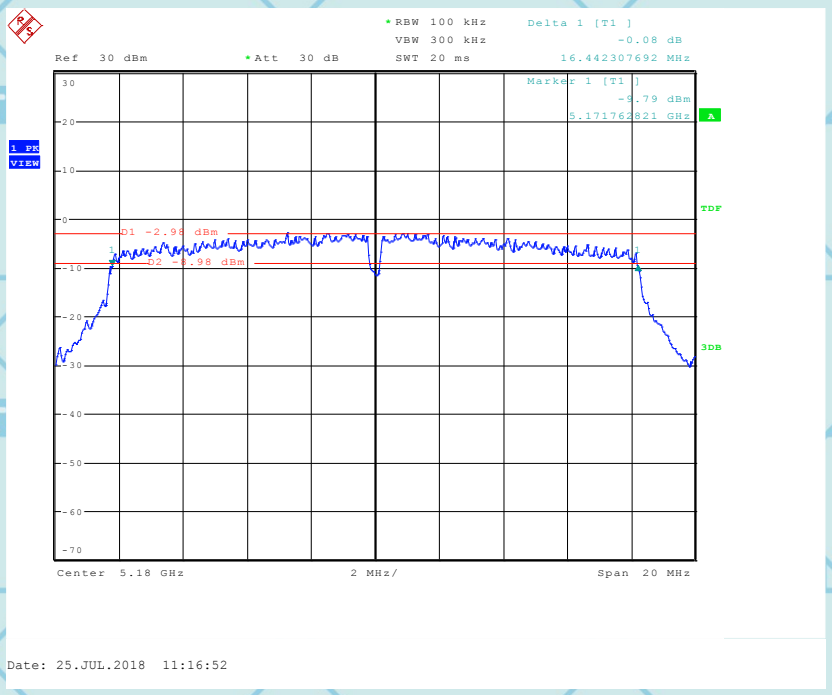
6 dB Bandwidth

Product	: Mobile phone	Test Mode	: See Section 2.2
Test Item	: 6 dB BW	Temperature	: 25℃
Test Voltage	: DC 3.85V	Humidity	: 56%RH
Test Result	: **PASS**		

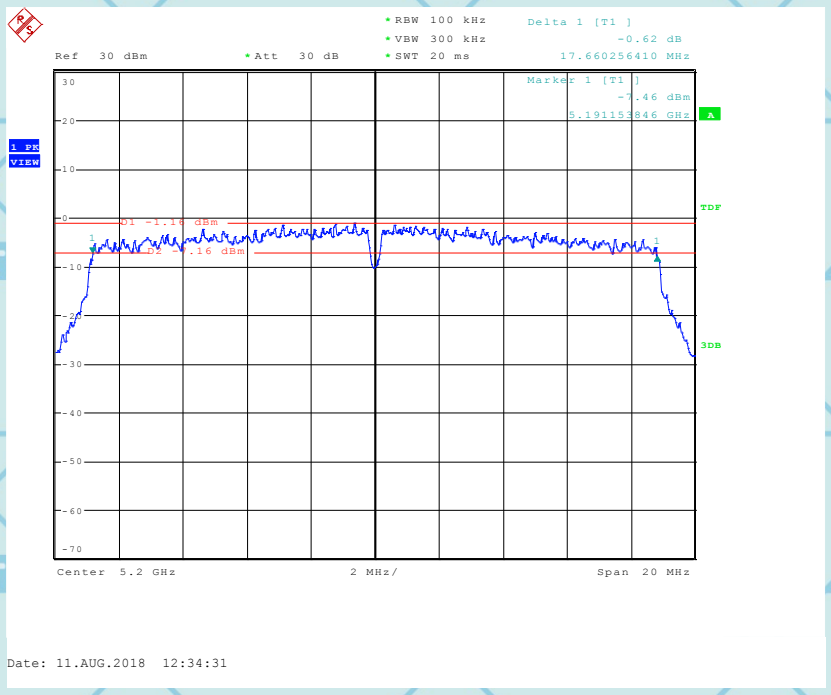
IEEE 802.11a

Channel	Measured Frequency (MHz)	6 dB Bandwidth (MHz)	Limit
36	5180	16.44	> 0.5MHz
40	5200	17.66	> 0.5MHz
48	5240	16.41	> 0.5MHz

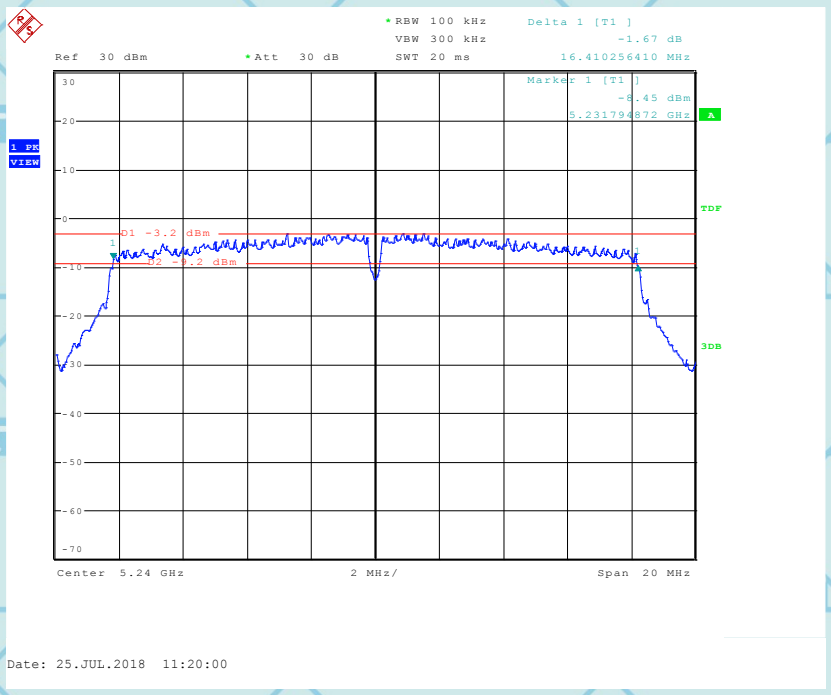
Channel 36



Channel 40



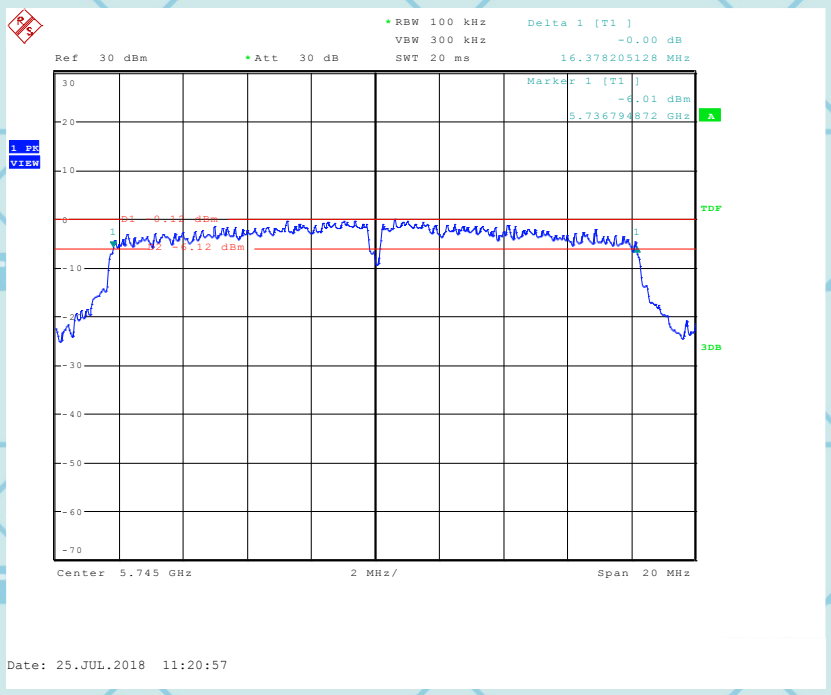
Channel 48



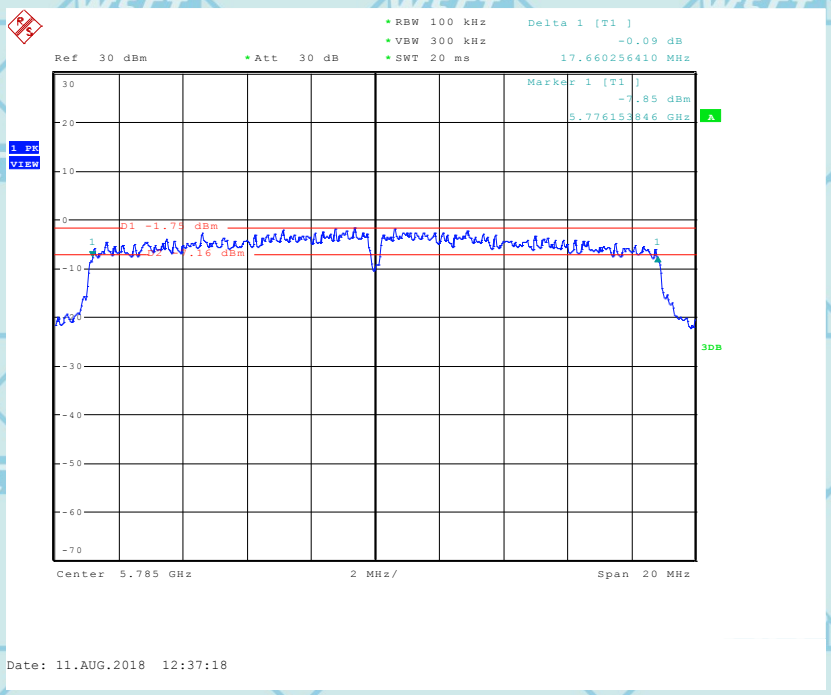
IEEE 802.11a

Channel	Measured Frequency (MHz)	6 dB Bandwidth (MHz)	Limit
149	5745	16.38	> 0.5MHz
157	5785	17.66	> 0.5MHz
165	5825	16.41	> 0.5MHz

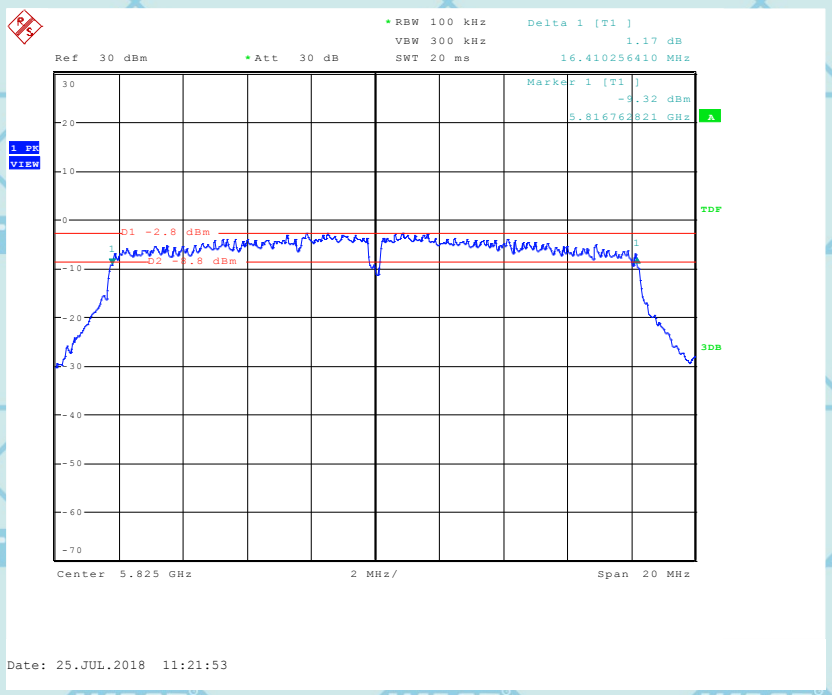
Channel 149



Channel 157



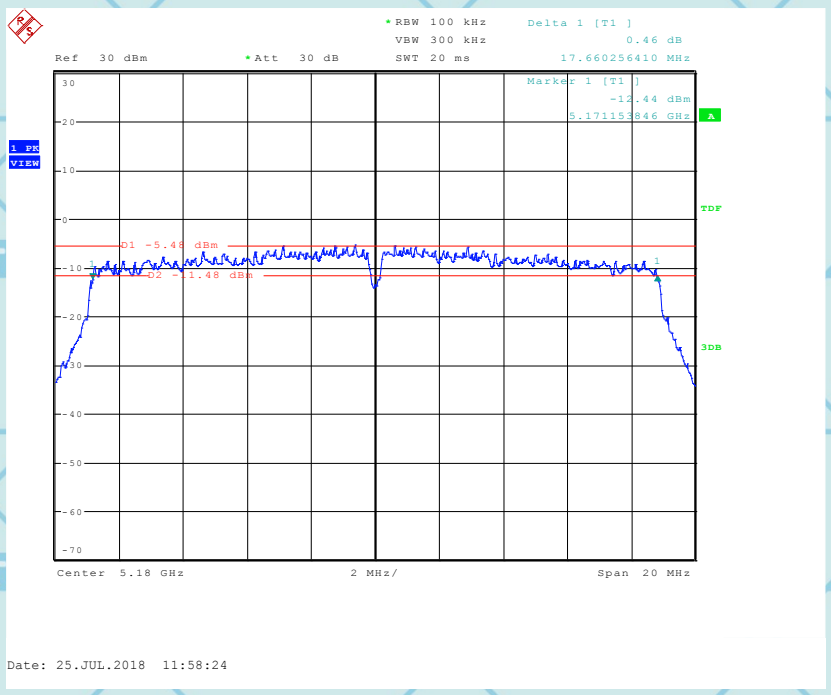
Channel 165


RBW 100 kHz
VBW 300 kHz
SWT 20 ms
Delta 1 [T1]
1.17 dB
16.410256410 MHz
Ref 30 dBm
Att 30 dB
Marker 1 [T1]
-9.32 dBm
5.816762821 GHz
1 PK VIEW
D1 -2.8 dBm
TDF
3DB
Center 5.825 GHz
2 MHz/
Span 20 MHz
Date: 25.JUL.2018 11:21:53

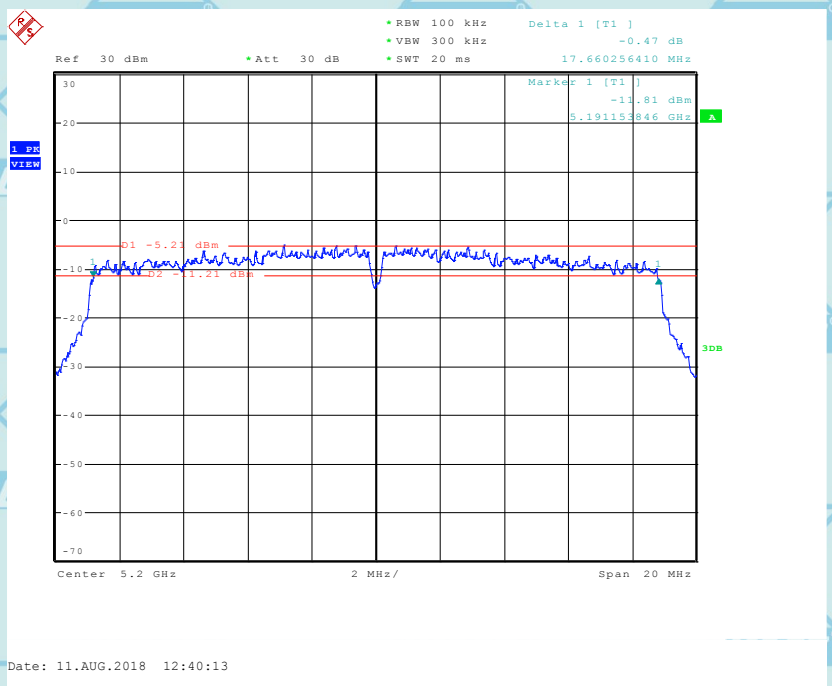
IEEE802.11n 20MHz

Channel	Measured Frequency (MHz)	6 dB Bandwidth (MHz)	Limit
36	5180	17.66	> 0.5MHz
40	5200	17.66	> 0.5MHz
48	5240	17.63	> 0.5MHz

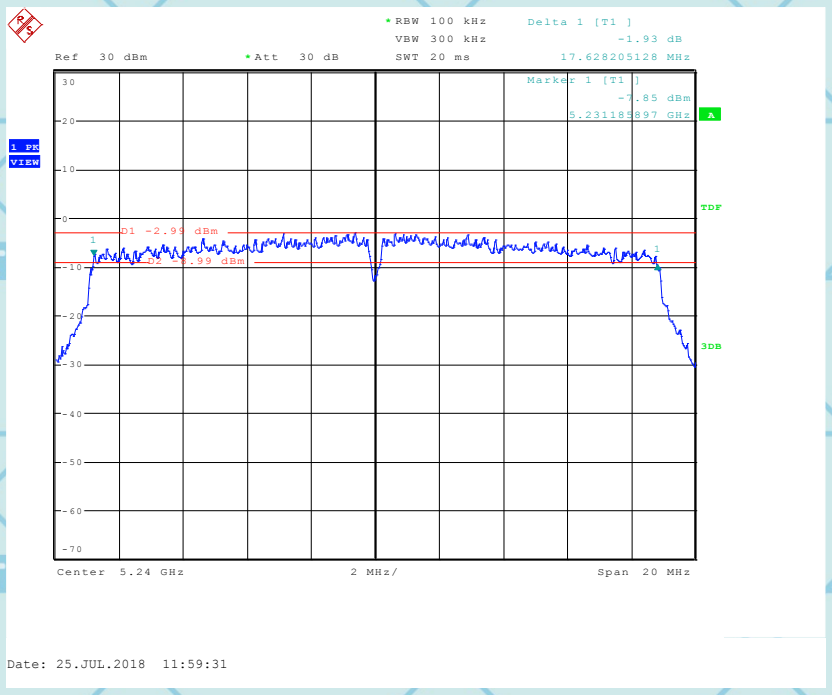
Channel 36



Channel 40



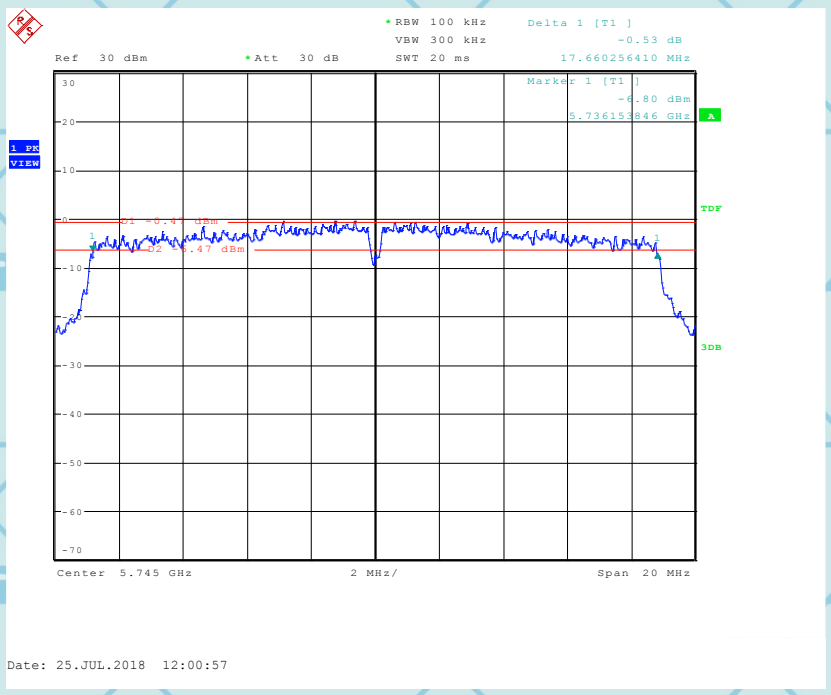
Channel 48


RBW 100 kHz
VBW 300 kHz
SWT 20 ms
Delta 1 [T1]
-1.93 dB
17.628205128 MHz
Ref 30 dBm
Att 30 dB
Marker 1 [T1]
-7.85 dBm
5.231185897 GHz
1 PK VIEW
D1 -2.99 dBm
TDF
3DB
Center 5.24 GHz
2 MHz/
Span 20 MHz
Date: 25.JUL.2018 11:59:31

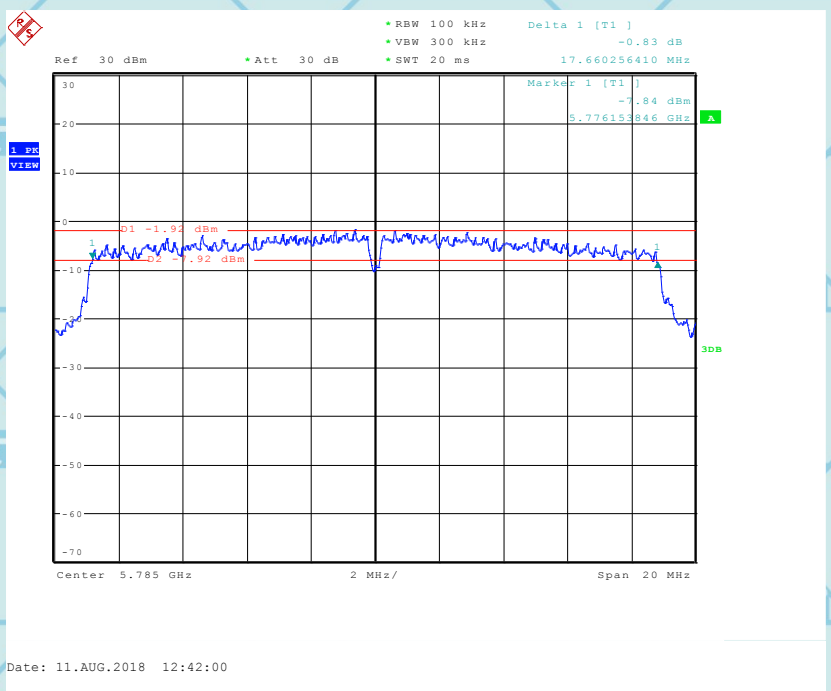
IEEE 802.11n 20MHz

Channel	Measured Frequency (MHz)	6 dB Bandwidth (MHz)	Limit
149	5745	17.66	> 0.5MHz
157	5785	17.66	> 0.5MHz
165	5825	17.63	> 0.5MHz

