz	35.54	4.13	54.00	-18.46	1.00	55.00	Vertical	Passed
4	5.1497649GHz	39.87	3.77	54.00	-14.13	3.00	124.10	Vertical	Passed

Overall Graphs:





Remarks:

1 Level Peak Reading (dBµV/m)= Raw Peak Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Peak Reading – Limit

Remarks:

1 Level Average Reading (dBµV/m)= Raw Average Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Average Reading – Limit

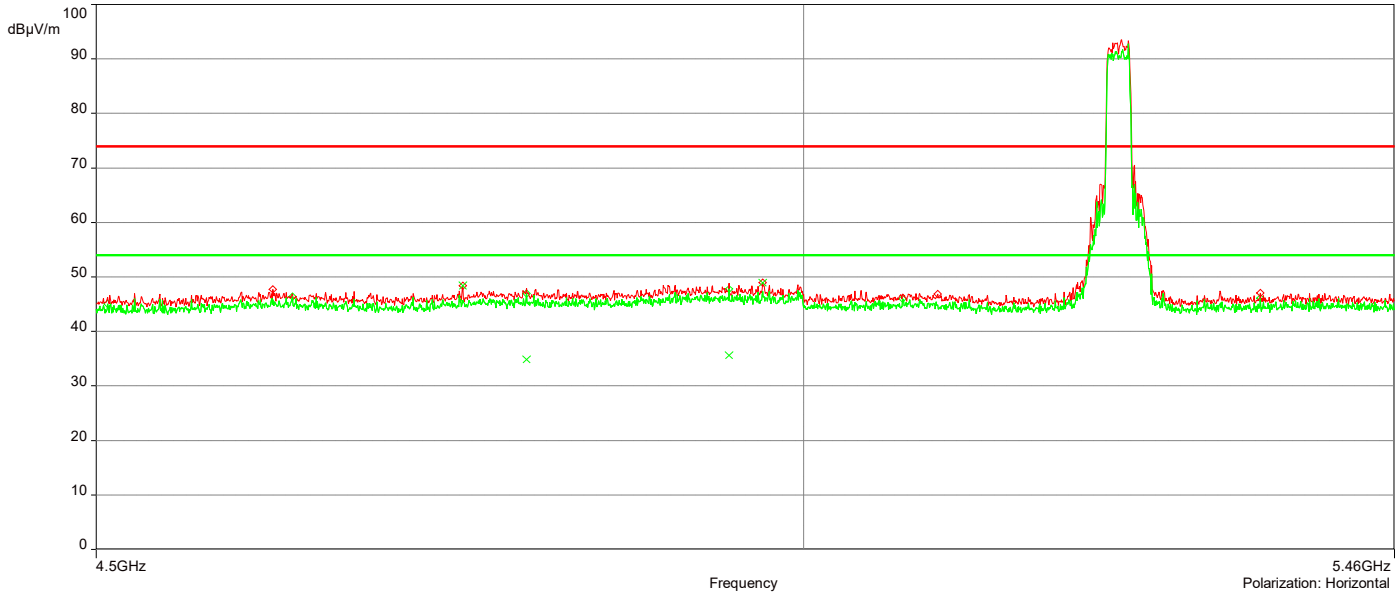
AH22021401-HAR-004#3_Restricted Bandedge_5G UNII-1 802.11ac_Ch 48

3/16/2022 11:04:38 AM

No	Frequency (MHz)	Level Peak Reading (dBuV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1	4.7526063GHz	48.37	3.63	74.00	-25.63	3.00	175.80	Horizontal	Passed
2	4.9696748GHz	48.98	4.16	74.00	-25.02	2.50	338.50	Horizontal	Passed
3	4.7761381GHz	48.16	3.73	74.00	-25.84	2.00	97.00	Vertical	Passed
4	4.9557479GHz	48.93	4.07	74.00	-25.07	2.00	184.60	Vertical	Passed

No	Frequency (MHz)	Level Average Reading (dBuV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgment
1	4.7977489GHz	34.91	3.87	54.00	-19.09	4.00	241.90	Horizontal	Passed
2	4.9447024GHz	35.62	4.23	54.00	-18.38	3.50	20.90	Horizontal	Passed
3	4.7761381GHz	35.02	3.73	54.00	-18.98	2.00	97.00	Vertical	Passed
4	4.9557479GHz	35.58	4.07	54.00	-18.42	2.00	184.60	Vertical	Passed

Overall Graphs:



Remarks:

1 Level Peak Reading (dBµV/m)= Raw Peak Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Peak Reading – Limit

Remarks:

1 Level Average Reading (dBµV/m)= Raw Average Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Average Reading – Limit

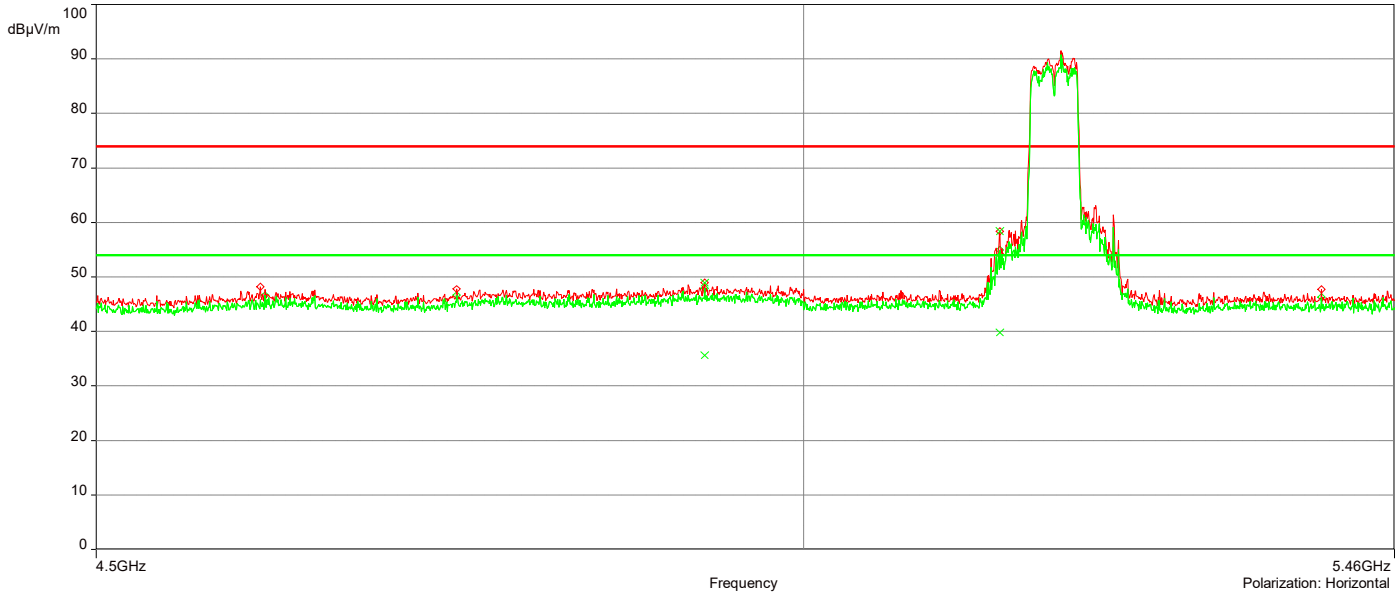
AH22021401-HAR-004#3_Restricted Bandedge_5G UNII-1 802.11ac_Ch 38

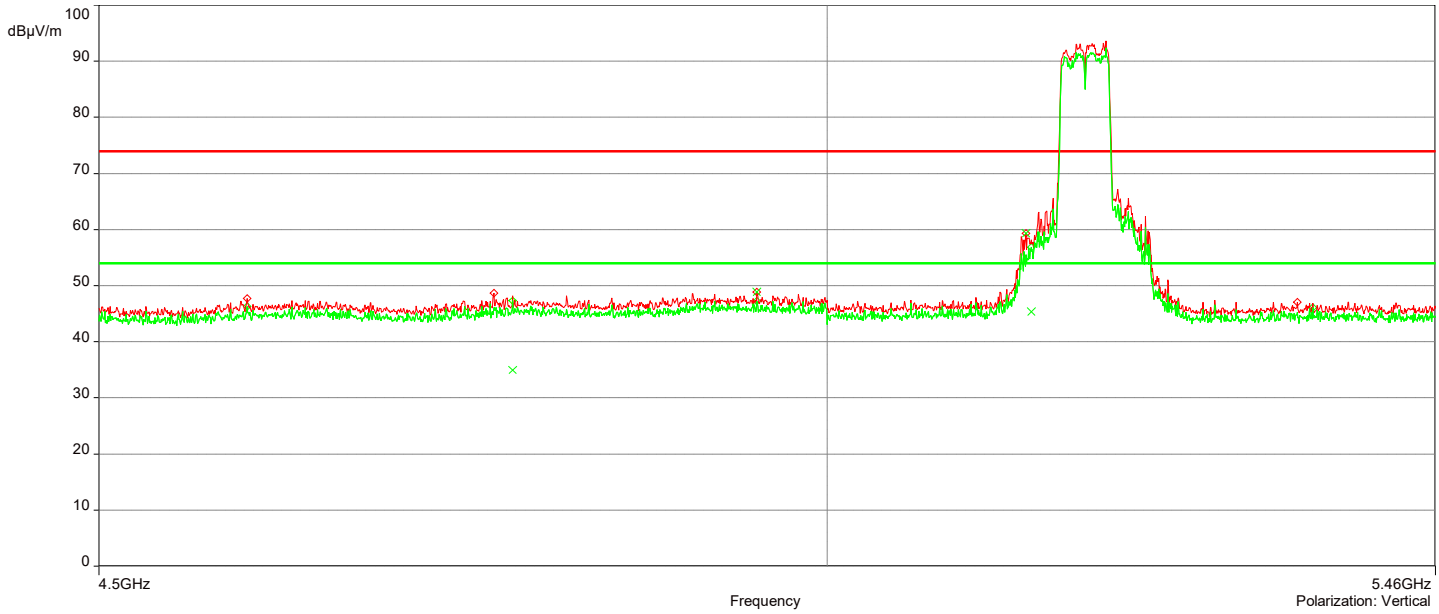
3/16/2022 11:34:33 AM

No	Frequency (MHz)	Level Peak Reading (dBuV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1	4.9269335GHz	48.97	4.25	74.00	-25.03	3.50	234.90	Horizontal	Passed
2	5.1483242GHz	58.38	3.83	74.00	-15.62	1.00	170.80	Horizontal	Passed
3	4.9495048GHz	48.86	4.09	74.00	-25.14	2.00	154.30	Vertical	Passed
4	5.145923GHz	59.31	3.79	74.00	-14.69	1.50	334.60	Vertical	Passed

No	Frequency (MHz)	Level Average Reading (dBuV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgment
1	4.9269335GHz	35.64	4.25	54.00	-18.36	3.50	234.90	Horizontal	Passed
2	5.1483242GHz	39.87	3.83	54.00	-14.13	1.00	170.80	Horizontal	Passed
3	4.7775788GHz	34.98	3.74	54.00	-19.02	3.50	234.90	Vertical	Passed
4	5.1497649GHz	45.31	3.77	54.00	-8.69	2.00	139.10	Vertical	Passed

Overall Graphs:





Remarks:

1 Level Peak Reading (dBµV/m)= Raw Peak Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Peak Reading – Limit

Remarks:

1 Level Average Reading (dBµV/m)= Raw Average Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Average Reading – Limit

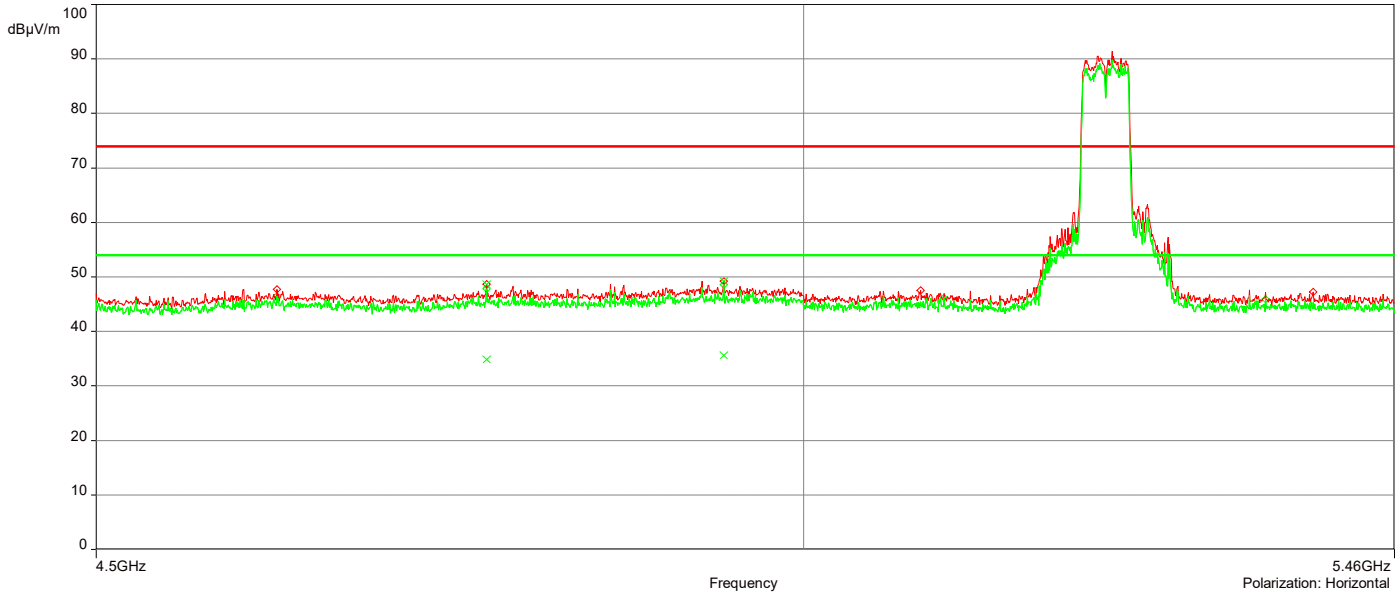
AH22021401-HAR-004#3_Restricted Bandedge_5G UNII-1 802.11ac_Ch 46

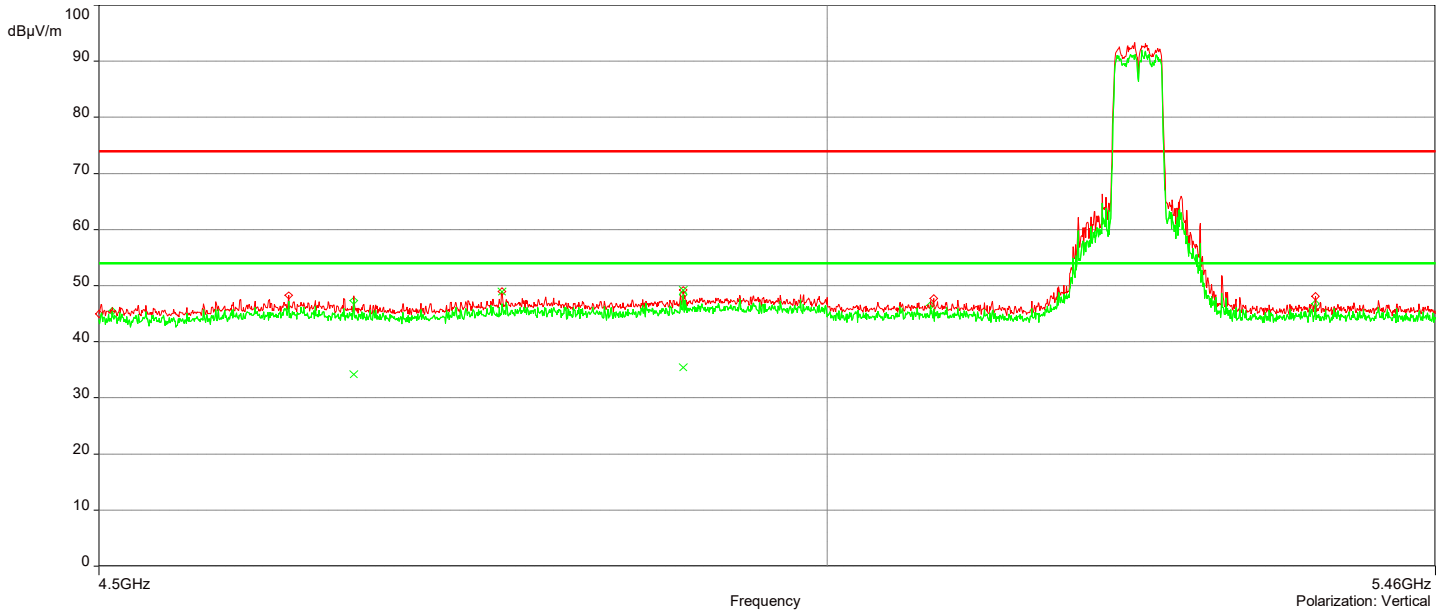
3/16/2022 12:19:48 PM

No	Frequency (MHz)	Level Peak Reading (dBuV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1	4.7694147GHz	48.69	3.72	74.00	-25.31	2.50	355.40	Horizontal	Passed
2	4.9408604GHz	49.26	4.24	74.00	-24.74	3.00	118.40	Horizontal	Passed
3	4.7703752GHz	48.92	3.69	74.00	-25.08	3.00	312.90	Vertical	Passed
4	4.8971586GHz	49.26	4.30	74.00	-24.74	1.00	232.00	Vertical	Passed

No	Frequency (MHz)	Level Average Reading (dBuV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgment
1	4.7694147GHz	34.91	3.72	54.00	-19.09	2.50	355.40	Horizontal	Passed
2	4.9408604GHz	35.65	4.24	54.00	-18.35	3.00	118.40	Horizontal	Passed
3	4.6690445GHz	34.23	3.33	54.00	-19.77	3.50	85.10	Vertical	Passed
4	4.8971586GHz	35.47	4.30	54.00	-18.53	1.00	232.00	Vertical	Passed

Overall Graphs:





Remarks:

1 Level Peak Reading (dBµV/m)= Raw Peak Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Peak Reading – Limit

Remarks:

1 Level Average Reading (dBµV/m)= Raw Average Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Average Reading – Limit

AH22021401-HAR-004#3_Restricted Bandedge_5G UNII-1 802.11ac_Ch 42

3/16/2022 12:47:52 PM

No	Frequency (MHz)	Level Peak Reading (dBuV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1	4.9869635GHz	49.55	4.15	74.00	-24.45	1.50	73.60	Horizontal	Passed
2	5.1444822GHz	63.94	3.85	74.00	-10.06	3.50	222.10	Horizontal	Passed
3	5.350025GHz	49.39	4.32	74.00	-24.61	3.50	149.90	Horizontal	Passed
4	5.1396798GHz	67.31	3.82	74.00	-6.69	1.00	85.60	Vertical	Passed

No	Frequency (MHz)	Level Average Reading (dBuV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgment
1	4.9869635GHz	35.05	4.15	54.00	-18.95	1.50	73.60	Horizontal	Passed
2	5.1372786GHz	44.50	3.83	54.00	-9.50	2.50	322.90	Horizontal	Passed
3	5.350025GHz	34.15	4.32	54.00	-19.85	3.50	149.90	Horizontal	Passed
4	5.1396798GHz	50.42	3.82	54.00	-3.58	1.00	85.60	Vertical	Passed

Overall Graphs:

Remarks:

1 Level Peak Reading (dBµV/m)= Raw Peak Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Peak Reading – Limit

Remarks:

1 Level Average Reading (dBµV/m)= Raw Average Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Average Reading – Limit

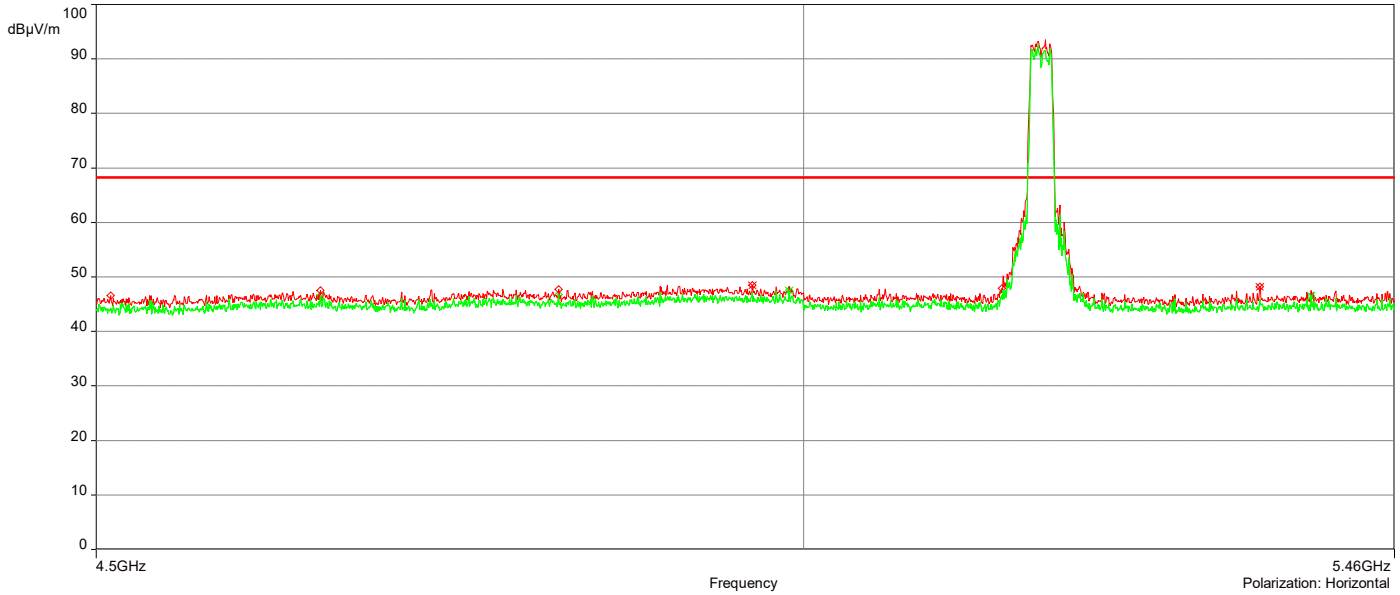
AH22021401-HAR-004#3_UnRestricted Bandedge_5G UNII-1 802.11a_Ch 36

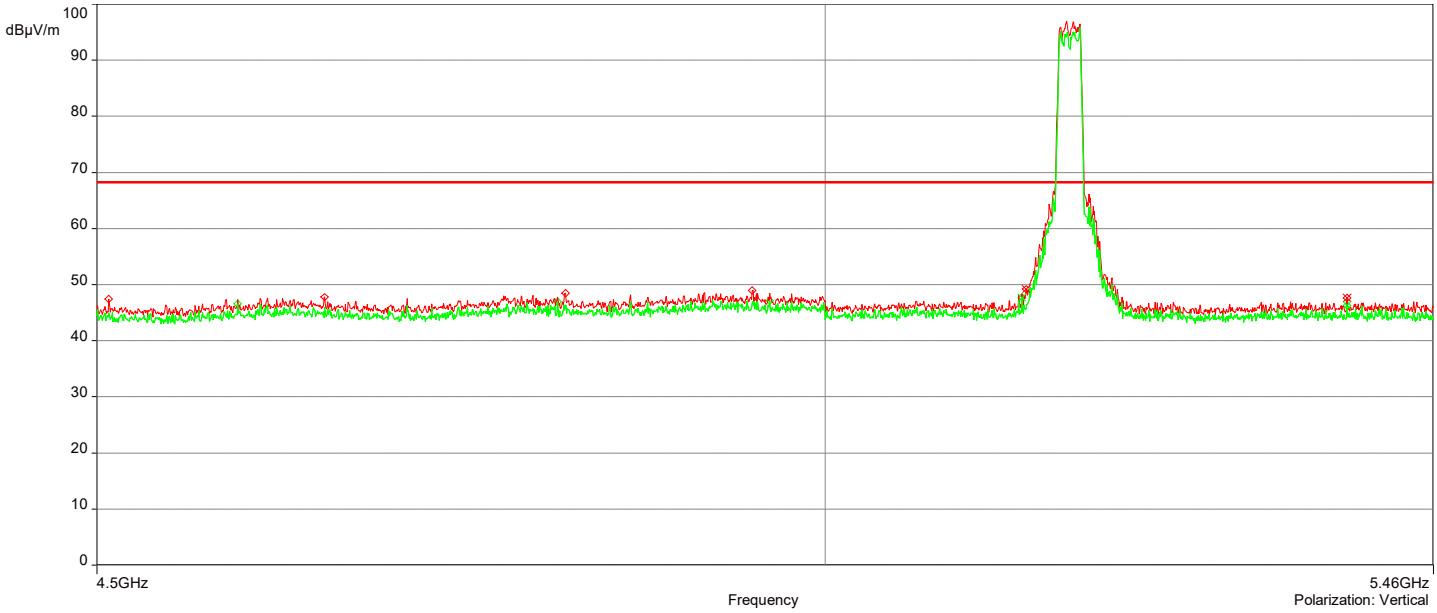
3/15/2022 10:27:17 AM

No	Frequency (MHz)	Level Peak Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1	4.961991GHz	48.51	4.17	68.23	-19.72	3.00	146.60	Horizontal	Passed
2	5.3514657GHz	48.20	4.32	68.23	-20.03	1.50	46.90	Horizontal	Passed
3	5.1473637GHz	49.23	3.78	68.23	-19.00	3.00	128.00	Vertical	Passed
4	5.3922861GHz	47.67	4.29	68.23	-20.56	3.00	36.90	Vertical	Passed

No	Frequency (MHz)	Level Average Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgment
1	4.9893647GHz	47.56	4.15	68.23	-20.67	1.50	261.90	Horizontal	Passed
2	5.3927664GHz	46.51	4.41	68.23	-21.72	1.50	75.50	Horizontal	Passed
3	5.1444822GHz	47.77	3.80	68.23	-20.46	3.00	129.00	Vertical	Passed
4	5.3922861GHz	46.35	4.29	68.23	-21.88	3.00	36.90	Vertical	Passed

Overall Graphs:




dBµV/m
100
90
80
70
60
50
40
30
20
10
0
4.5GHz
Frequency
5.46GHz
Polarization: Vertical

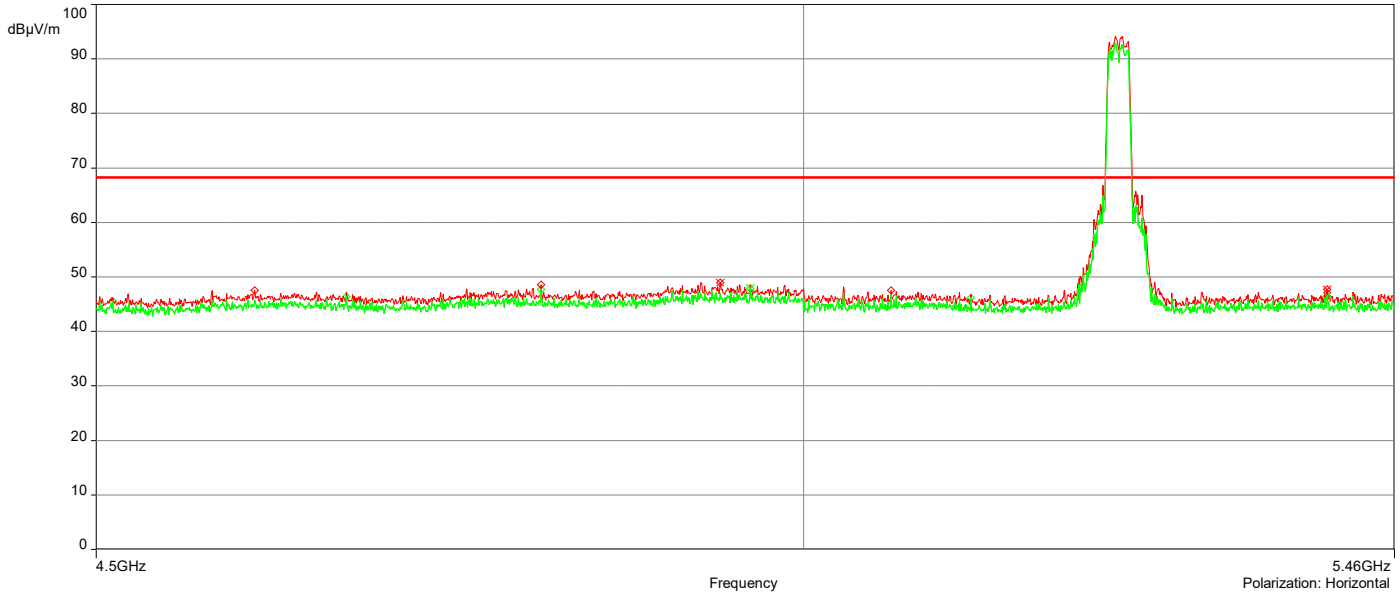
AH22021401-HAR-004#3_UnRestricted Bandedge_5G UNII-1 802.11a_Ch 48

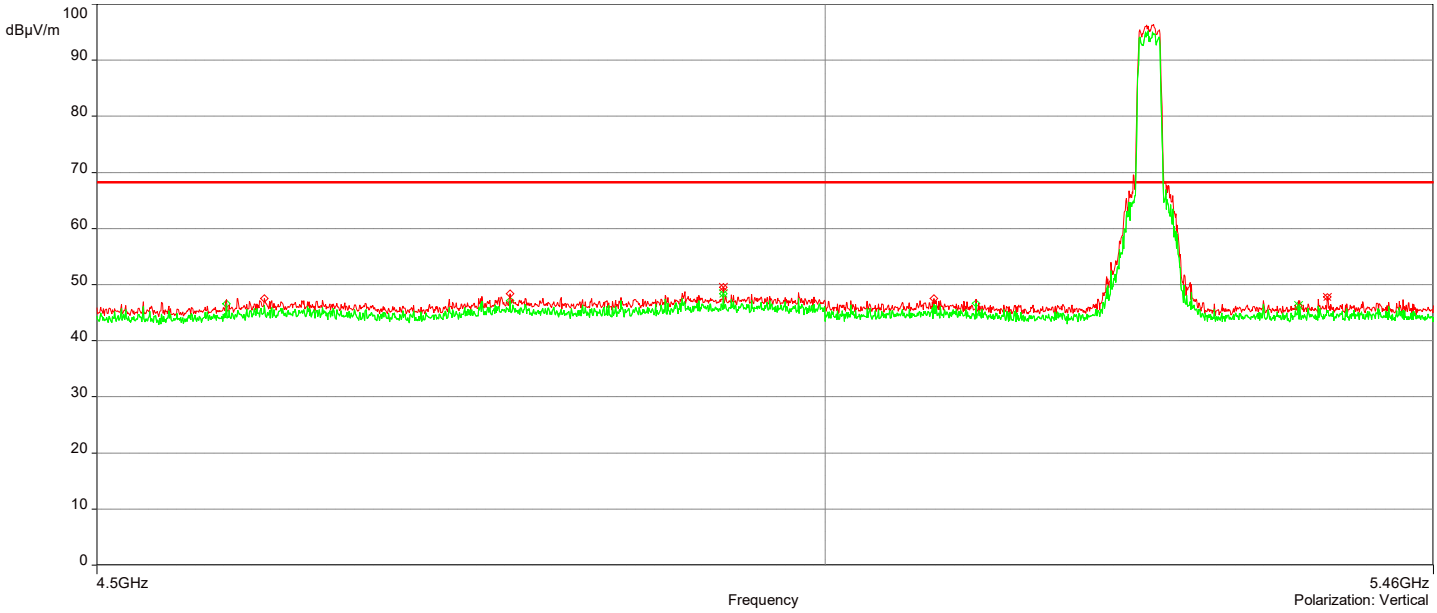
4/11/2022 8:49:48 AM

No	Frequency (MHz)	Level Peak Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1	4.9384592GHz	48.99	4.24	68.23	-19.24	1.50	250.60	Horizontal	Passed
2	5.4057329GHz	47.73	4.41	68.23	-20.50	4.00	336.40	Horizontal	Passed
3	4.9269335GHz	49.49	4.20	68.23	-18.74	1.50	92.50	Vertical	Passed
4	5.3769185GHz	47.81	4.30	68.23	-20.42	2.50	213.80	Vertical	Passed

No	Frequency (MHz)	Level Average Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgment
1	4.9605503GHz	47.91	4.17	68.23	-20.32	4.00	336.40	Horizontal	Passed
2	5.4057329GHz	46.49	4.41	68.23	-21.74	4.00	336.40	Horizontal	Passed
3	4.9269335GHz	48.38	4.20	68.23	-19.85	1.50	92.50	Vertical	Passed
4	5.3543472GHz	46.30	4.24	68.23	-21.93	3.50	229.40	Vertical	Passed

Overall Graphs:




dBµV/m
100
90
80
70
60
50
40
30
20
10
0
4.5GHz
Frequency
5.46GHz
Polarization: Vertical

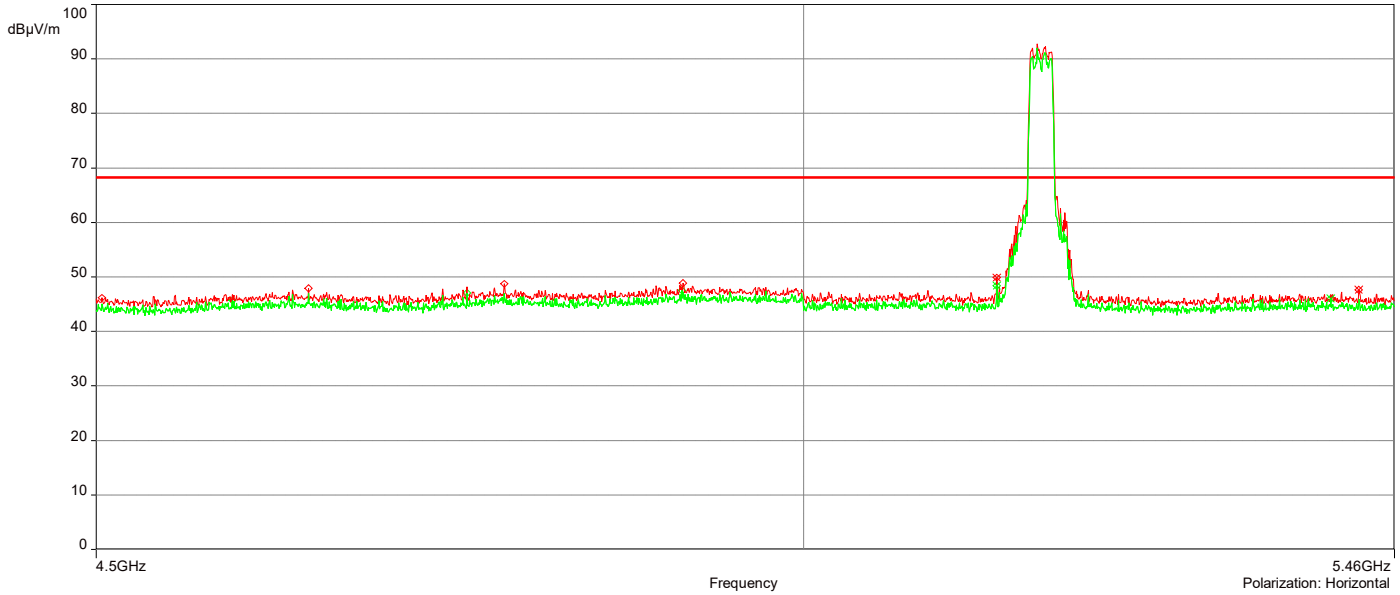
AH22021401-HAR-004#3_UnRestricted Bandedge_5G UNII-1 802.11n_Ch 36

