

FCC PART 15.407

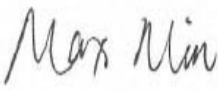
TEST REPORT

For

MeiG Smart Technology Co., Ltd

3/F, No.88, Qinjiang Road, Xuhui District, Shanghai, China.

FCC ID: 2APJ4-SLM756P

Report Type: Original Report		Product Type: Smart Module	
Test Engineer:	Max Min		
Report Number:	RSA190708001-00C		
Report Date:	2019-09-04		
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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Applicant	MeiG Smart Technology Co., Ltd
Tested Model	SLM756P
Product Type	Smart Module
Dimension	44mm(L)*39mm(W)*3mm(H)
Power Supply	DC 3.8V

**All measurement and test data in this report was gathered from production sample serial number: 20190708001. (Assigned by the BACL. The EUT supplied by the applicant was received on 2019-07-08)*

Objective

This type approval report is prepared on behalf of *MeiG Smart 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, Part 15.247 DSS, and Part 22H24E27 PCB submissions with FCC ID: 2APJ4-SLM756P.

Test Methodology

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

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

Measurement Uncertainty

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

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

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.

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

802.11a/n20 mode Channel 36, 40, 48 were tested.

802.11n40 mode Channel 38, 46 were tested.

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

For **5250~5350 MHz** band

802.11a/n20 mode Channel 52, 56, 64 were tested.

802.11n40 mode Channel 54, 62 were tested.

Channel	Frequency (MHz)	Channel	Frequency (MHz)
52	5260	60	5300
54	5270	62	5310
56	5280	64	5320
58	5290	/	/

For **5470~5725 MHz** band

802.11a/n20 mode Channel 100, 120, 140 were tested.

802.11n40 mode Channel 102, 118, 134 were tested.

Channel	Frequency (MHz)	Channel	Frequency (MHz)
100	5500	124	5620
102	5510	126	5630
104	5520	128	5640
106	5530	130	5650
108	5540	132	5660
110	5550	134	5670
112	5560	136	5680
114	5570	138	5690
116	5580	140	5700
118	5590	142	5710
120	5600	144	5720
122	5610	/	/

Note: Channel 144 for 802.11a, n20, 142 for 802.11n40 crossed the band U-NII 2C to U-NII 3, were crossed to test, and output power and PSD test was performed .

For **5725~5850 MHz** band,

802.11a/n20 mode Channel 149, 157, 165 were tested.

802.11n40 mode Channel 151, 159 were tested.

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

EUT Exercise Software

RF test tool: QRCT

The worst case was performed under:

5150-5250MHz

Mode	Channel	Data rate	Power Setting
802.11a	5180	6 Mbps	17
	5200		18
	5240		18
802.11n-HT20	5180	MCS0	17
	5200		18
	5240		18
802.11n-HT40	5190	MCS0	14
	5230		15

5250-5350MHz

Mode	Channel	Data rate	Power Setting
802.11a	5260	6 Mbps	18
	5280		19
	5320		19
802.11n-HT20	5260	MCS0	18
	5280		19
	5320		19
802.11n-HT40	5270	MCS0	15
	5310		15

5470-5725MHz

Mode	Channel	Data rate	Power Setting
802.11a	5500	6 Mbps	15
	5600		13
	5700		13
	5720		13
802.11n-HT20	5500	MCS0	15
	5600		13
	5700		13
	5720		13
802.11n-HT40	5510	MCS0	14
	5590		12
	5710		12

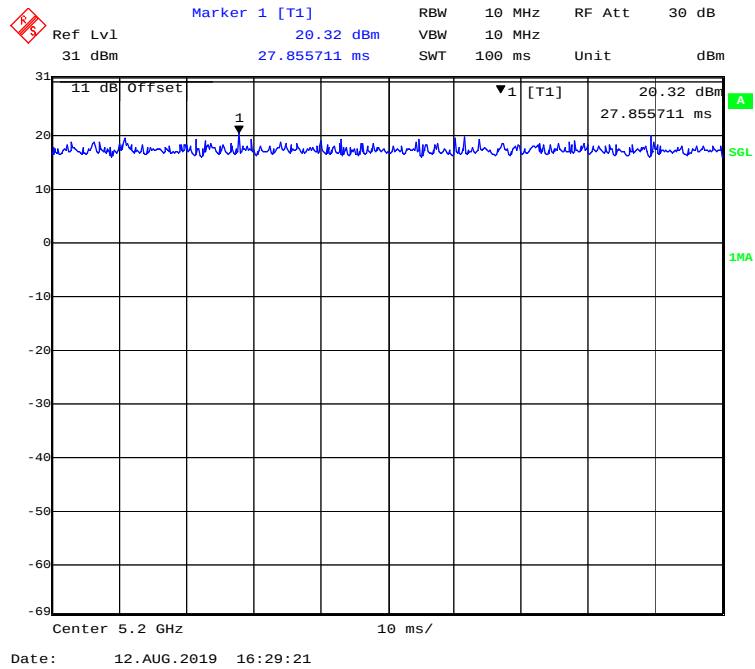
5725-5850MHz

Mode	Channel	Data rate	Power Setting
802.11a	5745	6 Mbps	16
	5785		17
	5825		19
802.11n-HT20	5745	MCS0	16
	5785		17
	5825		19
802.11n-HT40	5755	MCS0	15
	5795		16

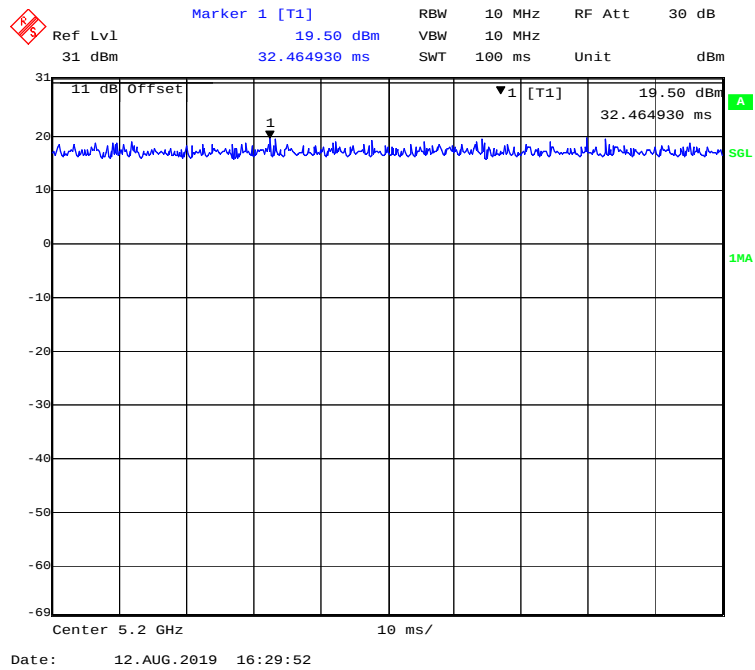
Duty Cycle

5150MHz-5250MHz Band:

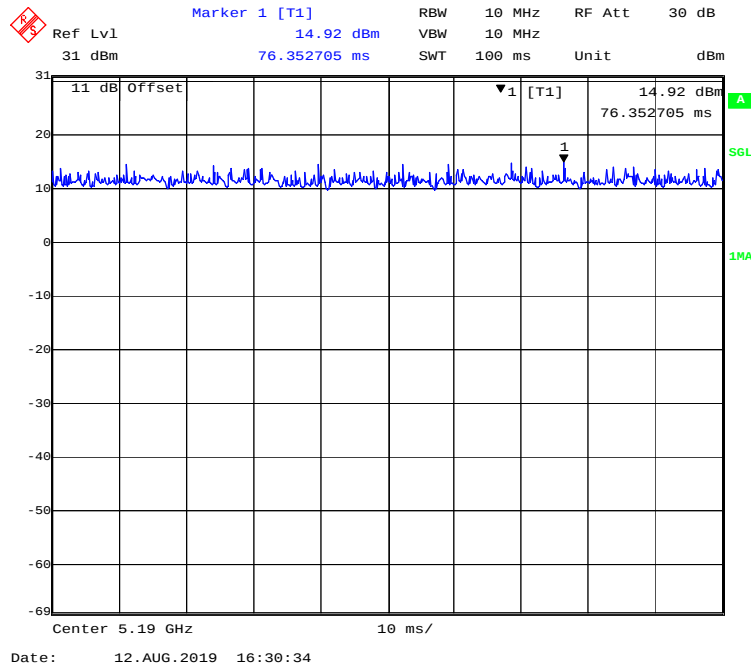
802.11a mode



802.11n-HT20 mode

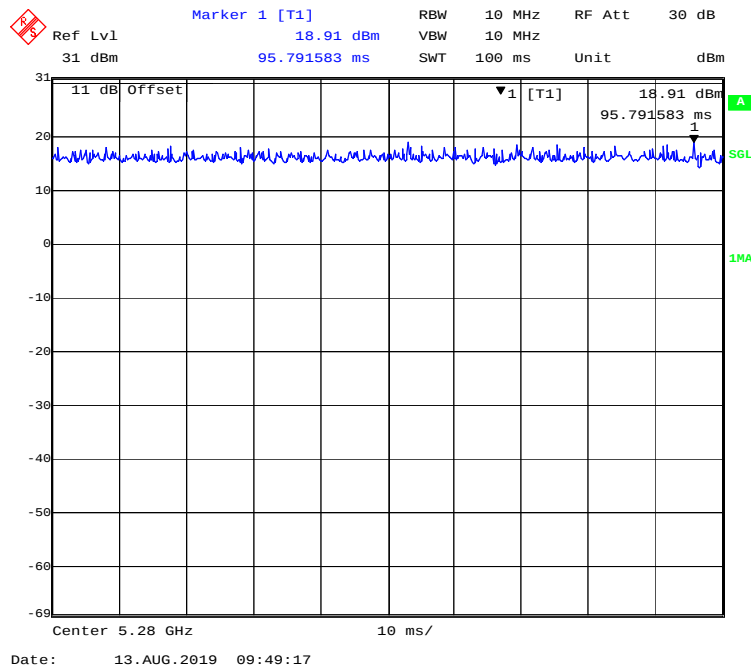


802.11n-HT40 mode

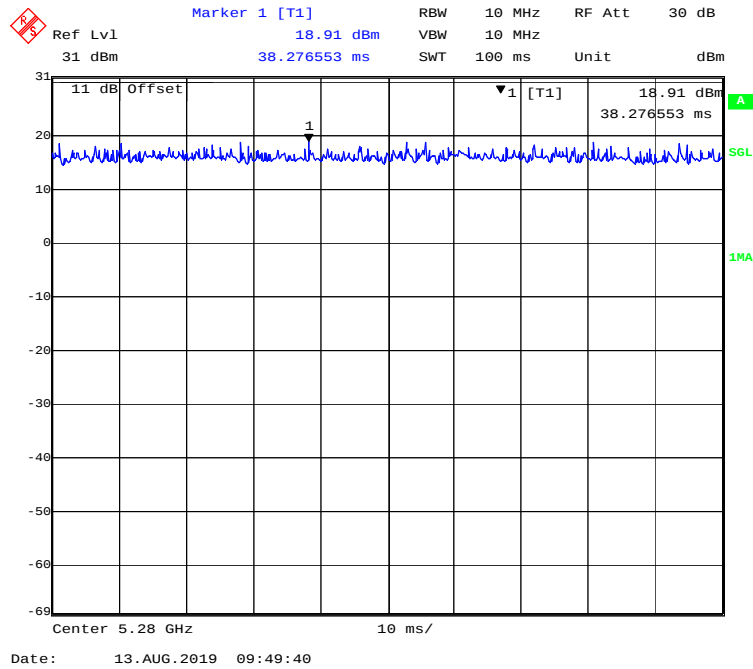


5250MHz-5350MHz Band:

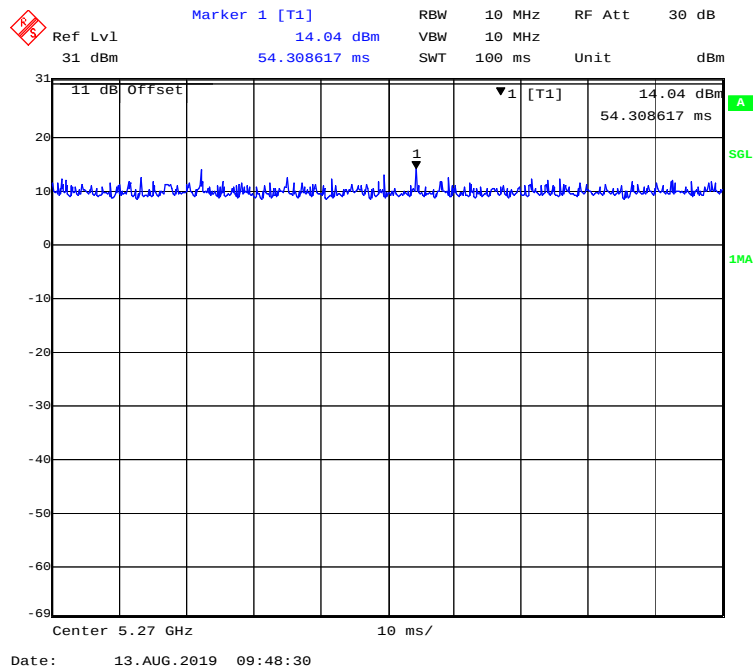
802.11a mode



802.11n-HT20 mode

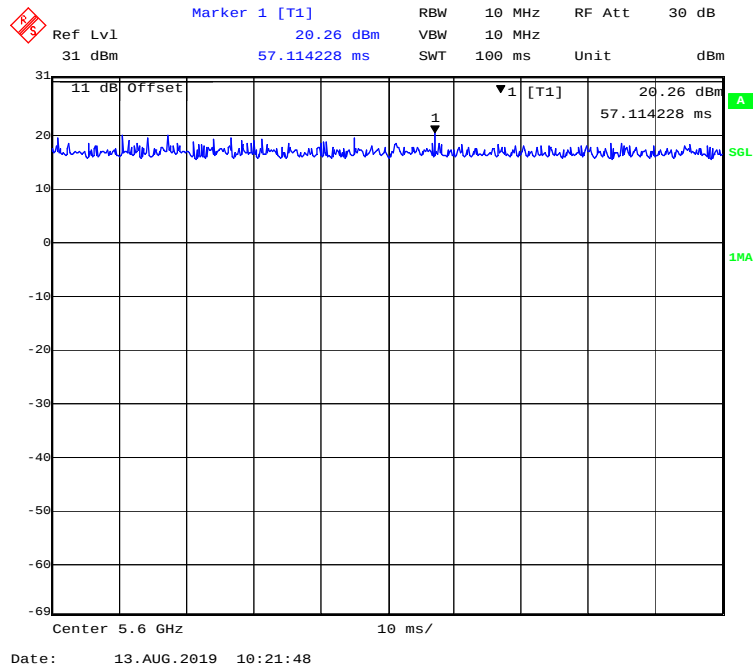


802.11n-HT40 mode

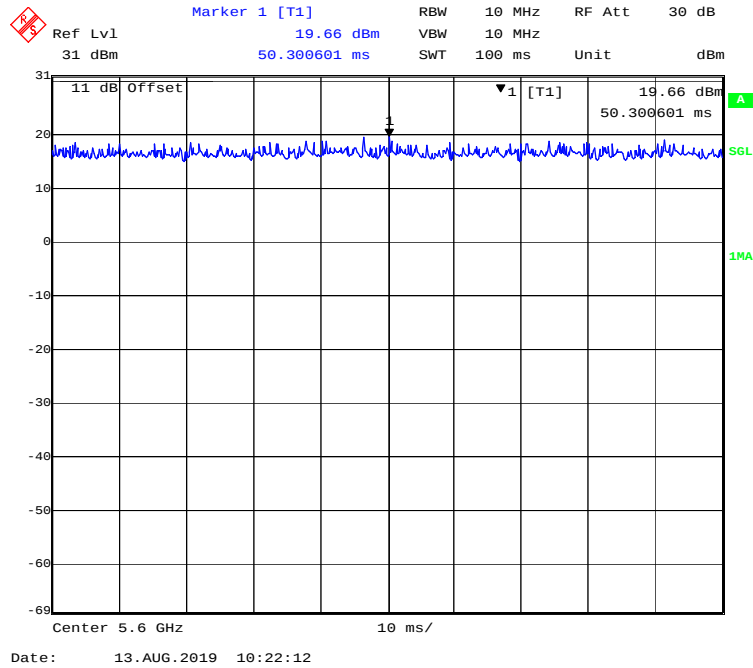


5470MHz-5725MHz Band:

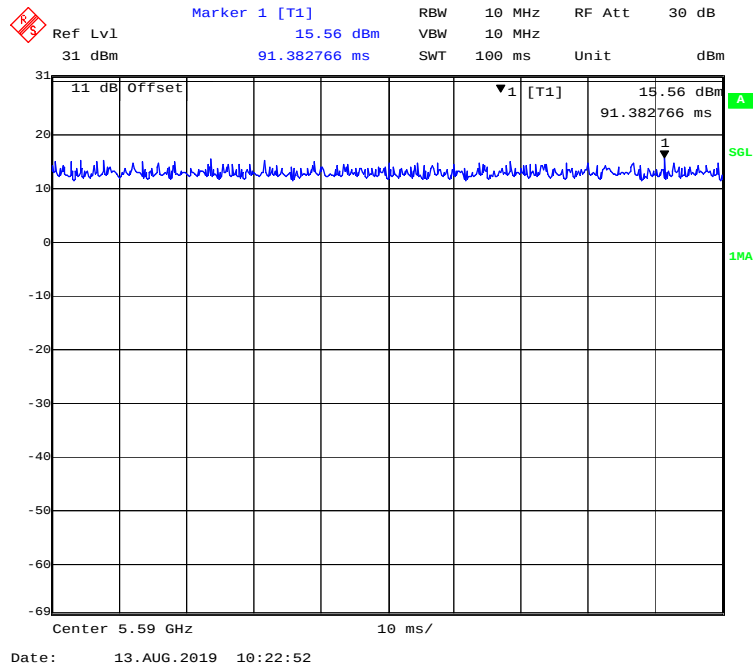
802.11a mode



802.11n-HT20 mode

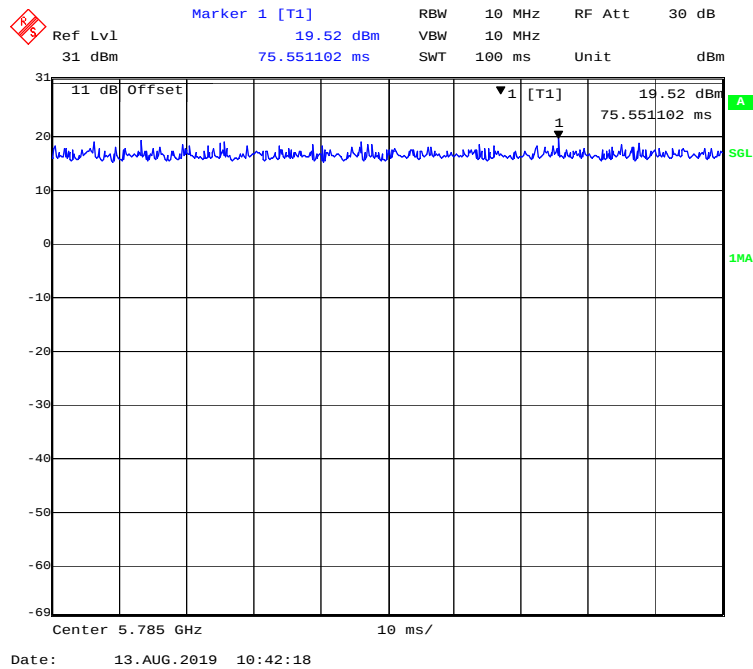


802.11n-HT40 mode

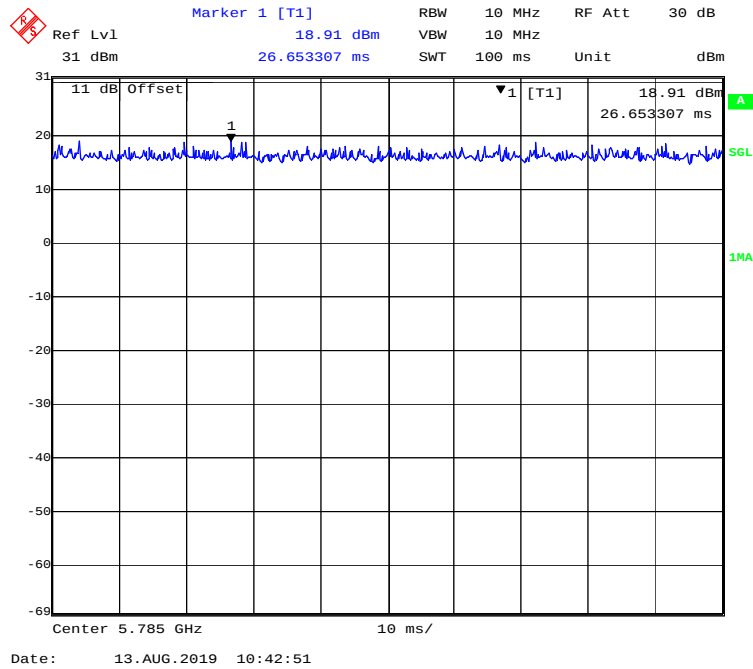


5725MHz-5850MHz Band:

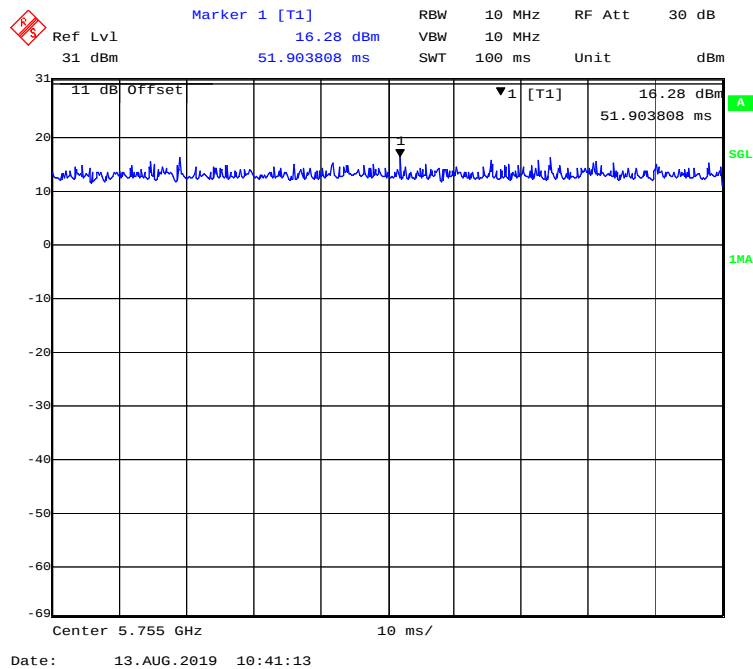
802.11a mode



802.11n-HT20 mode



802.11n-HT40 mode



Mode	Frequency Range (MHz)	Duty Cycle (%)	T (ms)	1/T (kHz)	10log(1/x)
802.11a	5150-5250	100	/	/	0
802.11n-HT20		100	/	/	0
802.11n-HT40		100	/	/	0
802.11a	5250-5350	100	/	/	0
802.11n-HT20		100	/	/	0
802.11n-HT40		100	/	/	0
802.11a	5450-5725	100	/	/	0
802.11n-HT20		100	/	/	0
802.11n-HT40		100	/	/	0
802.11a	5725-5850	100	/	/	0
802.11n-HT20		100	/	/	0
802.11n-HT40		100	/	/	0

Note: “x” means duty cycle.

Equipment Modifications

No modification was made to the EUT.

Support Equipment List and Details

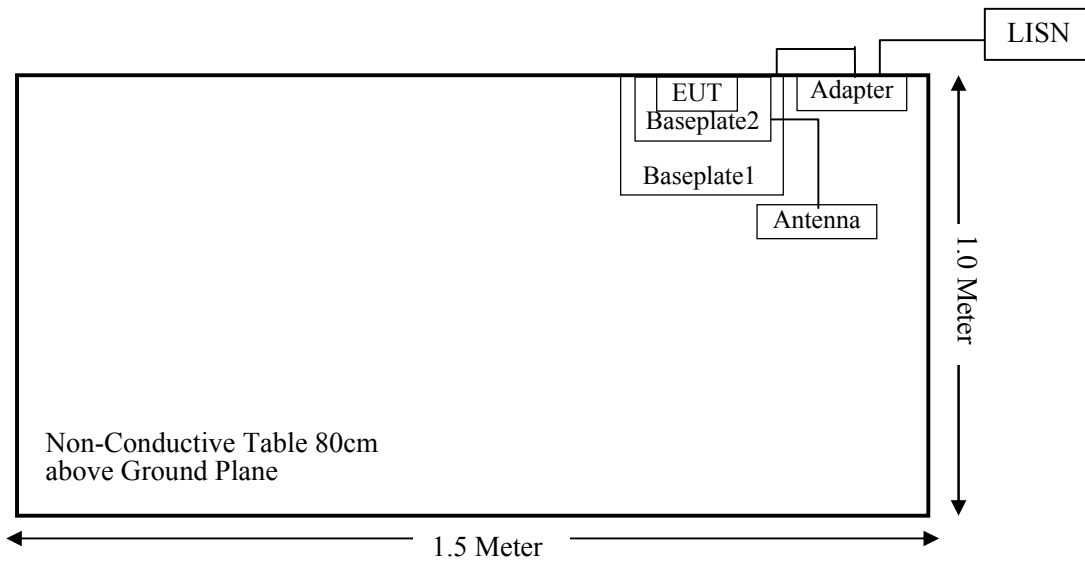
Manufacturer	Description	Model	Serial Number
Dian Yuan Technology	Adapter	DYS-0502000C	/
MEIG	Baseplate1	MEIG_EVB_V1.03	/
MEIG	Baseplate2	SLM756_ZB_V1.03_PCB	/
MeiG Smart	Antenna	/	/

External I/O Cable

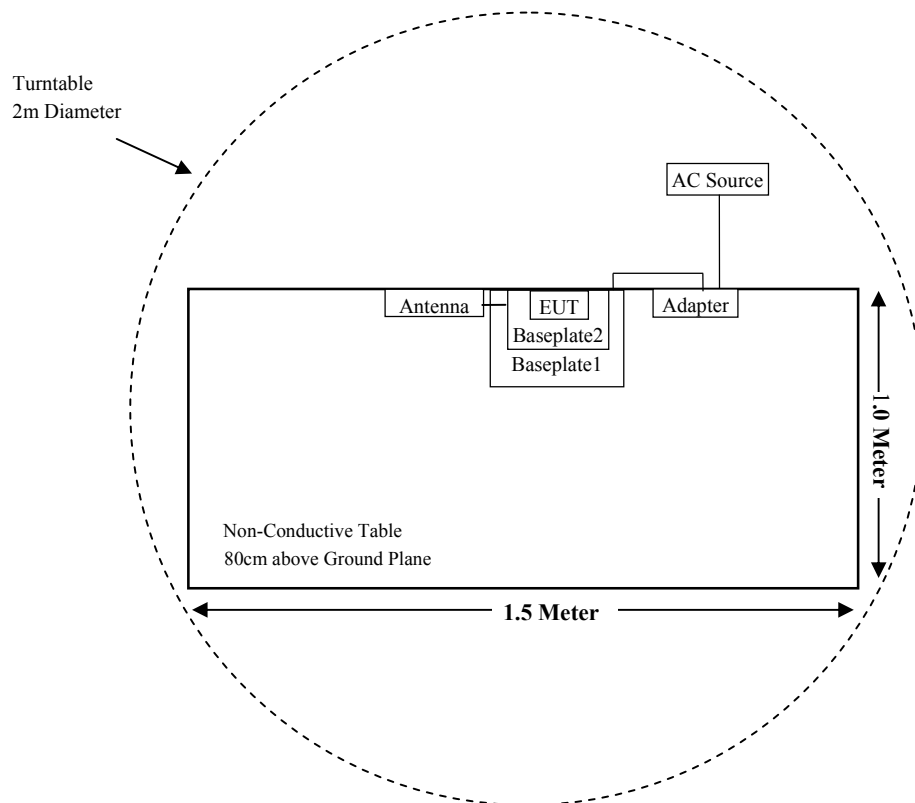
Cable Description	Length (m)	From Port	To
Power Cable	1.0	Baseplate1	Adapter
Antenna Cable	0.3	Baseplate2	MeiG Smart Antenna

Block Diagram of Test Setup

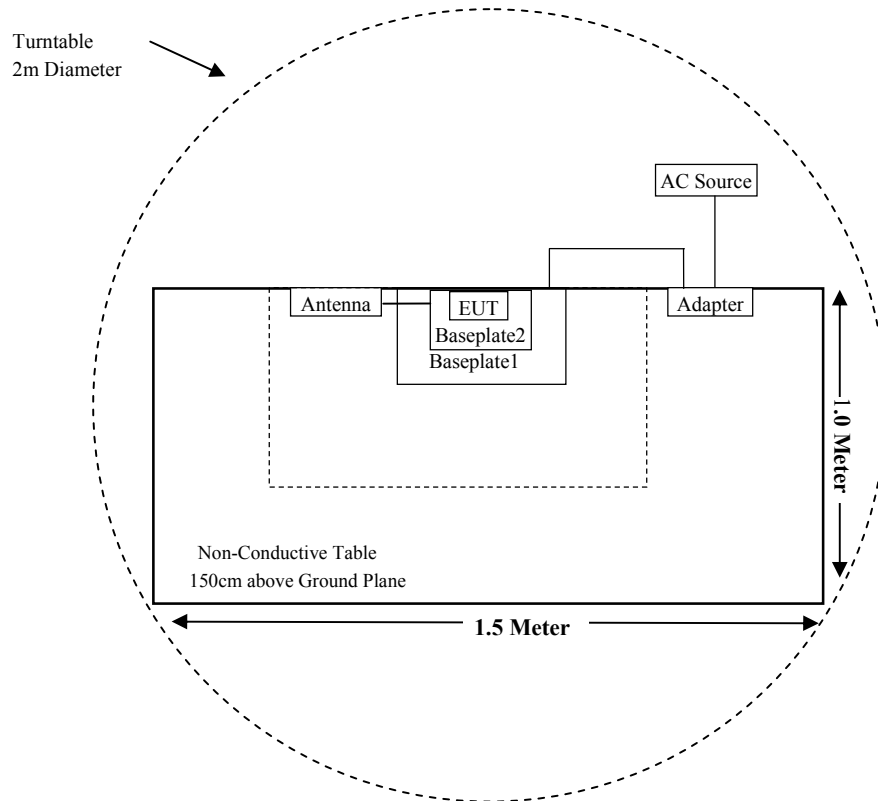
For Conducted Emissions:



For Radiated Emissions (Below 1GHz):



For Radiated Emissions (Above 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) (6)	AC Power Line Conducted Emissions	Compliant
§ 15.205 & §15.209 & §15.407(b) (1), (2), (3),(6),(7)	Undesirable Emission & Restricted Bands	Compliant
§§15.407(a) &§15.407(e)	Emission Bandwidth	Compliant
§15.407(a) (1) (2) (3)	Conducted Transmitter Output Power	Compliant
§15.407(a) (1) (2) (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	2018-11-12	2019-11-11
Sunol Sciences	Broadband Antenna	JB3	A090413-1	2016-12-26	2019-12-25
Sonoma Instrument	Pre-amplifier	310N	171205	2019-08-15	2020-08-14
Rohde & Schwarz	Auto test Software	EMC32	100361	N/A	N/A
MICRO-COAX	Coaxial Cable	Cable-8	008	2019-08-15	2020-08-14
MICRO-COAX	Coaxial Cable	Cable-9	009	2019-08-15	2020-08-14
MICRO-COAX	Coaxial Cable	Cable-10	010	2019-08-15	2020-08-14
Radiated Emission Test (Chamber 2#)					
Rohde & Schwarz	EMI Test Receiver	ESU40	100207	2019-05-30	2020-05-29
ETS-LINDGREN	Horn Antenna	3115	6229	2019-01-11	2022-01-10
ETS-LINDGREN	Horn Antenna	3116	00084159	2016-10-18	2019-10-17
Mini-Circuits	Amplifier	ZVA-183W-S+	220701818	2019-05-20	2020-05-19
SELECTOR	Amplifier	EM18G40G	060726	2019-03-22	2020-03-21
MICRO-TRONICS	Band Reject Filter	BRC50703	G094	2019-08-05	2020-08-04
MICRO-TRONICS	Band Reject Filter	BRC50705	G085	2019-08-05	2020-08-04
Narda	Attenuator	10dB	010	2019-08-15	2020-08-14
Rohde & Schwarz	Auto test Software	EMC32	100361	/	/
MICRO-COAX	Coaxial Cable	Cable-6	006	2019-08-15	2020-08-14
MICRO-COAX	Coaxial Cable	Cable-11	011	2019-08-15	2020-08-14
MICRO-COAX	Coaxial Cable	Cable-12	012	2019-08-15	2020-08-14
MICRO-COAX	Coaxial Cable	Cable-13	013	2019-08-15	2020-08-14
RF Conducted Test					
Rohde & Schwarz	Signal Analyzer	FSIQ26	836131/009	2018-11-12	2019-11-11
Agilent	Power Meter	N1912A	MY5000492	2018-11-18	2019-11-17
Agilent	Power Sensor	N1921A	MY54210024	2018-11-18	2019-11-17
Narda	Attenuator/10dB	10dB	/	2019-01-10	2020-01-09
BACL	Temperature & Humidity Chamber	BTH-150	30023	2018-12-20	2019-12-19
MeiG Smart	RF Cable	MeiG Smart C01	C01	Each Time	/
Conducted Emission Test					
Rohde & Schwarz	EMI Test Receiver	ESR	1316.3003K03-101746-zn	2019-07-11	2020-07-10
Rohde & Schwarz	LISN	ESH3-Z5	862770/011	2018-11-12	2019-11-11
Audix	Test Software	e3	V9	--	--
Narda	Attenuator/6dB	10690812-2	26850-6	2019-01-10	2020-01-09
MICRO-COAX	Coaxial Cable	Cable-15	015	2019-08-15	2020-08-14

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

FCC §15.247 (I) & §1.1310 & §2.1091 - MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Applicable Standard

According to subpart 15.247 (i) and subpart 1.1310, 2.1091 systems operating under the provisions of this section shall be operated in a manner that ensures the public is not exposed to RF energy level in excess of the communication guidelines.

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

Calculated Formulary:

Predication of MPE limit at a given distance

$S = PG/4\pi R^2$ = power density (in appropriate units, e.g. mW/cm²);

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):

Mode	Frequency Range (MHz)	Maximum Antenna Gain		Tune-up Conducted Power		Evaluation Distance (cm)	Power Density (mW/cm ²)	MPE Limit (mW/cm ²)	MPE ratio
		(dBi)	(numeric)	(dBm)	(mW)				
802.11b	2412-2462	0.00	1.00	19.00	79.43	20	0.0158	1.00	0.0158
802.11g		0.00	1.00	20.00	100.00	20	0.0199	1.00	0.0199
802.11n-HT20		0.00	1.00	18.50	70.79	20	0.0141	1.00	0.0141
802.11n-HT40	2422-2452	0.00	1.00	17.50	56.23	20	0.0112	1.00	0.0112
802.11a	5150~5250	0.00	1.00	12.00	15.85	20	0.0032	1.00	0.0032
	5250~5350	0.00	1.00	12.00	15.85	20	0.0032	1.00	0.0032
	5470~5725	0.00	1.00	12.50	17.78	20	0.0035	1.00	0.0035
	5725~5850	0.00	1.00	12.50	17.78	20	0.0035	1.00	0.0035
802.11n-HT20	5150~5250	0.00	1.00	12.50	17.78	20	0.0035	1.00	0.0035
	5250~5350	0.00	1.00	11.50	14.13	20	0.0028	1.00	0.0028
	5470~5725	0.00	1.00	12.50	17.78	20	0.0035	1.00	0.0035
	5725~5850	0.00	1.00	12.50	17.78	20	0.0035	1.00	0.0035
802.11n-HT40	5150~5250	0.00	1.00	9.50	8.91	20	0.0018	1.00	0.0018
	5250~5350	0.00	1.00	9.00	7.94	20	0.0016	1.00	0.0016
	5470~5725	0.00	1.00	11.50	14.13	20	0.0028	1.00	0.0028
	5725~5850	0.00	1.00	11.50	14.13	20	0.0028	1.00	0.0028
BLE	2402-2480	0.00	1.00	1.50	1.41	20	0.0003	1.00	0.0003
BT 3.0	2402-2480	0.00	1.00	11.50	14.13	20	0.0028	1.00	0.0032

Calculation of maximum antenna gain based on ERP/EIRP

Mode	Max Tune-up Power (dBm)	ERP/EIRP Limit (dBm)	Max Antenna Gain (dBd)	Max Antenna Gain (dBi)
WCDMA Band II	23.00	33.00	/	10.00
WCDMA Band IV	23.00	30.00	/	7.00
WCDMA Band V	24.00	38.45	14.45	16.60
FDD (Band 2)	22.00	33.00	/	11.00
FDD (Band 4)	22.50	30.00	/	7.00
FDD (Band 5)	22.50	38.45	15.95	18.10
FDD (Band 7)	22.50	33.00	/	10.00
FDD (Band 12)	23.00	34.77	11.77	13.92
FDD (Band 13)	23.00	34.77	11.77	13.92
FDD (Band 17)	23.00	34.77	11.77	13.92

Note:0dBd=2.15dBi

Calculation of maximum antenna gain based on MPE Ratio

Mode	Frequency Range	Tune-up Conducted Power		Power Density Limit	Maximum Power Density	Evaluation Distance	Maximum Antenna Gain Allowed based on MPE		MPE ratio
	(MHz)	(dBm)	(mW)	(mW/cm ²)	(mW/cm ²)	(cm)	(numeric)	(dBi)	
WCDMA Band II	1850.0-1910.0	23.00	199.53	1.00	0.9788	20	24.66	13.92	0.9788
WCDMA Band IV	1710.0-1755.0	23.00	199.53	1.00	0.9788	20	24.66	13.92	0.9788
WCDMA Band V	824.0-849.0	24.00	251.19	0.55	0.5619	20	19.59	12.92	0.9788
FDD (Band 2)	1850.0-1910.0	22.00	158.49	1.00	0.9789	20	31.05	14.92	0.9789
FDD (Band 4)	1710.0-1755.0	22.50	177.83	1.00	0.9788	20	22.67	14.42	0.9788
FDD (Band 5)	824.0-849.0	22.50	177.83	0.55	0.5619	20	22.67	14.42	0.9788
FDD (Band 7)	2500.0-2570.0	22.50	177.83	1.00	0.9788	20	22.67	14.42	0.9788
FDD (Band 12)	699.0-716.0	23.00	199.53	0.47	0.4802	20	24.66	13.92	0.9788
FDD (Band 13)	777.0-787.0	23.00	199.53	0.52	0.5313	20	24.66	13.92	0.9788
FDD (Band 17)	704.0-716.0	23.00	199.53	0.47	0.4802	20	24.66	13.92	0.9788

Note: Wi-Fi/ BLE/ BT 3.0& WCDMA/FDD can transmit simultaneously; the worst condition is 802.11b of Wi-Fi & FDD (Band13), as below:

$$\sum_i \frac{S_i}{S_{Limit,i}} = 0.0199 + 0.9789 = 0.9988 < 1.0$$

Mode	Max Allow Antenna Gain (dBi)
WCDMA Band II/LTE Band 2	10.0
WCDMA Band IV/ LTE Band 4	7.00
WCDMA Band V/ LTE Band 5	12.92
LTE Band 7	10.00
LTE Band 12/ LTE Band 17	13.92
LTE Band 13	13.92

Result: To meet RF exposure & ERP/ERIP, the maximum net gains of antennas allowed are 10dBi@ WCDMA Band II/LTE Band 2 , 7dBi@ WCDMA Band IV/ LTE Band 4 , 12.92dBi@ WCDMA Band V/ LTE Band 5 , 10.00dBi @LTE Band 7, 13.92dBi @ LTE Band 12/LTE Band 17, 13.92dBi @ LTE Band 13. The antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm. The transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

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 6 dBi.