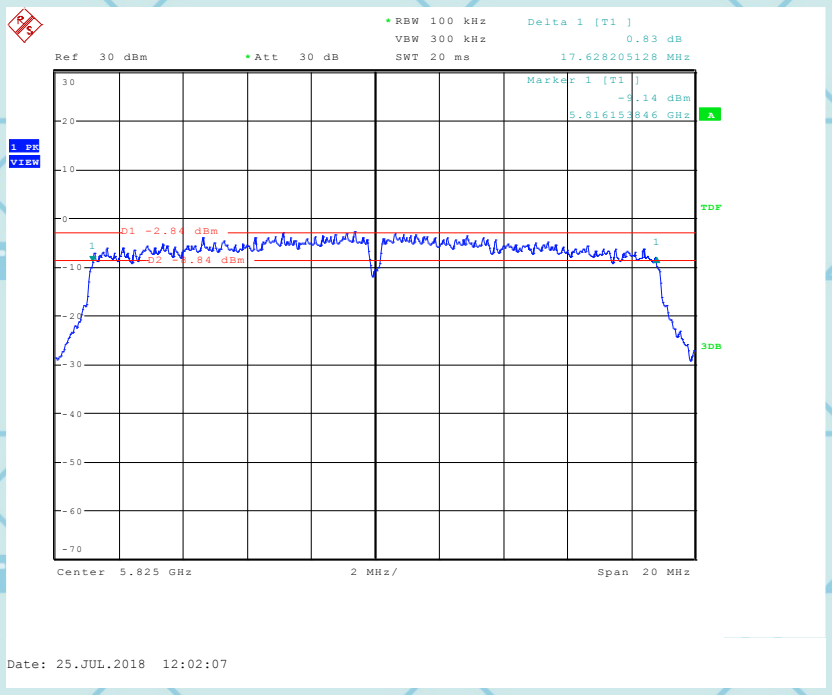
Channel 149



Channel 157



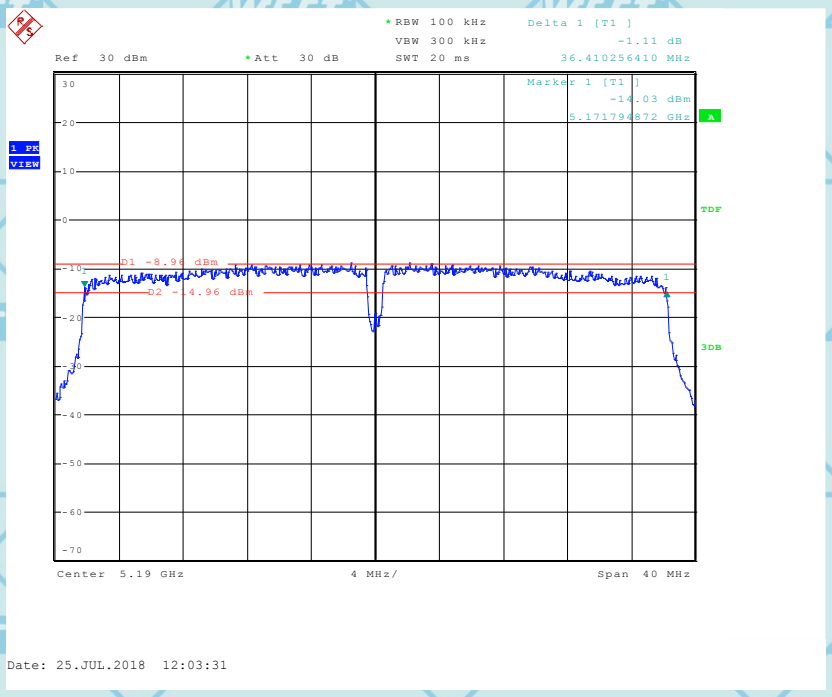
Channel 165


RBW 100 kHz
VBW 300 kHz
SWT 20 ms
Delta 1 [T1]
0.83 dB
17.628205128 MHz
Marker 1 [T1]
-9.14 dBm
5.816153846 GHz
Ref 30 dBm
Att 30 dB
1 PK VIEW
D1 -2.84 dBm
D2 -3.84 dBm
TDF
3DB
Center 5.825 GHz
2 MHz/
Span 20 MHz
Date: 25.JUL.2018 12:02:07

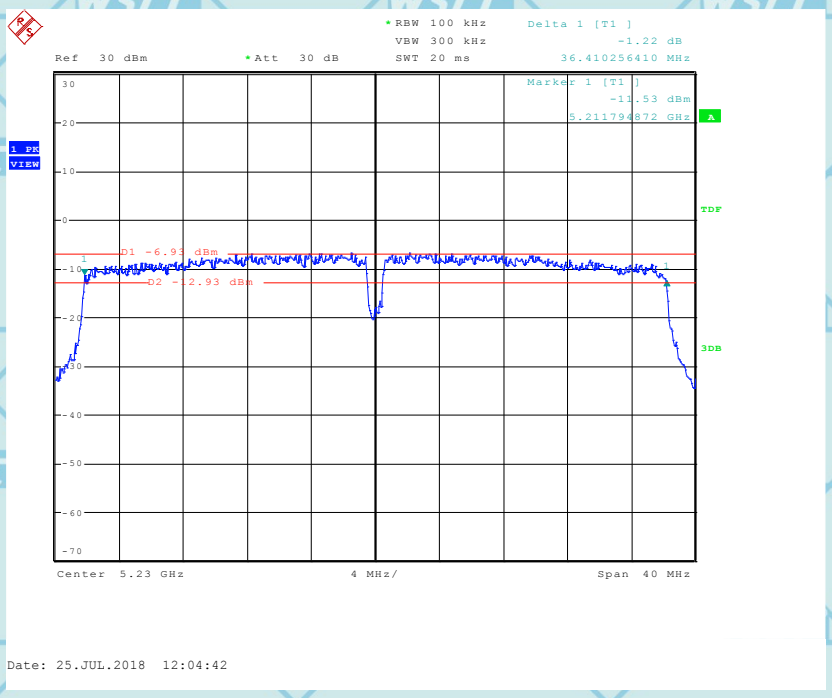
IEEE802.11n 40MHz

Channel	Measured Frequency (MHz)	6 dB Bandwidth (MHz)	Limit
38	5190	36.41	> 0.5MHz
46	5230	36.41	> 0.5MHz

Channel 38



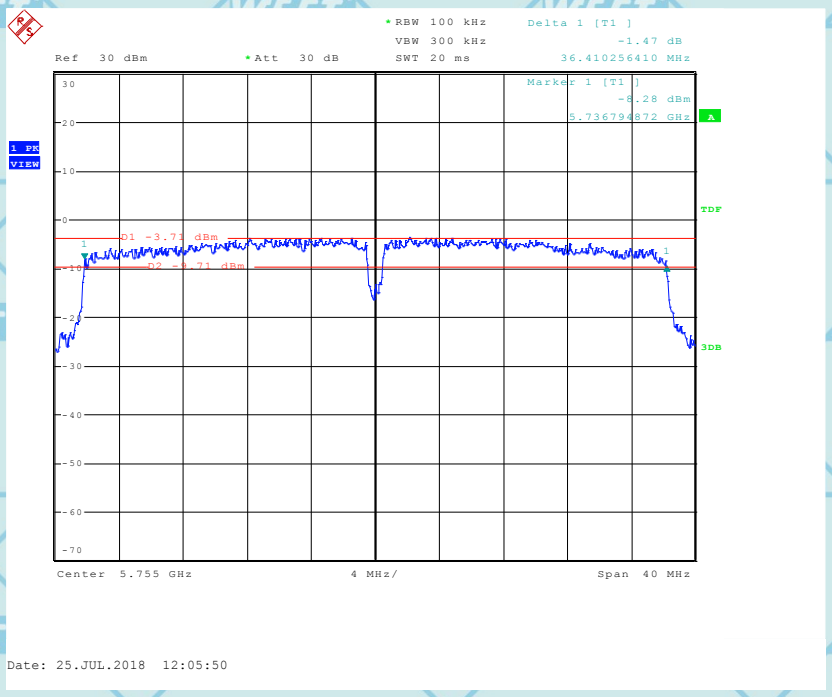
Channel 46



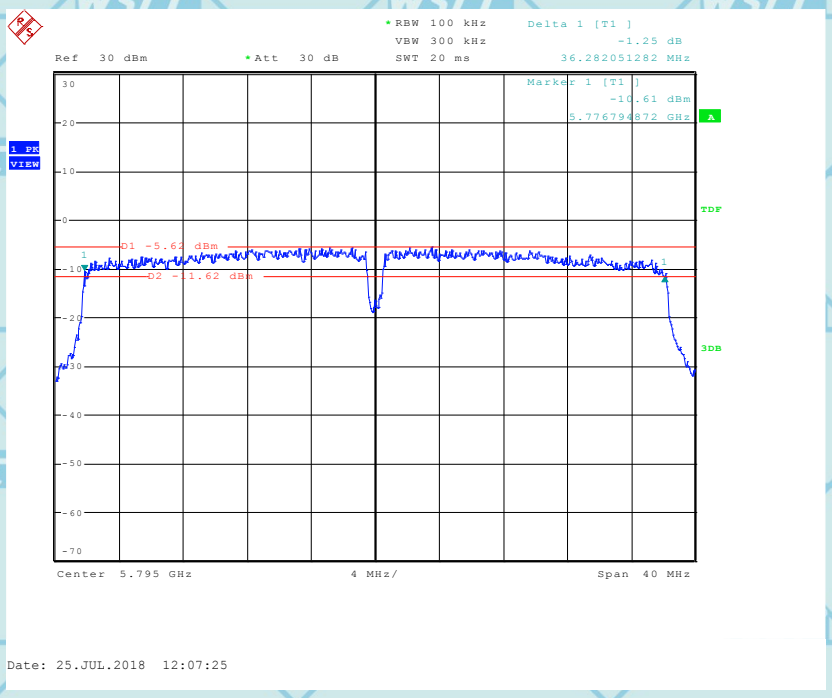
IEEE 802.11n 40MHz

Channel	Measured Frequency (MHz)	6 dB Bandwidth (MHz)	Limit
151	5755	36.41	> 0.5MHz
159	5795	36.28	> 0.5MHz

Channel 151



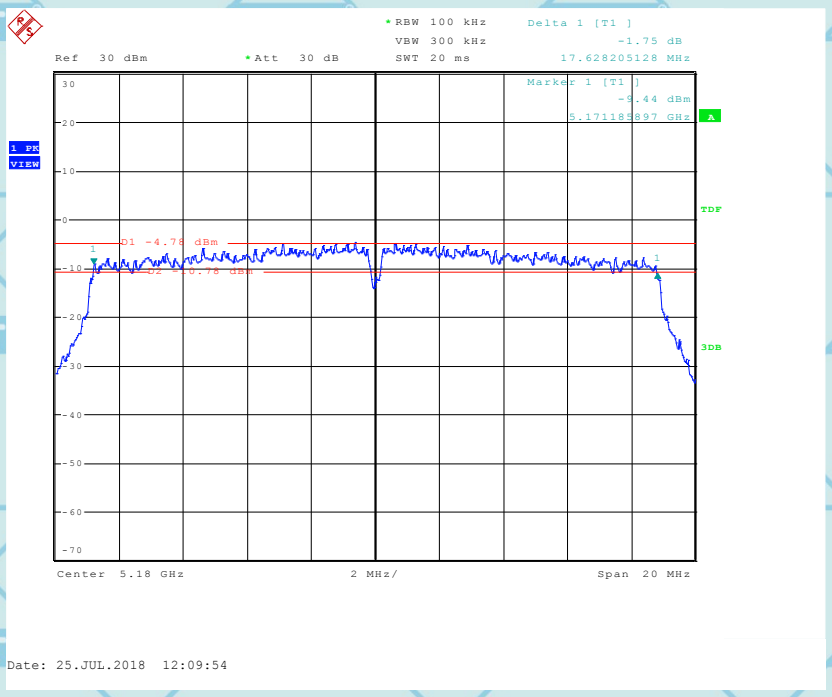
Channel 159



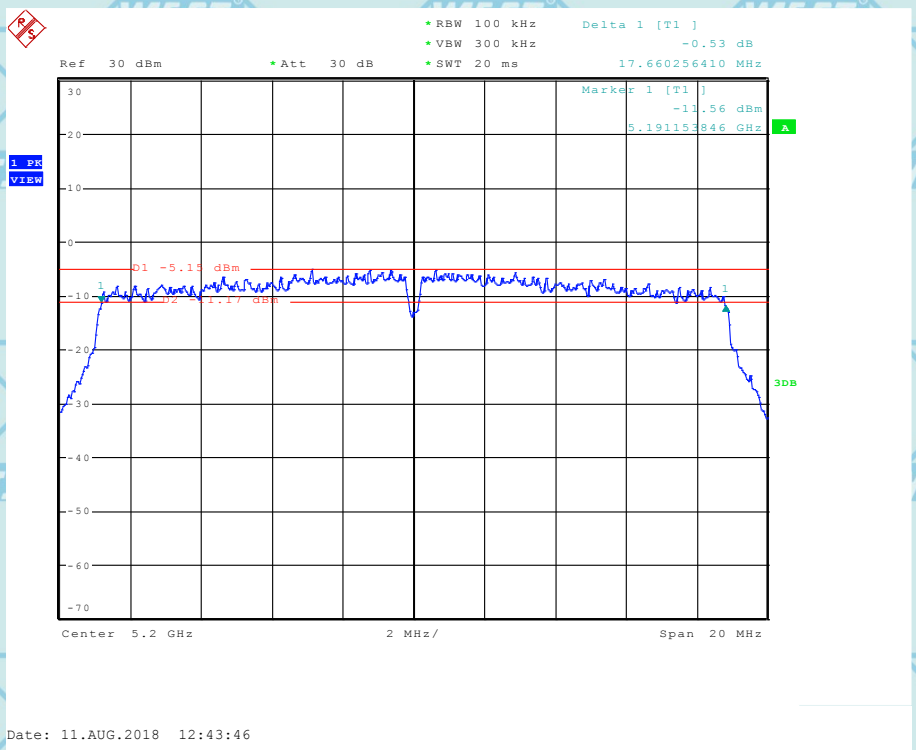
802.11ac 5GHz 20MHz

Channel	Measured Frequency (MHz)	6 dB Bandwidth (MHz)	Limit
36	5180	17.63	> 0.5MHz
40		17.66	> 0.5MHz
48	5240	17.66	> 0.5MHz

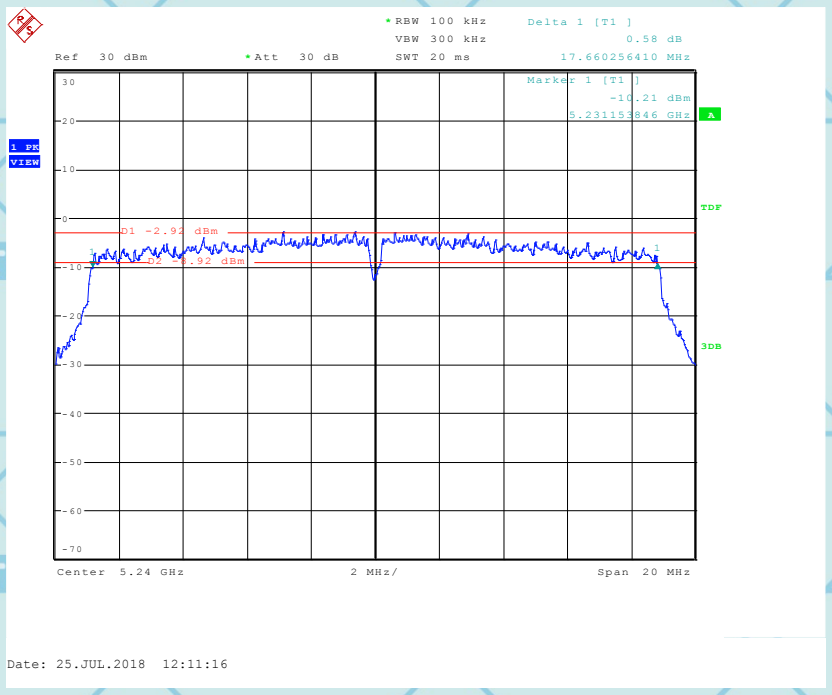
Channel 36



Channel 40



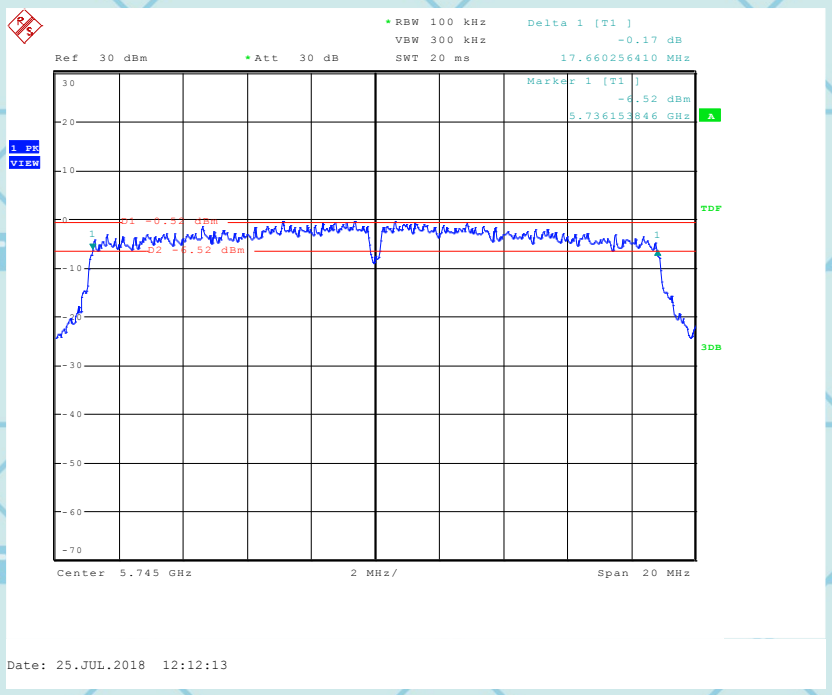
Channel 48


RBW 100 kHz
VBW 300 kHz
SWT 20 ms
Delta 1 [T1]
0.58 dB
17.660256410 MHz
Ref 30 dBm
Att 30 dB
Marker 1 [T1]
-10.21 dBm
5.231153846 GHz
1 PK VIEW
D1 -2.92 dBm
D2 -2.92 dBm
TDF
3DB
Center 5.24 GHz
2 MHz/
Span 20 MHz
Date: 25.JUL.2018 12:11:16

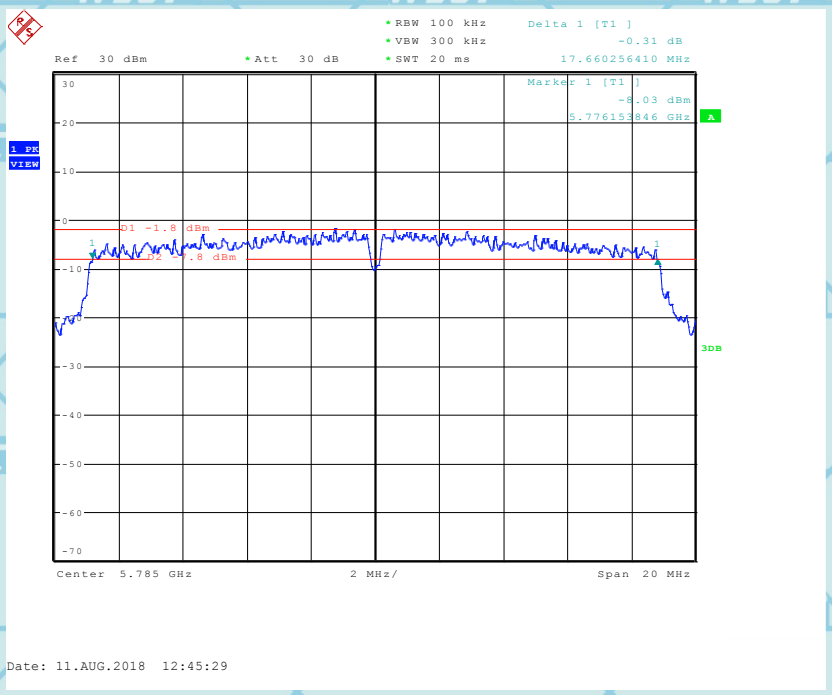
802.11ac 5GHz 20MHz

Channel	Measured Frequency (MHz)	6 dB Bandwidth (MHz)	Limit
149	5745	17.66	> 0.5MHz
157	5785	17.66	> 0.5MHz
165	5825	17.63	> 0.5MHz

