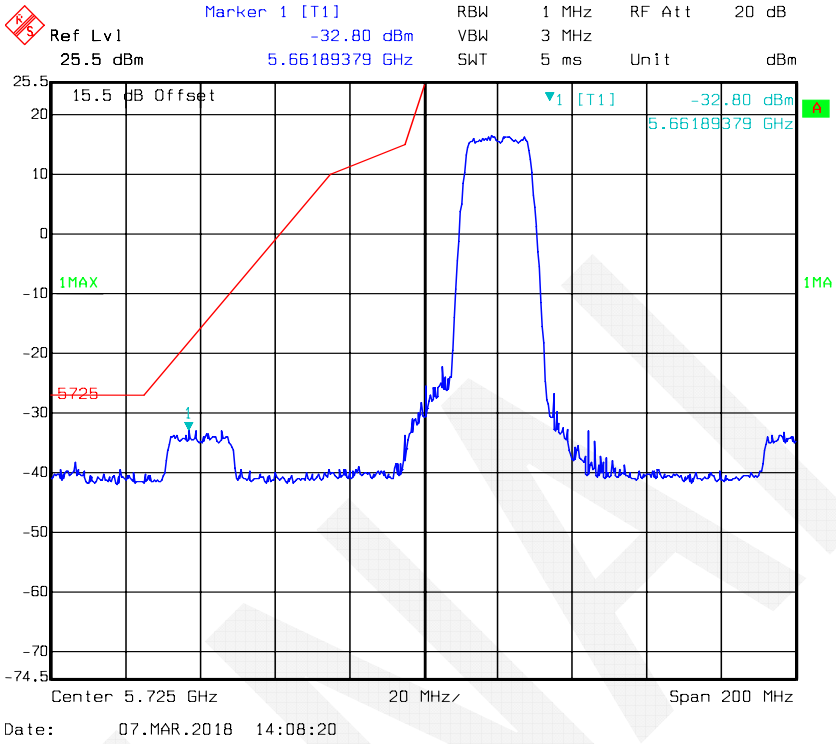
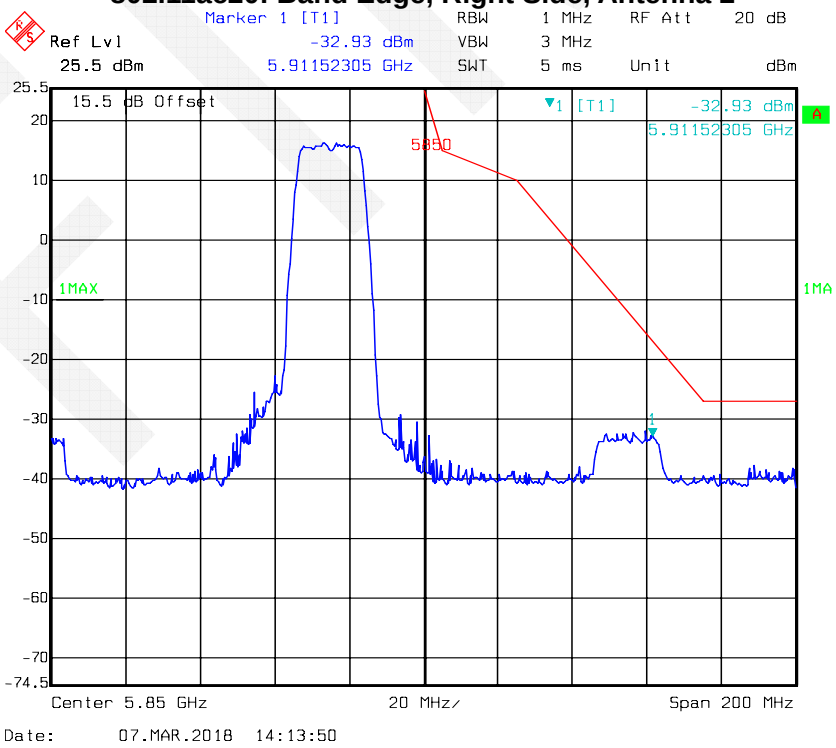
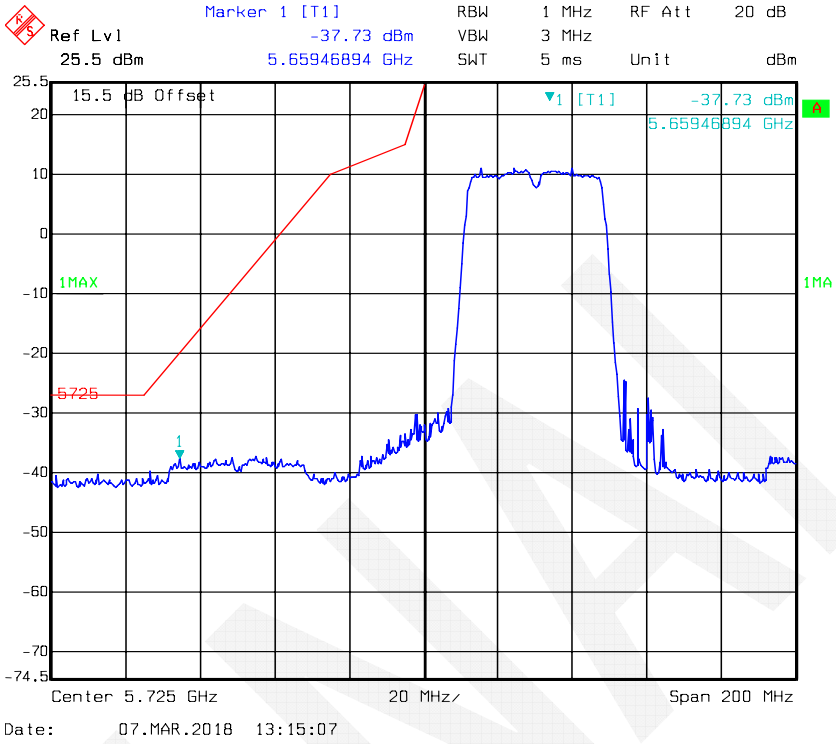
802.11ac20: Band Edge, Left Side, Antenna 2



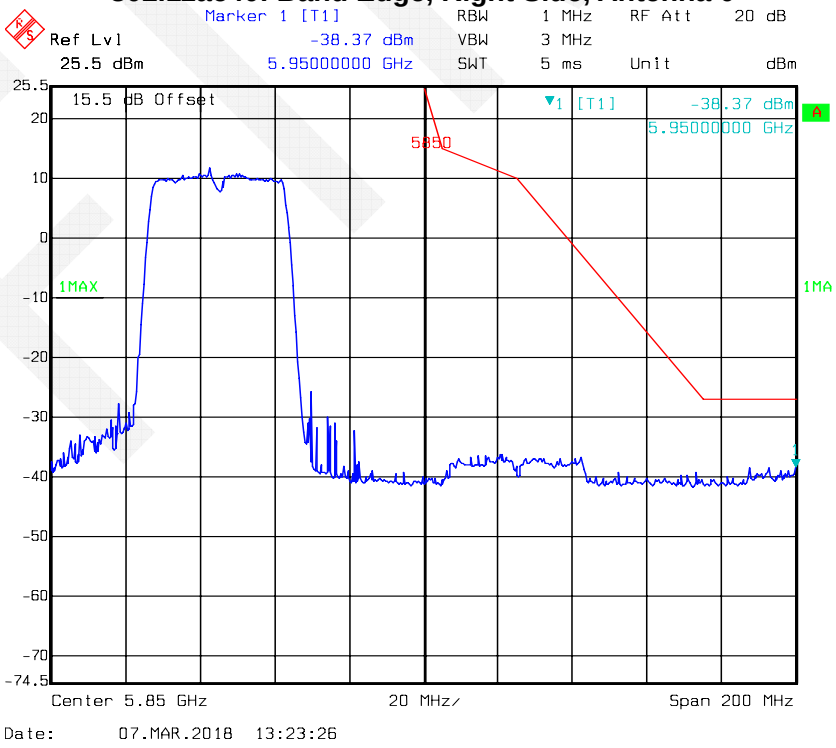
802.11ac20: Band Edge, Right Side, Antenna 2



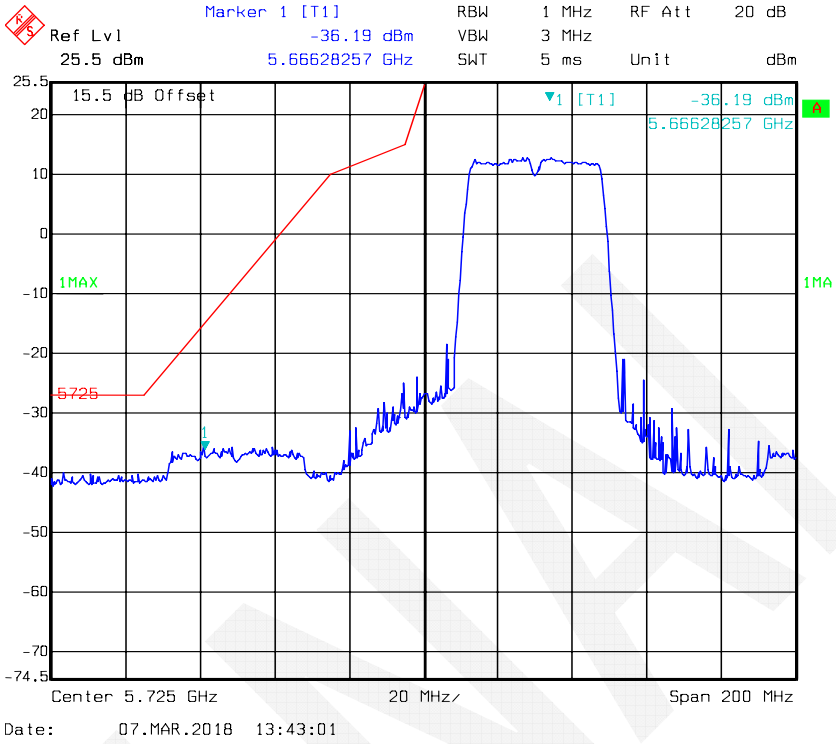
802.11ac40: Band Edge, Left Side, Antenna 0



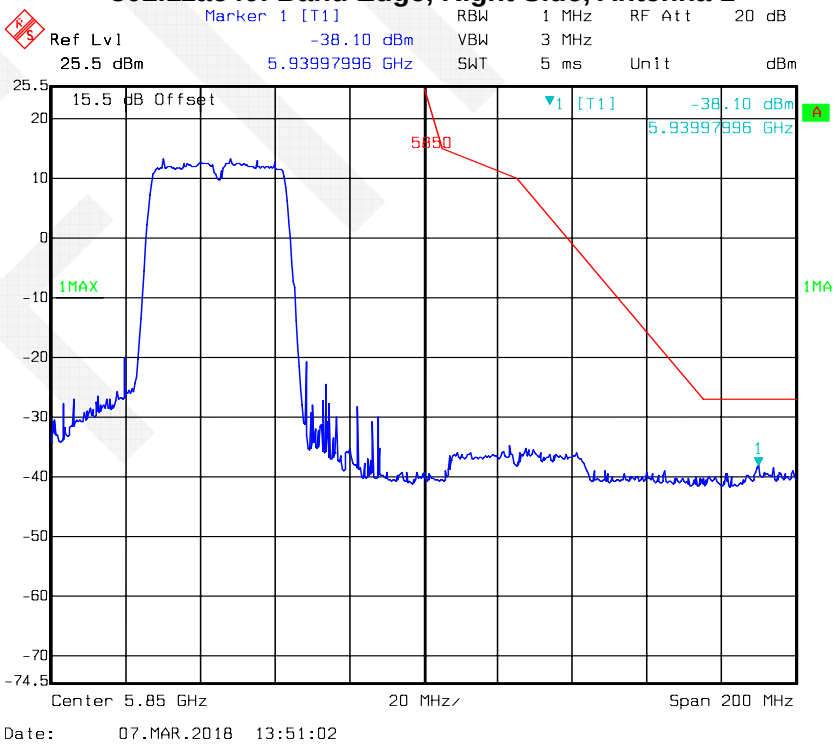
802.11ac40: Band Edge, Right Side, Antenna 0



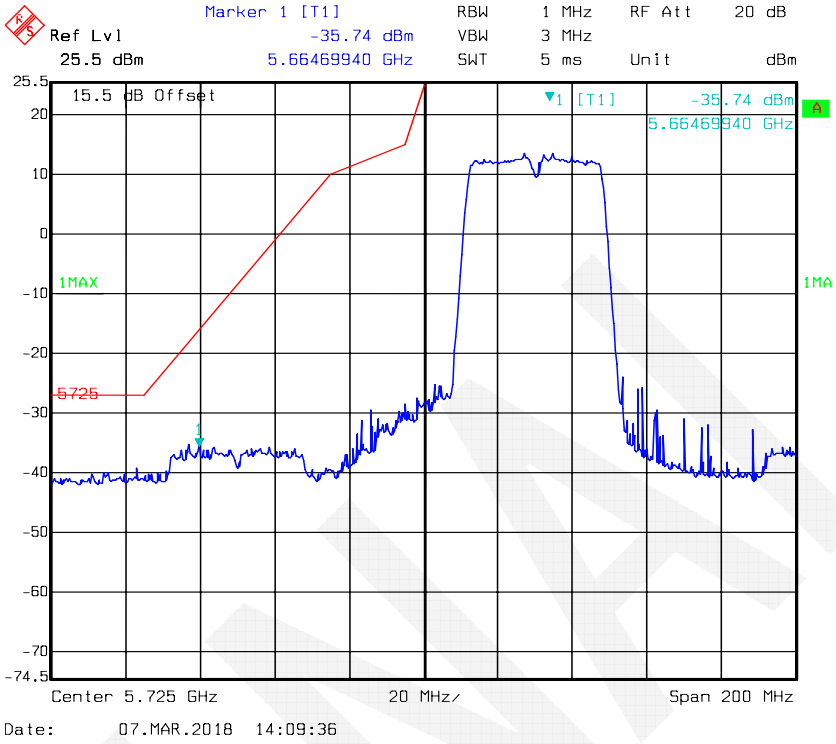
802.11ac40: Band Edge, Left Side, Antenna 1



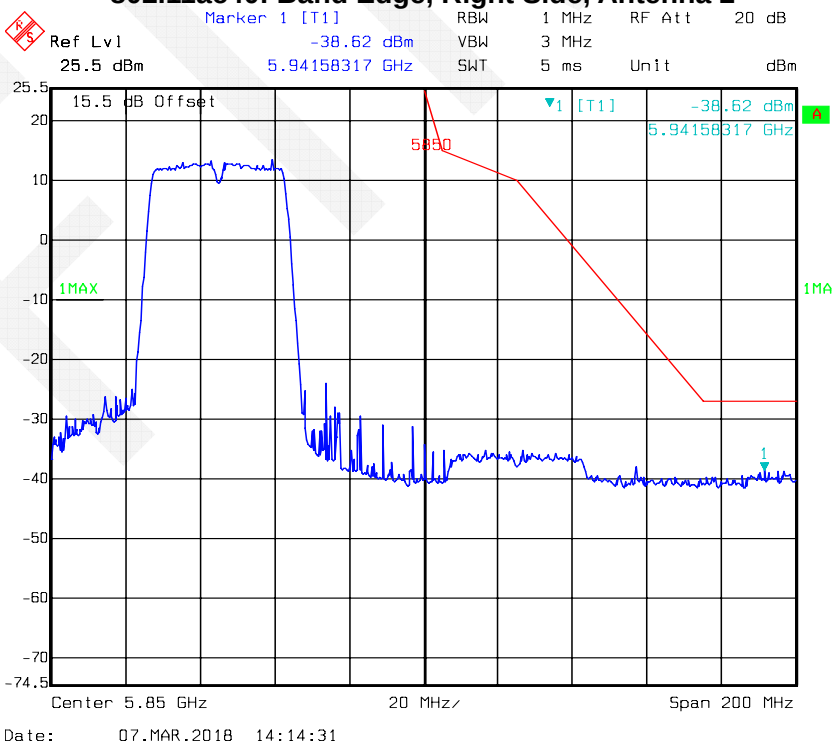
802.11ac40: Band Edge, Right Side, Antenna 1



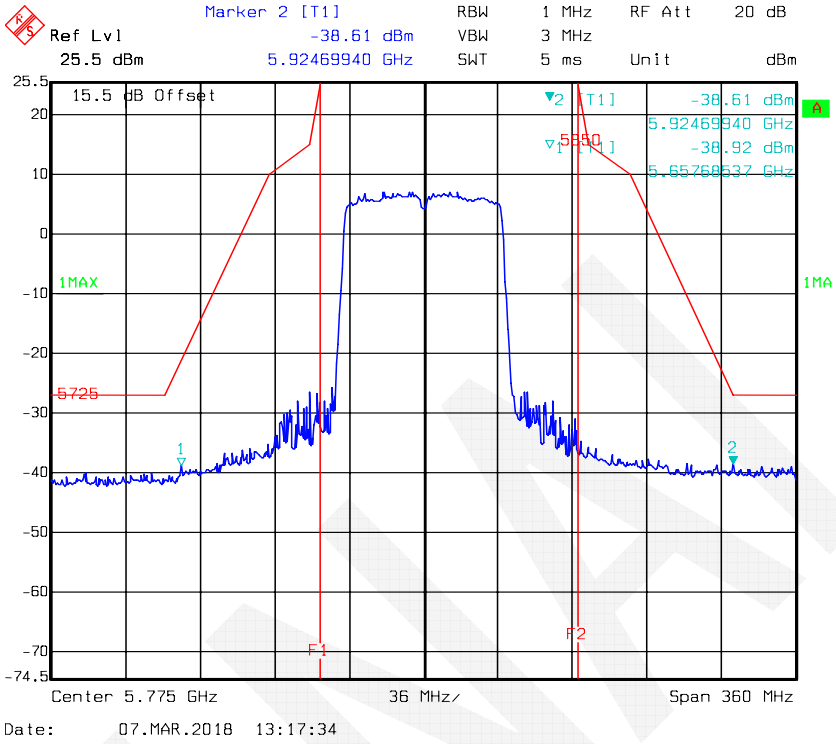
802.11ac40: Band Edge, Left Side, Antenna 2



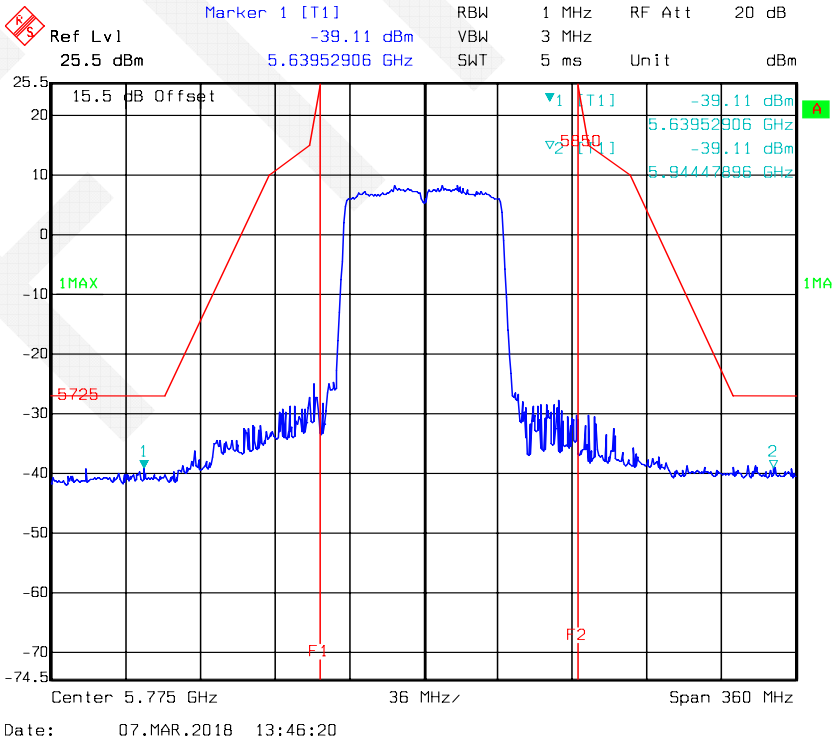
802.11ac40: Band Edge, Right Side, Antenna 2



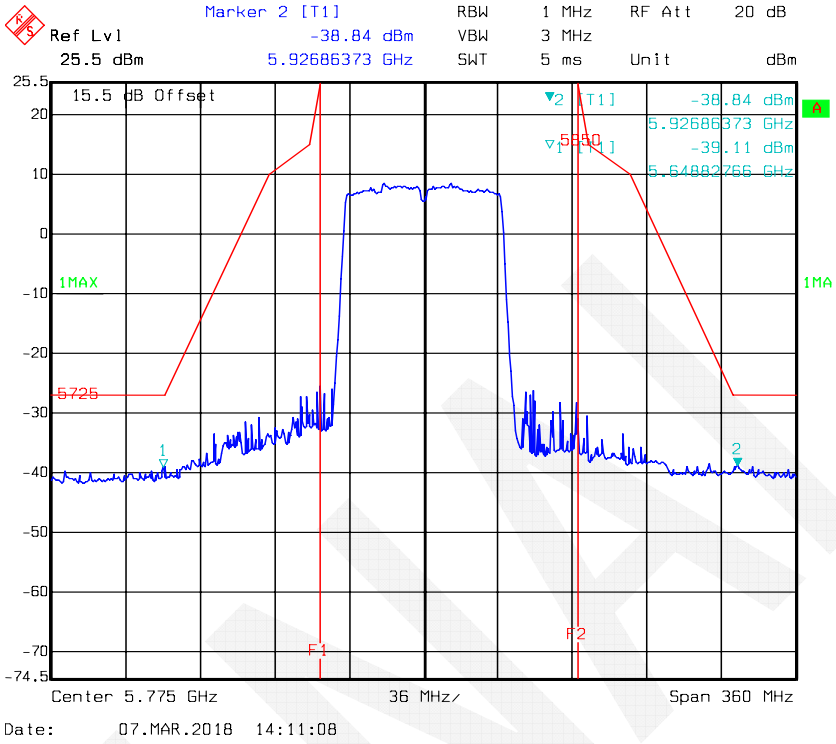
802.11ac80: Band Edge, Antenna 0



802.11ac80: Band Edge, Antenna 1



802.11ac80: Band Edge, Antenna 2



FCC §15.407(a) (5) & (e) – 26dB & 6dB BANDWIDTH

Applicable Standard

(a)(5) The maximum power spectral density is measured as a conducted emission by direct connection of a calibrated test instrument to the equipment under test. If the device cannot be connected directly, alternative techniques acceptable to the Commission may be used. Measurements in the 5.725-5.85 GHz band are made over a reference bandwidth of 500 kHz or the 26 dB emission bandwidth of the device, whichever is less. Measurements in the 5.15-5.25 GHz, 5.25-5.35 GHz, and the 5.47-5.725 GHz bands are made over a bandwidth of 1 MHz or the 26 dB emission bandwidth of the device, whichever is less. A narrower resolution bandwidth can be used, provided that the measured power is integrated over the full reference bandwidth.

(e) Within the 5.725-5.85 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

Test Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.

2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.

3.

(A) 26dB Bandwidth

Set RBW = approximately 1% of the emission bandwidth.
Set the VBW > RBW. Detector= Peak. Trace mode = max hold. Measure the maximum width of the emission that is 26 dB down from the maximum of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

(B) 6dB Bandwidth

Set RBW = 100 kHz. Set the video bandwidth (VBW) ≥ 3 × RBW.
Detector = Peak. Trace mode = max hold. Sweep = auto couple. Allow the trace to stabilize. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

(C) 99% Occupied Bandwidth

The following procedure shall be used for measuring (99 %) power bandwidth:

1. Set center frequency to the nominal EUT channel center frequency.
2. Set span = 1.5 times to 5.0 times the OBW.
3. Set RBW = 1 % to 5 % of the OBW
4. Set VBW ≥ 3 · RBW
5. Use the 99 % power bandwidth function of the instrument.

4. Repeat above procedures until all frequencies measured were complete.

Test Data

Environmental Conditions

Temperature:	18 ~ 20 °C
Relative Humidity:	45 ~ 56 %
ATM Pressure:	95.2 ~ 96.2 kPa

** The testing was performed by Tom Tang on 2018-03-06 ~ 2018-03-07.*

Test Result: Pass. Please refer to the following tables and plots.

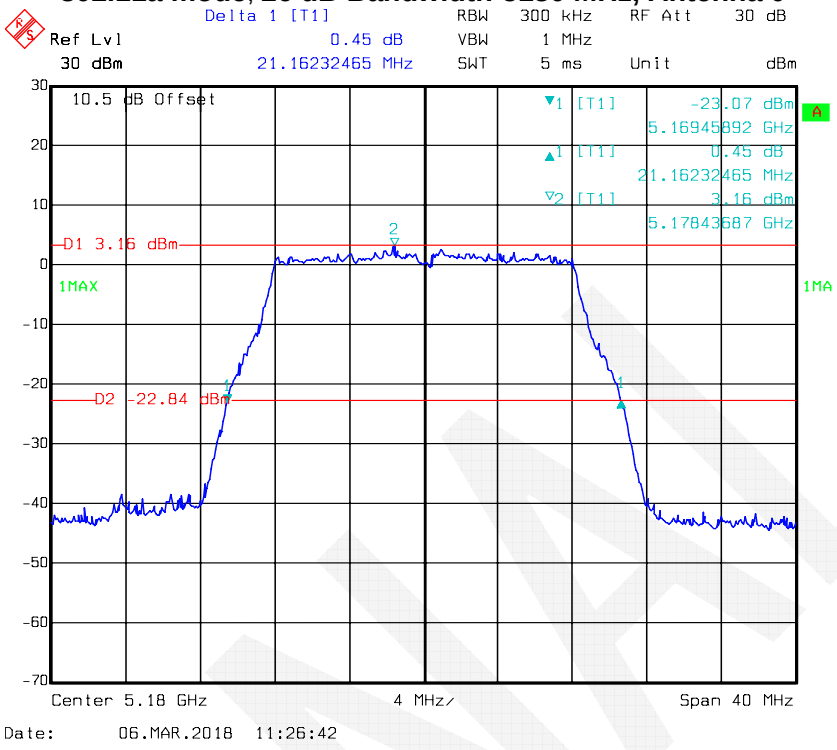
Test mode: Transmitting

For 5150-5250 MHz:

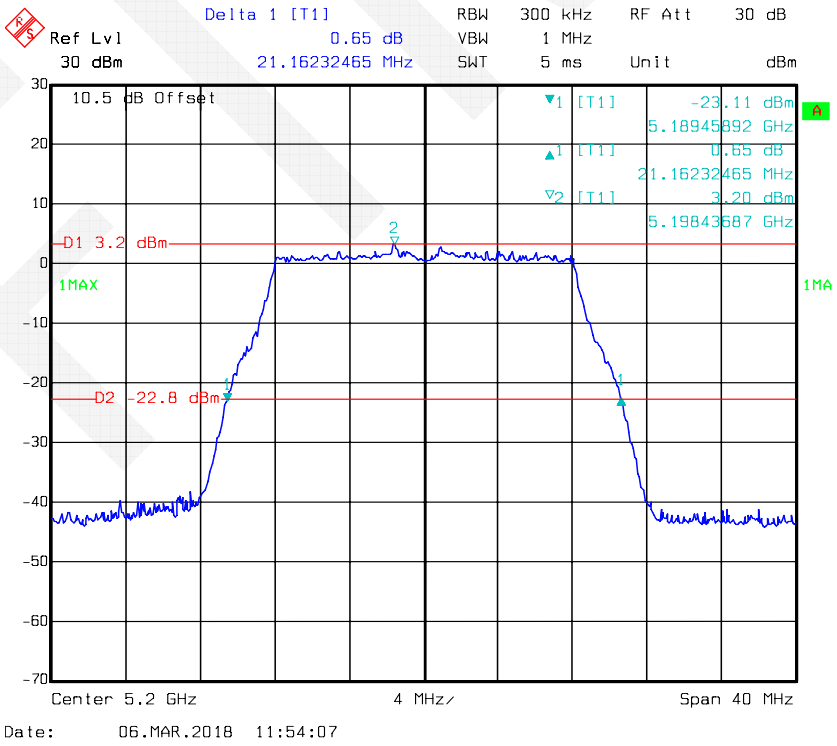
Mode	Channel	Frequency (MHz)	26dB Bandwidth (MHz)			99% Occupied Bandwidth (MHz)		
			Antenna 0	Antenna 1	Antenna 2	Antenna 0	Antenna 1	Antenna 2
802.11a	Low	5180	21.16	21.16	21.16	17.07	17.07	17.07
	Middle	5200	21.16	21.16	21.16	16.99	17.07	17.07
	High	5240	21.16	21.16	21.08	16.99	16.99	17.15
802.11n-HT20	Low	5180	21.64	21.56	21.72	18.20	18.12	18.12
	Middle	5200	21.72	21.48	21.56	18.12	18.12	18.12
	High	5240	21.72	21.48	21.64	18.12	18.12	18.04
802.11n-HT40	Low	5190	40.08	40.08	40.08	36.87	36.87	36.87
	High	5230	40.24	40.08	40.08	37.03	36.87	36.87
802.11ac20	Low	5180	21.56	21.48	21.72	18.12	18.04	18.12
	Middle	5200	21.64	21.48	21.72	18.12	18.04	18.12
	High	5240	21.56	21.64	21.64	18.20	18.12	18.12
802.11ac40	Low	5190	40.08	40.40	40.24	36.87	36.87	36.87
	High	5230	40.24	40.40	40.08	36.87	36.87	36.87
802.11ac80	-	5210	82.73	82.73	83.05	75.67	75.99	75.99

Note: the 99% Occupied Bandwidth doesn't extend U-NII-2A band 5250-5350MHz.

