Appendix D

RF Test Data for 5.2G WLAN (Conducted Measurement)

Product Name: IPTV Set-Top Box

Trade Mark: N/A

Test Model: SML-5051W

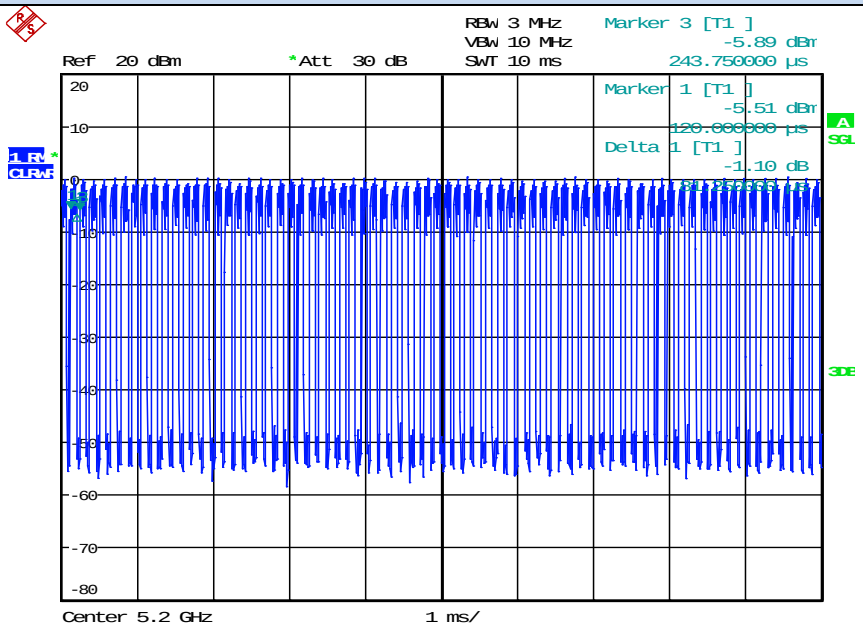
Environmental Conditions

Temperature:	24.8 ° C
Relative Humidity:	53.8%
ATM Pressure:	100.0 kPa
Test Engineer:	David Luo
Supervised by:	Wang.Chuang

D.1 Duty Cycle

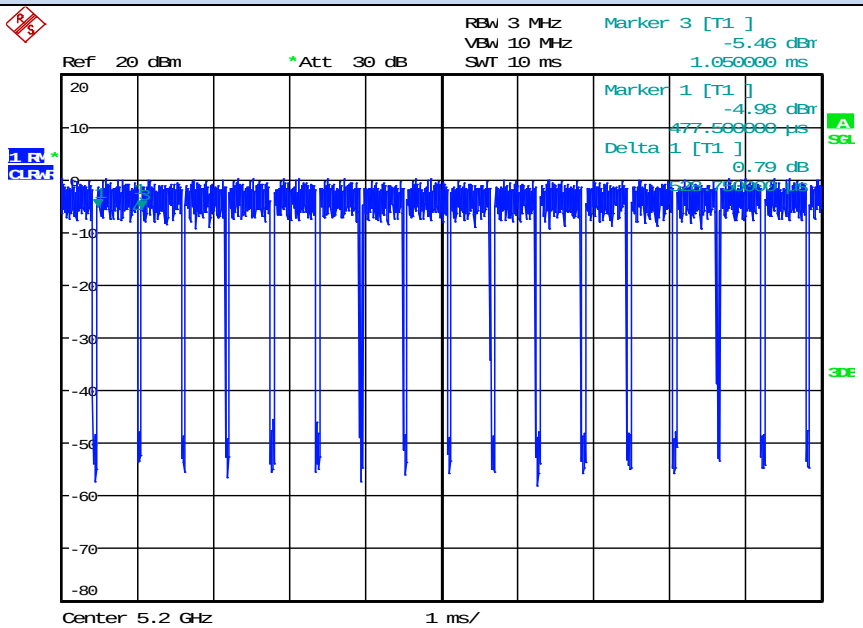
Test Mode	Test Frequency (MHz)	Duty Cycle (%)	10log(1/x) Factor (dB)	1/B Minimum VBW(KHz)
11A	5200	65.66	1.83	0.01
11N20 SISO	5200	92.36	0.35	0.01
11N40 SISO	5190	81.65	0.88	0.01
11AC20 SISO	5200	89.52	0.48	0.01
11AC40 SISO	5190	79.5	1.00	0.01
11AC80 SISO	5210	68	1.67	0.01

On Time and Duty Cycle



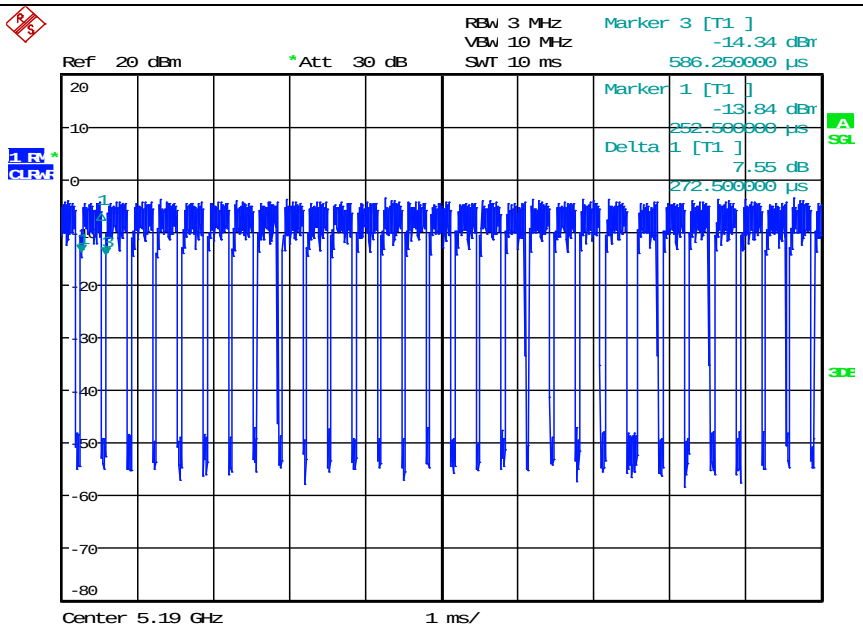
Date: 26.AUG.2019 20:17:05

IEEE 802.11a



Date: 27.AUG.2019 09:35:21

IEEE 802.11n HT20



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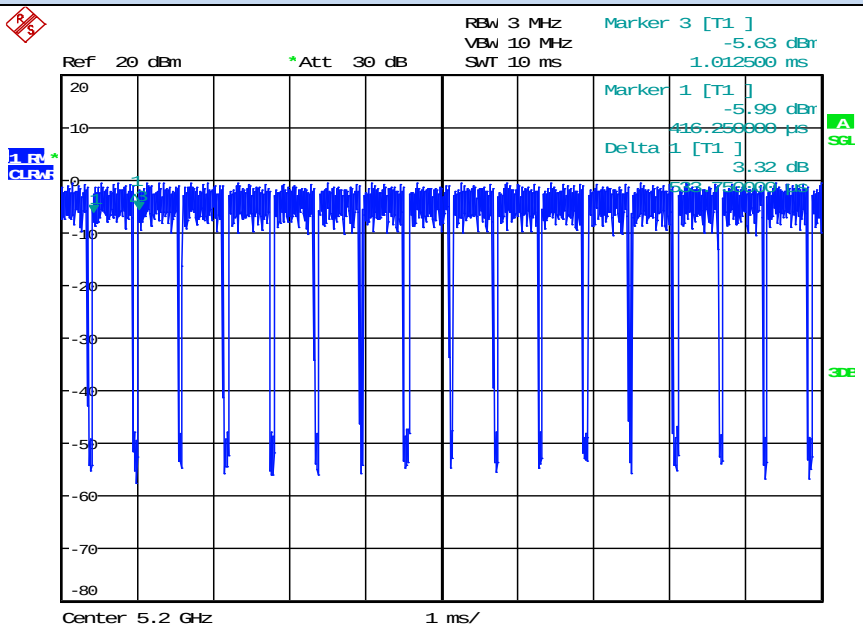
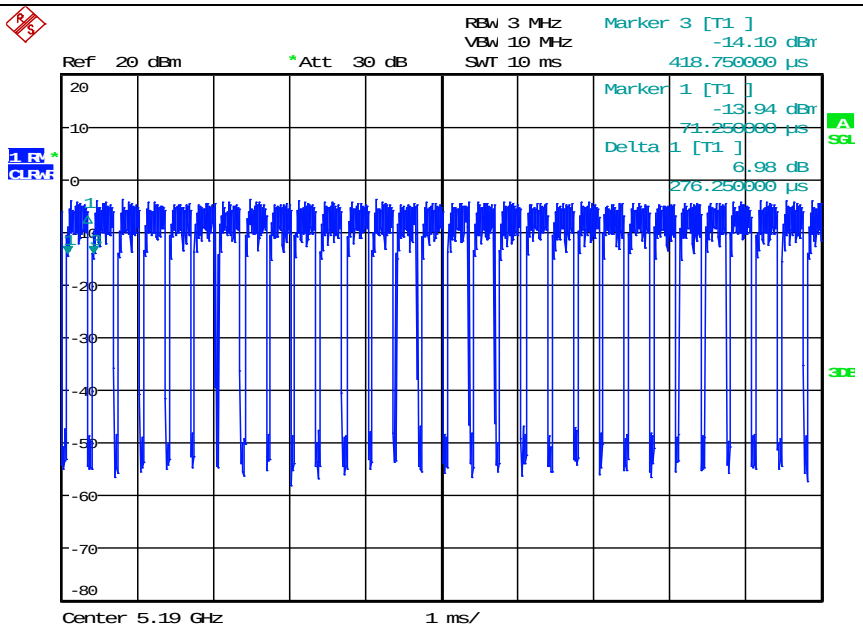
IEEE 802.11n HT40



Date: 27.AUG.2019 10:12:01

IEEE 802.11AC20



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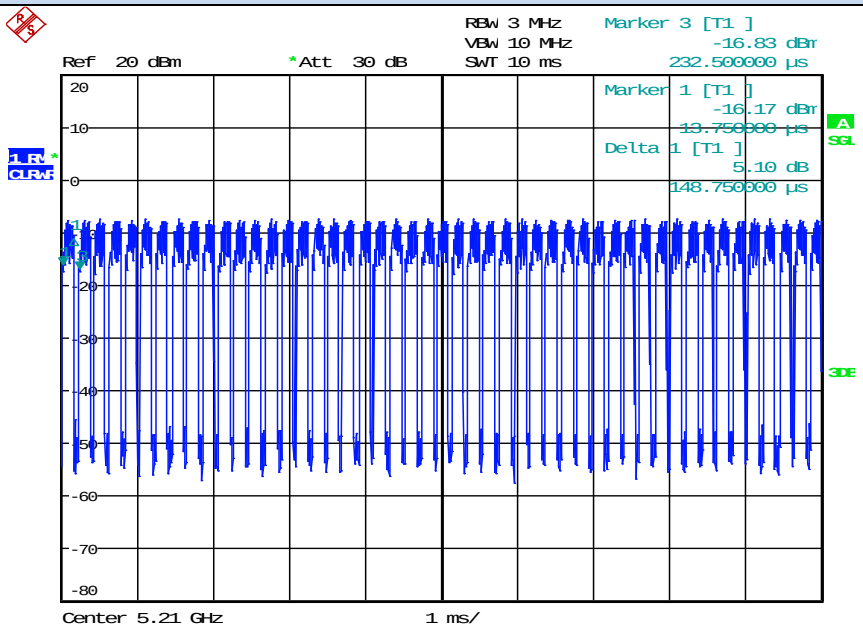
IEEE 802.11 AC40



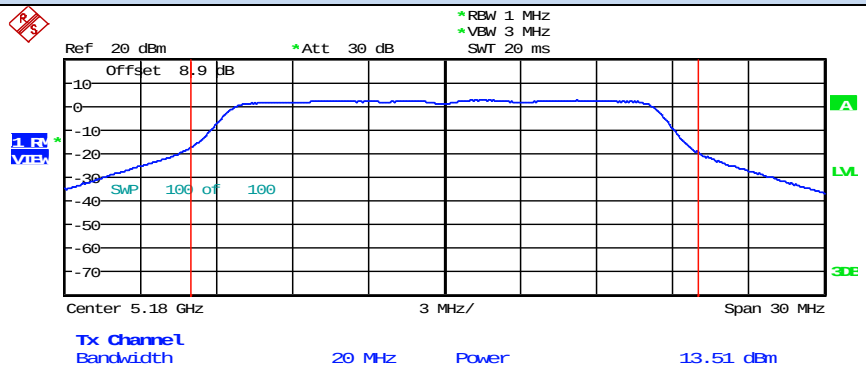
Date: 27.AUG.2019 10:49:10

IEEE 802.11AC80

D.2 Maximum Conduct Output Power

Test Mode	Channel	Frequency (MHz)	AVG Conducted Power (dBm)	Duty Cycle Factor(dB)	Report Conducted Power(dBm)	Limit (dBm)	Verdict
11A	36	5180	13.51	1.83	15.34	24	Pass
	40	5200	13.21	1.83	15.04		Pass
	48	5240	13.47	1.83	15.30		Pass
11N20 SISO	36	5180	13.78	0.35	14.12	24	Pass
	40	5200	13.61	0.35	13.96		Pass
	48	5240	13.31	0.35	13.66		Pass
11N40 SISO	38	5190	13.74	0.88	14.62	24	Pass
	46	5230	13.68	0.88	14.67		Pass
11AC20 SISO	36	5180	13.51	0.48	13.99	24	Pass
	40	5200	13.78	0.48	14.26		Pass
	48	5240	13.3	0.48	13.77		Pass
11AC40 SISO	38	5190	13.64	1.00	14.64	24	Pass
	46	5230	13.39	1.00	14.26		Pass
11AC80 SISO	42	5210	13.27	1.67	14.94	24	Pass

Maximum Conducted Output Power



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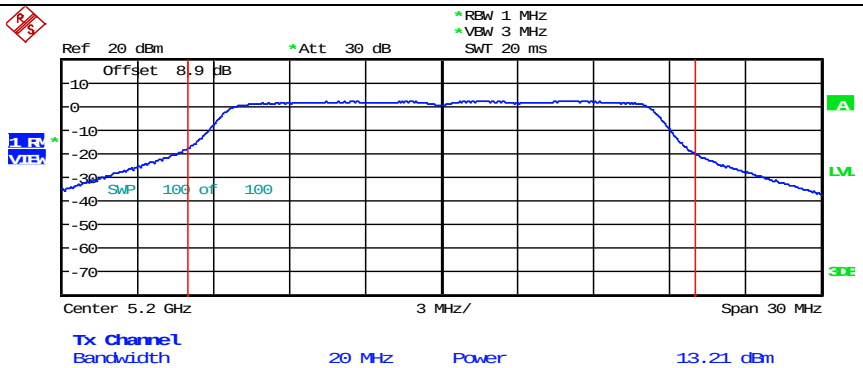
IEEE 802.11a / Channel 36 / 5180MHz



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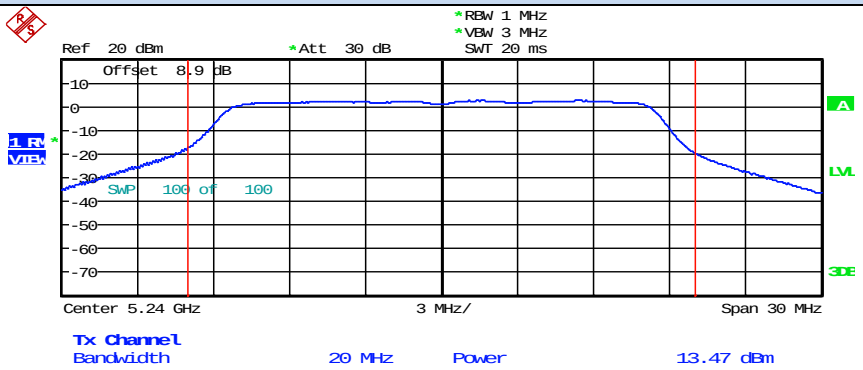
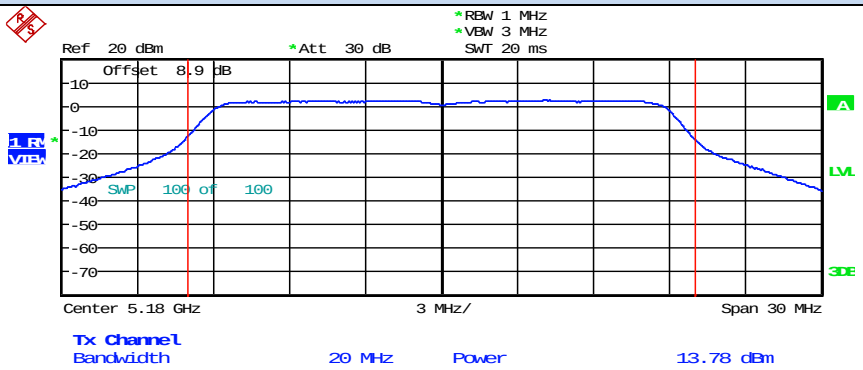
IEEE 802.11a / Channel 40 / 5200MHz



Date: 26.AUG.2019 20:43:19

IEEE 802.11a / Channel 48 / 5240MHz

Maximum Conducted Output Power



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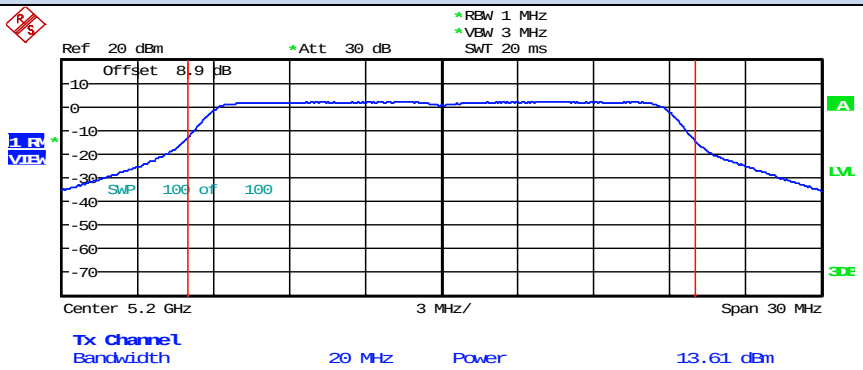
IEEE 802.11n20 / Channel 36 / 5180MHz



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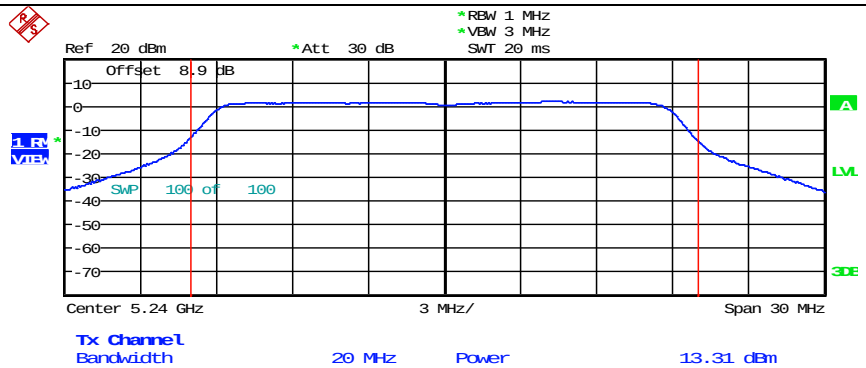
IEEE 802.11n20 / Channel 40 / 5200MHz