Antenna Connector Construction

The EUT has been tested with an external antenna for 5G Wi-Fi which the antenna gain is 0 dBi, fulfill the requirement of this section. Please refer to the EUT photos.

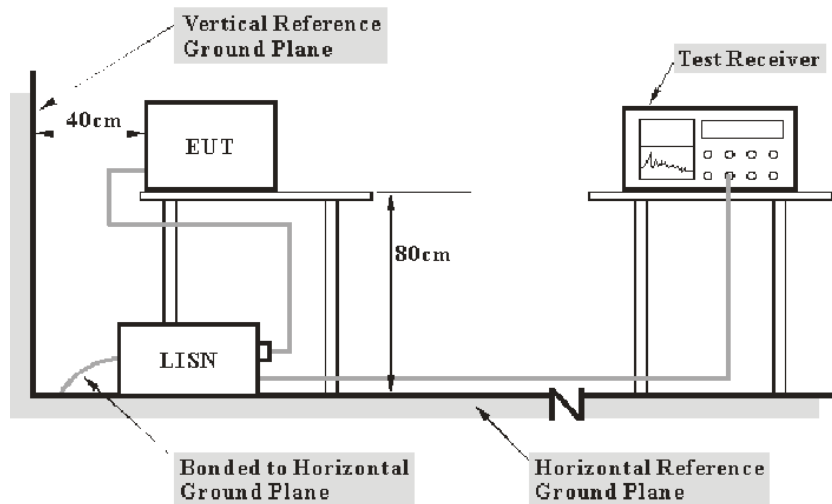
Result: Compliant.

FCC §15.407 (b) (6) §15.207 (a) – AC POWER LINE CONDUCTED EMISSIONS

Applicable Standard

FCC §15.207(a), §15.407(b) (6)

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 first LISN and the other support equipments were connected to the outlet of the second LISN.

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

All data was recorded in the Quasi-peak and average detection mode.

Corrected Factor & Over Limit Calculation

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

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

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

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

Test Results Summary

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

Test Data

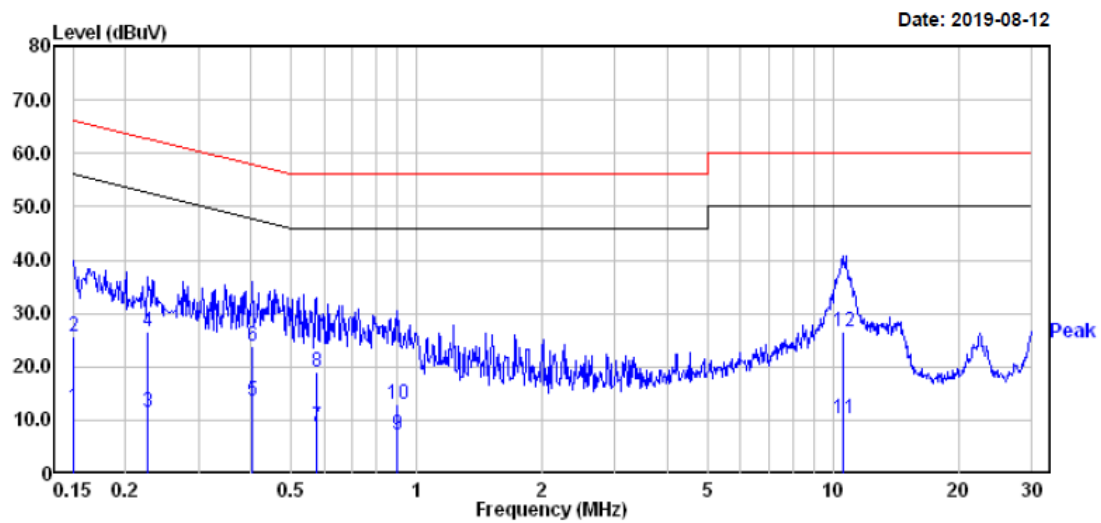
Environmental Conditions

Temperature:	20.2 °C
Relative Humidity:	51 %
ATM Pressure:	101.3 kPa

The testing was performed by Max Min on 2019-08-12.

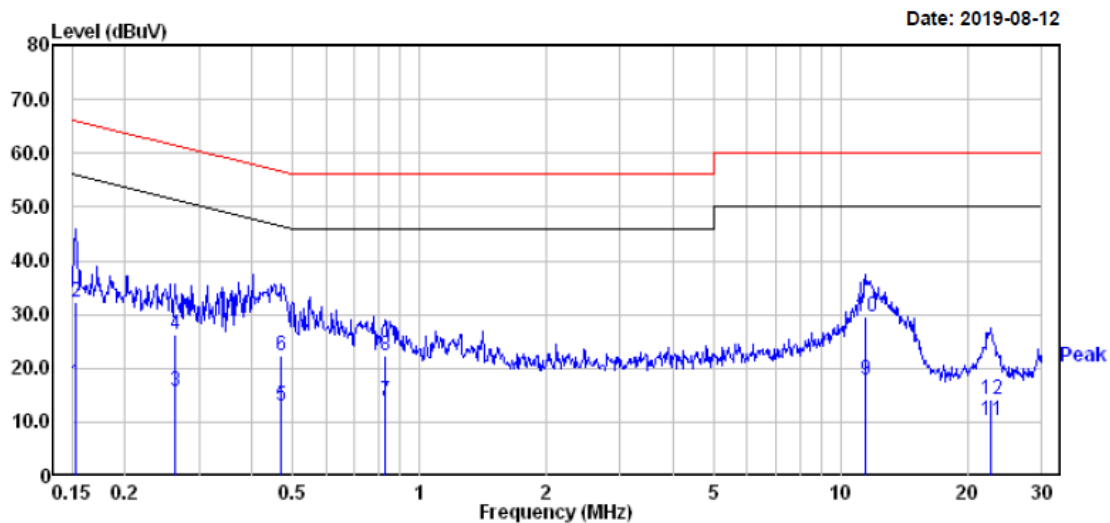
EUT operation mode: Transmitting in 802.11n-HT20 mode middle channel of 5725-5850MHz (worst case)

AC 120V/60 Hz, Line



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.150	-7.30	19.82	12.52	56.00	-43.48	Average
2	0.150	5.90	19.82	25.72	66.00	-40.28	QP
3	0.226	-8.30	19.82	11.52	52.61	-41.09	Average
4	0.226	6.80	19.82	26.62	62.61	-35.99	QP
5	0.404	-6.20	19.74	13.54	47.77	-34.23	Average
6	0.404	4.00	19.74	23.74	57.77	-34.03	QP
7	0.576	-10.90	19.75	8.85	46.00	-37.15	Average
8	0.576	-0.70	19.75	19.05	56.00	-36.95	QP
9	0.899	-12.40	19.73	7.33	46.00	-38.67	Average
10	0.899	-6.70	19.73	13.03	56.00	-42.97	QP
11	10.564	-9.20	19.56	10.36	50.00	-39.64	Average
12	10.564	7.10	19.56	26.66	60.00	-33.34	QP

AC 120V/60 Hz, Neutral



	Freq	Read		Limit	Over	
	MHz	Level	Factor	Level	Line	Limit
	MHz	dBuV	dB	dBuV	dBuV	dB
1	0.152	-2.50	19.82	17.32	55.87	-38.55
2	0.152	12.40	19.82	32.22	65.87	-33.65
3	0.263	-4.20	19.82	15.62	51.34	-35.72
4	0.263	6.40	19.82	26.22	61.34	-35.12
5	0.471	-6.79	19.75	12.96	46.49	-33.53
6	0.471	2.51	19.75	22.26	56.49	-34.23
7	0.830	-5.90	19.71	13.81	46.00	-32.19
8	0.830	2.70	19.71	22.41	56.00	-33.59
9	11.498	-1.90	19.58	17.68	50.00	-32.32
10	11.498	9.90	19.58	29.48	60.00	-30.52
11	22.775	-9.40	19.80	10.40	50.00	-39.60
12	22.775	-5.50	19.80	14.30	60.00	-45.70

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), (2), (3),(6),(7) – UNDESIRABLE EMISSION & RESTRICTED BANDS

Applicable Standard

FCC §15.407 (b) (1), (2), (3), (6), (7); §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 e.i.r.p. of -27 dBm/MHz.

For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

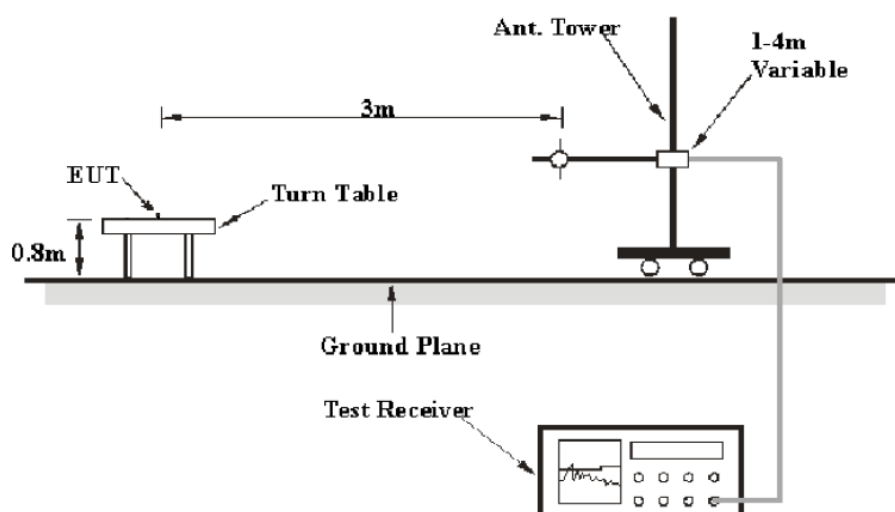
For transmitters operating in the 5.725-5.85 GHz band: All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to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

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.

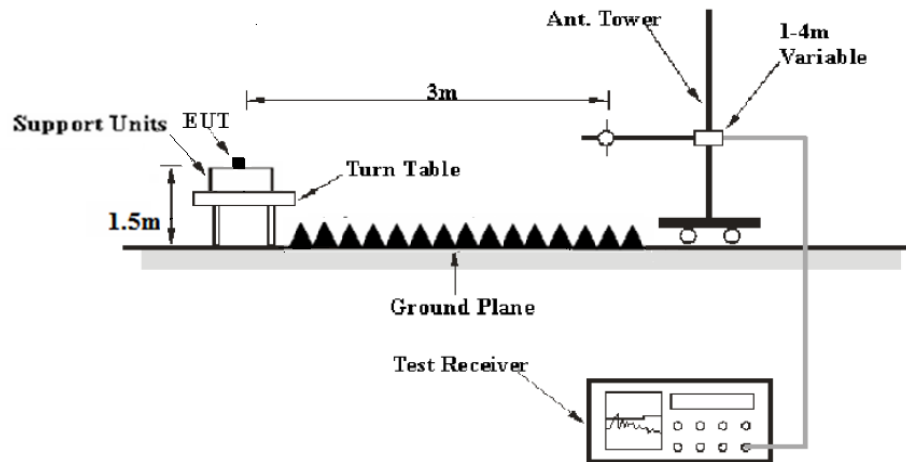
According to 789033 D02 General UNII Test Procedures New Rules v02r01, emission shall be computed as: $E \text{ [dB}\mu\text{V/m]} = \text{EIRP [dBm]} + 95.2$, for $d = 3$ meters.

EUT Setup

Below 1 GHz:



1 GHz-40GHz:



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.

Data was recorded in Quasi-peak detection mode for frequency range of 30 MHz-1GHz, peak and Average detection modes for frequencies above 1GHz.

Corrected Amplitude & Margin Calculation

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

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

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

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

Test Data

Environmental Conditions

Temperature:	20.2 °C
Relative Humidity:	51 %
ATM Pressure:	101.3 kPa

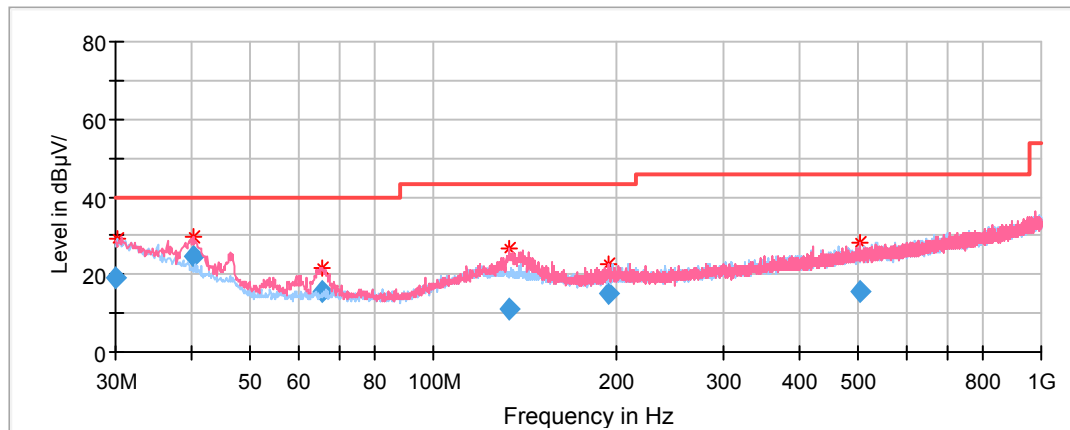
The testing was performed by Max Min on 2019-08-18.

Test Mode: Transmitting

Spurious Emission Test

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

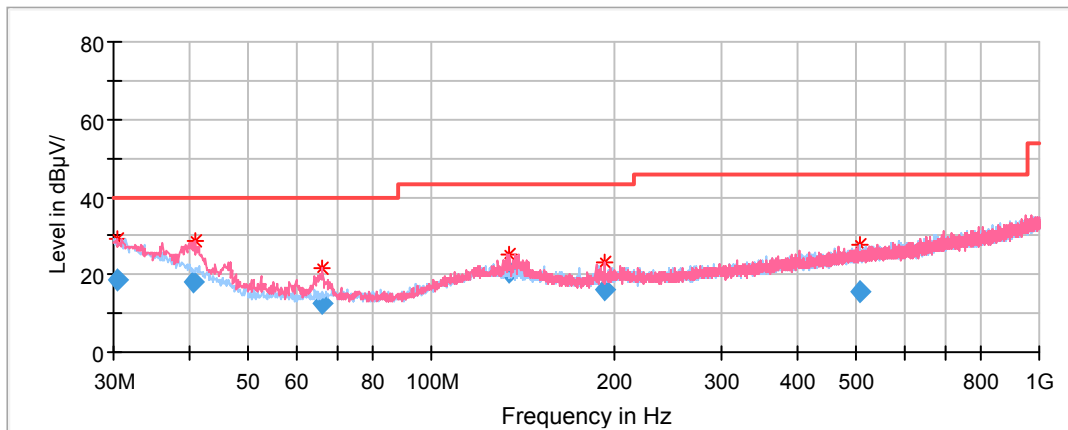
Pre-scan with 802.11a, 802.11n-HT20 and 802.11n-HT40 modes of operation in the X,Y and Z axes of orientation, the worst case 802.11n-HT20 mode in channel 5200 in Z-axis of orientation was recorded



Frequency (MHz)	Corrected Amplitude	Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	QuasiPeak (dBμV/m)	Height (cm)	Polar (H/V)				
30.00	18.90	100	V	343	-3.9	40.00	21.10
40.31	24.52	100	V	276	-10.7	40.00	15.48
65.65	15.63	100	V	271	-17.5	40.00	24.37
133.43	11.15	100	V	108	-11.7	43.50	32.35
193.86	14.93	100	V	271	-12.7	43.50	28.57
504.05	15.40	100	V	322	-6.1	46.00	30.60

30MHz-1GHz(5250-5350MHz Band):

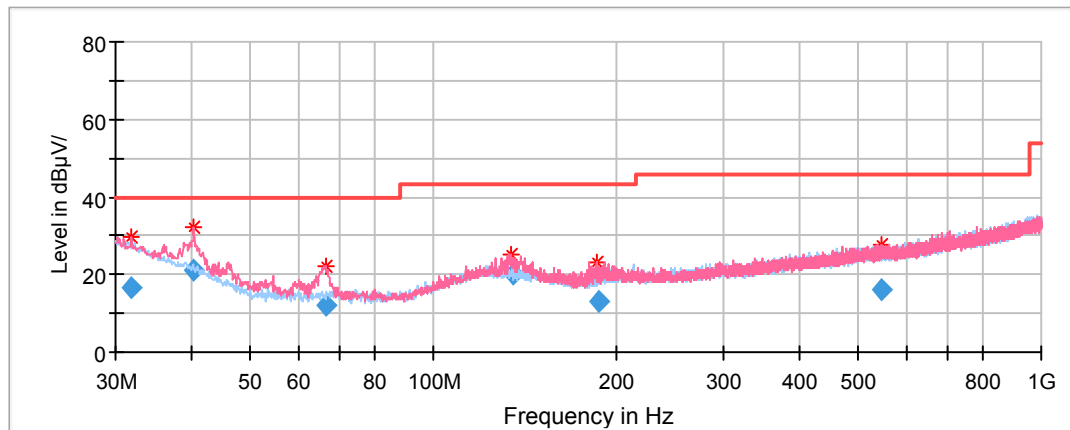
Pre-scan with 802.11a, 802.11n-HT20 and 802.11n-HT40 modes of operation in the X,Y and Z axes of orientation, the worst case 802.11a mode in channel 5280 in Z-axis of orientation was recorded



Frequency (MHz)	Corrected Amplitude	Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	QuasiPeak (dBμV/m)	Height (cm)	Polar (H/V)				
30.36	18.43	100	H	342	-4.3	40.00	21.57
40.50	17.95	100	V	8	-11.1	40.00	22.05
66.01	12.61	100	V	2	-17.5	40.00	27.39
134.52	20.42	100	V	0	-11.8	43.50	23.08
193.20	16.18	100	V	0	-12.8	43.50	27.32
506.12	15.44	100	H	239	-6.1	46.00	30.56

30MHz-1GHz(5470-5725MHz Band):

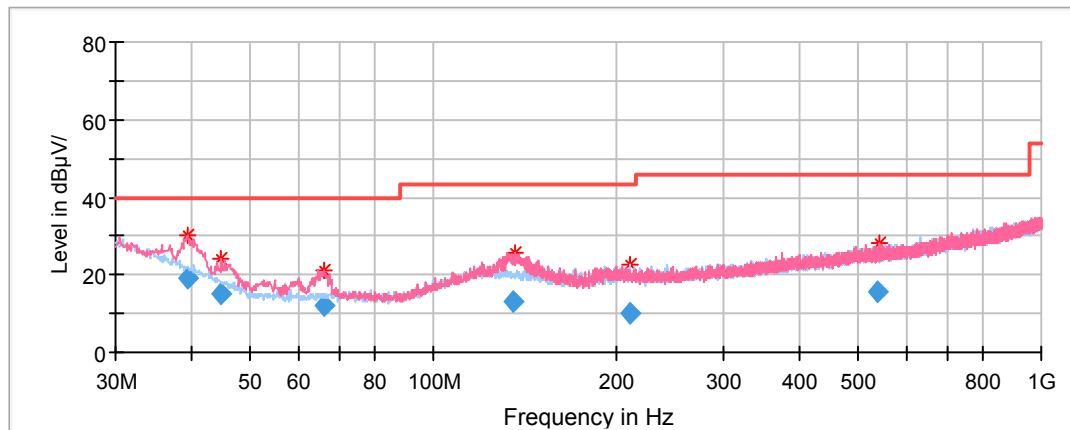
Pre-scan with 802.11a, 802.11n-HT20 and 802.11n-HT40 modes of operation in the X,Y and Z axes of orientation, the worst case 802.11a mode in channel 5700 in Z-axis of orientation was recorded



Frequency (MHz)	Corrected Amplitude	Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	QuasiPeak (dBμV/m)	Height (cm)	Polar (H/V)				
31.94	16.51	200	V	201	-6	40.00	23.49
40.43	20.95	200	V	317	-11.1	40.00	19.05
66.62	11.83	100	V	309	-17.5	40.00	28.17
134.79	20.23	100	V	0	-11.8	43.50	23.27
186.58	12.97	100	V	319	-13.2	43.50	30.53
545.29	15.85	200	V	283	-5.7	46.00	30.15

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

Pre-scan with 802.11a, 802.11n-HT20 and 802.11n-HT40 modes of operation in the X,Y and Z axes of orientation, the worst case 802.11n-HT20 mode in channel 5745 in Z-axis of orientation was recorded



Frequency (MHz)	Corrected Amplitude	Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	QuasiPeak (dBμV/m)	Height (cm)	Polar (H/V)				
39.37	19.25	100	V	180	-10.3	40.00	20.75
44.67	15.26	100	V	32	-13.1	40.00	24.74
66.25	12.15	100	V	11	-17.5	40.00	27.85
135.75	13.27	100	V	114	-11.8	43.50	30.23
210.82	10.22	200	H	192	-12.3	43.50	33.28
539.00	15.72	200	V	38	-5.8	46.00	30.28

1GHz-18GHz (5150-5250MHz Band):**802.11a Mode:**

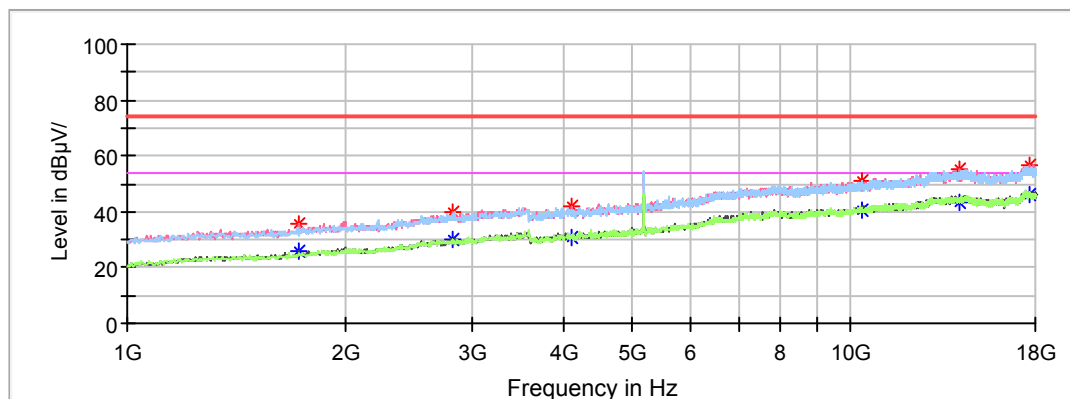
(Pre-scan in the X, Y and Z axes of orientation, the worst case Z-axis of orientation was recorded.)

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

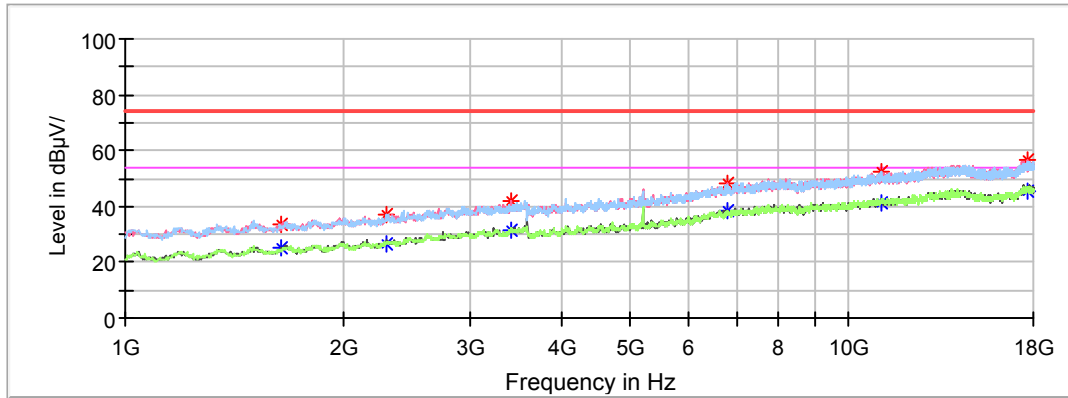
Full Spectrum



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
1724.20	35.47	---	200	V	210	-9.2	68.20	32.73
2812.20	---	29.77	200	V	332	-5.3	54.00	24.23
2812.20	39.93	---	200	V	332	-5.3	74.00	34.07
4124.60	---	30.75	100	V	31	-1.6	54.00	23.25
4124.60	41.96	---	150	V	28	-1.6	74.00	32.04
10350.00	51.02	---	100	H	2	8.8	68.20	17.18
14110.40	55.17	---	150	V	353	12.5	68.20	13.03
17673.60	56.60	---	200	V	262	14	68.20	11.60

Middle Channel: 5200MHz

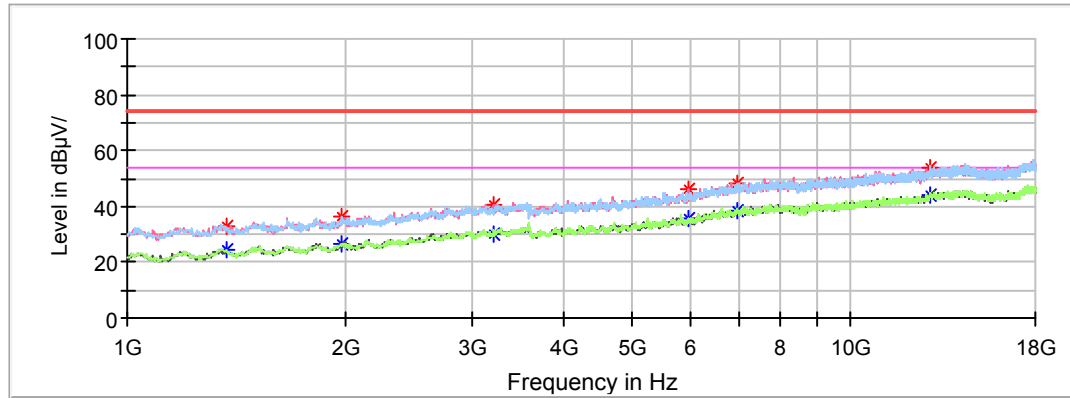
Full Spectrum



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
1642.60	33.81	---	200	V	176	-9.4	68.20	34.39
2298.80	37.14	---	200	H	235	-7.5	74.00	36.86
2298.80	---	26.54	200	H	235	-7.5	54.00	27.46
3420.80	42.05	---	200	V	164	-3.7	68.20	26.15
6797.00	48.27	---	150	V	359	5	68.20	19.93
11067.40	52.55	---	150	H	235	9.8	74.00	21.45
11067.40	---	40.92	200	H	235	9.8	54.00	13.08
17615.80	56.39	---	200	V	257	14.1	68.20	11.81

High Channel: 5240MHz

Full Spectrum



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
1370.60	---	24.75	150	V	120	-10.6	54.00	29.25
1370.60	33.03	---	150	V	120	-10.6	74.00	40.97
1982.60	36.57	---	150	H	66	-8.3	68.20	31.63
3199.80	40.33	---	200	V	183	-4.0	68.20	27.87
5970.80	45.93	---	150	V	272	2.2	68.20	22.27
6950.00	47.98	---	200	H	148	5.2	68.20	20.22
12862.60	53.56	---	150	V	48	11.6	68.20	14.64

802.11n-HT20 Mode:

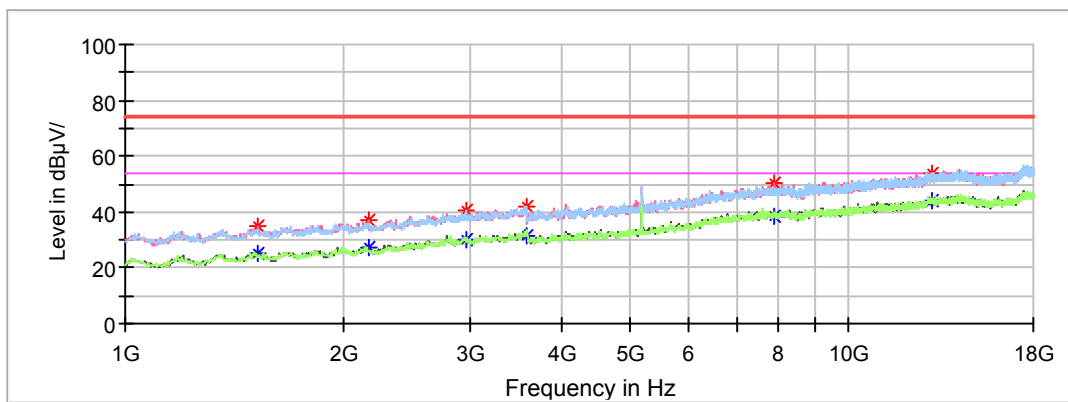
Pre-scan with X,Y and Z axes of orientation, the worst case Z-axis of orientation was recorded

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

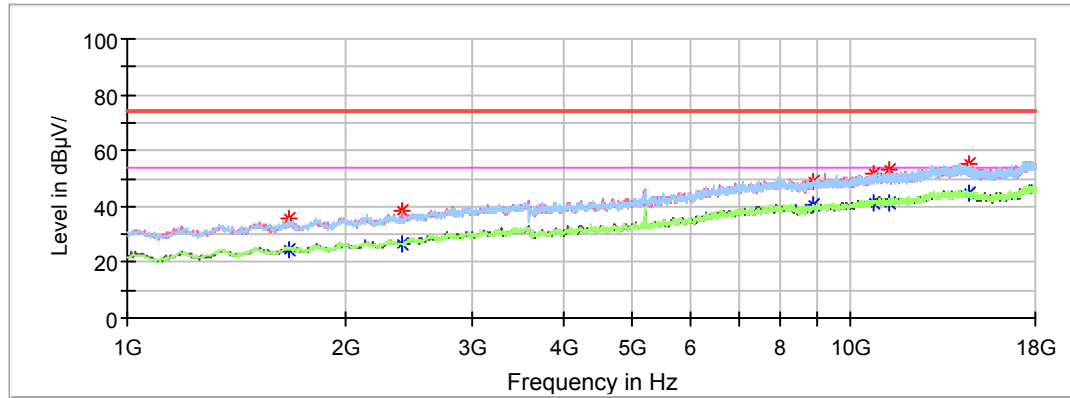
Full Spectrum



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
1527.00	34.79	---	150	V	94	-9.8	74.00	39.21
1527.00	---	25.14	200	V	9	-9.8	54.00	28.86
2166.20	37.13	---	200	V	3	-7.8	68.20	31.07
2951.60	40.70	---	200	H	242	-4.6	68.20	27.50
3580.60	42.07	---	200	H	324	-3.3	68.20	26.13
7878.20	50.32	---	200	V	0	6.8	68.20	17.88
13025.80	53.92	---	200	V	18	12.1	68.20	14.28

Middle Channel: 5200MHz

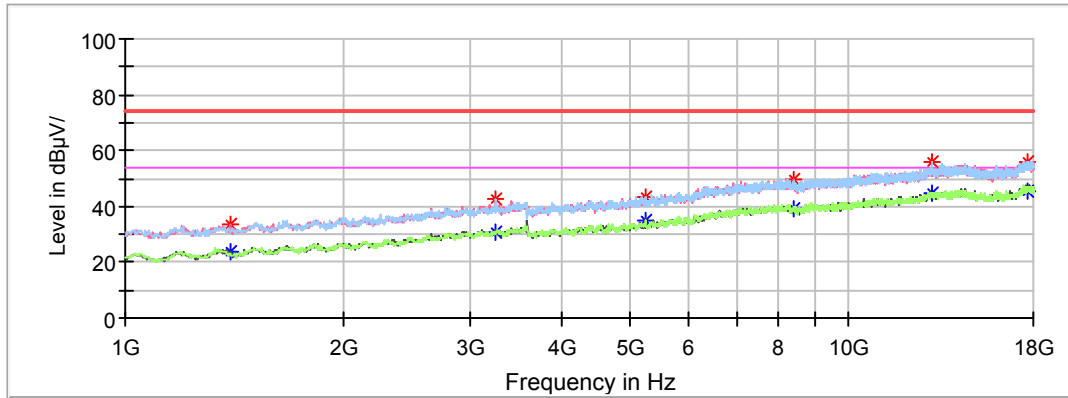
Full Spectrum



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1669.80	---	24.82	150	H	19	-9.4	54.00	29.18
1669.80	35.68	---	150	H	241	-9.4	74.00	38.32
2397.40	38.21	---	150	V	0	-7.2	68.20	29.99
8850.60	49.11	---	150	V	40	7.3	68.20	19.09
10785.20	---	41.36	200	H	160	9.4	54.00	12.64
10785.20	51.43	---	200	H	160	9.4	74.00	22.57
11312.20	---	41.30	150	V	328	9.8	54.00	12.70
11312.20	52.93	---	150	V	328	9.8	74.00	21.07
14617.00	55.12	---	200	H	183	12.4	68.20	13.08

High Channel: 5240MHz

Full Spectrum



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
1394.40	---	23.75	150	V	114	-10.5	54.00	30.25
1394.40	33.28	---	200	V	130	-10.5	74.00	40.72
3257.60	42.61	---	150	H	140	-3.9	68.20	25.59
5233.00	43.14	---	200	H	259	0.5	68.20	25.06
8391.60	---	39.38	200	V	95	6.4	54.00	14.62
8391.60	49.52	---	200	V	95	6.4	74.00	24.48
13022.40	55.69	---	200	H	294	12.1	68.20	12.51
17639.60	56.29	---	200	V	259	14.1	68.20	11.91

802.11n-HT40 Mode:

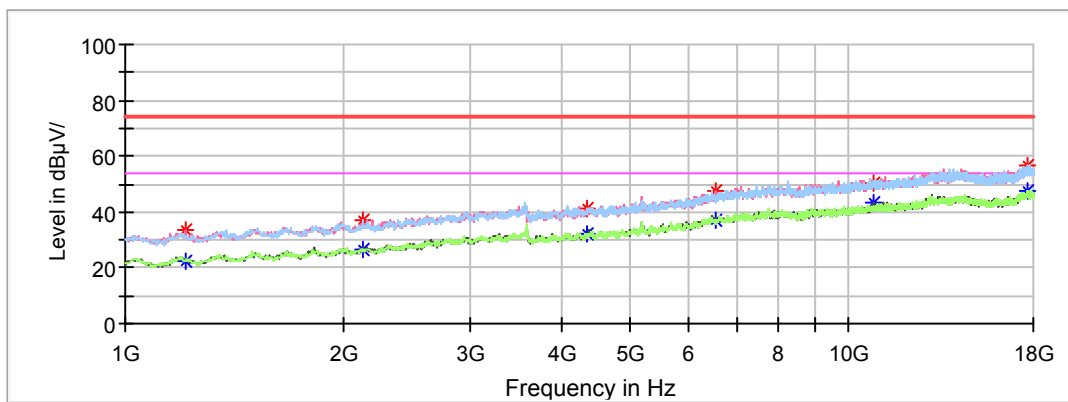
Pre-scan with X,Y and Z axes of orientation, the worst case Z-axis of orientation was recorded

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

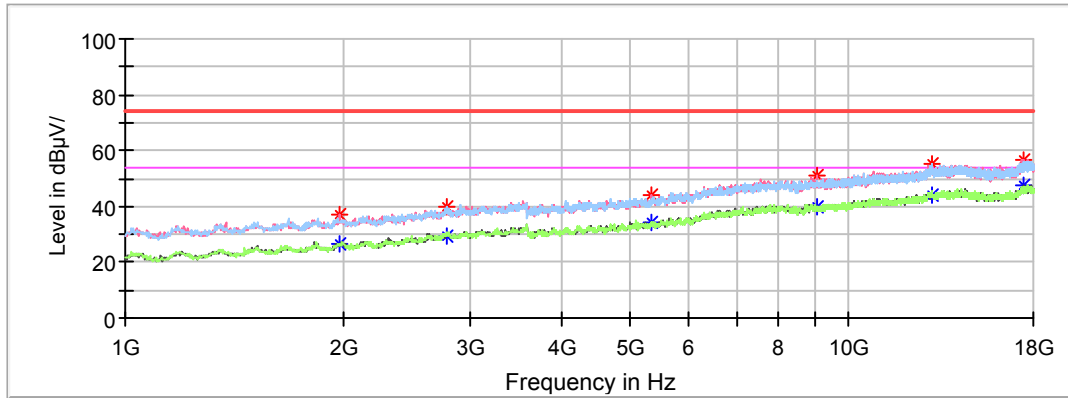
Full Spectrum



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
1,210.80	---	22.39	200	V	163	-11.5	54.00	31.61
1,210.80	33.38	---	150	V	144	-11.5	74.00	40.62
2,128.80	37.05	---	200	V	281	-7.9	68.20	31.15
4,342.20	---	32.30	200	V	12	-1.3	54.00	21.70
4,342.20	41.27	---	200	V	12	-1.3	74.00	32.73
6,531.80	47.73	---	150	V	342	4.5	68.20	20.47
10,853.20	---	43.21	150	V	31	9.5	54.00	10.79
10,853.20	50.07	---	150	V	31	9.5	74.00	23.93
17,639.60	56.47	---	200	H	65	14.1	68.20	11.73

High Channel: 5230MHz

Full Spectrum



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1975.80	36.81	---	150	V	7	-8.3	68.20	31.39
2781.60	---	29.45	150	V	259	-5.5	54.00	24.55
2781.60	39.96	---	150	V	259	-5.5	74.00	34.04
5324.80	43.92	---	150	V	0	0.8	68.20	24.28
9037.60	---	40.20	200	V	34	7.7	54.00	13.80
9037.60	51.16	---	200	V	34	7.7	74.00	22.84
13012.20	54.96	---	150	H	77	12.1	68.20	13.24
17500.20	56.43	---	200	V	92	14.3	68.20	11.77

1GHz-18GHz (5250-5350MHz Band):**802.11a Mode:**

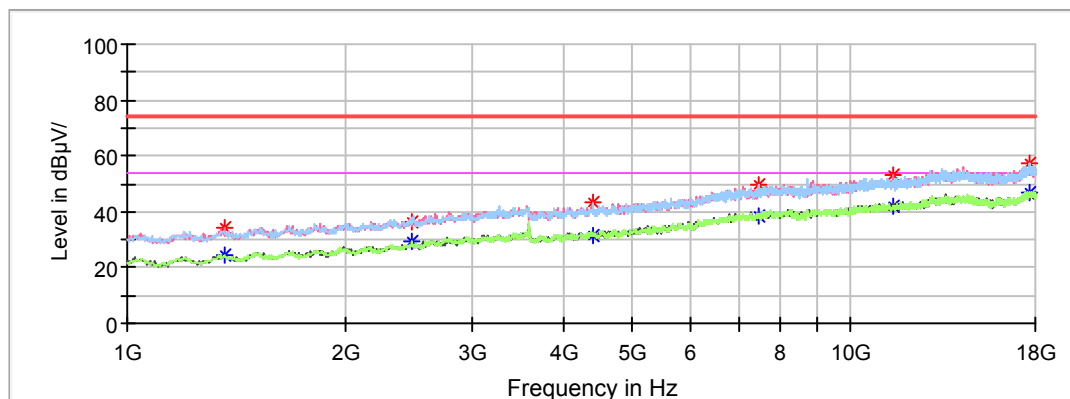
(Pre-scan in the X, Y and Z axes of orientation, the worst case Z-axis of orientation was recorded.)