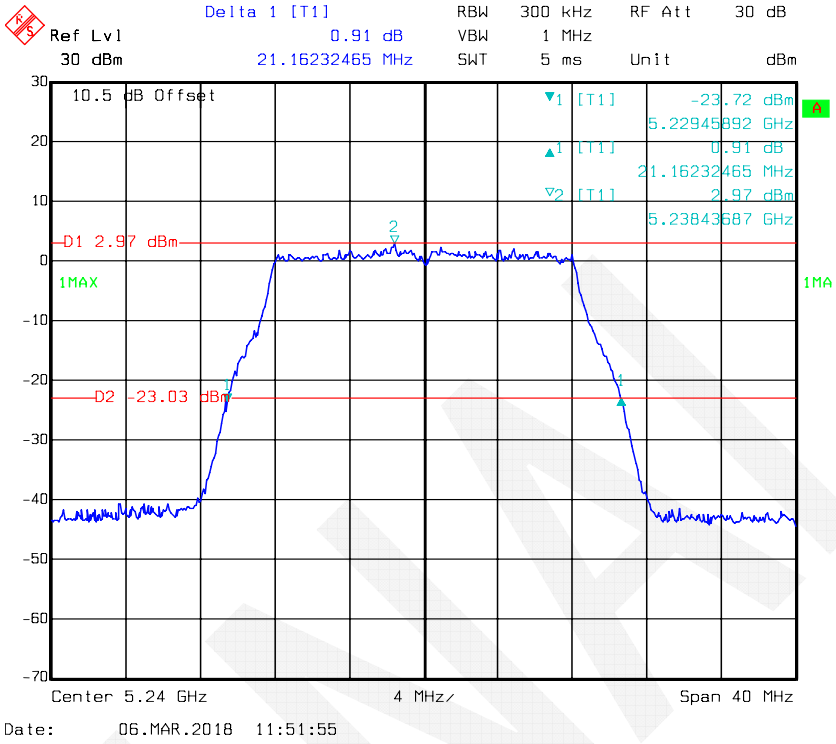
802.11a mode, 26 dB Bandwidth-5180 MHz, Antenna 0



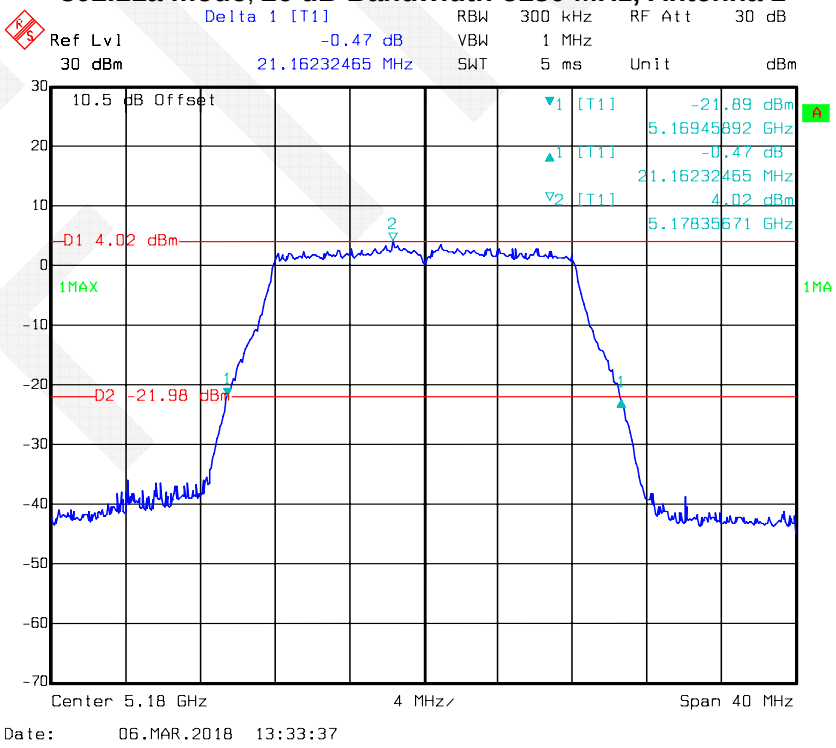
802.11a mode, 26 dB Bandwidth-5200 MHz, Antenna 0



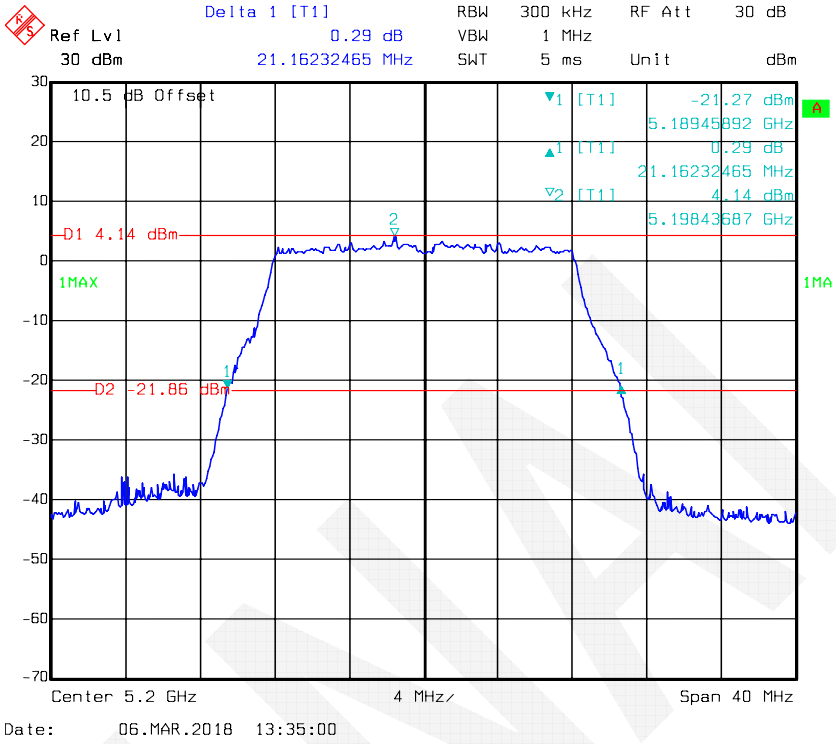
802.11a mode, 26 dB Bandwidth-5240 MHz, Antenna 0



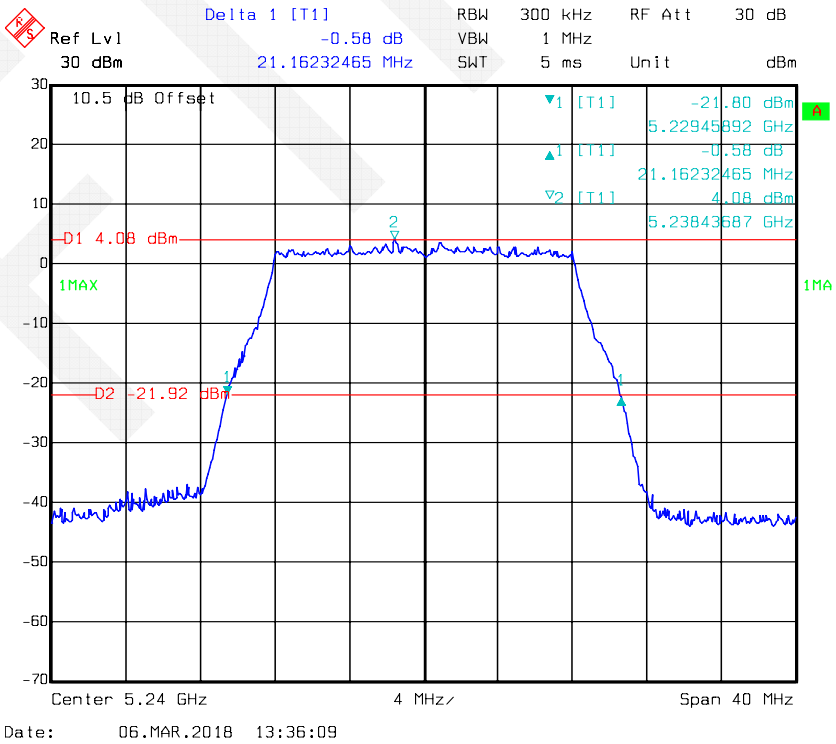
802.11a mode, 26 dB Bandwidth-5180 MHz, Antenna 1



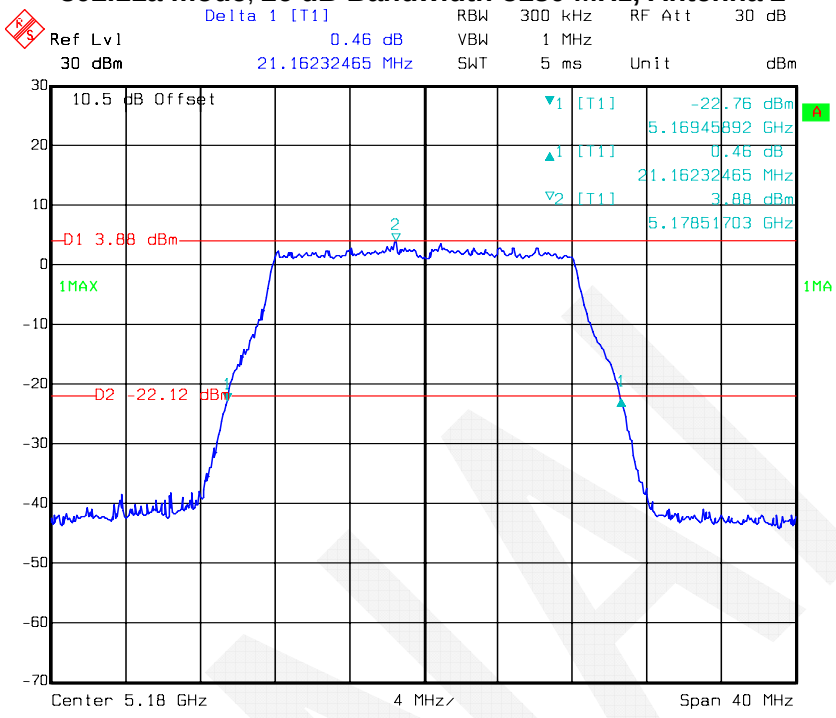
802.11a mode, 26 dB Bandwidth-5200 MHz, Antenna 1



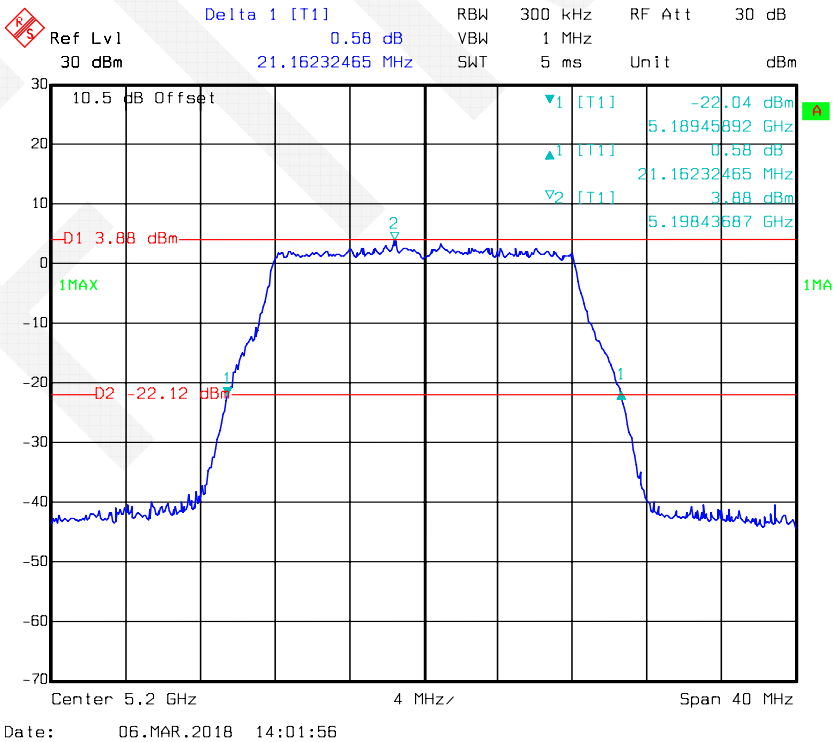
802.11a mode, 26 dB Bandwidth-5240 MHz, Antenna 1



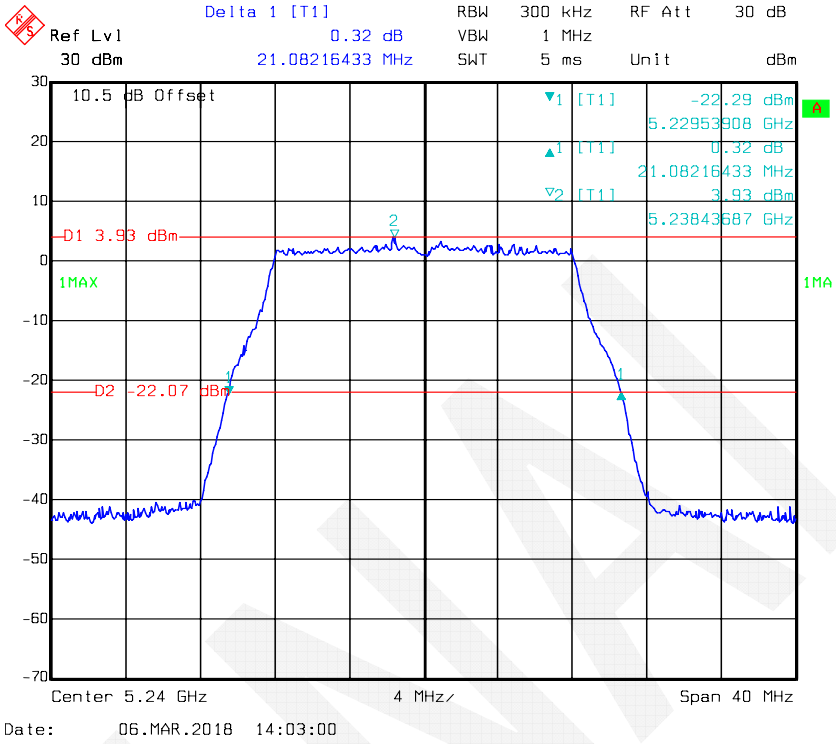
802.11a mode, 26 dB Bandwidth-5180 MHz, Antenna 2



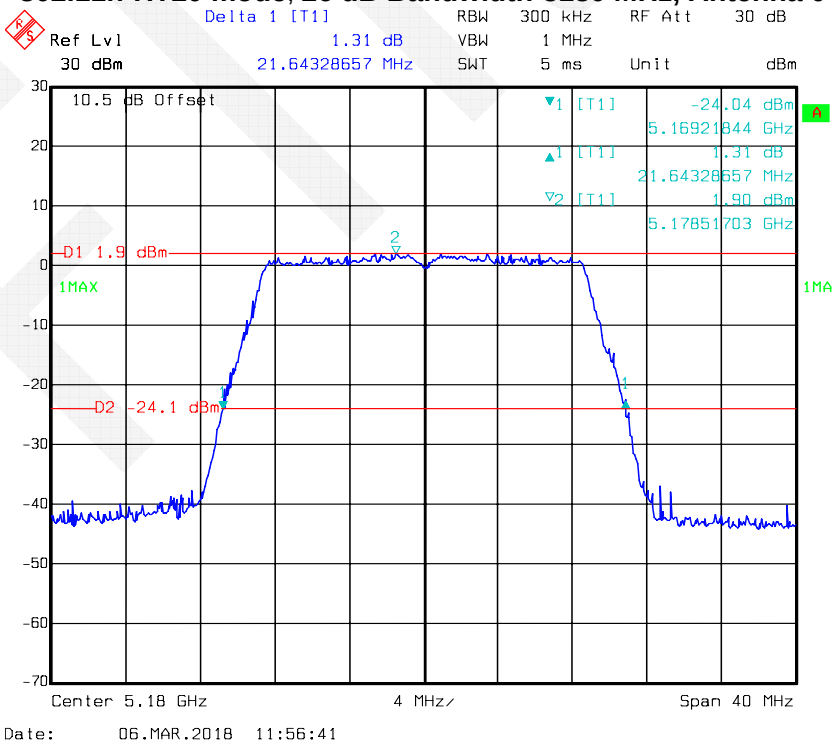
802.11a mode, 26 dB Bandwidth-5200 MHz, Antenna 2



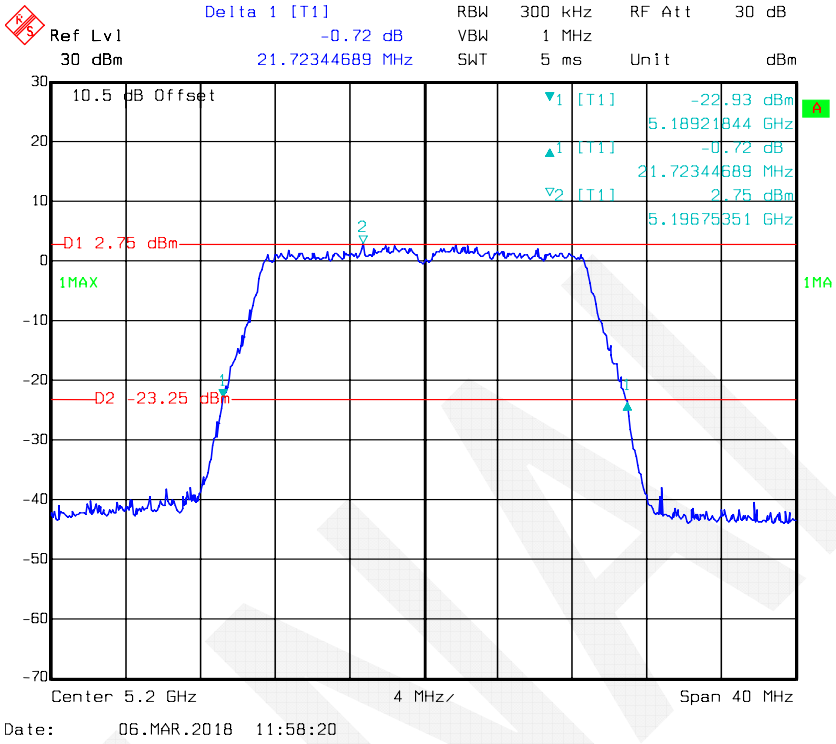
802.11a mode, 26 dB Bandwidth-5240 MHz, Antenna 2



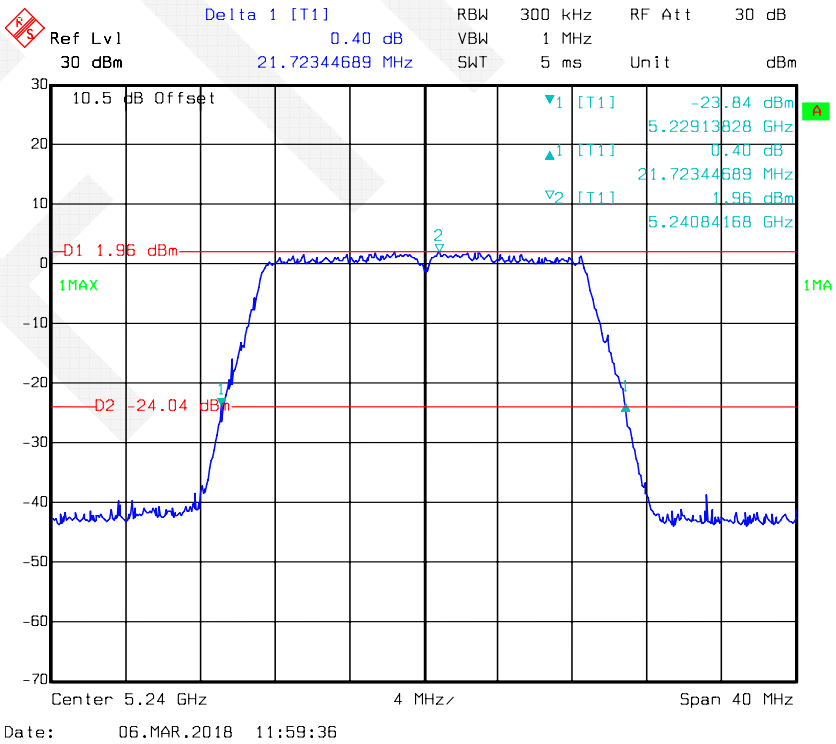
802.11n-HT20 mode, 26 dB Bandwidth-5180 MHz, Antenna 0



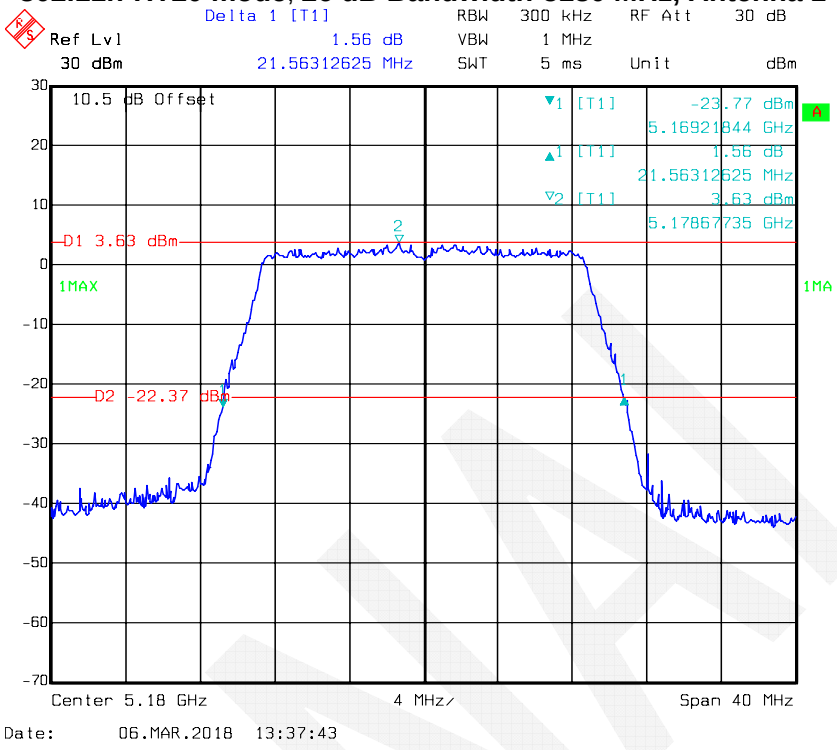
802.11n-HT20 mode, 26 dB Bandwidth-5200 MHz, Antenna 0



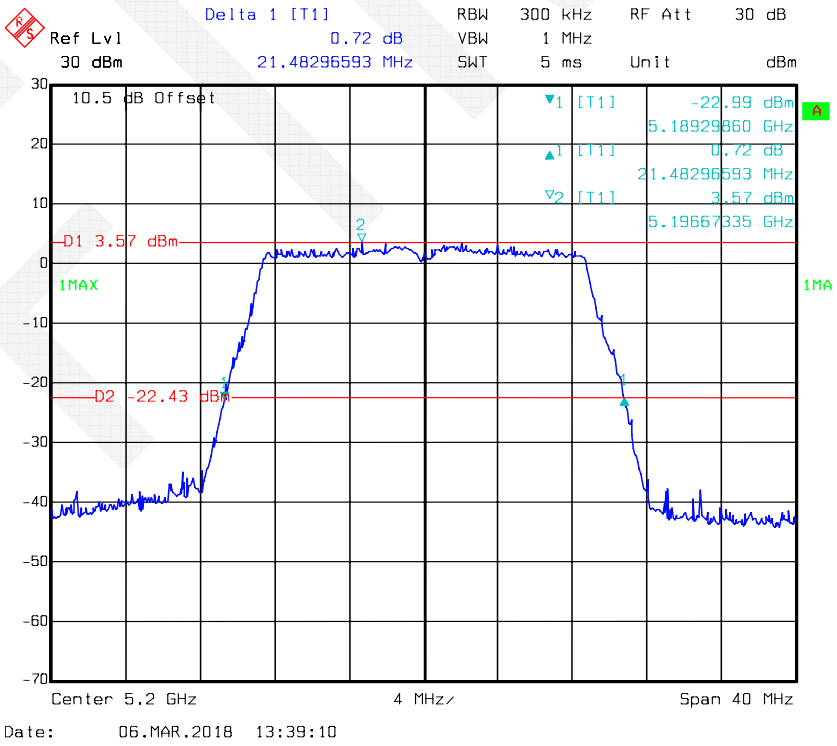
802.11n-HT20 mode, 26 dB Bandwidth-5240 MHz, Antenna 0



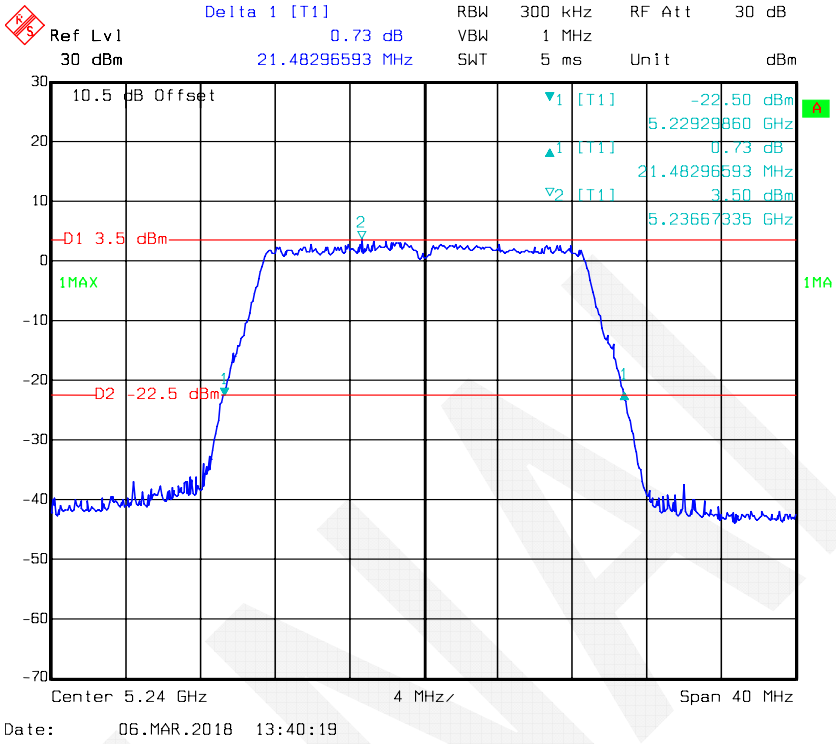
802.11n-HT20 mode, 26 dB Bandwidth-5180 MHz, Antenna 1



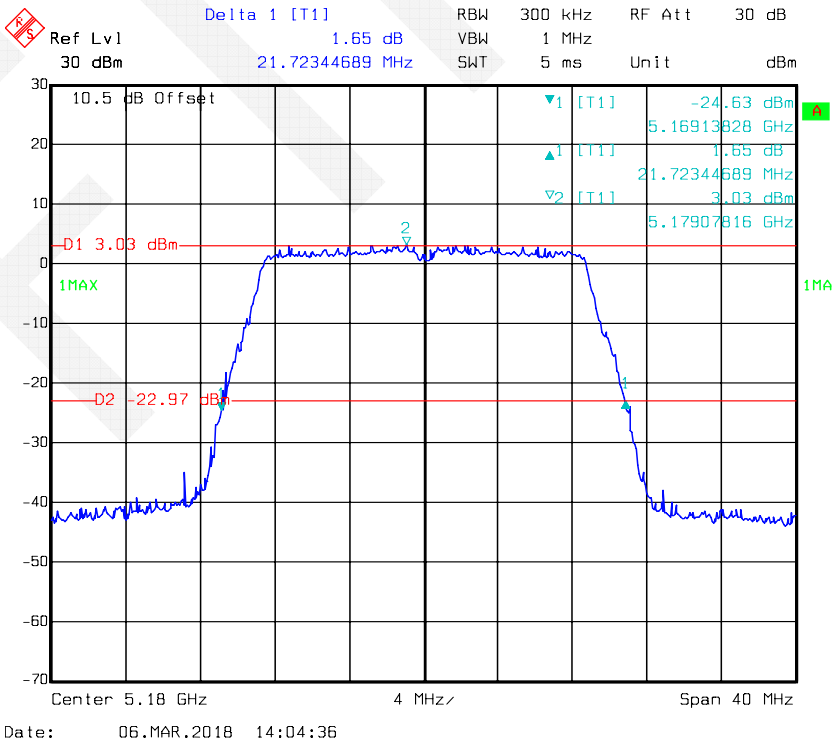
802.11n-HT20 mode, 26 dB Bandwidth-5200 MHz, Antenna 1



