



TESTING LABORATORY  
CERTIFICATE#4323.01



## FCC PART 15.407

## TEST REPORT

For

### Shanghai Sunmi Technology Co.,Ltd.

Room 505, KIC Plaza, No.388 Song Hu Road, Yang Pu District, Shanghai, China

**FCC ID: 2AH25T5941**

<b>Report Type:</b> Original Report	<b>Product Type:</b> Wireless data POS System
<b>Project Engineer:</b>	Miller Xie <i>Miller Xie</i>
<b>Report Number:</b>	RKSA210422005-00E
<b>Report Date:</b>	2021-05-27
<b>Reviewed By:</b>	Oscar Ye <i>Oscar Ye</i> EMC Manager
<b>Test Laboratory:</b>	Bay Area Compliance Laboratories Corp. (Kunshan) No.248 Chenghu Road, Kunshan, Jiangsu province, China Tel: +86-0512-86175000 Fax: +86-0512-88934268 <a href="http://www.baclcorp.com.cn">www.baclcorp.com.cn</a>

**TABLE OF CONTENTS**

**GENERAL INFORMATION.....4**

    PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT) .....4

    OBJECTIVE .....4

    RELATED SUBMITTAL(S)/GRANT(S).....5

    TEST METHODOLOGY .....5

    MEASUREMENT UNCERTAINTY.....6

    TEST FACILITY .....6

**SYSTEM TEST CONFIGURATION.....7**

    DESCRIPTION OF TEST CONFIGURATION .....7

    EUT EXERCISE SOFTWARE .....8

    EQUIPMENT MODIFICATIONS .....15

    SUPPORT EQUIPMENT LIST AND DETAILS .....15

    EXTERNAL I/O CABLE.....15

    BLOCK DIAGRAM OF TEST SETUP .....16

**SUMMARY OF TEST RESULTS .....18**

**TEST EQUIPMENT LIST .....19**

**FCC §1.1307(b) & §2.1093 - RF EXPOSURE INFORMATION .....20**

    TEST RESULT .....20

**FCC §15.203 – ANTENNA REQUIREMENT .....21**

    APPLICABLE STANDARD .....21

    ANTENNA CONNECTOR CONSTRUCTION .....21

**FCC §15.407 (b) (8) §15.207 (a) – AC POWER LINE CONDUCTED EMISSIONS.....22**

    APPLICABLE STANDARD .....22

    EUT SETUP.....22

    EMI TEST RECEIVER SETUP.....22

    TEST PROCEDURE .....23

    FACTOR & OVER LIMIT CALCULATION – FOR BELOW 1GHZ .....23

    CORRECTED AMPLITUDE & MARGIN CALCULATION – FOR ABOVE 1GHZ.....23

    TEST RESULTS SUMMARY .....23

    TEST DATA .....23

**§15.205 & §15.209 & §15.407(B)(1)(4) (8)(9) – UNDESIRABLE EMISSION & RESTRICTED BANDS.....32**

    APPLICABLE STANDARD .....32

    EUT SETUP .....32

    EMI TEST RECEIVER & SPECTRUM ANALYZER SETUP .....33

    TEST PROCEDURE .....33

    CORRECTED AMPLITUDE & MARGIN CALCULATION .....34

    TEST DATA .....34

**FCC §15.407(a) & §15.407(e)–EMISSION BANDWIDTH.....74**

    APPLICABLE STANDARD .....74

    TEST PROCEDURE .....74

    TEST DATA .....75

**FCC §15.407(a) (1) (3) – CONDUCTED TRANSMITTER OUTPUT POWER .....98**

    APPLICABLE STANDARD .....98

    TEST PROCEDURE .....98

    TEST DATA .....98

**FCC §15.407(a) (1) (3) - POWER SPECTRAL DENSITY .....100**

---

APPLICABLE STANDARD .....	100
TEST PROCEDURE .....	100
TEST DATA .....	100

## GENERAL INFORMATION

### Product Description for Equipment under Test (EUT)

Applicant:	Shanghai Sunmi Technology Co.,Ltd.
Test Model	Wireless data POS System
Product Type:	T5941
Power Supply:	DC 7.7V from battery and DC 5V from Adapter
RF Function:	5G Wi-Fi
Maximum Output Power:	Band1: 802.11a:11.22dBm,802.11ac20:11.92dBm,802.11n-HT20:11.83dBm, 802.11ac40:12.34dBm,802.11n-HT40:10.12dBm,802.11ac80:8.60dBm Band4: 802.11a: 14.35dBm,802.11ac20:13.23dBm,802.11n-HT20:14.10dBm, 802.11ac40:13.89dBm,802.11n-HT40:15.19dBm,802.11ac80:13.03dBm
Operating Band/Frequency:	Band 1:5150~5250 MHz, Band 4: 5725~5850 MHz
Channel Number:	Band 1: 7, Band 4: 8
Channel Separation:	802.11a/ac20/n20: 20MHz; 802.11n40/ac40:40 MHz 802.11ac80: 80 MHz
Modulation Type:	OFDM
Antenna Type:	FPC Antenna
*Maximum Antenna Gain:	Band 1: 2.0dBi, Band 4: 2.0dBi

*Adapter-1 Information:*

*Model: TPA-23A050200UU01*

*Input: AC100-240~50/60Hz 0.3A*

*Output: 5.0V,2000mA*

*Adapter-2 Information:*

*Model: UC13US*

*Input: 100-240V~50/60Hz 0.35A*

*Output:5.0V, 2A*

*Note1: The Maximum Antenna Gain was declared by the manufacturer.*

*Note2: This product model (T5941) has two different configurations, only the worst case configuration With Scan code (Version: B-A) data was in report .*

*\*All measurement and test data in this report was gathered from production sample serial number: RKSA210422005-1(Assigned by the BACL. The EUT supplied by the applicant was received on 2021-04-22)*

### Objective

This type approval report is prepared on behalf of *Shanghai Sunmi Technology Co.,Ltd.* in accordance with Part 2-Subpart J, Part 15-Subparts A and E of the Federal Communication Commissions' rules.

The tests were performed in order to determine compliance with FCC Part 15, Subpart E, section 15.203, 15.205, 15.207, 15.209 and 15.407 rules.

**Related Submittal(s)/Grant(s)**

FCC Part 15.247 DTS submissions with FCC ID: 2AH25T5941  
FCC Part 15.247 DSS submissions with FCC ID: 2AH25T5941  
FCC Part 22H/24E/27/90 PCB submissions with FCC ID: 2AH25T5941  
FCC Part 15.225 DXX submissions with FCC ID: 2AH25T5941  
FCC Part 15B JBP submissions with FCC ID: 2AH25T5941

**Test Methodology**

All measurements contained in this report were conducted with ANSI C63.10-2013, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

All emissions measurement was performed and Bay Area Compliance Laboratories Corp. (Kunshan).

**Measurement Uncertainty**

Item		Uncertainty
AC Power Lines Conducted Emissions		3.19 dB
RF conducted test with spectrum		0.9dB
RF Output Power with Power meter		0.5dB
Radiated emission	30MHz~1GHz	6.11dB
	1GHz~6GHz	4.45dB
	6GHz~18GHz	5.23dB
	18GHz~40GHz	5.65dB
Occupied Bandwidth		0.5kHz
Temperature		1.0°C
Humidity		6%

**Test Facility**

The Test site used by Bay Area Compliance Laboratories Corp. (Kunshan) to collect test data is located on the No.248 Chenghu Road, Kunshan, Jiangsu province, China.

Bay Area Compliance Laboratories Corp. (Kunshan) Lab is accredited to ISO/IEC 17025 by A2LA (Lab code: 4323.01), the FCC designation No. CN1185 under the FCC KDB 974614 D01 and CAB identifier CN0004 under the ISED requirement. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2014.

**SYSTEM TEST CONFIGURATION**

**Description of Test Configuration**

The EUT was configured for testing in an engineering mode which was provided by the manufacturer.

In **5150~5250 MHz** band, test channel list is as below,

802.11a/802.11ac20/n20 mode Channel 36, 40, 48 were tested.  
 802.11n40/802.11ac40 mode Channel 38, 46 were tested.  
 802.11ac80 mode Channel 42 was tested

Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	44	5220
38	5190	46	5230
40	5200	48	5240
42	5210	/	/

For **5725~5850 MHz** band,

802.11a/802.11ac20/n20 mode Channel 149, 157, 165 were tested.  
 802.11n40/802.11ac40 mode Channel 151, 159 were tested.  
 802.11ac80 mode Channel 155 was tested.

Channel	Frequency (MHz)	Channel	Frequency (MHz)
149	5745	159	5795
151	5755	161	5805
153	5765	165	5825
155	5775	/	/
157	5785	/	/

**EUT Exercise Software**

RF test tool: The EUT tested in engineering mode.

The worst case was performed under:

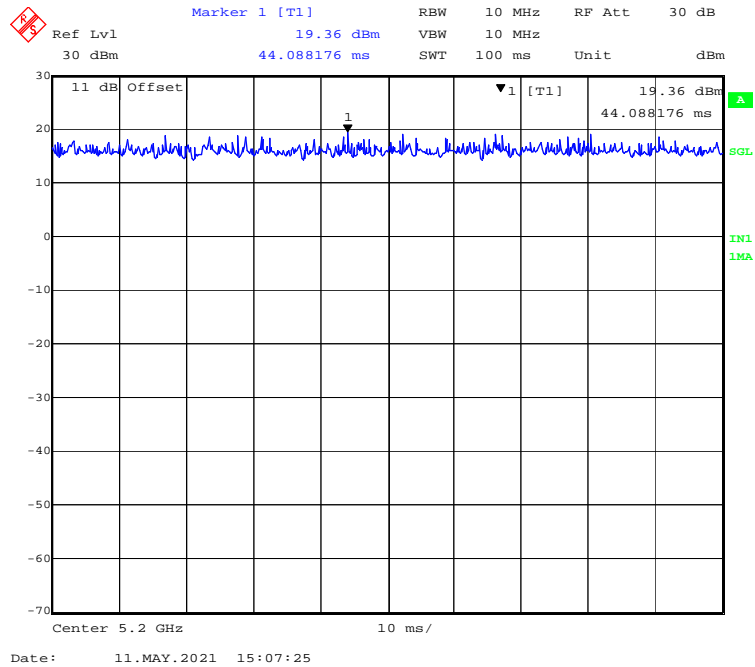
Mode	Data rate	Power level	
		5150-5250 Band	5725-5850 Band
802.11a	6 Mbps	20	16
802.11ac20	MCS0	16	16
802.11n-HT20	MCS0	16	16
802.11ac40	MCS0	16	16
802.11n-HT40	MCS0	16	16
802.11ac80	MCS0	16	16



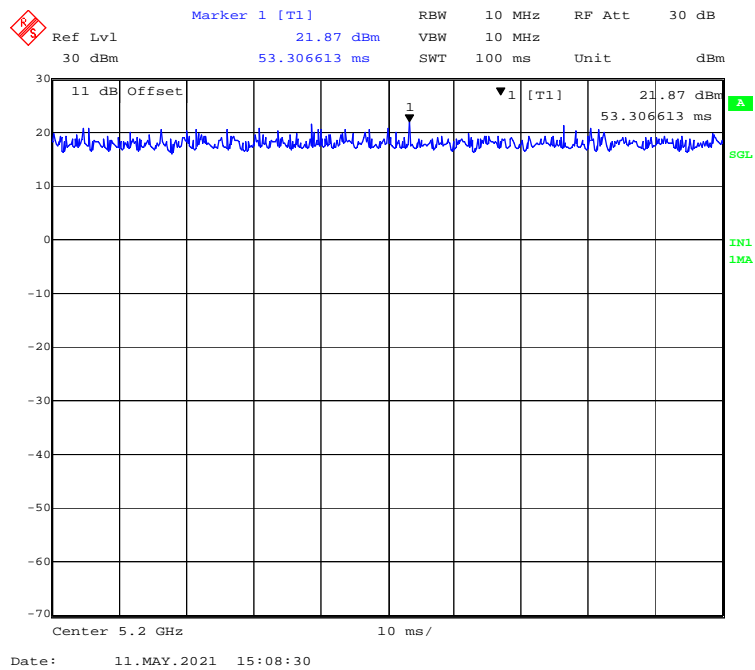
**Duty Cycle**

**5150MHz-5250MHz Band:**

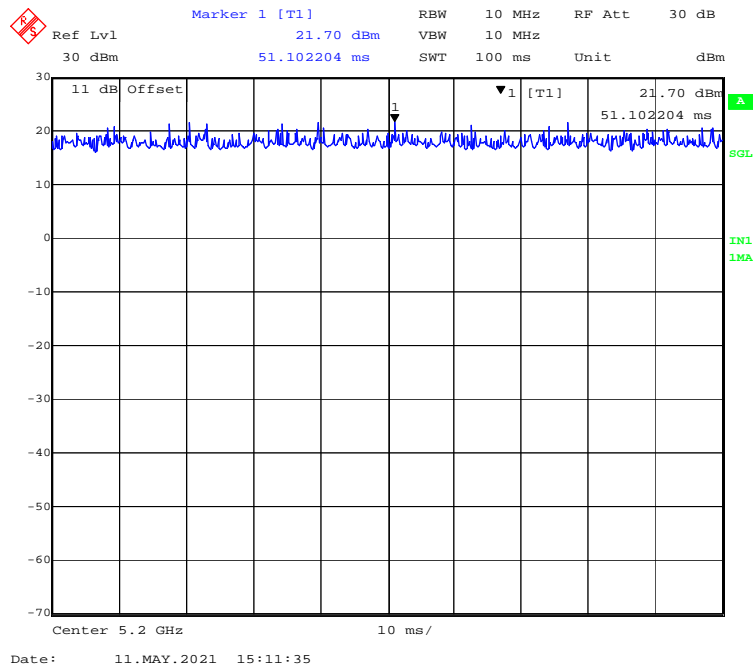
**802.11a mode**



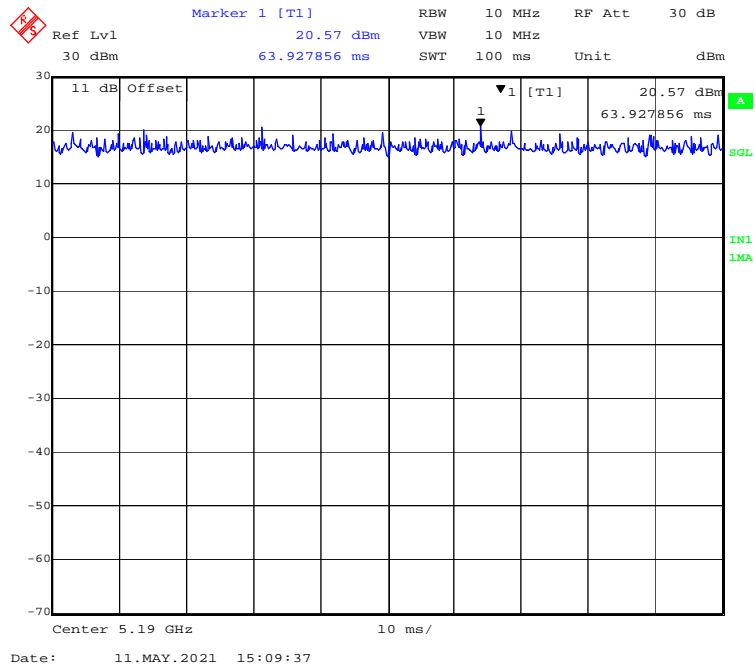
**802.11ac20 mode**



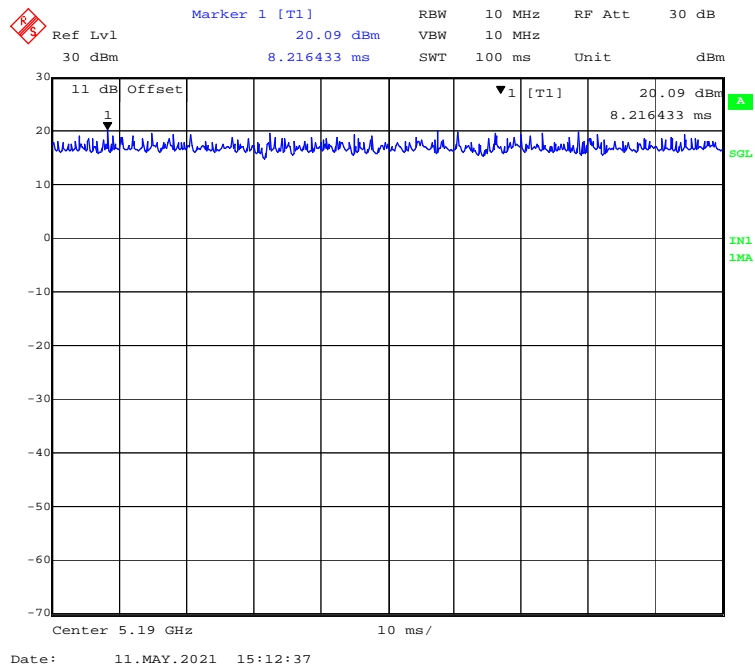
### 802.11n-HT20 mode



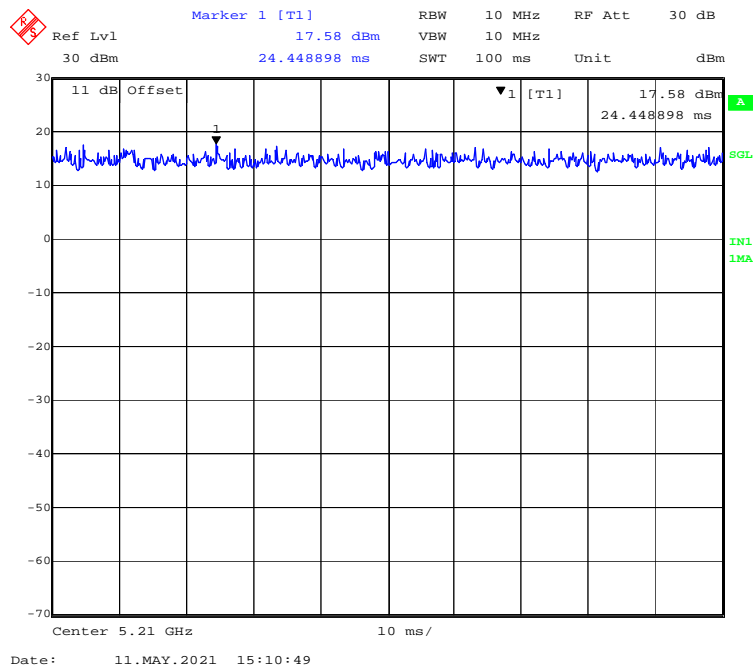
### 802.11 ac40 mode



### 802.11n-HT40 mode

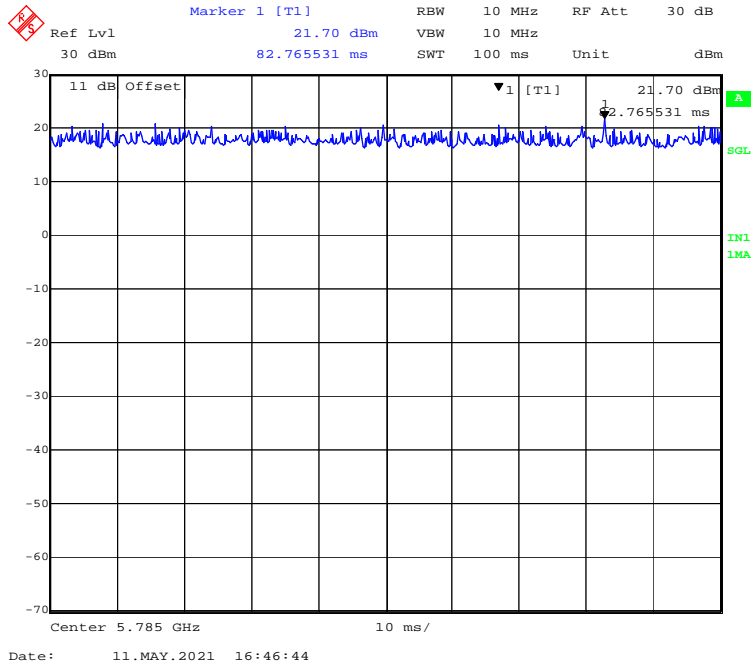


### 802.11 ac80 mode

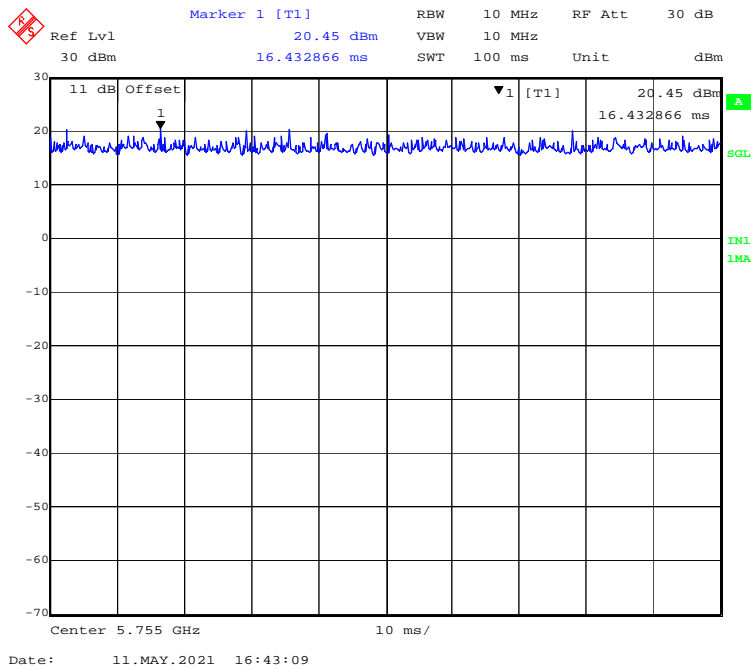




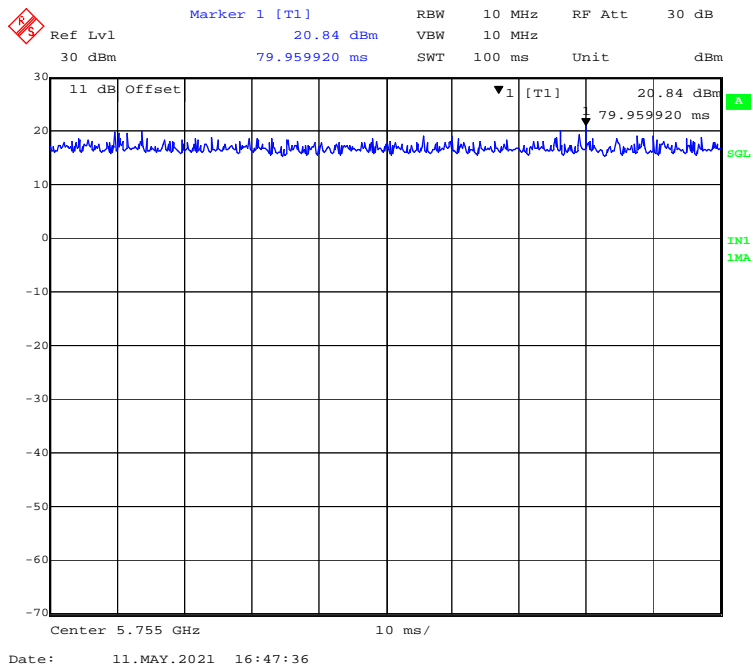
### 802.11n-HT20 mode



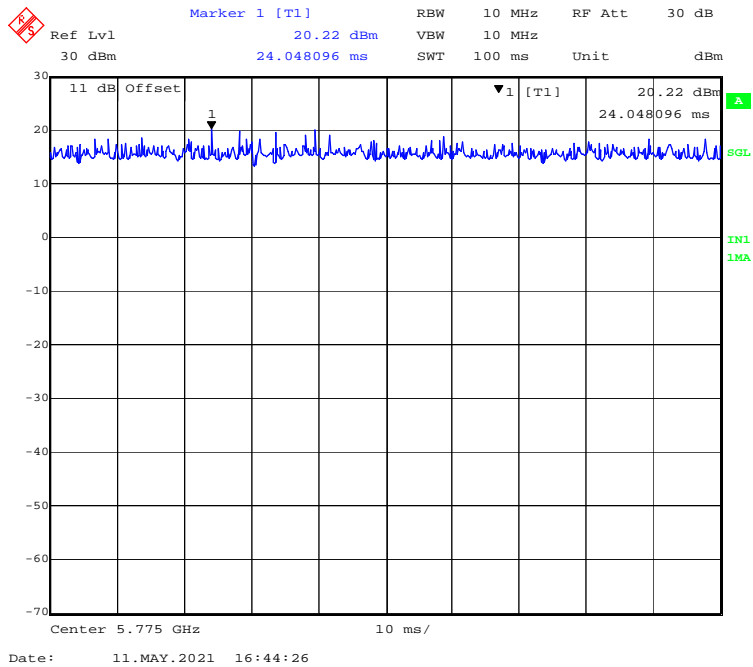
### 802.11 ac40 mode



### 802.11n-HT40 mode



### 802.11 ac80 mode



Frequency Range (MHz)	Mode	Duty Cycle (%)	T (ms)	1/T (kHz)	10log(1/x)
5150-5250	802.11a	100	/	/	0
	802.11ac20	100	/	/	0
	802.11n-HT20	100	/	/	0
	802.11ac40	100	/	/	0
	802.11n-HT40	100	/	/	0
	802.11ac80	100	/	/	0
5725-5850	802.11a	100	/	/	0
	802.11ac20	100	/	/	0
	802.11n-HT20	100	/	/	0
	802.11ac40	100	/	/	0
	802.11n-HT40	100	/	/	0
	802.11ac80	100	/	/	0

Note: "x" means duty cycle.

**Equipment Modifications**

No modification was made to the EUT.

**Support Equipment List and Details**

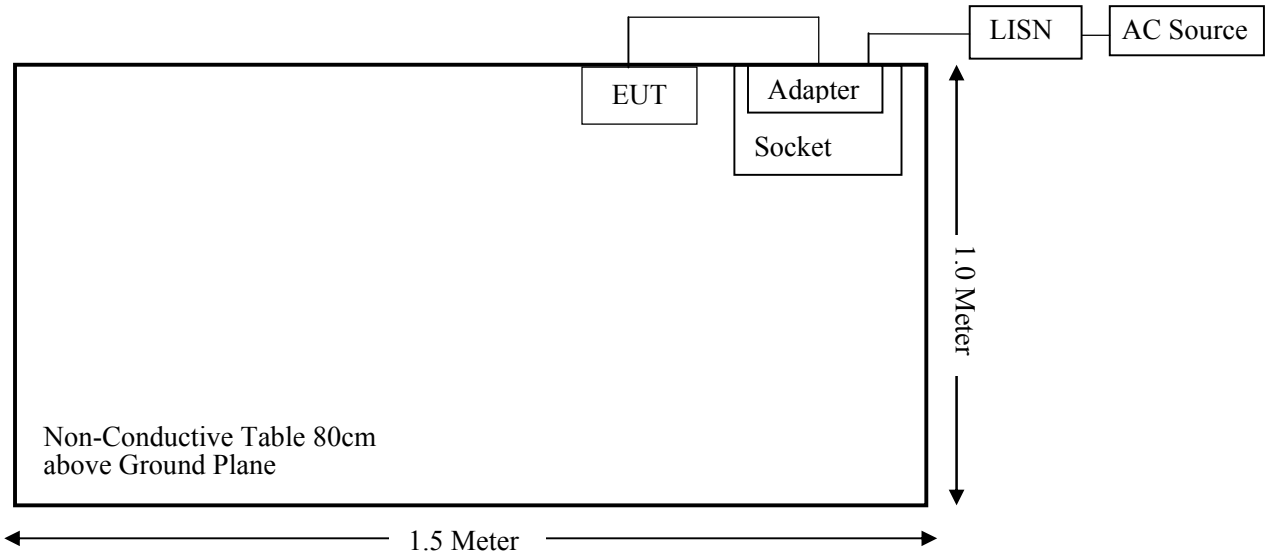
Manufacturer	Description	Model	Serial Number
/	/	/	/

**External I/O Cable**

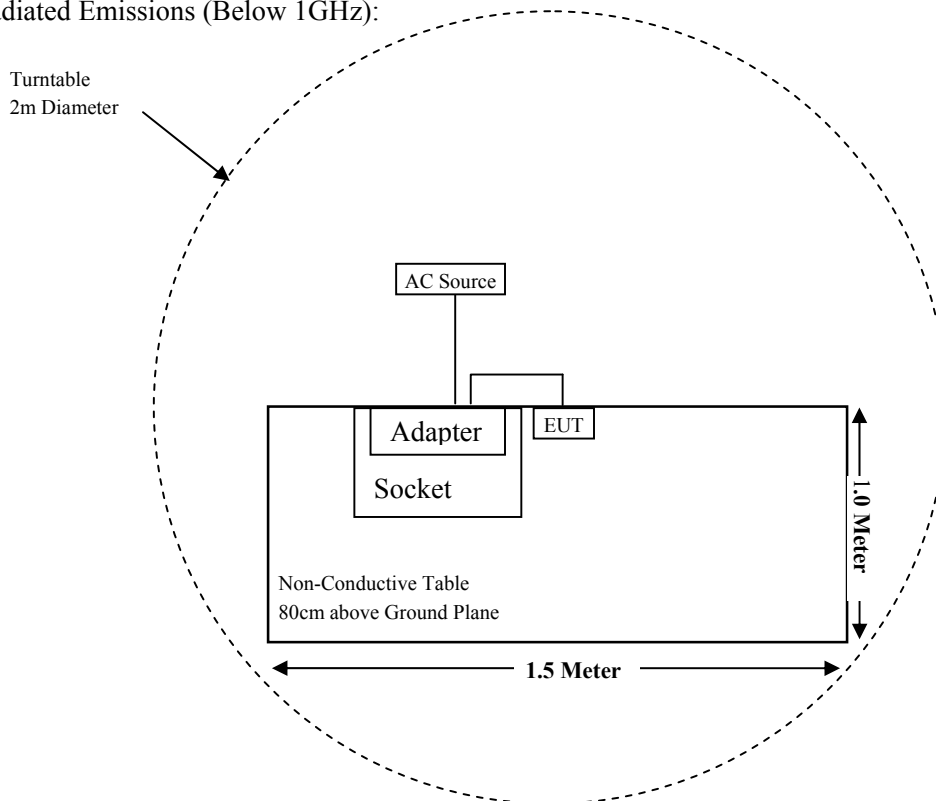
Cable Description	Length (m)	From Port	To
Power cable1	1.0	EUT	Adapter
Power cable2	1.0	Adapter	LISN/AC Source

### Block Diagram of Test Setup

For Conducted Emissions:



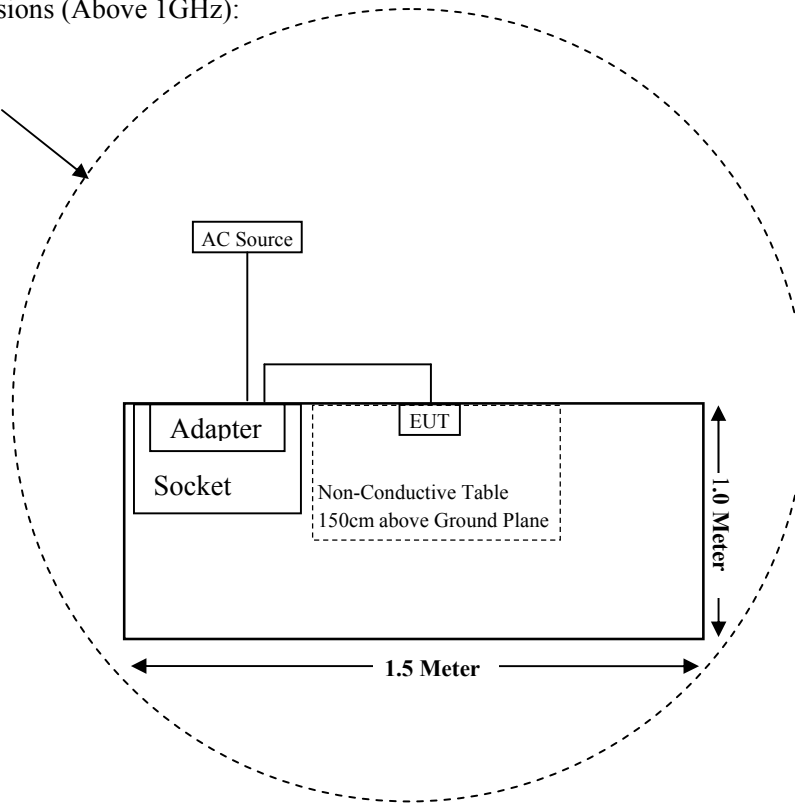
For Radiated Emissions (Below 1GHz):





For Radiated Emissions (Above 1GHz):

Turntable  
2m Diameter



**SUMMARY OF TEST RESULTS**

<b>FCC Rules</b>	<b>Description of Test</b>	<b>Result</b>
§1.1307(b)(1) & §2.1093	RF Exposure Information	Compliant
§15.203	Antenna Requirement	Compliant
§15.207 & §15.407(b) (8)	AC Power Line Conducted Emissions	Compliant
§15.205 & §15.209 & §15.407(b)(1)(4)(8)(9)	Undesirable Emission & Restricted Bands	Compliant
§15.407(a) & §15.407 (e)	Emission Bandwidth	Compliant
§15.407(a) (1) (3)	Conducted Transmitter Output Power	Compliant
§15.407(a) (1) (3)	Power Spectral Density	Compliant

**TEST EQUIPMENT LIST**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
<b>Radiated Emission Test (Chamber 1#)</b>					
Rohde & Schwarz	EMI Test Receiver	ESCI	100195	2020-11-27	2021-11-26
Sunol Sciences	Hybrid Antenna	JB3	A090314-1	2020-08-05	2023-08-04
Sonoma Instrument	Pre-amplifier	310N	171205	2020-08-14	2021-08-13
Rohde & Schwarz	Auto Test Software	EMC32	100361	N/A	N/A
MICRO-COAX	Coaxial Cable	Cable-8	008	2020-08-15	2021-08-14
MICRO-COAX	Coaxial Cable	Cable-9	009	2020-08-15	2021-08-14
MICRO-COAX	Coaxial Cable	Cable-10	010	2020-08-15	2021-08-14
<b>Radiated Emission Test (Chamber 2#)</b>					
Rohde & Schwarz	EMI Test Receiver	ESU40	100207	2021-03-16	2022-03-15
ETS-LINDGREN	Horn Antenna	3115	6229	2020-01-07	2023-01-06
ETS-LINDGREN	Horn Antenna	3116	2516	2020-01-07	2023-01-06
A.H.Systems, inc	Amplifier	PAM-0118P	512	202102-20	2022-02-19
SELECTOR	Amplifier	EM18G40G	060726	2021-03-22	2022-03-21
MICRO-TRONICS	Band Reject Filter	BRC50703	G094	2020-08-05	2021-08-04
MICRO-TRONICS	Band Reject Filter	BRC50705	G085	2020-08-05	2021-08-04
Narda	Attenuator	10dB	010	2020-08-05	2021-08-04
Rohde & Schwarz	Auto test Software	EMC32	100361	N/A	N/A
MICRO-COAX	Coaxial Cable	Cable-6	006	2020-08-15	2021-08-14
MICRO-COAX	Coaxial Cable	Cable-11	011	2020-08-15	2021-08-14
MICRO-COAX	Coaxial Cable	Cable-12	012	2020-08-15	2021-08-14
MICRO-COAX	Coaxial Cable	Cable-13	013	2020-08-15	2021-08-14
<b>RF Conducted Test</b>					
Rohde & Schwarz	EMI Test Receiver	ESIB26	100146	2020-11-27	2021-11-26
Agilent	Power Meter	N1912A	MY5000492	2020-11-18	2021-11-17
Agilent	Power Sensor	N1921A	MY54210024	2020-11-18	2021-11-17
Narda	Attenuator	10dB	010	2020-08-15	2021-08-14
Sunmi	RF Cable	Sunmi C01	C01	Each Time	N/A
<b>Conducted Emission Test</b>					
Rohde & Schwarz	EMI Test Receiver	ESR	102454	2020-11-27	2021-11-26
Rohde & Schwarz	LISN	ENV216	101115	2020-11-27	2021-11-26
Audix	Test Software	e3	V9	N/A	N/A
Rohde & Schwarz	Pulse limiter	ESH3-Z2	357.8810.52	2020-08-10	2021-08-09
MICRO-COAX	Coaxial Cable	Cable-15	015	2020-08-15	2021-08-14

\* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Kunshan) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

---

## **FCC §1.1307(b) & §2.1093 - RF EXPOSURE INFORMATION**

---

### **Applicable Standard**

FCC§1.1307, §2.1093.

