TESTING LABORATORY
CERTIFICATE # 4821.01

FCC PART 15.407

TEST REPORT

For

August Home, Inc

657 Bryant Street, San Francisco, CA 94107 United States

FCC ID: 2AB6UABR3

Report Type:	**Product Type:**
Original Report	August View

Report Number:	RSZ180905005-00C
Report Date:	2018-11-02
Reviewed By:	Rocky Kang 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

Note: This report must not be used by the customer to claim product certification, approval, or endorsement by A2LA* or any agency of the Federal Government. * This report may contain data that are not covered by the A2LA accreditation and are marked with an asterisk "*".

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The *August Home, Inc's* product, model number: Platinum AB-R3 (FC*C ID: 2AB6UABR3)* or the "EUT" in this report was a *August View,* which was measured approximately: 13.2 cm (L) × 4.6 cm (W) × 2.8 cm (H), rated with input voltage: DC 3.6 V from a rechargeable li-ion battery.

**All measurement and test data in this report was gathered from production sample serial number: 180905005. (Assigned by BACL, Shenzhen). The EUT supplied by the applicant was received on 2018-09-05.*

Objective

This type approval report is prepared on behalf of *August Home, Inc* 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, 15.209 and 15.407 rules.

Related Submittal(s)/Grant(s)

FCC Part 15.247 DTS and Part 15.231 DSC submissions with FCC ID: 2AB6UABR3.

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		±0.5dB
RF conducted test with spectrum		±1.5dB
AC Power Lines Conducted Emissions		±1.95dB
Emissions, Radiated	Below 1GHz	±4.75dB
	Above 1GHz	±4.88dB
Temperature		-30~60 ℃
Humidity		±6%
Supply voltages		±0.4%

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/ac20 modes.

For 5150-5250MHz Band, 4 channels are provided to testing:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	44	5220
40	5200	48	5240

For 5250-5350MHz Band, 4 channels are provided to testing:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
52	5260	60	5300
56	5280	64	5320

For 5470-5725MHz Band, 11 channels are provided to testing:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
100	5500	124	5620
104	5520	128	5640
108	5540	132	5660
112	5560	136	5680
116	5580	140	5700
120	5600	/	/

For 5725-5850MHz Band, 5 channels are provided to testing:

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

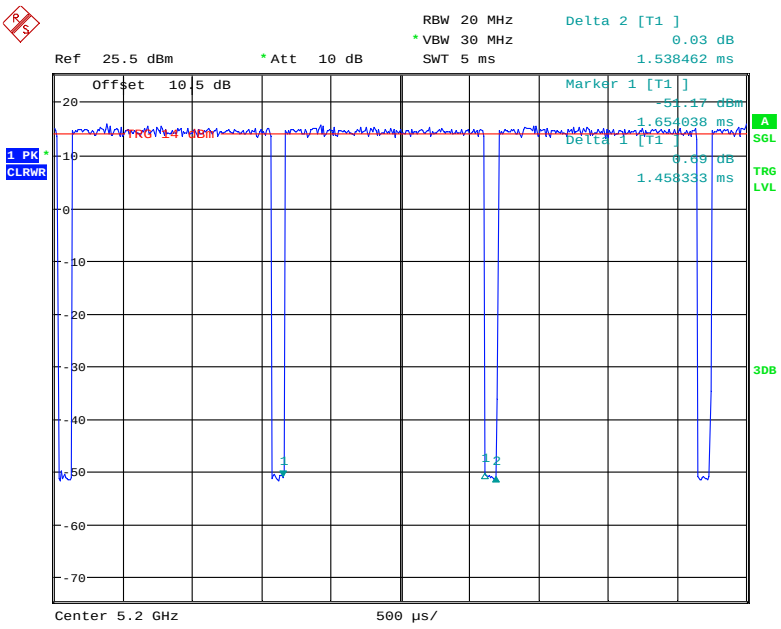
EUT Exercise Software

"SecureCRT.exe" software was used. Test frequencies and power level were configured as below:

U-NII	Mode	Channel Number	Frequency (MHz)	Rate (Mbps)	Power Level
5150 – 5250MHz	802.11 a	CH36	5180	6	14
		CH40	5200	6	14
		CH48	5240	6	14
	802.11 n20	CH36	5180	MCS0	16
		CH40	5200	MCS0	16
		CH48	5240	MCS0	16
	802.11 ac20	CH36	5180	MCS0	10
		CH40	5200	MCS0	10
		CH48	5240	MCS0	10
5250 – 5350MHz	802.11 a	CH52	5260	6	14
		CH56	5280	6	14
		CH64	5320	6	14
	802.11 n20	CH52	5260	MCS0	16
		CH56	5280	MCS0	16
		CH64	5320	MCS0	16
	802.11 ac20	CH52	5260	MCS0	10
		CH56	5280	MCS0	10
		CH64	5320	MCS0	10
5470 – 5725MHz	802.11 a	CH100	5500	6	14
		CH120	5600	6	14
		CH140	5700	6	14
	802.11 n20	CH100	5500	MCS0	16
		CH120	5600	MCS0	16
		CH140	5700	MCS0	16
	802.11 ac20	CH100	5500	MCS0	10
		CH120	5600	MCS0	10
		CH140	5700	MCS0	10
5725 – 5850MHz	802.11 a	CH149	5745	6	14
		CH157	5785	6	14
		CH165	5825	6	14
	802.11 n20	CH149	5745	MCS0	16
		CH157	5785	MCS0	16
		CH165	5825	MCS0	16
	802.11 ac20	CH149	5745	MCS0	10
		CH157	5785	MCS0	10
		CH165	5825	MCS0	10

Duty cycle
5150-5250 MHz

802.11a mode



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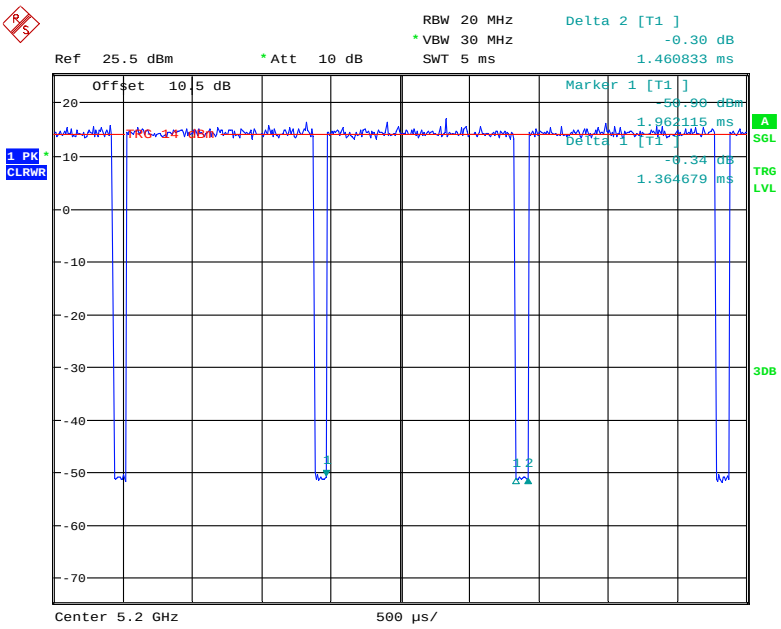
802.11n20 mode



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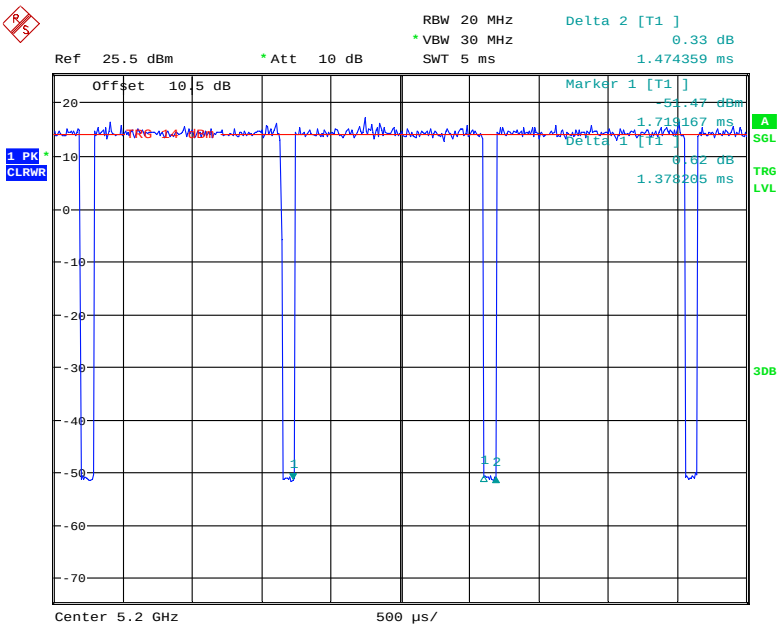
802.11ac20 Mode



Band	Duty Cycle (%)	T(ms)	1/T(kHz)	VBW Setting	Duty cycle factor
802.11a	95	1.456	0.69	10Hz	0.22
802.11n20	93	1.365	0.73	10Hz	0.32
802.11ac20	93	1.376	0.73	10Hz	0.32

Note: 5250-5350MHz band, 5470-5725MHz band and 5725-5850MHz band was used the same duty cycle to test for each mode.
Duty cycle factor =10*log(1/ Duty Cycle)

Equipment Modifications

No modification was made to the EUT tested.

Support Equipment List and Details

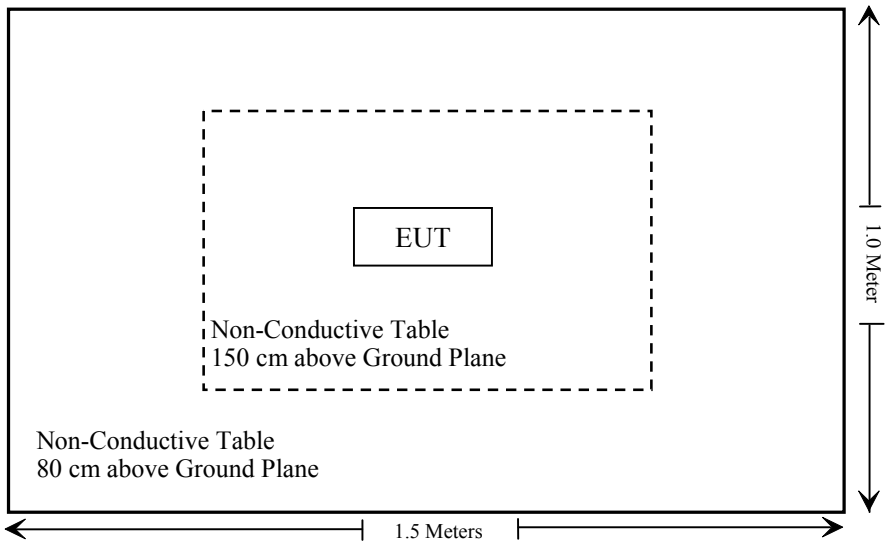
Manufacturer	Description	Model	Serial Number
/	/	/	/

External I/O Cable

Cable Description	Length (m)	From Port	To
/	/	/	/

Block Diagram of Test Setup

For conducted emission:



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§1.1307 (b) (1) & §2.1091	MaximuM Permissible exposure (MPE)	Compliance
§15.203	Antenna Requirement	Compliance
§15.407(b)(6)& §15.207(a)	Conducted Emissions	Not Applicable
§15.205& §15.209 &§15.407(b) (1), (2), (3), (4),(7)	Undesirable Emission& Restricted Bands	Compliance
§15.407(b) (1), (2), (3), (4)	Out Of Band Emission	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

Not Applicable: The battery need be pulled out from EUT while it's been charging.
DFS report please refere to RSZ180905008-00 issued by Bay Area Compliance Laboratories Corp. (Dongguan).

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Radiated Emission Test					
A.H.System	Horn Antenna	SAS-200/571	135	2018-08-18	2021-08-17
Rohde & Schwarz	Signal Analyzer	FSEM	845987/005	2018-06-23	2019-06-23
Agilent	Spectrum Analyzer	8564E	3943A01781	2018-01-04	2019-01-04
Sunol Sciences	Broadband Antenna	JB1	A040904-1	2017-12-22	2020-12-21
COM-POWER	Pre-amplifier	PA-122	181919	2018-05-22	2018-11-22
Sonoma instrument	Amplifier	310N	186238	2018-05-12	2018-11-12
Rohde & Schwarz	EMI Test Receiver	ESCI	101120	2018-01-11	2019-01-11
Ducommun technologies	RF Cable	UFA147A-2362-100100	MFR64639 231029-003	2018-08-01	2019-02-01
Ducommun technologies	RF Cable	104PEA	218124002	2018-05-21	2018-11-19
Ducommun technologies	RF Cable	RG-214	1	2018-05-21	2018-11-21
Ducommun technologies	RF Cable	RG-214	2	2018-05-22	2018-11-22
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	2018-08-01	2019-02-01
RF Conducted Test					
Rohde & Schwarz	SPECTRUM ANALYZER	FSU26	200120	2017-12-24	2018-12-24
Agilent	USB wideband power meter	U2021XA	MY54250003	2018-06-23	2019-06-23
Ducommun technologies	RF Cable	RG-214	3	Each Time	
WEINSCHEL	10dB Attenuator	5324	AU 3842	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).

§1.1307 (b) (1) & §2.1091- MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Applicable Standard

According to subpart 1.1307 (b)(1), 2.1091 systems operating under the provisions of this section shall be operated in a manner that ensures the public is not exposed to RF energy level in excess of the communication guidelines.

Limits for General Population/Uncontrolled Exposure

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

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

Result

Calculated Formulary:

Predication of MPE limit at a given distance

$$S = \frac{PG}{4\pi R^2}$$

S = power density (in appropriate units, e.g. mW/cm^2)
P = power input to the antenna (in appropriate units, e.g., mW).
G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain.
R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

Calculated Data:

Mode	Frequency (MHz)	Antenna Gain		Max Tune-up Conducted Power		Evaluation Distance (cm)	Power Density (mW/cm^2)	MPE Limit (mW/cm^2)
		(dBi)	(numeric)	(dBm)	(mW)			
WiFi	5150-5250	1.0	1.26	13	19.95	20	0.0050	1.0
WiFi	5250-5350	1.0	1.26	12	15.85	20	0.0040	1.0
WiFi	5470-5725	1.0	1.26	12.5	17.78	20	0.0045	1.0
WiFi	5725-5850	1.0	1.26	14	25.12	20	0.0063	1.0

Note: To maintain compliance with the FCC's RF exposure guidelines, place the equipment at least 20cm from nearby persons.
The BLE and wifi can't transmission simultaneously.

Result: Compliance

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 internal antenna arrangement, which was permanently attached and the antenna gain is 1.0 dBi, fulfill the requirement of this section. Please refer to the EUT photos.

Result: Compliance.

§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.

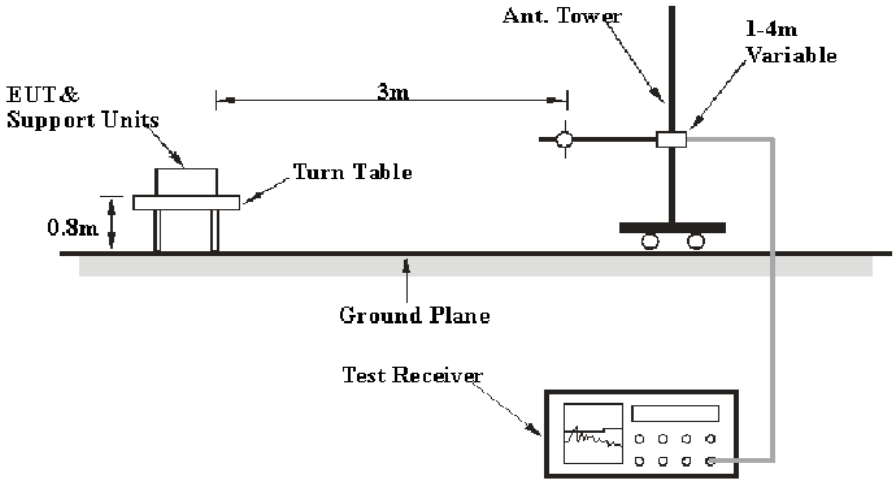
The general limit of -27 dBm EIRP (= 68.2 dBμV/m) is applied for unwanted emission of U-NII devices.
However, compliance with unwanted emissions in restricted bands may need to be considered, *e.g.,* some harmonics may land in the restricted bands below 5.15 GHz and above 5.35 GHz (refer
The general 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:

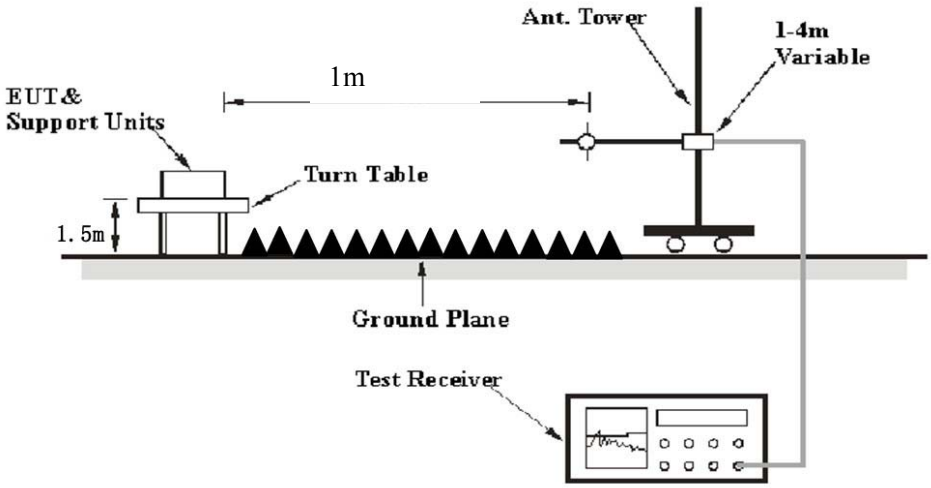
1) For 25MHz-75 MHz above or below the band edge, a level of -27 dBm/MHz (68.2dBμV/m) was applied.
2) For 5MHz-25 MHz above or below the band edge, a level of 10 dBm/MHz (105.2dBμV/m) was applied.
2) For 0MHz-5 MHz above or below the band edge, a level of 15.6 dBm/MHz (110.8dBμV/m) was applied.

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

Refer to CISPR16-4-2:2011 and CISPR 16-4-1:2009, the measured level is in compliance with the limit if

$$L_m + U_{(Lm)} \leq L_{lim} + U_{cispr}$$

In BACL, $U_{(Lm)}$ is less than U_{cispr}, if L_m is less than L_{lim}, it implies that the EUT complies with the limit.

Test Data

Environmental Conditions

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

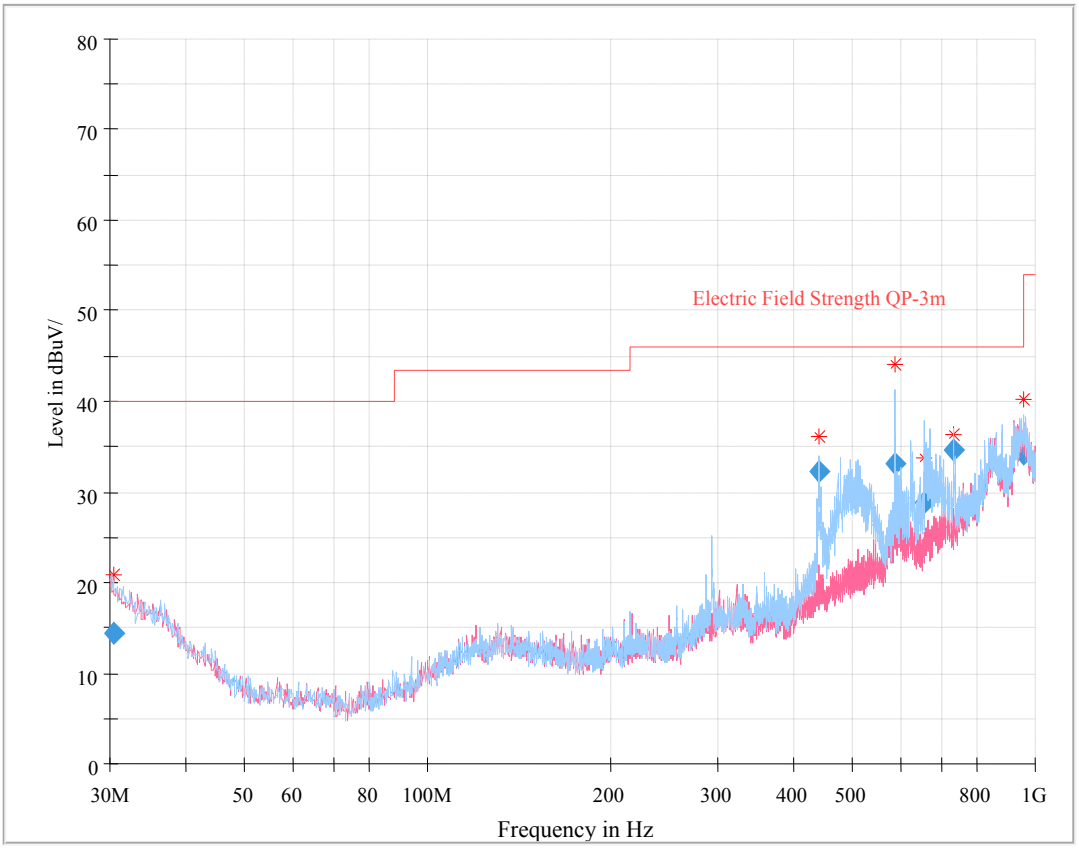
The testing was performed by Shawn Xiao on 2018-09-20.

EUT operation mode: Transmitting

Note:
For non-Restricted band:
E[dBμV/m] = EIRP[dBm] - 20 log (d[m]) + 104.77, where E = field strength and d = distance at which field strength limit is specified in the rules

So the limit of 1m=-27-20*log(1)+104.77=77.77 dBμV/m

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)
30.410879	14.42	261.0	V	345.0	-7.9	40.00	25.58
441.096250	32.21	125.0	H	106.0	-8.6	46.00	13.79
588.100375	33.12	103.0	H	173.0	-2.5	46.00	12.88
657.970875	28.90	108.0	H	181.0	-3.2	46.00	17.10
735.065375	34.60	102.0	H	191.0	-0.6	46.00	11.40
954.999000	34.29	122.0	H	212.0	9.6	46.00	11.71

30 MHz ~ 40 GHz:
Note： Limit@1m=Limit@3m+9.5
5150-5250 MHz & 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) @1m	Margin (dB)
802.11a									
5180MHz									
5180.00	71.25	PK	265	2.2	H	41.53	112.78	/	/
5180.00	59.38	Ave.	265	2.2	H	41.53	100.91	/	/
5180.00	68.79	PK	189	1.6	V	41.53	110.32	/	/
5180.00	57.15	Ave.	189	1.6	V	41.53	98.68	/	/
5140.00	28.10	PK	55	1.3	H	41.60	69.70	83.5	13.80
5140.00	13.57	Ave.	55	1.3	H	41.60	55.17	63.5	8.33
5350.00	27.14	PK	110	1.2	H	42.06	69.20	83.5	14.30
5350.00	13.28	Ave.	110	1.2	H	42.06	55.34	63.5	8.16
10360.00	37.86	PK	148	2.5	H	21.69	59.55	77.77	18.22
5200MHz									
5200.00	71.64	PK	145	1.1	H	41.53	113.17	/	/
5200.00	59.78	Ave.	145	1.1	H	41.53	101.31	/	/
5200.00	68.19	PK	198	2.3	V	41.53	109.72	/	/
5200.00	56.33	Ave.	198	2.3	V	41.53	97.86	/	/
10400.00	38.96	PK	274	2.3	H	21.79	60.75	77.77	17.02
5240MHz									
5240.00	71.95	PK	118	2.2	H	41.63	113.58	/	/
5240.00	59.98	Ave.	118	2.2	H	41.63	101.61	/	/
5240.00	68.25	PK	153	1.1	V	41.63	109.88	/	/
5240.00	56.46	Ave.	153	1.1	V	41.63	98.09	/	/
5150.00	26.59	PK	288	1.8	H	41.43	68.02	83.5	15.48
5150.00	13.35	Ave.	288	1.8	H	41.43	54.78	63.5	8.72
5355.00	26.80	PK	337	1.8	H	42.06	68.86	83.5	14.64
5355.00	13.44	Ave.	337	1.8	H	42.06	55.50	63.5	8.00
10480.00	39.77	PK	254	1.1	H	21.49	61.26	77.77	16.51

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) @1m	Margin (dB)
5260MHz									
5260.00	70.95	PK	282	1.4	H	41.79	112.74	/	/
5260.00	59.62	Ave.	282	1.4	H	41.79	101.41	/	/
5260.00	68.24	PK	71	2.2	V	41.79	110.03	/	/
5260.00	57.03	Ave.	71	2.2	V	41.79	98.82	/	/
5149.00	26.74	PK	98	1.6	H	41.60	68.34	83.5	15.16
5149.00	13.29	Ave.	98	1.6	H	41.60	54.89	63.5	8.61
5352.00	26.75	PK	200	1.6	H	42.06	68.81	83.5	14.69
5352.00	13.39	Ave.	200	1.6	H	42.06	55.45	63.5	8.05
10520.00	39.28	PK	265	1.6	H	21.49	60.77	77.77	17.00
5280MHz									
5280.00	69.95	PK	180	2.0	H	41.79	111.74	/	/
5280.00	58.75	Ave.	180	2.0	H	41.79	100.54	/	/
5280.00	67.44	PK	13	1.9	V	41.79	109.23	/	/
5280.00	56.81	Ave.	13	1.9	V	41.79	98.60	/	/
10560.00	39.62	PK	196	2.2	H	21.94	61.56	77.77	16.21
5320MHz									
5320.00	70.25	PK	208	1.1	H	41.89	112.14	/	/
5320.00	59.04	Ave.	208	1.1	H	41.89	100.93	/	/
5320.00	67.93	PK	217	2.3	V	41.89	109.82	/	/
5320.00	56.82	Ave.	217	2.3	V	41.89	98.71	/	/
5140.00	27.46	PK	138	2.1	H	41.60	69.06	83.5	14.44
5140.00	13.38	Ave.	138	2.1	H	41.60	54.98	63.5	8.52
5350.00	27.99	PK	289	2.1	H	42.06	70.05	83.5	13.45
5350.00	13.52	Ave.	289	2.1	H	42.06	55.58	63.5	7.92
10640.00	39.84	PK	14	1.6	H	22.04	61.88	83.5	21.62
10640.00	24.98	Ave.	14	1.6	H	22.04	47.02	63.5	16.48

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) @1m	Margin (dB)
5500MHz									
5500.00	68.23	PK	128	2.1	H	42.46	110.69	/	/
5500.00	56.43	Ave.	128	2.1	H	42.46	98.89	/	/
5500.00	66.24	PK	357	2.3	V	42.46	108.70	/	/
5500.00	54.71	Ave.	357	2.3	V	42.46	97.17	/	/
5460.00	27.92	PK	239	2.1	H	42.36	70.28	83.5	13.22
5460.00	13.68	Ave.	239	2.1	H	42.36	56.04	63.5	7.46
5730.00	26.65	PK	258	1.4	H	42.78	69.43	77.77	8.34
11000.00	39.37	PK	127	1.3	H	22.24	61.61	83.5	21.89
11000.00	25.13	Ave.	127	1.3	H	22.24	47.37	63.5	16.13
5600MHz									
5600.00	71.62	PK	116	1.9	H	42.55	114.17	/	/
5600.00	59.68	Ave.	116	1.9	H	42.55	102.23	/	/
5600.00	68.30	PK	297	2.0	V	42.55	110.85	/	/
5600.00	56.84	Ave.	297	2.0	V	42.55	99.39	/	/
11200.00	40.05	PK	0	1.7	H	22.48	62.53	83.5	20.97
11200.00	25.46	Ave.	0	1.7	H	22.48	47.94	63.5	15.56
5700MHz									
5700.00	71.43	PK	37	1.2	H	42.78	114.21	/	/
5700.00	60.21	Ave.	37	1.2	H	42.78	102.99	/	/
5700.00	68.15	PK	152	1.4	V	42.78	110.93	/	/
5700.00	56.99	Ave.	152	1.4	V	42.78	99.77	/	/
5460.00	26.98	PK	217	2.4	H	42.36	69.34	83.5	14.16
5460.00	13.55	Ave.	217	2.4	H	42.36	55.91	63.5	7.59
5730.00	26.94	PK	230	1.6	H	42.78	69.72	77.77	8.05
11400.00	39.20	PK	9	2.2	H	23.33	62.53	83.5	20.97
11400.00	25.03	Ave.	9	2.2	H	23.33	48.36	63.5	15.14

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) @1m	Margin (dB)
802.11n20									
5180MHz									
5180.00	70.89	PK	76	2.4	H	41.53	112.42	/	/
5180.00	59.18	Ave.	76	2.4	H	41.53	100.71	/	/
5180.00	69.83	PK	133	1.6	V	41.53	111.36	/	/
5180.00	58.21	Ave.	133	1.6	V	41.53	99.74	/	/
5149.00	40.25	PK	272	1.1	H	41.60	81.85	83.5	1.65
5149.00	15.39	Ave.	272	1.1	H	41.60	56.99	63.5	6.51
5350.00	27.71	PK	4	2.2	H	42.06	69.77	83.5	13.73
5350.00	13.51	Ave.	4	2.2	H	42.06	55.57	63.5	7.93
10360.00	40.06	PK	172	1.8	H	21.69	61.75	77.77	16.02
5200MHz									
5200.00	71.42	PK	275	2.1	H	41.53	112.95	/	/
5200.00	60.18	Ave.	275	2.1	H	41.53	101.71	/	/
5200.00	68.95	PK	8	1.9	V	41.53	110.48	/	/
5200.00	57.85	Ave.	8	1.9	V	41.53	99.38	/	/
10400.00	39.52	PK	85	1.4	H	21.79	61.31	77.77	16.46
5240MHz									
5240.00	71.89	PK	26	1.3	H	41.63	113.52	/	/
5240.00	60.74	Ave.	26	1.3	H	41.63	102.37	/	/
5240.00	68.42	PK	169	2.1	V	41.63	110.05	/	/
5240.00	57.30	Ave.	169	2.1	V	41.63	98.93	/	/
5150.00	26.99	PK	172	2.3	H	41.43	68.42	83.5	15.08
5150.00	13.35	Ave.	172	2.3	H	41.43	54.78	63.5	8.72
5350.00	26.65	PK	255	1.1	H	42.06	68.71	83.5	14.79
5350.00	13.20	Ave.	255	1.1	H	42.06	55.26	63.5	8.24
10480.00	39.10	PK	56	2.2	H	21.49	60.59	77.77	17.18