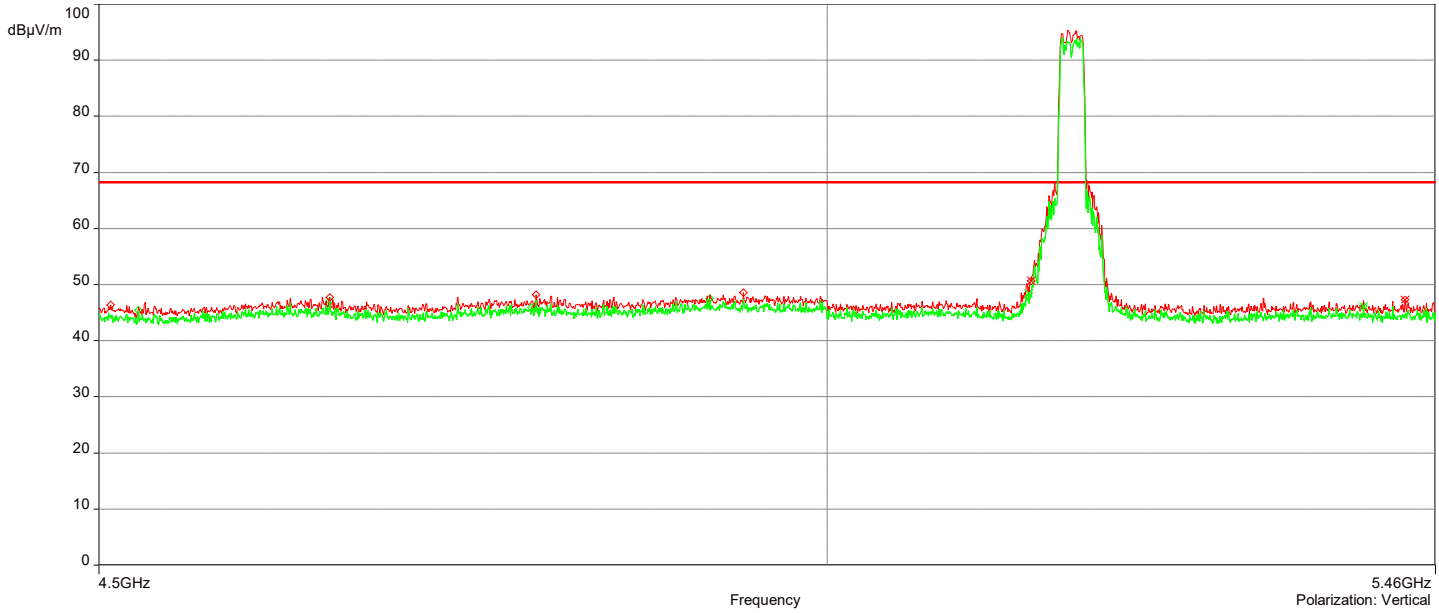
3/15/2022 3:46:30 PM

No	Frequency (MHz)	Level Peak Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1	5.145923GHz	49.89	3.85	68.23	-18.34	3.50	222.20	Horizontal	Passed
2	5.4311856GHz	47.67	4.38	68.23	-20.56	3.00	60.70	Horizontal	Passed
3	5.1497649GHz	50.63	3.77	68.23	-17.60	3.00	113.20	Vertical	Passed
4	5.435988GHz	47.30	4.27	68.23	-20.93	3.50	236.80	Vertical	Passed

No	Frequency (MHz)	Level Average Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgment
1	5.145923GHz	48.38	3.85	68.23	-19.85	3.50	222.20	Horizontal	Passed
2	5.4086143GHz	46.02	4.40	68.23	-22.21	2.50	256.00	Horizontal	Passed
3	5.1478439GHz	48.53	3.78	68.23	-19.70	3.50	118.10	Vertical	Passed
4	5.4033317GHz	46.21	4.29	68.23	-22.02	3.50	333.40	Vertical	Passed

Overall Graphs:




dBµV/m
100
90
80
70
60
50
40
30
20
10
0
4.5GHz
Frequency
5.46GHz
Polarization: Vertical

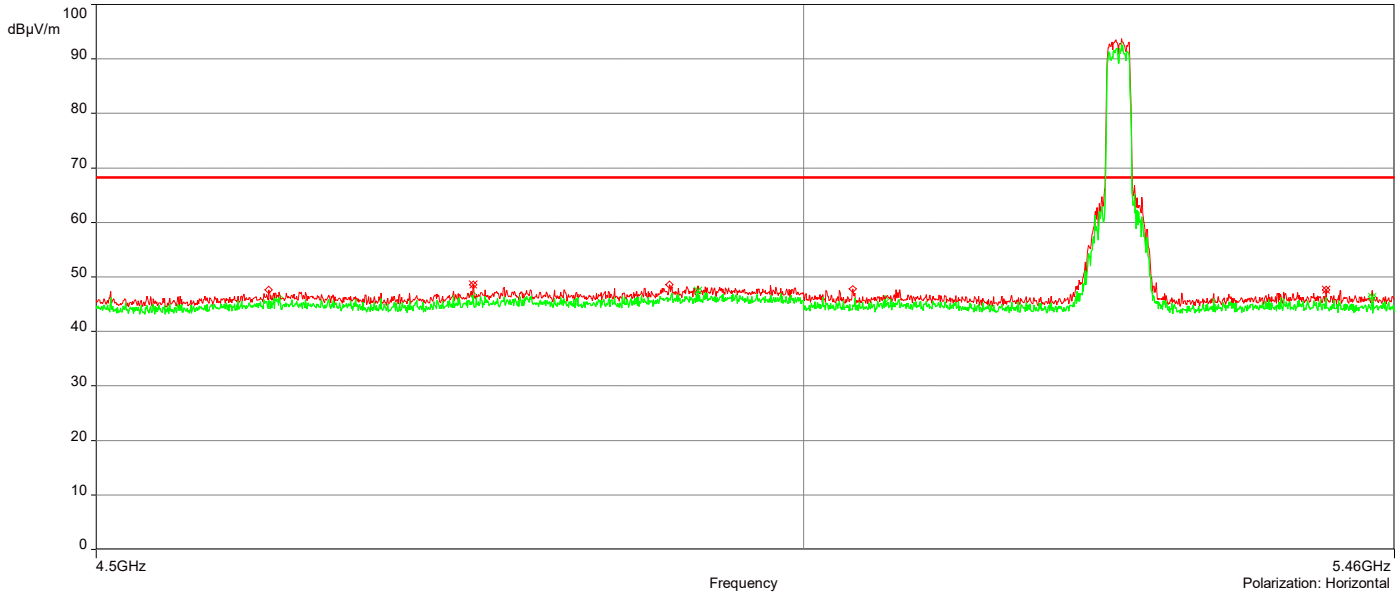
AH22021401-HAR-004#3_UnRestricted Bandedge_5G UNII-1 802.11n_Ch 48

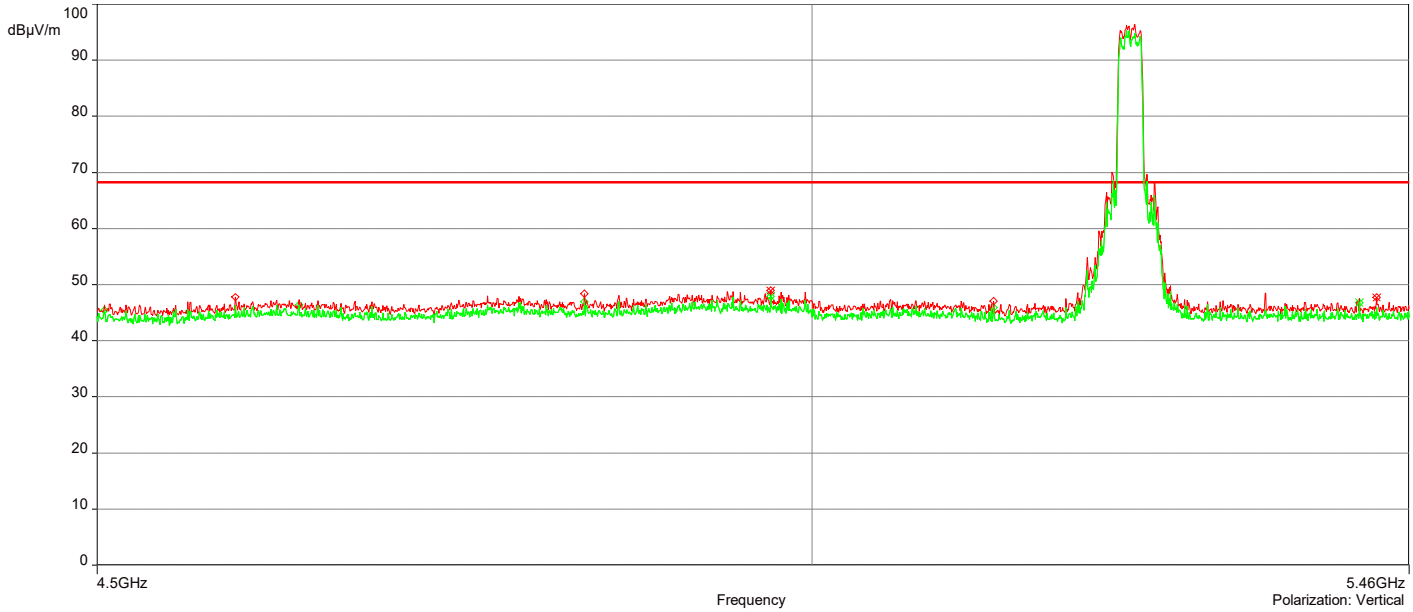
3/15/2022 4:24:41 PM

No	Frequency (MHz)	Level Peak Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1	4.7598099GHz	48.62	3.67	68.23	-19.61	1.50	115.90	Horizontal	Passed
2	5.4047724GHz	47.62	4.41	68.23	-20.61	4.00	122.00	Horizontal	Passed
3	4.9696748GHz	48.94	4.04	68.23	-19.29	3.00	223.90	Vertical	Passed
4	5.434067GHz	47.69	4.27	68.23	-20.54	3.00	108.20	Vertical	Passed

No	Frequency (MHz)	Level Average Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgment
1	4.9221311GHz	47.51	4.26	68.23	-20.72	2.50	210.00	Horizontal	Passed
2	5.4417509GHz	46.37	4.40	68.23	-21.86	4.00	252.90	Horizontal	Passed
3	4.9696748GHz	47.88	4.04	68.23	-20.35	3.00	223.90	Vertical	Passed
4	5.4201401GHz	46.80	4.27	68.23	-21.43	1.00	19.90	Vertical	Passed

Overall Graphs:




dBµV/m
100
90
80
70
60
50
40
30
20
10
0
4.5GHz
Frequency
5.46GHz
Polarization: Vertical

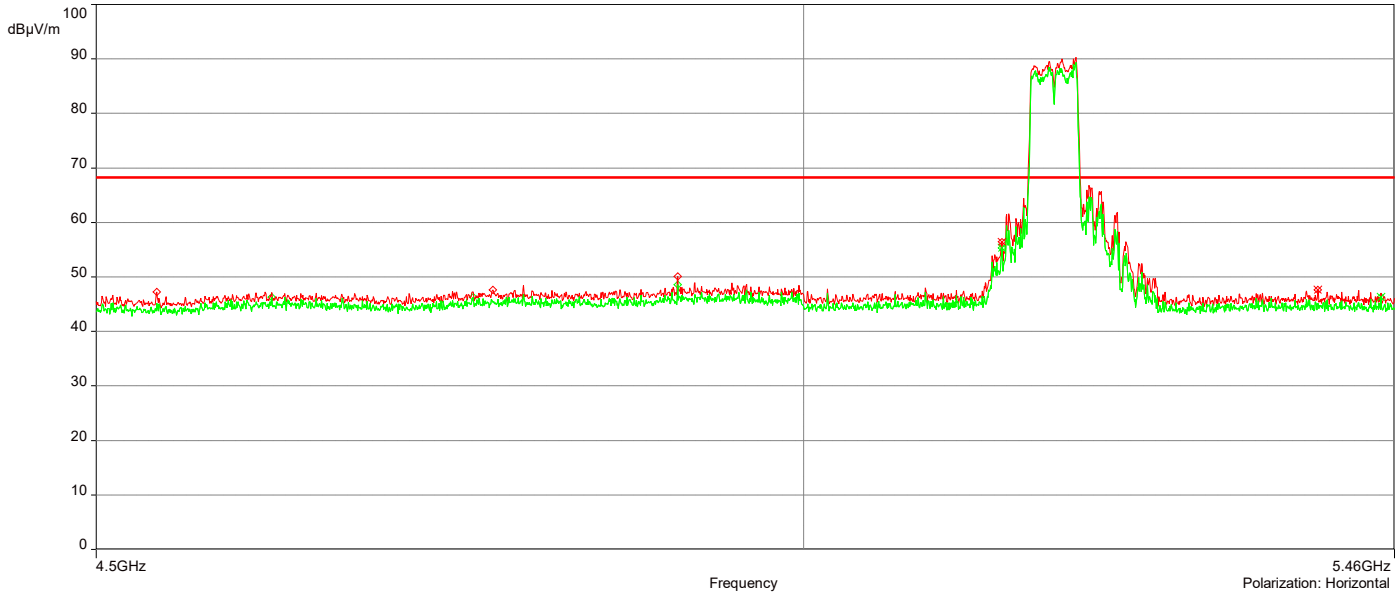
AH22021401-HAR-004#3_UnRestricted Bandedge_5G UNII-1 802.11n_Ch 38

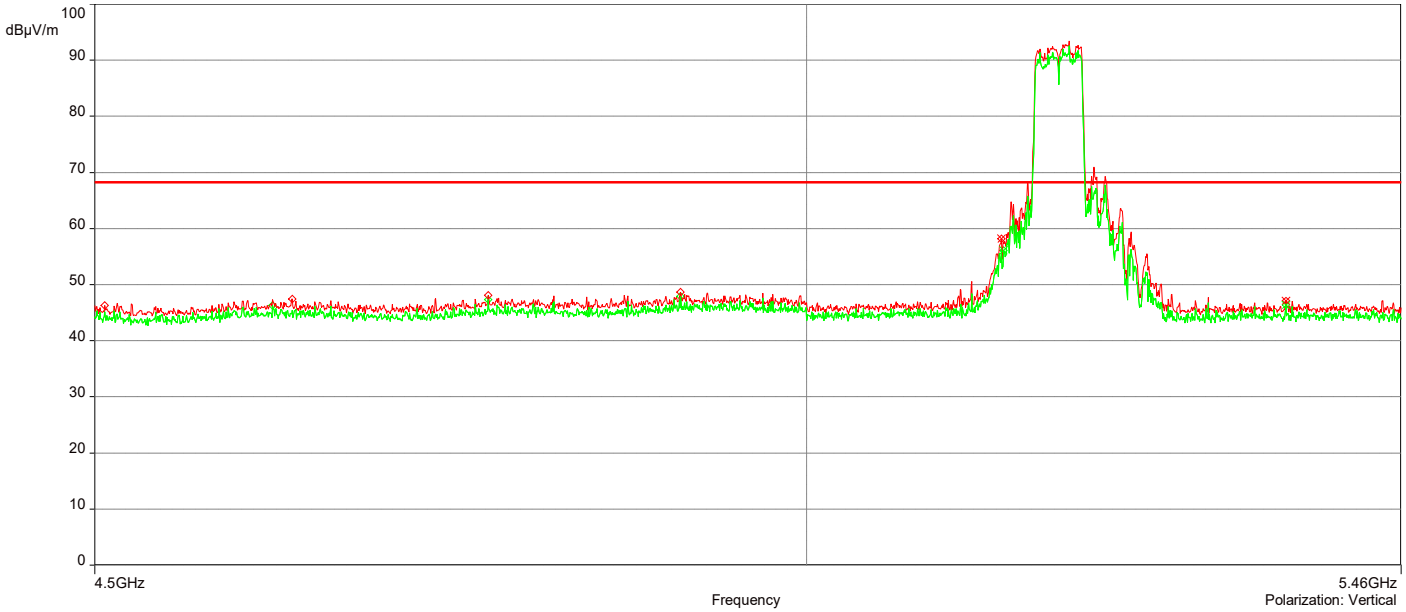
3/15/2022 5:25:54 PM

No	Frequency (MHz)	Level Peak Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1	5.1497649GHz	56.46	3.82	68.23	-11.77	3.50	227.30	Horizontal	Passed
2	5.398049GHz	47.64	4.41	68.23	-20.59	4.00	266.90	Horizontal	Passed
3	5.1464032GHz	58.15	3.79	68.23	-10.08	3.00	125.70	Vertical	Passed
4	5.3677939GHz	47.18	4.28	68.23	-21.05	1.50	44.90	Vertical	Passed

No	Frequency (MHz)	Level Average Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgment
1	5.1497649GHz	55.31	3.82	68.23	-12.92	3.50	227.30	Horizontal	Passed
2	5.4489545GHz	46.30	4.41	68.23	-21.93	2.00	218.80	Horizontal	Passed
3	5.1478439GHz	56.09	3.78	68.23	-12.14	3.00	130.60	Vertical	Passed
4	5.3677939GHz	46.40	4.28	68.23	-21.83	1.50	44.90	Vertical	Passed

Overall Graphs:




dBµV/m
100
90
80
70
60
50
40
30
20
10
0
4.5GHz
Frequency
5.46GHz
Polarization: Vertical

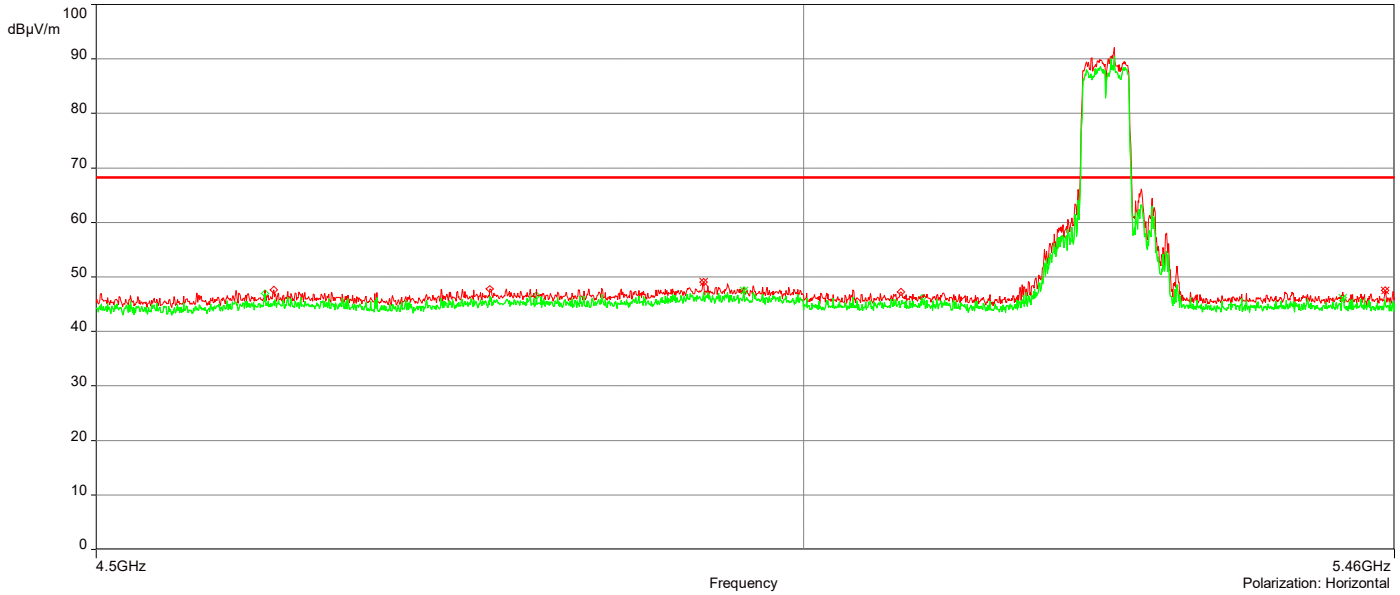
AH22021401-HAR-004#3_UnRestricted Bandedge_5G UNII-1 802.11n_Ch 46

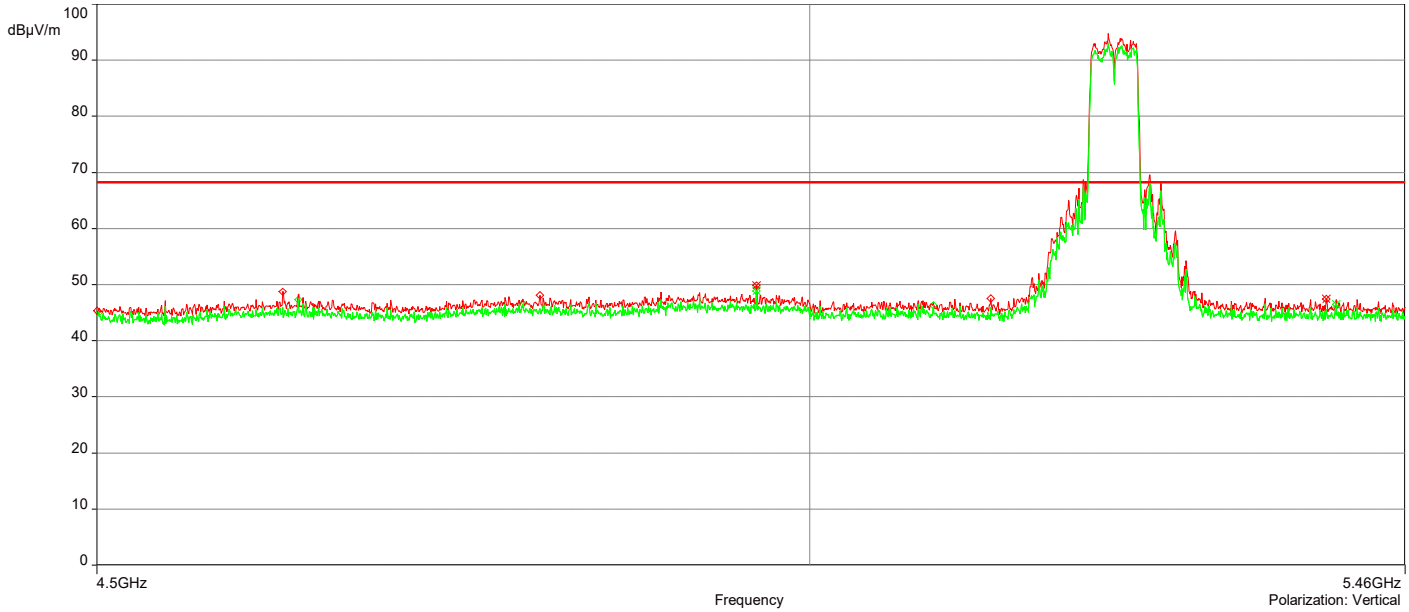
3/16/2022 9:58:53 AM

No	Frequency (MHz)	Level Peak Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1	4.925973GHz	49.05	4.25	68.23	-19.18	3.00	214.90	Horizontal	Passed
2	5.4523162GHz	47.50	4.41	68.23	-20.73	3.50	215.00	Horizontal	Passed
3	4.9610305GHz	49.90	4.05	68.23	-18.33	2.50	331.20	Vertical	Passed
4	5.3966083GHz	47.43	4.29	68.23	-20.80	2.00	174.10	Vertical	Passed

No	Frequency (MHz)	Level Average Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgment
5.	4.9557479GHz	47.54	4.20	68.23	-20.69	3.00	204.40	Horizontal	Passed
6.	5.4182191GHz	46.24	4.39	68.23	-21.99	3.00	305.10	Horizontal	Passed
7.	4.9610305GHz	48.88	4.05	68.23	-19.35	2.50	331.20	Vertical	Passed
8.	5.4047724GHz	46.53	4.29	68.23	-21.70	2.00	251.60	Vertical	Passed

Overall Graphs:




dBµV/m
100
90
80
70
60
50
40
30
20
10
0
4.5GHz
Frequency
5.46GHz
Polarization: Vertical

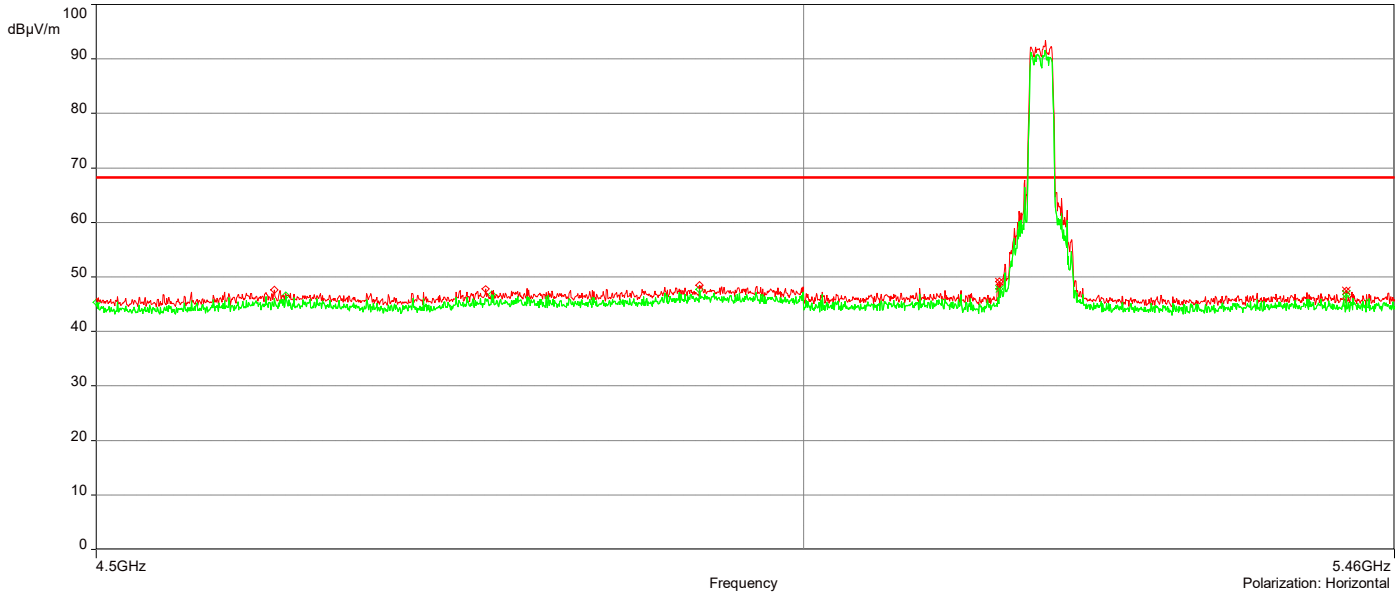
AH22021401-HAR-004#3_UnRestricted Bandedge_5G UNII-1 802.11ac_Ch 36

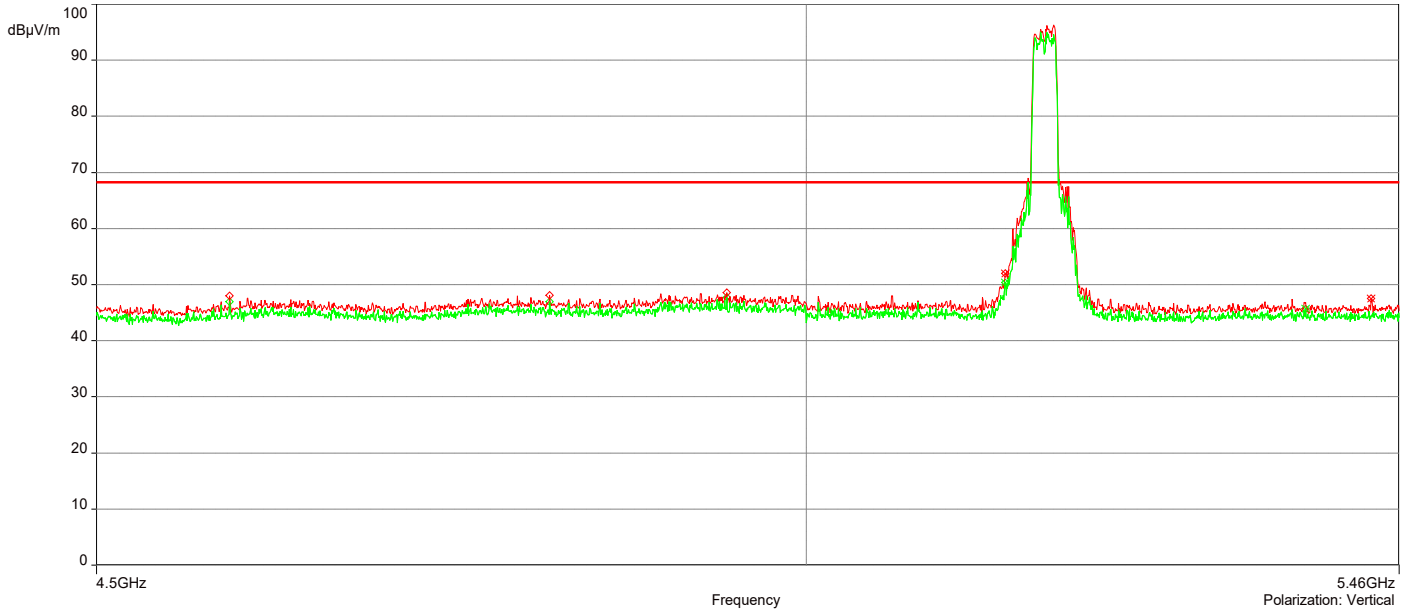
3/16/2022 10:29:44 AM

No	Frequency (MHz)	Level Peak Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1	5.1478439GHz	49.20	3.84	68.23	-19.03	1.00	288.80	Horizontal	Passed
2	5.4211006GHz	47.41	4.39	68.23	-20.82	3.00	358.90	Horizontal	Passed
3	5.1497649GHz	52.03	3.77	68.23	-16.20	3.00	124.10	Vertical	Passed
4	5.4374287GHz	47.58	4.27	68.23	-20.65	3.50	143.70	Vertical	Passed

No	Frequency (MHz)	Level Average Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgment
1	5.1478439GHz	47.83	3.84	68.23	-20.40	1.00	288.80	Horizontal	Passed
2	5.4211006GHz	46.75	4.39	68.23	-21.48	3.00	358.90	Horizontal	Passed
3	5.1497649GHz	50.39	3.77	68.23	-17.84	3.00	124.10	Vertical	Passed
4	5.3846023GHz	45.70	4.30	68.23	-22.53	3.50	201.20	Vertical	Passed

Overall Graphs:




dBµV/m
100
90
80
70
60
50
40
30
20
10
0
4.5GHz
Frequency
5.46GHz
Polarization: Vertical

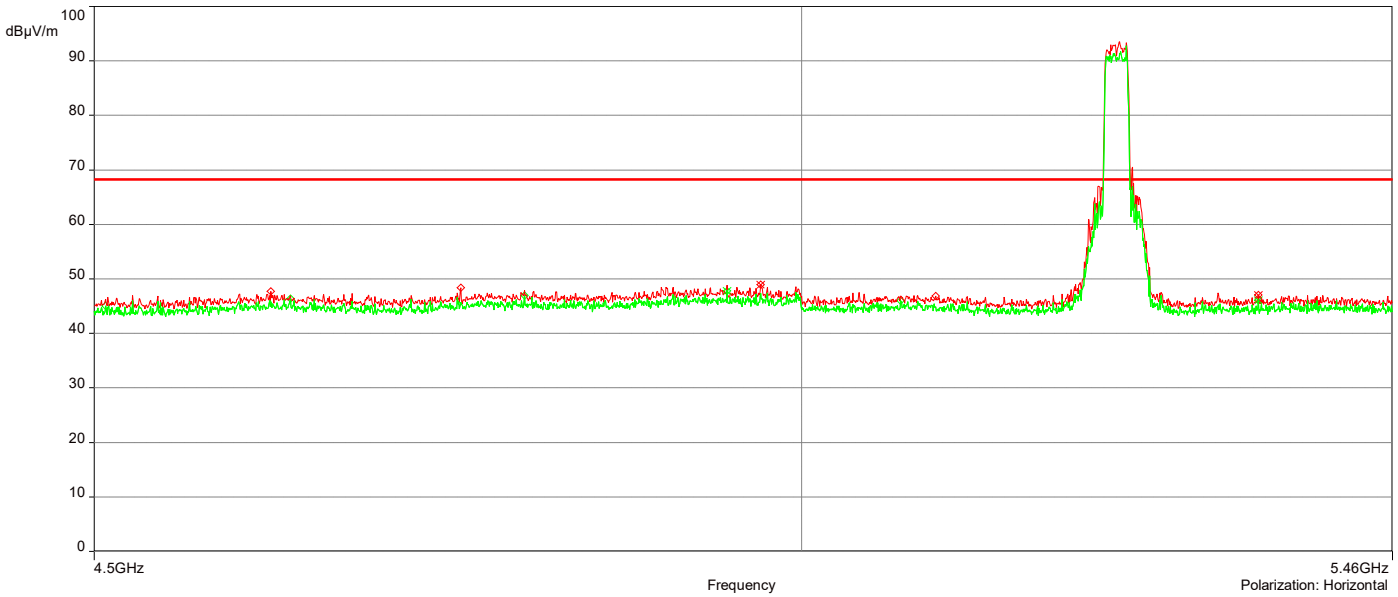
AH22021401-HAR-004#3_UnRestricted Bandedge_5G UNII-1 802.11ac_Ch 48

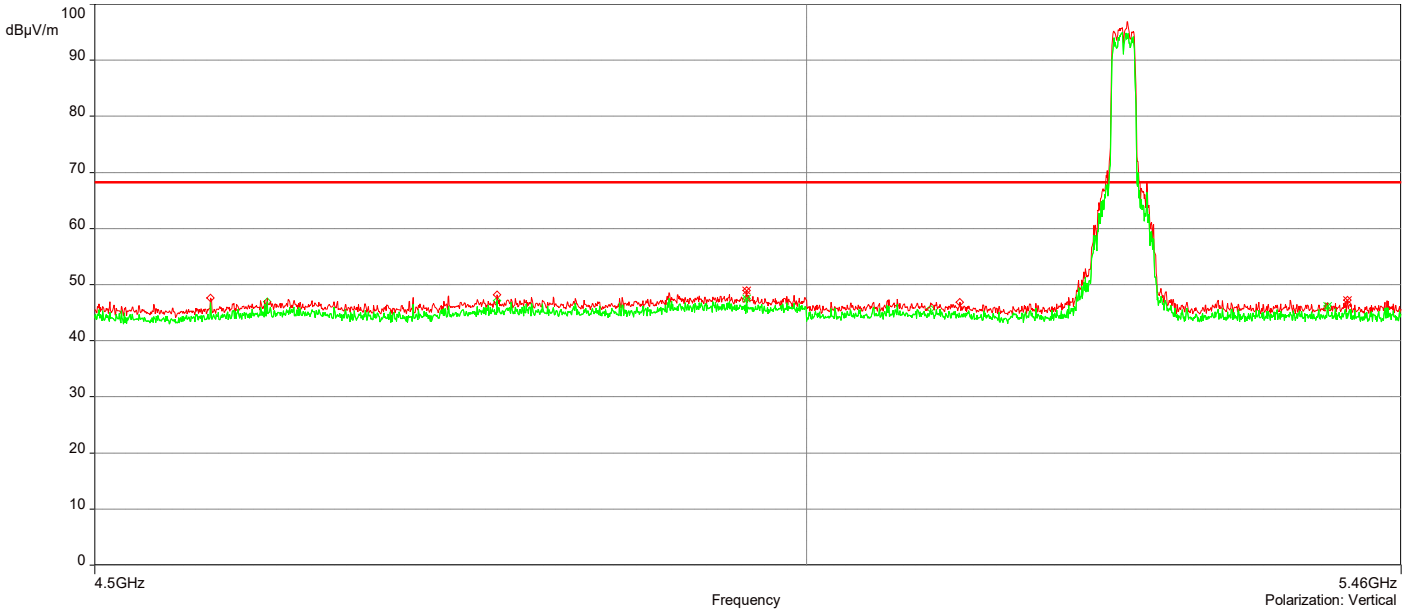
3/16/2022 11:04:38 AM

No	Frequency (MHz)	Level Peak Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1	4.9696748GHz	48.98	4.16	68.23	-19.25	2.50	338.50	Horizontal	Passed
2	5.351946GHz	47.10	4.33	68.23	-21.13	1.00	167.20	Horizontal	Passed
3	4.9557479GHz	48.93	4.07	68.23	-19.30	2.00	184.60	Vertical	Passed
4	5.4167784GHz	47.28	4.27	68.23	-20.95	1.00	34.90	Vertical	Passed

