TESTING LABORATORY
CERTIFICATE # 4821.01

FCC PART 15.407

TEST REPORT

For

KRIPTO MOBILE CORPORATION

7236 NW 31ST ST., MIAMI, Florida, United States

FCC ID: 2APX7K55H

Report Type:	Product Type:
Original Report	Mobile phone

Report Number:	RSZ190917001-00E
Report Date:	2019-11-12
Reviewed By:	Jacob Kong RF Engineer
Prepared By:	Bay Area Compliance Laboratories Corp. (Shenzhen) 6/F., West Wing, Third Phase of Wanli Industrial Building, Shihua Road, Futian Free Trade Zone, Shenzhen, Guangdong, China Tel: +86-755-33320018 Fax: +86-755-33320008 www.baclcorp.com.cn

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Product	Mobile phone
Tested Model	K55h
Frequency Range	5G WI-FI: 5150-5250 MHz; 5250-5350 MHz; 5470-5725 MHz, 5725-5850 MHz
Transmit Power	5150-5250 MHz: 12.25dBm (802.11a), 12.45dBm(802.11n20), 11.92 dBm(802.11n40), 12.28dBm (802.11ac20), 11.90dBm(802.11 ac40) 5250-5350 MHz: 8.10dBm (802.11a), 8.16dBm(802.11n20), 7.69 dBm(802.11n40), 8.08dBm (802.11ac20), 7.72dBm(802.11 ac40) 5470-5725 MHz 9.82dBm (802.11a), 9.27dBm(802.11n20), 9.54 dBm(802.11n40), 9.24dBm (802.11ac20), 9.24dBm(802.11 ac40) 5725-5850 MHz 9.68dBm (802.11a), 9.47dBm(802.11n20), 9.30dBm(802.11n40), 9.60dBm (802.11ac20), 9.38dBm(802.11 ac40)
Modulation Technique	OFDM
Antenna Specification	PIFA Antenna: 1.74dBi
Voltage Range	DC 3.8V battery or DC 5.0V from adapter
Date of Test	2019-09-23 to 2019-11-07.
Sample serial number	190917001(Assigned by BACL, Shenzhen)
Received date	2019-09-17
Sample/EUT Status	Good condition
Adapter information	Model:C55h Input: AC 100-240V, 50/60Hz, 0.2A Output: DC 5V, 1.0A

Objective

This type approval report is prepared on behalf of *KRIPTO MOBILE CORPORATION* 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 DSS, Part 15.247 DTS and and FCC Part22H24E27 PCE submissions with FCC ID: 2APX7K55H.

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 at Bay Area Compliance Laboratories Corp. (Shenzhen). The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Measurement Uncertainty

Parameter		Uncertainty
Occupied Channel Bandwidth		±5%
RF Output Power with Power meter		±0.73dB
RF conducted test with spectrum		±1.6dB
AC Power Lines Conducted Emissions		±1.95dB
Emissions, Radiated	Below 1GHz	±4.75dB
	Above 1GHz	±4.88dB
Temperature		±1℃
Humidity		±6%
Supply voltages		±0.4%

Note: The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval.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. (Shenzhen) to collect test data is located on the 6/F., West Wing, Third Phase of Wanli Industrial Building, Shihua Road, Futian Free Trade Zone, Shenzhen, Guangdong, China.

The test site has been approved by the FCC under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No.: 342867, the FCC Designation No.: CN1221.

The test site has been registered with ISED Canada under ISED Canada Registration Number 3062B.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing in an engineering mode, which was provided by manufacturer.

The device support 802.11a/n20/n40/ac20/ac40 modes.

For 5150-5250MHz Band, 6 channels are provided to testing:

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

For 802.11a, 802.11n20, 802.11ac20 mode, EUT was tested with Channel 36, 40 and 48.
For 802.11n40, 802.11ac40 mode, EUT was tested with Channel 38 and 46.

For 5250-5350MHz Band, 6 channels are provided to testing:

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

For 802.11a, 802.11n20, 802.11ac20 mode, EUT was tested with Channel 52, 56 and 64.
For 802.11n40, 802.11ac40 mode, EUT was tested with Channel 54 and 62.

For 5470-5725MHz Band, 16 channels are provided to testing:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
100	5500	124	5620
102	5510	126	5630
104	5520	128	5640
108	5540	132	5660
110	5550	134	5670
112	5560	136	5680
116	5580	140	5700
118	5590	/	/
120	5600	/	/

For 802.11a, 802.11n20, 802.11ac20 mode, EUT was tested with Channel 100, 120 and 140.
For 802.11n40, 802.11ac40 mode, EUT was tested with Channel 102, 118 and 134.

For 5725-5850MHz Band, 7 channels are provided to testing:

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

For 802.11a, 802.11n20, 802.11ac20 mode, EUT was tested with Channel 149, 157 and 165.
For 802.11n40, 802.11ac40 mode, EUT was tested with Channel 151 and 159.

EUT Exercise Software

Wi-Fi test in the engineer mode.

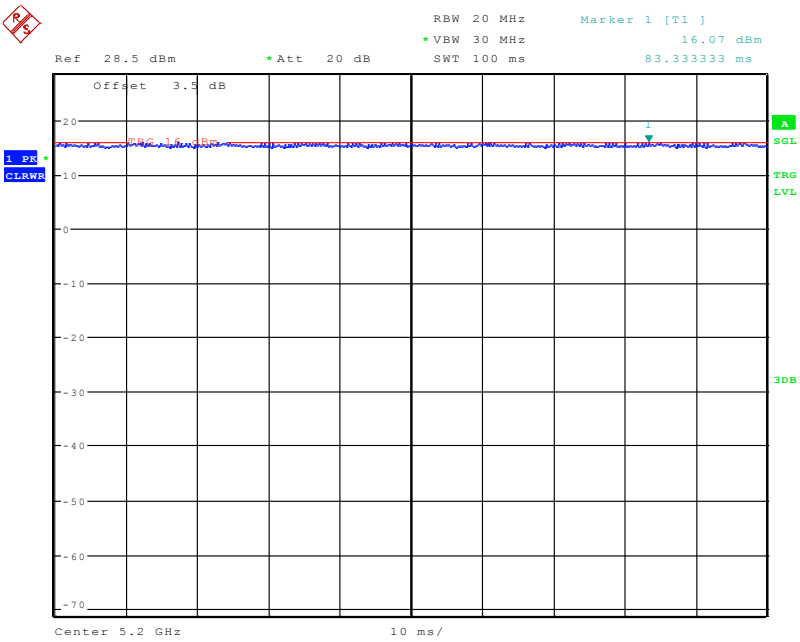
The device was tested with the worst case was performed as below:

U-NII	Mode	Channel Number	Frequency (MHz)	Data Rate (Mbps)	Power Level
5150 – 5250MHz	802.11 a	CH36	5180	6	31
		CH40	5200	6	31
		CH48	5240	6	31
	802.11 n20	CH36	5180	MCS0	31
		CH40	5200	MCS0	31
		CH48	5240	MCS0	31
	802.11 n40	CH38	5190	MCS0	31
		CH46	5230	MCS0	31
	802.11 ac20	CH36	5180	MCS0	31
		CH40	5200	MCS0	31
		CH48	5240	MCS0	31
	802.11 ac40	CH38	5190	MCS0	31
		CH46	5230	MCS0	31
5250 – 5350MHz	802.11 a	CH52	5260	6	31
		CH56	5280	6	31
		CH64	5320	6	31
	802.11 n20	CH52	5260	MCS0	31
		CH56	5280	MCS0	31
		CH64	5320	MCS0	31
	802.11 n40	CH54	5270	MCS0	31
		CH62	5310	MCS0	31
	802.11 ac20	CH52	5260	MCS0	31
		CH56	5280	MCS0	31
		CH64	5320	MCS0	31
	802.11 ac40	CH54	5270	MCS0	31
		CH62	5310	MCS0	31

U-NII	Mode	Channel Number	Frequency (MHz)	Data Rate (Mbps)	Power Level
5470 – 5725MHz	802.11 a	CH100	5500	6	31
		CH120	5600	6	31
		CH140	5700	6	31
	802.11 n20	CH100	5500	MCS0	31
		CH120	5600	MCS0	31
		CH140	5700	MCS0	31
	802.11 n40	CH102	5510	MCS0	31
		CH118	5590	MCS0	31
		CH134	5670	MCS0	31
	802.11 ac20	CH100	5500	MCS0	31
		CH120	5600	MCS0	31
		CH140	5700	MCS0	31
	802.11 ac40	CH102	5510	MCS0	31
		CH118	5590	MCS0	31
		CH134	5670	MCS0	31
5725 – 5850MHz	802.11 a	CH149	5745	6	31
		CH157	5785	6	31
		CH165	5825	6	31
	802.11 n20	CH149	5745	MCS0	31
		CH157	5785	MCS0	31
		CH165	5825	MCS0	31
	802.11 n40	CH151	5755	MCS0	31
		CH159	5795	MCS0	31
	802.11 ac20	CH149	5745	MCS0	31
		CH157	5785	MCS0	31
		CH165	5825	MCS0	31
	802.11 ac40	CH151	5755	MCS0	31
		CH159	5795	MCS0	31

Duty cycle
5150-5250 MHz

802.11a mode



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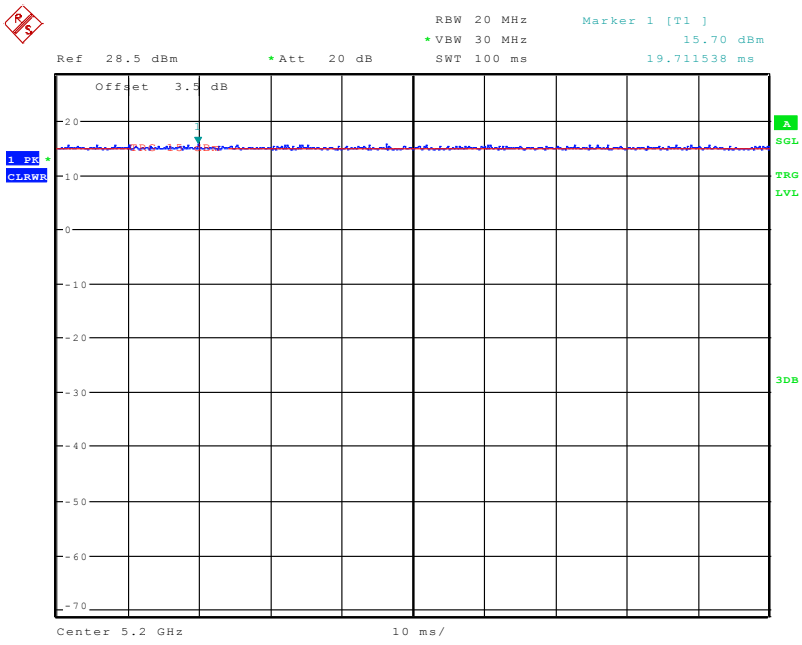
802.11n20 mode



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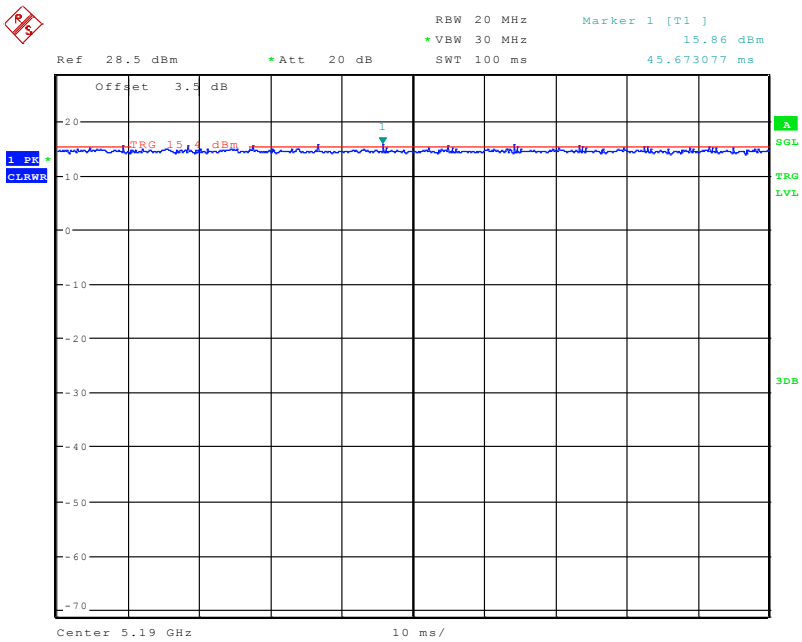
802.11n40 mode



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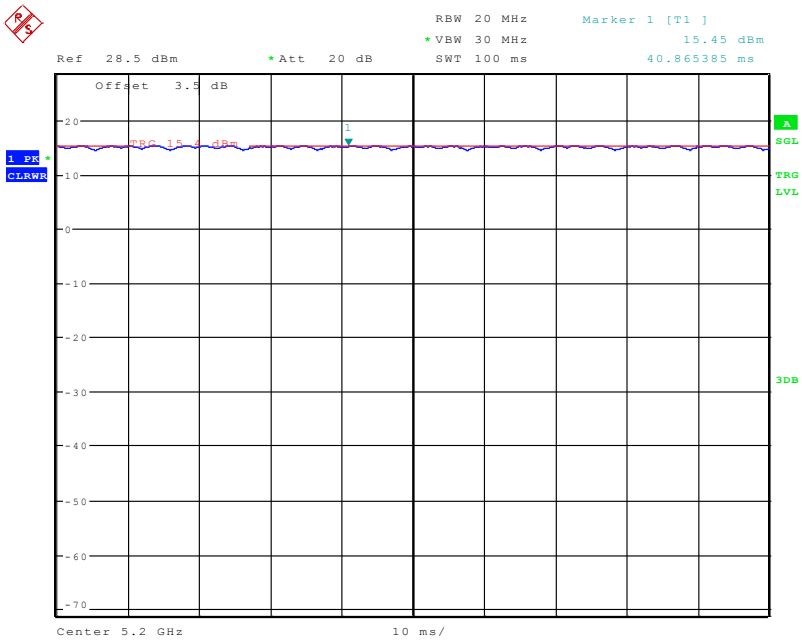
802.11ac20 Mode



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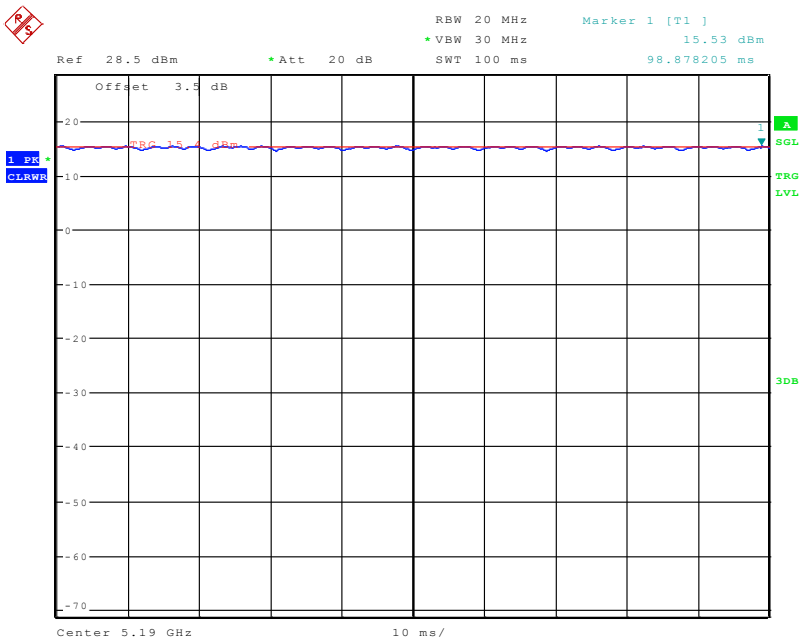
802.11ac40 Mode



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Band	Duty Cycle (%)	T(ms)	1/T(kHz)	VBW Setting	10log(1/x)
802.11a	100	-	-	10Hz	-
802.11n20	100	-	-	10Hz	-
802.11n40	100	-	-	10Hz	-
802.11ac20	100	-	-	10Hz	-
802.11ac40	100	-	-	10Hz	-

Note: 5250-5350MHz band, 5470-5725MHz band and 5725-5850MHz band was used the same duty cycle to test for each mode.

Equipment Modifications

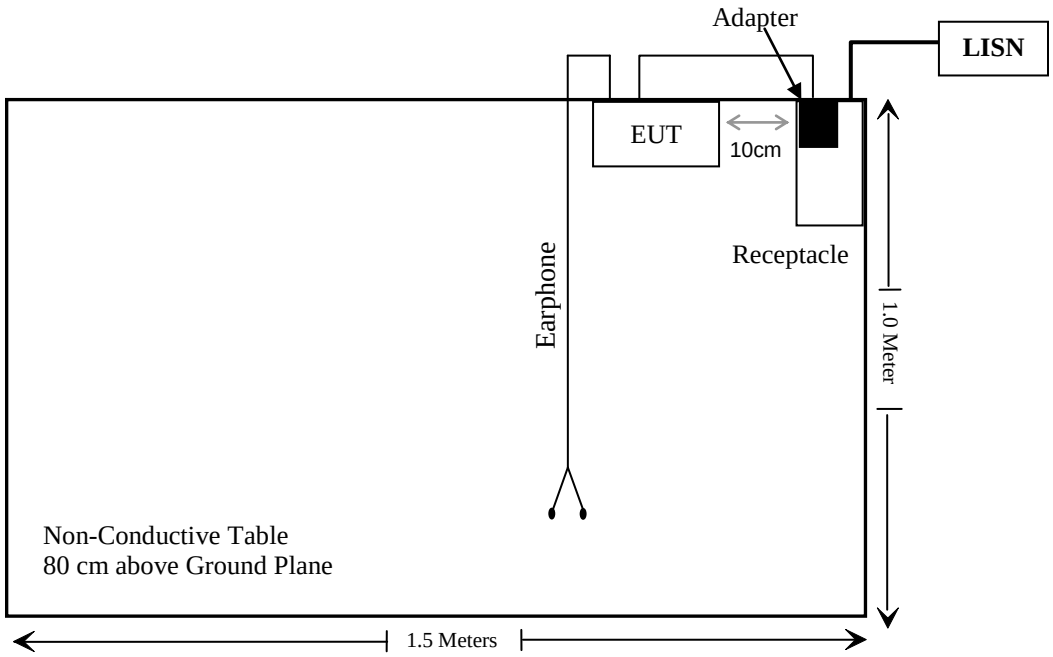
No modification was made to the EUT tested.

External I/O Cable

Cable Description	Length (m)	From Port	To
Un-shielding Detachable USB Cable	1.0	EUT	Adapter

Block Diagram of Test Setup

For conducted emission:



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§1.1307(b) & §2.1093	RF EXPOSURE INFORMATION	Compliance
§15.203	Antenna Requirement	Compliance
§15.407(b)(6)& §15.207(a)	Conducted Emissions	Compliance
§15.205& §15.209 & §15.407(b) (1), (2), (3), (4),(7)	Undesirable Emission& Restricted Bands	Compliance
§15.407(a) (1), (5),(e)	26 dB Emission Bandwidth & 6dB Bandwidth	Compliance
§15.407(a)(1),(2), (3)	Conducted Transmitter Output Power	Compliance
§15.407 (a)(1), (2), (3)	Power Spectral Density	Compliance

DFS report please refere to RSZ191023007-00 issued by Bay Area Compliance Laboratories Corp. (Dongguan).

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
AC Line Conducted test					
Rohde & Schwarz	EMI Test Receiver	ESCS30	100176	2019-07-11	2020-07-11
Rohde & Schwarz	LISN	ENV216	3560.6650.12-101613-Yb	2019-01-25	2020-01-25
Rohde & Schwarz	Transient Limiter	ESH3Z2	DE25985	2019-03-02	2020-03-02
Rohde & Schwarz	CE Test software	EMC 32	V8.53.0	NCR	NCR
Unknown	Conducted Emission Cable	78652	UF A210B-1-0720-504504	2018-11-12	2019-11-12
Radiated Emission Test					
A.H. System	Horn Antenna	SAS-200/571	135	2018-09-01	2021-08-31
Rohde & Schwarz	Signal Analyzer	FSEM	845987/005	2019-07-22	2020-07-21
Agilent	Spectrum Analyzer	8564E	3943A01781	2019-03-02	2020-03-02
Sunol Sciences	Broadband Antenna	JB1	A040904-1	2017-12-22	2020-12-21
COM-POWER	Pre-amplifier	PA-122	181919	2018-11-12	2019-11-12
Sonoma Instrument	Amplifier	310N	186238	2018-11-12	2019-11-12
Rohde & Schwarz	EMI Test Receiver	ESR3	102455	2019-07-09	2020-07-08
Ducommun technologies	RF Cable	UFA147A-2362-100100	MFR64639 231029-003	2018-11-12	2019-11-12
Ducommun technologies	RF Cable	104PEA	218124002	2018-11-12	2019-11-12
Ducommun Technologies	RF Cable	RG-214	1	2019-05-21	2019-11-19
Ducommun Technologies	RF Cable	RG-214	2	2018-11-12	2019-11-12
Ducommun Technologies	Horn Antenna	ARH-4223-02	1007726-04	2017-12-29	2020-12-28
Ducommun Technologies	Horn Antenna	ARH-4223-02	1007726-03	2017-12-29	2020-12-28
Heatsink Required	Amplifier	QLW-18405536-J0	15964001002	2018-11-12	2019-11-12

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
RF Conducted Test					
Rohde & Schwarz	Spectrum Analyzer	FSU26	200120	2019-03-02	2020-03-01
Agilent	USB wideband power meter	U2021XA	MY54250003	2019-07-10	2020-07-09
Ducommun technologies	RF Cable	RG-214	3	Each Time	
WEINSCHEL	3dB Attenuator	6231	666	Each Time	

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

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

Applicable Standard

FCC§1.1310 and §2.1093.

Test Result

Compliance, please refer to the SAR report: RSZ190917001-SA.

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 (a), if the transmitting antennas of directional gain greater than 6dBi are used, the transmit power and power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Antenna Connector Construction

The EUT has one integrated antenna arrangement, which was permanently attached and the antenna gain is 1.74dBi, fulfill the requirement of this section. Please refer to the EUT photos.

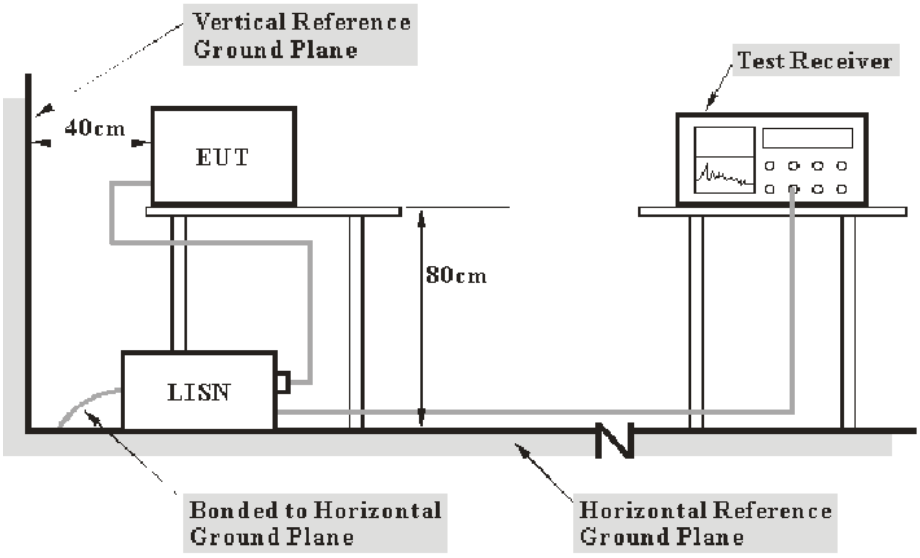
Result: Compliance.

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

Applicable Standard

FCC §15.207, §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 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.

Test Results Summary

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

Test Data

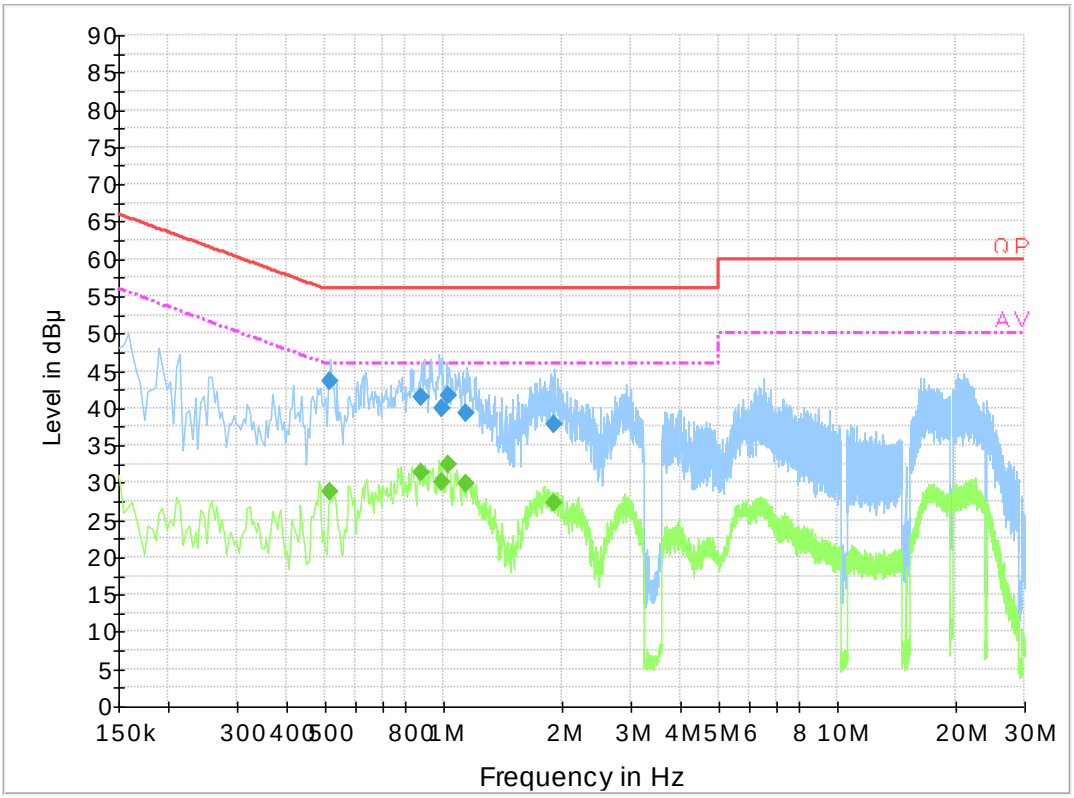
Environmental Conditions

Temperature:	25 ℃
Relative Humidity:	50 %
ATM Pressure:	101.0 kPa

The testing was performed by Kiki Geng on 2019-10-23.

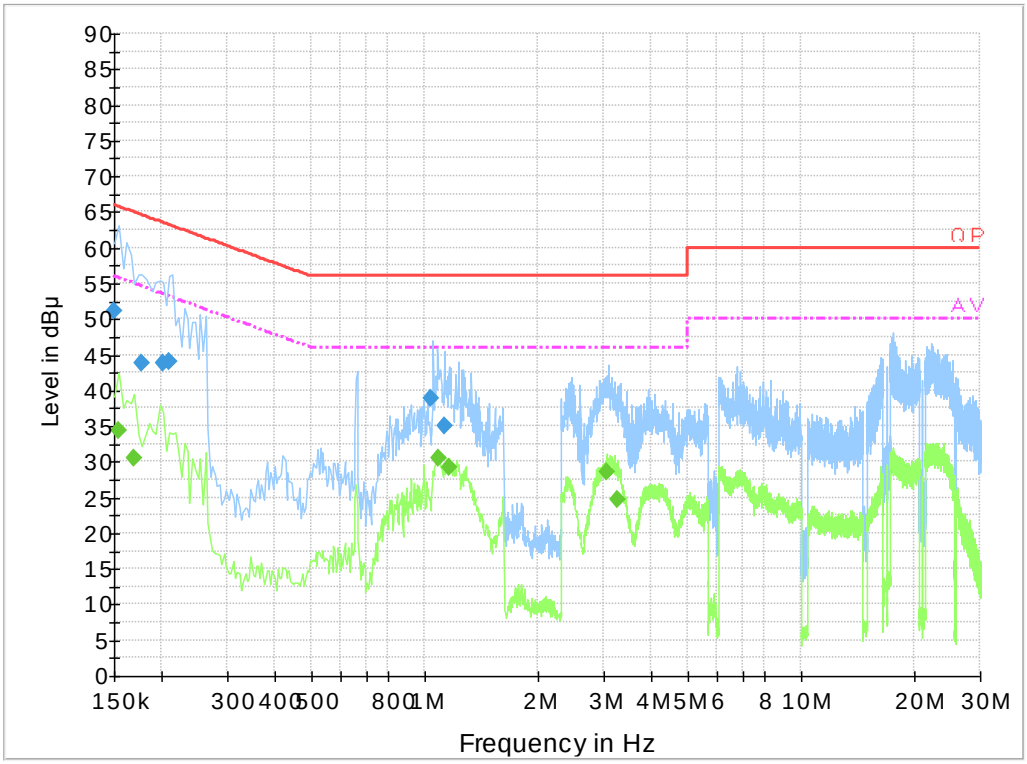
EUT operation mode: Transmitting (worst case)

AC120V/60 Hz, Line:



Frequency (MHz)	Corrected Amplitude (dBµV)	Correction Factor (dB)	Limit (dBµV)	Margin (dB)	Detector (PK/Ave./QP)
0.514230	43.5	19.8	56.0	12.5	QP
0.880590	41.4	19.8	56.0	14.6	QP
0.992670	40.0	19.9	56.0	16.0	QP
1.030670	41.8	19.9	56.0	14.2	QP
1.144810	39.3	19.8	56.0	16.7	QP
1.921170	37.8	19.9	56.0	18.2	QP
0.514230	28.9	19.8	46.0	17.1	Ave.
0.880590	31.4	19.8	46.0	14.6	Ave.
0.992670	30.0	19.9	46.0	16.0	Ave.
1.030670	32.4	19.9	46.0	13.6	Ave.
1.144810	29.8	19.8	46.0	16.2	Ave.
1.921170	27.3	19.9	46.0	18.7	Ave.

AC120V, 60 Hz, Neutral:



Frequency (MHz)	Corrected Amplitude (dBµV)	Correction Factor (dB)	Limit (dBµV)	Margin (dB)	Detector (PK/Ave./QP)
0.150000	51.0	19.8	66.0	15.0	QP
0.177500	43.8	19.8	64.6	20.8	QP
0.202500	43.8	19.8	63.5	19.7	QP
0.209500	44.0	19.8	63.2	19.2	QP
1.038190	38.9	19.8	56.0	17.1	QP
1.133050	35.1	19.8	56.0	20.9	QP
0.154000	34.4	19.8	55.8	21.4	Ave.
0.170000	30.5	19.9	55.0	24.5	Ave.
1.094000	30.4	19.8	46.0	15.6	Ave.
1.162000	29.2	19.8	46.0	16.8	Ave.
3.058000	28.5	19.9	46.0	17.5	Ave.
3.250000	24.6	19.9	46.0	21.4	Ave.

Note:
1) Correction Factor =LISN VDF (Voltage Division Factor) + Cable Loss + Transient Limiter Attenuation
2) Corrected Amplitude = Reading + Correction Factor
3) Margin = Limit – Corrected Amplitude

§15.205 & §15.209 & §15.407(B) (1), (2), (3), (4),(6),(7) – UNDESIRABLE EMISSION

Applicable Standard

FCC §15.407 (b) (1), (2), (3), (4), (6), (7); §15.209; §15.205;

(b) Undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:
(1) For transmitters operating in the 5.15-5.25 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.
(2) 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.
(3) 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.
(4) For transmitters operating in the 5.725-5.85 GHz band:
(i) All emissions shall be limited to a level of −27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.
Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209.

KDB 789033 D02 General UNII Test Procedures New Rules v02r01, clause G),
E [dBμV/m] = EIRP [dBm] + 95.2, for d = 3 meters.

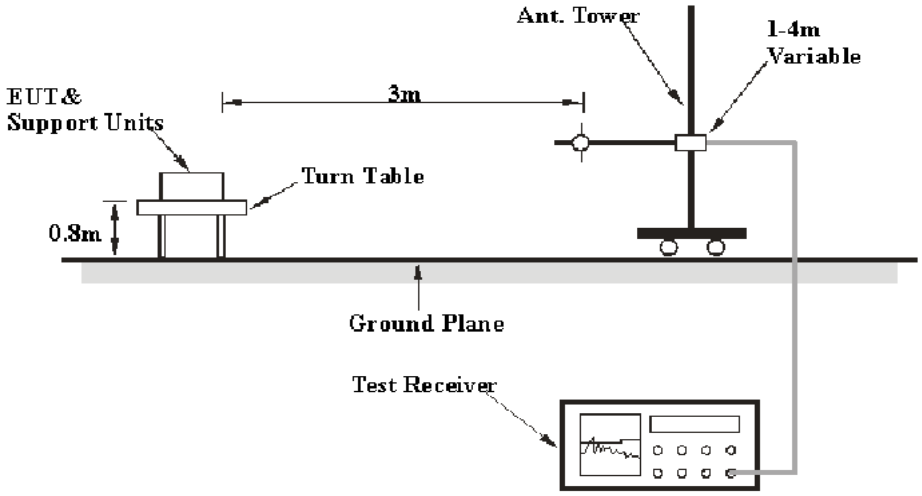
The general limit of -27 dBm EIRP (= 68.2 dBμV/m) is applied for unwanted emission of U-NII devices.
However, compliance with unwanted emissions in restricted bands may need to be considered, *e.g.*, some harmonics may land in the restricted bands below 5.15 GHz and above 5.35 GHz (refer
The general limit of -27 dBm EIRP (= 68.2 dBμV/m) is applied for unwanted emission of U-NII devices.
However, compliance with unwanted emissions in restricted bands may need to be considered, *e.g.*, some harmonics may land in the restricted bands below 5.15 GHz and above 5.35 GHz (refer to §15.205 for restricted bands) that have average and peak limits specified in §§15.209 and 15.35(b), respectively.
Although the peak limit of 74 dBμV/m (20 dB above 54 dBμV/m) in the restricted band appears to be higher than 68.2 dBμV/m, the lower average limit of 54 dBμV/m in the restricted bands needs to be complied to

As to transmitters operating in the 5.725-5.85 GHz band, the strictest limit was applied for undesirable emissions, performed as below:

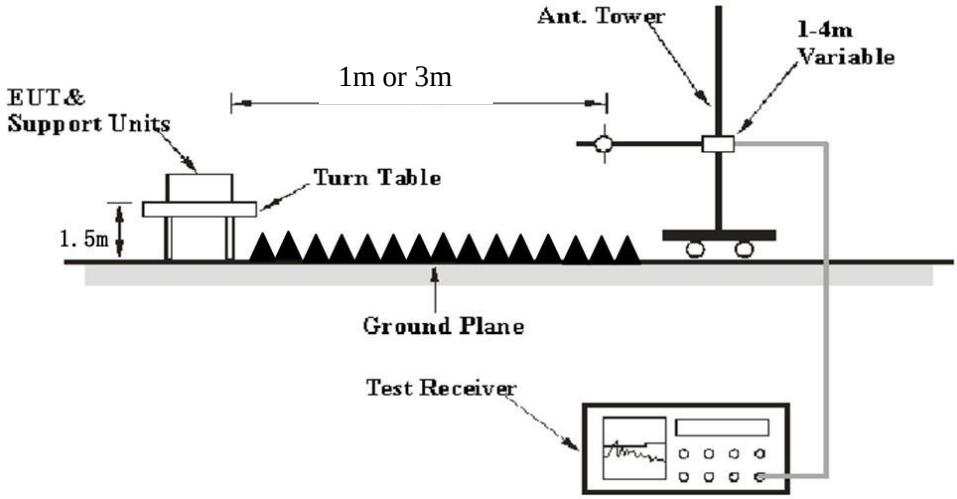
1) For 25MHz-75 MHz above or below the band edge, a level of -27 dBm/MHz (68.2dBμV/m) was applied.
2) For 5MHz-25 MHz above or below the band edge, a level of 10 dBm/MHz (105.2dBμV/m) was applied.
2) For 0MHz-5 MHz above or below the band edge, a level of 15.6 dBm/MHz (110.8dBμV/m) was applied.

EUT Setup

Below 1 GHz:



Above 1 GHz:



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

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

The adapter was connected to a 24VAC/60 Hz power source,

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 & Spectrum Analyzer Setup were set with the following configurations:

Frequency Range	RBW	Video B/W	IF B/W	Measurements
30 MHz – 1000 MHz	100 kHz	300 kHz	120 kHz	QP
Above 1 GHz	1 MHz	3 MHz	/	PK
	1MHz	10 Hz Note 1	/	Average
	1MHz	＞1/T Note 2	/	Average

Note 1: when duty cycle is no less than 98%
Note 2: when duty cycle is less than 98%

Test Procedure

Radiated Spurious Emission

During the radiated emission test, the adapter was connected to the AC floor outlet.

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

According to ANSI C63.10-2013,9.4: For field strength measurements made at other than the distance at which the applicable limit is specified,extrapolate the measured field strength to the field strength at the distance specified by the limit using an inverse distance correction factor (20 dB/decade of distance). In some cases, a different distance correction factor may be required;

$$E_{\mathrm{SpecLimit}} = E_{\mathrm{Meas}} + 20\log\left(\frac{d_{\mathrm{Meas}}}{d_{\mathrm{SpecLimit}}}\right)$$

where

$E_{\mathrm{SpecLimit}}$ is the field strength of the emission at the distance specified by the limit, in dBμV/m
E_{Meas} is the field strength of the emission at the measurement distance, in dBμV/m
d_{Meas} is the measurement distance, in m
$d_{\mathrm{SpecLimit}}$ is the distance specified by the limit, in m

So the extrapolation factor of 1m is 20*log(1/3)= -9.5 dB

Corrected Amplitude & Margin Calculation

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

Corrected Amplitude = Meter Reading + Antenna Factor + Cable Loss - Amplifier Gain

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

Margin = Limit – Corrected Amplitude

Test Results Summary

According to the EUT complied with the FCC Title 47, Part 15, Subpart E, section 15.205, 15.209 and 15.407 rules.

Test Data

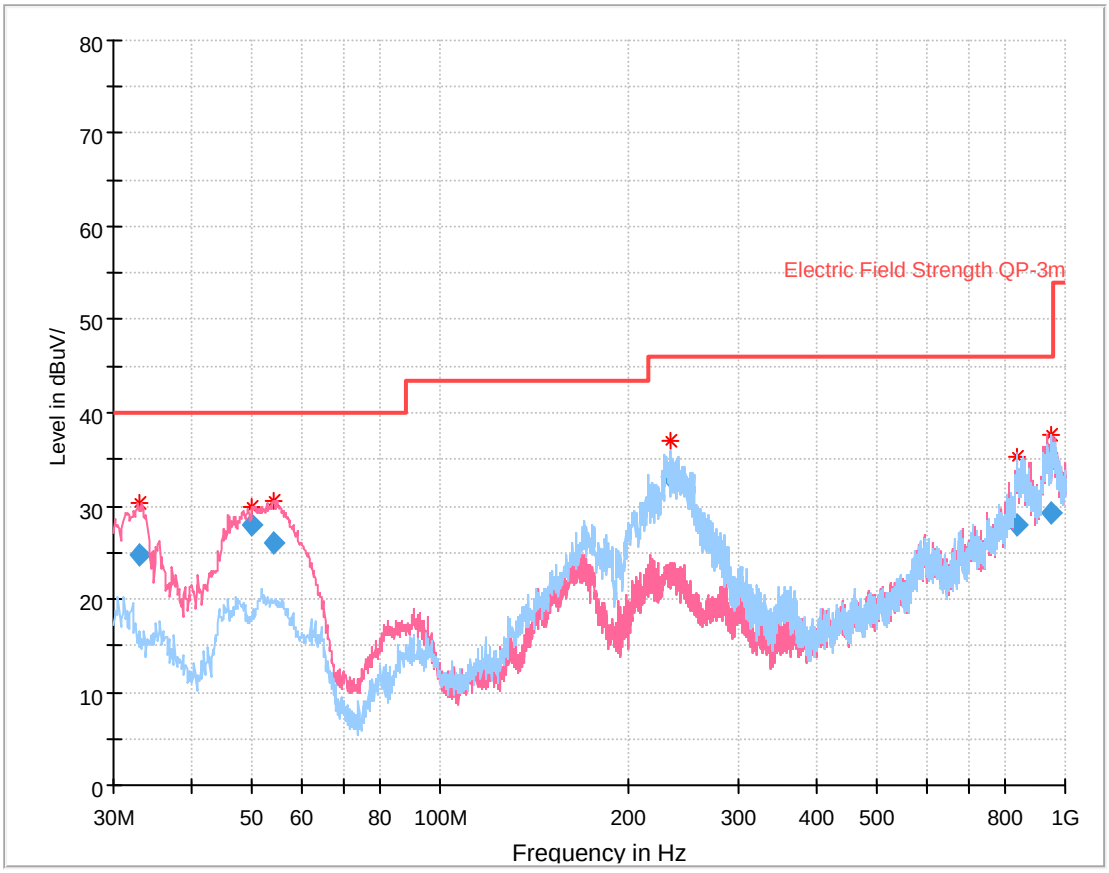
Environmental Conditions

Temperature:	24~25 ℃
Relative Humidity:	50~52 %
ATM Pressure:	100.9~101.0 kPa

The testing was performed by Zero Yan and Alan He on 2019-10-30.