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) @1m	Margin (dB)
5260MHz									
5260.00	71.20	PK	320	1.6	H	41.79	112.99	/	/
5260.00	60.33	AV	320	1.6	H	41.79	102.12	/	/
5260.00	68.52	PK	336	1.1	V	41.79	110.31	/	/
5260.00	57.76	AV	336	1.1	V	41.79	99.55	/	/
5150.00	26.95	PK	270	1.7	H	41.43	68.38	83.5	15.12
5150.00	13.84	AV	270	1.7	H	41.43	55.27	63.5	8.23
5350.00	27.04	PK	71	2.2	H	42.06	69.10	83.5	14.40
5350.00	13.49	AV	71	2.2	H	42.06	55.55	63.5	7.95
10520.00	39.40	PK	352	1.1	H	21.49	60.89	77.77	16.88
5280MHz									
5280.00	71.62	PK	227	1.1	H	41.79	113.41	/	/
5280.00	60.40	AV	227	1.1	H	41.79	102.19	/	/
5280.00	68.95	PK	147	1.1	V	41.79	110.74	/	/
5280.00	57.70	AV	147	1.1	V	41.79	99.49	/	/
10560.00	39.26	PK	161	1.7	H	21.94	61.20	77.77	16.57
5320MHz									
5320.00	73.06	PK	39	2.1	H	41.89	114.95	/	/
5320.00	61.50	Ave.	39	2.1	H	41.89	103.39	/	/
5320.00	71.28	PK	82	1.9	V	41.89	113.17	/	/
5320.00	59.35	Ave.	82	1.9	V	41.89	101.24	/	/
5149.00	27.76	PK	123	2.4	H	41.60	69.36	83.5	14.14
5149.00	13.85	Ave.	123	2.4	H	41.60	55.45	63.5	8.05
5352.00	30.73	PK	49	1.4	H	42.06	72.79	83.5	10.71
5352.00	15.38	Ave.	49	1.4	H	42.06	57.44	63.5	6.06
10640.00	38.95	PK	291	1.4	H	22.04	60.99	83.5	22.51
10640.00	25.02	Ave.	291	1.4	H	22.04	47.06	63.5	16.44

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) @1m	Margin (dB)
5500MHz									
5500.00	70.93	PK	280	2.2	H	42.46	113.39	/	/
5500.00	58.91	Ave.	280	2.2	H	42.46	101.37	/	/
5500.00	69.28	PK	20	2.1	V	42.46	111.74	/	/
5500.00	57.85	Ave.	20	2.1	V	42.46	100.31	/	/
5455.00	32.30	PK	185	2.1	H	42.36	74.66	83.5	8.84
5455.00	14.91	Ave.	185	2.1	H	42.36	57.27	63.5	6.23
5744.00	26.54	PK	148	1.6	H	42.78	69.32	77.77	8.45
11000.00	39.91	PK	291	1.8	H	22.24	62.15	83.5	21.35
11000.00	25.32	Ave.	291	1.8	H	22.24	47.56	63.5	15.94
5600MHz									
5600.00	71.45	PK	114	1.5	H	42.55	114.00	/	/
5600.00	60.12	Ave.	114	1.5	H	42.55	102.67	/	/
5600.00	68.52	PK	198	1.1	V	42.55	111.07	/	/
5600.00	57.14	Ave.	198	1.1	V	42.55	99.69	/	/
11200.00	39.07	PK	216	1.1	H	22.48	61.55	83.5	21.95
11200.00	24.93	Ave.	216	1.1	H	22.48	47.41	63.5	16.09
5700MHz									
5700.00	72.48	PK	150	2.3	H	42.78	115.26	/	/
5700.00	60.95	Ave.	150	2.3	H	42.78	103.73	/	/
5700.00	68.43	PK	222	2.2	V	42.78	111.21	/	/
5700.00	57.20	Ave.	222	2.2	V	42.78	99.98	/	/
5150.00	26.84	PK	23	1.3	H	41.43	68.27	83.5	15.23
5150.00	13.37	Ave.	23	1.3	H	41.43	54.80	63.5	8.70
5744.00	26.59	PK	181	2.2	H	42.78	69.37	77.77	8.40
11400.00	39.24	PK	210	1.6	H	23.33	62.57	83.5	20.93
11400.00	25.16	Ave.	210	1.6	H	23.33	48.49	63.5	15.01

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) @1m	Margin (dB)
802.11ac20									
5180MHz									
5180.00	67.43	PK	2	1.8	H	41.53	108.96	/	/
5180.00	56.12	Ave.	2	1.8	H	41.53	97.65	/	/
5180.00	65.51	PK	42	1.4	V	41.53	107.04	/	/
5180.00	54.03	Ave.	42	1.4	V	41.53	95.56	/	/
5150.00	27.83	PK	224	2.4	H	41.43	69.26	83.5	14.24
5150.00	13.54	Ave.	224	2.4	H	41.43	54.97	63.5	8.53
5350.00	27.34	PK	187	1.1	H	42.06	69.40	83.5	14.10
5350.00	13.28	Ave.	187	1.1	H	42.06	55.34	63.5	8.16
10360.00	40.13	PK	156	1.6	H	21.69	61.82	77.77	15.95
5200MHz									
5200.00	72.62	PK	15	2.3	H	41.53	114.15	/	/
5200.00	60.84	Ave.	15	2.3	H	41.53	102.37	/	/
5200.00	69.37	PK	238	2.1	V	41.53	110.90	/	/
5200.00	58.12	Ave.	238	2.1	V	41.53	99.65	/	/
10400.00	38.74	PK	103	1.8	H	21.79	60.53	77.77	17.24
5240MHz									
5240.00	72.54	PK	256	1.9	H	41.63	114.17	/	/
5240.00	61.13	Ave.	256	1.9	H	41.63	102.76	/	/
5240.00	68.90	PK	88	1.0	V	41.63	110.53	/	/
5240.00	57.29	Ave.	88	1.0	V	41.63	98.92	/	/
5150.00	27.01	PK	119	2.5	H	41.43	68.44	83.5	15.06
5150.00	13.52	Ave.	119	2.5	H	41.43	54.95	63.5	8.55
5355.00	26.89	PK	293	1.9	H	42.06	68.95	83.5	14.55
5355.00	13.40	Ave.	293	1.9	H	42.06	55.46	63.5	8.04
10480.00	39.36	PK	4	2.0	H	21.49	60.85	77.77	16.92

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) @1m	Margin (dB)
5260MHz									
5260.00	72.30	PK	98	1.2	H	41.79	114.09	/	/
5260.00	61.14	Ave.	98	1.2	H	41.79	102.93	/	/
5260.00	68.43	PK	132	1.0	V	41.79	110.22	/	/
5260.00	57.20	Ave.	132	1.0	V	41.79	98.99	/	/
5148.00	27.13	PK	66	1.6	H	41.60	68.73	83.5	14.77
5148.00	13.61	Ave.	66	1.6	H	41.60	55.21	63.5	8.29
5355.00	26.84	PK	177	1.7	H	42.06	68.90	83.5	14.60
5355.00	13.54	Ave.	177	1.7	H	42.06	55.60	63.5	7.90
10520.00	39.05	PK	295	1.8	H	21.49	60.54	77.77	17.23
5280MHz									
5280.00	72.10	PK	12	1.6	H	41.79	113.89	/	/
5280.00	60.85	Ave.	12	1.6	H	41.79	102.64	/	/
5280.00	68.77	PK	299	2.0	V	41.79	110.56	/	/
5280.00	57.62	Ave.	299	2.0	V	41.79	99.41	/	/
10560.00	39.12	PK	241	1.2	H	21.94	61.06	77.77	16.71
5320MHz									
5320.00	66.94	PK	57	1.9	H	41.89	108.83	/	/
5320.00	55.72	Ave.	57	1.9	H	41.89	97.61	/	/
5320.00	66.88	PK	19	2.1	V	41.89	108.77	/	/
5320.00	65.24	Ave.	19	2.1	V	41.89	107.13	/	/
5150.00	27.51	PK	329	1.5	H	41.43	68.94	83.5	14.56
5150.00	13.64	Ave.	329	1.5	H	41.43	55.07	63.5	8.43
5350.00	27.69	PK	36	1.5	H	42.06	69.75	83.5	13.75
5350.00	13.58	Ave.	36	1.5	H	42.06	55.64	63.5	7.86
10640.00	39.89	PK	105	2.0	H	22.04	61.93	83.5	21.57
10640.00	25.46	Ave.	105	2.0	H	22.04	47.50	63.5	16.00

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) @1m	Margin (dB)
5500MHz									
5500.00	64.33	PK	282	1.1	H	42.46	106.79	/	/
5500.00	53.21	Ave.	282	1.1	H	42.46	95.67	/	/
5500.00	64.18	PK	113	2.2	V	42.46	106.64	/	/
5500.00	52.95	Ave.	113	2.2	V	42.46	95.41	/	/
5460.00	27.86	PK	129	1.8	H	42.36	70.22	83.5	13.28
5460.00	13.74	Ave.	129	1.8	H	42.36	56.10	63.5	7.40
5730.00	26.87	PK	308	1.1	H	42.78	69.65	77.77	8.12
11000.00	39.85	PK	81	2.0	H	22.24	62.09	83.5	21.41
11000.00	25.11	Ave.	81	2.0	H	22.24	47.35	63.5	16.15
5600MHz									
5600.00	71.42	PK	229	2.0	H	42.55	113.97	/	/
5600.00	60.13	Ave.	229	2.0	H	42.55	102.68	/	/
5600.00	69.95	PK	337	1.7	V	42.55	112.50	/	/
5600.00	58.70	Ave.	337	1.7	V	42.55	101.25	/	/
11200.00	38.94	PK	81	1.7	H	22.48	61.42	83.5	22.08
11200.00	25.03	Ave.	81	1.7	H	22.48	47.51	63.5	15.99
5700MHz									
5700.00	70.86	PK	113	1.9	H	42.78	113.64	/	/
5700.00	59.70	Ave.	113	1.9	H	42.78	102.48	/	/
5700.00	69.24	PK	112	2.0	V	42.78	112.02	/	/
5700.00	58.13	Ave.	112	2.0	V	42.78	100.91	/	/
5459.00	27.58	PK	350	1.6	H	42.36	69.94	83.5	13.56
5459.00	13.77	Ave.	350	1.6	H	42.36	56.13	63.5	7.37
5732.00	27.05	PK	332	1.9	H	42.78	69.83	77.77	7.94
11400.00	39.86	PK	322	1.6	H	23.33	63.19	83.5	20.31
11400.00	25.20	Ave.	322	1.6	H	23.33	48.53	63.5	14.97

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) @1m	Margin (dB)
802.11a									
5745MHz									
5745.00	69.38	PK	274	1.1	H	42.78	112.16	/	/
5745.00	57.23	Ave.	274	1.1	H	42.78	100.01	/	/
5745.00	68.47	PK	271	1.3	V	42.78	111.25	/	/
5745.00	56.32	Ave.	271	1.3	V	42.78	99.10	/	/
5725.00	31.68	PK	76	1.1	H	42.78	74.46	131.7	57.24
5720.00	28.75	PK	76	1.1	H	42.78	71.53	120.3	48.77
5700.00	28.43	PK	222	2.3	H	42.78	71.21	114.7	43.49
5850.00	28.36	PK	222	2.3	H	42.87	71.23	131.7	60.47
11490.00	40.73	PK	114	1.1	H	24.17	64.90	83.5	18.60
11490.00	25.84	Ave.	114	1.1	H	24.17	50.01	63.5	13.49
5785MHz									
5785.00	67.23	PK	78	1.3	H	42.92	110.15	/	/
5785.00	55.21	Ave.	78	1.3	H	42.92	98.13	/	/
5785.00	66.84	PK	106	2.5	V	42.92	109.76	/	/
5785.00	54.38	Ave.	106	2.5	V	42.92	97.30	/	/
11570.00	39.16	PK	111	2.0	H	23.10	62.26	83.5	21.24
11570.00	25.63	Ave.	111	2.0	H	23.10	48.73	63.5	14.77
5825MHz									
5825.00	66.85	PK	118	2.1	H	42.92	109.77	/	/
5825.00	54.02	Ave.	118	2.1	H	42.92	96.94	/	/
5825.00	65.94	PK	223	1.7	V	42.92	108.86	/	/
5825.00	53.52	Ave.	223	1.7	V	42.92	96.44	/	/
5725.00	27.95	PK	125	1.4	H	42.78	70.73	131.7	60.97
5875.00	27.81	PK	125	1.4	H	42.87	70.68	114.7	44.02
5855.00	28.31	PK	138	1.2	H	42.87	71.18	120.3	49.12
5850.00	29.54	PK	138	1.2	H	42.87	72.41	131.7	59.29
11650.00	38.74	PK	310	1.7	H	22.37	61.11	83.5	22.39
11650.00	25.45	Ave.	310	1.7	H	22.37	47.82	63.5	15.68

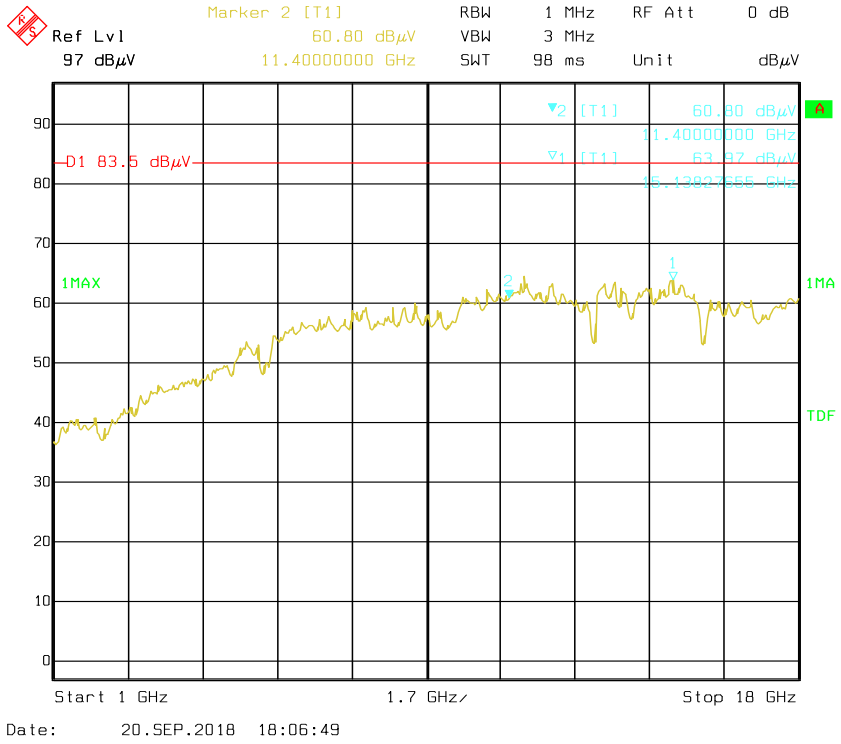
Frequency (MHz)	Receiver		Turntable	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m) @1m	FCC Part 15.407/205/209	
	Reading (dBμV) @1m	PK/QP/Ave.	Degree	Height (m)	Polar (H / V)			Limit (dBμV/m) @1m	Margin (dB)
802.11n20									
5745MHz									
5745.00	68.19	PK	185	1.9	H	42.78	110.97	/	/
5745.00	56.05	Ave.	185	1.9	H	42.78	98.83	/	/
5745.00	67.96	PK	128	2.5	V	42.78	110.74	/	/
5745.00	55.81	Ave.	128	2.5	V	42.78	98.59	/	/
5725.00	35.19	PK	70	2.0	H	42.78	77.97	131.7	53.73
5720.00	28.81	PK	70	2.0	H	42.78	71.59	120.3	48.71
5700.00	27.95	PK	21	2.2	H	42.78	70.73	114.7	43.97
5850.00	27.86	PK	21	2.2	H	42.87	70.73	131.7	60.97
11490.00	39.95	PK	74	2.2	H	24.17	64.12	83.5	19.38
11490.00	25.80	Ave.	74	2.2	H	24.17	49.97	63.5	13.53
5785MHz									
5785.00	68.79	PK	194	1.1	H	42.92	111.71	/	/
5785.00	56.62	Ave.	194	1.1	H	42.92	99.54	/	/
5785.00	67.93	PK	345	1.6	V	42.92	110.85	/	/
5785.00	55.71	Ave.	345	1.6	V	42.92	98.63	/	/
11570.00	39.27	PK	273	1.3	H	23.10	62.37	83.5	21.13
11570.00	25.61	Ave.	273	1.3	H	23.10	48.71	63.5	14.79
5825MHz									
5825.00	68.02	PK	202	1.3	H	42.92	110.94	/	/
5825.00	55.89	Ave.	202	1.3	H	42.92	98.81	/	/
5825.00	66.47	PK	87	2.2	V	42.92	109.39	/	/
5825.00	54.33	Ave.	87	2.2	V	42.92	97.25	/	/
5725.00	27.69	PK	241	2.0	H	42.78	70.47	131.7	61.23
5875.00	28.34	PK	241	2.0	H	42.87	71.21	114.7	43.49
5855.00	28.16	PK	277	2.1	H	42.87	71.03	120.3	49.27
5850.00	28.33	PK	277	2.1	H	42.87	71.20	131.7	60.50
11650.00	40.71	PK	204	2.3	H	22.37	63.08	83.5	20.42
11650.00	25.34	Ave.	204	2.3	H	22.37	47.71	63.5	15.79

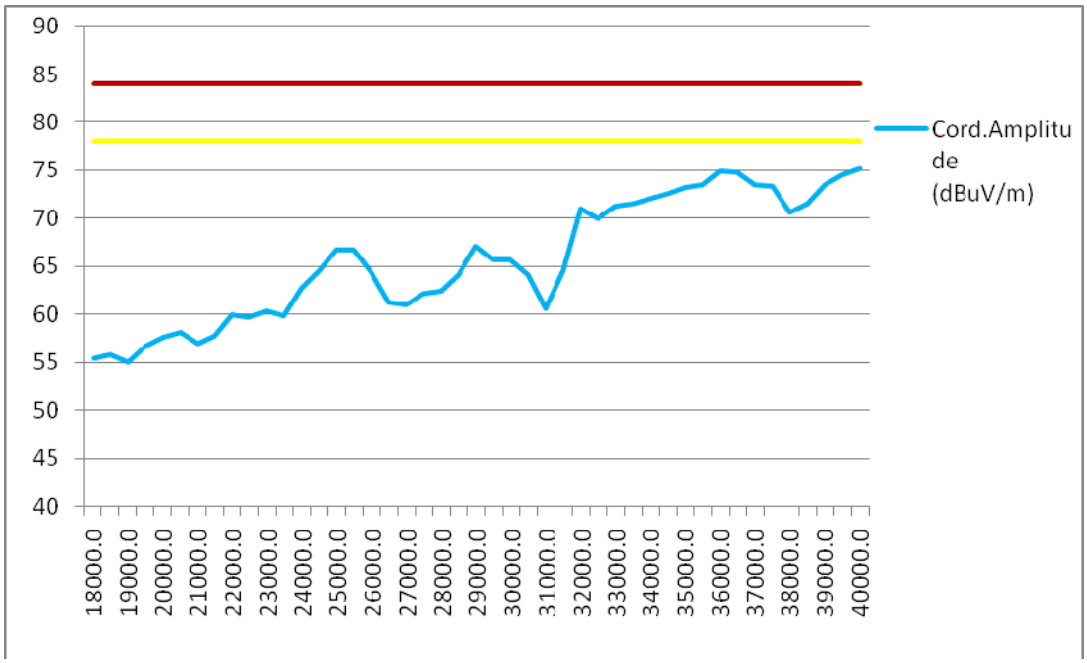
Frequency (MHz)	Receiver		Turntable	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m) @1m	FCC Part 15.407/205/209	
	Reading (dBμV) @1m	PK/QP/Ave.	Degree	Height (m)	Polar (H / V)			Limit (dBμV/m) @1m	Margin (dB)
802.11ac20									
5745MHz									
5745.00	64.12	PK	360	1.9	H	42.78	106.90	/	/
5745.00	52.39	Ave.	360	1.9	H	42.78	95.17	/	/
5745.00	62.57	PK	25	2.4	V	42.78	105.35	/	/
5745.00	50.84	Ave.	25	2.4	V	42.78	93.62	/	/
5725.00	28.15	PK	131	2.3	H	42.78	70.93	131.7	60.77
5720.00	27.93	PK	131	2.3	H	42.78	70.71	120.3	49.59
5700.00	27.86	PK	13	2.4	H	42.78	70.64	114.7	44.06
5850.00	27.87	PK	13	2.4	H	42.87	70.74	131.7	60.96
11490.00	39.21	PK	159	1.2	H	24.17	63.38	83.5	20.12
11490.00	25.47	Ave.	159	1.2	H	24.17	49.64	63.5	13.86
5785MHz									
5785.00	64.29	PK	0	2.2	H	42.92	107.21	/	/
5785.00	52.18	Ave.	0	2.2	H	42.92	95.10	/	/
5785.00	63.76	PK	89	2.4	V	42.92	106.68	/	/
5785.00	51.55	Ave.	89	2.4	V	42.92	94.47	/	/
11570.00	39.24	PK	271	1.2	H	23.10	62.34	83.5	21.16
11570.00	25.17	Ave.	271	1.2	H	23.10	48.27	63.5	15.23
5825MHz									
5825.00	64.58	PK	151	2.4	H	42.92	107.50	/	/
5825.00	52.50	Ave.	151	2.4	H	42.92	95.42	/	/
5825.00	63.34	PK	211	1.6	V	42.92	106.26	/	/
5825.00	51.47	Ave.	211	1.6	V	42.92	94.39	/	/
5725.00	27.54	PK	291	2.3	H	42.78	70.32	131.7	61.38
5875.00	27.39	PK	291	2.3	H	42.87	70.26	114.7	44.44
5855.00	27.89	PK	67	1.1	H	42.87	70.76	120.3	49.54
5850.00	28.01	PK	67	1.1	H	42.87	70.88	131.7	60.82
11650.00	39.11	PK	109	1.6	H	22.37	61.48	83.5	22.02
11650.00	25.52	Ave.	109	1.6	H	22.37	47.89	63.5	15.61

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.

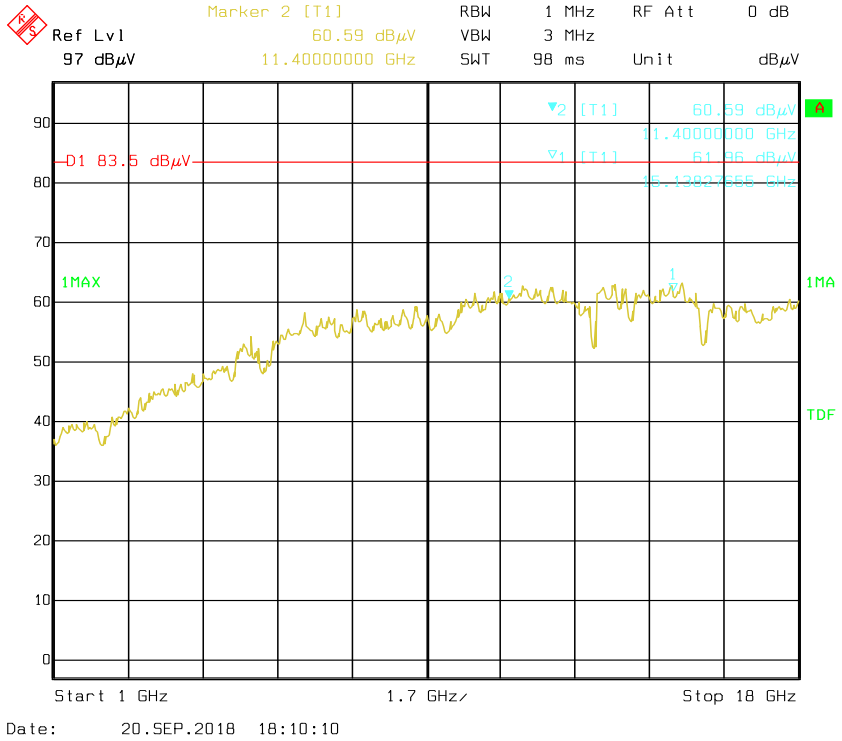
Pre-scan with 802.11a 5700MHz, for Peak

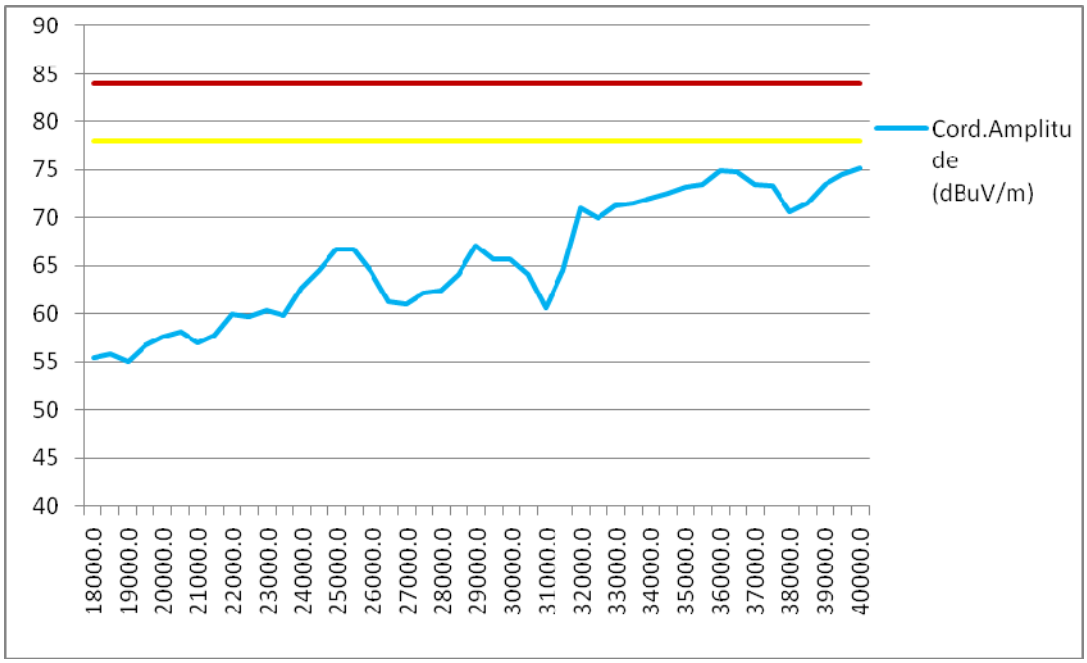
Horizontal



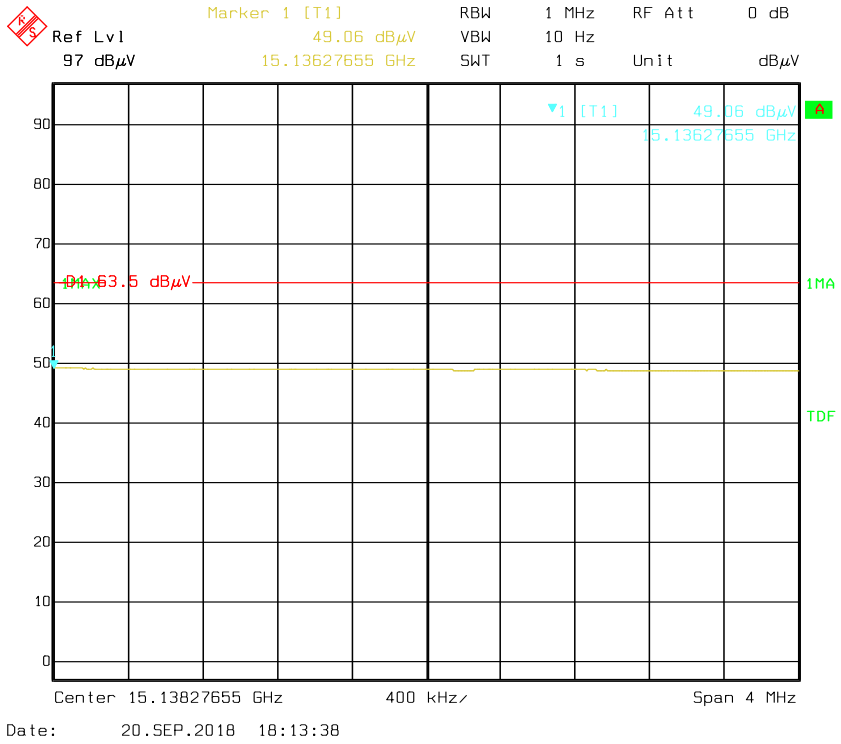


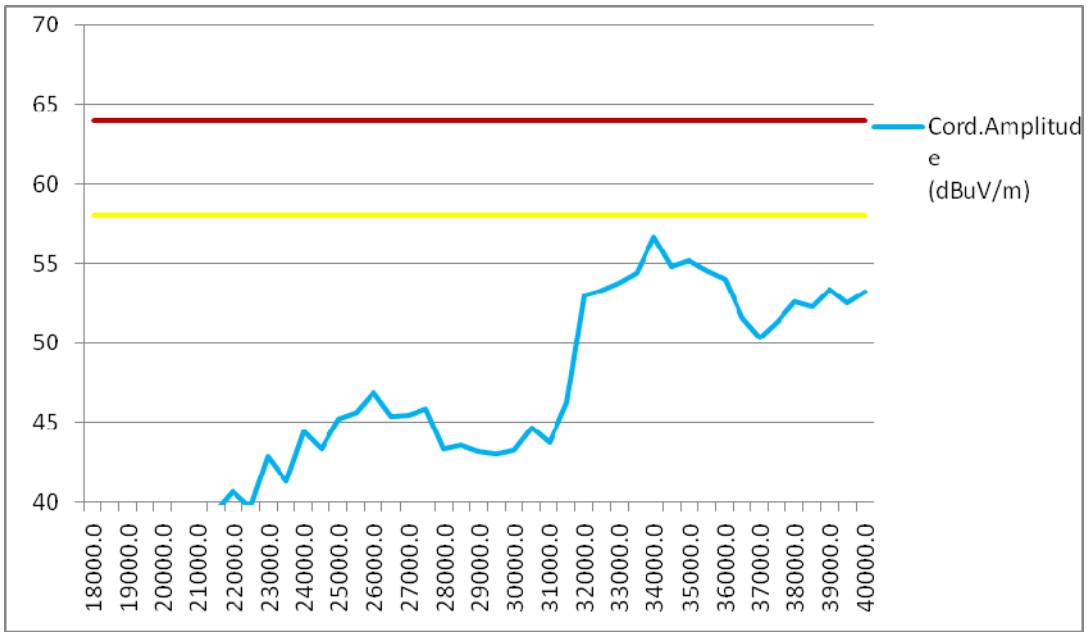
Vertical


Marker 2 [T1]
Ref Lvl
97 dBµV
60.59 dBµV
11.40000000 GHz
RBW 1 MHz
VBW 3 MHz
SWT 98 ms
RF Att 0 dB
Unit dBµV
D1 83.5 dBµV
2 [T1] 60.59 dBµV
11.40000000 GHz
1 [T1] 61.96 dBµV
1MAX
1MA
TDF
Start 1 GHz
1.7 GHz/
Stop 18 GHz
Date: 20.SEP.2018 18:10:10