No	Frequency (MHz)	Level Average Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgment
1	4.9447024GHz	47.82	4.23	68.23	-20.41	3.50	21.00	Horizontal	Passed
2	5.351946GHz	46.08	4.33	68.23	-22.15	1.00	167.20	Horizontal	Passed
3	4.9557479GHz	47.54	4.07	68.23	-20.69	2.00	184.60	Vertical	Passed
4	5.4009305GHz	46.17	4.29	68.23	-22.06	4.00	8.00	Vertical	Passed

Overall Graphs:




dBµV/m
100
90
80
70
60
50
40
30
20
10
0
4.5GHz
Frequency
5.46GHz
Polarization: Vertical

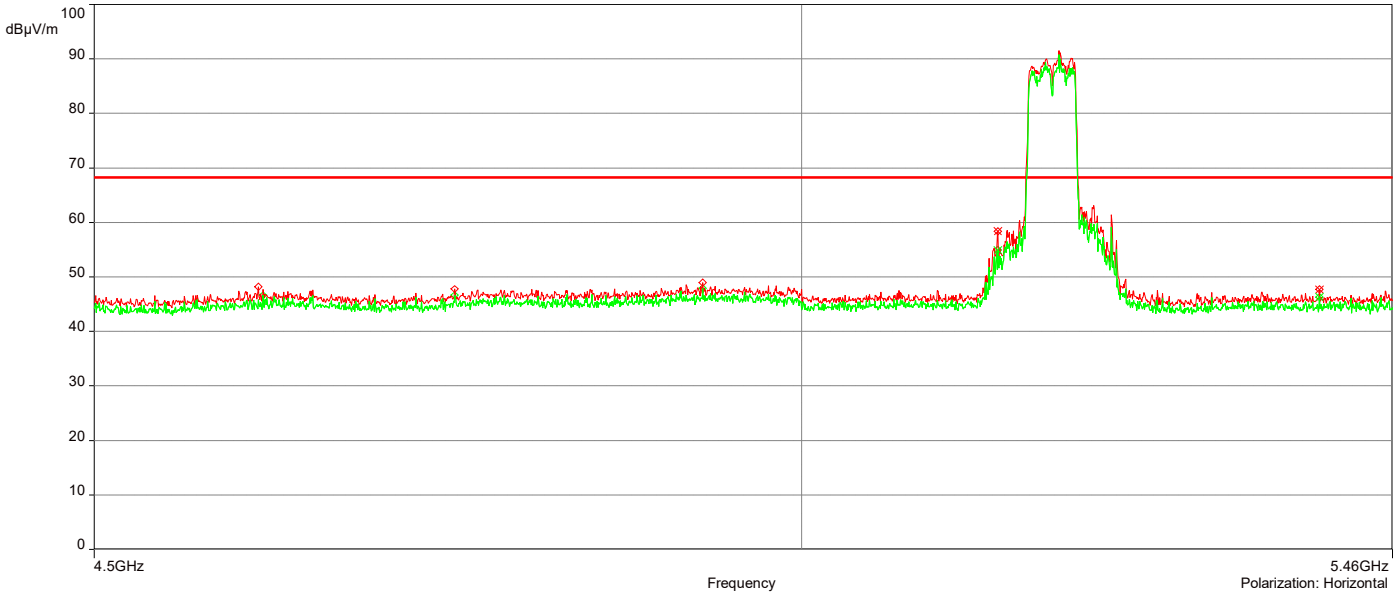
AH22021401-HAR-004#3_UnRestricted Bandedge_5G UNII-1 802.11ac_Ch 38

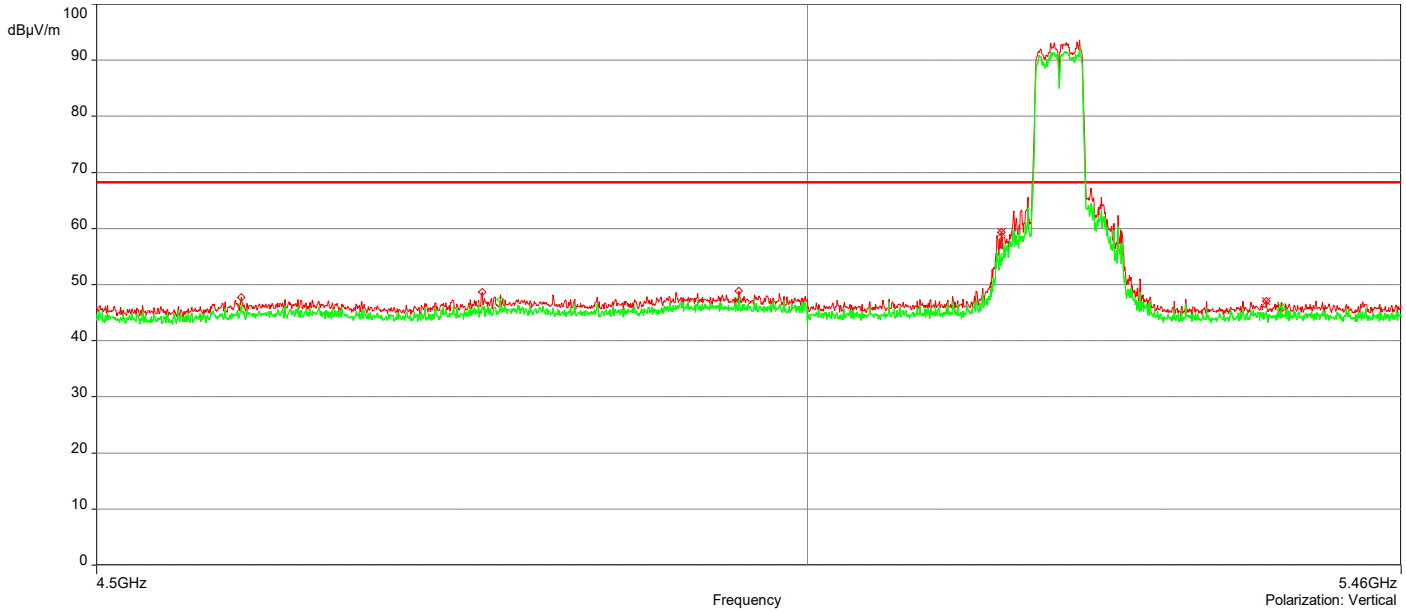
3/16/2022 11:34:33 AM

No	Frequency (MHz)	Level Peak Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1	5.1483242GHz	58.38	3.83	68.23	-9.85	1.00	170.80	Horizontal	Passed
2	5.4009305GHz	47.74	4.41	68.23	-20.49	1.50	330.50	Horizontal	Passed
3	5.145923GHz	59.31	3.79	68.23	-8.92	1.50	334.60	Vertical	Passed
4	5.351946GHz	47.03	4.23	68.23	-21.20	1.00	60.90	Vertical	Passed

No	Frequency (MHz)	Level Average Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgment
1	5.1483242GHz	54.93	3.83	68.23	-13.30	1.00	170.80	Horizontal	Passed
2	5.4009305GHz	46.33	4.41	68.23	-21.90	1.50	330.50	Horizontal	Passed
3	5.1497649GHz	56.89	3.77	68.23	-11.34	2.00	139.30	Vertical	Passed
4	5.363952GHz	46.06	4.27	68.23	-22.17	2.50	276.70	Vertical	Passed

Overall Graphs:




dBµV/m
100
90
80
70
60
50
40
30
20
10
0
4.5GHz
Frequency
5.46GHz
Polarization: Vertical

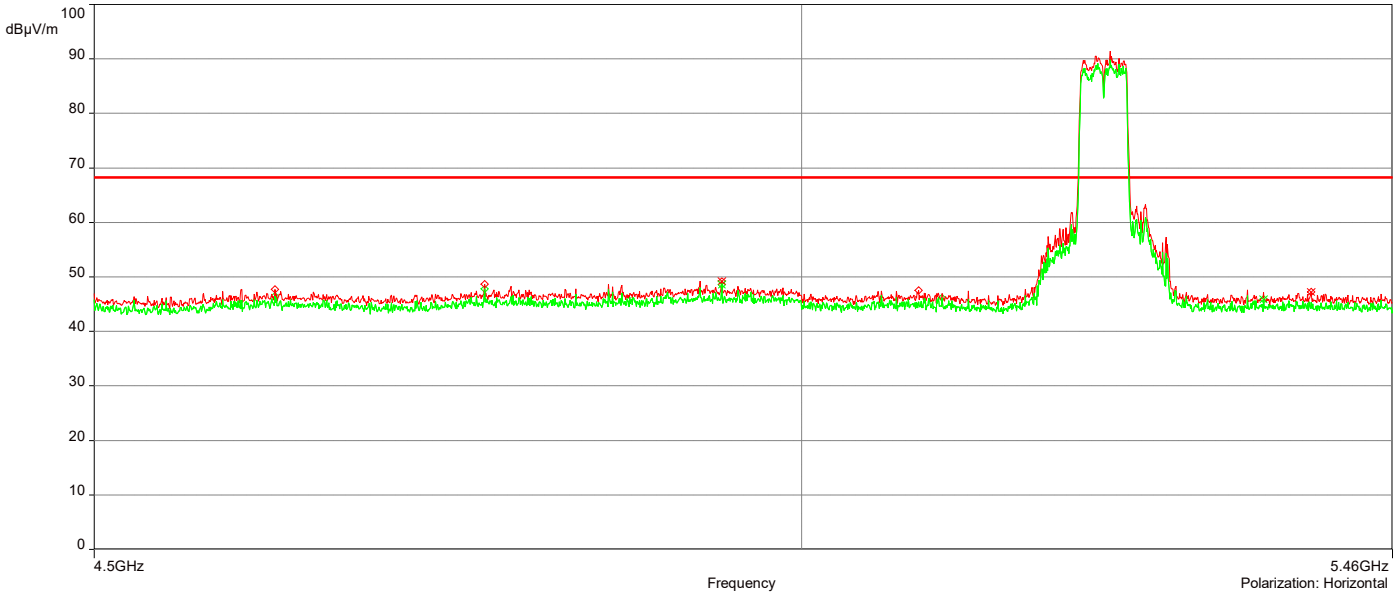
AH22021401-HAR-004#3_UnRestricted Bandedge_5G UNII-1 802.11ac_Ch 46

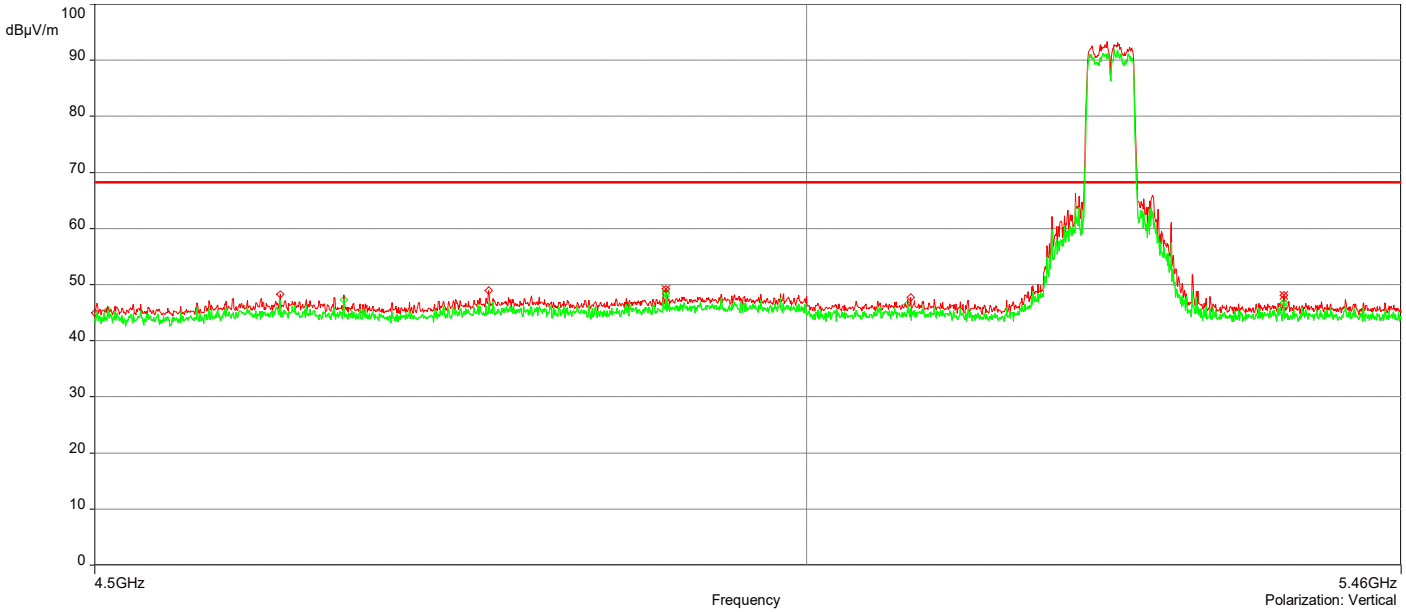
3/16/2022 12:19:48 PM

No	Frequency (MHz)	Level Peak Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1	4.9408604GHz	49.26	4.24	68.23	-18.97	3.00	118.40	Horizontal	Passed
2	5.3942071GHz	47.24	4.41	68.23	-20.99	3.50	165.90	Horizontal	Passed
3	4.8971586GHz	49.26	4.30	68.23	-18.97	1.00	232.00	Vertical	Passed
4	5.3658729GHz	48.07	4.28	68.23	-20.16	1.50	324.50	Vertical	Passed

No	Frequency (MHz)	Level Average Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgment
1	4.9408604GHz	48.57	4.24	68.23	-19.66	3.00	118.40	Horizontal	Passed
2	5.3562681GHz	45.89	4.34	68.23	-22.34	3.50	283.50	Horizontal	Passed
3	4.8971586GHz	48.43	4.30	68.23	-19.80	1.00	232.00	Vertical	Passed
4	5.3658729GHz	46.78	4.28	68.23	-21.45	1.50	324.50	Vertical	Passed

Overall Graphs:




dBµV/m
100
90
80
70
60
50
40
30
20
10
0
4.5GHz
Frequency
5.46GHz
Polarization: Vertical

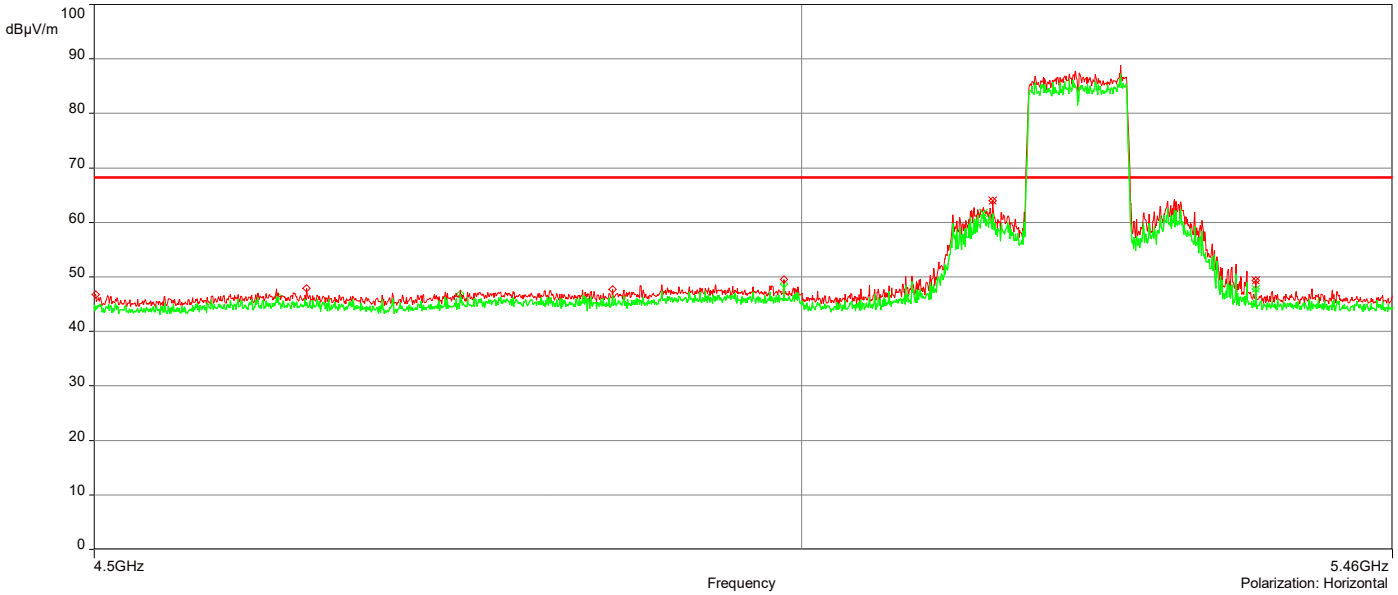
AH22021401-HAR-004#3_UnRestricted Bandedge_5G UNII-1 802.11ac_Ch 42

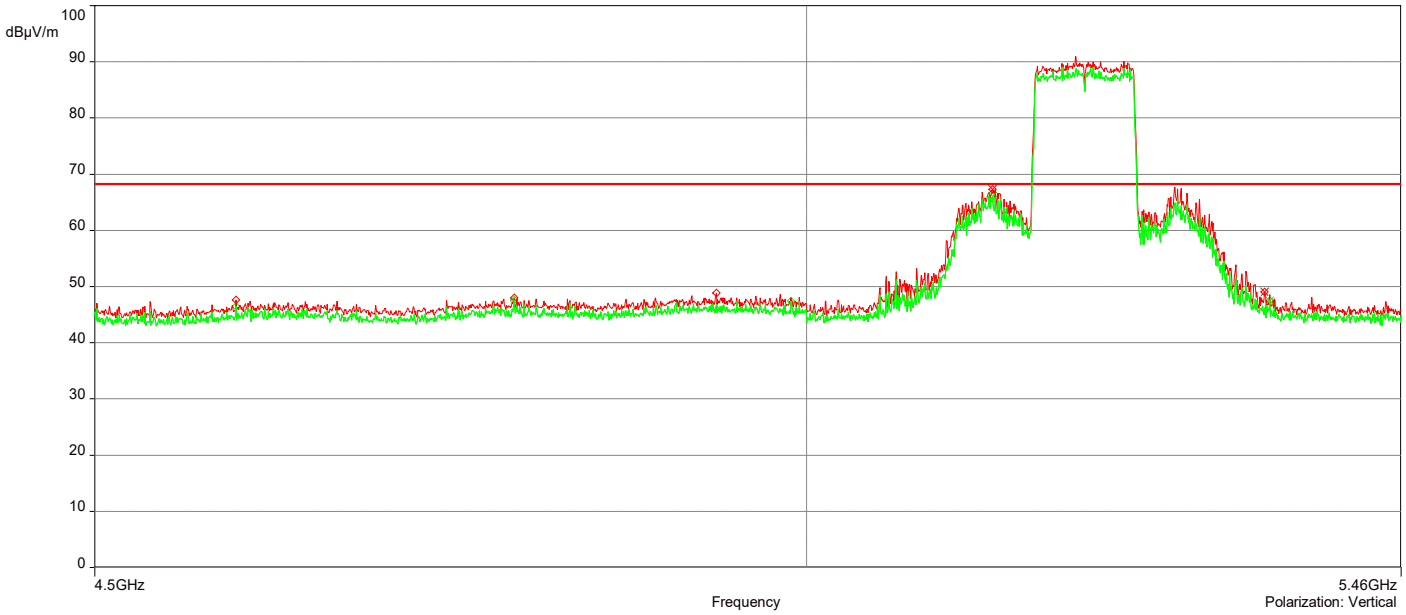
3/16/2022 12:47:52 PM

No	Frequency (MHz)	Level Peak Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1	5.1444822GHz	63.94	3.85	68.23	-4.29	3.50	222.10	Horizontal	Passed
2	5.350025GHz	49.39	4.32	68.23	-18.84	3.50	149.90	Horizontal	Passed
3	5.1396798GHz	67.31	3.82	68.23	-0.92	1.00	85.60	Vertical	Passed
4	5.3509855GHz	49.08	4.23	68.23	-19.15	4.00	116.50	Vertical	Passed

No	Frequency (MHz)	Level Average Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgment
1	5.1372786GHz	61.67	3.89	68.23	-6.56	2.50	322.80	Horizontal	Passed
2	5.350025GHz	47.85	4.32	68.23	-20.38	3.50	149.90	Horizontal	Passed
3	5.1396798GHz	66.06	3.82	68.23	-2.17	1.00	85.60	Vertical	Passed
4	5.3548274GHz	47.56	4.24	68.23	-20.67	1.00	58.40	Vertical	Passed

Overall Graphs:




dBµV/m
100
90
80
70
60
50
40
30
20
10
0
4.5GHz
Frequency
5.46GHz
Polarization: Vertical

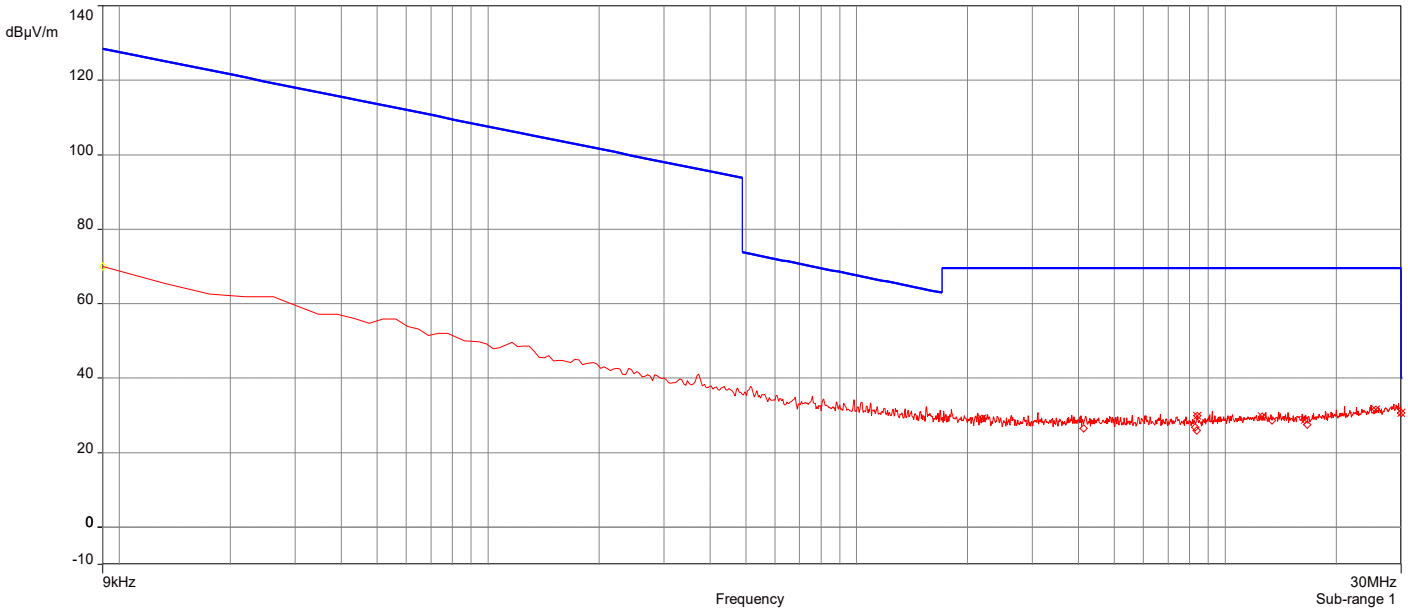
UNII-3

AH22021401-HAR-004#3_5G UNII-3 802.11a_Ch 157_9kHz-30MHz_Ground-Parallel

3/19/2022 8:50:34 PM

No	Frequency (MHz)	Level Q-Peak Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1.	2.190086MHz	29.20	19.21	69.54	-40.34	1.00	349.80	H/V	Passed
2.	8.386255MHz	29.96	19.28	69.54	-39.58	1.00	278.60	H/V	Passed
3.	12.577024MHz	29.63	19.83	69.54	-39.91	1.00	250.70	H/V	Passed
4.	16.420706MHz	28.78	19.84	69.54	-40.76	1.00	237.40	H/V	Passed
5.	25.612118MHz	31.71	20.89	69.54	-37.83	1.00	6.40	H/V	Passed
6.	30MHz	30.69	21.95	40.00	-9.31	1.00	231.30	H/V	Passed

Overall Graphs:



Remarks:

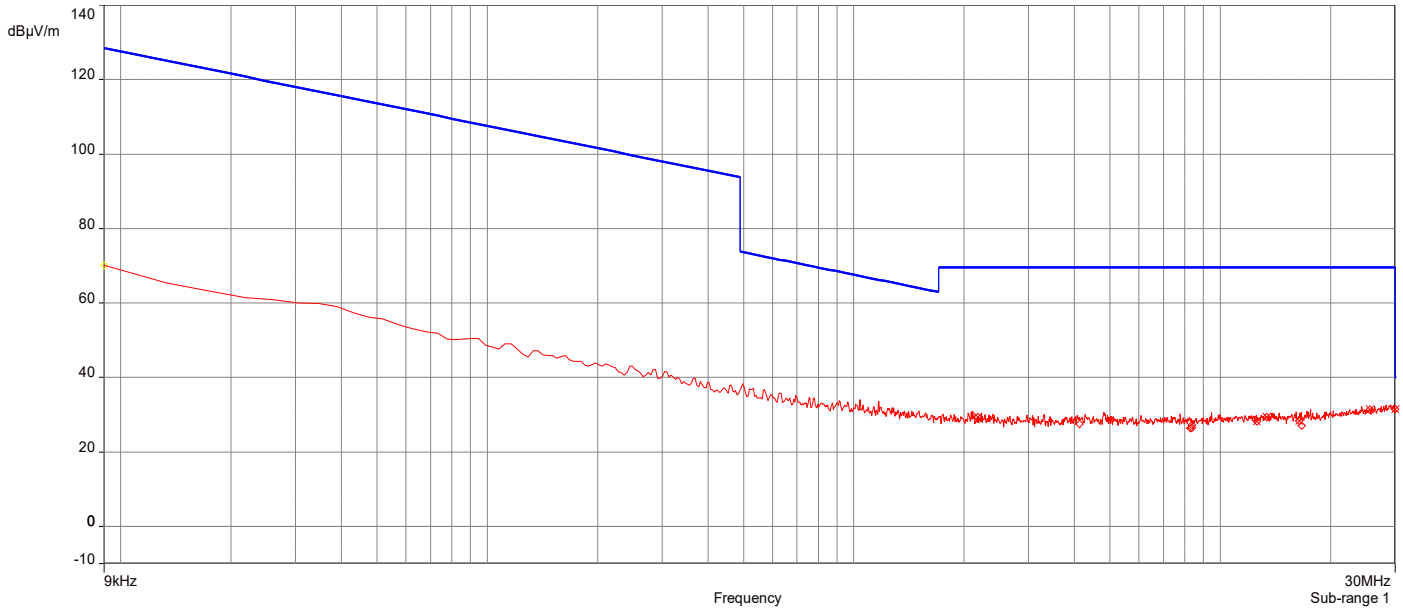
1. Level Q-Peak Reading (dBµV/m) = Raw Q-Peak Level + Correction Factor
2. Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain
3. Margin = Level Q-Peak Reading – Limit

AH22021401-HAR-004#3_5G UNII-3 802.11a_Ch 157_9kHz-30MHz_Parallel

3/19/2022 8:53:39 PM

No	Frequency (MHz)	Level Q-Peak Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1	2.181516MHz	29.37	19.21	69.54	-40.17	1.00	197.10	H/V	Passed
2	12.577024MHz	28.25	19.83	69.54	-41.29	1.00	8.10	H/V	Passed
3	13.391182MHz	29.34	19.85	69.54	-40.20	1.00	261.10	H/V	Passed
4	16.420706MHz	28.37	19.84	69.54	-41.17	1.00	76.40	H/V	Passed
5	25.560698MHz	31.33	20.88	69.54	-38.21	1.00	228.00	H/V	Passed
6	30MHz	31.53	21.95	40.00	-8.47	1.00	128.90	H/V	Passed

Overall Graphs:



Remarks:

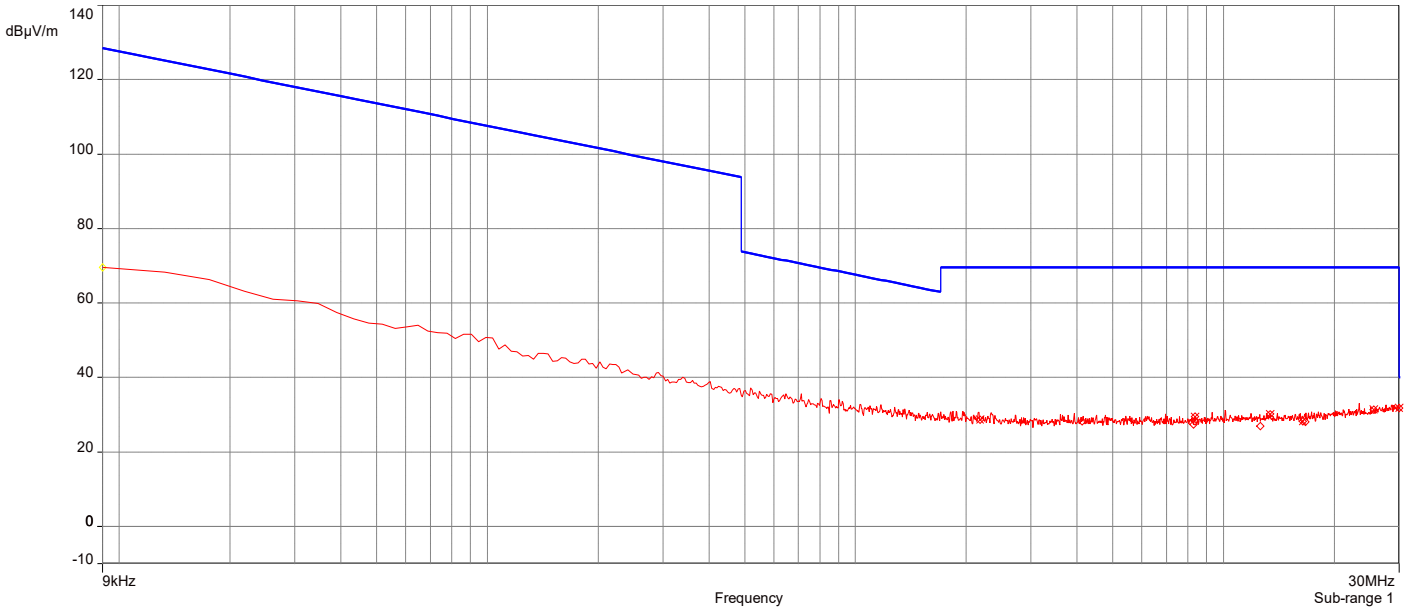
1. Level Q-Peak Reading (dBµV/m) = Raw Q-Peak Level + Correction Factor
2. Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain
3. Margin = Level Q-Peak Reading – Limit

AH22021401-HAR-004#3_5G UNII-3 802.11a_Ch 157_9kHz-30MHz_Perpendicular

3/19/2022 9:00:56 PM

No	Frequency (MHz)	Level Q-Peak Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1	2.177231MHz	28.67	19.21	69.54	-40.87	1.00	184.20	H/V	Passed
2	8.38197MHz	29.44	19.28	69.54	-40.10	1.00	323.00	H/V	Passed
3	13.374042MHz	30.26	19.85	69.54	-39.28	1.00	356.30	H/V	Passed
4	16.420706MHz	28.21	19.84	69.54	-41.33	1.00	309.90	H/V	Passed
5	25.612118MHz	31.31	20.89	69.54	-38.23	1.00	255.70	H/V	Passed
6	30MHz	31.76	21.95	40.00	-8.24	1.00	103.40	H/V	Passed

Overall Graphs:

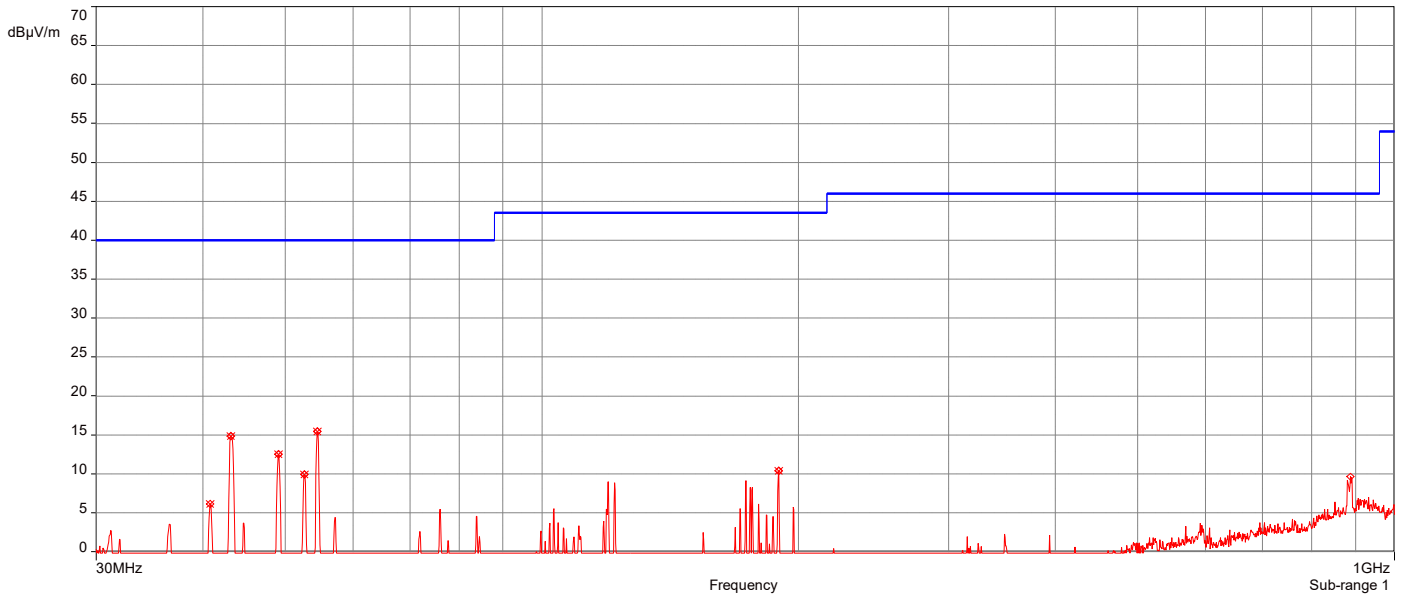


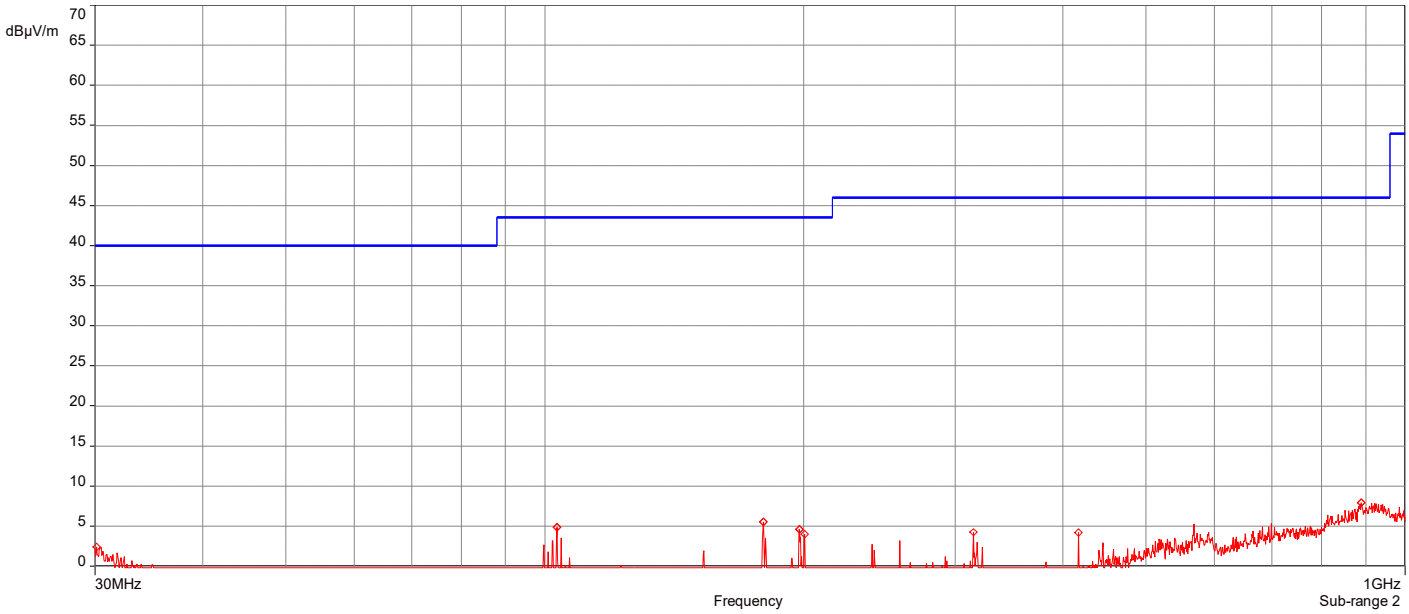
AH22021401-HAR-004#3_5G UNII-3 802.11a_Ch 149_30MHz-1GHz

