

Appendix B

RF Test Data for 5.2G WLAN (Conducted Measurement)

Product Name: Mini 802.11ac Wireless USB Adapter

Trade Mark: N/A

Test Model: U0633

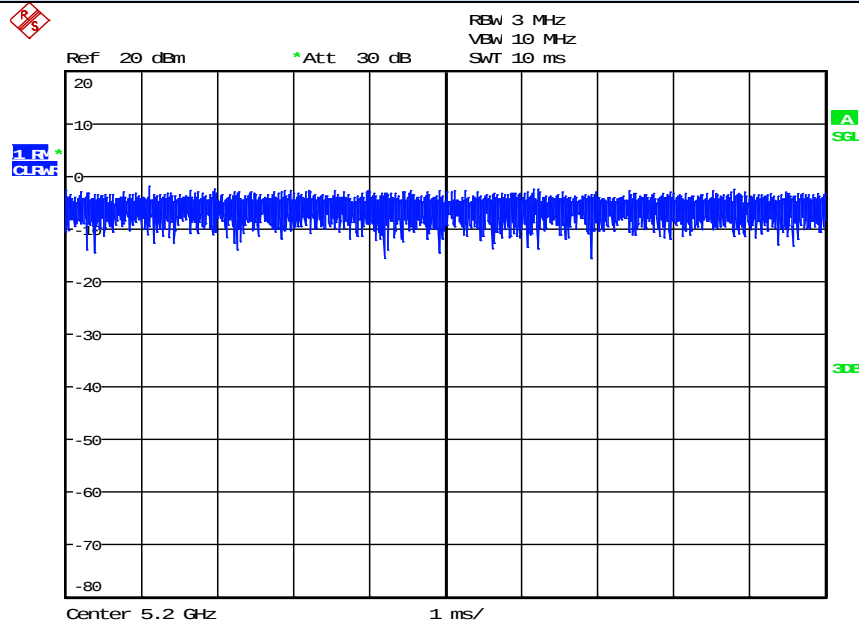
Environmental Conditions

Temperature:	22.5 ° C
Relative Humidity:	53.6%
ATM Pressure:	100.0 kPa
Test Engineer:	David Luo
Supervised by:	Wang.Chuang

D.1 Duty Cycle

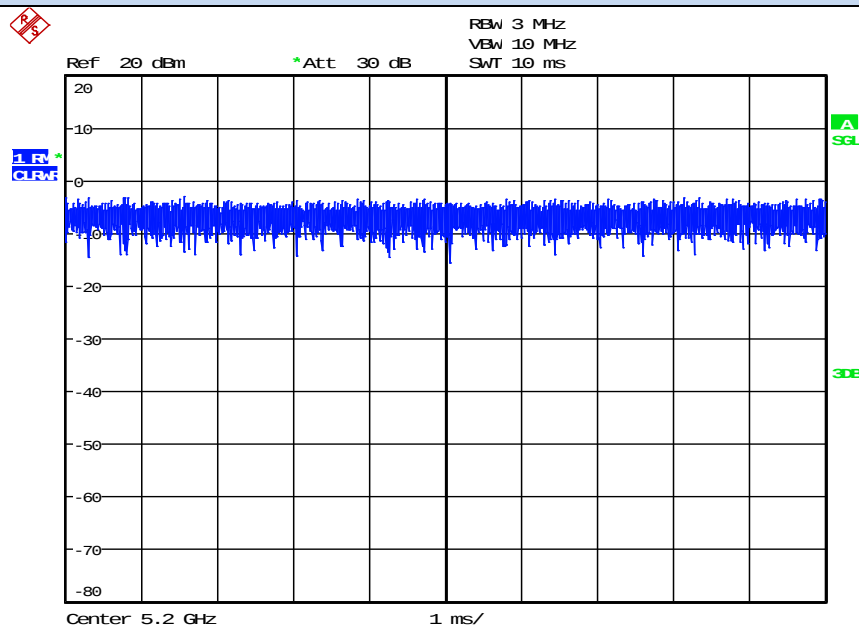
Test Mode	Test Frequency (MHz)	Duty Cycle (%)	10log(1/x) Factor (dB)	1/B Minimum VBW(KHz)
11A	5200	100	0.00	0.01
11N20 SISO	5200	100	0.00	0.01
11N40 SISO	5190	100	0.00	0.01
11AC20 SISO	5200	100	0.00	0.01
11AC40 SISO	5190	100	0.00	0.01
11AC80 SISO	5210	100	0.00	0.01

On Time and Duty Cycle



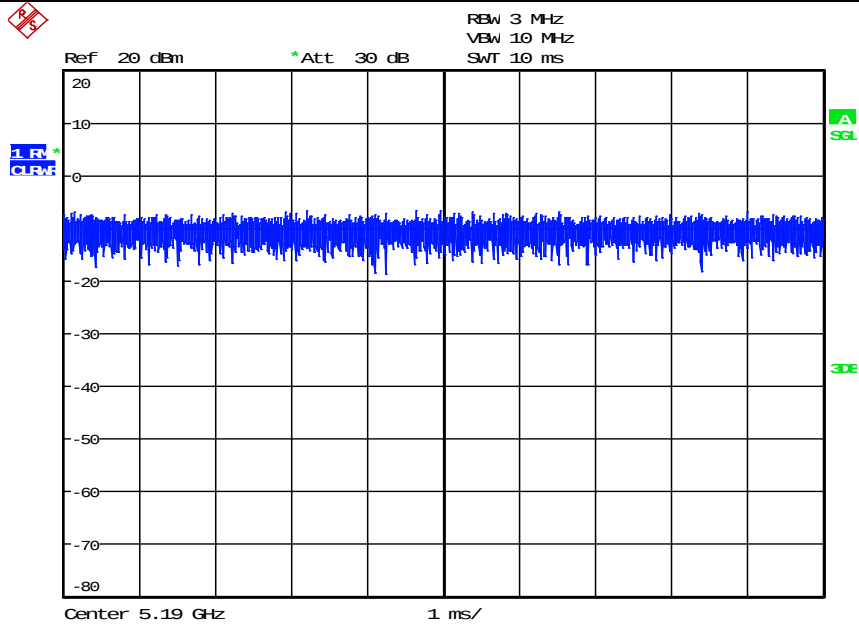
Date: 17.SEP.2019 14:00:02

IEEE 802.11a



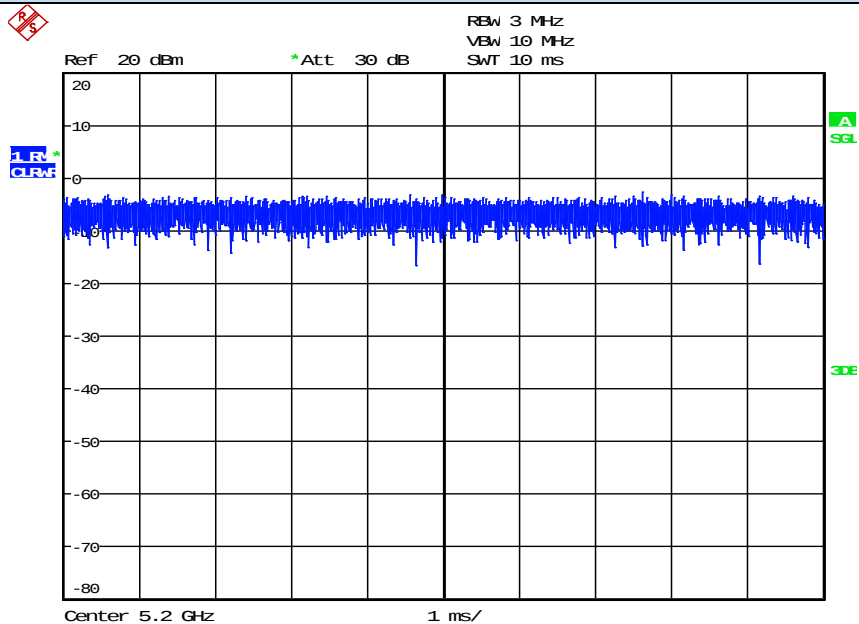
Date: 17.SEP.2019 14:28:29

IEEE 802.11n HT20



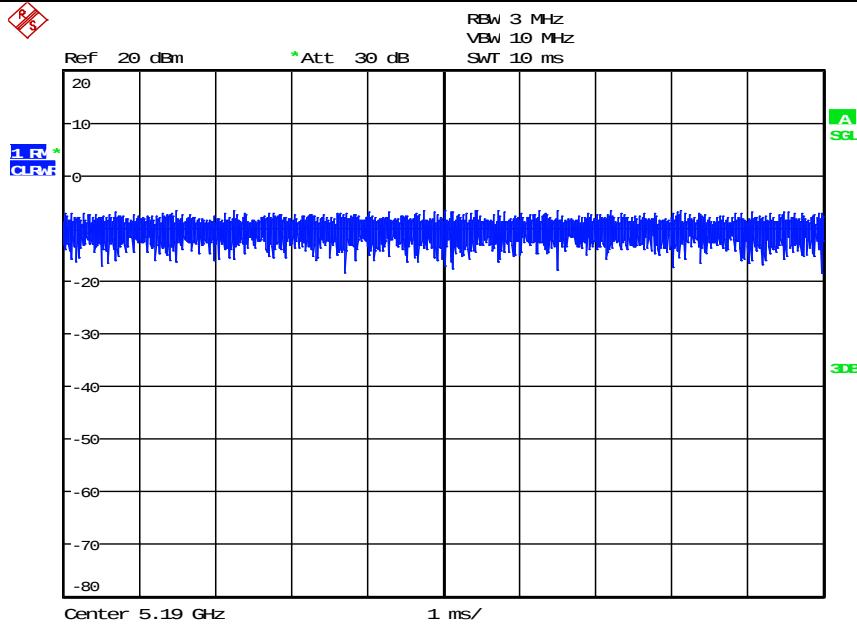
Date: 17.SEP.2019 14:45:08

IEEE 802.11n HT40



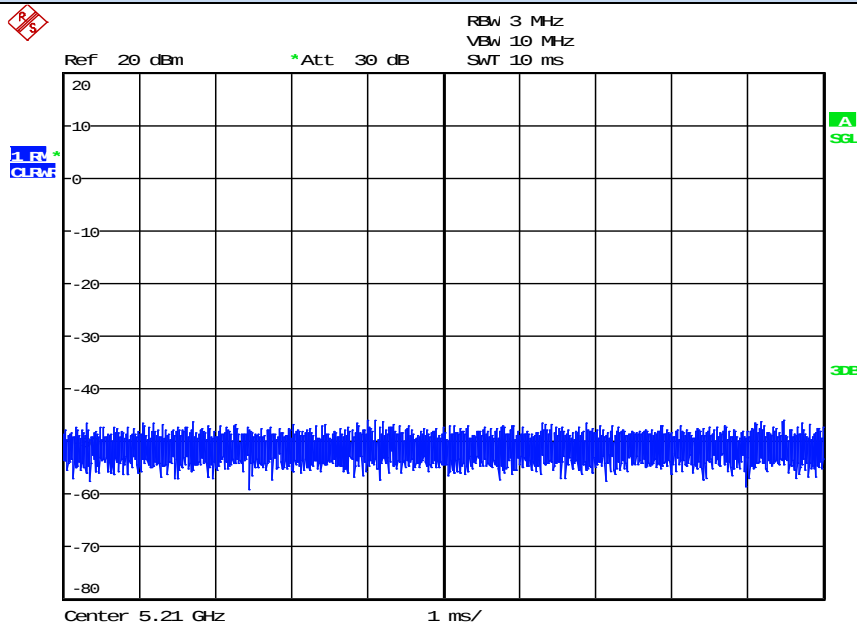
Date: 17.SEP.2019 15:16:45

IEEE 802.11AC20



Date: 17.SEP.2019 15:35:31

IEEE 802.11 AC40



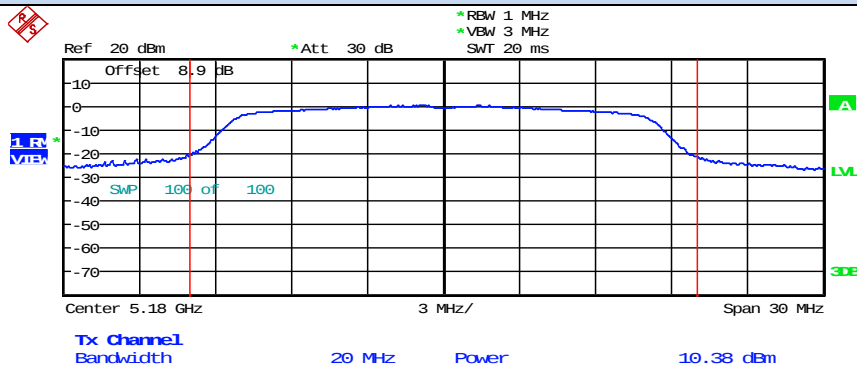
Date: 17.SEP.2019 15:56:53

IEEE 802.11AC80

D.2 Maximum Conduct Output Power

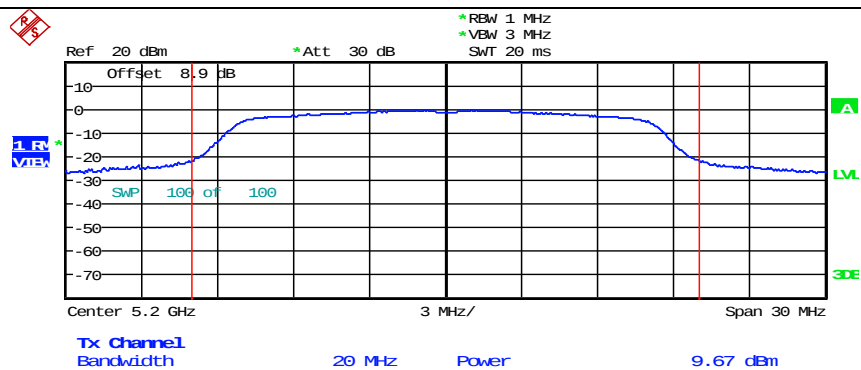
Test Mode	Channel	Frequency (MHz)	AVG Conducted Power (dBm)	Duty Cycle Factor(dB)	Report Conducted Power(dBm)	Limit (dBm)	Verdict
11A	36	5180	10.38	0	10.38	24	Pass
	40	5200	9.67	0	9.67		Pass
	48	5240	8.34	0	8.34		Pass
11N20 SISO	36	5180	10.08	0	10.08	24	Pass
	40	5200	9.06	0	9.06		Pass
	48	5240	8.05	0	8.05		Pass
11N40 SISO	38	5190	9.29	0	9.29	24	Pass
	46	5230	8.08	0	8.08		Pass
11AC20 SISO	36	5180	9.82	0	9.82	24	Pass
	40	5200	9.11	0	9.11		Pass
	48	5240	7.93	0	7.93		Pass
11AC40 SISO	38	5190	9.54	0	9.54	24	Pass
	46	5230	8.02	0	8.02		Pass
11AC80 SISO	42	5210	8.44	0	8.44	24	Pass