### **Test Result**

Compliance, please refer to the SAR report: RKSA210422005-20A

---

## **FCC §15.203 – ANTENNA REQUIREMENT**

---

### **Applicable Standard**

According to § 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the user of a standard antenna jack or electrical connector is prohibited. The structure and application of the EUT were analyzed to determine compliance with section §15.203 of the rules. §15.203 state that the subject device must meet the following criteria:

- a. Antenna must be permanently attached to the unit.
- b. Antenna must use a unique type of connector to attach to the EUT.

Unit must be professionally installed, and installer shall be responsible for verifying that the correct antenna is employed with the unit.

And according to FCC 47 CFR section 15.407, if the transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

### **Antenna Connector Construction**

The EUT has an FPC antenna for 5G Wi-Fi which the antenna gain is 2.0dBi, fulfill the requirement of this section. Please refer to the EUT photos.

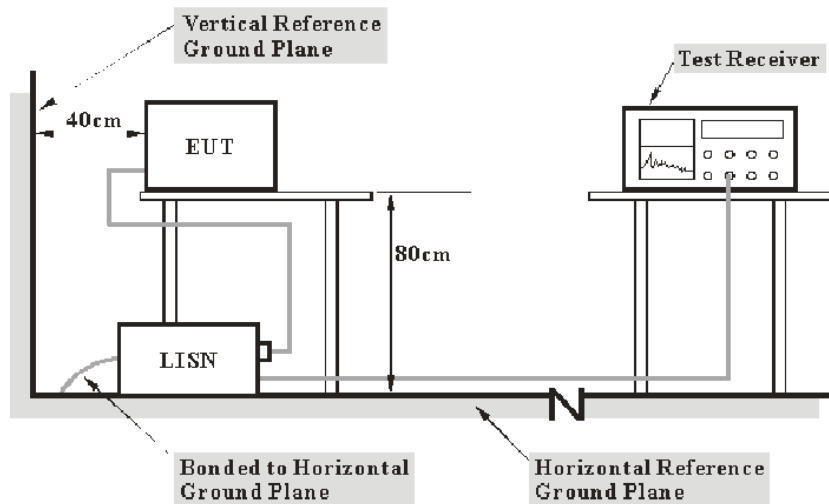
**Result:** Compliant.

## FCC §15.407 (b) (8) §15.207 (a) – AC POWER LINE CONDUCTED EMISSIONS

### Applicable Standard

FCC §15.207(a), §15.407(b) (8)

### EUT Setup



- Note: 1. Support units were connected to second LISN.  
 2. Both of LISNs (AMN) 80 cm from EUT and at the least 30 cm from other units and other metal planes support units.

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

The spacing between the peripherals was 10 cm.

### EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz

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

Frequency Range	IF B/W
150 kHz – 30 MHz	9 kHz

## Test Procedure

During the conducted emission test, the adapter was connected to the outlet of the LISN.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

## Factor & Over Limit Calculation – for Below 1GHz

The factor is calculated by adding LISN VDF (Voltage Division Factor), Cable Loss and Transient Limiter Attenuation. The basic equation is as follows:

$$\text{Factor (dB)} = \text{LISN VDF (dB)} + \text{Cable Loss (dB)} + \text{Transient Limiter Attenuation (dB)}$$

The “**Over Limit**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, an over limit of 7dB means the emission is 7 dB above the limit. The equation for over limit calculation is as follows:

$$\text{Over Limit (dB)} = \text{Read level (dB}\mu\text{V)} + \text{Factor (dB)} - \text{Limit (dB}\mu\text{V)}$$

## Corrected Amplitude & Margin Calculation – for Above 1GHz

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

$$\text{Corrected Amplitude (dB}\mu\text{V/m)} = \text{Meter Reading (dB}\mu\text{V)} + \text{Antenna Factor (dB/m)} + \text{Cable Loss (dB)} - \text{Amplifier Gain (dB)}$$

The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

$$\text{Margin (dB)} = \text{Limit (dB}\mu\text{V/m)} - \text{Corrected Amplitude (dB}\mu\text{V/m)}$$

## Test Results Summary

According to the recorded data in following table, the EUT complied with the FCC Part 15.207.

## Test Data

### Environmental Conditions

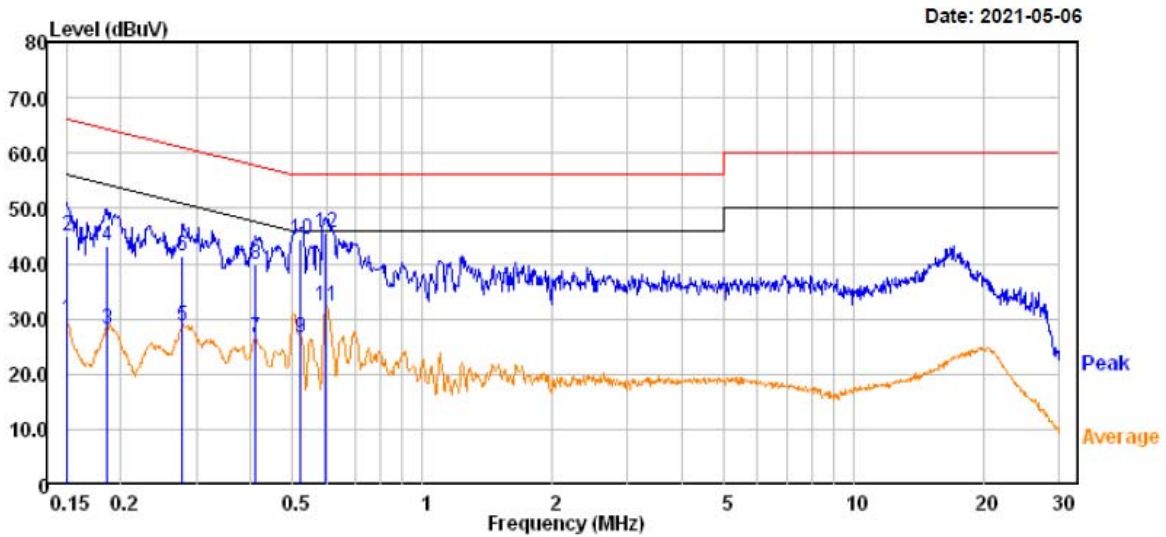
<b>Temperature:</b>	25 °C
<b>Relative Humidity:</b>	50 %
<b>ATM Pressure:</b>	100.9 kPa

*The testing was performed by Miller Xie on 2021-05-06.*

Adapter-I:

EUT operation mode: Transmitting in 802.11n-HT20 mode middle channel of 5150-5250MHz (worst case)

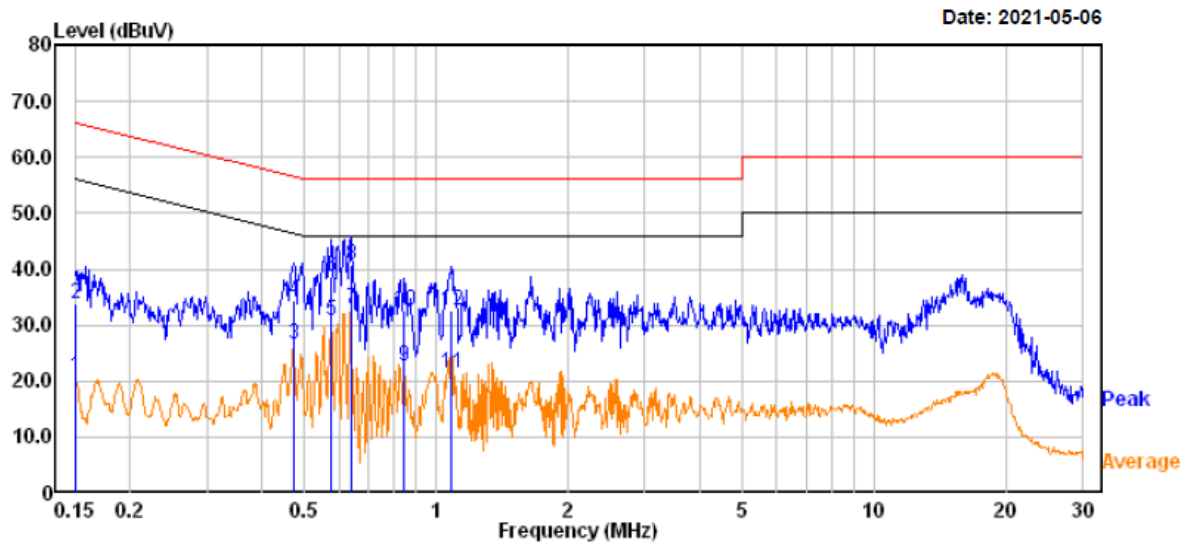
AC 120V/60 Hz, Line



	Read Freq	Read Level	Factor	Limit Level	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dB	
1	0.150	10.20	19.82	30.02	56.00	-25.98 Average
2	0.150	25.30	19.82	45.12	66.00	-20.88 QP
3	0.186	8.11	19.82	27.93	54.22	-26.29 Average
4	0.186	23.31	19.82	43.13	64.22	-21.09 QP
5	0.278	8.90	19.82	28.72	50.87	-22.15 Average
6	0.278	21.60	19.82	41.42	60.87	-19.45 QP
7	0.411	6.70	19.74	26.44	47.64	-21.20 Average
8	0.411	20.20	19.74	39.94	57.64	-17.70 QP
9	0.524	6.81	19.75	26.56	46.00	-19.44 Average
10	0.524	24.51	19.75	44.26	56.00	-11.74 QP
11	0.597	12.60	19.75	32.35	46.00	-13.65 Average
12	0.597	25.90	19.75	45.65	56.00	-10.35 QP



**AC 120V/60 Hz, Neutral**



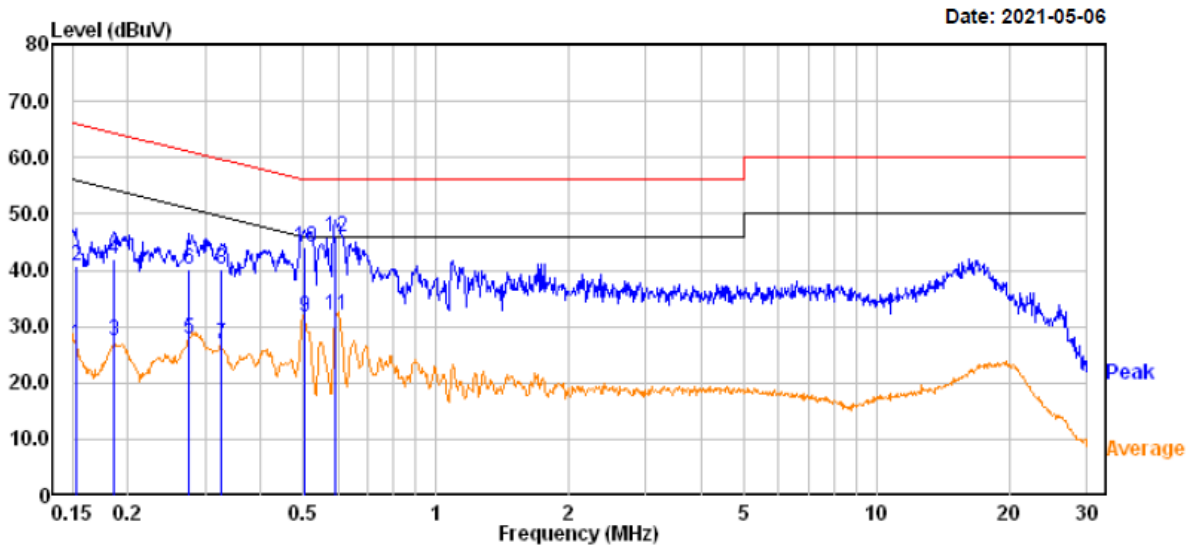
	Read	Limit	Over				
	Freq	Level	Factor	Level	Line	Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.150	1.10	19.82	20.92	56.00	-35.08	Average
2	0.150	13.90	19.82	33.72	66.00	-32.28	QP
3	0.474	6.80	19.76	26.56	46.44	-19.88	Average
4	0.474	14.60	19.76	34.36	56.44	-22.08	QP
5	0.576	10.90	19.75	30.65	46.00	-15.35	Average
6	0.576	18.90	19.75	38.65	56.00	-17.35	QP
7	0.640	13.20	19.75	32.95	46.00	-13.05	Average
8	0.640	20.90	19.75	40.65	56.00	-15.35	QP
9	0.846	2.90	19.71	22.61	46.00	-23.39	Average
10	0.846	13.00	19.71	32.71	56.00	-23.29	QP
11	1.080	1.60	19.82	21.42	46.00	-24.58	Average
12	1.080	12.70	19.82	32.52	56.00	-23.48	QP

**Note:**

- 1) Factor (dB) = LISN VDF (dB) + Cable Loss (dB) + Transient Limiter Attenuation (dB)
- 2) Over Limit (dB) = Read level (dBμV) + Factor (dB) - Limit (dBμV)

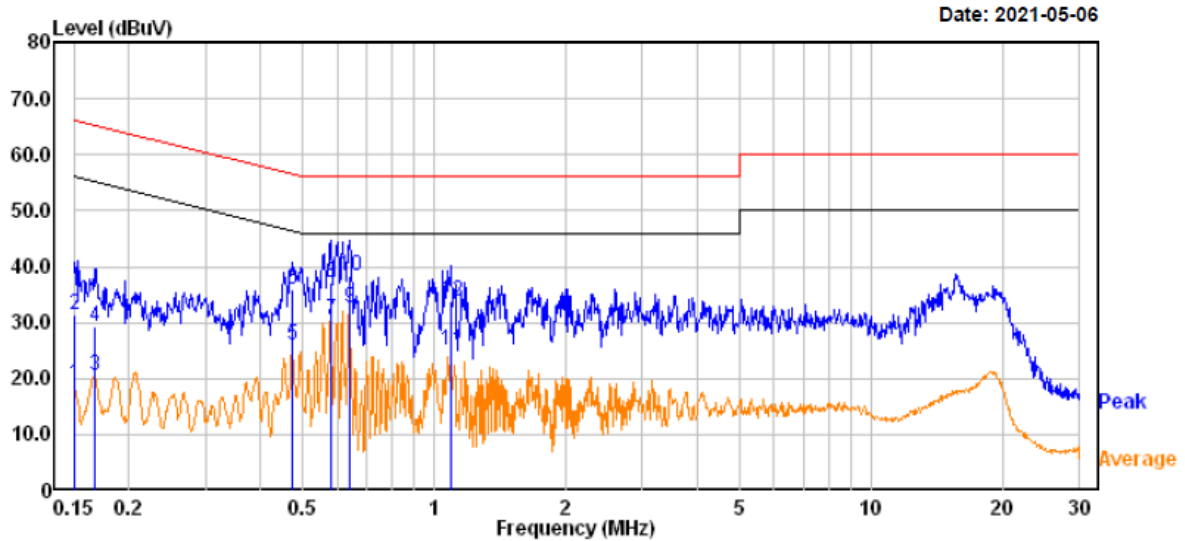
EUT operation mode: Transmitting in 802.11a mode high channel of 5725-5850MHz (worst case)

AC 120V/60 Hz, Line



	Read Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.152	7.10	19.82	26.92	55.88	-28.96	Average
2	0.152	20.90	19.82	40.72	65.88	-25.16	QP
3	0.186	7.51	19.82	27.33	54.22	-26.89	Average
4	0.186	22.11	19.82	41.93	64.22	-22.29	QP
5	0.274	7.90	19.82	27.72	50.99	-23.27	Average
6	0.274	20.30	19.82	40.12	60.99	-20.87	QP
7	0.325	7.00	19.82	26.82	49.58	-22.76	Average
8	0.325	20.40	19.82	40.22	59.58	-19.36	QP
9	0.504	11.90	19.76	31.66	46.00	-14.34	Average
10	0.504	24.40	19.76	44.16	56.00	-11.84	QP
11	0.594	12.40	19.75	32.15	46.00	-13.85	Average
12	0.594	26.20	19.75	45.95	56.00	-10.05	QP

AC 120V/60 Hz, Neutral



	Read Freq	Read Level	Factor	Limit Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.150	-0.81	19.82	19.01	56.00	-36.99	Average
2	0.150	11.50	19.82	31.32	66.00	-34.68	QP
3	0.167	0.58	19.83	20.41	55.13	-34.72	Average
4	0.167	9.40	19.83	29.23	65.13	-35.90	QP
5	0.474	6.08	19.76	25.84	46.44	-20.60	Average
6	0.474	16.10	19.76	35.86	56.44	-20.58	QP
7	0.579	10.80	19.75	30.55	46.00	-15.45	Average
8	0.579	17.40	19.75	37.15	56.00	-18.85	QP
9	0.643	12.90	19.75	32.65	46.00	-13.35	Average
10	0.643	18.70	19.75	38.45	56.00	-17.55	QP
11	1.096	5.27	19.81	25.08	46.00	-20.92	Average
12	1.096	14.11	19.81	33.92	56.00	-22.08	QP

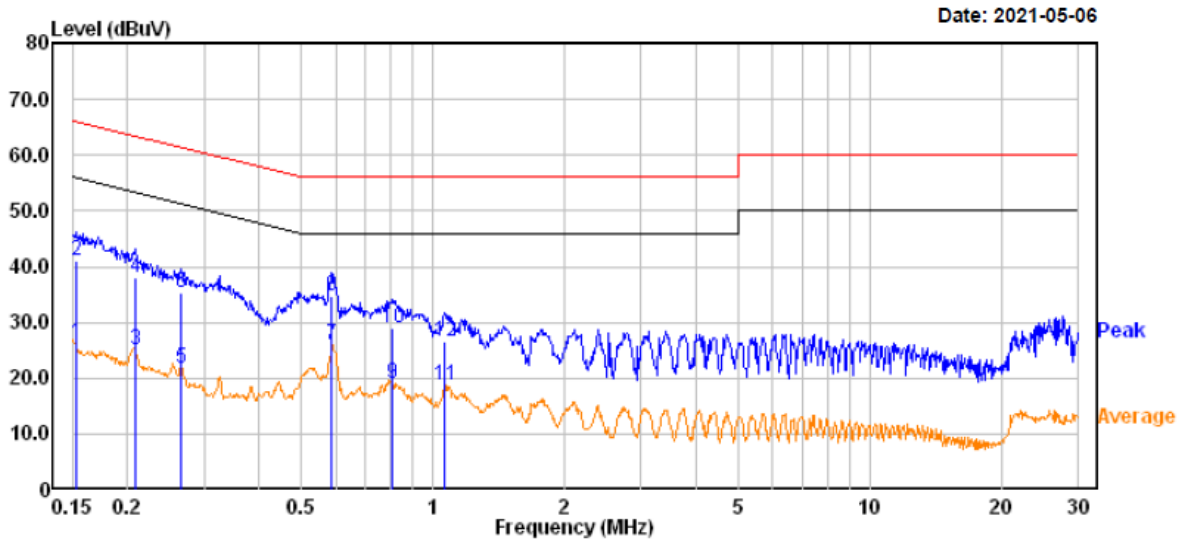
Note:

- 1) Factor (dB) = LISN VDF (dB) + Cable Loss (dB) + Transient Limiter Attenuation (dB)
- 2) Over Limit (dB) = Read level (dBuV) + Factor (dB) - Limit (dBuV)

Adapter-2:

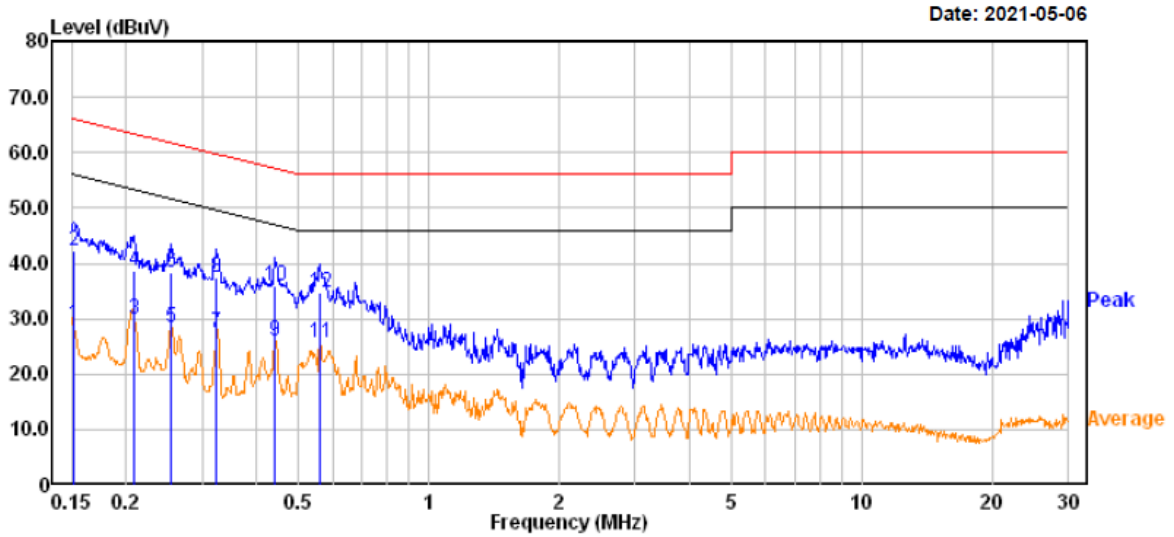
EUT operation mode: Transmitting in 802.11n-HT20 mode middle channel of 5150-5250MHz (worst case)

AC 120V/60 Hz, Line



	Read Freq	Read Level	Factor	Limit Level	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dB	
1	0.152	6.38	19.82	26.20	55.88	-29.68 Average
2	0.152	21.10	19.82	40.92	65.88	-24.96 QP
3	0.209	5.23	19.82	25.05	53.23	-28.18 Average
4	0.209	18.30	19.82	38.12	63.23	-25.11 QP
5	0.266	1.80	19.82	21.62	51.24	-29.62 Average
6	0.266	15.40	19.82	35.22	61.24	-26.02 QP
7	0.588	6.09	19.75	25.84	46.00	-20.16 Average
8	0.588	15.00	19.75	34.75	56.00	-21.25 QP
9	0.809	-0.68	19.70	19.02	46.00	-26.98 Average
10	0.809	9.21	19.70	28.91	56.00	-27.09 QP
11	1.064	-1.19	19.82	18.63	46.00	-27.37 Average
12	1.064	6.60	19.82	26.42	56.00	-29.58 QP

**AC 120V/60 Hz, Neutral**



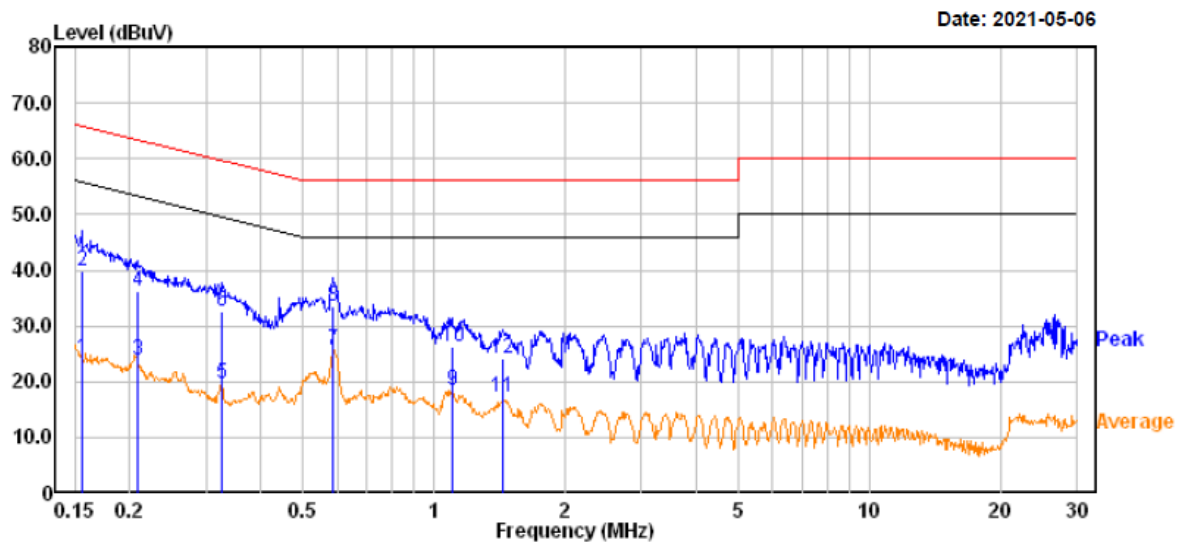
	Read		Limit	Over			
	Freq	Level	Factor	Level	Line	Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.152	9.20	19.82	29.02	55.92	-26.90	Average
2	0.152	22.40	19.82	42.22	65.92	-23.70	QP
3	0.208	10.10	19.82	29.92	53.27	-23.35	Average
4	0.208	18.80	19.82	38.62	63.27	-24.65	QP
5	0.254	8.69	19.82	28.51	51.61	-23.10	Average
6	0.254	18.40	19.82	38.22	61.61	-23.39	QP
7	0.323	7.77	19.82	27.59	49.62	-22.03	Average
8	0.323	17.60	19.82	37.42	59.62	-22.20	QP
9	0.442	6.33	19.75	26.08	47.02	-20.94	Average
10	0.442	16.10	19.75	35.85	57.02	-21.17	QP
11	0.559	6.05	19.75	25.80	46.00	-20.20	Average
12	0.559	15.00	19.75	34.75	56.00	-21.25	QP

**Note:**

- 1) Factor (dB) = LISN VDF (dB) + Cable Loss (dB) + Transient Limiter Attenuation (dB)
- 2) Over Limit (dB) = Read level (dBμV) + Factor (dB) - Limit (dBμV)

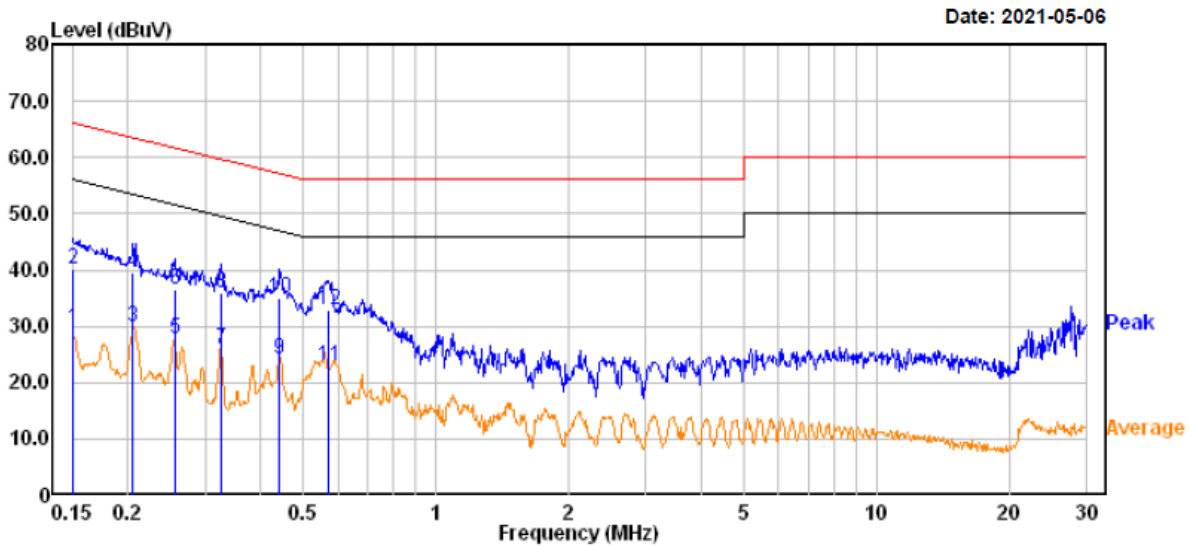
EUT operation mode: Transmitting in 802.11a mode high channel of 5725-5850MHz (worst case)

AC 120V/60 Hz, Line



	Read Freq	Read Level	Factor	Limit Level	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB
1	0.155	4.40	19.82	24.22	55.71	-31.49 Average
2	0.155	20.10	19.82	39.92	65.71	-25.79 QP
3	0.209	4.01	19.82	23.83	53.23	-29.40 Average
4	0.209	16.40	19.82	36.22	63.23	-27.01 QP
5	0.325	-0.17	19.82	19.65	49.58	-29.93 Average
6	0.325	12.70	19.82	32.52	59.58	-27.06 QP
7	0.588	5.95	19.75	25.70	46.00	-20.30 Average
8	0.588	13.80	19.75	33.55	56.00	-22.45 QP
9	1.101	-1.42	19.81	18.39	46.00	-27.61 Average
10	1.101	6.31	19.81	26.12	56.00	-29.88 QP
11	1.434	-2.54	19.83	17.29	46.00	-28.71 Average
12	1.434	4.21	19.83	24.04	56.00	-31.96 QP

AC 120V/60 Hz, Neutral



	Read	Limit	Over	Remark			
Freq	Level	Factor	Level	Line			
MHz	dBuV	dB	dBuV	dBuV			
1	0.150	9.70	19.82	29.52	56.00	-26.48	Average
2	0.150	20.40	19.82	40.22	66.00	-25.78	QP
3	0.205	9.98	19.82	29.80	53.39	-23.59	Average
4	0.205	19.70	19.82	39.52	63.39	-23.87	QP
5	0.256	8.09	19.82	27.91	51.57	-23.66	Average
6	0.256	16.80	19.82	36.62	61.57	-24.95	QP
7	0.326	6.20	19.82	26.02	49.54	-23.52	Average
8	0.326	16.10	19.82	35.92	59.54	-23.62	QP
9	0.442	4.53	19.75	24.28	47.02	-22.74	Average
10	0.442	15.20	19.75	34.95	57.02	-22.07	QP
11	0.570	3.27	19.75	23.02	46.00	-22.98	Average
12	0.570	13.10	19.75	32.85	56.00	-23.15	QP

Note:

- 1) Factor (dB) = LISN VDF (dB) + Cable Loss (dB) + Transient Limiter Attenuation (dB)
- 2) Over Limit (dB) = Read level (dBμV) + Factor (dB) - Limit (dBμV)

**§15.205 & §15.209 & §15.407(B)(1)(4) (8)(9) – UNDESIRABLE EMISSION & RESTRICTED BANDS**

**Applicable Standard**

FCC §15.407 (b) (1)(4) (8) (9); §15.209; §15.205;

For transmitters operating in the 5.15–5.25 GHz band: all emissions outside of the 5.15–5.35 GHz band shall not exceed an EIRP of –27dBm/MHz

For transmitters operating in the 5.725-5.85 GHz band: All emissions shall be limited to a level of –27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

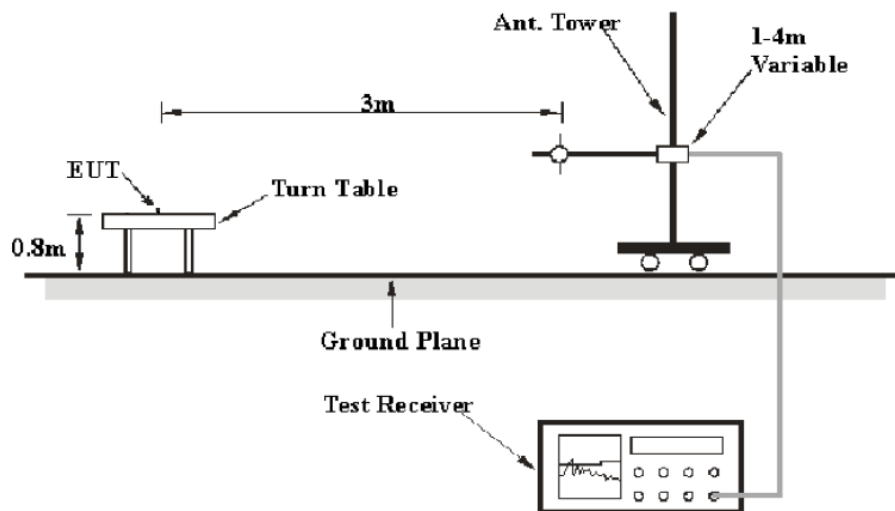
Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209.

As per FCC §15.35(d):Unless otherwise specified, on any frequency or frequencies above 1000MHz,the radiated emission limits are based on the use of measurement instrumentation employing an average detector function. Unless otherwise specified, measurements above 1000MHz shall be performed using a minimum resolution bandwidth of 1MHz.

According to 789033 D02 General UNII Test Procedures New Rules v02r01, emission shall be computed as:  $E [dB\mu V/m] = EIRP [dBm] + 95.2$ , for  $d = 3$  meters.

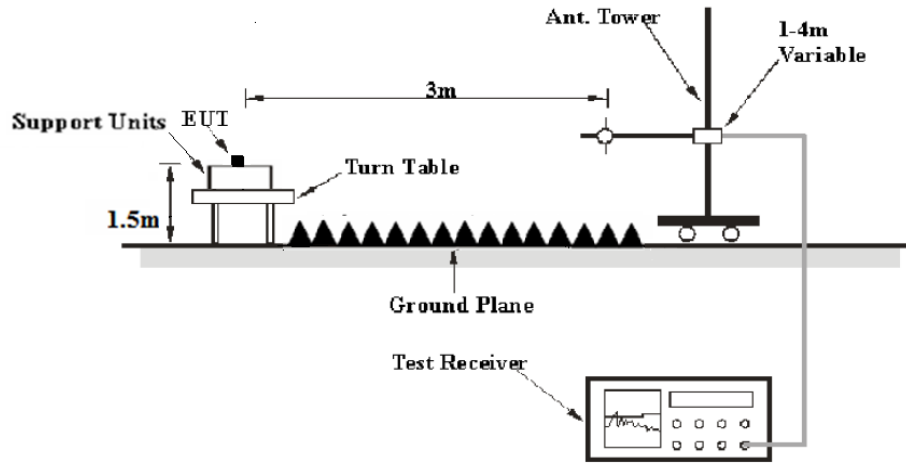
**EUT Setup**

Below 1 GHz:





Above 1 GHz:



The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC 15.209 and FCC 15.407 limits.