3/9/2022 11:59:22 AM

No	Frequency (MHz)	Level Q-Peak Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1.	40.784752MHz	6.12	-12.79	40.00	-33.88	3.00	221.40	Vertical	Passed
2.	43.181364MHz	14.82	-14.27	40.00	-25.18	2.75	213.50	Vertical	Passed
3.	49.11583MHz	12.53	-17.38	40.00	-27.47	3.50	247.50	Vertical	Passed
4.	52.653686MHz	9.89	-18.25	40.00	-30.11	3.50	162.60	Vertical	Passed
5.	54.536737MHz	15.42	-19.10	40.00	-24.58	3.00	323.60	Vertical	Passed
6.	189.48879MHz	10.37	-15.43	43.50	-33.13	4.00	202.70	Vertical	Passed

Overall Graphs:





Remarks:

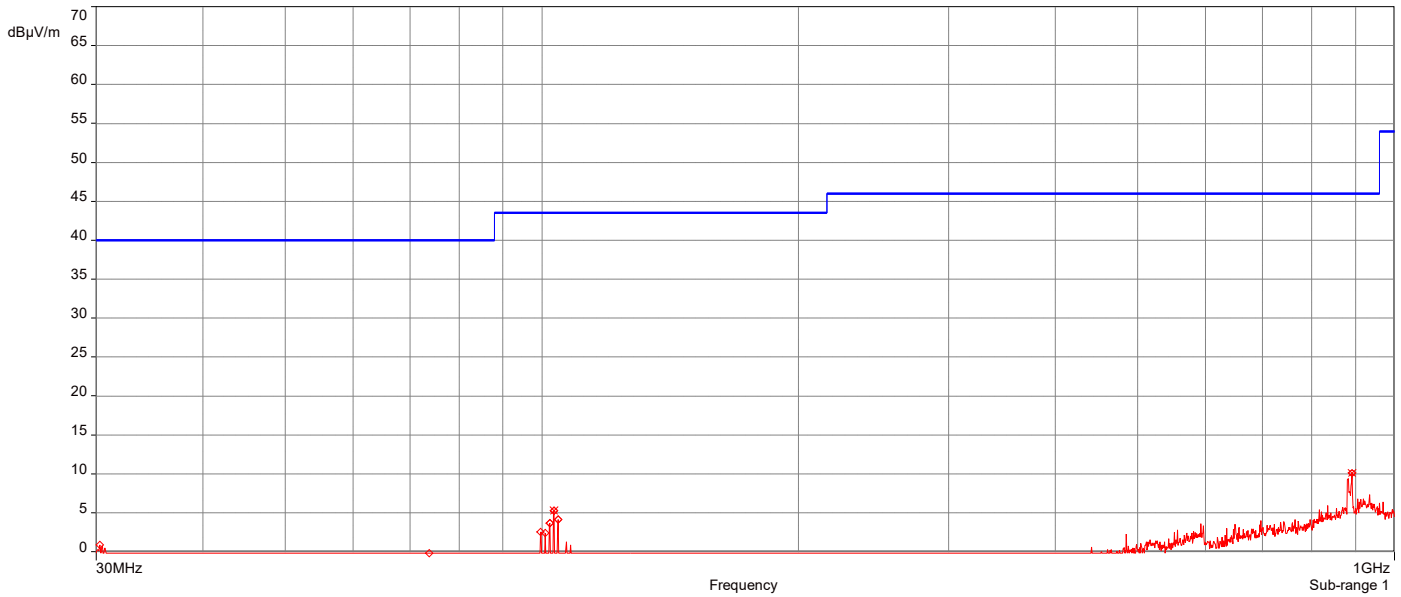
1. Level Q-Peak Reading (dBµV/m) = Raw Q-Peak Level + Correction Factor
2. Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain
3. Margin = Level Q-Peak Reading – Limit

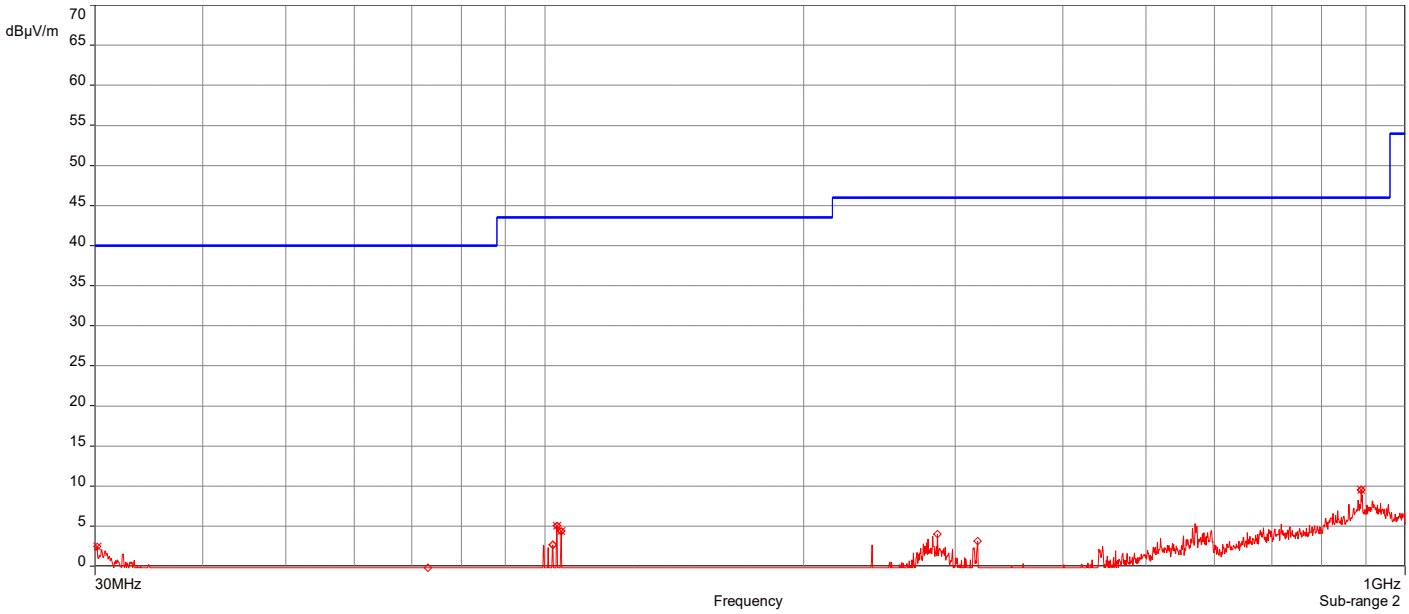
AH22021401-HAR-004#3_5G UNII-3 802.11a_Ch 157_30MHz-1GHz

3/9/2022 12:30:17 PM

No	Frequency (MHz)	Level Q-Peak Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1	103.26784MHz	5.27	-12.88	43.50	-38.23	1.00	304.30	Vertical	Passed
2	891.86717MHz	10.10	-1.36	46.00	-35.90	2.00	188.80	Vertical	Passed
3	30.171187MHz	2.45	-4.92	40.00	-37.55	2.50	45.60	Horizontal	Passed
4	103.26784MHz	5.08	-13.58	43.50	-38.42	3.25	32.40	Horizontal	Passed
5	104.40908MHz	4.38	-13.50	43.50	-39.12	2.75	19.80	Horizontal	Passed
6	889.4135MHz	9.49	-0.16	46.00	-36.51	1.75	223.50	Horizontal	Passed

Overall Graphs:





Remarks:

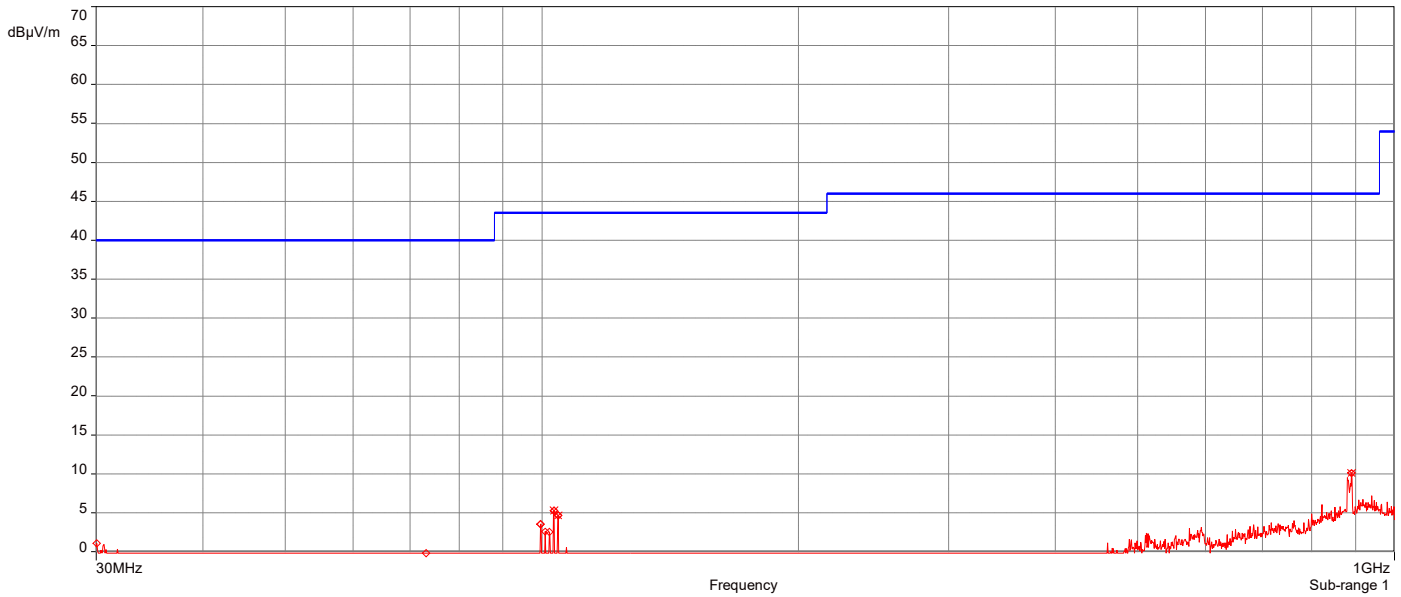
1. Level Q-Peak Reading (dBµV/m) = Raw Q-Peak Level + Correction Factor
2. Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain
3. Margin = Level Q-Peak Reading – Limit

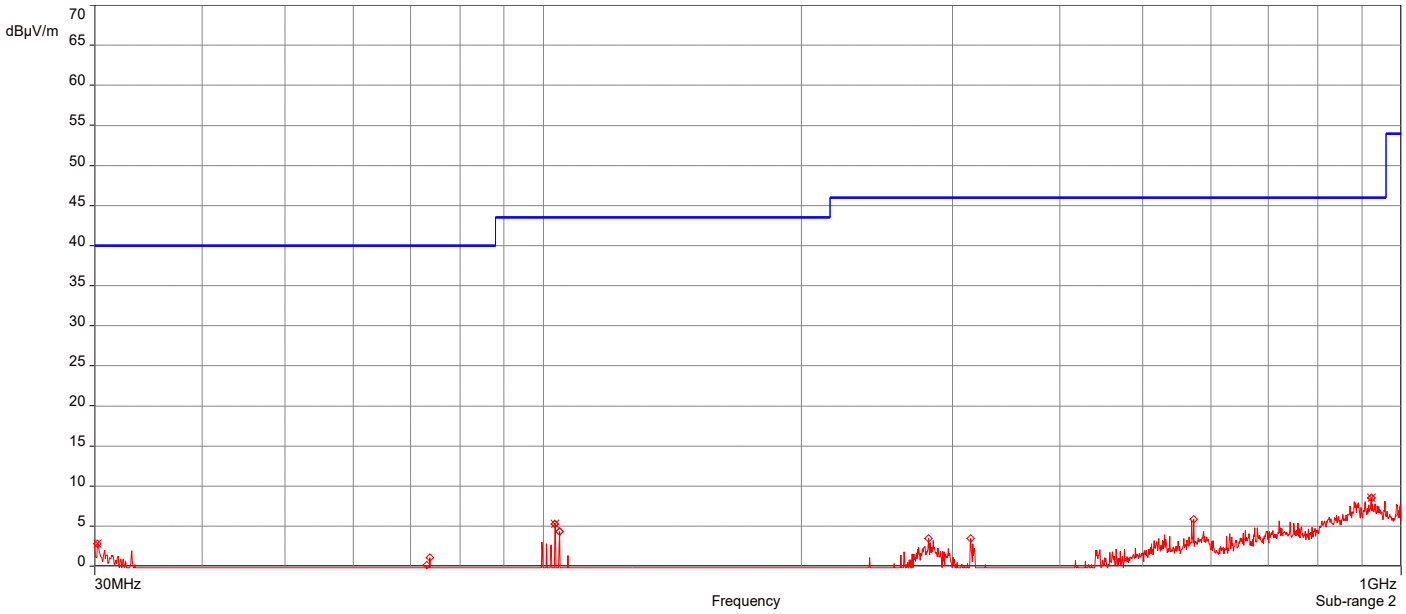
AH22021401-HAR-004#3_5G UNII-3 802.11a_Ch 165_30MHz-1GHz

3/9/2022 1:05:30 PM

No	Frequency (MHz)	Level Q-Peak Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1	103.26784MHz	5.25	-12.88	43.50	-38.25	1.00	295.70	Vertical	Passed
2	104.40908MHz	4.67	-12.80	43.50	-38.83	1.00	299.40	Vertical	Passed
3	890.78299MHz	10.11	-1.35	46.00	-35.89	2.00	190.60	Vertical	Passed
4	30.228249MHz	2.83	-4.96	40.00	-37.17	3.25	160.30	Horizontal	Passed
5	103.21078MHz	5.26	-13.59	43.50	-38.24	3.25	44.60	Horizontal	Passed
6	923.36549MHz	8.49	0.26	46.00	-37.51	1.75	288.60	Horizontal	Passed

Overall Graphs:





Remarks:

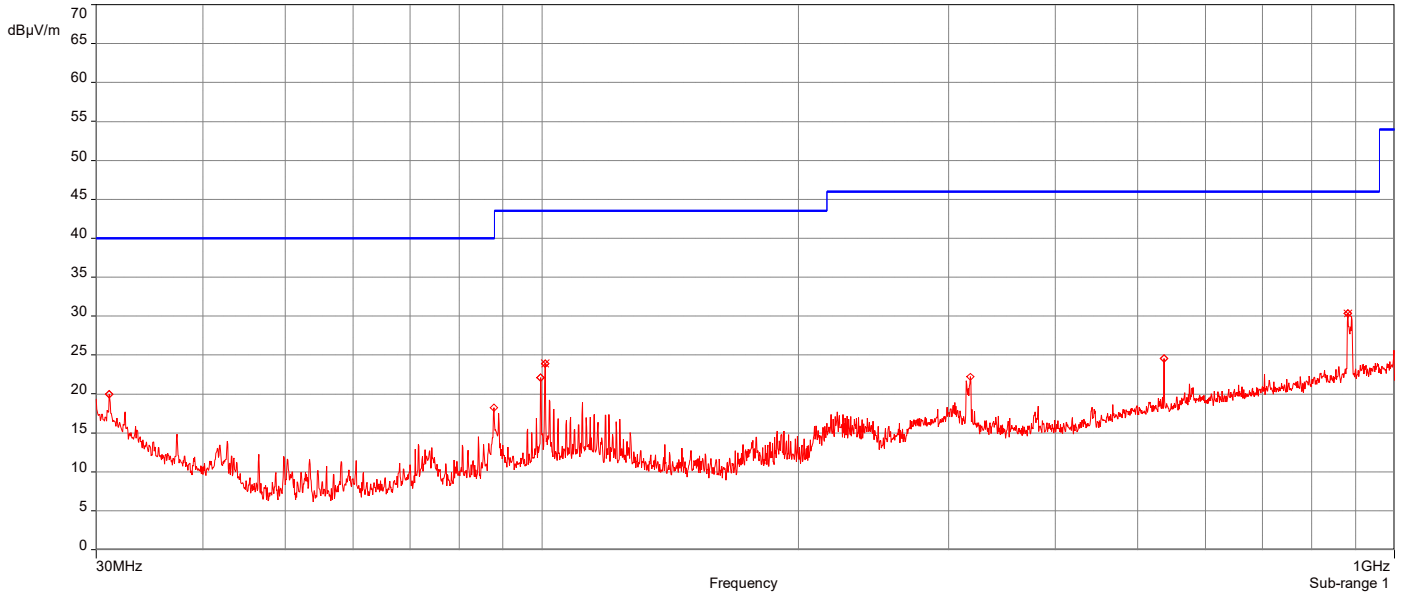
1. Level Q-Peak Reading (dBµV/m) = Raw Q-Peak Level + Correction Factor
2. Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain
3. Margin = Level Q-Peak Reading – Limit

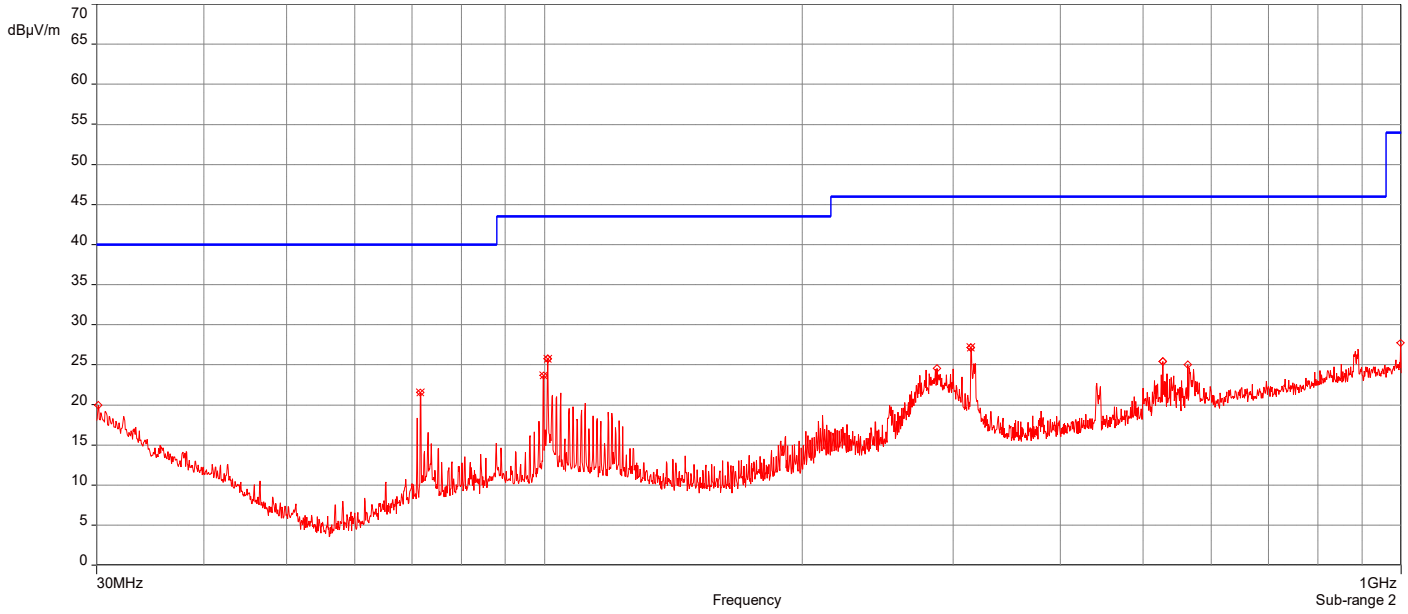
AH22021401-HAR-004#3_5G UNII-3 802.11ac_Ch 151_30MHz-1GHz

6/3/2022 14:41:38

No	Frequency (MHz)	Level Q-Peak Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1.	100.87123MHz	23.93	-12.75	43.50	-19.57	3.50	118.90	Vertical	Passed
2.	881.36773MHz	30.38	-1.55	46.00	-15.62	2.50	358.90	Vertical	Passed
3.	71.655391MHz	21.56	-15.67	40.00	-18.44	3.00	0.10	Horizontal	Passed
4.	99.729984MHz	23.69	-13.63	43.50	-19.81	2.00	39.30	Horizontal	Passed
5.	100.81417MHz	25.74	-13.57	43.50	-17.76	3.25	20.40	Horizontal	Passed
6.	314.74028MHz	27.17	-10.54	46.00	-18.83	1.25	262.70	Horizontal	Passed

Overall Graphs:





Remarks:

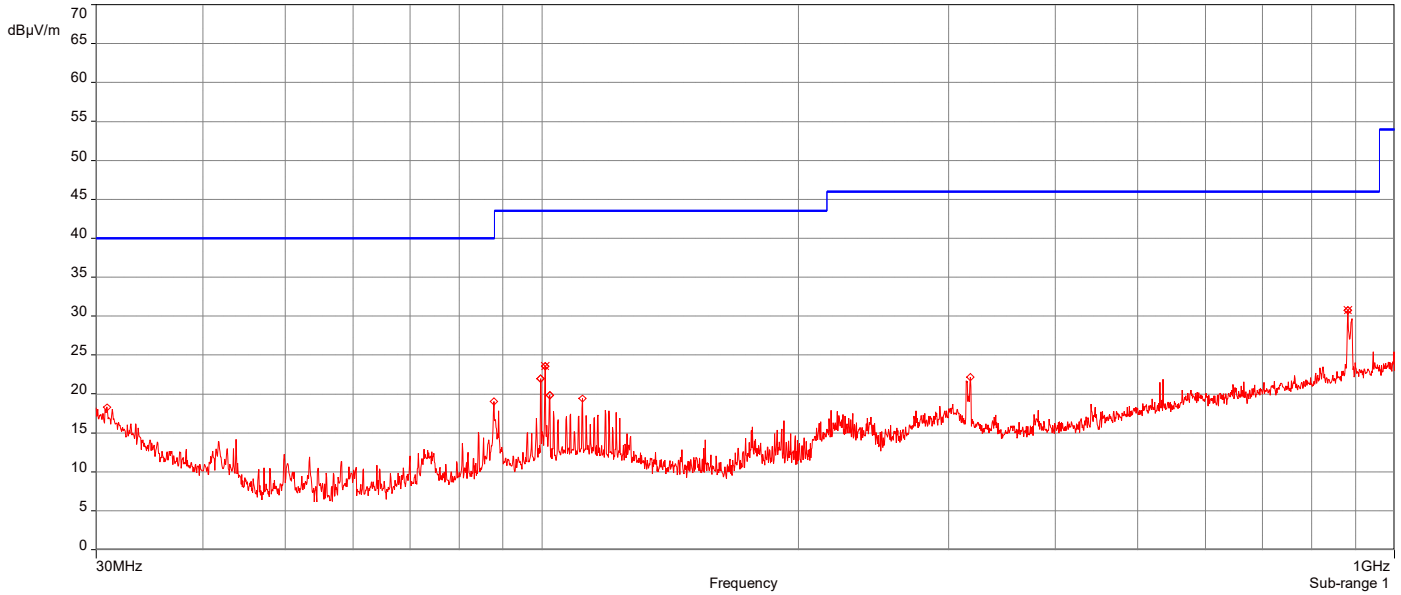
1. Level Q-Peak Reading (dBµV/m) = Raw Q-Peak Level + Correction Factor
2. Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain
3. Margin = Level Q-Peak Reading – Limit

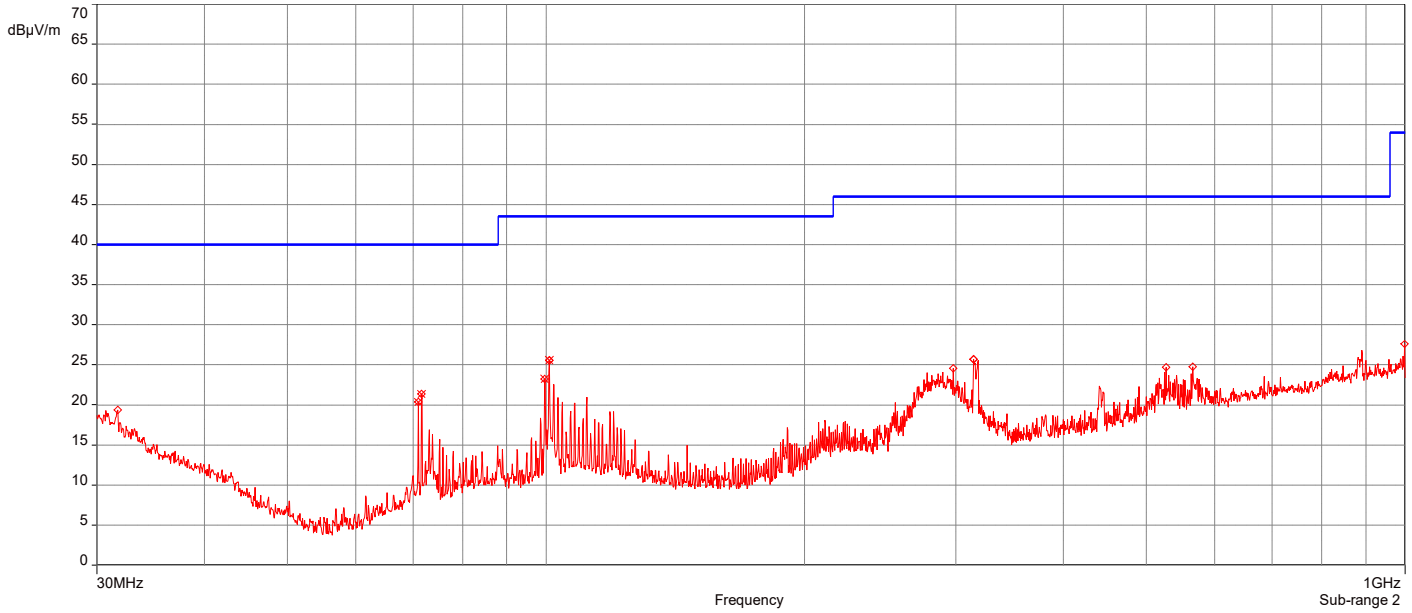
AH22021401-HAR-004#3_5G UNII-3 802.11ac_Ch 159_30MHz-1GHz

6/3/2022 15:03:15

No	Frequency (MHz)	Level Q-Peak Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1	100.81417MHz	23.58	-12.75	43.50	-19.92	1.00	294.00	Vertical	Passed
2	881.48185MHz	30.73	-1.55	46.00	-15.27	2.25	178.00	Vertical	Passed
3	70.970645MHz	20.38	-15.81	40.00	-19.62	2.50	0.10	Horizontal	Passed
4	71.655391MHz	21.39	-15.67	40.00	-18.61	2.50	0.10	Horizontal	Passed
5	99.672922MHz	23.21	-13.63	43.50	-20.29	2.50	37.60	Horizontal	Passed
6	100.87123MHz	25.57	-13.57	43.50	-17.93	3.00	12.40	Horizontal	Passed

Overall Graphs:





Remarks:

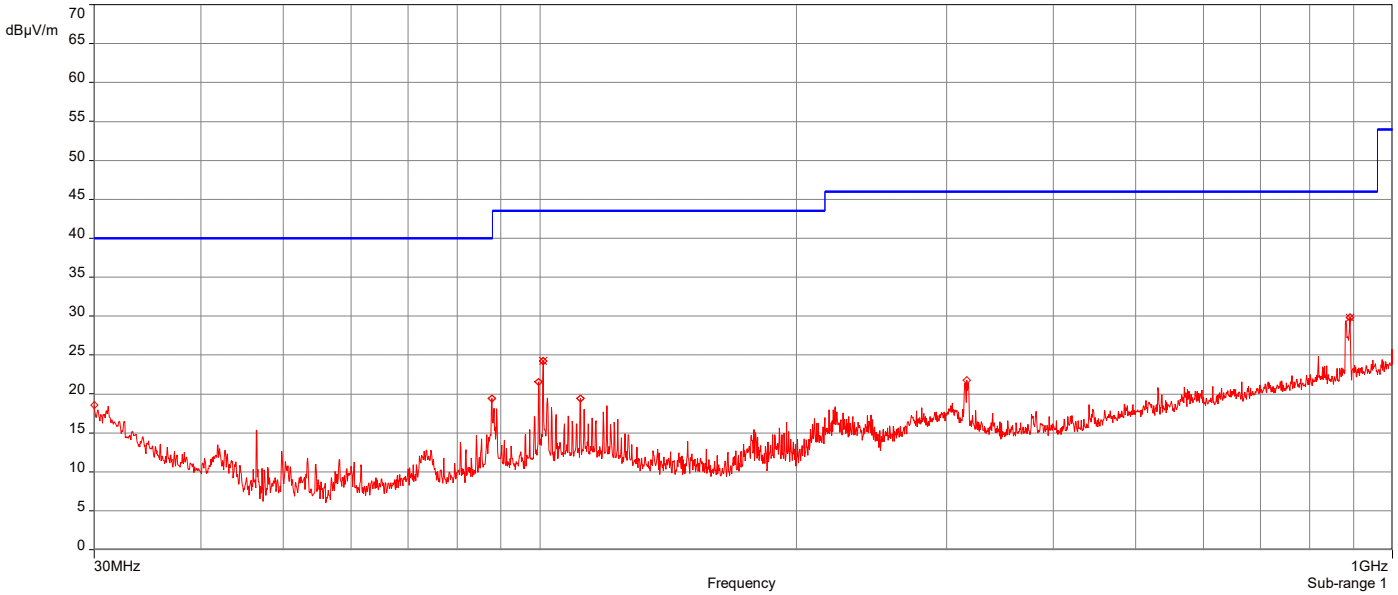
1. Level Q-Peak Reading (dBµV/m) = Raw Q-Peak Level + Correction Factor
2. Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain
3. Margin = Level Q-Peak Reading – Limit

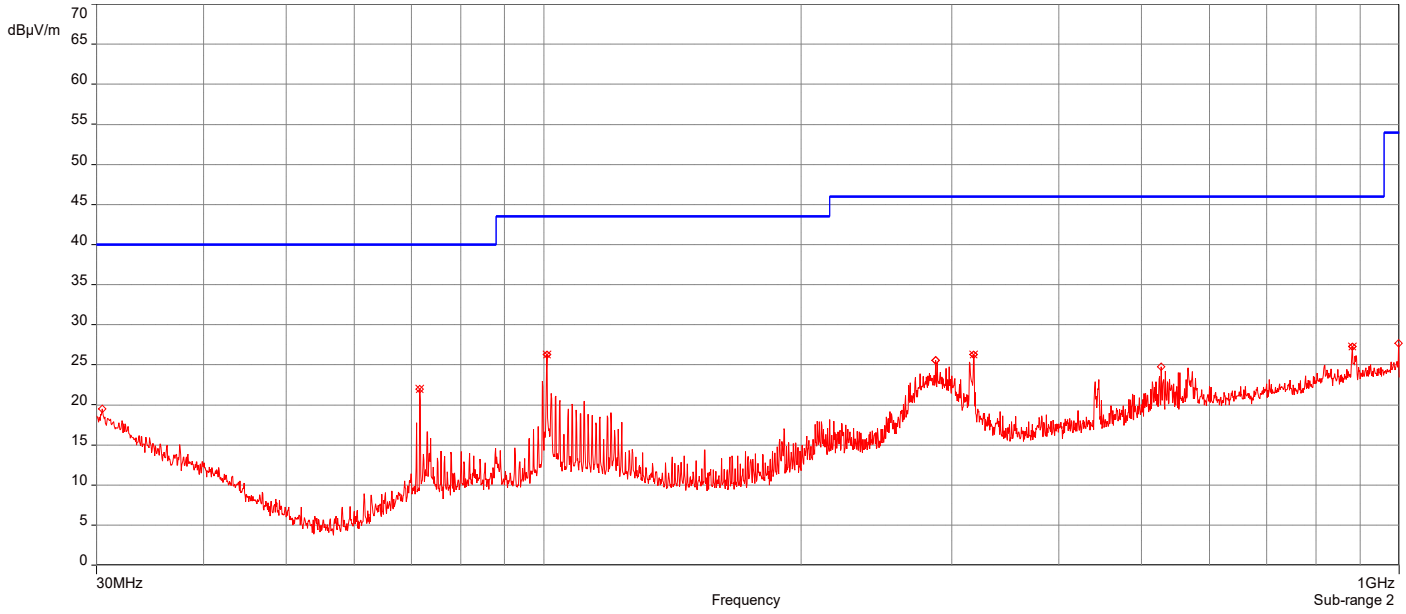
AH22021401-HAR-004#3_5G UNII-3 802.11ac_Ch 155_30MHz-1GHz

6/3/2022 15:25:38

No	Frequency (MHz)	Level Q-Peak Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1	100.87123MHz	24.21	-12.75	43.50	-19.29	4.00	126.90	Vertical	Passed
2	891.23948MHz	29.81	-1.62	46.00	-16.19	2.00	194.70	Vertical	Passed
3	71.655391MHz	21.95	-15.67	40.00	-18.05	2.50	0.10	Horizontal	Passed
4	100.81417MHz	26.30	-13.57	43.50	-17.20	3.00	25.60	Horizontal	Passed
5	318.10695MHz	26.32	-10.41	46.00	-19.68	1.25	263.20	Horizontal	Passed
6	881.99541MHz	27.26	-0.45	46.00	-18.74	1.75	226.20	Horizontal	Passed

Overall Graphs:





Remarks:

1. Level Q-Peak Reading (dBµV/m) = Raw Q-Peak Level + Correction Factor
2. Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain
3. Margin = Level Q-Peak Reading – Limit