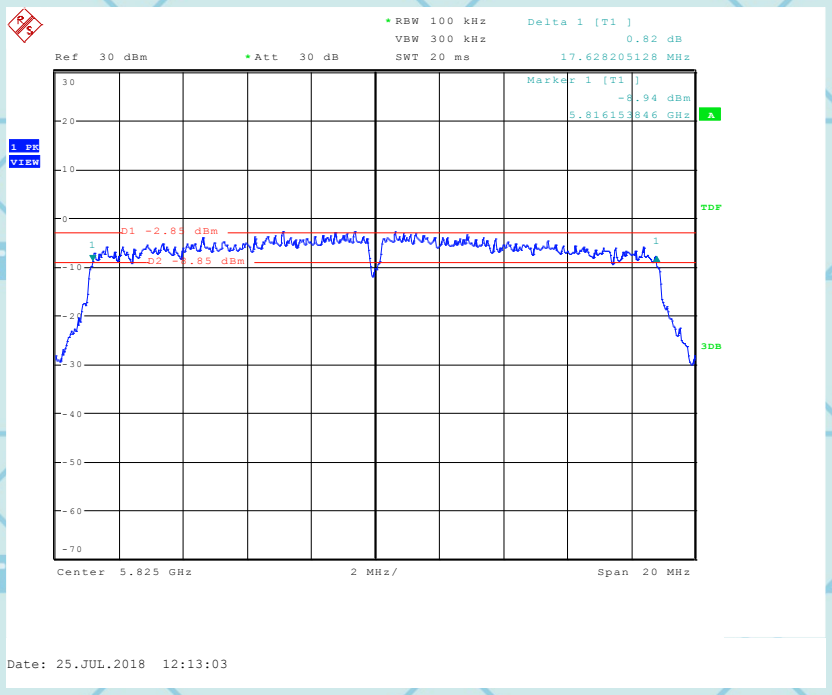
Channel 149



Channel 157



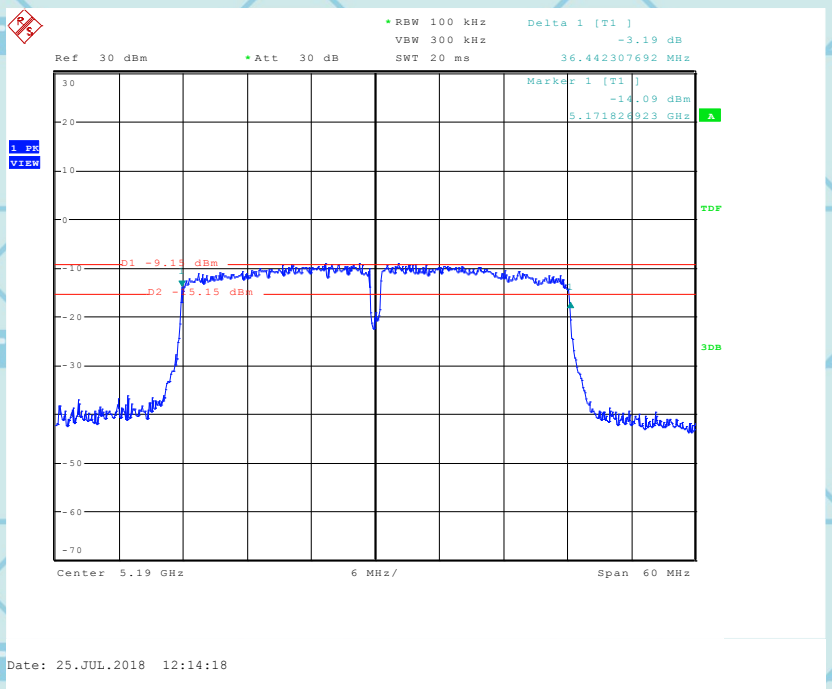
Channel 165


RBW 100 kHz
VBW 300 kHz
SWT 20 ms
Delta 1 [T1]
0.82 dB
17.628205128 MHz
Ref 30 dBm
Att 30 dB
Marker 1 [T1]
-8.94 dBm
5.816153846 GHz
1 PK VIEW
D1 -2.85 dBm
D2 -3.85 dBm
TDF
3DB
Center 5.825 GHz
2 MHz/
Span 20 MHz
Date: 25.JUL.2018 12:13:03

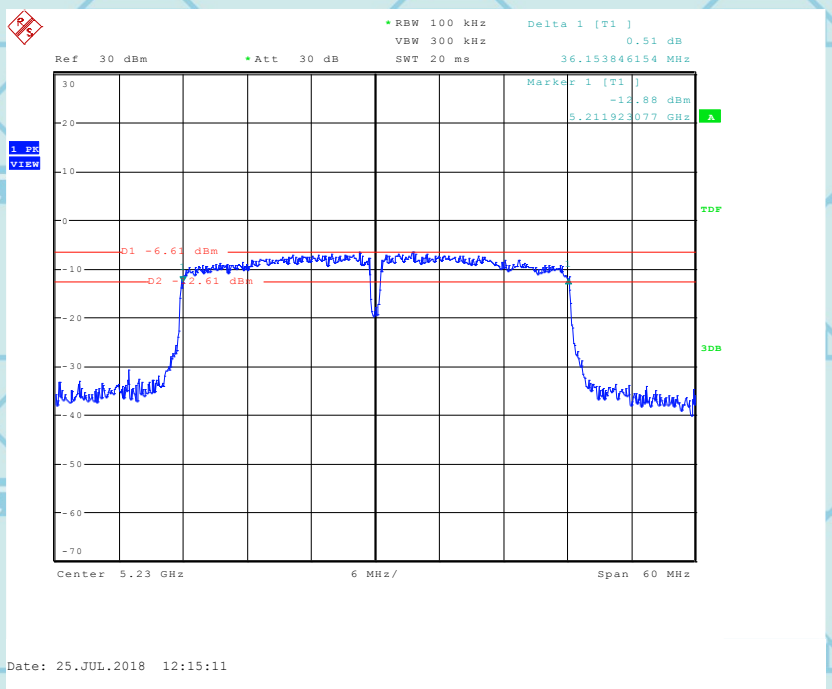
802.11ac 5GHz 40MHz

Channel	Measured Frequency (MHz)	6 dB Bandwidth (MHz)	Limit
38	5190	36.44	> 0.5MHz
46	5230	36.15	> 0.5MHz

Channel 38



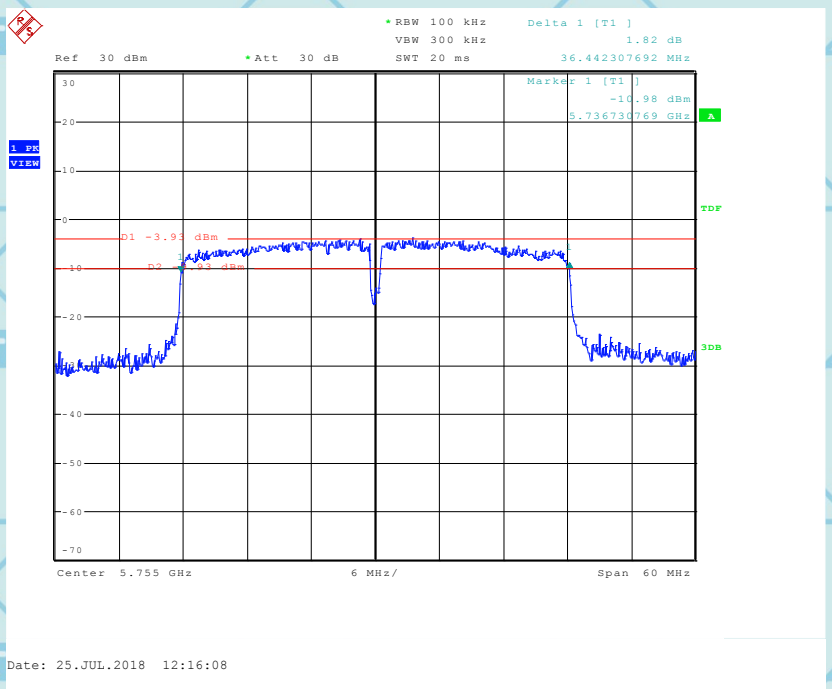
Channel 46



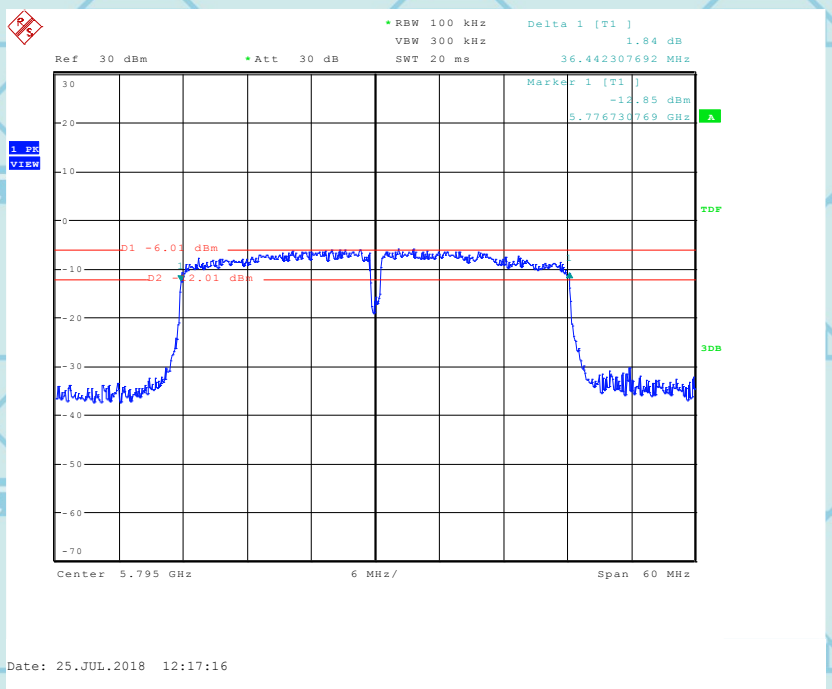
802.11ac 5GHz 40MHz

Channel	Measured Frequency (MHz)	6 dB Bandwidth (MHz)	Limit
151	5755	36.44	> 0.5MHz
159	5795	36.44	> 0.5MHz

Channel 151



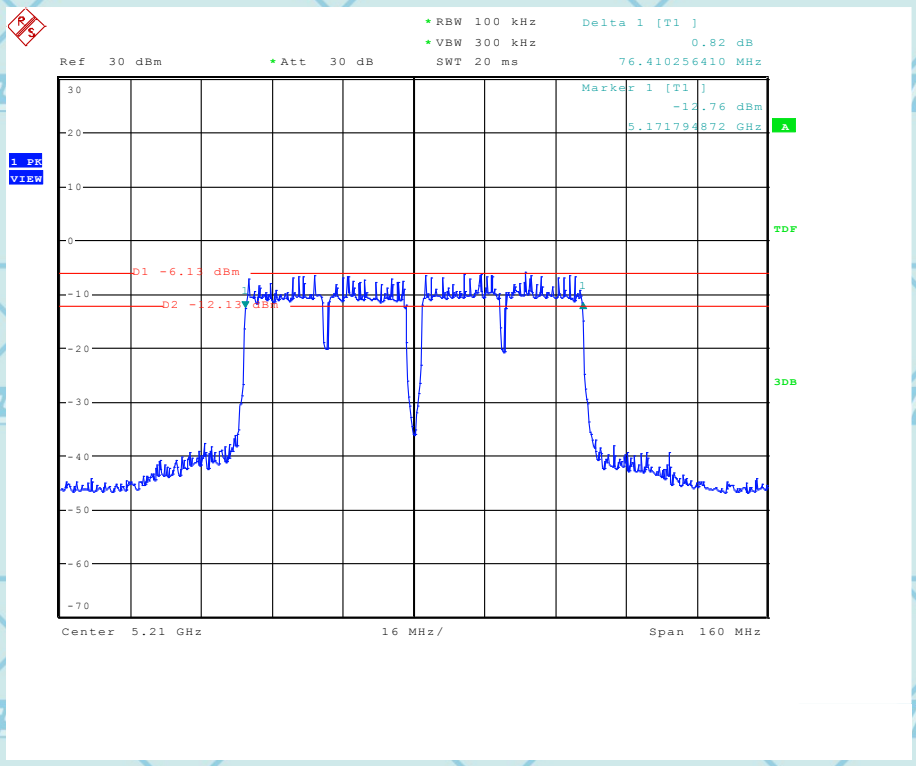
Channel 159



802.11ac 5GHz 80MHz

Channel	Measured Frequency (MHz)	6 dB Bandwidth (MHz)	Limit
42	5210	76.41	> 0.5MHz

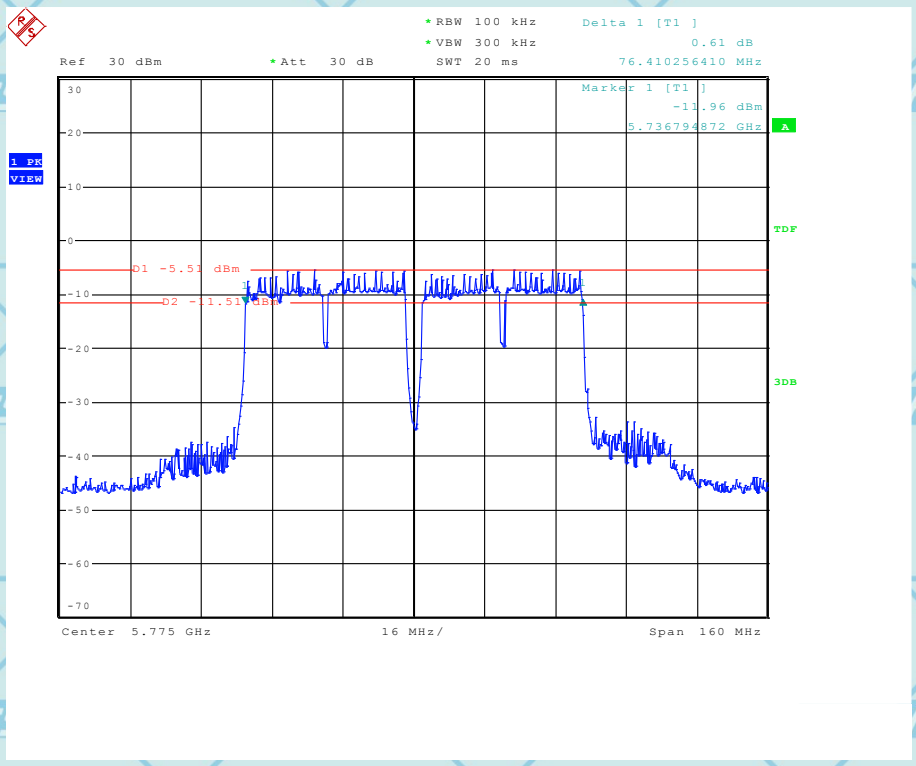
Channel 42



802.11ac 5GHz 80MHz

Channel	Measured Frequency (MHz)	6 dB Bandwidth (MHz)	Limit
155	5775	76.41	> 0.5MHz

Channel 155



9. MAXIMUM CONDUCTED OUTPUT POWER

The test method

Test Requirement: FCC 47 CFR Part 15 Subpart E Section 15.407 (a)(1)(2)(3)

Test Method: KDB 789033 D02 v01r04 Section E.3.a(Method PM)

Limits:

(1) For the band 5.15-5.25 GHz.

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

1. Connected the EUT's antenna port to measure device by 10dB attenuator.
2. Method PM is used to perform output power measurement, trigger and gating function of wide band powermeter is enabled to measure max output power of Tx on burst.

Note: The cable loss and attenuator loss were offset into measure device as an amplitude offset.

For Conducted RF test setup

(EUT: Mobile phone)

Test Data:
Band 1: 5150 MHz ~ 5250 MHz

Mode	Channel/ Frequency (MHz)	Maximum conducted output power (dBm)	Limit(dBm)	Pass / Fail
		Meas Power		
IEEE 802.11a	36 (5180)	15.22	24	Pass
	40(5200)	15.28	24	Pass
	44 (5220)	15.32	24	Pass
	48 (5240)	**15.36**	24	Pass
IEEE 802.11n-HT20	36 (5180)	14.17	24	Pass
	40(5200)	14.32	24	Pass
	44 (5220)	14.46	24	Pass
	48 (5240)	14.61	24	Pass
802.11n(HT40)	38 (5190)	13.24	24	Pass
	46 (5230)	13.31	24	Pass
IEEE 802.11ac-HT20	36(5180)	12.51	24	Pass
	40(5200)	12.54	24	Pass
	44 (5220)	12.36	24	Pass
	48(5240)	12.48	24	Pass
IEEE 802.11ac-HT40	38(5190)	12.36	24	Pass
	46(5230)	12.08	24	Pass
IEEE 802.11ac-HT80	42(5210)	10.12	24	Pass

Band 4: 5725 MHz ~ 5850 MHz

Mode	Channel/ Frequency (MHz)	Maximum conducted output power (dBm)	Limit(dBm)	Pass / Fail
		Meas Power		
IEEE 802.11a	149 (5745)	15.18	30	Pass
	153 (5765)	15.26	30	Pass
	157 (5785)	15.21	30	Pass
	161 (5805)	15.35	30	Pass
	165 (5825)	**15.40**	30	Pass
IEEE 802.11n-HT20	149 (5745)	14.21	30	Pass
	153 (5765)	14.08	30	Pass
	157 (5785)	14.20	30	Pass
	161 (5805)	14.36	30	Pass
	165 (5825)	14.23	30	Pass
802.11n(HT40)	151 (5755)	13.56	30	Pass
	159 (5795)	13.47	30	Pass
IEEE 802.11ac-HT20	149(5745)	12.56	30	Pass
	153 (5765)	12.36	30	Pass
	157 (5785)	12.42	30	Pass
	161 (5805)	12.64	30	Pass
	165(5825)	12.46	30	Pass
IEEE 802.11ac-HT40	151(5755)	12.41	30	Pass
	159(5795)	12.25	30	Pass
IEEE 802.11ac-HT80	155(5775)	10.64	30	Pass

10. PEAK POWER SPECTRAL DENSITY

Product	: Mobile phone	Test Mode	: See Section 2.2
Test Item	: Peak Power Spectral Density	Temperature	: 25℃
Test Voltage	: DC 3.85V	Humidity	: 56%RH
Test Result	: **PASS**		

IEEE 802.11a
Band1

Channel	Frequency (MHz)	PPSD (dBm)	FCC Limit (kHz)	Result
36	5180	6.37	11dBm/MHz	PASS
40	5200	6.43		PASS
48	5240	8.65		PASS

Band4

Channel	Frequency (MHz)	PPSD (dBm)	FCC Limit (kHz)	Result
149	5745	11.04	30dBm/500 kHz	PASS
157	5785	9.74		PASS
165	5825	8.89		PASS

IEEE 802.11n 5G 20MHz
Band1

Channel	Frequency (MHz)	PPSD (dBm)	FCC Limit (kHz)	Result
36	5180	6.10	11dBm/MHz	PASS
40	4200	6.32		PASS
48	5240	7.86		PASS

Band4

Channel	Frequency (MHz)	PPSD (dBm)	FCC Limit (kHz)	Result
149	5745	10.83	30dBm/500 kHz	PASS
157	5785	12.10		PASS
165	5825	8.44		PASS

IEEE 802.11n 5G 40MHz
Band1

Channel	Frequency (MHz)	PPSD (dBm)	FCC Limit (kHz)	Result
38	5190	2.60	11dBm/MHz	PASS
46	5230	4.73		PASS

Band4

Channel	Frequency (MHz)	PPSD (dBm)	FCC Limit (kHz)	Result
151	5755	7.68	30dBm/500 kHz	PASS
159	5795	5.97		PASS

IEEE 802.11ac 5G 20MHz
Band1

Channel	Frequency (MHz)	PPSD (dBm)	FCC Limit (kHz)	Result
36	5180	6.03	11dBm/MHz	PASS
40	4200	8.78		
48	5240	7.90		PASS

Band4

Channel	Frequency (MHz)	PPSD (dBm)	FCC Limit (kHz)	Result
149	5745	10.63	30dBm/500 kHz	PASS
157	5785	9.12		
165	5825	4.44		PASS

IEEE 802.11ac 5G 40MHz

Band1

Channel	Frequency (MHz)	PPSD (dBm)	FCC Limit (kHz)	Result
38	5190	2.64	11dBm/MHz	PASS
46	5230	4.77		PASS

Band4

Channel	Frequency (MHz)	PPSD (dBm)	FCC Limit (kHz)	Result
151	5755	8.31	30dBm/500 kHz	PASS
159	5795	6.36		PASS

IEEE 802.11ac 5G 80MHz

Band1

Channel	Frequency (MHz)	PPSD (dBm)	FCC Limit (kHz)	Result
42	5210	-5.58	11dBm/MHz	PASS

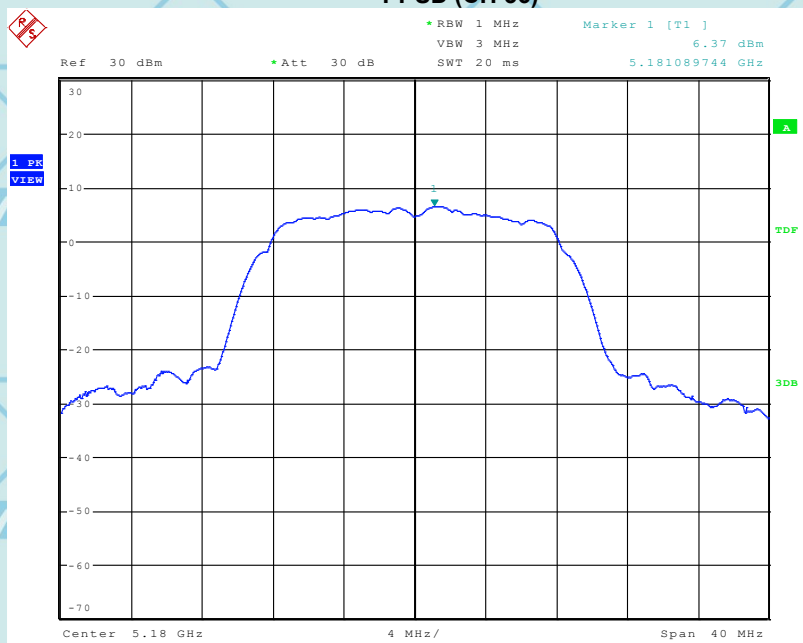
Band4

Channel	Frequency (MHz)	PPSD (dBm)	FCC Limit (kHz)	Result
155	5775	-4.57	30dBm/500 kHz (26.99dBm/MHz)	PASS

Note: For 5.725~5.85GHz (Band4): Power Density(dBm/500kHz)= Power Density (dBm/MHz)- 10log(500kHz/RBW) (dB)

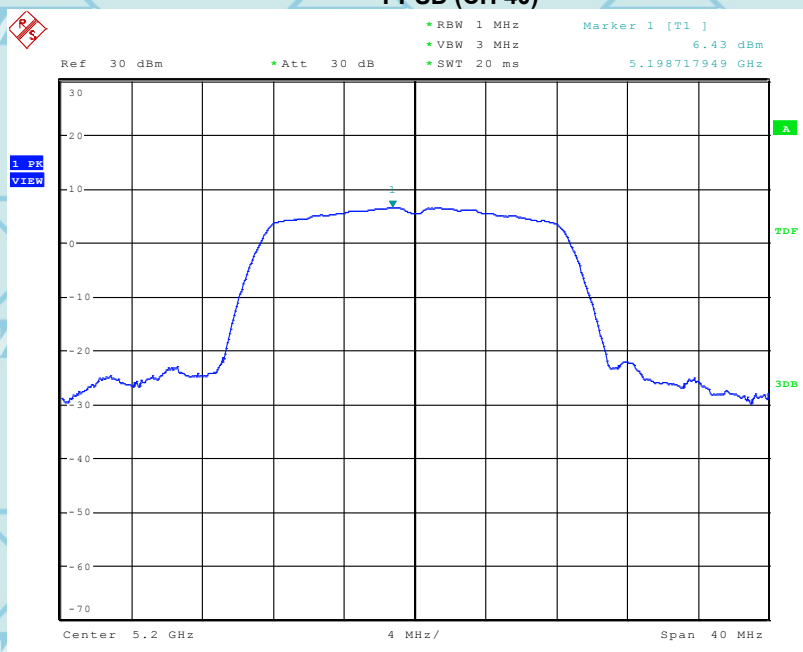
IEEE 802.11a Band1

PPSD (CH 36)