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

The spacing between the peripherals was 10 cm.

**EMI Test Receiver & Spectrum Analyzer Setup**

The system was investigated from 30 MHz to 40 GHz.

During the radiated emission test, the EMI test receiver Setup was set with the following configurations:

Frequency Range	RBW	Video B/W	Detector
30 MHz – 1000 MHz	120 kHz	300 kHz	QP
Above 1GHz	1MHz	3 MHz	PK
	1MHz	3 MHz	Ave.

**Test Procedure**

During the radiated emission test, the adapter was connected to the first AC floor outlet and the other support equipments were connected to the second AC floor outlet.

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

## Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Loss and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

$$\text{Corrected Amplitude} = \text{Meter Reading} + \text{Antenna factor} + \text{Cable Loss} - \text{Amplifier Gain}$$

The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Limit} - \text{Corrected Amplitude}$$

## Test Data

### Environmental Conditions

<b>Temperature:</b>	24.6~25.0 °C
<b>Relative Humidity:</b>	48~53 %
<b>ATM Pressure:</b>	100.7~101.3 kPa

*The testing was performed by Miller Xie from 2021-04-28 to 2021-05-07.*

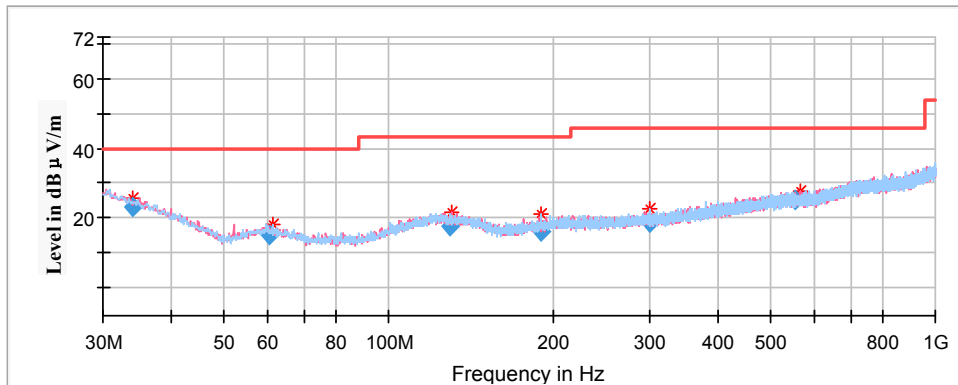
*Test Mode: Transmitting*

Adapter-1:

**Spurious Emission Test**

**30MHz-1GHz(5150-5250MHz Band):**

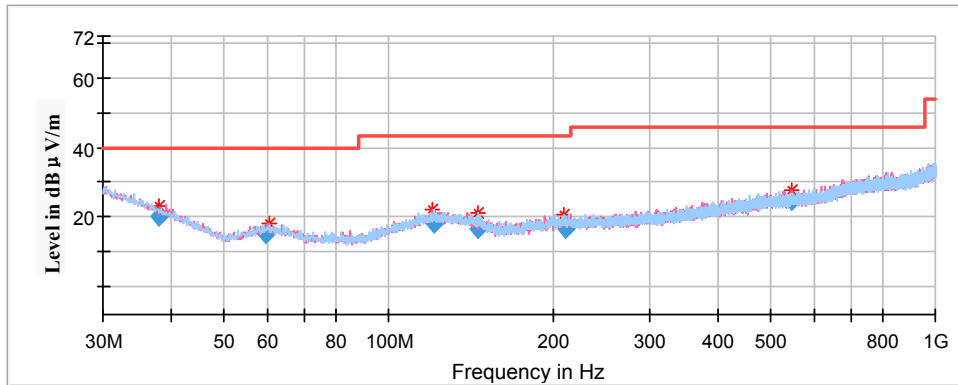
Pre-scan with 802.11a, 802.11ac20, 802.11n-HT20, 802.11ac40, 802.11n-HT40 and 802.11ac80 modes of operation in the X,Y and Z axes of orientation, **the worst case 802.11n-HT20 mode middle channel in X-axis of orientation was recorded.**



Frequency (MHz)	Corrected Amplitude	Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	QuasiPeak (dBµV/m)	Height (cm)	Polar (H/V)				
33.998650	23.21	100.0	V	56.0	-6.4	40.00	16.79
60.692700	15.29	199.0	H	38.0	-14.6	40.00	24.71
129.590400	17.76	100.0	V	247.0	-11.2	43.50	24.74
189.584600	16.01	100.0	H	344.0	-12.7	43.50	27.49
300.620950	18.54	100.0	H	34.0	-10.8	46.00	27.46
555.291800	25.09	200.0	V	0.0	-5.1	46.00	20.91

**30MHz-1GHz(5725-5850MHz Band):**

Pre-scan with 802.11a, 802.11ac20, 802.11n-HT20, 802.11ac40, 802.11n-HT40 and 802.11ac80 modes of operation in the X,Y and Z axes of orientation, **the worst case 802.11a mode high channel in X-axis of orientation was recorded.**



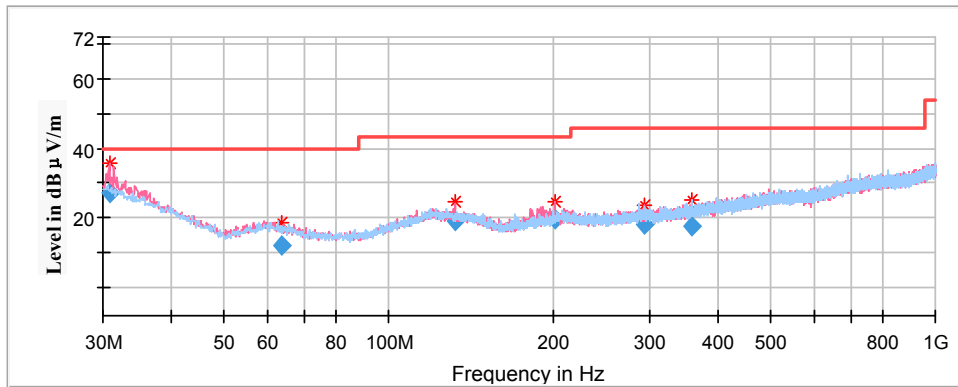
Frequency (MHz)	Corrected Amplitude	Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	QuasiPeak (dBµV/m)	Height (cm)	Polar (H/V)				
38.028800	20.38	100.0	V	0.0	-9.1	40.00	19.62
59.710850	15.11	100.0	V	333.0	-14.5	40.00	24.89
120.779900	18.04	200.0	H	308.0	-10.9	43.50	24.46
145.903950	16.72	100.0	H	332.0	-12.4	43.50	26.78
210.011050	16.71	200.0	H	262.0	-12.0	43.50	26.79
546.695900	24.85	199.0	V	152.0	-5.2	46.00	21.15

Adapter-2:

**Spurious Emission Test**

**30MHz-1GHz(5150-5250MHz Band):**

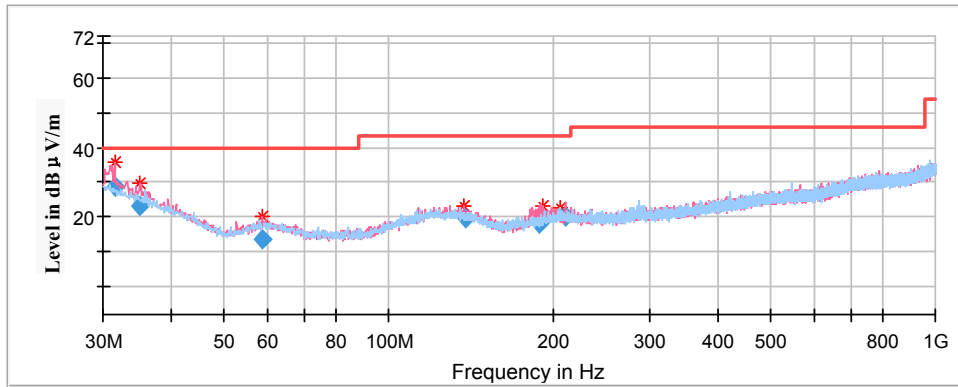
Pre-scan with 802.11a, 802.11ac20, 802.11n-HT20, 802.11ac40, 802.11n-HT40 and 802.11ac80 modes of operation in the X,Y and Z axes of orientation, **the worst case 802.11n-HT20 mode middle channel in X-axis of orientation was recorded.**



Frequency (MHz)	Corrected Amplitude	Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	QuasiPeak (dBµV/m)	Height (cm)	Polar (H/V)				
30.834654	27.34	100.0	V	118.0	-4.6	40.00	12.66
63.651250	12.14	100.0	H	186.0	-15.3	40.00	27.86
132.767750	19.17	100.0	V	142.0	-11.3	43.50	24.33
201.144750	19.92	100.0	V	202.0	-12.0	43.50	23.58
294.028300	18.04	100.0	V	208.0	-11.0	46.00	27.96
357.898800	17.74	100.0	H	131.0	-9.2	46.00	28.26

**30MHz-1GHz(5725-5850MHz Band):**

Pre-scan with 802.11a, 802.11ac20, 802.11n-HT20, 802.11ac40, 802.11n-HT40 and 802.11ac80 modes of operation in the X,Y and Z axes of orientation, **the worst case 802.11a mode high channel** in X-axis of orientation was recorded.



Frequency (MHz)	Corrected Amplitude	Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	QuasiPeak (dBµV/m)	Height (cm)	Polar (H/V)				
31.577850	28.65	100.0	V	165.0	-4.0	40.00	11.35
35.148300	23.24	100.0	V	170.0	-7.1	40.00	16.76
58.904500	13.40	199.0	V	69.0	-14.8	40.00	26.60
137.894400	19.47	100.0	V	186.0	-11.5	43.50	24.03
188.252150	18.31	100.0	V	186.0	-12.8	43.50	25.19
209.920700	20.19	100.0	V	186.0	-12.0	43.50	23.31

**1GHz-18GHz (5150-5250MHz Band):** For adapter-2 (worst case) :

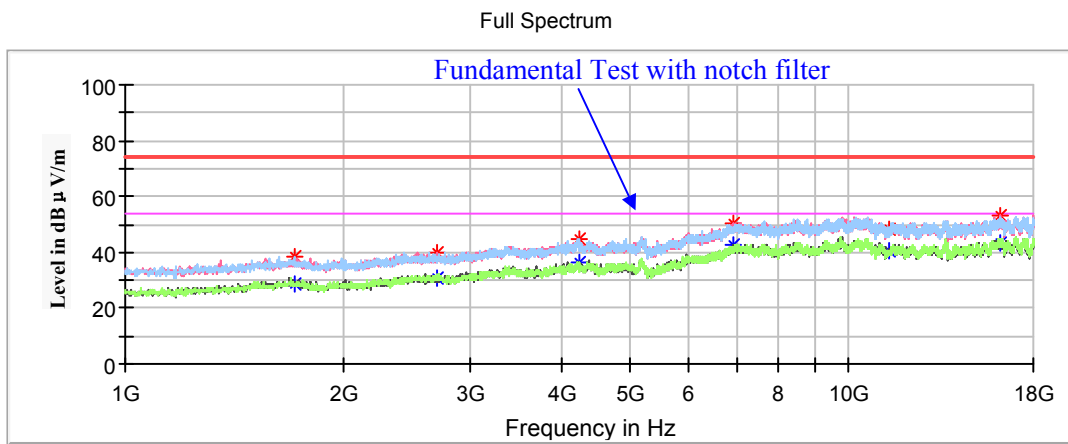
**802.11a Mode:**

(Pre-scan in the X, Y and Z axes of orientation, the worst case X-axis of orientation was recorded.)

Note:

1. This test was performed with the 5150-5250MHz band reject filter.
2. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor  
 Corrected Amplitude = Corrected Factor + Reading  
 Margin = Limit - Corrected. Amplitude

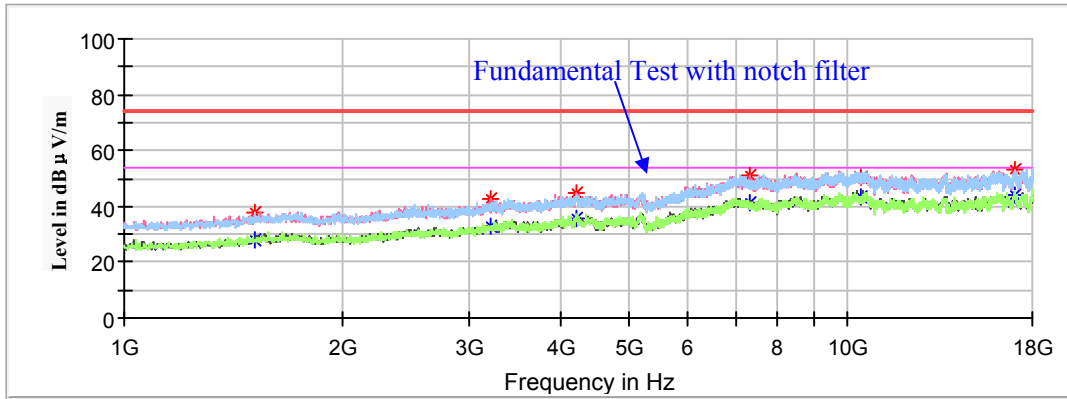
**Low Channel: 5180MHz**



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
1710.600000	38.47	---	150.0	H	244.0	-8.7	68.20	29.73
2693.200000	---	30.46	150.0	V	18.0	-4.8	54.00	23.54
2693.200000	39.95	---	150.0	V	18.0	-4.8	74.00	34.05
4230.000000	44.90	---	150.0	H	130.0	0.6	74.00	29.10
4230.000000	---	36.43	150.0	H	130.0	0.6	54.00	17.57
6938.100000	---	42.39	200.0	V	78.0	8.6	54.00	11.61
6938.100000	50.59	---	200.0	V	78.0	8.6	74.00	23.41
11352.700000	48.29	---	150.0	V	325.0	11.7	68.20	19.91
16238.800000	53.20	---	150.0	H	324.0	12.2	68.20	15.00

**Middle Channel: 5200MHz**

Full Spectrum

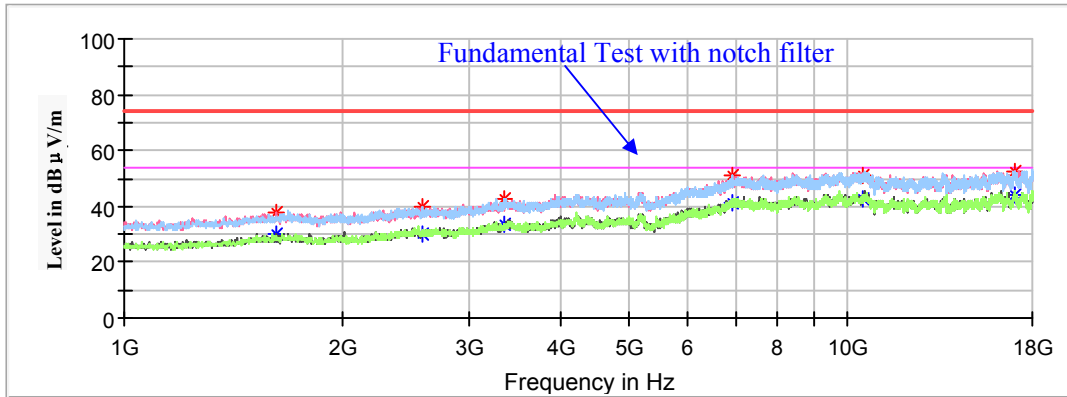


Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
1515.100000	---	28.11	150.0	H	1.0	-9.3	54.00	25.89
1515.100000	37.64	---	150.0	H	1.0	-9.3	74.00	36.36
3216.800000	42.98	---	200.0	V	13.0	-2.6	68.20	25.22
4214.700000	---	35.46	150.0	H	0.0	0.6	54.00	18.54
4214.700000	44.86	---	150.0	H	0.0	0.6	74.00	29.14
7317.200000	---	41.49	200.0	V	0.0	9.1	54.00	12.51
7317.200000	51.14	---	200.0	V	0.0	9.1	74.00	22.86
10400.000000	50.27	---	150.0	V	306.0	12.8	68.20	17.93
16990.200000	53.07	---	200.0	V	88.0	12.0	68.20	15.13



**High Channel: 5240MHz**

Full Spectrum



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1622.200000	---	30.11	200.0	V	298.0	-9.0	54.00	23.89
1622.200000	37.97	---	200.0	V	298.0	-9.0	74.00	36.03
2584.400000	39.64	---	200.0	V	324.0	-5.4	68.20	28.56
3359.600000	42.65	---	150.0	V	15.0	-2.2	68.20	25.55
6927.900000	51.13	---	150.0	H	352.0	8.6	68.20	17.07
10480.000000	51.27	---	200.0	V	156.0	13.0	68.20	16.93
17031.000000	52.79	---	150.0	V	0.0	11.9	68.20	15.41

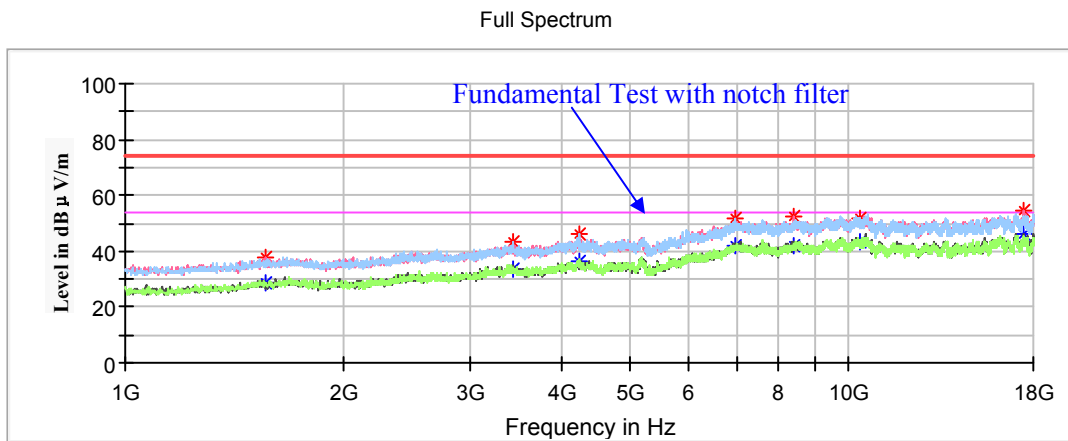
**802.11ac20 Mode:**

(Pre-scan in the X, Y and Z axes of orientation, the worst case X-axis of orientation was recorded.)

Note:

1. This test was performed with the 5150-5250MHz band reject filter.
2. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor  
 Corrected Amplitude = Corrected Factor + Reading  
 Margin = Limit - Corrected. Amplitude

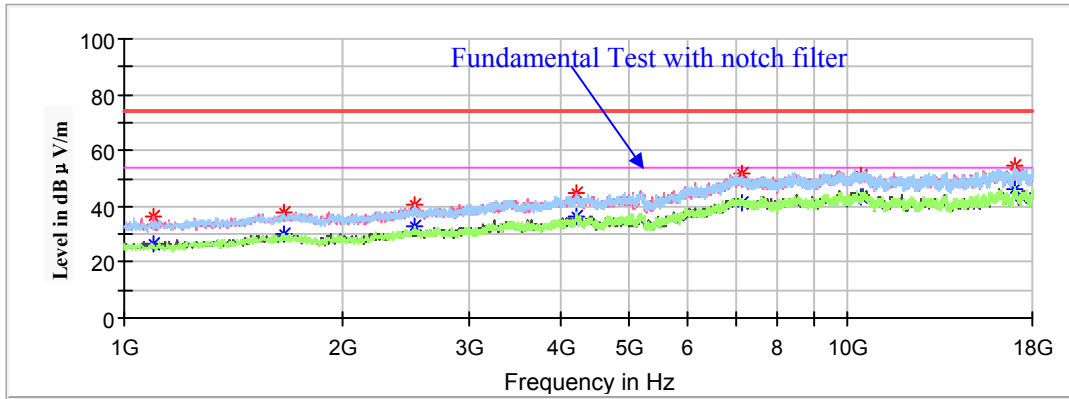
**Low Channel: 5180MHz**



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1561.000000	---	28.55	150.0	V	167.0	-9.2	54.00	25.45
1561.000000	38.00	---	150.0	V	167.0	-9.2	74.00	36.00
3437.800000	43.44	---	150.0	H	353.0	-2.0	68.20	24.76
4240.200000	---	36.48	200.0	H	334.0	0.7	54.00	17.52
4240.200000	45.96	---	200.0	H	334.0	0.7	74.00	28.04
6948.300000	52.00	---	200.0	H	65.0	8.7	68.20	16.20
8389.900000	---	42.24	200.0	H	258.0	10.7	54.00	11.76
8389.900000	52.21	---	200.0	H	258.0	10.7	74.00	21.79
10360.000000	51.63	---	150.0	V	2.0	12.7	68.20	16.57

**Middle Channel: 5200MHz**

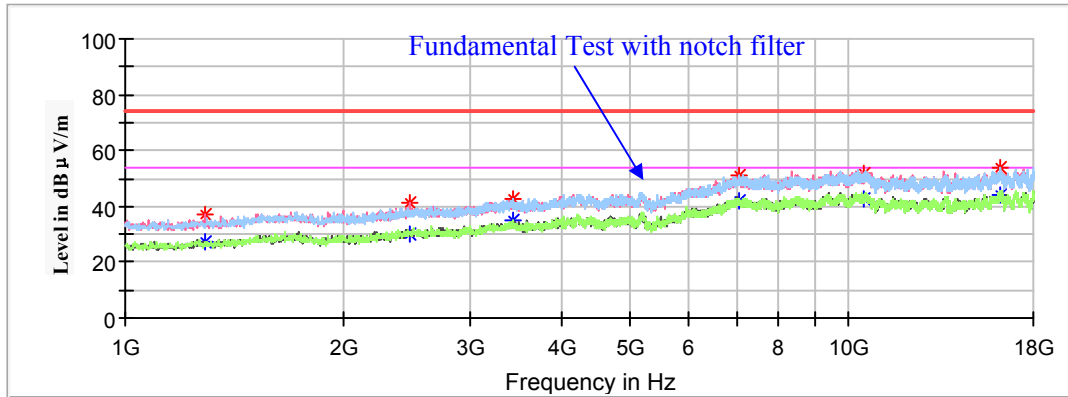
Full Spectrum



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
1096.900000	---	26.62	200.0	V	5.0	-11.9	54.00	27.38
1096.900000	36.09	---	200.0	V	5.0	-11.9	74.00	37.91
1662.000000	---	30.16	150.0	H	112.0	-8.8	54.00	23.84
1662.000000	38.10	---	150.0	H	112.0	-8.8	74.00	35.90
2526.600000	40.52	---	150.0	H	151.0	-5.7	68.20	27.68
4216.400000	---	36.29	150.0	V	166.0	0.6	54.00	17.71
4216.400000	44.91	---	150.0	V	166.0	0.6	74.00	29.09
7128.500000	51.53	---	150.0	V	0.0	9.0	68.20	16.67
10400.000000	51.14	---	150.0	V	359.0	12.8	68.20	17.06

**High Channel: 5240MHz**

Full Spectrum



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
1287.300000	36.76	---	150.0	V	298.0	-10.7	68.20	31.44
2475.600000	41.11	---	200.0	V	0.0	-5.9	68.20	27.09
3441.200000	42.75	---	150.0	H	164.0	-1.9	68.20	25.45
7067.300000	51.02	---	150.0	H	358.0	9.0	68.20	17.18
10480.000000	51.83	---	150.0	H	111.0	12.9	68.20	16.37
16218.400000	54.00	---	200.0	H	226.0	12.2	68.20	14.20

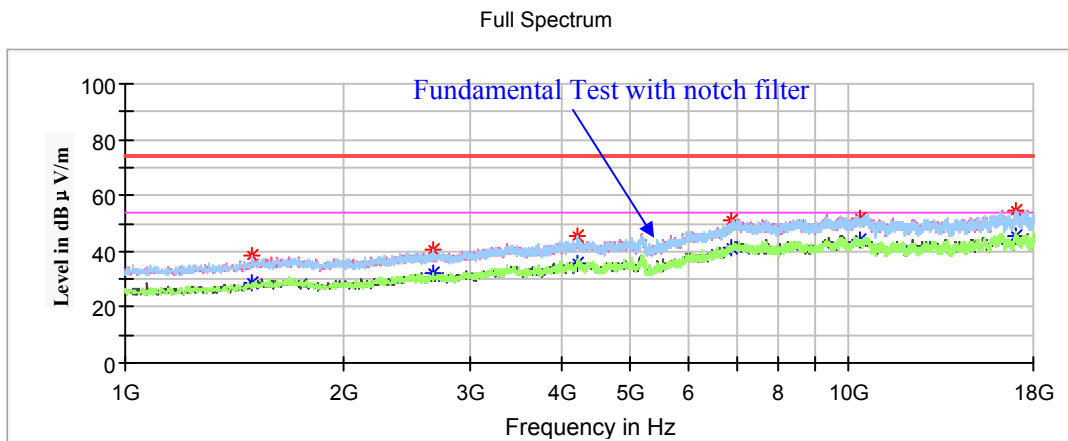
**802.11n-HT20 Mode:**

Pre-scan with X,Y and Z axes of orientation, the worst case X-axis of orientation was recorded

Note:

1. This test was performed with the 5150-5250MHz band reject filter.
2. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor  
 Corrected Amplitude = Corrected Factor + Reading  
 Margin = Limit - Corrected. Amplitude

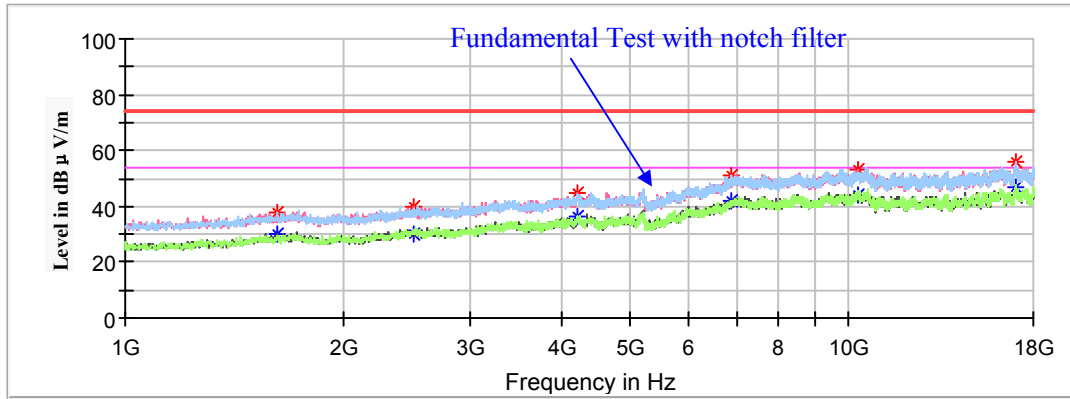
**Low Channel: 5180MHz**



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
1499.800000	---	28.34	200.0	H	264.0	-9.4	54.00	25.66
1499.800000	38.44	---	200.0	H	264.0	-9.4	74.00	35.56
2662.600000	40.30	---	200.0	H	41.0	-5.0	68.20	27.90
4213.000000	---	35.44	150.0	V	292.0	0.6	54.00	18.56
4213.000000	45.22	---	150.0	V	292.0	0.6	74.00	28.78
6873.500000	51.18	---	150.0	H	0.0	8.4	68.20	17.02
10360.000000	51.43	---	150.0	H	0.0	12.7	68.20	16.77
17034.400000	54.56	---	200.0	H	171.0	11.9	68.20	13.64

**Middle Channel: 5200MHz**

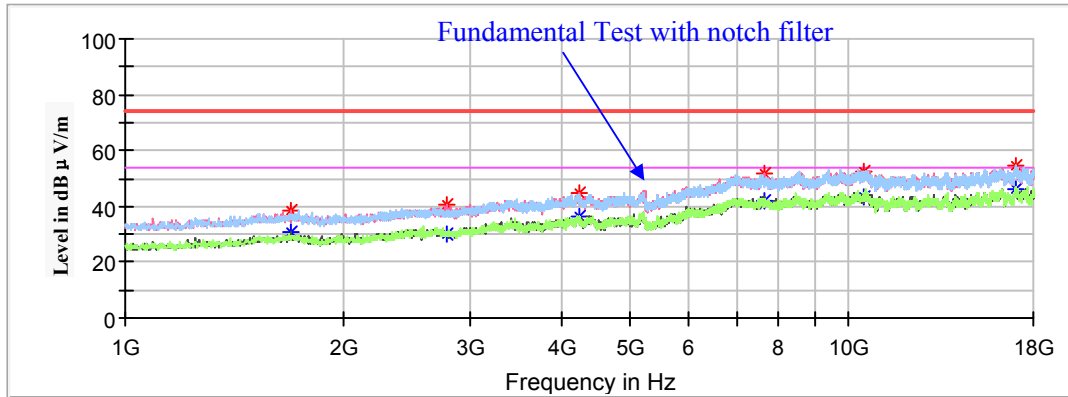
Full Spectrum



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
1620.500000	---	29.82	200.0	V	41.0	-9.0	54.00	24.18
1620.500000	37.69	---	200.0	V	41.0	-9.0	74.00	36.31
2506.200000	39.69	---	150.0	H	74.0	-5.8	68.20	28.51
4223.200000	---	36.42	150.0	H	189.0	0.6	54.00	17.58
4223.200000	45.03	---	150.0	H	189.0	0.6	74.00	28.97
6899.000000	50.96	---	200.0	H	192.0	8.5	68.20	17.24
10400.000000	52.90	---	200.0	V	207.0	12.6	68.20	15.30
16993.600000	56.08	---	200.0	H	0.0	12.0	68.20	12.12

**High Channel: 5240MHz**

Full Spectrum



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1691.900000	---	30.74	200.0	V	0.0	-8.7	54.00	23.26
1691.900000	38.67	---	200.0	V	0.0	-8.7	74.00	35.33
2785.000000	---	30.27	150.0	V	104.0	-4.3	54.00	23.73
2785.000000	40.33	---	150.0	V	104.0	-4.3	74.00	33.67
4235.100000	---	36.04	150.0	V	282.0	0.6	54.00	17.96
4235.100000	44.73	---	150.0	V	282.0	0.6	74.00	29.27
7628.300000	---	42.29	150.0	H	233.0	9.6	54.00	11.71
7628.300000	51.55	---	150.0	H	233.0	9.6	74.00	22.45
10480.000000	52.66	---	150.0	H	245.0	13.0	68.20	15.54
17044.600000	54.86	---	200.0	H	179.0	11.9	68.20	13.34

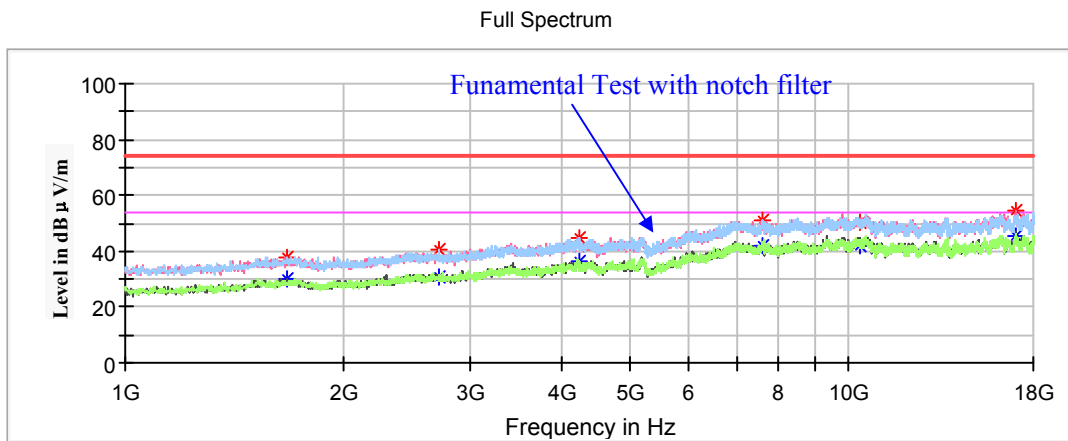
**802.11ac40 Mode:**

(Pre-scan in the X, Y and Z axes of orientation, the worst case X-axis of orientation was recorded.)

