TESTING LABORATORY
CERTIFICATE#4323.01

FCC PART 15.407

TEST REPORT

For

Hangzhou Roombanker Technology Co., Ltd.

A#801 Wantong center, Hangzhou, China

FCC ID: 2AUXBDSGW-020

Report Type:	**Product Type:**
Original Report	Dual band Wi-Fi Smart Gateway

Project Engineer:	CK Huang
Report Number:	RSHD201119001-00C
Report Date:	2021-02-04
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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Applicant:	Hangzhou Roombanker Technology Co., Ltd.
Test Model	DSGW-020
Series Model:	DSGW-020-1, DSGW-020-2, DSGW-020-3, DSGW-020-4, DSGW-020-5
Model Difference	See declaration letter
Product Type:	Dual band Wi-Fi Smart Gateway
Power Supply:	DC 5V from Adapter and DC 48V from PoE
RF Function:	5G Wi-Fi
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: 40MHz, 802.11ac80: 80MHz
Modulation Type:	DSSS,OFDM
Antenna Type:	Omni Antenna
*Maximum Antenna Gain:	2.0 dBi

Adapter information:
Model: A8A-050200U-US1
Input: AC 100-240V, 50/60Hz, 0.35A
Output: DC 5V, 2A

Note: The Maximum Antenna Gain was declared by the manufacturer.

**All measurement and test data in this report was gathered from production sample serial number: RSHD201119001-1. (Assigned by the BACL. The EUT supplied by the applicant was received on 2020-11-19)*

Objective

This type approval report is prepared on behalf of *Hangzhou Roombanker 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 for Wi-Fi & BLE Submittal with FCC ID: 2AUXBDSGW-020
FCC Part 15.247 DTS for Zigbee Submittal with FCC ID: 2AUXBDSGW-020

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℃
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	/	/

For Conducted Test:

802.11a: each transmit chains were tested
802.11ac: each transmit chains were tested
802.11n: each transmit chains were tested

For Radiated Test:

802.11a: SISO for each transmit chain
802.11ac: MIMO for two transmit chains
802.11n: MIMO for two transmit chains

EUT Exercise Software

RF test tool: secureCRT

The worst case was performed under:

5150MHz-5250MHz Band:

Mode	Data rate	Channel	Power Level Setting	
			Chain 0	Chain 1
802.11a	6 Mbps	5180	25	23
		5200		
		5240		
802.11ac20	MCS0	5180	23	23
		5200		
		5240		
802.11n-HT20	MCS0	5180	23	23
		5200		
		5240		
802.11ac40	MCS0	5190	22	22
		5230		
802.11n-HT40	MCS0	5190	22	22
		5230		
802.11ac80	MCS0	5210	22	22

Note: The power level setting was declared by the applicant.

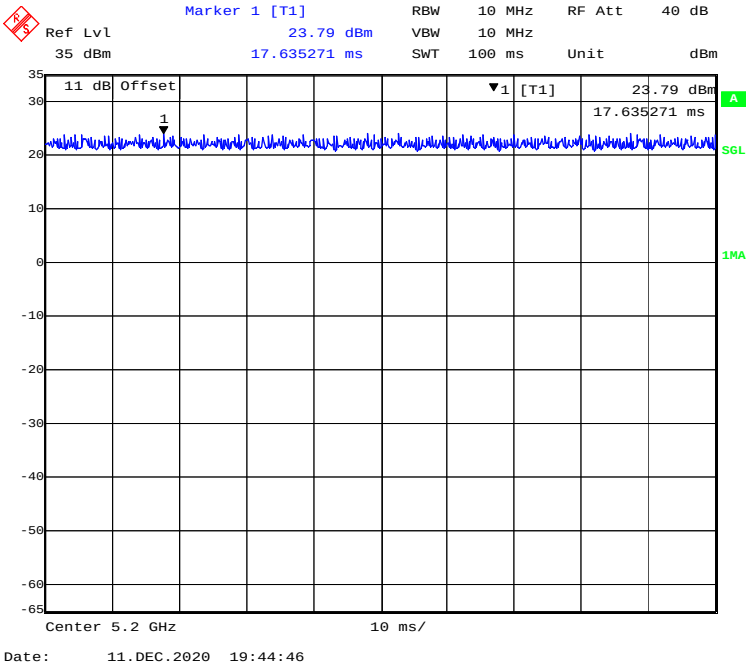
5725MHz-5850MHz Band:

Mode	Data rate	Channel	Power Level Setting	
			Chain 0	Chain 1
802.11a	6 Mbps	5745	30	30
		5785		
		5825		
802.11ac20	MCS0	5745	30	30
		5785		
		5825		
802.11n-HT20	MCS0	5745	30	30
		5785		
		5825		
802.11ac40	MCS0	5755	30	30
		5795		
802.11n-HT40	MCS0	5755	30	30
		5795		
802.11ac80	MCS0	5775	30	30

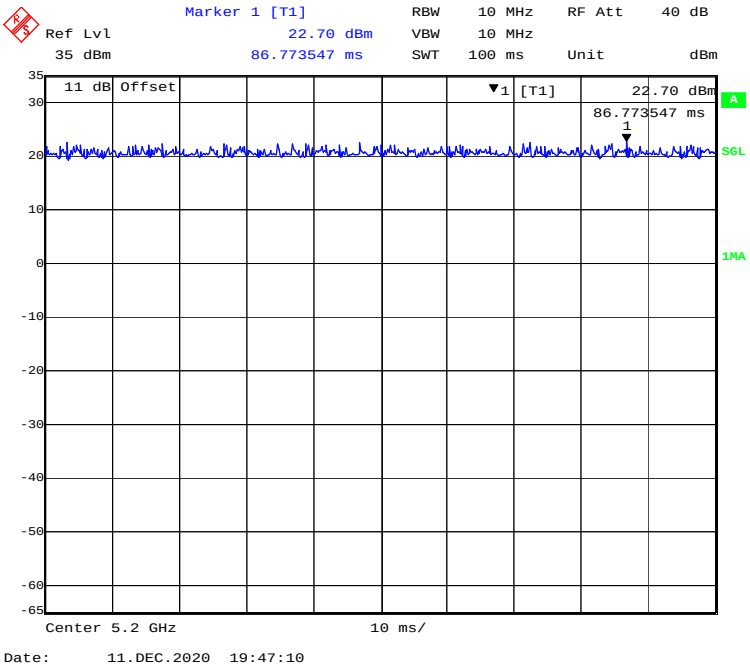
Note: The power level setting was declared by the applicant.

Duty Cycle
5150MHz-5250MHz Band-Chain0:

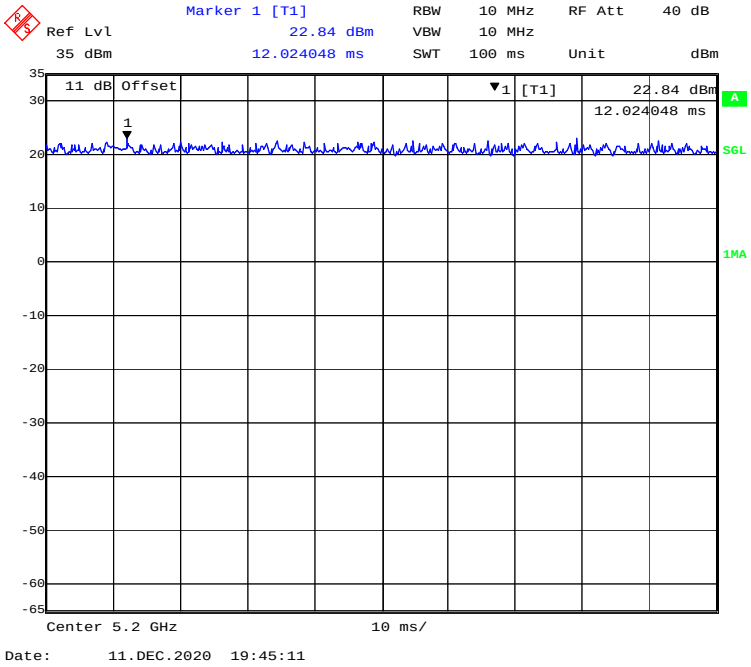
802.11a mode



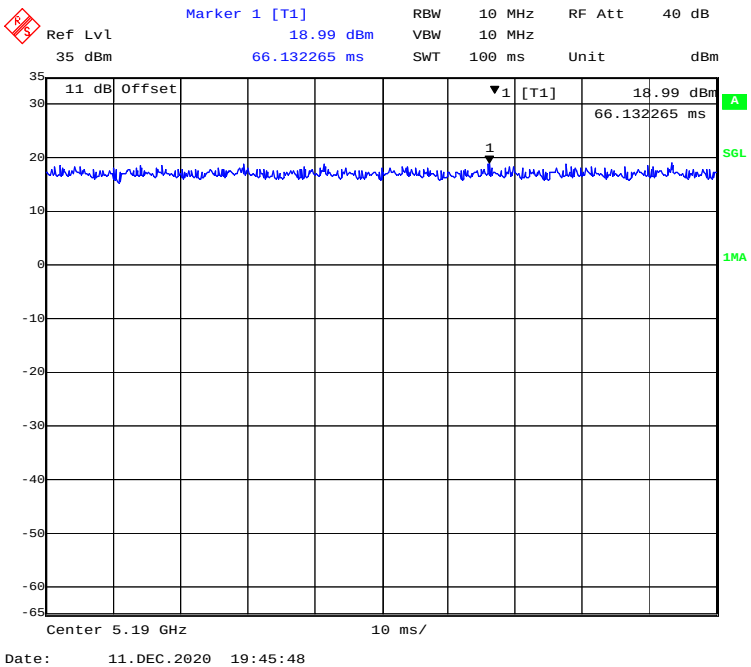
802.11ac20 mode



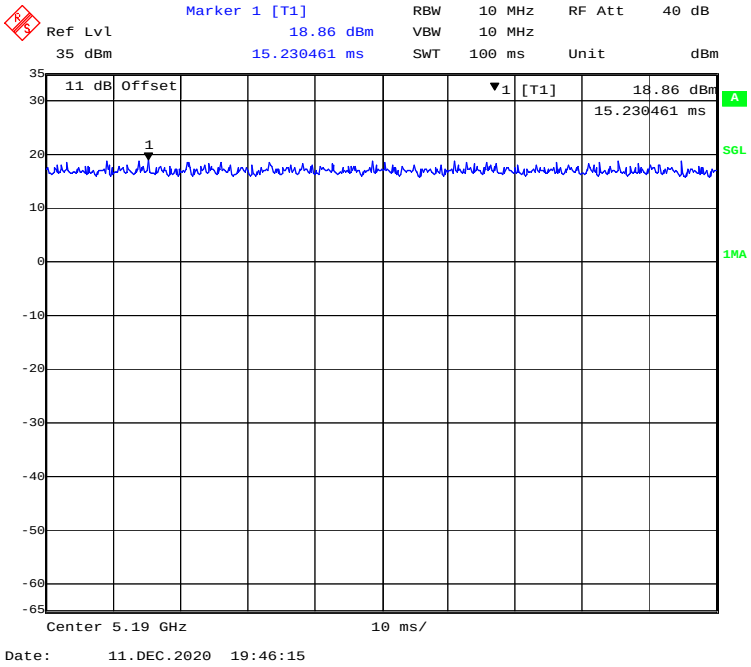
802.11n-HT20 mode



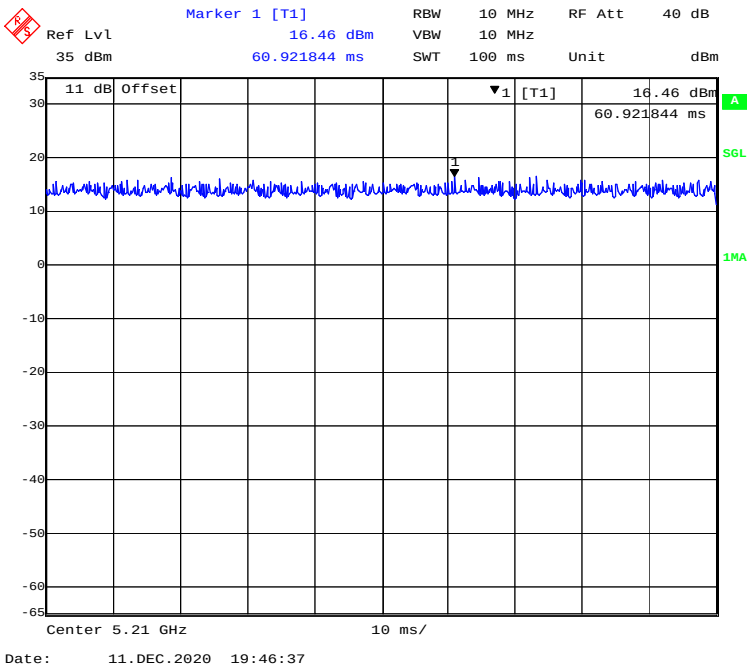
802.11ac40 mode



802.11n-HT40 mode

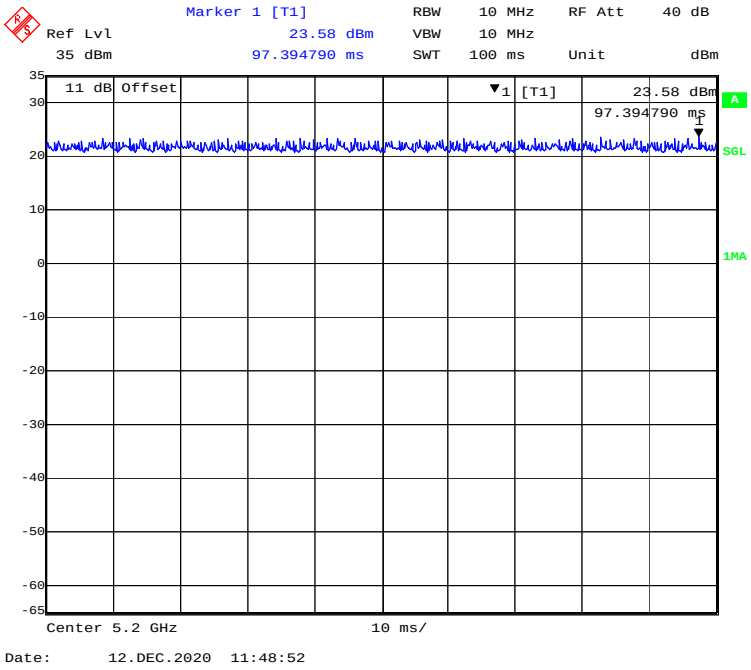


802.11ac80 mode

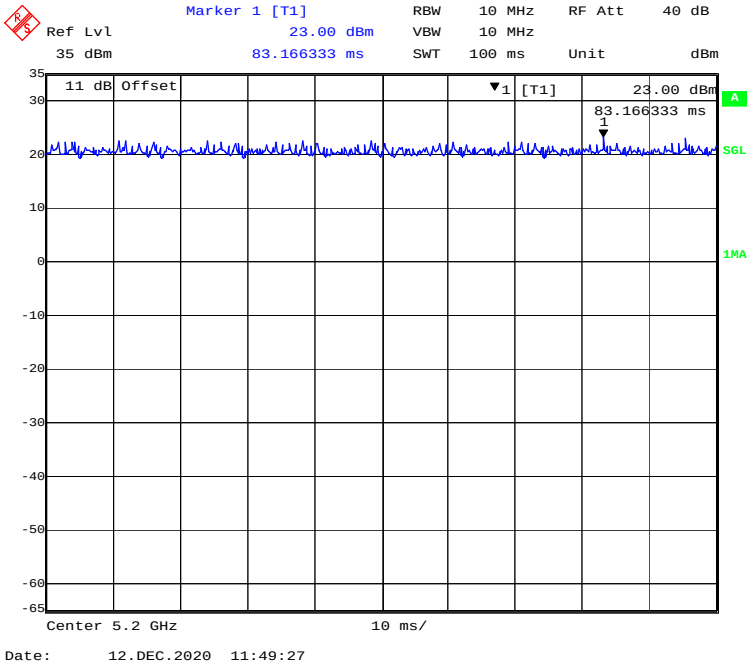


5150MHz-5250MHz Band-Chain1:

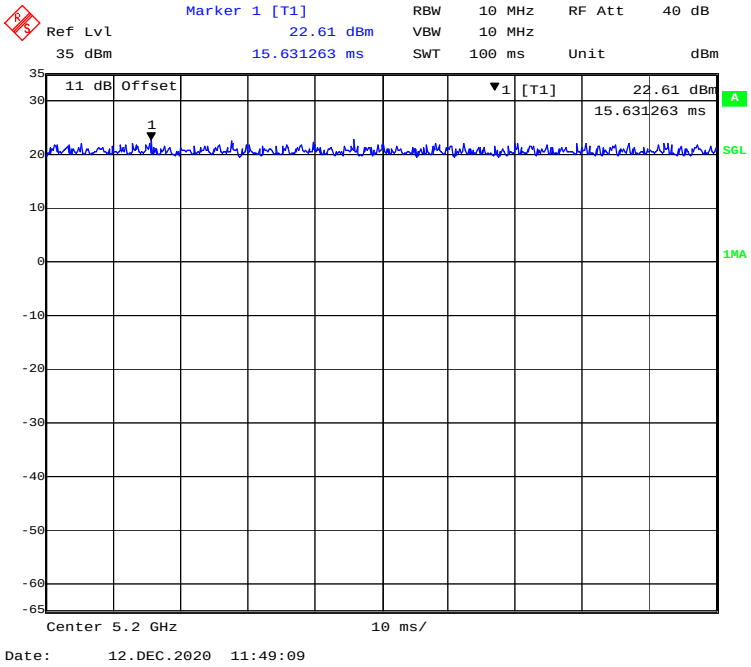
802.11a mode



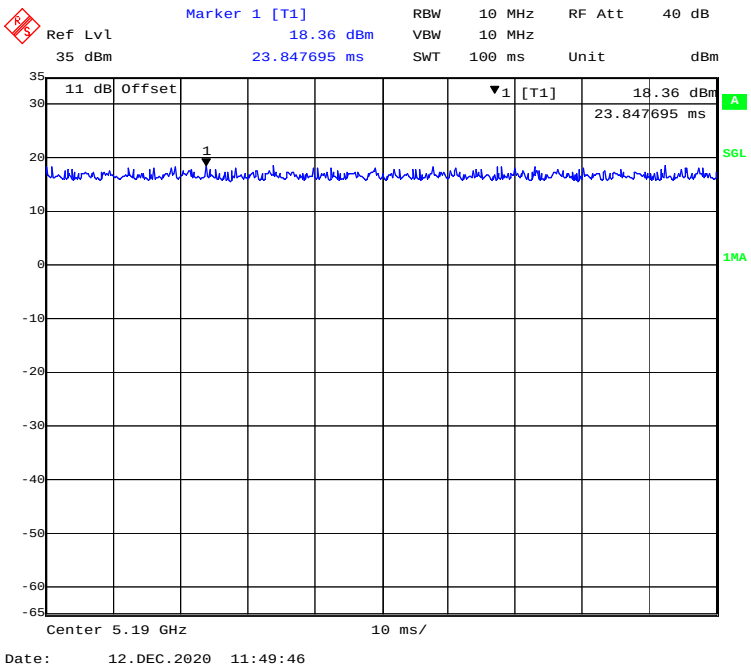
802.11ac20 mode



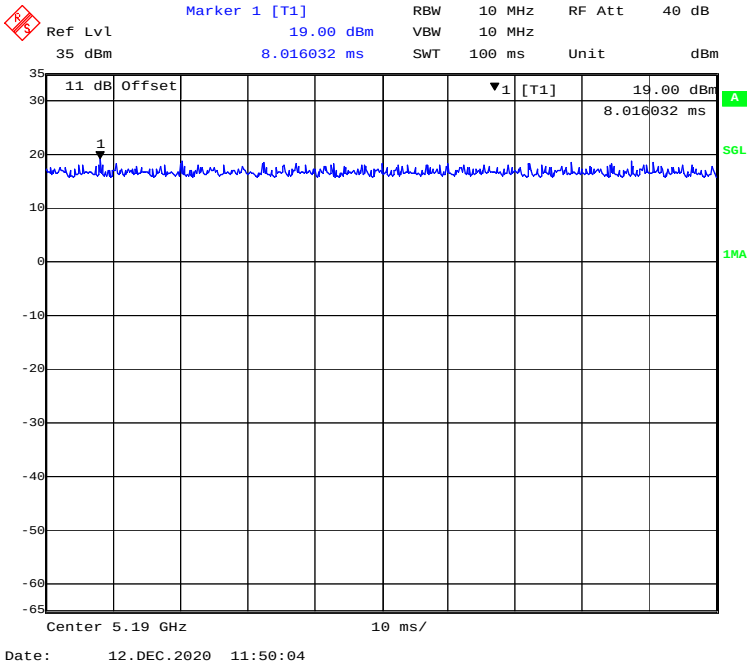
802.11n-HT20 mode



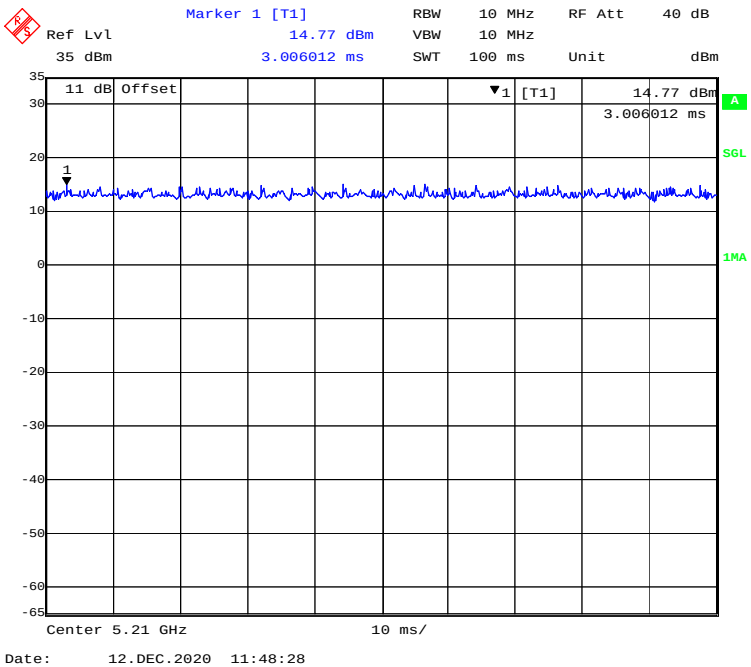
802.11ac40 mode



802.11n-HT40 mode

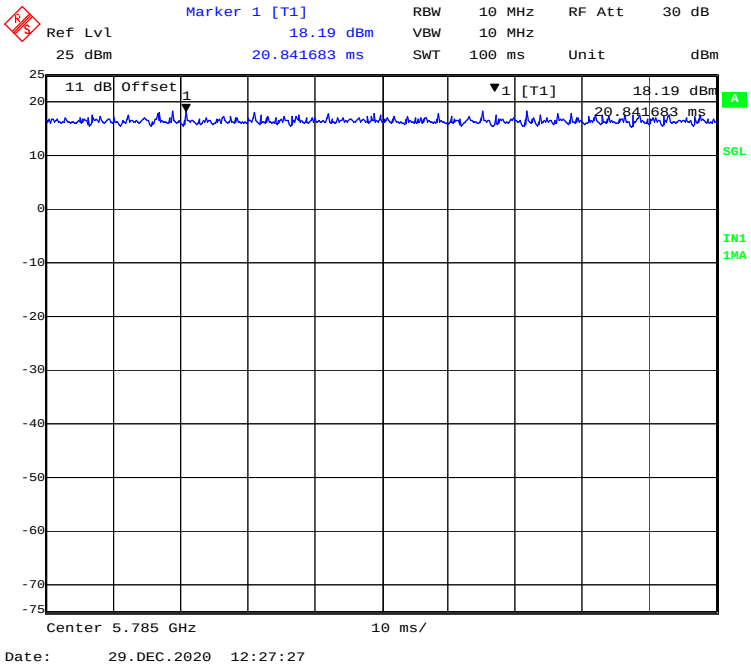


802.11ac80 mode

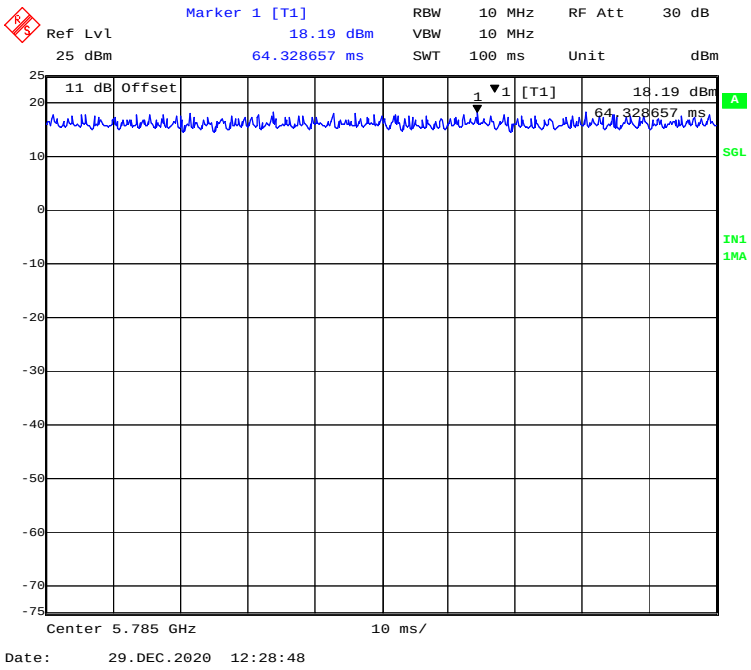


5725MHz-5850MHz Band-Chain0:

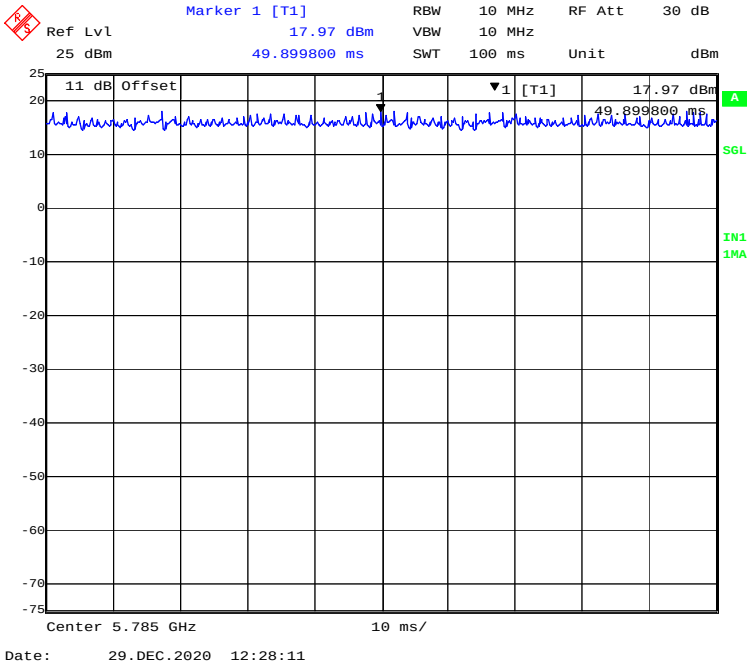
802.11a mode



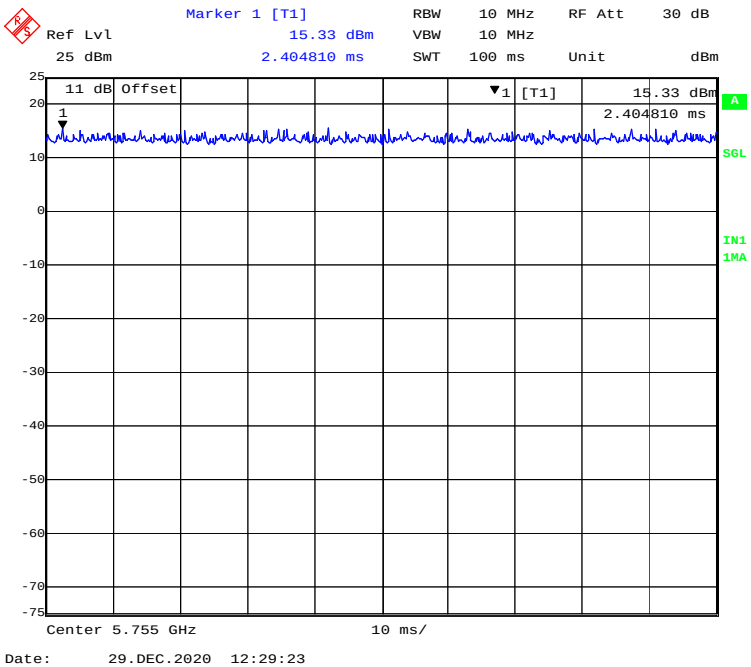
802.11ac20 mode



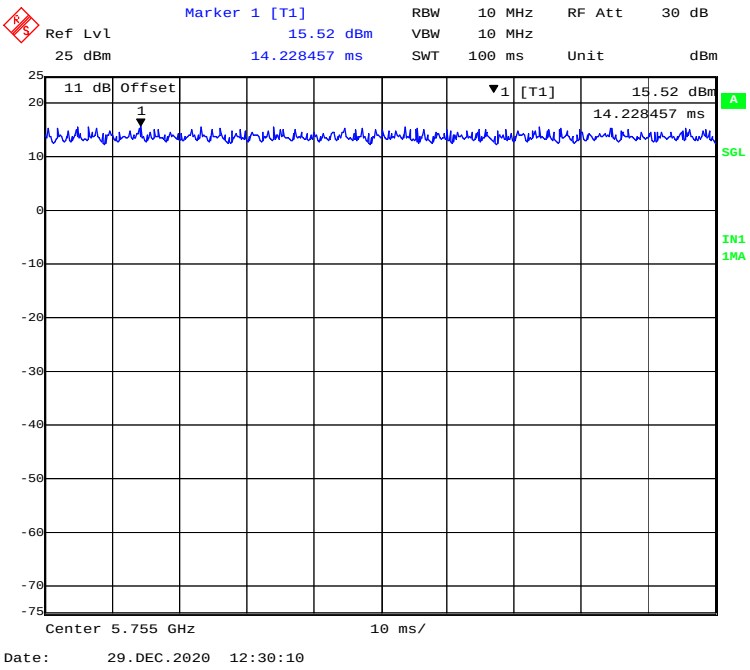
802.11n-HT20 mode



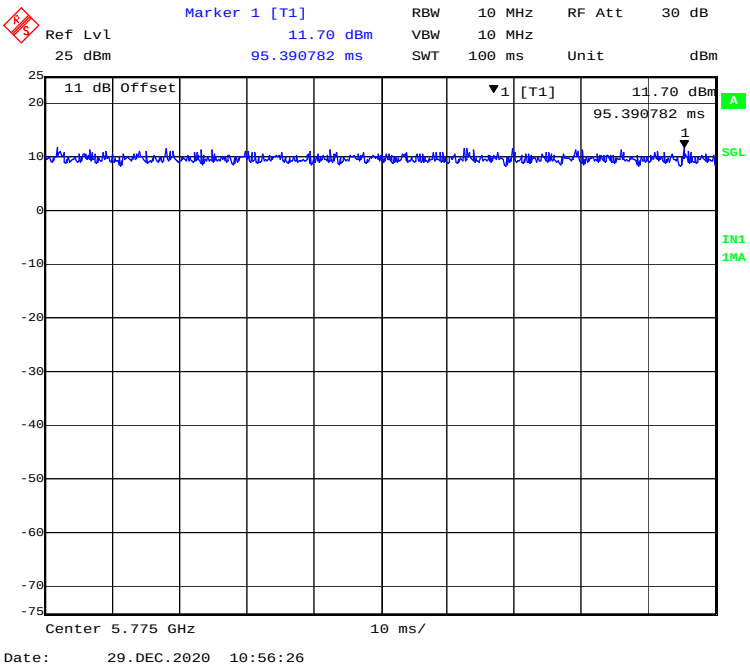
802.11ac40 mode



802.11n-HT40 mode

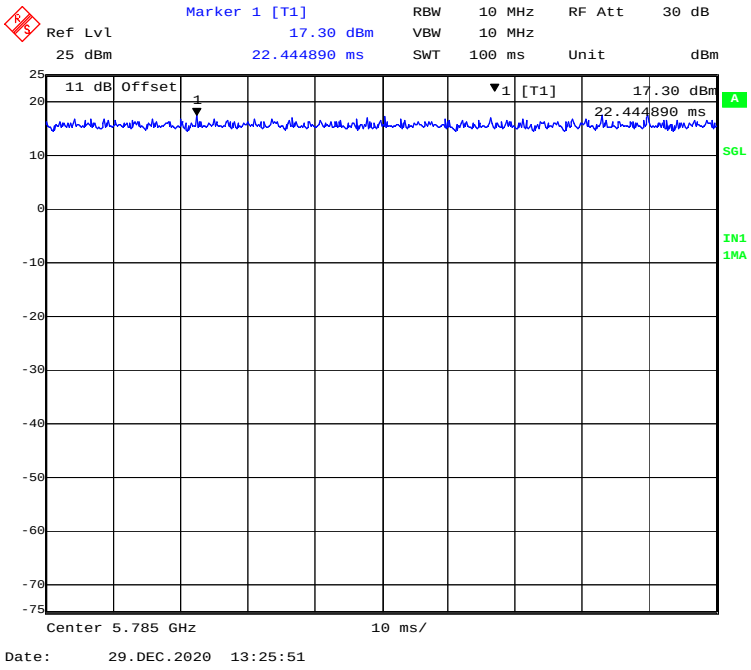


802.11ac80 mode

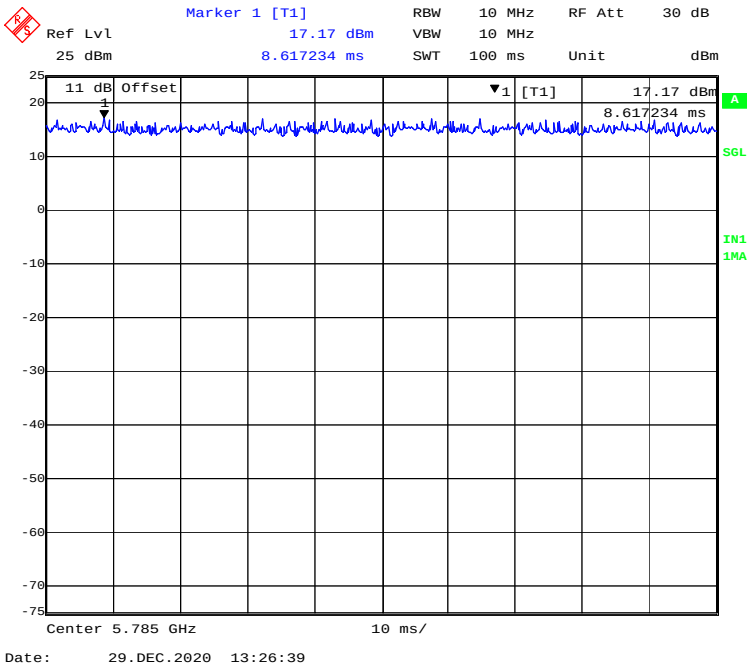


5725MHz-5850MHz Band-Chain1:

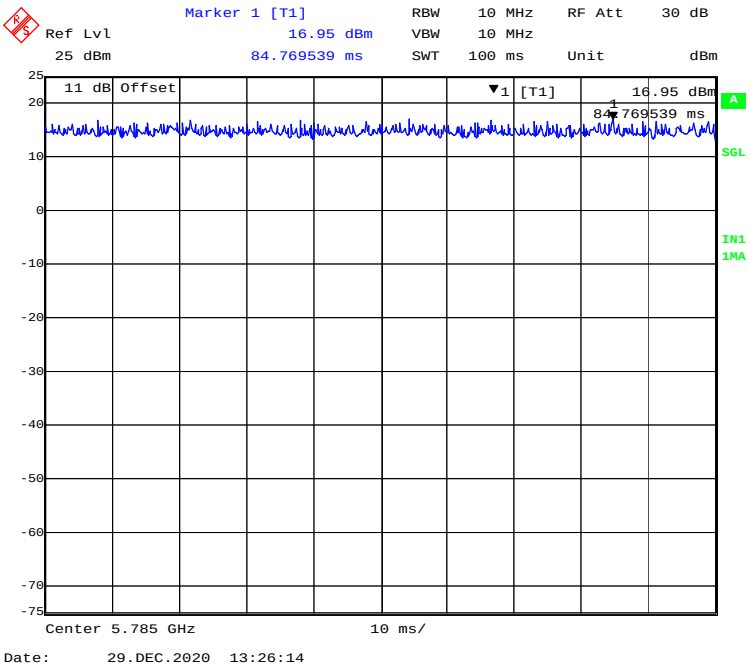
802.11a mode



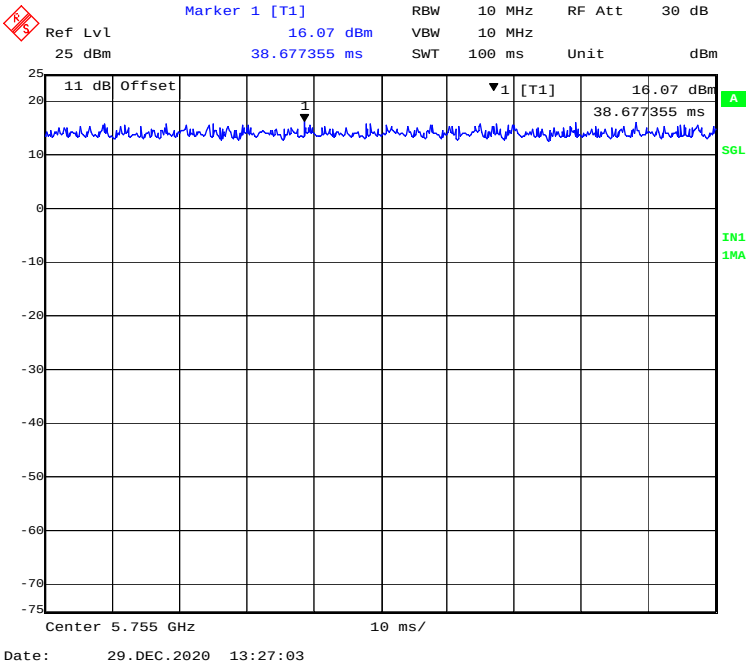
802.11ac20 mode



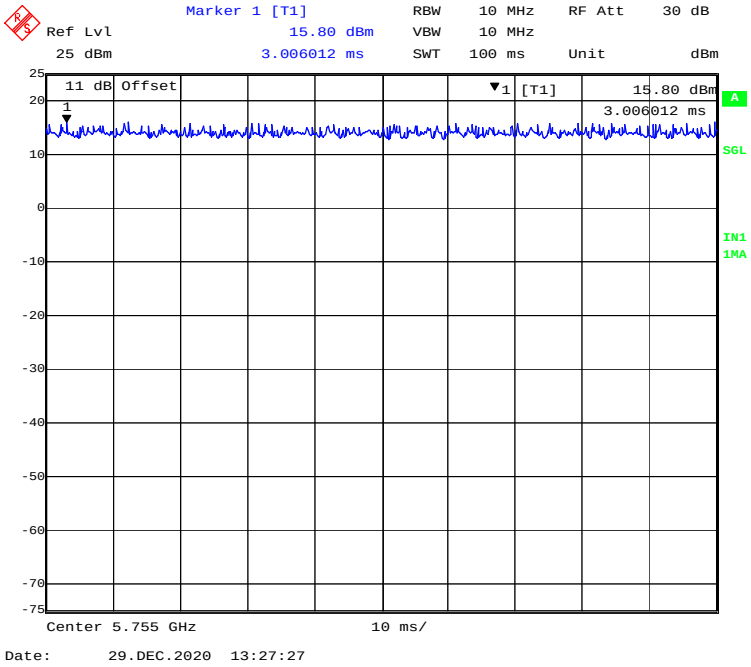
802.11n-HT20 mode



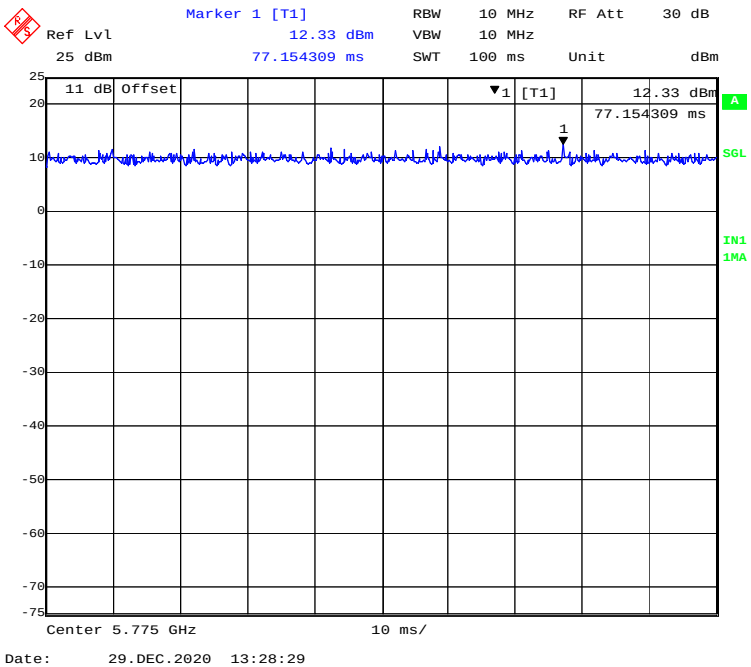
802.11ac40 mode



802.11n-HT40 mode



802.11ac80 mode



Chain 0

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

Chain 1

Mode	Frequency Range (MHz)	Duty Cycle (%)	T (ms)	1/T (kHz)	10log(1/x)
802.11a	5150-5250	100	/	/	0
802.11ac20		100	/	/	0
802.11n-HT20		100	/	/	0
802.11ac40		100	/	/	0
802.11n-HT40		100	/	/	0
802.11ac80		100	/	/	0
802.11a	5725-5850	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
TP-LINK	Router	TL-WDR5620	1188431022424
DELL	Notebook	GX620	D65874152
DELL	Adapter 1	LA65NS0-00	DF263
NETGEAR	PoE	GS308P	4F217B5000891
NETGEAR	Adapter 2	2ABF060R	332-10771-01

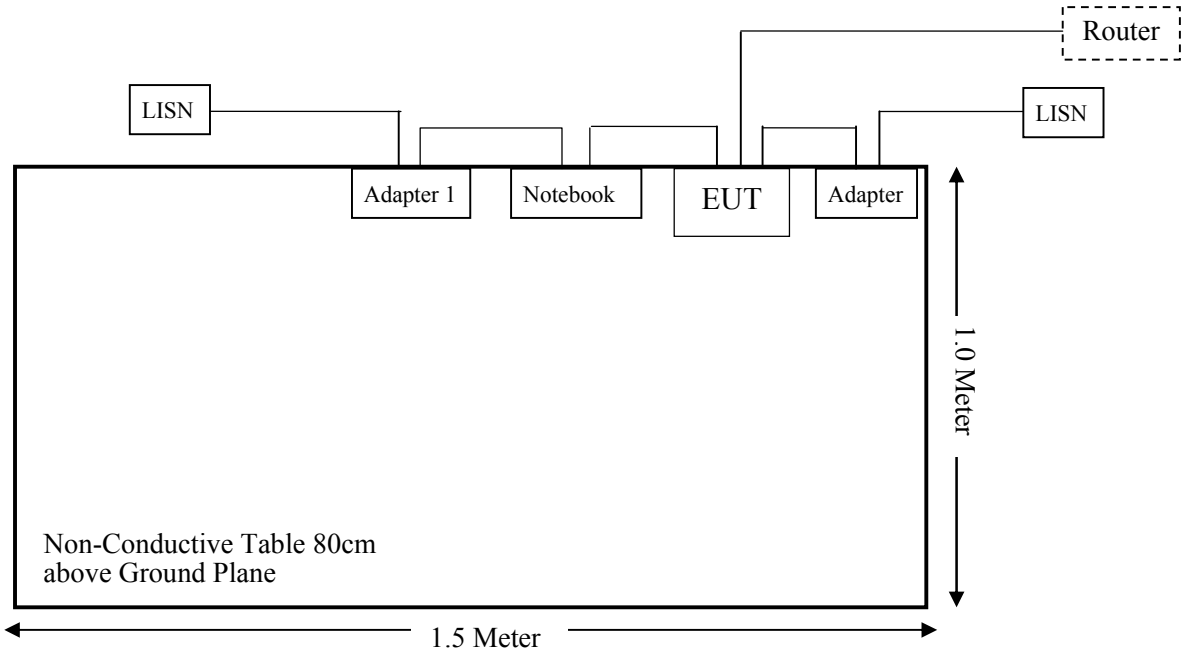
External I/O Cable

Cable Description	Length (m)	From Port	To
Power Cable 1	1.0	EUT	Adapter
Power Cable 2	1.0	Adapter	LISN/AC source
RJ45 Cable 1	3.0	EUT	Router
RJ45 Cable 2	3.0	EUT	Notebook
Power Cable 3	1.0	Notebook	Adapter 1
Power Cable 4	1.0	Adapter 1	LISN/AC source
RJ45 Cable 3	3.0	EUT	PoE
Power Cable 5	1.0	PoE	Adapter 2
Power Cable 6	1.0	Adapter 2	LISN/AC source

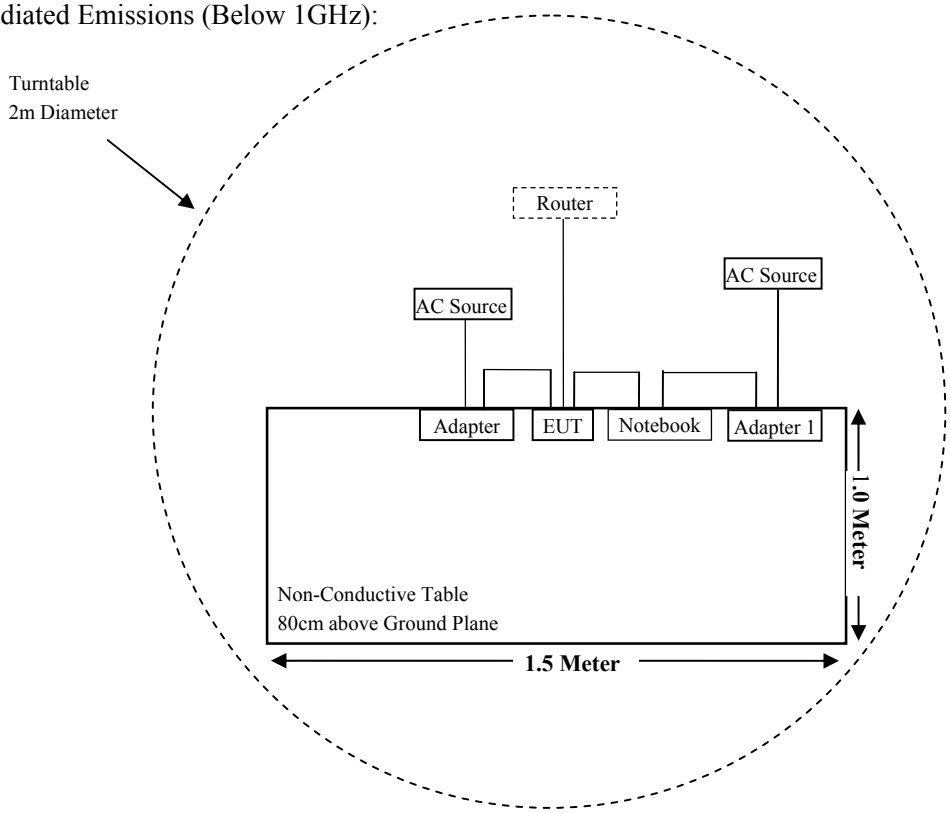
Block Diagram of Test Setup

For adapter power supply:

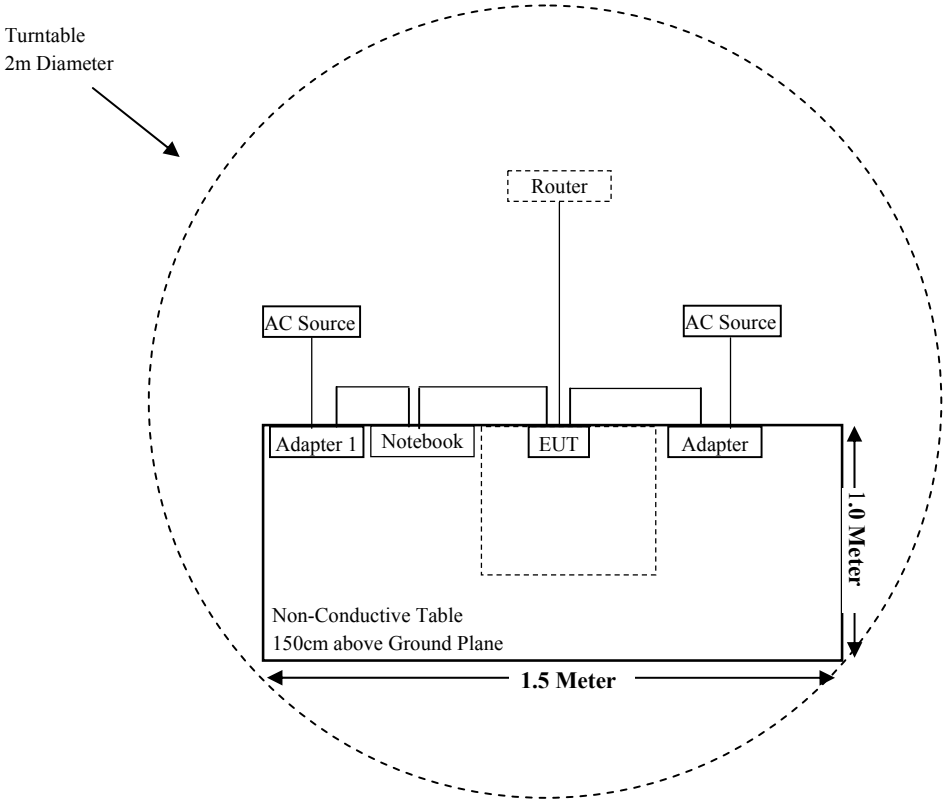
For Conducted Emissions:



For Radiated Emissions (Below 1GHz):

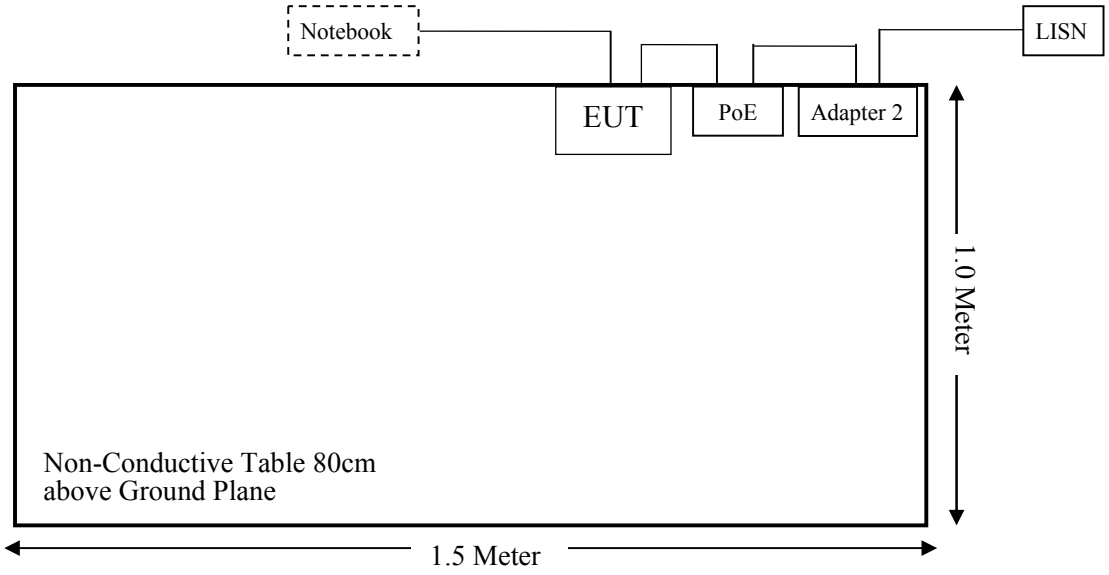


For Radiated Emissions (Above 1GHz):

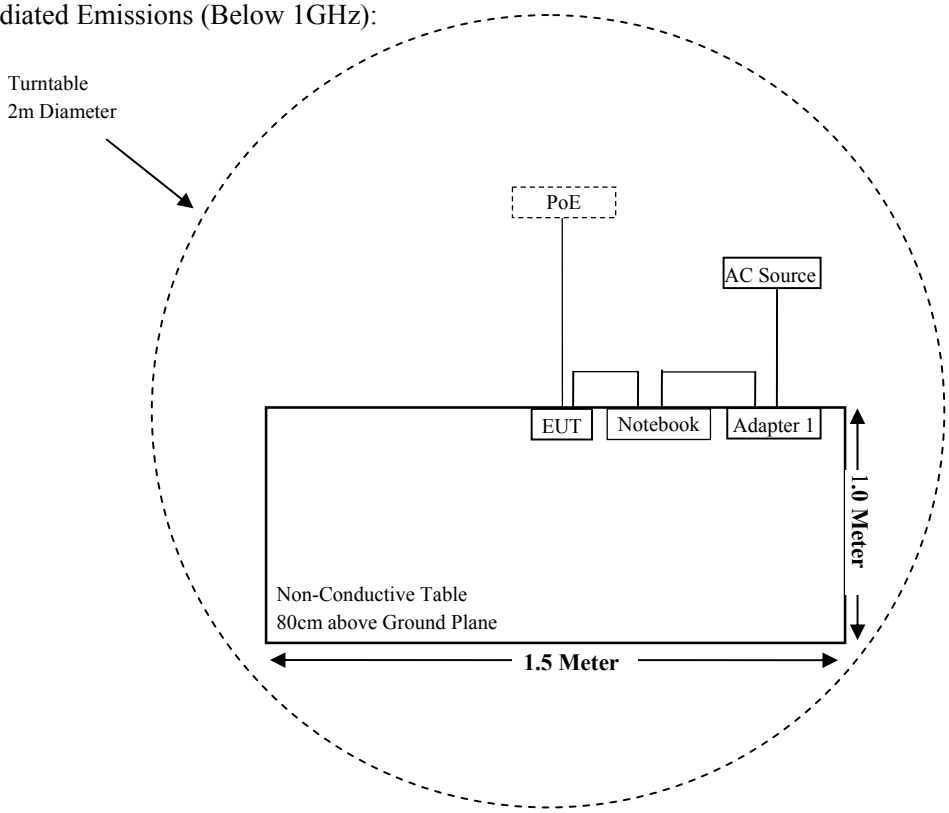


For PoE power supply:

For Conducted Emissions:



For Radiated Emissions (Below 1GHz):



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§1.1310 & §2.1091	Maximum Permissible Exposure (MPE)	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
Radiated Emission Test（Chamber 1#）					
Rohde & Schwarz	EMI Test Receiver	ESCI	100195	2020-11-27	2021-11-26
Sunol Sciences	Hybrid Antenna	JB3	A090314-2	2020-01-07	2023-01-06
Sonoma Instrument	Pre-amplifier	310N	171205	2020-08-14	2021-08-13
Rohde & Schwarz	Auto test Software	EMC32	100361	/	/
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
Radiated Emission Test（Chamber 2#）					
Rohde & Schwarz	EMI Test Receiver	ESU40	100207/040	2020-04-01	2021-03-31
ETS-LINDGREN	Horn Antenna	3115	9311-4159	2020-07-15	2023-07-14
ETS-LINDGREN	Horn Antenna	3116	2516	2020-01-17	2023-01-16
A.H.Systems,inc	Amplifier	PAM-0118P	512	2020-08-14	2021-08-13
EM Electronics Corporation	Amplifier	EM18G40G	060726	2020-03-22	2021-03-21
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	/	/
MICRO-COAX	Coaxial Cable	Cable-4	004	2020-08-15	2021-08-14
MICRO-COAX	Coaxial Cable	Cable-5	005	2020-08-15	2021-08-14
RF Conducted Test					
Rohde & Schwarz	EMI Test Receiver	ESIB26	100146	2020-11-27	2021-11-26
Rohde & Schwarz	Signal Analyzer	FSIQ26	100048/027	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
Roombanker	RF Cable	Roombanker 01	C01	Each Time	/
Conducted Emission Test					
Rohde & Schwarz	EMI Test Receiver	ESR	1316.3003K03-101746-zn	2020-07-28	2021-07-27
Rohde & Schwarz	LISN	ENV216	101115	2020-11-27	2021-11-26
COM-POWER	LISN	LI-3P-132	20200002	2020-11-27	2021-11-26
Audix	Test Software	e3	V9	/	/
Rohde & Schwarz	Pulse limiter	ESH3-Z2	100552	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).

§1.1310& §2.1091 - MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Applicable Standard

According to subpart §1.1310, systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

Limits for Maximum Permissible Exposure (MPE) (§1.1310, §2.1091)

(B) Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	**Electric Field Strength (V/m)**	**Magnetic Field Strength (A/m)**	**Power Density (mW/cm^2)**	**Averaging Time (minutes)**
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f^2)	30
30-300	27.5	0.073	0.2	30
300-1500	/		f/1500	30
1500-100,000	/		1.0	30

f = frequency in MHz; * = Plane-wave equivalent power density;

According to §1.1310 and §2.1091 RF exposure is calculated.