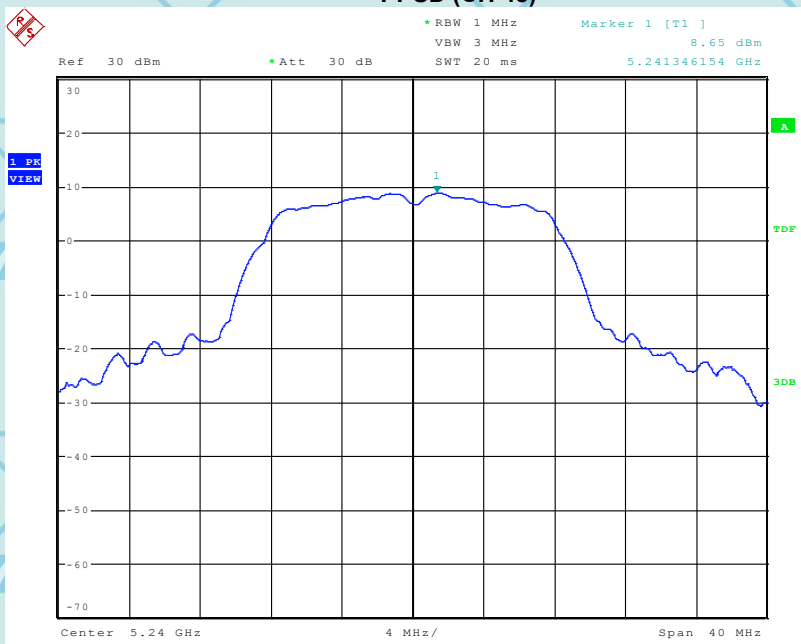
Date: 25.JUL.2018 10:38:46

PPSD (CH 40)



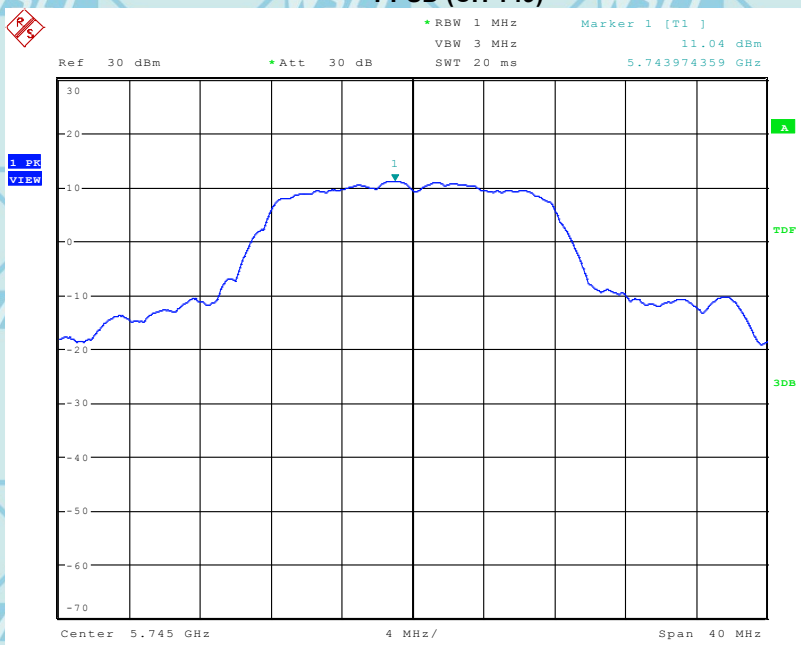
Date: 11.AUG.2018 15:28:34

PPSD (CH 48)



IEEE 802.11a Band4

PPSD (CH 149)



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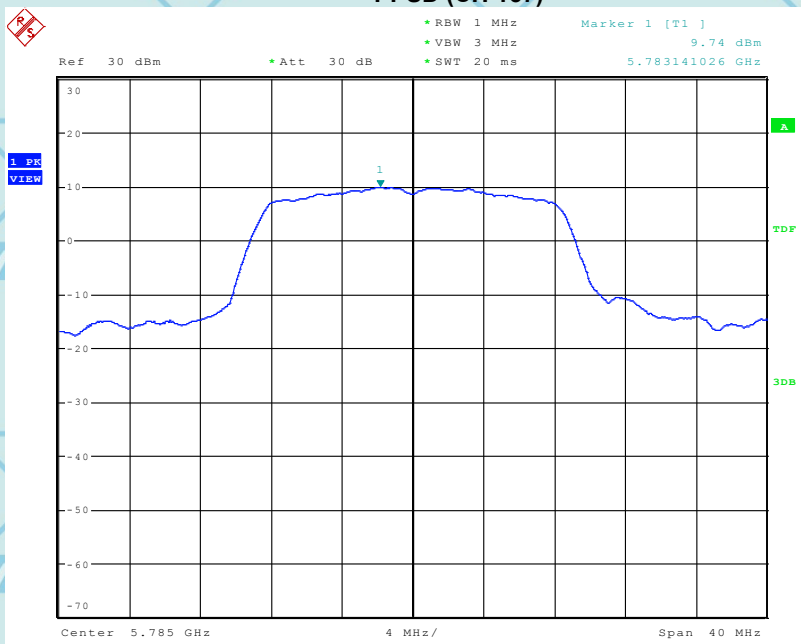

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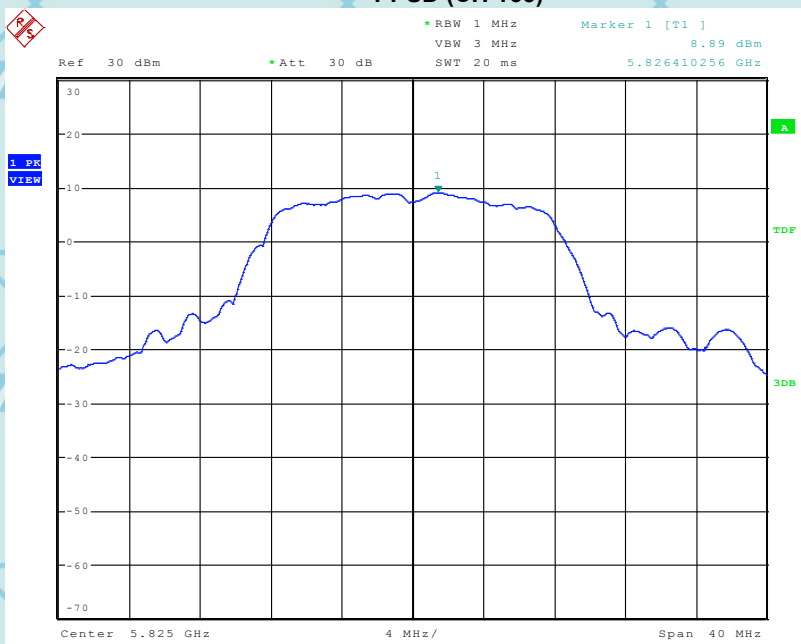
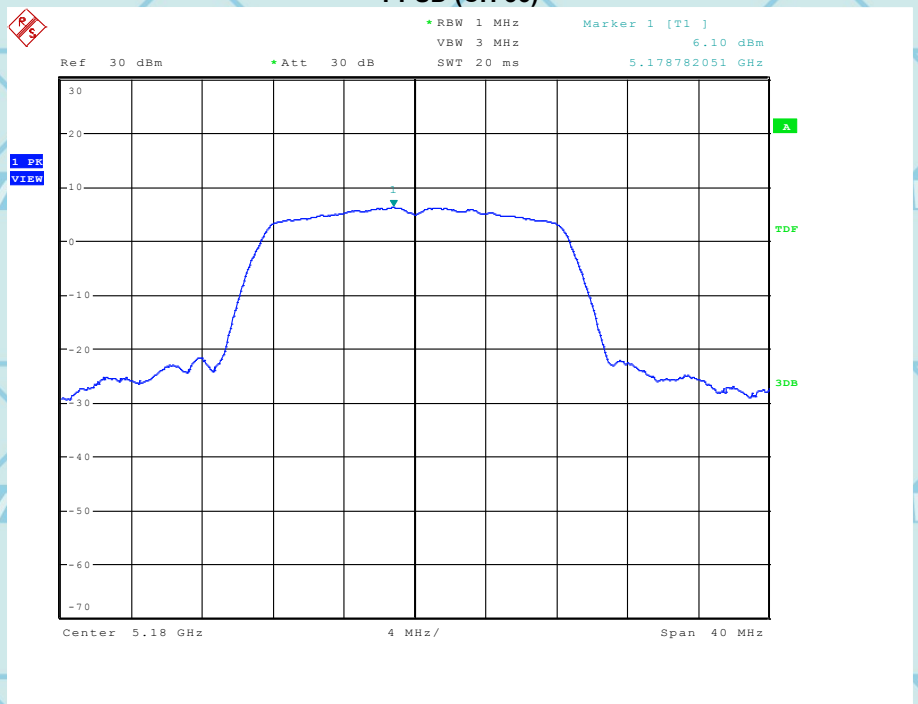


Date: 25.JUL.2018 10:42:27

IEEE 802.11n 5G 20MHz Band1

PPSD (CH 36)



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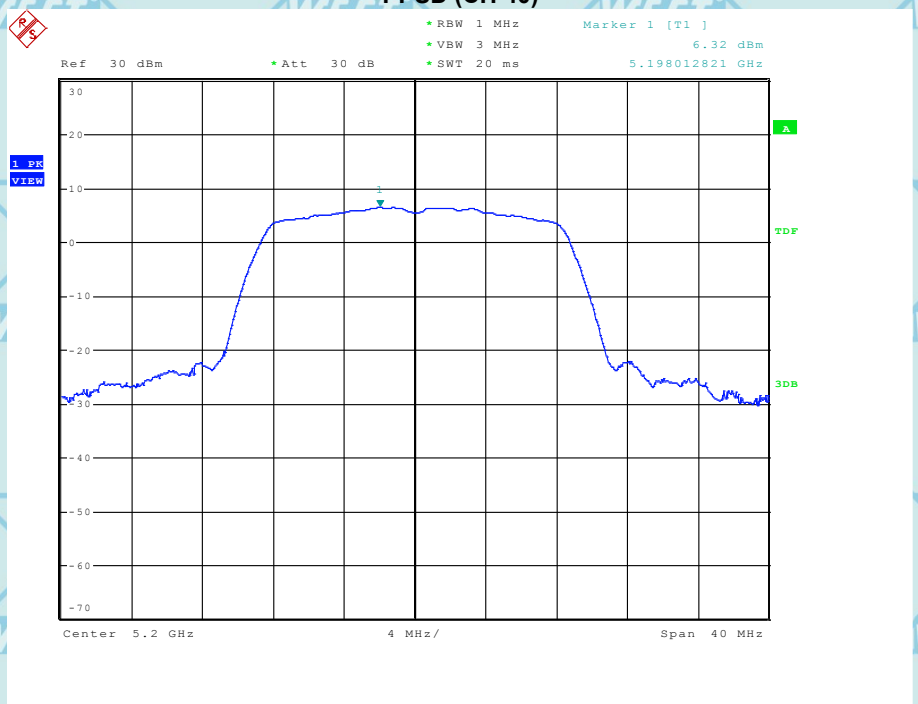

Date: 11.AUG.2018 15:30:08

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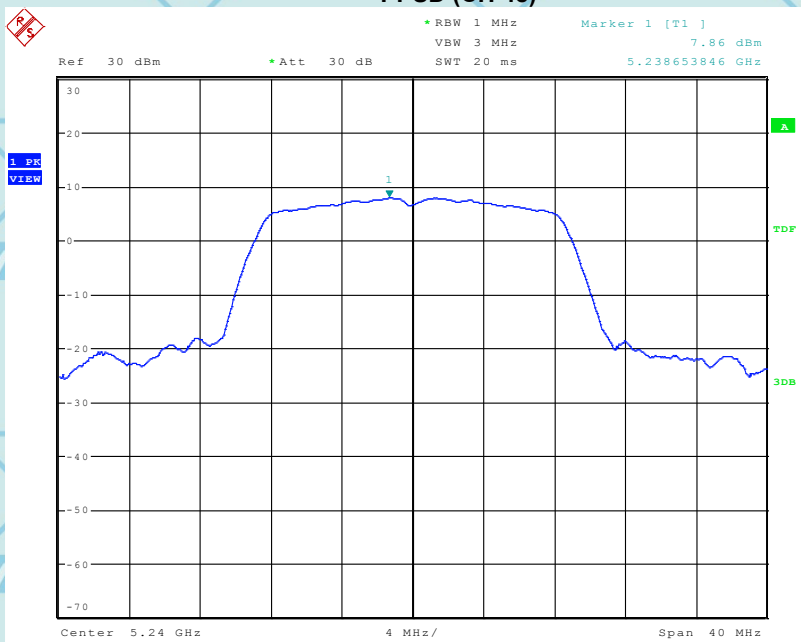

IEEE 802.11n 5G 20MHz Band4

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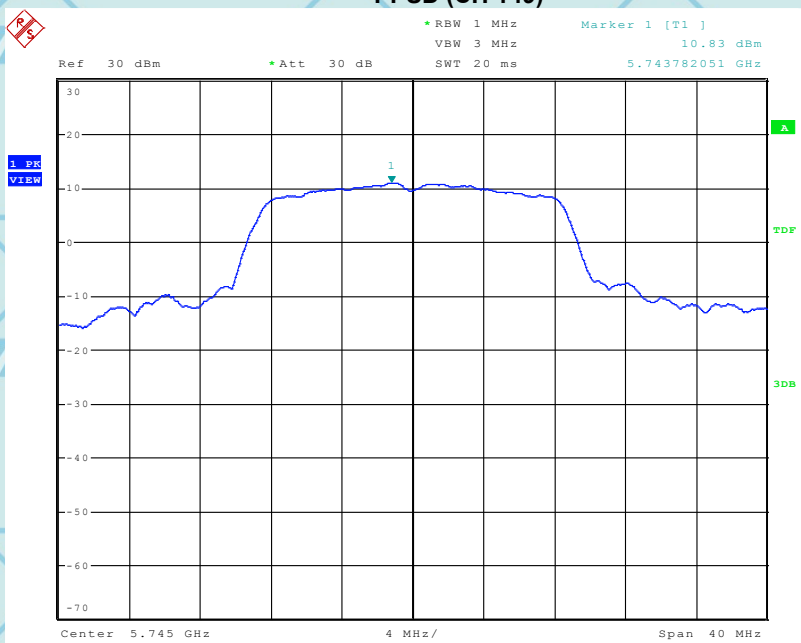

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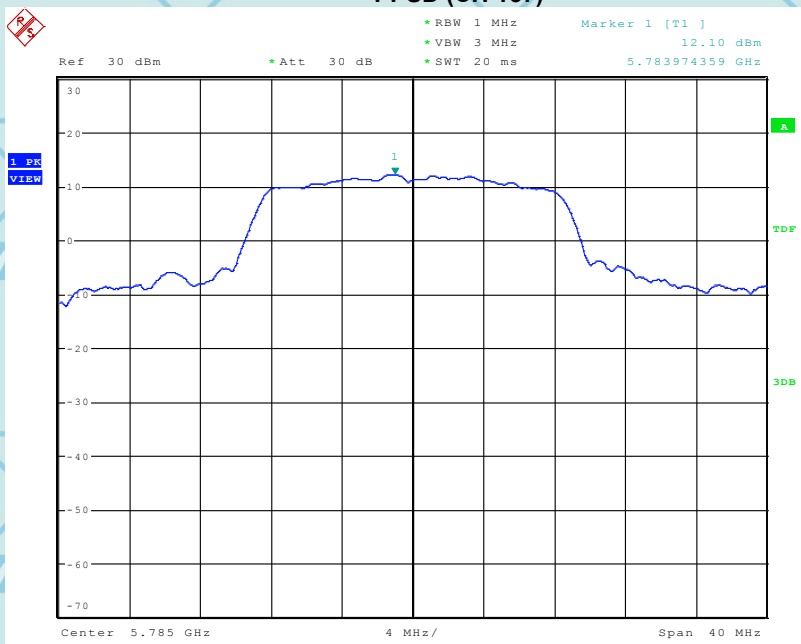

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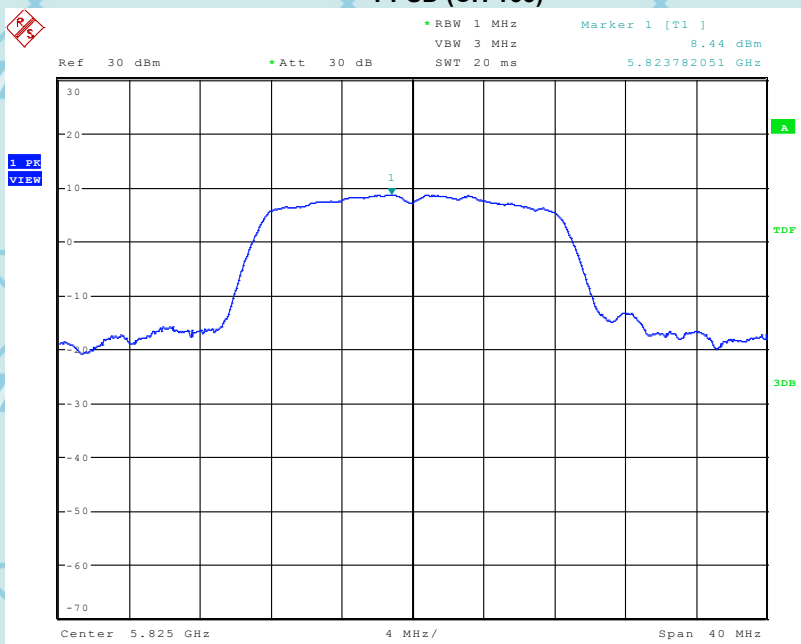

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IEEE 802.11n 5G 40MHz Band1

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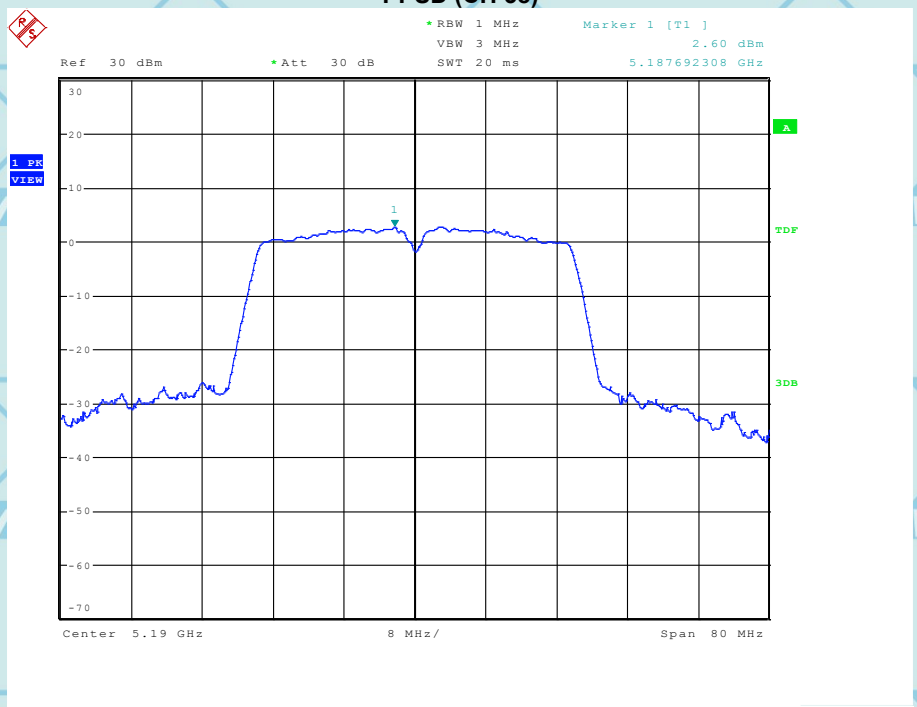

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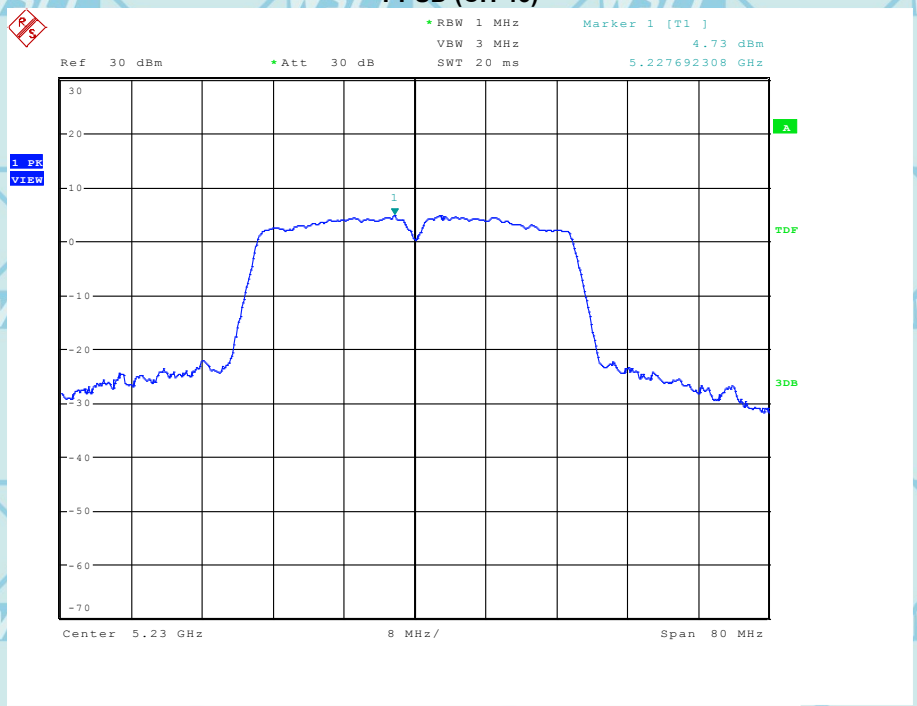