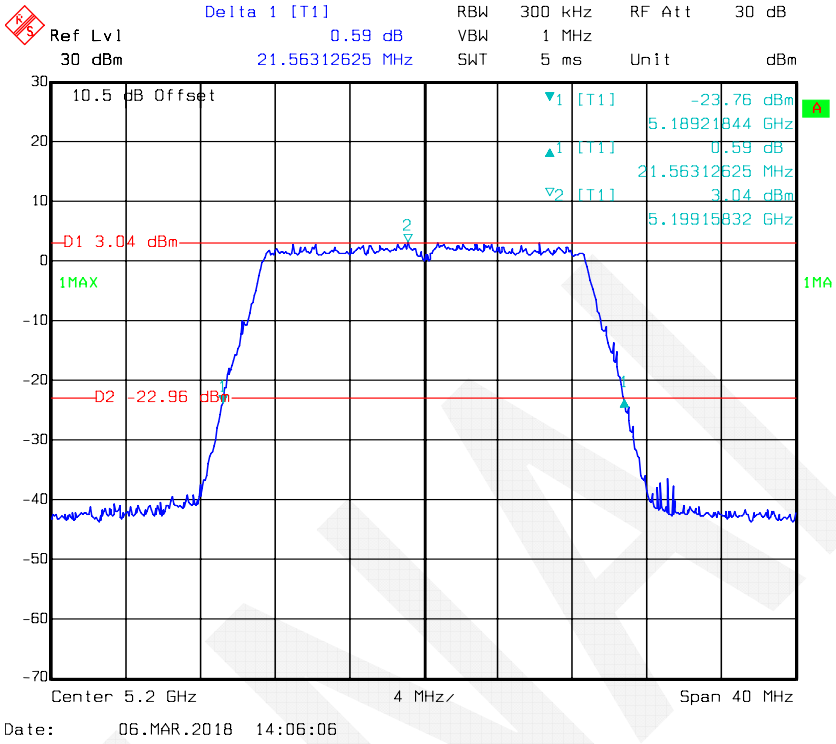
802.11n-HT20 mode, 26 dB Bandwidth-5240 MHz, Antenna 1



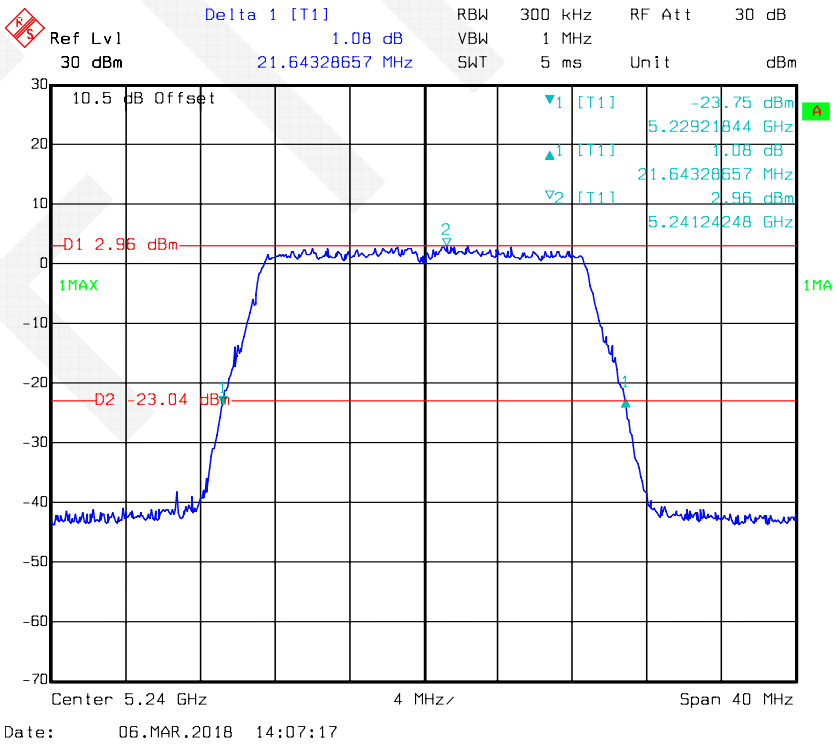
802.11n-HT20 mode, 26 dB Bandwidth-5180 MHz, Antenna 2



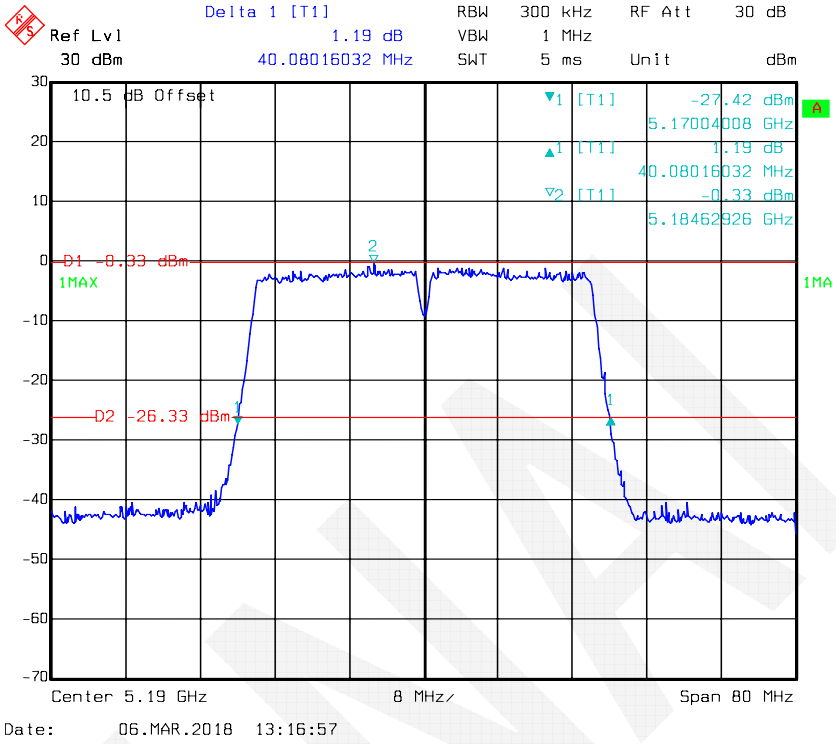
802.11n-HT20 mode, 26 dB Bandwidth-5200 MHz, Antenna 2



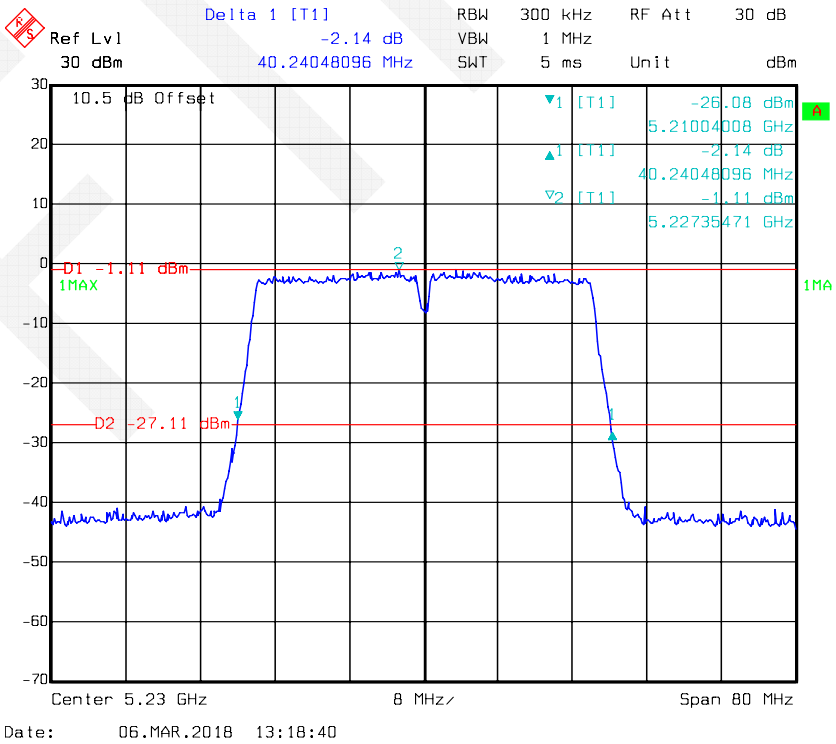
802.11n-HT20 mode, 26 dB Bandwidth-5240 MHz, Antenna 2



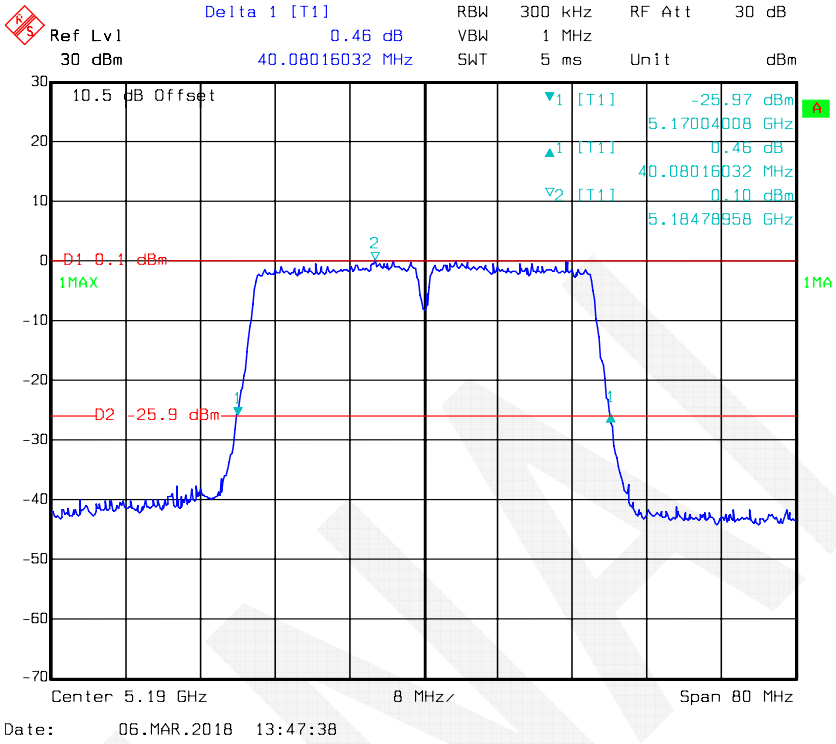
802.11n-HT40 mode, 26 dB Bandwidth-5190 MHz, Antenna 0



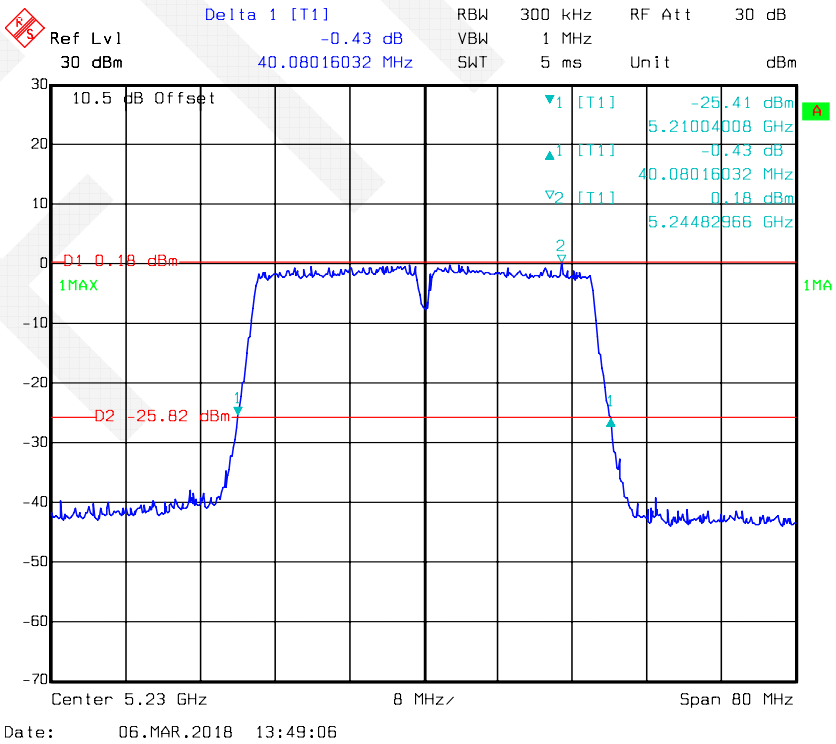
802.11n-HT40 mode, 26 dB Bandwidth-5230 MHz, Antenna 0



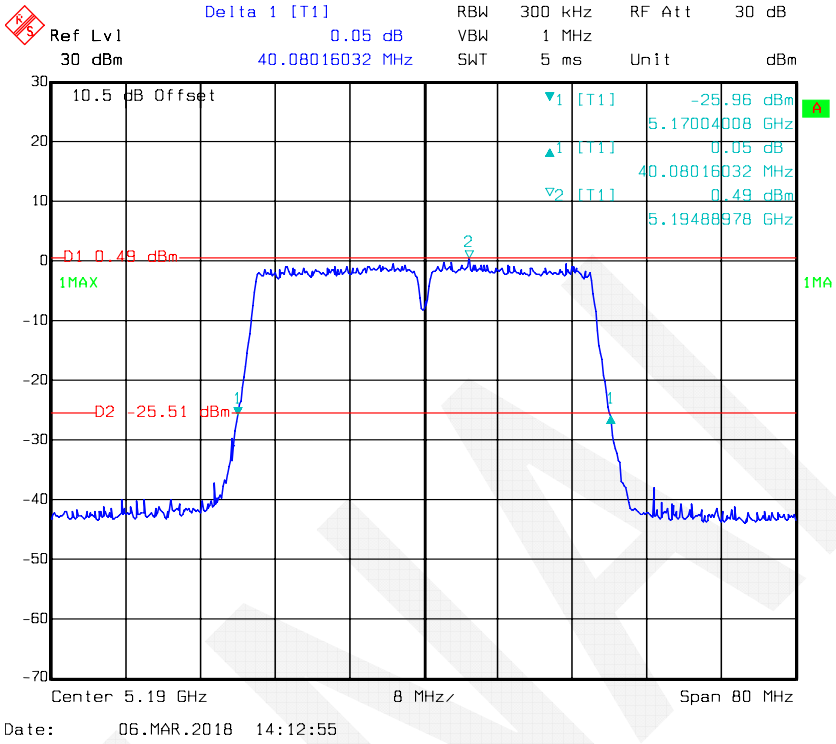
802.11n-HT40 mode, 26 dB Bandwidth-5190 MHz, Antenna 1



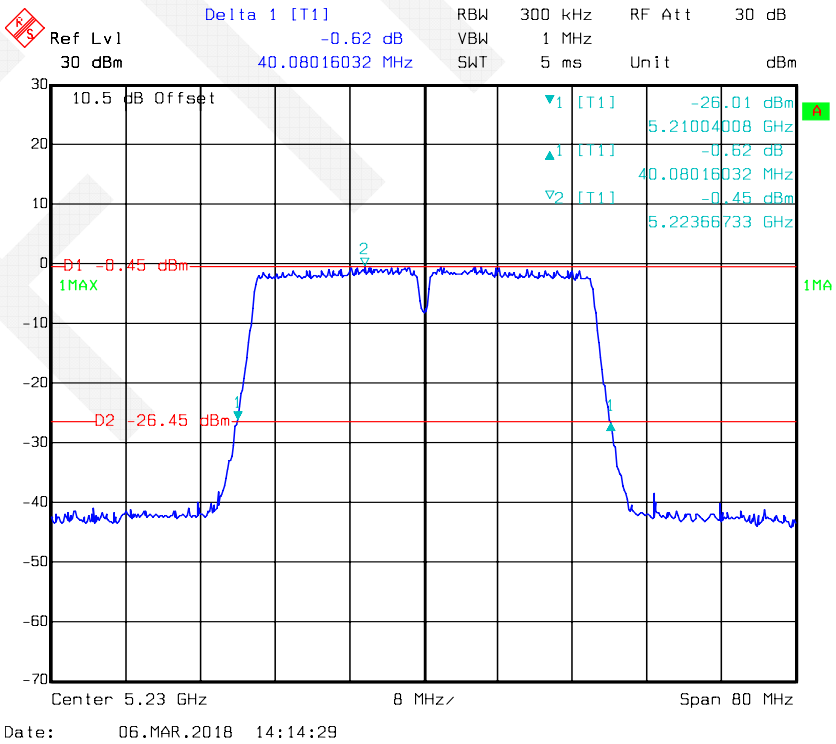
802.11n-HT40 mode, 26 dB Bandwidth-5230 MHz, Antenna 1



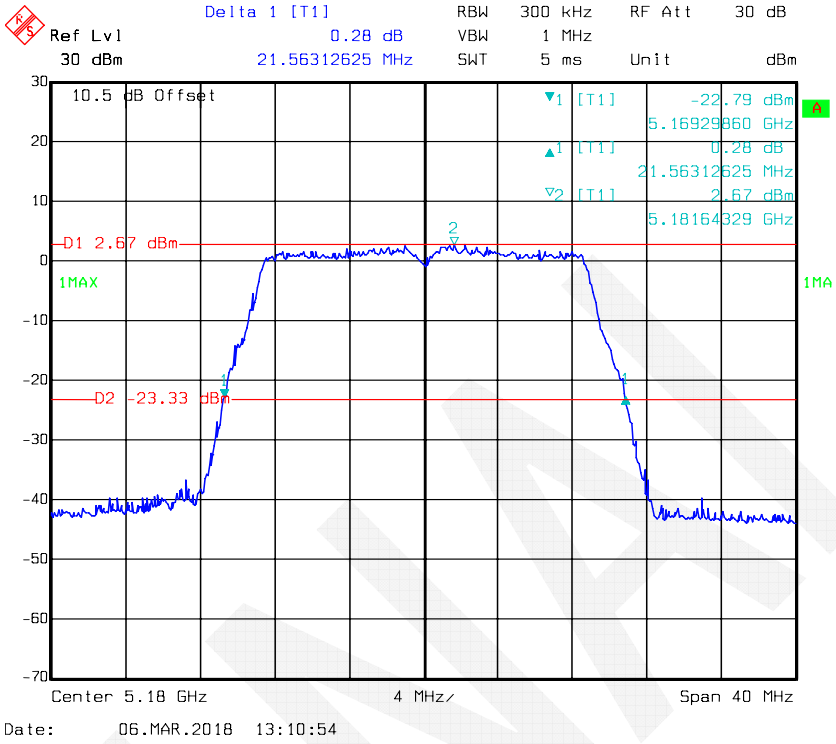
802.11n-HT40 mode, 26 dB Bandwidth-5190 MHz, Antenna 2



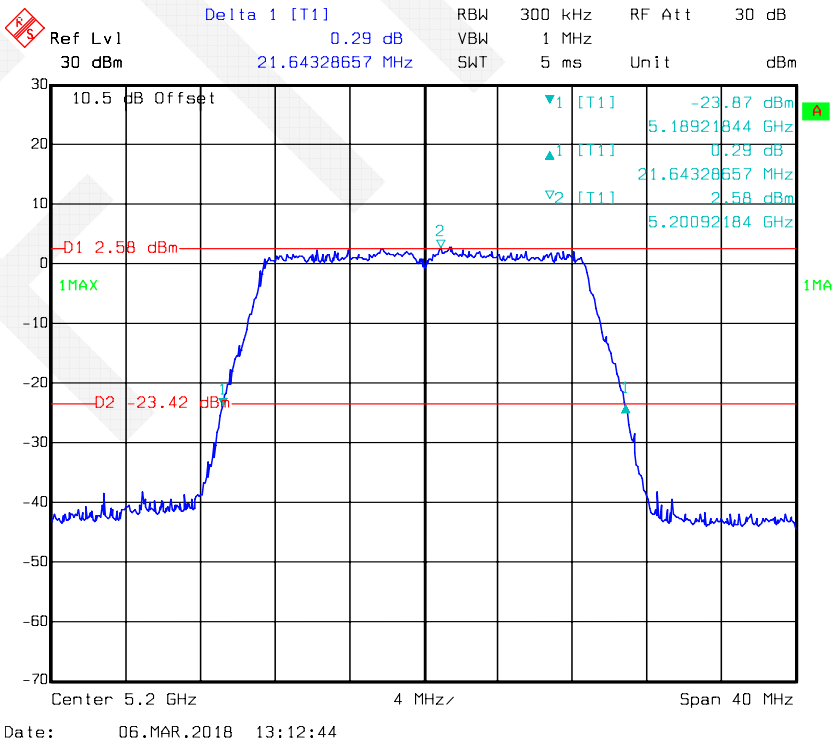
802.11n-HT40 mode, 26 dB Bandwidth-5230 MHz, Antenna 2



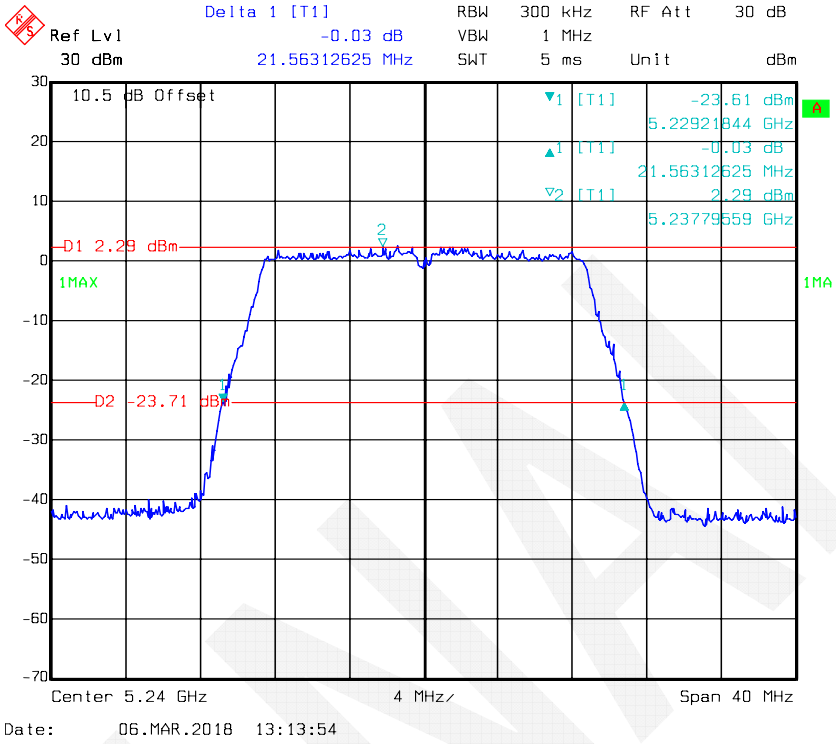
802.11ac20 mode, 26 dB Bandwidth-5180 MHz, Antenna 0



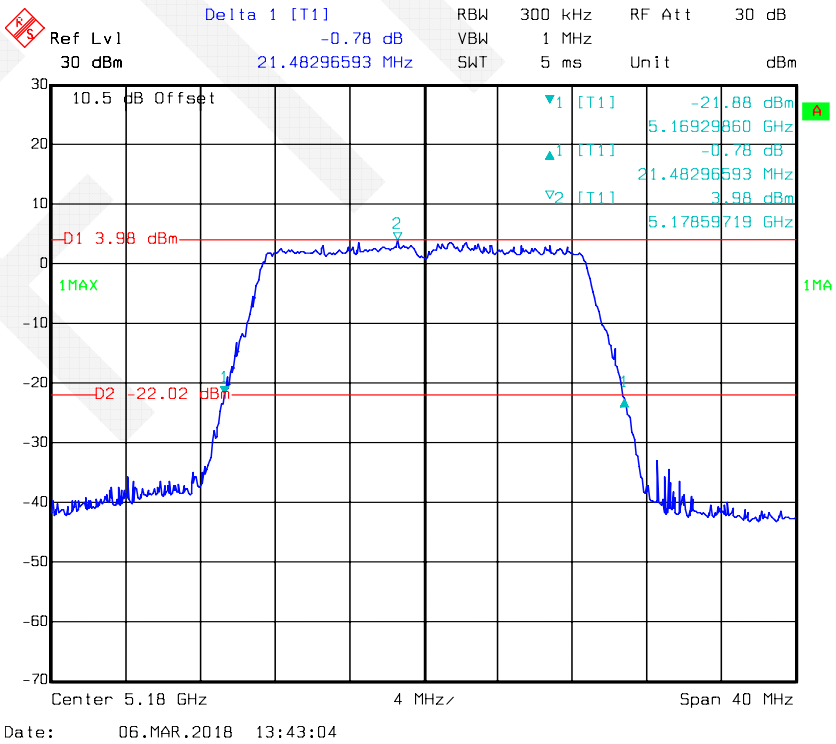
802.11ac20 mode, 26 dB Bandwidth-5200 MHz, Antenna 0



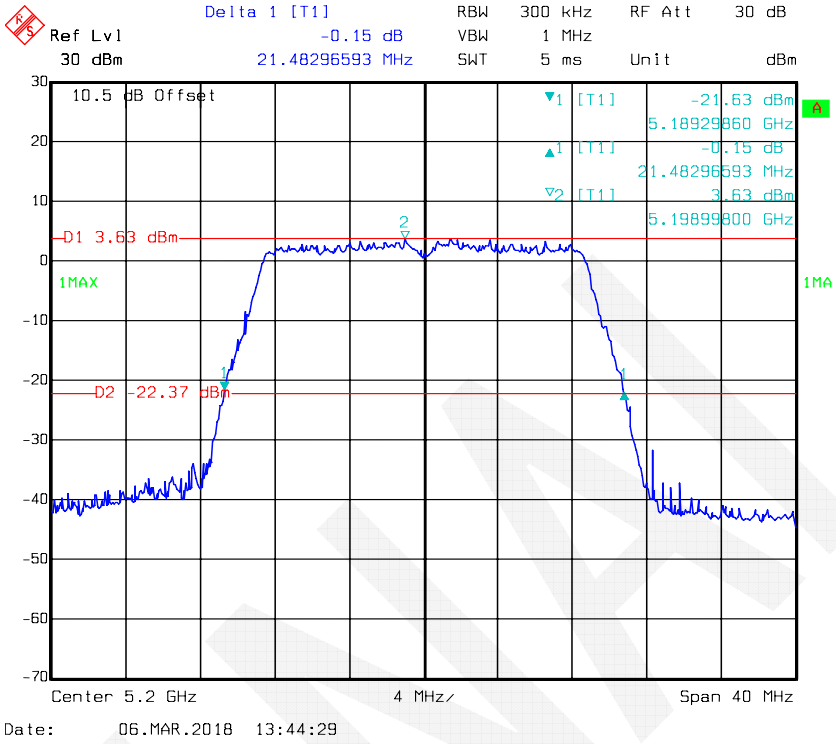
802.11ac20 mode, 26 dB Bandwidth-5240 MHz, Antenna 0



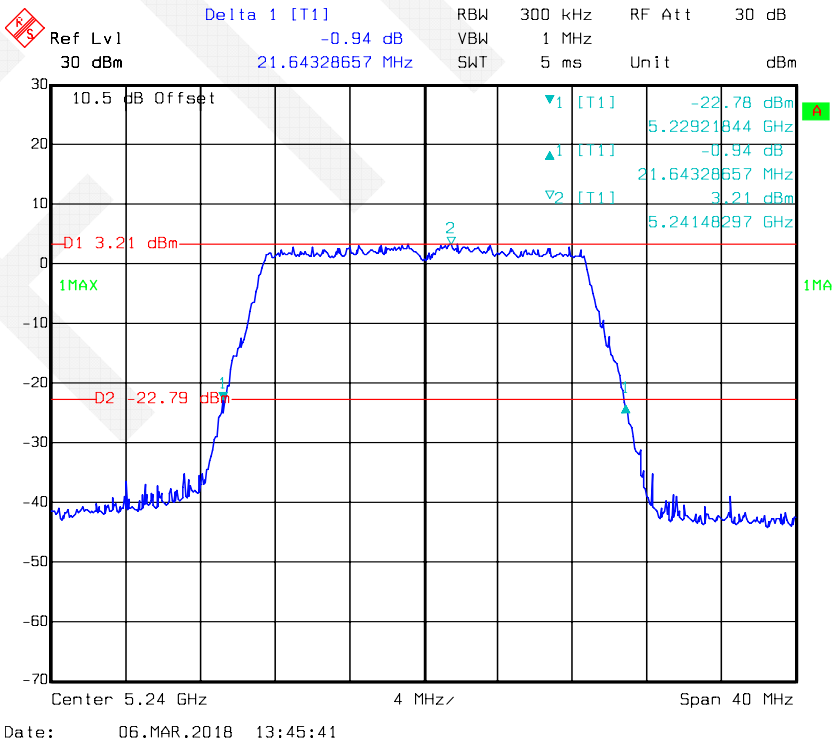
802.11ac20 mode, 26 dB Bandwidth-5180 MHz, Antenna 1