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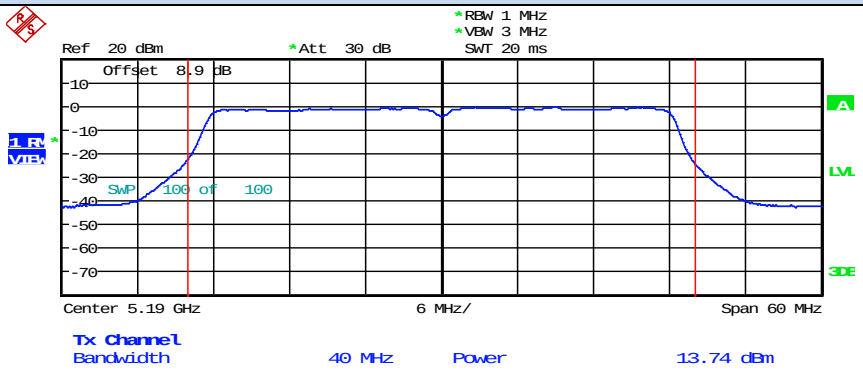
IEEE 802.11n20 / Channel 48 / 5240MHz

Maximum Conducted Output Power



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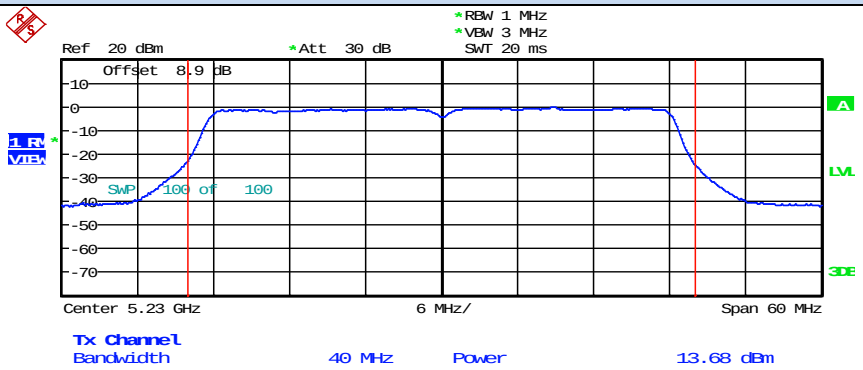
IEEE 802.11n40 / Channel 38 / 5190MHz



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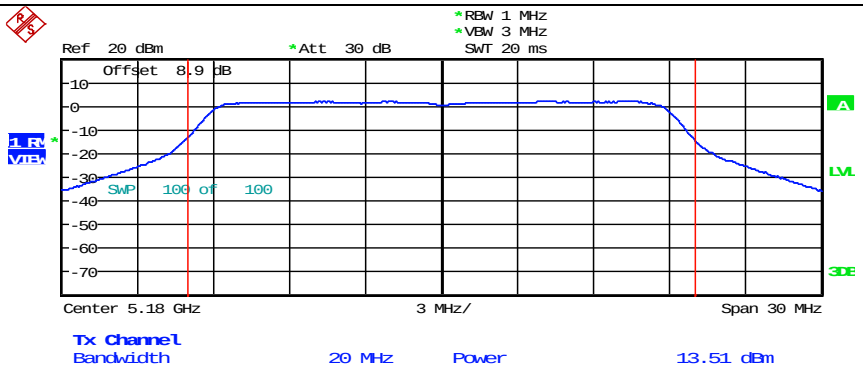
IEEE 802.11n40 / Channel 46 / 5230MHz



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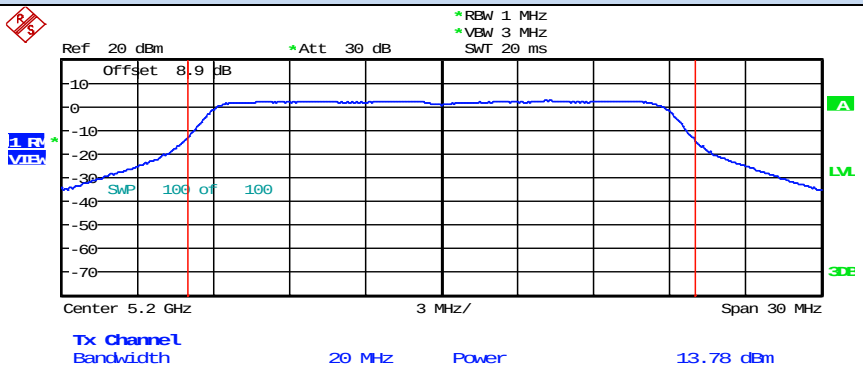
IEEE 802.11ac20 / Channel 36 / 5180MHz



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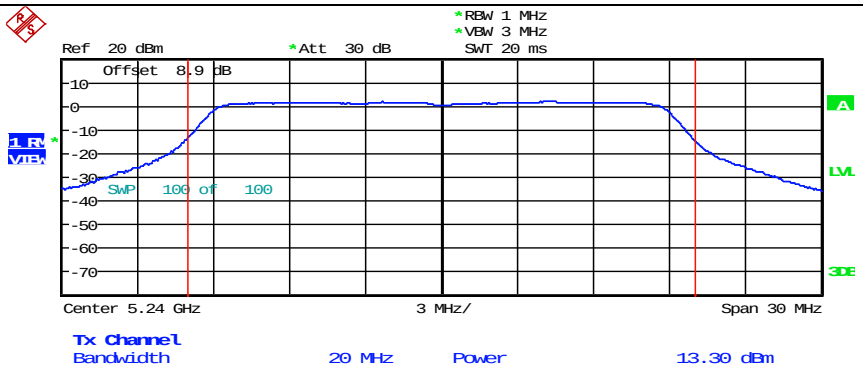
IEEE 802.11ac20 / Channel 40 / 5200MHz



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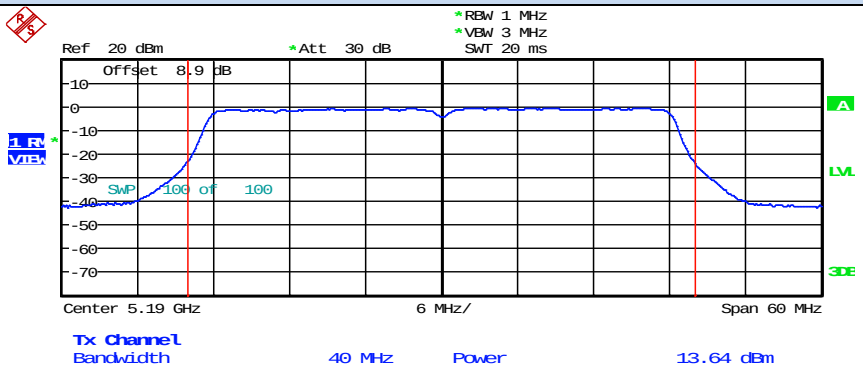
IEEE 802.11ac20 / Channel 48 / 5240MHz



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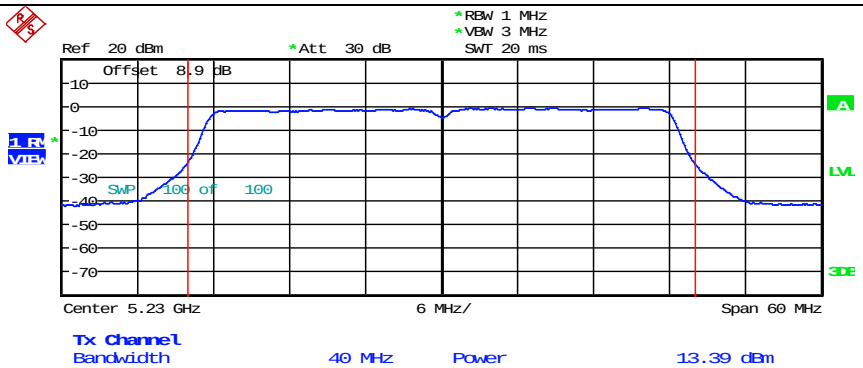
IEEE 802.11ac40 / Channel 38 / 5190MHz



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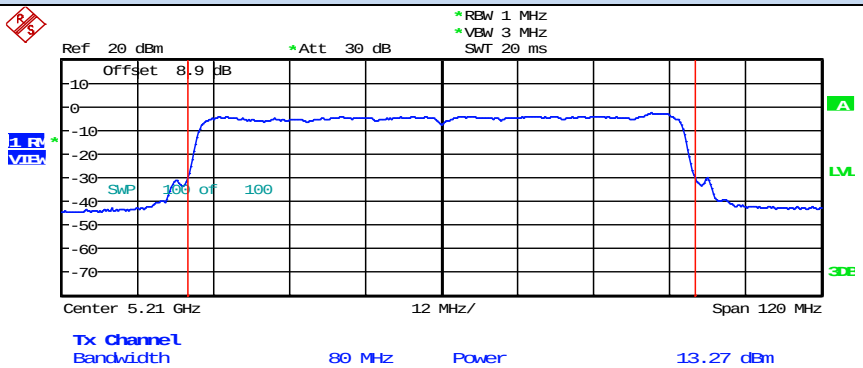
IEEE 802.11ac40 / Channel 46 / 5230MHz



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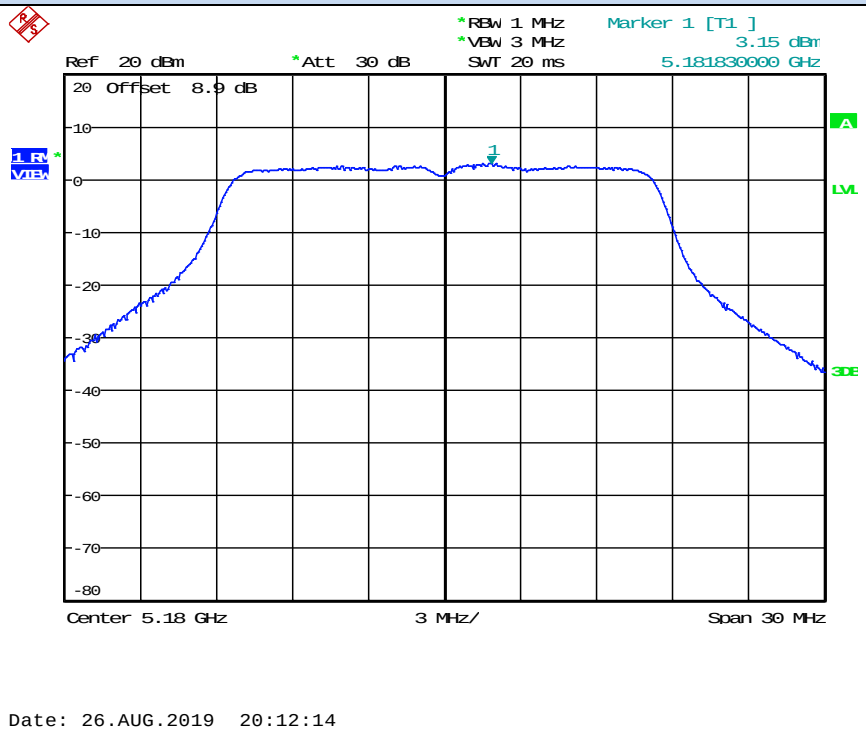
IEEE 802.11ac80 / Channel 42 / 5210MHz

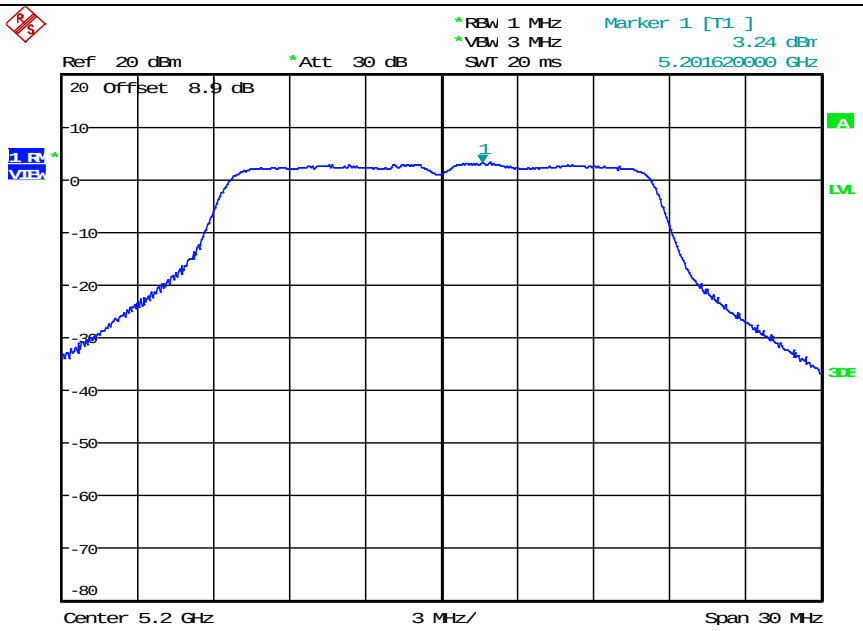
D.3 Power Spectral Density

Test Mode	Channel	Frequency (MHz)	Power Density (dBm/MHz)	Duty Cycle Factor(dB)	Report Power Density (dBm/MHz)	Limit (dBm/MHz)	Verdict
11A	36	5180	3.15	1.83	4.98	11	Pass
	40	5200	3.24	1.83	5.07		Pass
	48	5240	3.08	1.83	5.24		Pass
11N20 SISO	36	5180	2.64	0.35	2.98	11	Pass
	40	5200	3.04	0.35	3.39		Pass
	48	5240	2.76	0.35	3.11		Pass
11N40 SISO	38	5190	0.05	0.88	0.93	11	Pass
	46	5230	0.00	0.88	0.99		Pass
11AC20 SISO	36	5180	3.13	0.48	3.61	11	Pass
	40	5200	2.89	0.48	3.37		Pass
	48	5240	2.34	0.48	2.81		Pass
11AC40 SISO	38	5190	-0.15	1.00	0.85	11	Pass
	46	5230	-0.20	1.00	0.67		Pass
11AC80 SISO	42	5210	-2.49	1.67	-0.82	11	Pass

Power Spectral Density



IEEE 802.11a / Channel 36 / 5180MHz



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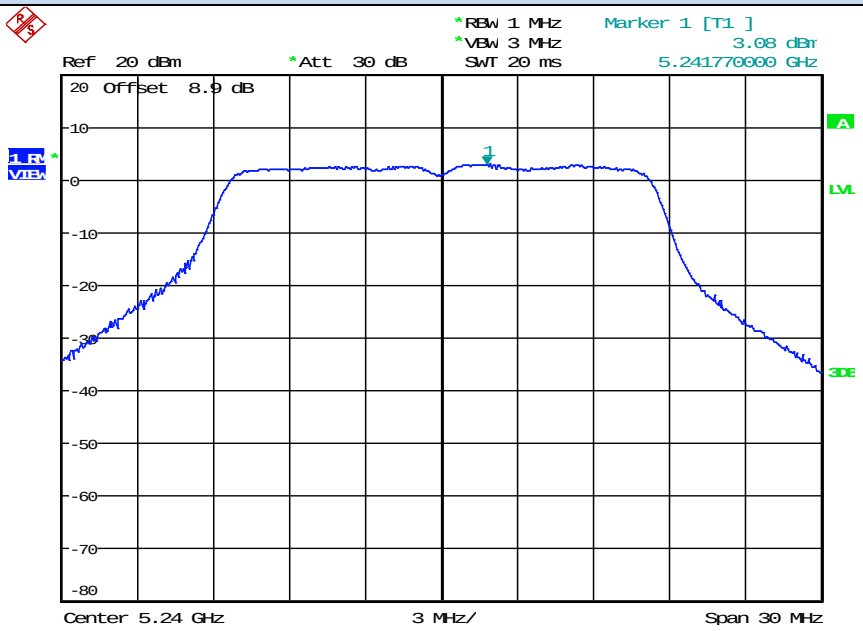
IEEE 802.11na / Channel 40 / 5200MHz



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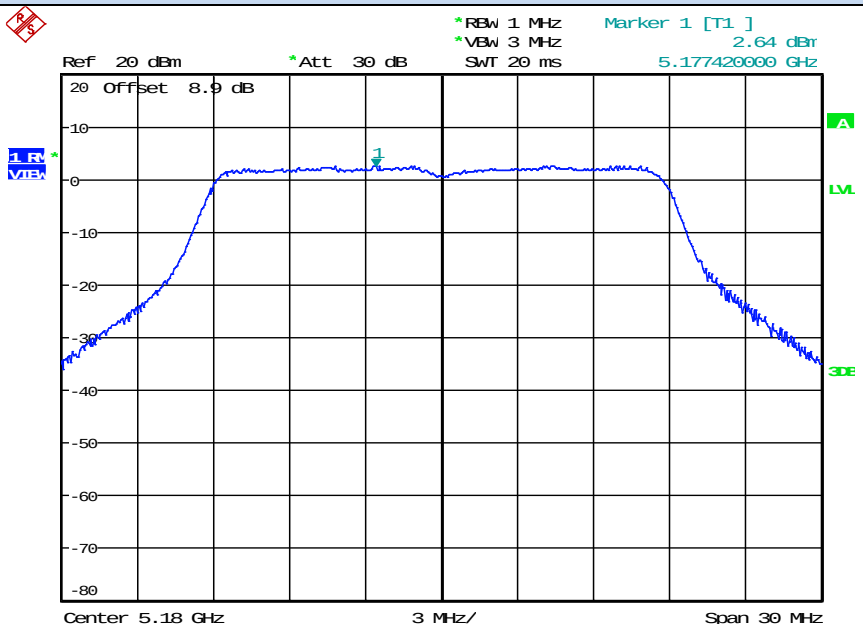
IEEE 802.11na / Channel 48 / 5240MHz

Power Spectral Density



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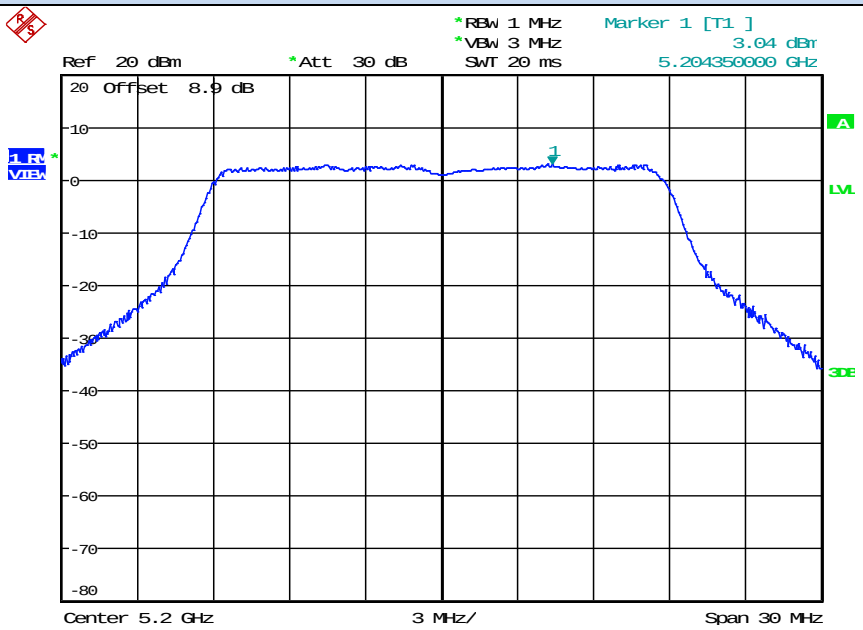
IEEE 802.11n20 / Channel 36 / 5180MHz