Calculated Formulary:

Predication of MPE limit at a given distance
$S = PG/4\pi R^2$ = power density (in appropriate units, e.g. mW/cm^2);
P = power input to the antenna (in appropriate units, e.g., mW);
G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain;
R = distance to the center of radiation of the antenna (appropriate units, e.g., cm);

For simultaneously transmit system, the calculated power density should comply with:

$$\sum_i \frac{S_i}{S_{Limit,i}} \leq 1$$

Calculated Data (worst case):

2.4G Wi-Fi&BLE&Zigbee&5G Wi-Fi:

Mode	Frequency (MHz)	Maximum Antenna Gain		Tune-up Conducted Power		Evaluation Distance (cm)	Power Density (mW/cm^2)	MPE Limit (mW/cm^2)
		(dBi)	(numeric)	(dBm)	(mW)			
2.4G Wi-Fi 802.11b	2412~2462	2.0	1.58	21.50	141.25	20	0.0444	1.0
2.4G Wi-Fi 802.11g		2.0	1.58	21.00	125.89	20	0.0396	1.0
2.4G Wi-Fi 802.11n-HT20		2.0	1.58	24.50	281.84	20	0.0886	1.0
2.4G Wi-Fi 802.11n-HT40	2422~2452	2.0	1.58	25.00	316.23	20	**0.0994**	**1.0**
BLE(1Mbps)	2402~2480	0	1.00	8.50	7.08	20	**0.0014**	**1.0**
BLE(2Mbps)	2402~2480	0	1.00	8.50	7.08	20	0.0014	1.0
Zigbee	2405~2480	0	1.00	19.50	89.13	20	**0.0177**	**1.0**
5G Wi-Fi 802.11a	5150~5250	2.0	1.58	16.00	39.81	20	0.0125	1.0
	5725~5850	2.0	1.58	14.00	25.12	20	0.0079	1.0
5G Wi-Fi 802.11ac20	5150~5250	2.0	1.58	15.50	35.48	20	0.0112	1.0
	5725~5850	2.0	1.58	16.50	44.67	20	**0.0140**	**1.0**
5G Wi-Fi 802.11n20	5150~5250	2.0	1.58	15.50	35.48	20	0.0112	1.0
	5725~5850	2.0	1.58	16.50	44.67	20	0.0140	1.0
5G Wi-Fi 802.11ac40	5150~5250	2.0	1.58	16.00	39.81	20	0.0125	1.0
	5725~5850	2.0	1.58	15.00	31.62	20	0.0099	1.0
5G Wi-Fi 802.11n40	5150~5250	2.0	1.58	15.50	35.48	20	0.0112	1.0
	5725~5850	2.0	1.58	14.50	28.18	20	0.0089	1.0
5G Wi-Fi 802.11ac80	5150~5250	2.0	1.58	15.50	35.48	20	0.0112	1.0
	5725~5850	2.0	1.58	14.50	28.18	20	0.0089	1.0

GSM:

Mode	Frequency Range (MHz)	Maximum Antenna Gain		Tune-up Conducted Power		Evaluation Distance (cm)	Power Density (mW/cm^2)	MPE Limit (mW/cm^2)
		(dBi)	(numeric)	(dBm)	(mW)			
GSM 850	824.2-848.8	4	2.51	27.50	562.34	20	**0.2810**	**0.55**
GSM 1900	1850.2-1909.8	4	2.51	26.50	446.68	20	0.2232	1.00

Note:
GPRS 850: Tune-up maximum output power with 1 slot is 32.50 dBm, 2 slots is 32.50 dBm, 3 slots is 31.50 dBm, 4 slots is 30.50 dBm, so the tune-up time based Ave. power compared to sloted Ave. power is 27.50dBm.
EGPRS 850: Tune-up maximum output power with 1 slot is 27.00 dBm, 2 slots is 27.00 dBm, 3 slots is 26.50 dBm, 4 slots is 26.50 dBm so the tune-up time based Ave. power compared to sloted Ave. power is 23.50 dBm.
GPRS 1900: Tune-up maximum output power with 1 slot is 30.00 dBm, 2 slots is 30.00 dBm, 3 slots is 30.00 dBm, 4 slots is 29.50 dBm so the tune-up time based Ave. power compared to sloted Ave. power is 26.50 dBm.
EGPRS 1900: Tune-up maximum output power with 1 slot is 26.50 dBm, 2 slots is 26.00 dBm, 3 slots is 26.00 dBm, 4 slots is 26.00 dBm so the tune-up time based Ave. power compared to sloted Ave. power is 23.00 dBm.

Number of Time slot	1	2	3	4
Duty Cycle	1:8	1:4	1:2.66	1:2
Time based Ave. power compared to slotted Ave. power	-9 dB	-6 dB	-4.26 dB	-3 dB

LTE CAT-M1:

Mode	Frequency Range (MHz)	Maximum Antenna Gain		Tune-up Conducted Power		Evaluation Distance (cm)	Power Density (mW/cm^2)	MPE Limit (mW/cm^2)
		(dBi)	(numeric)	(dBm)	(mW)			
LTE Band 2	1850.7~1909.3	4	2.51	24	251.19	20	0.1255	1.00
LTE Band 4	1710.7~1754.3	4	2.51	23	199.53	20	0.0997	1.00
LTE Band 5	824.7~848.3	4	2.51	24	251.19	20	0.1255	0.55
LTE Band 12	699.7~715.3	4	2.51	24	251.19	20	0.1255	0.47
LTE Band 13	779.5~784.5	4	2.51	24	251.19	20	0.1255	0.52
LTE Band 26	814.7~848.3	4	2.51	24	251.19	20	0.1255	0.54

LTE NB-IOT:

Mode	Frequency Range (MHz)	Maximum Antenna Gain		Tune-up Conducted Power		Evaluation Distance (cm)	Power Density (mW/cm^2)	MPE Limit (mW/cm^2)
		(dBi)	(numeric)	(dBm)	(mW)			
LTE Band 2	1850.7~1909.3	4	2.51	25	316.23	20	0.1579	1.00
LTE Band 4	1710.7~1754.3	4	2.51	25	316.23	20	0.1579	1.00
LTE Band 5	824.7~848.3	4	2.51	25	316.23	20	0.1579	0.55
LTE Band 12	699.7~715.3	4	2.51	25	316.23	20	0.1579	0.47
LTE Band 13	779.5~784.5	4	2.51	25	316.23	20	0.1579	0.52

Note:
1. For the above tune up power were declared by the manufacturer.
2. For 802.11b, 802.11g, 802.11a, the tune-up power is base on SISO mode
   For 802.11ac20/n20/n40/ac40/ac80, the tune-up power is base on MIMO mode
3. The LTE module FCC ID: XMR201707BG96 (Grant:09/08/2020).
4. 2.4G Wi-Fi & BLE & Zigbee & 5G Wi-Fi & GSM850 can transmit simultaneously; the worst condition as below:

$$\sum_i \frac{S_i}{S_{Limit,i}} = 0.0994/1.00+0.0014/1.00+0.0177/1.00+0.0140/1.00+0.2810/0.55=0.6434 < 1.0$$

Conclusion: The device meets MPE at distance 20cm.

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 two omni antennas for Wi-Fi, the antenna gain is 2.0 dBi for chain0 and 2.0 dBi for chain1, the antenna was permanently attached, fulfill the requirement of this section. Please refer to the EUT photos.

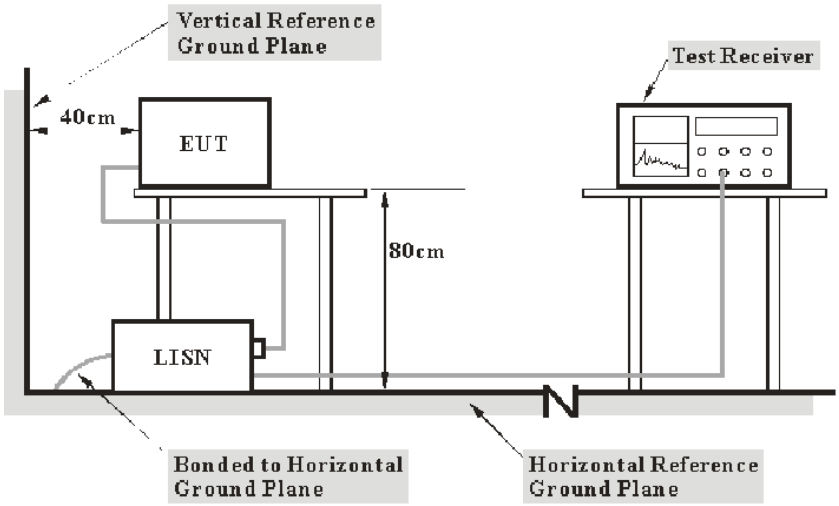
Result: Compliant.

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 80 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

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

Factor (dB) = LISN VDF (dB) + Cable Loss (dB) + 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:

Over Limit (dB) = Read level (dBμV) + Factor (dB) - Limit (dBμV)

Test Results Summary

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

Test Data

Environmental Conditions

Temperature:	20.2-22.3 ℃
Relative Humidity:	46-50 %
ATM Pressure:	101.2-101.5 kPa

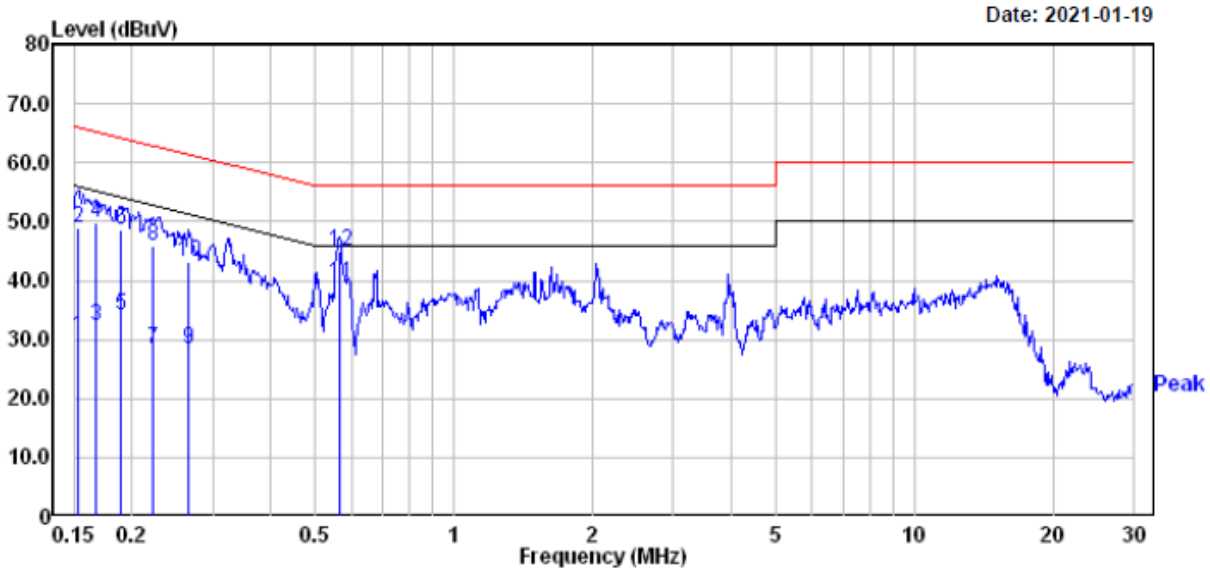
The testing was performed by CK Huang from 2021-01-19 to 2021-01-22.

For 5150~5250MHz Band:

EUT operation mode: Transmitting in 802.11a mode low channel of Chain0 (worst case)

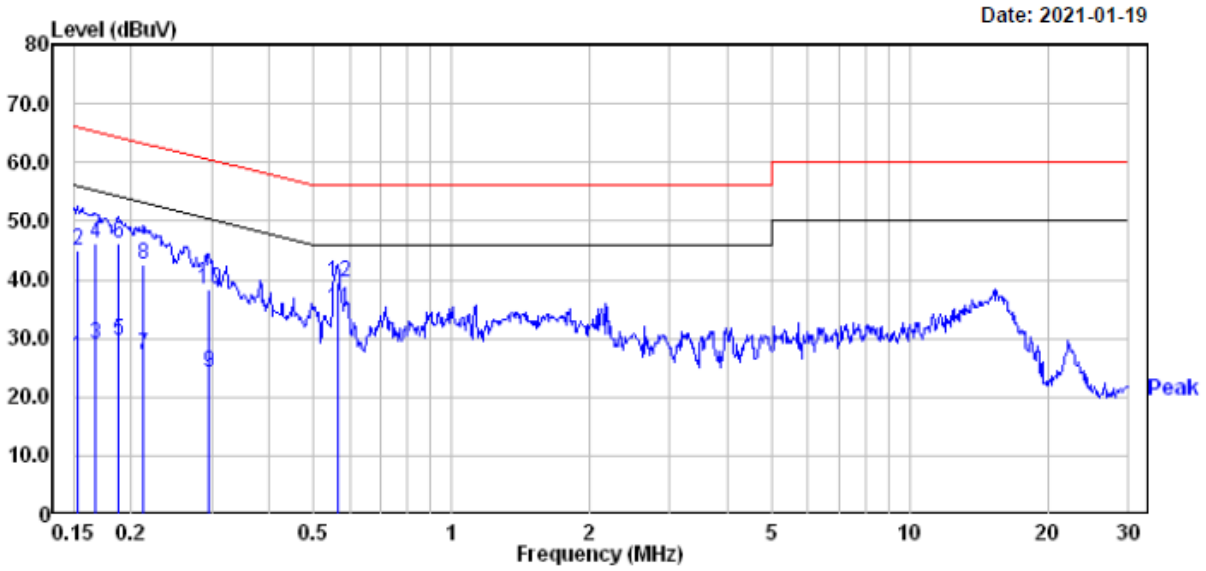
For adapter power supply

AC 120V/60Hz, Line



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.153	10.60	19.82	30.42	55.82	-25.40	Average
2	0.153	29.10	19.82	48.92	65.82	-16.90	QP
3	0.168	12.50	19.83	32.33	55.08	-22.75	Average
4	0.168	30.10	19.83	49.93	65.08	-15.15	QP
5	0.189	14.20	19.82	34.02	54.06	-20.04	Average
6	0.189	28.70	19.82	48.52	64.06	-15.54	QP
7	0.222	8.70	19.82	28.52	52.74	-24.22	Average
8	0.222	26.00	19.82	45.82	62.74	-16.92	QP
9	0.264	8.50	19.82	28.32	51.29	-22.97	Average
10	0.264	23.30	19.82	43.12	61.29	-18.17	QP
11	0.564	19.80	19.75	39.55	46.00	-6.45	Average
12	0.564	25.30	19.75	45.05	56.00	-10.95	QP

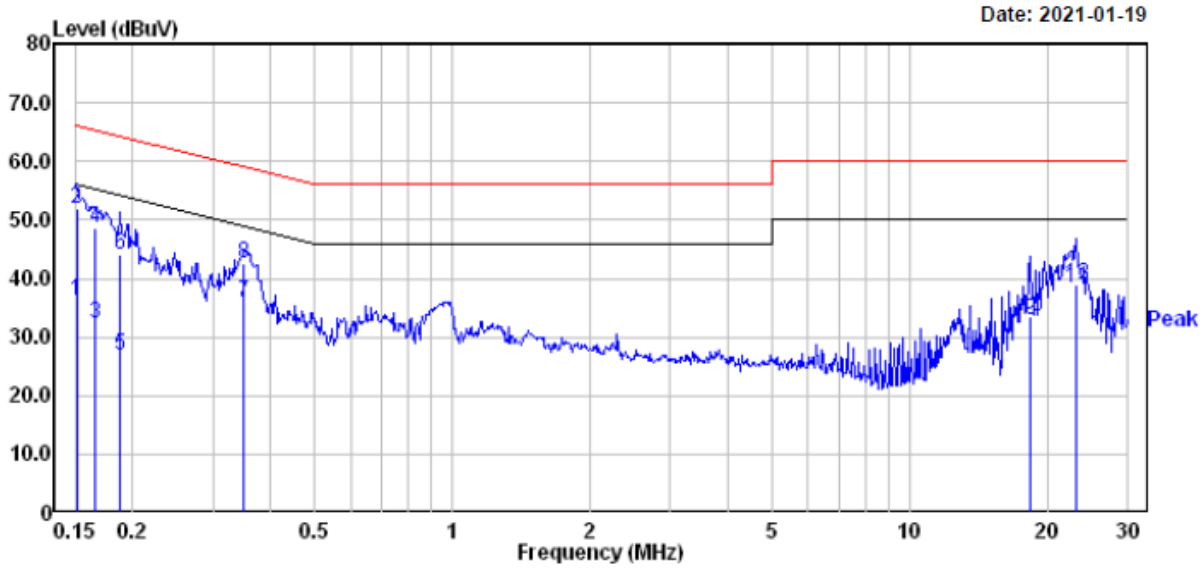
AC 120V/60Hz, Neutral



	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	55.87	-28.95	Average
2	0.152	25.30	19.82	45.12	65.87	-20.75	QP
3	0.167	9.30	19.83	29.13	55.12	-25.99	Average
4	0.167	26.30	19.83	46.13	65.12	-18.99	QP
5	0.188	9.71	19.82	29.53	54.11	-24.58	Average
6	0.188	26.51	19.82	46.33	64.11	-17.78	QP
7	0.213	7.40	19.82	27.22	53.10	-25.88	Average
8	0.213	22.60	19.82	42.42	63.10	-20.68	QP
9	0.296	4.30	19.83	24.13	50.37	-26.24	Average
10	0.296	18.40	19.83	38.23	60.37	-22.14	QP
11	0.564	15.30	19.75	35.05	46.00	-10.95	Average
12	0.564	19.80	19.75	39.55	56.00	-16.45	QP

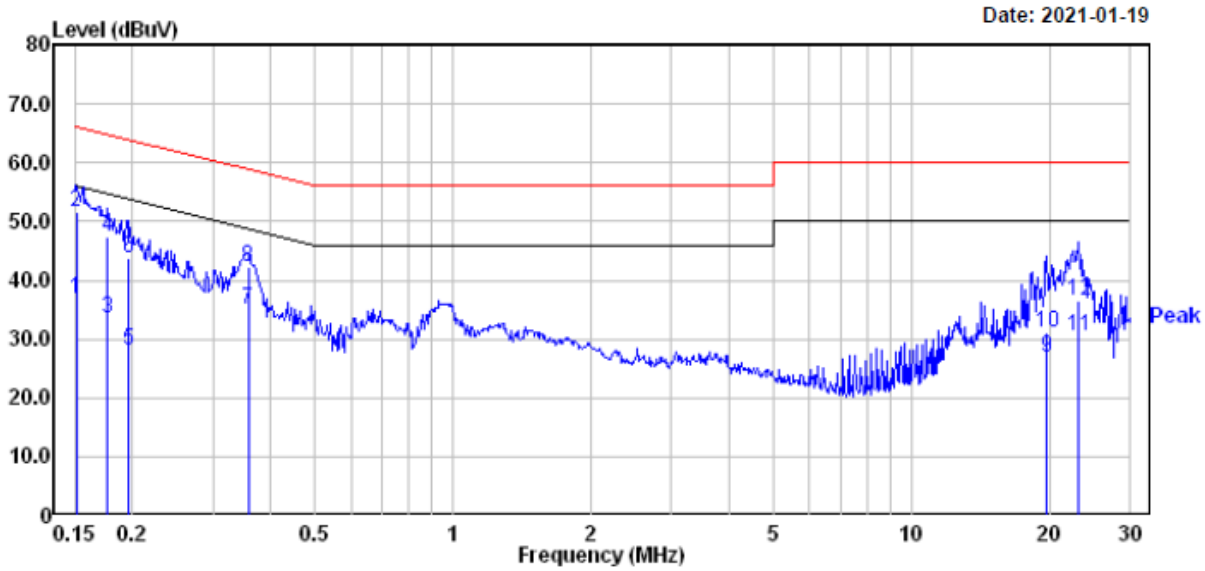
For PoE power supply

AC 120V/60Hz, Line



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.151	16.40	19.82	36.22	55.96	-19.74	Average
2	0.151	32.10	19.82	51.92	65.96	-14.04	QP
3	0.165	12.60	19.83	32.43	55.21	-22.78	Average
4	0.165	28.90	19.83	48.73	65.21	-16.48	QP
5	0.188	7.01	19.82	26.83	54.11	-27.28	Average
6	0.188	24.21	19.82	44.03	64.11	-20.08	QP
7	0.350	16.20	19.81	36.01	48.96	-12.95	Average
8	0.350	22.80	19.81	42.61	58.96	-16.35	QP
9	18.328	13.10	19.86	32.96	50.00	-17.04	Average
10	18.328	13.70	19.86	33.56	60.00	-26.44	QP
11	23.140	18.59	19.79	38.38	50.00	-11.62	Average
12	23.140	19.19	19.79	38.98	60.00	-21.02	QP

AC 120V/60Hz, Neutral



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.151	17.10	19.82	36.92	55.96	-19.04	Average
2	0.151	31.80	19.82	51.62	65.96	-14.34	QP
3	0.177	13.80	19.83	33.63	54.64	-21.01	Average
4	0.177	27.50	19.83	47.33	64.64	-17.31	QP
5	0.196	8.40	19.82	28.22	53.80	-25.58	Average
6	0.196	23.90	19.82	43.72	63.80	-20.08	QP
7	0.358	15.30	19.80	35.10	48.78	-13.68	Average
8	0.358	22.50	19.80	42.30	58.78	-16.48	QP
9	19.740	6.80	19.94	26.74	50.00	-23.26	Average
10	19.740	11.10	19.94	31.04	60.00	-28.96	QP
11	23.140	10.59	19.79	30.38	50.00	-19.62	Average
12	23.140	16.59	19.79	36.38	60.00	-23.62	QP

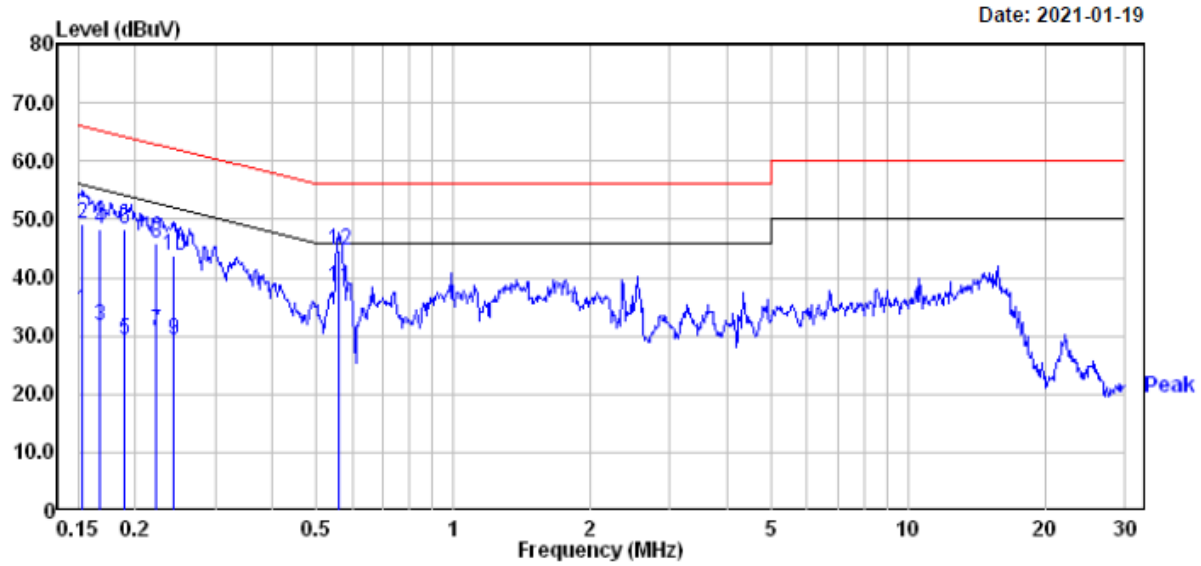
Note:
1) Factor (dB) = LISN VDF (dB) + Cable Loss (dB) + Transient Limiter Attenuation (dB)
2) Over Limit (dB) = Read level (dBµV) + Factor (dB) - Limit (dBµV)

For 5725~5850MHz Band:

EUT operation mode: Transmitting in 802.11ac20 mode low channel (worst case)

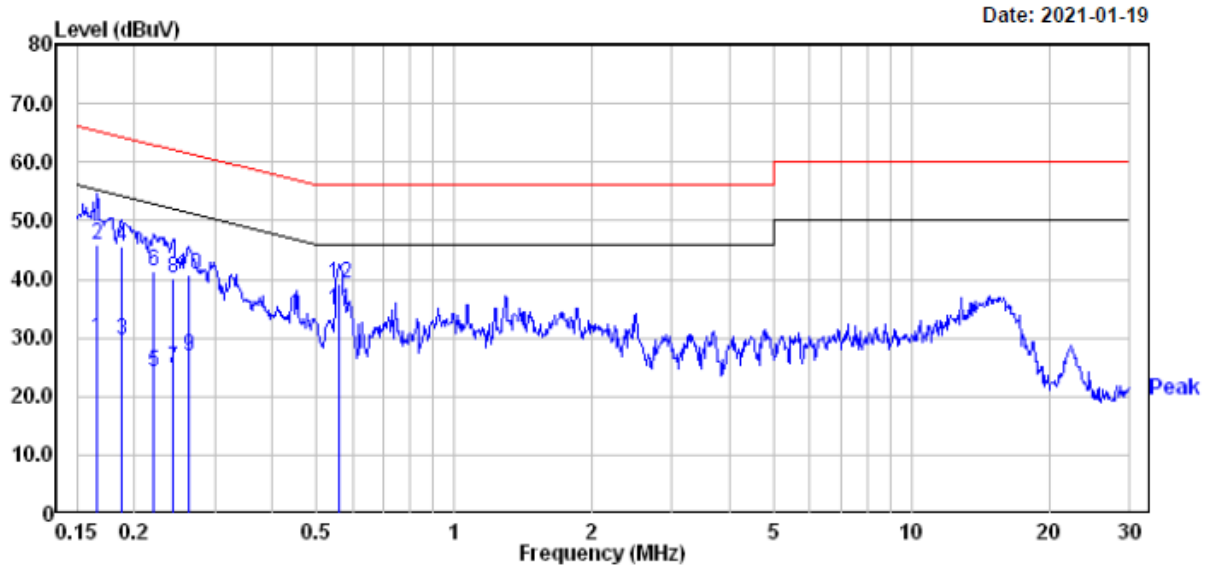
For adapter power supply

AC 120V/60Hz, Line



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.153	14.70	19.82	34.52	55.82	-21.30	Average
2	0.153	29.40	19.82	49.22	65.82	-16.60	QP
3	0.168	12.00	19.83	31.83	55.08	-23.25	Average
4	0.168	28.60	19.83	48.43	65.08	-16.65	QP
5	0.189	9.50	19.82	29.32	54.06	-24.74	Average
6	0.189	28.60	19.82	48.42	64.06	-15.64	QP
7	0.222	11.00	19.82	30.82	52.74	-21.92	Average
8	0.222	26.20	19.82	46.02	62.74	-16.72	QP
9	0.243	9.50	19.82	29.32	52.00	-22.68	Average
10	0.243	24.00	19.82	43.82	62.00	-18.18	QP
11	0.561	18.50	19.75	38.25	46.00	-7.75	Average
12	0.561	24.90	19.75	44.65	56.00	-11.35	QP

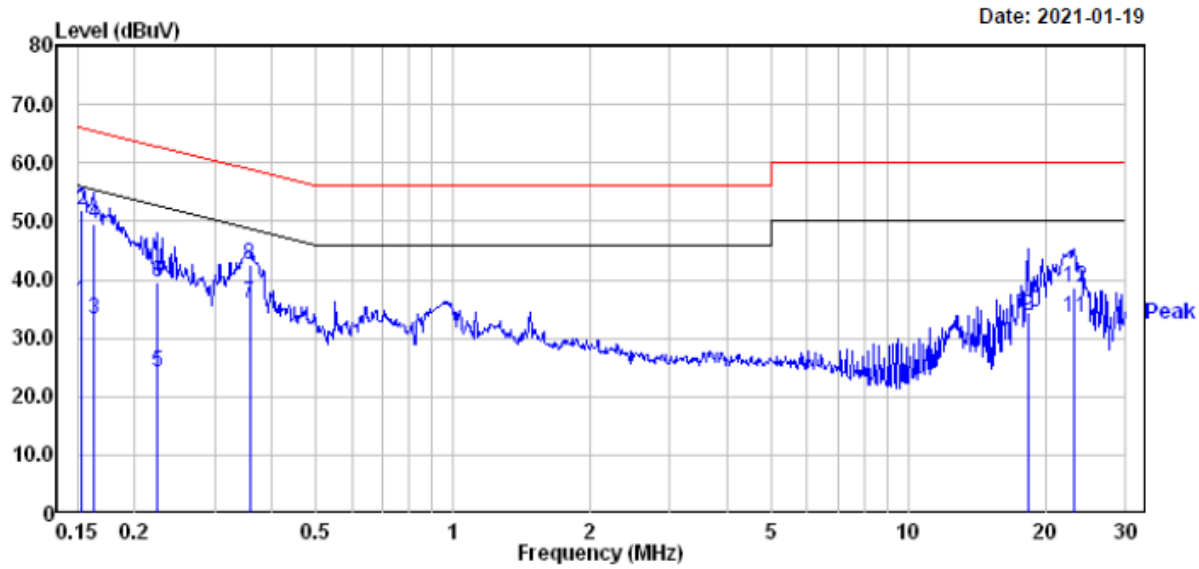
AC 120V/60Hz, Neutral



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.166	10.20	19.83	30.03	55.16	-25.13	Average
2	0.166	26.20	19.83	46.03	65.16	-19.13	QP
3	0.187	9.71	19.82	29.53	54.15	-24.62	Average
4	0.187	25.71	19.82	45.53	64.15	-18.62	QP
5	0.220	4.30	19.82	24.12	52.83	-28.71	Average
6	0.220	21.50	19.82	41.32	62.83	-21.51	QP
7	0.243	5.00	19.82	24.82	52.00	-27.18	Average
8	0.243	20.30	19.82	40.12	62.00	-21.88	QP
9	0.263	7.00	19.82	26.82	51.34	-24.52	Average
10	0.263	21.00	19.82	40.82	61.34	-20.52	QP
11	0.561	15.00	19.75	34.75	46.00	-11.25	Average
12	0.561	19.60	19.75	39.35	56.00	-16.65	QP

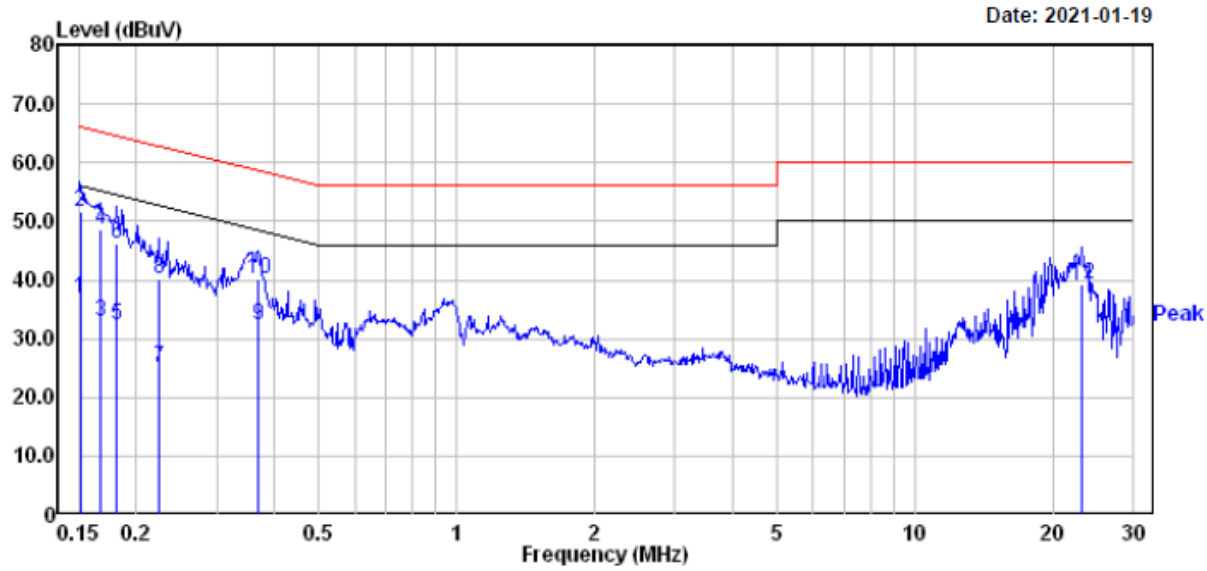
For PoE power supply

AC 120V/60Hz, Line



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.152	16.50	19.82	36.32	55.87	-19.55	Average
2	0.152	32.10	19.82	51.92	65.87	-13.95	QP
3	0.163	13.40	19.83	33.23	55.30	-22.07	Average
4	0.163	29.70	19.83	49.53	65.30	-15.77	QP
5	0.223	4.30	19.82	24.12	52.70	-28.58	Average
6	0.223	19.70	19.82	39.52	62.70	-23.18	QP
7	0.358	16.10	19.80	35.90	48.78	-12.88	Average
8	0.358	22.90	19.80	42.70	58.78	-16.08	QP
9	18.328	13.90	19.86	33.76	50.00	-16.24	Average
10	18.328	14.50	19.86	34.36	60.00	-25.64	QP
11	23.140	13.59	19.79	33.38	50.00	-16.62	Average
12	23.140	18.89	19.79	38.68	60.00	-21.32	QP

AC 120V/60Hz, Neutral



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.151	16.90	19.82	36.72	55.96	-19.24	Average
2	0.151	31.70	19.82	51.52	65.96	-14.44	QP
3	0.167	13.10	19.83	32.93	55.12	-22.19	Average
4	0.167	28.80	19.83	48.63	65.12	-16.49	QP
5	0.182	12.60	19.83	32.43	54.42	-21.99	Average
6	0.182	26.50	19.83	46.33	64.42	-18.09	QP
7	0.223	5.10	19.82	24.92	52.70	-27.78	Average
8	0.223	20.30	19.82	40.12	62.70	-22.58	QP
9	0.369	12.60	19.78	32.38	48.52	-16.14	Average
10	0.369	20.50	19.78	40.28	58.52	-18.24	QP
11	23.140	19.09	19.79	38.88	50.00	-11.12	Average
12	23.140	19.39	19.79	39.18	60.00	-20.82	QP

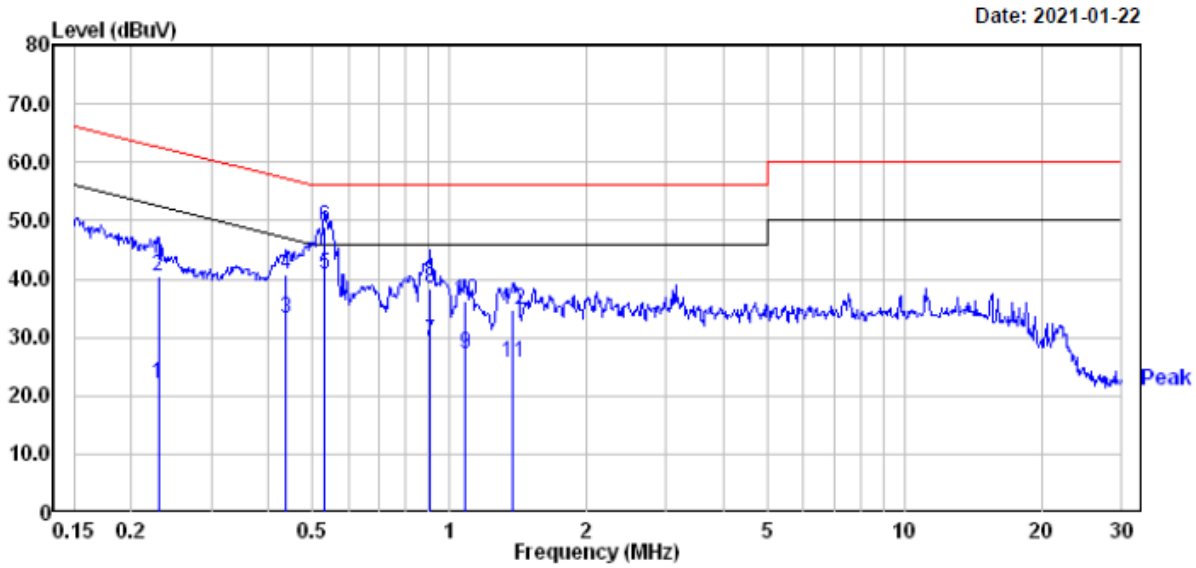
Note:
1) Factor (dB) = LISN VDF (dB) + Cable Loss (dB) + Transient Limiter Attenuation (dB)
2) Over Limit (dB) = Read level (dBµV) + Factor (dB) - Limit (dBµV)

Transmitting simultaneously test:

*(The worst case **2.4G Wi-Fi 802.11n-HT40 mode high channel & BLE (1Mbps) mode high channel & Zigbee low channel & 5G Wi-Fi 802.11ac20 mode low channel of 5725~5850 Band & LTE Band 2 16QAM 3MHz high channel** transmitting simultaneously was recorded)*

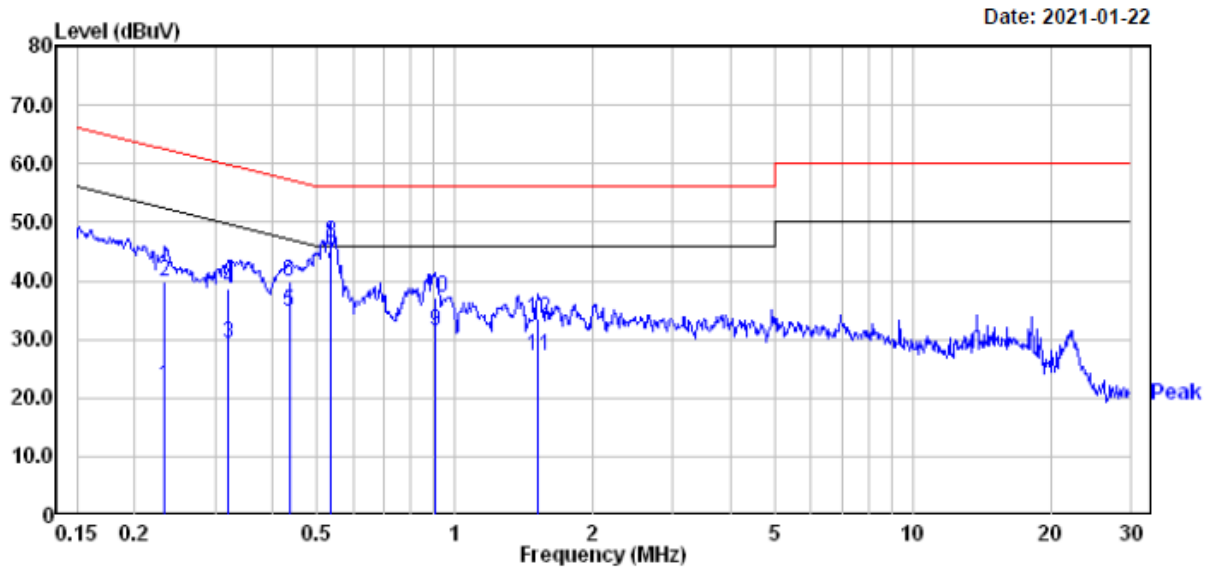
For adapter power supply

AC 120V/60 Hz, Line



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.229	2.10	19.82	21.92	52.48	-30.56	Average
2	0.229	20.70	19.82	40.52	62.48	-21.96	QP
3	0.437	13.50	19.75	33.25	47.11	-13.86	Average
4	0.437	21.10	19.75	40.85	57.11	-16.26	QP
5	0.532	21.01	19.75	40.76	46.00	-5.24	Average
6	0.532	29.11	19.75	48.86	56.00	-7.14	QP
7	0.909	9.60	19.74	29.34	46.00	-16.66	Average
8	0.909	18.70	19.74	38.44	56.00	-17.56	QP
9	1.082	7.20	19.82	27.02	46.00	-18.98	Average
10	1.082	16.50	19.82	36.32	56.00	-19.68	QP
11	1.381	5.70	19.83	25.53	46.00	-20.47	Average
12	1.381	15.00	19.83	34.83	56.00	-21.17	QP

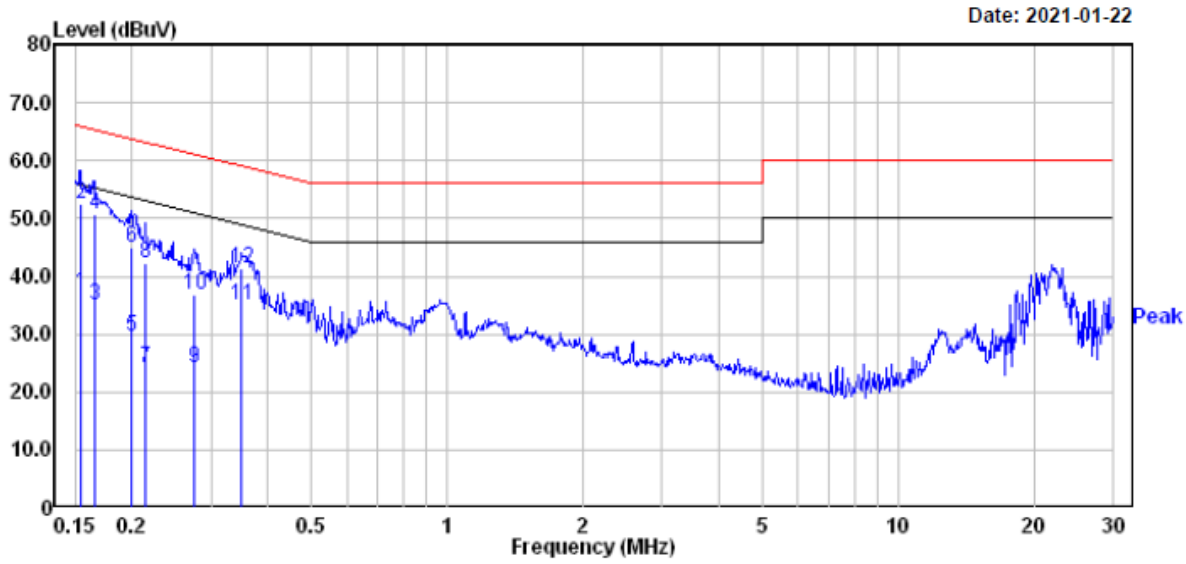
AC 120V/60 Hz, Neutral



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.233	2.30	19.82	22.12	52.35	-30.23	Average
2	0.233	20.00	19.82	39.82	62.35	-22.53	QP
3	0.320	9.40	19.82	29.22	49.71	-20.49	Average
4	0.320	18.70	19.82	38.52	59.71	-21.19	QP
5	0.435	15.10	19.75	34.85	47.15	-12.30	Average
6	0.435	20.00	19.75	39.75	57.15	-17.40	QP
7	0.535	23.11	19.75	42.86	46.00	-3.14	Average
8	0.535	26.71	19.75	46.46	56.00	-9.54	QP
9	0.904	11.60	19.73	31.33	46.00	-14.67	Average
10	0.904	17.30	19.73	37.03	56.00	-18.97	QP
11	1.519	7.39	19.85	27.24	46.00	-18.76	Average
12	1.519	13.59	19.85	33.44	56.00	-22.56	QP

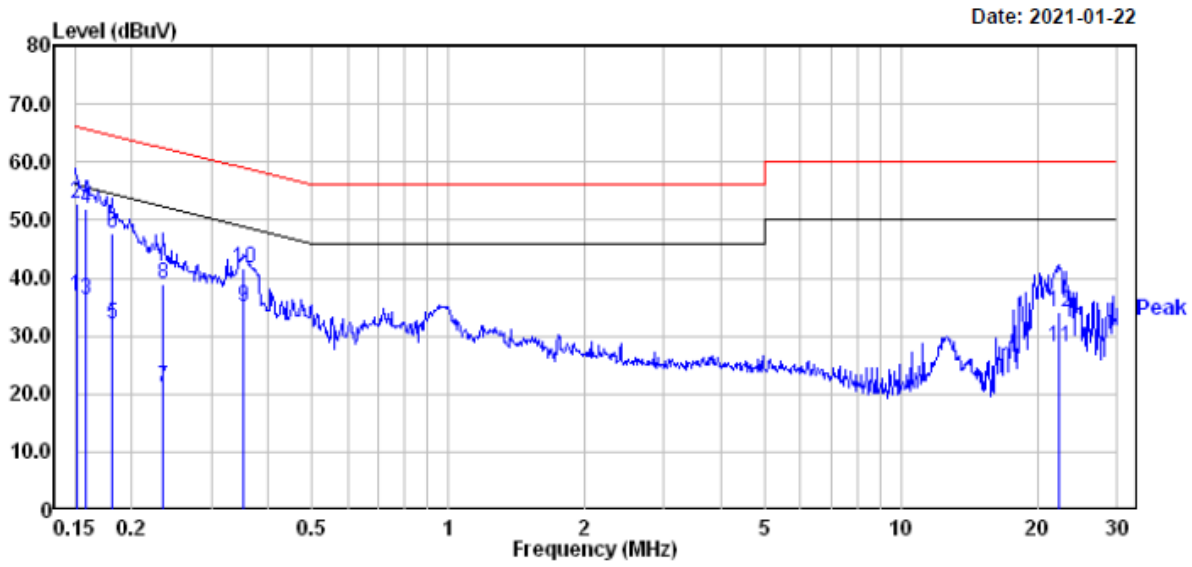
For PoE power supply

AC 120V/60 Hz, Line



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.154	17.40	19.82	37.22	55.78	-18.56	Average
2	0.154	32.70	19.82	52.52	65.78	-13.26	QP
3	0.165	15.20	19.83	35.03	55.21	-20.18	Average
4	0.165	30.90	19.83	50.73	65.21	-14.48	QP
5	0.200	9.70	19.82	29.52	53.62	-24.10	Average
6	0.200	25.20	19.82	45.02	63.62	-18.60	QP
7	0.215	4.20	19.82	24.02	53.01	-28.99	Average
8	0.215	22.50	19.82	42.32	63.01	-20.69	QP
9	0.276	4.20	19.82	24.02	50.94	-26.92	Average
10	0.276	17.00	19.82	36.82	60.94	-24.12	QP
11	0.350	15.20	19.81	35.01	48.96	-13.95	Average
12	0.350	21.40	19.81	41.21	58.96	-17.75	QP

AC 120V/60 Hz, Neutral



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.151	17.10	19.82	36.92	55.96	-19.04	Average
2	0.151	33.10	19.82	52.92	65.96	-13.04	QP
3	0.159	16.30	19.82	36.12	55.52	-19.40	Average
4	0.159	32.10	19.82	51.92	65.52	-13.60	QP
5	0.181	12.30	19.83	32.13	54.46	-22.33	Average
6	0.181	27.80	19.83	47.63	64.46	-16.83	QP
7	0.234	1.40	19.82	21.22	52.30	-31.08	Average
8	0.234	19.10	19.82	38.92	62.30	-23.38	QP
9	0.354	15.20	19.80	35.00	48.87	-13.87	Average
10	0.354	21.80	19.80	41.60	58.87	-17.27	QP
11	22.416	8.30	19.82	28.12	50.00	-21.88	Average
12	22.416	14.30	19.82	34.12	60.00	-25.88	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.

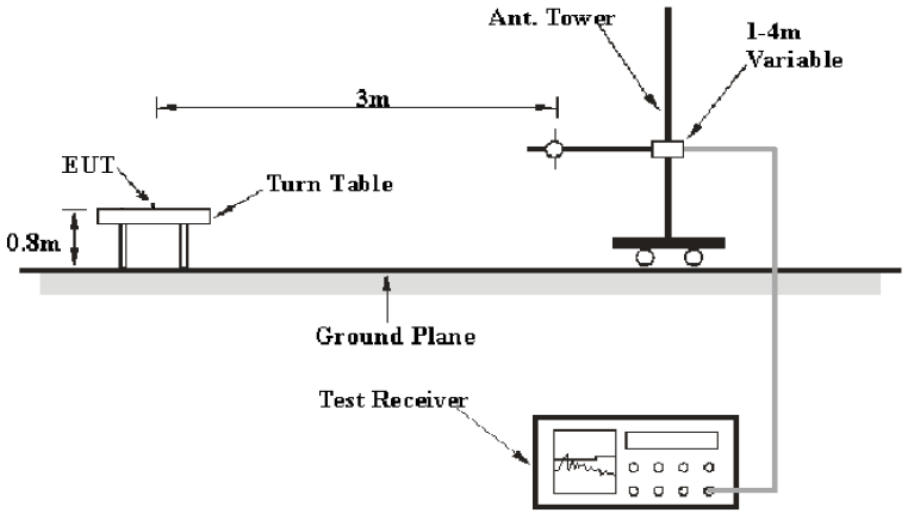
Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209.

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.

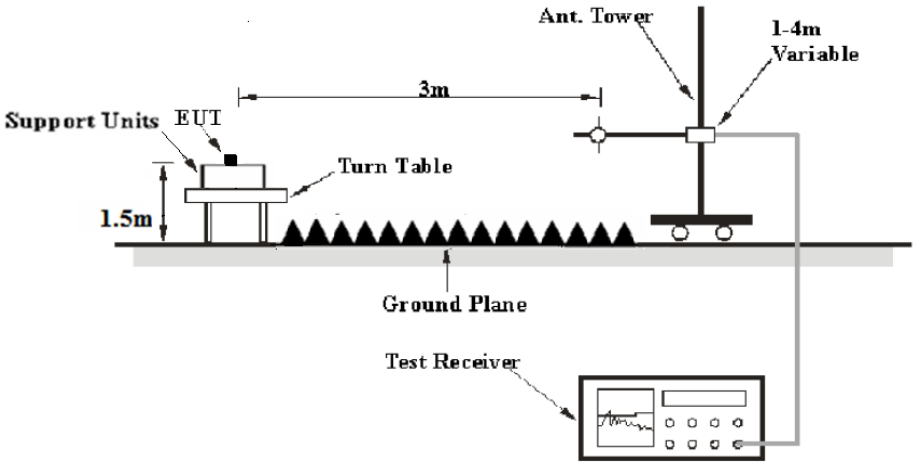
According to 789033 D02 General UNII Test Procedures New Rules v02r01, emission shall be computed as: E [dBµV/m] = EIRP [dBm] + 95.2, for d = 3 meters.

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	IF B/W	Detector
30 MHz – 1000 MHz	120 kHz	300 kHz	120 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:

Corrected Amplitude = Meter Reading + Antenna factor + Cable Loss - 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:

Margin = Limit –Corrected Amplitude

Test Data

Environmental Conditions

Temperature:	22.6~23.0 ℃
Relative Humidity:	48~53 %
ATM Pressure:	100.7~101.3 kPa

The testing was performed by CK Huang from 2020-12-05 to 2021-01-20.