Maximum Conducted Output Power



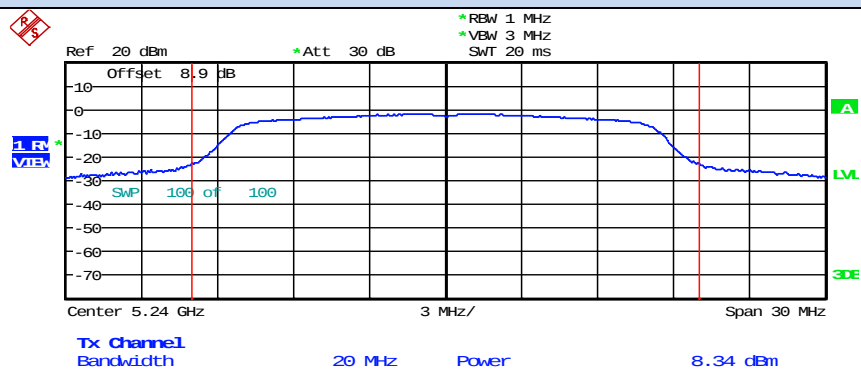
Date: 17.SEP.2019 13:48:30

IEEE 802.11a / Channel 36 / 5180MHz



Date: 17.SEP.2019 14:00:52

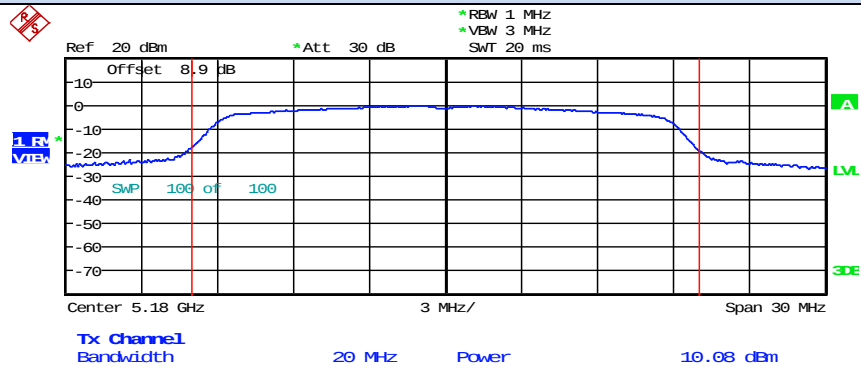
IEEE 802.11a / Channel 40 / 5200MHz



Date: 17.SEP.2019 14:02:19

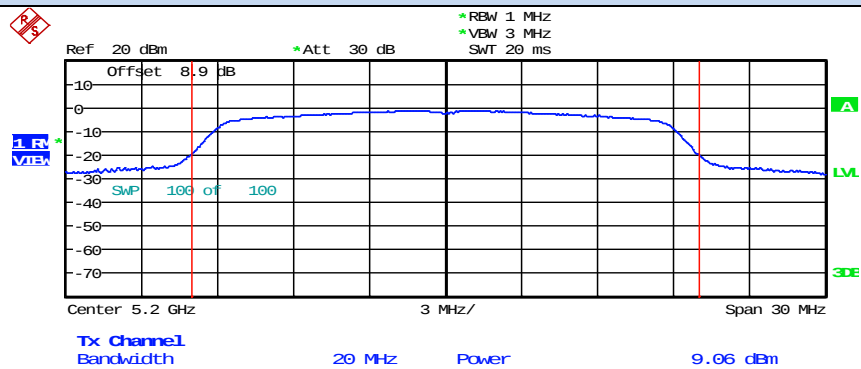
IEEE 802.11a / Channel 48 / 5240MHz

Maximum Conducted Output Power



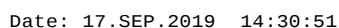
Date: 17.SEP.2019 14:25:00

IEEE 802.11n20 / Channel 36 / 5180MHz

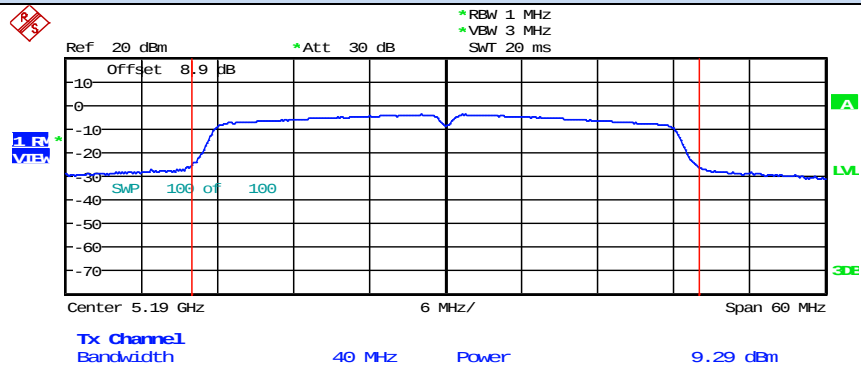


Date: 17.SEP.2019 14:29:19

IEEE 802.11n20 / Channel 40 / 5200MHz

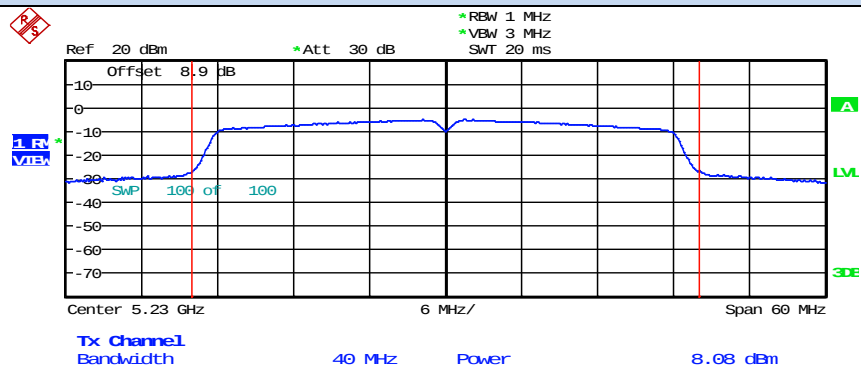


Maximum Conducted Output Power



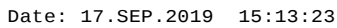
Date: 17.SEP.2019 14:45:58

IEEE 802.11n40 / Channel 38 / 5190MHz



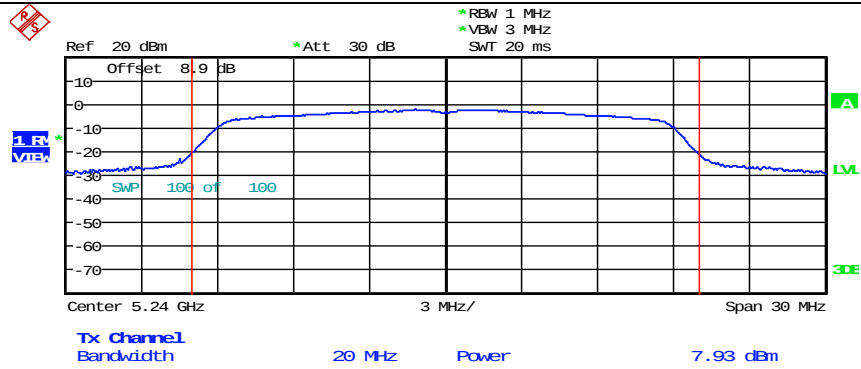
Date: 17.SEP.2019 14:50:11

IEEE 802.11n40 / Channel 46 / 5230MHz



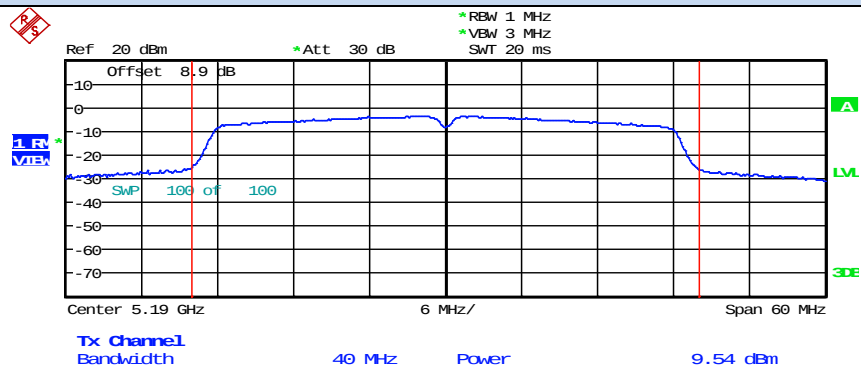
Date: 17.SEP.2019 15:17:35

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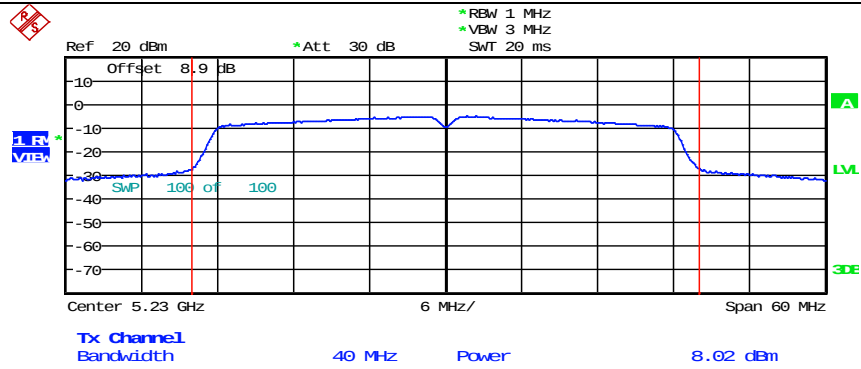
Date: 17.SEP.2019 15:19:02

IEEE 802.11ac20 / Channel 48 / 5240MHz



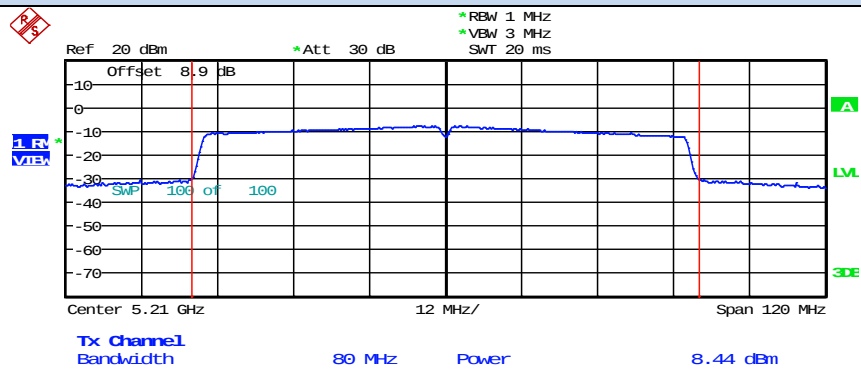
Date: 17.SEP.2019 15:36:21

IEEE 802.11ac40 / Channel 38 / 5190MHz



Date: 17.SEP.2019 15:40:33

IEEE 802.11ac40 / Channel 46 / 5230MHz

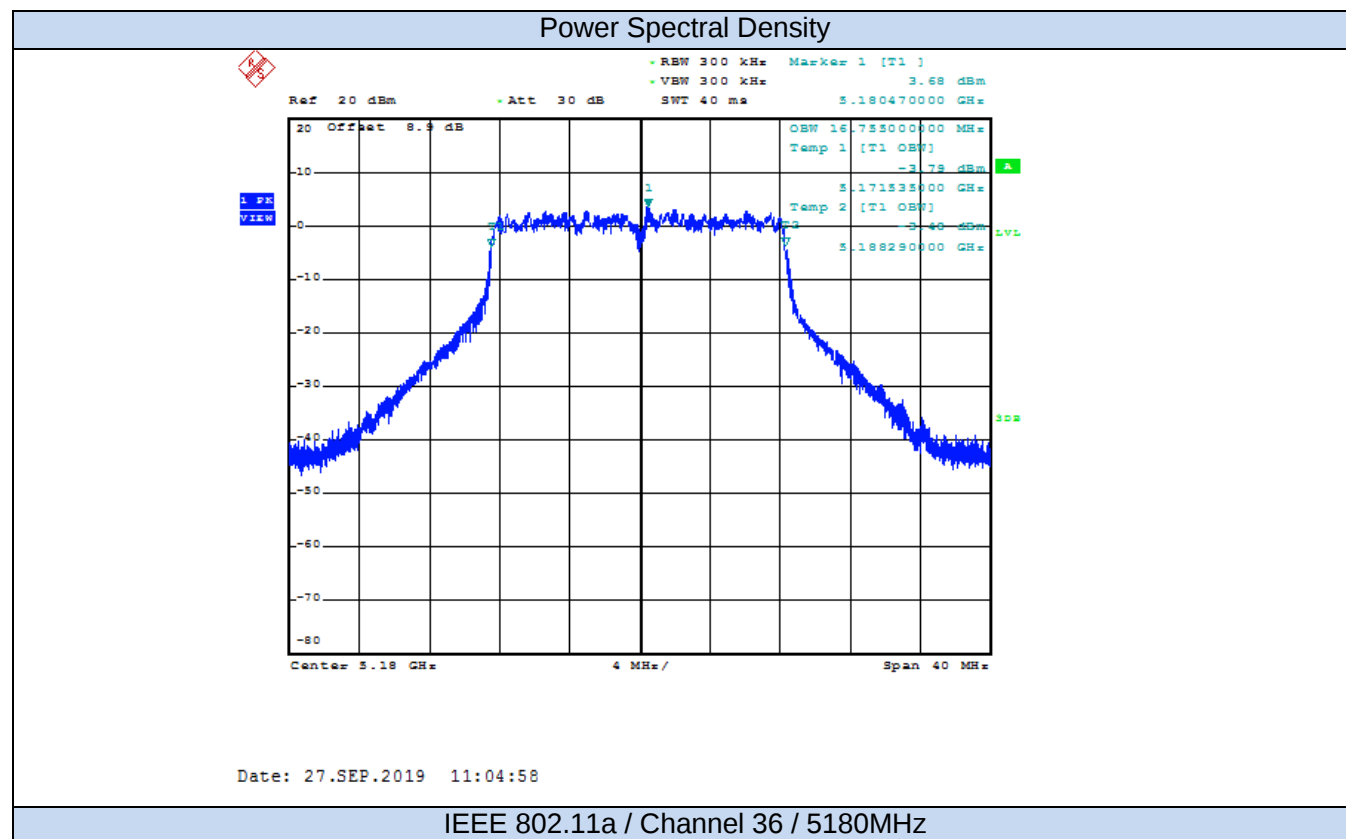


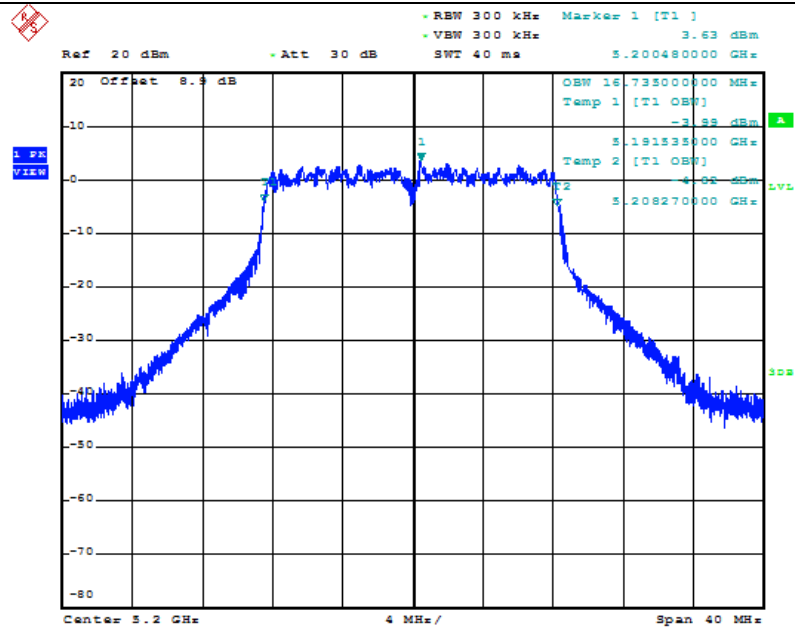
Date: 17.SEP.2019 15:57:43

IEEE 802.11ac80 / Channel 42 / 5210MHz

D.3 Power Spectral Density

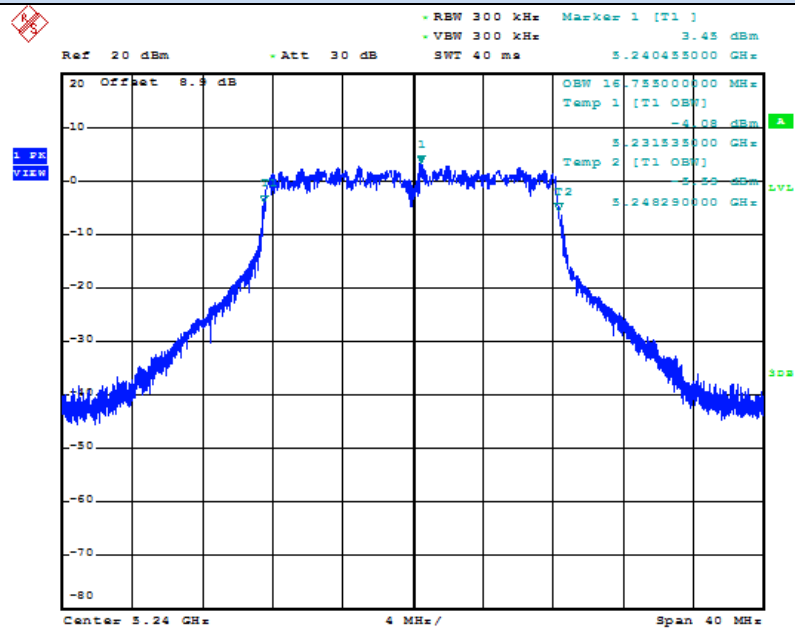
Test Mode	Channel	Frequency (MHz)	Power Density (dBm/MHz)	Duty Cycle Factor (dB)	Report Power Density (dBm/MHz)	Limit (dBm/MHz)	Verdict
11A	36	5180	0.54	0	0.54	11	Pass
	40	5200	-0.13	0	-0.13		Pass
	48	5240	-1.44	0	-1.44		Pass
11N20 SISO	36	5180	0.08	0	0.08	11	Pass
	40	5200	-0.57	0	-0.57		Pass
	48	5240	-1.75	0	-1.75		Pass
11N40 SISO	38	5190	-3.57	0	-3.57	11	Pass
	46	5230	-4.91	0	-4.91		Pass
11AC20 SISO	36	5180	0.37	0	0.37	11	Pass
	40	5200	-0.67	0	-0.67		Pass
	48	5240	-1.91	0	-1.91		Pass
11AC40 SISO	38	5190	-3.34	0	-3.34	11	Pass
	46	5230	-4.85	0	-4.85		Pass
11AC80 SISO	42	5210	-7.25	0	-7.25	11	Pass