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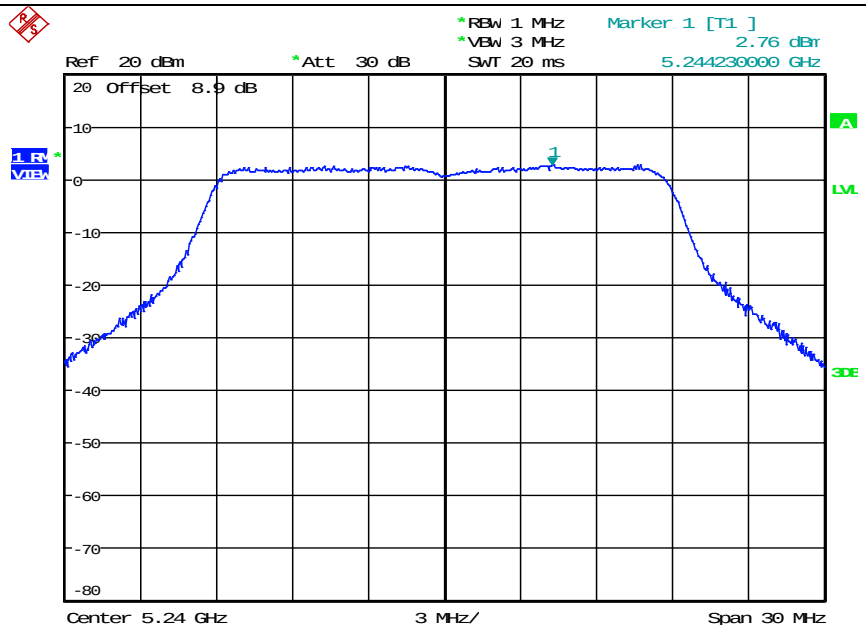
IEEE 802.11n20 / Channel 40 / 5200MHz



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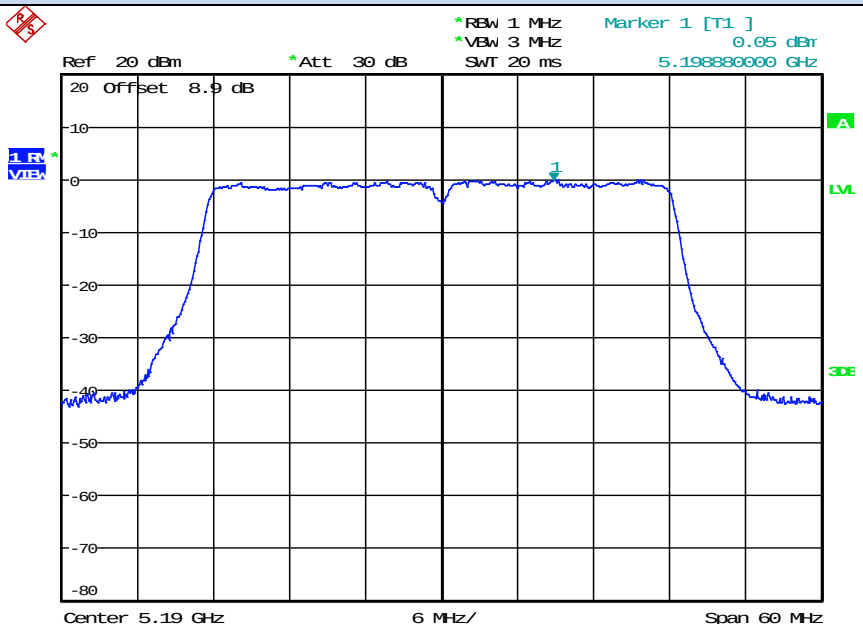
IEEE 802.11n20 / Channel 48 / 5240MHz

Power Spectral Density



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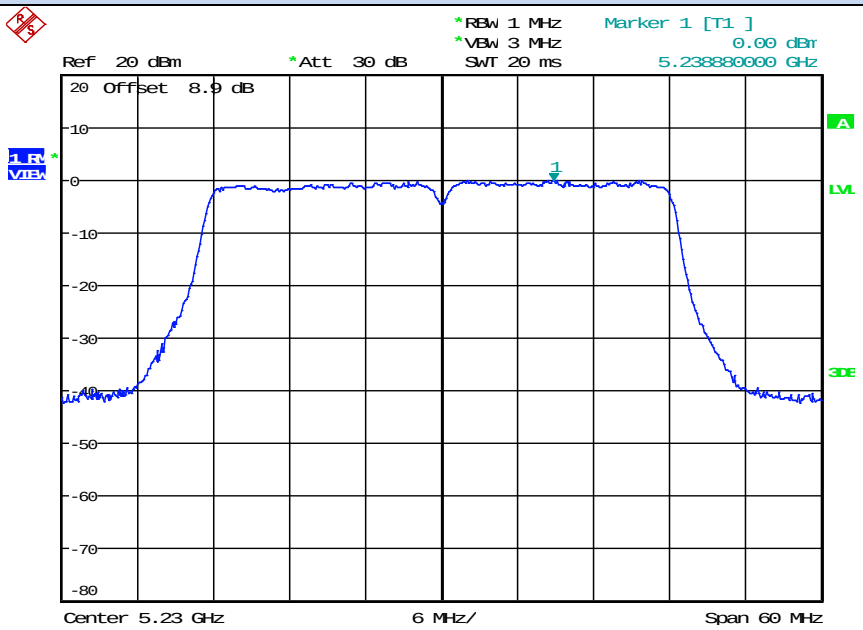
IEEE 802.11n40 / Channel 38 / 5190MHz



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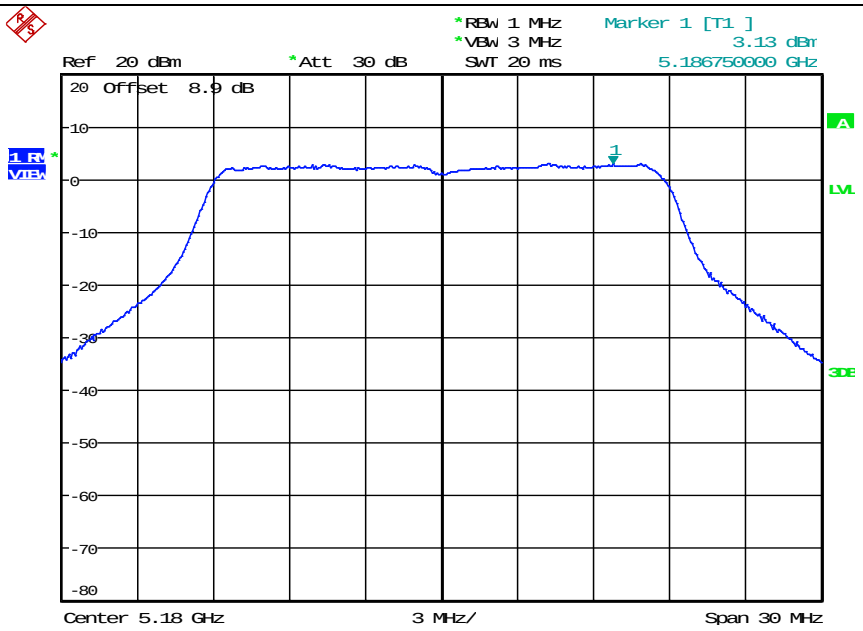
IEEE 802.11n40 / Channel 46 / 5230MHz



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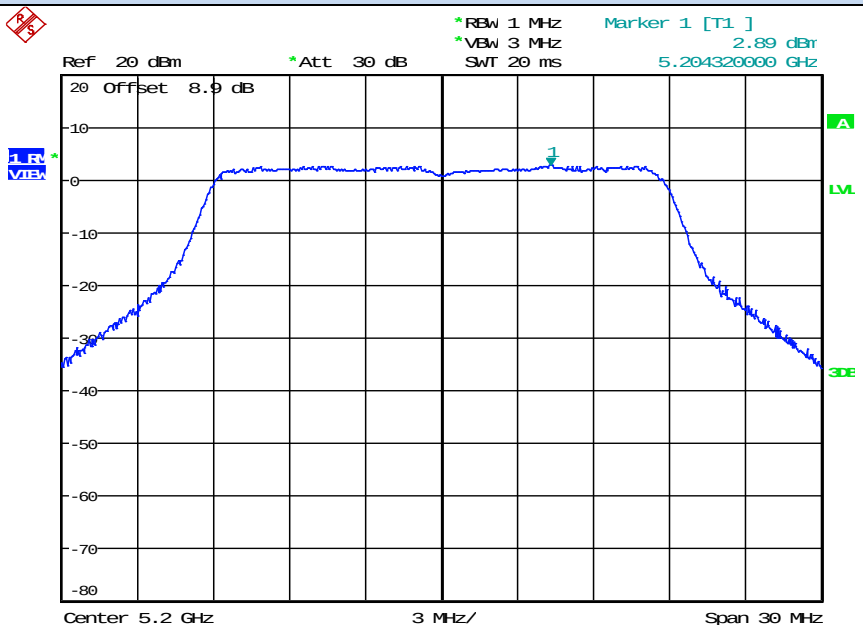
IEEE 802.11ac20 / Channel 36 / 5180MHz



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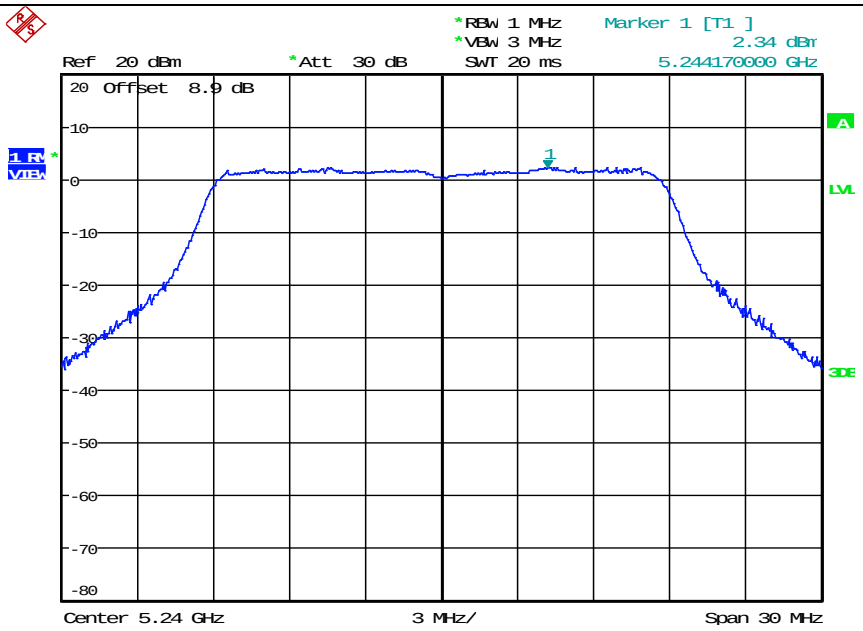
IEEE 802.11ac20 / Channel 40 / 5200MHz



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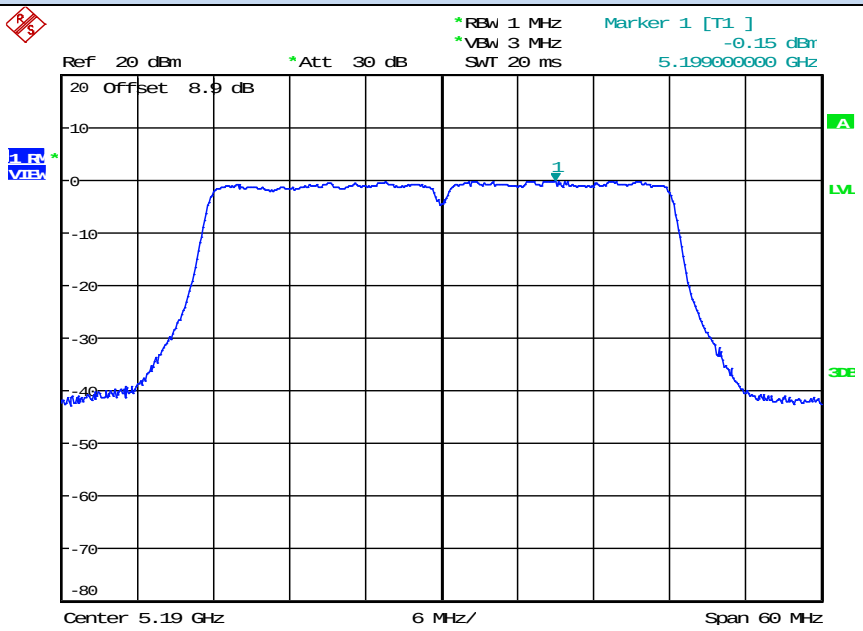
IEEE 802.11ac20 / Channel 48 / 5240MHz



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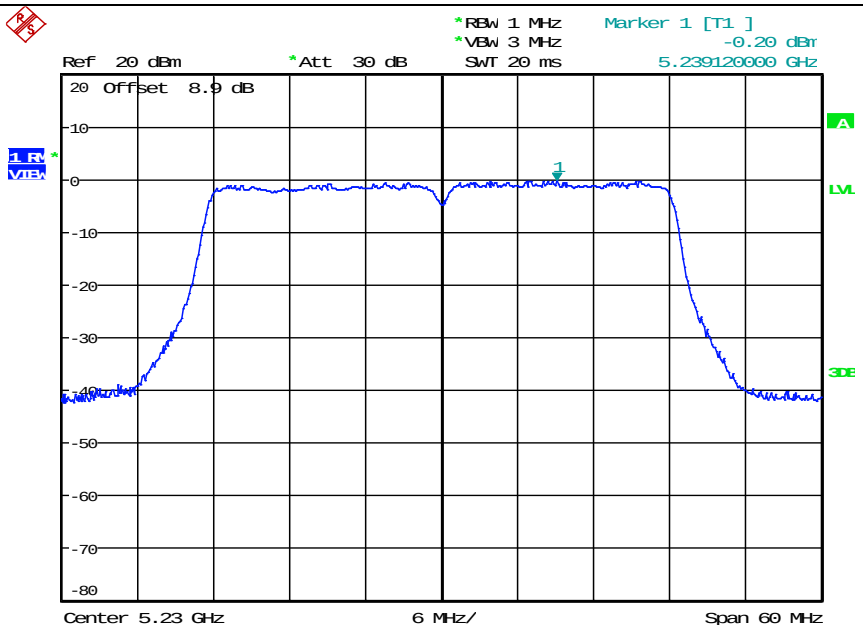
IEEE 802.11ac40 / Channel 38 / 5190MHz



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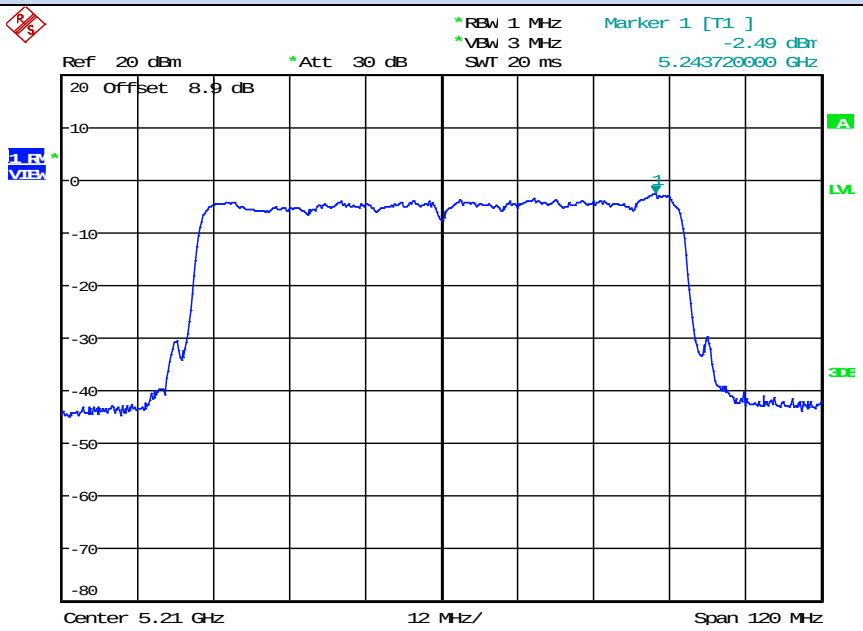
IEEE 802.11ac40 / Channel 46 / 5230MHz



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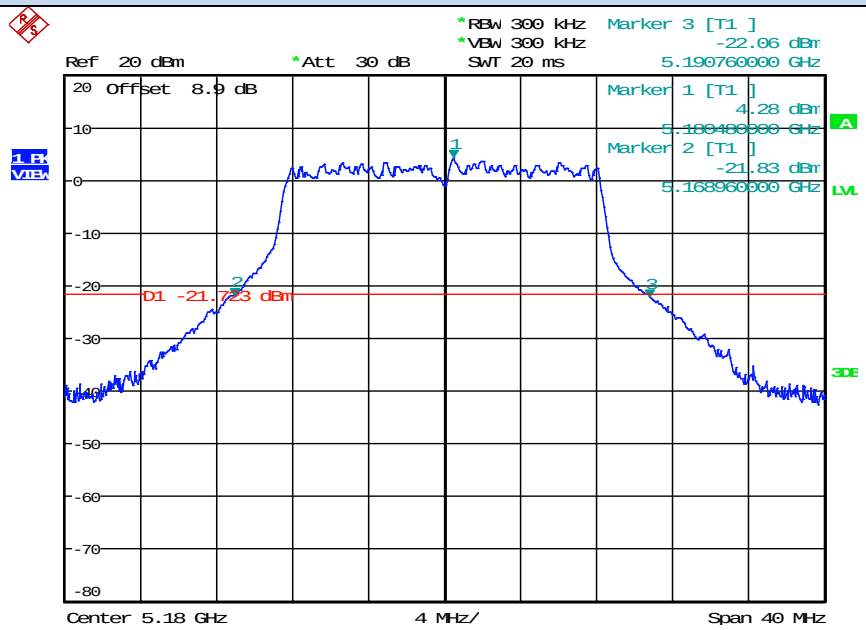
IEEE 802.11ac80 / Channel 42 / 5210MHz