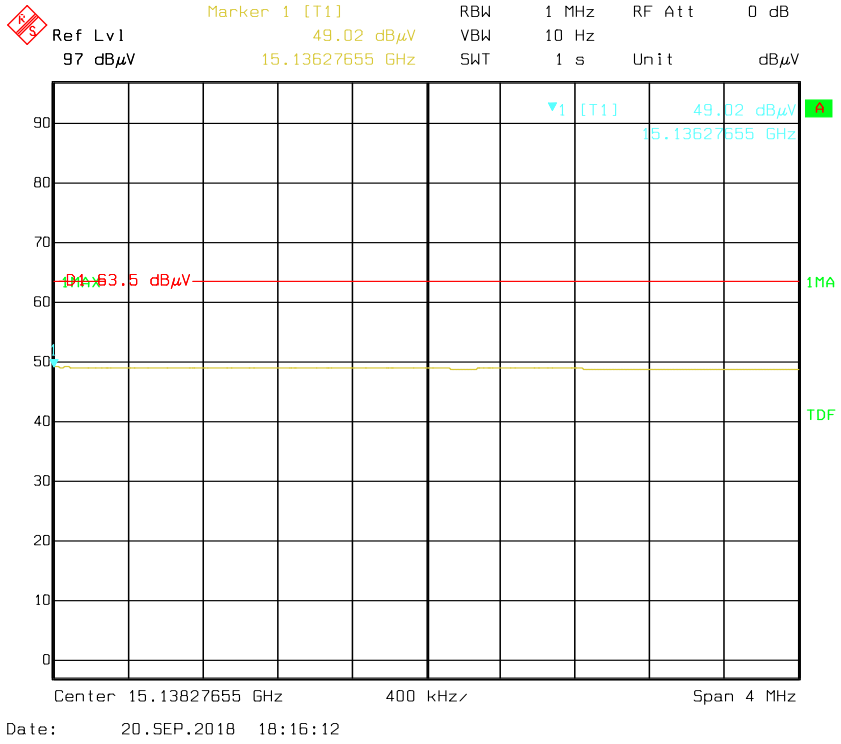

Cord.Amplitude (dBuV/m)

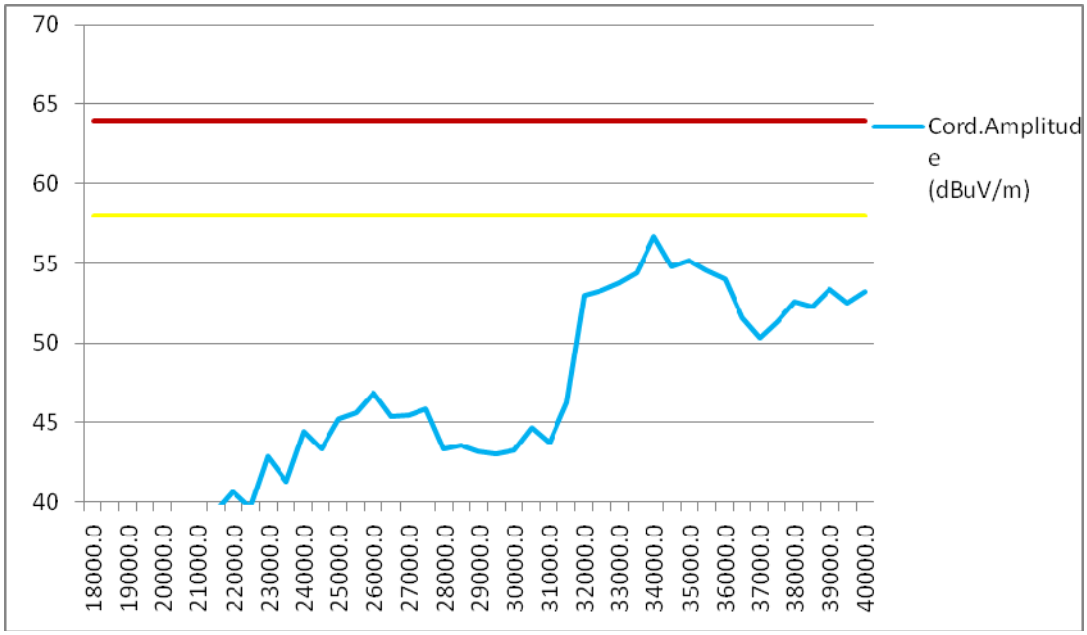
Pre-scan with 802.11a 5700MHz, for **Average**
Horizontal





Vertical


Marker 1 [T1]
RBW 1 MHz
RF Att 0 dB
Ref Lvl
49.02 dBµV
VBW 10 Hz
97 dBµV
15.13627655 GHz
SWT 1 s
Unit dBµV
1 [T1] 49.02 dBµV
15.13627655 GHz
D1 63.5 dBµV
1MA
TDF
Center 15.13827655 GHz
400 kHz/
Span 4 MHz
Date: 20.SEP.2018 18:16:12


Cord.Amplitude (dBuV/m)

§15.407(B) (1), (2), (3), (4) –OUT OF BAND EMISSION

Applicable Standard

FCC §15.407 (b) (1), (2), (3), (4);

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

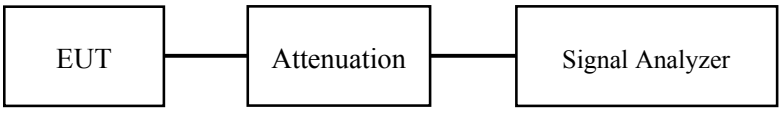
For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

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

For transmitters operating in the 5.725–5.825 GHz band: All emissions shall be limited to a level of −27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

Test Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. The Resolution bandwidth is set to 1MHz, The Video bandwidth is set to ≥ 1MHz, report the peak value out of the oprating band.
3. Repeat above procedures until all frequencies measured were complete.



Test Data

Environmental Conditions

Temperature:	23.5~25 ℃
Relative Humidity:	49~56 %
ATM Pressure:	109.0~101.0 kPa

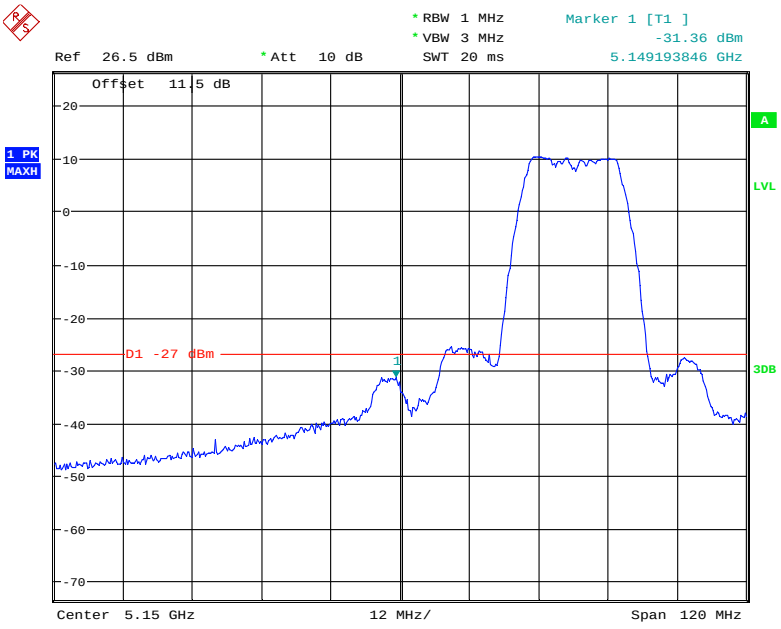
The testing was performed by Shawn Xiao from 2018-09-17 to 2018-09-21.

EUT operation mode: Transmitting

Note: Antenna gain was added into the test result.

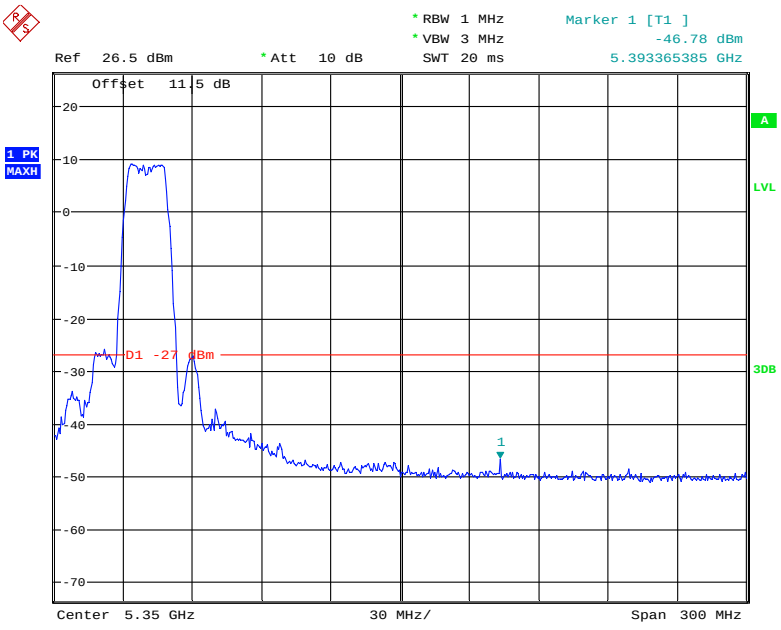
5150 – 5250 MHz:

802.11a mode, Band Edge, Left Side



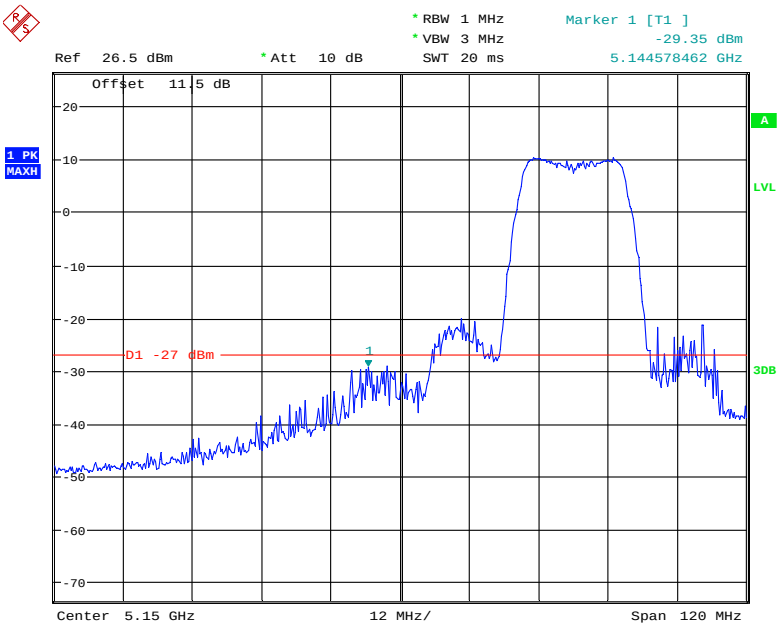
Date: 18.SEP.2018 00:30:13

802.11a mode, Band Edge, Right Side



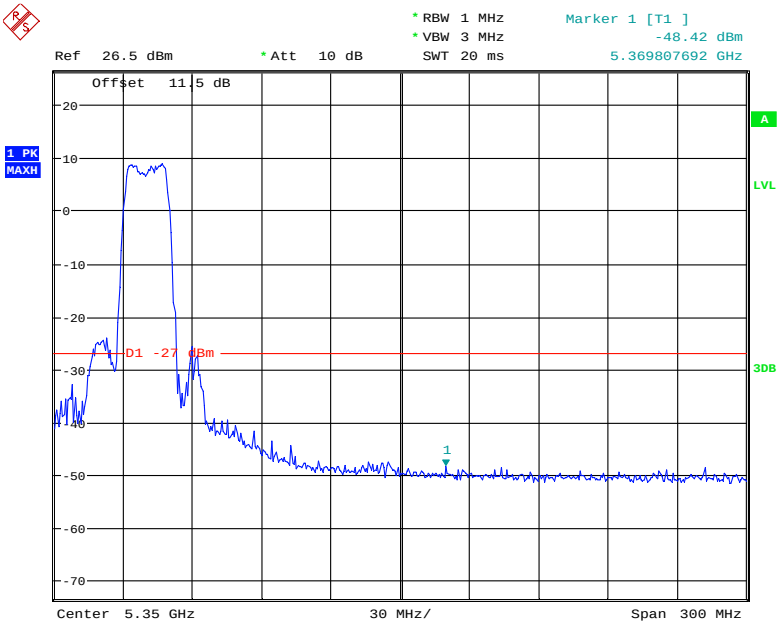
Date: 18.SEP.2018 00:31:28

802.11n20 mode, Band Edge, Left Side



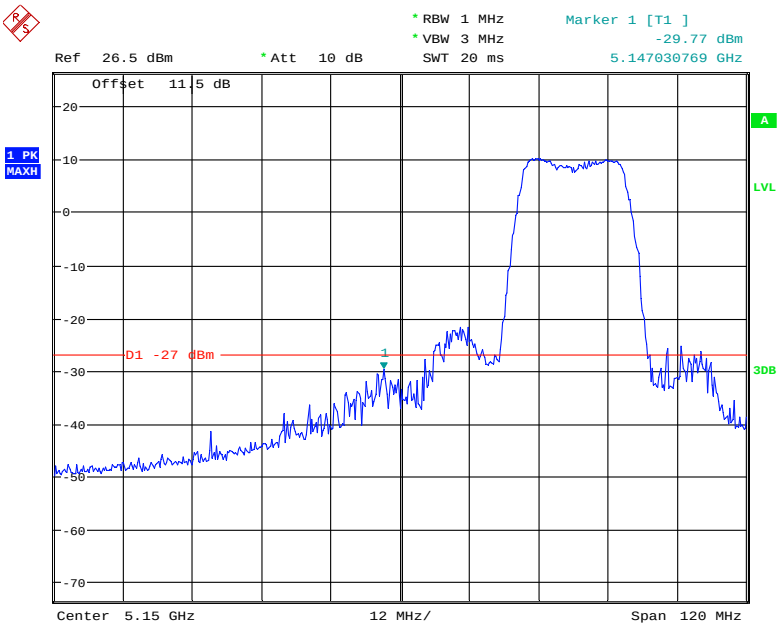
Date: 18.SEP.2018 00:25:05

802.11n20 mode, Band Edge, Right Side



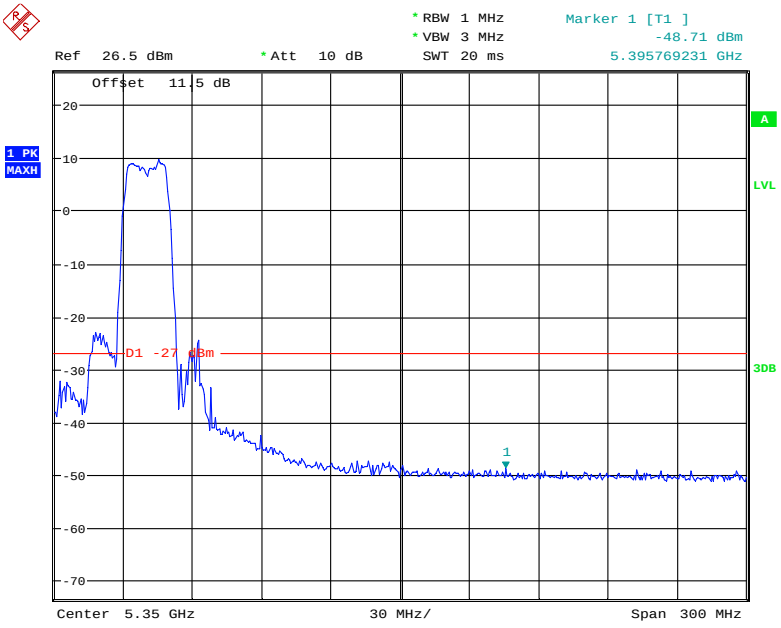
Date: 18.SEP.2018 00:24:06

802.11ac20 mode, Band Edge, Left Side



Date: 18.SEP.2018 00:20:35

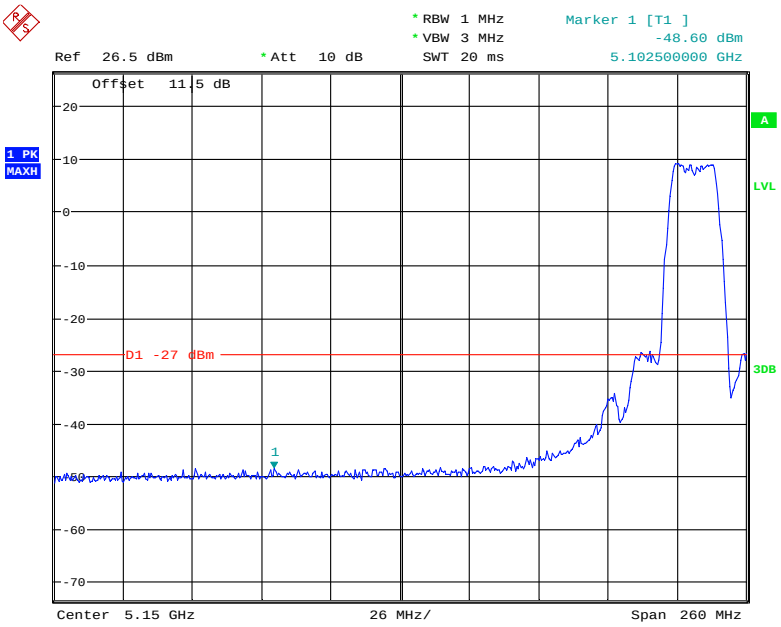
802.11ac20 mode, Band Edge, Right Side



Date: 18.SEP.2018 00:21:48

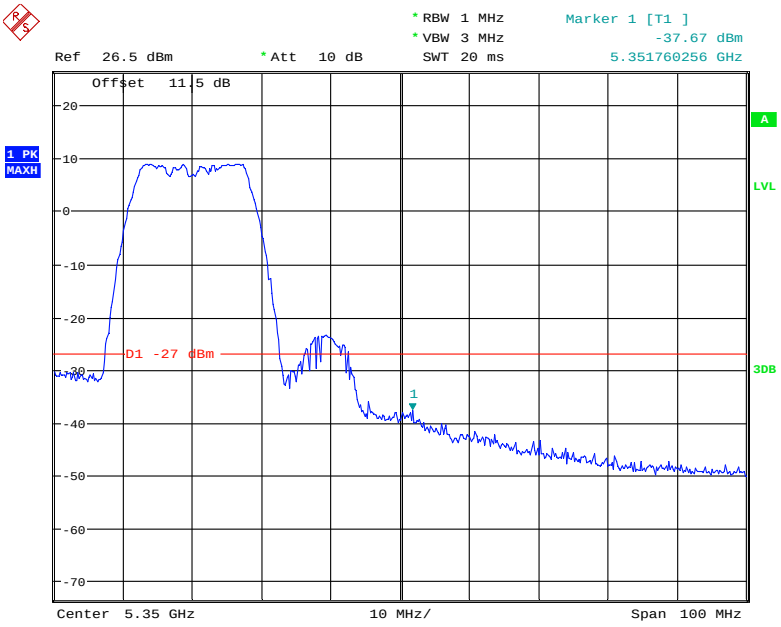
5250 – 5350 MHz:

802.11a mode, Band Edge, Left Side



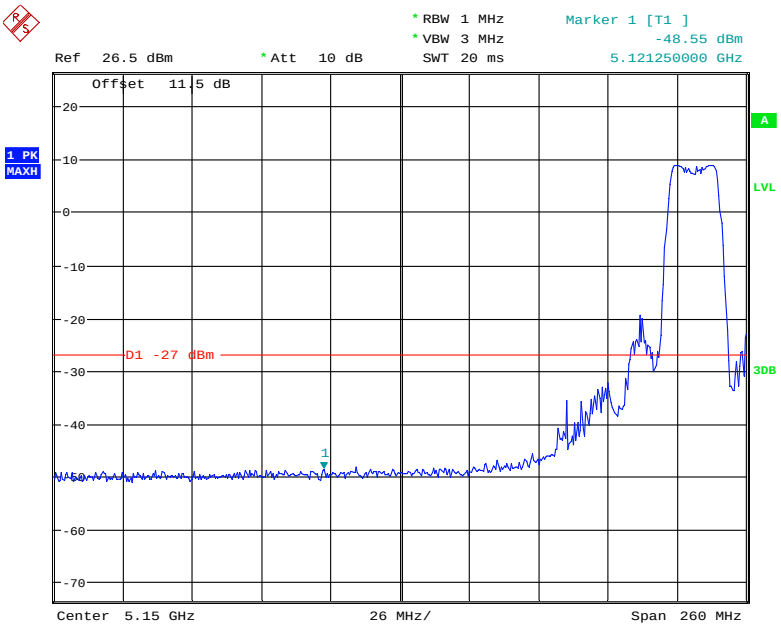
Date: 18.SEP.2018 00:00:25

802.11a mode, Band Edge, Right Side



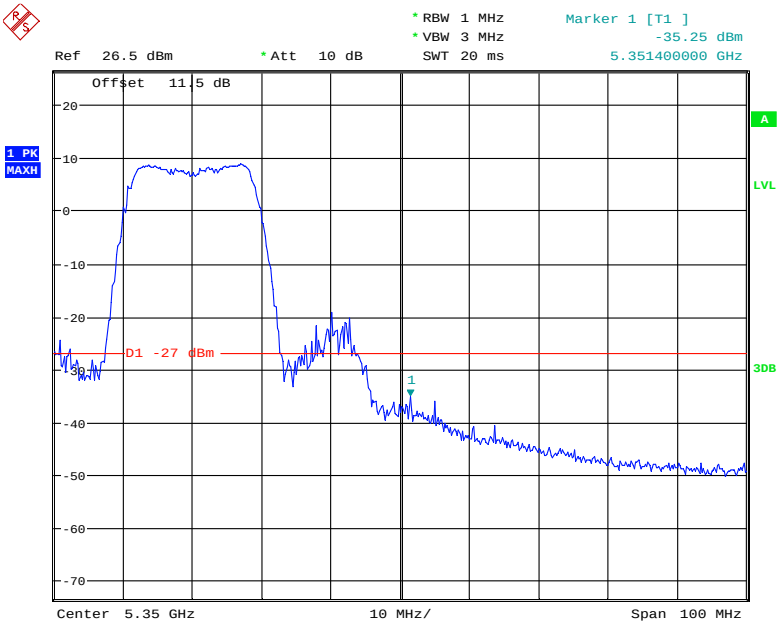
Date: 18.SEP.2018 00:01:14

802.11n20 mode, Band Edge, Left Side



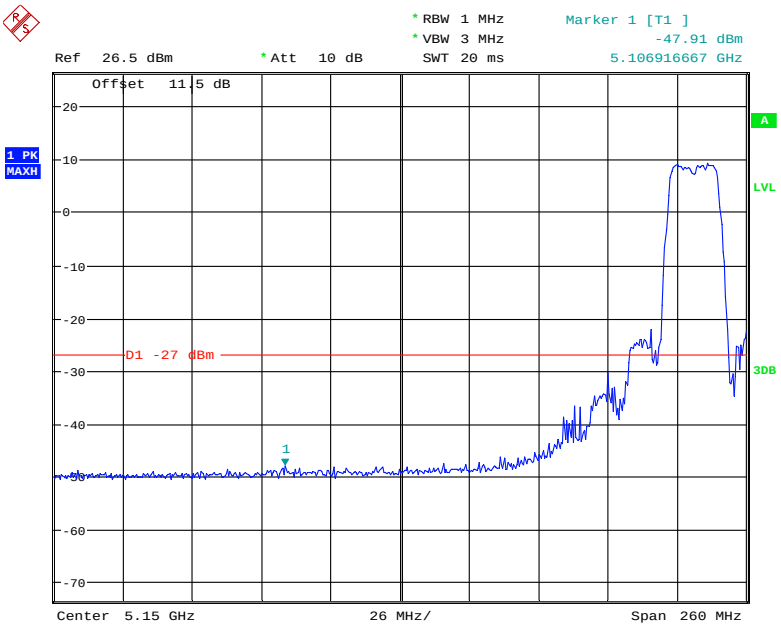
Date: 17.SEP.2018 23:58:24

802.11n20 mode, Band Edge, Right Side



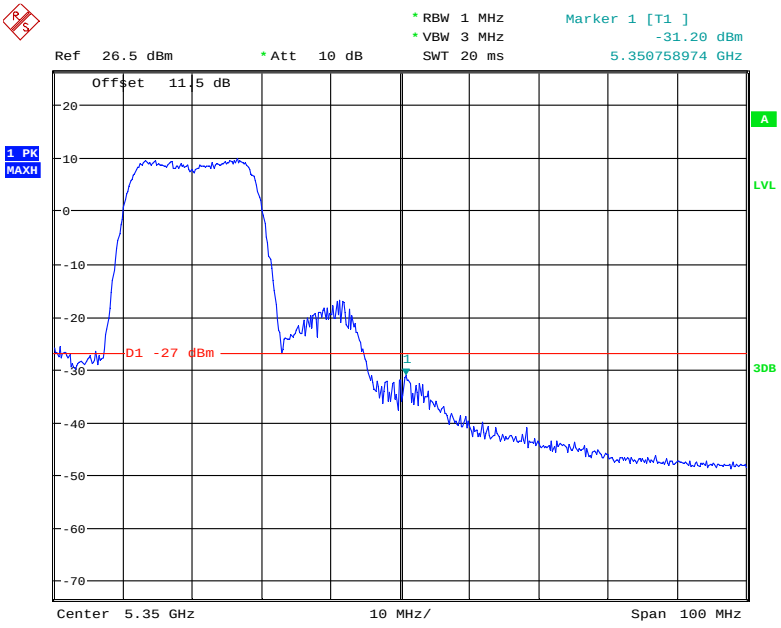
Date: 17.SEP.2018 23:57:15

802.11ac20 mode, Band Edge, Left Side



Date: 17.SEP.2018 23:43:59

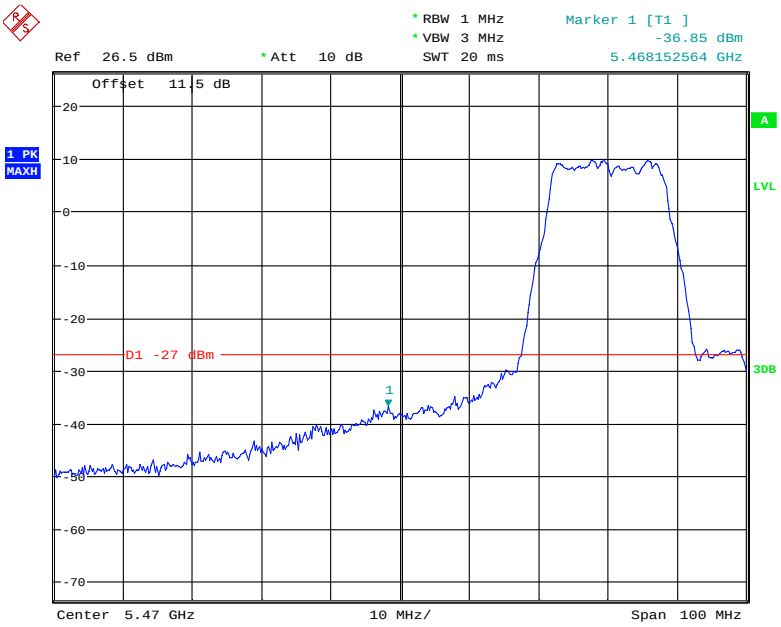
802.11ac20 mode, Band Edge, Right Side



Date: 17.SEP.2018 23:48:37

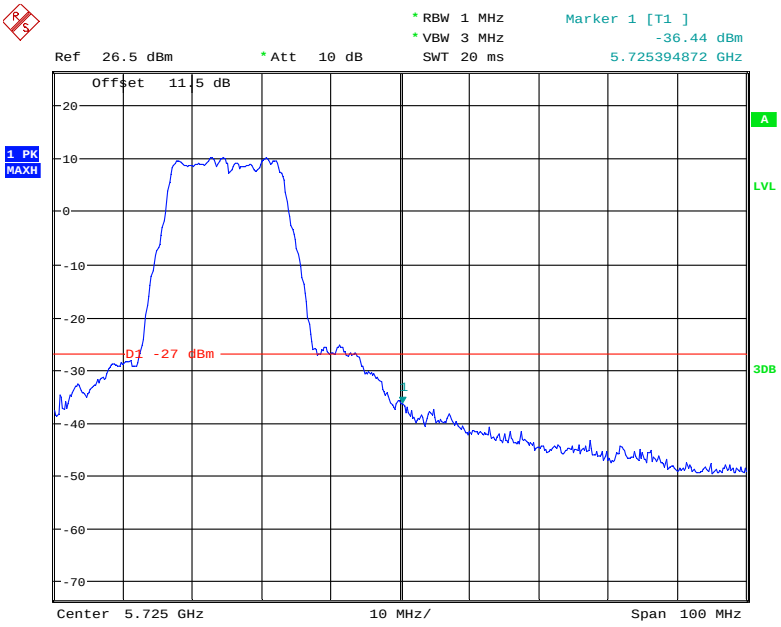
5470 – 5725 MHz:

802.11a mode, Band Edge, Left Side



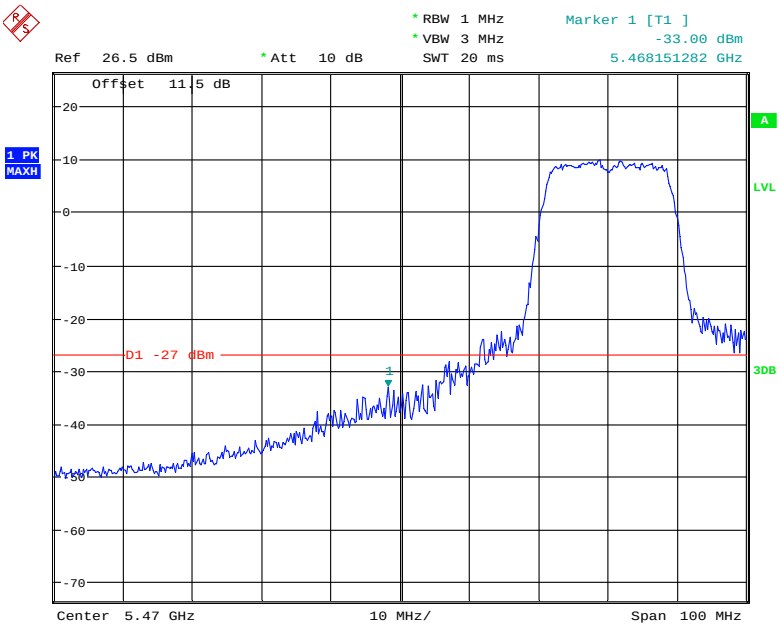
Date: 21.SEP.2018 19:54:40

802.11a mode, Band Edge, Right Side



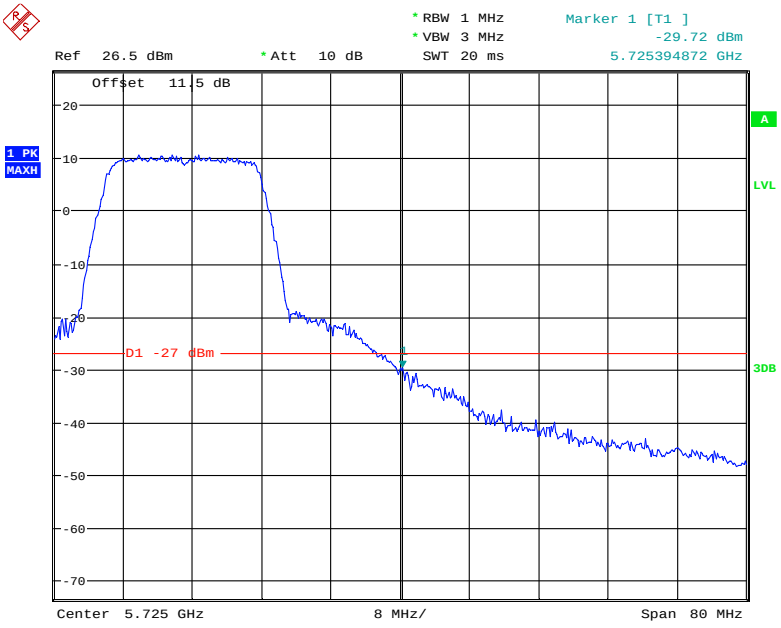
Date: 21.SEP.2018 19:52:23

802.11n20 mode, Band Edge, Left Side



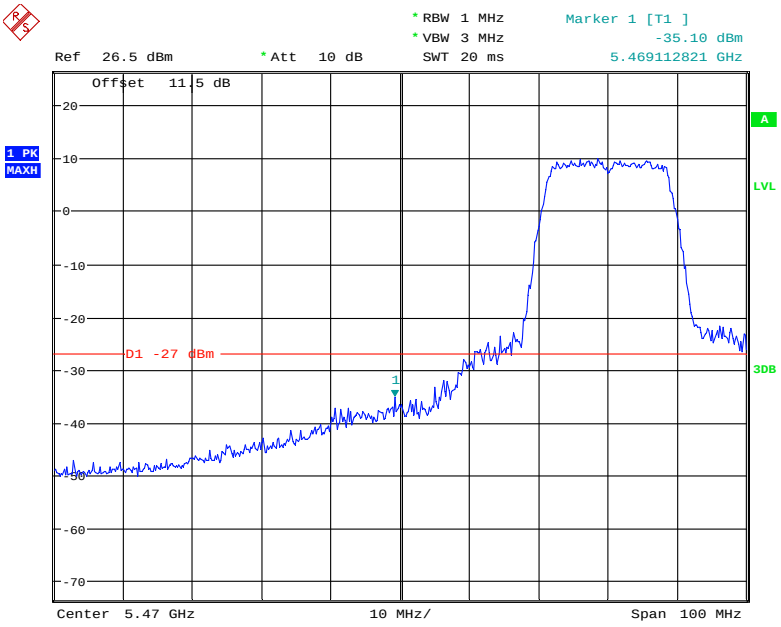
Date: 21.SEP.2018 19:45:11

802.11n20 mode, Band Edge, Right Side



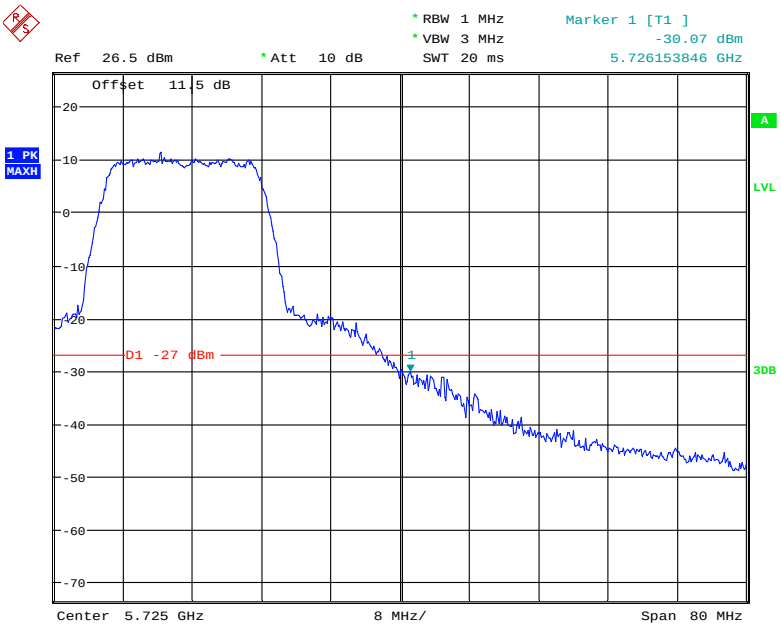
Date: 21.SEP.2018 19:46:45

802.11ac20 mode, Band Edge, Left Side



Date: 21.SEP.2018 19:44:29

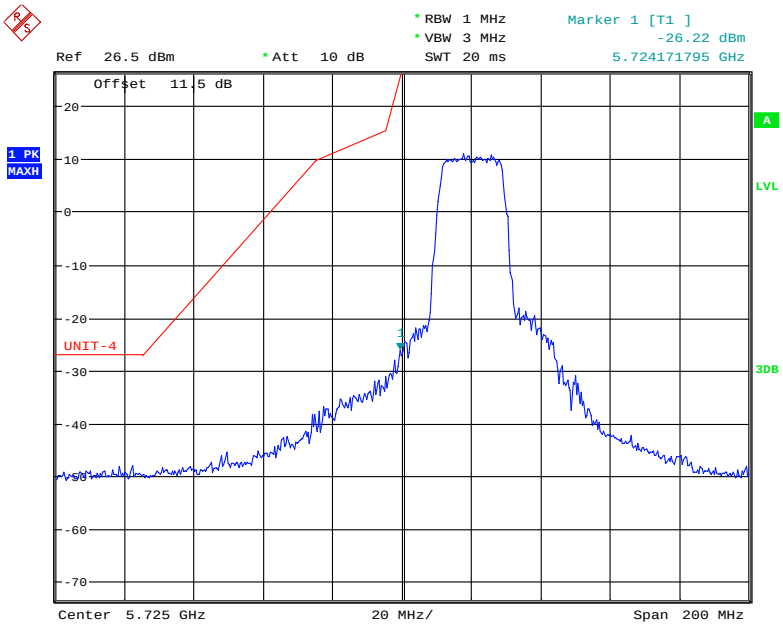
802.11ac20 mode, Band Edge, Right Side



Date: 21.SEP.2018 19:43:00

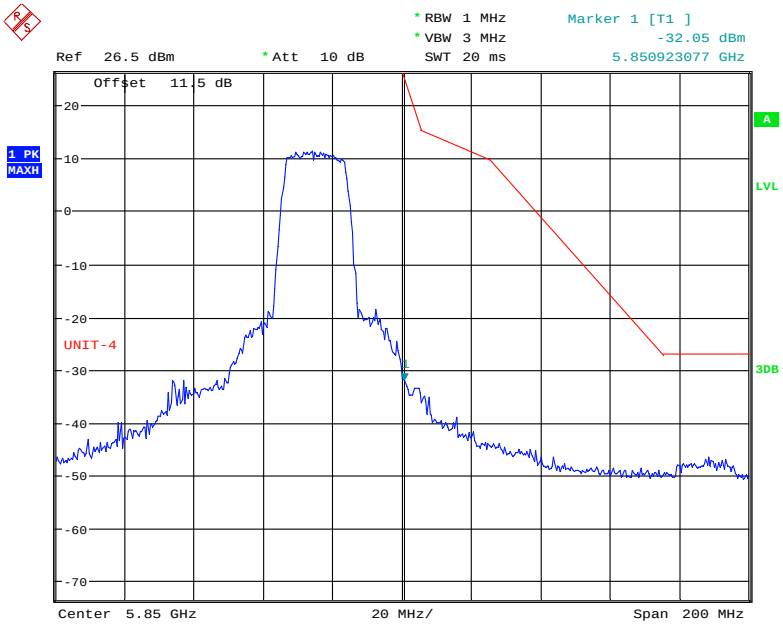
5725 – 5850 MHz:

802.11a mode, Band Edge, Left Side



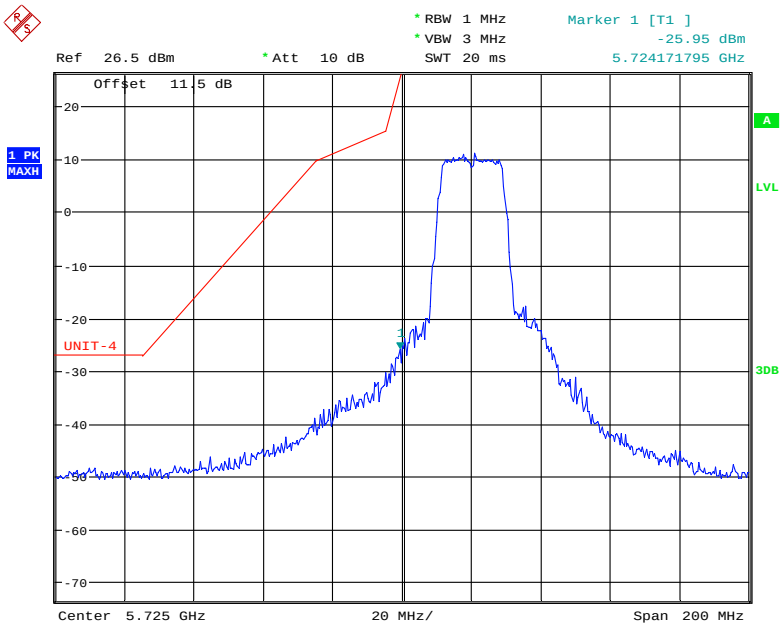
Date: 21.SEP.2018 21:55:14

802.11a mode, Band Edge, Right Side



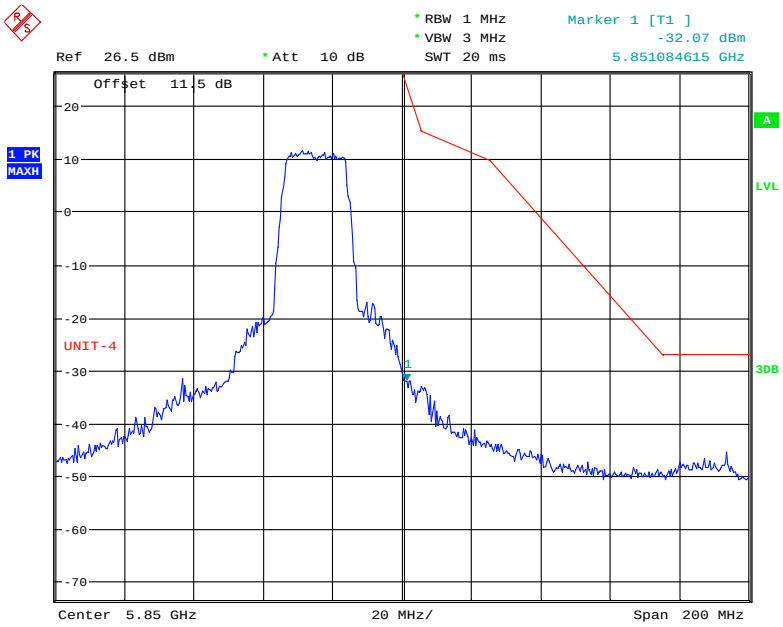
Date: 21.SEP.2018 21:56:16

802.11n20 mode, Band Edge, Left Side



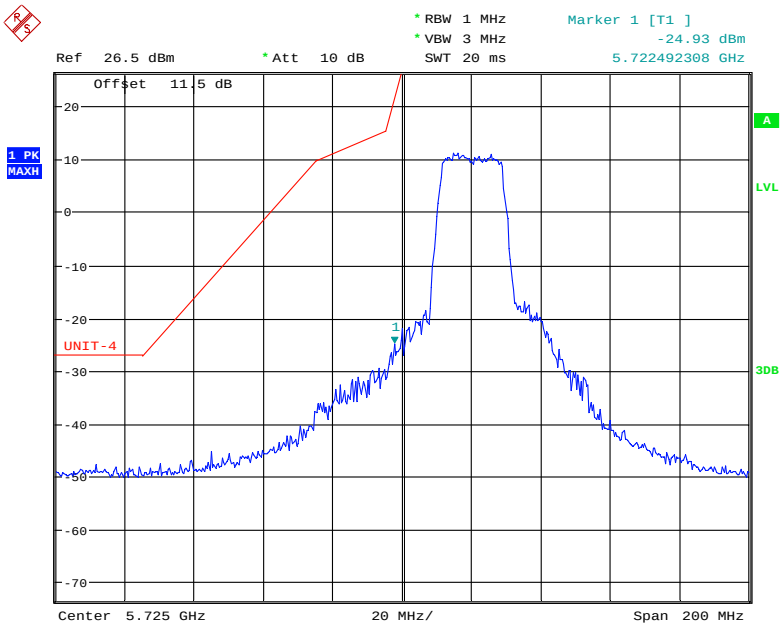
Date: 21.SEP.2018 21:54:24

802.11n20 mode, Band Edge, Right Side



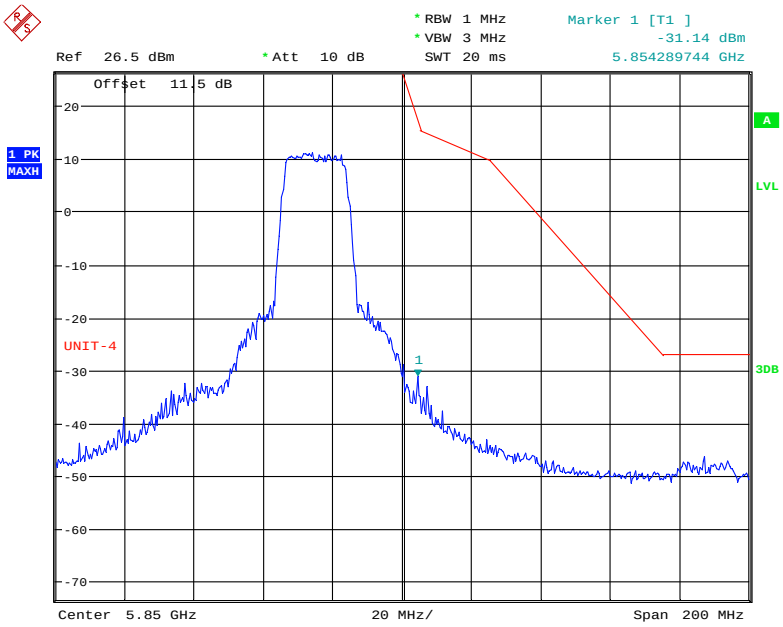
Date: 21.SEP.2018 21:53:21

802.11ac20 mode, Band Edge, Left Side



Date: 21.SEP.2018 21:50:59

802.11ac20 mode, Band Edge, Right Side



Date: 21.SEP.2018 21:52:27

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

Applicable Standard

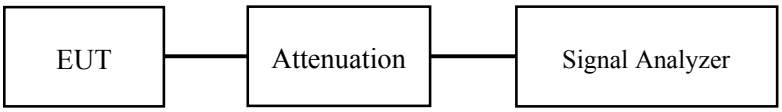
The maximum power spectral density is measured as a conducted emission by direct connection of a calibrated test instrument to the equipment under test. If the device cannot be connected directly, alternative techniques acceptable to the Commission may be used. Measurements in the 5.725-5.85 GHz band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



Test Data

Environmental Conditions

Temperature:	23.5~25 ℃
Relative Humidity:	52~56 %
ATM Pressure:	109.0~101.0 kPa

The testing was performed by Shawn Xiao from 2018-09-17 to 2018-11-01.

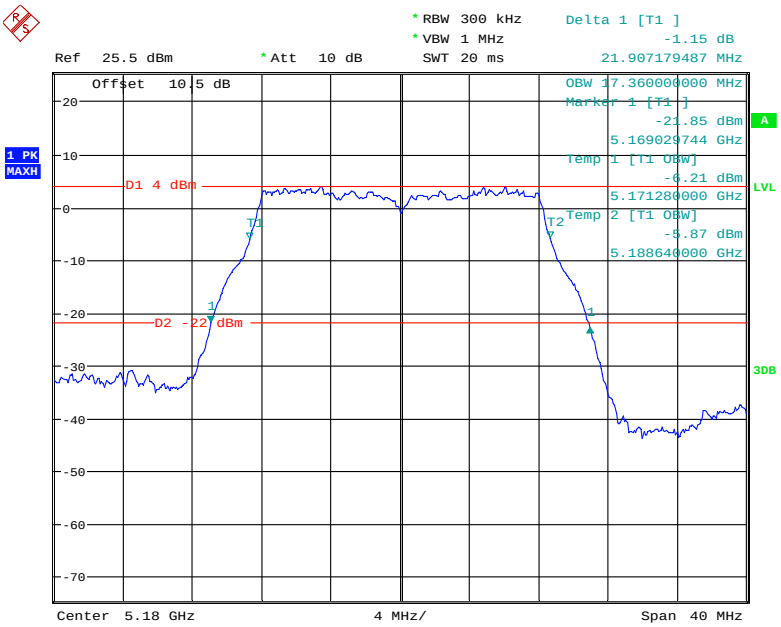
EUT operation mode: Transmitting

Test Result: Pass; please refer to the following tables and plots.

5120 MHz - 5250 MHz:

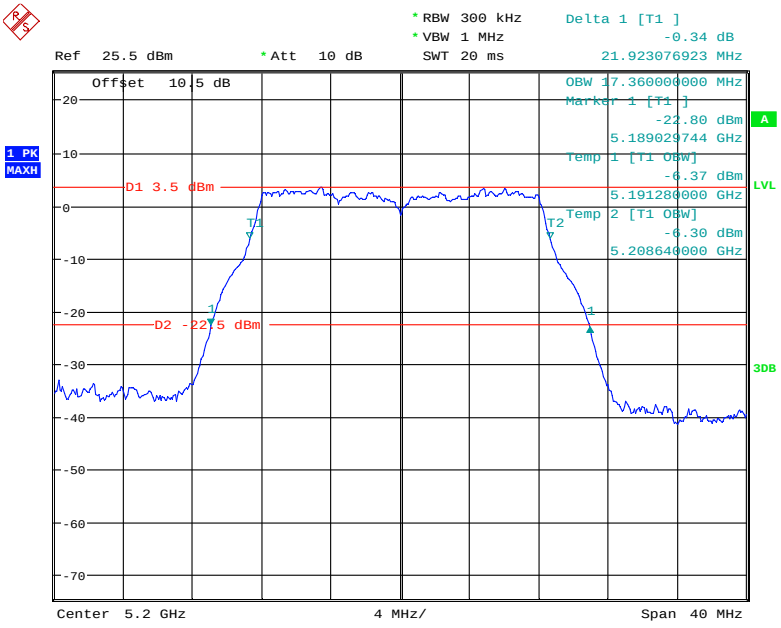
Frequency (MHz)	26dB bandwidth (MHz)	99% Bandwidth (MHz)	Remark
802.11a			No transmitted signal in the 99% bandwidth extends into the U-NII-2A band
5180	21.907	17.360	
5200	21.923	17.360	
5240	21.859	17.440	
802.11n20			
5180	22.361	18.560	
5200	22.377	18.480	
5240	22.364	18.560	
802.11ac20			
5180	22.196	18.480	
5200	22.310	18.480	
5240	22.349	18.480	

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



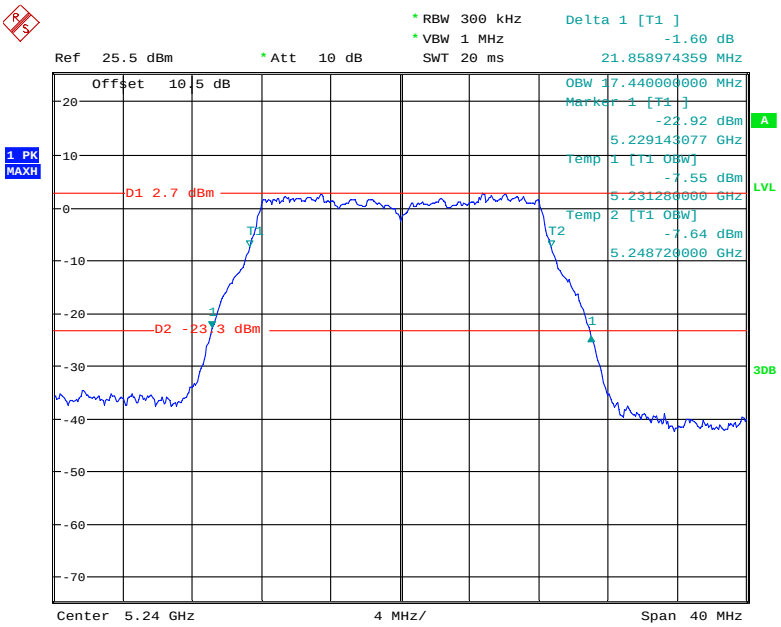
Date: 17.SEP.2018 20:53:49

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



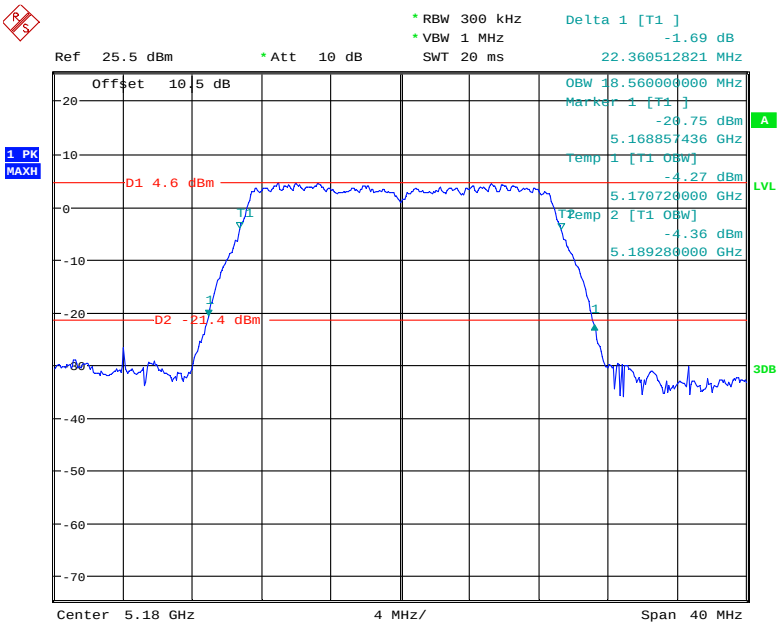
Date: 17.SEP.2018 20:54:57

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



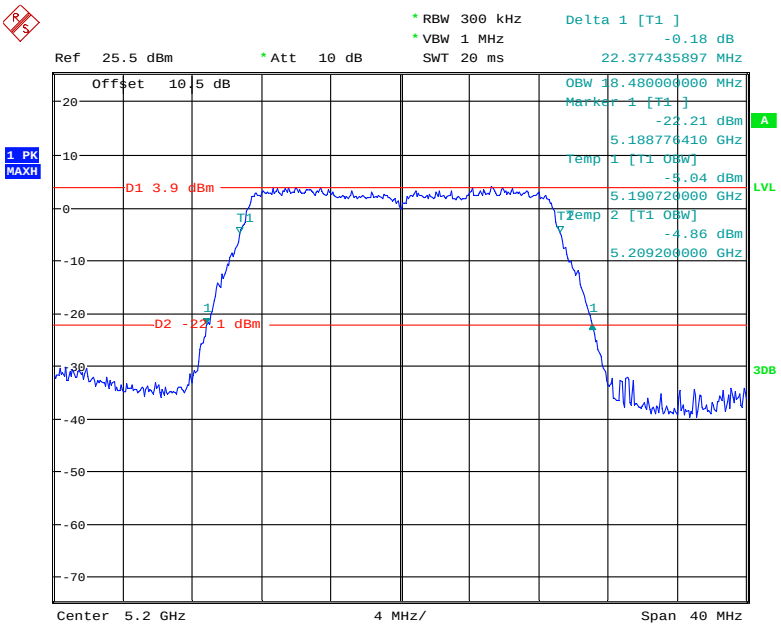
Date: 17.SEP.2018 21:04:04

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



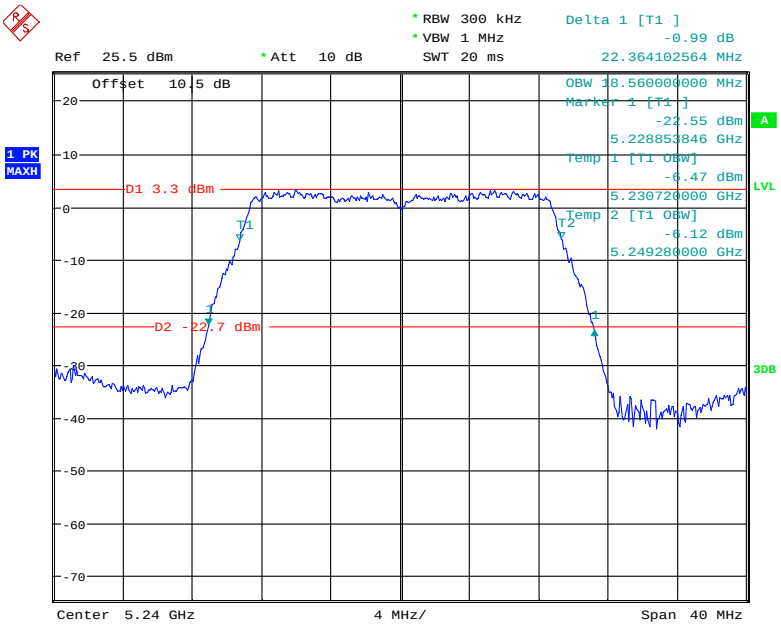
Date: 17.SEP.2018 20:51:58

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



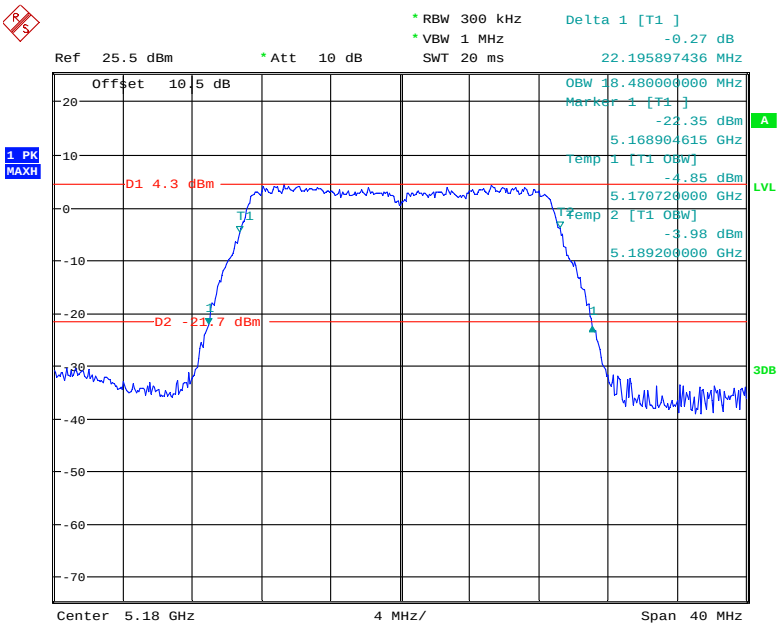
Date: 17.SEP.2018 20:39:13

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



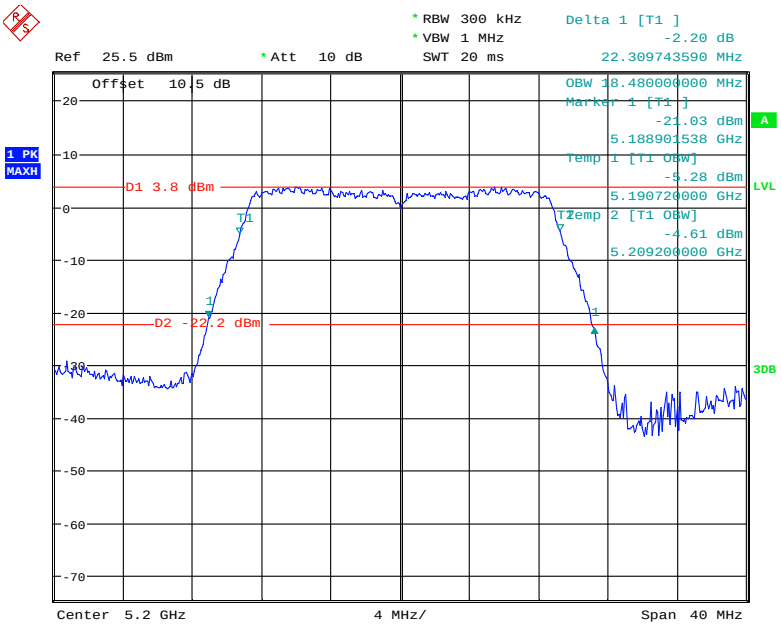
Date: 17.SEP.2018 20:36:43

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



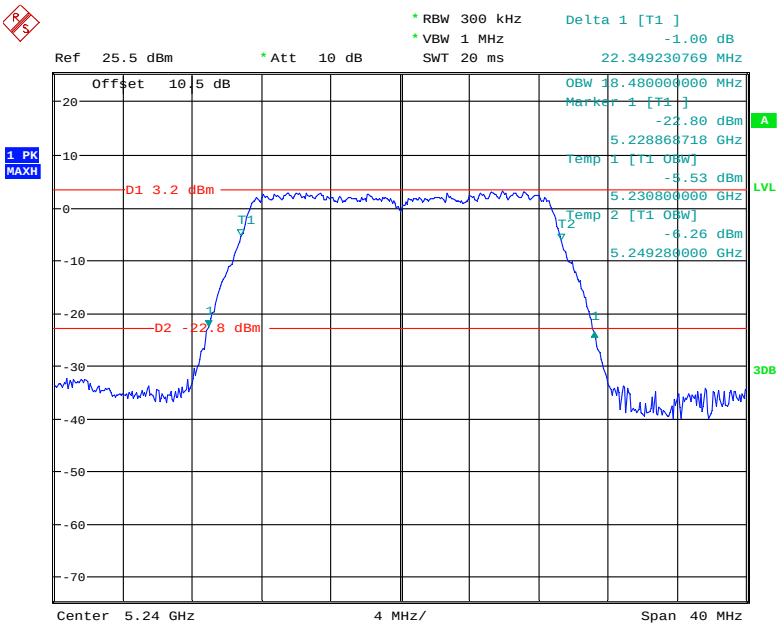
Date: 17.SEP.2018 20:26:47

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



Date: 17.SEP.2018 20:30:27

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

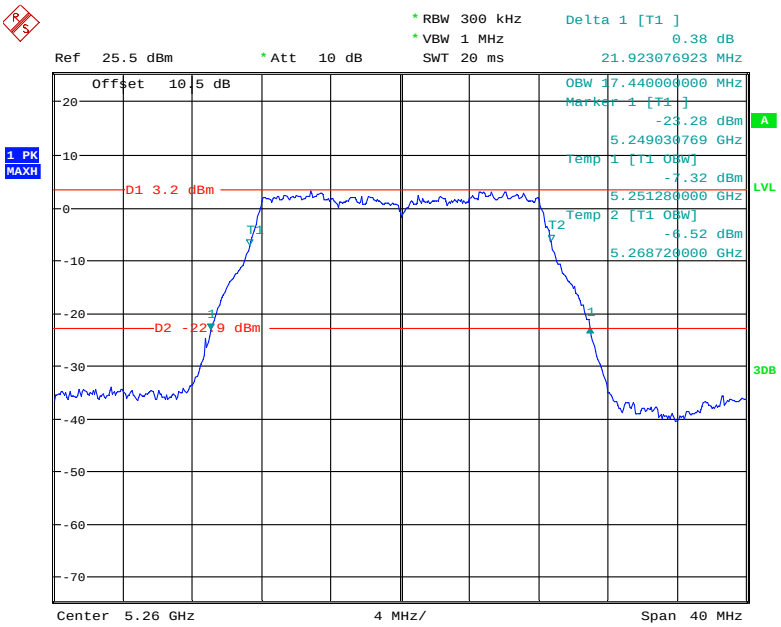


Date: 17.SEP.2018 20:33:46

5250 MHz - 5350 MHz:

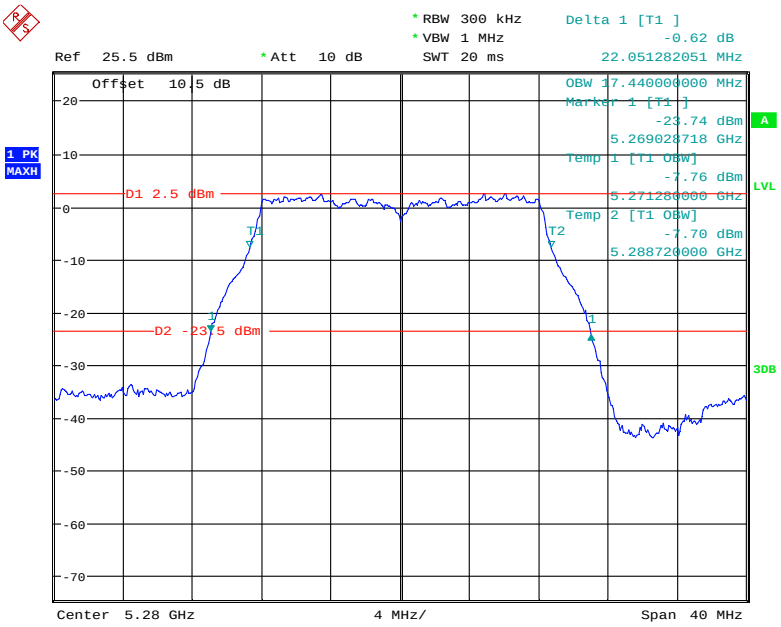
Frequency (MHz)	26dB bandwidth (MHz)	99% Bandwidth (MHz)
802.11a		
5260	21.923	17.440
5280	22.051	17.440
5320	22.051	17.360
802.11n20		
5260	22.308	18.640
5280	22.372	18.480
5320	22.179	18.480
802.11ac20		
5260	22.303	18.480
5280	22.244	18.480
5320	22.308	18.480