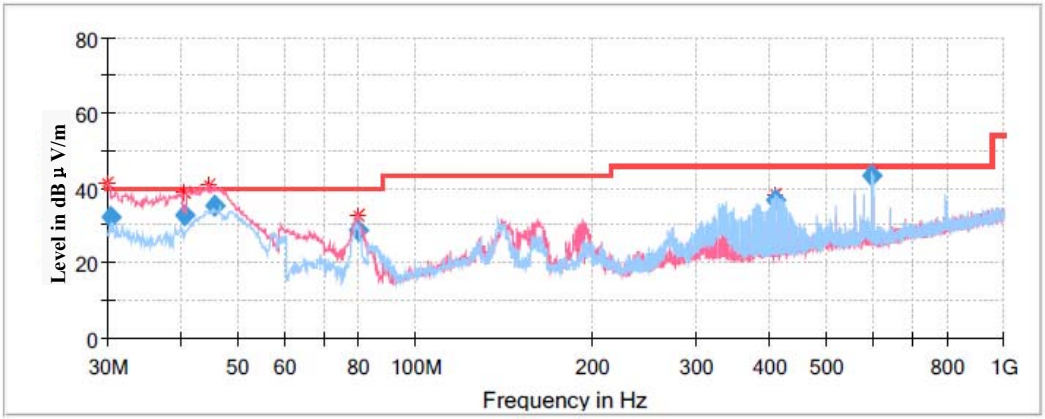
Test Mode: Transmitting

Spurious Emission Test

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

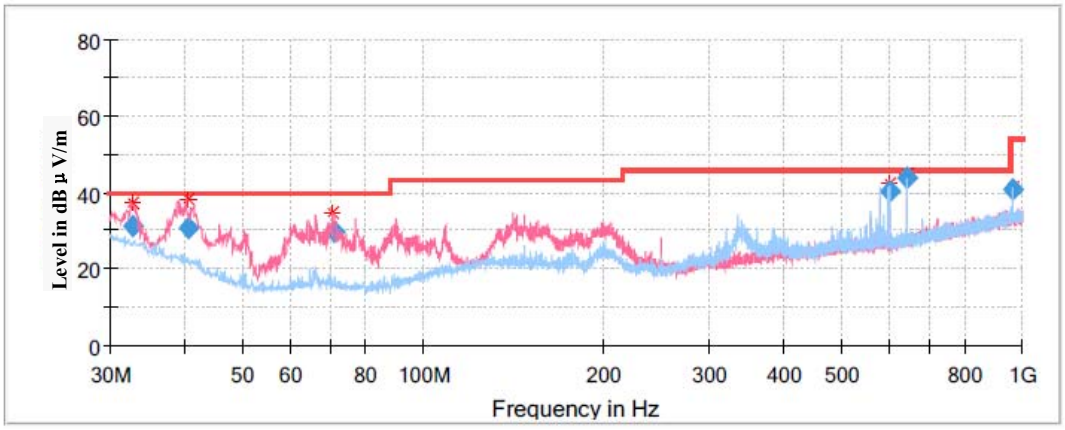
Pre-scan with 802.11a, 802.11ac20, 802.11n-HT20, 802.11ac40, 802.11n-HT40 and 802.11ac80 modes of operation in the X,Y and Z axes of orientation, ***the worst case 802.11a mode low channel of Chain0*** *in Z-axis of orientation was recorded.*

For adapter power supply



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)				
30.532463	32.42	100.0	V	16.0	-4.9	40.00	7.58
40.527700	32.77	100.0	V	120.0	-11.6	40.00	7.23
45.531300	35.47	100.0	V	65.0	-15.0	40.00	4.53
79.840350	28.76	100.0	V	0.0	-18.1	40.00	11.24
408.021200	36.69	100.0	H	41.0	-8.4	46.00	9.31
597.472800	43.14	200.0	H	9.0	-5.5	46.00	2.86

For PoE power supply

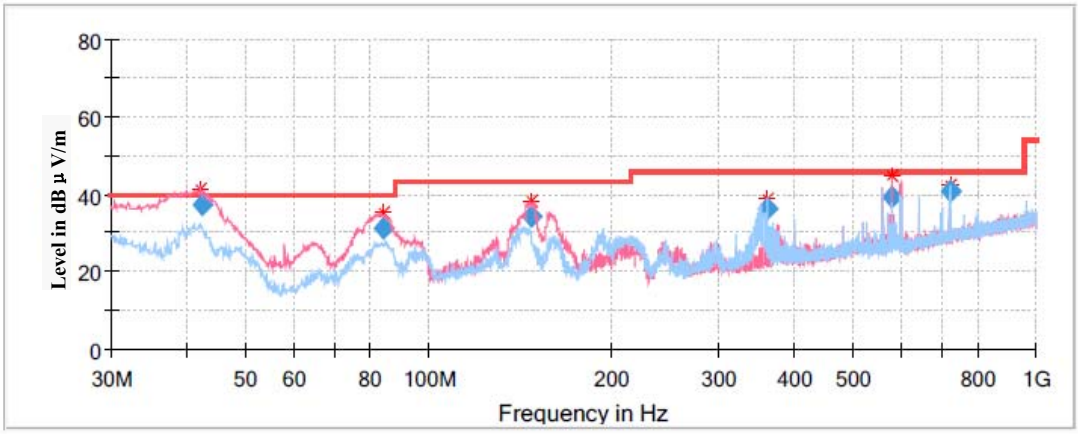


Frequency (MHz)	Corrected Amplitude	Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	QuasiPeak (dBµV/m)	Height (cm)	Polar (H/V)				
32.774850	31.36	100.0	V	98.0	-5.7	40.00	8.64
40.522550	30.92	100.0	V	198.0	-10.9	40.00	9.08
71.162700	29.90	100.0	V	44.0	-16.2	40.00	10.10
599.978500	40.12	200.0	H	351.0	-5.0	46.00	5.88
639.991050	43.88	200.0	H	314.0	-4.0	46.00	2.12
966.675200	40.66	100.0	H	201.0	2.2	53.90	13.24

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

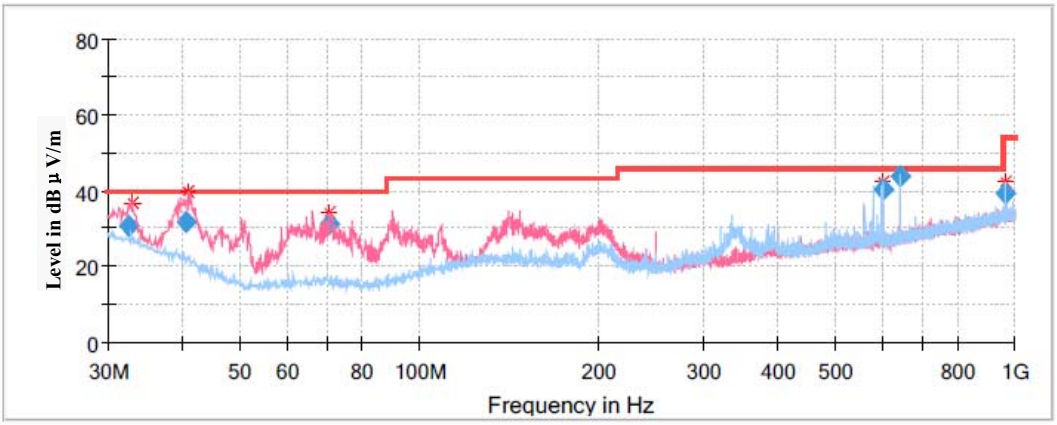
Pre-scan with 802.11a, 802.11ac20, 802.11n-HT20, 802.11ac40, 802.11n-HT40 and 802.11ac80 modes of operation in the X,Y and Z axes of orientation, ***the worst case 802.11ac20 mode low channel*** *in Z-axis of orientation was recorded*

For adapter power supply



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)				
42.292450	37.01	100.0	V	153.0	-11.7	40.00	2.99
84.250800	31.12	100.0	V	196.0	-16.9	40.00	8.88
147.695000	34.03	100.0	V	153.0	-11.5	43.50	9.47
359.995700	36.26	100.0	H	170.0	-9.0	46.00	9.74
580.074000	39.09	100.0	V	297.0	-5.0	46.00	6.91
720.001350	40.80	200.0	H	201.0	-2.0	46.00	5.20

For PoE power supply



Frequency (MHz)	Corrected Amplitude	Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	QuasiPeak (dBµV/m)	Height (cm)	Polar (H/V)				
32.565200	30.46	100.0	V	68.0	-5.6	40.00	9.54
40.505150	31.56	100.0	V	68.0	-10.9	40.00	8.44
70.810800	31.10	100.0	V	266.0	-16.2	40.00	8.90
599.994150	40.11	200.0	H	177.0	-5.0	46.00	5.89
640.000950	43.90	200.0	H	303.0	-4.0	46.00	2.10
966.674250	39.28	200.0	H	201.0	2.2	53.90	14.62

1GHz-18GHz – adapter power supply (worst case)

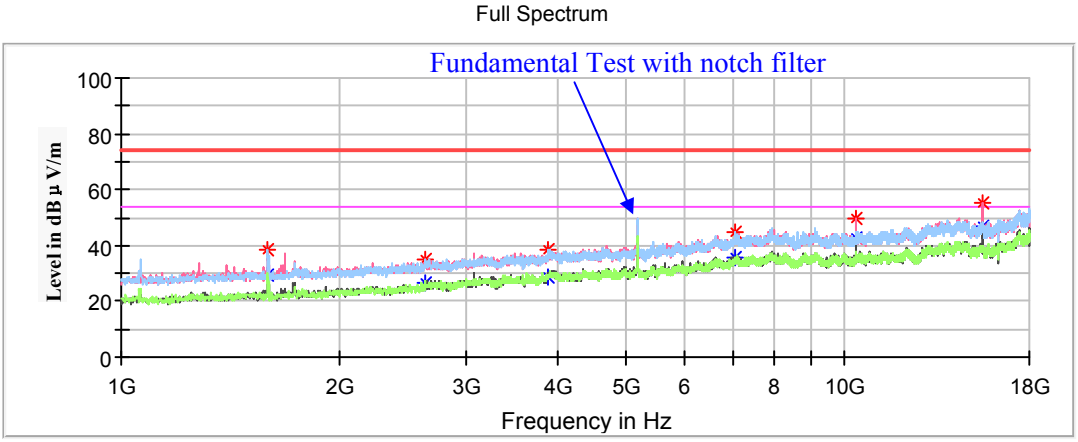
5150-5250MHz Band:

802.11a Mode(Chain0):

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

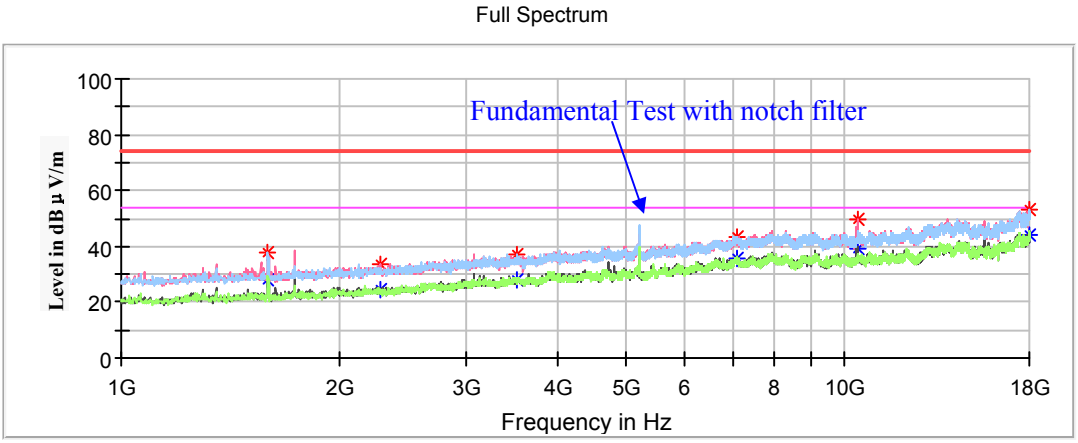
Note:
1. This test was performed with the 5150-5250MHz band reject filter.
2. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
   Corrected Amplitude = Corrected Factor + Reading
   Margin = Limit - Corrected. Amplitude

Low Channel: 5180MHz



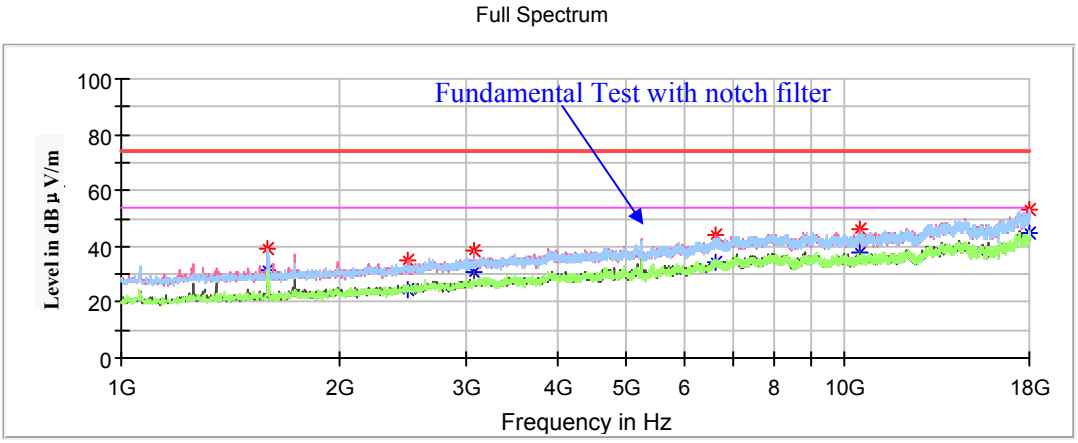
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1591.600000	38.30	---	150.0	H	186.0	-16.0	74.00	35.70
1591.600000	---	29.48	150.0	H	186.0	-16.0	54.00	24.52
2632.000000	35.24	---	200.0	V	275.0	-11.8	68.20	32.96
3888.300000	38.33	---	200.0	H	283.0	-7.4	74.00	35.67
3888.300000	---	28.79	200.0	H	283.0	-7.4	54.00	25.21
7057.100000	44.45	---	200.0	H	257.0	0.1	68.20	23.75
10360.000000	49.98	---	200.0	V	349.0	2.2	68.20	18.22
15540.000000	---	46.84	200.0	V	94.0	4.7	54.00	7.16
15540.000000	55.01	---	200.0	V	94.0	4.7	74.00	18.99

Middle Channel: 5200MHz



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)				
1591.600000	38.11	---	200.0	H	205.0	-16.0	74.00	35.89
1591.600000	---	27.78	200.0	H	205.0	-16.0	54.00	26.22
2280.100000	33.30	---	200.0	V	206.0	-13.3	74.00	40.70
2280.100000	---	24.32	200.0	V	206.0	-13.3	54.00	29.68
3516.000000	37.12	---	150.0	H	69.0	-8.8	68.20	31.08
7087.700000	43.60	---	150.0	H	15.0	0.1	68.20	24.60
10400.000000	49.81	---	200.0	V	354.0	2.2	68.20	18.39
17960.900000	---	44.03	150.0	H	314.0	8.8	54.00	9.97
17960.900000	52.85	---	150.0	H	314.0	8.8	74.00	21.15

High Channel: 5240MHz



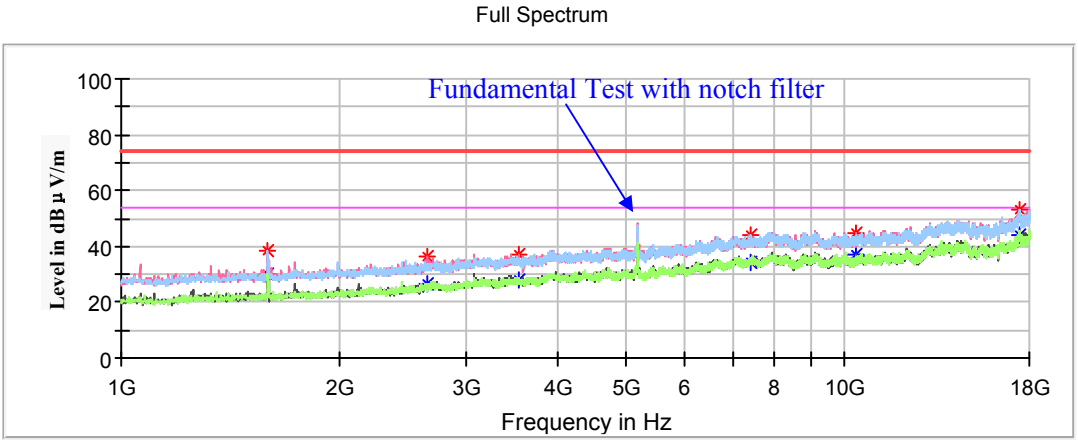
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1596.700000	38.84	---	200.0	H	204.0	-16.0	74.00	35.16
1596.700000	---	31.34	200.0	H	204.0	-16.0	54.00	22.66
2490.900000	34.73	---	150.0	V	116.0	-12.5	74.00	39.27
2490.900000	---	24.56	150.0	V	116.0	-12.5	54.00	29.44
3070.600000	38.49	---	200.0	V	349.0	-9.9	68.20	29.71
6621.900000	44.27	---	150.0	V	65.0	-0.9	68.20	23.93
10480.000000	45.94	---	200.0	V	356.0	2.3	68.20	22.26
17969.400000	---	44.66	200.0	H	243.0	8.8	54.00	9.34
17969.400000	53.26	---	200.0	H	243.0	8.8	74.00	20.74

802.11a Mode(Chain1):

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

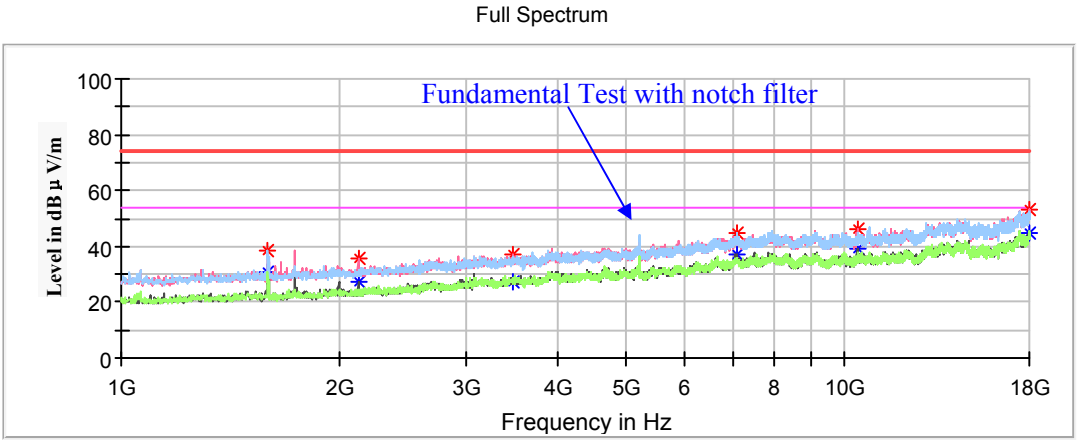
Note:
1. This test was performed with the 5150-5250MHz band reject filter.
2. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
   Corrected Amplitude = Corrected Factor + Reading
   Margin = Limit - Corrected. Amplitude

Low Channel: 5180MHz



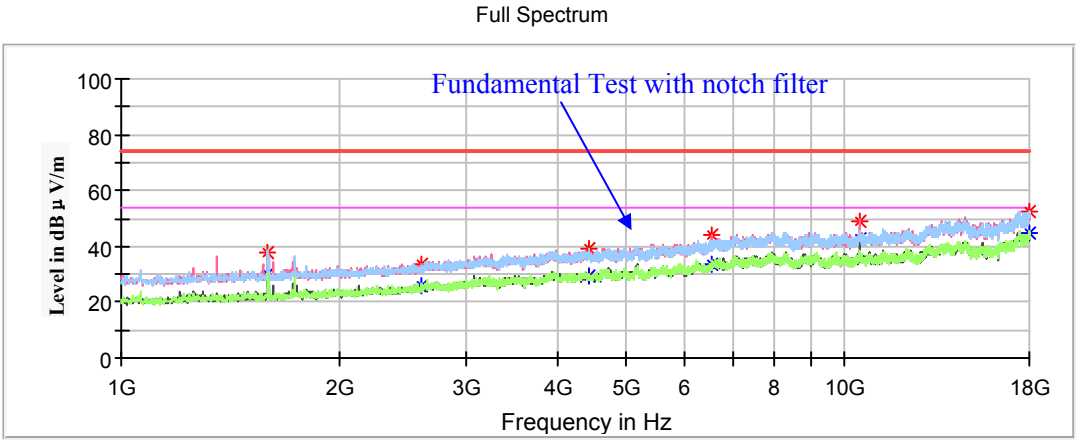
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1595.000000	38.40	---	200.0	H	201.0	-16.0	74.00	35.60
1595.000000	---	29.88	200.0	H	201.0	-16.0	54.00	24.12
2654.100000	36.70	---	200.0	V	313.0	-11.7	68.20	31.50
3551.700000	36.81	---	200.0	V	275.0	-8.6	68.20	31.39
7434.500000	44.18	---	200.0	H	0.0	0.9	74.00	29.82
7434.500000	---	34.55	200.0	H	0.0	0.9	54.00	19.45
10360.000000	44.46	---	200.0	V	356.0	2.2	68.20	23.74
17440.700000	53.03	---	200.0	H	150.0	8.7	68.20	15.17

Middle Channel: 5200MHz



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)				
1591.600000	38.66	---	200.0	H	200.0	-16.0	74.00	35.34
1591.600000	---	30.80	200.0	H	200.0	-16.0	54.00	23.20
2125.400000	35.45	---	150.0	V	206.0	-14.0	68.20	32.75
3480.300000	37.05	---	200.0	V	338.0	-8.9	68.20	31.15
7108.100000	44.97	---	150.0	V	2.0	0.2	68.20	23.23
10400.000000	45.95	---	200.0	V	63.0	2.2	68.20	22.25
17989.800000	---	45.08	150.0	H	257.0	8.8	54.00	8.92
17989.800000	53.36	---	150.0	H	257.0	8.8	74.00	20.64

High Channel: 5240MHz



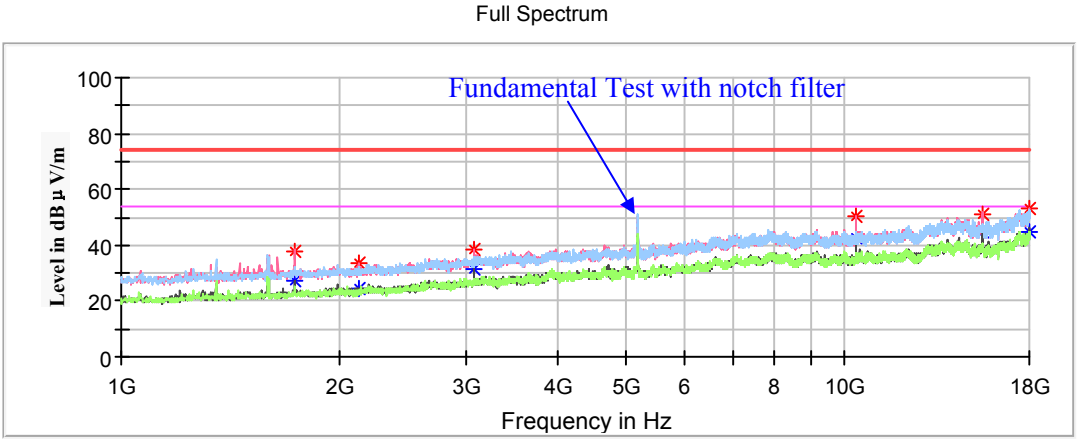
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1591.600000	---	30.28	150.0	H	212.0	-16.0	54.00	23.72
1591.600000	38.11	---	150.0	H	212.0	-16.0	74.00	35.89
2604.800000	33.89	---	150.0	H	0.0	-11.9	68.20	34.31
4432.300000	38.99	---	150.0	V	154.0	-6.3	68.20	29.21
6560.700000	43.87	---	200.0	V	358.0	-1.1	68.20	24.33
10480.000000	49.29	---	150.0	V	348.0	2.3	68.20	18.91
17983.000000	---	44.89	150.0	H	46.0	8.8	54.00	9.11
17983.000000	52.63	---	150.0	H	46.0	8.8	74.00	21.37

802.11ac20 Mode(Chain0+Chain1):

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

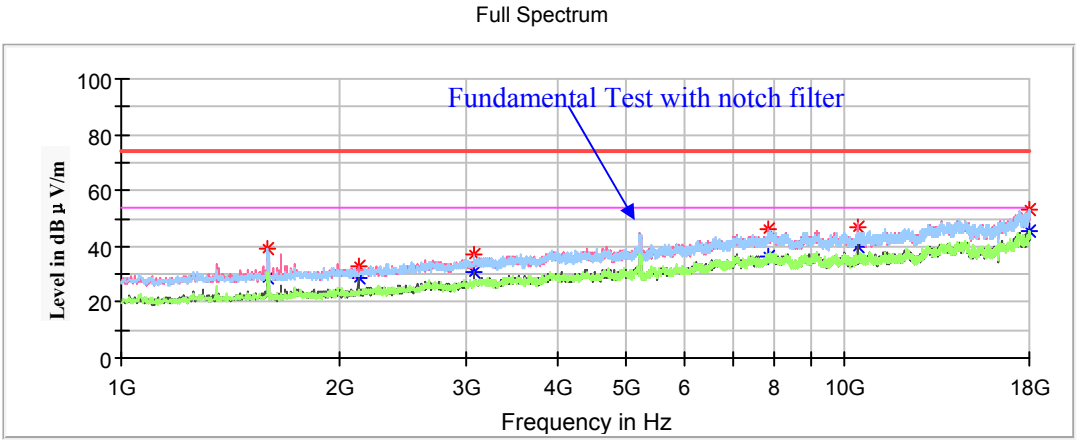
Note:
1. This test was performed with the 5150-5250MHz band reject filter.
2. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
   Corrected Amplitude = Corrected Factor + Reading
   Margin = Limit - Corrected. Amplitude

Low Channel: 5180MHz



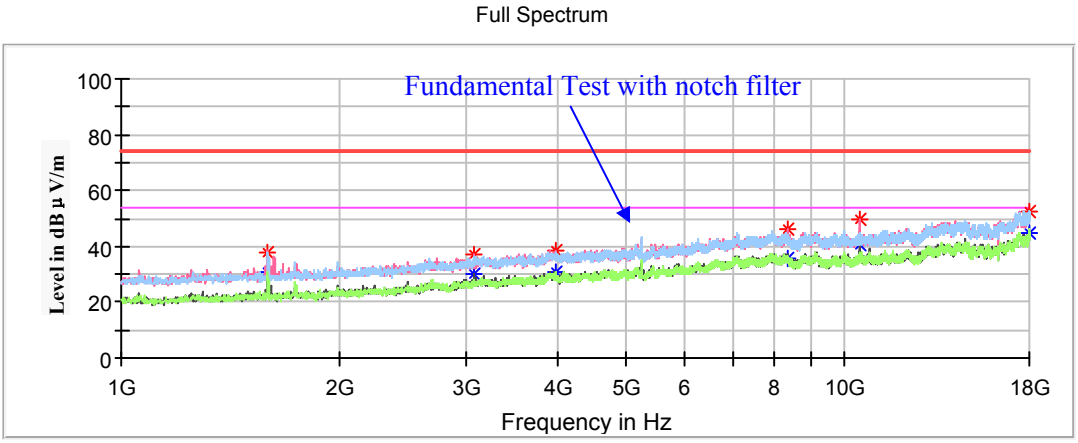
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1739.500000	37.45	---	200.0	V	218.0	-15.5	68.20	30.75
2125.400000	33.81	---	200.0	V	47.0	-14.0	68.20	34.39
3070.600000	38.15	---	200.0	V	180.0	-9.9	68.20	30.05
10360.000000	50.53	---	150.0	V	333.0	2.2	68.20	17.67
15540.000000	50.91	---	200.0	V	111.0	4.7	74.00	23.09
15540.000000	---	45.07	200.0	V	111.0	4.7	54.00	8.93
17994.900000	---	44.73	150.0	V	232.0	8.8	54.00	9.27
17994.900000	53.38	---	150.0	V	232.0	8.8	74.00	20.62

Middle Channel: 5200MHz



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)				
1593.300000	38.99	---	200.0	H	354.0	-16.0	74.00	35.01
1593.300000	---	28.94	200.0	H	354.0	-16.0	54.00	25.06
2125.400000	33.06	---	200.0	V	252.0	-14.0	68.20	35.14
3070.600000	37.37	---	200.0	V	226.0	-9.9	68.20	30.83
7822.100000	46.43	---	200.0	V	200.0	1.5	68.20	21.77
10400.000000	46.86	---	200.0	V	73.0	2.2	68.20	21.34
17977.900000	---	45.11	200.0	H	194.0	8.8	54.00	8.89
17977.900000	52.95	---	200.0	H	194.0	8.8	74.00	21.05

High Channel: 5240MHz

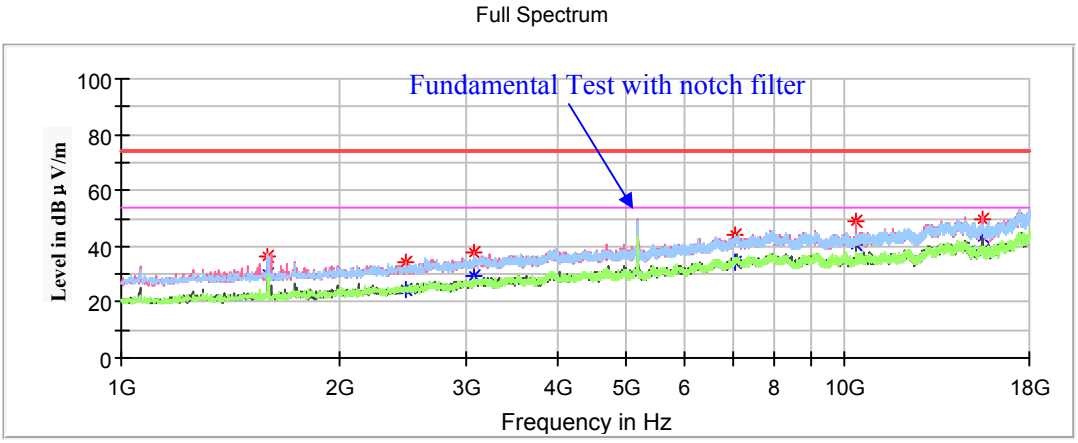


Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1593.300000	37.85	---	200.0	H	185.0	-16.0	74.00	36.15
1593.300000	---	30.86	200.0	H	185.0	-16.0	54.00	23.14
3070.600000	36.85	---	150.0	V	309.0	-9.9	68.20	31.35
3976.700000	38.35	---	150.0	V	182.0	-7.1	74.00	35.65
3976.700000	---	30.44	150.0	V	182.0	-7.1	54.00	23.56
8330.400000	46.08	---	150.0	V	8.0	1.5	74.00	27.92
8330.400000	---	35.66	150.0	V	8.0	1.5	54.00	18.34
10480.000000	49.44	---	200.0	V	206.0	2.3	68.20	18.76
17983.000000	---	44.49	200.0	H	299.0	8.8	54.00	9.51
17983.000000	52.68	---	200.0	H	299.0	8.8	74.00	21.32

802.11n-HT20 Mode*(Chain0+Chain1):*
*Pre-scan with X,Y and Z axes of orientation, the worst case **Z-axis of orientation** was recorded*

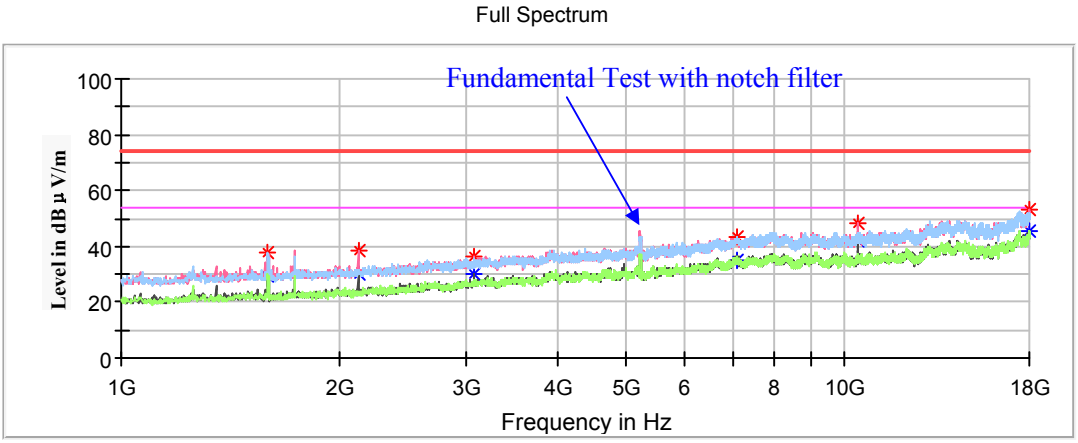
Note:
1. This test was performed with the 5150-5250MHz band reject filter.
2. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
   Corrected Amplitude = Corrected Factor + Reading
   Margin = Limit - Corrected. Amplitude

Low Channel: 5180MHz



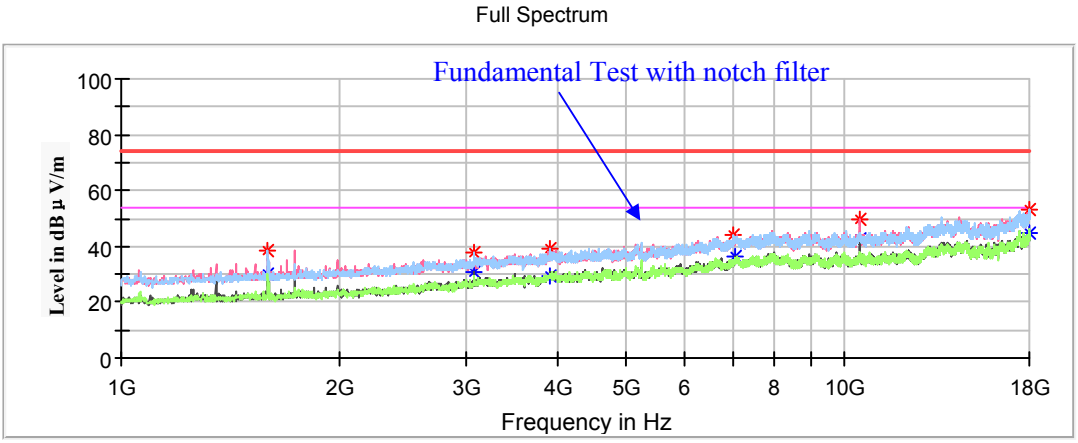
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1593.300000	36.49	---	200.0	H	349.0	-16.0	74.00	37.51
1593.300000	---	30.25	200.0	H	349.0	-16.0	54.00	23.75
2468.800000	34.26	---	150.0	V	200.0	-12.5	68.20	33.94
3070.600000	37.88	---	200.0	V	204.0	-9.9	68.20	30.32
7036.700000	44.12	---	150.0	V	123.0	0.0	68.20	24.08
10360.000000	49.12	---	200.0	V	204.0	2.2	68.20	19.08
15540.000000	49.98	---	150.0	V	276.0	4.7	74.00	24.02
15540.000000	---	43.66	150.0	V	276.0	4.7	54.00	10.34

Middle Channel: 5200MHz



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)				
1596.700000	37.52	---	200.0	H	200.0	-16.0	74.00	36.48
1596.700000	---	29.26	200.0	H	200.0	-16.0	54.00	24.74
2125.400000	38.24	---	200.0	V	205.0	-14.0	68.20	29.96
3070.600000	36.54	---	200.0	V	217.0	-9.9	68.20	31.66
7086.000000	43.65	---	150.0	V	0.0	0.1	68.20	24.55
10400.000000	48.52	---	150.0	V	345.0	2.2	68.20	19.68
17976.200000	---	45.73	200.0	V	1.0	8.8	54.00	8.27
17976.200000	52.87	---	200.0	V	1.0	8.8	74.00	21.13

High Channel: 5240MHz



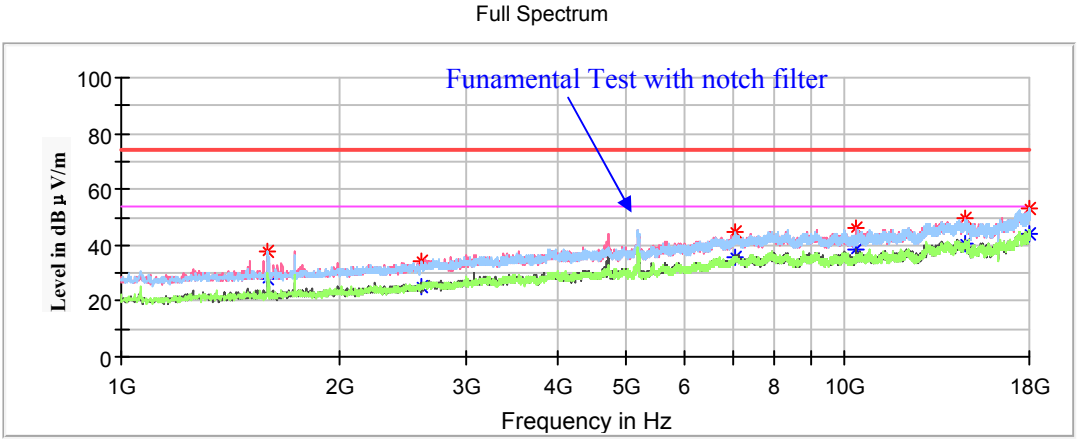
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1595.000000	38.28	---	200.0	H	193.0	-16.0	74.00	35.72
1595.000000	---	30.24	200.0	H	193.0	-16.0	54.00	23.76
3070.600000	37.76	---	150.0	H	279.0	-9.9	68.20	30.44
3918.900000	39.12	---	200.0	H	25.0	-7.3	74.00	34.88
3918.900000	---	29.65	200.0	H	25.0	-7.3	54.00	24.35
7033.300000	44.08	---	200.0	H	287.0	0.0	68.20	24.12
10480.000000	49.94	---	150.0	V	354.0	2.3	68.20	18.26
17989.800000	---	44.58	150.0	H	279.0	8.8	54.00	9.42
17989.800000	53.20	---	150.0	H	279.0	8.8	74.00	20.80

802.11ac40 Mode(Chain0+Chain1):

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

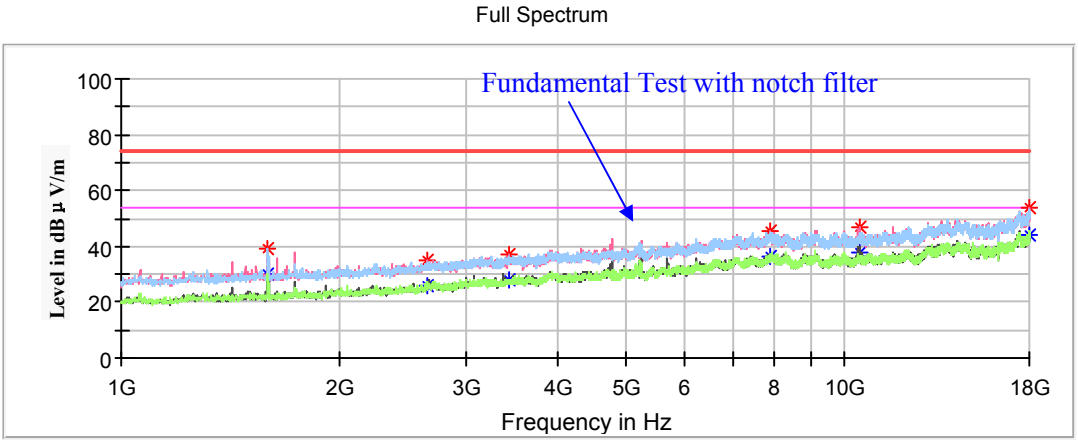
Note:
1. This test was performed with the 5150-5250MHz band reject filter.
2. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
   Corrected Amplitude = Corrected Factor + Reading
   Margin = Limit - Corrected. Amplitude

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)				
1591.600000	37.73	---	200.0	H	199.0	-16.0	74.00	36.27
1591.600000	---	28.32	200.0	H	199.0	-16.0	54.00	25.68
2606.500000	34.35	---	200.0	H	339.0	-11.9	68.20	33.85
7075.800000	44.70	---	150.0	H	335.0	0.1	68.20	23.50
10380.000000	45.96	---	150.0	V	346.0	2.2	68.20	22.24
14695.200000	49.65	---	150.0	V	63.0	6.0	68.20	18.55
17971.100000	---	44.27	150.0	V	296.0	8.8	54.00	9.73
17971.100000	53.31	---	150.0	V	296.0	8.8	74.00	20.69

High Channel: 5230MHz

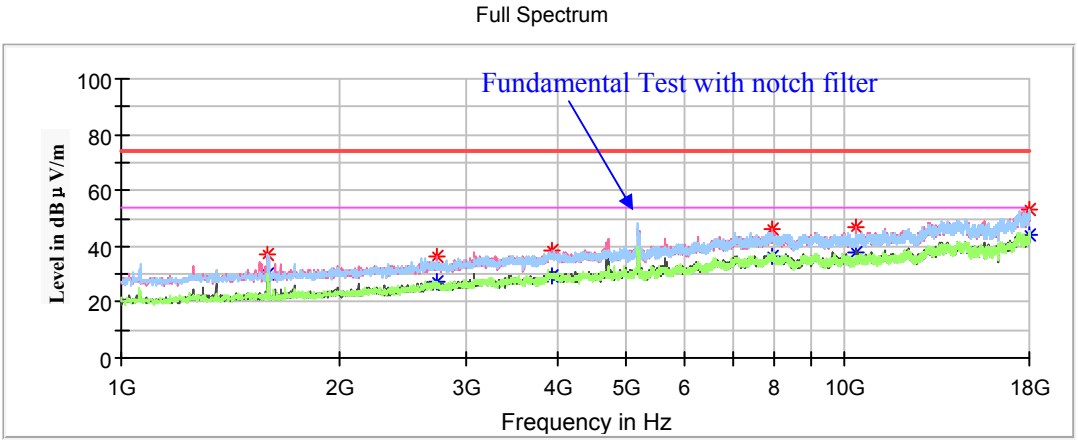


Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1595.000000	---	30.40	200.0	H	195.0	-16.0	54.00	23.60
1595.000000	39.30	---	200.0	H	195.0	-16.0	74.00	34.70
2652.400000	34.96	---	200.0	V	47.0	-11.7	68.20	33.24
3427.600000	37.33	---	150.0	V	0.0	-9.0	68.20	30.87
7896.900000	45.39	---	200.0	V	175.0	1.6	68.20	22.81
10460.000000	46.69	---	150.0	V	186.0	2.3	68.20	21.51
17979.600000	---	44.19	200.0	H	90.0	8.8	54.00	9.81
17979.600000	53.90	---	200.0	H	90.0	8.8	74.00	20.10

802.11n-HT40 Mode*(Chain0+Chain1)*:
*Pre-scan with X,Y and Z axes of orientation, the worst case **Z-axis of orientation** was recorded*

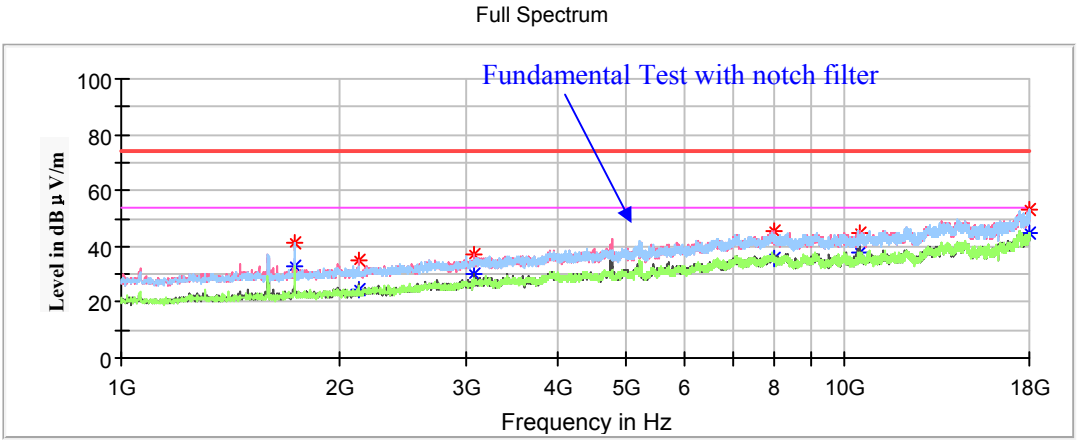
Note:
1. This test was performed with the 5150-5250MHz band reject filter.
2. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
   Corrected Amplitude = Corrected Factor + Reading
   Margin = Limit - Corrected. Amplitude

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)				
1596.700000	---	30.10	150.0	H	193.0	-16.0	54.00	23.90
1596.700000	36.88	---	150.0	H	193.0	-16.0	74.00	37.12
2737.400000	36.05	---	200.0	V	15.0	-11.3	74.00	37.95
2737.400000	---	27.09	200.0	V	15.0	-11.3	54.00	26.91
3939.300000	38.80	---	200.0	V	90.0	-7.2	74.00	35.20
3939.300000	---	29.48	200.0	V	90.0	-7.2	54.00	24.52
7946.200000	45.97	---	150.0	V	185.0	1.7	68.20	22.23
10380.000000	46.51	---	200.0	V	335.0	2.2	68.20	21.69
17993.200000	---	44.09	150.0	V	349.0	8.8	54.00	9.91
17993.200000	53.02	---	150.0	V	349.0	8.8	74.00	20.98

High Channel: 5230MHz

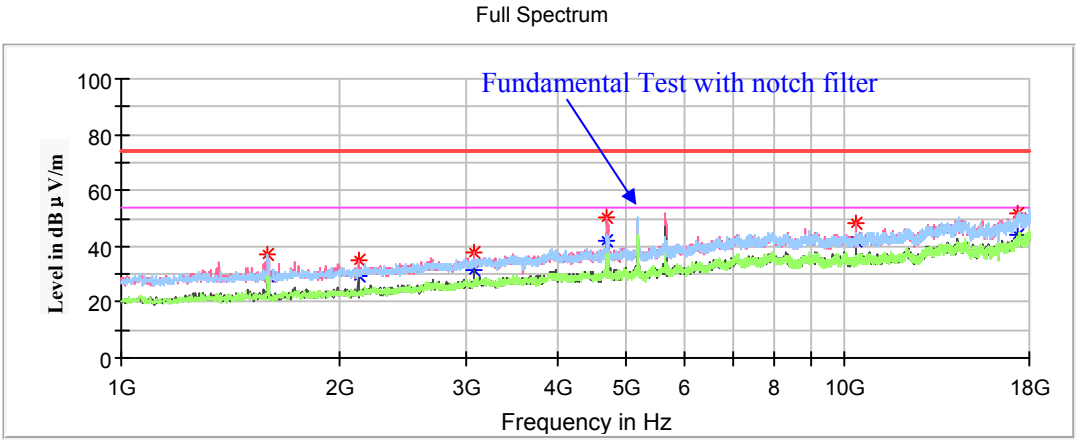


Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1739.500000	41.20	---	150.0	H	192.0	-15.5	68.20	27.00
2127.100000	34.65	---	150.0	V	296.0	-13.9	68.20	33.55
3070.600000	36.82	---	150.0	V	0.0	-9.9	68.20	31.38
7963.200000	45.50	---	200.0	V	0.0	1.8	68.20	22.70
10460.000000	44.63	---	200.0	V	175.0	2.3	68.20	23.57
17993.200000	---	44.91	150.0	V	326.0	8.8	54.00	9.09
17993.200000	53.23	---	150.0	V	326.0	8.8	74.00	20.77

802.11ac80 Mode*(Chain0+Chain1)*:
*Pre-scan with X,Y and Z axes of orientation, the worst case **Z-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)				
1593.300000	36.91	---	200.0	H	216.0	-16.0	74.00	37.09
1593.300000	---	29.62	200.0	H	216.0	-16.0	54.00	24.38
2125.400000	35.30	---	200.0	V	212.0	-14.0	68.20	32.90
3070.600000	37.54	---	150.0	V	230.0	-9.9	68.20	30.66
4699.200000	---	42.08	150.0	V	256.0	-5.8	54.00	11.92
4699.200000	50.04	---	150.0	V	256.0	-5.8	74.00	23.96
10420.000000	48.54	---	200.0	V	350.0	2.2	68.20	19.66
17374.400000	51.89	---	200.0	V	0.0	8.5	68.20	16.31

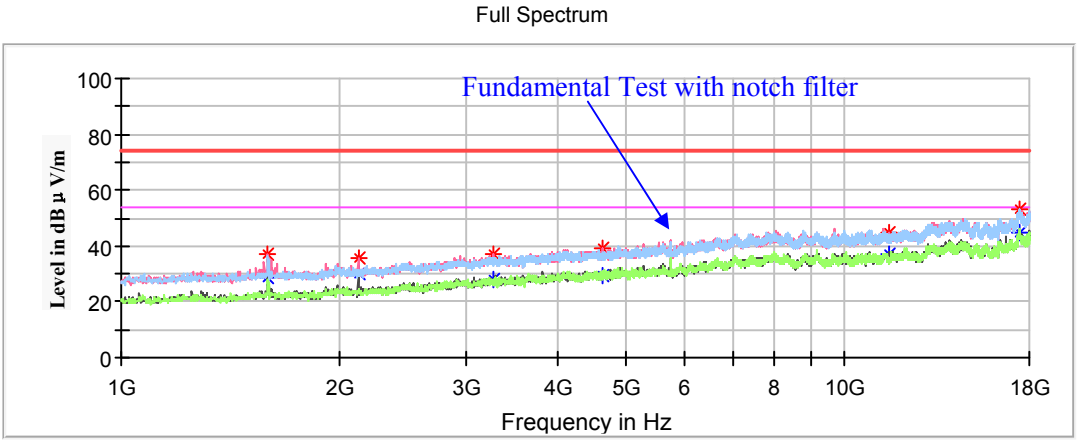
5725-5850MHz Band:

802.11a Mode(Chain0):

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

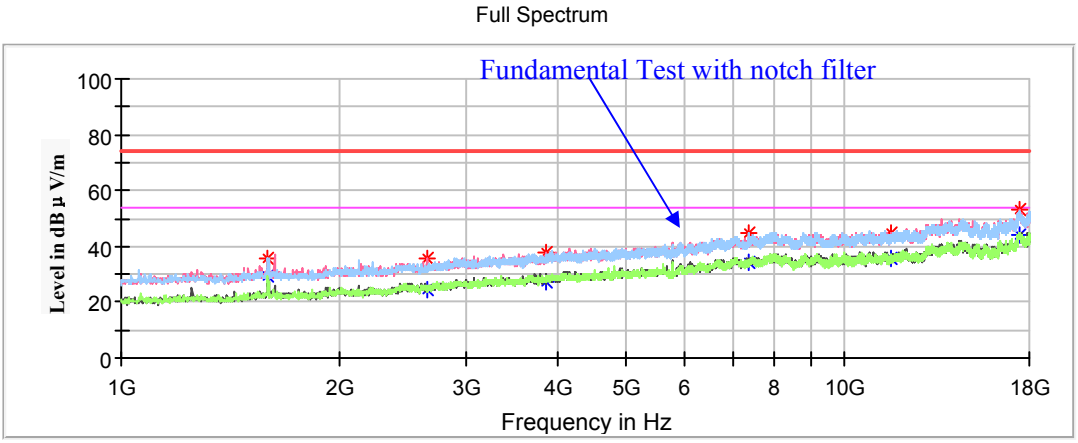
Note:
1. This test was performed with the 5725-5850MHz band reject filter.
2. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
   Corrected Amplitude = Corrected Factor + Reading
   Margin = Limit - Corrected. Amplitude

Low Channel: 5745MHz



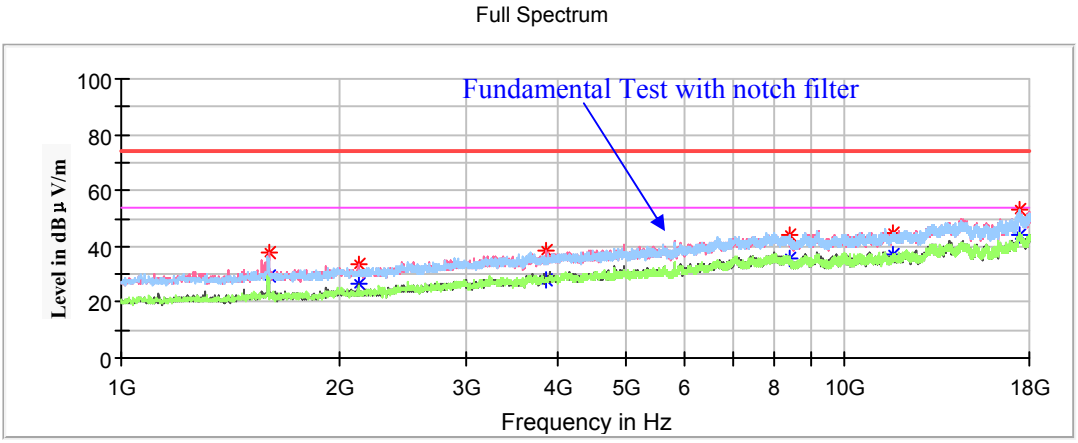
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1596.700000	37.01	---	150.0	V	25.0	-16.0	74.00	36.99
1596.700000	---	28.79	150.0	V	25.0	-16.0	54.00	25.21
2125.400000	35.84	---	100.0	V	59.0	-14.0	68.20	32.36
3262.700000	37.32	---	200.0	V	358.0	-9.4	74.00	36.68
3262.700000	---	27.93	200.0	V	358.0	-9.4	54.00	26.07
4632.900000	39.01	---	100.0	V	46.0	-5.9	74.00	34.99
4632.900000	---	29.32	100.0	V	46.0	-5.9	54.00	24.68
11490.000000	44.54	---	100.0	V	0.0	2.8	74.00	29.46
11490.000000	---	37.16	100.0	V	0.0	2.8	54.00	16.84
17481.500000	53.30	---	150.0	V	321.0	8.8	68.20	14.90

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)				
1593.300000	35.85	---	150.0	H	186.0	-16.0	74.00	38.15
1593.300000	---	29.44	150.0	H	186.0	-16.0	54.00	24.56
2647.300000	35.49	---	200.0	V	354.0	-11.7	68.20	32.71
3854.300000	37.88	---	200.0	V	0.0	-7.5	74.00	36.12
3854.300000	---	27.43	200.0	V	0.0	-7.5	54.00	26.57
7380.100000	44.58	---	200.0	H	15.0	0.8	74.00	29.42
7380.100000	---	34.13	200.0	H	15.0	0.8	54.00	19.87
11570.000000	---	35.76	100.0	V	196.0	2.9	54.00	18.24
11570.000000	44.48	---	100.0	V	196.0	2.9	74.00	29.52
17469.600000	52.91	---	200.0	H	233.0	8.8	68.20	15.29

High Channel: 5825MHz



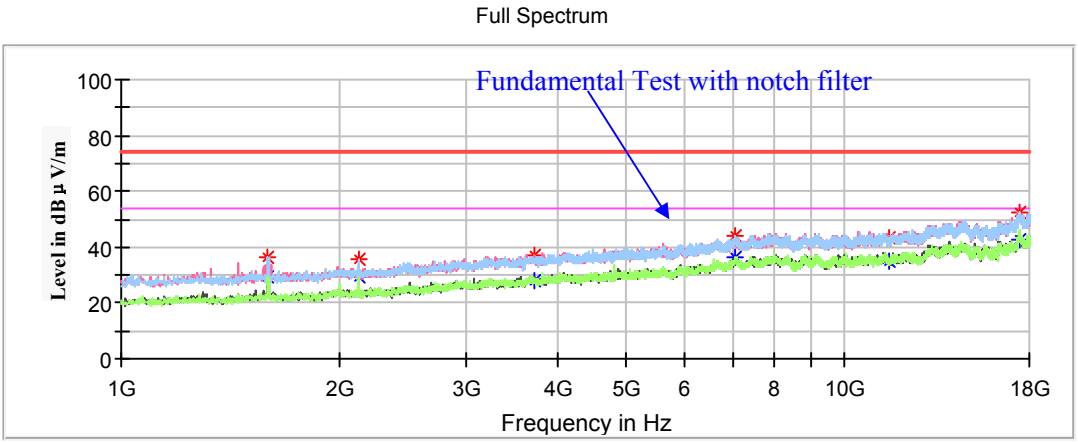
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1598.400000	37.55	---	150.0	V	20.0	-16.0	74.00	36.45
1598.400000	---	29.09	150.0	V	20.0	-16.0	54.00	24.91
2125.400000	33.65	---	200.0	V	201.0	-14.0	68.20	34.55
3871.300000	38.36	---	200.0	V	201.0	-7.5	74.00	35.64
3871.300000	---	28.14	200.0	V	201.0	-7.5	54.00	25.86
8381.400000	44.26	---	200.0	H	0.0	1.4	74.00	29.74
8381.400000	---	35.76	200.0	H	0.0	1.4	54.00	18.24
11650.000000	44.49	---	150.0	V	216.0	3.1	74.00	29.51
11650.000000	---	36.81	150.0	V	216.0	3.1	54.00	17.19
17475.000000	52.88	---	150.0	V	122.0	8.8	68.20	15.32

802.11a Mode(Chain1):

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

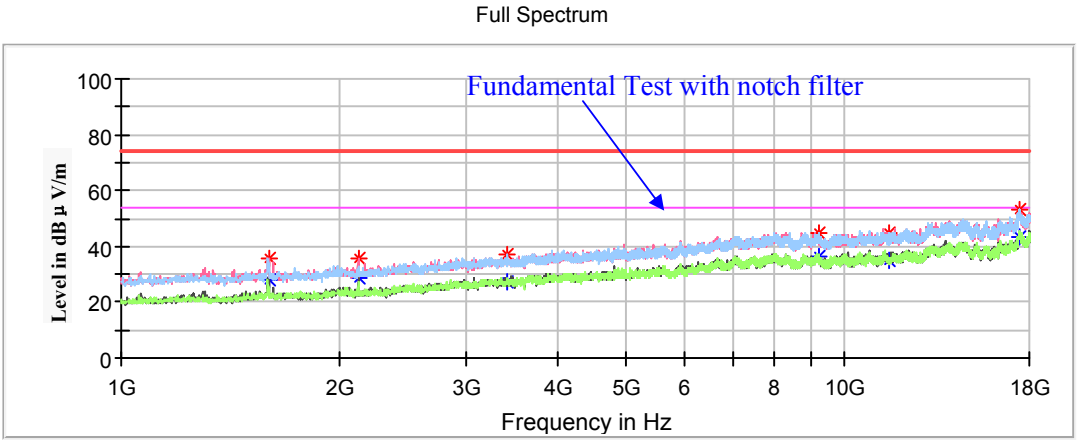
Note:
1. This test was performed with the 5725-5850MHz band reject filter.
2. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
   Corrected Amplitude = Corrected Factor + Reading
   Margin = Limit - Corrected. Amplitude

Low Channel: 5745MHz



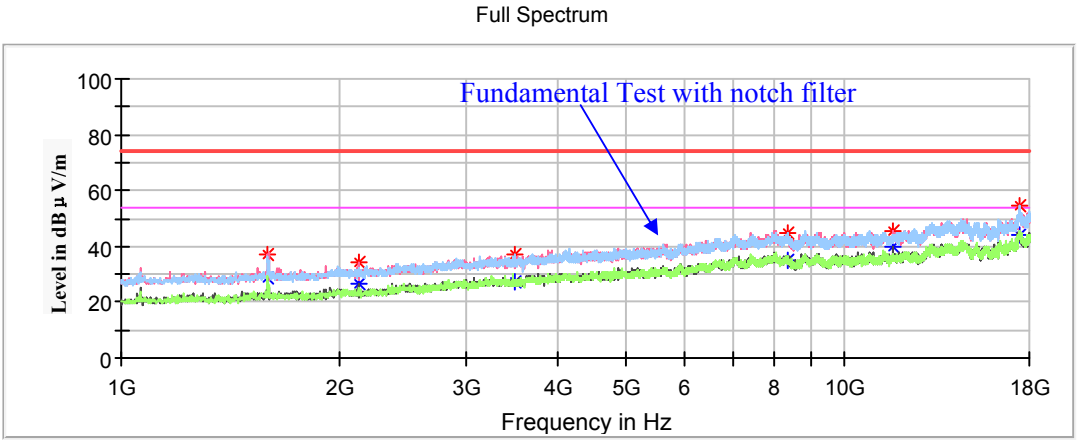
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1593.300000	---	29.06	200.0	H	257.0	-16.0	54.00	24.94
1593.300000	36.11	---	200.0	H	257.0	-16.0	74.00	37.89
2125.400000	35.83	---	150.0	H	200.0	-14.0	68.20	32.37
3721.700000	---	28.02	150.0	V	352.0	-8.0	54.00	25.98
3721.700000	37.18	---	150.0	V	352.0	-8.0	74.00	36.82
7053.700000	44.12	---	150.0	H	15.0	0.1	68.20	24.08
11490.000000	43.51	---	200.0	H	14.0	2.8	74.00	30.49
11490.000000	---	34.90	200.0	H	14.0	2.8	54.00	19.10
17495.100000	52.47	---	200.0	H	257.0	8.9	68.20	15.73

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)				
1598.400000	35.78	---	150.0	V	25.0	-16.0	74.00	38.22
1598.400000	---	28.09	150.0	V	25.0	-16.0	54.00	25.91
2125.400000	35.34	---	200.0	V	23.0	-14.0	68.20	32.86
3415.700000	37.32	---	200.0	H	244.0	-9.0	68.20	30.88
9194.000000	---	36.25	200.0	V	61.0	2.0	54.00	17.75
9194.000000	44.99	---	200.0	V	61.0	2.0	74.00	29.01
11570.000000	---	35.14	150.0	H	310.0	2.9	54.00	18.86
11570.000000	44.88	---	150.0	H	310.0	2.9	74.00	29.12
17462.800000	53.00	---	200.0	V	163.0	8.8	68.20	15.20

High Channel: 5825MHz



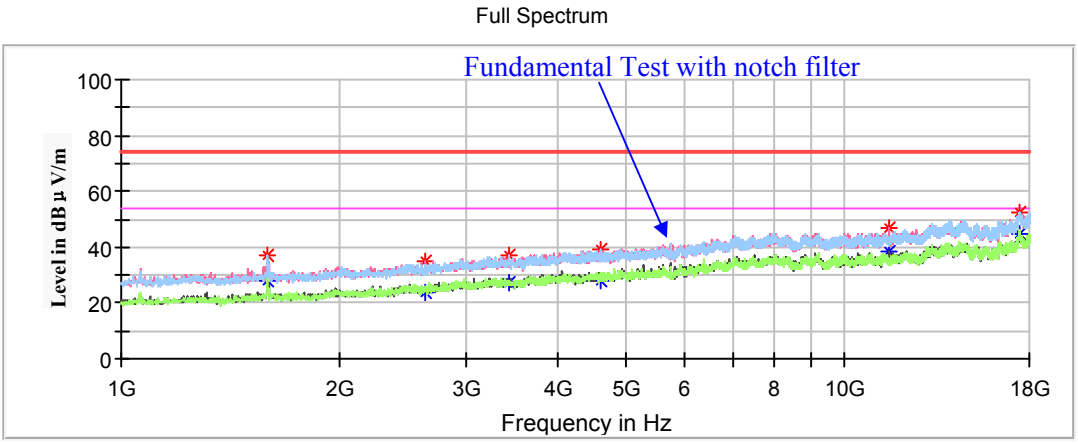
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1593.300000	36.96	---	150.0	V	25.0	-16.0	74.00	37.04
1593.300000	---	28.85	150.0	V	25.0	-16.0	54.00	25.15
2125.400000	34.43	---	200.0	V	324.0	-14.0	68.20	33.77
3507.500000	36.78	---	200.0	H	350.0	-8.8	68.20	31.42
8342.300000	---	34.86	200.0	H	0.0	1.5	54.00	19.14
8342.300000	44.67	---	200.0	H	0.0	1.5	74.00	29.33
11650.000000	---	39.63	200.0	V	141.0	3.1	54.00	14.37
11650.000000	45.67	---	200.0	V	141.0	3.1	74.00	28.33
17475.000000	54.56	---	200.0	V	297.0	8.8	68.20	13.64

