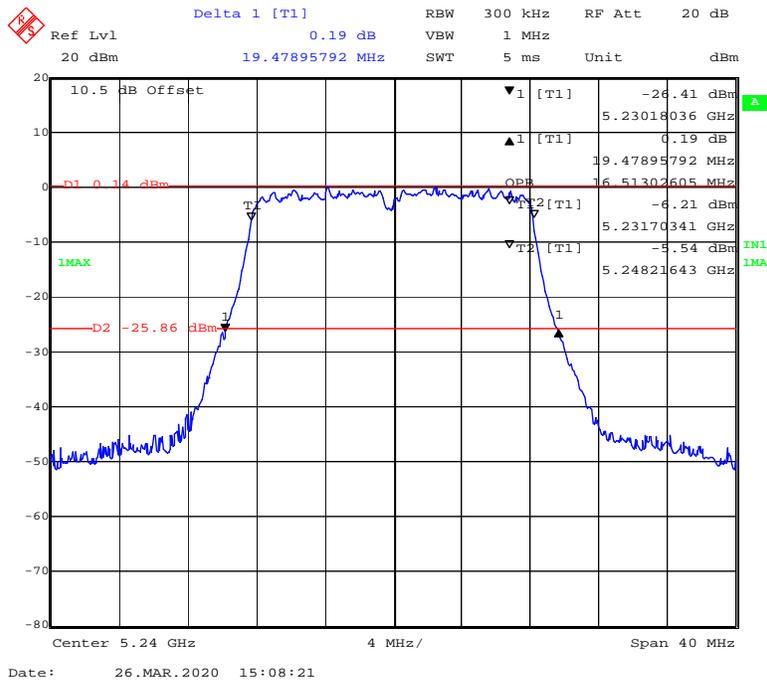
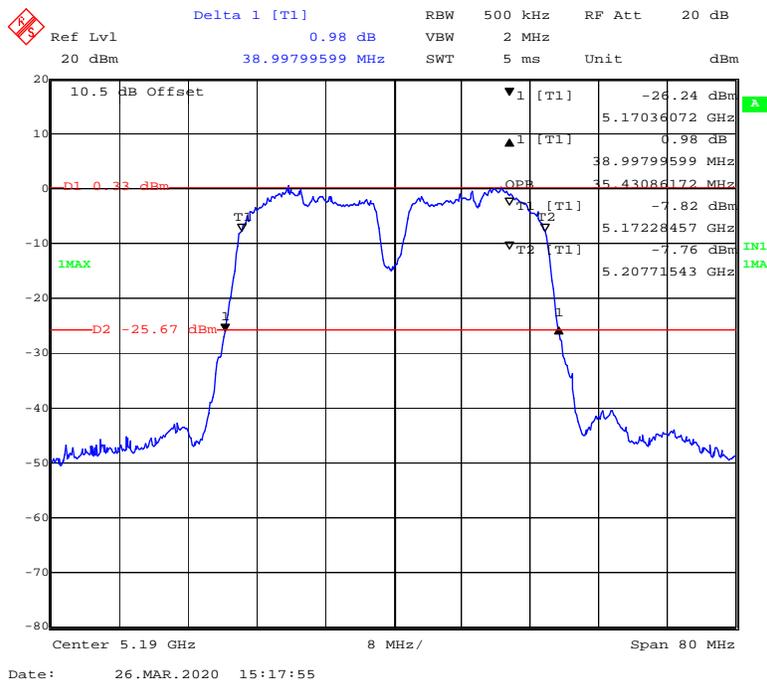


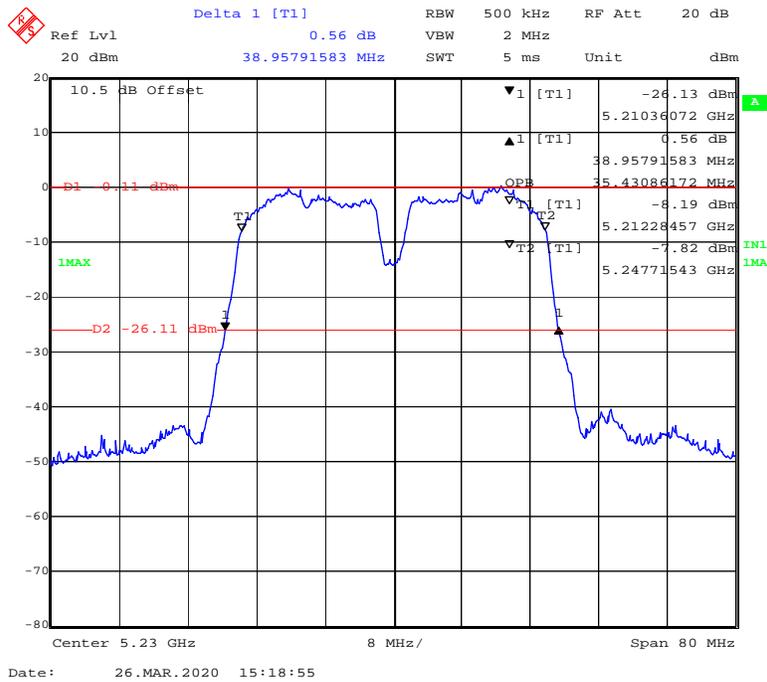
802.11n-HT20 mode, 5240MHz



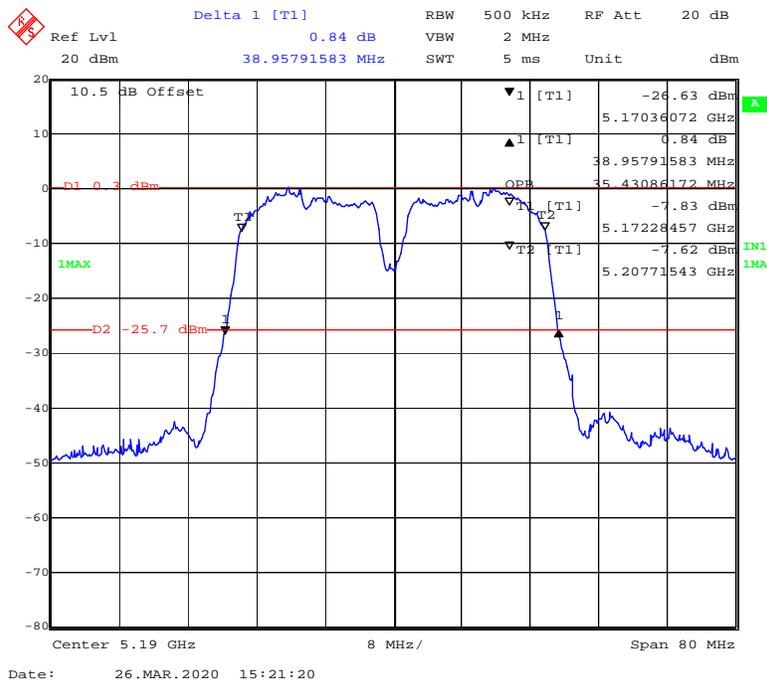
802.11ac40 mode, 5190MHz



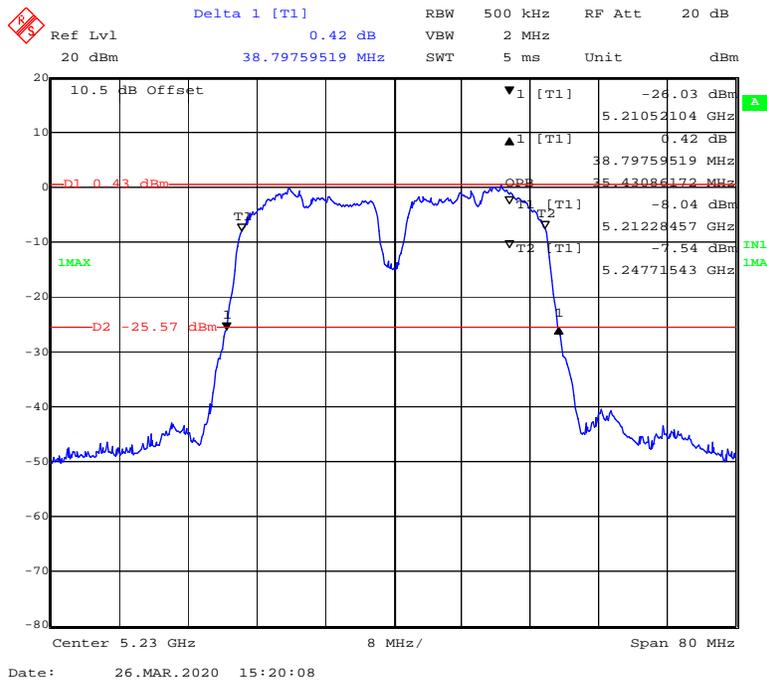
802.11 ac40 mode, 5230MHz



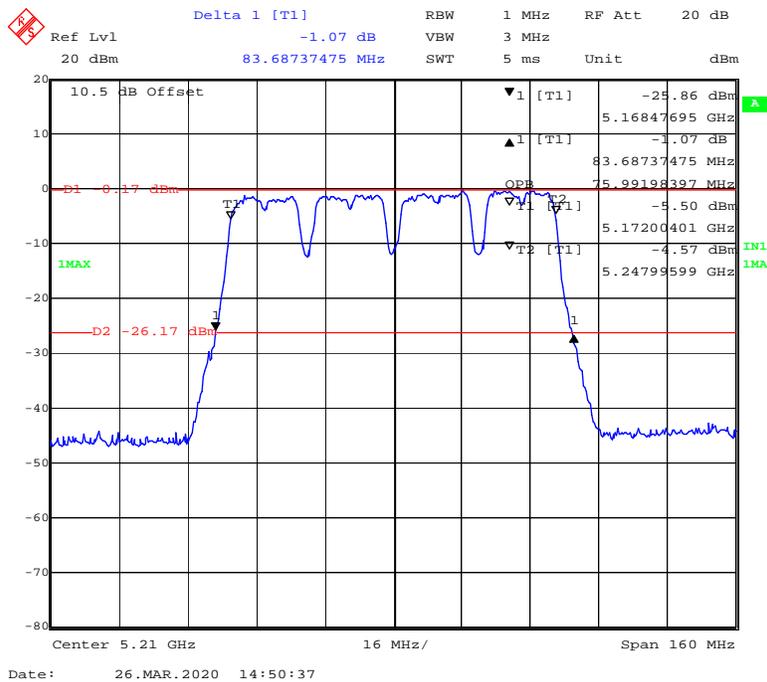
802.11n-HT40 mode, 5190MHz



802.11n-HT40 mode, 5230MHz



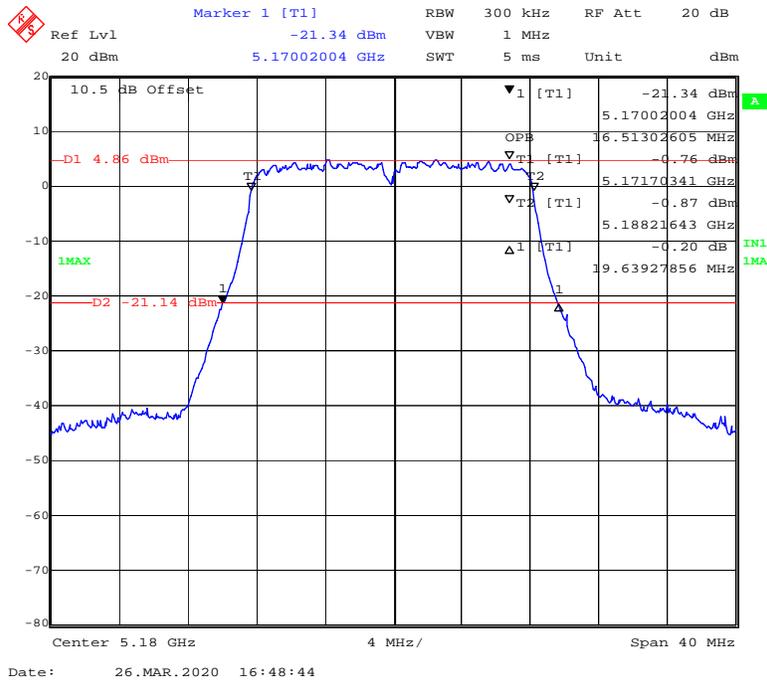
802.11ac80 mode, 5210MHz



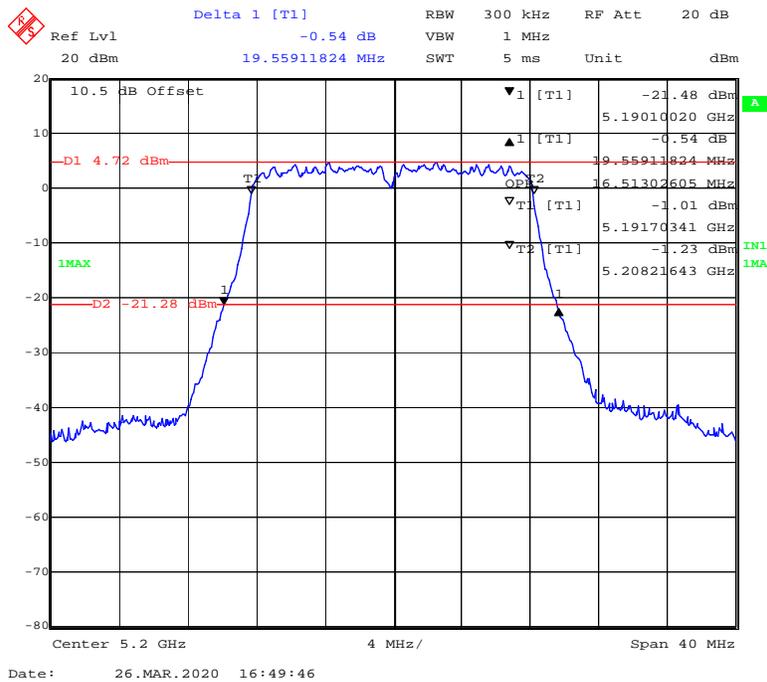
Chain1:

26 Bandwidth&99% Occupied Bandwidth

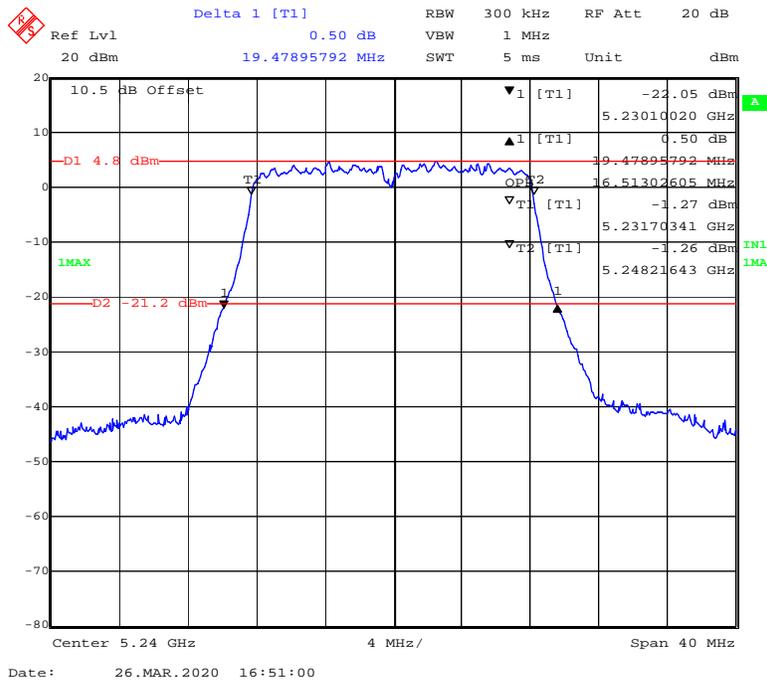
802.11a mode, 5180MHz



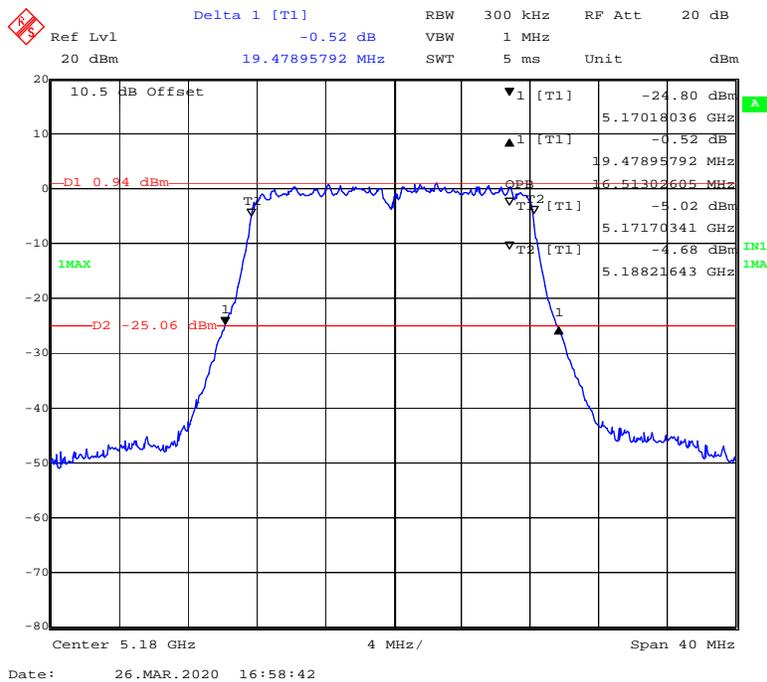
802.11a mode, 5200MHz



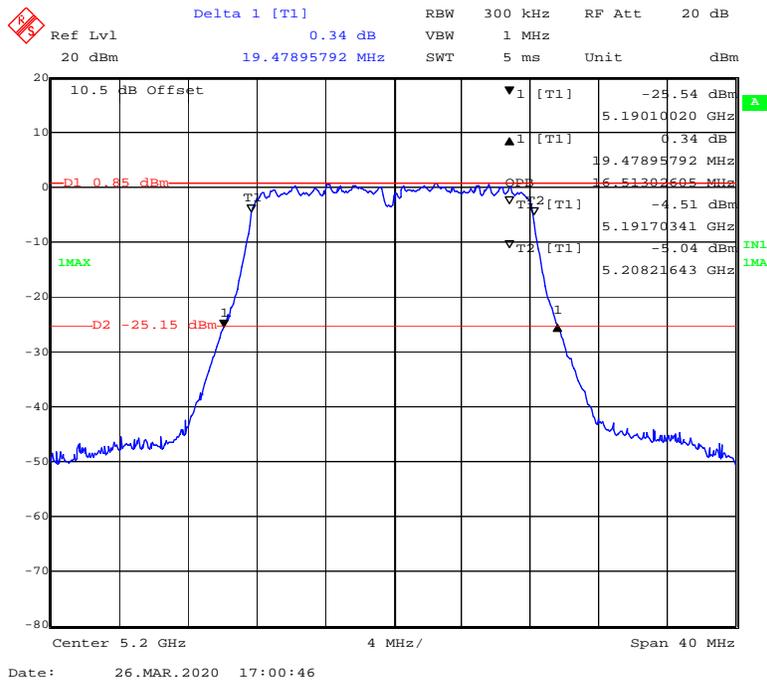
802.11a mode, 5240MHz



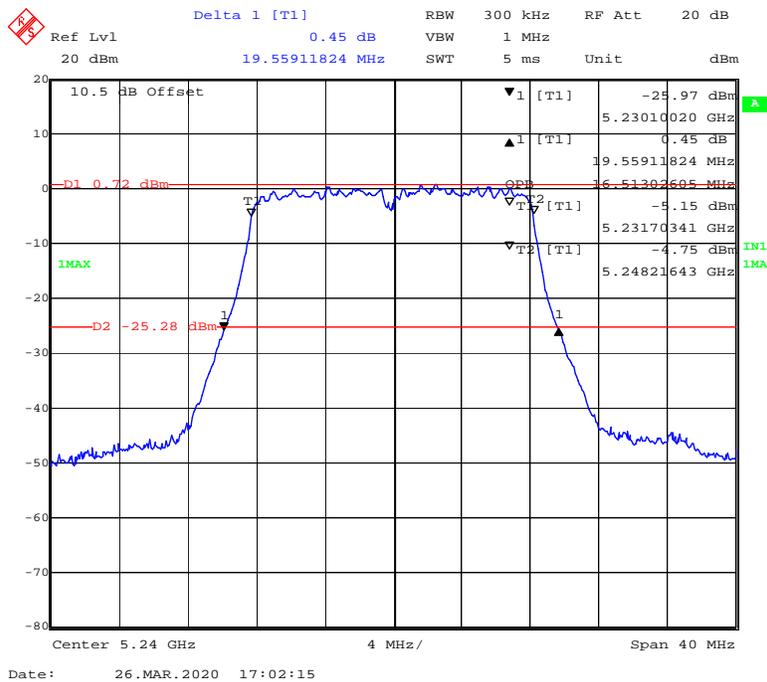
802.11ac20 mode, 5180MHz



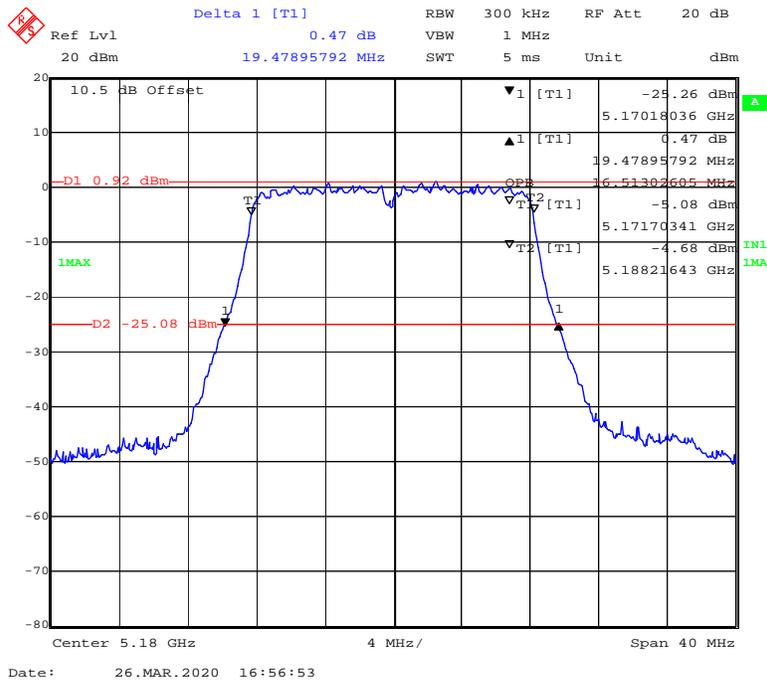
802.11 ac20 mode, 5200MHz



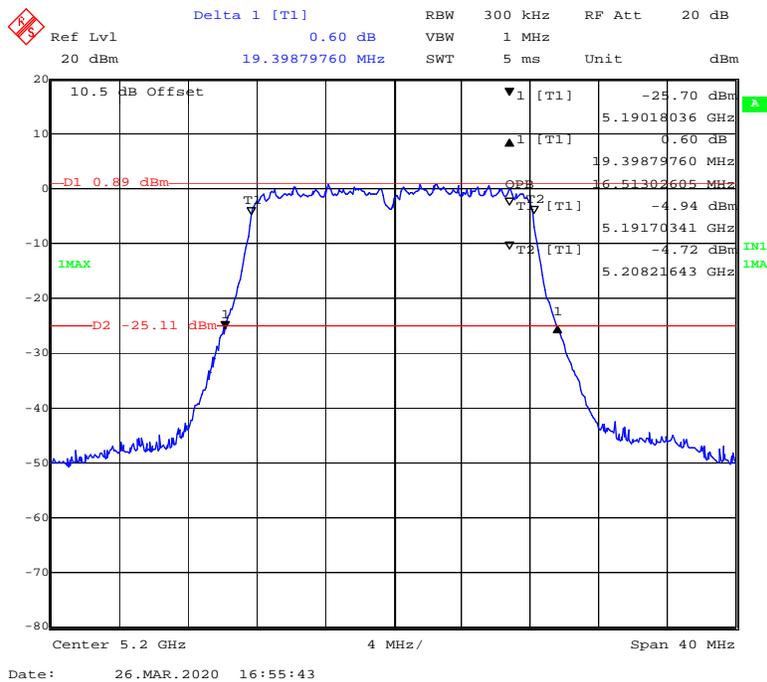
802.11 ac20 mode, 5240MHz



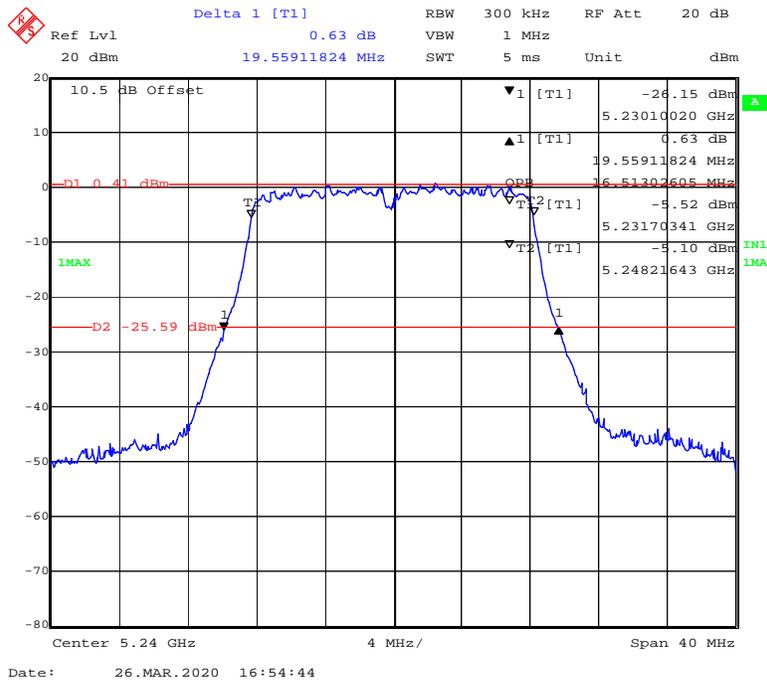
802.11n-HT20 mode, 5180MHz



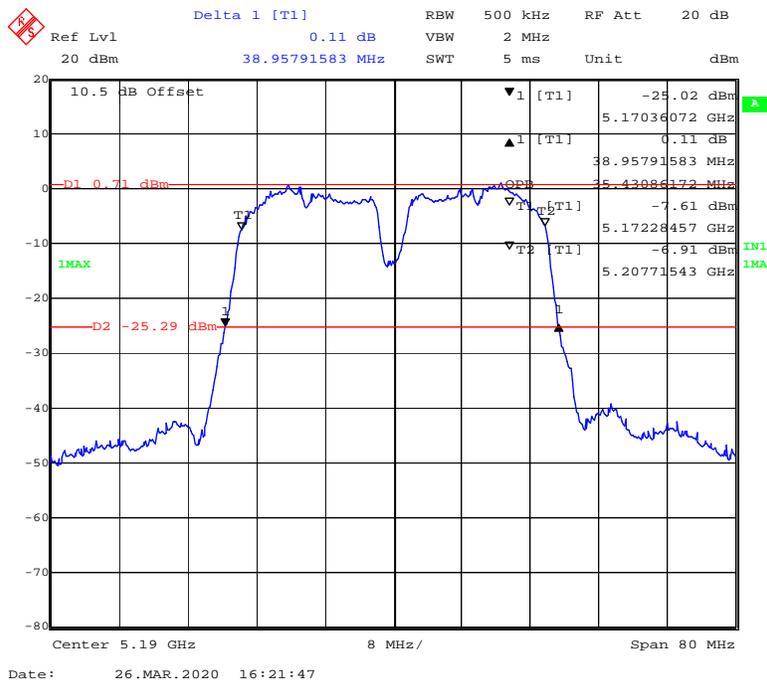
802.11n-HT20 mode, 5200MHz



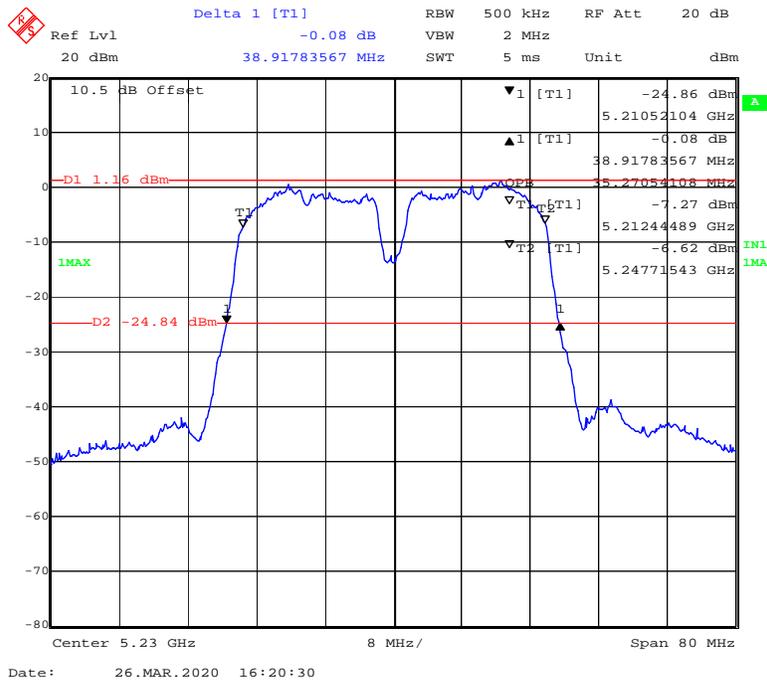
802.11n-HT20 mode, 5240MHz



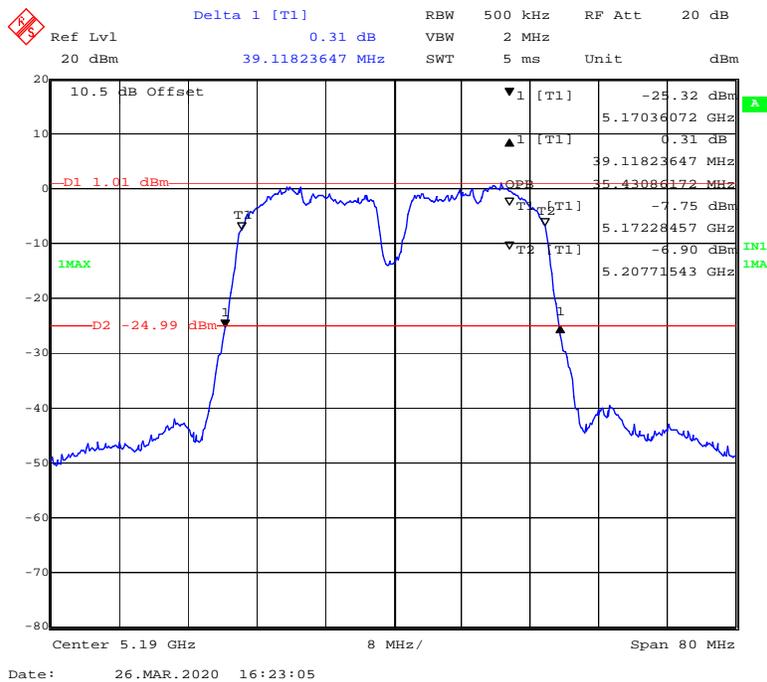
802.11ac40 mode, 5190MHz



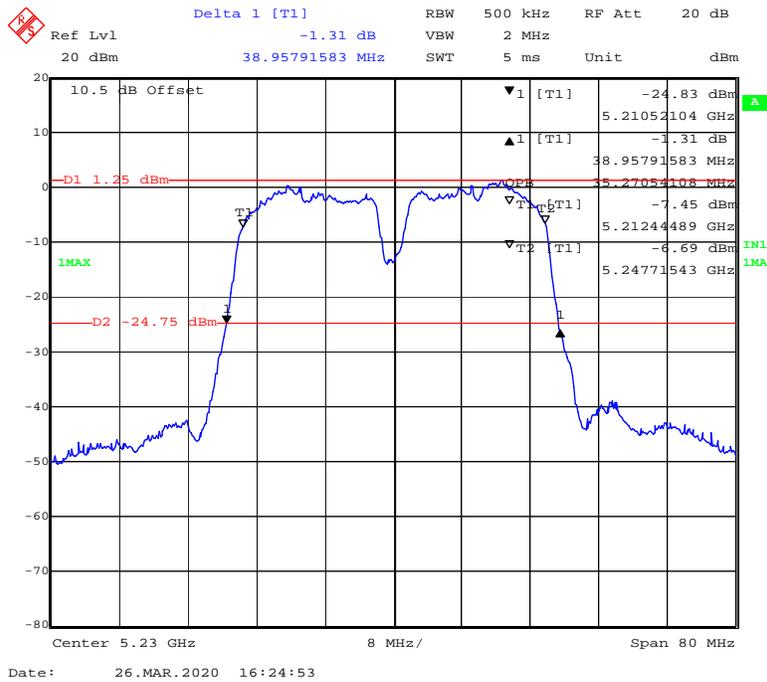
802.11 ac40 mode, 5230MHz



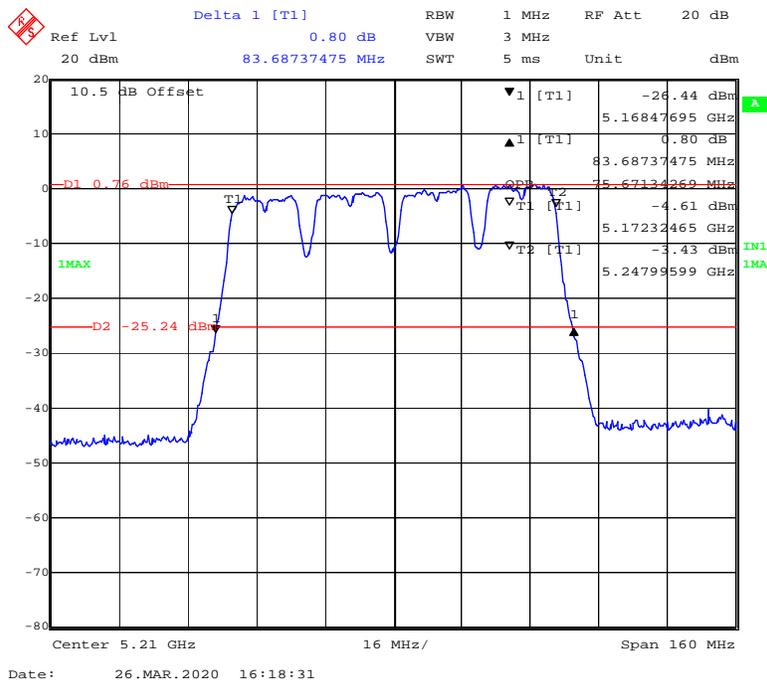
802.11n-HT40 mode, 5190MHz



802.11n-HT40 mode, 5230MHz

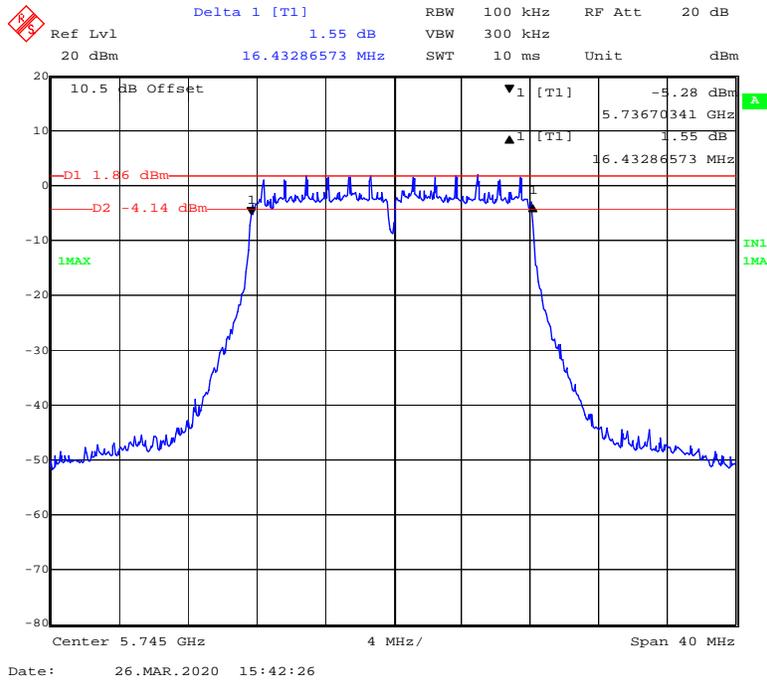


802.11ac80 mode, 5210MHz

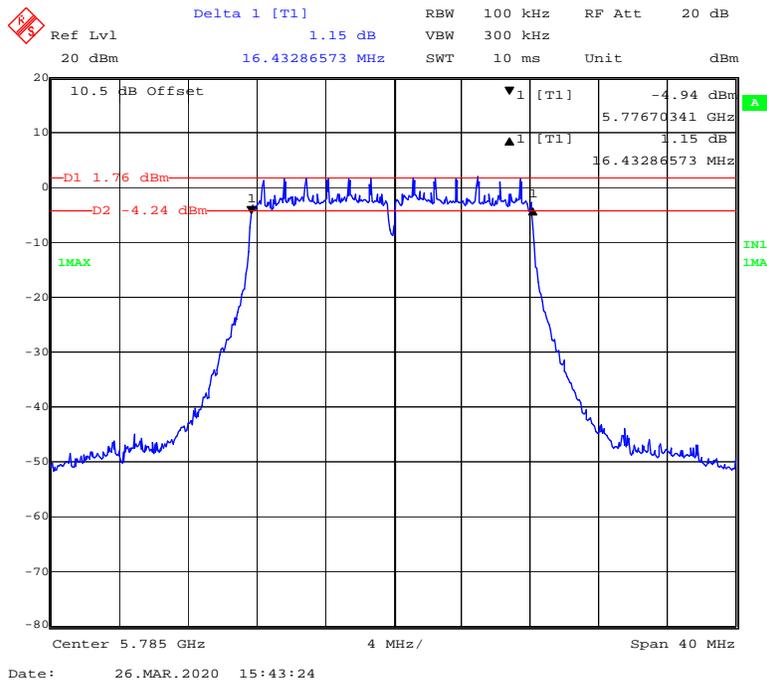


5725-5850 MHz Band
 Chain0:
 6 Bandwidth

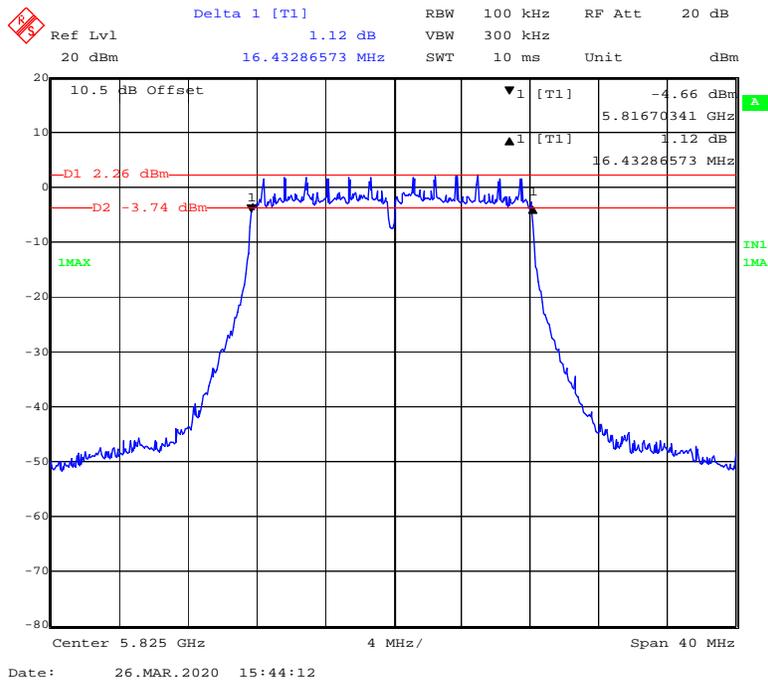
802.11a mode, 5745MHz



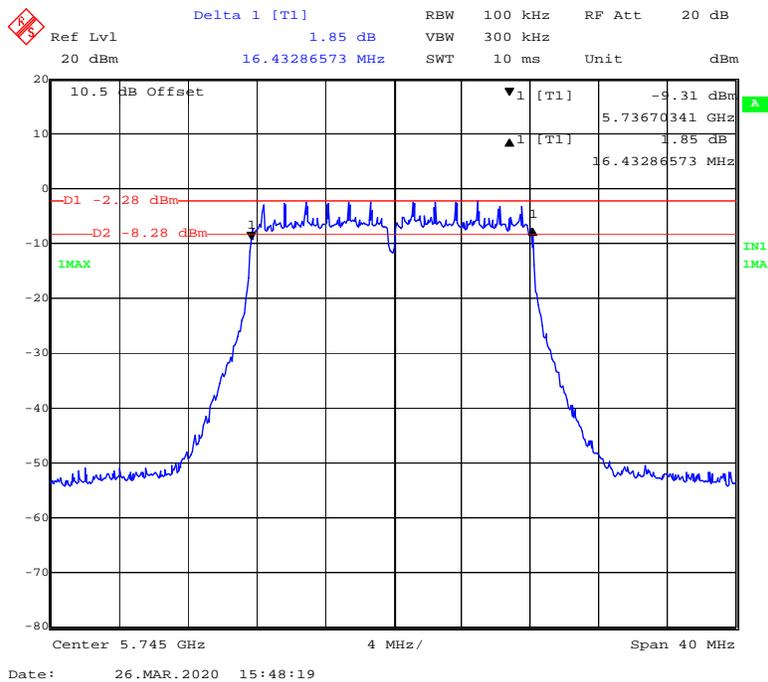
802.11a mode, 5785MHz



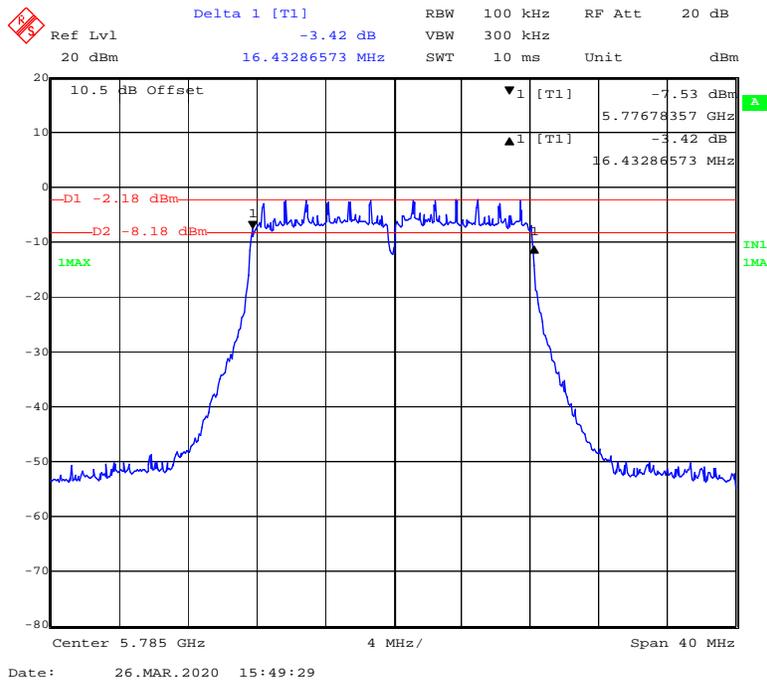
802.11a mode, 5825MHz



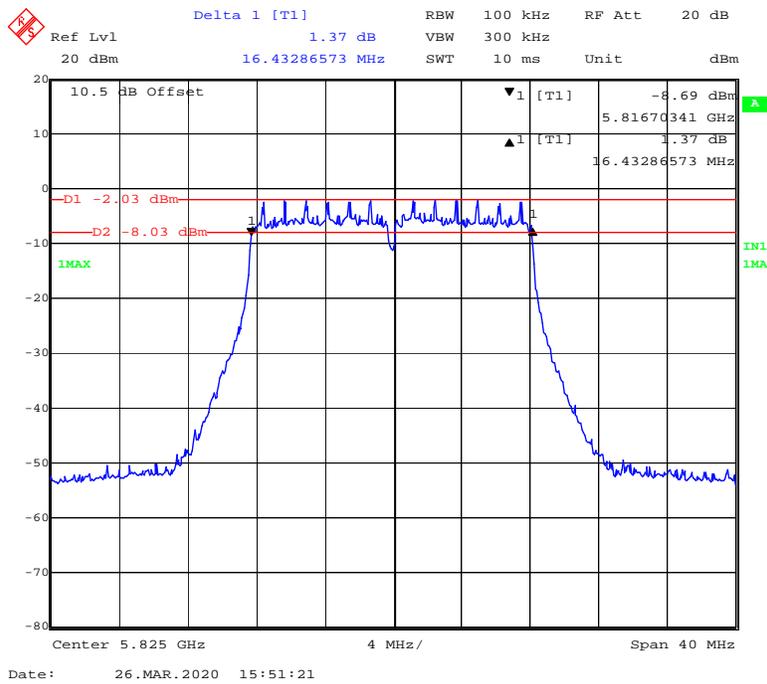
802.11ac20 mode, 5745MHz



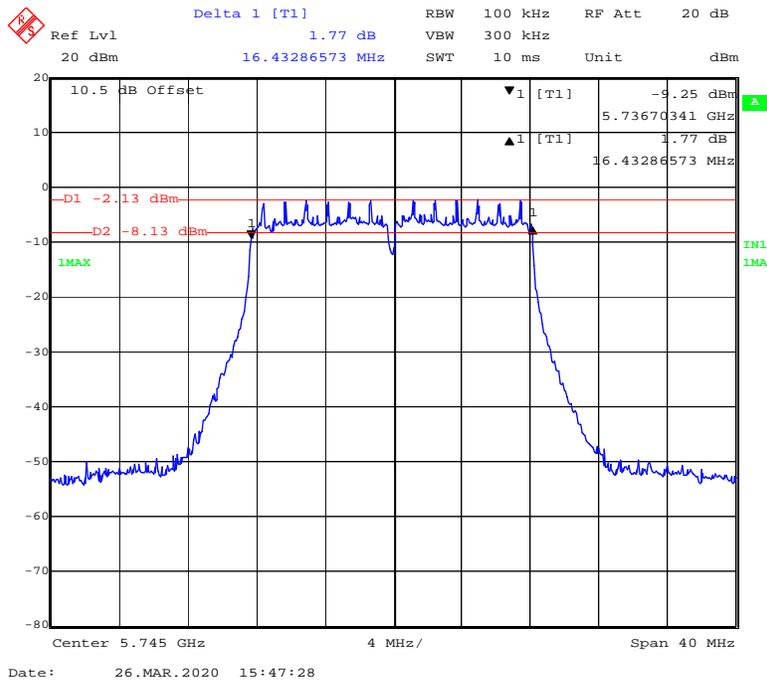
802.11 ac20 mode, 5785MHz



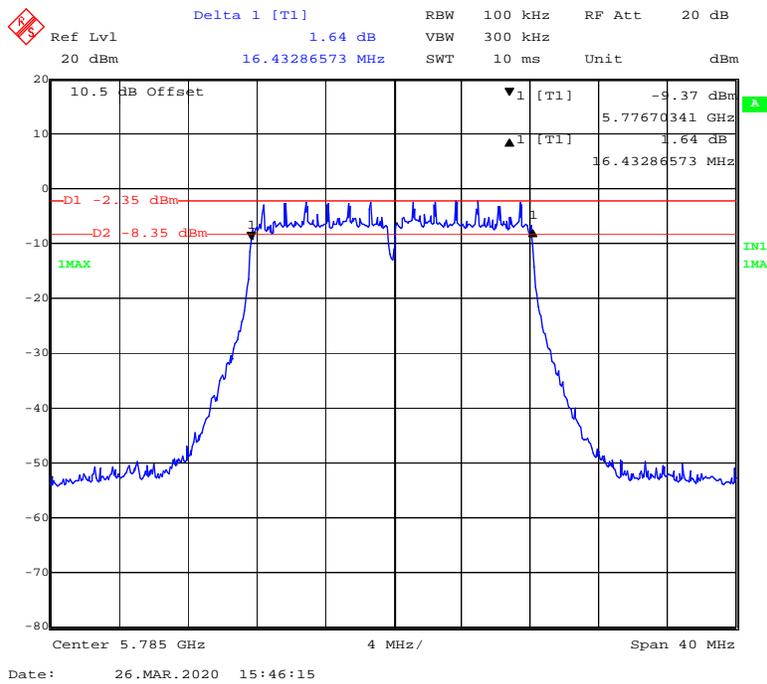
802.11 ac20 mode, 5825MHz



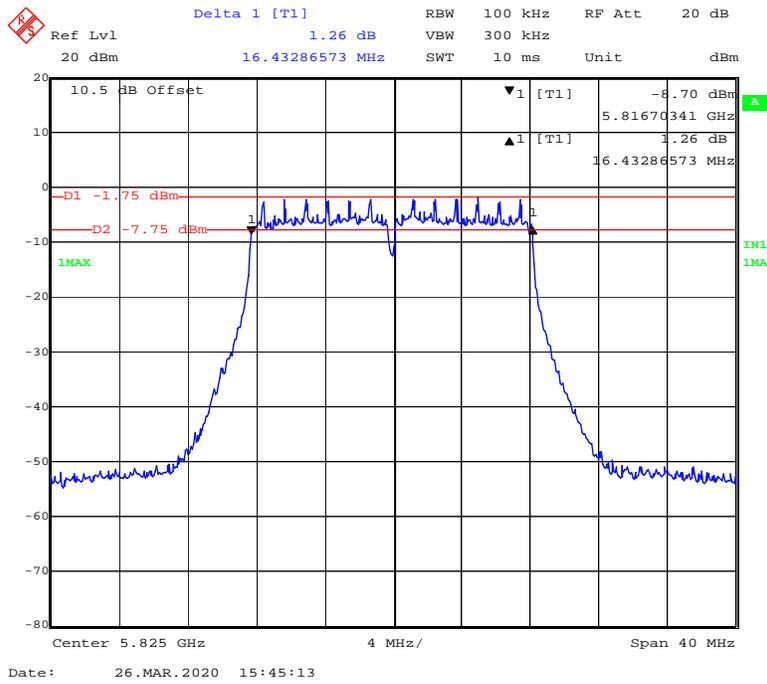
802.11n-HT20 mode, 5745MHz



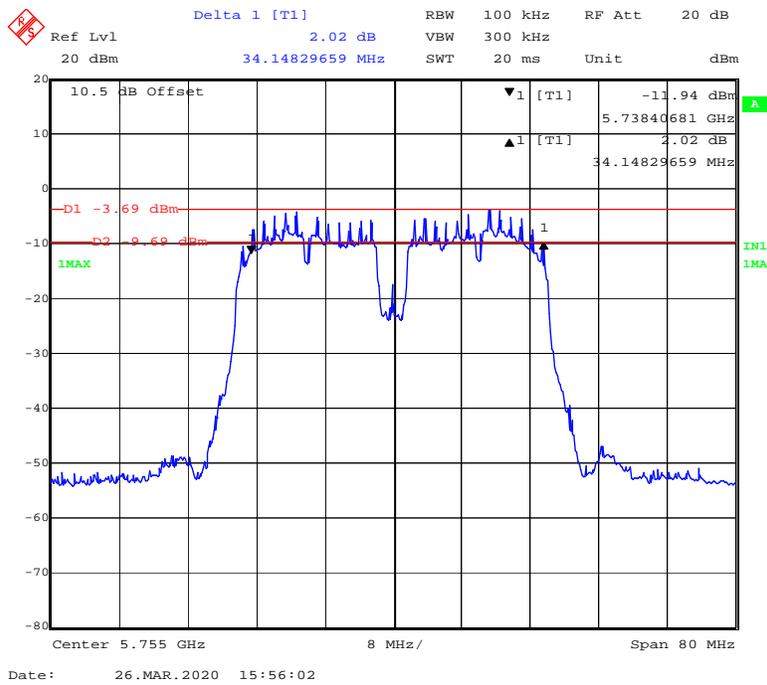
802.11n-HT20 mode, 5785MHz



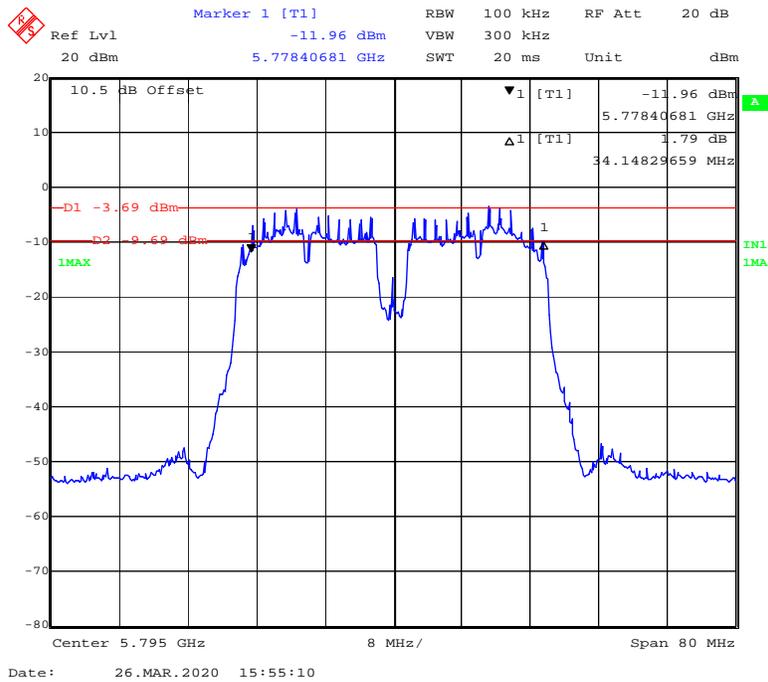
802.11n-HT20 mode, 5825MHz



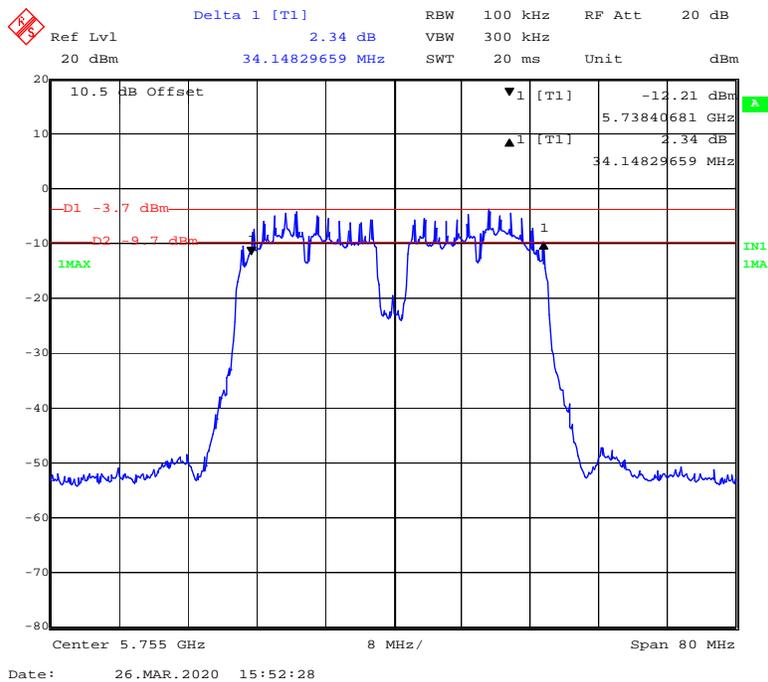
802.11ac40 mode, 5755MHz



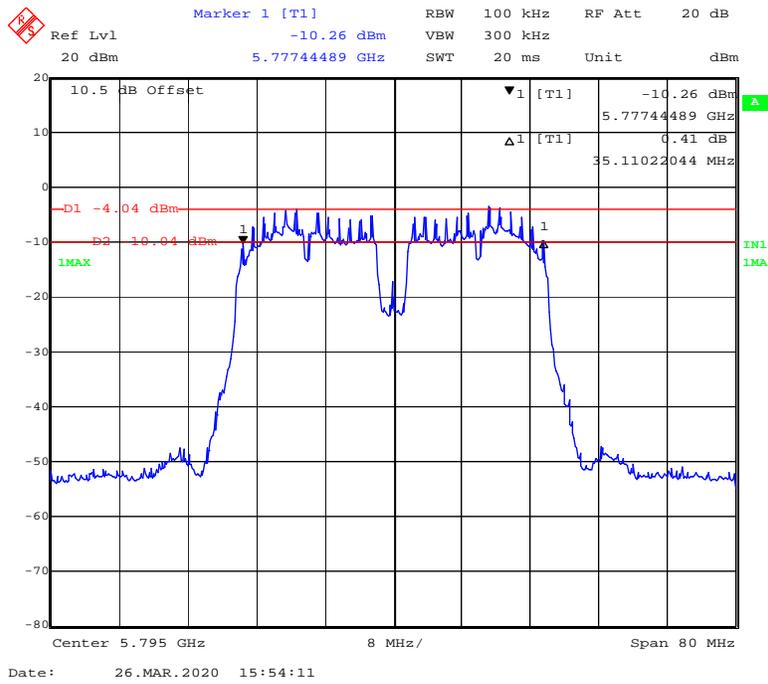
802.11 ac40 mode, 5795MHz



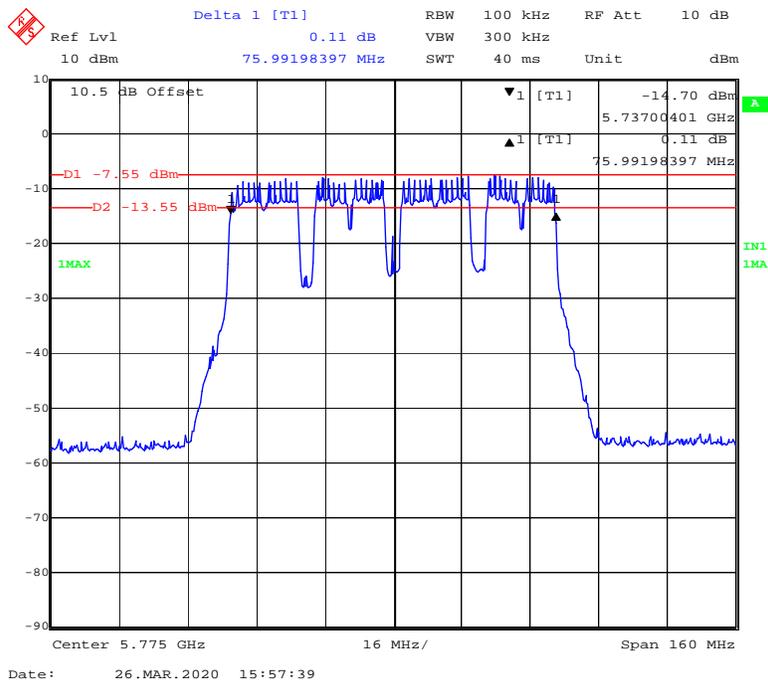
802.11n-HT40 mode, 5755MHz



802.11n-HT40 mode, 5795MHz



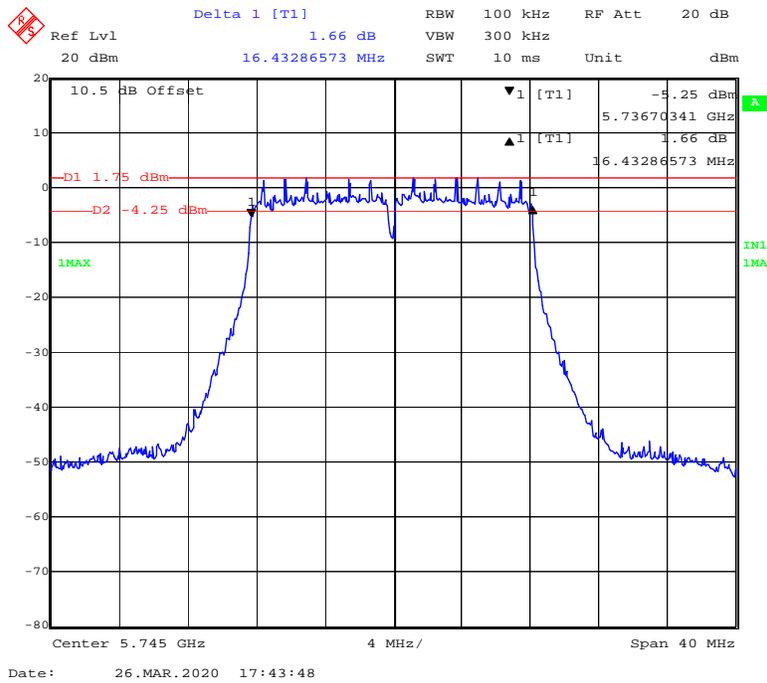
802.11ac80 mode, 5775MHz



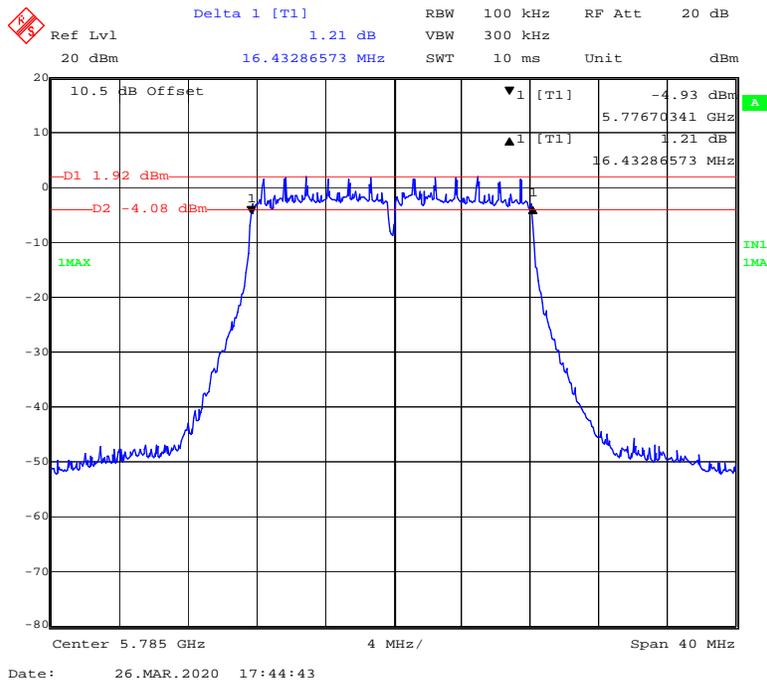
Chain1:

6 Bandwidth

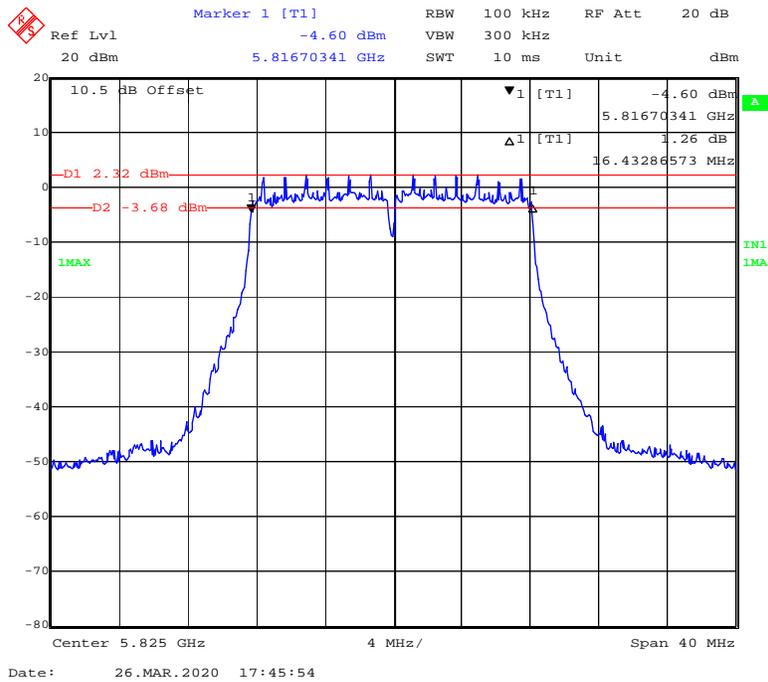
802.11a mode, 5745MHz



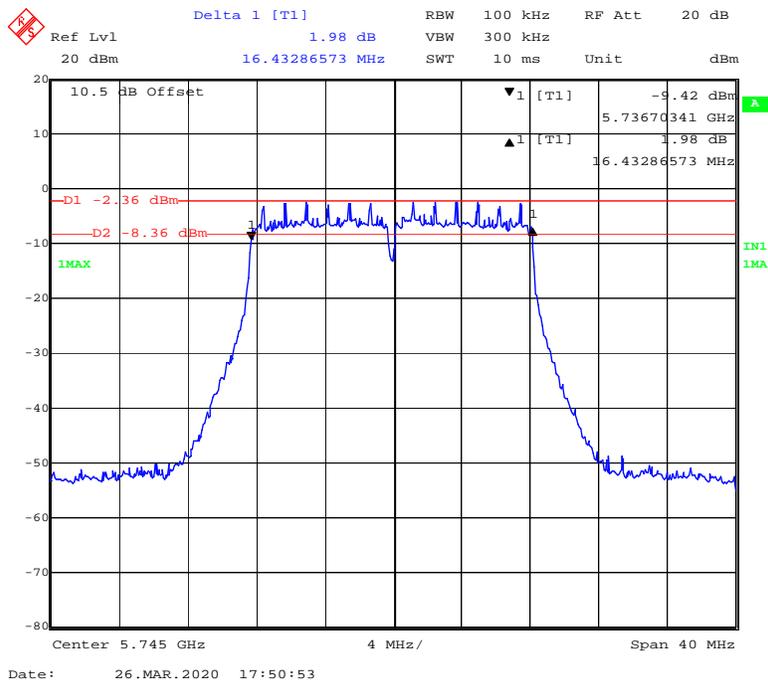
802.11a mode, 5785MHz



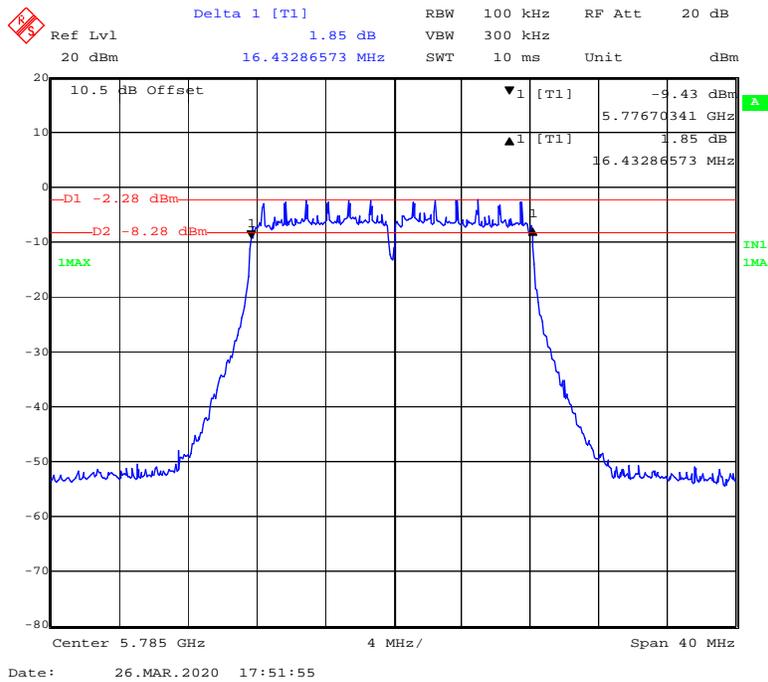
802.11a mode, 5825MHz



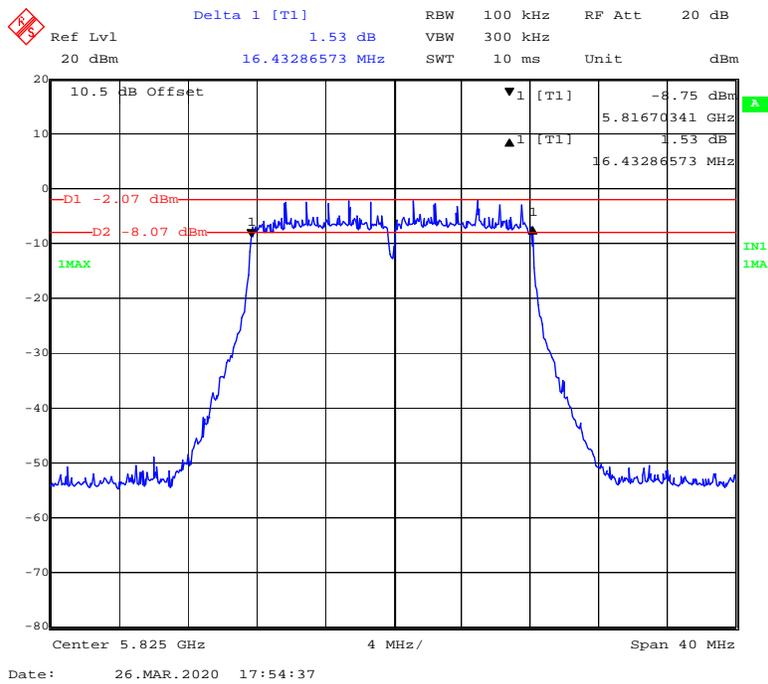
802.11ac20 mode, 5745MHz



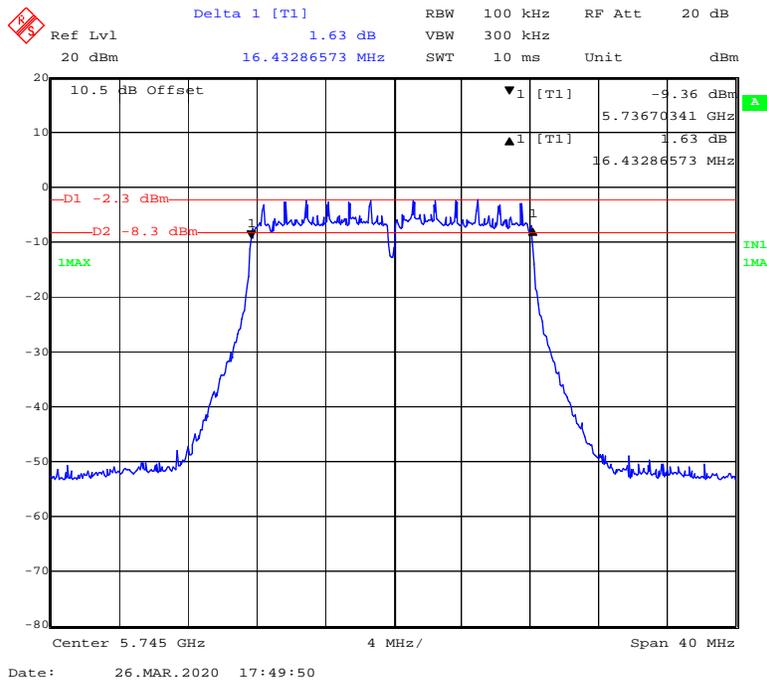
802.11 ac20 mode, 5785MHz



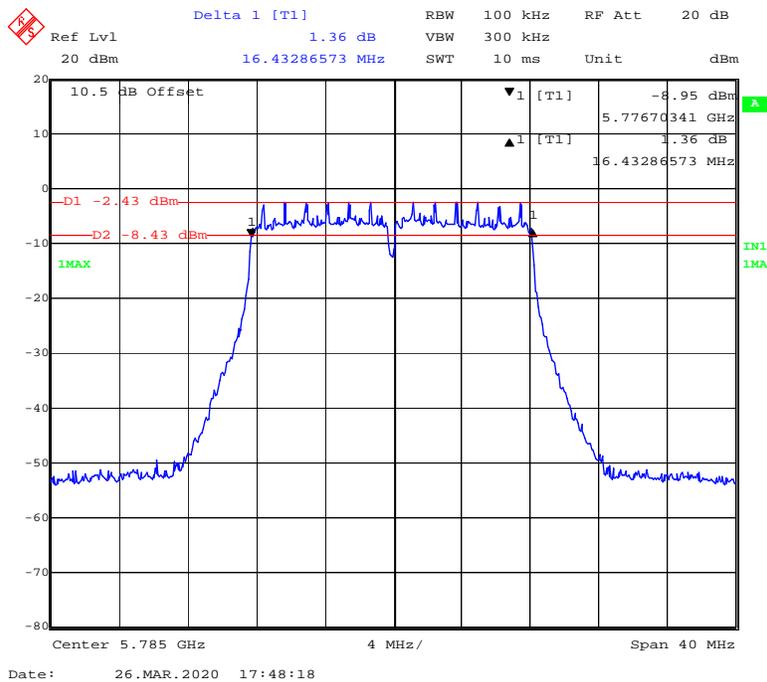
802.11 ac20 mode, 5825MHz



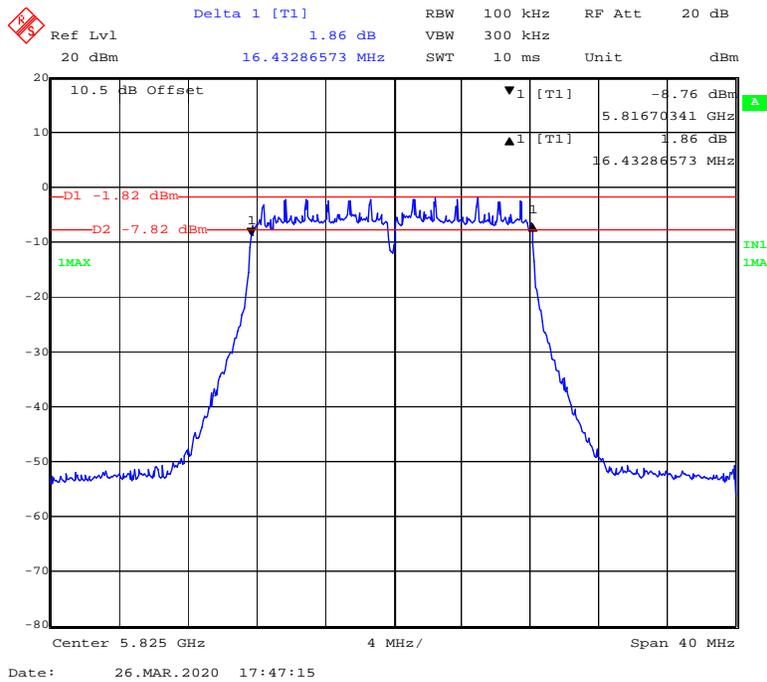
802.11n-HT20 mode, 5745MHz



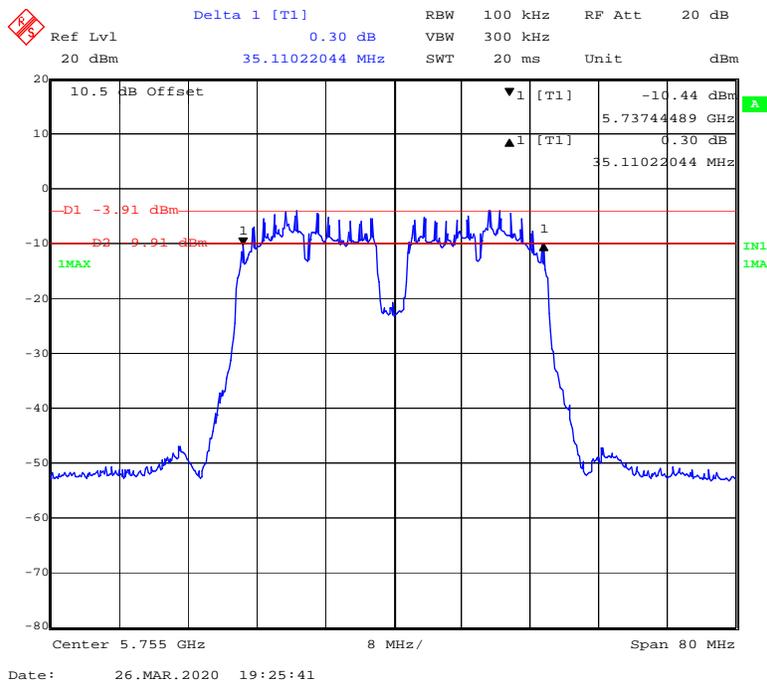
802.11n-HT20 mode, 5785MHz



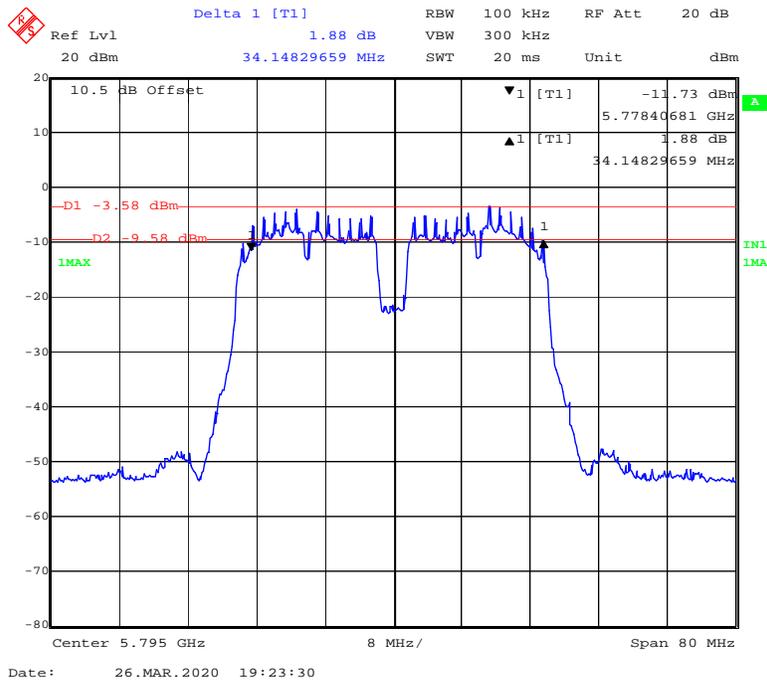
802.11n-HT20 mode, 5825MHz



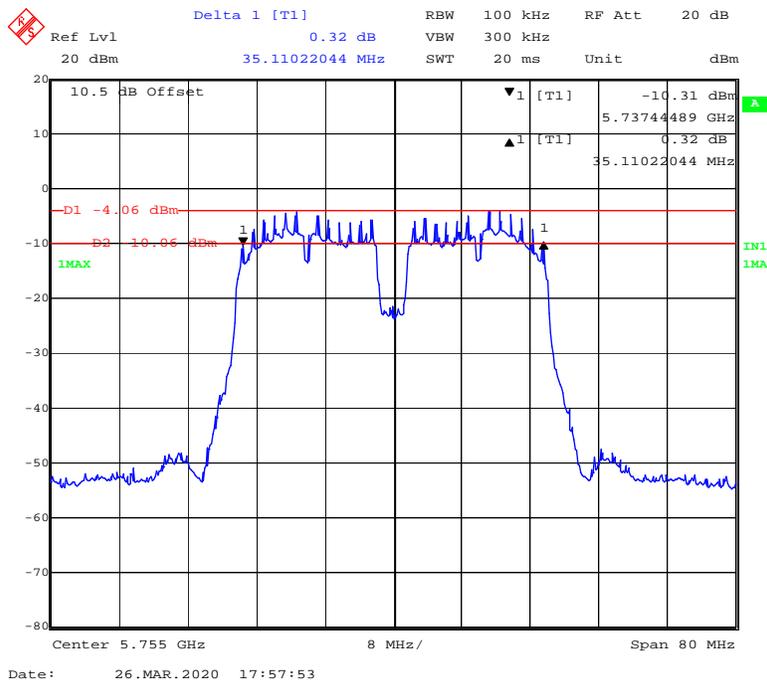
802.11ac40 mode, 5755MHz



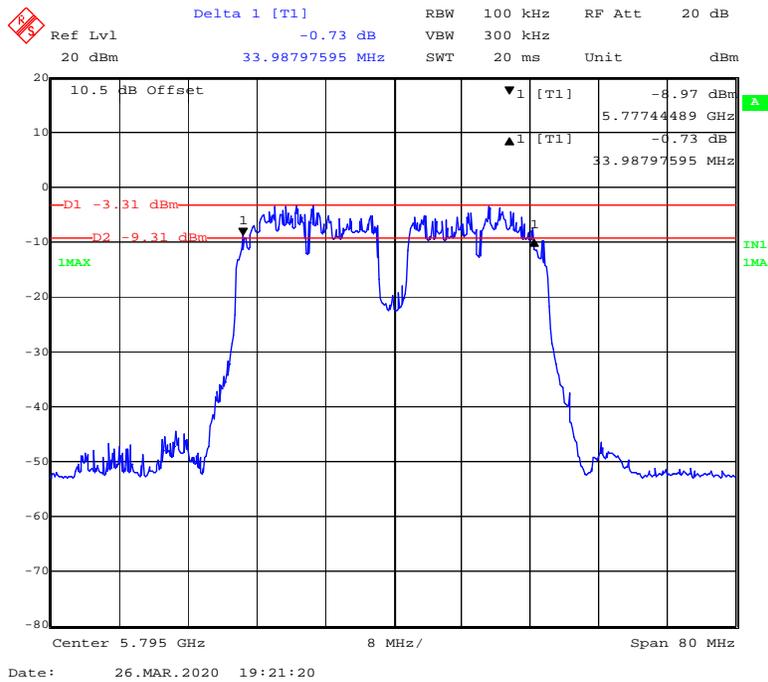
802.11 ac40 mode, 5795MHz



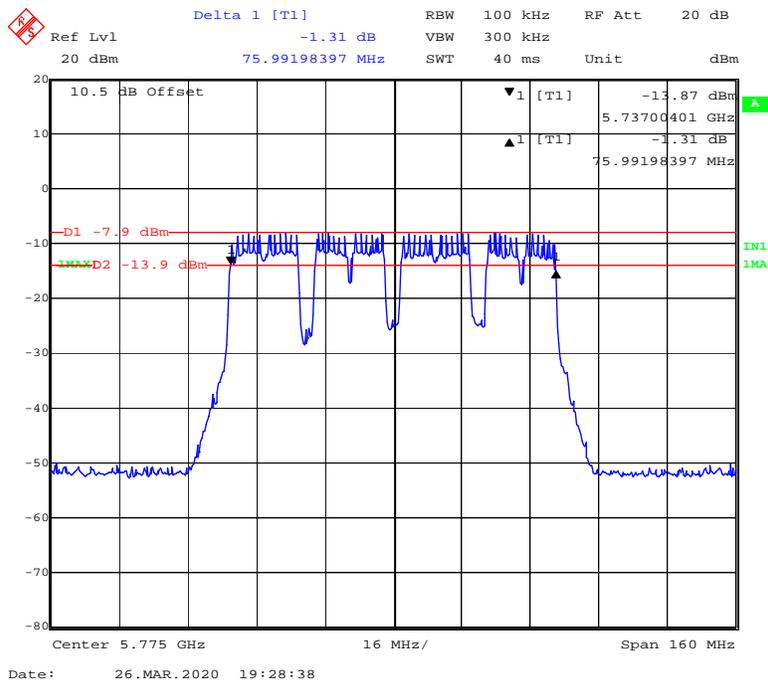
802.11n-HT40 mode, 5755MHz



802.11n-HT40 mode, 5795MHz

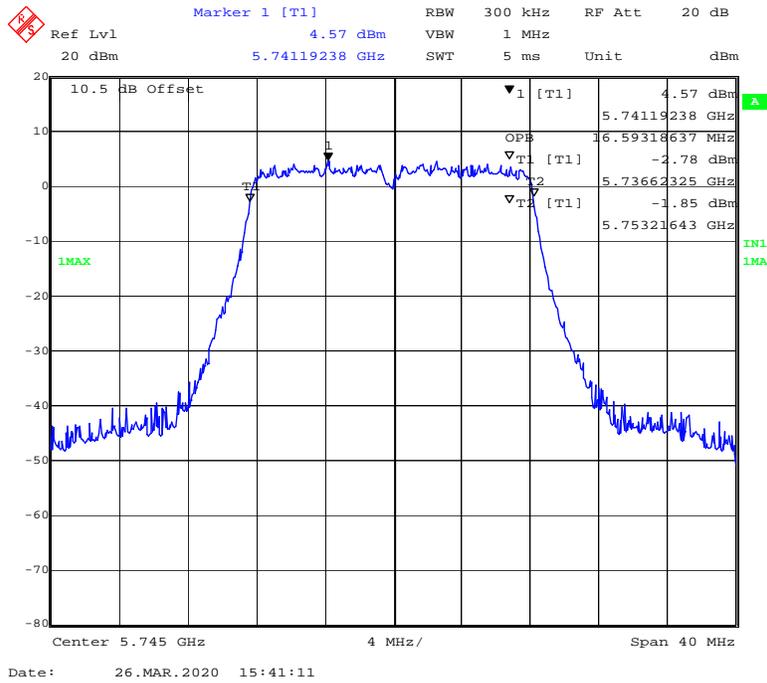


802.11ac80 mode, 5775MHz

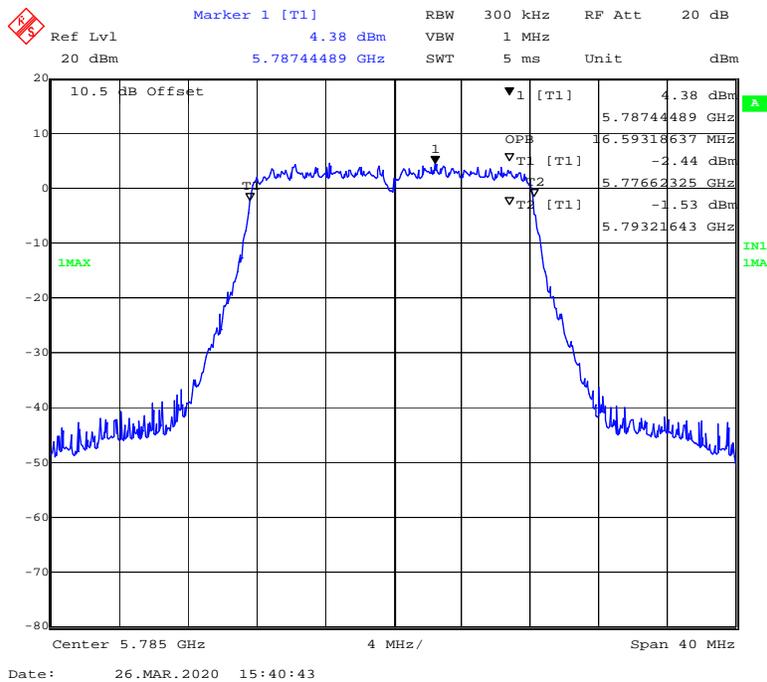


99% Occupied Bandwidth-Chain0

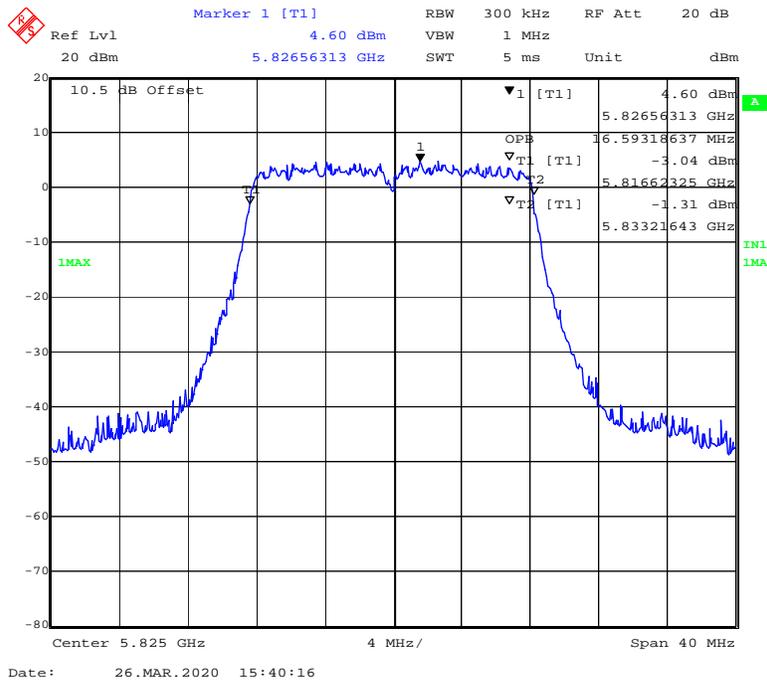
802.11a mode, 5745MHz



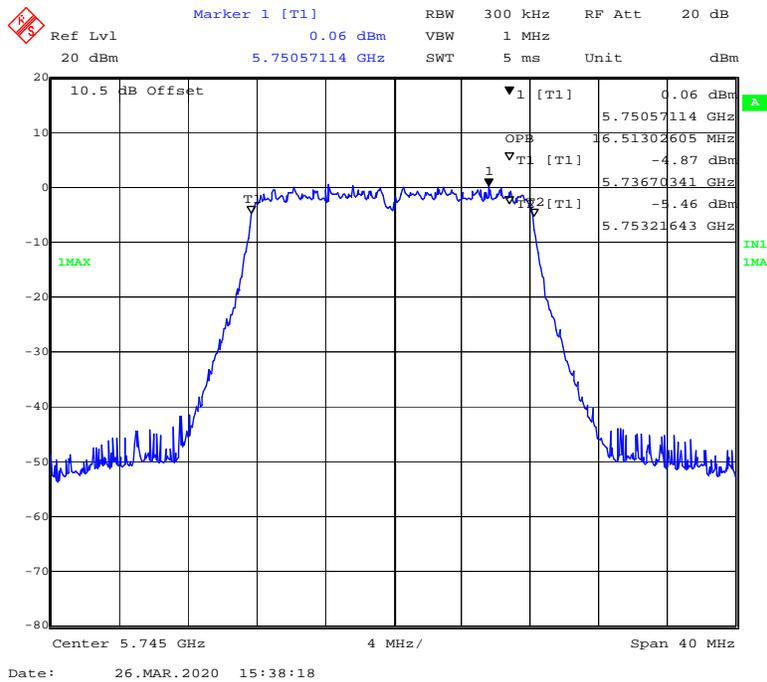
802.11a mode, 5785MHz



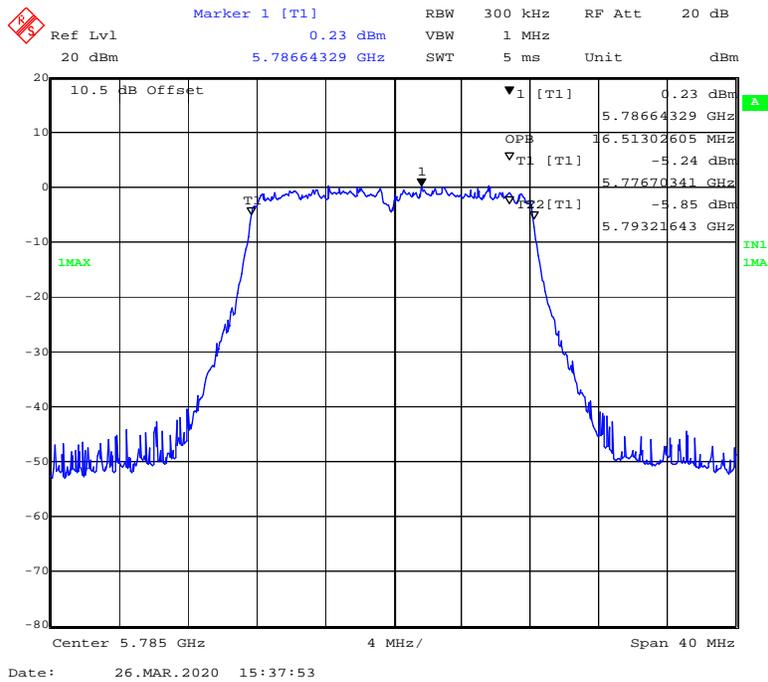
802.11a mode, 5825MHz



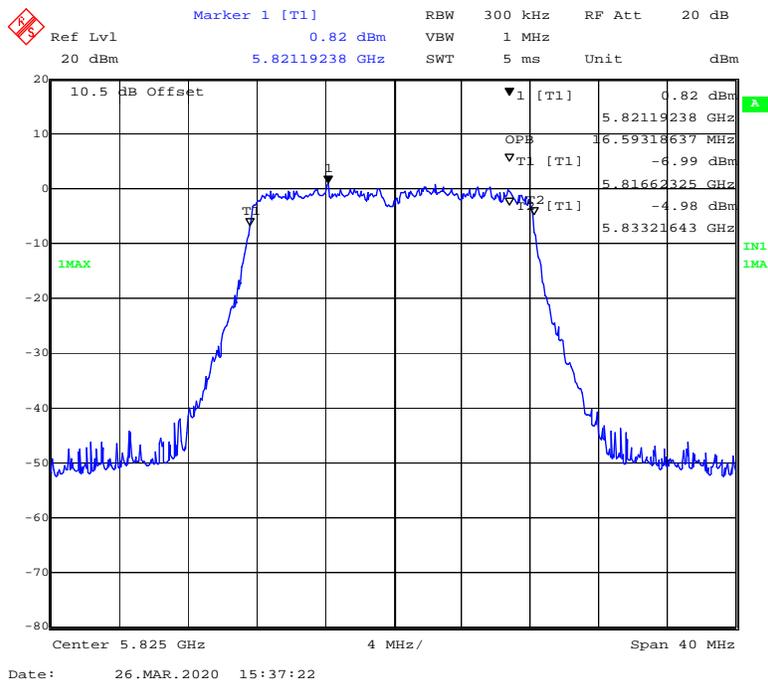
802.11ac20 mode, 5745MHz



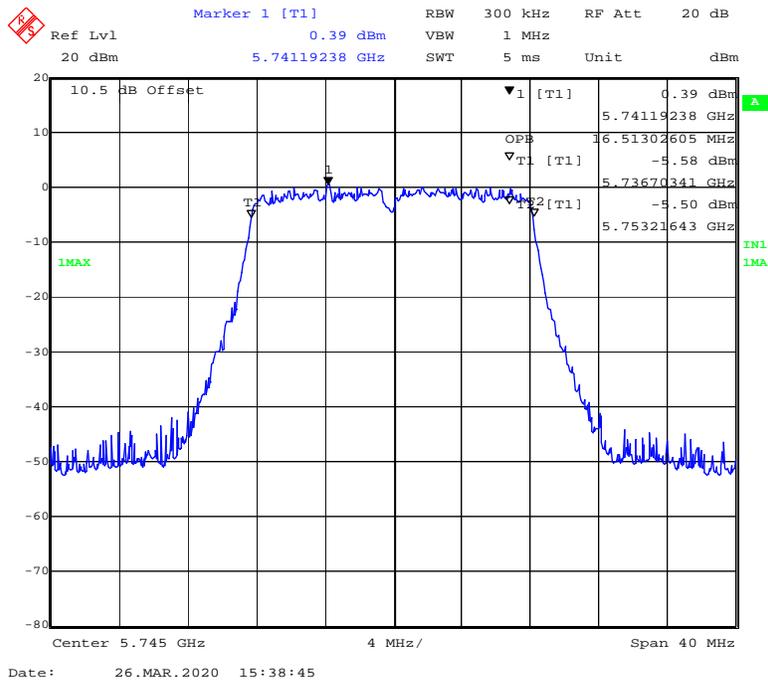
802.11 ac20 mode, 5785MHz



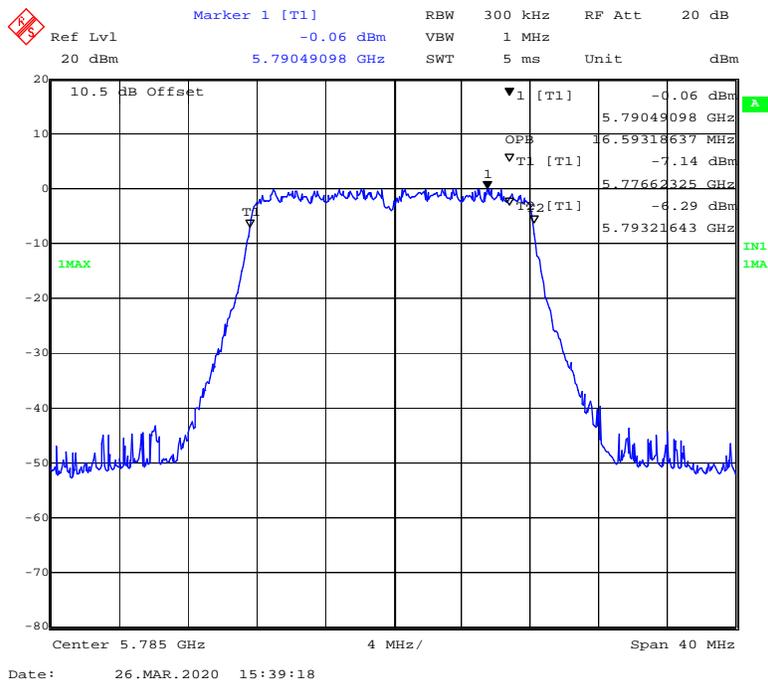
802.11 ac20 mode, 5825MHz



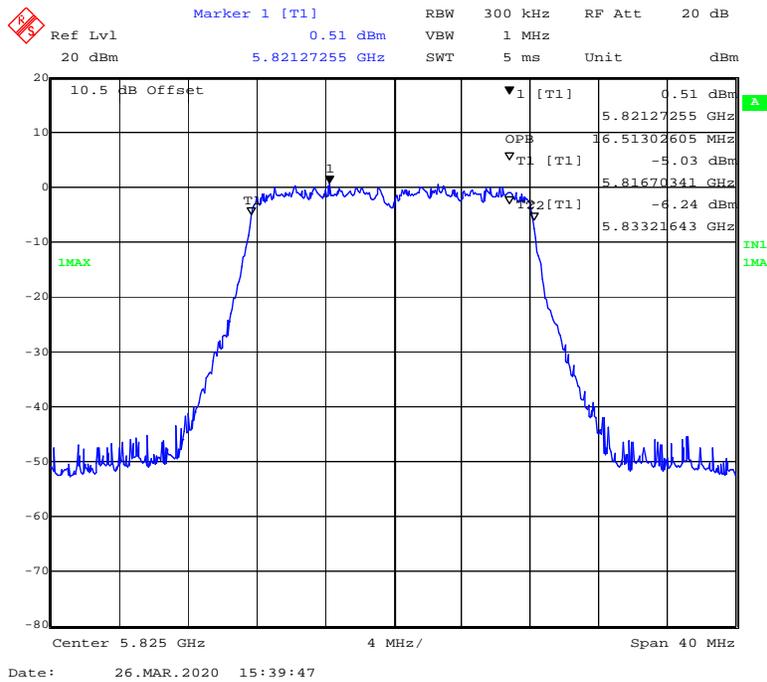
802.11n-HT20 mode, 5745MHz



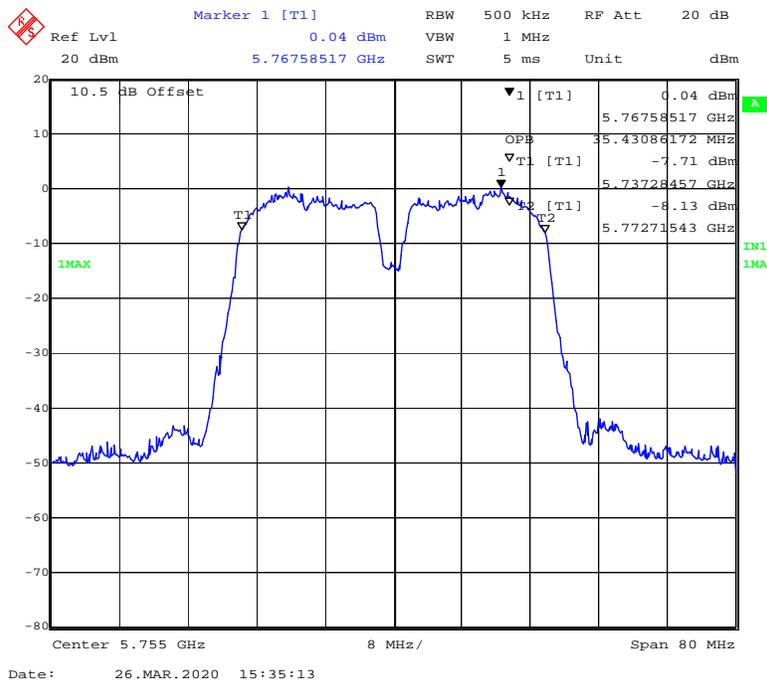
802.11n-HT20 mode, 5785MHz



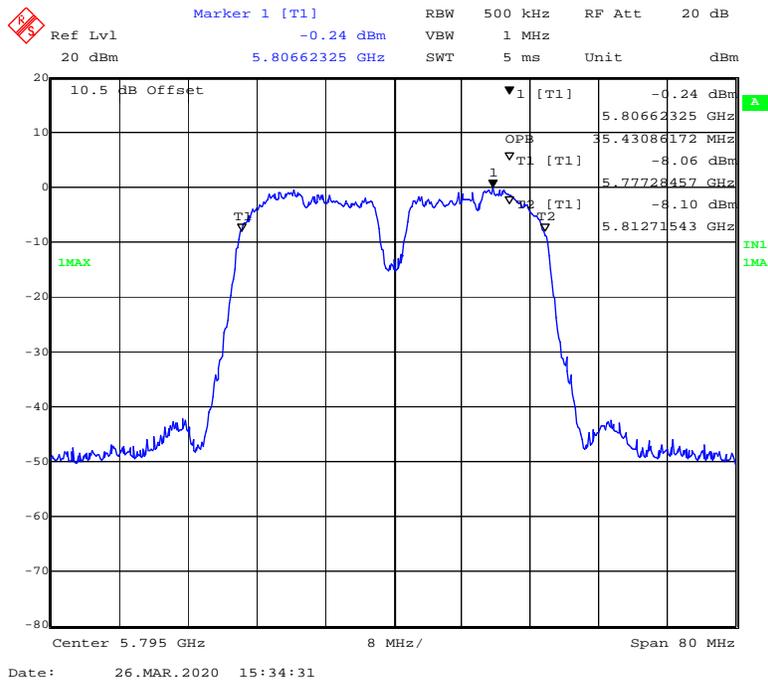
802.11n-HT20 mode, 5825MHz



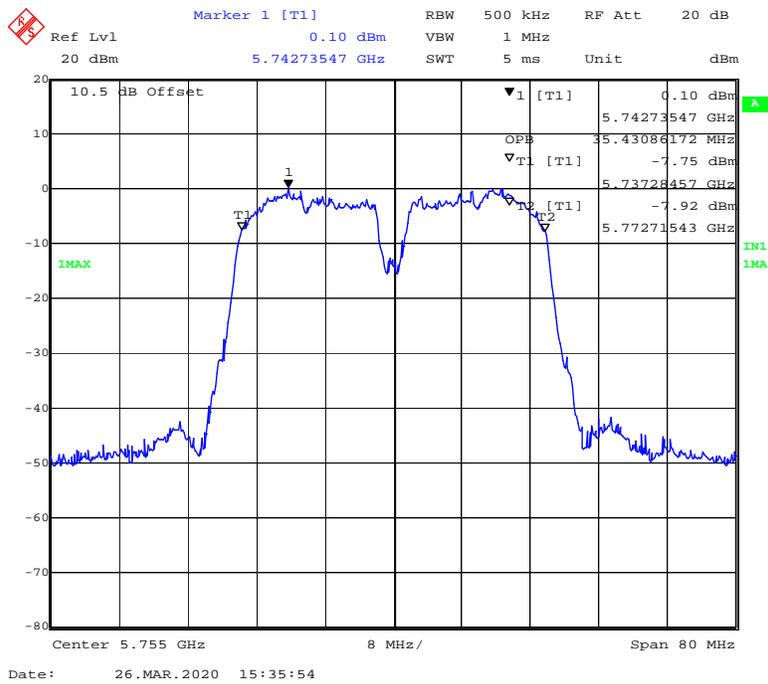
802.11ac40 mode, 5755MHz



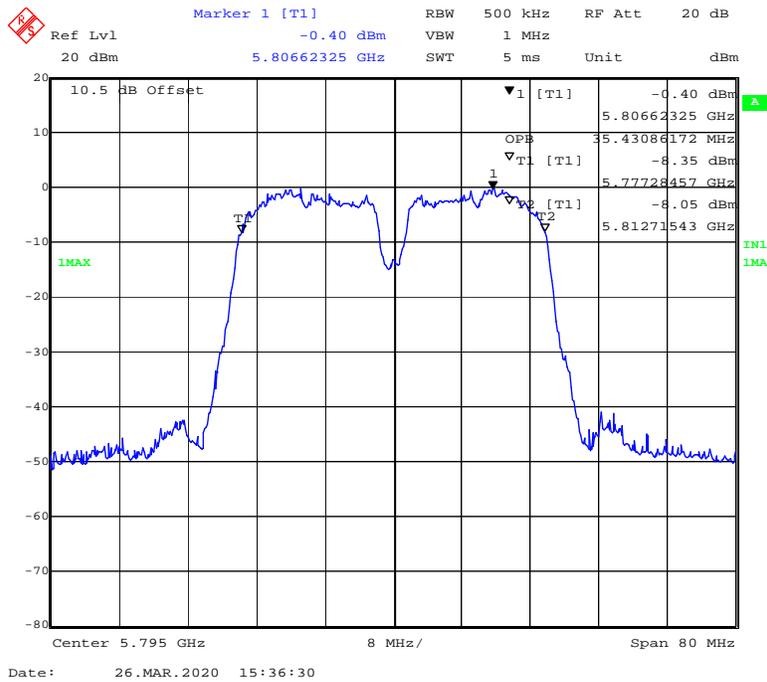
802.11 ac40 mode, 5795MHz



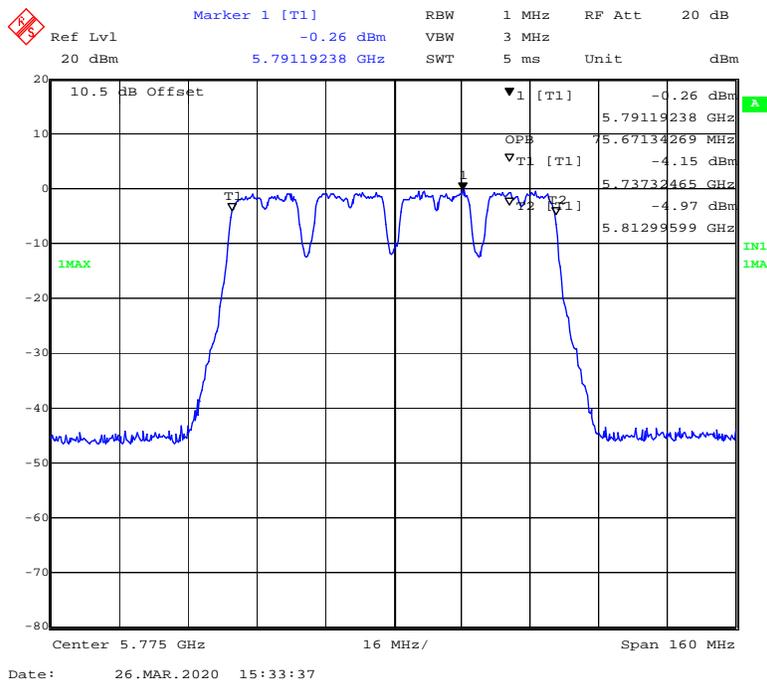
802.11n-HT40 mode, 5755MHz



802.11n-HT40 mode, 5795MHz

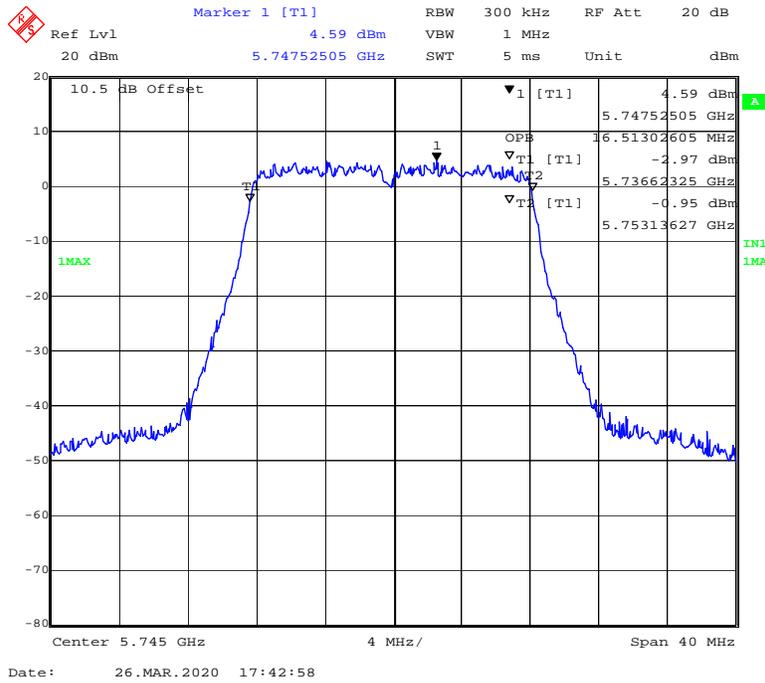


802.11n-ac80 mode, 5775MHz

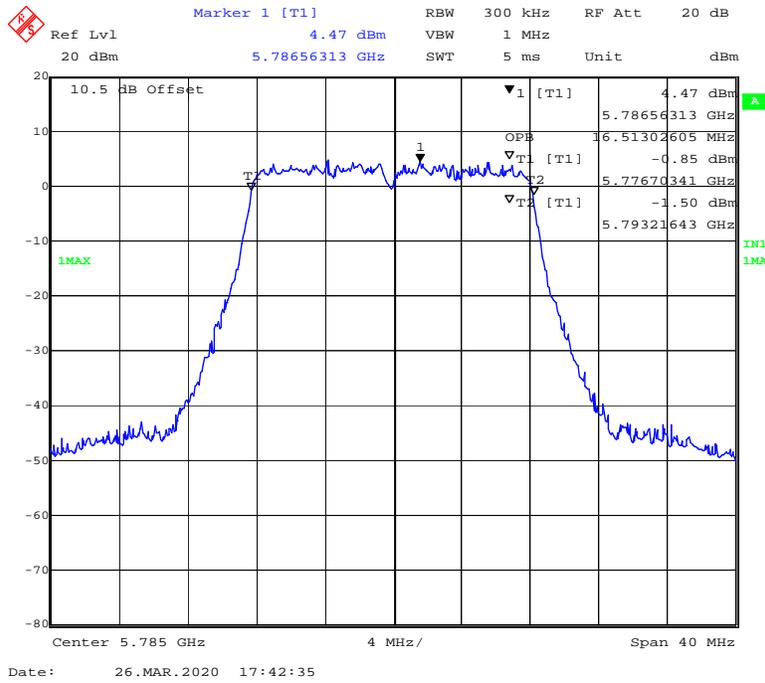


99% Occupied Bandwidth-Chain1

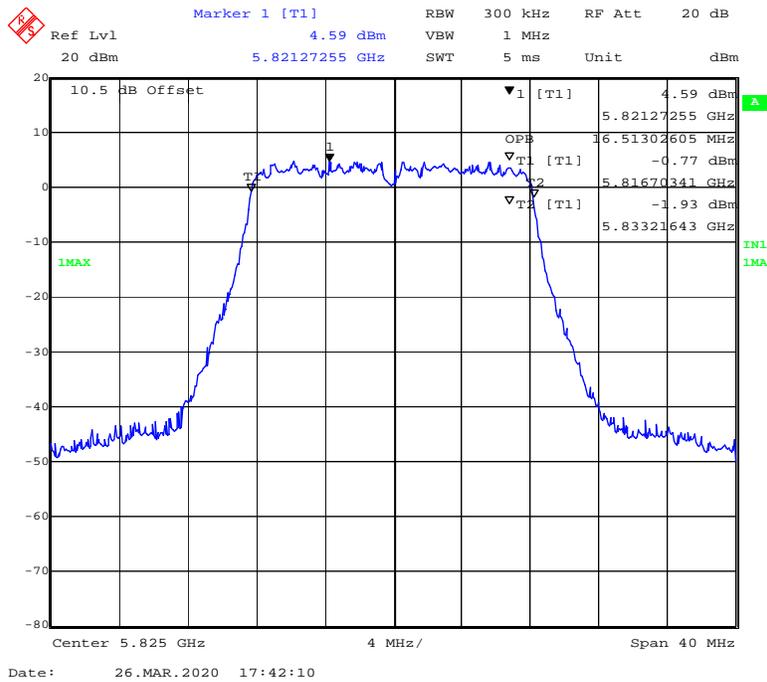
802.11a mode, 5745MHz



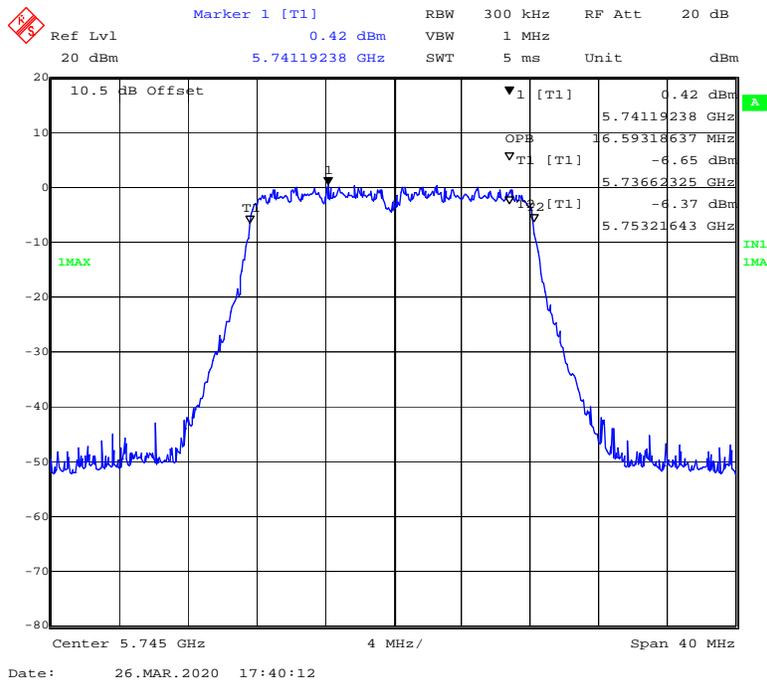
802.11a mode, 5785MHz



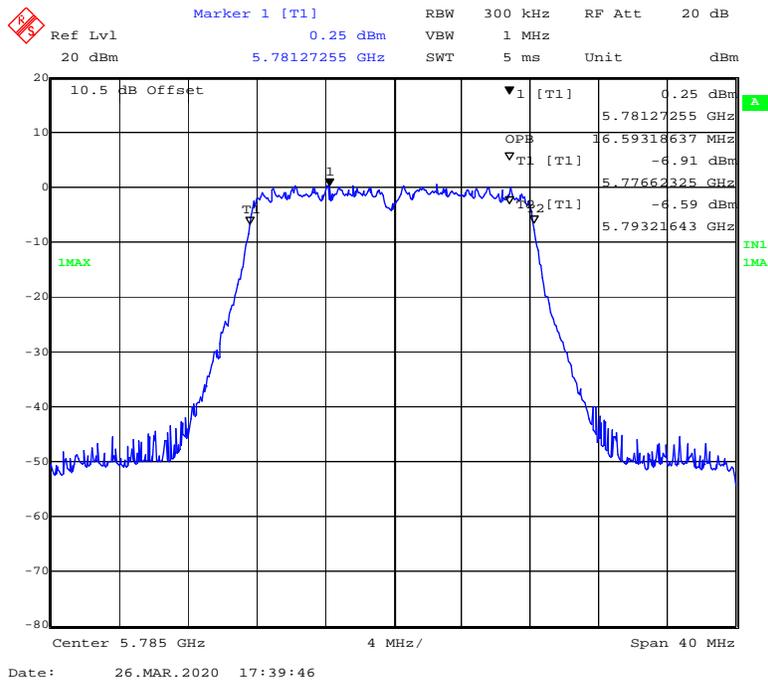
802.11a mode, 5825MHz



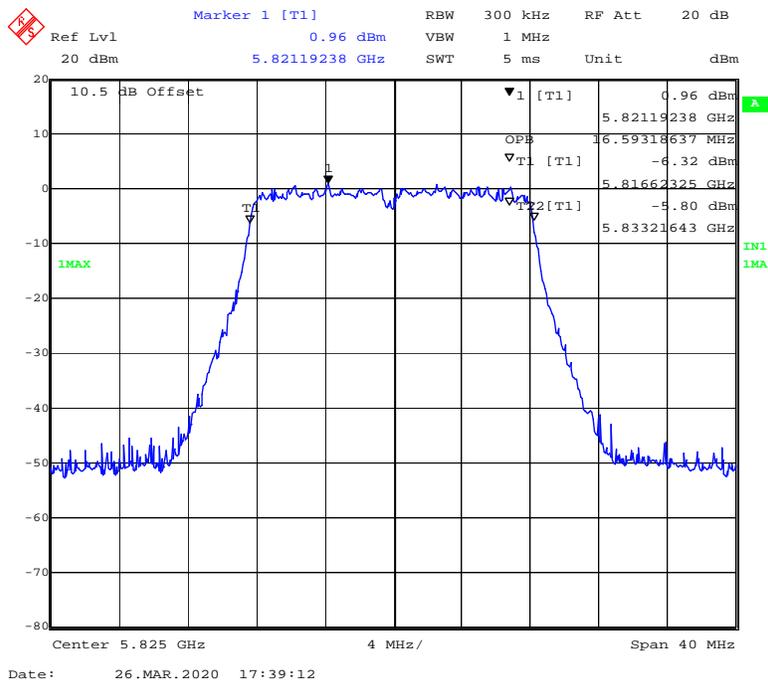
802.11ac20 mode, 5745MHz



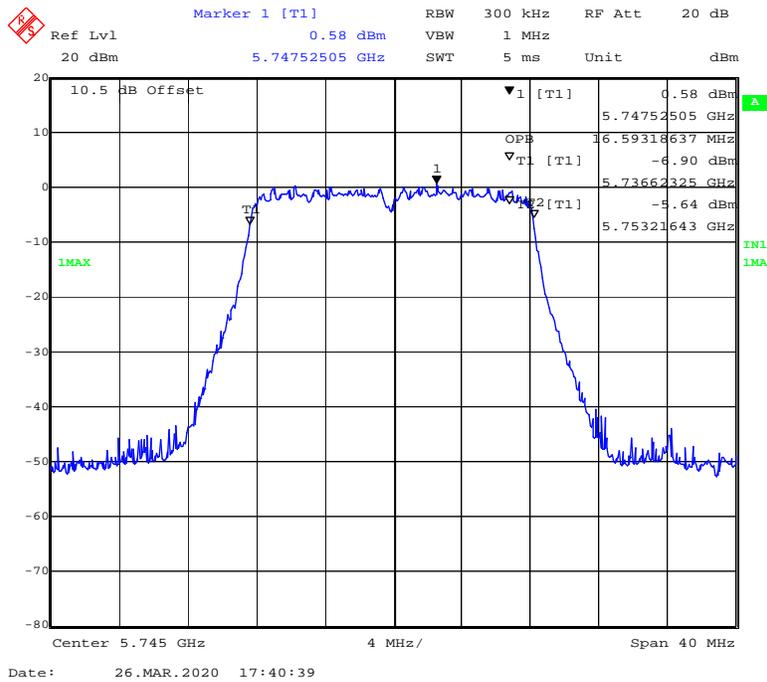
802.11 ac20 mode, 5785MHz



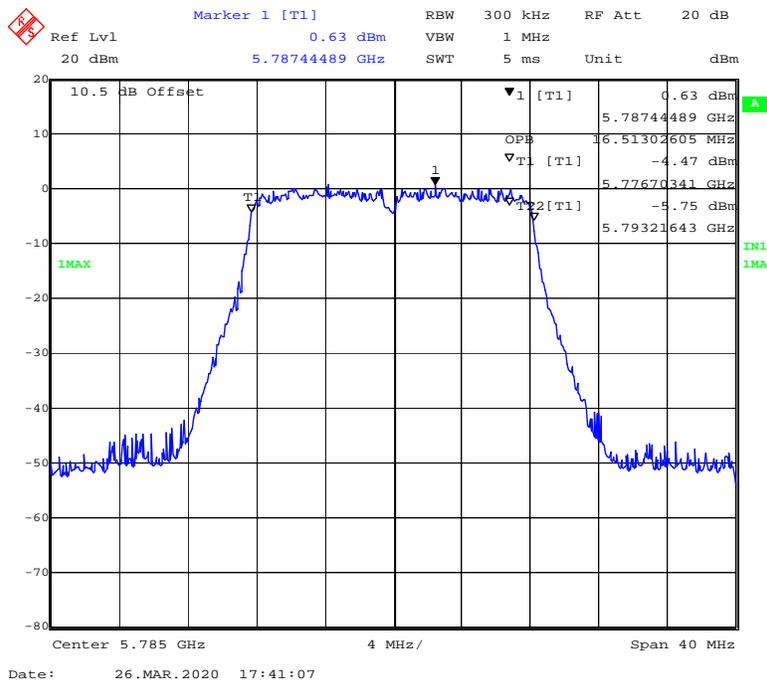
802.11 ac20 mode, 5825MHz



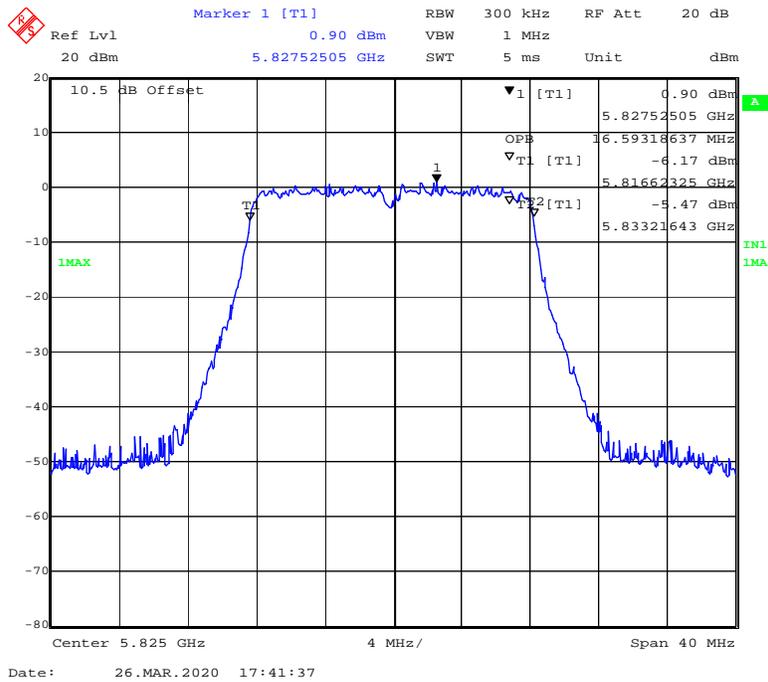
802.11n-HT20 mode, 5745MHz



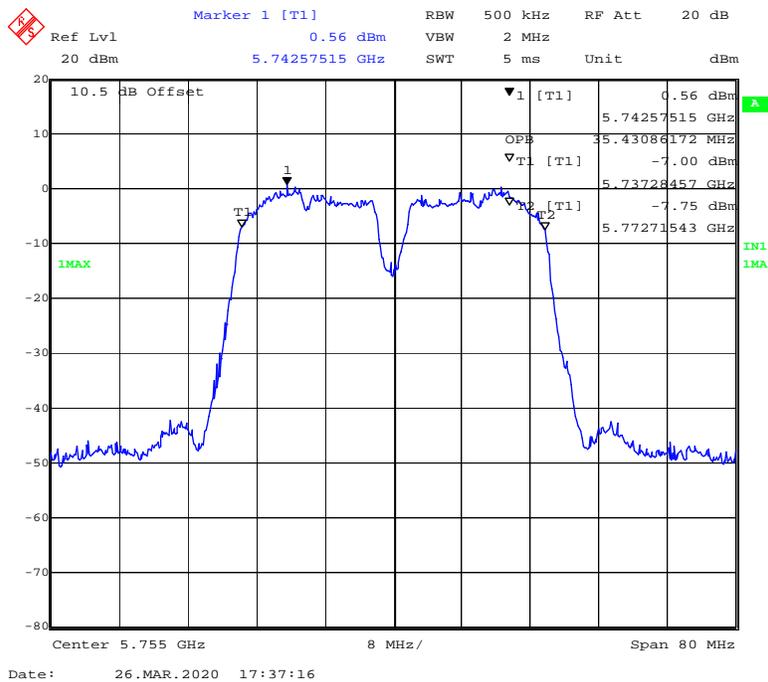
802.11n-HT20 mode, 5785MHz



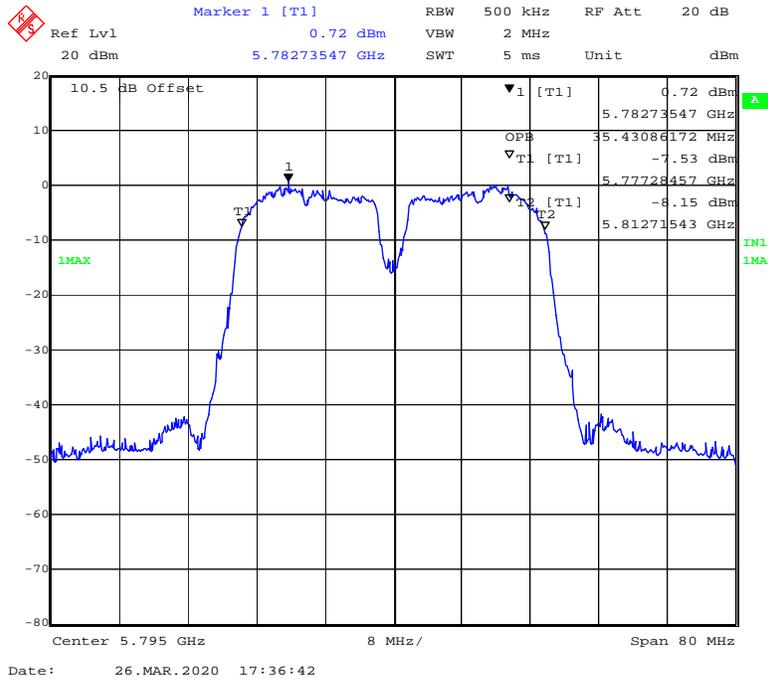
802.11n-HT20 mode, 5825MHz



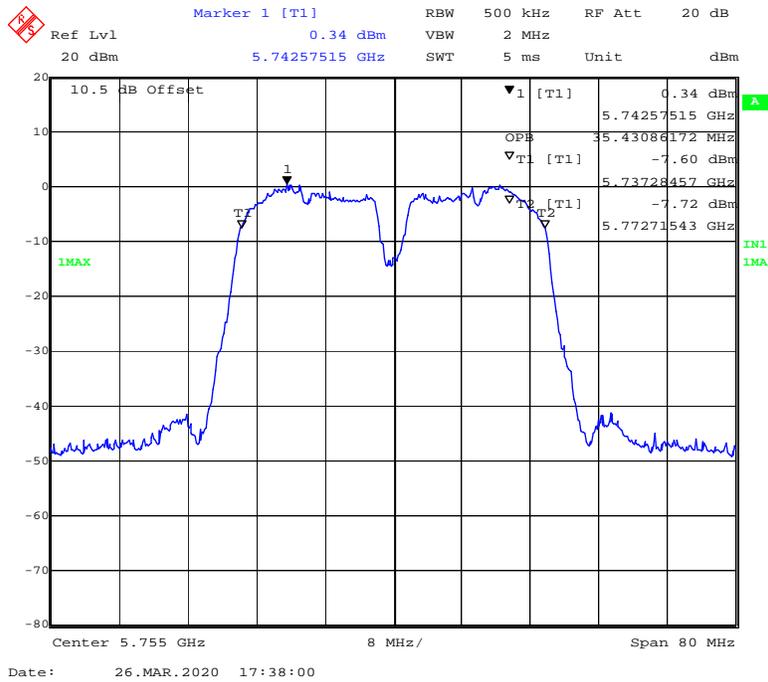
802.11ac40 mode, 5755MHz



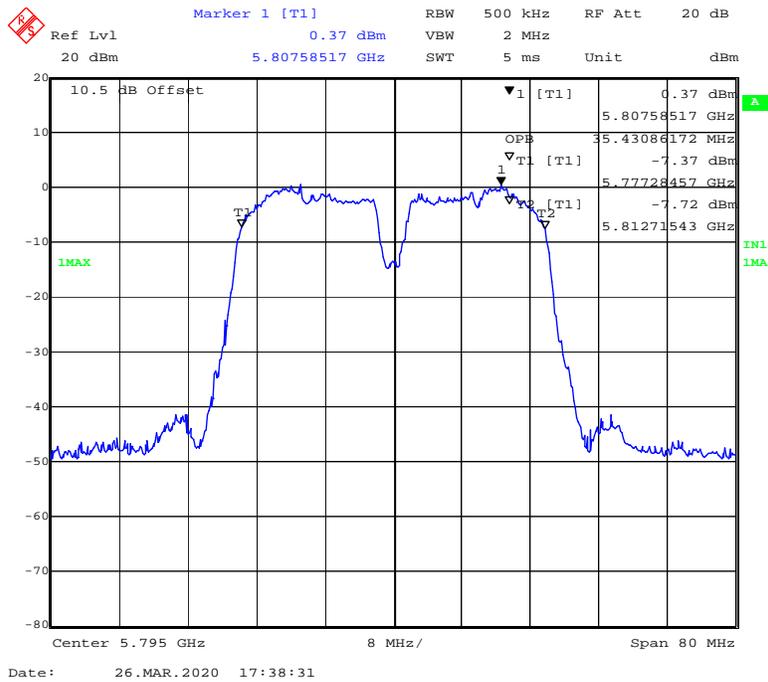
802.11 ac40 mode, 5795MHz



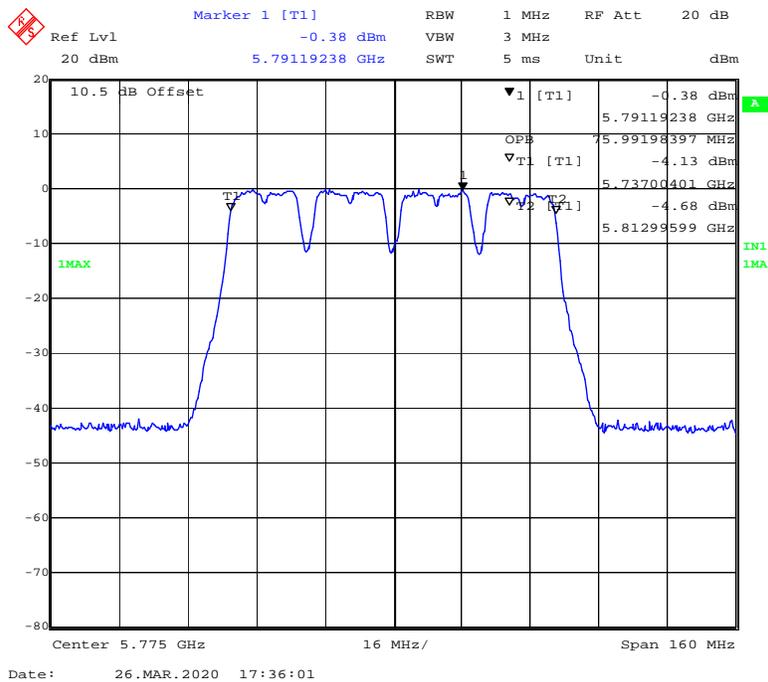