Note:

1. This test was performed with the 5250-5350MHz band reject filter.
2. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
 Corrected Amplitude = Corrected Factor + Reading
 Margin = Limit - Corrected. Amplitude

Low Channel: 5260MHz

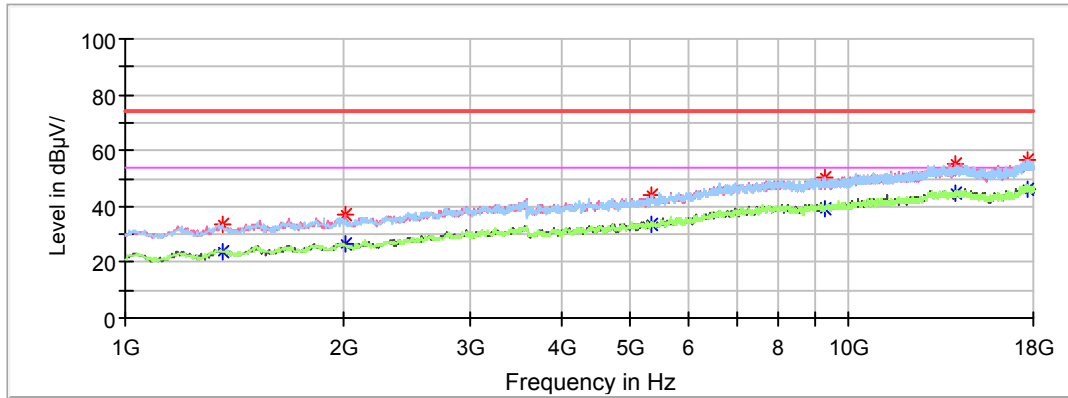
Full Spectrum



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1363.80	---	24.14	150	V	350	-10.7	54.00	29.86
1363.80	34.20	---	150	V	350	-10.7	74.00	39.80
2468.80	36.12	---	150	V	270	-7	68.20	32.08
4393.20	43.02	---	150	V	165	-1.2	68.20	25.18
7466.80	---	38.71	200	H	308	6.1	54.00	15.29
7466.80	49.34	---	200	H	308	6.1	74.00	24.66
11438.00	---	42.21	150	V	282	9.8	54.00	11.79
11438.00	53.08	---	150	V	282	9.8	74.00	20.92
17673.60	57.12	---	150	H	223	14	68.20	11.08

Middle Channel: 5280MHz

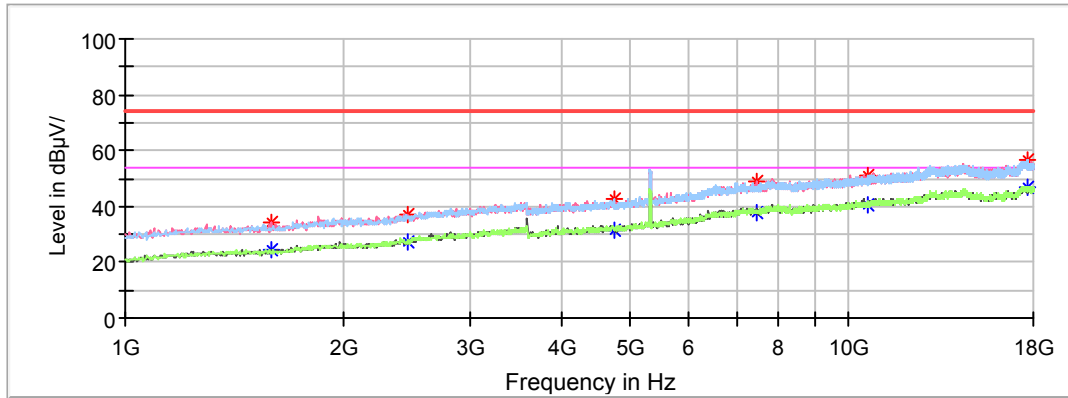
Full Spectrum



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1360.40	---	23.75	200	H	334	-10.7	54.00	30.25
1360.40	33.47	---	200	H	334	-10.7	74.00	40.53
2009.80	36.91	---	200	V	0	-8.2	68.20	31.29
5352.00	---	33.75	150	H	35	0.9	54.00	20.25
5352.00	44.26	---	200	H	147	0.9	74.00	29.74
9245.00	50.61	---	150	H	47	7.7	68.20	17.59
14005.00	55.41	---	150	V	41	12.5	68.20	12.79
17643.00	56.89	---	200	H	240	14.1	68.20	11.31

High Channel: 5320MHz

Full Spectrum



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1591.60	---	24.13	200	V	231	-9.6	54.00	29.87
1591.60	34.46	---	150	V	358	-9.6	74.00	39.54
2451.80	37.40	---	200	V	313	-7	68.20	30.80
4729.80	---	31.65	100	H	99	-0.7	54.00	22.35
4729.80	42.68	---	200	H	217	-0.7	74.00	31.32
7466.80	---	38.10	150	V	64	6.1	54.00	15.90
7466.80	48.88	---	150	V	64	6.1	74.00	25.12
10632.20	---	40.82	150	V	134	9.2	54.00	13.18
10632.20	50.95	---	100	V	357	9.2	74.00	23.05
17656.60	56.80	---	200	H	100	14	68.20	11.40

802.11n-HT20 Mode:

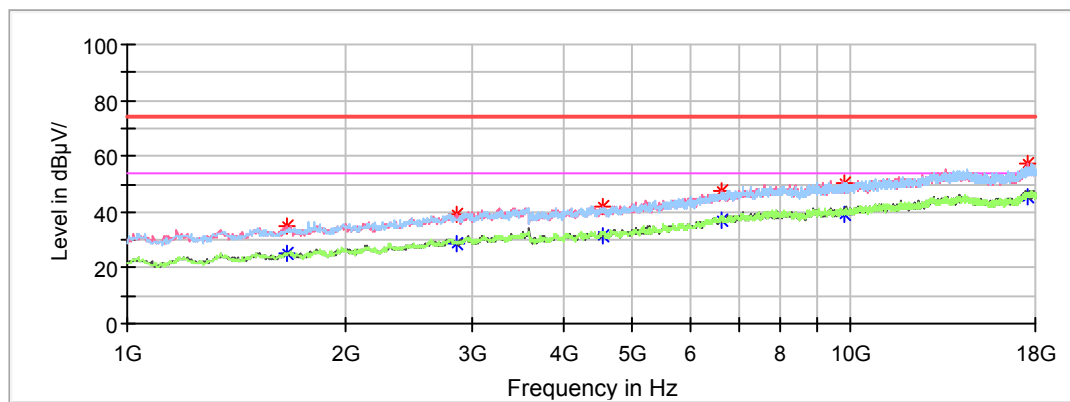
Pre-scan with X,Y and Z axes of orientation, the worst case Z-axis of orientation was recorded

Note:

1. This test was performed with the 5250-5350MHz band reject filter.
2. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
Corrected Amplitude = Corrected Factor + Reading
Margin = Limit - Corrected. Amplitude

Low Channel: 5260MHz

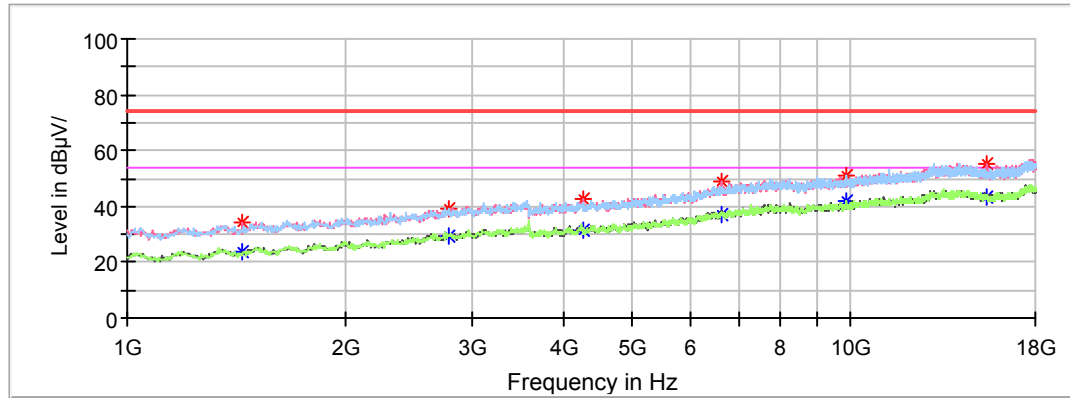
Full Spectrum



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
1659.60	35.28	---	200	V	71	-9.4	68.20	32.92
2849.60	---	28.84	200	V	211	-5.1	54.00	25.16
2849.60	39.46	---	200	V	211	-5.1	68.20	28.74
4536.00	---	31.79	150	V	350	-0.9	54.00	22.21
4536.00	42.24	---	150	V	350	-0.9	74.00	31.76
6633.80	47.49	---	200	V	94	4.7	68.20	20.71
9799.20	50.04	---	150	H	4	8	68.20	18.16
17575.00	57.17	---	150	V	0	14.2	68.20	11.03

Middle Channel: 5280MHz

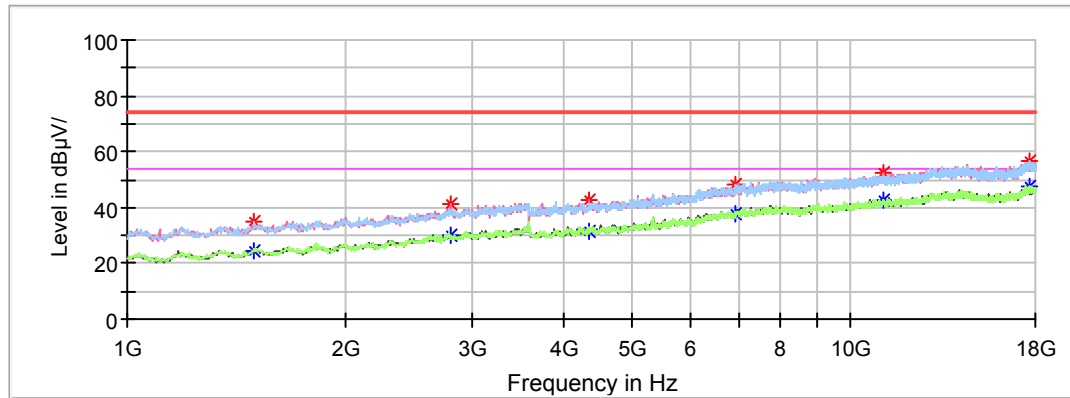
Full Spectrum



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
1445.40	---	23.75	150	V	114	-10.2	54.00	30.25
1445.40	34.46	---	150	V	114	-10.2	74.00	39.54
2781.60	---	29.64	150	H	258	-5.5	54.00	24.36
2781.60	38.91	---	200	H	262	-5.5	74.00	35.09
4260.60	---	31.73	200	V	89	-1.4	54.00	22.27
4260.60	42.39	---	200	V	89	-1.4	74.00	31.61
6633.80	49.67	---	150	V	184	4.7	68.20	18.53
9846.80	51.04	---	200	H	239	8.0	68.20	17.16
15460.20	---	43.42	150	V	254	11.3	54.00	10.58
15460.20	55.56	---	150	V	254	11.3	74.00	18.44

High Channel: 5320MHz

Full Spectrum



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1499.80	---	24.59	150	H	13	-9.9	54.00	29.41
1499.80	35.05	---	150	H	13	-9.9	74.00	38.95
2795.20	---	30.05	200	V	247	-5.4	54.00	23.95
2795.20	41.28	---	150	V	0	-5.4	74.00	32.72
4342.20	---	31.14	200	V	258	-1.3	54.00	22.86
4342.20	42.31	---	200	V	258	-1.3	74.00	31.69
6946.60	48.53	---	200	H	249	5.2	68.20	19.67
11118.40	---	42.38	150	V	277	9.8	54.00	11.62
11118.40	52.12	---	150	V	277	9.8	74.00	21.88
17670.20	56.68	---	150	H	188	14	68.20	11.52

802.11n-HT40 Mode:

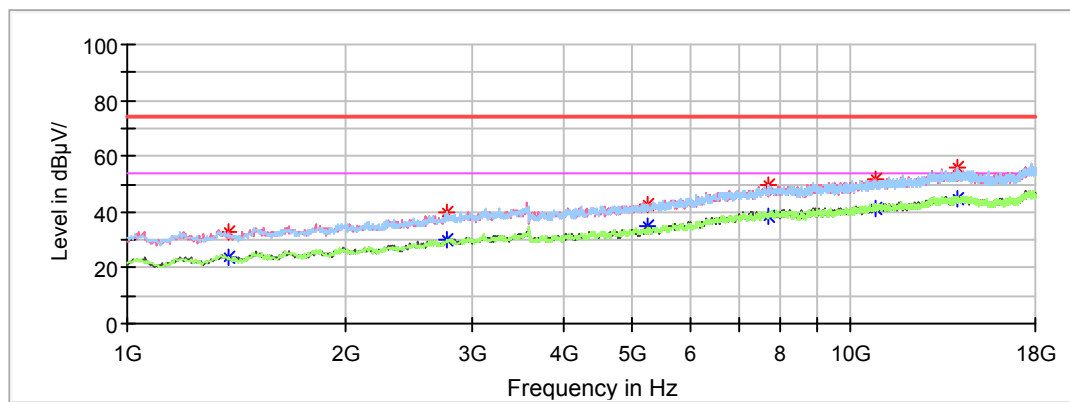
Pre-scan with X,Y and Z axes of orientation, the worst case Z-axis of orientation was recorded

Note:

1. This test was performed with the 5550-5350MHz band reject filter.
2. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
Corrected Amplitude = Corrected Factor + Reading
Margin = Limit - Corrected. Amplitude

Low Channel: 5270MHz

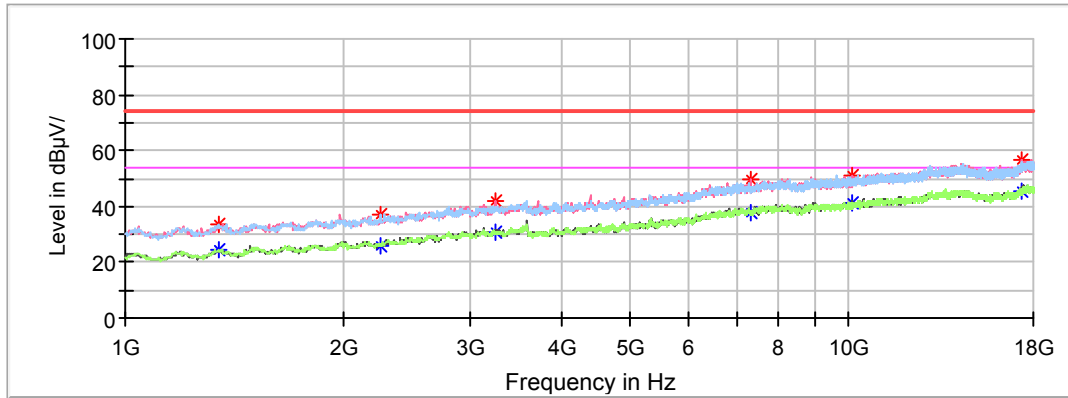
Full Spectrum



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
1377.40	---	23.57	150	V	317	-10.6	54.00	30.43
1377.40	33.16	---	150	V	317	-10.6	74.00	40.84
2761.20	---	29.88	150	H	306	-5.6	54.00	24.12
2761.20	39.66	---	200	H	240	-5.6	74.00	34.34
5222.80	42.56	---	150	V	200	0.5	68.20	25.64
7681.00	---	38.55	150	H	71	6.5	54.00	15.45
7681.00	49.52	---	150	H	71	6.5	74.00	24.48
10826.00	---	41.57	200	V	24	9.5	54.00	12.43
10826.00	52.07	---	200	V	24	9.5	74.00	21.93
14025.40	55.60	---	200	H	3	12.5	68.20	12.60

High Channel: 5310MHz

Full Spectrum



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1343.40	---	24.26	200	H	318	-10.8	54.00	29.74
1343.40	33.40	---	200	H	318	-10.8	74.00	40.60
2251.20	---	26.02	150	H	245	-7.6	54.00	27.98
2251.20	37.16	---	200	H	21	-7.6	74.00	36.84
3244.00	41.85	---	150	V	53	-4	68.20	26.35
7317.20	---	38.01	150	V	219	5.8	54.00	15.99
7317.20	49.37	---	150	V	219	5.8	74.00	24.63
10139.20	51.20	---	150	V	312	8.4	68.20	17.00
17333.60	56.39	---	200	V	76	13.4	68.20	11.81

1GHz-18GHz (5470-5725MHz Band):**802.11a Mode:**

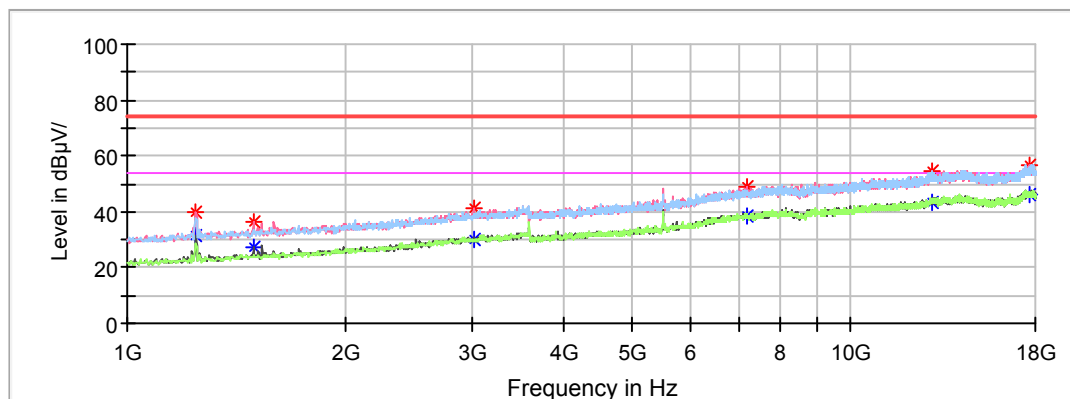
(Pre-scan in the X, Y and Z axes of orientation, the worst case Z-axis of orientation was recorded.)

Note:

1. This test was performed with the 5470-5725MHz band reject filter.
2. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
 Corrected Amplitude = Corrected Factor + Reading
 Margin = Limit - Corrected. Amplitude

Low Channel: 5500MHz

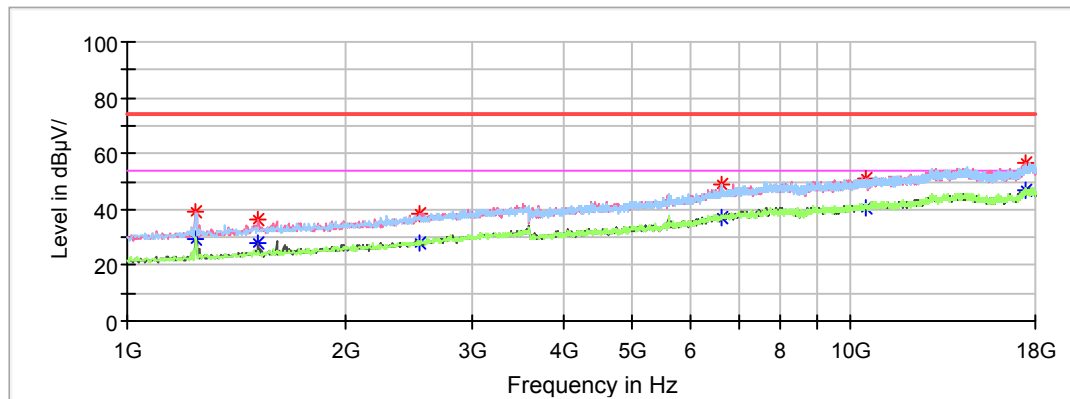
Full Spectrum



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1244.80	39.88	---	200	V	164	-11.3	68.20	28.32
1496.40	36.26	---	200	V	153	-9.9	68.20	31.94
3009.40	41.29	---	200	V	30	-4.4	68.20	26.91
7177.80	49.13	---	150	V	132	5.6	68.20	19.07
12917.00	54.50	---	150	H	176	11.8	68.20	13.70
17653.20	56.97	---	150	V	308	14.0	68.20	11.23

Middle Channel: 5600MHz

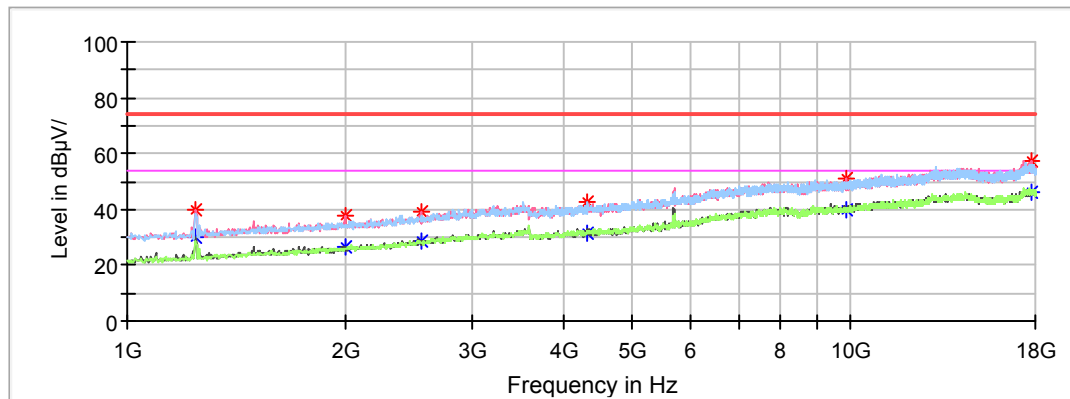
Full Spectrum



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
1244.80	39.39	---	150	V	266	-11.3	68.20	28.81
1516.80	---	27.97	200	V	211	-9.9	54.00	26.03
1516.80	36.11	---	200	V	211	-9.9	74.00	37.89
2540.20	38.81	---	150	V	90	-6.7	68.20	29.39
6644.00	48.65	---	150	H	0	4.7	68.20	19.55
10492.80	51.28	---	150	V	219	9	68.20	16.92
17496.80	56.61	---	150	V	254	14.3	68.20	11.59

High Channel: 5700MHz

Full Spectrum



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
1244.80	39.67	---	200	V	38	-11.3	68.20	28.53
1999.60	37.95	---	200	V	50	-8.2	68.20	30.25
2543.60	38.92	---	150	V	0	-6.7	68.20	29.28
4335.40	---	31.80	200	H	133	-1.3	54.00	22.20
4335.40	42.68	---	150	H	5	-1.3	74.00	31.32
9836.60	50.97	---	200	V	2	8	68.20	17.23
17779.00	---	46.06	150	V	0	13.8	54.00	7.94
17779.00	57.26	---	200	V	38	13.8	74.00	16.74

802.11n-HT20 Mode:

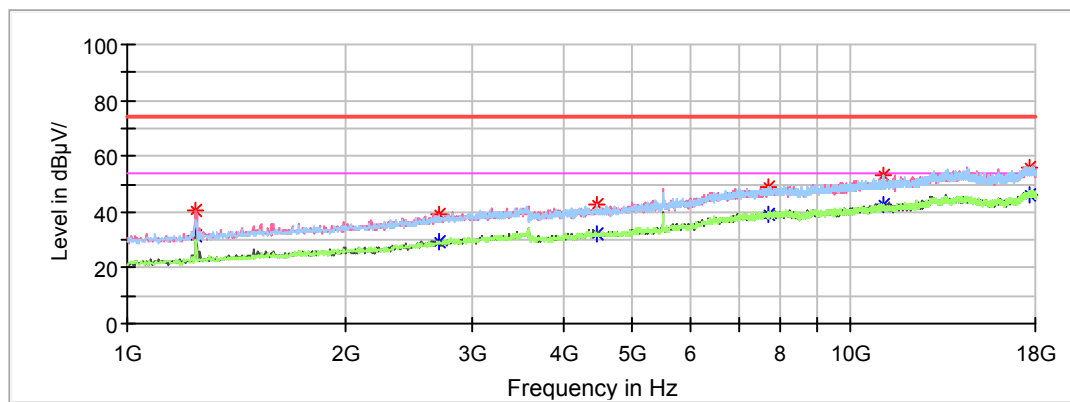
Pre-scan with X,Y and Z axes of orientation, the worst case Z-axis of orientation was recorded

Note:

1. This test was performed with the 5470-5725MHz band reject filter.
2. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
Corrected Amplitude = Corrected Factor + Reading
Margin = Limit - Corrected. Amplitude

Low Channel: 5500MHz

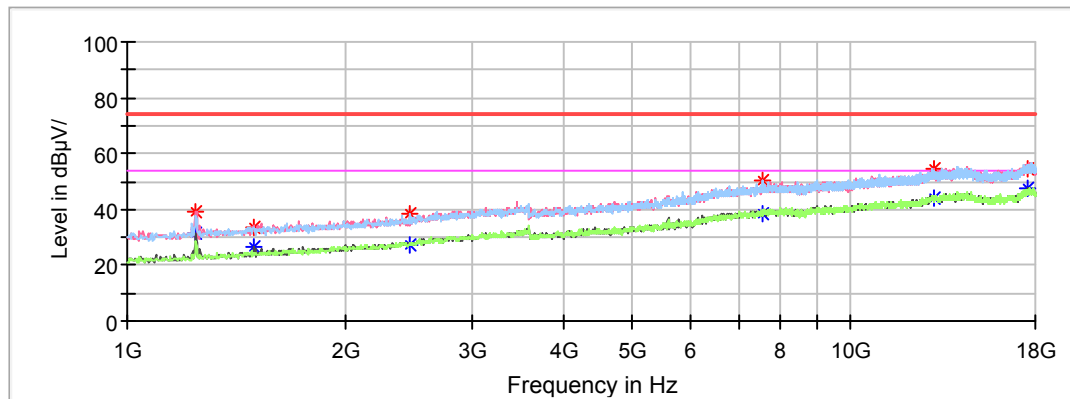
Full Spectrum



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
1244.80	40.50	---	200	V	164	-11.3	68.20	27.70
2689.80	39.23	---	150	V	95	-6	68.20	28.97
4461.20	---	32.42	150	H	153	-1	54.00	21.58
4461.20	42.44	---	150	H	153	-1	74.00	31.56
7701.40	---	38.93	200	H	125	6.5	54.00	15.07
7701.40	49.27	---	200	H	125	6.5	74.00	24.73
11070.80	---	42.77	200	H	78	9.8	54.00	11.23
11070.80	53.02	---	200	H	78	9.8	74.00	20.98
17639.60	56.27	---	150	V	295	14.1	68.20	11.93

Middle Channel: 5600MHz

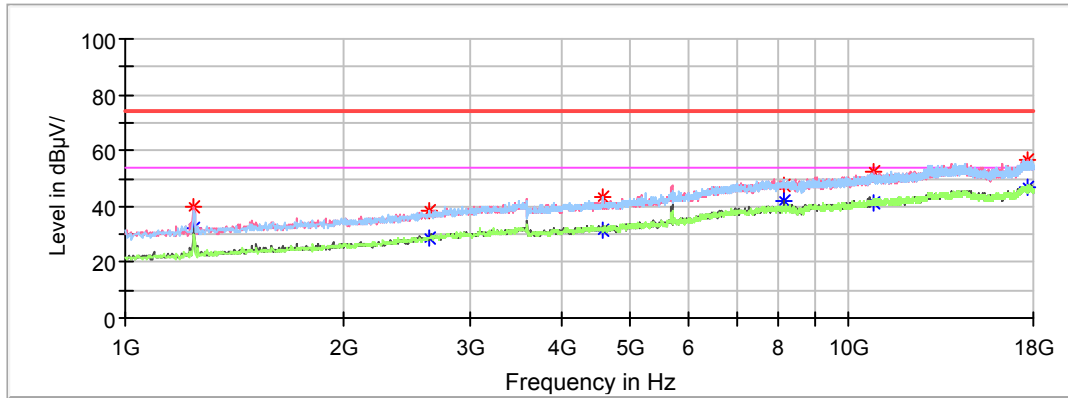
Full Spectrum



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
1244.80	38.94	---	200	V	325	-11.3	68.20	29.26
1496.40	33.61	---	150	V	271	-9.9	74.00	40.39
1496.40	---	26.57	150	V	271	-9.9	54.00	27.43
2465.40	38.65	---	200	H	77	-7	68.20	29.55
7555.20	---	38.74	150	H	206	6.2	54.00	15.26
7555.20	50.40	---	150	H	206	6.2	74.00	23.60
13025.80	54.37	---	200	V	42	12.1	68.20	13.83
17598.80	54.30	---	200	V	31	14.1	68.20	13.90

High Channel: 5700MHz

Full Spectrum



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
1244.80	39.52	---	200	V	168	-11.3	68.20	28.68
2628.60	38.56	---	150	H	257	-6.3	68.20	29.64
4563.20	---	31.76	150	H	70	-0.9	54.00	22.24
4563.20	43.46	---	150	H	70	-0.9	74.00	30.54
8123.00	---	41.90	200	V	63	6.9	54.00	12.10
8123.00	47.46	---	200	V	63	6.9	74.00	26.54
10856.60	---	41.50	150	V	330	9.5	54.00	12.50
10856.60	52.76	---	150	V	330	9.5	74.00	21.24
17626.00	56.53	---	200	V	192	14.1	68.20	11.67

802.11n-HT40 Mode:

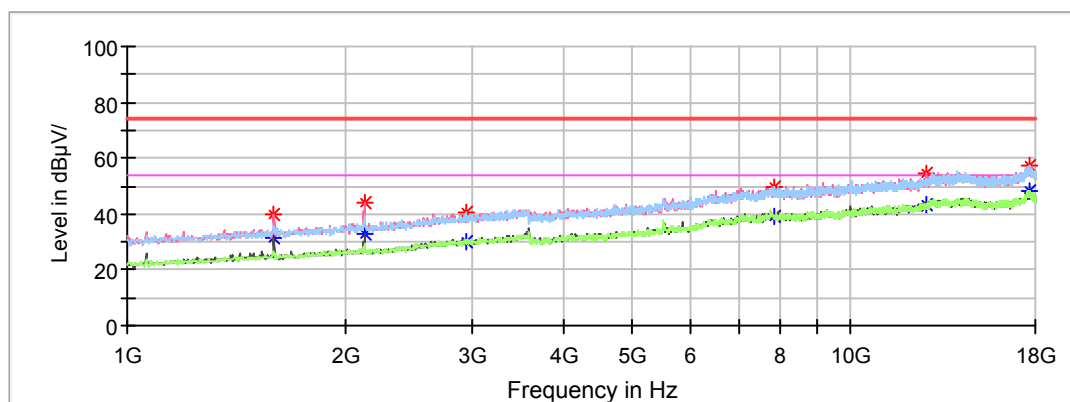
Pre-scan with X,Y and Z axes of orientation, the worst case Z-axis of orientation was recorded

Note:

1. This test was performed with the 5470-5725MHz band reject filter.
2. Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
Corrected Amplitude = Corrected Factor + Reading
Margin = Limit - Corrected. Amplitude

Low Channel: 5510MHz

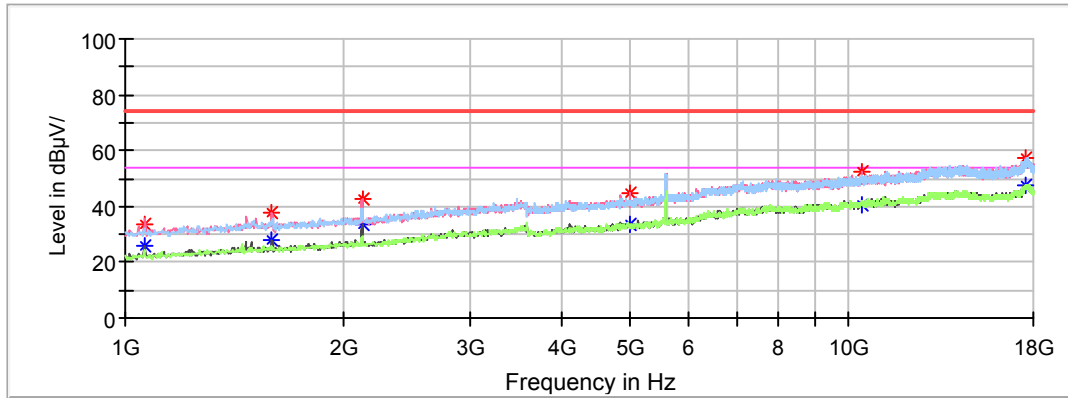
Full Spectrum



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
1595.00	---	31.14	150	V	42	-9.6	54.00	22.86
1595.00	39.71	---	150	V	42	-9.6	74.00	34.29
2128.80	43.82	---	150	V	260	-7.9	68.20	24.38
2934.60	40.29	---	150	H	147	-4.7	68.20	27.91
7857.80	49.48	---	150	H	124	6.8	68.20	18.72
12740.20	---	43.28	200	V	253	11.2	54.00	10.72
12740.20	54.89	---	200	V	253	11.2	74.00	19.11
17663.40	57.17	---	200	H	113	14	68.20	11.03

Middle Channel: 5590MHz

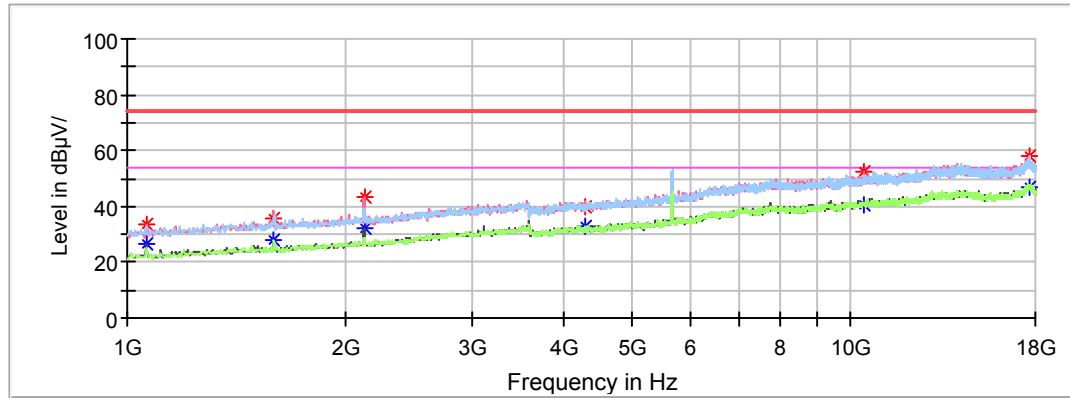
Full Spectrum



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
1061.20	---	26.15	150	V	52	-12.3	54.00	27.85
1061.20	33.42	---	150	V	52	-12.3	74.00	40.58
1595.00	---	28.20	200	V	64	-9.6	54.00	25.80
1595.00	37.61	---	200	V	64	-9.6	74.00	36.39
2125.40	42.56	---	150	V	66	-7.9	68.20	25.64
4974.60	---	33.48	200	V	41	-0.3	54.00	20.52
4974.60	45.03	---	200	V	41	-0.3	74.00	28.97
10452.00	52.14	---	200	V	0	8.9	68.20	16.06
17585.20	57.60	---	200	V	356	14.1	68.20	10.60

High Channel: 5670MHz

Full Spectrum



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1061.20	---	26.55	200	V	129	-12.3	54.00	27.45
1061.20	33.78	---	200	V	129	-12.3	74.00	40.22
1595.00	---	28.29	150	H	358	-9.6	54.00	25.71
1595.00	35.59	---	150	H	358	-9.6	74.00	38.41
2125.40	43.48	---	150	V	259	-7.9	68.20	24.72
4284.40	---	32.79	200	H	22	-1.4	54.00	21.21
4284.40	39.65	---	200	H	22	-1.4	74.00	34.35
10414.60	52.10	---	150	V	83	8.9	68.20	16.10
17663.40	58.12	---	150	H	1	14	68.20	10.08

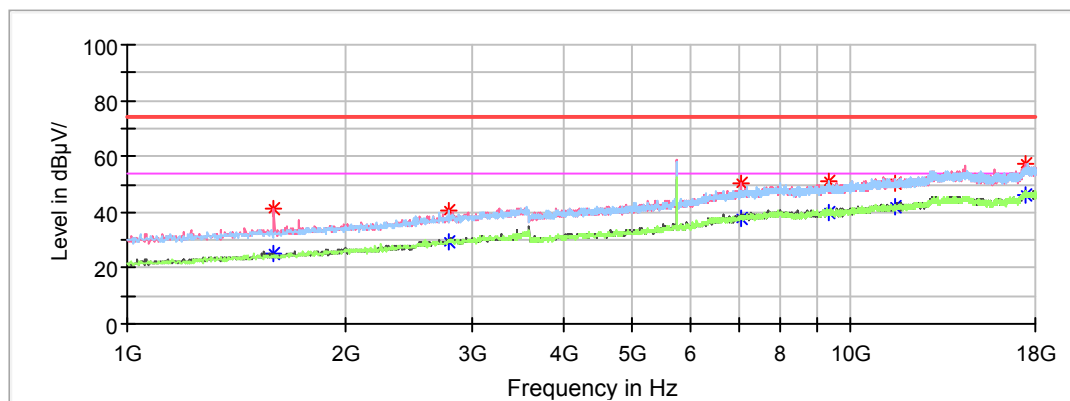
5725-5850MHz Band:**1GHz-18GHz:****802.11a Mode:***(Pre-scan in the X,Y and Z axes of orientation, the worst case Z-axis of orientation was recorded.)*

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

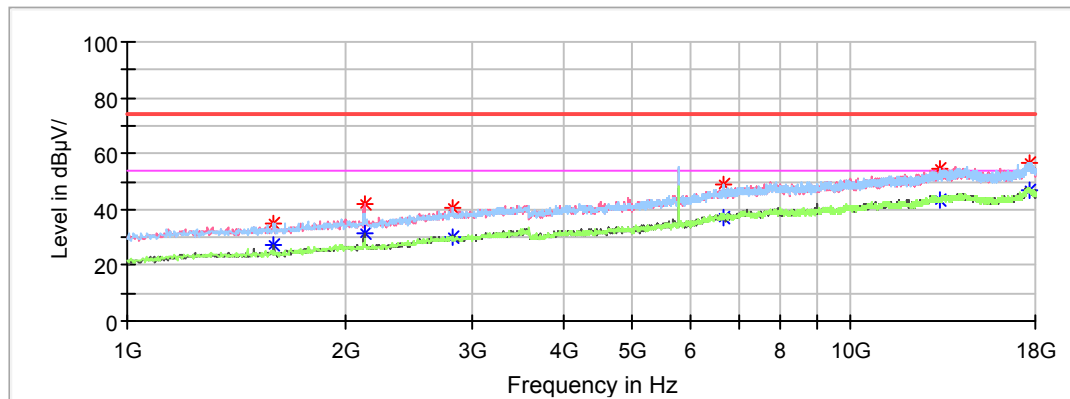
Full Spectrum



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
1595.00	---	24.85	100	V	67	-9.6	54.00	29.15
1595.00	41.28	---	100	V	67	-9.6	74.00	32.72
2781.60	---	29.28	100	H	274	-5.5	54.00	24.72
2781.60	40.29	---	100	H	274	-5.5	74.00	33.71
7055.40	50.01	---	150	V	239	5.4	68.20	18.19
9323.20	---	39.54	100	H	146	7.7	54.00	14.46
9323.20	51.33	---	100	H	146	7.7	74.00	22.67
11492.40	---	41.88	150	H	80	9.8	54.00	12.12
11492.40	50.57	---	150	H	80	9.8	74.00	23.43
17405.00	57.27	---	200	V	232	13.8	68.20	10.93