EUT operation mode: Transmitting

30 MHz – 1 GHz: *(worst case)*



Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna height (cm)	Antenna Polarity	Turntable position (degree)	Correction Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
33.050500	24.72	102.0	V	342.0	-9.4	40.00	15.28
50.057250	27.86	102.0	V	346.0	-19.6	40.00	12.14
54.334250	26.04	103.0	V	344.0	-19.9	40.00	13.96
233.473625	33.10	130.0	H	248.0	-14.0	46.00	12.90
836.106250	27.98	362.0	V	264.0	5.5	46.00	18.02
949.352250	29.28	142.0	H	178.0	9.9	46.00	16.72

1000MHz ~ 40 GHz:

5150-5250 MHz:

Frequency (MHz)	Receiver		Turntable	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m) @1m	FCC Part 15.407/205/209	
	Reading (dBμV) @1m	PK/QP/Ave.	Degree	Height (m)	Polar (H / V)			Limit (dBμV/m)	Margin (dB)
802.11a									
5180MHz									
5143.96	31.78	PK	143	2.4	H	38.36	70.14	83.5	13.36
5143.96	16.44	Ave.	143	2.4	H	38.36	54.80	63.5	8.70
5362.18	30.76	PK	23	1.5	H	39.09	69.85	83.5	13.65
5362.18	16.56	Ave.	23	1.5	H	39.09	55.65	63.5	7.85
10360.00	48.94	PK	258	1.8	H	17.42	66.36	77.7	11.34
15540.00	56.68	PK	336	2.3	H	17.54	74.22	83.5	9.28
15540.00	41.26	Ave.	336	2.3	H	17.54	58.80	63.5	4.70
5200MHz									
10400.00	49.61	PK	296	2.2	H	17.52	67.13	77.7	10.57
15600.00	54.15	PK	156	1.9	H	18.68	72.83	83.5	10.67
15600.00	39.83	Ave.	156	1.9	H	18.68	58.51	63.5	4.99
5240 MHz									
5149.96	31.23	PK	139	1.4	H	38.36	69.59	83.5	13.91
5149.96	16.45	Ave.	139	1.4	H	38.36	54.81	63.5	8.69
5429.04	31.18	PK	27	2.2	H	39.19	70.37	83.5	13.13
5429.04	16.57	Ave.	27	2.2	H	39.19	55.76	63.5	7.74
10480.00	48.89	PK	217	2.1	H	17.25	66.14	77.7	11.56
15720.00	56.15	PK	266	1.9	H	17.86	74.01	83.5	9.49
15720.00	40.62	Ave.	266	1.9	H	17.86	58.48	63.5	5.02

Frequency (MHz)	Receiver		Turntable	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBµV/m) @1m	FCC Part 15.407/205/209	
	Reading (dBµV) @1m	PK/QP/Ave.	Degree	Height (m)	Polar (H / V)			Limit (dBµV/m)	Margin (dB)
802.11n20									
5180MHz									
5101.56	31.19	PK	239	1.4	H	38.26	69.45	83.5	14.05
5101.56	16.5	Ave.	239	1.4	H	38.26	54.76	63.5	8.74
5448.78	31.09	PK	102	2.5	H	39.29	70.38	83.5	13.12
5448.78	16.57	Ave.	102	2.5	H	39.29	55.86	63.5	7.64
10360.00	51.33	PK	57	1.6	H	17.42	68.75	77.7	8.95
15540.00	59.47	PK	2	1.6	H	17.54	77.01	83.5	6.49
15540.00	40.67	Ave.	2	1.6	H	17.54	58.21	63.5	5.29
5200MHz									
10400.00	51.00	PK	272	1.9	H	17.52	68.52	77.7	9.18
15600.00	53.31	PK	236	1.7	H	18.68	71.99	83.5	11.51
15600.00	34.76	Ave.	236	1.7	H	18.68	53.44	63.5	10.06
5240 MHz									
5142.73	31.47	PK	17	1.5	H	38.36	69.83	83.5	13.67
5142.73	16.43	Ave.	17	1.5	H	38.36	54.79	63.5	8.71
5441.45	31.07	PK	344	2.5	H	39.29	70.36	83.5	13.14
5441.45	16.58	Ave.	344	2.5	H	39.29	55.87	63.5	7.63
10480.00	50.47	PK	348	1.5	H	17.25	67.72	77.7	9.98
15720.00	56.85	PK	278	1.7	H	17.86	74.71	83.5	8.79
15720.00	39.87	Ave.	278	1.7	H	17.86	57.73	63.5	5.77

Frequency (MHz)	Receiver		Turntable	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBµV/m) @1m	FCC Part 15.407/205/209	
	Reading (dBµV) @1m	PK/QP/Ave.	Degree	Height (m)	Polar (H / V)			Limit (dBµV/m)	Margin (dB)
802.11n40									
5190MHz									
5120.44	30.63	PK	300	1.0	H	38.36	68.99	83.5	14.51
5120.44	16.02	Ave.	300	1.0	H	38.36	54.38	63.5	9.12
5449.70	31.57	PK	333	1.9	H	39.29	70.86	83.5	12.64
5449.70	16.48	Ave.	333	1.9	H	39.29	55.77	63.5	7.73
10380.00	47.34	PK	246	2.3	H	17.42	64.76	77.7	12.94
15570.00	53.46	PK	114	1.5	H	18.58	72.04	83.5	11.46
15570.00	37.22	Ave.	114	1.5	H	18.58	55.80	63.5	7.70
5230 MHz									
5125.86	31.55	PK	320	1.2	H	38.36	69.91	83.5	13.59
5125.86	16.42	Ave.	320	1.2	H	38.36	54.78	63.5	8.72
5378.10	30.87	PK	17	1.8	H	39.09	69.96	83.5	13.54
5378.10	15.94	Ave.	17	1.8	H	39.09	55.03	63.5	8.47
10460.00	45.35	PK	201	2.3	H	17.15	62.50	77.7	15.20
15690.00	50.53	PK	246	1.6	H	17.76	68.29	83.5	15.21
15690.00	35.38	Ave.	246	1.6	H	17.76	53.14	63.5	10.36

Frequency (MHz)	Receiver		Turntable	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBµV/m) @1m	FCC Part 15.407/205/209	
	Reading (dBµV) @1m	PK/QP/Ave.	Degree	Height (m)	Polar (H / V)			Limit (dBµV/m)	Margin (dB)
802.11ac20									
5180MHz									
5114.79	30.97	PK	88	2.0	H	38.36	69.33	83.5	14.17
5114.79	15.89	Ave.	88	2.0	H	38.36	54.25	63.5	9.25
5449.25	31.02	PK	335	2.4	H	39.29	70.31	83.5	13.19
5449.25	16.35	Ave.	335	2.4	H	39.29	55.64	63.5	7.86
10360.00	50.90	PK	283	2.2	H	17.42	68.32	77.7	9.38
15540.00	57.93	PK	267	2.3	H	17.54	75.47	83.5	8.03
15540.00	40.30	Ave.	267	2.3	H	17.54	57.84	63.5	5.66
5200MHz									
10400.00	50.83	PK	310	1.3	H	17.52	68.35	77.7	9.35
15600.00	53.31	PK	236	1.7	H	18.68	71.99	83.5	11.51
15600.00	34.76	Ave.	236	1.7	H	18.68	53.44	63.5	10.06
5240 MHz									
5147.35	31.21	PK	301	1.6	H	38.36	69.57	83.5	13.93
5147.35	16.44	Ave.	301	1.6	H	38.36	54.80	63.5	8.70
5398.63	31.09	PK	2	2.4	H	39.19	70.28	83.5	13.22
5398.63	16.25	Ave.	2	2.4	H	39.19	55.44	63.5	8.06
10480.00	50.48	PK	121	1.2	H	17.25	67.73	77.7	9.97
15720.00	56.32	PK	239	1.4	H	17.86	74.18	83.5	9.32
15720.00	38.33	Ave.	239	1.4	H	17.86	56.19	63.5	7.31

Frequency (MHz)	Receiver		Turntable	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBµV/m) @1m	FCC Part 15.407/205/209	
	Reading (dBµV) @1m	PK/QP/Ave.	Degree	Height (m)	Polar (H / V)			Limit (dBµV/m)	Margin (dB)
802.11ac40									
5190MHz									
5119.21	30.92	PK	163	2.1	H	38.36	69.28	83.5	14.22
5119.21	16.11	Ave.	163	2.1	H	38.36	54.47	63.5	9.03
5416.78	31.06	PK	215	1.9	H	39.19	70.25	83.5	13.25
5416.78	16.23	Ave.	215	1.9	H	39.19	55.42	63.5	8.08
10380.00	46.75	PK	74	2.3	H	17.42	64.17	77.7	13.53
15570.00	51.47	PK	131	2.0	H	18.58	70.05	83.5	13.45
15570.00	37.28	Ave.	131	2.0	H	18.58	55.86	63.5	7.64
5230 MHz									
5147.57	31.98	PK	0	1.8	H	38.36	70.34	83.5	13.16
5147.57	16.89	Ave.	0	1.8	H	38.36	55.25	63.5	8.25
5359.79	31.48	PK	217	2.0	H	39.09	70.57	83.5	12.93
5359.79	16.65	Ave.	217	2.0	H	39.09	55.74	63.5	7.76
10460.00	45.37	PK	223	2.5	H	17.15	62.52	77.7	15.18
15690.00	51.30	PK	128	1.5	H	17.76	69.06	83.5	14.44
15690.00	37.41	Ave.	128	1.5	H	17.76	55.17	63.5	8.33

5250-5350 MHz & 5470-5725 MHz:

Frequency (MHz)	Receiver		Turntable	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m) @1m	FCC Part 15.407/205/209	
	Reading (dBμV) @1m	PK/QP/Ave.	Degree	Height (m)	Polar (H / V)			Limit (dBμV/m)	Margin (dB)
802.11a									
5250 MHz ~ 5350 MHz									
5260 MHz									
5128.47	31.67	PK	1	1.5	H	38.36	70.03	83.5	13.47
5128.47	16.57	Ave.	1	1.5	H	38.36	54.93	63.5	8.57
5448.78	31.24	PK	42	1.3	H	39.29	70.53	83.5	12.97
5448.78	16.30	Ave.	42	1.3	H	39.29	55.59	63.5	7.91
10520.00	46.31	PK	145	2.2	H	17.25	63.56	77.7	14.14
15780.00	53.63	PK	356	1.2	H	17.36	70.99	83.5	12.51
15780.00	37.06	Ave.	356	1.2	H	17.36	54.42	63.5	9.08
5280 MHz									
10560.00	46.84	PK	56	1.6	H	17.91	64.75	77.7	12.95
15840.00	52.76	PK	105	1.9	H	17.46	70.22	83.5	13.28
15840.00	37.50	Ave.	105	1.9	H	17.46	54.96	63.5	8.54
5320 MHZ									
5129.52	31.47	PK	36	2.1	H	38.36	69.83	83.5	13.67
5129.52	16.23	Ave.	36	2.1	H	38.36	54.59	63.5	8.91
5395.77	30.49	PK	73	2.4	H	39.19	69.68	83.5	13.82
5395.77	15.91	Ave.	73	2.4	H	39.19	55.10	63.5	8.40
10640.00	47.26	PK	334	1.8	H	18.01	65.27	83.5	18.23
10640.00	32.11	Ave.	334	1.8	H	18.01	50.12	63.5	13.38
15960.00	50.93	PK	39	2.1	H	16.97	67.90	83.5	15.60
15960.00	35.31	Ave.	39	2.1	H	16.97	52.28	63.5	11.22
5470 MHz ~ 5725 MHz									
5500 MHz									
5435.53	31.17	PK	38	2.5	H	39.29	70.46	83.5	13.04
5435.53	16.9	Ave.	38	2.5	H	39.29	56.19	63.5	7.31
5755.66	32.87	PK	86	1.6	H	39.61	72.48	83.5	11.02
5755.66	18.27	Ave.	86	1.6	H	39.61	57.88	63.5	5.62
11000.00	44.52	PK	249	2.5	H	17.66	62.18	83.5	21.32
11000.00	29.91	Ave.	249	2.5	H	17.66	47.57	63.5	15.93
16500.00	52.43	PK	24	1.7	H	19.82	72.25	77.7	5.45
5600MHz									
11200.00	43.07	PK	178	2.4	H	17.39	60.46	83.5	23.04
11200.00	28.44	Ave.	178	2.4	H	17.39	45.83	63.5	17.67
16800.00	45.55	PK	357	2.3	H	20.52	66.07	77.7	11.63
5700 MHZ									
5423.89	31.49	PK	75	1.8	H	39.19	70.68	83.5	12.82
5423.89	16.68	Ave.	75	1.8	H	39.19	55.87	63.5	7.63
5797.56	33.12	PK	276	1.3	H	39.61	72.73	83.5	10.77
5797.56	18.30	Ave.	276	1.3	H	39.61	57.91	63.5	5.59
11400.00	44.03	PK	334	1.0	H	17.73	61.76	83.5	21.74
11400.00	29.65	Ave.	334	1.0	H	17.73	47.38	63.5	16.12
17100.00	43.35	PK	144	2.1	H	20.72	64.07	77.7	13.63

Frequency (MHz)	Receiver		Turntable	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBµV/m) @1m	FCC Part 15.407/205/209	
	Reading (dBµV) @1m	PK/QP/Ave.	Degree	Height (m)	Polar (H / V)			Limit (dBµV/m)	Margin (dB)
802.11n20									
5250 MHz ~ 5350 MHz									
5260MHz									
5122.24	31.74	PK	239	1.7	H	38.36	70.10	83.5	13.40
5122.24	16.58	Ave.	239	1.7	H	38.36	54.94	63.5	8.56
5395.61	30.52	PK	7	1.7	H	39.19	69.71	83.5	13.79
5395.61	15.81	Ave.	7	1.7	H	39.19	55.00	63.5	8.50
10520.00	48.33	PK	352	2.5	H	17.25	65.58	77.7	12.12
15780.00	54.89	PK	239	1.2	H	17.36	72.25	83.5	11.25
15780.00	37.36	Ave.	239	1.2	H	17.36	54.72	63.5	8.78
5280 MHz									
10560.00	48.11	PK	130	1.6	H	17.91	66.02	77.7	11.68
15840.00	54.25	PK	74	2.1	H	17.46	71.71	83.5	11.79
15840.00	36.25	Ave.	74	2.1	H	17.46	53.71	63.5	9.79
5320 MHZ									
5118.12	31.31	PK	205	1.7	H	38.36	69.67	83.5	13.83
5118.12	16.38	Ave.	205	1.7	H	38.36	54.74	63.5	8.76
5408.34	31.02	PK	285	1.4	H	39.19	70.21	83.5	13.29
5408.34	16.13	Ave.	285	1.4	H	39.19	55.32	63.5	8.18
10640.00	46.30	PK	222	2.5	H	18.01	64.31	83.5	19.19
10640.00	31.79	Ave.	222	2.5	H	18.01	49.80	63.5	13.70
15960.00	53.65	PK	77	1.4	H	16.97	70.62	83.5	12.88
15960.00	36.66	Ave.	77	1.4	H	16.97	53.63	63.5	9.87
5470 MHz ~ 5725 MHz									
5500 MHz									
5457.36	31.65	PK	53	2.4	H	39.37	71.02	83.5	12.48
5457.36	17.11	Ave.	53	2.4	H	39.37	56.48	63.5	7.02
5780.84	33.05	PK	52	1.3	H	39.61	72.66	83.5	10.84
5780.84	18.27	Ave.	52	1.3	H	39.61	57.88	63.5	5.62
11000.00	43.98	PK	127	2.2	H	17.66	61.64	83.5	21.86
11000.00	28.00	Ave.	127	2.2	H	17.66	45.66	63.5	17.84
16500.00	52.14	PK	44	1.7	H	19.82	71.96	77.7	5.74
5600MHz									
11200.00	43.57	PK	224	1.3	H	17.39	60.96	83.5	22.54
11200.00	27.79	Ave.	224	1.3	H	17.39	45.18	63.5	18.32
16800.00	50.02	PK	47	1.3	H	20.52	70.54	77.7	7.16
5700 MHZ									
5427.71	31.17	PK	164	1.0	H	39.19	70.36	83.5	13.14
5427.71	16.66	Ave.	164	1.0	H	39.19	55.85	63.5	7.65
5771.62	33.18	PK	287	1.2	H	39.61	72.79	83.5	10.71
5771.62	18.28	Ave.	287	1.2	H	39.61	57.89	63.5	5.61
11400.00	45.98	PK	295	1.5	H	17.73	63.71	83.5	19.79
11400.00	30.24	Ave.	295	1.5	H	17.73	47.97	63.5	15.53
17100.00	45.04	PK	80	1.3	H	20.72	65.76	77.7	11.94

Frequency (MHz)	Receiver		Turntable	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBµV/m) @1m	FCC Part 15.407/205/209	
	Reading (dBµV) @1m	PK/QP/Ave.	Degree	Height (m)	Polar (H / V)			Limit (dBµV/m)	Margin (dB)
802.11ac20									
5250 MHz ~ 5350 MHz									
5260MHz									
4938.85	31.95	PK	334	1.7	H	37.92	69.87	83.5	13.63
4938.85	16.78	Ave.	334	1.7	H	37.92	54.70	63.5	8.80
5426.65	31.35	PK	325	1.8	H	39.19	70.54	83.5	12.96
5426.65	16.37	Ave.	325	1.8	H	39.19	55.56	63.5	7.94
10520.00	47.77	PK	68	2.1	H	17.25	65.02	77.7	12.68
15780.00	56.19	PK	285	1.2	H	17.36	73.55	83.5	9.95
15780.00	38.08	Ave.	285	1.2	H	17.36	55.44	63.5	8.06
5280 MHz									
10560.00	47.26	PK	146	1.9	H	17.91	65.17	77.7	12.53
15840.00	55.72	PK	131	1.7	H	17.46	73.18	83.5	10.32
15840.00	38.60	Ave.	181	2.1	H	17.46	56.06	63.5	7.44
5320 MHZ									
5107.56	30.96	PK	334	2.2	H	38.26	69.22	83.5	14.28
5107.56	15.93	Ave.	334	2.2	H	38.26	54.19	63.5	9.31
5414.48	30.46	PK	328	2.0	H	39.19	69.65	83.5	13.85
5414.48	15.68	Ave.	328	2.0	H	39.19	54.87	63.5	8.63
10640.00	46.12	PK	296	2.1	H	18.01	64.13	83.5	19.37
10640.00	31.09	Ave.	296	2.1	H	18.01	49.10	63.5	14.40
15960.00	56.21	PK	23	1.6	H	16.97	73.18	83.5	10.32
15960.00	38.32	Ave.	23	1.6	H	16.97	55.29	63.5	8.21
5470 MHz ~ 5725 MHz									
5500 MHz									
5404.27	31.89	PK	265	1.7	H	39.19	71.08	83.5	12.42
5404.27	17.13	Ave.	265	1.7	H	39.19	56.32	63.5	7.18
5785.08	33.72	PK	30	1.1	H	39.61	73.33	83.5	10.17
5785.08	18.28	Ave.	30	1.1	H	39.61	57.89	63.5	5.61
11000.00	44.06	PK	239	1.2	H	17.66	61.72	83.5	21.78
11000.00	29.26	Ave.	239	1.2	H	17.66	46.92	63.5	16.58
16500.00	53.33	PK	308	1.2	H	19.82	73.15	77.7	4.55
5600MHz									
11200.00	44.53	PK	130	1.9	H	17.39	61.92	83.5	21.58
11200.00	29.41	Ave.	130	1.9	H	17.39	46.80	63.5	16.70
16800.00	49.54	PK	7	1.4	H	20.52	70.06	77.7	7.64
5700 MHZ									
5436.57	31.13	PK	292	1.6	H	39.29	70.42	83.5	13.08
5436.57	16.68	Ave.	292	1.6	H	39.29	55.97	63.5	7.53
5799.19	33.45	PK	148	1.2	H	39.61	73.06	83.5	10.44
5799.19	18.29	Ave.	148	1.2	H	39.61	57.90	63.5	5.60
11400.00	44.99	PK	263	1.3	H	17.73	62.72	83.5	20.78
11400.00	30.00	Ave.	263	1.3	H	17.73	47.73	63.5	15.77
17100.00	48.29	PK	91	1.3	H	20.72	69.01	77.7	8.69

Frequency (MHz)	Receiver		Turntable	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m) @1m	FCC Part 15.407/205/209	
	Reading (dBμV) @1m	PK/QP/Ave.	Degree	Height (m)	Polar (H / V)			Limit (dBμV/m)	Margin (dB)
802.11n40									
5270 MHz ~ 5350 MHz									
5260MHz									
5149.81	31.46	PK	160	2.0	H	38.36	69.82	83.5	13.68
5149.81	16.25	Ave.	160	2.0	H	38.36	54.61	63.5	8.89
5384.78	31.61	PK	88	1.7	H	39.09	70.70	83.5	12.80
5384.78	16.04	Ave.	88	1.7	H	39.09	55.13	63.5	8.37
10540.00	44.59	PK	181	1.4	H	17.25	61.84	77.7	15.86
15810.00	49.74	PK	107	1.7	H	17.46	67.20	83.5	16.30
15810.00	33.52	Ave.	107	1.7	H	17.46	50.98	63.5	12.52
5310 MHz									
5134.69	31.29	PK	66	1.6	H	38.36	69.65	83.5	13.85
5134.69	16.13	Ave.	66	1.6	H	38.36	54.49	63.5	9.01
5405.48	30.39	PK	298	1.6	H	39.19	69.58	83.5	13.92
5405.48	15.55	Ave.	298	1.6	H	39.19	54.74	63.5	8.76
10620.00	44.65	PK	173	2.4	H	18.01	62.66	83.5	20.84
10620.00	30.72	Ave.	173	2.4	H	18.01	48.73	63.5	14.77
15930.00	49.36	PK	268	1.5	H	19.37	68.73	83.5	14.77
15930.00	33.19	Ave.	268	1.5	H	19.37	52.56	63.5	10.94
5470 MHz ~ 5725 MHz									
5510 MHz									
5459.68	34.57	PK	181	2	H	39.37	73.94	83.5	9.56
5459.68	19.3	Ave.	181	2	H	39.37	58.67	63.5	4.83
5766.73	33.15	PK	273	1.7	H	39.61	72.76	83.5	10.74
5766.73	18.29	Ave.	273	1.7	H	39.61	57.90	63.5	5.60
11020.00	42.78	PK	188	1.2	H	17.66	60.44	83.5	23.06
11020.00	28.00	Ave.	188	1.2	H	17.66	45.66	63.5	17.84
16530.00	50.02	PK	263	2.3	H	19.92	69.94	77.7	7.76
5590MHz									
11180.00	43.29	PK	144	1.9	H	17.39	60.68	83.5	22.82
11180.00	27.29	Ave.	144	1.9	H	17.39	44.68	63.5	18.82
16770.00	49.49	PK	307	2.3	H	20.32	69.81	77.7	7.89
5670 MHZ									
5400.80	32.08	PK	160	1.2	H	39.19	71.27	83.5	12.23
5400.80	16.6	Ave.	160	1.2	H	39.19	55.79	63.5	7.71
5760.98	32.96	PK	341	1.1	H	39.61	72.57	83.5	10.93
5760.98	18.22	Ave.	341	1.1	H	39.61	57.83	63.5	5.67
11340.00	43.12	PK	280	1.4	H	17.43	60.55	83.5	22.95
11340.00	28.90	Ave.	280	1.4	H	17.43	46.33	63.5	17.17
17010.00	45.26	PK	32	1.8	H	18.81	64.07	77.7	13.63

Frequency (MHz)	Receiver		Turntable	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBµV/m) @1m	FCC Part 15.407/205/209	
	Reading (dBµV) @1m	PK/QP/Ave.	Degree	Height (m)	Polar (H / V)			Limit (dBµV/m)	Margin (dB)
802.11ac40									
5250 MHz ~ 5350 MHz									
5270MHz									
5107.64	31.26	PK	255	1.2	H	38.26	69.52	83.5	13.98
5107.64	16.63	Ave.	255	1.2	H	38.26	54.89	63.5	8.61
5378.90	31.17	PK	206	2.0	H	39.09	70.26	83.5	13.24
5378.90	16.20	Ave.	206	2.0	H	39.09	55.29	63.5	8.21
10540.00	45.67	PK	178	1.4	H	17.25	62.92	77.7	14.78
15810.00	50.77	PK	309	1.4	H	17.46	68.23	83.5	15.27
15810.00	36.82	Ave.	309	1.4	H	17.46	54.28	63.5	9.22
5310 MHz									
5126.30	30.74	PK	350	1.2	H	38.36	69.10	83.5	14.40
5126.30	16.19	Ave.	350	1.2	H	38.36	54.55	63.5	8.95
5350.24	31.38	PK	100	2.5	H	39.09	70.47	83.5	13.03
5350.24	16.61	Ave.	100	2.5	H	39.09	55.70	63.5	7.80
10620.00	44.80	PK	135	1.7	H	18.01	62.81	83.5	20.69
10620.00	30.21	Ave.	135	1.7	H	18.01	48.22	63.5	15.28
15930.00	48.32	PK	30	1.1	H	19.37	67.69	83.5	15.81
15930.00	35.26	Ave.	30	1.1	H	19.37	54.63	63.5	8.87
5470 MHz ~ 5725 MHz									
5510 MHz									
5458.91	35.12	PK	24	1.1	H	39.37	74.49	83.5	9.01
5458.91	20.06	Ave.	24	1.1	H	39.37	59.43	63.5	4.07
5793.54	33.91	PK	252	1.6	H	39.61	73.52	83.5	9.98
5793.54	18.19	Ave.	252	1.6	H	39.61	57.80	63.5	5.70
11020.00	42.16	PK	181	2.3	H	17.66	59.82	83.5	23.68
11020.00	26.89	Ave.	181	2.3	H	17.66	44.55	63.5	18.95
16530.00	49.88	PK	261	2.2	H	19.92	69.80	77.7	7.90
5590MHz									
11180.00	41.67	PK	317	2.5	H	17.39	59.06	83.5	24.44
11180.00	27.25	Ave.	317	2.5	H	17.39	44.64	63.5	18.86
16770.00	49.95	PK	325	1.5	H	20.32	70.27	77.7	7.43
5670 MHZ									
5407.40	30.66	PK	170	1.6	H	39.19	69.85	83.5	13.65
5407.40	16.58	Ave.	170	1.6	H	39.19	55.77	63.5	7.73
5784.21	32.76	PK	90	1.2	H	39.61	72.37	83.5	11.13
5784.21	18.20	Ave.	90	1.2	H	39.61	57.81	63.5	5.69
11340.00	42.03	PK	295	1.0	H	17.43	59.46	83.5	24.04
11340.00	28.07	Ave.	295	1.0	H	17.43	45.50	63.5	18.00
17010.00	44.38	PK	280	2.4	H	18.81	63.19	77.7	14.51

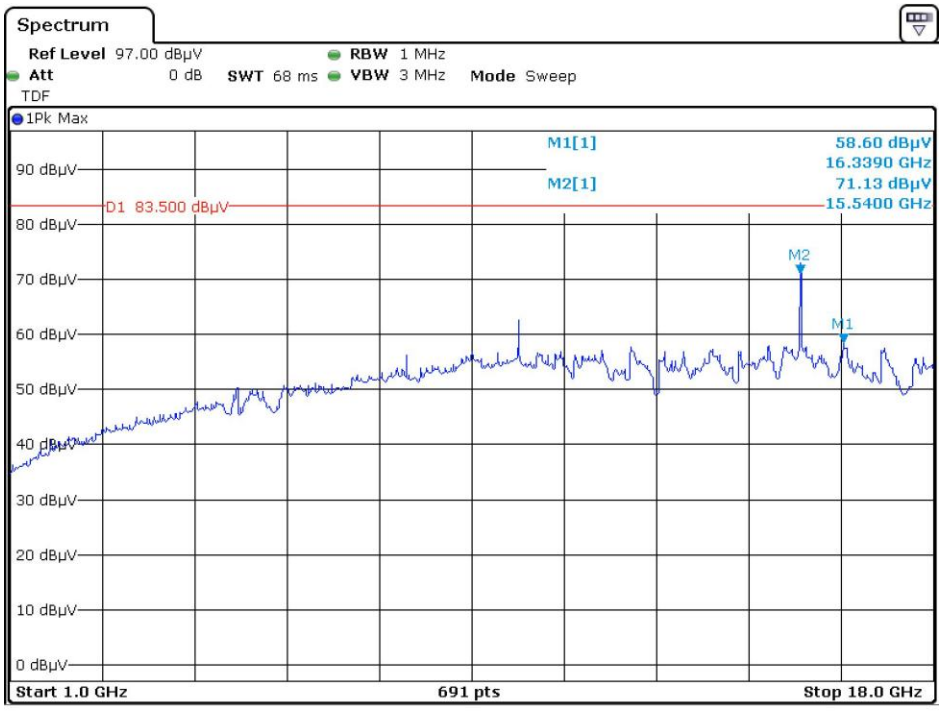
5725-5850 MHz:

Frequency (MHz)	Receiver		Turntable	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBµV/m) @1m	FCC Part 15.407/205/209	
	Reading (dBµV) @1m	PK/QP/Ave.	Degree	Height (m)	Polar (H / V)			Limit (dBµV/m)	Margin (dB)
802.11a									
5745 MHZ									
5680.00	32.17	PK	294	1.9	H	39.49	71.66	99.9	28.24
5716.10	32.94	PK	30	2.4	H	39.49	72.43	119.21	46.78
5724.50	35.55	PK	104	1.8	H	39.49	75.04	130.56	55.52
11490.00	42.14	PK	93	1.4	H	17.47	59.61	83.5	23.89
11490.00	27.06	Ave.	93	1.4	H	17.47	44.53	63.5	18.97
5785 MHz									
11570.00	43.73	PK	3	2.2	H	17.51	61.24	83.5	22.26
11570.00	29.29	Ave.	3	2.2	H	17.51	46.80	63.5	16.70
5825 MHZ									
5853.00	33.75	PK	46	1.1	H	39.87	73.62	124.86	51.24
5860.00	33.6	PK	35	2.4	H	39.87	73.47	118.9	45.43
5905.00	33.95	PK	300	1.7	H	39.87	73.82	92.5	18.68
11650.00	43.32	PK	298	1.4	H	16.18	59.50	83.5	24.00
11650.00	28.80	Ave.	298	1.4	H	16.18	44.98	63.5	18.52
802.11N20									
5745 MHZ									
5667.90	30.89	PK	50	1.6	H	39.49	70.38	90.95	20.57
5711.90	32.56	PK	0	1.1	H	39.49	72.05	118.03	45.98
5724.00	34.99	PK	96	2.3	H	39.49	74.48	129.42	54.94
11490.00	42.64	PK	331	1.4	H	17.47	60.11	83.5	23.39
11490.00	27.69	Ave.	331	1.4	H	17.47	45.16	63.5	18.34
5785 MHZ									
11570.00	42.76	PK	71	2.0	V	17.51	60.27	83.5	23.23
11570.00	27.83	Ave.	71	2.0	V	17.51	45.34	63.5	18.16
5825 MHZ									
5851.50	32.67	PK	239	1.9	H	42.76	75.43	128.28	52.85
5861.00	33.43	PK	324	1.3	H	42.76	76.19	118.62	42.43
5919.80	33.44	PK	63	2.4	H	42.86	76.30	81.55	5.25
11650.00	42.38	PK	196	1.7	H	16.18	58.86	83.5	24.94
11650.00	27.39	AV	196	1.7	H	16.18	43.57	63.5	19.93

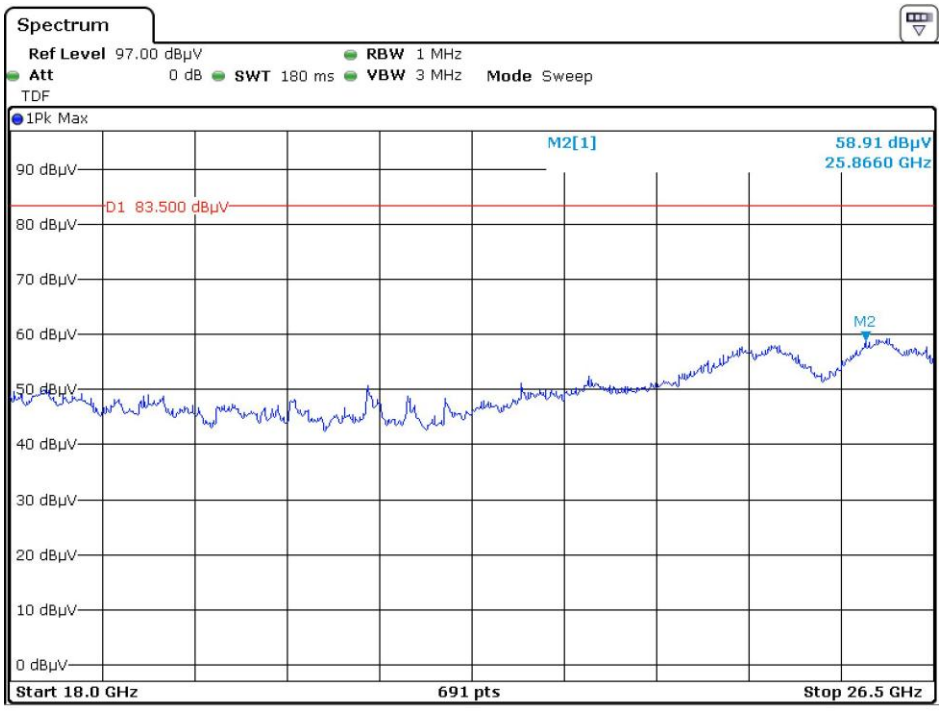
Frequency (MHz)	Receiver		Turntable	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBµV/m) @1m	FCC Part 15.407/205/209	
	Reading (dBµV) @1m	PK/QP/Ave.	Degree	Height (m)	Polar (H / V)			Limit (dBµV/m)	Margin (dB)
802.11AC20									
5745 MHZ									
5698	31.83	PK	235	1.6	H	39.49	71.32	113.22	41.90
5720	32.87	PK	174	2.2	H	39.49	72.36	120.3	47.94
5723.90	34.39	PK	302	1.7	H	39.49	73.88	129.19	55.31
11490.00	41.43	PK	267	2.0	H	17.47	58.90	83.5	24.60
11490.00	27.05	Ave.	267	2.0	H	17.47	44.52	63.5	18.98
5785 MHZ									
11570.00	43.26	PK	326	1.7	H	17.51	60.77	83.5	22.73
11570.00	27.21	Ave.	326	1.7	H	17.51	44.72	63.5	18.78
5825 MHZ									
5851.2	33.18	PK	50	1.6	H	39.87	73.05	128.96	55.91
5874.3	32.36	PK	22	1.3	H	39.87	72.23	114.9	42.67
5915.30	33.56	PK	146	1.4	H	39.87	73.43	84.88	11.45
11650.00	42.85	PK	43	1.4	H	16.18	59.03	83.5	24.47
11650.00	27.32	Ave.	43	1.4	H	16.18	43.50	63.5	20.00
802.11AC40									
5755 MHZ									
5679.9	31.59	PK	280	1.5	H	39.49	71.08	99.83	28.75
5718.2	34.09	PK	52	1.4	H	39.49	73.58	119.8	46.22
5724.9	35.24	PK	286	1.4	H	39.49	74.73	131.47	56.74
11510.00	41.99	PK	110	1.7	H	17.47	59.46	83.5	24.04
11510.00	27.41	Ave.	110	1.7	H	17.47	44.88	63.5	18.62
5795 MHZ									
5853.6	33.12	PK	222	2.0	H	39.87	72.99	123.49	50.50
5874	33.41	PK	201	1.7	H	39.87	73.28	114.98	41.70
5907.8	33.09	PK	32	2.2	H	39.87	72.96	90.43	17.47
11590.00	41.39	PK	299	1.7	H	17.51	58.90	83.5	24.60
11590.00	27.29	Ave.	299	1.7	H	17.51	44.80	63.5	18.70
802.11N40									
5755 MHZ									
5693.7	32.3	PK	88	2.4	H	39.49	71.79	110.04	38.25
5719.7	33.83	PK	357	1.3	H	39.49	73.32	120.22	46.90
5724.69	35.18	PK	174	1.6	H	39.49	74.67	130.99	56.32
11510.00	42.34	PK	130	2.5	H	17.47	59.81	83.5	23.69
11510.00	27.35	Ave.	130	2.5	H	17.47	44.82	63.5	18.68
5795 MHZ									
5851.24	32.95	PK	105	2.1	H	39.87	72.82	128.96	56.14
5851.24	33.57	PK	328	2.2	H	39.87	73.44	118.17	44.73
5903.8	33.24	PK	271	1.1	H	39.87	73.11	93.39	20.28
11590.00	42.08	PK	198	2.0	H	17.51	59.59	83.5	23.91
11590.00	27.31	Ave.	198	2.0	H	17.51	44.82	63.5	18.68

Note:
Corrected Amplitude = Corrected Factor + Reading
Corrected Factor=Antenna factor (RX) + Cable Loss – Amplifier Factor
Margin = Limit- Corr. Amplitude
All other spurious emissions are 20 dB below the limit or are on the system noise floor level.