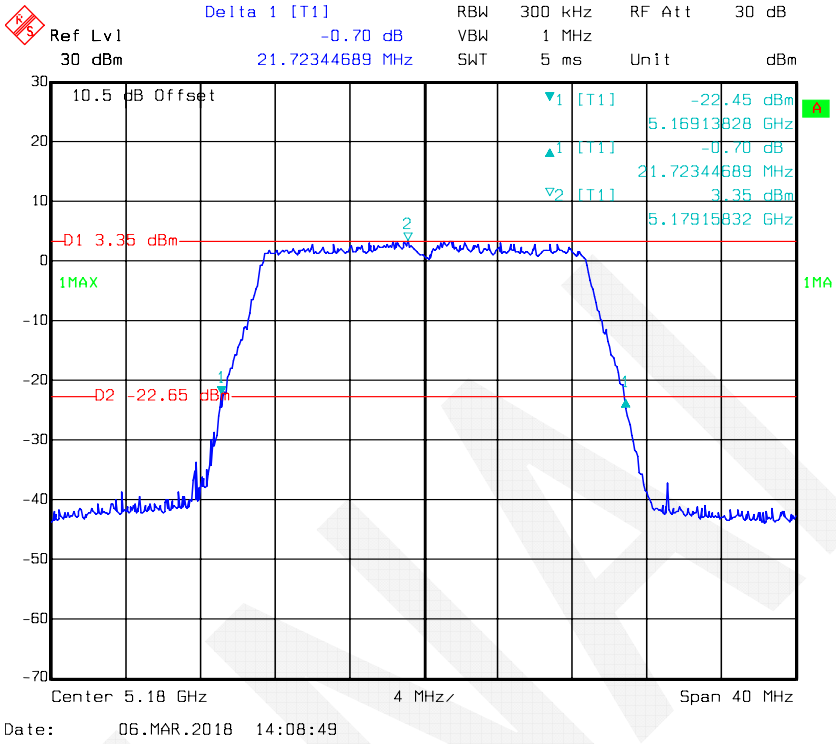
802.11ac20 mode, 26 dB Bandwidth-5200 MHz, Antenna 1



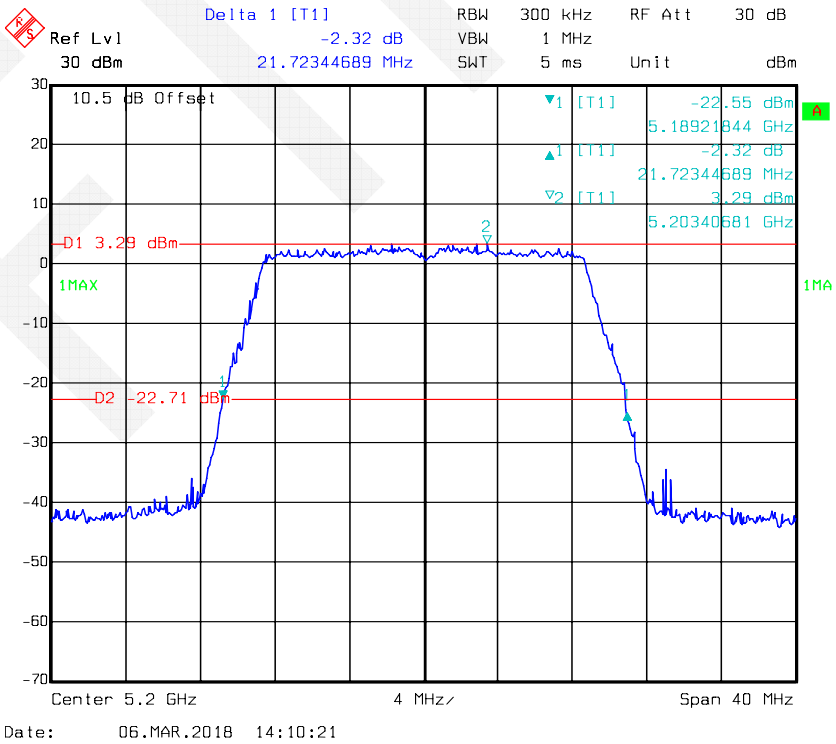
802.11ac20 mode, 26 dB Bandwidth-5240 MHz, Antenna 1



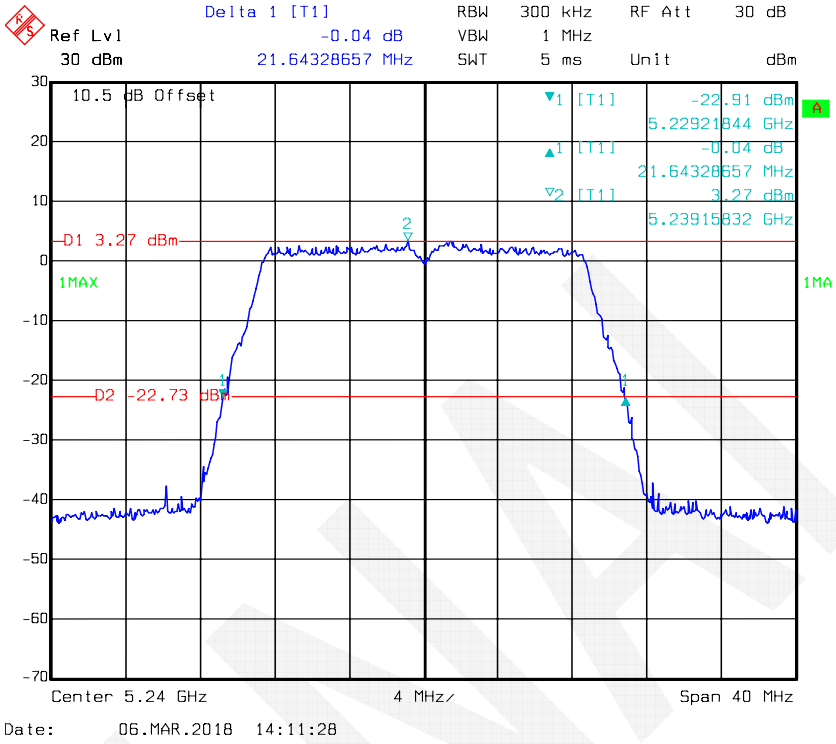
802.11ac20 mode, 26 dB Bandwidth-5180 MHz, Antenna 2



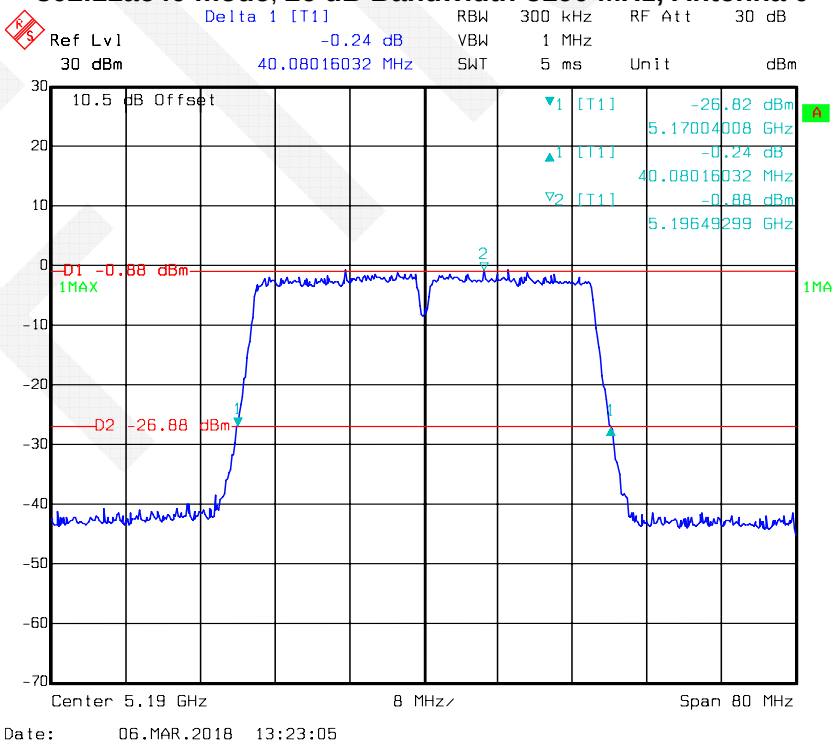
802.11ac20 mode, 26 dB Bandwidth-5200 MHz, Antenna 2



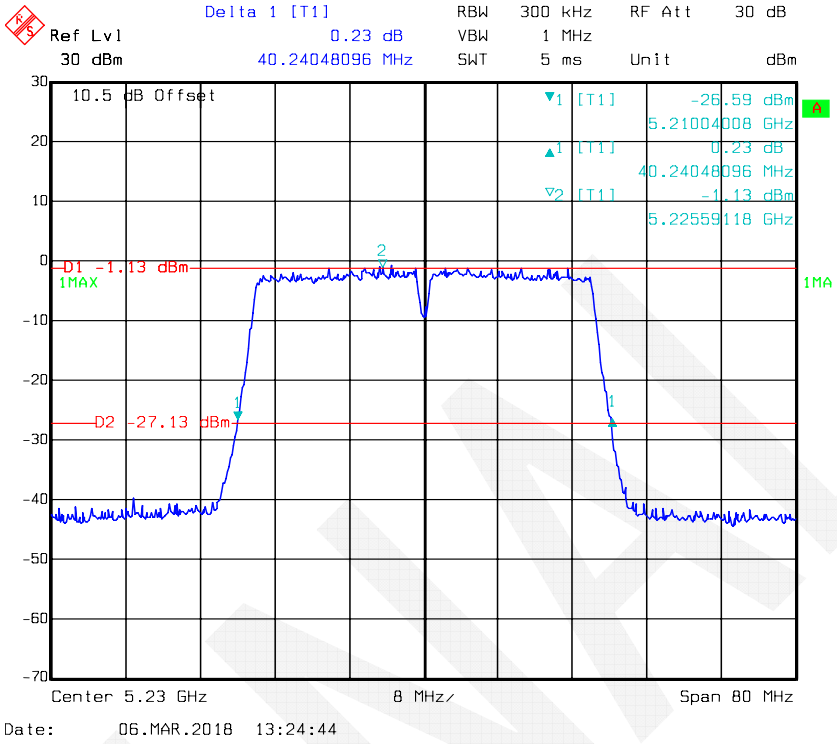
802.11ac20 mode, 26 dB Bandwidth-5240 MHz, Antenna 2



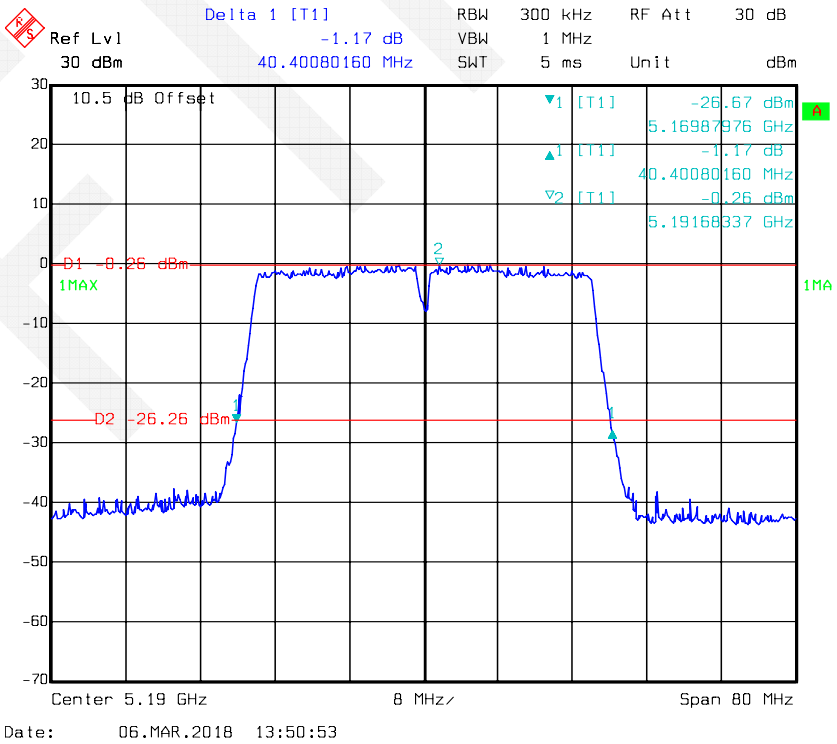
802.11ac40 mode, 26 dB Bandwidth-5190 MHz, Antenna 0



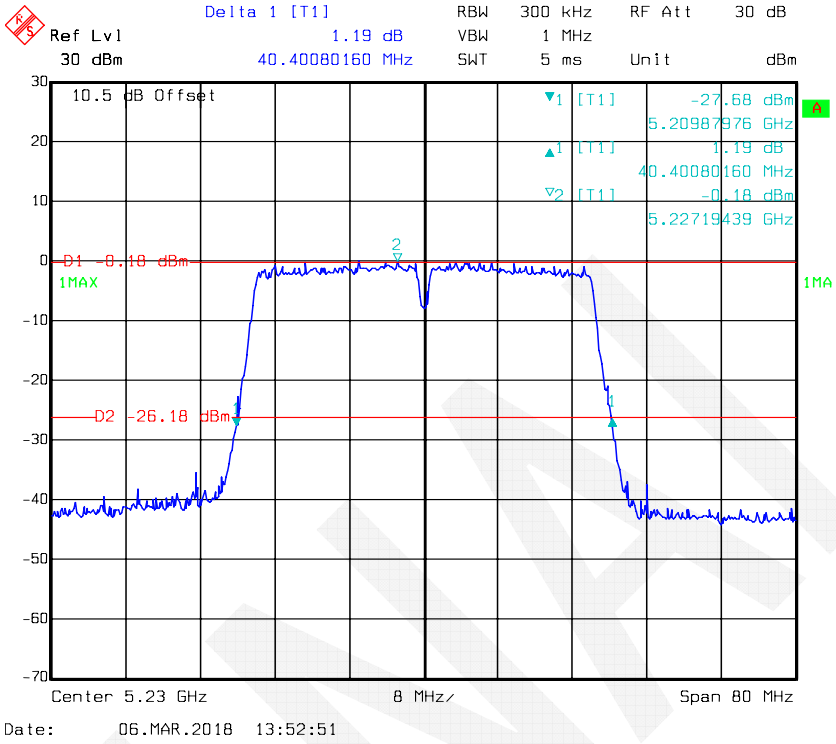
802.11ac40 mode, 26 dB Bandwidth-5230 MHz, Antenna 0



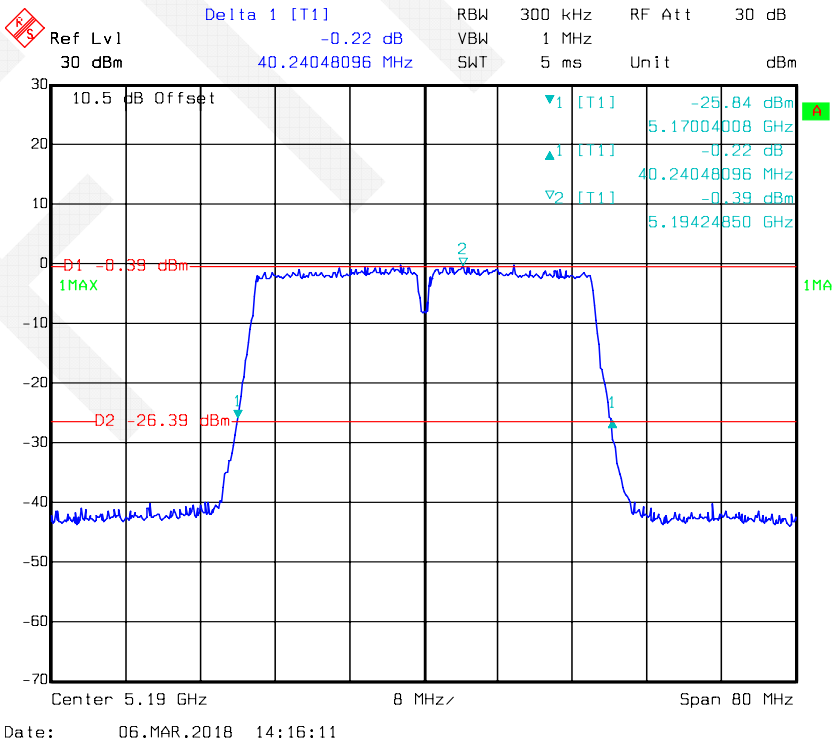
802.11ac40 mode, 26 dB Bandwidth-5190 MHz, Antenna 1



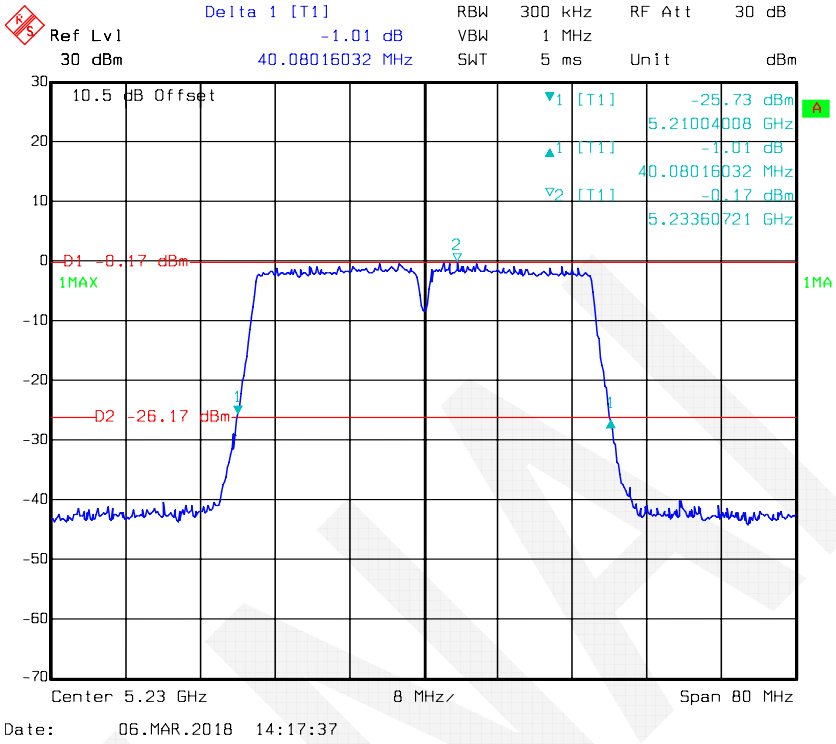
802.11ac40 mode, 26 dB Bandwidth-5230 MHz, Antenna 1



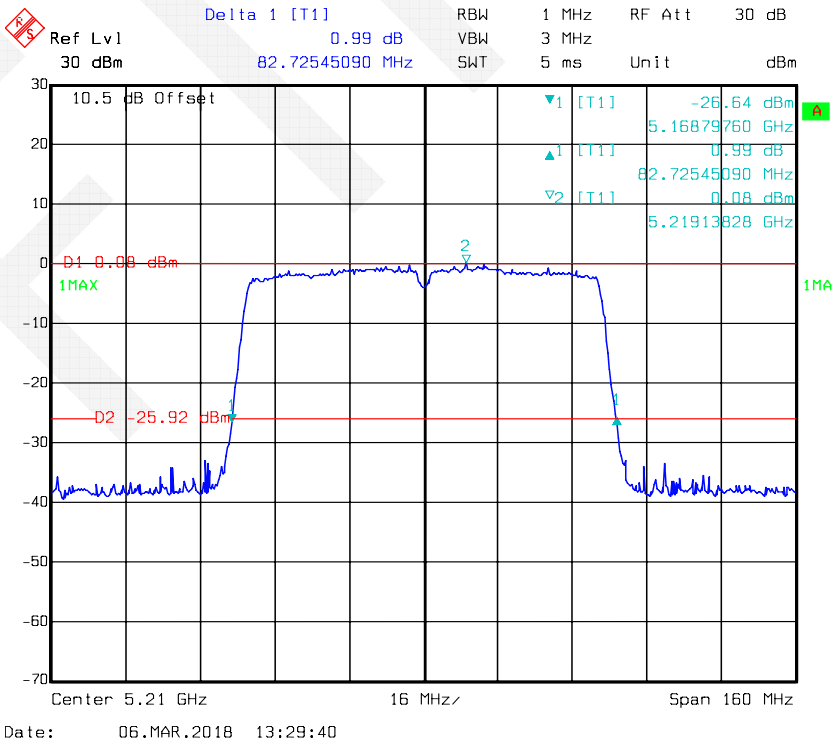
802.11ac40 mode, 26 dB Bandwidth-5190 MHz, Antenna 2



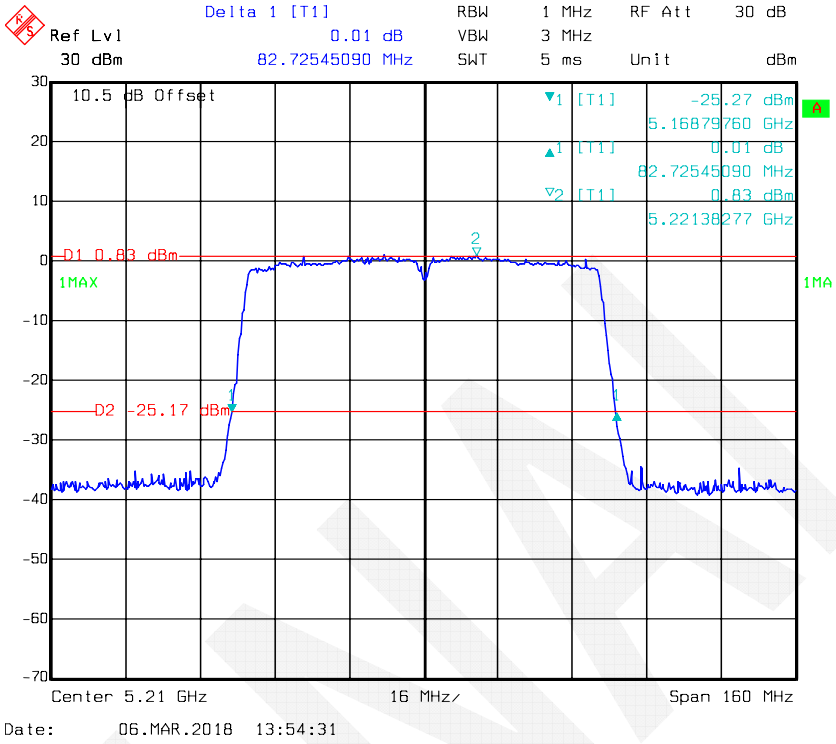
802.11ac40 mode, 26 dB Bandwidth-5230 MHz, Antenna 2



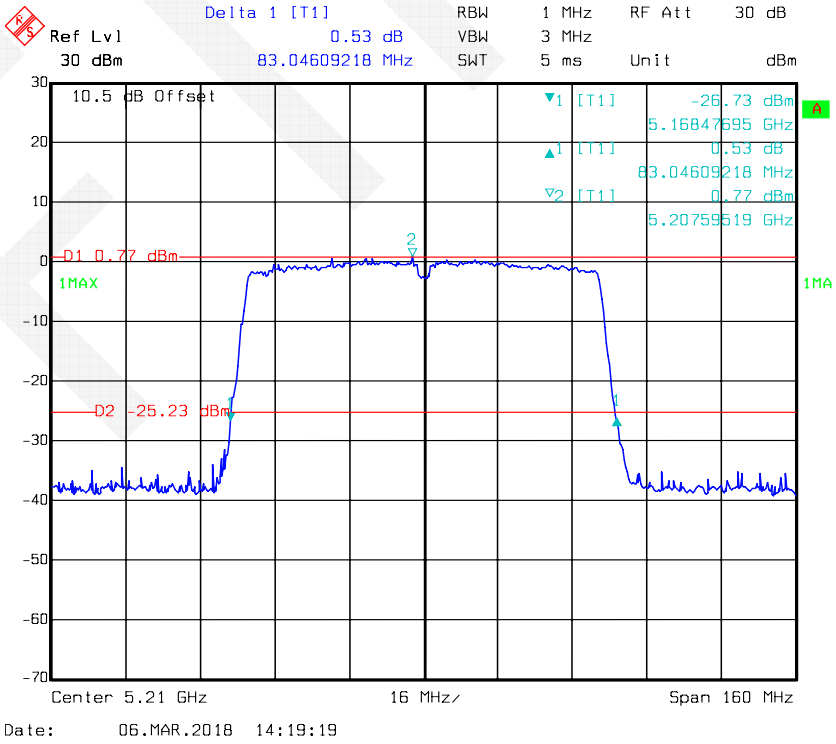
802.11ac80 mode, 26 dB Bandwidth-5210 MHz, Antenna 0



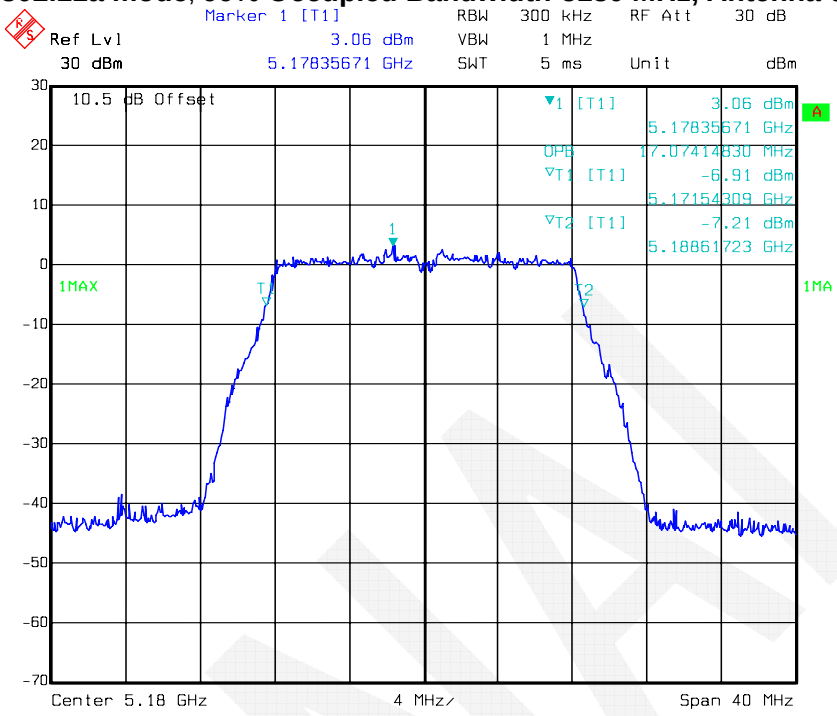
802.11ac80 mode, 26 dB Bandwidth-5210 MHz, Antenna 1



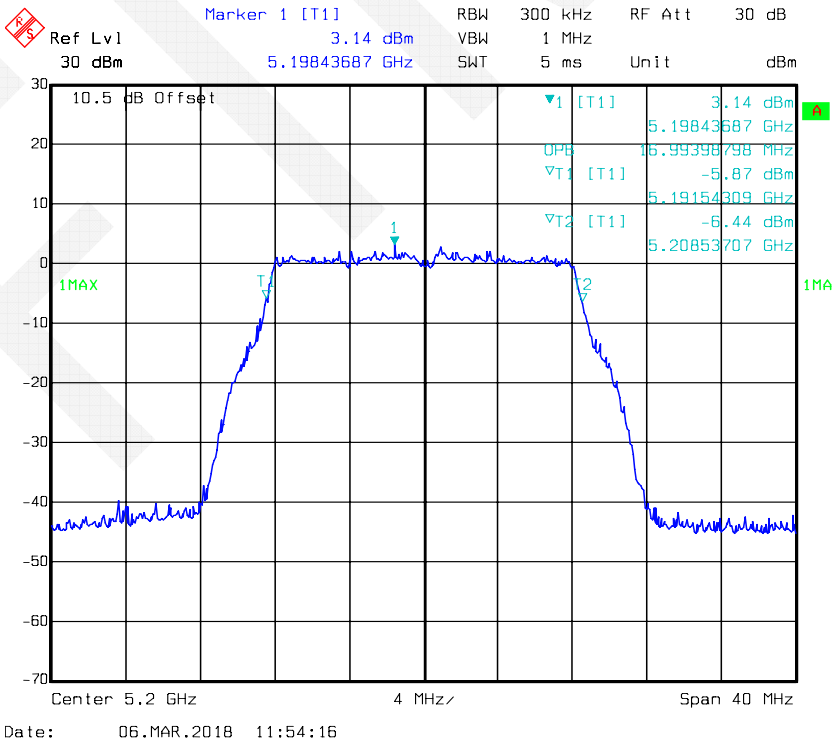
802.11ac80 mode, 26 dB Bandwidth-5210 MHz, Antenna 2



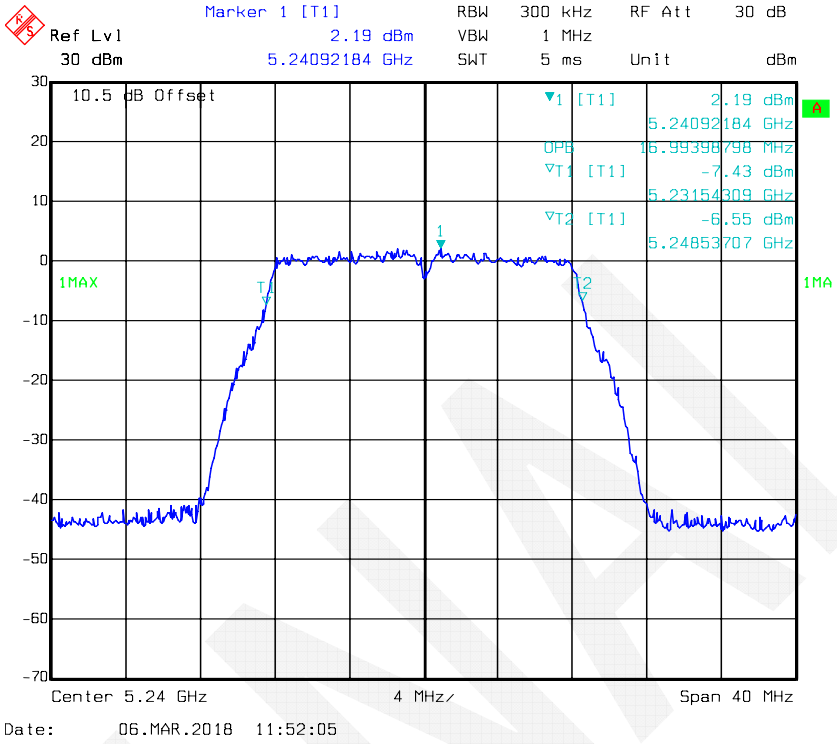
802.11a mode, 99% Occupied Bandwidth-5180 MHz, Antenna 0