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



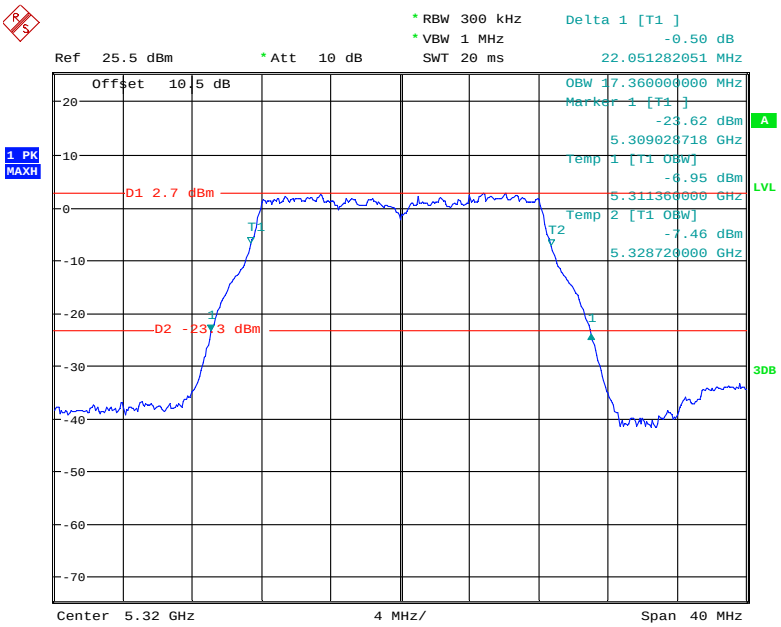
Date: 17.SEP.2018 23:13:26

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



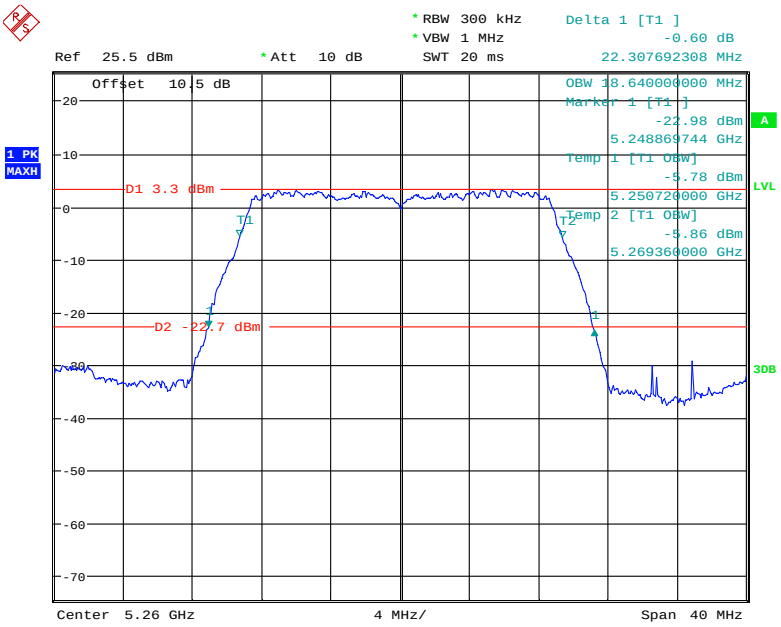
Date: 17.SEP.2018 23:15:54

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



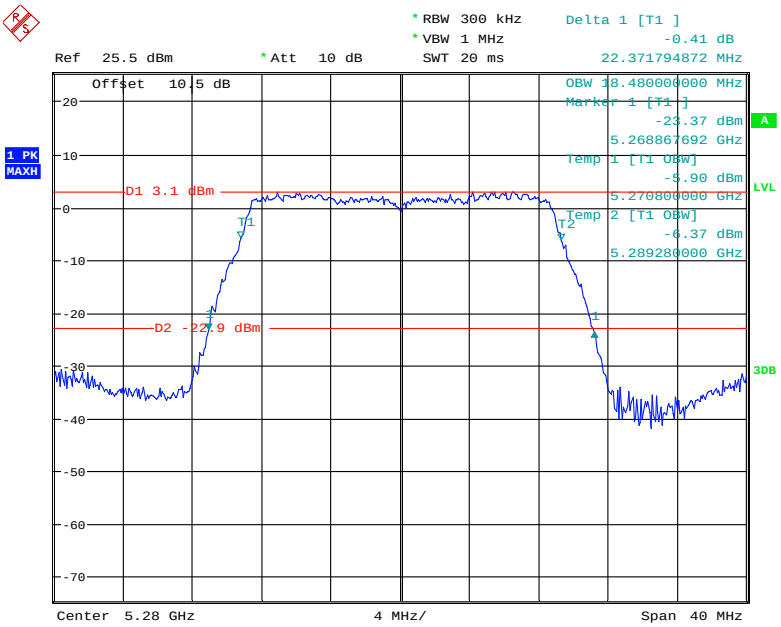
Date: 17.SEP.2018 23:17:05

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



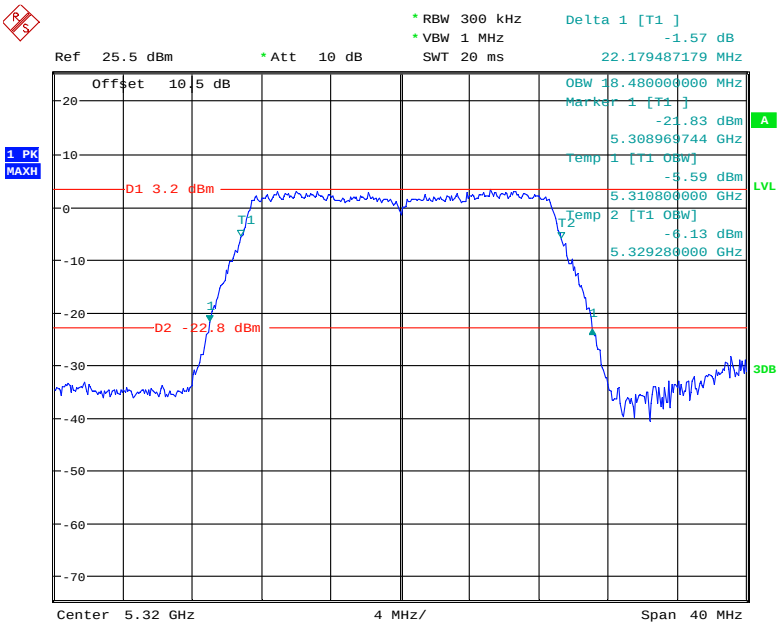
Date: 17.SEP.2018 23:01:41

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



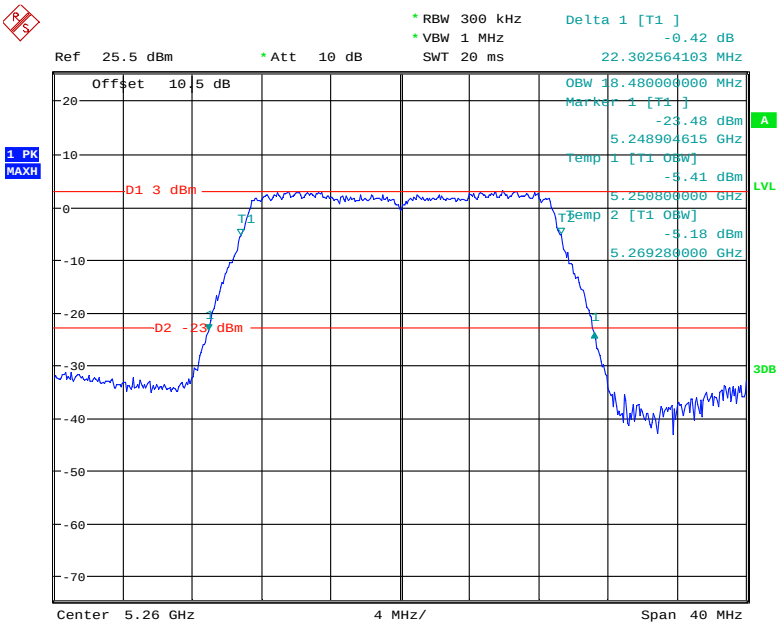
Date: 17.SEP.2018 22:49:30

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



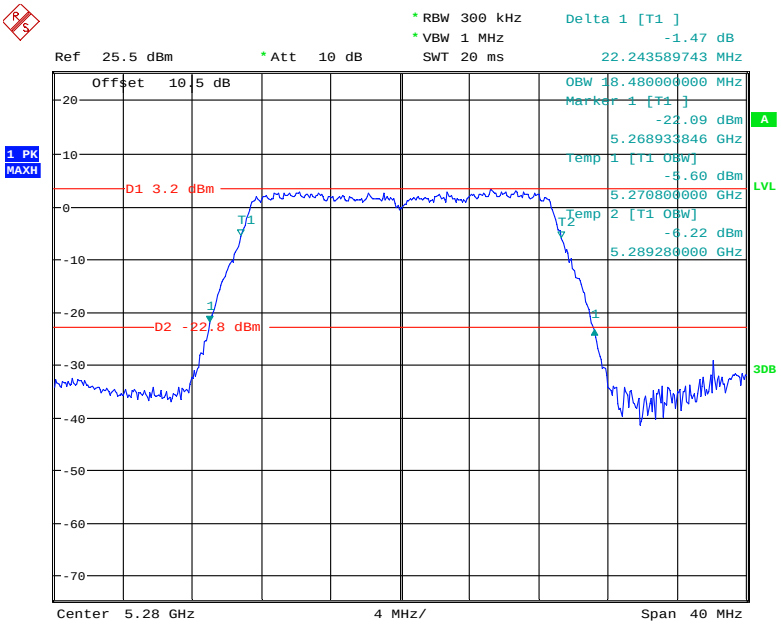
Date: 17.SEP.2018 22:47:47

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



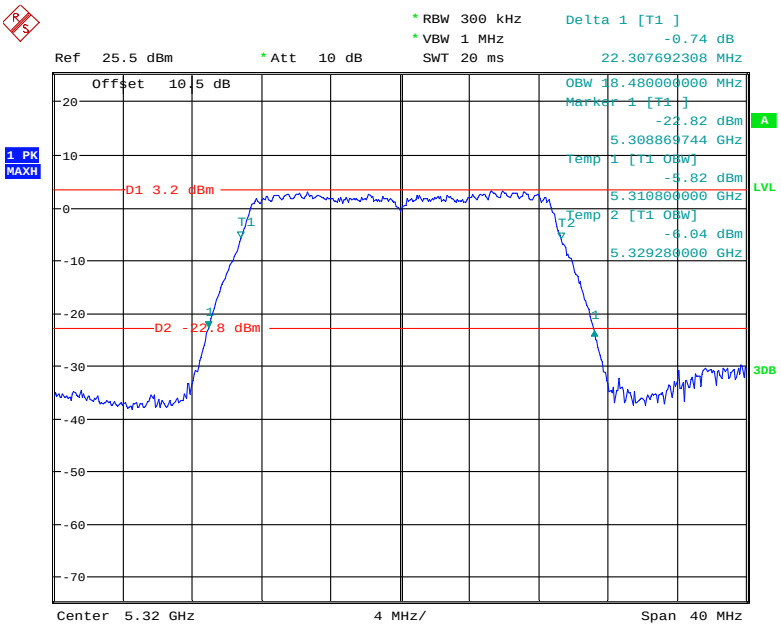
Date: 17.SEP.2018 22:39:03

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



Date: 17.SEP.2018 22:42:18

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

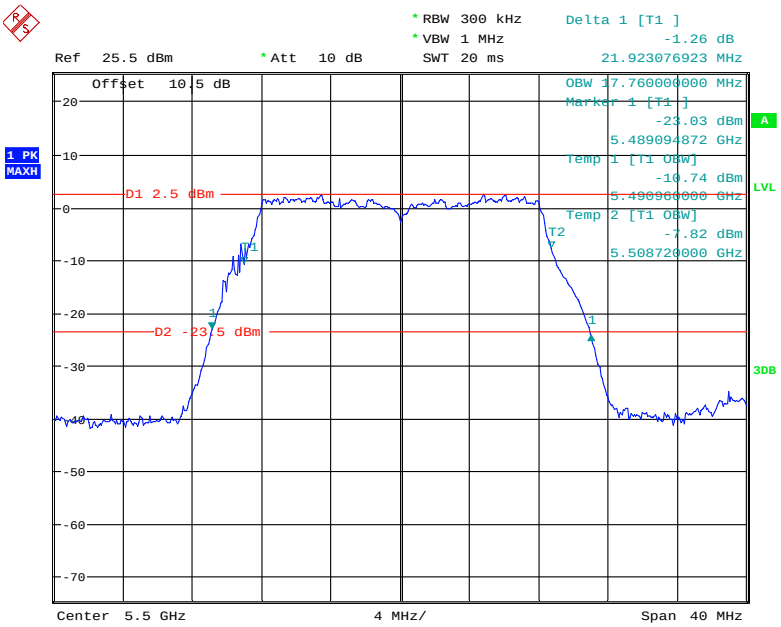


Date: 17.SEP.2018 22:46:23

5470 MHz – 5725 MHz:

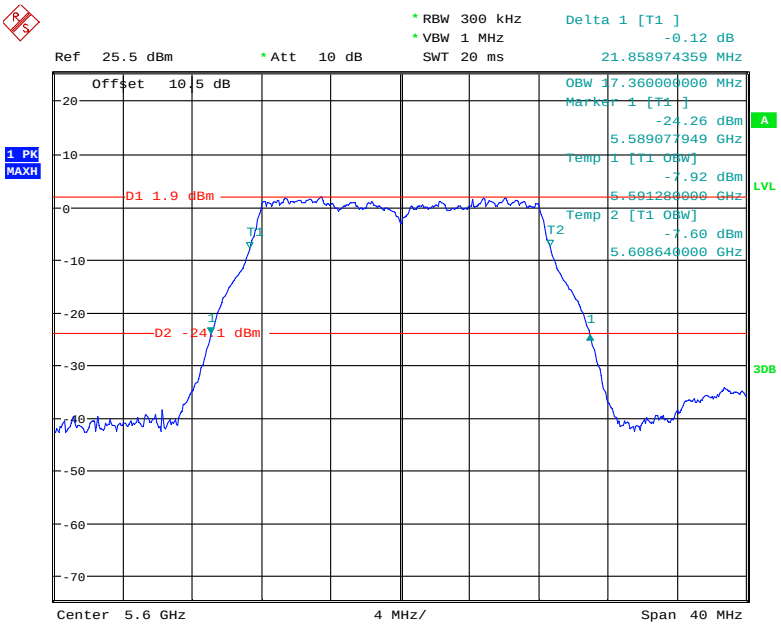
Frequency (MHz)	26dB bandwidth (MHz)	99% Bandwidth (MHz)
802.11a		
5500	21.923	17.760
5600	21.859	17.360
5720	21.923	17.360
802.11n20		
5500	22.372	18.560
5600	22.388	18.560
5720	22.259	18.560
802.11ac20		
5500	22.308	18.480
5600	22.228	18.560
5720	22.308	18.560

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



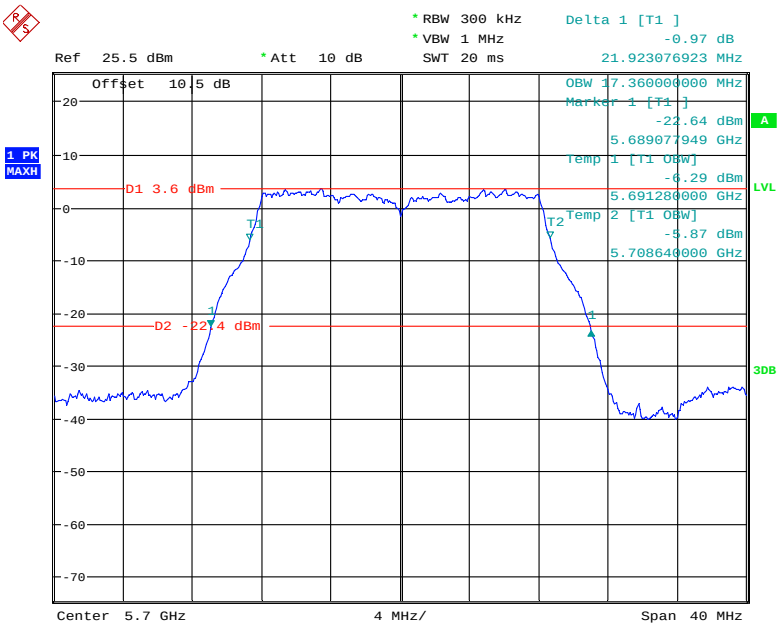
Date: 18.SEP.2018 00:34:10

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



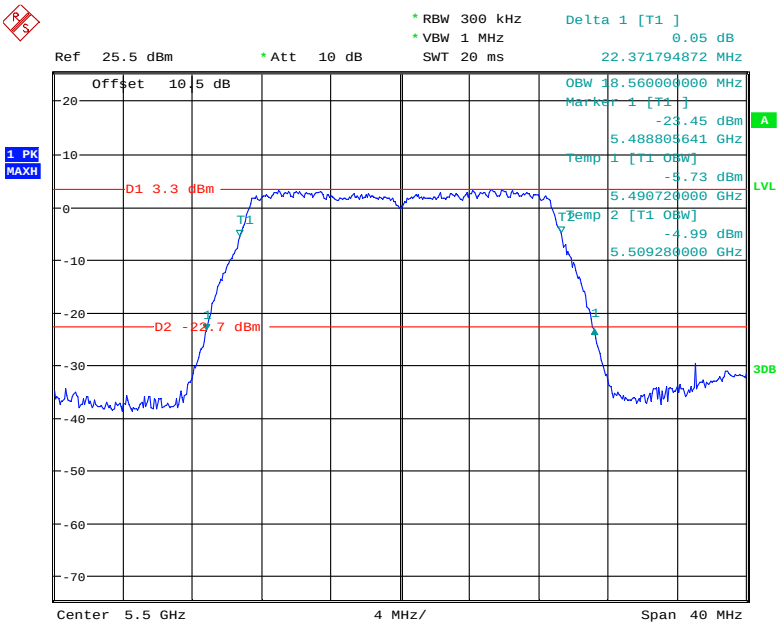
Date: 18.SEP.2018 00:35:37

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



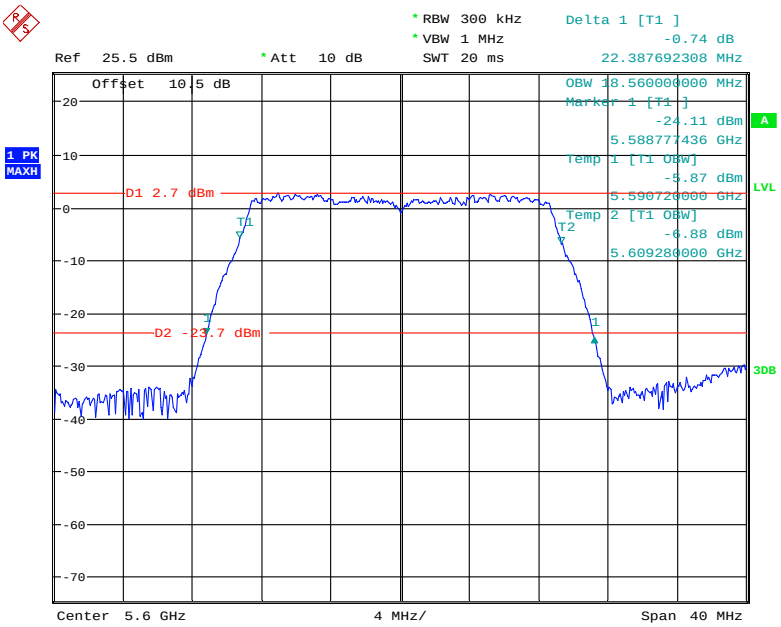
Date: 18.SEP.2018 00:36:41

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



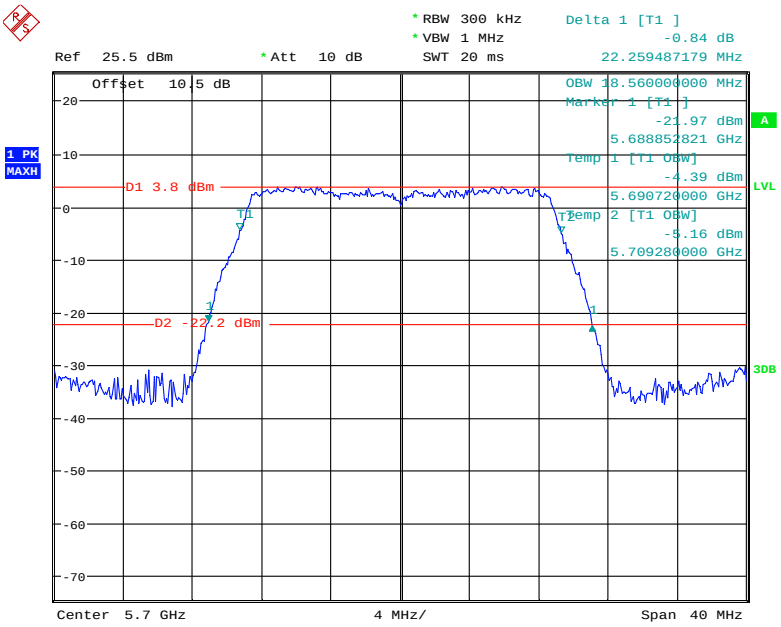
Date: 18.SEP.2018 00:46:03

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



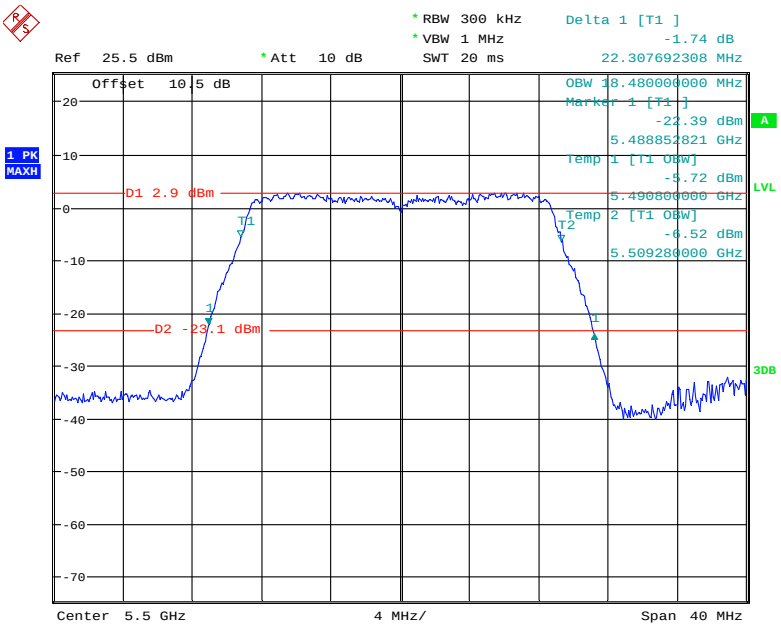
Date: 18.SEP.2018 00:53:51

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



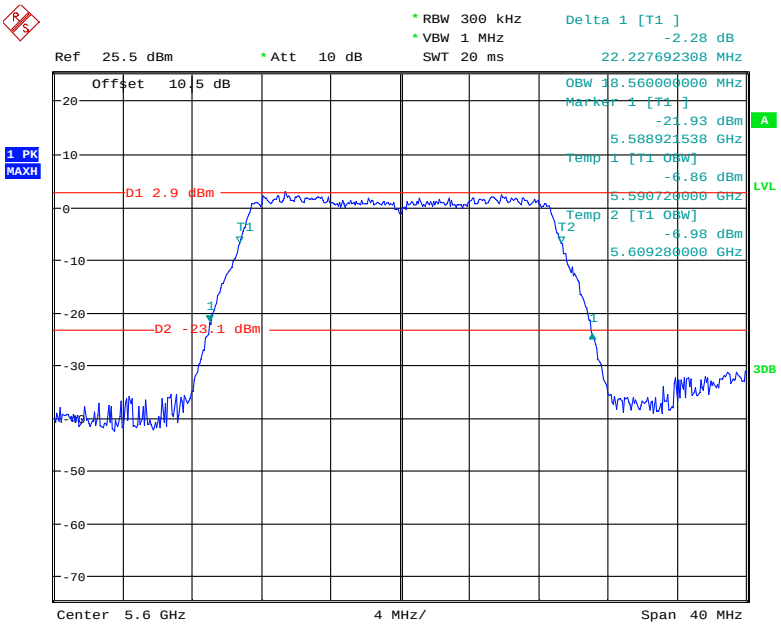
Date: 18.SEP.2018 00:58:37

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



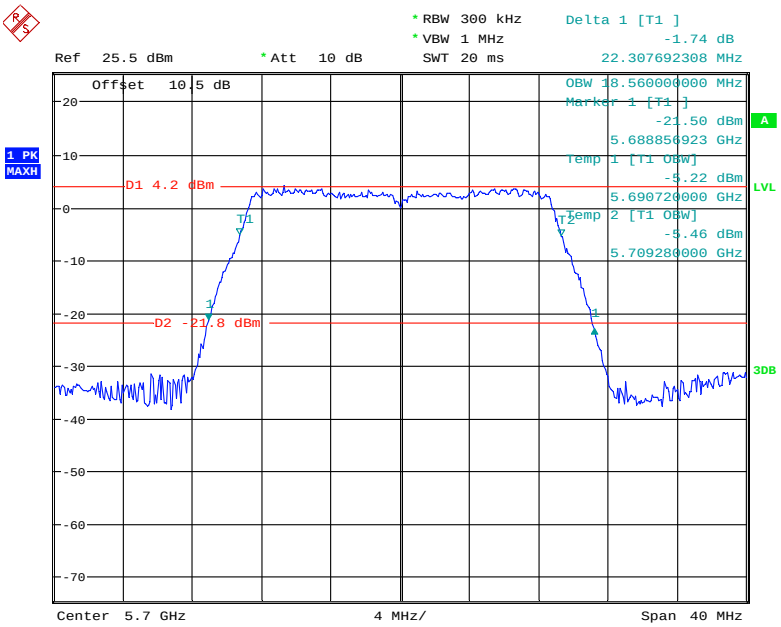
Date: 18.SEP.2018 01:05:27

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



Date: 18.SEP.2018 01:03:12

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

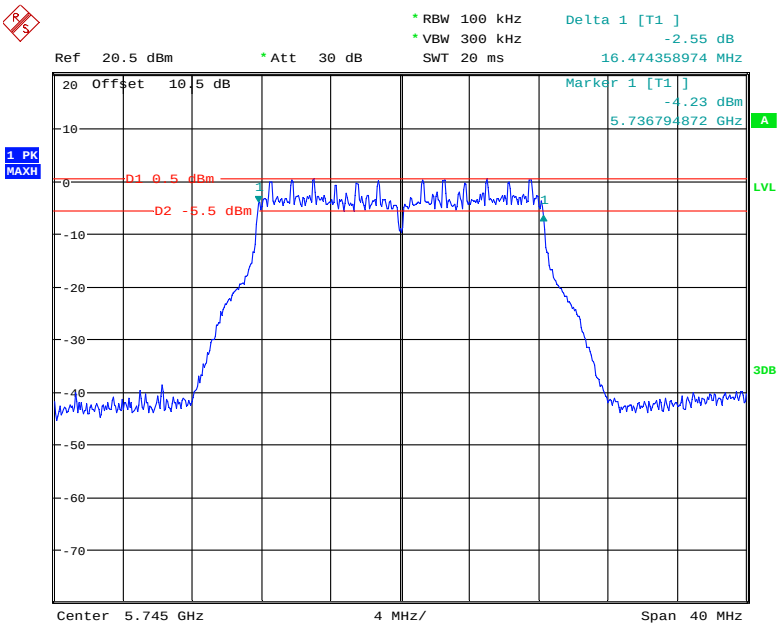


Date: 18.SEP.2018 01:01:20

5725 MHz – 5850 MHz:

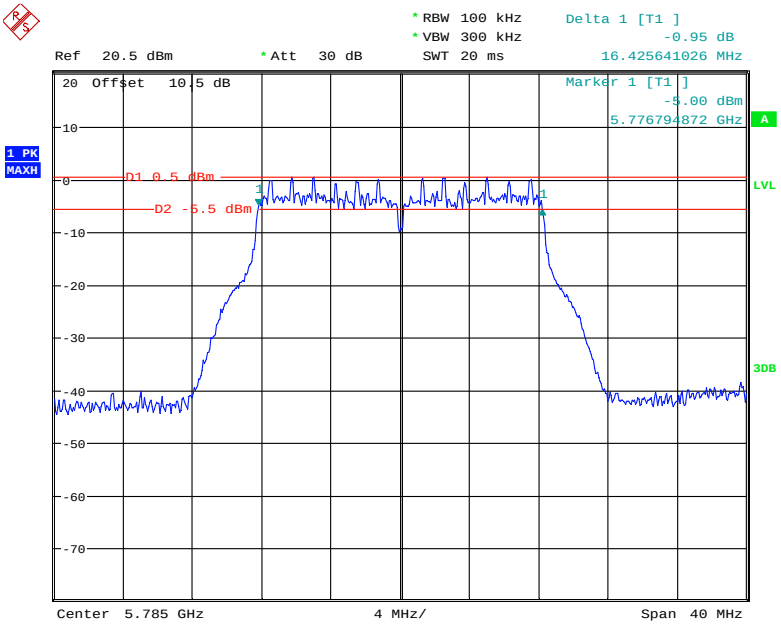
Frequency (MHz)	6dB bandwidth (MHz)	99% Bandwidth (MHz)	Limit (MHz)	Remark
802.11a				No transmitted signal in the 99% bandwidth extends into the U-NII-2C band
5745	16.474	17.400	0.5	
5785	16.426	17.400	0.5	
5825	16.474	17.333	0.5	
802.11n20				
5745	17.821	18.160	0.5	
5785	17.821	18.160	0.5	
5825	17.821	18.160	0.5	
802.11ac20				
5745	17.885	18.160	0.5	
5785	17.821	18.160	0.5	
5825	17.821	18.160	0.5	