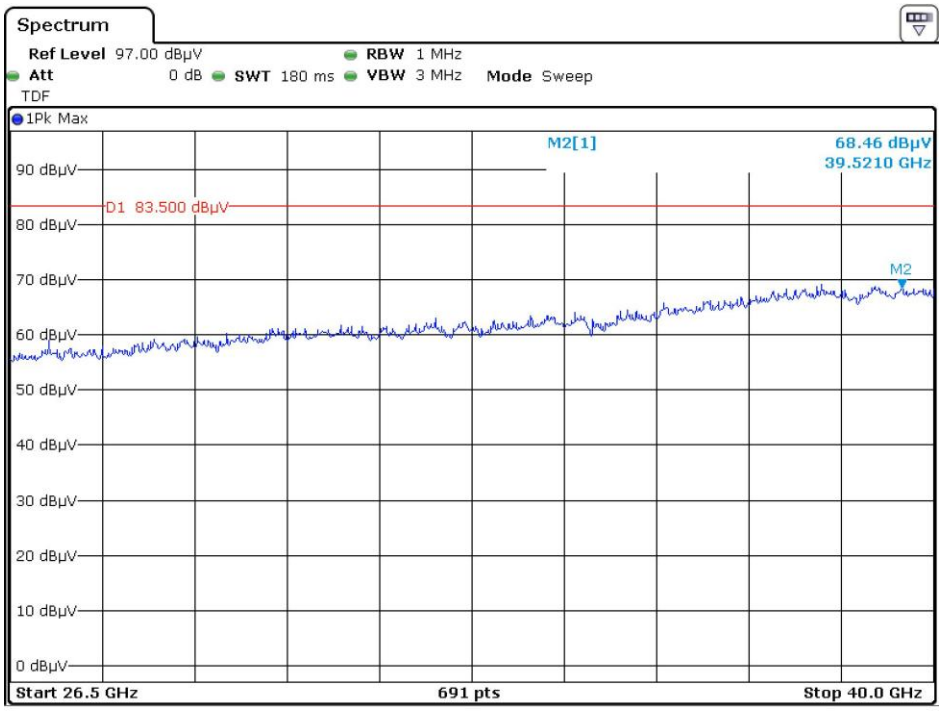
Pre-scan with 802.11a 5180MHz, for Peak
Horizontal



Date: 30.OCT.2019 08:52:08

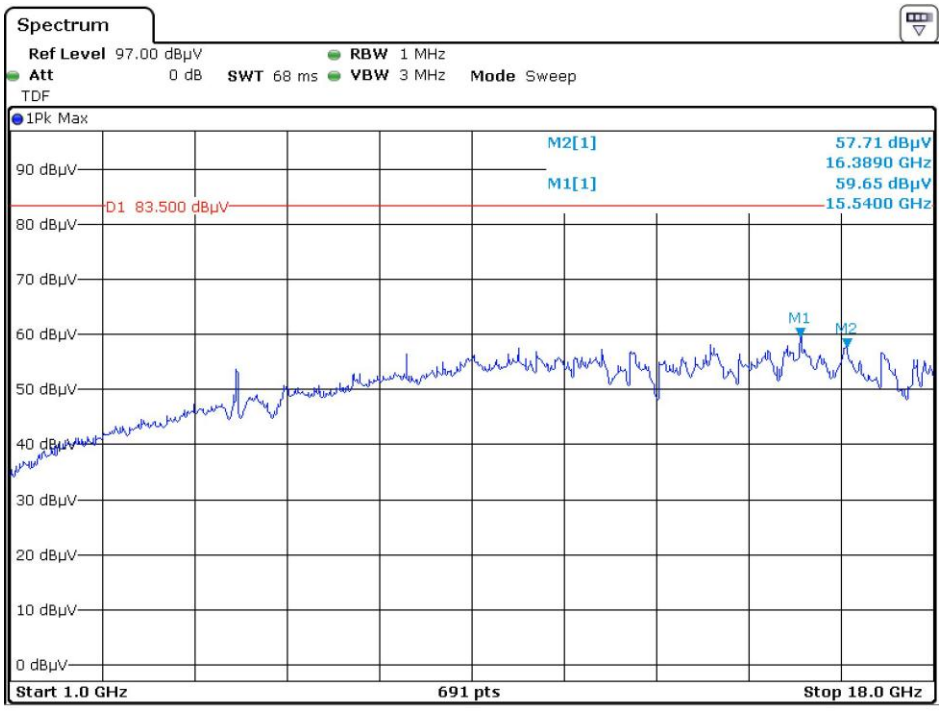


Date: 30.OCT.2019 10:05:24

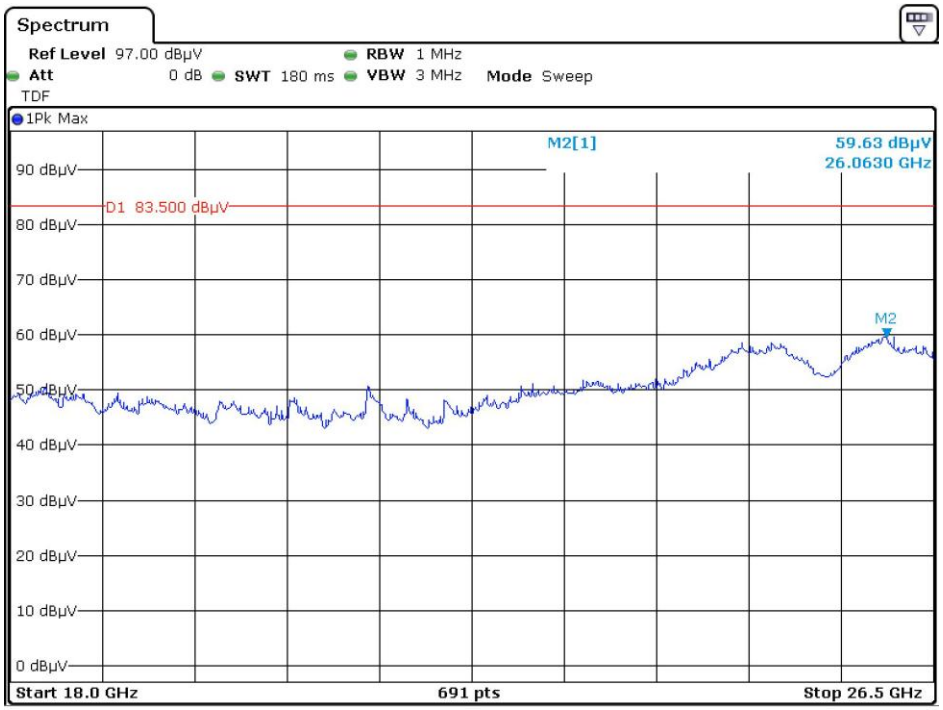


Date: 30.OCT.2019 10:56:29

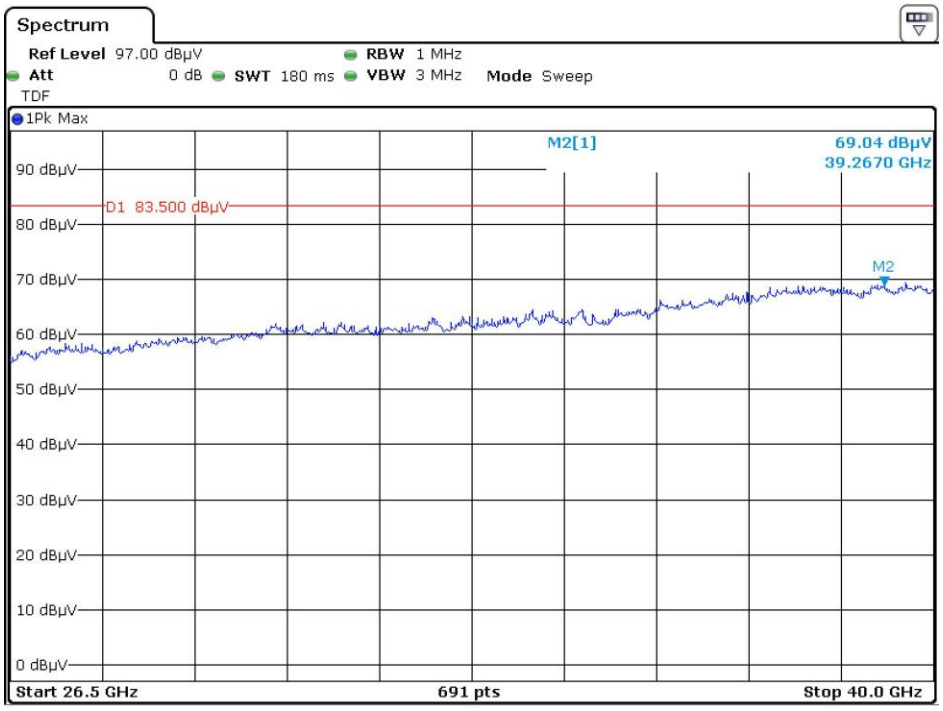
Vertical



Date: 30.OCT.2019 09:10:21

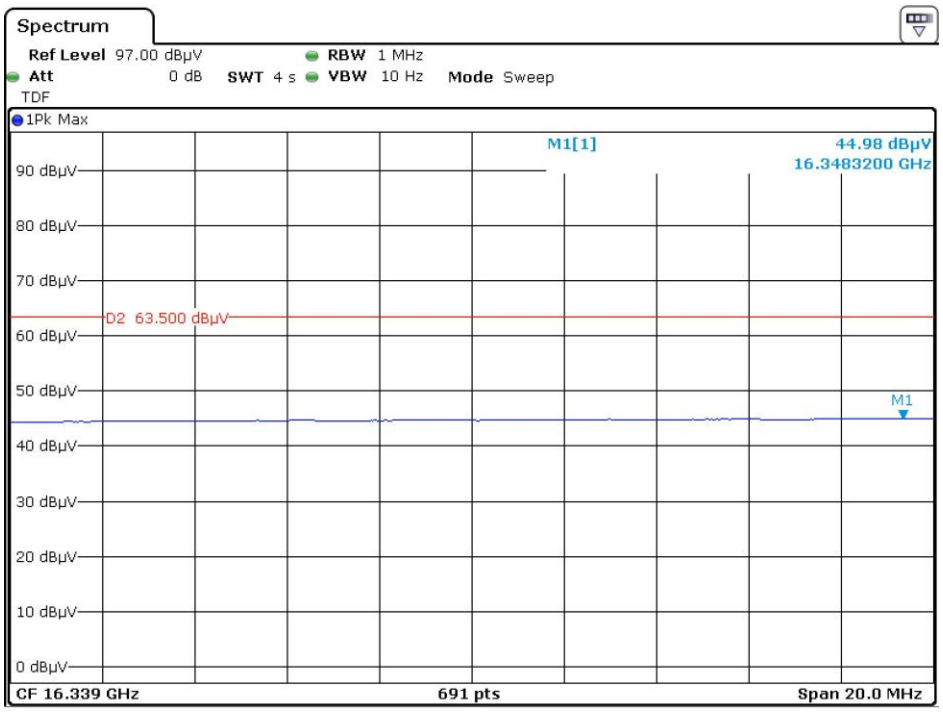


Date: 30.OCT.2019 09:53:47

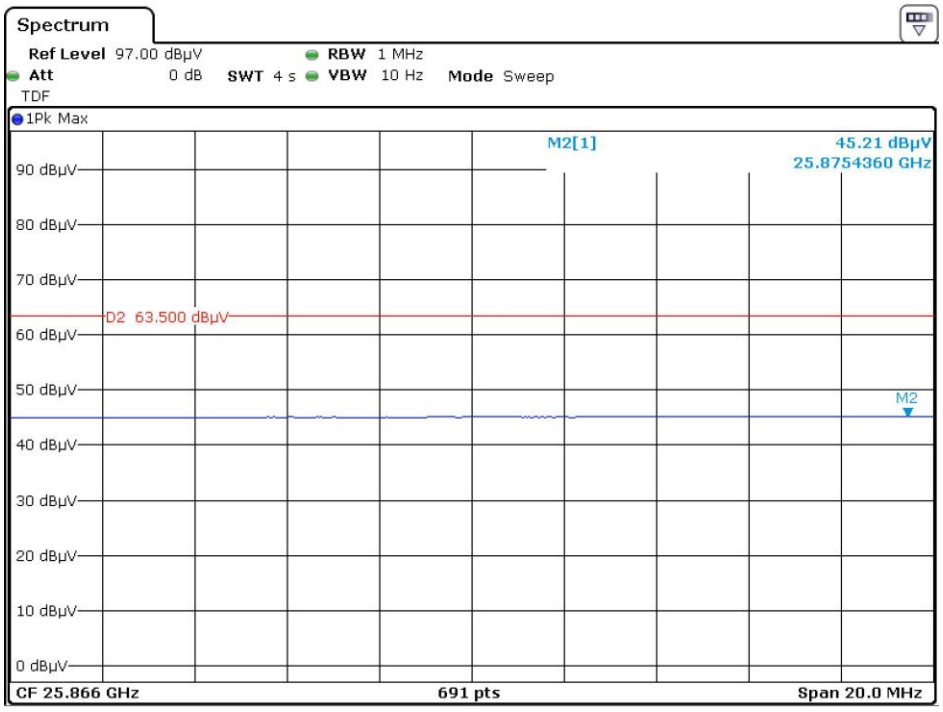


Date: 30.OCT.2019 10:44:24

Pre-scan with 802.11a 5180MHz, for **Average**
Horizontal



Date: 30.OCT.2019 08:58:25



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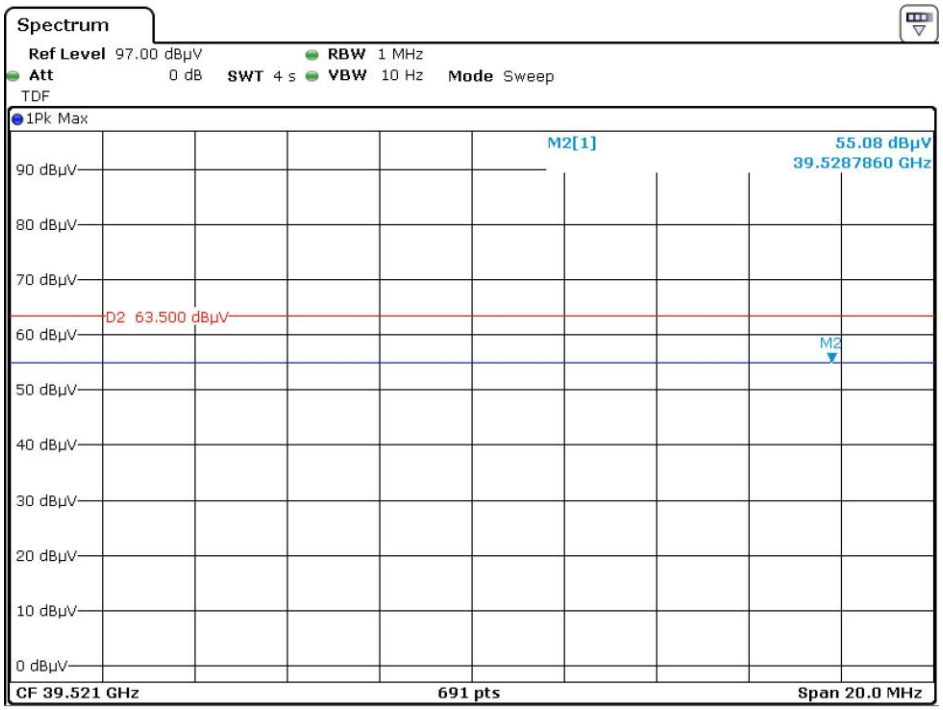
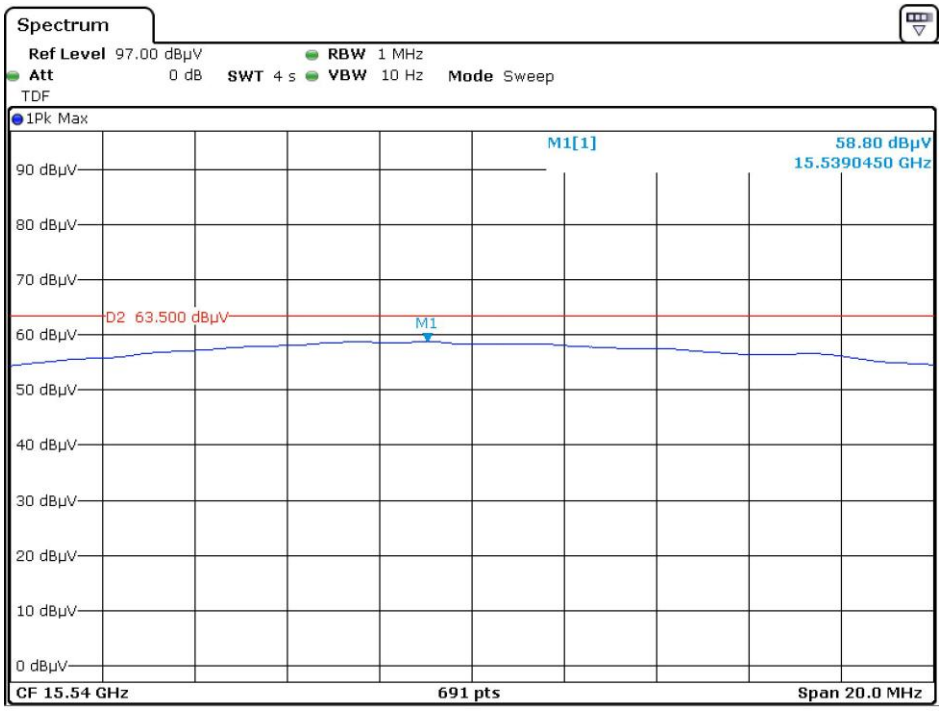
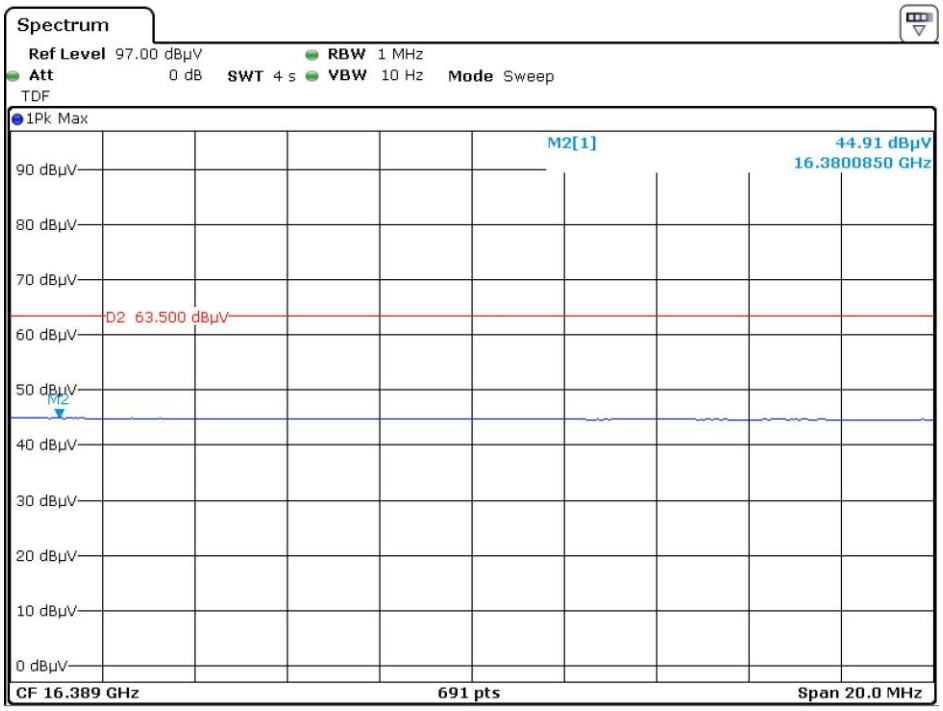


Date: 30.OCT.2019 11:02:05

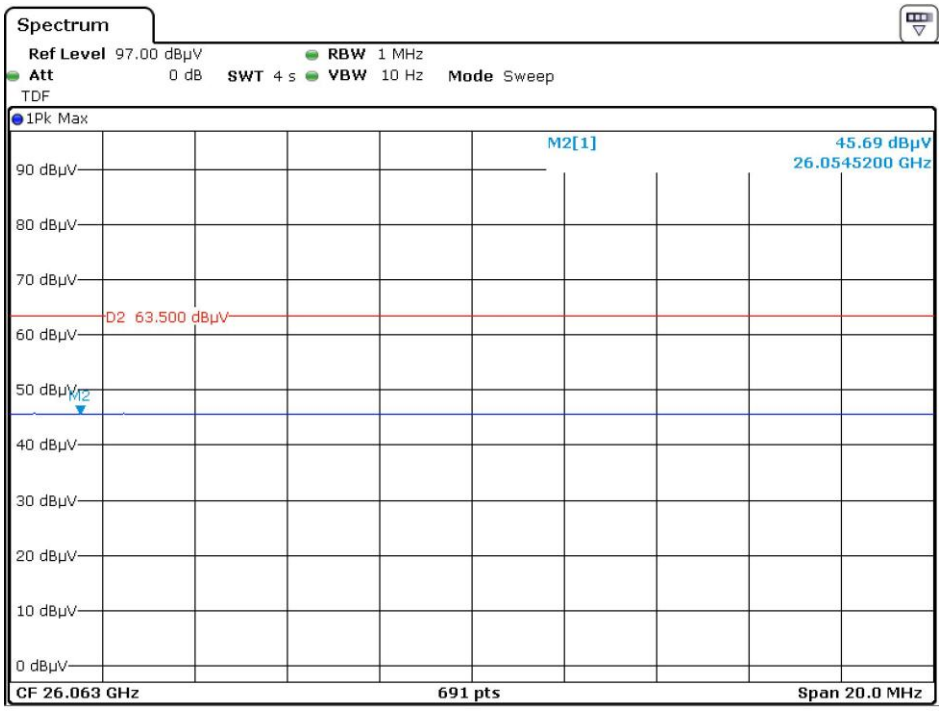


Date: 30.OCT.2019 09:04:22

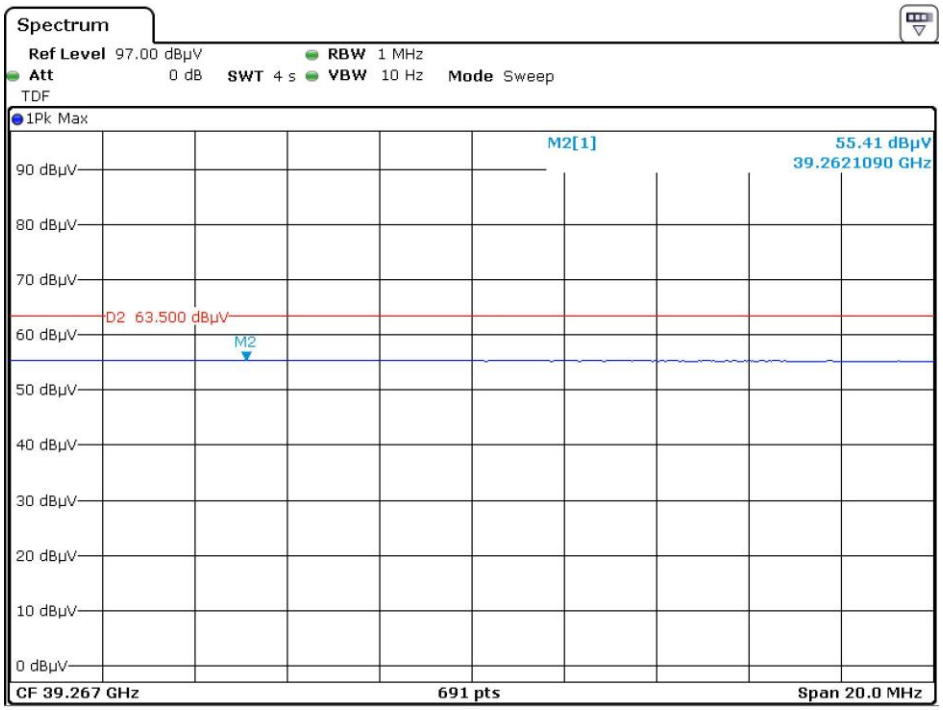
Vertical



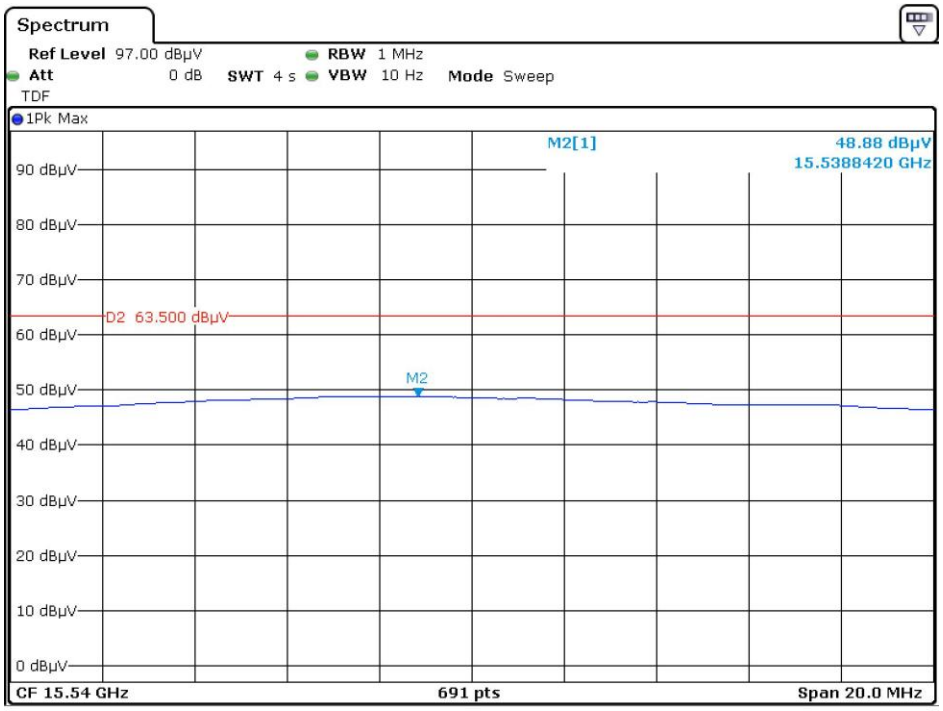
Date: 30.OCT.2019 09:16:00



Date: 30.OCT.2019 09:59:34



Date: 30.OCT.2019 10:50:56



Date: 30.OCT.2019 09:21:48

FCC §15.407(a) (1) – 26 dB & 6dB EMISSION BANDWIDTH

Applicable Standard

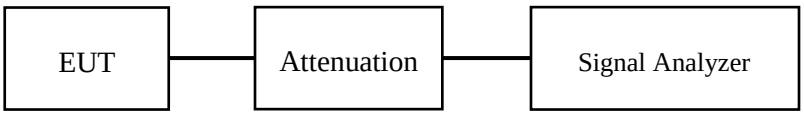
The maximum power spectral density is measured as a conducted emission by direct connection of a calibrated test instrument to the equipment under test. If the device cannot be connected directly, alternative techniques acceptable to the Commission may be used. Measurements in the 5.725-5.85 GHz band 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 5.715-5.85 GHz. The following procedure shall be used for measuring this bandwidth:
a) Set RBW = 100 kHz.
b) Set the video bandwidth (VBW) ≥ 3 × RBW.
c) Detector = Peak.
d) Trace mode = max hold.
e) Sweep = auto couple.
f) Allow the trace to stabilize.
g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.



Test Data

Environmental Conditions

Temperature:	25 ℃
Relative Humidity:	56 %
ATM Pressure:	101.0 kPa

The testing was performed by Gavin Guo on 2019-11-05 and 2019-11-07.

EUT operation mode: Transmitting

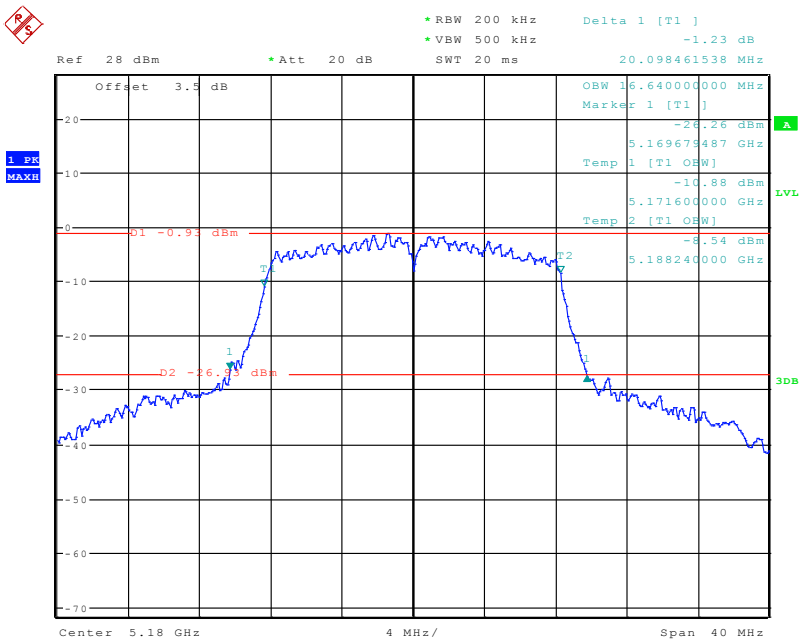
Test Result: Pass

please refer to the following tables and plots.

5150 MHz - 5250 MHz:

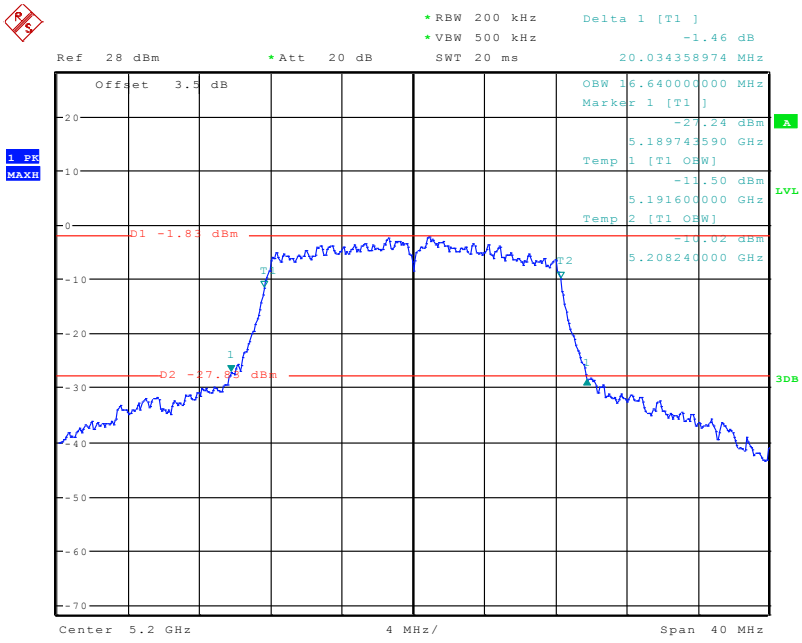
Frequency (MHz)	26dB bandwidth (MHz)	99% Bandwidth (MHz)	Remark
802.11a			No transmitted signal in the 99% bandwidth extends into the U-NII-2A band
5180	20.098	16.640	
5200	20.034	16.640	
5240	20.256	16.640	
802.11n20			
5180	20.167	17.760	
5200	22.962	17.760	
5240	20.064	17.760	
802.11n40			
5190	40.513	36.160	
5230	40.256	36.160	
802.11ac20			
5180	19.987	17.680	
5200	20.000	17.680	
5240	19.949	17.680	
802.11ac40			
5190	39.487	36.000	
5230	39.487	36.000	

802.11a mode, 26 dB Emissions & 99% Occupied Bandwidth, 5180 MHz



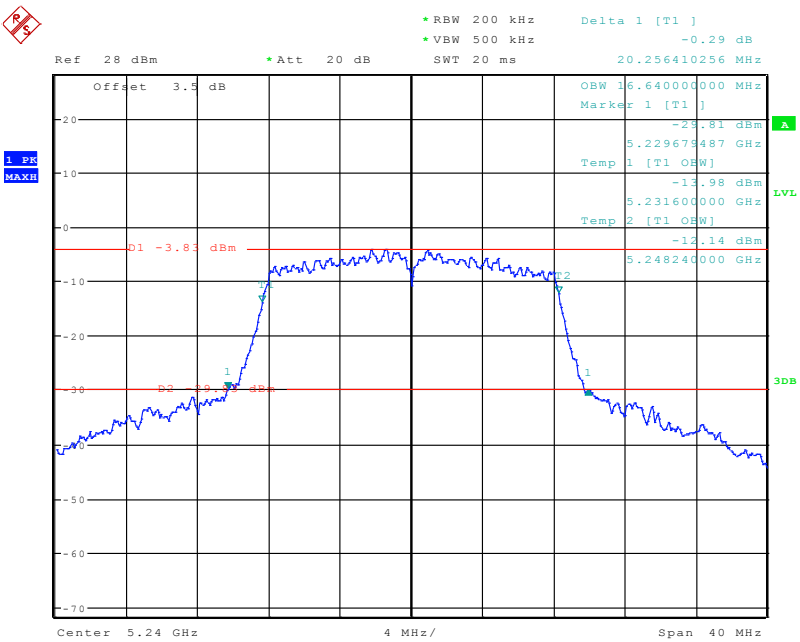
Date: 5.NOV.2019 15:49:50

802.11a mode, 26 dB Emissions & 99% Occupied Bandwidth, 5200 MHz



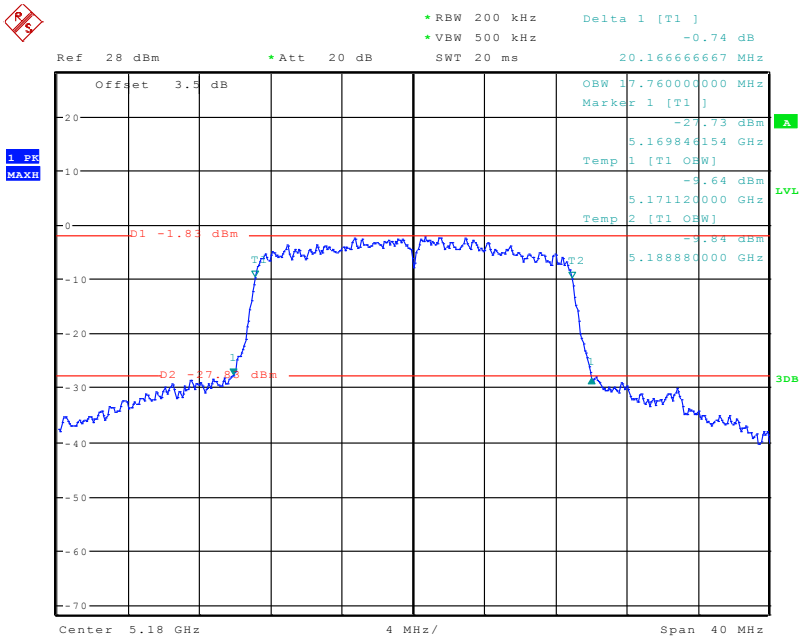
Date: 5.NOV.2019 15:53:11

802.11a mode, 26 dB Emissions & 99% Occupied Bandwidth, 5240 MHz



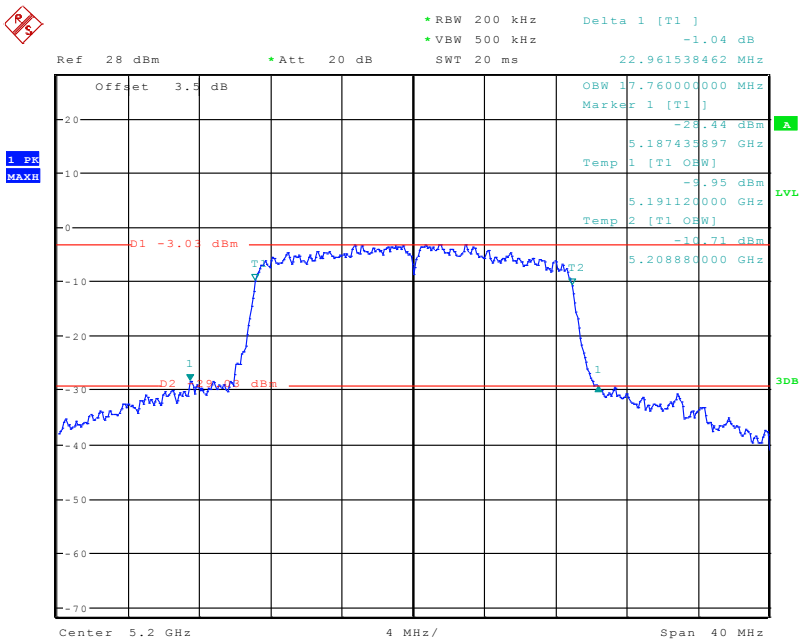
Date: 5.NOV.2019 15:55:16

802.11n20 mode, 26 dB Emissions & 99% Occupied Bandwidth, 5180 MHz



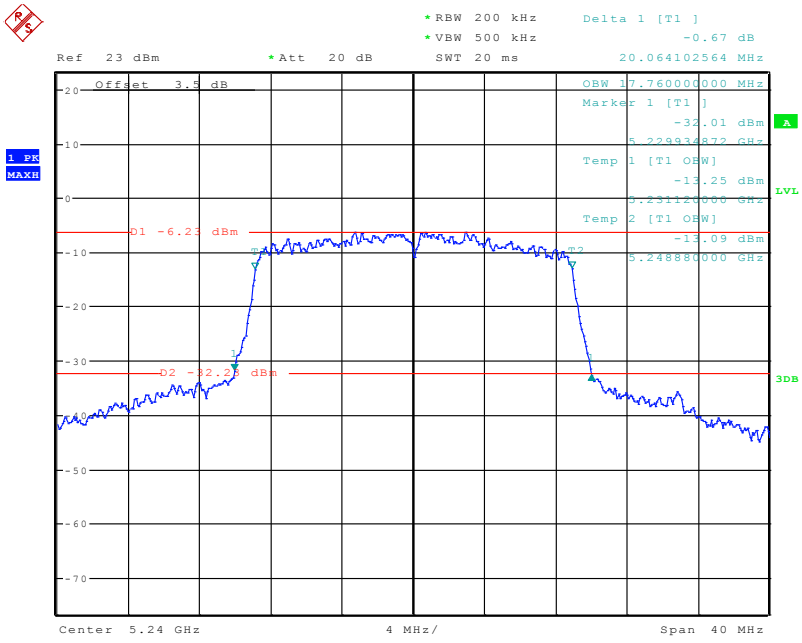
Date: 5.NOV.2019 15:58:19

802.11n20 mode, 26 dB Emissions & 99% Occupied Bandwidth, 5200 MHz



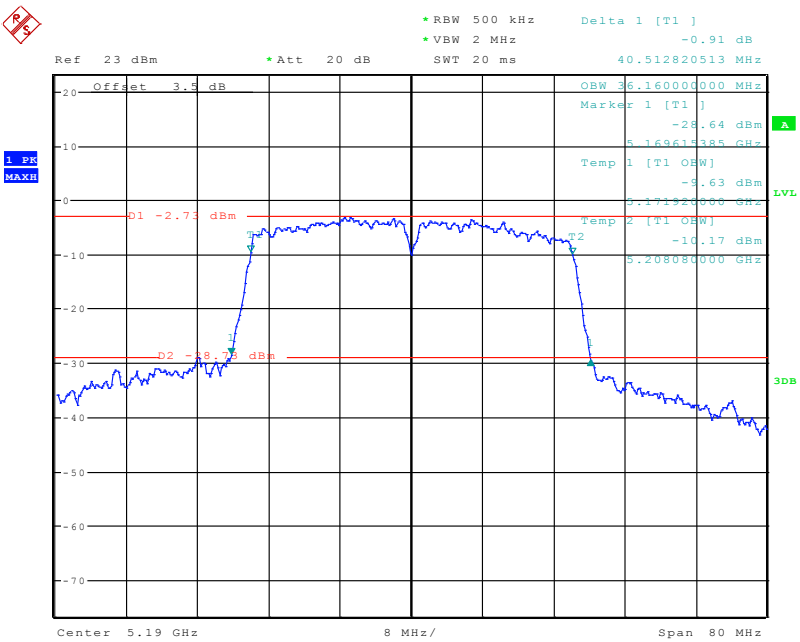
Date: 5.NOV.2019 16:02:08

802.11n20 mode, 26 dB Emissions & 99% Occupied Bandwidth, 5240 MHz



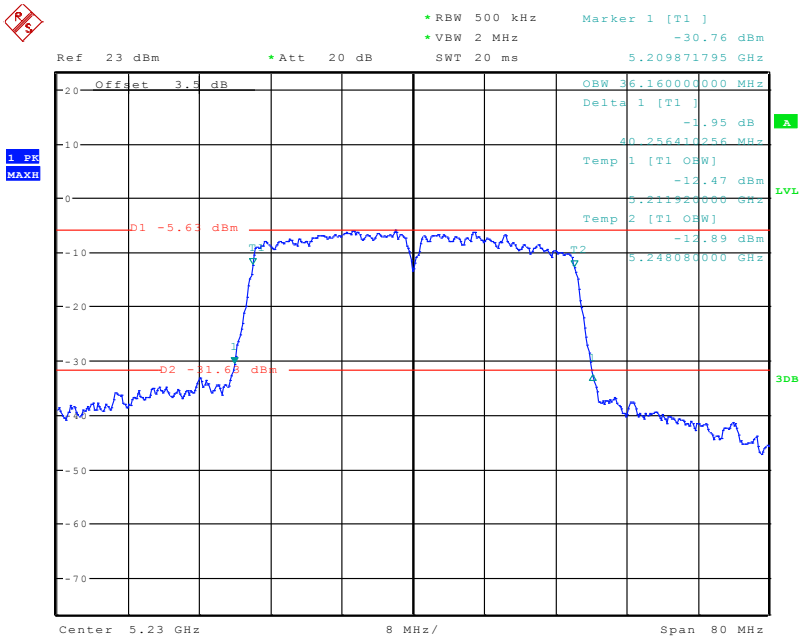
Date: 5.NOV.2019 16:07:38

802.11n40 mode, 26 dB Emissions & 99% Occupied Bandwidth, 5190 MHz



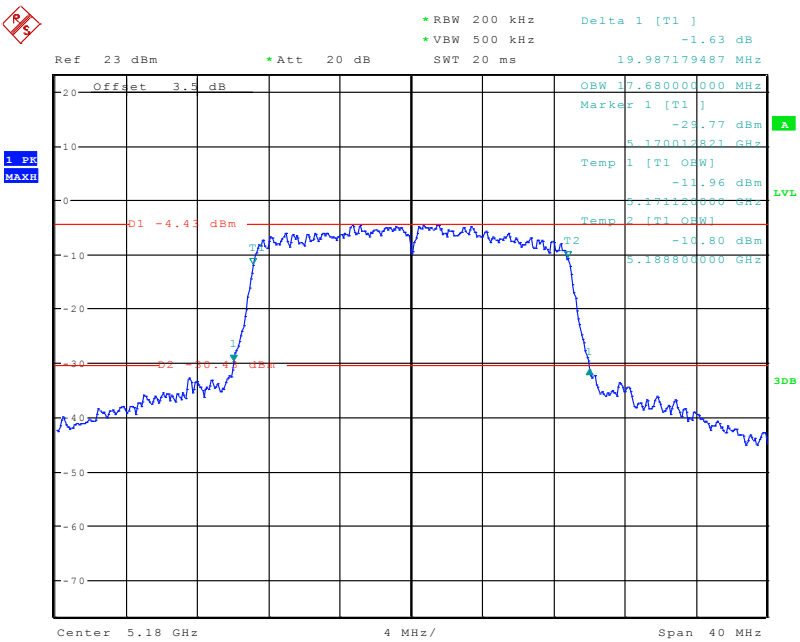
Date: 5.NOV.2019 16:14:32

802.11n40 mode, 26 dB Emissions & 99% Occupied Bandwidth, 5230 MHz

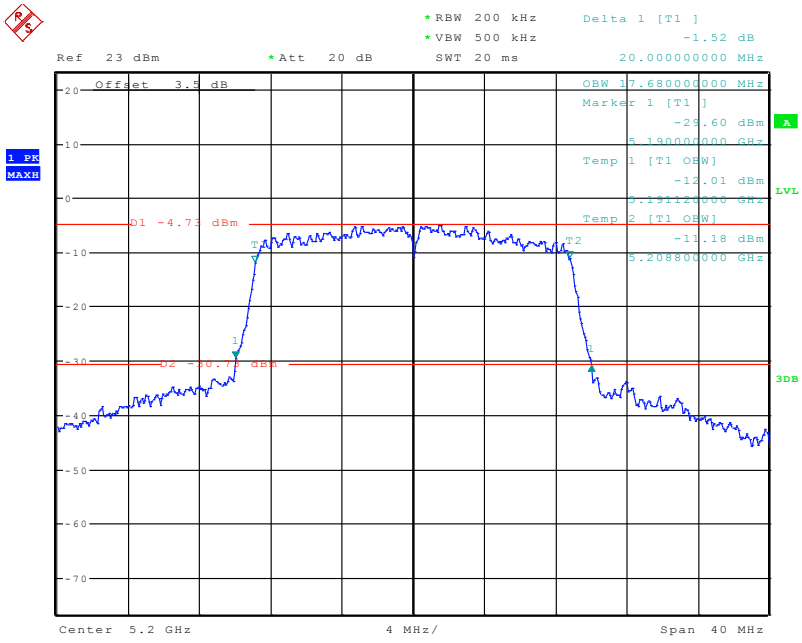


Date: 5.NOV.2019 16:17:47

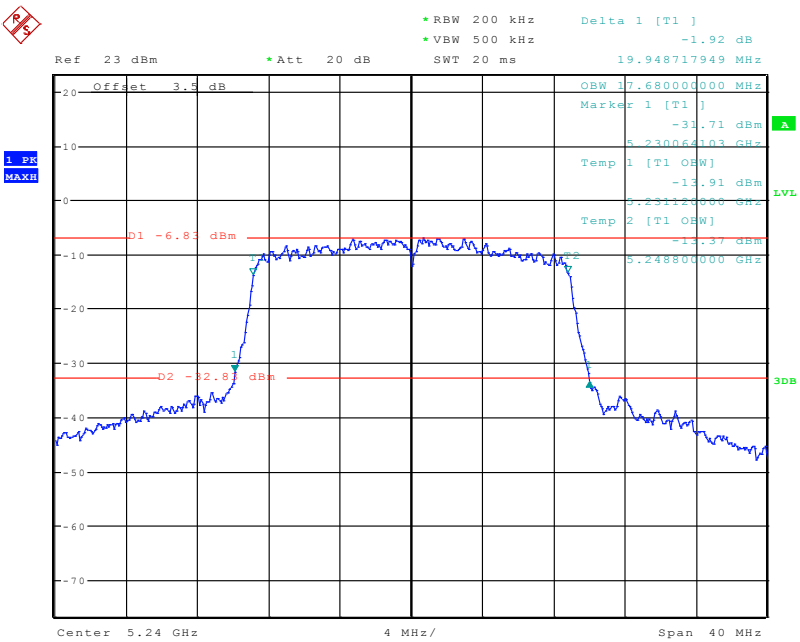
802.11ac20 mode, 26 dB Emissions & 99% Occupied Bandwidth, 5180 MHz