Middle Channel: 5785MHz

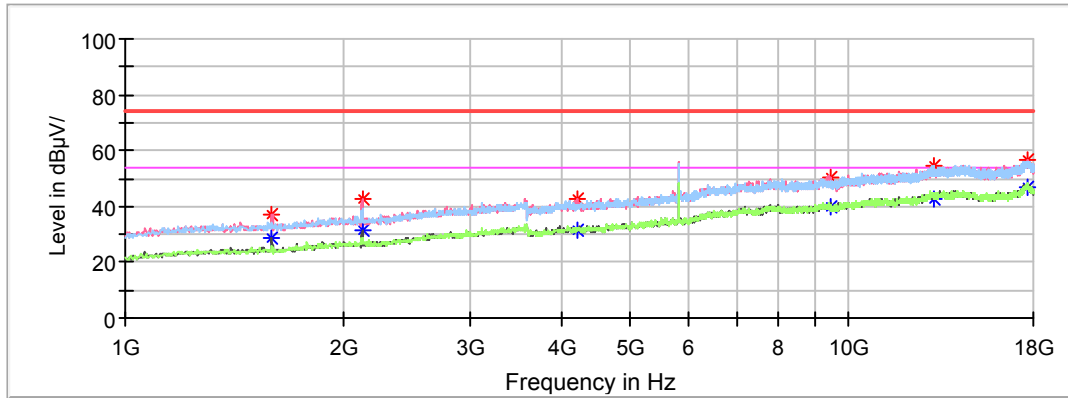
Full Spectrum



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
1595.00	---	27.16	200	V	325	-9.6	54.00	26.84
1595.00	35.01	---	200	V	325	-9.6	74.00	38.99
2128.80	41.65	---	150	V	78	-7.9	68.20	26.55
2815.60	40.56	---	200	H	0	-5.3	68.20	27.64
6688.20	48.79	---	200	H	83	4.8	68.20	19.41
13270.60	---	43.59	150	V	317	12	54.00	10.41
13270.60	54.80	---	150	V	317	12	74.00	19.20
17677.00	56.89	---	200	V	301	14	68.20	11.31

High Channel: 5825MHz

Full Spectrum



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
1591.60	---	28.40	150	V	60	-9.6	54.00	25.60
1591.60	36.74	---	150	V	60	-9.6	74.00	37.26
2125.40	42.98	---	150	V	83	-7.9	68.20	25.22
4216.40	---	31.15	150	V	351	-1.5	54.00	22.85
4216.40	42.88	---	150	V	351	-1.5	74.00	31.12
9421.80	---	39.72	200	V	220	7.6	54.00	14.28
9421.80	50.39	---	200	V	220	7.6	74.00	23.61
13121.00	---	42.88	200	H	229	12	54.00	11.12
13121.00	54.51	---	200	H	229	12	74.00	19.49
17690.60	56.65	---	200	V	267	14	68.20	11.55

802.11n-HT20 Mode:

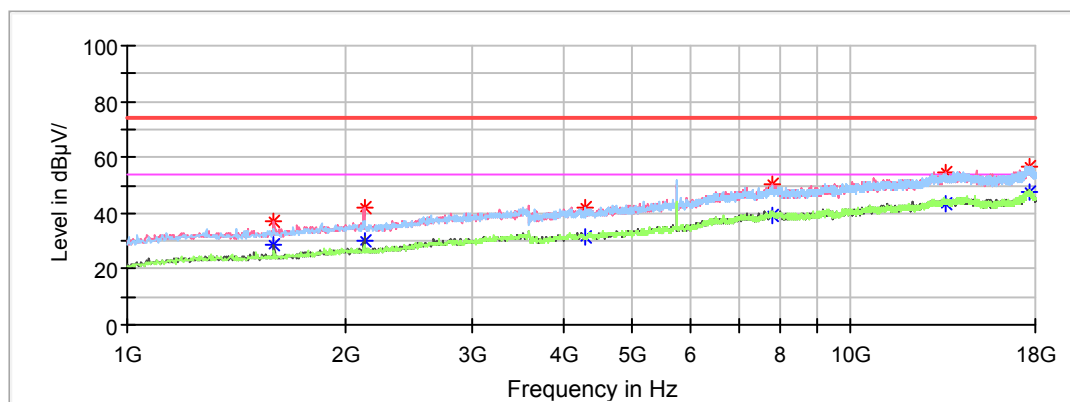
(Pre-scan with X,Y and Z axes of orientation, the worst case **Z-axis of orientation** was recorded)

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

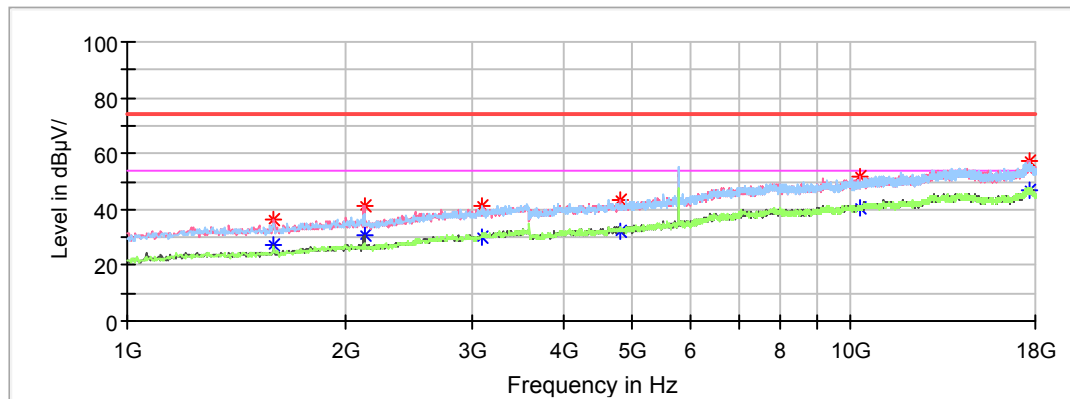
Full Spectrum



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
1595.00	---	28.65	150	V	330	-9.6	54.00	25.35
1595.00	36.78	---	150	V	330	-9.6	74.00	37.22
2125.40	41.76	---	150	V	271	-7.9	68.20	26.44
4304.80	---	31.32	200	H	31	-1.3	54.00	22.68
4304.80	42.05	---	200	H	31	-1.3	74.00	31.95
7783.00	50.51	---	150	V	177	6.7	68.20	17.69
13539.20	54.84	---	200	V	196	12	68.20	13.36
17660.00	56.84	---	150	H	196	14	68.20	11.36

Middle Channel: 5785MHz

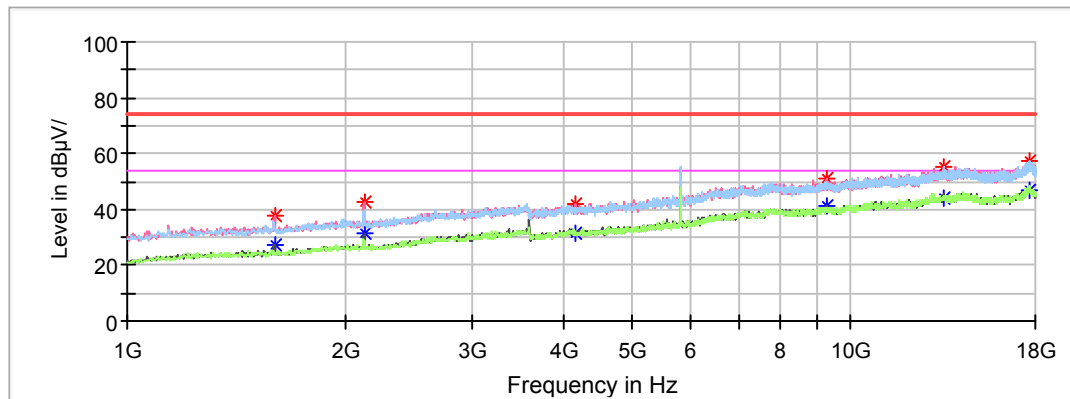
Full Spectrum



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1595.00	---	27.33	150	V	72	-9.6	54.00	26.67
1595.00	36.46	---	150	V	72	-9.6	74.00	37.54
2125.40	41.57	---	150	V	107	-7.9	68.20	26.63
3101.20	41.00	---	200	H	136	-4.2	68.20	27.20
4791.00	---	31.95	200	V	247	-0.6	54.00	22.05
4791.00	43.40	---	200	V	247	-0.6	74.00	30.60
10302.40	51.69	---	150	V	130	8.7	68.20	16.51
17663.40	57.26	---	150	V	1	14	68.20	10.94

High Channel: 5825MHz

Full Spectrum



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
1598.40	---	27.36	150	V	60	-9.6	54.00	26.64
1598.40	37.70	---	150	V	60	-9.6	74.00	36.30
2125.40	42.52	---	150	V	71	-7.9	68.20	25.68
4158.60	---	31.57	150	V	66	-1.6	54.00	22.43
4158.60	42.26	---	150	V	66	-1.6	74.00	31.74
9241.60	51.36	---	200	V	30	7.7	68.20	16.84
13474.60	54.92	---	200	H	91	11.9	68.20	13.28
17646.40	57.13	---	150	H	77	14	68.20	11.07

802.11n-HT40 Mode:

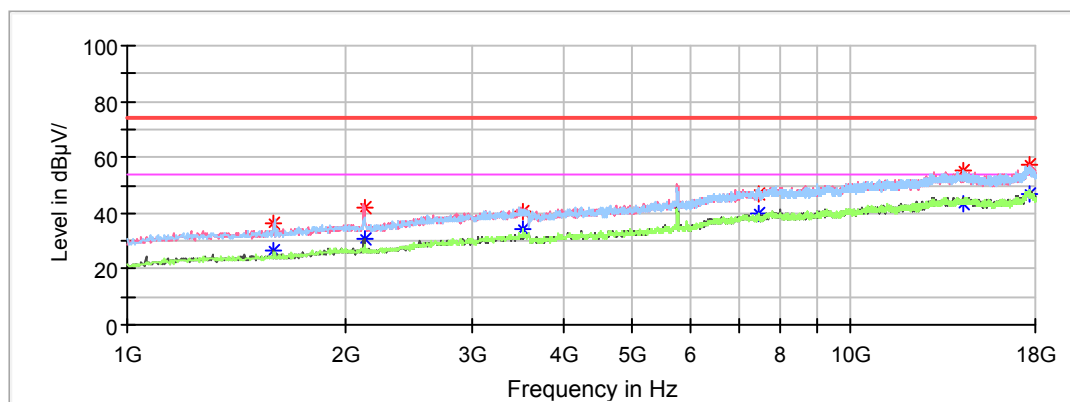
(Pre-scan with X,Y and Z axes of orientation, the worst case **Z-axis of orientation** was recorded)

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

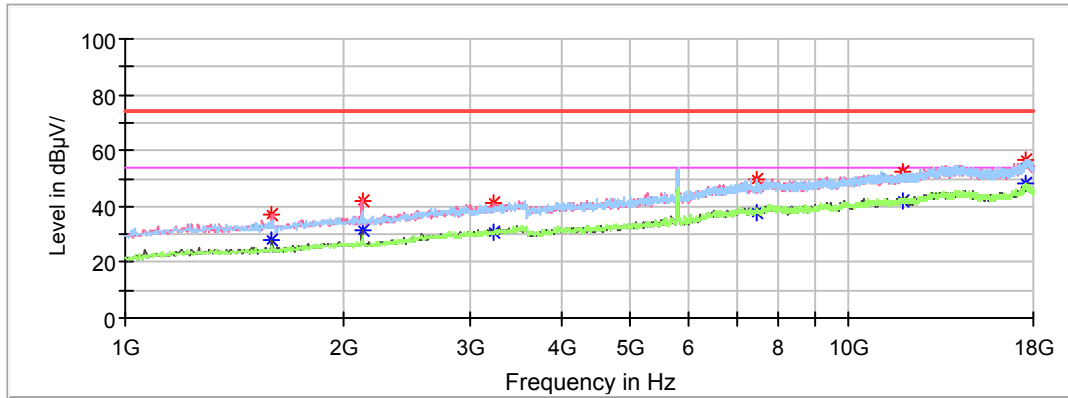
Full Spectrum



Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBμV/m)	Margin (dB)
	MaxPeak (dBμV/m)	Average (dBμV/m)	Height (cm)	Polar (H/V)				
1591.60	---	26.82	200	V	54	-9.6	54.00	27.18
1591.60	36.55	---	200	V	54	-9.6	74.00	37.45
2125.40	42.28	---	150	V	78	-7.9	68.20	25.92
3522.80	40.56	---	150	H	137	-3.5	68.20	27.64
7460.00	---	39.67	150	H	172	6.1	54.00	14.33
7460.00	46.84	---	150	H	172	6.1	74.00	27.16
14338.20	55.00	---	200	H	113	12.6	68.20	13.20
17643.00	56.99	---	150	V	66	14.1	68.20	11.21

High Channel: 5795MHz

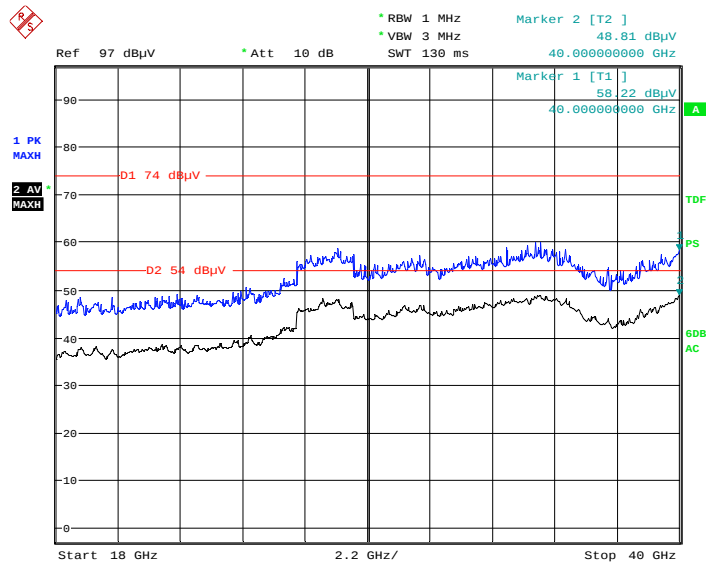
Full Spectrum



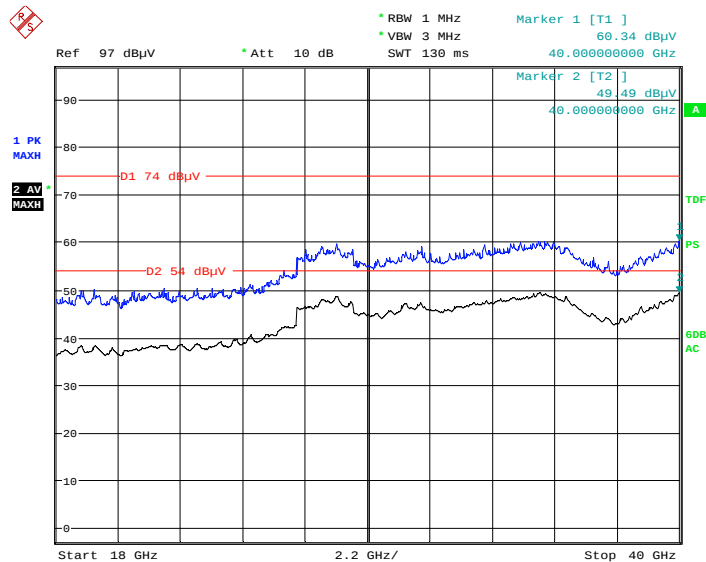
Frequency (MHz)	Corrected Amplitude		Rx Antenna		Turntable Degree	Correct Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
	MaxPeak (dBµV/m)	Average (dBµV/m)	Height (cm)	Polar (H/V)				
1595.00	---	27.93	200	V	113	-9.6	54.00	26.07
1595.00	36.94	---	200	V	113	-9.6	74.00	37.06
2128.80	42.30	---	150	V	270	-7.9	68.20	25.90
3220.20	41.24	---	150	V	90	-4	68.20	26.96
7466.80	---	37.83	200	H	356	6.1	54.00	16.17
7466.80	49.31	---	200	H	356	6.1	74.00	24.69
11869.80	---	42.26	200	H	47	10	54.00	11.74
11869.80	52.75	---	200	H	47	10	74.00	21.25
17602.20	56.53	---	150	H	270	14.1	68.20	11.67

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

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

Horizontal

Date: 18.AUG.2019 20:33:10

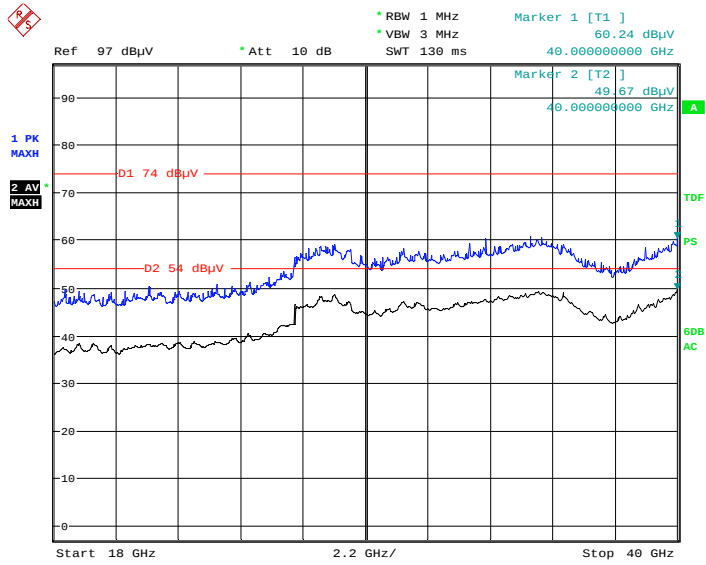
Vertical

Date: 18.AUG.2019 20:52:21

18GHz-40GHz (5250-5350MHz Band):

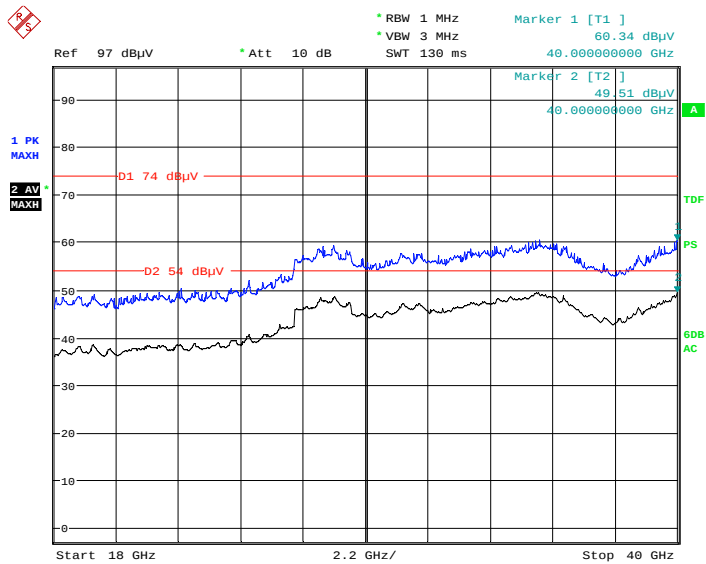
Pre-scan with 802.11a and 802.11n-HT20 modes of operation in the X,Y and Z axes of orientation, the worst case middle channel of 802.11a mode in Z-axis of orientation was recorded

Horizontal



Date: 18.AUG.2019 21:19:07

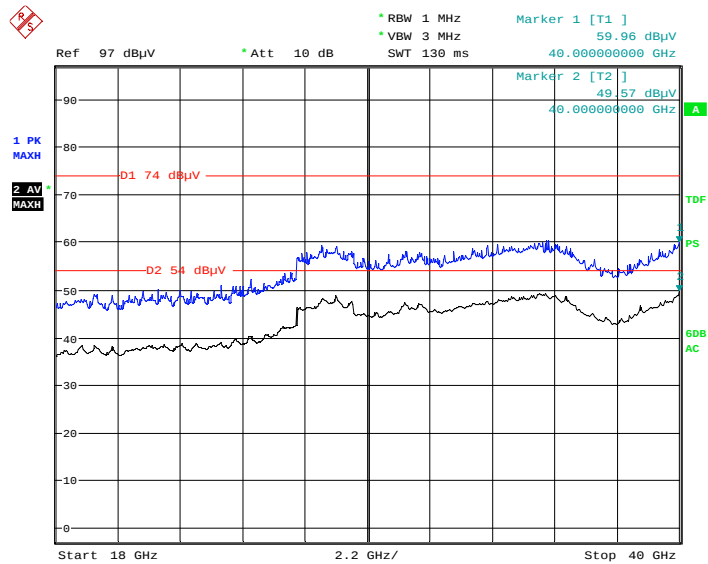
Vertical



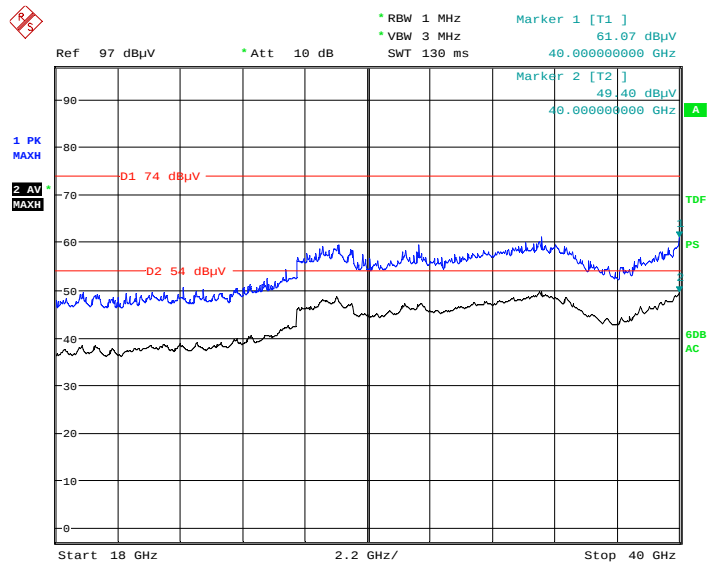
Date: 18.AUG.2019 21:42:33

18GHz-40GHz (5470-5725MHz Band):

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

Horizontal

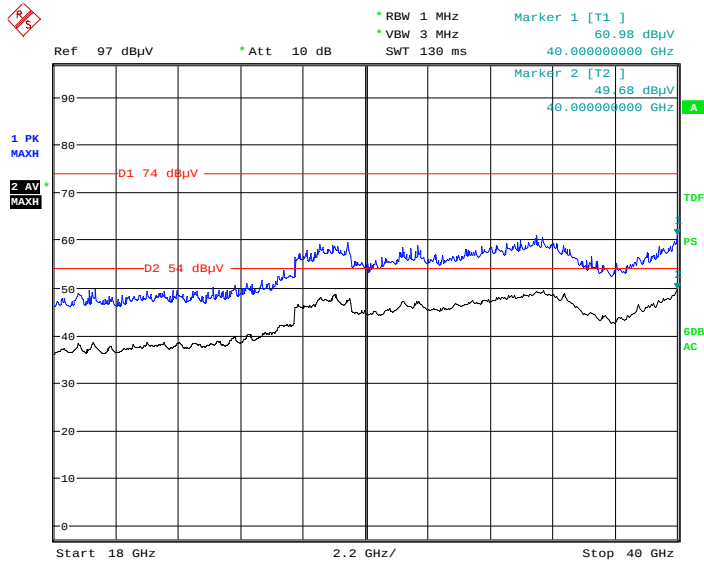
Date: 18.AUG.2019 22:06:14

Vertical

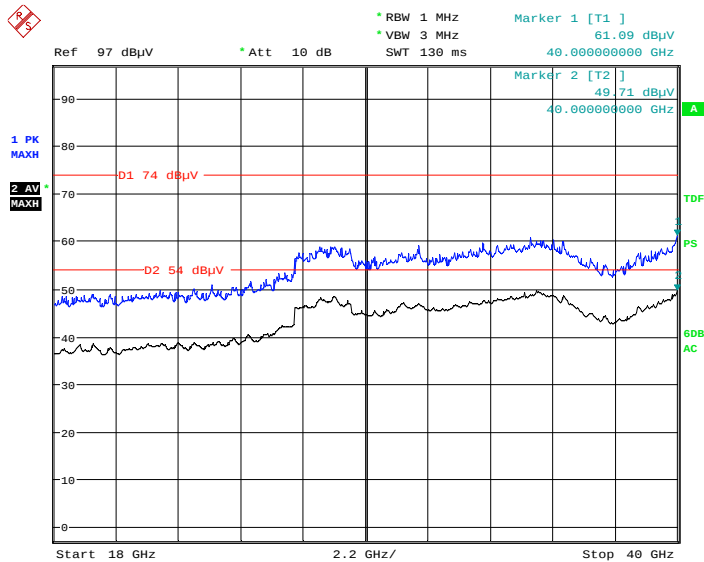
Date: 18.AUG.2019 22:39:51

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

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

Horizontal

Date: 18.AUG.2019 23:12:39

Vertical

Date: 18.AUG.2019 23:38:05

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

Note:

Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor

Corrected Amplitude = Corrected Factor + Reading

Margin = Limit - Corrected. Amplitude

802.11a Mode: (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: 5180MHz								
5150.00	---	49.52	150	V	140	10.2	54.00	4.48
5150.00	58.65	---	150	V	140	10.2	74.00	15.35
High Channel: 5240MHz								
5350.00	---	48.23	200	V	171	10.9	54.00	5.77
5350.00	57.86	---	200	V	171	10.9	74.00	16.14

802.11n-HT20 Mode: (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: 5180MHz								
5150.00	---	49.62	150	V	192	10.2	54.00	4.38
5150.00	59.51	---	150	V	192	10.2	74.00	14.49
High Channel: 5240MHz								
5350.00	---	48.37	200	V	13	10.9	54.00	5.63
5350.00	57.83	---	200	V	13	10.9	74.00	16.17

802.11n-HT40 Mode: (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: 5190MHz								
5150.00	---	50.93	150	V	242	10.2	54.00	3.07
5150.00	59.69	---	150	V	242	10.2	74.00	14.31
Middle Channel: 5230MHz								
5350.00	---	48.31	200	V	234	10.9	54.00	5.69
5350.00	57.89	---	200	V	234	10.9	74.00	16.11

Fundamental Test & Restricted Bands Emissions Test (5250-5350MHz Band):

Note:

Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor

Corrected Amplitude = Corrected Factor + Reading

Margin = Limit - Corrected. Amplitude

802.11a Mode: (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: 5260MHz								
5150.00	---	47.61	150	V	332	10.2	54	6.39
5150.00	57.12	---	150	V	332	10.2	74	16.88
High Channel: 5320MHz								
5350.00	---	49.97	200	V	206	10.9	54	4.03
5350.00	59.56	---	200	V	206	10.9	74	14.44

802.11n-HT20 Mode: (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: 5260MHz								
5150.00	---	47.68	150	V	62	10.2	54	6.32
5150.00	57.34	---	150	V	62	10.2	74	16.66
High Channel: 5320MHz								
5350.00	---	49.90	200	V	116	10.9	54	4.10
5350.00	58.85	---	200	V	116	10.9	74	15.15

802.11n-HT40 Mode: (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: 5270MHz								
5150.00	---	47.63	150	V	240	10.2	54	6.37
5150.00	57.26	---	150	V	240	10.2	74	16.74
Middle Channel: 5310MHz								
5350.00	---	50.83	200	V	1	10.9	54	3.17
5350.00	62.99	---	200	V	1	10.9	74	11.01

Fundamental Test & Restricted Bands Emissions Test (5470-5725MHz Band):

Note:

Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor

Corrected Amplitude = Corrected Factor + Reading

Margin = Limit - Corrected. Amplitude

802.11a Mode: (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: 5500MHz								
5460.00	---	49.38	150	V	40	11.3	54.00	4.62
5460.00	59.10	---	150	V	0	11.3	74.00	14.90
5470.00	60.53	---	150	V	40	11.3	68.20	7.67
High Channel: 5700MHz								
5725.00	60.02	---	150	V	40	11.3	68.20	8.18

802.11n-HT20 Mode: (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: 5500MHz								
5460.00	---	50.27	150	V	105	10.2	54.00	3.73
5460.00	59.25	---	150	V	0	11.3	74.00	14.75
5470.00	59.70	---	150	V	105	11.3	68.20	8.50
High Channel: 5700MHz								
5725.00	60.11	---	150	V	105	11.3	68.20	8.09

802.11n-HT40 Mode: (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: 5510MHz								
5460.00	---	50.33	150	V	52	11.3	54.00	3.67
5460.00	62.48	---	150	V	0	11.3	74.00	11.52
5470.00	65.07	---	150	V	52	11.3	68.20	3.13
Middle Channel: 5670MHz								
5725.00	60.09	---	150	V	52	11.3	68.20	8.11

Fundamental Test & Restricted Bands Emissions Test (5725-5850MHz band):

Note:

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

802.11a Mode: (Pre-scan in the X, Y and Z axes of orientation, the worst case in 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	59.67	---	150	V	222	11.6	68.20	8.53
5700.00	60.01	---	150	V	217	11.7	105.20	45.19
5720.00	63.54	---	150	V	119	11.9	110.80	47.26
5725.00	63.87	---	150	V	315	11.9	122.20	58.33
High Channel: 5825MHz								
5850.00	60.89	---	150	V	282	12.0	122.20	61.31
5855.00	59.67	---	150	V	162	12.1	110.80	51.13
5875.00	59.86	---	150	V	266	12.2	105.20	45.34
5925.00	60.37	---	150	V	209	12.2	68.20	7.83

802.11n-HT20 Mode: (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	59.38	---	150	V	265	11.6	68.20	8.82
5700.00	59.79	---	150	V	131	11.7	105.20	45.41
5720.00	64.45	---	150	V	49	11.9	110.80	46.35
5725.00	65.65	---	150	V	326	11.9	122.20	56.55
High Channel: 5825MHz								
5850.00	61.33	---	150	V	9	12.0	122.20	60.87
5855.00	59.56	---	150	V	69	12.1	110.80	51.24
5875.00	59.91	---	150	V	201	12.2	105.20	45.29
5925.00	60.56	---	150	V	315	12.2	68.20	7.64

802.11n-HT40 Mode: (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	59.40	---	150	V	265	11.6	68.20	8.80
5700.00	62.26	---	150	V	69	11.7	105.20	42.94
5720.00	74.12	---	150	V	158	11.9	110.80	36.68
5725.00	74.56	---	150	V	149	11.9	122.20	47.64
High Channel: 5795MHz								
5850.00	62.77	---	150	V	128	12.0	122.20	59.43
5855.00	62.45	---	150	V	97	12.1	110.80	48.35
5875.00	59.86	---	150	V	115	12.2	105.20	45.34
5925.00	60.38	---	150	V	326	12.2	68.20	7.82

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

Applicable Standard

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

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

Test Procedure

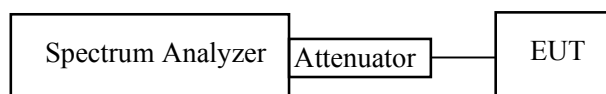
1. Emission Bandwidth (EBW)

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

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

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

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



Test Data**Environmental Conditions**

Temperature:	23.5 °C~24.5 °C
Relative Humidity:	50 %~52 %
ATM Pressure:	101.2 kPa~101.4 kPa

The testing was performed by Max Min from 2019-08-12 to 2019-08-13.

Test Result: Pass.

5150-5250 MHz:

Test mode	Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
802.11a	Low	5180	41.463	18.036
	Middle	5200	42.625	18.517
	High	5240	41.703	18.156
802.11n-HT20	Low	5180	44.830	18.818
	Middle	5200	45.752	19.118
	High	5240	46.633	18.758
802.11n-HT40	Low	5190	48.818	36.673
	High	5230	47.415	36.673

5250-5350 MHz:

Test mode	Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
802.11a	Low	5260	43.527	17.976
	Middle	5280	44.128	18.697
	High	5320	44.008	18.216
802.11n-HT20	Low	5260	45.571	18.818
	Middle	5280	47.094	19.299
	High	5320	45.691	18.998
802.11n-HT40	Low	5270	47.836	36.673
	High	5310	44.269	36.673

5470-5725 MHz:

Test mode	Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
802.11a	Low	5500	41.242	17.796
	Middle	5600	40.281	18.277
	High	5700	37.395	18.697
802.11n-HT20	Low	5500	44.609	18.697
	Middle	5600	42.565	18.758
	High	5700	45.451	19.238
802.11n-HT40	Low	5510	51.824	36.553
	Middle	5590	50.612	36.794
	High	5670	50.020	36.794

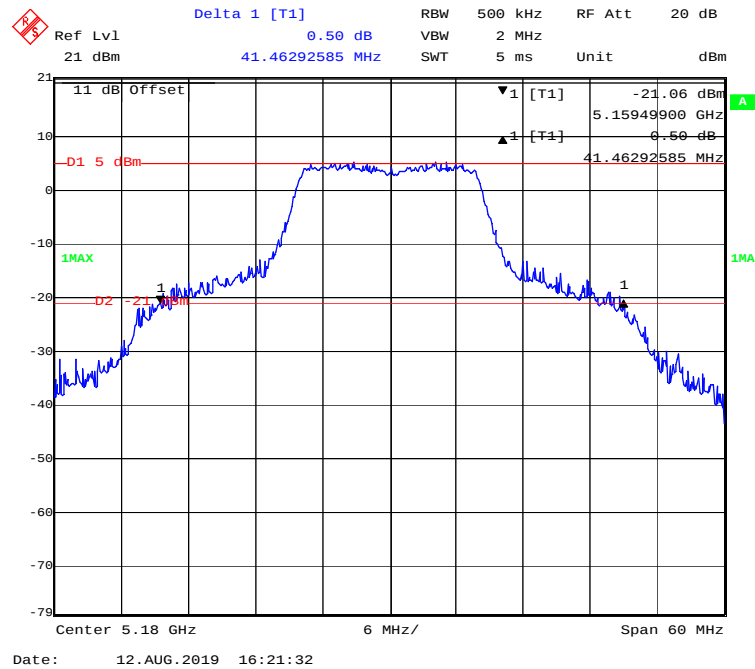
5725-5850MHz:

Test mode	Channel	Frequency (MHz)	6dB Bandwidth (MHz)	99% Bandwidth (MHz)
802.11a	Low	5745	16.413	18.878
	Middle	5785	16.473	20.080
	High	5825	16.473	21.523
802.11n-HT20	Low	5745	17.675	19.539
	Middle	5785	17.675	20.621
	High	5825	17.675	22.305
802.11n-HT40	Low	5755	35.952	36.794
	High	5795	36.102	36.914

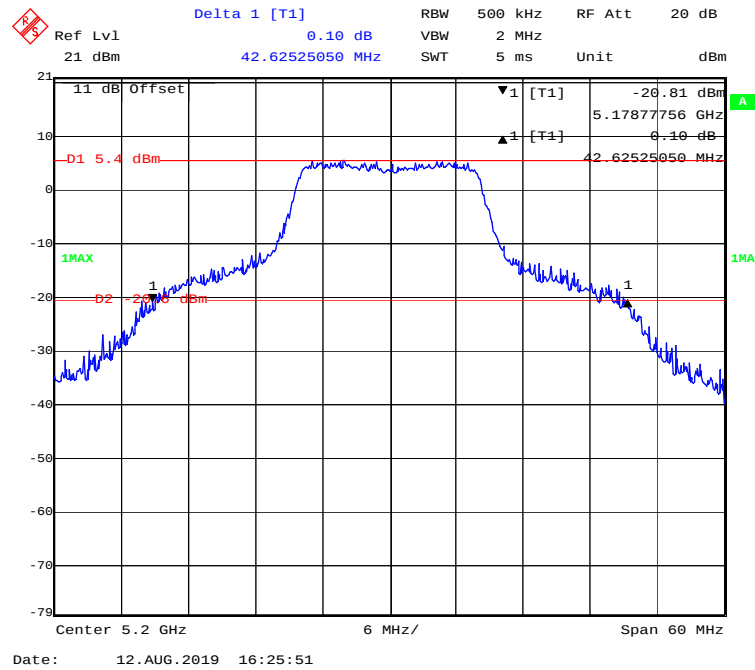
5150-5250 MHz Band:

26 Bandwidth

802.11a mode, 5180MHz



802.11a mode, 5200MHz



Delta 1 [T1] -0.24 dB
 RBW 500 kHz RF Att 20 dB
 Ref Lvl 21 dBm VBW 2 MHz
 SWT 5 ms Unit dBm

11 dB Offset
 -20.50 dBm
 5.21961924 GHz
 -0.24 dB
 41.70340681 MHz
 -21.70 dBm
 1MA

Center 5.24 GHz 6 MHz/ Span 60 MHz

Date: 12.AUG.2019 16:27:42

Delta 1 [T1] 0.26 dB
 44.82965932 MHz
 RBW 500 kHz RF Att 20 dB
 VBW 2 MHz
 SWT 5 ms Unit dBm
 Ref Lvl 21 dBm
 11 dB Offset
 -20.29 dBm
 5.15709419 GHz
 0.26 dB
 44.82965932 MHz
 -20.29 dBm
 1MAX
 1
 1
 Center 5.18 GHz 6 MHz/ Span 60 MHz
 Date: 12. AUG. 2019 16:22:58

[illegible]

Delta 1 [T1]

