



# FCC PART 15.407 TEST REPORT

For

## Ingenico Inc.

101 Federal St, Suite 700, 7th flr, Boston, Massachusetts, United States

**FCC ID: 2ABY6-MOBC150RPA**

<b>Report Type:</b> Original Report	<b>Product Name:</b> Smart Cash Register
<b>Report Number:</b>	RXM180827050-00C
<b>Report Date:</b>	2018-11-01
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## GENERAL INFORMATION

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

<b>EUT Name:</b>		Smart Cash Register
<b>EUT Model:</b>		Moby C150
<b>FCC ID:</b>		2ABY6-MOBC150RPA
<b>Rated Input Voltage:</b>		DC19/19.5V from adapter
<b>Adapter #1 Information</b>	<b>Model:</b>	PA-1650-90
	<b>Input:</b>	100-240V~50/60Hz 1.6A
	<b>Output:</b>	DC19V,3.42A
<b>Adapter #2 Information</b>	<b>Model:</b>	A14-065N1A
	<b>Input:</b>	100-240V~1.7A 50-60Hz
	<b>Output:</b>	DC 19.5V, 3.33A
<b>External Dimension:</b>		Dual screen:403mm(L)*225mm(W)*390mm(H) Single screen:403mm(L)*225mm(W)*380mm(H)
<b>Serial Number:</b>		180827050
<b>EUT Received Date:</b>		2018.08.28

### Objective

This type approval report is prepared on behalf of *Ingenico Inc.* in accordance with Part 2-Subpart J, Part 15-Subparts A, and E of the Federal Communications Commission's rules.

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

### Related Submittal(s)/Grant(s)

FCC Part 15C DTS submissions with FCC ID: 2ABY6-MOBC150RPA.  
FCC Part 15C DSS submissions with FCC ID: 2ABY6-MOBC150RPA.

### 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. And KDB 789033 D02 General U-NII Test Procedures New Rules v02r01.

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

**Measurement Uncertainty**

Parameter	Measurement Uncertainty
Occupied Channel Bandwidth	±5 %
RF output power, conducted	±0.61dB
Power Spectral Density, conducted	±0.61 dB
Unwanted Emissions, radiated	30M~200MHz: 4.58 dB for Horizontal, 4.59 dB for Vertical 200M~1GHz: 4.83 dB for Horizontal, 5.85 dB for Vertical 1G~6GHz: 4.45 dB, 6G~40GHz: 5.23 dB
Unwanted Emissions,conducted	±1.5 dB
Temperature	±1 °C
Humidity	±5%
DC and low frequency voltages	±0.4%
Duty Cycle	1%
AC Power Lines Conducted Emission	3.12 dB (150 kHz to 30 MHz)

**Test Facility**

The Test site used by Bay Area Compliance Laboratories Corp. (Dongguan) to collect test data is located on the No.69 Pulongcun, Puxinhu Industry Area, Tangxia, Dongguan, 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. : 897218,the FCC Designation No. : CN1220.

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

## SYSTEM TEST CONFIGURATION

### Description of Test Configuration

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

The system supports 802.11a/n ht20/n ht40/ac vht 20/40/80 modes. The vh20/vht40 were reduced since the identical parameters with 802.11n ht20 and ht40.

For 5150~5250 MHz band, 7 channels are provided:

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

For 802.11a, 802.11n ht20 Channel 36, 40 and 48 were tested, for 802.11n ht40 Channel 38, 46 were tested, for 802.11ac vht 80, channel 42 was tested.

For 5250~5350 MHz band, 7 channels are provided:

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

For 802.11a, 802.11n ht20 Channel 52, 56 and 64 were tested, for 802.11n ht40 Channel 54, 62 were tested. For 802.11ac vht80, channel 58 was tested.

For 5470~5725 MHz band, 21 channels are provided:

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

For 802.11a, 802.11n ht20 Channel 100, 116,140 and 144 were tested, for 802.11n ht40 Channel 102, 110, 134 and 142 were tested, for 802.11ac vht80 channel 106, 122 and 138 were tested.

For 5725~5850MHz band, 8 channels are provided to testing:

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

For 802.11a, 802.11n ht20 Channel 149, 157 and 165 was tested, for 802.11n ht40 Channel 151, 159 was tested, for 802.11ac vht80, channel 155 was tested.

**EUT Exercise Software**

The software “QRCT V2.0.244.0” was used for testing, which was provided by manufacturer. The worst-case data rates are determined to be as follows for each mode based upon investigations by measuring the average power and PSD across all data rates, bandwidths, and modulations. The maximum power was configured as below table, that provided by the manufacturer:

Band	Mode	Frequency (MHz)	Data rate (Mbps)	Power level Setting
5150-5250 MHz	802.11a	5180	6	14
		5200	6	17
		5240	6	17
	802.11n ht20	5180	6.5	14
		5200	6.5	16.5
		5240	6.5	16.5
	802.11n ht40	5190	13.5	12
5230		13.5	16.5	
802.11ac80	5210	29.3	13.5	
5250-5350 MHz	802.11a	5260	6	17
		5280	6	17
		5320	6	15
	802.11n ht20	5260	6.5	16.5
		5280	6.5	16.5
		5320	6.5	14.5
	802.11n Ht40	5270	13.5	16
		5310	13.5	13
	802.11ac80	5290	29.3	14

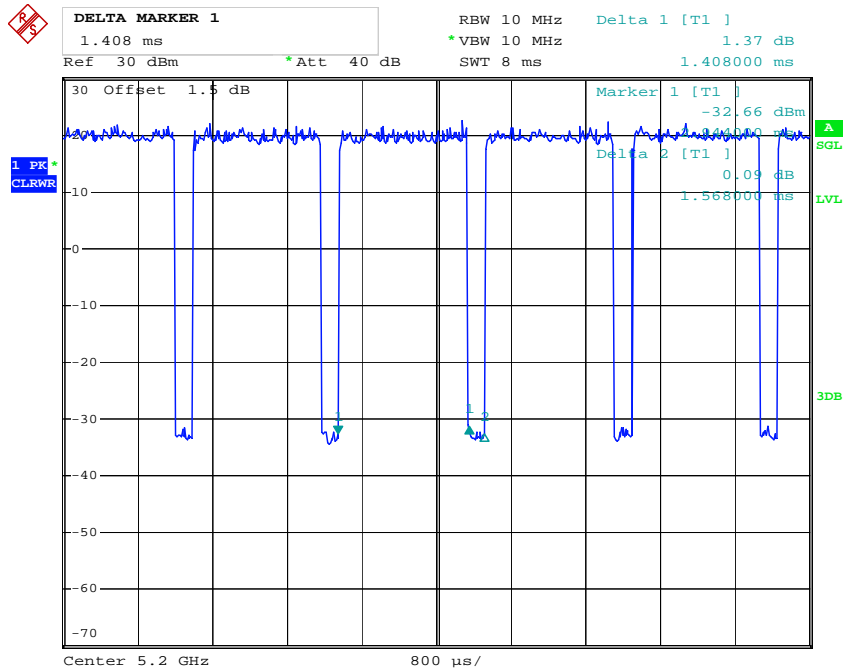
Band	Mode	Frequency (MHz)	Data rate (Mbps)	Power level Setting
5470-5725 MHz	802.11a	5500	6	15
		5580	6	17
		5700	6	16
		5720	6	16
	802.11n ht20	5500	6.5	14.5
		5580	6.5	16.5
		5700	6.5	15
		5720	6.5	17
	802.11n ht40	5510	13.5	13
		5590	13.5	16.5
		5670	13.5	16.5
		5710	13.5	17
	802.11 ac80	5530	29.3	11.5
5610		29.3	17	
5690		29.3	17	
5725-5850 MHz	802.11a	5745	6	17.5
		5785	6	17.5
		5825	6	17.5
	802.11n ht20	5745	6.5	17.5
		5785	6.5	17.5
		5825	6.5	17
	802.11n ht40	5755	13.5	17
		5795	13.5	17
	802.11ac80	5775	29.3	17

The duty cycle as below:

Mode	T <sub>on</sub> (ms)	T <sub>on+off</sub> (ms)	Duty Cycle(x) (%)	Duty cycle Factor (10*lg(1/x))
802.11a	1.408	1.568	89.80	0.54
802.11n ht20	1.312	1.472	89.13	0.58
802.11n ht40	0.660	0.840	78.57	1.11
802.11ac80	0.260	0.452	57.52	2.40

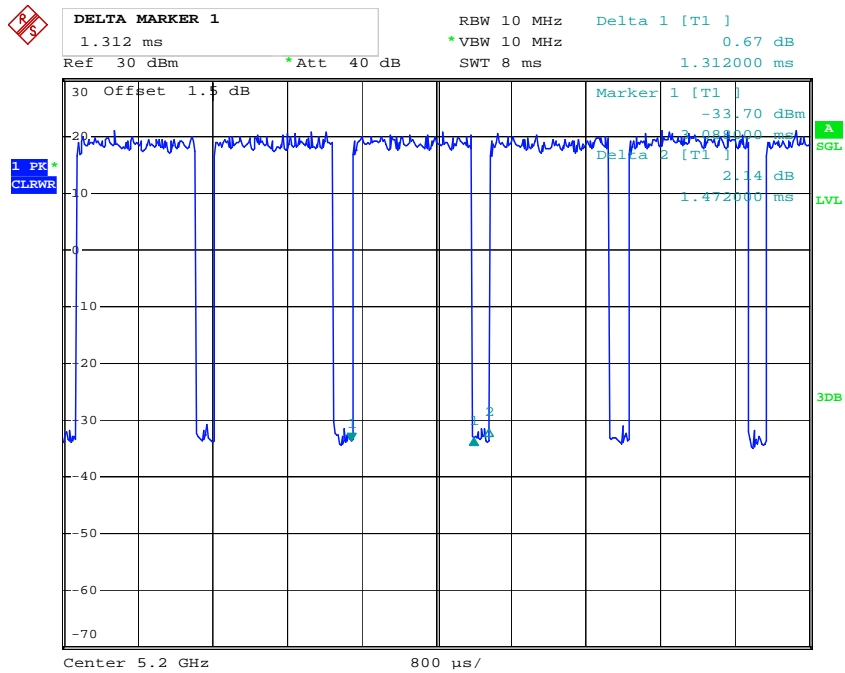


### 802.11a mode



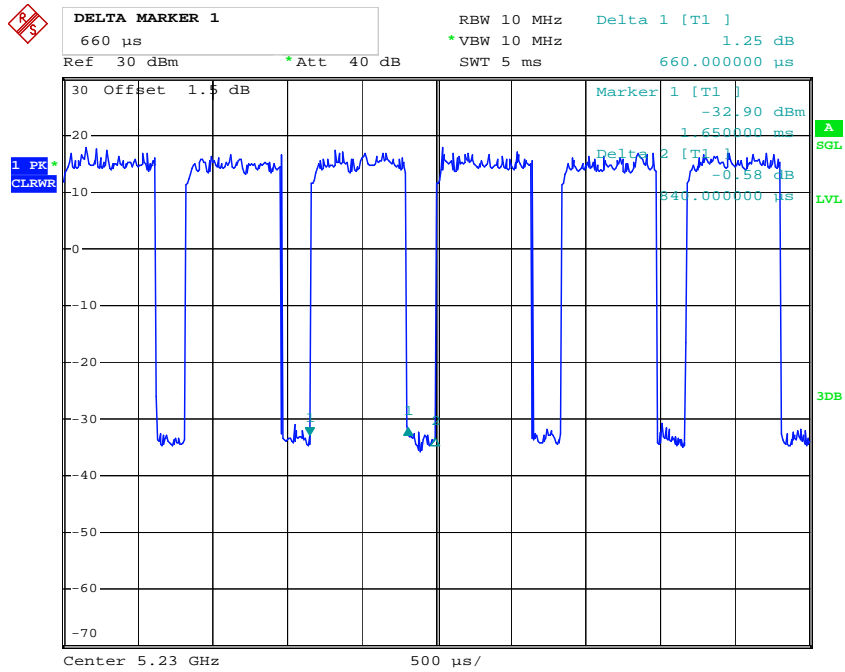
Date: 26.OCT.2018 23:18:08

### 802.11n ht20 mode



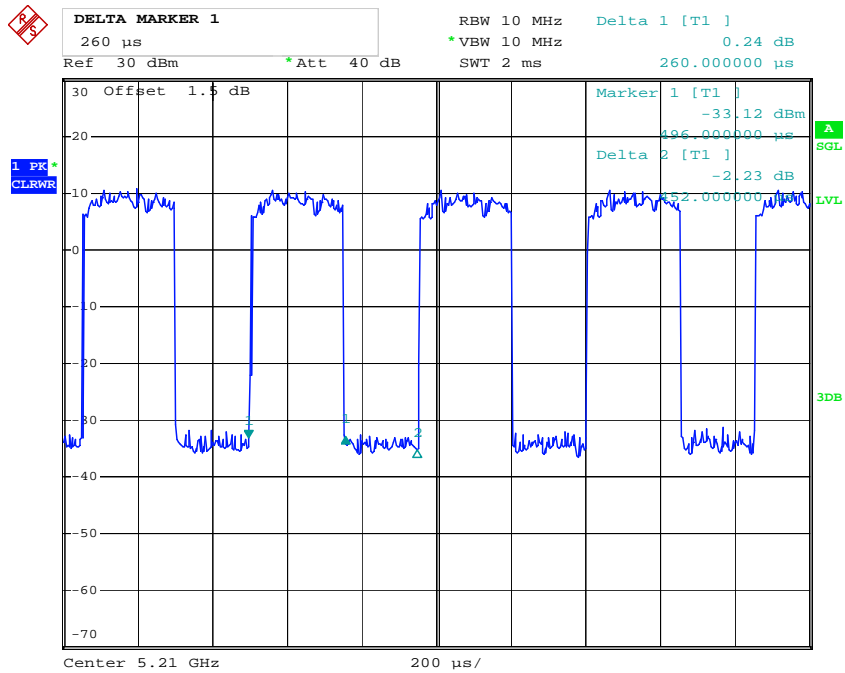
Date: 26.OCT.2018 23:19:13

802.11n ht40 mode



Date: 26.OCT.2018 23:21:26

802.11ac80 mode



Date: 26.OCT.2018 23:23:21

### Equipment Modifications

No modification was made to the EUT.

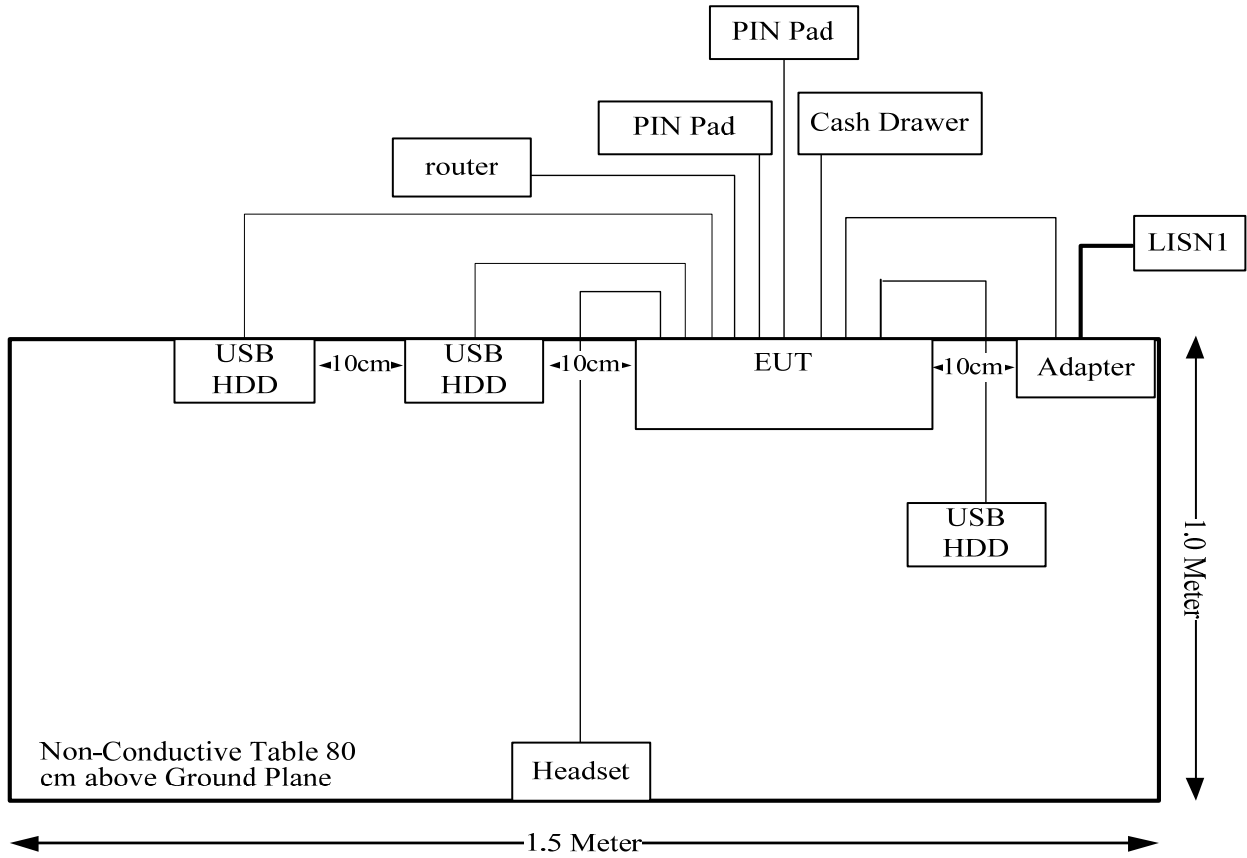
### Local Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
YOUBAI	Headset	Y028	/
TOSHIBA	USB HDD	v63700-A	7271TGZ1TTSJ2
TOSHIBA	USB HDD	v63700-A	7283T8CUTSJ2
TOSHIBA	USB HDD	DTP105	248HS1Z1SRE8
Tenda	Router	D301	/
MAKEN	Cash Drawer	MT-350T	/
YD	PIN Pad	YD511DA-RJ	/

### Support Cable List and Details

Cable Description	Shielding Type	Ferrite Core	Length (m)	From Port	To
USB Cable	Yes	No	0.45	EUT USB Port	USB HDD
Headset Cable	Yes	No	1.5	EUT	Headset
Adapter Cable	No	No	1.02	EUT	Adapter
RJ45 Cable	No	No	5.00	Router	EUT
RJ11 Cable	No	No	5.00	Cash Drawer	EUT
RS232 Cable*2	No	No	5.00	PIN Pad	EUT

### Block Diagram of Test Setup



## SUMMARY OF TEST RESULTS

<b>Rules</b>	<b>Description of Test</b>	<b>Result</b>
§15.407 (f) & §1.1310 & §2.1091	Maximum Permissible Exposure (MPE)	Compliance
FCC §15.203,	Antenna Requirement	Compliance
FCC §15.407(b)(6)& §15.207(a),	Conducted Emissions	Compliance
FCC §15.205& §15.209 &§15.407(b),	Undesirable Emission& Restricted Bands	Compliance
FCC §15.407(b),	Out Of Band Emissions	Compliance
§15.407(a) (e),	Emission Bandwidth	Compliance
FCC §15.407(a),	Conducted Transmitter Output Power	Compliance
FCC §15.407 (a),	Power Spectral Density	Compliance
FCC§15.407(H)	Dynamic Frequency Selection (DFS)	Compliance*

Note:

Compliance\*: please refer to the DFS test report: RXM180827050-00E.

**FCC §15.407 (f) & §1.1310 & §2.1091- MAXIMUM PERMISSIBLE EXPOSURE (MPE)**

**Applicable Standard**

According to subpart 15.407(f) and subpart §1.1310, systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission’s guidelines.

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

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

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

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

**Calculation formula:**

Prediction of power density at the distance of the applicable MPE limit  
 $S = PG/4\pi R^2$  = power density (in appropriate units, e.g. mW/cm<sup>2</sup>);  
 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:**

Frequency Range	Antenna Gain		Max. Target Power including Tolerance		Evaluation Distance (cm)	Power Density (W/m <sup>2</sup> )	MPE Limit (W/m <sup>2</sup> )
	(dBi)	(numeric)	(dBm)	(mW)			
5150-5850	4.5	2.82	18	63.10	20.00	0.035	1.0

**Result: Compliance,** The device meets MPE requirement for Devices Used by the General Public (Uncontrolled Environment) at distance ≥20 cm.

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

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### **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.

### **Antenna Connector Construction**

The EUT has one internal antenna arrangement for WIFI, and the antenna gain is 4.5 dBi@5GHz band, fulfill the requirement of this section. Please refer to the EUT photos.

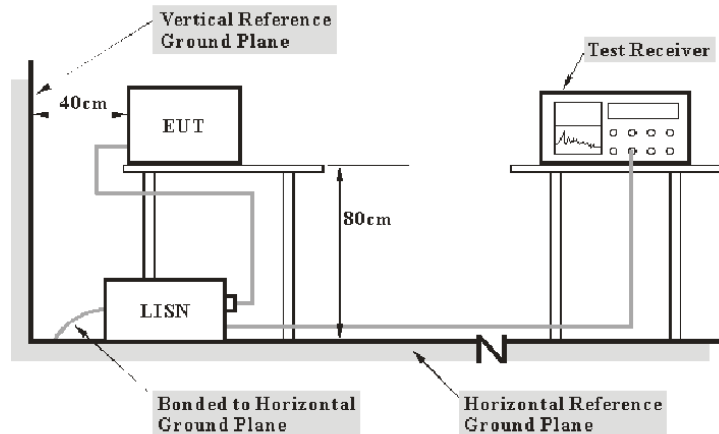
**Result:** Compliance.

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

**Applicable Standard**

FCC §15.207(a), §15.407(b) (6)

**EUT Setup**



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

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

The spacing between the peripherals was 10 cm.

The adapter was connected to the main lisen with a 120 V/60 Hz AC power source.

**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



## Corrected Amplitude & Margin Calculation

The basic equation is as follows:

$$V_C = V_R + A_C + VDF$$

$$C_f = A_C + VDF$$

Herein,

$V_C$  (cord. Reading): corrected voltage amplitude

$V_R$ : reading voltage amplitude

$A_C$ : attenuation caused by cable loss

VDF: voltage division factor of AMN

$C_f$ : Correction Factor

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

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

## Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	EMI Test Receiver	ESCS 30	830245/006	2017-12-11	2018-12-11
Unknown	Coaxial Cable	C-NJNJ-50	C-0200-01	2018-09-05	2019-09-05
R&S	Test Software	EMC32	Version8.53.0	N/A	N/A
R&S	Two-line V-network	ENV 216	101614	2017-12-08	2018-12-08

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

## Test Procedure

During the conducted emission test, the adapter was connected to the first 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 Data**

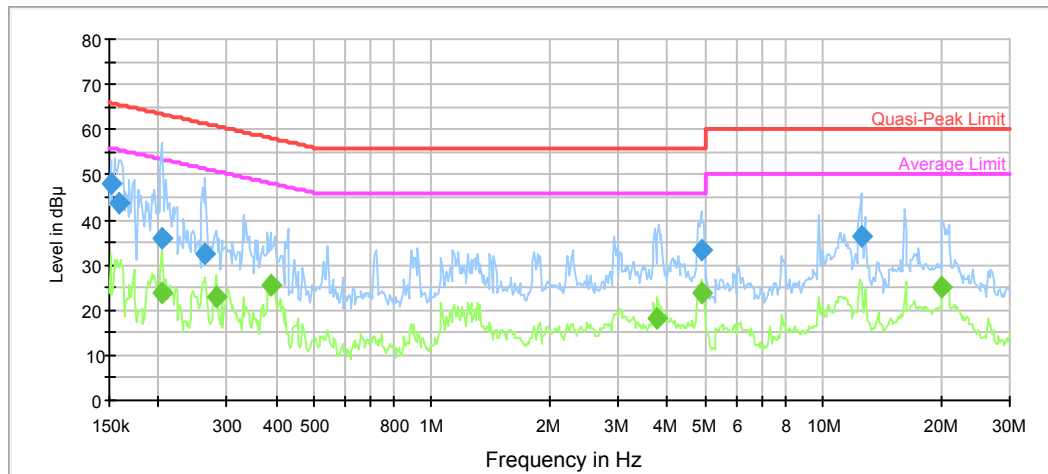
**Environmental Conditions**

<b>Temperature:</b>	27.1 °C
<b>Relative Humidity:</b>	51 %
<b>ATM Pressure:</b>	100.3kPa

The testing was performed by Alex You on 2018-10-23.

Test Mode: Transmitting (per pretest, dual screen+Adapter #1 was the worst)

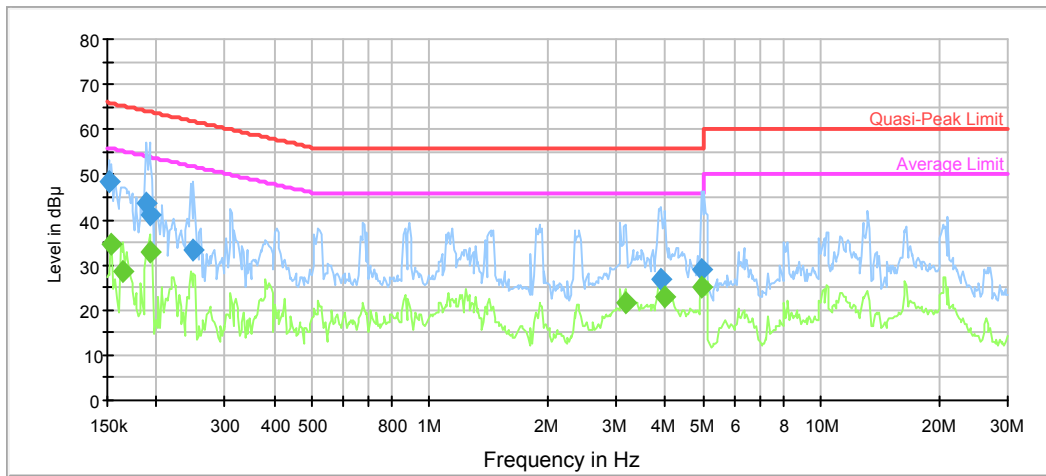
**AC120 V, 60 Hz, Line:**



Frequency (MHz)	QuasiPeak (dBμV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.151200	48.1	9.000	L1	11.2	17.8	65.9	Compliance
0.158604	43.9	9.000	L1	11.1	21.6	65.5	Compliance
0.204669	35.9	9.000	L1	10.6	27.5	63.4	Compliance
0.264113	32.5	9.000	L1	10.3	28.8	61.3	Compliance
4.879149	33.2	9.000	L1	9.8	22.8	56.0	Compliance
12.493579	36.4	9.000	L1	9.9	23.6	60.0	Compliance

Frequency (MHz)	Average (dBμV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.204669	23.9	9.000	L1	10.6	29.5	53.4	Compliance
0.281497	22.7	9.000	L1	10.2	28.1	50.8	Compliance
0.390261	25.4	9.000	L1	10.0	22.7	48.1	Compliance
3.781003	18.1	9.000	L1	9.8	27.9	46.0	Compliance
4.879149	23.9	9.000	L1	9.8	22.1	46.0	Compliance
20.152030	25.2	9.000	L1	10.1	24.8	50.0	Compliance

**AC120 V, 60 Hz, Neutral:**



Frequency (MHz)	QuasiPeak (dBμV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.151200	48.3	9.000	N	11.1	17.6	65.9	Compliance
0.188994	43.6	9.000	N	10.7	20.5	64.1	Compliance
0.192030	41.2	9.000	N	10.7	22.7	63.9	Compliance
0.249785	33.1	9.000	N	10.3	28.7	61.8	Compliance
3.903455	27.0	9.000	N	9.8	29.0	56.0	Compliance
4.957528	29.0	9.000	N	9.8	27.0	56.0	Compliance

Frequency (MHz)	Average (dBμV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.153629	34.6	9.000	N	11.1	21.2	55.8	Compliance
0.165051	28.5	9.000	N	11.0	26.7	55.2	Compliance
0.192030	32.9	9.000	N	10.7	21.0	53.9	Compliance
3.173039	21.4	9.000	N	9.8	24.6	46.0	Compliance
3.997889	22.8	9.000	N	9.8	23.2	46.0	Compliance
4.957528	25.1	9.000	N	9.8	20.9	46.0	Compliance

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**FCC §15.209, §15.205 & §15.407(b) –UNWANTED EMISSION**

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**Applicable Standard**

FCC §15.407; §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.

(ii) Devices certified before March 2, 2017 with antenna gain greater than 10 dBi may demonstrate compliance with the emission limits in §15.247(d), but manufacturing, marketing and importing of devices certified under this alternative must cease by March 2, 2018. Devices certified before March 2, 2018 with antenna gain of 10 dBi or less may demonstrate compliance with the emission limits in §15.247(d), but manufacturing, marketing and importing of devices certified under this alternative must cease before March 2, 2020.

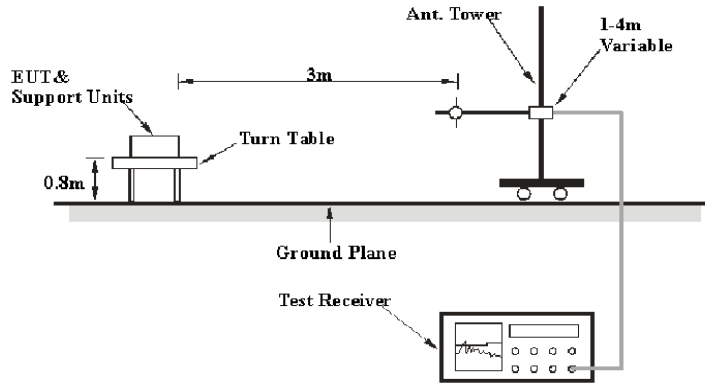
(5) The emission measurements shall be performed using a minimum resolution bandwidth of 1 MHz. A lower resolution bandwidth may be employed near the band edge, when necessary, provided the measured energy is integrated to show the total power over 1 MHz.

(6) Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209. Further, any U-NII devices using an AC power line are required to comply also with the conducted limits set forth in §15.207.

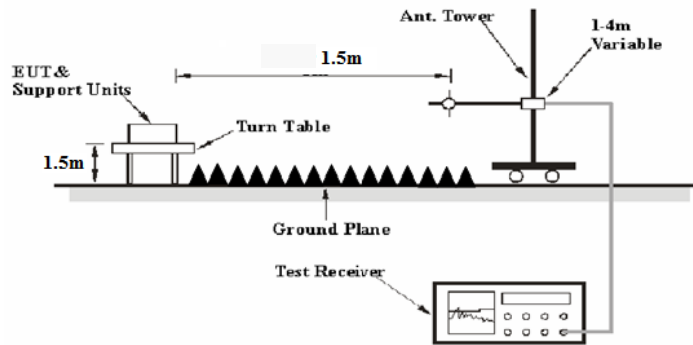
(7) The provisions of §15.205 apply to intentional radiators operating under this section.

**EUT Setup**

**Below 1 GHz:**



**Above 1 GHz:**



The radiated emission tests were performed in the 3 meters chamber test site, using the setup accordance with the ANSI C63.10-2013. The specification used was the FCC 15.209, and FCC 15.407 limits.

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

The spacing between the peripherals was 10 cm.

**EMI Test Receiver & Spectrum Analyzer Setup**

The system was investigated from 30 MHz to 40 GHz.

During the radiated emission test, the EMI test receiver & Spectrum Analyzer Setup were set with the following configurations:

30-1000MHz:

Measurement	RBW	Video B/W	IF B/W
QP	120 kHz	300 kHz	120kHz

1GHz- 40GHz:

Measurement	Duty cycle	RBW	Video B/W
PK	Any	1MHz	3 MHz
Ave.	>98%	1MHz	10 Hz
	<98%	1MHz	1/T

Note: T is minimum transmission duration

### Test Procedure

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

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

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

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

According to C63.10, the above 1G test result shall be extrapolated to the specified distance using an extrapolation factor of 20dB/decade from 3m to 1.5m

Distance extrapolation factor =  $20 \log(\text{specific distance [3m]}/\text{test distance [1.5m]})$  dB = 6.02 dB

### Corrected Amplitude & Margin Calculation

For the range 30MHz-1GHz, the Corrected Amplitude is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

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

For the range 1GHz-40GHz, Test performed at 1.5m, the Corrected Amplitude is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading and the Distance extrapolation factor. The basic equation is as follows:

$$\begin{aligned} \text{Corrected Amplitude} \\ = \text{Meter Reading} + \text{Antenna Factor} + \text{Cable Loss} - \text{Amplifier Gain} - \text{Distance extrapolation factor} \end{aligned}$$

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

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

**Test Equipment List and Details**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	EMI Test Receiver	ESCI	100224	2017-12-11	2018-12-11
Farad	Test Software	EZ-EMC	V1.1.4.2	N/A	N/A
Sunol Sciences	Antenna	JB3	A060611-1	2017-11-10	2020-11-10
Unknown	Coaxial Cable	C-NJNJ-50	C-0400-01	2018-09-05	2019-09-05
Unknown	Coaxial Cable	C-NJNJ-50	C-0075-01	2018-09-05	2019-09-05
Unknown	Coaxial Cable	C-NJNJ-50	C-1000-01	2018-09-05	2019-09-05
HP	Amplifier	8447D	2727A05902	2018-09-05	2019-09-05
Agilent	Spectrum Analyzer	E4440A	SG43360054	2018-01-04	2019-01-04
R&S	Spectrum Analyzer	FSP 38	100478	2017-12-08	2018-12-08
Farad	Test Software	EZ-EMC	V1.1.4.2	N/A	N/A
ETS-Lindgren	Horn Antenna	3115	000 527 35	2016-01-05	2019-01-04
Ducommun Technologies	Horn Antenna	ARH-4223-02	1007726-01 1304	2016-11-18	2019-11-18
Ducommun Technologies	Horn Antenna	ARH-2823-02	1007726-01 1302	2016-11-18	2019-11-18
Unknown	Coaxial Cable	C-SJSJ-50	C-0800-01	2018-09-05	2019-09-05
Unknown	Coaxial Cable	C-2.4J2.4J-50	C-0700-02	2018-06-27	2019-06-27
MITEQ	Amplifier	AFS42-00101800- 25-S-42	2001271	2018-09-05	2019-09-05
Quinstar	Amplifier	QLW-18405536-JO	15964001001	2018-06-27	2019-06-27
Sinoscite	Bandstop Filters	BSF5150-5850MN- 0899-003	0899003	2018-05-06	2019-05-06
Mini Circuits	High Pass Filter	VHF-6010+	31118	2018-06-16	2019-06-16

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

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

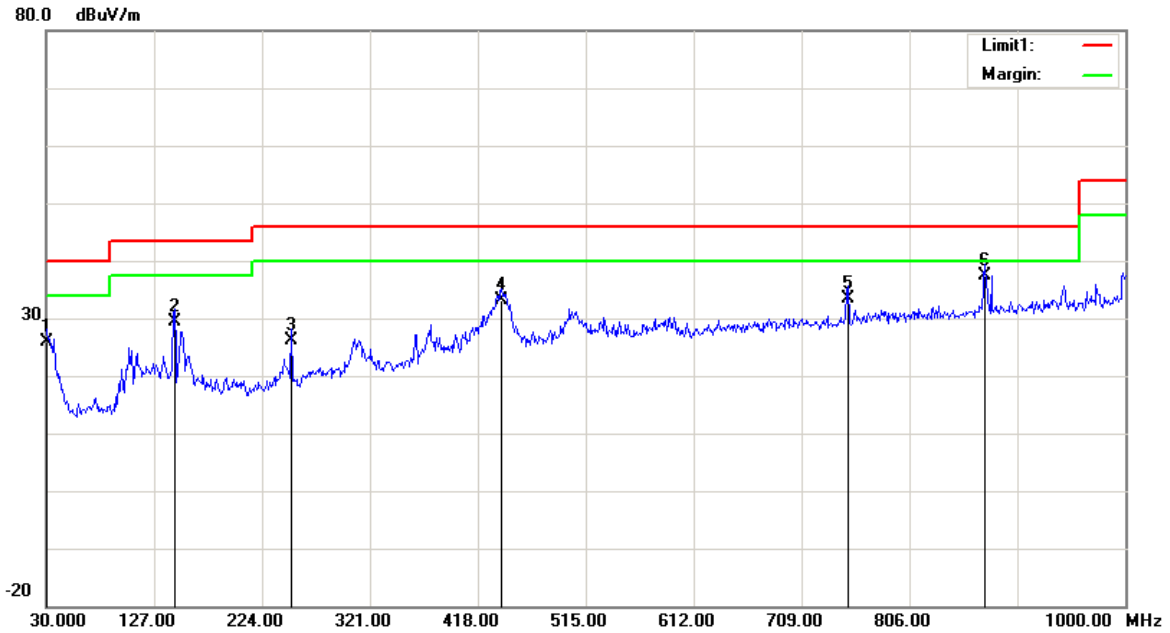
<b>Temperature:</b>	27.3 °C
<b>Relative Humidity:</b>	41 %
<b>ATM Pressure:</b>	100.6 kPa

\* The testing was performed by Tyler Pan & Sunny Cen & Blake Yang on 2018-09-19 and 2018-09-20.