802.11ac20 mode, 26 dB Emissions & 99% Occupied Bandwidth, 5200 MHz

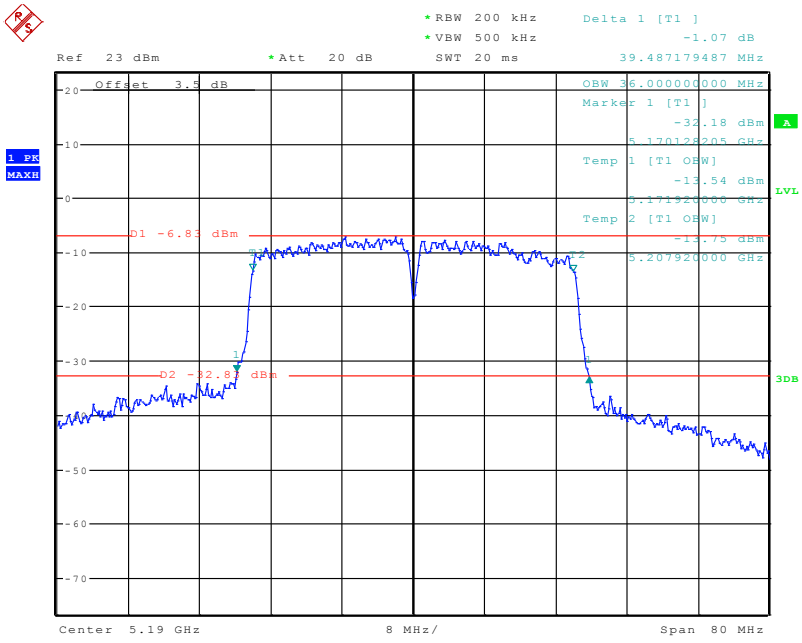


802.11ac20 mode, 26 dB Emissions & 99% Occupied Bandwidth, 5240 MHz



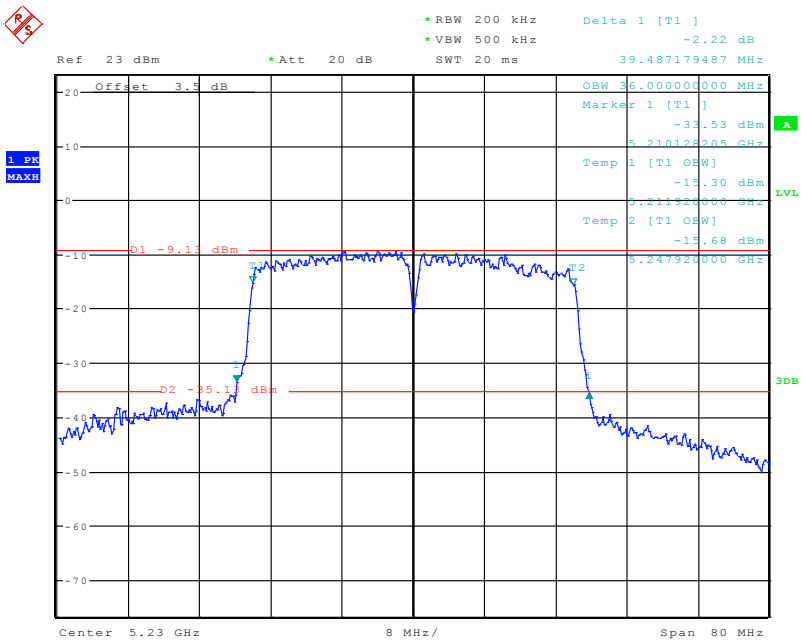
Date: 5.NOV.2019 16:27:41

802.11ac40 mode, 26 dB Emissions & 99% Occupied Bandwidth, 5190 MHz



Date: 5.NOV.2019 16:29:20

802.11ac40 mode, 26 dB Emissions & 99% Occupied Bandwidth, 5230 MHz

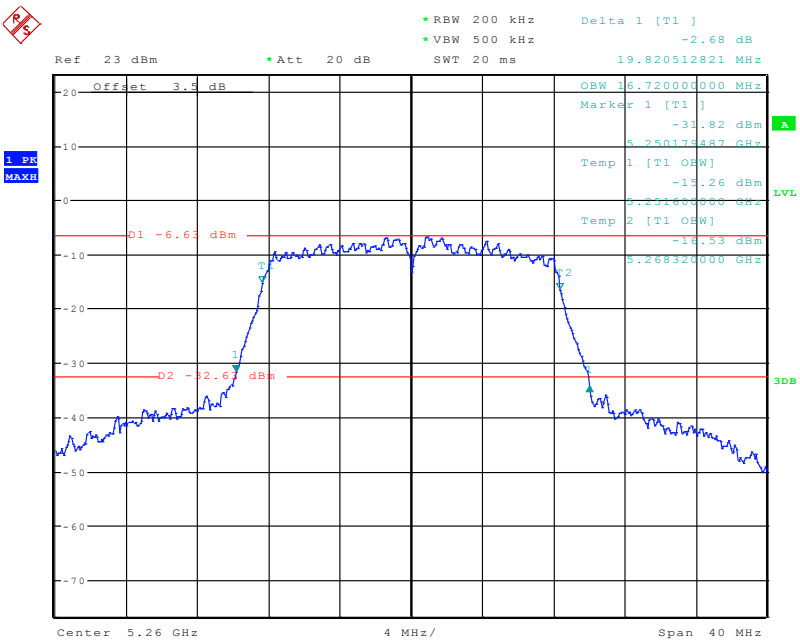


Date: 5.NOV.2019 16:30:35

5250 MHz - 5350 MHz:

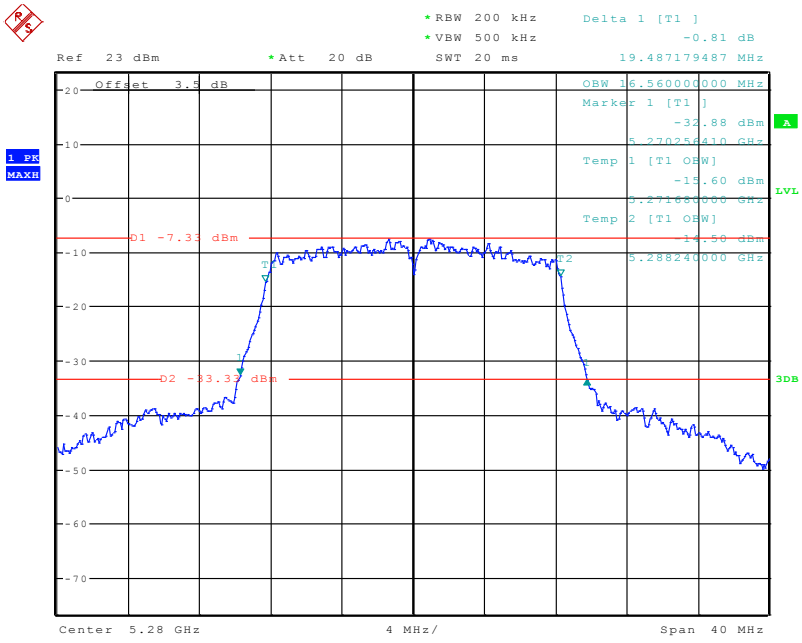
Frequency (MHz)	26dB bandwidth (MHz)	99% Bandwidth (MHz)
802.11a		
5260	19.821	16.720
5280	19.487	16.560
5320	19.949	16.560
802.11n20		
5260	20.026	17.760
5280	20.013	17.760
5320	20.077	17.680
802.11n40		
5270	40.385	36.160
5310	40.385	36.160
802.11ac20		
5260	20.000	17.760
5280	20.128	17.680
5320	20.013	17.680
802.11ac40		
5270	40.410	36.160
5310	40.641	36.160

802.11a mode, 26 dB Emissions & 99% Occupied Bandwidth, 5260 MHz



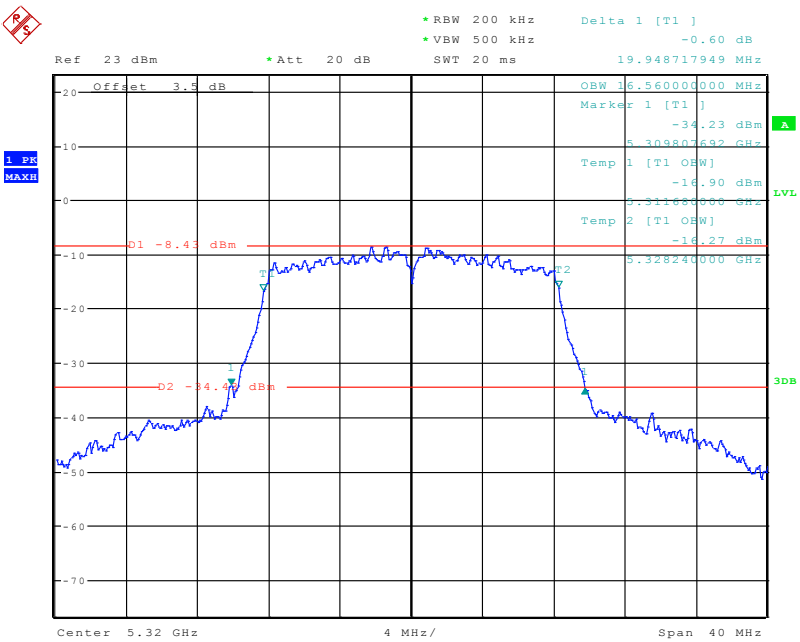
Date: 5.NOV.2019 16:50:46

802.11a mode, 26 dB Emissions & 99% Occupied Bandwidth, 5280 MHz



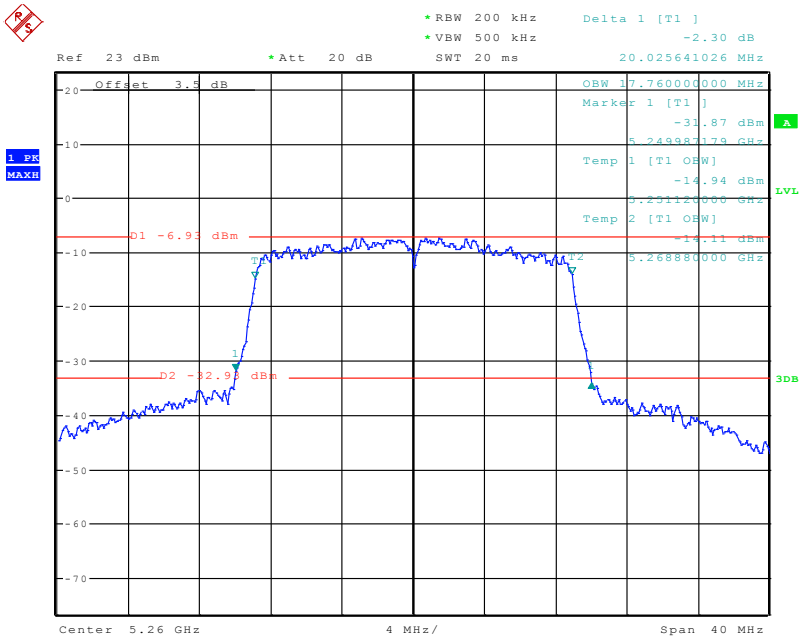
Date: 5.NOV.2019 16:51:48

802.11a mode, 26 dB Emissions & 99% Occupied Bandwidth, 5320 MHz



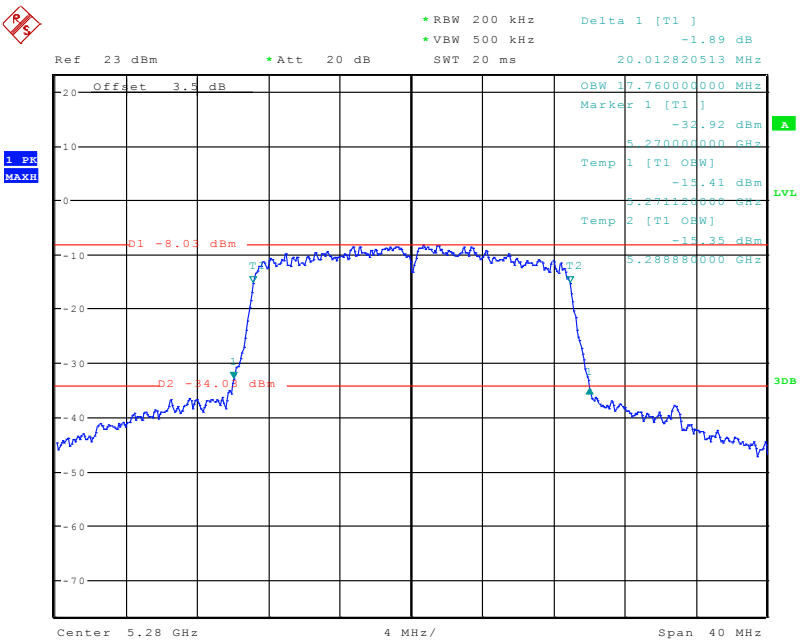
Date: 5.NOV.2019 16:53:00

802.11n20 mode, 26 dB Emissions & 99% Occupied Bandwidth, 5260 MHz



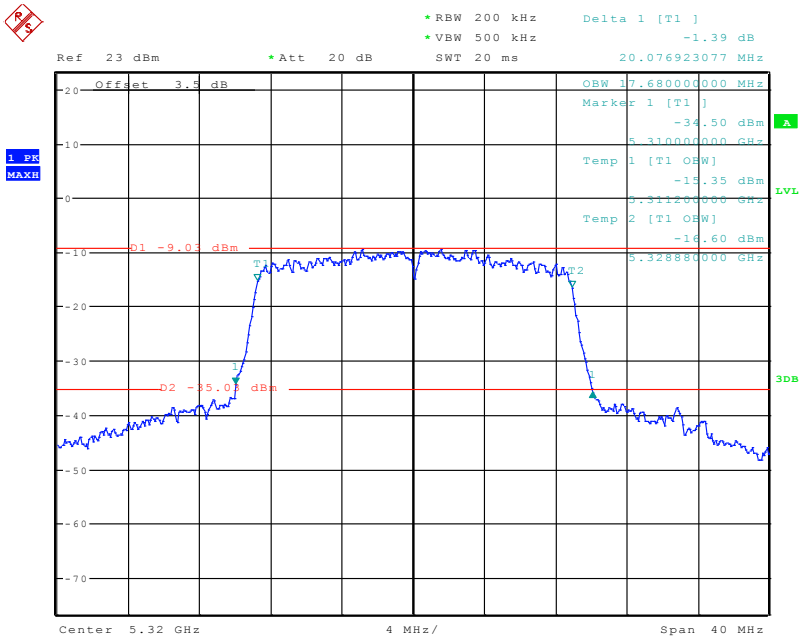
Date: 5.NOV.2019 16:42:19

802.11n20 mode, 26 dB Emissions & 99% Occupied Bandwidth, 5280 MHz



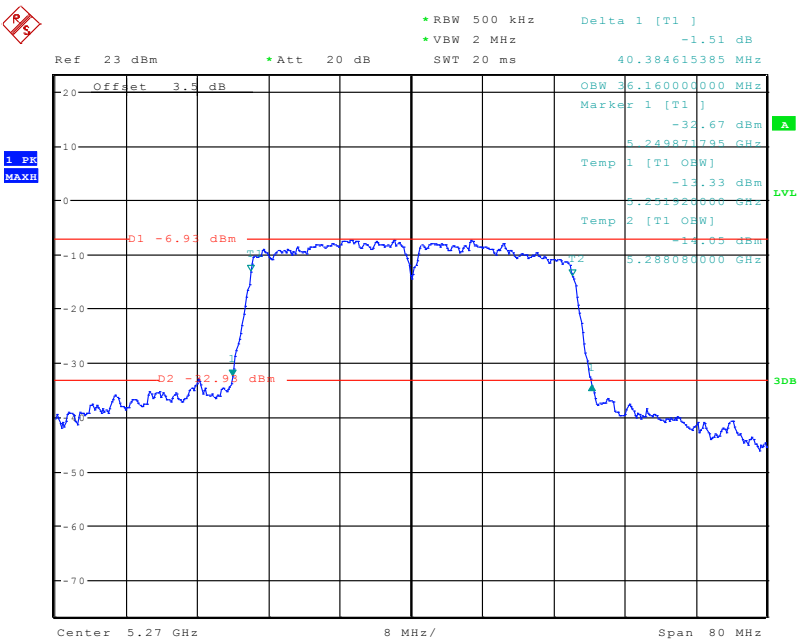
Date: 5.NOV.2019 16:43:18

802.11n20 mode, 26 dB Emissions & 99% Occupied Bandwidth, 5320 MHz



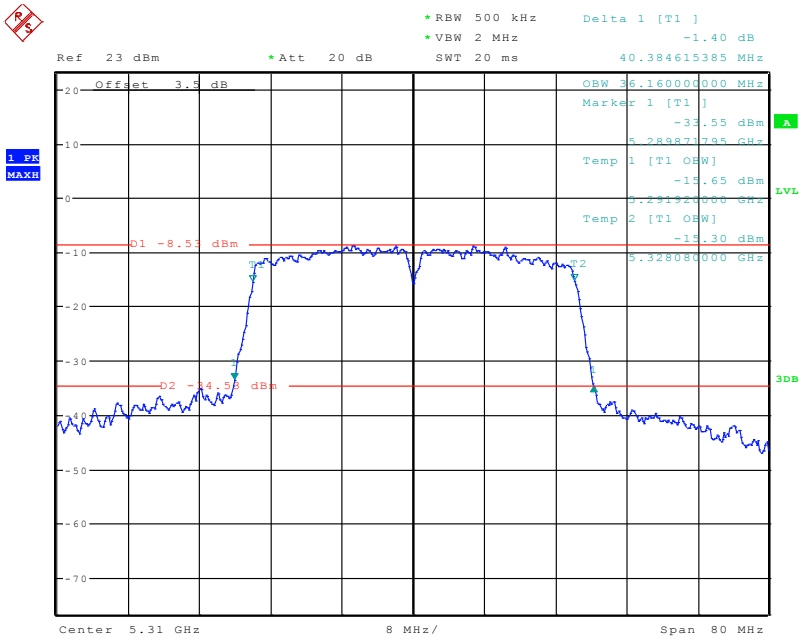
Date: 5.NOV.2019 16:44:19

802.11n40 mode, 26 dB Emissions & 99% Occupied Bandwidth, 5270 MHz



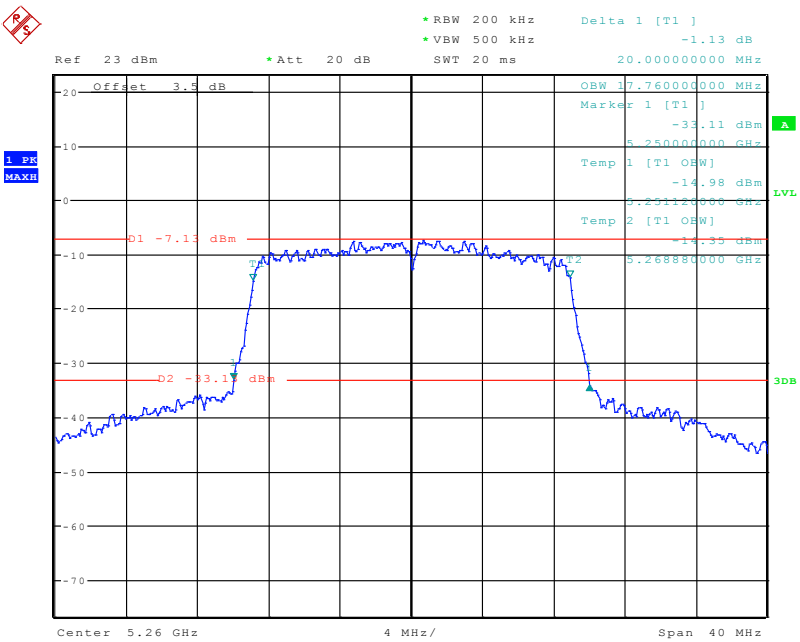
Date: 5.NOV.2019 16:47:12

802.11n40 mode, 26 dB Emissions & 99% Occupied Bandwidth, 5310 MHz



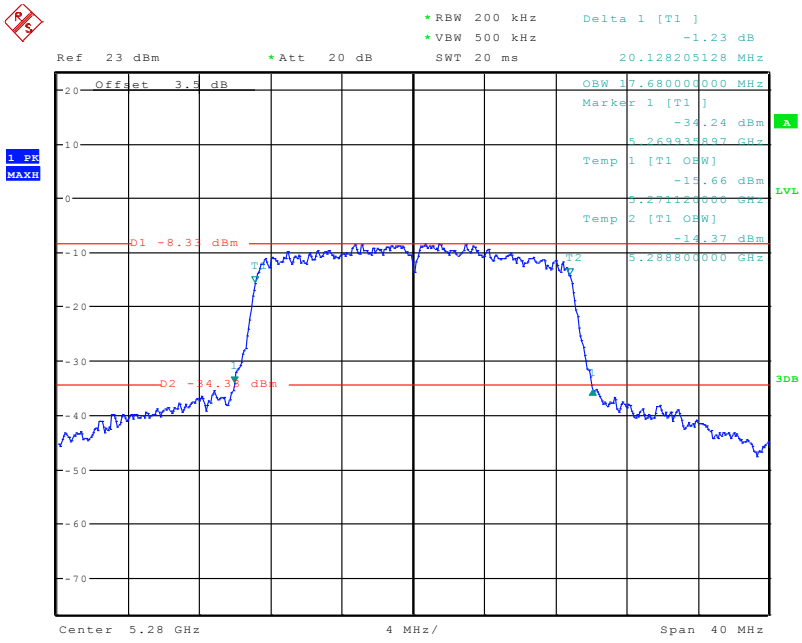
Date: 5.NOV.2019 16:49:22

802.11ac20 mode, 26 dB Emissions & 99% Occupied Bandwidth, 5260 MHz



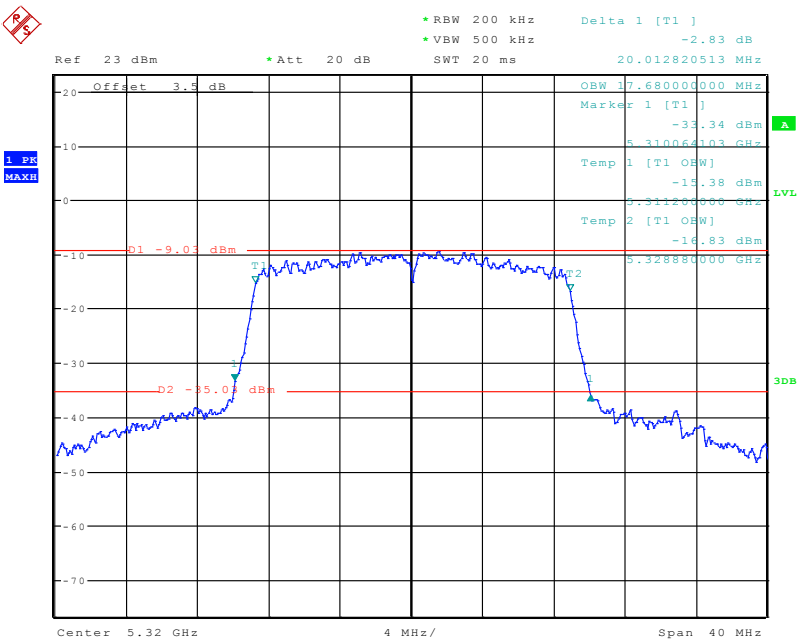
Date: 5.NOV.2019 16:38:25

802.11ac20 mode, 26 dB Emissions & 99% Occupied Bandwidth, 5280 MHz



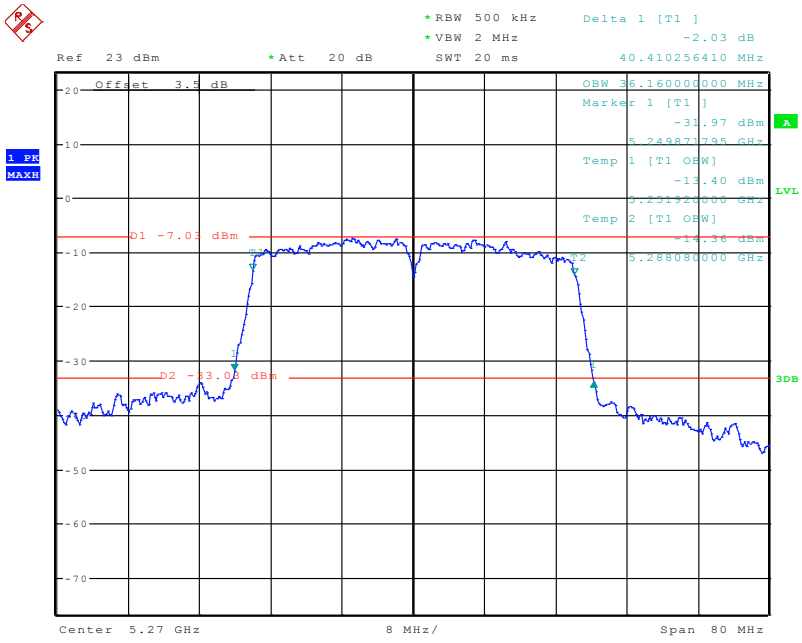
Date: 5.NOV.2019 16:39:35

802.11ac20 mode, 26 dB Emissions & 99% Occupied Bandwidth, 5320 MHz



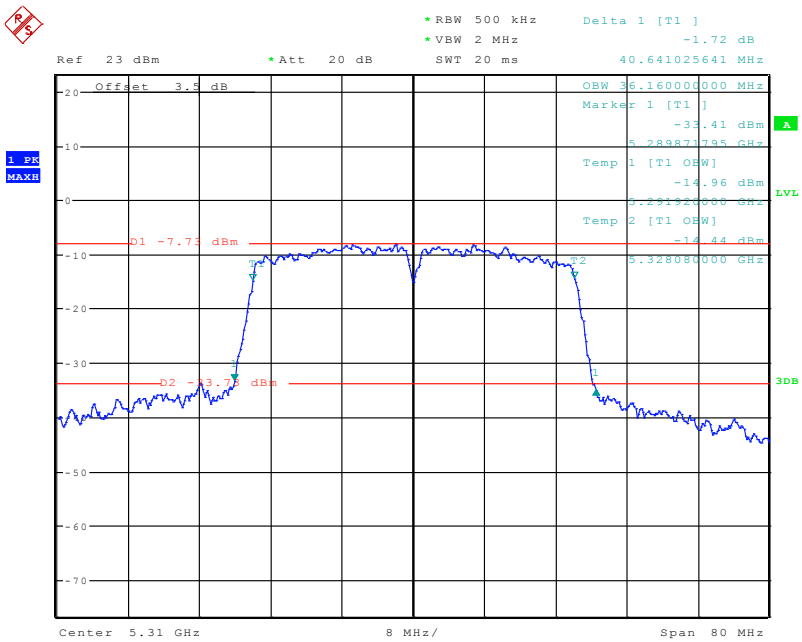
Date: 5.NOV.2019 16:40:45

802.11ac40 mode, 26 dB Emissions & 99% Occupied Bandwidth, 5270 MHz



Date: 5.NOV.2019 16:36:33

802.11ac40 mode, 26 dB Emissions & 99% Occupied Bandwidth, 5310 MHz

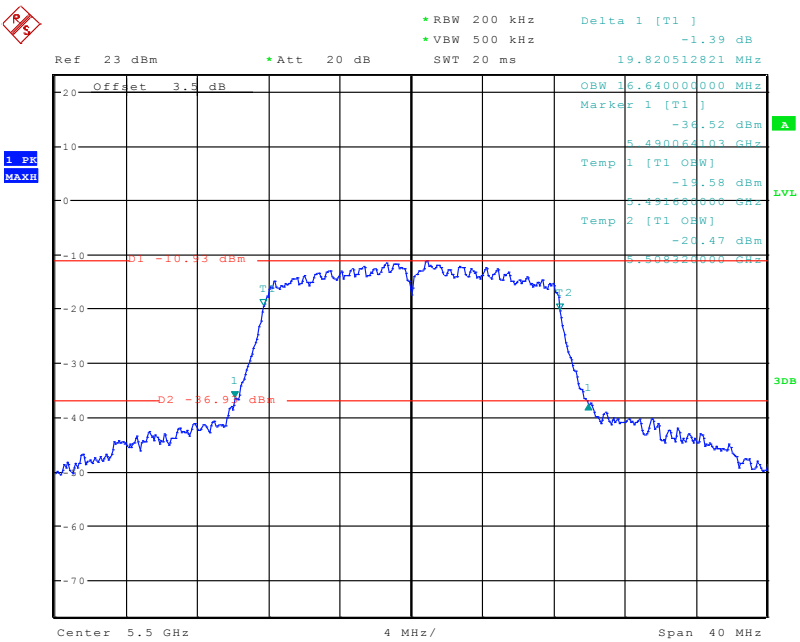


Date: 5.NOV.2019 16:35:01

5470 MHz – 5725 MHz:

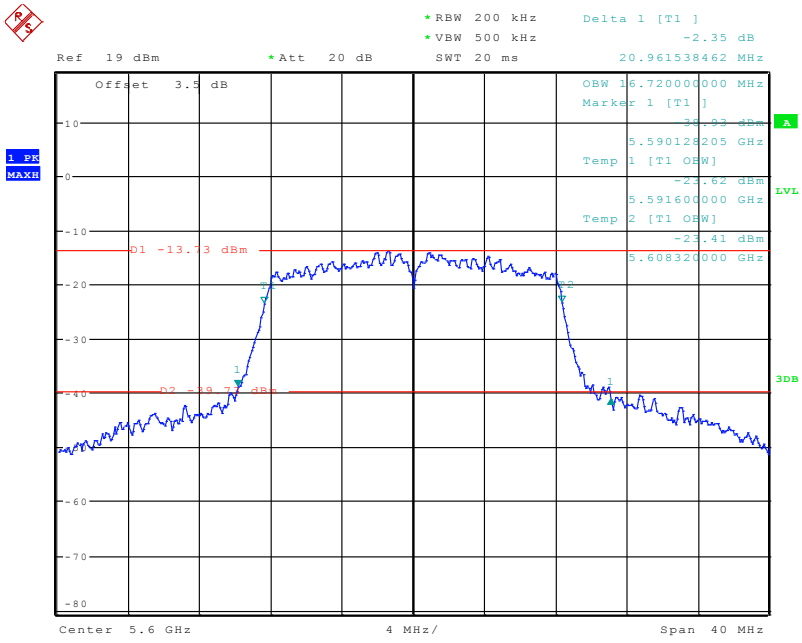
Frequency (MHz)	26dB bandwidth (MHz)	99% Bandwidth (MHz)
802.11a		
5500	19.821	16.640
5600	20.962	16.720
5700	19.974	16.720
802.11n20		
5500	19.923	17.680
5600	20.667	17.840
5700	20.205	17.840
802.11n40		
5510	40.128	36.160
5590	40.538	36.480
5670	40.692	36.480
802.11ac20		
5500	20.077	17.760
5600	20.397	17.840
5700	20.128	17.840
802.11ac40		
5510	40.538	36.320
5590	40.564	36.480
5670	40.667	36.480