D.4 Emission Bandwidth

Test Mode	Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)	Limit (MHz)	Verdict
11A	36	5180	21.800	16.755	No Limit	Pass
	40	5200	21.760	16.735		Pass
	48	5240	21.760	16.755		Pass
11N20 SISO	36	5180	23.280	17.935	No Limit	Pass
	40	5200	23.080	17.910		Pass
	48	5240	23.480	17.910		Pass
11N40 SISO	38	5190	41.600	36.240	No Limit	Pass
	46	5230	41.680	36.210		Pass
11AC20 SISO	36	5180	23.440	17.925	No Limi	Pass
	40	5200	23.400	17.920		Pass
	48	5240	23.360	17.925		Pass
11AC40 SISO	38	5190	41.680	36.250	No Limi	Pass
	46	5230	41.440	36.220		Pass
11AC80 SISO	42	5210	81.760	75.380	No Limi	Pass

26dB Bandwidth



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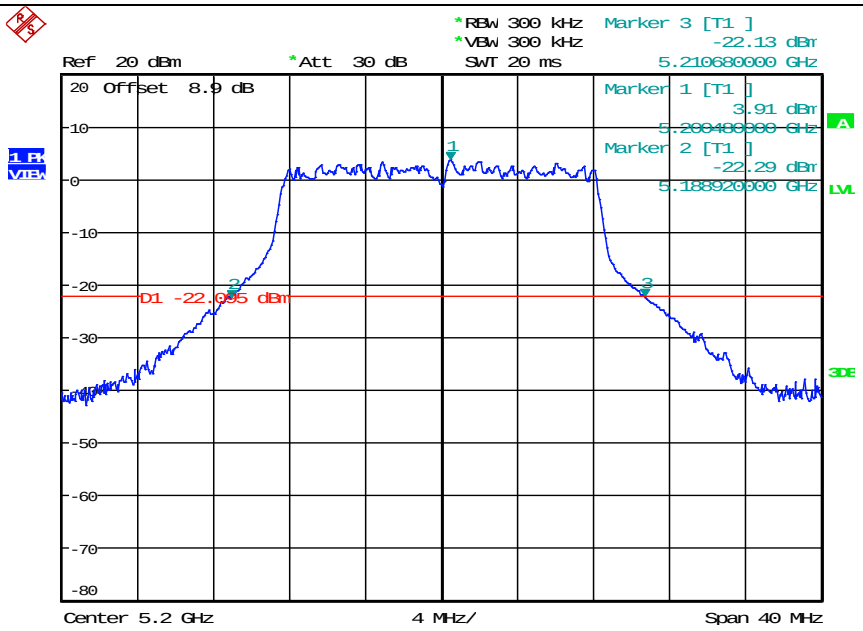
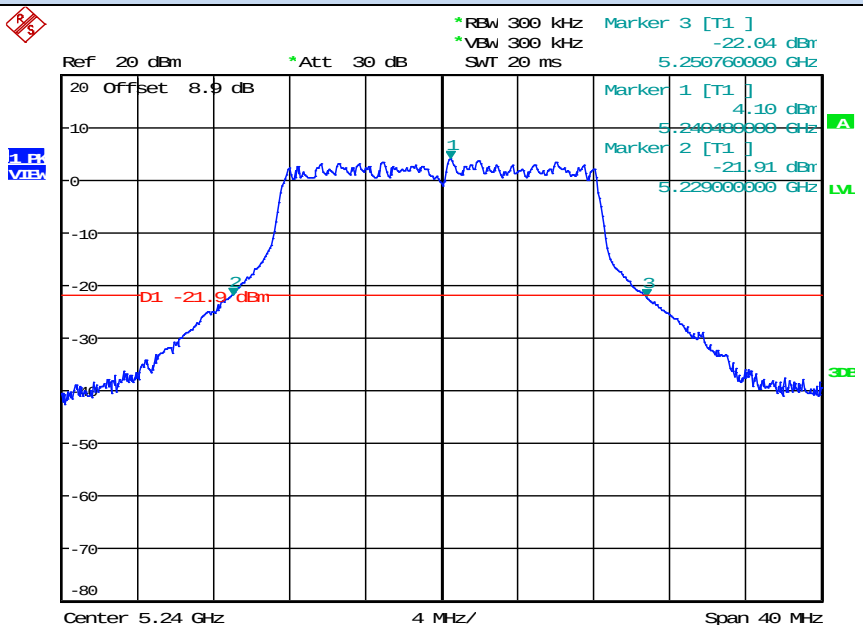
IEEE 802.11a / Channel 36 / 5180MHz



Date: 26.AUG.2019 20:17:21

IEEE 802.11a / Channel 40 / 5200MHz



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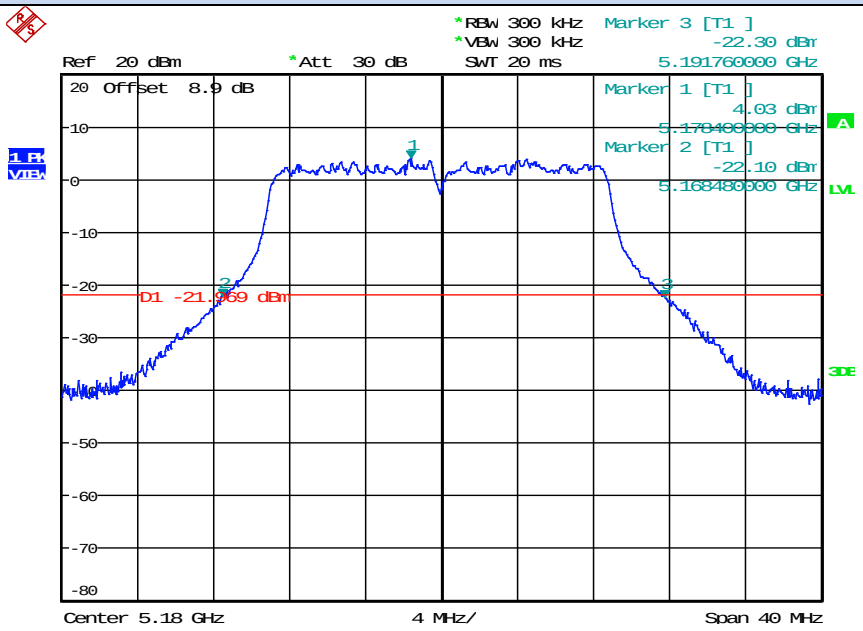
IEEE 802.11a / Channel 48 / 5240MHz

26dB Bandwidth



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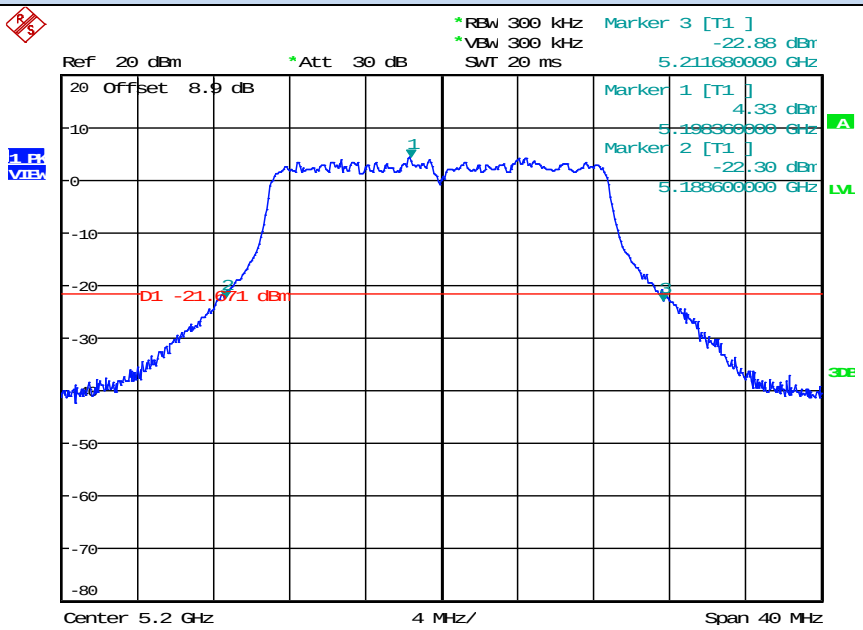
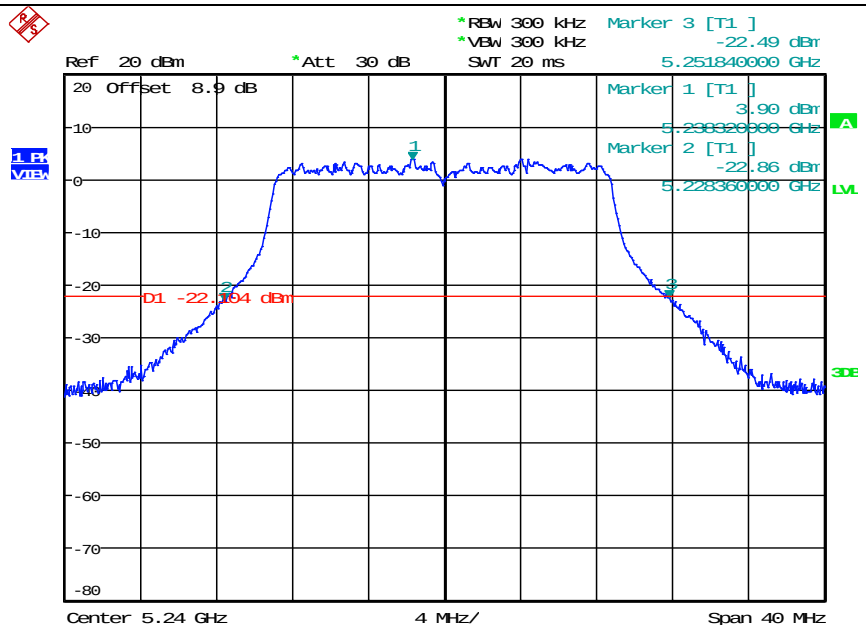
IEEE 802.11n20 / Channel 36 / 5180MHz