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IEEE 802.11n 5G 40MHz Band4

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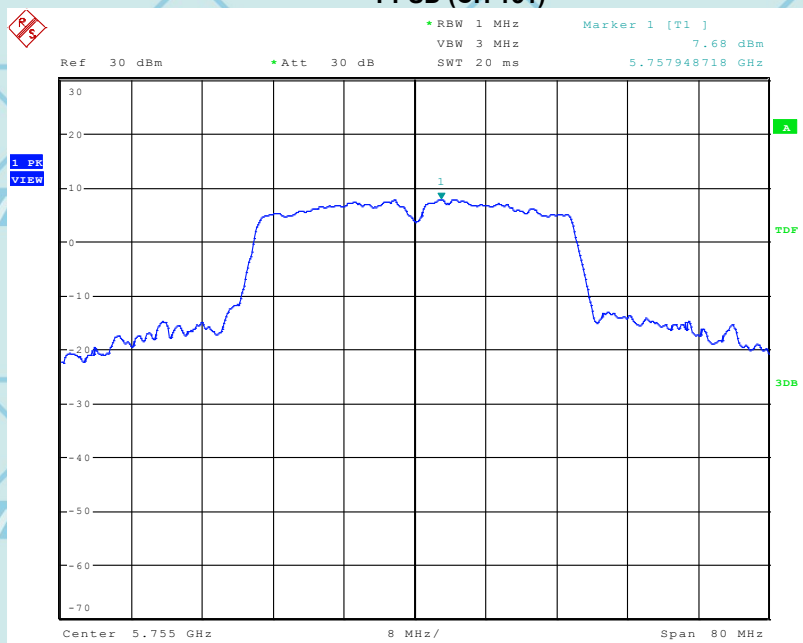

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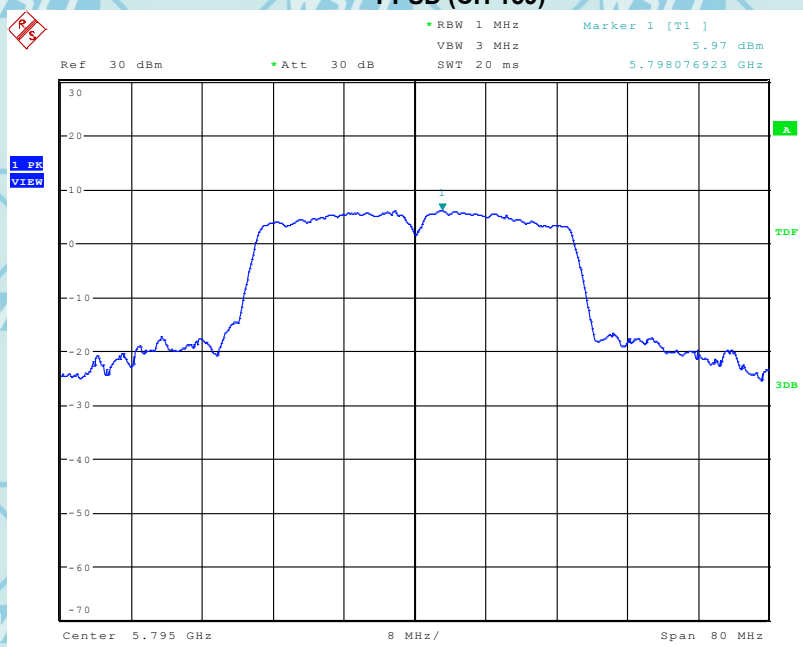
PPSD (CH 159)



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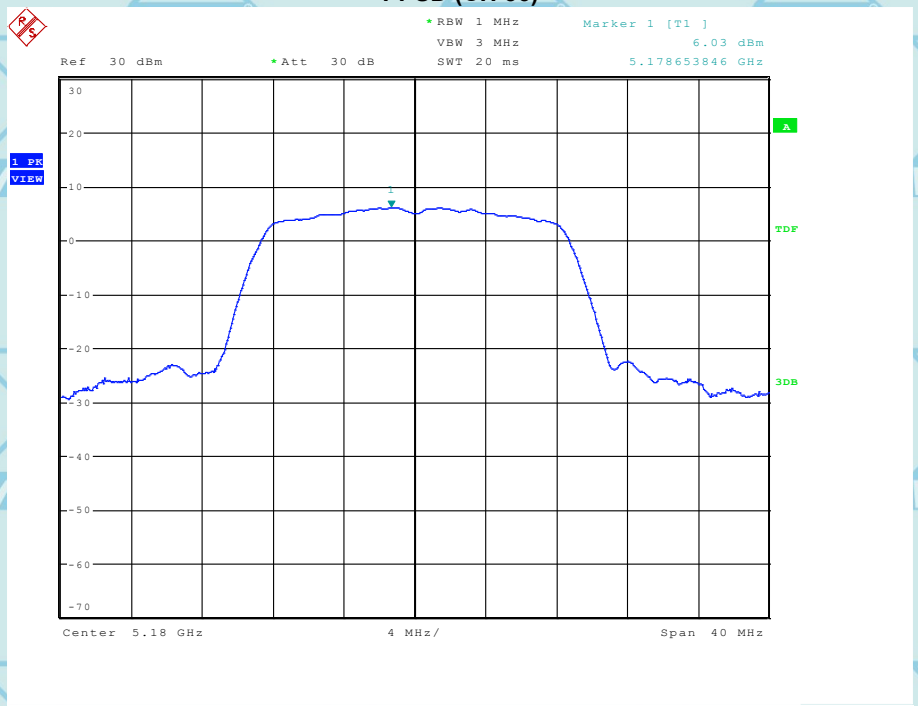
IEEE 802.11ac 5G 20MHz Band1

PPSD (CH 36)



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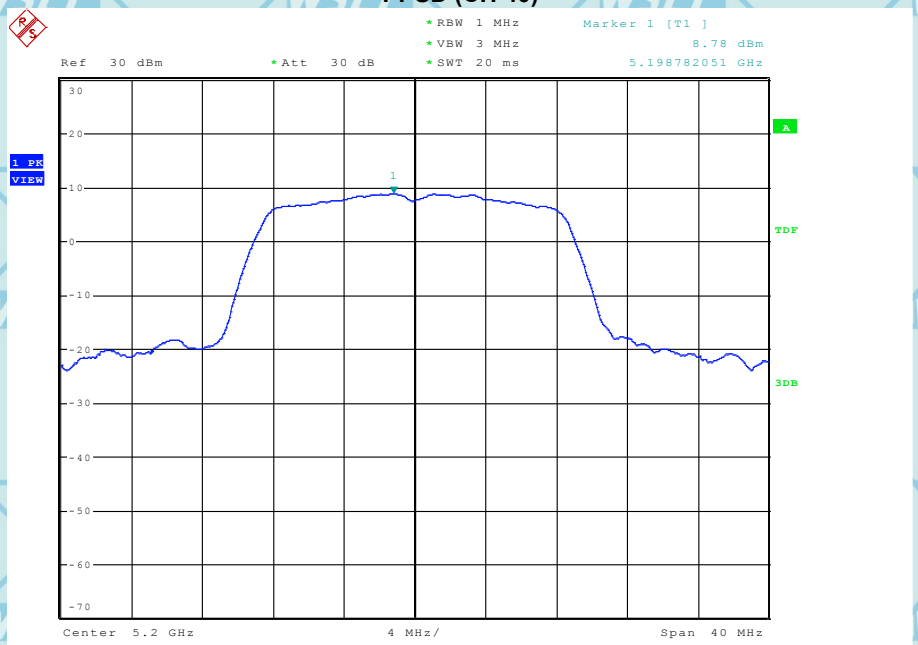

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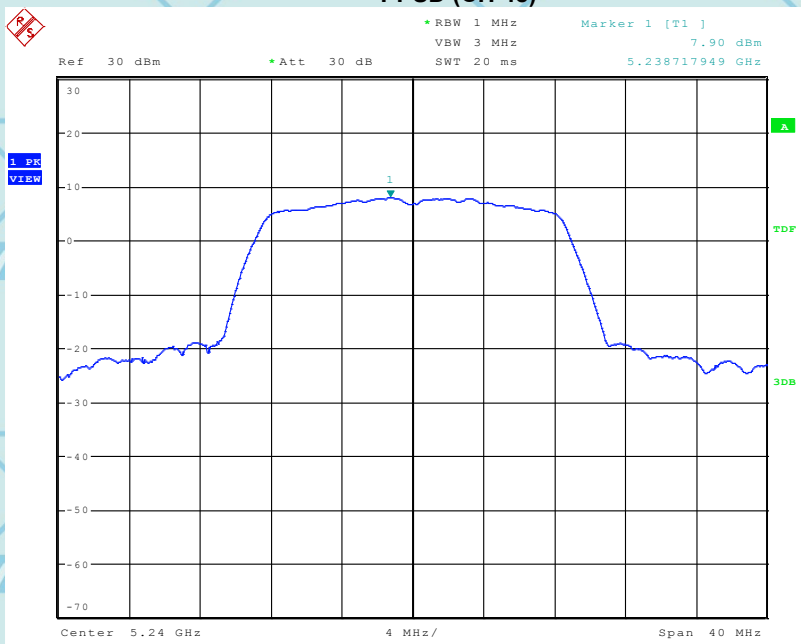
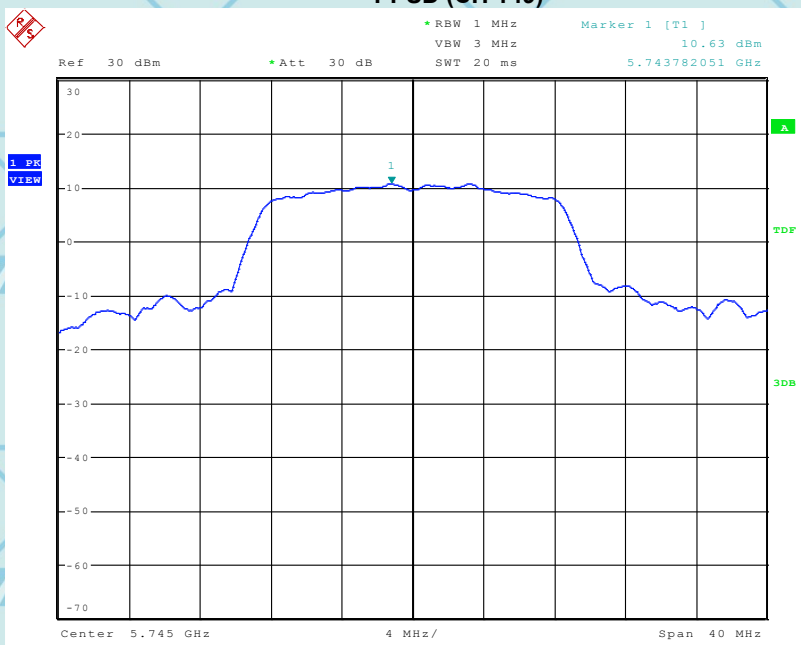


IEEE 802.11ac 5G 20MHz Band4

PPSD (CH 149)



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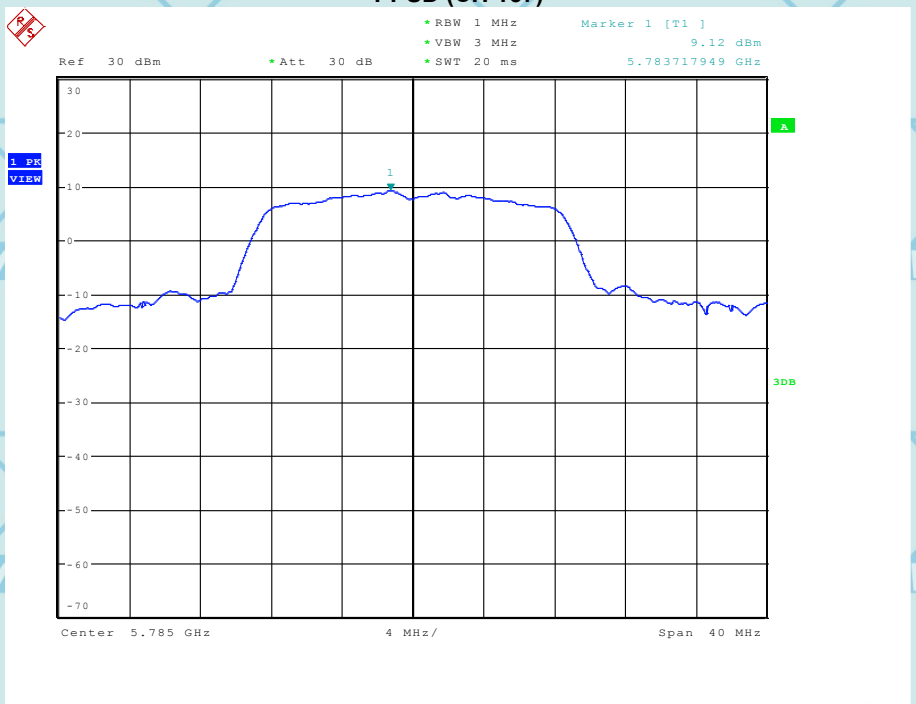

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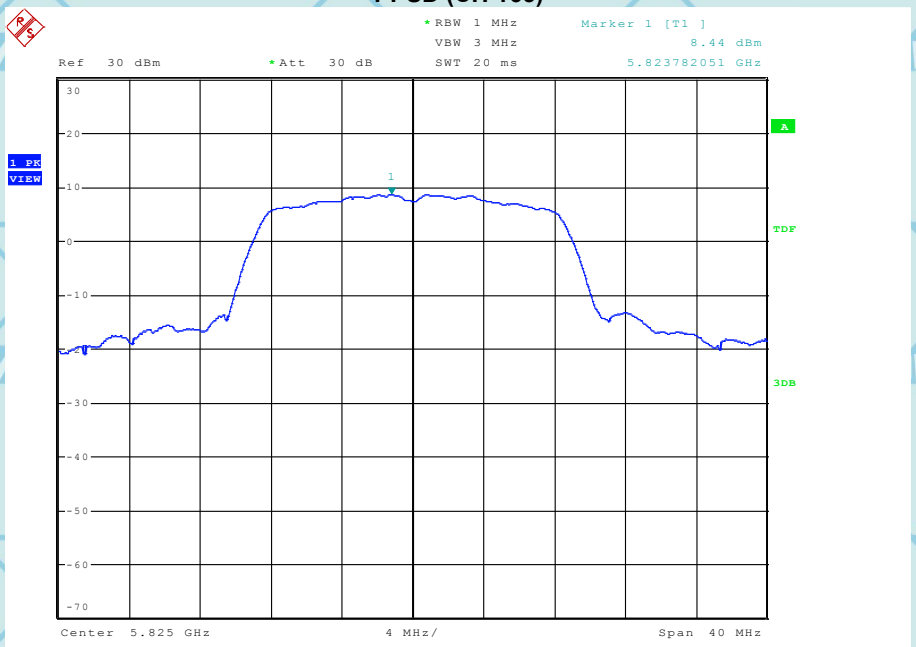

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IEEE 802.11ac 5G 40MHz Band1

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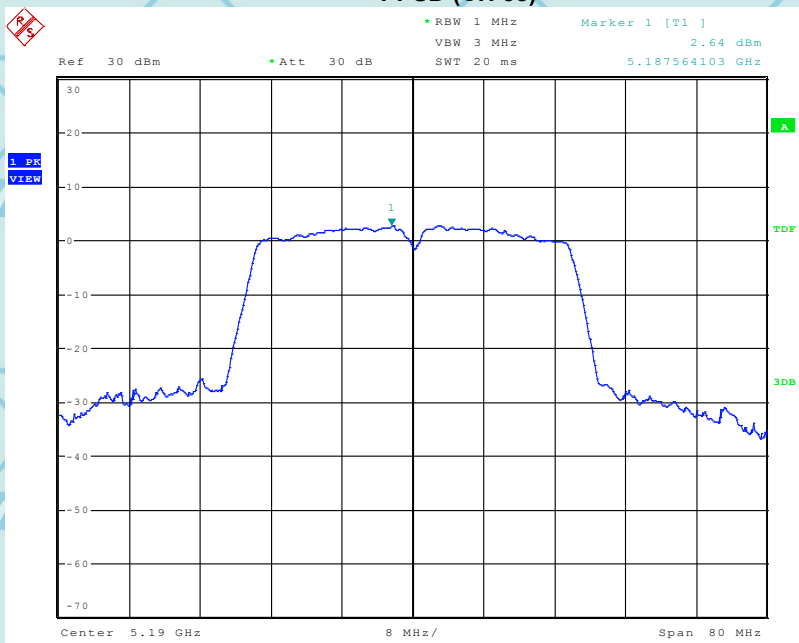

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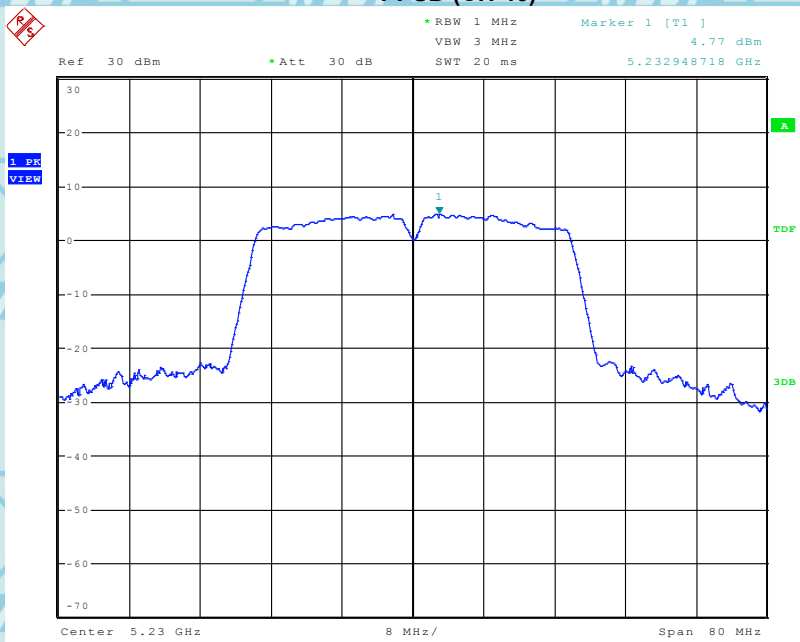

IEEE 802.11ac 5G 40MHz Band4

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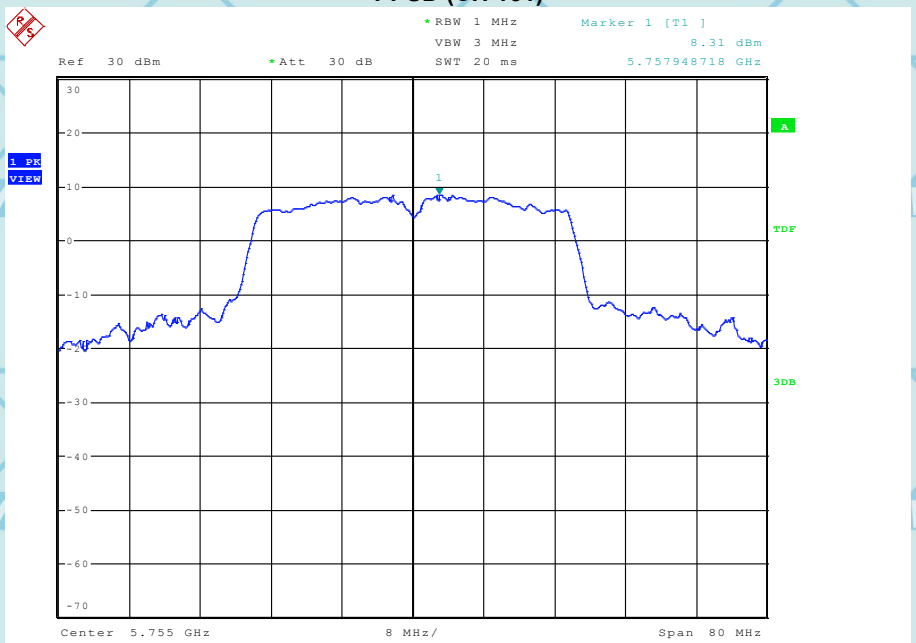

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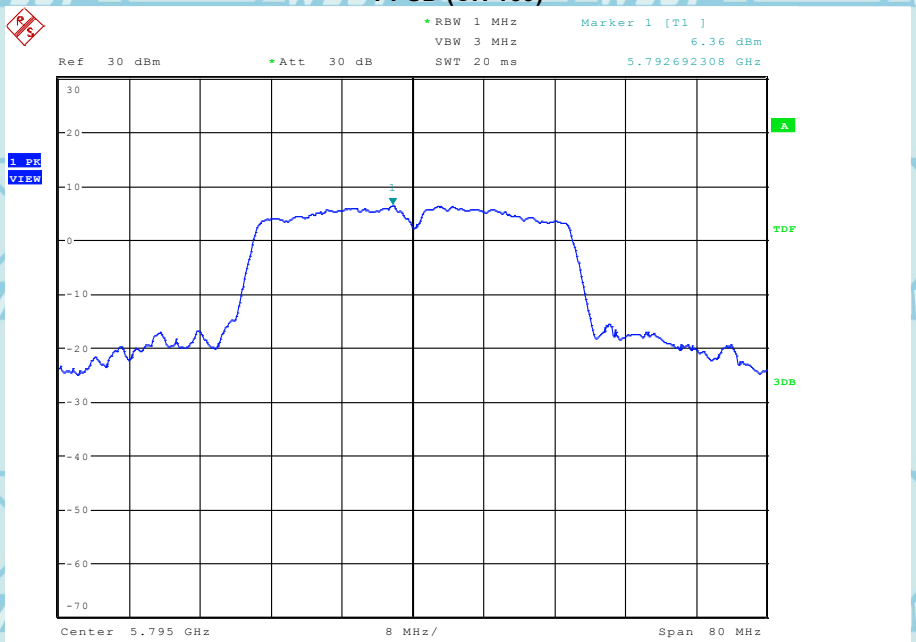