802.11ac20 Mode(Chain0+Chain1):

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

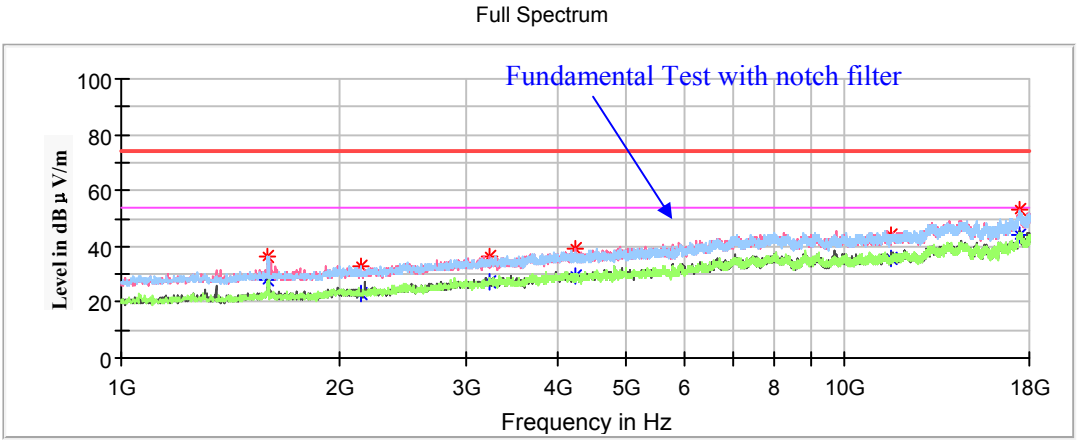
Note:
1. This test was performed with the 5725-5850MHz band reject filter.
2. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
   Corrected Amplitude = Corrected Factor + Reading
   Margin = Limit - Corrected. Amplitude

Low Channel: 5745MHz



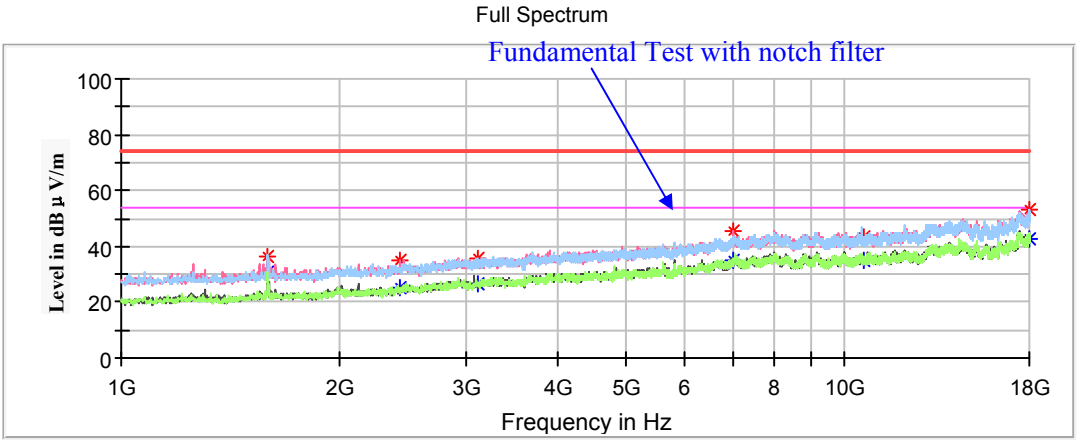
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1595.000000	37.14	---	150.0	H	199.0	-16.0	74.00	36.86
1595.000000	---	28.20	150.0	H	199.0	-16.0	54.00	25.80
2637.100000	34.80	---	200.0	V	0.0	-11.8	68.20	33.40
3439.500000	36.72	---	150.0	H	17.0	-9.0	68.20	31.48
4607.400000	---	28.11	150.0	V	349.0	-6.0	54.00	25.89
4607.400000	39.16	---	150.0	V	349.0	-6.0	74.00	34.84
11490.000000	---	38.36	150.0	V	356.0	2.8	54.00	15.64
11490.000000	46.61	---	150.0	V	356.0	2.8	74.00	27.39
17408.400000	52.38	---	150.0	H	283.0	8.6	68.20	15.82

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)				
1593.300000	36.46	---	150.0	V	274.0	-16.0	74.00	37.54
1593.300000	---	27.76	150.0	V	274.0	-16.0	54.00	26.24
2147.500000	33.15	---	200.0	H	296.0	-13.9	68.20	35.05
3230.400000	36.63	---	200.0	V	149.0	-9.5	68.20	31.57
4247.000000	38.95	---	200.0	V	124.0	-6.6	74.00	35.05
4247.000000	---	29.38	200.0	V	124.0	-6.6	54.00	24.62
11570.000000	---	35.51	150.0	V	0.0	2.9	54.00	18.49
11570.000000	43.72	---	150.0	V	0.0	2.9	74.00	30.28
17355.000000	52.89	---	150.0	V	356.0	8.7	68.20	15.31

High Channel: 5825MHz

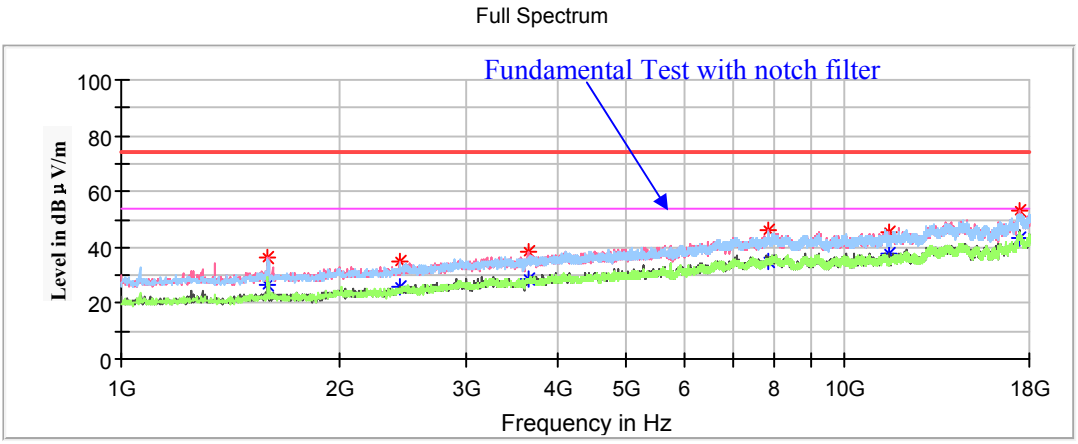


Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1593.300000	36.44	---	150.0	H	213.0	-16.0	74.00	37.56
1593.300000	---	30.80	150.0	H	213.0	-16.0	54.00	23.20
2422.900000	34.99	---	200.0	V	116.0	-12.7	68.20	33.21
3106.300000	35.67	---	150.0	H	99.0	-9.8	68.20	32.53
7028.200000	45.55	---	200.0	V	27.0	0.0	68.20	22.65
10654.300000	---	34.99	150.0	V	262.0	2.5	54.00	19.01
10654.300000	43.53	---	150.0	V	262.0	2.5	74.00	30.47
17952.400000	---	42.70	200.0	V	345.0	8.8	54.00	11.30
17952.400000	52.81	---	200.0	V	345.0	8.8	74.00	21.19

802.11n-HT20 Mode*(Chain0+Chain1):*
*(Pre-scan with X,Y and Z axes of orientation, the worst case **Z-axis of orientation** was recorded)*

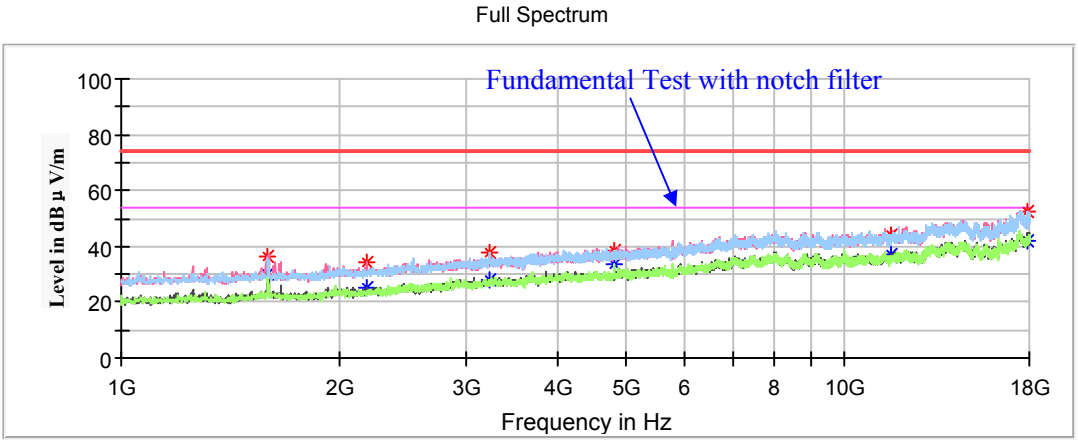
Note:
1. This test was performed with the 5725-5850MHz band reject filter.
2. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
   Corrected Amplitude = Corrected Factor + Reading
   Margin = Limit - Corrected. Amplitude

Low Channel: 5745MHz



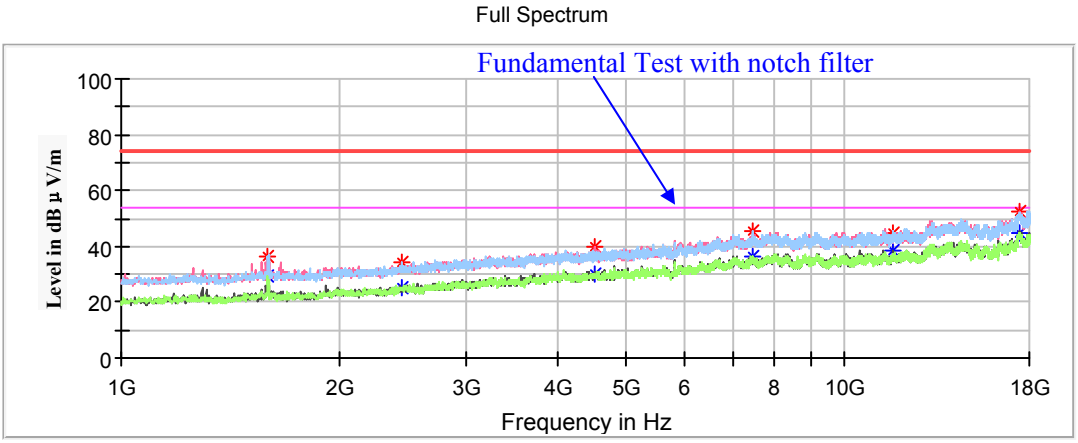
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1595.000000	36.46	---	150.0	V	24.0	-16.0	74.00	37.54
1595.000000	---	26.34	150.0	V	24.0	-16.0	54.00	27.66
2421.200000	34.70	---	150.0	V	115.0	-12.7	68.20	33.50
3645.200000	38.12	---	150.0	V	15.0	-8.3	74.00	35.88
3645.200000	---	28.46	150.0	V	15.0	-8.3	54.00	25.54
7851.000000	45.98	---	200.0	V	22.0	1.6	68.20	22.22
11490.000000	---	37.58	150.0	V	358.0	2.8	54.00	16.42
11490.000000	45.51	---	150.0	V	358.0	2.8	74.00	28.49
17483.200000	52.82	---	150.0	H	297.0	8.8	68.20	15.38

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)				
1593.300000	36.64	---	150.0	V	24.0	-16.0	74.00	37.36
1593.300000	---	30.23	150.0	V	24.0	-16.0	54.00	23.77
2179.800000	34.29	---	200.0	V	60.0	-13.7	68.20	33.91
3233.800000	37.42	---	150.0	H	257.0	-9.5	68.20	30.78
4806.300000	38.38	---	150.0	H	311.0	-5.6	74.00	35.62
4806.300000	---	33.31	150.0	H	311.0	-5.6	54.00	20.69
11570.000000	44.18	---	150.0	V	359.0	2.9	74.00	29.82
11570.000000	---	36.94	150.0	V	359.0	2.9	54.00	17.06
17908.200000	---	42.04	150.0	H	22.0	8.8	54.00	11.96
17908.200000	52.61	---	150.0	H	22.0	8.8	74.00	21.39

High Channel: 5825MHz



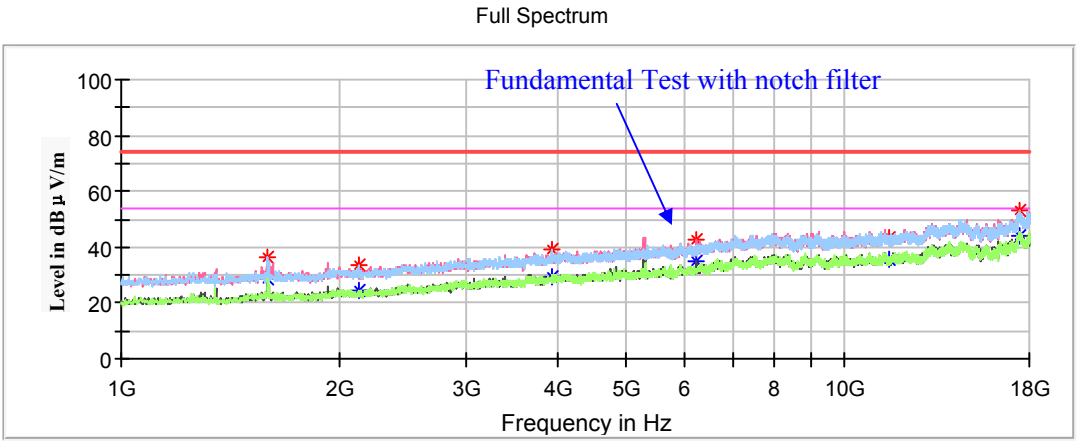
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1591.600000	36.44	---	150.0	H	213.0	-16.0	74.00	37.56
1591.600000	---	29.63	150.0	H	213.0	-16.0	54.00	24.37
2445.000000	33.93	---	150.0	H	22.0	-12.6	68.20	34.27
4520.700000	39.87	---	200.0	V	141.0	-6.2	74.00	34.13
4520.700000	---	30.26	200.0	V	141.0	-6.2	54.00	23.74
7448.100000	---	36.27	200.0	H	156.0	0.9	54.00	17.73
7448.100000	45.14	---	200.0	H	156.0	0.9	74.00	28.86
11650.000000	---	38.55	150.0	V	356.0	3.1	54.00	15.45
11650.000000	44.55	---	150.0	V	356.0	3.1	74.00	29.45
17475.000000	52.42	---	200.0	V	77.0	8.8	68.20	15.78

802.11ac40 Mode(Chain0+Chain1):

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

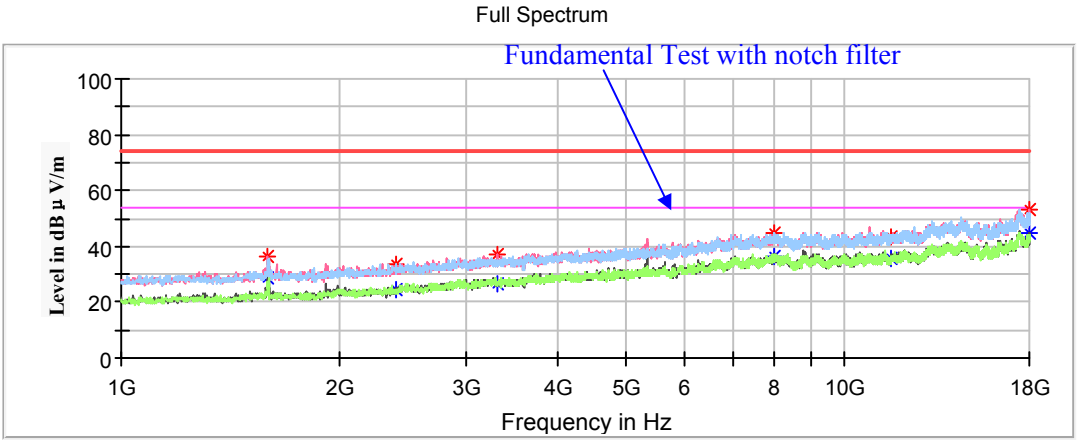
Note:
1. This test was performed with the 5725-5850MHz band reject filter.
2. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
   Corrected Amplitude = Corrected Factor + Reading
   Margin = Limit - Corrected. Amplitude

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)				
1593.300000	36.44	---	200.0	H	257.0	-16.0	74.00	37.56
1593.300000	---	28.54	200.0	H	257.0	-16.0	54.00	25.46
2125.400000	33.29	---	150.0	H	231.0	-14.0	68.20	34.91
3927.400000	---	29.05	150.0	H	90.0	-7.3	54.00	24.95
3927.400000	39.26	---	150.0	H	90.0	-7.3	74.00	34.74
6249.600000	42.64	---	200.0	V	136.0	-2.1	68.20	25.56
11510.000000	---	35.80	150.0	H	297.0	2.8	54.00	18.20
11510.000000	43.59	---	150.0	H	297.0	2.8	74.00	30.41
17473.000000	53.01	---	200.0	V	0.0	8.8	68.20	15.19

High Channel: 5795MHz

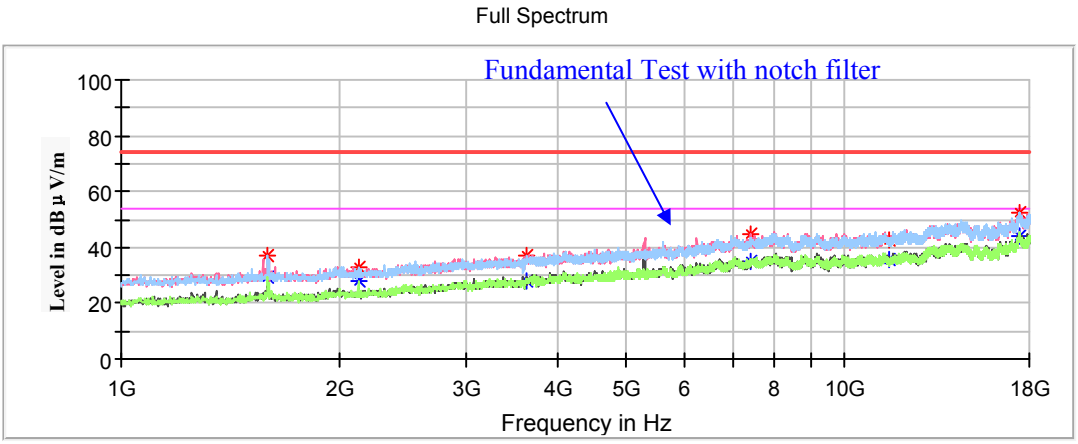


Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1595.000000	---	28.41	150.0	V	25.0	-16.0	54.00	25.59
1595.000000	36.17	---	150.0	V	25.0	-16.0	74.00	37.83
2402.500000	33.37	---	150.0	H	257.0	-12.8	68.20	34.83
3317.100000	36.98	---	200.0	V	46.0	-9.3	68.20	31.22
7966.600000	44.91	---	200.0	V	191.0	1.8	68.20	23.29
11590.000000	43.53	---	150.0	V	359.0	3.0	74.00	30.47
11590.000000	---	35.53	150.0	V	359.0	3.0	54.00	18.47
17949.000000	---	44.60	200.0	V	335.0	8.8	54.00	9.40
17949.000000	53.41	---	200.0	V	335.0	8.8	74.00	20.59

802.11n-HT40 Mode*(Chain0+Chain1)*:
*(Pre-scan with X,Y and Z axes of orientation, the worst case **Z-axis of orientation** was recorded)*

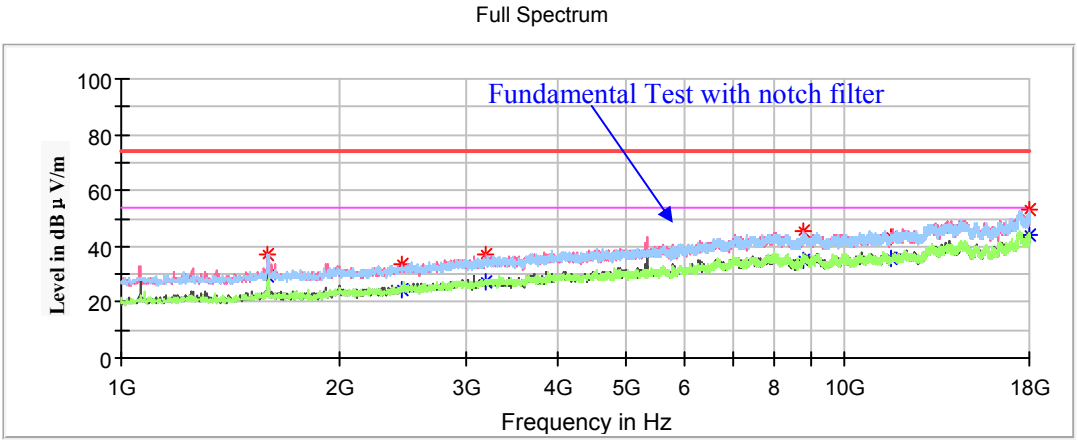
Note:
1. This test was performed with the 5725-5850MHz band reject filter.
2. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
   Corrected Amplitude = Corrected Factor + Reading
   Margin = Limit - Corrected. Amplitude

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)				
1593.300000	37.10	---	150.0	H	205.0	-16.0	74.00	36.90
1593.300000	---	29.66	150.0	H	205.0	-16.0	54.00	24.34
2125.400000	33.00	---	200.0	H	237.0	-14.0	68.20	35.20
3643.500000	37.38	---	200.0	H	0.0	-8.3	74.00	36.62
3643.500000	---	28.24	200.0	H	0.0	-8.3	54.00	25.76
7432.800000	44.94	---	150.0	V	173.0	0.9	74.00	29.06
7432.800000	---	35.22	150.0	V	173.0	0.9	54.00	18.78
11510.000000	42.80	---	150.0	V	313.0	2.8	74.00	31.20
11510.000000	---	35.91	150.0	V	313.0	2.8	54.00	18.09
17440.700000	52.63	---	150.0	V	326.0	8.7	68.20	15.57

High Channel: 5795MHz



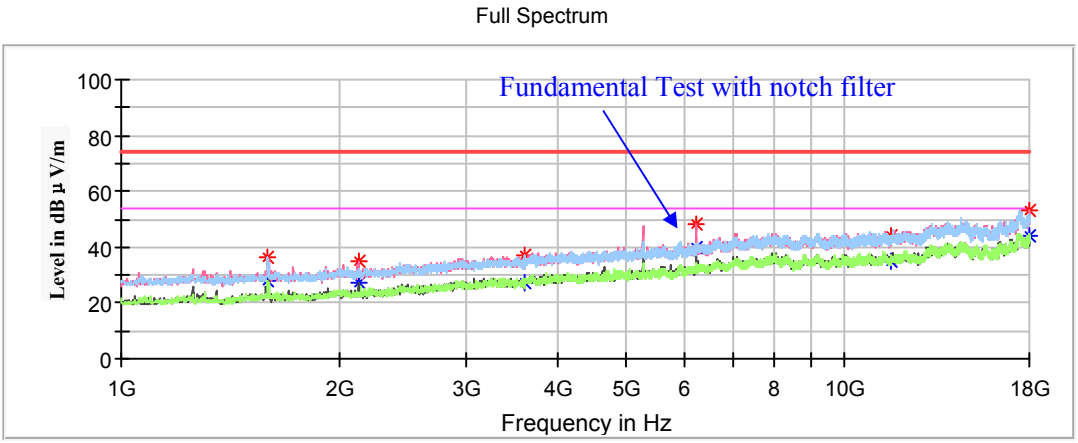
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1591.600000	36.79	---	150.0	V	25.0	-16.0	74.00	37.21
1591.600000	---	29.64	150.0	V	25.0	-16.0	54.00	24.36
2450.100000	33.72	---	150.0	V	116.0	-12.6	68.20	34.48
3194.700000	37.11	---	150.0	V	244.0	-9.6	68.20	31.09
8746.900000	45.44	---	200.0	V	258.0	1.6	68.20	22.76
11590.000000	---	36.00	200.0	V	345.0	3.0	54.00	18.00
11590.000000	43.05	---	200.0	V	345.0	3.0	74.00	30.95
17977.900000	---	44.36	200.0	V	141.0	8.8	54.00	9.64
17977.900000	52.99	---	200.0	V	141.0	8.8	74.00	21.01

802.11ac80 Mode(Chain0+Chain1):

*(Pre-scan in the X,Y and Z axes of orientation, the worst case **Z-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



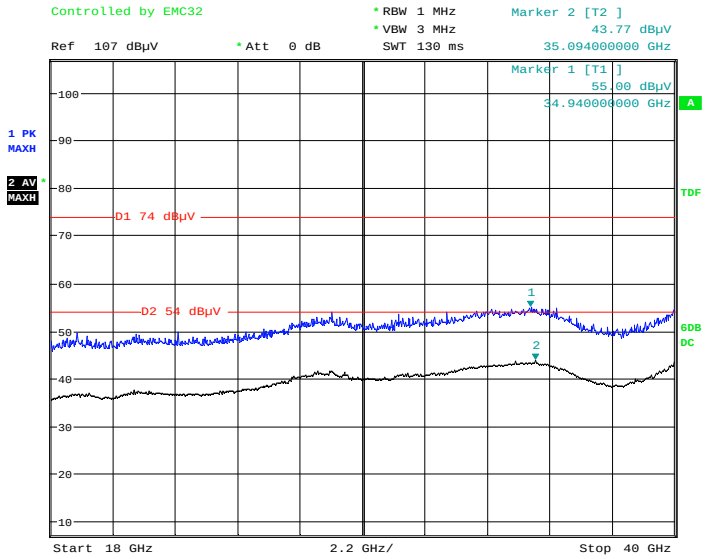
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1591.600000	36.33	---	150.0	H	212.0	-16.0	74.00	37.67
1591.600000	---	28.07	150.0	H	212.0	-16.0	54.00	25.93
2125.400000	34.98	---	200.0	V	320.0	-14.0	68.20	33.22
3612.900000	37.07	---	200.0	H	155.0	-8.4	74.00	36.93
3612.900000	---	27.06	200.0	H	155.0	-8.4	54.00	26.94
6222.400000	48.32	---	200.0	V	112.0	-2.2	68.20	19.88
11550.000000	43.96	---	200.0	V	73.0	2.9	74.00	30.04
11550.000000	---	35.22	200.0	V	73.0	2.9	54.00	18.78
17966.000000	---	44.40	150.0	V	180.0	8.8	54.00	9.60
17966.000000	53.13	---	150.0	V	180.0	8.8	74.00	20.87

18GHz-40GHz – adapter power supply (worst case)

5150-5250MHz Band:

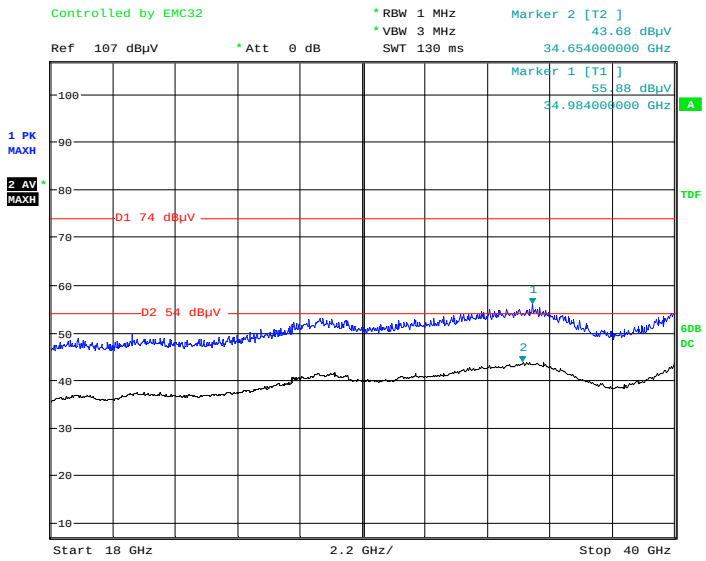
*Pre-scan with 802.11a, 802.11ac20, 802.11n-HT20, 802.11ac40, 802.11n-HT40 and 802.11 ac80 modes of operation in the X,Y and Z axes of orientation, **the worst case 802.11a mode low channel of Chain0** in Z-axis of orientation was recorded.*

Horizontal



Date: 5.DEC.2020 14:00:24

Vertical

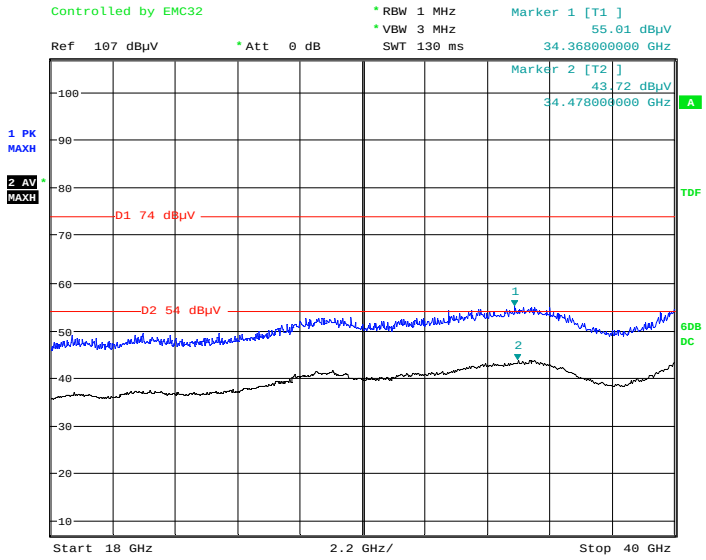


Date: 5.DEC.2020 13:54:15

5725-5850 Band:

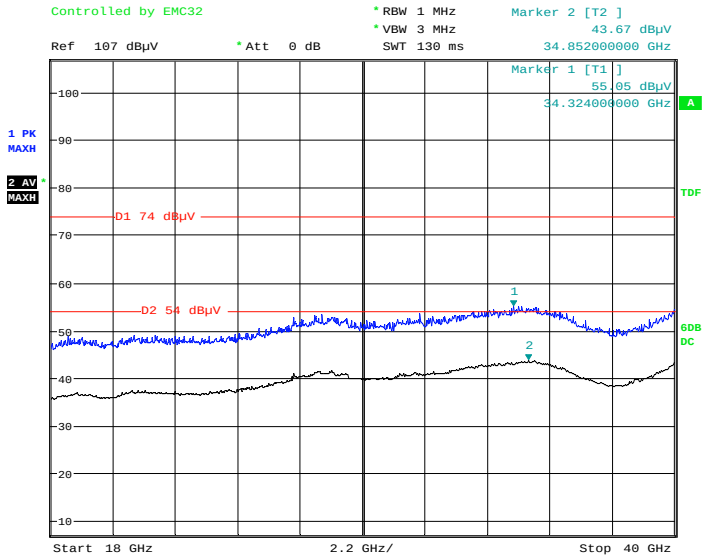
Pre-scan with 802.11a, 802.11ac20, 802.11n-HT20, 802.11ac40, 802.11n-HT40 and 802.11 ac80 modes of operation in the X,Y and Z axes of orientation, ***the worst case 802.11ac20 mode low channel*** *in Z-axis of orientation was recorded.*

Horizontal



Date: 5.DEC.2020 13:55:41

Vertical



Date: 5.DEC.2020 13:58:05

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-Chain0: *(Pre-scan in the X, Y and Z axes of orientation, the worst case in Z-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								
5150.00	53.40	---	200.0	V	295.0	5.2	74.00	20.60
5150.00	---	50.24	200.0	V	295.0	5.2	54.00	3.76
High Channel: 5240MHz								
5350.00	53.29	---	200.0	V	210.0	5.7	74.00	20.71
5350.00	---	50.66	200.0	V	210.0	5.7	54.00	3.34

802.11a Mode-Chain1: *(Pre-scan in the X, Y and Z axes of orientation, the worst case in Z-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								
5150.00	52.61	---	200.0	V	359.0	5.2	74.00	21.39
5150.00	---	50.21	200.0	V	359.0	5.2	54.00	3.79
High Channel: 5240MHz								
5350.00	---	51.22	200.0	V	270.0	5.7	54.00	2.78
5350.00	54.51	---	200.0	V	270.0	5.7	74.00	19.49

802.11ac20 Mode (Chain0+ Chain1): *(Pre-scan in the X, Y and Z axes of orientation, the worst case in Z-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								
5150.00	---	50.35	200.0	V	247.0	5.2	54.00	3.65
5150.00	53.84	---	200.0	V	247.0	5.2	74.00	20.16
High Channel: 5240MHz								
5350.00	54.60	---	150.0	V	193.0	5.7	74.00	19.40
5350.00	---	50.11	150.0	V	193.0	5.7	54.00	3.89

802.11n-HT20 Mode (Chain0+ Chain1): *(Pre-scan in the X, Y and Z axes of orientation, the worst case in Z-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								
5150.00	55.71	---	150.0	V	158.0	5.2	74.00	18.29
5150.00	---	49.65	150.0	V	158.0	5.2	54.00	4.35
High Channel: 5240MHz								
5350.00	54.84	---	150.0	V	292.0	5.7	74.00	19.16
5350.00	---	50.74	150.0	V	292.0	5.7	54.00	3.26

802.11ac40 Mode (Chain0+ Chain1): *(Pre-scan in the X, Y and Z axes of orientation, the worst case in Z-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								
5150.00	53.62	---	150.0	V	292.0	5.2	74.00	20.38
5150.00	---	50.19	150.0	V	292.0	5.2	54.00	3.81
High Channel: 5230MHz								
5350.00	52.68	---	150.0	V	185.0	5.7	74.00	21.32
5350.00	---	50.25	150.0	V	185.0	5.7	54.00	3.75

802.11n-HT40 Mode (Chain0+ Chain1): *(Pre-scan in the X, Y and Z axes of orientation, the worst case in Z-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								
5150.00	53.32	---	200.0	V	70.0	5.2	74.00	20.68
5150.00	---	49.93	200.0	V	70.0	5.2	54.00	4.07
High Channel: 5230MHz								
5350.00	55.27	---	150.0	V	198.0	5.7	74.00	18.73
5350.00	---	50.54	150.0	V	198.0	5.7	54.00	3.46

802.11ac80 Mode (Chain0+ Chain1): *(Pre-scan in the X, Y and Z axes of orientation, the worst case in Z-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: 5210MHz								
5150.00	52.83	---	150.0	V	3.0	5.2	74.00	21.17
5150.00	---	50.89	150.0	V	3.0	5.2	54.00	3.11
5350.00	54.14	---	200.0	V	113.0	5.7	74.00	19.86
5350.00	---	50.39	200.0	V	113.0	5.7	54.00	3.61

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-Chain0: *(Pre-scan in the X, Y and Z axes of orientation, the worst case in Z-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	52.44	---	150.0	V	358.0	6.4	68.20	15.76
5700.00	52.95	---	150.0	H	203.0	6.5	105.20	52.25
5720.00	56.12	---	150.0	V	194.0	6.5	110.80	54.68
5725.00	61.58	---	150.0	V	324.0	6.5	122.20	60.62
High Channel: 5825MHz								
5850.00	55.44	---	200.0	V	54.0	6.7	122.20	66.76
5855.00	54.28	---	200.0	V	338.0	6.7	110.80	56.52
5875.00	53.94	---	200.0	H	161.0	6.8	105.20	51.26
5925.00	53.33	---	200.0	H	287.0	6.9	68.20	14.87

802.11a Mode-Chain1: *(Pre-scan in the X, Y and Z axes of orientation, the worst case in Z-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	53.63	---	150.0	V	290.0	6.4	68.20	14.57
5700.00	54.60	---	200.0	H	0.0	6.5	105.20	50.60
5720.00	53.92	---	200.0	H	253.0	6.5	110.80	56.88
5725.00	53.59	---	150.0	H	44.0	6.5	122.20	68.61
High Channel: 5825MHz								
5850.00	54.07	---	150.0	V	322.0	6.7	122.20	68.13
5855.00	54.25	---	150.0	H	0.0	6.7	110.80	56.55
5875.00	53.76	---	150.0	V	358.0	6.8	105.20	51.44
5925.00	54.76	---	200.0	V	105.0	6.9	68.20	13.44

802.11ac20 Mode(Chain0+ Chain1): *(Pre-scan in the X, Y and Z axes of orientation, the worst case in Z-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	53.62	---	200.0	V	120.0	6.4	68.20	14.58
5700.00	53.72	---	200.0	V	0.0	6.5	105.20	51.48
5720.00	56.63	---	150.0	V	194.0	6.5	110.80	54.17
5725.00	64.94	---	150.0	V	228.0	6.5	122.20	57.26
High Channel: 5825MHz								
5850.00	57.23	---	200.0	V	84.0	6.7	122.20	64.97
5855.00	55.70	---	150.0	V	228.0	6.7	110.80	55.10
5875.00	53.49	---	150.0	H	0.0	6.8	105.20	51.71
5925.00	54.45	---	150.0	H	16.0	6.9	68.20	13.75

802.11n-HT20 Mode(Chain0+ Chain1): *(Pre-scan in the X, Y and Z axes of orientation, the worst case in Z-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	53.57	---	150.0	V	37.0	6.4	68.20	14.63
5700.00	54.48	---	150.0	H	139.0	6.5	105.20	50.72
5720.00	56.65	---	200.0	V	279.0	6.5	110.80	54.15
5725.00	64.86	---	150.0	V	255.0	6.5	122.20	57.34
High Channel: 5825MHz								
5850.00	57.83	---	150.0	V	206.0	6.7	122.20	64.37
5855.00	53.97	---	150.0	H	134.0	6.7	110.80	56.83
5875.00	53.18	---	200.0	H	205.0	6.8	105.20	52.02
5925.00	54.33	---	200.0	H	315.0	6.9	68.20	13.87

802.11ac40 Mode(Chain0+ Chain1): *(Pre-scan in the X, Y and Z axes of orientation, the worst case in Z-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	54.44	---	200.0	V	227.0	6.4	68.20	13.76
5700.00	53.31	---	150.0	H	87.0	6.5	105.20	51.89
5720.00	63.25	---	200.0	V	227.0	6.5	110.80	47.55
5725.00	67.37	---	150.0	V	256.0	6.5	122.20	54.83
High Channel: 5795MHz								
5850.00	54.70	---	200.0	V	321.0	6.7	122.20	67.50
5855.00	55.69	---	200.0	V	266.0	6.7	110.80	55.11
5875.00	55.19	---	200.0	H	351.0	6.8	105.20	50.01
5925.00	54.92	---	200.0	V	105.0	6.9	68.20	13.28

802.11n-HT40 Mode(Chain0+ Chain1): *(Pre-scan in the X, Y and Z axes of orientation, the worst case in Z-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	53.17	---	200.0	H	161.0	6.4	68.20	15.03
5700.00	54.22	---	200.0	H	358.0	6.5	105.20	50.98
5720.00	63.43	---	200.0	V	119.0	6.5	110.80	47.37
5725.00	67.00	---	150.0	V	325.0	6.5	122.20	55.20
High Channel: 5795MHz								
5850.00	54.46	---	200.0	V	53.0	6.7	122.20	67.74
5855.00	55.02	---	150.0	H	56.0	6.7	110.80	55.78
5875.00	53.49	---	150.0	H	56.0	6.8	105.20	51.71
5925.00	54.06	---	200.0	V	216.0	6.9	68.20	14.14

802.11ac80 Mode(Chain0+ Chain1): *(Pre-scan in the X, Y and Z axes of orientation, the worst case in Z-axis of orientation was recorded)*

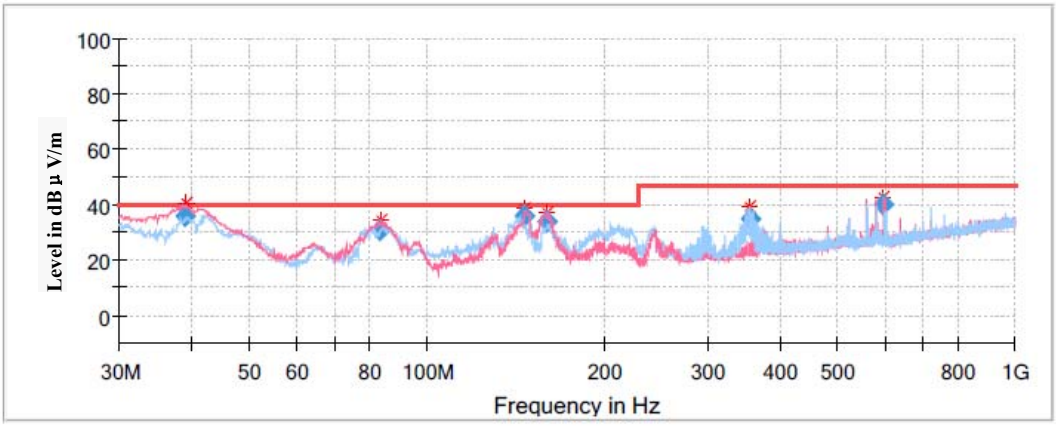
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
Low Channel: 5775MHz								
5650.00	54.99	---	150.0	V	346.0	6.4	68.20	13.21
5700.00	61.76	---	150.0	V	298.0	6.5	105.20	43.44
5720.00	65.65	---	150.0	V	330.0	6.5	110.80	45.15
5725.00	54.99	---	150.0	V	281.0	6.5	122.20	55.21
5850.00	61.06	---	150.0	V	298.0	6.7	122.20	61.14
5855.00	59.45	---	200.0	V	142.0	6.7	110.80	51.35
5875.00	54.51	---	150.0	H	337.0	6.8	105.20	50.69
5925.00	54.58	---	200.0	H	352.0	6.9	68.20	13.62

Transmitting simultaneously test:

*(The worst case **2.4G Wi-Fi 802.11n-HT40 mode high channel & BLE (1Mbps) mode high channel & Zigbee low channel & 5G Wi-Fi 802.11ac20 mode low channel of 5725~5850 Band & LTE Band 2 16QAM 3MHz high channel** transmitting simultaneously in Z-axis of orientation was recorded)*

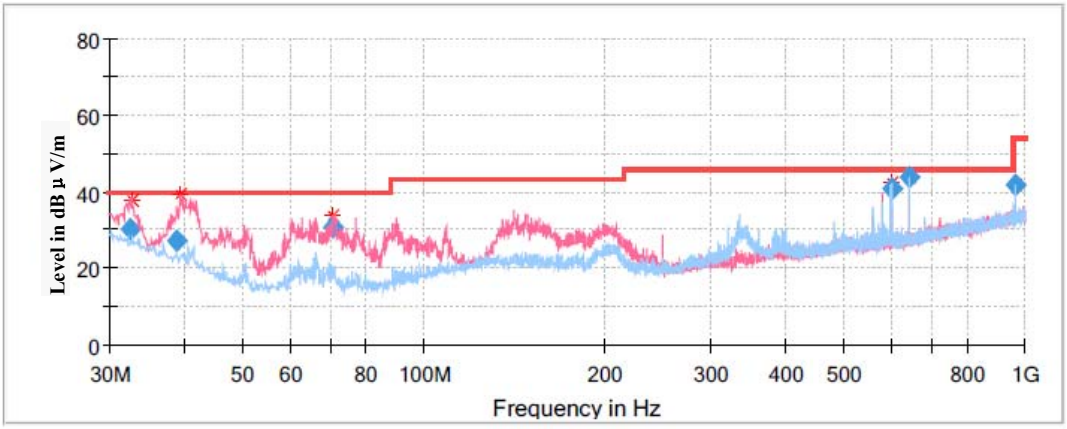
30MHz-1GHz

For adapter power supply



Frequency (MHz)	Corrected Amplitude	Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	QuasiPeak (dBµV/m)	Height (cm)	Polar (H/V)				
38.851250	37.63	100.0	V	352.0	-9.8	40.00	2.37
83.835000	30.32	200.0	V	125.0	-17.0	40.00	9.68
146.885000	36.37	100.0	V	187.0	-11.4	40.00	3.63
159.858750	33.97	100.0	V	163.0	-12.0	40.00	6.03
353.980000	35.20	100.0	H	184.0	-9.1	47.00	11.80
597.571250	39.84	100.0	V	302.0	-5.0	47.00	7.16

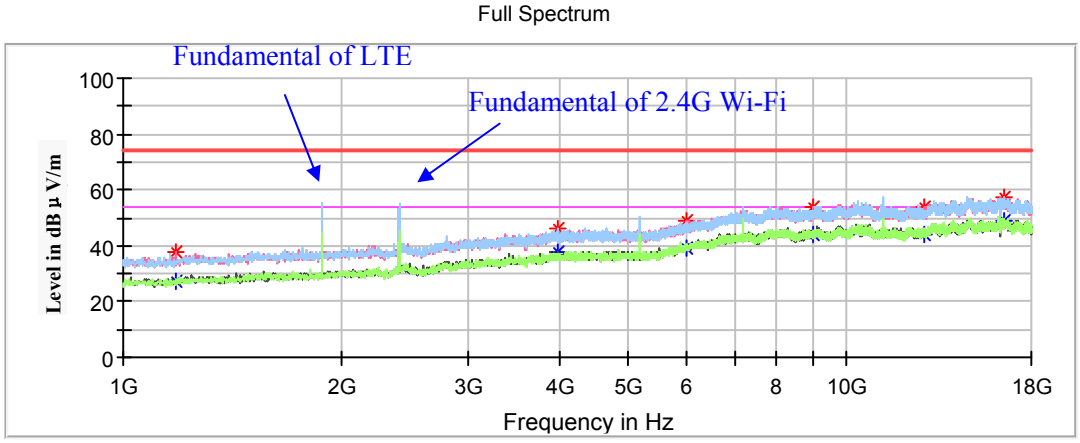
For PoE power supply



Frequency (MHz)	Corrected Amplitude	Rx Antenna		Turntable Degree	Corrected Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	QuasiPeak (dBµV/m)	Height (cm)	Polar (H/V)				
32.636900	30.23	100.0	V	1.0	-5.6	40.00	9.77
38.725150	27.35	100.0	V	31.0	-9.7	40.00	12.65
70.827600	30.58	100.0	V	31.0	-16.2	40.00	9.42
599.982750	40.59	200.0	H	346.0	-5.0	46.00	5.41
639.998550	43.98	200.0	H	303.0	-4.0	46.00	2.02
966.671000	41.63	100.0	H	148.0	2.2	53.90	12.27

1GHz-18GHz - adapter power supply (worst case)

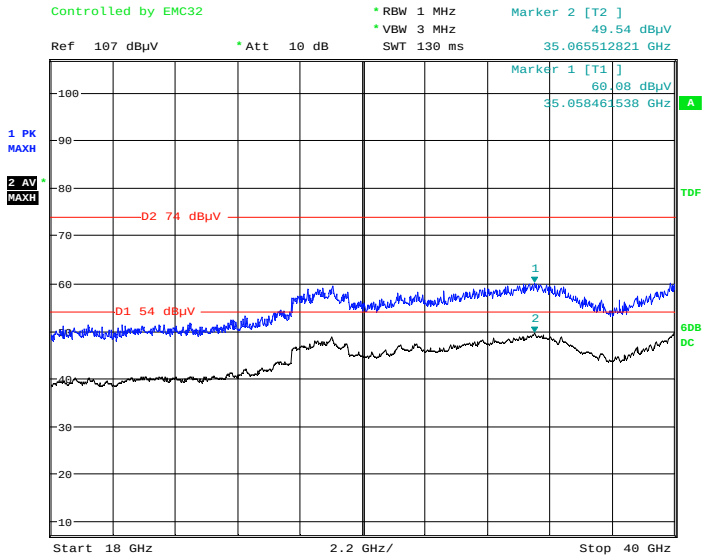
Note:
1. This test was performed with the 2.4-2.5GHz notch filter.
2. Corrected Factor (dB/m) = Antenna factor (RX) (dB/m) + Cable Loss (dB) – Amplifier Factor (dB)
   Corrected Amplitude (dBμV/m) = Corrected Factor (dB/m) + Reading (dBμV)
   Margin (dB) = Limit (dBμV/m) – Corrected Amplitude (dBμV/m)



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)				
1183.600000	---	27.54	150.0	V	8.0	-11.4	54.00	26.46
1183.600000	37.55	---	150.0	V	8.0	-11.4	74.00	36.45
3990.300000	---	38.08	200.0	V	16.0	0.4	54.00	15.92
3990.300000	46.32	---	200.0	V	16.0	0.4	74.00	27.68
6006.500000	---	39.38	150.0	H	132.0	5.1	54.00	14.62
6006.500000	48.69	---	150.0	H	132.0	5.1	74.00	25.31
8964.500000	---	43.74	200.0	V	44.0	10.7	54.00	10.26
8964.500000	53.55	---	200.0	V	44.0	10.7	74.00	20.45
12830.300000	---	44.16	150.0	H	263.0	12.6	54.00	9.84
12830.300000	54.13	---	150.0	H	263.0	12.6	74.00	19.87
16512.500000	---	48.82	200.0	H	358.0	13.9	54.00	5.18
16512.500000	57.15	---	200.0	H	358.0	13.9	74.00	16.85

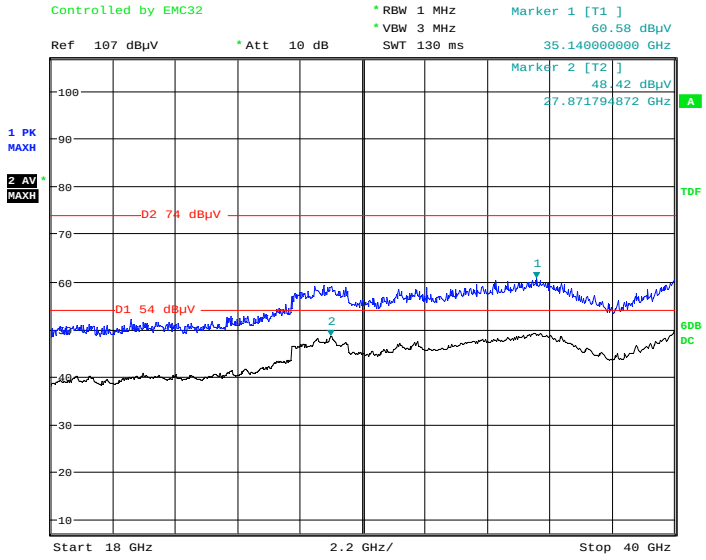
18GHz-40GHz - adapter power supply (worst case)

Horizontal



Date: 20.JAN.2021 19:34:44

Vertical



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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.

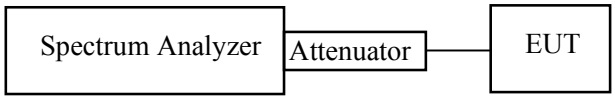
Within the 5.725-5.85 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

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) ≥ 3 × 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

Temperature:	21.8~22.3 ℃
Relative Humidity:	49~50 %
ATM Pressure:	101.2~101.5 kPa

The testing was performed by CK Huang from 2020-12-11 to 2021-01-25.

Test Result: Compliant

5150-5250 MHz:

Test mode	Channel	Frequency (MHz)	26dB Bandwidth (MHz)		99% Bandwidth (MHz)	
			Chain0	Chain1	Chain0	Chain1
802.11a	Low	5180	21.483	19.319	16.673	16.593
	Middle	5200	20.281	19.319	16.673	16.673
	High	5240	19.399	19.238	16.593	16.593
802.11ac20	Low	5180	20.842	20.200	17.715	17.635
	Middle	5200	20.521	21.723	17.635	18.758
	High	5240	20.120	20.120	17.635	17.635
802.11n-HT20	Low	5180	20.681	20.200	17.715	17.635
	Middle	5200	20.681	20.281	17.715	17.635
	High	5240	20.120	20.040	17.715	17.635
802.11ac40	Low	5190	40.401	40.281	36.192	36.192
	High	5230	40.160	40.160	36.192	36.192
802.11n-HT40	Low	5190	40.401	39.920	36.192	36.192
	High	5230	40.160	40.281	36.192	36.192
802.11ac80	Low	5210	80.802	80.802	75.030	75.030

5750-5850 MHz:

Test mode	Channel	Frequency (MHz)	6dB Bandwidth (MHz)		99% Bandwidth (MHz)		Limit (MHz)
			Chain0	Chain1	Chain0	Chain1	
802.11a	Low	5745	16.473	16.473	17.615	16.774	≥0.5
	Middle	5785	16.533	16.593	16.894	16.774	≥0.5
	High	5825	16.533	16.653	18.457	16.774	≥0.5
802.11ac20	Low	5745	17.675	17.675	17.675	17.675	≥0.5
	Middle	5785	17.735	17.675	17.856	17.735	≥0.5
	High	5825	17.675	17.735	18.397	17.675	≥0.5
802.11n-HT20	Low	5745	17.675	17.675	18.697	17.735	≥0.5
	Middle	5785	17.735	17.675	17.735	17.735	≥0.5
	High	5825	17.675	17.675	18.277	17.796	≥0.5
802.11ac40	Low	5755	36.433	36.192	37.515	36.313	≥0.5
	High	5795	36.192	36.433	36.553	36.313	≥0.5
802.11n-HT40	Low	5755	36.192	36.433	36.313	36.313	≥0.5
	High	5795	36.192	36.433	37.876	36.553	≥0.5
802.11ac80	Low	5775	74.309	74.309	75.271	75.271	≥0.5

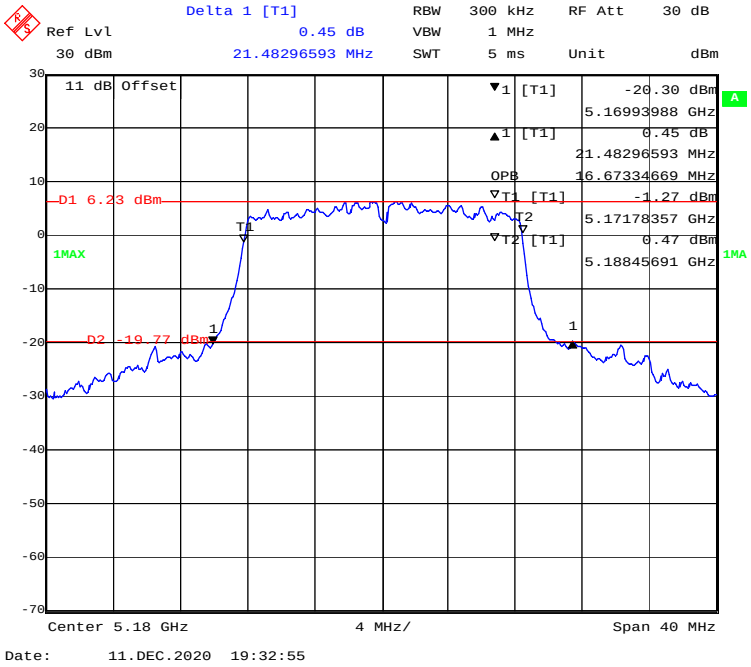
Note: No transmitted signal in the 99% bandwidth extends into the U-NII-2A and U-NII-2C band.