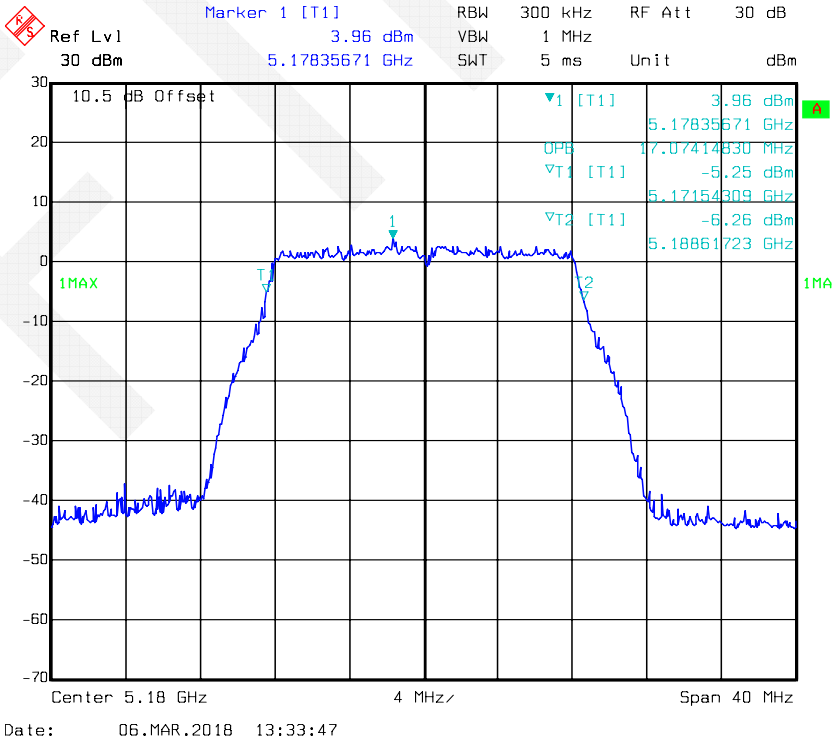
802.11a mode, 99% Occupied Bandwidth -5200 MHz, Antenna 0



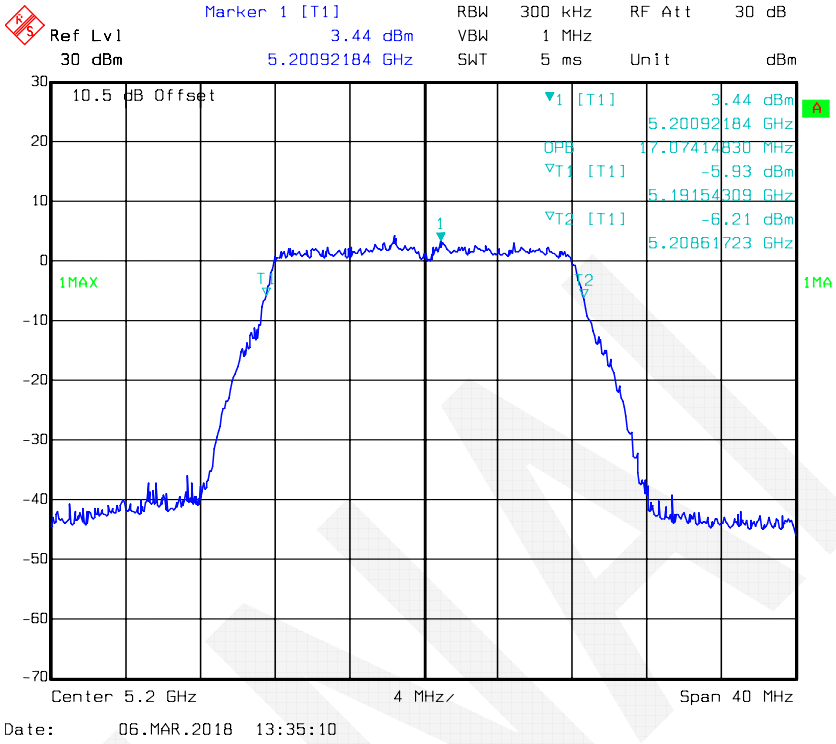
802.11a mode, 99% Occupied Bandwidth -5240 MHz, Antenna 0



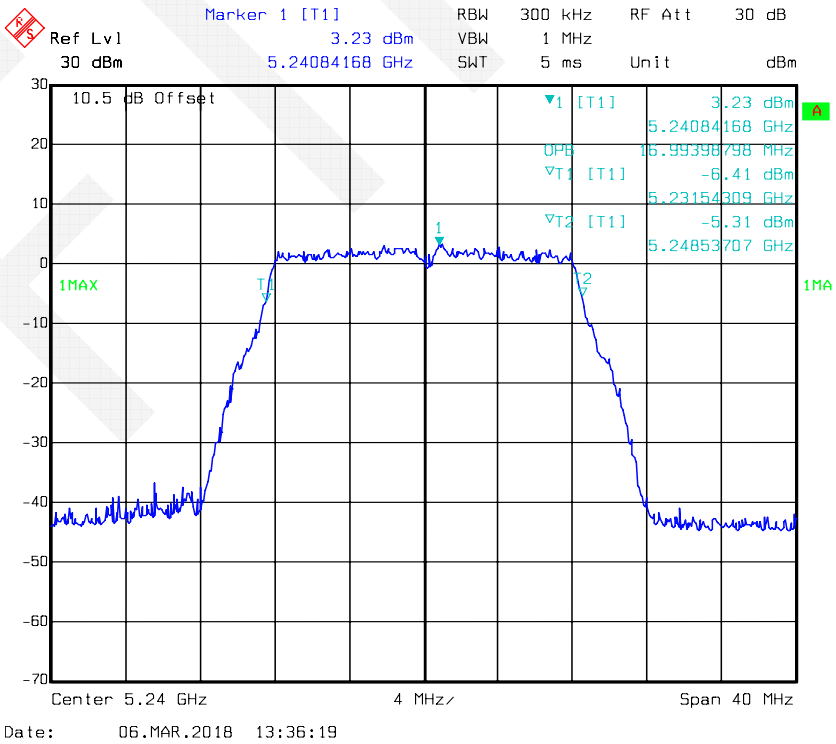
802.11a mode, 99% Occupied Bandwidth-5180 MHz, Antenna 1



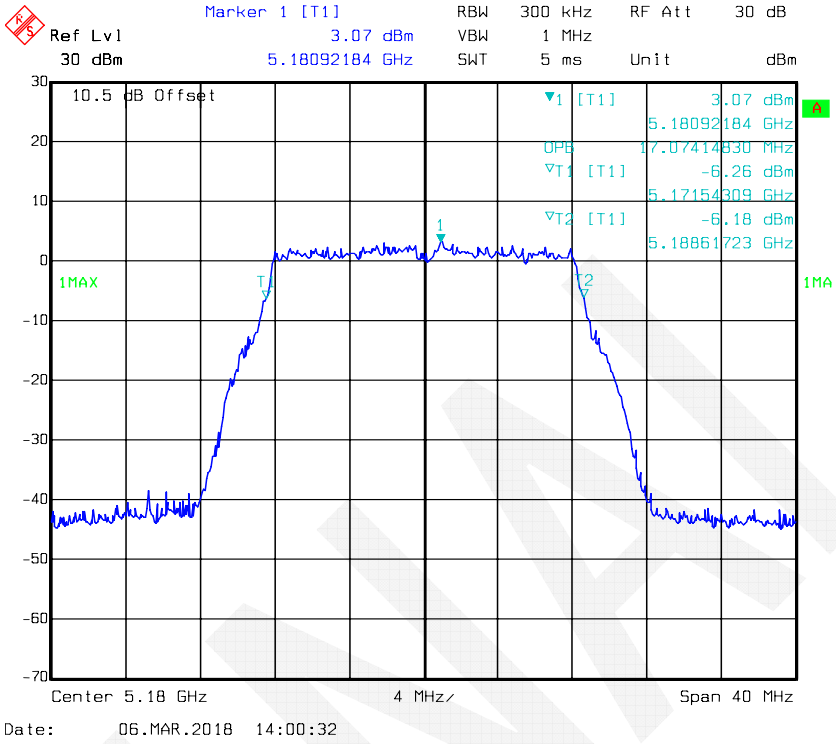
802.11a mode, 99% Occupied Bandwidth -5200 MHz, Antenna 1



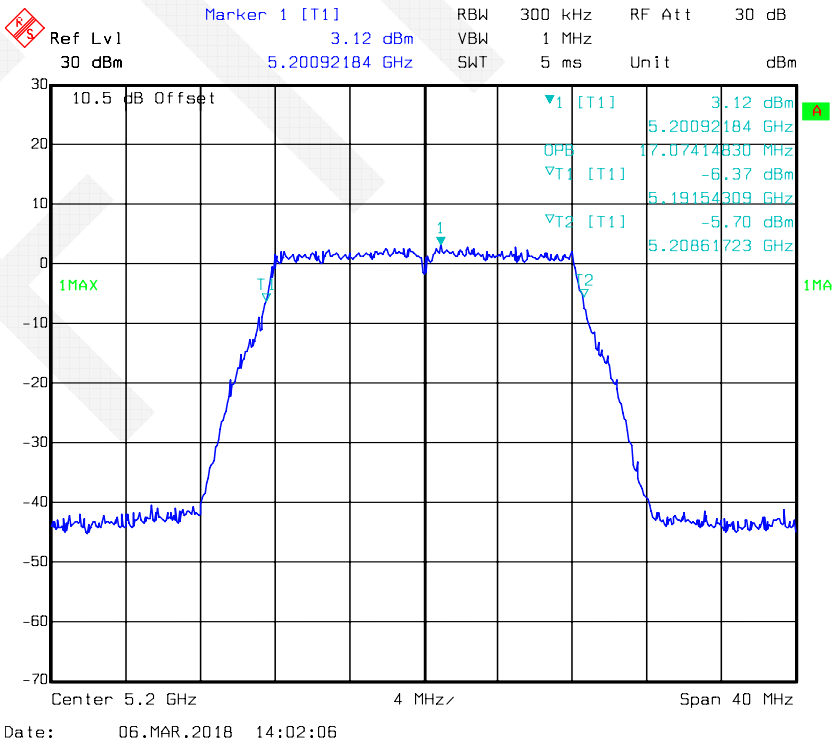
802.11a mode, 99% Occupied Bandwidth -5240 MHz, Antenna 1



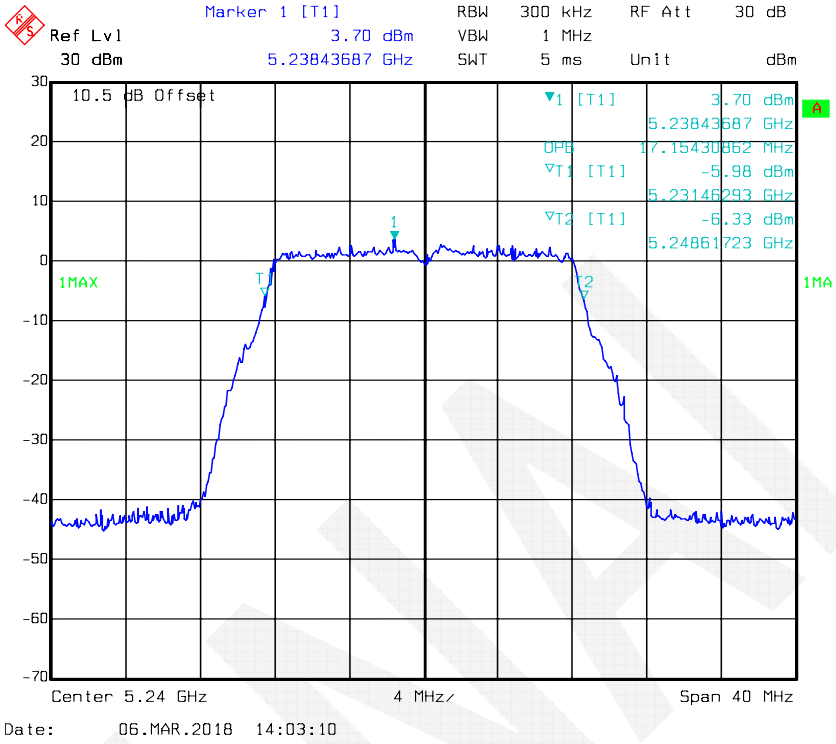
802.11a mode, 99% Occupied Bandwidth-5180 MHz, Antenna 2



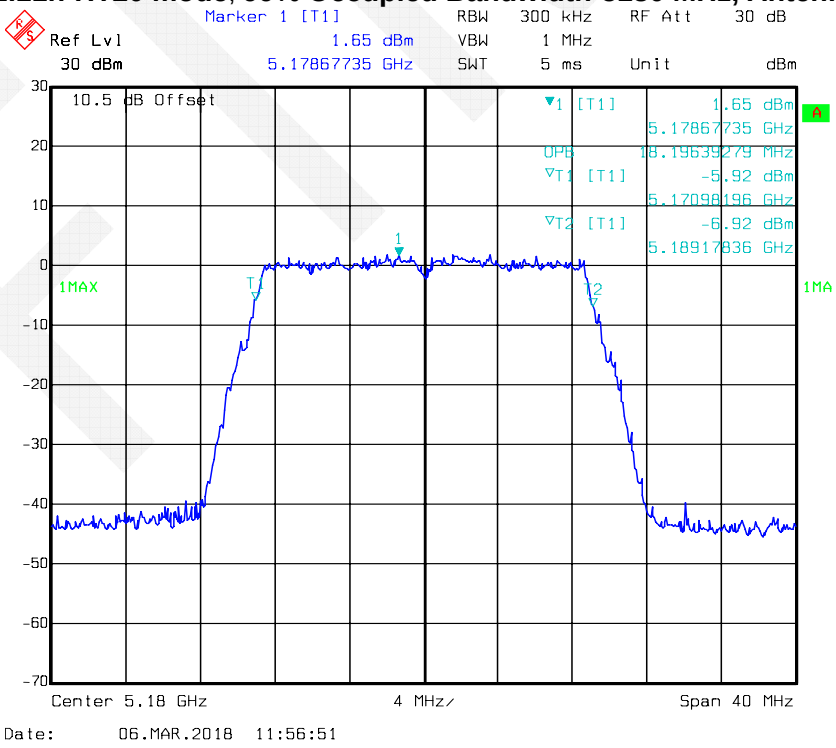
802.11a mode, 99% Occupied Bandwidth -5200 MHz, Antenna 2



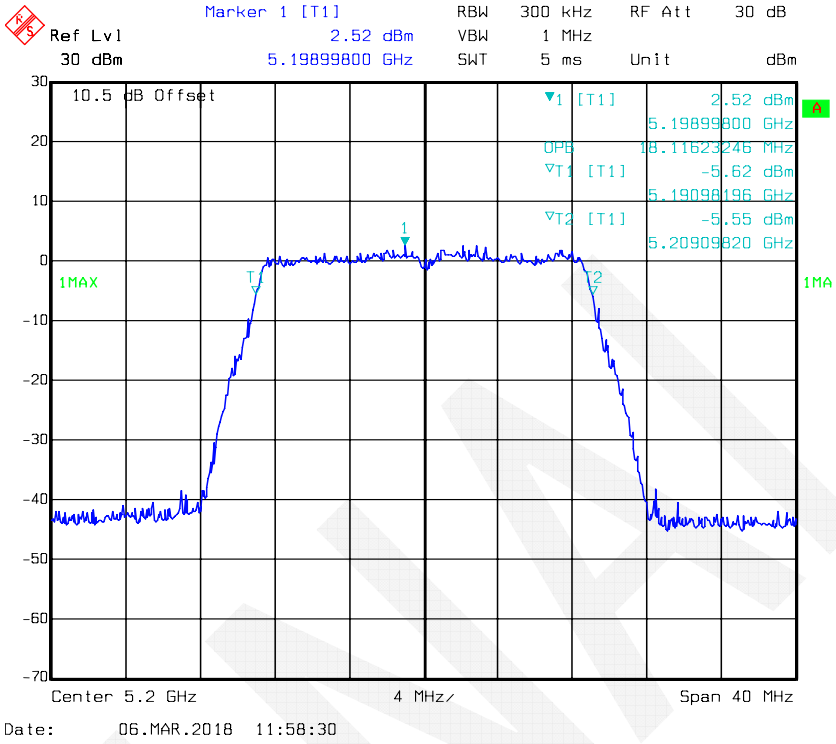
802.11a mode, 99% Occupied Bandwidth -5240 MHz, Antenna 2



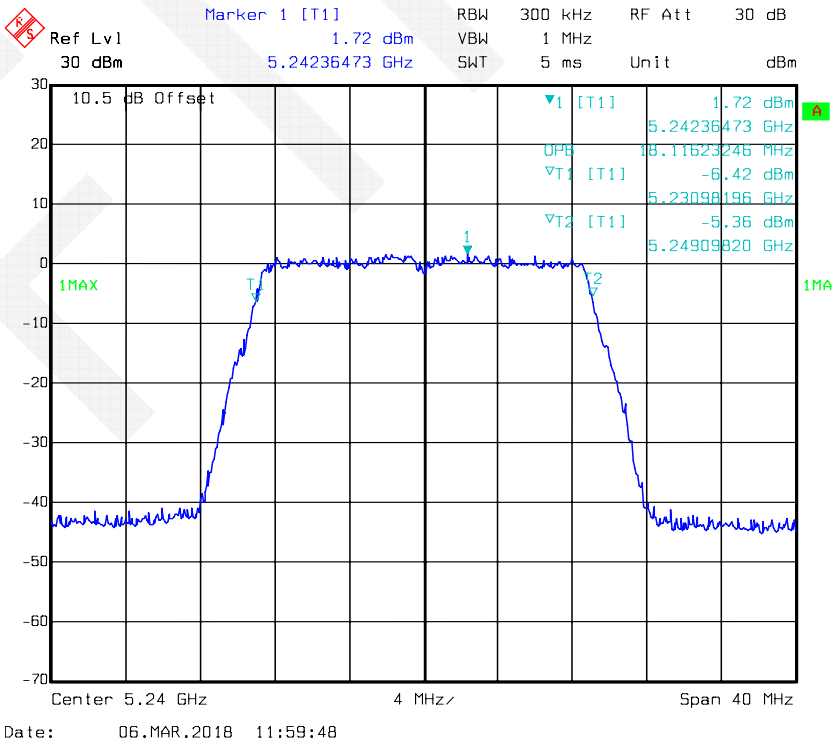
802.11n-HT20 mode, 99% Occupied Bandwidth-5180 MHz, Antenna 0



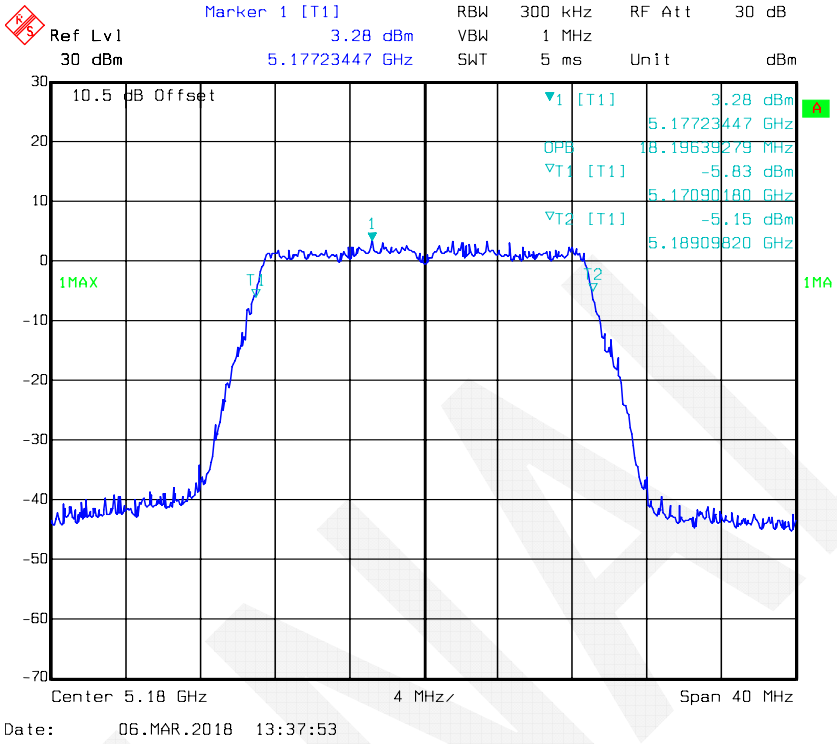
802.11n-HT20 mode, 99% Occupied Bandwidth -5200 MHz, Antenna 0



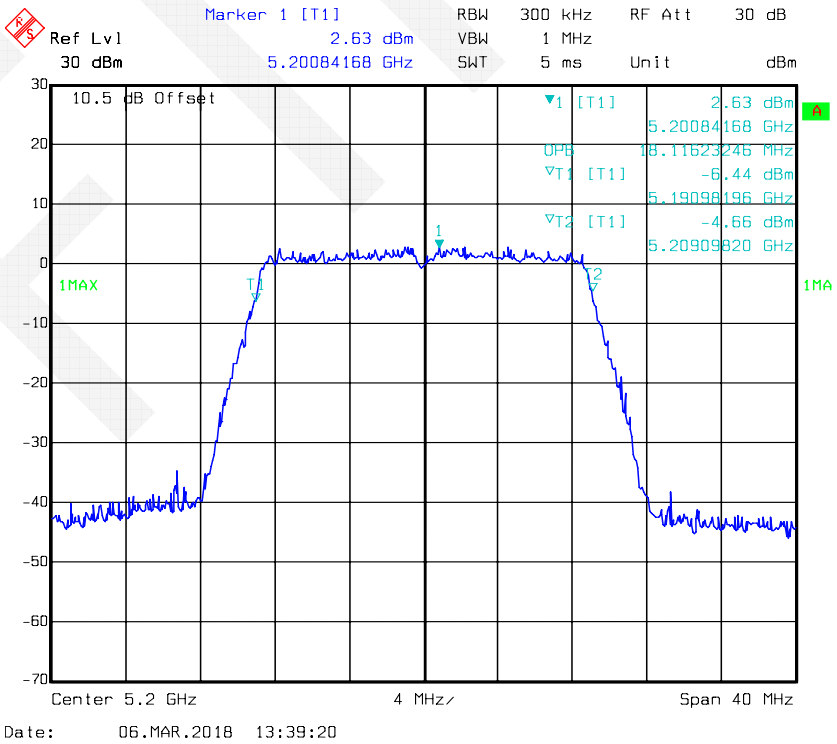
802.11n-HT20 mode, 99% Occupied Bandwidth -5240 MHz, Antenna 0



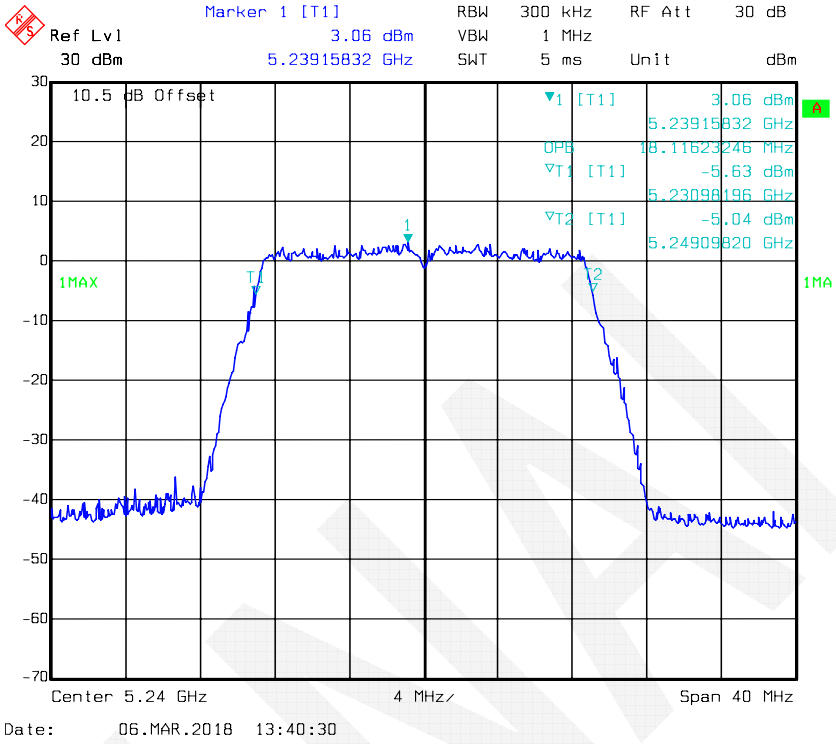
802.11n-HT20 mode, 99% Occupied Bandwidth-5180 MHz, Antenna 1



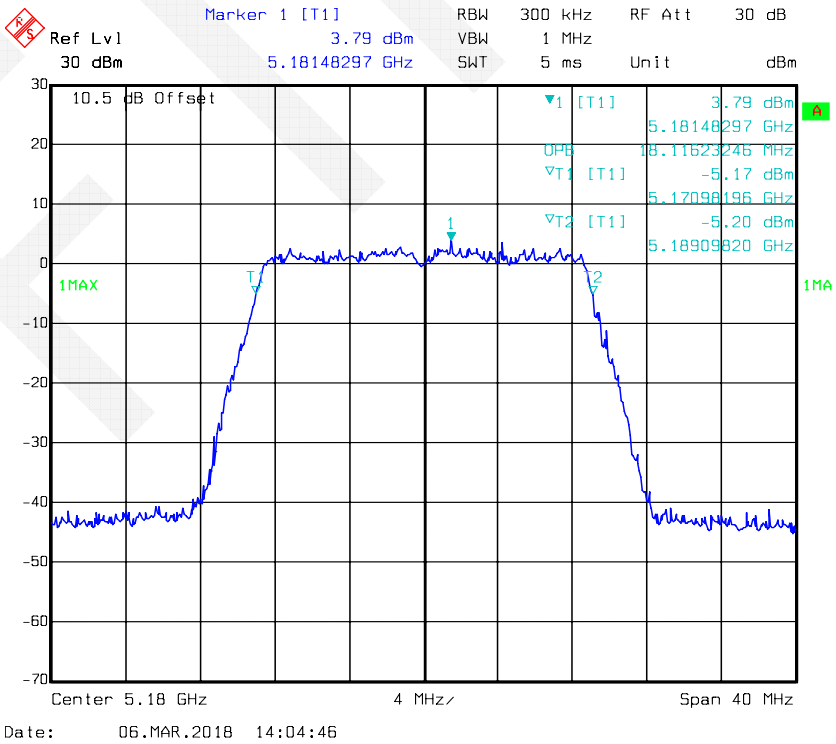
802.11n-HT20 mode, 99% Occupied Bandwidth -5200 MHz, Antenna 1



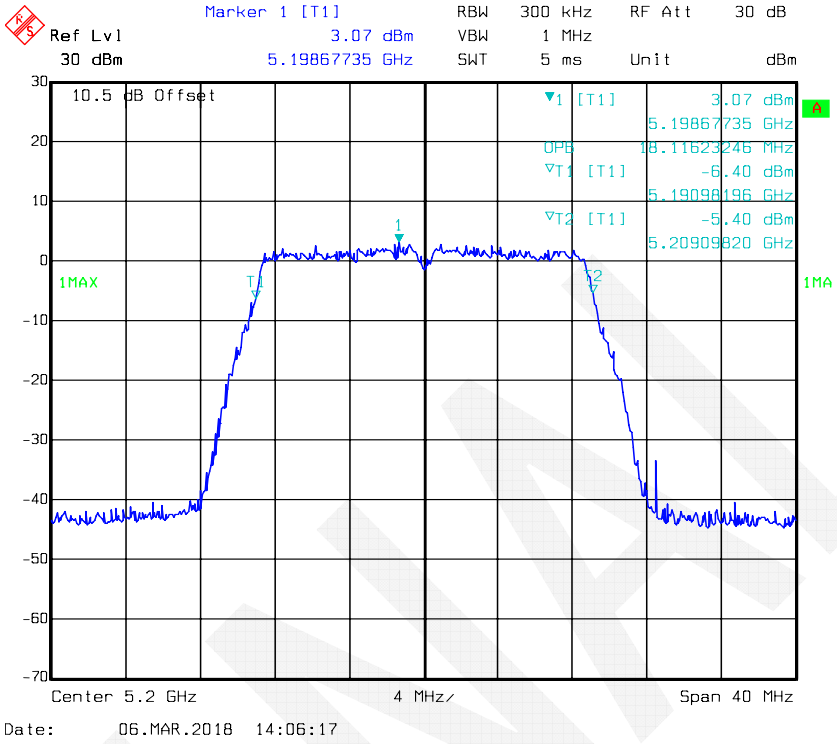
802.11n-HT20 mode, 99% Occupied Bandwidth -5240 MHz, Antenna 1