Date: 27.SEP.2019 11:05:41

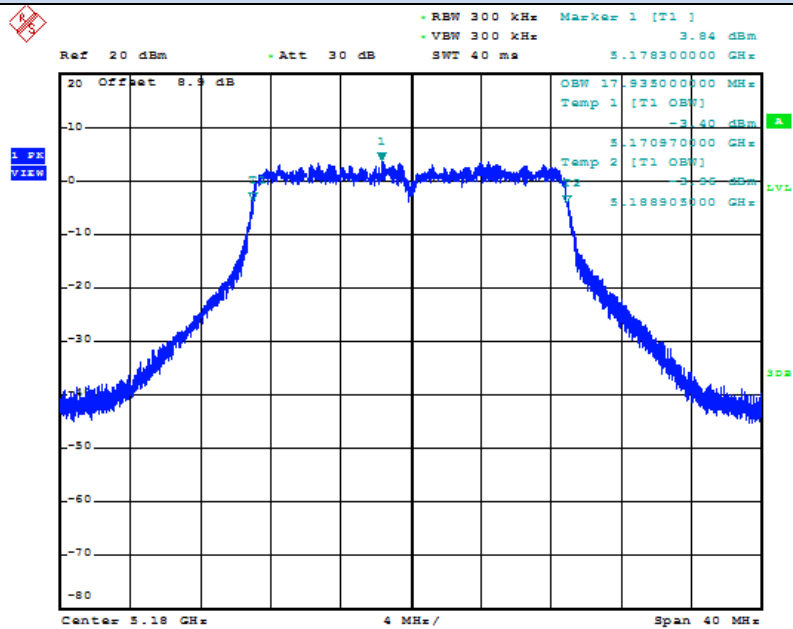
IEEE 802.11na / Channel 40 / 5200MHz



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

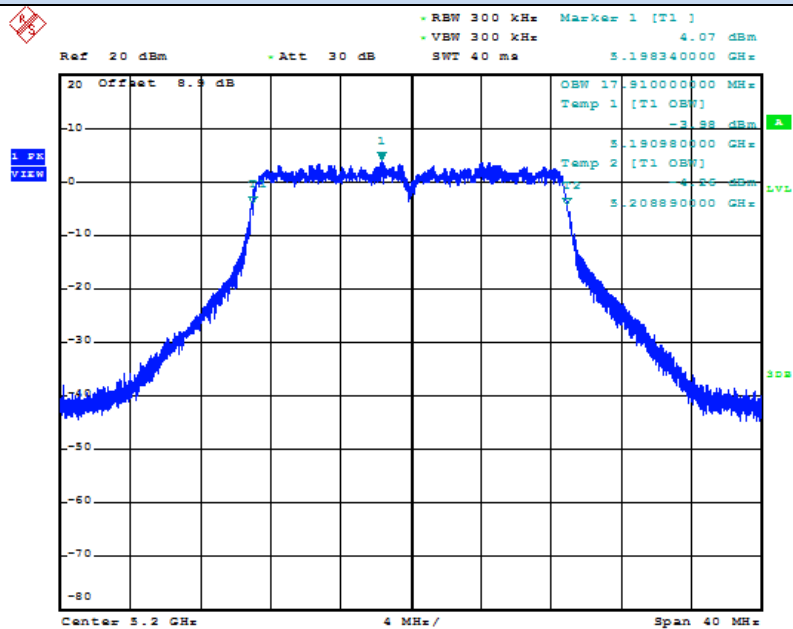
IEEE 802.11na / Channel 48 / 5240MHz

Power Spectral Density



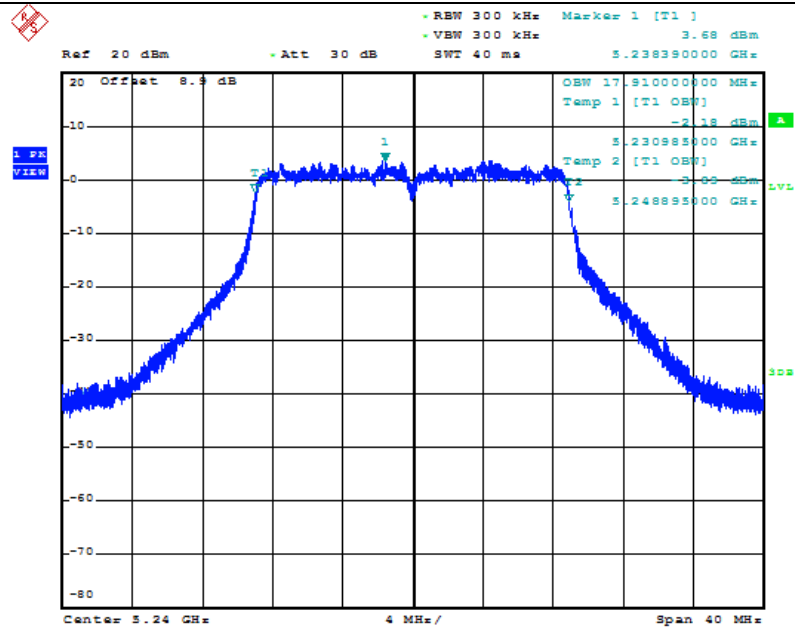
Date: 27.SEP.2019 11:09:22

IEEE 802.11n20 / Channel 36 / 5180MHz



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

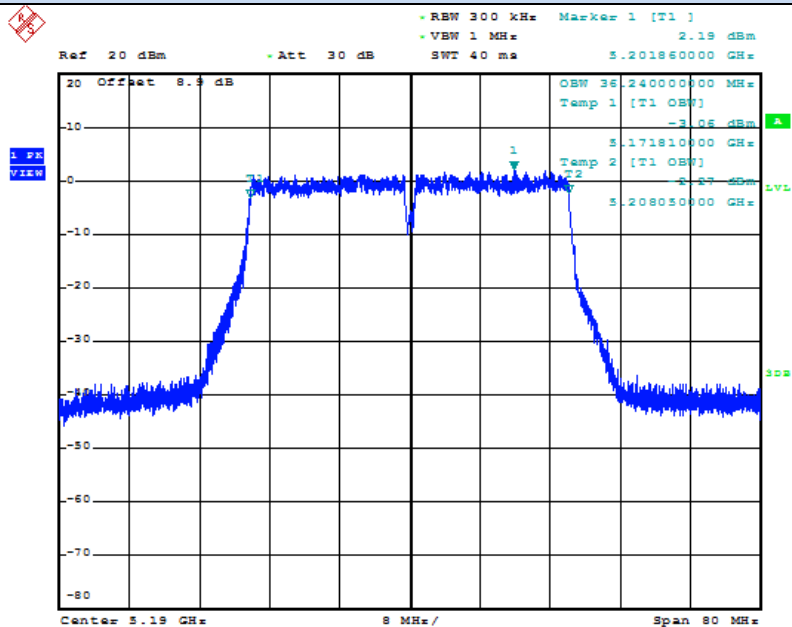
IEEE 802.11n20 / Channel 40 / 5200MHz



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

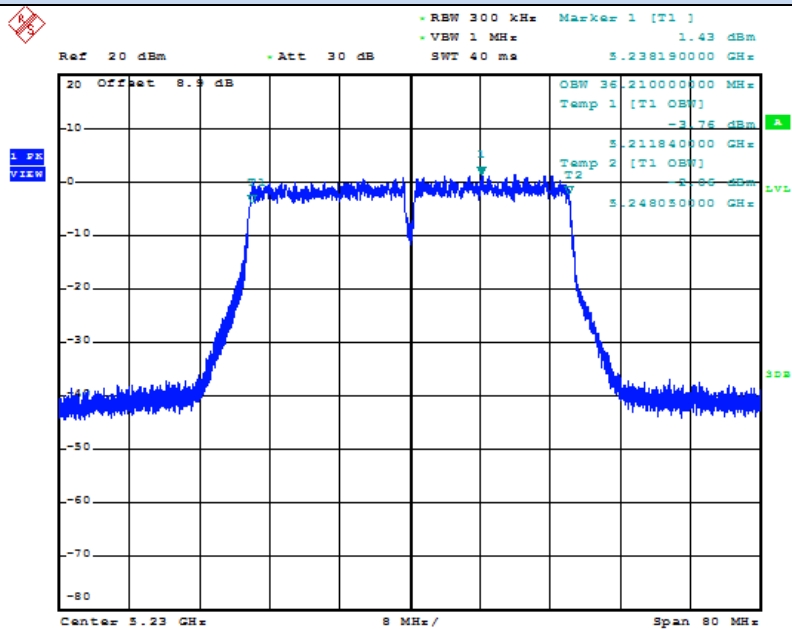
IEEE 802.11n20 / Channel 48 / 5240MHz

Power Spectral Density



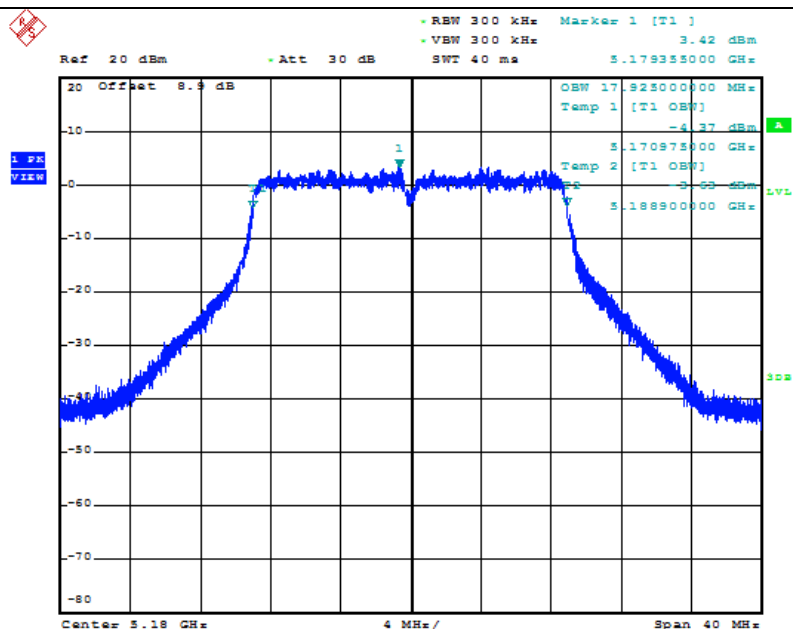
Date: 27.SEP.2019 11:14:05

IEEE 802.11n40 / Channel 38 / 5190MHz



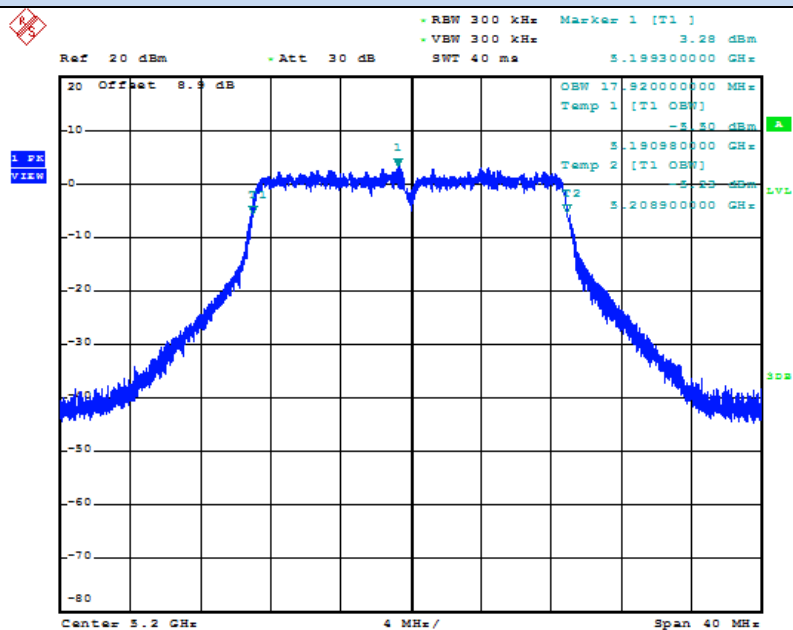
Date: 27.SEP.2019 11:17:40

IEEE 802.11n40 / Channel 46 / 5230MHz



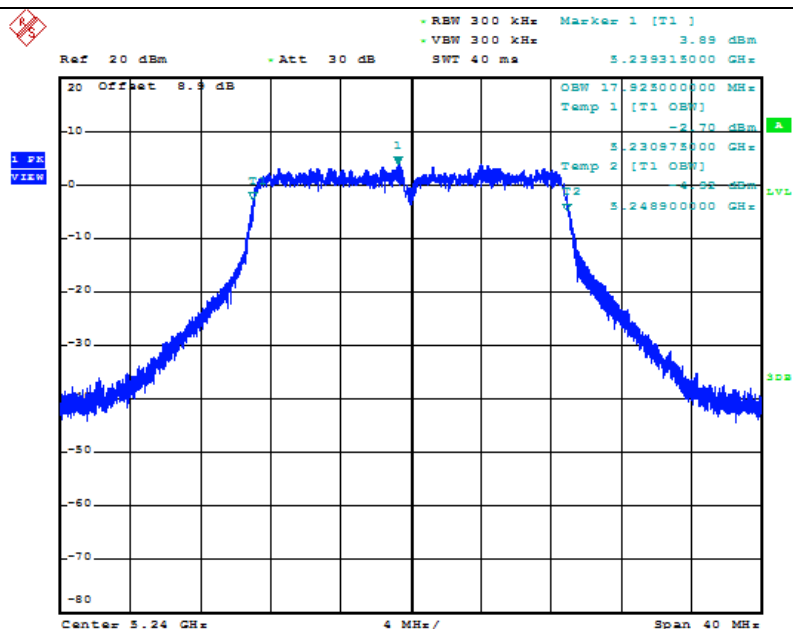
Date: 27.SEP.2019 11:20:52

IEEE 802.11ac20 / Channel 36 / 5180MHz



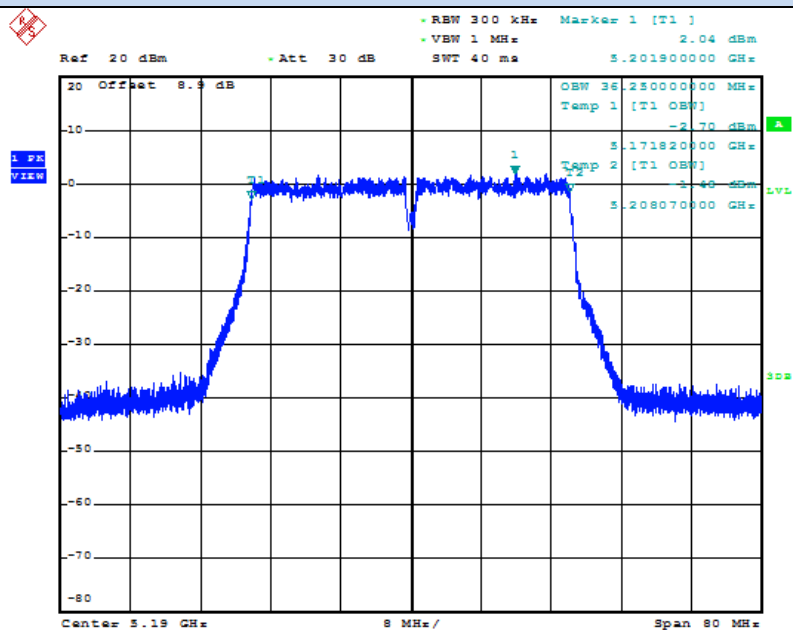