802.11a mode, 26 dB Emissions & 99% Occupied Bandwidth, 5500 MHz



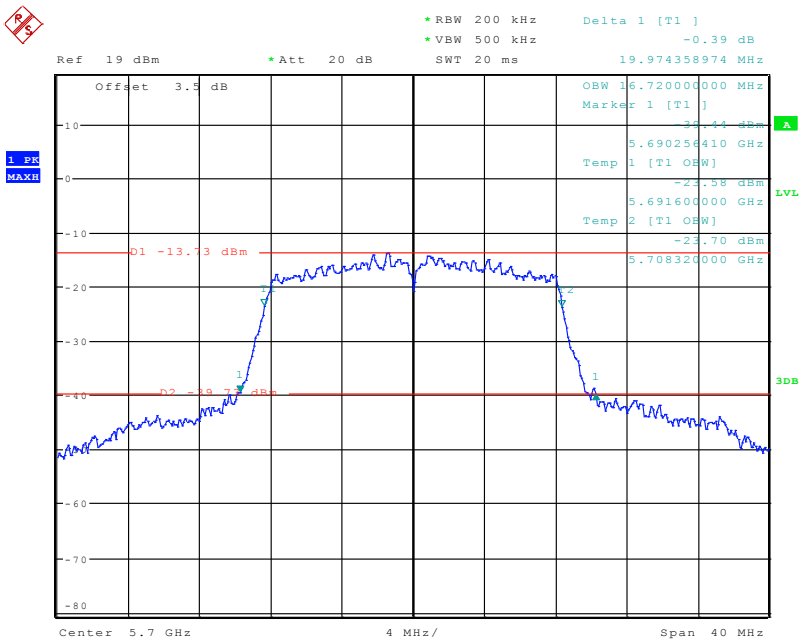
Date: 5.NOV.2019 16:55:04

802.11a mode, 26 dB Emissions & 99% Occupied Bandwidth, 5600 MHz



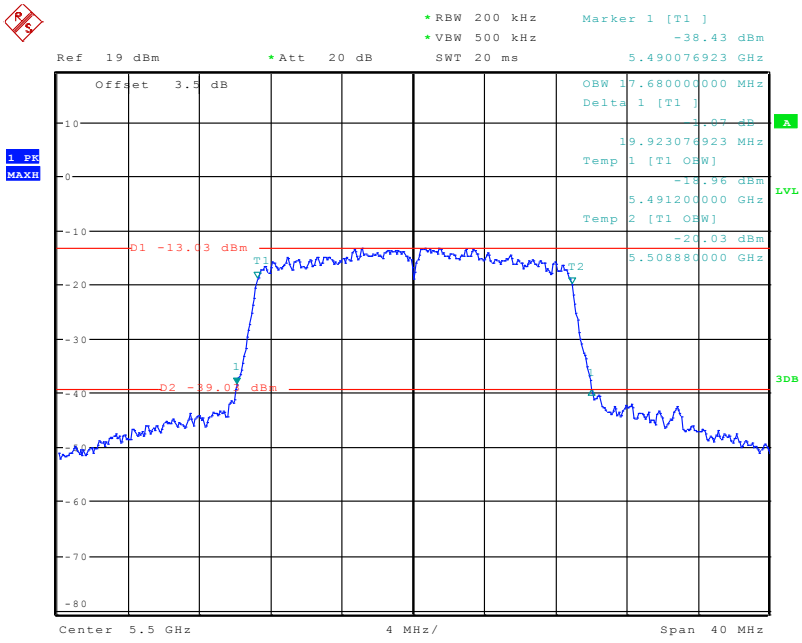
Date: 5.NOV.2019 16:57:08

802.11a mode, 26 dB Emissions & 99% Occupied Bandwidth, 5700 MHz



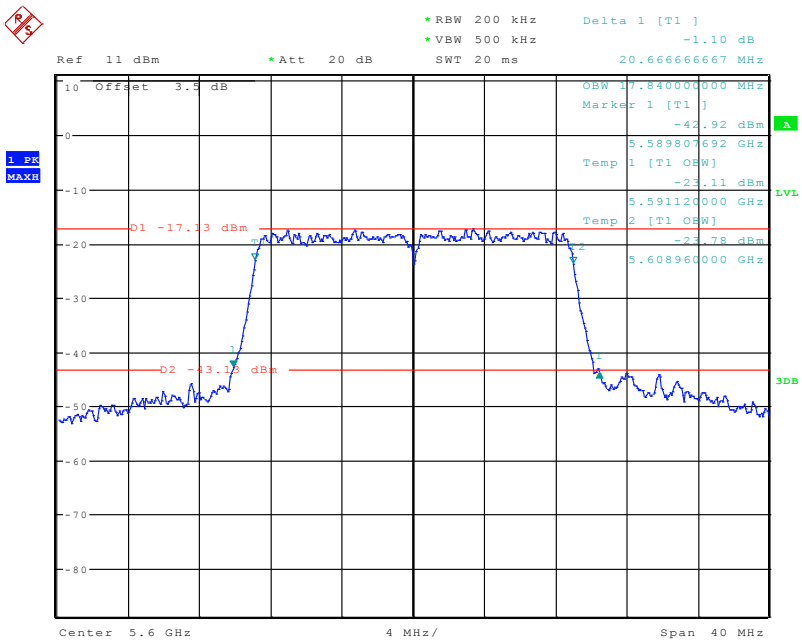
Date: 5.NOV.2019 16:58:00

802.11n20 mode, 26 dB Emissions & 99% Occupied Bandwidth, 5500 MHz



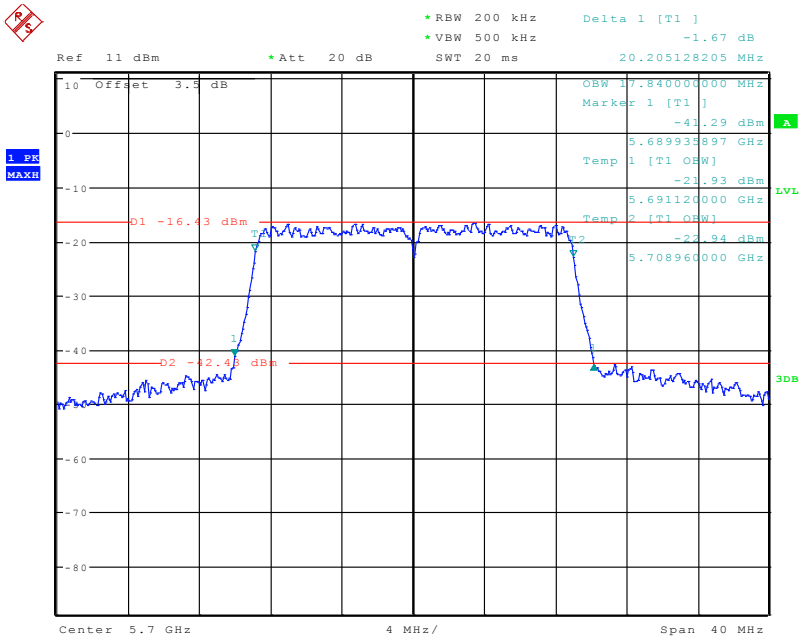
Date: 5.NOV.2019 17:00:05

802.11n20 mode, 26 dB Emissions & 99% Occupied Bandwidth, 5600 MHz



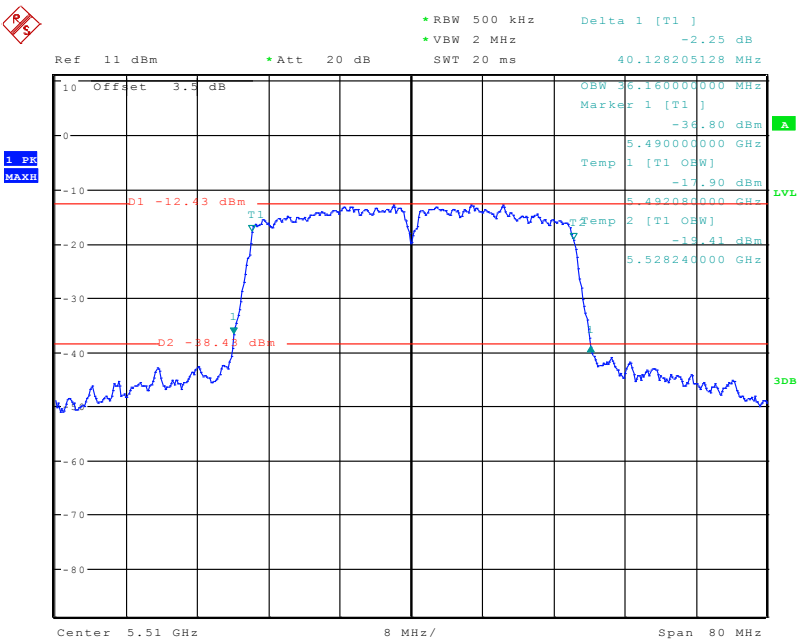
Date: 5.NOV.2019 17:04:09

802.11n20 mode, 26 dB Emissions & 99% Occupied Bandwidth, 5700 MHz



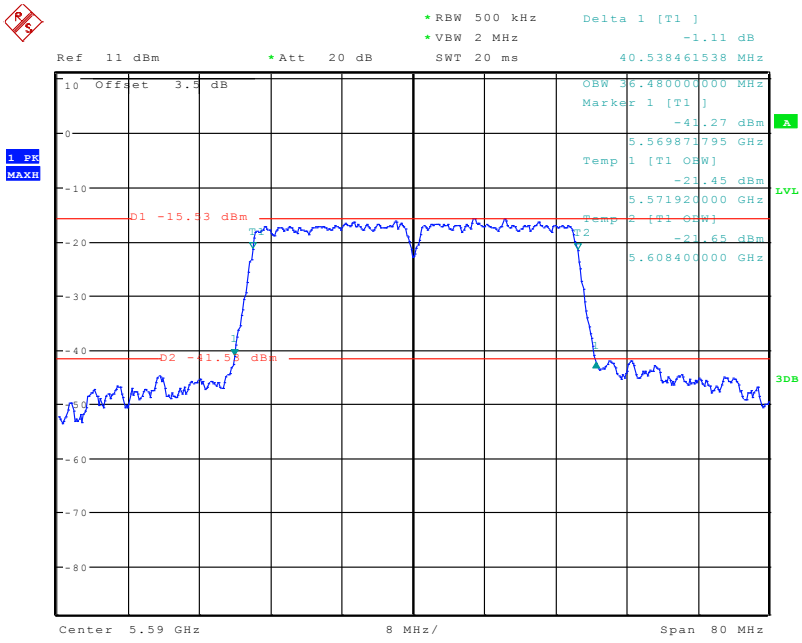
Date: 5.NOV.2019 17:06:11

802.11n40 mode, 26 dB Emissions & 99% Occupied Bandwidth, 5510 MHz



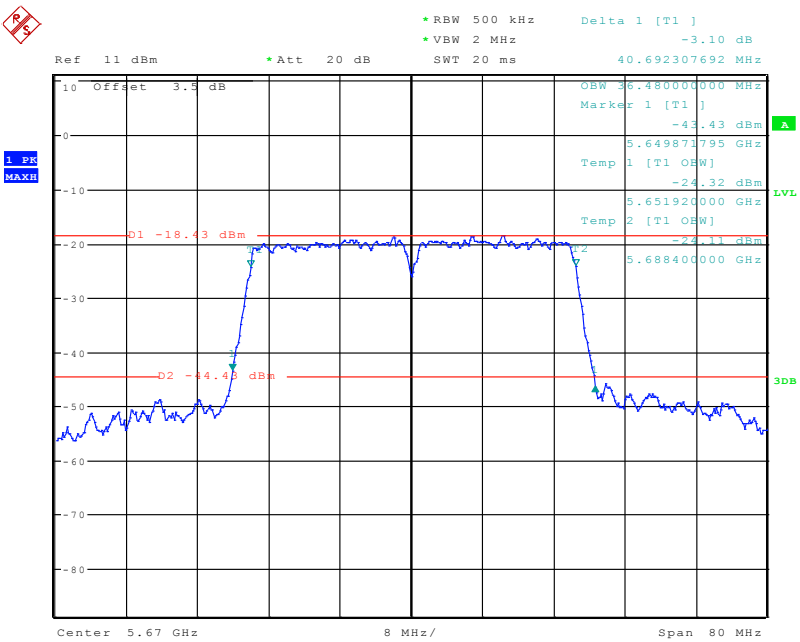
Date: 5.NOV.2019 17:07:49

802.11n40 mode, 26 dB Emissions & 99% Occupied Bandwidth, 5590 MHz



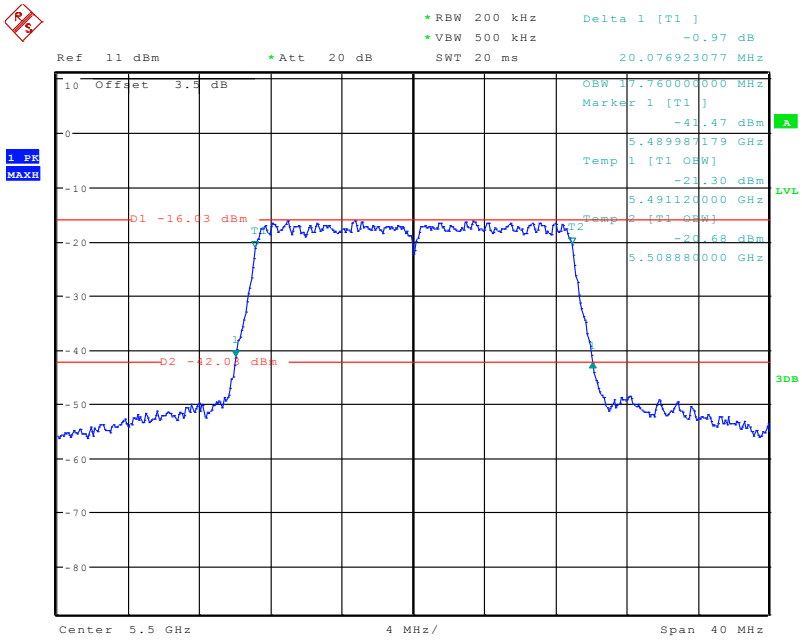
Date: 5.NOV.2019 17:10:16

802.11 n40 mode, 26 dB Emissions & 99% Occupied Bandwidth, 5670 MHz



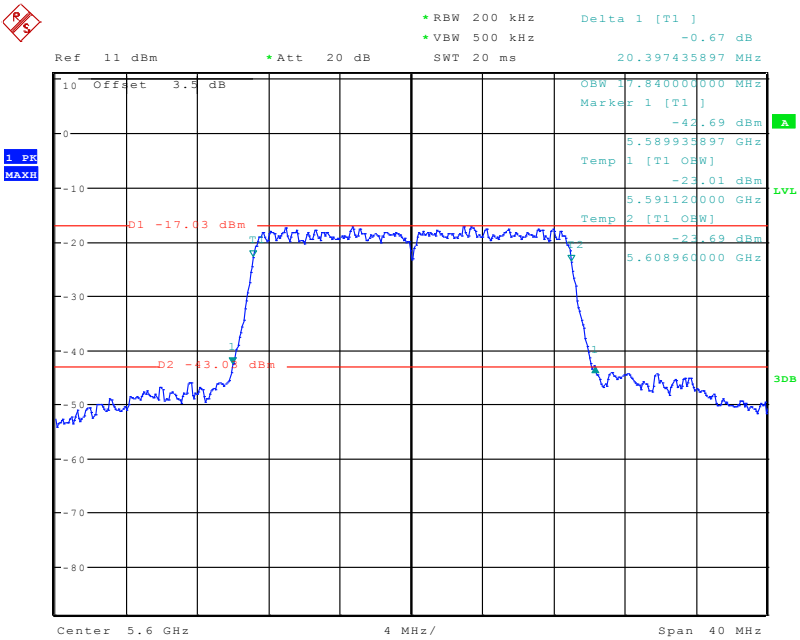
Date: 5.NOV.2019 17:12:14

802.11ac20 mode, 26 dB Emissions & 99% Occupied Bandwidth, 5500 MHz



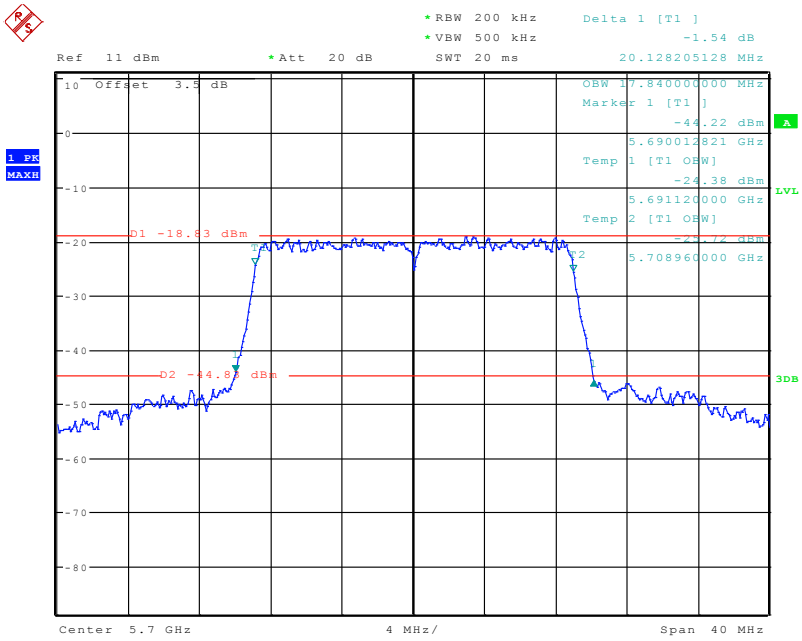
Date: 5.NOV.2019 17:19:32

802.11ac20 mode, 26 dB Emissions & 99% Occupied Bandwidth, 5600 MHz



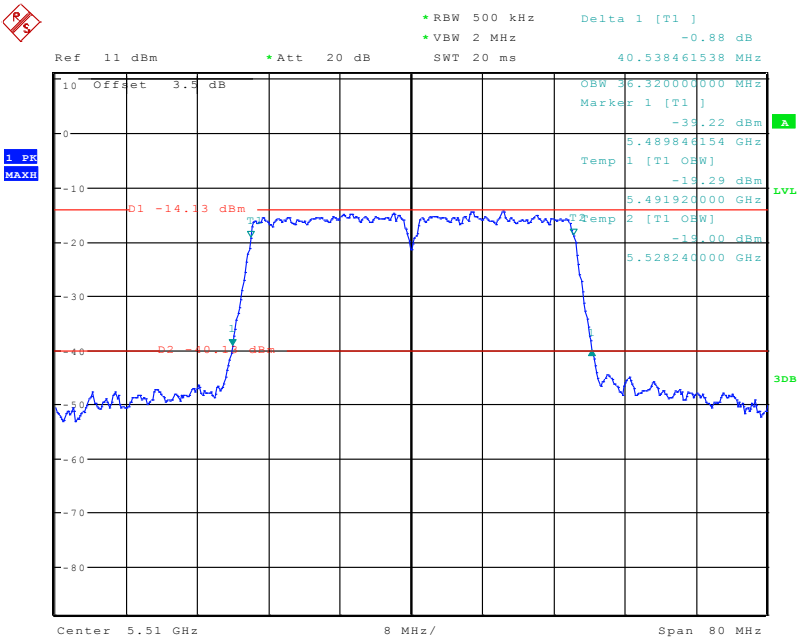
Date: 5.NOV.2019 17:20:44

802.11ac20 mode, 26 dB Emissions & 99% Occupied Bandwidth, 5700 MHz



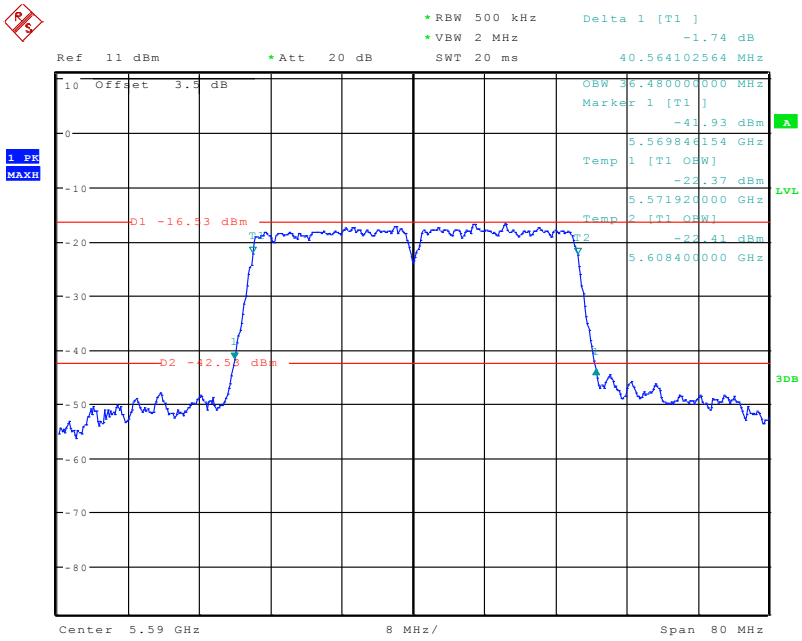
Date: 5.NOV.2019 17:21:46

802.11ac40 mode, 26 dB Emissions & 99% Occupied Bandwidth, 5510 MHz



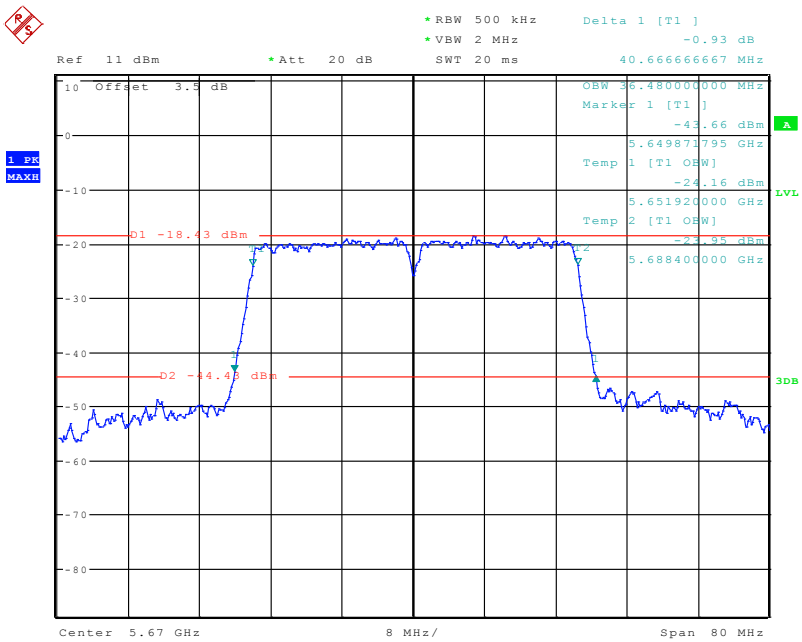
Date: 5.NOV.2019 17:14:09

802.11ac40 mode, 26 dB Emissions & 99% Occupied Bandwidth, 5590 MHz



Date: 5.NOV.2019 17:15:51

802.11ac40 mode, 26 dB Emissions & 99% Occupied Bandwidth, 5670 MHz

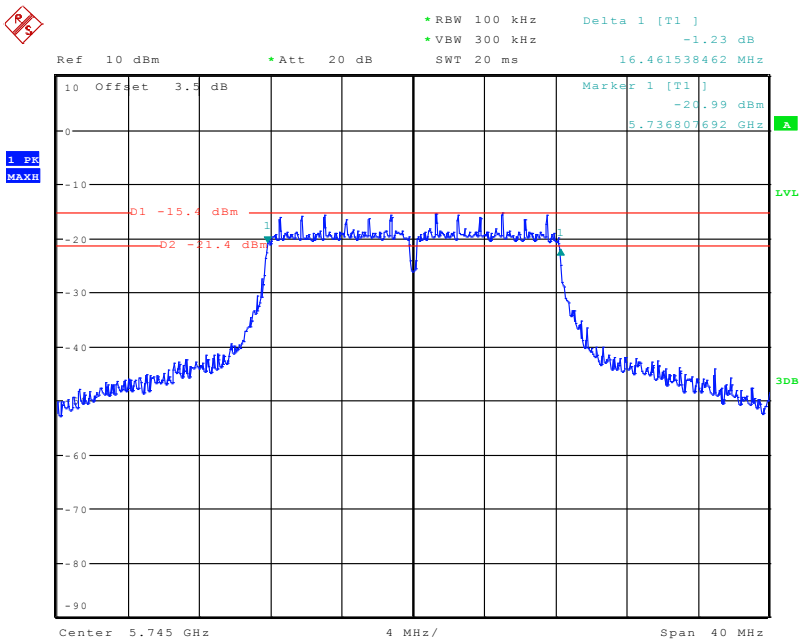


Date: 5.NOV.2019 17:17:55

5725 MHz – 5850 MHz:

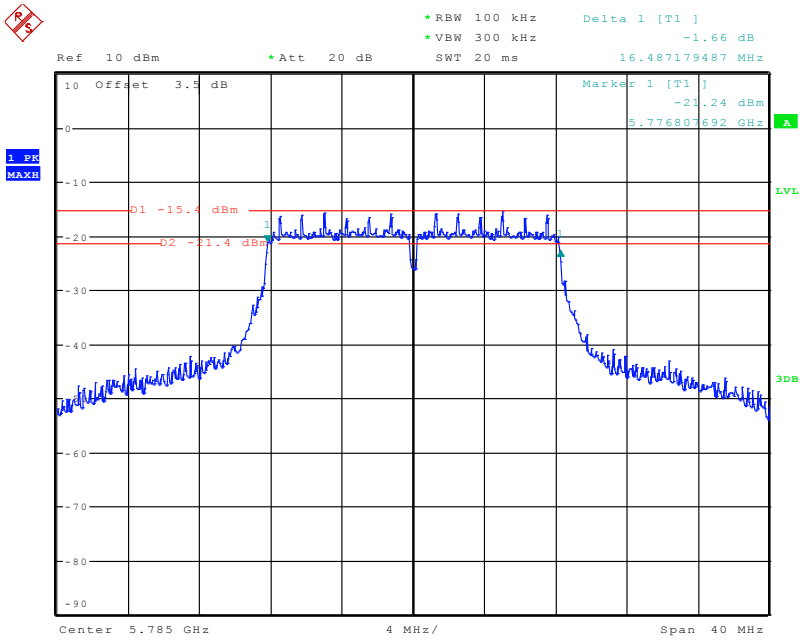
Frequency (MHz)	6dB bandwidth (MHz)	99% Bandwidth (MHz)	Limit (MHz)	Remark
802.11a				No transmitted signal in the 99% bandwidth extends into the U-NII-2C band
5745	16.462	16.923	0.5	
5785	16.487	16.923	0.5	
5825	16.397	16.923	0.5	
802.11n20				
5745	17.692	17.949	0.5	
5785	17.538	17.949	0.5	
5825	17.615	17.885	0.5	
802.11n40				
5755	36.282	36.923	0.5	
5795	36.154	36.795	0.5	
802.11ac20				
5745	17.603	17.949	0.5	
5785	17.603	17.885	0.5	
5825	17.603	17.949	0.5	
802.11ac40				
5755	36.282	36.795	0.5	
5795	36.154	36.667	0.5	