802.11a mode, 6dB Emission Bandwidth, 5745 MHz



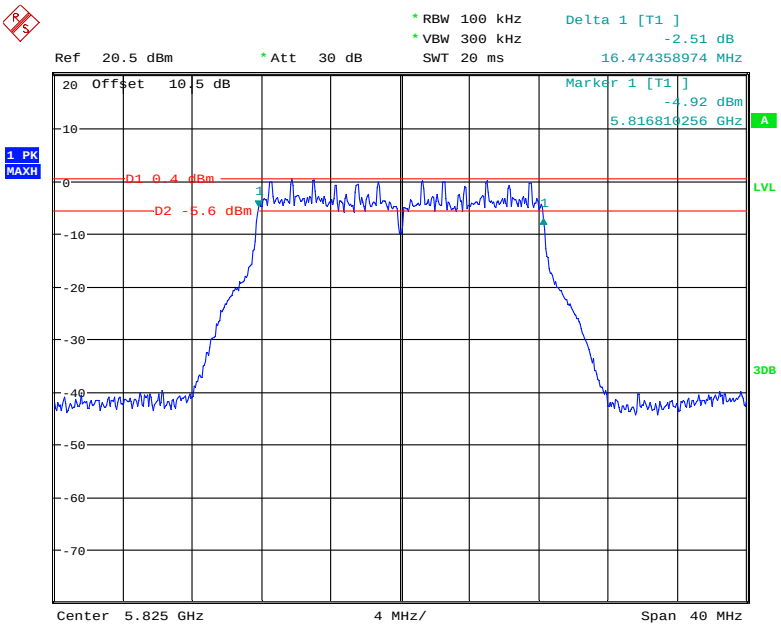
Date: 1.NOV.2018 21:49:24

802.11a mode, 6dB Emission Bandwidth, 5785 MHz



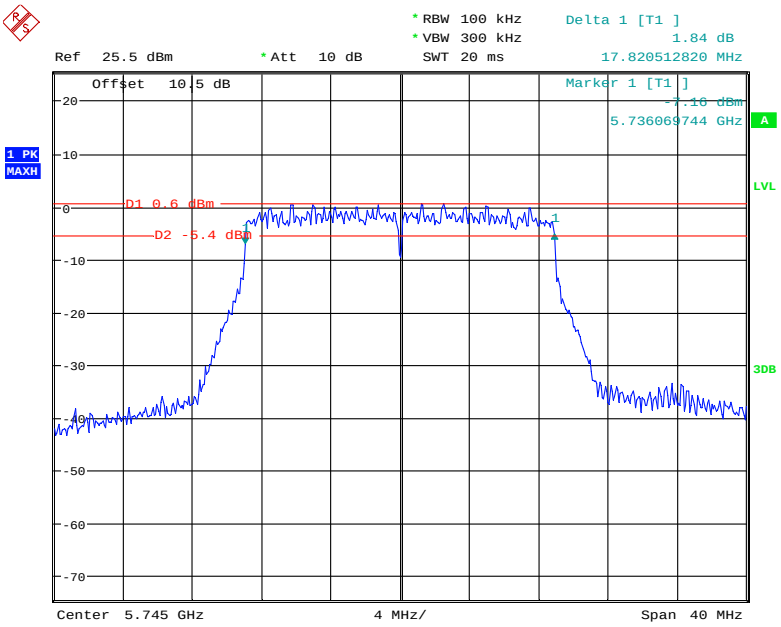
Date: 1.NOV.2018 21:47:51

802.11a mode, 6dB Emission Bandwidth, 5825 MHz



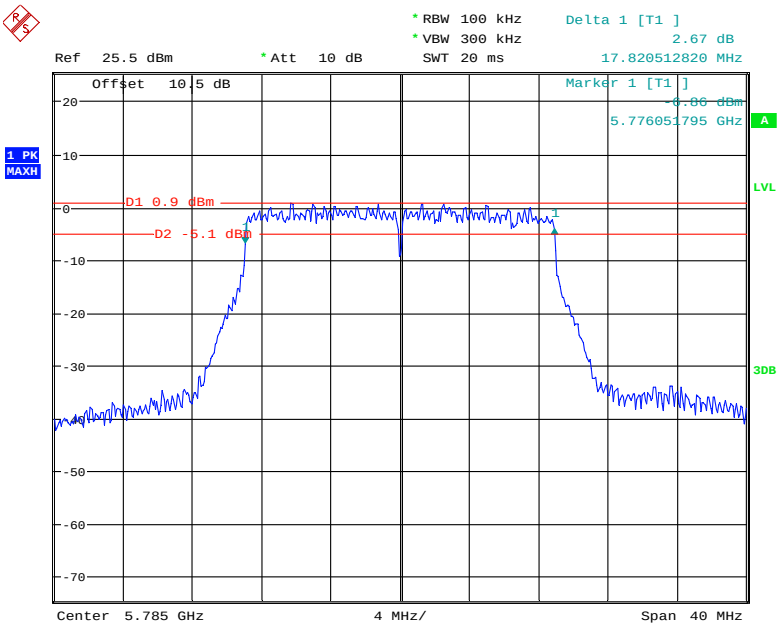
Date: 1.NOV.2018 21:44:39

802.11n20 mode, 6dB Emission Bandwidth, 5745 MHz



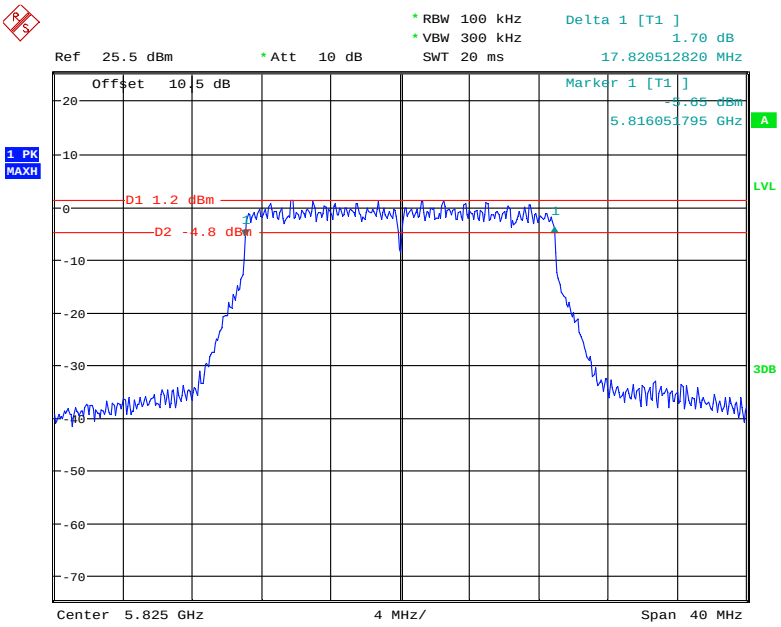
Date: 21.SEP.2018 21:00:14

802.11n20 mode, 6dB Emission Bandwidth, 5785 MHz



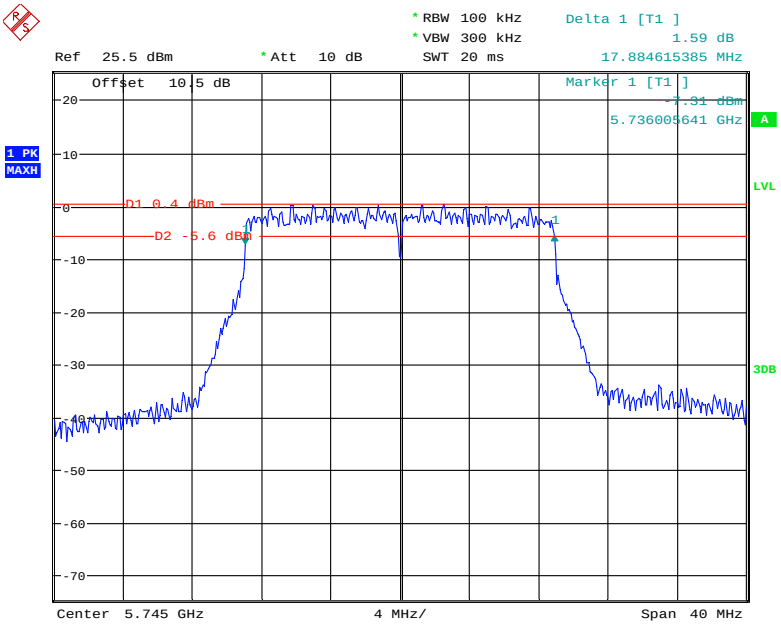
Date: 21.SEP.2018 21:04:50

802.11n20 mode, 6dB Emission Bandwidth, 5825 MHz



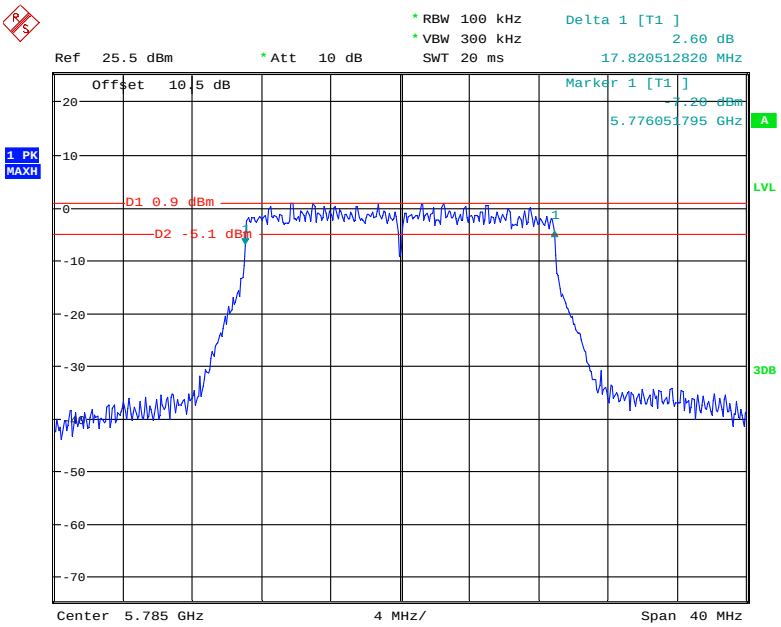
Date: 21.SEP.2018 21:07:02

802.11ac20 mode, 6dB Emission Bandwidth, 5745 MHz



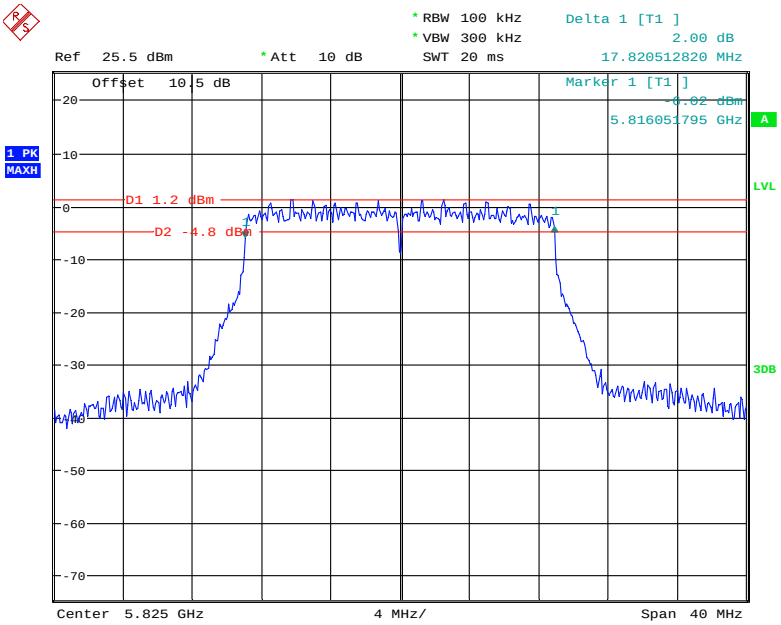
Date: 21.SEP.2018 21:11:03

802.11ac20 mode, 6dB Emission Bandwidth, 5785 MHz



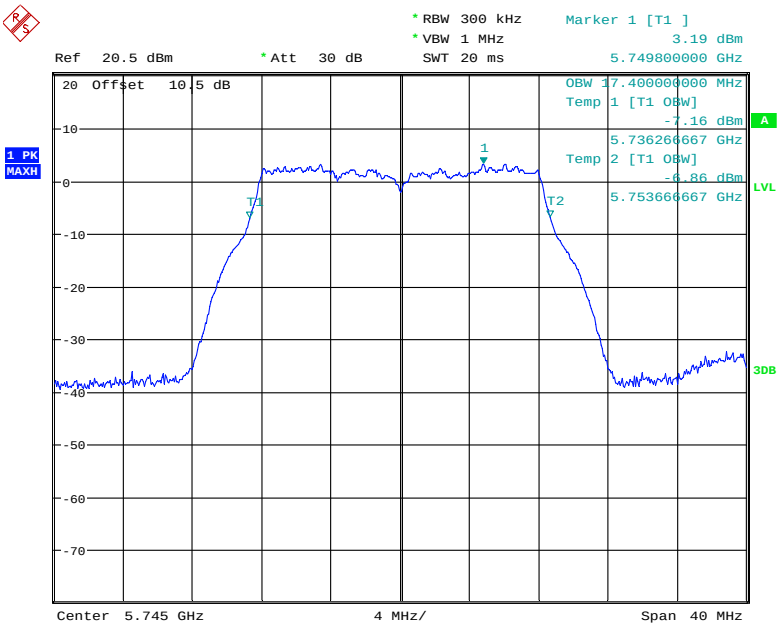
Date: 21.SEP.2018 21:09:37

802.11ac20 mode, 6dB Emission Bandwidth, 5825 MHz



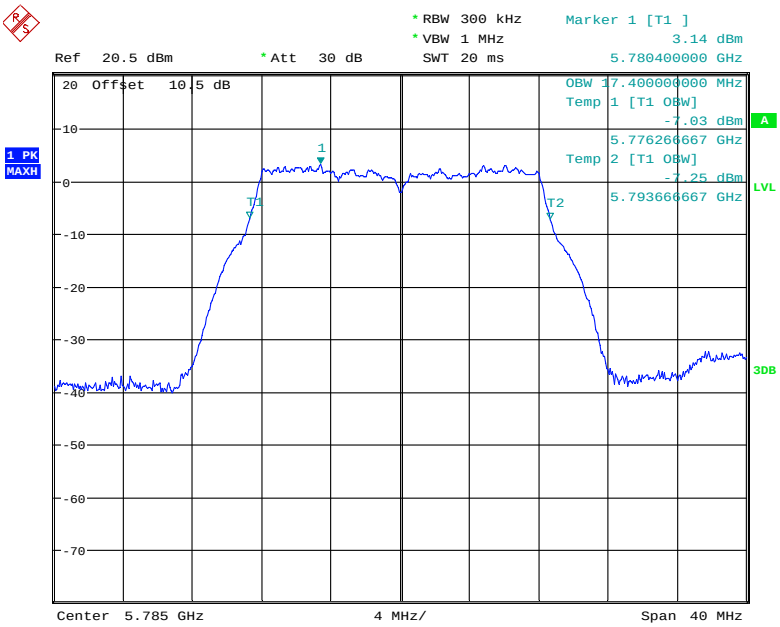
Date: 21.SEP.2018 21:08:12

802.11a mode, 99% Occupied Bandwidth, 5745 MHz



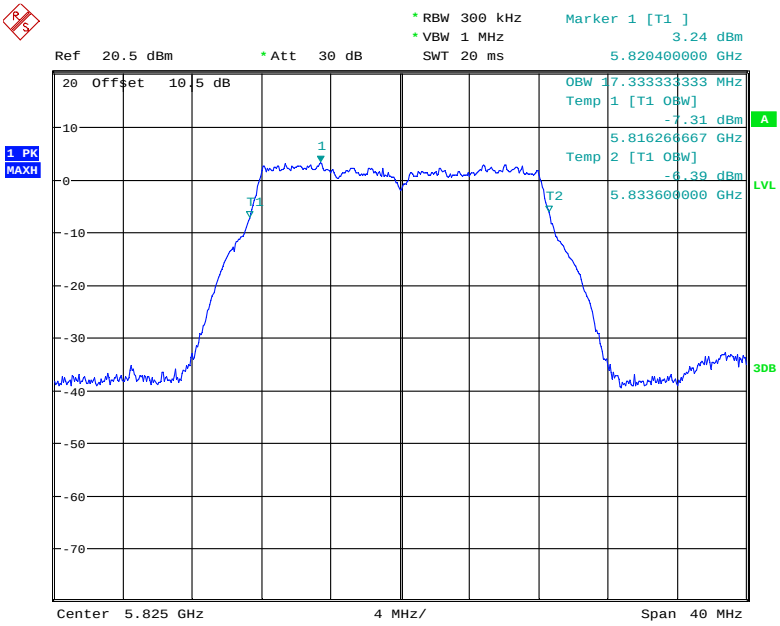
Date: 1.NOV.2018 21:50:02

802.11a mode, 99% Occupied Bandwidth, 5785 MHz



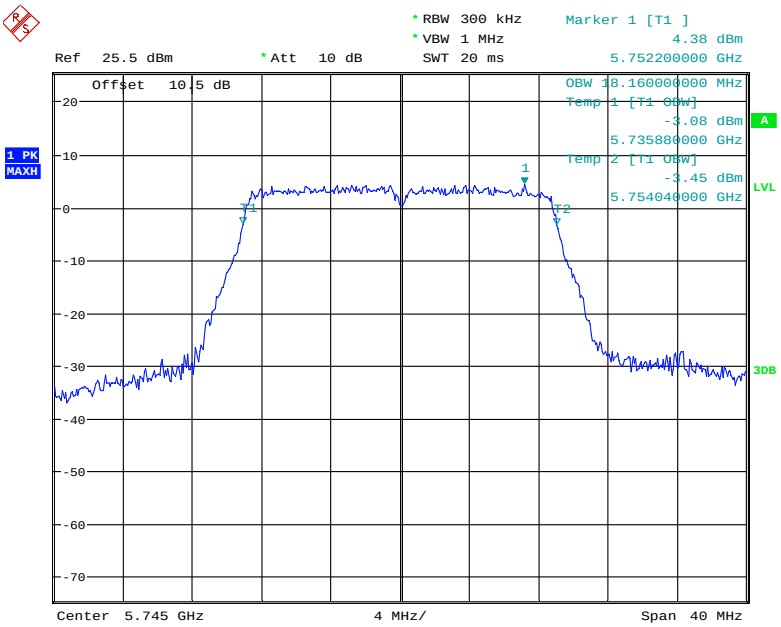
Date: 1.NOV.2018 21:46:22

802.11a mode, 99% Occupied Bandwidth, 5825 MHz

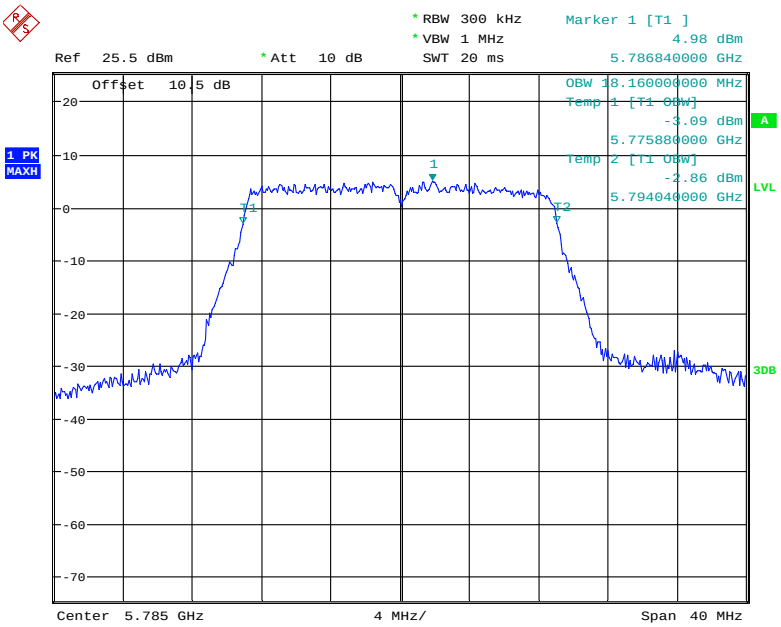


Date: 1.NOV.2018 21:45:16

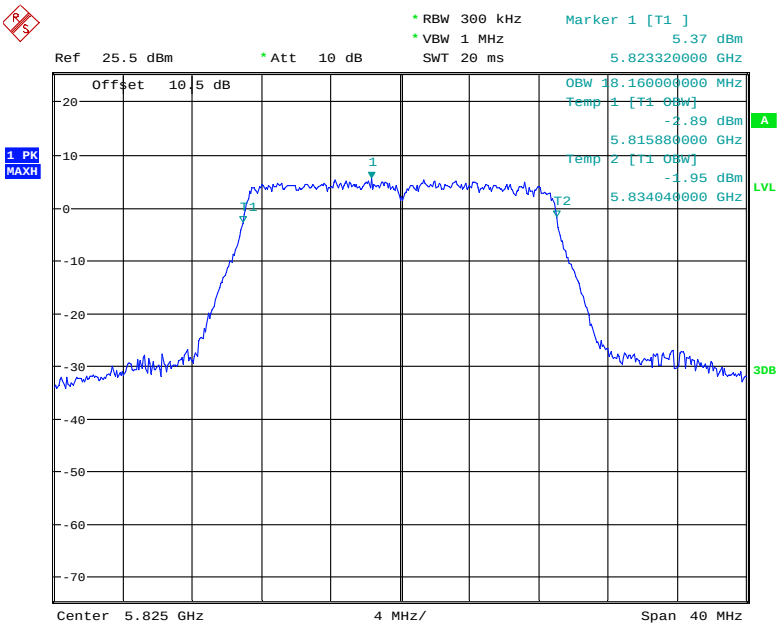
802.11n20 mode, 99% Occupied Bandwidth, 5745 MHz



802.11n20 mode, 99% Occupied Bandwidth, 5785 MHz

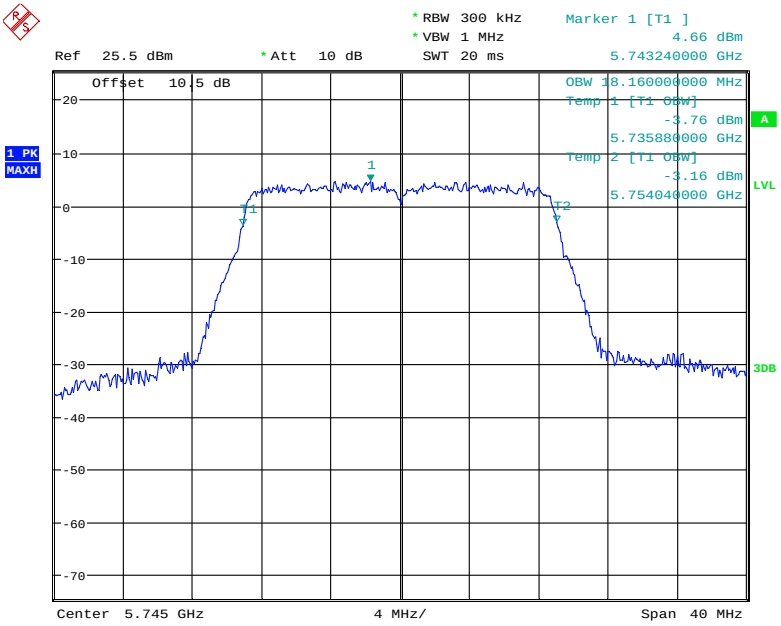


802.11n20 mode, 99% Occupied Bandwidth, 5825 MHz



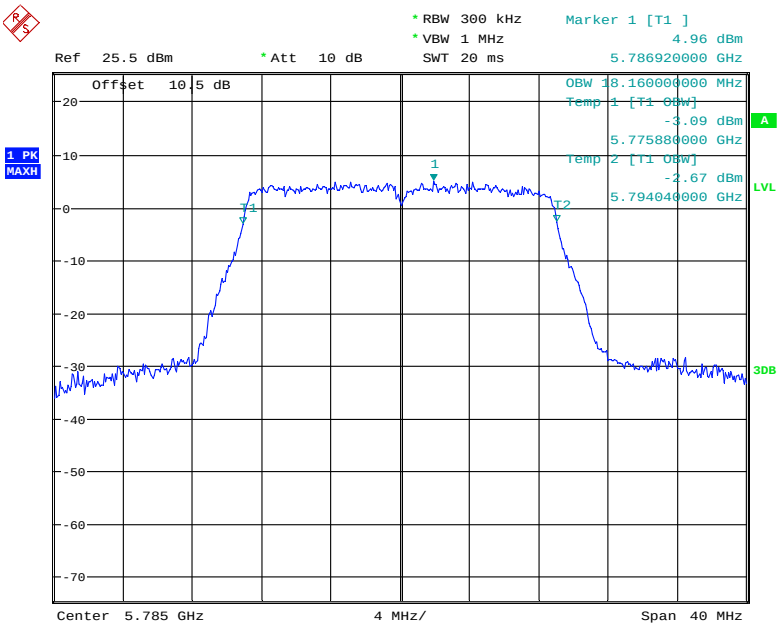
Date: 21.SEP.2018 20:32:13

802.11ac20 mode, 99% Occupied Bandwidth, 5745 MHz



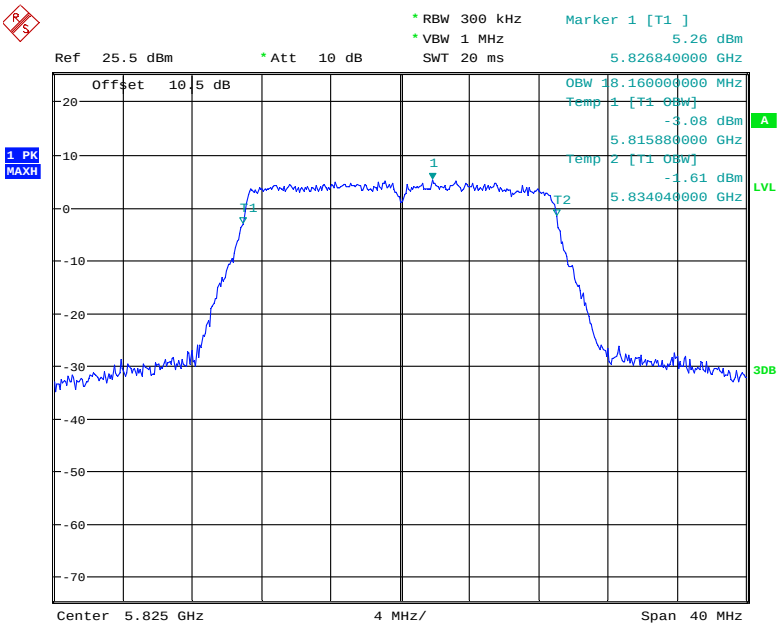
Date: 21.SEP.2018 20:34:50

802.11ac20 mode, 99% Occupied Bandwidth, 5785 MHz



Date: 21.SEP.2018 20:35:51

802.11ac20 mode, 99% Occupied Bandwidth, 5825 MHz



Date: 21.SEP.2018 20:37:05

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.

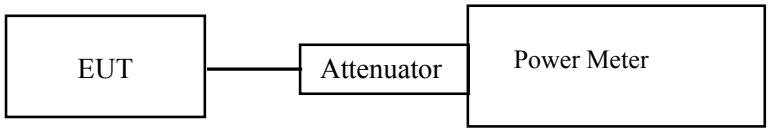
For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting 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:	23~24 ℃
Relative Humidity:	54~55 %
ATM Pressure:	101.0~101.2 kPa

The testing was performed by Shawn Xiao from 2018-09-17 to 2018-09-21.

EUT operation mode: Transmitting

Test Result: Pass

Please refer to the following tables.

Note: duty cycle factor please refer to duty cycle section in this report.

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

Frequency (MHz)	Reading (dBm)	Duty cycle factor (dB)	Power (dBm)	Limit (dBm)
802.11a				
5180	12.33	0.22	12.55	24
5200	11.84	0.22	12.06	
5240	10.96	0.22	11.18	
802.11n20				
5180	12.58	0.32	12.9	24
5200	12.12	0.32	12.44	
5240	11.12	0.32	11.44	
802.11ac20				
5180	12.41	0.32	12.73	24
5200	12.05	0.32	12.37	
5240	11.15	0.32	11.47	

5250 MHz – 5350 MHz:

Frequency (MHz)	Reading (dBm)	Duty cycle factor (dB)	Power (dBm)	Limit (dBm)
802.11a				
5260	11.24	0.22	11.46	24
5280	11.01	0.22	11.23	
5320	11.12	0.22	11.34	
802.11n20				
5260	11.35	0.32	11.67	24
5280	11.34	0.32	11.66	
5320	11.46	0.32	11.78	
802.11ac20				
5260	11.41	0.32	11.73	24
5280	11.23	0.32	11.55	
5320	11.34	0.32	11.66	

5470 MHz – 5725 MHz:

Frequency (MHz)	Reading (dBm)	Duty cycle factor (dB)	Power (dBm)	Limit (dBm)
802.11a				
5500	10.90	0.22	11.12	24
5600	10.31	0.22	10.53	
5700	11.77	0.22	11.99	
802.11n20				
5500	11.03	0.32	11.35	24
5600	10.73	0.32	11.05	
5700	12.15	0.32	12.47	
802.11ac20				
5500	11.25	0.32	11.57	24
5600	10.56	0.32	10.88	
5700	12.15	0.32	12.47	

5725 MHz – 5850 MHz:

Frequency (MHz)	Reading (dBm)	Duty cycle factor (dB)	Power (dBm)	Limit (dBm)
802.11a				
5745	12.68	0.22	12.9	30
5785	12.96	0.22	13.18	
5825	12.97	0.22	13.19	
802.11n20				
5745	12.66	0.32	12.98	30
5785	13.11	0.32	13.43	
5825	13.20	0.32	13.52	
802.11ac20				
5745	12.75	0.32	13.07	30
5785	13.16	0.32	13.48	
5825	13.22	0.32	13.54	

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

Applicable Standard

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

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 ≥ 1/T, where T is defined in section II.B.l.a).
b) Set VBW ≥ 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:	23~24 ℃
Relative Humidity:	54~55 %
ATM Pressure:	101.0~101.2 kPa

The testing was performed by Shawn Xiao from 2018-09-17 to 2018-09-21.