Test Mode: Transmitting(per pretest, dual screen+Adapter #1 was the worst)

1) Below 1GHz(802.11n ht20 5240MHz was the worst):

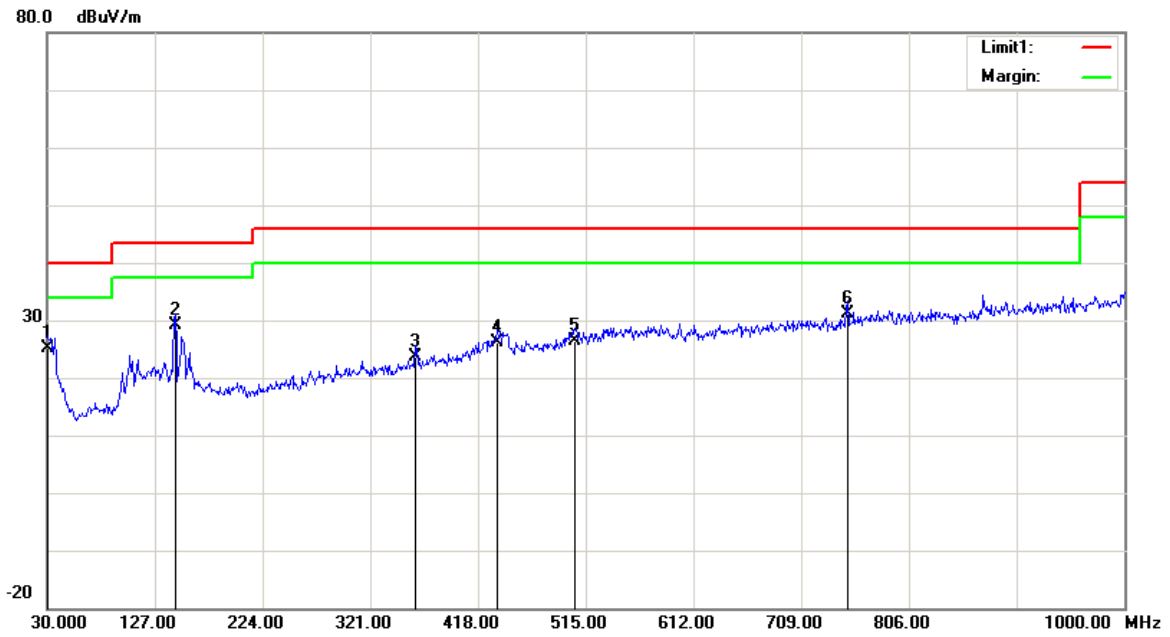
Horizontal



Frequency (MHz)	Receiver Reading (dBμV)	Remark	Correction Factor (dB/m)	Cord. Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)
30.0000	24.24	QP	1.76	26.00	40.00	14.00
145.4300	35.39	QP	-5.99	29.40	43.50	14.10
250.1900	32.13	QP	-6.03	26.10	46.00	19.90
439.3400	34.29	QP	-1.19	33.10	46.00	12.90
750.7100	29.81	QP	3.69	33.50	46.00	12.50
873.9000	35.75	QP	1.75	37.50	46.00	8.50



**Vertical**



Frequency (MHz)	Receiver Reading (dBμV)	Remark	Correction Factor (dB/m)	Cord. Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)
30.0000	23.44	QP	1.76	25.20	40.00	14.80
145.4300	35.09	QP	-5.99	29.10	43.50	14.40
361.7400	26.49	QP	-2.79	23.70	46.00	22.30
435.4600	27.40	QP	-1.20	26.20	46.00	19.80
505.3000	26.74	QP	-0.24	26.50	46.00	19.50
750.7100	27.51	QP	3.69	31.20	46.00	14.80

**1GHz-40GHz:  
5150-5250MHz  
802.11a**

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBµV/m)	Extrapolation result (dBµV/m)	Limit (dBµV/m)	Margin (dB)
	Reading (dBµV)	Remark	Polar (H/V)	Factor (dB/m)						
5180 MHz										
5180.00	68.99	PK	H	33.59	3.58	0.00	106.16	100.14	N/A	N/A
5180.00	59.35	AV	H	33.59	3.58	0.00	96.52	90.5	N/A	N/A
5180.00	70.93	PK	V	33.59	3.58	0.00	108.10	102.08	N/A	N/A
5180.00	61.19	AV	V	33.59	3.58	0.00	98.36	92.34	N/A	N/A
5150.00	30.84	PK	V	33.54	3.56	0.00	67.94	61.92	74.00	12.08
5150.00	16.81	AV	V	33.54	3.56	0.00	53.91	47.89	54.00	6.11
10360.00	45.68	PK	V	38.17	6.29	36.85	53.29	47.27	74.00	26.73
10360.00	33.25	AV	V	38.17	6.29	36.85	40.86	34.84	54.00	19.16
15540.00	47.71	PK	V	38.06	8.85	39.04	55.58	49.56	74.00	24.44
15540.00	35.31	AV	V	38.06	8.85	39.04	43.18	37.16	54.00	16.84
5200 MHz										
5200.00	71.74	PK	H	33.62	3.60	0.00	108.96	102.94	N/A	N/A
5200.00	62.10	AV	H	33.62	3.60	0.00	99.32	93.3	N/A	N/A
5200.00	73.48	PK	V	33.62	3.60	0.00	110.70	104.68	N/A	N/A
5200.00	63.71	AV	V	33.62	3.60	0.00	100.93	94.91	N/A	N/A
10400.00	45.62	PK	V	38.18	6.32	36.86	53.26	47.24	74.00	26.76
10400.00	33.10	AV	V	38.18	6.32	36.86	40.74	34.72	54.00	19.28
15600.00	47.64	PK	V	38.00	8.83	39.09	55.38	49.36	74.00	24.64
15600.00	35.24	AV	V	38.00	8.83	39.09	42.98	36.96	54.00	17.04
5240 MHz										
5240.00	70.81	PK	H	33.68	3.52	0.00	108.01	101.99	N/A	N/A
5240.00	61.13	AV	H	33.68	3.52	0.00	98.33	92.31	N/A	N/A
5240.00	72.74	PK	V	33.68	3.52	0.00	109.94	103.92	N/A	N/A
5240.00	63.06	AV	V	33.68	3.52	0.00	100.26	94.24	N/A	N/A
5350.00	26.61	PK	V	33.86	3.52	0.00	63.99	57.97	74.00	16.03
5350.00	15.15	AV	V	33.86	3.52	0.00	52.53	46.51	54.00	7.49
10480.00	45.78	PK	V	38.20	6.37	36.88	53.47	47.45	74.00	26.55
10480.00	33.42	AV	V	38.20	6.37	36.88	41.11	35.09	54.00	18.91
15720.00	47.91	PK	V	37.88	8.79	39.18	55.40	49.38	74.00	24.62
15720.00	35.46	AV	V	37.88	8.79	39.18	42.95	36.93	54.00	17.07

**802.11n ht20**

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBµV/m)	Extrapolation result (dBµV/m)	Limit (dBµV/m)	Margin (dB)
	Reading (dBµV)	Remark	Polar (H/V)	Factor (dB/m)						
5180 MHz										
5180.00	67.53	PK	H	33.59	3.58	0.00	104.70	98.68	N/A	N/A
5180.00	57.41	AV	H	33.59	3.58	0.00	94.58	88.56	N/A	N/A
5180.00	69.81	PK	V	33.59	3.58	0.00	106.98	100.96	N/A	N/A
5180.00	59.62	AV	V	33.59	3.58	0.00	96.79	90.77	N/A	N/A
5150.00	28.54	PK	V	33.54	3.56	0.00	65.64	59.62	74.00	14.38
5150.00	16.22	AV	V	33.54	3.56	0.00	53.32	47.3	54.00	6.70
10360.00	46.10	PK	V	38.17	6.29	36.85	53.71	47.69	74.00	26.31
10360.00	34.01	AV	V	38.17	6.29	36.85	41.62	35.6	54.00	18.40
15540.00	47.84	PK	V	38.06	8.85	39.04	55.71	49.69	74.00	24.31
15540.00	35.40	AV	V	38.06	8.85	39.04	43.27	37.25	54.00	16.75
5200 MHz										
5200.00	70.29	PK	H	33.62	3.60	0.00	107.51	101.49	N/A	N/A
5200.00	60.10	AV	H	33.62	3.60	0.00	97.32	91.3	N/A	N/A
5200.00	72.36	PK	V	33.62	3.60	0.00	109.58	103.56	N/A	N/A
5200.00	62.13	AV	V	33.62	3.60	0.00	99.35	93.33	N/A	N/A
10400.00	46.20	PK	V	38.18	6.32	36.86	53.84	47.82	74.00	26.18
10400.00	33.74	AV	V	38.18	6.32	36.86	41.38	35.36	54.00	18.64
15600.00	47.69	PK	V	38.00	8.83	39.09	55.43	49.41	74.00	24.59
15600.00	35.34	AV	V	38.00	8.83	39.09	43.08	37.06	54.00	16.94
5240 MHz										
5240.00	69.84	PK	H	33.68	3.52	0.00	107.04	101.02	N/A	N/A
5240.00	59.62	AV	H	33.68	3.52	0.00	96.82	90.8	N/A	N/A
5240.00	71.69	PK	V	33.68	3.52	0.00	108.89	102.87	N/A	N/A
5240.00	61.48	AV	V	33.68	3.52	0.00	98.68	92.66	N/A	N/A
5350.00	26.97	PK	V	33.86	3.52	0.00	64.35	58.33	74.00	15.67
5350.00	13.64	AV	V	33.86	3.52	0.00	51.02	45	54.00	9.00
10480.00	45.87	PK	V	38.20	6.37	36.88	53.56	47.54	74.00	26.46
10480.00	33.35	AV	V	38.20	6.37	36.88	41.04	35.02	54.00	18.98
15720.00	47.71	PK	V	37.88	8.79	39.18	55.20	49.18	74.00	24.82
15720.00	35.28	AV	V	37.88	8.79	39.18	42.77	36.75	54.00	17.25

**802.11n ht40**

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBµV/m)	Extrapolation result (dBµV/m)	Limit (dBµV/m)	Margin (dB)
	Reading (dBµV)	Remark	Polar (H/V)	Factor (dB/m)						
5190 MHz										
5190.00	62.52	PK	H	33.60	3.59	0.00	99.71	93.69	N/A	N/A
5190.00	53.49	AV	H	33.60	3.59	0.00	90.68	84.66	N/A	N/A
5190.00	65.38	PK	V	33.60	3.59	0.00	102.57	96.55	N/A	N/A
5190.00	56.25	AV	V	33.60	3.59	0.00	93.44	87.42	N/A	N/A
5150.00	36.38	PK	V	33.54	3.56	0.00	73.48	67.46	74.00	6.54
5150.00	18.82	AV	V	33.54	3.56	0.00	55.92	49.9	54.00	4.10
10380.00	46.61	PK	V	38.18	6.31	36.85	54.25	48.23	74.00	25.77
10380.00	34.18	AV	V	38.18	6.31	36.85	41.82	35.8	54.00	18.20
15570.00	46.57	PK	V	38.03	8.84	39.06	54.38	48.36	74.00	25.64
15570.00	34.14	AV	V	38.03	8.84	39.06	41.95	35.93	54.00	18.07
5230 MHz										
5230.00	67.53	PK	H	33.67	3.54	0.00	104.74	98.72	N/A	N/A
5230.00	58.32	AV	H	33.67	3.54	0.00	95.53	89.51	N/A	N/A
5230.00	70.27	PK	V	33.67	3.54	0.00	107.48	101.46	N/A	N/A
5230.00	61.20	AV	V	33.67	3.54	0.00	98.41	92.39	N/A	N/A
5350.00	26.13	PK	V	33.86	3.52	0.00	63.51	57.49	74.00	16.51
5350.00	15.16	AV	V	33.86	3.52	0.00	52.54	46.52	54.00	7.48
10460.00	47.72	PK	V	38.19	6.36	36.87	55.40	49.38	74.00	24.62
10460.00	34.36	AV	V	38.19	6.36	36.87	42.04	36.02	54.00	17.98
15690.00	48.93	PK	V	37.91	8.80	39.15	56.49	50.47	74.00	23.53
15690.00	35.24	AV	V	37.91	8.80	39.15	42.80	36.78	54.00	17.22

**802.11 ac80**

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBµV/m)	Extrapolation result (dBµV/m)	Limit (dBµV/m)	Margin (dB)
	Reading (dBµV)	Remark	Polar (H/V)	Factor (dB/m)						
5210 MHz										
5210.00	61.87	PK	H	33.64	3.58	0.00	99.09	93.07	N/A	N/A
5210.00	52.52	AV	H	33.64	3.58	0.00	89.74	83.72	N/A	N/A
5210.00	64.33	PK	V	33.64	3.58	0.00	101.55	95.53	N/A	N/A
5210.00	55.20	AV	V	33.64	3.58	0.00	92.42	86.4	N/A	N/A
5150.00	31.74	PK	V	33.54	3.56	0.00	68.84	62.82	74.00	11.18
5150.00	18.88	AV	V	33.54	3.56	0.00	55.98	49.96	54.00	4.04
5350.00	26.83	PK	V	33.86	3.52	0.00	64.21	58.19	74.00	15.81
5350.00	15.69	AV	V	33.86	3.52	0.00	53.07	47.05	54.00	6.95
10420.00	46.52	PK	V	38.18	6.33	36.86	54.17	48.15	74.00	25.85
10420.00	34.10	AV	V	38.18	6.33	36.86	41.75	35.73	54.00	18.27
15630.00	46.41	PK	V	37.97	8.82	39.11	54.09	48.07	74.00	25.93
15630.00	34.02	AV	V	37.97	8.82	39.11	41.70	35.68	54.00	18.32

**5250-5350MHz  
802.11a**

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBµV/m)	Extrapolation result (dBµV/m)	Limit (dBµV/m)	Margin (dB)
	Reading (dBµV)	Remark	Polar (H/V)	Factor (dB/m)						
5260 MHz										
5260.00	70.34	PK	H	33.72	3.49	0.00	107.55	101.53	N/A	N/A
5260.00	60.55	AV	H	33.72	3.49	0.00	97.76	91.74	N/A	N/A
5260.00	73.84	PK	V	33.72	3.49	0.00	111.05	105.03	N/A	N/A
5260.00	63.92	AV	V	33.72	3.49	0.00	101.13	95.11	N/A	N/A
5150.00	27.81	PK	V	33.54	3.56	0.00	64.91	58.89	74.00	15.11
5150.00	15.83	AV	V	33.54	3.56	0.00	52.93	46.91	54.00	7.09
10520.00	46.42	PK	V	38.21	6.39	36.89	54.13	48.11	74.00	25.89
10520.00	34.01	AV	V	38.21	6.39	36.89	41.72	35.7	54.00	18.30
15780.00	47.17	PK	V	37.82	8.76	39.22	54.53	48.51	74.00	25.49
15780.00	34.70	AV	V	37.82	8.76	39.22	42.06	36.04	54.00	17.96
5280 MHz										
5280.00	69.98	PK	H	33.75	3.45	0.00	107.18	101.16	N/A	N/A
5280.00	60.10	AV	H	33.75	3.45	0.00	97.30	91.28	N/A	N/A
5280.00	72.91	PK	V	33.75	3.45	0.00	110.11	104.09	N/A	N/A
5280.00	63.23	AV	V	33.75	3.45	0.00	100.43	94.41	N/A	N/A
10560.00	46.21	PK	V	38.24	6.40	36.90	53.95	47.93	74.00	26.07
10560.00	33.76	AV	V	38.24	6.40	36.90	41.50	35.48	54.00	18.52
15840.00	47.10	PK	V	37.76	8.74	39.27	54.33	48.31	74.00	25.69
15840.00	34.58	AV	V	37.76	8.74	39.27	41.81	35.79	54.00	18.21
5320 MHz										
5320.00	68.31	PK	H	33.81	3.45	0.00	105.57	99.55	N/A	N/A
5320.00	58.42	AV	H	33.81	3.45	0.00	95.68	89.66	N/A	N/A
5320.00	71.40	PK	V	33.81	3.45	0.00	108.66	102.64	N/A	N/A
5320.00	62.53	AV	V	33.81	3.45	0.00	99.79	93.77	N/A	N/A
5350.00	30.08	PK	V	33.86	3.52	0.00	67.46	61.44	74.00	12.56
5350.00	16.28	AV	V	33.86	3.52	0.00	53.66	47.64	54.00	6.36
10640.00	46.64	PK	V	38.28	6.43	36.93	54.42	48.4	74.00	25.60
10640.00	34.21	AV	V	38.28	6.43	36.93	41.99	35.97	54.00	18.03
15960.00	47.12	PK	V	37.64	8.70	39.36	54.10	48.08	74.00	25.92
15960.00	34.66	AV	V	37.64	8.70	39.36	41.64	35.62	54.00	18.38

## 802.11n ht20

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBµV/m)	Extrapolation result (dBµV/m)	Limit (dBµV/m)	Margin (dB)
	Reading (dBµV)	Remark	Polar (H/V)	Factor (dB/m)						
5260 MHz										
5260.00	69.55	PK	H	33.72	3.49	0.00	106.76	100.74	N/A	N/A
5260.00	60.03	AV	H	33.72	3.49	0.00	97.24	91.22	N/A	N/A
5260.00	72.20	PK	V	33.72	3.49	0.00	109.41	103.39	N/A	N/A
5260.00	62.78	AV	V	33.72	3.49	0.00	99.99	93.97	N/A	N/A
5150.00	25.77	PK	V	33.54	3.56	0.00	62.87	56.85	74.00	17.15
5150.00	15.46	AV	V	33.54	3.56	0.00	52.56	46.54	54.00	7.46
10520.00	46.25	PK	V	38.21	6.39	36.89	53.96	47.94	74.00	26.06
10520.00	33.70	AV	V	38.21	6.39	36.89	41.41	35.39	54.00	18.61
15780.00	46.21	PK	V	37.82	8.76	39.22	53.57	47.55	74.00	26.45
15780.00	33.69	AV	V	37.82	8.76	39.22	41.05	35.03	54.00	18.97
5280 MHz										
5280.00	69.25	PK	H	33.75	3.45	0.00	106.45	100.43	N/A	N/A
5280.00	59.76	AV	H	33.75	3.45	0.00	96.96	90.94	N/A	N/A
5280.00	71.93	PK	V	33.75	3.45	0.00	109.13	103.11	N/A	N/A
5280.00	62.41	AV	V	33.75	3.45	0.00	99.61	93.59	N/A	N/A
10560.00	46.58	PK	V	38.24	6.40	36.90	54.32	48.3	74.00	25.70
10560.00	34.15	AV	V	38.24	6.40	36.90	41.89	35.87	54.00	18.13
15840.00	46.35	PK	V	37.76	8.74	39.27	53.58	47.56	74.00	26.44
15840.00	33.87	AV	V	37.76	8.74	39.27	41.10	35.08	54.00	18.92
5320 MHz										
5320.00	67.41	PK	H	33.81	3.45	0.00	104.67	98.65	N/A	N/A
5320.00	58.08	AV	H	33.81	3.45	0.00	95.34	89.32	N/A	N/A
5320.00	70.27	PK	V	33.81	3.45	0.00	107.53	101.51	N/A	N/A
5320.00	60.88	AV	V	33.81	3.45	0.00	98.14	92.12	N/A	N/A
5350.00	29.31	PK	V	33.86	3.52	0.00	66.69	60.67	74.00	13.33
5350.00	15.79	AV	V	33.86	3.52	0.00	53.17	47.15	54.00	6.85
10640.00	46.25	PK	V	38.28	6.43	36.93	54.03	48.01	74.00	25.99
10640.00	33.82	AV	V	38.28	6.43	36.93	41.60	35.58	54.00	18.42
15960.00	46.41	PK	V	37.64	8.70	39.36	53.39	47.37	74.00	26.63
15960.00	33.94	AV	V	37.64	8.70	39.36	40.92	34.9	54.00	19.10

**802.11n ht40**

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dB $\mu$ V/m)	Extrapolation result (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)
	Reading (dB $\mu$ V)	Remark	Polar (H/V)	Factor (dB/m)						
5270 MHz										
5270.00	66.40	PK	H	33.73	3.47	0.00	103.60	97.58	N/A	N/A
5270.00	57.46	AV	H	33.73	3.47	0.00	94.66	88.64	N/A	N/A
5270.00	69.14	PK	V	33.73	3.47	0.00	106.34	100.32	N/A	N/A
5270.00	60.37	AV	V	33.73	3.47	0.00	97.57	91.55	N/A	N/A
5150.00	26.54	PK	V	33.54	3.56	0.00	63.64	57.62	74.00	16.38
5150.00	15.66	AV	V	33.54	3.56	0.00	52.76	46.74	54.00	7.26
10540.00	45.69	PK	V	38.22	6.40	36.89	53.42	47.4	74.00	26.60
10540.00	33.23	AV	V	38.22	6.40	36.89	40.96	34.94	54.00	19.06
15810.00	46.58	PK	V	37.79	8.75	39.25	53.87	47.85	74.00	26.15
15810.00	34.26	AV	V	37.79	8.75	39.25	41.55	35.53	54.00	18.47
5310 MHz										
5310.00	62.91	PK	H	33.80	3.43	0.00	100.14	94.12	N/A	N/A
5310.00	54.10	AV	H	33.80	3.43	0.00	91.33	85.31	N/A	N/A
5310.00	65.34	PK	V	33.80	3.43	0.00	102.57	96.55	N/A	N/A
5310.00	56.43	AV	V	33.80	3.43	0.00	93.66	87.64	N/A	N/A
5350.00	31.26	PK	V	33.86	3.52	0.00	68.64	62.62	74.00	11.38
5350.00	17.87	AV	V	33.86	3.52	0.00	55.25	49.23	54.00	4.77
10620.00	45.88	PK	V	38.27	6.43	36.92	53.66	47.64	74.00	26.36
10620.00	33.41	AV	V	38.27	6.43	36.92	41.19	35.17	54.00	18.83
15930.00	46.61	PK	V	37.67	8.71	39.34	53.65	47.63	74.00	26.37
15930.00	34.25	AV	V	37.67	8.71	39.34	41.29	35.27	54.00	18.73

**802.11 ac80**

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dB $\mu$ V/m)	Extrapolation result (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)
	Reading (dB $\mu$ V)	Remark	Polar (H/V)	Factor (dB/m)						
5290 MHz										
5290.00	61.04	PK	H	33.76	3.43	0.00	98.23	92.21	N/A	N/A
5290.00	52.10	AV	H	33.76	3.43	0.00	89.29	83.27	N/A	N/A
5290.00	63.53	PK	V	33.76	3.43	0.00	100.72	94.7	N/A	N/A
5290.00	54.44	AV	V	33.76	3.43	0.00	91.63	85.61	N/A	N/A
5150.00	28.96	PK	V	33.54	3.56	0.00	66.06	60.04	74.00	13.96
5150.00	16.24	AV	V	33.54	3.56	0.00	53.34	47.32	54.00	6.68
5350.00	30.25	PK	V	33.86	3.52	0.00	67.63	61.61	74.00	12.39
5350.00	17.38	AV	V	33.86	3.52	0.00	54.76	48.74	54.00	5.26
10580.00	45.87	PK	V	38.25	6.41	36.91	53.62	47.6	74.00	26.40
10580.00	33.58	AV	V	38.25	6.41	36.91	41.33	35.31	54.00	18.69
15870.00	45.63	PK	V	37.73	8.73	39.29	52.80	46.78	74.00	27.22
15870.00	33.24	AV	V	37.73	8.73	39.29	40.41	34.39	54.00	19.61

**5470-5725MHz**  
**802.11a**

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBµV/m)	Extrapolation result (dBµV/m)	Limit (dBµV/m)	Margin (dB)
	Reading (dBµV)	Remark	Polar (H/V)	Factor (dB/m)						
5500 MHz										
5500.00	71.30	PK	H	34.10	3.54	0.00	108.94	102.92	N/A	N/A
5500.00	61.89	AV	H	34.10	3.54	0.00	99.53	93.51	N/A	N/A
5500.00	72.05	PK	V	34.10	3.54	0.00	109.69	103.67	N/A	N/A
5500.00	63.54	AV	V	34.10	3.54	0.00	101.18	95.16	N/A	N/A
5470.00	29.05	PK	V	34.05	3.56	0.00	66.66	60.64	74.00	13.36
5470.00	15.92	AV	V	34.05	3.56	0.00	53.53	47.51	54.00	6.49
11000.00	50.27	PK	V	38.50	6.57	37.06	58.28	52.26	74.00	21.74
11000.00	39.10	AV	V	38.50	6.57	37.06	47.11	41.09	54.00	12.91
16500.00	47.16	PK	V	38.20	8.63	39.30	54.69	48.67	74.00	25.33
16500.00	34.76	AV	V	38.20	8.63	39.30	42.29	36.27	54.00	17.73
5580 MHz										
5580.00	73.53	PK	H	34.13	3.56	0.00	111.22	105.2	N/A	N/A
5580.00	64.10	AV	H	34.13	3.56	0.00	101.79	95.77	N/A	N/A
5580.00	75.63	PK	V	34.13	3.56	0.00	113.32	107.3	N/A	N/A
5580.00	66.06	AV	V	34.13	3.56	0.00	103.75	97.73	N/A	N/A
11160.00	51.81	PK	V	38.66	6.58	37.16	59.89	53.87	74.00	20.13
11160.00	40.25	AV	V	38.66	6.58	37.16	48.33	42.31	54.00	11.69
16740.00	47.44	PK	V	39.16	8.67	39.05	56.22	50.2	74.00	23.80
16740.00	34.89	AV	V	39.16	8.67	39.05	43.67	37.65	54.00	16.35
5700 MHz										
5700.00	72.18	PK	H	34.18	3.68	0.00	110.04	104.02	N/A	N/A
5700.00	62.73	AV	H	34.18	3.68	0.00	100.59	94.57	N/A	N/A
5700.00	73.75	PK	V	34.18	3.68	0.00	111.61	105.59	N/A	N/A
5700.00	64.37	AV	V	34.18	3.68	0.00	102.23	96.21	N/A	N/A
5725.00	31.68	PK	V	34.19	3.69	0.00	69.56	63.54	74.00	10.46
5725.00	17.53	AV	V	34.19	3.69	0.00	55.41	49.39	54.00	4.61
11400.00	52.04	PK	V	38.90	6.59	37.30	60.23	54.21	74.00	19.79
11400.00	40.32	AV	V	38.90	6.59	37.30	48.51	42.49	54.00	11.51
17100.00	47.63	PK	V	40.78	8.75	38.70	58.46	52.44	74.00	21.56
17100.00	35.14	AV	V	40.78	8.75	38.70	45.97	39.95	54.00	14.05
5720MHz										
5720.00	74.21	PK	H	34.19	3.69	0.00	112.09	106.07	N/A	N/A
5720.00	64.85	AV	H	34.19	3.69	0.00	102.73	96.71	N/A	N/A
5720.00	76.48	PK	V	34.19	3.69	0.00	114.36	108.34	N/A	N/A
5720.00	67.07	AV	V	34.19	3.69	0.00	104.95	98.93	N/A	N/A
11440.00	49.52	PK	V	38.94	6.59	37.32	57.73	51.71	74.00	22.29
11440.00	38.86	AV	V	38.94	6.59	37.32	47.07	41.05	54.00	12.95
17160.00	47.25	PK	V	41.13	8.76	38.66	58.48	52.46	74.00	21.54
17160.00	35.08	AV	V	41.13	8.76	38.66	46.31	40.29	54.00	13.71



**802.11n ht20**

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBµV/m)	Extrapolation result (dBµV/m)	Limit (dBµV/m)	Margin (dB)
	Reading (dBµV)	Remark	Polar (H/V)	Factor (dB/m)						
5500 MHz										
5500.00	69.42	PK	H	34.10	3.54	0.00	107.06	101.04	N/A	N/A
5500.00	60.15	AV	H	34.10	3.54	0.00	97.79	91.77	N/A	N/A
5500.00	71.48	PK	V	34.10	3.54	0.00	109.12	103.1	N/A	N/A
5500.00	62.20	AV	V	34.10	3.54	0.00	99.84	93.82	N/A	N/A
5470.00	28.54	PK	V	34.05	3.56	0.00	66.15	60.13	74.00	13.87
5470.00	15.95	AV	V	34.05	3.56	0.00	53.56	47.54	54.00	6.46
11000.00	46.87	PK	V	38.50	6.57	37.06	54.88	48.86	74.00	25.14
11000.00	34.35	AV	V	38.50	6.57	37.06	42.36	36.34	54.00	17.66
16500.00	46.10	PK	V	38.20	8.63	39.30	53.63	47.61	74.00	26.39
16500.00	33.66	AV	V	38.20	8.63	39.30	41.19	35.17	54.00	18.83
5580 MHz										
5580.00	72.70	PK	H	34.13	3.56	0.00	110.39	104.37	N/A	N/A
5580.00	63.41	AV	H	34.13	3.56	0.00	101.10	95.08	N/A	N/A
5580.00	75.24	PK	V	34.13	3.56	0.00	112.93	106.91	N/A	N/A
5580.00	65.79	AV	V	34.13	3.56	0.00	103.48	97.46	N/A	N/A
11160.00	46.37	PK	V	38.66	6.58	37.16	54.45	48.43	74.00	25.57
11160.00	34.06	AV	V	38.66	6.58	37.16	42.14	36.12	54.00	17.88
16740.00	45.95	PK	V	39.16	8.67	39.05	54.73	48.71	74.00	25.29
16740.00	33.56	AV	V	39.16	8.67	39.05	42.34	36.32	54.00	17.68
5700 MHz										
5700.00	69.43	PK	H	34.18	3.68	0.00	107.29	101.27	N/A	N/A
5700.00	60.11	AV	H	34.18	3.68	0.00	97.97	91.95	N/A	N/A
5700.00	73.25	PK	V	34.18	3.68	0.00	111.11	105.09	N/A	N/A
5700.00	64.03	AV	V	34.18	3.68	0.00	101.89	95.87	N/A	N/A
5725.00	31.87	PK	V	34.19	3.69	0.00	69.75	63.73	74.00	10.27
5725.00	17.98	AV	V	34.19	3.69	0.00	55.86	49.84	54.00	4.16
11400.00	50.99	PK	V	38.90	6.59	37.30	59.18	53.16	74.00	20.84
11400.00	38.45	AV	V	38.90	6.59	37.30	46.64	40.62	54.00	13.38
17100.00	47.54	PK	V	40.78	8.75	38.70	58.37	52.35	74.00	21.65
17100.00	35.10	AV	V	40.78	8.75	38.70	45.93	39.91	54.00	14.09
5720MHz										
5720.00	74.76	PK	H	34.19	3.69	0.00	112.64	106.62	N/A	N/A
5720.00	65.12	AV	H	34.19	3.69	0.00	103.00	96.98	N/A	N/A
5720.00	76.65	PK	V	34.19	3.69	0.00	114.53	108.51	N/A	N/A
5720.00	67.58	AV	V	34.19	3.69	0.00	105.46	99.44	N/A	N/A
11440.00	48.66	PK	V	38.94	6.59	37.32	56.87	50.85	74.00	23.15
11440.00	36.73	AV	V	38.94	6.59	37.32	44.94	38.92	54.00	15.08
17160.00	46.85	PK	V	41.13	8.76	38.66	58.08	52.06	74.00	21.94
17160.00	34.52	AV	V	41.13	8.76	38.66	45.75	39.73	54.00	14.27

**802.11n ht40**

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBµV/m)	Extrapolation result (dBµV/m)	Limit (dBµV/m)	Margin (dB)
	Reading (dBµV)	Remark	Polar (H/V)	Factor (dB/m)						
5510 MHz										
5510.00	65.07	PK	H	34.10	3.54	0.00	102.71	96.69	N/A	N/A
5510.00	57.39	AV	H	34.10	3.54	0.00	95.03	89.01	N/A	N/A
5510.00	67.61	PK	V	34.10	3.54	0.00	105.25	99.23	N/A	N/A
5510.00	58.91	AV	V	34.10	3.54	0.00	96.55	90.53	N/A	N/A
5470.00	32.10	PK	V	34.05	3.56	0.00	69.71	63.69	74.00	10.31
5470.00	18.82	AV	V	34.05	3.56	0.00	56.43	50.41	54.00	3.59
11020.00	46.04	PK	V	38.52	6.57	37.07	54.06	48.04	74.00	25.96
11020.00	33.65	AV	V	38.52	6.57	37.07	41.67	35.65	54.00	18.35
16530.00	46.28	PK	V	38.32	8.64	39.27	53.97	47.95	74.00	26.05
16530.00	33.54	AV	V	38.32	8.64	39.27	41.23	35.21	54.00	18.79
5590 MHz										
5590.00	69.75	PK	H	34.14	3.57	0.00	107.46	101.44	N/A	N/A
5590.00	61.04	AV	H	34.14	3.57	0.00	98.75	92.73	N/A	N/A
5590.00	72.14	PK	V	34.14	3.57	0.00	109.85	103.83	N/A	N/A
5590.00	63.41	AV	V	34.14	3.57	0.00	101.12	95.1	N/A	N/A
11180.00	46.31	PK	V	38.68	6.58	37.17	54.40	48.38	74.00	25.62
11180.00	33.76	AV	V	38.68	6.58	37.17	41.85	35.83	54.00	18.17
16770.00	46.54	PK	V	39.28	8.68	39.01	55.49	49.47	74.00	24.53
16770.00	34.10	AV	V	39.28	8.68	39.01	43.05	37.03	54.00	16.97
5670 MHz										
5670.00	70.88	PK	H	34.17	3.65	0.00	108.70	102.68	N/A	N/A
5670.00	61.93	AV	H	34.17	3.65	0.00	99.75	93.73	N/A	N/A
5670.00	73.41	PK	V	34.17	3.65	0.00	111.23	105.21	N/A	N/A
5670.00	64.82	AV	V	34.17	3.65	0.00	102.64	96.62	N/A	N/A
5725.00	29.67	PK	V	34.19	3.69	0.00	67.55	61.53	74.00	12.47
5725.00	17.52	AV	V	34.19	3.69	0.00	55.40	49.38	54.00	4.62
11340.00	46.38	PK	V	38.84	6.58	37.26	54.54	48.52	74.00	25.48
11340.00	33.78	AV	V	38.84	6.58	37.26	41.94	35.92	54.00	18.08
17010.00	46.59	PK	V	40.26	8.72	38.76	56.81	50.79	74.00	23.21
17010.00	34.13	AV	V	40.26	8.72	38.76	44.35	38.33	54.00	15.67
5710MHz										
5710.00	71.63	PK	H	34.18	3.68	0.00	109.49	103.47	N/A	N/A
5710.00	61.72	AV	H	34.18	3.68	0.00	99.58	93.56	N/A	N/A
5710.00	73.82	PK	V	34.18	3.68	0.00	111.68	105.66	N/A	N/A
5710.00	64.05	AV	V	34.18	3.68	0.00	101.91	95.89	N/A	N/A
11420.00	46.25	PK	V	38.92	6.59	37.31	54.45	48.43	74.00	25.57
11420.00	33.82	AV	V	38.92	6.59	37.31	42.02	36	54.00	18.00
17130.00	46.68	PK	V	40.95	8.75	38.68	57.70	51.68	74.00	22.32
17130.00	34.54	AV	V	40.95	8.75	38.68	45.56	39.54	54.00	14.46

**802.11 ac80**

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBµV/m)	Extrapolation result (dBµV/m)	Limit (dBµV/m)	Margin (dB)
	Reading (dBµV)	Remark	Polar (H/V)	Factor (dB/m)						
5530 MHz										
5530.00	61.08	PK	H	34.11	3.55	0.00	98.74	92.72	N/A	N/A
5530.00	51.64	AV	H	34.11	3.55	0.00	89.30	83.28	N/A	N/A
5530.00	63.21	PK	V	34.11	3.55	0.00	100.87	94.85	N/A	N/A
5530.00	53.74	AV	V	34.11	3.55	0.00	91.40	85.38	N/A	N/A
5470.00	27.16	PK	V	34.05	3.56	0.00	64.77	58.75	74.00	15.25
5470.00	15.45	AV	V	34.05	3.56	0.00	53.06	47.04	54.00	6.96
11060.00	45.89	PK	V	38.56	6.57	37.10	53.92	47.9	74.00	26.10
11060.00	33.97	AV	V	38.56	6.57	37.10	42.00	35.98	54.00	18.02
16590.00	46.57	PK	V	38.56	8.65	39.20	54.58	48.56	74.00	25.44
16590.00	34.41	AV	V	38.56	8.65	39.20	42.42	36.4	54.00	17.60
5610 MHz										
5610.00	68.73	PK	H	34.14	3.58	0.00	106.45	100.43	N/A	N/A
5610.00	59.31	AV	H	34.14	3.58	0.00	97.03	91.01	N/A	N/A
5610.00	71.13	PK	V	34.14	3.58	0.00	108.85	102.83	N/A	N/A
5610.00	62.54	AV	V	34.14	3.58	0.00	100.26	94.24	N/A	N/A
5725.00	27.32	PK	V	34.19	3.69	0.00	65.20	59.18	74.00	14.82
5725.00	15.58	AV	V	34.19	3.69	0.00	53.46	47.44	54.00	6.56
11220.00	45.63	PK	V	38.72	6.58	37.19	53.74	47.72	74.00	26.28
11220.00	33.87	AV	V	38.72	6.58	37.19	41.98	35.96	54.00	18.04
16830.00	46.38	PK	V	39.52	8.69	38.95	55.64	49.62	74.00	24.38
16830.00	34.25	AV	V	39.52	8.69	38.95	43.51	37.49	54.00	16.51
5690MHz										
5690.00	69.05	PK	H	34.18	3.67	0.00	106.90	100.88	N/A	N/A
5690.00	59.47	AV	H	34.18	3.67	0.00	97.32	91.3	N/A	N/A
5690.00	71.27	PK	V	34.18	3.67	0.00	109.12	103.1	N/A	N/A
5690.00	62.68	AV	V	34.18	3.67	0.00	100.53	94.51	N/A	N/A
11380.00	45.86	PK	V	38.88	6.59	37.29	54.04	48.02	74.00	25.98
11380.00	33.52	AV	V	38.88	6.59	37.29	41.70	35.68	54.00	18.32
17070.00	46.58	PK	V	40.61	8.74	38.72	57.21	51.19	74.00	22.81
17070.00	34.65	AV	V	40.61	8.74	38.72	45.28	39.26	54.00	14.74

**5725-5850MHz:  
802.11a**

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBµV/m)	Extrapolation result (dBµV/m)	Limit (dBµV/m)	Margin (dB)
	Reading (dBµV)	Remark	Polar (H/V)	Factor (dB/m)						
5745MHz										
5745.00	74.28	PK	H	34.20	3.69	0.00	112.17	106.15	N/A	N/A
5745.00	64.05	AV	H	34.20	3.69	0.00	101.94	95.92	N/A	N/A
5745.00	76.54	PK	V	34.20	3.69	0.00	114.43	108.41	N/A	N/A
5745.00	67.61	AV	V	34.20	3.69	0.00	105.50	99.48	N/A	N/A
5725.00	48.19	PK	V	34.19	3.69	0.00	86.07	80.05	122.20	42.15
5720.00	36.65	PK	V	34.19	3.69	0.00	74.53	68.51	110.80	42.29
5700.00	26.46	PK	V	34.18	3.68	0.00	64.32	58.3	105.20	46.90
5650.00	26.14	PK	V	34.16	3.63	0.00	63.93	57.91	68.20	10.29
11490.00	45.98	PK	V	38.99	6.59	37.35	54.21	48.19	74.00	25.81
11490.00	34.13	AV	V	38.99	6.59	37.35	42.36	36.34	54.00	17.66
17235.00	47.15	PK	V	41.56	8.78	38.61	58.88	52.86	74.00	21.14
17235.00	35.02	AV	V	41.56	8.78	38.61	46.75	40.73	54.00	13.27
5785 MHz										
5785.00	73.24	PK	H	34.21	3.71	0.00	111.16	105.14	N/A	N/A
5785.00	62.97	AV	H	34.21	3.71	0.00	100.89	94.87	N/A	N/A
5785.00	76.18	PK	V	34.21	3.71	0.00	114.10	108.08	N/A	N/A
5785.00	66.05	AV	V	34.21	3.71	0.00	103.97	97.95	N/A	N/A
11570.00	46.13	PK	V	39.00	6.61	37.44	54.30	48.28	74.00	25.72
11570.00	34.22	AV	V	39.00	6.61	37.44	42.39	36.37	54.00	17.63
17355.00	46.87	PK	V	42.26	8.81	38.52	59.42	53.4	74.00	20.60
17355.00	34.74	AV	V	42.26	8.81	38.52	47.29	41.27	54.00	12.73
5825 MHz										
5825.00	73.46	PK	H	34.23	3.73	0.00	111.42	105.4	N/A	N/A
5825.00	63.52	AV	H	34.23	3.73	0.00	101.48	95.46	N/A	N/A
5825.00	75.77	PK	V	34.23	3.73	0.00	113.73	107.71	N/A	N/A
5825.00	66.01	AV	V	34.23	3.73	0.00	103.97	97.95	N/A	N/A
5850.00	30.93	PK	V	34.24	3.75	0.00	68.92	62.9	122.20	59.30
5855.00	29.17	PK	V	34.24	3.75	0.00	67.16	61.14	110.80	49.66
5875.00	26.45	PK	V	34.25	3.77	0.00	64.47	58.45	105.20	46.75
5925.00	26.31	PK	V	34.27	3.80	0.00	64.38	58.36	68.20	9.84
11650.00	45.89	PK	V	39.00	6.64	37.53	54.00	47.98	74.00	26.02
11650.00	33.76	AV	V	39.00	6.64	37.53	41.87	35.85	54.00	18.15
17475.00	46.35	PK	V	42.96	8.84	38.44	59.71	53.69	74.00	20.31
17475.00	34.47	AV	V	42.96	8.84	38.44	47.83	41.81	54.00	12.19

**802.11n ht20**

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBµV/m)	Extrapolation result (dBµV/m)	Limit (dBµV/m)	Margin (dB)
	Reading (dBµV)	Remark	Polar (H/V)	Factor (dB/m)						
5745MHz										
5745.00	74.73	PK	H	34.20	3.69	0.00	112.62	106.6	N/A	N/A
5745.00	64.31	AV	H	34.20	3.69	0.00	102.20	96.18	N/A	N/A
5745.00	76.97	PK	V	34.20	3.69	0.00	114.86	108.84	N/A	N/A
5745.00	66.26	AV	V	34.20	3.69	0.00	104.15	98.13	N/A	N/A
5725.00	49.45	PK	V	34.19	3.69	0.00	87.33	81.31	122.20	40.89
5720.00	39.58	PK	V	34.19	3.69	0.00	77.46	71.44	110.80	39.36
5700.00	26.68	PK	V	34.18	3.68	0.00	64.54	58.52	105.20	46.68
5650.00	26.14	PK	V	34.16	3.63	0.00	63.93	57.91	68.20	10.29
11490.00	45.99	PK	V	38.99	6.59	37.35	54.22	48.2	74.00	25.80
11490.00	34.25	AV	V	38.99	6.59	37.35	42.48	36.46	54.00	17.54
17235.00	46.53	PK	V	41.56	8.78	38.61	58.26	52.24	74.00	21.76
17235.00	34.82	AV	V	41.56	8.78	38.61	46.55	40.53	54.00	13.47
5785 MHz										
5785.00	72.94	PK	H	34.21	3.71	0.00	110.86	104.84	N/A	N/A
5785.00	63.02	AV	H	34.21	3.71	0.00	100.94	94.92	N/A	N/A
5785.00	76.35	PK	V	34.21	3.71	0.00	114.27	108.25	N/A	N/A
5785.00	66.28	AV	V	34.21	3.71	0.00	104.20	98.18	N/A	N/A
11570.00	46.01	PK	V	39.00	6.61	37.44	54.18	48.16	74.00	25.84
11570.00	34.15	AV	V	39.00	6.61	37.44	42.32	36.3	54.00	17.70
17355.00	46.52	PK	V	42.26	8.81	38.52	59.07	53.05	74.00	20.95
17355.00	34.58	AV	V	42.26	8.81	38.52	47.13	41.11	54.00	12.89
5825 MHz										
5825.00	72.76	PK	H	34.23	3.73	0.00	110.72	104.7	N/A	N/A
5825.00	62.14	AV	H	34.23	3.73	0.00	100.10	94.08	N/A	N/A
5825.00	74.47	PK	V	34.23	3.73	0.00	112.43	106.41	N/A	N/A
5825.00	64.25	AV	V	34.23	3.73	0.00	102.21	96.19	N/A	N/A
5850.00	38.24	PK	V	34.24	3.75	0.00	76.23	70.21	122.20	51.99
5855.00	33.27	PK	V	34.24	3.75	0.00	71.26	65.24	110.80	45.56
5875.00	27.06	PK	V	34.25	3.77	0.00	65.08	59.06	105.20	46.14
5925.00	26.43	PK	V	34.27	3.80	0.00	64.50	58.48	68.20	9.72
11650.00	45.76	PK	V	39.00	6.64	37.53	53.87	47.85	74.00	26.15
11650.00	33.61	AV	V	39.00	6.64	37.53	41.72	35.7	54.00	18.30
17475.00	45.98	PK	V	42.96	8.84	38.44	59.34	53.32	74.00	20.68
17475.00	33.85	AV	V	42.96	8.84	38.44	47.21	41.19	54.00	12.81