802.11a mode, 6dB Emission Bandwidth, 5745 MHz



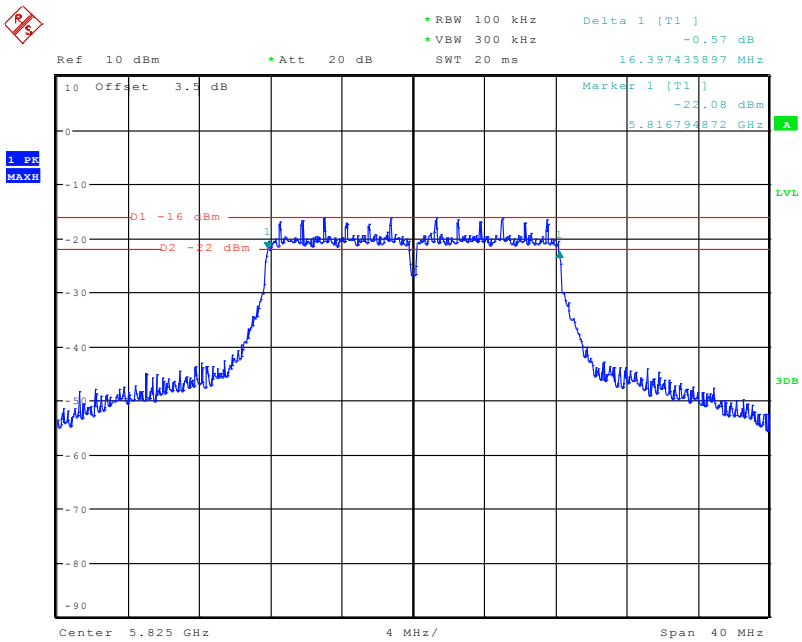
Date: 7.NOV.2019 17:46:31

802.11a mode, 6dB Emission Bandwidth, 5785 MHz



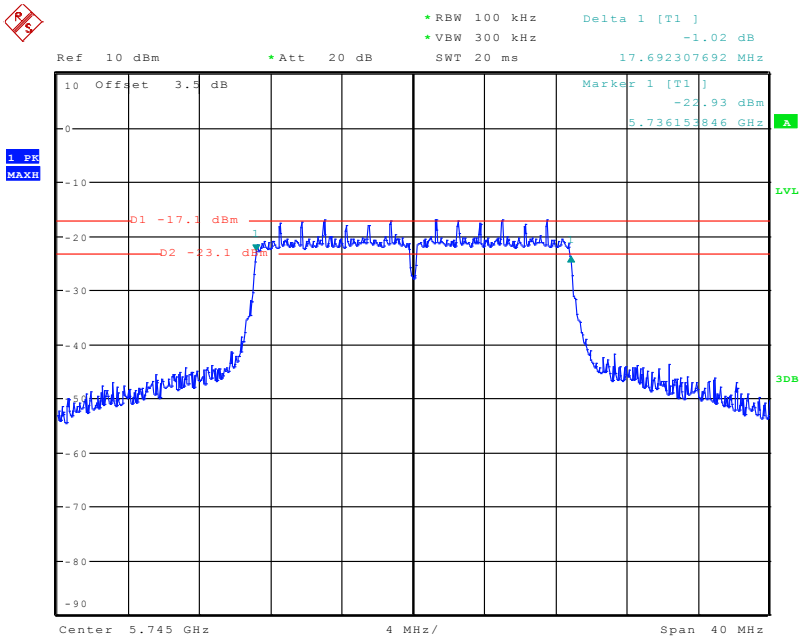
Date: 7.NOV.2019 17:48:04

802.11a mode, 6dB Emission Bandwidth, 5825 MHz



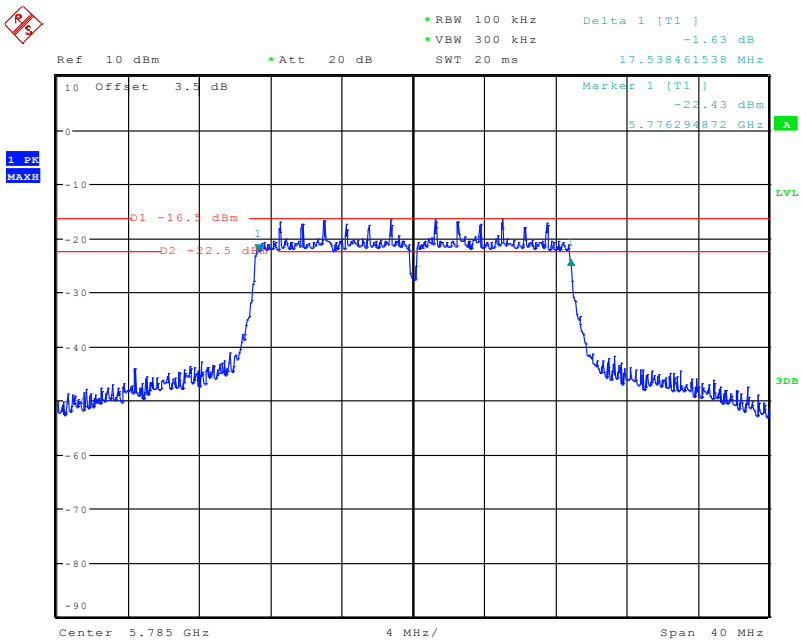
Date: 7.NOV.2019 17:49:08

802.11n20 mode, 6dB Emission Bandwidth, 5745 MHz



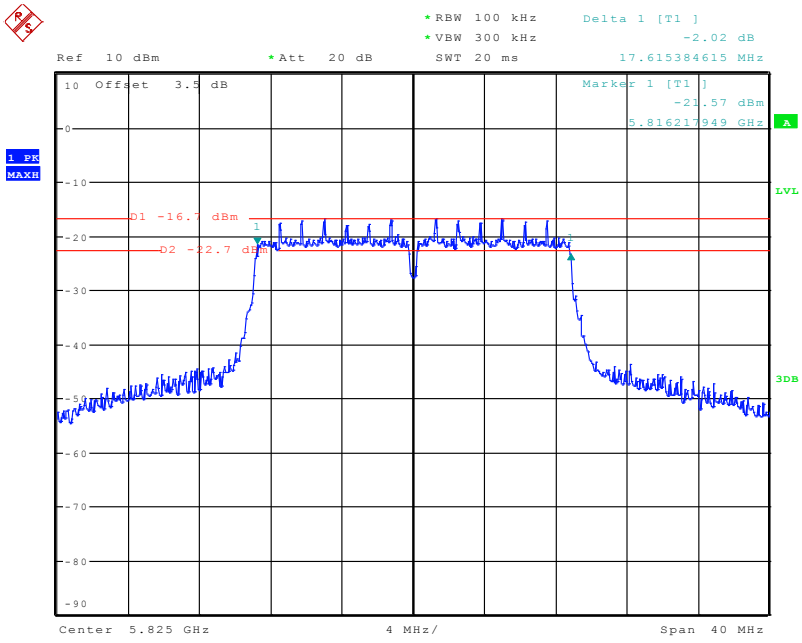
Date: 7.NOV.2019 16:28:33

802.11n20 mode, 6dB Emission Bandwidth, 5785 MHz



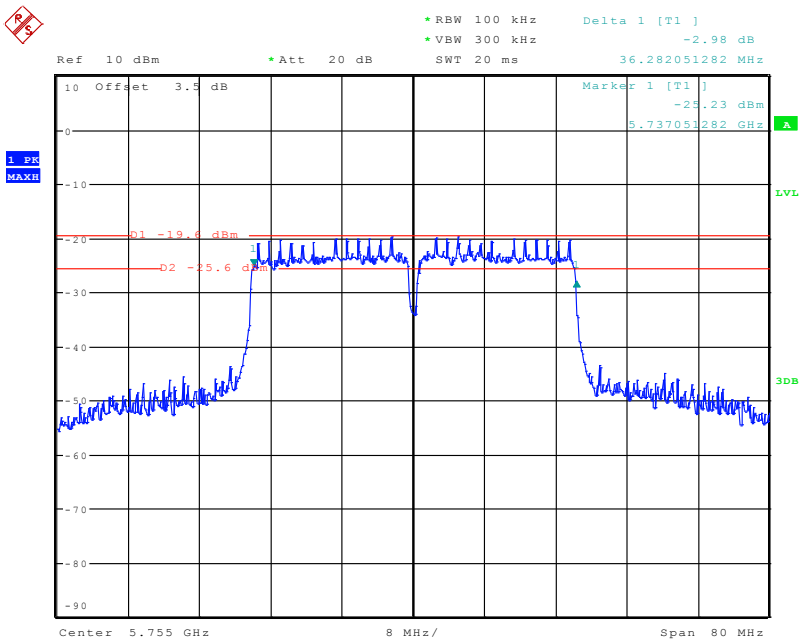
Date: 7.NOV.2019 16:32:55

802.11n20 mode, 6dB Emission Bandwidth, 5825 MHz



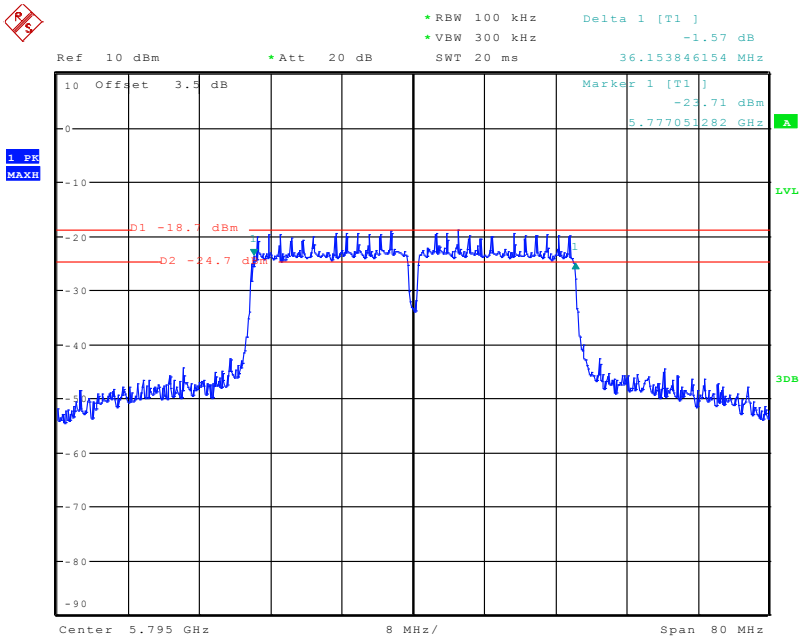
Date: 7.NOV.2019 16:31:18

802.11n40 mode, 6dB Emission Bandwidth, 5755 MHz



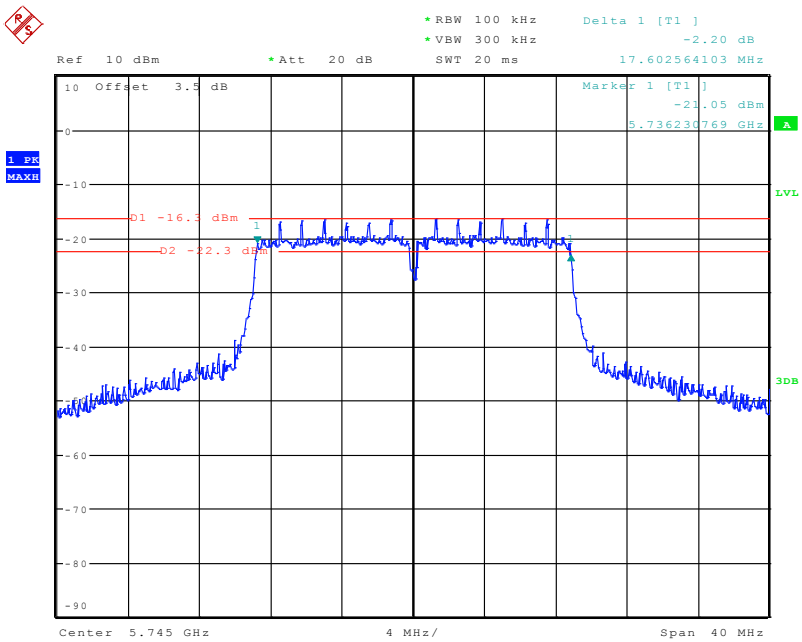
Date: 7.NOV.2019 16:26:38

802.11n40 mode, 6dB Emission Bandwidth, 5795 MHz



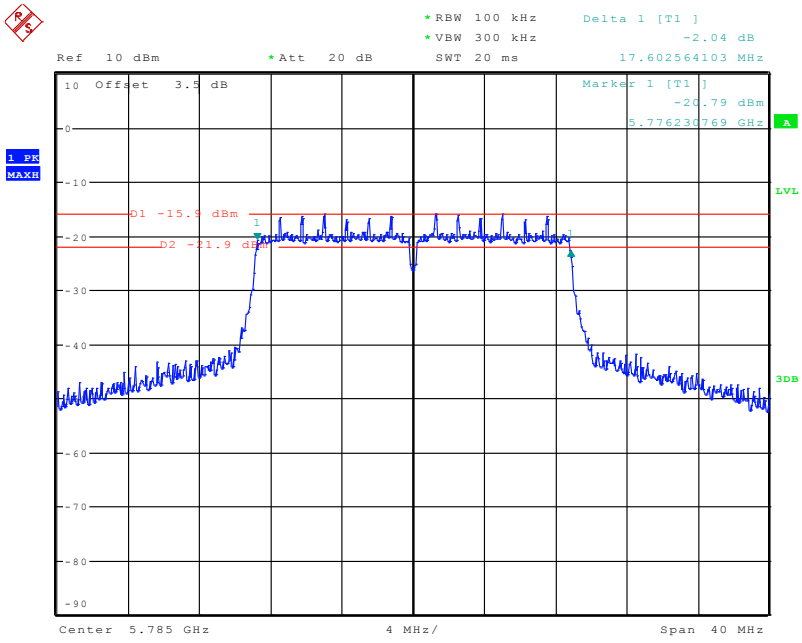
Date: 7.NOV.2019 16:25:22

802.11ac20 mode, 6dB Emission Bandwidth, 5745 MHz



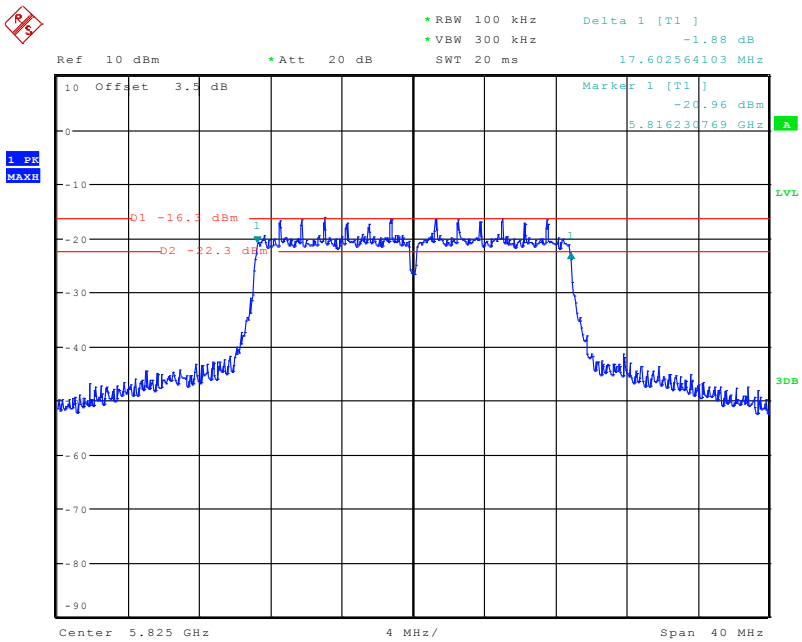
Date: 7.NOV.2019 17:44:00

802.11ac20 mode, 6dB Emission Bandwidth, 5785 MHz



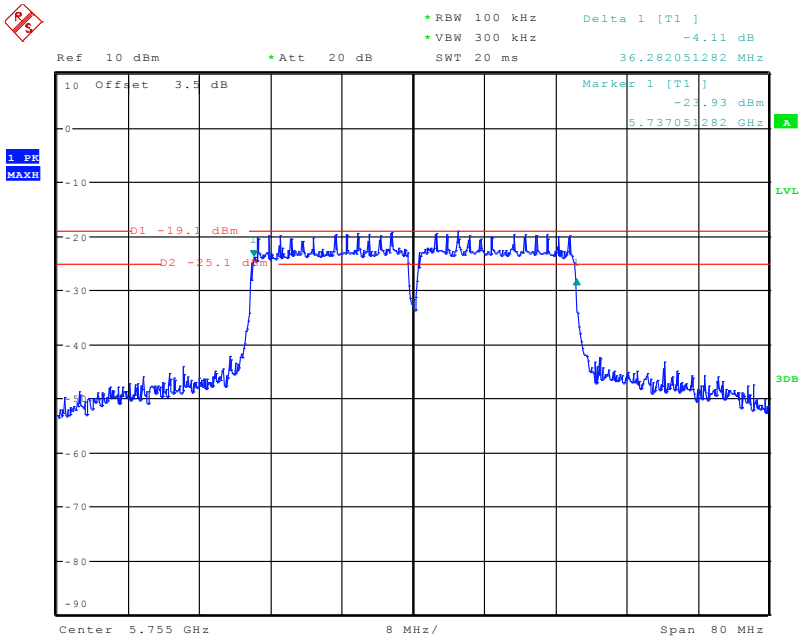
Date: 7.NOV.2019 17:42:33

802.11ac20 mode, 6dB Emission Bandwidth, 5825 MHz



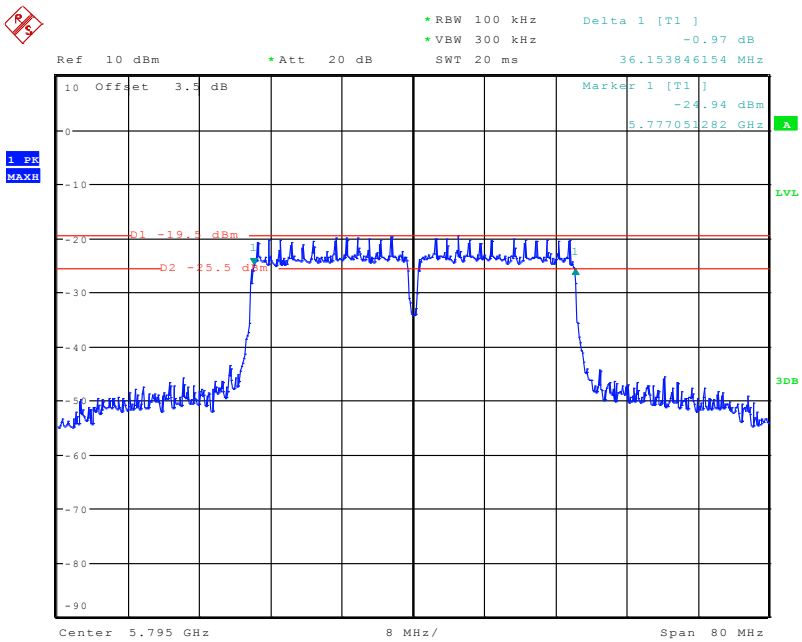
Date: 7.NOV.2019 17:44:59

802.11ac40 mode, 6dB Emission Bandwidth, 5755 MHz



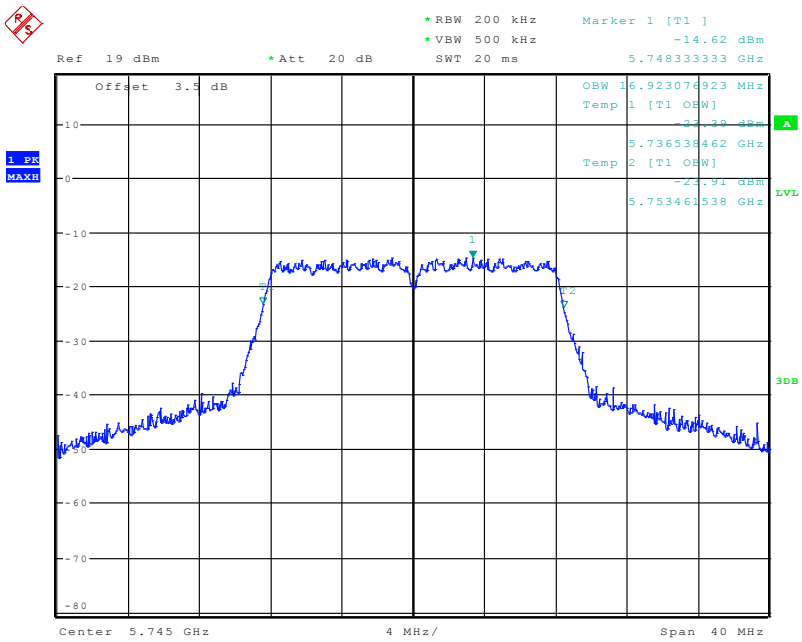
Date: 7.NOV.2019 16:22:43

802.11ac40 mode, 6dB Emission Bandwidth, 5795 MHz



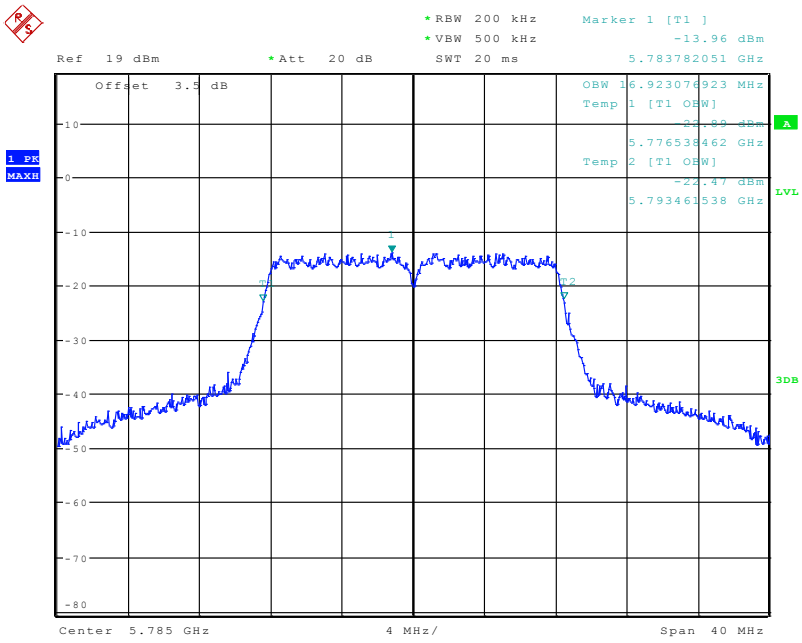
Date: 7.NOV.2019 16:24:14

802.11a mode, 99% Occupied Bandwidth, 5745 MHz



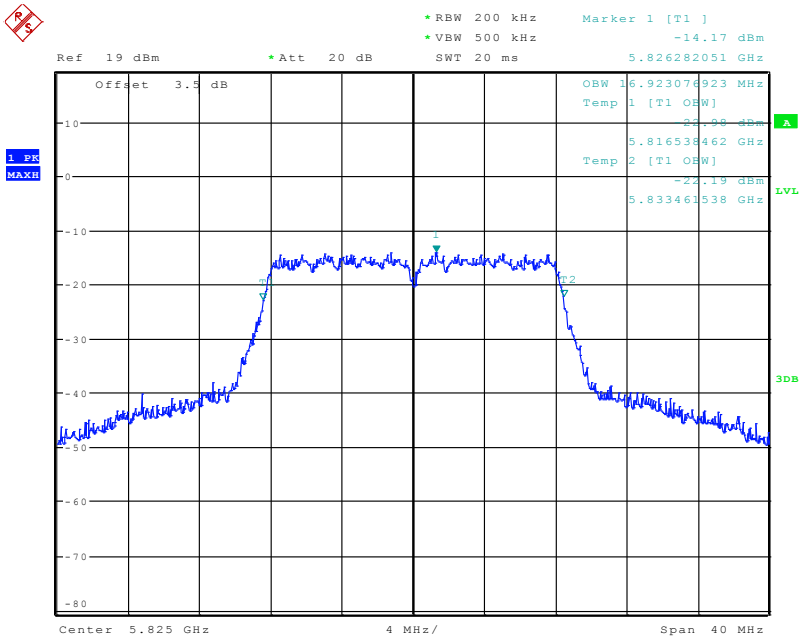
Date: 7.NOV.2019 15:58:32

802.11a mode, 99% Occupied Bandwidth, 5785 MHz



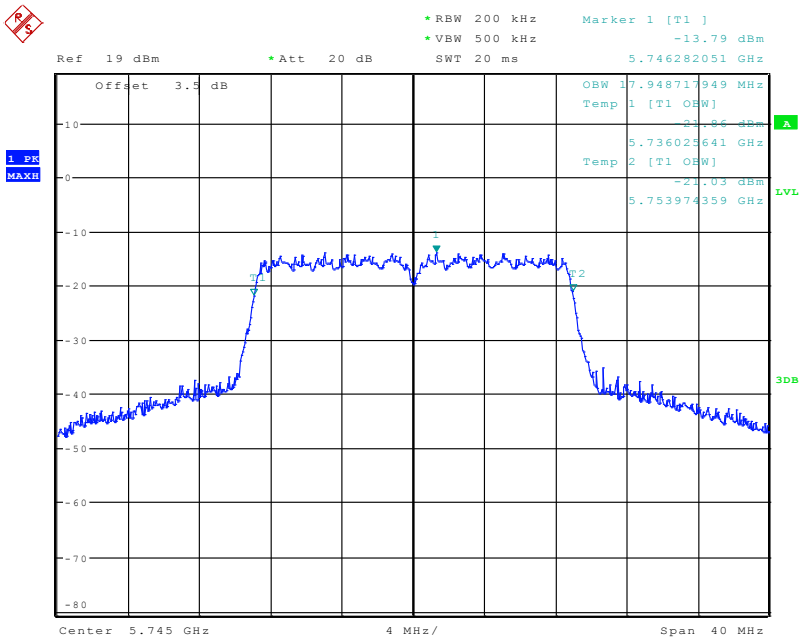
Date: 7.NOV.2019 16:00:17

802.11a mode, 99% Occupied Bandwidth, 5825 MHz



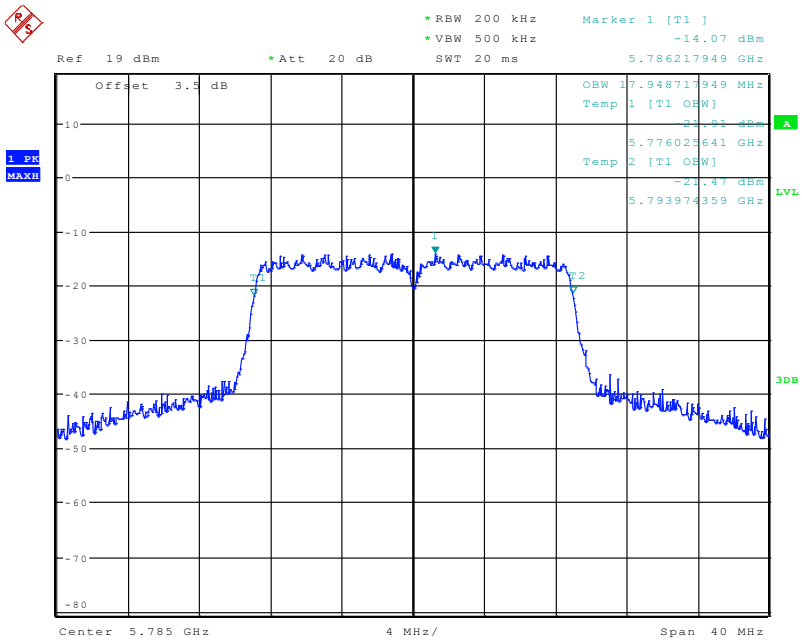
Date: 7.NOV.2019 16:01:07

802.11n20 mode, 99% Occupied Bandwidth, 5745 MHz



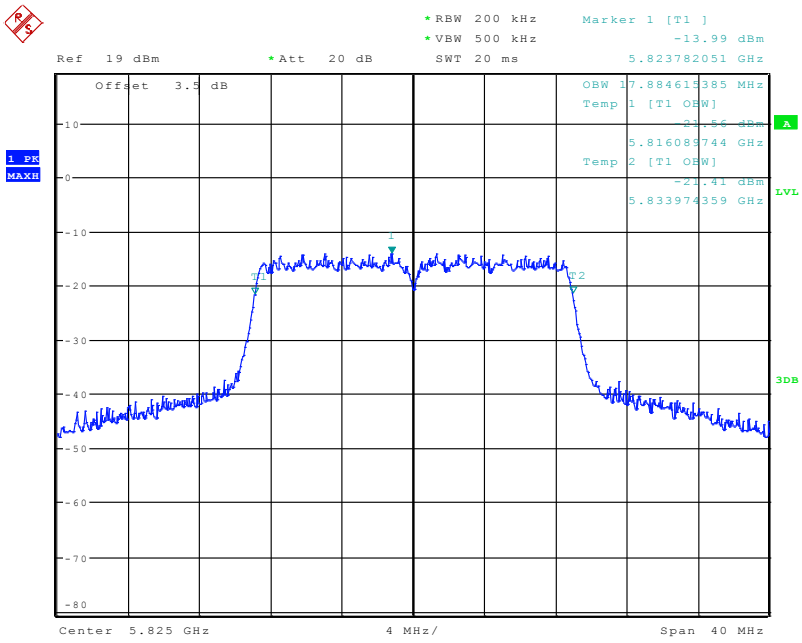
Date: 7.NOV.2019 16:02:23

802.11n20 mode, 99% Occupied Bandwidth, 5785 MHz



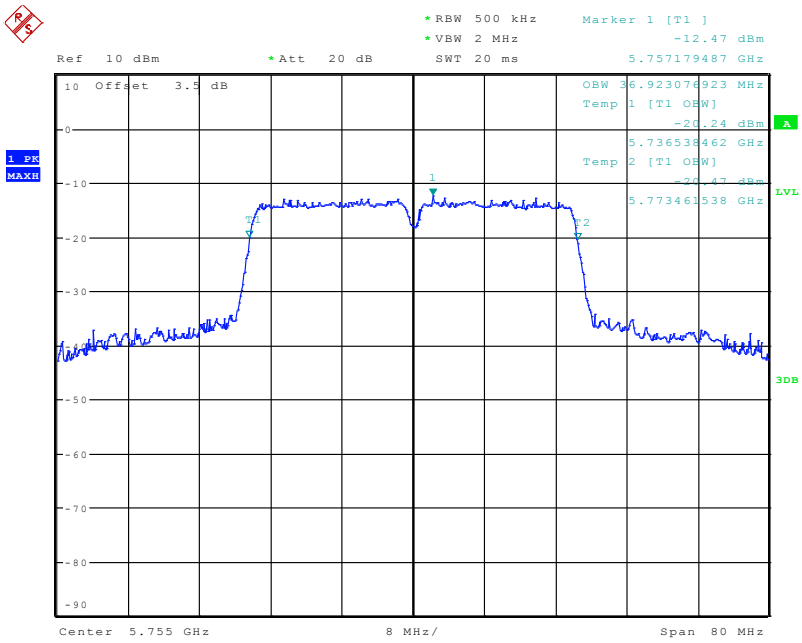
Date: 7.NOV.2019 16:03:06

802.11n20 mode, 99% Occupied Bandwidth, 5825 MHz



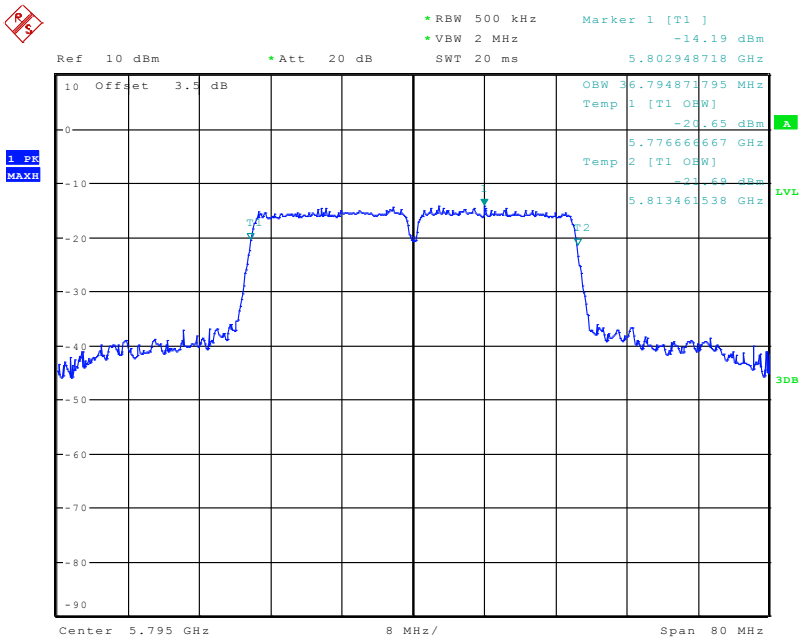
Date: 7.NOV.2019 16:03:41

802.11n40 mode, 99% Occupied Bandwidth, 5755 MHz



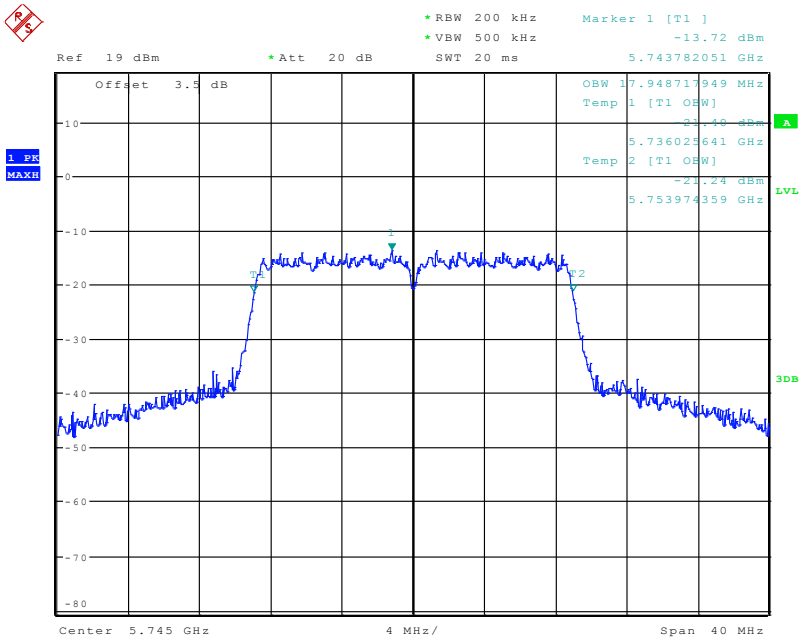
Date: 7.NOV.2019 16:11:37

802.11n40 mode, 99% Occupied Bandwidth, 5795 MHz



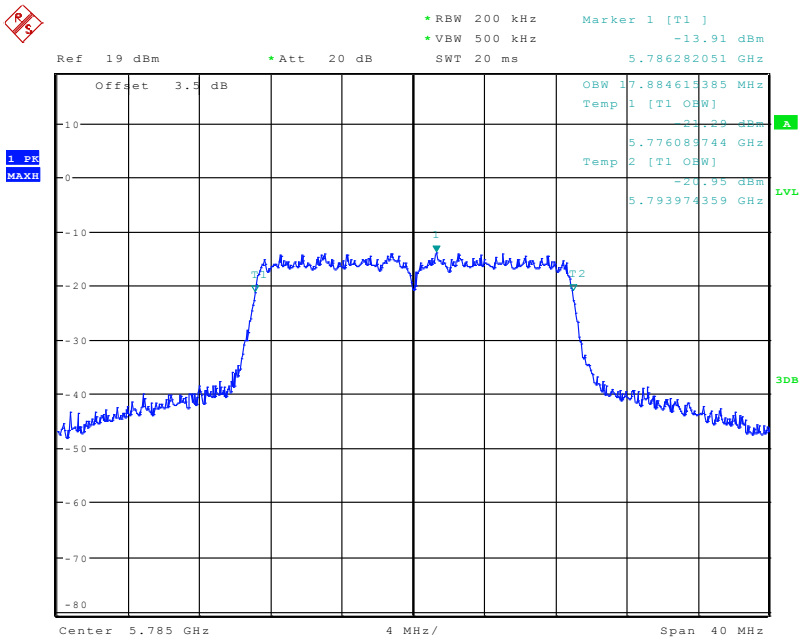
Date: 7.NOV.2019 16:17:30

802.11ac20 mode, 99% Occupied Bandwidth, 5745 MHz



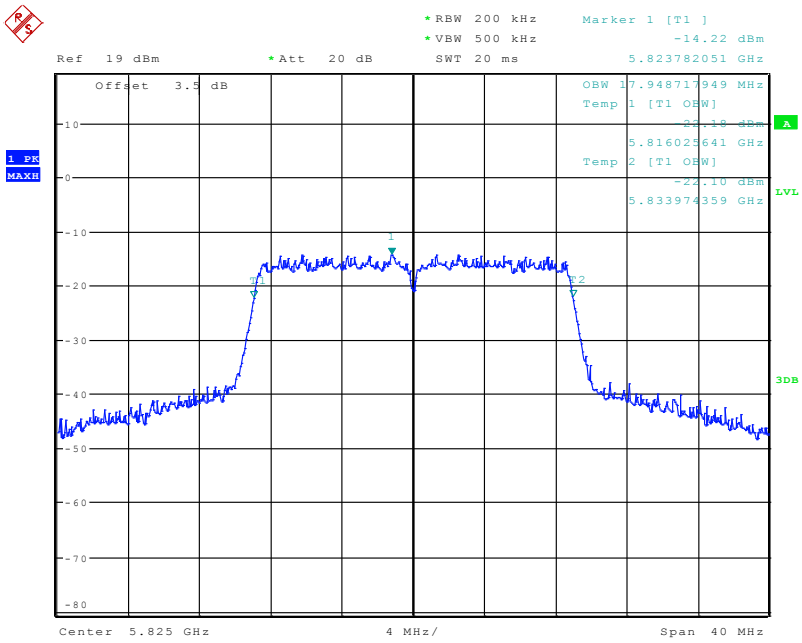
Date: 7.NOV.2019 16:05:18

802.11ac20 mode, 99% Occupied Bandwidth, 5785 MHz



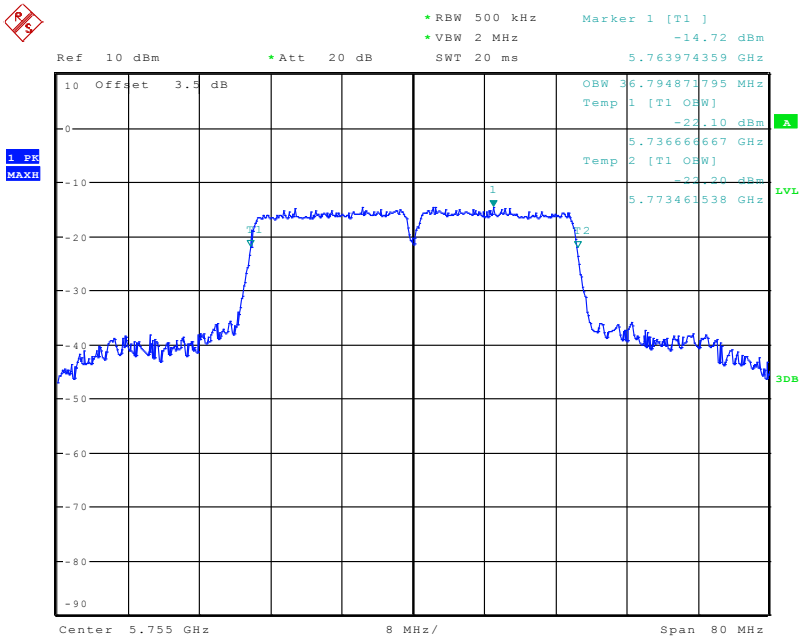
Date: 7.NOV.2019 16:06:06

802.11ac20 mode, 99% Occupied Bandwidth, 5825 MHz



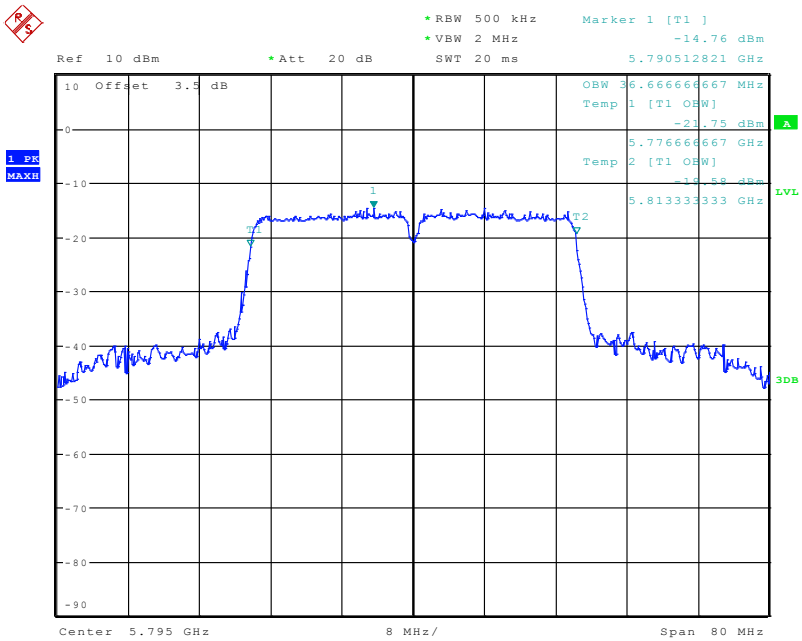
Date: 7.NOV.2019 16:06:42

802.11ac40 mode, 99% Occupied Bandwidth, 5755 MHz



Date: 7.NOV.2019 16:18:29

802.11ac40 mode, 99% Occupied Bandwidth, 5795 MHz



Date: 7.NOV.2019 16:18:05

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

Applicable Standard

For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

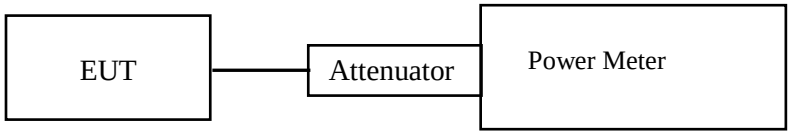
For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting 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.

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.

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 ℃
Relative Humidity:	54 %
ATM Pressure:	101.0 kPa

The testing was performed by Gavin Guo on 2019-11-07

EUT operation mode: Transmitting

Test Result: Pass

Please refer to the following tables.

5150 MHz – 5250 MHz(this is a client device)

Frequency (MHz)	Average Output Power (dBm)	Limit (dBm)
802.11a		
5180	12.25	24
5200	11.43	
5240	9.17	
802.11n20		
5180	12.45	24
5200	11.46	
5240	9.46	
802.11n40		
5190	11.92	24
5230	9.84	
802.11ac20		
5180	12.28	24
5200	11.49	
5240	9.07	
802.11ac40		
5190	11.9	24
5230	9.79	

5250 MHz – 5350 MHz:

Frequency (MHz)	Average Output Power (dBm)	Limit (dBm)
802.11a		
5260	8.10	24
5280	7.13	
5320	6.09	
802.11n20		
5260	8.16	24
5280	7.27	
5320	6.06	
802.11n40		
5270	7.69	24
5310	6.30	
802.11ac20		
5260	8.08	24
5280	7.35	
5320	6.03	
802.11ac40		
5270	7.72	24
5310	6.20	

5470 MHz – 5725 MHz:

Frequency (MHz)	Average Output Power (dBm)	Limit (dBm)
802.11a		
5500	9.82	24
5600	9.48	
5700	9.69	
802.11n20		
5500	9.25	24
5600	9.14	
5700	9.27	
802.11n40		
5510	9.12	24
5590	9.23	
5670	9.54	
802.11ac20		
5500	9.24	24
5600	9.06	
5700	9.19	
802.11ac40		
5510	9.18	24
5590	9.24	
5670	9.11	

5725 MHz – 5850 MHz:

Frequency (MHz)	Average Output Power (dBm)	Limit (dBm)
802.11a		
5745	9.27	30
5785	9.68	
5825	9.39	
802.11n20		
5745	8.90	30
5785	9.47	
5825	9.29	
802.11n40		
5755	9.30	30
5795	9.13	
802.11ac20		
5745	9.16	30
5785	9.60	
5825	9.29	
802.11ac40		
5755	9.38	30
5795	9.11	

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

Applicable Standard

(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.

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.

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

For devices operating in the bands 5.15-5.25 GHz, 5.25-5.35 GHz, and 5.47-5.725 GHz, the above procedures make use of 1 MHz RBW to satisfy directly the 1 MHz reference bandwidth specified in § 15.407(a)(5). For devices operating in the band 5.725-5.85 GHz, the rules specify a measurement bandwidth of 500 kHz. Many spectrum analyzers do not have 500 kHz RBW, thus a narrower RBW may need to be used. The rules permit the use of a RBWs less than 1 MHz, or 500 kHz, "provided that the measured power is integrated over the full reference bandwidth" to show the total power over the specified measurement bandwidth (i.e., 1 MHz, or 500 kHz). If measurements are performed using a reduced resolution bandwidth (< 1 MHz, or < 500 kHz) and integrated over 1 MHz, or 500 kHz bandwidth, the following adjustments to the procedures apply:

a) Set RBW $\geqslant$ 1/T, where T is defined in section II.B.l.a).
b) Set VBW $\geqslant$ 3 RBW.
c) If measurement bandwidth of Maximum PSD is specified in 500 kHz, add 10 log (500 kHz/RBW) to the measured result, whereas RBW (< 500 kHz) is the reduced resolution bandwidth of the spectrum analyzer set during measurement.
d) If measurement bandwidth of Maximum PSD is specified in 1 MHz, add 10 log (1MHz/RBW) to the measured result, whereas RBW (< 1 MHz) is the reduced resolution bandwidth of spectrum analyzer set during measurement.
e) Care must be taken to ensure that the measurements are performed during a period of continuous transmission or are corrected upward for duty cycle.

Test Data

Environmental Conditions

Temperature:	25 ℃
Relative Humidity:	56 %
ATM Pressure:	101.0 kPa

The testing was performed by Gavin Guo from 2019-10-24 to 2019-11-07.

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EUT operation mode: Transmitting

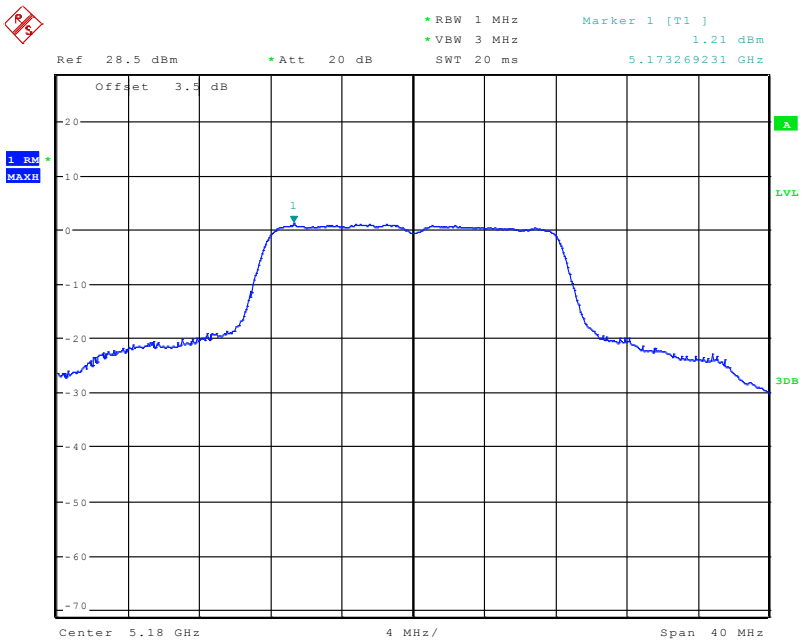
Test Result: Pass

Please refer to the following tables and plots.

5150 MHz – 5250 MHz(this is a client device):

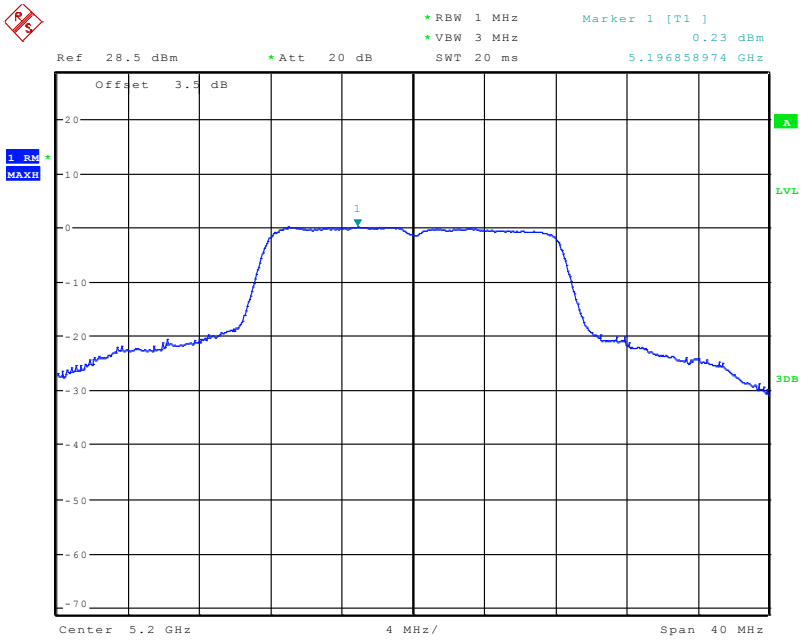
Frequency (MHz)	Power Spectral Density (dBm/MHz)	Limit (dBm/MHz)
802.11a		
5180	1.21	11
5200	0.23	
5240	-1.89	
802.11n20		
5180	0.77	11
5200	0.05	
5240	-2.11	
802.11n40		
5190	-2.52	11
5230	-4.13	
802. 11ac20		
5180	0.83	11
5200	0.12	
5240	-2.21	
802. 11ac40		
5190	-2.37	11
5230	-4.13	