Note:

1. This test was performed with the 5150-5250MHz band reject filter.
2. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor  
 Corrected Amplitude = Corrected Factor + Reading  
 Margin = Limit - Corrected. Amplitude

**Low Channel: 5190MHz**

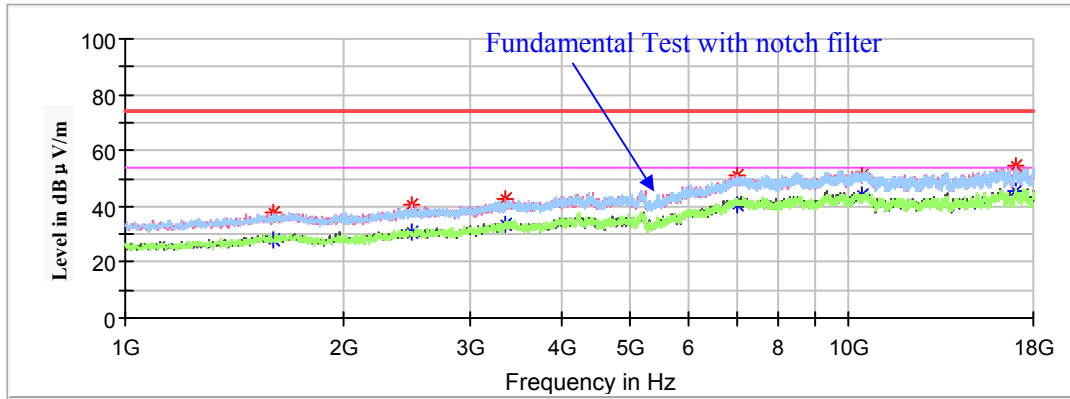


Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1673.200000	---	29.72	150.0	V	178.0	-8.8	54.00	24.28
1673.200000	37.79	---	150.0	V	178.0	-8.8	74.00	36.21
2717.000000	---	30.76	150.0	H	0.0	-4.7	54.00	23.24
2717.000000	40.24	---	150.0	H	0.0	-4.7	74.00	33.76
4231.700000	---	36.07	150.0	V	352.0	0.6	54.00	17.93
4231.700000	44.84	---	150.0	V	352.0	0.6	74.00	29.16
7618.100000	51.11	---	150.0	H	11.0	9.6	74.00	22.89
7618.100000	---	42.26	150.0	H	11.0	9.6	54.00	11.74
10380.000000	50.43	---	200.0	H	0.0	12.8	68.20	17.77
17032.700000	54.49	---	150.0	V	242.0	11.9	68.20	13.71



**High Channel: 5230MHz**

Full Spectrum



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1605.200000	---	28.12	200.0	H	230.0	-9.0	54.00	25.88
1605.200000	37.49	---	200.0	H	230.0	-9.0	74.00	36.51
2490.900000	---	30.49	200.0	H	166.0	-5.8	54.00	23.51
2490.900000	40.21	---	200.0	H	166.0	-5.8	74.00	33.79
3357.900000	---	33.87	200.0	V	194.0	-2.2	54.00	20.13
3357.900000	42.93	---	200.0	V	194.0	-2.2	74.00	31.07
7021.400000	---	40.74	150.0	H	1.0	8.9	68.20	27.46
10460.000000	51.02	---	150.0	H	320.0	12.9	68.20	17.18
17037.800000	54.59	---	200.0	V	325.0	11.9	68.20	13.61

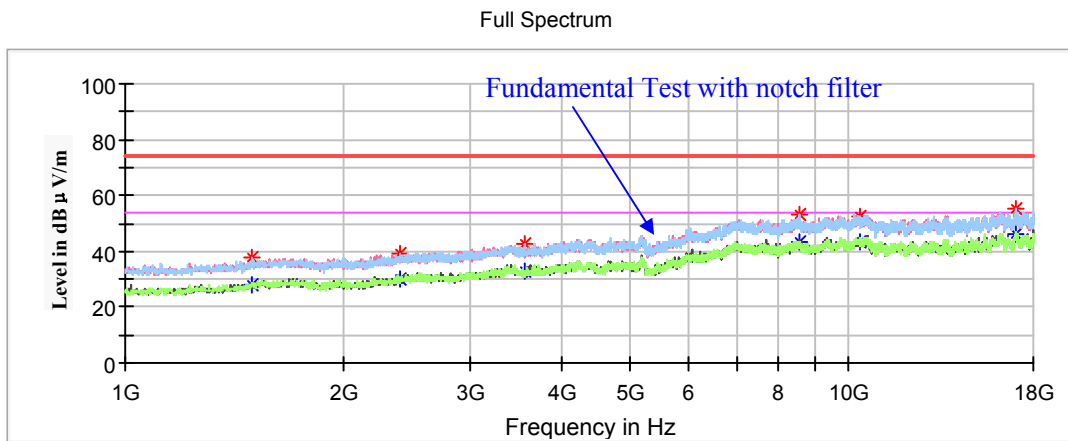
**802.11n-HT40 Mode:**

*Pre-scan with X,Y and Z axes of orientation, the worst case X-axis of orientation was recorded*

Note:

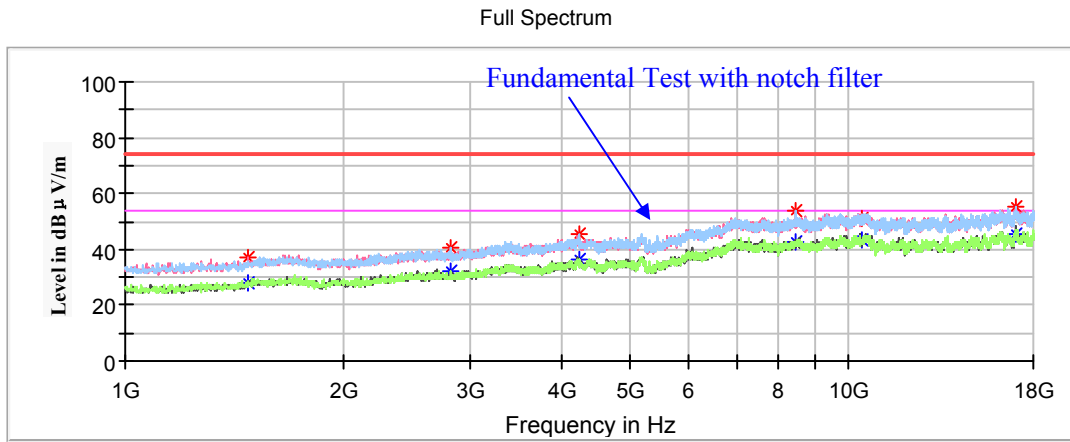
1. This test was performed with the 5150-5250MHz band reject filter.
2. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor  
 Corrected Amplitude = Corrected Factor + Reading  
 Margin = Limit - Corrected. Amplitude

**Low Channel: 5190MHz**



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
1499.800000	---	27.83	200.0	H	89.0	-9.4	54.00	26.17
1499.800000	37.84	---	200.0	H	89.0	-9.4	74.00	36.16
2402.500000	39.46	---	200.0	H	255.0	-6.2	68.20	28.74
3560.200000	42.47	---	200.0	H	102.0	-1.5	68.20	25.73
8551.400000	52.86	---	150.0	V	305.0	10.7	68.20	15.34
10380.000000	---	43.70	200.0	H	49.0	12.7	68.20	24.50
17034.400000	55.05	---	200.0	H	318.0	11.9	68.20	13.15

**High Channel: 5230MHz**



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1479.400000	---	28.23	150.0	H	207.0	-9.5	54.00	25.77
1479.400000	37.32	---	150.0	H	207.0	-9.5	74.00	36.68
2812.200000	---	31.96	200.0	H	294.0	-4.2	54.00	22.04
2812.200000	40.28	---	200.0	H	294.0	-4.2	74.00	33.72
4230.000000	---	36.13	150.0	V	241.0	0.6	54.00	17.87
4230.000000	45.27	---	150.0	V	241.0	0.6	74.00	28.73
8442.600000	---	42.98	200.0	H	269.0	10.7	54.00	11.02
8442.600000	53.51	---	200.0	H	269.0	10.7	74.00	20.49
10460.000000	51.20	---	200.0	V	0.0	12.9	68.20	17.00
17046.300000	55.05	---	200.0	H	167.0	11.9	68.20	13.15

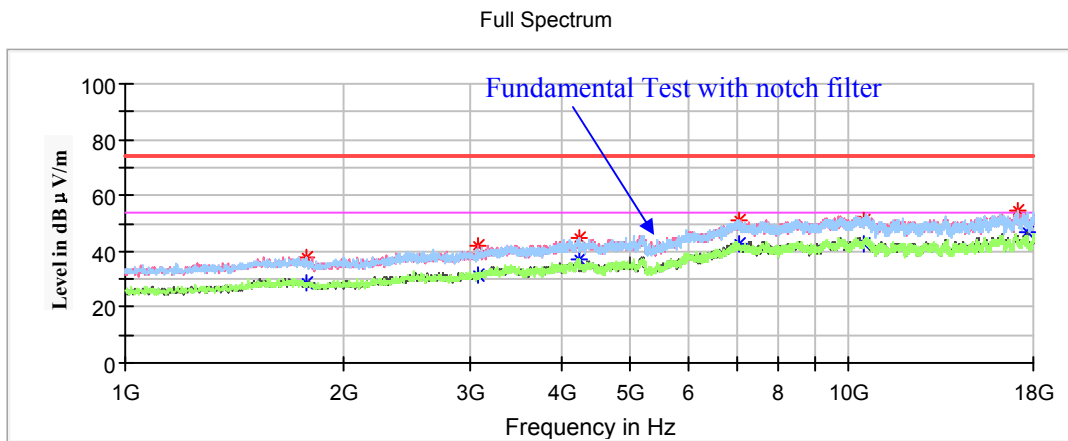
**802.11ac80 Mode:**

*Pre-scan with X,Y and Z axes of orientation, the worst case X-axis of orientation was recorded*

Note:

1. This test was performed with the 5150-5250MHz band reject filter.
2. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor  
 Corrected Amplitude = Corrected Factor + Reading  
 Margin = Limit - Corrected. Amplitude

**Low Channel: 5210MHz**



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
1778.600000	37.99	---	150.0	H	5.0	-8.4	68.20	30.21
3065.500000	41.77	---	150.0	V	242.0	-3.0	68.20	26.43
4238.500000	---	36.82	150.0	H	62.0	0.7	54.00	17.18
4238.500000	44.71	---	150.0	H	62.0	0.7	74.00	29.29
7074.100000	---	42.44	200.0	H	37.0	9.0	68.20	25.76
10484.300000	51.22	---	150.0	V	331.0	13.0	68.20	16.98
17087.100000	54.30	---	200.0	H	308.0	11.8	68.20	13.90

**1GHz-18GHz(5725-5850MHz Band):**

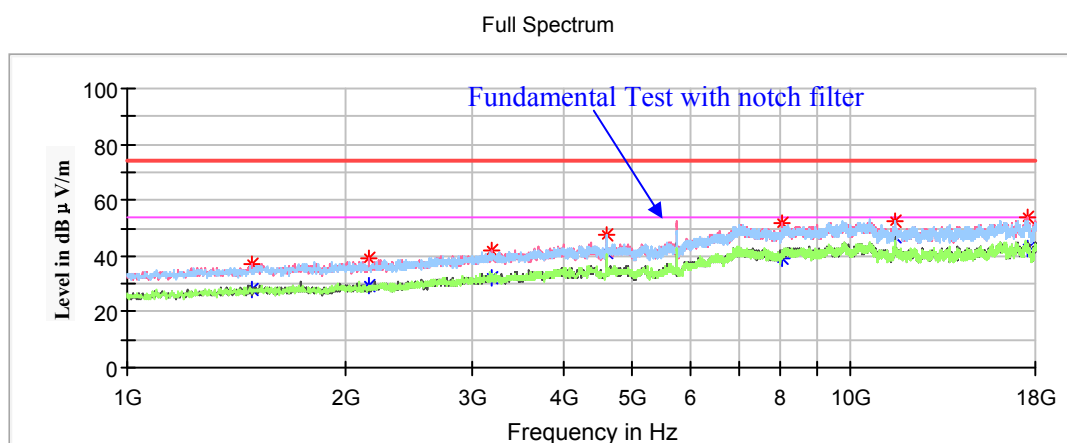
**802.11a Mode:**

(Pre-scan in the X,Y and Z axes of orientation, the worst case X-axis of orientation was recorded.)

Note:

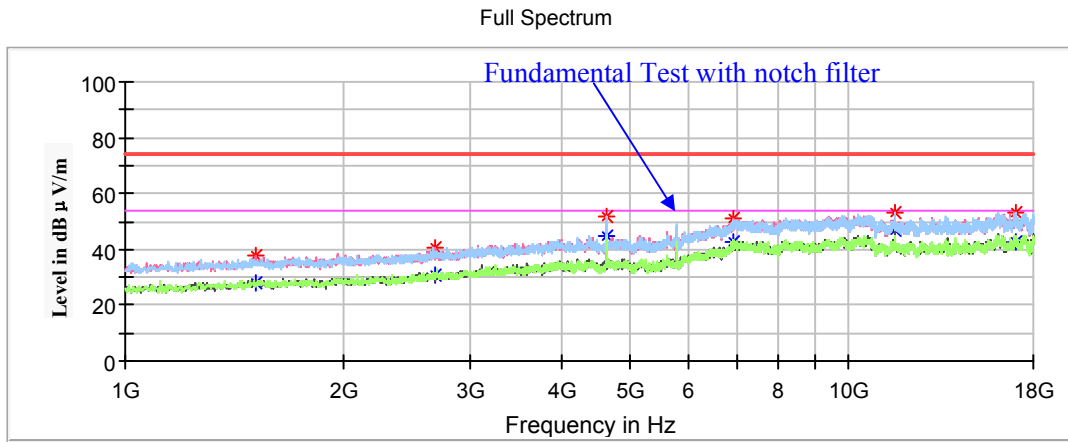
1. This test was performed with the 5725-5850MHz band reject filter.
2. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor  
 Corrected Amplitude = Corrected Factor + Reading  
 Margin = Limit - Corrected. Amplitude

**Low Channel: 5745MHz**



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1487.900000	---	28.20	150.0	H	170.0	-9.5	54.00	25.80
1487.900000	37.17	---	150.0	H	170.0	-9.5	74.00	36.83
2157.700000	38.88	---	150.0	H	51.0	-7.1	68.20	29.32
3193.000000	42.17	---	150.0	V	140.0	-2.6	68.20	26.03
4595.500000	---	40.97	200.0	V	177.0	1.0	54.00	13.03
4595.500000	47.48	---	200.0	V	177.0	1.0	74.00	26.52
8043.100000	51.62	---	200.0	V	75.0	10.8	68.20	16.58
11490.000000	---	46.89	200.0	V	336.0	11.8	54.00	7.11
11490.000000	52.17	---	200.0	V	336.0	11.8	74.00	21.83

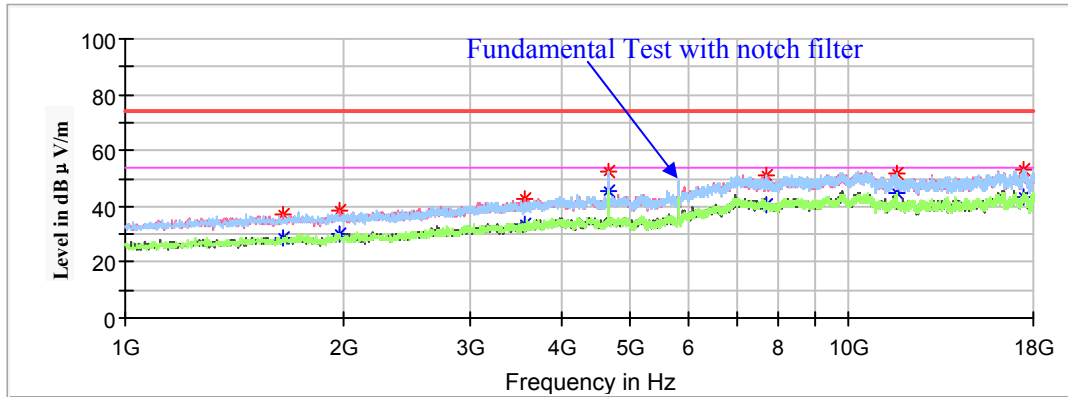
**Middle Channel: 5785MHz**



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
1511.700000	---	28.02	150.0	V	331.0	-9.4	54.00	25.98
1511.700000	37.49	---	150.0	V	331.0	-9.4	74.00	36.51
2688.100000	40.63	---	150.0	V	7.0	-4.8	68.20	27.57
4627.800000	---	44.83	200.0	H	51.0	1.0	54.00	9.17
4627.800000	51.56	---	200.0	H	51.0	1.0	74.00	22.44
6946.600000	51.00	---	200.0	V	233.0	8.7	68.20	17.20
11570.000000	53.25	---	200.0	V	336.0	11.8	74.00	20.75
11570.000000	---	46.90	200.0	V	336.0	11.8	54.00	7.10
17003.800000	53.34	---	200.0	V	6.0	12.0	68.20	14.86

**High Channel: 5825MHz**

Full Spectrum



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
1656.200000	37.38	---	200.0	V	1.0	-8.9	68.20	30.82
1977.500000	38.66	---	150.0	V	15.0	-7.7	68.20	29.54
3568.700000	42.47	---	200.0	H	114.0	-1.5	68.20	25.73
4660.100000	---	45.64	150.0	H	63.0	1.0	54.00	8.36
4660.100000	52.68	---	150.0	H	63.0	1.0	74.00	21.32
7691.200000	---	40.70	200.0	H	318.0	9.8	54.00	13.30
7691.200000	50.94	---	200.0	H	318.0	9.8	74.00	23.06
11650.000000	---	44.84	200.0	V	336.0	11.7	54.00	9.16
11650.000000	52.03	---	200.0	V	336.0	11.7	74.00	21.97

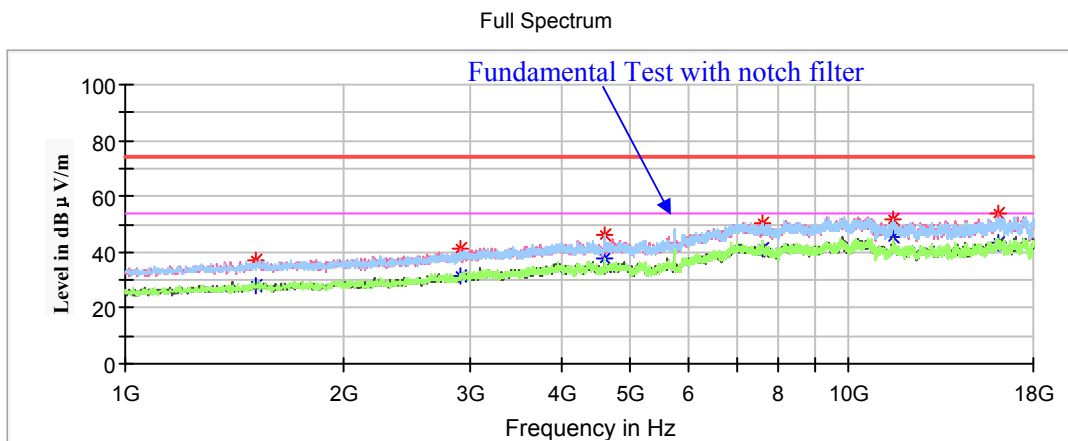
**802.11ac20 Mode:**

(Pre-scan in the X,Y and Z axes of orientation, the worst case X-axis of orientation was recorded.)

Note:

1. This test was performed with the 5725-5850MHz band reject filter.
2. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor  
 Corrected Amplitude = Corrected Factor + Reading  
 Margin = Limit - Corrected. Amplitude

**Low Channel: 5745MHz**

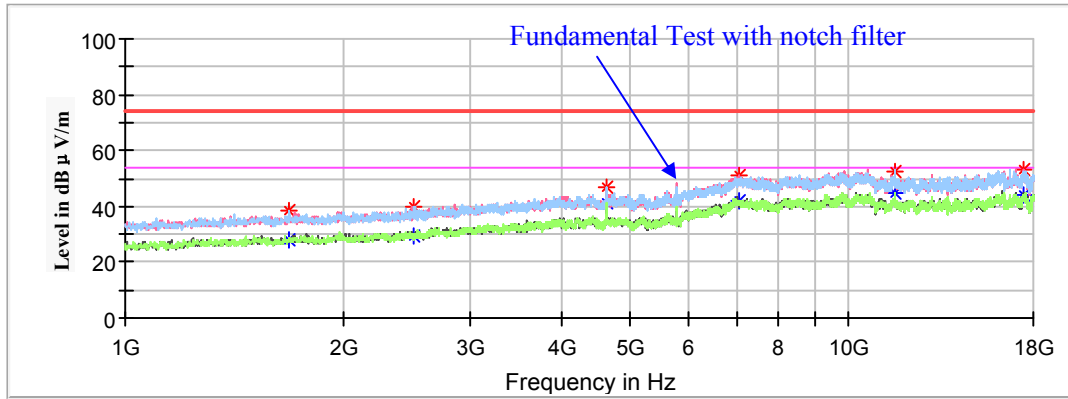


Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1518.500000	---	28.19	150.0	H	203.0	-9.3	54.00	25.81
1518.500000	36.99	---	150.0	H	203.0	-9.3	74.00	37.01
2914.200000	40.92	---	200.0	H	178.0	-3.6	68.20	27.28
4595.500000	---	37.94	150.0	H	75.0	1.0	54.00	16.06
4595.500000	46.01	---	150.0	H	75.0	1.0	74.00	27.99
7614.700000	---	41.40	150.0	V	234.0	9.6	54.00	12.60
7614.700000	50.13	---	150.0	V	234.0	9.6	74.00	23.87
11490.000000	---	45.22	200.0	V	342.0	11.8	54.00	8.78
11490.000000	51.44	---	200.0	V	342.0	11.8	74.00	22.56
16106.200000	---	43.44	150.0	V	165.0	12.4	54.00	10.56
16106.200000	53.71	---	150.0	V	165.0	12.4	74.00	20.29



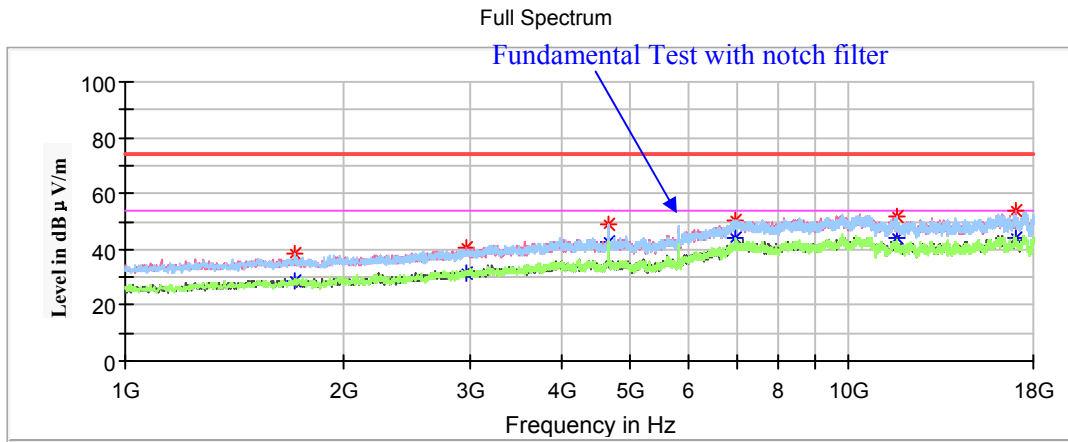
**Middle Channel: 5785MHz**

Full Spectrum



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
1688.500000	---	27.94	200.0	H	241.0	-8.7	54.00	26.06
1688.500000	38.31	---	200.0	H	241.0	-8.7	74.00	35.69
2511.300000	40.19	---	200.0	H	102.0	-5.8	68.20	28.01
4627.800000	---	40.96	200.0	H	62.0	1.0	54.00	13.04
4627.800000	46.53	---	200.0	H	62.0	1.0	74.00	27.47
7072.400000	51.22	---	150.0	V	309.0	9.0	68.20	16.98
11570.000000	---	44.65	200.0	H	330.0	11.8	54.00	9.35
11570.000000	52.79	---	200.0	H	330.0	11.8	74.00	21.21
17495.100000	53.23	---	150.0	V	246.0	10.9	68.20	14.97

**High Channel: 5825MHz**



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
1715.700000	38.71	---	150.0	H	38.0	-8.7	68.20	29.49
2958.400000	40.58	---	200.0	V	1.0	-3.4	68.20	27.62
4660.100000	---	42.83	150.0	H	63.0	1.0	54.00	11.17
4660.100000	49.12	---	150.0	H	63.0	1.0	74.00	24.88
6989.100000	50.05	---	150.0	H	114.0	8.9	68.20	18.15
11650.000000	---	43.95	200.0	V	204.0	11.7	54.00	10.05
11650.000000	51.48	---	200.0	V	204.0	11.7	74.00	22.52
16973.200000	53.69	---	150.0	V	62.0	12.0	68.20	14.51

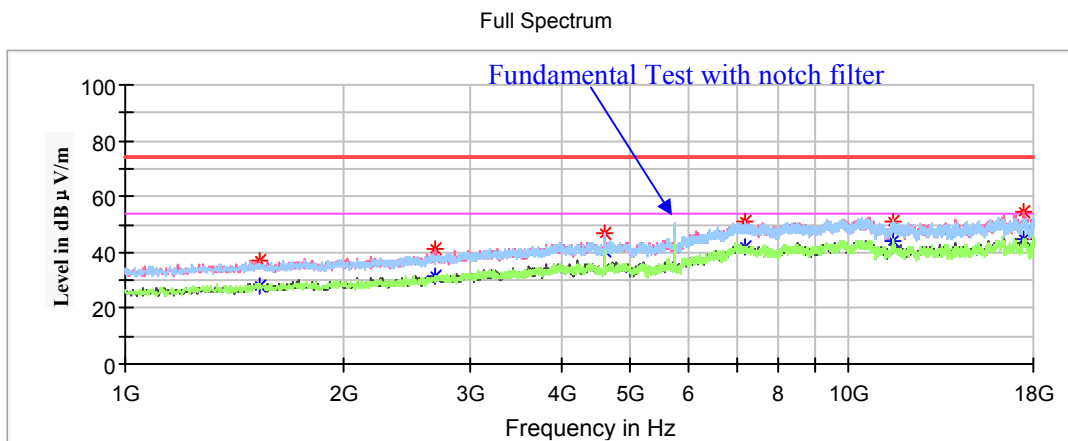
**802.11n-HT20 Mode:**

(Pre-scan with X,Y and Z axes of orientation, the worst case X-axis of orientation was recorded)

Note:

1. This test was performed with the 5725-5850MHz band reject filter.
2. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor  
 Corrected Amplitude = Corrected Factor + Reading  
 Margin = Limit - Corrected. Amplitude

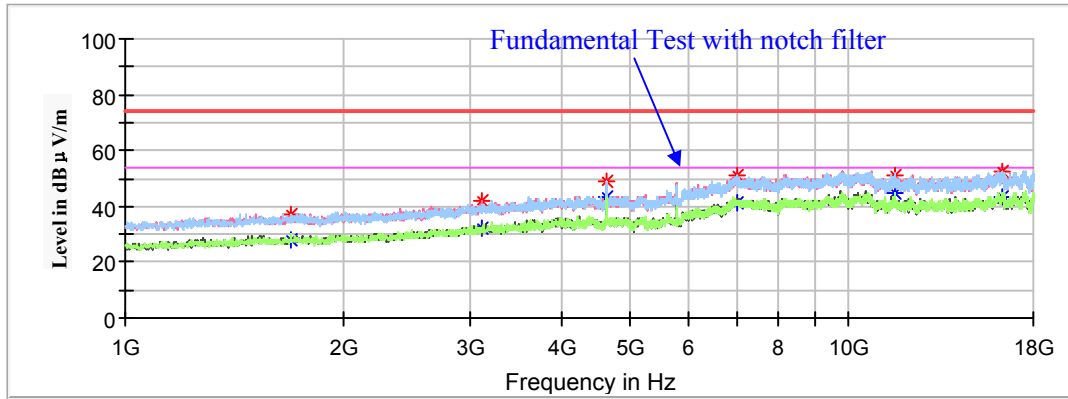
**Low Channel: 5745MHz**



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
1535.500000	---	28.09	150.0	V	177.0	-9.3	54.00	25.91
1535.500000	37.25	---	150.0	V	177.0	-9.3	74.00	36.75
2688.100000	40.99	---	150.0	V	35.0	-4.8	68.20	27.21
4595.500000	---	40.39	200.0	H	68.0	1.0	54.00	13.61
4595.500000	47.01	---	200.0	H	68.0	1.0	74.00	26.99
7177.800000	51.09	---	200.0	H	246.0	9.0	68.20	17.11
11490.000000	---	43.80	200.0	V	54.0	11.8	54.00	10.20
11490.000000	51.32	---	200.0	V	54.0	11.8	74.00	22.68
17478.100000	54.20	---	200.0	H	81.0	10.9	68.20	14.00

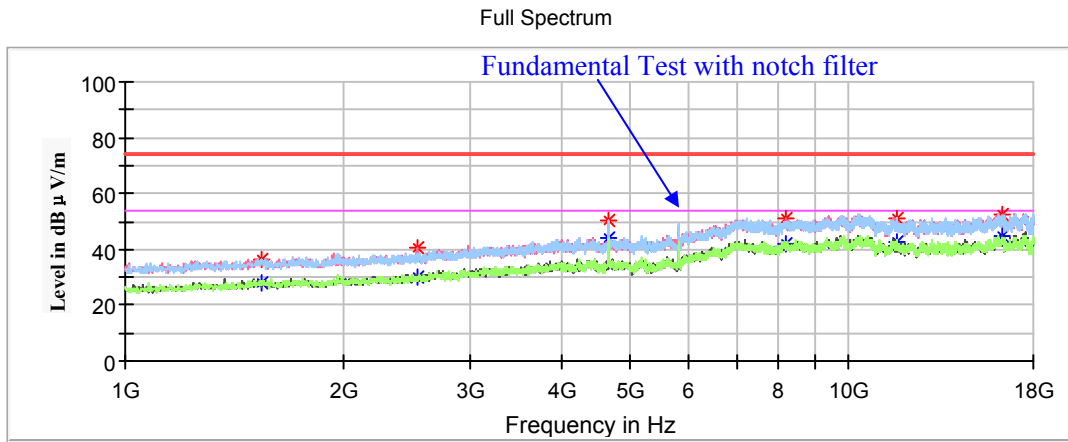
**Middle Channel: 5785MHz**

Full Spectrum



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
1698.700000	---	28.19	150.0	H	169.0	-8.7	54.00	25.81
1698.700000	37.27	---	150.0	H	169.0	-8.7	74.00	36.73
3108.000000	41.79	---	200.0	V	266.0	-2.9	68.20	26.41
4627.800000	---	43.25	200.0	H	64.0	1.0	54.00	10.75
4627.800000	49.26	---	200.0	H	64.0	1.0	74.00	24.74
7018.000000	50.92	---	150.0	H	169.0	8.9	68.20	17.28
11570.000000	51.33	---	200.0	V	321.0	11.8	74.00	22.67
11570.000000	---	44.60	200.0	V	321.0	11.8	54.00	9.40
16317.000000	52.73	---	200.0	H	38.0	12.1	68.20	15.47

**High Channel: 5825MHz**



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
1540.600000	---	27.68	200.0	V	230.0	-9.3	54.00	26.32
1540.600000	36.64	---	200.0	V	230.0	-9.3	74.00	37.36
2528.300000	40.29	---	200.0	V	166.0	-5.7	68.20	27.91
4660.100000	---	44.04	200.0	H	49.0	1.0	54.00	9.96
4660.100000	50.04	---	200.0	H	49.0	1.0	74.00	23.96
8184.200000	---	41.85	150.0	V	272.0	10.8	54.00	12.15
8184.200000	51.21	---	150.0	V	272.0	10.8	74.00	22.79
11650.000000	---	42.53	200.0	H	342.0	11.7	54.00	11.47
11650.000000	51.05	---	200.0	H	342.0	11.7	74.00	22.95
16332.300000	---	44.44	150.0	V	347.0	12.1	68.20	23.76

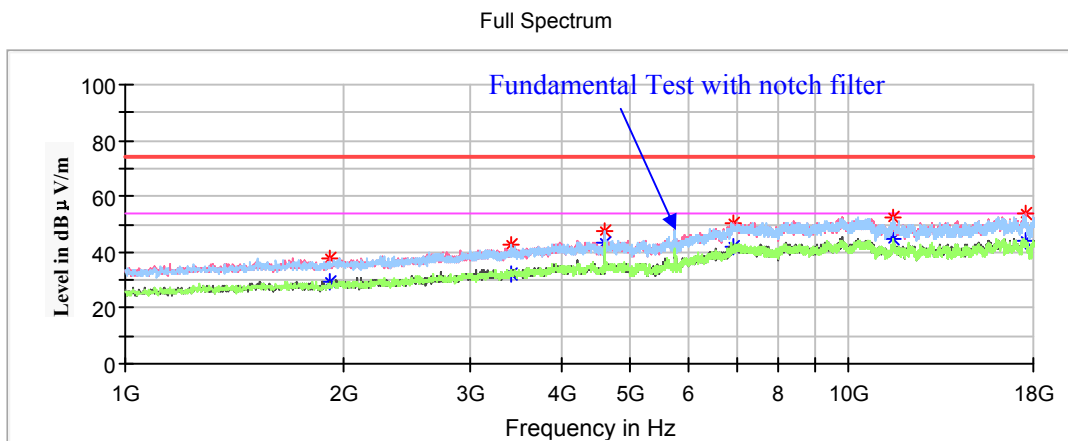
**802.11ac40 Mode:**

(Pre-scan in the X,Y and Z axes of orientation, the worst case X-axis of orientation was recorded.)