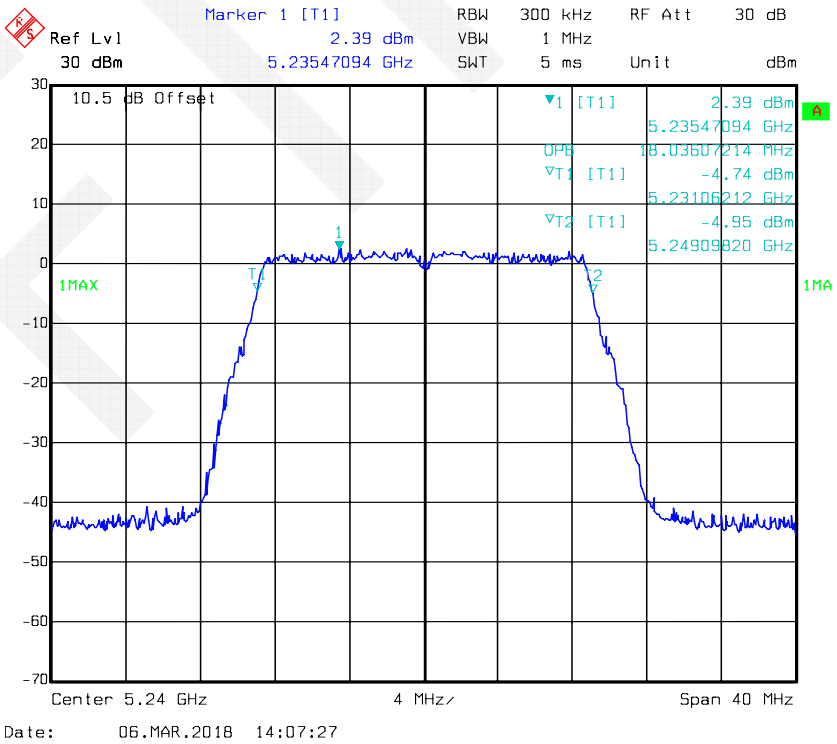
802.11n-HT20 mode, 99% Occupied Bandwidth-5180 MHz, Antenna 2



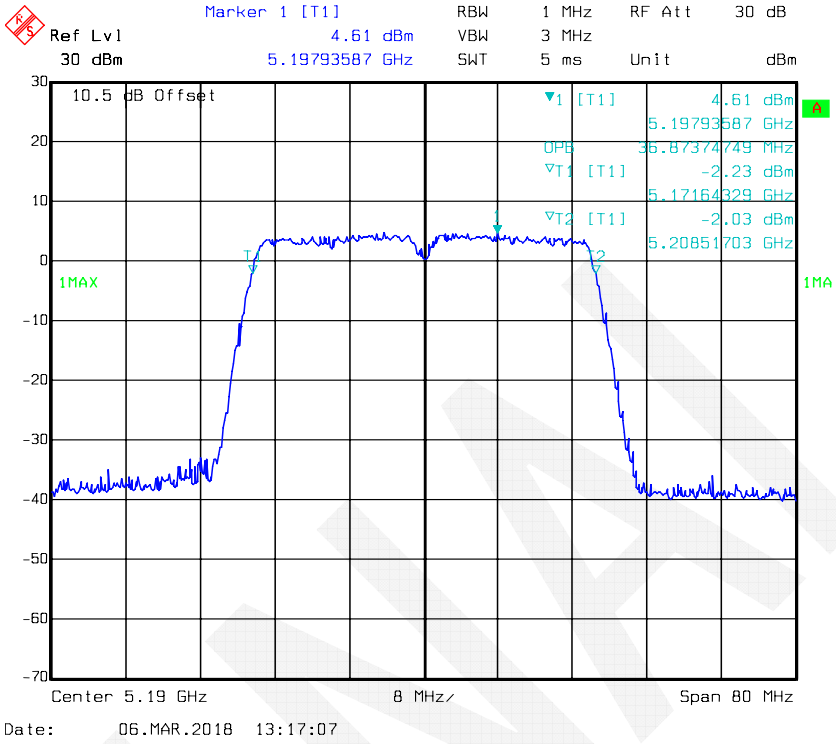
802.11n-HT20 mode, 99% Occupied Bandwidth -5200 MHz, Antenna 2



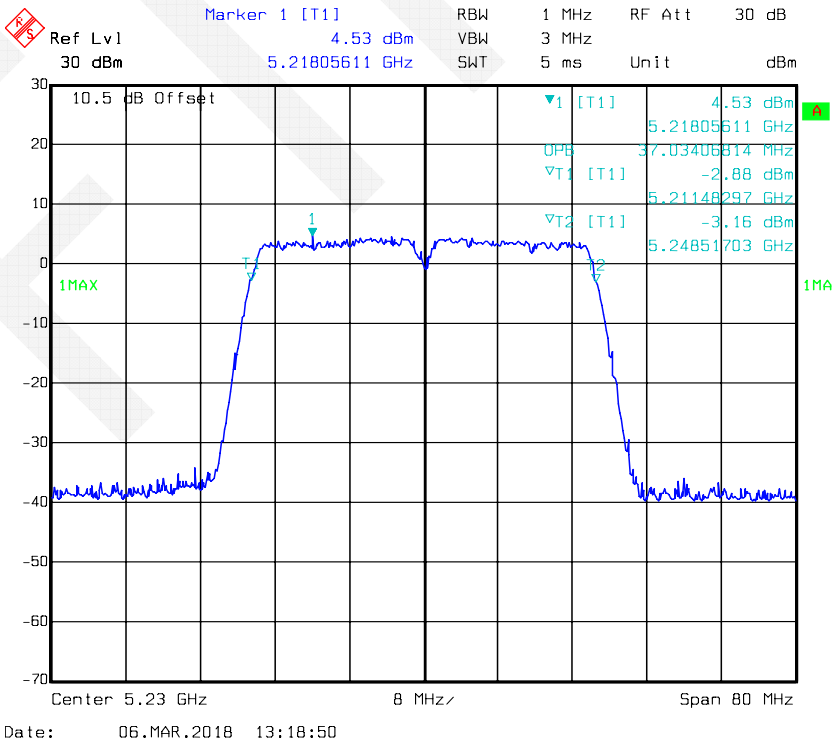
802.11n-HT20 mode, 99% Occupied Bandwidth -5240 MHz, Antenna 2



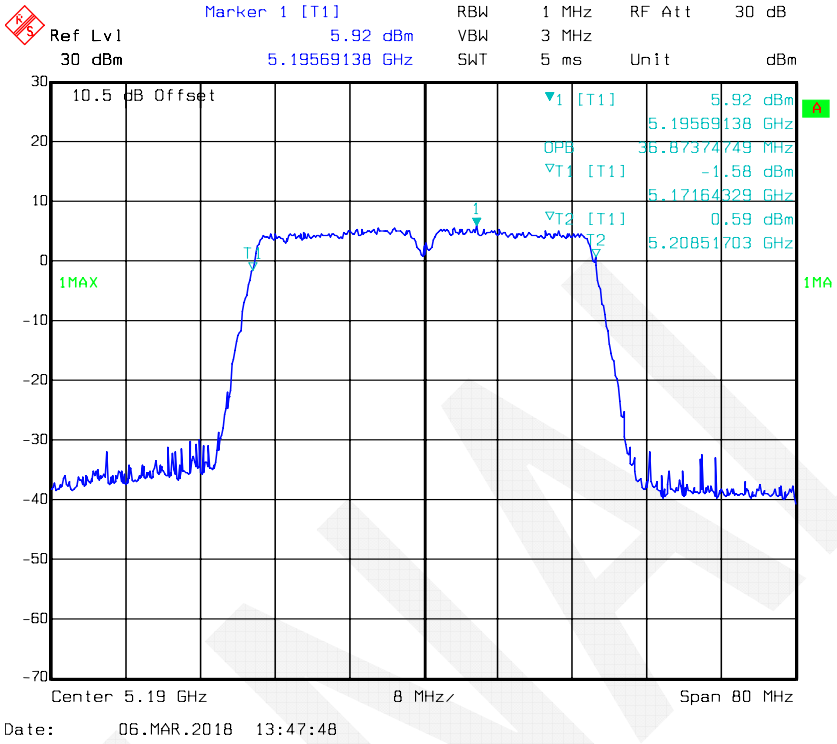
802.11n-HT40 mode, 99% Occupied Bandwidth-5190 MHz, Antenna 0



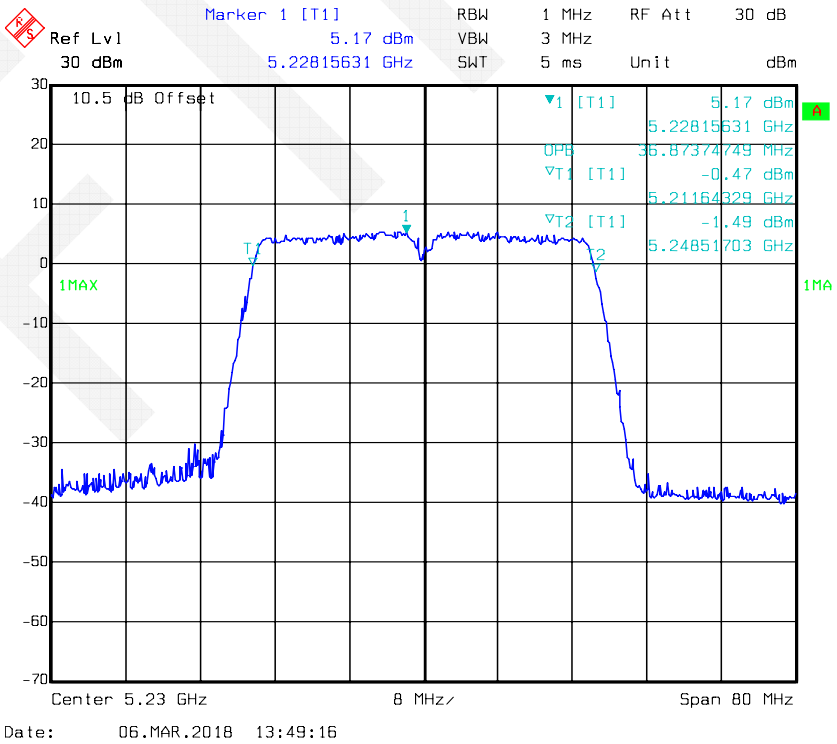
802.11n-HT40 mode, 99% Occupied Bandwidth-5230 MHz, Antenna 0



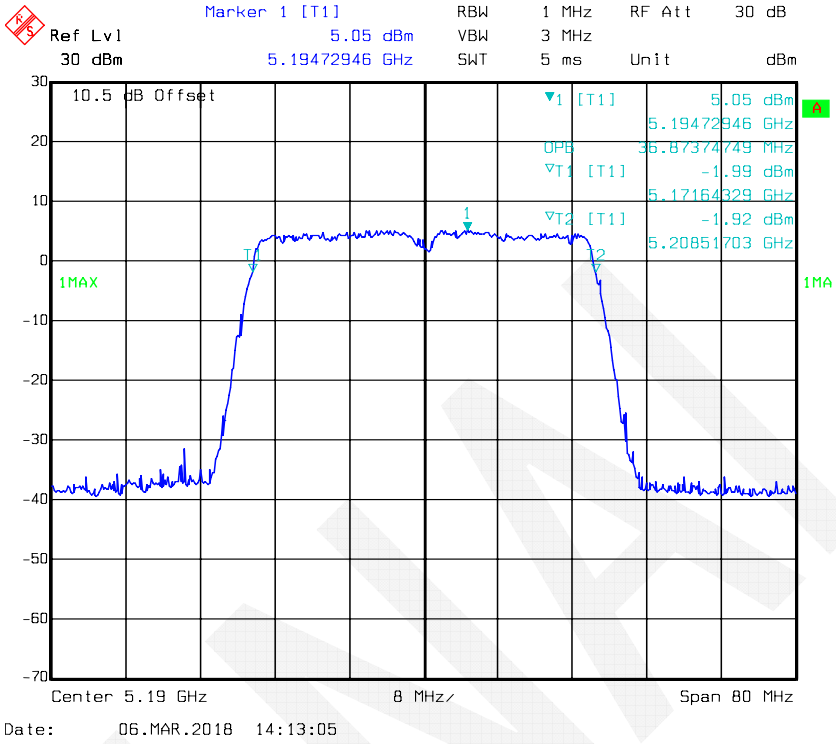
802.11n-HT40 mode, 99% Occupied Bandwidth-5190 MHz, Antenna 1



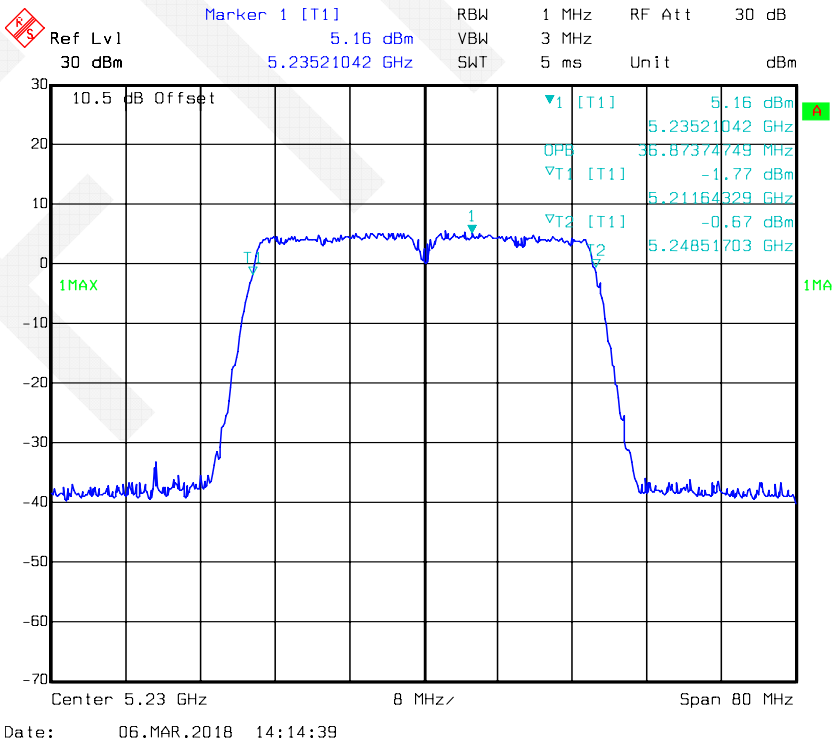
802.11n-HT40 mode, 99% Occupied Bandwidth-5230 MHz, Antenna 1



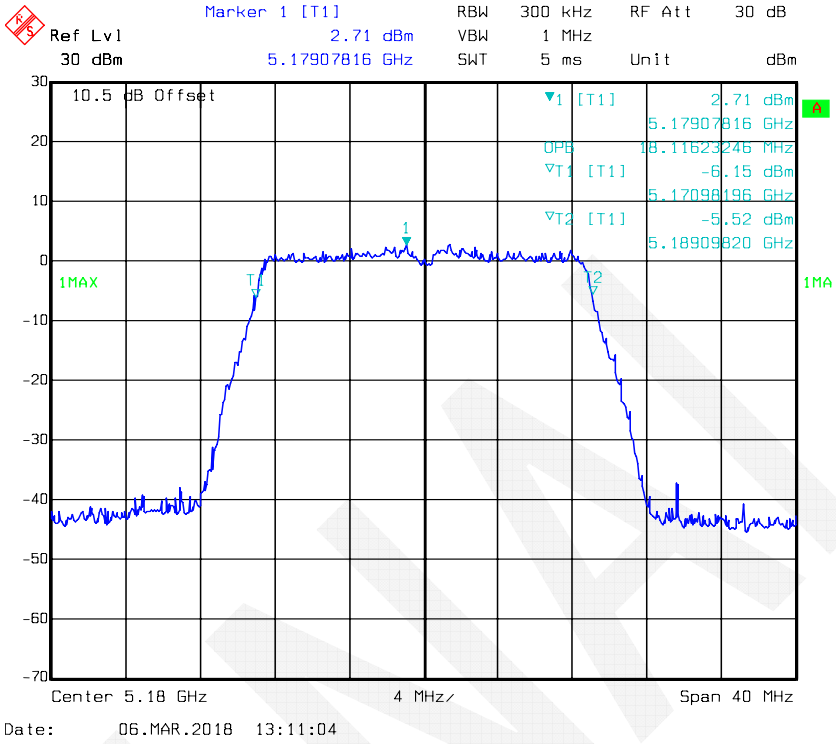
802.11n-HT40 mode, 99% Occupied Bandwidth-5190 MHz, Antenna 2



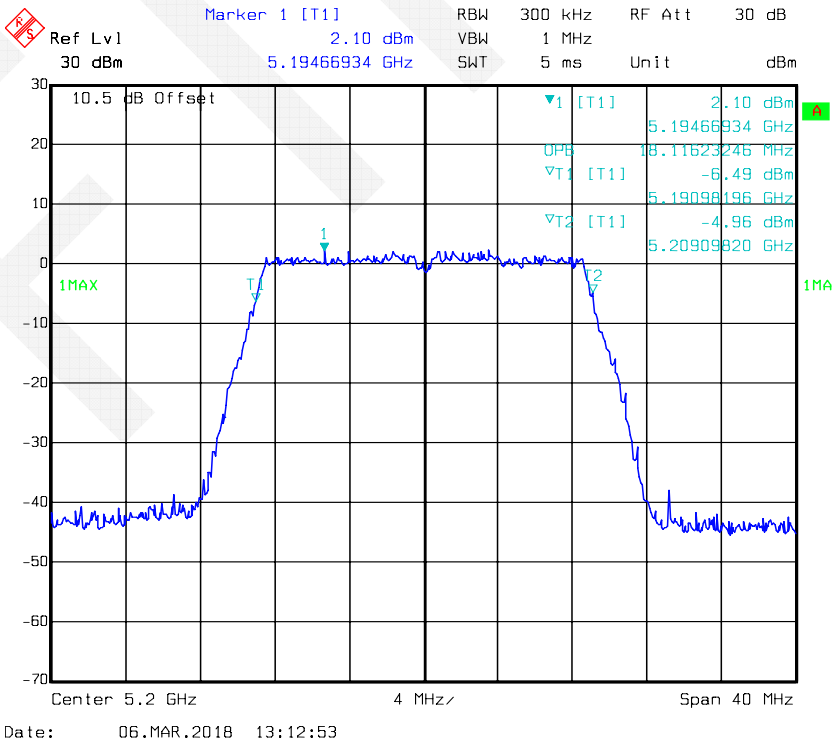
802.11n-HT40 mode, 99% Occupied Bandwidth-5230 MHz, Antenna 2



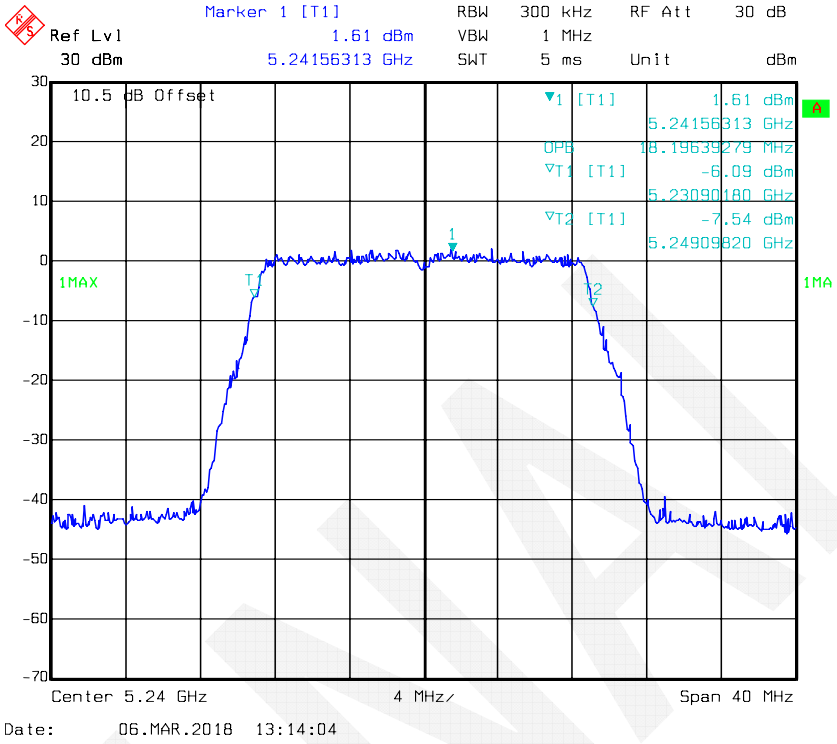
802.11ac20 mode, 99% Occupied Bandwidth-5180 MHz, Antenna 0



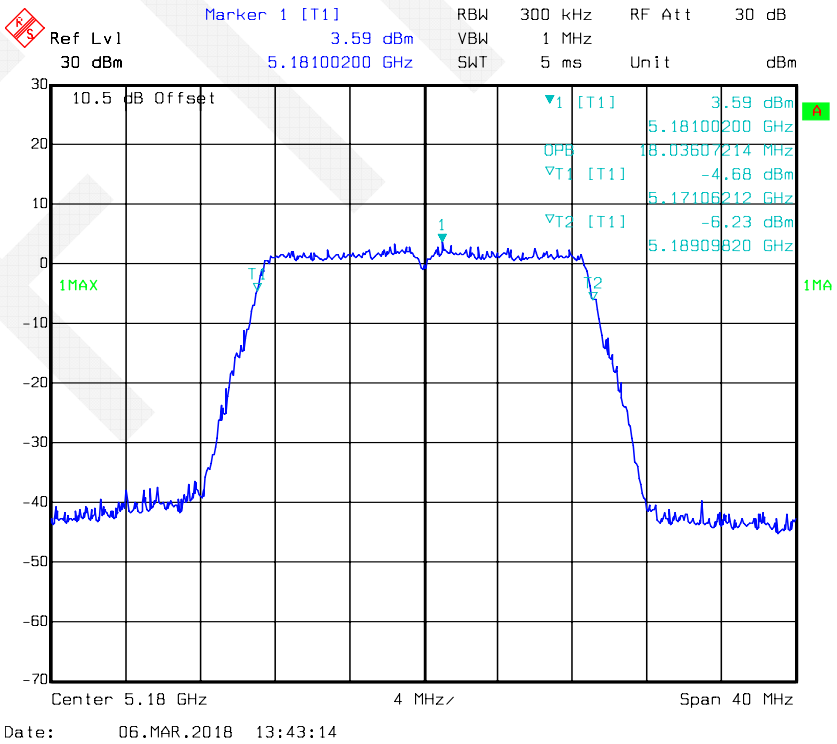
802.11ac20 mode, 99% Occupied Bandwidth-5200 MHz, Antenna 0



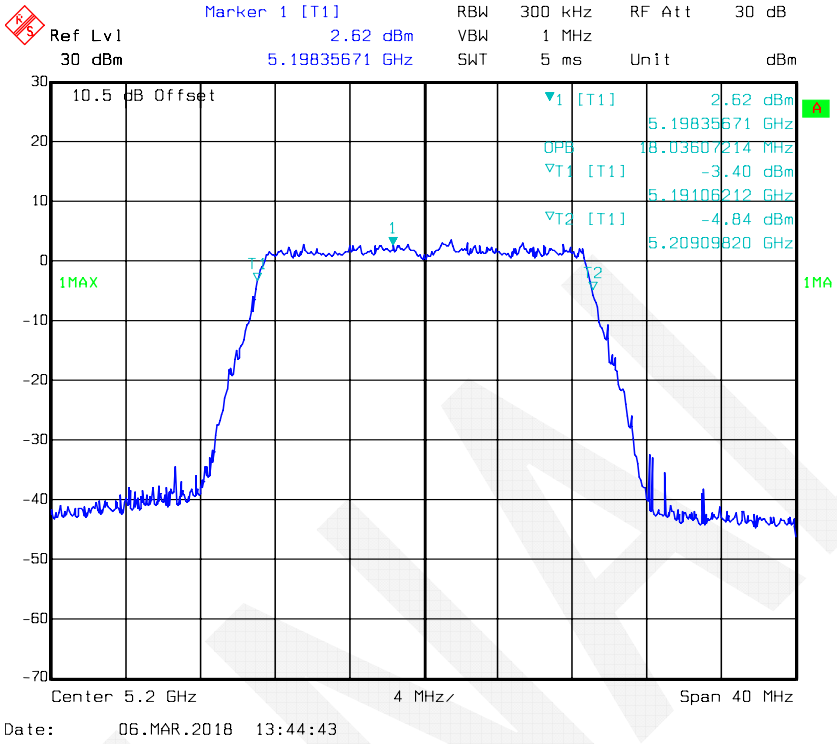
802.11ac20 mode, 99% Occupied Bandwidth-5240 MHz, Antenna 0



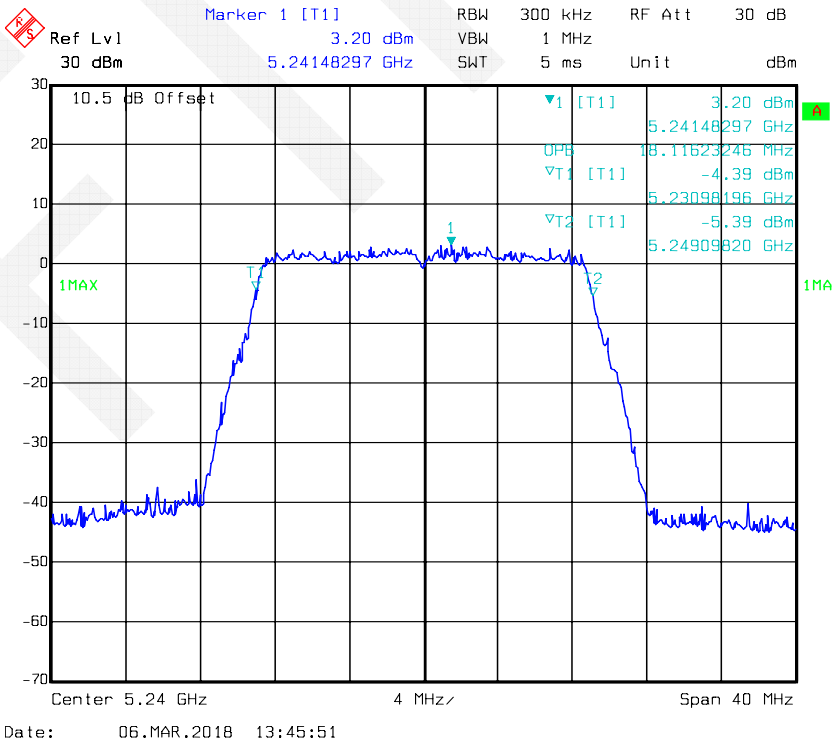
802.11ac20 mode, 99% Occupied Bandwidth-5180 MHz, Antenna 1



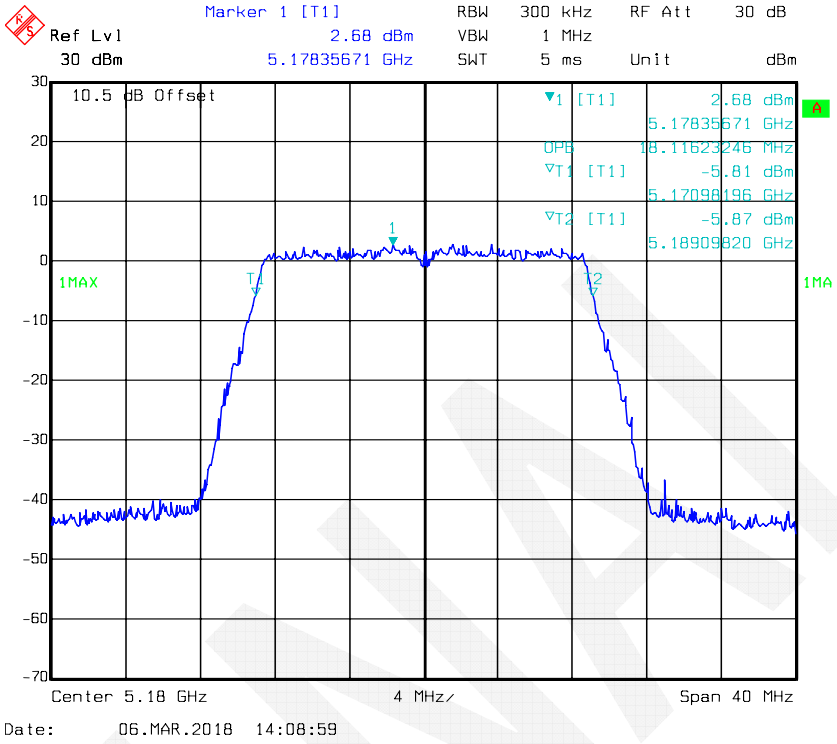
802.11ac20 mode, 99% Occupied Bandwidth-5200 MHz, Antenna 1