**802.11n ht40**

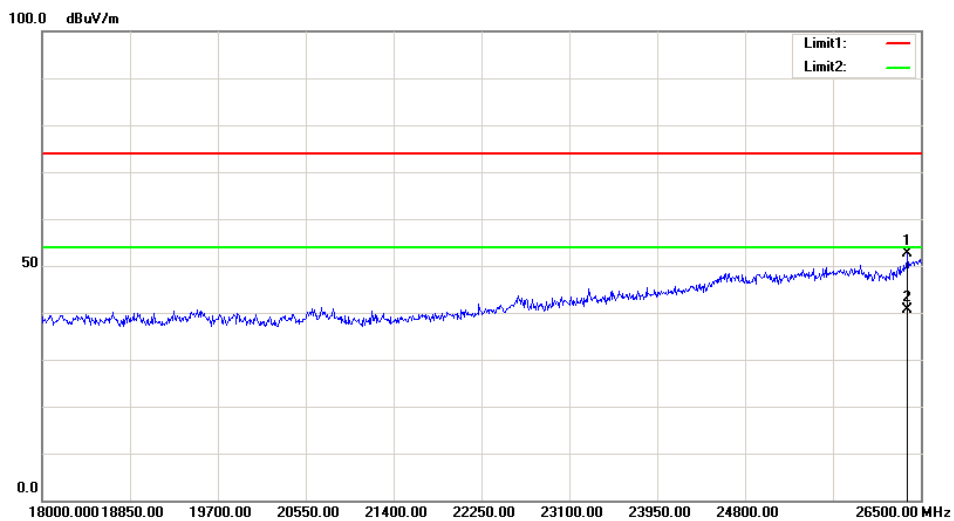
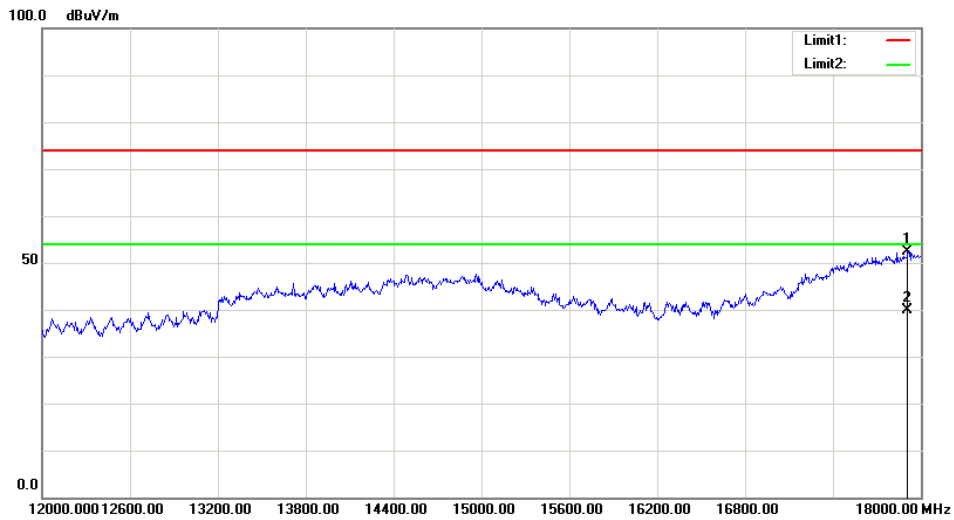
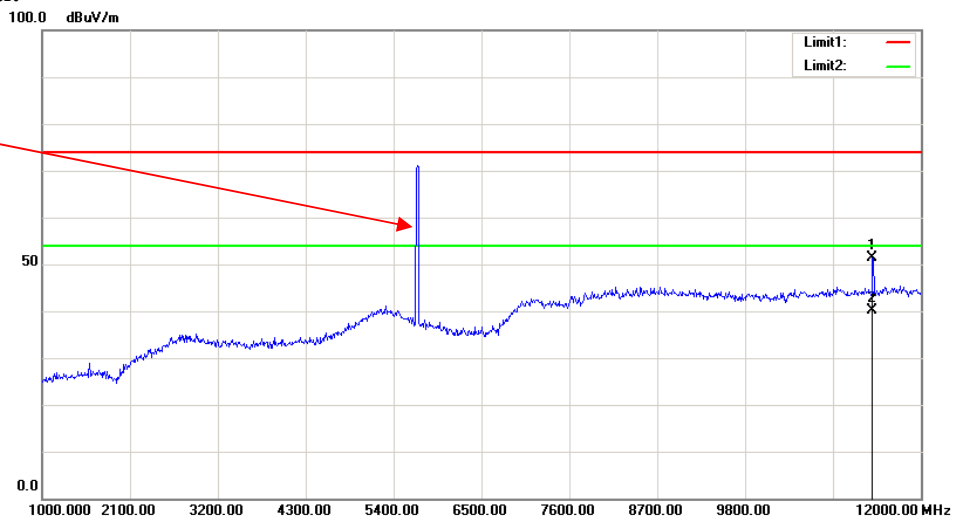
Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBµV/m)	Extrapolation result (dBµV/m)	Limit (dBµV/m)	Margin (dB)
	Reading (dBµV)	Remark	Polar (H/V)	Factor (dB/m)						
5755MHz										
5755.00	71.82	PK	H	34.20	3.70	0.00	109.72	103.7	N/A	N/A
5755.00	61.18	AV	H	34.20	3.70	0.00	99.08	93.06	N/A	N/A
5755.00	76.34	PK	V	34.20	3.70	0.00	114.24	108.22	N/A	N/A
5755.00	65.42	AV	V	34.20	3.70	0.00	103.32	97.3	N/A	N/A
5725.00	50.13	PK	V	34.19	3.69	0.00	88.01	81.99	122.20	40.21
5720.00	46.90	PK	V	34.19	3.69	0.00	84.78	78.76	110.80	32.04
5700.00	31.21	PK	V	34.18	3.68	0.00	69.07	63.05	105.20	42.15
5650.00	26.83	PK	V	34.16	3.63	0.00	64.62	58.6	68.20	9.60
11510.00	45.36	PK	V	39.00	6.59	37.37	53.58	47.56	74.00	26.44
11510.00	33.54	AV	V	39.00	6.59	37.37	41.76	35.74	54.00	18.26
17265.00	46.13	PK	V	41.74	8.79	38.58	58.08	52.06	74.00	21.94
17265.00	34.85	AV	V	41.74	8.79	38.58	46.80	40.78	54.00	13.22
5795 MHz										
5795.00	72.31	PK	H	34.22	3.71	0.00	110.24	104.22	N/A	N/A
5795.00	62.08	AV	H	34.22	3.71	0.00	100.01	93.99	N/A	N/A
5795.00	74.12	PK	V	34.22	3.71	0.00	112.05	106.03	N/A	N/A
5795.00	63.87	AV	V	34.22	3.71	0.00	101.80	95.78	N/A	N/A
5850.00	30.62	PK	V	34.24	3.75	0.00	68.61	62.59	122.20	59.61
5855.00	27.53	PK	V	34.24	3.75	0.00	65.52	59.5	110.80	51.30
5875.00	26.45	PK	V	34.25	3.77	0.00	64.47	58.45	105.20	46.75
5925.00	25.63	PK	V	34.27	3.80	0.00	63.70	57.68	68.20	10.52
11590.00	46.25	PK	V	39.00	6.62	37.46	54.41	48.39	74.00	25.61
11590.00	33.96	AV	V	39.00	6.62	37.46	42.12	36.1	54.00	17.90
17385.00	46.81	PK	V	42.43	8.82	38.50	59.56	53.54	74.00	20.46
17385.00	34.52	AV	V	42.43	8.82	38.50	47.27	41.25	54.00	12.75

**802.11 ac80**

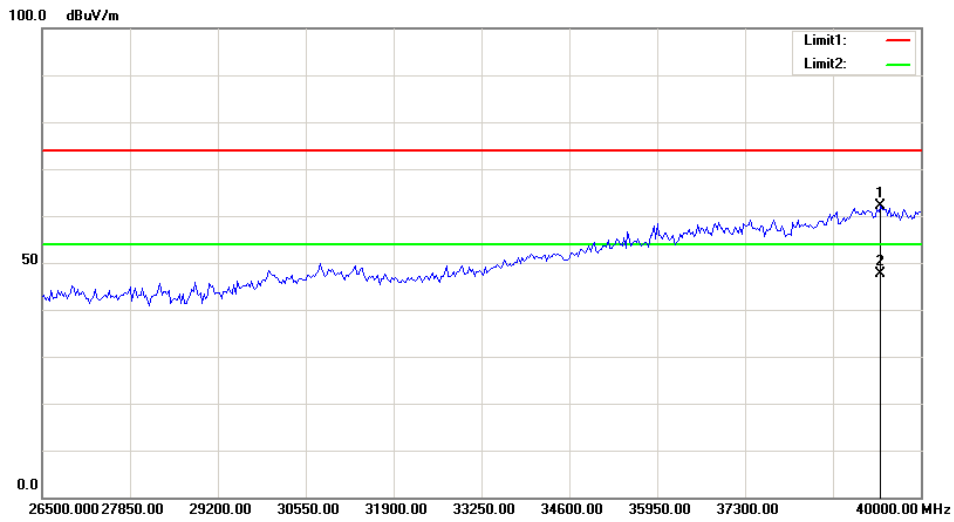
Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dB $\mu$ V/m)	Extrapolation result (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)
	Reading (dB $\mu$ V)	Remark	Polar (H/V)	Factor (dB/m)						
5775 MHz										
5775.00	66.76	PK	H	34.21	3.70	0.00	104.67	98.65	N/A	N/A
5775.00	55.91	AV	H	34.21	3.70	0.00	93.82	87.8	N/A	N/A
5775.00	68.83	PK	V	34.21	3.70	0.00	106.74	100.72	N/A	N/A
5775.00	57.82	AV	V	34.21	3.70	0.00	95.73	89.71	N/A	N/A
5725.00	34.56	PK	V	34.19	3.69	0.00	72.44	66.42	122.20	55.78
5720.00	34.05	PK	V	34.19	3.69	0.00	71.93	65.91	110.80	44.89
5700.00	29.16	PK	V	34.18	3.68	0.00	67.02	61	105.20	44.20
5650.00	26.35	PK	V	34.16	3.63	0.00	64.14	58.12	68.20	10.08
5850.00	31.49	PK	V	34.24	3.75	0.00	69.48	63.46	122.20	58.74
5855.00	30.17	PK	V	34.24	3.75	0.00	68.16	62.14	110.80	48.66
5875.00	27.83	PK	V	34.25	3.77	0.00	65.85	59.83	105.20	45.37
5925.00	26.43	PK	V	34.27	3.80	0.00	64.50	58.48	68.20	9.72
11550.00	45.83	PK	V	39.00	6.61	37.42	54.02	48	74.00	26.00
11550.00	33.82	AV	V	39.00	6.61	37.42	42.01	35.99	54.00	18.01
17325.00	46.25	PK	V	42.09	8.80	38.54	58.60	52.58	74.00	21.42
17325.00	34.87	AV	V	42.09	8.80	38.54	47.22	41.2	54.00	12.80

**Worst Test Plots (802.11a 5580MHz)**  
**Horizontal:**

Fundamental  
Test with Band  
Rejection Filter

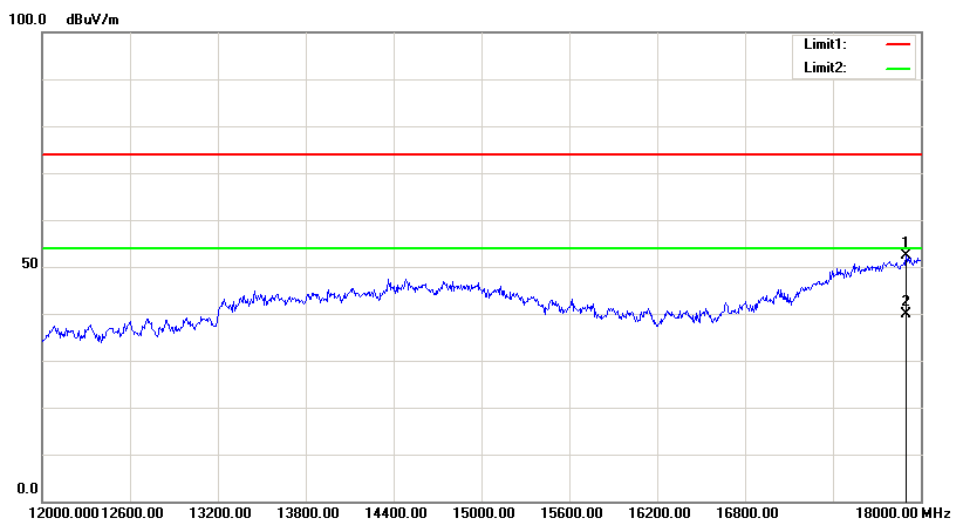
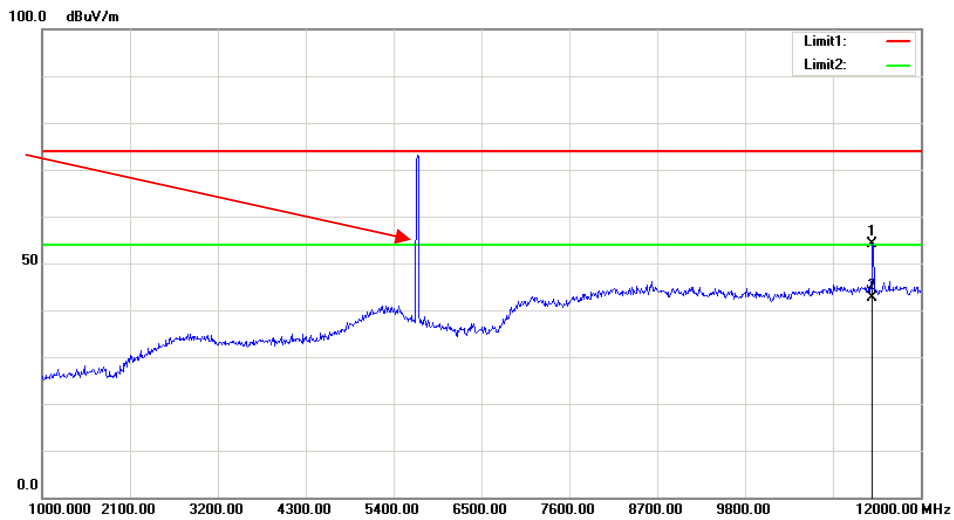


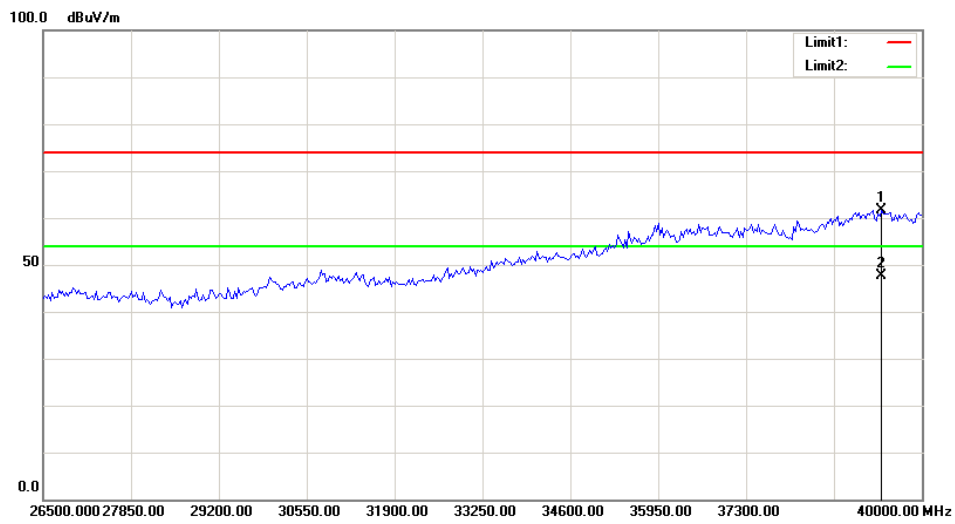
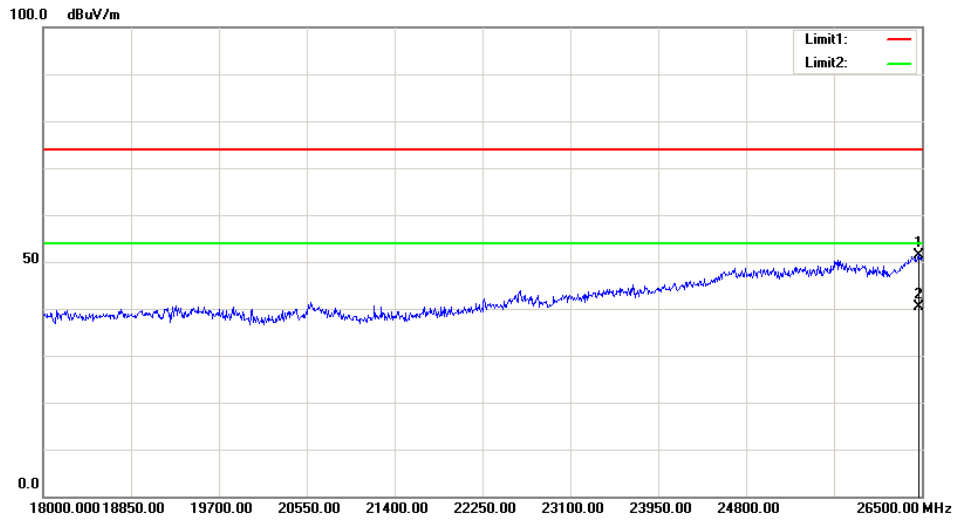




**Vertical:**

Fundamental Test with Band Rejection Filter





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## **FCC §15.407(b) –OUT- OF-BAND EMISSIONS**

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### **Applicable Standard**

FCC §15.407

(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.

(ii) Devices certified before March 2, 2017 with antenna gain greater than 10 dBi may demonstrate compliance with the emission limits in §15.247(d), but manufacturing, marketing and importing of devices certified under this alternative must cease by March 2, 2018. Devices certified before March 2, 2018 with antenna gain of 10 dBi or less may demonstrate compliance with the emission limits in §15.247(d), but manufacturing, marketing and importing of devices certified under this alternative must cease before March 2, 2020.

(5) The emission measurements shall be performed using a minimum resolution bandwidth of 1 MHz. A lower resolution bandwidth may be employed near the band edge, when necessary, provided the measured energy is integrated to show the total power over 1 MHz.

### **Test Procedure**

According to KDB 789033 D02 General U-NII Test Procedures New Rules v02r01.

**Test Equipment List and Details**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	Signal Analyzer	FSIQ26	831929/005	2018-08-03	2019-08-03
yzjingcheng	Coaxial Cable	KTRFBU-141-50	41005012	2017-09-05	2019-09-05

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

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

<b>Temperature:</b>	27.3~27.8°C
<b>Relative Humidity:</b>	34 ~59 %
<b>ATM Pressure:</b>	100.4 ~ 100.8 kPa

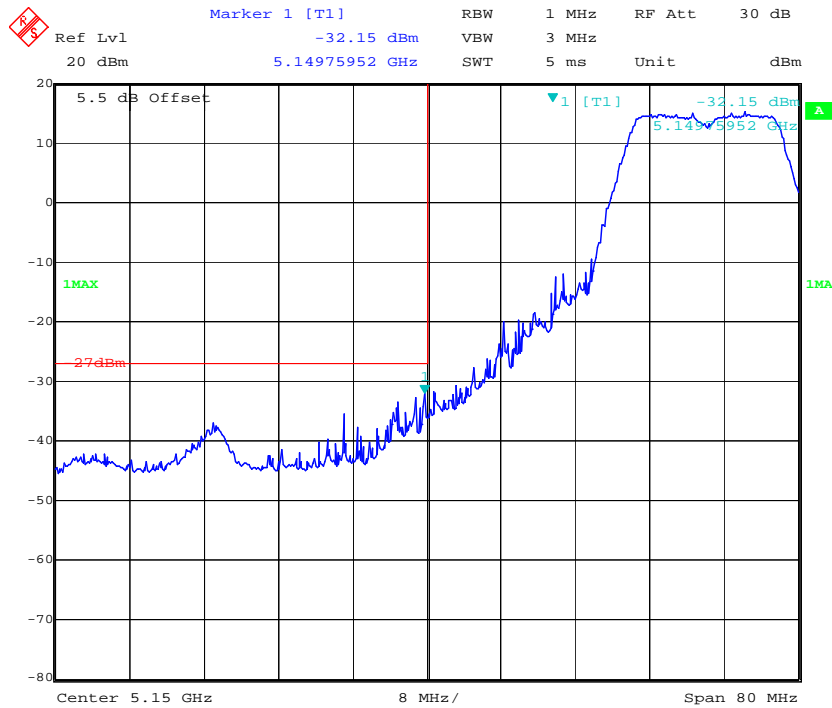
*The testing was performed by Swim Lv on 2018-09-25 & 2018-10-30*

**Test Result:** Pass, the antenna gain was added in the test result.

Please refer to the following plots.