802.11a mode, Power Spectral Density, 5180 MHz



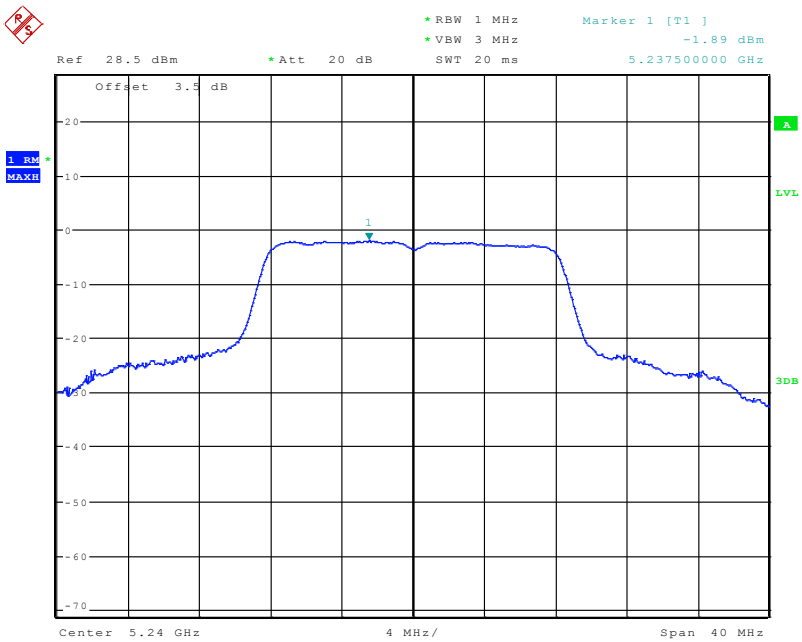
Date: 24.OCT.2019 10:56:48

802.11a mode, Power Spectral Density, 5200 MHz



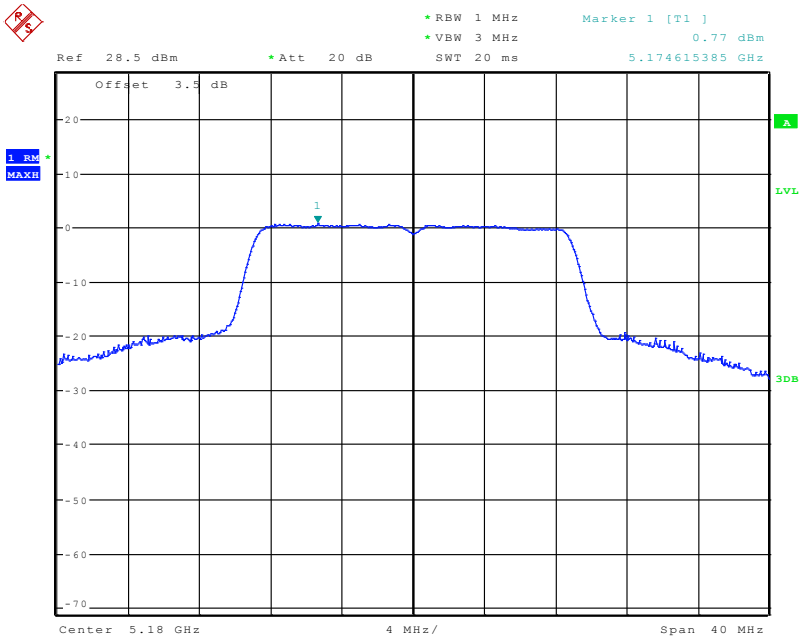
Date: 24.OCT.2019 10:57:30

802.11a mode, Power Spectral Density, 5240 MHz



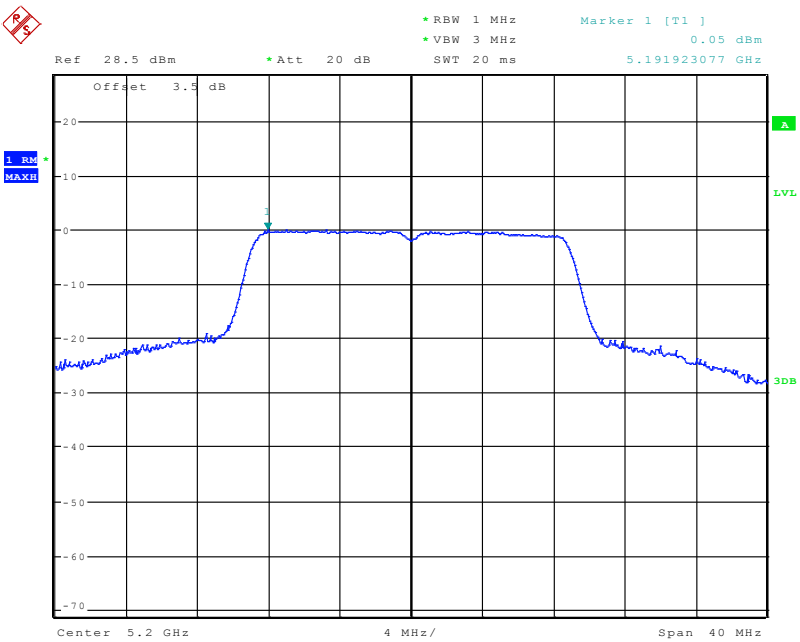
Date: 24.OCT.2019 10:57:56

802.11n20 mode, Power Spectral Density, 5180 MHz



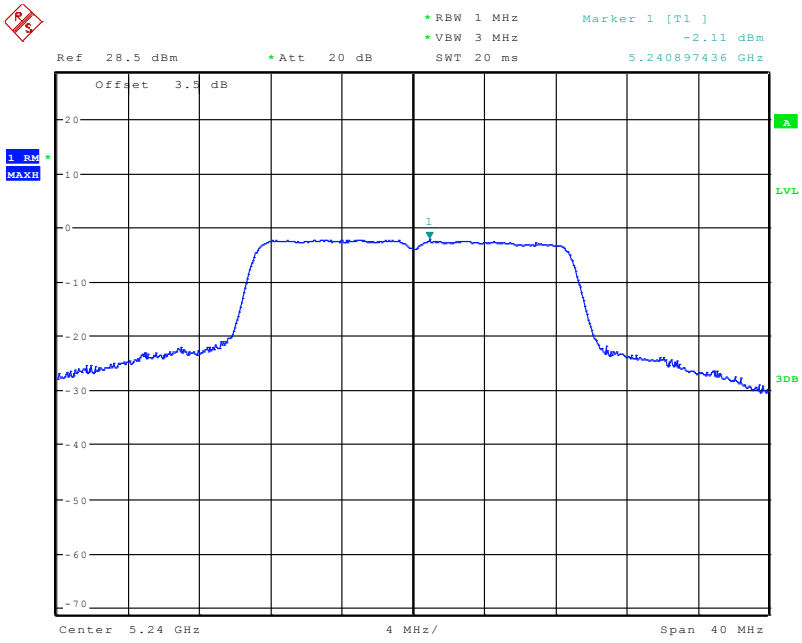
Date: 24.OCT.2019 10:54:46

802.11n20 mode, Power Spectral Density, 5200 MHz



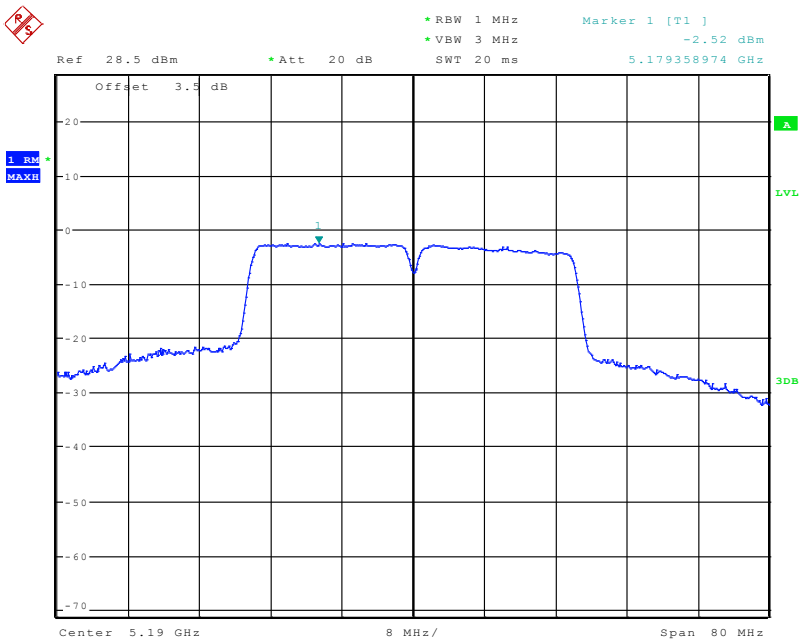
Date: 24.OCT.2019 10:54:06

802.11n20 mode, Power Spectral Density, 5240 MHz



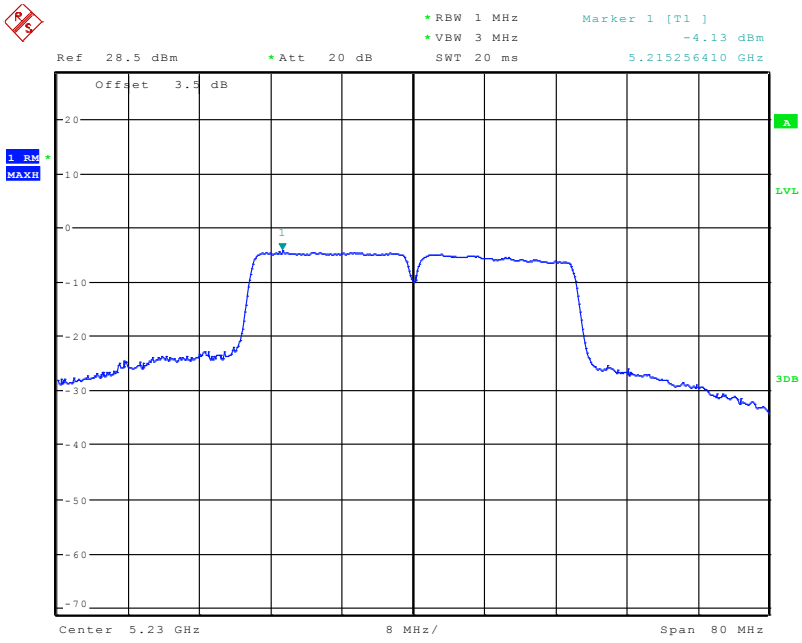
Date: 24.OCT.2019 10:53:32

802.11n40 mode, Power Spectral Density, 5190 MHz



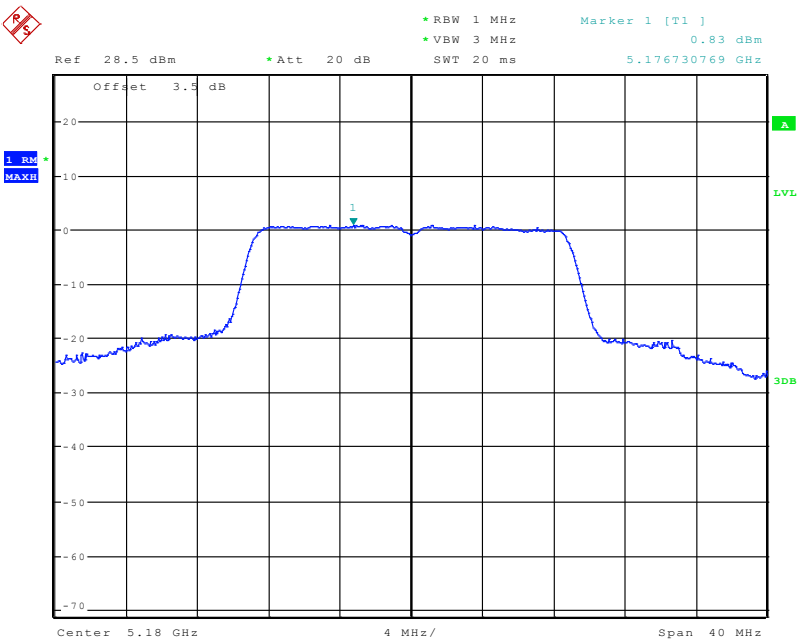
Date: 24.OCT.2019 10:55:26

802.11n40 mode, Power Spectral Density, 5230 MHz



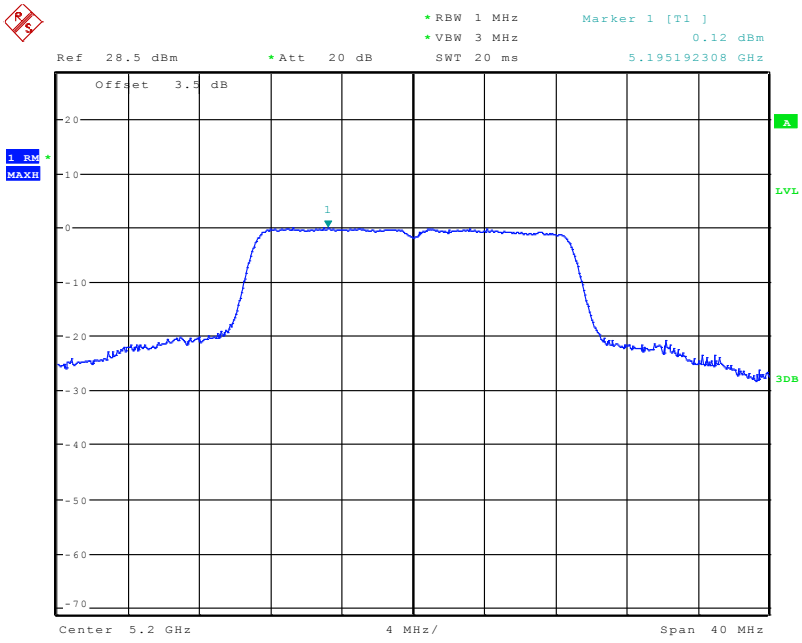
Date: 24.OCT.2019 10:56:03

802.11ac20 mode, Power Spectral Density, 5180 MHz



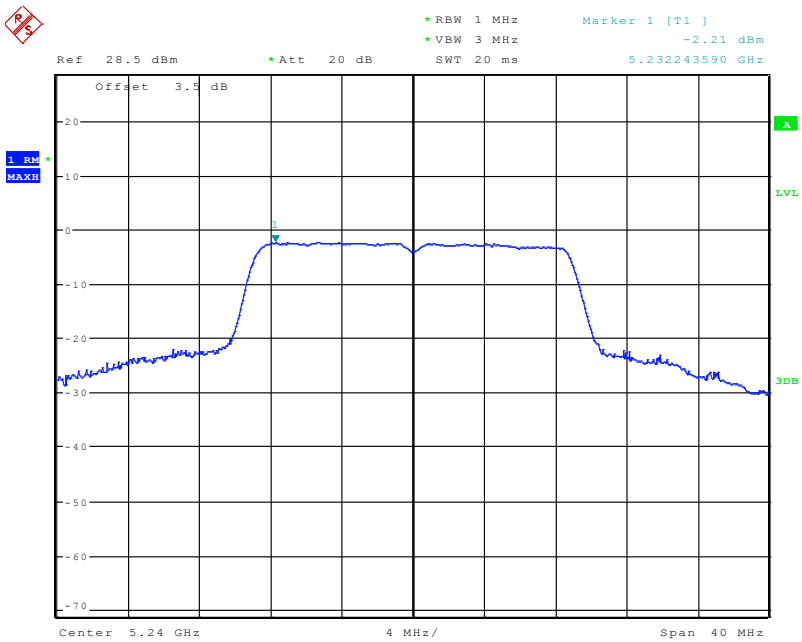
Date: 24.OCT.2019 10:51:38

802. 11ac20 mode, Power Spectral Density, 5200 MHz



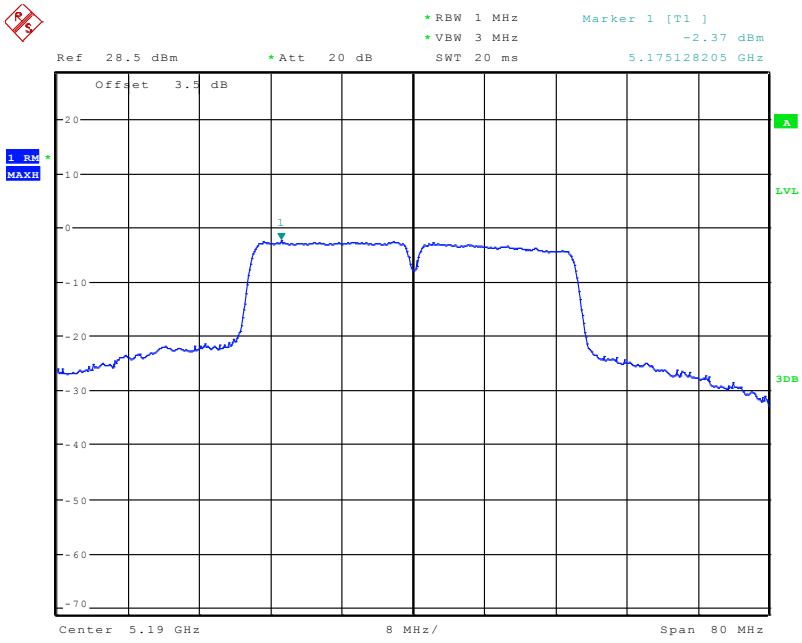
Date: 24.OCT.2019 10:52:03

802. 11ac20 mode, Power Spectral Density, 5240 MHz



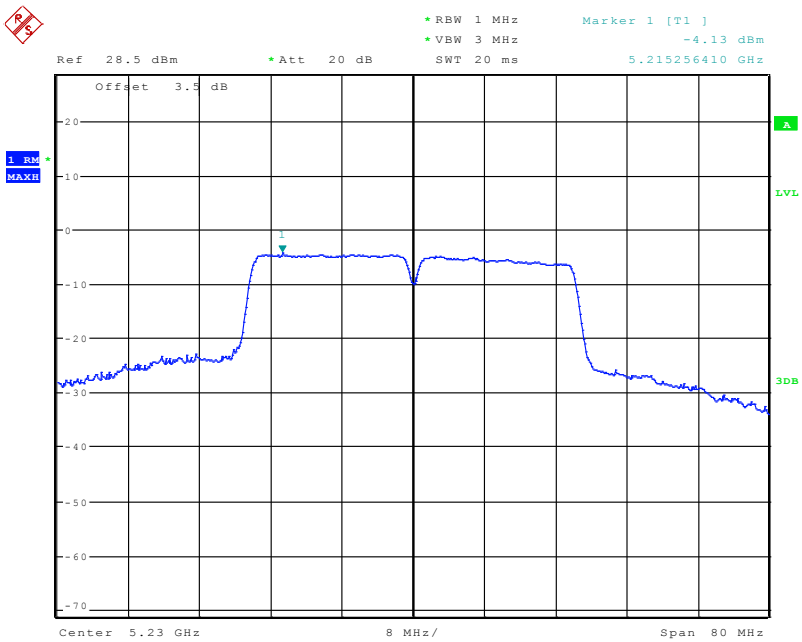
Date: 24.OCT.2019 10:52:33

802. 11ac40 mode, Power Spectral Density, 5190 MHz



Date: 24.OCT.2019 10:50:06

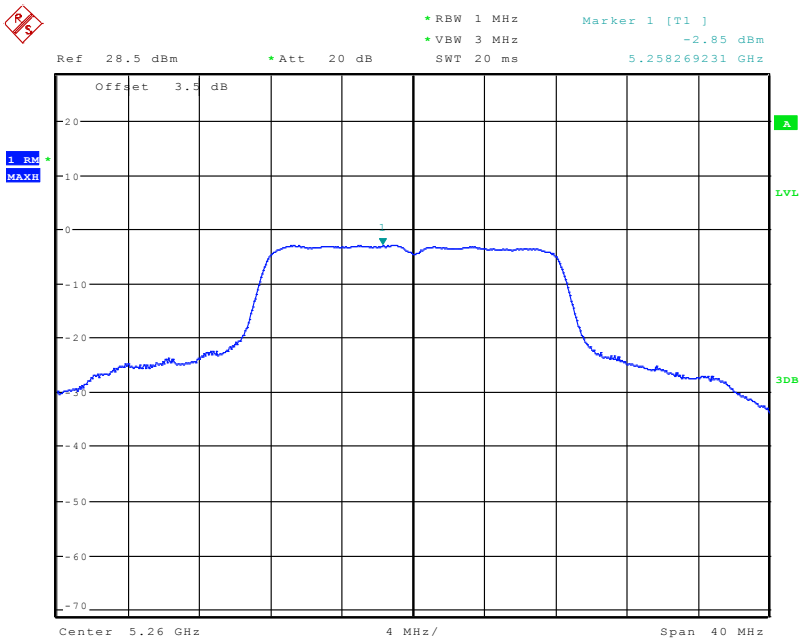
802. 11ac40 mode, Power Spectral Density, 5230 MHz



5250 MHz – 5350 MHz:

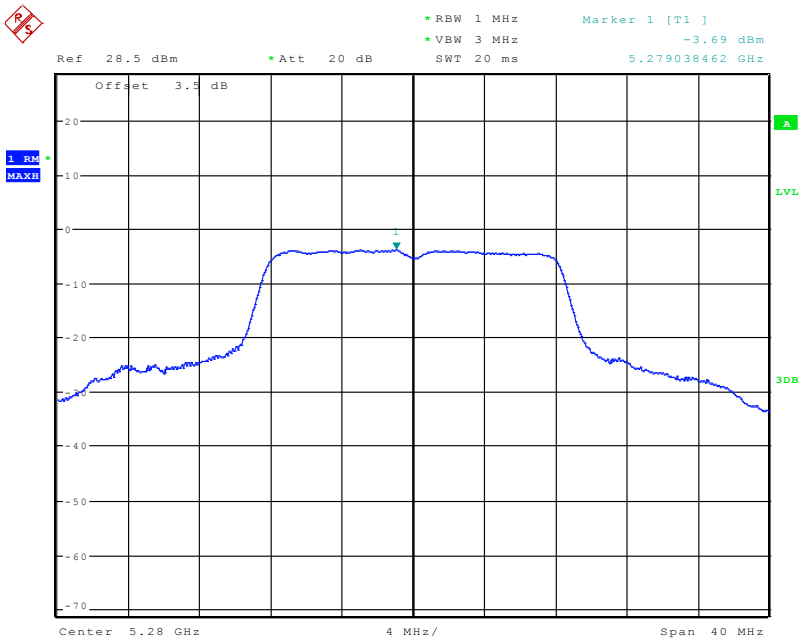
Frequency (MHz)	Power Spectral Density(dBm/MHz)	duty cycle factor(dB)	Power Spectral Density(dBm/MHz)	Limit (dBm/MHz)
802.11a				
5260	-2.85	0	-2.85	11
5280	-3.69	0	-3.69	
5320	-4.85	0	-4.85	
802.11n20				
5260	-2.93	0	-2.93	11
5280	-3.90	0	-3.90	
5320	-5.28	0	-5.28	
802.11n40				
5270	-6.56	0	-6.56	11
5310	-7.92	0	-7.92	
802. 11ac20				
5260	-3.30	0	-3.30	11
5280	-4.04	0	-4.04	
5320	-5.10	0	-5.10	
802. 11ac40				
5270	-6.49	0	-6.49	11
5310	-7.87	0	-7.87	

802.11a mode, Power Spectral Density, 5260 MHz



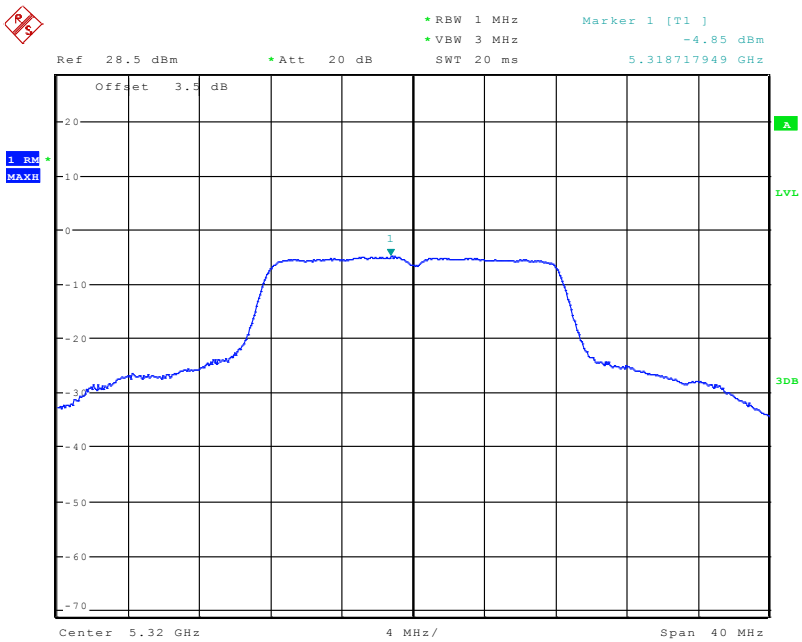
Date: 24.OCT.2019 13:01:12

802.11a mode, Power Spectral Density, 5280 MHz



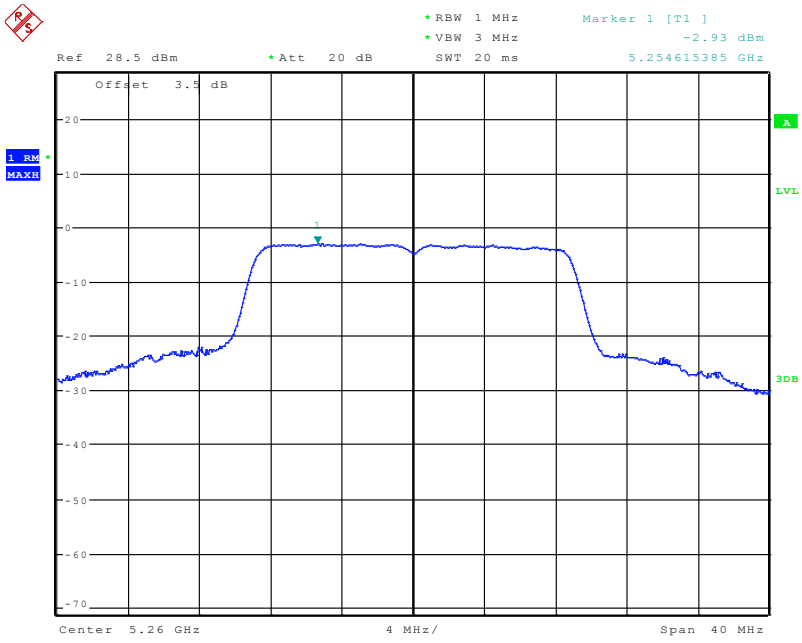
Date: 24.OCT.2019 13:02:01

802.11a mode, Power Spectral Density, 5320 MHz



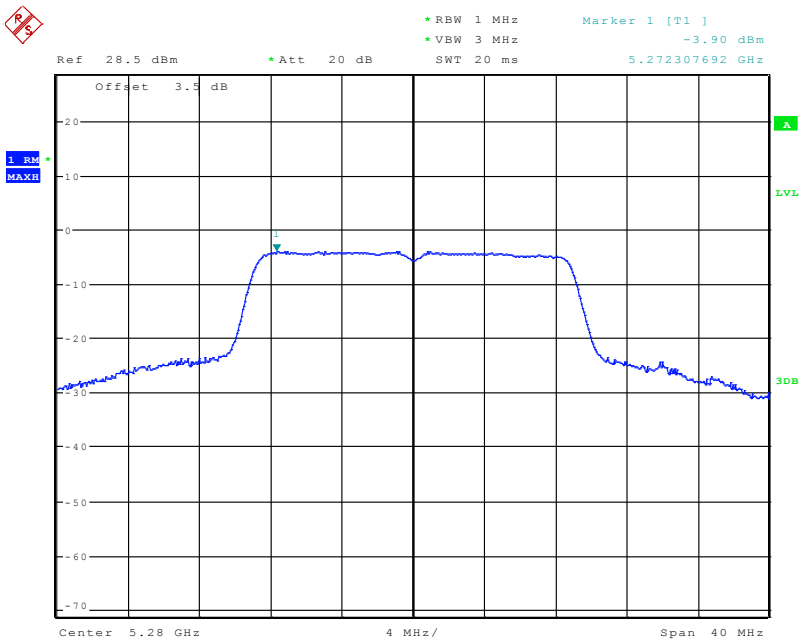
Date: 24.OCT.2019 13:02:34

802.11n20 mode, Power Spectral Density, 5260 MHz



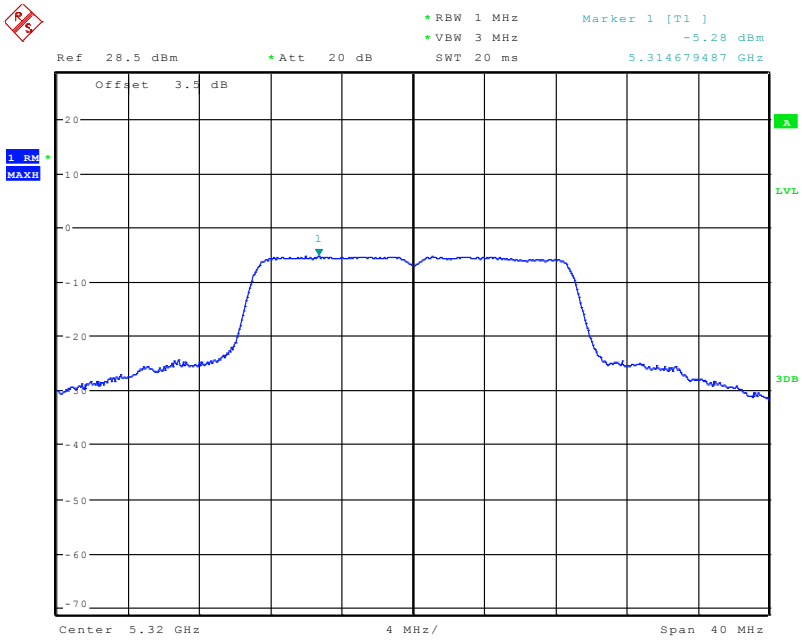
Date: 24.OCT.2019 13:06:49

802.11n20 mode, Power Spectral Density, 5280 MHz



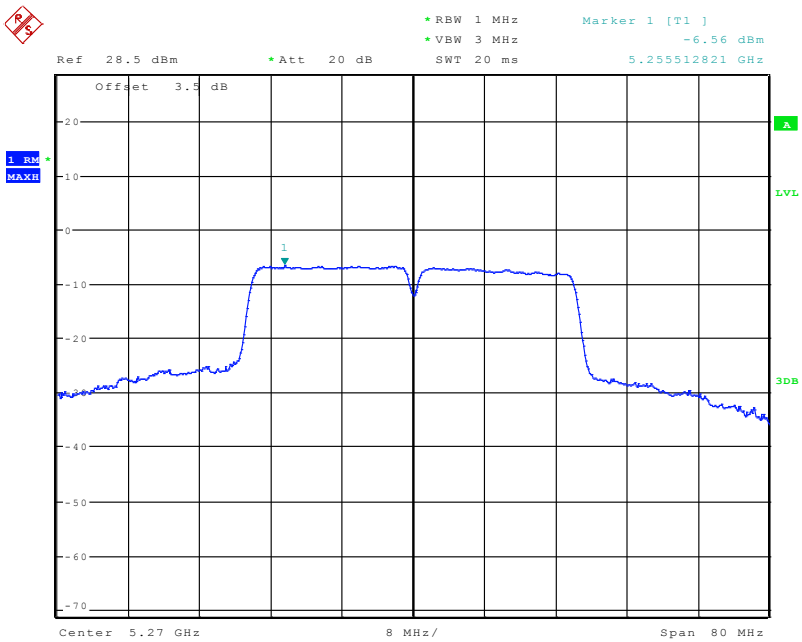
Date: 24.OCT.2019 13:07:23

802.11n20 mode, Power Spectral Density, 5320 MHz



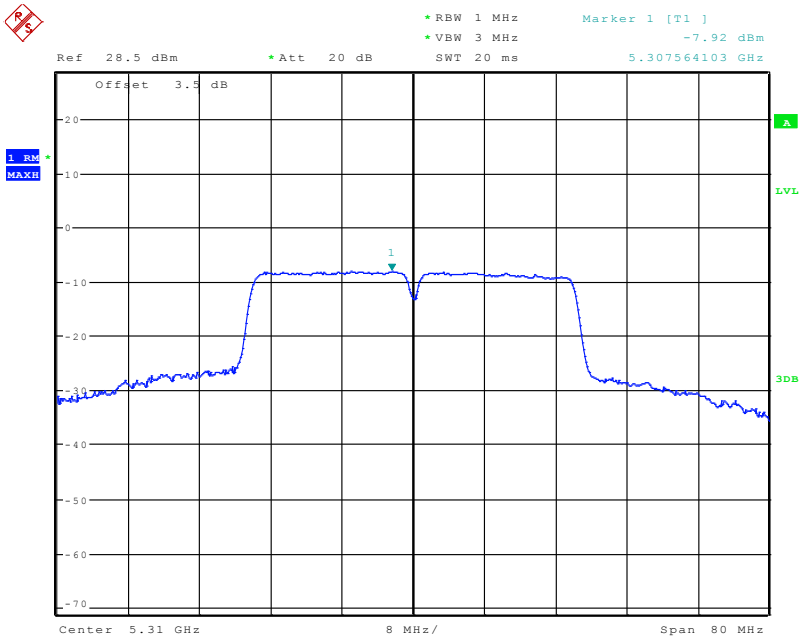
Date: 24.OCT.2019 13:09:09

802.11n40 mode, Power Spectral Density, 5270 MHz



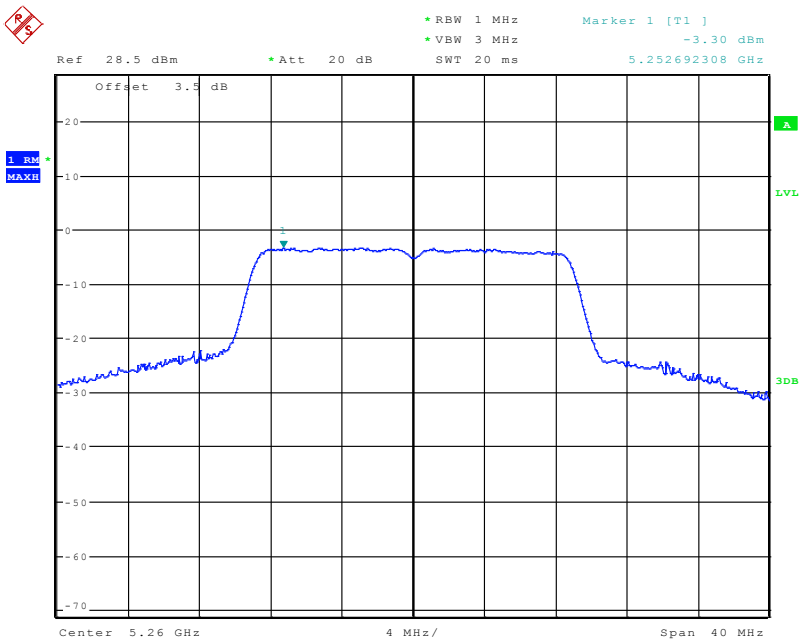
Date: 24.OCT.2019 13:09:59

802.11n40 mode, Power Spectral Density, 5310 MHz



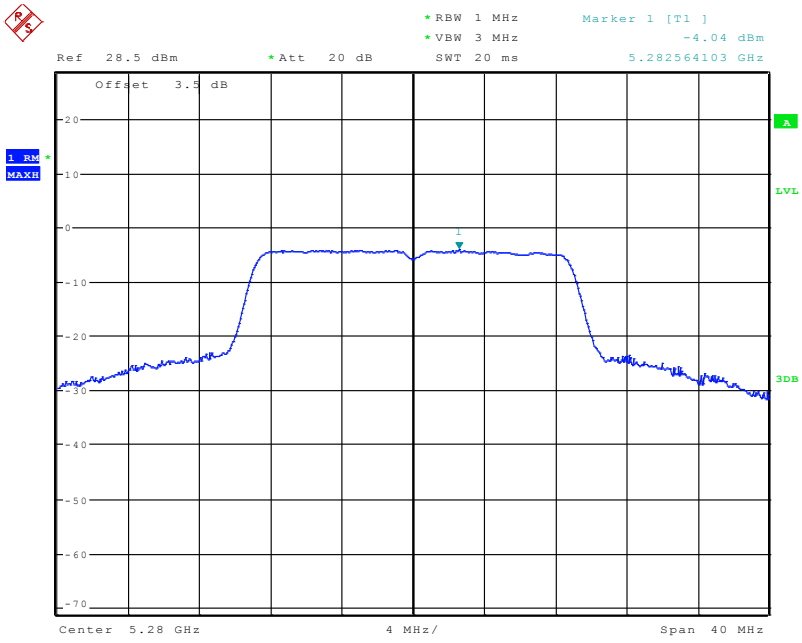
Date: 24.OCT.2019 13:10:35

802.11ac20 mode, Power Spectral Density, 5260 MHz



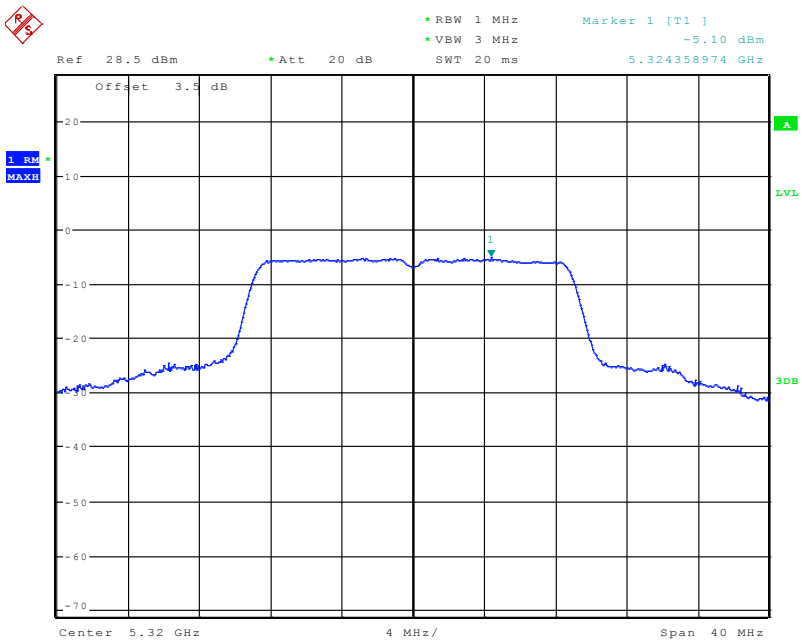
Date: 24.OCT.2019 13:12:20

802. 11ac20 mode, Power Spectral Density, 5280 MHz



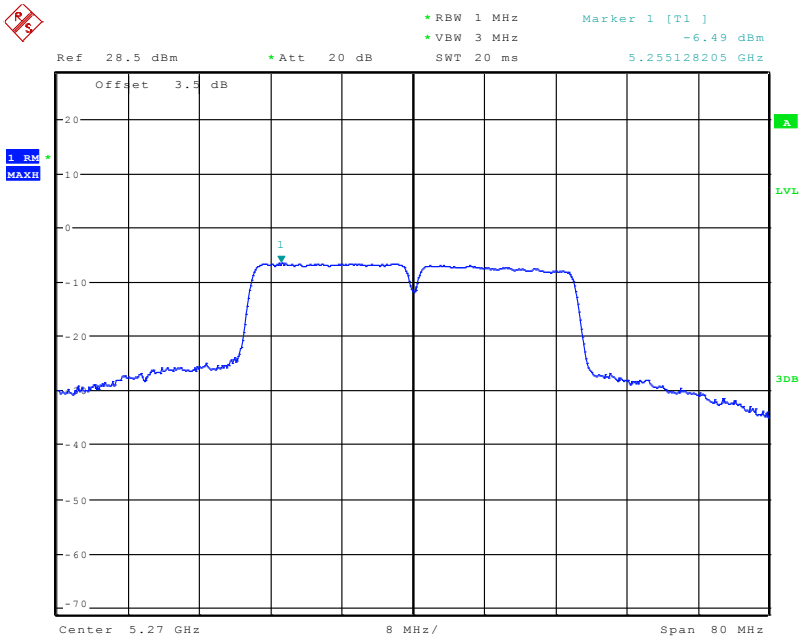
Date: 24.OCT.2019 13:12:57

802. 11ac20 mode, Power Spectral Density, 5320 MHz



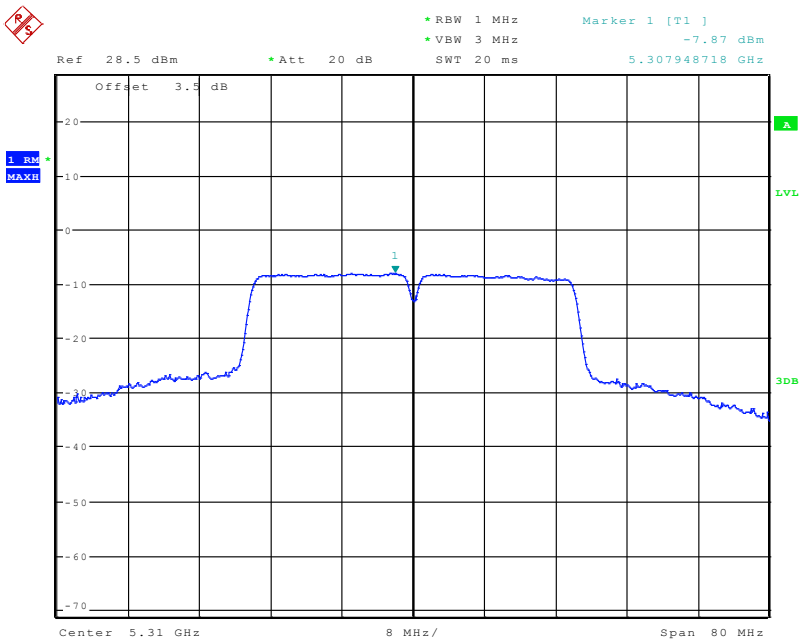
Date: 24.OCT.2019 13:13:35

802. 11ac40 mode, Power Spectral Density, 5270 MHz



Date: 24.OCT.2019 13:11:33

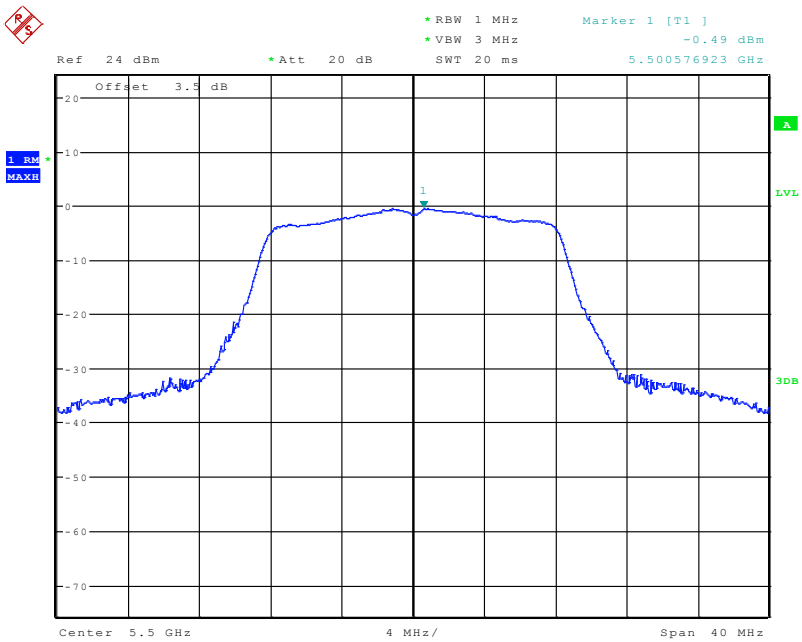
802. 11ac40 mode, Power Spectral Density, 5310 MHz



5470 MHz – 5725 MHz:

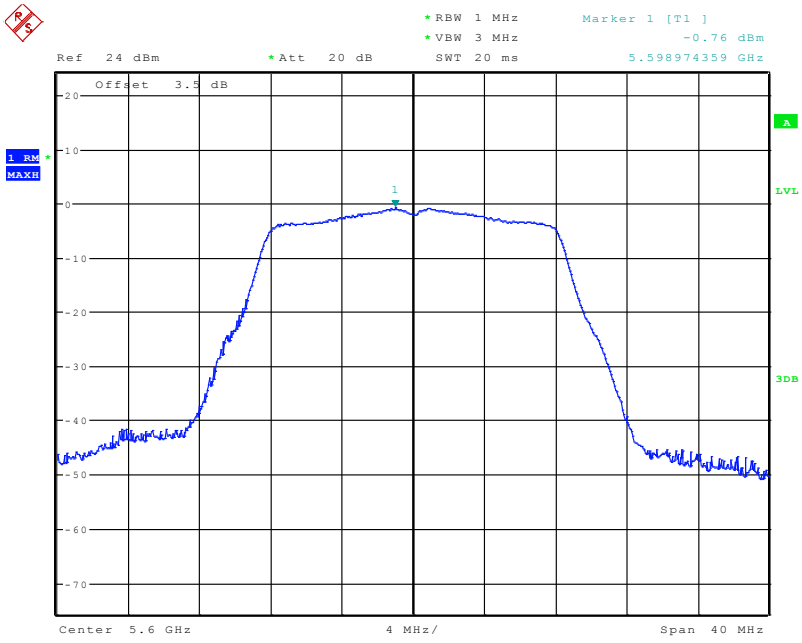
Frequency (MHz)	Power Spectral Density(dBm/MHz)	duty cycle factor(dB)	Power Spectral Density(dBm/MHz)	Limit (dBm/MHz)
802.11a				
5500	-0.49	0	-0.49	11
5600	-0.76	0	-0.76	
5700	-0.39	0	-0.39	
802.11n20				
5500	-1.34	0	-1.34	11
5600	-1.62	0	-1.62	
5700	-1.21	0	-1.21	
802.11n40				
5510	-3.98	0	-3.98	11
5590	-3.86	0	-3.86	
5670	-4.22	0	-4.22	
802. 11ac20				
5500	-1.07	0	-1.07	11
5600	-1.33	0	-1.33	
5700	-1.08	0	-1.08	
802. 11ac40				
5510	-4.08	0	-4.08	11
5590	-3.71	0	-3.71	
5670	-4.09	0	-4.09	