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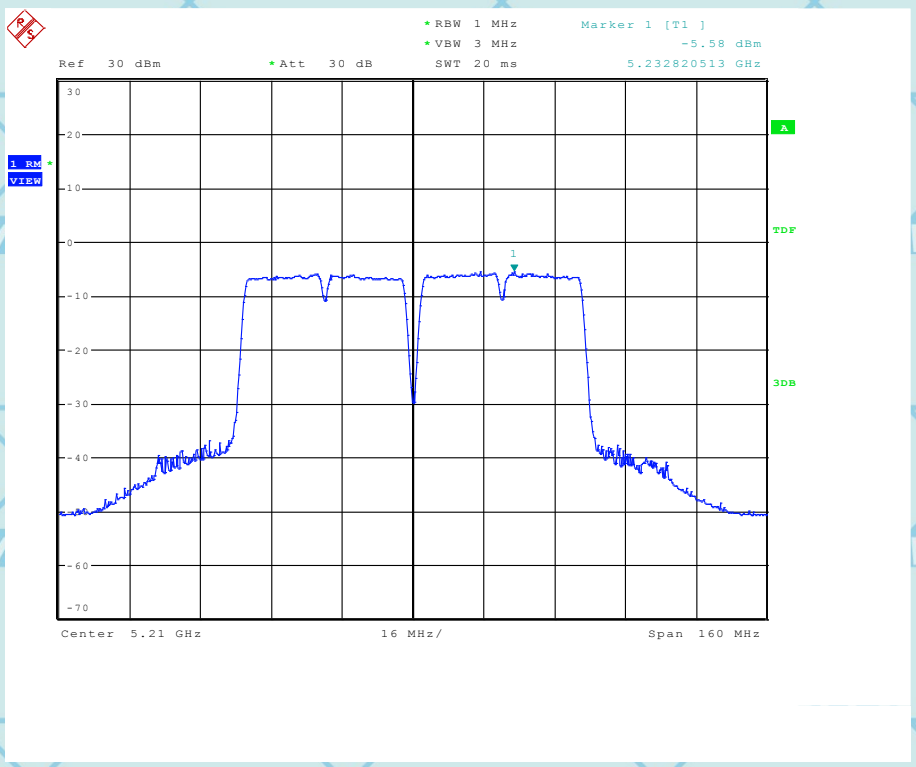
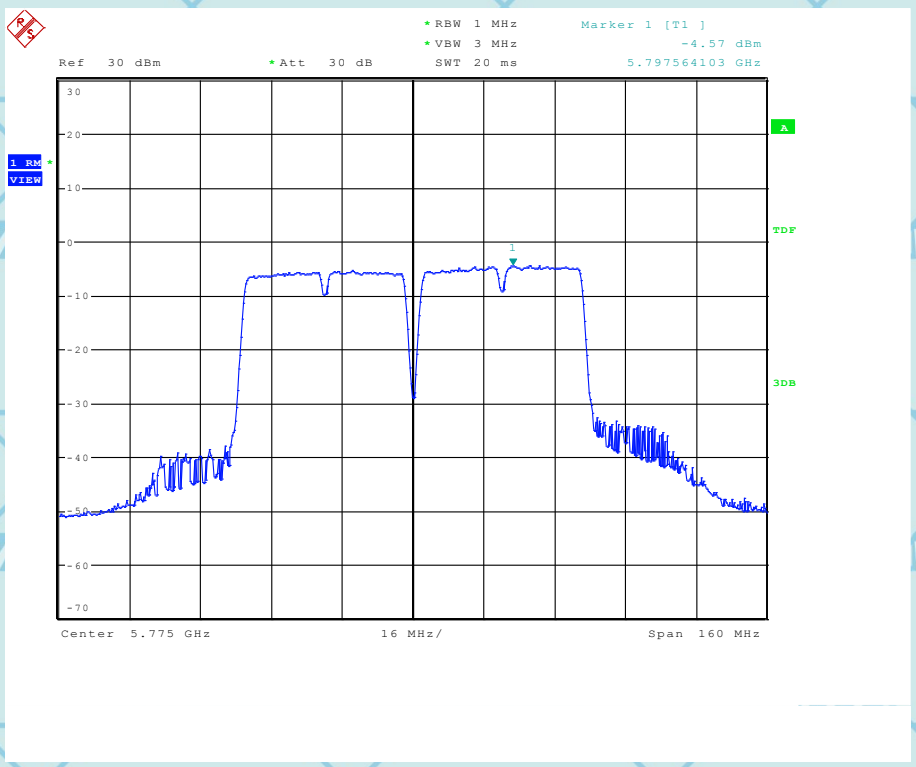
IEEE 802.11ac 5G 80MHz Band1

PPSD (CH 42)



IEEE 802.11ac 5G 80MHz Band4

PPSD (CH 155)



11.BAND EDGE EMISSIONS

11. 1 TEST EQUIPMENT

Please refer to Section 5 this report.

11. 2 TEST PROCEDURE

Band Edge Emissions Measurement:	
Test Method:	a.)The EUT was tested according to ANSI C63.10. b)The EUT, peripherals were put on the turntable which table size is 1m x 1.5 m, table high 1.5m. All set up is according to ANSI C63.10. c)The frequency spectrum from 9kHz to 40 GHz was investigated. All readings from 9kHz to 150kHz are quasi-peak values with a resolution bandwidth of 200 Hz. All readings from 150kHz to 30MHz are quasi-peak values with a resolution bandwidth of 9 KHz. All readings from 30 MHz to 1 GHz are quasi-peak values with a resolution bandwidth of 120 KHz. All readings are above 1 GHz , peak values with a resolution bandwidth of 1 MHz . Measurements were made at 3 meters. d)The emissions from the EUT were measured continuously at every azimuth by rotating the turntable. The Receiving antenna high is varied from 1 m to 4 m high to find the maximum emission for each frequency. Emissions below 30MHz were measured with a loop antenna while emission above 30MHz were measured using a broadband E-field antenna. e) Maximizing procedure was performed on the six (6) highest emissions to ensure EUT compliance is withall installation combinations. All data was recorded in the peak detection mode. Quasi-peak readings wasperformed only when an emission was found to be marginal (within -4 dB of specification limit), and aredistinguished with a "**QP**" in the data table. f)Each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the max. emission, the relative positions of this transmitter(EUT) was rotated through three orthogonal axes according to the requirements in Section 8 and 13 of ANSI C63.10.

Band Edge Emissions Measurement:	
Test Equipment Setting:	
a)Attenuation: Auto b)Span Frequency: 100 MHz c)RBW/VBW (Emission in restricted band): 1MHz / 3MHz for Peak, 1MHz / 1/T for Average	d)RBW/VBW(Emission in non-restricted band) 1MHz / 3MHz for peak

11.2. 1 Test Setup

Same as section 3.2of this report

11. 2.2 Configuration of the EUT

Same as section 3.2of this report

11. 2.3 EUT Operating Condition

Same as section 3.2of this report.

11. 3 LIMIT

Spurious Radiated Emission & Band Edge Emissions Measurement:	
Limit:	Part 15.407(b) (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. (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.
Note: Applies to harmonics/spurious emissions that fall in the restricted bands listed in section 15.205. The maximum permitted average field strength is listed in section 15.209. 47 CFR § 15.237(c): The emission limits as specified above are based on measurement instrument employing an average detector. The provisions in section 15.35 for limiting peak emissions apply.	

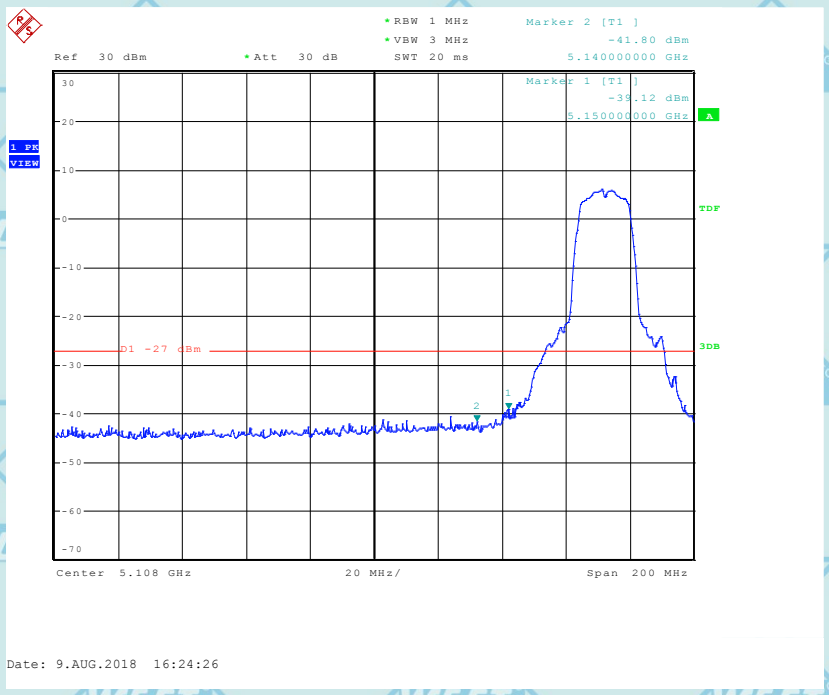
11. 4 TEST RESULT

Band Edge and Fundamental Emissions

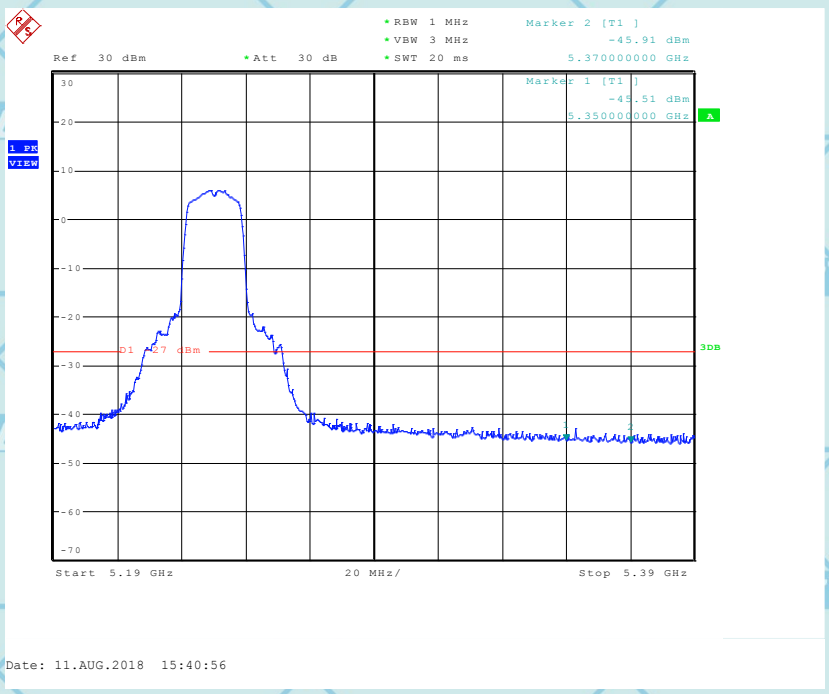
Product:	Mobile phone	Test Mode:	IEEE 802.11a/n/ac 5G
Test Item:	Band Edge and Fundamental Emissions	Temperature:	25℃
Test Voltage:	3.85V	Humidity:	56%RH
Test Result:	**PASS**		

IEEE 802.11a

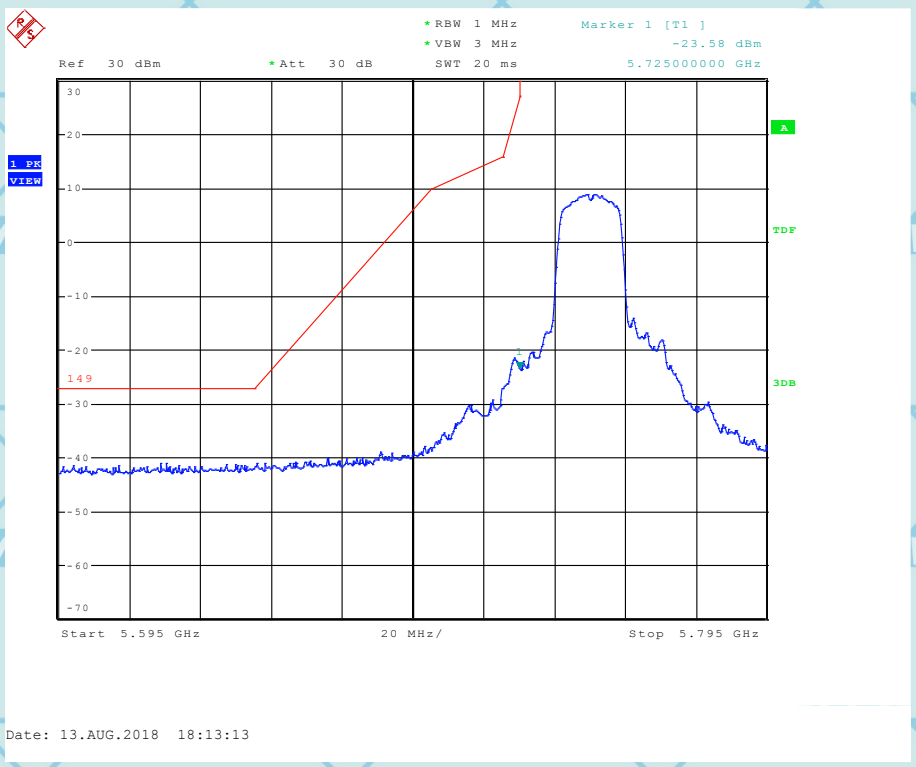
Channel 36 (5180MHz)



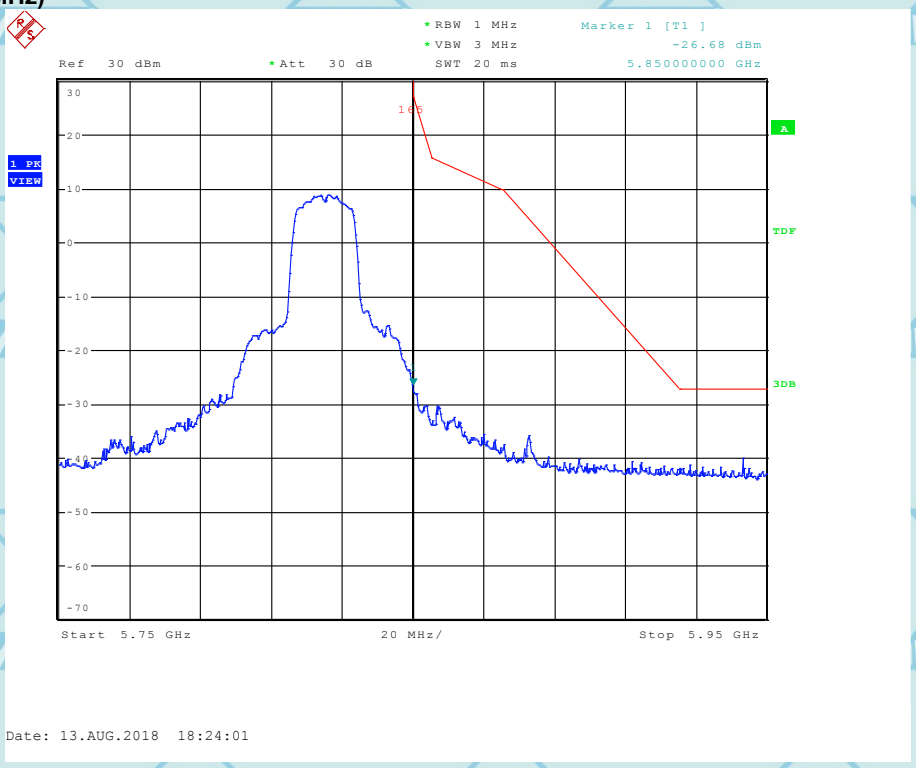
Channel 48 (5240MHz)



Channel 149 (5745MHz)

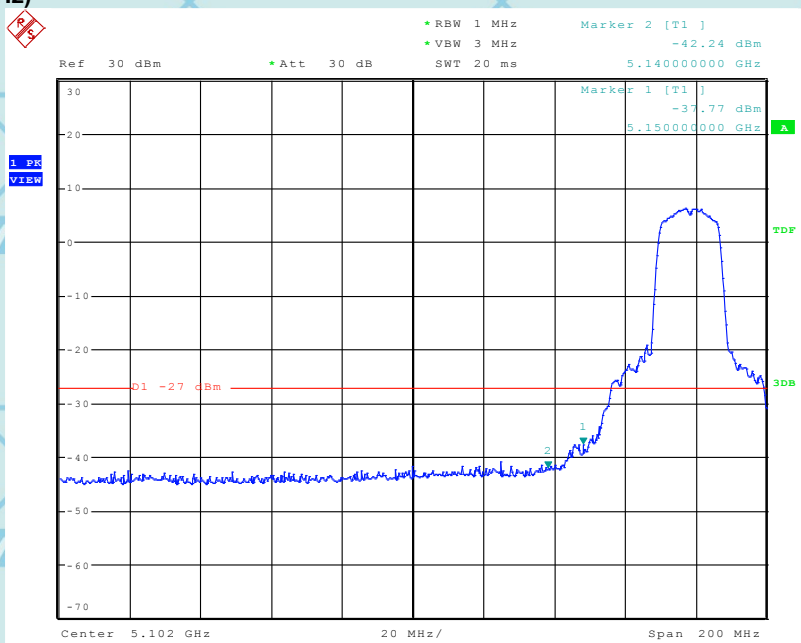


Channel 165 (5825MHz)



IEEE 802.11n 20MHz

Channel 36 (5180MHz)



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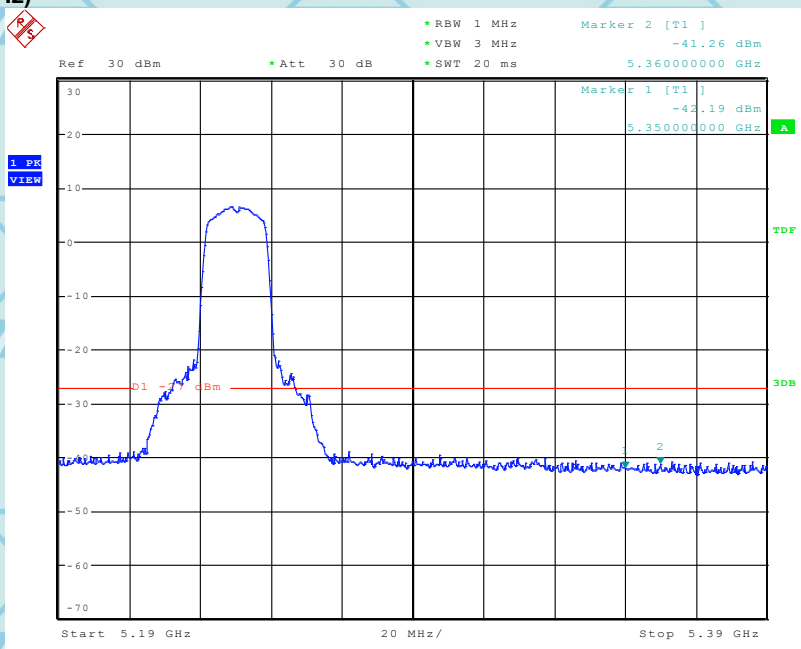
Channel 48 (5240MHz)



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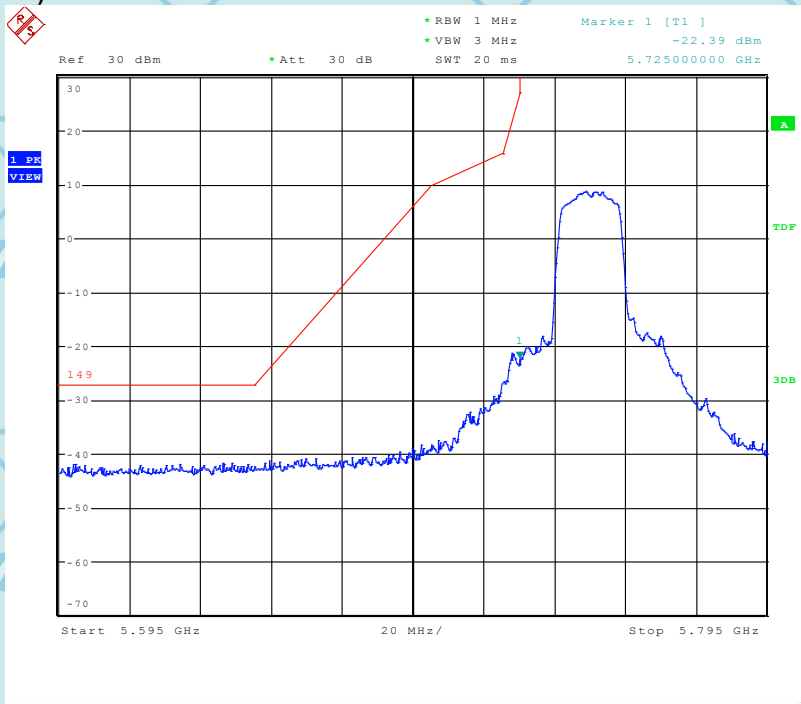
Channel 149 (5745MHz)



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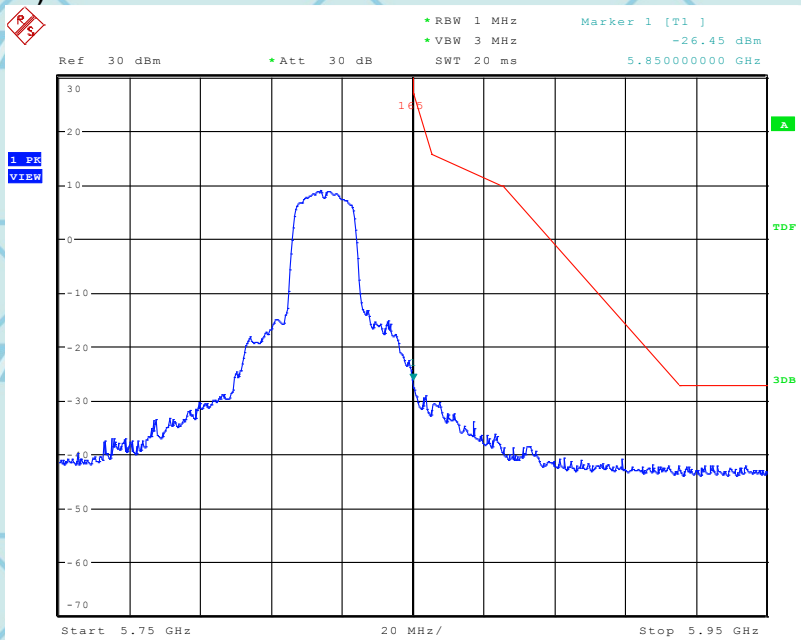
Channel 165 (5825MHz)