Note:

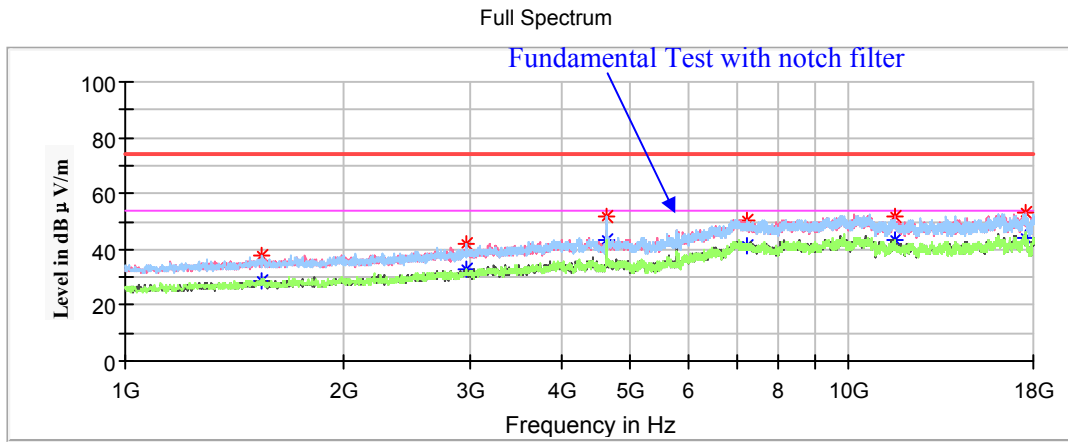
1. This test was performed with the 5725-5850MHz band reject filter.
2. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor  
 Corrected Amplitude = Corrected Factor + Reading  
 Margin = Limit - Corrected. Amplitude

**Low Channel: 5755MHz**



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1918.000000	37.91	---	200.0	V	68.0	-8.0	68.20	30.29
3412.300000	42.55	---	200.0	H	166.0	-2.0	68.20	25.65
4604.000000	---	43.12	200.0	H	293.0	1.0	54.00	10.88
4604.000000	47.49	---	200.0	H	293.0	1.0	74.00	26.51
6924.500000	50.51	---	150.0	H	1.0	8.6	68.20	17.69
11510.000000	---	44.60	200.0	V	336.0	11.8	54.00	9.40
11510.000000	52.18	---	200.0	V	336.0	11.8	74.00	21.82
17551.200000	53.61	---	150.0	H	50.0	10.9	68.20	14.59

**High Channel: 5795MHz**



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1547.400000	---	28.33	200.0	H	0.0	-9.2	54.00	25.67
1547.400000	37.95	---	200.0	H	0.0	-9.2	74.00	36.05
2963.500000	41.69	---	150.0	H	345.0	-3.4	68.20	26.51
4636.300000	---	43.57	200.0	H	62.0	1.0	54.00	10.43
4636.300000	51.61	---	200.0	H	62.0	1.0	74.00	22.39
7249.200000	50.61	---	150.0	H	244.0	9.1	68.20	17.59
11590.000000	---	43.07	200.0	V	337.0	11.8	54.00	10.93
11590.000000	51.45	---	200.0	V	337.0	11.8	74.00	22.55
17551.200000	52.90	---	200.0	V	31.0	10.9	68.20	15.30

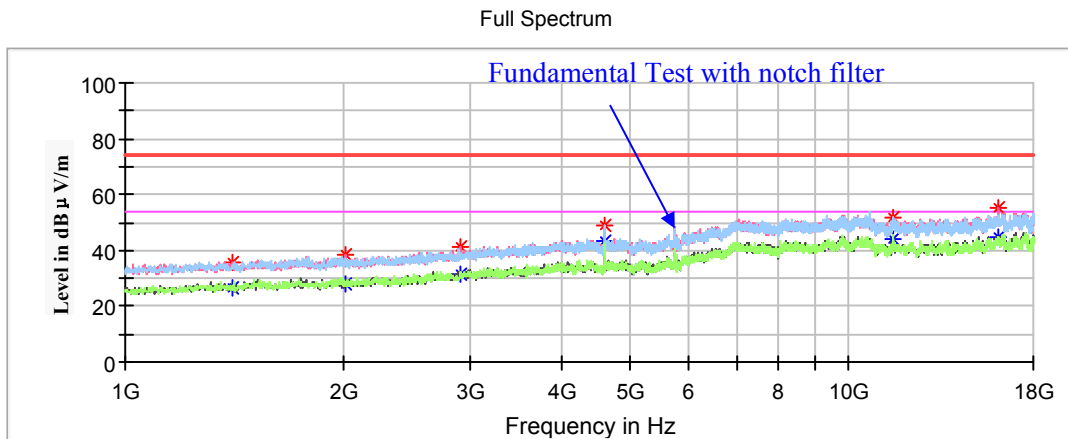
**802.11n-HT40 Mode:**

(Pre-scan with X,Y and Z axes of orientation, the worst case X-axis of orientation was recorded)

Note:

1. This test was performed with the 5725-5850MHz band reject filter.
2. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor  
 Corrected Amplitude = Corrected Factor + Reading  
 Margin = Limit - Corrected. Amplitude

**Low Channel: 5755MHz**

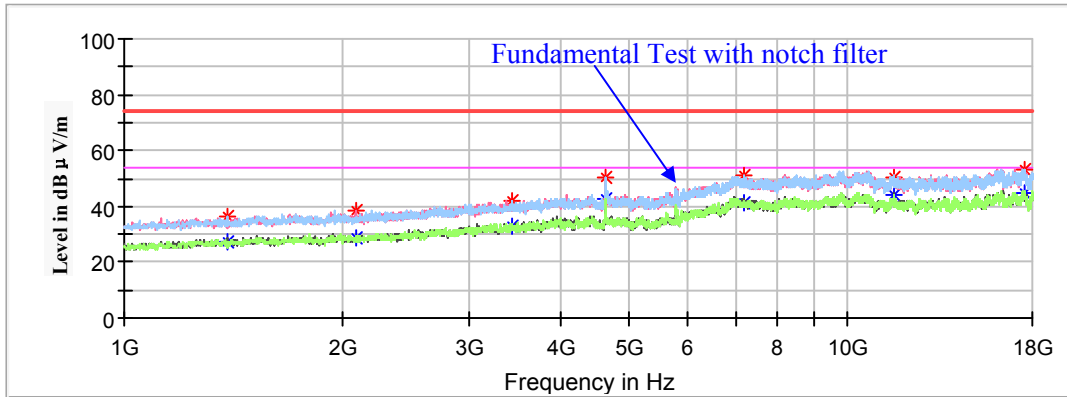


Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1408.000000	---	26.54	200.0	H	51.0	-10.0	54.00	27.46
1408.000000	35.82	---	200.0	H	51.0	-10.0	74.00	38.18
2013.200000	---	28.19	150.0	V	8.0	-7.6	68.20	40.01
2910.800000	41.14	---	200.0	V	88.0	-3.7	68.20	27.06
4604.000000	---	43.23	200.0	V	165.0	1.0	54.00	10.77
4604.000000	48.64	---	200.0	V	165.0	1.0	74.00	25.36
11510.000000	51.91	---	200.0	H	321.0	11.8	74.00	22.09
11510.000000	---	43.89	200.0	H	321.0	11.8	54.00	10.11
16070.500000	---	44.80	200.0	H	76.0	12.4	54.00	9.20
16070.500000	55.00	---	200.0	H	76.0	12.4	74.00	19.00



**High Channel: 5795MHz**

Full Spectrum



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
1387.600000	---	27.60	150.0	H	35.0	-10.1	54.00	26.40
1387.600000	36.64	---	150.0	H	35.0	-10.1	74.00	37.36
2086.300000	---	28.70	200.0	V	250.0	-7.3	68.20	39.50
3439.500000	42.20	---	150.0	H	8.0	-2.0	68.20	26.00
4636.300000	---	42.32	200.0	H	67.0	1.0	54.00	11.68
4636.300000	50.53	---	200.0	H	67.0	1.0	74.00	23.47
7177.800000	50.99	---	200.0	V	212.0	9.0	68.20	17.21
11590.000000	---	44.37	200.0	H	336.0	11.8	54.00	9.63
11590.000000	50.24	---	200.0	H	336.0	11.8	74.00	23.76

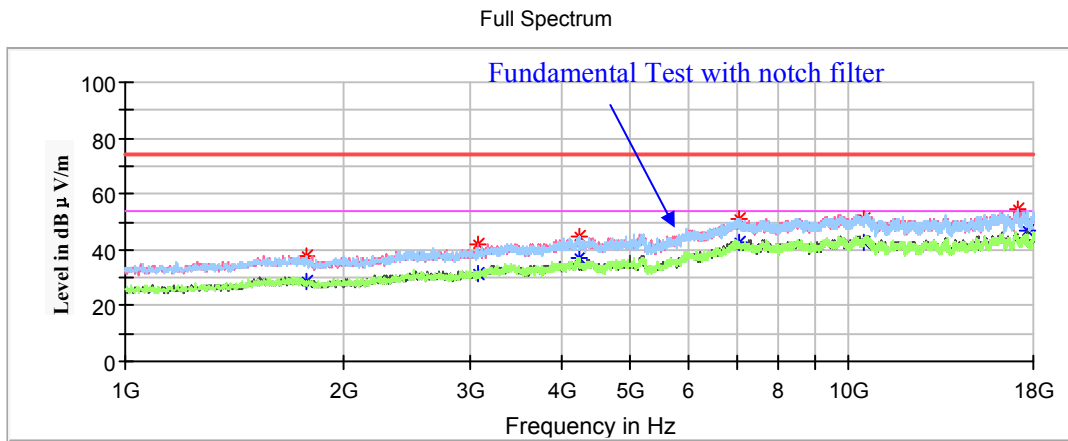
**802.11ac80 Mode:**

(Pre-scan with X,Y and Z axes of orientation, the worst case X-axis of orientation was recorded)

Note:

1. This test was performed with the 5725-5850MHz band reject filter.
2. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor  
 Corrected Amplitude = Corrected Factor + Reading  
 Margin = Limit - Corrected. Amplitude

**Low Channel: 5775MHz**

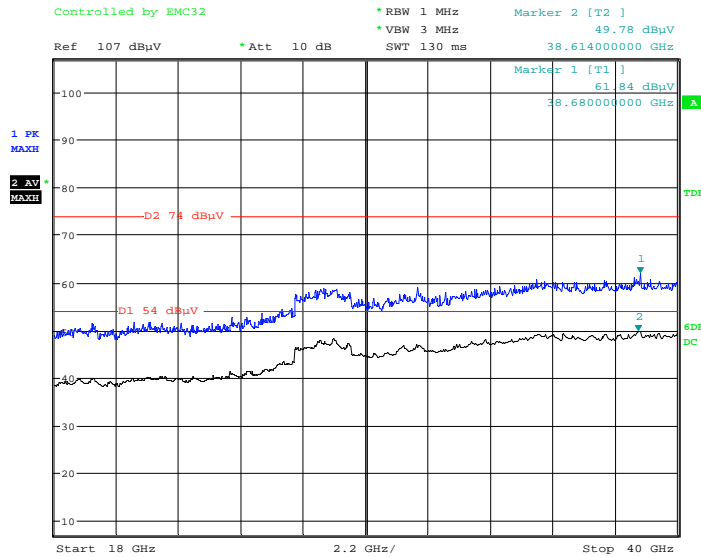


Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
1742.900000	38.39	---	200.0	H	0.0	-8.6	68.20	29.81
2684.700000	39.82	---	200.0	V	208.0	-4.8	68.20	28.38
4619.300000	---	43.34	200.0	H	61.0	1.0	54.00	10.66
4619.300000	48.24	---	200.0	H	61.0	1.0	74.00	25.76
7699.700000	---	40.49	200.0	V	353.0	9.9	54.00	13.51
7699.700000	50.45	---	200.0	V	353.0	9.9	74.00	23.55
11550.200000	---	42.19	200.0	H	334.0	11.8	54.00	11.81
11550.200000	50.60	---	200.0	H	334.0	11.8	74.00	23.40
16385.000000	53.14	---	200.0	V	18.0	12.0	68.20	15.06

**18GHz-40GHz (5150-5250MHz Band):**

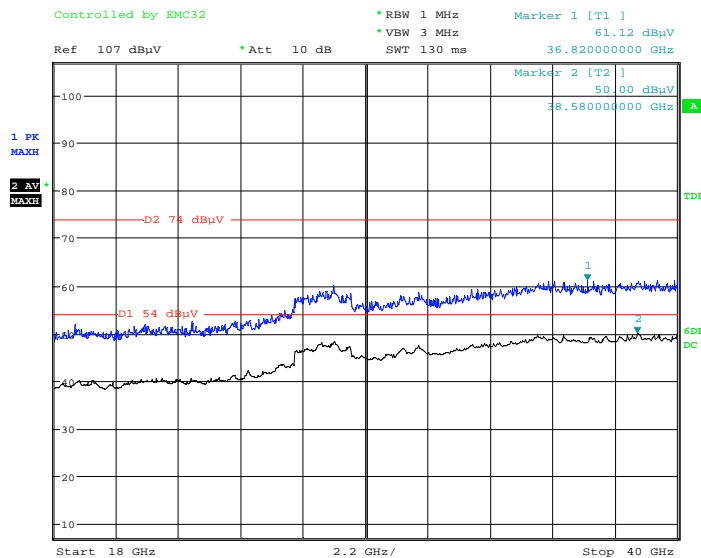
*Pre-scan with 802.11a, 802.11ac20, 802.11n-HT20, 802.11ac40, 802.11n-HT40 and 802.11ac80 modes of operation in the X,Y and Z axes of orientation, the worst case 802.11n-HT20 mode middle channel in X-axis of orientation was recorded.*

**Horizontal**



Date: 7.MAY.2021 14:26:03

**Vertical**

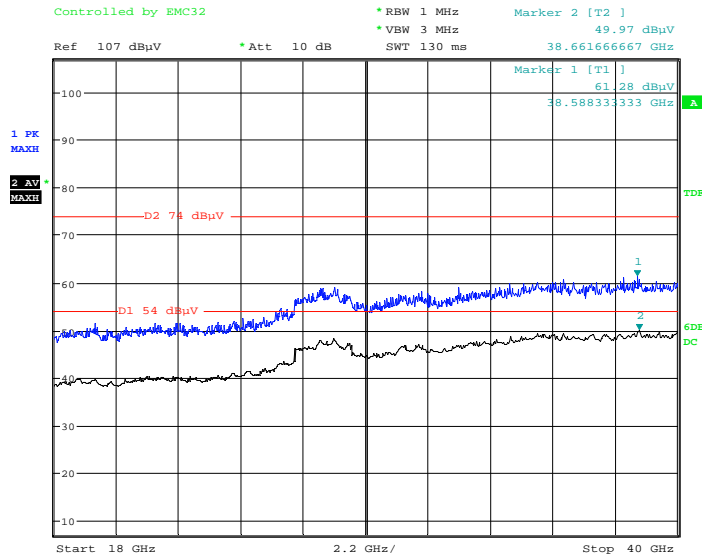


Date: 7.MAY.2021 14:31:38

**18GHz-40GHz (5725-5850 Band):**

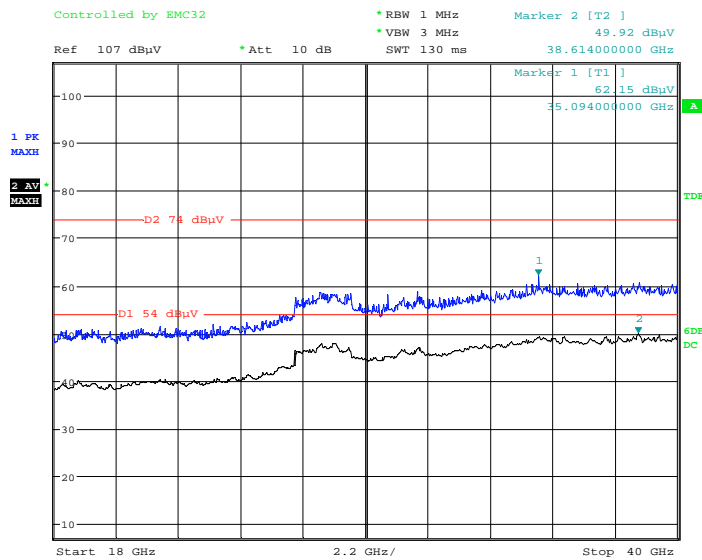
Pre-scan with 802.11a, 802.11ac20, 802.11n-HT20, 802.11ac40, 802.11n-HT40 and 802.11ac80 modes of operation in the X,Y and Z axes of orientation, **the worst case 802.11a mode high channel in X-axis of orientation was recorded.**

**Horizontal**



Date: 7.MAY.2021 14:36:22

**Vertical**



Date: 7.MAY.2021 14:41:19

**Restricted Bands Emissions Test (5150-5250MHz Band):**

Note:

1. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
2. Corrected Amplitude = Corrected Factor + Reading
3. Margin = Limit - Corrected. Amplitude

**802.11a Mode:** (Pre-scan in the X, Y and Z axes of orientation, the worst case in X-axis of orientation was recorded)

Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
Low Channel: 5180MHz								
5150	---	51.17	150.0	H	53.0	11.4	54.00	2.83
5150	61.47	---	150.0	H	53.0	11.4	74.00	12.53
High Channel: 5240MHz								
5350	---	48.21	150.0	H	94.0	11.8	54.00	5.79
5350	55.36	---	150.0	H	94.0	11.8	74.00	18.64

**802.11ac20 Mode:** (Pre-scan in the X, Y and Z axes of orientation, the worst case in X-axis of orientation was recorded)

Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
Low Channel: 5150MHz								
5150	56.78	---	150.0	H	356.0	11.4	74.00	17.22
5150	---	50.75	150.0	H	356.0	11.4	54.00	3.25
High Channel: 5350MHz								
5350	55.68	---	200.0	H	173.0	11.8	74.00	18.32
5350	---	48.15	200.0	H	173.0	11.8	54.00	5.85

**802.11n-HT20 Mode:** (Pre-scan in the X, Y and Z axes of orientation, the worst case in X-axis of orientation was recorded)

Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
Low Channel: 5150MHz								
5150	59.27	---	200.0	H	296.0	11.4	74.00	14.73
5150	---	50.67	200.0	H	296.0	11.4	54.00	3.33
High Channel: 5350MHz								
5350	---	47.06	150.0	H	147.0	11.8	54.00	6.94
5350	58.08	---	150.0	H	147.0	11.8	74.00	15.92

**802.11ac40 Mode:** (Pre-scan in the X, Y and Z axes of orientation, the worst case in X-axis of orientation was recorded)

Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
Low Channel: 5190MHz								
5150	---	51.29	200.0	H	78.0	11.4	54.00	2.71
5150	57.29	---	200.0	H	78.0	11.4	74.00	16.71
High Channel: 5230MHz								
5350	---	48.29	200.0	H	243.0	11.8	54.00	5.71
5350	55.86	---	200.0	H	243.0	11.8	74.00	18.14

**802.11n-HT40 Mode:** (Pre-scan in the X, Y and Z axes of orientation, the worst case in X-axis of orientation was recorded)

Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
Low Channel: 5190MHz								
5150	64.22	---	150.0	H	292.0	11.4	74.00	9.78
5150	---	51.81	150.0	H	292.0	11.4	54.00	2.19
High Channel: 5230MHz								
5350	---	48.43	150.0	H	336.0	11.8	54.00	5.57
5350	56.12	---	150.0	H	336.0	11.8	74.00	17.88

**802.11ac80 Mode:** (Pre-scan in the X, Y and Z axes of orientation, the worst case in X-axis of orientation was recorded)

Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
5150	---	51.19	150.0	H	299.0	11.4	54.00	2.81
5150	59.40	---	150.0	H	299.0	11.4	74.00	14.60
5350	---	48.29	200.0	H	286.0	11.8	54.00	5.71
5350	56.47	---	200.0	H	286.0	11.8	74.00	17.53

**Band Edge Emissions Test (5725-5850MHz band):**

Note:

1. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
2. Corrected Amplitude = Corrected Factor + Reading
3. Margin = Limit - Corrected. Amplitude

**802.11a Mode:** (Pre-scan in the X, Y and Z axes of orientation, the worst case in X-axis of orientation was recorded)

Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
Low Channel: 5745MHz								
5650.00	55.39	---	150.0	V	151.0	13.0	68.20	12.81
5700.00	55.96	---	150.0	H	275.0	13.3	105.20	49.24
5720.00	65.26	---	200.0	V	200.0	13.4	110.80	45.54
5725.00	74.96	---	200.0	V	210.0	13.4	122.20	47.02
High Channel: 5825MHz								
5850.00	58.06	---	150.0	H	0.0	14.2	122.20	64.14
5855.00	57.52	---	200.0	H	77.0	14.2	110.80	53.28
5875.00	57.96	---	200.0	V	195.0	14.3	105.20	47.24
5925.00	57.62	---	200.0	V	233.0	14.7	68.20	10.58

**802.11ac20 Mode:** (Pre-scan in the X, Y and Z axes of orientation, the worst case in X-axis of orientation was recorded)

Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
Low Channel: 5745MHz								
5650.00	55.30	---	150.0	H	185.0	13.0	68.20	12.90
5700.00	58.95	---	200.0	V	204.0	13.3	105.20	46.26
5720.00	67.25	---	150.0	V	215.0	13.4	110.80	43.55
5725.00	73.96	---	200.0	V	204.0	13.4	122.20	48.24
High Channel: 5825MHz								
5850.00	61.90	---	150.0	H	131.0	14.2	122.20	60.30
5855.00	60.47	---	200.0	V	35.0	14.2	110.80	50.33
5875.00	56.86	---	150.0	H	282.0	14.3	105.20	48.34
5925.00	57.09	---	200.0	V	178.0	14.7	68.20	11.11

**802.11n-HT20 Mode:** (Pre-scan in the X, Y and Z axes of orientation, the worst case in X-axis of orientation was recorded)

Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
Low Channel: 5745MHz								
5650.00	56.22	---	200.0	H	109.0	13.0	68.20	11.98
5700.00	57.78	---	150.0	V	221.0	13.3	105.20	47.42
5720.00	69.07	---	150.0	V	211.0	13.4	110.80	41.84
5725.00	77.71	---	200.0	V	205.0	13.0	122.20	44.49
High Channel: 5825MHz								
5850.00	67.89	---	200.0	V	205.0	14.2	122.20	54.31
5855.00	68.22	---	150.0	V	213.0	14.2	110.80	42.58
5875.00	58.79	---	150.0	V	204.0	14.3	105.20	46.37
5925.00	57.52	---	150.0	V	348.0	14.7	68.20	10.68

**802.11ac40 Mode:** (Pre-scan in the X, Y and Z axes of orientation, the worst case in X-axis of orientation was recorded)

Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
Low Channel: 5755MHz								
5650.00	56.37	---	150.0	H	1.0	13.0	68.20	11.83
5700.00	63.62	---	200.0	V	212.0	13.3	105.20	41.58
5720.00	75.92	---	200.0	V	201.0	13.4	110.80	34.99
5725.00	77.30	---	150.0	V	206.0	13.0	122.20	44.90
High Channel: 5795MHz								
5850.00	65.59	---	150.0	V	211.0	14.2	122.20	56.49
5855.00	62.91	---	200.0	V	2.0	14.2	110.80	47.89
5875.00	60.08	---	150.0	H	71.0	14.3	105.20	45.12
5925.00	57.97	---	200.0	H	358.0	14.7	68.20	10.23



**802.11n-HT40 Mode:** (Pre-scan in the X, Y and Z axes of orientation, the worst case in X-axis of orientation was recorded)

Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
Low Channel: 5755MHz								
5650.00	55.78	---	200.0	H	282.0	13.0	68.20	12.42
5700.00	64.25	---	200.0	V	206.0	13.3	105.20	40.95
5720.00	77.94	---	200.0	V	217.0	13.4	110.80	32.86
5725.00	79.99	---	200.0	V	206.0	13.0	122.20	42.21
High Channel: 5795MHz								
5850.00	66.49	---	200.0	V	216.0	14.2	122.20	55.71
5855.00	64.67	---	150.0	V	204.0	14.2	110.80	46.13
5875.00	60.10	---	200.0	V	205.0	14.3	105.20	45.10
5925.00	57.22	---	200.0	V	265.0	14.7	68.20	10.98

**802.11ac80 Mode:** (Pre-scan in the X, Y and Z axes of orientation, the worst case in X-axis of orientation was recorded)

Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
5650.000000	59.96	---	200.0	V	208.0	13.0	68.20	8.24
5700.000000	70.23	---	200.0	V	0.0	13.3	105.20	34.97
5720.000000	76.01	---	150.0	V	217.0	13.4	110.80	34.79
5725.000000	74.58	---	200.0	V	0.0	13.4	122.20	47.62
5850.000000	74.64	---	150.0	V	206.0	14.2	122.20	47.56
5855.000000	69.49	---	150.0	V	217.0	14.2	110.80	41.31
5875.000000	64.81	---	200.0	V	187.0	14.3	105.20	40.39
5925.050000	61.17	---	200.0	H	64.0	14.7	68.20	7.03

## FCC §15.407(a) & §15.407(e) – EMISSION BANDWIDTH

### Applicable Standard

The maximum power spectral density is measured as a conducted emission by direct connection of a calibrated test instrument to the equipment under test. If the device cannot be connected directly, alternative techniques acceptable to the Commission may be used. Measurements in the 5.725-5.85 GHz band are made over a reference bandwidth of 500 kHz or the 26 dB emission bandwidth of the device, whichever is less. Measurements in the 5.15-5.25 GHz, 5.25-5.35 GHz, and the 5.47-5.725 GHz bands are made over a bandwidth of 1 MHz or the 26 dB emission bandwidth of the device, whichever is less. A narrower resolution bandwidth can be used, provided that the measured power is integrated over the full reference bandwidth.

Within the 5.725-5.85 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

### Test Procedure

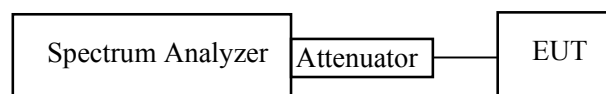
#### 1. Emission Bandwidth (EBW)

- a) Set RBW = approximately 1% of the emission bandwidth.
- b) Set the VBW > RBW.
- c) Detector = Peak.
- d) Trace mode = max hold.
- e) Measure the maximum width of the emission that is 26 dB down from the maximum of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

#### 2. Minimum Emission Bandwidth for the band 5.725-5.85 GHz

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

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



**Test Data****Environmental Conditions**

<b>Temperature:</b>	24.8°C
<b>Relative Humidity:</b>	49%
<b>ATM Pressure:</b>	101.2 kPa

The testing was performed by Miller Xie on 2021-05-11.

**Test Result:** Compliant

5150-5250 MHz:

Test mode	Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
802.11a	Low	5180	20.281	16.834
	Middle	5200	20.281	16.834
	High	5240	20.361	16.834
802.11ac20	Low	5180	20.601	17.876
	Middle	5200	20.681	17.876
	High	5240	20.521	17.796
802.11n-HT20	Low	5180	20.601	17.876
	Middle	5200	20.681	17.876
	High	5240	20.601	17.876
802.11ac40	Low	5190	40.882	36.192
	High	5230	41.122	36.192
802.11n-HT40	Low	5190	41.002	36.192
	High	5230	40.882	36.192
802.11ac80	/	5210	81.523	75.511

5725-5850MHz:

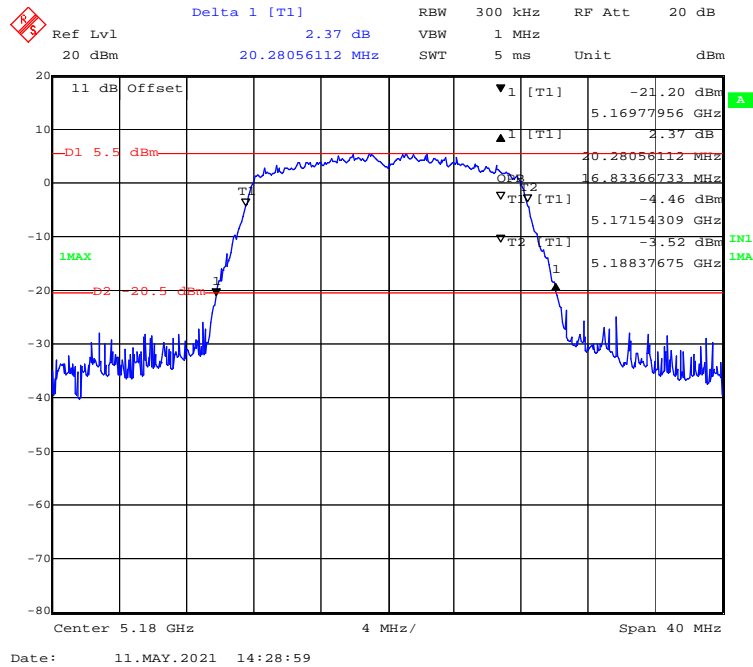
Test mode	Channel	Frequency (MHz)	6dB Bandwidth (MHz)	99% Bandwidth (MHz)	Limit (MHz)
802.11a	Low	5745	15.812	17.014	≥0.5
	Middle	5785	15.812	16.894	≥0.5
	High	5825	15.812	16.954	≥0.5
802.11ac20	Low	5745	15.812	17.735	≥0.5
	Middle	5785	15.691	17.796	≥0.5
	High	5825	15.812	17.796	≥0.5
802.11n-HT20	Low	5745	16.293	17.856	≥0.5
	Middle	5785	16.112	17.796	≥0.5
	High	5825	15.932	17.916	≥0.5
802.11ac40	Low	5755	35.351	36.313	≥0.5
	High	5795	35.351	36.433	≥0.5
802.11n-HT40	Low	5755	35.351	36.433	≥0.5
	High	5795	35.351	36.433	≥0.5
802.11ac80	/	5775	75.511	75.992	≥0.5

Note: No transmitted signal in the 99% bandwidth extends into the U-NII-2A and U-NII-2C band.

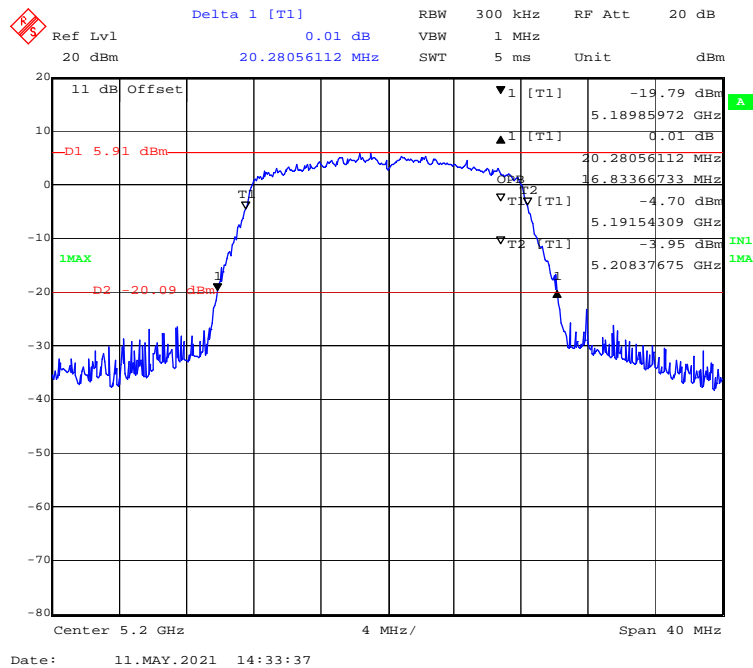
5150-5250 MHz Band:

26 Bandwidth & 99% Occupied Bandwidth

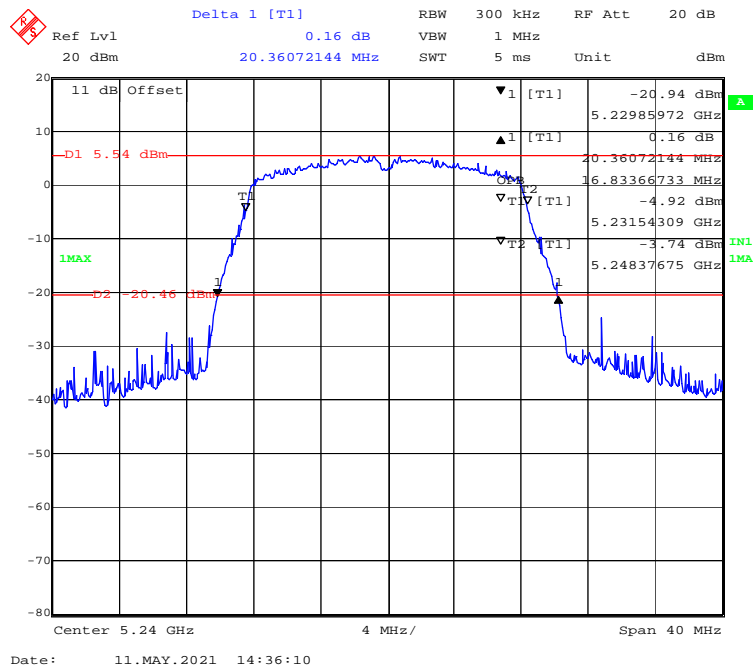
802.11a mode, 5180MHz



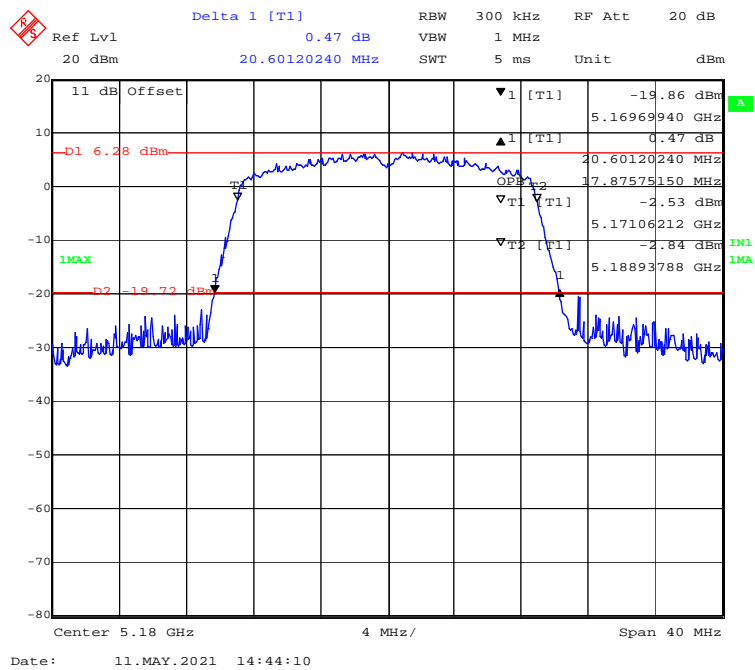
802.11a mode, 5200MHz



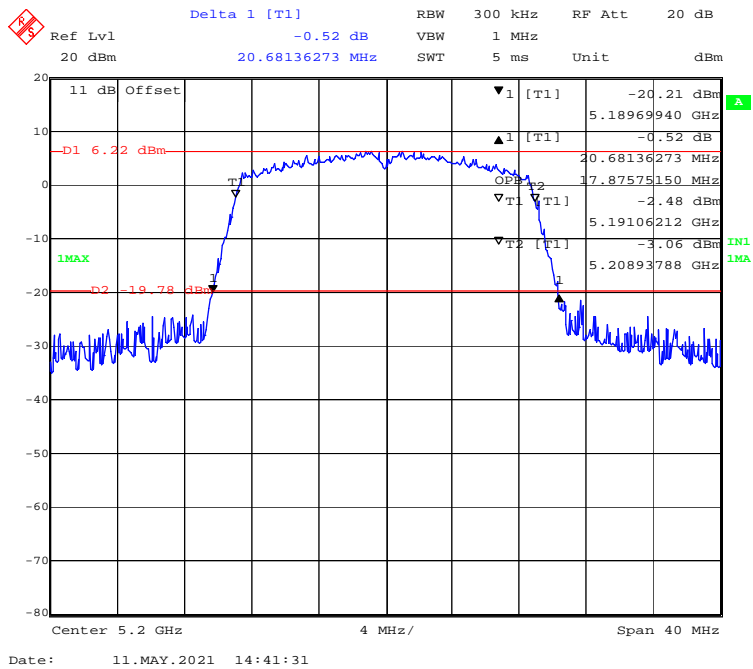
**802.11a mode, 5240MHz**



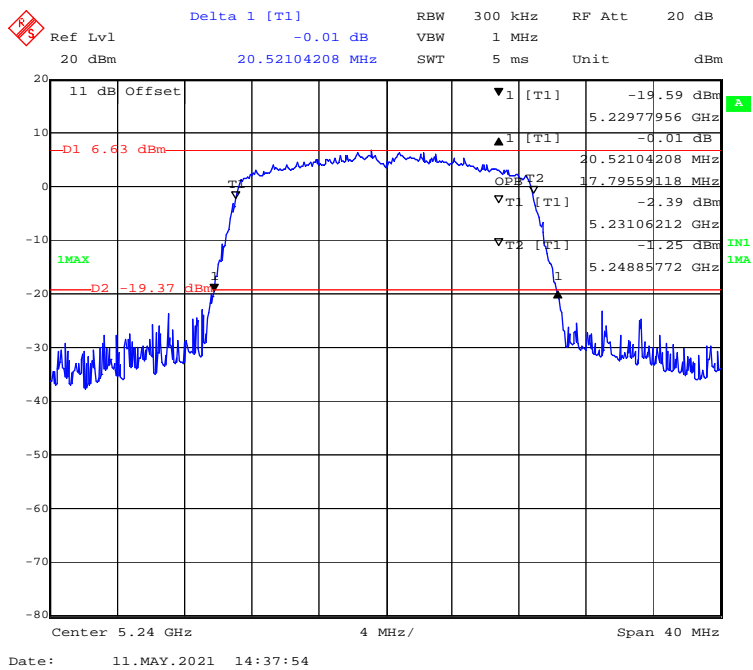
**802.11ac20 mode, 5180MHz**



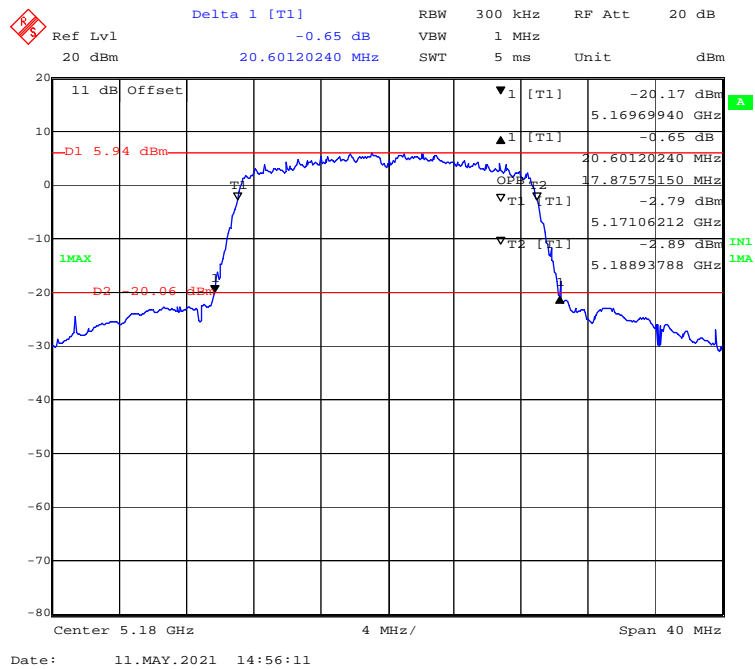
**802.11ac20 mode, 5200MHz**



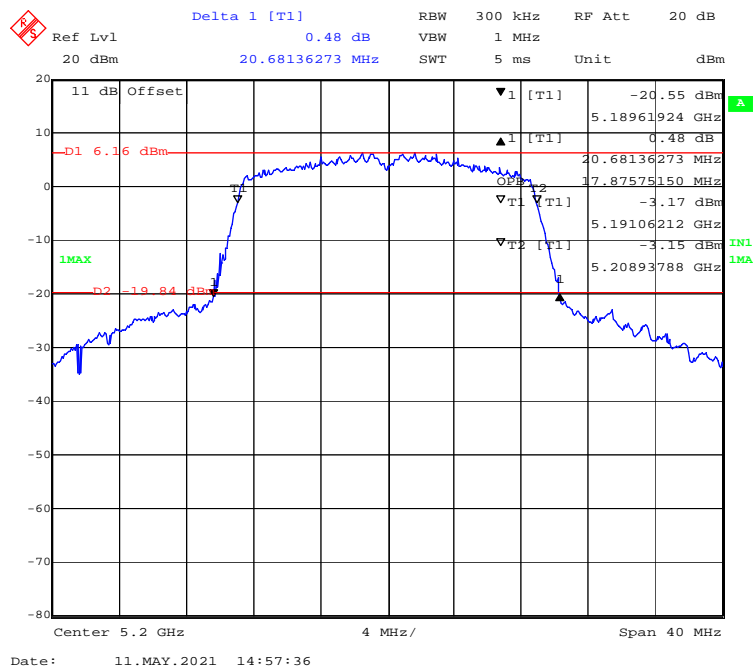
**802.11ac20 mode, 5240MHz**



802.11n-HT20 mode, 5180MHz

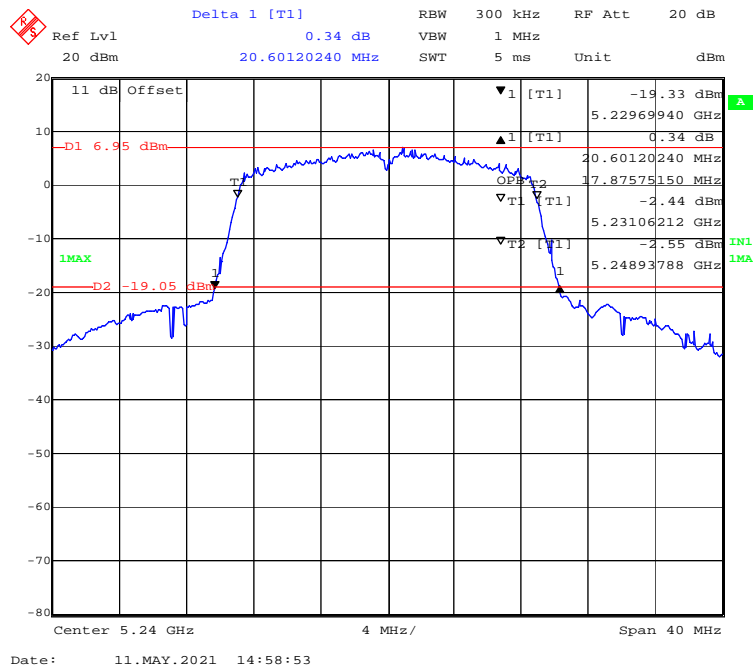


802.11n-HT20 mode, 5200MHz

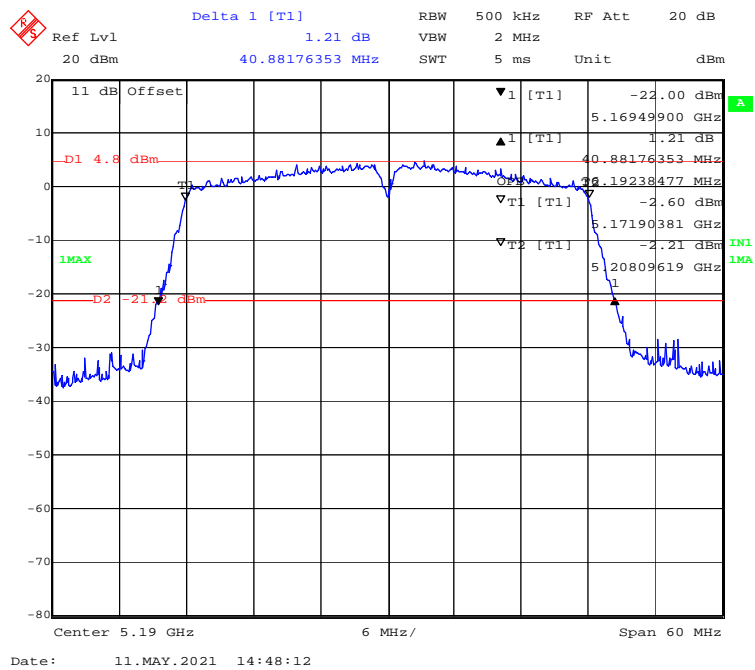




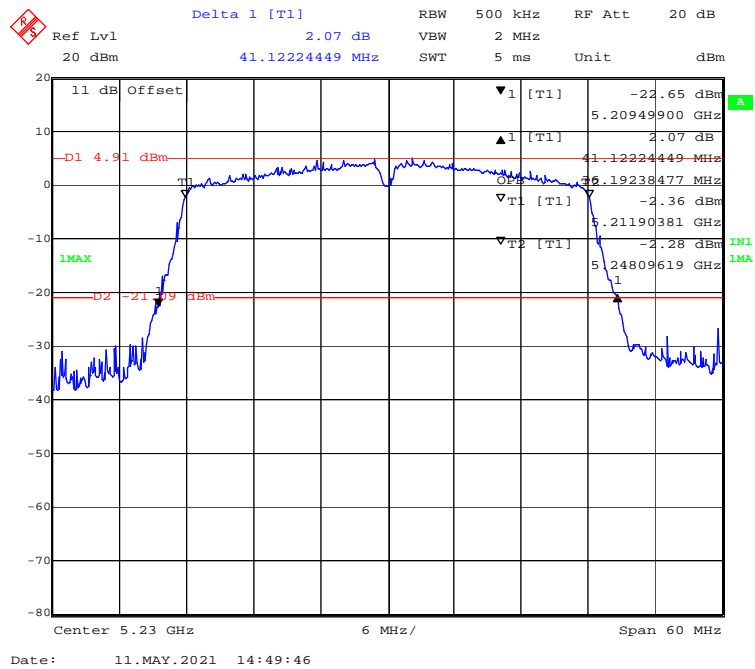
**802.11n-HT20 mode, 5240MHz**



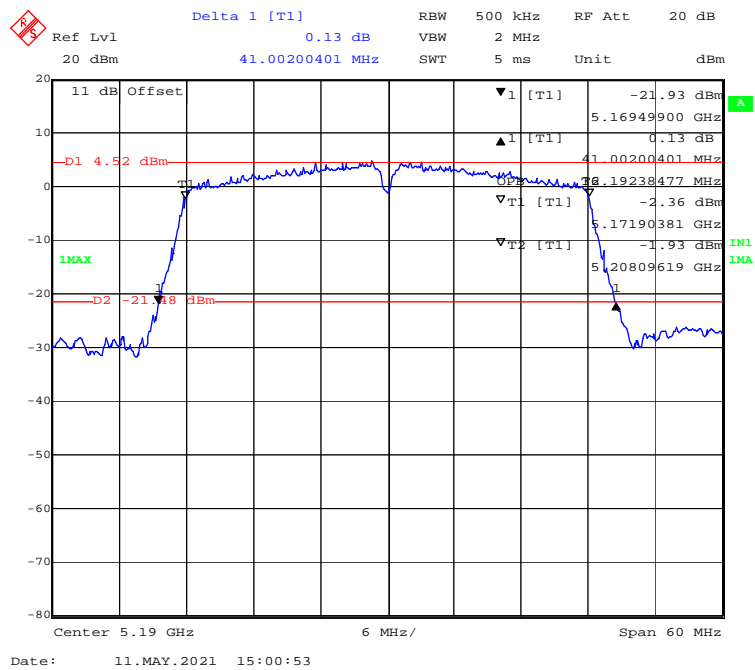
**802.11ac40 mode, 5190MHz**



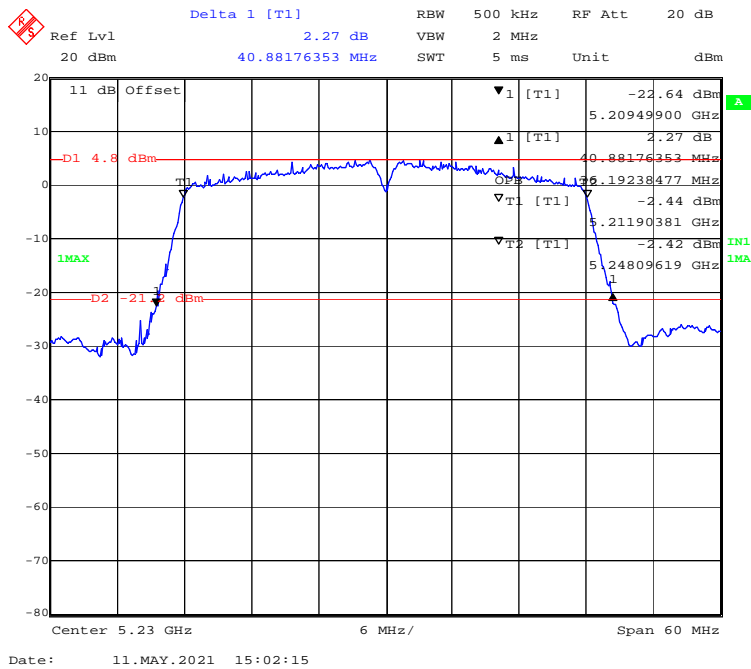
**802.11ac40 mode, 5230MHz**



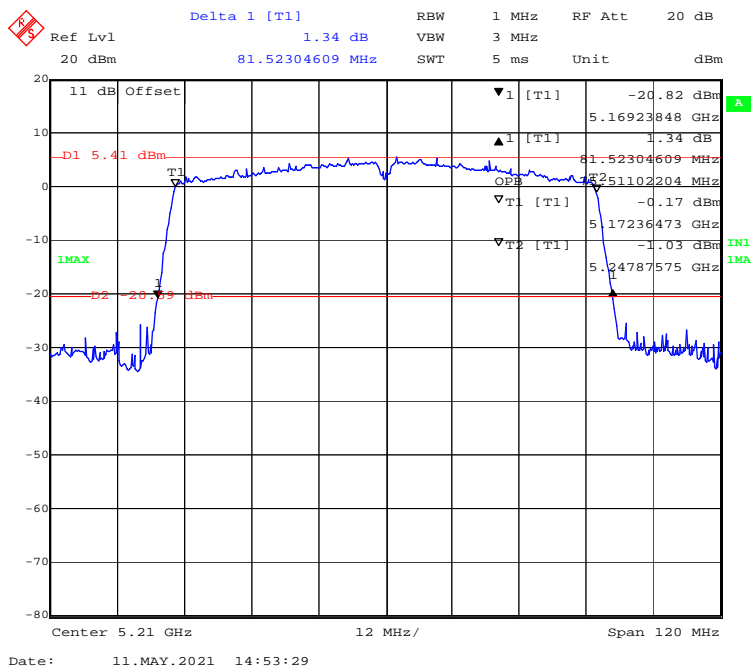
**802.11n-HT40 mode, 5190MHz**



**802.11n-HT40 mode, 5230MHz**

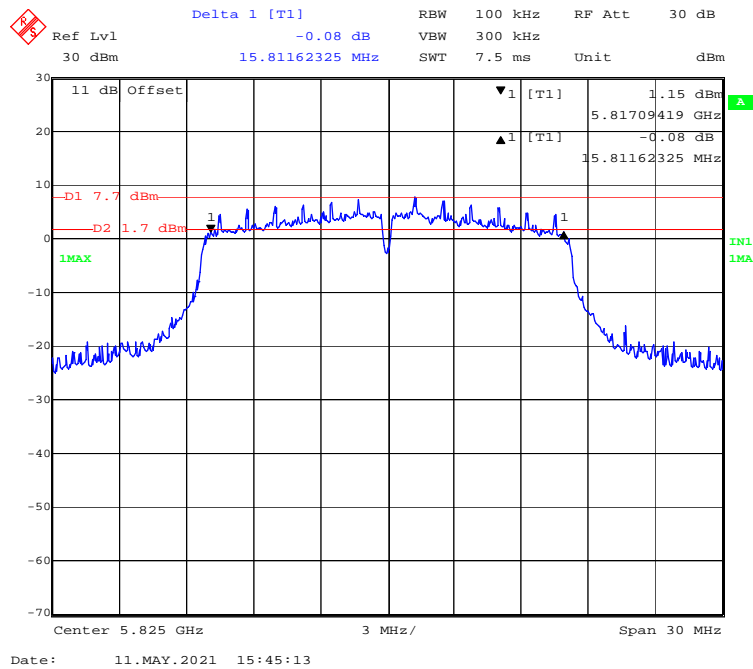


**802.11ac80 mode, 5210MHz**

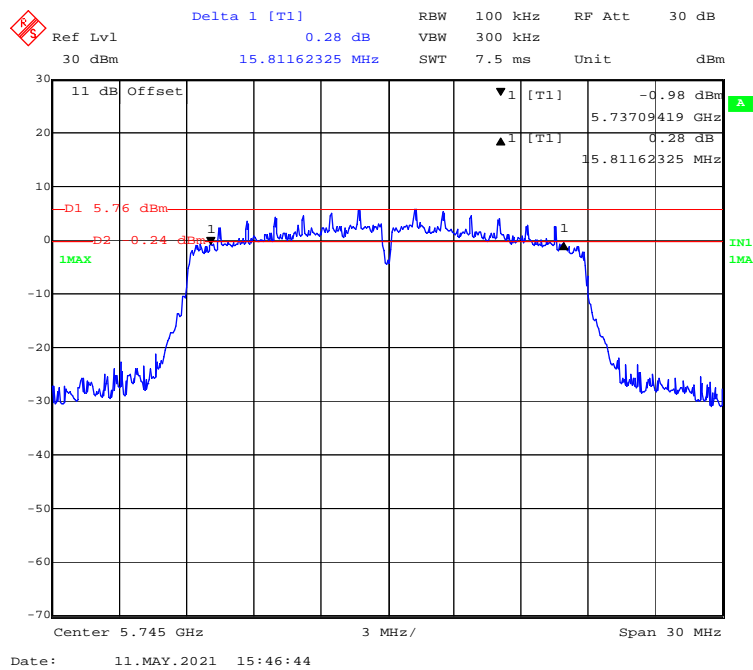




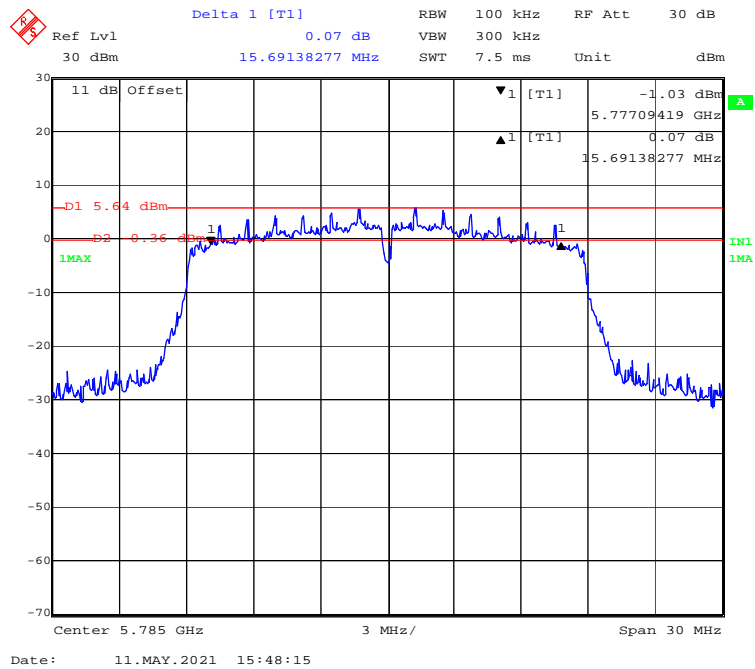
**802.11a mode, 5825MHz**



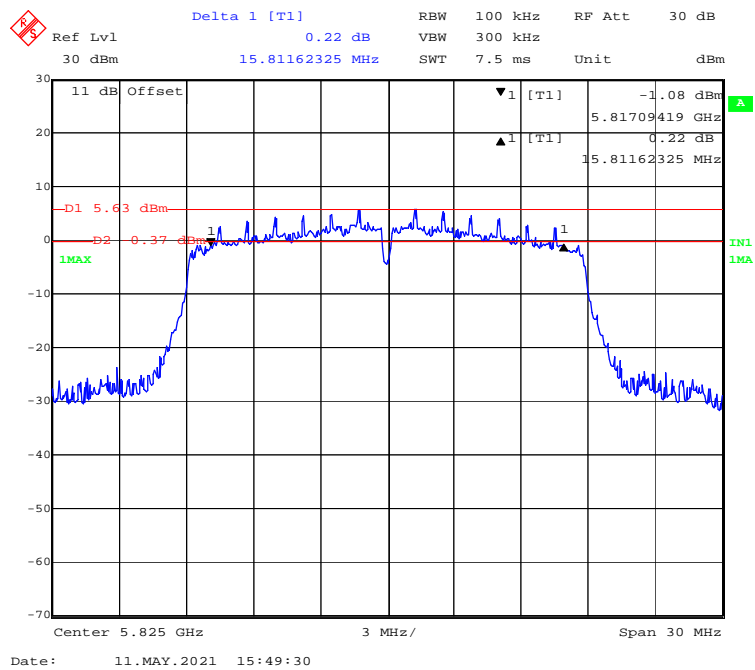
**802.11ac20 mode, 5745MHz**



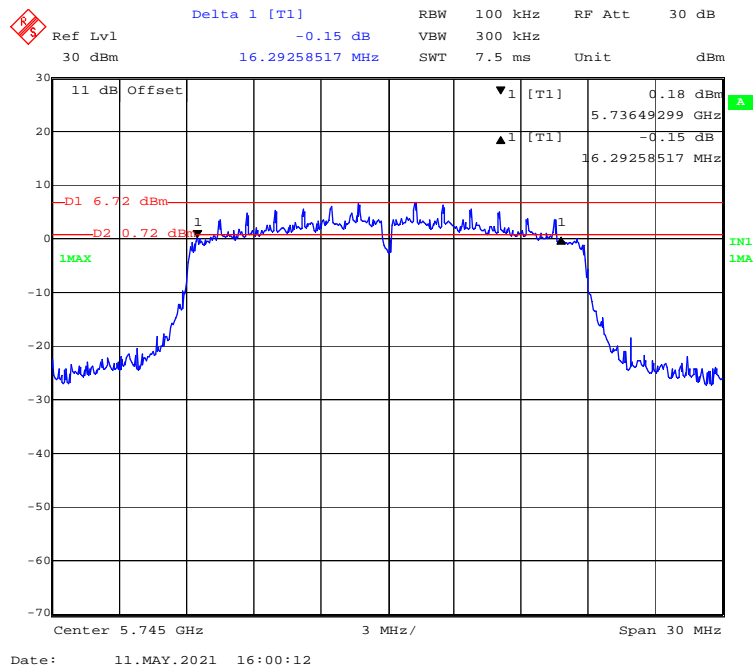
**802.11ac20 mode, 5785MHz**



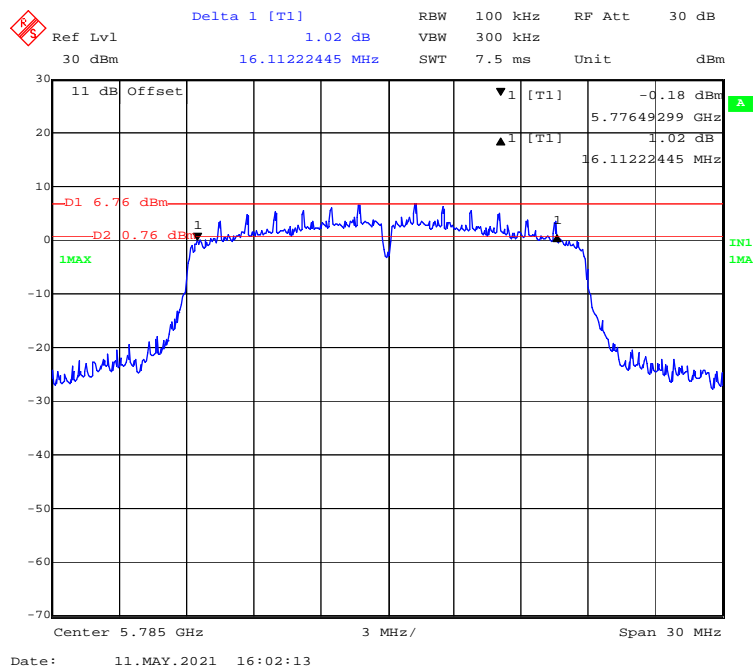
**802.11ac20 mode, 5825MHz**



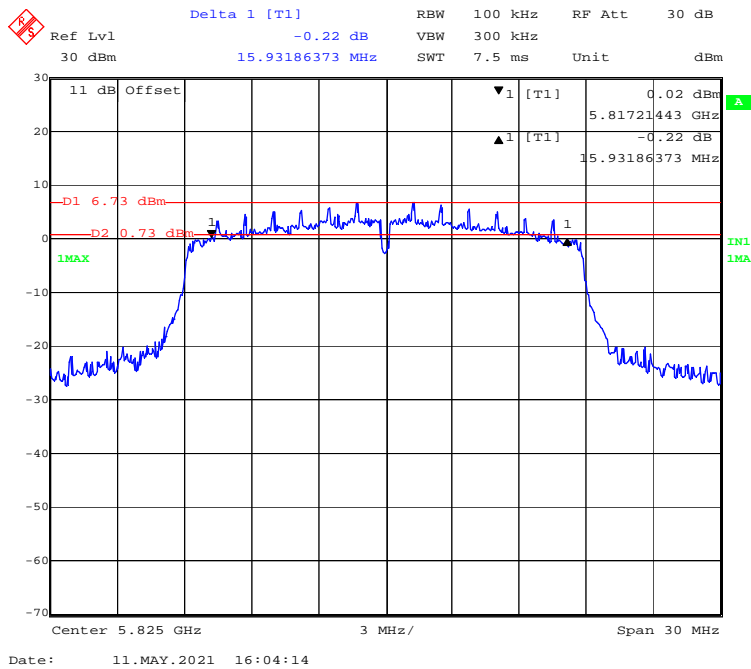
**802.11n-HT20 mode, 5745MHz**



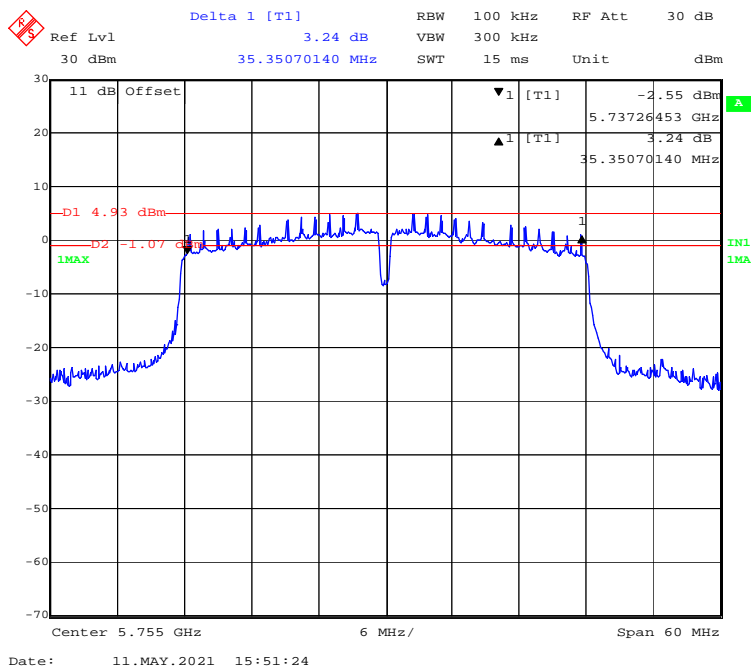
**802.11n-HT20 mode, 5785MHz**



**802.11n-HT20 mode, 5825MHz**

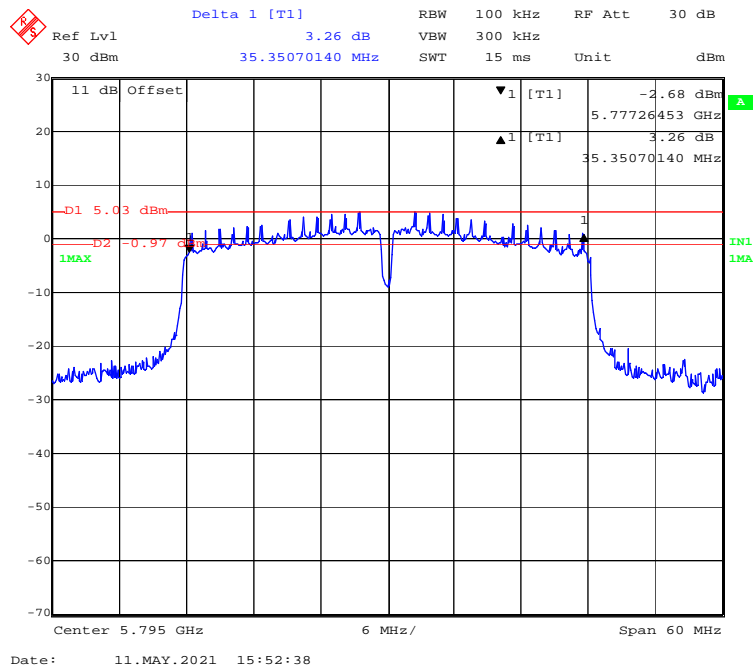


**802.11ac40 mode, 5755MHz**

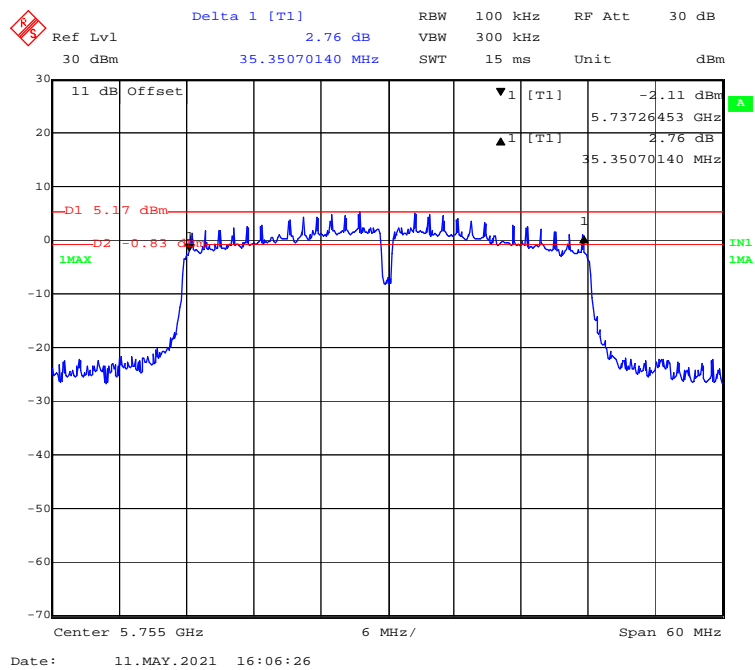




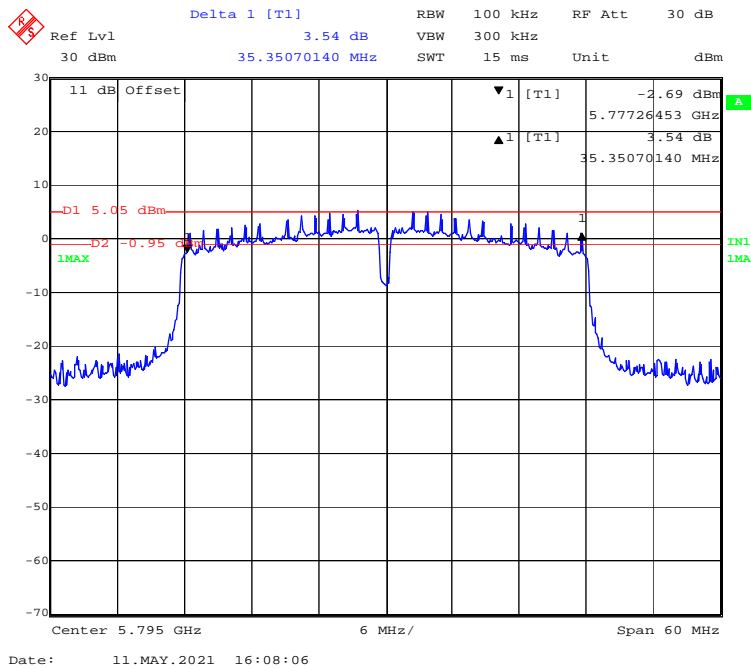
**802.11ac40 mode, 5795MHz**



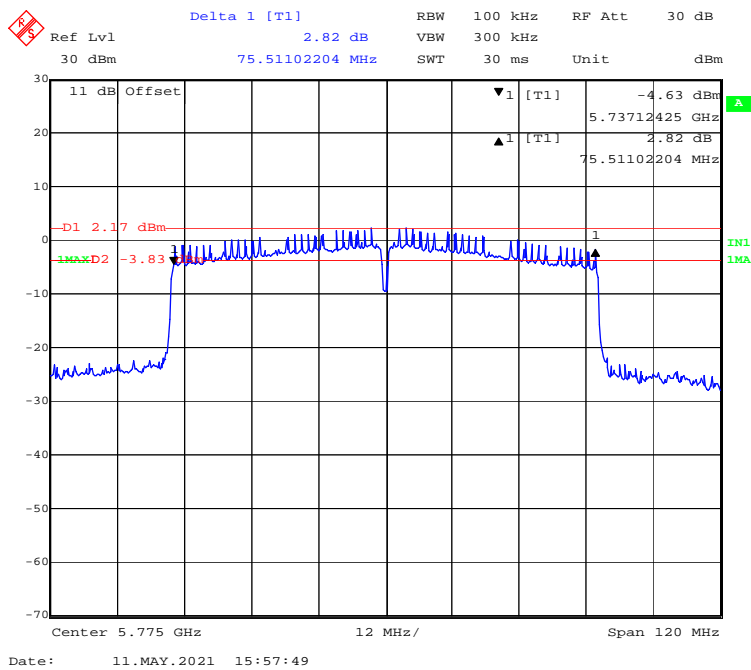
**802.11n-HT40 mode, 5755MHz**



**802.11n-HT40 mode, 5795MHz**

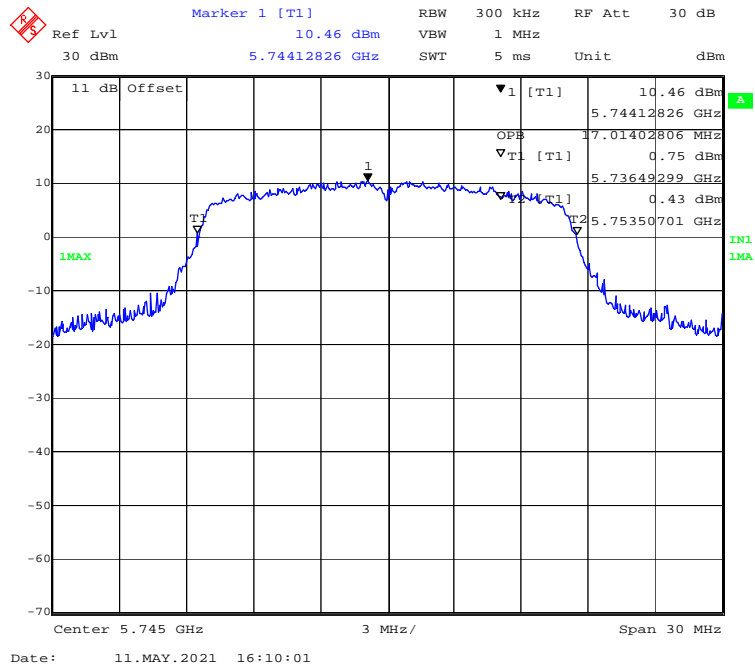


**802.11ac80 mode, 5775MHz**

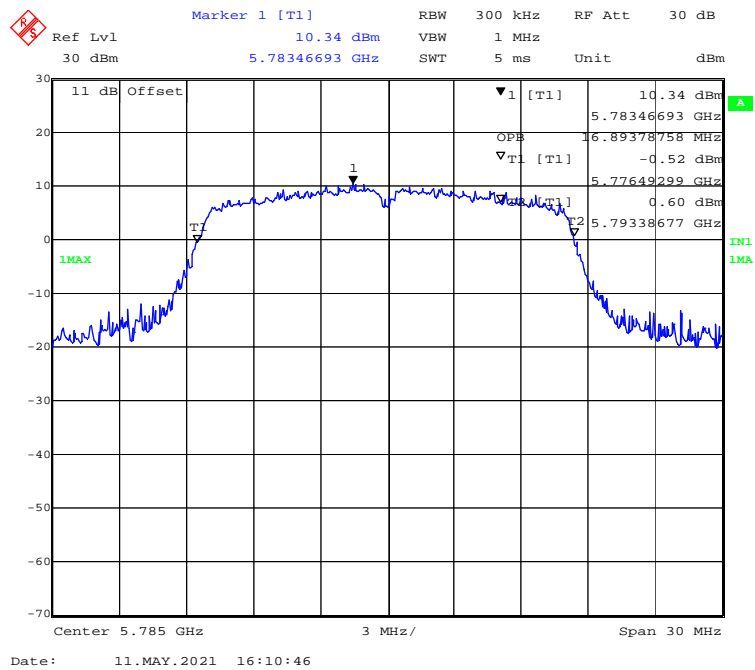


99% Occupied Bandwidth

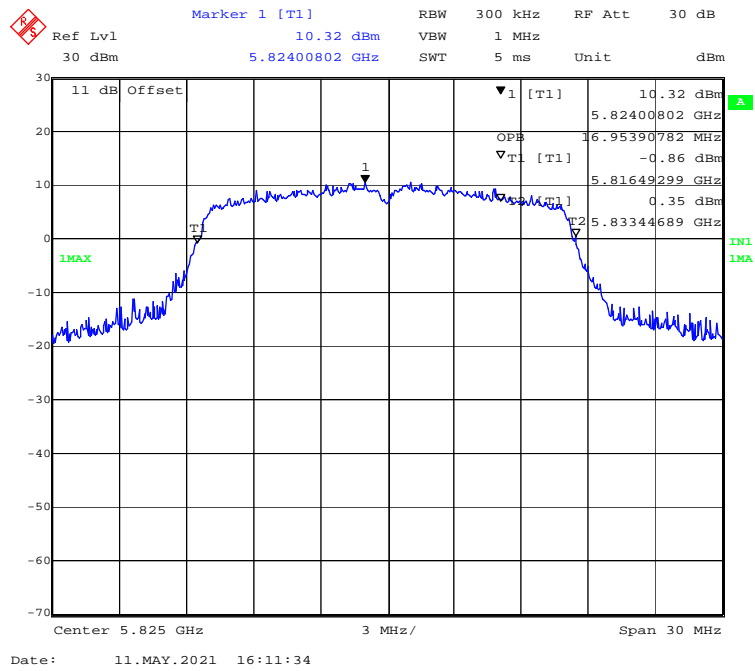
802.11a mode, 5745MHz



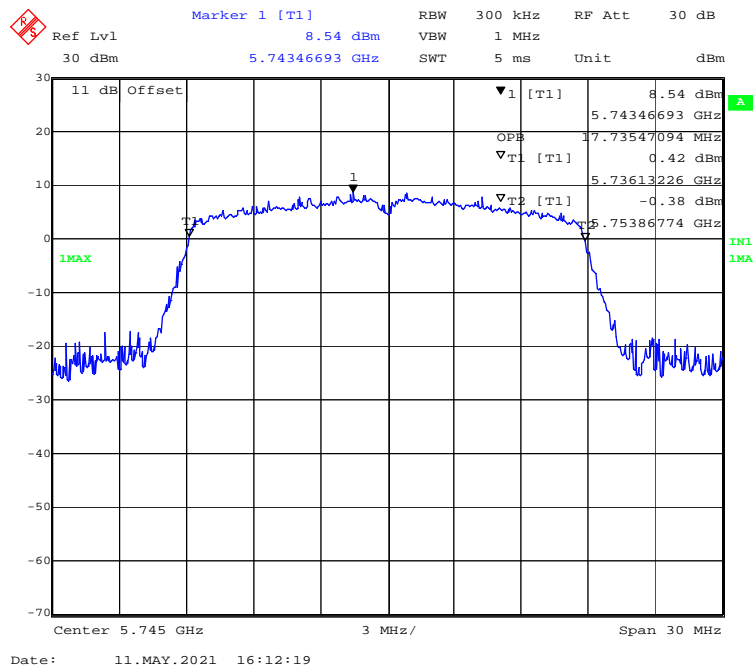
802.11a mode, 5785MHz



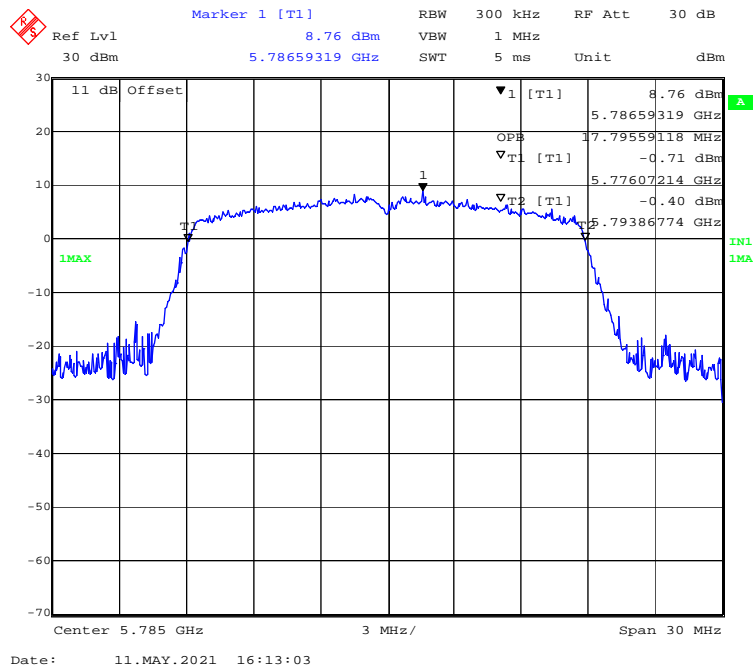
**802.11a mode, 5825MHz**



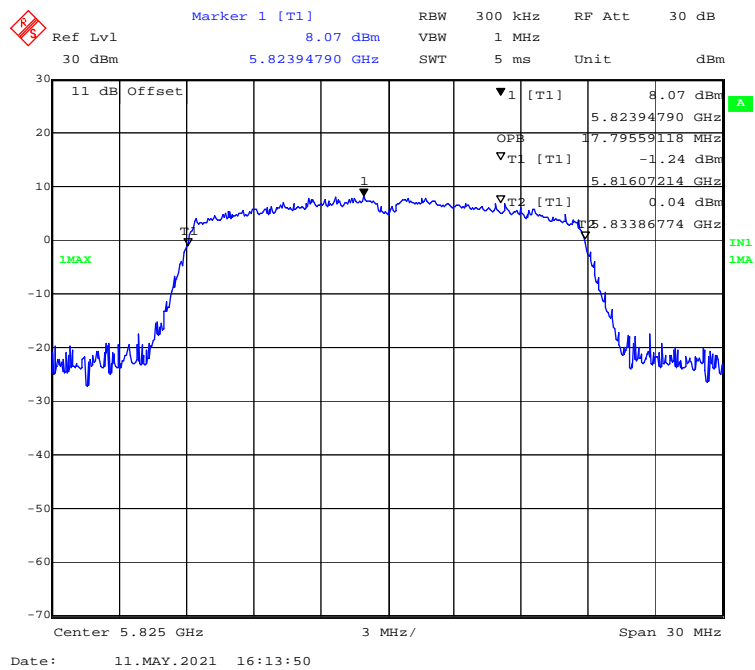
**802.11ac20 mode, 5745MHz**



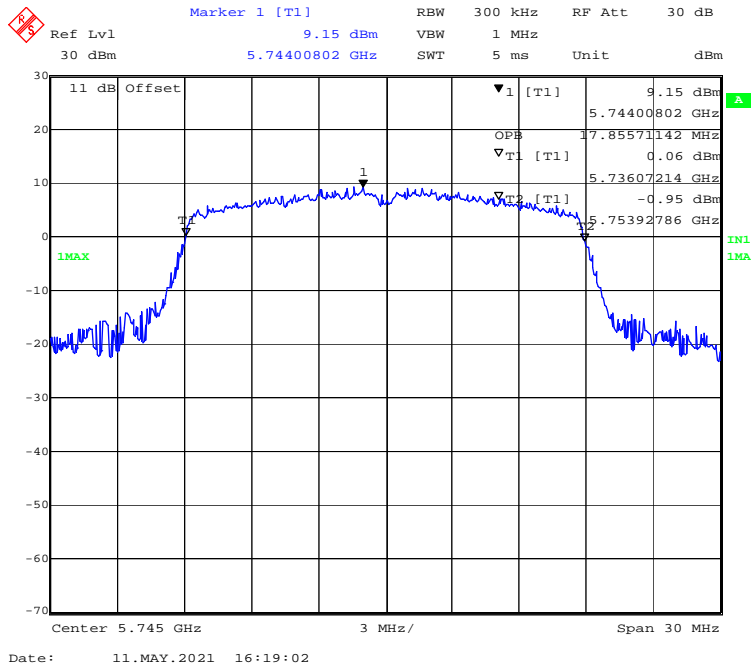
**802.11ac20 mode, 5785MHz**



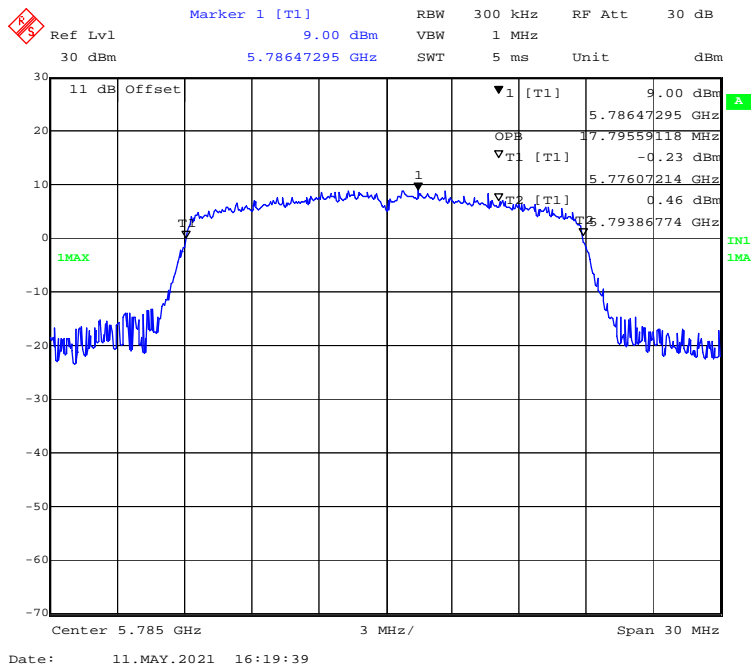
**802.11ac20 mode, 5825MHz**



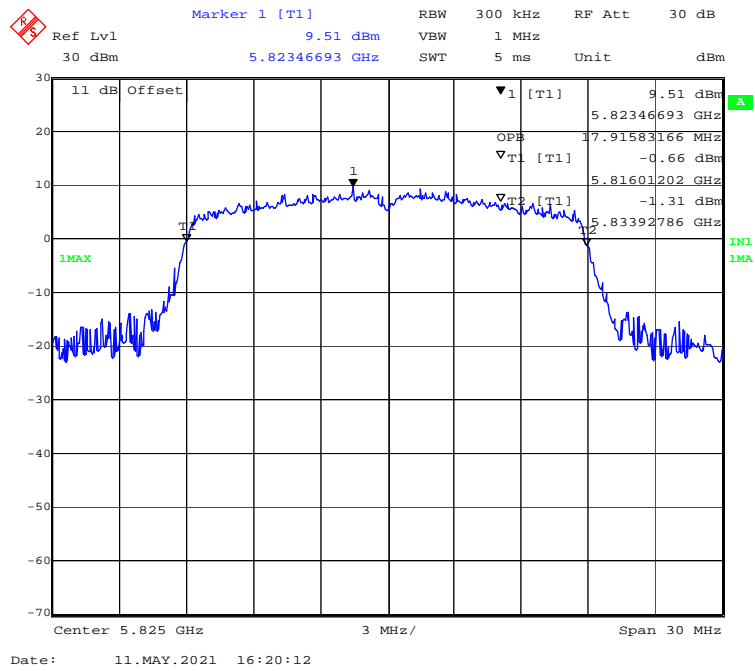
**802.11n-HT20 mode, 5745MHz**



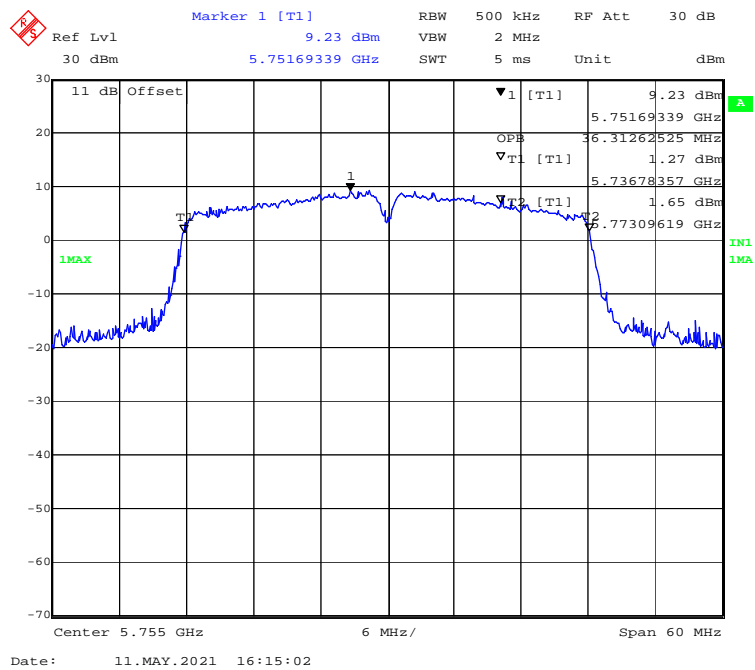
**802.11n-HT20 mode, 5785MHz**



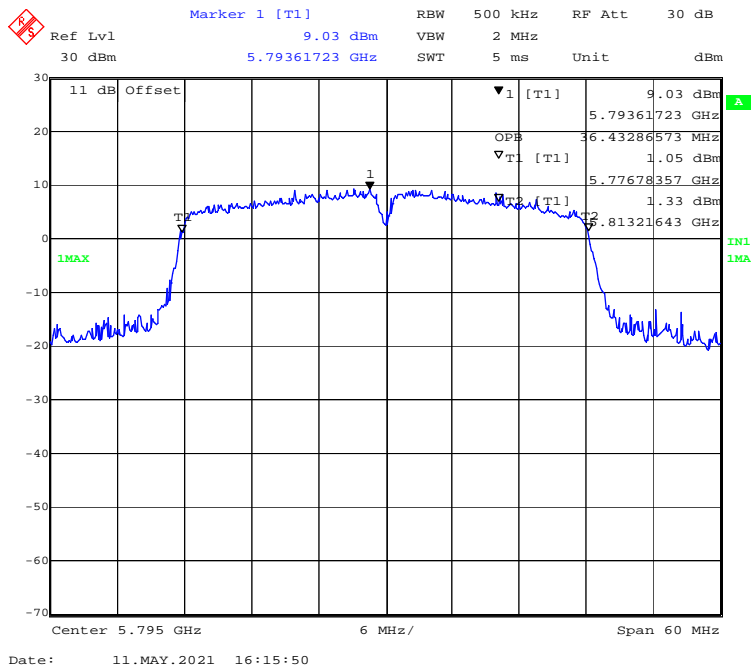
**802.11n-HT20 mode, 5825MHz**



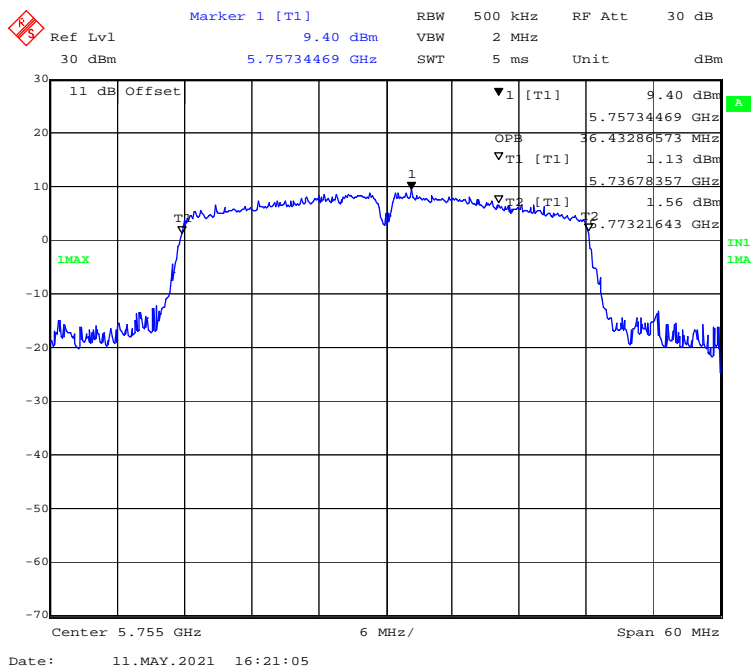
**802.11ac40 mode, 5755MHz**



**802.11ac40 mode, 5795MHz**

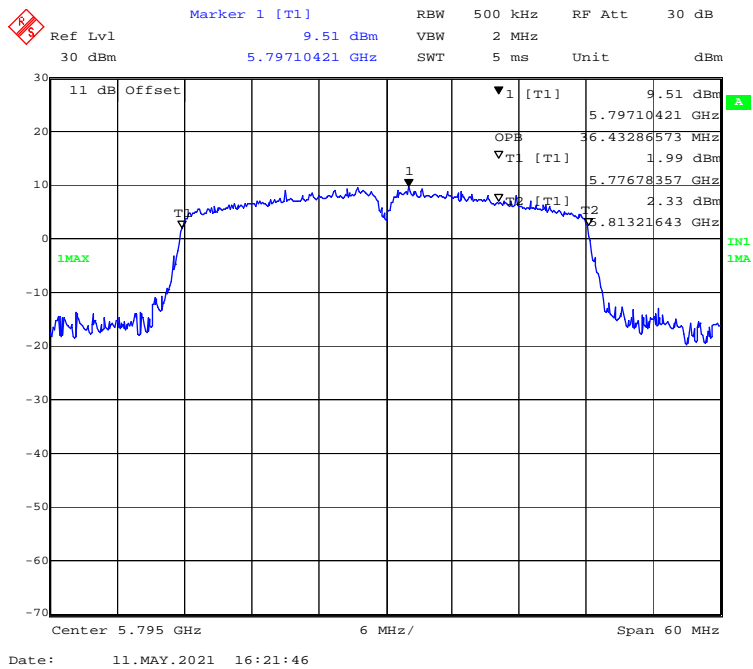


**802.11n-HT40 mode, 5755MHz**

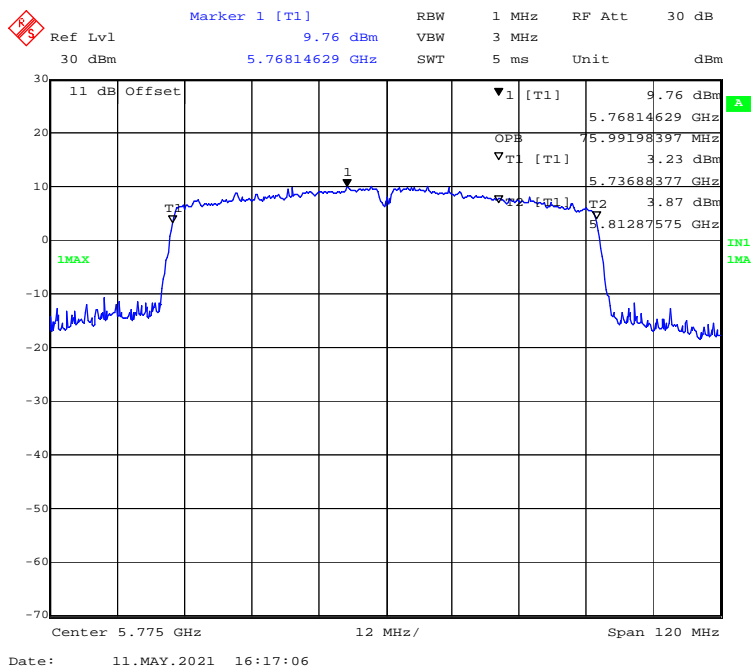




**802.11n-HT40 mode, 5795MHz**



**802.11ac80 mode, 5775MHz**



**FCC §15.407(a) (1) (3) – CONDUCTED TRANSMITTER OUTPUT POWER**

**Applicable Standard**

According to §15.407(a)(1)

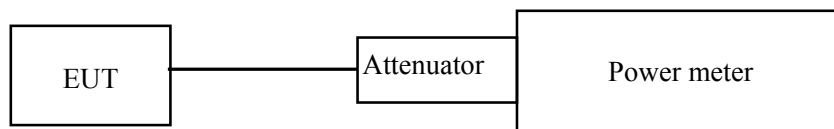
(iv) For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band.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

According to §15.407(a) (3)

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

**Test Procedure**

1. Place the EUT on a bench and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to one test equipment.
3. Add a correction factor to the display.