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EUT operation mode: Transmitting

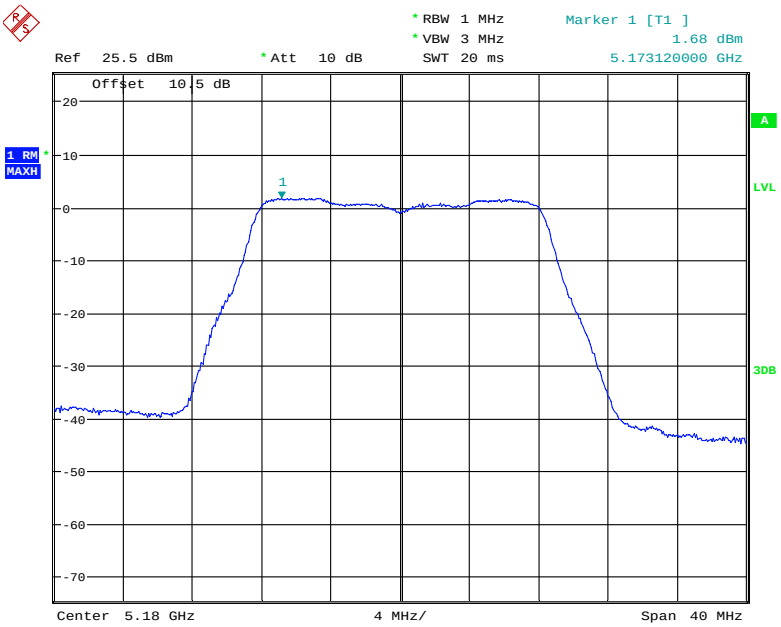
Test Result: Pass

Please refer to the following tables and plots.

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

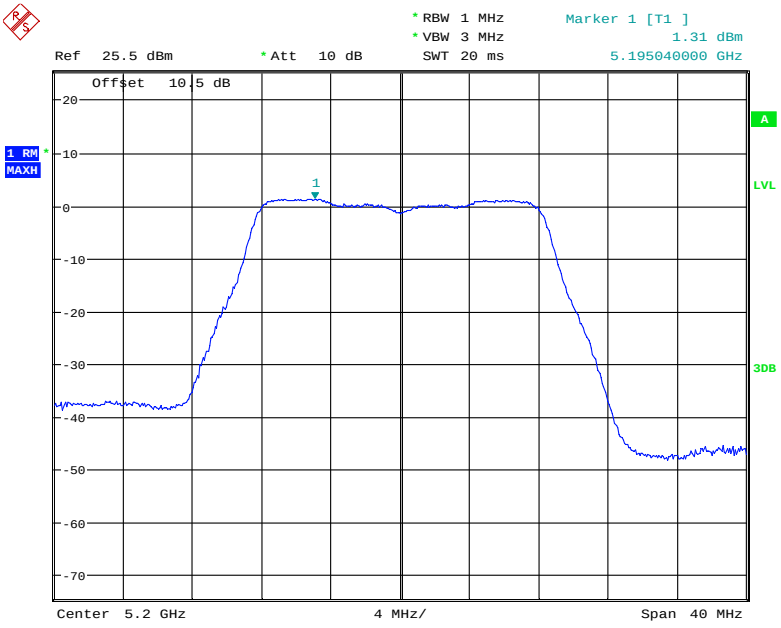
Frequency (MHz)	Reading (dBm/MHz)	Dutycycle Factor	Power Spectral Density (dBm/MHz)	Limit (dBm/MHz)
802.11a				
5180	1.68	0.22	1.9	11
5200	1.31	0.22	1.53	
5240	0.09	0.22	0.31	
802.11n20				
5180	1.58	0.32	1.9	11
5200	1.24	0.32	1.56	
5240	0.00	0.32	0.32	
802. 11ac20				
5180	1.68	0.32	2	11
5200	1.17	0.32	1.49	
5240	0.21	0.32	0.53	

802.11a mode, Power Spectral Density, 5180 MHz



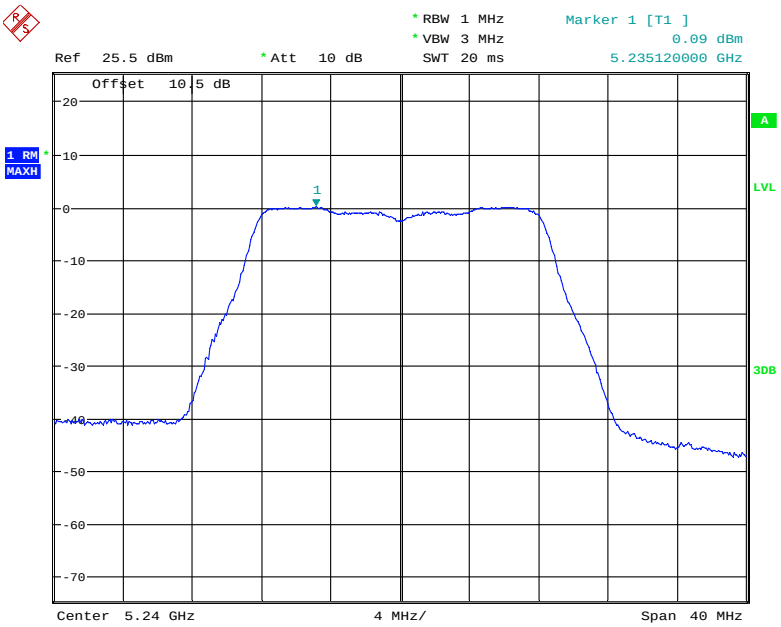
Date: 17.SEP.2018 21:08:29

802.11a mode, Power Spectral Density, 5200 MHz



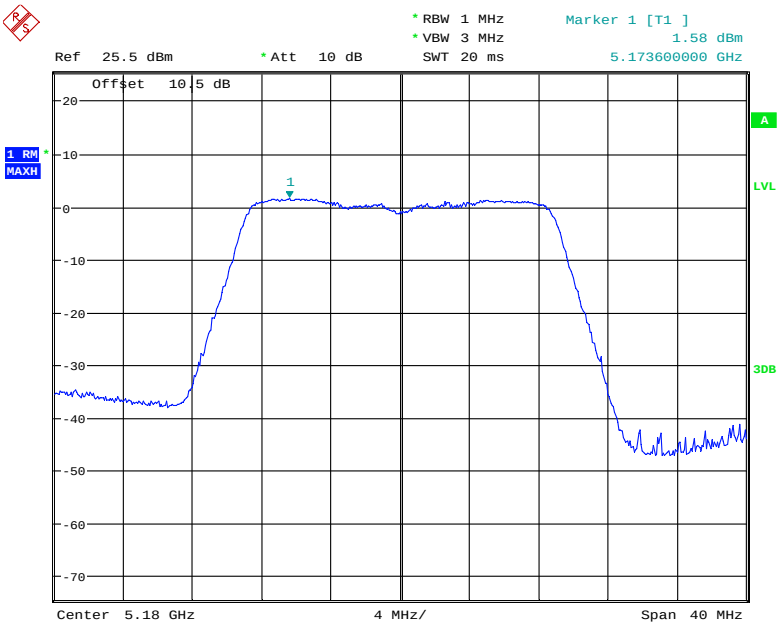
Date: 17.SEP.2018 21:07:25

802.11a mode, Power Spectral Density, 5240 MHz



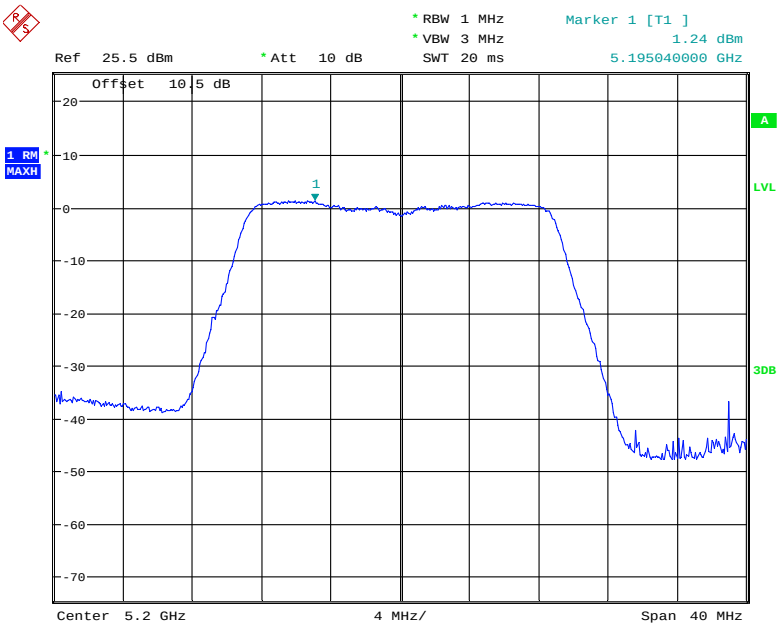
Date: 17.SEP.2018 21:06:41

802.11n20 mode, Power Spectral Density, 5180 MHz



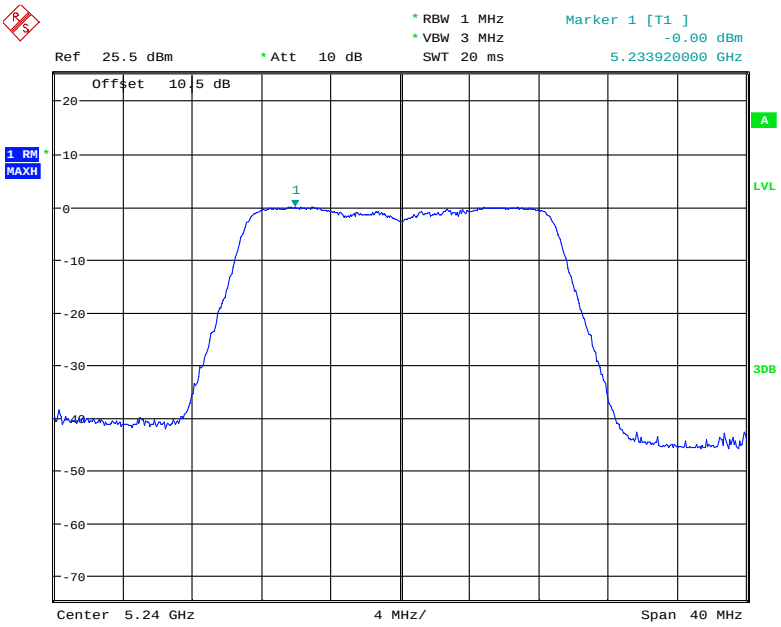
Date: 17.SEP.2018 21:09:24

802.11n20 mode, Power Spectral Density, 5200 MHz



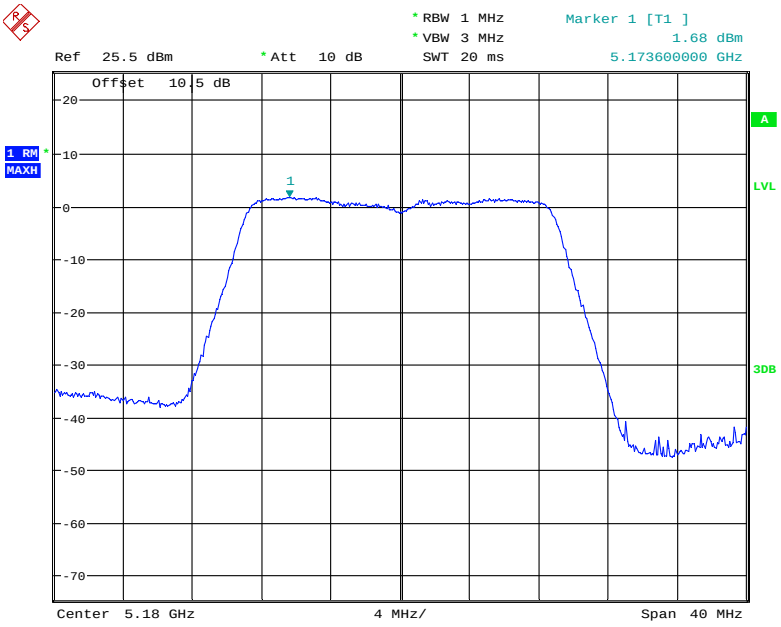
Date: 17.SEP.2018 21:10:14

802.11n20 mode, Power Spectral Density, 5240 MHz



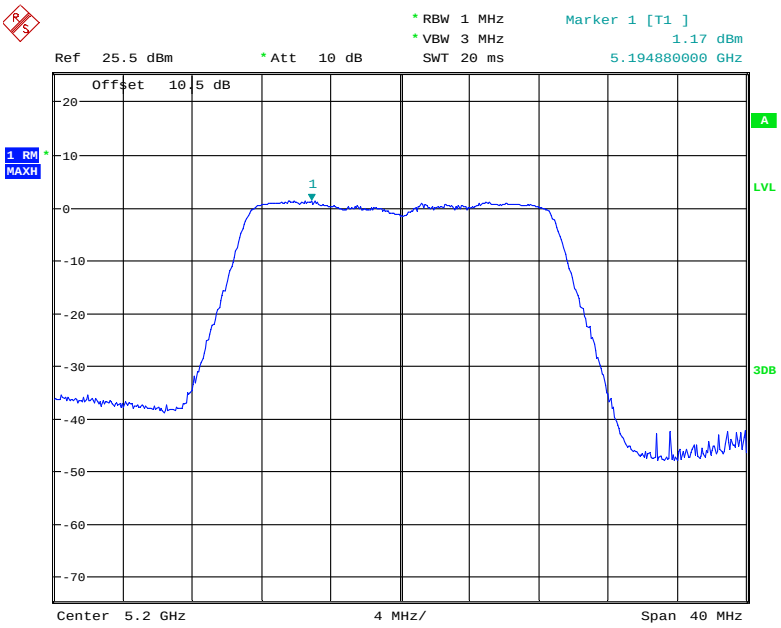
Date: 17.SEP.2018 21:11:04

802.11ac20 mode, Power Spectral Density, 5180 MHz



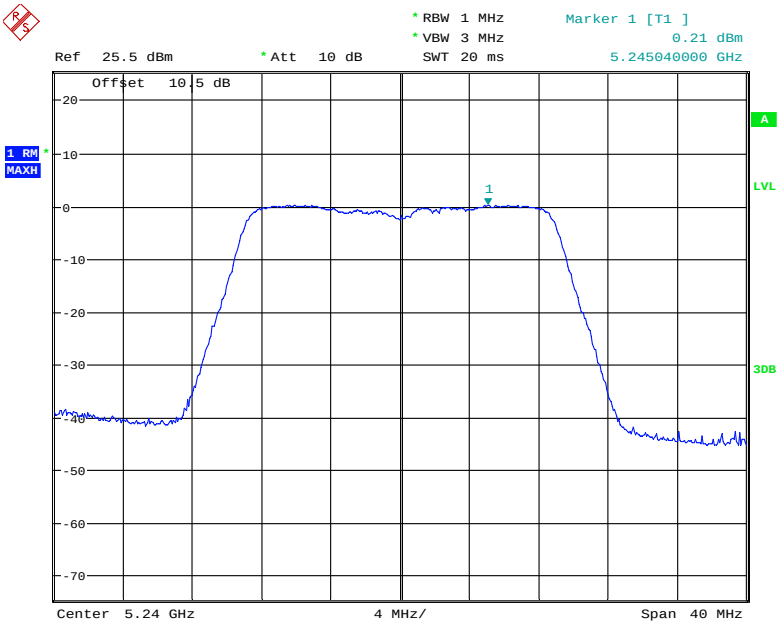
Date: 17.SEP.2018 21:17:34

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



Date: 17.SEP.2018 21:16:45

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

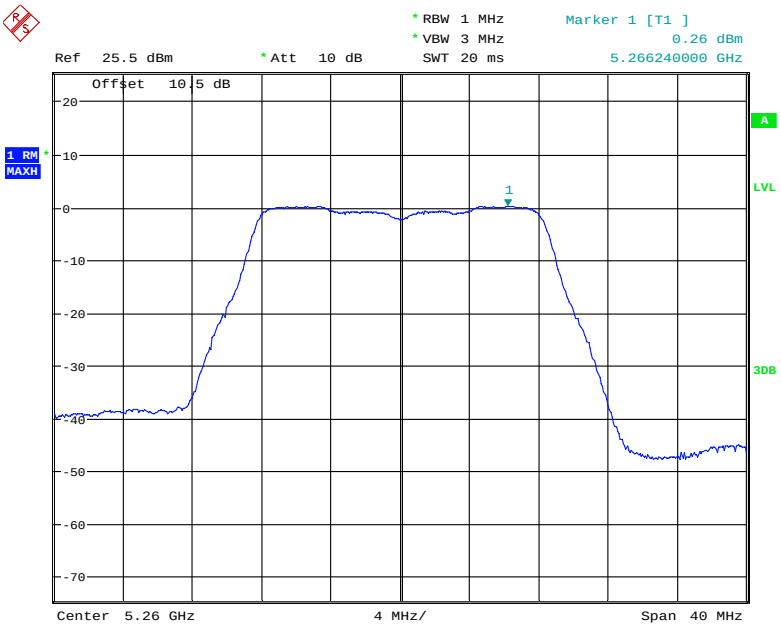


Date: 17.SEP.2018 21:15:43

5250 MHz – 5350 MHz:

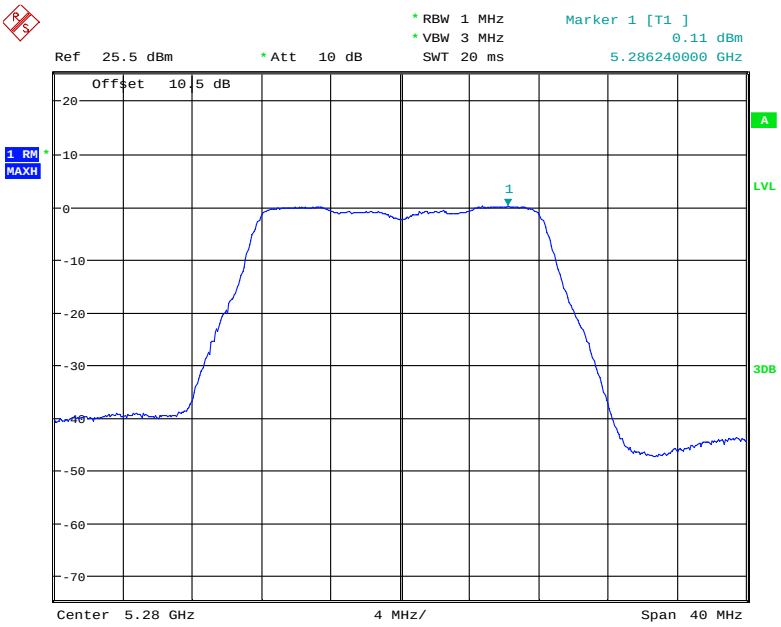
Frequency (MHz)	Reading (dBm/MHz)	Dutycycle Factor	Power Spectral Density (dBm/MHz)	Limit (dBm/MHz)
802.11a				
5260	0.26	0.22	0.48	11
5280	0.11	0.22	0.33	
5320	0.29	0.22	0.51	
802.11n20				
5260	0.11	0.32	0.43	11
5280	0.04	0.32	0.36	
5320	0.02	0.32	0.34	
802. 11ac20				
5260	0.30	0.32	0.62	11
5280	0.00	0.32	0.32	
5320	0.04	0.32	0.36	

802.11a mode, Power Spectral Density, 5260 MHz



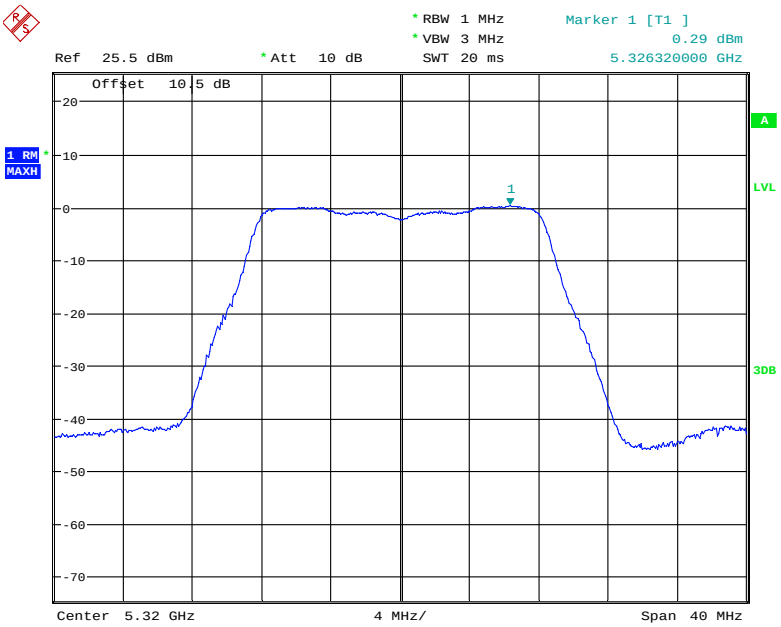
Date: 17.SEP.2018 23:19:11

802.11a mode, Power Spectral Density, 5280 MHz



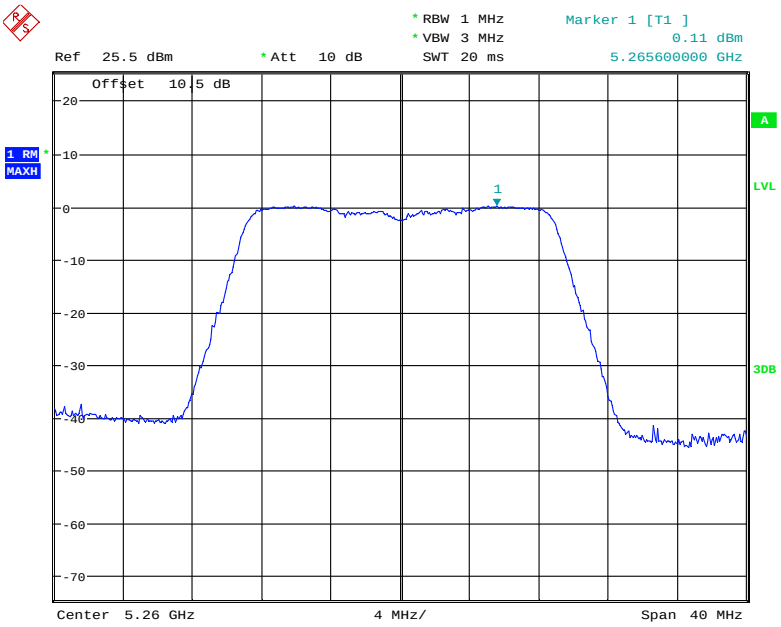
Date: 17.SEP.2018 23:18:33

802.11a mode, Power Spectral Density, 5320 MHz



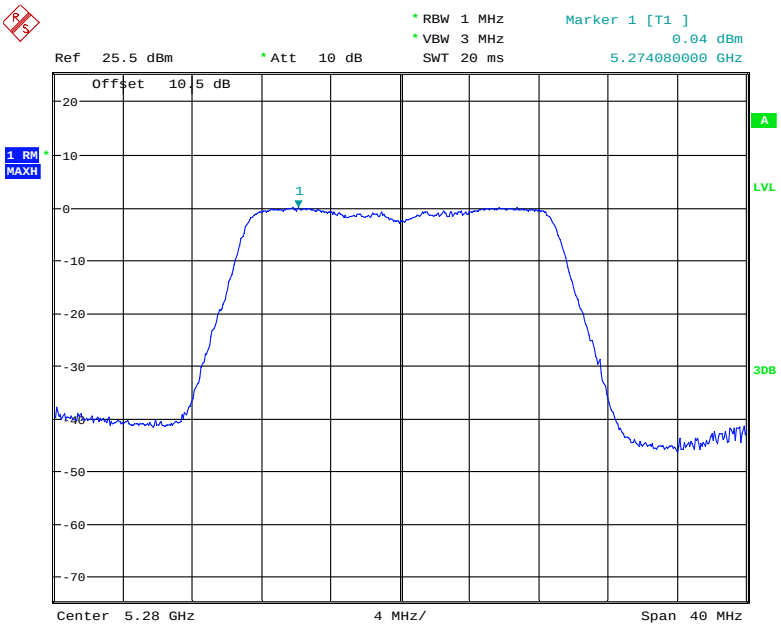
Date: 17.SEP.2018 23:17:50

802.11n20 mode, Power Spectral Density, 5260 MHz



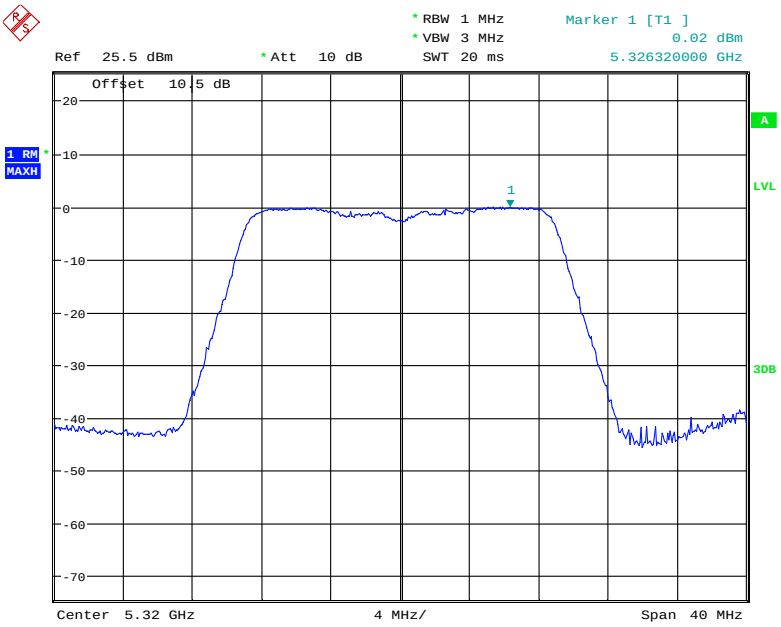
Date: 17.SEP.2018 23:20:23

802.11n20 mode, Power Spectral Density, 5280 MHz



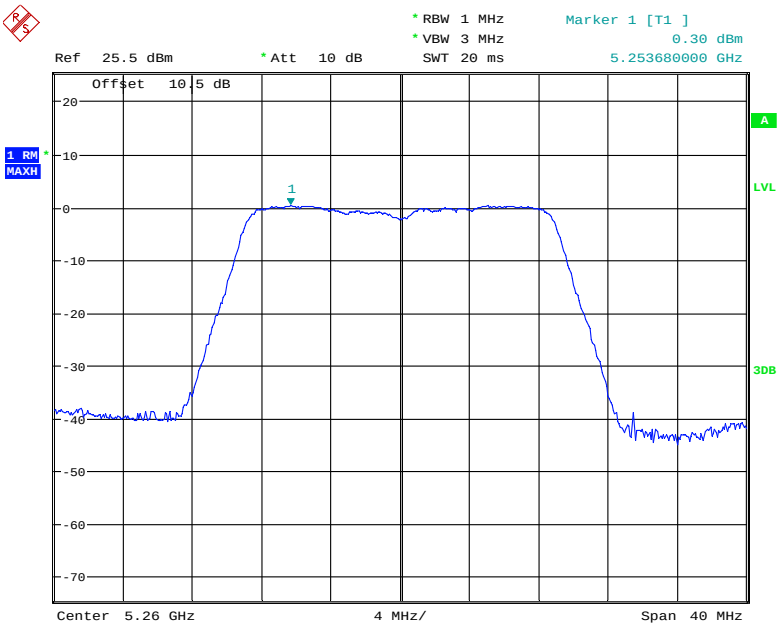
Date: 17.SEP.2018 23:20:56

802.11n20 mode, Power Spectral Density, 5320 MHz



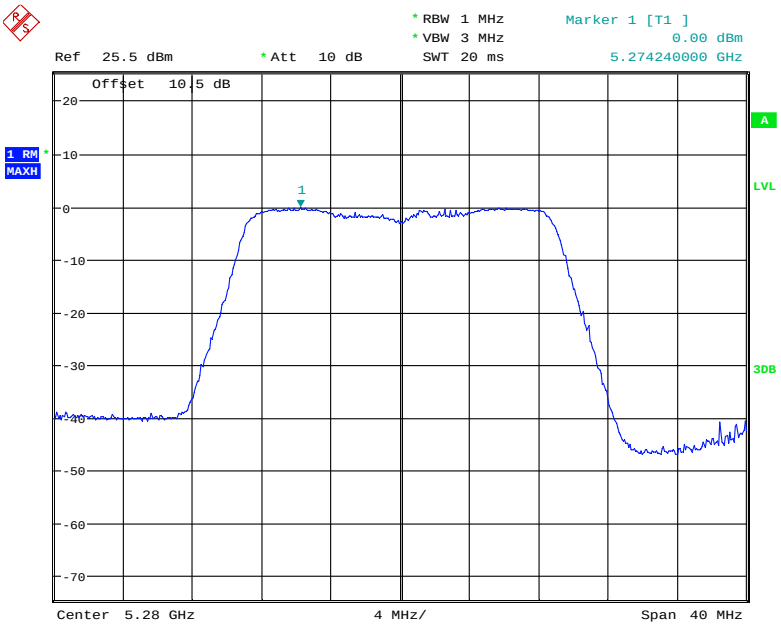
Date: 17.SEP.2018 23:21:34

802.11ac20 mode, Power Spectral Density, 5260 MHz



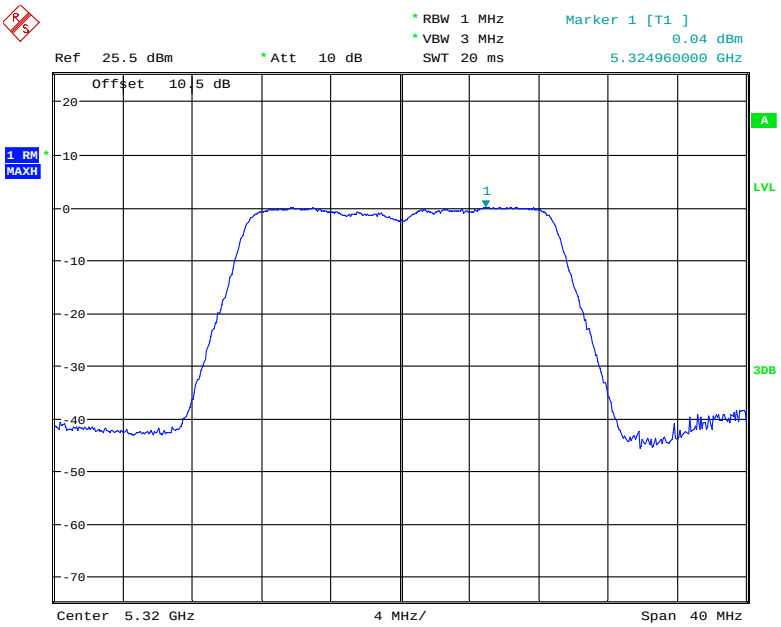
Date: 17.SEP.2018 23:33:52

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



Date: 17.SEP.2018 23:30:38

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

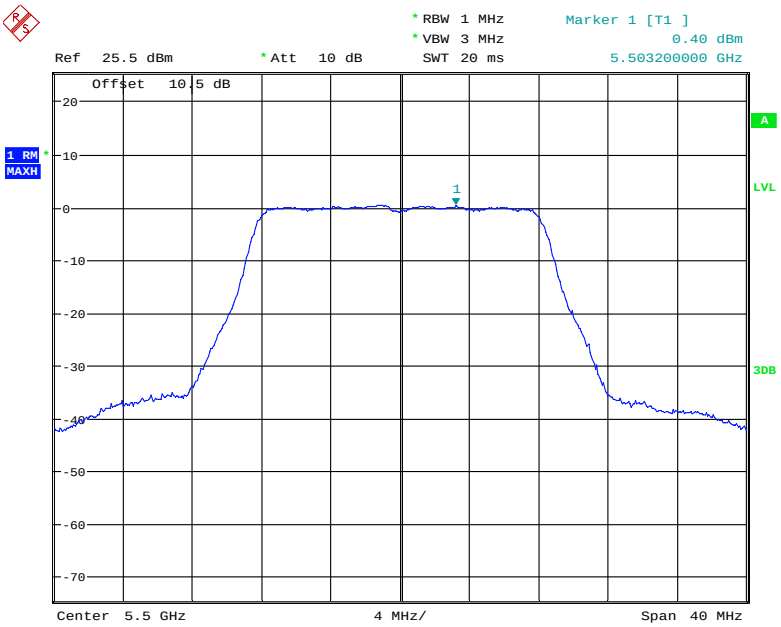


Date: 17.SEP.2018 23:30:08

5470 MHz – 5725 MHz:

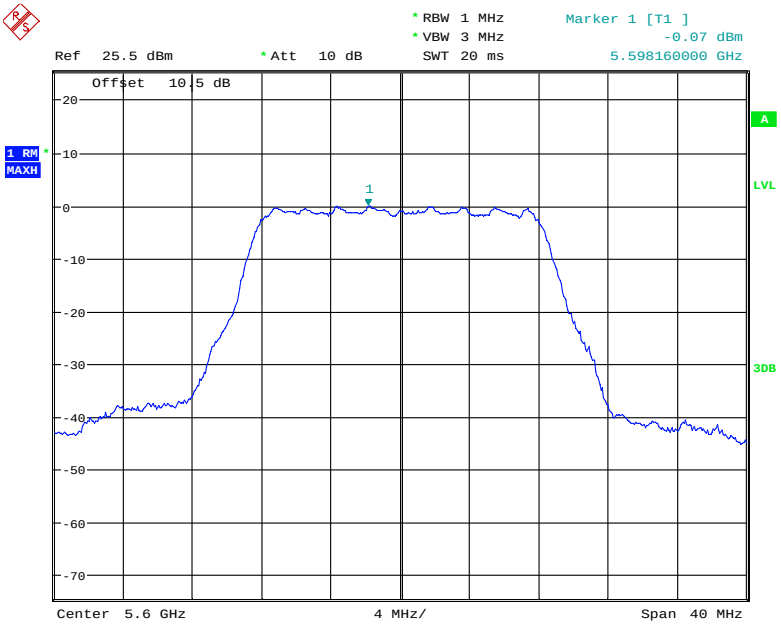
Frequency (MHz)	Reading (dBm/MHz)	Dutycycle Factor	Power Spectral Density (dBm/MHz)	Limit (dBm/MHz)
802.11a				
5500	0.40	0.22	0.62	11
5600	-0.07	0.22	0.15	
5700	0.60	0.22	0.82	
802.11n20				
5500	0.58	0.32	0.9	11
5600	1.89	0.32	2.21	
5700	0.80	0.32	1.12	
802. 11ac20				
5500	0.79	0.32	1.11	11
5600	1.78	0.32	2.1	
5700	0.80	0.32	1.12	