Ref Lvl 0.03 dB

21 dBm 46.63326653 MHz

RBW 500 kHz RF Att 20 dB

VBW 2 MHz

SWT 5 ms Unit dBm

11 dB Offset

▼1 [T1] -21.46 dBm

▲1 [T1] 0.03 dB

D1 4.5 dBm

5.21649299 GHz

1MAX

D2 23.46 dBm

1

1

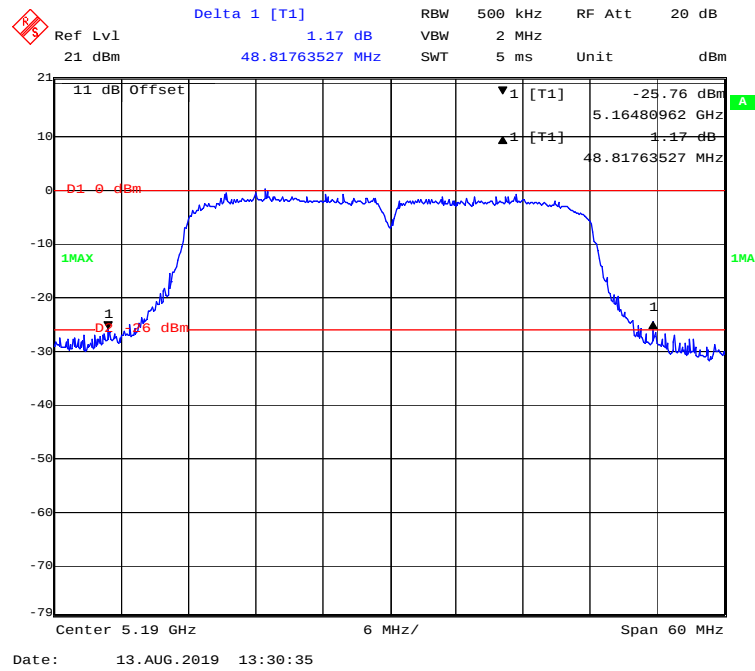
Center 5.24 GHz

6 MHz/

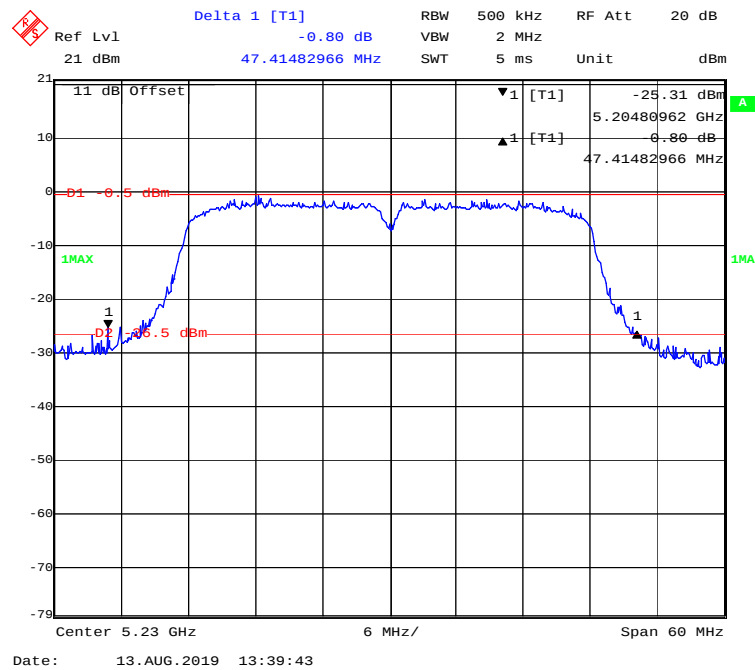
Span 60 MHz

Date: 12.AUG.2019 16:28:31

802.11n-HT40 mode, 5190MHz

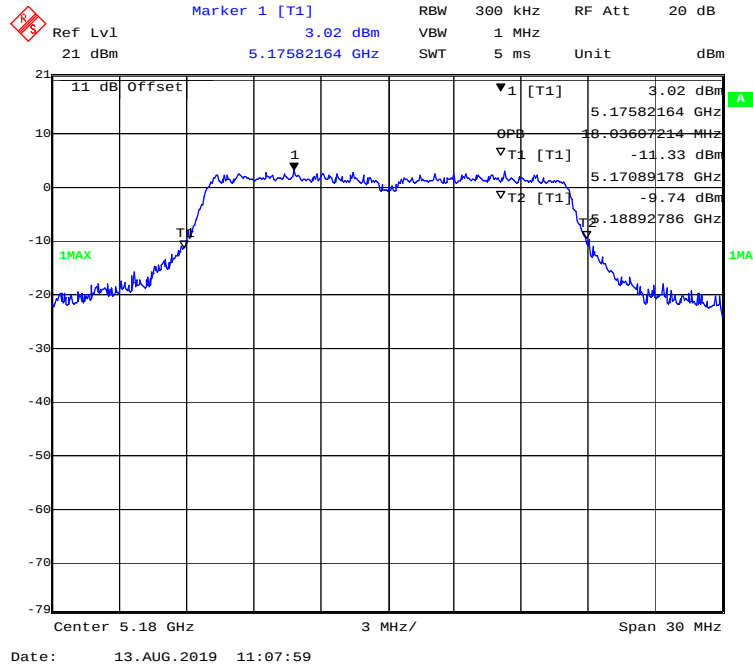


802.11n-HT40 mode, 5230MHz

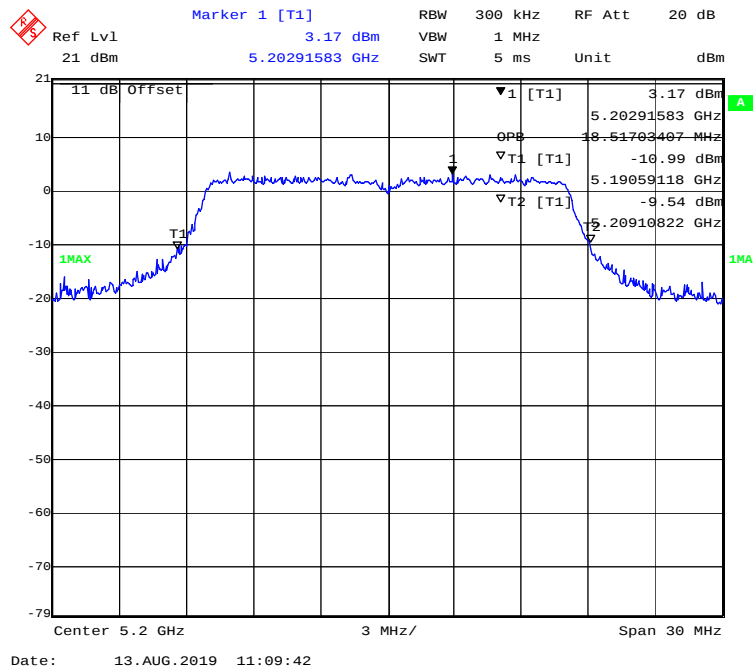


99% Occupied Bandwidth

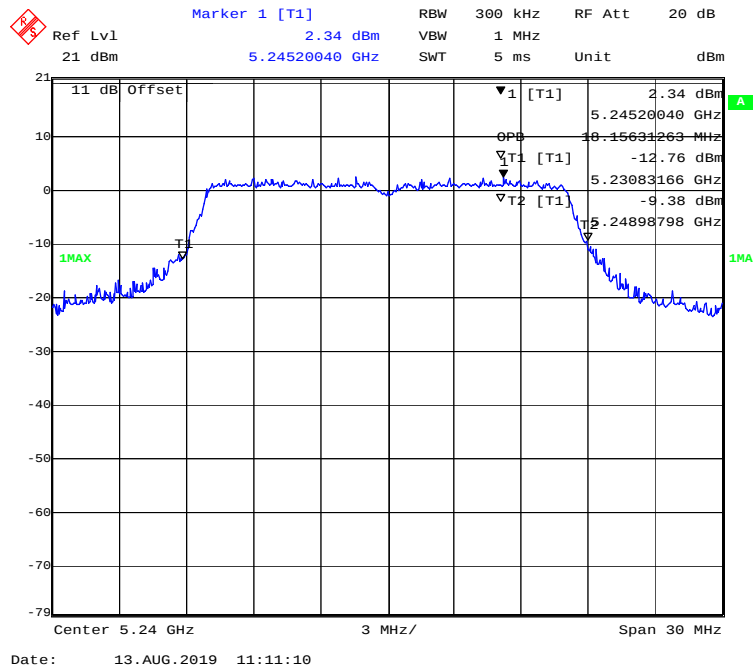
802.11a mode, 5180MHz



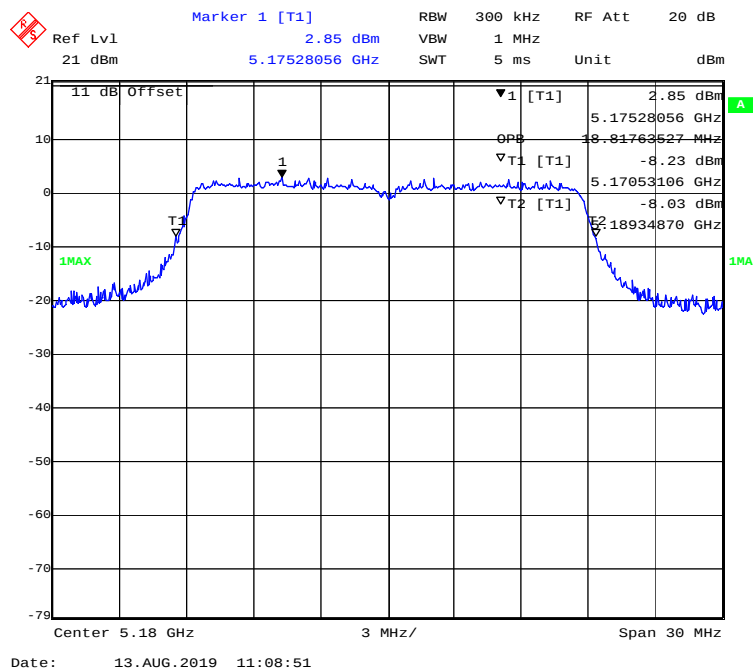
802.11a mode, 5200MHz



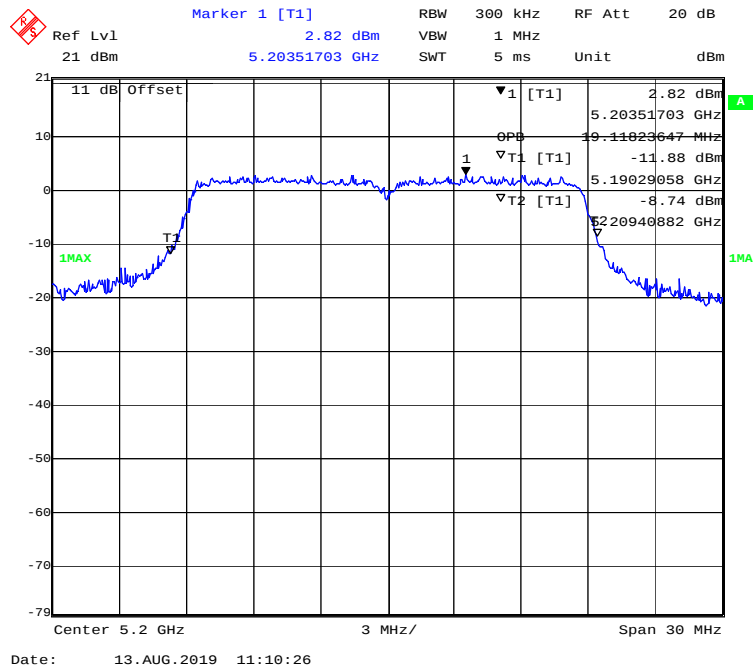
802.11a mode, 5240MHz



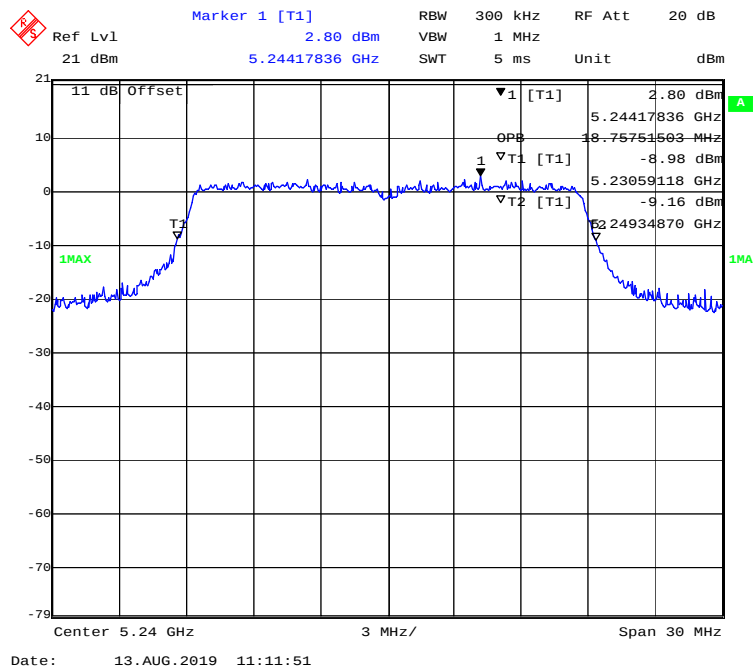
802.11n-HT20 mode, 5180MHz



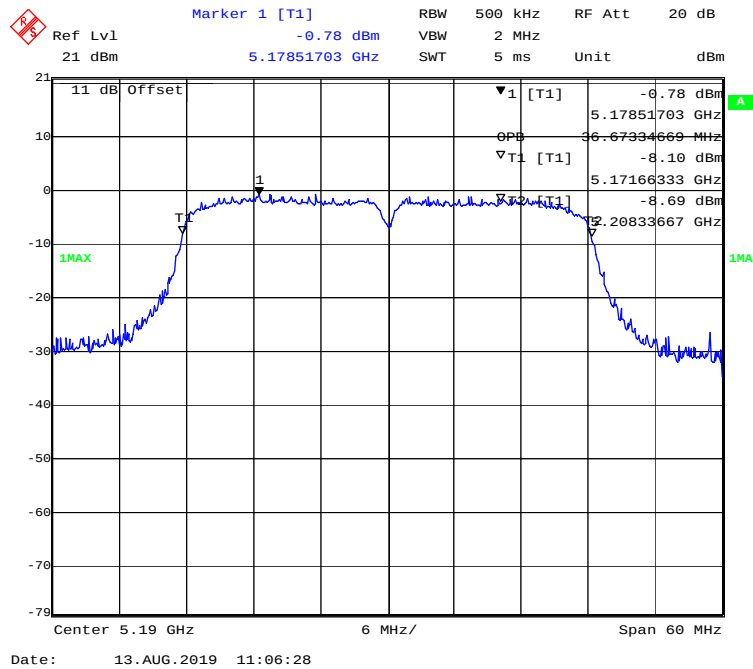
802.11n-HT20 mode, 5200MHz



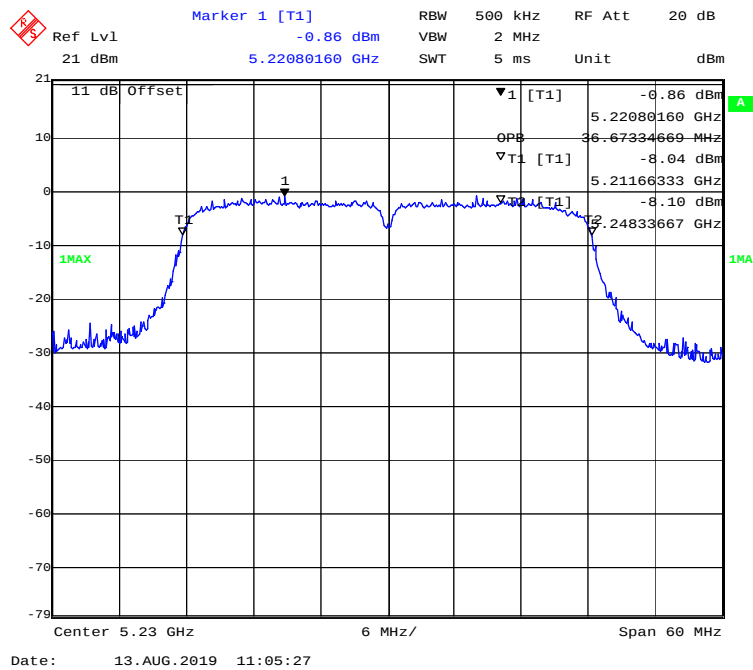
802.11n-HT20 mode, 5240MHz



802.11n-HT40 mode, 5190MHz



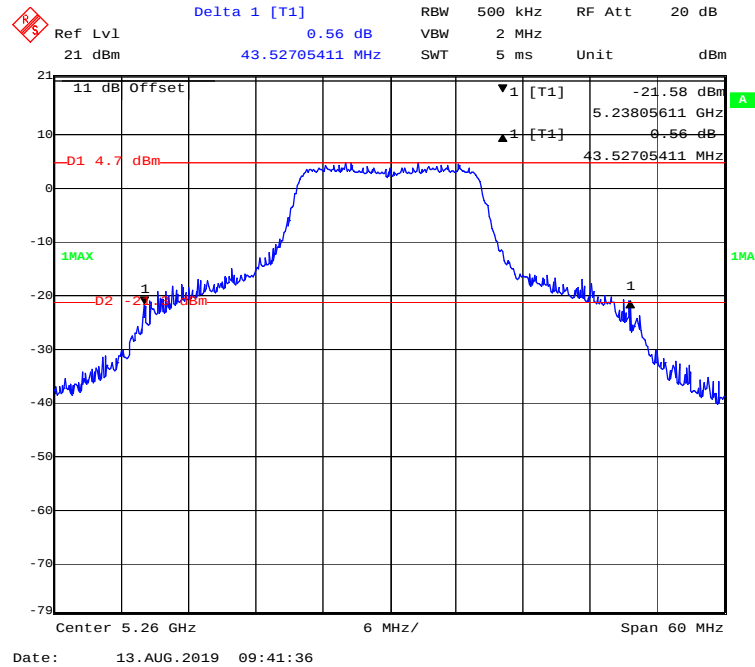
802.11n-HT40 mode, 5230MHz



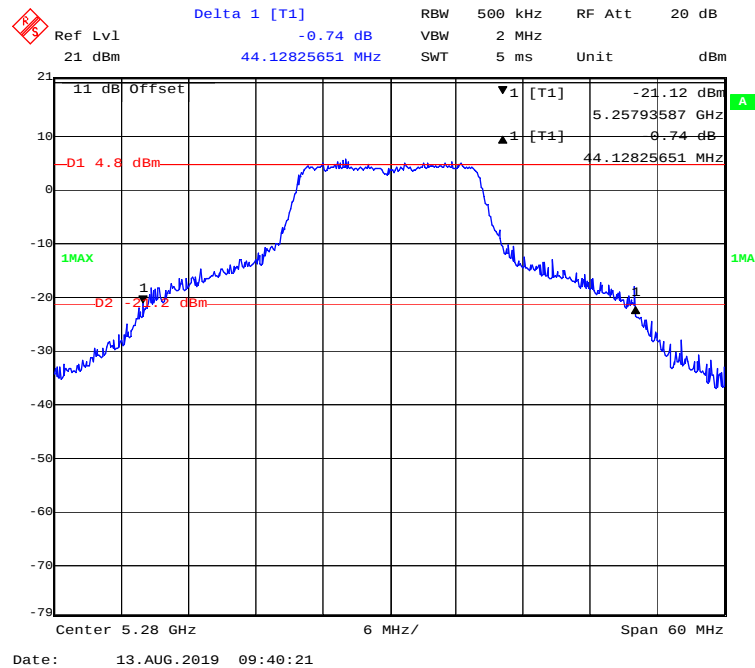
5250-5350 MHz Band:

26 Bandwidth

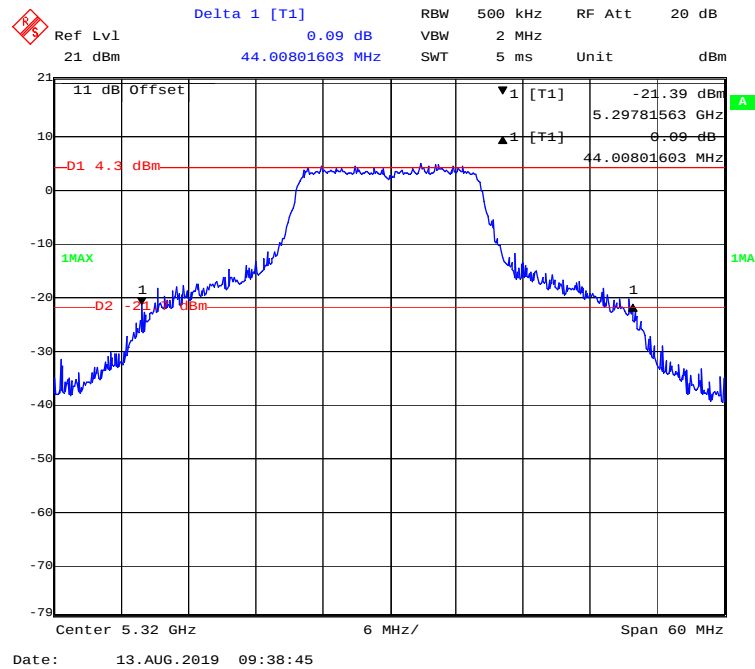
802.11a mode, 5260MHz



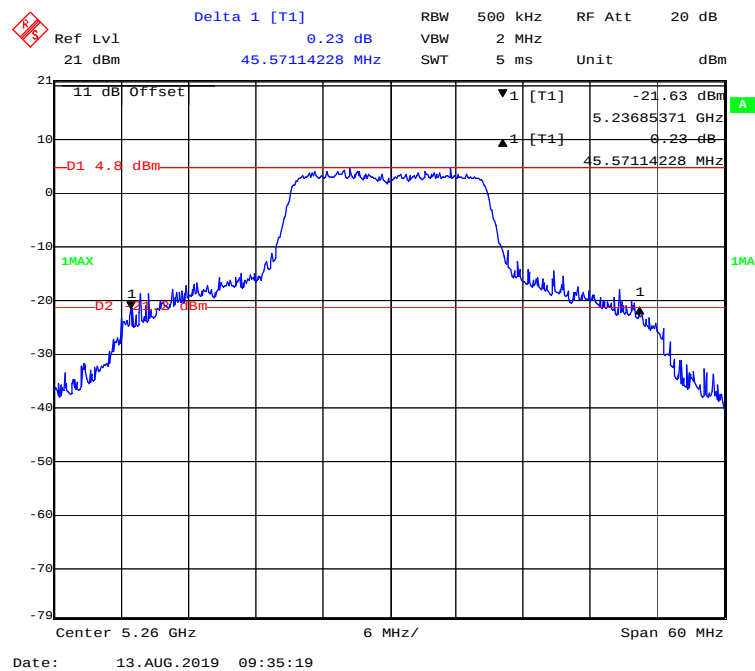
802.11a mode, 5280MHz



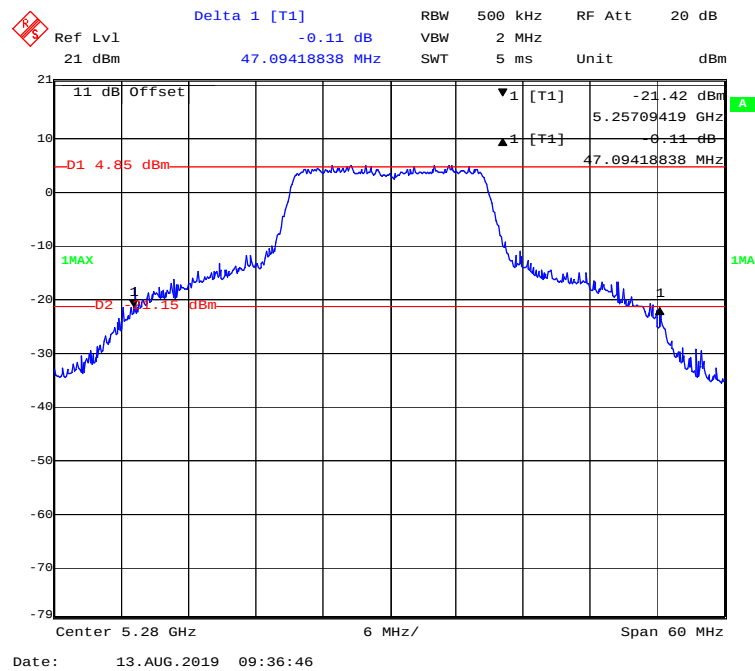
802.11a mode, 5320MHz



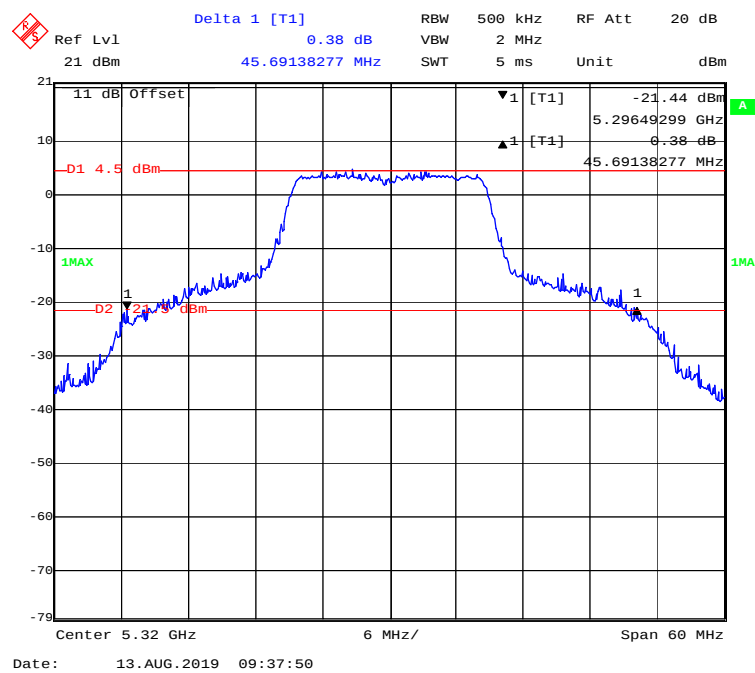
802.11n-HT20 mode, 5260MHz



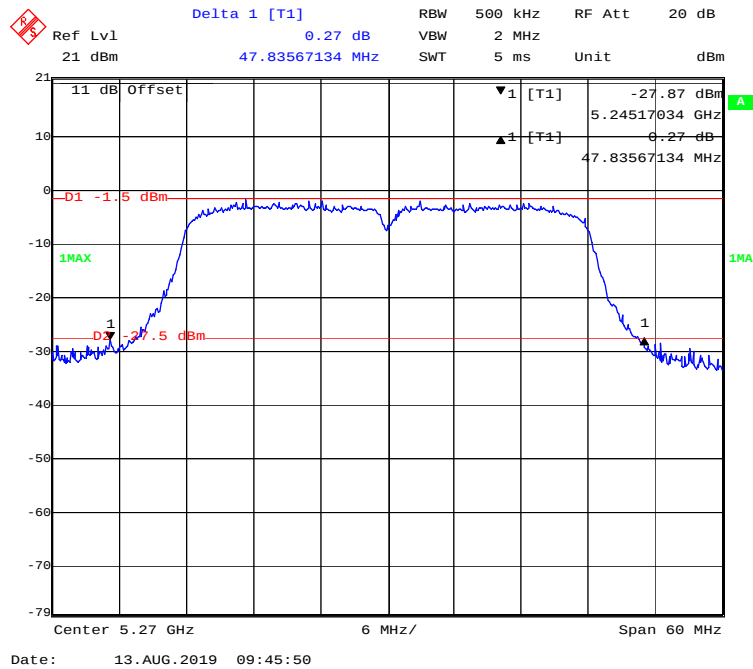
802.11n-HT20 mode, 5280MHz



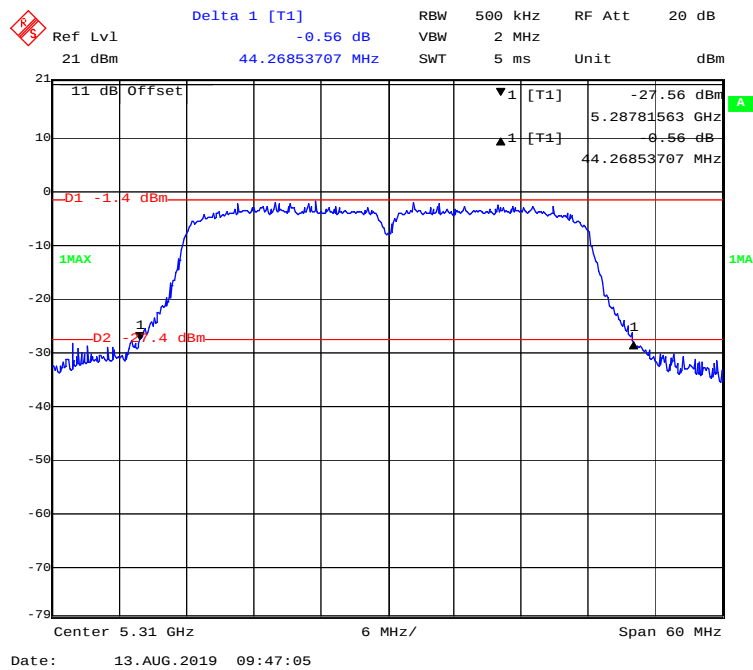
802.11n-HT20 mode, 5320MHz



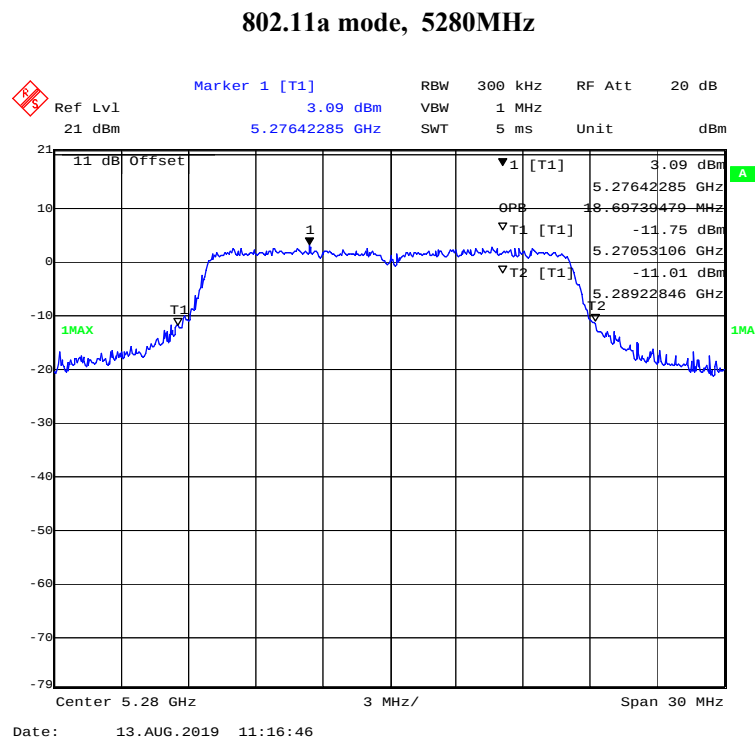
802.11n-HT40 mode, 5270MHz



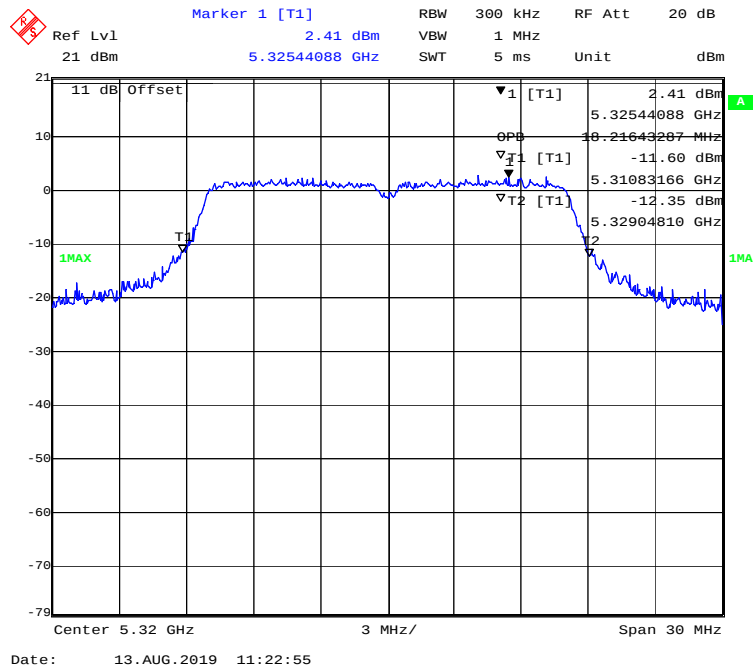
802.11n-HT40 mode, 5310MHz



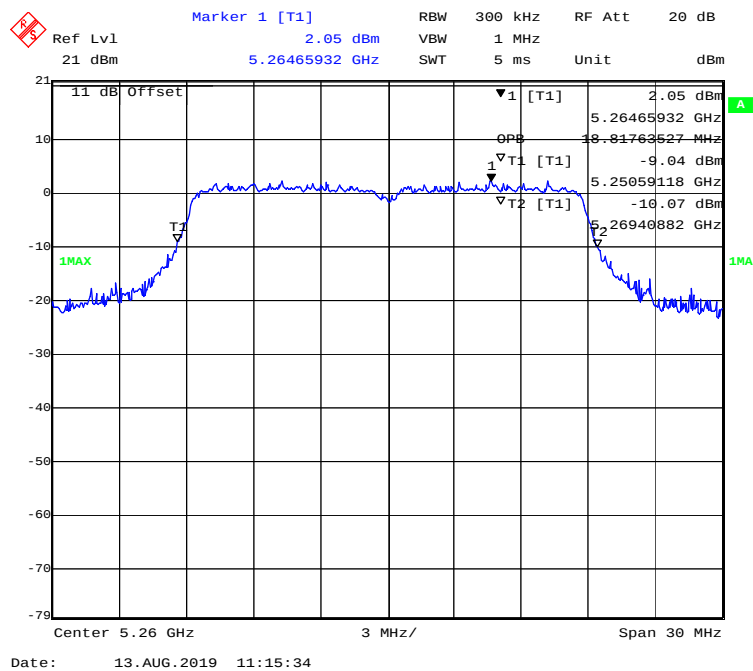
802.11a mode, 5260MHz



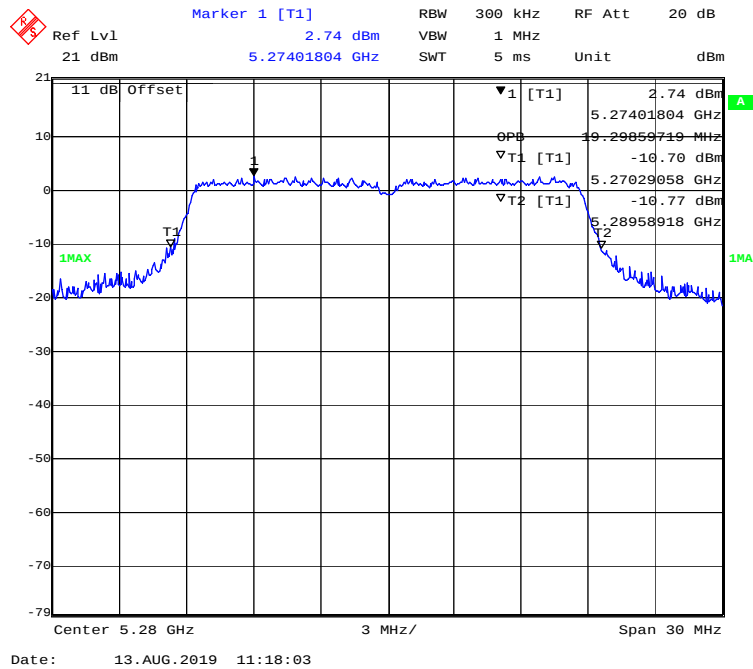
802.11a mode, 5320MHz



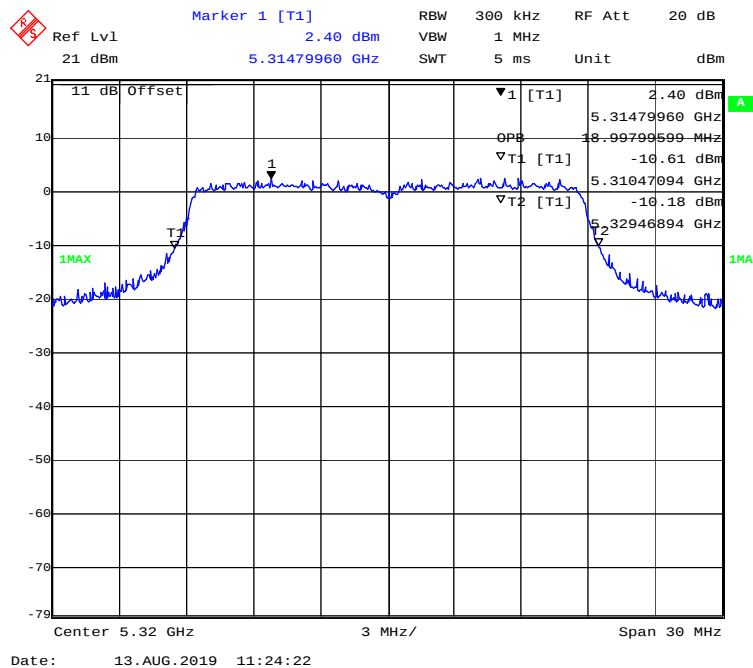
802.11n-HT20 mode, 5260MHz



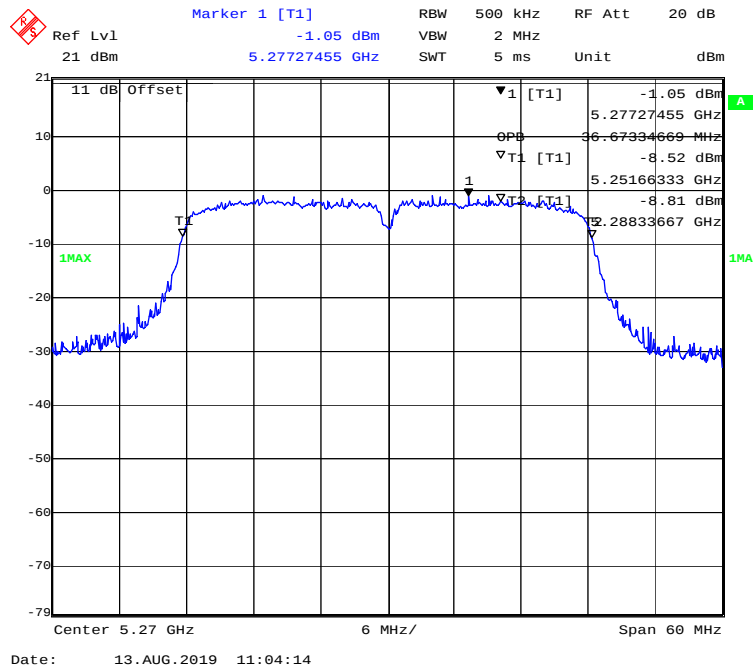
802.11n-HT20 mode, 5280MHz



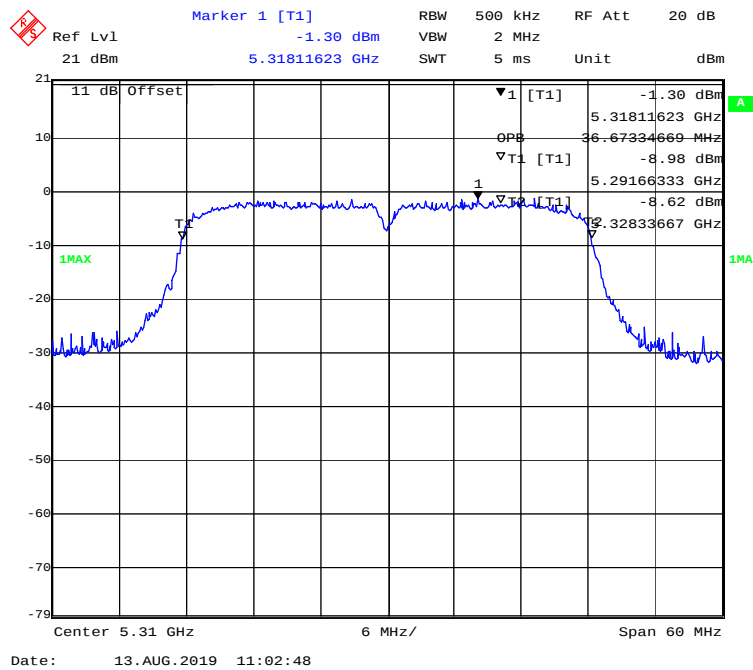
802.11n-HT20 mode, 5320MHz



802.11n-HT40 mode, 5270MHz



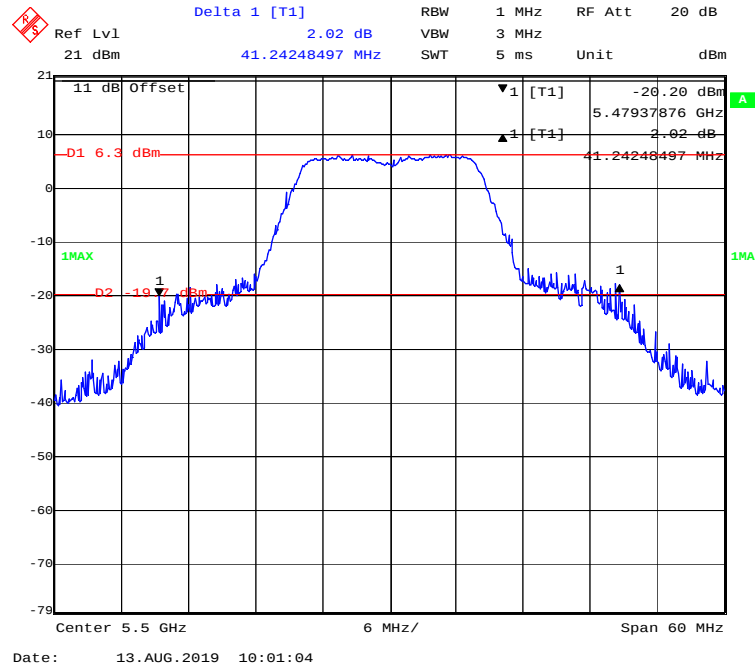
802.11n-HT40 mode, 5310MHz



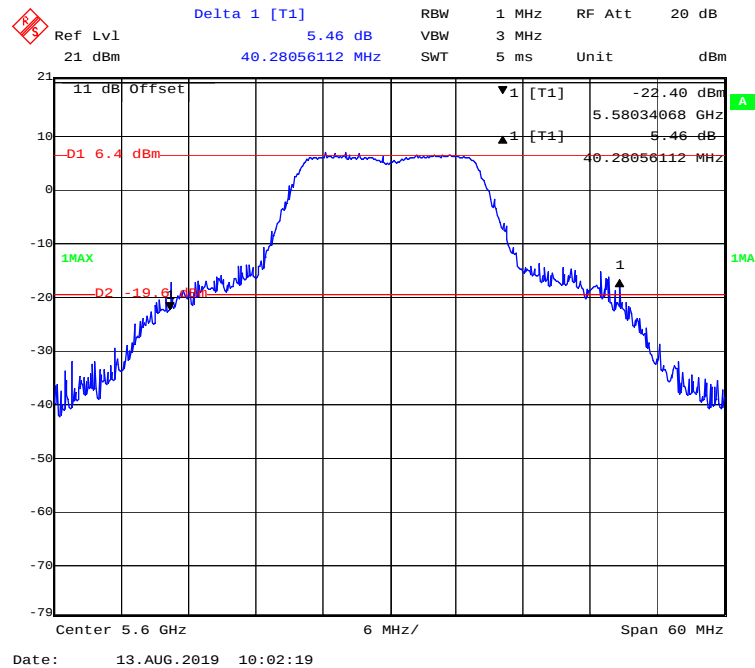
5470-5725 MHz Band:

26 Bandwidth

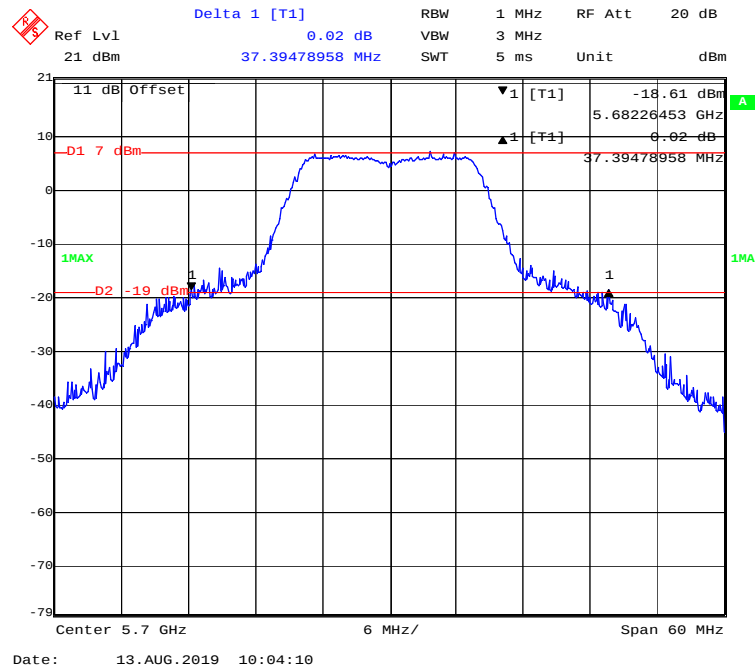
802.11a mode, 5500MHz



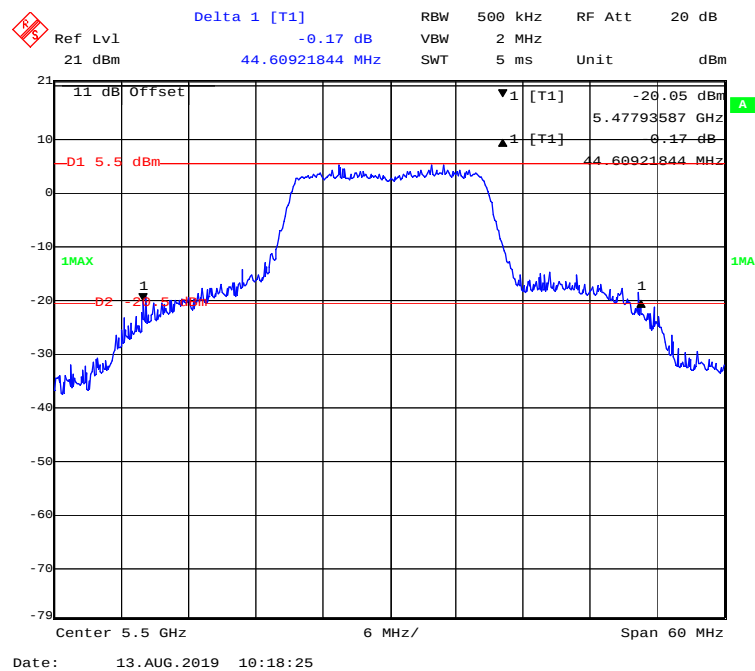
802.11a mode, 5600MHz



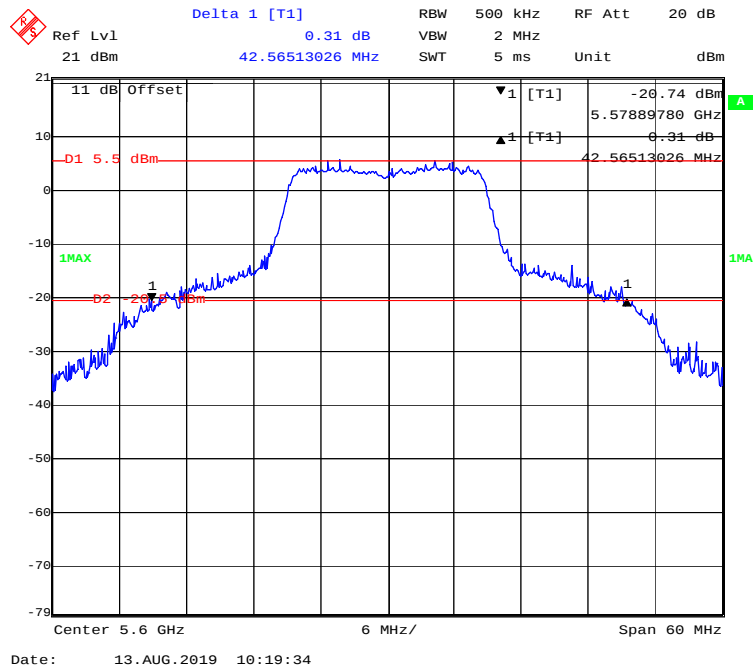
802.11a mode, 5700MHz



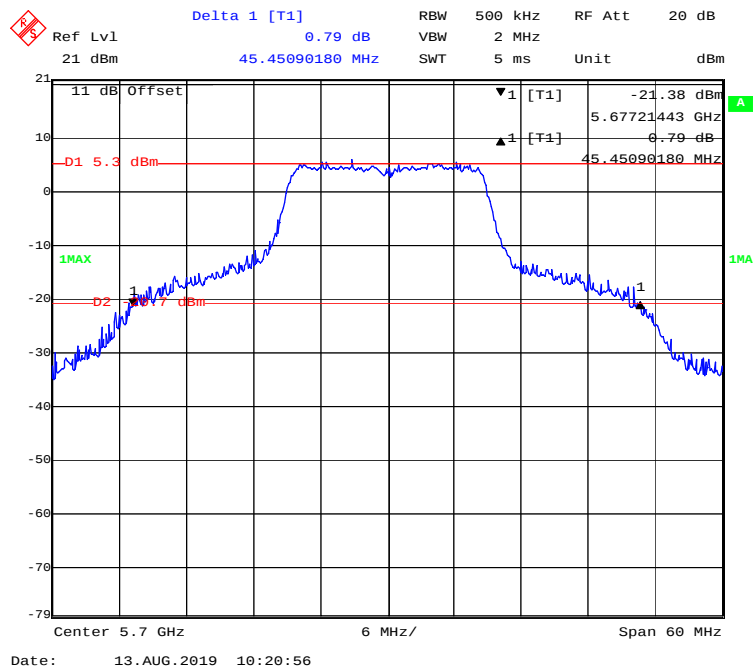
802.11n-HT20 mode, 5500MHz



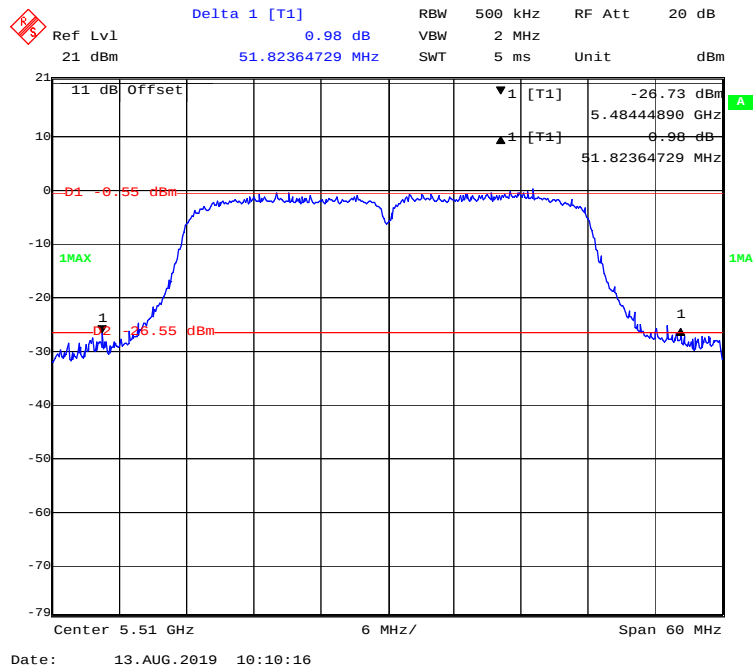
802.11n-HT20 mode, 5600MHz



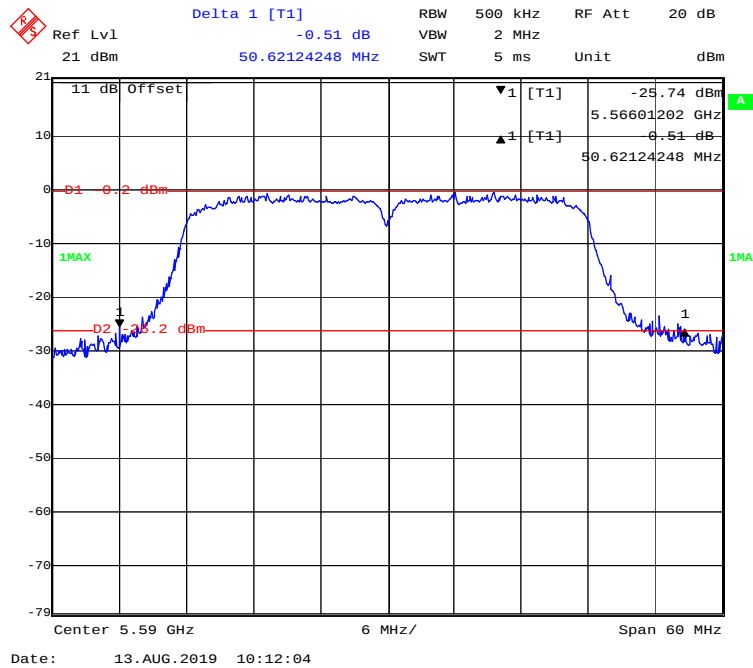
802.11n-HT20 mode, 5700MHz



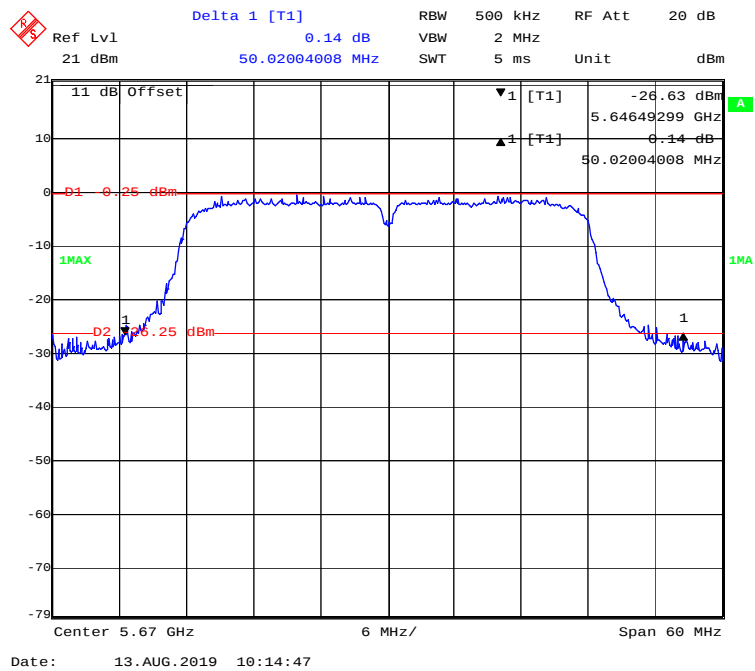
802.11n-HT40 mode, 5510MHz



802.11n-HT40 mode, 5590MHz

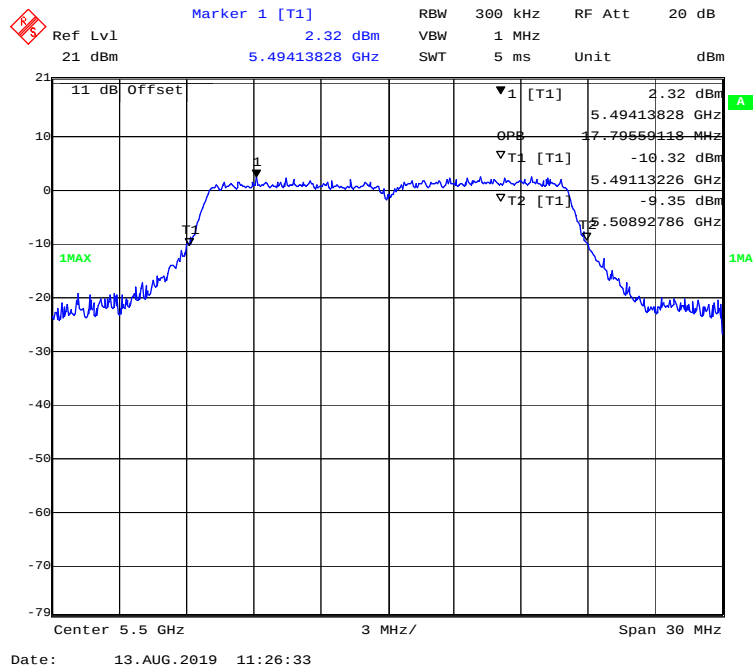


802.11n-HT40 mode, 5670MHz

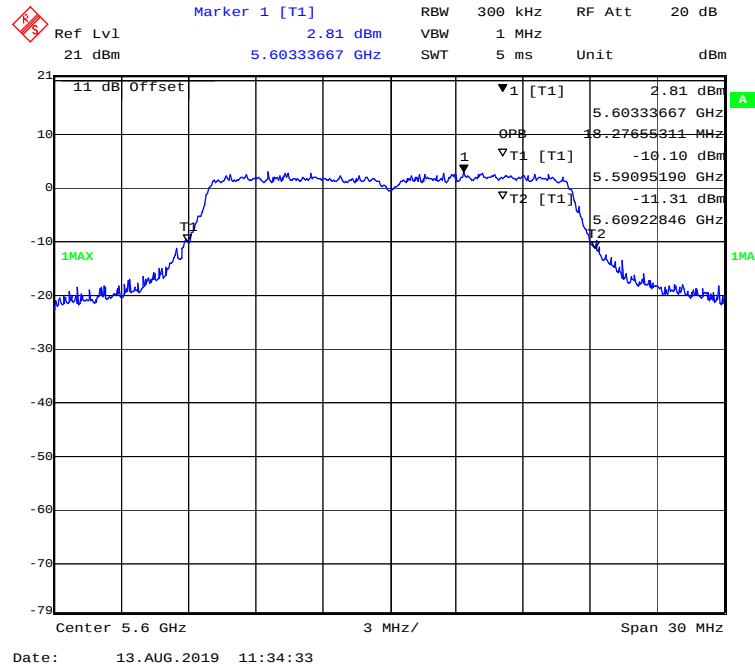


99% Occupied Bandwidth

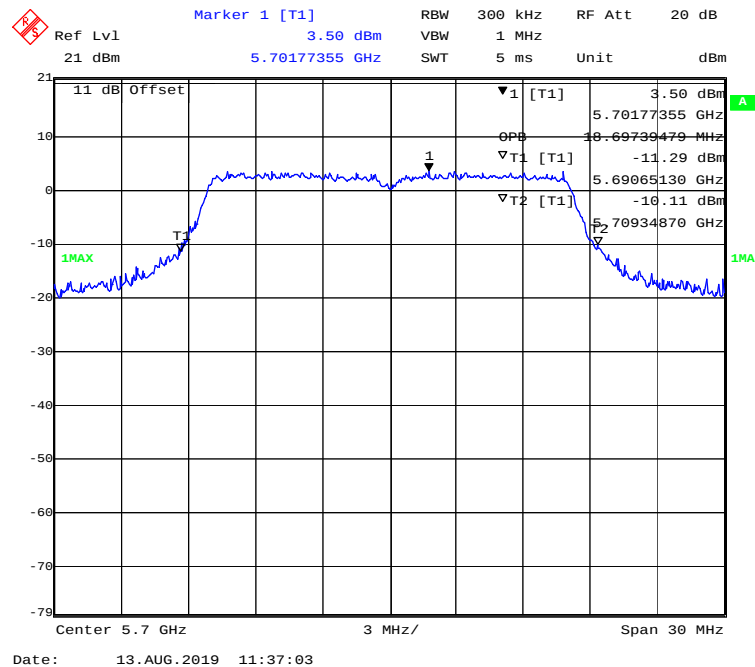
802.11a mode, 5500MHz



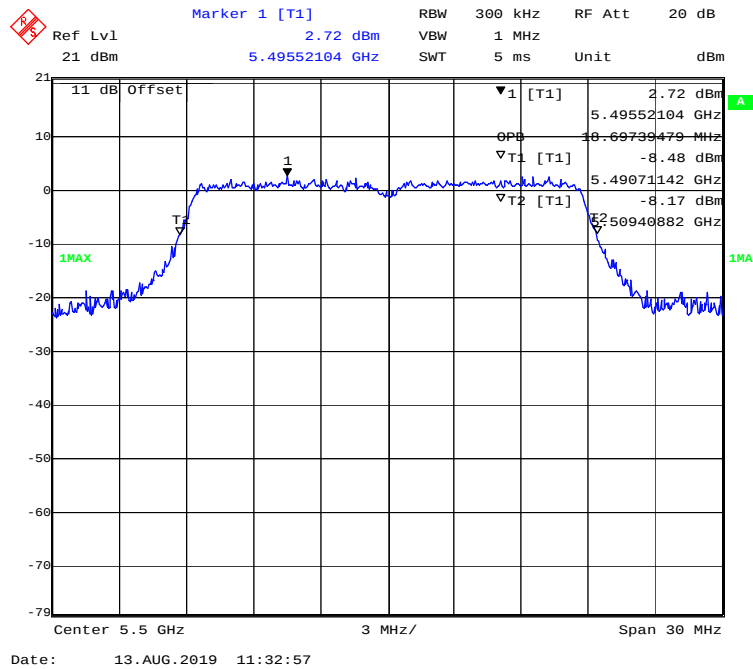
802.11a mode, 5600MHz



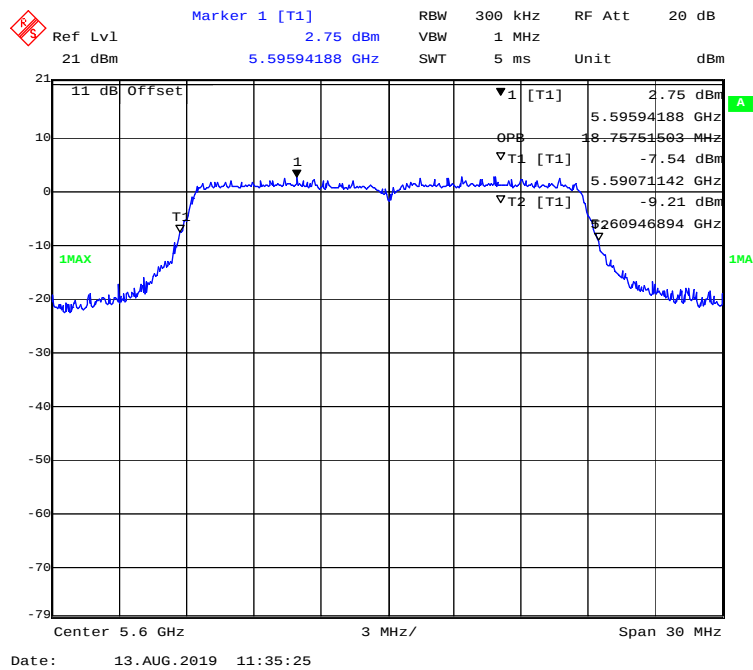
802.11a mode, 5700MHz



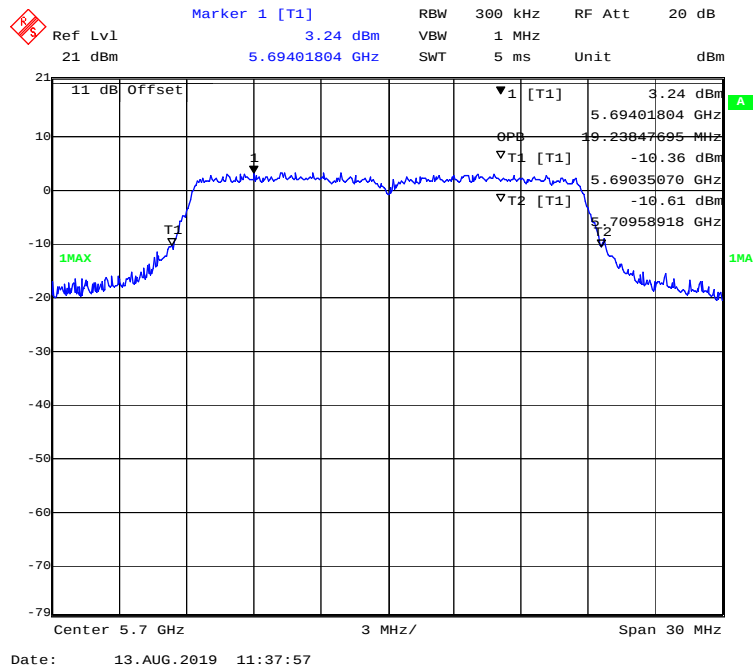
802.11n-HT20 mode, 5500MHz



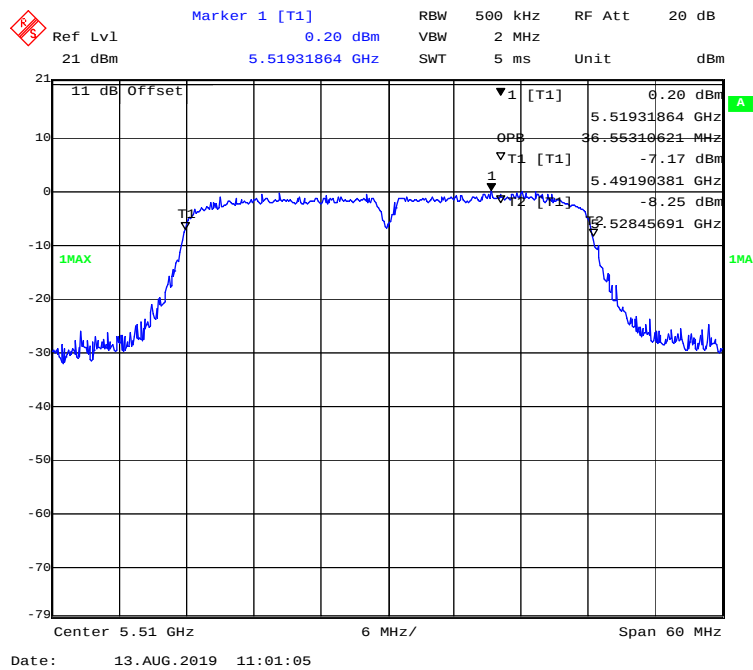
802.11n-HT20 mode, 5600MHz



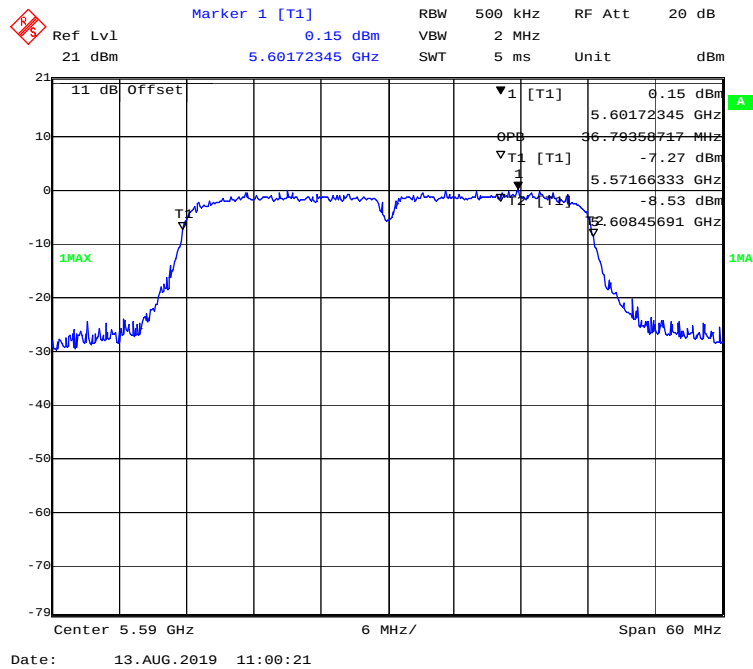
802.11n-HT20 mode, 5700MHz



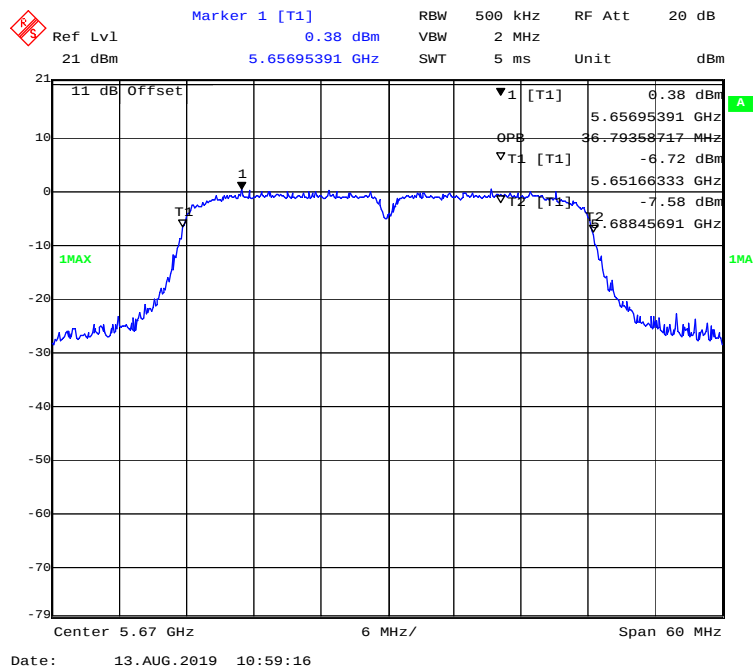
802.11n-HT40 mode, 5510MHz



802.11n-HT40 mode, 5590MHz



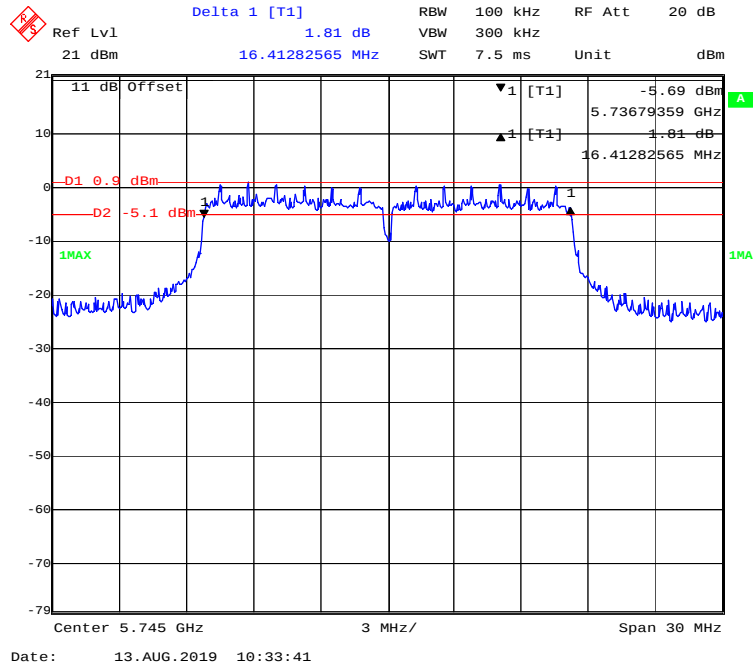
802.11n-HT40 mode, 5670MHz



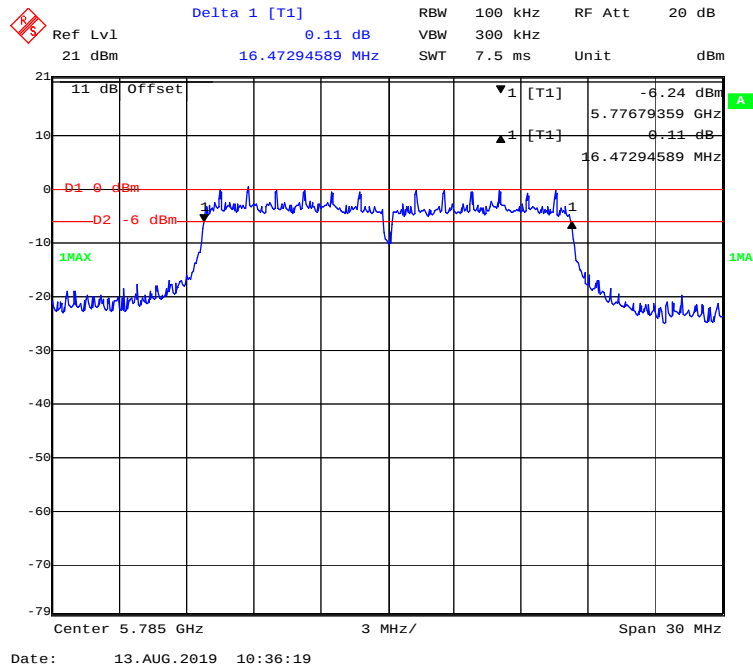
5725-5850 MHz Band

6 Bandwidth

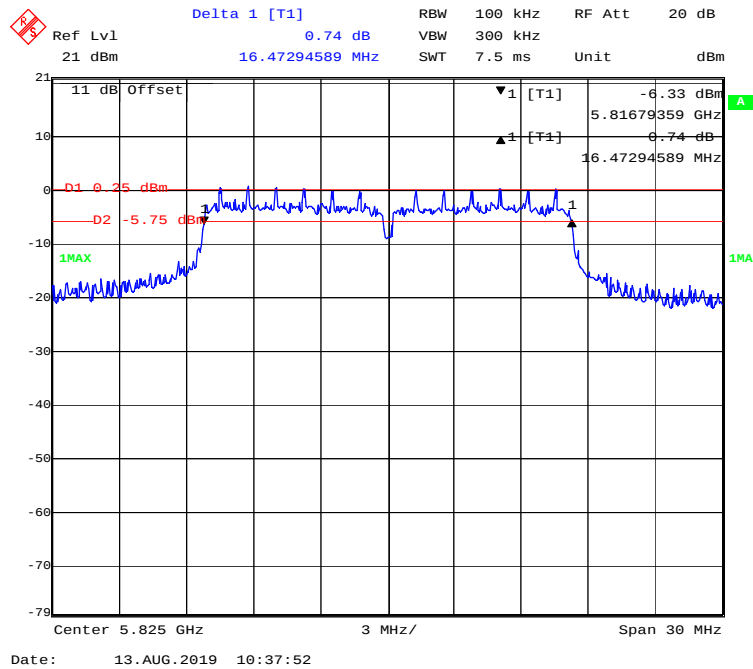
802.11a mode, 5745MHz



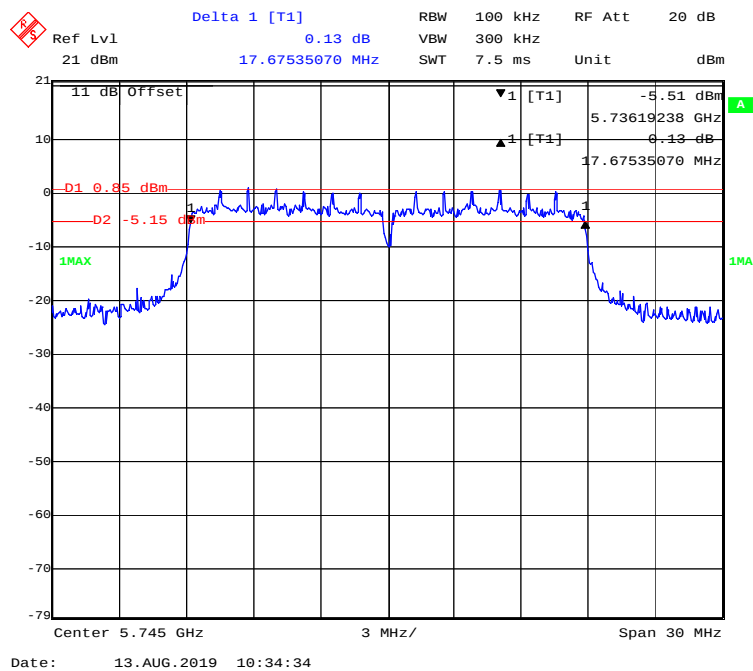
802.11a mode, 5785MHz



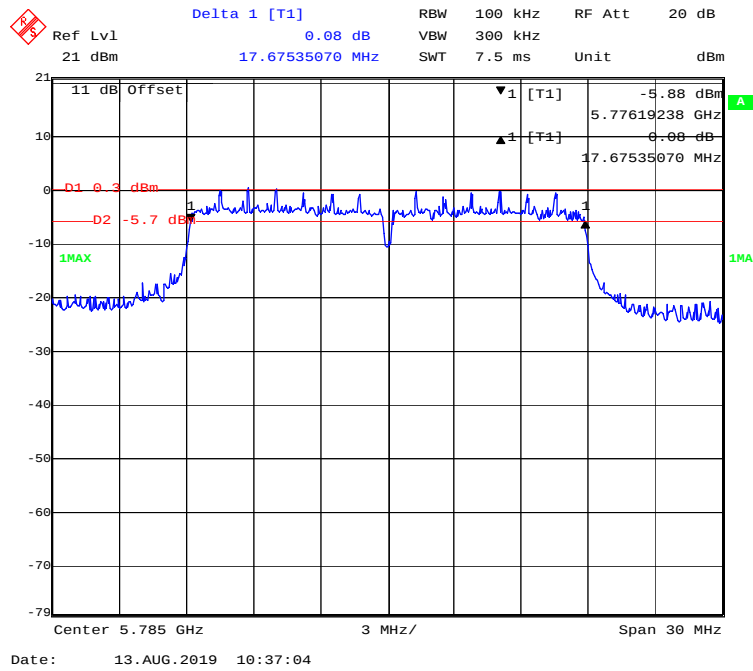
802.11a mode, 5825MHz



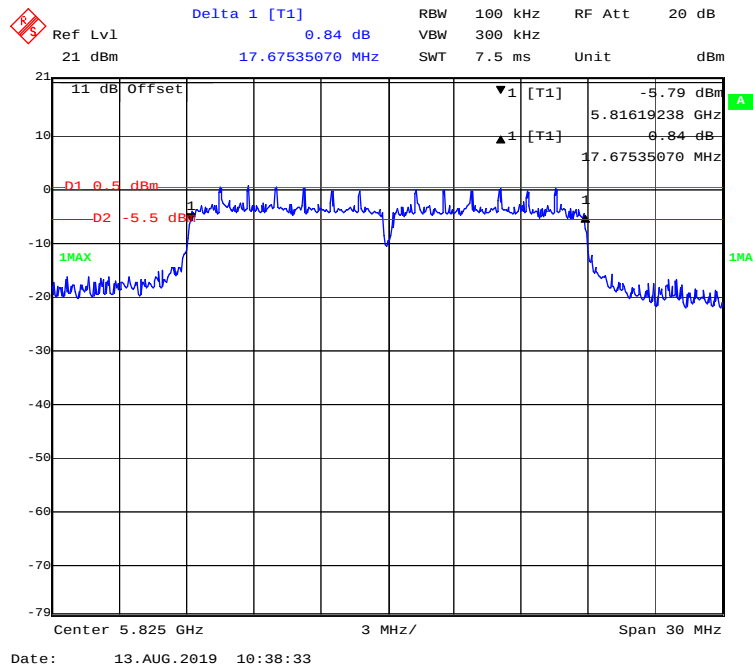
802.11n-HT20 mode, 5745MHz



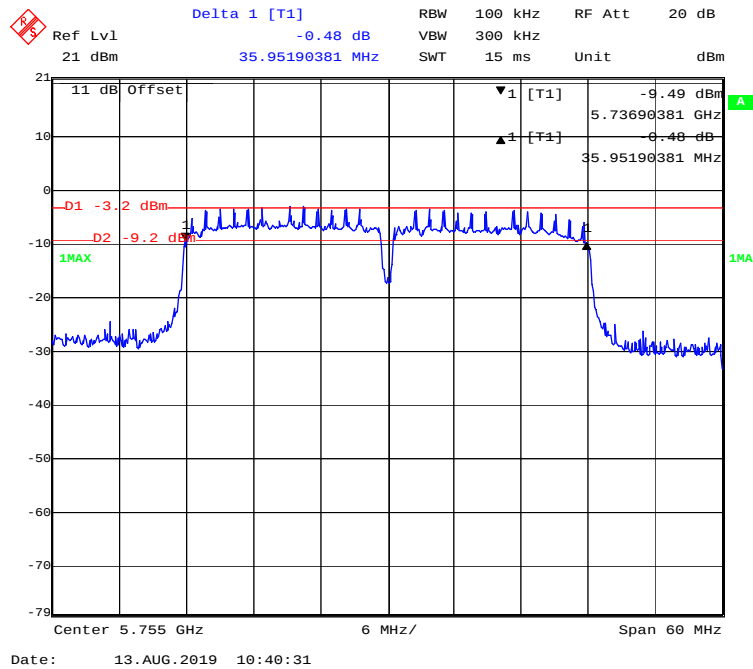
802.11n-HT20 mode, 5785MHz



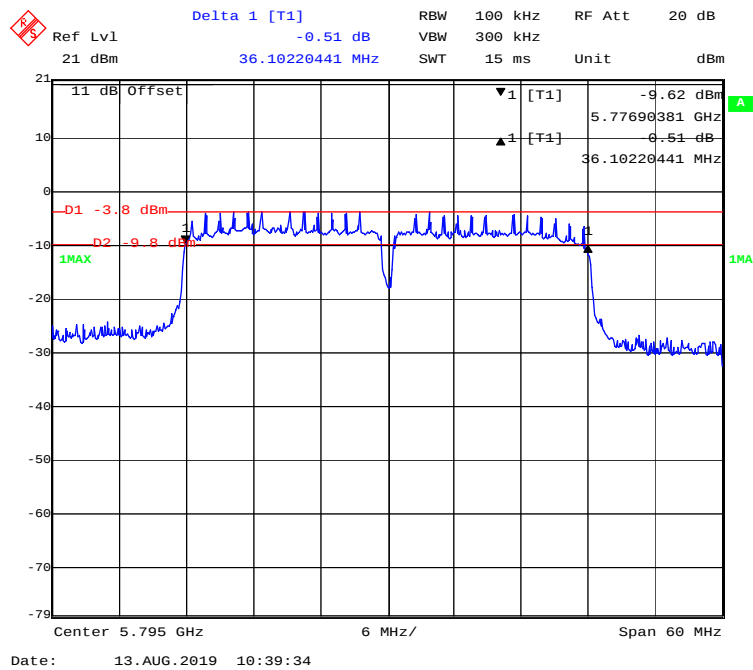
802.11n-HT20 mode, 5825MHz



802.11n-HT40 mode, 5755MHz

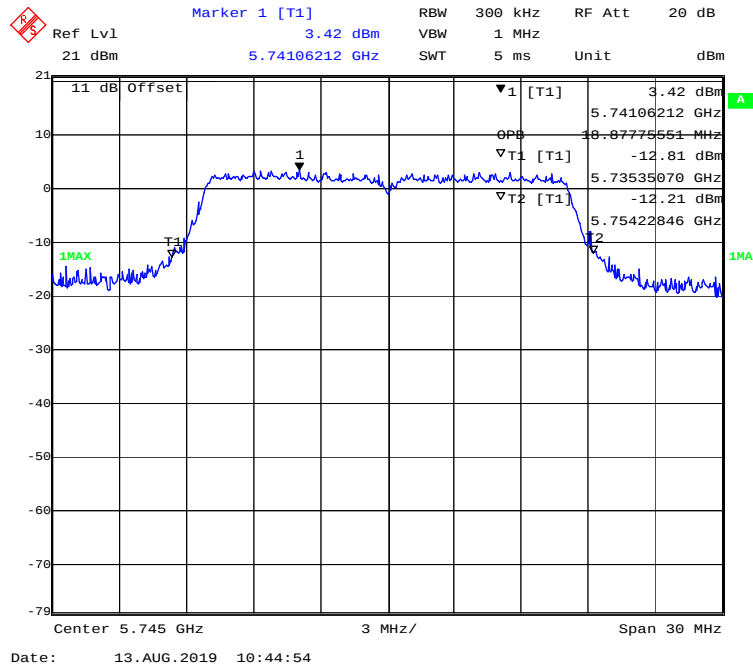


802.11n-HT40 mode, 5795MHz

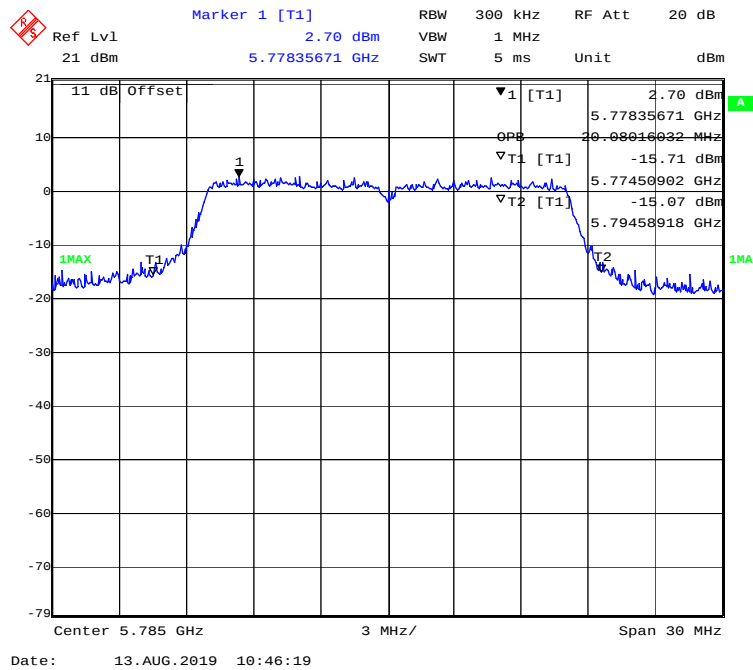


99% Occupied Bandwidth

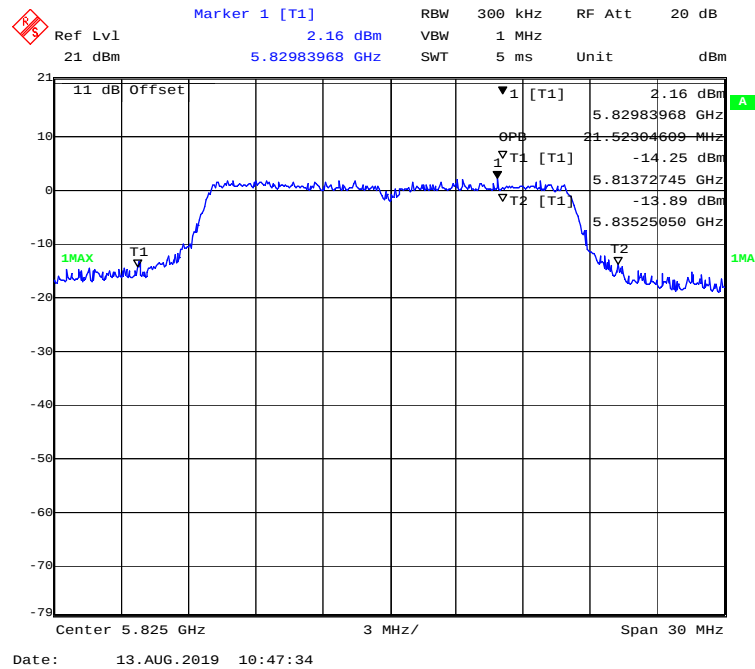
802.11a mode, 5745MHz



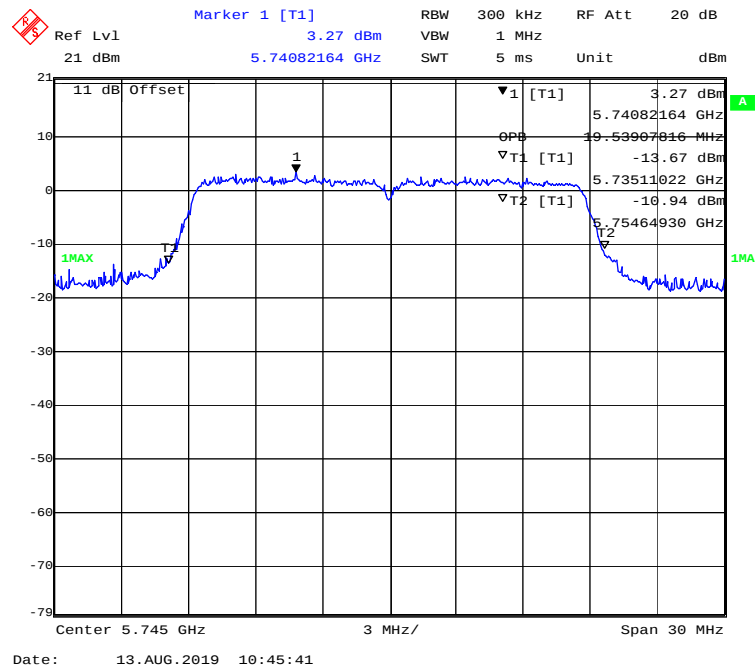
802.11a mode, 5785MHz



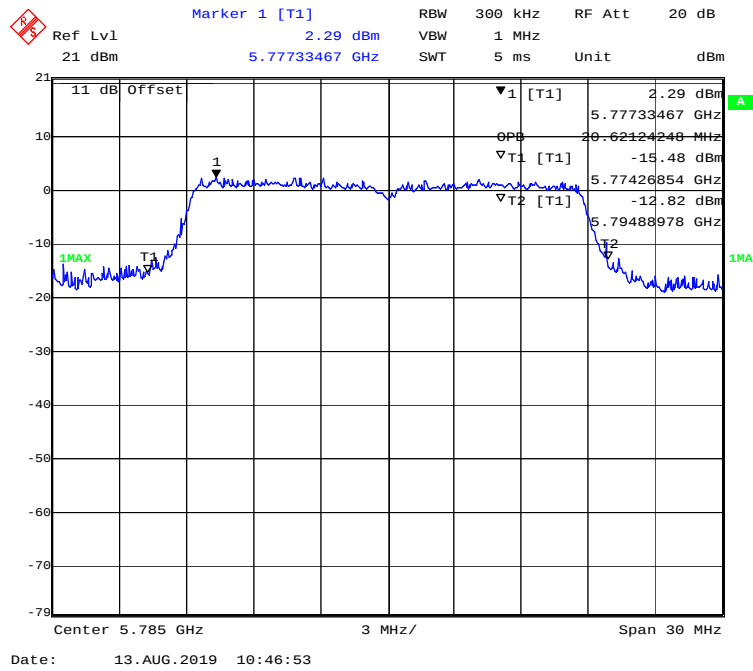
802.11a mode, 5825MHz



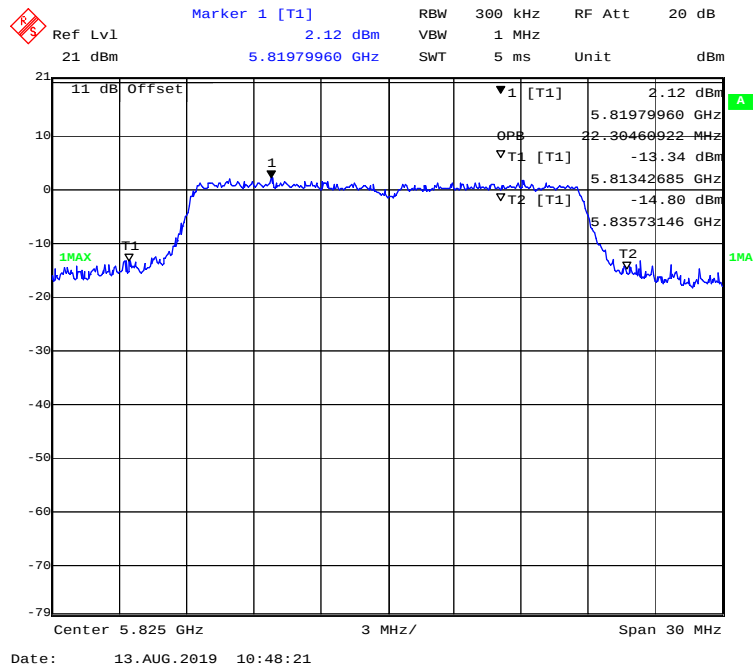
802.11n-HT20 mode, 5745MHz



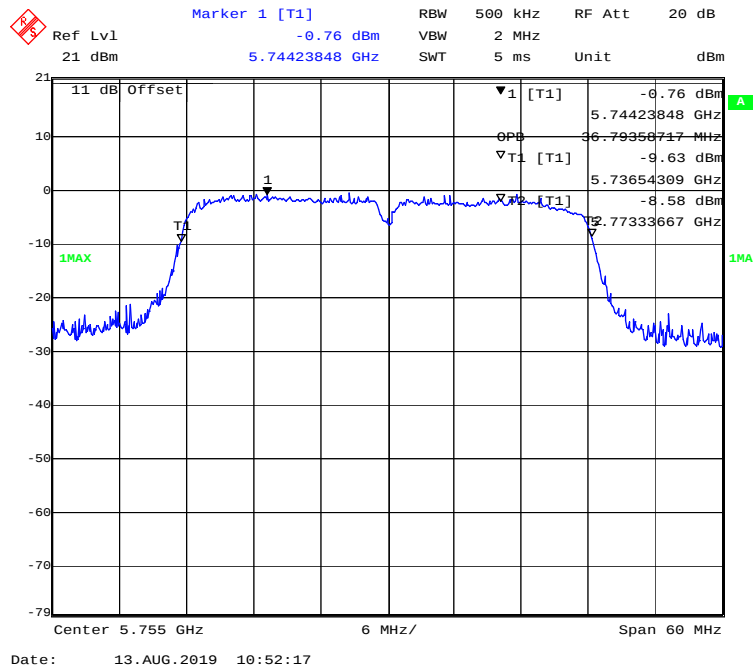
802.11n-HT20 mode, 5785MHz



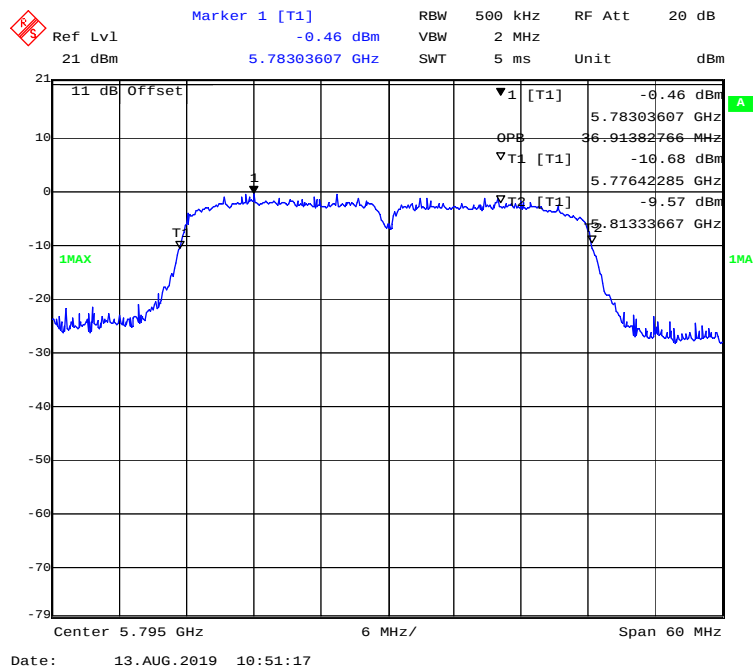
802.11n-HT20 mode, 5825MHz



802.11n-HT40 mode, 5755MHz



802.11n-HT40 mode, 5795MHz



FCC §15.407(a) (1) (2) (3) – CONDUCTED TRANSMITTER OUTPUT POWER**Applicable Standard**

According to §15.407(a)(1)

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

According to §15.407(a)(2)

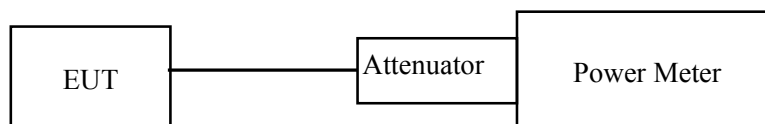
For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

According to §15.407(a) (3)

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

Test Procedure

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



Test Data**Environmental Conditions**

Temperature:	23.5~24.2 °C
Relative Humidity:	48~50 %
ATM Pressure:	101.2~101.3 kPa

The testing was performed by Max Min from 2019-08-30 to 2019-09-04.

Test Mode: Transmitting

Test Mode: Transmitting

Test mode	Band	Frequency (MHz)	Average Conducted Output Power (dBm)	Limit	Result
802.11a	5150-5250 MHz	5180	11.56	24	PASS
		5200	11.92	24	PASS
		5240	11.59	24	PASS
	5250-5350 MHz	5260	11.21	24	PASS
		5280	11.62	24	PASS
		5320	11.13	24	PASS
	5470-5725 MHz	5500	11.62	24	PASS
		5600	12.24	24	PASS
		5700	12.33	24	PASS
		5720	10.98	24	PASS
	5725-5850 MHz	5745	12.28	30	PASS
		5785	11.94	30	PASS
		5825	11.93	30	PASS
802.11n-HT20	5150-5250 MHz	5180	11.63	24	PASS