Date: 27.AUG.2019 09:35:37

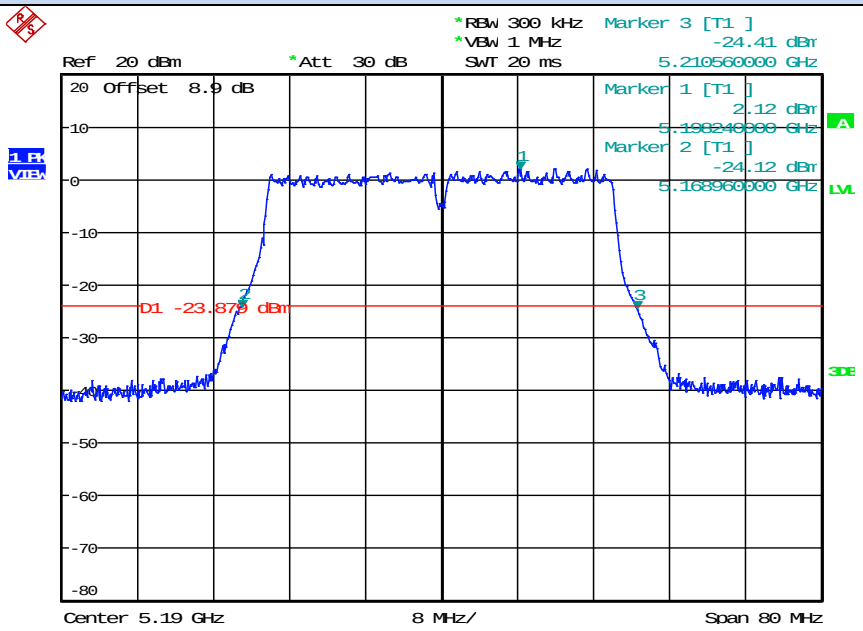
IEEE 802.11n20 / Channel 40 / 5200MHz



Date: 27.AUG.2019 09:37:18

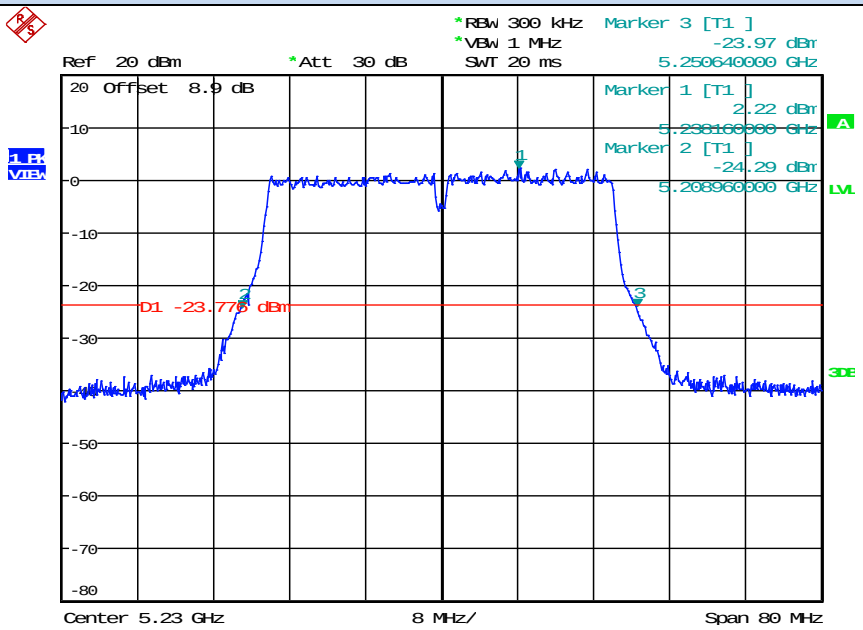
IEEE 802.11n20 / Channel 48 / 5240MHz

26dB Bandwidth



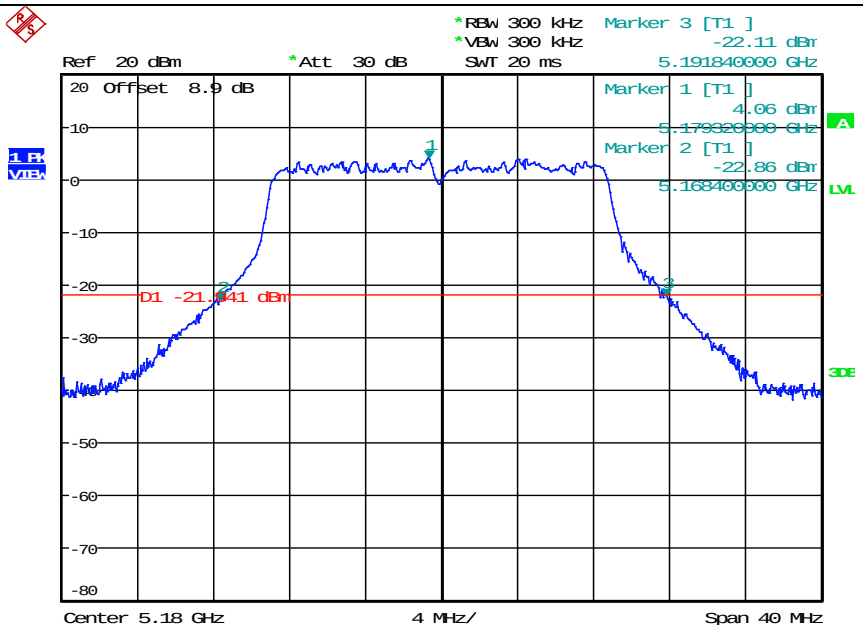
Date: 27.AUG.2019 09:52:39

IEEE 802.11n40 / Channel 38 / 5190MHz



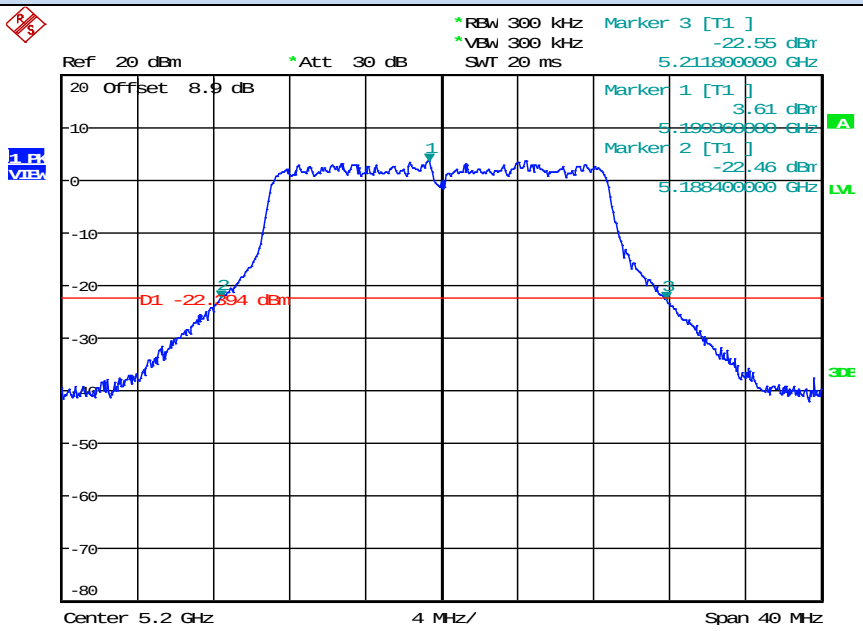
Date: 27.AUG.2019 09:55:55

IEEE 802.11n40 / Channel 46 / 5230MHz



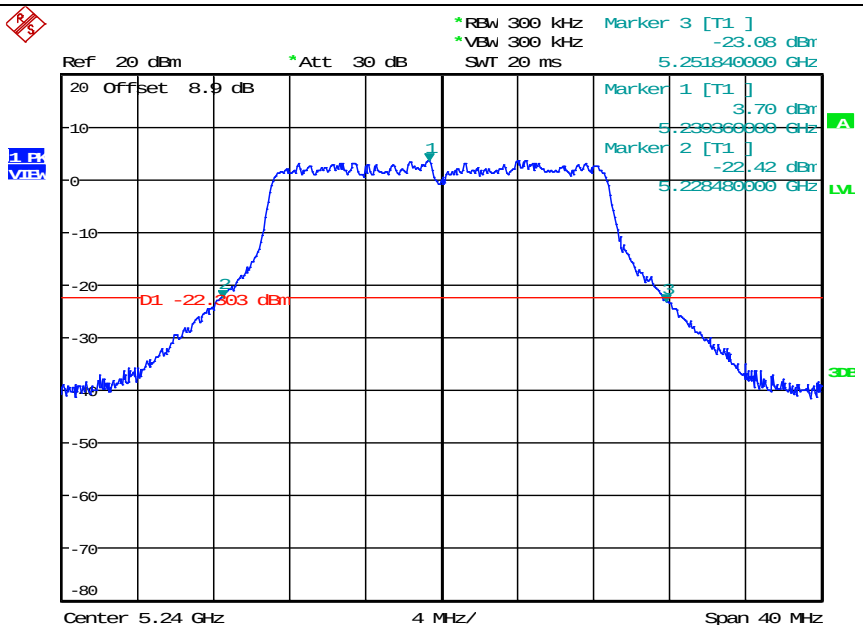
Date: 27.AUG.2019 10:08:52

IEEE 802.11ac20 / Channel 36 / 5180MHz



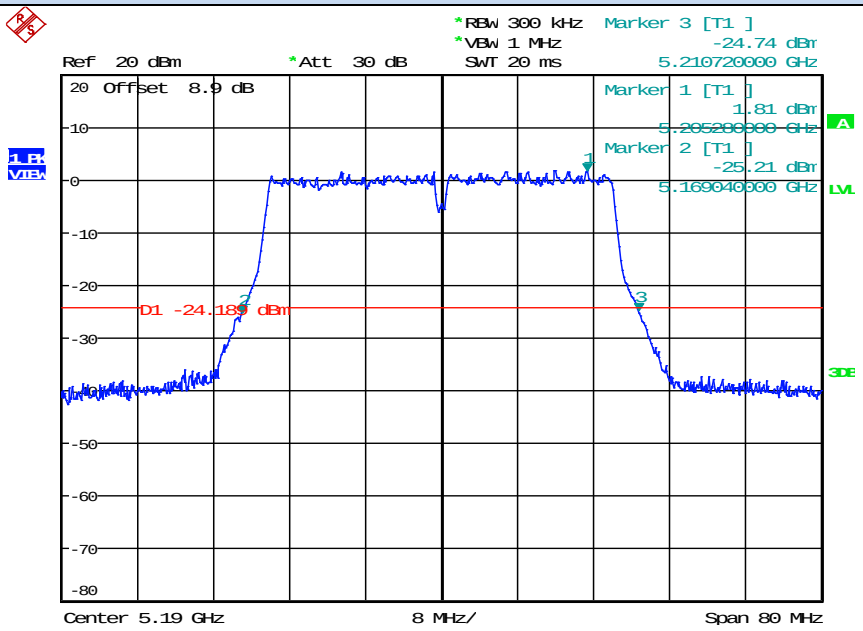
Date: 27.AUG.2019 10:12:17

IEEE 802.11ac20 / Channel 40 / 5200MHz



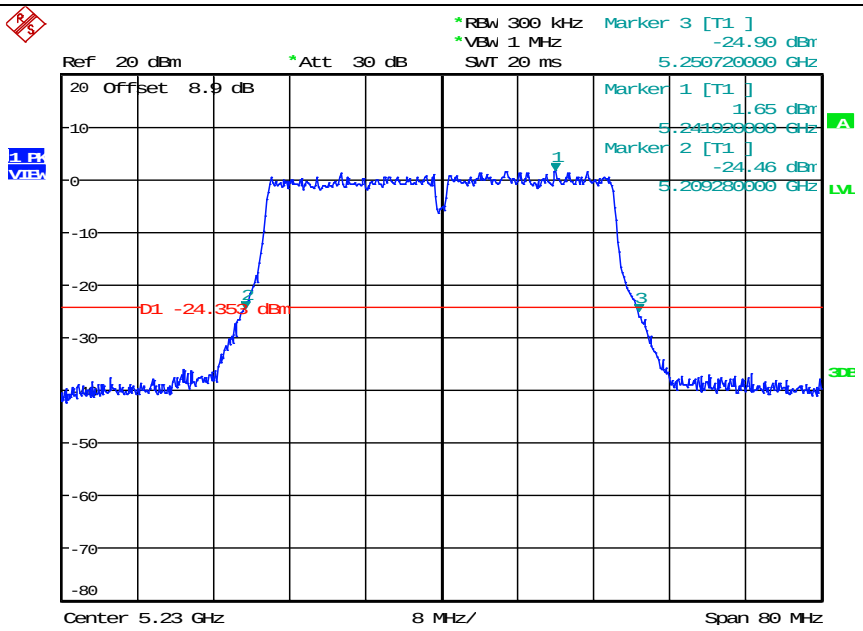
Date: 27.AUG.2019 10:14:12

IEEE 802.11ac20 / Channel 48 / 5240MHz



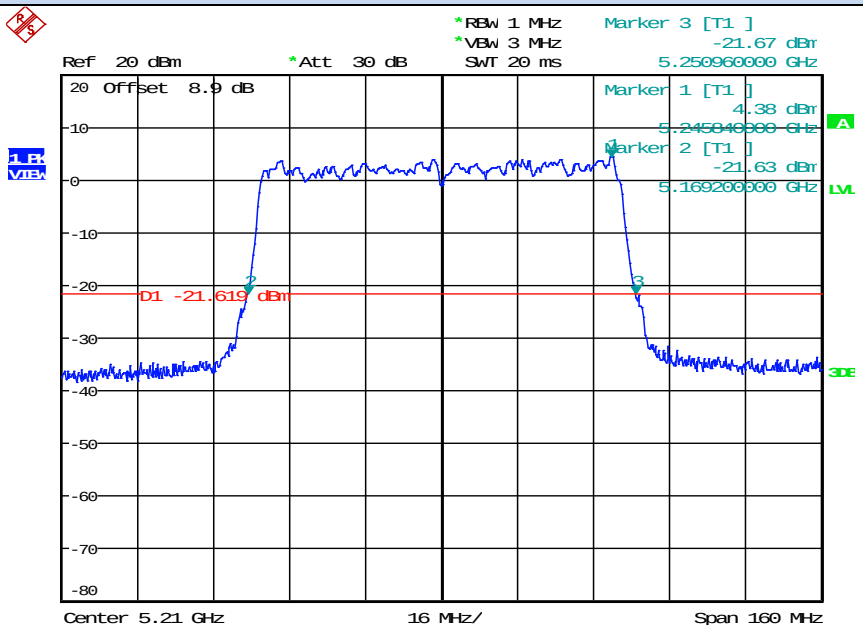
Date: 27.AUG.2019 10:26:36

IEEE 802.11ac40 / Channel 38 / 5190MHz



Date: 27.AUG.2019 10:29:57

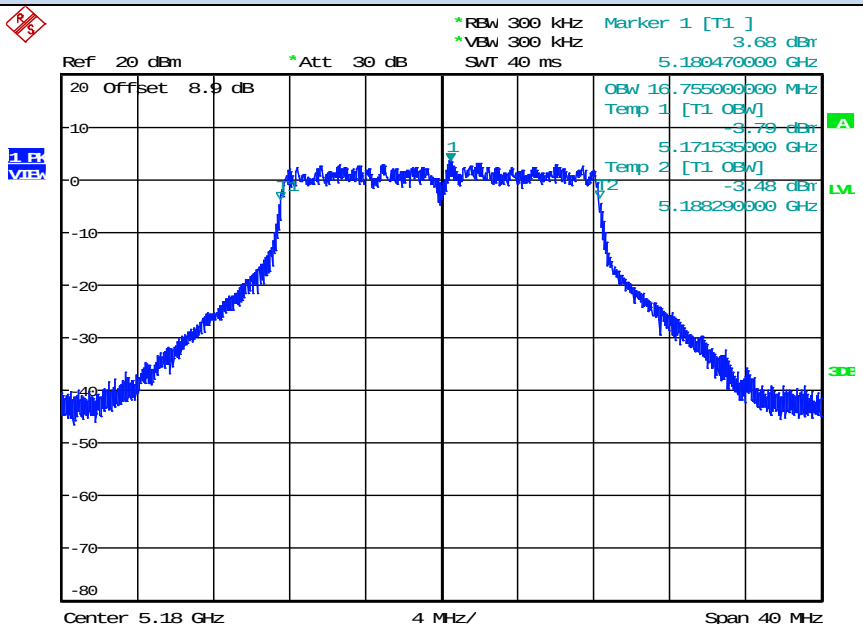
IEEE 802.11ac40 / Channel 46 / 5230MHz



Date: 27.AUG.2019 10:49:26

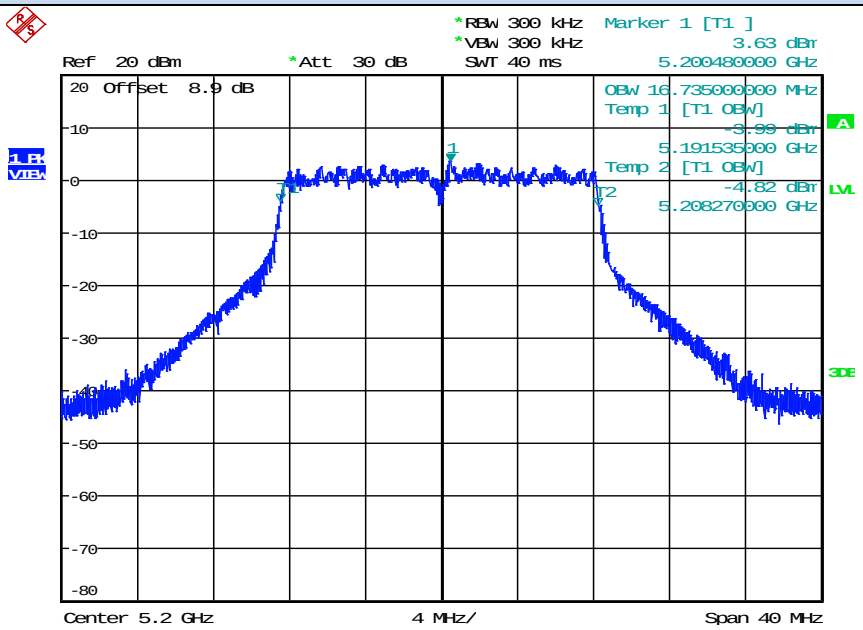
IEEE 802.11ac80 / Channel 42 / 5210MHz

99% Occupied Bandwidth



Date: 27.AUG.2019 11:04:58

IEEE 802.11a / Channel 36 / 5180MHz



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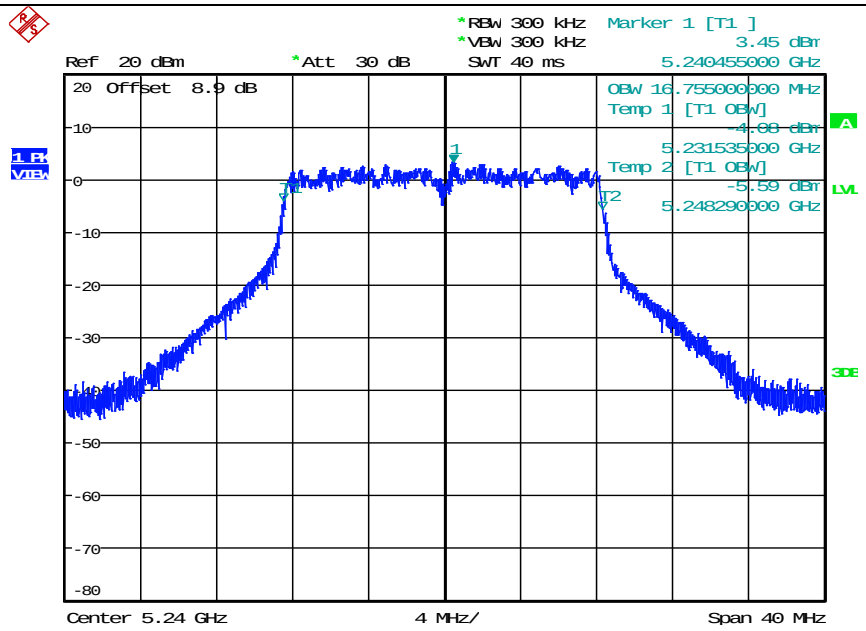
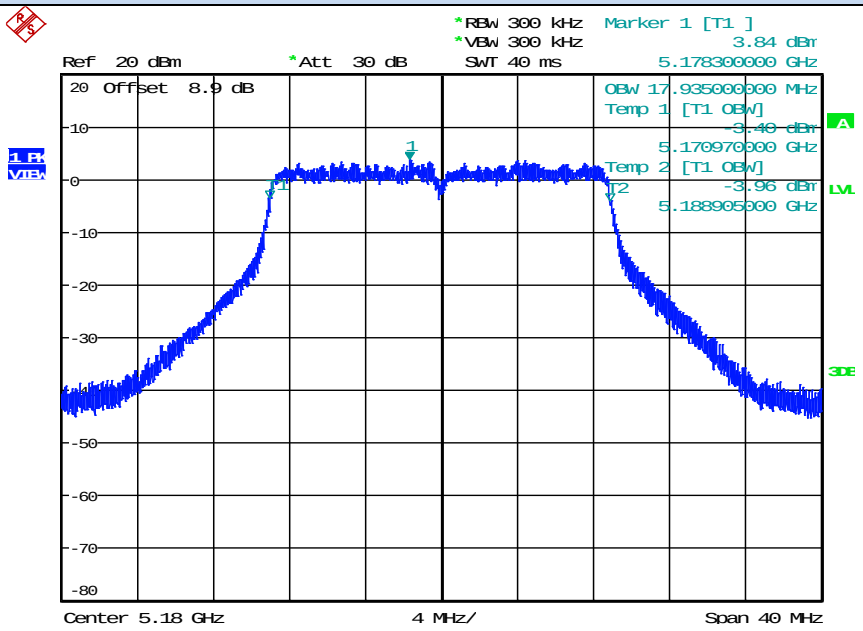
IEEE 802.11a / Channel 40 / 5200MHz