5150-5250 MHz Band:

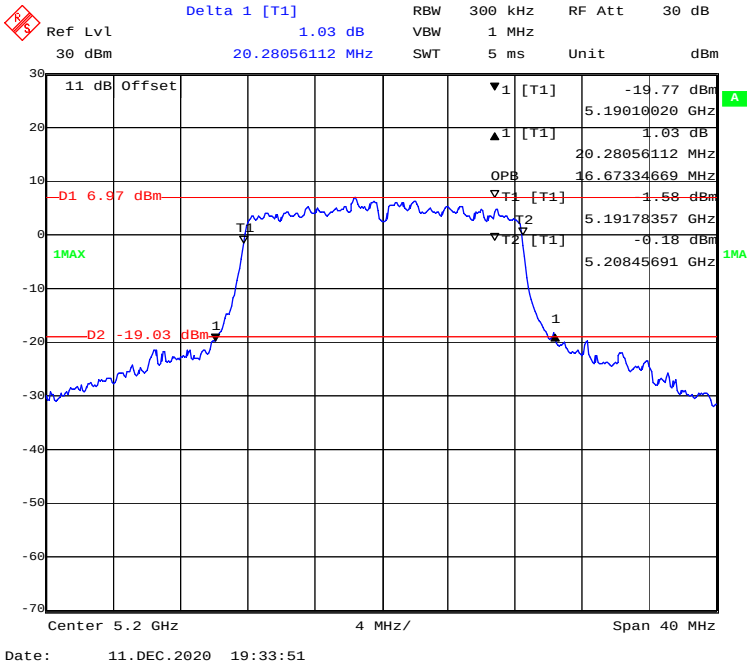
Chain0:

26 Bandwidth&99% Occupied Bandwidth

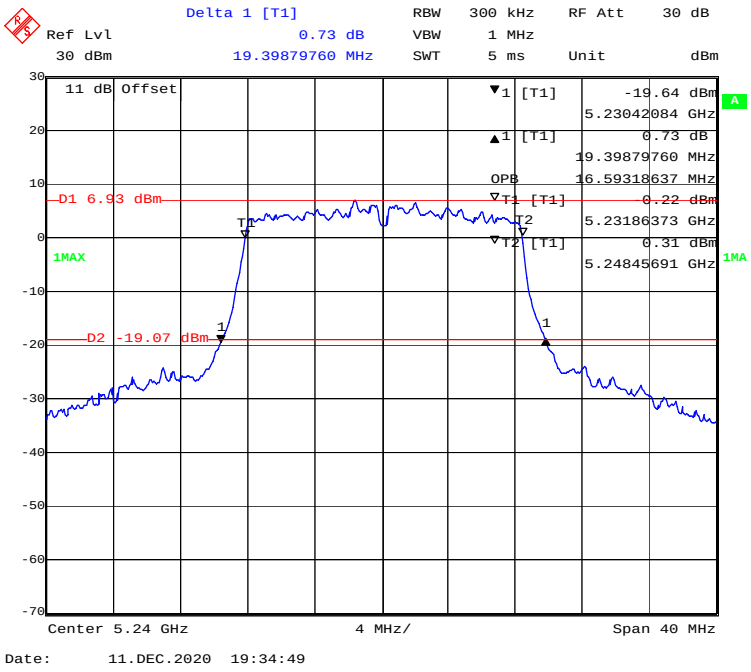
802.11a mode, 5180MHz



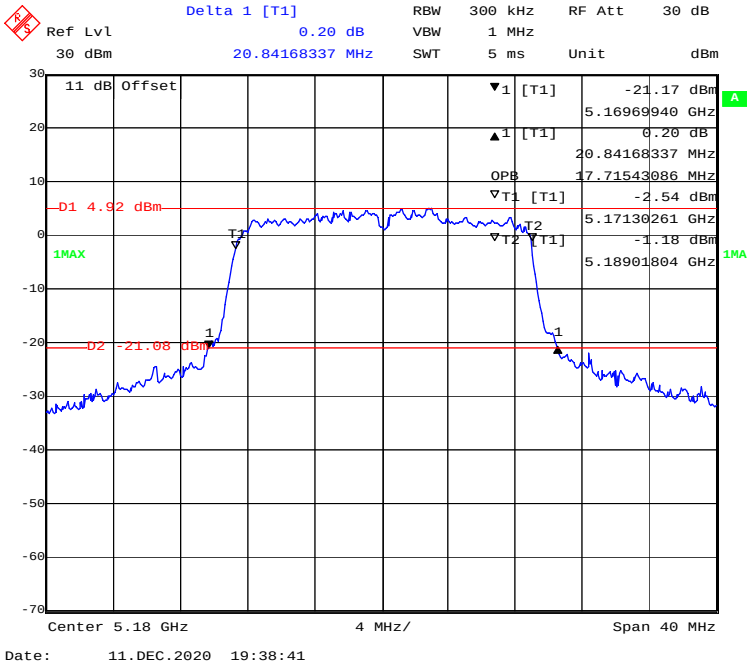
802.11a mode, 5200MHz



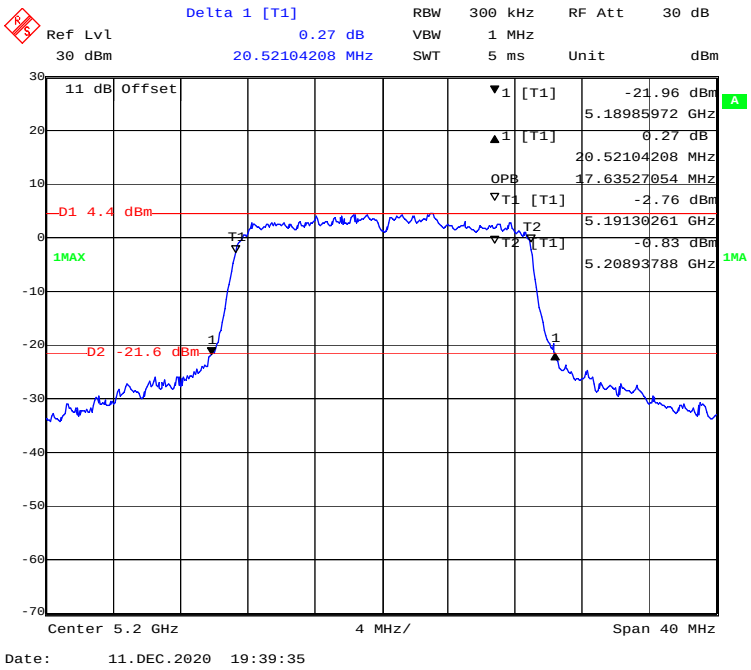
802.11a mode, 5240MHz



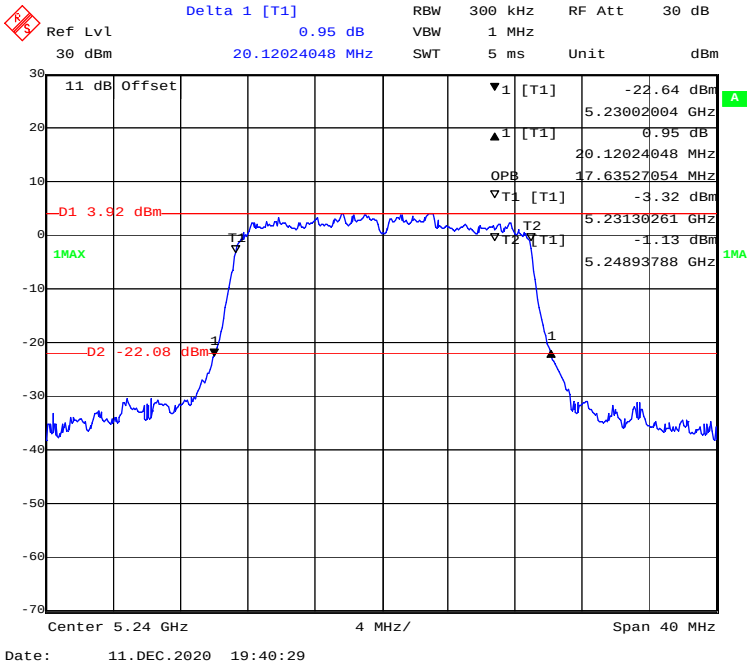
802.11ac20 mode, 5180MHz



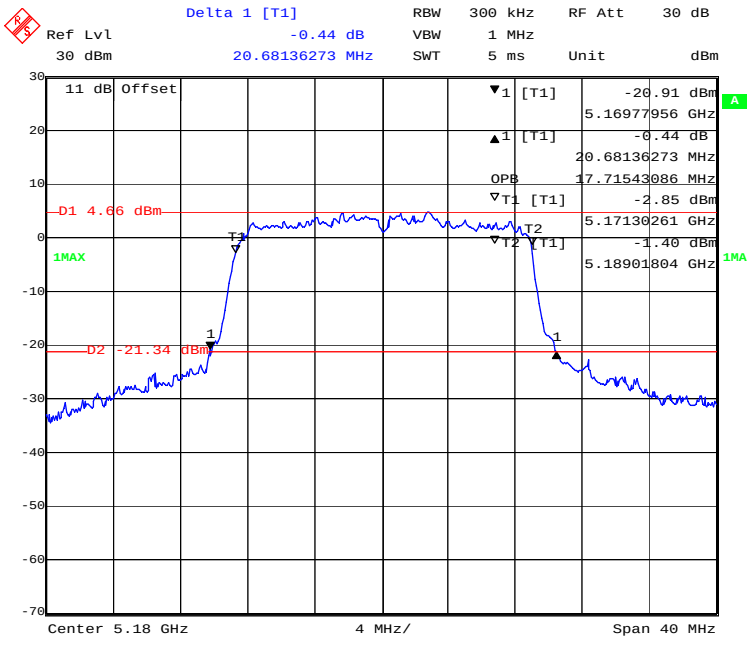
802.11ac20 mode, 5200MHz



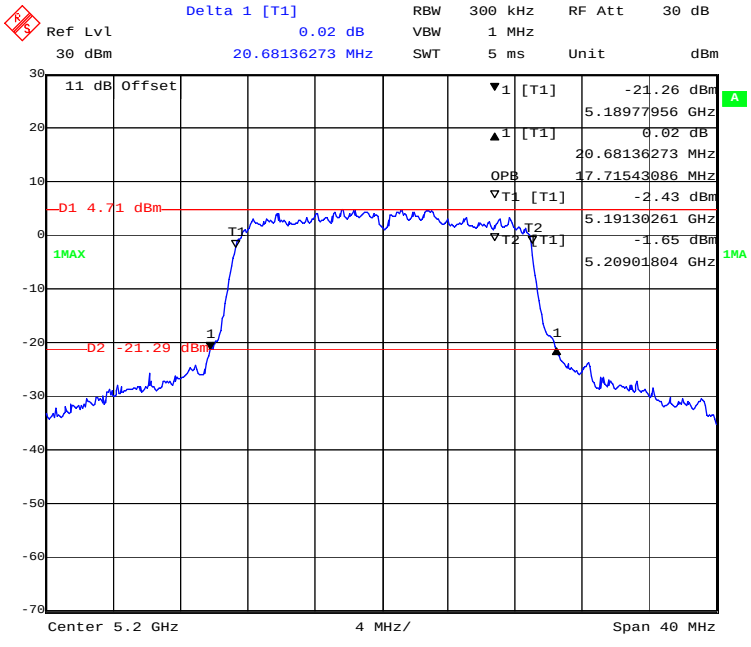
802.11ac20 mode, 5240MHz



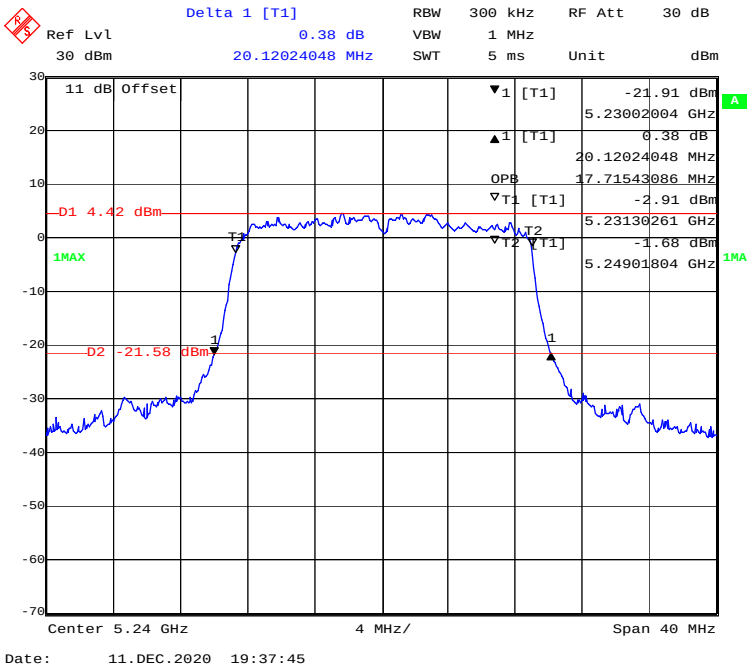
802.11n-HT20 mode, 5180MHz



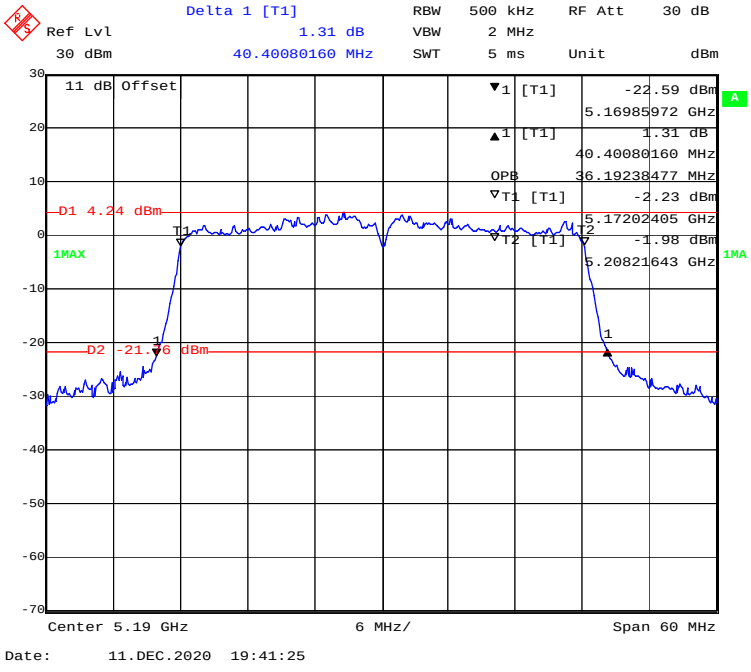
802.11n-HT20 mode, 5200MHz



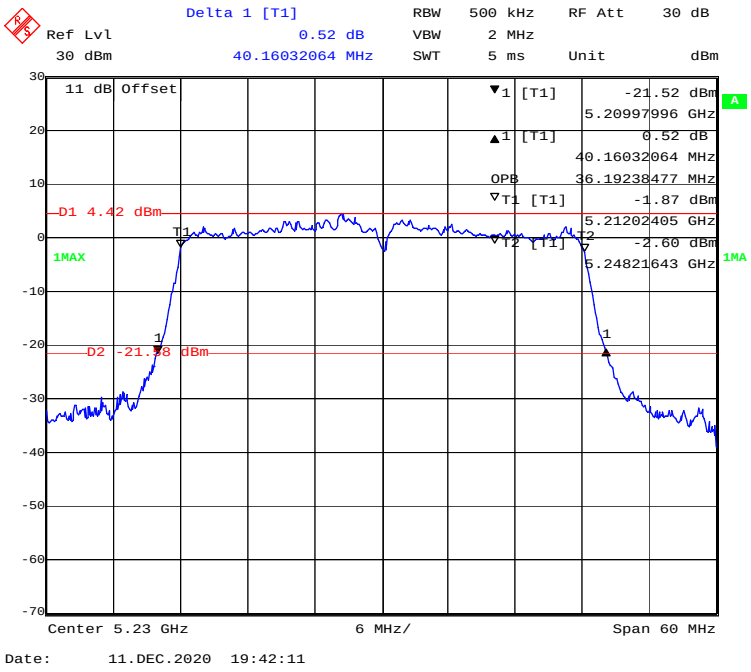
802.11n-HT20 mode, 5240MHz



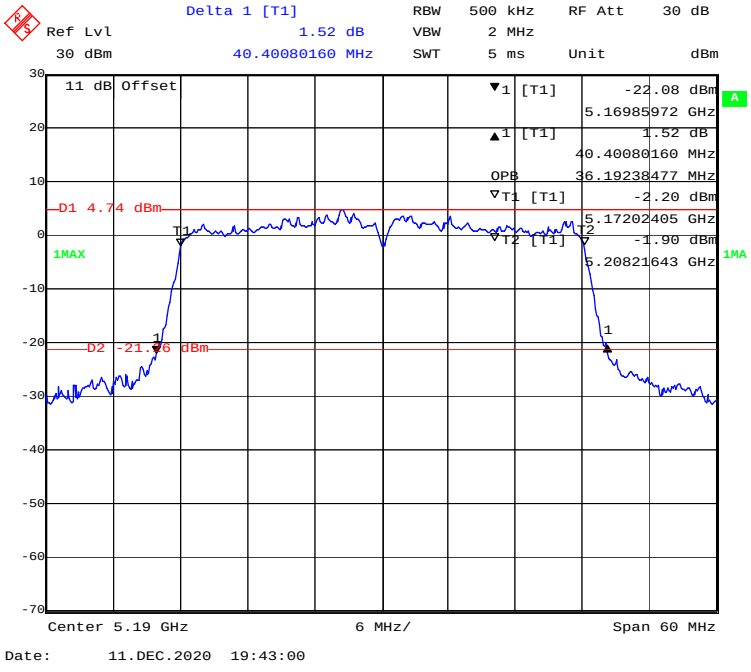
802.11ac40 mode, 5190MHz



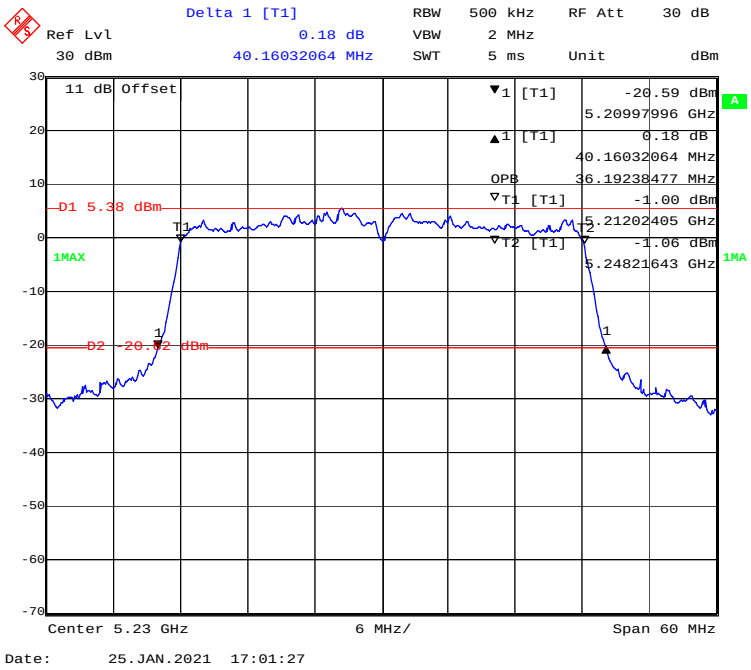
802.11ac40 mode, 5230MHz



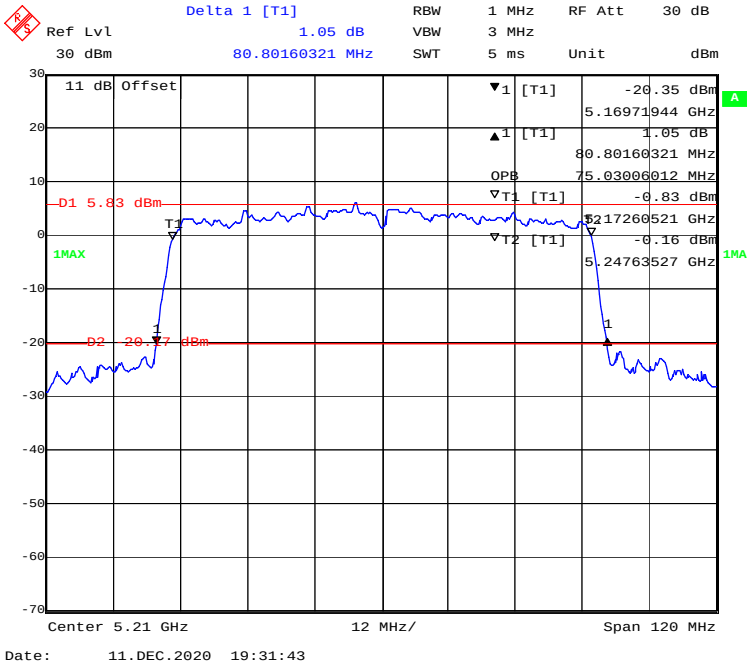
802.11n-HT40 mode, 5190MHz



802.11n-HT40 mode, 5230MHz



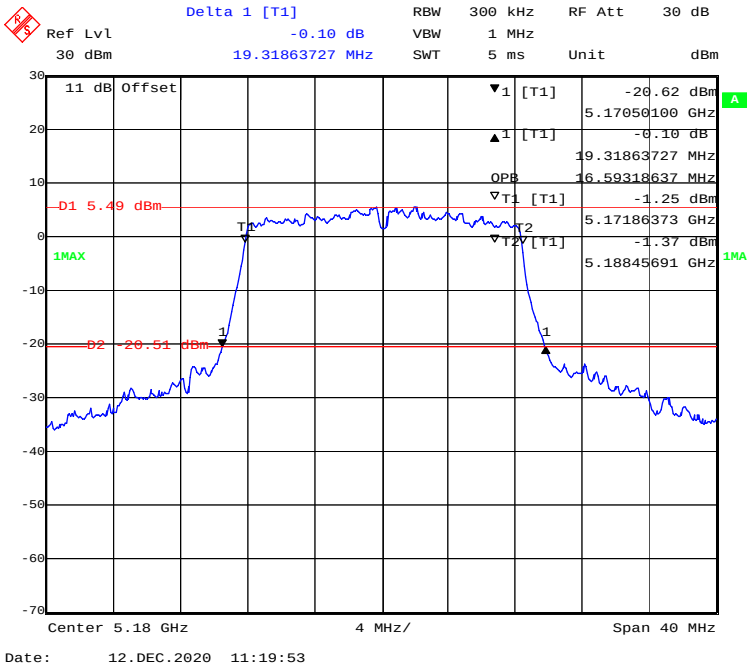
802.11ac80 mode, 5210MHz



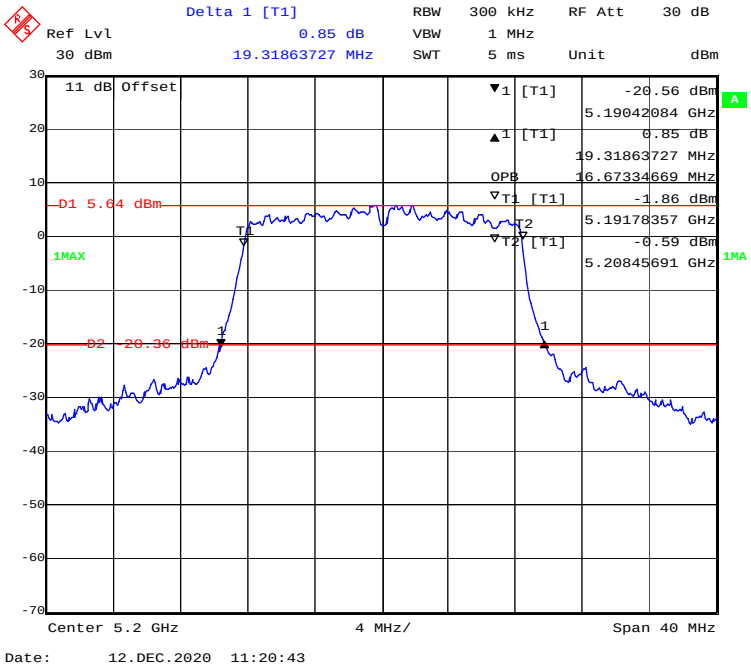
Chain1:

26 Bandwidth&99% Occupied Bandwidth

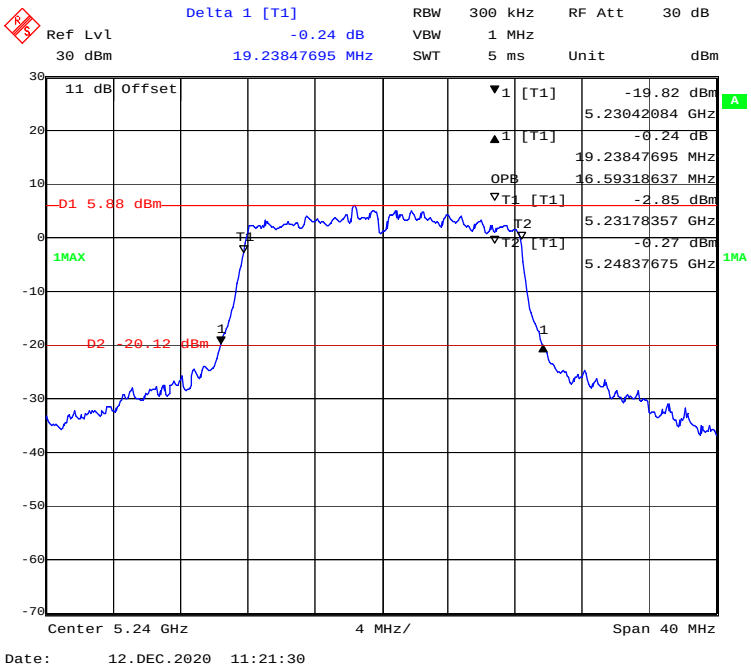
802.11a mode, 5180MHz



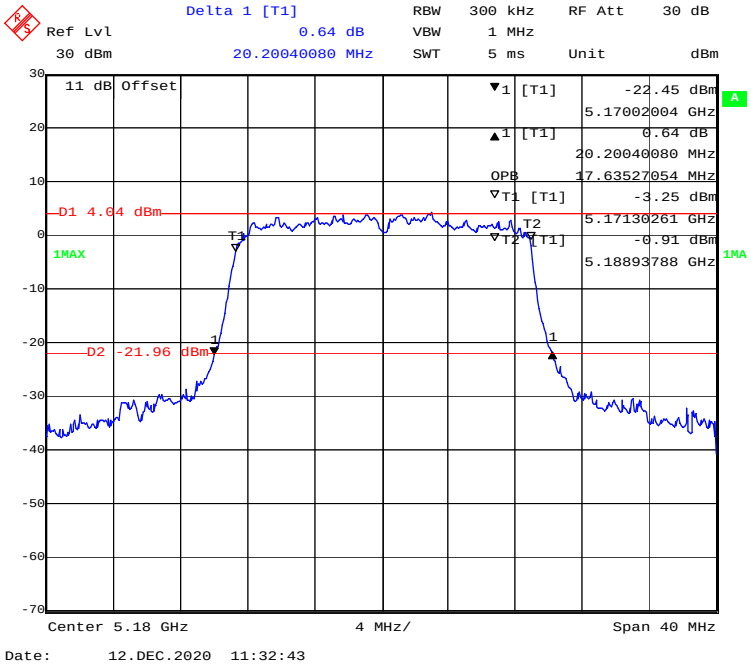
802.11a mode, 5200MHz



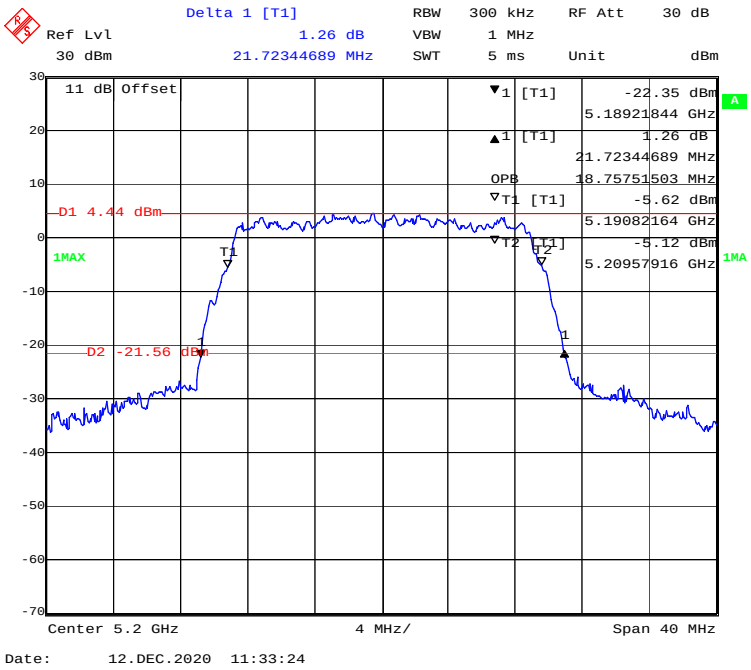
802.11a mode, 5240MHz



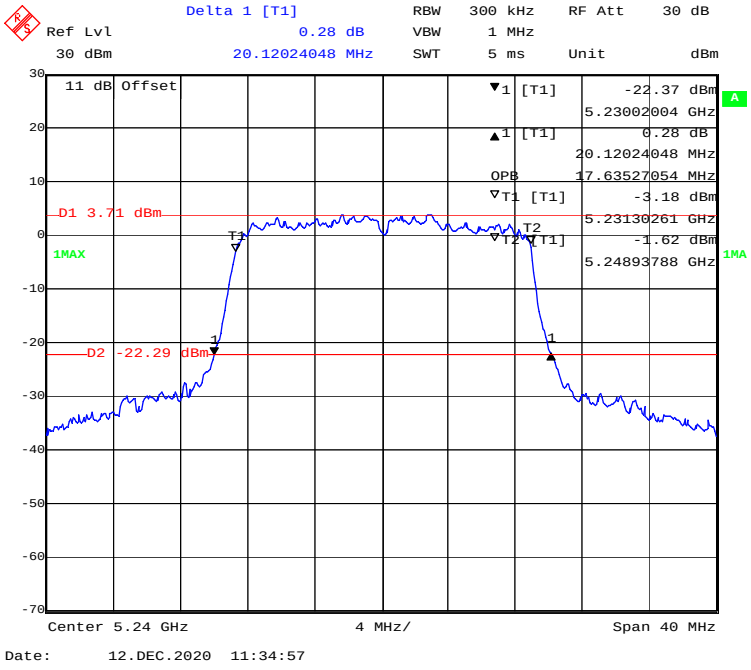
802.11ac20 mode, 5180MHz



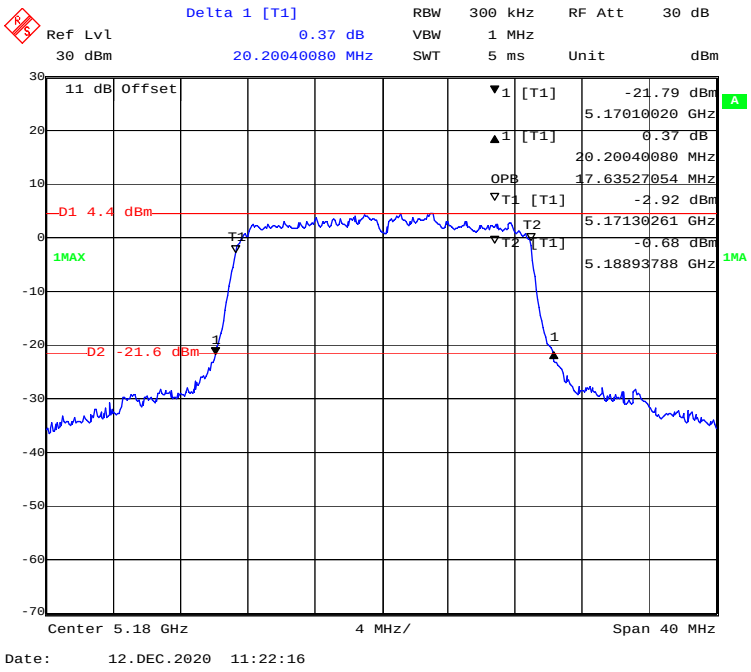
802.11ac20 mode, 5200MHz



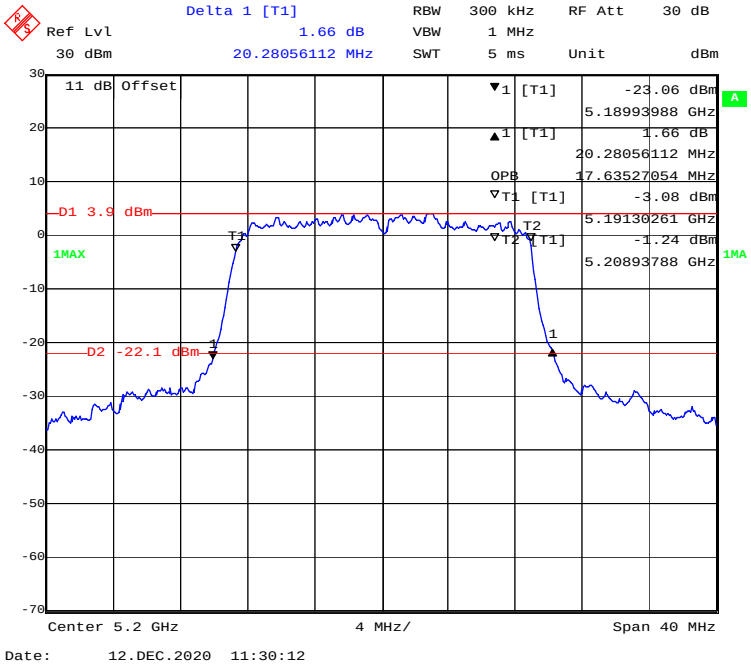
802.11ac20 mode, 5240MHz



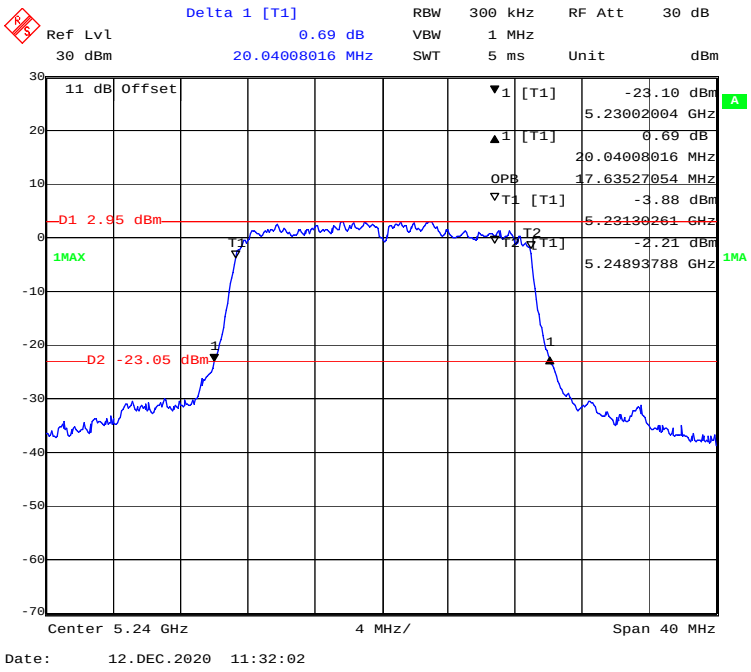
802.11n-HT20 mode, 5180MHz



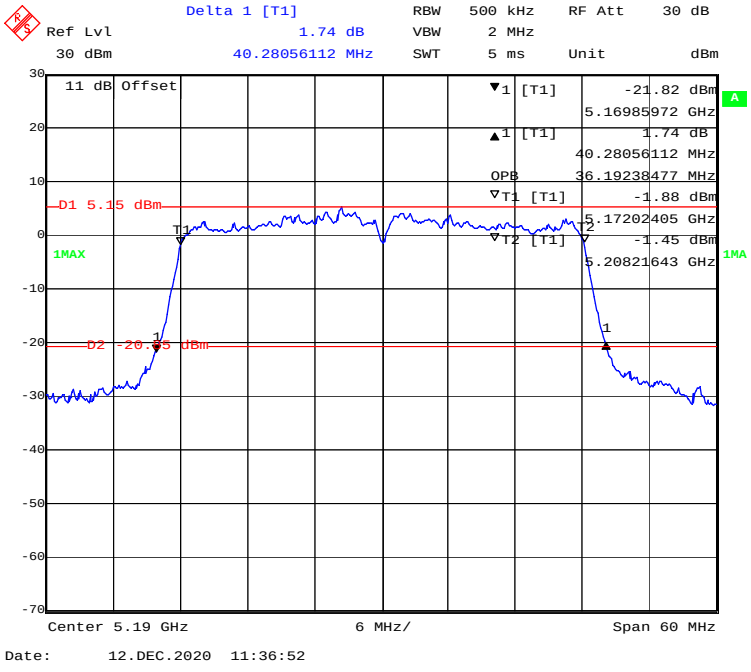
802.11n-HT20 mode, 5200MHz



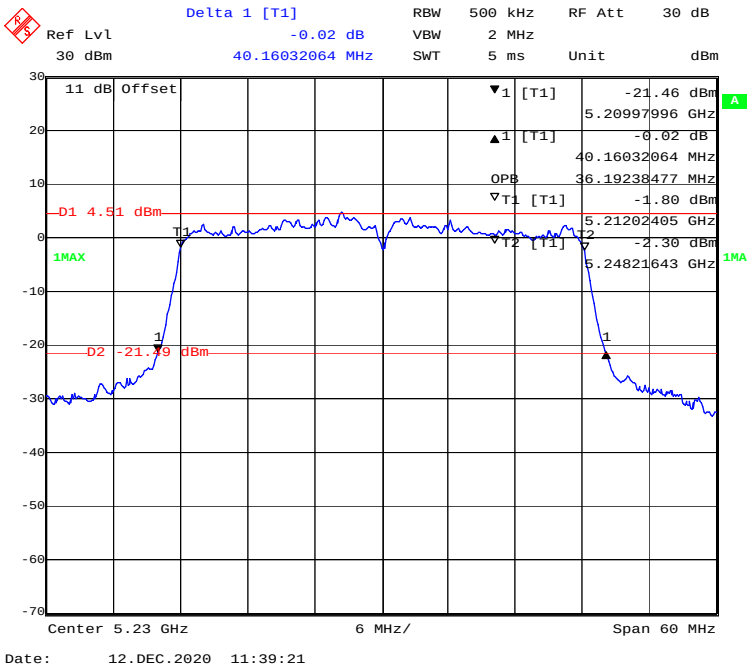
802.11n-HT20 mode, 5240MHz



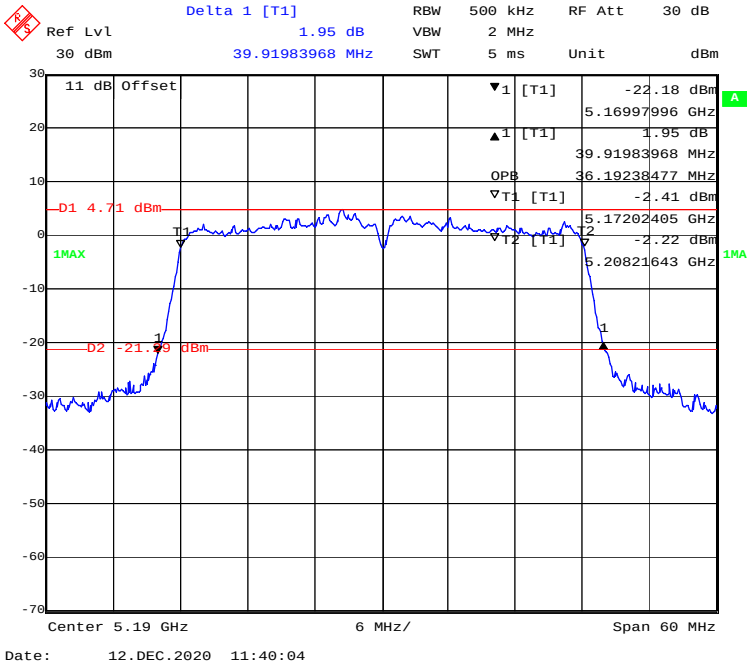
802.11ac40 mode, 5190MHz



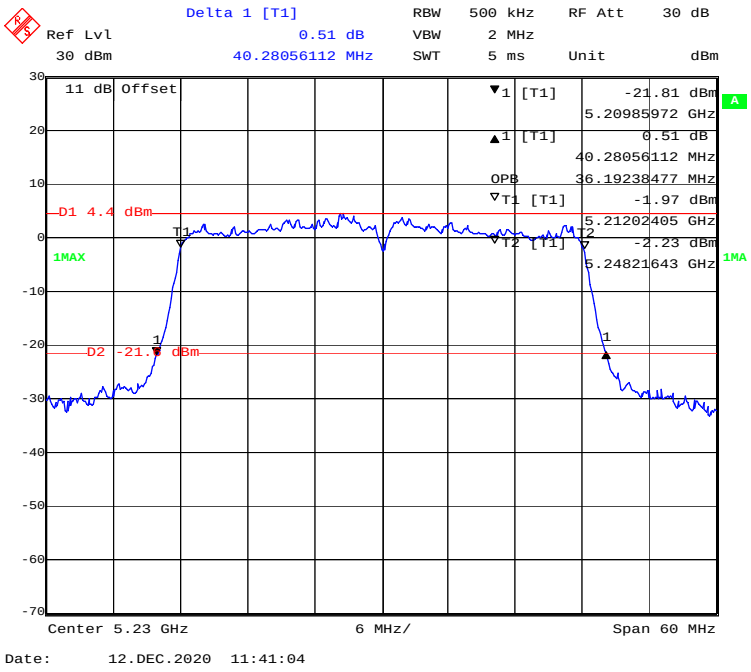
802.11ac40 mode, 5230MHz



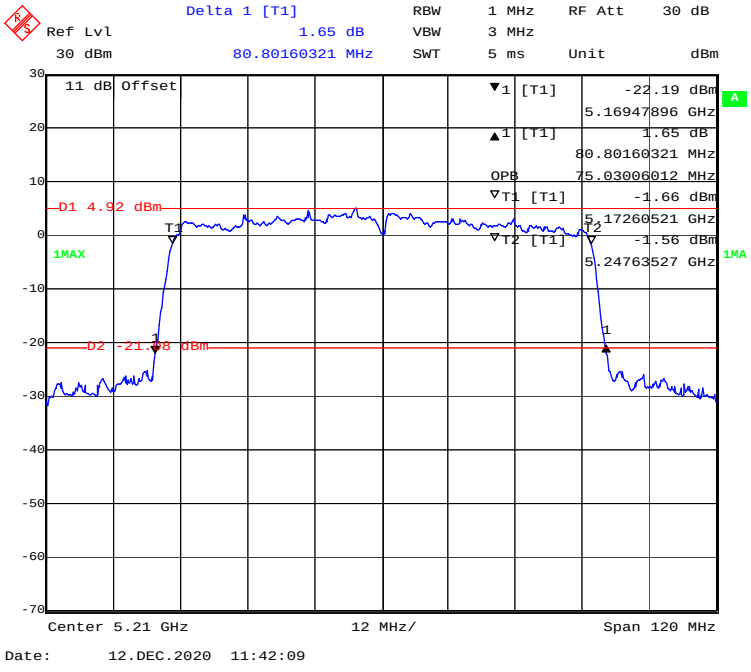
802.11n-HT40 mode, 5190MHz



802.11n-HT40 mode, 5230MHz



802.11ac80 mode, 5210MHz

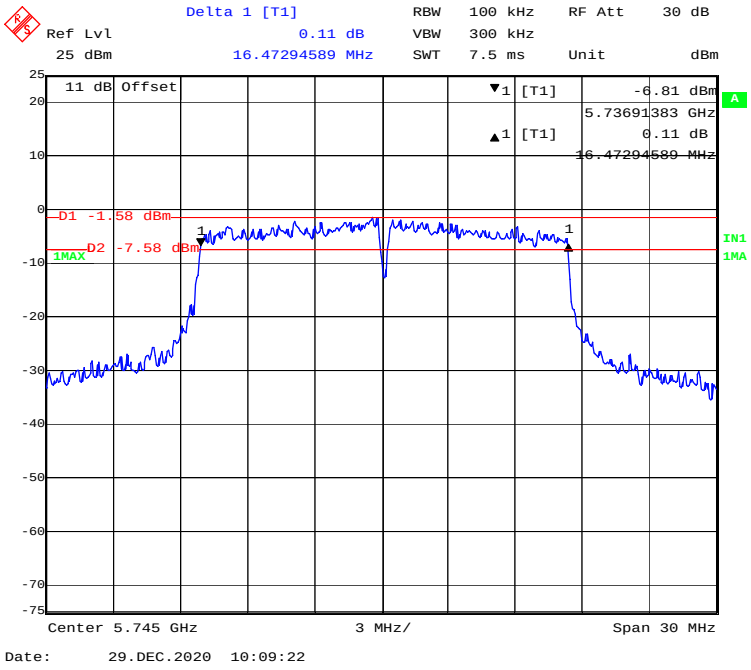


5725-5850 MHz Band

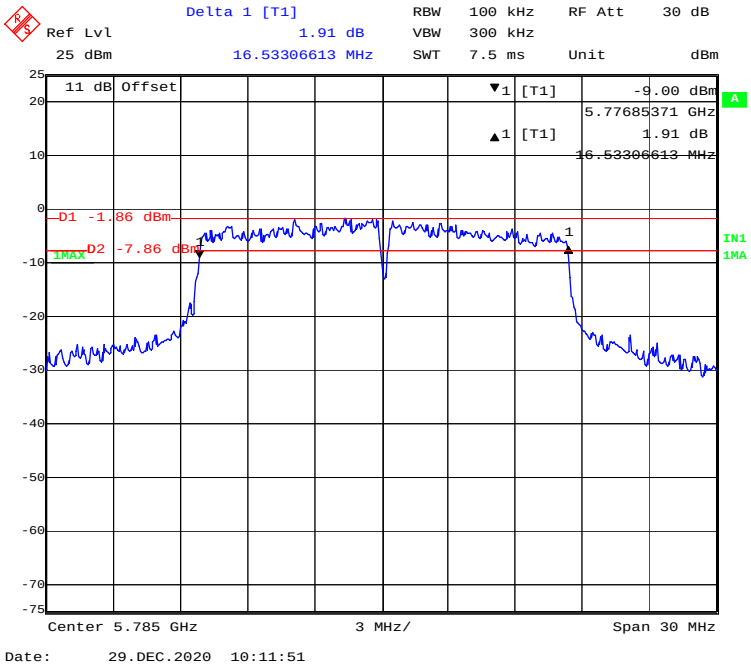
Chain0:

6 Bandwidth

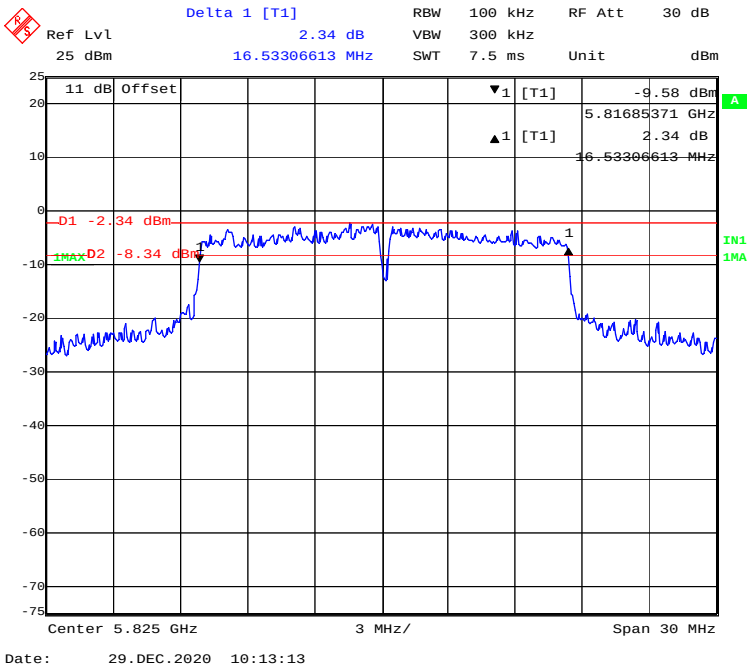
802.11a mode, 5745MHz



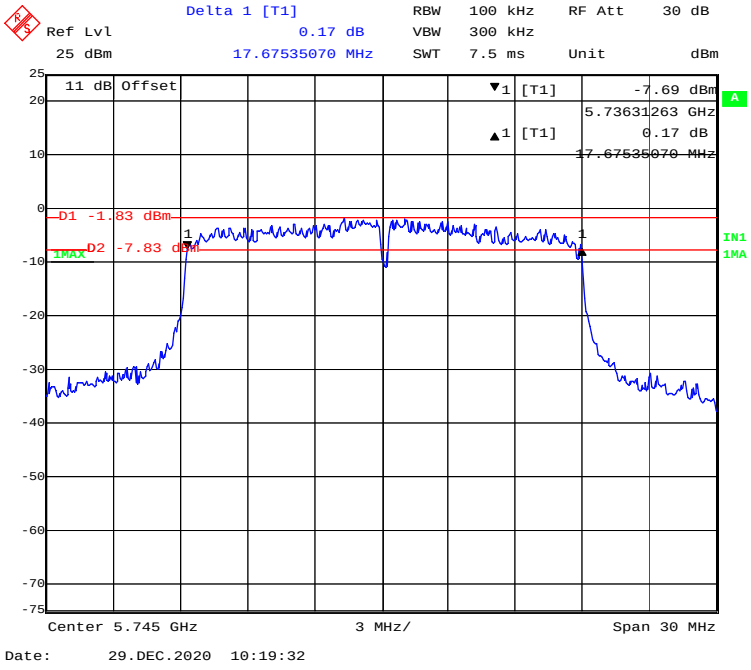
802.11a mode, 5785MHz



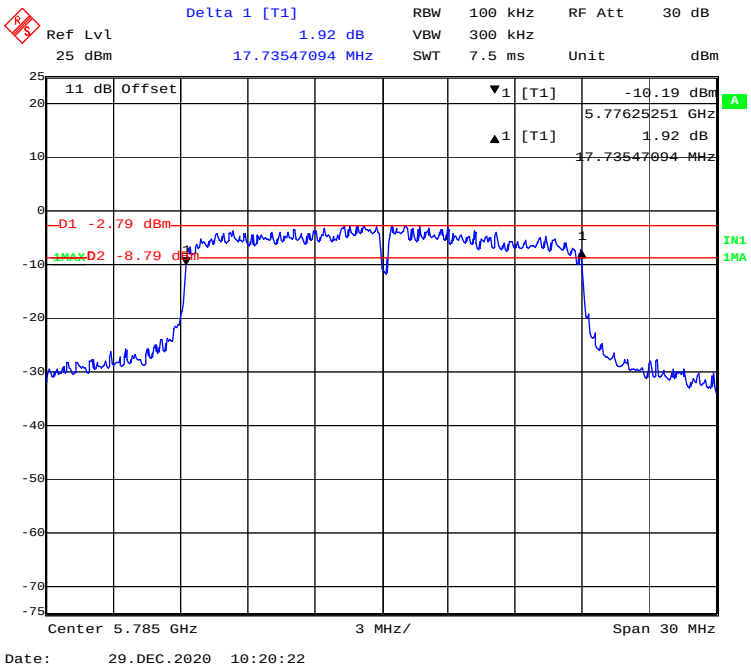
802.11a mode, 5825MHz



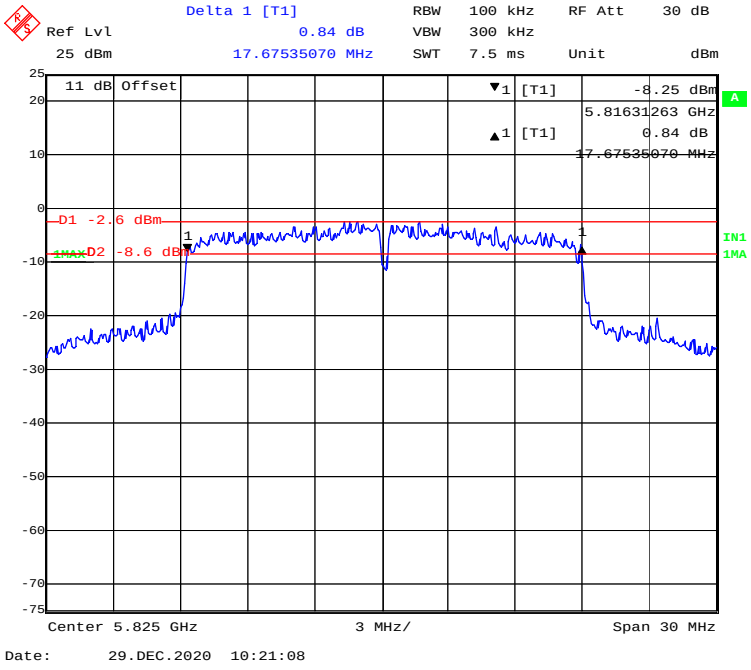
802.11ac20 mode, 5745MHz



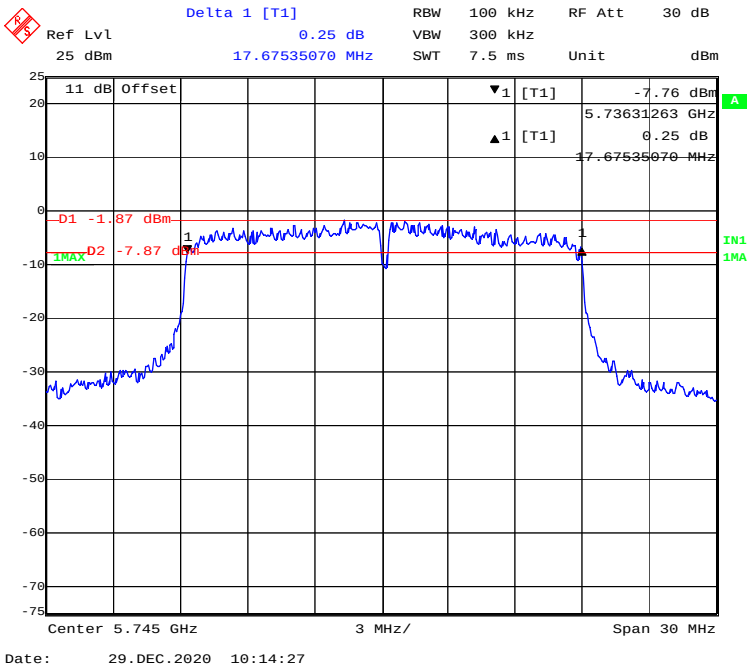
802.11ac20 mode, 5785MHz



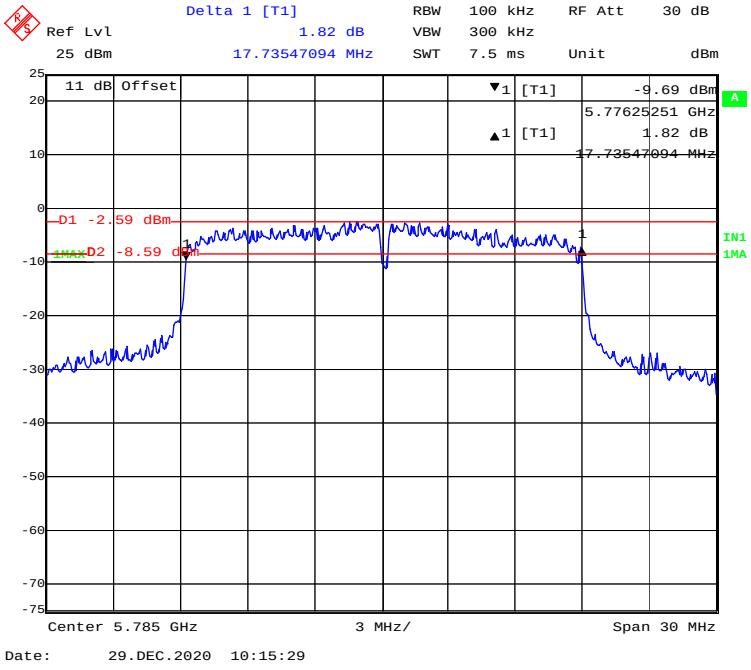
802.11ac20 mode, 5825MHz



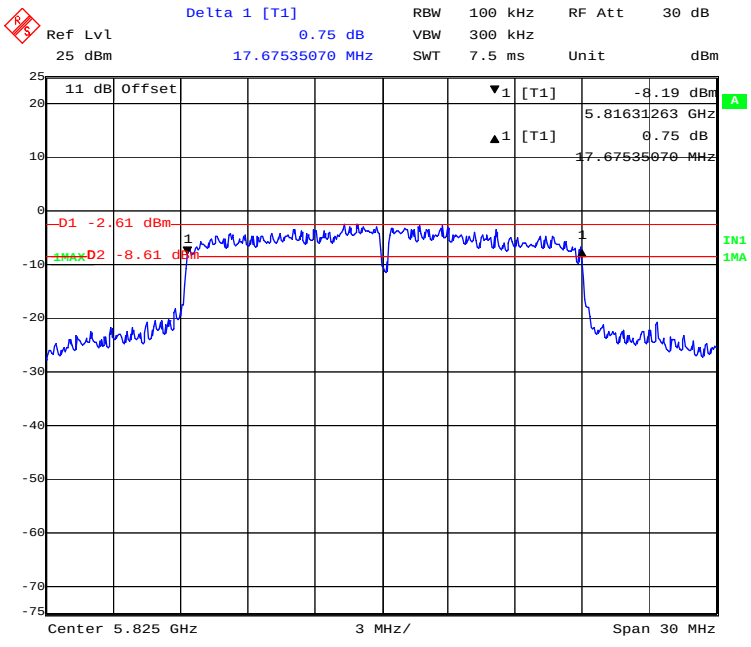
802.11n-HT20 mode, 5745MHz



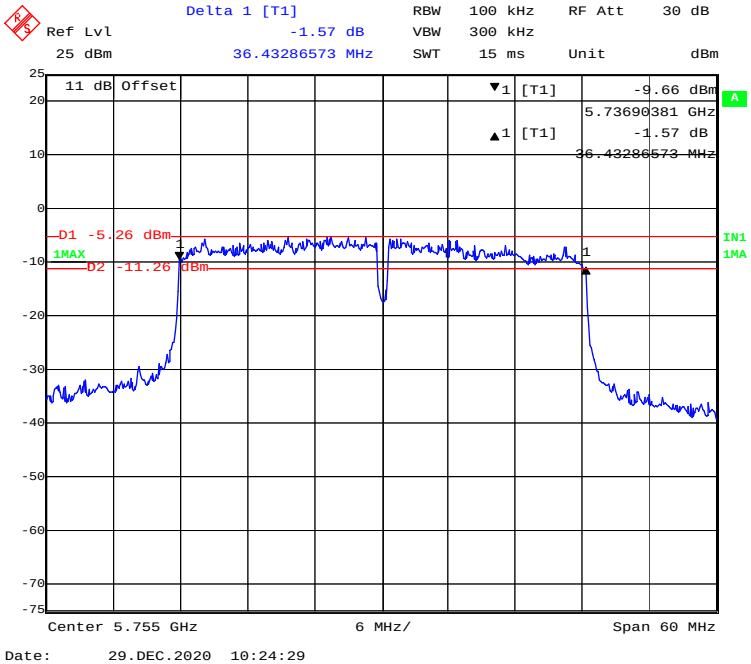
802.11n-HT20 mode, 5785MHz



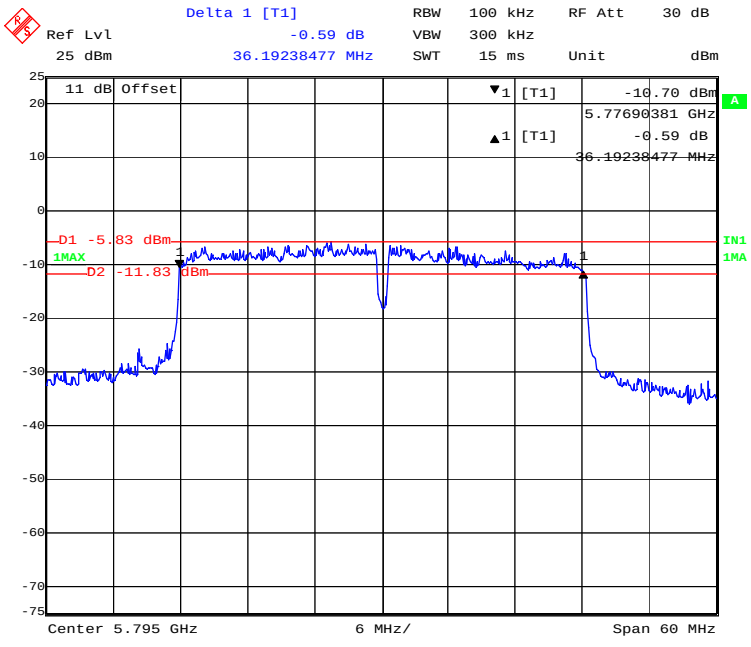
802.11n-HT20 mode, 5825MHz



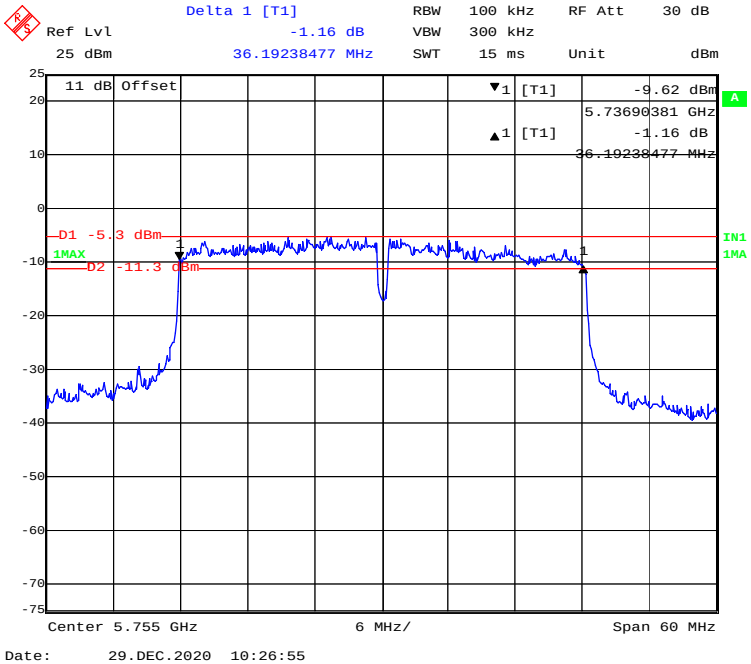
802.11ac40 mode, 5755MHz



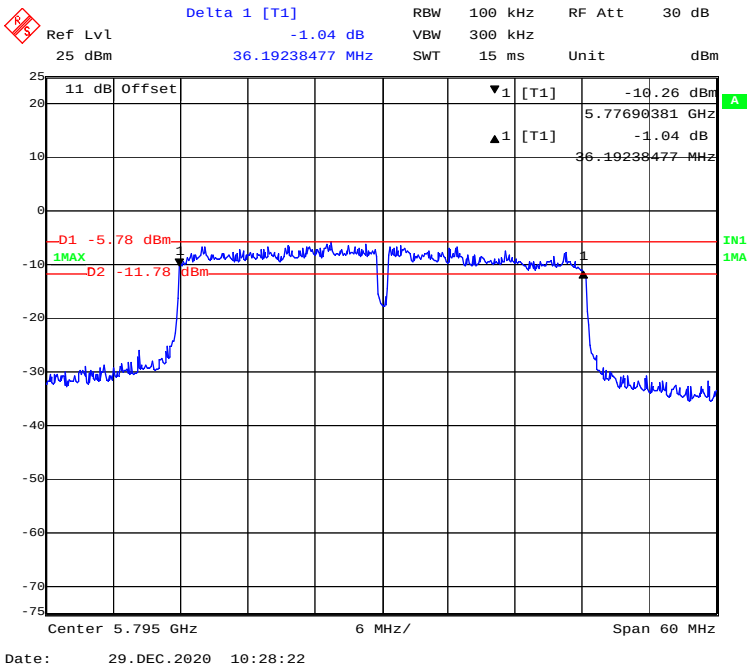
802.11ac40 mode, 5795MHz



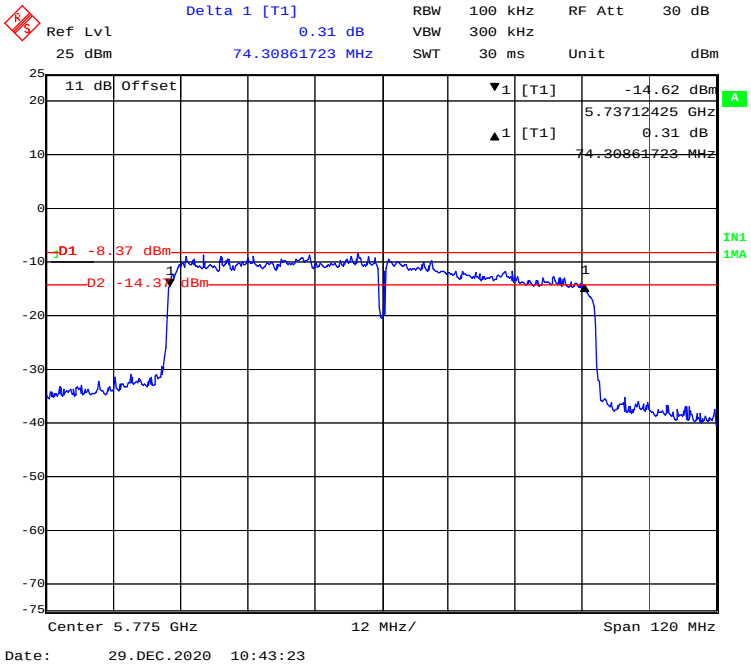
802.11n-HT40 mode, 5755MHz



802.11n-HT40 mode, 5795MHz



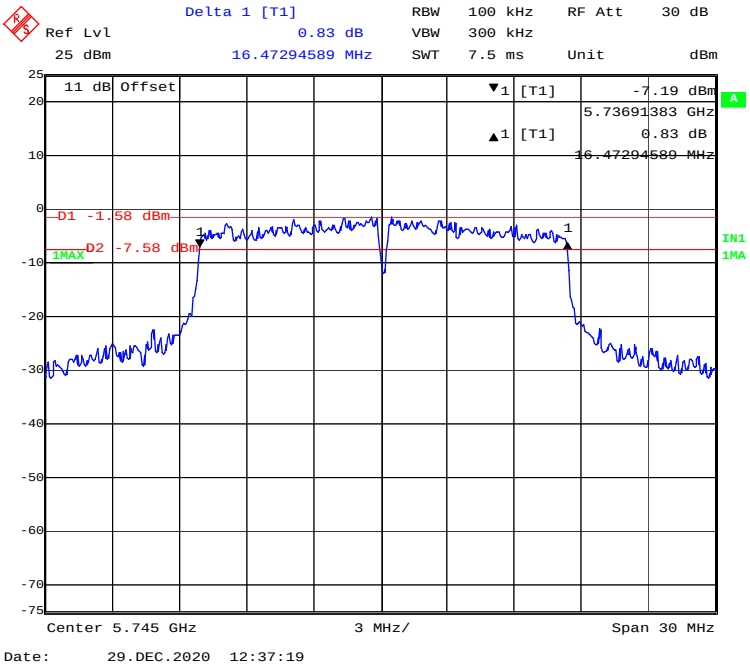
802.11ac80 mode, 5775MHz



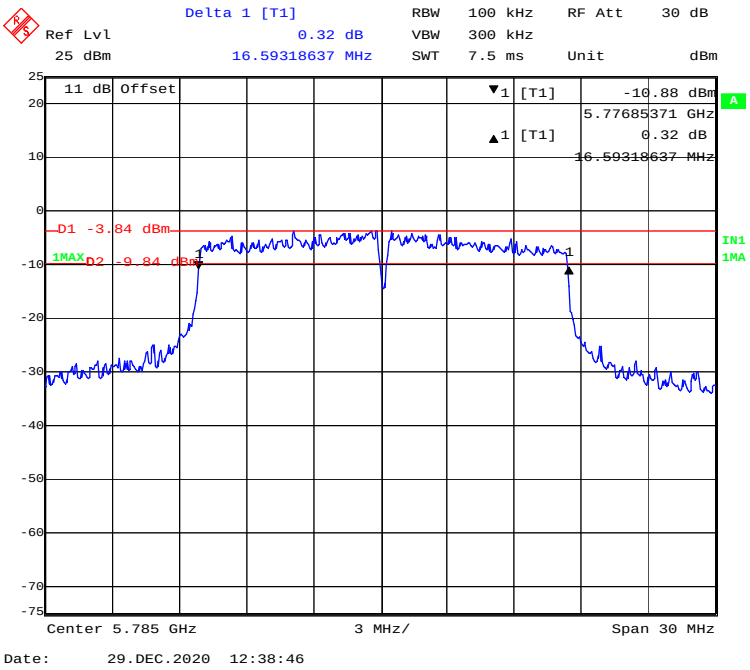
Chain1:

6 Bandwidth

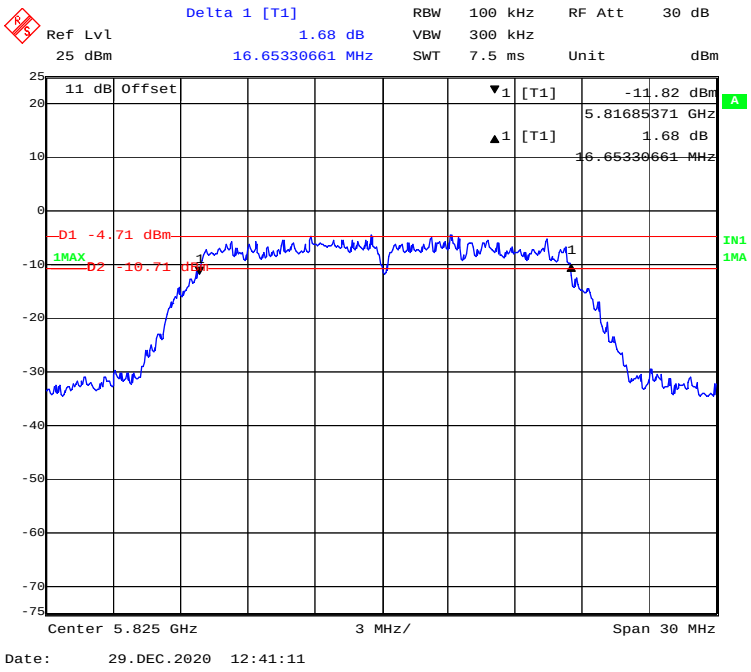
802.11a mode, 5745MHz



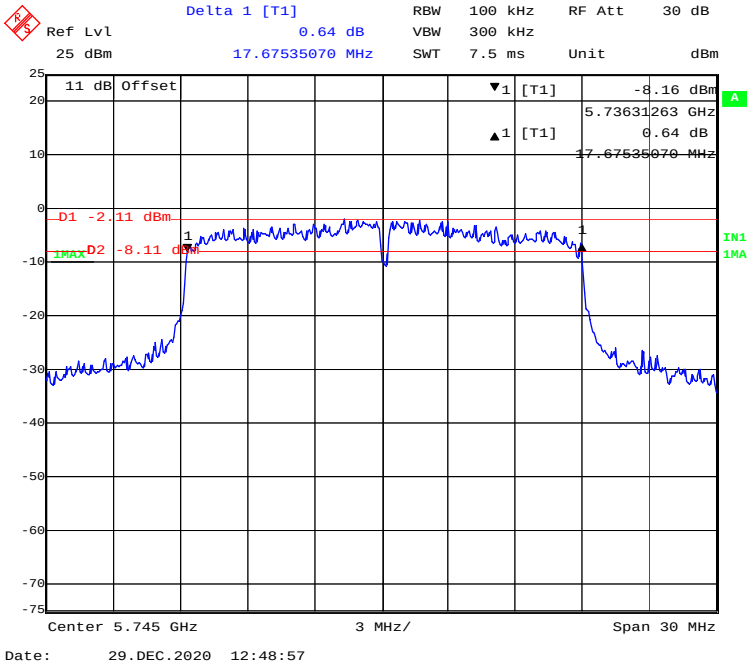
802.11a mode, 5785MHz



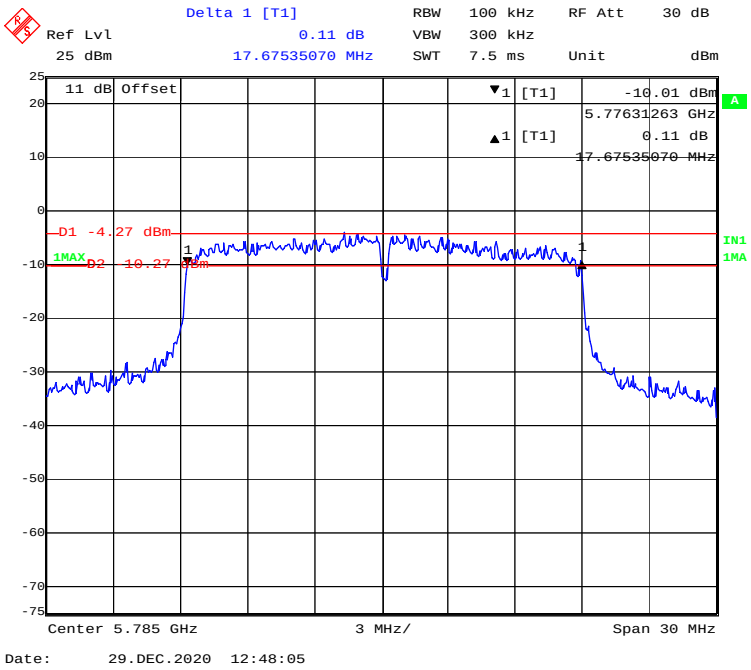
802.11a mode, 5825MHz



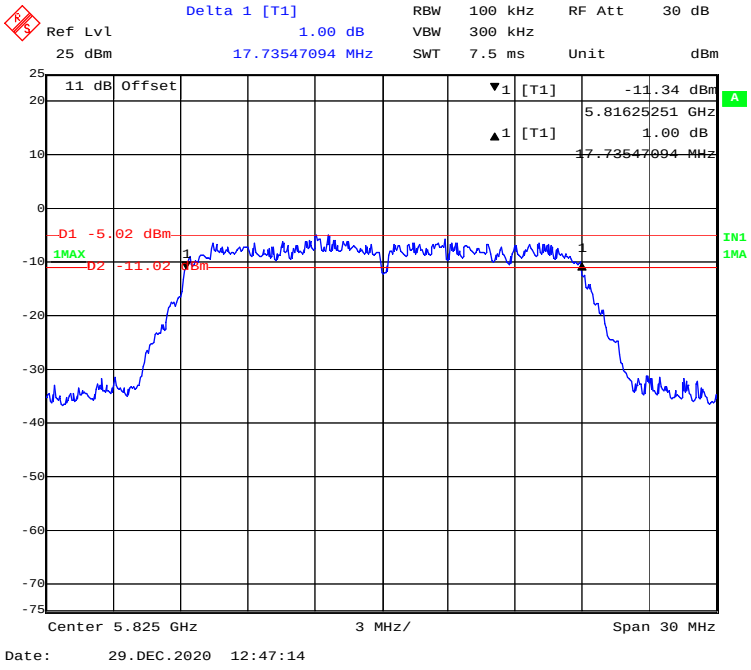
802.11ac20 mode, 5745MHz



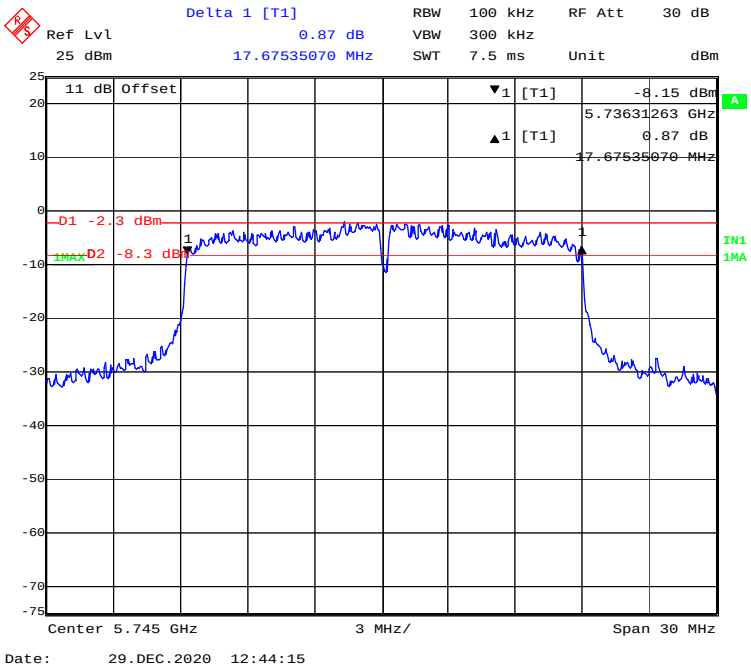
802.11ac20 mode, 5785MHz



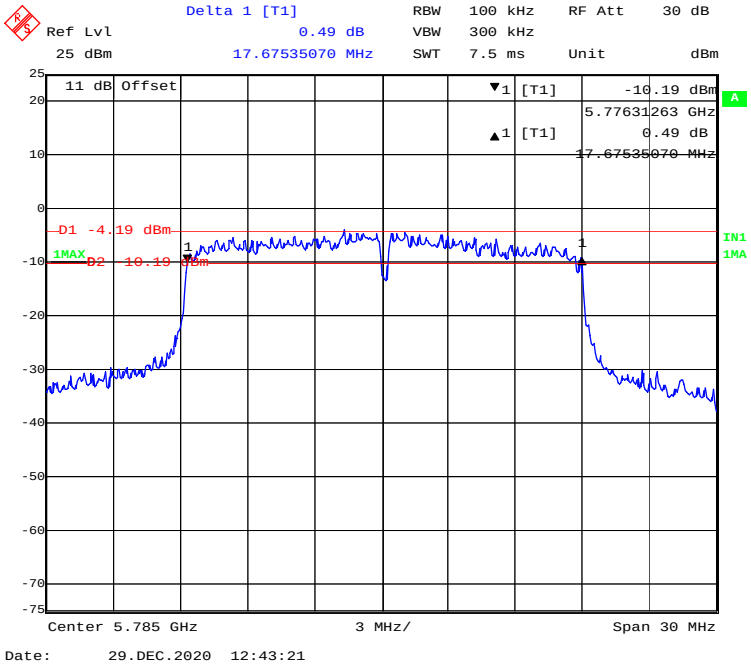
802.11ac20 mode, 5825MHz



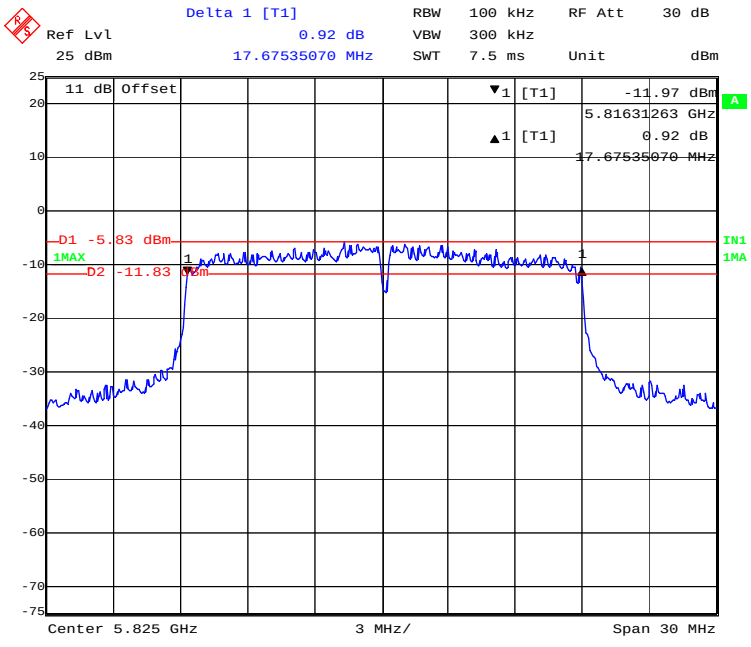
802.11n-HT20 mode, 5745MHz



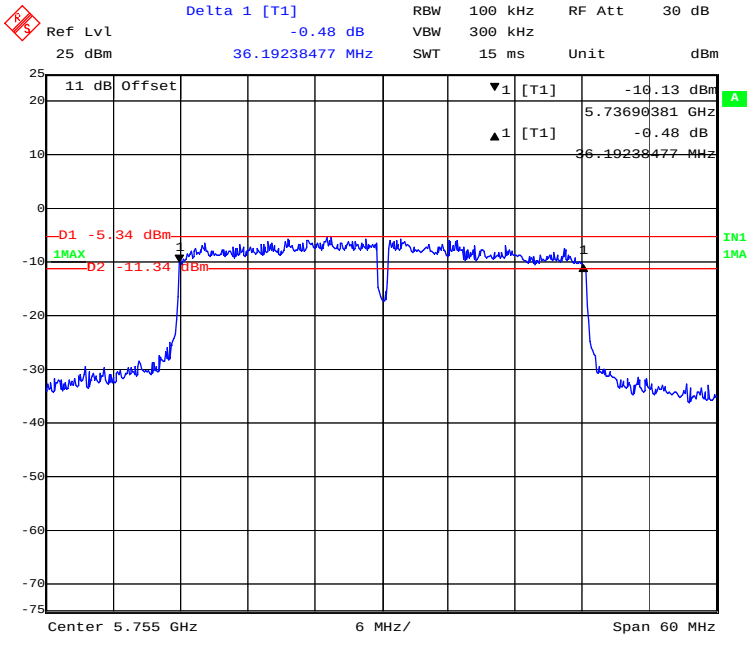
802.11n-HT20 mode, 5785MHz



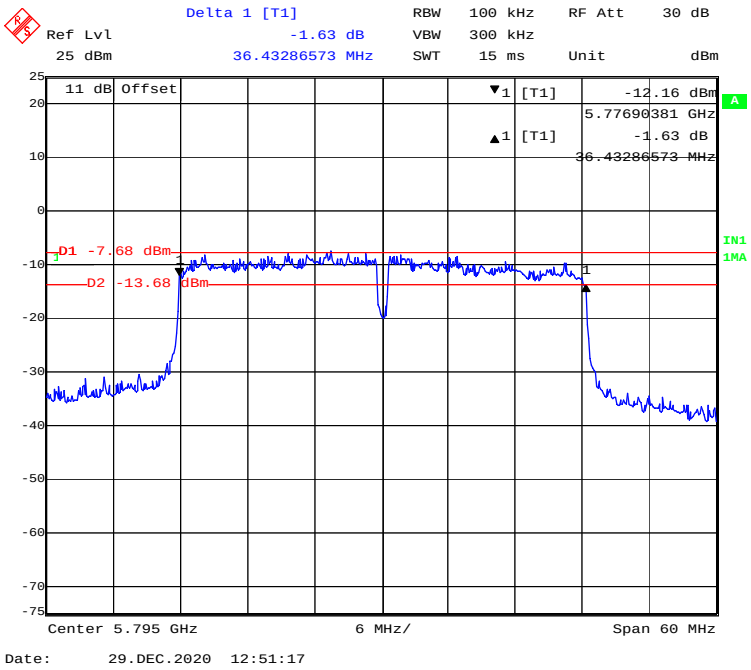
802.11n-HT20 mode, 5825MHz



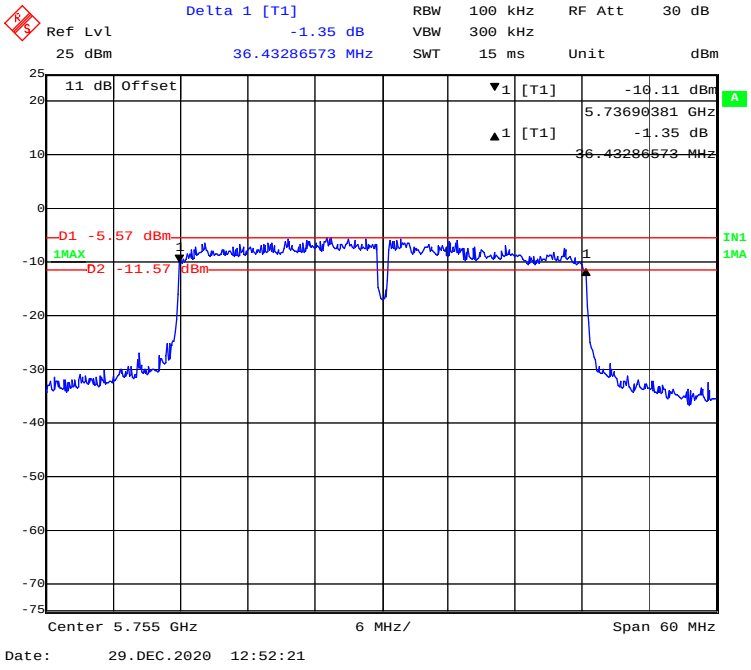
802.11ac40 mode, 5755MHz



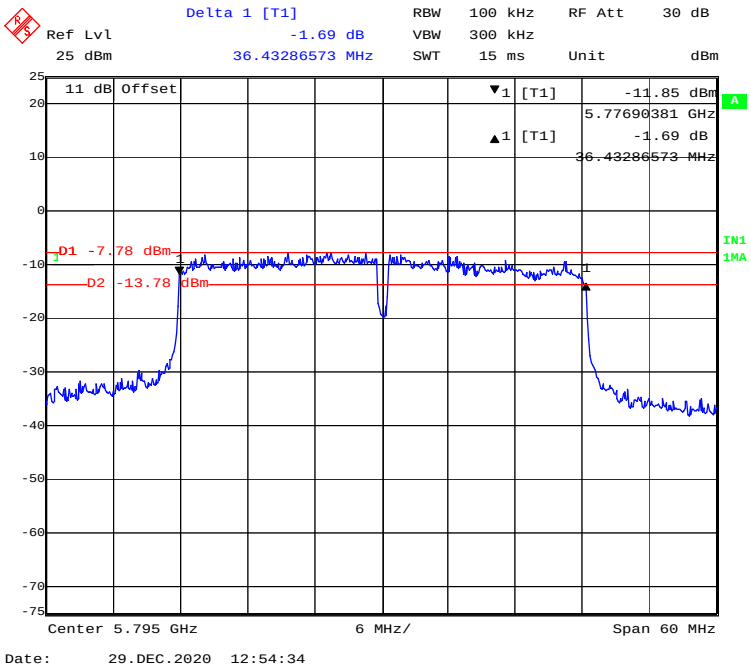
802.11ac40 mode, 5795MHz



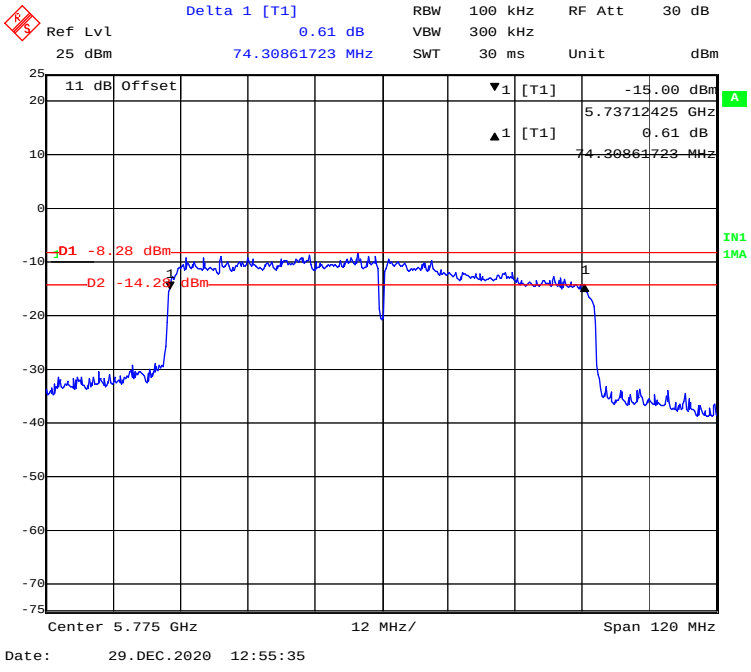
802.11n-HT40 mode, 5755MHz



802.11n-HT40 mode, 5795MHz



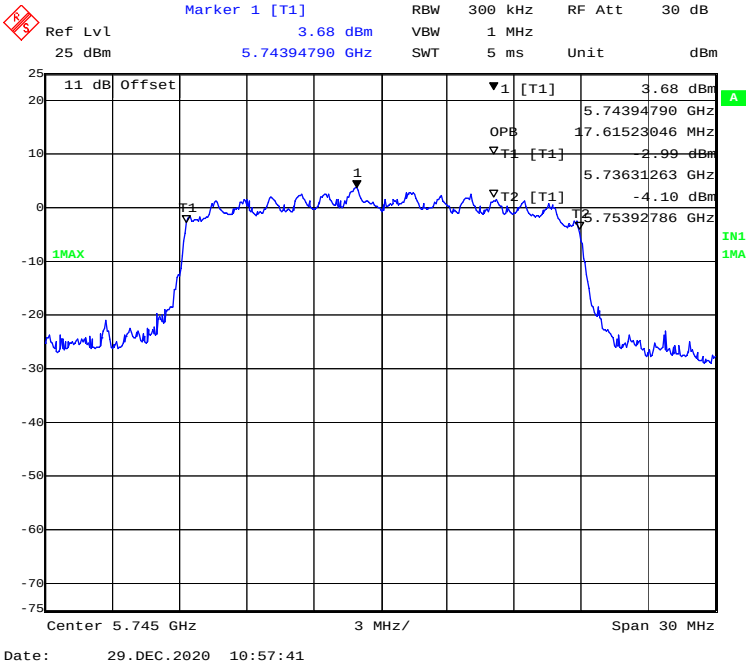
802.11ac80 mode, 5775MHz



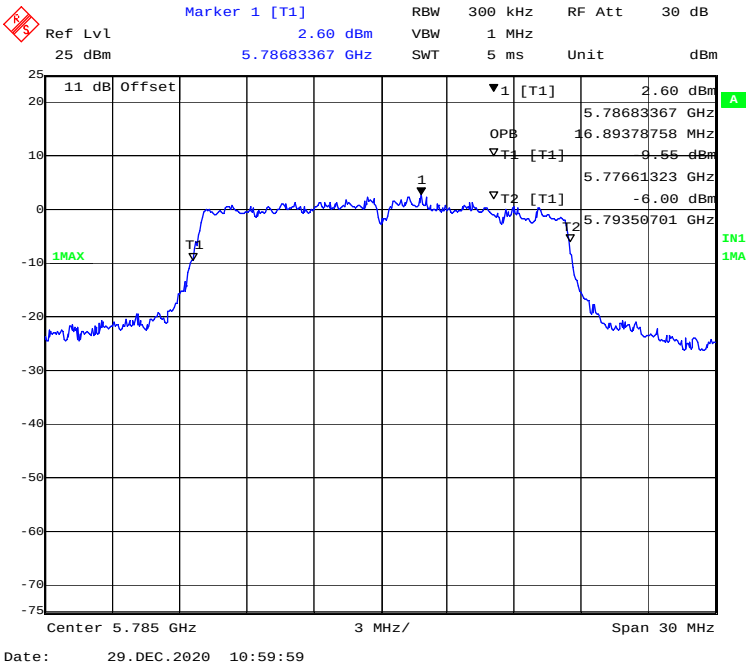
Chain0

99% Occupied Bandwidth

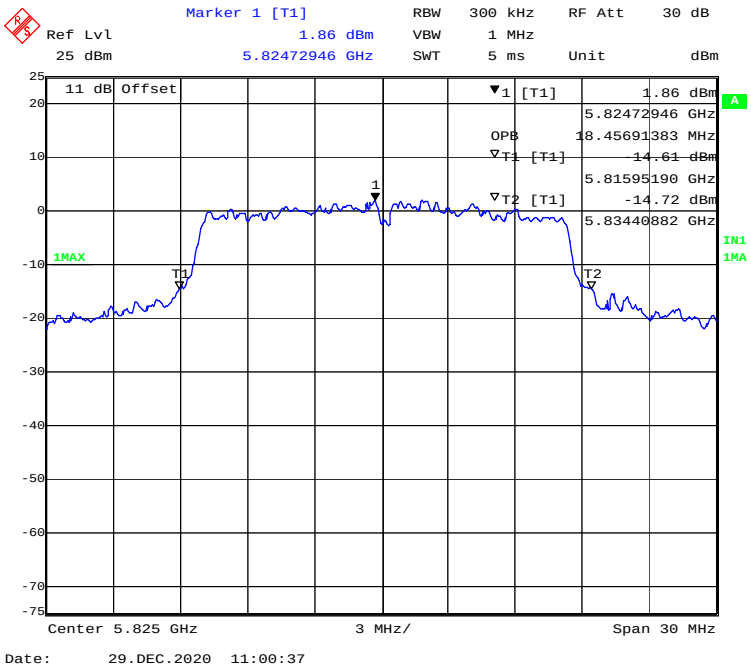
802.11a mode, 5745MHz



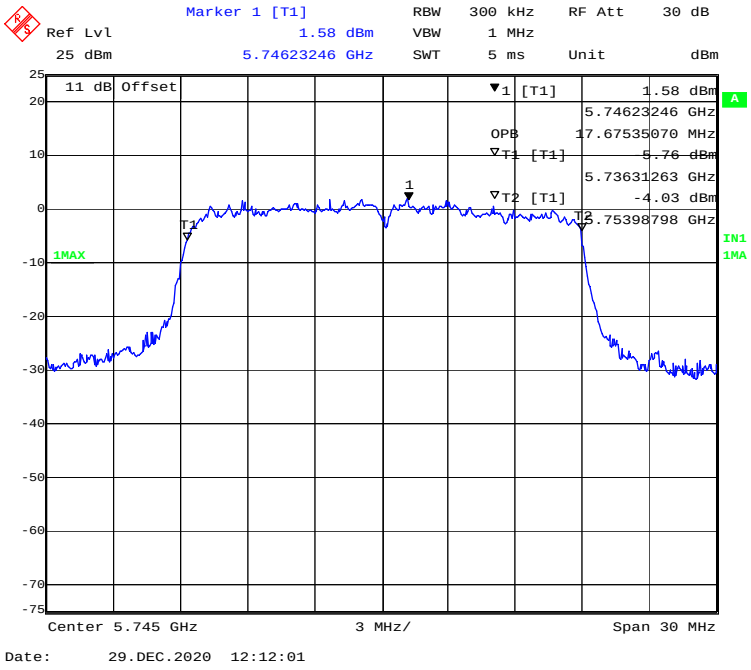
802.11a mode, 5785MHz



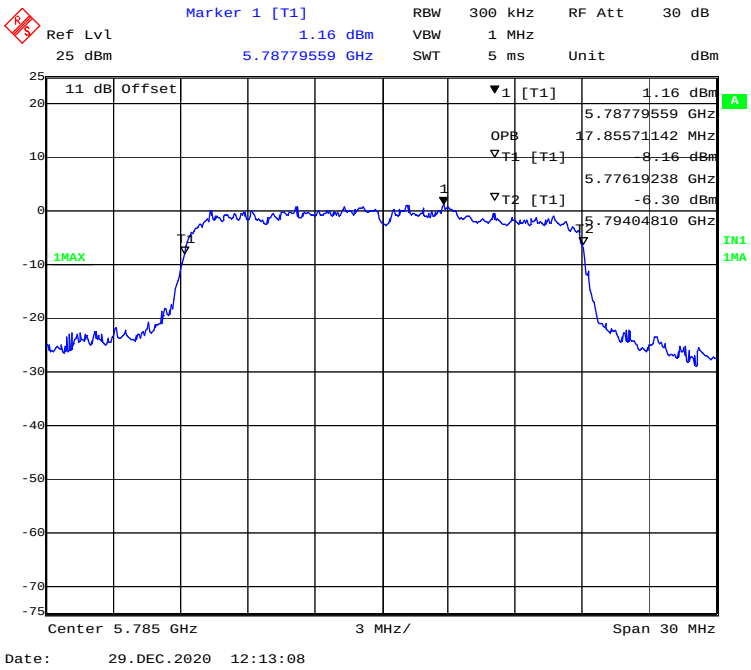
802.11a mode, 5825MHz



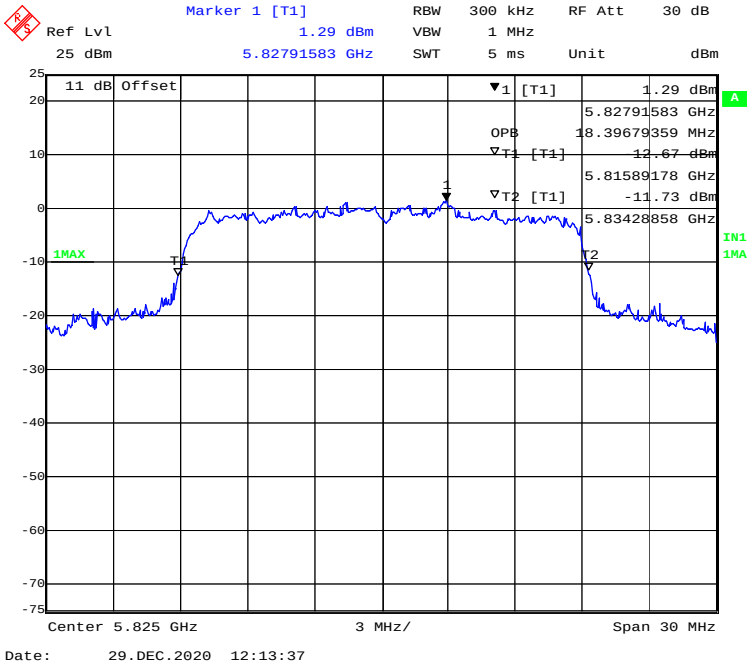
802.11ac20 mode, 5745MHz



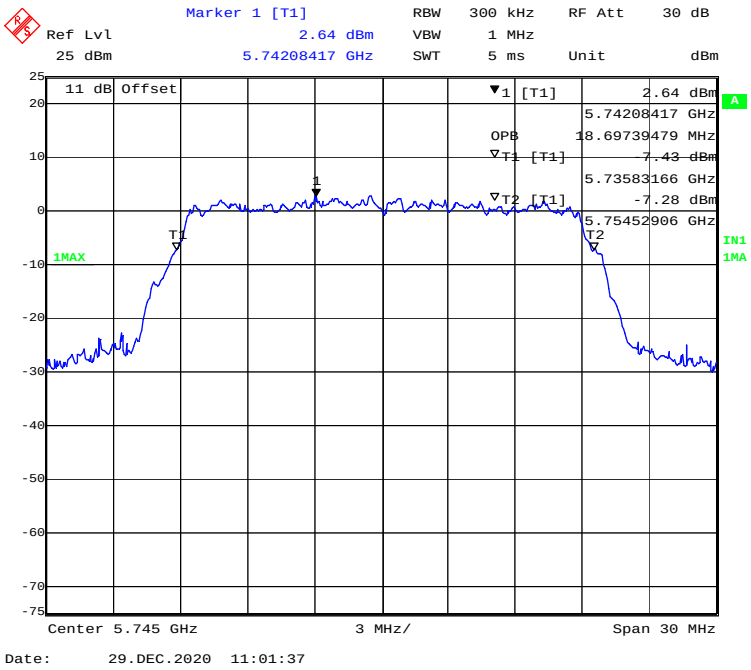
802.11ac20 mode, 5785MHz



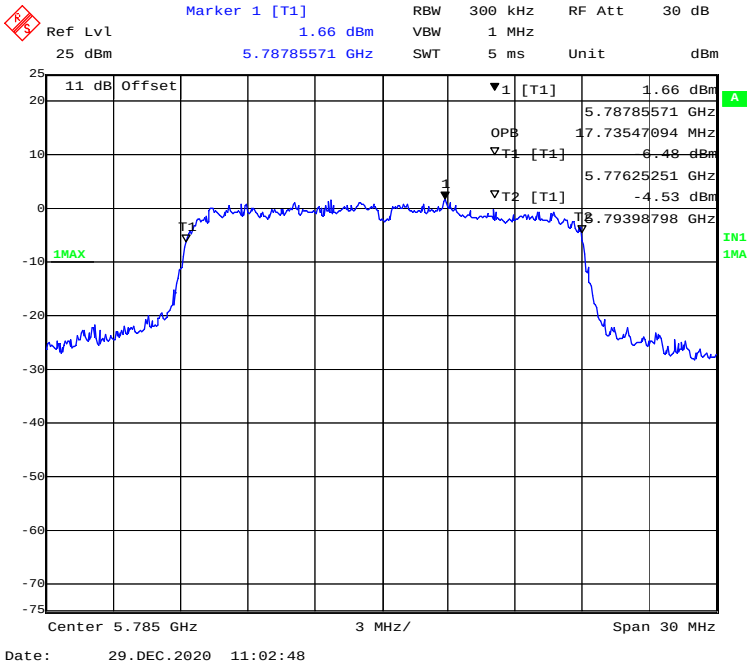
802.11ac20 mode, 5825MHz



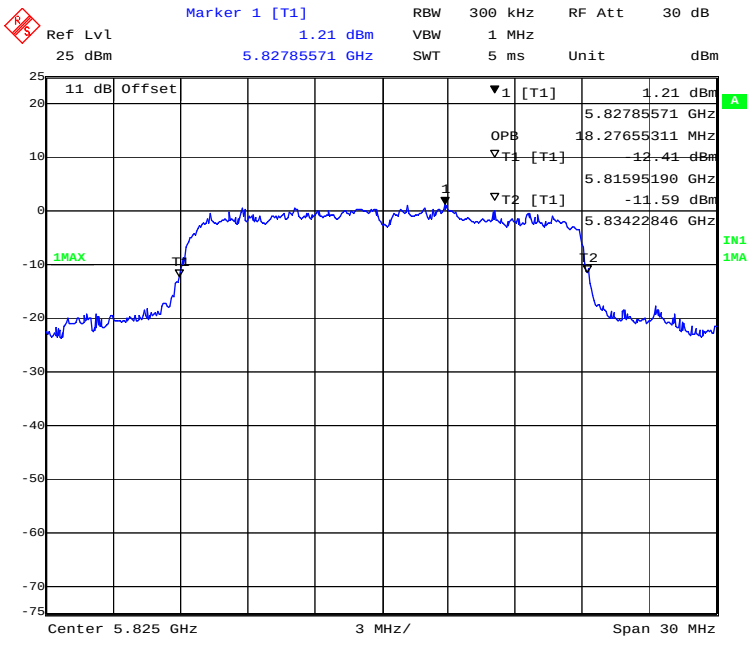
802.11n-HT20 mode, 5745MHz



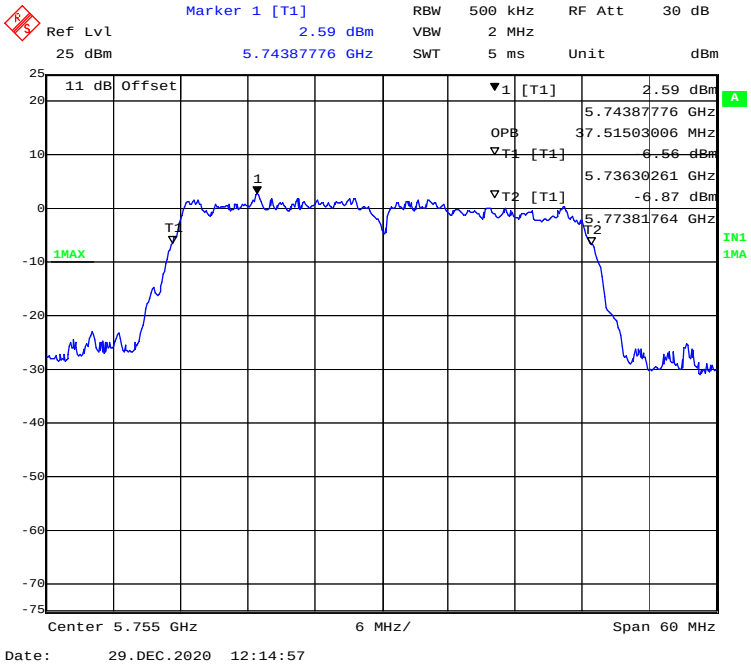
802.11n-HT20 mode, 5785MHz



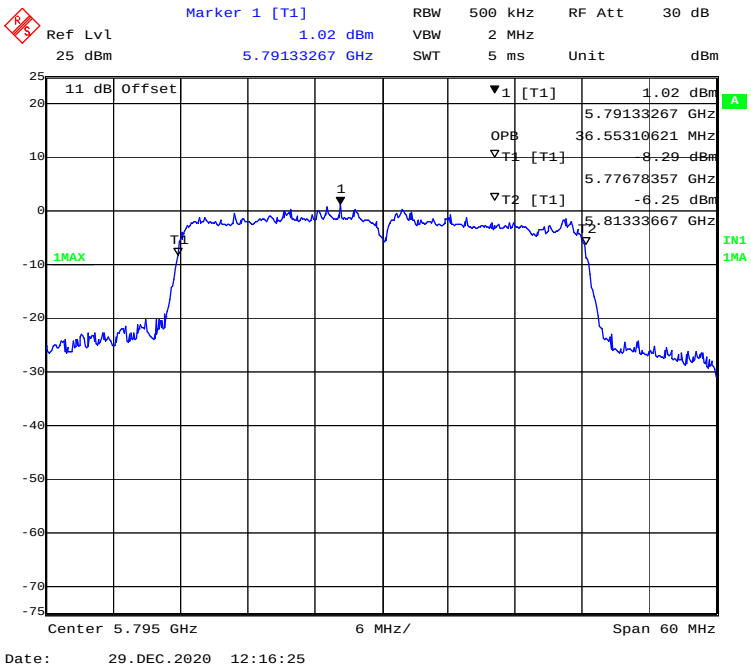
802.11n-HT20 mode, 5825MHz



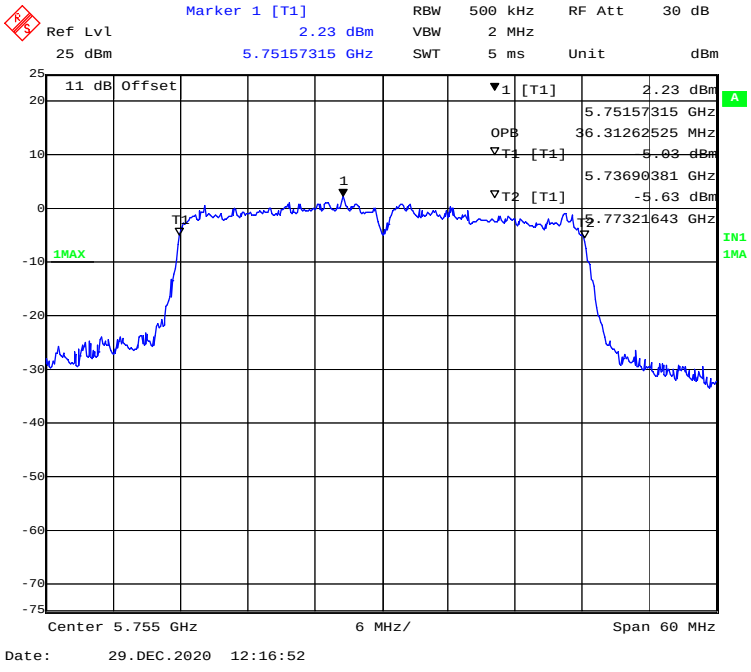
802.11ac40 mode, 5755MHz



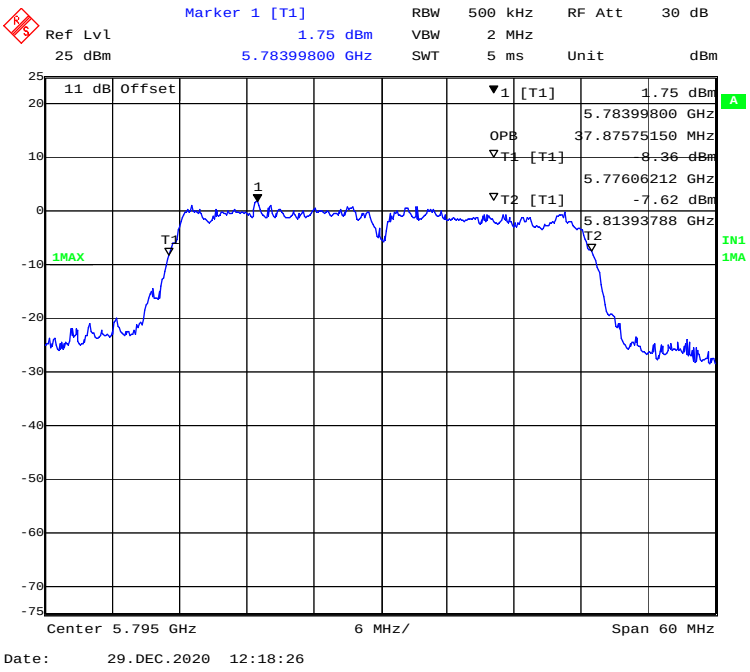
802.11ac40 mode, 5795MHz



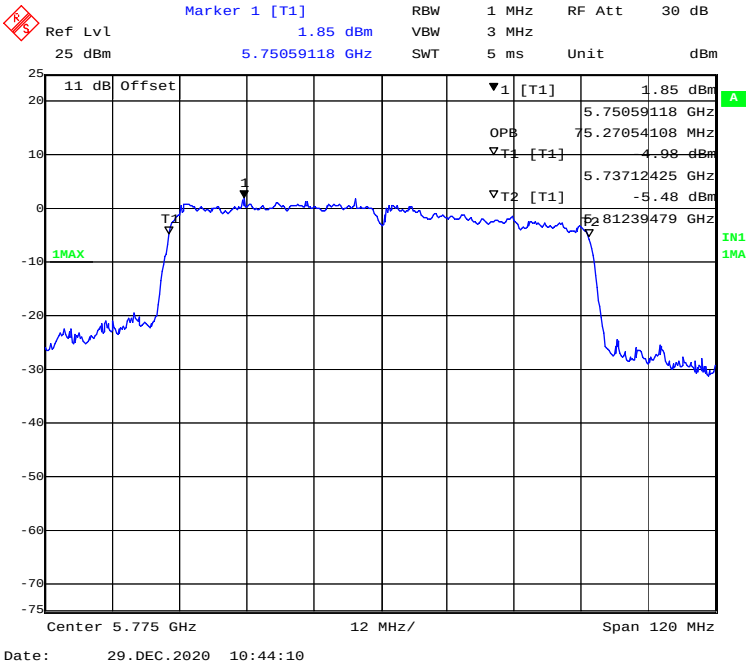
802.11n-HT40 mode, 5755MHz



802.11n-HT40 mode, 5795MHz



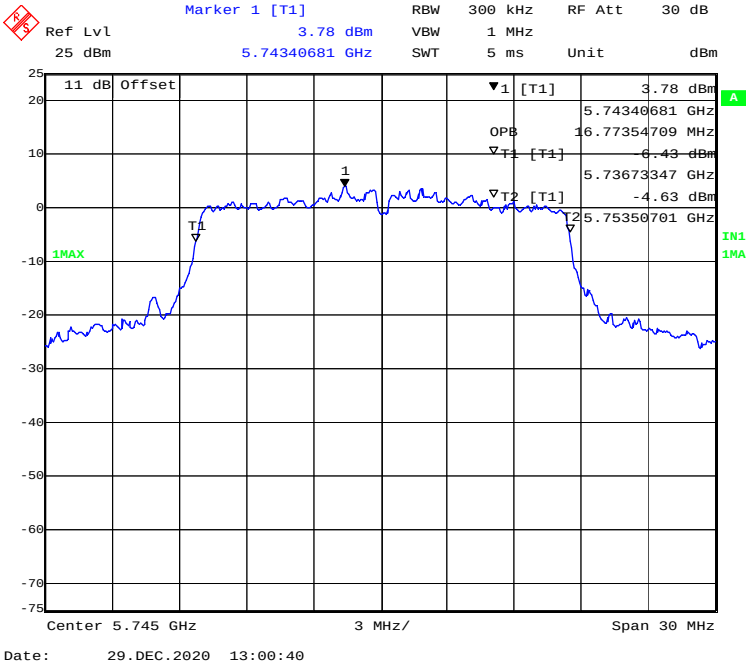
802.11ac80 mode, 5775MHz



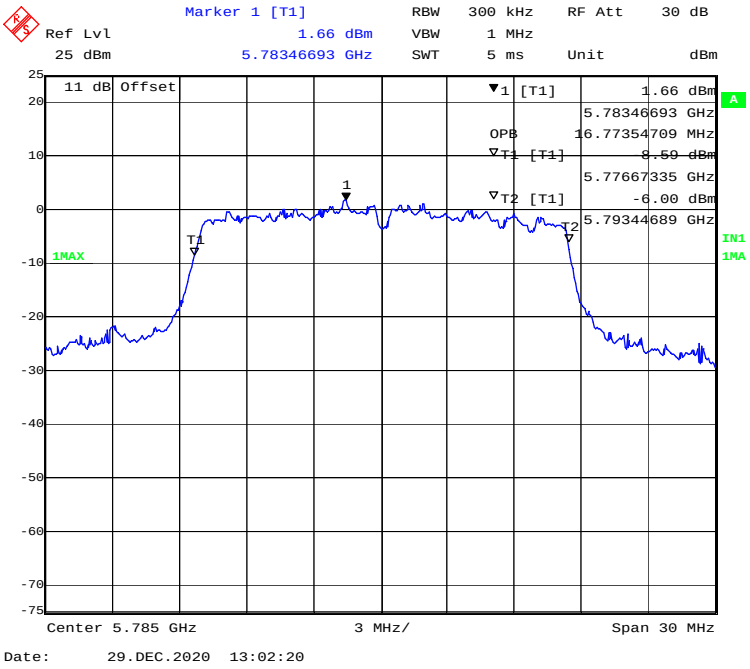
Chain1

99% Occupied Bandwidth

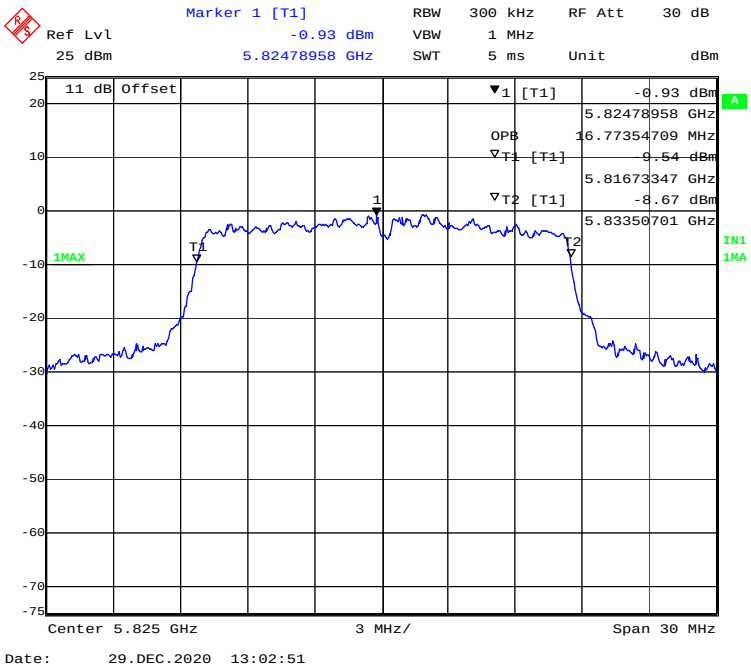
802.11a mode, 5745MHz



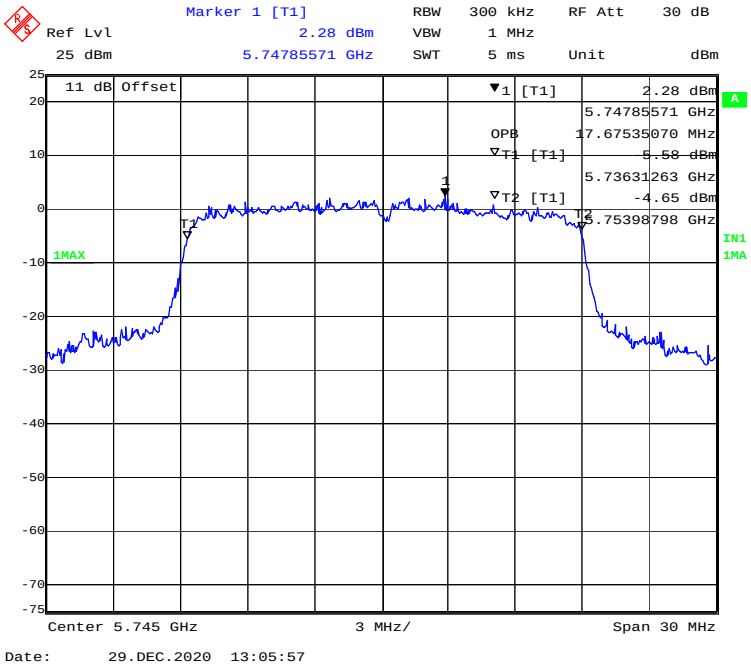
802.11a mode, 5785MHz



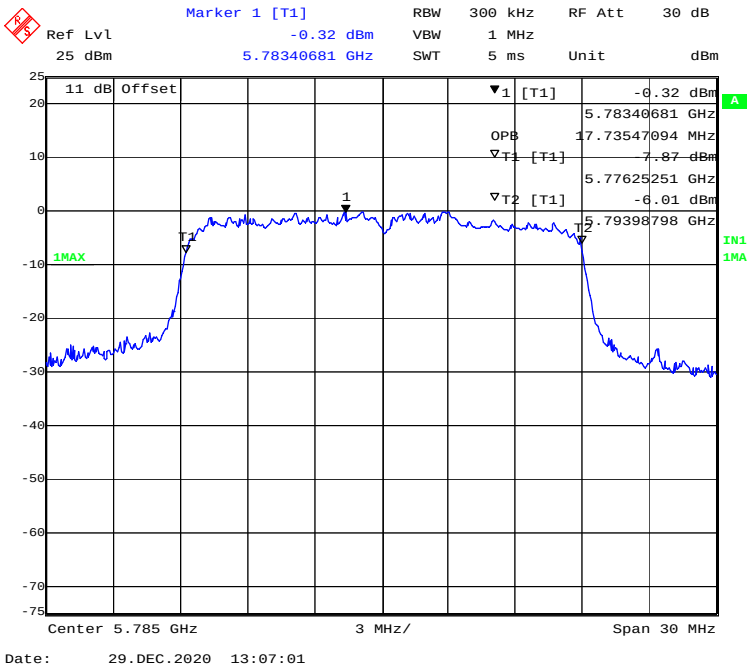
802.11a mode, 5825MHz



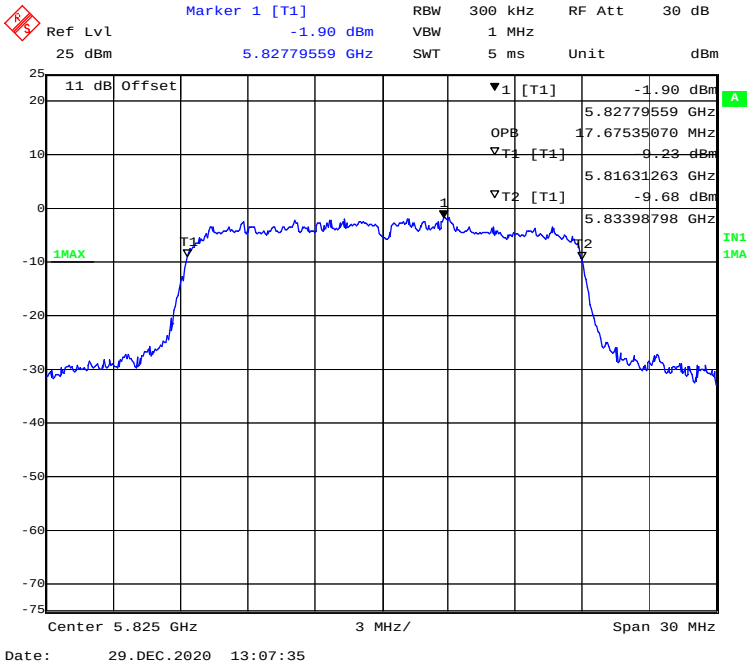
802.11ac20 mode, 5745MHz



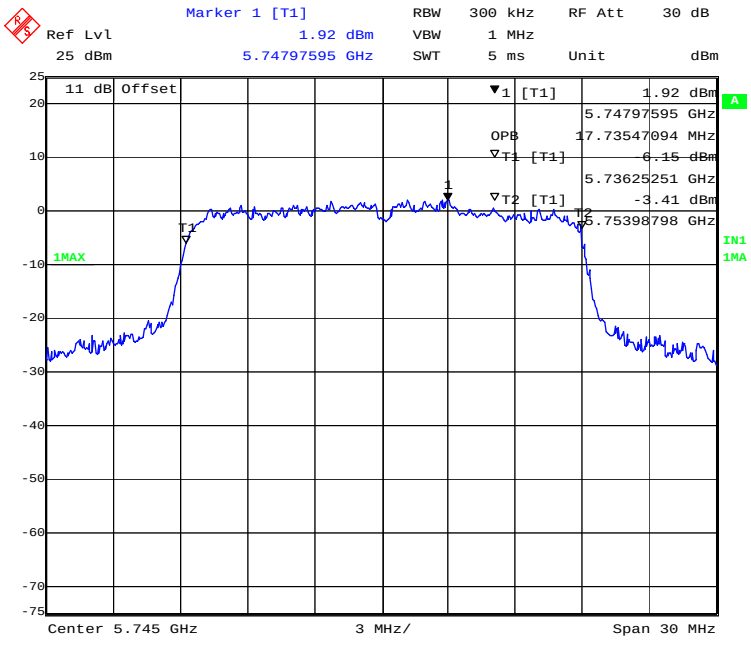
802.11ac20 mode, 5785MHz



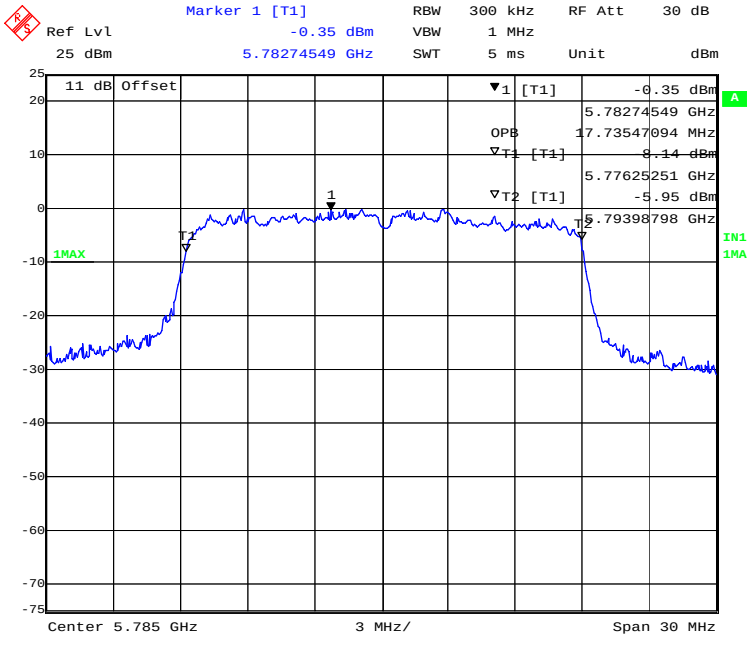
802.11ac20 mode, 5825MHz



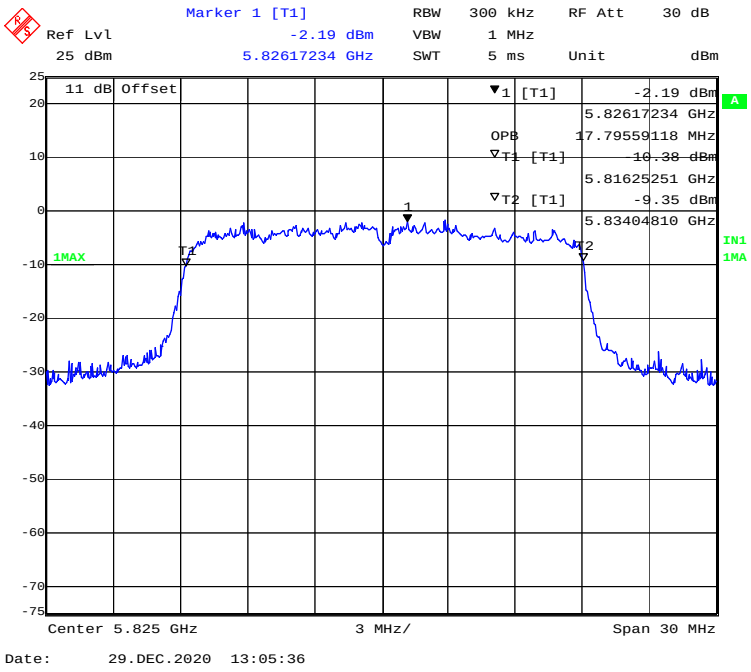
802.11n-HT20 mode, 5745MHz



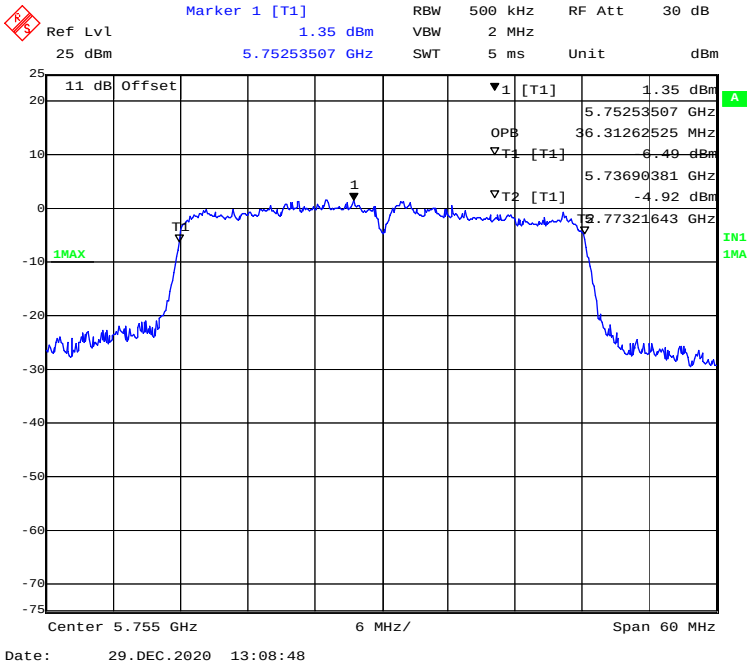
802.11n-HT20 mode, 5785MHz



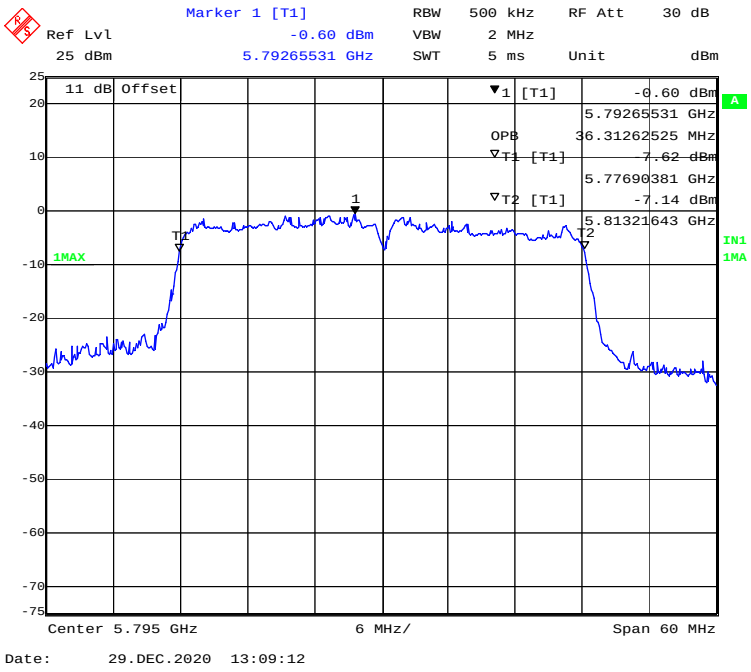
802.11n-HT20 mode, 5825MHz



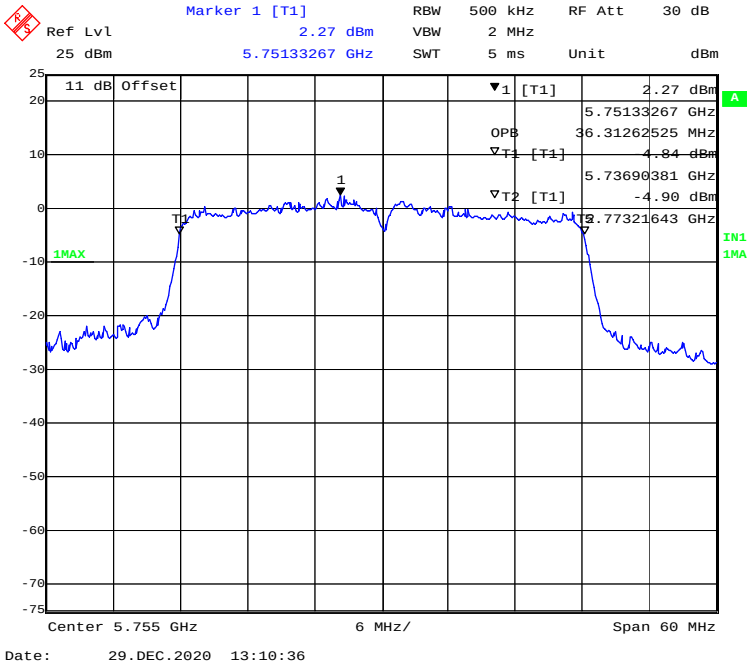
802.11ac40 mode, 5755MHz



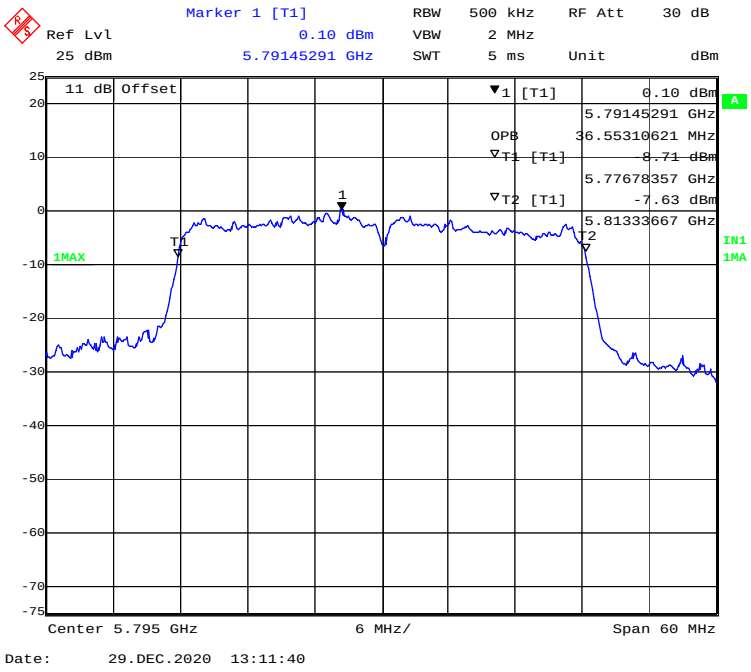
802.11ac40 mode, 5795MHz



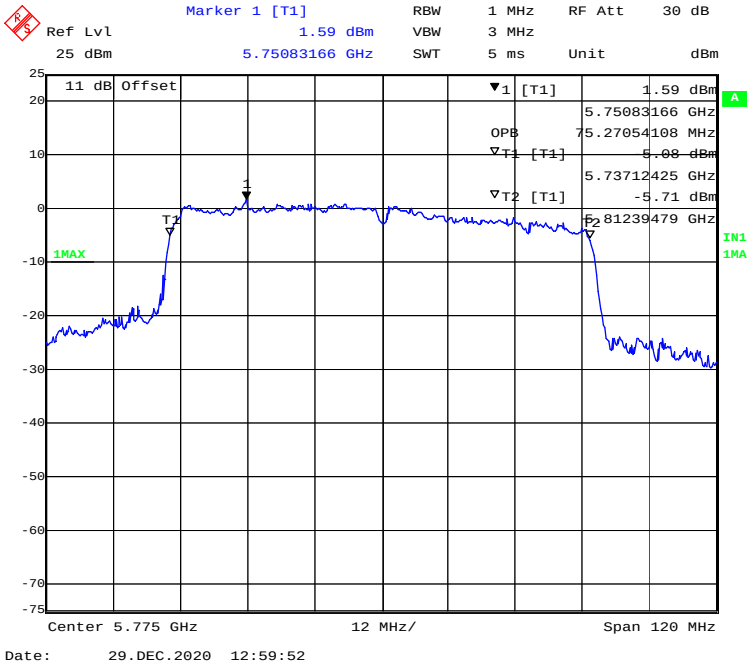
802.11n-HT40 mode, 5755MHz



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)

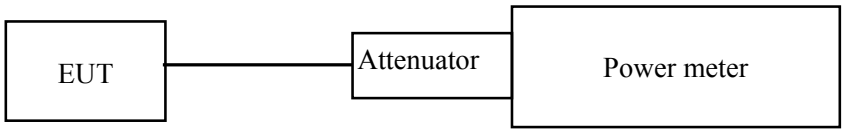
(ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz 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

Temperature:	21.8~22.3 ℃
Relative Humidity:	49~50 %
ATM Pressure:	101.2~101.5 kPa

The testing was performed by CK Huang from 2020-12-11 to 2020-12-29.

Test Mode: Transmitting

Test mode	Band	Channel	Frequency (MHz)	Average Conducted Output Power (dBm)			Limit	Result
				Chain0	Chain1	Total	(dBm)	
802.11a	5150-5250 MHz	Low	5180	15.92	13.02	/	30	PASS
		Middle	5200	15.85	13.33	/	30	PASS
		High	5240	15.77	12.70	/	30	PASS
	5725-5850 MHz	Low	5745	13.23	13.76	/	30	PASS
		Middle	5785	13.13	12.82	/	30	PASS
		High	5825	13.09	11.57	/	30	PASS
802.11n-HT20	5150-5250 MHz	Low	5180	12.17	11.91	15.05	30	PASS
		Middle	5200	12.28	11.76	15.04	30	PASS
		High	5240	12.34	10.91	14.69	30	PASS
	5725-5850 MHz	Low	5745	13.27	12.87	16.08	30	PASS
		Middle	5785	12.86	12.43	15.66	30	PASS
		High	5825	12.67	11.12	14.97	30	PASS
802.11n-HT40	5150-5250 MHz	Low	5190	12.44	12.31	15.39	30	PASS
		High	5230	12.39	11.82	15.12	30	PASS
	5725-5850 MHz	Low	5755	11.76	11.12	14.46	30	PASS
		High	5795	11.13	10.76	13.96	30	PASS
802.11ac20	5150-5250 MHz	Low	5180	12.21	11.91	15.07	30	PASS
		Middle	5200	12.22	12.25	15.25	30	PASS
		High	5240	11.94	11.58	14.77	30	PASS
	5725-5850 MHz	Low	5745	13.18	12.97	16.09	30	PASS
		Middle	5785	12.92	12.34	15.65	30	PASS
		High	5825	13.03	11.03	15.15	30	PASS
802.11ac40	5150-5250 MHz	Low	5190	12.83	12.28	15.57	30	PASS
		High	5230	12.53	11.83	15.20	30	PASS
	5725-5850 MHz	Low	5755	12.12	11.83	14.99	30	PASS
		High	5795	11.01	10.81	13.92	30	PASS
802.11ac80	5150-5250 MHz	/	5210	12.76	11.90	15.36	30	PASS
	5725-5850 MHz	/	5775	11.00	11.14	14.08	30	PASS

Note 1: The total output power=10Log10(10^(Chain0/10)+10^(Chain1/10))
Note 2: The maximum antenna gain is 2.0dBi(Band 1) and 2.0 dBi(Band 4), the device employed Cyclic Delay Diversity (CDD) for 802.11 MIMO transmitting, per KDB 662911 D01 Multiple Transmitter Output v02r01, for power measurements on IEEE 802.11 devices:
Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;
So:
Directional gain = G_{ANT} + Array Gain = 2.0dBi < 6dBi

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

Applicable Standard

According to §15.407(a)(1)

(ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 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

Temperature:	21.8~22.3 ℃
Relative Humidity:	49~50 %
ATM Pressure:	101.2~101.5 kPa

The testing was performed by CK Huang from 2020-12-11 to 2021-02-04.

Test Mode: Transmitting

5150MHz-5250MHz:

Mode	Channel	Frequency (MHz)	PSD (dBm/MHz)			Limit (dBm/MHz)	Result
			Chain0	Chain1	Total		
802.11a	Low	5180	5.60	4.26	/	17	PASS
	Middle	5200	5.84	5.17	/	17	PASS
	High	5240	5.42	3.89	/	17	PASS
802.11ac20	Low	5180	3.58	2.89	6.26	17	PASS
	Middle	5200	3.81	3.22	6.54	17	PASS
	High	5240	3.69	2.58	6.18	17	PASS
802.11n20	Low	5180	3.62	3.37	6.51	17	PASS
	Middle	5200	3.84	2.68	6.31	17	PASS
	High	5240	3.59	1.89	5.83	17	PASS
802.11ac40	Low	5190	0.41	0.42	3.43	17	PASS
	High	5230	0.68	0.04	3.38	17	PASS
802.11n40	Low	5190	0.64	0.38	3.52	17	PASS
	High	5230	0.47	0.33	3.41	17	PASS
802.11ac80	/	5210	-2.17	-2.81	0.53	17	PASS

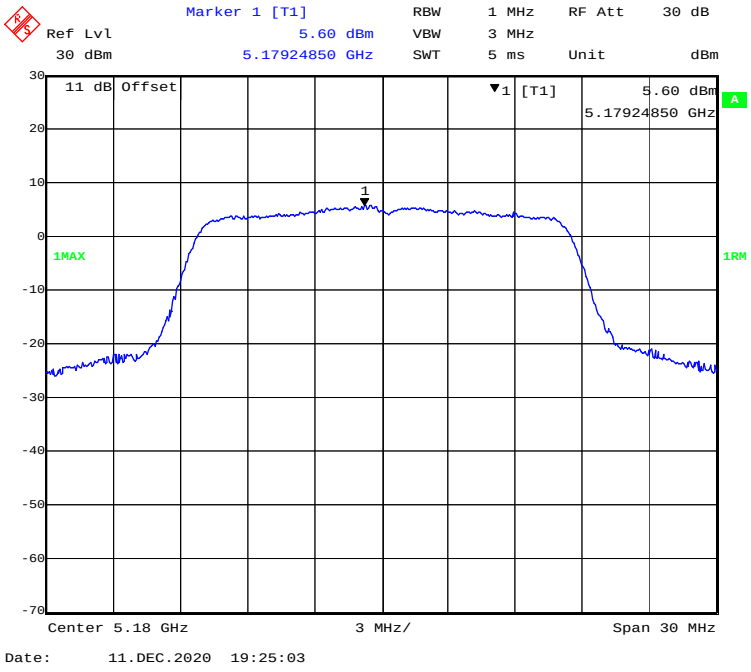
5725MHz-5850MHz:

Mode	Channel	Frequency (MHz)	PSD (dBm/500kHz)			Limit (dBm/500kHz)	Result
			Chain0	Chain1	Total		
802.11a	Low	5745	0.22	0.62	/	30	PASS
	Middle	5785	-0.97	-1.78	/	30	PASS
	High	5825	-1.39	-3.83	/	30	PASS
802.11ac20	Low	5745	-0.82	-0.65	2.28	30	PASS
	Middle	5785	-1.53	-2.73	0.92	30	PASS
	High	5825	-1.00	-4.61	0.57	30	PASS
802.11n20	Low	5745	-0.69	-0.62	2.36	30	PASS
	Middle	5785	-1.63	-2.86	0.81	30	PASS
	High	5825	-1.83	-4.63	0.00	30	PASS
802.11ac40	Low	5755	-3.96	-3.72	-0.83	30	PASS
	High	5795	-5.18	-6.26	-2.68	30	PASS
802.11n40	Low	5755	-4.48	-4.01	-1.23	30	PASS
	High	5795	-5.21	-5.98	-2.57	30	PASS
802.11ac80	/	5775	-7.48	-5.53	-3.39	30	PASS

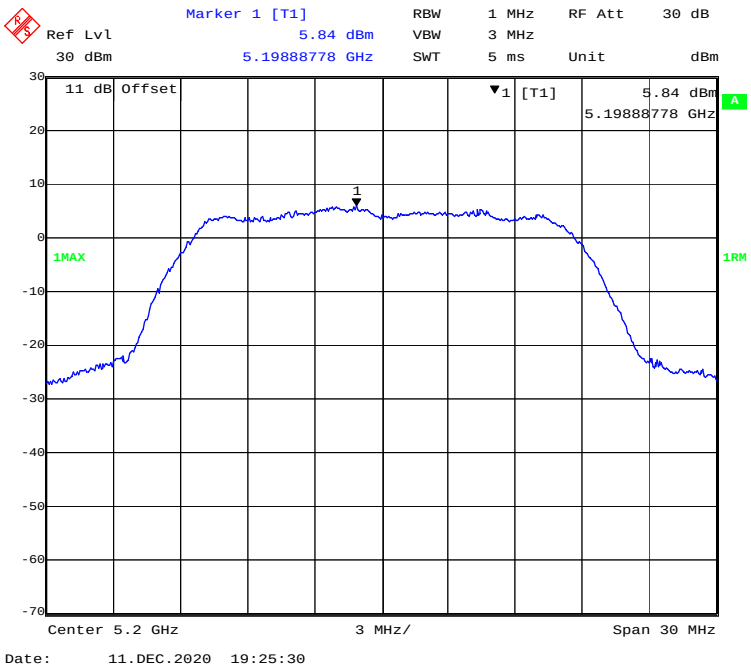
Note1: The total PSD=10Log10(10^(Chain0/10)+10^(Chain1/10))
Note2: The maximum antenna gain is 2.0dBi(Band 1) and 2.0dBi(Band 4). The device employed Cyclic Delay Diversity (CDD) for 802.11MIMO transmitting, per KDB 662911 D01 Multiple Transmitter Output v02r01, for power spectral density (PSD)measurements on the devices:
Array Gain = $10*\log(N_{ANT}/N_{SS})$ dB.
So:
Directional gain = G_{ANT} + Array Gain = $2.0+10*\log(2/1) = 5.0$dBi

5150MHz-5250MHz Band-Chain0 :

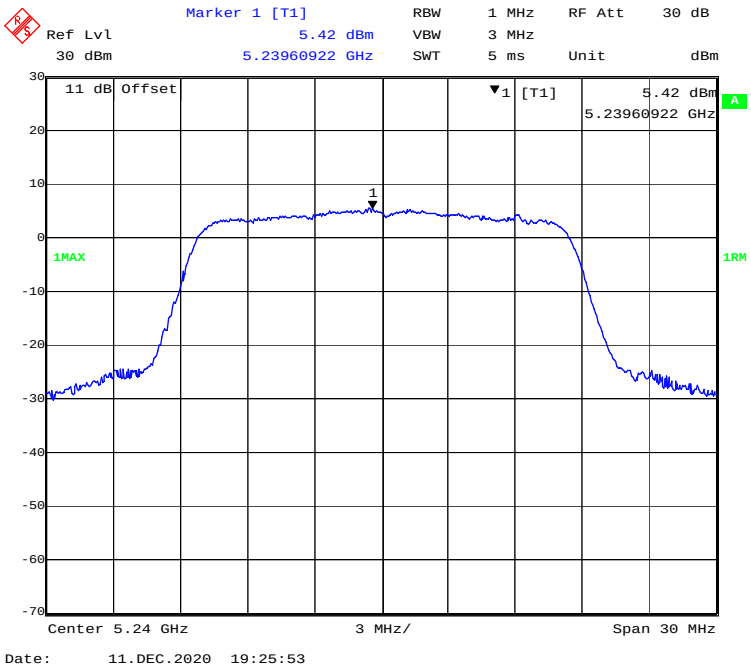
802.11a mode, Power spectral density-5180MHz



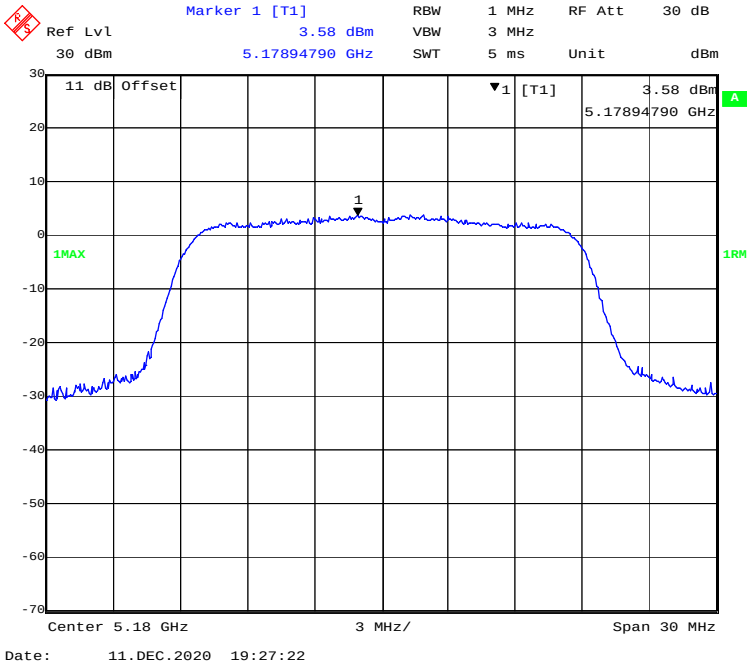
802.11a mode, Power spectral density-5200MHz



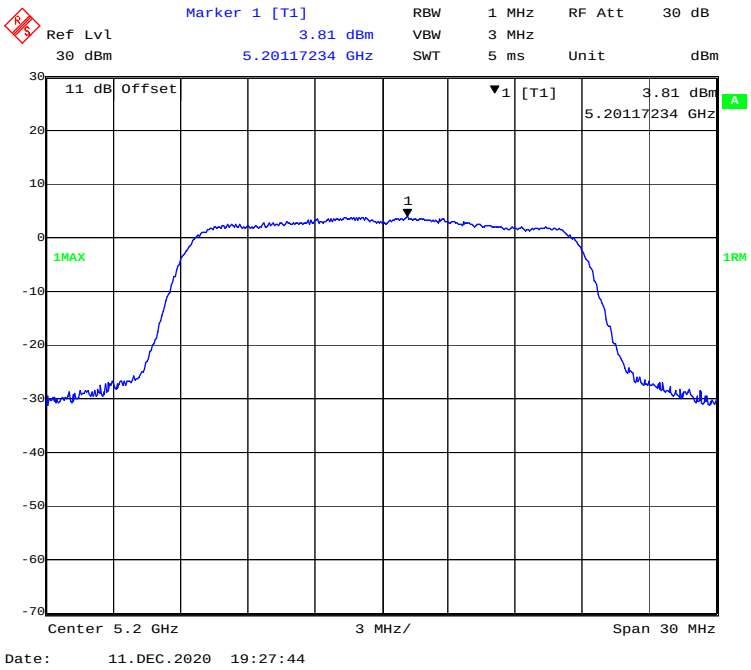
802.11a mode, Power spectral density-5240MHz



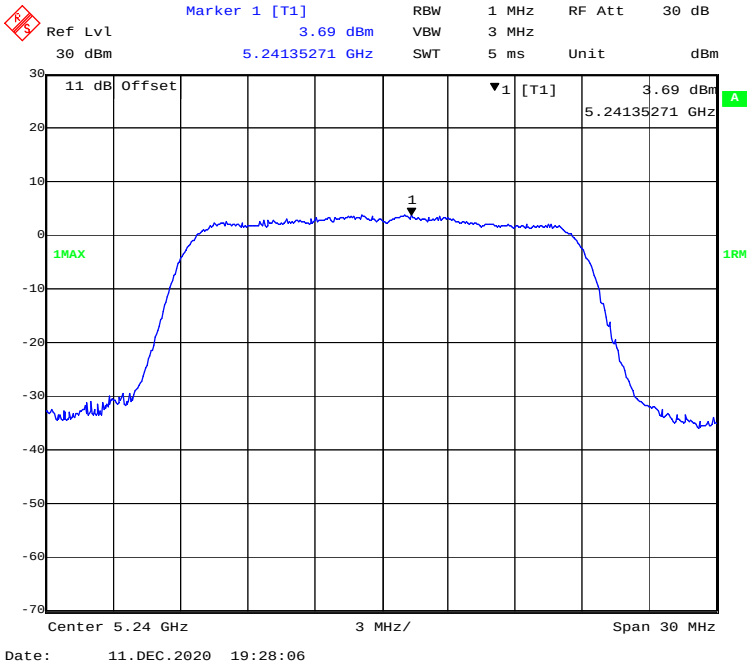
802.11ac20 mode, Power spectral density-5180MHz



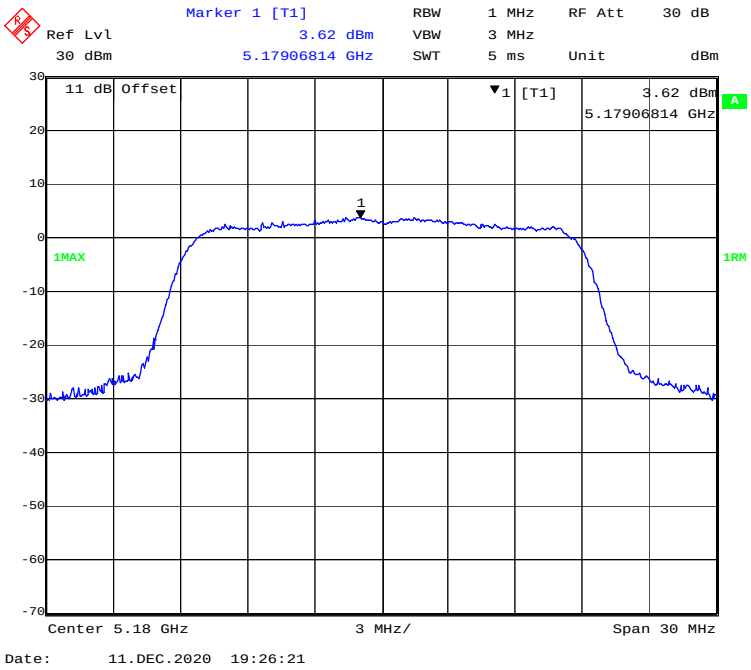
802.11ac20 mode, Power spectral density-5200MHz



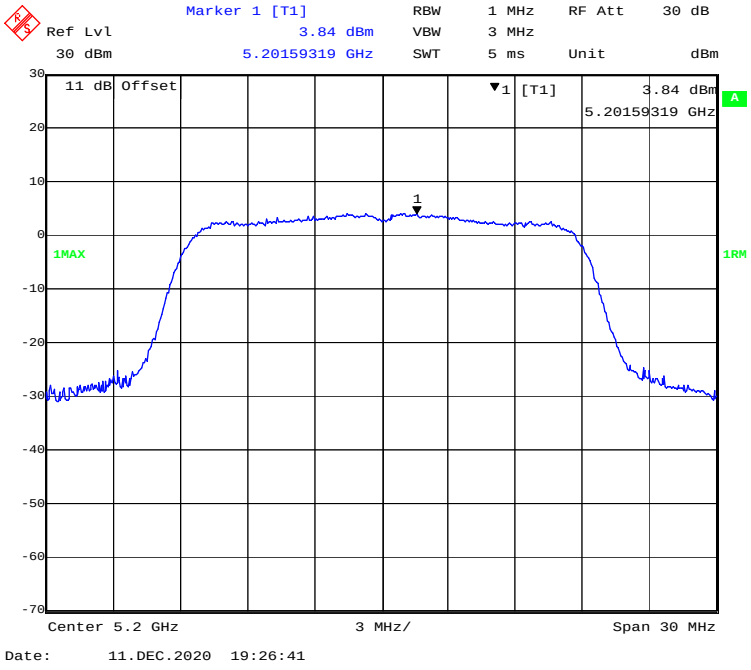
802.11ac20 mode, Power spectral density-5240MHz



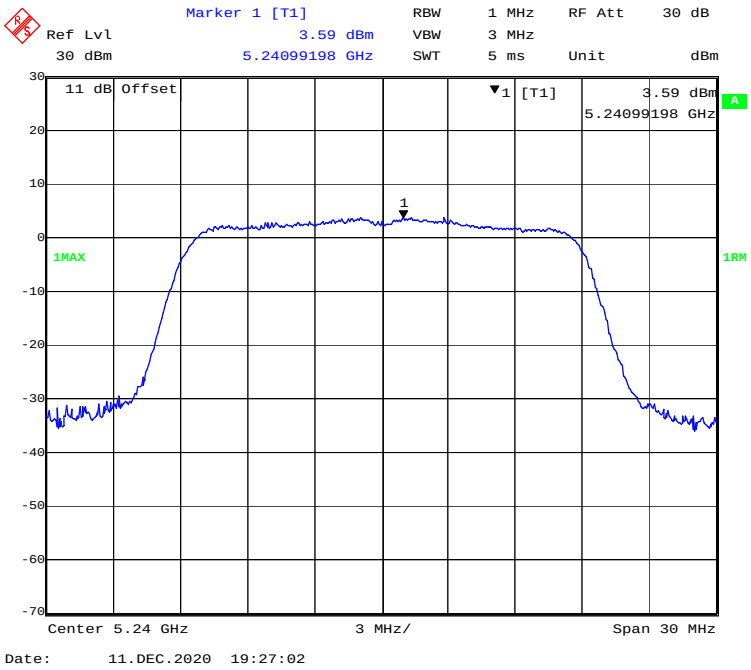
802.11n-HT20 mode, Power spectral density-5180MHz



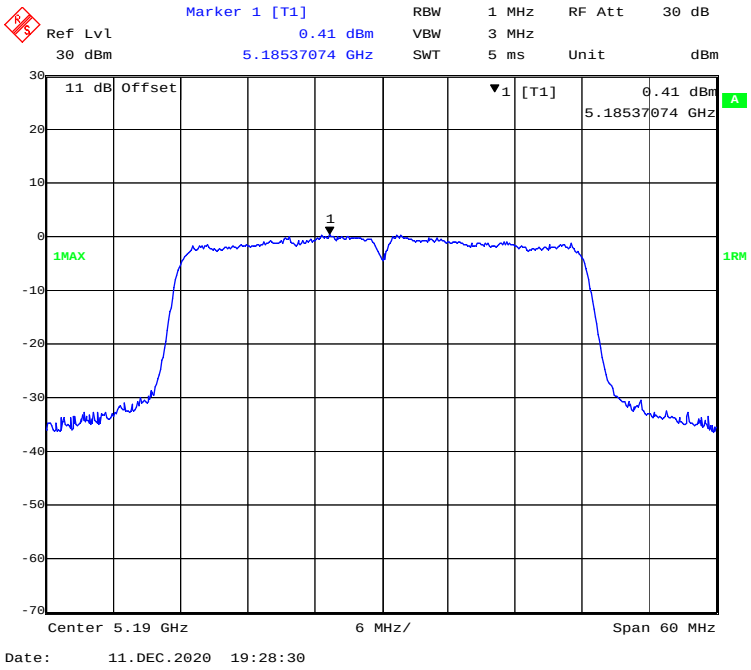
802.11n-HT20 mode, Power spectral density-5200MHz



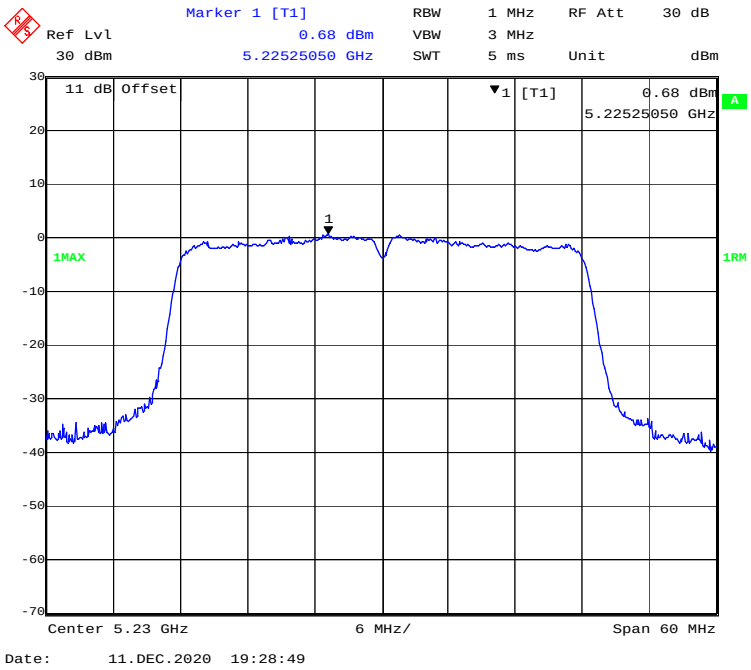
802.11n-HT20 mode, Power spectral density-5240MHz



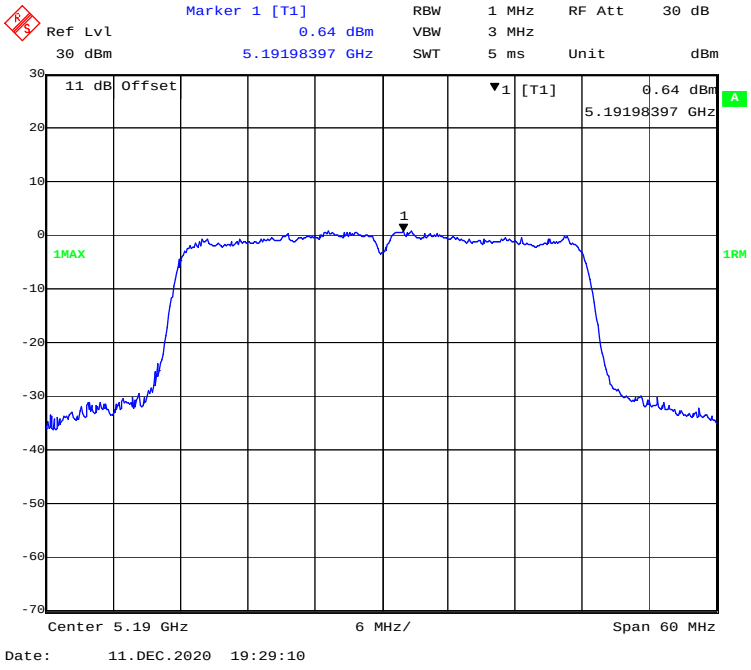
802.11ac40 mode, Power spectral density-5190MHz



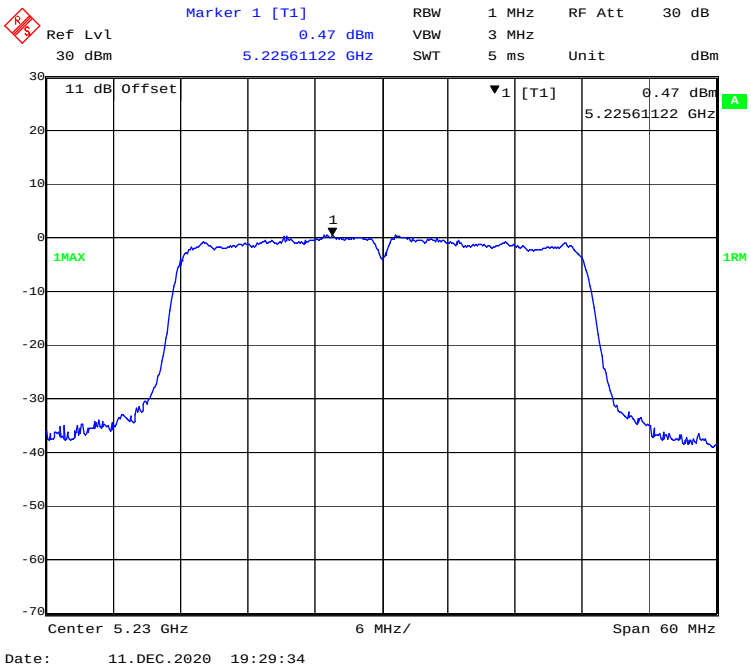
802.11ac40 mode, Power spectral density-5230MHz



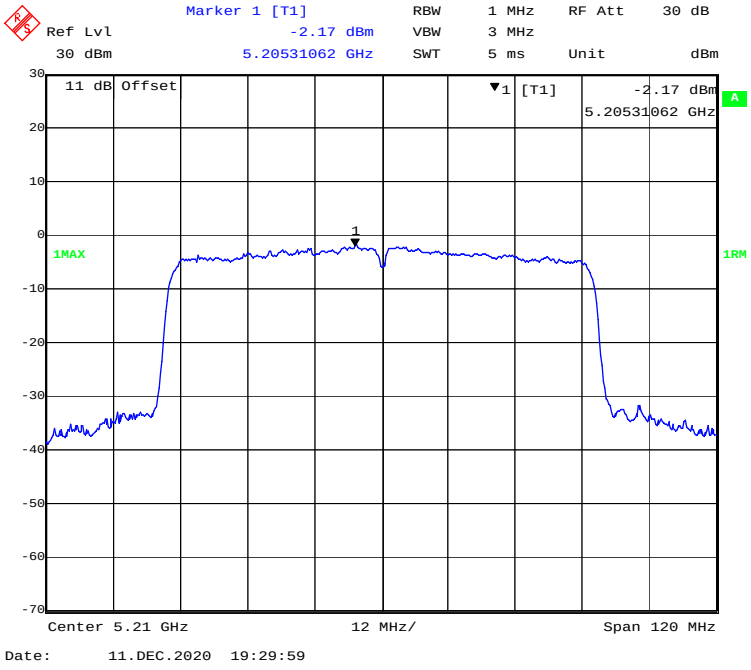
802.11n-HT40 mode, Power spectral density-5190MHz



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

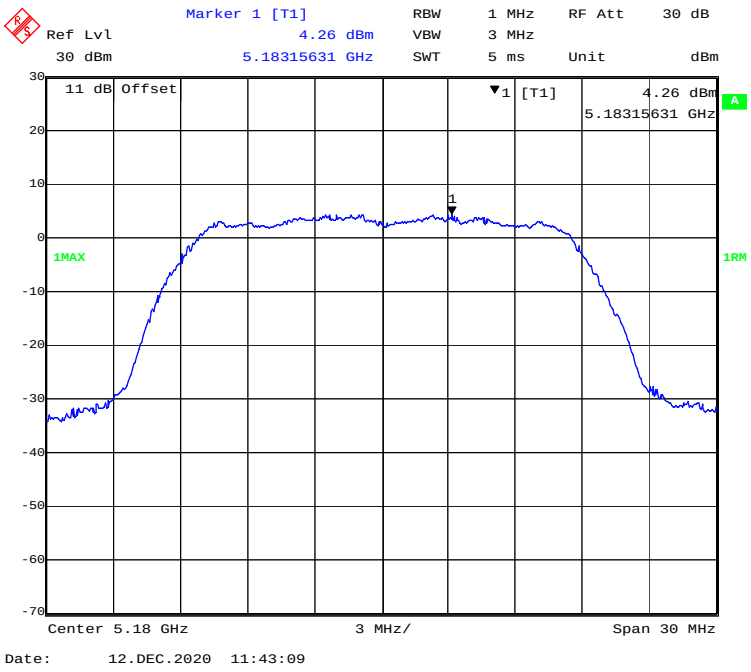


802.11ac80 mode, Power spectral density-5210MHz

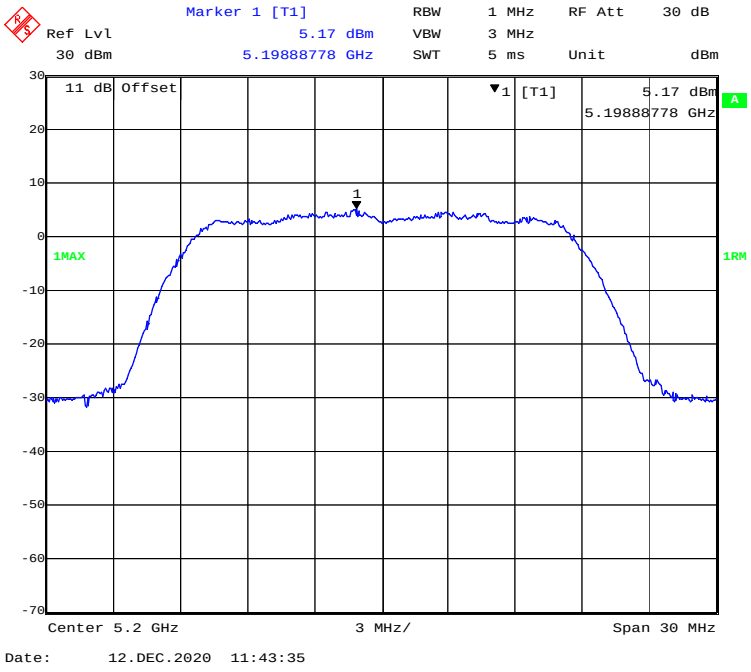


5150MHz-5250MHz Band-Chain1 :

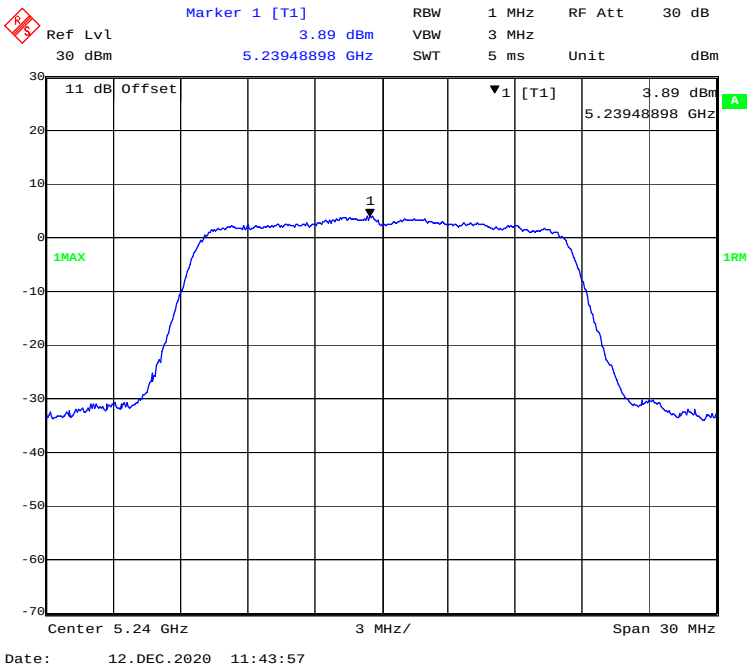
802.11a mode, Power spectral density-5180MHz



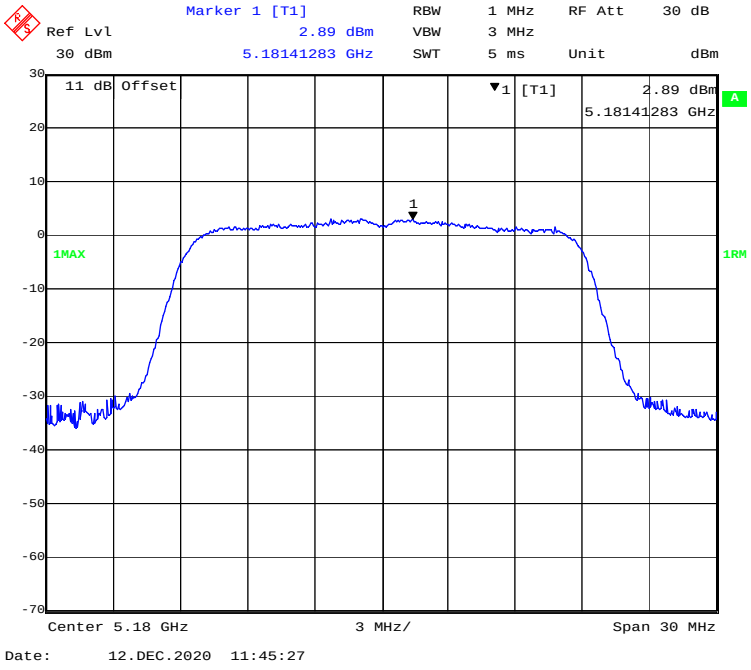
802.11a mode, Power spectral density-5200MHz



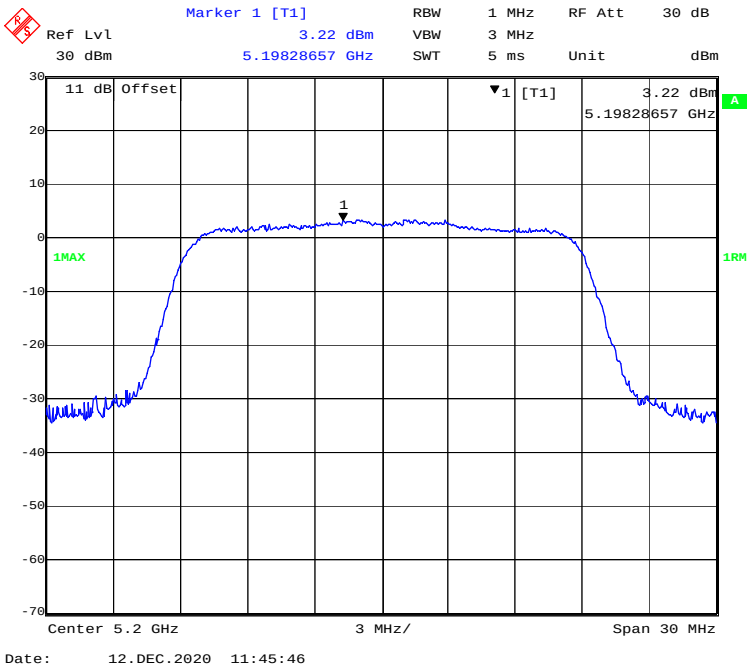
802.11a mode, Power spectral density-5240MHz



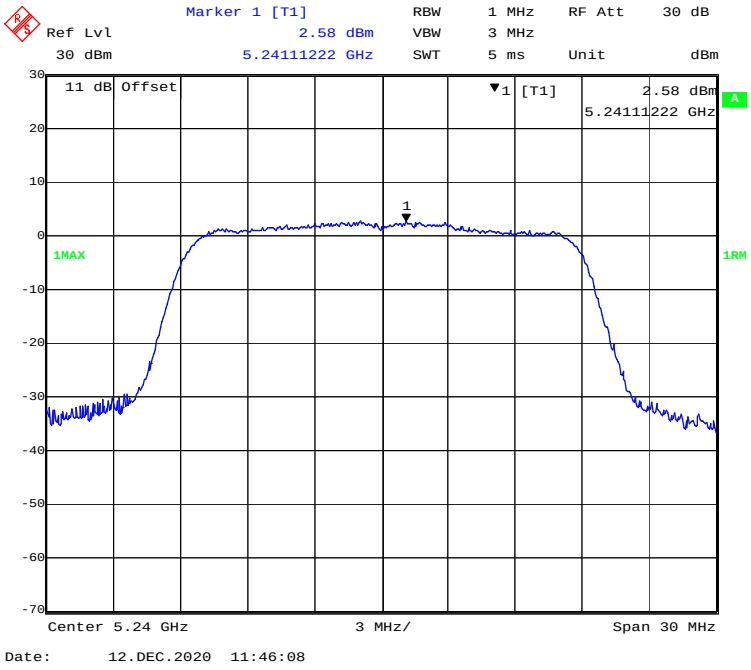
802.11ac20 mode, Power spectral density-5180MHz



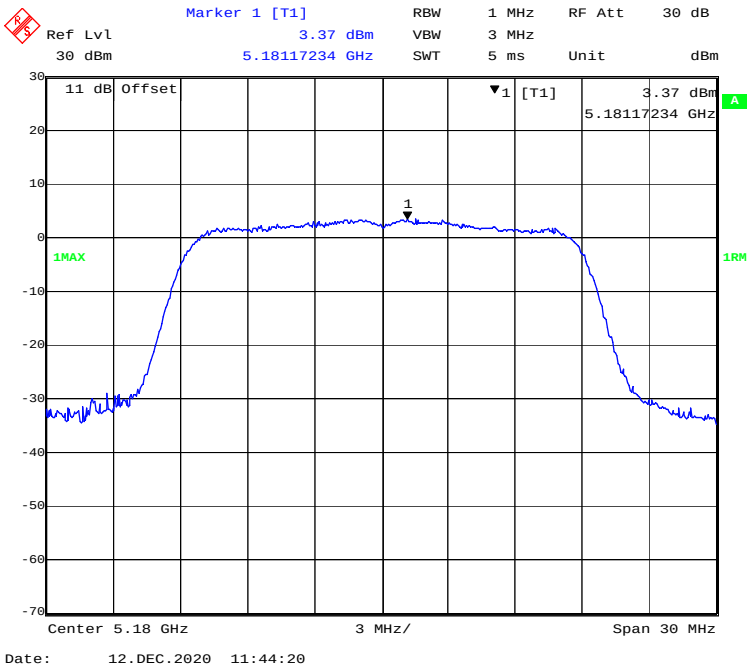
802.11ac20 mode, Power spectral density-5200MHz