**Test Data**

**Environmental Conditions**

<b>Temperature:</b>	24.8 °C
<b>Relative Humidity:</b>	50 %
<b>ATM Pressure:</b>	101.5 kPa

*The testing was performed by Miller Xie on 2021-05-11.*

*Test Mode: Transmitting*

Test Mode: Transmitting

Test mode	Band	Frequency (MHz)	Average Conducted Output Power (dBm)	Limit (dBm)	Result
802.11a	5150-5250 MHz	5180	11.08	24	PASS
		5200	11.09	24	PASS
		5240	11.22	24	PASS
802.11ac20	5150-5250 MHz	5180	11.74	24	PASS
		5200	11.83	24	PASS
		5240	11.92	24	PASS
802.11n-HT20	5150-5250 MHz	5180	11.82	24	PASS
		5200	11.81	24	PASS
		5240	11.83	24	PASS
802.11ac40	5150-5250 MHz	5190	12.23	24	PASS
		5230	12.34	24	PASS
802.11n-HT40	5150-5250 MHz	5190	10.07	24	PASS
		5230	10.12	24	PASS
802.11ac80	5210 MHz	5210	8.60	24	PASS

Test mode	Band	Frequency (MHz)	Average Conducted Output Power (dBm)	Limit (dBm)	Result
802.11a	5725-5850 MHz	5745	14.19	30	PASS
		5785	14.16	30	PASS
		5825	14.35	30	PASS
802.11ac20	5725-5850 MHz	5745	13.23	30	PASS
		5785	13.05	30	PASS
		5825	13.15	30	PASS
802.11n-HT20	5725-5850 MHz	5745	14.01	30	PASS
		5785	14.10	30	PASS
		5825	14.10	30	PASS
802.11ac40	5725-5850 MHz	5755	13.85	30	PASS
		5795	13.89	30	PASS
802.11n-HT40	5725-5850 MHz	5755	15.19	30	PASS
		5795	15.16	30	PASS
802.11ac80	5775 MHz	5775	13.03	30	PASS

Note: The maximum antenna gain is 2.0dBi.

## **FCC §15.407(a) (1) (3) - POWER SPECTRAL DENSITY**

### **Applicable Standard**

According to §15.407(a)(1)

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

According to §15.407(a) (3)

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

### **Test Procedure**

The measurements are base on FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01: Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices section F: Maximum power spectral density (PPSD)

### **Test Data**

#### **Environmental Conditions**

<b>Temperature:</b>	23.1 °C
<b>Relative Humidity:</b>	54 %
<b>ATM Pressure:</b>	101.5 kPa

*The testing was performed by Miller Xie on 2021-05-11.*

Test Mode: Transmitting

5150MHz-5250MHz:

Mode	Channel	Frequency (MHz)	PSD (dBm/MHz)	Limit (dBm/MHz)	Result
802.11a	Low	5180	3.98	11	PASS
	Middle	5200	3.75	11	PASS
	High	5240	4.28	11	PASS
802.11ac20	Low	5180	4.09	11	PASS
	Middle	5200	4.07	11	PASS
	High	5240	4.22	11	PASS
802.11n-HT20	Low	5180	4.73	11	PASS
	Middle	5200	4.82	11	PASS
	High	5240	4.49	11	PASS
802.11ac40	Low	5190	0.35	11	PASS
	High	5230	0.65	11	PASS
802.11n-HT40	Low	5190	0.57	11	PASS
	High	5230	1.01	11	PASS
802.11ac80	/	5210	-1.70	11	PASS

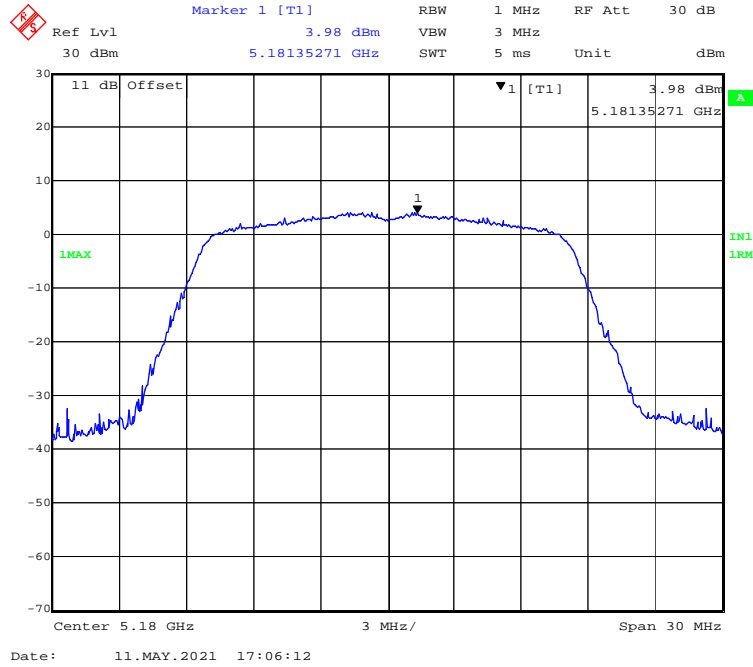
5725MHz-5850MHz:

Mode	Channel	Frequency (MHz)	PSD (dBm/500kHz)	Limit (dBm/500kHz)	Result
802.11a	Low	5745	7.54	30	PASS
	Middle	5785	7.93	30	PASS
	High	5825	8.04	30	PASS
802.11ac20	Low	5745	4.91	30	PASS
	Middle	5785	4.98	30	PASS
	High	5825	5.49	30	PASS
802.11n-HT20	Low	5745	7.08	30	PASS
	Middle	5785	6.62	30	PASS
	High	5825	6.92	30	PASS
802.11ac40	Low	5755	4.57	30	PASS
	High	5795	4.32	30	PASS
802.11n-HT40	Low	5755	4.85	30	PASS
	High	5795	5.09	30	PASS
802.11ac80	/	5775	2.07	30	PASS

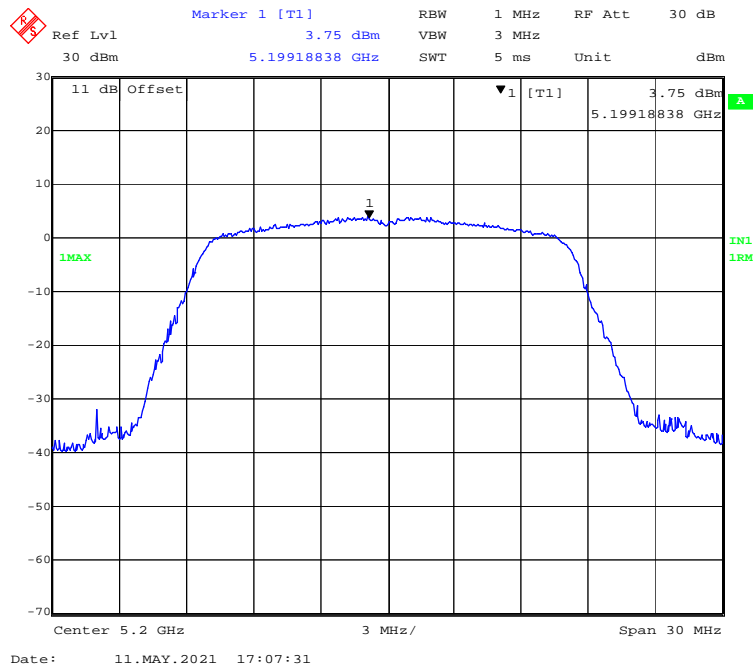
Note: The maximum antenna gain is 2.0dBi.

5150MHz-5250MHz Band :

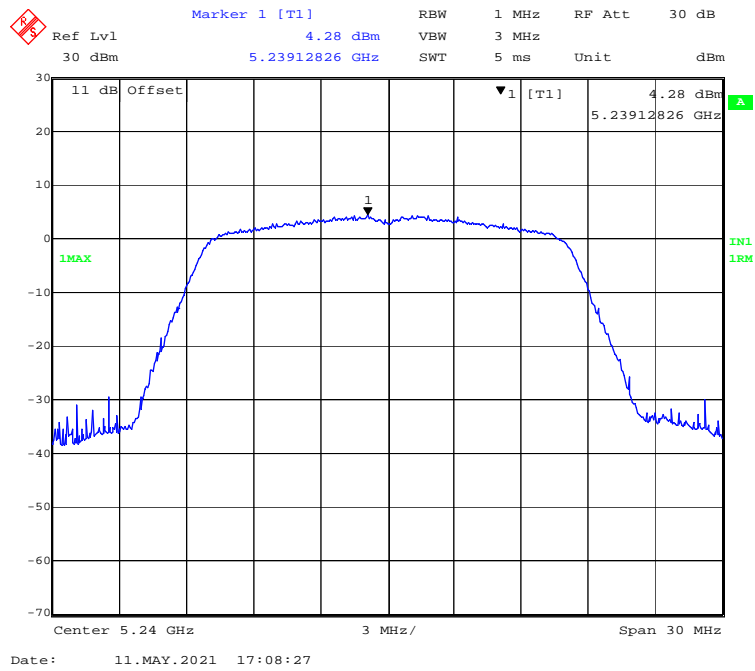
802.11a mode, Power spectral density-5180MHz



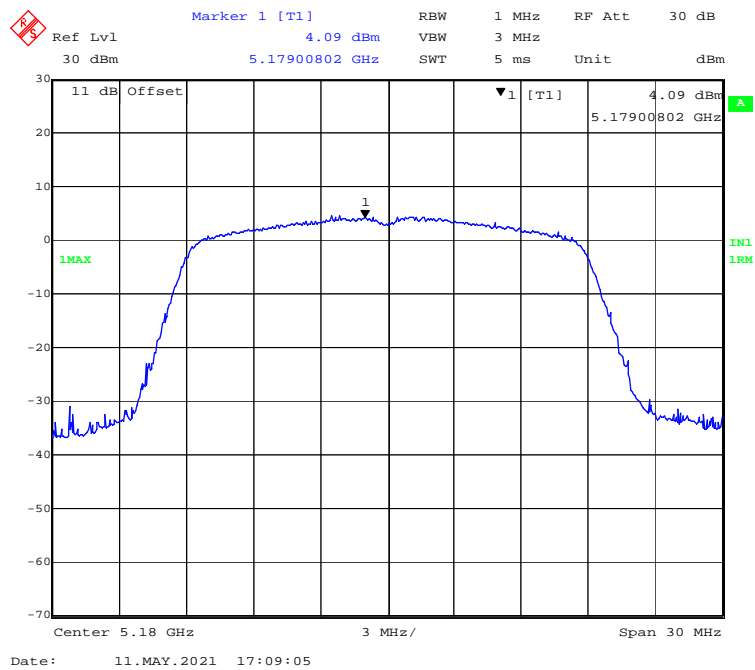
802.11a mode, Power spectral density-5200MHz



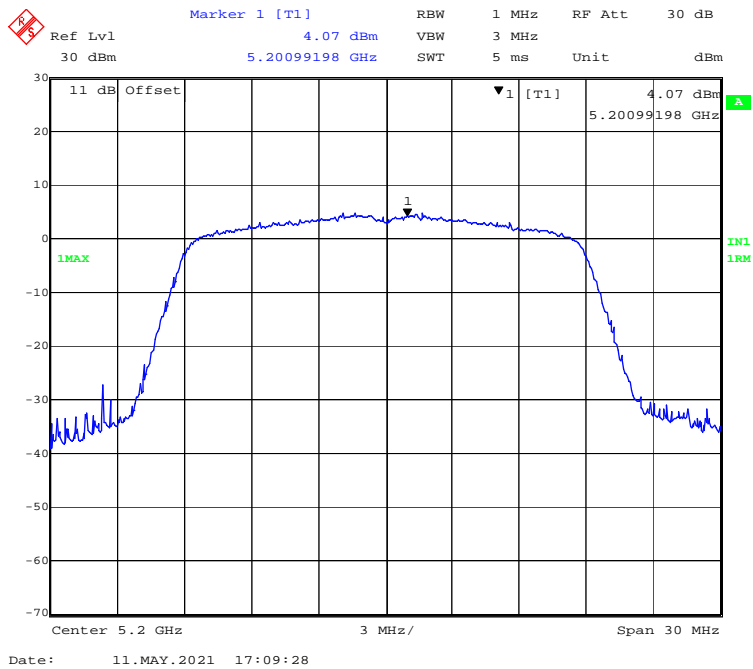
**802.11a mode, Power spectral density-5240MHz**



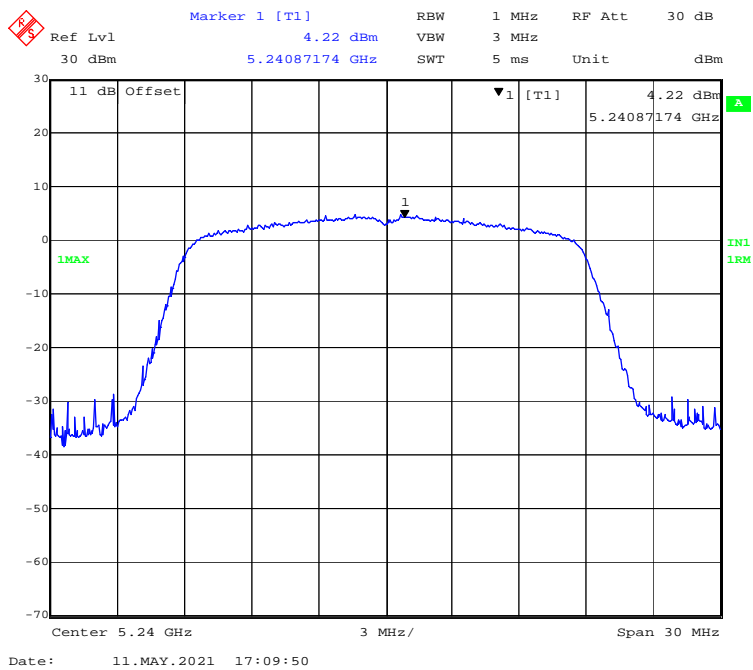
**802.11ac20 mode, Power spectral density-5180MHz**