Date: 27.SEP.2019 11:21:34

IEEE 802.11ac20 / Channel 40 / 5200MHz



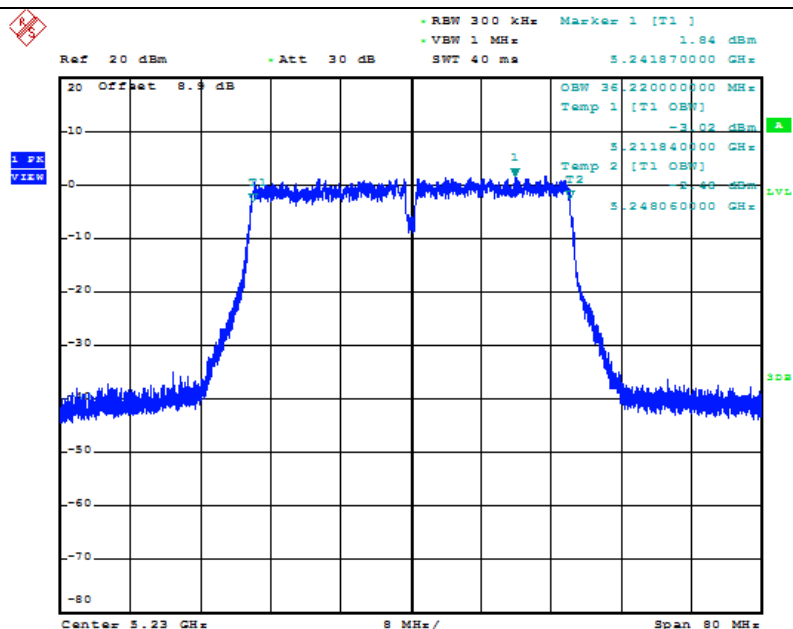
Date: 27.SEP.2019 11:22:55

IEEE 802.11ac20 / Channel 48 / 5240MHz



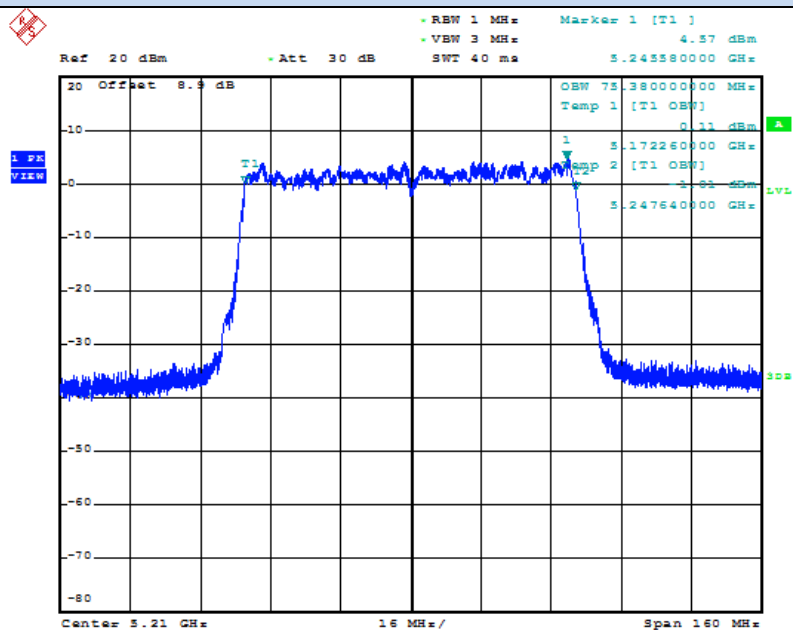
Date: 27.SEP.2019 11:26:23

IEEE 802.11ac40 / Channel 38 / 5190MHz



Date: 27.SEP.2019 11:27:12

IEEE 802.11ac40 / Channel 46 / 5230MHz

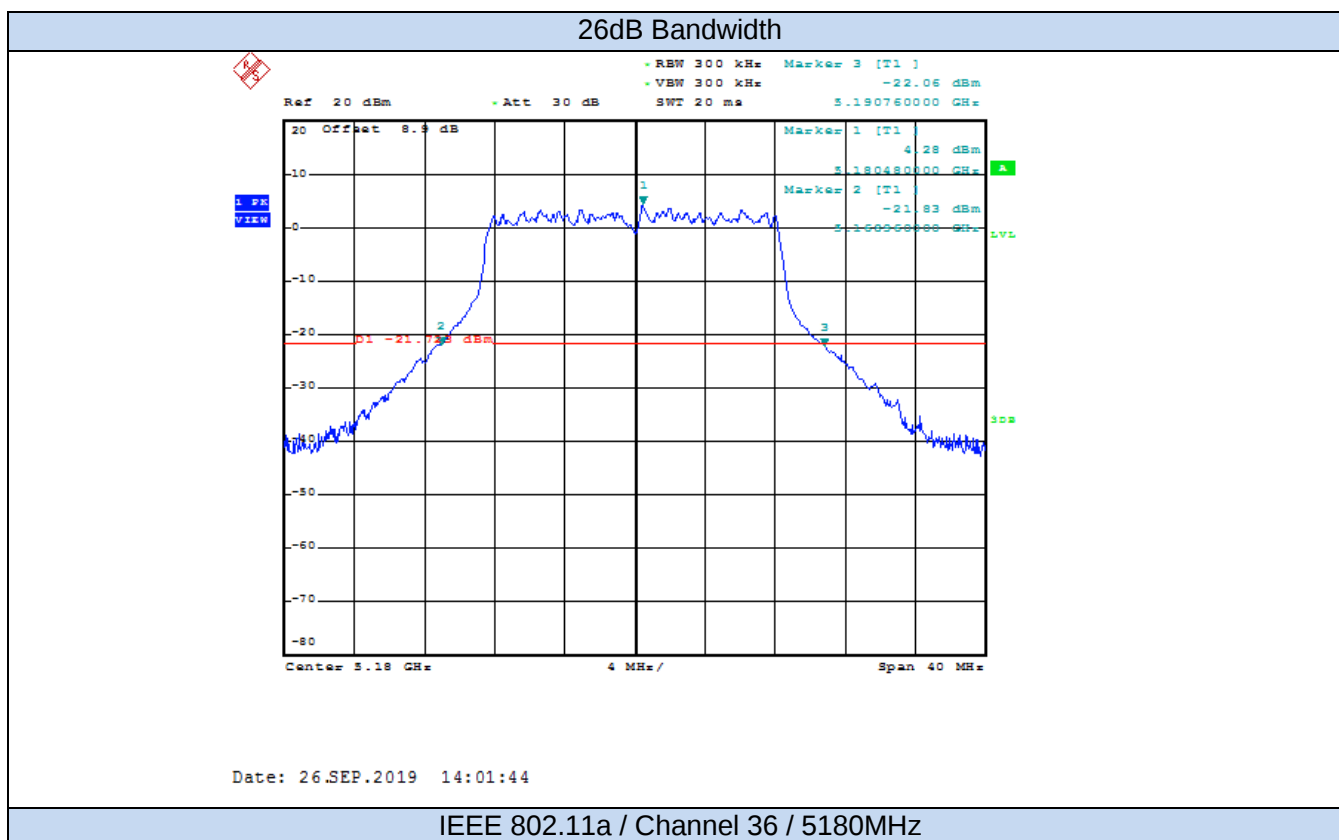


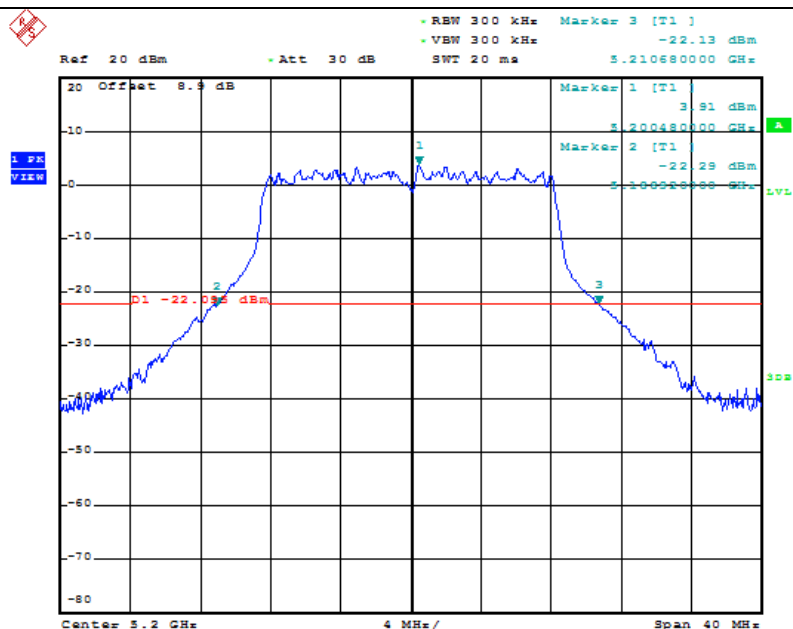
Date: 27.SEP.2019 11:30:17

IEEE 802.11ac80 / Channel 42 / 5210MHz

D.4 Emission Bandwidth

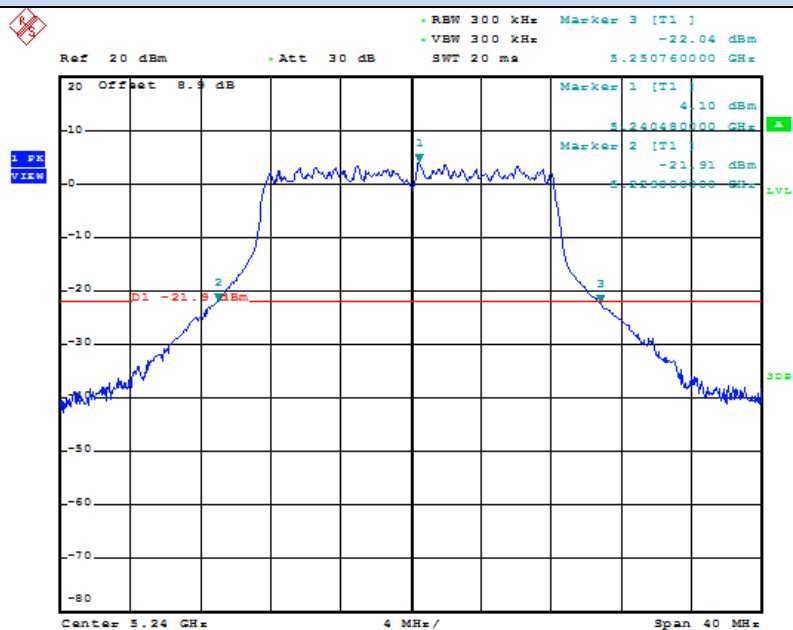
Test Mode	Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Limit (MHz)	Verdict
11A	36	5180	24.520	No Limit	Pass
	40	5200	23.920		Pass
	48	5240	24.800		Pass
11N20 SISO	36	5180	23.520	No Limit	Pass
	40	5200	24.480		Pass
	48	5240	23.240		Pass
11N40 SISO	38	5190	55.280	No Limit	Pass
	46	5230	54.800		Pass
11AC20 SISO	36	5180	25.200	No Limit	Pass
	40	5200	23.080		Pass
	48	5240	23.960		Pass
11AC40 SISO	38	5190	58.480	No Limit	Pass
	46	5230	59.080		Pass
11AC80 SISO	42	5210	83.680	No Limit	Pass