		5200	12.01	24	PASS
		5240	11.65	24	PASS
	5250-5350 MHz	5260	11.14	24	PASS
		5280	11.39	24	PASS
		5320	11.07	24	PASS
	5470-5725 MHz	5500	11.72	24	PASS
		5600	12.24	24	PASS
		5700	12.18	24	PASS
		5720	11.12	24	PASS
	5725-5850 MHz	5745	12.32	30	PASS
		5785	11.93	30	PASS
		5825	12.01	30	PASS
802.11n-HT40	5150-5250 MHz	5190	9.33	24	PASS
		5230	8.96	24	PASS
	5250-5350 MHz	5270	8.97	24	PASS
		5310	8.84	24	PASS
	5470-5725 MHz	5510	11.03	24	PASS
		5590	11.46	24	PASS
		5670	11.34	24	PASS
		5710	11.08	24	PASS
	5725-5850 MHz	5755	11.37	30	PASS
		5795	11.04	30	PASS

FCC §15.407(a) (1) (2) (3) - POWER SPECTRAL DENSITY**Applicable Standard**

According to §15.407(a) (1)

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

According to §15.407(a)(2)

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

According to §15.407(a) (3)

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

Test Procedure

The measurements are base on FCC KDB 789033 D02 General UNII Test Proceidyres 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:	22.5. °C~24.5 °C
Relative Humidity:	50 %~52 %
ATM Pressure:	101.2 kPa~101. 3 kPa

The testing was performed by Max Min from 2019-08-12 to 2019-09-04.

Test Mode: Transmitting

5150MHz-5250MHz:

Mode	Frequency (MHz)	PSD (dBm/MHz)	Limit (dBm/MHz)	Result
802.11a	5180	1.25	11	PASS
	5200	1.95	11	PASS
	5240	0.80	11	PASS
802.11n-HT20	5180	0.94	11	PASS
	5200	1.59	11	PASS
	5240	0.75	11	PASS
802.11n-HT40	5190	-4.09	11	PASS
	5230	-4.48	11	PASS

5250MHz-5350MHz:

Mode	Frequency (MHz)	PSD (dBm/MHz)	Limit (dBm/MHz)	Result
802.11a	5260	0.85	11	PASS
	5280	1.38	11	PASS
	5320	0.75	11	PASS
802.11n-HT20	5260	0.46	11	PASS
	5280	1.30	11	PASS
	5320	0.62	11	PASS
802.11n-HT40	5270	-5.03	11	PASS
	5310	-5.23	11	PASS

5470MHz-5725MHz:

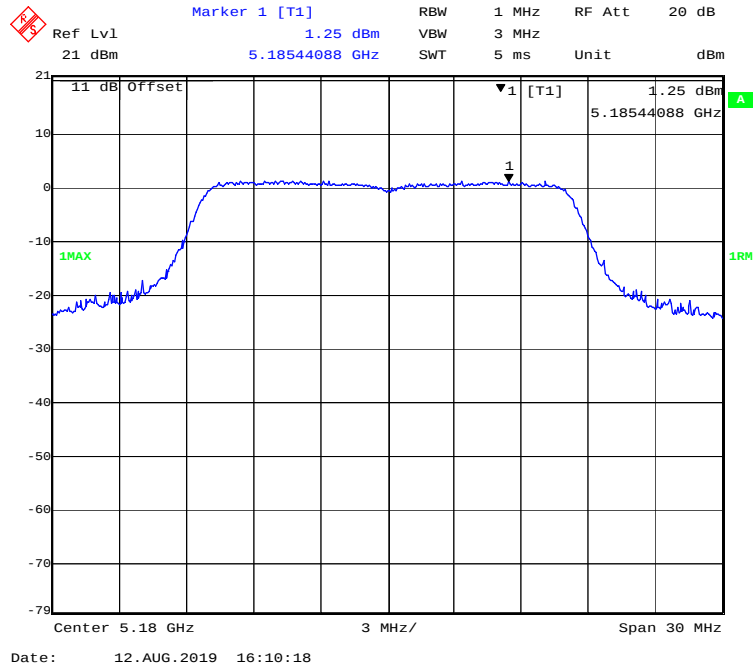
Mode	Frequency (MHz)	PSD (dBm/MHz)	Limit (dBm/MHz)	Result
802.11a	5500	0.66	11	PASS
	5600	1.05	11	PASS
	5700	1.40	11	PASS
	5720	0.01	11	PASS
802.11n-HT20	5500	0.48	11	PASS
	5600	0.75	11	PASS
	5700	1.28	11	PASS
	5720	-0.28	11	PASS
802.11n-HT40	5510	-3.20	11	PASS
	5590	-2.77	11	PASS
	5670	-2.88	11	PASS
	5710	-2.33	11	PASS

5725MHz-5850MHz:

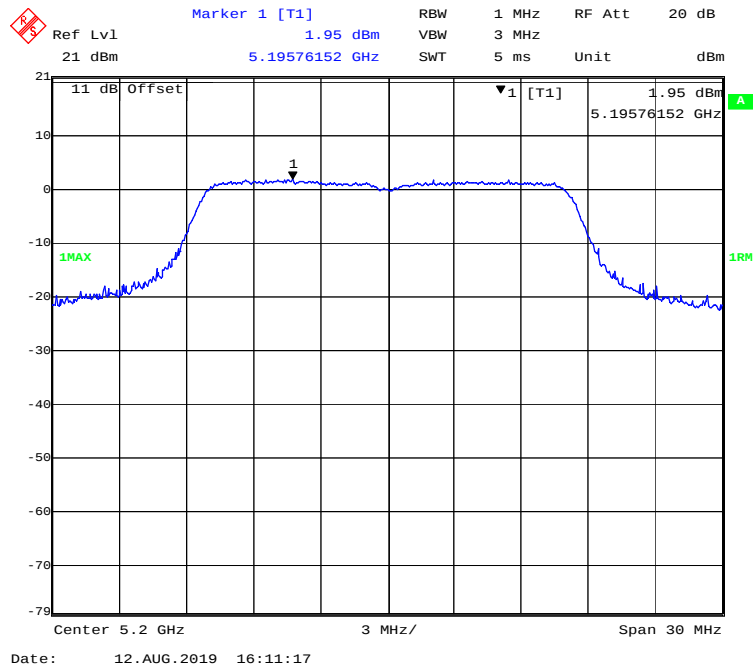
Mode	Frequency MHz	PSD (dBm/500kHz)	Limit (dBm/500kHz)	Result
802.11a	5745	0.21	30	PASS
	5785	-0.54	30	PASS
	5825	-0.18	30	PASS
802.11n-HT20	5745	0.14	30	PASS
	5785	-0.32	30	PASS
	5825	0.07	30	PASS
802.11n-HT40	5755	-3.88	30	PASS
	5795	-4.18	30	PASS

5150MHz-5250MHz Band :

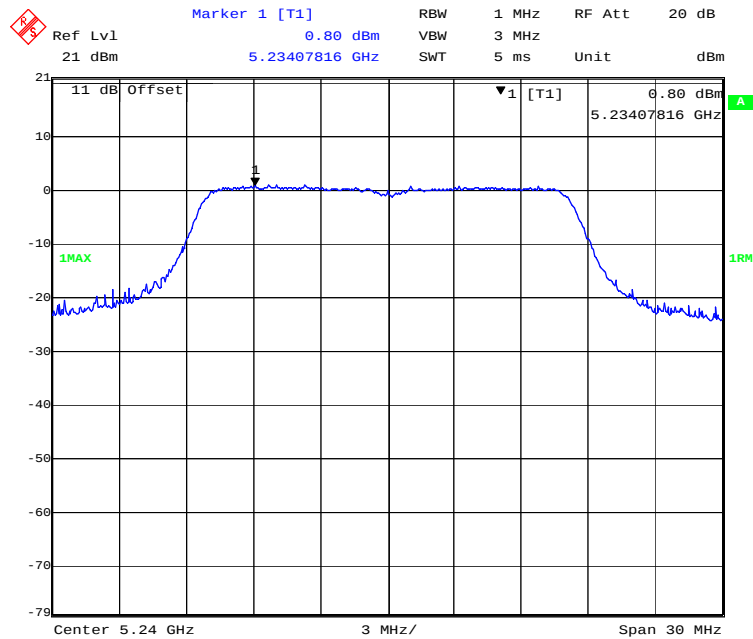
802.11a mode, Power spectral density-5180MHz



802.11a mode, Power spectral density-5200MHz

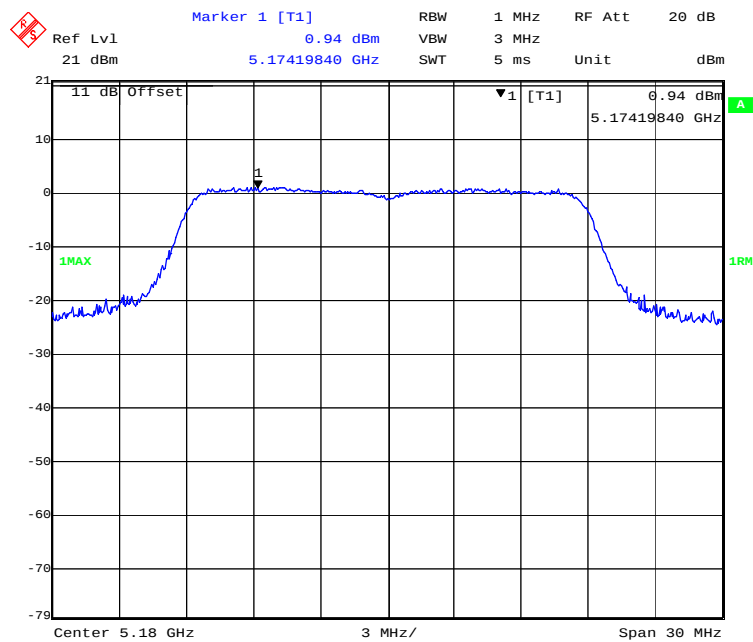


802.11a mode, Power spectral density-5240MHz



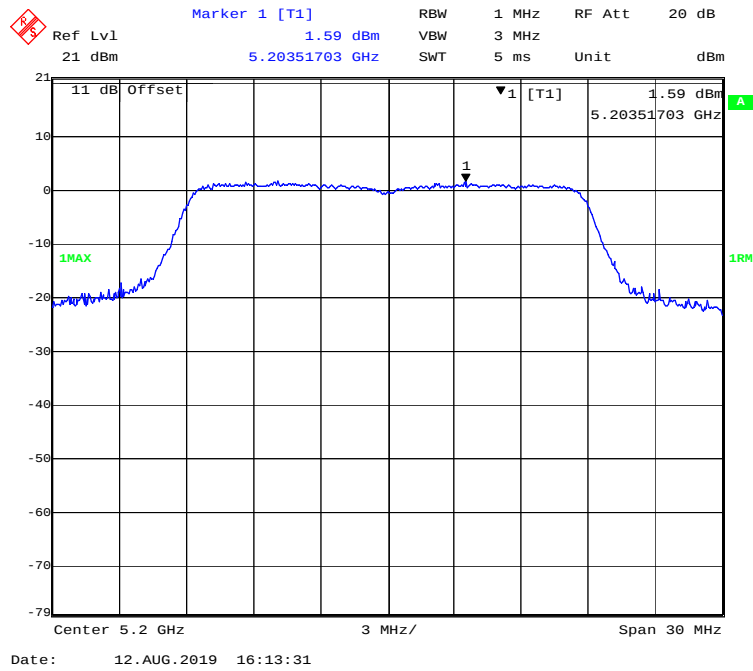
Date: 12.AUG.2019 16:12:08

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

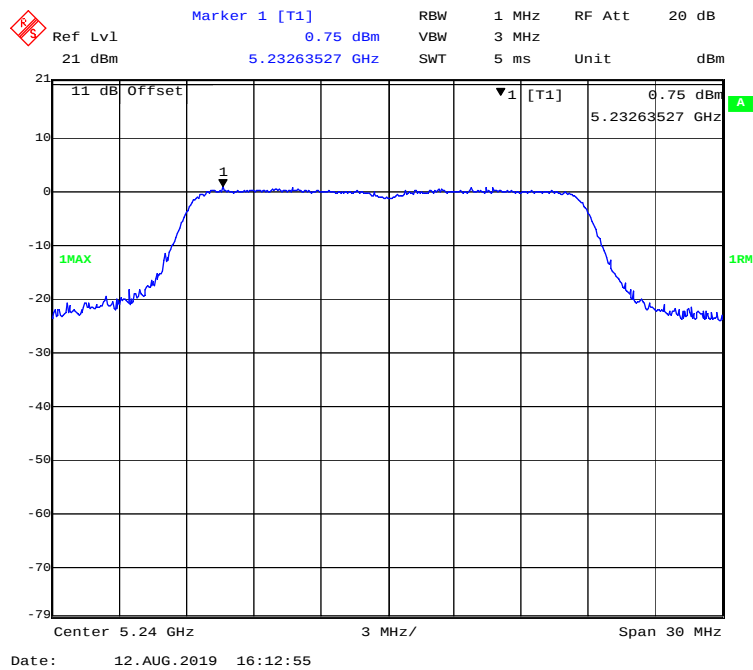


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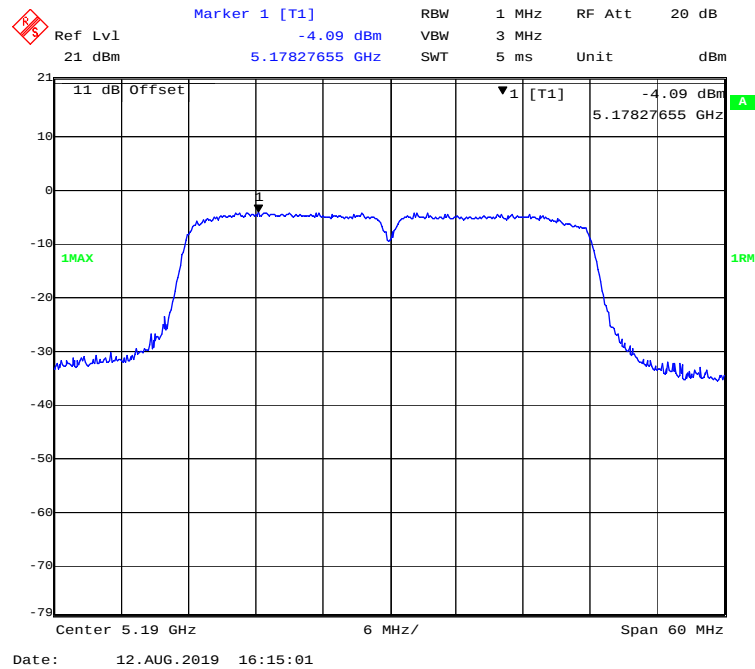
802.11n-HT20 mode, Power spectral density-5200MHz



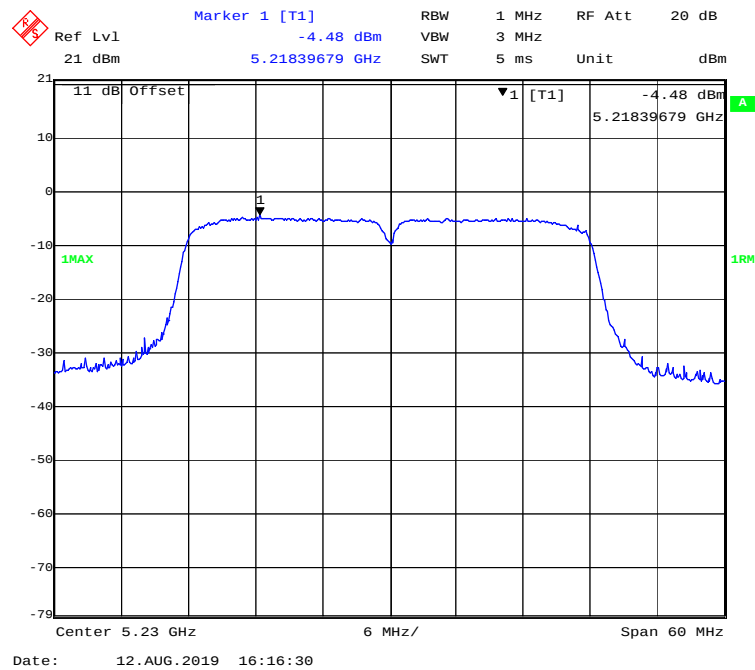
802.11n-HT20 mode, Power spectral density-5240MHz

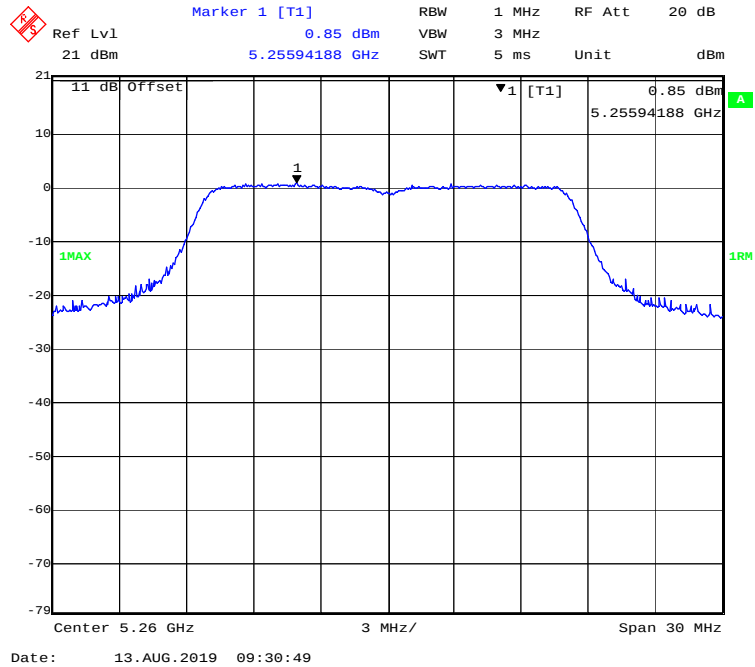
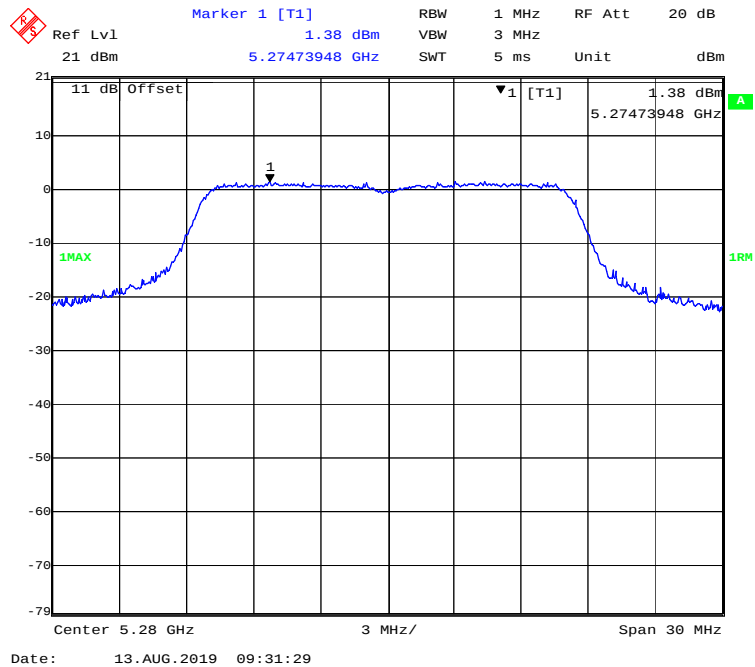


802.11n-HT40 mode, Power spectral density-5190MHz

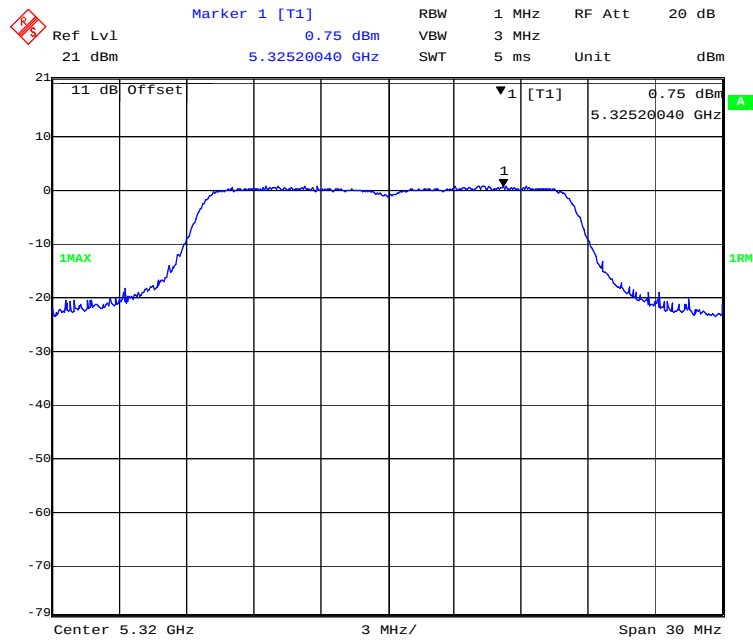


802.11n-HT40 mode, Power spectral density-5230MHz



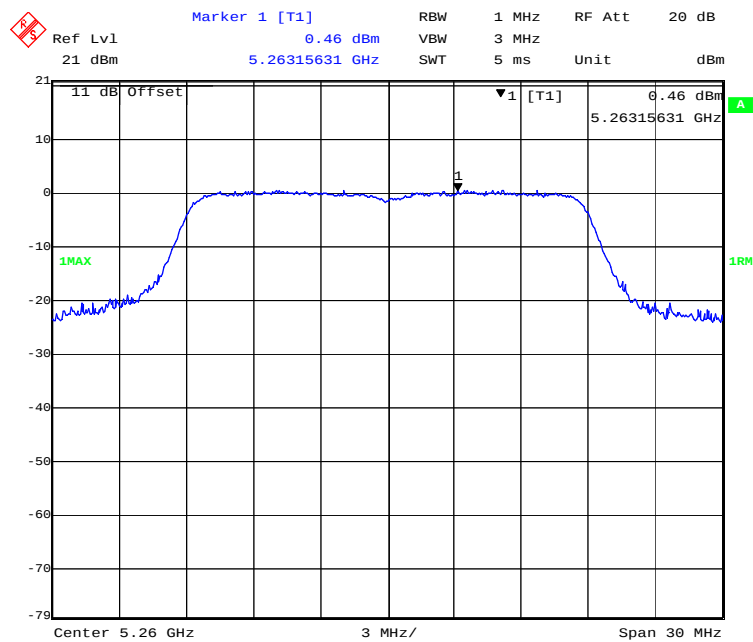
5250 MHz -5350MHz Band :**802.11a mode, Power spectral density-5260MHz****802.11a mode, Power spectral density-5280MHz**