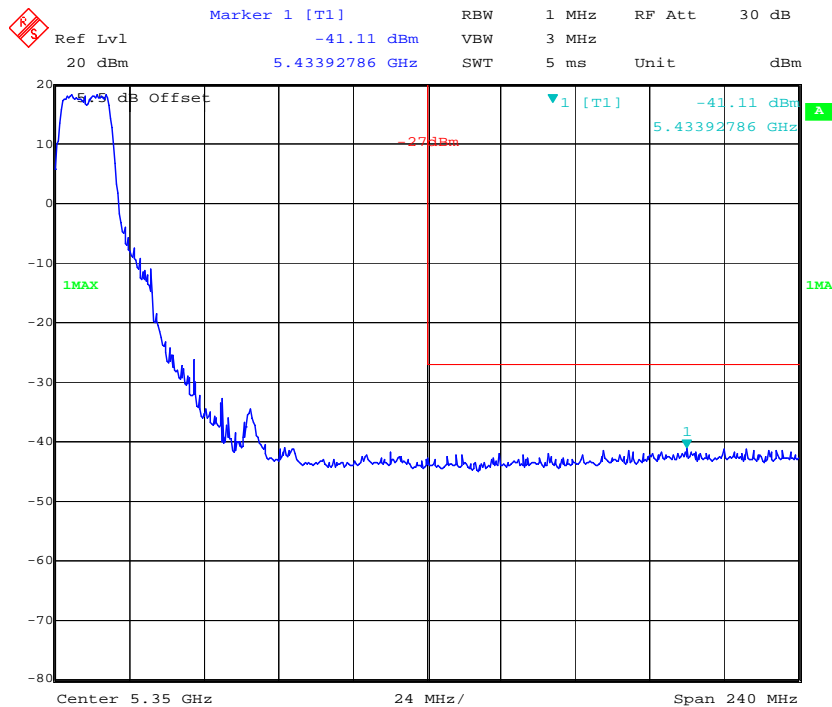
5150-5250MHz

802.11a 5180MHz



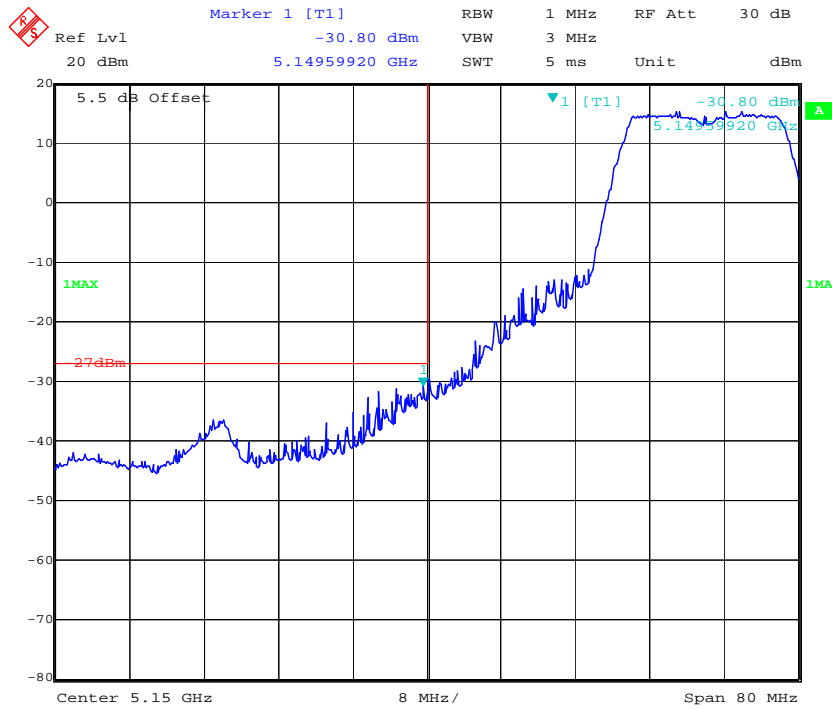
Date: 25.SEP.2018 23:23:12

802.11a 5240MHz



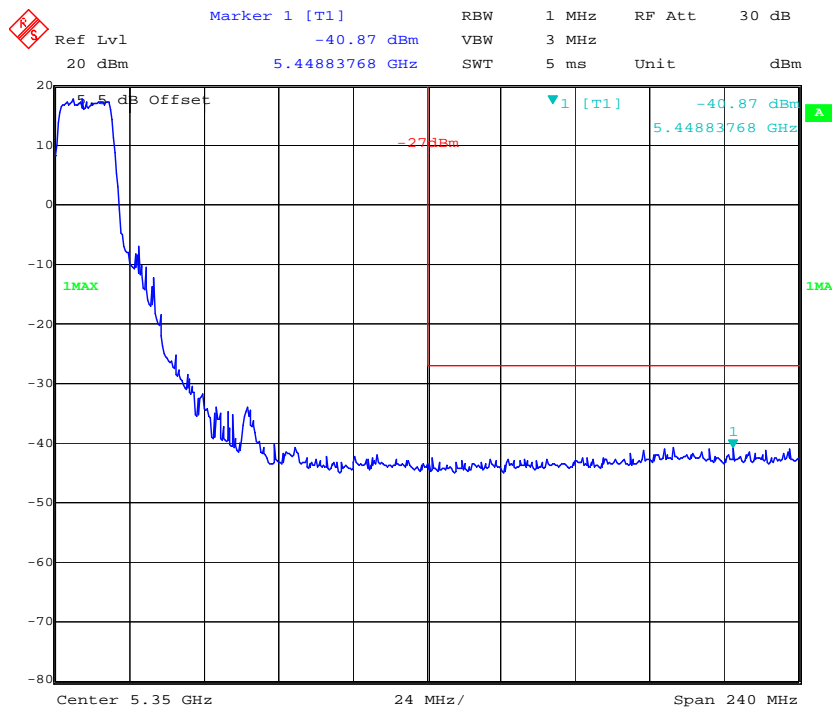
Date: 25.SEP.2018 19:51:19

**802.11n ht20 5180MHz**



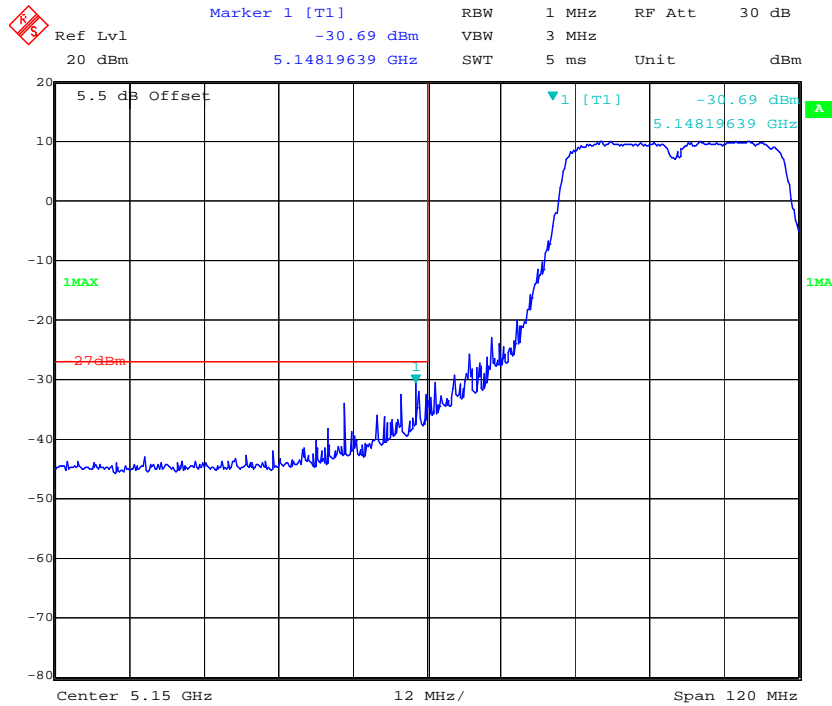
Date: 25.SEP.2018 23:50:06

**802.11n ht20 5240MHz**

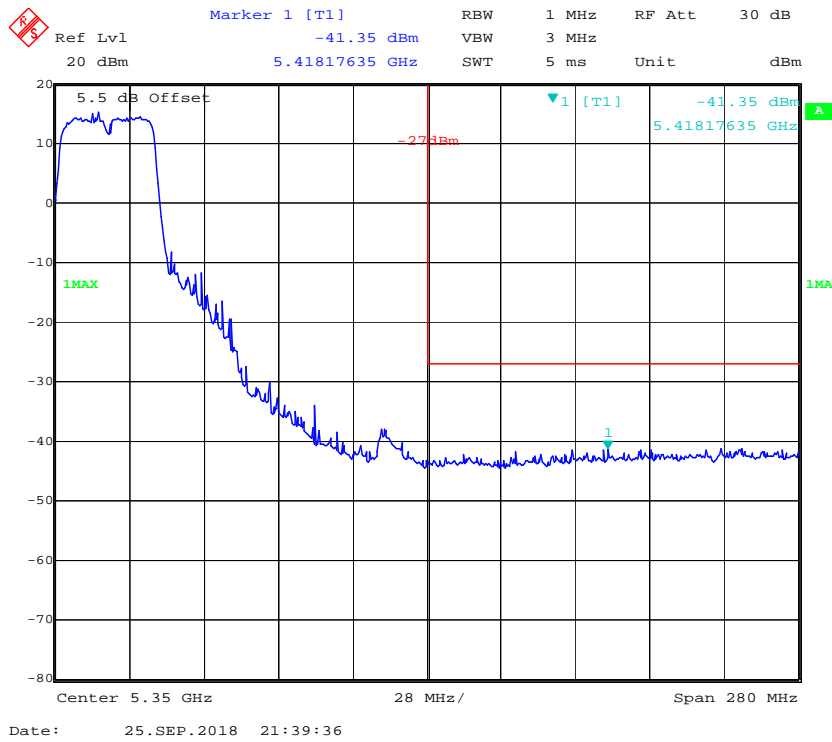


Date: 25.SEP.2018 19:57:31

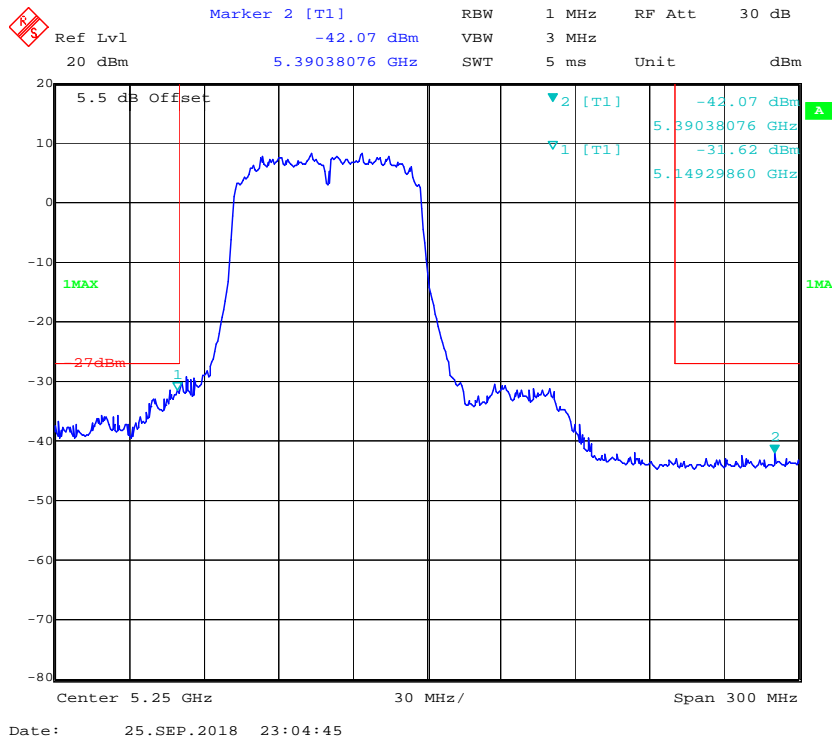
**802.11n ht40 5190MHz**



**802.11n ht40 5230MHz**



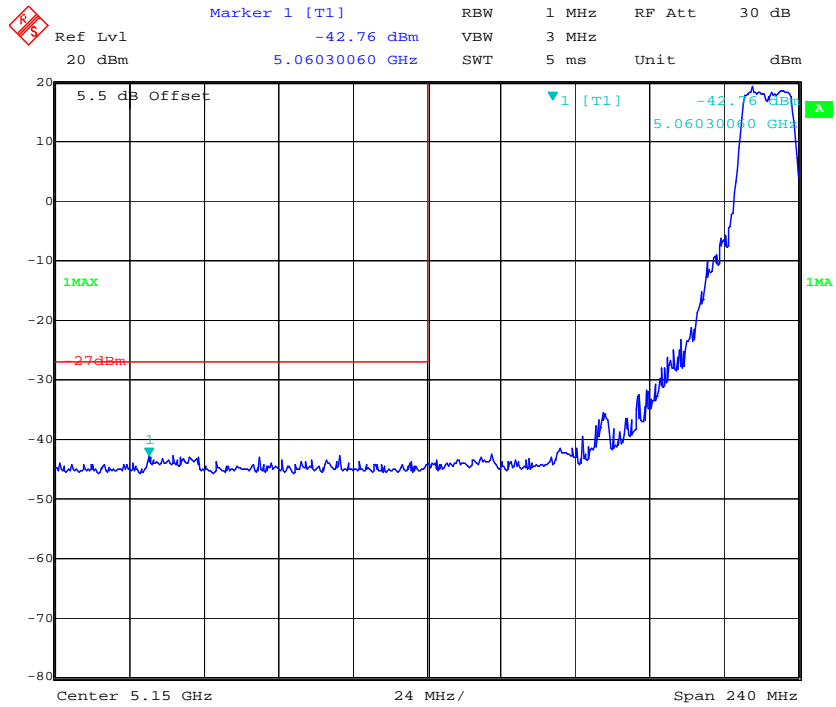
### 802.11 ac80 5210MHz





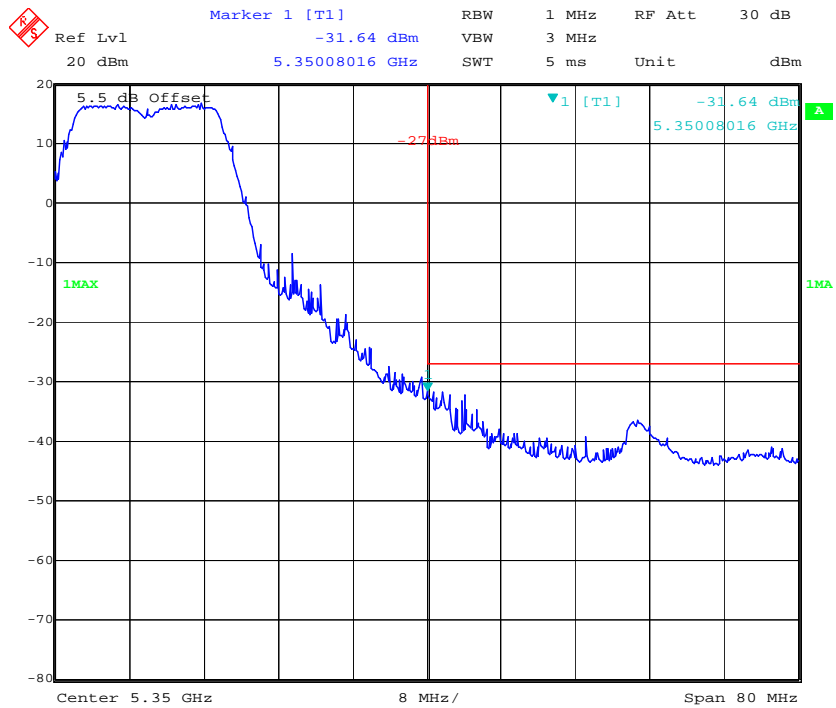
5250-5350MHz

802.11a 5260MHz



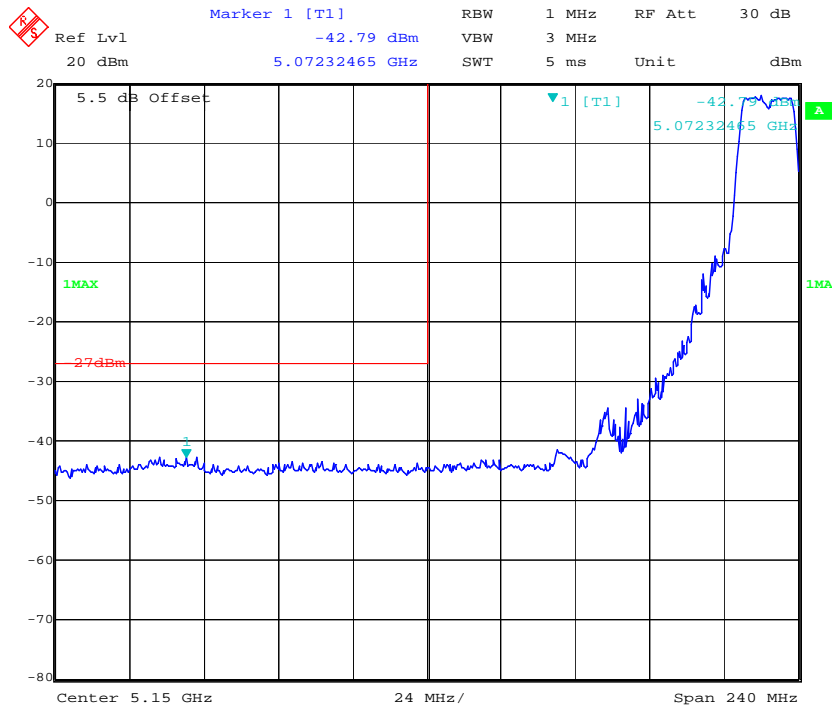
Date: 25.SEP.2018 20:31:53

802.11a 5320MHz

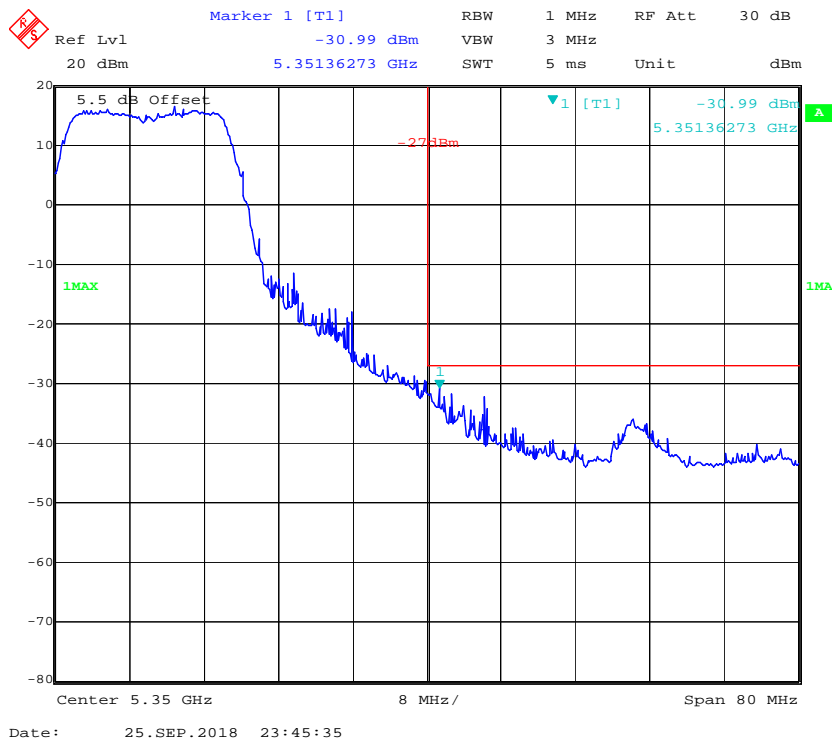


Date: 25.SEP.2018 23:26:30

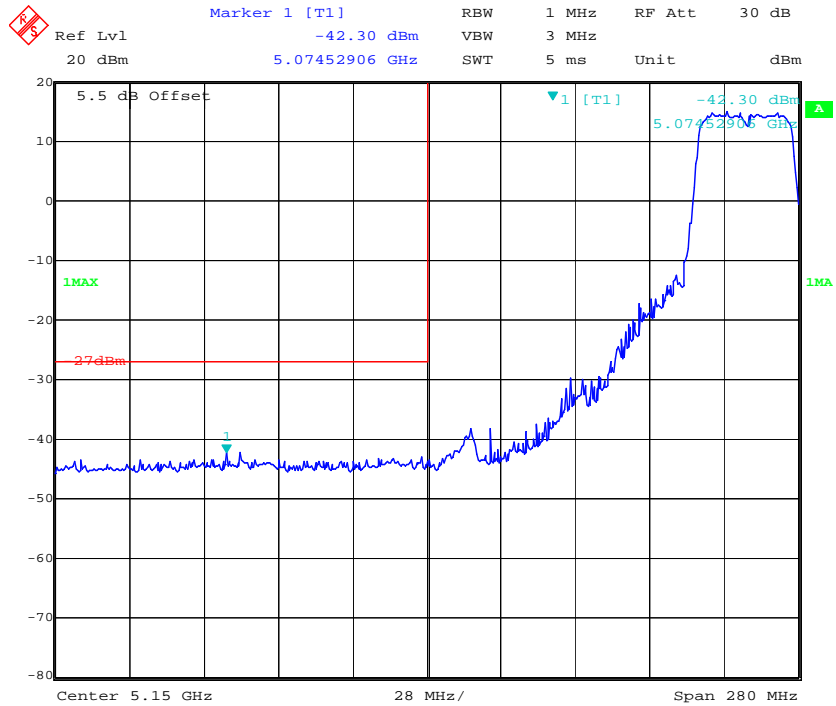
**802.11n ht20 5260MHz**



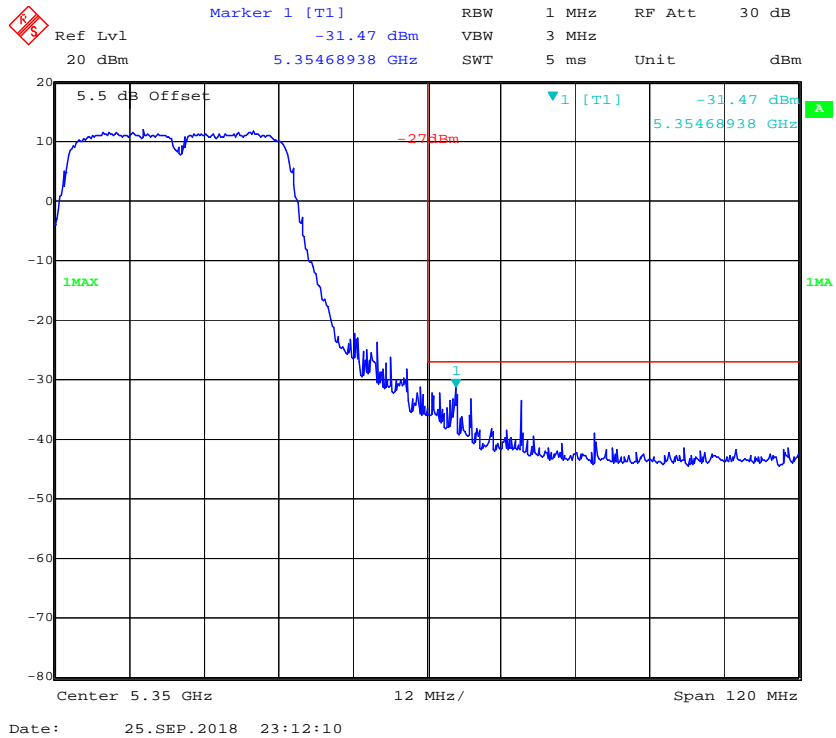
**802.11n ht20 5320MHz**



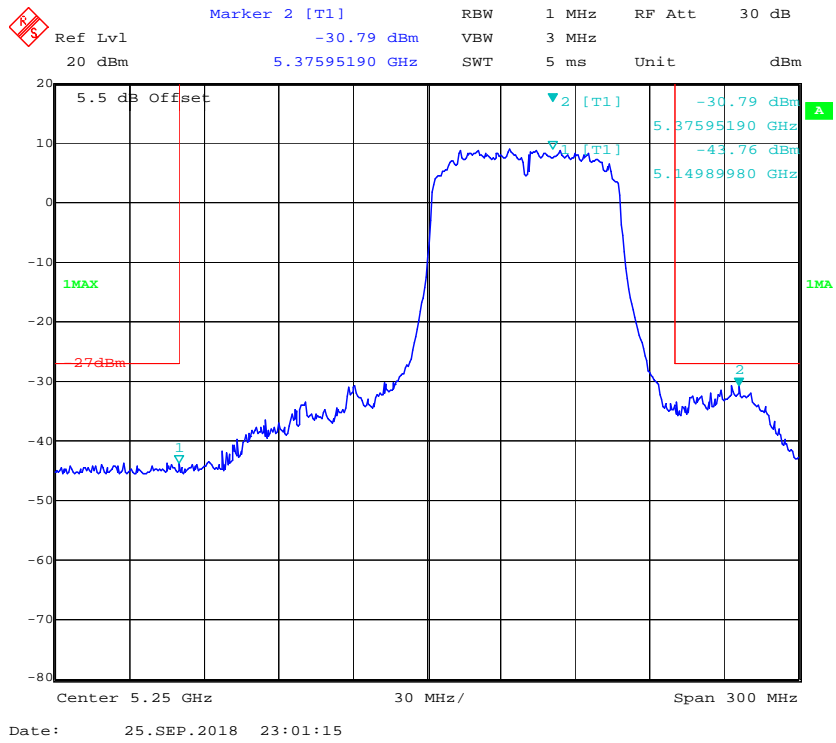
### 802.11n ht40 5270MHz



### 802.11n ht40 5310MHz

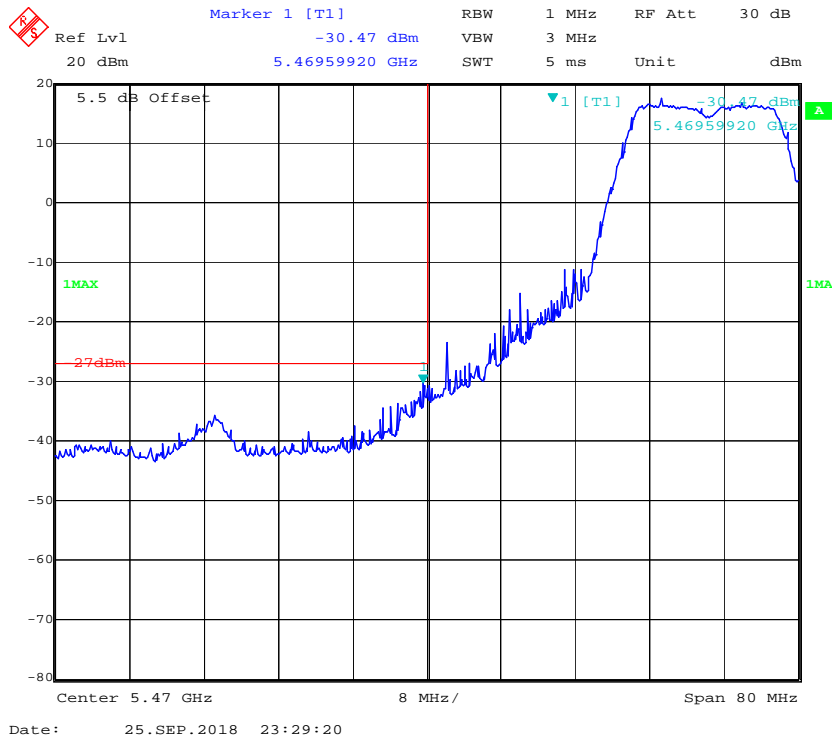


### 802.11 ac80 5290MHz

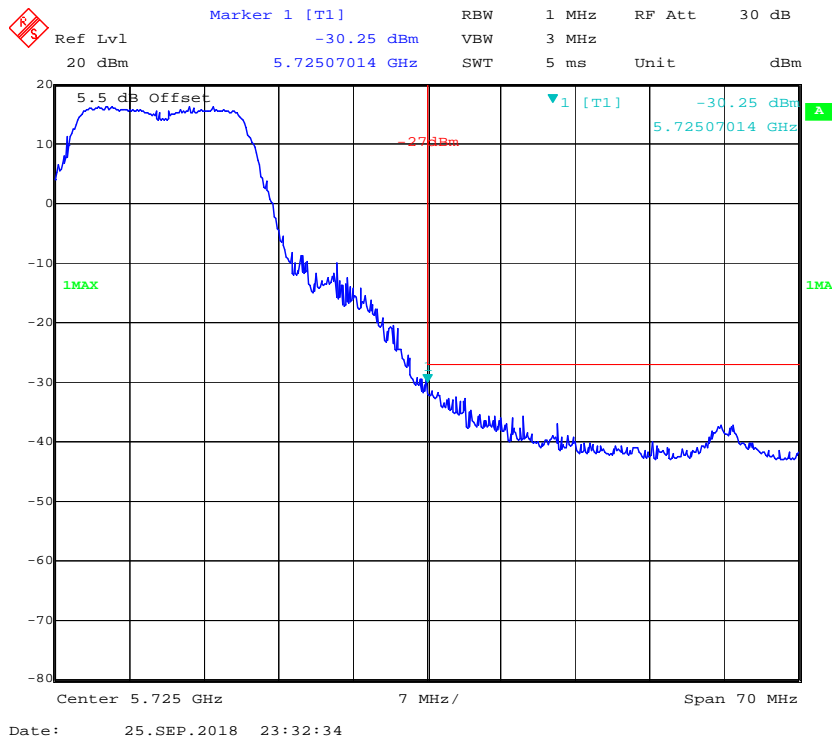


5470-5725MHz

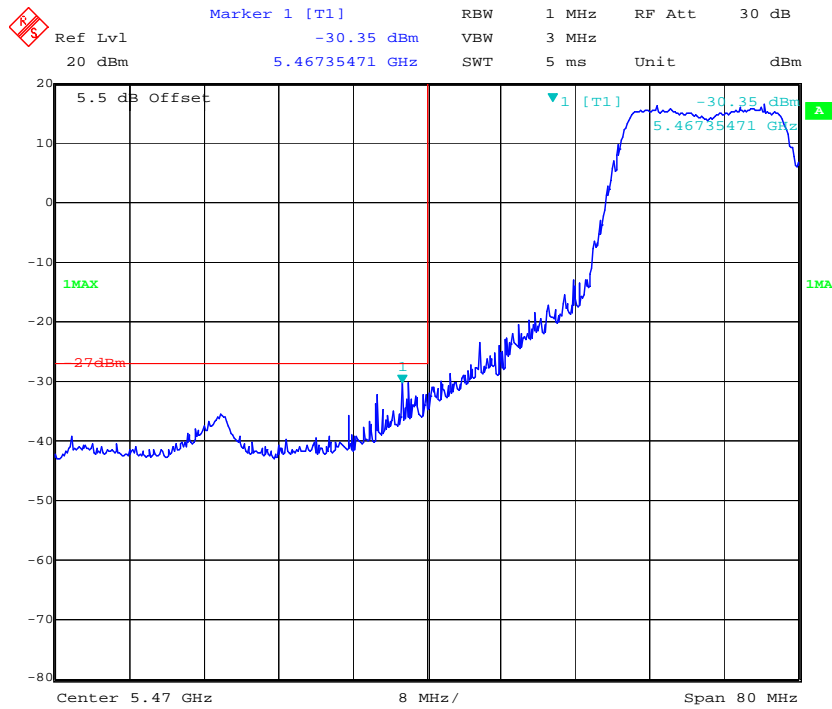
802.11a 5500MHz



802.11a 5700MHz

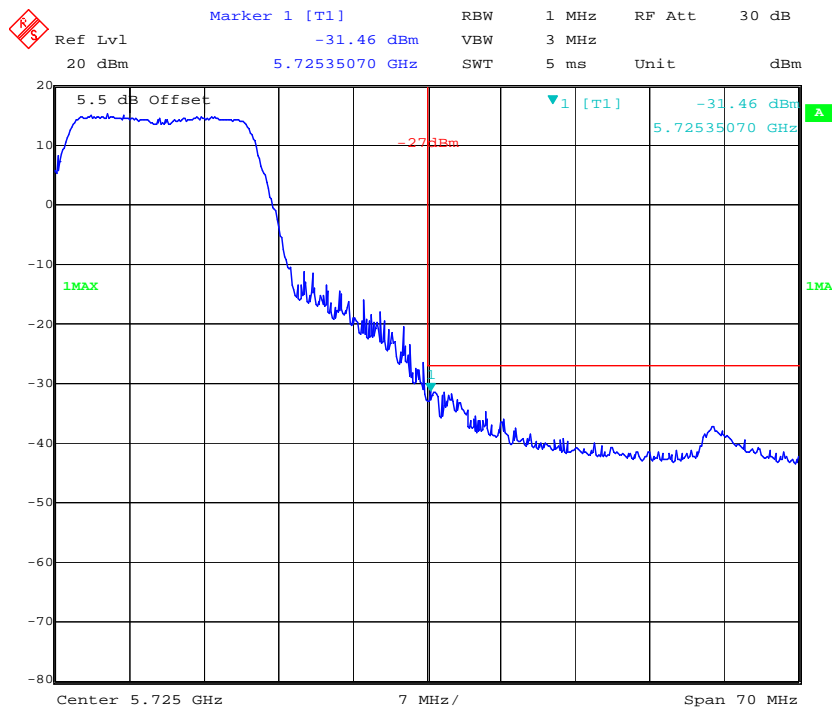


### 802.11n ht20 5500MHz



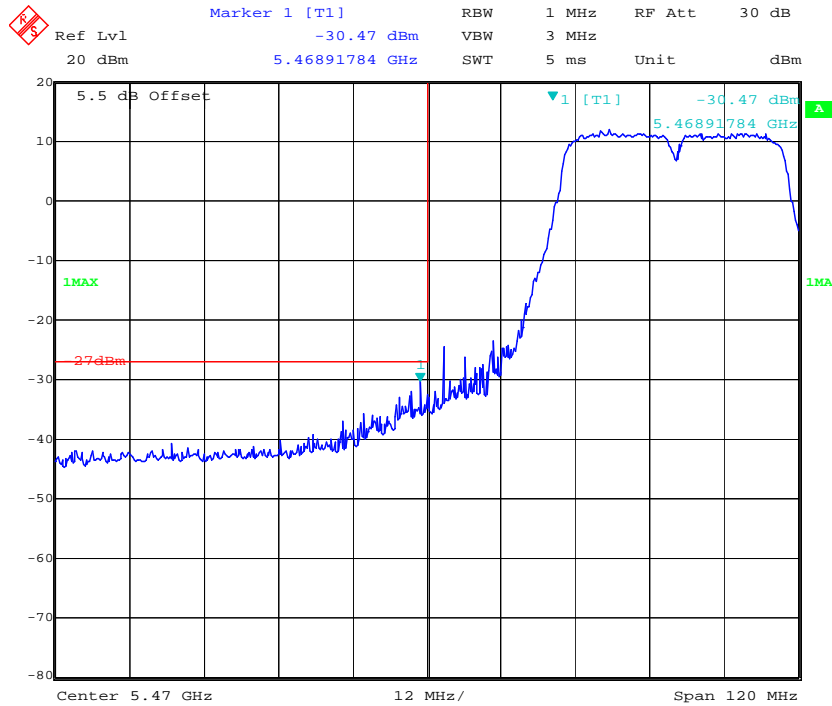
Date: 25.SEP.2018 23:38:54

### 802.11n ht20 5700MHz

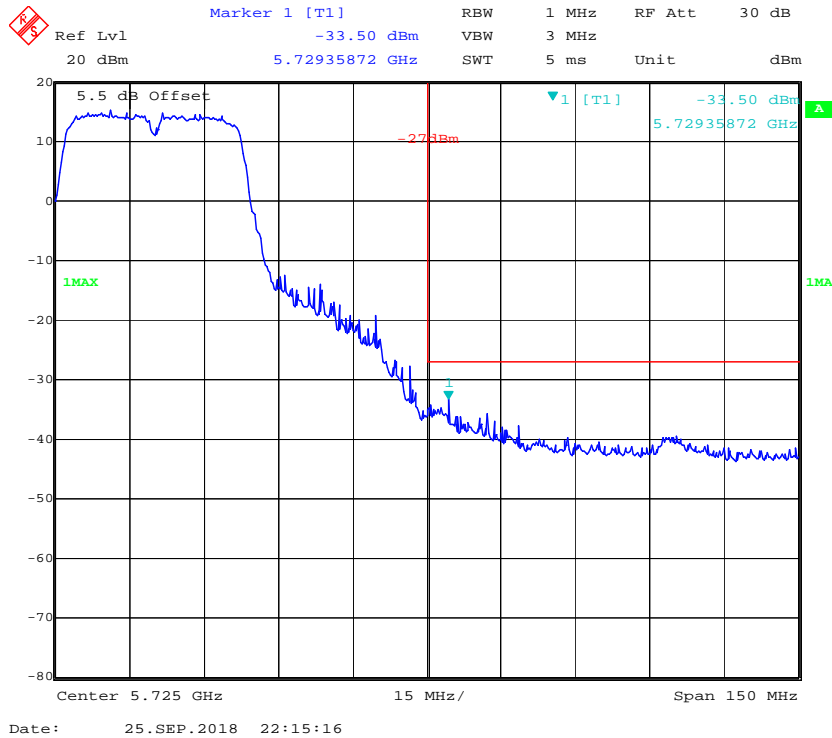


Date: 25.SEP.2018 23:37:13

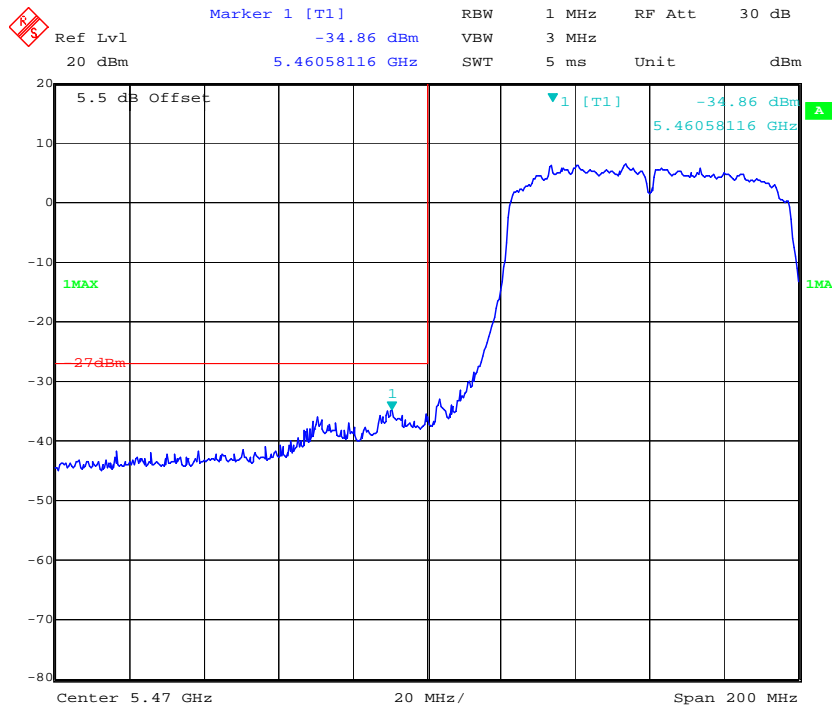
### 802.11n ht40 5510MHz



### 802.11n ht40 5670MHz



**802.11 ac80 5530MHz**



Date: 25.SEP.2018 20:52:10

**802.11 ac80 5610MHz**

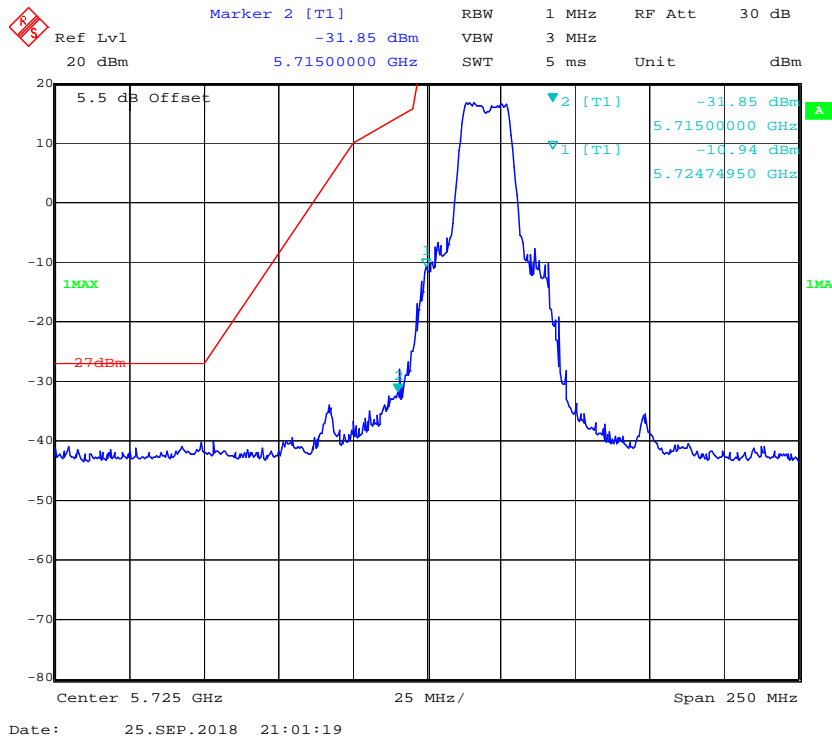


Date: 30.OCT.2018 00:18:19

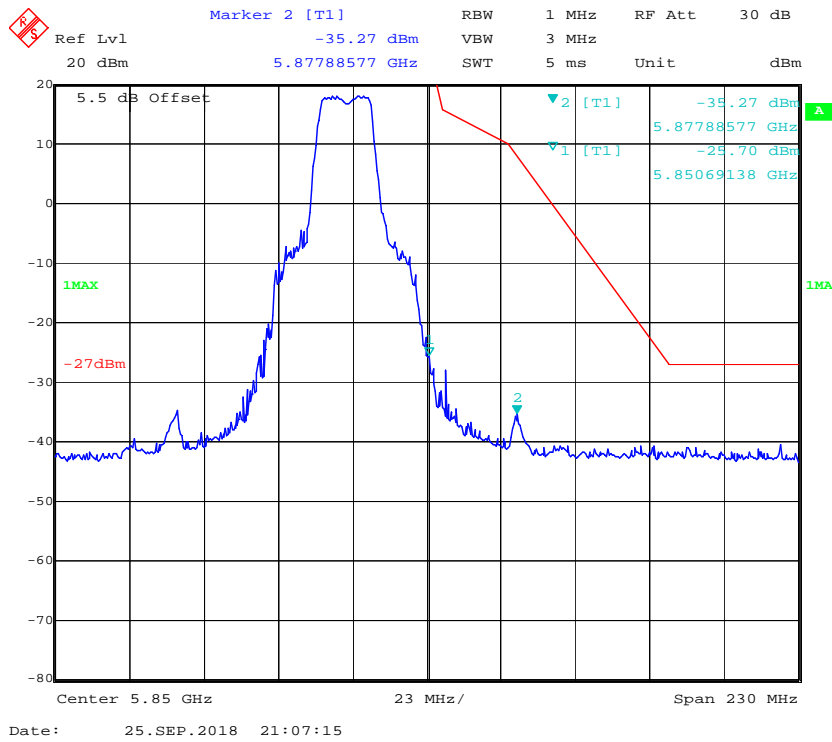


5725-5850MHz

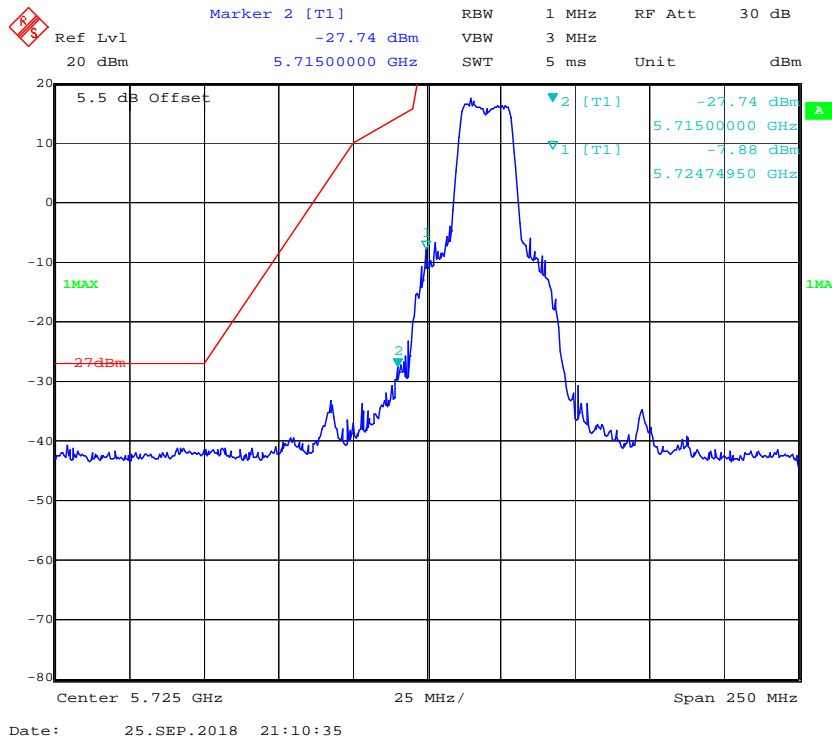
802.11a 5745MHz



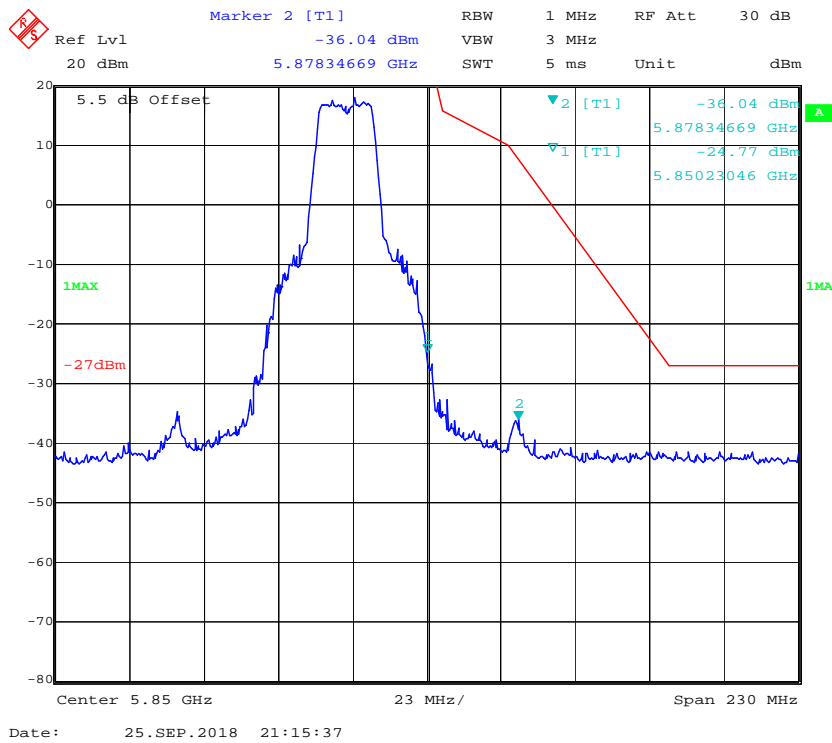
802.11a 5825MHz



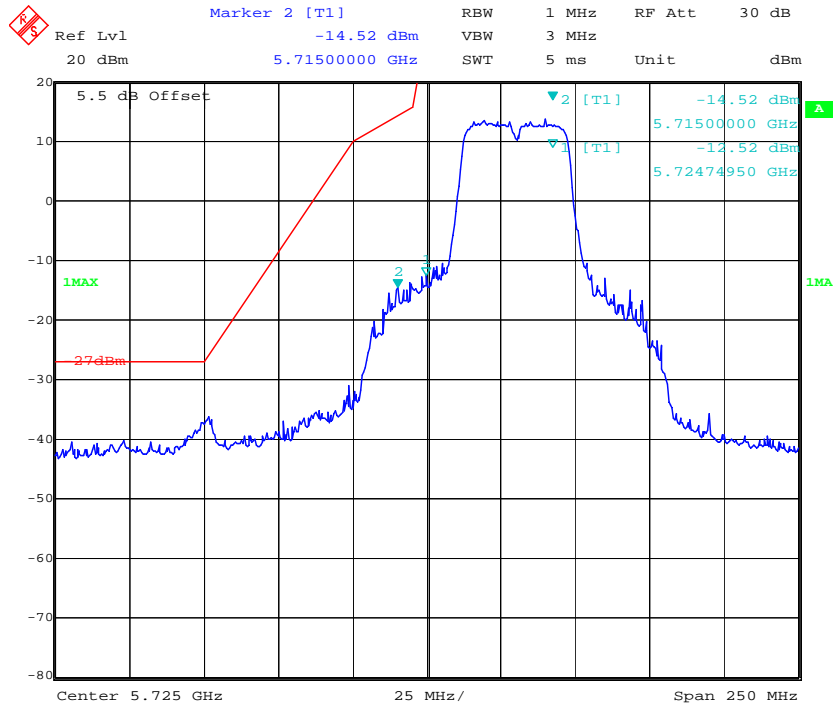
**802.11n ht20 5745MHz**



**802.11n ht20 5825MHz**

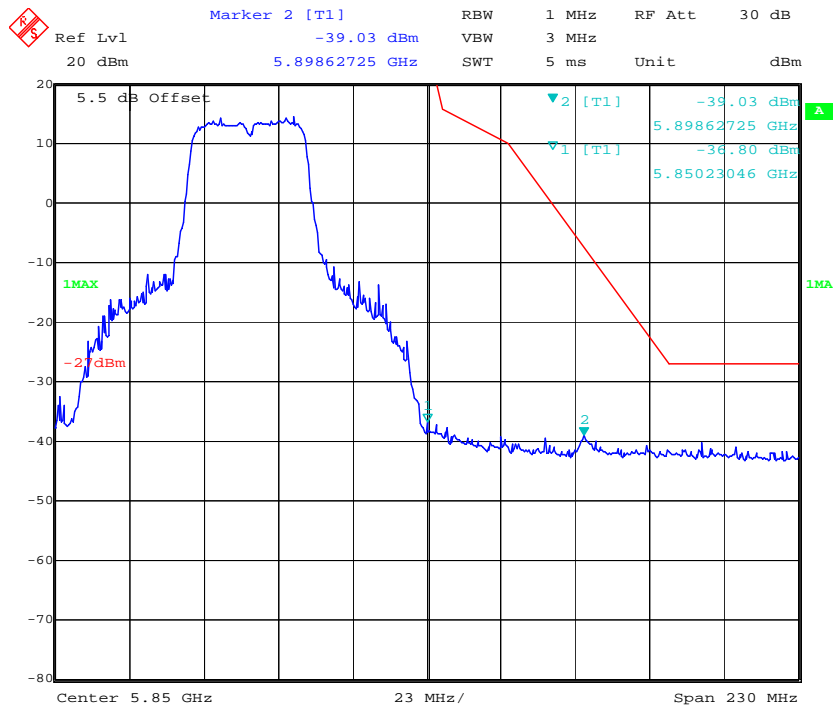


**802.11n ht40 5755MHz**



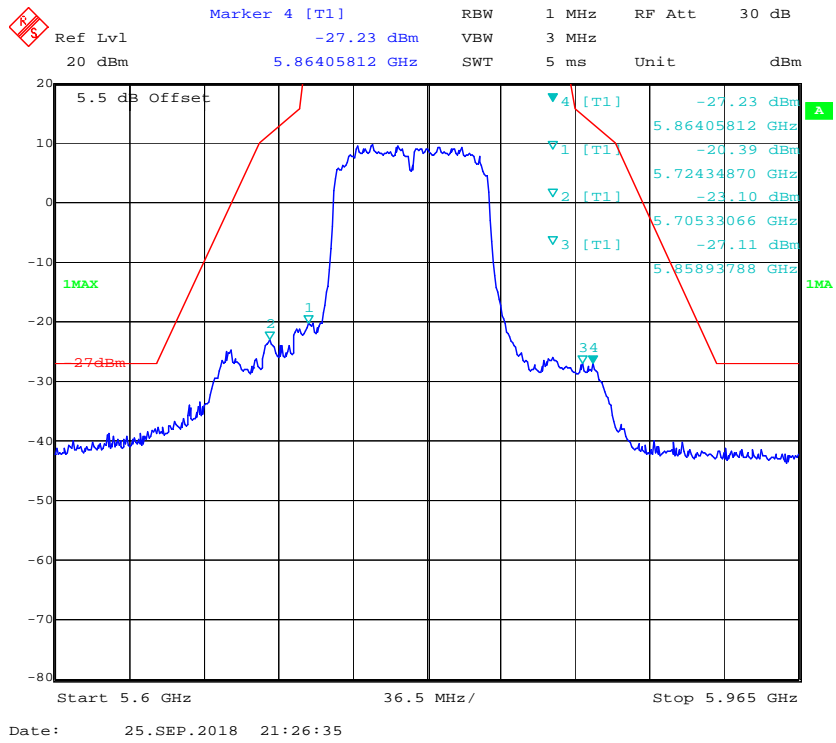
Date: 25.SEP.2018 21:20:44

**802.11n ht40 5795MHz**



Date: 25.SEP.2018 21:24:05

802.11 ac80 5775MHz



## FCC §15.407(a)(e) – EMISSION BANDWIDTH AND OCCUPIED BANDWIDTH

### Applicable Standard

15.407(a) (e)

### Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	Signal Analyzer	FSIQ26	831929/005	2018-08-03	2019-08-03
yzjingcheng	Coaxial Cable	KTRFBU-141-50	41005012	2017-09-05	2019-09-05

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

### Test Procedure

According to KDB 789033 D02 General U-NII Test Procedures New Rules v02r01.

### Test Data

#### Environmental Conditions

Temperature:	27.3~27.8°C
Relative Humidity:	59~60 %
ATM Pressure:	100.4~100.6kPa

*The testing was performed by Swim Lv on 2018-09-25 and 2018-09-26.*

**Test Result:** Pass.

Please refer to the following tables and plots.

Test mode: Transmitting

UNII Band	Mode	Frequency (MHz)	26 dB Emission Bandwidth (MHz)
5150-5250 MHz	802.11a	5180	22.36
		5200	24.77
		5240	25.57
	802.11n ht20	5180	22.85
		5200	25.97
		5240	27.74
	802.11n ht40	5190	43.13
		5230	43.61
	802.11 ac80	5210	85.61
5250-5350 MHz	802.11a	5260	24.69
		5280	22.93
		5320	22.44
	802.11n ht20	5260	27.41
		5280	24.93
		5320	23.01
	802.11n ht40	5270	43.45
		5310	42.48
	802.11 ac80	5290	84.97
5470-5725 MHz	802.11a	5500	22.44
		5580	24.13
		5700	23.17
		5720	24.79
	802.11n ht20	5500	22.77
		5580	22.36
		5700	22.85
		5720	24.63
	802.11n ht40	5510	42.65
		5550	45.85
		5670	43.94
		5710	45.27
	802.11 ac80	5530	84.65
		5610	84.87
5690		84.46	

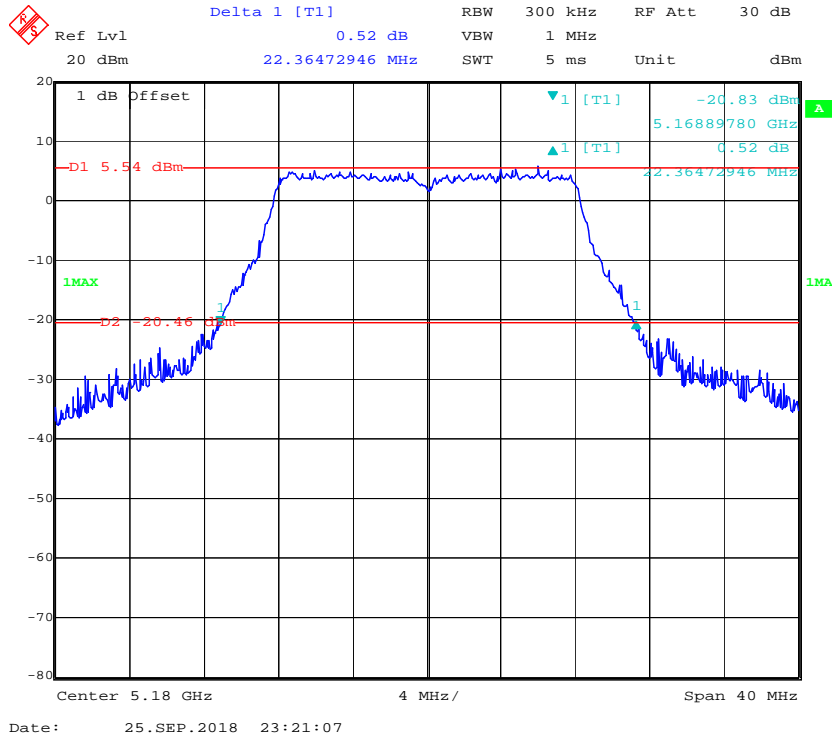
5725-5850MHz:

Mode	Frequency (MHz)	6 dB Emission Bandwidth (MHz)
802.11 a	5745	16.43
	5785	16.51
	5825	16.51
802.11 n20	5745	17.56
	5785	17.72
	5825	17.47
802.11 n40	5755	35.75
	5795	35.75
802.11 ac80	5775	75.03