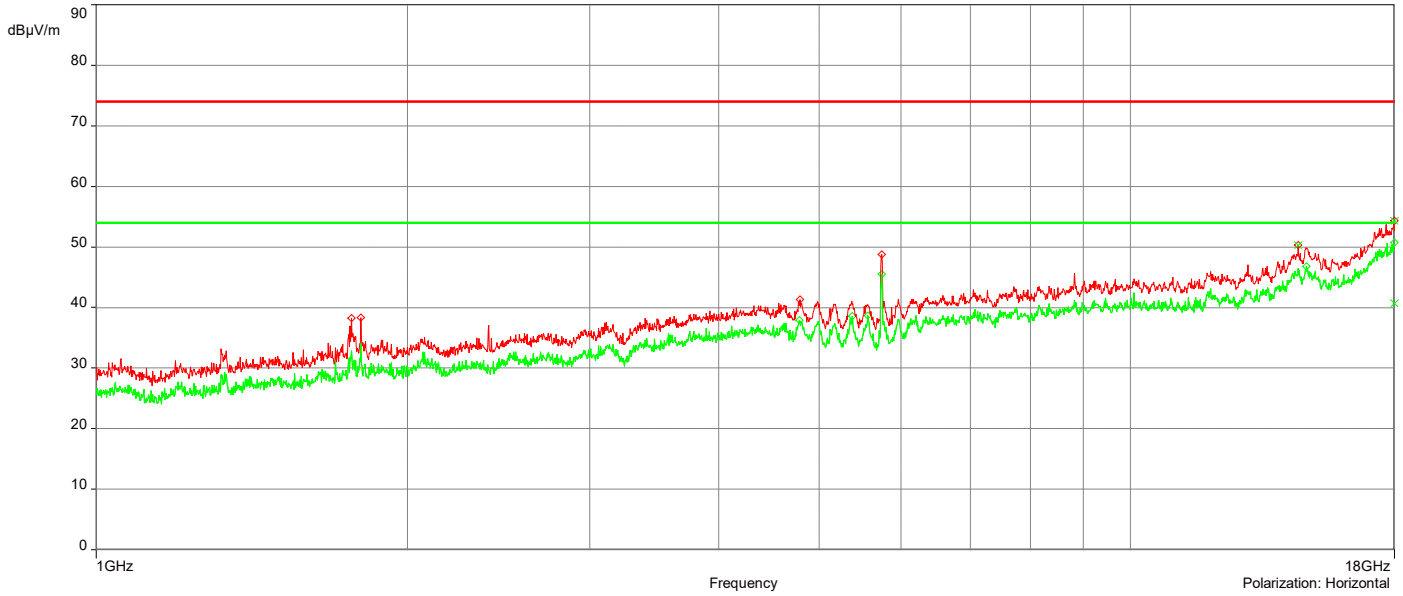
AH22021401-HAR-004#3_5G UNII-3 802.11a_Ch 149_1-18GHz

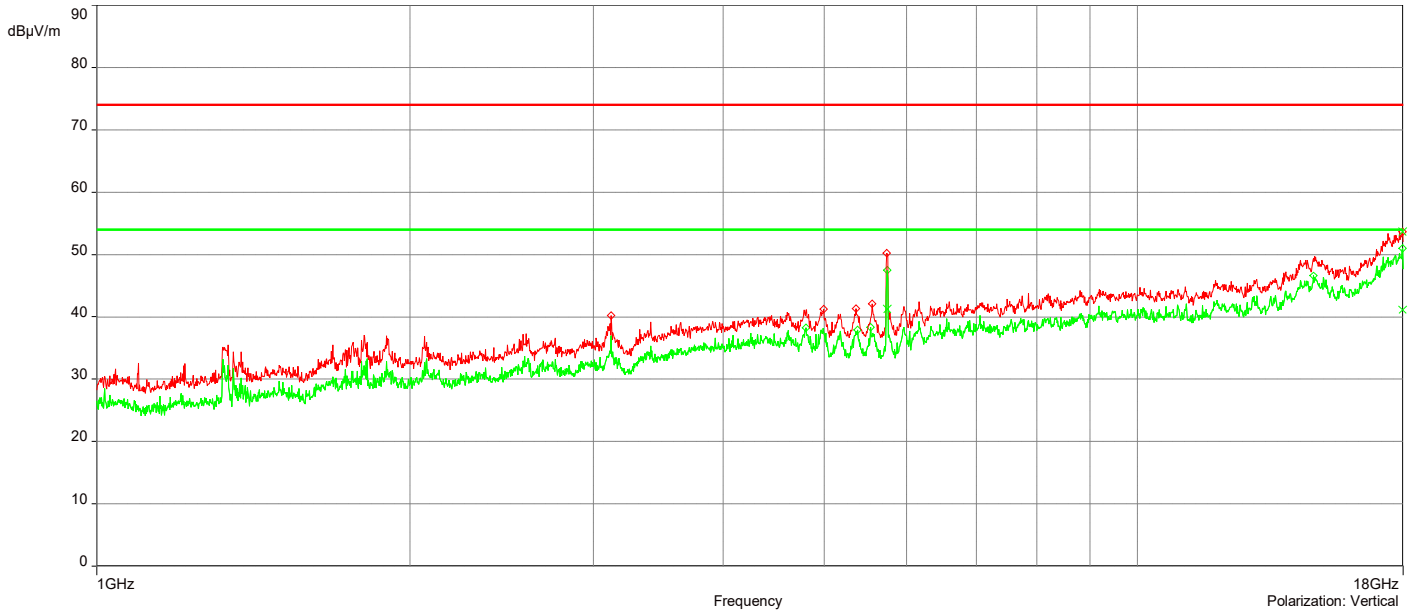
3/13/2022 3:38:06 PM

No	Frequency (MHz)	Level Peak Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1	17.974499GHz	53.63	19.24	74.00	-20.37	1.50	324.90	Vertical	Passed
2	14.518898GHz	50.27	14.28	74.00	-23.73	1.50	44.40	Horizontal	Passed
3	17.9905GHz	54.35	19.55	74.00	-19.65	2.00	159.30	Horizontal	Passed

No	Frequency (MHz)	Level Average Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgment
1	5.7476396GHz	41.22	3.94	54.00	-12.78	3.00	72.10	Vertical	Passed
2	17.982499GHz	41.14	19.37	54.00	-12.86	1.00	222.10	Vertical	Passed
3	17.995GHz	40.71	19.71	54.00	-13.29	2.50	108.10	Horizontal	Passed

Overall Graphs:





Remarks:

1 Level Peak Reading (dBµV/m) = Raw Peak Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Peak Reading – Limit

Remarks:

1 Level Average Reading (dBµV/m) = Raw Average Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Average Reading – Limit

AH22021401-HAR-004#3_5G UNII-3 802.11a_Ch 157_1-18GHz

3/13/2022 4:52:43 PM

No	Frequency (MHz)	Level Peak Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1	17.993GHz	54.14	19.65	74.00	-19.86	2.50	235.70	Vertical	Passed
2	14.829907GHz	49.84	15.19	74.00	-24.16	2.50	44.90	Horizontal	Passed
3	17.985GHz	53.92	19.40	74.00	-20.08	4.00	214.70	Horizontal	Passed

No	Frequency (MHz)	Level Average Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgment
1	14.872908GHz	35.92	14.41	54.00	-18.08	4.00	47.90	Vertical	Passed
2	17.964499GHz	40.89	19.13	54.00	-13.11	2.00	359.90	Vertical	Passed
3	17.478485GHz	38.93	17.50	54.00	-15.07	1.00	0.10	Horizontal	Passed

Overall Graphs:

Remarks:

1 Level Peak Reading (dBµV/m) = Raw Peak Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Peak Reading – Limit

Remarks:

1 Level Average Reading (dBµV/m) = Raw Average Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Average Reading – Limit

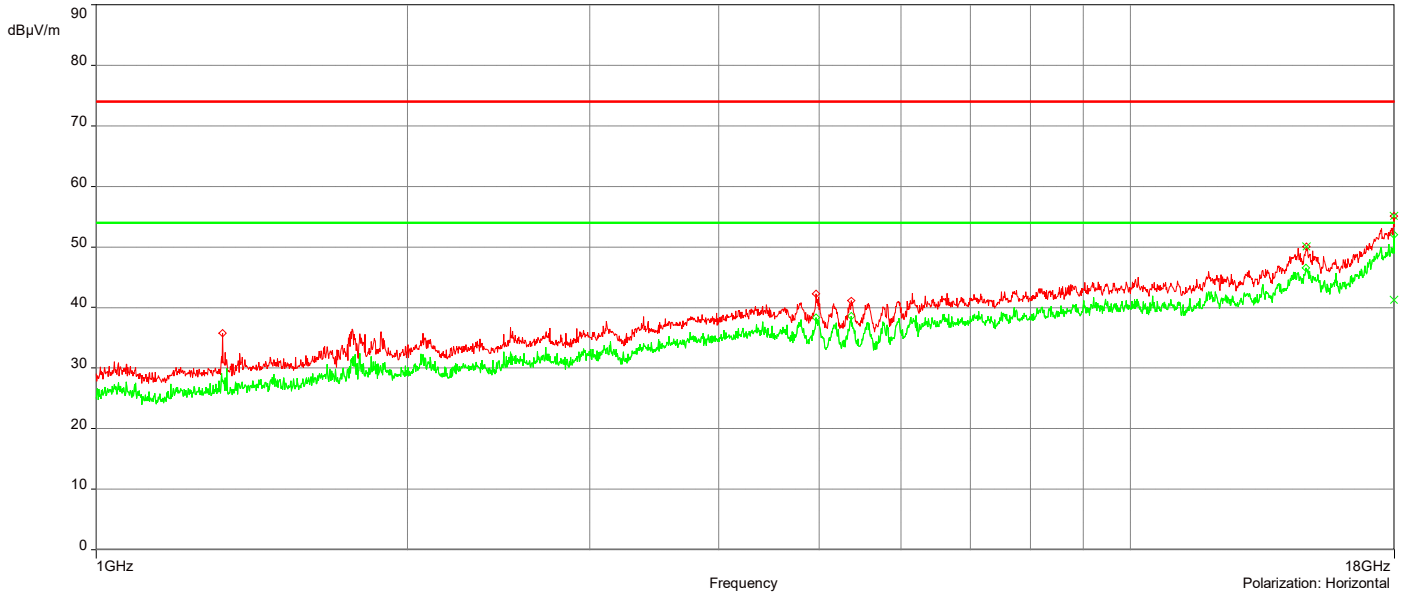
AH22021401-HAR-004#3_5G UNII-3 802.11a_Ch 165_1-18GHz

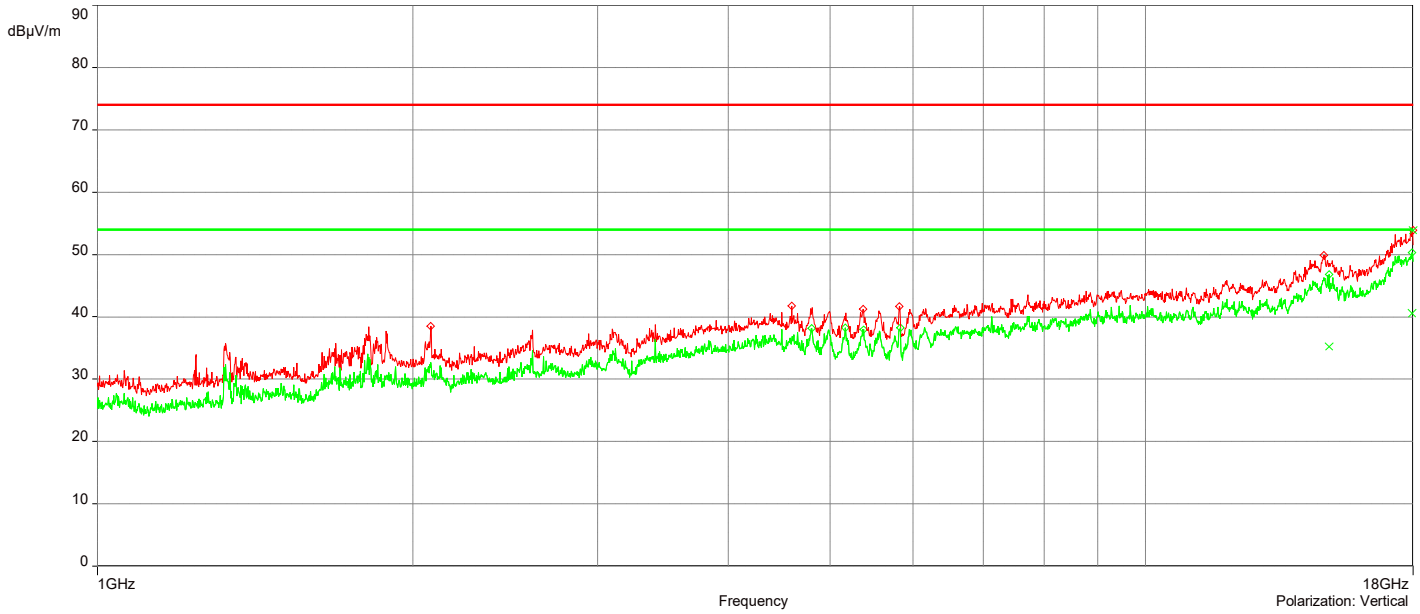
3/13/2022 5:24:59 PM

No	Frequency (MHz)	Level Peak Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1	17.994GHz	53.94	19.68	74.00	-20.06	2.00	235.90	Vertical	Passed
2	14.797406GHz	50.05	14.87	74.00	-23.95	3.00	0.10	Horizontal	Passed
3	17.99GHz	55.08	19.54	74.00	-18.92	3.50	314.10	Horizontal	Passed

No	Frequency (MHz)	Level Average Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgment
1	14.961911GHz	35.27	13.35	54.00	-18.73	1.00	21.10	Vertical	Passed
2	17.954999GHz	40.53	18.91	54.00	-13.47	3.00	196.10	Vertical	Passed
3	17.99GHz	41.27	19.54	54.00	-12.73	3.50	314.10	Horizontal	Passed

Overall Graphs:





Remarks:

1 Level Peak Reading (dBµV/m) = Raw Peak Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Peak Reading – Limit

Remarks:

1 Level Average Reading (dBµV/m) = Raw Average Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Average Reading – Limit

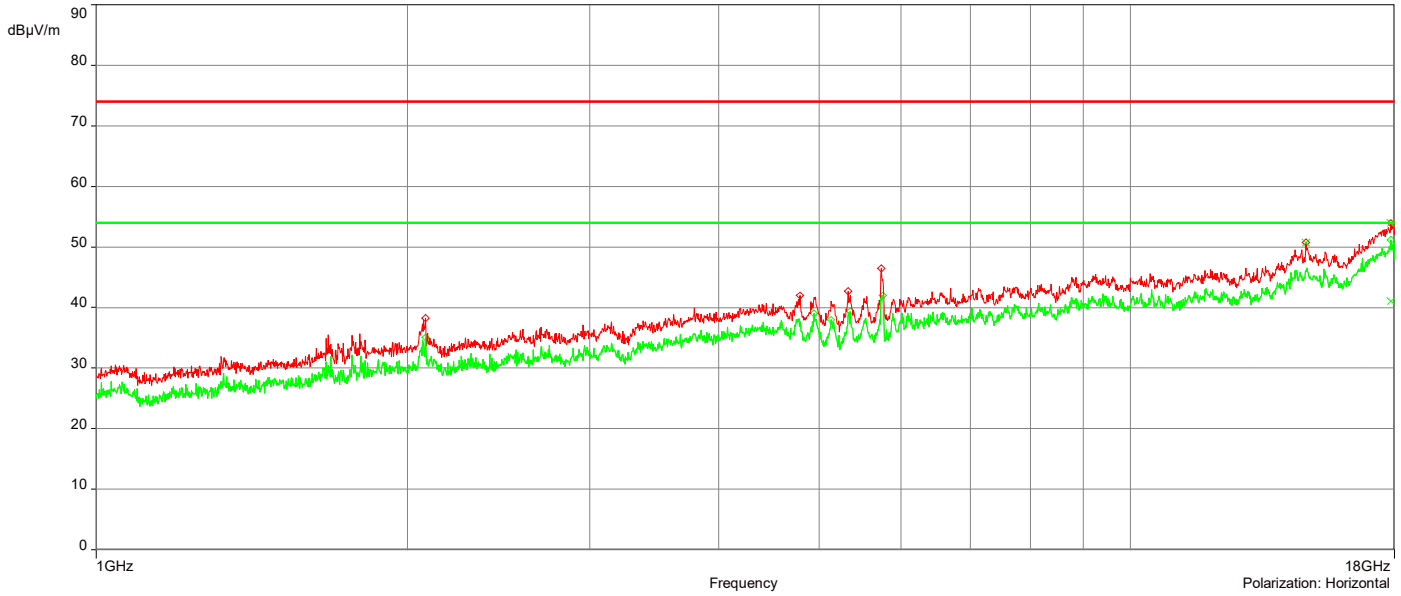
AH22021401-HAR-004#3_5G UNII-3 802.11ac_Ch 151_1-18GHz

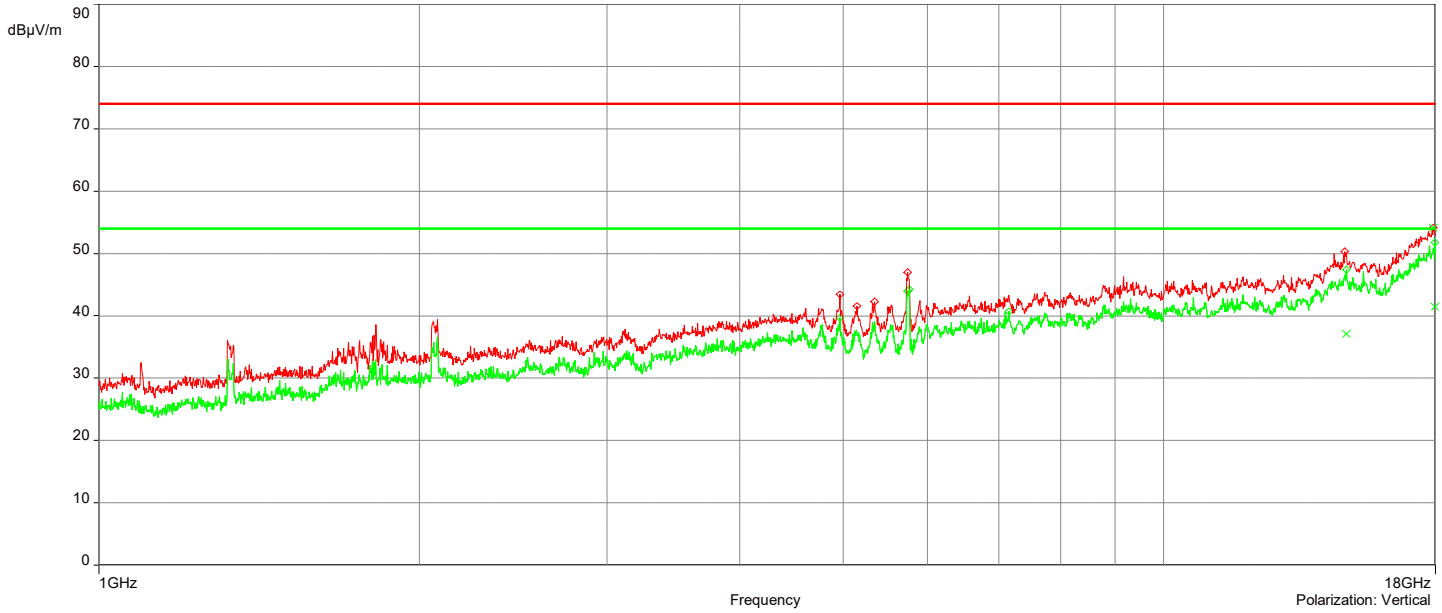
6/2/2022 13:22:34

No	Frequency (MHz)	Level Peak Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1	17.923998GHz	54.13	20.06	74.00	-19.87	1.00	322.80	Vertical	Passed
2	14.785905GHz	50.70	14.91	74.00	-23.30	3.00	102.80	Horizontal	Passed
3	17.859996GHz	54.02	19.68	74.00	-19.98	4.00	273.10	Horizontal	Passed

No	Frequency (MHz)	Level Average Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgment
1	14.850907GHz	37.12	15.03	54.00	-16.88	3.00	29.10	Vertical	Passed
2	17.972499GHz	41.48	20.29	54.00	-12.52	2.00	45.90	Vertical	Passed
3	17.859996GHz	41.10	19.68	54.00	-12.90	4.00	273.10	Horizontal	Passed

Overall Graphs:





Remarks:

1 Level Peak Reading (dBµV/m) = Raw Peak Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Peak Reading – Limit

Remarks:

1 Level Average Reading (dBµV/m) = Raw Average Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Average Reading – Limit

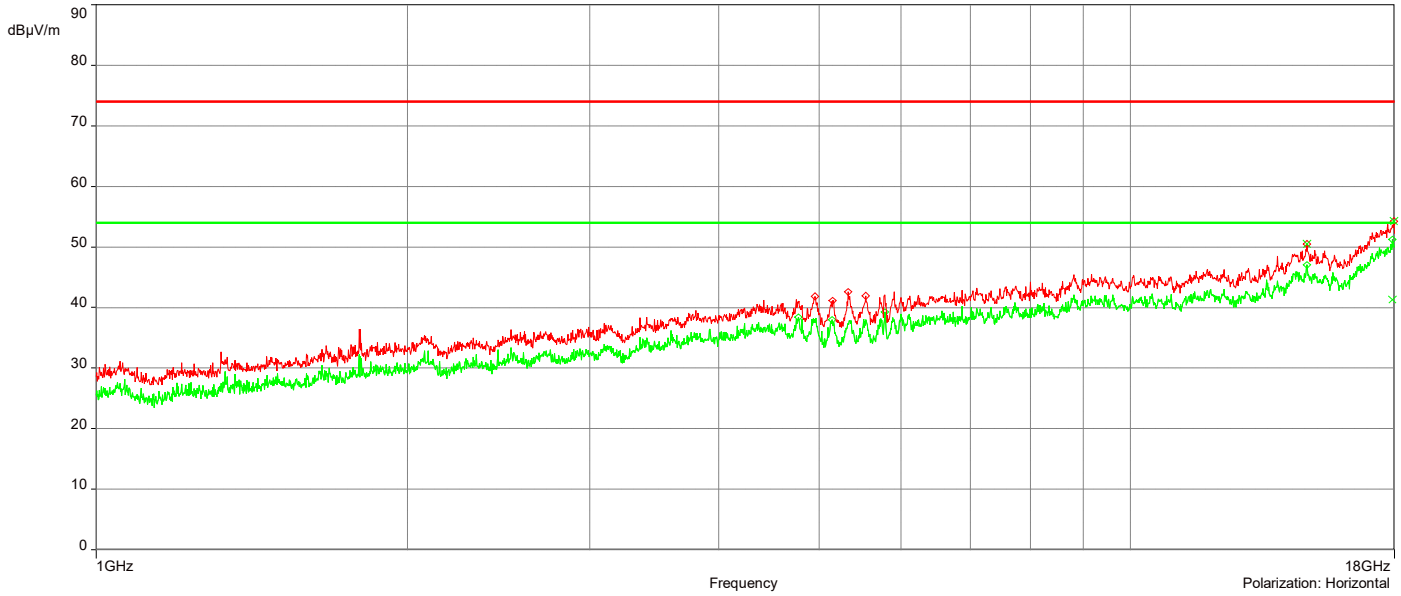
AH22021401-HAR-004#3_5G UNII-3 802.11ac_Ch 159_1-18GHz

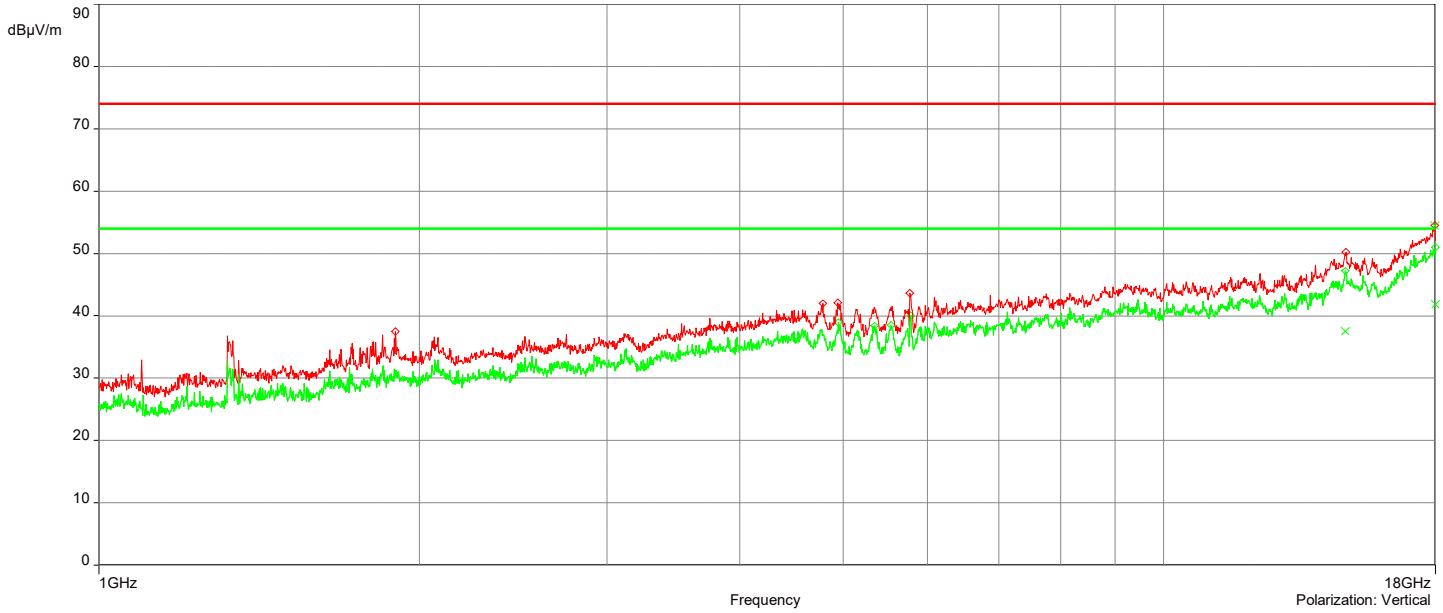
6/2/2022 14:05:07

No	Frequency (MHz)	Level Peak Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1	17.9835GHz	54.48	20.35	74.00	-19.52	3.00	15.60	Vertical	Passed
2	14.811906GHz	50.44	15.18	74.00	-23.56	3.00	183.10	Horizontal	Passed
3	17.980999GHz	54.26	20.30	74.00	-19.74	4.00	154.70	Horizontal	Passed

No	Frequency (MHz)	Level Average Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgment
1	14.805906GHz	37.54	15.00	54.00	-16.46	2.50	154.10	Vertical	Passed
2	17.995GHz	41.84	20.42	54.00	-12.16	1.50	50.10	Vertical	Passed
3	17.919498GHz	41.32	20.05	54.00	-12.68	2.50	156.90	Horizontal	Passed

Overall Graphs:





Remarks:

1 Level Peak Reading (dBµV/m) = Raw Peak Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Peak Reading – Limit

Remarks:

1 Level Average Reading (dBµV/m) = Raw Average Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Average Reading – Limit

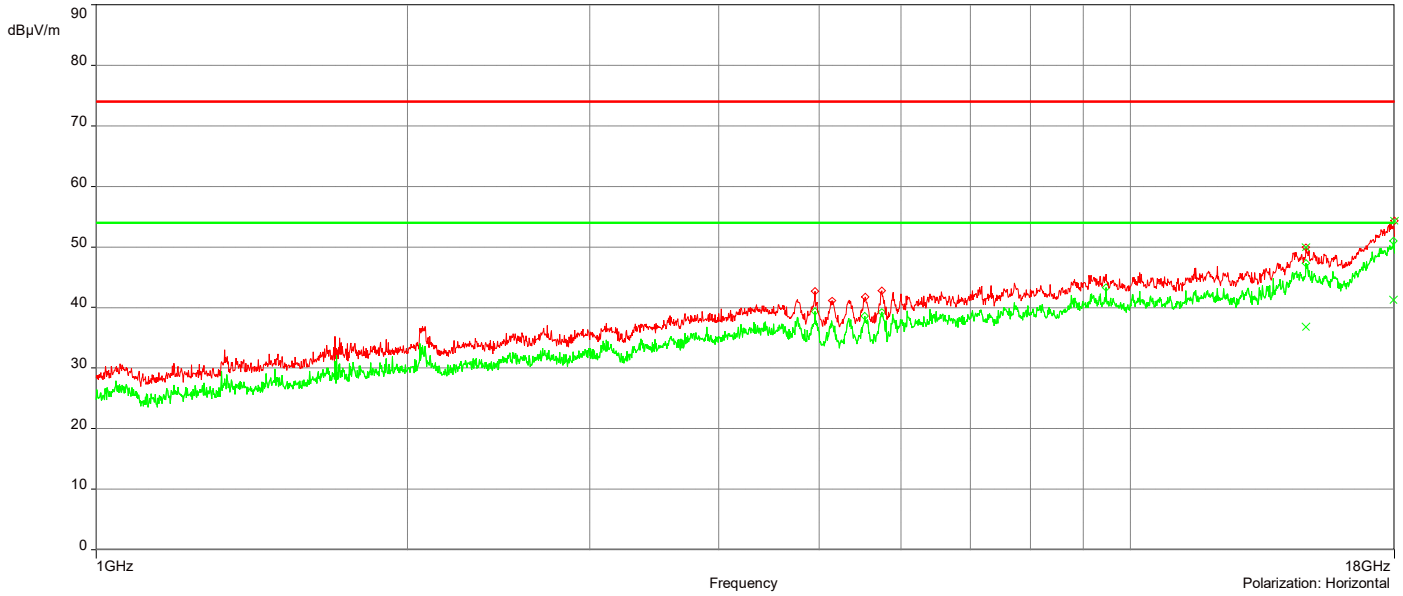
AH22021401-HAR-004#3_5G UNII-3 802.11ac_Ch 155_1-18GHz

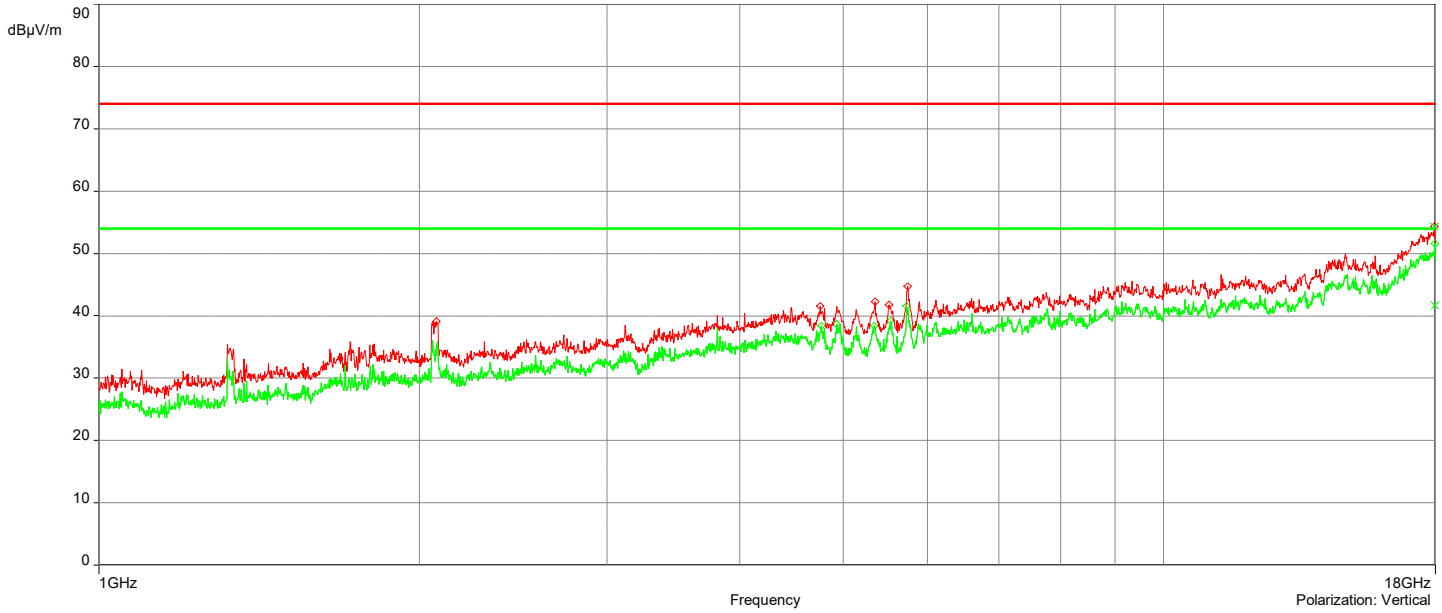
6/2/2022 14:27:24

No	Frequency (MHz)	Level Peak Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1	17.966499GHz	54.34	20.26	74.00	-19.66	1.00	35.40	Vertical	Passed
2	14.772905GHz	50.00	14.78	74.00	-24.00	3.50	80.20	Horizontal	Passed
3	17.9925GHz	54.34	20.38	74.00	-19.66	3.50	307.50	Horizontal	Passed

No	Frequency (MHz)	Level Average Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgment
1	17.986GHz	41.66	20.37	54.00	-12.34	3.00	130.90	Vertical	Passed
2	14.772905GHz	36.80	14.78	54.00	-17.20	3.50	80.20	Horizontal	Passed
3	17.955499GHz	41.26	20.20	54.00	-12.74	3.00	355.90	Horizontal	Passed

Overall Graphs:





Remarks:

1 Level Peak Reading (dBµV/m) = Raw Peak Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Peak Reading – Limit

Remarks:

1 Level Average Reading (dBµV/m) = Raw Average Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Average Reading – Limit

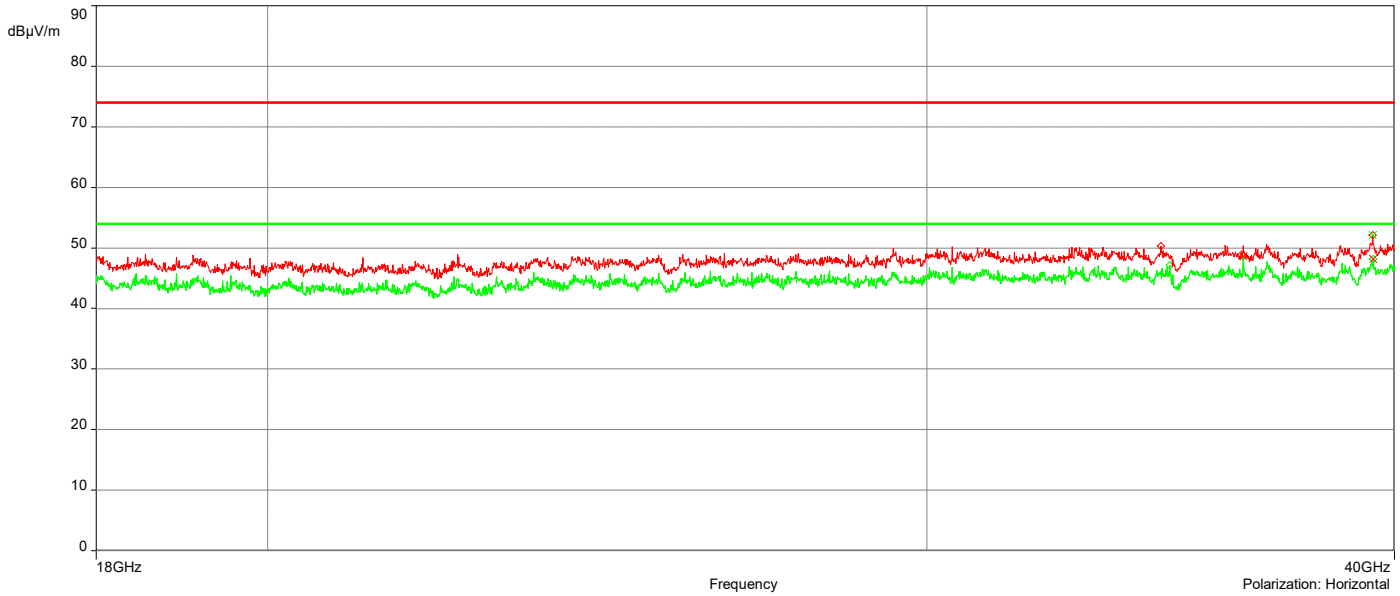
AH22021401-HAR-004#3_5G UNII-3 802.11a_Ch 149_18-40GHz