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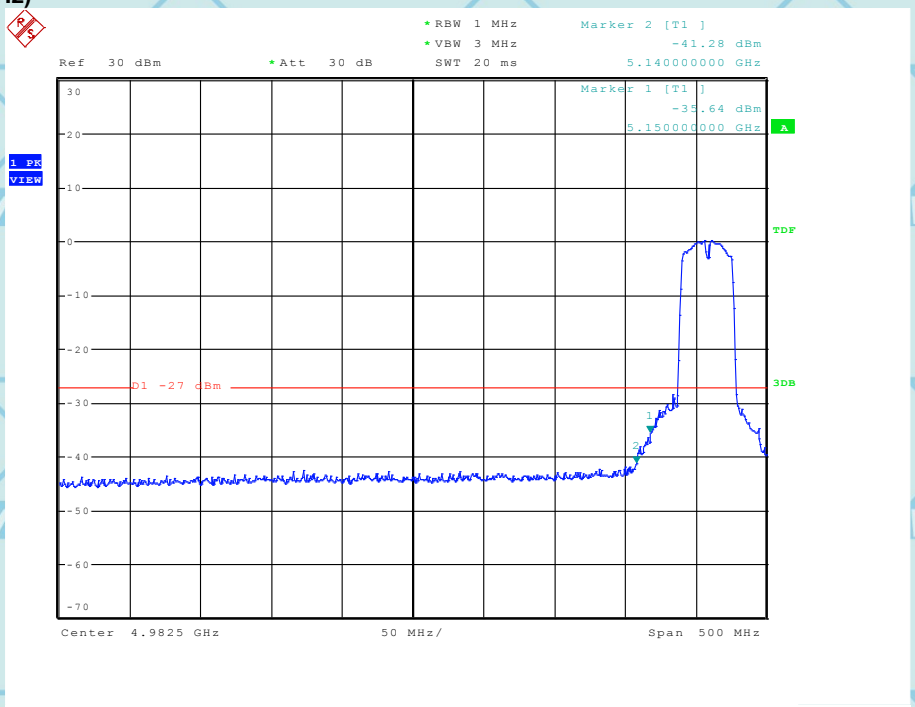
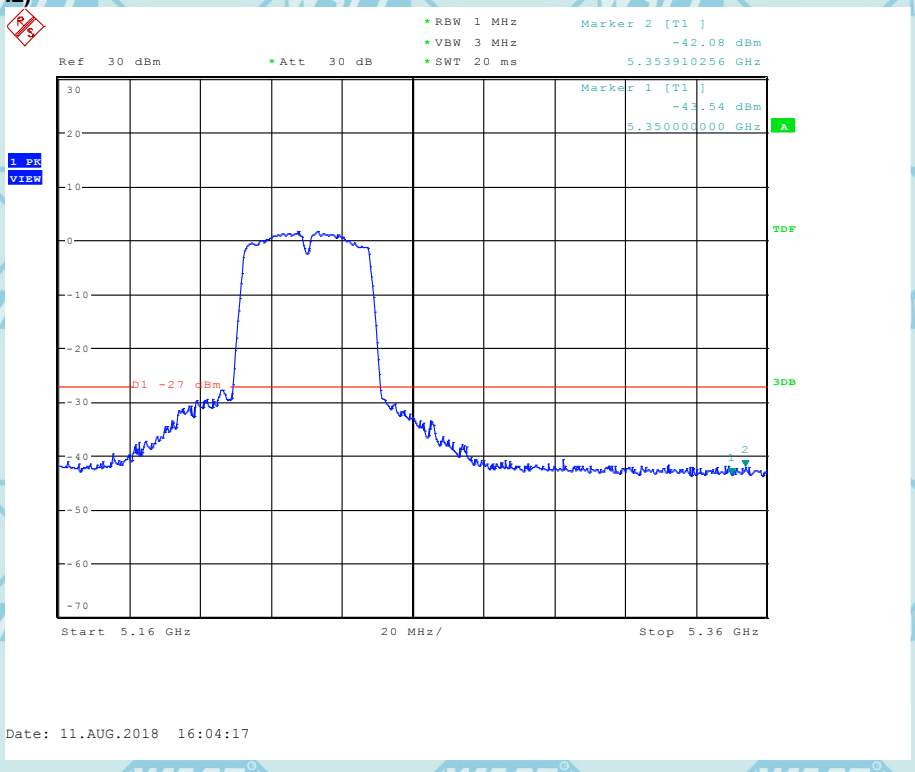
IEEE 802.11n 40MHz

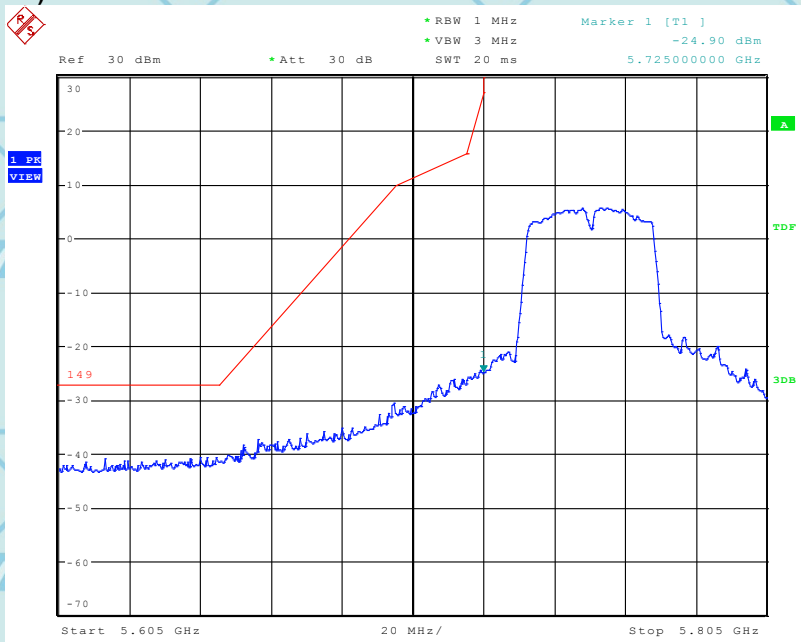
Channel 38 (5190MHz)



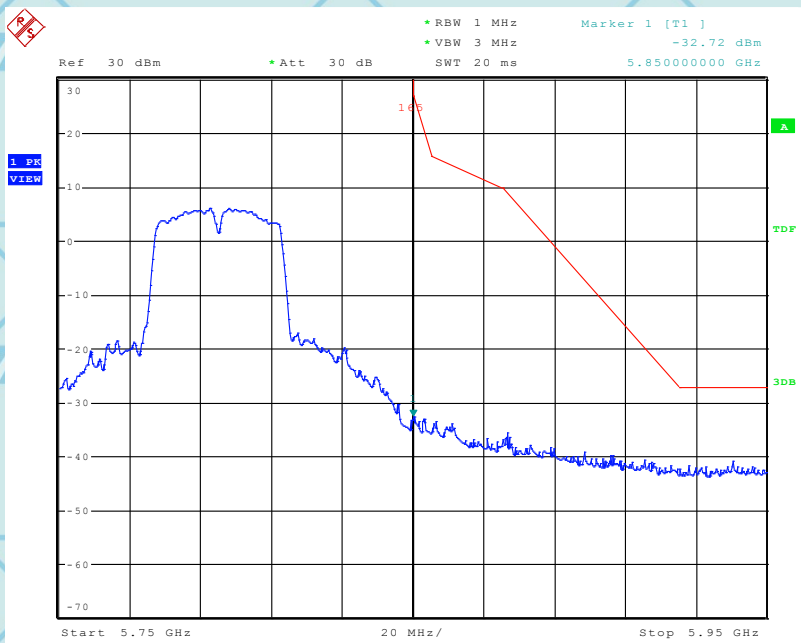
Channel 46 (5230MHz)



Channel 151 (5755MHz)

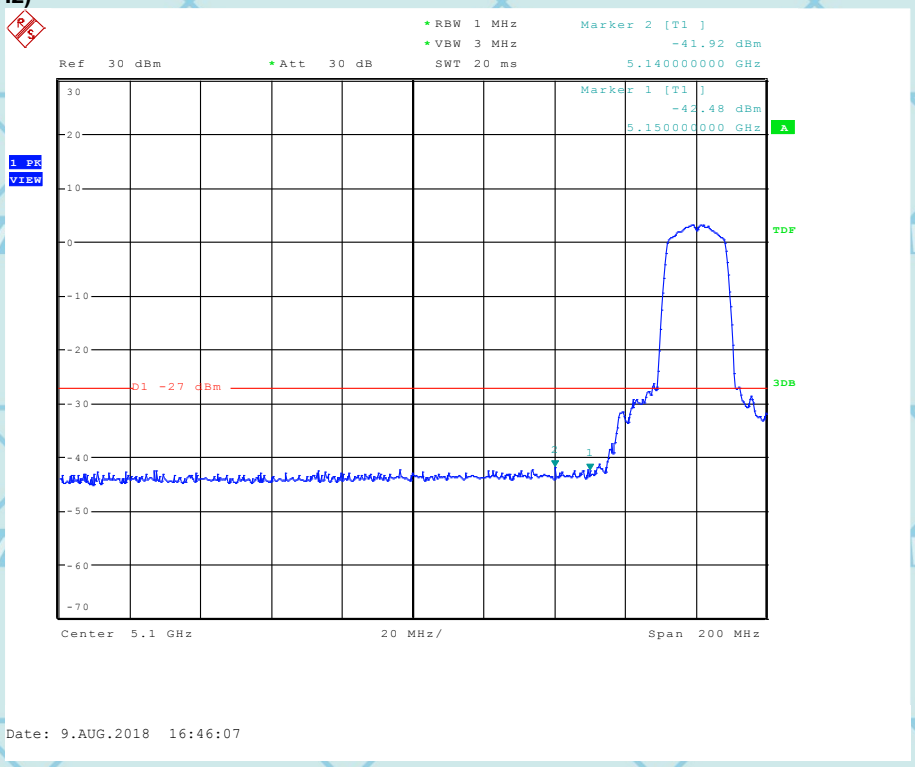


Channel 159 (5795MHz)

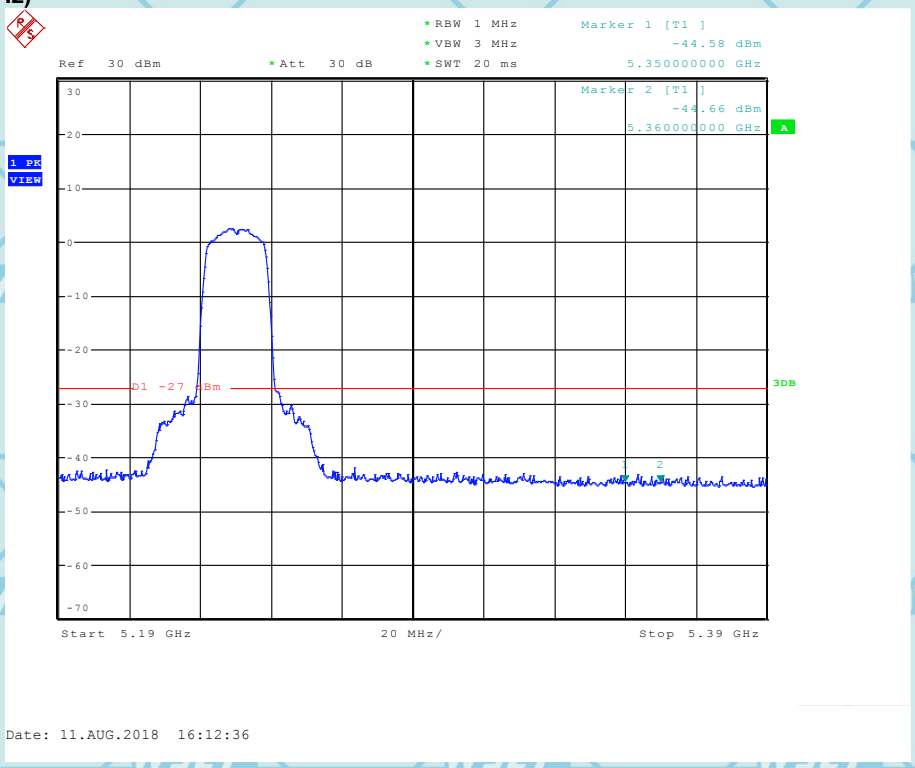


IEEE 802.11ac 20MHz

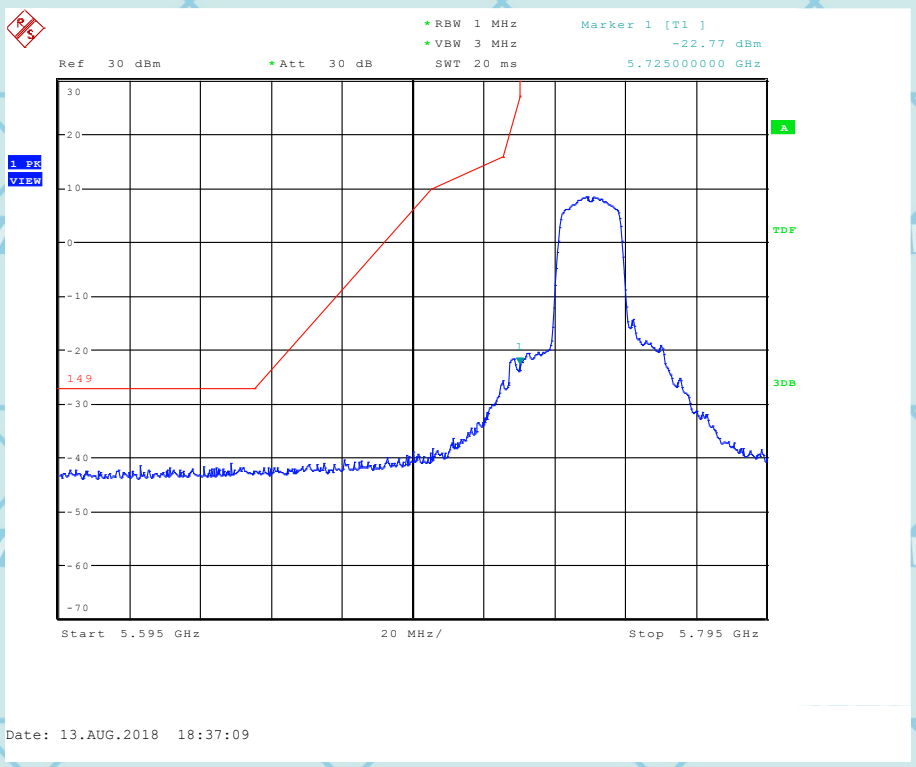
Channel 36 (5180MHz)



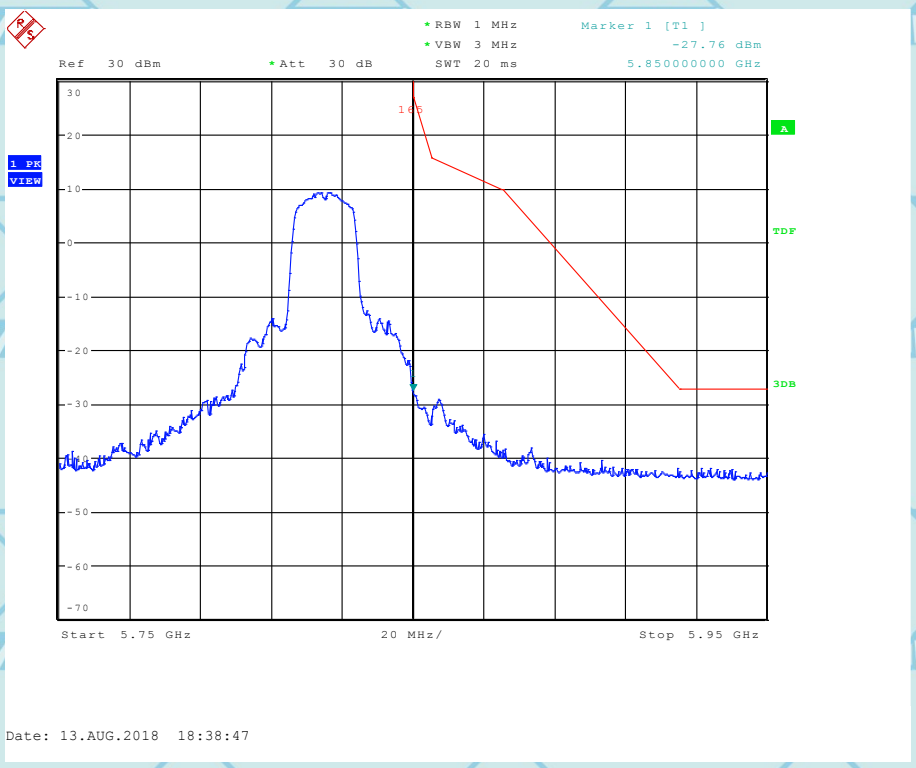
Channel 36 (5180MHz)



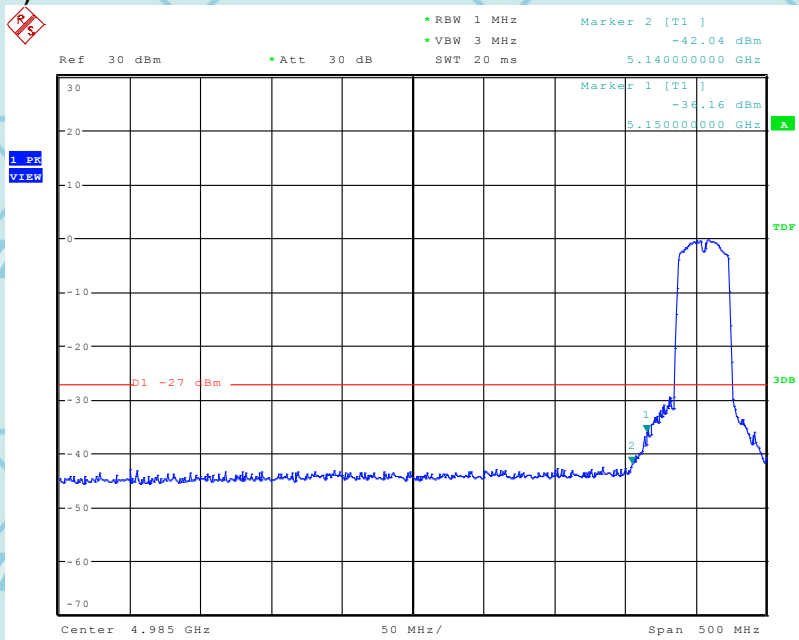
Channel 149 (5745MHz)



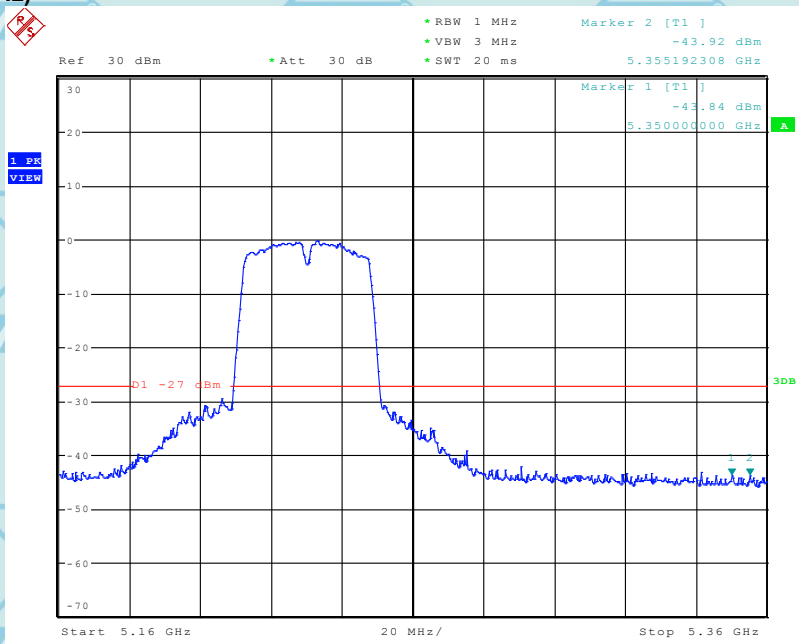
Channel 165 (5825MHz)



Channel 38 (5190MHz)

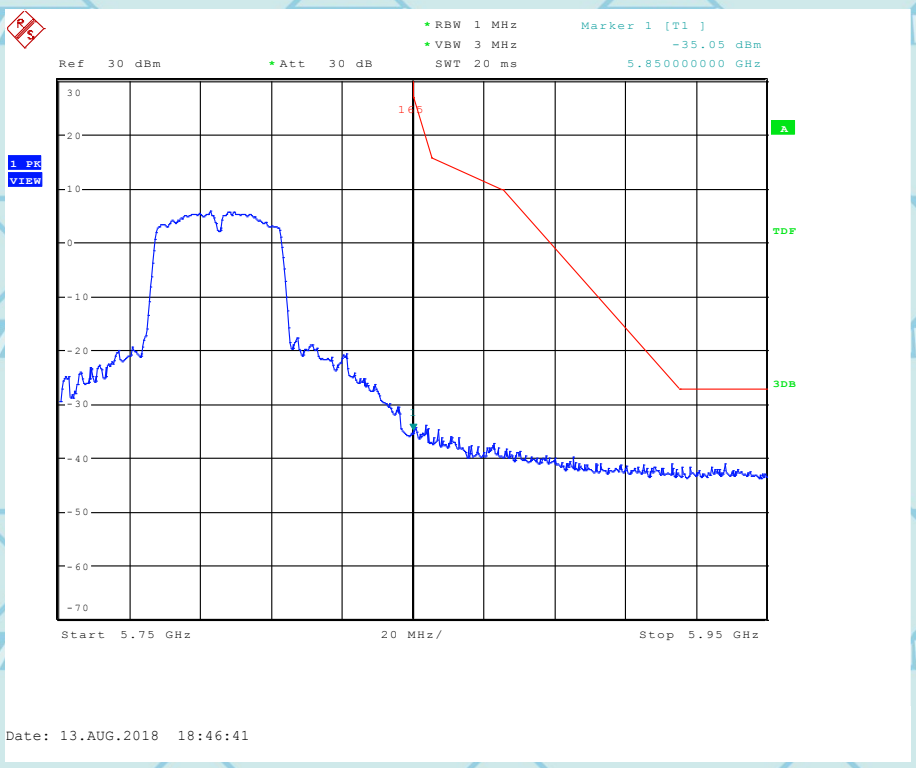


Channel 46 (5230MHz)



Channel 151 (5755MHz)

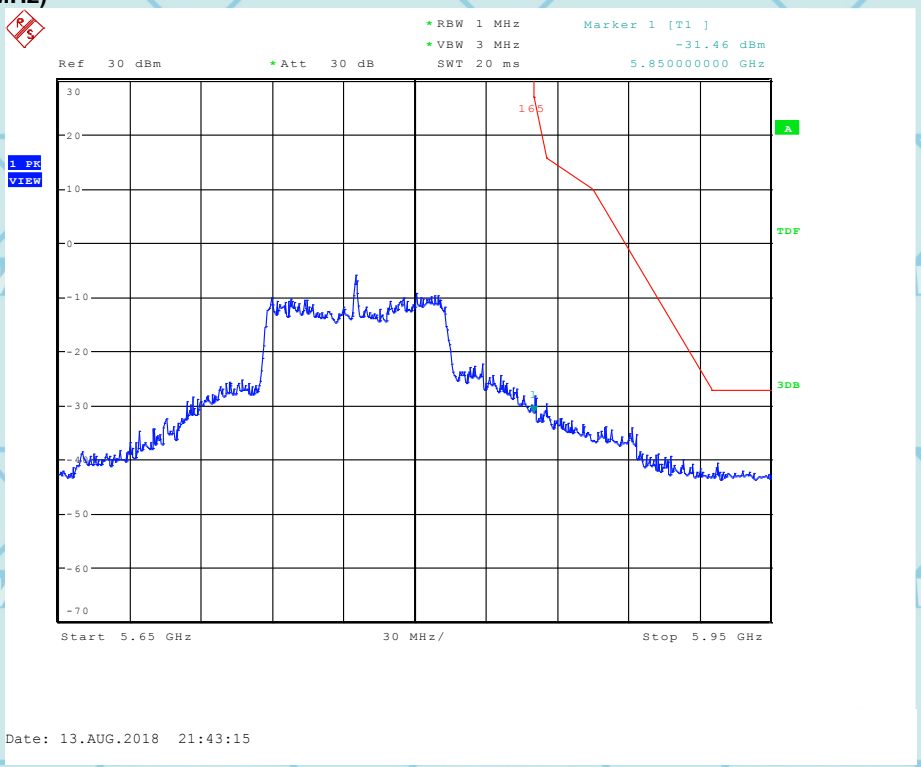
Channel 159 (5795MHz)



IEEE 802.11n 80MHz

Channel 42 (5210MHz)

Channel 155 (5775MHz)



12. IN RESTRICTED BAND

Test Requirement: FCC 47 CFR Part 15 Subpart E Section 15.407 (b)(1)(2)(3)(4)(6)
FCC 47 CFR Part 15 Subpart C Section 15.209/205

Test Method: KDB 789033 D02 v01r04 Section G.2

a) For all measurements, follow the requirements in II.G.3. “General Requirements for Unwanted Emissions Measurements.”

b) At frequencies below 1000 MHz, use the procedure described in II.G.4. “Procedure for Unwanted Emissions Measurements Below 1000 MHz.”

c) At frequencies above 1000 MHz, use the procedure for maximum emissions described in II.G.5., “Procedure for Unwanted Emissions Measurements Above 1000 MHz.”