802.11a mode, Power spectral density-5320MHz

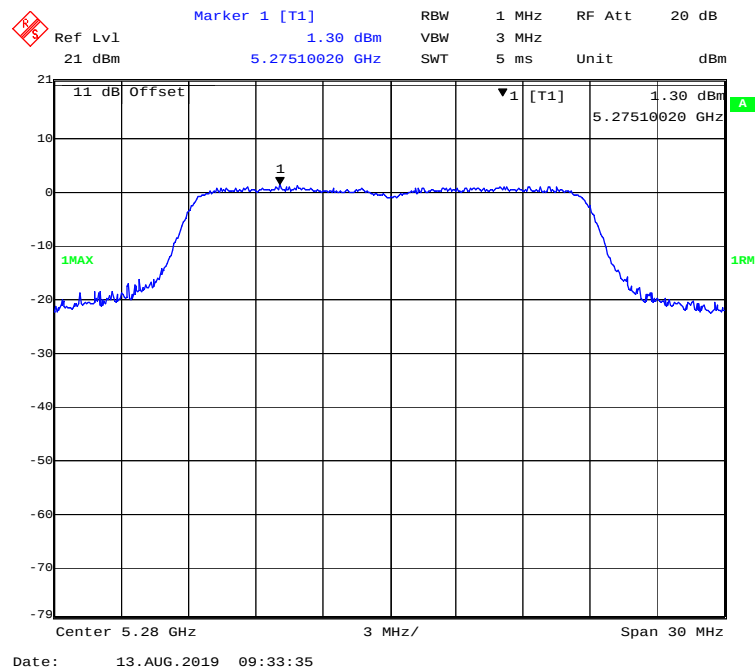
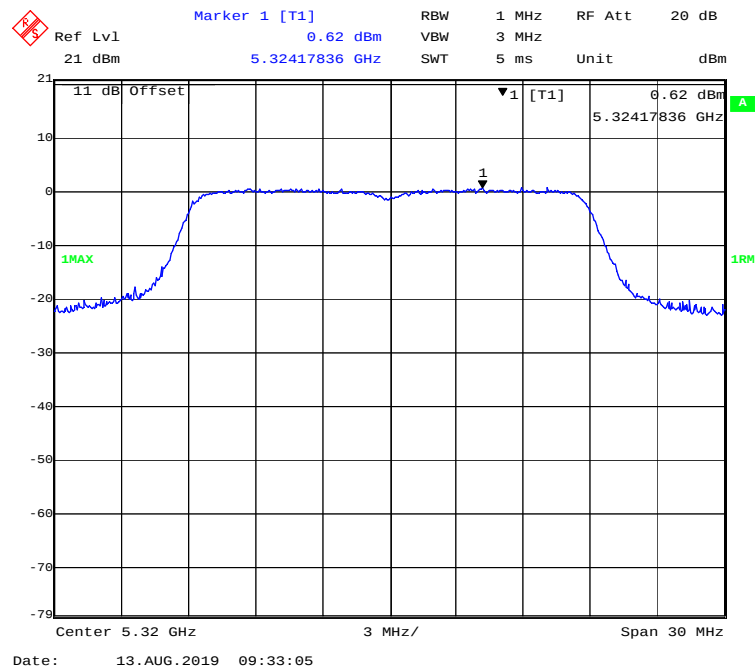


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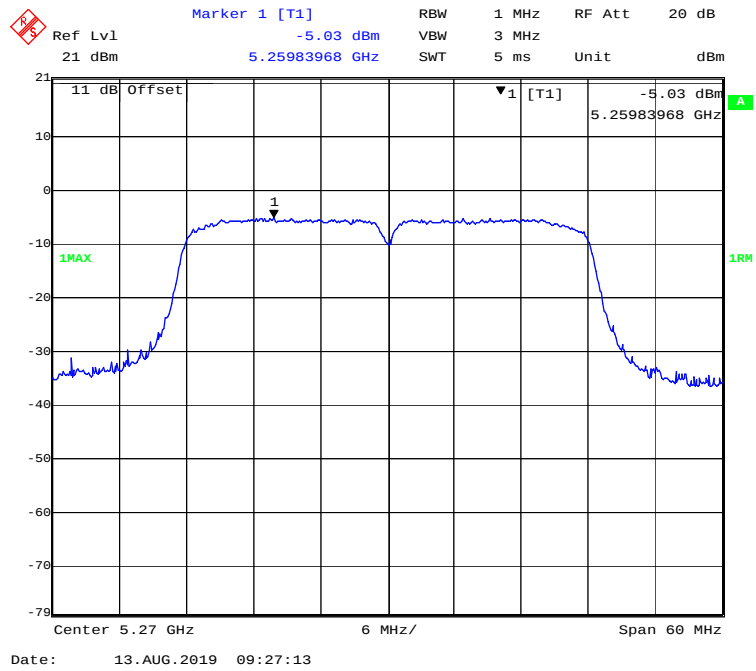
802.11n-HT20 mode, Power spectral density-5260MHz



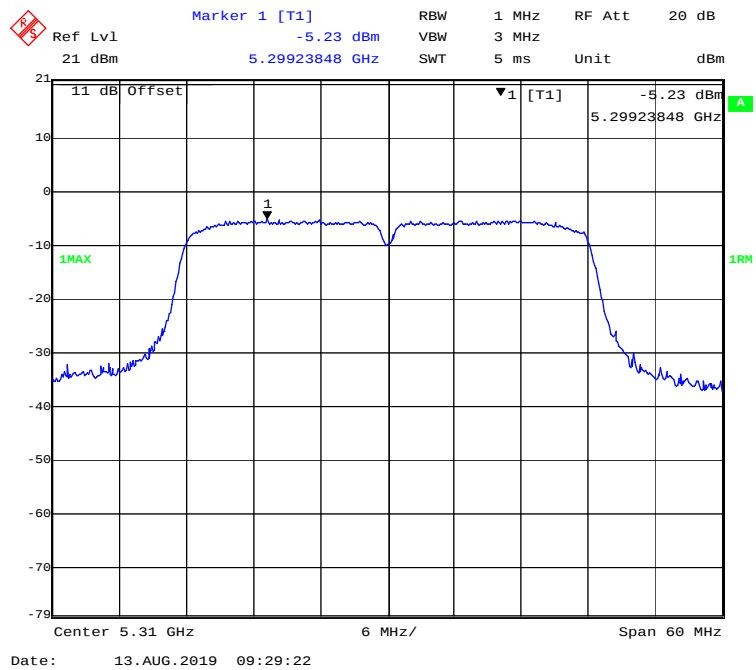
Date: 13.AUG.2019 09:34:22

802.11n-HT20 mode, Power spectral density-5280MHz**802.11n-HT20 mode, Power spectral density-5320MHz**

802.11n-HT40 mode, Power spectral density-5270MHz

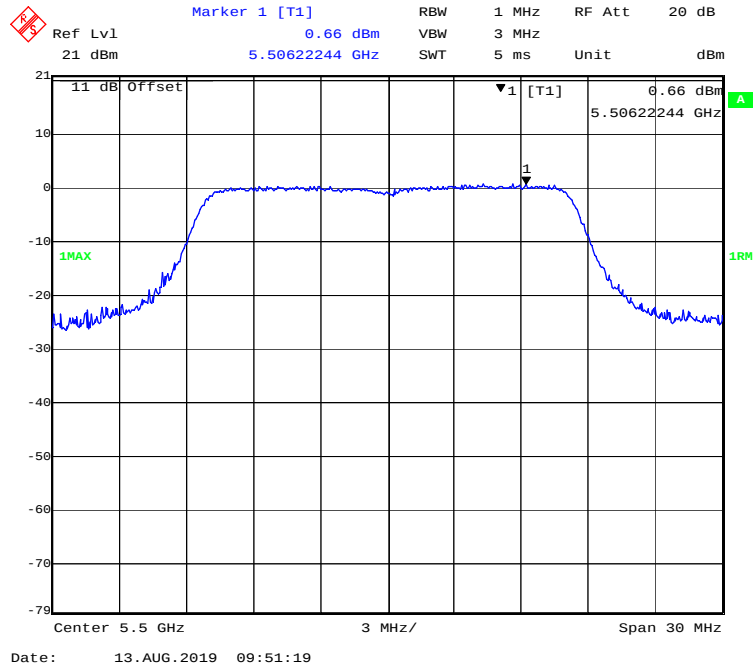


802.11n-HT40 mode, Power spectral density-5310MHz

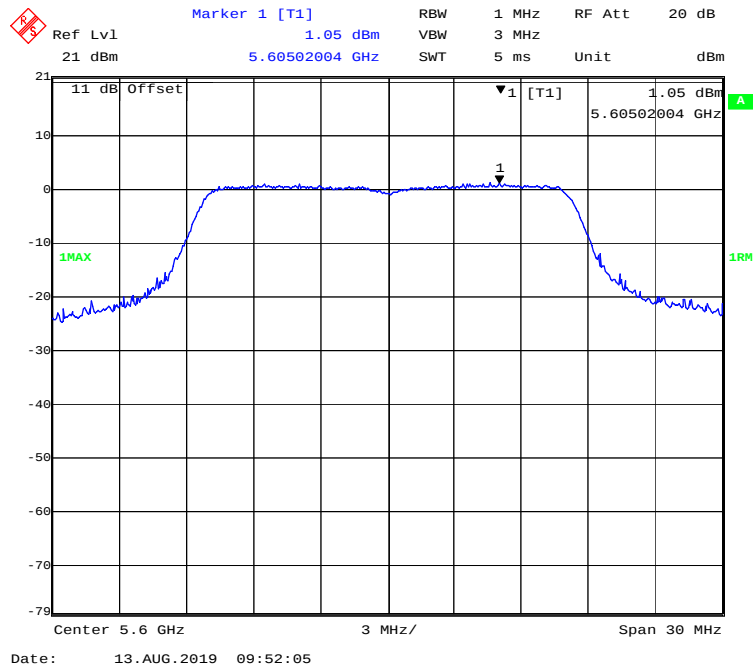


5470 MHz -5725MHz Band :

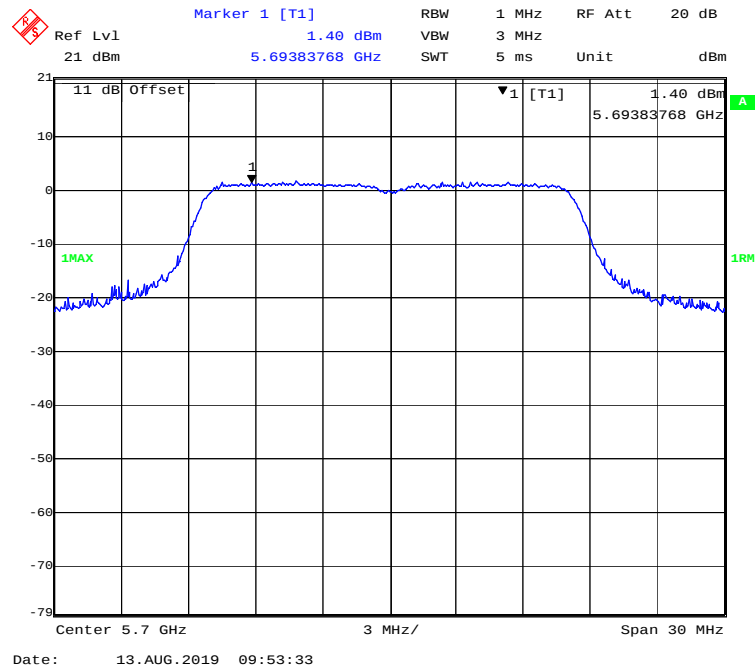
802.11a mode, Power spectral density-5500MHz



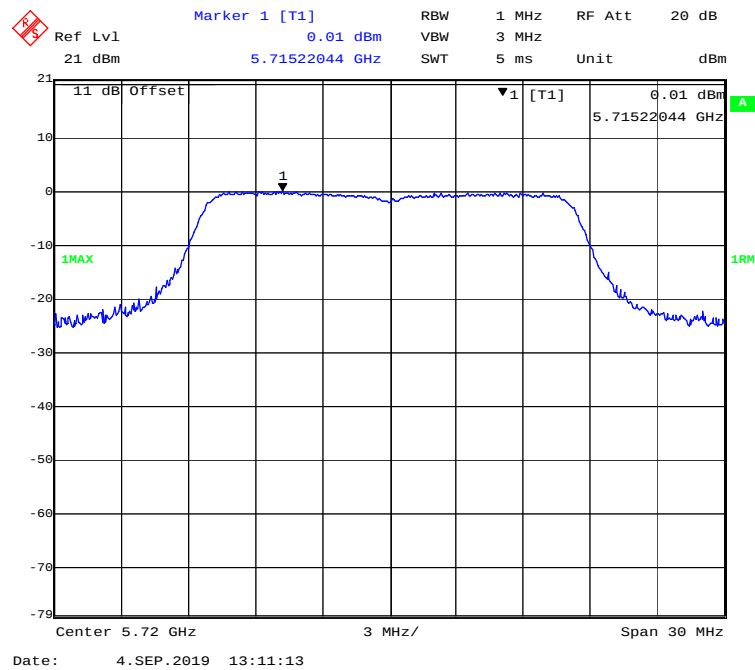
802.11a mode, Power spectral density-5600MHz



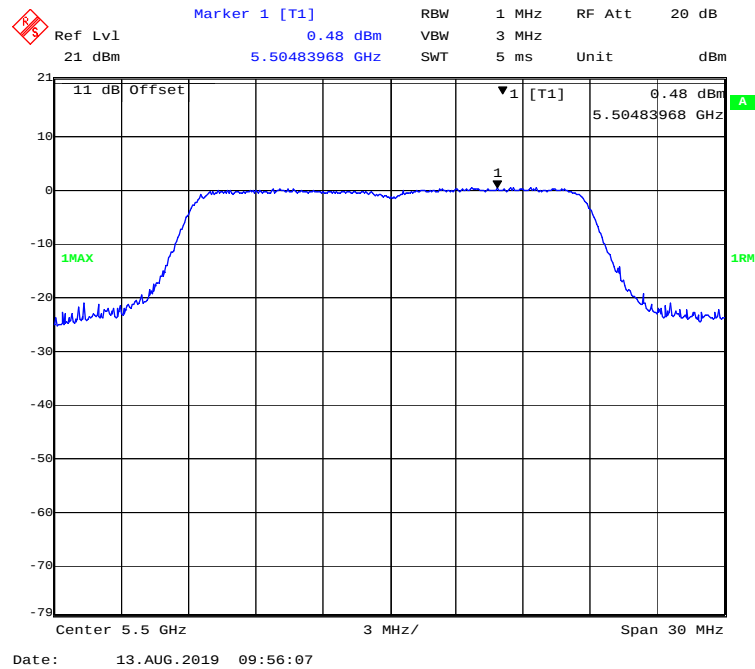
802.11a mode, Power spectral density-5700MHz



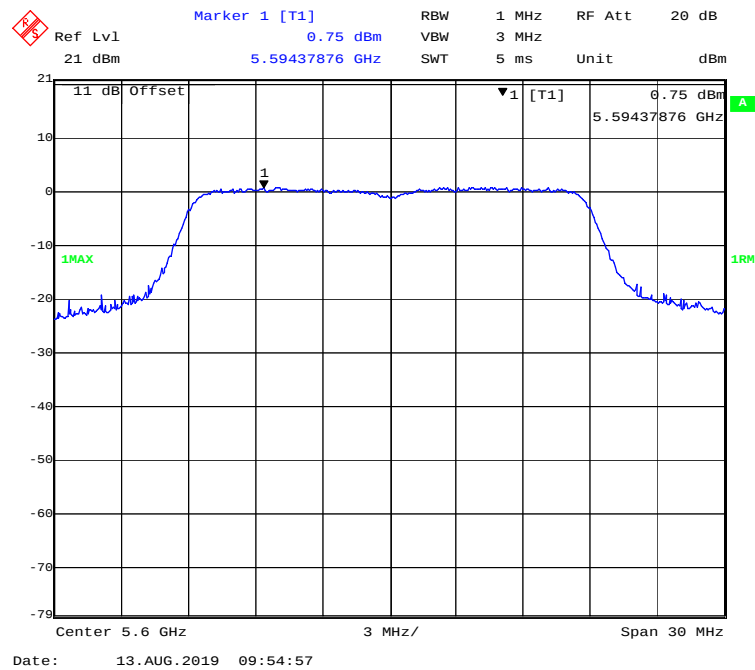
802.11a mode, Power spectral density-5720MHz



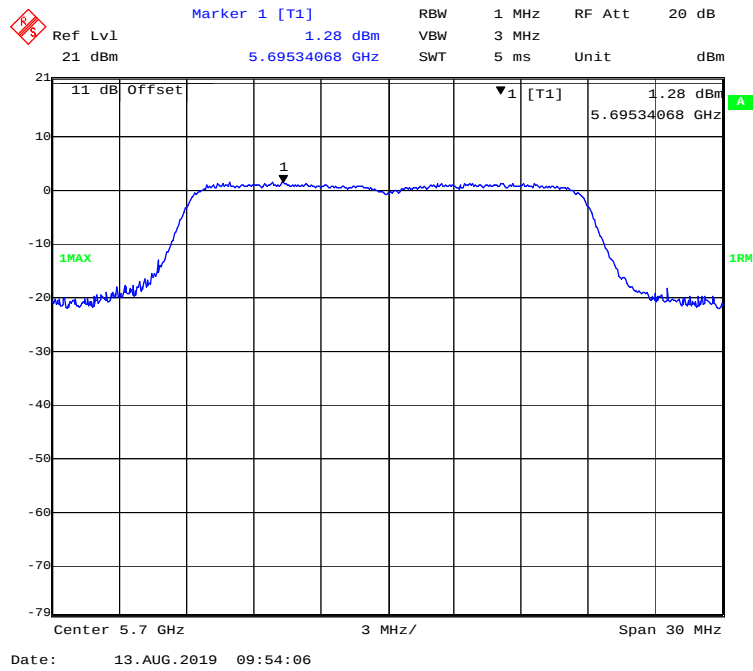
802.11n-HT20 mode, Power spectral density-5500MHz



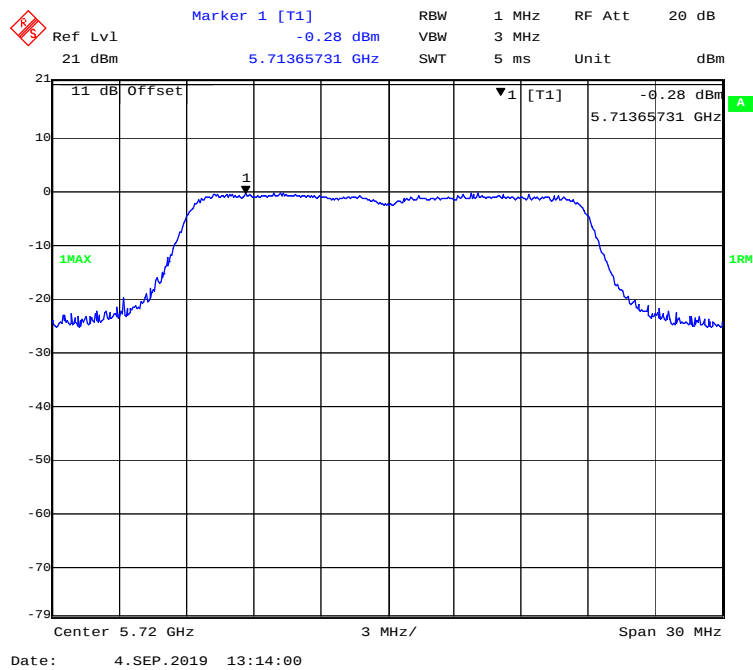
802.11n-HT20 mode, Power spectral density-5600MHz



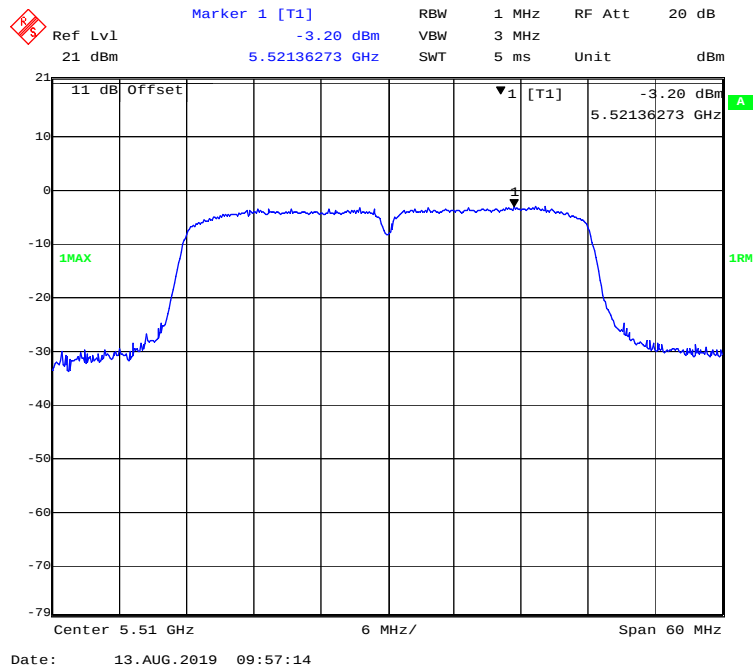
802.11n-HT20 mode, Power spectral density-5700MHz



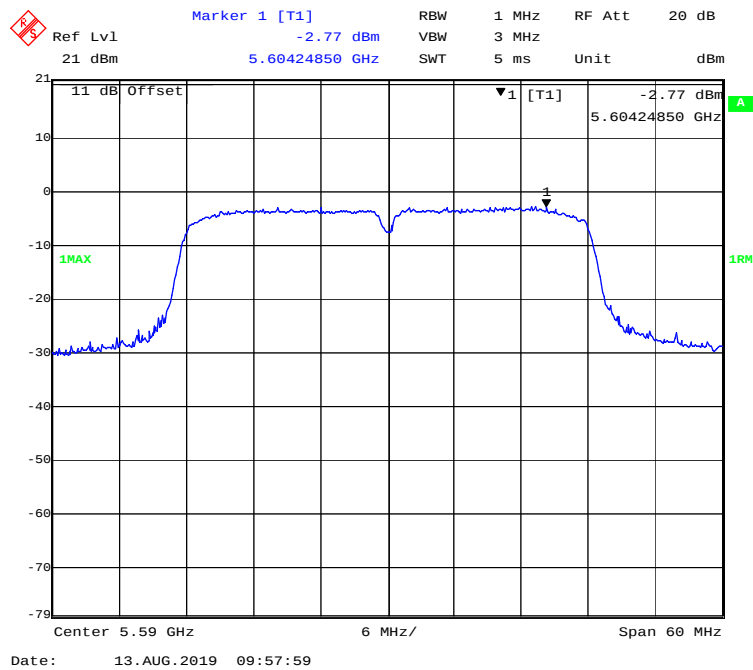
802.11n-HT20 mode, Power spectral density-5720MHz



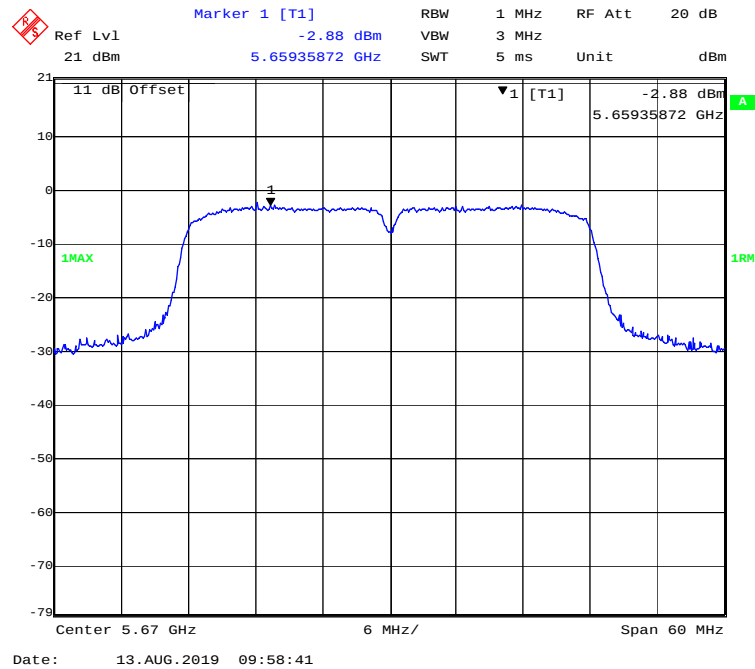
802.11n-HT40 mode, Power spectral density-5510MHz



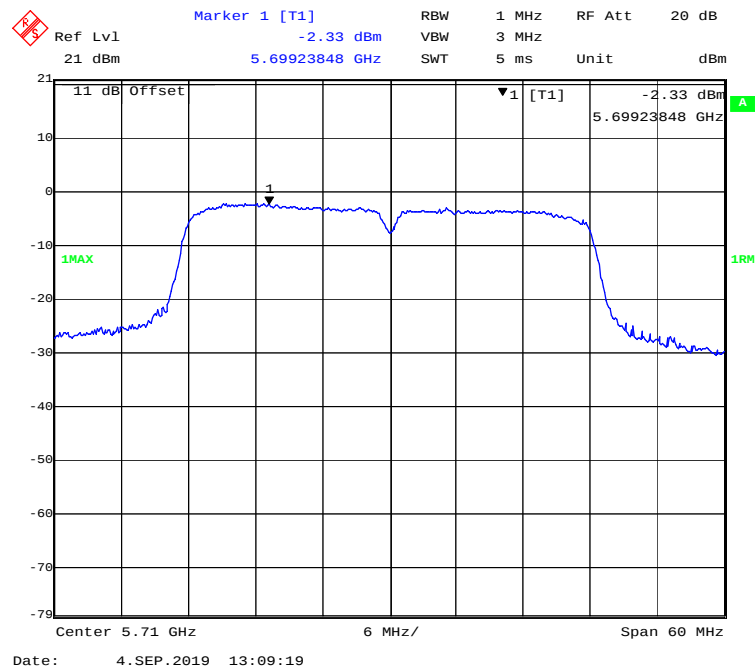
802.11n-HT40 mode, Power spectral density-5590MHz



802.11n-HT40 mode, Power spectral density-5670MHz

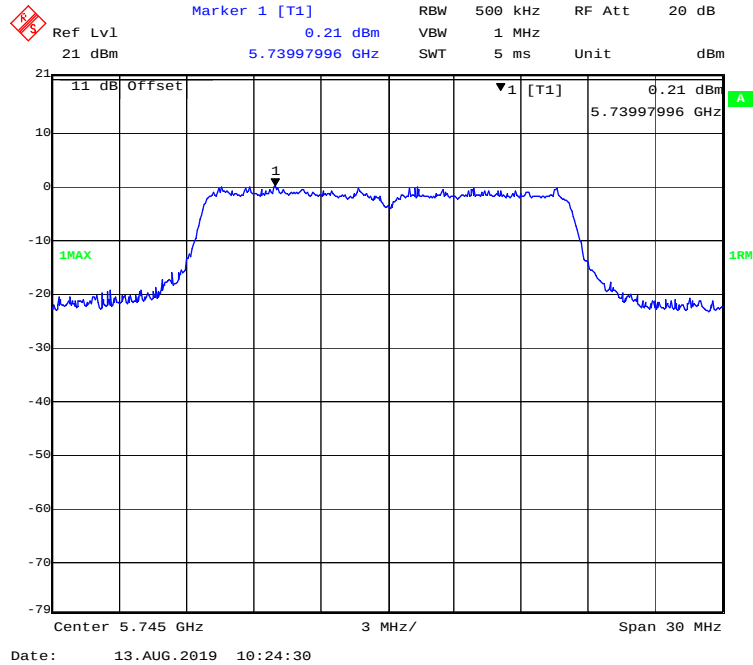


802.11n-HT40 mode, Power spectral density-5710MHz

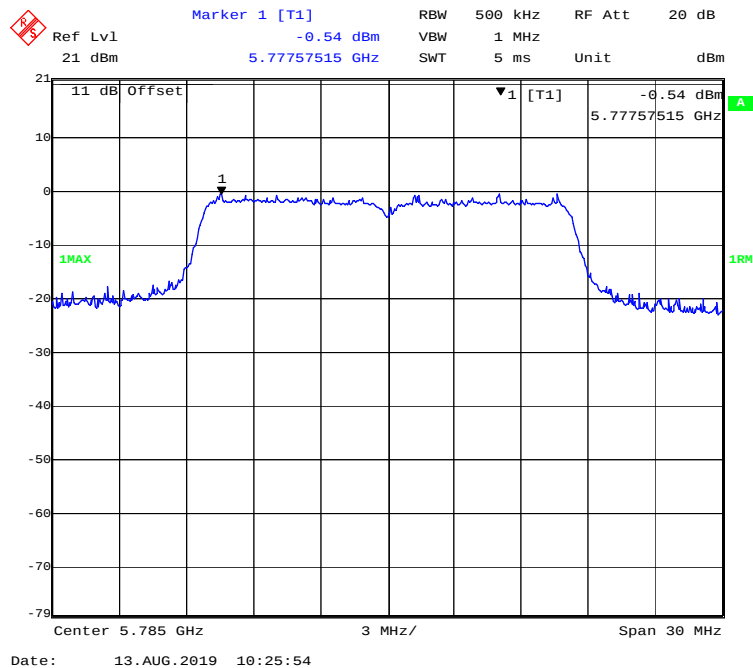


5725MHz-5850 MHz Band:

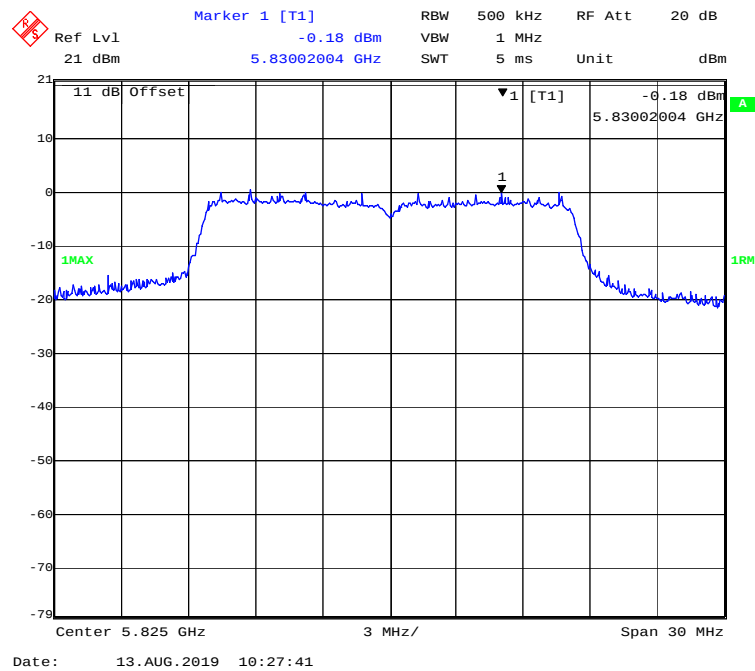
802.11a mode, Power spectral density-5745MHz



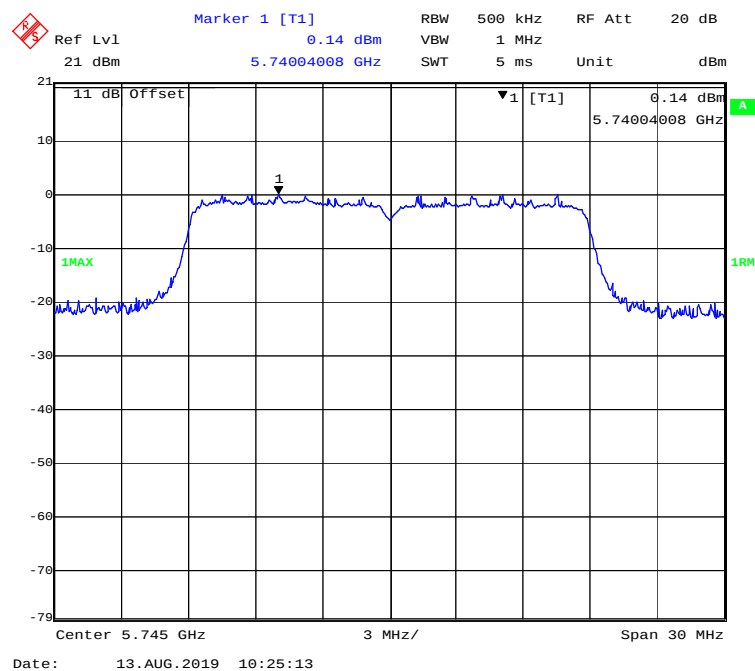
802.11a mode, Power spectral density-5785MHz



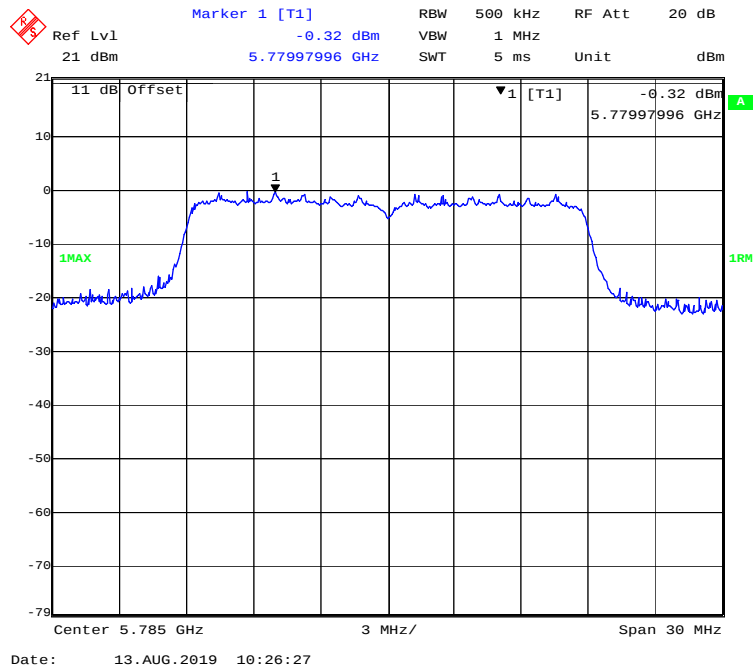
802.11a mode, Power spectral density-5825MHz



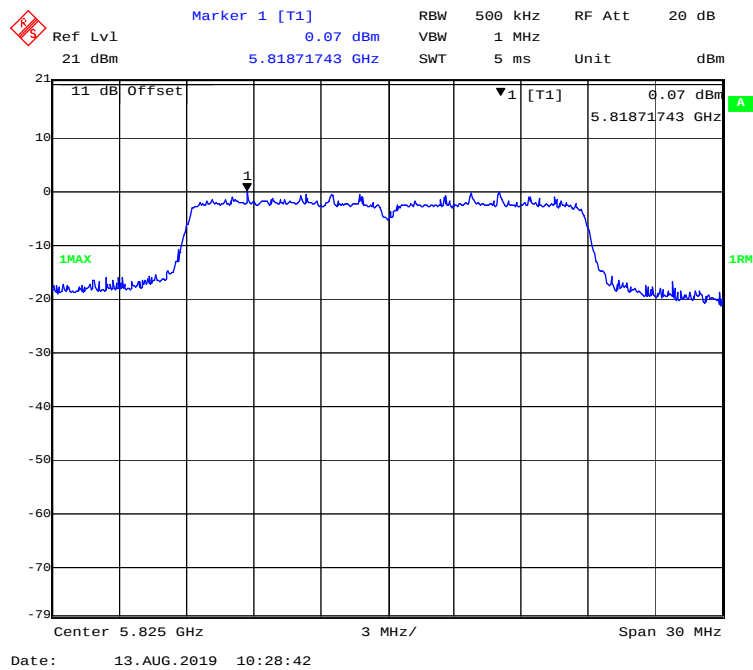
802.11n-HT20 mode, Power spectral density-5745MHz



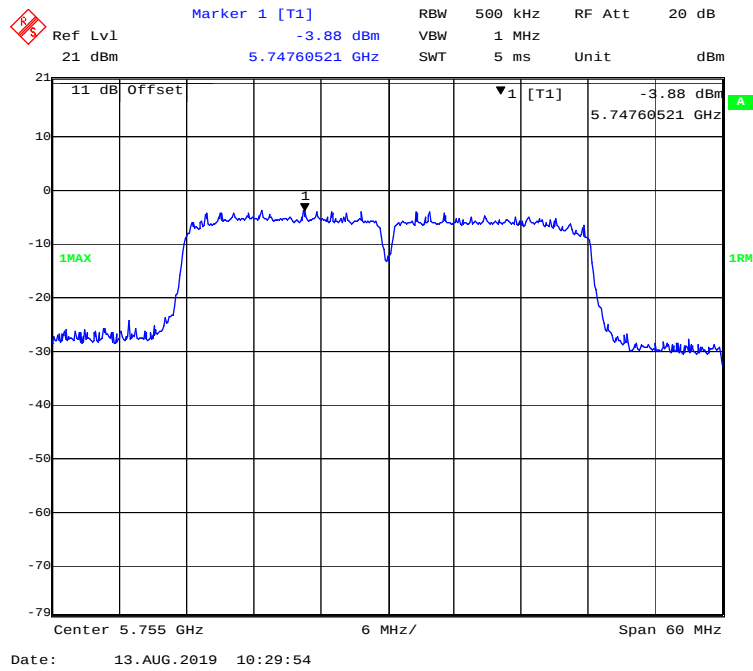
802.11n-HT20 mode, Power spectral density-5785MHz



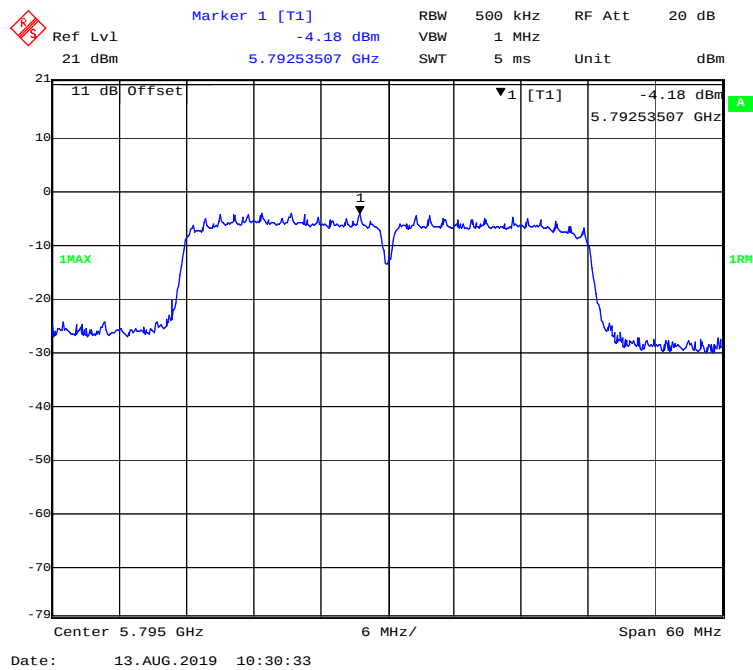
802.11n-HT20 mode, Power spectral density-5825MHz



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



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



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