802.11a mode, Power Spectral Density, 5500 MHz



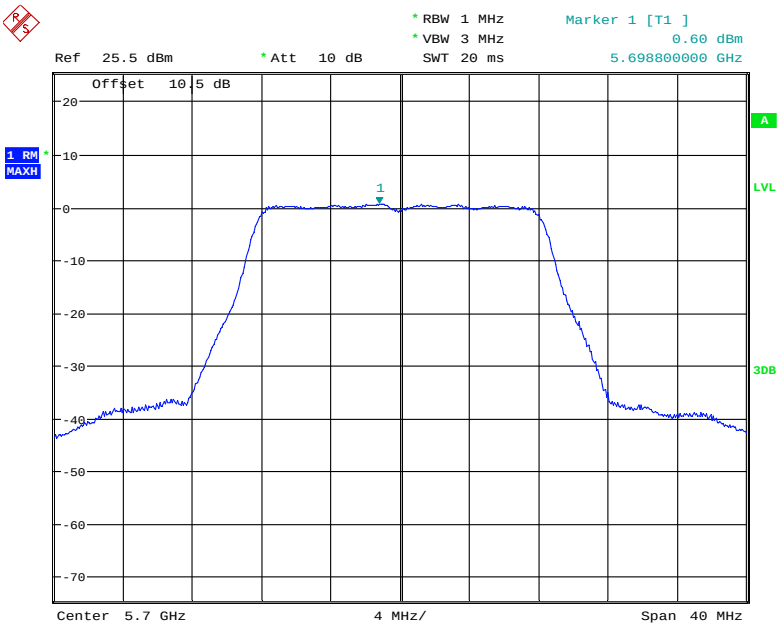
Date: 21.SEP.2018 19:18:43

802.11a mode, Power Spectral Density, 5600 MHz



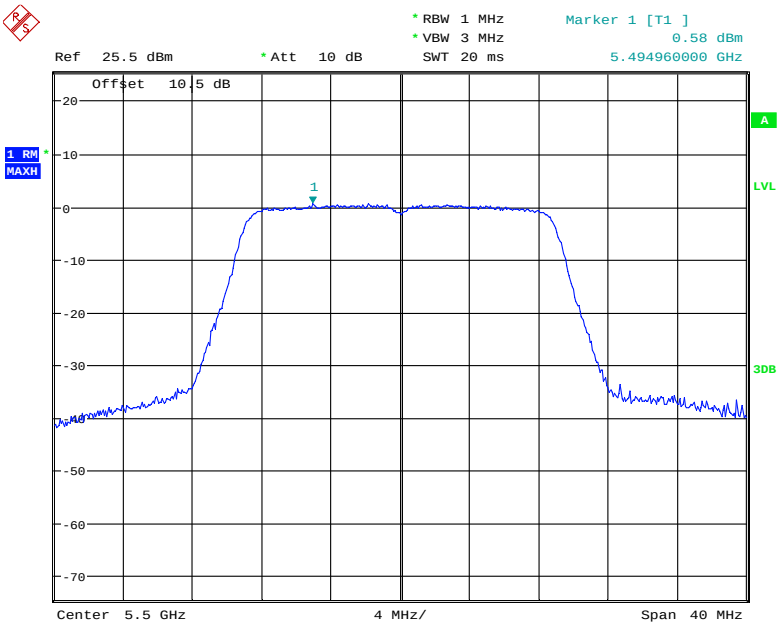
Date: 21.SEP.2018 19:20:01

802.11a mode, Power Spectral Density, 5700 MHz



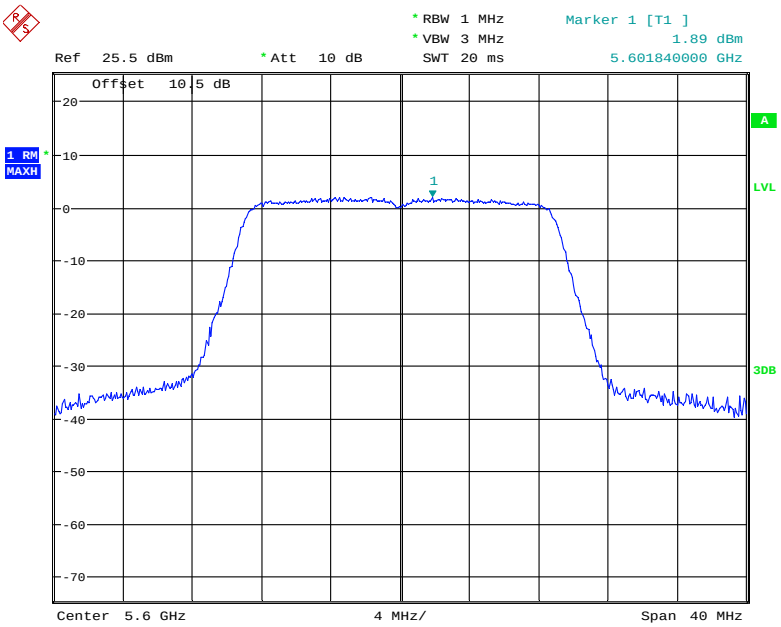
Date: 21.SEP.2018 19:20:42

802.11n20 mode, Power Spectral Density, 5500 MHz



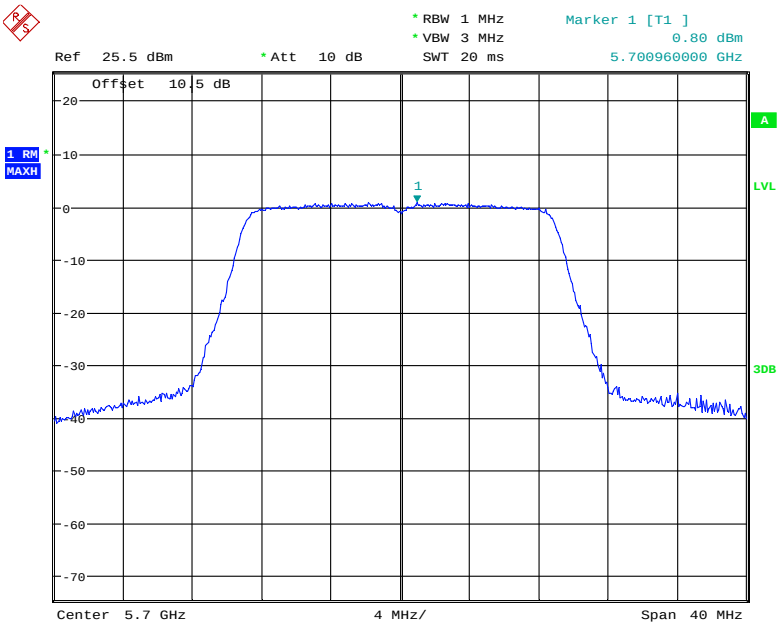
Date: 21.SEP.2018 19:21:51

802.11n20 mode, Power Spectral Density, 5600 MHz



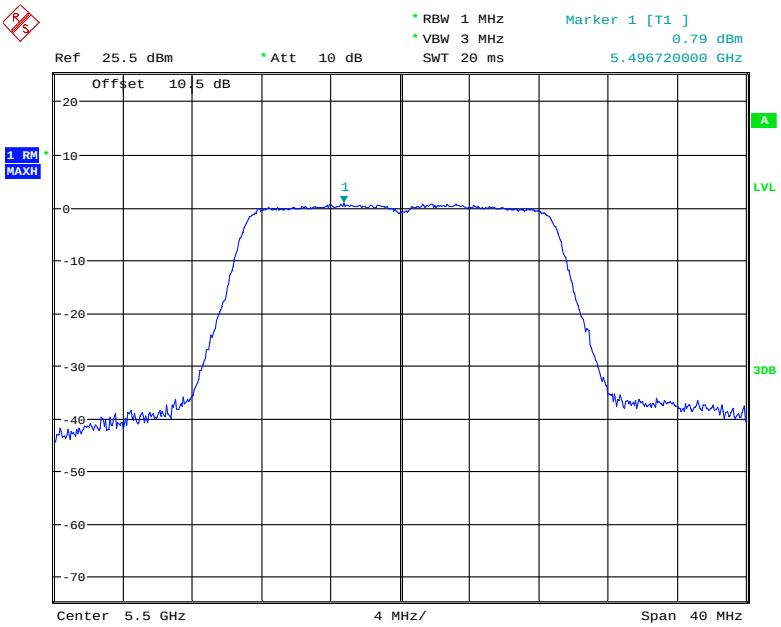
Date: 21.SEP.2018 19:22:37

802.11n20 mode, Power Spectral Density, 5700 MHz



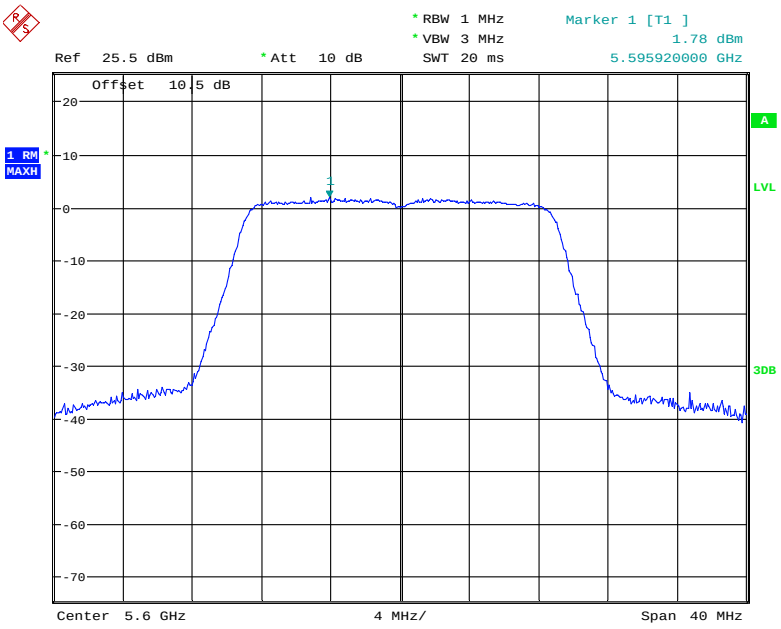
Date: 21.SEP.2018 19:23:40

802.11ac20 mode, Power Spectral Density, 5500 MHz



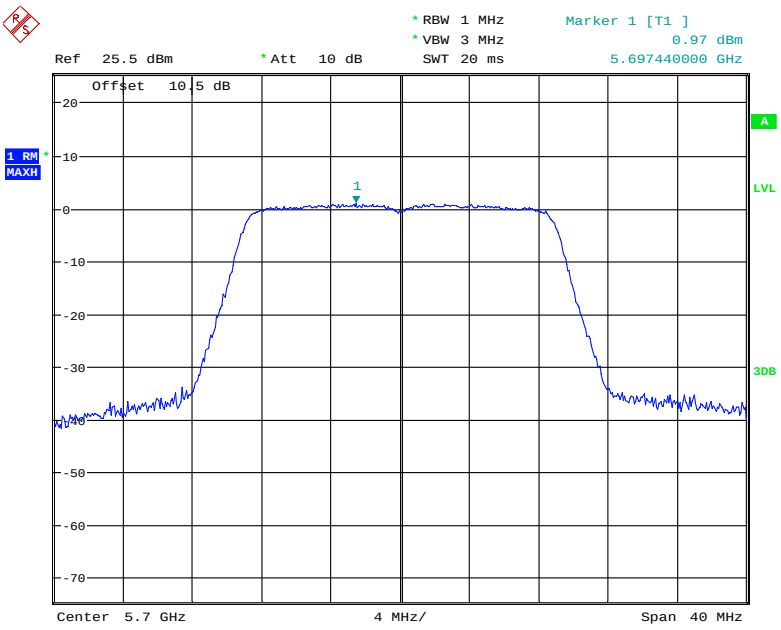
Date: 21.SEP.2018 19:36:54

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



Date: 21.SEP.2018 19:37:42

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

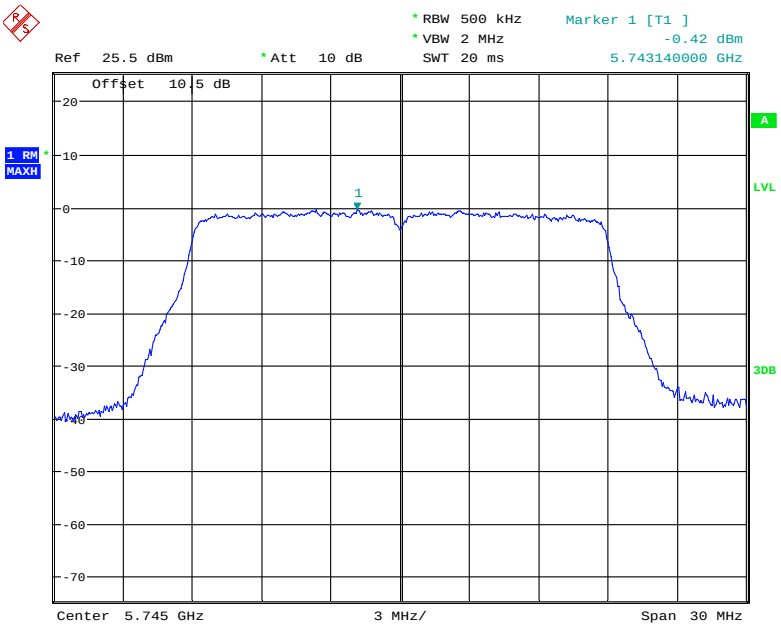


Date: 21.SEP.2018 19:38:43

5725 MHz – 5850 MHz:

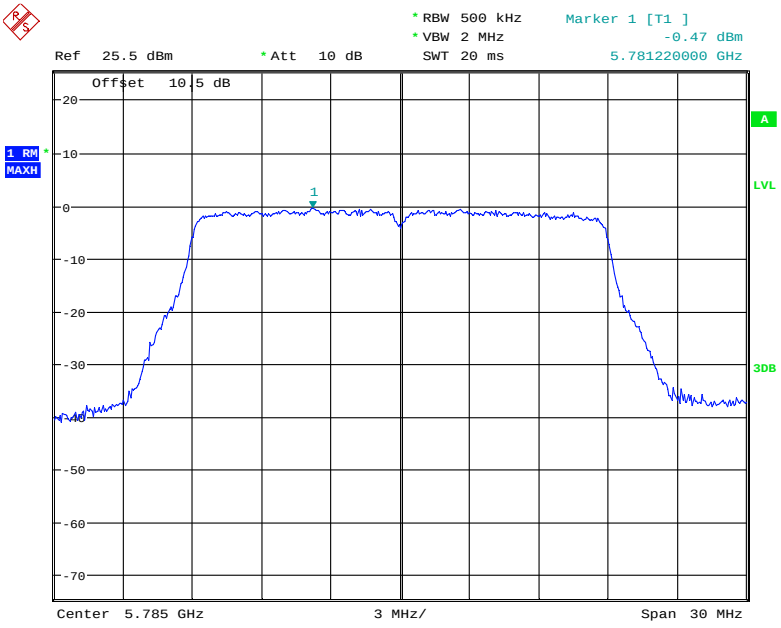
Frequency (MHz)	Reading (dBm/MHz)	Dutycycle Factor	Power Spectral Density (dBm/500kHz)	Limit (dBm/500kHz)
802.11a				
5745	-0.42	0.22	-0.2	30
5785	-0.47	0.22	-0.25	
5825	0.06	0.22	0.28	
802.11n20				
5745	-0.62	0.32	-0.3	30
5785	-0.01	0.32	0.31	
5825	-0.04	0.32	0.28	
802. 11ac20				
5745	-0.90	0.32	-0.58	30
5785	-0.52	0.32	-0.2	
5825	0.08	0.32	0.4	

802.11a mode, Power Spectral Density, 5745 MHz



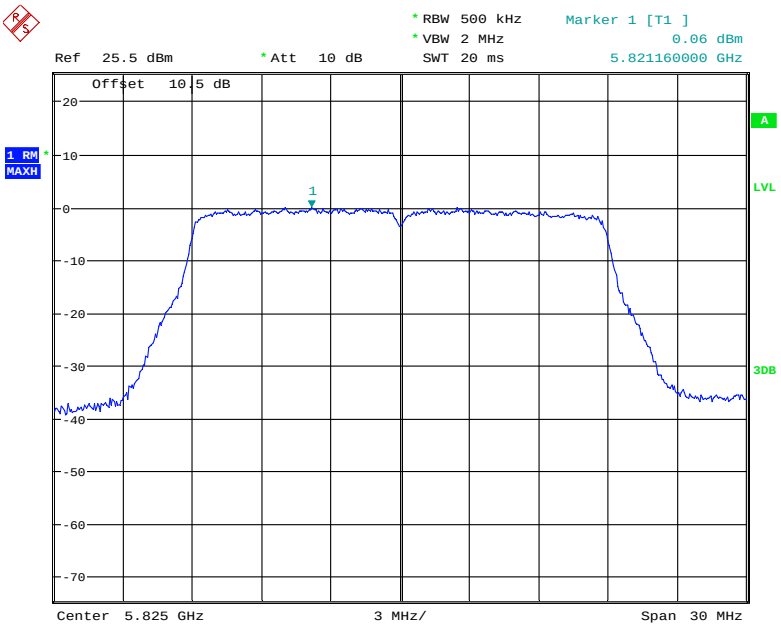
Date: 21.SEP.2018 21:34:29

802.11a mode, Power Spectral Density, 5785 MHz



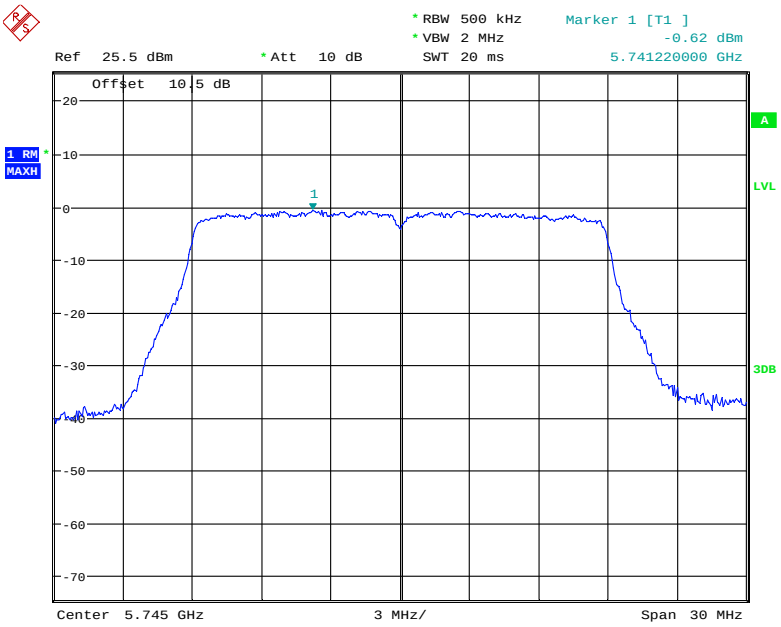
Date: 21.SEP.2018 21:35:20

802.11a mode, Power Spectral Density, 5825 MHz



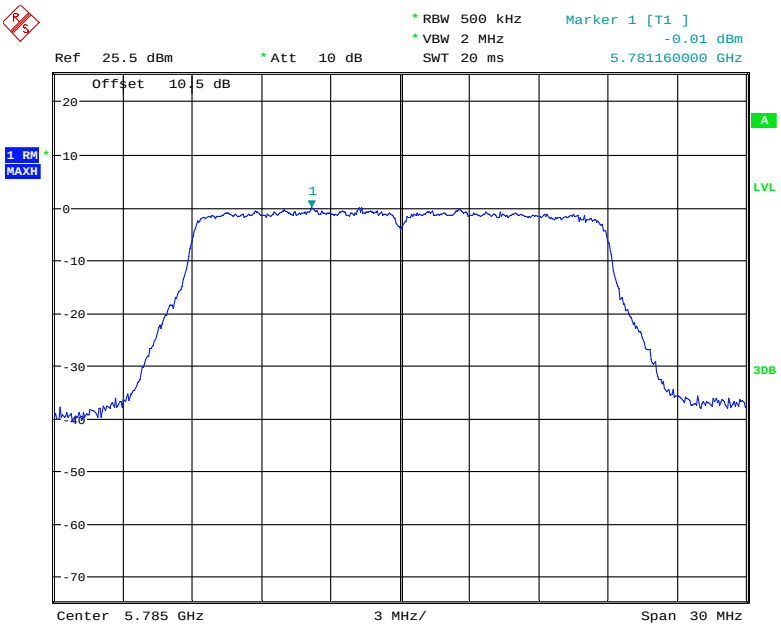
Date: 21.SEP.2018 21:38:20

802.11n20 mode, Power Spectral Density, 5745 MHz



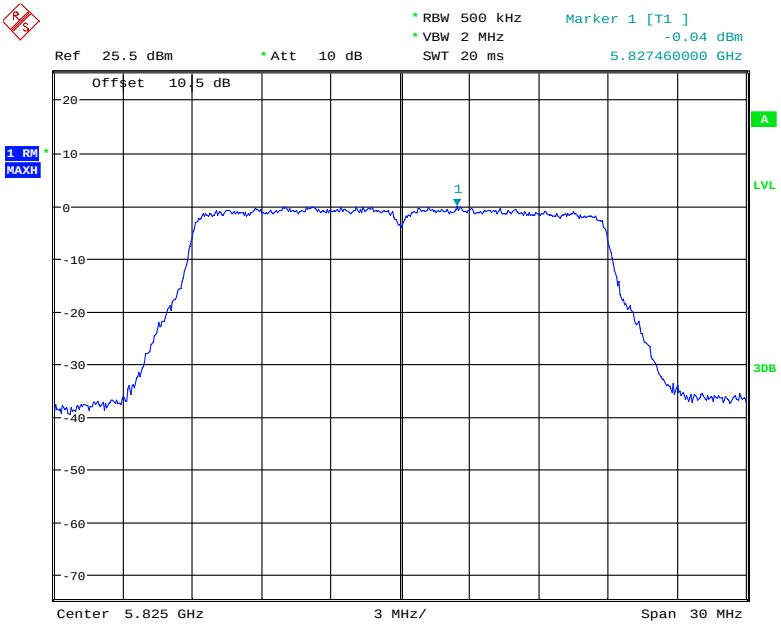
Date: 21.SEP.2018 21:32:43

802.11n20 mode, Power Spectral Density, 5785 MHz



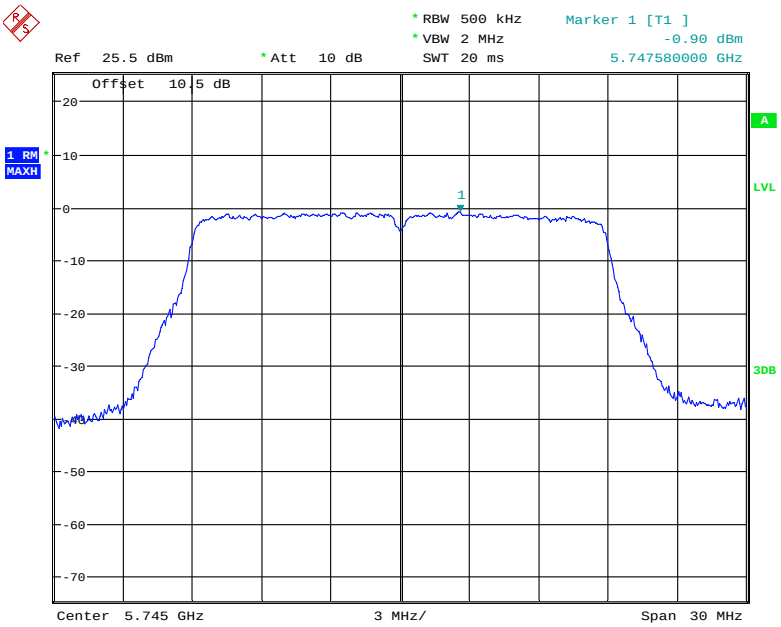
Date: 21.SEP.2018 21:30:55

802.11n20 mode, Power Spectral Density, 5825 MHz



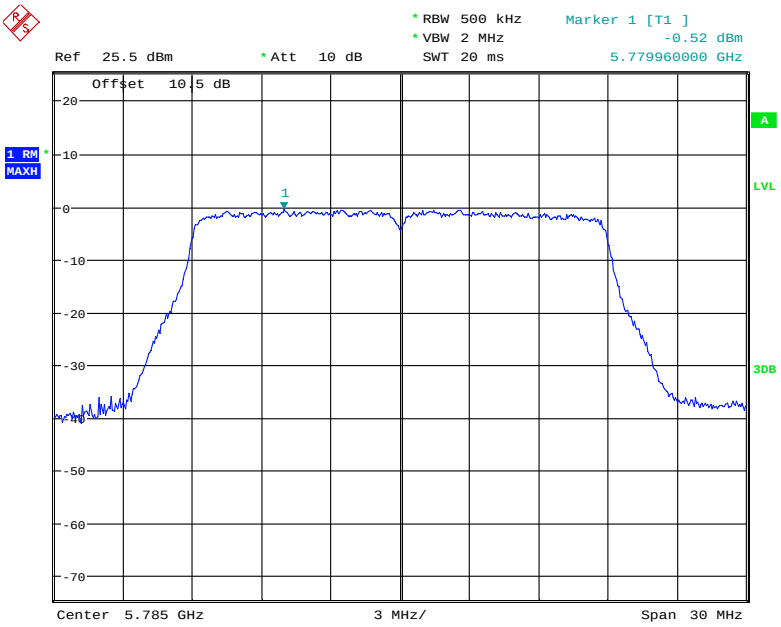
Date: 21.SEP.2018 21:29:31

802.11ac20 mode, Power Spectral Density, 5745 MHz



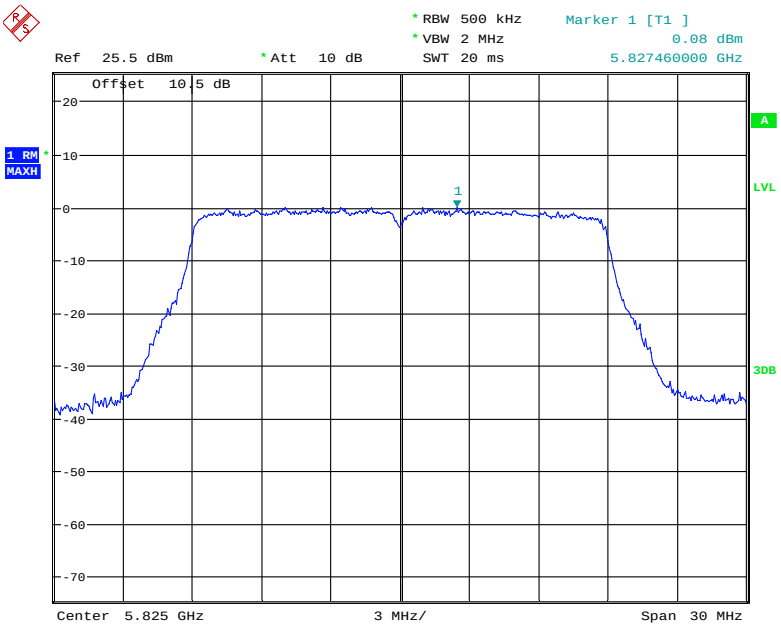
Date: 21.SEP.2018 21:26:20

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



Date: 21.SEP.2018 21:27:15

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



Date: 21.SEP.2018 21:28:05

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