(i) Sections 15.407(b)(1) to (b)(3) specify the unwanted emission limits for the U-NII-1 and U-NII-2 bands. As specified, emissions above 1000 MHz that are outside of the restricted bands are subject to a peak emission limit of 27 dBm/MHz.3

(ii) Section 15.407(b)(4) specifies the unwanted emission limit for the U-NII-3 band. A band emissions mask is specified in Section 15.407(b)(4)(i). The emission limits are in terms of a Peak detector. An alternative to the band emissions mask is specified in Section 15.407(b)(4)(ii). The alternative limits are based on the highest antenna gain specified in the filing. There are also marketing and importation restrictions for the devices using the alternative limit.4

d) If radiated measurements are performed, field strength is then converted to EIRP as follows:

(i) EIRP = ((E×d)^2) / 30 where:
E is the field strength in V/m;
d is the measurement distance in meters;
EIRP is the equivalent isotropically radiated power in watts.

(ii) Working in dB units, the above equation is equivalent to:
EIRP[dBm] = E[dBμ V/m] + 20 log (d[meters]) -104.77

(iii) Or, if d is 3 meters:
EIRP[dBm] = E[dBμ V/m] -95.2

§15.205 Restricted bands of operation.

(a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
[1]0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	([2])
13.36-13.41			

[1]Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

[2]Above 38.6

Test result

802.11a
Band1:5180MHz

Indicated		result	Antenna	Correction Factor					
Frequency (MHz)	Receiver Reading (dBμV/m)	(PK/AV)	Polar (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord. Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)
5150	29.72	AV	V	30.3	4.1	33.1	31.02	54	22.98
5150	30.48	AV	H	30.3	4.1	33.1	31.78	54	22.22
5150	39.44	PK	V	30.3	4.1	33.1	40.74	74	33.26
5150	40.74	PK	H	30.3	4.1	33.1	42.04	74	31.96
5050	30.75	AV	V	31	4.4	32.7	33.45	54	20.55
5050	30.30	AV	H	31	4.4	32.7	33.00	54	21.00
5050	41.65	PK	V	31	4.4	32.7	44.35	74	29.65
5050	41.15	PK	H	31	4.4	32.7	43.85	74	30.15

802.11n/H20
Band1:5180MHz

Indicated		result	Antenna	Correction Factor					
Frequency (MHz)	Receiver Reading (dBμV/m)	(PK/AV)	Polar (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord. Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)
5150	31.08	AV	V	30.3	4.1	33.1	32.38	54	21.62
5150	29.59	AV	H	30.3	4.1	33.1	30.89	54	23.11
5150	41.93	PK	V	30.3	4.1	33.1	43.23	74	30.77
5150	40.61	PK	H	30.3	4.1	33.1	41.91	74	32.09
5050	29.56	AV	V	31	4.4	32.7	32.26	54	21.74
5050	30.60	AV	H	31	4.4	32.7	33.30	54	20.70
5050	41.79	PK	V	31	4.4	32.7	44.49	74	29.51
5050	40.83	PK	H	31	4.4	32.7	43.53	74	30.47

802.11ac/H20
Band1:5180MHz

Indicated		result (PK/AV)	Antenna Polar (H/V)	Correction Factor					
Frequency (MHz)	Receiver Reading (dBμV/m)			Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord. Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)
5150	34.50	AV	V	30.3	4.1	33.1	35.80	54	18.20
5150	33.46	AV	H	30.3	4.1	33.1	34.76	54	19.24
5150	51.01	PK	V	30.3	4.1	33.1	52.31	74	21.69
5150	49.97	PK	H	30.3	4.1	33.1	51.27	74	22.73
5050	30.98	AV	V	31	4.4	32.7	33.68	54	20.32
5050	31.62	AV	H	31	4.4	32.7	34.32	54	19.68
5050	42.05	PK	V	31	4.4	32.7	44.75	74	29.25
5050	41.69	PK	H	31	4.4	32.7	44.39	74	29.61

802.11n/H40
Band1:5190MHz

Indicated		result (PK/AV)	Antenna Polar (H/V)	Correction Factor					
Frequency (MHz)	Receiver Reading (dBμV/m)			Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord. Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)
5150	38.15	AV	V	30.3	4.1	33.1	39.45	54	14.55
5150	37.70	AV	H	30.3	4.1	33.1	39.00	54	15.00
5150	53.64	PK	V	30.3	4.1	33.1	54.94	74	19.06
5150	53.65	PK	H	30.3	4.1	33.1	54.95	74	19.05
5050	34.15	AV	V	31	4.4	32.7	36.85	54	17.15
5050	32.00	AV	H	31	4.4	32.7	34.70	54	19.30
5050	46.83	PK	V	31	4.4	32.7	49.53	74	24.47
5050	46.18	PK	H	31	4.4	32.7	48.88	74	25.12

802.11ac/H40
Band1:5190MHz

Indicated		result (PK/AV)	Antenna Polar (H/V)	Correction Factor					
Frequency (MHz)	Receiver Reading (dBμV/m)			Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord. Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)
5150	37.61	AV	V	30.3	4.1	33.1	38.91	54	15.09
5150	37.22	AV	H	30.3	4.1	33.1	38.52	54	15.48
5150	53.13	PK	V	30.3	4.1	33.1	54.43	74	19.57
5150	53.45	PK	H	30.3	4.1	33.1	54.75	74	19.25
5050	33.82	AV	V	31	4.4	32.7	36.52	54	17.48
5050	32.52	AV	H	31	4.4	32.7	35.22	54	18.78
5050	45.47	PK	V	31	4.4	32.7	48.17	74	25.83
5050	46.25	PK	H	31	4.4	32.7	48.95	74	25.05

802.11ac/H80
Band1:5210MHz

Indicated		result (PK/AV)	Antenna Polar (H/V)	Correction Factor					
Frequency (MHz)	Receiver Reading (dBμV/m)			Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord. Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)
5150	29.93	AV	V	30.3	4.1	33.1	31.23	54	22.77
5150	29.75	AV	H	30.3	4.1	33.1	31.05	54	22.95
5150	39.34	PK	V	30.3	4.1	33.1	40.64	74	33.36
5150	41.53	PK	H	30.3	4.1	33.1	42.83	74	31.17
5050	30.24	AV	V	31	4.4	32.7	32.94	54	21.06
5050	32.21	AV	H	31	4.4	32.7	34.91	54	19.09
5050	40.96	PK	V	31	4.4	32.7	43.66	74	30.34
5050	40.15	PK	H	31	4.4	32.7	42.85	74	31.15

Remark:
All emissions not reported were more than 20dB below the specified limit or in the noise floor.
Factor = Antenna Factor + Cable Loss – Pre-amplifier.
And only worst case is presented in this report.

13. FREQUENCY STABILITY

Product:	Mobile phone	Test Mode:	Mode: IEEE 802.11a
Test Item:	Frequency Stability	Temperature:	25 ℃
Test Voltage:	DC 5V	Humidity:	56%RH
Test Result:	**PASS**		

Voltage vs. Frequency Stability

Voltage			Measurement Frequency (MHz)			
(V)	5180 MHz	5200 MHz	5240 MHz	5745 MHz	5785 MHz	5825 MHz
126.50	5179.9522	5199.9215	5239.9438	5744.9364	5784.9532	5824.9456
110.00	5179.9522	5199.9215	5239.9438	5744.9364	5784.9532	5824.9456
93.50	5179.9522	5199.9215	5239.9438	5744.9364	5784.9532	5824.9456
Max. Deviation (MHz)	-0.0478	-0.0785	-0.0562	-0.0636	-0.0468	-0.0544
Max. Deviation (ppm)	-9.23	-15.10	-10.73	-11.07	-8.09	-9.34

Temperature vs. Frequency Stability

Temperature			Measurement Frequency (MHz)			
(℃)	5180 MHz	5200 MHz	5240 MHz	5745 MHz	5785 MHz	5825 MHz
0	5179.9515	5199.9562	5239.9323	5744.9282	5784.9398	5824.9252
10	5179.9515	5199.9562	5239.9352	5744.9222	5784.9398	5824.9232
20	5179.951	5199.9562	5239.9322	5744.9272	5784.9398	5824.9412
30	5179.951	5199.9562	5239.9331	5744.9246	5784.9398	5824.9642
40	5179.9525	5199.9562	5239.9311	5744.9235	5784.9398	5824.9362
Max. Deviation (MHz)	-0.0475	-0.0438	-0.0648	-0.0718	-0.0602	-0.0358
Max. Deviation (ppm)	-9.17	-8.42	-12.37	-12.50	-10.41	-6.15

Product:	Mobile phone	Test Mode:	Mode: IEEE 802.11n 20MHz
Test Item:	Frequency Stability	Temperature:	25 ℃
Test Voltage:	DC 5V	Humidity:	56%RH
Test Result:	**PASS**		

Voltage vs. Frequency Stability

Voltage			Measurement Frequency (MHz)			
(V)	5180 MHz	5200 MHz	5240 MHz	5745 MHz	5785 MHz	5825 MHz
126.50	5179.9641	5199.9423	5239.9454	5744.9343	5784.9462	5824.9388
110.00	5179.9641	5199.9423	5239.9454	5744.9343	5784.9462	5824.9456
93.50	5179.9641	5199.9423	5239.9454	5744.9343	5784.9462	5824.9456
Max. Deviation (MHz)	-0.0359	-0.0577	-0.0546	-0.0657	-0.0538	-0.0544
Max. Deviation (ppm)	-6.93	-11.10	-10.42	-11.44	-9.30	-9.34

Temperature vs. Frequency Stability

Temperature			Measurement Frequency (MHz)			
(℃)	5180 MHz	5200 MHz	5240 MHz	5745 MHz	5785 MHz	5825 MHz
0	5179.9523	5199.9425	5239.9343	5744.9289	5784.9425	5824.9552
10	5179.9523	5199.9425	5239.9343	5744.9289	5784.9425	5824.9552
20	5179.9523	5199.9425	5239.9343	5744.9289	5784.9425	5824.9552
30	5179.9523	5199.9425	5239.9343	5744.9289	5784.9425	5824.9552
40	5179.9523	5199.9425	5239.9343	5744.9289	5784.9425	5824.9552
Max. Deviation (MHz)	0.0482	-0.0575	0.0782	0.0788	-0.0575	0.0748
Max. Deviation (ppm)	9.31	-11.06	14.92	13.72	-9.94	12.84

Product:	Mobile phone	Test Mode:	Mode: IEEE 802.11n 40MHz
Test Item:	Frequency Stability	Temperature:	25 ℃
Test Voltage:	DC 5V	Humidity:	56%RH
Test Result:	**PASS**		

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5190 MHz	5230 MHz	5755 MHz	5795 MHz
126.50	5189.9652	5229.9592	5754.9391	5794.9422
110.00	5189.9652	5229.9592	5754.9391	5794.9422
93.50	5189.9652	5229.9592	5754.9391	5794.9422
Max. Deviation (MHz)	-0.0348	-0.0408	-0.0609	-0.0578
Max. Deviation (ppm)	-6.71	-7.80	-10.58	-9.97

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(℃)	5190 MHz	5230 MHz	5755 MHz	5795 MHz
0	5189.9381	5229.9364	5754.9364	5794.9413
10	5189.9381	5229.9364	5754.9364	5794.9413
20	5189.9381	5229.9364	5754.9364	5794.9413
30	5189.9381	5229.9364	5754.9364	5794.9413
40	5189.9381	5229.9364	5754.9364	5794.9413
Max. Deviation (MHz)	-0.0619	-0.0636	-0.0636	-0.0587
Max. Deviation (ppm)	-11.93	-12.16	-11.05	-10.13

Product:	Mobile phone	Test Mode:	Mode: IEEE 802.11ac 20MHz
Test Item:	Frequency Stability	Temperature:	25 ℃
Test Voltage:	DC 5V	Humidity:	56%RH
Test Result:	**PASS**		

Voltage vs. Frequency Stability

Voltage			Measurement Frequency (MHz)			
(V)	5180 MHz	5200 MHz	5240 MHz	5745 MHz	5785 MHz	5825 MHz
126.50	5179.9556	5199.9305	5239.9236	5744.9228	5784.9289	5824.9244
110.00	5179.9556	5199.9305	5239.9236	5744.9228	5784.9289	5824.9242
93.50	5179.9554	5199.9305	5239.9234	5744.9230	5784.9289	5824.9242
Max. Deviation (MHz)	0.0446	-0.0695	0.0766	0.0770	-0.0711	0.0758
Max. Deviation (ppm)	8.61	-13.37	14.62	13.40	-12.29	13.01

Temperature vs. Frequency Stability

Temperature			Measurement Frequency (MHz)			
(℃)	5180 MHz	5200 MHz	5240 MHz	5745 MHz	5785 MHz	5825 MHz
0	5179.9536	5199.9263	5239.9248	5744.9224	5784.9132	5824.9234
10	5179.9536	5199.9263	5239.9244	5744.9224	5784.9132	5824.9234
20	5179.9535	5199.9263	5239.9246	5744.9224	5784.9132	5824.9236
30	5179.9534	5199.9263	5239.9246	5744.9222	5784.9132	5824.9236
40	5179.9534	5199.9263	5239.9244	5744.9222	5784.9132	5824.9234
Max. Deviation (MHz)	0.0466	-0.0737	0.0756	0.0776	-0.0868	0.0766
Max. Deviation (ppm)	9.00	-14.17	14.43	13.51	-15.00	13.15

Product:	Mobile phone	Test Mode:	Mode: IEEE 802.11ac 40MHz
Test Item:	Frequency Stability	Temperature:	25 ℃
Test Voltage:	DC 5V	Humidity:	56%RH
Test Result:	**PASS**		

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5190 MHz	5230 MHz	5755 MHz	5795 MHz
126.50	5189.9633	5229.9422	5754.9421	5794.9358
110.00	5189.9633	5229.9422	5754.9421	5794.9358
93.50	5189.9633	5229.9422	5754.9421	5794.9358
Max. Deviation (MHz)	-0.0367	-0.0578	-0.0579	-0.0642
Max. Deviation (ppm)	-7.07	-11.05	-10.06	-11.08

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(℃)	5190 MHz	5230 MHz	5755 MHz	5795 MHz
0	5189.9355	5229.9414	5754.9456	5794.9642
10	5189.9355	5229.9414	5754.9456	5794.9642
20	5189.9355	5229.9414	5754.9456	5794.9642
30	5189.9355	5229.9414	5754.9456	5794.9642
40	5189.9355	5229.9414	5754.9456	5794.9642
Max. Deviation (MHz)	-0.0645	-0.0586	-0.0544	-0.0358
Max. Deviation (ppm)	-12.43	-11.20	-9.45	-6.18

Product:	Mobile phone	Test Mode:	Mode: IEEE 802.11ac 80MHz
Test Item:	Frequency Stability	Temperature:	25 ℃
Test Voltage:	DC 5V	Humidity:	56%RH
Test Result:	**PASS**		

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)					
(V)	5210 MHz		5775 MHz			
126.50	5209.9226		5774.9202			
110.00	5209.9222		5774.9204			
93.50	5209.9222		5774.9202			
Max. Deviation (MHz)	0.0778		0.0798			
Max. Deviation (ppm)	14.93		13.82			

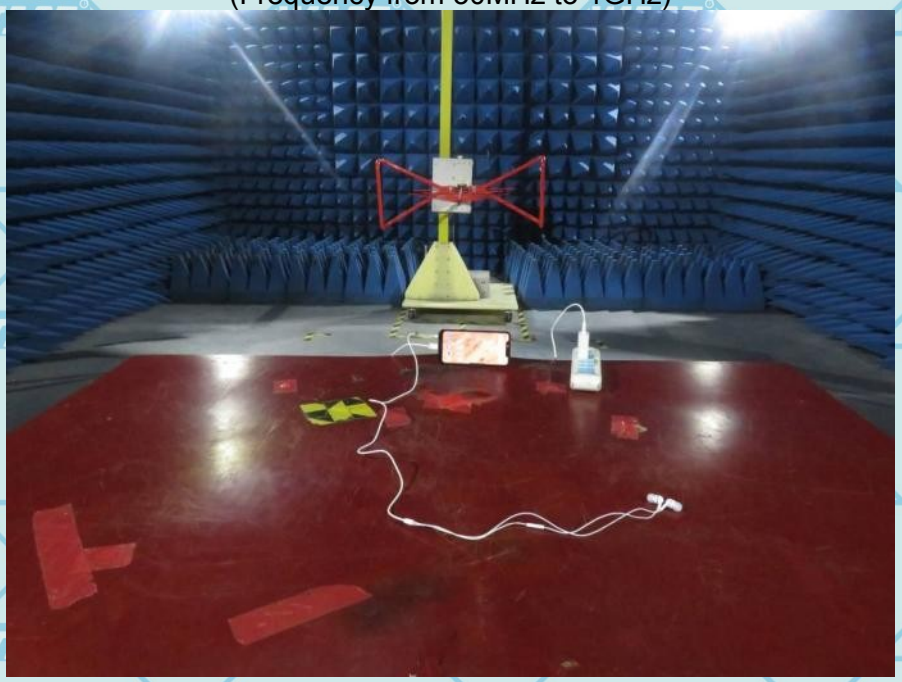
Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)					
(℃)	5210 MHz		5775 MHz			
0	5209.9314		5774.9166			
10	5209.9314		5774.9166			
20	5209.9312		5774.9164			
30	5209.9312		5774.9164			
40	5209.9312		5774.9164			
Max. Deviation (MHz)	0.0688		0.0836			
Max. Deviation (ppm)	13.21		14.48			

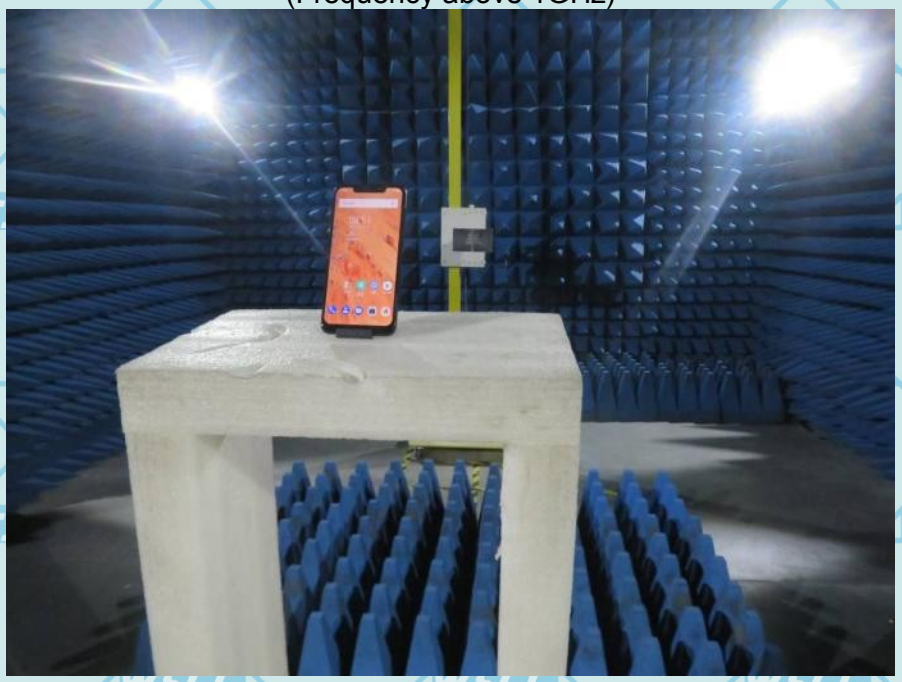
14. EUT TEST PHOTO

CONDUCTED EMISSION TEST

RADIATED EMISSION TEST
(Frequency from 30MHz to 1GHz)



RADIATED EMISSION TEST
(Frequency above 1GHz)



RF TEST

15.PHOTOGRAPHS OF EUT

Refer to test report FCC18070037A-15B

---END OF REPORT---