802.11n-HT40 mode, 5755MHz



802.11n-HT40 mode, 5795MHz



802.11n-ac80 mode, 5775MHz



5150-5250 MHz:

Test mode	Channel	Frequency (MHz)	26dB Bandwidth (MHz)		99% Bandwidth (MHz)	
			Chain2	Chain3	Chain2	Chain3
802.11a	Low	5180	23.888	22.926	16.994	16.994
	Middle	5200	23.407	22.926	16.994	16.994
	High	5240	23.487	23.246	16.994	16.994
802.11ac20	Low	5180	21.563	23.567	17.796	18.116
	Middle	5200	21.884	24.048	17.796	18.116
	High	5240	21.723	23.246	17.796	18.036
802.11n-HT20	Low	5180	23.567	23.888	18.517	18.116
	Middle	5200	21.964	23.888	17.796	18.116
	High	5240	21.884	23.808	17.796	18.116
802.11ac40	Low	5190	43.287	46.012	36.393	36.713
	High	5230	42.485	45.371	36.393	36.713
802.11n-HT40	Low	5190	42.966	45.852	36.393	36.713
	High	5230	42.485	45.210	36.393	36.713
802.11ac80	Low	5210	84.970	89.138	75.992	76.313

5725-5850MHz:

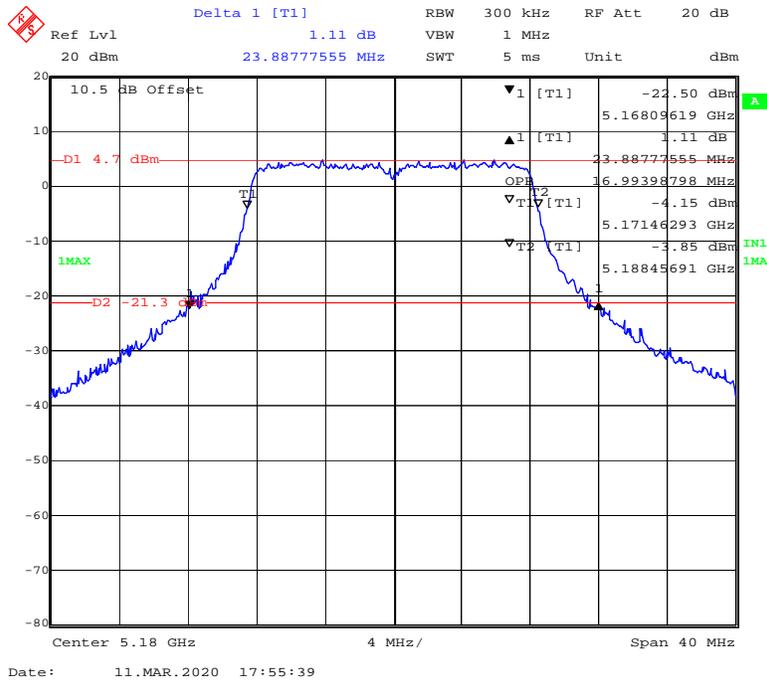
Test mode	Channel	Frequency (MHz)	6dB Bandwidth (MHz)		99% Bandwidth (MHz)		Limit (MHz)
			Chain2	Chain3	Chain2	Chain3	
802.11a	Low	5745	16.433	16.433	16.834	16.834	≥0.5
	Middle	5785	16.433	16.433	16.834	16.834	≥0.5
	High	5825	16.433	16.433	16.834	16.914	≥0.5
802.11ac20	Low	5745	17.715	17.635	18.036	18.036	≥0.5
	Middle	5785	17.635	17.635	18.036	17.956	≥0.5
	High	5825	17.475	17.635	18.036	18.036	≥0.5
802.11n-HT20	Low	5745	17.715	17.635	18.036	18.036	≥0.5
	Middle	5785	17.715	17.635	17.956	18.036	≥0.5
	High	5825	17.635	17.715	18.036	18.036	≥0.5
802.11ac40	Low	5755	36.393	36.072	36.713	37.194	≥0.5
	High	5795	36.232	36.232	36.874	36.874	≥0.5
802.11n-HT40	Low	5755	36.393	36.553	36.874	36.553	≥0.5
	High	5795	36.393	36.232	36.874	36.713	≥0.5
802.11ac80	Low	5775	76.313	76.313	76.633	76.313	≥0.5

5150-5250 MHz Band:

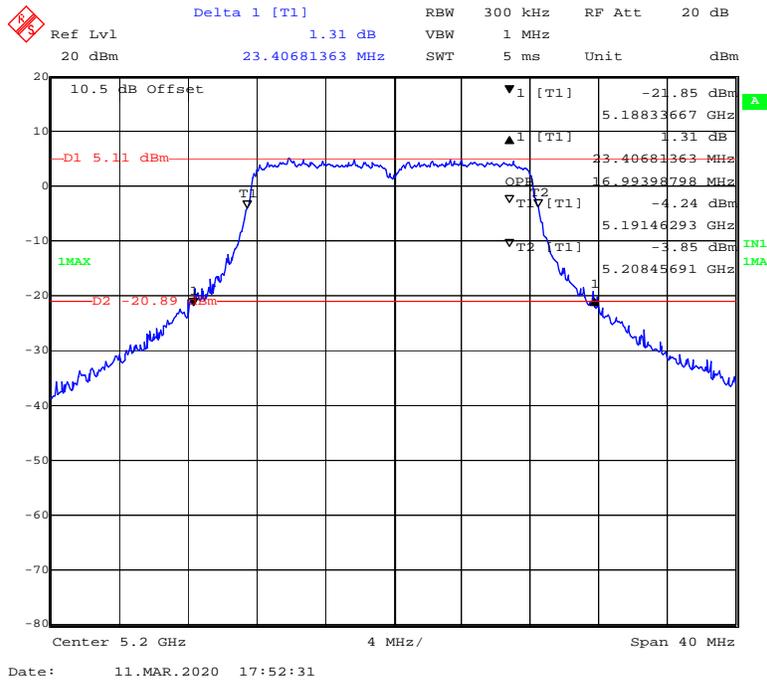
Chain2:

26 Bandwidth&99% Occupied Bandwidth

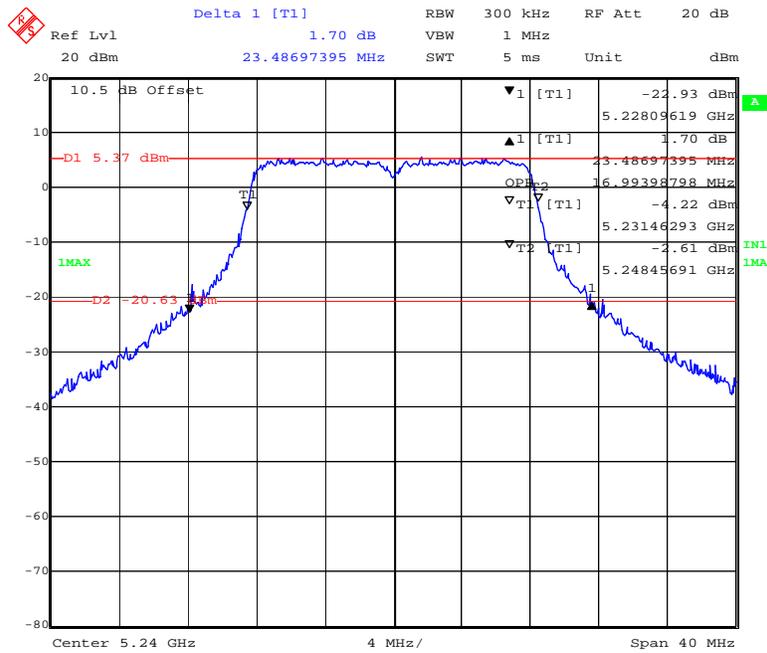
802.11a mode, 5180MHz



802.11a mode, 5200MHz

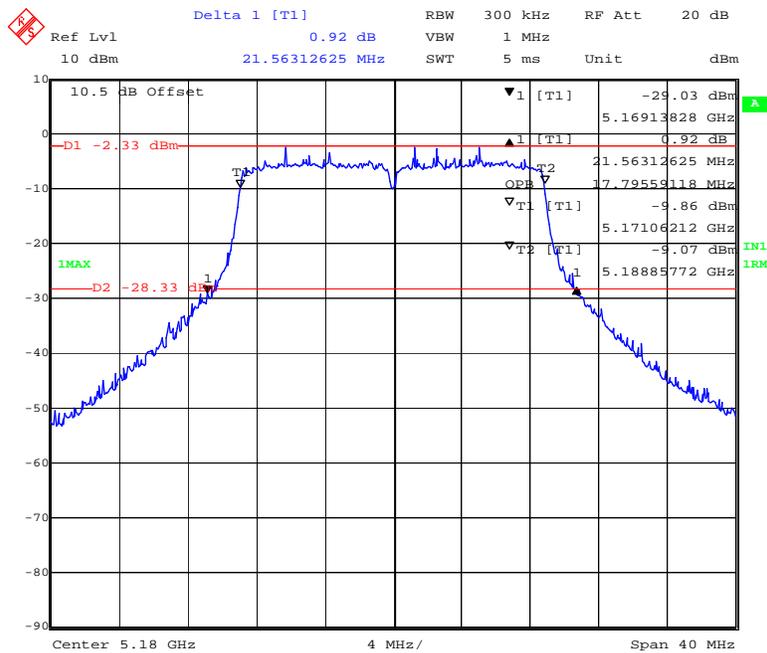


802.11a mode, 5240MHz



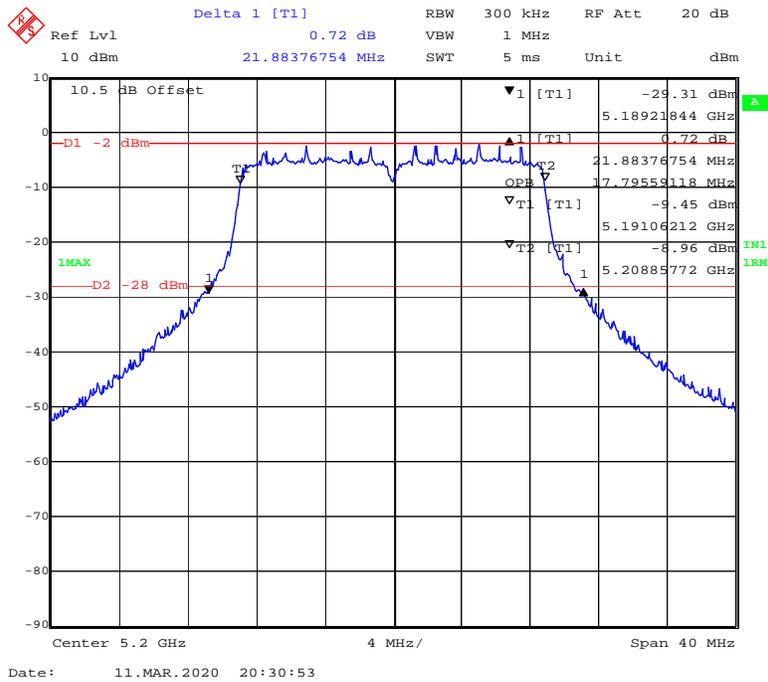
Date: 11.MAR.2020 17:50:13

802.11ac20 mode, 5180MHz

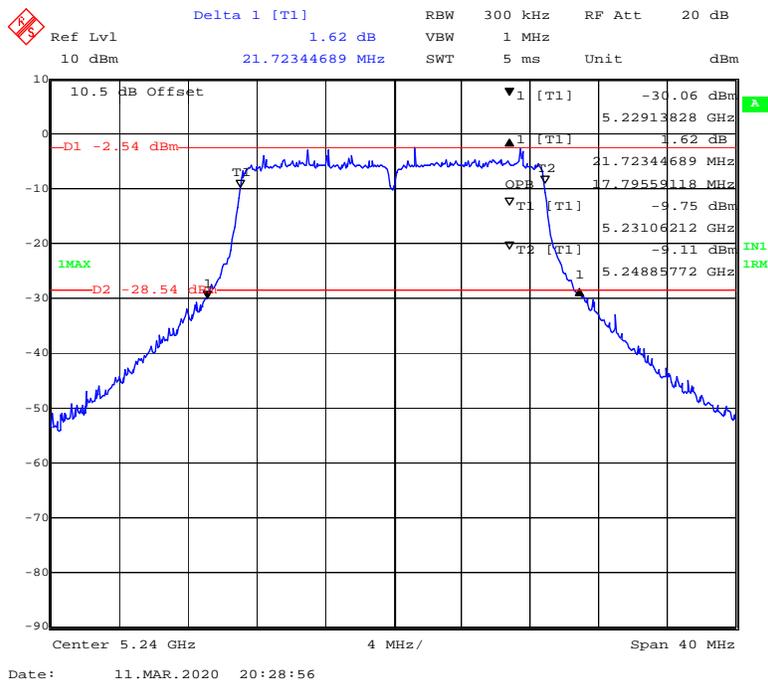


Date: 11.MAR.2020 20:32:09

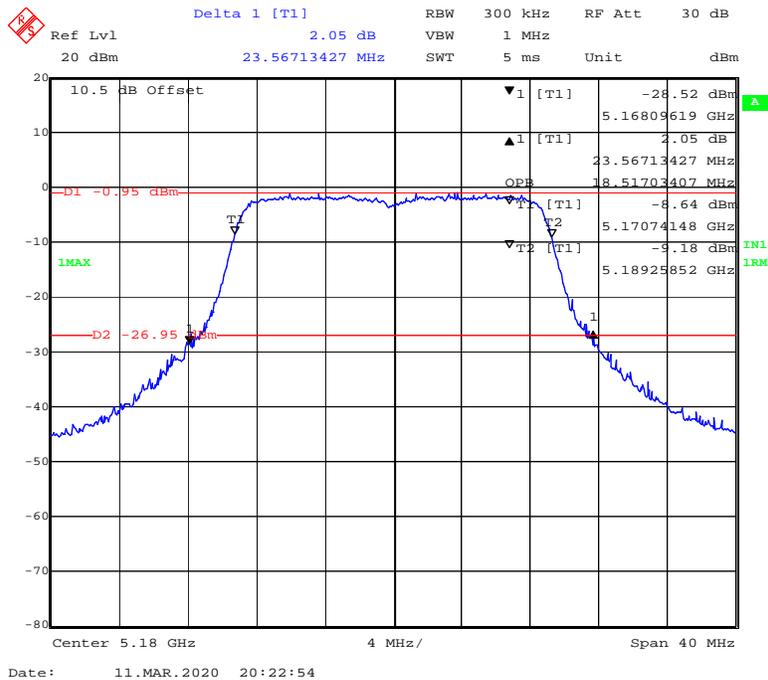
802.11 ac20 mode, 5200MHz



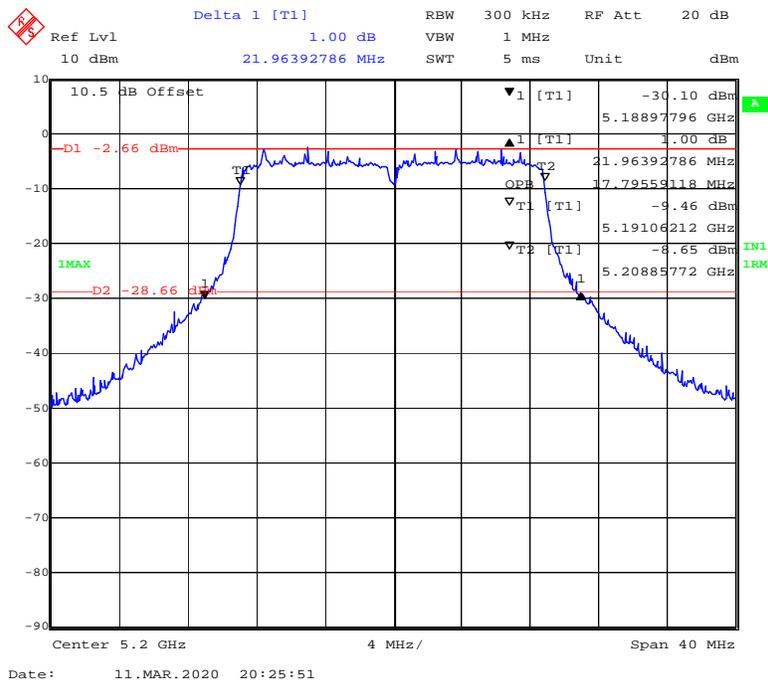
802.11 ac20 mode, 5240MHz



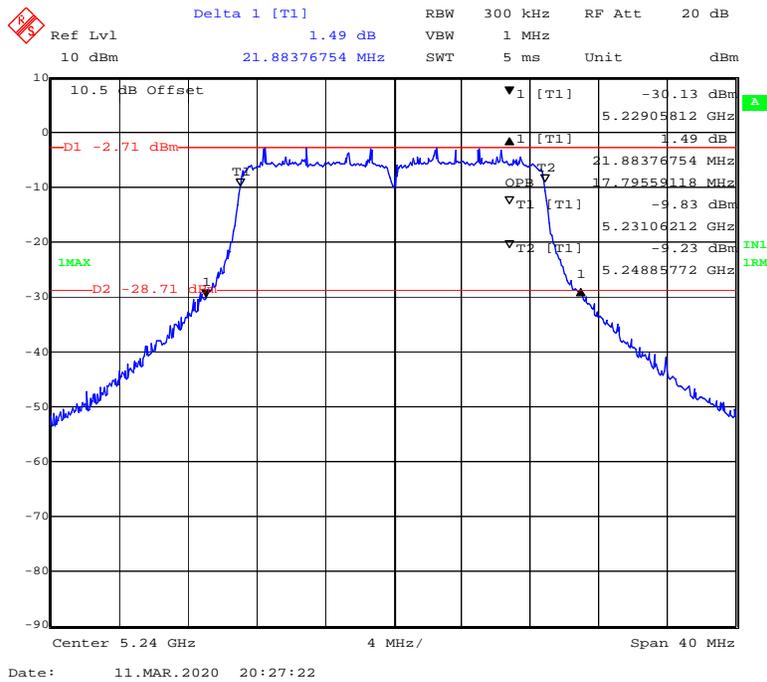
802.11n-HT20 mode, 5180MHz



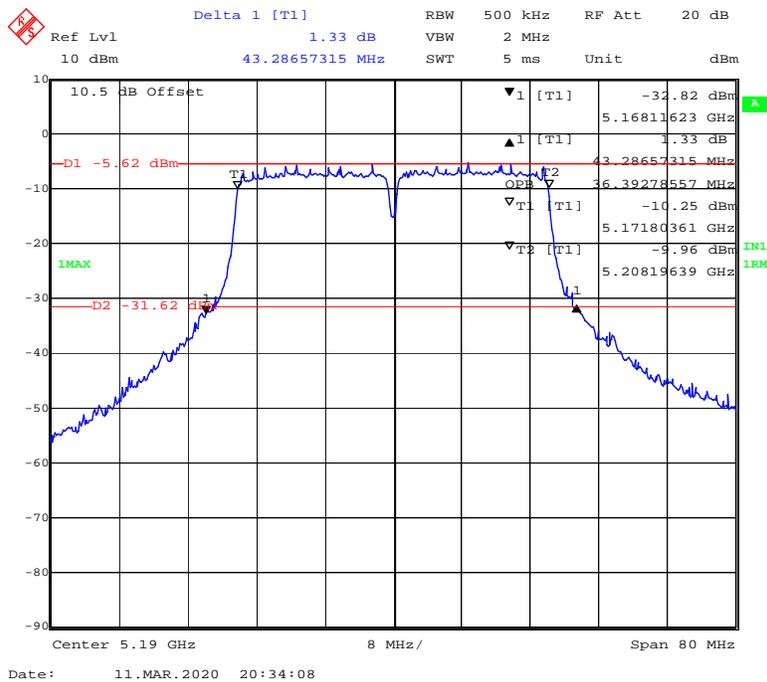
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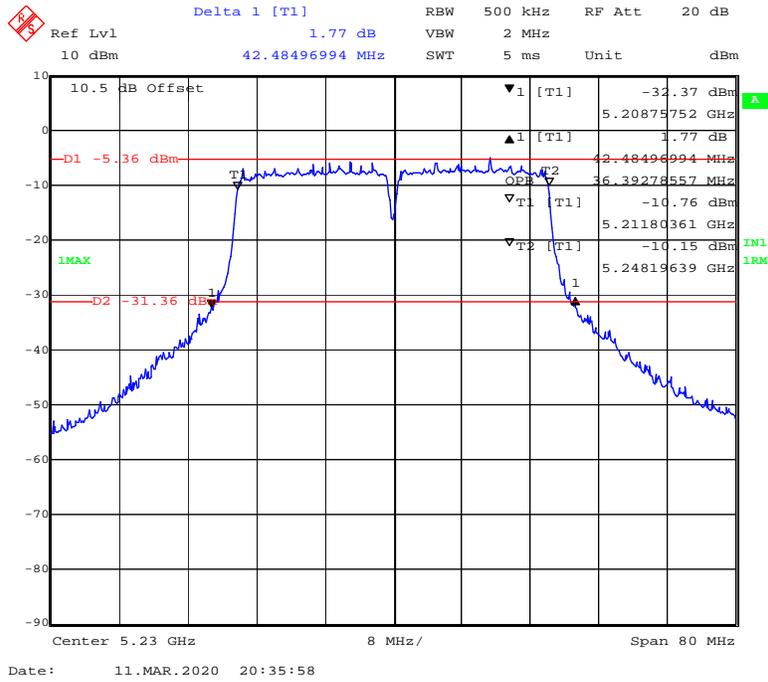
802.11n-HT20 mode, 5240MHz



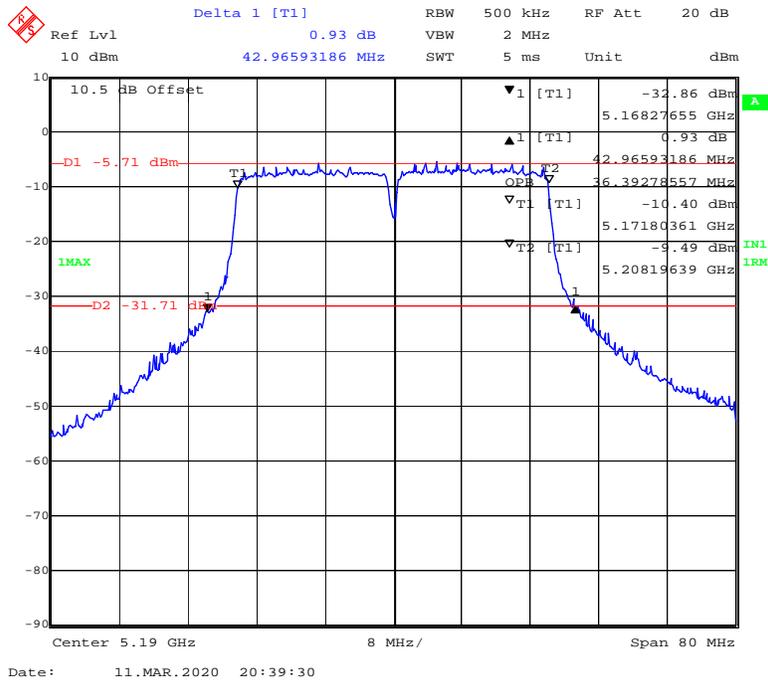
802.11ac40 mode, 5190MHz



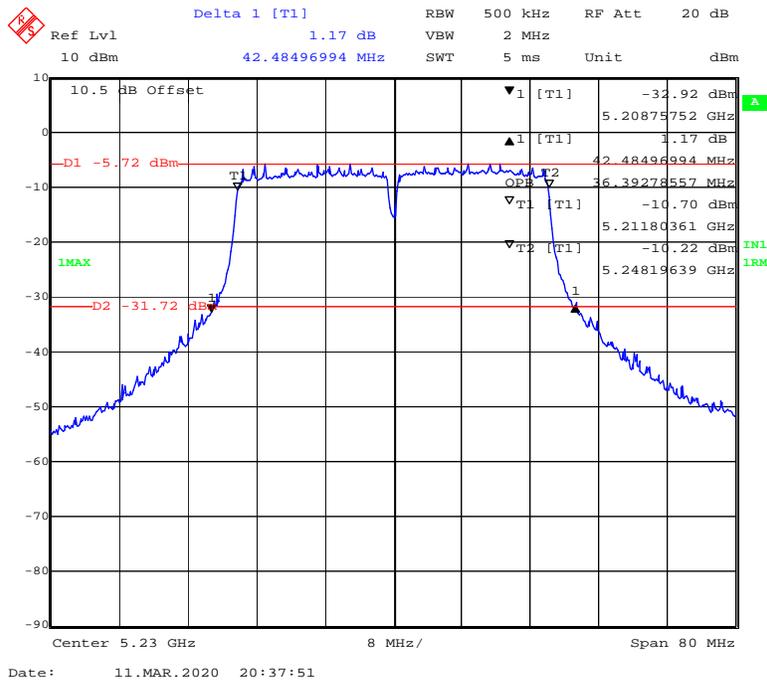
802.11 ac40 mode, 5230MHz



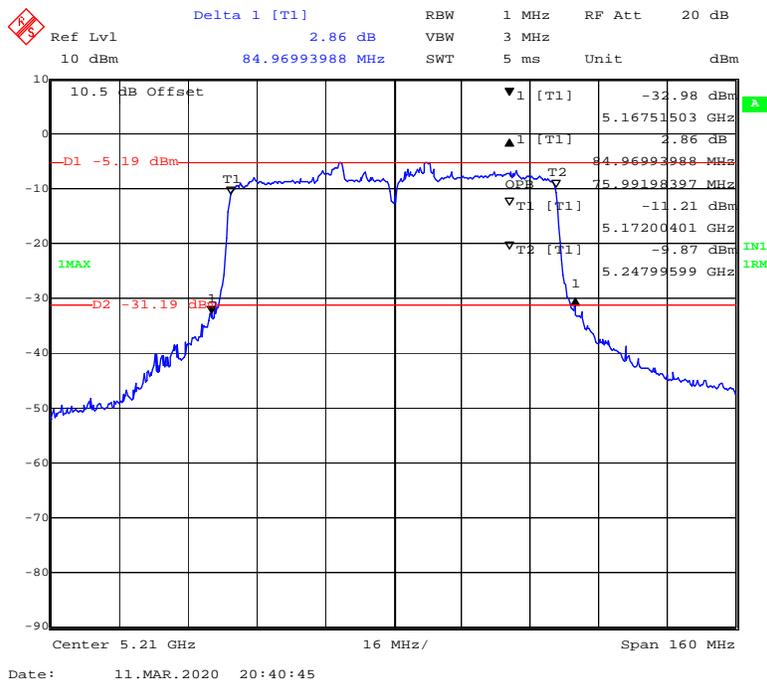
802.11n-HT40 mode, 5190MHz



802.11n-HT40 mode, 5230MHz



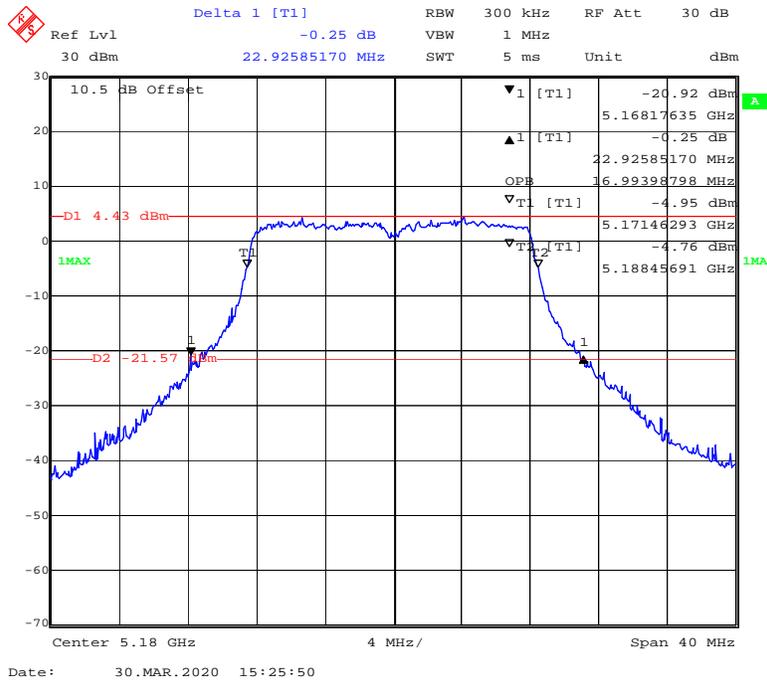
802.11ac80 mode, 5210MHz



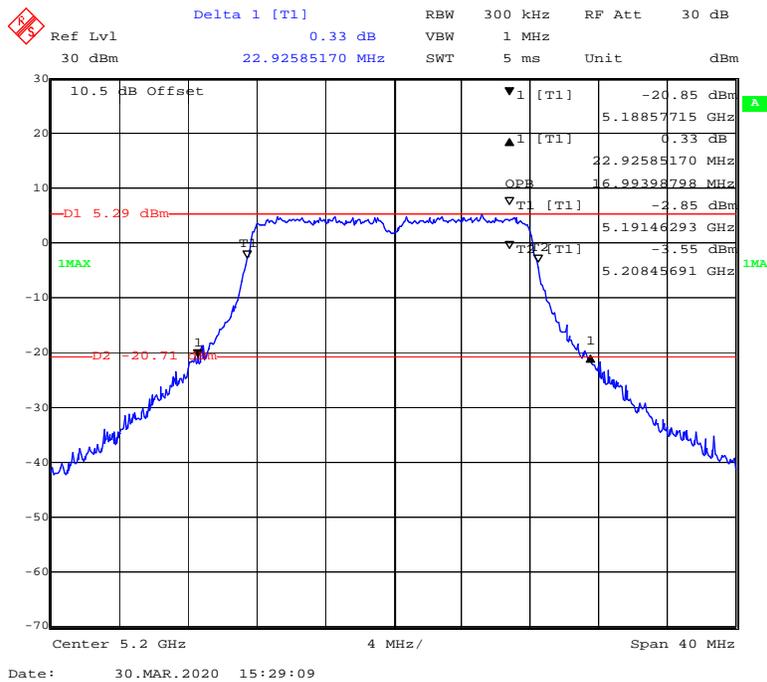
Chain3:

26 Bandwidth&99% Occupied Bandwidth

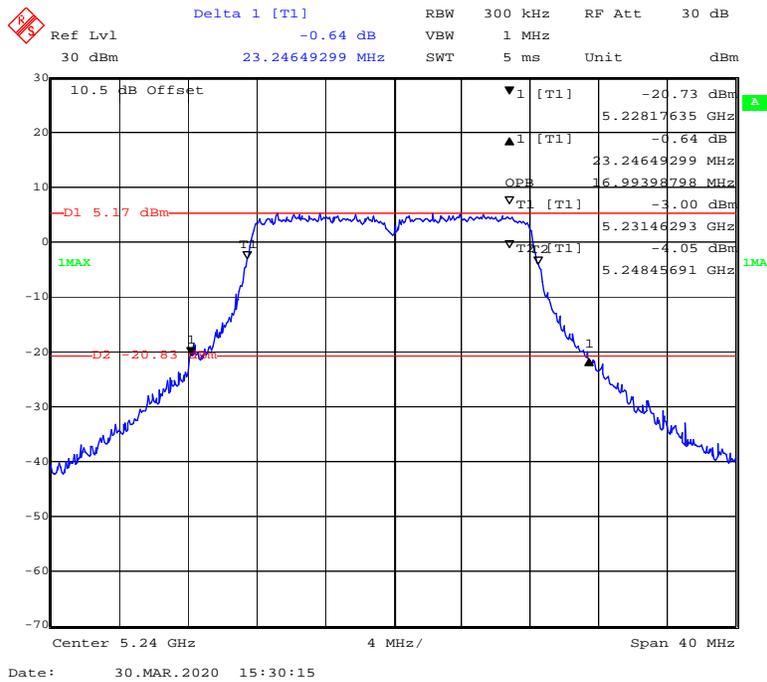
802.11a mode, 5180MHz



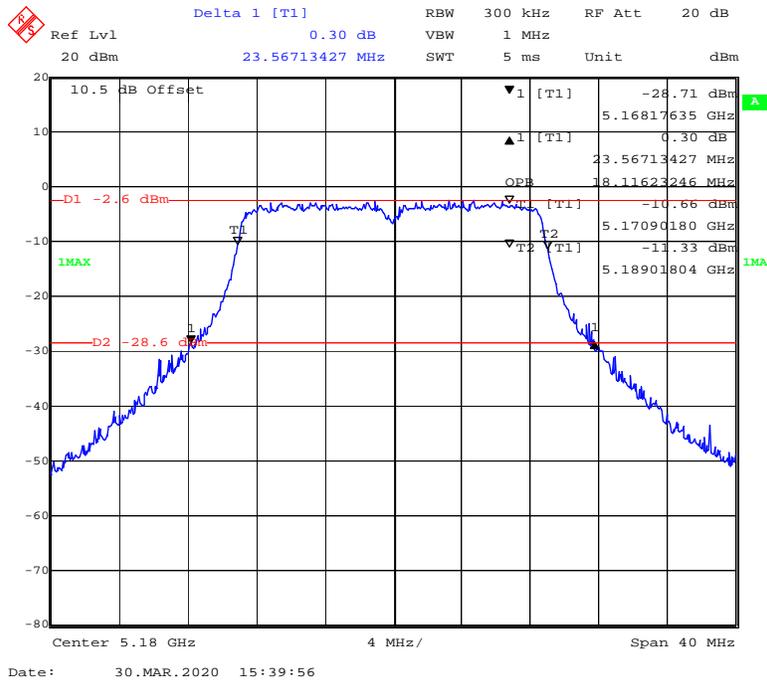
802.11a mode, 5200MHz



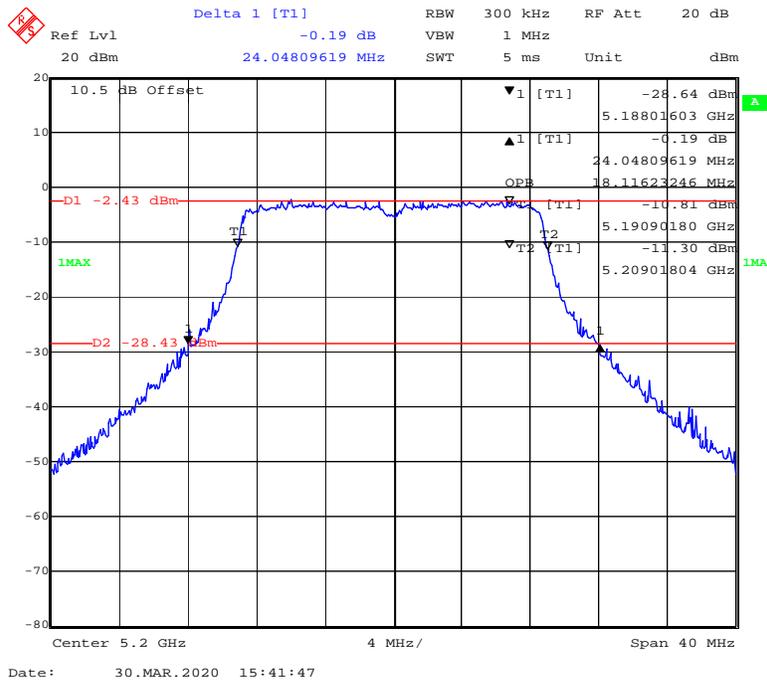
802.11a mode, 5240MHz



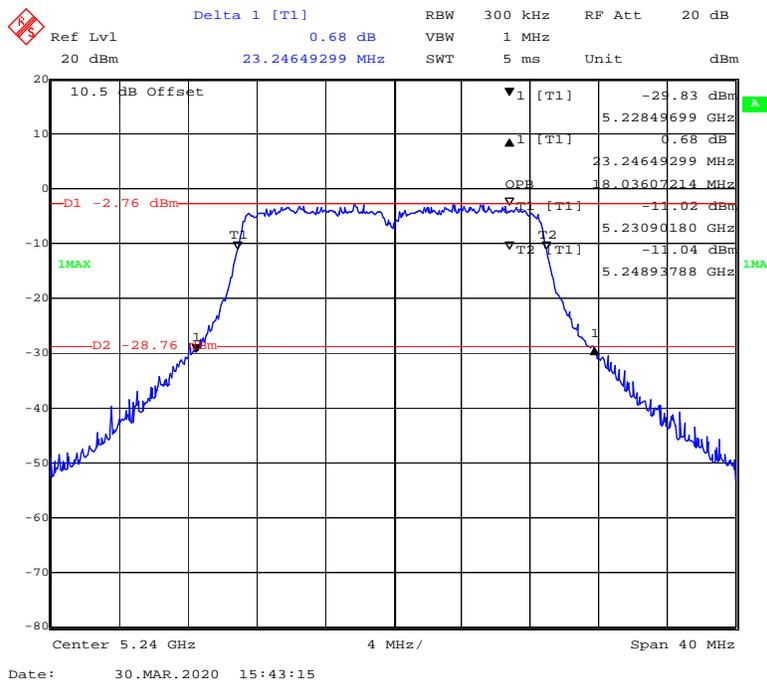
802.11ac20 mode, 5180MHz



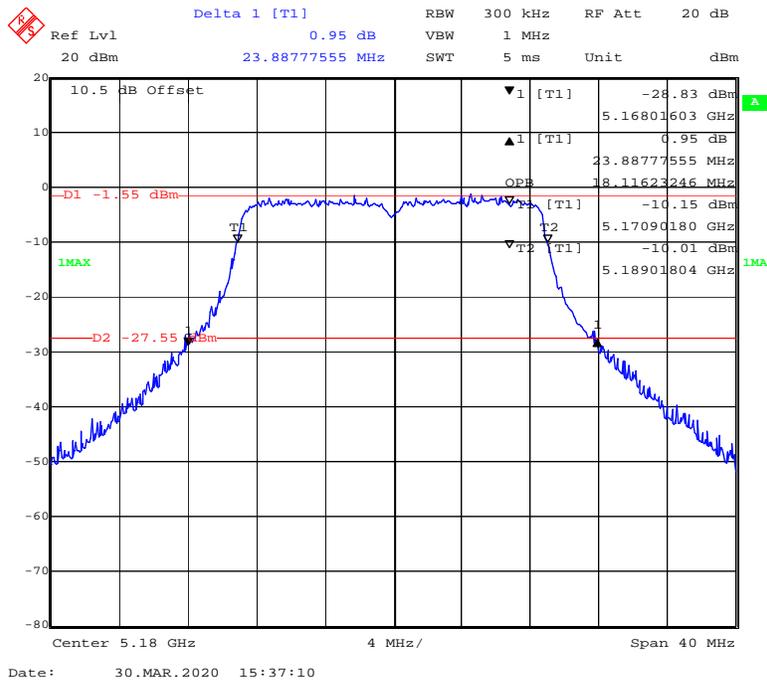
802.11 ac20 mode, 5200MHz



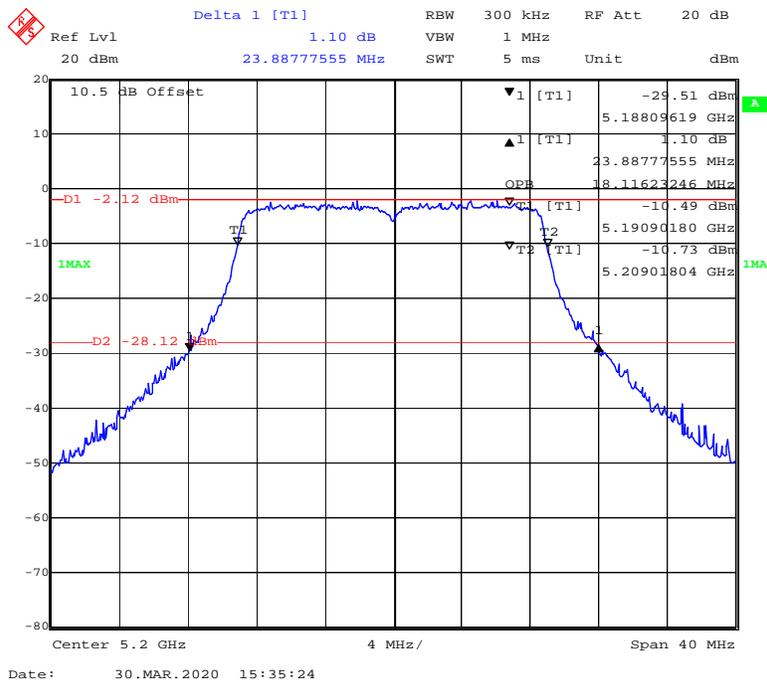
802.11 ac20 mode, 5240MHz



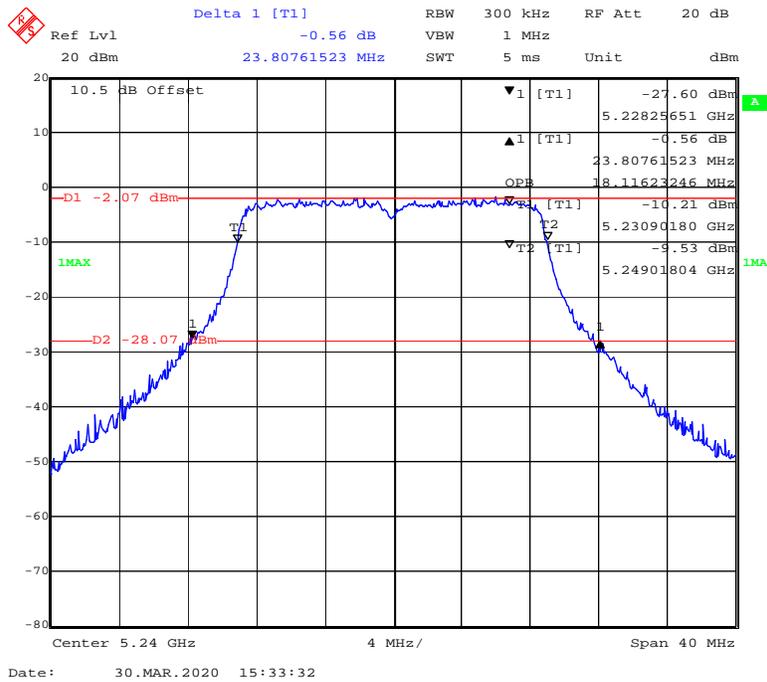
802.11n-HT20 mode, 5180MHz



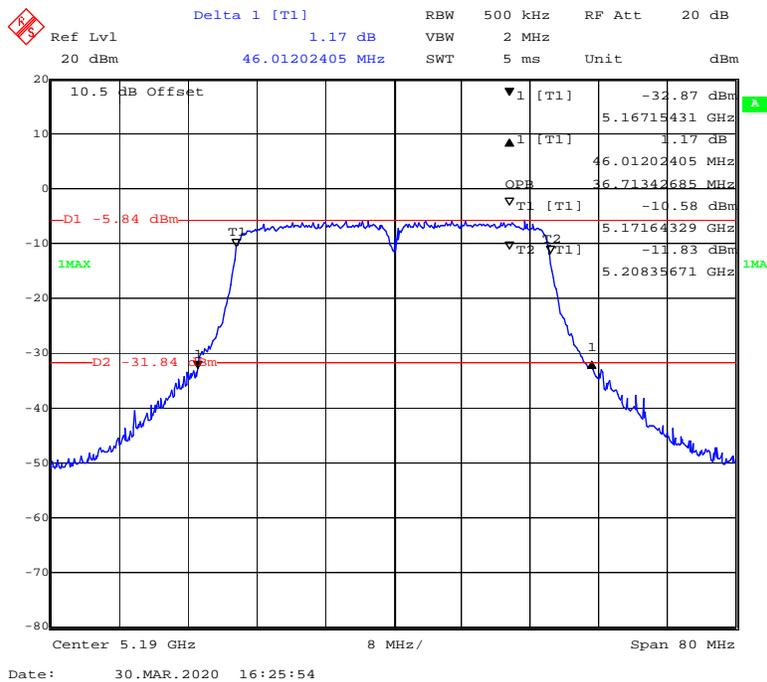
802.11n-HT20 mode, 5200MHz



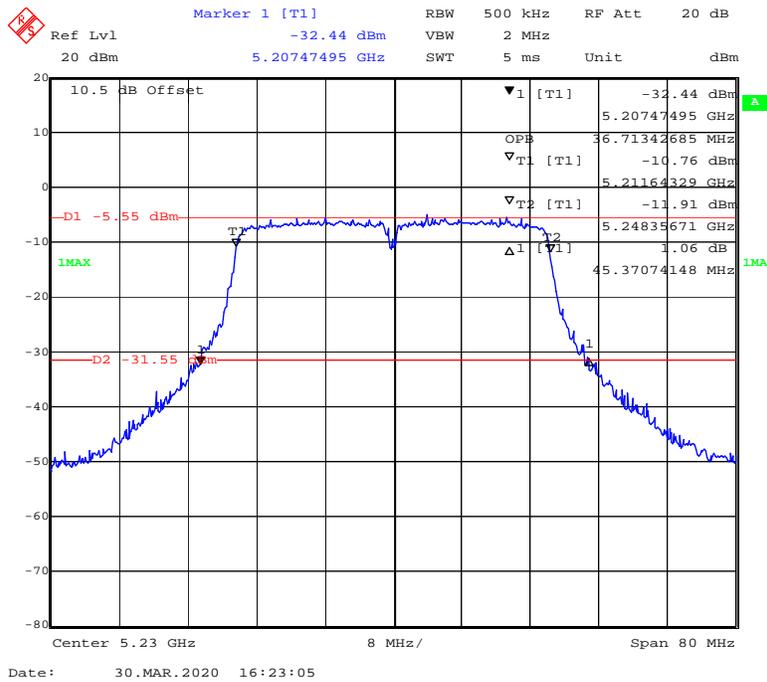
802.11n-HT20 mode, 5240MHz



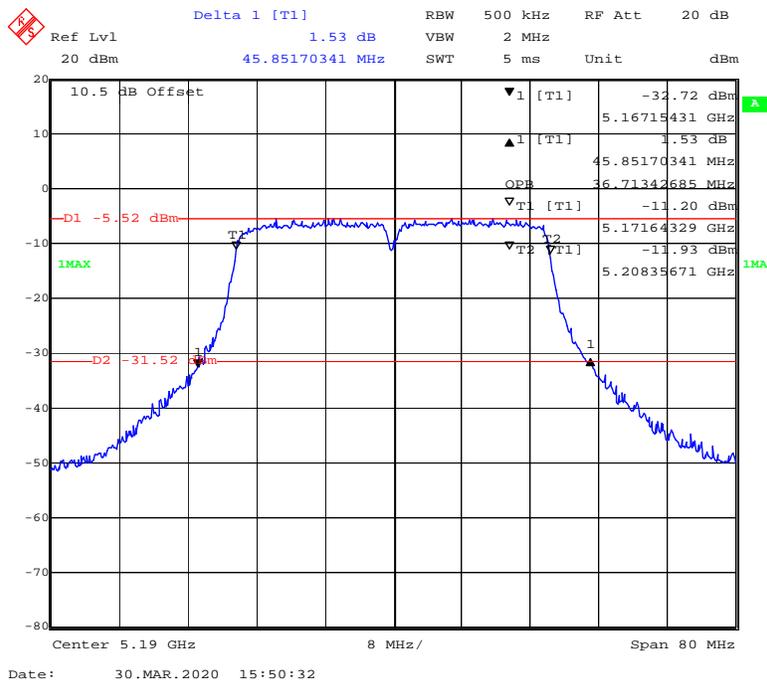
802.11ac40 mode, 5190MHz



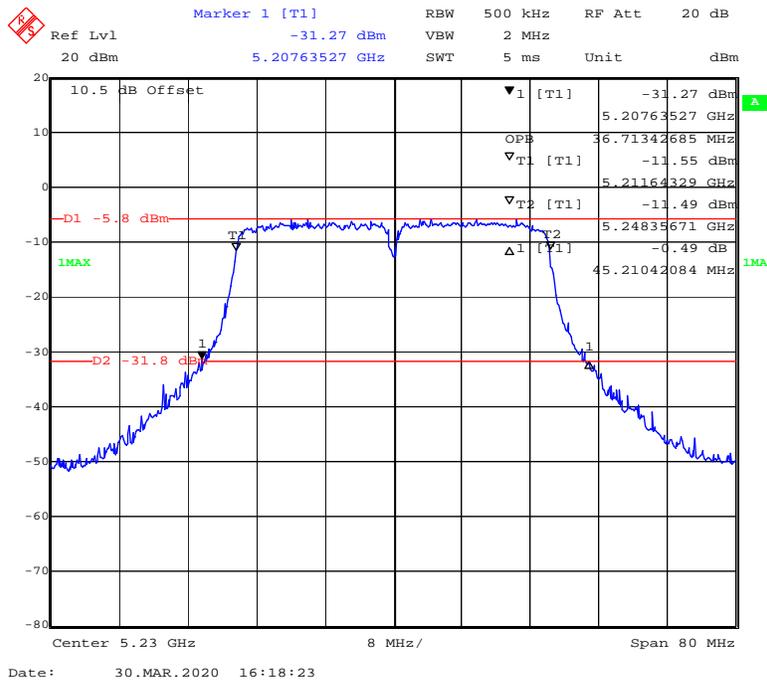
802.11 ac40 mode, 5230MHz



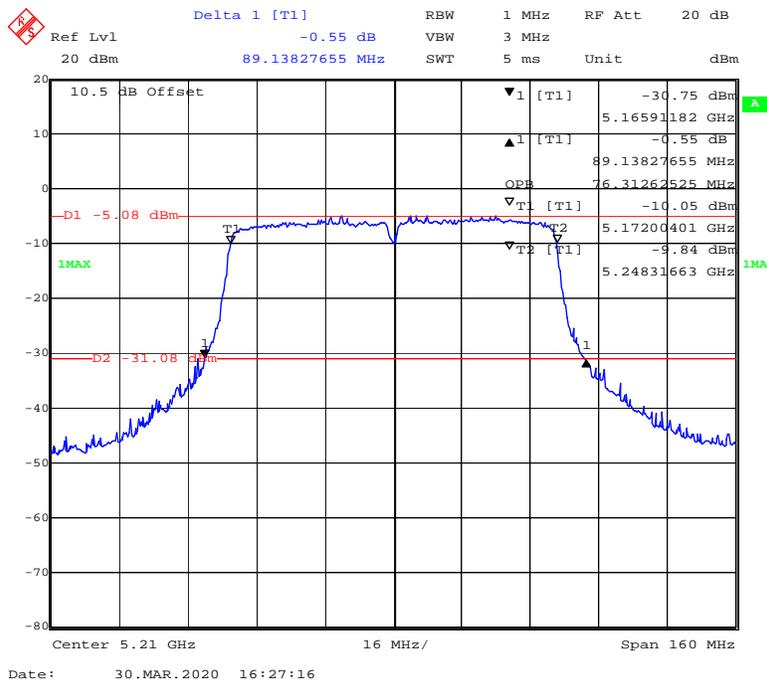
802.11n-HT40 mode, 5190MHz



802.11n-HT40 mode, 5230MHz

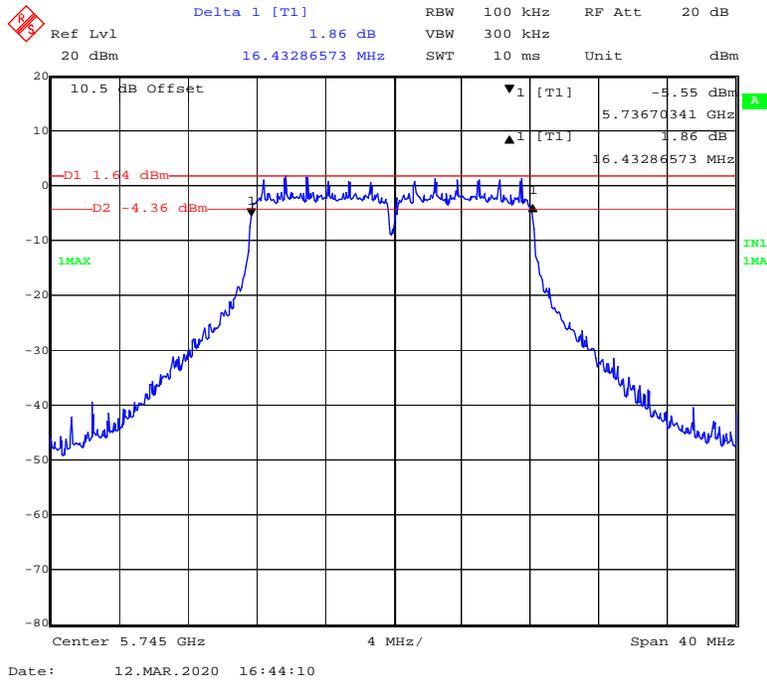


802.11ac80 mode, 5210MHz

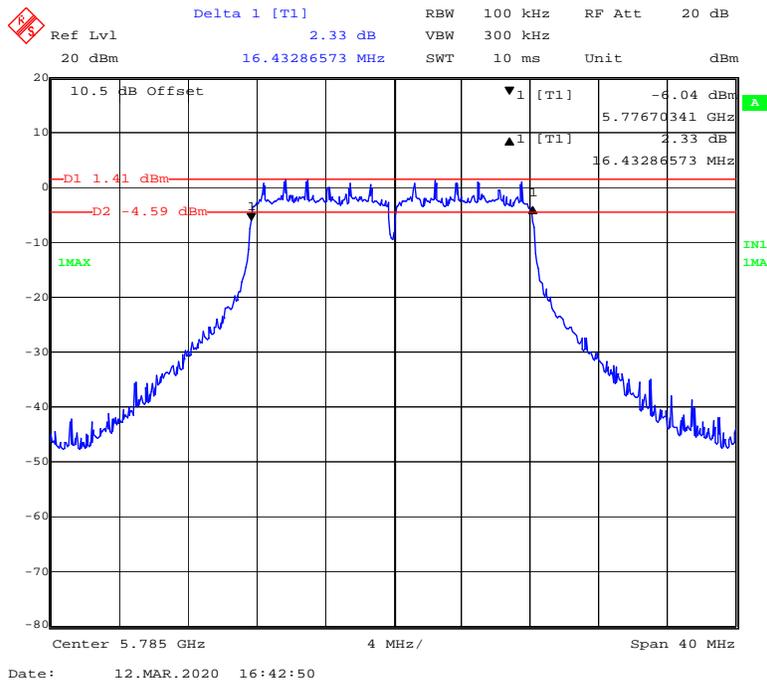


5725-5850 MHz Band
Chain2:
6 Bandwidth

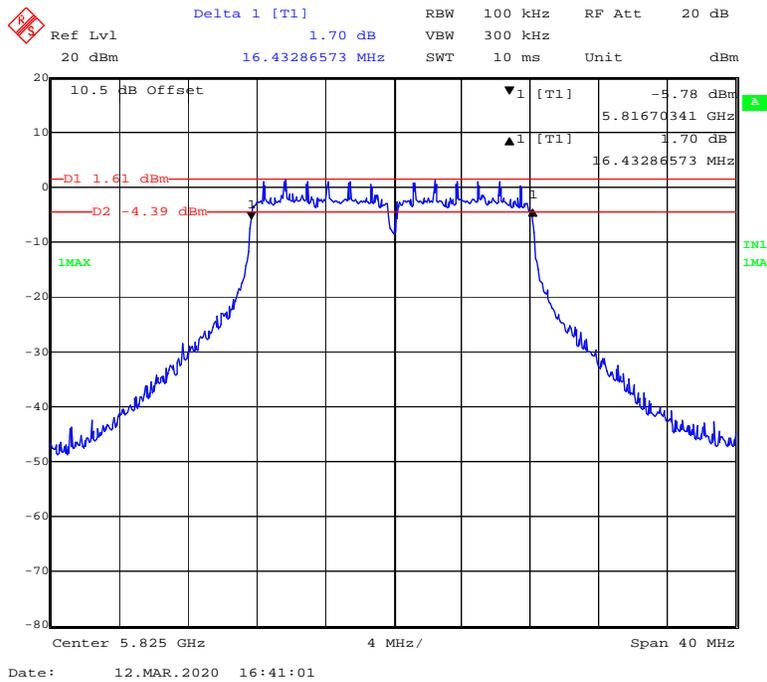
802.11a mode, 5745MHz



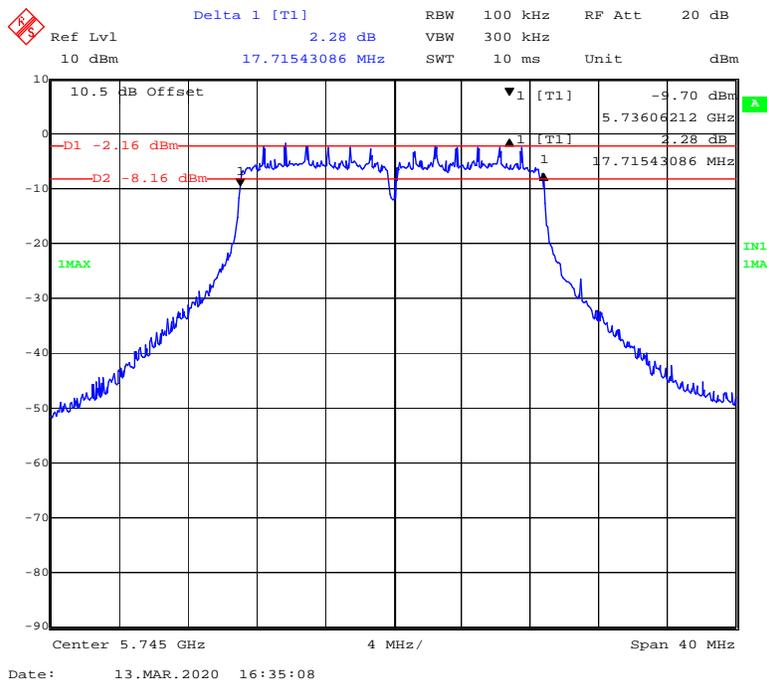
802.11a mode, 5785MHz



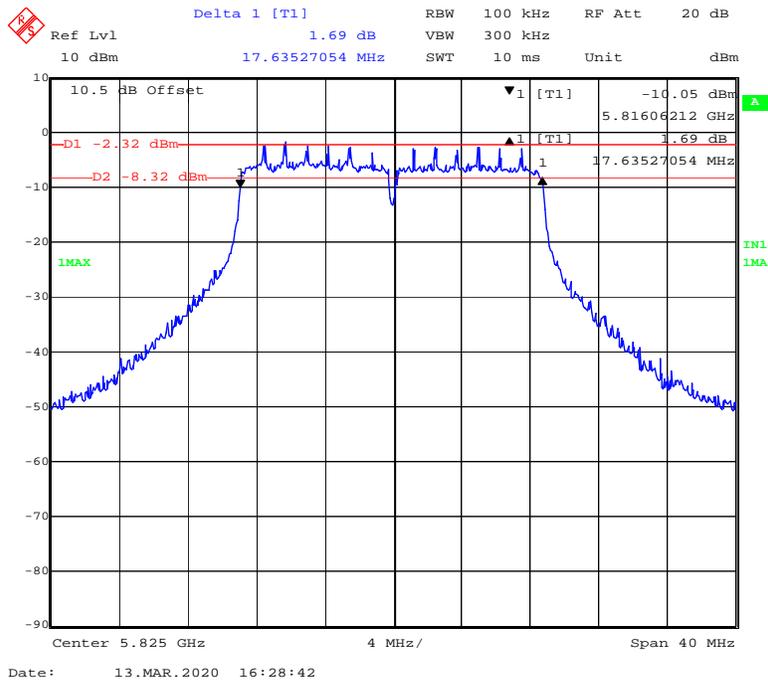
802.11a mode, 5825MHz



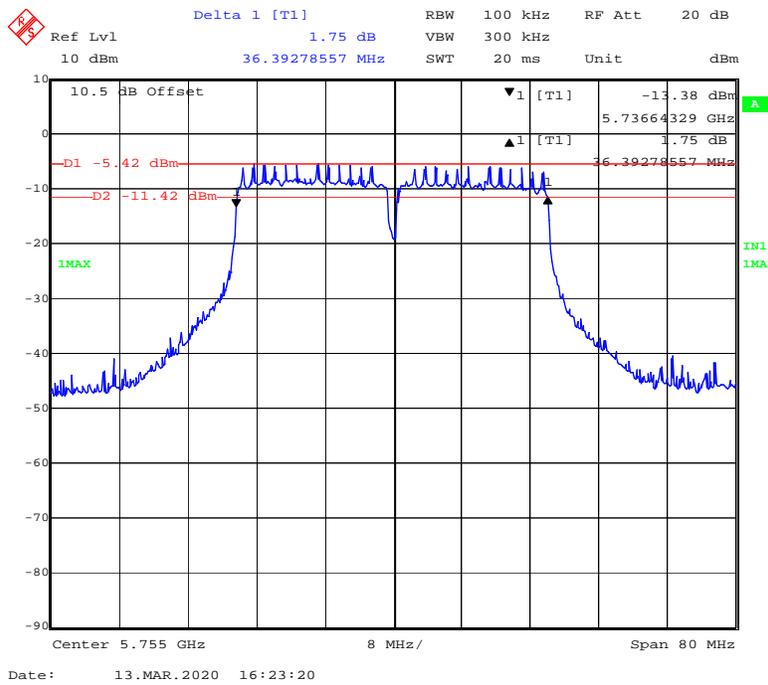
802.11ac20 mode, 5745MHz



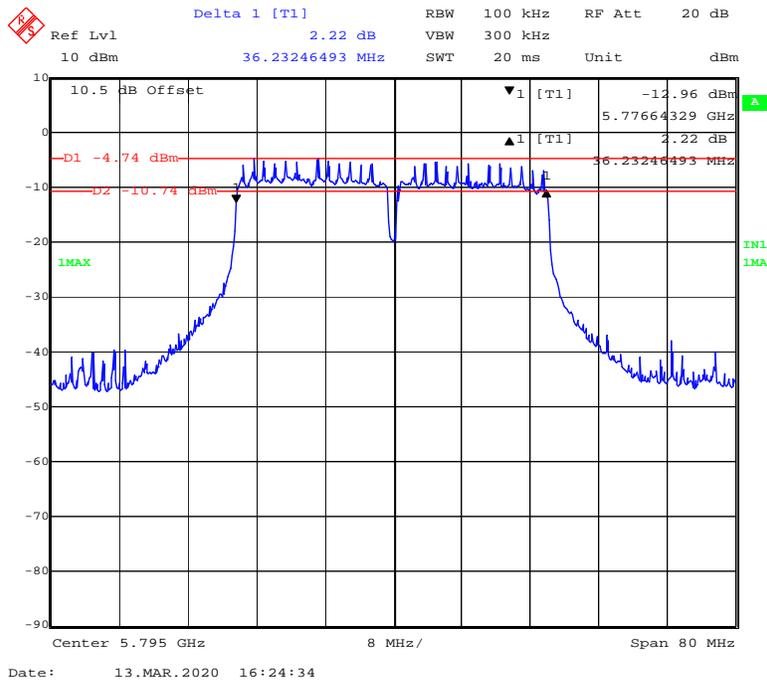
802.11n-HT20 mode, 5825MHz



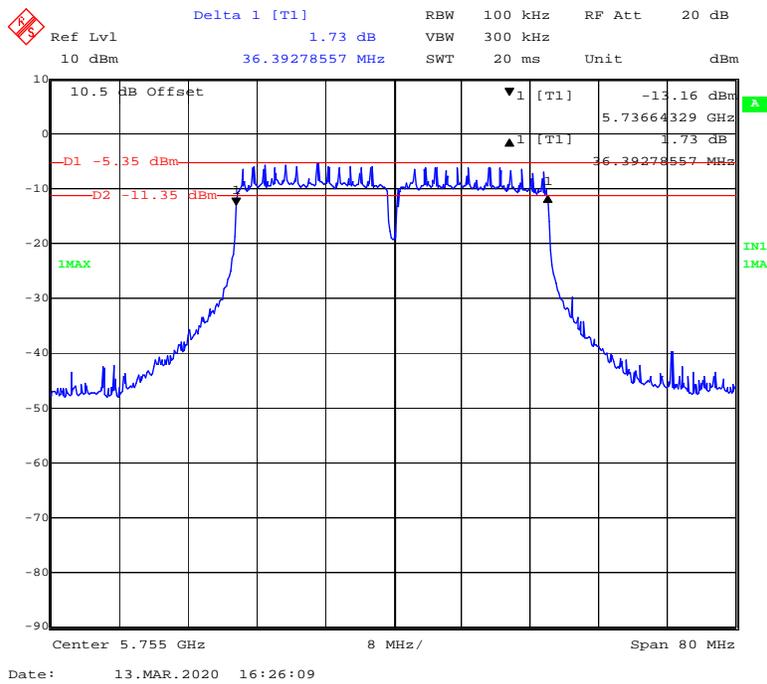
802.11ac40 mode, 5755MHz



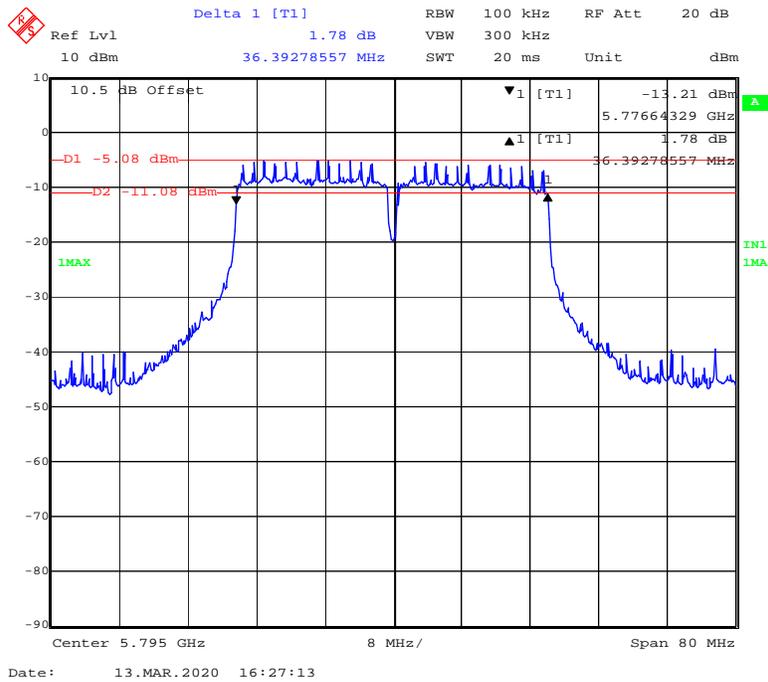
802.11 ac40 mode, 5795MHz



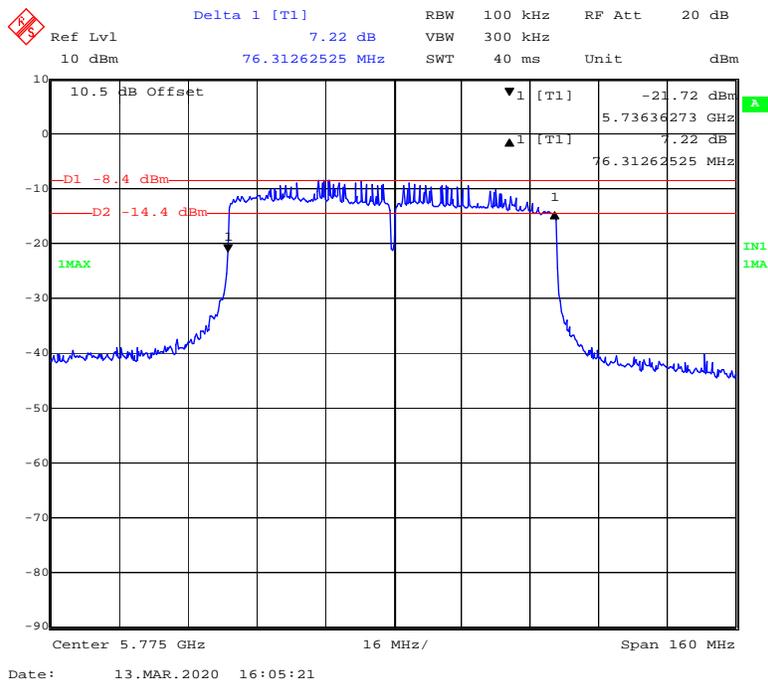
802.11n-HT40 mode, 5755MHz



802.11n-HT40 mode, 5795MHz



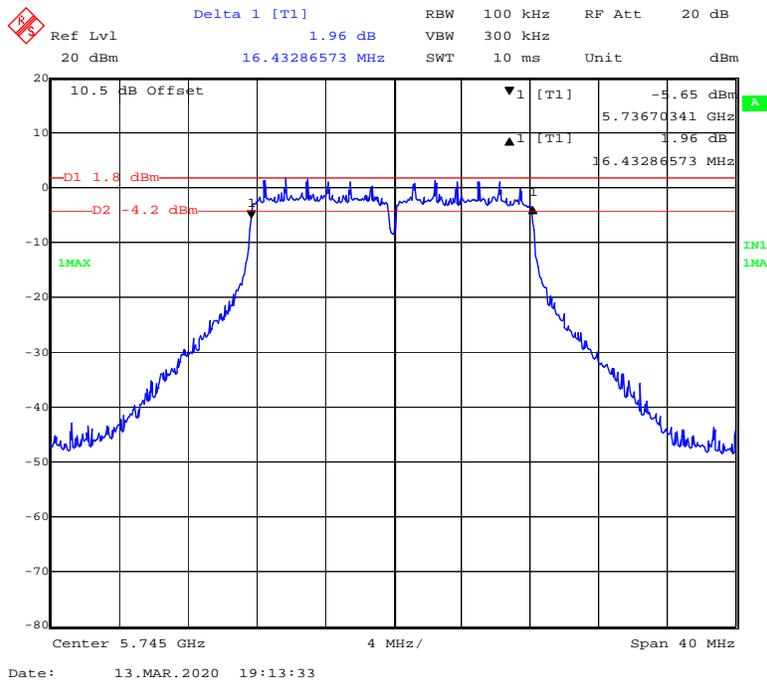
802.11ac80 mode, 5775MHz



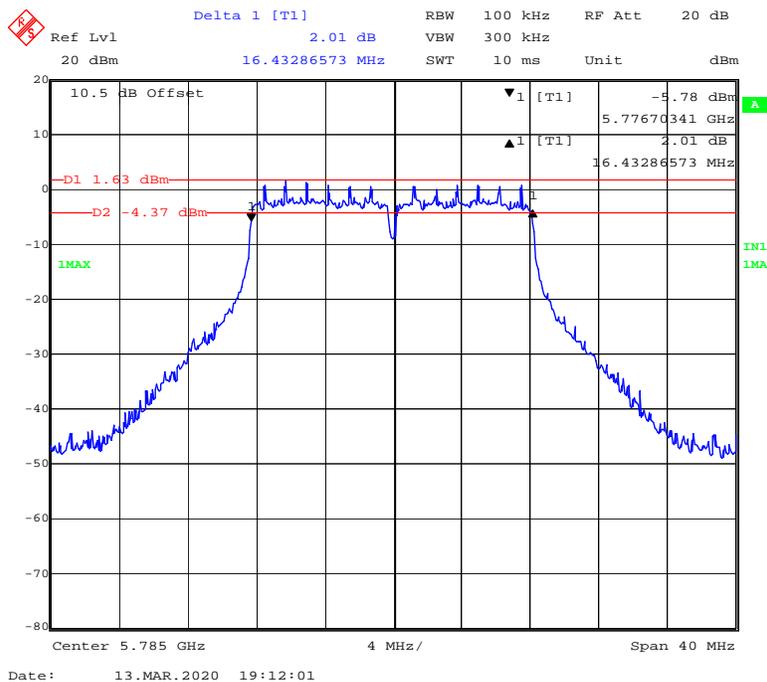
Chain3:

6 Bandwidth

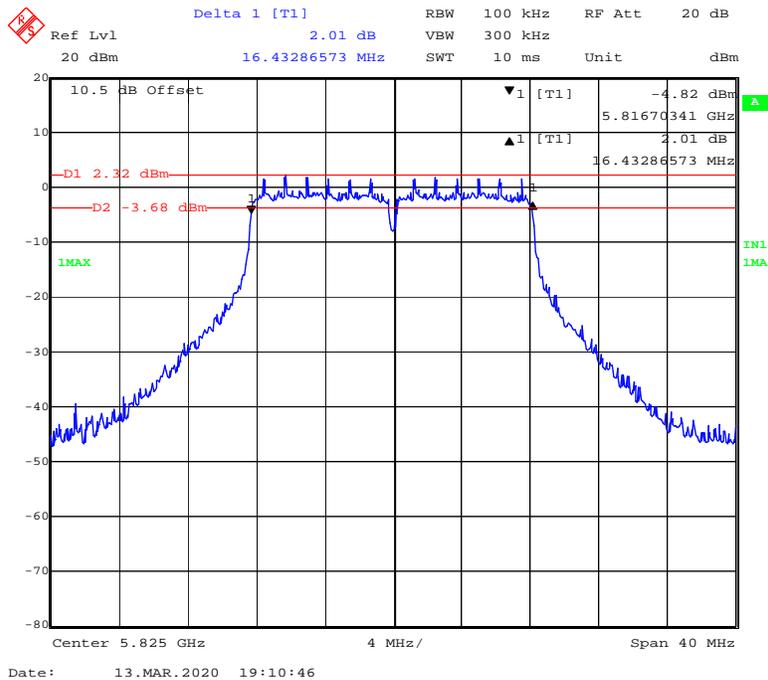
802.11a mode, 5745MHz



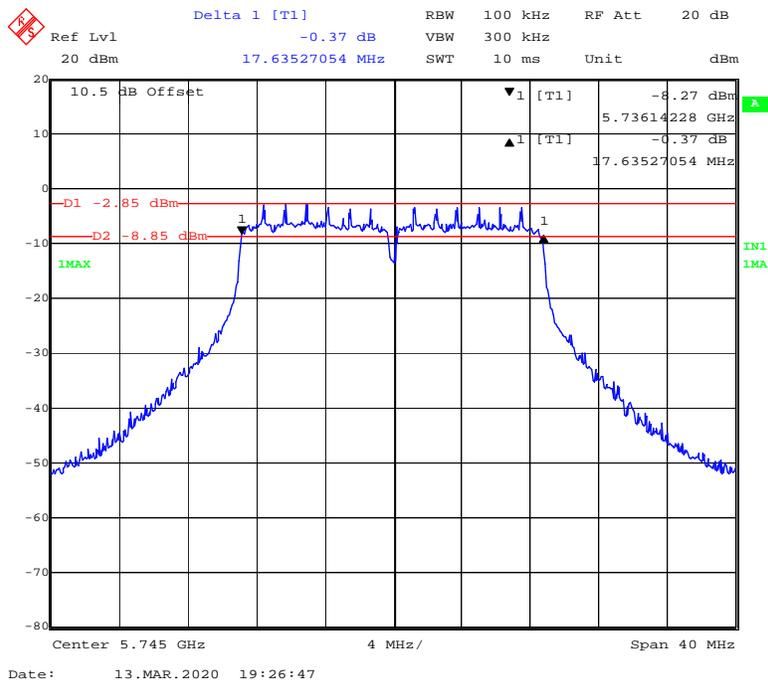
802.11a mode, 5785MHz



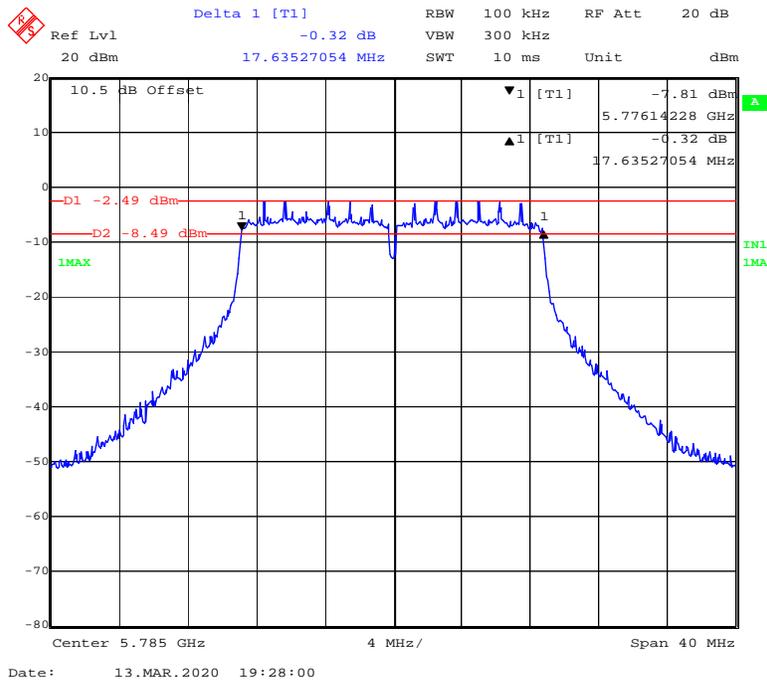
802.11a mode, 5825MHz



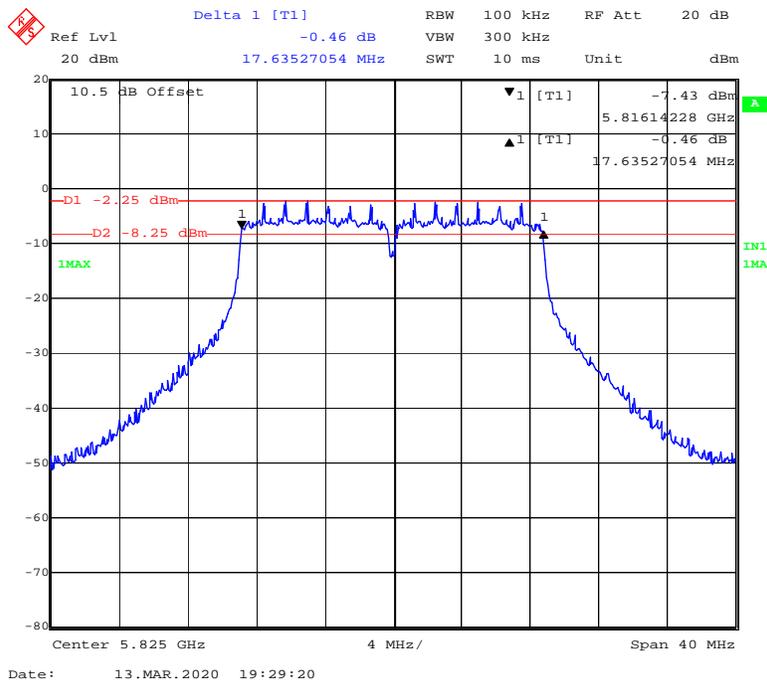
802.11ac20 mode, 5745MHz



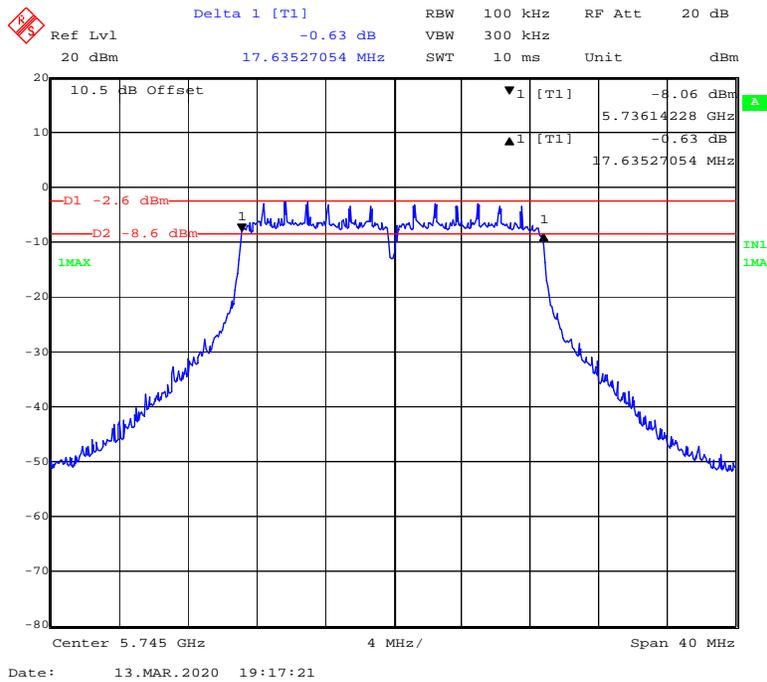
802.11 ac20 mode, 5785MHz



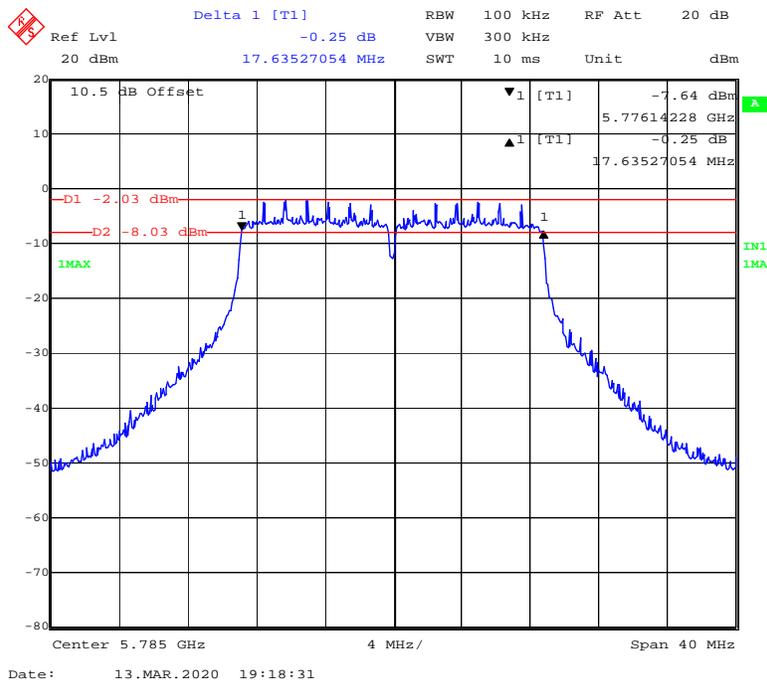
802.11 ac20 mode, 5825MHz



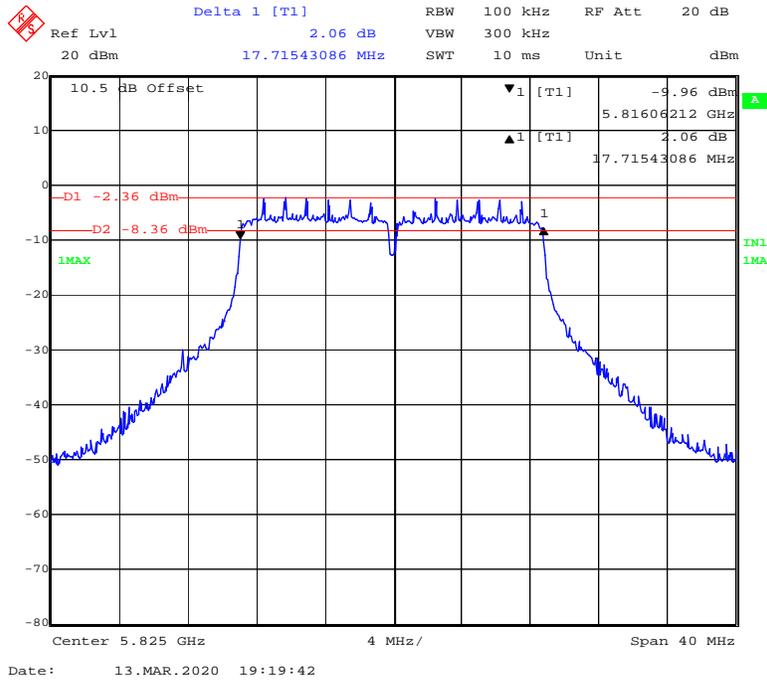
802.11n-HT20 mode, 5745MHz



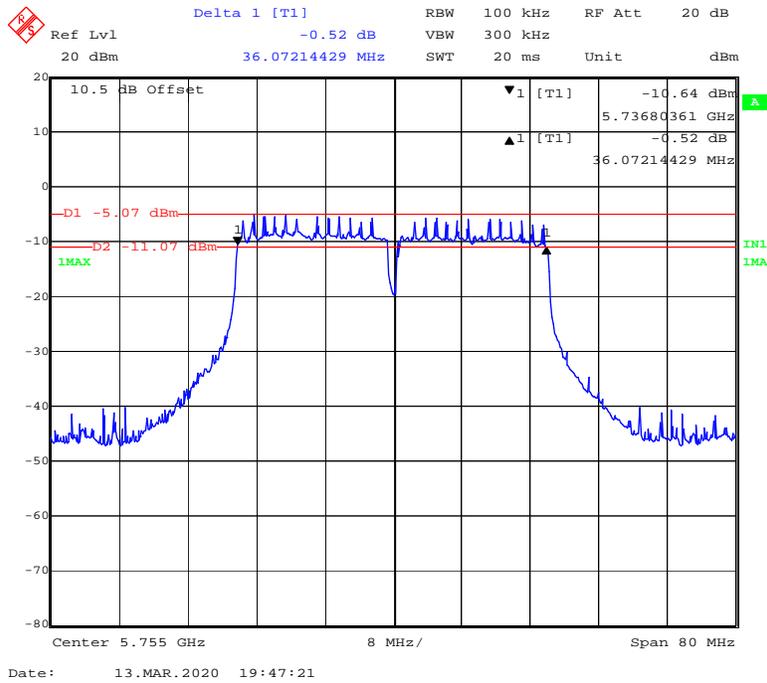
802.11n-HT20 mode, 5785MHz



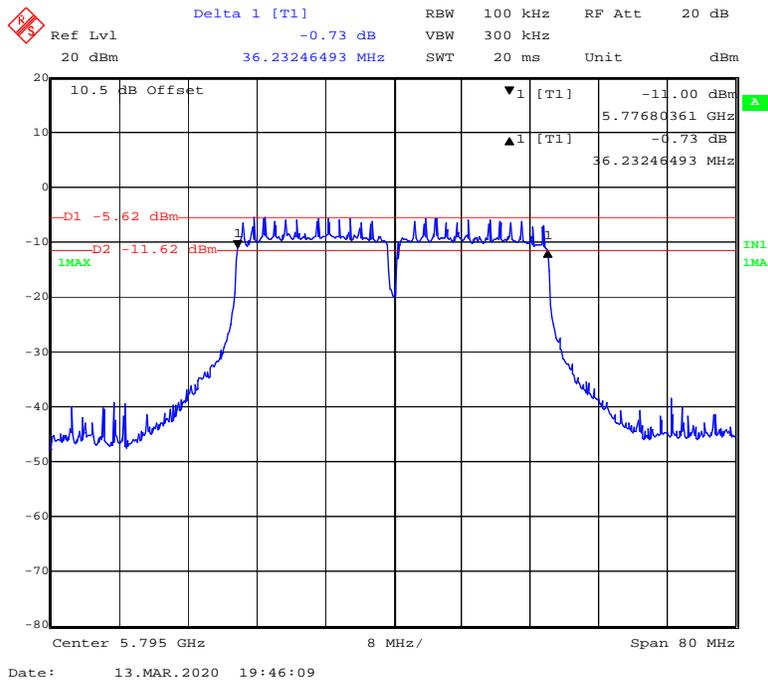
802.11n-HT20 mode, 5825MHz



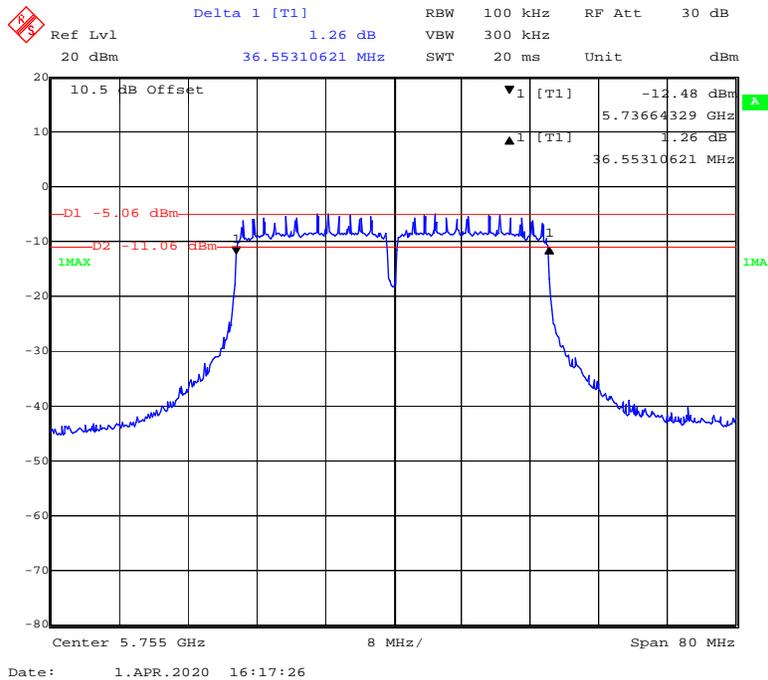
802.11ac40 mode, 5755MHz



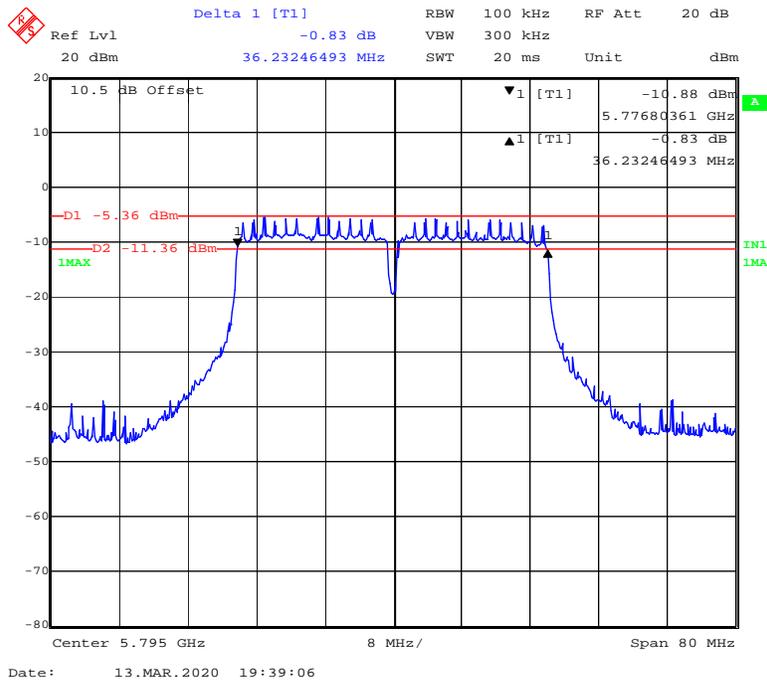
802.11 ac40 mode, 5795MHz



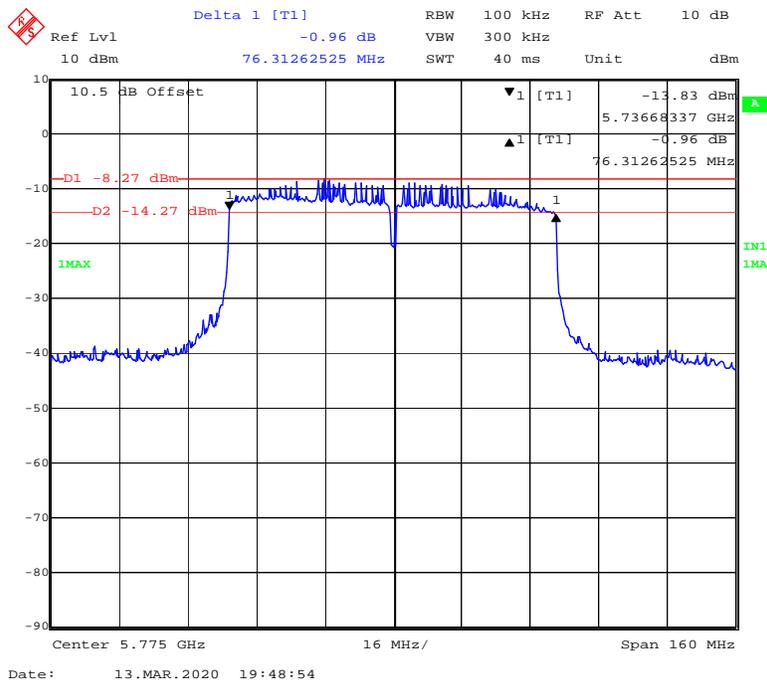
802.11n-HT40 mode, 5755MHz



802.11n-HT40 mode, 5795MHz

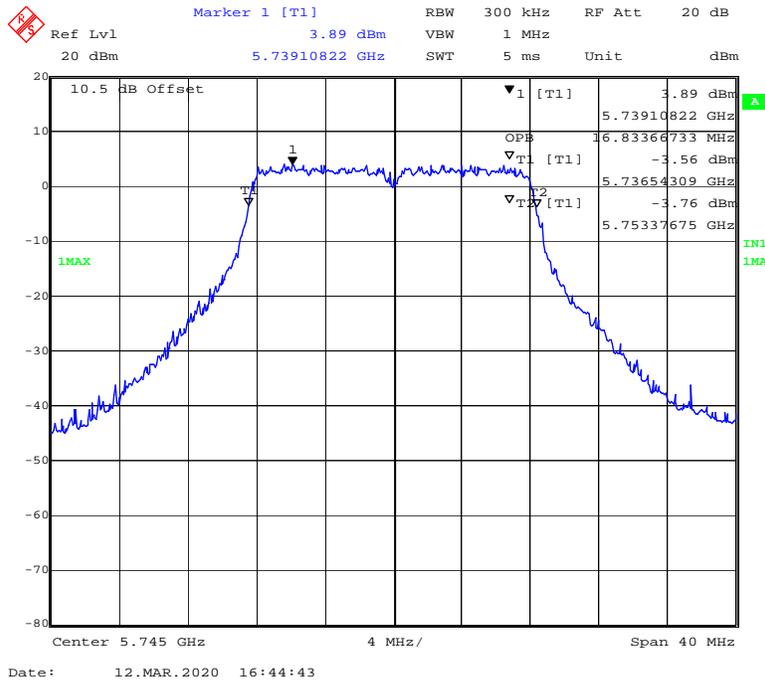


802.11ac80 mode, 5775MHz

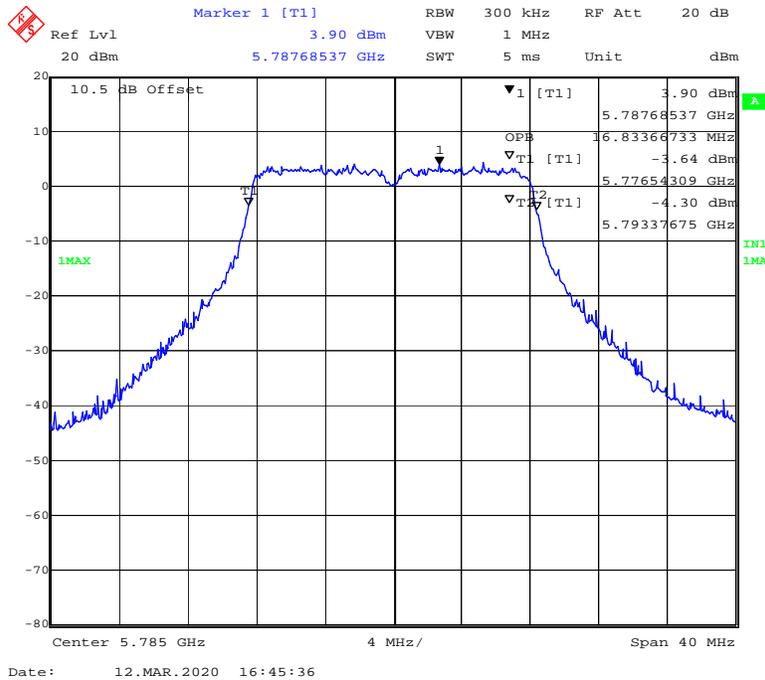


99% Occupied Bandwidth-Chain2

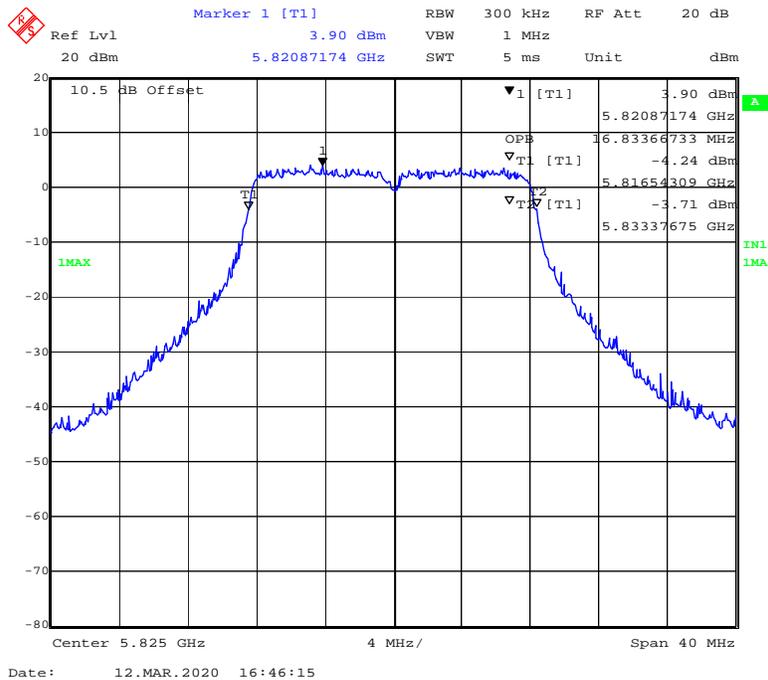
802.11a mode, 5745MHz



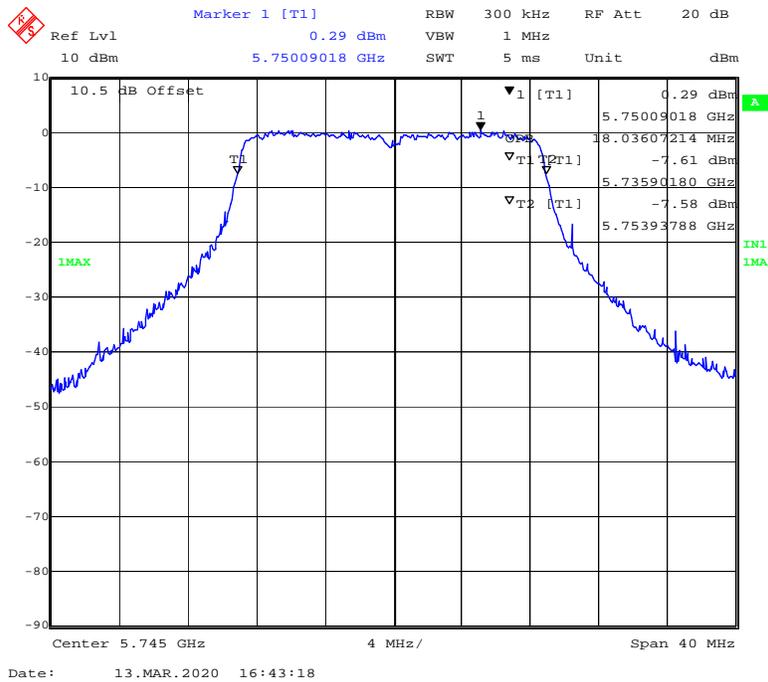
802.11a mode, 5785MHz



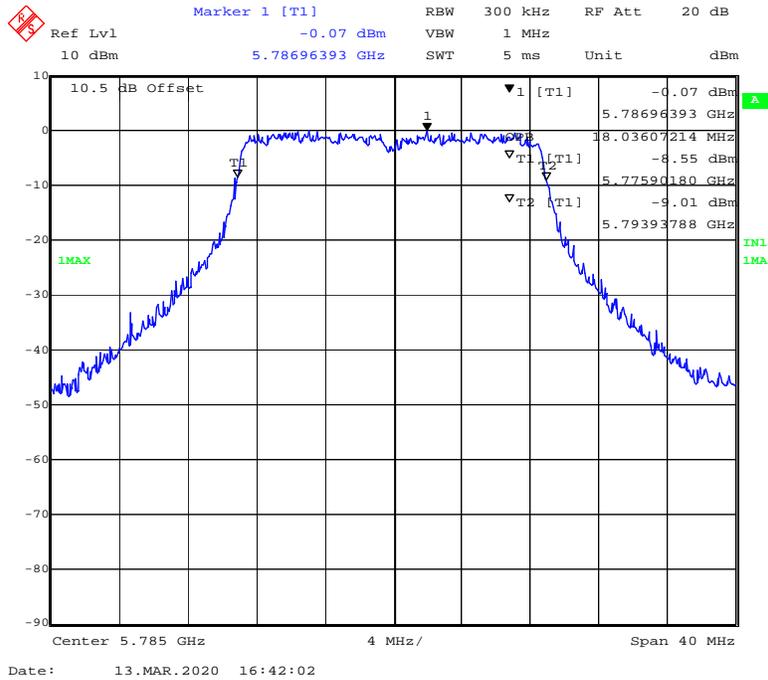
802.11a mode, 5825MHz



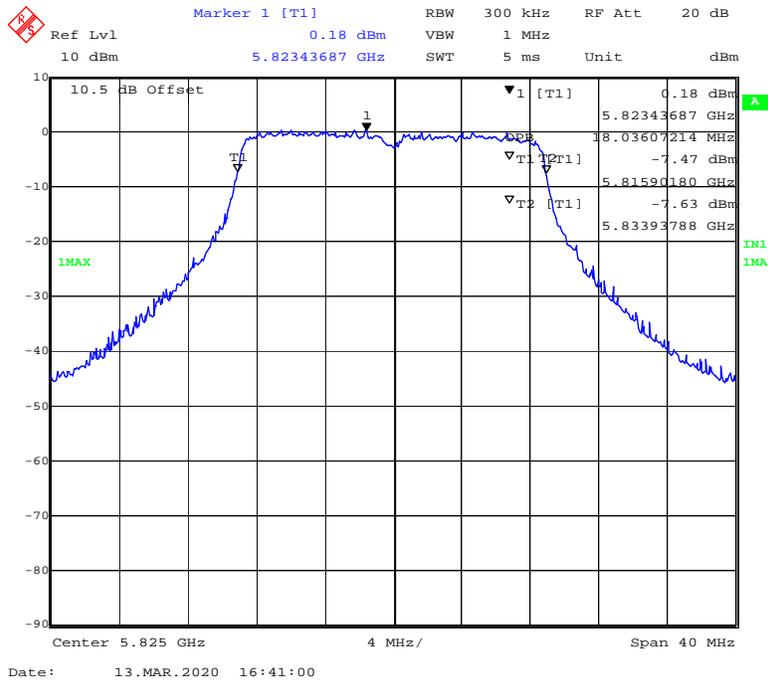
802.11ac20 mode, 5745MHz



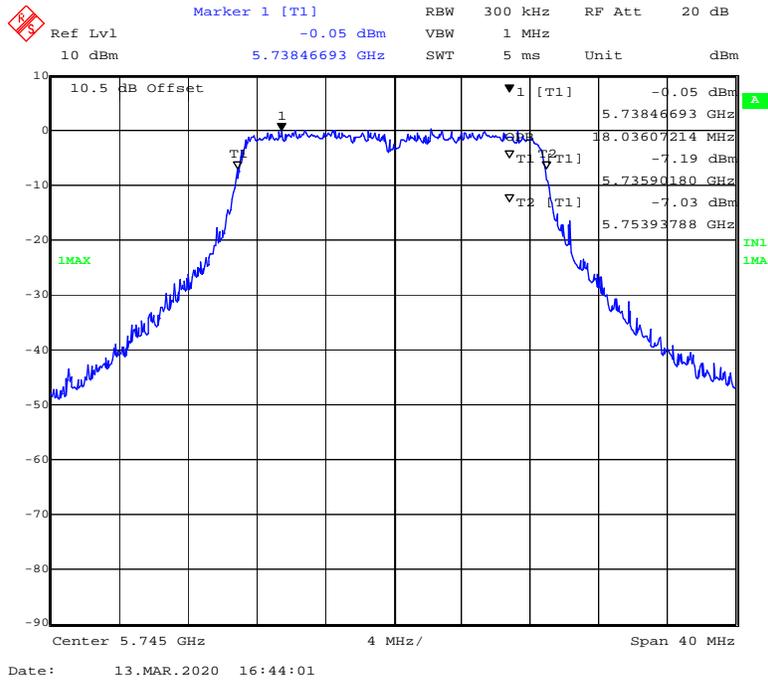
802.11 ac20 mode, 5785MHz



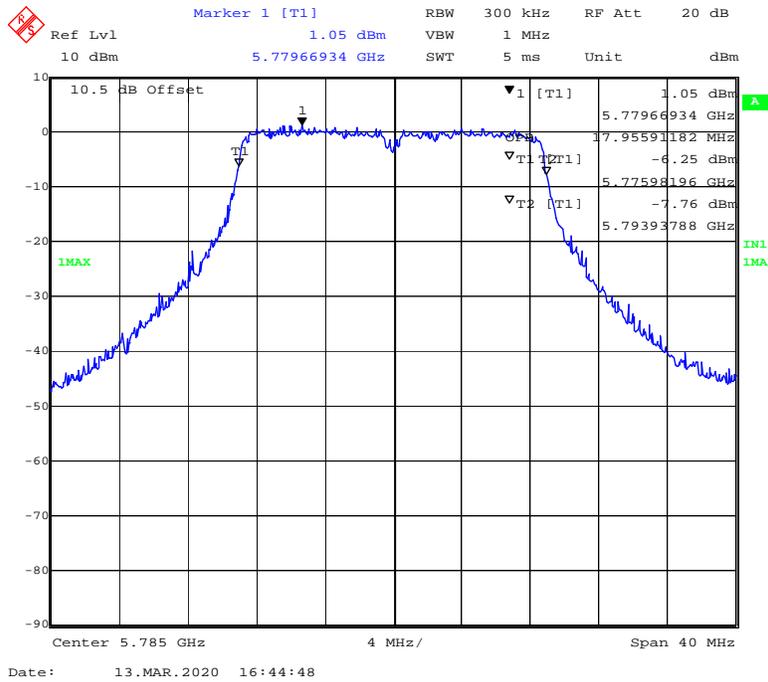
802.11 ac20 mode, 5825MHz



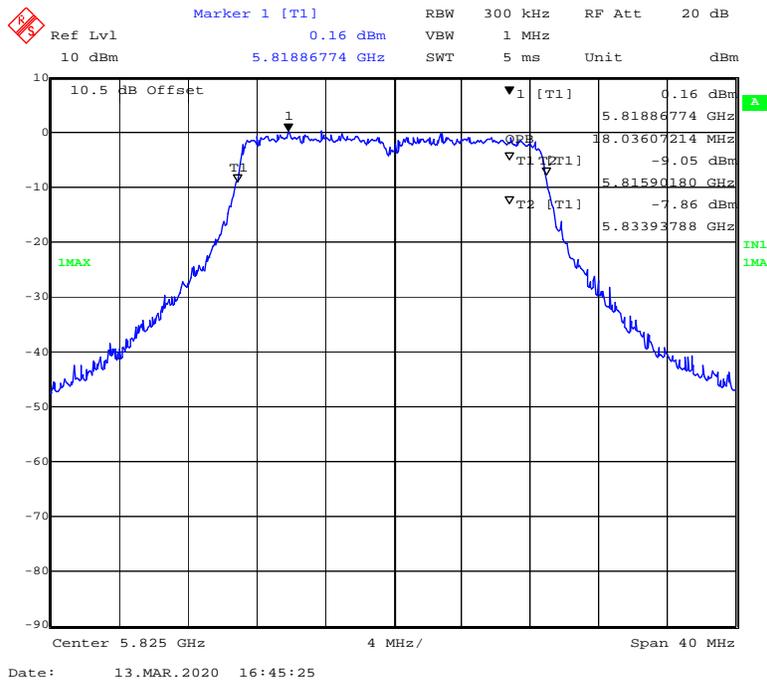
802.11n-HT20 mode, 5745MHz



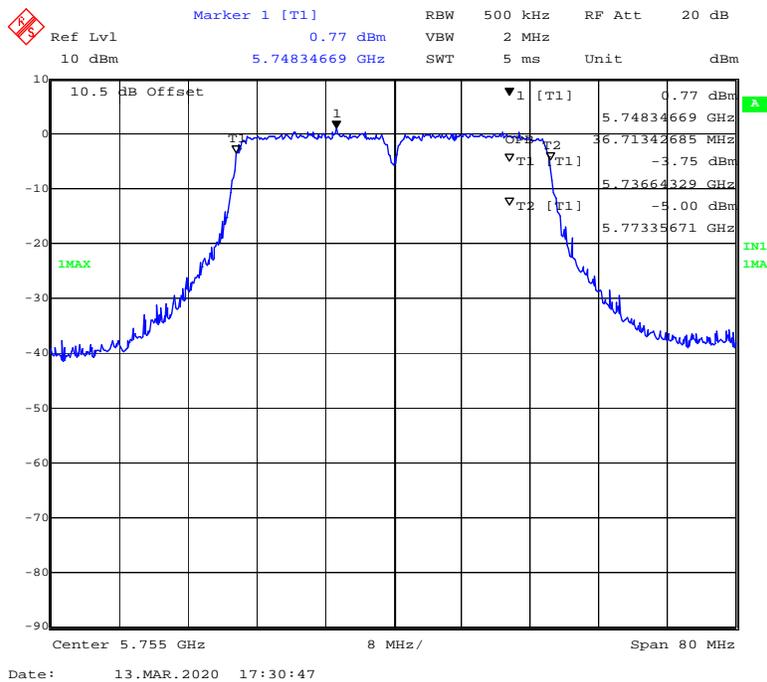
802.11n-HT20 mode, 5785MHz



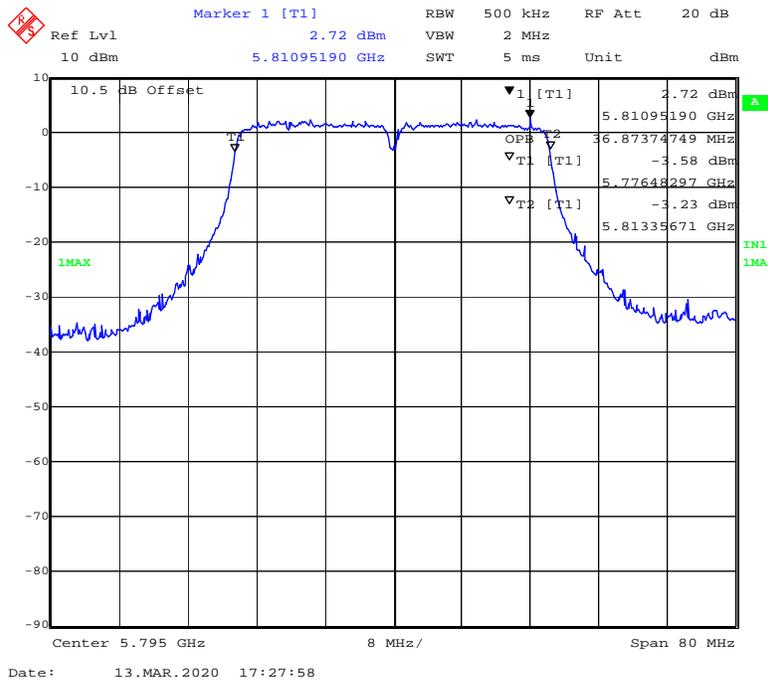
802.11n-HT20 mode, 5825MHz



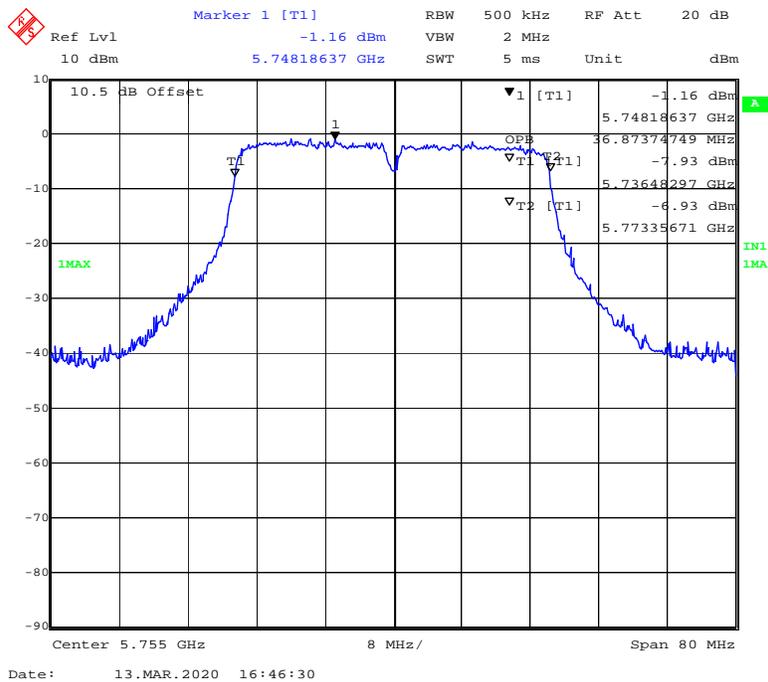
802.11ac40 mode, 5755MHz



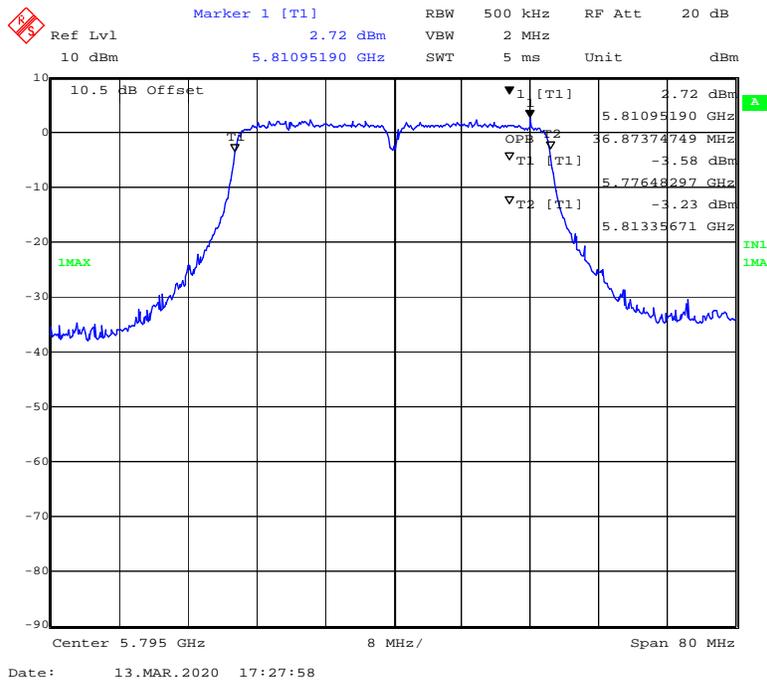
802.11 ac40 mode, 5795MHz



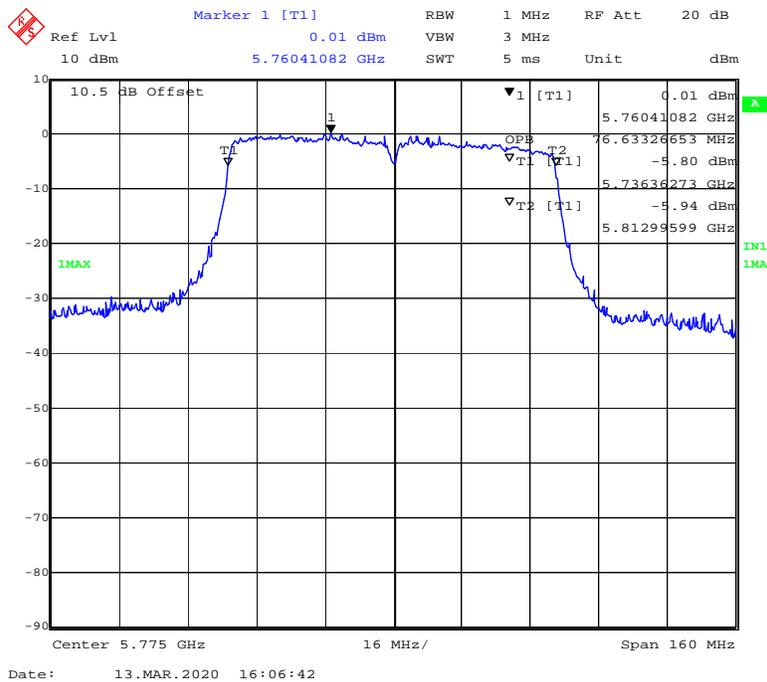
802.11n-HT40 mode, 5755MHz



802.11n-HT40 mode, 5795MHz

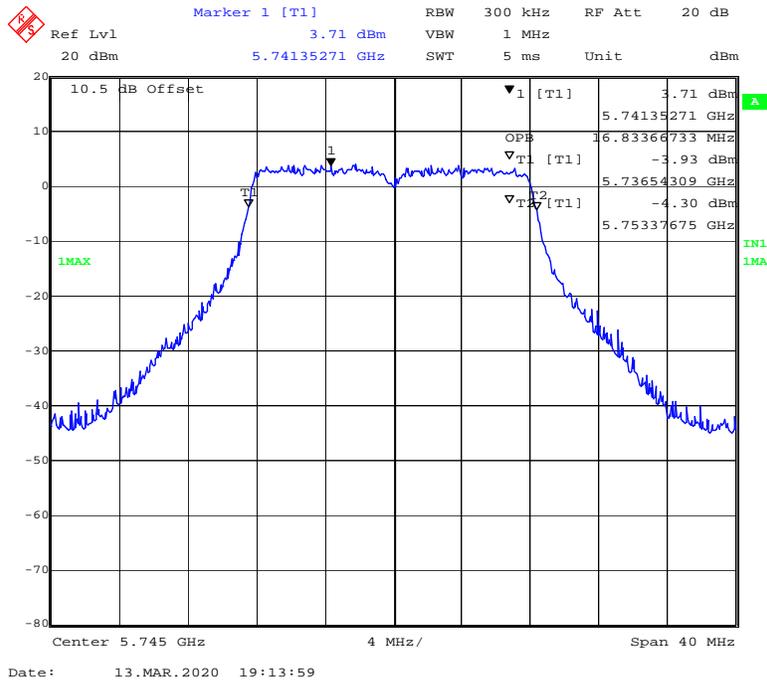


802.11n-ac80 mode, 5775MHz

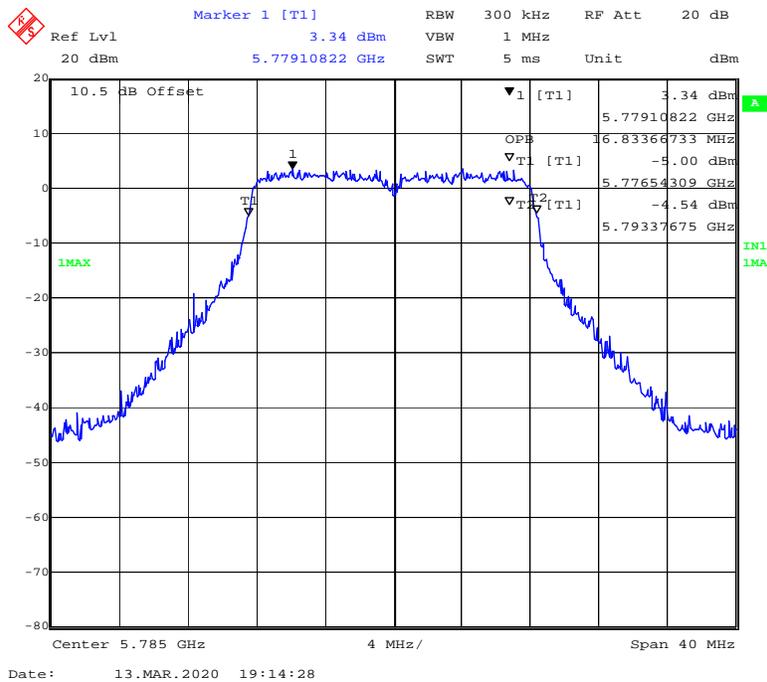


99% Occupied Bandwidth-Chain3

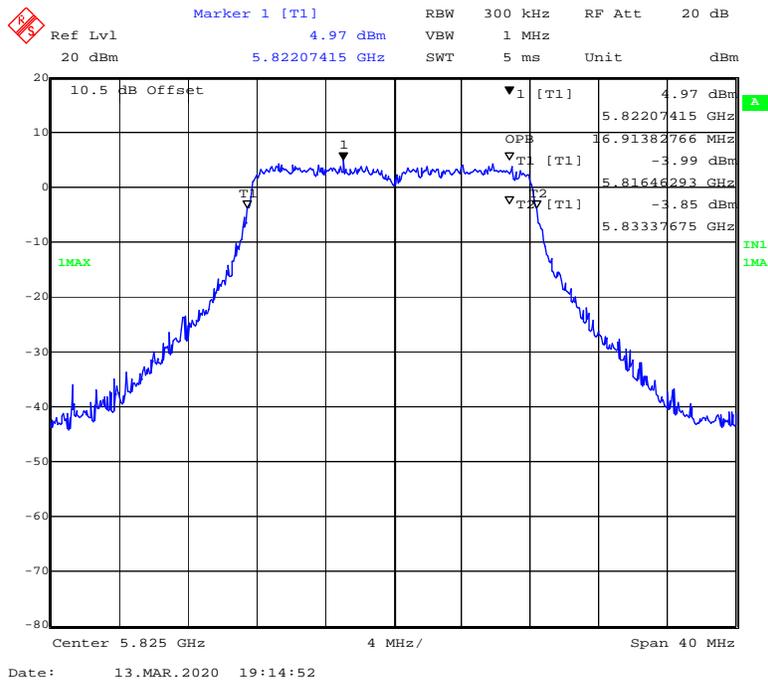
802.11a mode, 5745MHz



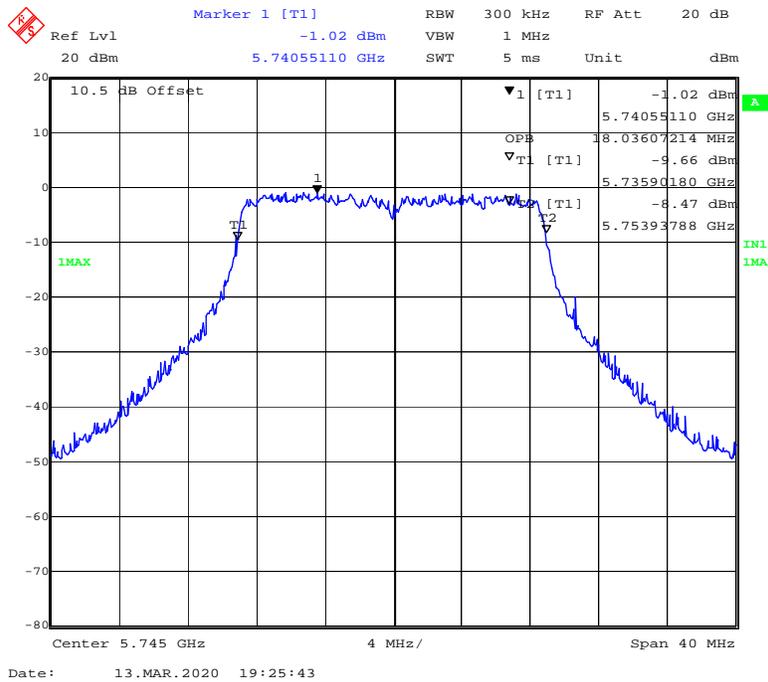
802.11a mode, 5785MHz



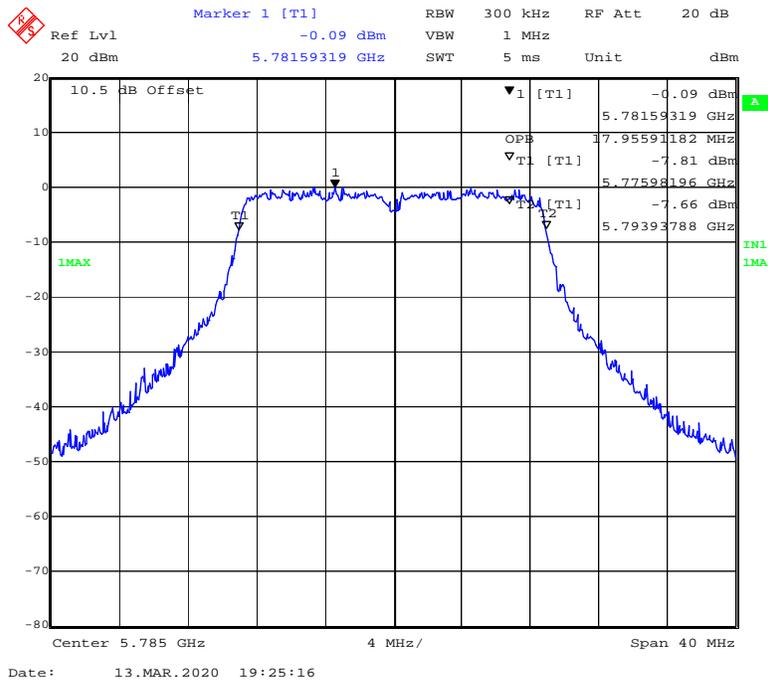
802.11a mode, 5825MHz



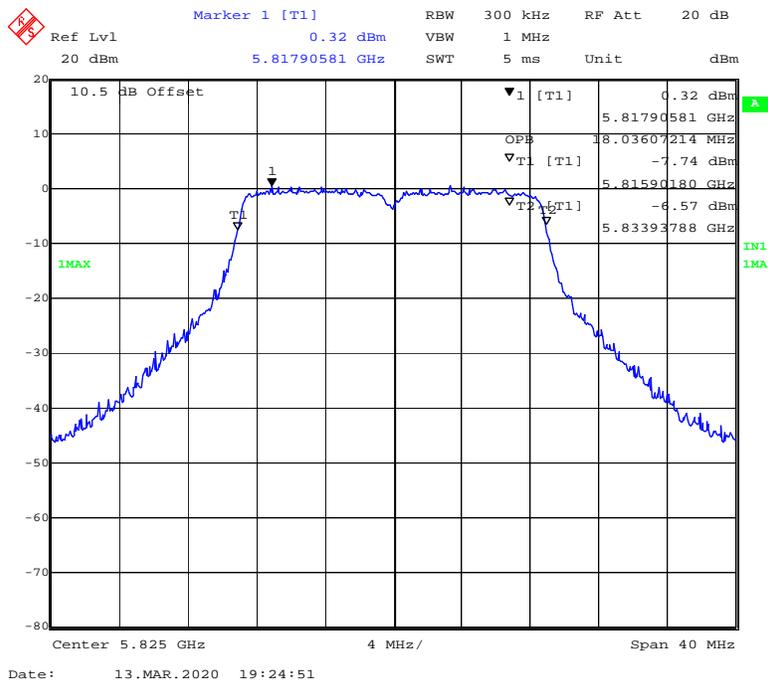
802.11ac20 mode, 5745MHz



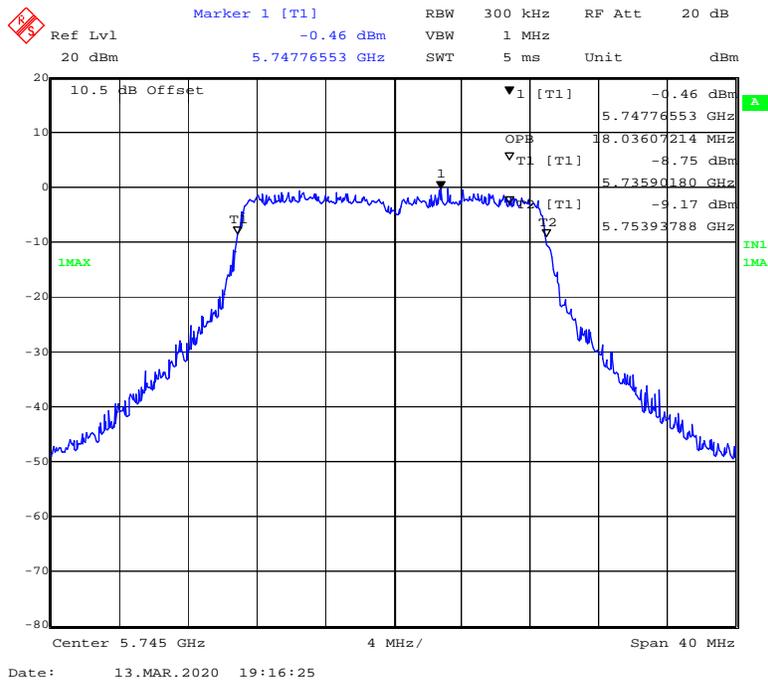
802.11 ac20 mode, 5785MHz



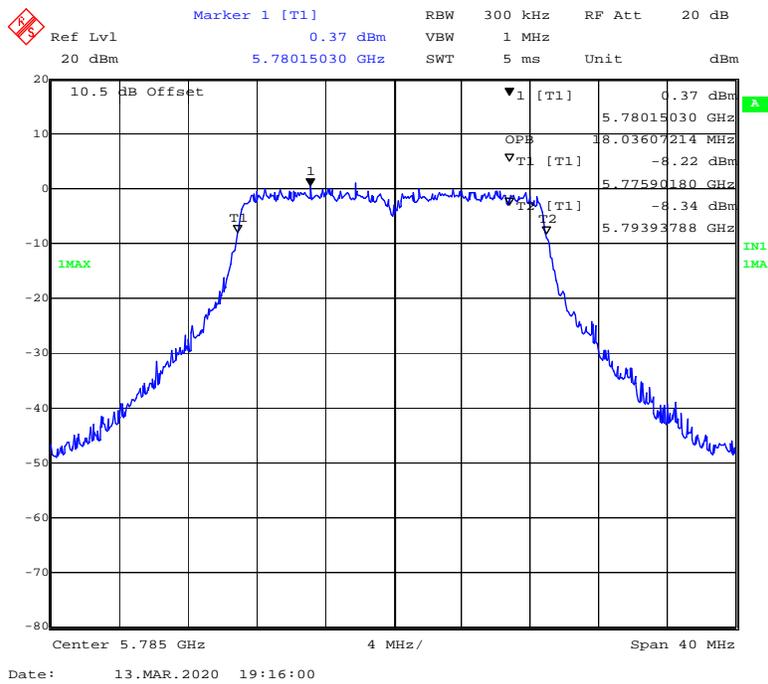
802.11 ac20 mode, 5825MHz



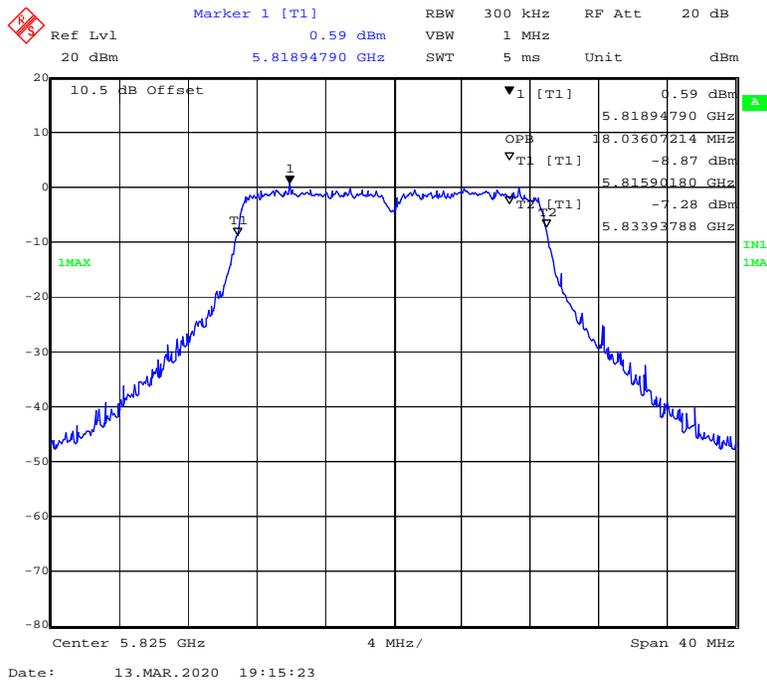
802.11n-HT20 mode, 5745MHz



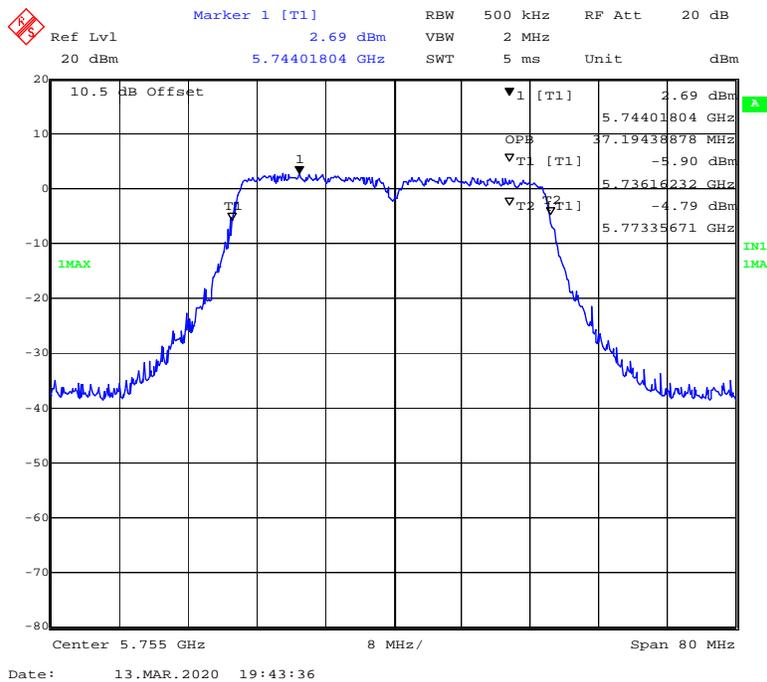
802.11n-HT20 mode, 5785MHz



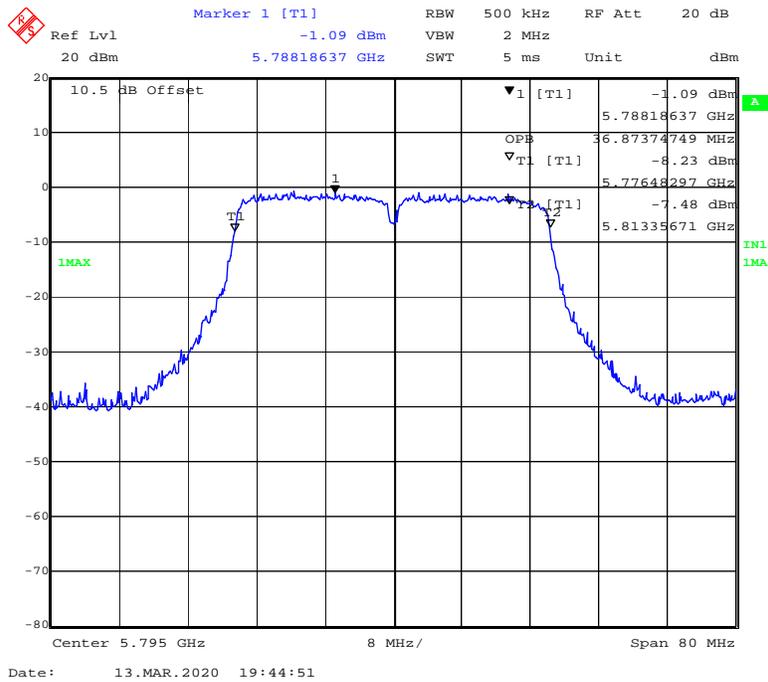
802.11n-HT20 mode, 5825MHz



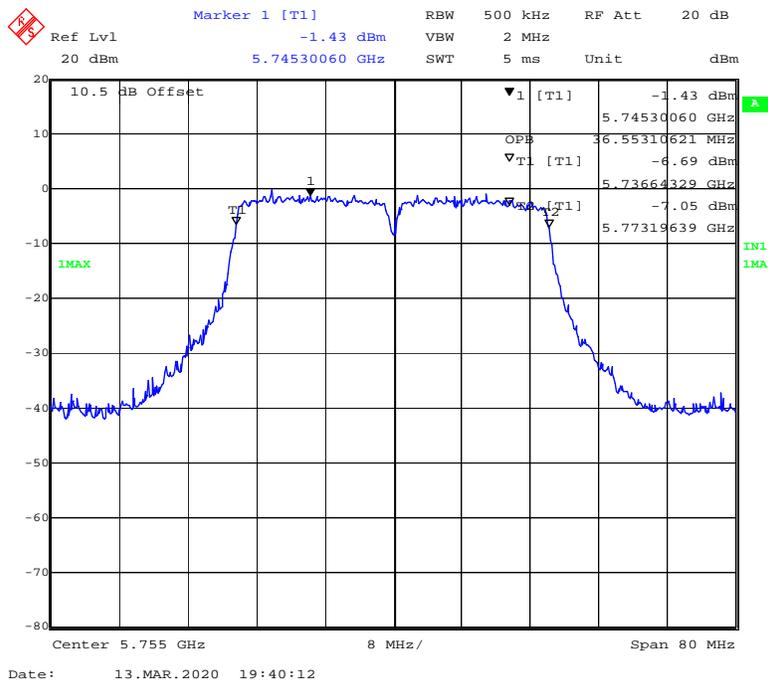
802.11ac40 mode, 5755MHz



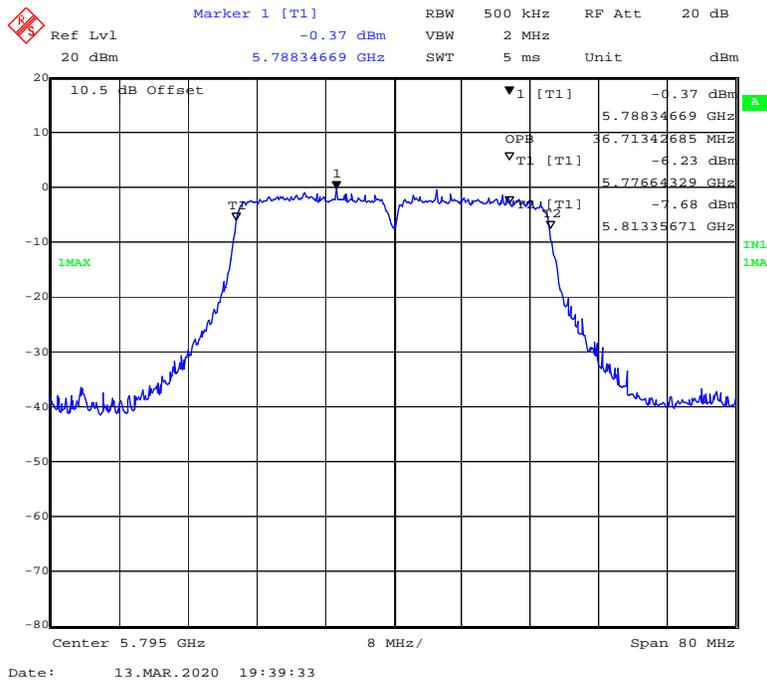
802.11 ac40 mode, 5795MHz



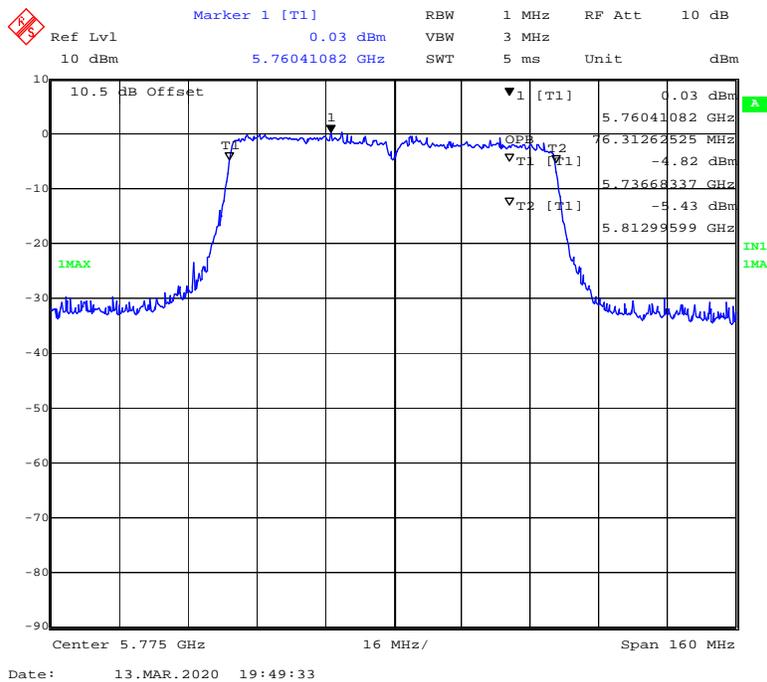
802.11n-HT40 mode, 5755MHz



802.11n-HT40 mode, 5795MHz



802.11n-ac80 mode, 5775MHz



FCC §15.407(a) (1) (3) – CONDUCTED TRANSMITTER OUTPUT POWER

Applicable Standard

According to §15.407(a)(1)

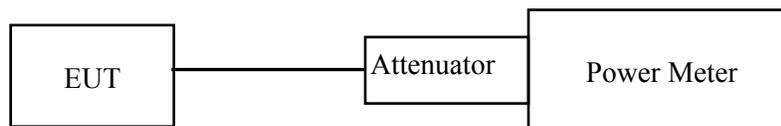
(i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

According to §15.407(a) (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. Place the EUT on a bench and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to one test equipment.
3. Add a correction factor to the display.



Test Data

Environmental Conditions

Temperature:	24.1~25.2 °C
Relative Humidity:	48~50 %
ATM Pressure:	101.1~101.2 kPa

The testing was performed by Stone Zhang from 2020-03-11 to 2020-03-16.

For 5G Wi-Fi Radio 1

Test Mode: Transmitting

Test mode	Band	Channel	Frequency (MHz)	Average Conducted Output Power (dBm)			Limit (dBm)	Result
				Chain0	Chain1	Total		
802.11a	5150-5250 MHz	Low	5180	20.62	20.40	/	21	PASS
		Middle	5200	20.38	20.45	/	21	PASS
		High	5240	20.15	20.61	/	21	PASS
	5725-5850 MHz	Low	5745	20.35	20.15	/	21	PASS
		Middle	5785	20.40	20.26	/	21	PASS
		High	5825	20.49	20.29	/	21	PASS
802.11n-HT20	5150-5250 MHz	Low	5180	16.85	16.66	19.77	21	PASS
		Middle	5200	16.79	16.81	19.81	21	PASS
		High	5240	16.59	16.56	19.59	21	PASS
	5725-5850 MHz	Low	5745	16.32	16.53	19.44	21	PASS
		Middle	5785	16.26	16.69	19.49	21	PASS
		High	5825	16.29	16.42	19.37	21	PASS
802.11n-HT40	5150-5250 MHz	Low	5190	17.03	16.57	19.82	21	PASS
		High	5230	16.89	16.56	19.74	21	PASS
	5725-5850 MHz	Low	5755	16.35	16.65	19.51	21	PASS
		High	5795	16.54	16.76	19.66	21	PASS
802.11ac20	5150-5250 MHz	Low	5180	16.82	15.73	19.32	21	PASS
		Middle	5200	16.73	15.89	19.34	21	PASS
		High	5240	16.46	15.78	19.14	21	PASS
	5725-5850 MHz	Low	5745	16.19	16.54	19.38	21	PASS
		Middle	5785	16.21	16.55	19.39	21	PASS
		High	5825	16.31	16.16	19.25	21	PASS
802.11ac40	5150-5250 MHz	Low	5190	16.96	16.32	19.66	21	PASS
		High	5230	16.83	16.44	19.65	21	PASS
	5725-5850 MHz	Low	5755	16.38	16.50	19.45	21	PASS
		High	5795	16.45	16.79	19.63	21	PASS
802.11ac80	5150-5250 MHz	/	5210	16.64	16.67	19.67	21	PASS
	5725-5850 MHz	/	5775	16.42	16.87	19.66	21	PASS

For 5G Wi-Fi Radio 2

Test Mode: Transmitting

Test mode	Band	Channel	Frequency (MHz)	Average Conducted Output Power (dBm)			Limit (dBm)	Result
				Chain2	Chain3	Total		
802.11a	5150-5250 MHz	Low	5180	20.54	20.58	/	21	PASS
		Middle	5200	20.71	19.59	/	21	PASS
		High	5240	21.43	19.37	/	21	PASS
	5725-5850 MHz	Low	5745	20.27	20.08	/	21	PASS
		Middle	5785	20.15	20.21	/	21	PASS
		High	5825	20.25	20.91	/	21	PASS
802.11n-HT20	5150-5250 MHz	Low	5180	16.67	16.37	19.53	21	PASS
		Middle	5200	16.91	16.10	19.53	21	PASS
		High	5240	16.60	15.53	19.11	21	PASS
	5725-5850 MHz	Low	5745	16.85	16.22	19.56	21	PASS
		Middle	5785	16.76	16.79	19.79	21	PASS
		High	5825	16.56	16.73	19.66	21	PASS
802.11n-HT40	5150-5250 MHz	Low	5190	16.53	16.96	19.76	21	PASS
		High	5230	16.56	16.90	19.74	21	PASS
	5725-5850 MHz	Low	5755	16.44	16.59	19.53	21	PASS
		High	5795	16.66	16.50	19.59	21	PASS
802.11ac20	5150-5250 MHz	Low	5180	16.72	16.33	19.54	21	PASS
		Middle	5200	16.89	16.17	19.56	21	PASS
		High	5240	16.92	16.30	19.63	21	PASS
	5725-5850 MHz	Low	5745	16.84	16.31	19.59	21	PASS
		Middle	5785	16.78	16.81	19.81	21	PASS
		High	5825	16.57	16.70	19.65	21	PASS
802.11ac40	5150-5250 MHz	Low	5190	16.84	16.75	19.81	21	PASS
		High	5230	16.46	16.25	19.37	21	PASS
	5725-5850 MHz	Low	5755	16.38	16.63	19.52	21	PASS
		High	5795	16.55	16.50	19.54	21	PASS
802.11ac80	5150-5250 MHz	/	5210	16.98	16.08	19.56	21	PASS
	5725-5850 MHz	/	5775	16.53	16.53	19.54	21	PASS

Note

1: The total output power= $10 * \log_{10}(10^{Chain\ 0/10} + 10^{Chain\ 1/10})$

2: The maximum antenna gain is 15.0 dBi, the device employed Cyclic Delay Diversity (CDD) for 802.11 MIMO transmitting, per KDB 662911 D01 Multiple Transmitter Output v02r01, for power measurements on IEEE 802.11 devices:

Array Gain = 0 dB (i.e., no array gain) for NANT ≤ 4;

So: Directional gain = GANT + Array Gain = 15.0dBi > 6dBi

3: For the 5G Wi-Fi antenna, The 3dB beamwidth is 14.85 degrees, It is less than 30 degrees. So the maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

Maximum Antenna Gain: (elevation angle above 30 degrees)	-2.5dBi
EIRP(elevation angle above 30 degrees)	18.11 dBm for 5G Radio 1 18.08 dBm for 5G Radio 2

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

Applicable Standard

According to §15.407(a)(1)

(i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

According to §15.407(a) (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

The measurements are base on FCC KDB 789033 D02 General UNII Test Proceidyres New Rules v02r01: Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices section F: Maximum power spectral density (PPSD)

Test Data

Environmental Conditions

Temperature:	23.4~24.5 °C
Relative Humidity:	48~50 %
ATM Pressure:	101.1~101.2 kPa

The testing was performed by Stone Zhang from 2020-03-11 to 2020-04-01.

Test Mode: Transmitting

5150MHz-5250MHz:

Mode	Channel	Frequency (MHz)	PSD (dBm/MHz)			Limit (dBm/MHz)	Result
			Chain0	Chain1	Total		
802.11a	Low	5180	3.09	3.21	/	5	PASS
	Middle	5200	3.06	3.41	/	5	PASS
	High	5240	2.34	3.38	/	5	PASS
802.11ac20	Low	5180	-1.28	-0.52	2.13	5	PASS
	Middle	5200	-1.39	-1.07	1.78	5	PASS
	High	5240	-1.24	-1.04	1.87	5	PASS
802.11n20	Low	5180	-1.27	-0.85	1.96	5	PASS
	Middle	5200	-1.27	-0.75	2.01	5	PASS
	High	5240	-1.65	-0.85	1.78	5	PASS
802.11ac40	Low	5190	-2.99	-2.88	0.08	5	PASS
	High	5230	-3.30	-2.80	-0.03	5	PASS
802.11n40	Low	5190	-3.29	-2.53	0.12	5	PASS
	High	5230	-3.76	-2.62	-0.14	5	PASS
802.11ac80	/	5210	-7.16	-6.06	-3.56	5	PASS

5725MHz-5850MHz:

Mode	Channel	Frequency MHz	PSD (dBm/500kHz)			Limit (dBm/500kHz)	Result
			Chain0	Chain1	Total		
802.11a	Low	5745	2.04	1.58	/	18	PASS
	Middle	5785	1.80	1.64	/	18	PASS
	High	5825	1.98	1.86	/	18	PASS
802.11ac20	Low	5745	-2.24	-2.78	0.51	18	PASS
	Middle	5785	-2.98	-2.37	0.35	18	PASS
	High	5825	-2.15	-1.91	0.98	18	PASS
802.11n20	Low	5745	-2.62	-2.27	0.57	18	PASS
	Middle	5785	-1.92	-2.56	0.78	18	PASS
	High	5825	-1.71	-2.03	1.14	18	PASS
802.11ac40	Low	5755	-4.61	-4.40	-1.49	18	PASS
	High	5795	-3.58	-4.06	-0.80	18	PASS
802.11n40	Low	5755	-3.73	-3.53	-0.62	18	PASS
	High	5795	-3.04	-3.31	-0.16	18	PASS
802.11ac80	/	5775	-8.04	-8.21	-5.11	18	PASS

Note1: The total PSD= $10 \cdot \log_{10}(10^{\text{Chain 0}/10} + 10^{\text{Chain 1}/10})$

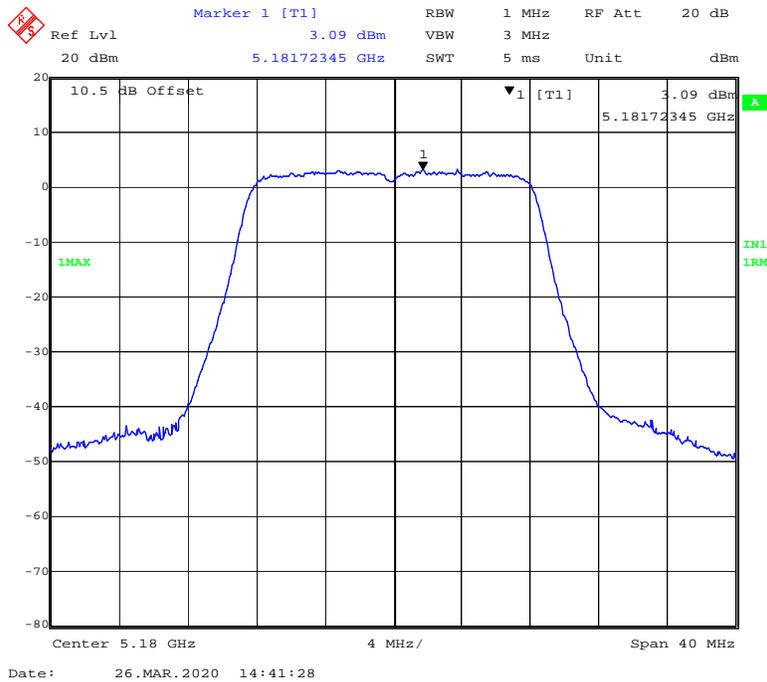
Note2: The maximum antenna gain is 15.0 dBi. The device employed Cyclic Delay Diversity (CDD) for 802.11MIMO transmitting, per KDB 662911 D01 Multiple Transmitter Output v02r01, for power spectral density (PSD) measurements on the devices:

Array Gain = $10 \log(N_{\text{ANT}}/N_{\text{SS}})$ dB.

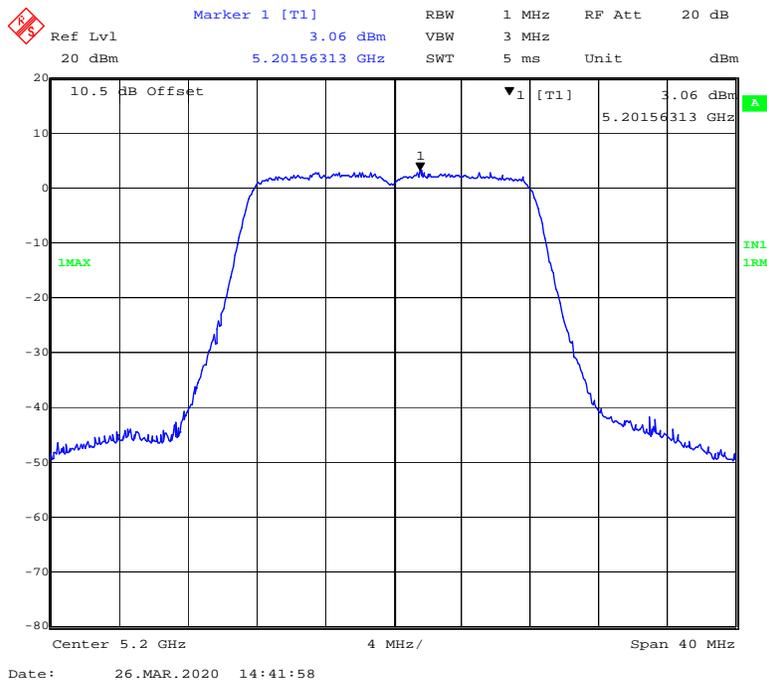
So: Directional gain = $G_{\text{ANT}} + \text{Array Gain} = 15.0 + 10 \cdot \log(2/1) = 18.0$ dBi, power spectral density limit reduced $18.0 - 6.0 = 12.0$ dB.

5150MHz-5250MHz Band-Chain0 :

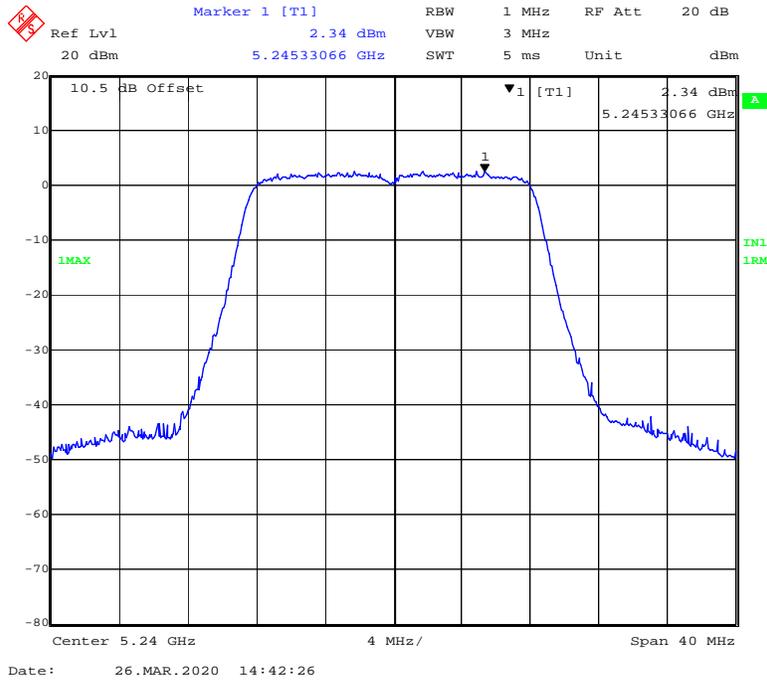
802.11a mode, Power spectral density-5180MHz



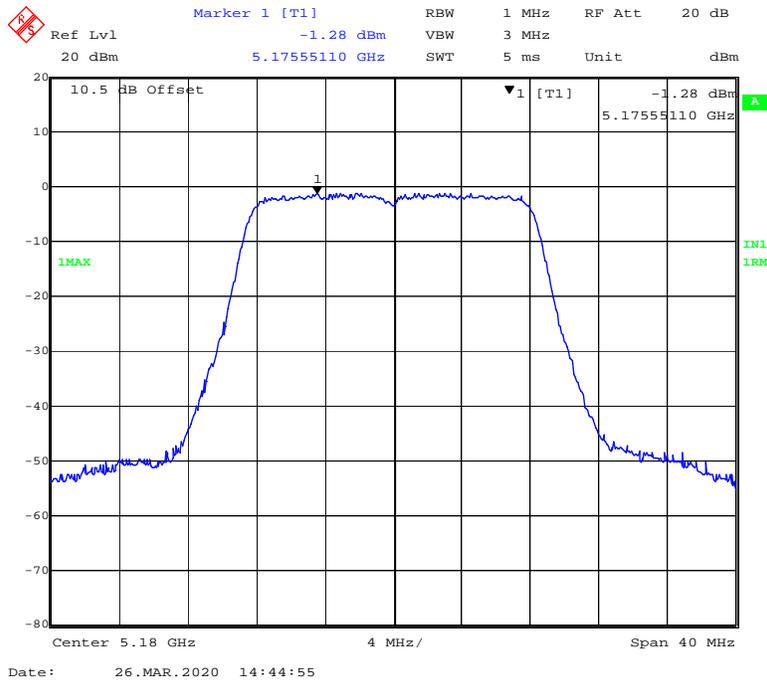
802.11a mode, Power spectral density-5200MHz



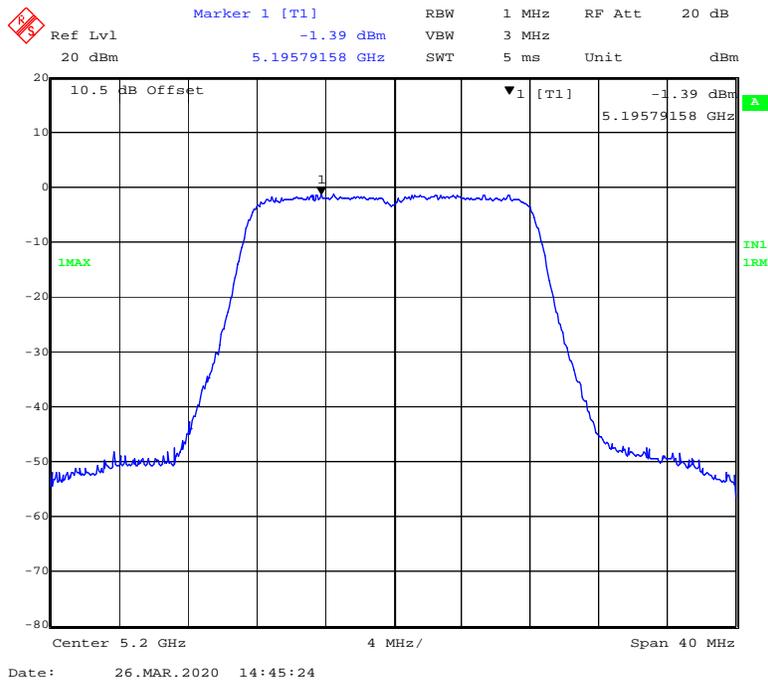
802.11a mode, Power spectral density-5240MHz



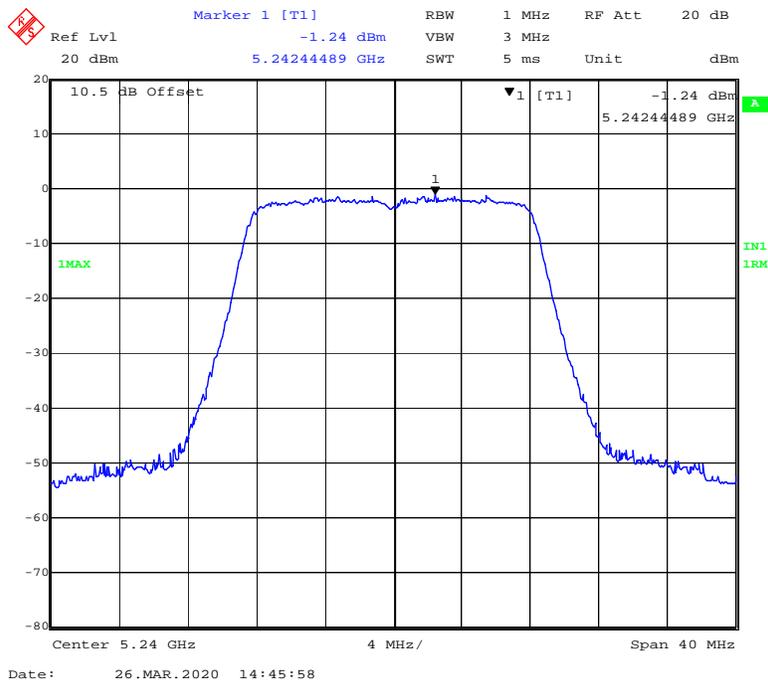
802.11ac20 mode, Power spectral density-5180MHz



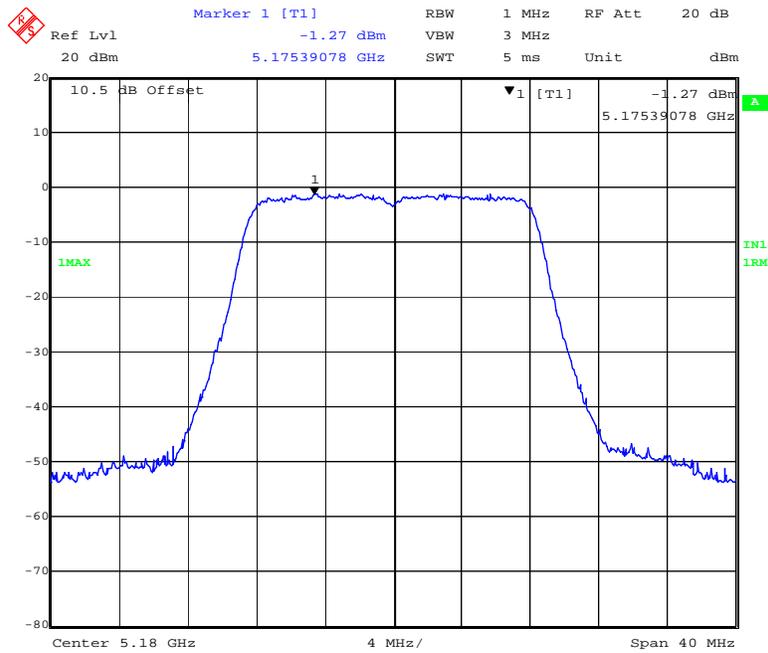
802.11 ac20 mode, Power spectral density-5200MHz



802.11ac20 mode, Power spectral density-5240MHz

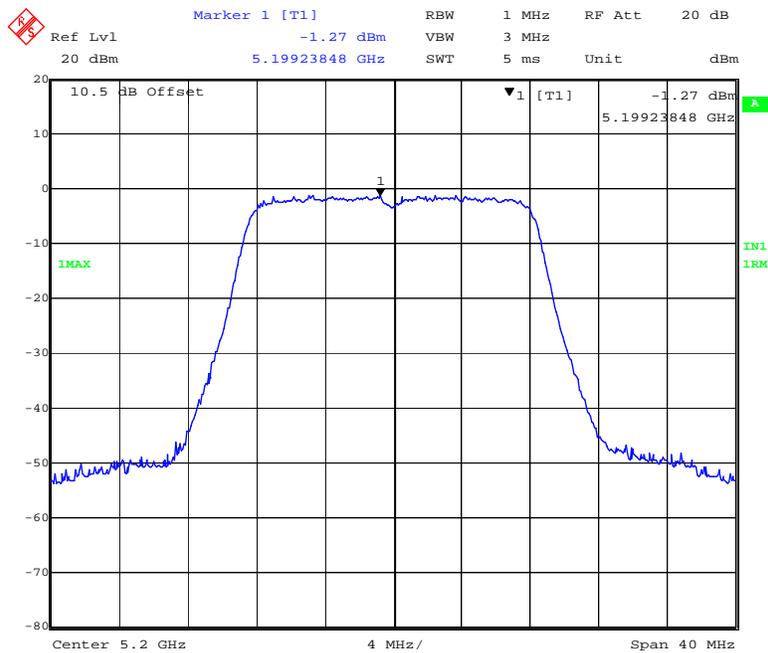


802.11n-HT20 mode, Power spectral density-5180MHz



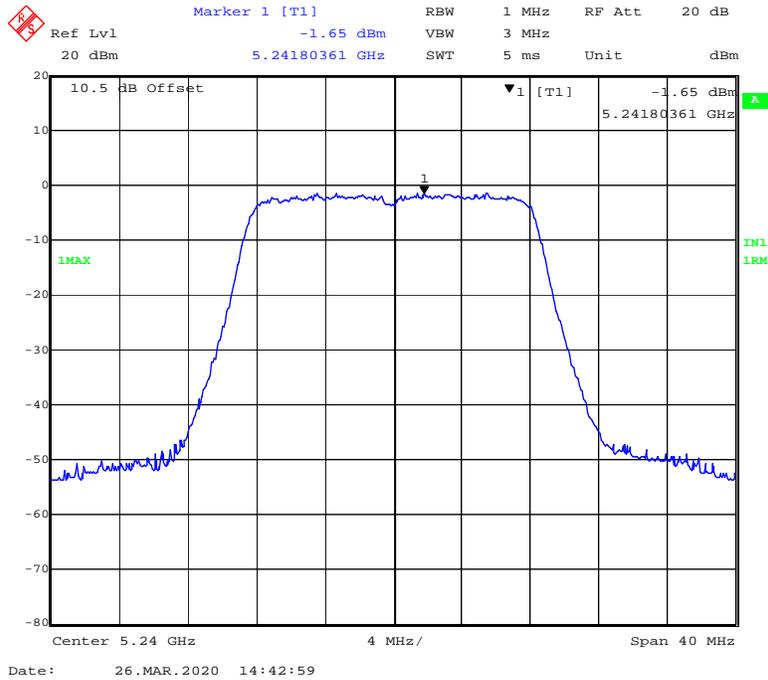
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802.11n-HT20 mode, Power spectral density-5200MHz

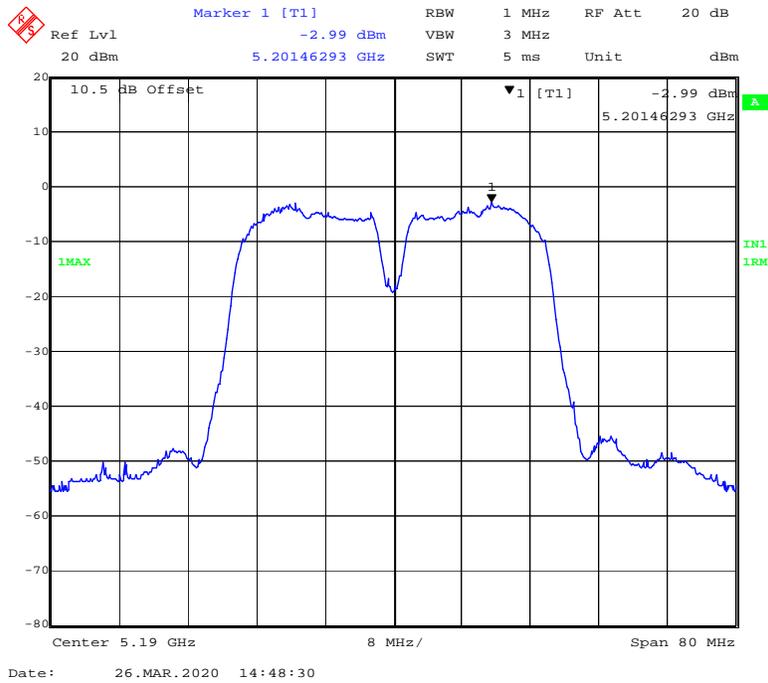


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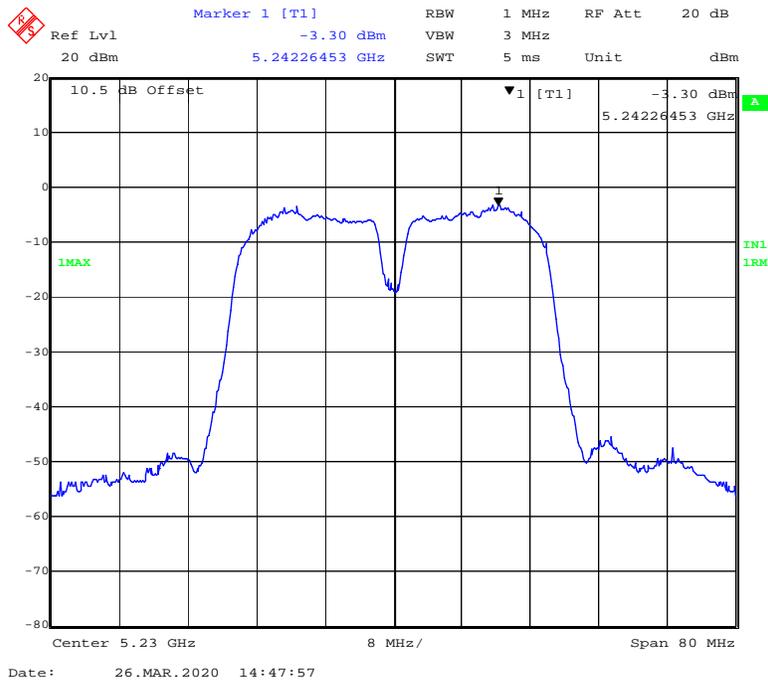
802.11n-HT20 mode, Power spectral density-5240MHz