802.11a mode, Power Spectral Density, 5500 MHz



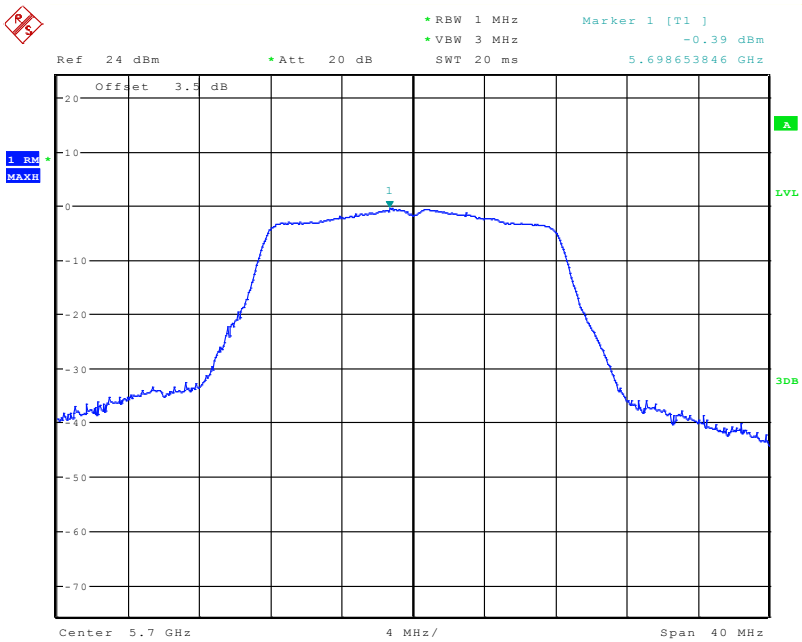
Date: 7.NOV.2019 18:48:14

802.11a mode, Power Spectral Density, 5600 MHz



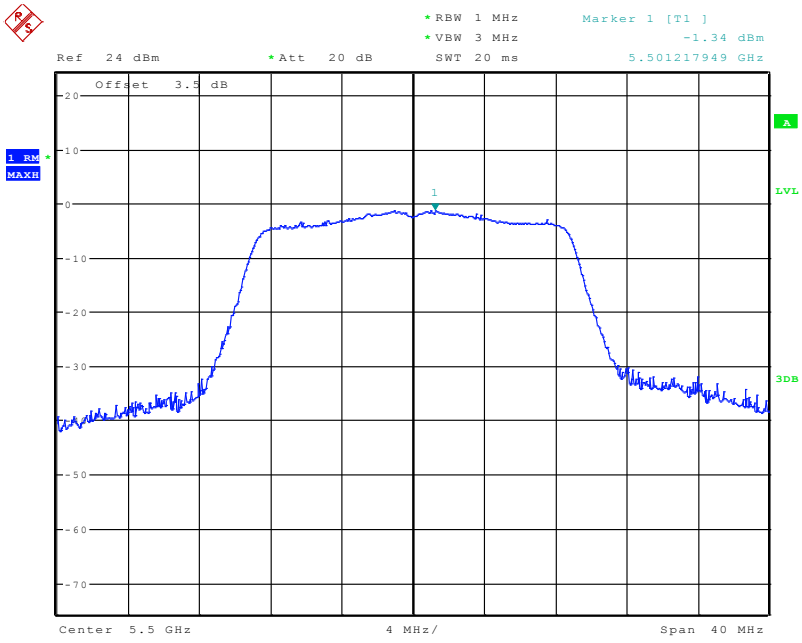
Date: 7.NOV.2019 18:47:35

802.11a mode, Power Spectral Density, 5700 MHz



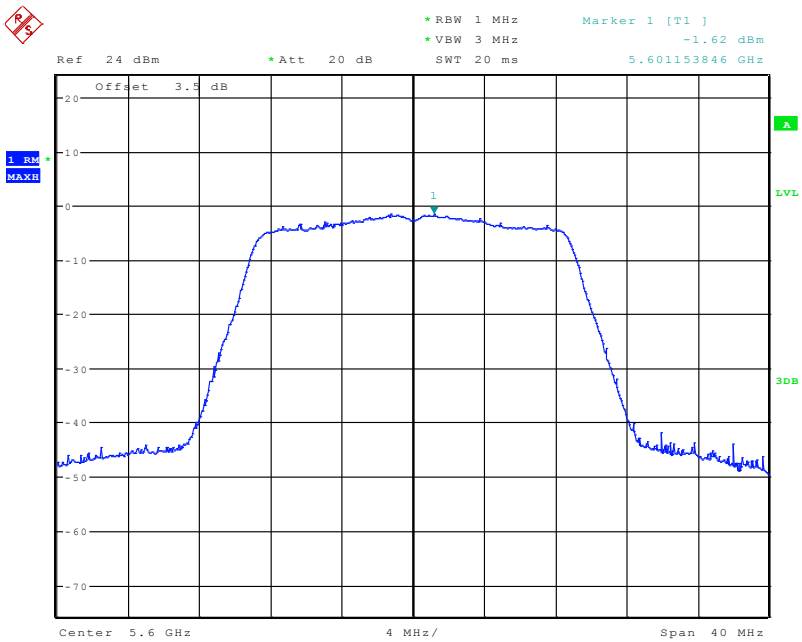
Date: 7.NOV.2019 18:47:09

802.11n20 mode, Power Spectral Density, 5500 MHz



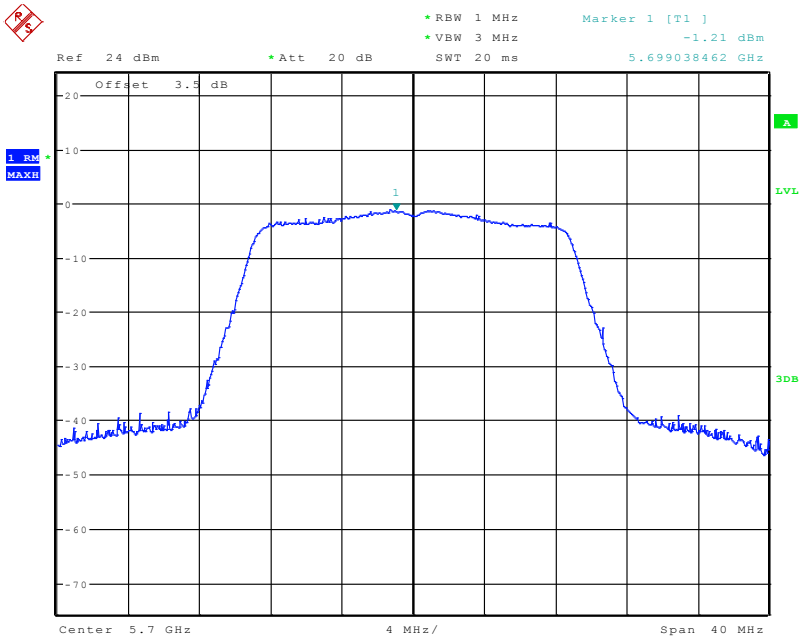
Date: 7.NOV.2019 18:45:45

802.11n20 mode, Power Spectral Density, 5600 MHz



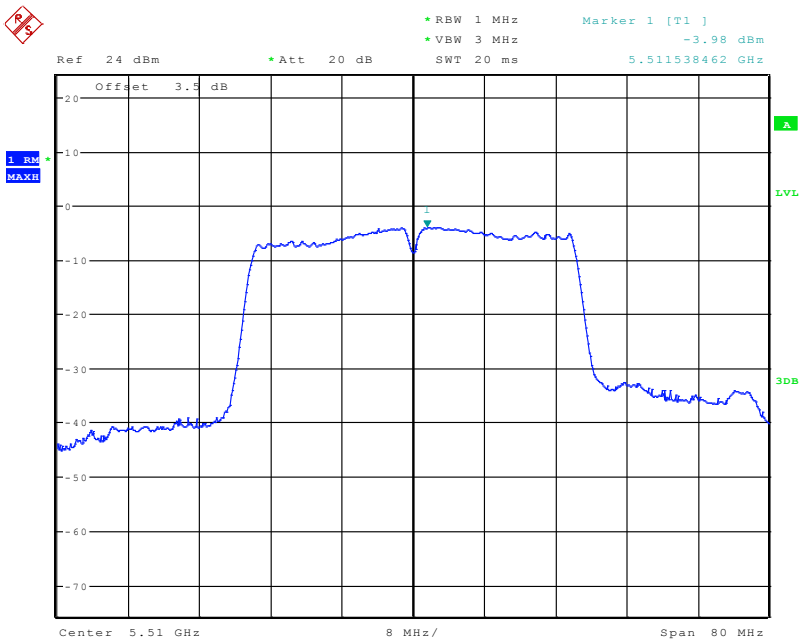
Date: 7.NOV.2019 18:46:16

802.11n20 mode, Power Spectral Density, 5700 MHz



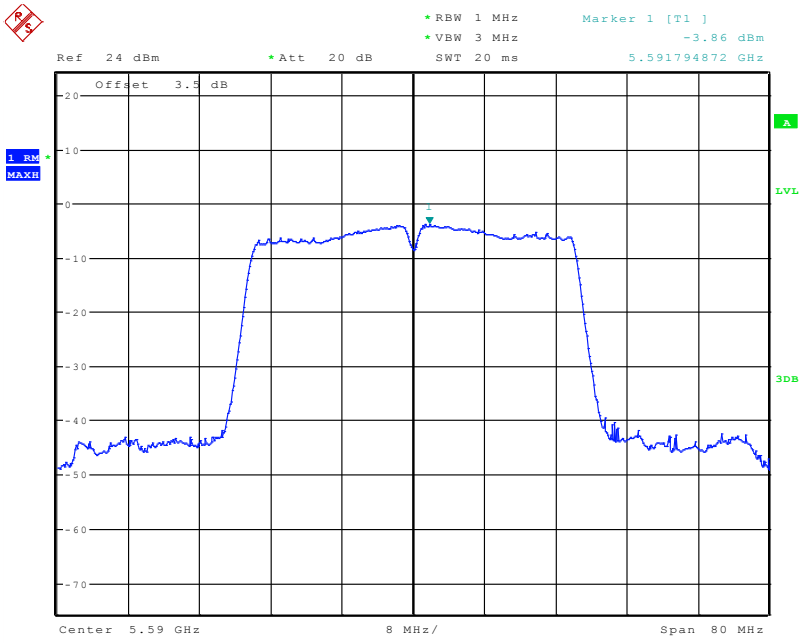
Date: 7.NOV.2019 18:46:38

802.11n40 mode, Power Spectral Density, 5510 MHz



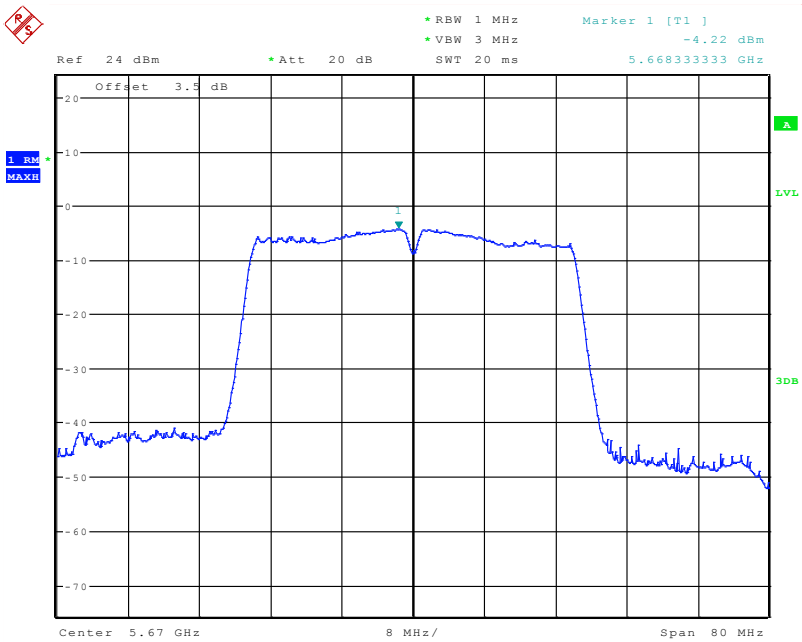
Date: 7.NOV.2019 18:37:26

802.11n40 mode, Power Spectral Density, 5590 MHz



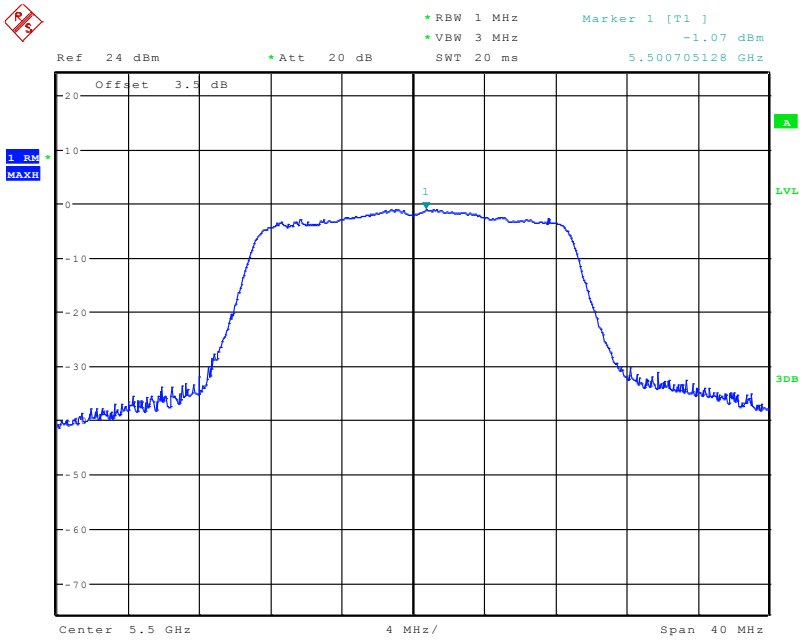
Date: 7.NOV.2019 18:39:20

802.11n40 mode, Power Spectral Density, 5670 MHz



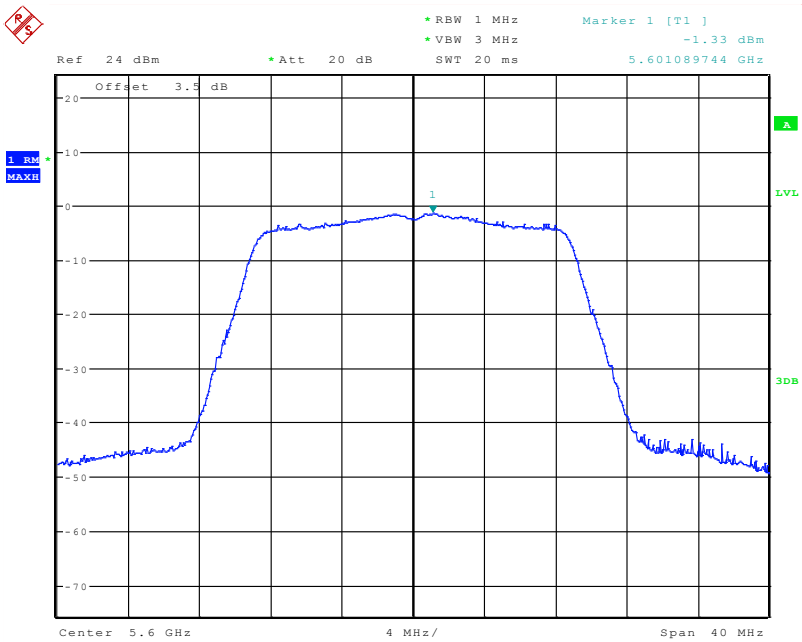
Date: 7.NOV.2019 18:39:53

802.11ac20 mode, Power Spectral Density, 5500 MHz



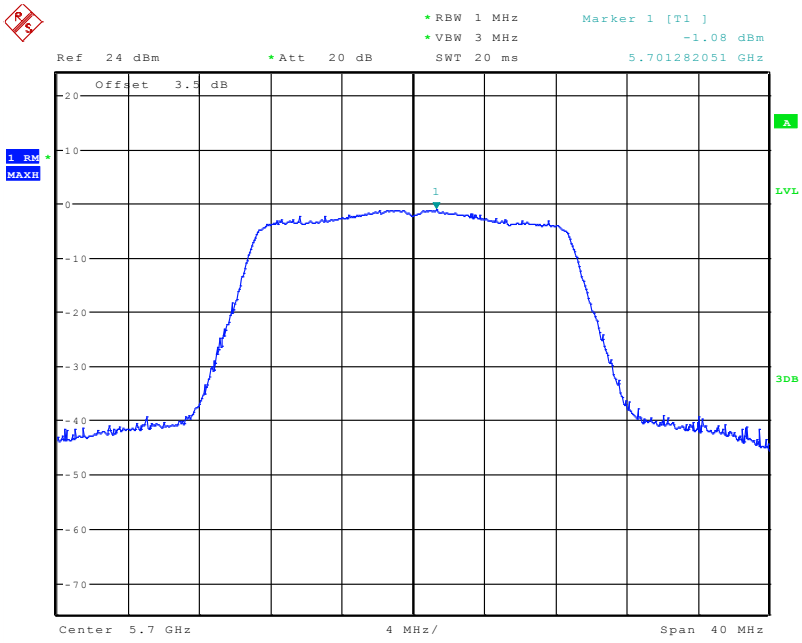
Date: 7.NOV.2019 18:43:50

802. 11ac20 mode, Power Spectral Density, 5600 MHz



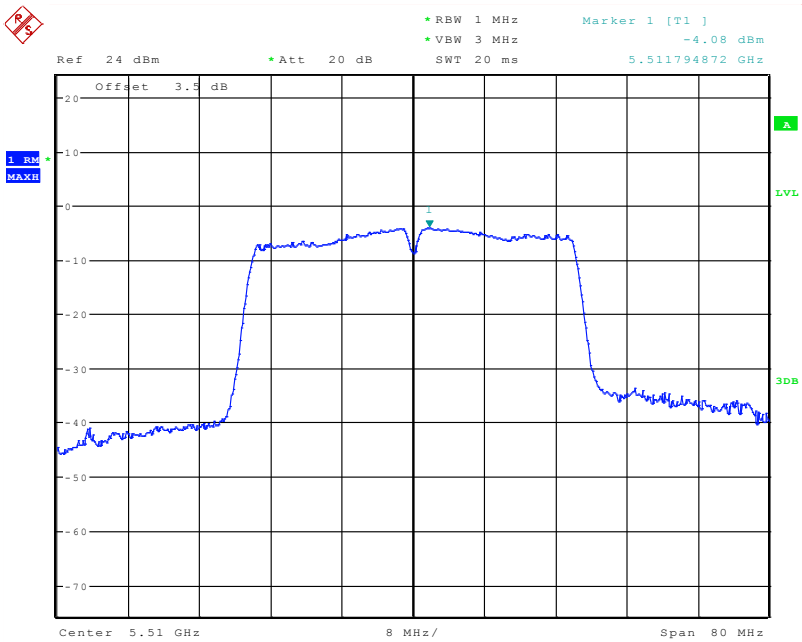
Date: 7.NOV.2019 18:44:34

802. 11ac20 mode, Power Spectral Density, 5700 MHz



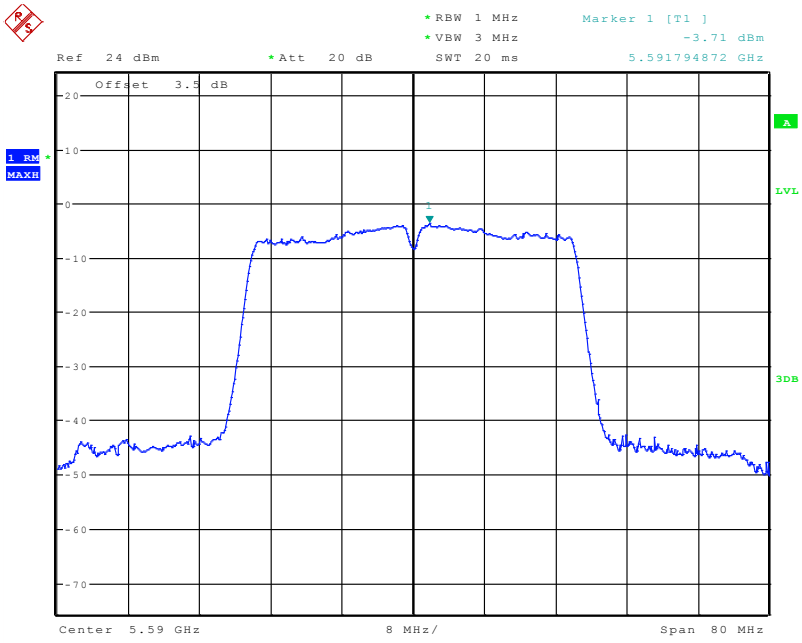
Date: 7.NOV.2019 18:45:01

802. 11ac40 mode, Power Spectral Density, 5510 MHz



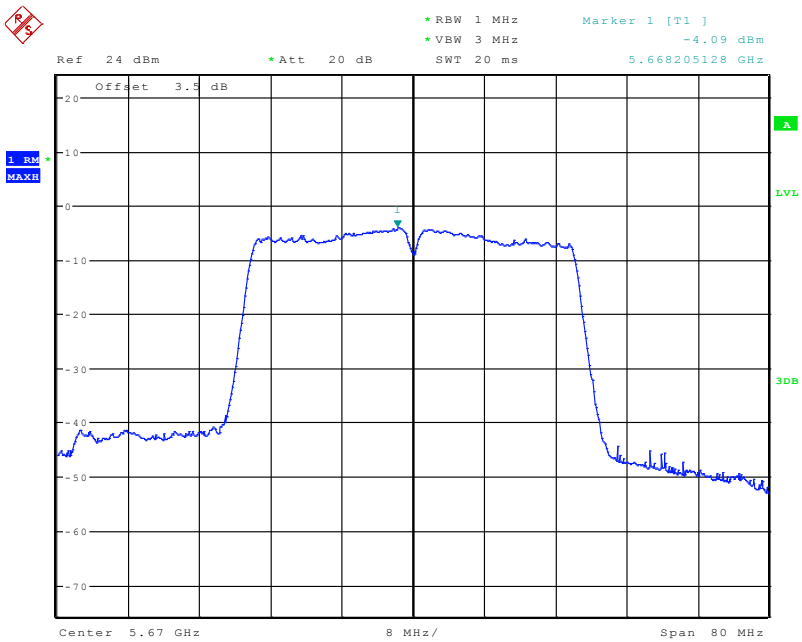
Date: 7.NOV.2019 18:42:56

802. 11ac40 mode, Power Spectral Density, 5590 MHz



Date: 7.NOV.2019 18:42:04

802. 11ac40 mode, Power Spectral Density, 5670 MHz

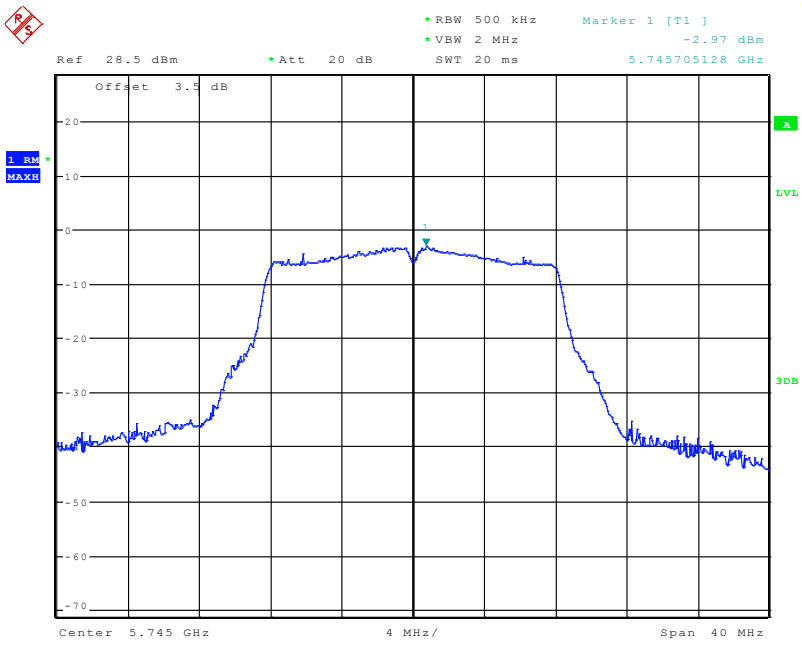


Date: 7.NOV.2019 18:41:32

5725 MHz – 5850 MHz:

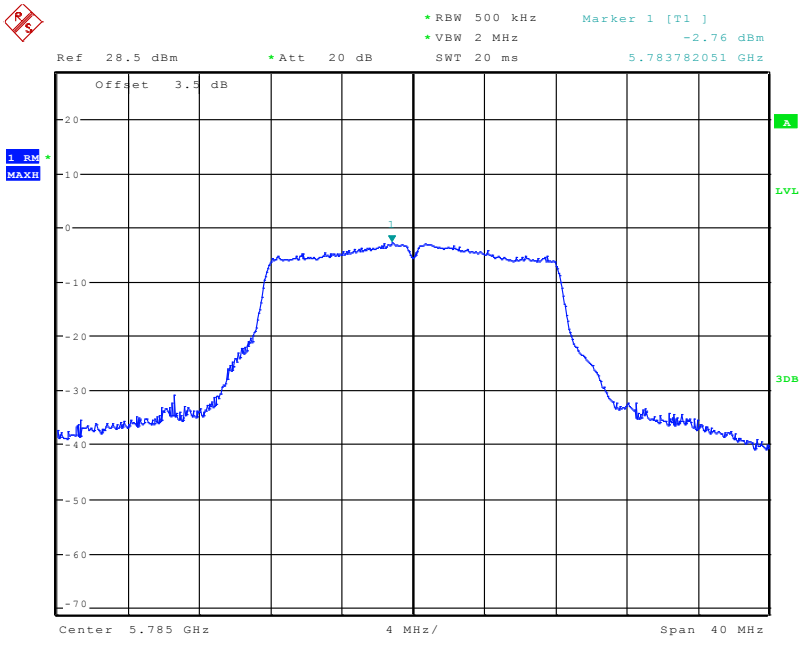
Frequency (MHz)	Power Spectral Density(dBm/500kHz)	duty cycle factor(dB)	Power Spectral Density(dBm/500kHz)	Limit (dBm/500kHz)
802.11a				
5745	-2.97	0	-2.97	30
5785	-2.76	0	-2.76	
5825	-2.90	0	-2.90	
802.11n20				
5745	-3.94	0	-3.94	30
5785	-3.07	0	-3.07	
5825	-3.25	0	-3.25	
802.11n40				
5755	-5.84	0	-5.84	30
5795	-6.64	0	-6.64	
802. 11ac20				
5745	-3.50	0	-3.50	30
5785	-2.85	0	-2.85	
5825	-3.43	0	-3.43	
802. 11ac40				
5755	-6.28	0	-6.28	30
5795	-6.67	0	-6.67	

802.11a mode, Power Spectral Density, 5745 MHz



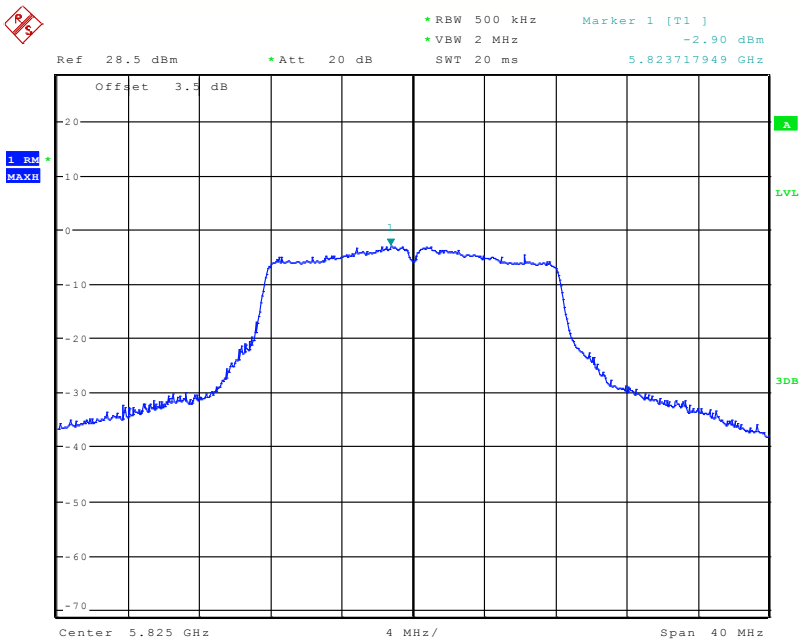
Date: 7.NOV.2019 19:14:28

802.11a mode, Power Spectral Density, 5785 MHz



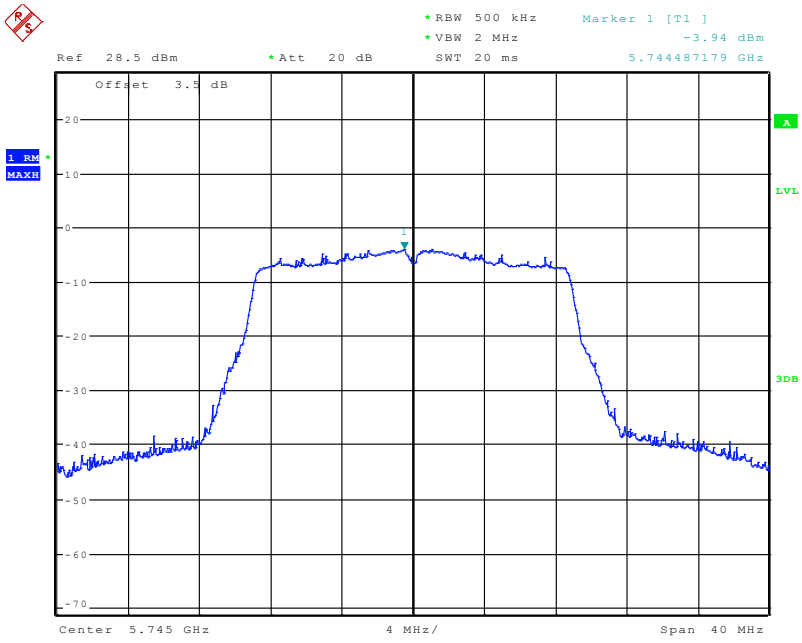
Date: 7.NOV.2019 19:14:56

802.11a mode, Power Spectral Density, 5825 MHz



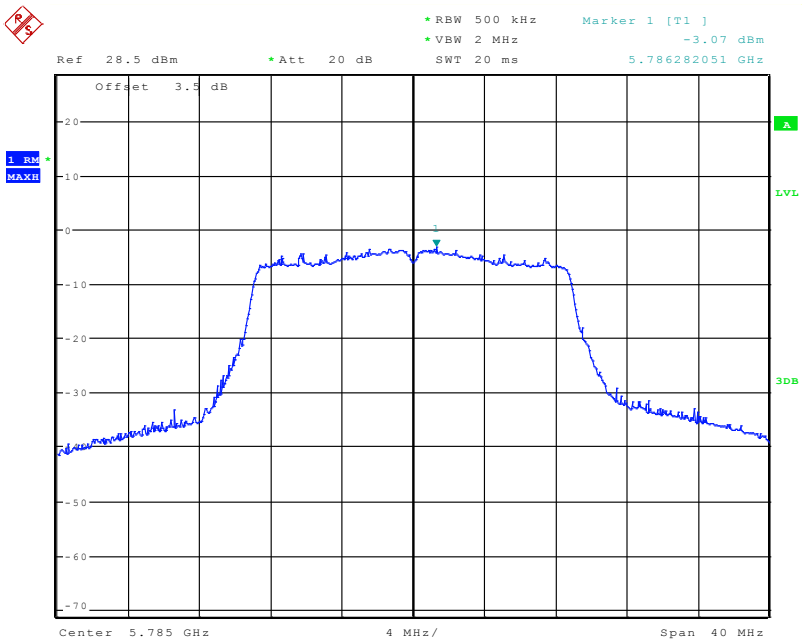
Date: 7.NOV.2019 19:15:31

802.11n20 mode, Power Spectral Density, 5745 MHz



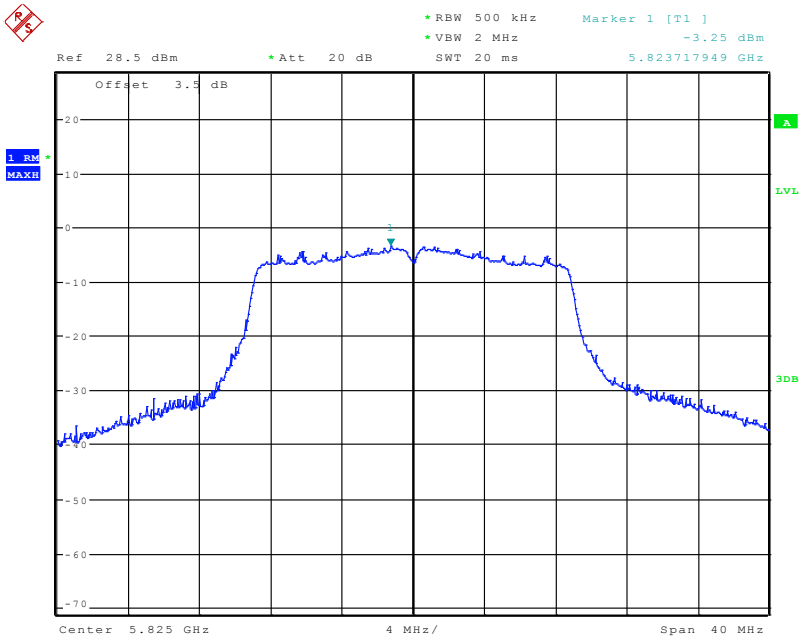
Date: 7.NOV.2019 19:13:49

802.11n20 mode, Power Spectral Density, 5785 MHz



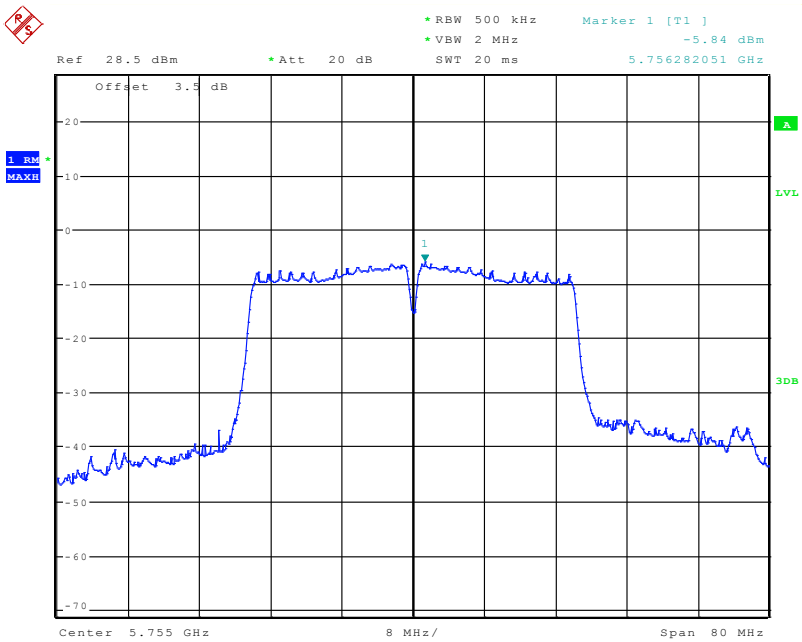
Date: 7.NOV.2019 19:13:23

802.11n20 mode, Power Spectral Density, 5825 MHz



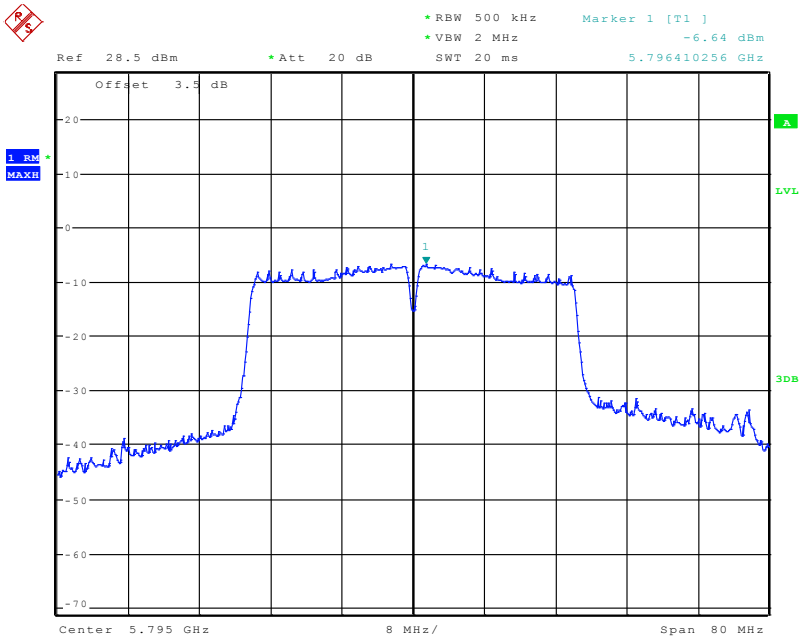
Date: 7.NOV.2019 19:12:50

802.11n40 mode, Power Spectral Density, 5755 MHz



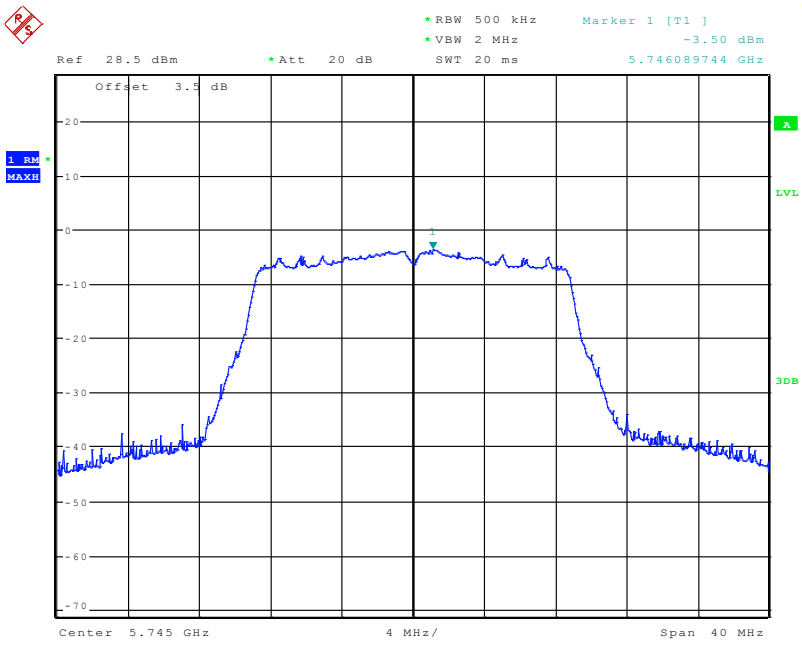
Date: 7.NOV.2019 19:07:50

802.11n40 mode, Power Spectral Density, 5795 MHz



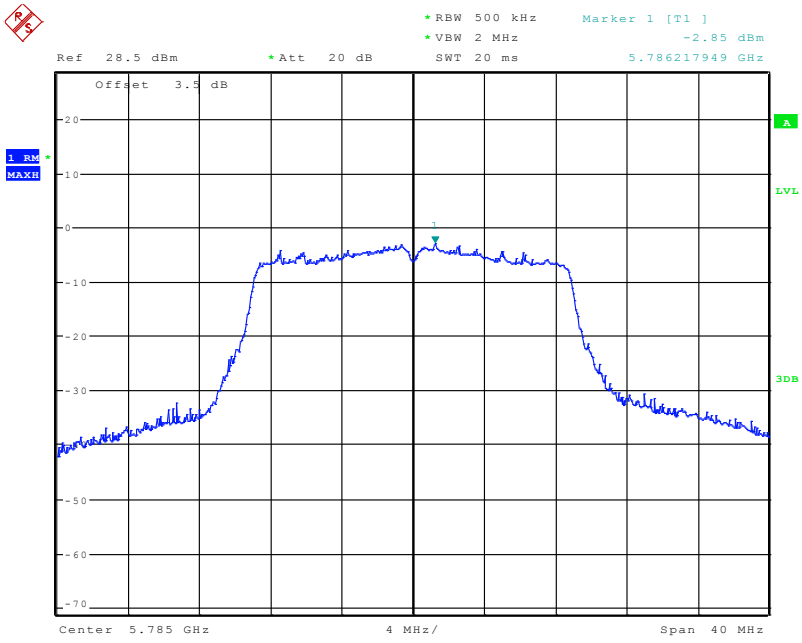
Date: 7.NOV.2019 19:08:28

802.11ac20 mode, Power Spectral Density, 5745 MHz



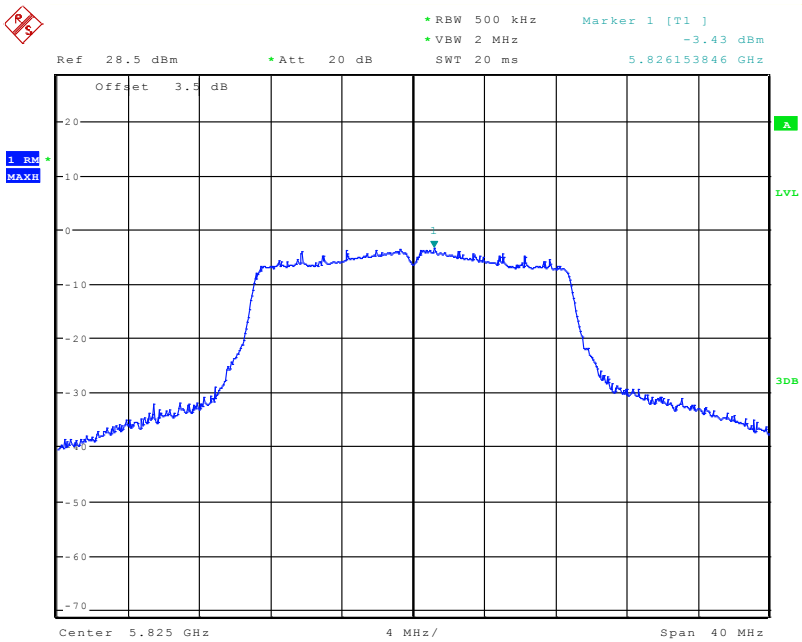
Date: 7.NOV.2019 19:10:48

802. 11ac20 mode, Power Spectral Density, 5785 MHz



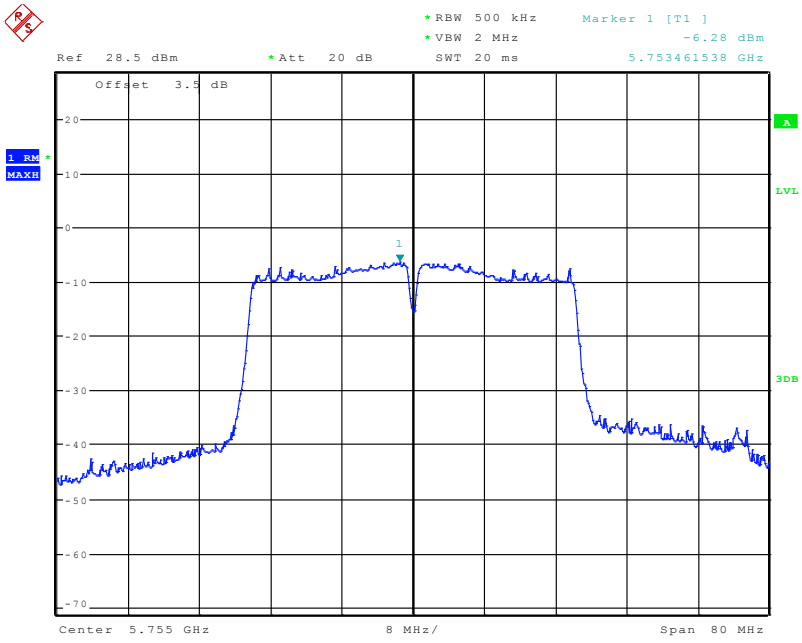
Date: 7.NOV.2019 19:11:22

802. 11ac20 mode, Power Spectral Density, 5825 MHz



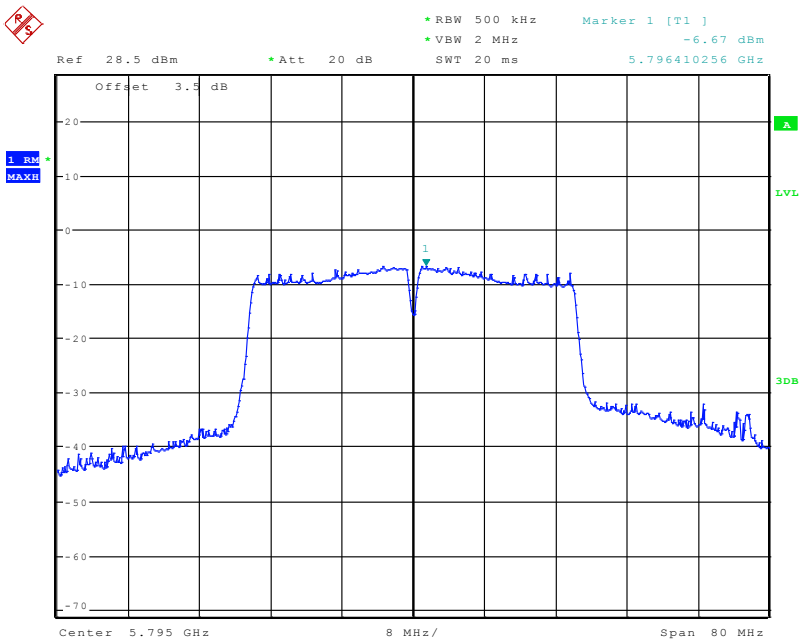
Date: 7.NOV.2019 19:11:57

802. 11ac40 mode, Power Spectral Density, 5755 MHz



Date: 7.NOV.2019 19:09:29

802. 11ac40 mode, Power Spectral Density, 5795 MHz



Date: 7.NOV.2019 19:08:54

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