Date: 26.SEP.2019 14:01:44

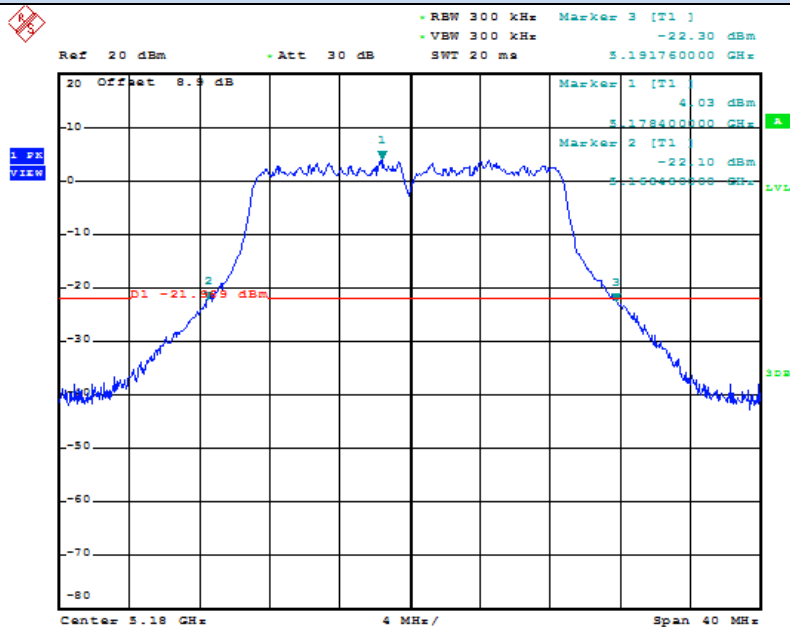
IEEE 802.11a / Channel 40 / 5200MHz



Date: 26.SEP.2019 14:01:44

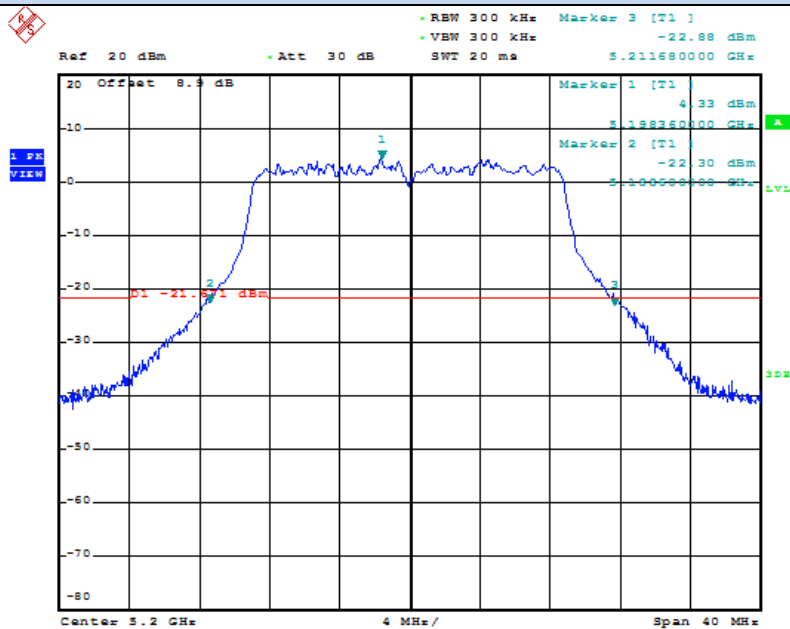
IEEE 802.11a / Channel 48 / 5240MHz

26dB Bandwidth



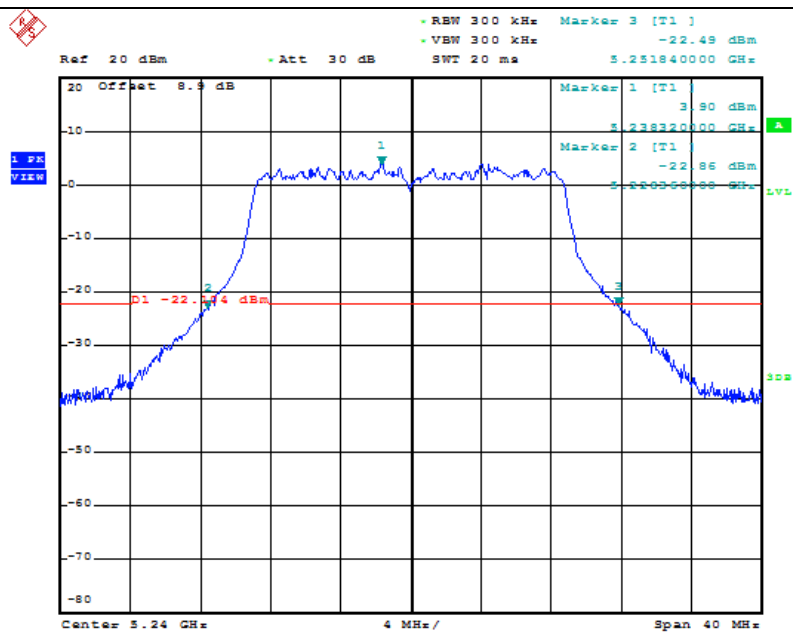
Date: 27.SEP.2019 14:01:44

IEEE 802.11n20 / Channel 36 / 5180MHz



Date: 27.SEP.2019 14:01:44

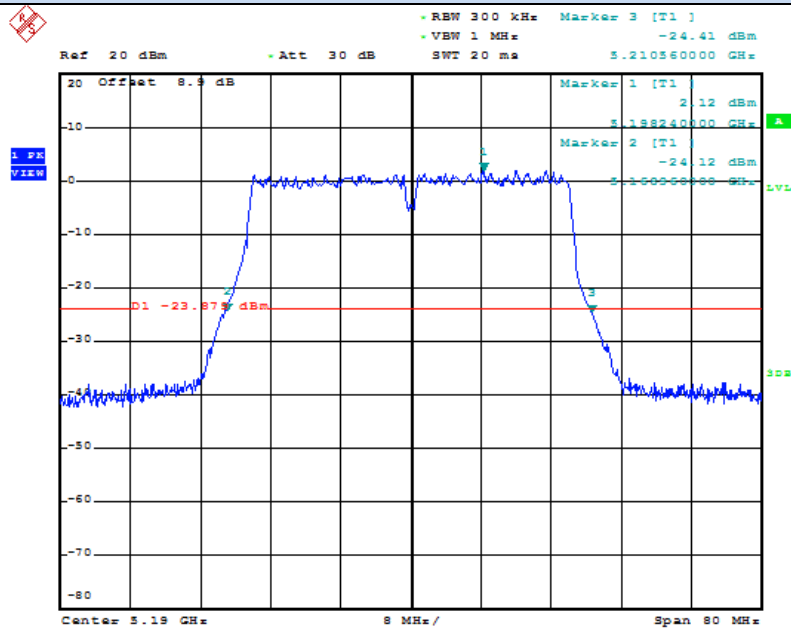
IEEE 802.11n20 / Channel 40 / 5200MHz



Date: 27.SEP.2019 14:01:44

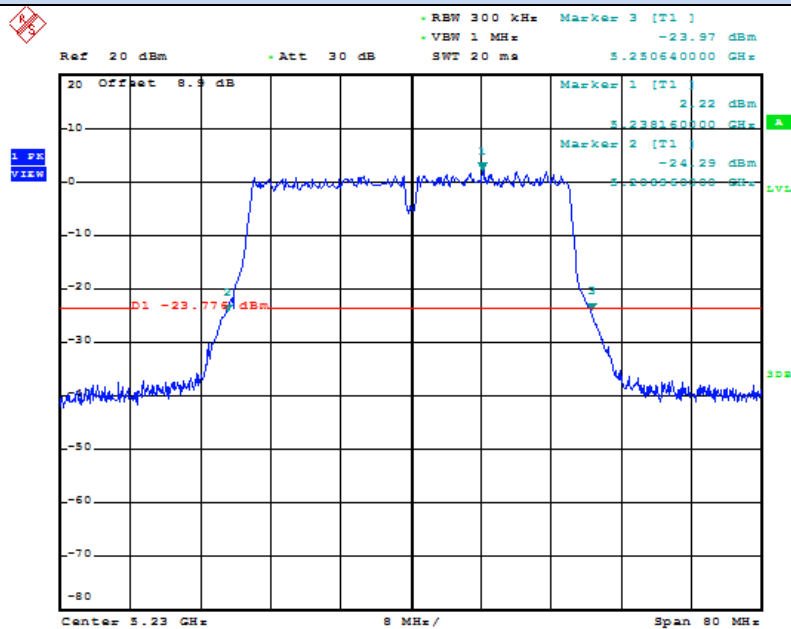
IEEE 802.11n20 / Channel 48 / 5240MHz

26dB Bandwidth



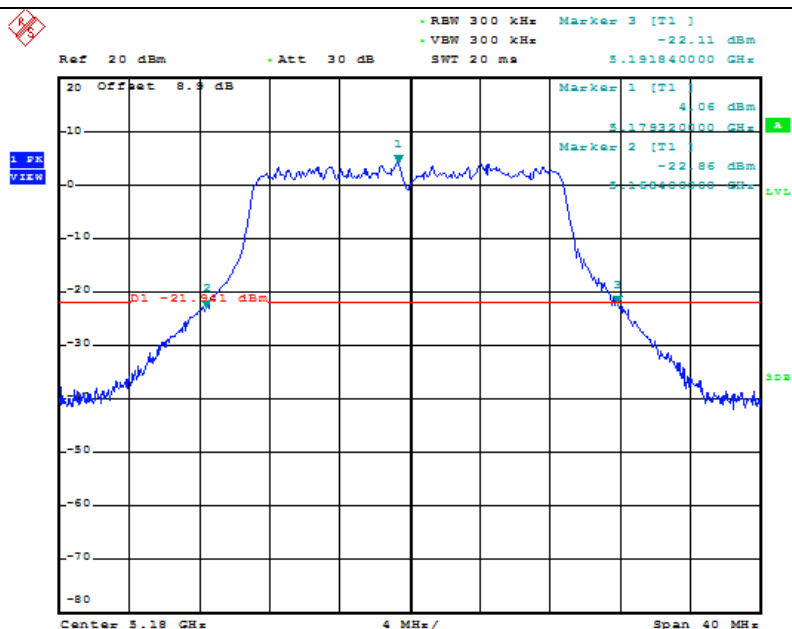
Date: 27.SEP.2019 14:01:44

IEEE 802.11n40 / Channel 38 / 5190MHz



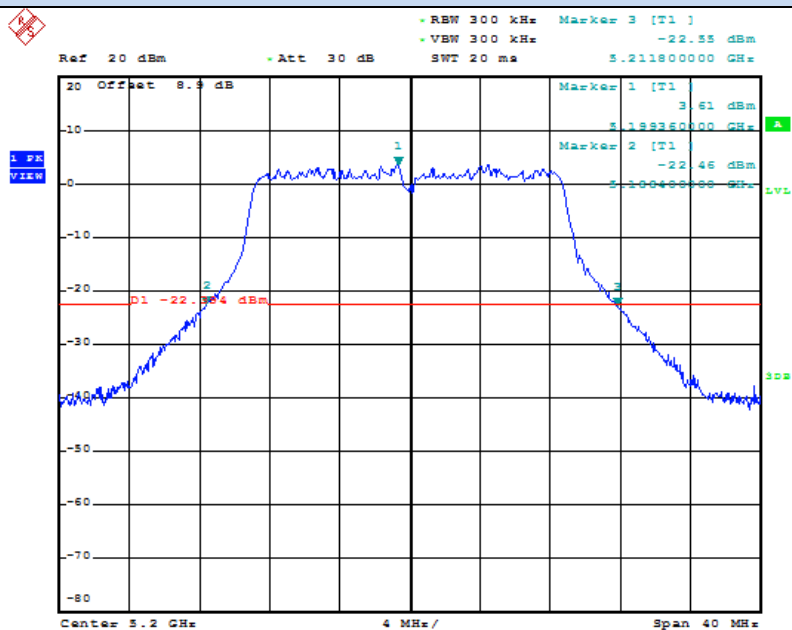
Date: 27.SEP.2019 14:01:44

IEEE 802.11n40 / Channel 46 / 5230MHz



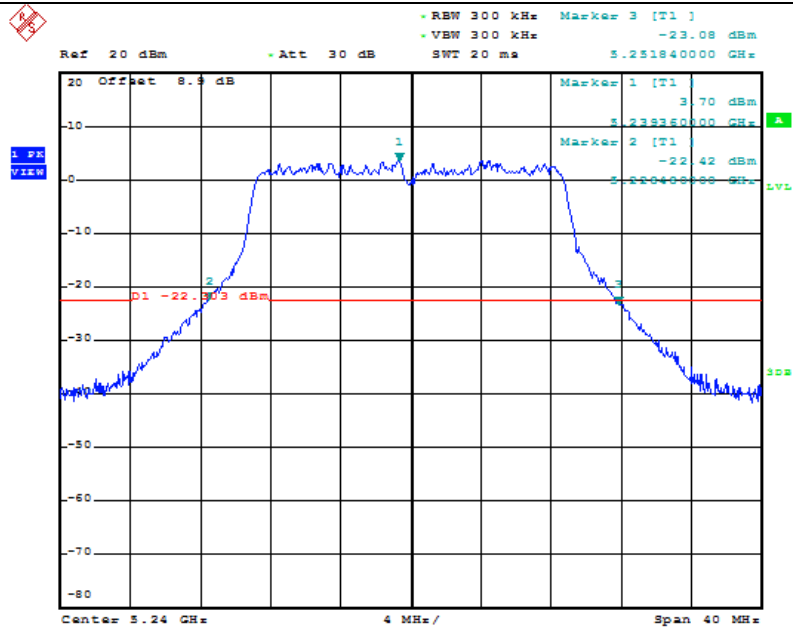
Date: 27.SEP.2019 14:01:44

IEEE 802.11ac20 / Channel 36 / 5180MHz



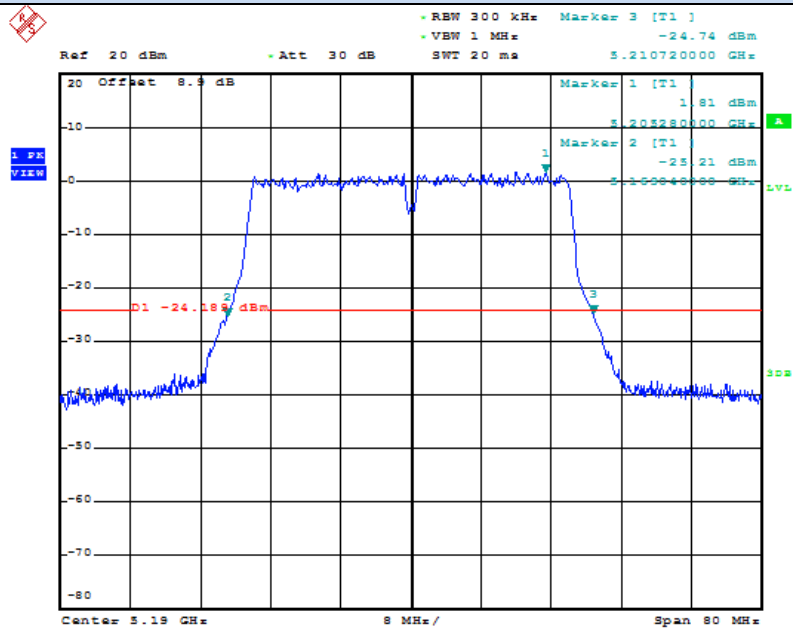
Date: 27.SEP.2019 14:01:44

IEEE 802.11ac20 / Channel 40 / 5200MHz



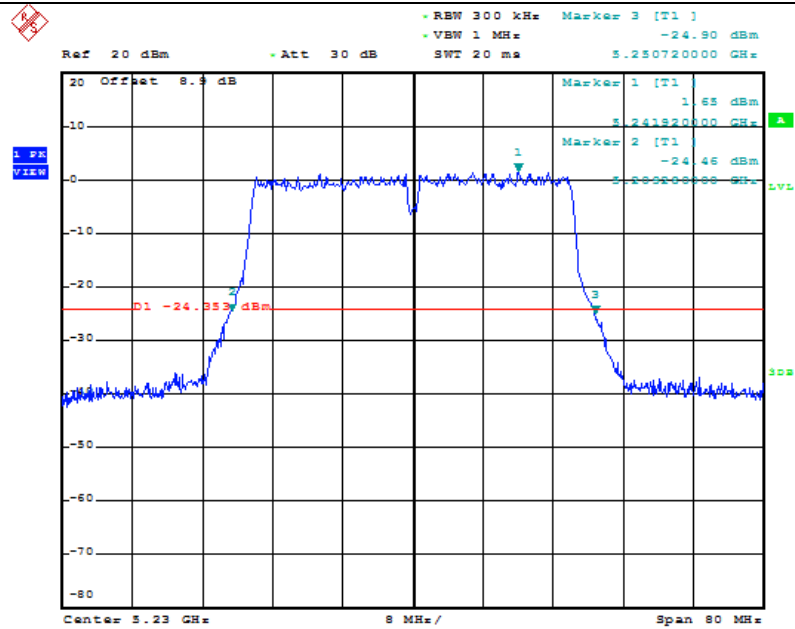
Date: 27.SEP.2019 10:14:12

IEEE 802.11ac20 / Channel 48 / 5240MHz



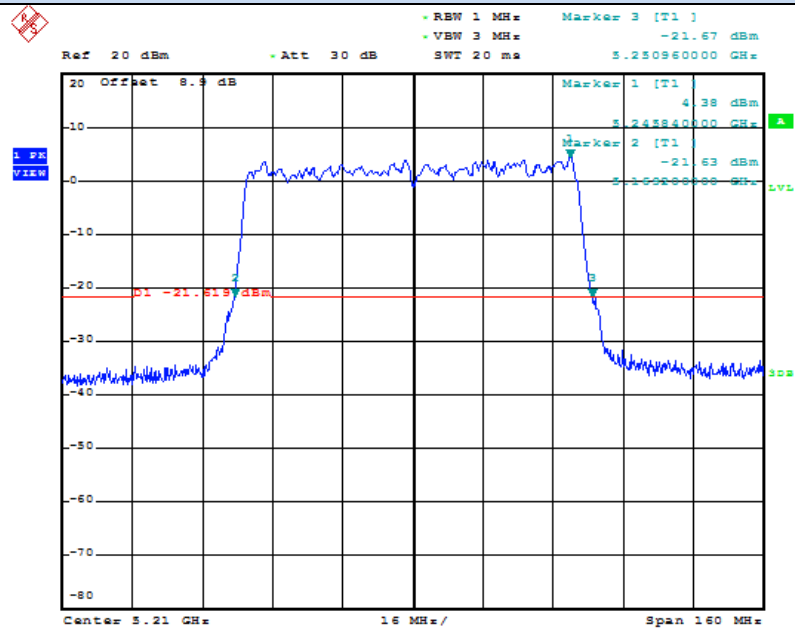
Date: 27.SEP.2019 14:01:44

IEEE 802.11ac40 / Channel 38 / 5190MHz



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

IEEE 802.11ac40 / Channel 46 / 5230MHz



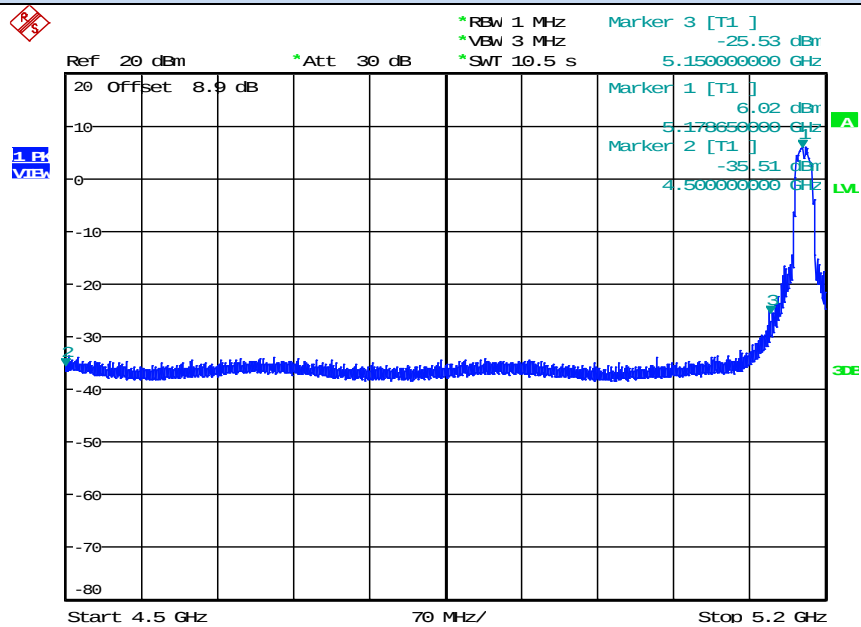
Date: 27.SEP.2019 10:49:26

IEEE 802.11ac80 / Channel 42 / 5210MHz

D.5 Undesirable Emissions Measurement

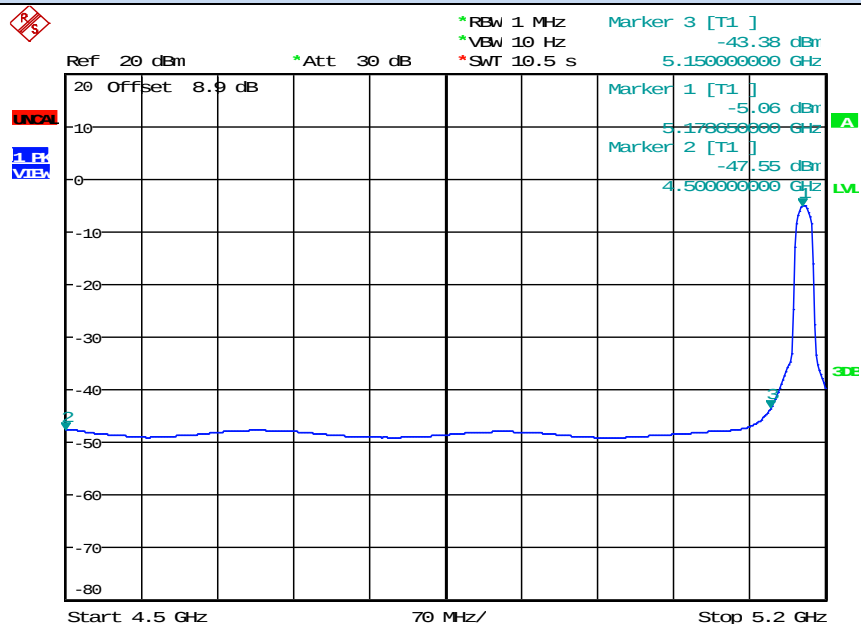
Test Mode	Channel	Frequency (MHz)	Conducted Power (dBm)	Antenna Gain (dBi)	Ground Reflection Factor (dB)	Covert Radiated E Level At 3m (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
11A	36	4500.0	-35.51	2.00	0	61.72	Peak	68.20	Pass
		4500.0	-47.55	2.00	0	49.68	Average	54.00	Pass
		5150.0	-25.53	2.00	0	71.70	Peak	68.20	Pass
		5150.0	-43.38	2.00	0	53.85	Average	54.00	Pass
	48	5350.0	-37.99	2.00	0	59.24	Peak	68.20	Pass
		5350.0	-48.94	2.00	0	48.29	Average	54.00	Pass
		5460.0	-36.88	2.00	0	60.35	Peak	68.20	Pass
		5460.0	-47.77	2.00	0	49.46	Average	54.00	Pass
11N2 O SISO	36	4500.0	-35.53	2.00	0	61.70	Peak	68.20	Pass
		4500.0	-47.59	2.00	0	49.64	Average	54.00	Pass
		5150.0	-25.98	2.00	0	71.25	Peak	68.20	Pass
		5150.0	-44.14	2.00	0	53.09	Average	54.00	Pass
	48	5350.0	-37.04	2.00	0	60.19	Peak	68.20	Pass
		5350.0	-48.98	2.00	0	48.25	Average	54.00	Pass