Date: 27.AUG.2019 11:06:16

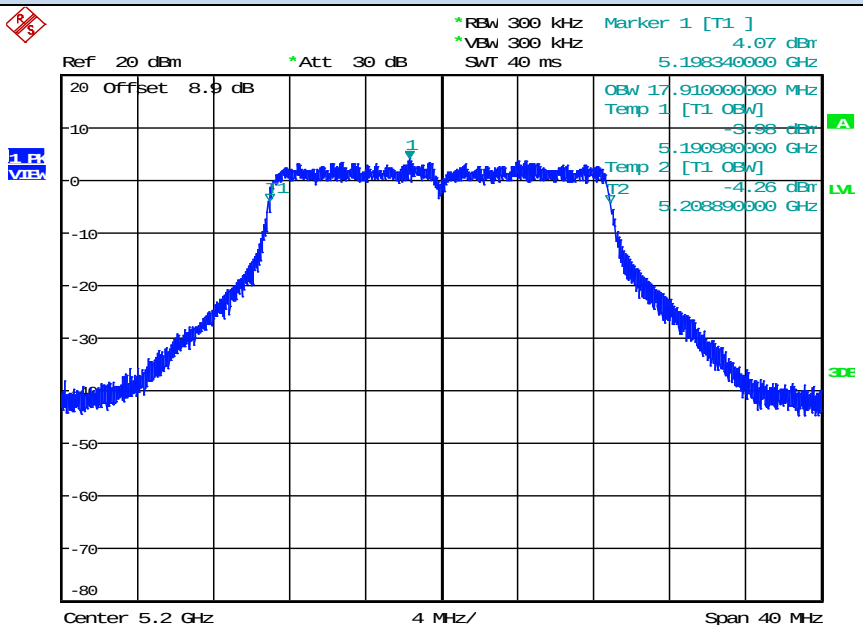
IEEE 802.11a / Channel 48 / 5240MHz

99% Occupied Bandwidth



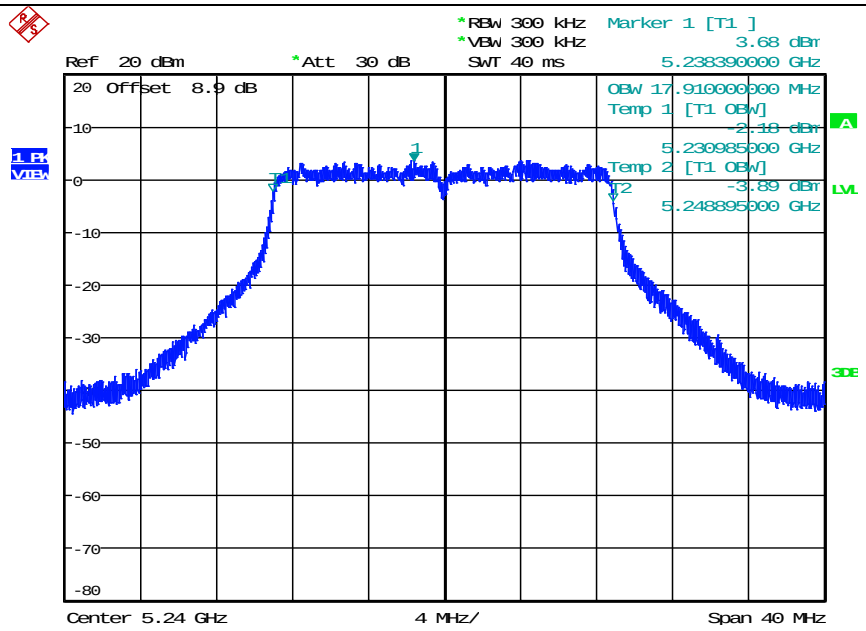
Date: 27.AUG.2019 11:09:22

IEEE 802.11n20 / Channel 36 / 5180MHz



Date: 27.AUG.2019 11:10:15

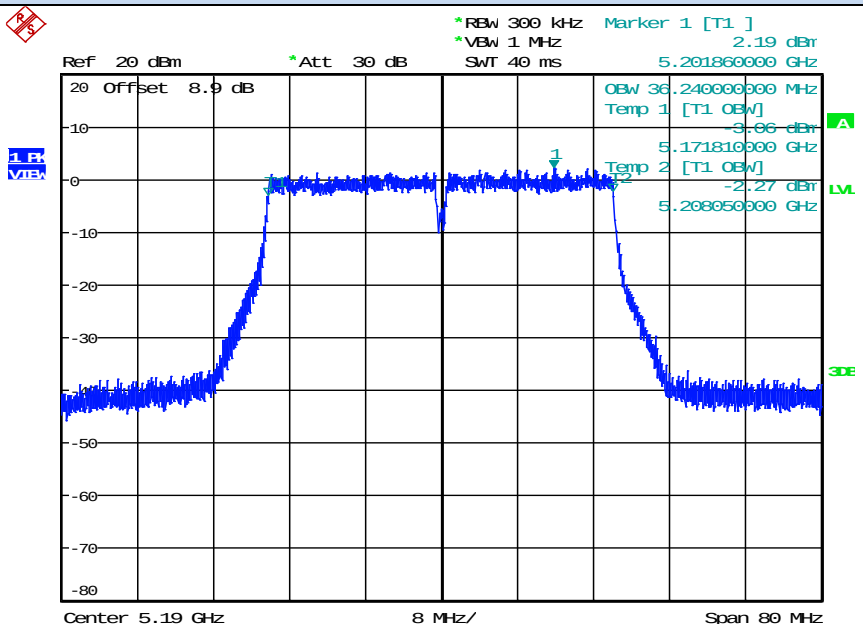
IEEE 802.11n20 / Channel 40 / 5200MHz



Date: 27.AUG.2019 11:10:53

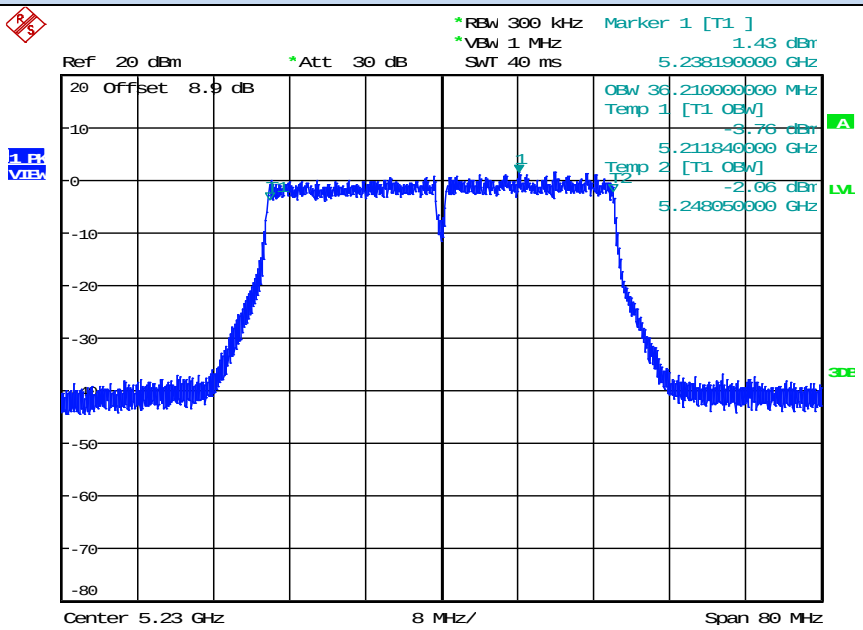
IEEE 802.11n20 / Channel 48 / 5240MHz

99% Occupied Bandwidth



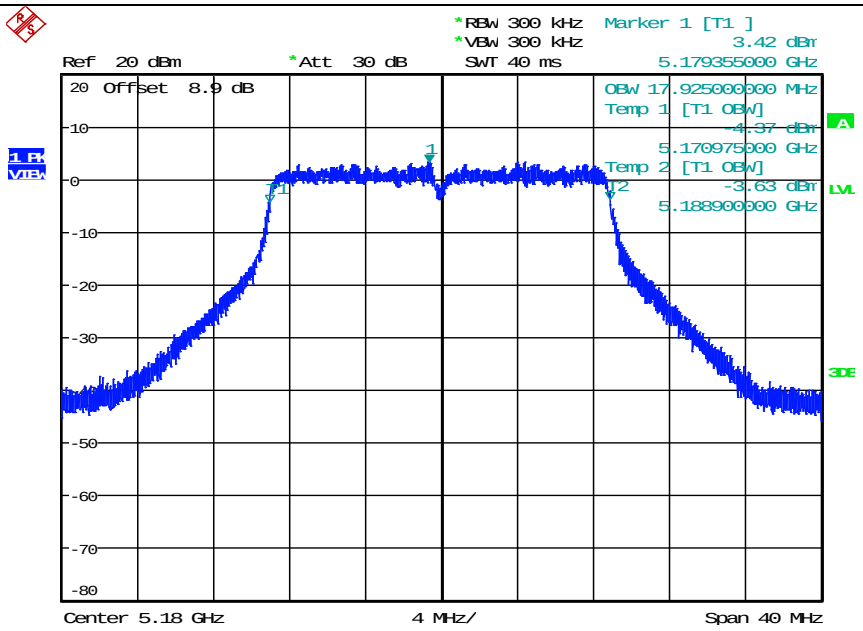
Date: 27.AUG.2019 11:14:05

IEEE 802.11n40 / Channel 38 / 5190MHz



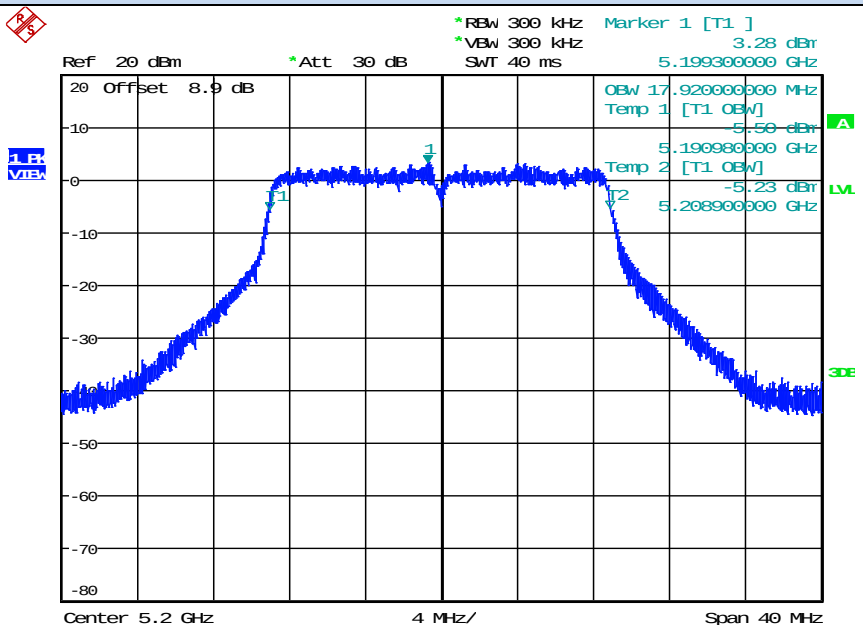
Date: 27.AUG.2019 11:17:40

IEEE 802.11n40 / Channel 46 / 5230MHz



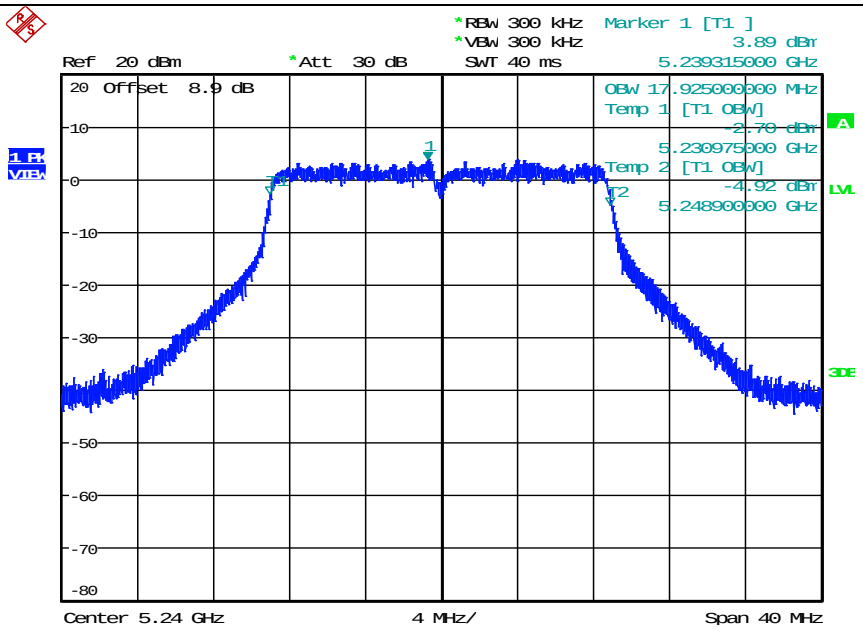
Date: 27.AUG.2019 11:20:52

IEEE 802.11ac20 / Channel 36 / 5180MHz



Date: 27.AUG.2019 11:21:34

IEEE 802.11ac20 / Channel 40 / 5200MHz



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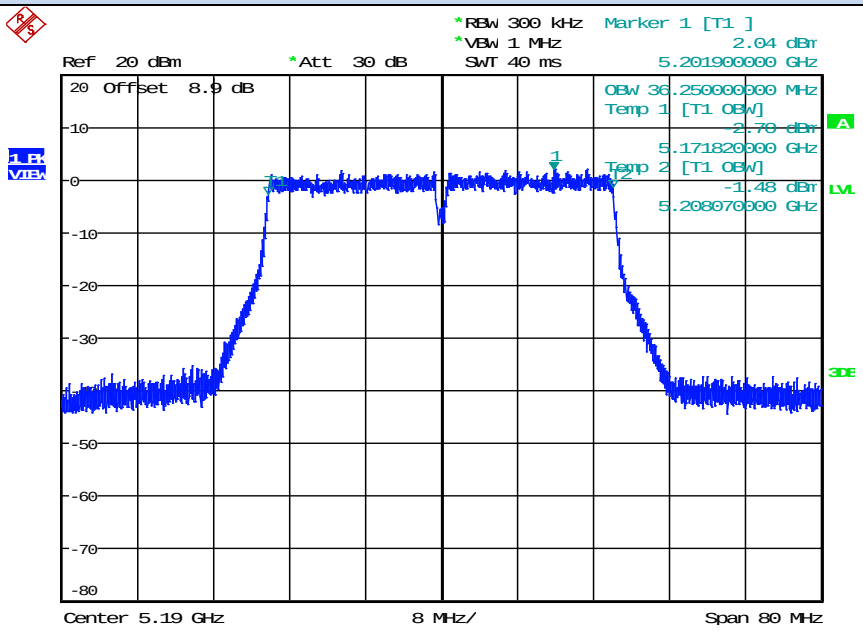
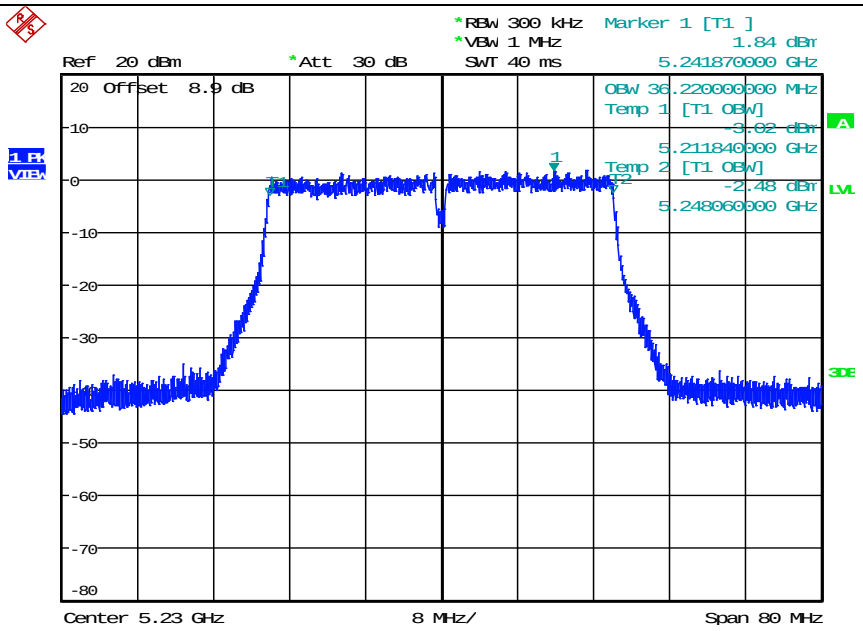
IEEE 802.11ac20 / Channel 48 / 5240MHz



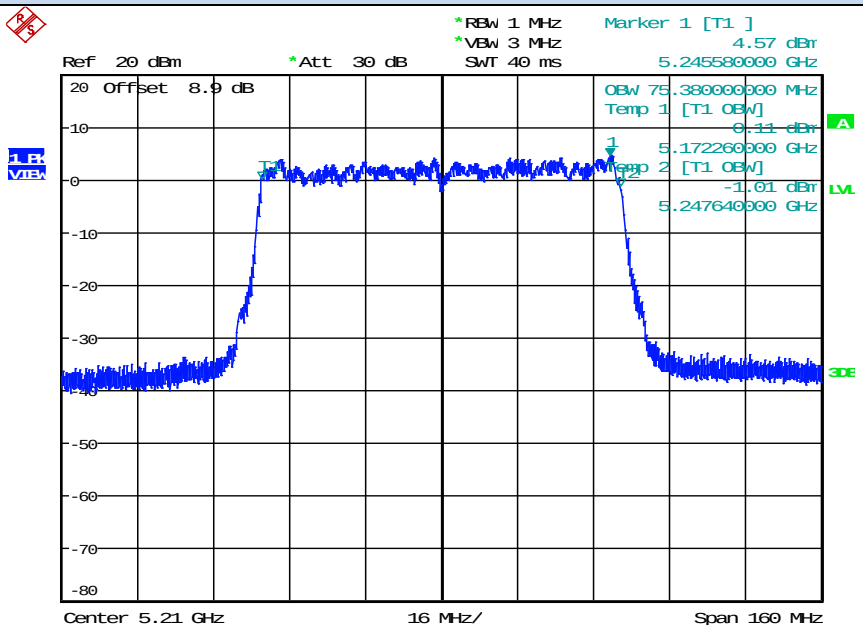
Date: 27.AUG.2019 11:26:23

IEEE 802.11ac40 / Channel 38 / 5190MHz



Date: 27.AUG.2019 11:27:12

IEEE 802.11ac40 / Channel 46 / 5230MHz



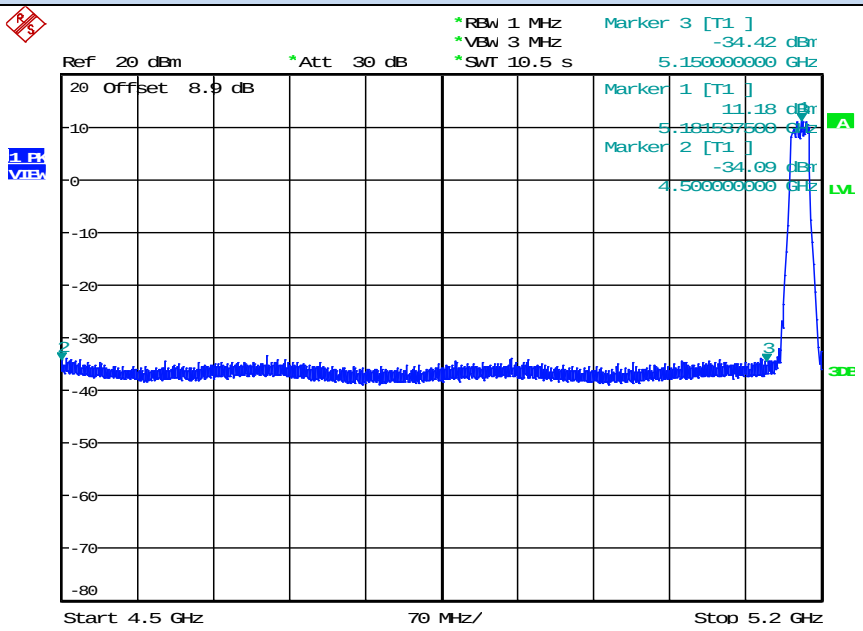
Date: 27.AUG.2019 11:30:17

IEEE 802.11ac80 / Channel 42 / 5210MHz

D.5 Undesirable Emissions Measurement

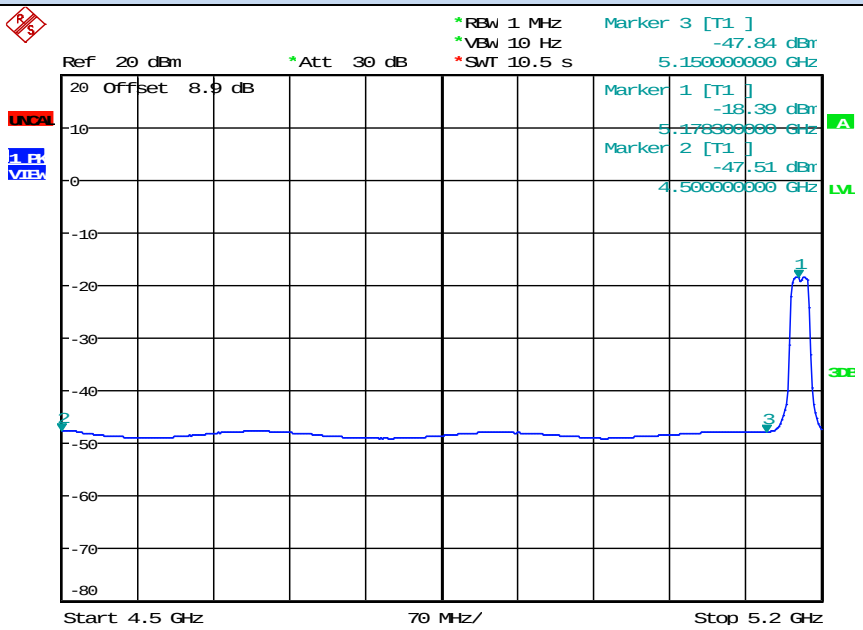
Test Mode	Channel	Frequency (MHz)	Conducted Power (dBm)	Antenna Gain (dBi)	Ground Reflection Factor (dB)	Covert Radiated E Level At 3m (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
11A	36	4500.0	-34.09	3.00	0	63.14	Peak	74.00	Pass
		4500.0	-47.51	3.00	0	49.72	Average	54.00	Pass
		5150.0	-34.42	2.00	0	62.81	Peak	74.00	Pass
		5150.0	-47.84	3.00	0	49.39	Average	54.00	Pass
	48	5350.0	-37.82	3.00	0	59.41	Peak	74.00	Pass
		5350.0	-48.76	3.00	0	48.47	Average	54.00	Pass
		5460.0	-35.19	3.00	0	62.04	Peak	74.00	Pass
		5460.0	-47.72	3.00	0	49.51	Average	54.00	Pass
11N20 SISO	36	4500.0	-36.17	3.00	0	61.06	Peak	74.00	Pass
		4500.0	-47.31	3.00	0	49.92	Average	54.00	Pass
		5150.0	-36.46	3.00	0	60.77	Peak	74.00	Pass
		5150.0	-47.29	3.00	0	49.94	Average	54.00	Pass
	48	5350.0	-37.02	3.00	0	60.21	Peak	74.00	Pass
		5350.0	-48.60	3.00	0	48.63	Average	54.00	Pass
		5460.0	-35.30	3.00	0	61.93	Peak	74.00	Pass
		5460.0	-47.53	3.00	0	49.70	Average	54.00	Pass
11N40 SISO	38	4500.0	-34.94	3.00	0	62.29	Peak	74.00	Pass
		4500.0	-47.44	3.00	0	49.79	Average	54.00	Pass
		5150.0	-35.98	3.00	0	61.25	Peak	74.00	Pass
		5150.0	-46.80	3.00	0	50.43	Average	54.00	Pass
	46	5350.0	-37.87	3.00	0	59.36	Peak	74.00	Pass
		5350.0	-48.66	3.00	0	48.57	Average	54.00	Pass
		5460.0	-36.74	3.00	0	60.49	Peak	74.00	Pass
		5460.0	-47.63	3.00	0	49.60	Average	54.00	Pass
11AC20 SISO	36	4500.0	-35.47	3.00	0	61.76	Peak	74.00	Pass
		4500.0	-47.47	3.00	0	49.76	Average	54.00	Pass
		5150.0	-36.25	3.00	0	60.98	Peak	74.00	Pass
		5150.0	-47.47	3.00	0	49.76	Average	54.00	Pass
	48	4500.0	-35.47	3.00	0	61.76	Peak	74.00	Pass
		4500.0	-47.47	3.00	0	49.76	Average	54.00	Pass
		5150.0	-36.25	3.00	0	60.98	Peak	74.00	Pass
		5150.0	-47.47	3.00	0	49.76	Average	54.00	Pass
11AC40 SISO	38	4500.0	-35.60	3.00	0	61.63	Peak	74.00	Pass
		4500.0	-47.53	3.00	0	49.70	Average	54.00	Pass
		5150.0	-35.28	3.00	0	61.95	Peak	74.00	Pass
		5150.0	-46.93	3.00	0	50.30	Average	54.00	Pass
	46	5350.0	-36.52	3.00	0	60.71	Peak	74.00	Pass
		5350.0	-48.72	3.00	0	48.51	Average	54.00	Pass
		5460.0	-35.60	3.00	0	61.63	Peak	74.00	Pass
		5460.0	-47.70	3.00	0	49.53	Average	54.00	Pass
11AC80 SISO	42	4500.0	-37.29	3.00	0	59.94	Peak	74.00	Pass
		5150.0	-48.72	3.00	0	48.51	Average	54.00	Pass
		4500.0	-35.75	3.00	0	61.48	Peak	74.00	Pass
		5150.0	-47.71	3.00	0	49.52	Average	54.00	Pass
		5350.0	-37.29	3.00	0	59.94	Peak	74.00	Pass
		5460.0	-48.72	3.00	0	48.51	Average	54.00	Pass
		5350.0	-35.75	3.00	0	61.48	Peak	74.00	Pass
		5460.0	-47.71	3.00	0	49.52	Average	54.00	Pass