802.11ac20 mode, Power spectral density-5200MHz

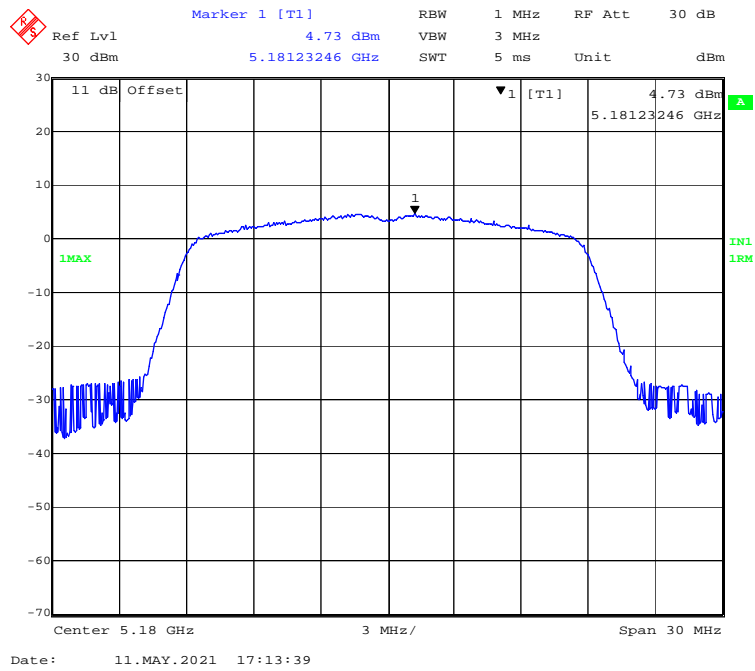


802.11ac20 mode, Power spectral density-5240MHz

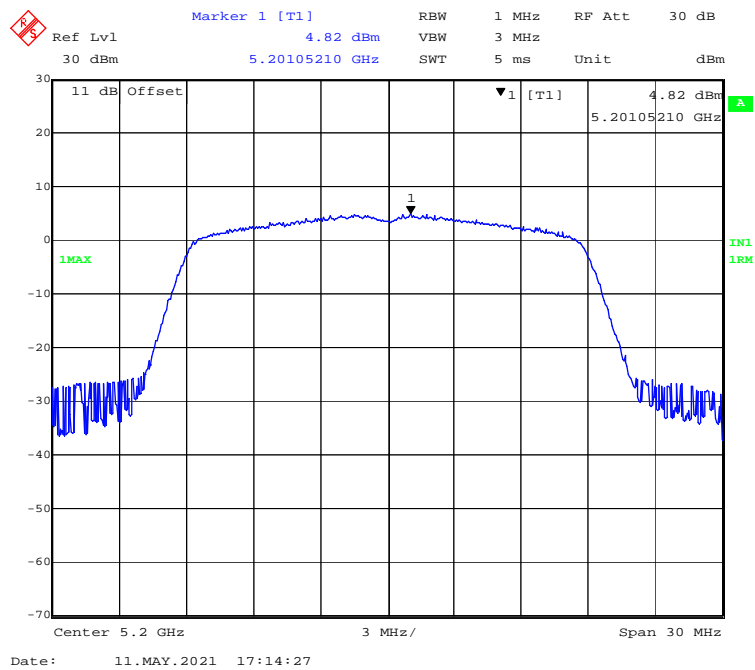




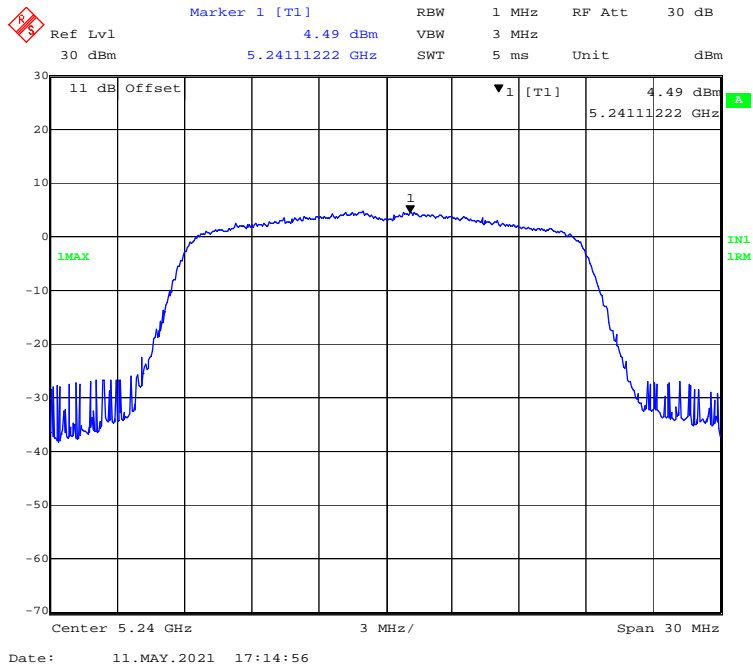
**802.11n-HT20 mode, Power spectral density-5180MHz**



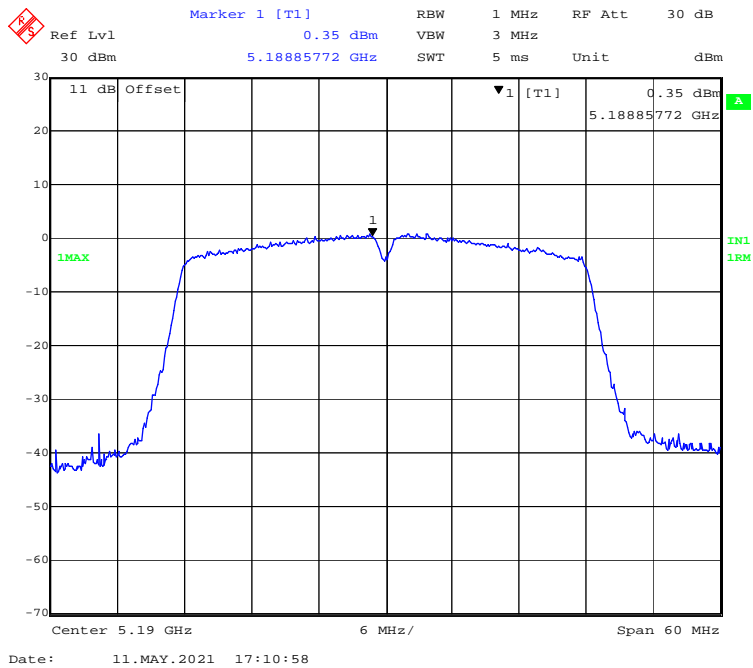
**802.11n-HT20 mode, Power spectral density-5200MHz**



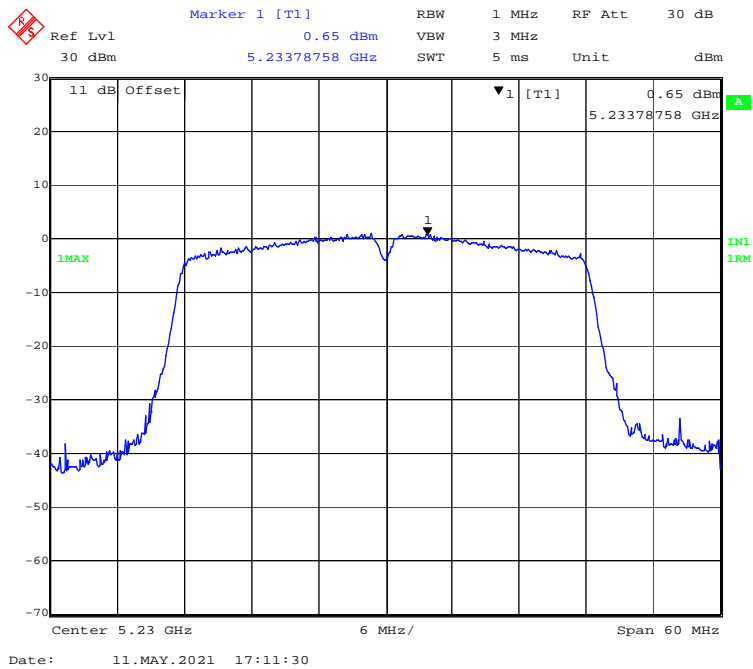
**802.11n-HT20 mode, Power spectral density-5240MHz**



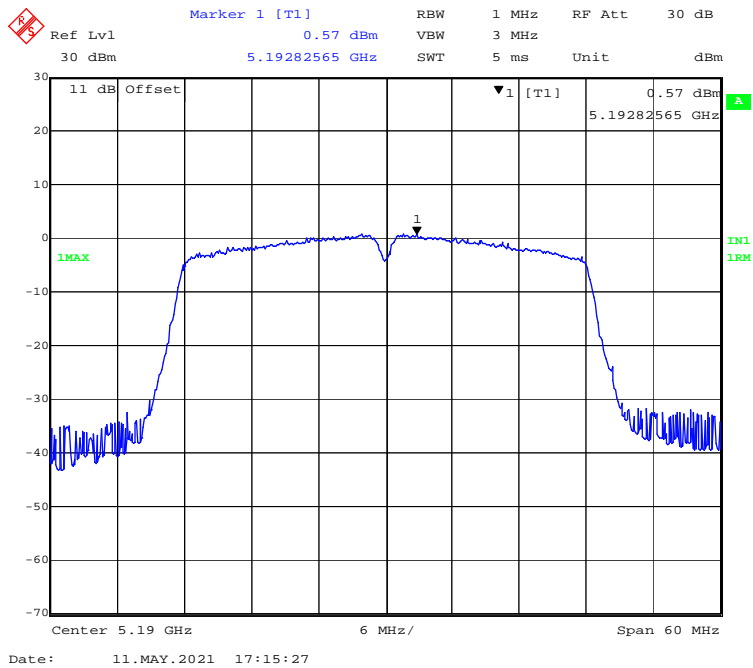
**802.11ac40 mode, Power spectral density-5190MHz**



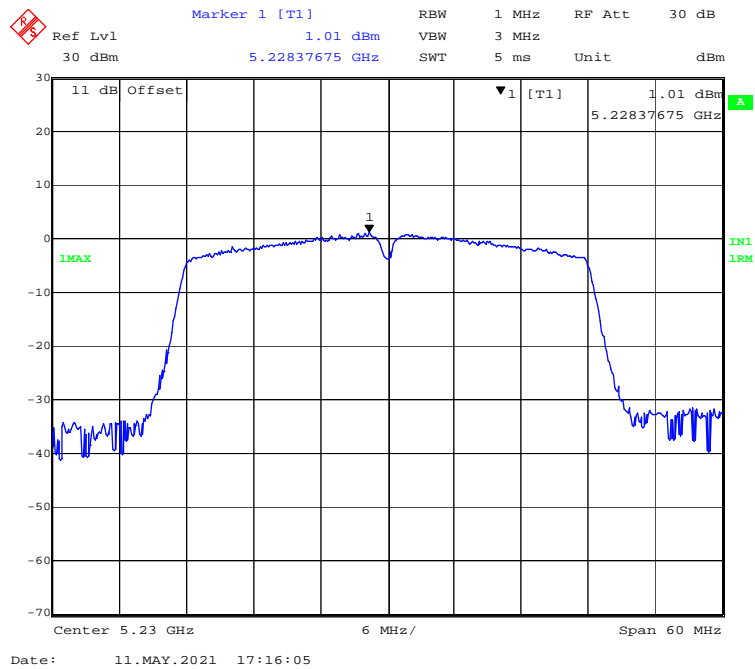
**802.11 ac40 mode, Power spectral density-5230MHz**



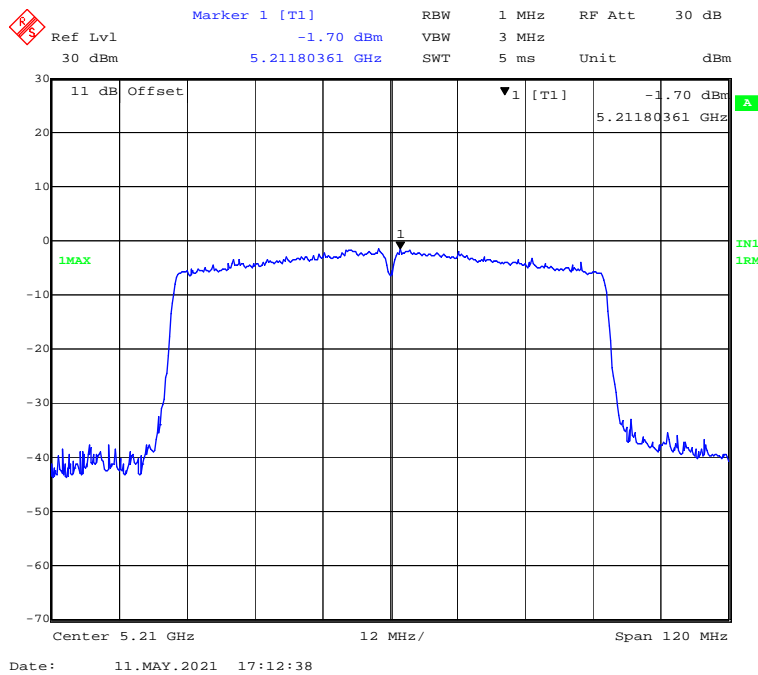
**802.11n-HT40 mode, Power spectral density-5190MHz**



802.11n-HT40 mode, Power spectral density-5230MHz

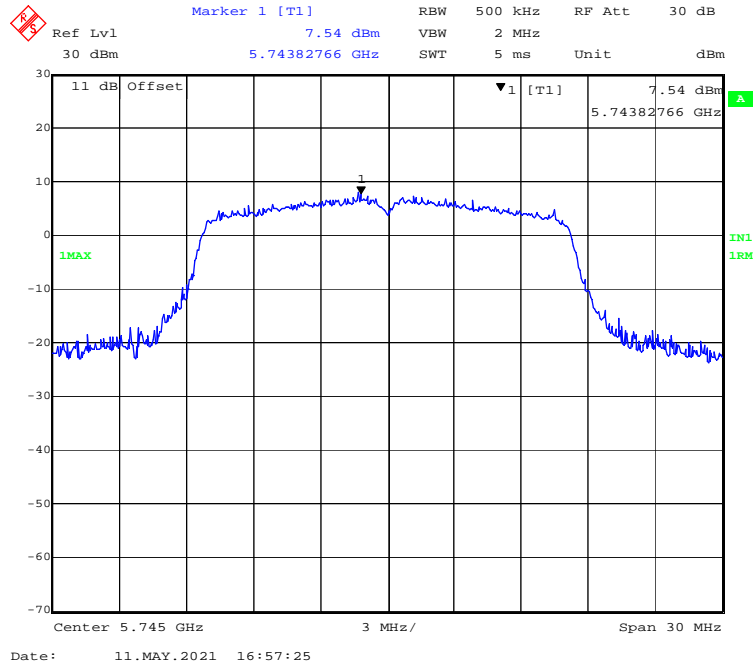


802.11 ac80 mode, Power spectral density-5210MHz

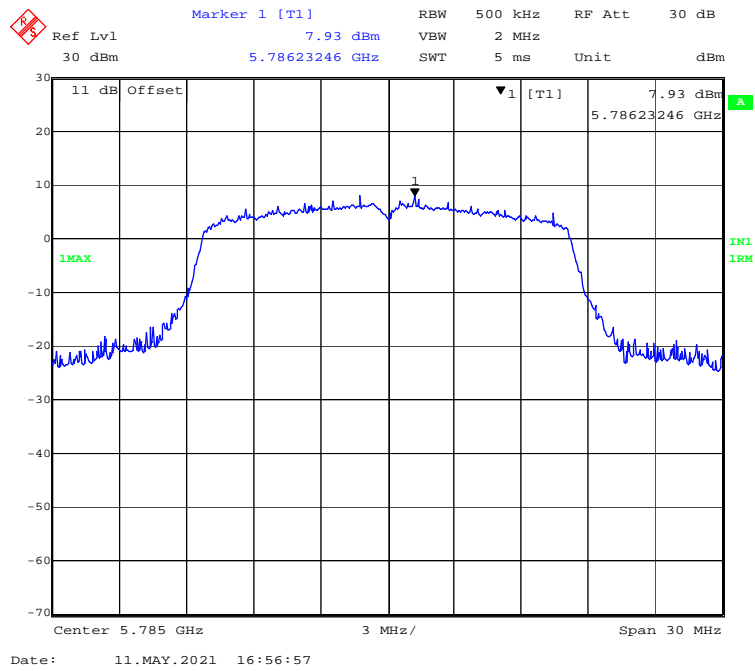


5725MHz-5850MHz Band:

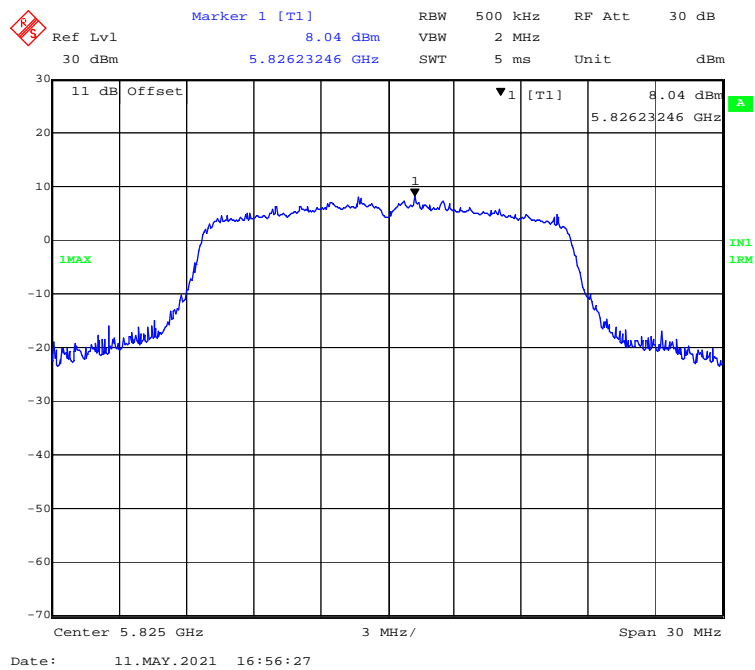
802.11a mode, Power spectral density-5745MHz



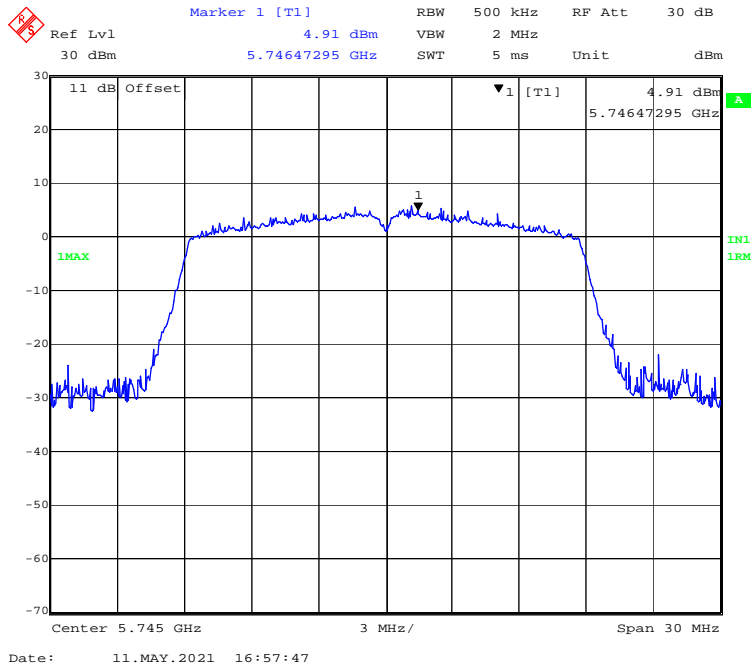
**802.11a mode, Power spectral density-5785MHz**



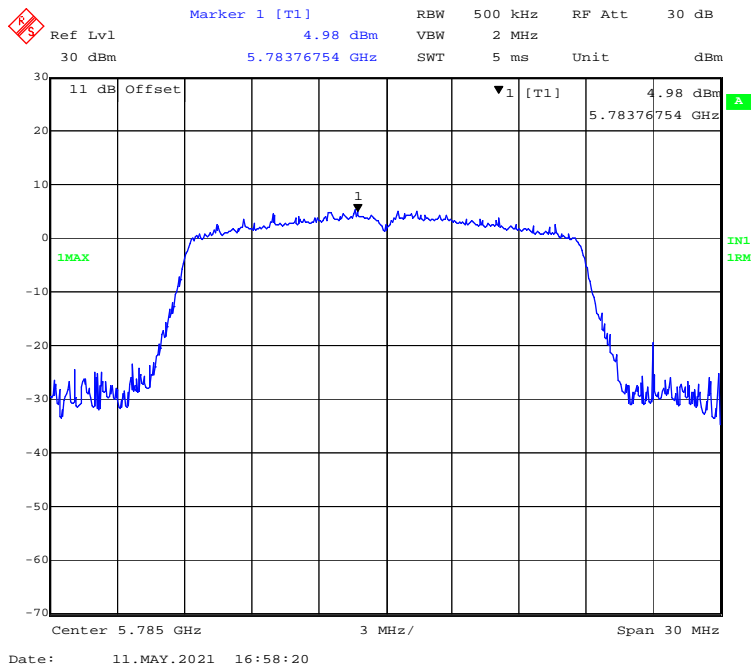
**802.11a mode, Power spectral density-5825MHz**



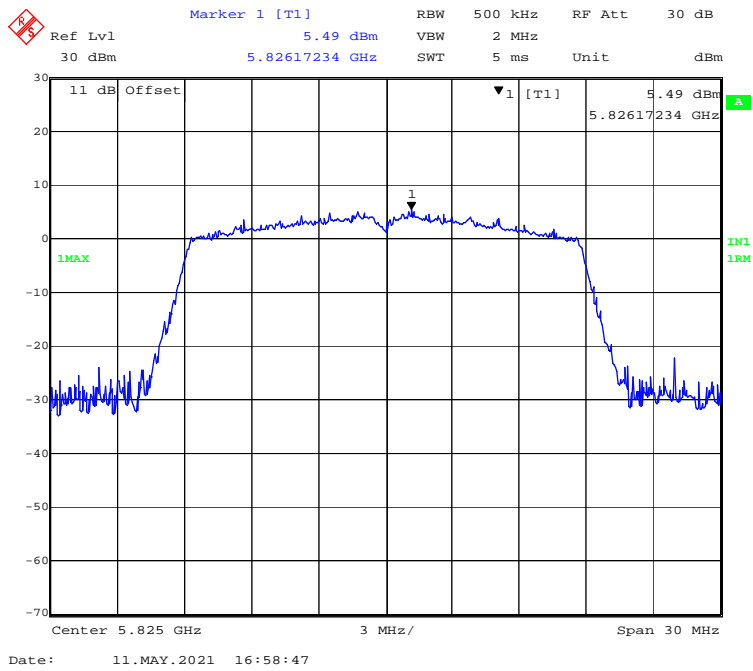
802.11ac20 mode, Power spectral density-5745MHz



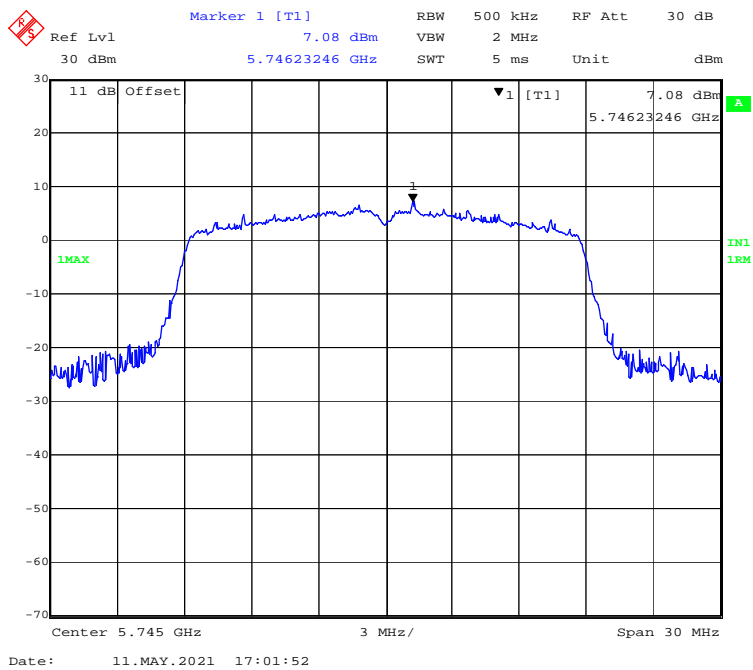
802.11 ac20 mode, Power spectral density-5785MHz



**802.11 ac20 mode, Power spectral density-5825MHz**

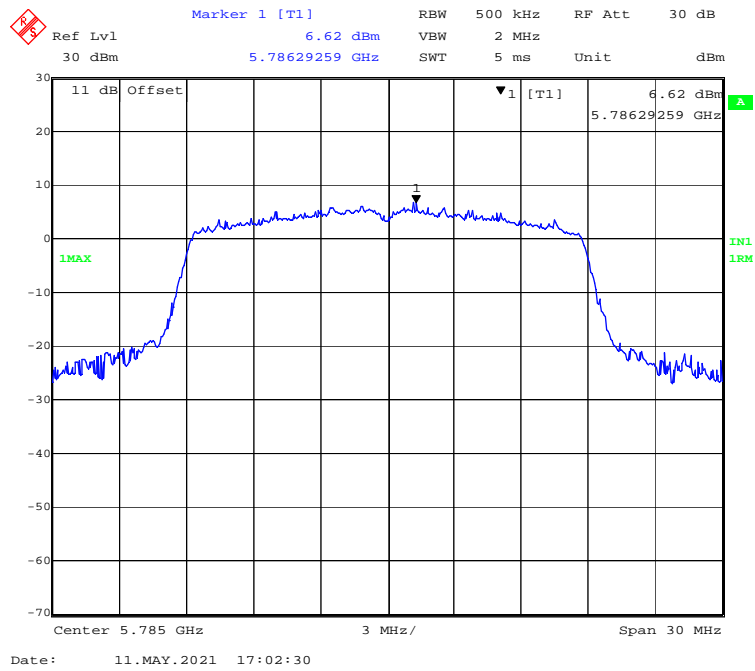


**802.11n-HT20 mode, Power spectral density-5745MHz**

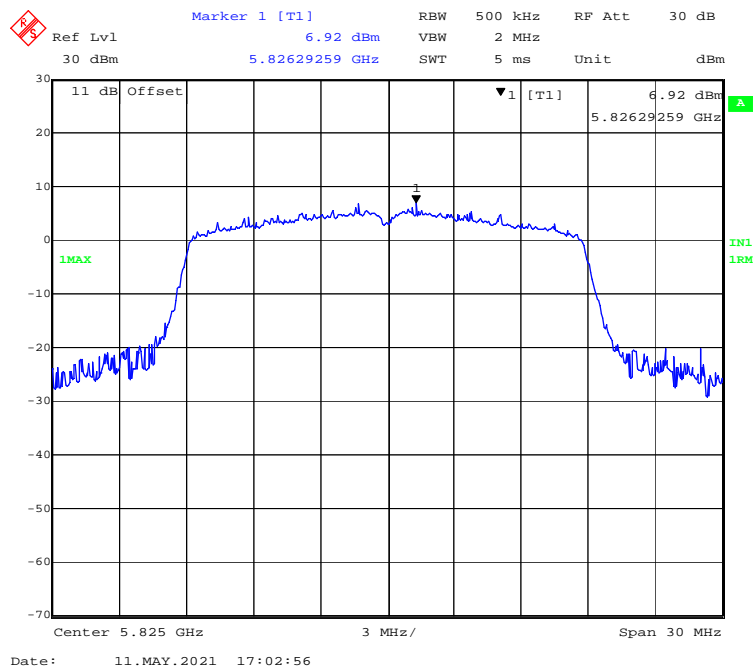




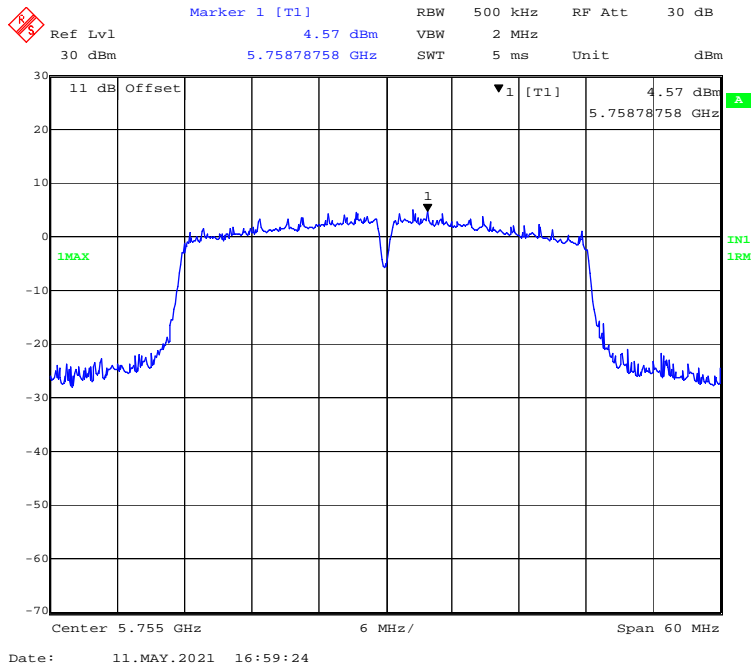
802.11n-HT20 mode, Power spectral density-5785MHz



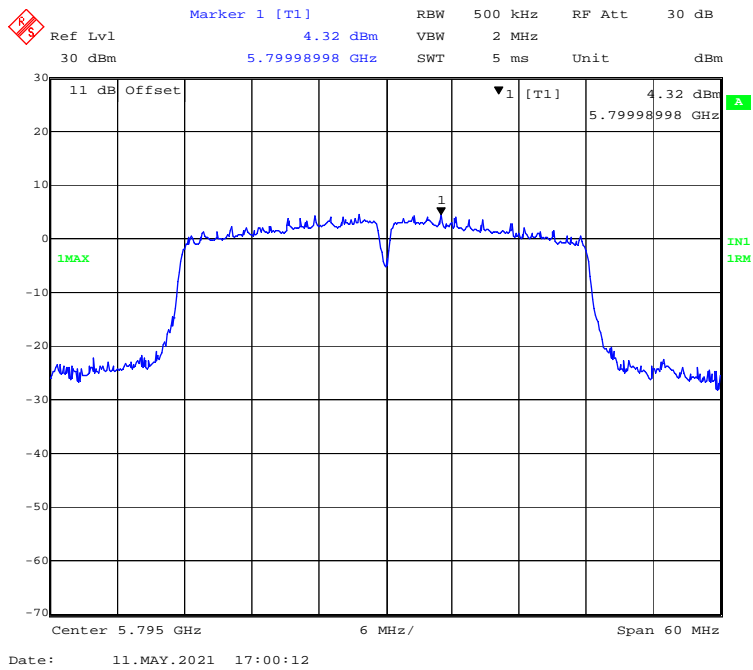
802.11n-HT20 mode, Power spectral density-5825MHz



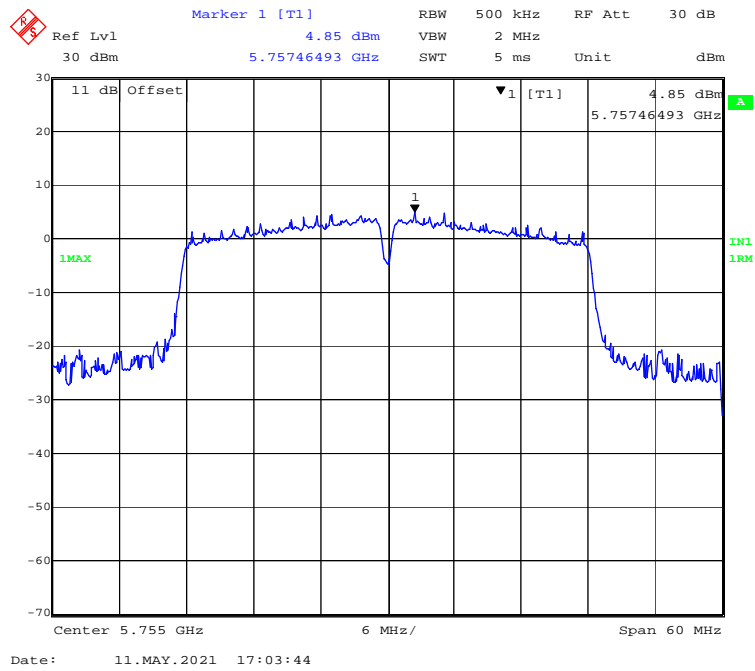
802.11ac40 mode, Power spectral density-5755MHz



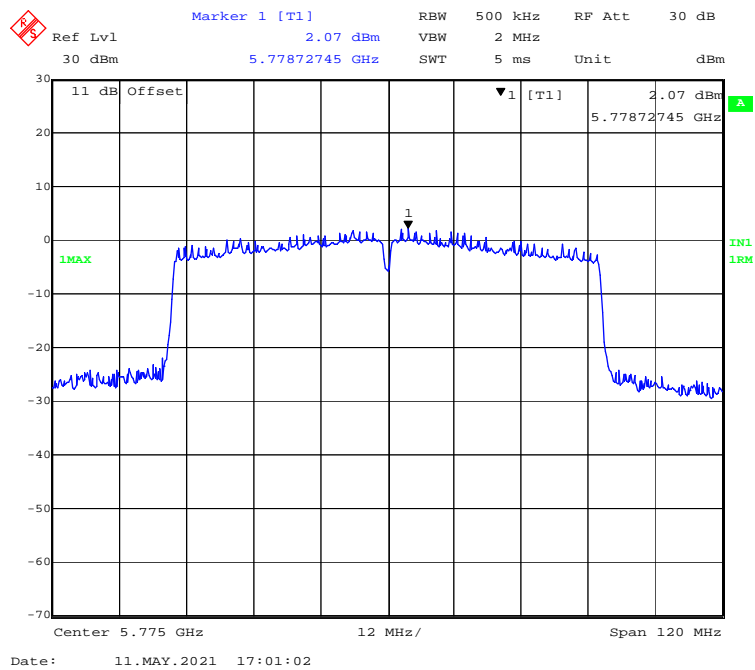
802.11 ac40 mode, Power spectral density-5795MHz



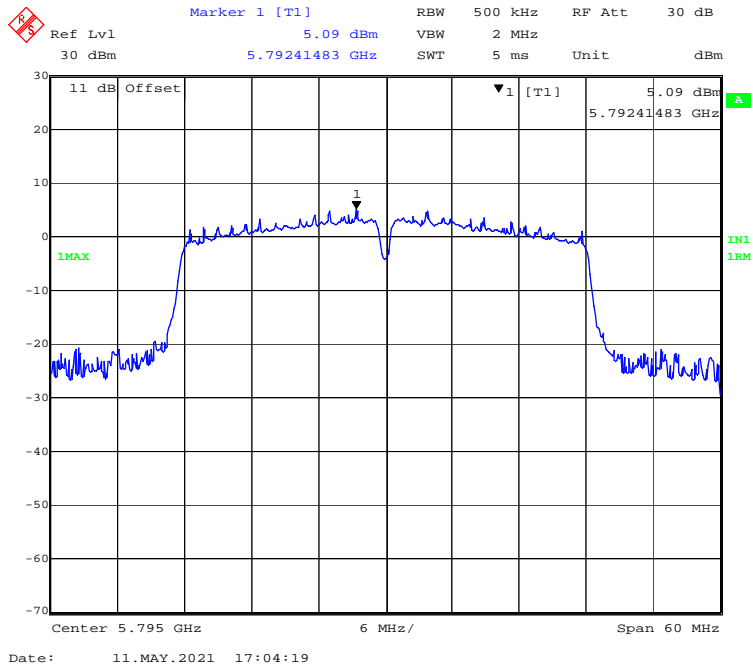
**802.11n-HT40 mode, Power spectral density-5755MHz**



**802.11ac80 mode, Power spectral density-5775MHz**



802.11n-HT40 mode, Power spectral density-5795MHz



### **Declarations**

1: BACL is not responsible for the authenticity of any test data provided by the applicant. Data included from the applicant that may affect test results are marked with an asterisk '\*'. Customer model name, addresses, names, trademarks etc. are not considered data.

2: Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

3: Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.

4: The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval.

5: This report cannot be reproduced except in full, without prior written approval of the Company.

6: This report is valid only with a valid digital signature. The digital signature may be available only under the Adobe software above version 7.0.

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