		5460.0	-36.66	2.00	0	60.57	Peak	68.20	Pass
		5460.0	-47.82	2.00	0	49.41	Average	54.00	Pass
11N4 O SISO	38	4500.0	-35.85	2.00	0	61.38	Peak	68.20	Pass
		4500.0	-47.63	2.00	0	49.60	Average	54.00	Pass
		5150.0	-30.34	2.00	0	66.89	Peak	68.20	Pass
		5150.0	-46.54	2.00	0	50.69	Average	54.00	Pass
	46	5350.0	-37.65	2.00	0	59.58	Peak	68.20	Pass
		5350.0	-48.88	2.00	0	48.35	Average	54.00	Pass
		5460.0	-34.39	2.00	0	62.84	Peak	68.20	Pass
		5460.0	-47.80	2.00	0	49.43	Average	54.00	Pass
11A C20 SIS O	36	4500.0	-35.99	2.00	0	61.24	Peak	68.20	Pass
		4500.0	-47.63	2.00	0	49.60	Average	54.00	Pass
		5150.0	-28.95	2.00	0	68.28	Peak	68.20	Pass
		5150.0	-44.97	2.00	0	52.26	Average	54.00	Pass
	48	4500.0	-35.99	2.00	0	61.24	Peak	68.20	Pass
		4500.0	-47.63	2.00	0	49.60	Average	54.00	Pass
		5150.0	-28.95	2.00	0	68.28	Peak	68.20	Pass
		5150.0	-44.97	2.00	0	52.26	Average	54.00	Pass
11A C40 SIS O	38	4500.0	-35.89	2.00	0	61.34	Peak	68.20	Pass
		4500.0	-47.65	2.00	0	49.58	Average	54.00	Pass
		5150.0	-28.28	2.00	0	68.95	Peak	68.20	Pass
		5150.0	-46.09	2.00	0	51.14	Average	54.00	Pass
	46	5350.0	-38.27	2.00	0	58.96	Peak	68.20	Pass
		5350.0	-48.91	2.00	0	48.32	Average	54.00	Pass
		5460.0	-36.76	2.00	0	60.47	Peak	68.20	Pass
		5460.0	-47.86	2.00	0	49.37	Average	54.00	Pass
11A C80 SIS O	42	4500.0	-38.04	2.00	0	59.19	Peak	68.20	Pass
		5150.0	-48.91	2.00	0	48.32	Average	54.00	Pass
		4500.0	-36.56	2.00	0	60.67	Peak	68.20	Pass
		5150.0	-47.82	2.00	0	49.41	Average	54.00	Pass
		5350.0	-38.04	2.00	0	59.19	Peak	68.20	Pass
		5460.0	-48.91	2.00	0	48.32	Average	54.00	Pass
		5350.0	-36.56	2.00	0	60.67	Peak	68.20	Pass
		5460.0	-47.82	2.00	0	49.41	Average	54.00	Pass

Undesirable Emissions Measurement



Date: 17.SEP.2019 13:58:53

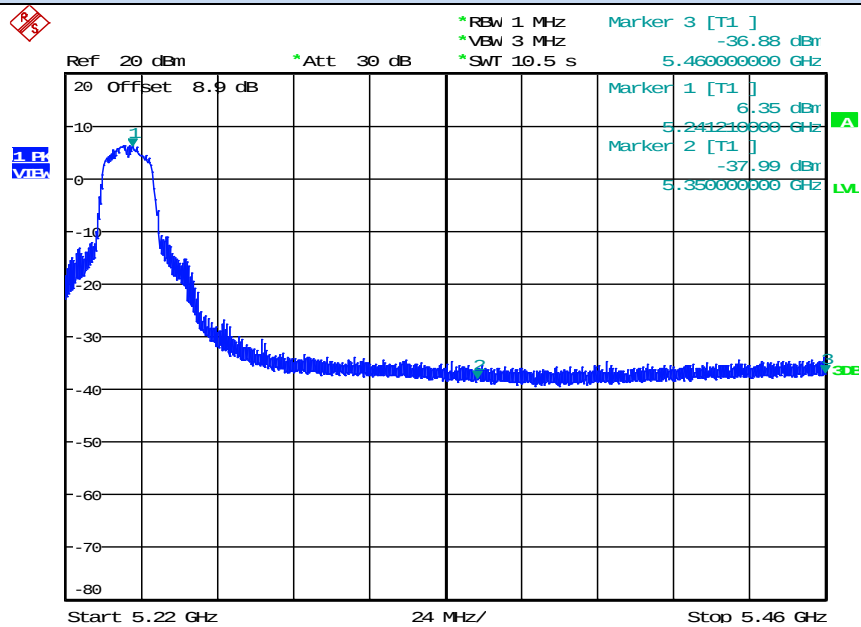
IEEE 802.11a / Channel 36 / 5180MHz / Peak



Date: 17.SEP.2019 13:59:35

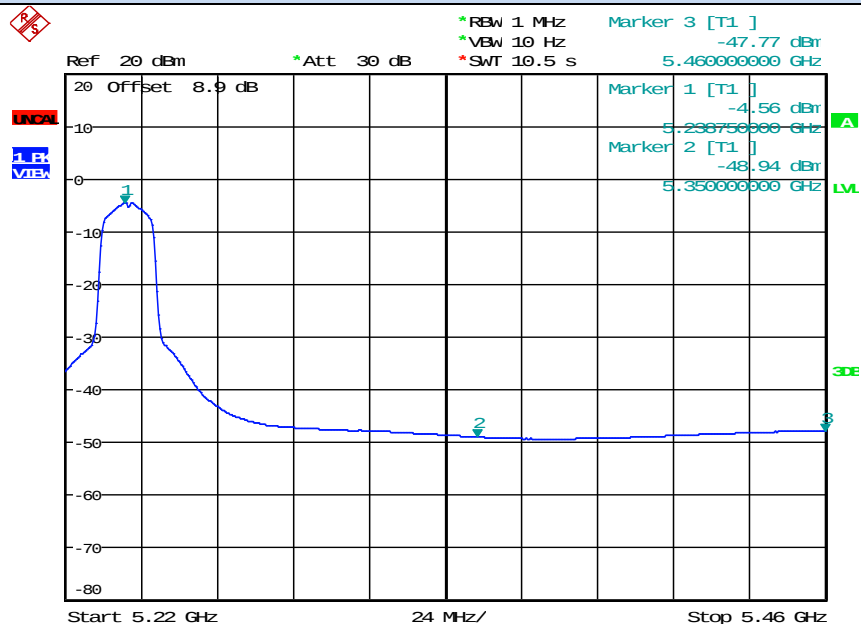
IEEE 802.11a / Channel 36 / 5180MHz / Average

Undesirable Emissions Measurement



Date: 17.SEP.2019 14:03:19

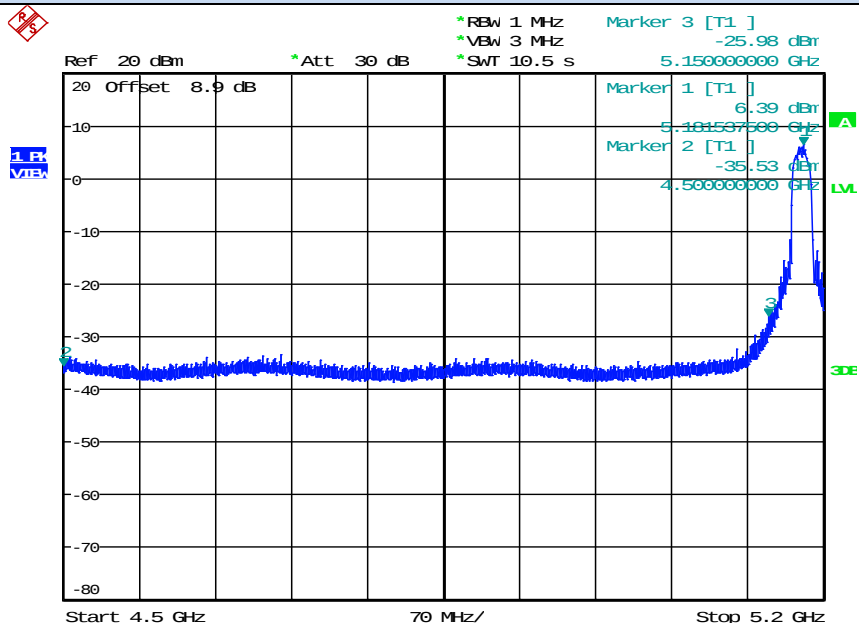
IEEE 802.11a / Channel 48 / 5240MHz / Peak



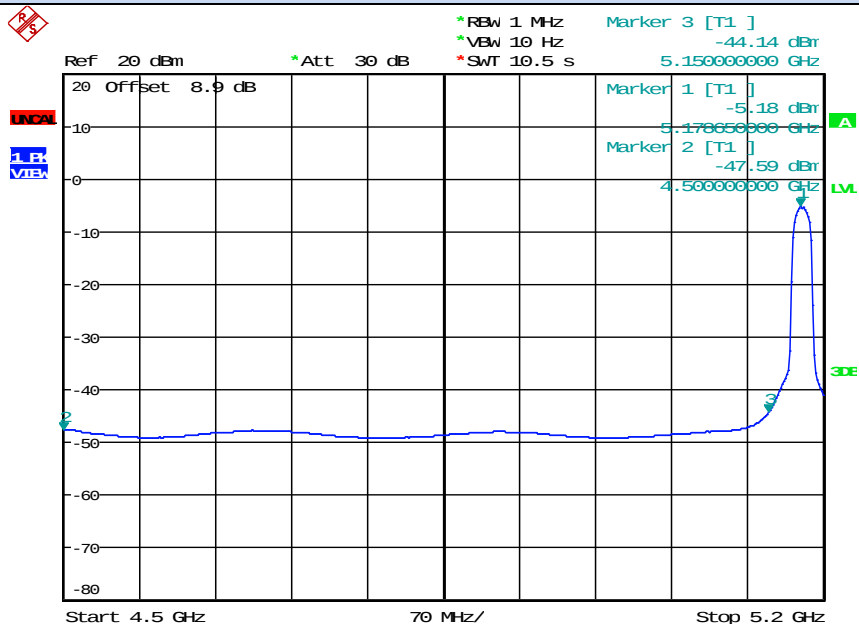
Date: 17.SEP.2019 14:03:51

IEEE 802.11a / Channel 48 / 5240MHz / Average

Undesirable Emissions Measurement

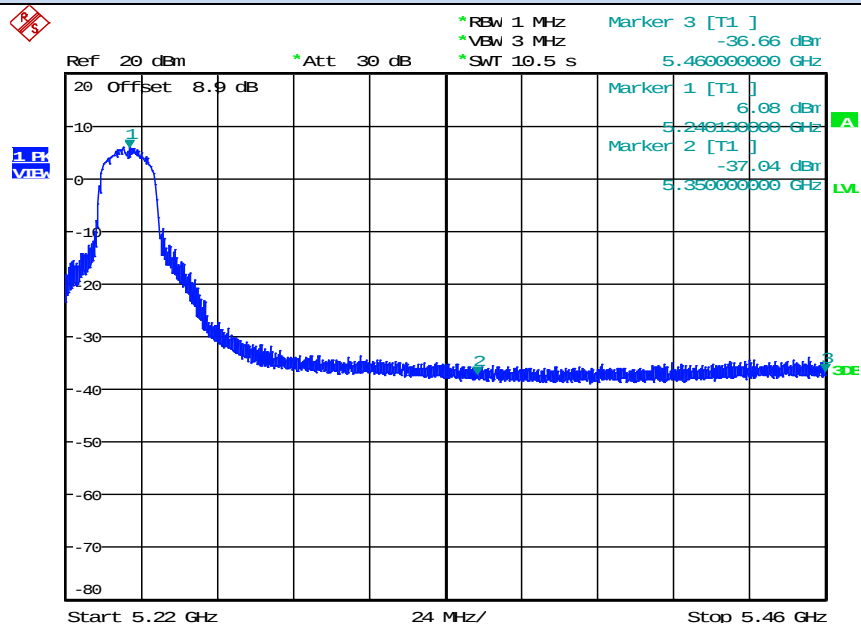


IEEE 802.11n20 / Channel 36 / 5180MHz / Peak



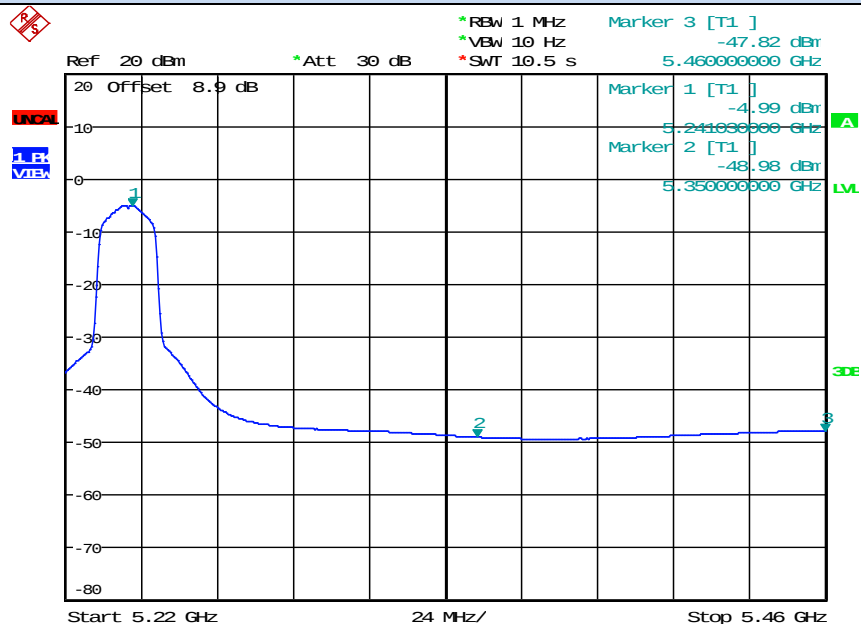
IEEE 802.11n20 / Channel 36 / 5180MHz / Average