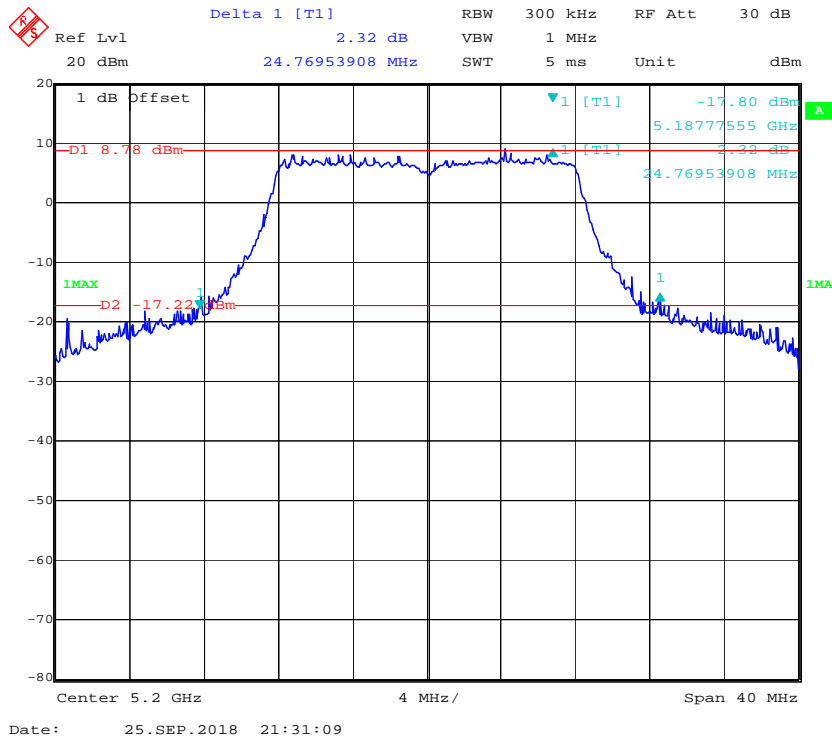
**26dB Emission Bandwidth:**

**5150-5250MHz:**

**802.11a 5180MHz**



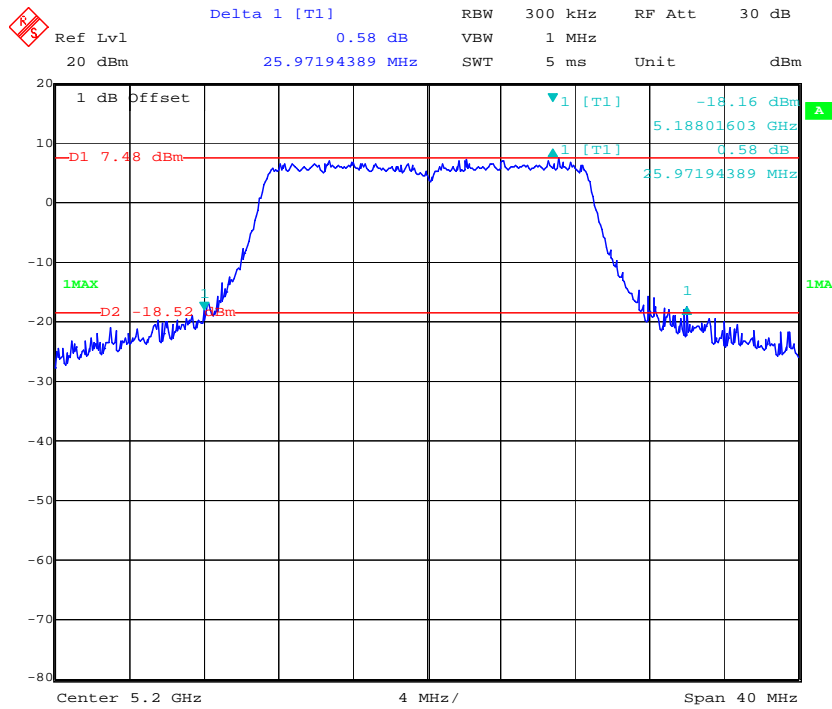
**802.11a 5200MHz**



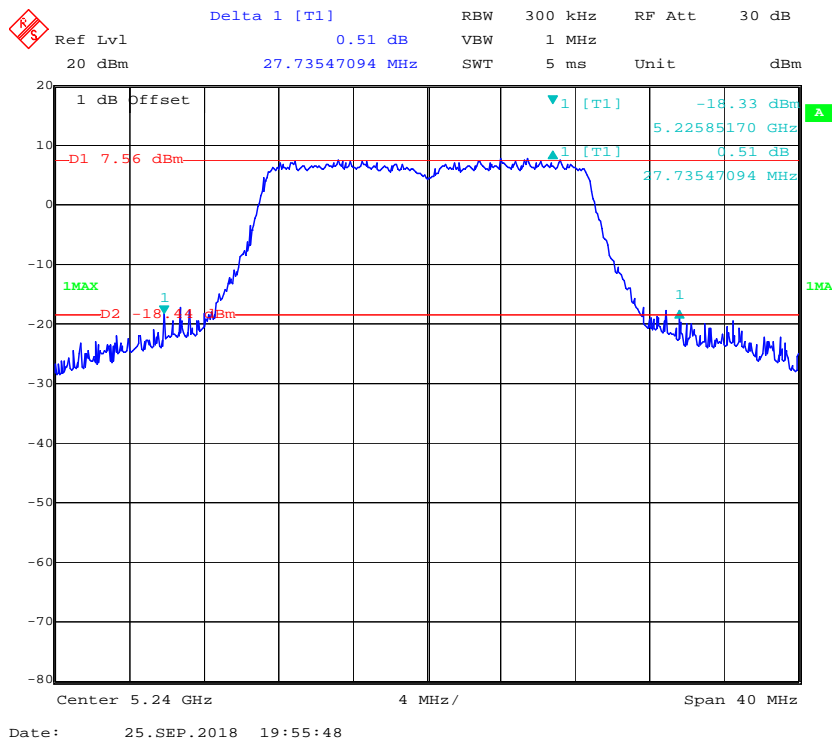




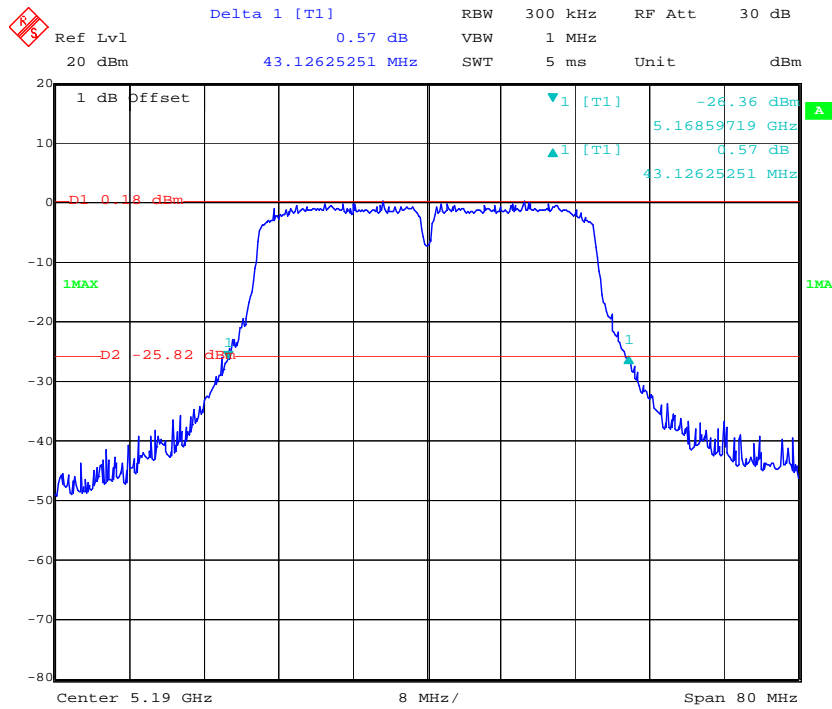
802.11n ht20 5200MHz



802.11n ht20 5240MHz

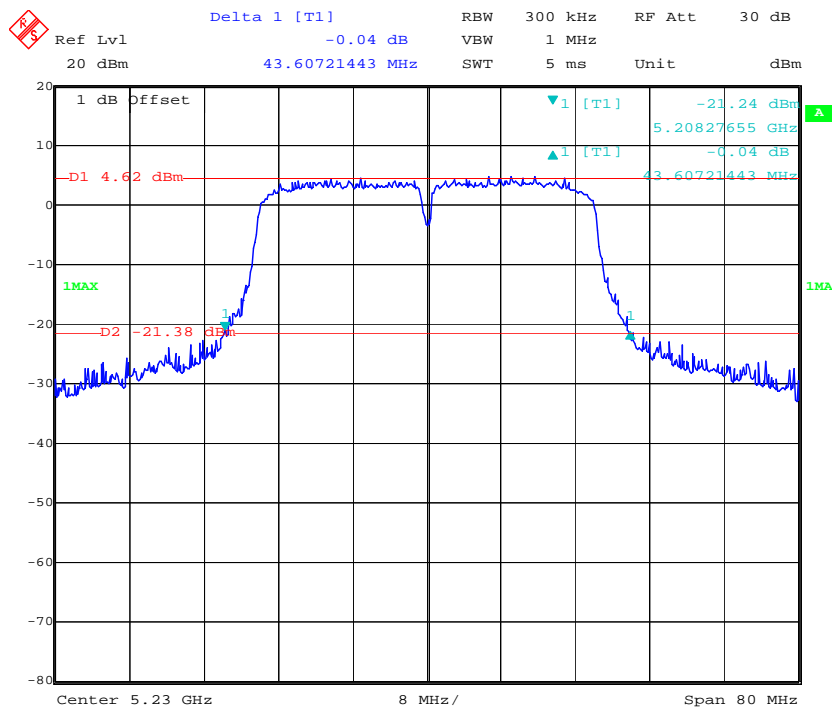


802.11n ht40 5190MHz



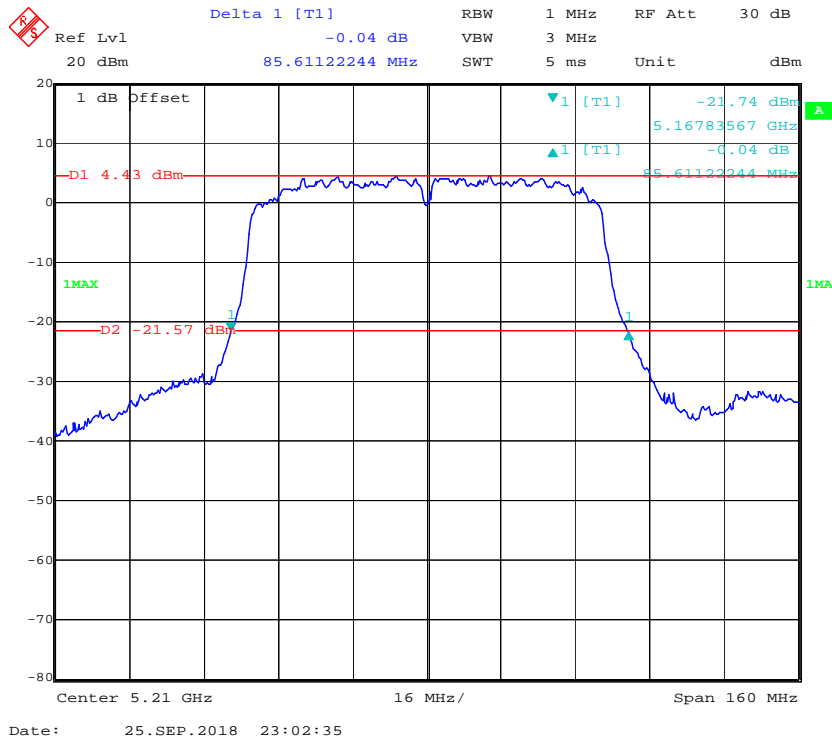
Date: 25.SEP.2018 23:06:10

802.11n ht40 5230MHz



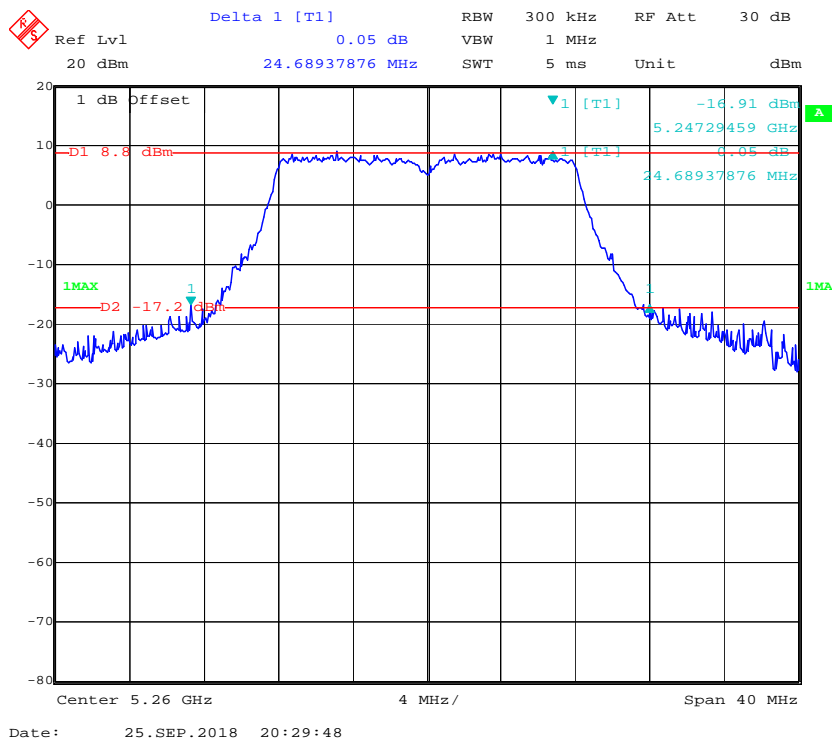
Date: 25.SEP.2018 21:37:38

**802.11 ac80 5210MHz**

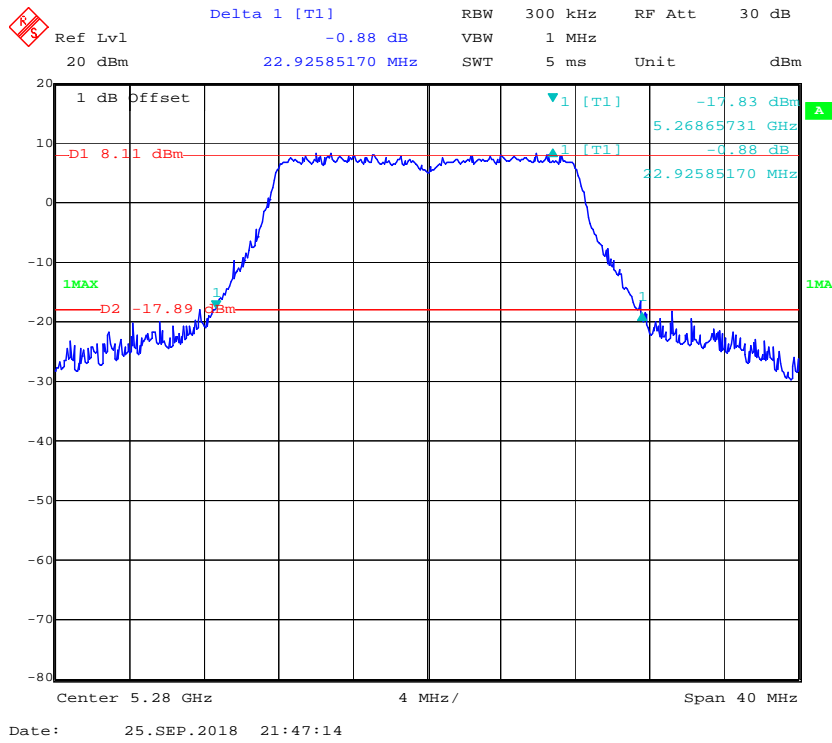


5250-5350MHz:

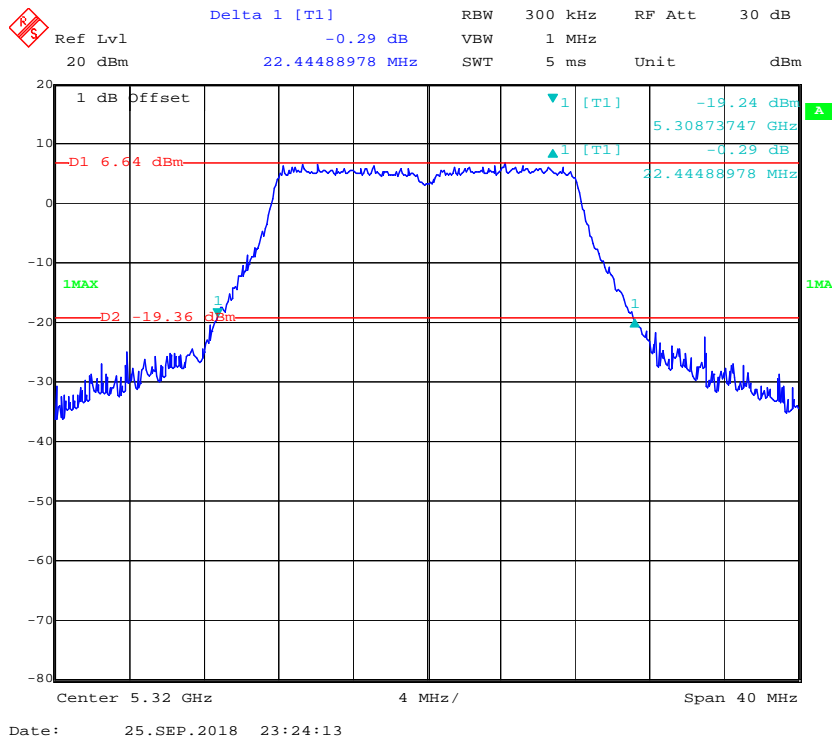
**802.11a 5260MHz**



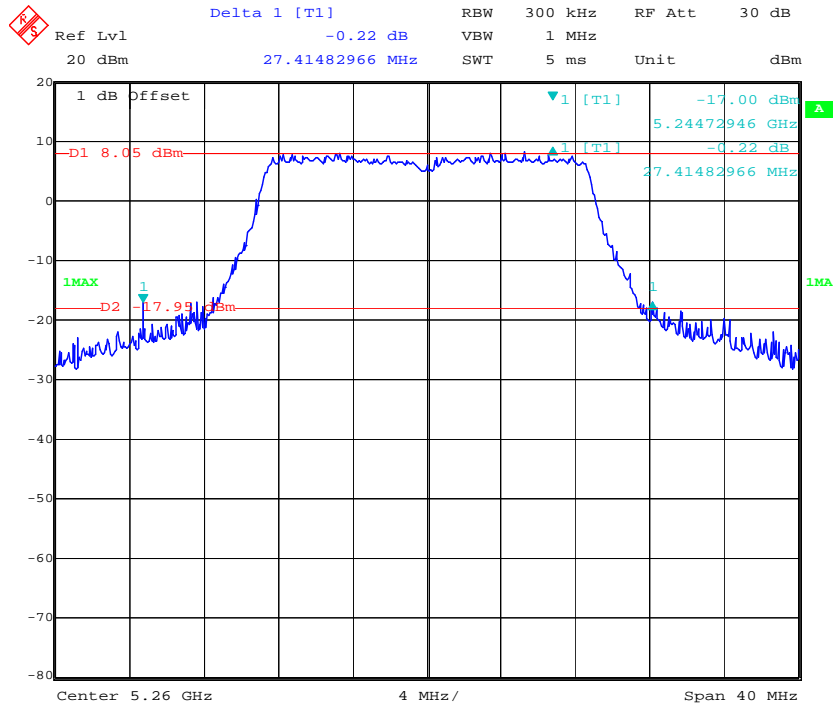
**802.11a 5280MHz**



**802.11a 5320MHz**

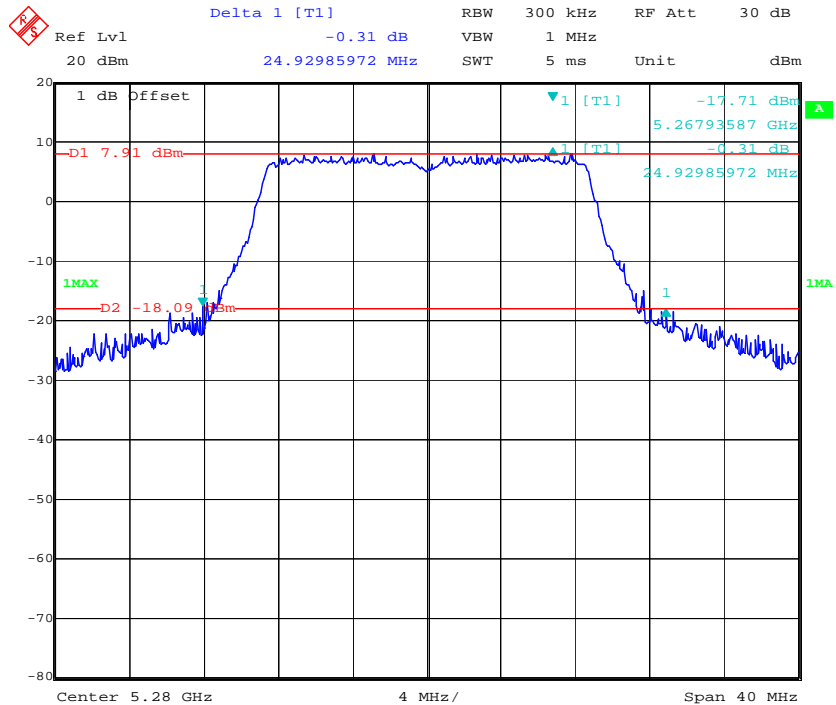


**802.11n ht20 5260MHz**



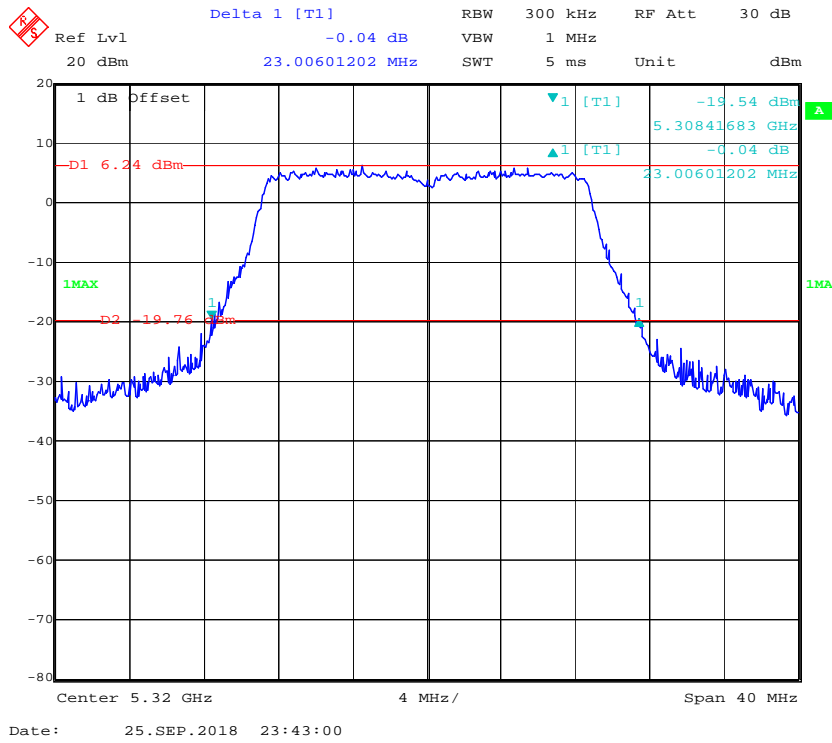
Date: 25.SEP.2018 20:22:55

**802.11n ht20 5280MHz**

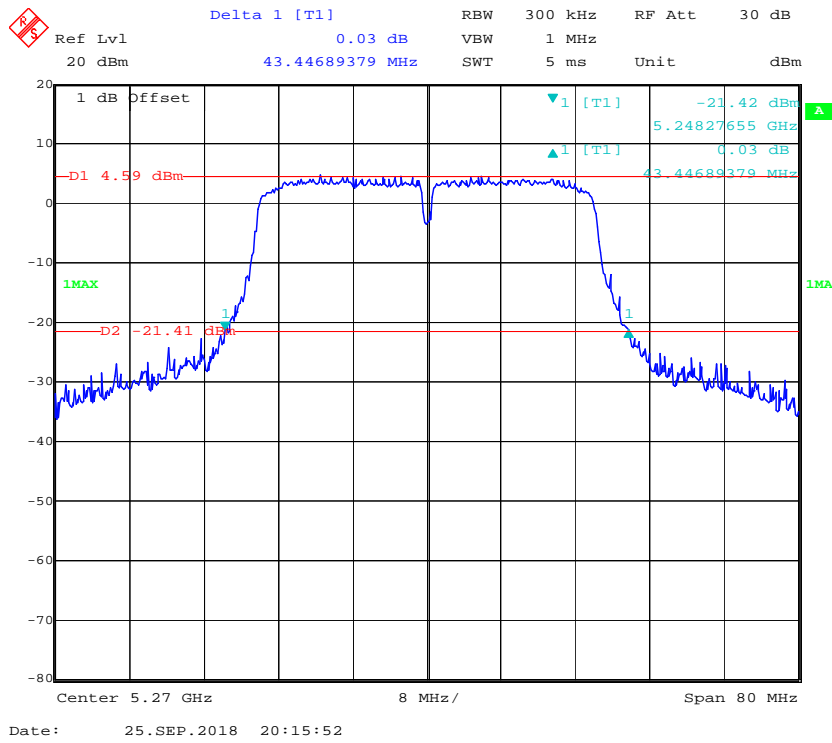


Date: 25.SEP.2018 22:00:40

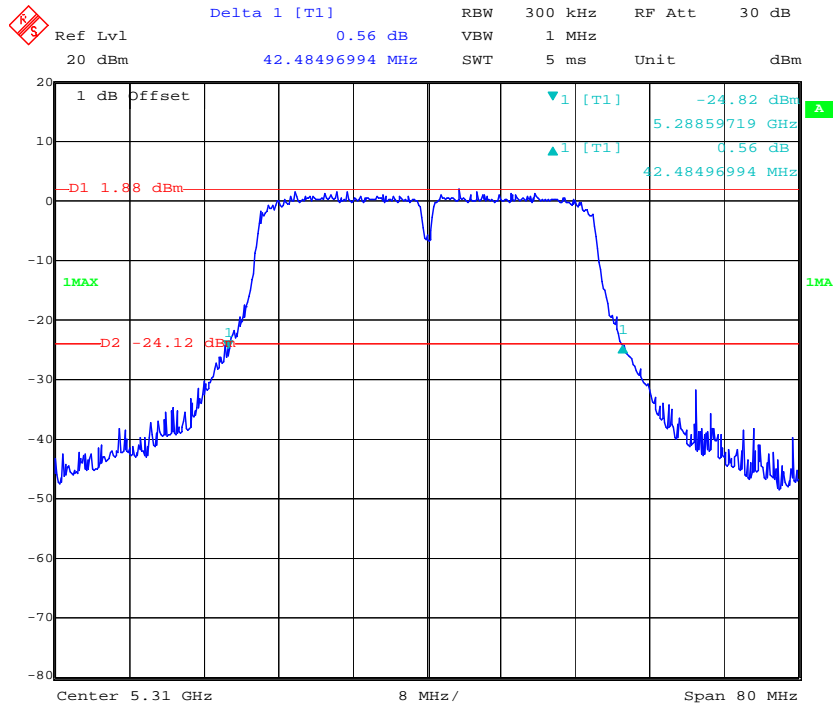
**802.11n ht20 5320MHz**



**802.11n ht40 5270MHz**

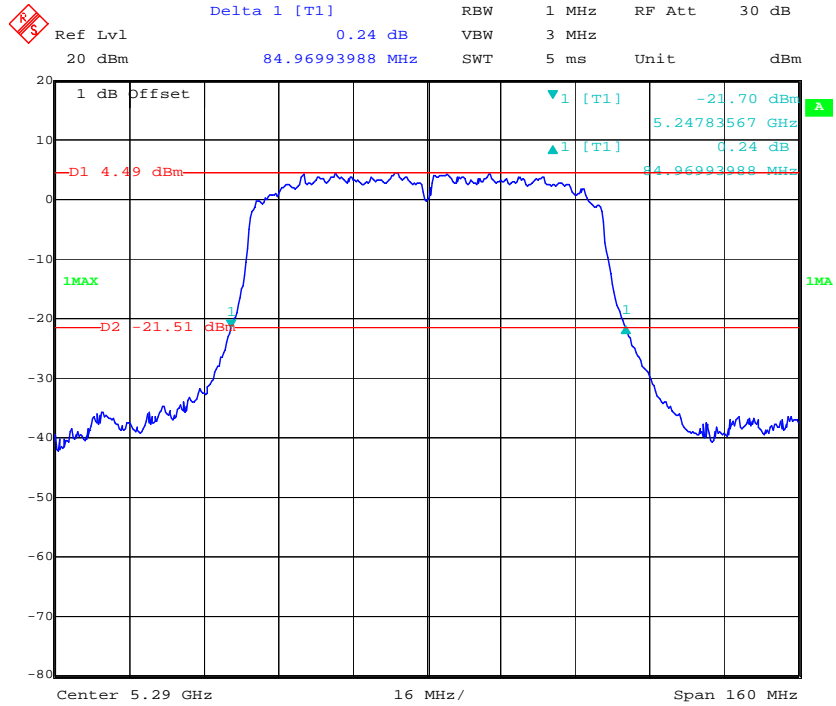


**802.11n ht40 5310MHz**



Date: 25.SEP.2018 23:09:31

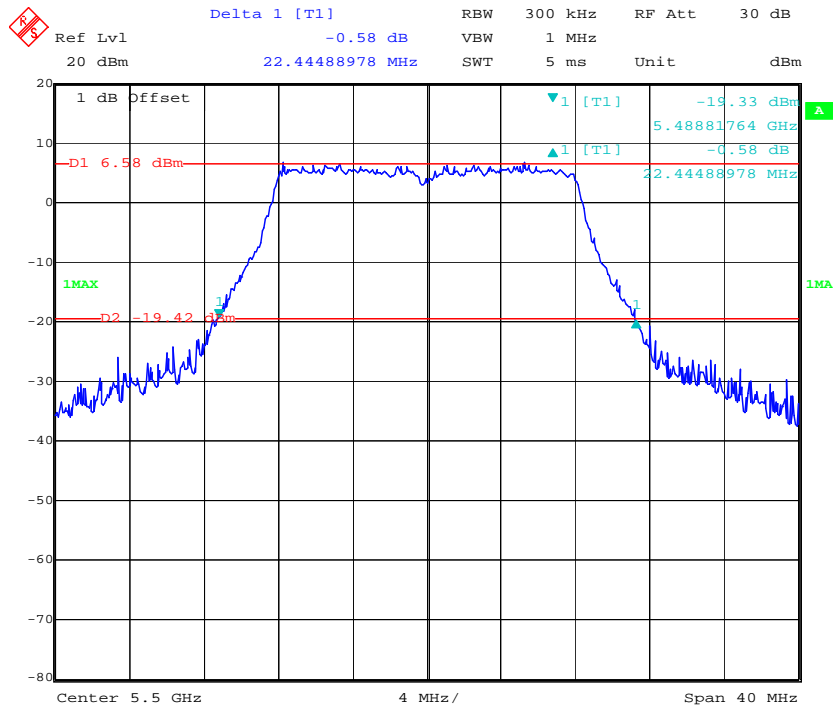
**802.11 ac80 5290MHz**



Date: 25.SEP.2018 22:59:32

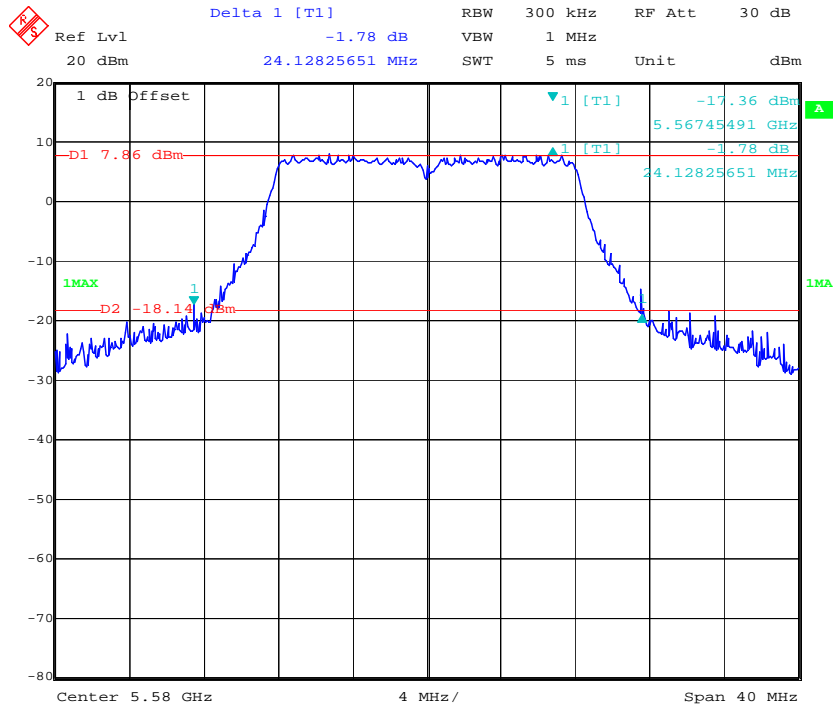
5470-5725MHz:

**802.11a 5500MHz**



Date: 25.SEP.2018 23:27:21

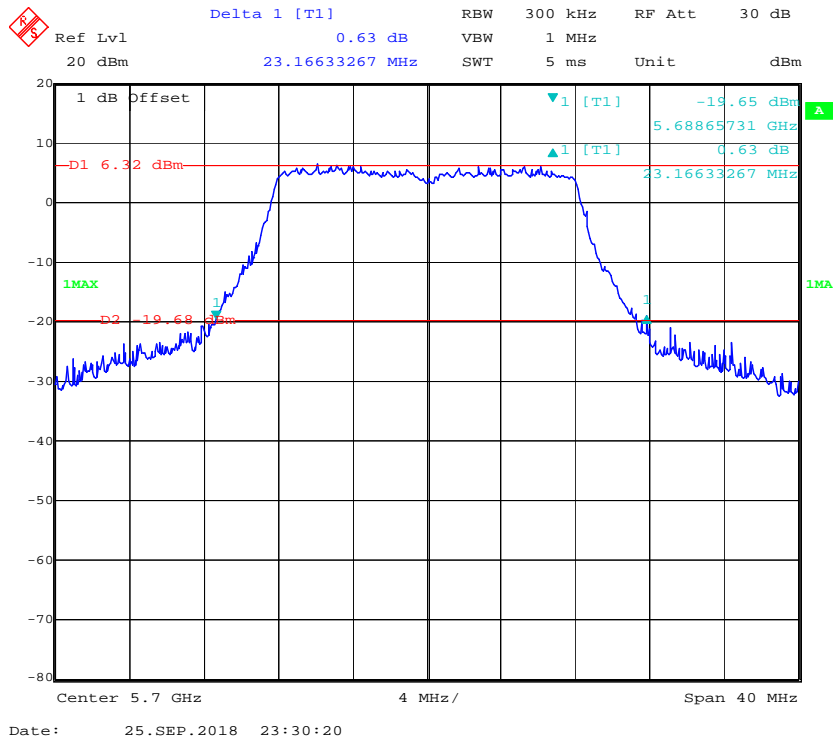
**802.11a 5580MHz**



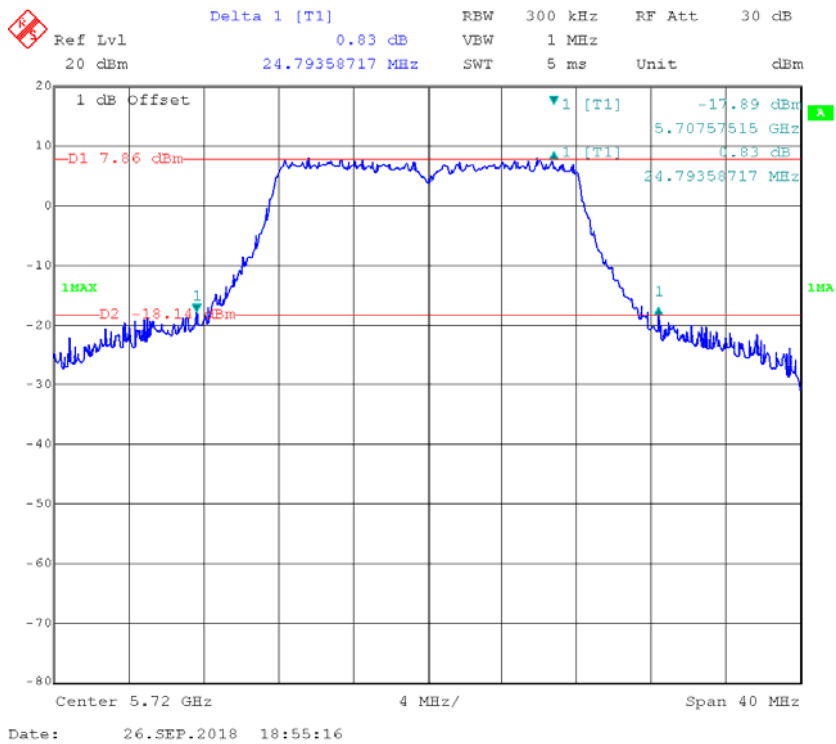
Date: 25.SEP.2018 20:36:05



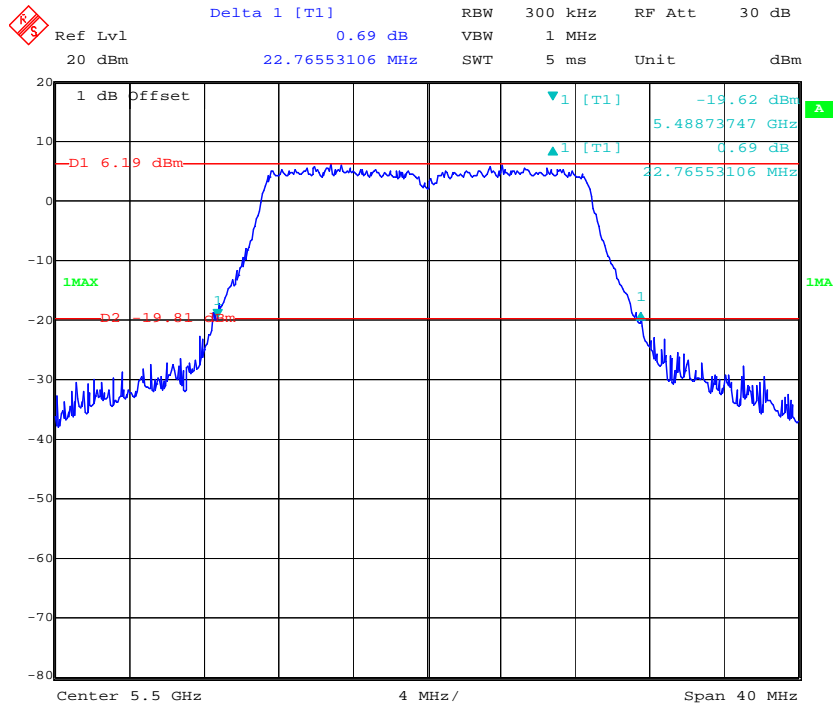
**802.11a 5700MHz**



**802.11a 5720 MHz**

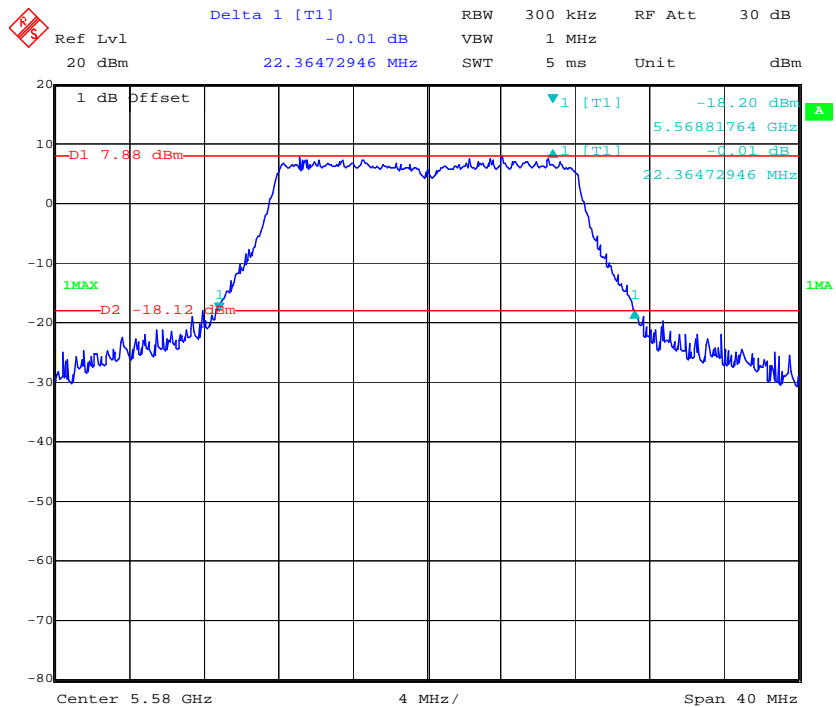


**802.11n ht20 5500MHz**



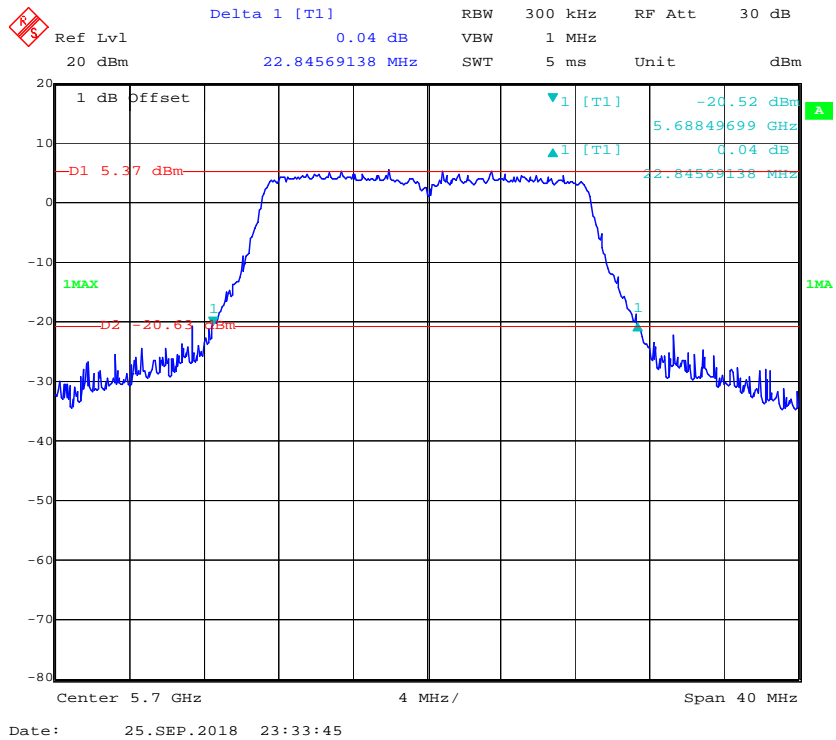
Date: 25.SEP.2018 23:39:47

**802.11n ht20 5580MHz**

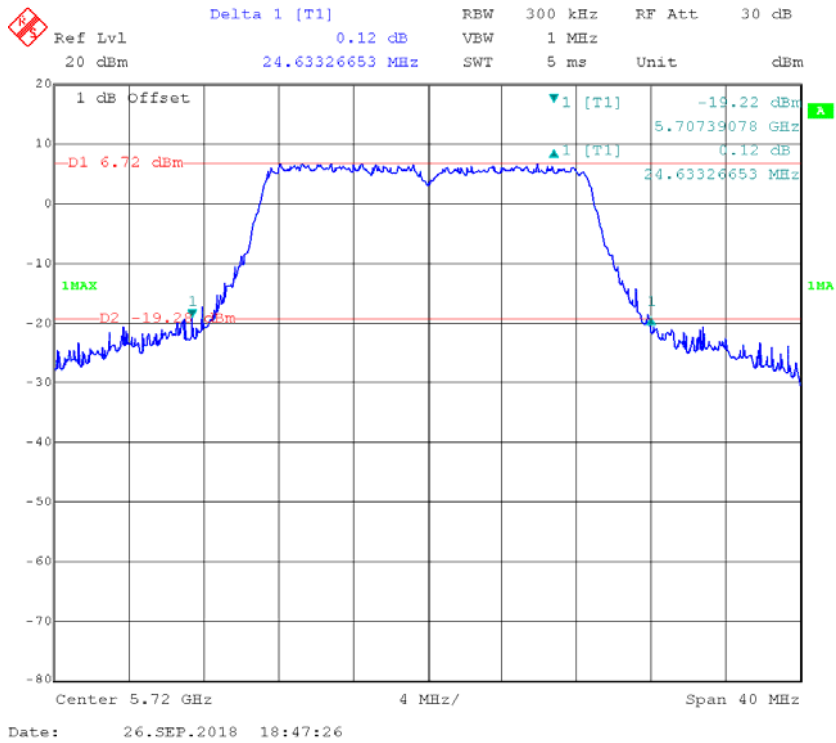


Date: 25.SEP.2018 20:43:38

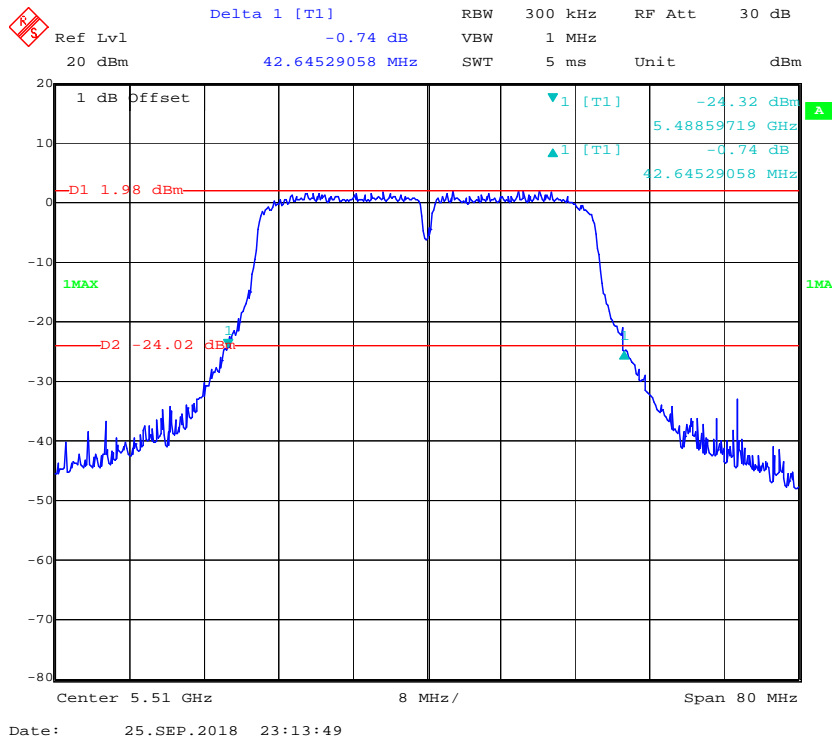
### 802.11n ht20 5700MHz



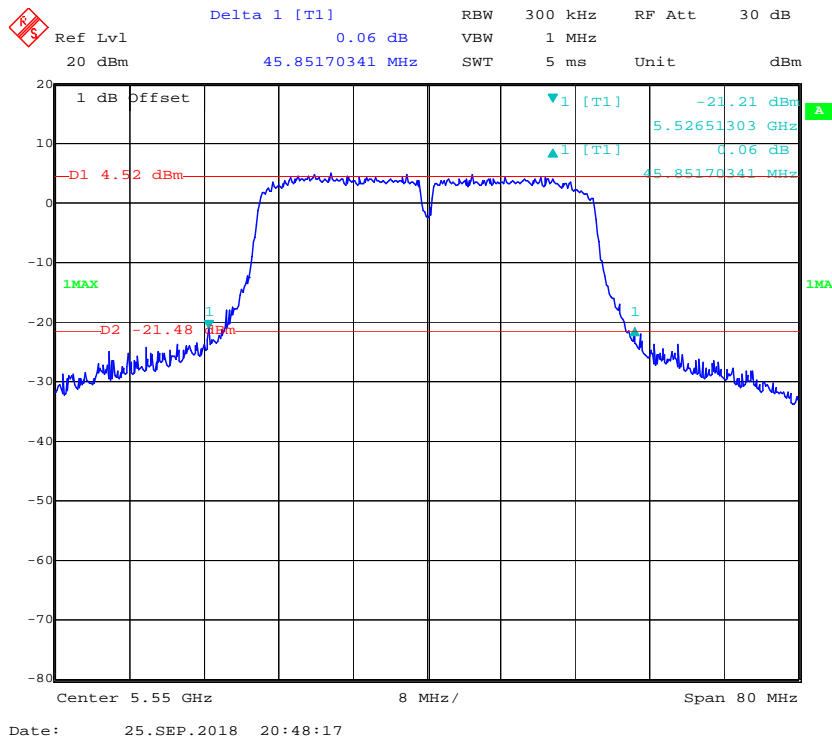
### 802.11n ht20 5720MHz



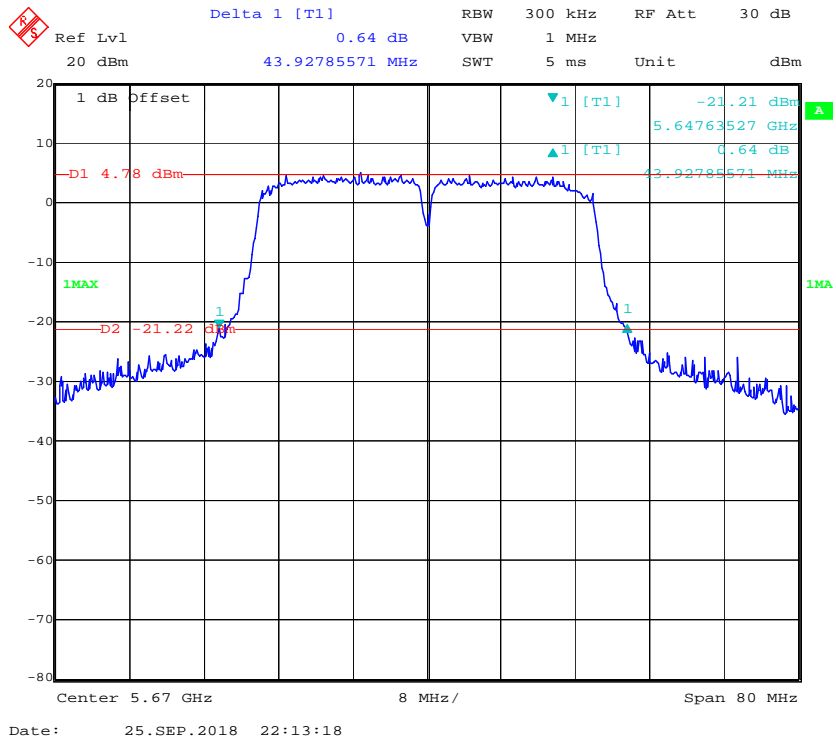
**802.11n ht40 5510MHz**



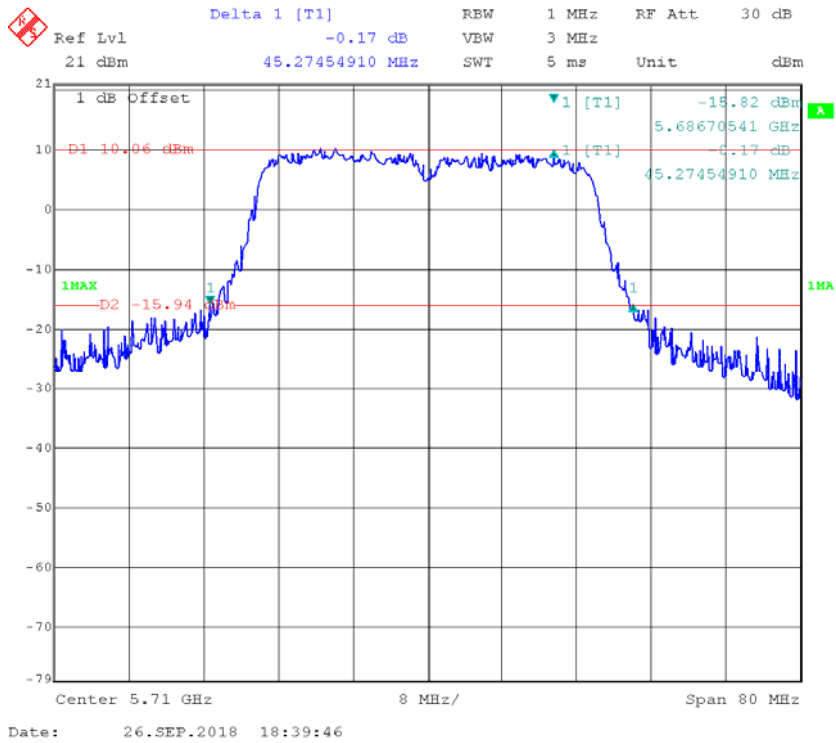
**802.11n ht40 5550MHz**



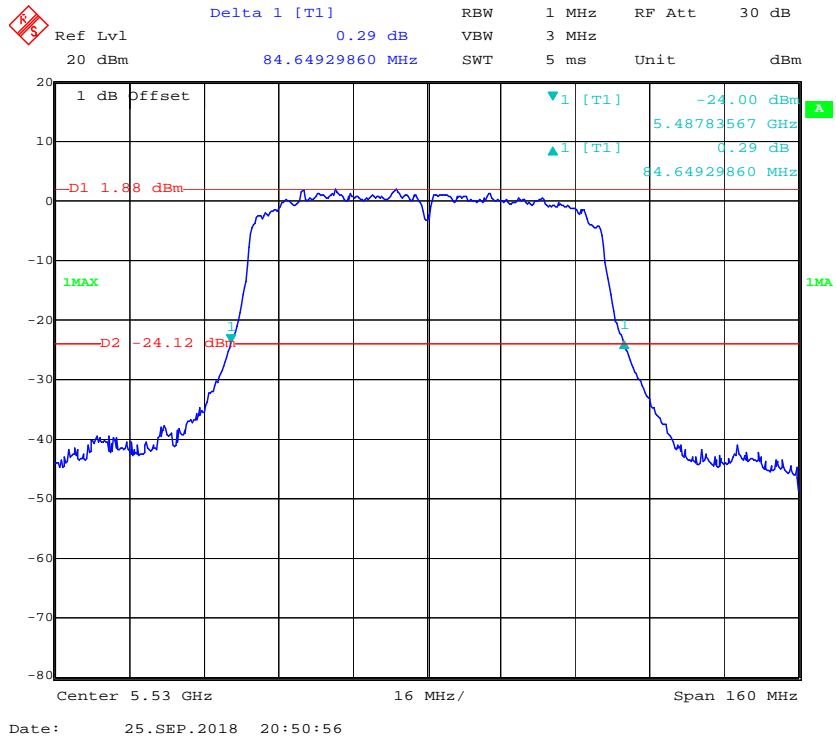
**802.11n ht40 5670MHz**



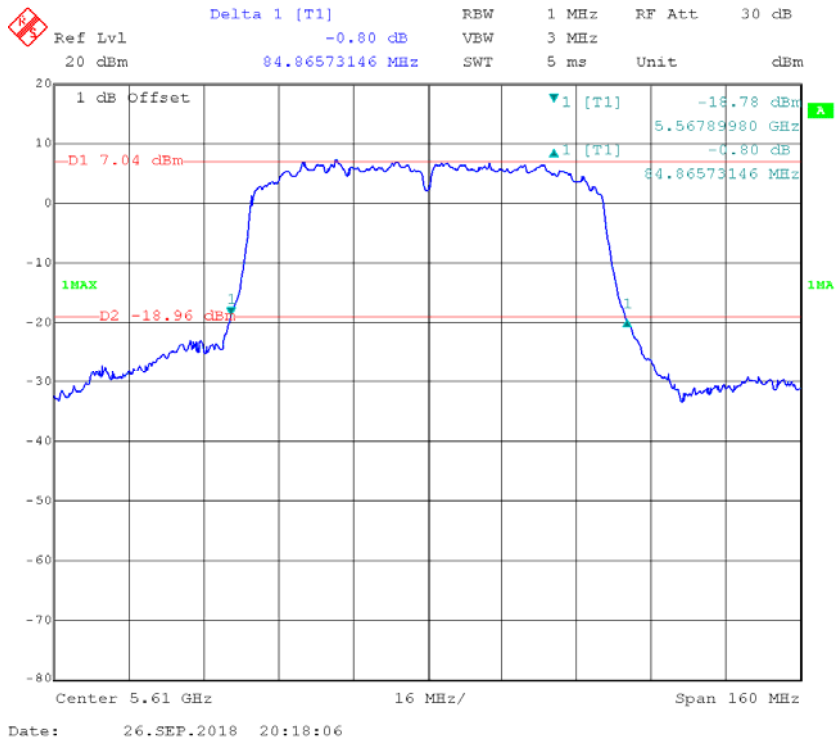
**802.11n ht40 5710MHz**



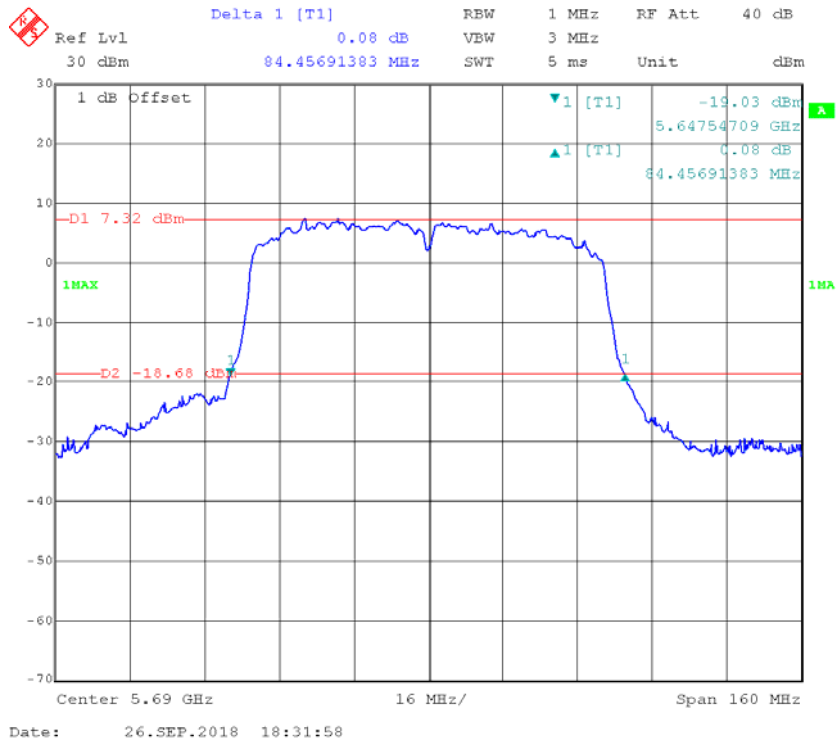
### 802.11 ac80 5530MHz



### 802.11 ac80 5610MHz

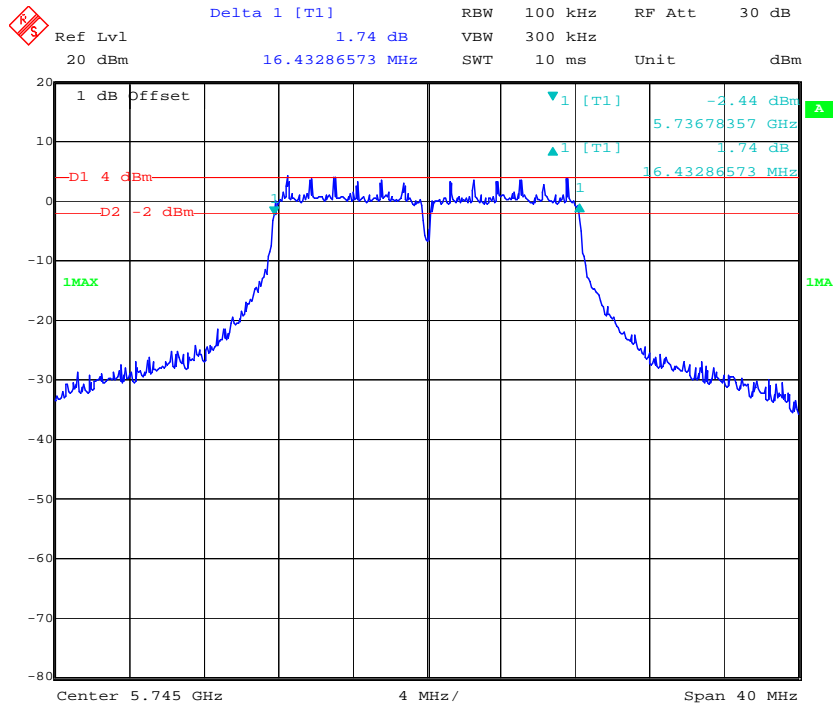


**802.11 ac80 5690MHz**



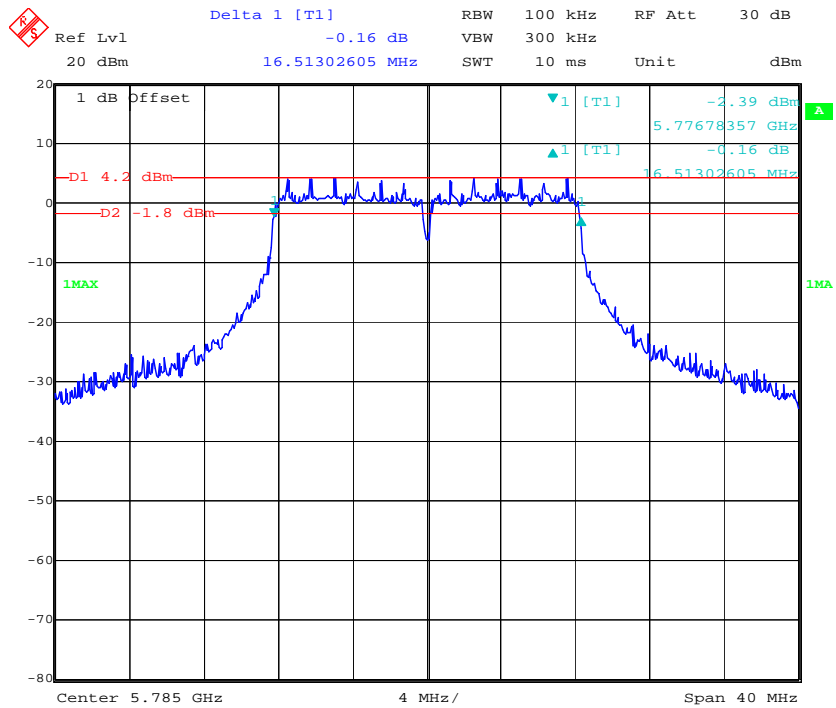
**5725-5850MHz**  
**6dB Minimum Emission Bandwidth:**

**802.11a 5745MHz**



Date: 25.SEP.2018 20:59:26

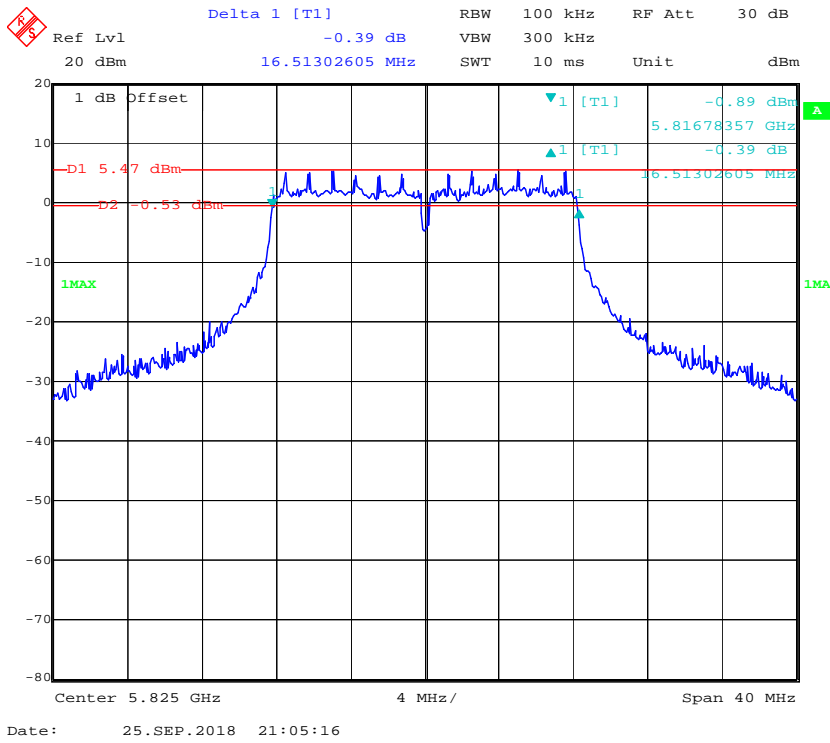
**802.11a 5785MHz**



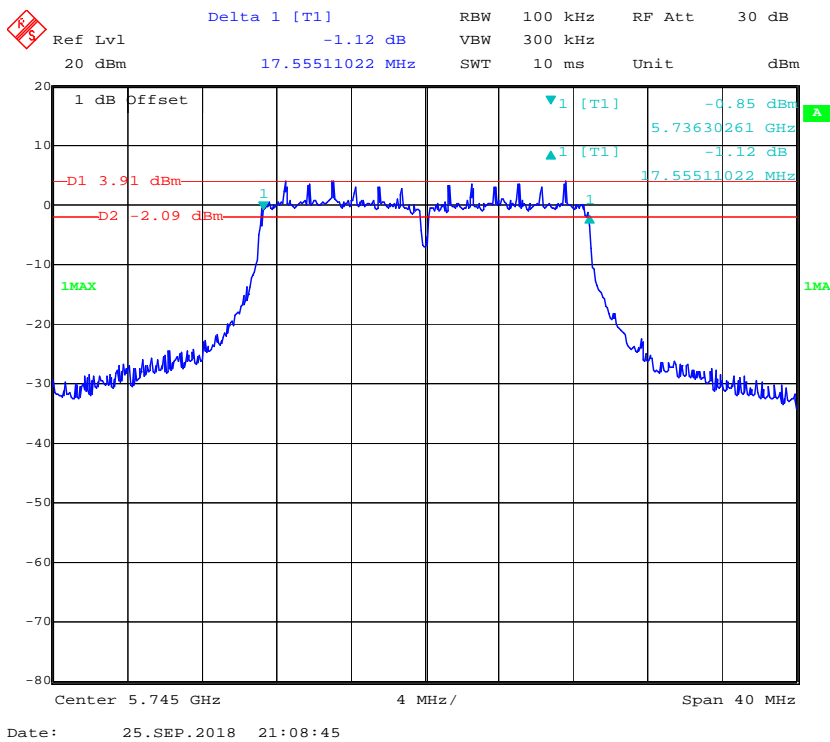
Date: 25.SEP.2018 21:03:00



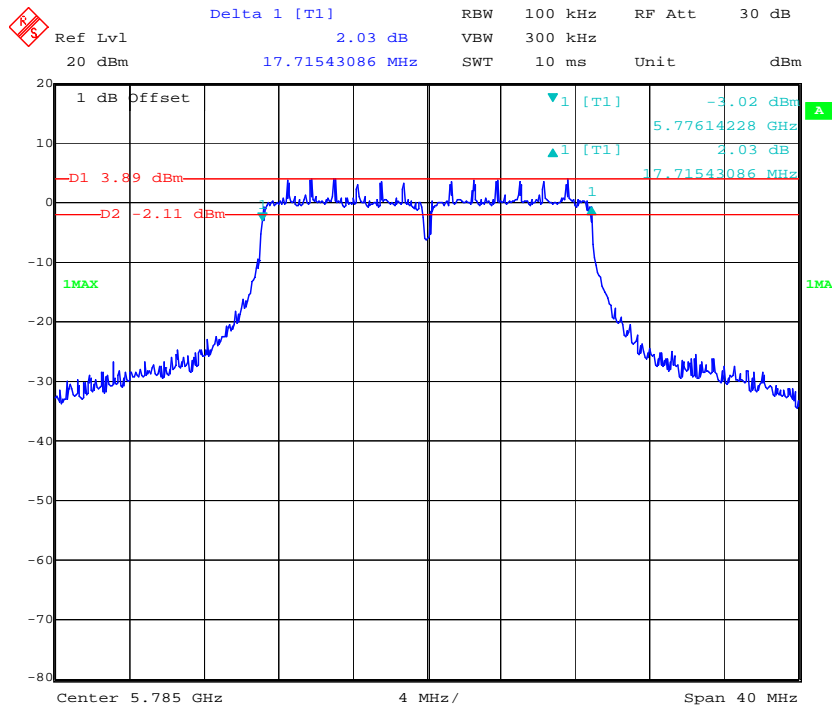
**802.11a 5825MHz**



**802.11n ht20 5745MHz**

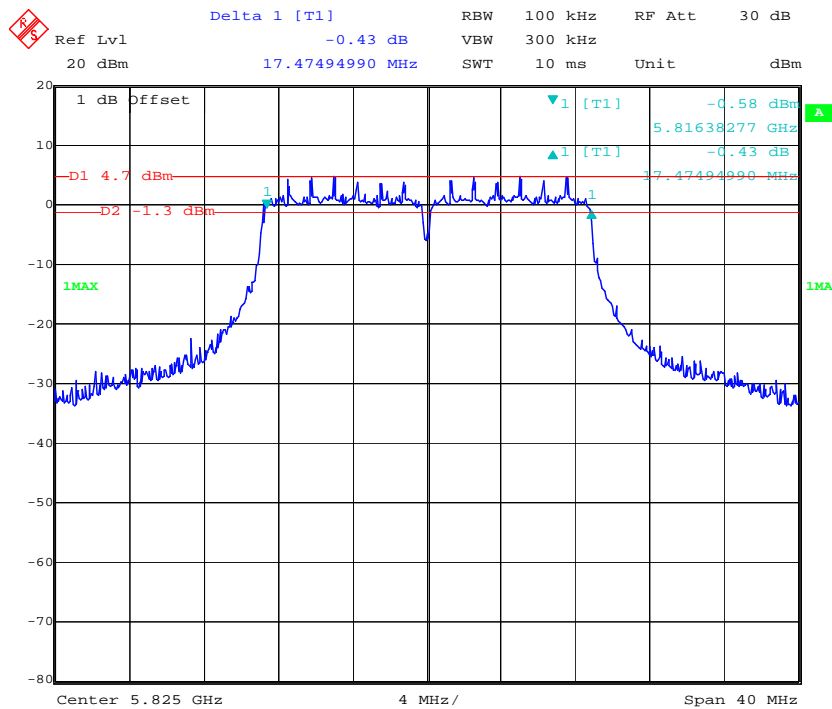


**802.11n ht20 5785MHz**



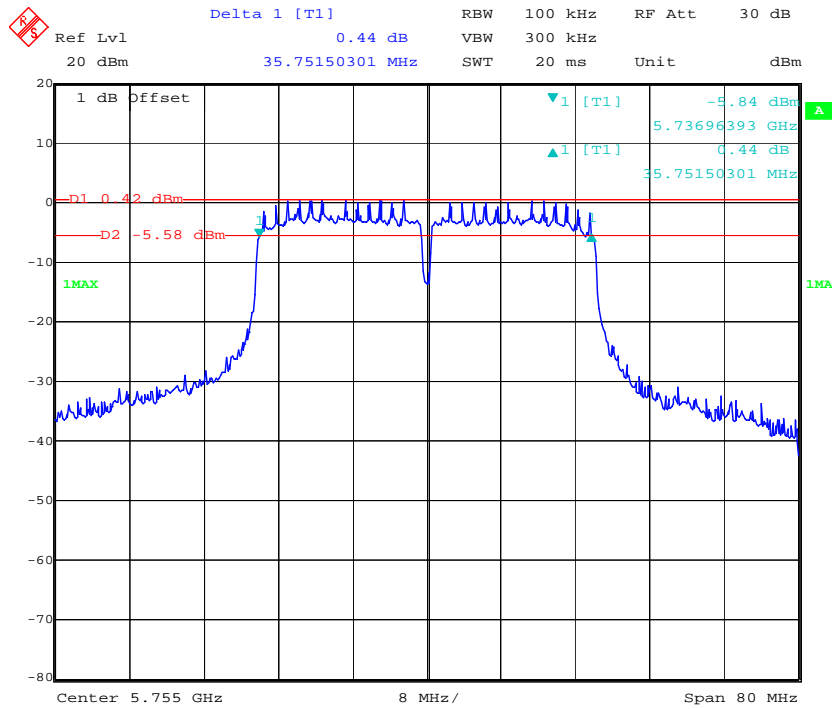
Date: 25.SEP.2018 21:11:54

**802.11n ht20 5825MHz**



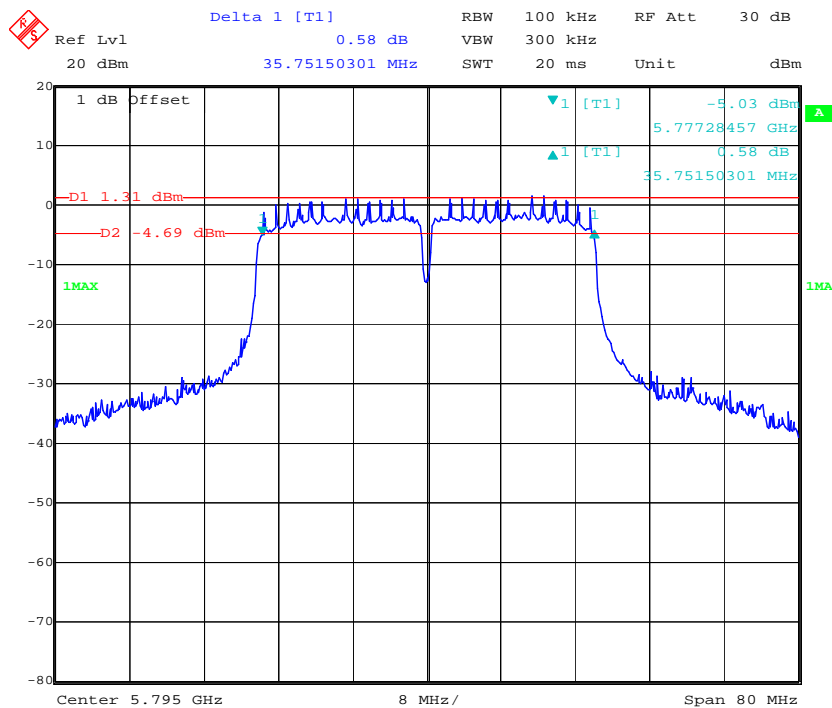
Date: 25.SEP.2018 21:14:02

**802.11n ht40 5755MHz**



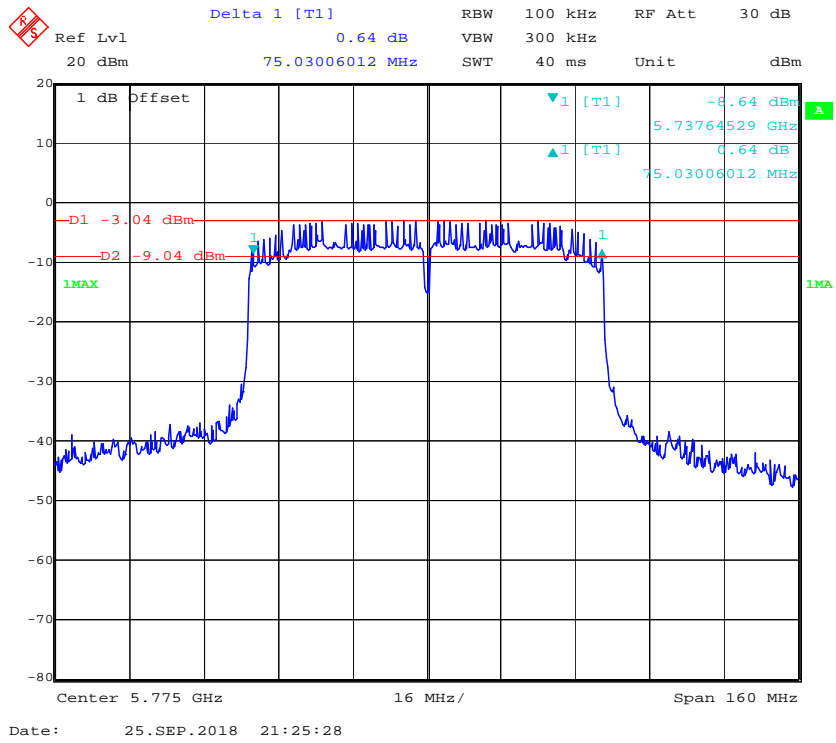
Date: 25.SEP.2018 21:18:47

**802.11n ht40 5795MHz**



Date: 25.SEP.2018 21:22:09

### 802.11 ac80 5775MHz



## **FCC §15.407(a) –MAXIMUM CONDUCTED OUTPUT POWER**

### **Applicable Standard**

According to FCC §15.407(a)

(a) Power limits:

(1) For the band 5.15-5.25 GHz.

(i) For an outdoor 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. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

(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.

(iii) For fixed point-to-point access points 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. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. 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.

(iv) For mobile and portable 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.

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

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

(4) The maximum conducted output power must be measured over any interval of continuous transmission using instrumentation calibrated in terms of an rms-equivalent voltage.

### Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Unknown	Coaxial Cable	C-SJ00-0010	C0010/02	Each time	N/A
E-Microwave	Blocking Control	EMDCB-00036	0E01201047	2018-05-06	2019-05-06
Agilent	USB Wideband Power Sensor	U2022XA	MY5417006	2017-12-11	2018-12-11

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

### Test Procedure

According to KDB 789033 D02 General U-NII Test Procedures New Rules v02r01.

### Test Data

#### Environmental Conditions

<b>Temperature:</b>	27.3°C
<b>Relative Humidity:</b>	59 %
<b>ATM Pressure:</b>	100.4 kPa

*The testing was performed by Swim Lv from 2018-09-25 to 2018-09-26.*

*Test Mode: Transmitting*

Band	Mode	Frequency (MHz)	Conducted RMS Output Power (dBm)	Limit (dBm)
5150-5250MHz	802.11a	5180	14.02	24
		5200	17.55	
		5240	17.68	
	802.11n ht20	5180	13.78	
		5200	17.17	
		5240	17.25	
	802.11n ht40	5190	12.03	
5230		16.98		
802.11ac80	5210	12.51		
5250-5350MHz	802.11a	5260	17.84	24
		5280	17.77	
		5320	15.32	
	802.11n ht20	5260	17.49	
		5280	17.47	
		5320	14.89	
	802.11n ht40	5270	17.04	
5310		13.35		
802.11ac80	5290	13.16		
5470-5725MHz	802.11a	5500	15.12	24
		5580	17.48	
		5700	15.51	
		5720	17.63	
	802.11n ht20	5500	14.53	
		5580	17.14	
		5700	14.46	
		5720	17.26	
	802.11n ht40	5510	13.23	
		5550	17.14	
		5670	17.02	
		5710	17.07	
	802.11ac80	5530	10.54	
5610		16.05		
5690		15.86		

Band	Mode	Frequency (MHz)	Conducted RMS Output Power (dBm)	Limit (dBm)
5725-5850MHz	802.11a	5745	17.04	30
		5785	17.39	
		5825	17.69	
	802.11n ht20	5745	17.48	
		5785	17.45	
		5825	17.13	
	802.11n ht40	5755	16.80	
		5795	16.93	
	802.11ac80	5775	15.79	



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

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### **Applicable Standard**

According to FCC §15.407(a)

(a) Power limits:

(1) For the band 5.15-5.25 GHz.

(i) For an outdoor 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. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

(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.

(iii) For fixed point-to-point access points 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. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. 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.

(iv) For mobile and portable 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.

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

power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

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

## Test Procedure

According to KDB 789033 D02 General U-NII Test Procedures New Rules v02r01.

## Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	Signal Analyzer	FSIQ26	831929/005	2018-08-03	2019-08-03
yzjingcheng	Coaxial Cable	KTRFBU-141-50	41005012	2017-09-05	2019-09-05

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

## Test Data

### Environmental Conditions

<b>Temperature:</b>	27.3 °C
<b>Relative Humidity:</b>	59 %
<b>ATM Pressure:</b>	100.4 kPa

*The testing was performed by Swim Lv from 2018-09-25 to 2018-09-26.*

**Test Result: Compliance**

*Test Mode: Transmitting*

Band	Mode	Frequency (MHz)	Maximum Power Spectral Density (dBm/MHz)	Limit (dBm/MHz)
5150-5250MHz	802.11a	5180	3.51	11
		5200	6.26	
		5240	6.86	
	802.11n ht20	5180	3.55	
		5200	5.72	
		5240	5.86	
	802.11n ht40	5190	-1.62	
5230		2.75		
802.11ac80	5210	-2.12		
5250-5350MHz	802.11a	5260	6.91	11
		5280	6.96	
		5320	4.96	
	802.11n ht20	5260	6.22	
		5280	6.38	
		5320	3.99	
	802.11n ht40	5270	3.12	
5310		-0.18		
802.11ac80	5290	-2.43		
5470-5725MHz	802.11a	5500	5.26	11
		5580	6.41	
		5700	4.49	
		5720	6.46	
	802.11n ht20	5500	4.04	
		5580	5.95	
		5700	3.51	
		5720	5.69	
	802.11n ht40	5510	0.17	
		5550	2.88	
		5670	2.90	
		5710	3.25	
	802.11ac80	5530	-4.86	
5610		0.25		
5690		0.42		

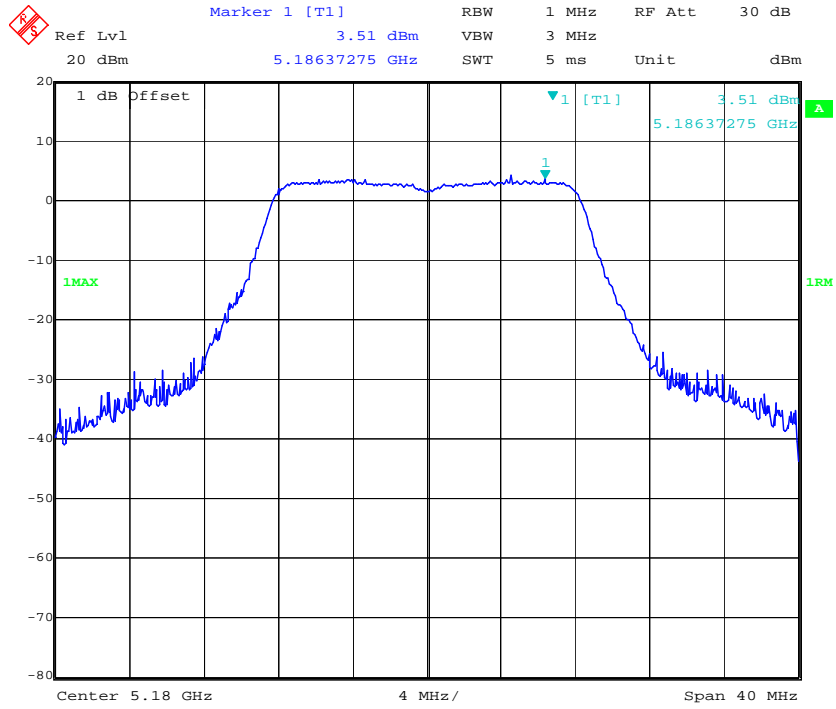
Band	Mode	Frequency (MHz)	Maximum Power Spectral Density (dBm/300kHz)	Maximum Power Spectral Density (dBm/500kHz)	Limit (dBm/500kHz)
5725-5850MHz	802.11a	5745	3.71	5.93	30
		5785	3.50	5.72	
		5825	4.85	7.07	
	802.11n ht20	5745	3.70	5.92	
		5785	3.79	6.01	
		5825	4.08	6.30	
	802.11n ht40	5755	-0.26	1.96	
		5795	0.97	3.19	
	802.11ac80	5775	-3.53	-1.31	

## Note:

For 5.8GHz band, If measurement bandwidth of Maximum PSD is specified in 500 kHz, add  $10\log(500\text{kHz}/\text{RBW})$  to the measured result, whereas RBW (< 500 KHz) is the reduced resolution bandwidth of the spectrum analyzer set during measurement.