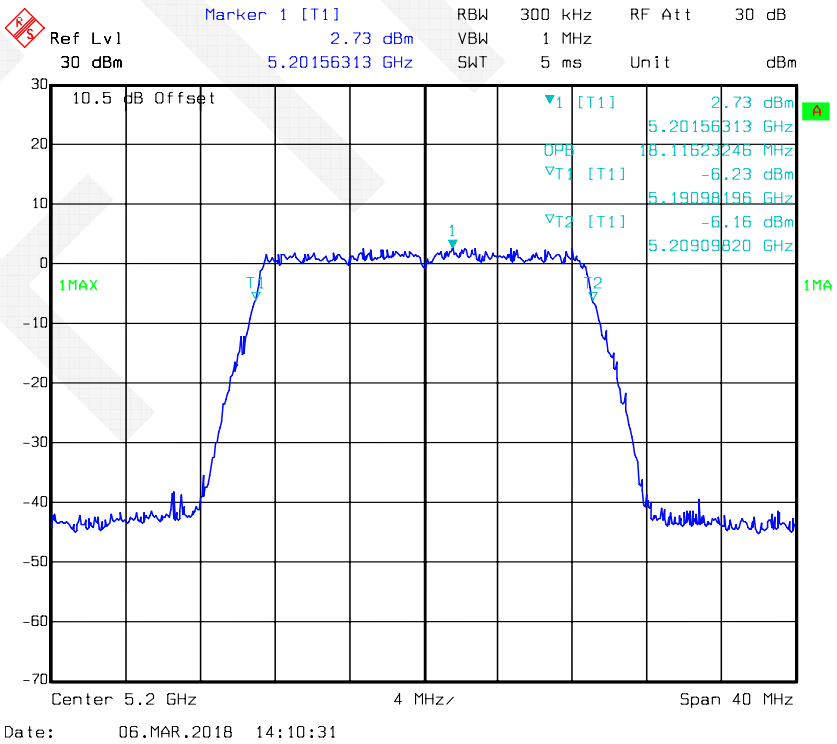
802.11ac20 mode, 99% Occupied Bandwidth-5240 MHz, Antenna 1



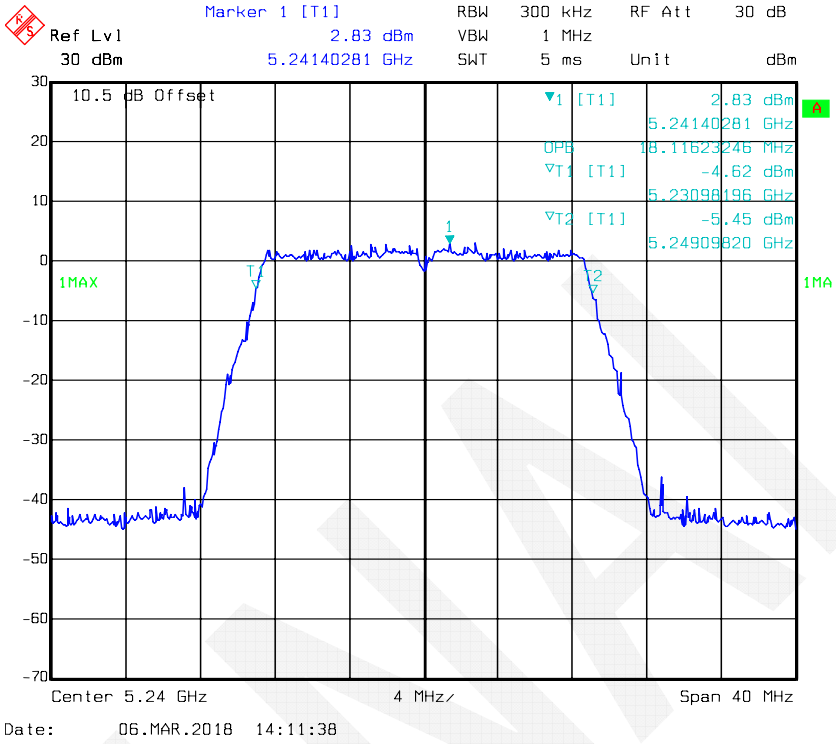
802.11ac20 mode, 99% Occupied Bandwidth-5180 MHz, Antenna 2



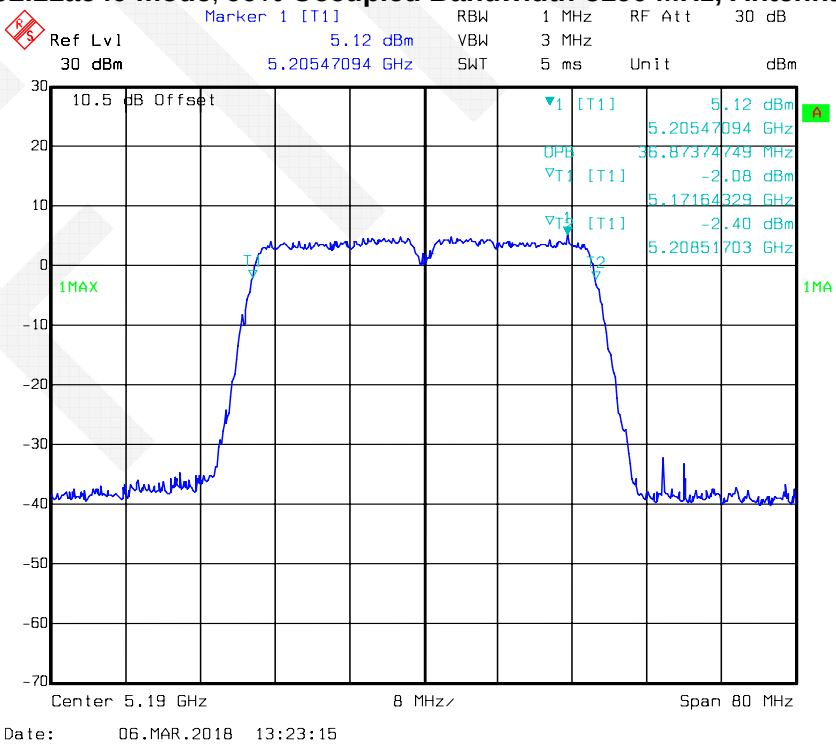
802.11ac20 mode, 99% Occupied Bandwidth-5200 MHz, Antenna 2



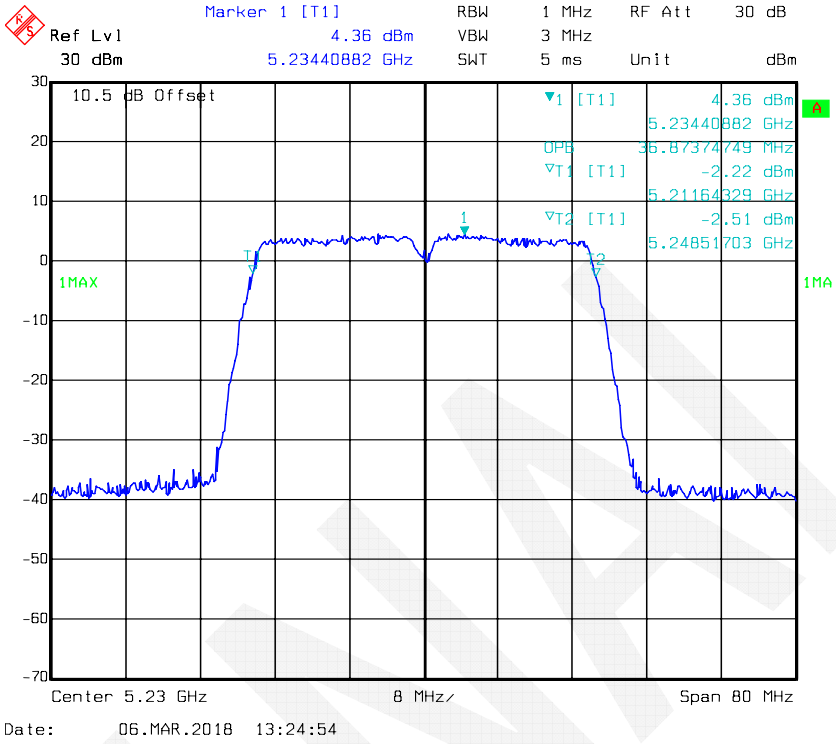
802.11ac20 mode, 99% Occupied Bandwidth-5240 MHz, Antenna 2



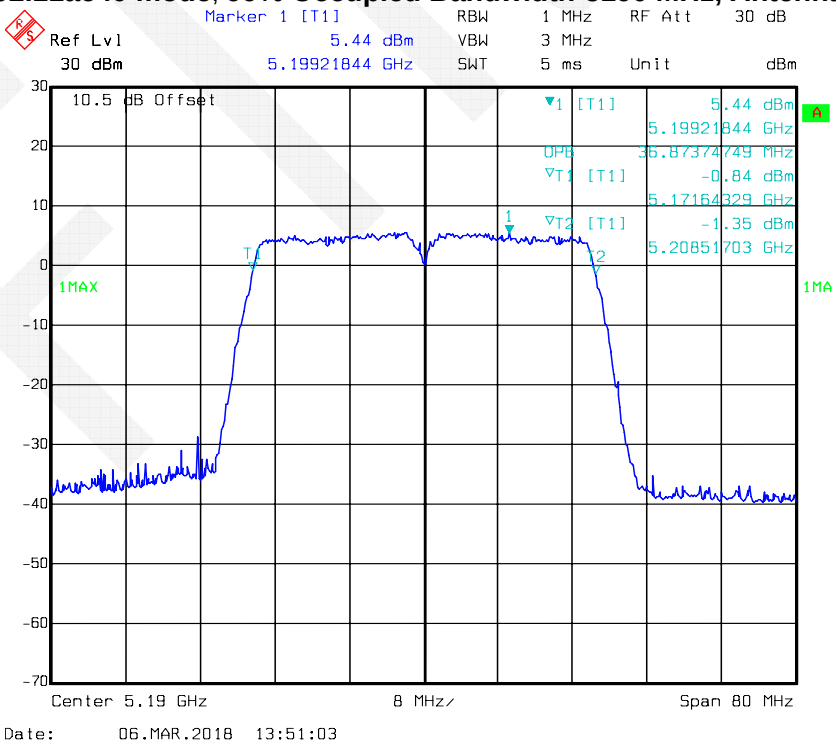
802.11ac40 mode, 99% Occupied Bandwidth-5190 MHz, Antenna 0



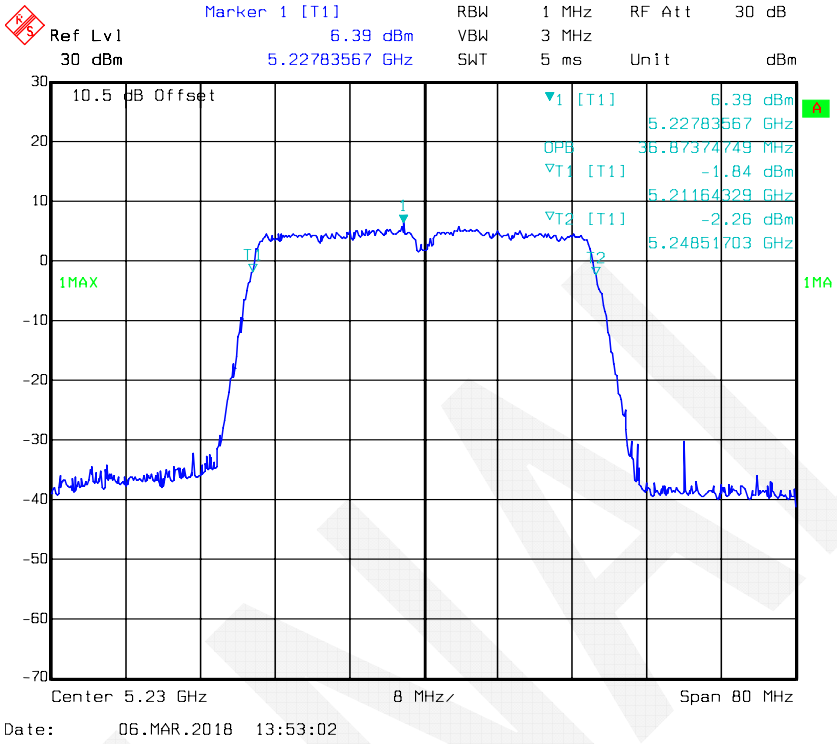
802.11ac40 mode, 99% Occupied Bandwidth-5230 MHz, Antenna 0



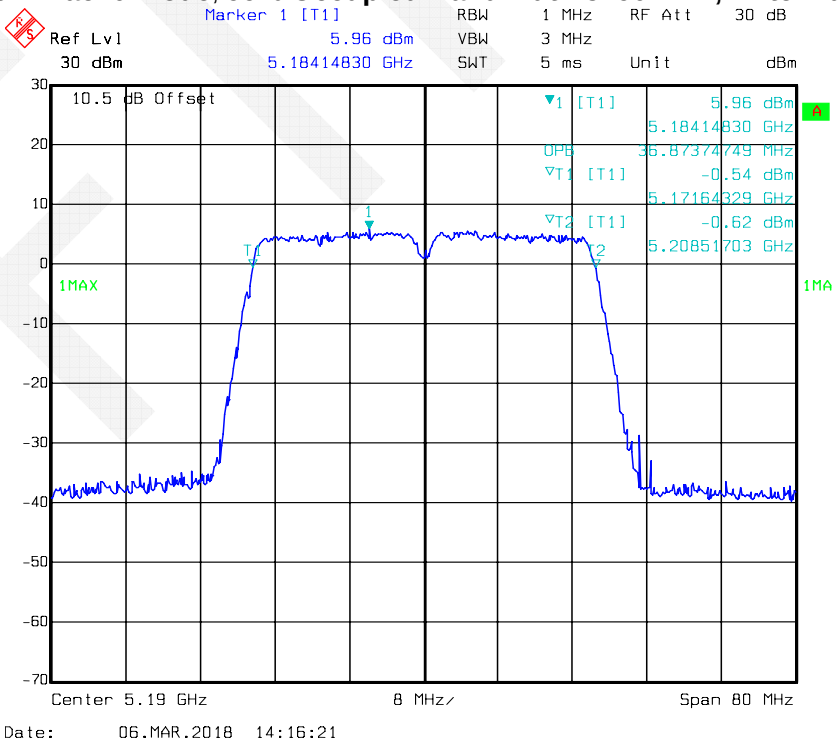
802.11ac40 mode, 99% Occupied Bandwidth-5190 MHz, Antenna 1



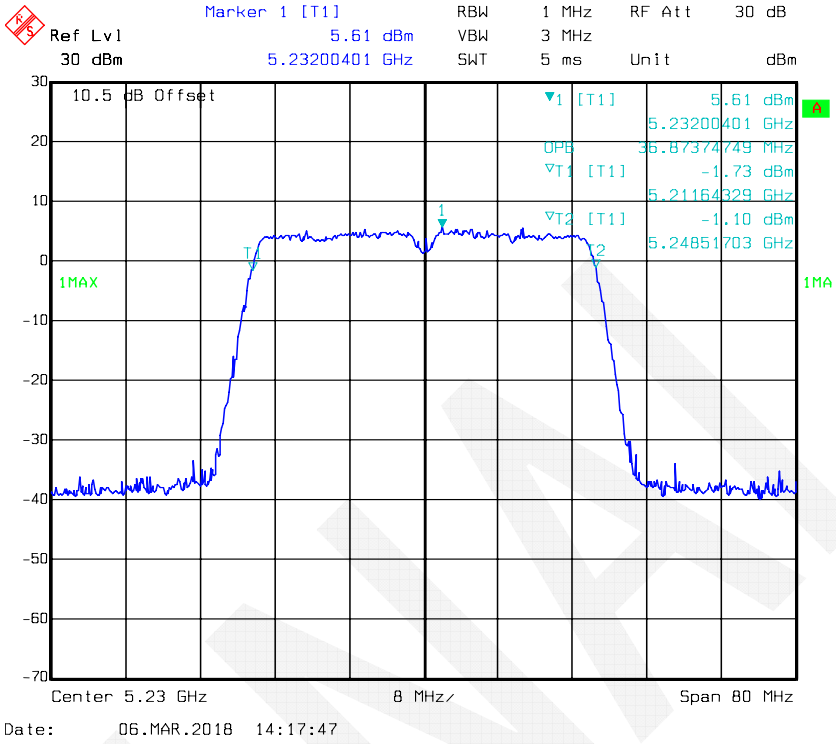
802.11ac40 mode, 99% Occupied Bandwidth-5230 MHz, Antenna 1



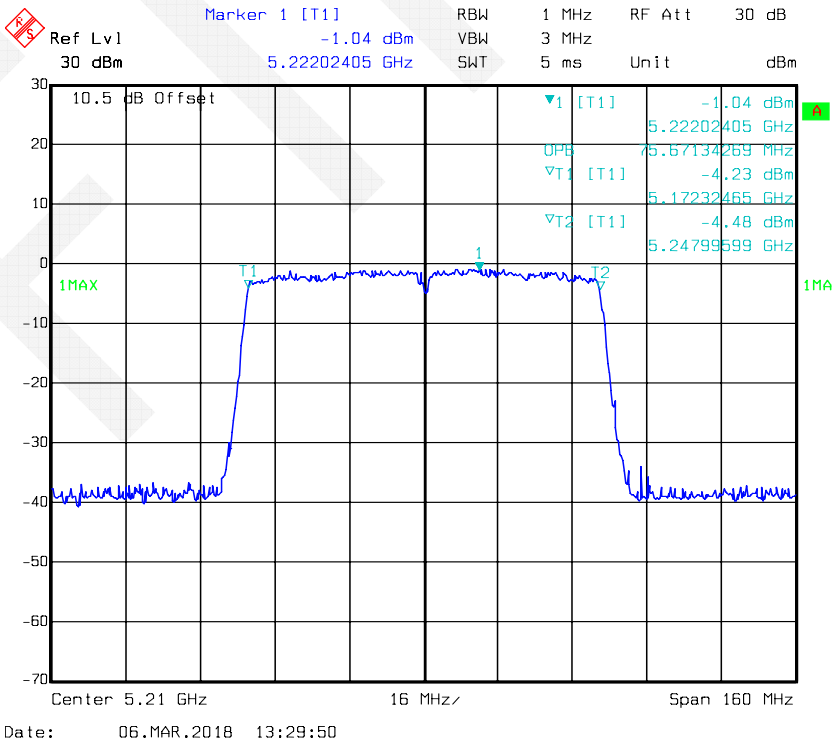
802.11ac40 mode, 99% Occupied Bandwidth-5190 MHz, Antenna 2



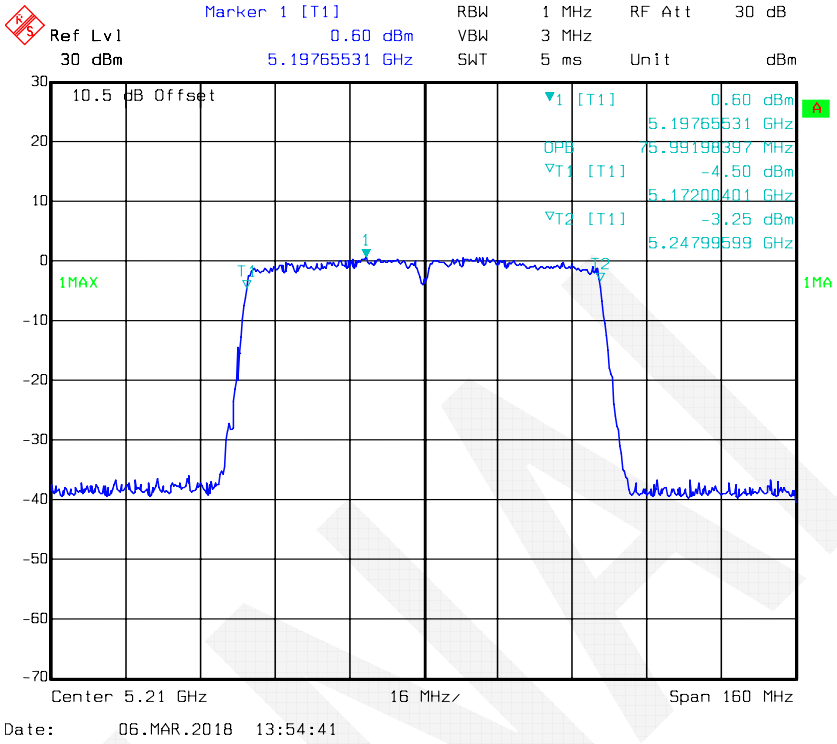
802.11ac40 mode, 99% Occupied Bandwidth-5230 MHz, Antenna 2



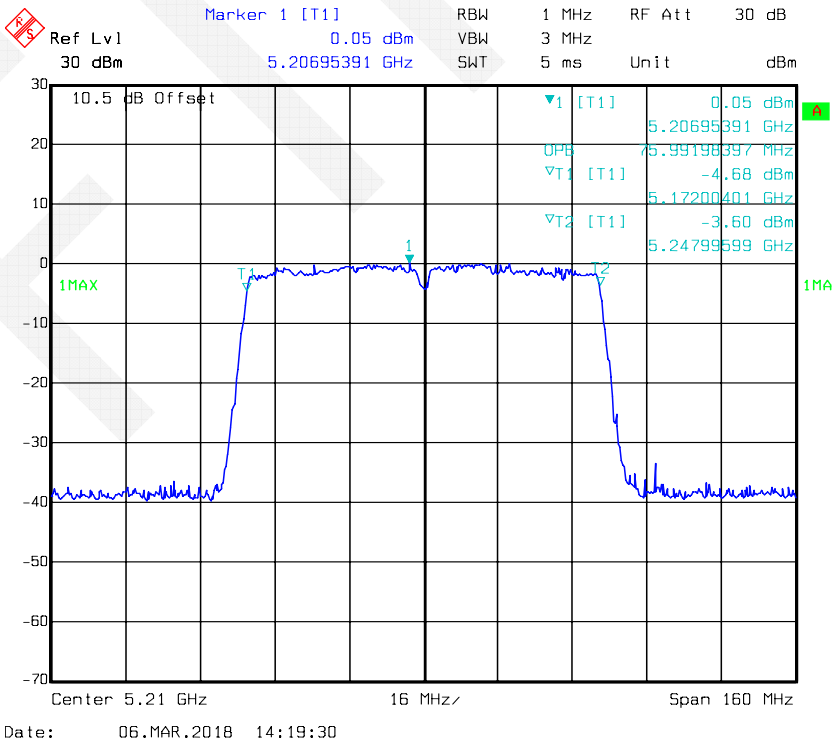
802.11ac80 mode, 99% Occupied Bandwidth-5210 MHz, Antenna 0



802.11ac80 mode, 99% Occupied Bandwidth-5210 MHz, Antenna 1



802.11ac80 mode, 99% Occupied Bandwidth-5210 MHz, Antenna 1

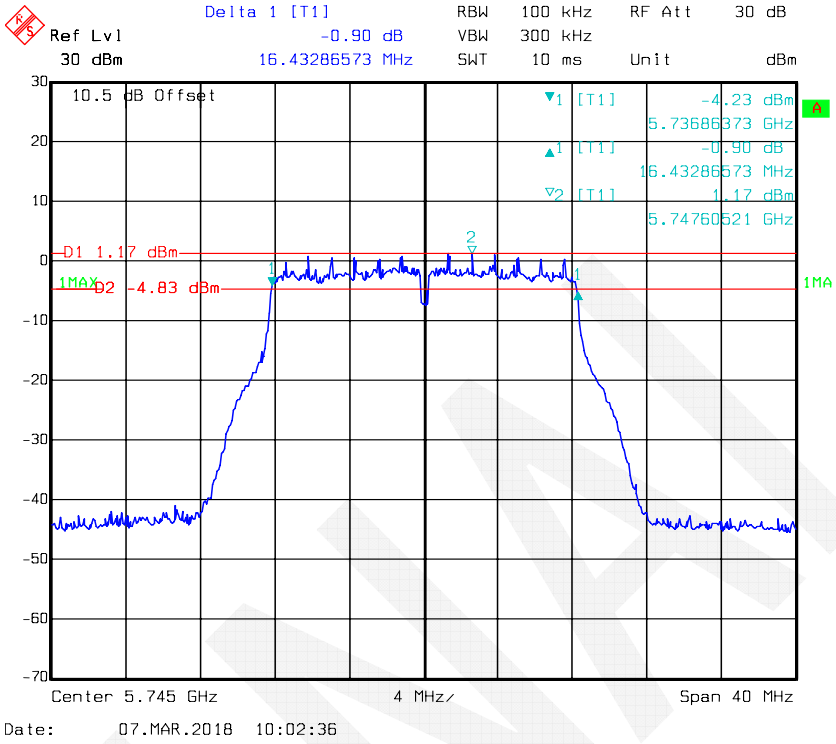


For 5725-5850 MHz:

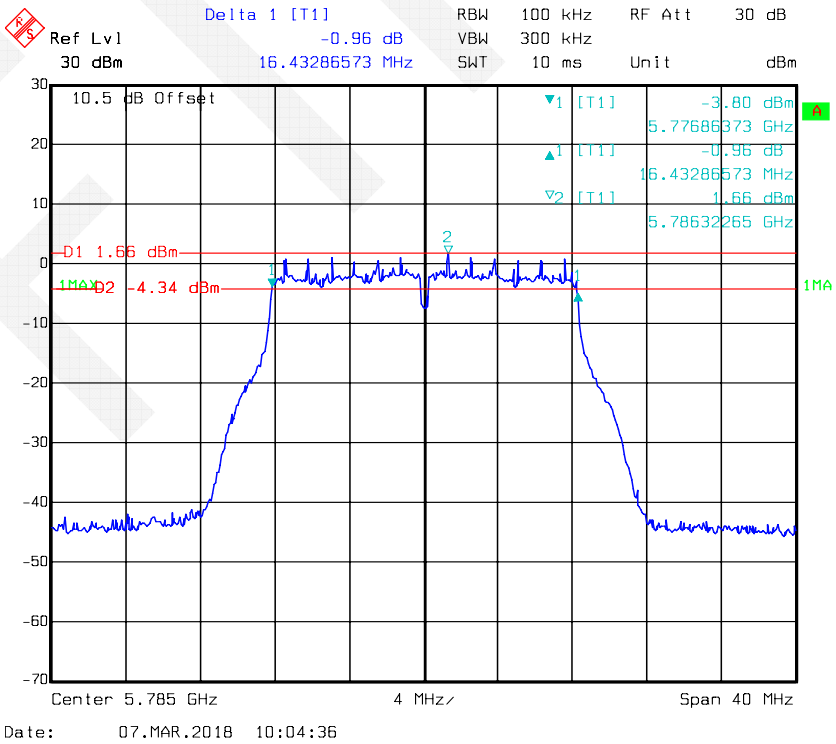
Mode	Channel	Frequency (MHz)	6dB Bandwidth (MHz)			99% Occupied Bandwidth (MHz)		
			Antenna 0	Antenna 1	Antenna 2	Antenna 0	Antenna 1	Antenna 2
802.11a	Low	5745	16.43	16.43	16.43	17.07	17.07	17.07
	Middle	5785	16.43	16.35	16.43	17.15	17.07	17.07
	High	5825	16.51	16.43	16.43	17.07	17.07	17.15
802.11n-HT20	Low	5745	17.64	17.64	17.64	18.12	18.12	18.12
	Middle	5785	17.64	17.64	17.64	18.12	18.12	18.04
	High	5825	17.64	17.64	17.64	18.12	18.12	18.12
802.11n-HT40	Low	5755	36.39	36.39	36.55	36.87	37.03	36.87
	High	5795	36.55	36.39	36.39	36.87	37.03	36.87
802.11ac20	Low	5745	17.64	17.64	17.64	18.12	18.12	18.12
	Middle	5785	17.64	17.64	17.64	18.04	18.20	18.20
	High	5825	17.64	17.64	17.64	18.12	18.12	18.04
802.11ac40	Low	5755	36.55	36.39	36.55	36.87	36.87	37.03
	High	5795	36.55	36.39	36.39	36.87	36.87	36.87
802.11ac80	-	5775	76.31	76.31	76.31	76.31	75.99	75.67

Note: the 99% Occupied Bandwidth doesn't extend U-NII-2C band 5470-5725MHz.