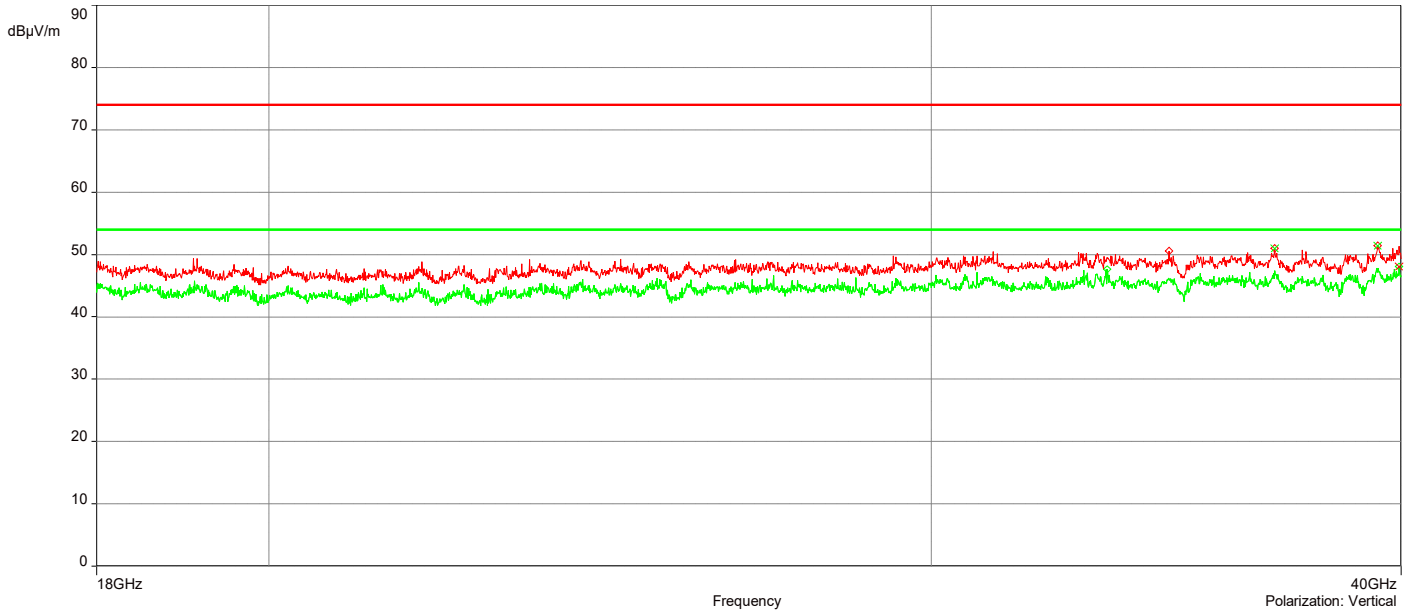
3/17/2022 6:06:05 PM

No	Frequency (MHz)	Level Peak Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1	37.023932GHz	50.99	2.93	74.00	-23.01	2.46	112.40	Vertical	Passed
2	39.429987GHz	51.44	5.70	74.00	-22.56	1.67	112.40	Vertical	Passed
3	39.473988GHz	52.09	5.82	74.00	-21.91	2.12	0	Horizontal	Passed

No	Frequency (MHz)	Level Average Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgment
1	39.955499GHz	48.06	5.83	54.00	-5.94	2.14	247.40	Vertical	Passed
2	36.444419GHz	48.58	3.14	54.00	-5.42	1.95	157.40	Horizontal	Passed
3	39.484988GHz	48.15	5.81	54.00	-5.85	3.55	157.40	Horizontal	Passed

Overall Graphs:





Remarks:

1 Level Peak Reading (dBµV/m) = Raw Peak Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Peak Reading – Limit

Remarks:

1 Level Average Reading (dBµV/m) = Raw Average Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Average Reading – Limit

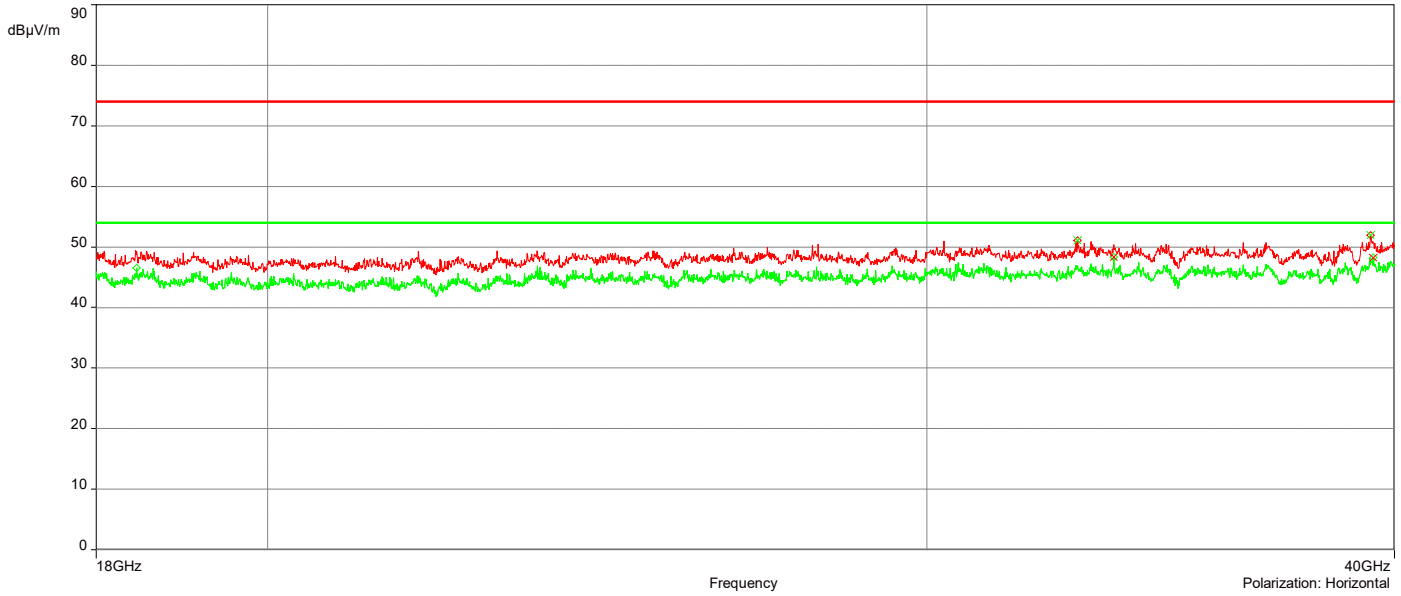
AH22021401-HAR-004#3_5G UNII-3 802.11a_Ch 157_18-40GHz

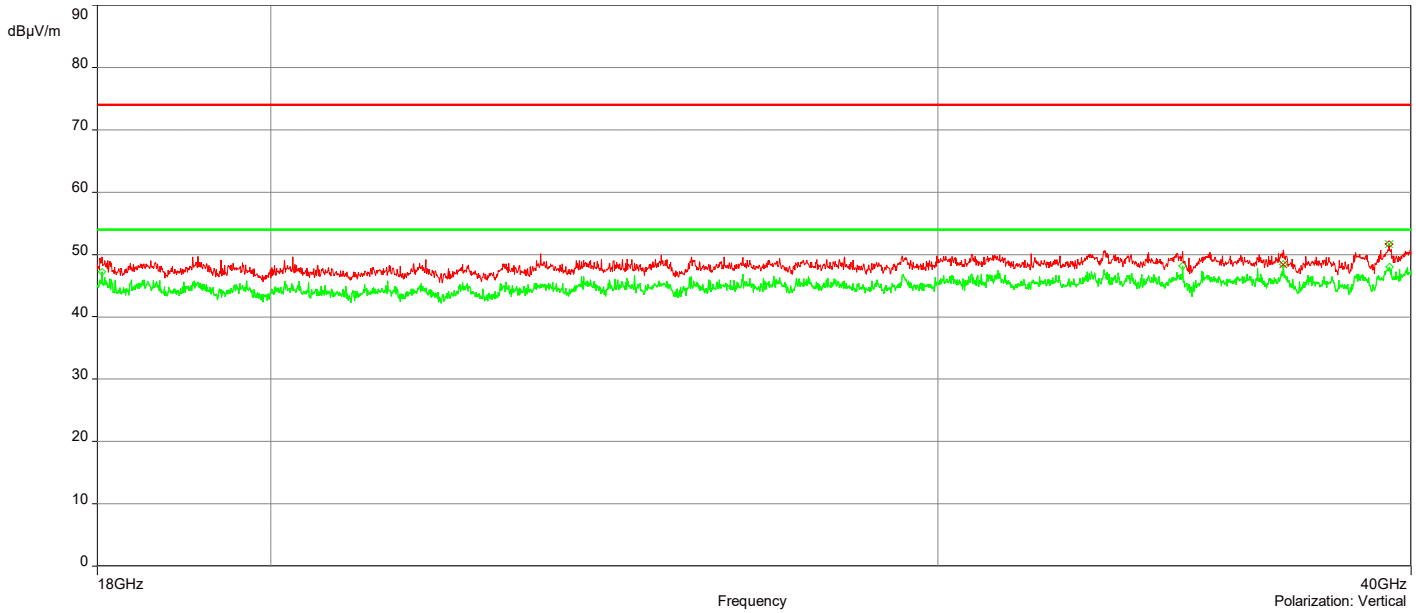
3/18/2022 10:32:18 AM

No	Frequency (MHz)	Level Peak Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
4.	39.465988GHz	51.69	5.95	74.00	-22.31	3.62	315.10	Vertical	Passed
5.	32.920339GHz	51.11	5.82	74.00	-22.89	1.33	270.10	Horizontal	Passed
6.	39.416987GHz	51.94	5.46	74.00	-22.06	1.98	292.60	Horizontal	Passed

No	Frequency (MHz)	Level Average Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgment
4.	37.010932GHz	48.45	2.95	54.00	-5.55	1.63	22.60	Vertical	Passed
5.	33.655356GHz	48.35	4.95	54.00	-5.65	1.00	202.50	Horizontal	Passed
6.	39.480488GHz	48.26	5.82	54.00	-5.74	1.77	180.20	Horizontal	Passed

Overall Graphs:





Remarks:

1 Level Peak Reading (dBµV/m) = Raw Peak Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Peak Reading – Limit

Remarks:

1 Level Average Reading (dBµV/m) = Raw Average Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Average Reading – Limit

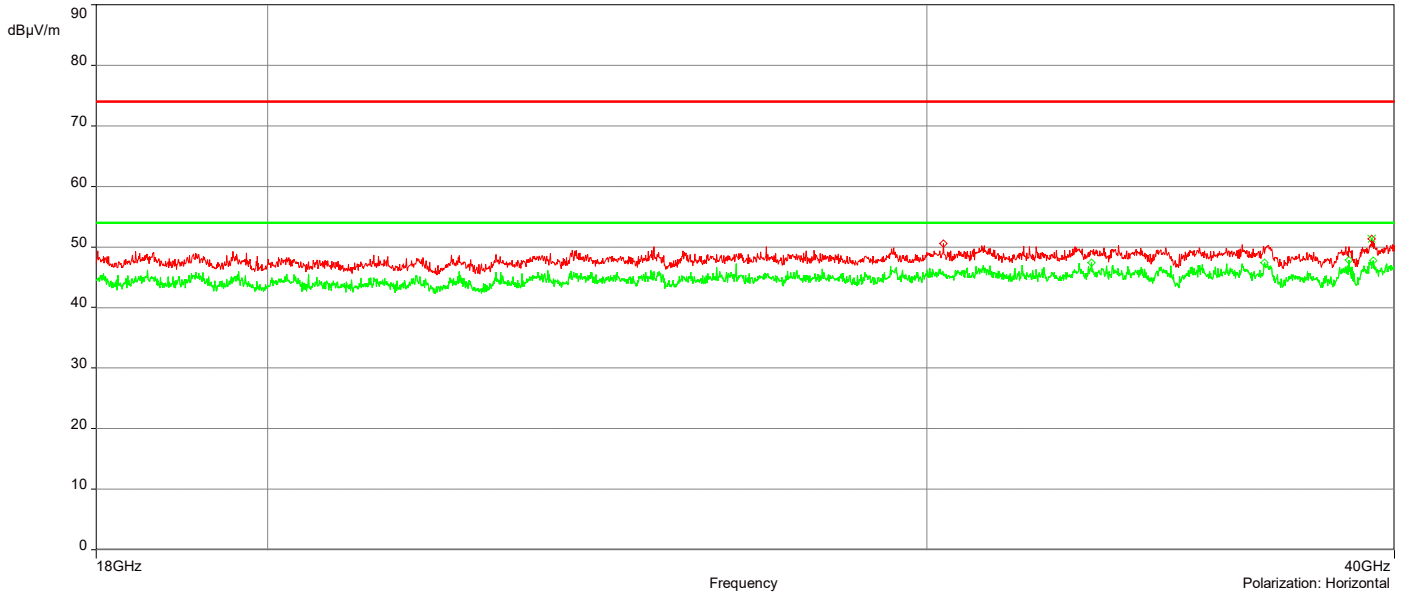
AH22021401-HAR-004#3_5G UNII-3 802.11a_Ch 165_18-40GHz

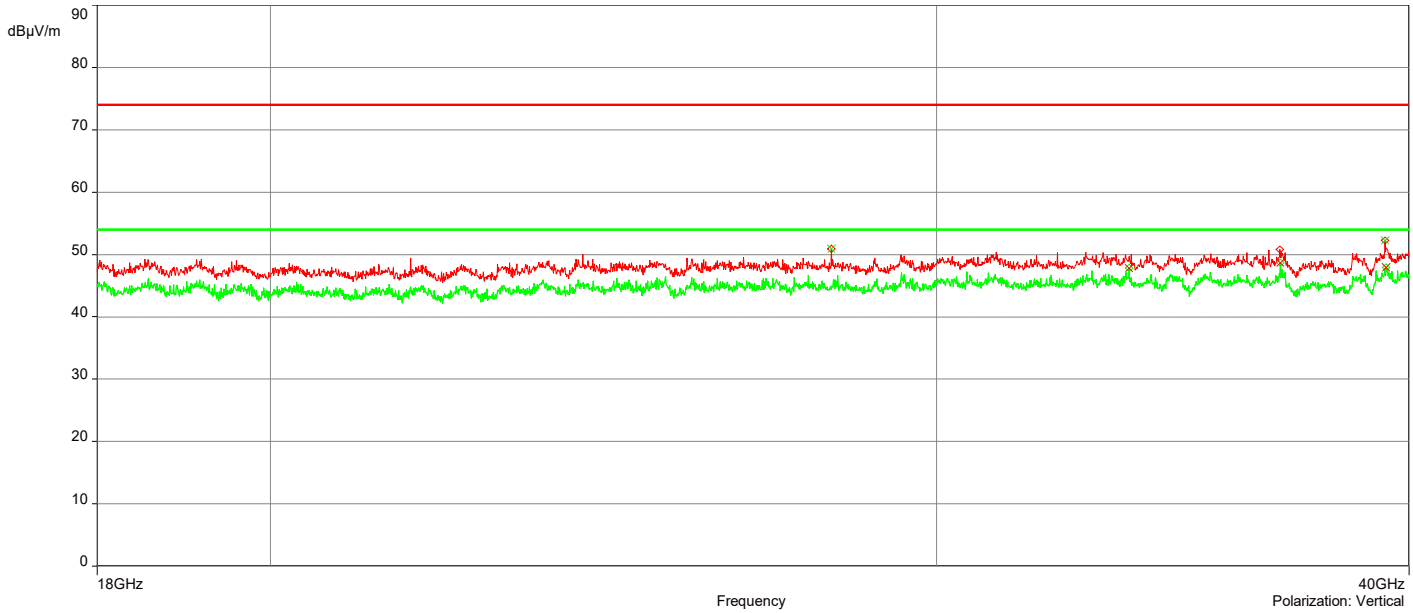
3/18/2022 11:05:03 AM

No	Frequency (MHz)	Level Peak Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
7.	28.144731GHz	50.87	5.72	74.00	-23.13	1.34	157.40	Vertical	Passed
8.	39.414487GHz	52.30	5.49	74.00	-21.70	3.28	247.40	Vertical	Passed
9.	39.447487GHz	51.34	5.85	74.00	-22.66	1.49	337.40	Horizontal	Passed

No	Frequency (MHz)	Level Average Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgment
7.	33.732358GHz	47.82	4.89	54.00	-6.18	2.09	0.10	Vertical	Passed
8.	36.990932GHz	48.70	2.99	54.00	-5.30	4.00	0.10	Vertical	Passed
9.	39.439487GHz	47.90	5.83	54.00	-6.10	4.00	134.90	Vertical	Passed

Overall Graphs:





Remarks:

1 Level Peak Reading (dBµV/m) = Raw Peak Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Peak Reading – Limit

Remarks:

1 Level Average Reading (dBµV/m) = Raw Average Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Average Reading – Limit

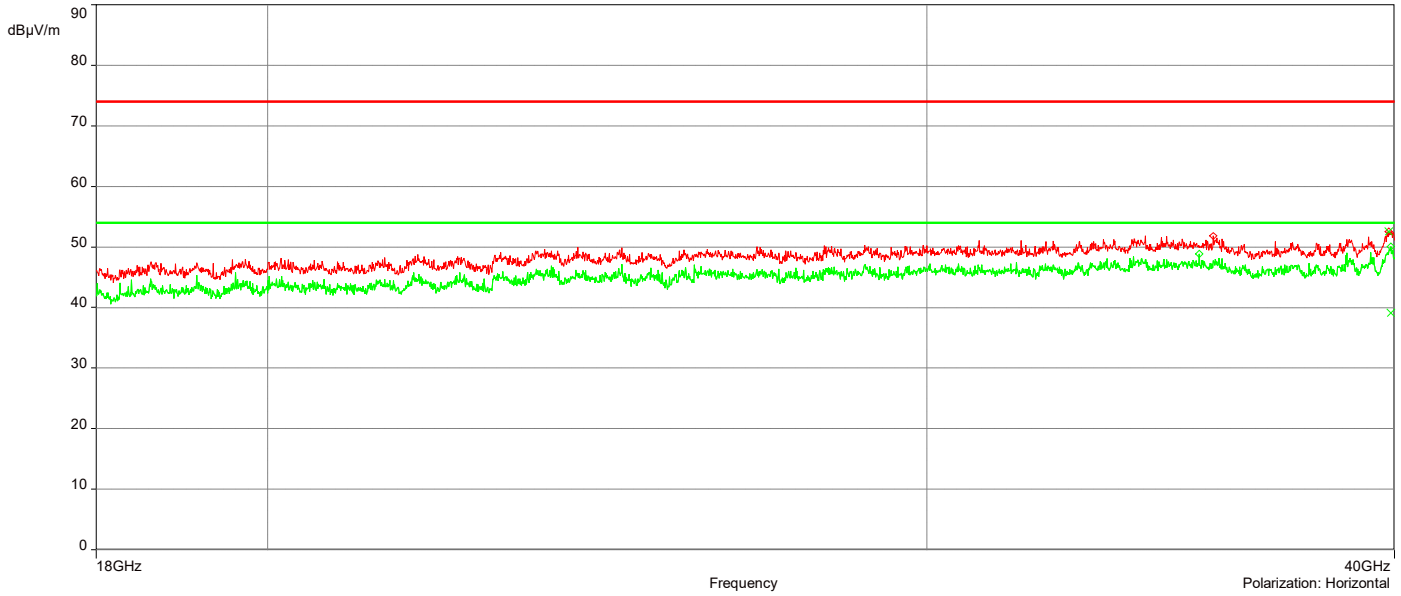
AH22021401-HAR-004#3_5G UNII-3 802.11ac_Ch 151_18-40GHz

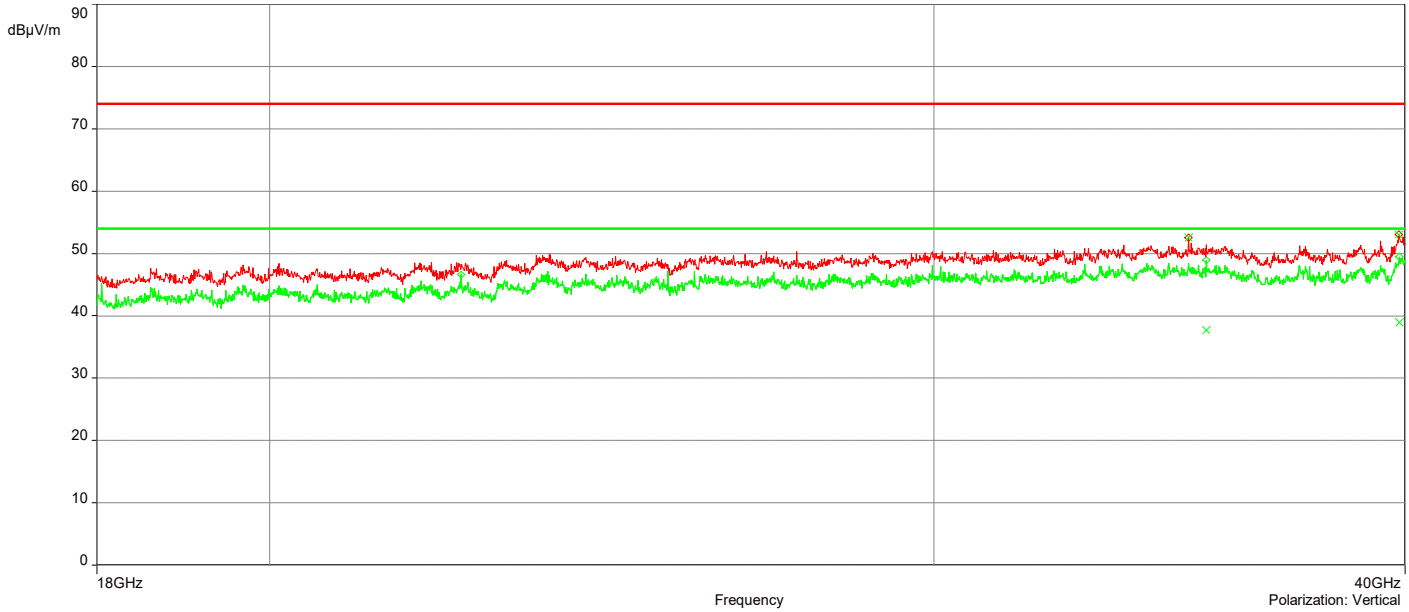
6/2/2022 21:20:51

No	Frequency (MHz)	Level Peak Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1	35.053388GHz	52.56	5.39	74.00	-21.44	3.37	89.90	Vertical	Passed
2	39.848497GHz	53.01	6.49	74.00	-20.99	3.70	134.90	Vertical	Passed
3	39.858997GHz	52.57	6.55	74.00	-21.43	1.00	89.90	Horizontal	Passed

No	Frequency (MHz)	Level Average Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgment
1	35.428896GHz	37.75	4.16	54.00	-16.25	3.28	337.40	Vertical	Passed
2	39.855497GHz	38.91	6.48	54.00	-15.09	3.19	45.10	Vertical	Passed
3	39.912998GHz	39.10	6.51	54.00	-14.90	1.48	156.90	Horizontal	Passed

Overall Graphs:





Remarks:

1 Level Peak Reading (dBµV/m) = Raw Peak Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Peak Reading – Limit

Remarks:

1 Level Average Reading (dBµV/m) = Raw Average Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Average Reading – Limit

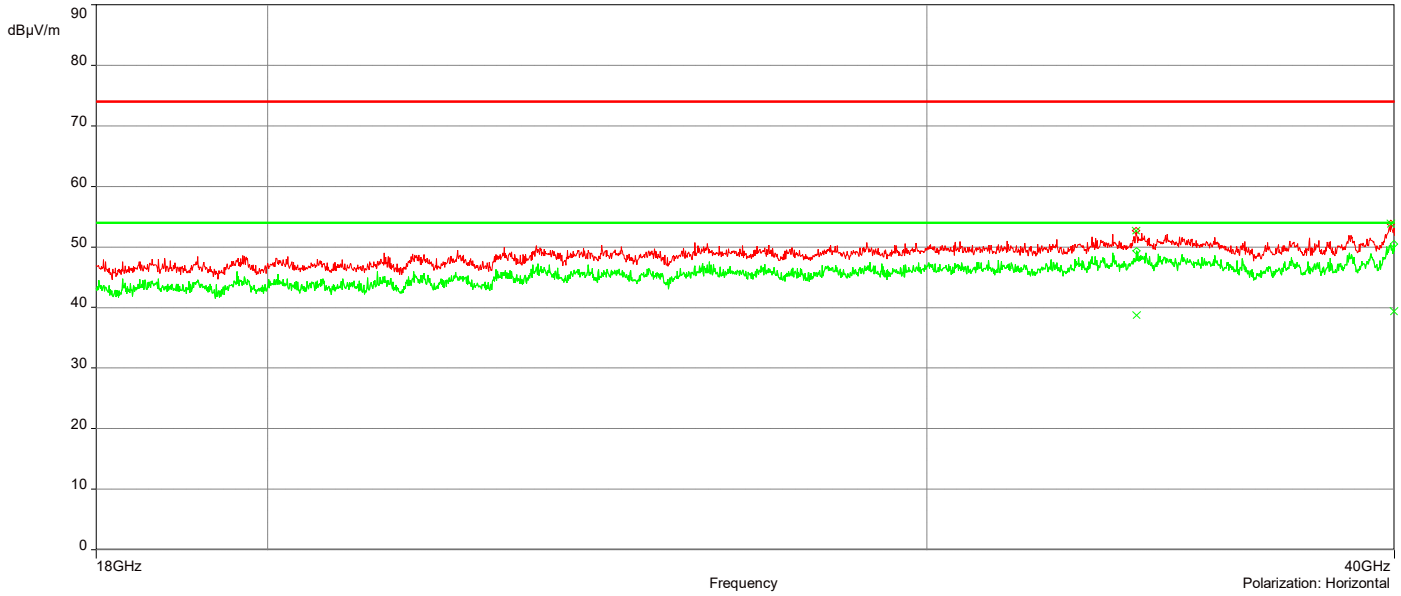
AH22021401-HAR-004#3_5G UNII-3 802.11ac_Ch 159_18-40GHz

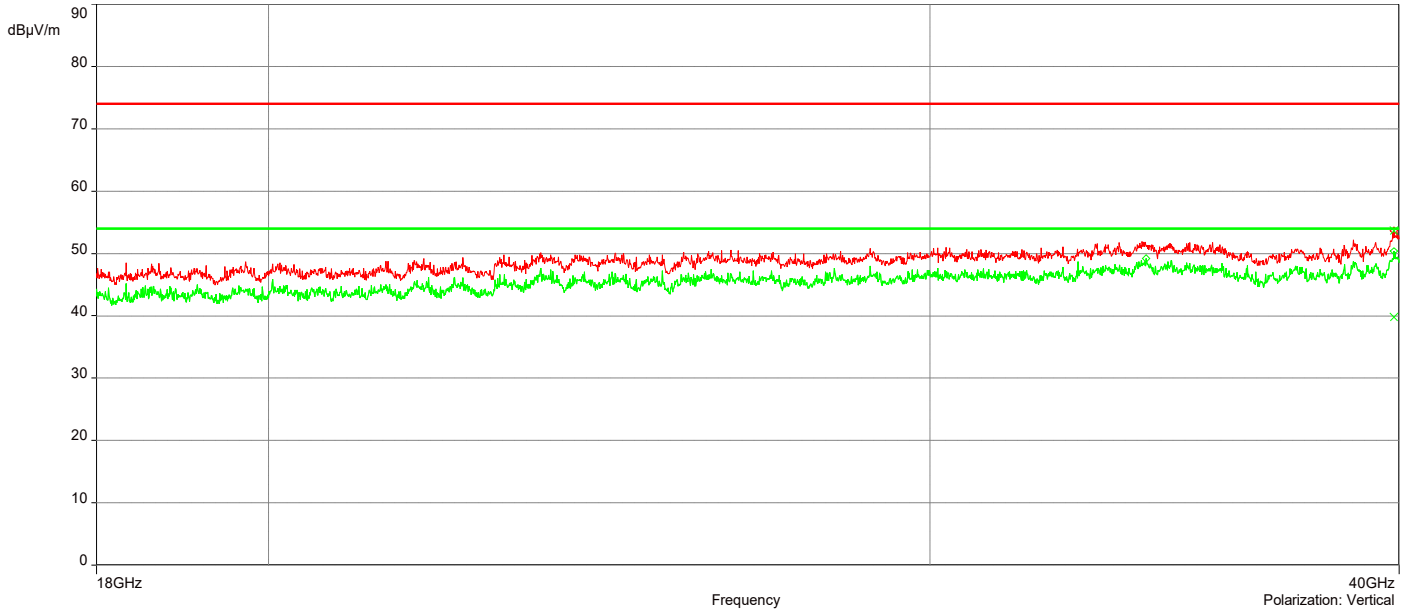
6/3/2022 10:04:37

No	Frequency (MHz)	Level Peak Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1	39.878997GHz	53.67	6.44	74.00	-20.33	4.00	89.90	Vertical	Passed
2	34.124866GHz	52.67	5.50	74.00	-21.33	2.77	224.90	Horizontal	Passed
3	39.911498GHz	53.83	6.66	74.00	-20.17	4.00	202.40	Horizontal	Passed

No	Frequency (MHz)	Level Average Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgment
1	39.867997GHz	39.82	6.46	54.00	-14.18	3.20	315.10	Vertical	Passed
2	34.135367GHz	38.80	5.49	54.00	-15.20	1.98	270.10	Horizontal	Passed
3	39.987GHz	39.38	6.72	54.00	-14.62	3.97	180.10	Horizontal	Passed

Overall Graphs:





Remarks:

1 Level Peak Reading (dBµV/m) = Raw Peak Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Peak Reading – Limit

Remarks:

1 Level Average Reading (dBµV/m) = Raw Average Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Average Reading – Limit

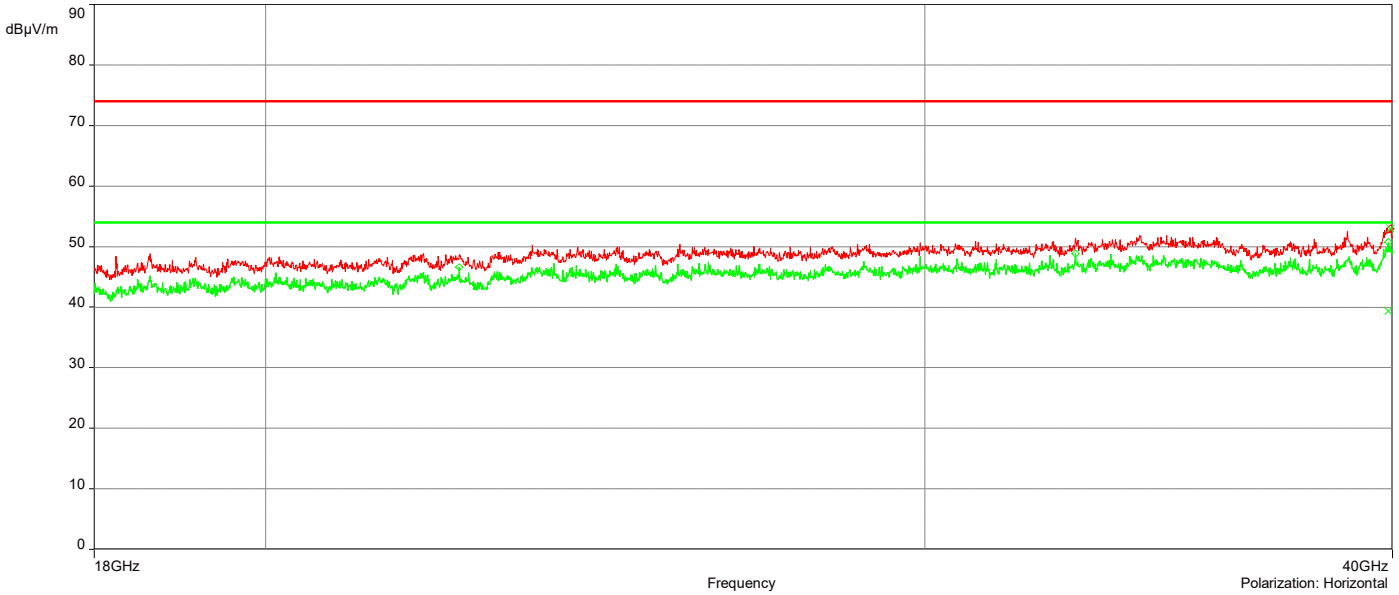
AH22021401-HAR-004#3_5G UNII-3 802.11ac_Ch 155_18-40GHz

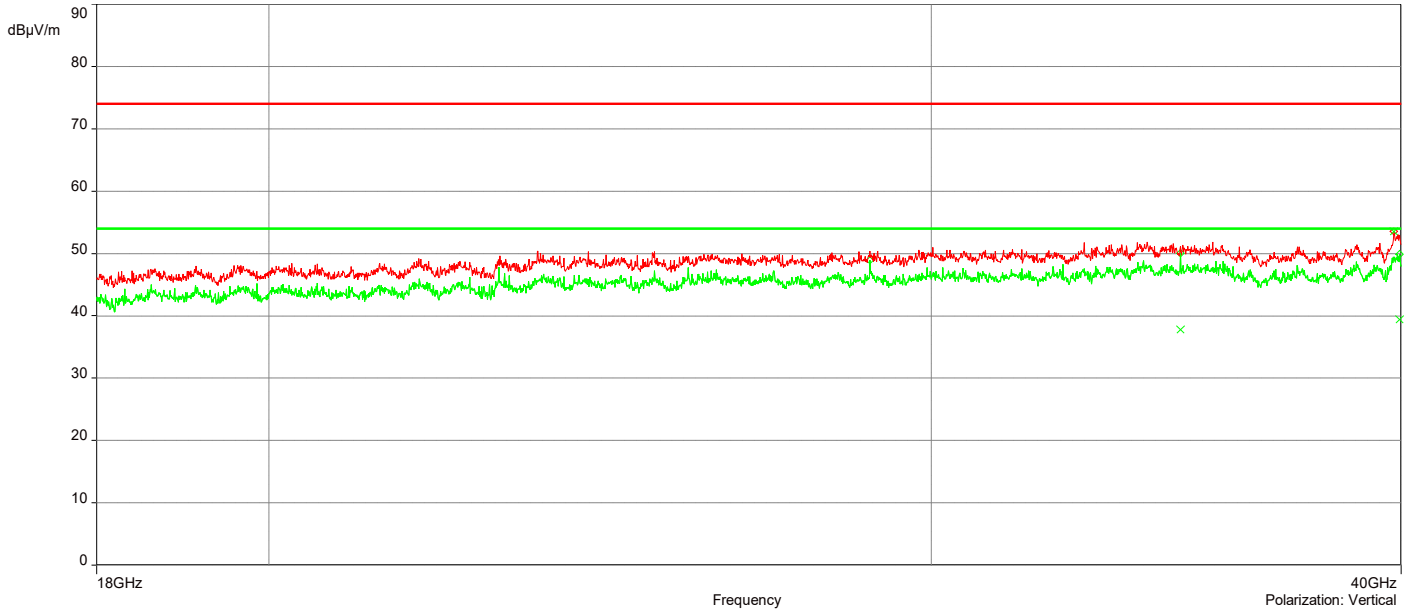
6/3/2022 10:35:20

No	Frequency (MHz)	Level Peak Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1	39.818996GHz	53.54	6.78	74.00	-20.46	3.97	225.10	Vertical	Passed
2	39.946499GHz	52.96	6.75	74.00	-21.04	1.04	67.60	Horizontal	Passed