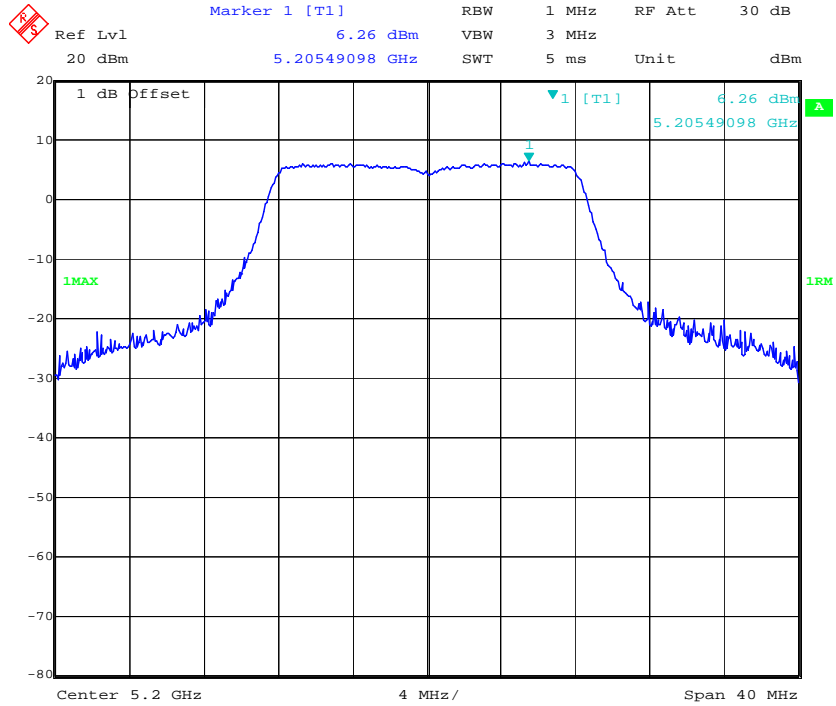
5150-5250MHz:

Power Spectral Density, 802.11a 5180MHz



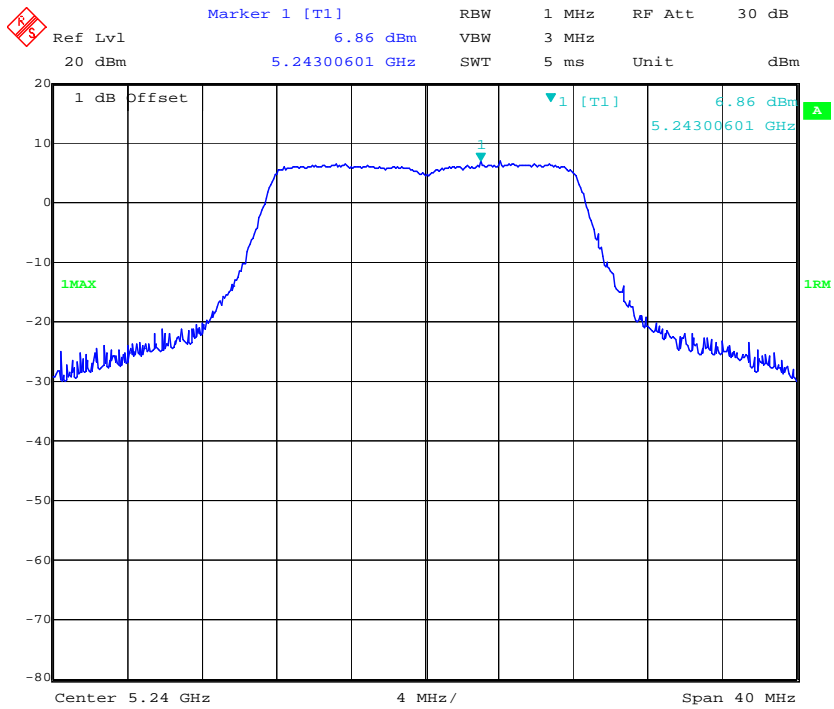
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Power Spectral Density, 802.11a 5200MHz



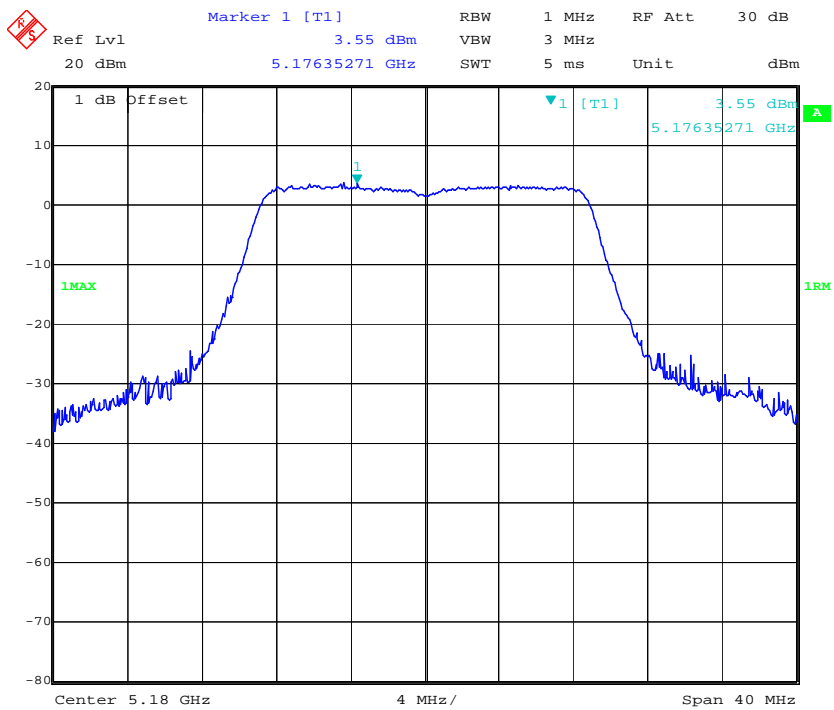
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**Power Spectral Density, 802.11a 5240MHz**



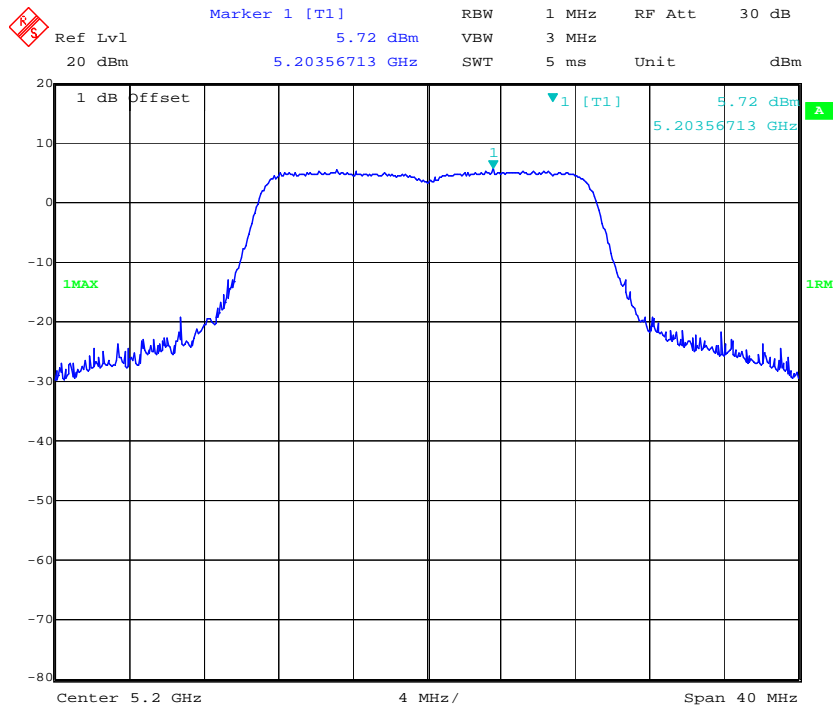
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**Power Spectral Density, 802.11n ht20 5180MHz**



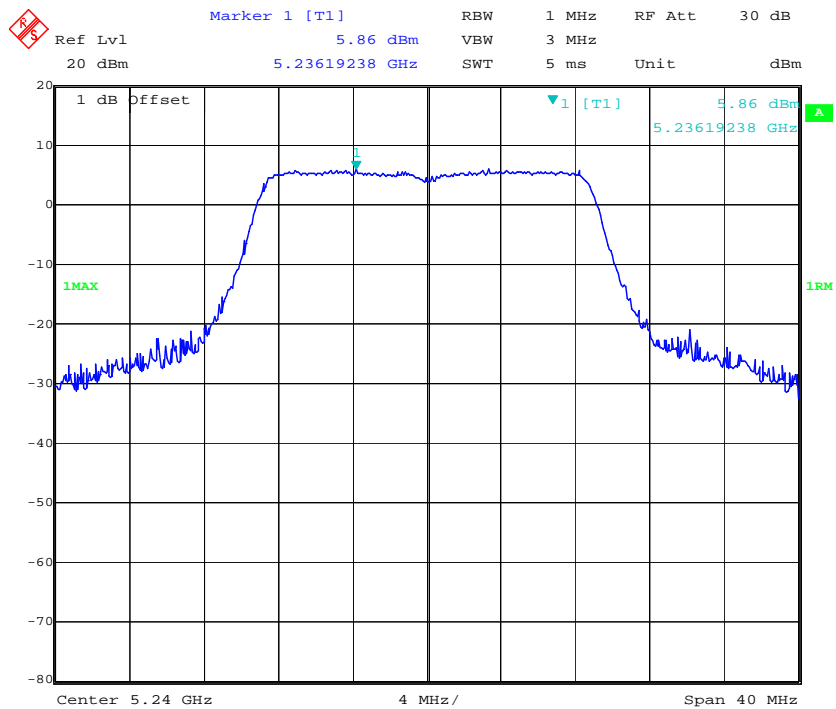
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**Power Spectral Density, 802.11n ht20 5200MHz**



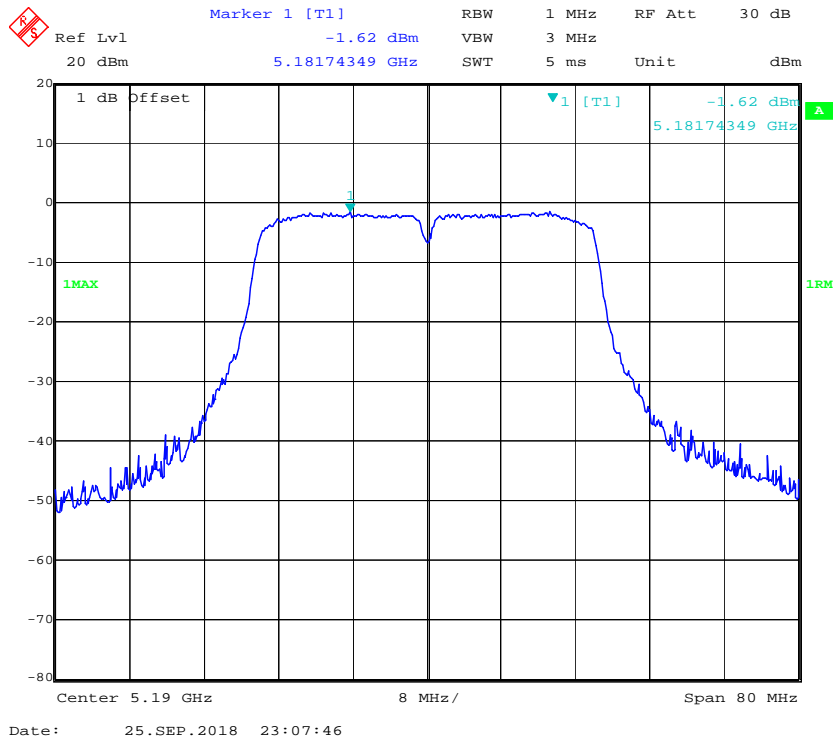
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**Power Spectral Density, 802.11n ht20 5240MHz**

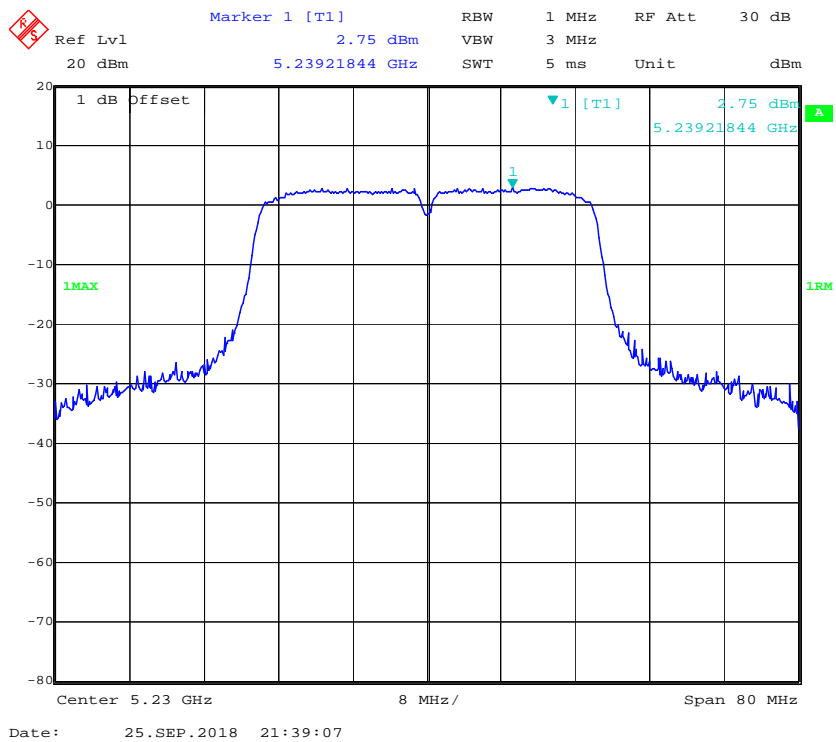


Date: 25.SEP.2018 19:57:08

### Power Spectral Density, 802.11n ht40 5190MHz

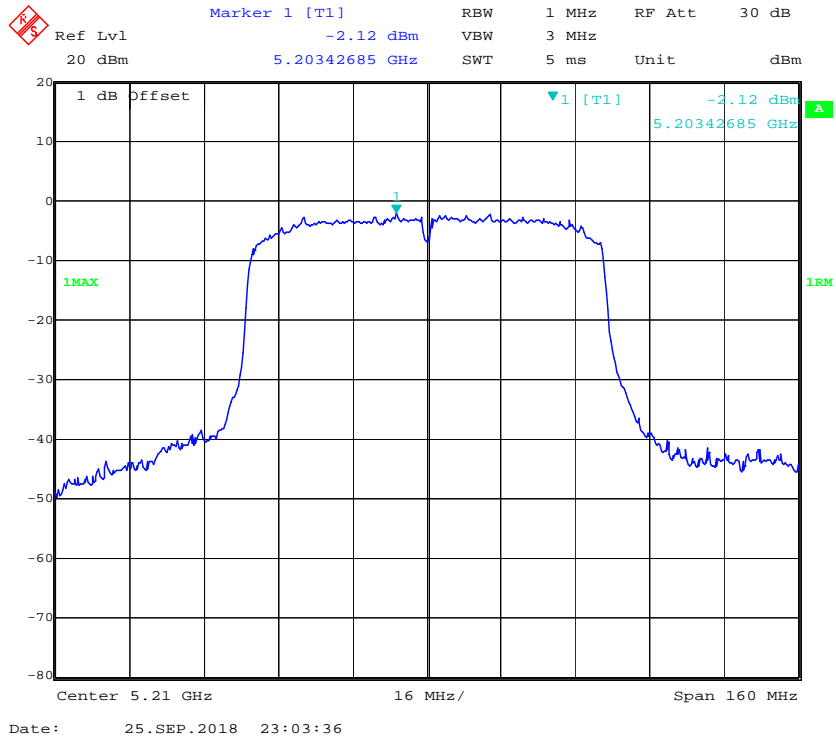


### Power Spectral Density, 802.11n ht40 5230MHz



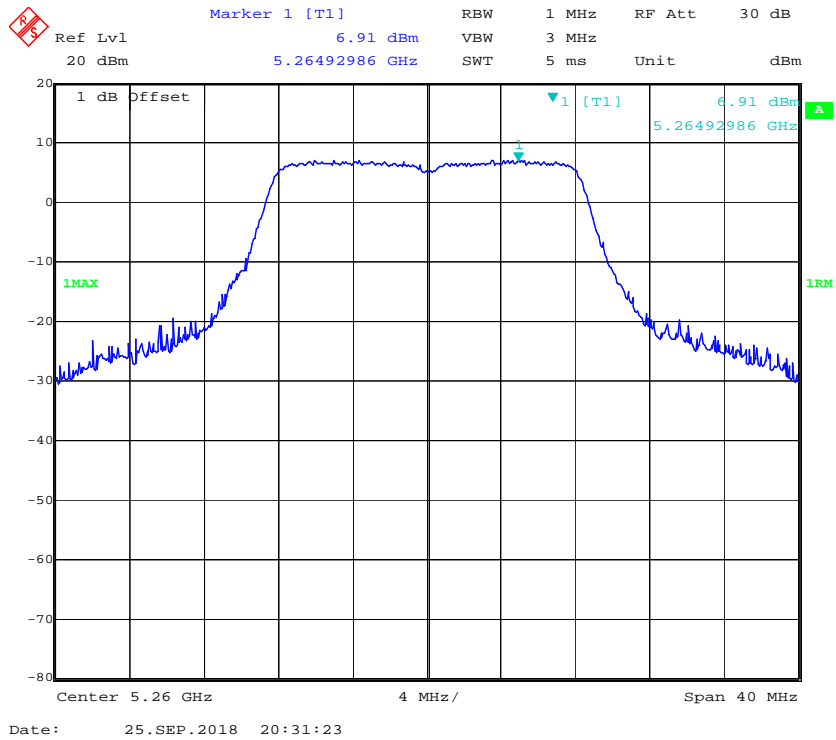


**Power Spectral Density, 802.11 ac80 5210MHz**

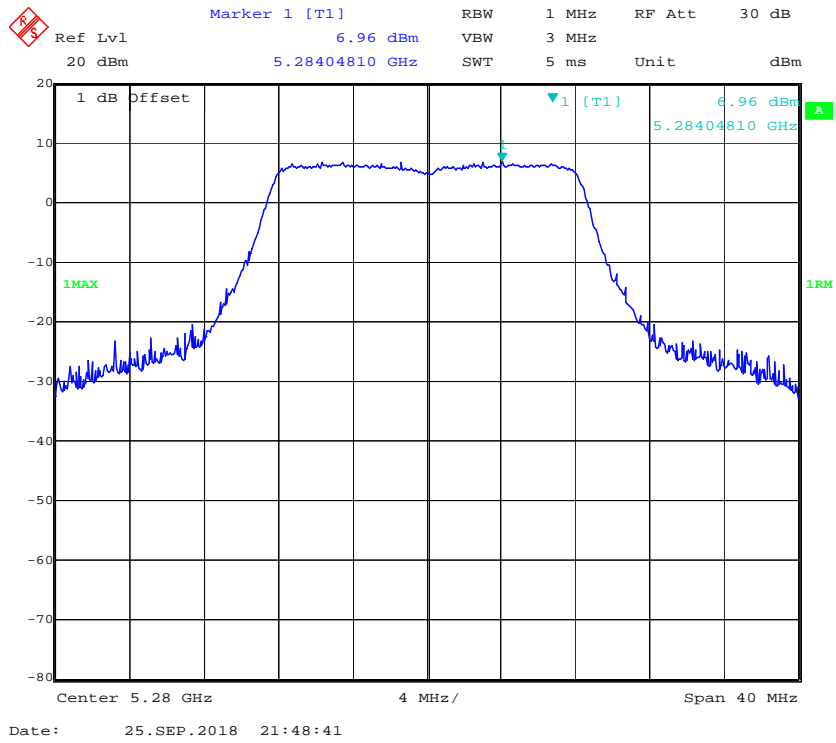


5250-5350MHz:

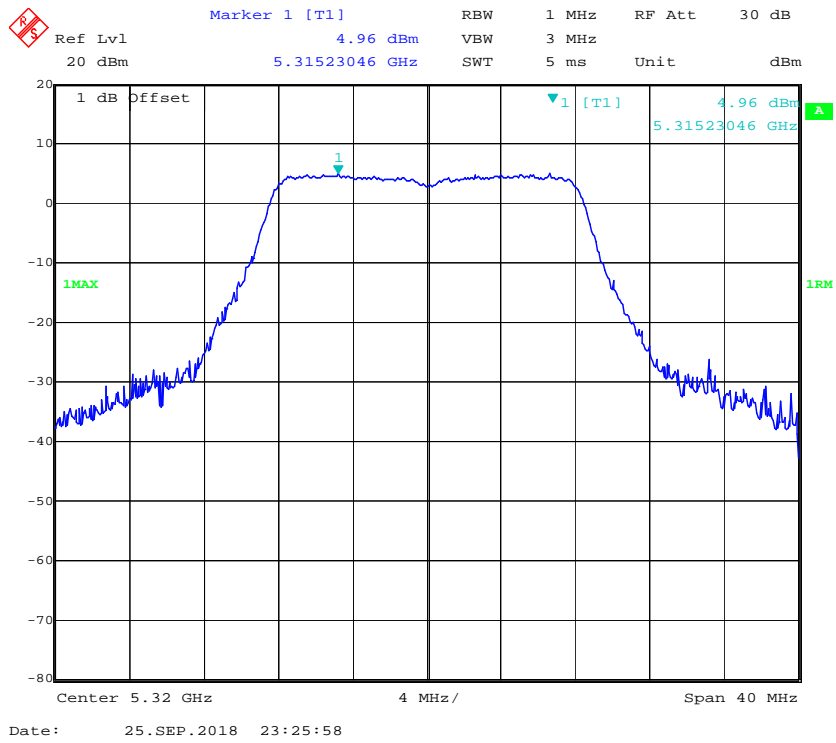
**Power Spectral Density, 802.11a 5260MHz**



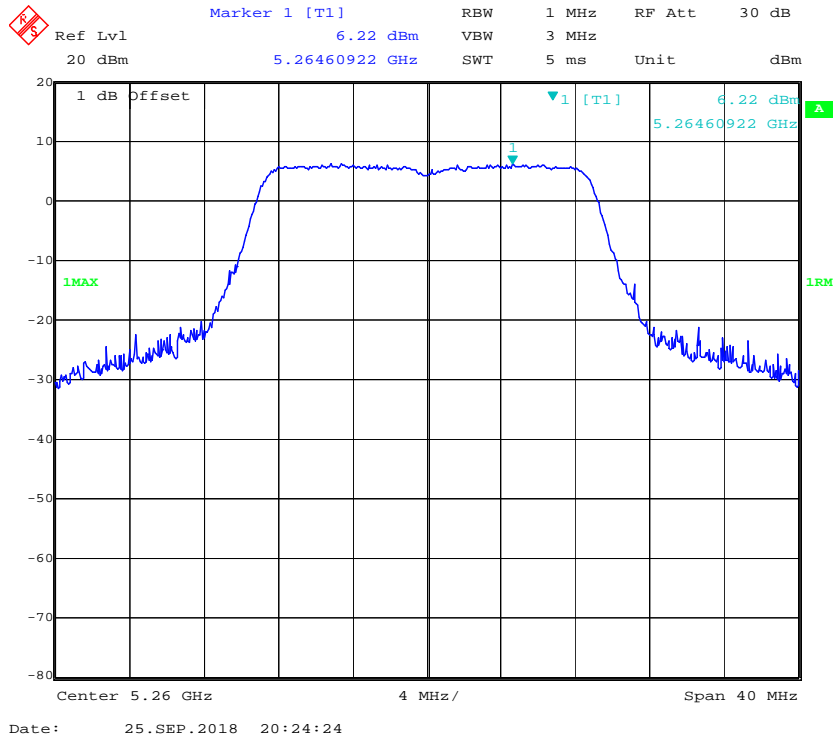
### Power Spectral Density, 802.11a 5280MHz



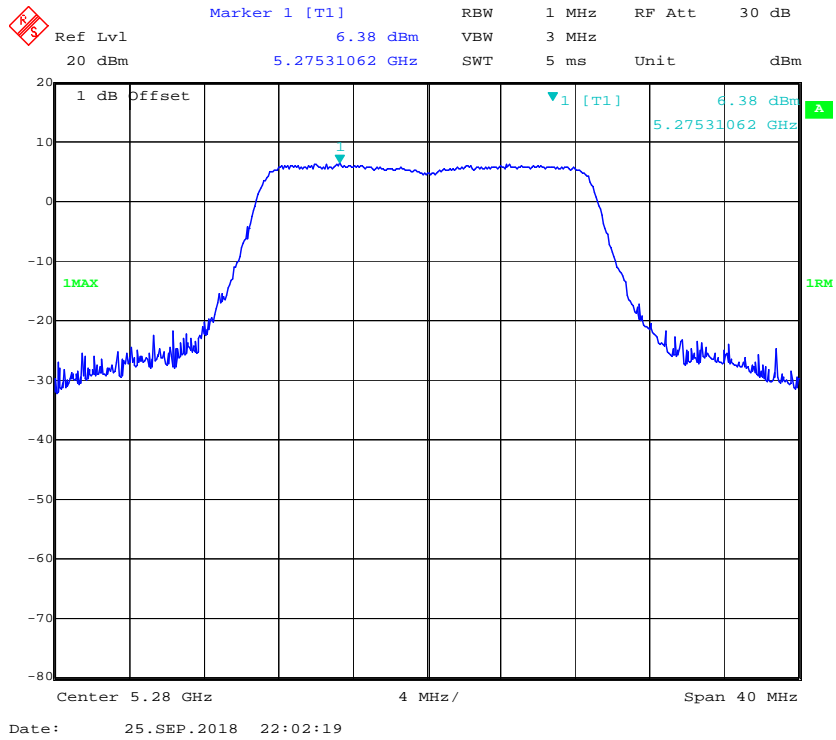
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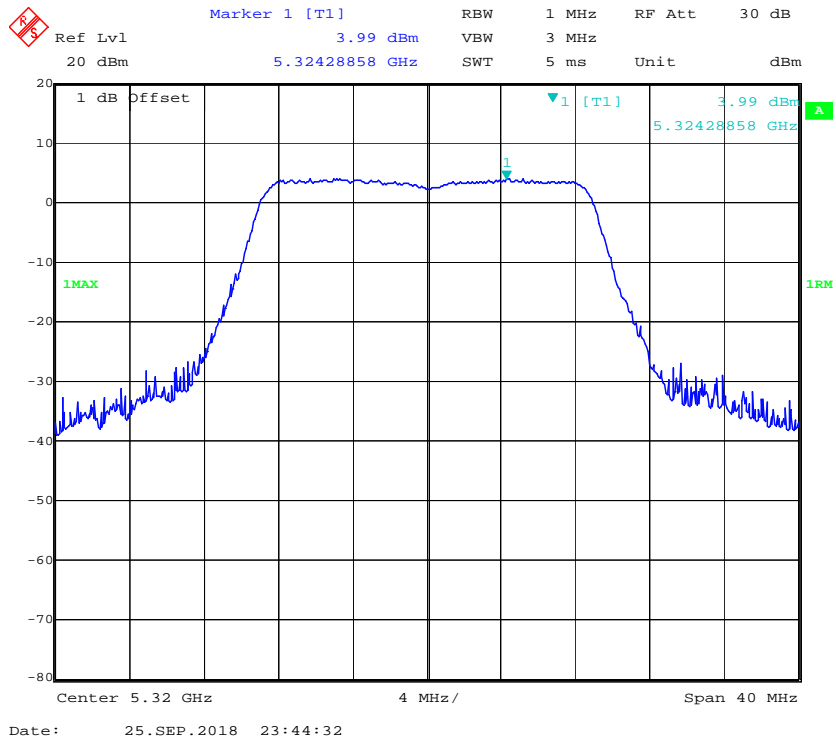
### Power Spectral Density, 802.11n ht20 5260MHz



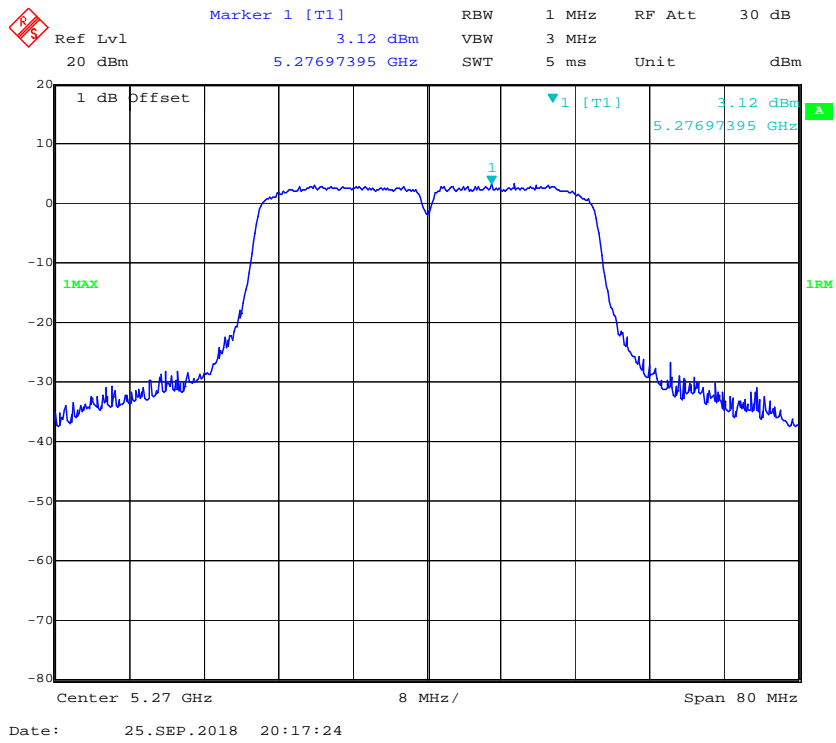
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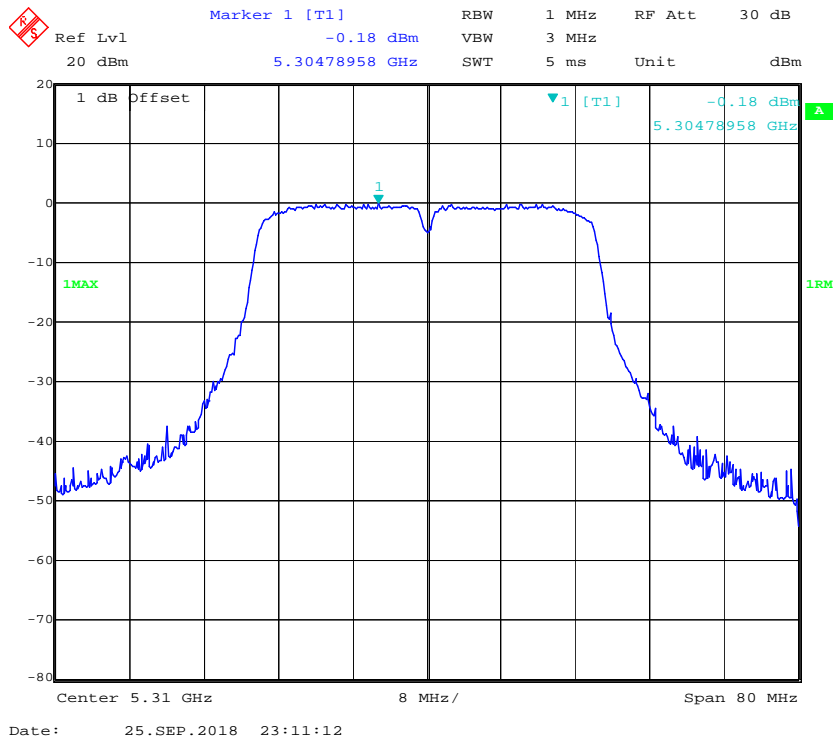
### Power Spectral Density, 802.11n ht20 5320MHz



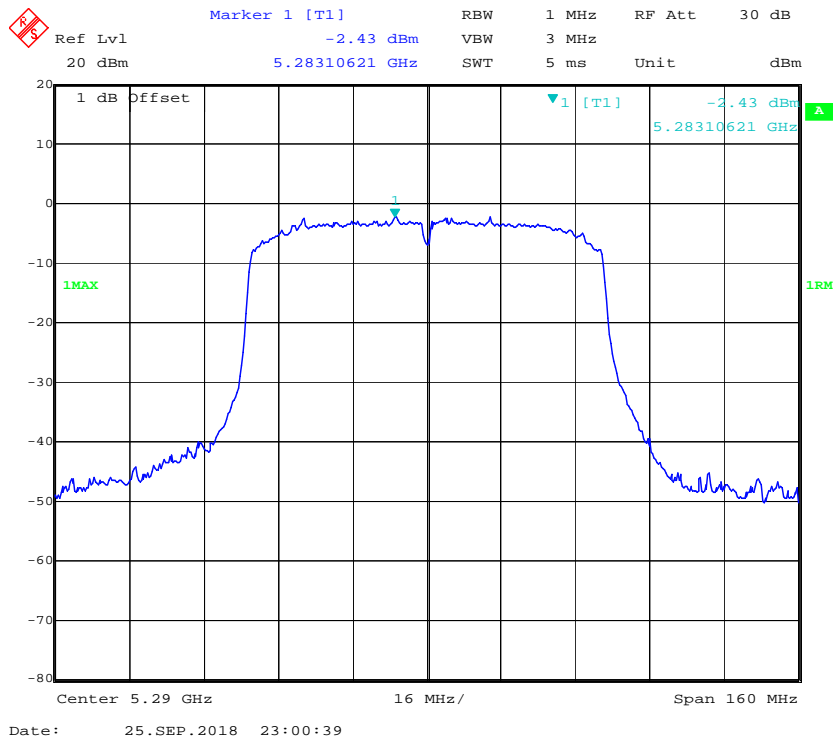
### Power Spectral Density, 802.11n ht40 5270MHz



### Power Spectral Density, 802.11n ht40 5310MHz

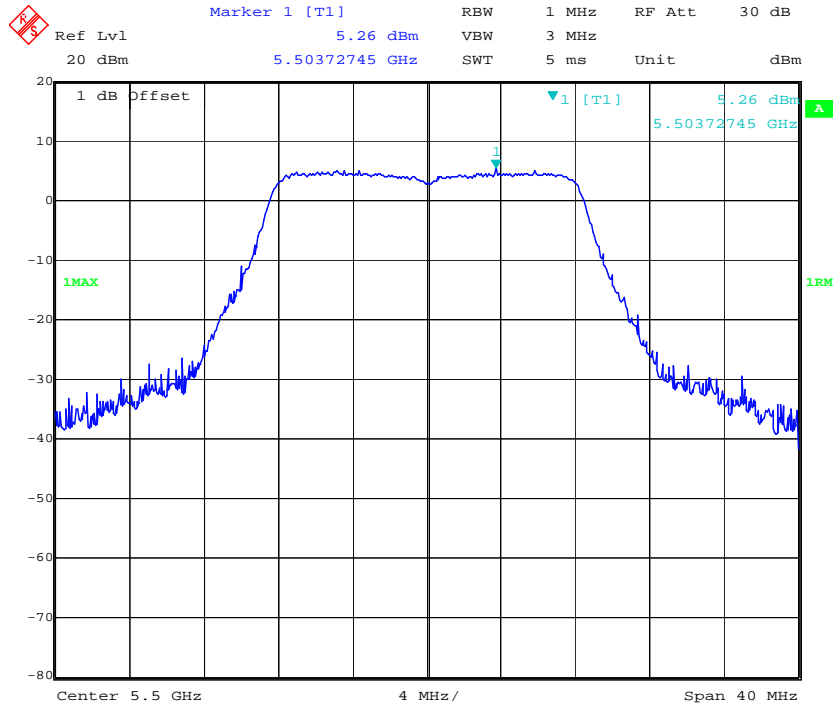


### Power Spectral Density, 802.11 ac80 5290MHz



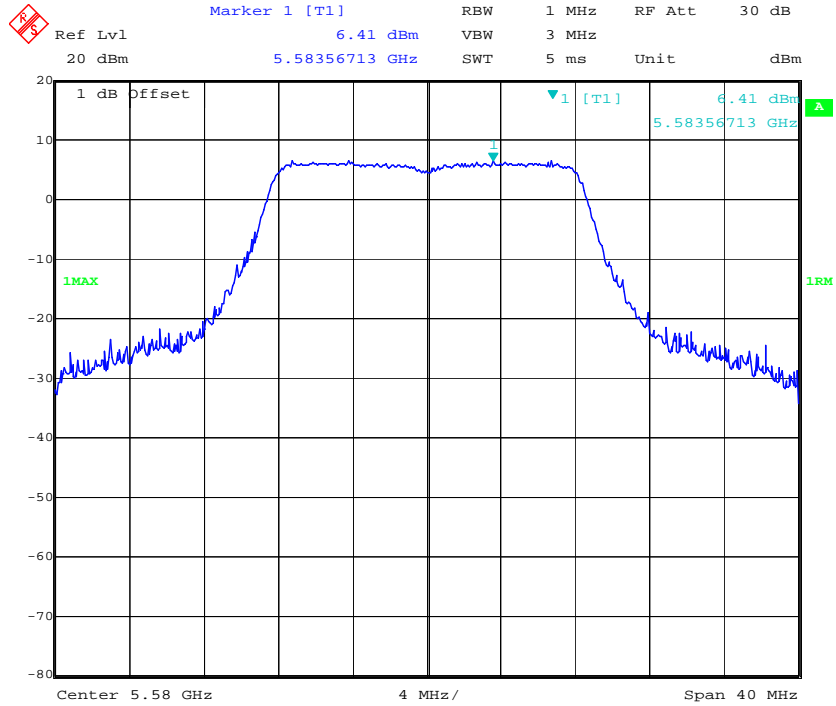
5470-5725MHz:

### Power Spectral Density, 802.11a 5500MHz



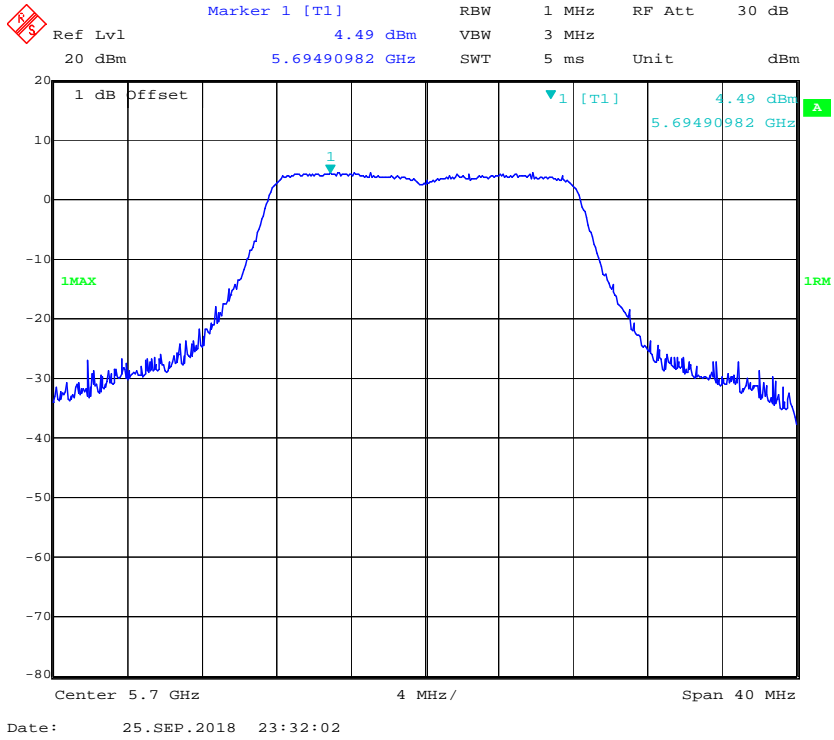
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### Power Spectral Density, 802.11a 5580MHz