Undesirable Emissions Measurement



Date: 26.AUG.2019 20:13:01

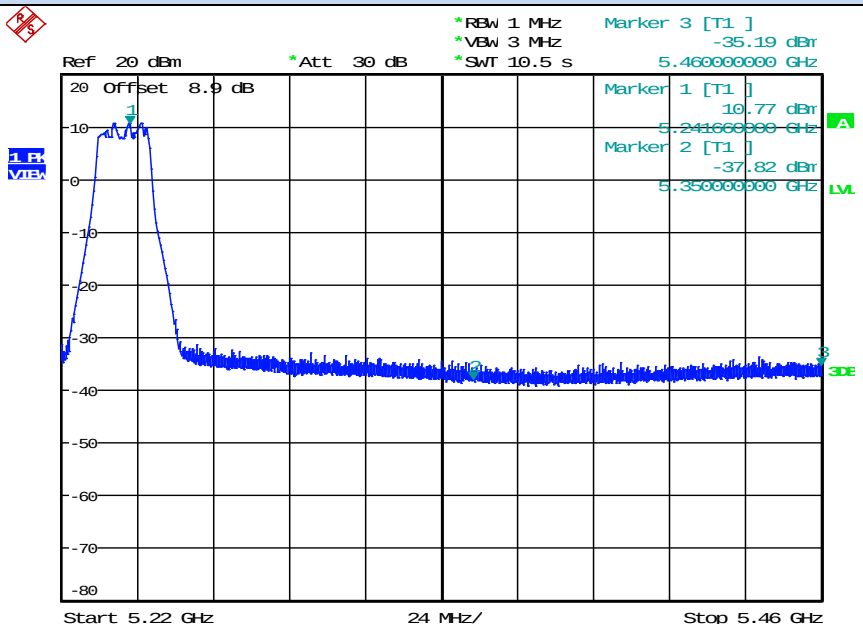
IEEE 802.11a / Channel 36 / 5180MHz / Peak



Date: 26.AUG.2019 20:13:36

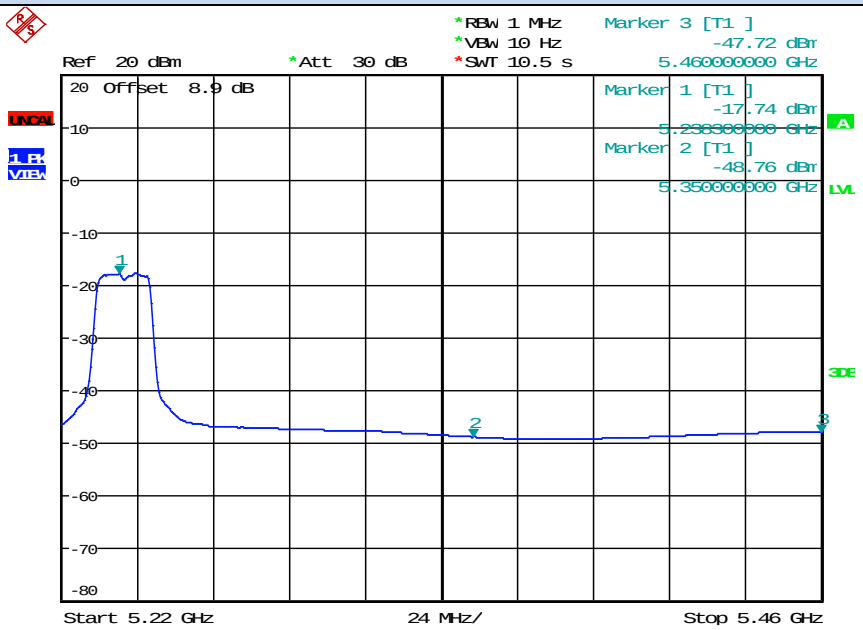
IEEE 802.11a / Channel 36 / 5180MHz / Average

Undesirable Emissions Measurement



Date: 26.AUG.2019 20:25:45

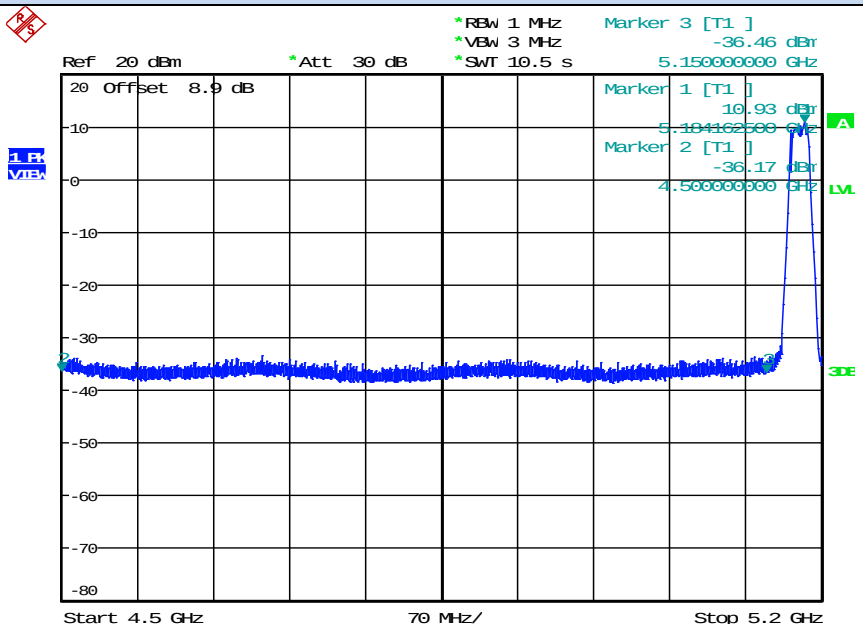
IEEE 802.11a / Channel 48 / 5240MHz / Peak



Date: 26.AUG.2019 20:26:30

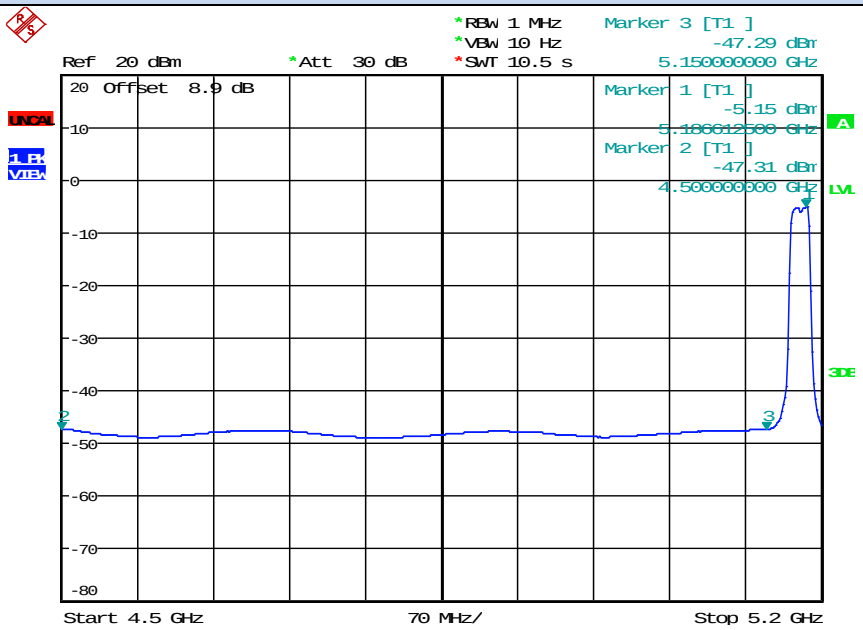
IEEE 802.11a / Channel 48 / 5240MHz / Average

Undesirable Emissions Measurement



Date: 27.AUG.2019 09:34:04

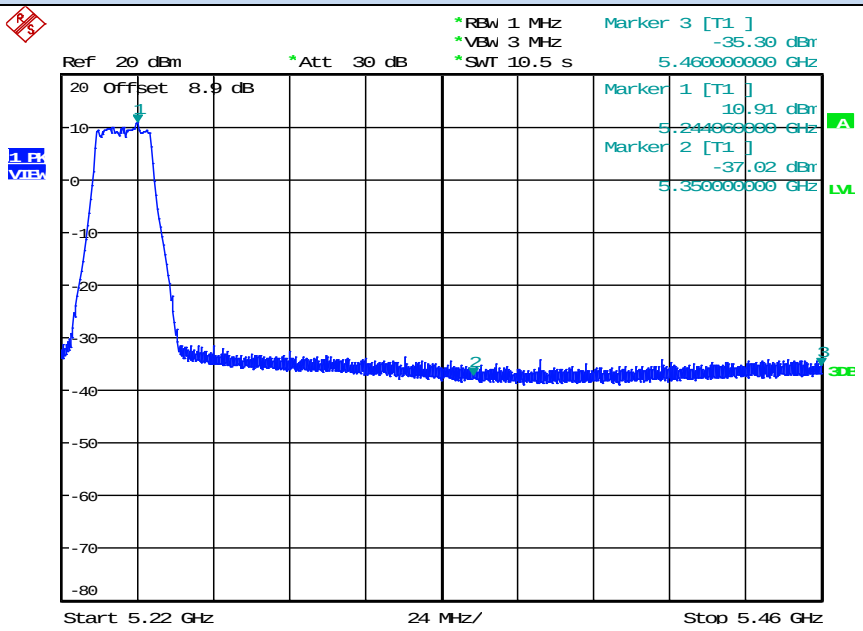
IEEE 802.11n20 / Channel 36 / 5180MHz / Peak



Date: 27.AUG.2019 09:34:37

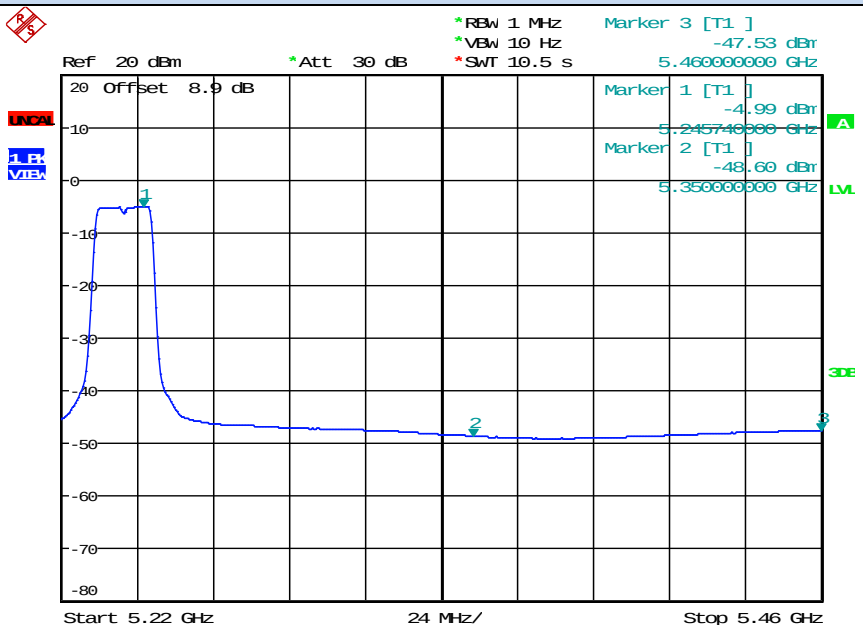
IEEE 802.11n20 / Channel 36 / 5180MHz / Average

Undesirable Emissions Measurement



Date: 27.AUG.2019 09:42:01

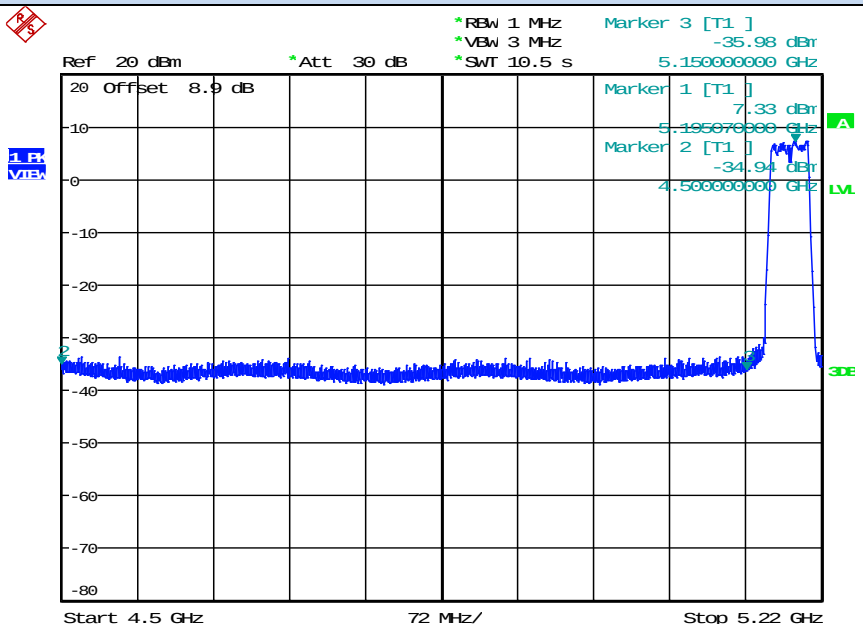
IEEE 802.11n20 / Channel 48 / 5240MHz / Peak



Date: 27.AUG.2019 09:42:31

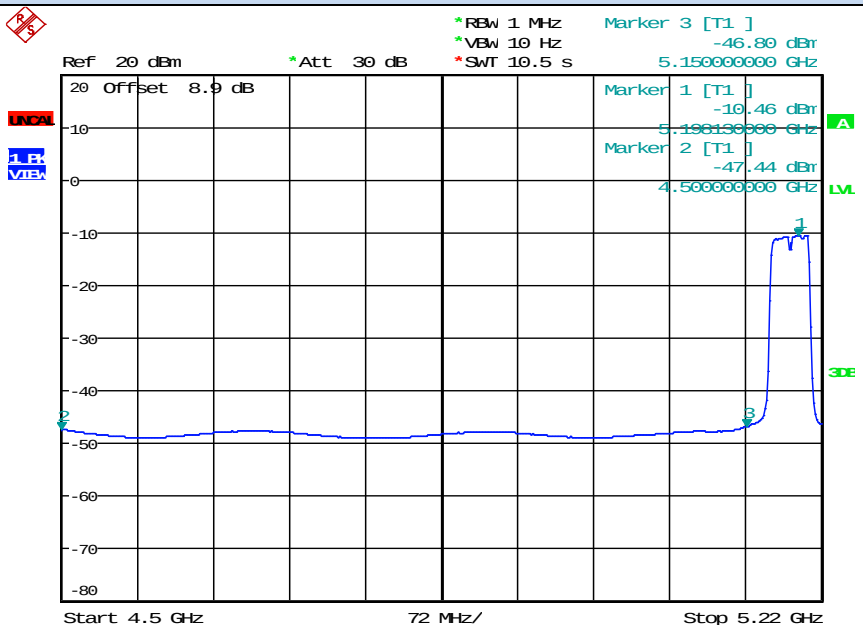
IEEE 802.11n20 / Channel 48 / 5240MHz / Average

Undesirable Emissions Measurement



Date: 27.AUG.2019 09:54:14

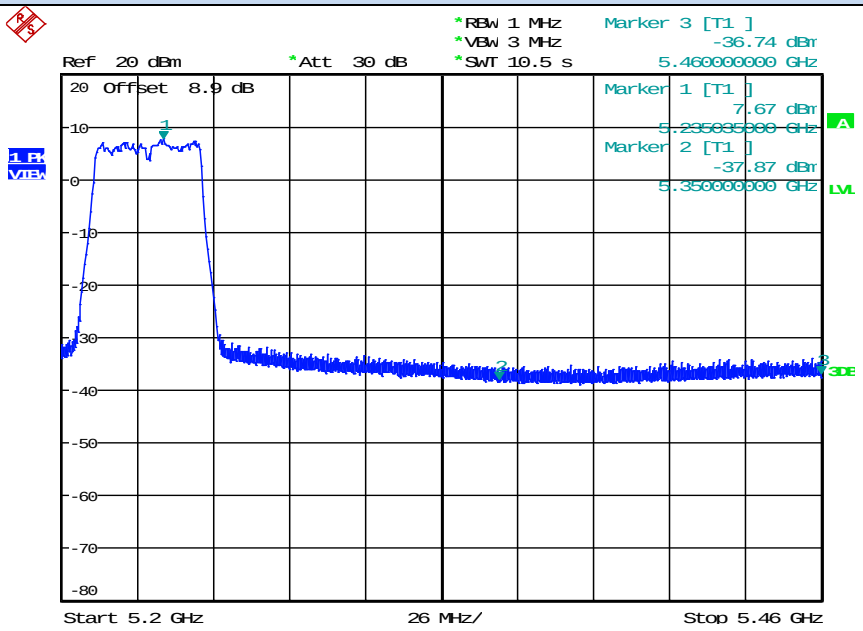
IEEE 802.11n40 / Channel 38 / 5190MHz / Peak



Date: 27.AUG.2019 09:54:47

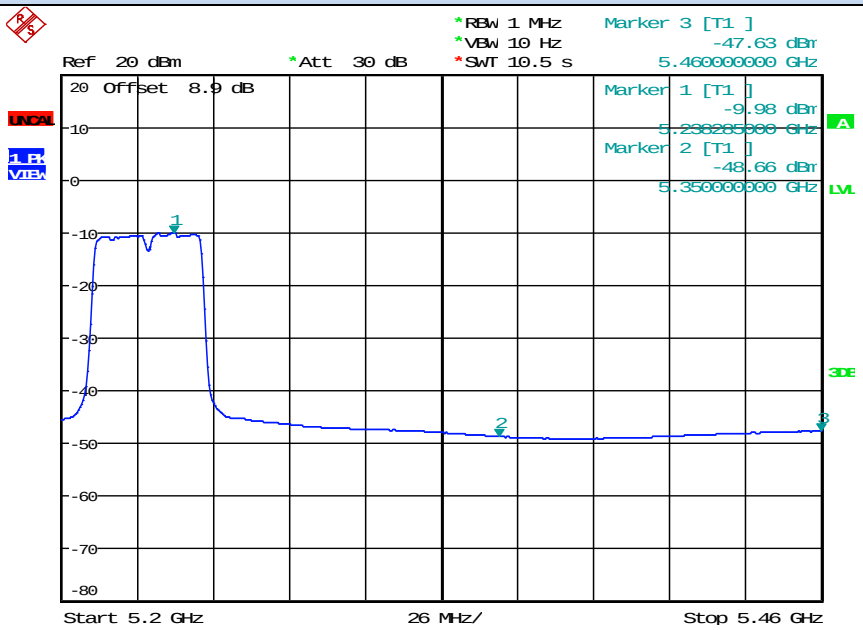
IEEE 802.11n40 / Channel 38 / 5190MHz / Average