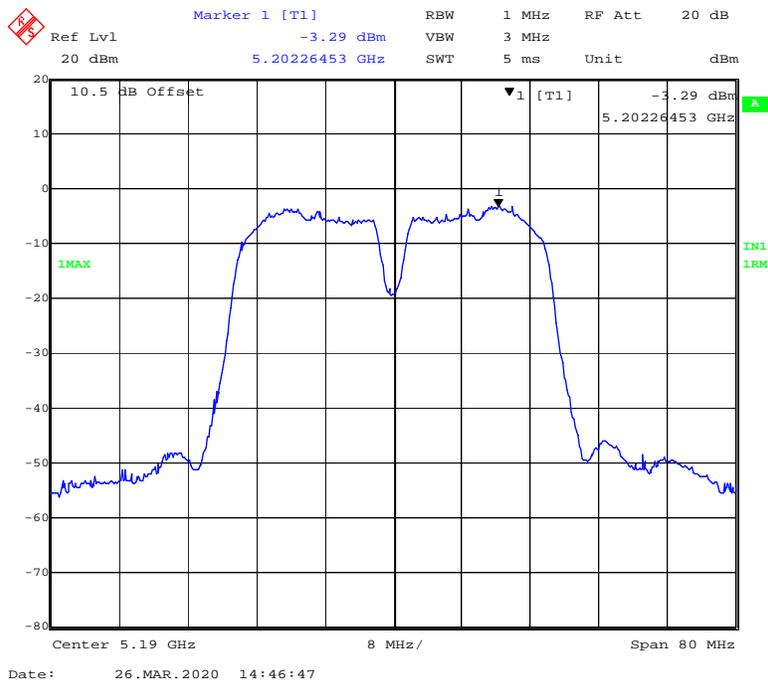
802.11ac40 mode, Power spectral density-5190MHz



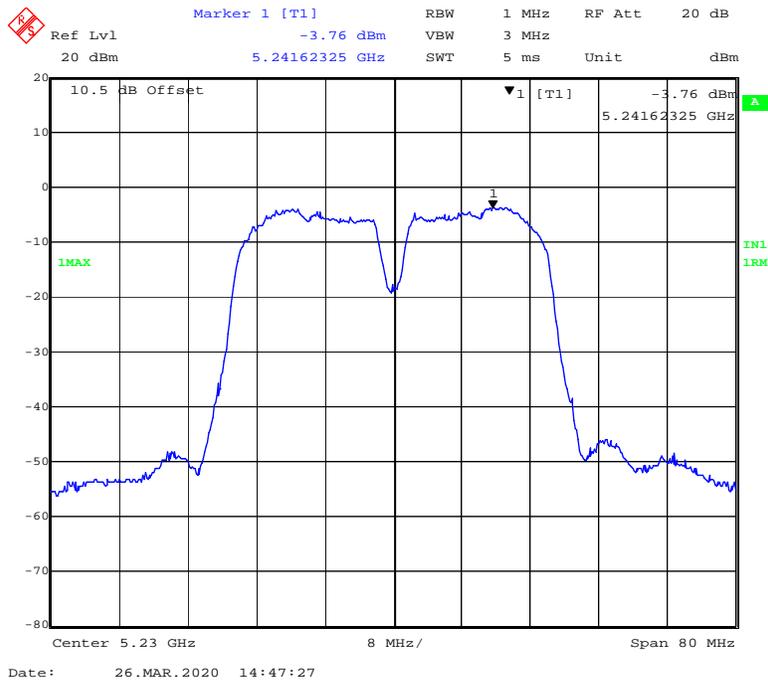
802.11 ac40 mode, Power spectral density-5230MHz



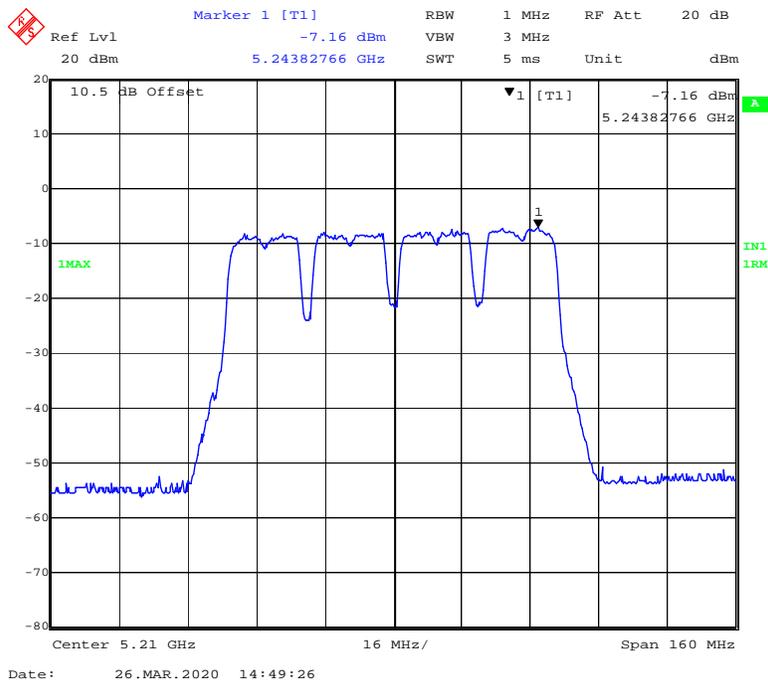
802.11n-HT40 mode, Power spectral density-5190MHz



802.11n-HT40 mode, Power spectral density-5230MHz

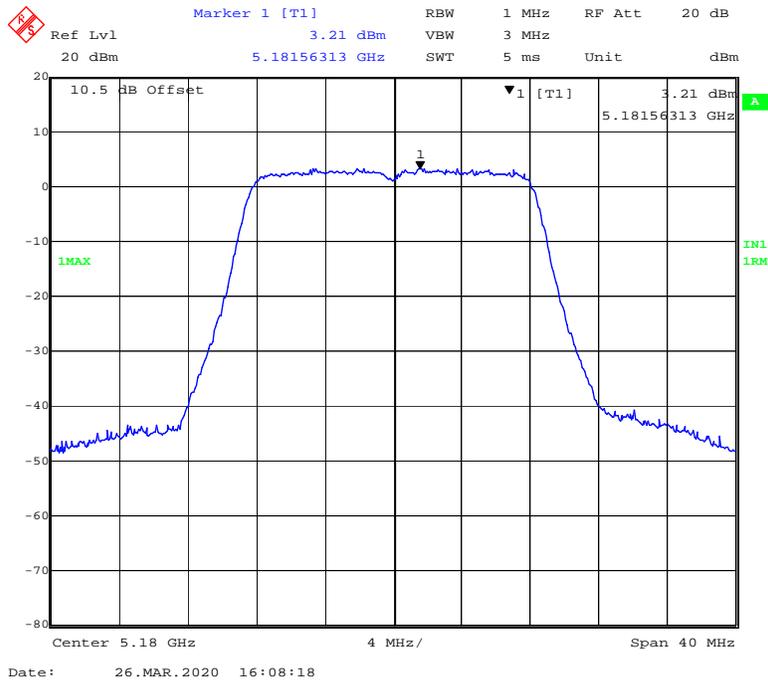


802.11n- ac80 mode, Power spectral density-5210MHz

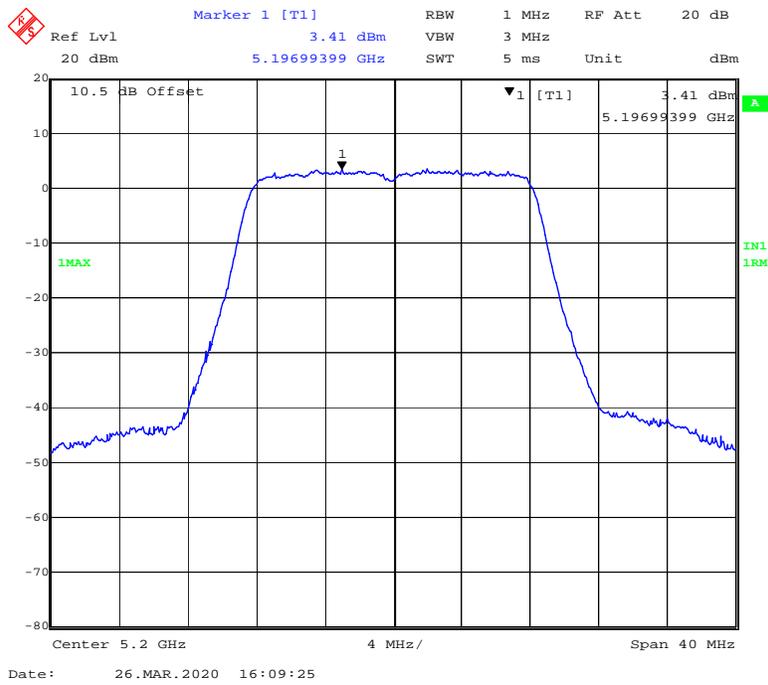


5150MHz-5250MHz Band-Chain1 :

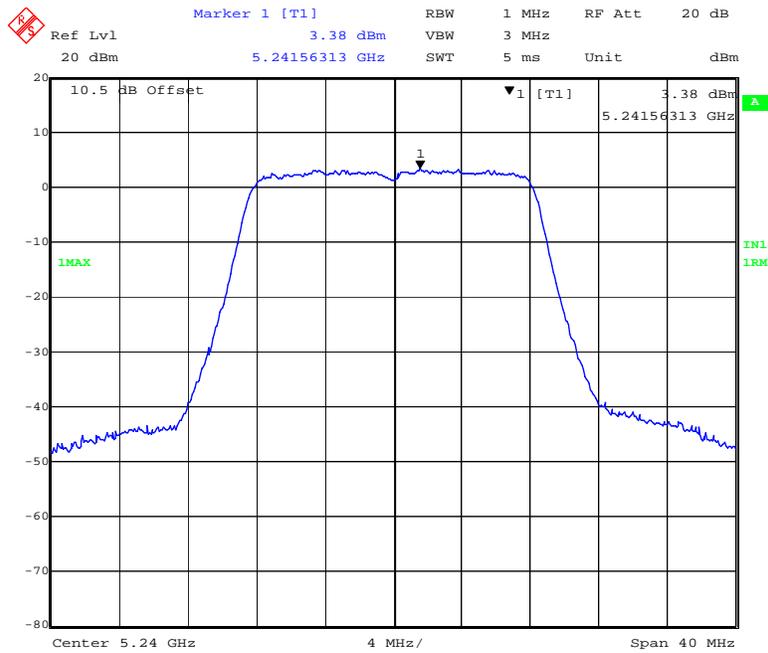
802.11a mode, Power spectral density-5180MHz



802.11a mode, Power spectral density-5200MHz

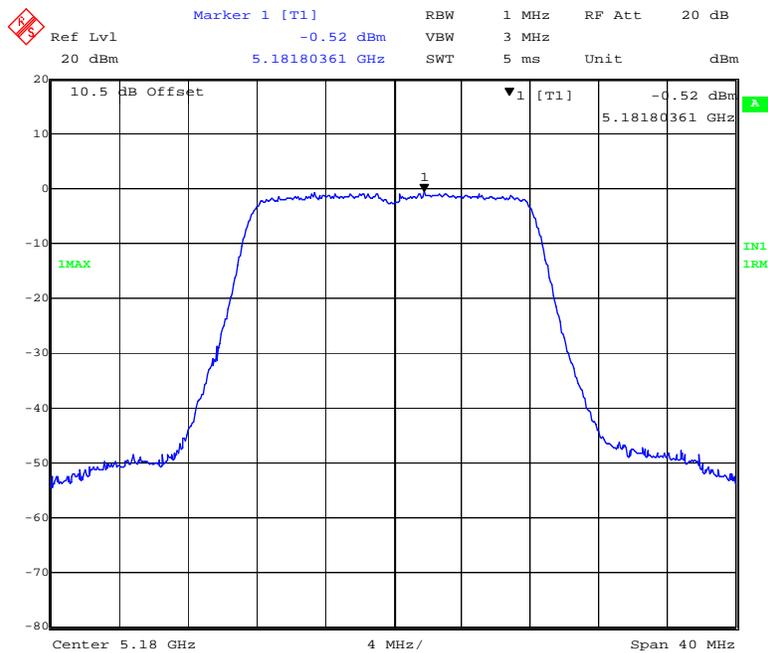


802.11a mode, Power spectral density-5240MHz



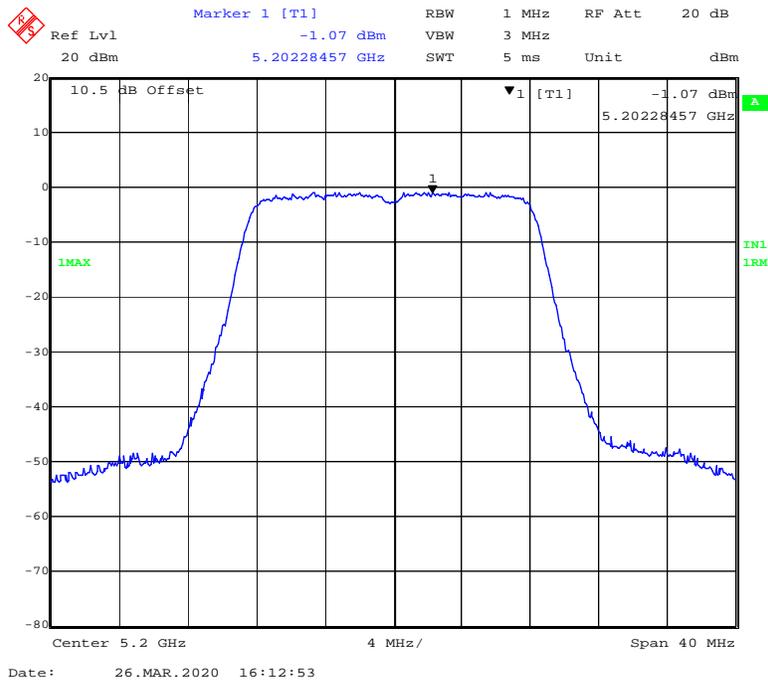
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802.11ac20 mode, Power spectral density-5180MHz

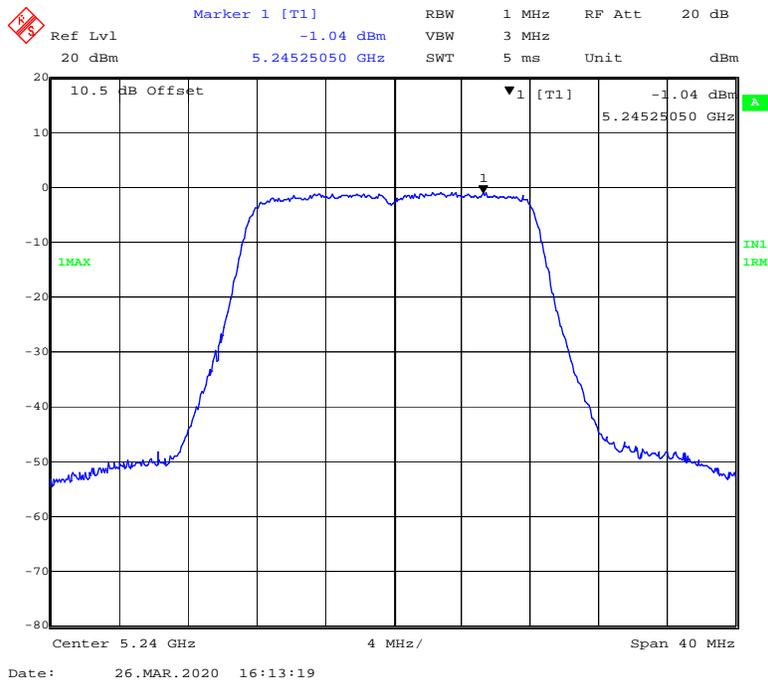


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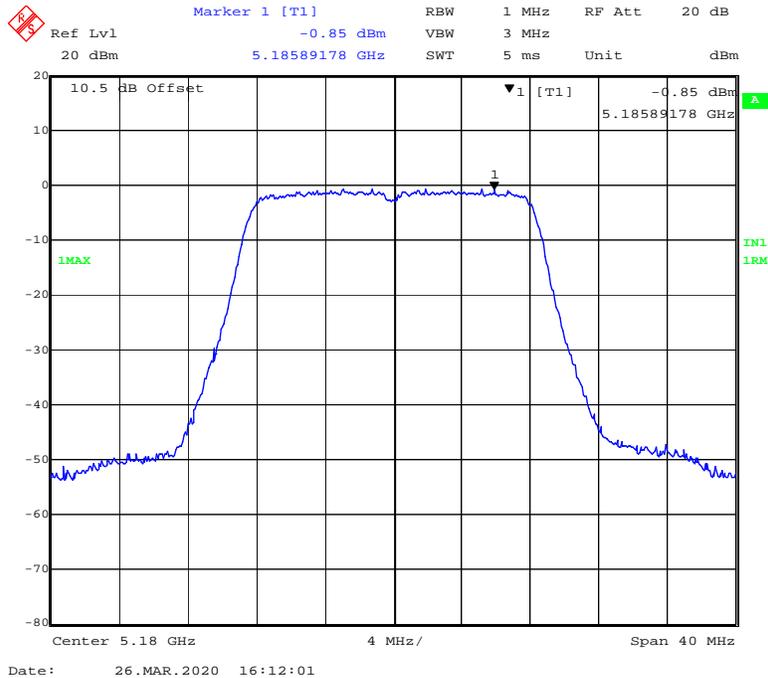
802.11 ac20 mode, Power spectral density-5200MHz



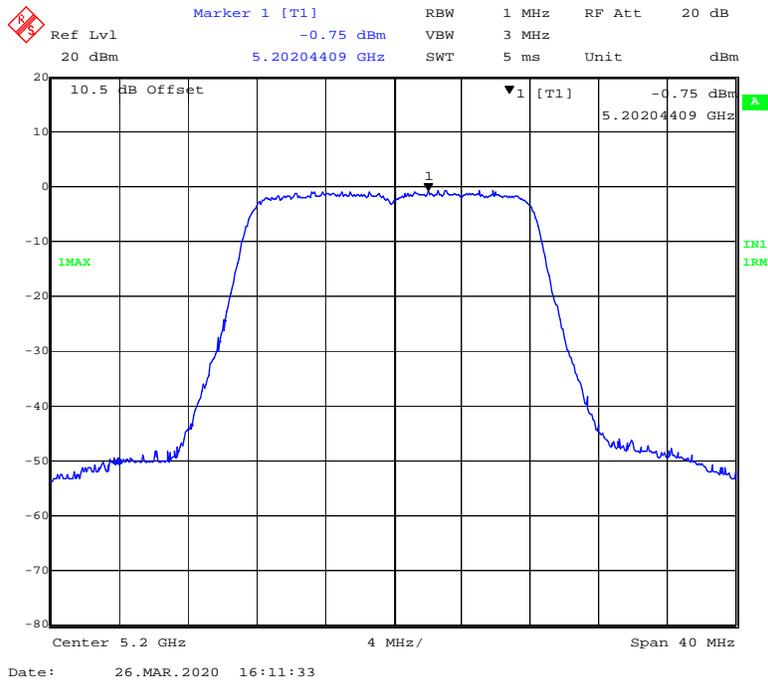
802.11ac20 mode, Power spectral density-5240MHz



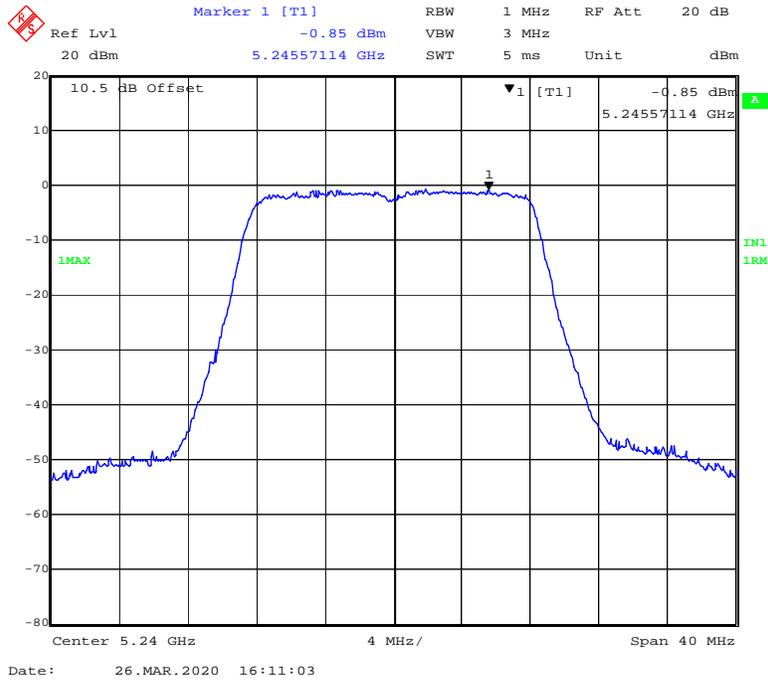
802.11n-HT20 mode, Power spectral density-5180MHz



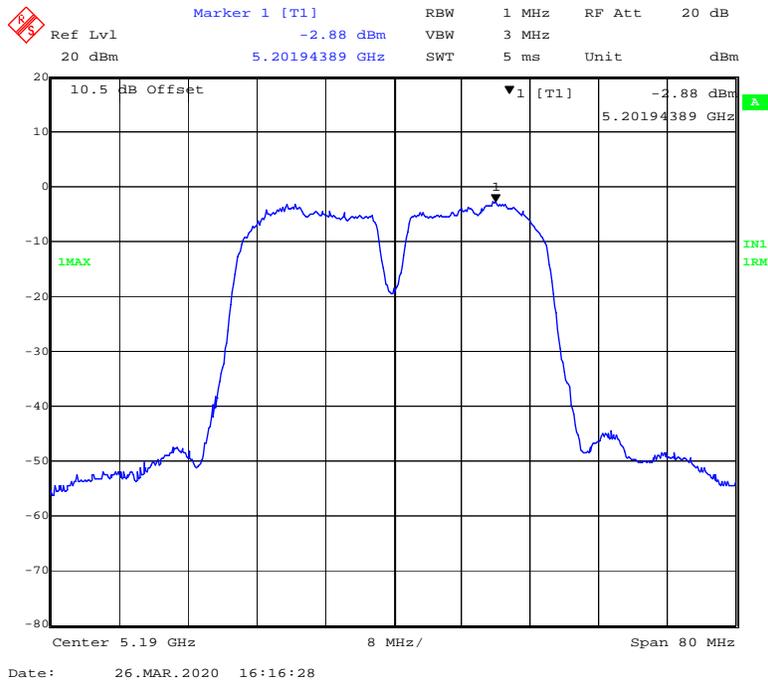
802.11n-HT20 mode, Power spectral density-5200MHz



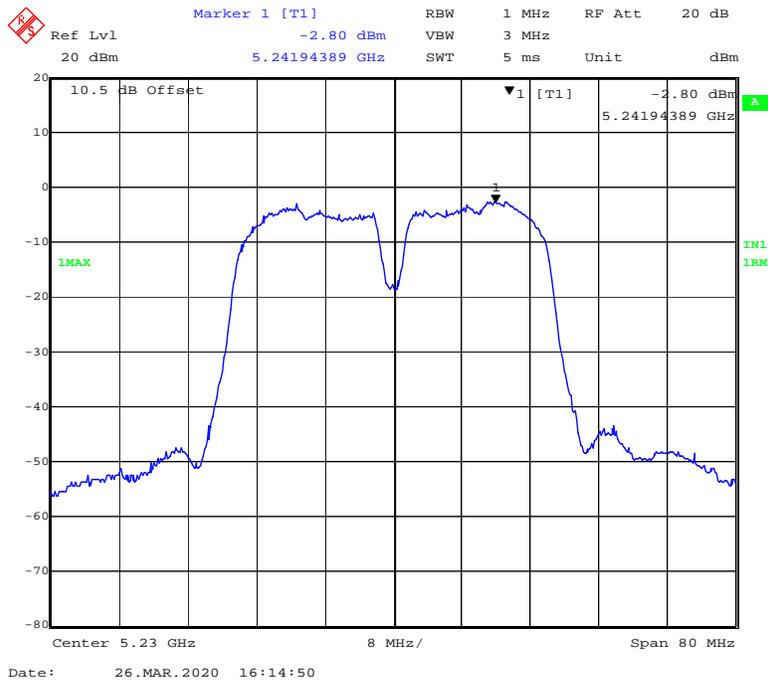
802.11n-HT20 mode, Power spectral density-5240MHz



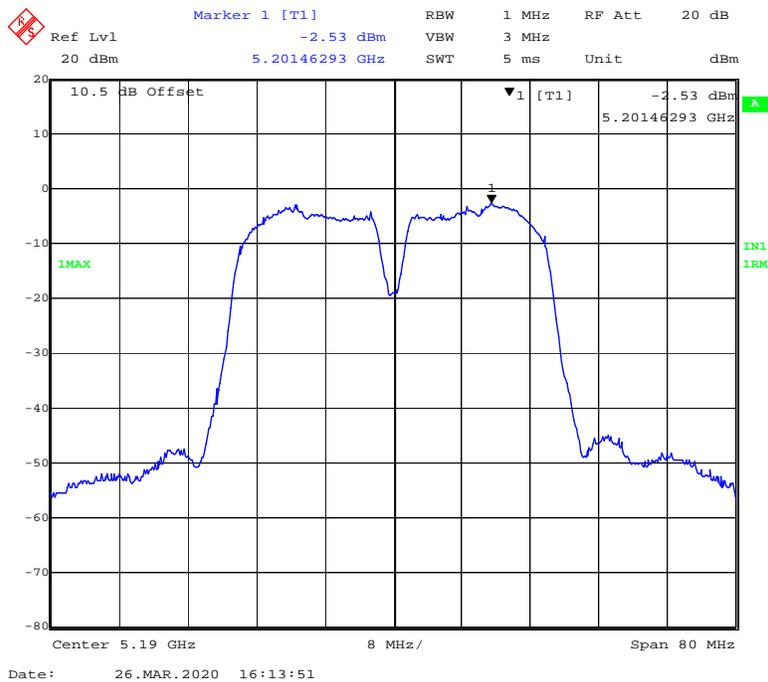
802.11ac40 mode, Power spectral density-5190MHz



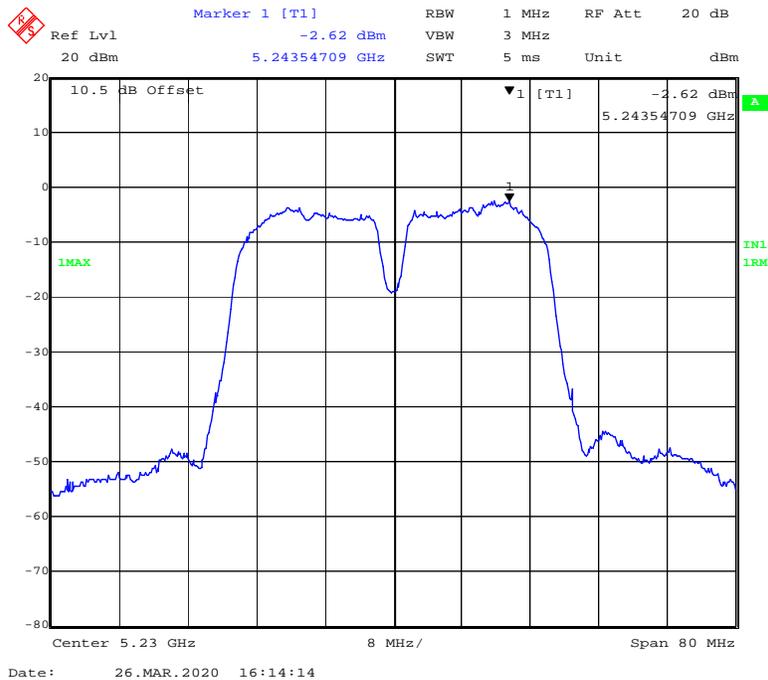
802.11 ac40 mode, Power spectral density-5230MHz



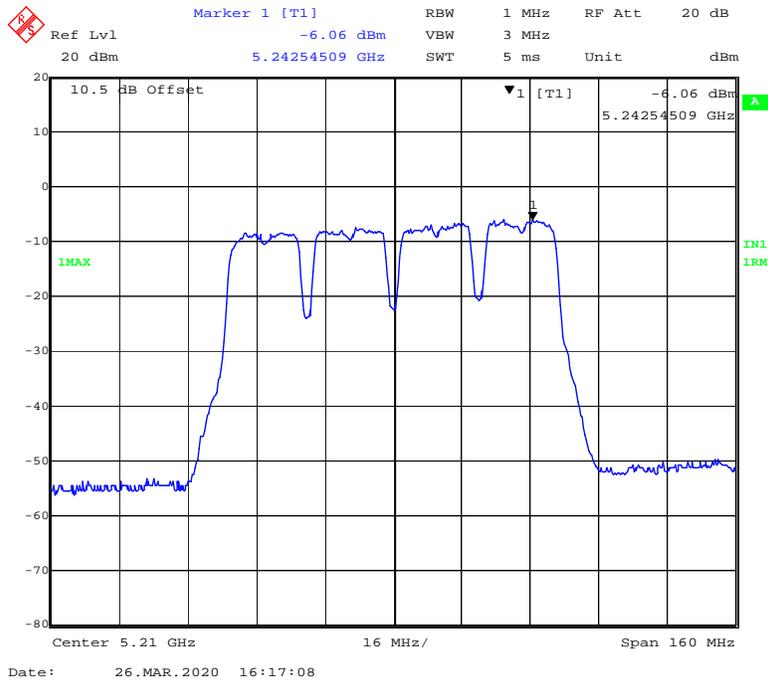
802.11n-HT40 mode, Power spectral density-5190MHz



802.11n-HT40 mode, Power spectral density-5230MHz

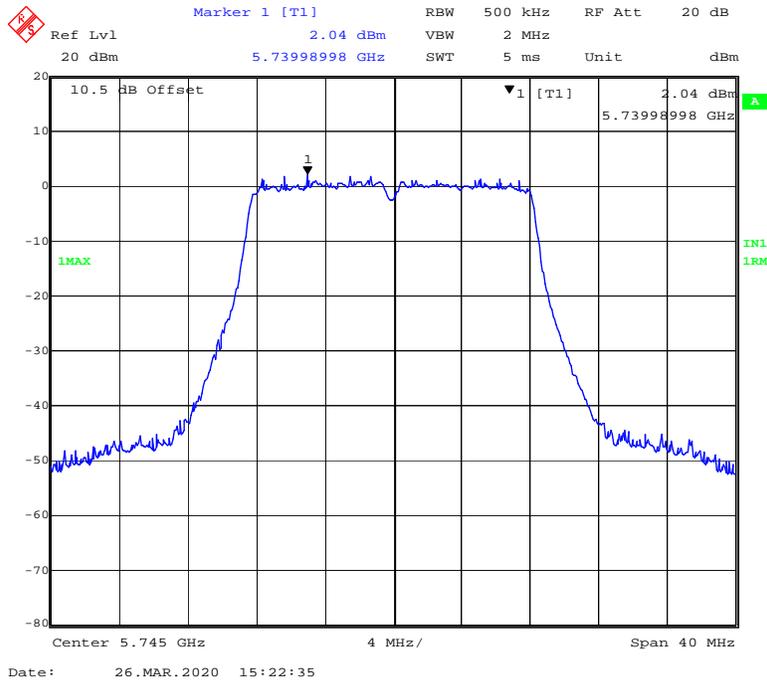


802.11n- ac80 mode, Power spectral density-5210MHz

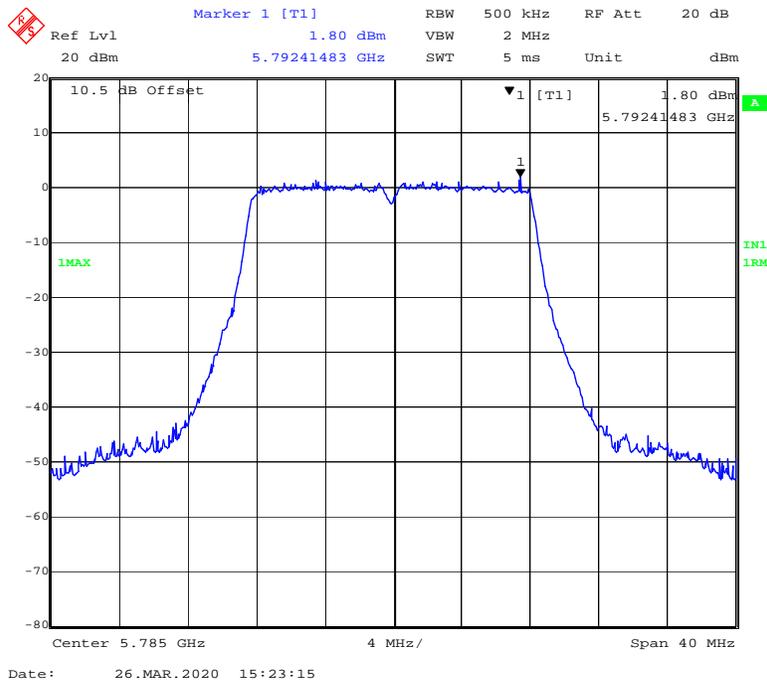


5725MHz-5850 MHz Band-Chain0:

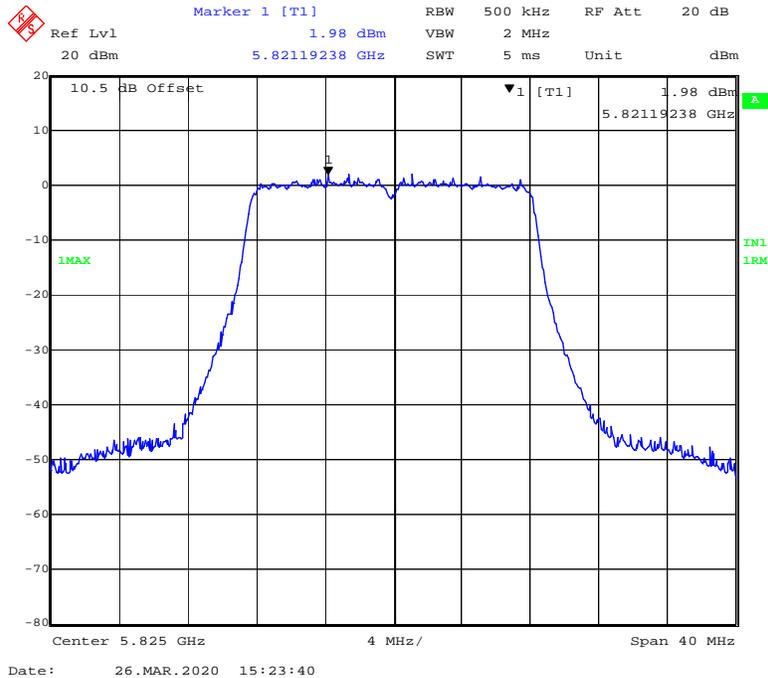
802.11a mode, Power spectral density-5745MHz



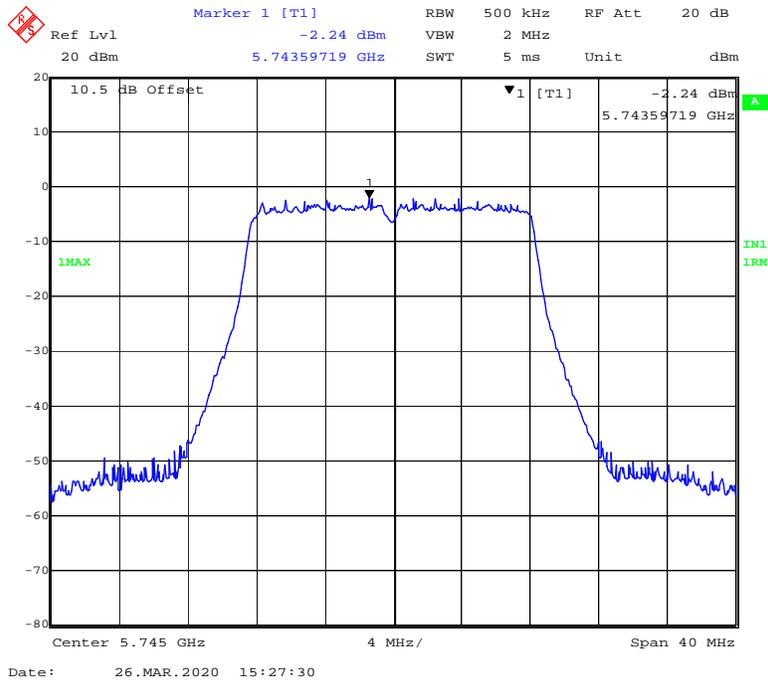
802.11a mode, Power spectral density-5785MHz



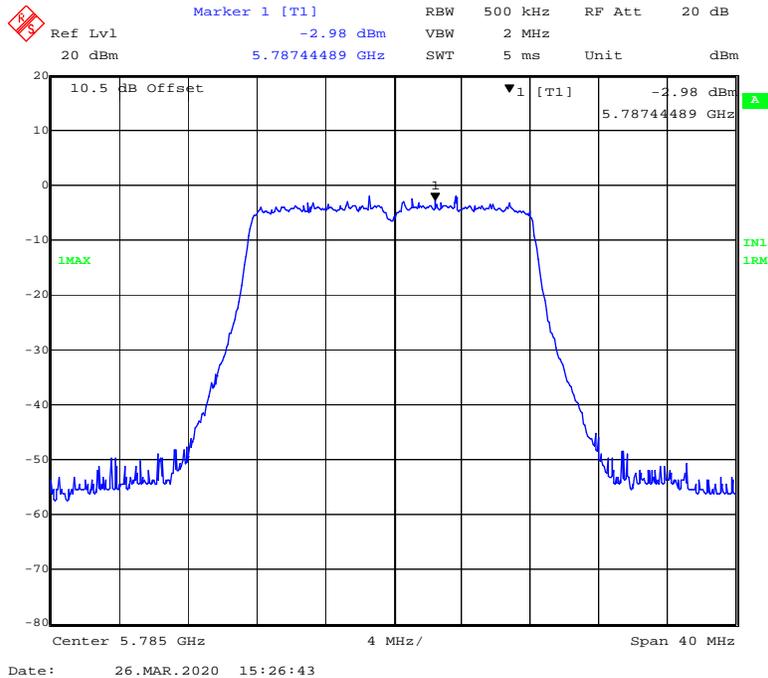
802.11a mode, Power spectral density-5825MHz



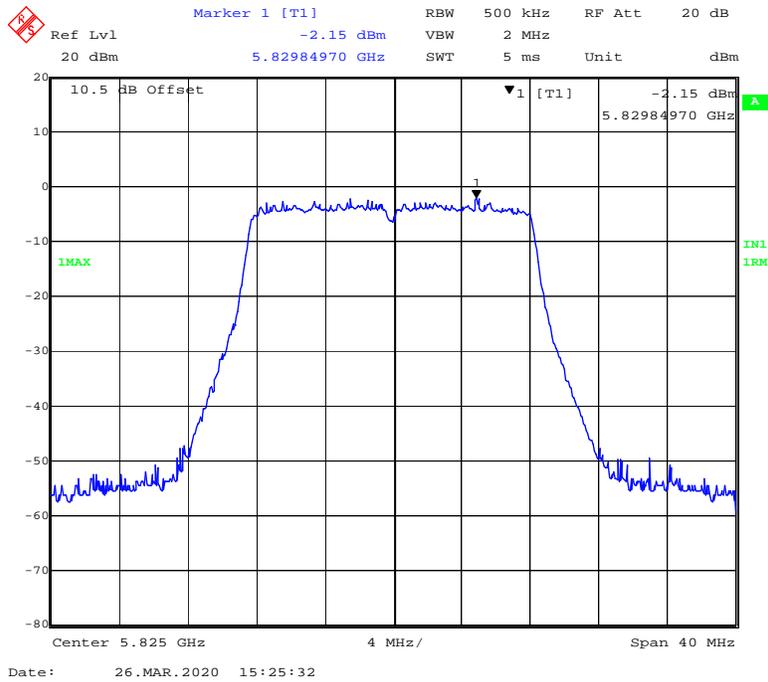
802.11ac20 mode, Power spectral density-5745MHz



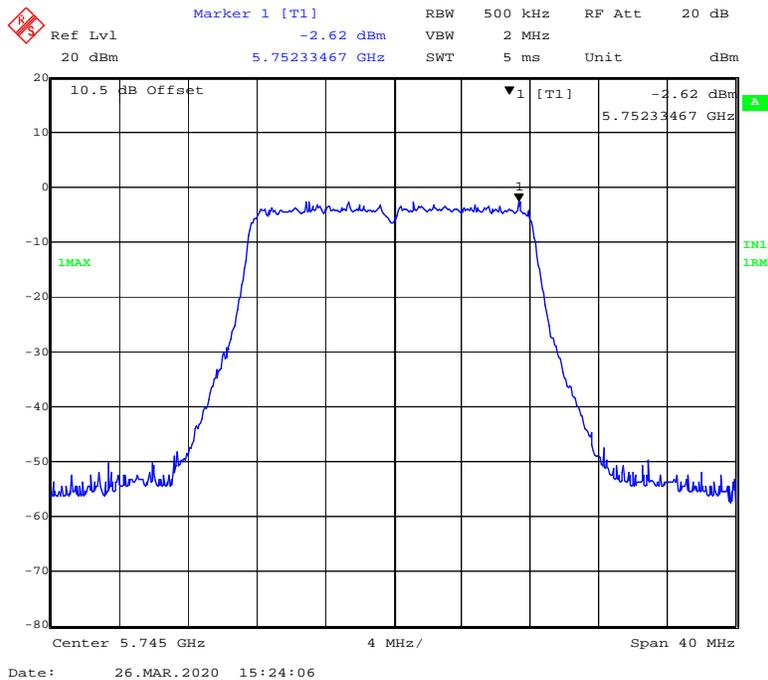
802.11 ac20 mode, Power spectral density-5785MHz



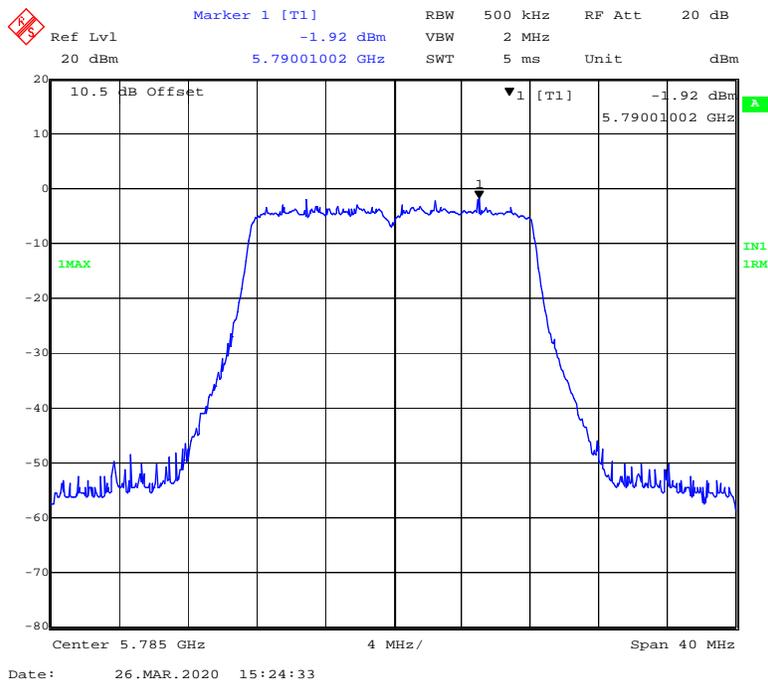
802.11 ac20 mode, Power spectral density-5825MHz



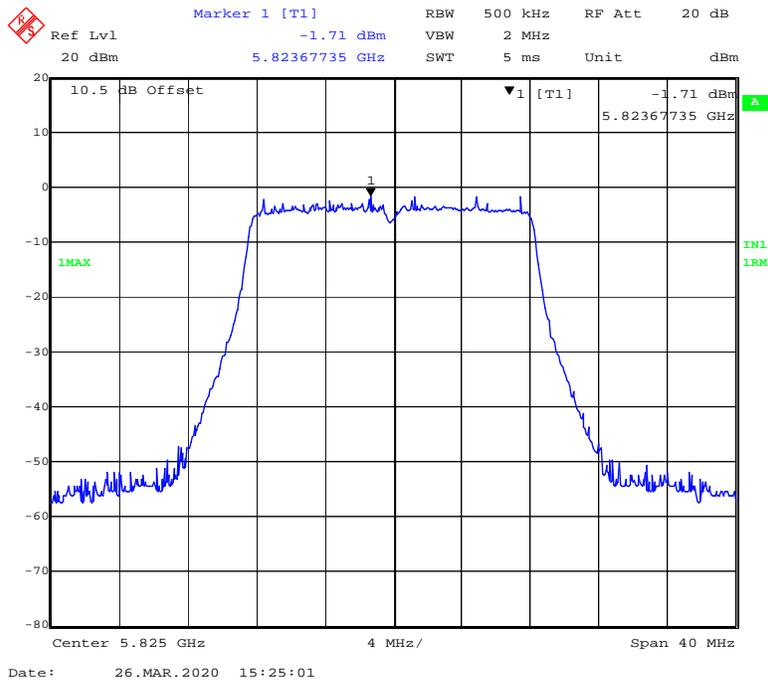
802.11n-HT20 mode, Power spectral density-5745MHz



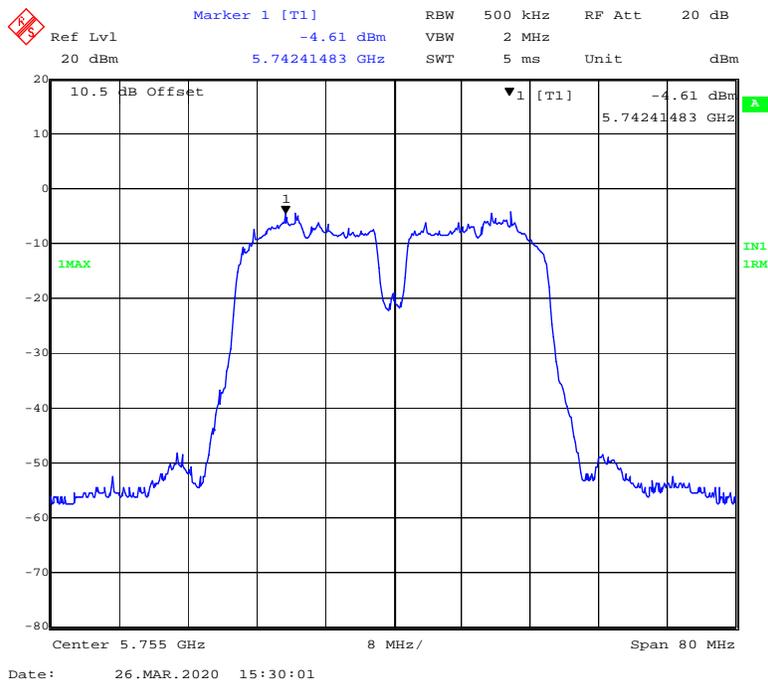
802.11n-HT20 mode, Power spectral density-5785MHz



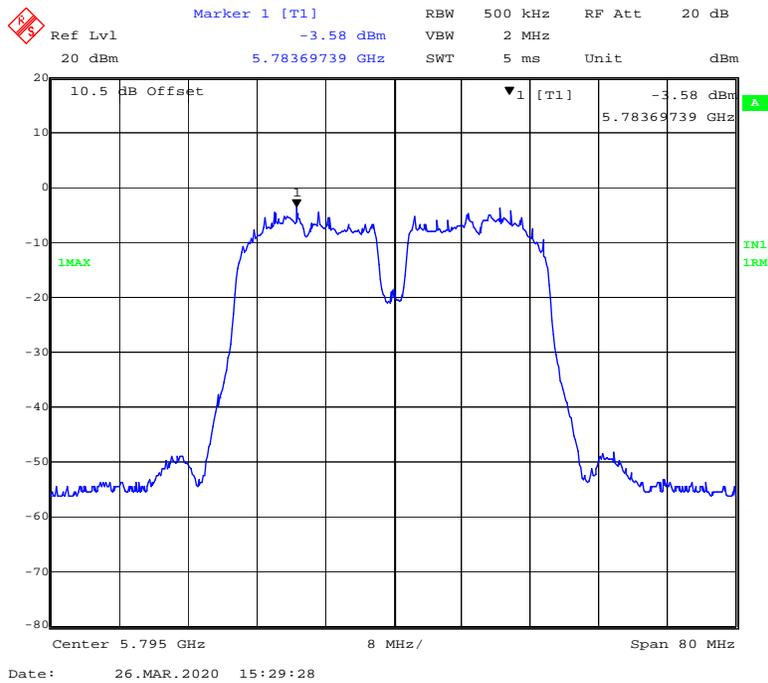
802.11n-HT20 mode, Power spectral density-5825MHz



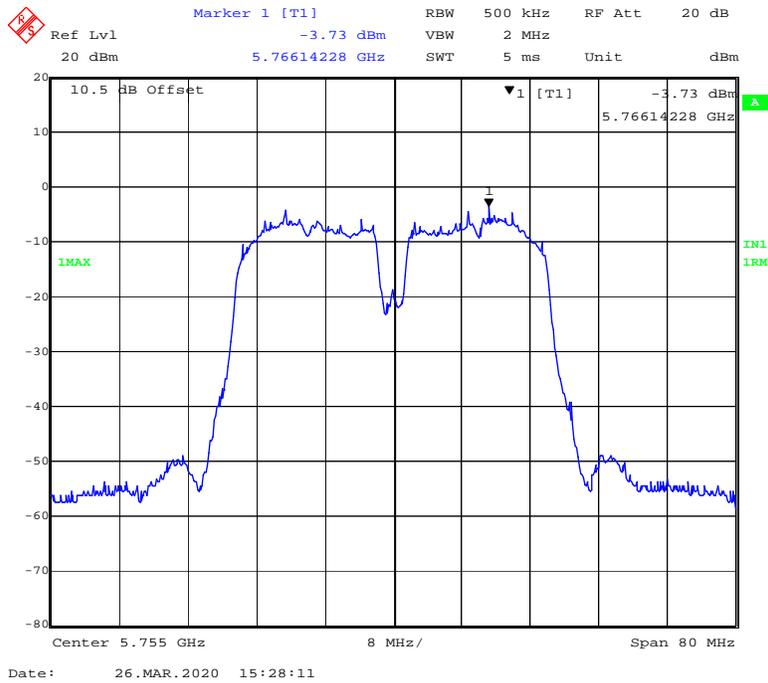
802.11ac40 mode, Power spectral density-5755MHz



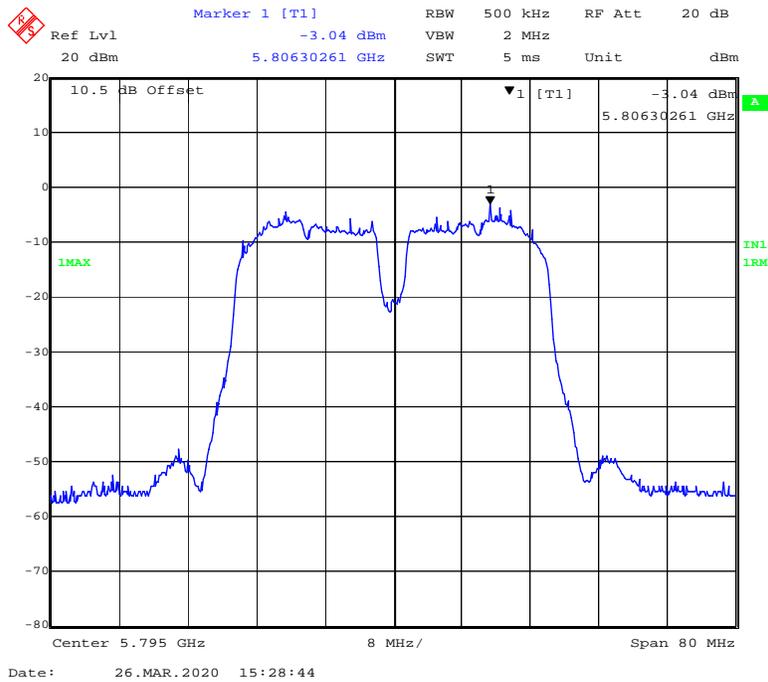
802.11 ac40 mode, Power spectral density-5795MHz



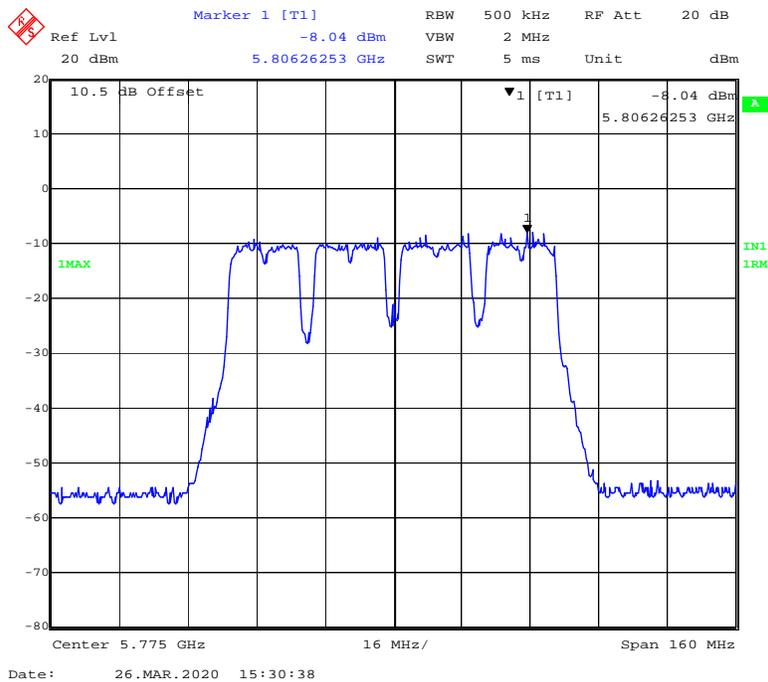
802.11n-HT40 mode, Power spectral density-5755MHz



802.11n-HT40 mode, Power spectral density-5795MHz

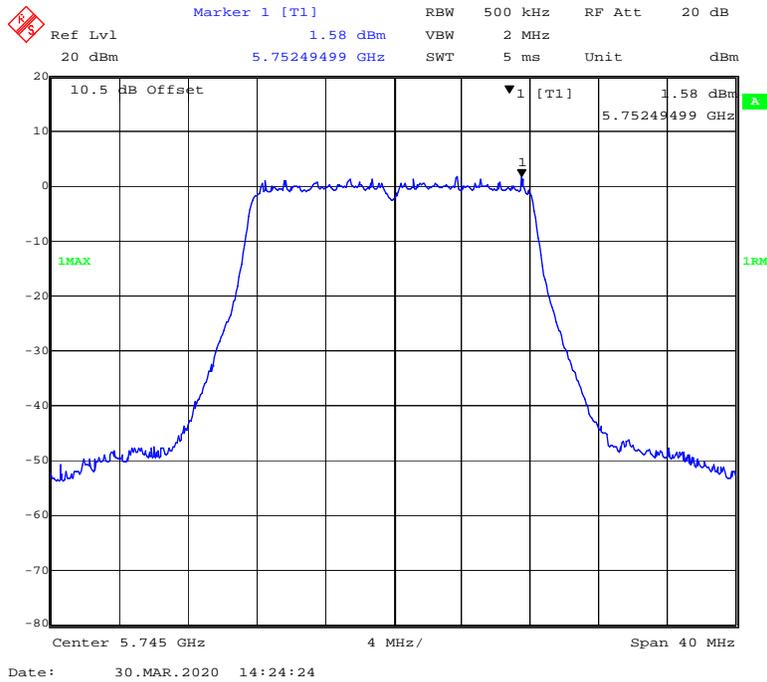


802.11 ac80 mode, Power spectral density-5775MHz

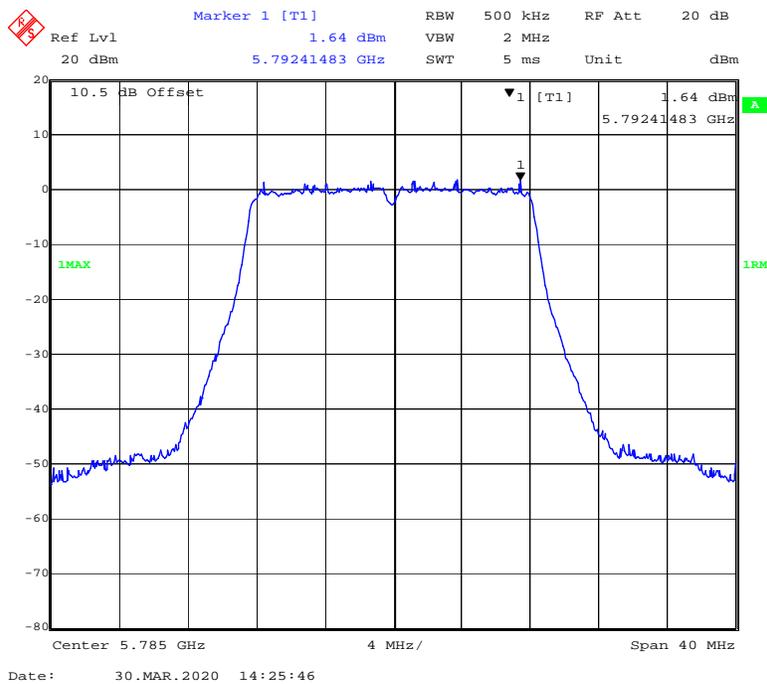


5725MHz-5850 MHz Band-Chain1:

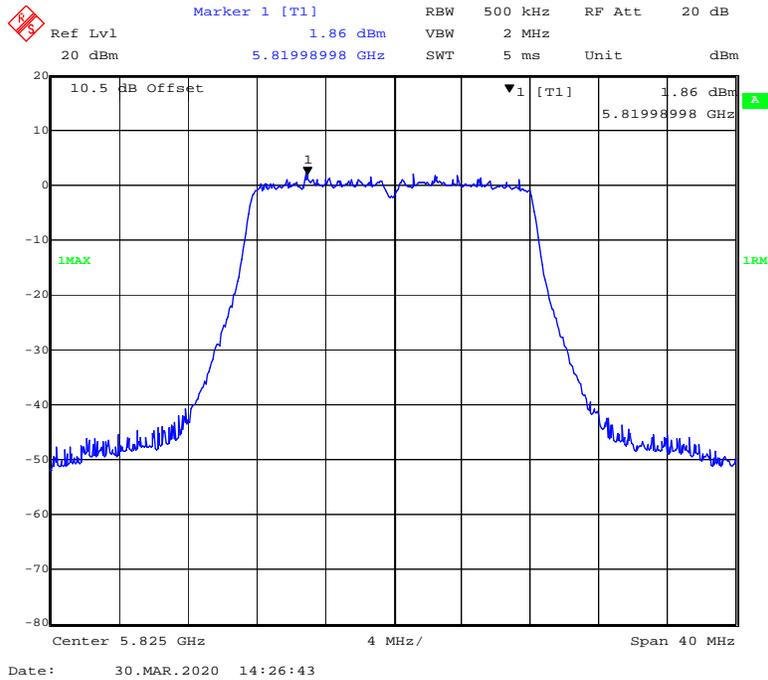
802.11a mode, Power spectral density-5745MHz



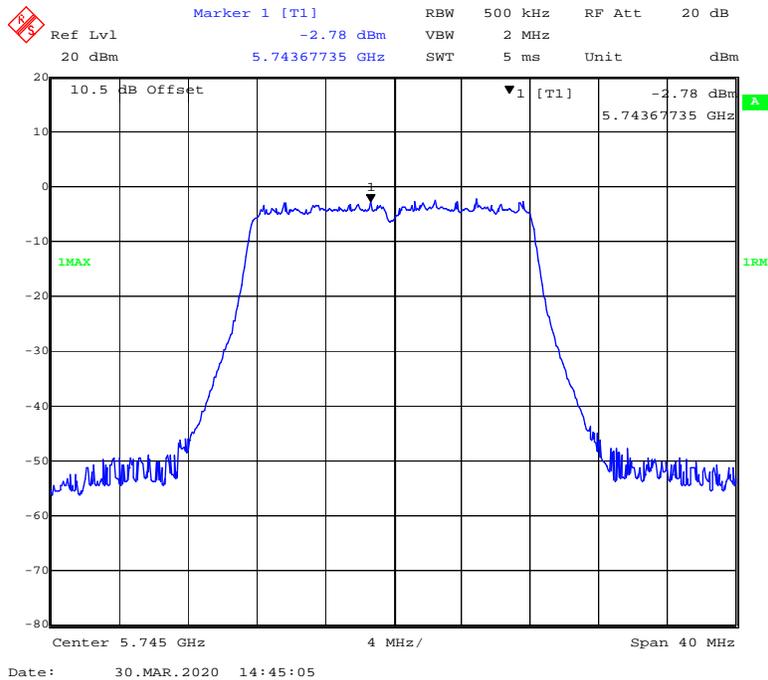
802.11a mode, Power spectral density-5785MHz



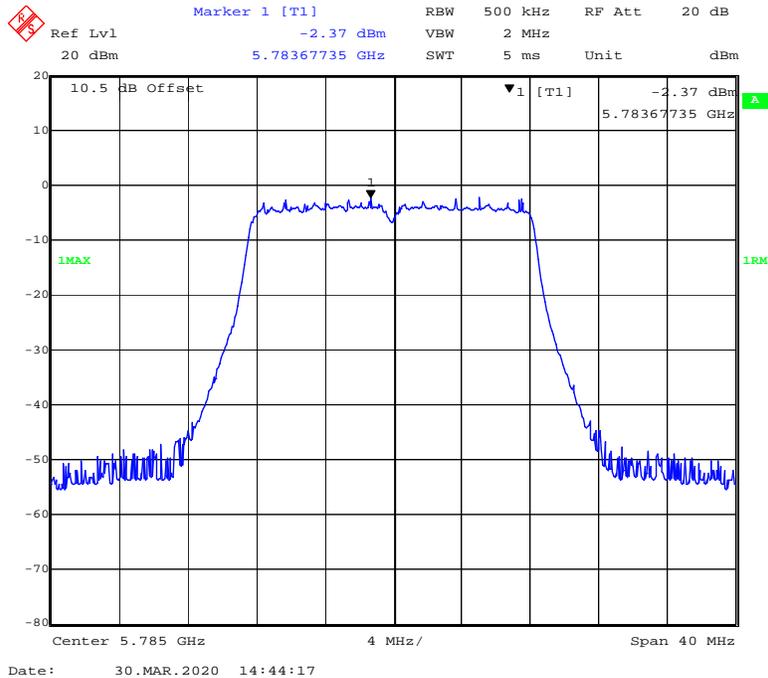
802.11a mode, Power spectral density-5825MHz



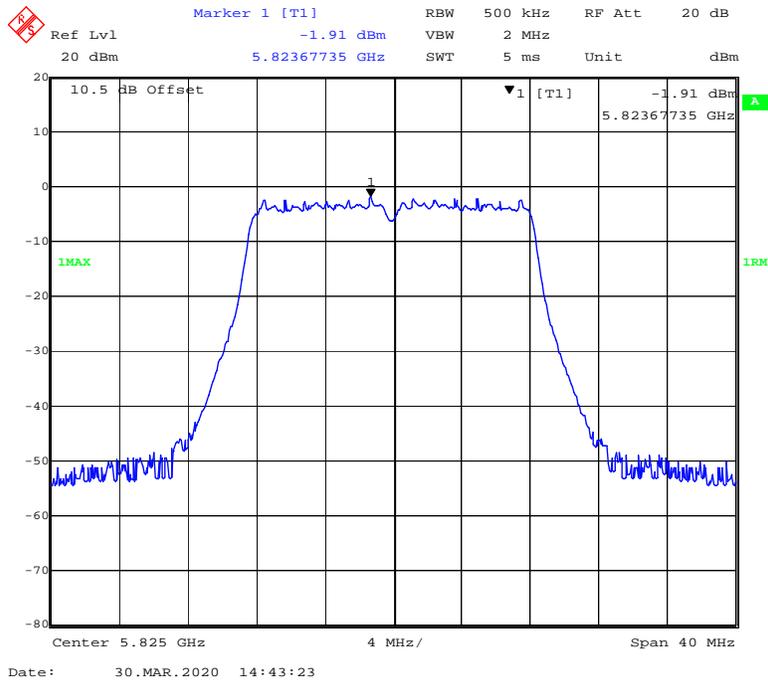
802.11ac20 mode, Power spectral density-5745MHz



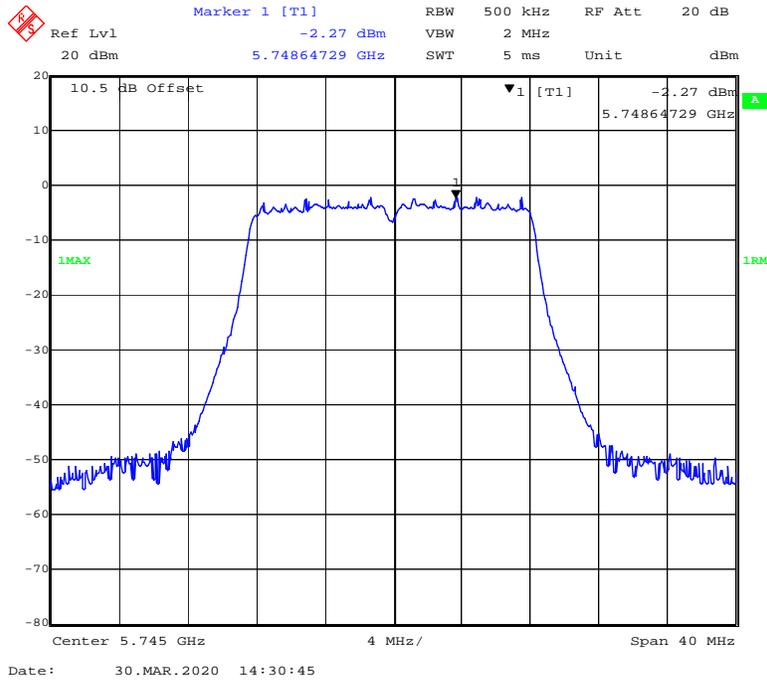
802.11 ac20 mode, Power spectral density-5785MHz



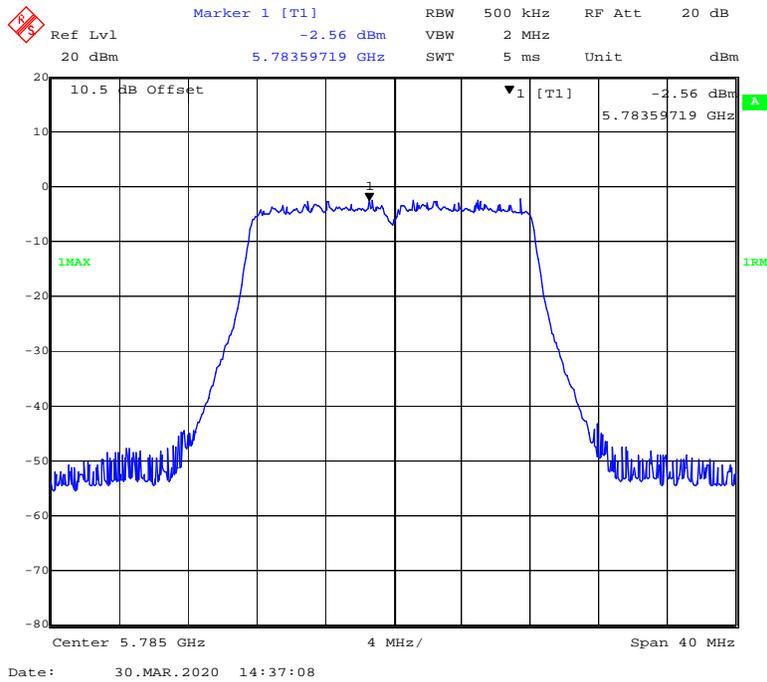
802.11 ac20 mode, Power spectral density-5825MHz



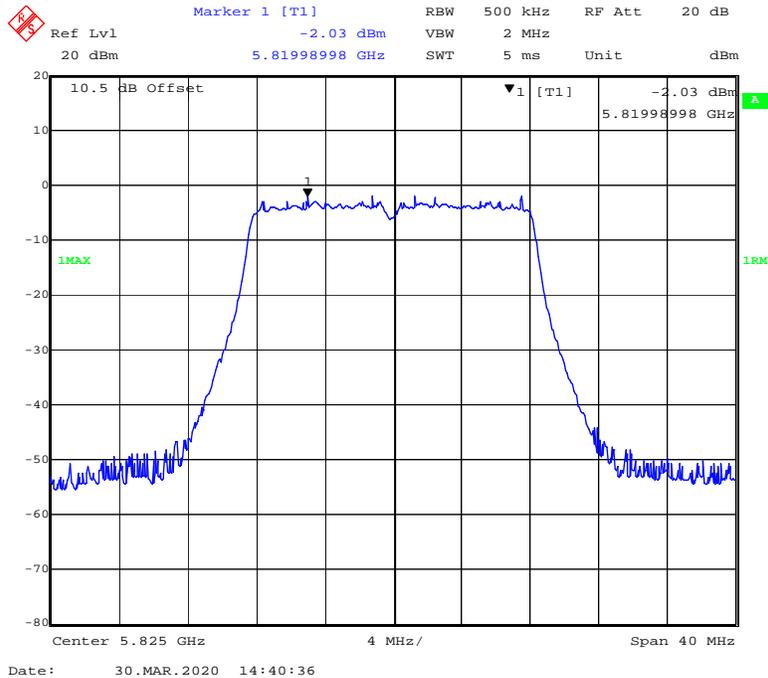
802.11n-HT20 mode, Power spectral density-5745MHz



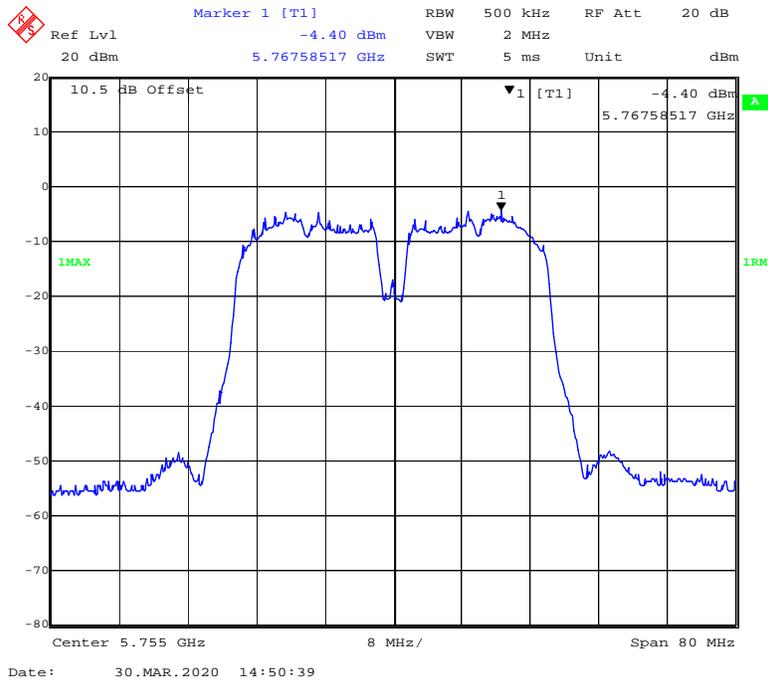
802.11n-HT20 mode, Power spectral density-5785MHz



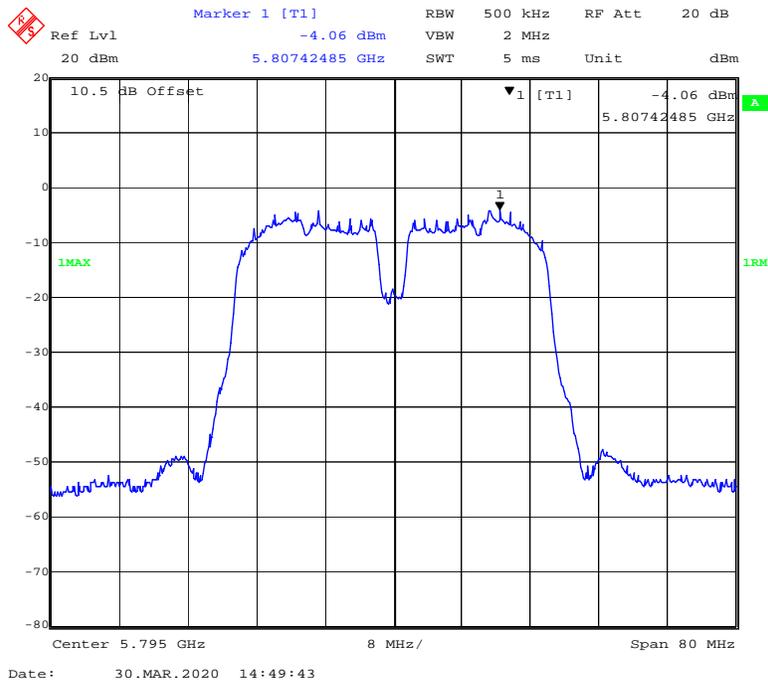
802.11n-HT20 mode, Power spectral density-5825MHz



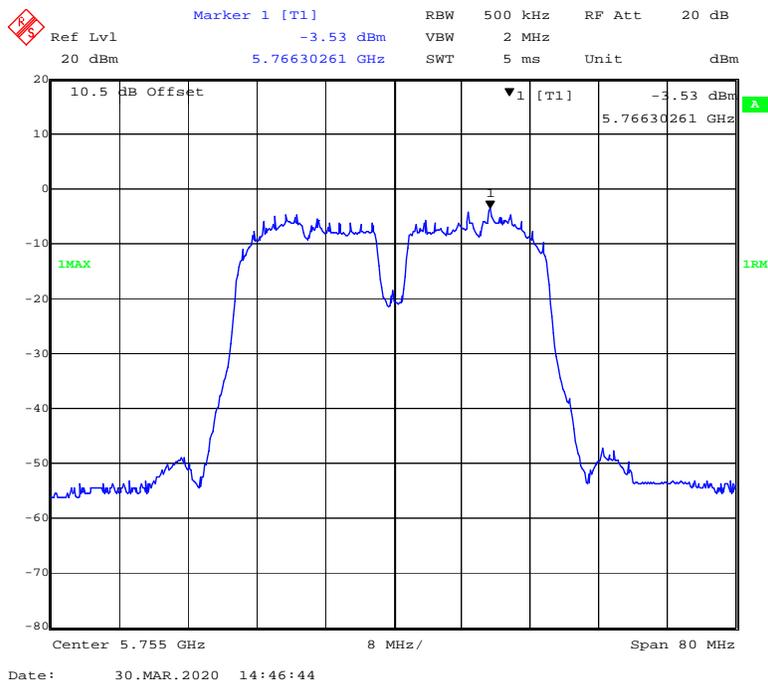
802.11ac40 mode, Power spectral density-5755MHz



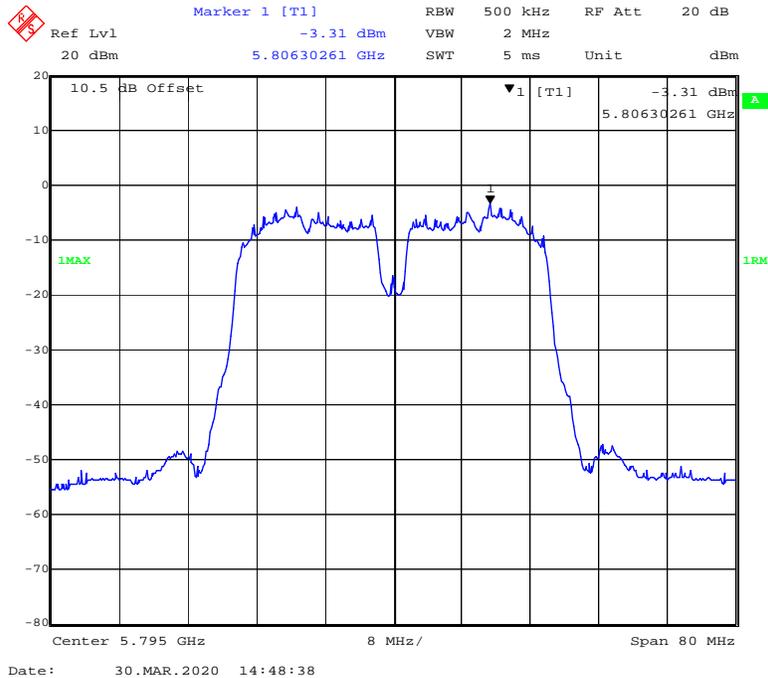
802.11 ac40 mode, Power spectral density-5795MHz



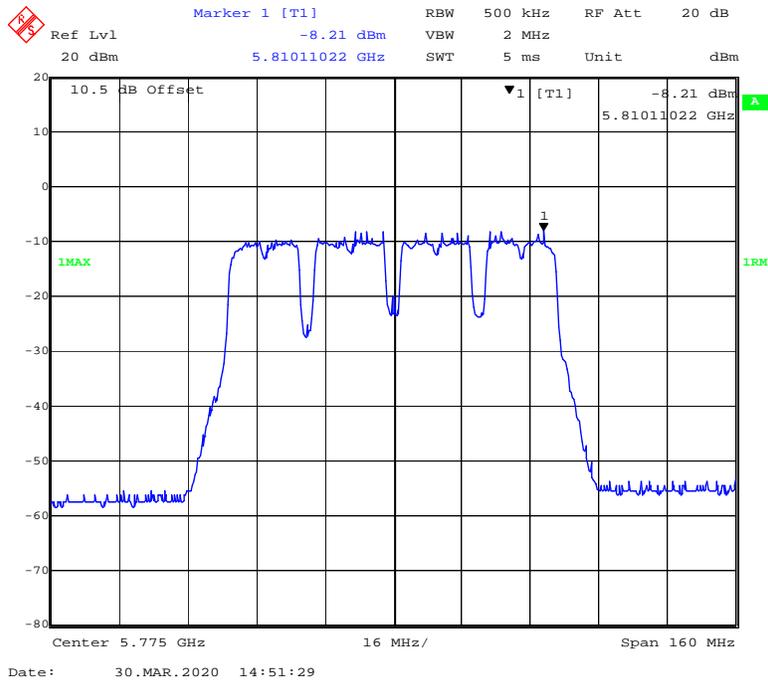
802.11n-HT40 mode, Power spectral density-5755MHz



802.11n-HT40 mode, Power spectral density-5795MHz



802.11 ac80 mode, Power spectral density-5775MHz



5150MHz-5250MHz:

Mode	Channel	Frequency (MHz)	PSD (dBm/MHz)			Limit (dBm/MHz)	Result
			Chain2	Chain3	Total		
802.11a	Low	5180	2.84	3.97	/	5	PASS
	Middle	5200	3.12	3.52	/	5	PASS
	High	5240	3.94	3.05	/	5	PASS
802.11ac20	Low	5180	-1.01	1.51	3.44	5	PASS
	Middle	5200	-1.37	1.31	3.18	5	PASS
	High	5240	-1.35	2.16	3.76	5	PASS
802.11n20	Low	5180	-1.65	1.48	3.20	5	PASS
	Middle	5200	-0.92	1.28	3.33	5	PASS
	High	5240	-1.51	1.55	3.29	5	PASS
802.11ac40	Low	5190	-4.64	-1.06	0.52	5	PASS
	High	5230	-4.93	-0.93	0.53	5	PASS
802.11n40	Low	5190	-4.90	-3.92	-1.37	5	PASS
	High	5230	-4.88	-4.15	-1.49	5	PASS
802.11ac80	/	5210	-5.65	-5.71	-2.67	5	PASS

5725MHz-5850MHz:

Mode	Channel	Frequency MHz	PSD (dBm/500kHz)			Limit (dBm/500kHz)	Result
			Chain2	Chain3	Total		
802.11a	Low	5745	1.14	2.44	/	18	PASS
	Middle	5785	1.14	2.42	/	18	PASS
	High	5825	1.53	2.80	/	18	PASS
802.11ac20	Low	5745	-2.64	-2.10	0.65	18	PASS
	Middle	5785	-2.07	0.14	2.18	18	PASS
	High	5825	-0.22	1.03	3.46	18	PASS
802.11n20	Low	5745	-2.16	-2.08	0.89	18	PASS
	Middle	5785	-1.20	1.23	3.19	18	PASS
	High	5825	-0.04	0.49	3.24	18	PASS
802.11ac40	Low	5755	-5.00	-3.94	-1.43	18	PASS
	High	5795	-5.39	-4.09	-1.68	18	PASS
802.11n40	Low	5755	-4.77	-5.00	-1.87	18	PASS
	High	5795	-4.49	-4.02	-1.24	18	PASS
802.11ac80	/	5775	-7.01	-7.44	-4.21	18	PASS

Note1: The total PSD= $10 \cdot \log_{10}(10^{(Chain\ 0/10)} + 10^{(Chain\ 1/10)})$

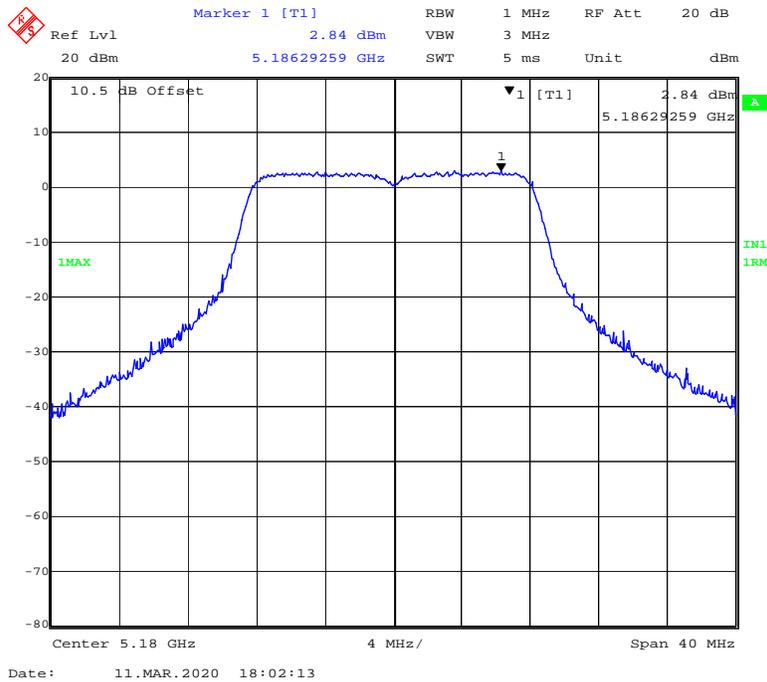
Note2: The maximum antenna gain is 15.0 dBi. The device employed Cyclic Delay Diversity (CDD) for 802.11MIMO transmitting, per KDB 662911 D01 Multiple Transmitter Output v02r01, for power spectral density (PSD) measurements on the devices:

Array Gain = $10 \log(N_{ANT}/N_{SS})$ dB.

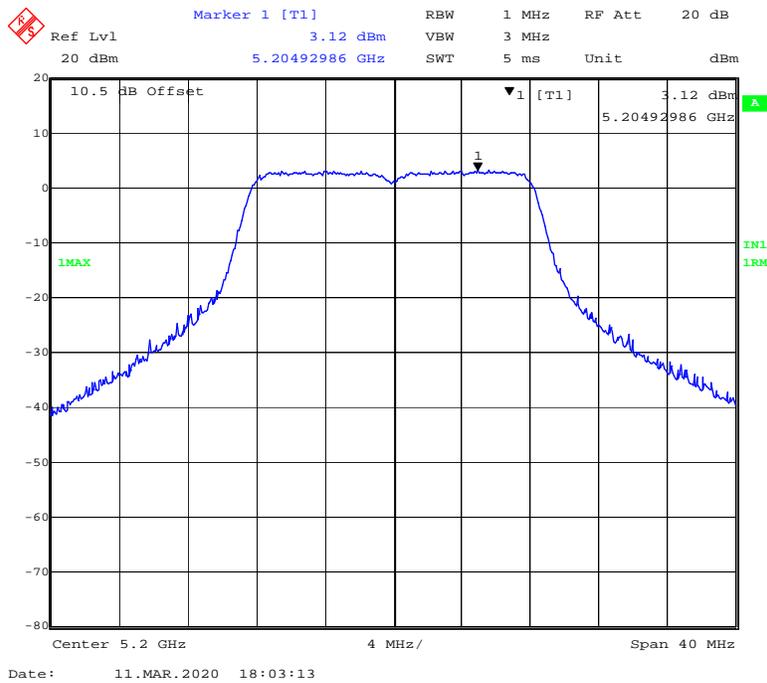
So: Directional gain = GANT + Array Gain = 15.0 + $10 \cdot \log(2/1)$ = 18.0 dBi, power spectral density limit reduced 18.0 - 6.0 = 12.0dB.

5150MHz-5250MHz Band-Chain2 :

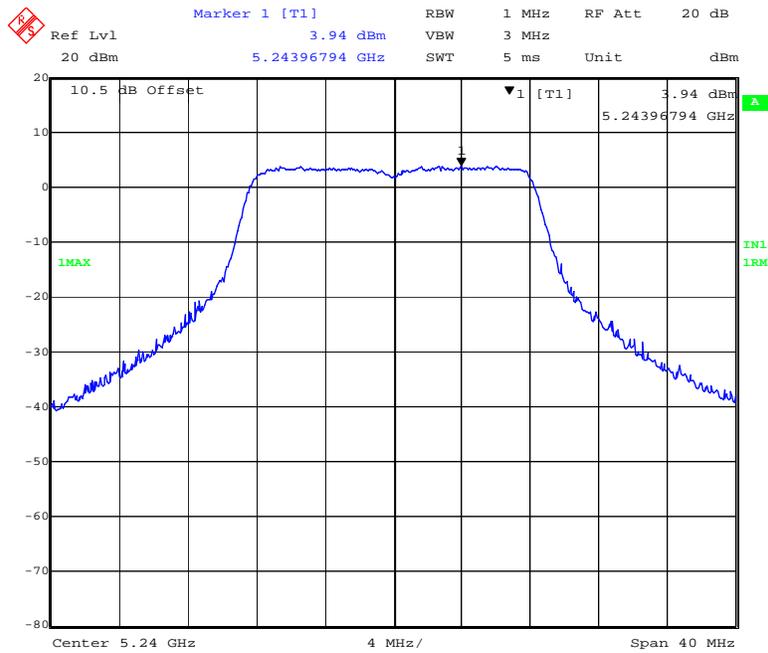
802.11a mode, Power spectral density-5180MHz



802.11a mode, Power spectral density-5200MHz

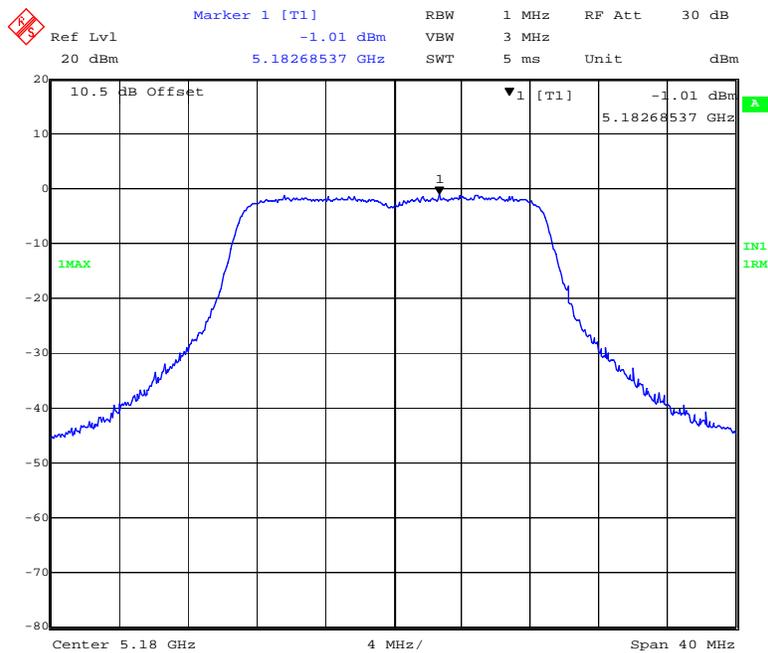


802.11a mode, Power spectral density-5240MHz



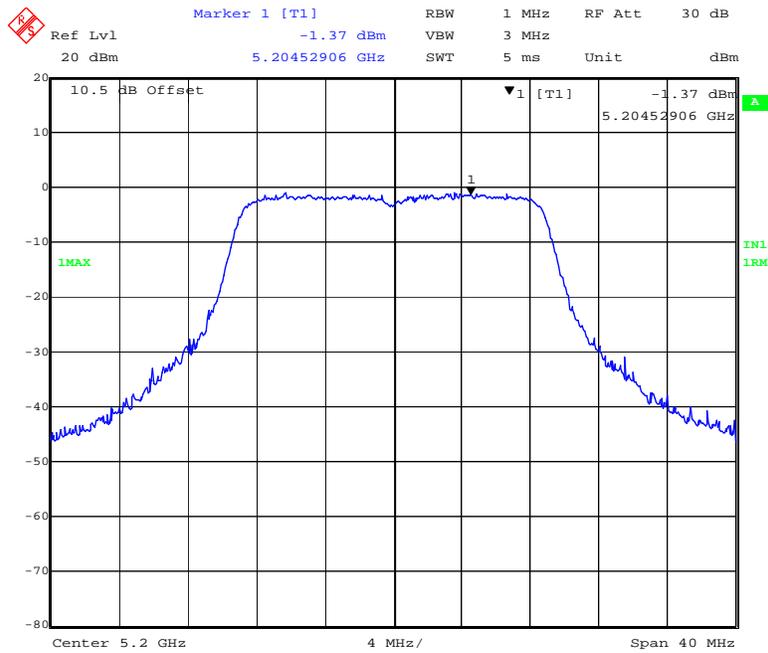
Date: 11.MAR.2020 18:03:51

802.11ac20 mode, Power spectral density-5180MHz



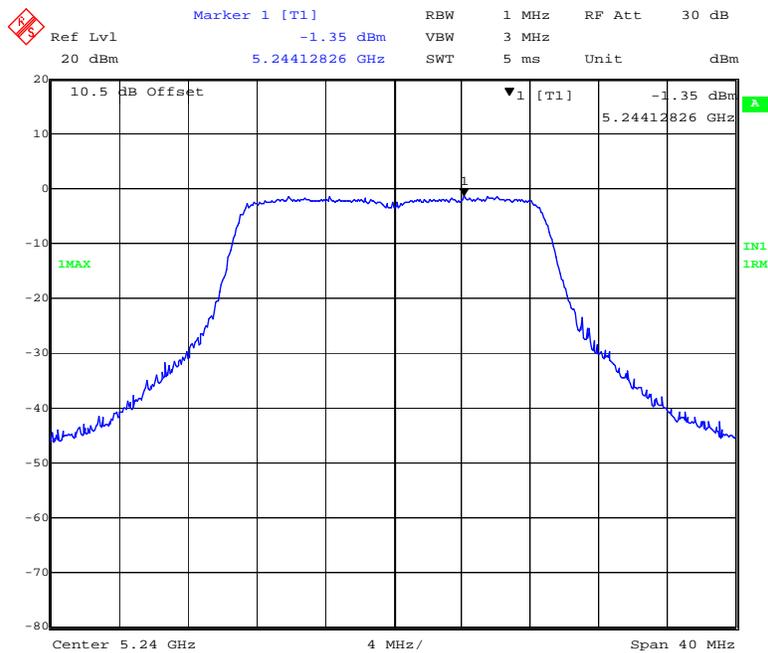
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802.11 ac20 mode, Power spectral density-5200MHz



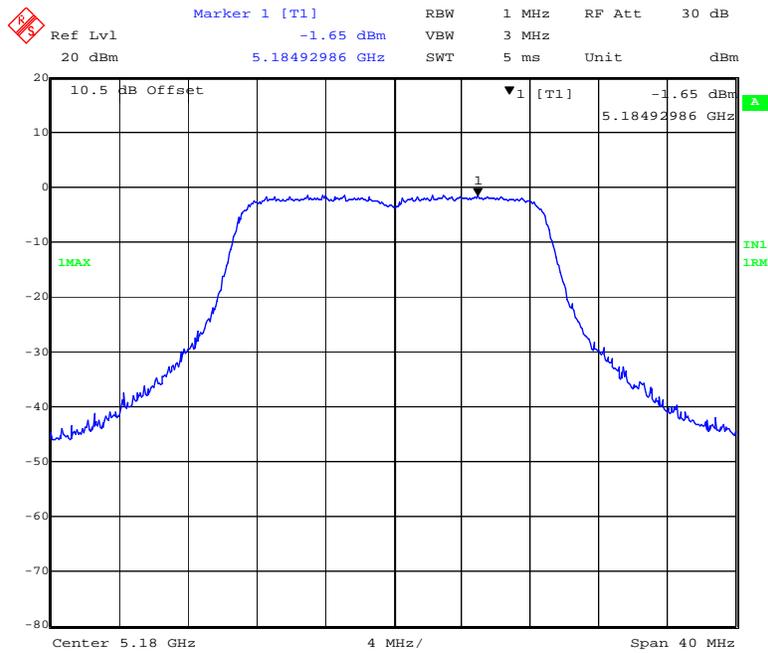
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802.11ac20 mode, Power spectral density-5240MHz



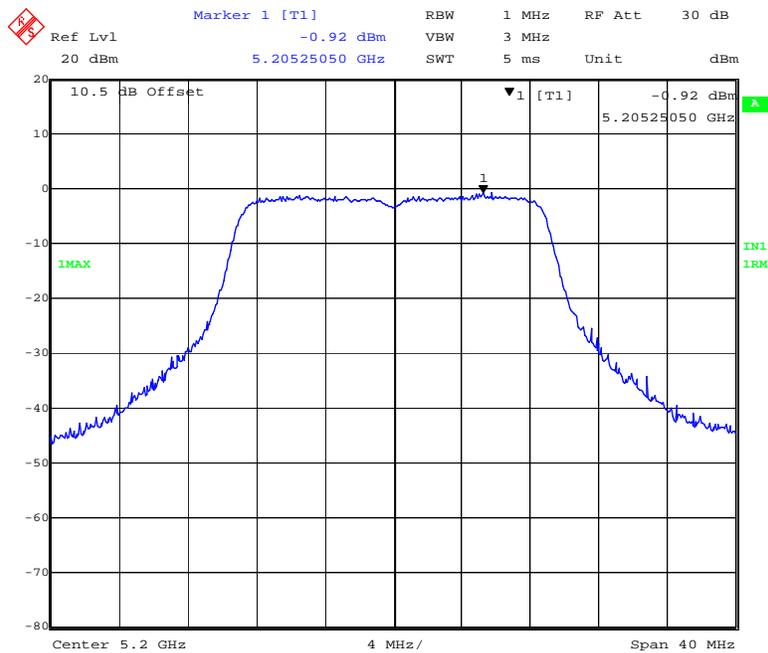
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802.11n-HT20 mode, Power spectral density-5180MHz



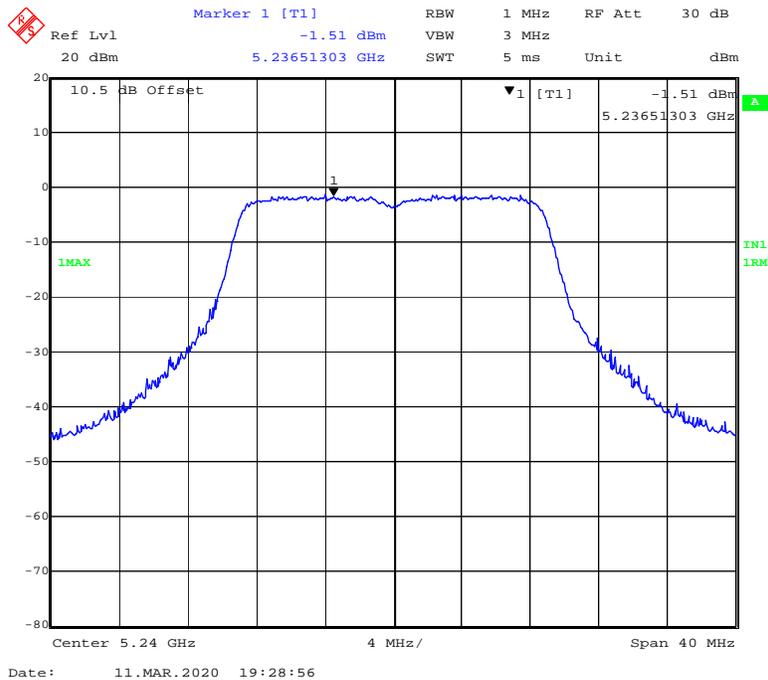
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802.11n-HT20 mode, Power spectral density-5200MHz

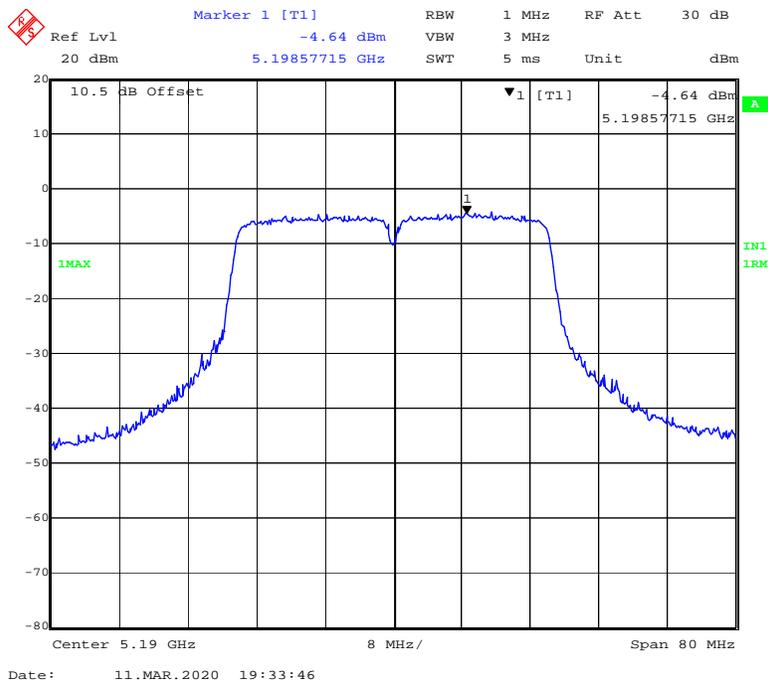


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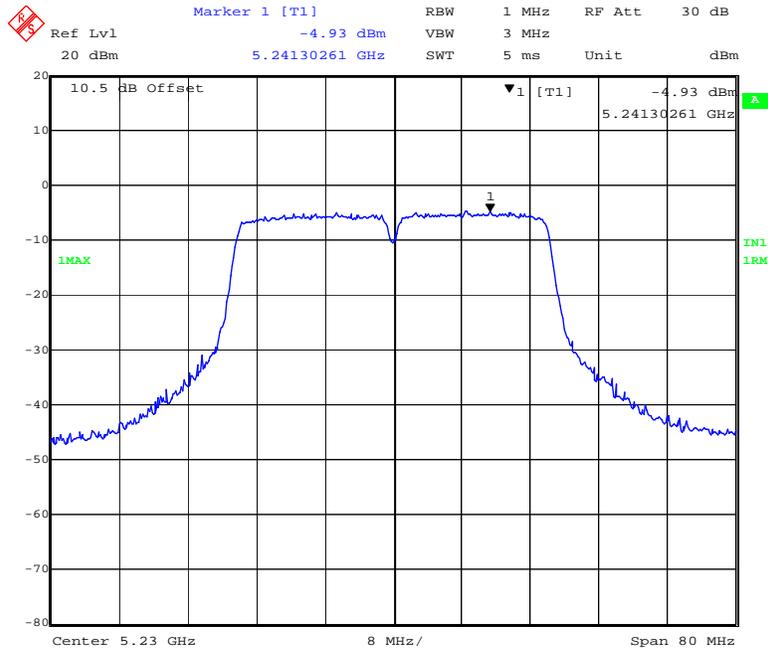
802.11n-HT20 mode, Power spectral density-5240MHz



802.11ac40 mode, Power spectral density-5190MHz

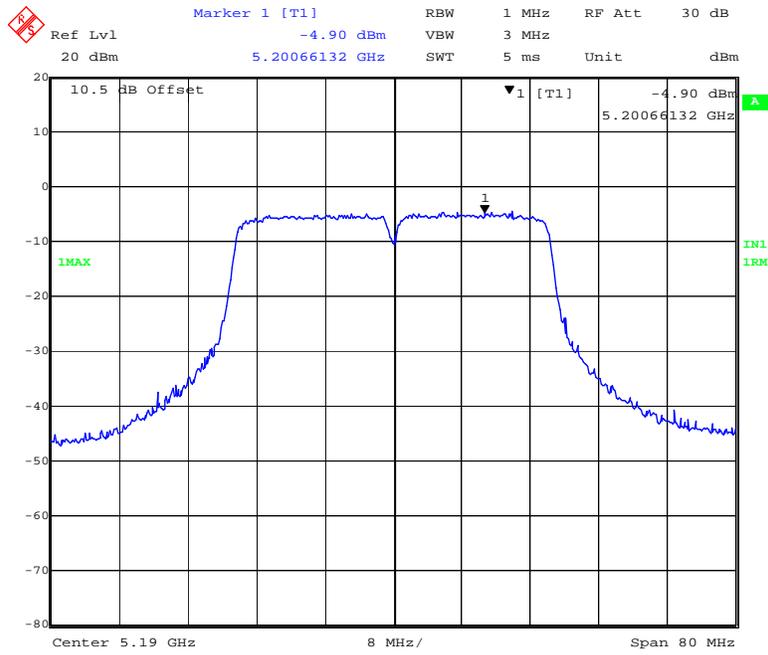


802.11 ac40 mode, Power spectral density-5230MHz



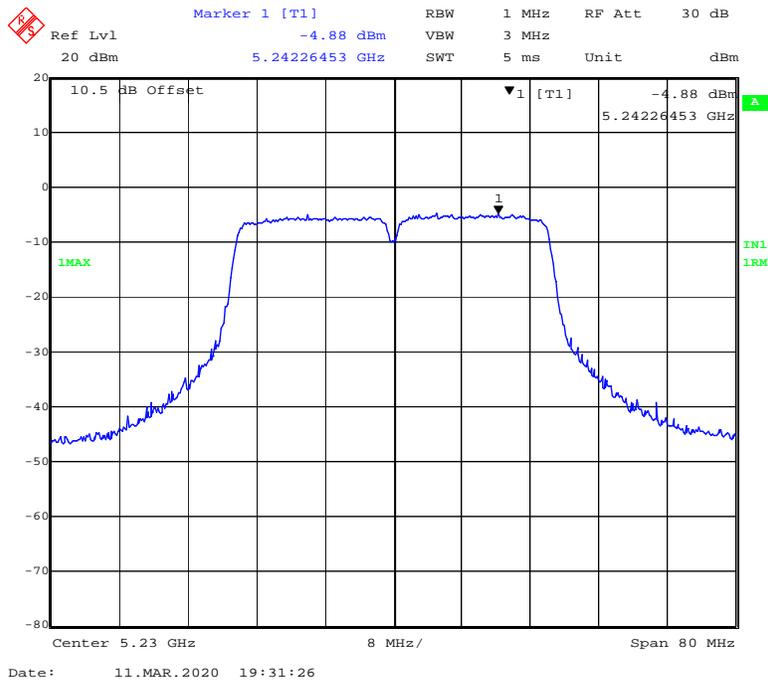
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802.11n-HT40 mode, Power spectral density-5190MHz

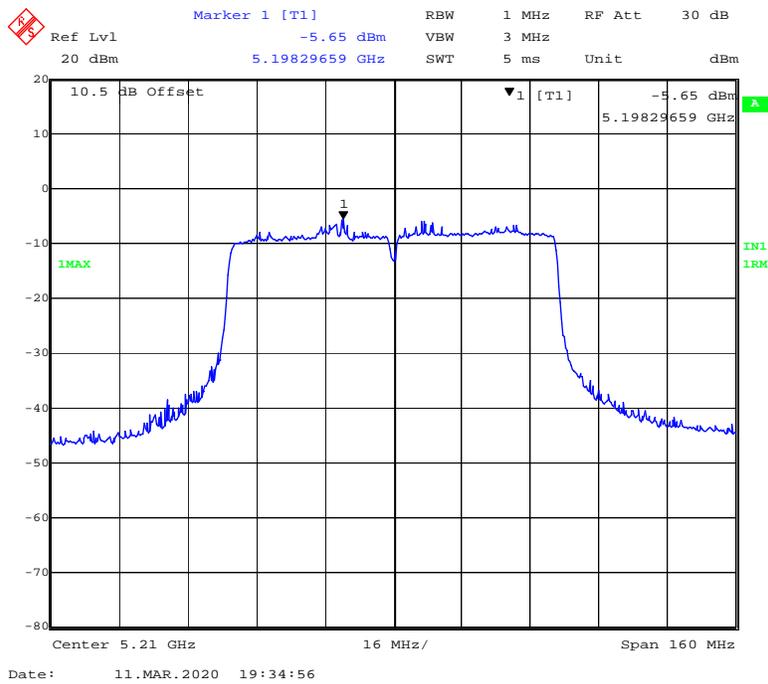


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802.11n-HT40 mode, Power spectral density-5230MHz

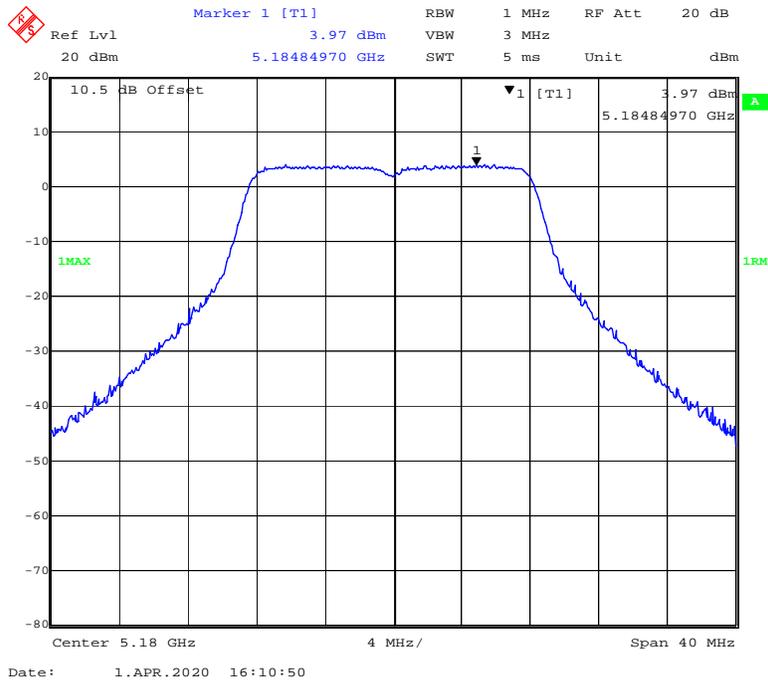


802.11n- ac80 mode, Power spectral density-5210MHz

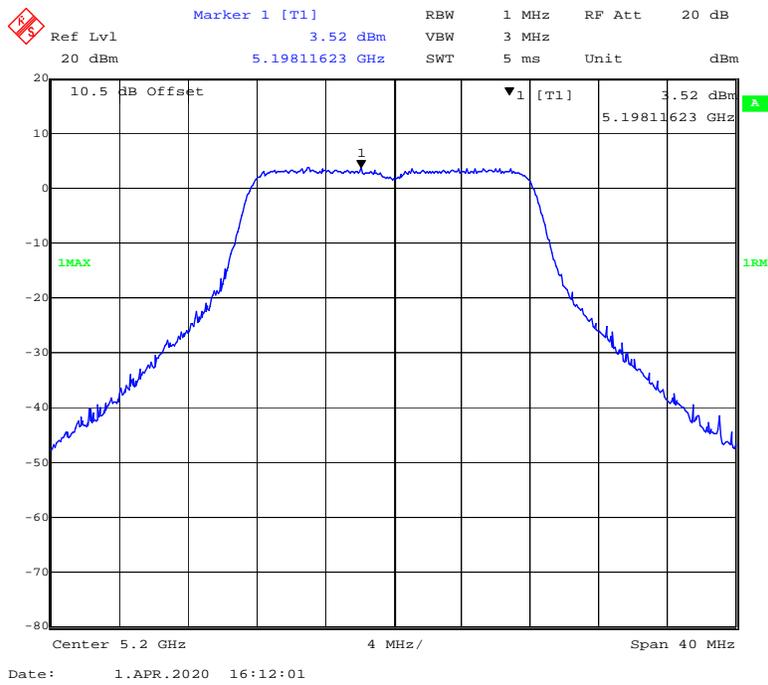


5150MHz-5250MHz Band-Chain3 :

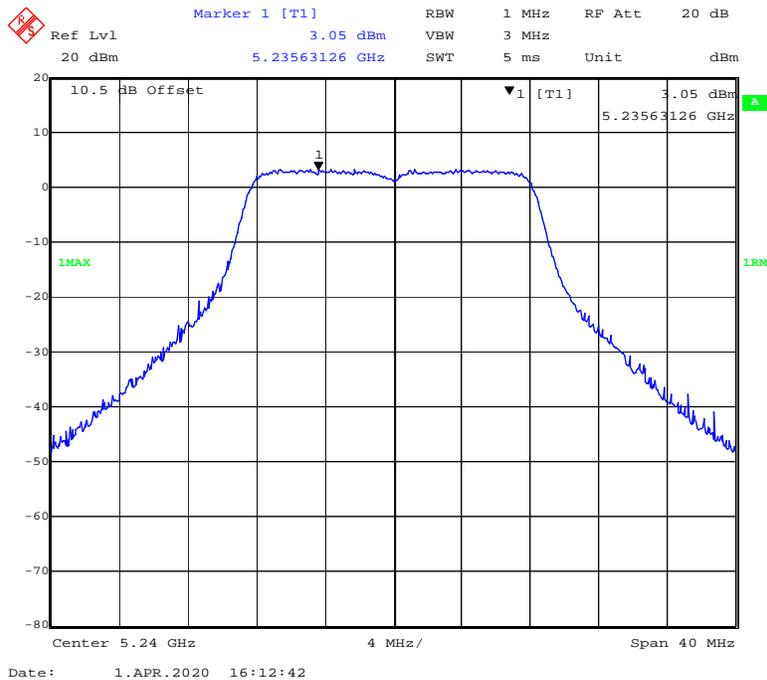
802.11a mode, Power spectral density-5180MHz



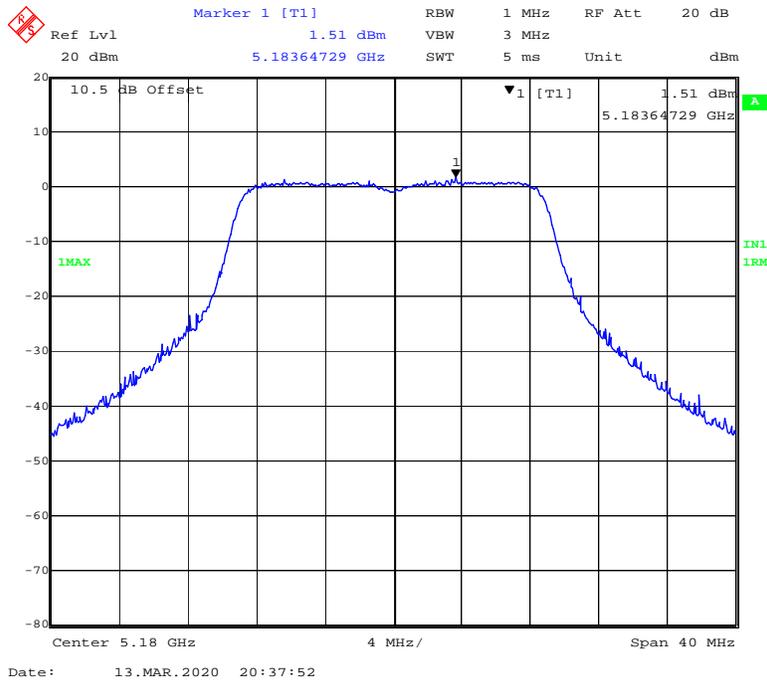
802.11a mode, Power spectral density-5200MHz



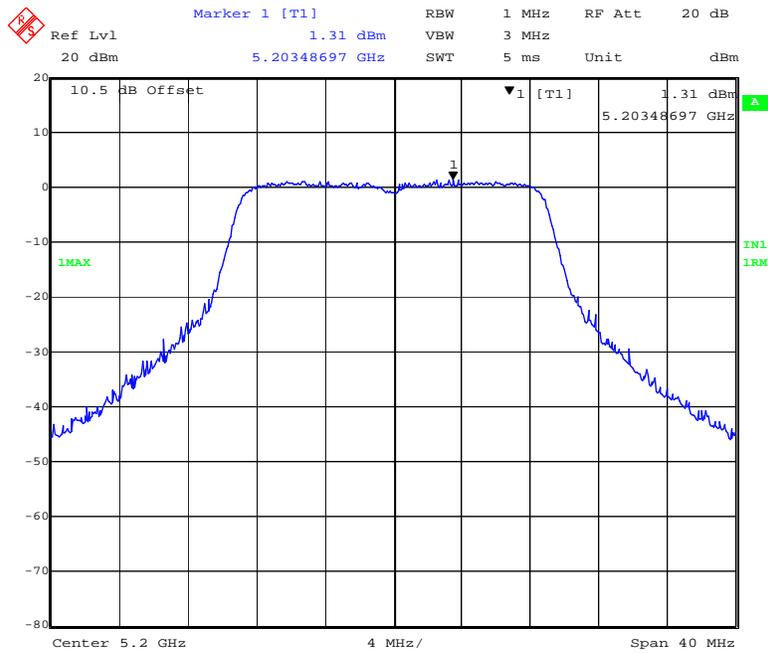
802.11a mode, Power spectral density-5240MHz



802.11ac20 mode, Power spectral density-5180MHz

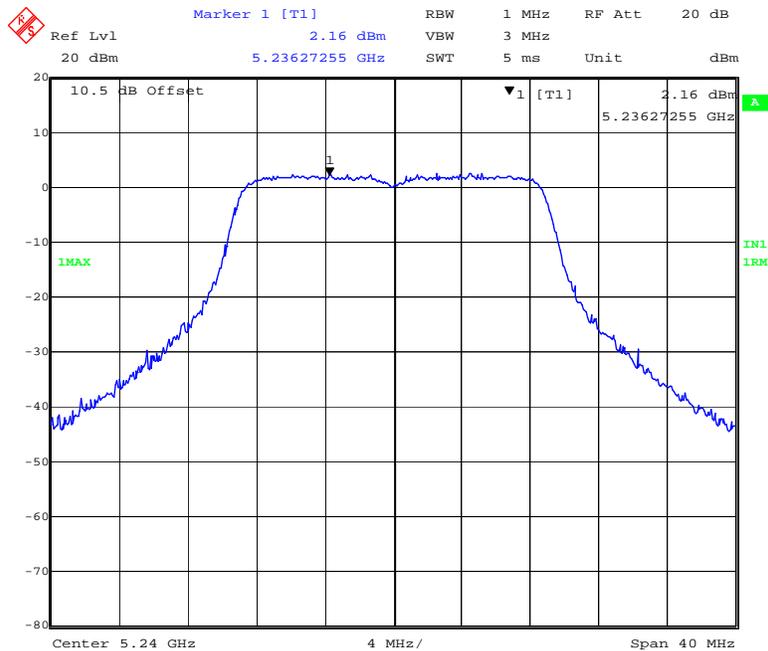


802.11 ac20 mode, Power spectral density-5200MHz



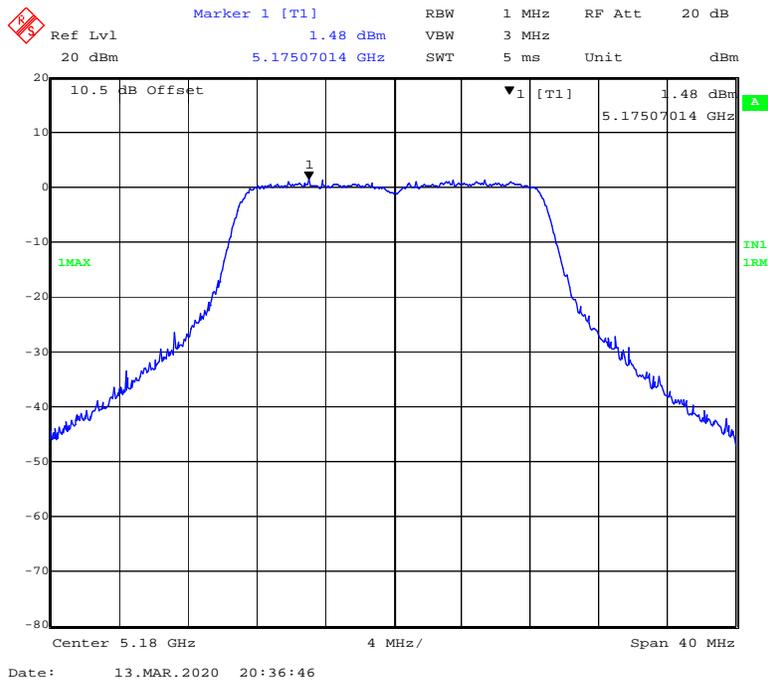
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802.11ac20 mode, Power spectral density-5240MHz