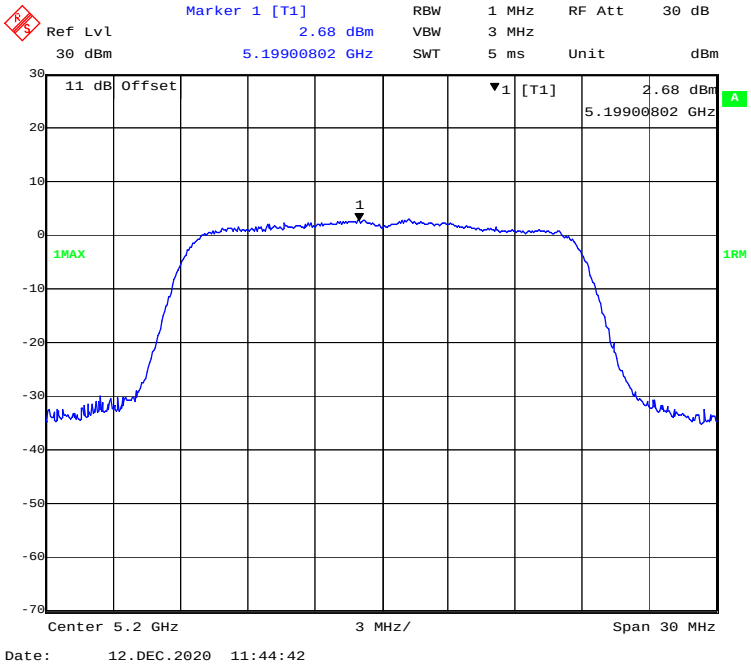
802.11ac20 mode, Power spectral density-5240MHz



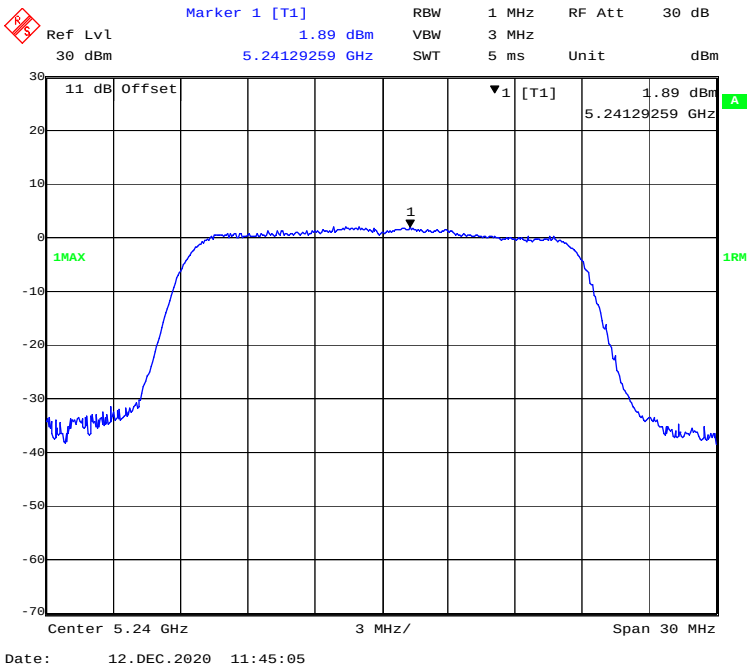
802.11n-HT20 mode, Power spectral density-5180MHz



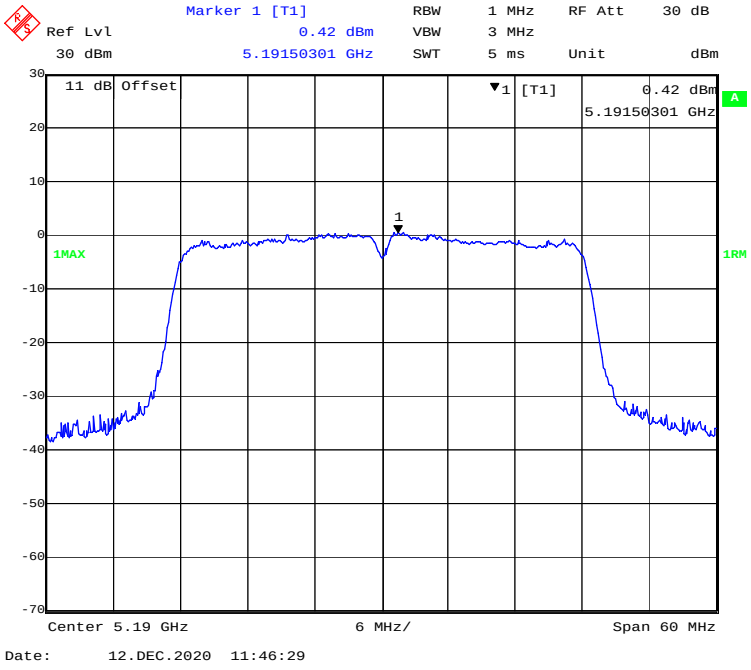
802.11n-HT20 mode, Power spectral density-5200MHz



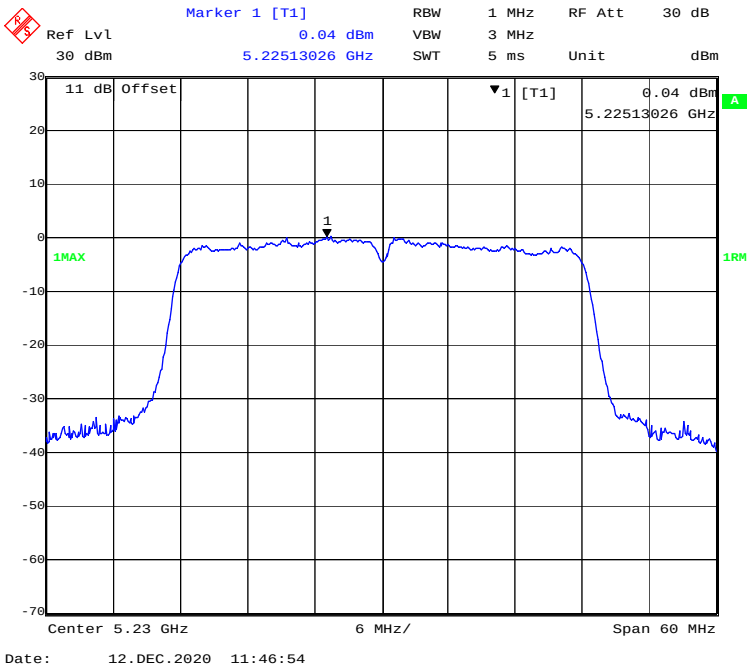
802.11n-HT20 mode, Power spectral density-5240MHz



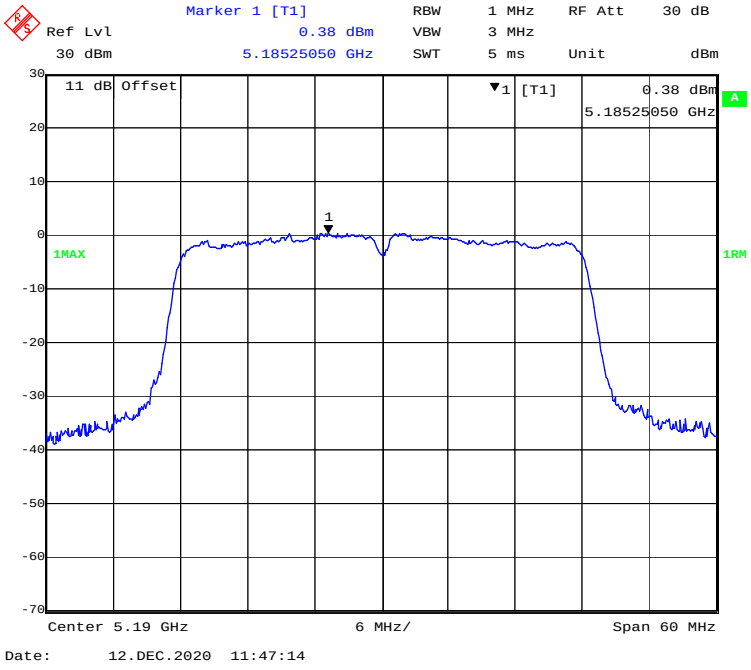
802.11ac40 mode, Power spectral density-5190MHz



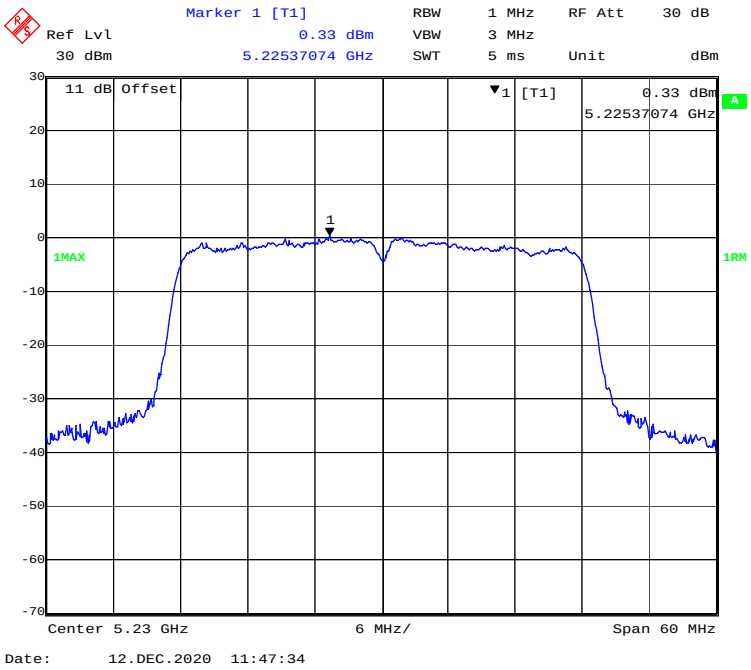
802.11ac40 mode, Power spectral density-5230MHz



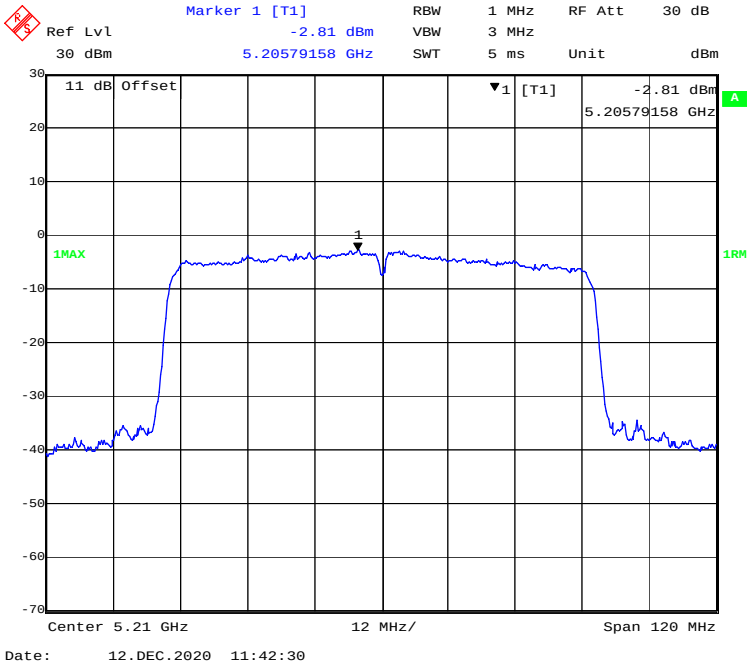
802.11n-HT40 mode, Power spectral density-5190MHz



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

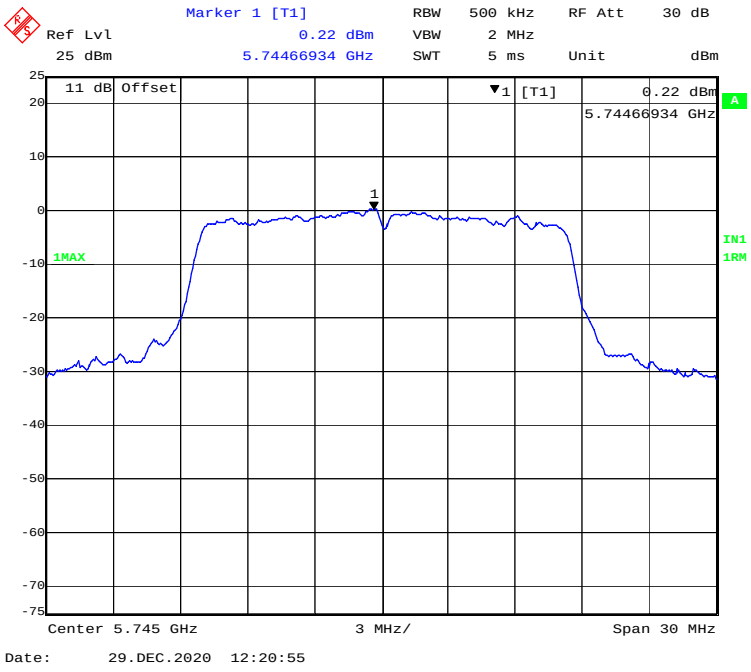


802.11ac80 mode, Power spectral density-5210MHz

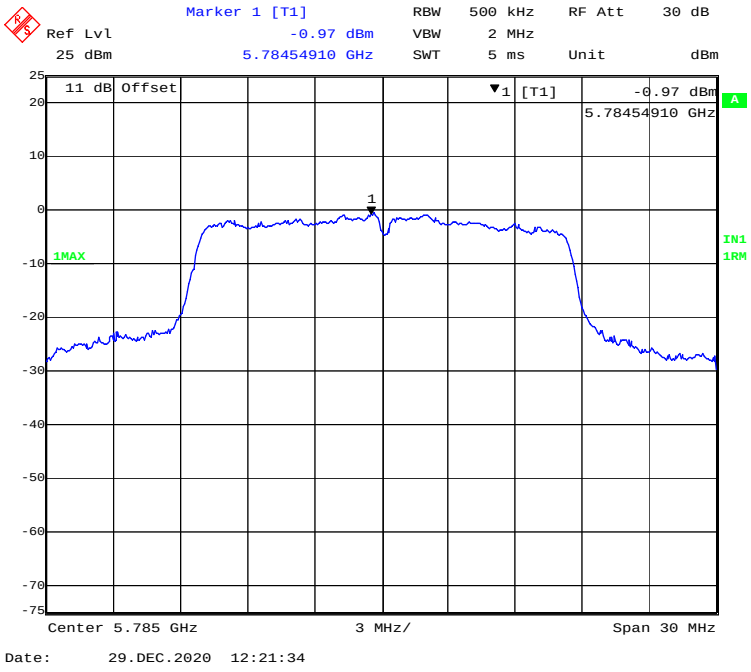


5725MHz-5850MHz Band-Chain0:

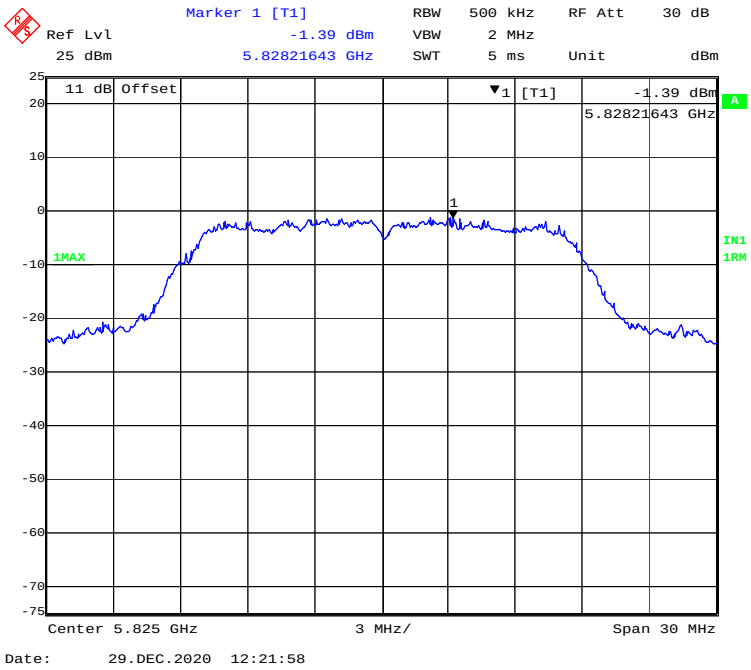
802.11a mode, Power spectral density-5745MHz



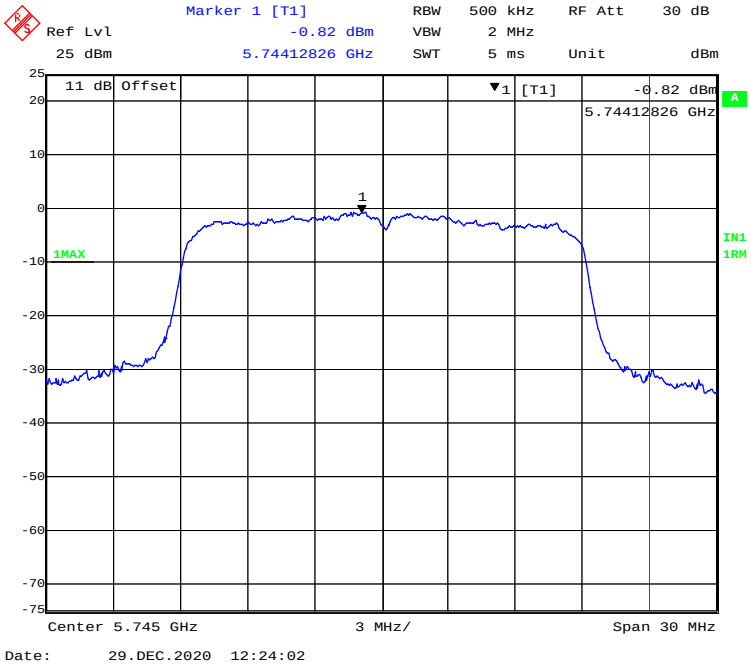
802.11a mode, Power spectral density-5785MHz



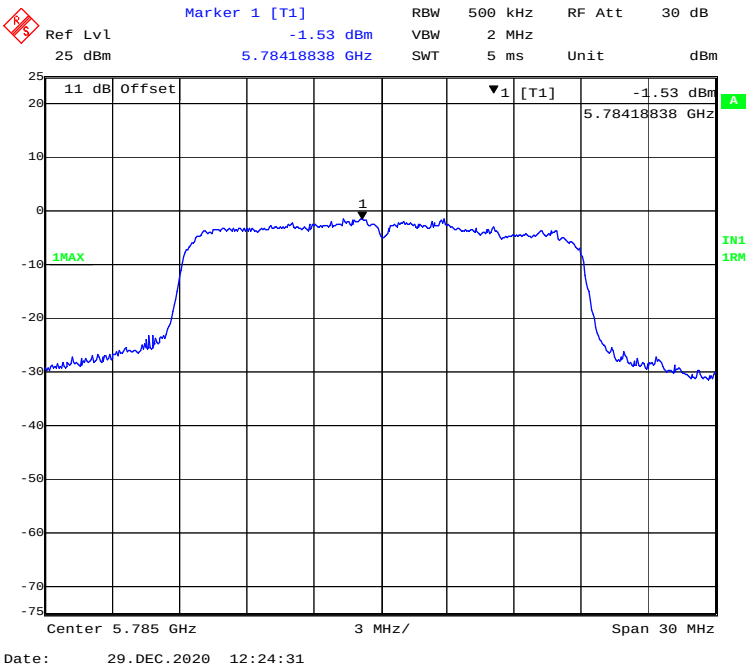
802.11a mode, Power spectral density-5825MHz



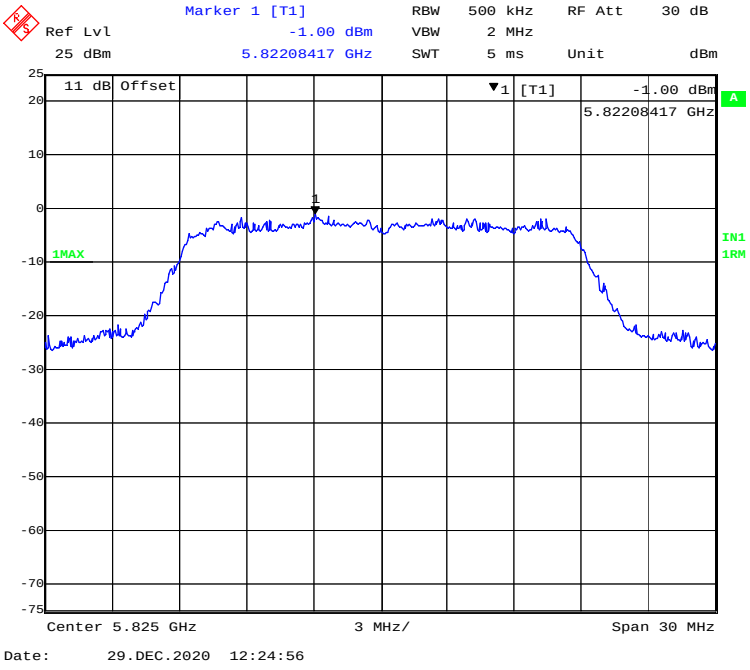
802.11ac20 mode, Power spectral density-5745MHz



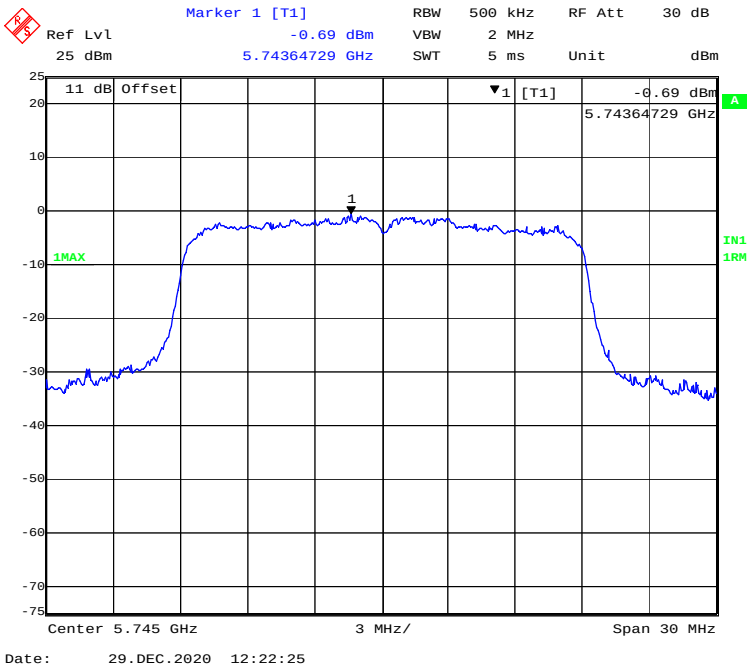
802.11ac20 mode, Power spectral density-5785MHz



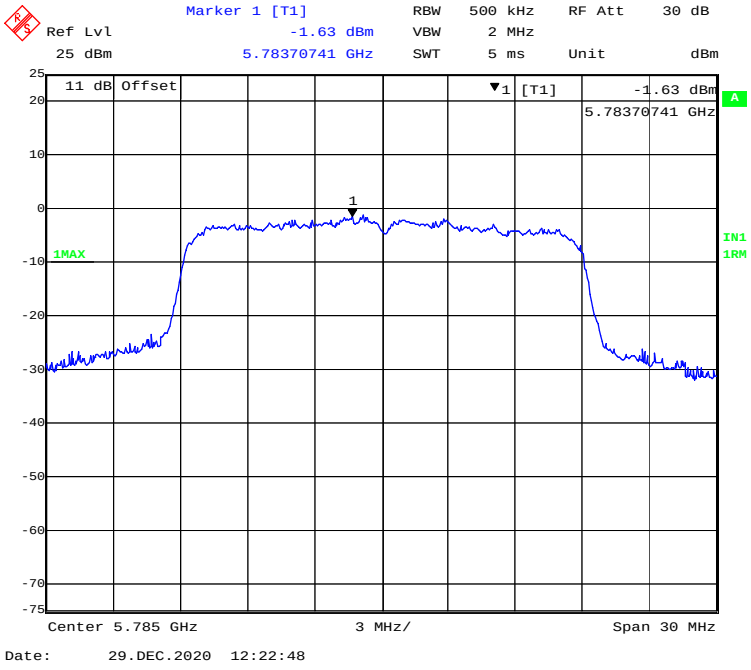
802.11ac20 mode, Power spectral density-5825MHz



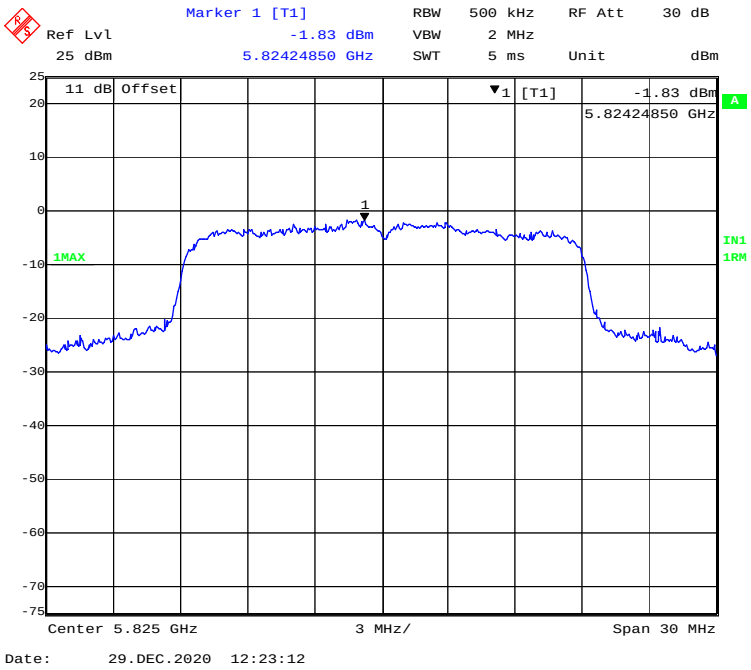
802.11n-HT20 mode, Power spectral density-5745MHz



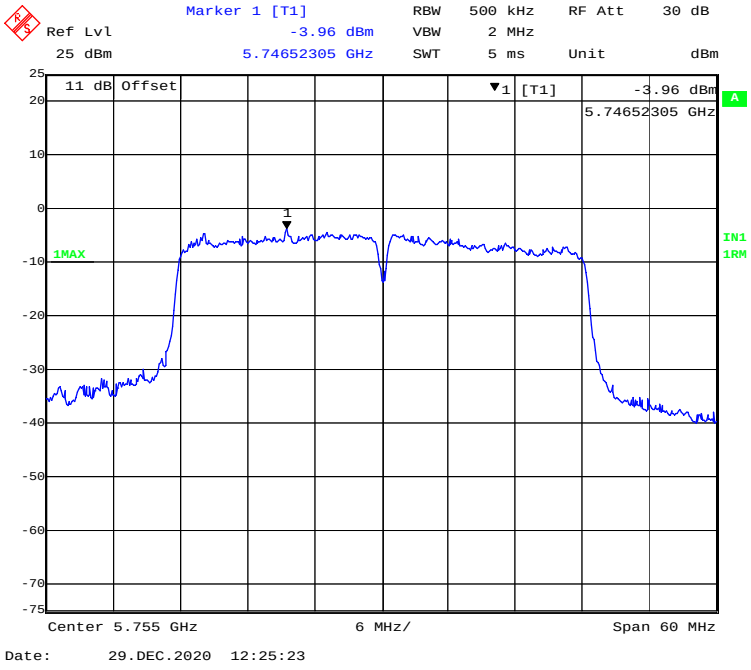
802.11n-HT20 mode, Power spectral density-5785MHz



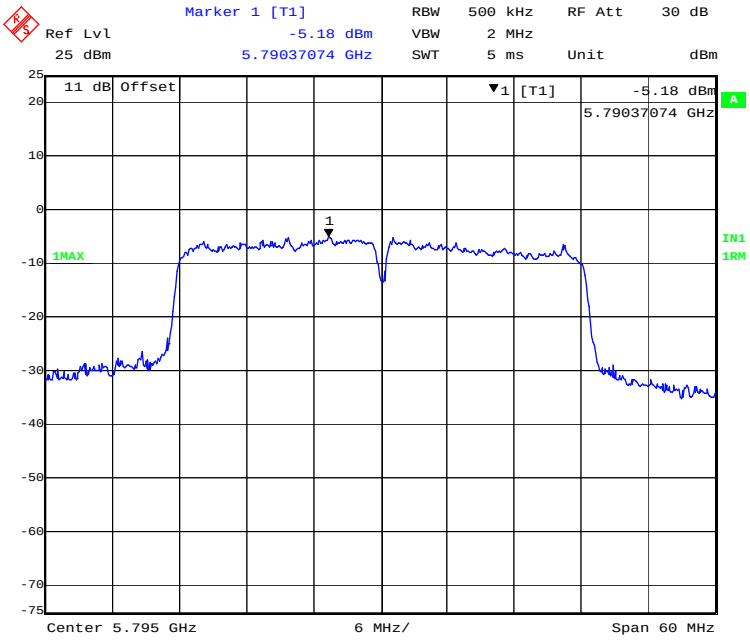
802.11n-HT20 mode, Power spectral density-5825MHz



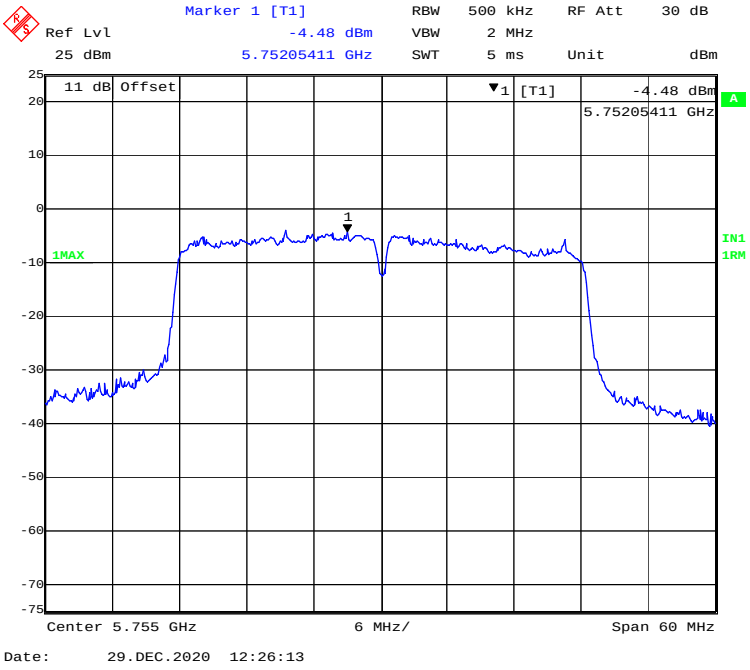
802.11ac40 mode, Power spectral density-5755MHz



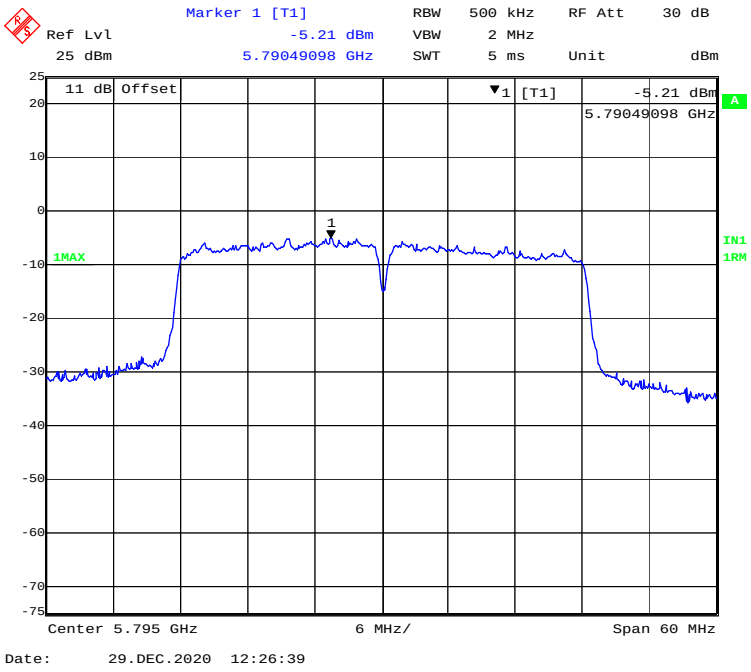
802.11ac40 mode, Power spectral density-5795MHz



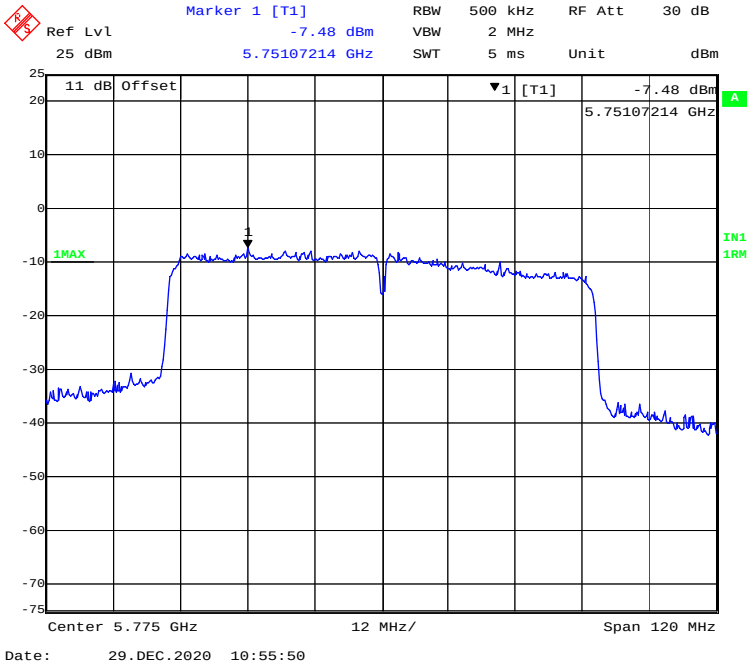
802.11n-HT40 mode, Power spectral density-5755MHz



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

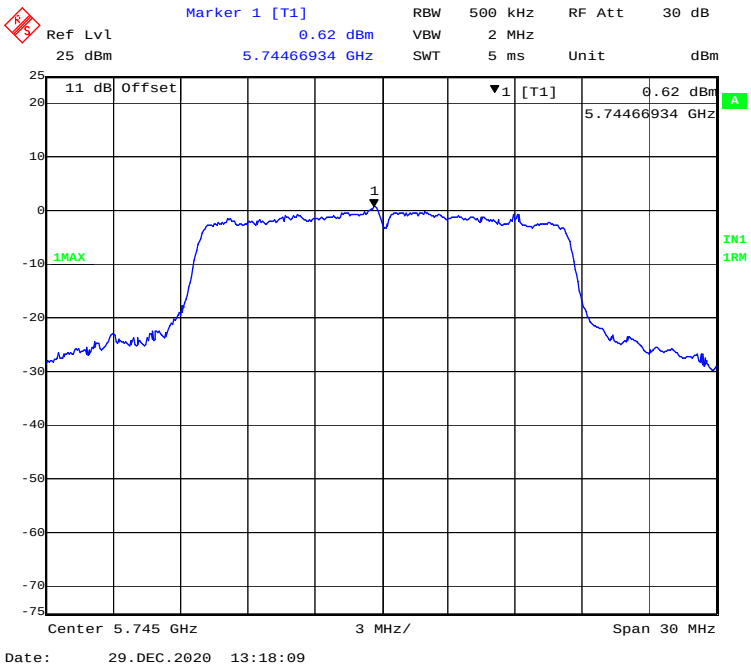


802.11ac80 mode, Power spectral density-5775MHz

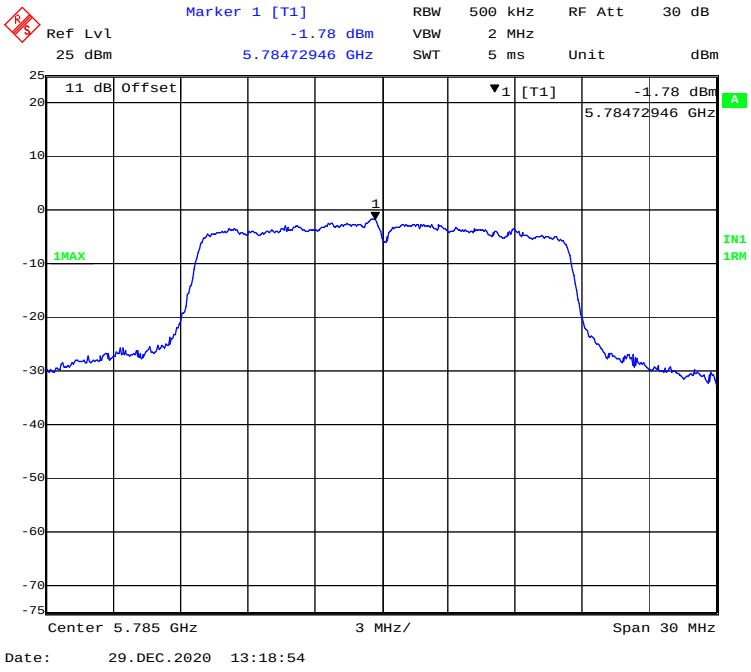


5725MHz-5850 MHz Band-Chain1:

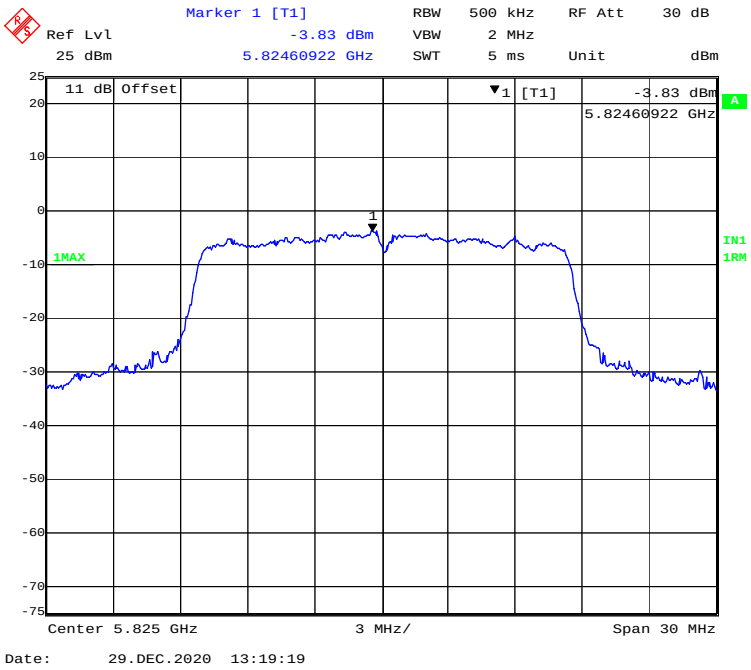
802.11a mode, Power spectral density-5745MHz



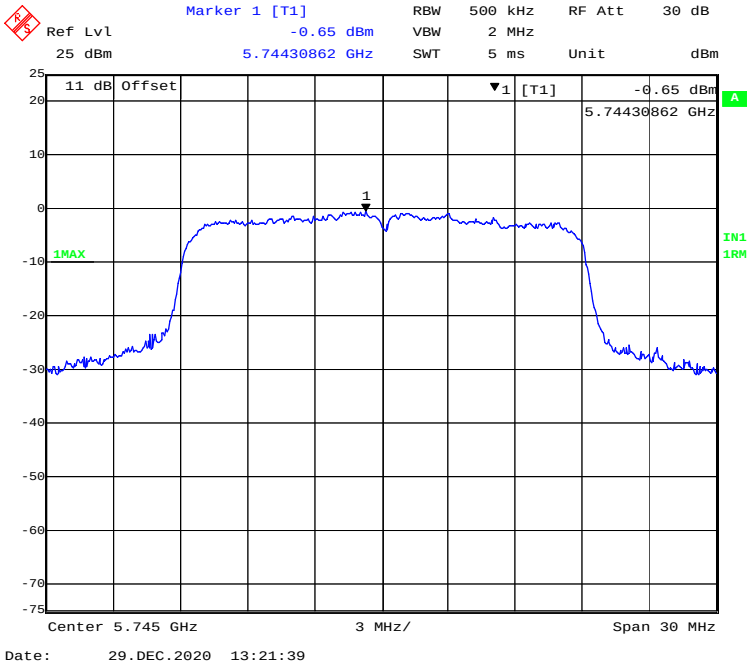
802.11a mode, Power spectral density-5785MHz



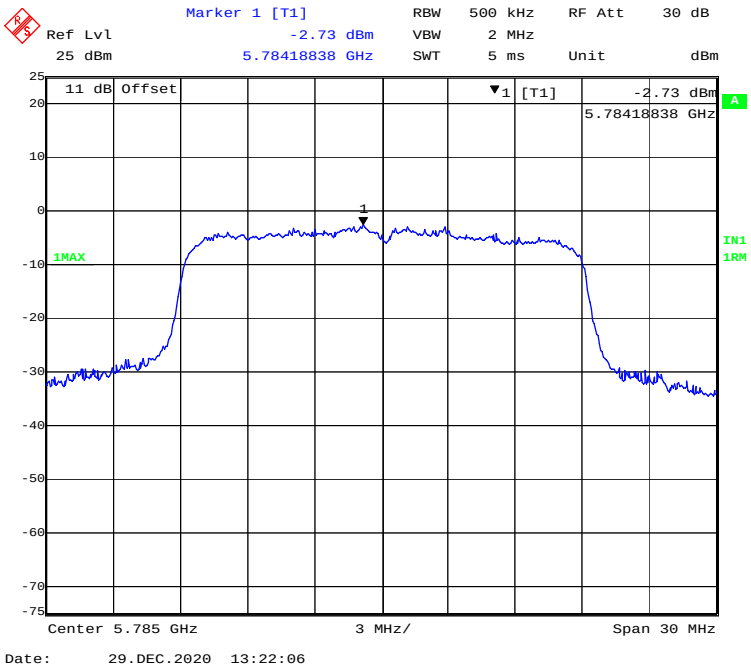
802.11a mode, Power spectral density-5825MHz



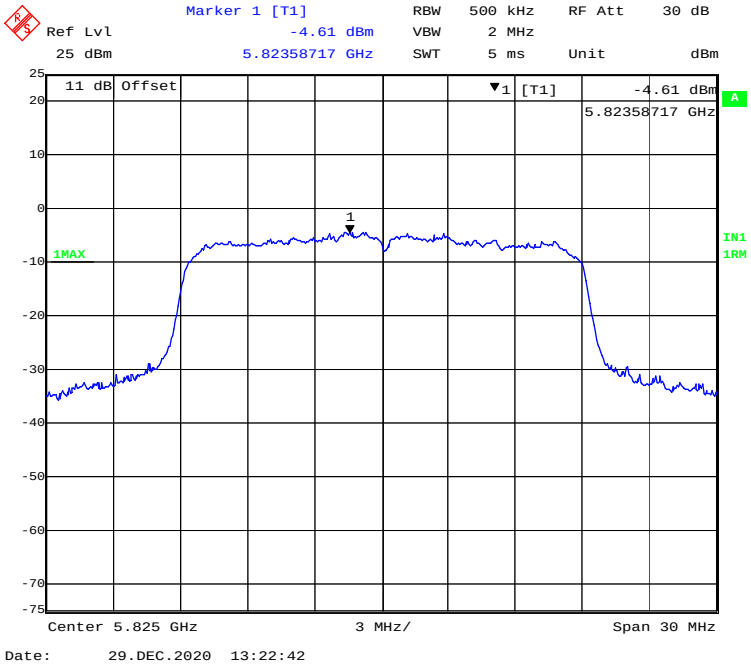
802.11ac20 mode, Power spectral density-5745MHz



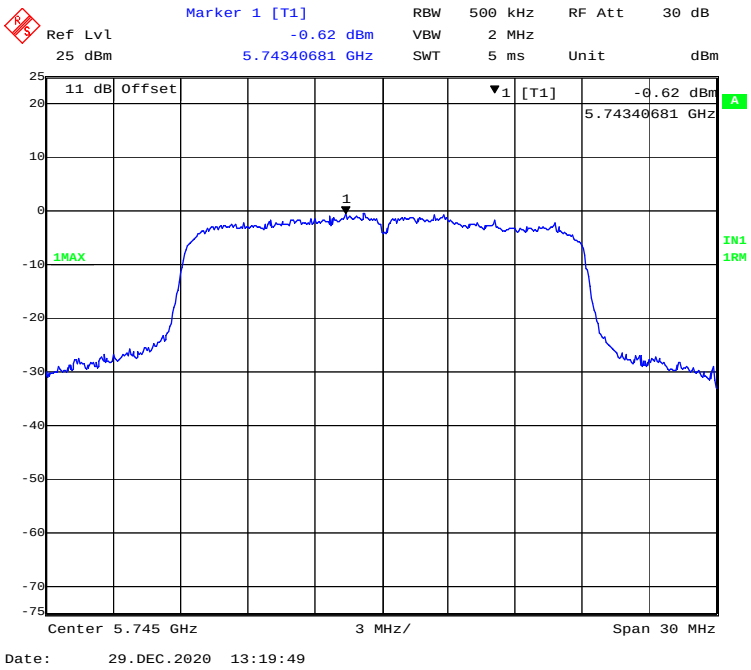
802.11ac20 mode, Power spectral density-5785MHz



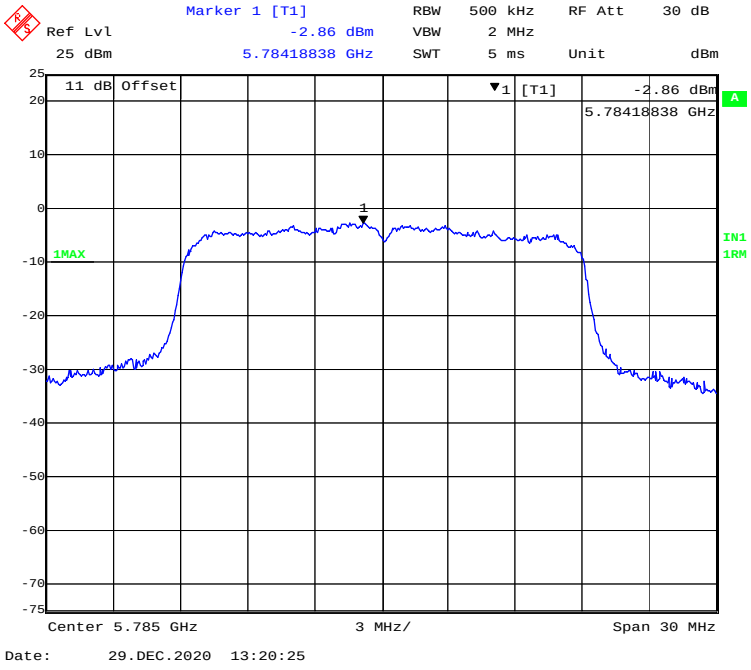
802.11ac20 mode, Power spectral density-5825MHz



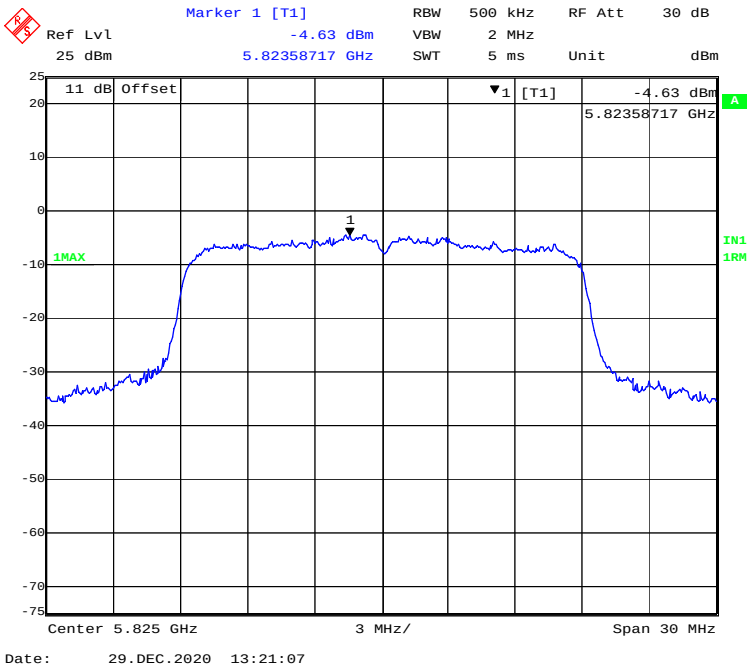
802.11n-HT20 mode, Power spectral density-5745MHz



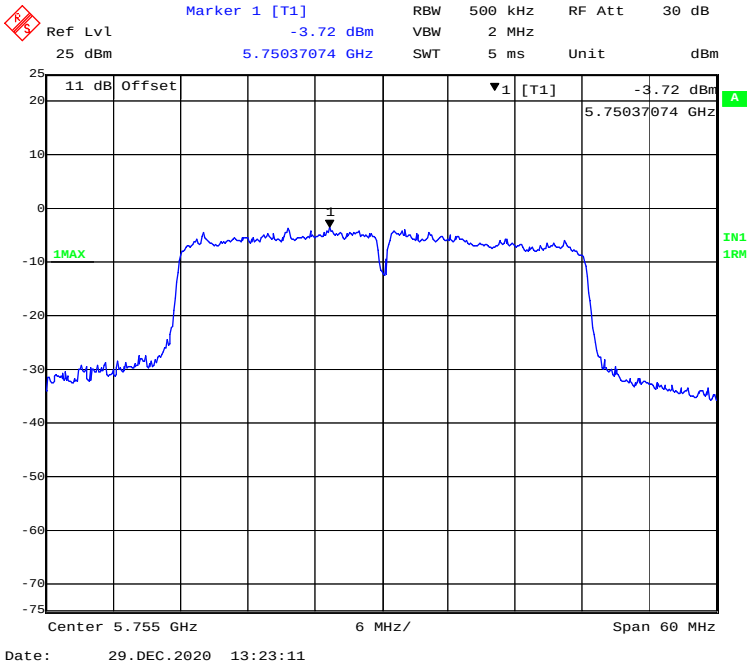
802.11n-HT20 mode, Power spectral density-5785MHz



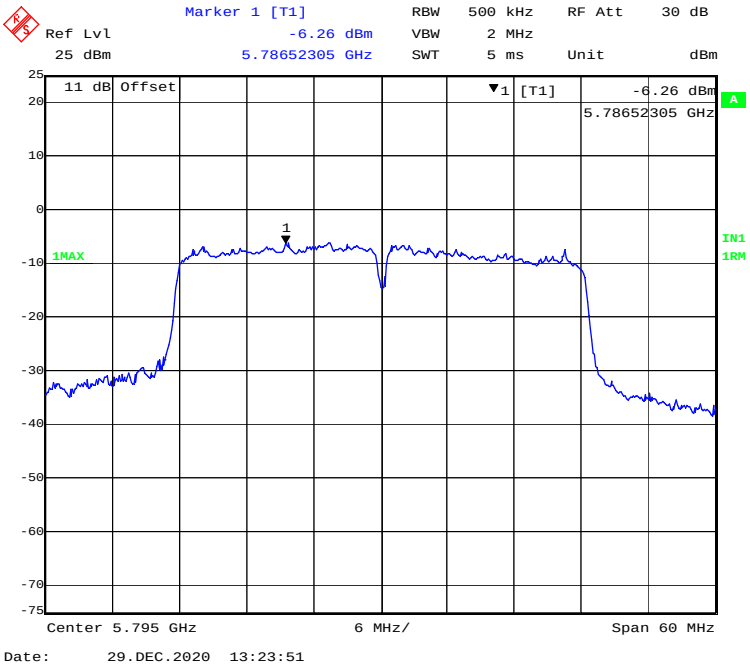
802.11n-HT20 mode, Power spectral density-5825MHz



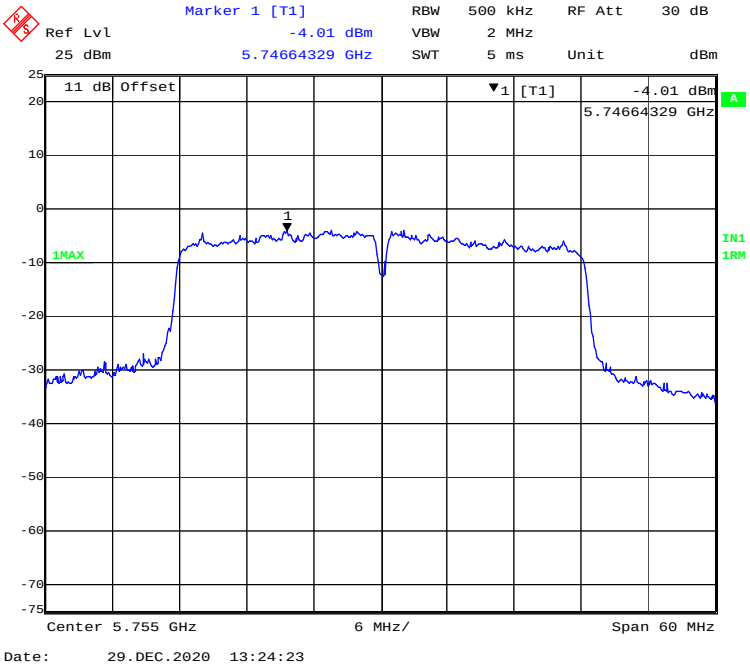
802.11ac40 mode, Power spectral density-5755MHz



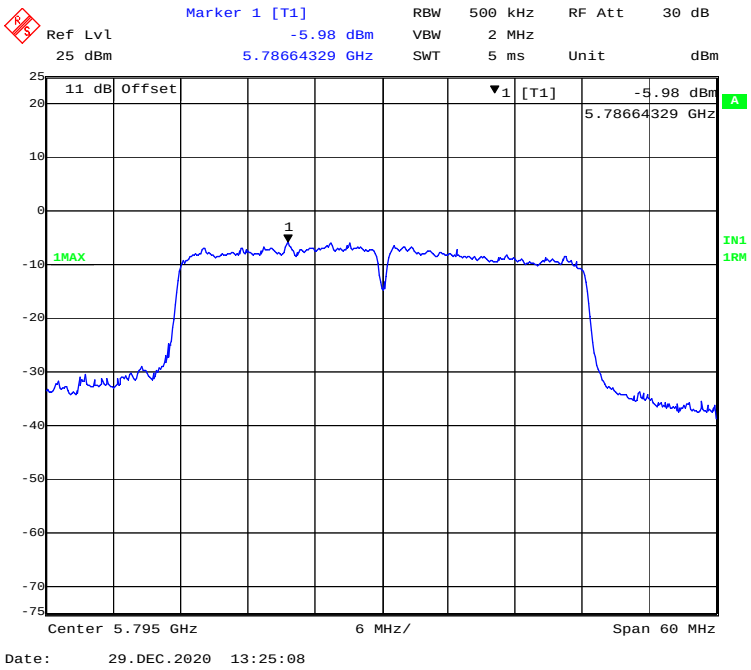
802.11ac40 mode, Power spectral density-5795MHz



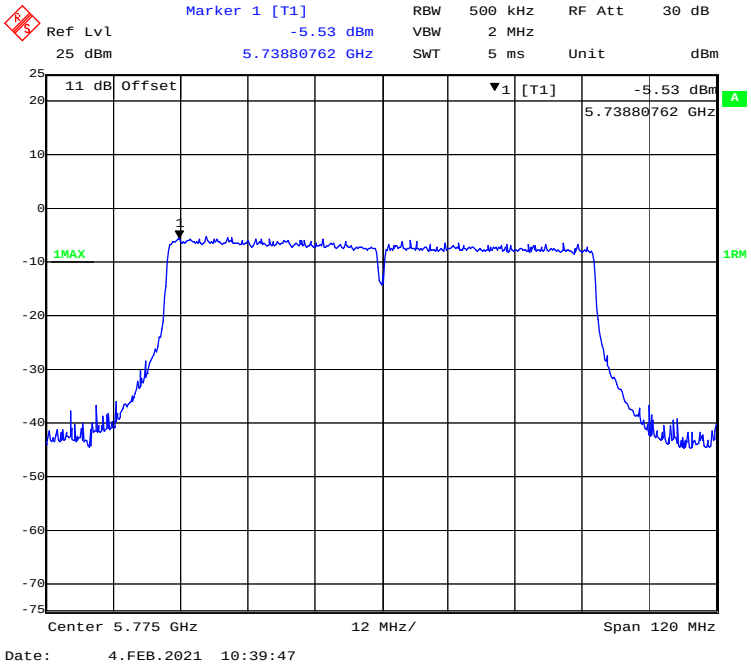
802.11n-HT40 mode, Power spectral density-5755MHz



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



802.11ac80 mode, Power spectral density-5775MHz



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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.

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