Undesirable Emissions Measurement



Date: 17.SEP.2019 14:31:43

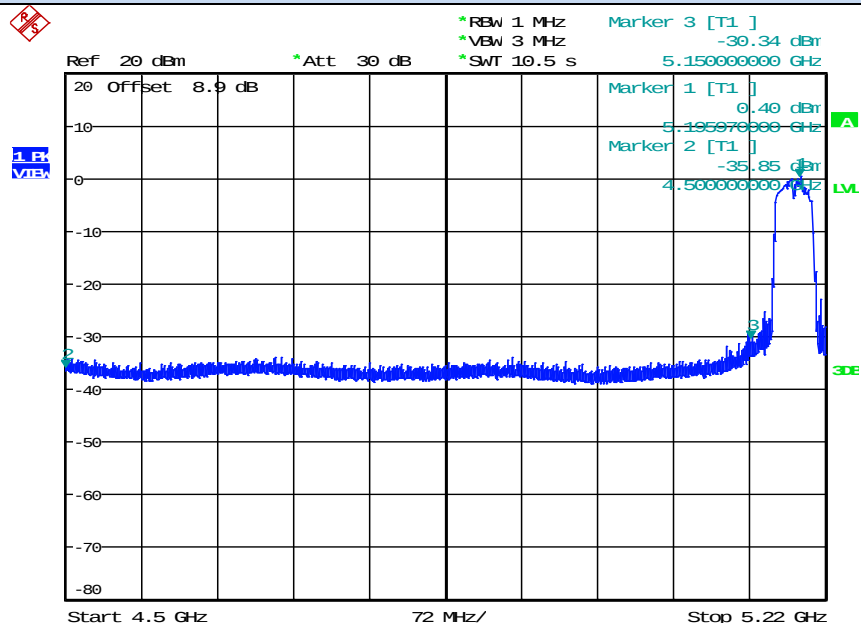
IEEE 802.11n20 / Channel 48 / 5240MHz / Peak



Date: 17.SEP.2019 14:32:28

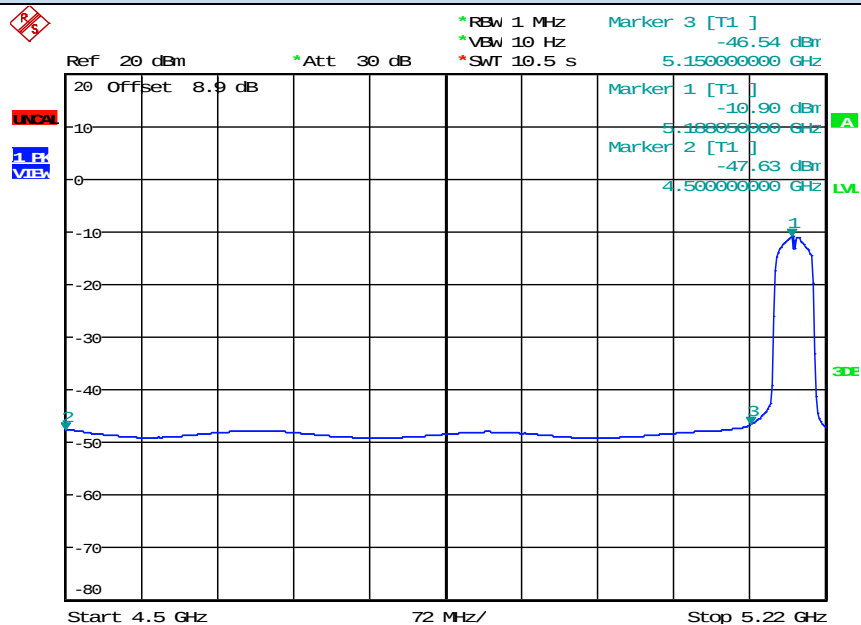
IEEE 802.11n20 / Channel 48 / 5240MHz / Average

Undesirable Emissions Measurement



Date: 17.SEP.2019 14:48:19

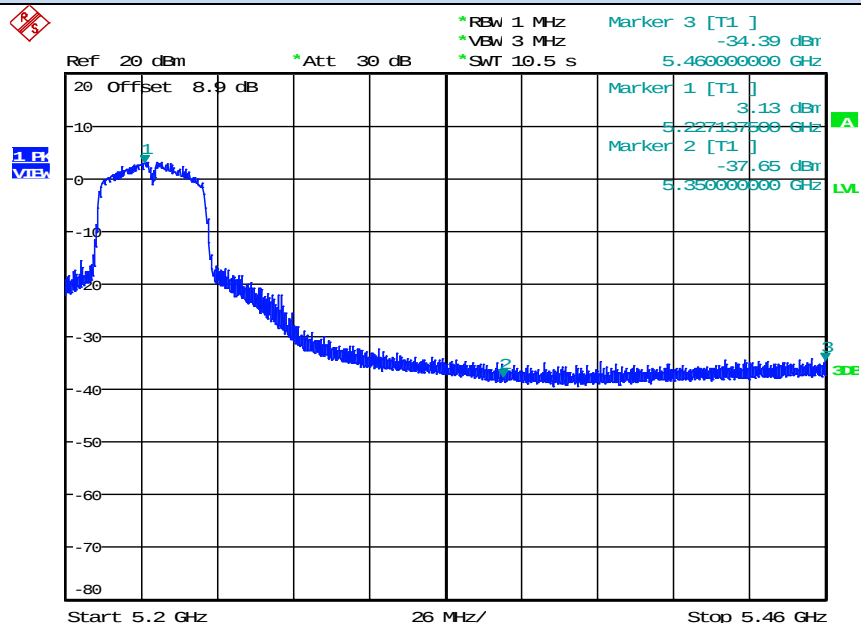
IEEE 802.11n40 / Channel 38 / 5190MHz / Peak



Date: 17.SEP.2019 14:48:53

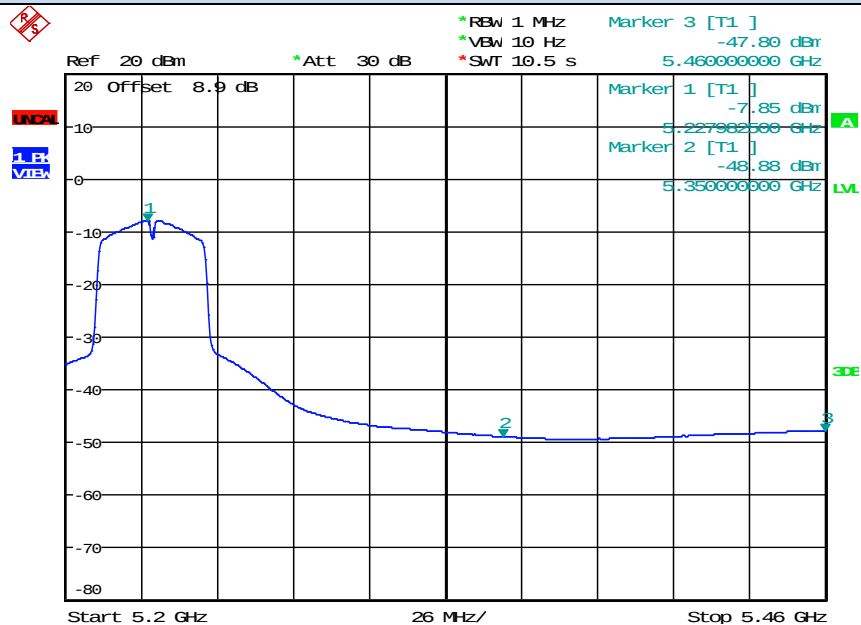
IEEE 802.11n40 / Channel 38 / 5190MHz / Average