No	Frequency (MHz)	Level Average Reading (dBµV/m)	Correction Factor (dB)	Limit dBµV/m	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgment
1	34.943385GHz	37.84	5.16	54.00	-16.16	3.97	179.90	Vertical	Passed
2	39.968999GHz	39.44	6.67	54.00	-14.56	1.63	68.10	Vertical	Passed
3	39.902998GHz	39.32	6.49	54.00	-14.68	1.79	0.10	Horizontal	Passed

Overall Graphs:





Remarks:

1 Level Peak Reading (dBµV/m) = Raw Peak Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Peak Reading – Limit

Remarks:

1 Level Average Reading (dBµV/m) = Raw Average Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

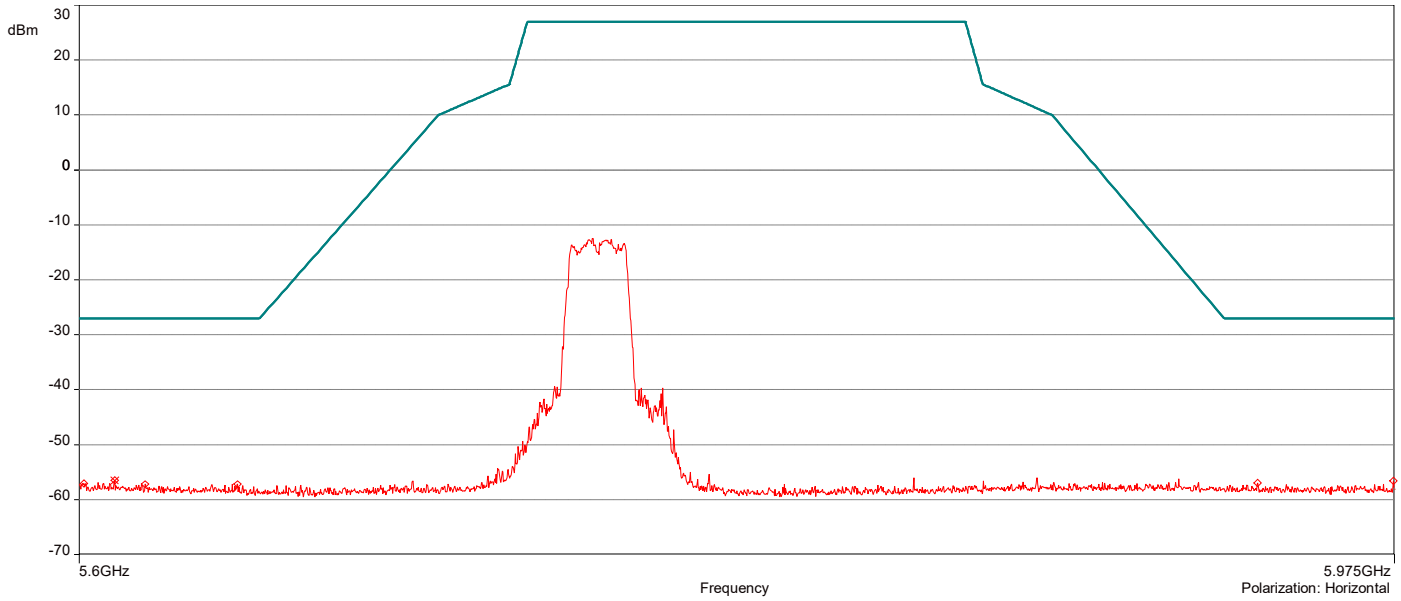
3 Margin = Level Average Reading – Limit

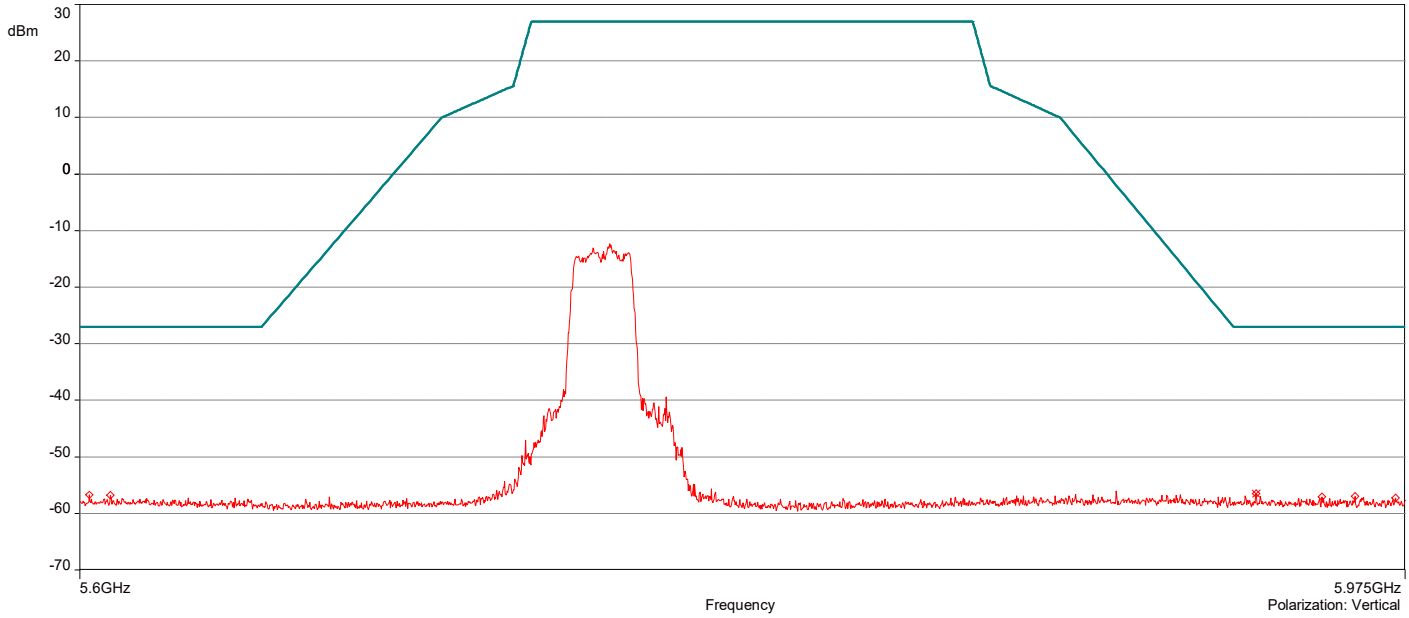
AH22021401-HAR-004#3_Restricted Bandedge_5G UNII-3_802.11a_Ch 149

3/15/2022 11:03:07 AM

No	Frequency (MHz)	Level Peak Reading (dBuV/m)	Correction Factor (dB)	Limit dBm	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1	5.60975GHz	-56.47	4.37	-27.00	-29.47	1.00	55.70	Horizontal	Passed
2	5.9316875GHz	-56.52	4.45	-27.00	-29.52	3.00	94.80	Vertical	Passed

Overall Graphs:





Remarks:

1 Level Peak Reading (dBm)= Raw Peak Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Peak Reading – Limit

Remarks:

1 Level Average Reading (dBm)= Raw Average Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

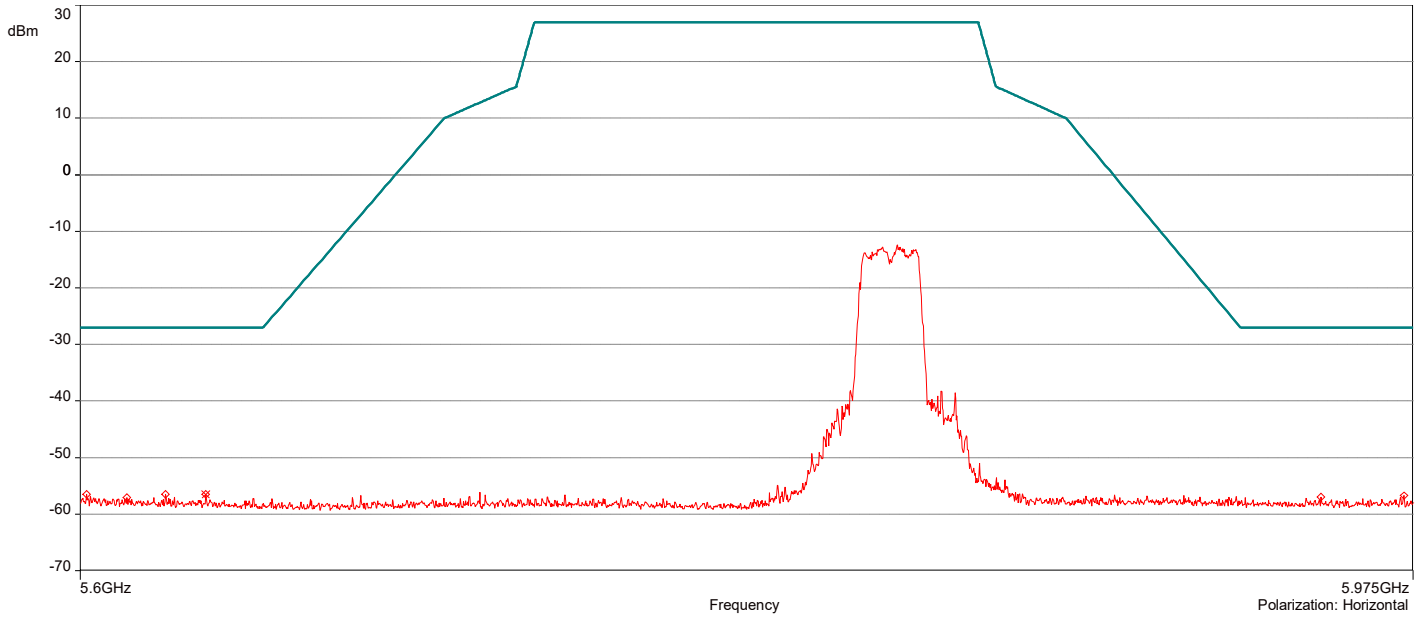
3 Margin = Level Average Reading – Limit

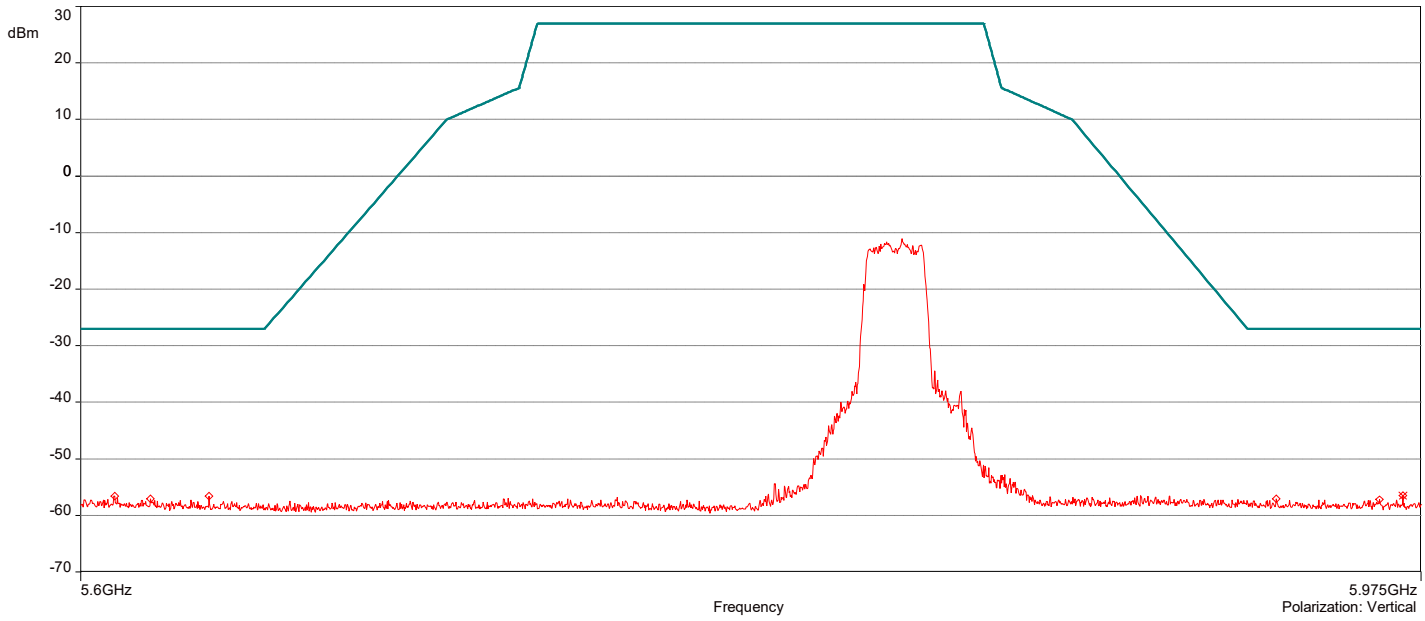
AH22021401-HAR-004#3_Restricted Bandedge_5G UNII-3_802.11a_Ch 165

3/15/2022 11:27:15 AM

No	Frequency (MHz)	Level Peak Reading (dBuV/m)	Correction Factor (dB)	Limit dBm	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1	5.6343125GHz	-56.46	4.29	-27.00	-29.46	2.00	135.50	Horizontal	Passed
2	5.96975GHz	-56.54	4.45	-27.00	-29.54	1.00	296.40	Vertical	Passed

Overall Graphs:





Remarks:

1 Level Peak Reading (dBm)= Raw Peak Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Peak Reading – Limit

Remarks:

1 Level Average Reading (dBm)= Raw Average Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

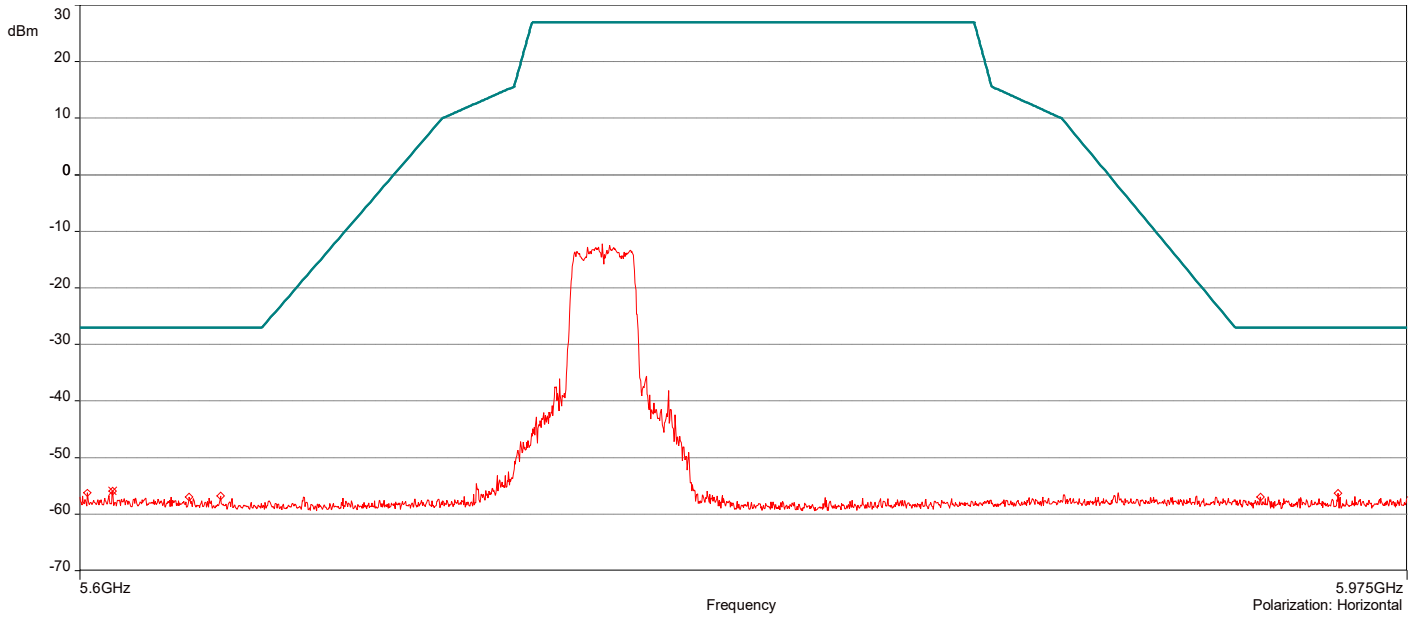
3 Margin = Level Average Reading – Limit

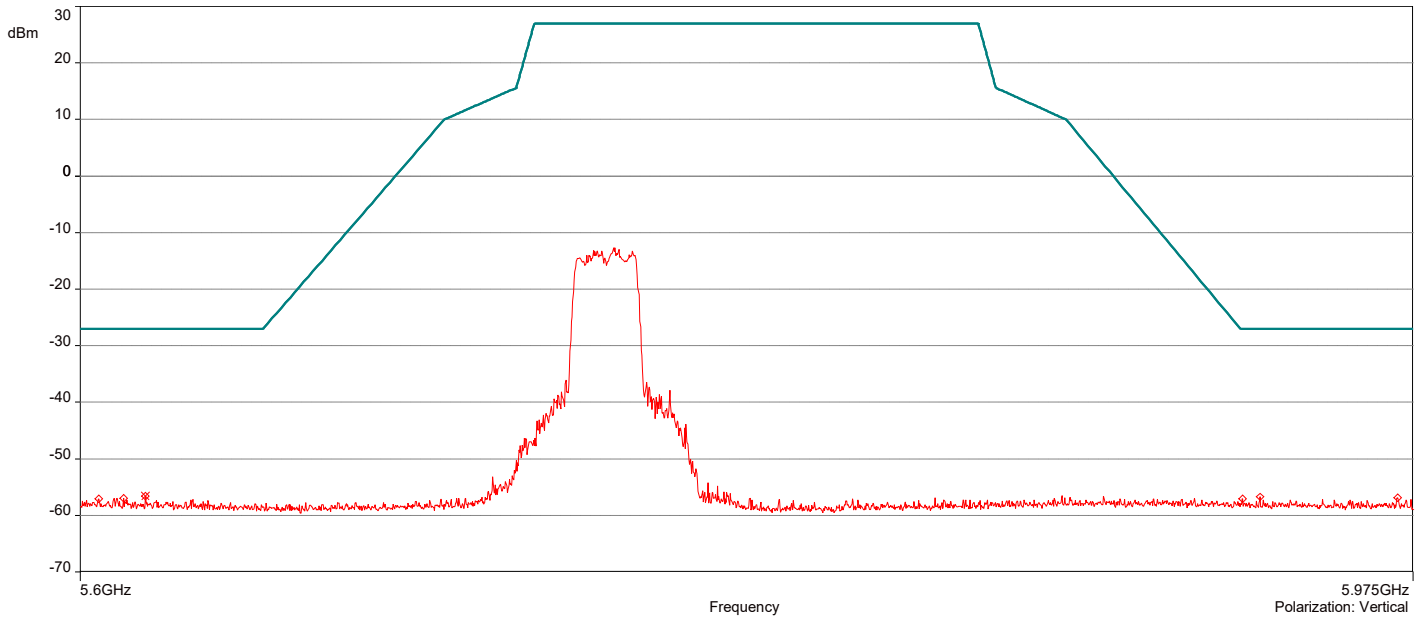
AH22021401-HAR-004#3_Restricted Bandedge_5G UNII-3_802.11n_Ch 149

3/15/2022 11:45:46 AM

No	Frequency (MHz)	Level Peak Reading (dBuV/m)	Correction Factor (dB)	Limit dBm	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1	5.609GHz	-55.94	4.37	-27.00	-28.94	3.50	58.40	Horizontal	Passed
2	5.6178125GHz	-56.63	4.23	-27.00	-29.63	2.50	306.20	Vertical	Passed

Overall Graphs:





Remarks:

1 Level Peak Reading (dBm)= Raw Peak Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Peak Reading – Limit

Remarks:

1 Level Average Reading (dBm)= Raw Average Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

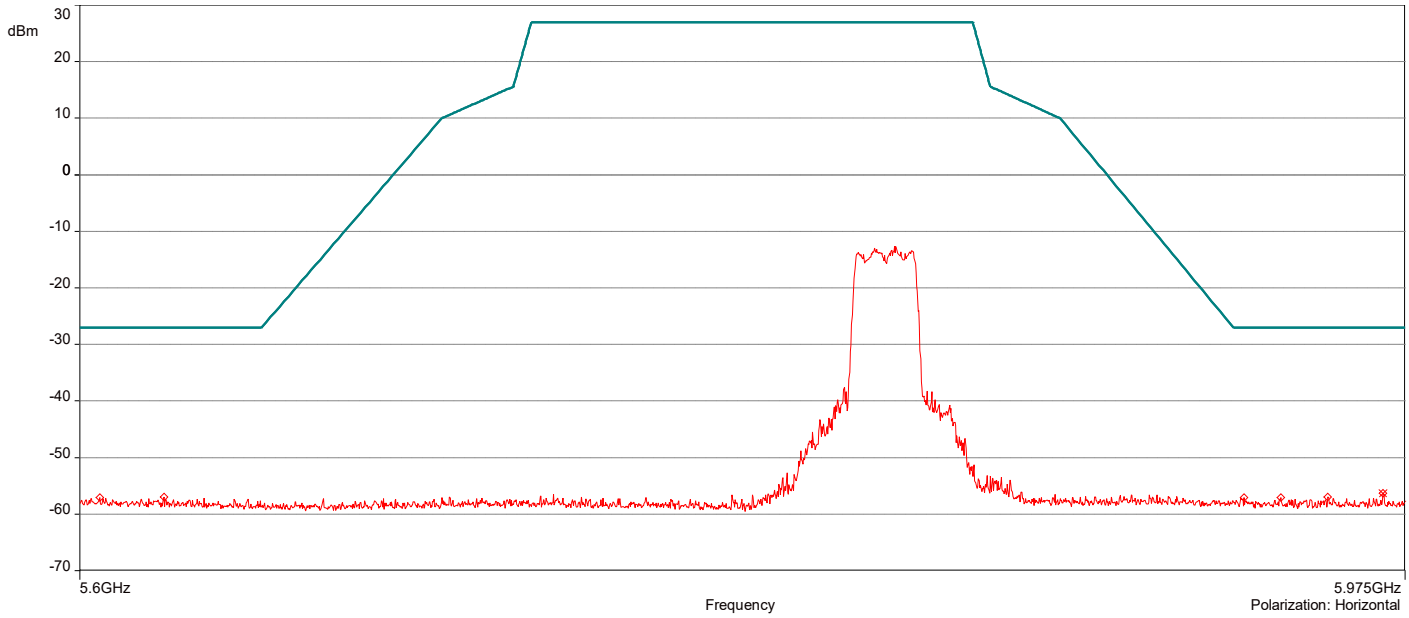
3 Margin = Level Average Reading – Limit

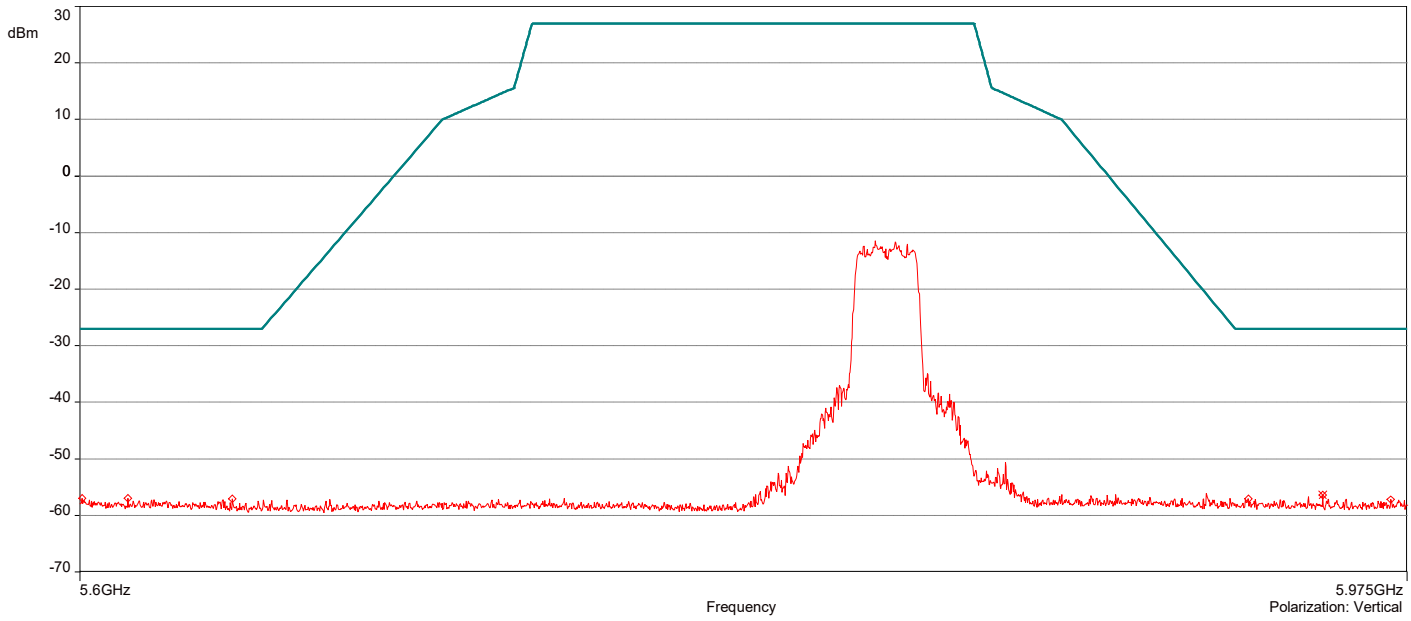
AH22021401-HAR-004#3_Restricted Bandedge_5G UNII-3_802.11n_Ch 165

3/15/2022 12:04:47 PM

No	Frequency (MHz)	Level Peak Reading (dBuV/m)	Correction Factor (dB)	Limit dBm	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1	5.968625GHz	-56.28	4.53	-27.00	-29.28	3.50	206.50	Horizontal	Passed
2	5.9504375GHz	-56.43	4.43	-27.00	-29.43	2.50	98.60	Vertical	Passed

Overall Graphs:





Remarks:

1 Level Peak Reading (dBm)= Raw Peak Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Peak Reading – Limit

Remarks:

1 Level Average Reading (dBm)= Raw Average Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

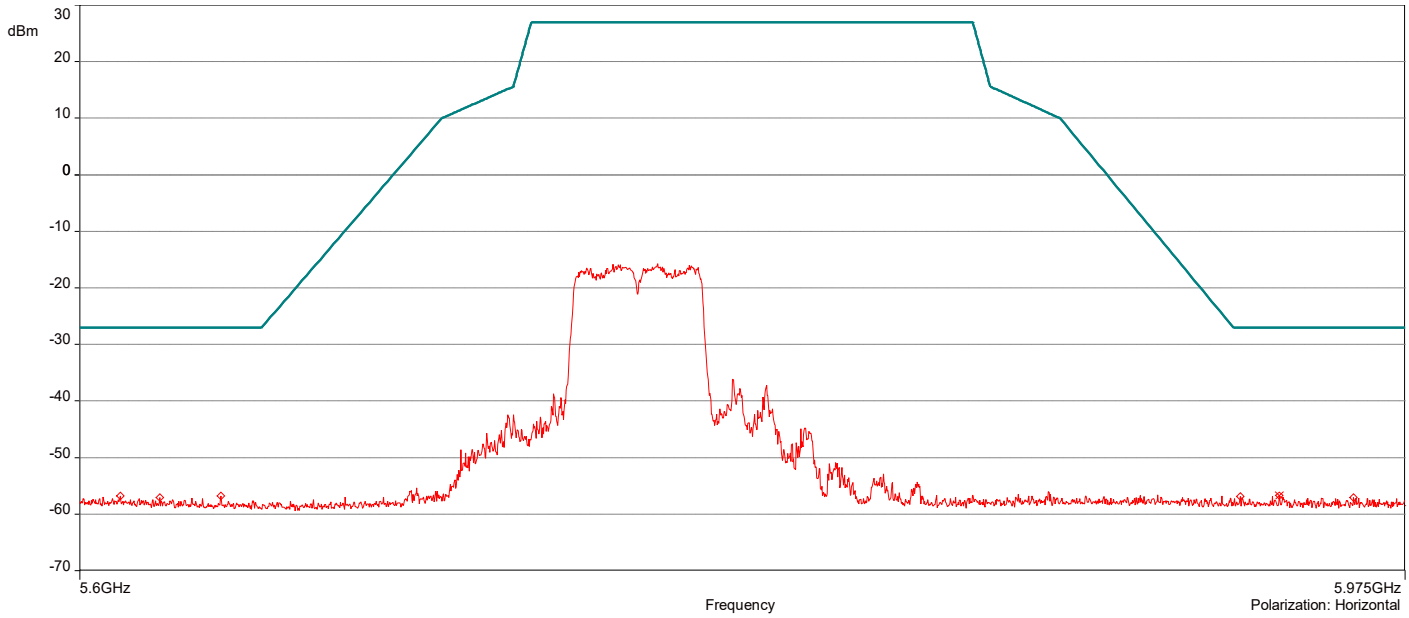
3 Margin = Level Average Reading – Limit

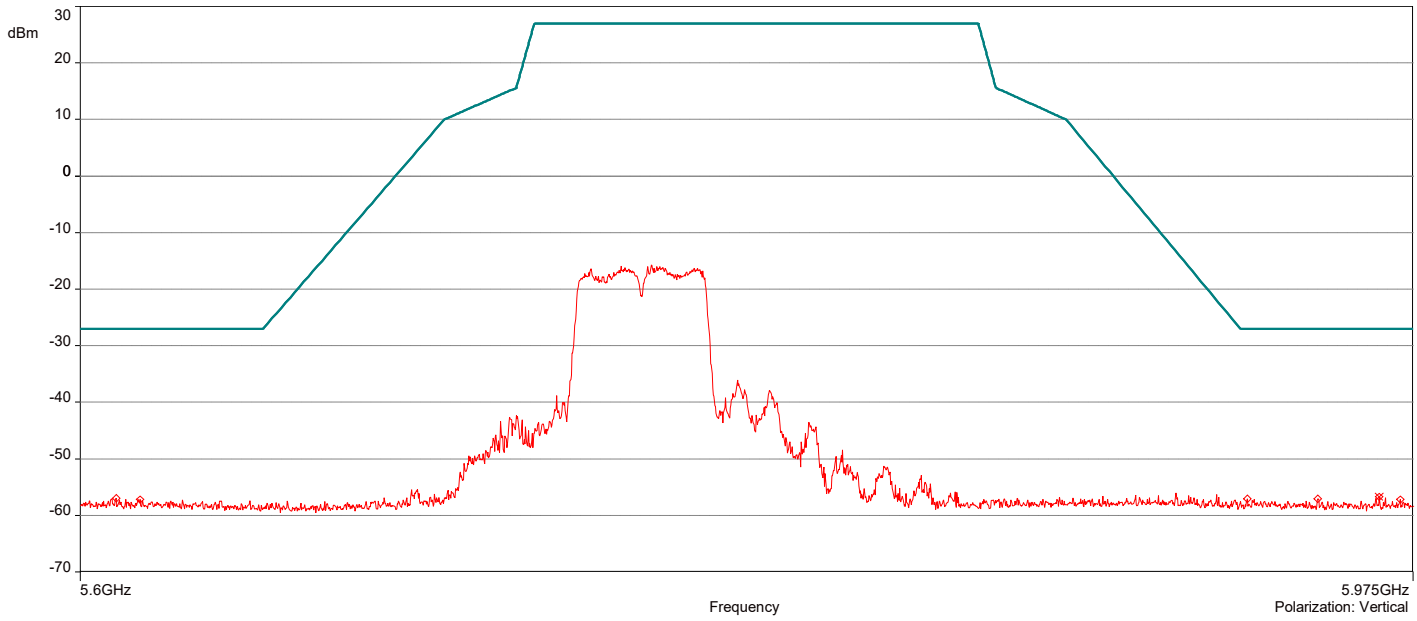
AH22021401-HAR-004#3_Restricted Bandedge_5G UNII-3_802.11n_Ch 151

3/15/2022 12:23:25 PM

No	Frequency (MHz)	Level Peak Reading (dBuV/m)	Correction Factor (dB)	Limit dBm	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1	5.9384375GHz	-56.67	4.50	-27.00	-29.67	2.00	102.40	Horizontal	Passed
2	5.96525GHz	-56.69	4.45	-27.00	-29.69	3.50	136.10	Vertical	Passed

Overall Graphs:





Remarks:

1 Level Peak Reading (dBm)= Raw Peak Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Peak Reading – Limit

Remarks:

1 Level Average Reading (dBm)= Raw Average Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

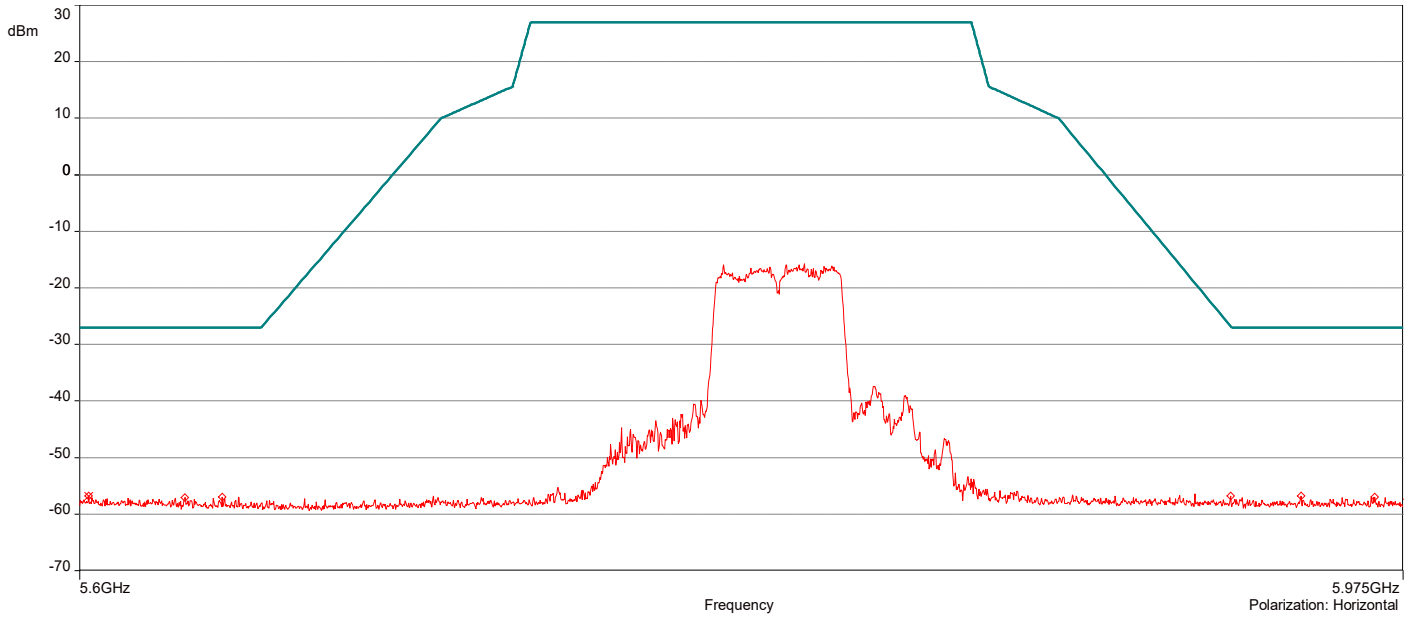
3 Margin = Level Average Reading – Limit