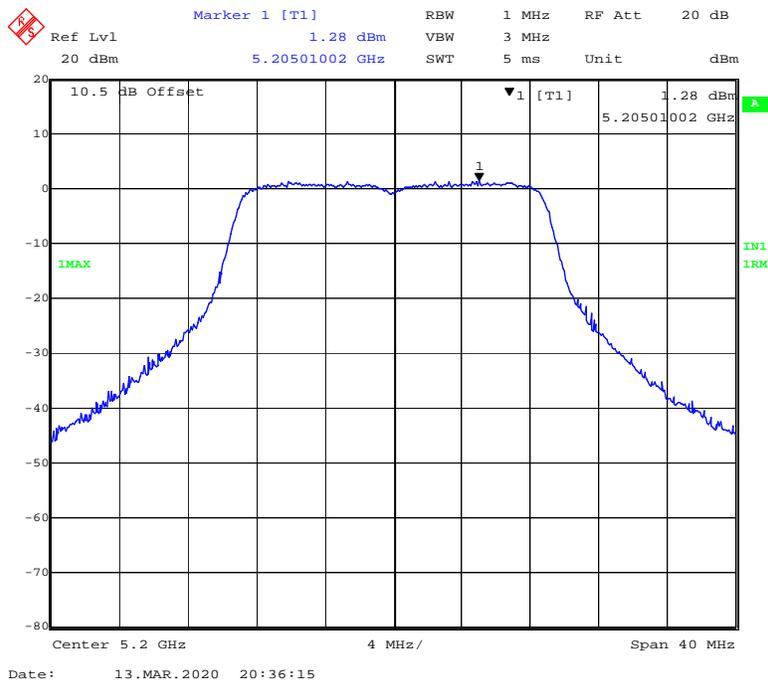


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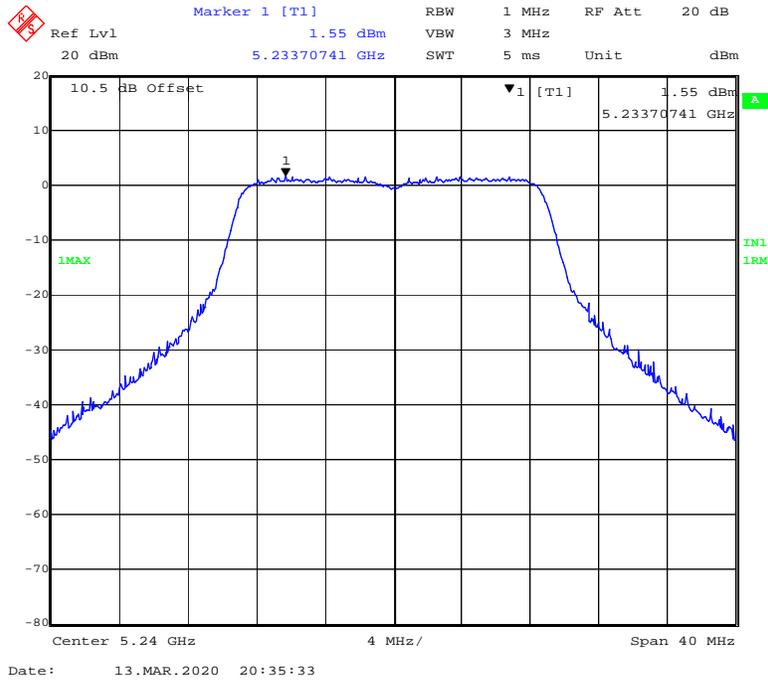
802.11n-HT20 mode, Power spectral density-5180MHz



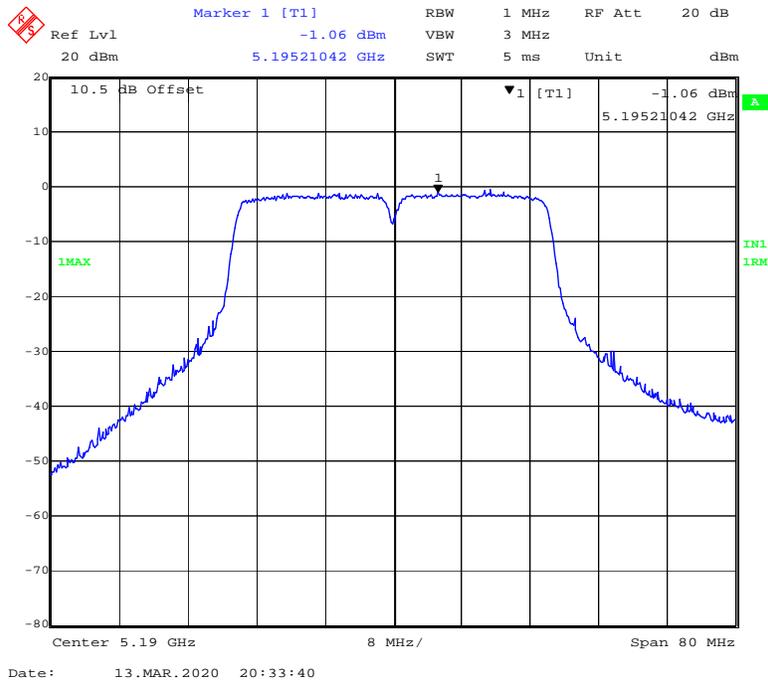
802.11n-HT20 mode, Power spectral density-5200MHz



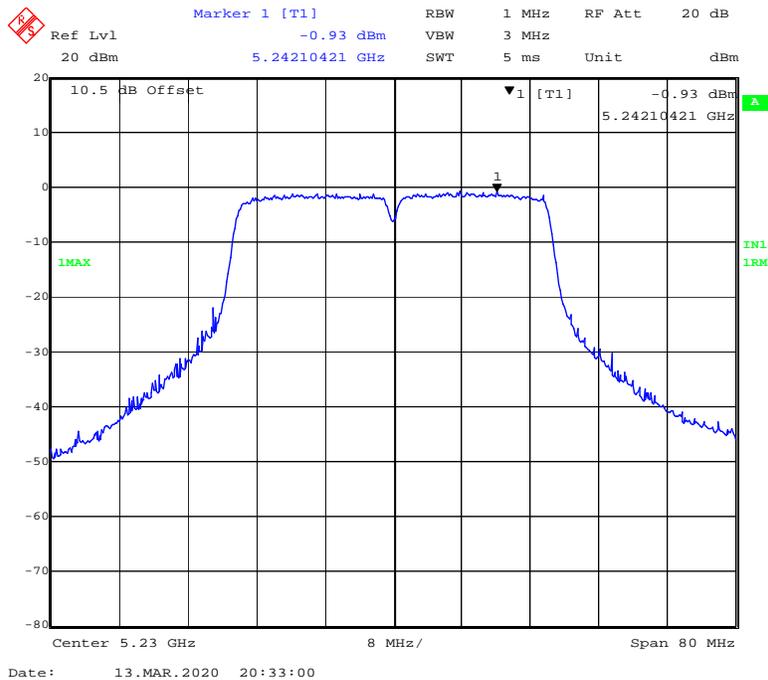
802.11n-HT20 mode, Power spectral density-5240MHz



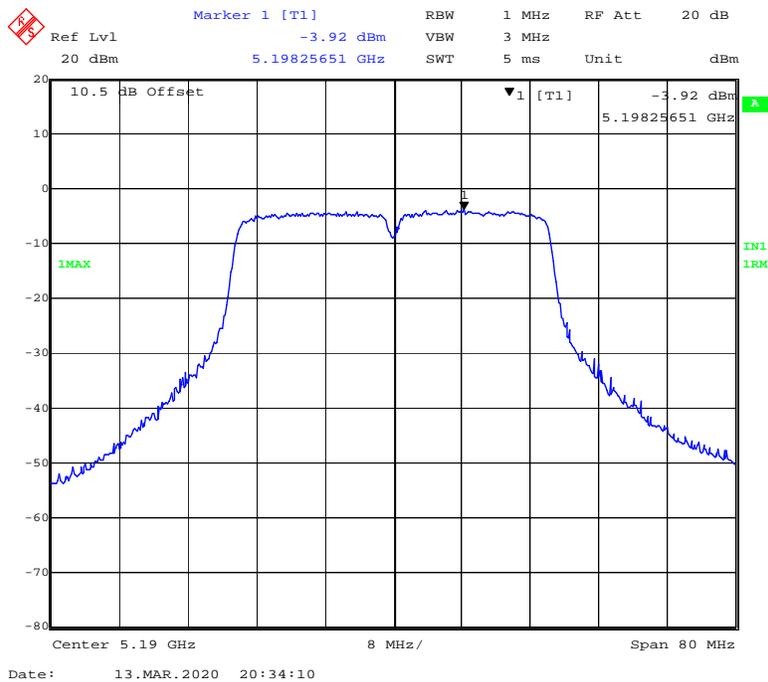
802.11ac40 mode, Power spectral density-5190MHz



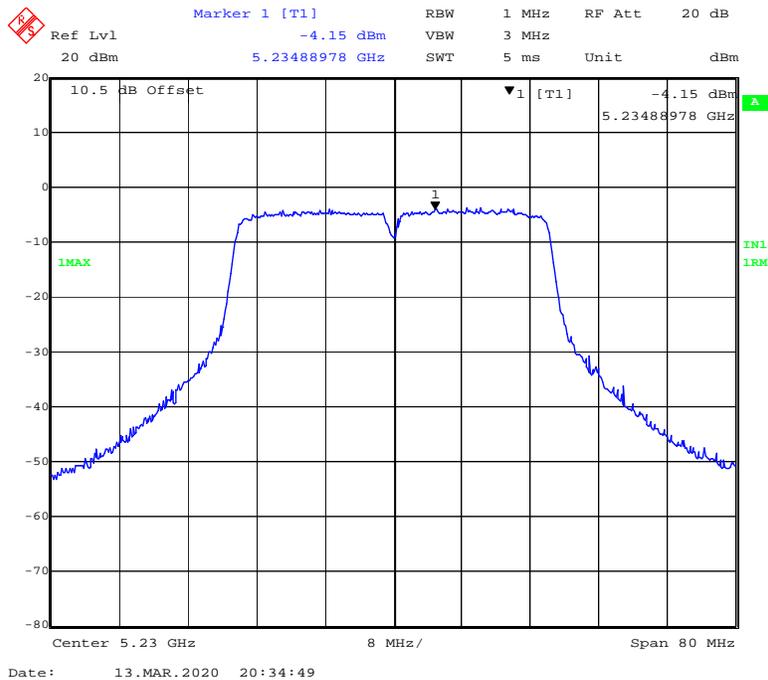
802.11 ac40 mode, Power spectral density-5230MHz



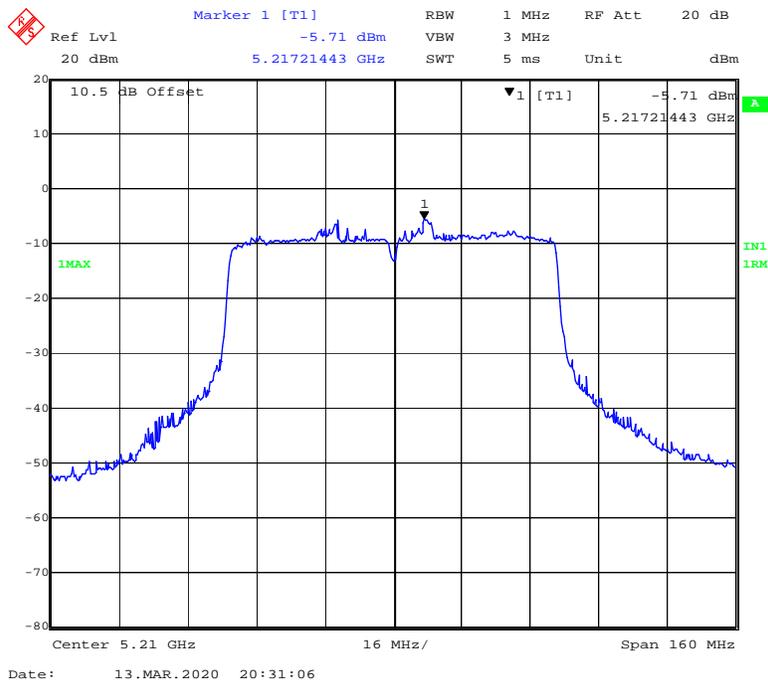
802.11n-HT40 mode, Power spectral density-5190MHz



802.11n-HT40 mode, Power spectral density-5230MHz

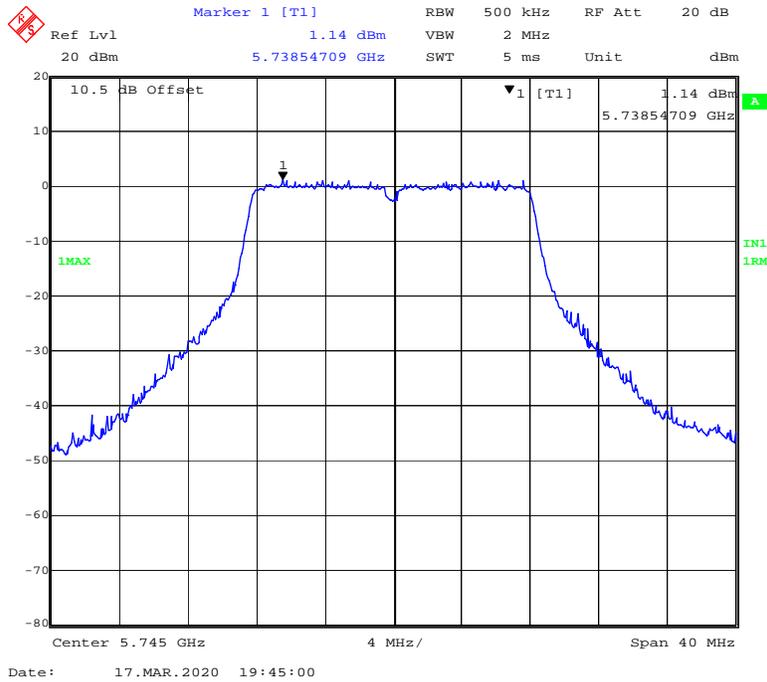


802.11n- ac80 mode, Power spectral density-5210MHz

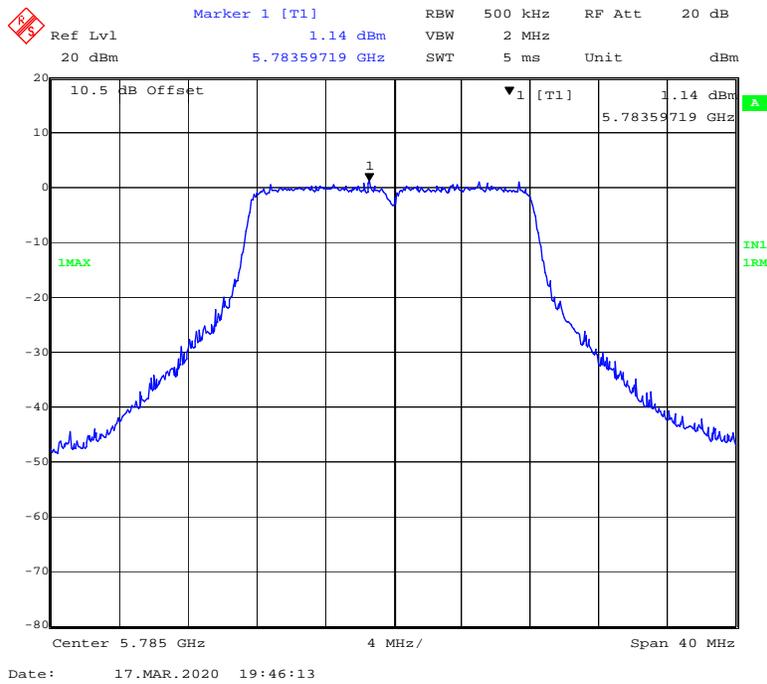


5725MHz-5850 MHz Band-Chain2:

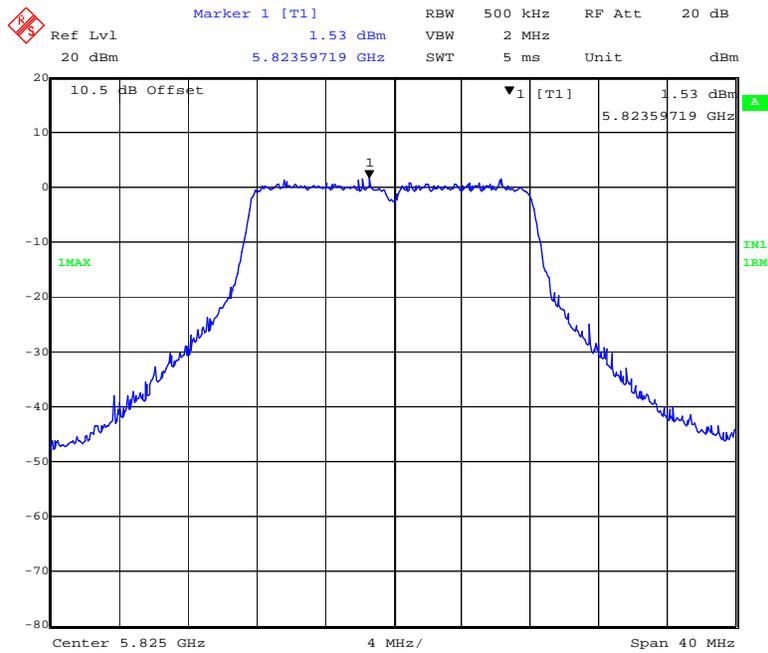
802.11a mode, Power spectral density-5745MHz



802.11a mode, Power spectral density-5785MHz

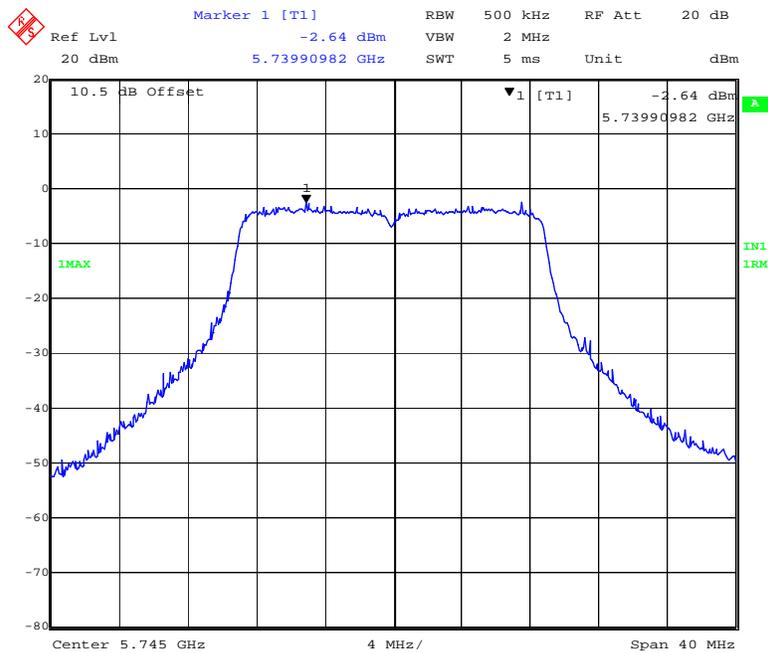


802.11a mode, Power spectral density-5825MHz



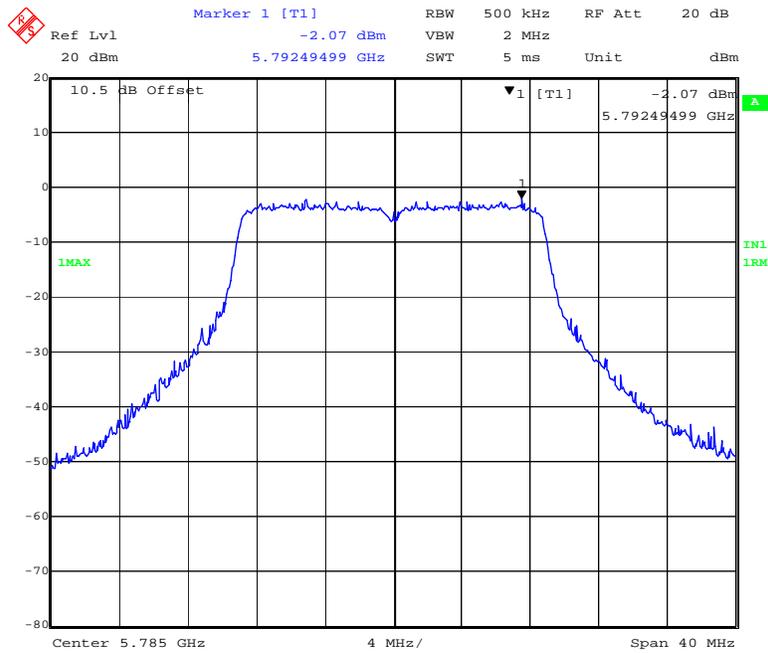
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802.11ac20 mode, Power spectral density-5745MHz



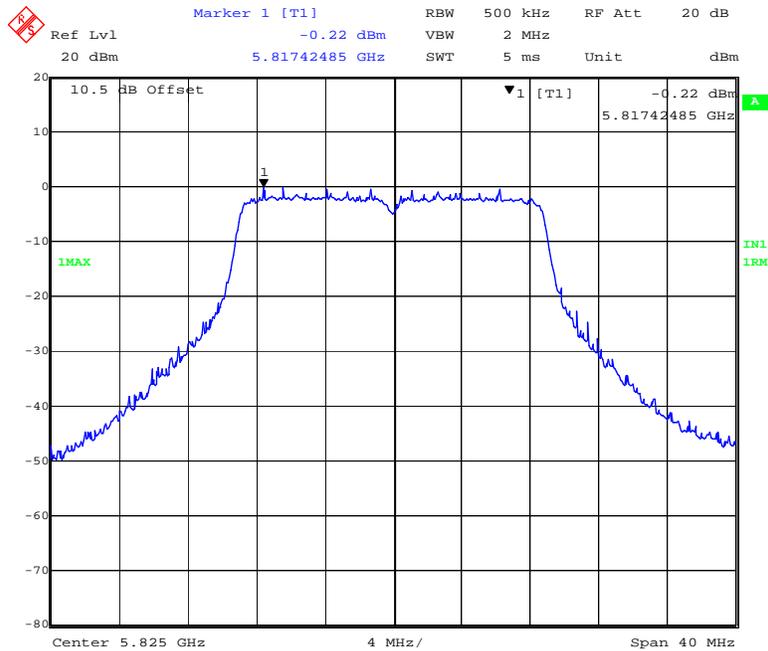
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802.11 ac20 mode, Power spectral density-5785MHz



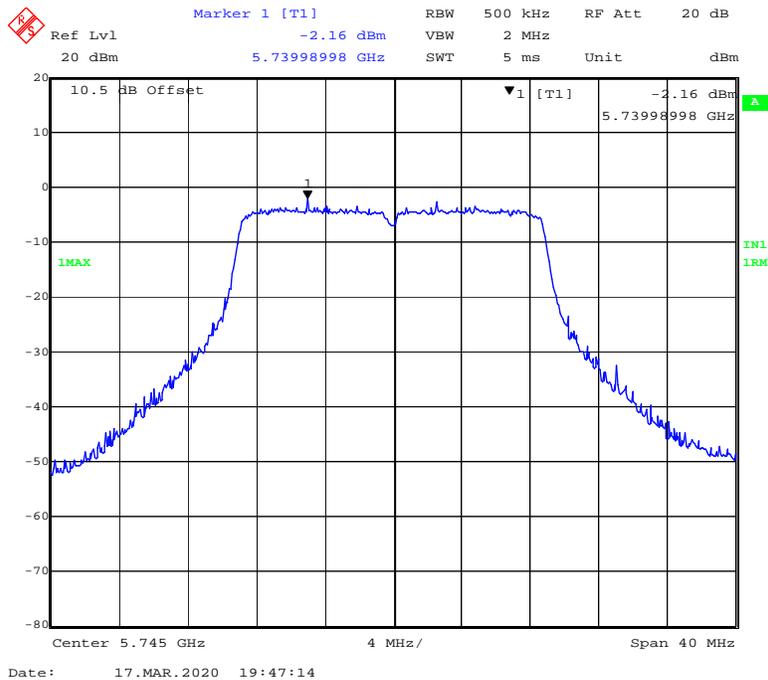
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802.11 ac20 mode, Power spectral density-5825MHz

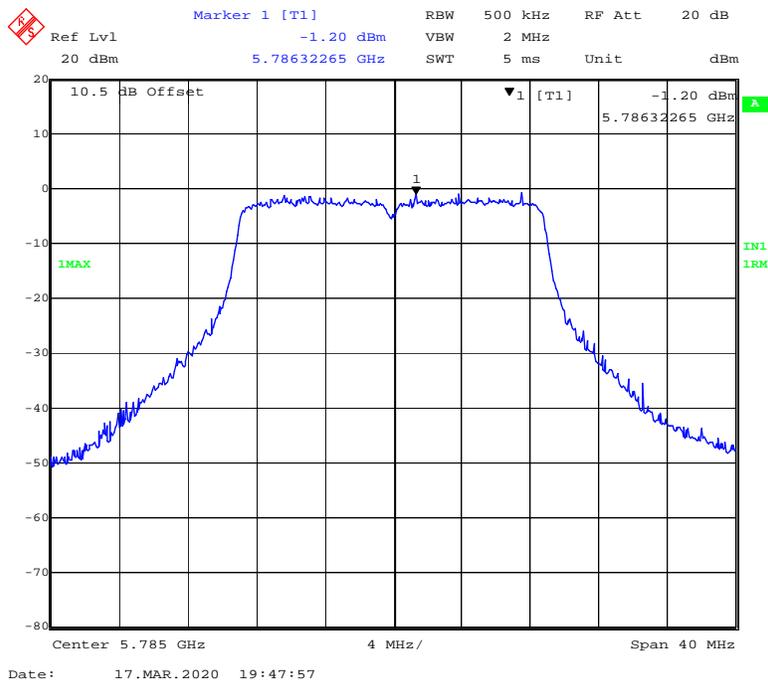


Date: 17.MAR.2020 19:50:43

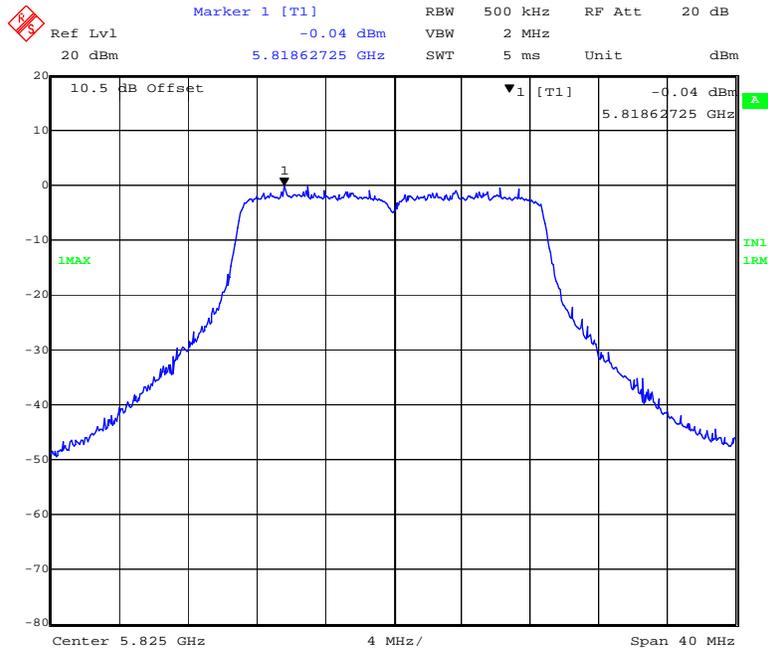
802.11n-HT20 mode, Power spectral density-5745MHz



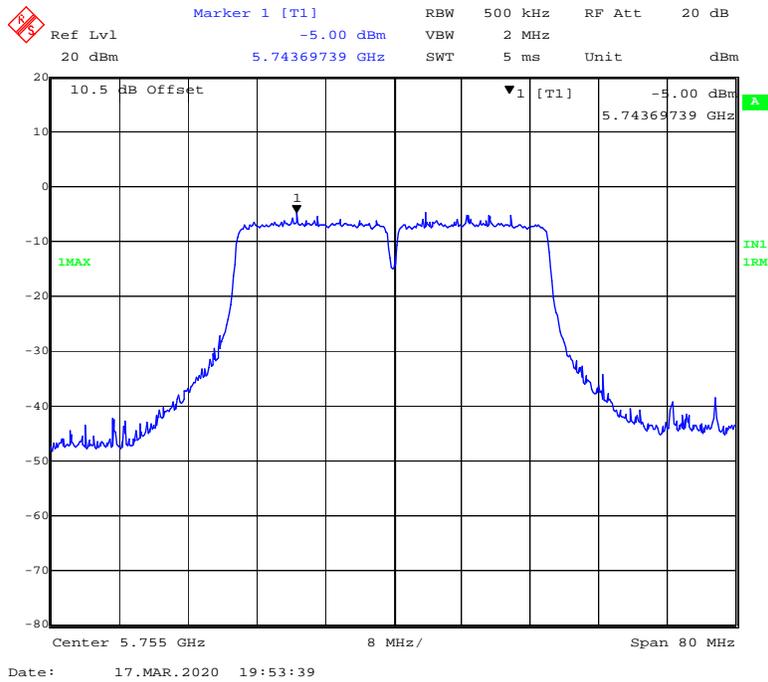
802.11n-HT20 mode, Power spectral density-5785MHz



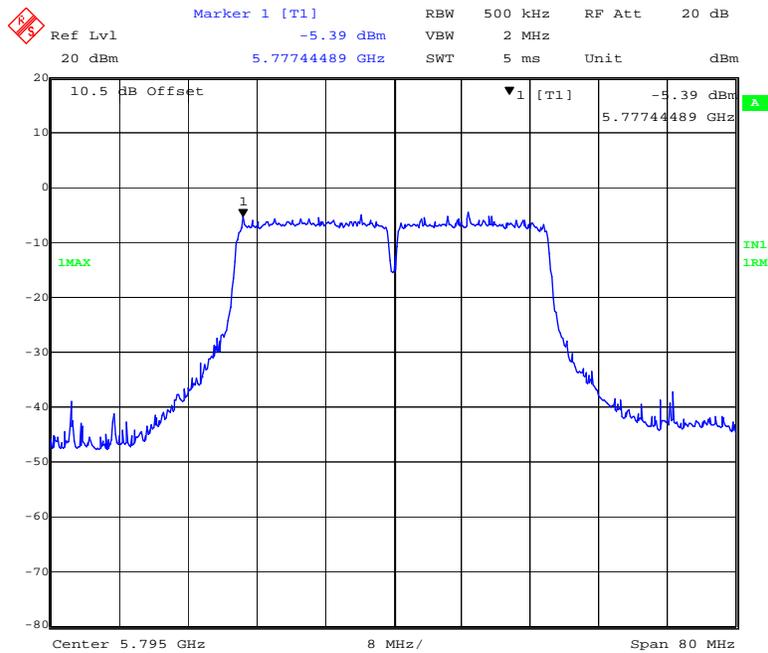
802.11n-HT20 mode, Power spectral density-5825MHz



802.11ac40 mode, Power spectral density-5755MHz

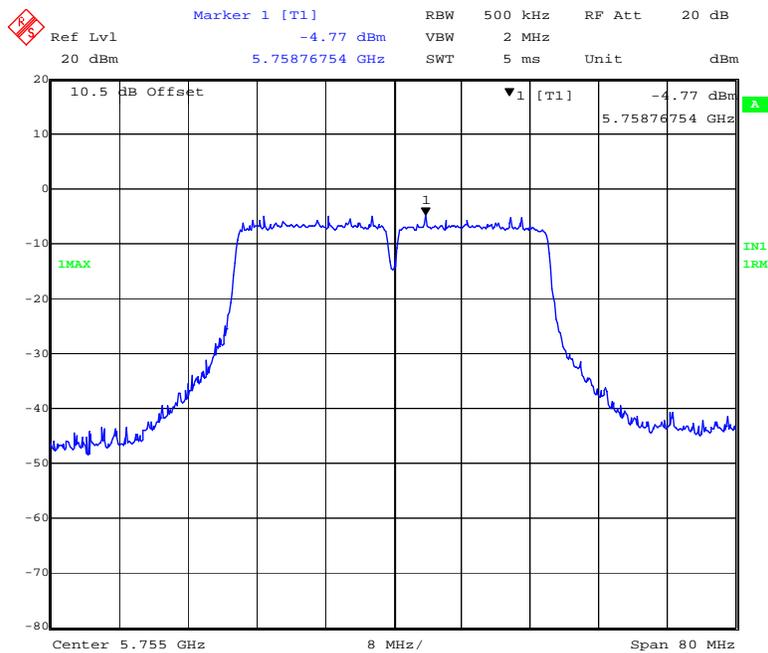


802.11 ac40 mode, Power spectral density-5795MHz



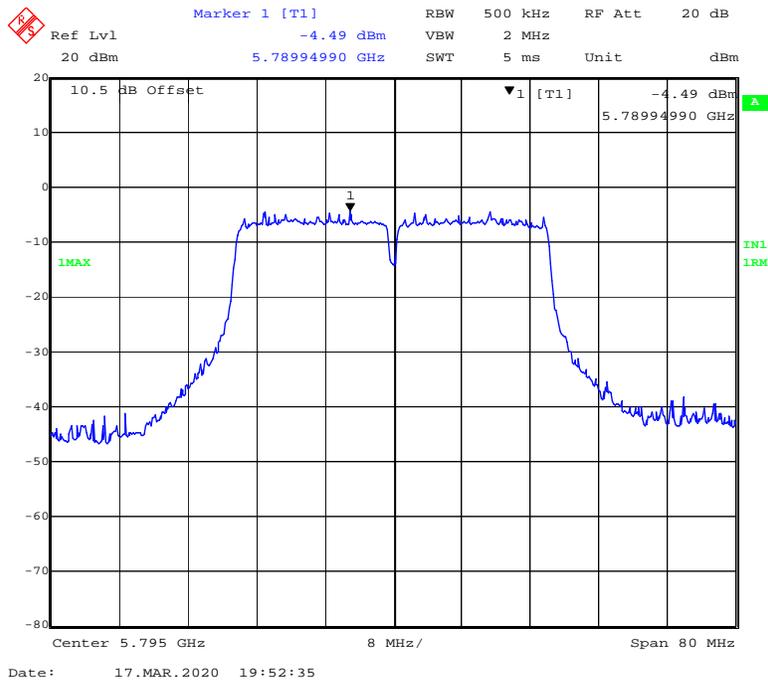
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802.11n-HT40 mode, Power spectral density-5755MHz

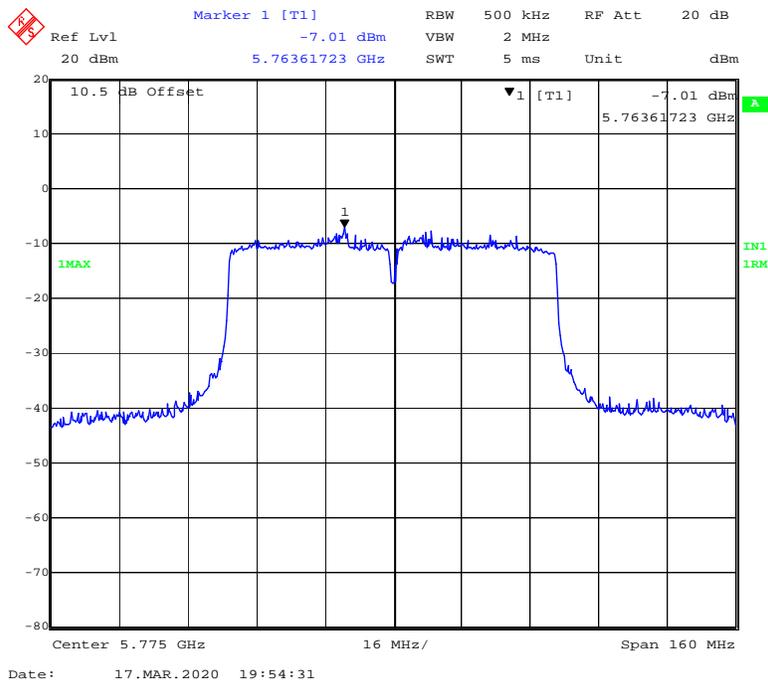


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802.11n-HT40 mode, Power spectral density-5795MHz

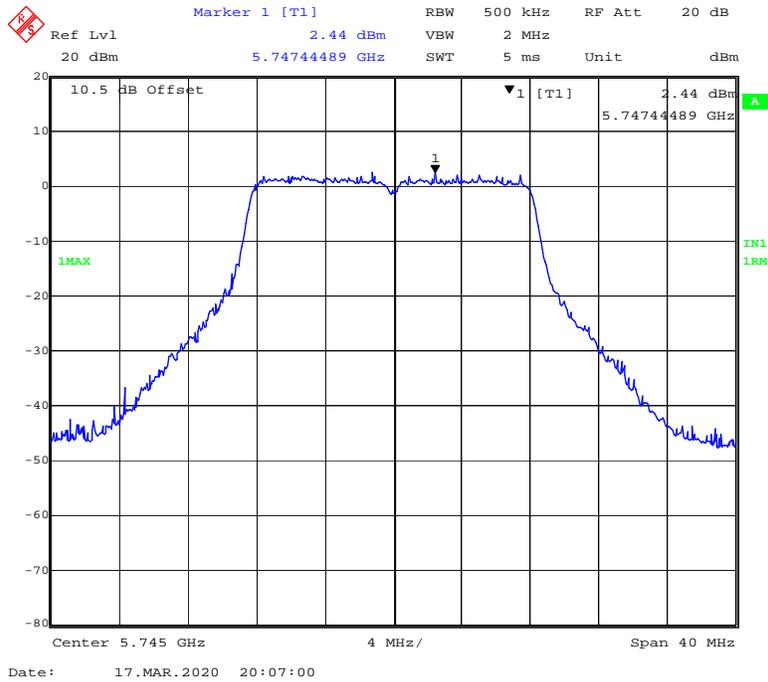


802.11 ac80 mode, Power spectral density-5775MHz

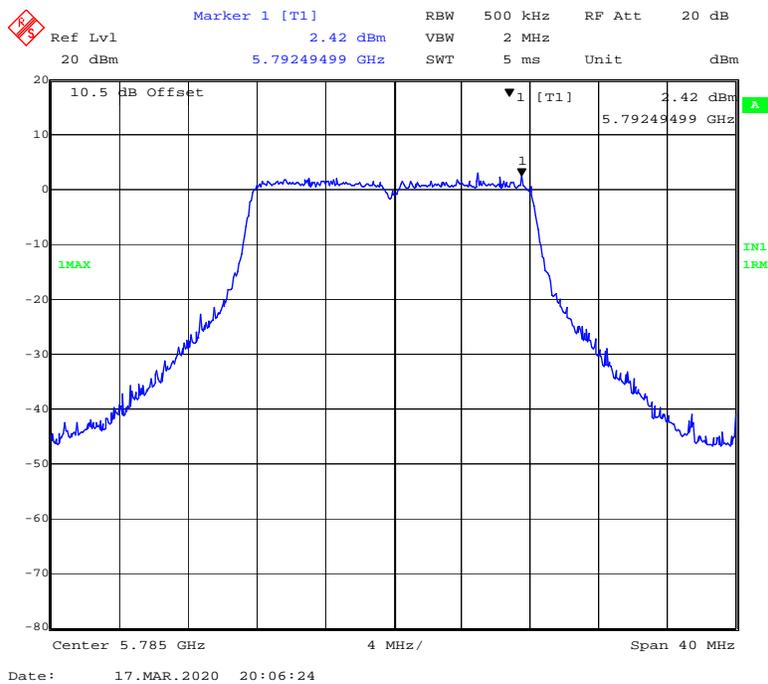


5725MHz-5850 MHz Band-Chain3:

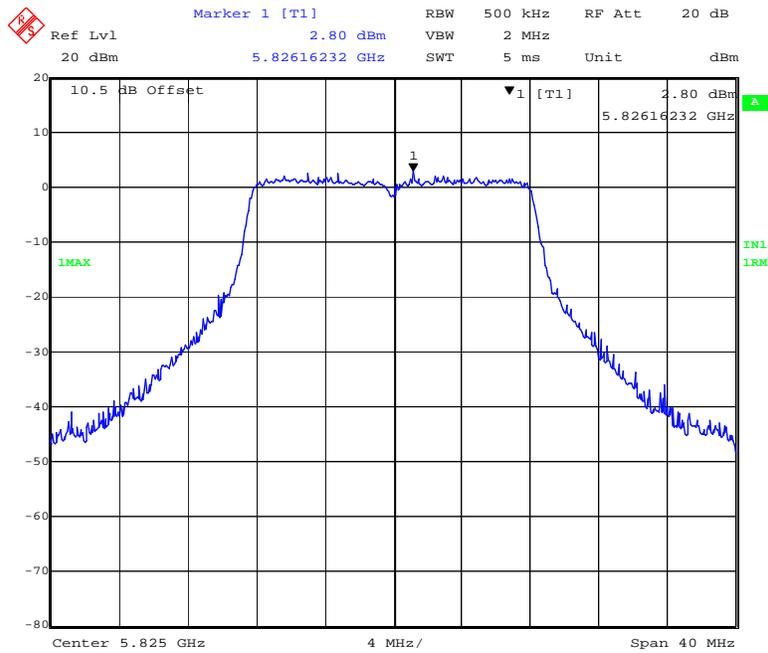
802.11a mode, Power spectral density-5745MHz



802.11a mode, Power spectral density-5785MHz

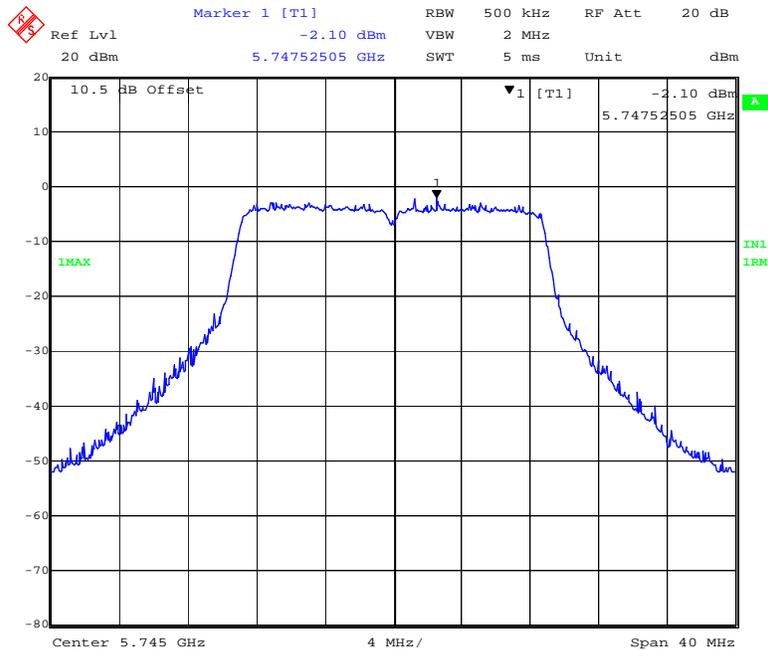


802.11a mode, Power spectral density-5825MHz



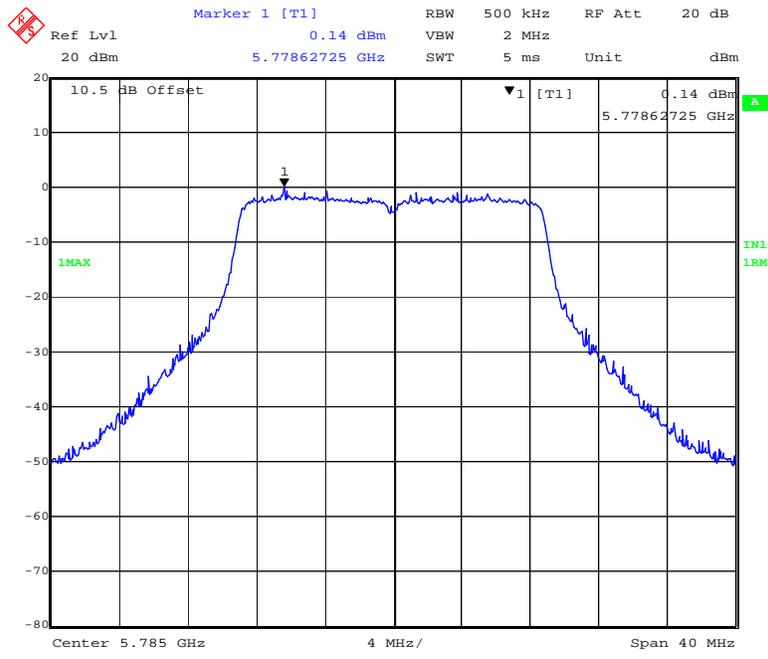
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802.11ac20 mode, Power spectral density-5745MHz



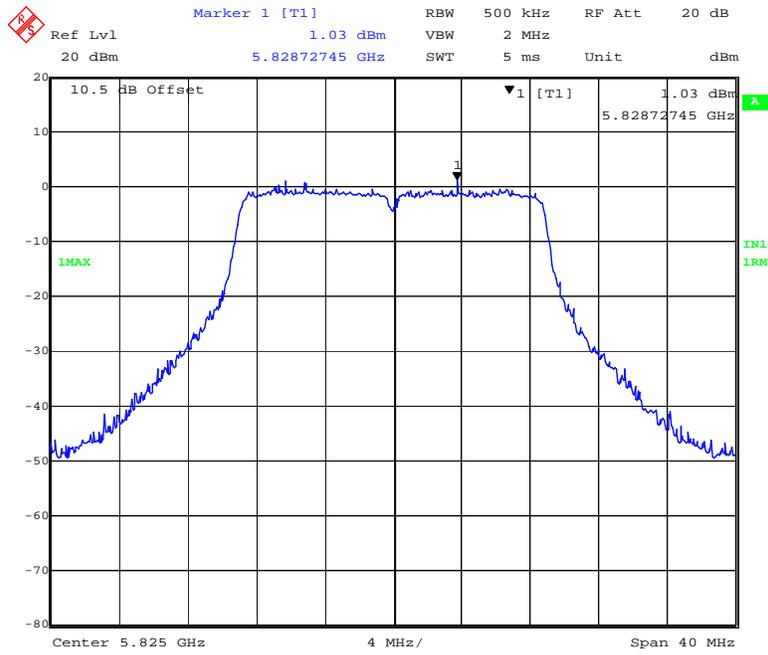
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802.11 ac20 mode, Power spectral density-5785MHz



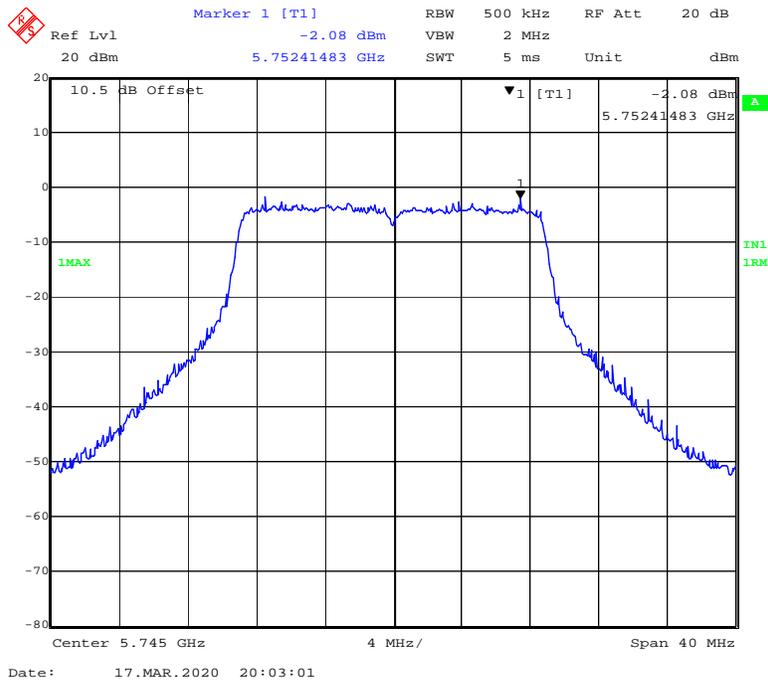
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802.11 ac20 mode, Power spectral density-5825MHz

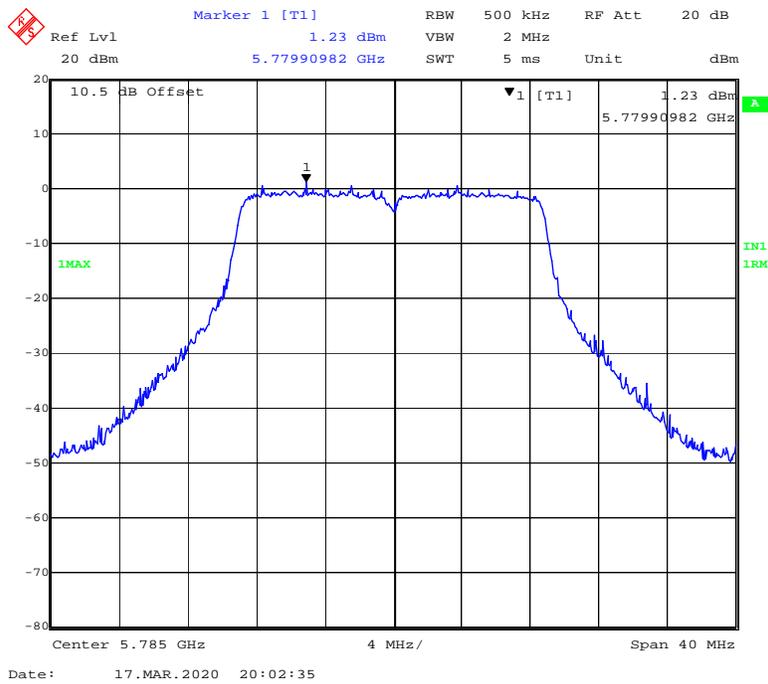


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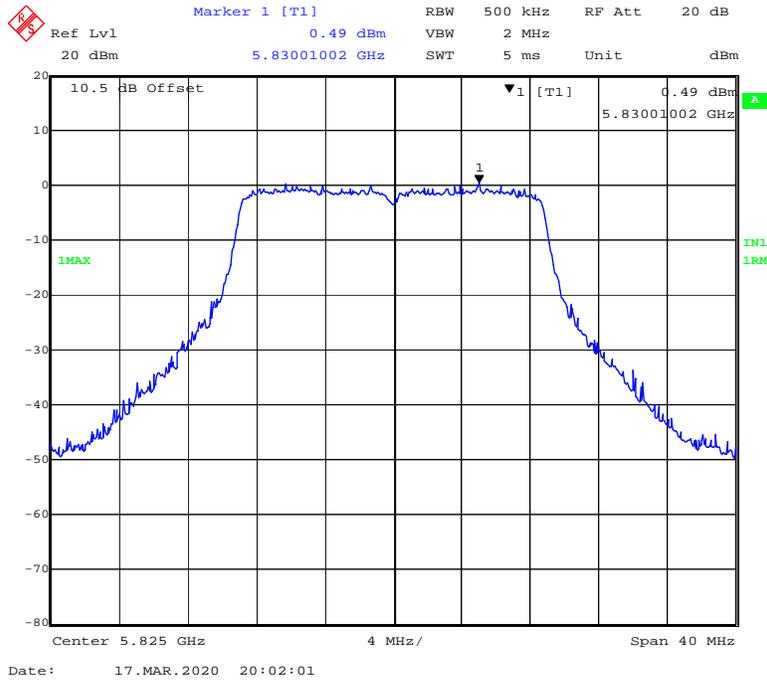
802.11n-HT20 mode, Power spectral density-5745MHz



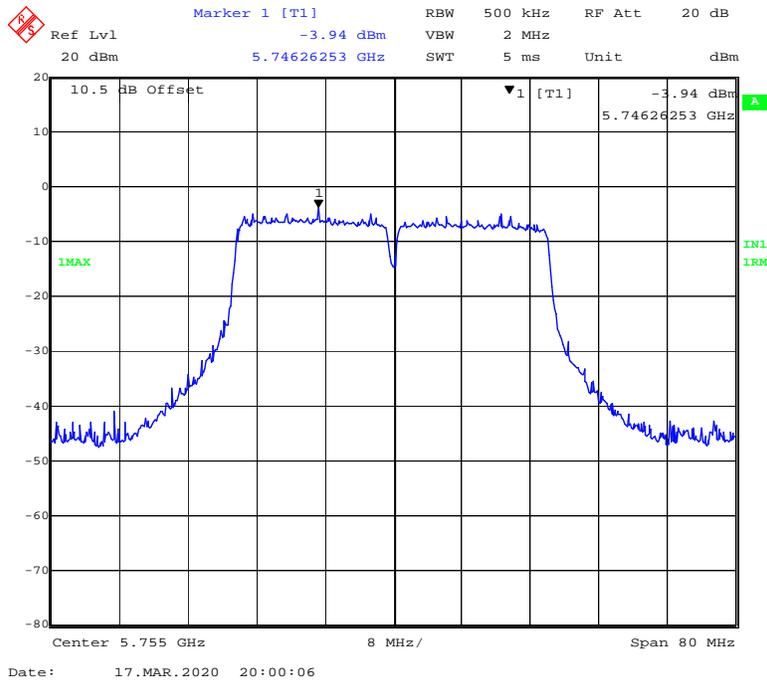
802.11n-HT20 mode, Power spectral density-5785MHz



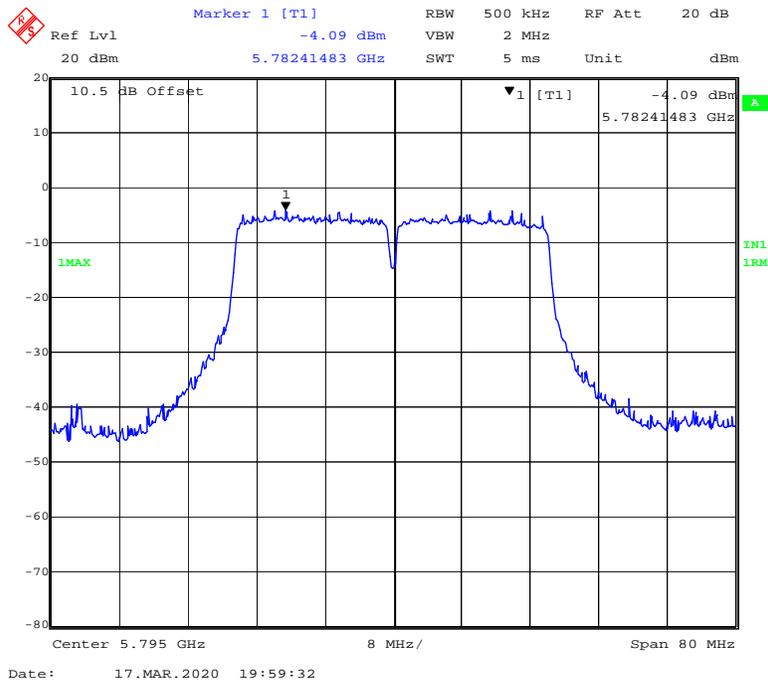
802.11n-HT20 mode, Power spectral density-5825MHz



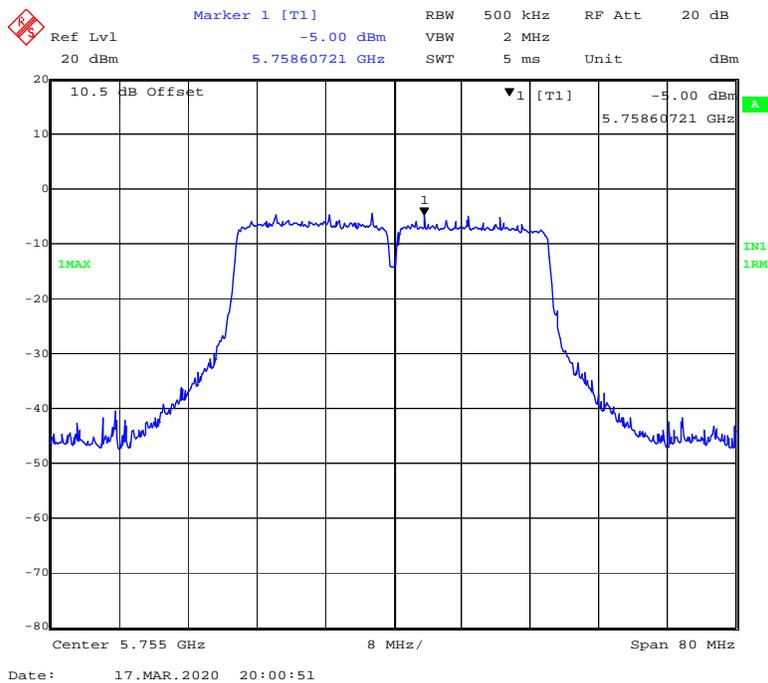
802.11ac40 mode, Power spectral density-5755MHz



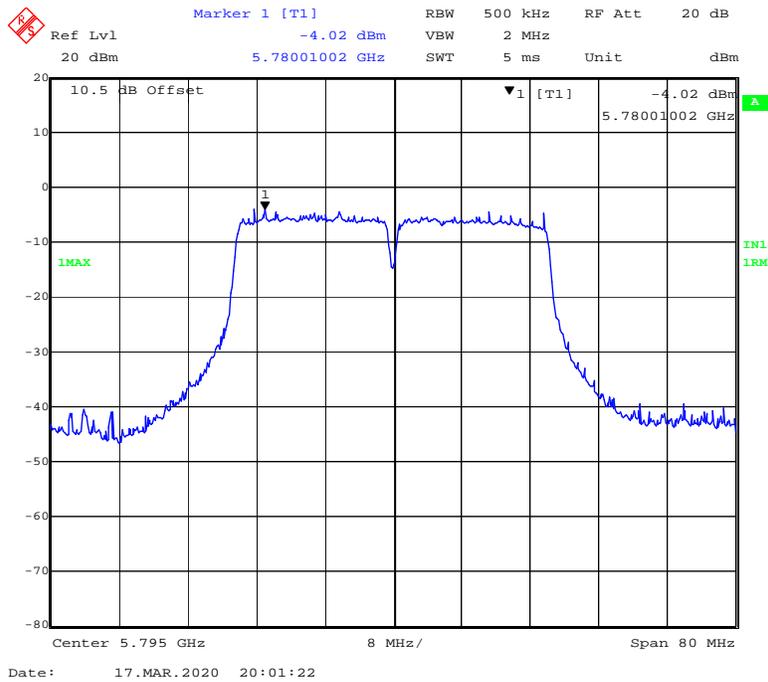
802.11 ac40 mode, Power spectral density-5795MHz



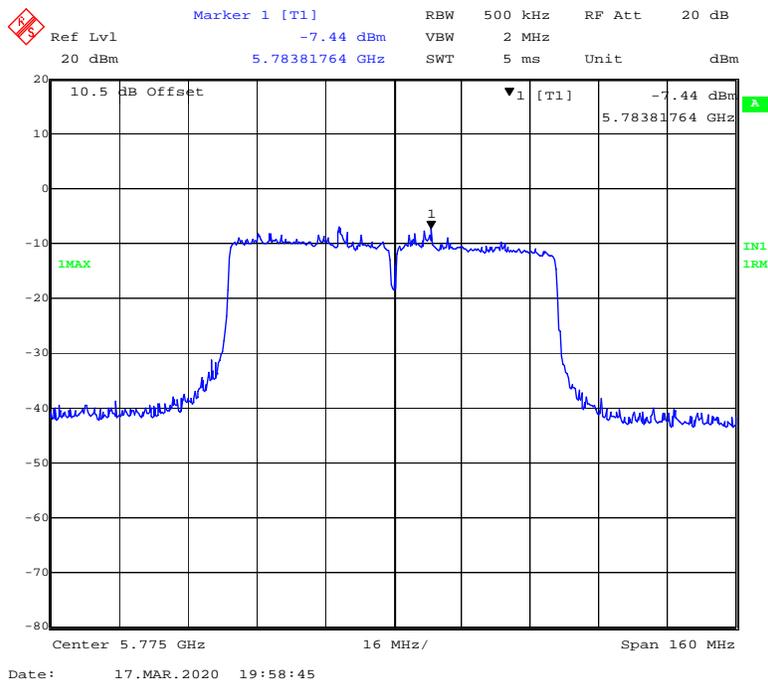
802.11n-HT40 mode, Power spectral density-5755MHz



802.11n-HT40 mode, Power spectral density-5795MHz



802.11 ac80 mode, Power spectral density-5775MHz



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