Undesirable Emissions Measurement



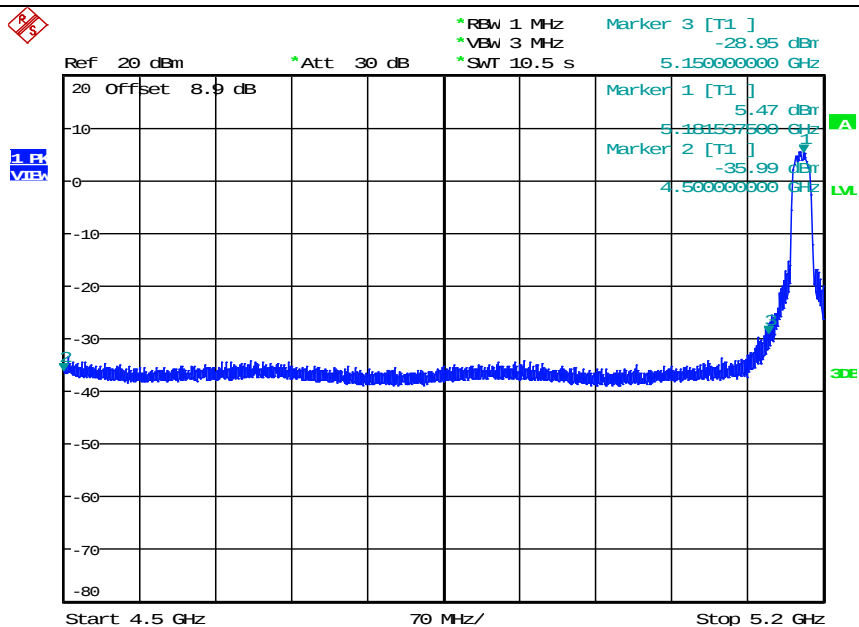
Date: 17.SEP.2019 14:51:00

IEEE 802.11n40 / Channel 46 / 5230MHz / Peak



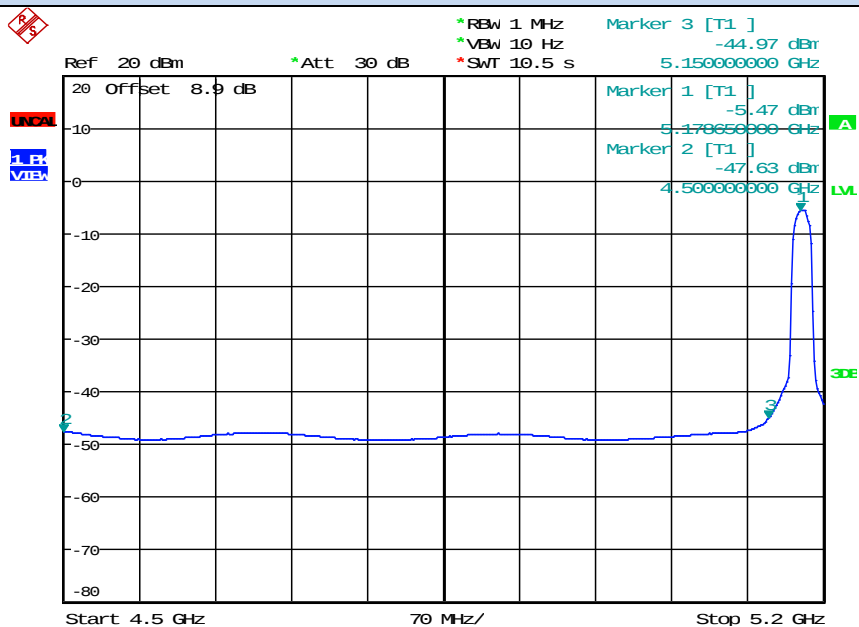
Date: 17.SEP.2019 14:51:29

IEEE 802.11n40 / Channel 46 / 5230MHz / Average



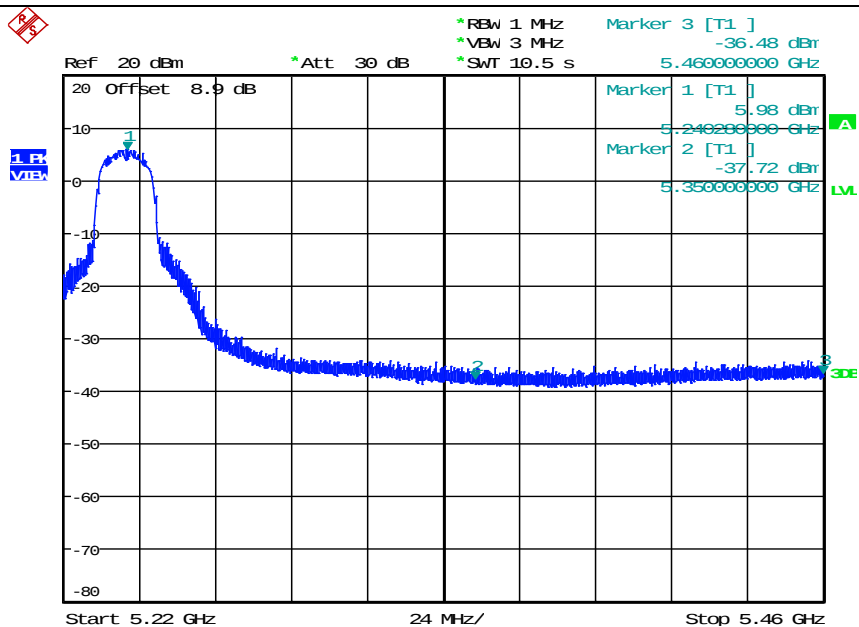
Date: 17.SEP.2019 15:15:47

IEEE 802.11ac20 / Channel 36 / 5180MHz / Peak



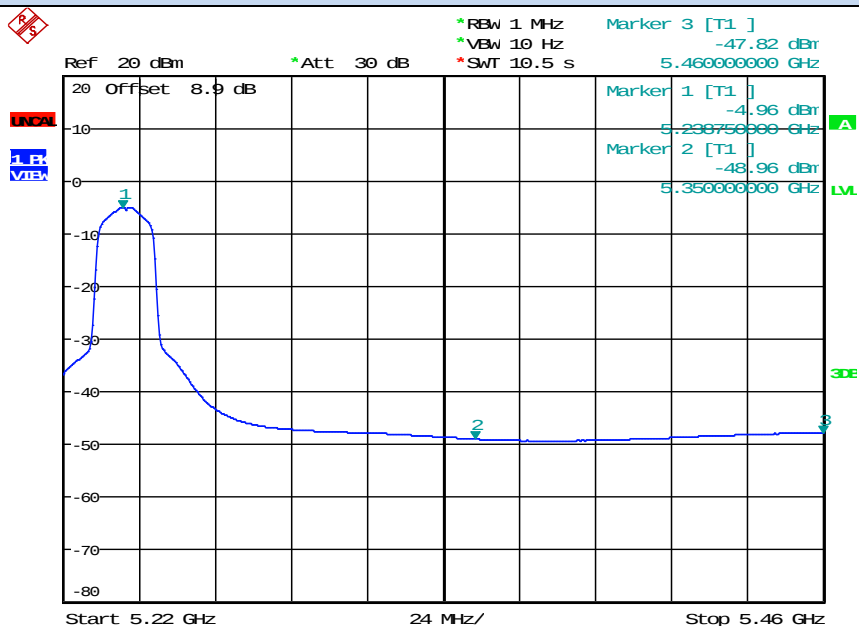
Date: 17.SEP.2019 15:16:21

IEEE 802.11ac20 / Channel 36 / 5180MHz / Average



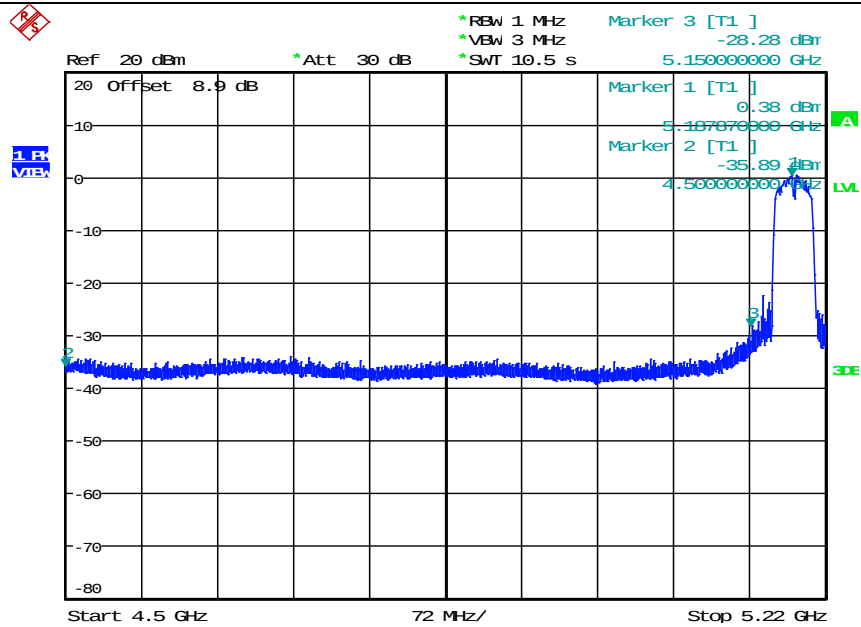
Date: 17.SEP.2019 15:21:52

IEEE 802.11ac20 / Channel 48 / 5240MHz / Peak



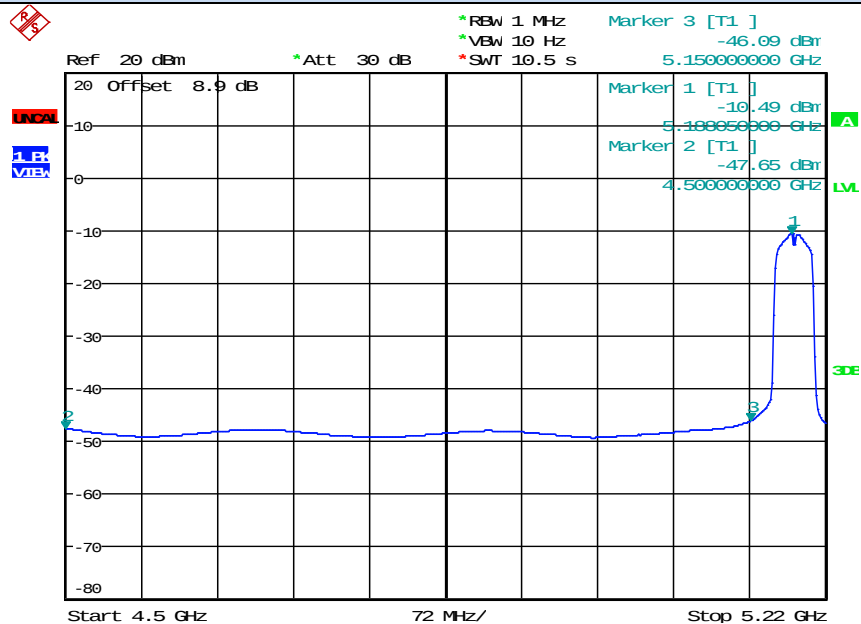
Date: 17.SEP.2019 15:24:06

IEEE 802.11ac20 / Channel 48 / 5240MHz / Average



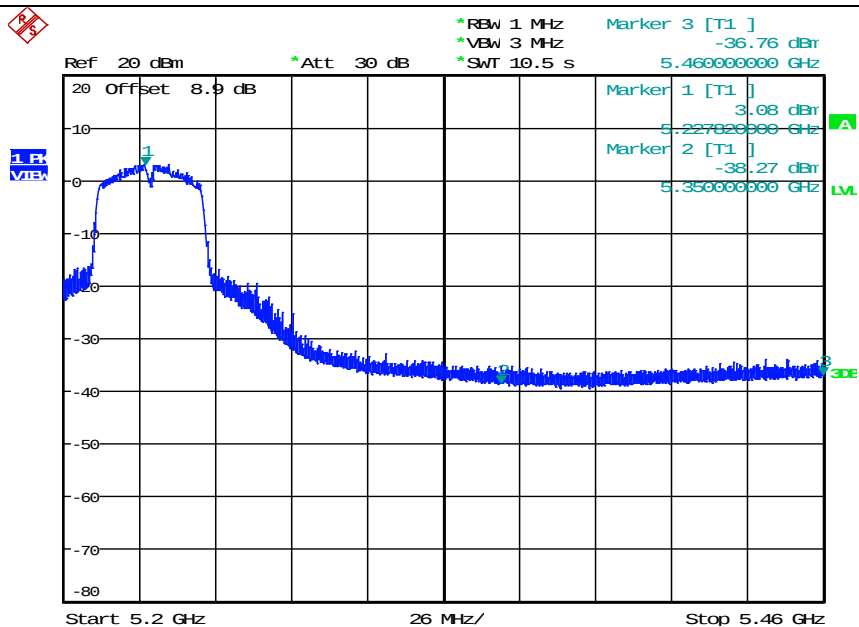
Date: 17.SEP.2019 15:38:43

IEEE 802.11ac40 / Channel 38 / 5190MHz / Peak



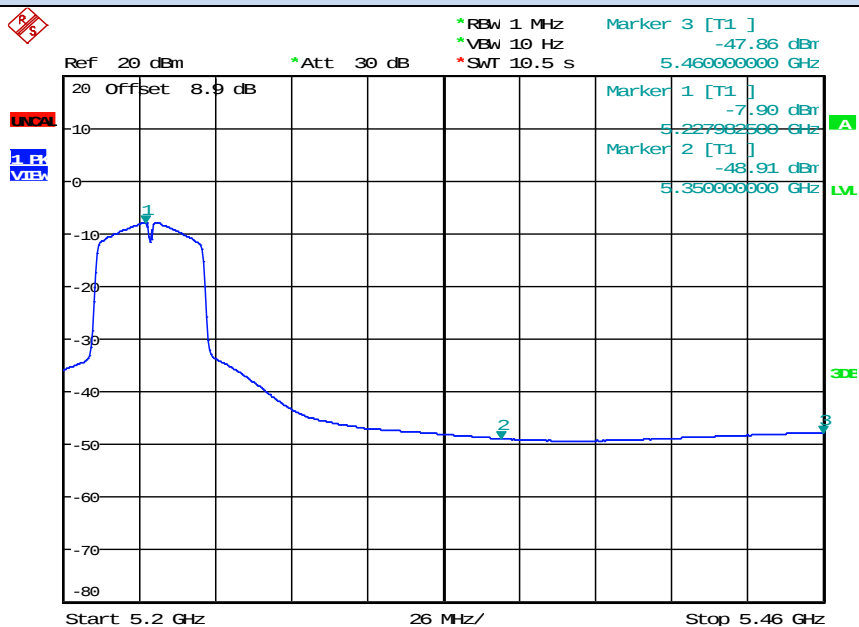
Date: 17.SEP.2019 15:39:15

IEEE 802.11ac40 / Channel 38 / 5190MHz / Average



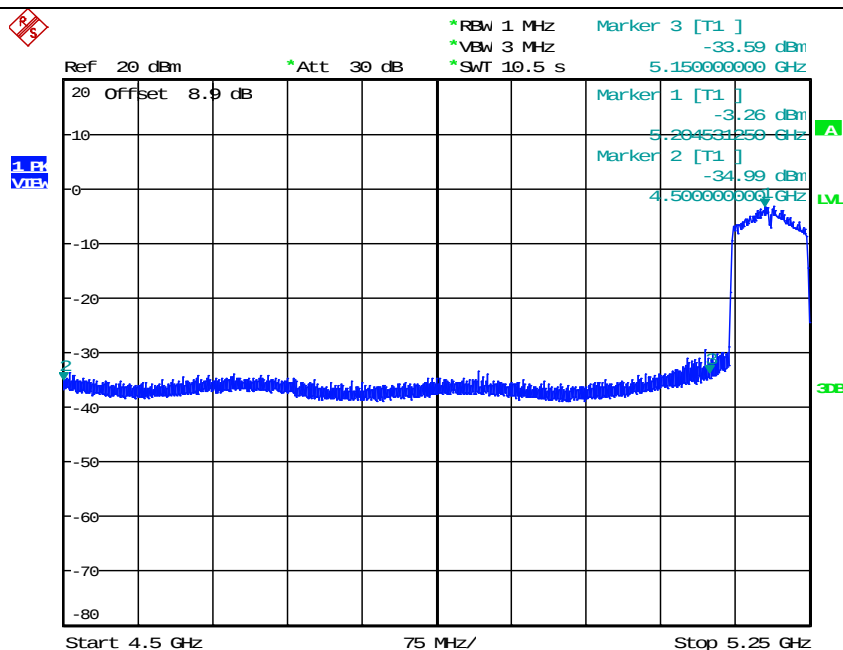
Date: 17.SEP.2019 15:41:18

IEEE 802.11ac40 / Channel 46/ 5230MHz / Peak



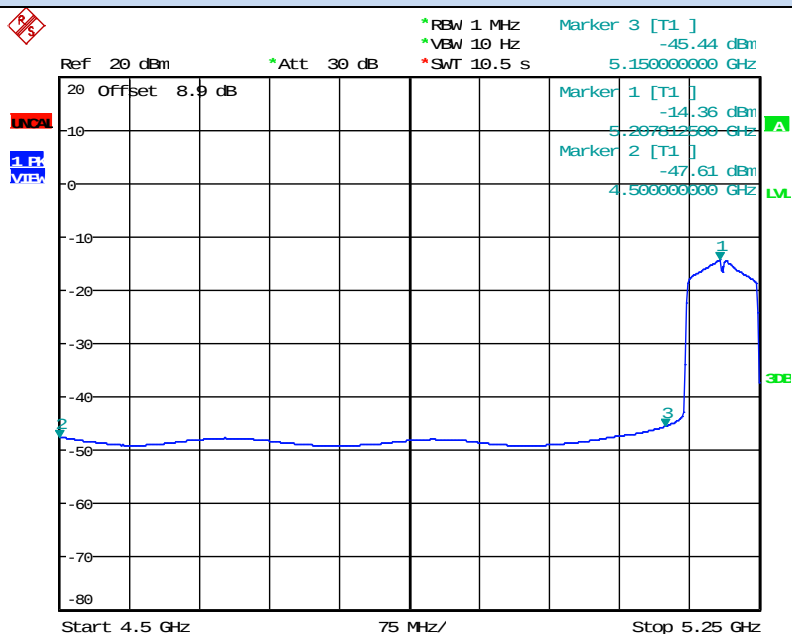
Date: 17.SEP.2019 15:41:48

IEEE 802.11ac40 / Channel 46/ 5230MHz / Average



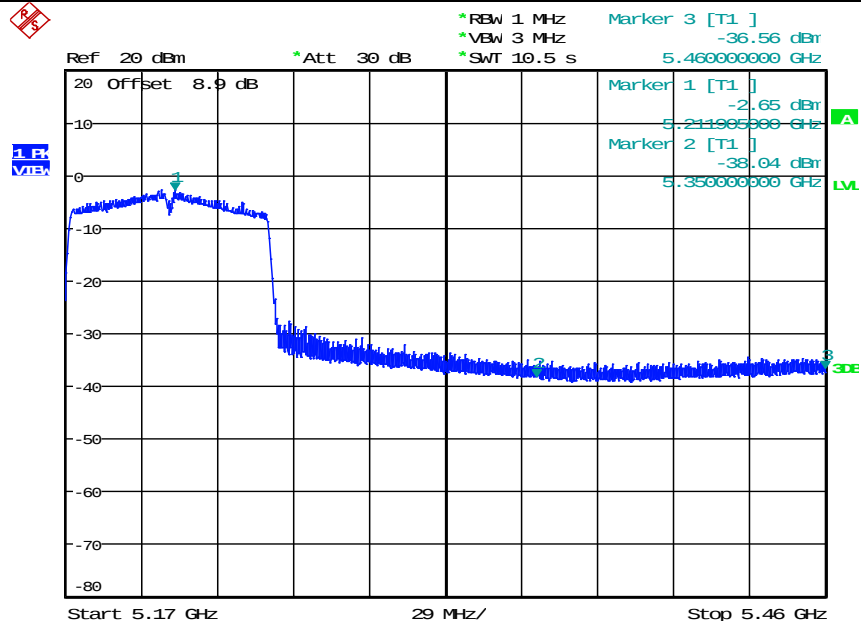
Date: 17.SEP.2019 16:05:36

IEEE 802.11ac80 / Channel 42 / 5210MHz / Peak



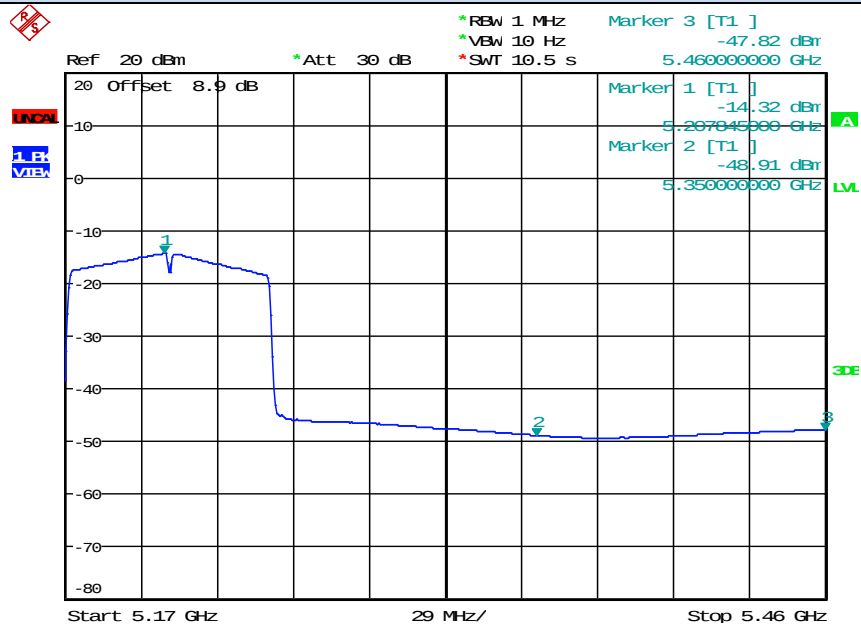
Date: 17.SEP.2019 16:06:10

IEEE 802.11ac80 / Channel 42 / 5210MHz / Average



Date: 17.SEP.2019 16:06:44

IEEE 802.11ac80 / Channel 42/ 5210MHz / Peak



Date: 17.SEP.2019 16:07:15

IEEE 802.11ac80 / Channel 42 / 5210MHz / Average