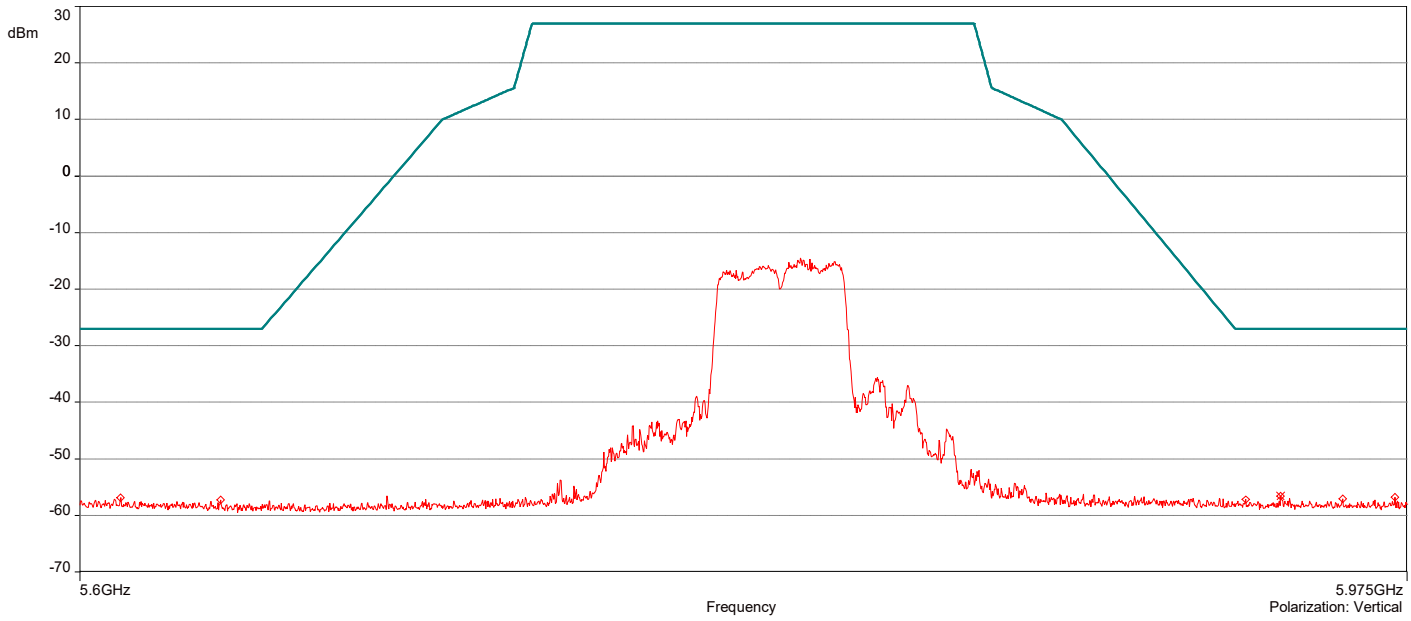
AH22021401-HAR-004#3_Restricted Bandedge_5G UNII-3_802.11n_Ch 159

3/15/2022 12:44:29 PM

No	Frequency (MHz)	Level Peak Reading (dBuV/m)	Correction Factor (dB)	Limit dBm	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1	5.6024375GHz	-56.75	4.36	-27.00	-29.75	4.00	296.40	Horizontal	Passed
2	5.93825GHz	-56.57	4.44	-27.00	-29.57	4.00	293.80	Vertical	Passed

Overall Graphs:





Remarks:

1 Level Peak Reading (dBm)= Raw Peak Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Peak Reading – Limit

Remarks:

1 Level Average Reading (dBm)= Raw Average Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

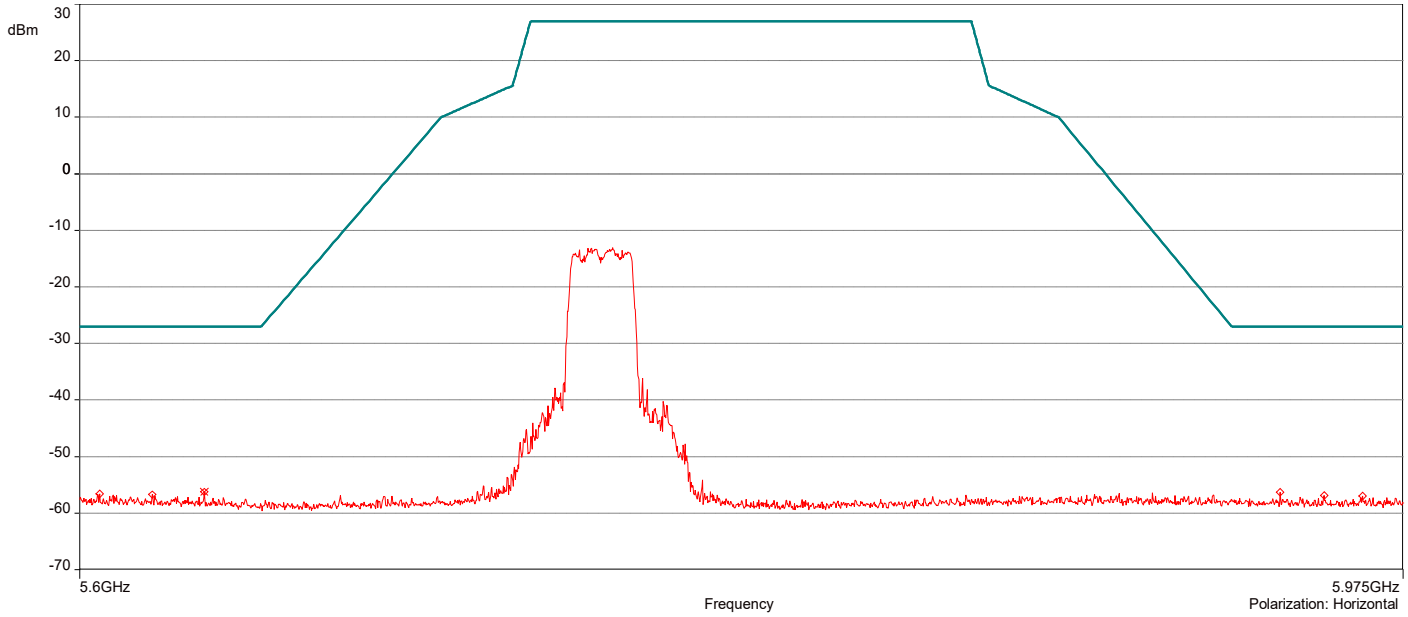
3 Margin = Level Average Reading – Limit

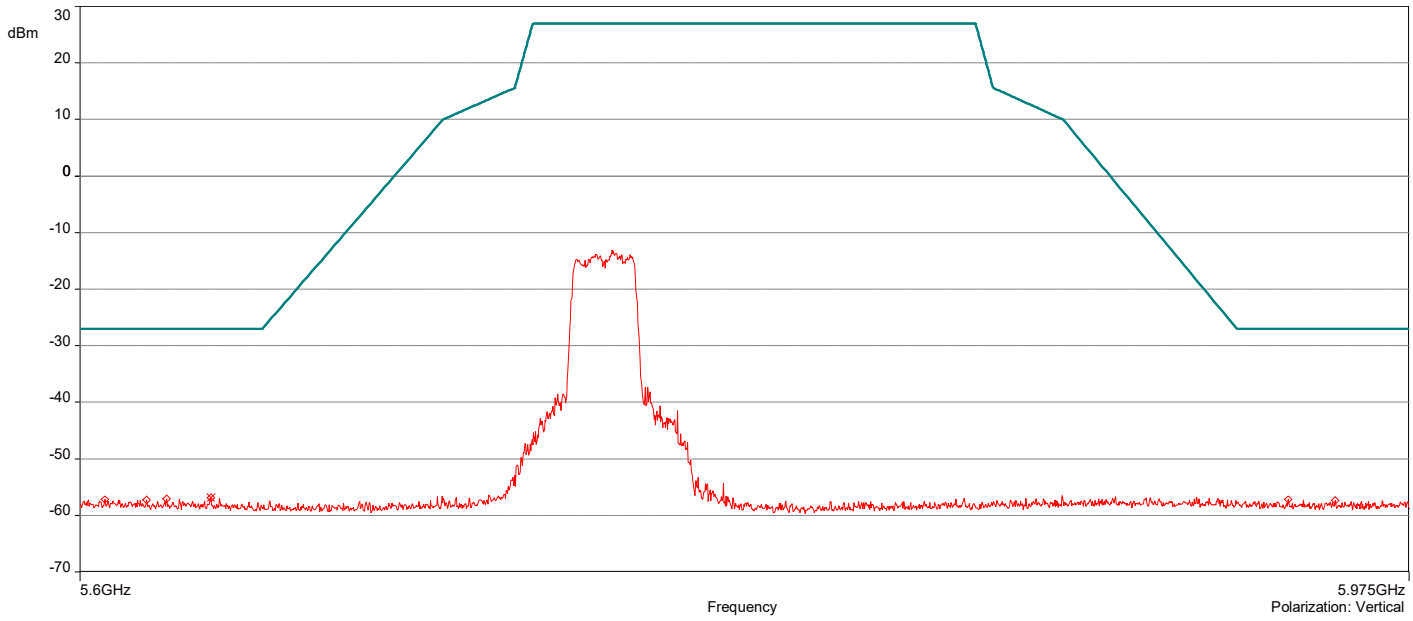
AH22021401-HAR-004#3_Restricted Bandedge_5G UNII-3_802.11ac_Ch 149

3/15/2022 1:03:19 PM

No	Frequency (MHz)	Level Peak Reading (dBuV/m)	Correction Factor (dB)	Limit dBm	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1	5.6343125GHz	-56.25	4.29	-27.00	-29.25	1.00	130.50	Horizontal	Passed
2	5.6358125GHz	-56.84	4.22	-27.00	-29.84	2.50	232.90	Vertical	Passed

Overall Graphs:





Remarks:

1 Level Peak Reading (dBm)= Raw Peak Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Peak Reading – Limit

Remarks:

1 Level Average Reading (dBm)= Raw Average Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

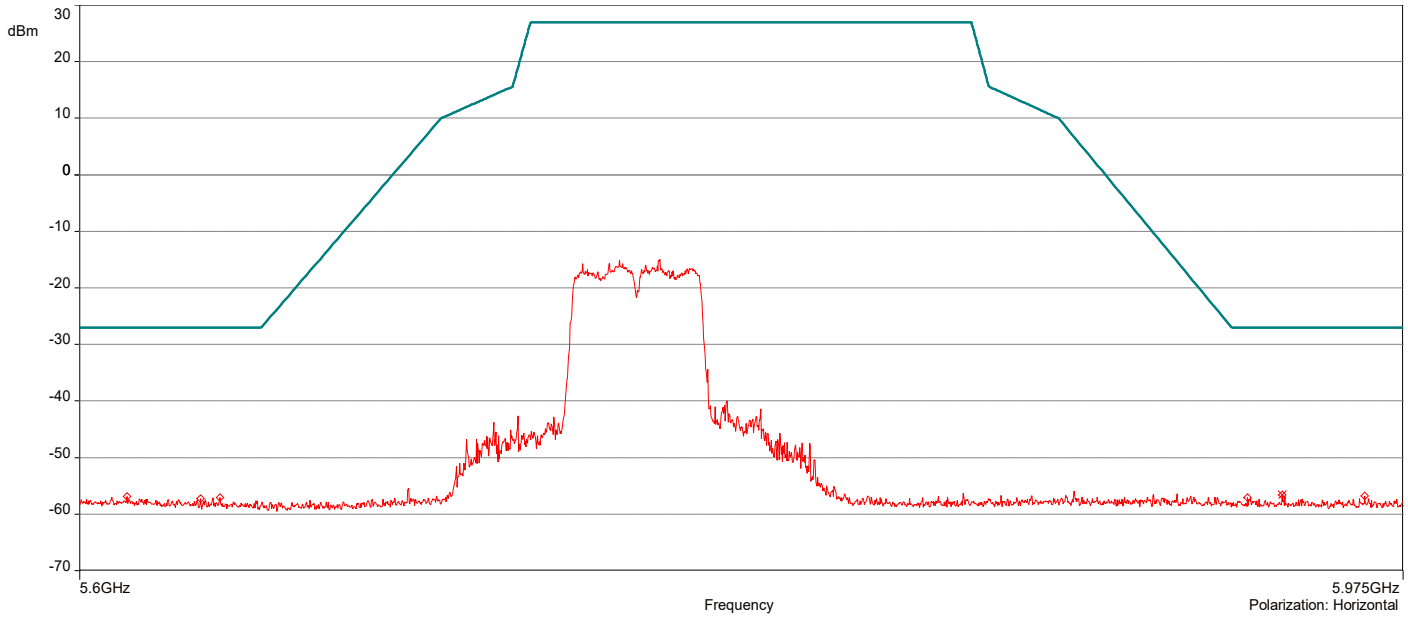
3 Margin = Level Average Reading – Limit

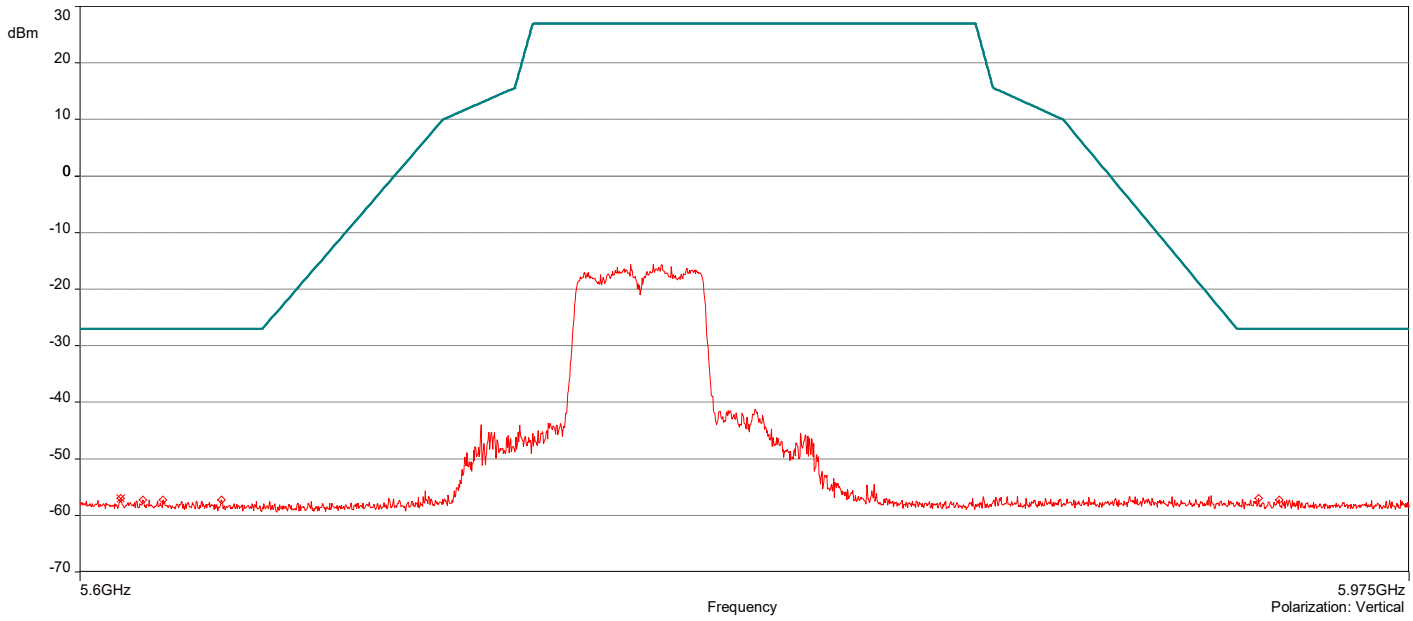
AH22021401-HAR-004#3_Restricted Bandedge_5G UNII-3_802.11ac_Ch 151

3/15/2022 1:40:09 PM

No	Frequency (MHz)	Level Peak Reading (dBuV/m)	Correction Factor (dB)	Limit dBm	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1	5.93975GHz	-56.61	4.50	-27.00	-29.61	4.00	146.50	Horizontal	Passed
2	5.6110625GHz	-56.93	4.23	-27.00	-29.93	2.00	71.90	Vertical	Passed

Overall Graphs:





Remarks:

1 Level Peak Reading (dBm)= Raw Peak Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Peak Reading – Limit

Remarks:

1 Level Average Reading (dBm)= Raw Average Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

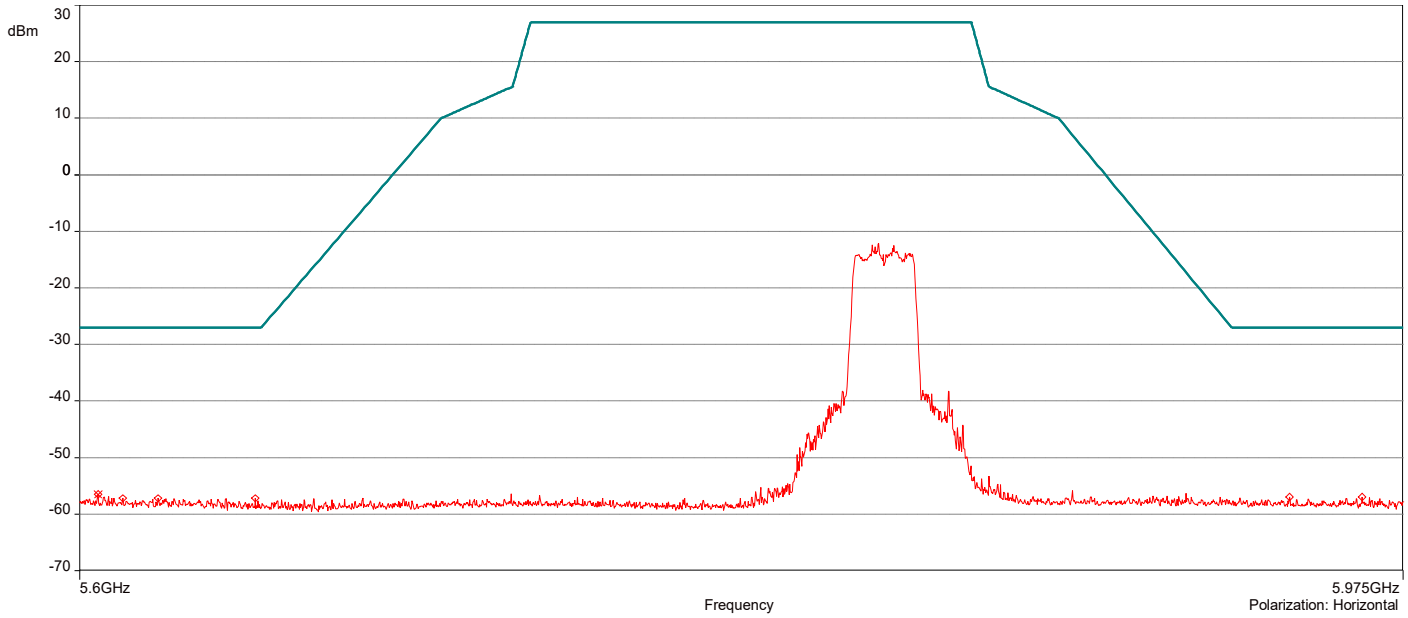
3 Margin = Level Average Reading – Limit

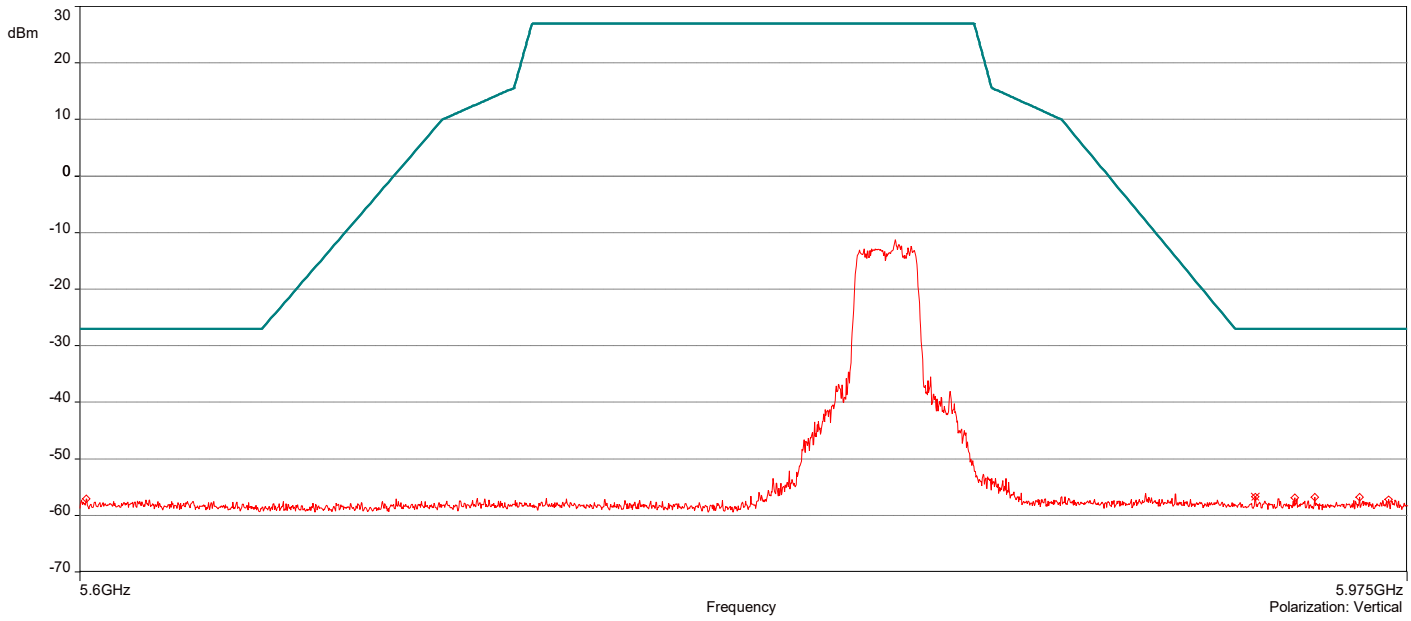
AH22021401-HAR-004#3_Restricted Bandedge_5G UNII-3_802.11ac_Ch 165

3/15/2022 1:21:23 PM

No	Frequency (MHz)	Level Peak Reading (dBuV/m)	Correction Factor (dB)	Limit dBm	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1	5.6050625GHz	-56.53	4.36	-27.00	-29.53	3.00	326.80	Horizontal	Passed
2	5.9309375GHz	-56.68	4.46	-27.00	-29.68	4.00	76.80	Vertical	Passed

Overall Graphs:





Remarks:

1 Level Peak Reading (dBm)= Raw Peak Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Peak Reading – Limit

Remarks:

1 Level Average Reading (dBm)= Raw Average Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

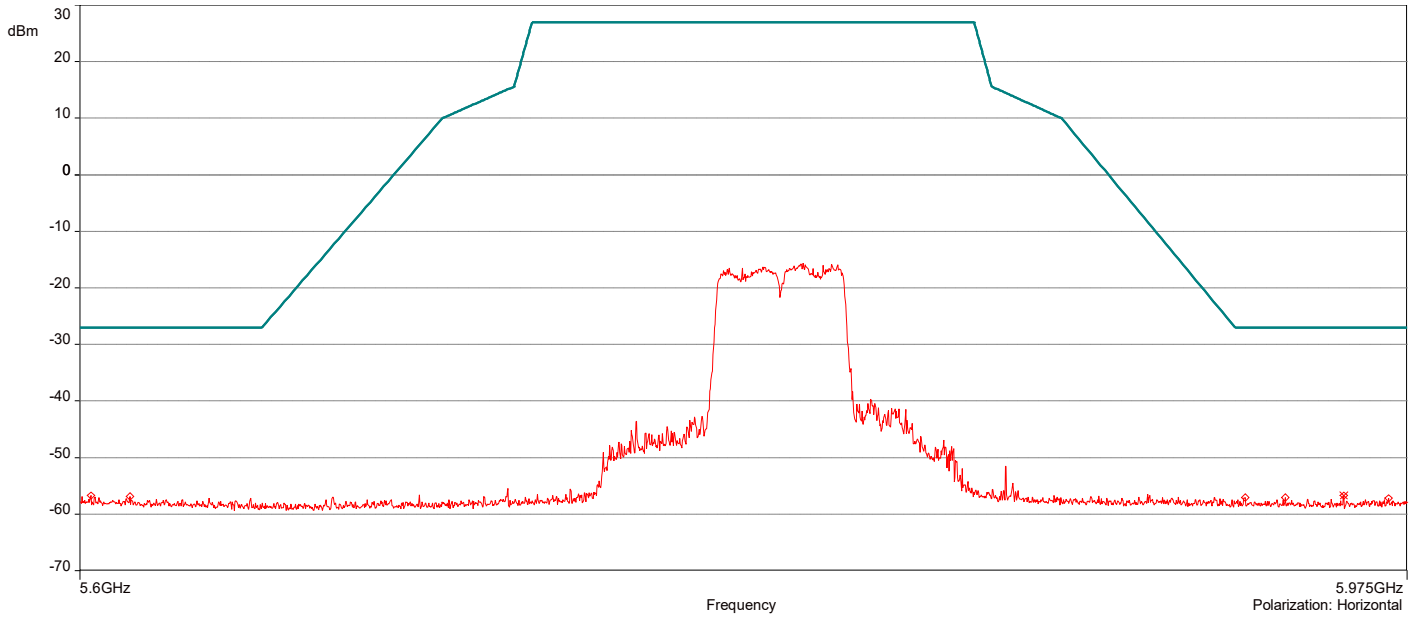
3 Margin = Level Average Reading – Limit

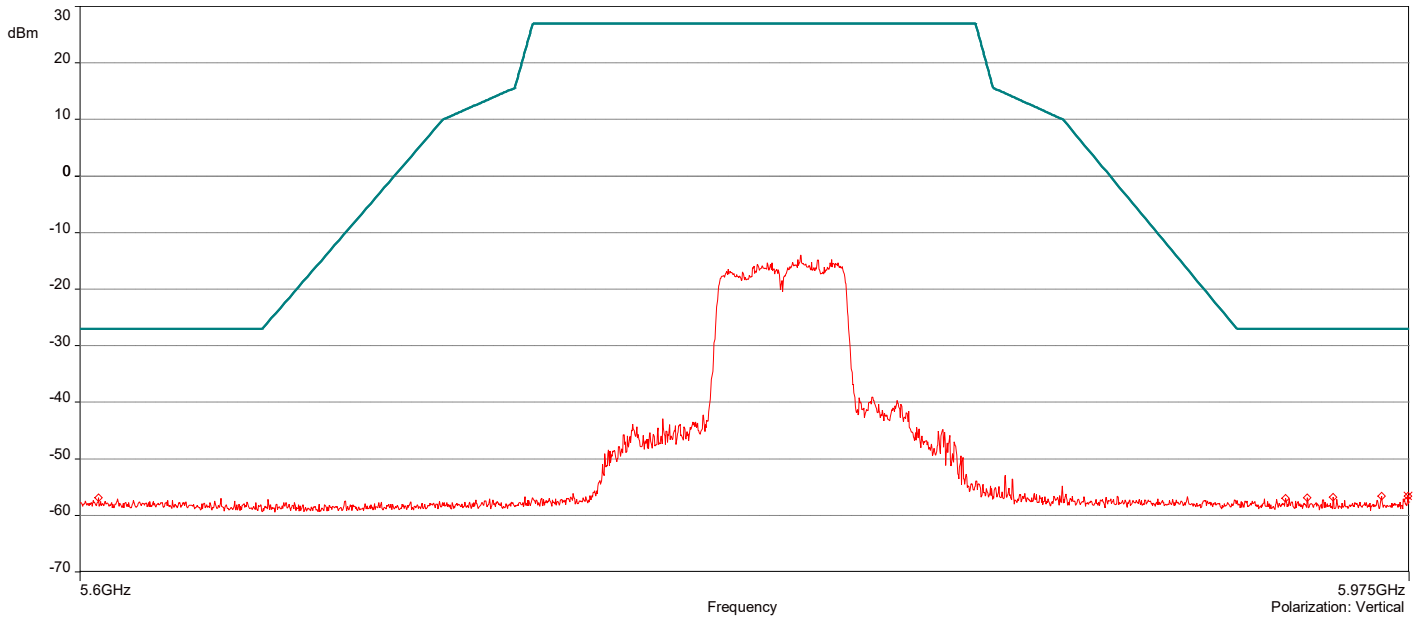
AH22021401-HAR-004#3_Restricted Bandedge_5G UNII-3_802.11ac_Ch 159

3/15/2022 1:57:31 PM

No	Frequency (MHz)	Level Peak Reading (dBuV/m)	Correction Factor (dB)	Limit dBm	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1	5.956625GHz	-56.71	4.52	-27.00	-29.71	3.50	109.00	Horizontal	Passed
2	5.974625GHz	-56.57	4.45	-27.00	-29.57	4.00	56.20	Vertical	Passed

Overall Graphs:





Remarks:

1 Level Peak Reading (dBm)= Raw Peak Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

3 Margin = Level Peak Reading – Limit

Remarks:

1 Level Average Reading (dBm)= Raw Average Level + Correction Factor

2 Correction Factor (dB) = Antenna Factor + Cable Loss – Preamplifier Gain

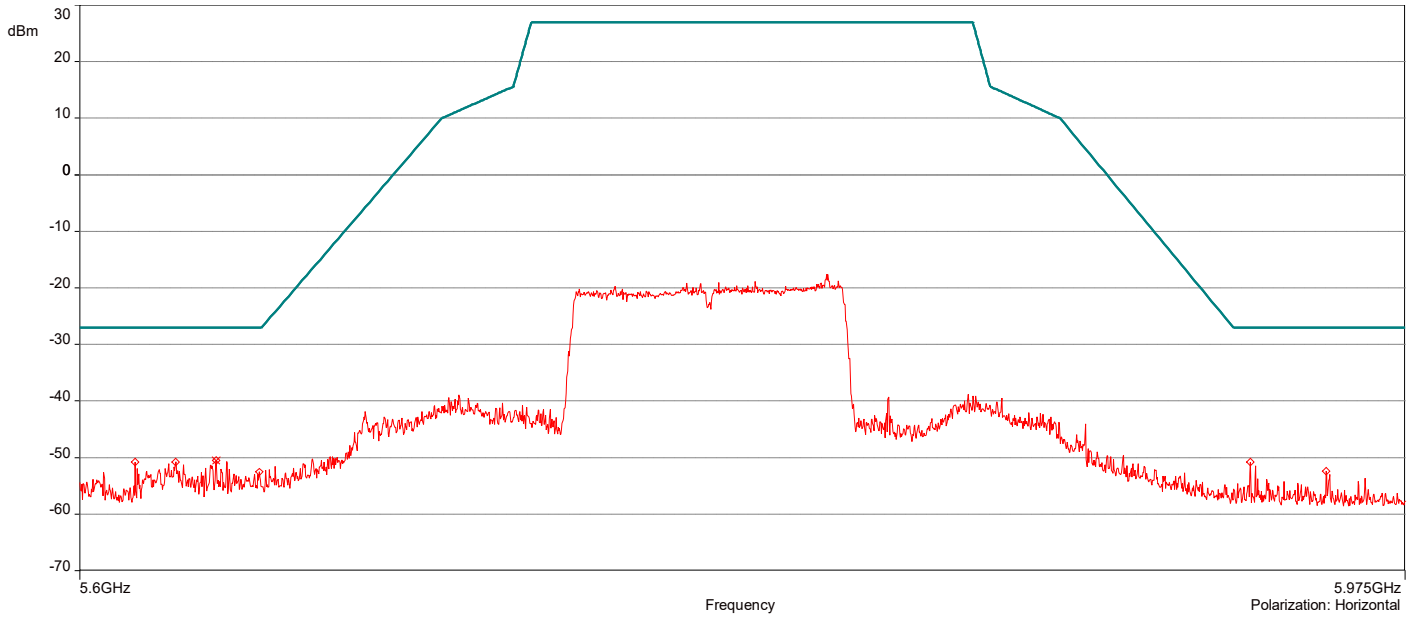
3 Margin = Level Average Reading – Limit

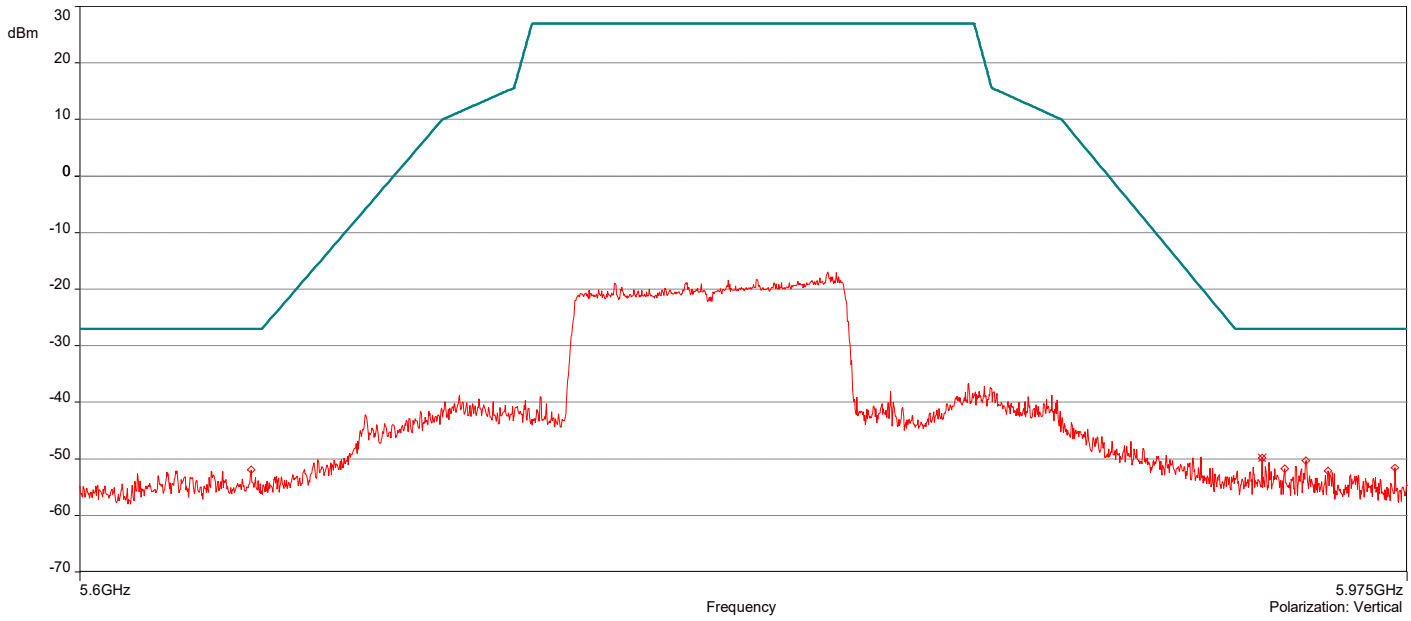
AH22021401-HAR-004#3_Restricted Bandedge_5G UNII-3_802.11ac_Ch 155

3/15/2022 2:37:56 PM

No	Frequency (MHz)	Level Peak Reading (dBuV/m)	Correction Factor (dB)	Limit dBm	Margin (dB)	Height (m)	Angle (°)	Polarization	Judgement
1	5.6375GHz	-50.47	4.28	-27.00	-23.47	2.50	40.40	Horizontal	Passed
2	5.9328125GHz	-49.88	4.45	-27.00	-22.88	3.00	93.50	Vertical	Passed

Overall Graphs:





Document Revisions

Version	Date	Modifier	Changes
1.0	04-11-2022	Aravind Buddana Ryan Philips	• Initial Draft
2.0	06-03-2022	Aravind Buddana	• Added FCC ID • Added 802.11 ac40, 802.11 ac80 Test data and plots • Added notes for full testing performed and worst case determination. • Added Notes on Power Measurement method. • Updated Antenna Type

End of Report