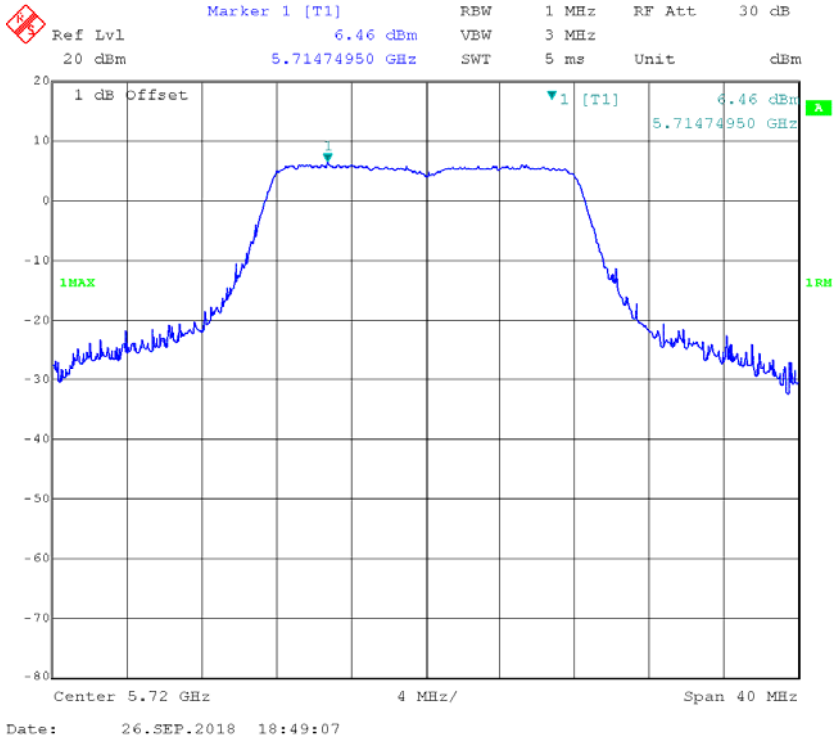


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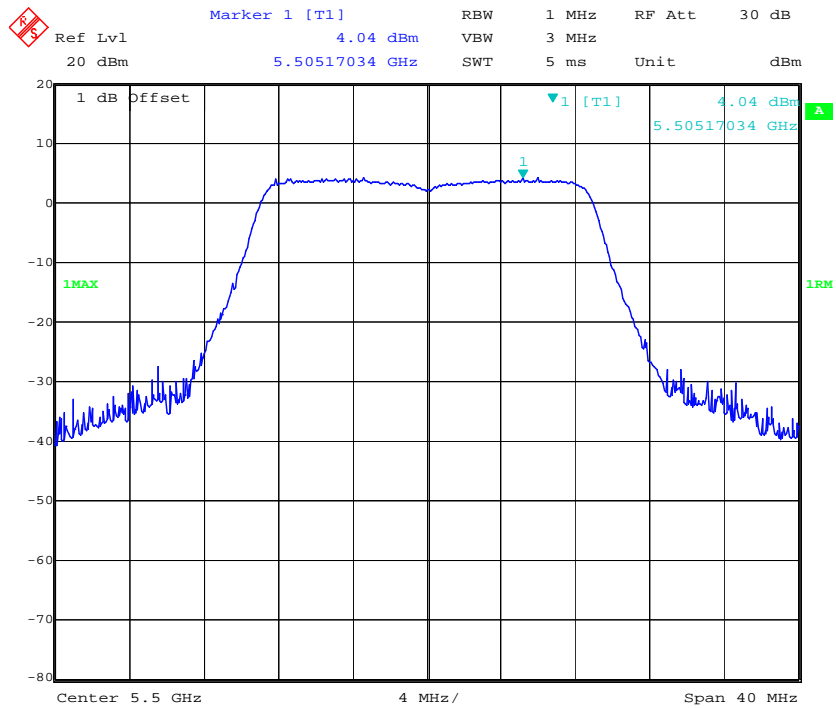
**Power Spectral Density, 802.11a 5700MHz**



**Power Spectral Density, 802.11a 5720MHz**

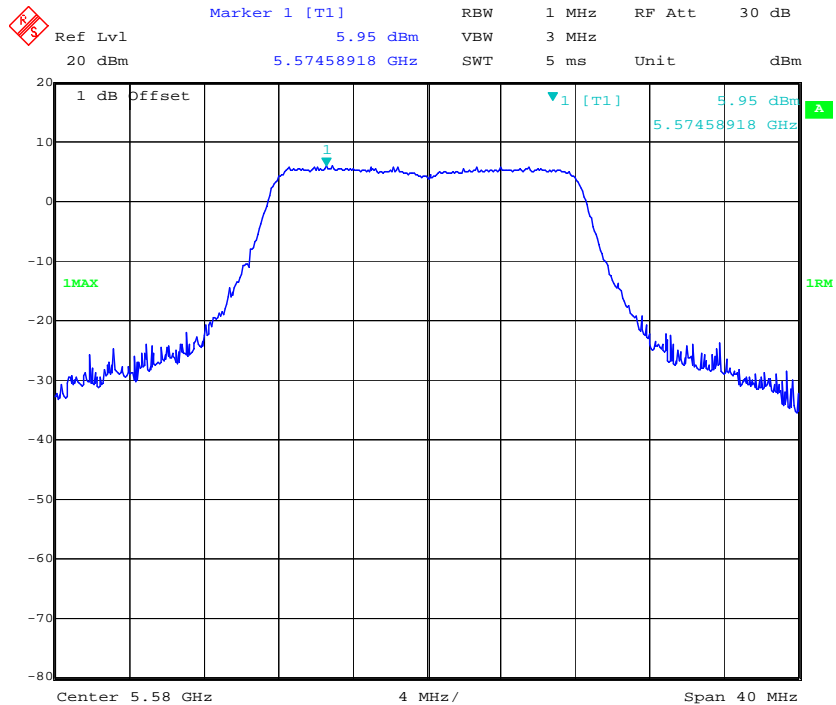


### Power Spectral Density, 802.11n ht20 5500MHz



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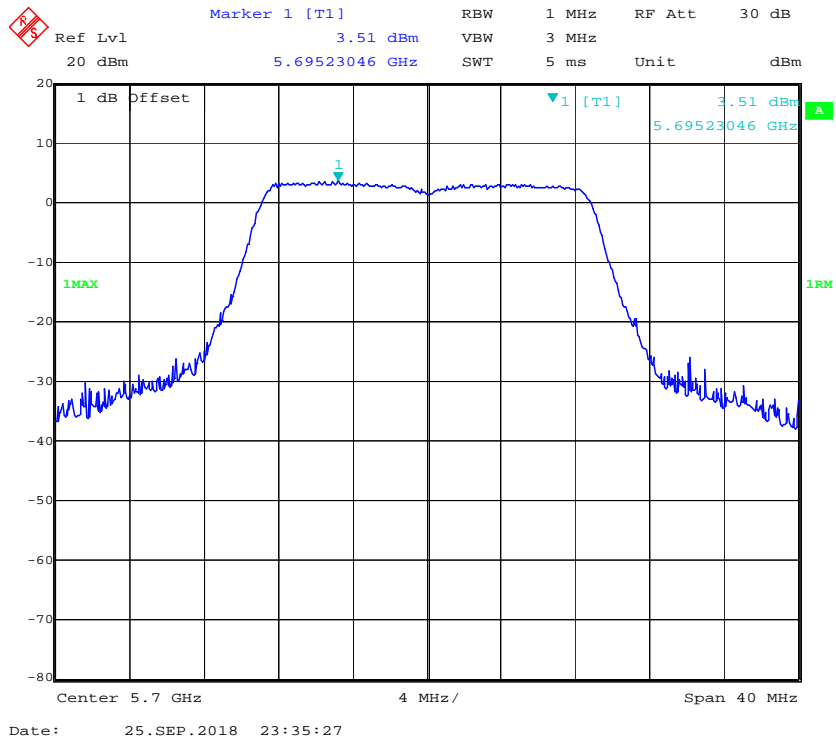
### Power Spectral Density, 802.11n ht20 5580MHz



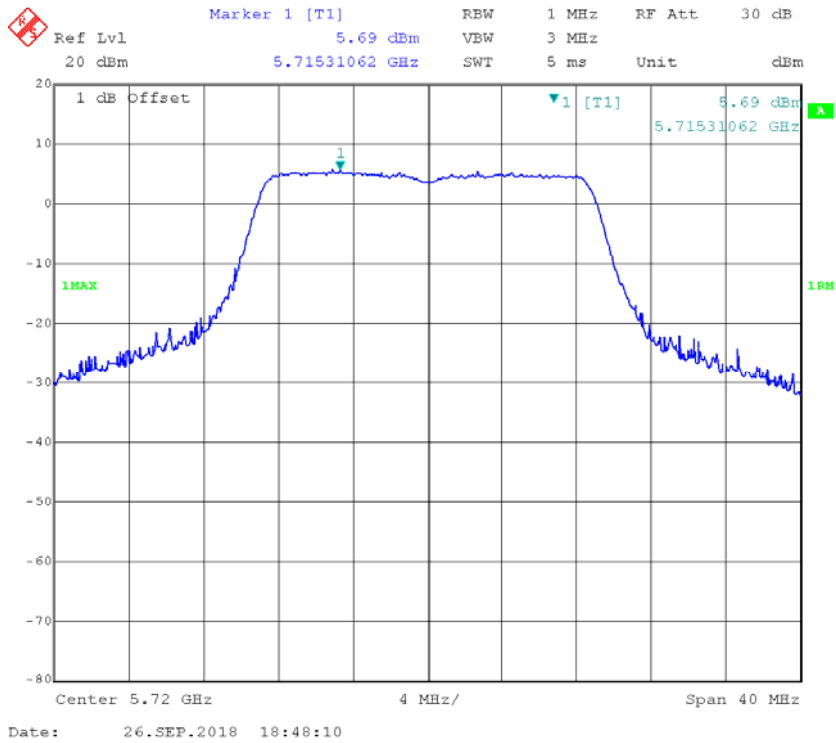
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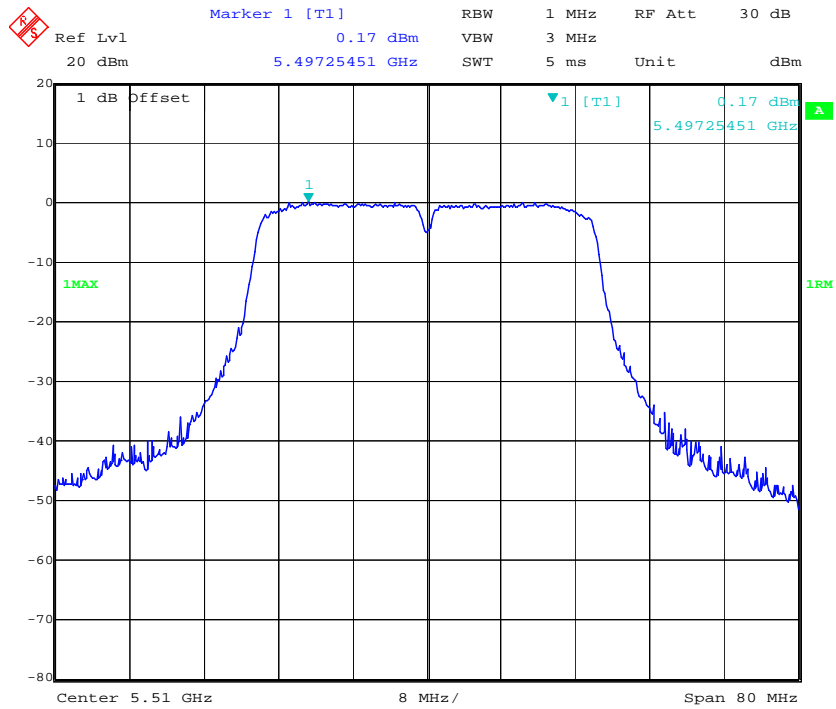
### Power Spectral Density, 802.11n ht20 5700MHz



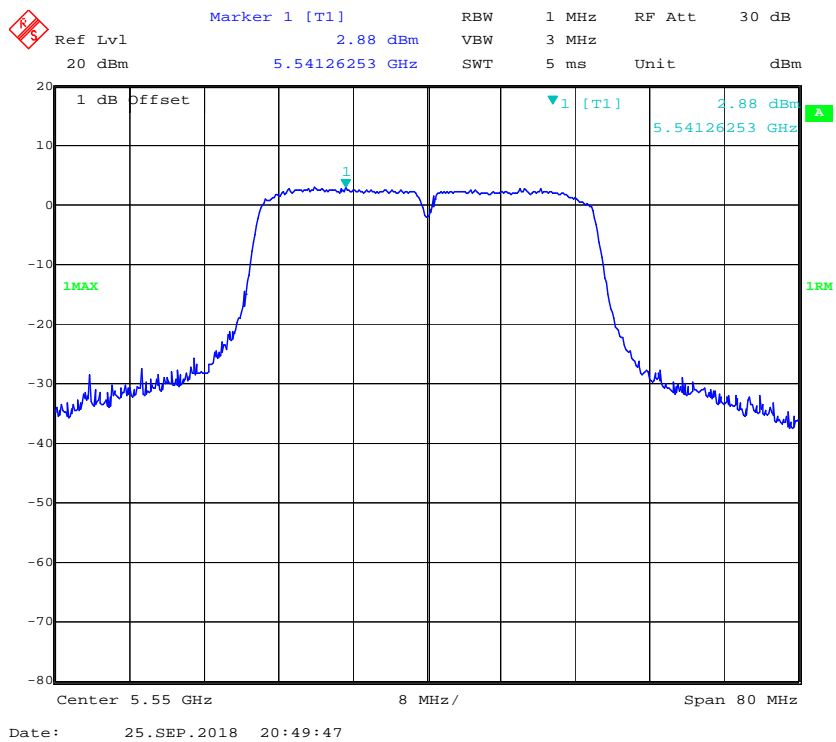
### Power Spectral Density, 802.11n ht20 5720MHz



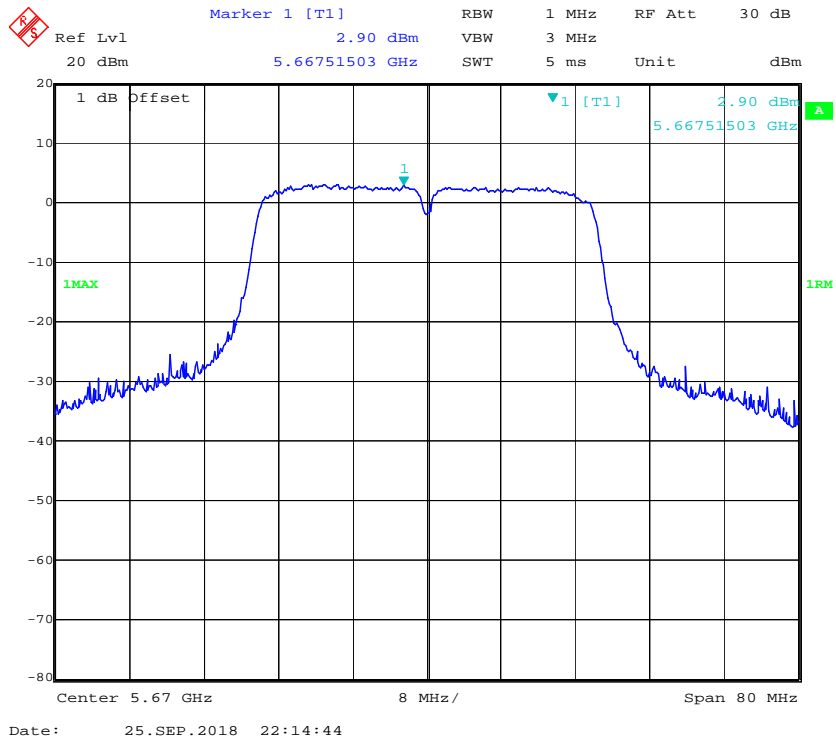
**Power Spectral Density, 802.11n ht40 5510MHz**



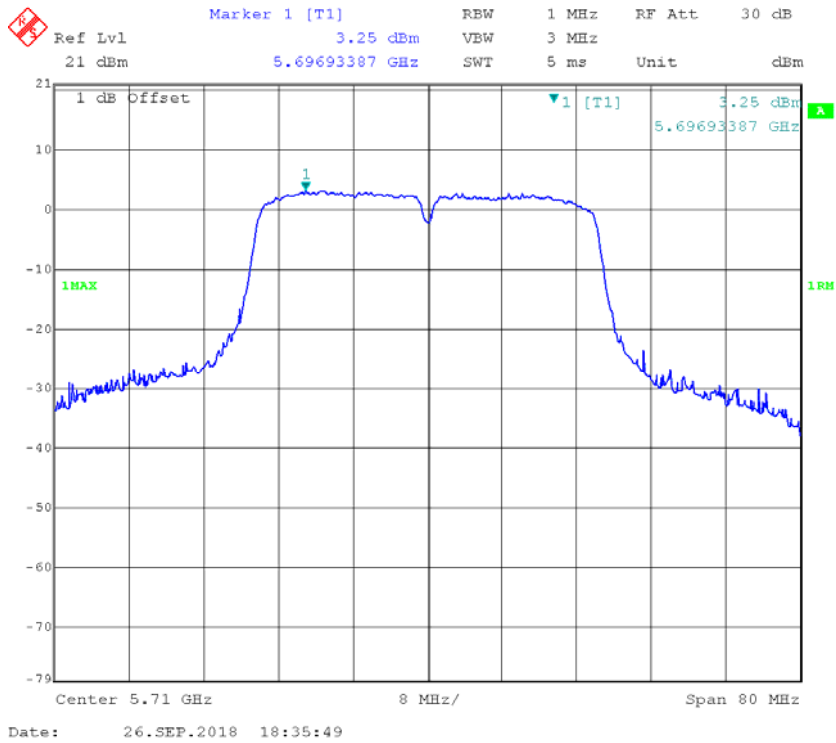
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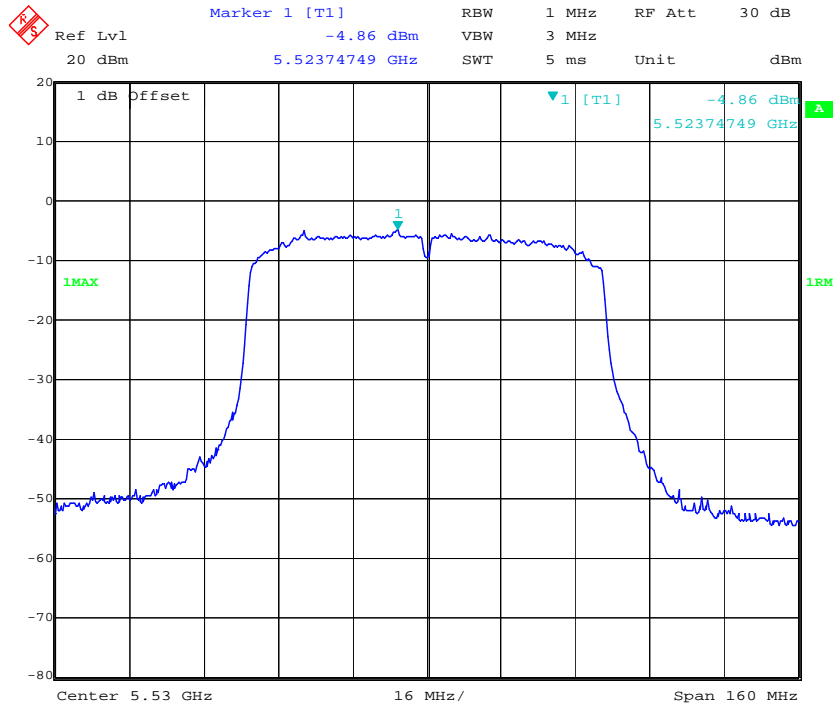
**Power Spectral Density, 802.11n ht40 5670MHz**



**Power Spectral Density, 802.11n ht40 5710MHz**

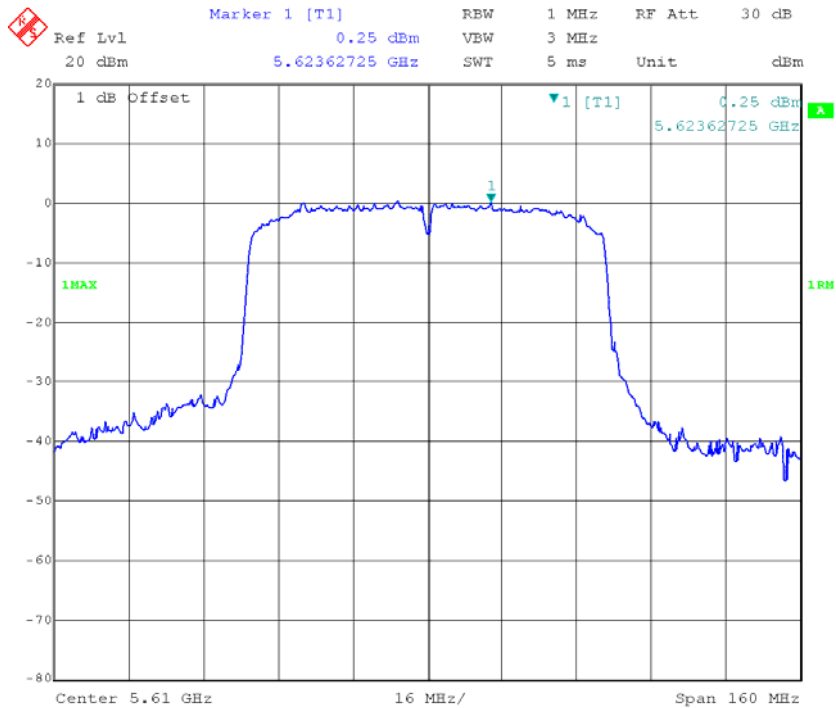


**Power Spectral Density, 802.11 ac80 5530MHz**



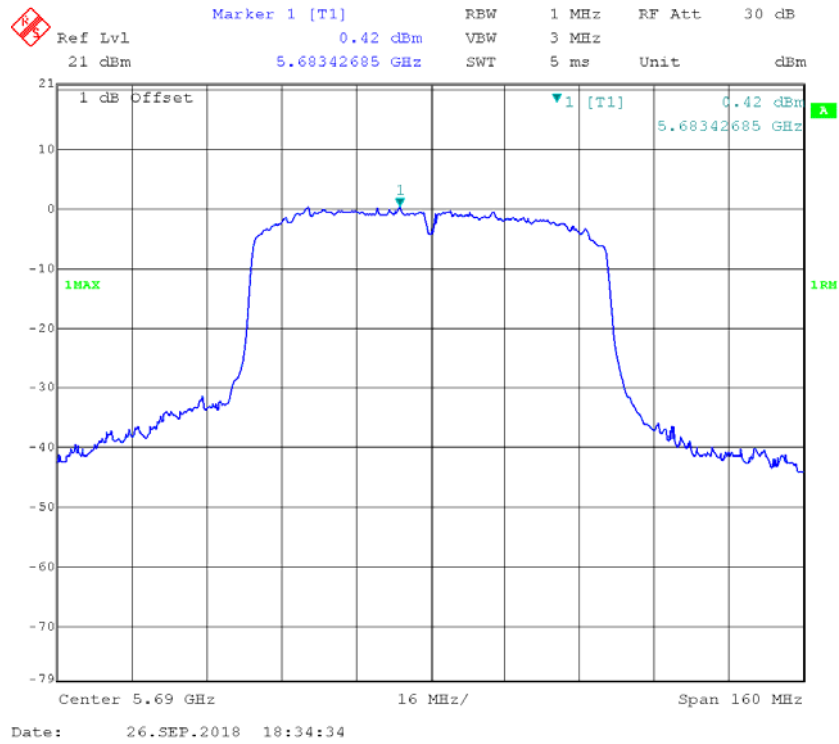
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**Power Spectral Density, 802.11 ac80 5610MHz**



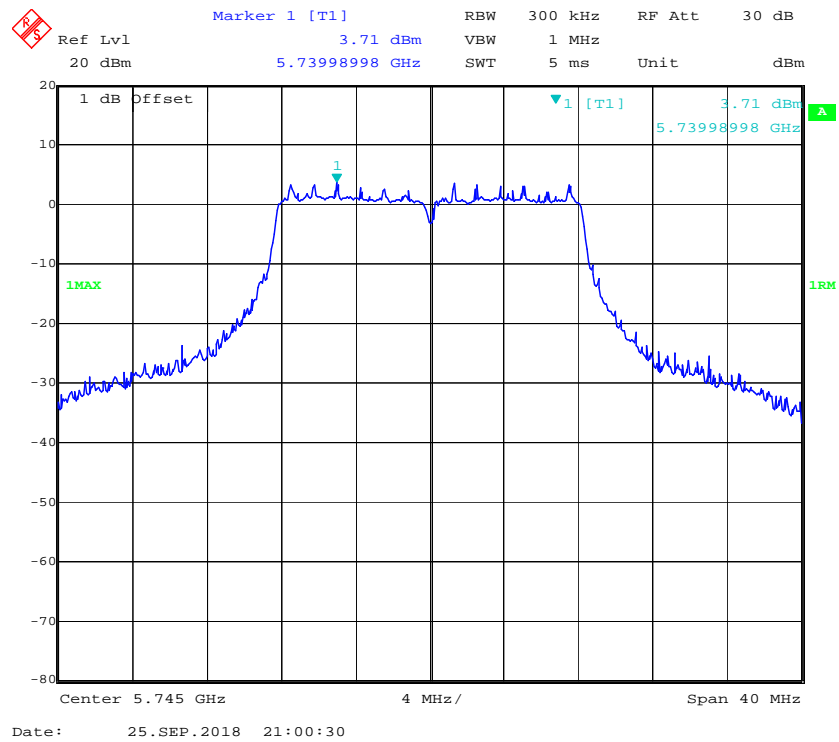
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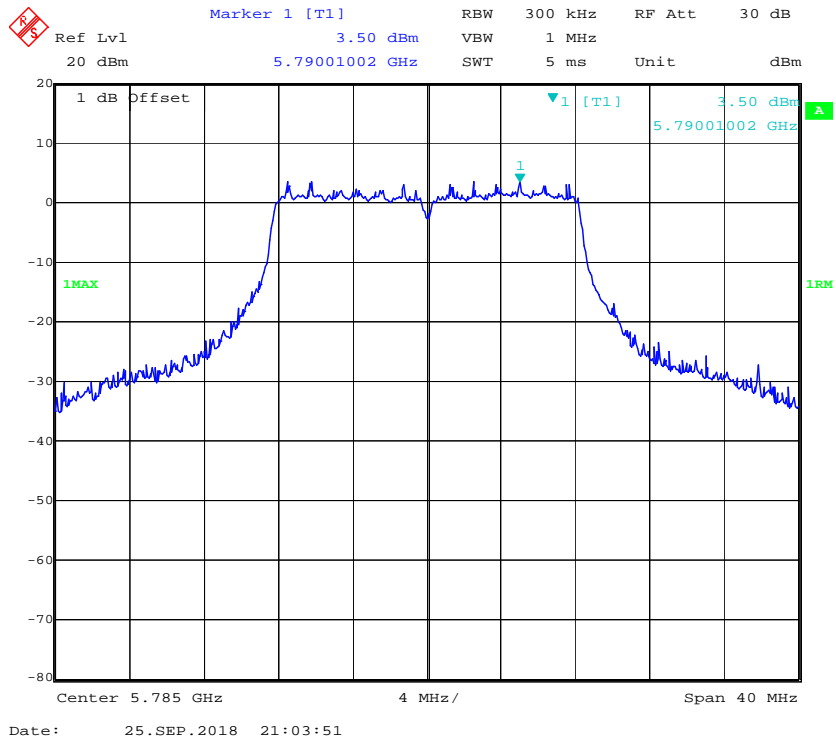


5725-5850MHz:

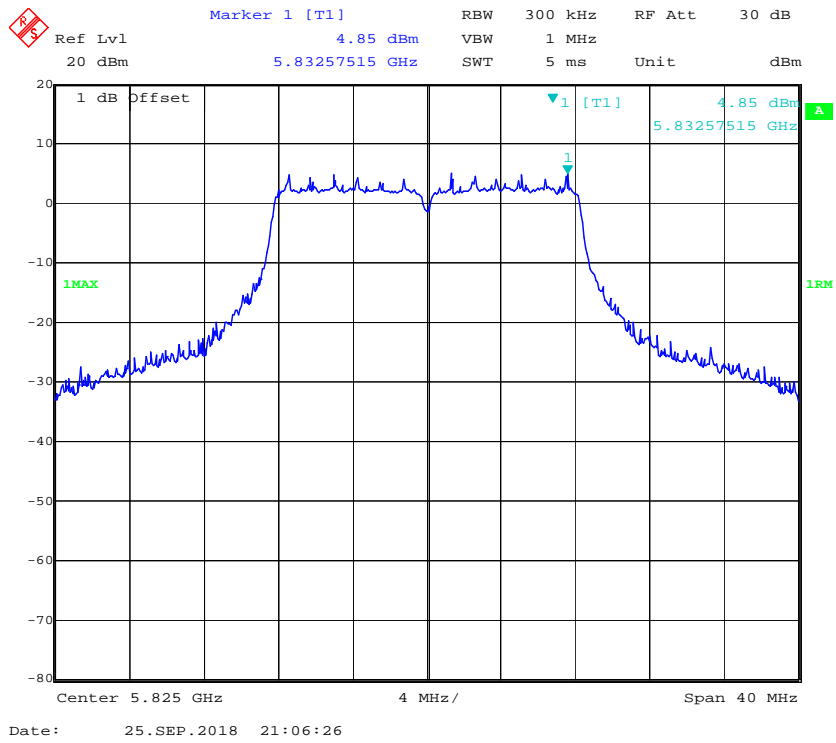
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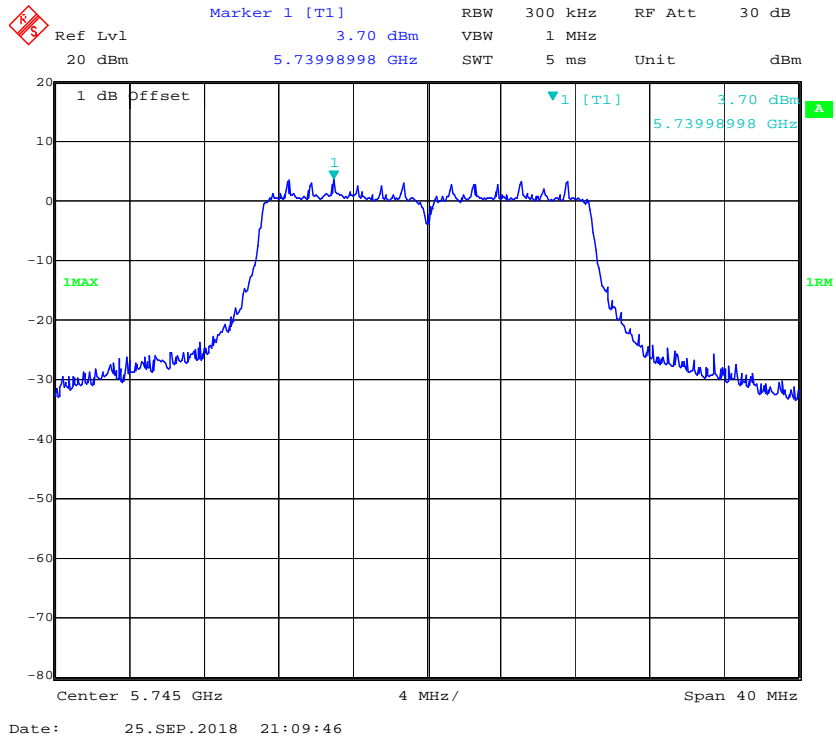
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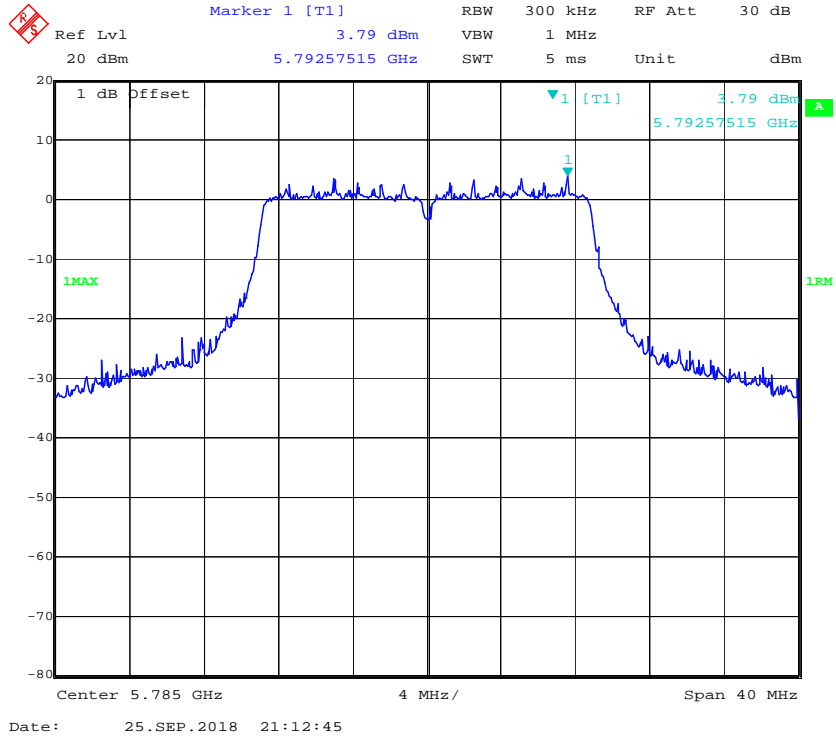
### Power Spectral Density, 802.11a 5825MHz



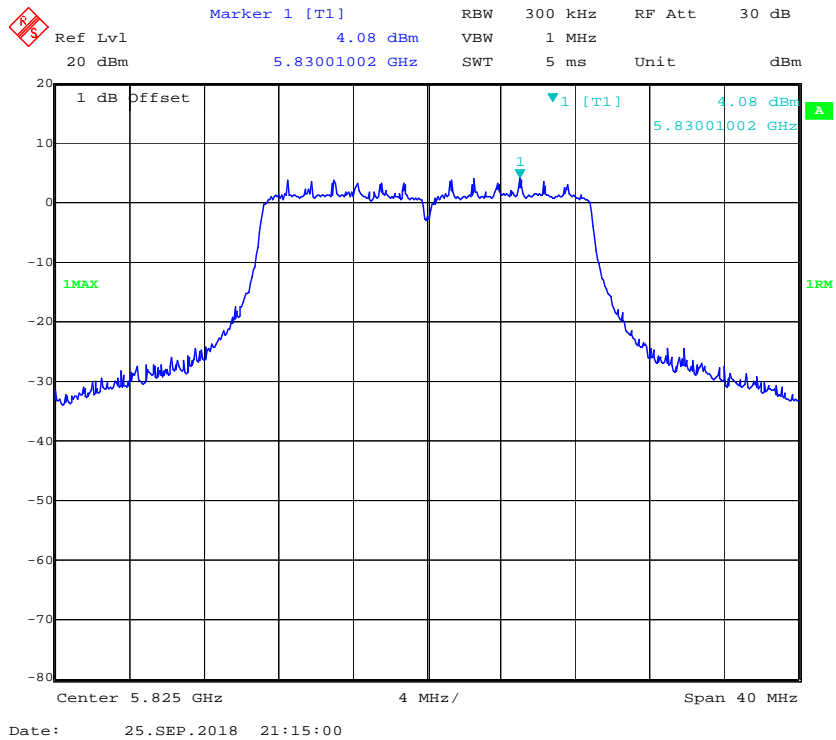
### Power Spectral Density, 802.11n ht20 5745MHz



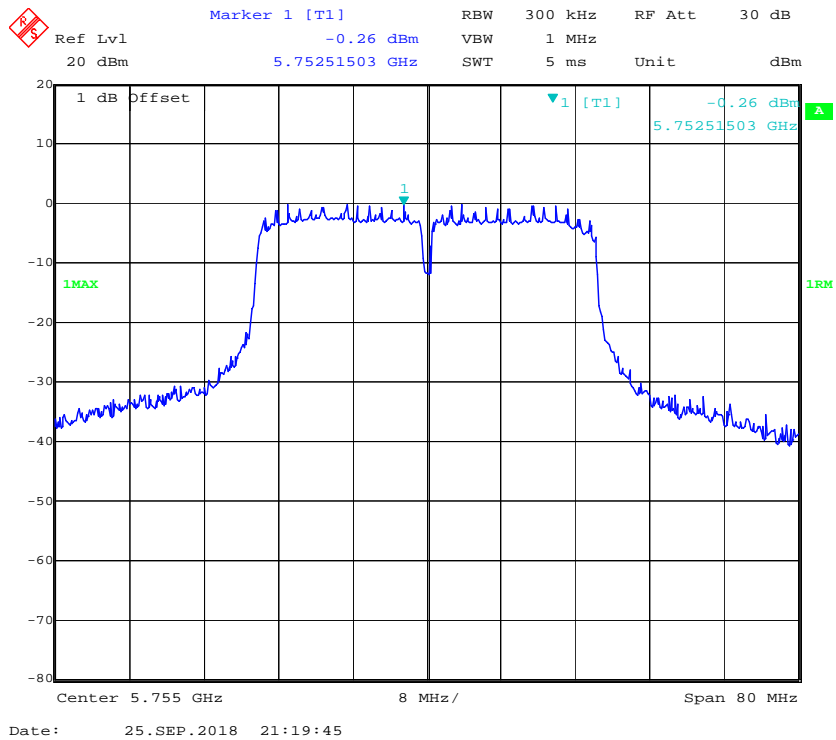
### Power Spectral Density, 802.11n ht20 5785MHz



**Power Spectral Density, 802.11n ht20 5825MHz**

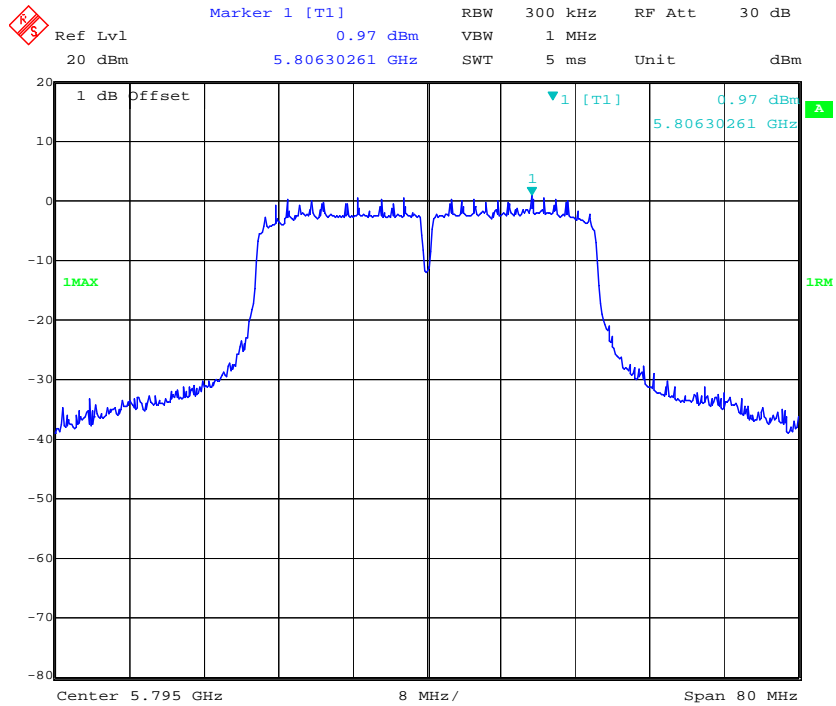


**Power Spectral Density, 802.11n ht40 5755MHz**



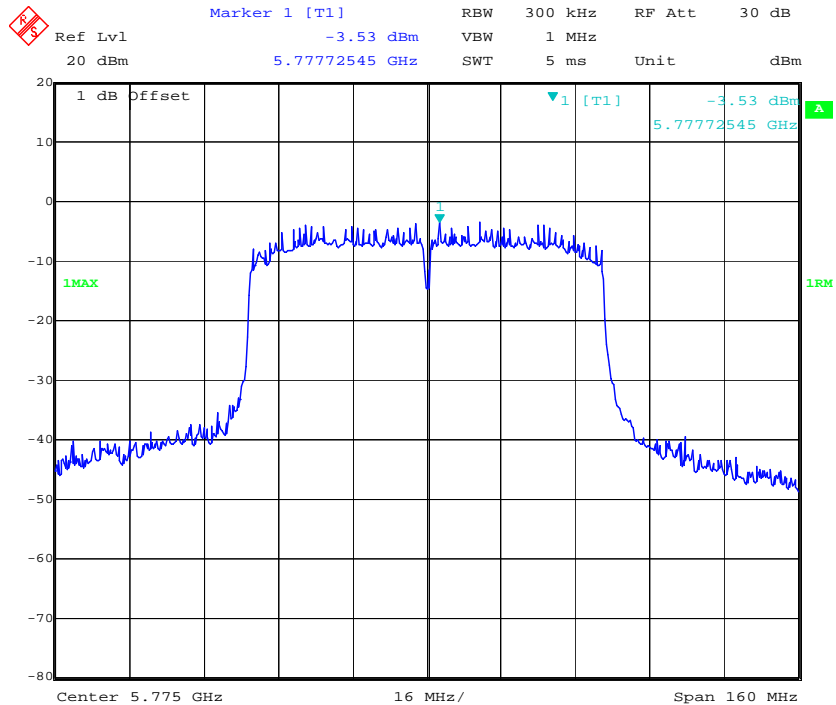


**Power Spectral Density, 802.11n ht40 5795MHz**



Date: 25.SEP.2018 21:23:13

**Power Spectral Density, 802.11 ac80 5775MHz**



Date: 25.SEP.2018 21:26:00

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