Undesirable Emissions Measurement



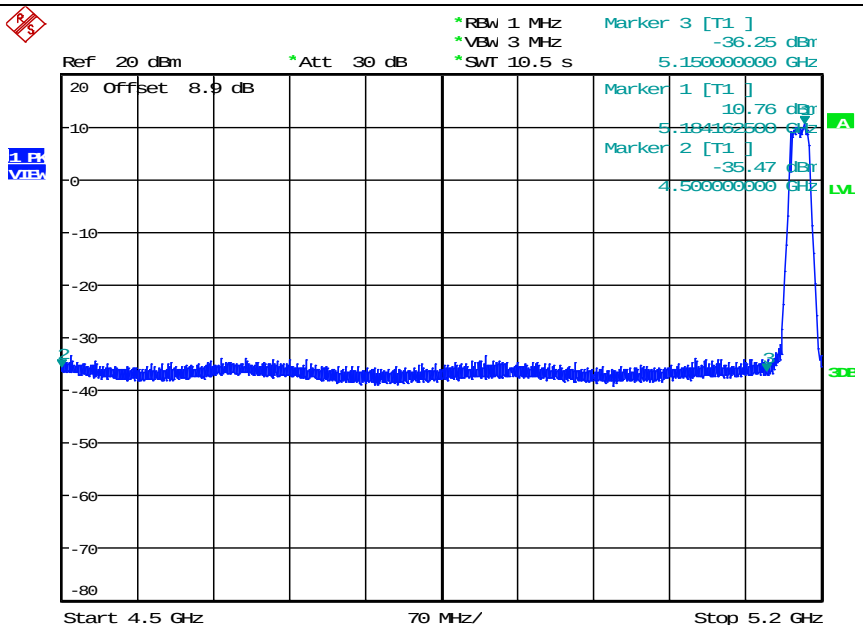
Date: 27.AUG.2019 09:58:37

IEEE 802.11n40 / Channel 48 / 5230MHz / Peak



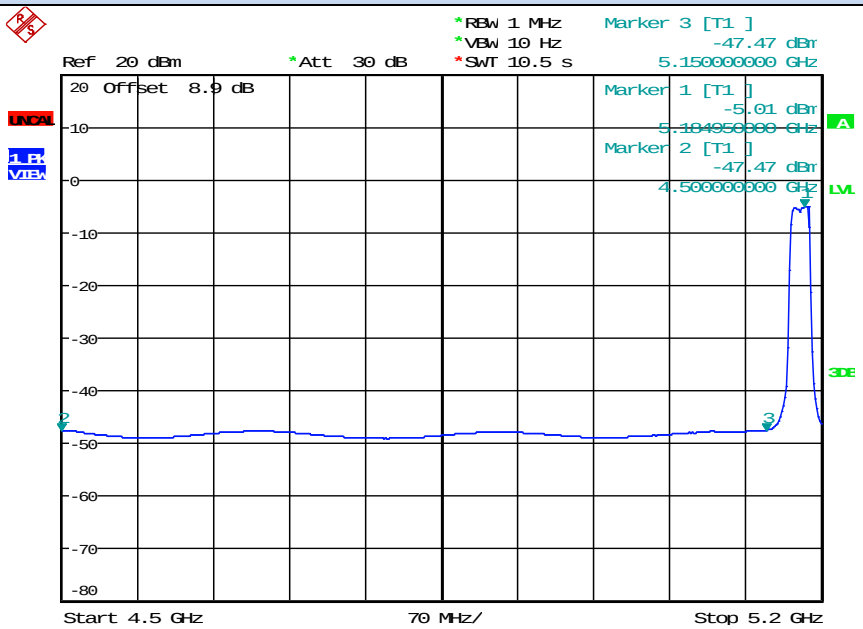
Date: 27.AUG.2019 09:59:10

IEEE 802.11n40 / Channel 48 / 5230MHz / Average



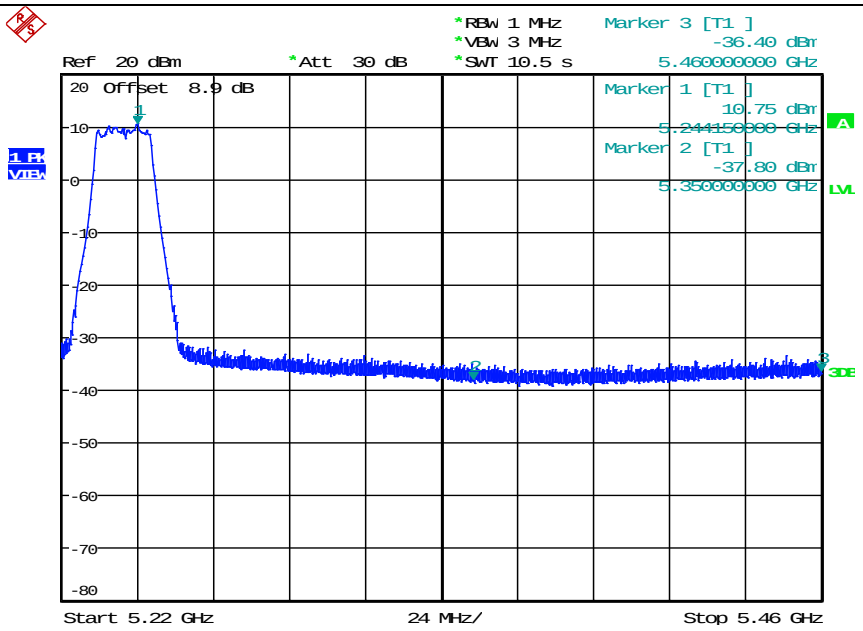
Date: 27.AUG.2019 10:10:31

IEEE 802.11ac20 / Channel 36 / 5180MHz / Peak



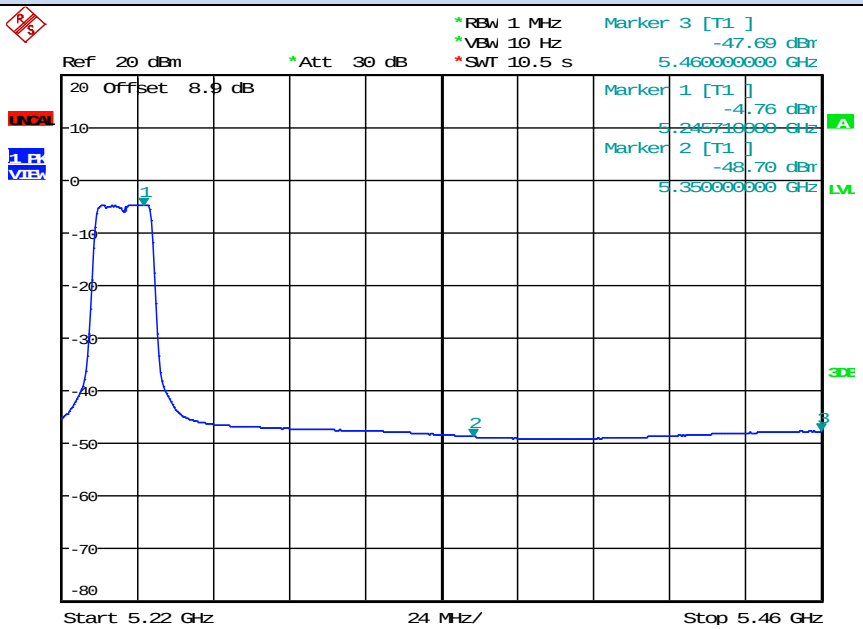
Date: 27.AUG.2019 10:11:07

IEEE 802.11ac20 / Channel 36 / 5180MHz / Average



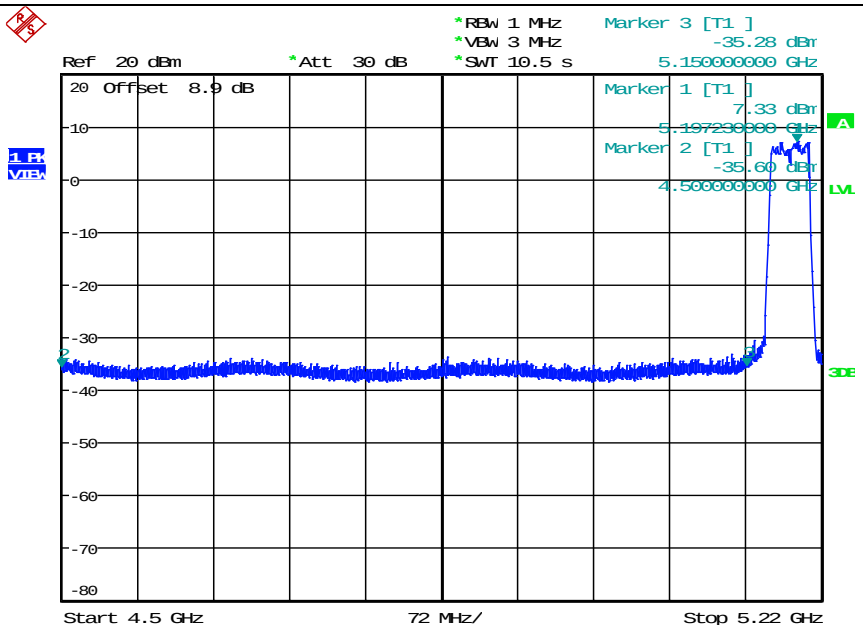
Date: 27.AUG.2019 10:15:48

IEEE 802.11ac20 / Channel 48 / 5240MHz / Peak



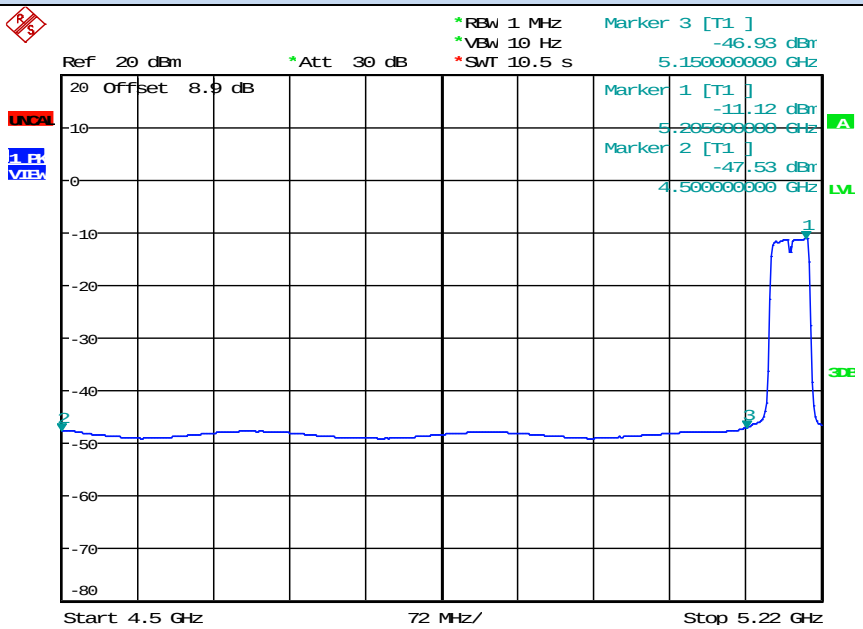
Date: 27.AUG.2019 10:16:19

IEEE 802.11ac20 / Channel 48 / 5240MHz / Average



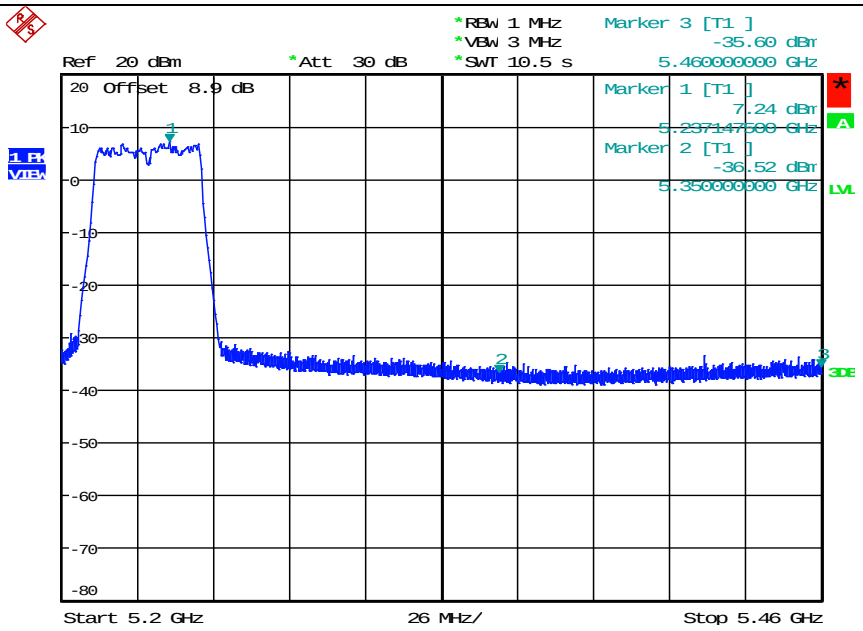
Date: 27.AUG.2019 10:28:21

IEEE 802.11ac40 / Channel 38 / 5190MHz / Peak



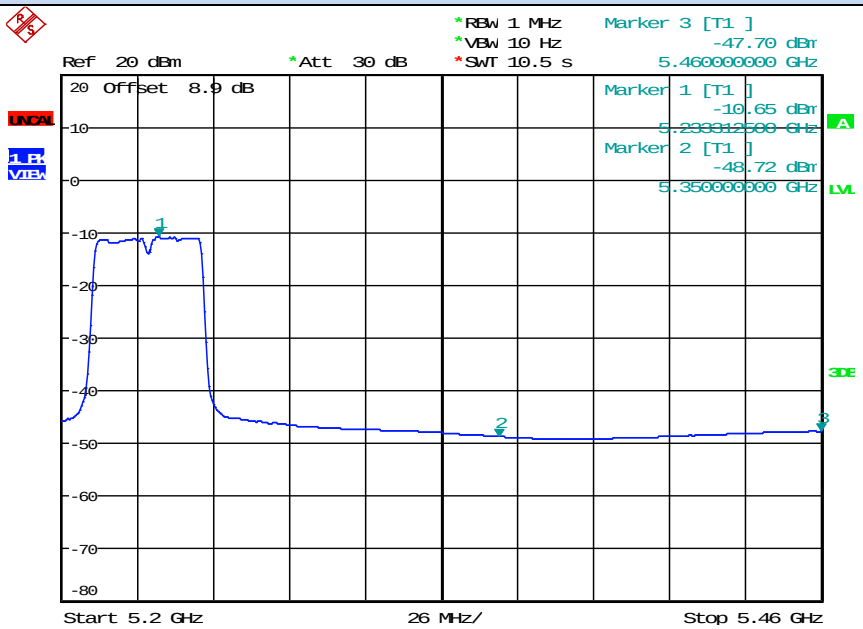
Date: 27.AUG.2019 10:28:56

IEEE 802.11ac40 / Channel 38 / 5190MHz / Average



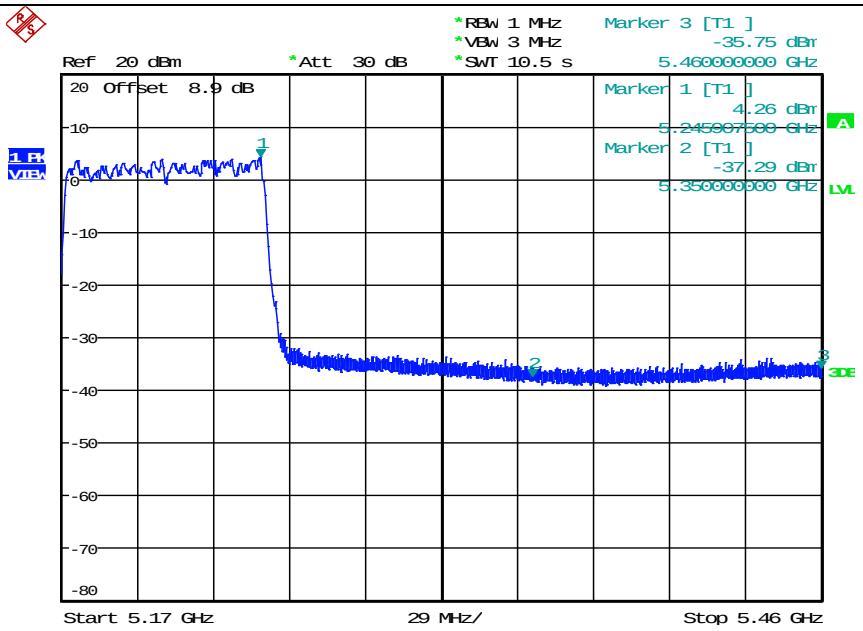
Date: 27.AUG.2019 10:33:13

IEEE 802.11ac40 / Channel 48 / 5230MHz / Peak



Date: 27.AUG.2019 10:34:00

IEEE 802.11ac40 / Channel 48 / 5230MHz / Average



Date: 27.AUG.2019 10:53:14

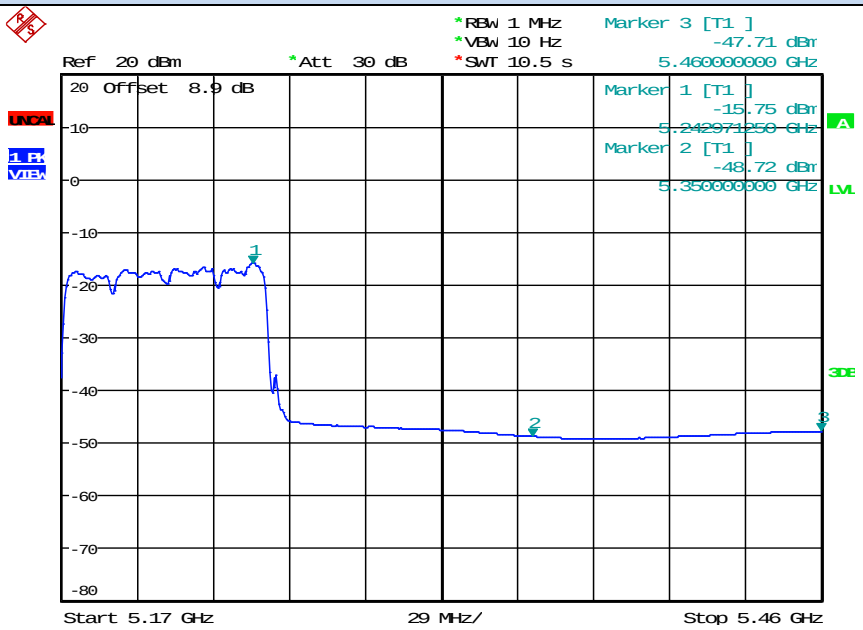
IEEE 802.11ac80 / Channel 42 / 5210MHz / Peak

#imgrb11ac80siso5210nnav

IEEE 802.11ac80 / Channel 42 / 5210MHz / Average

#imgrb11ac80siso15210nnpeak

IEEE 802.11ac80 / Channel 42/ 5210MHz / Peak



Date: 27.AUG.2019 10:53:53

IEEE 802.11ac80 / Channel 42 / 5210MHz / Average