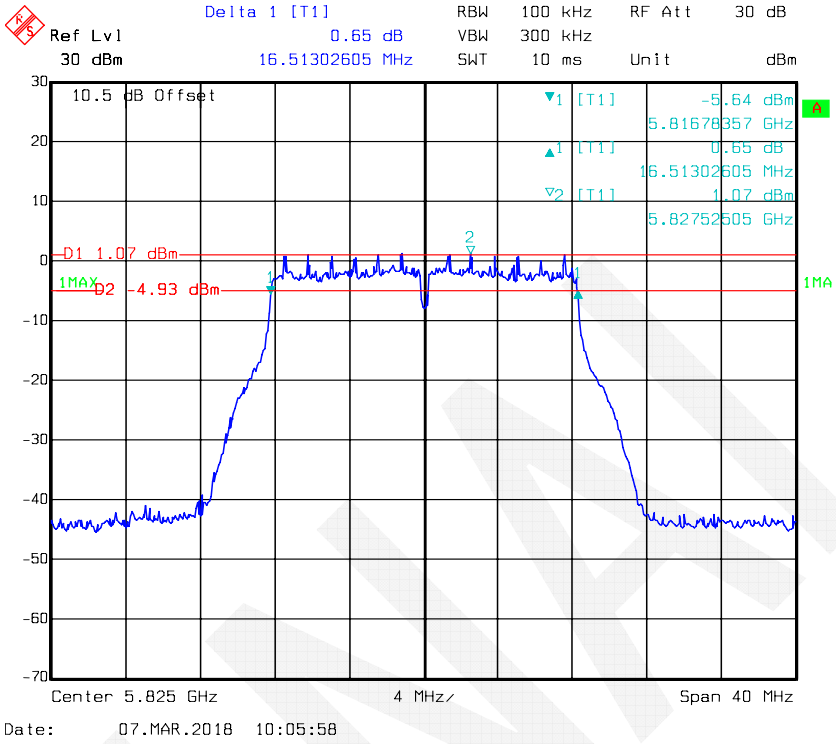
802.11a mode, 6 dB Bandwidth-5745 MHz, Antenna 0



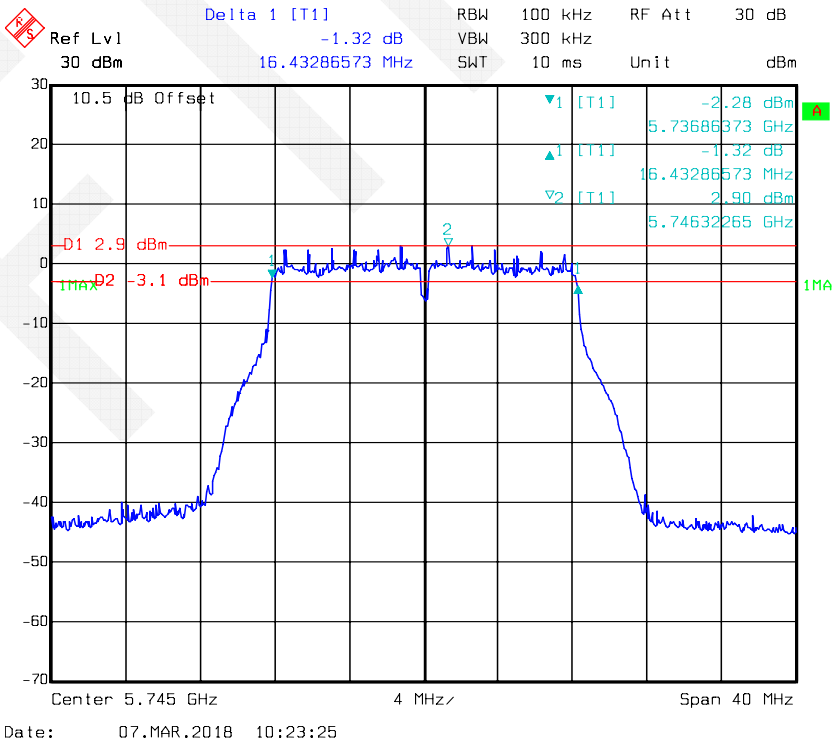
802.11a mode, 6 dB Bandwidth-5785 MHz, Antenna 0



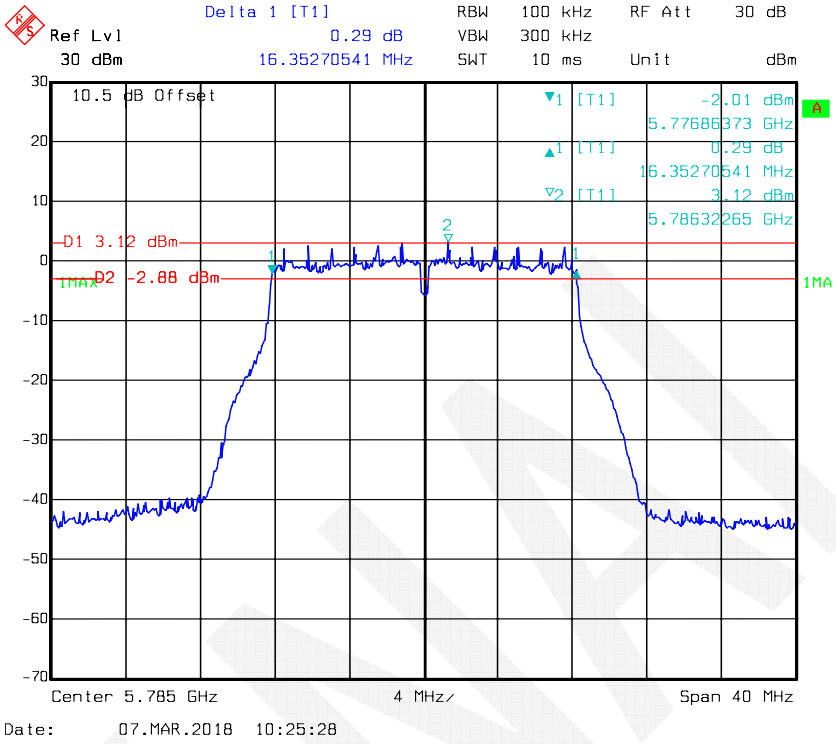
802.11a mode, 6 dB Bandwidth-5825 MHz, Antenna 0



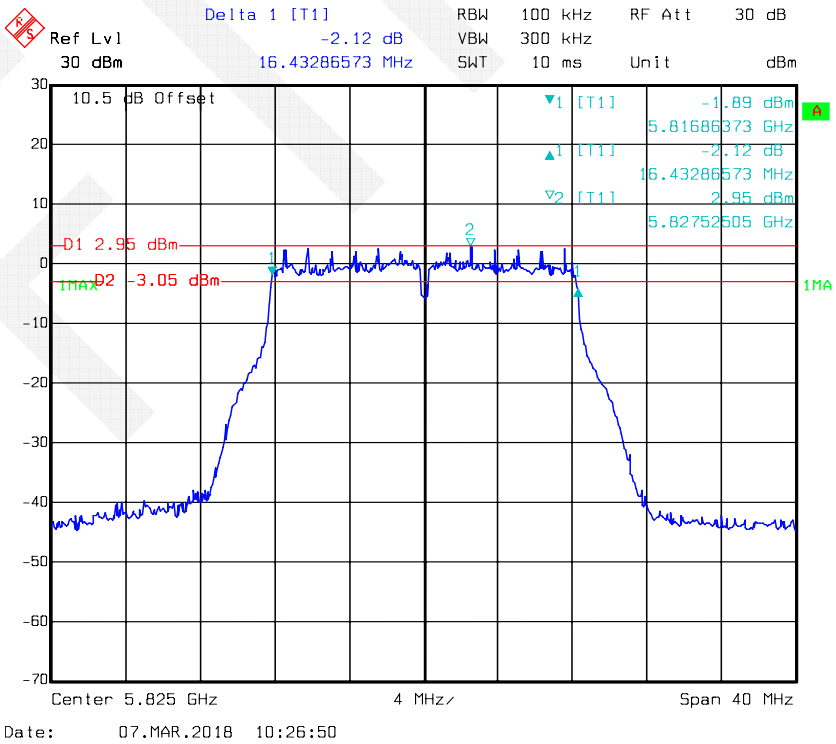
802.11a mode, 6 dB Bandwidth-5745 MHz, Antenna 1



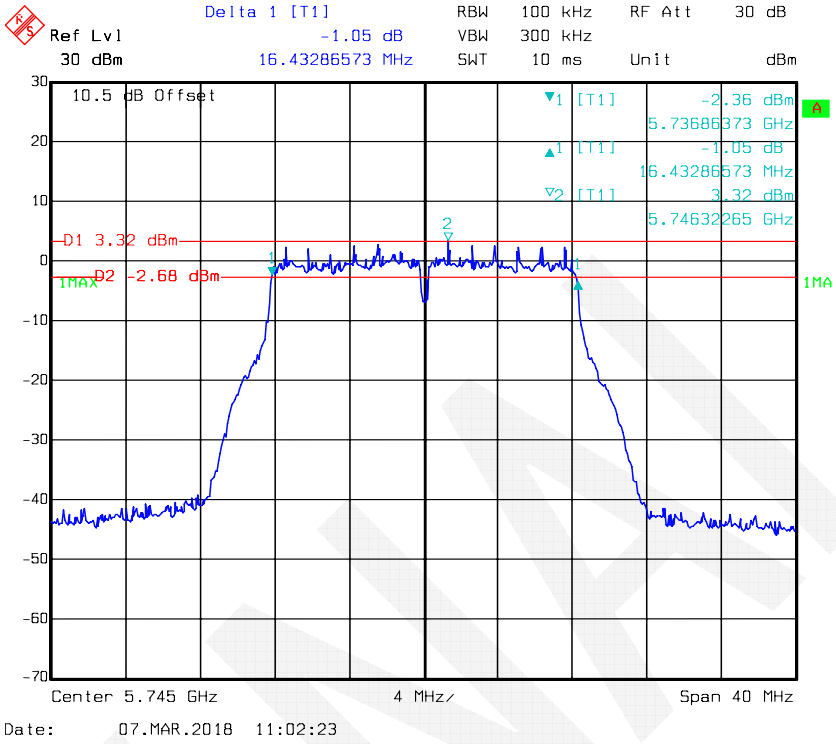
802.11a mode, 6 dB Bandwidth-5785 MHz, Antenna 1



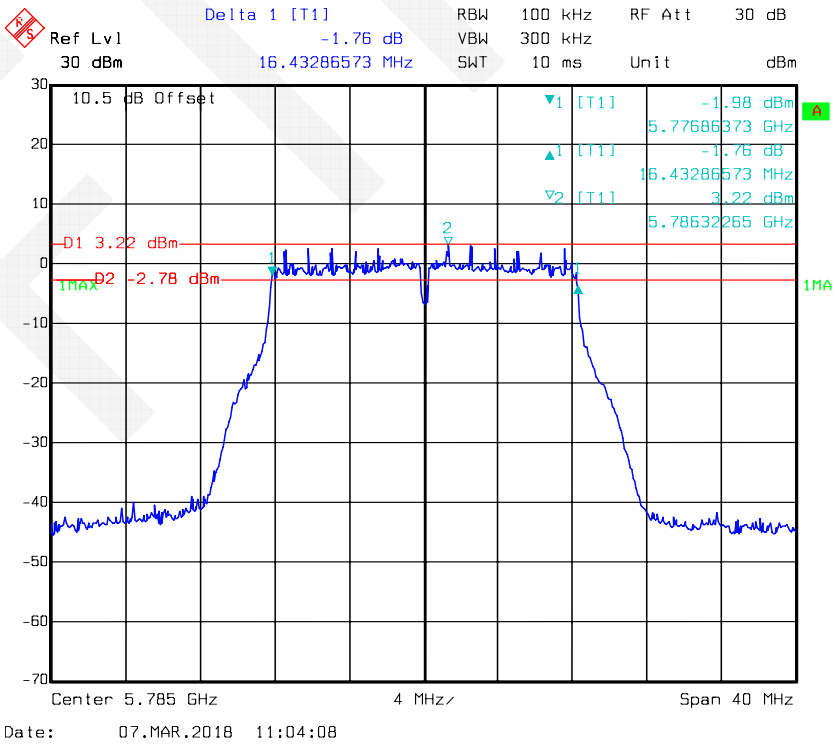
802.11a mode, 6 dB Bandwidth-5825 MHz, Antenna 1



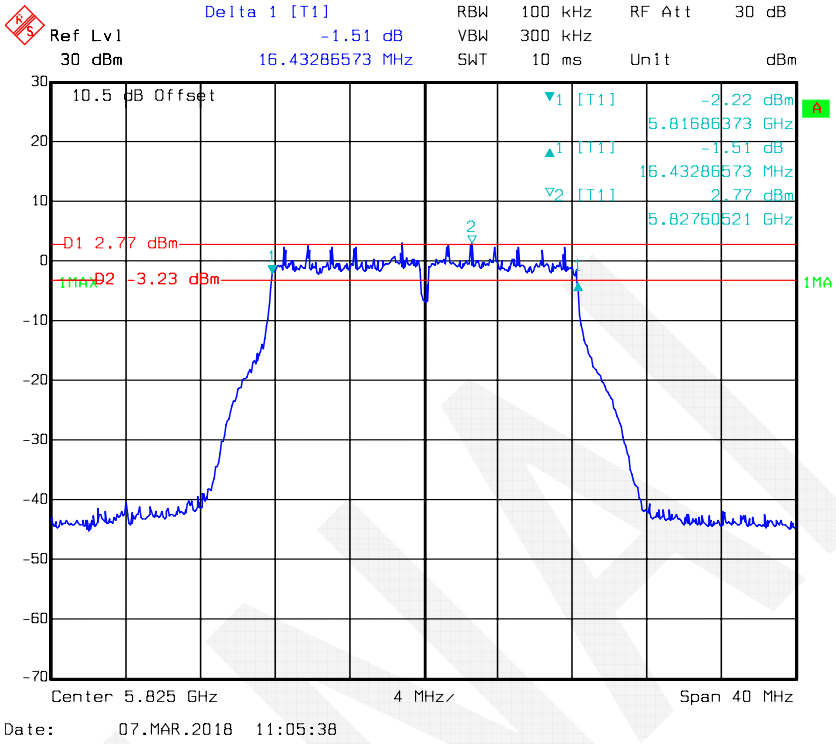
802.11a mode, 6 dB Bandwidth-5745 MHz, Antenna 2



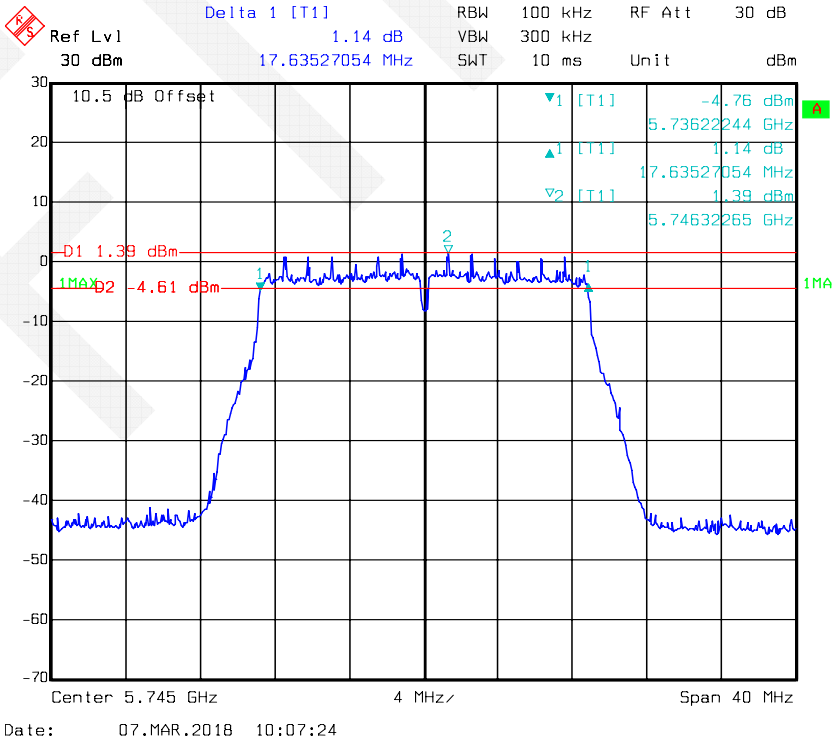
802.11a mode, 6 dB Bandwidth-5785 MHz, Antenna 2



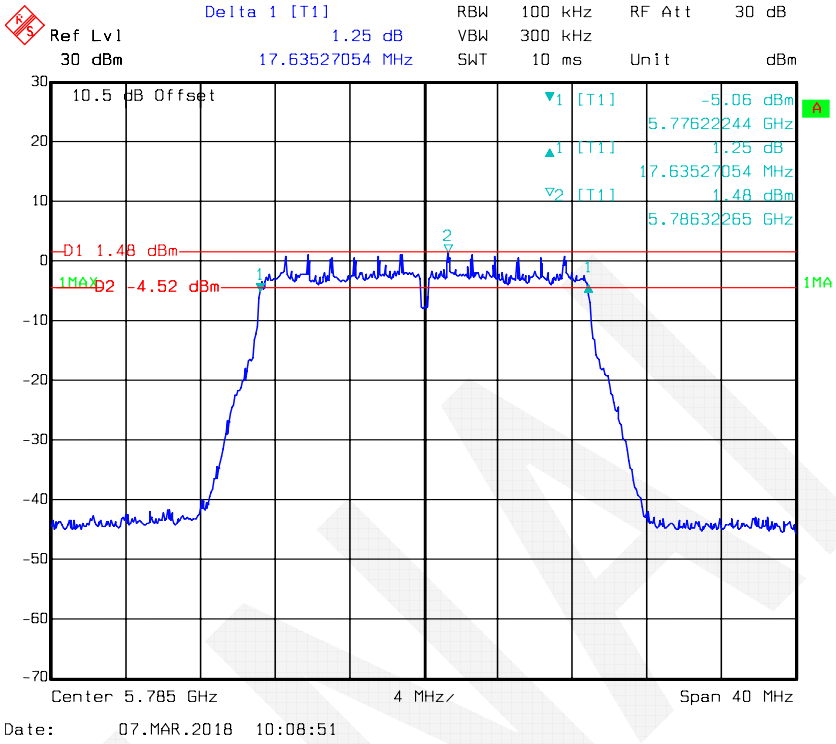
802.11a mode, 6 dB Bandwidth-5825 MHz, Antenna 2



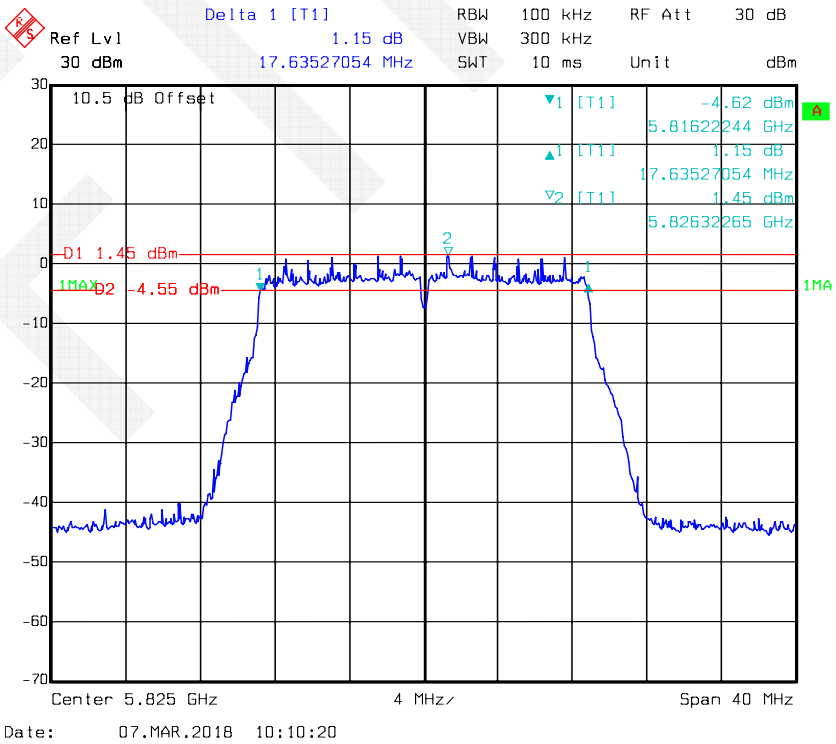
802.11n-HT20 mode, 6 dB Bandwidth-5745 MHz, Antenna 0



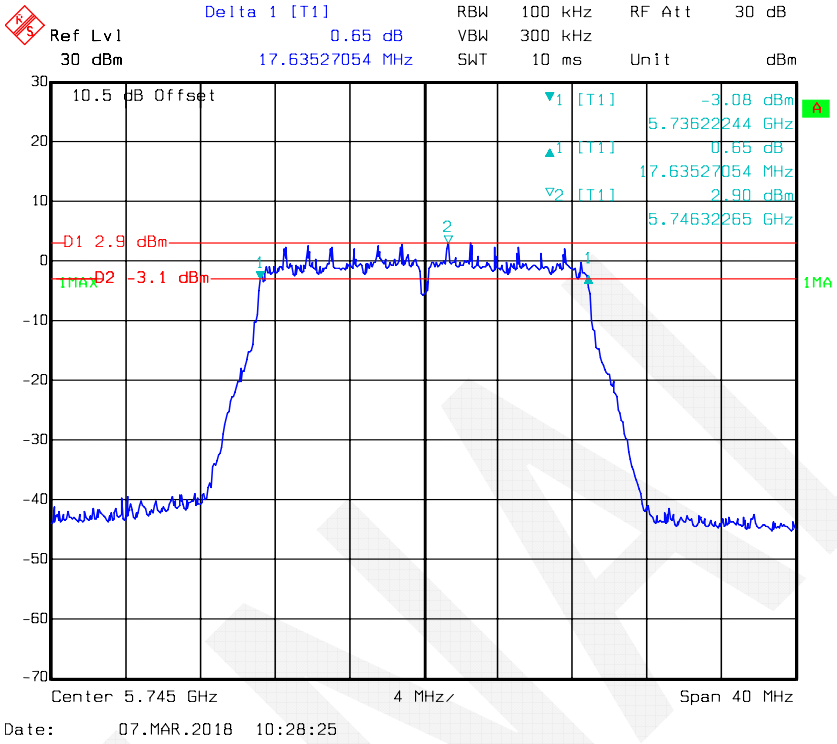
802.11n-HT20 mode, 6 dB Bandwidth-5785 MHz, Antenna 0



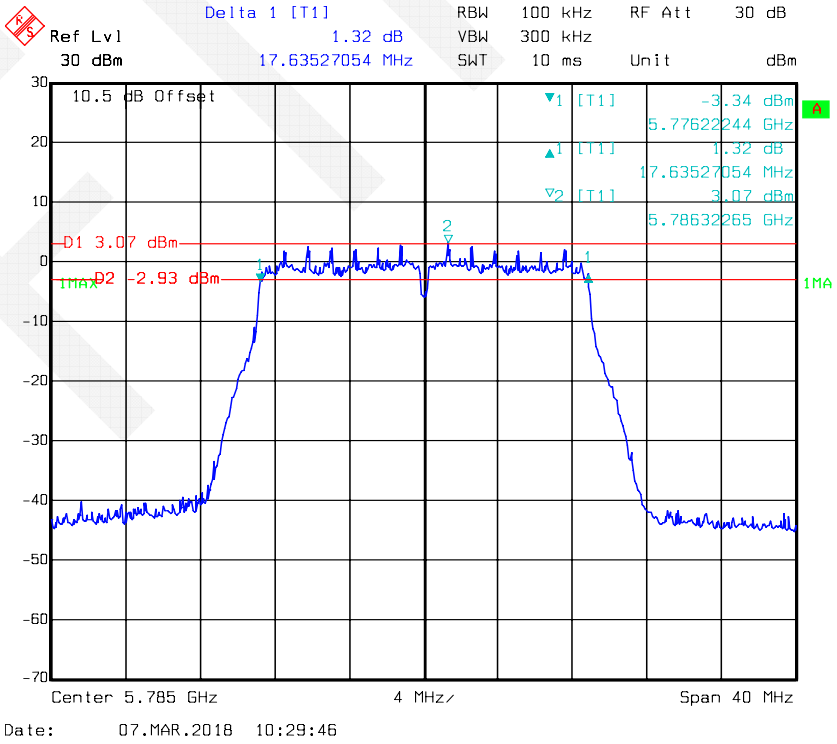
802.11n-HT20 mode, 6 dB Bandwidth-5825 MHz, Antenna 0



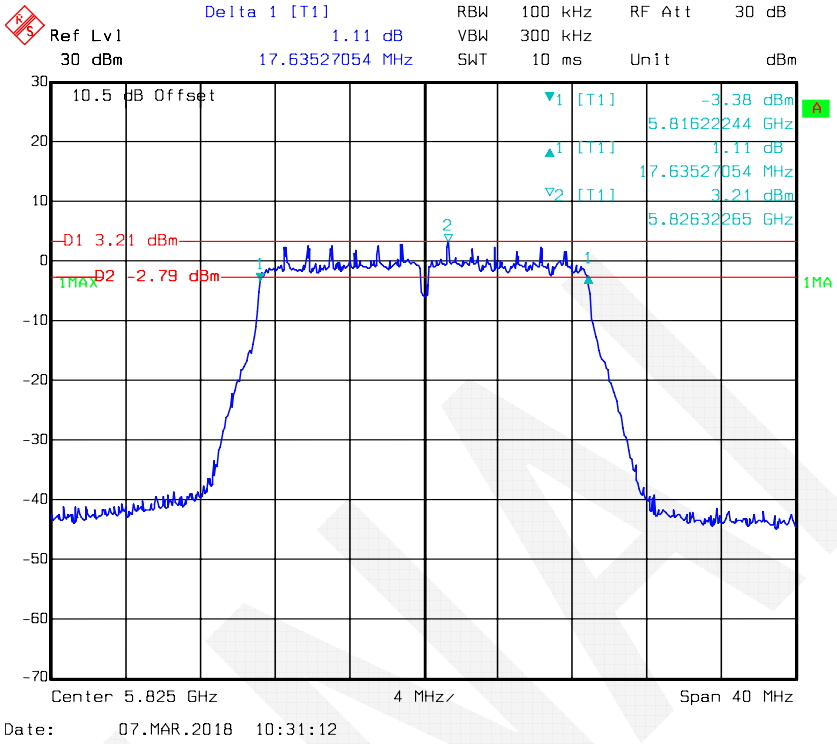
802.11n-HT20 mode, 6 dB Bandwidth-5745 MHz, Antenna 1



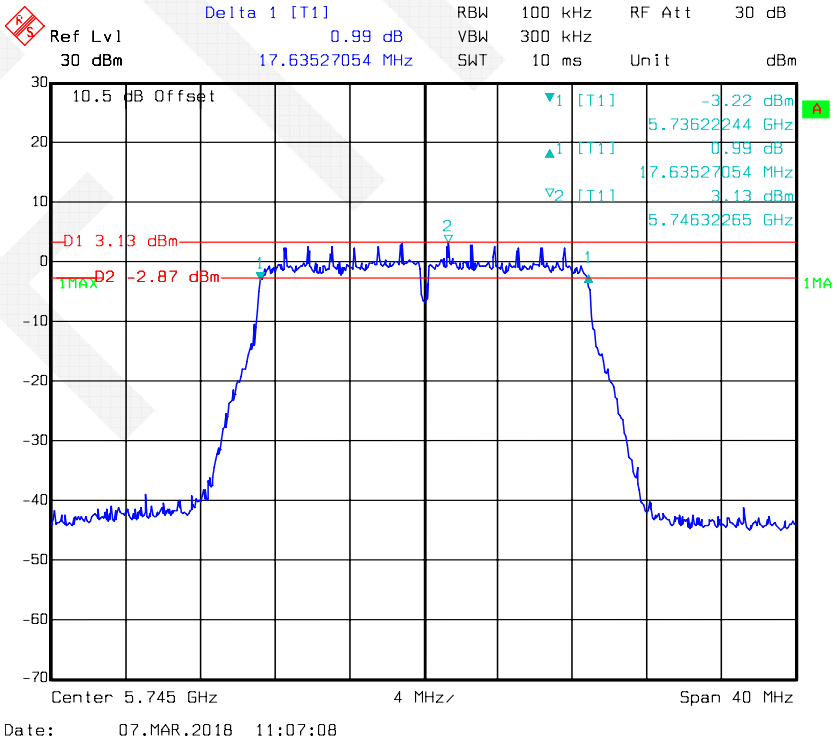
802.11n-HT20 mode, 6 dB Bandwidth-5785 MHz, Antenna 1



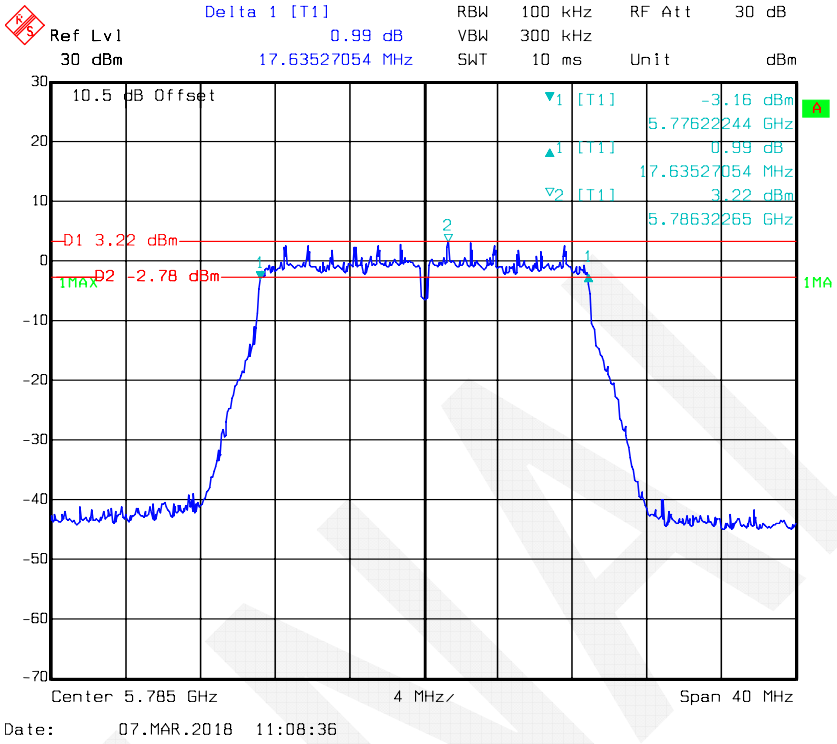
802.11n-HT20 mode, 6 dB Bandwidth-5825 MHz, Antenna 1



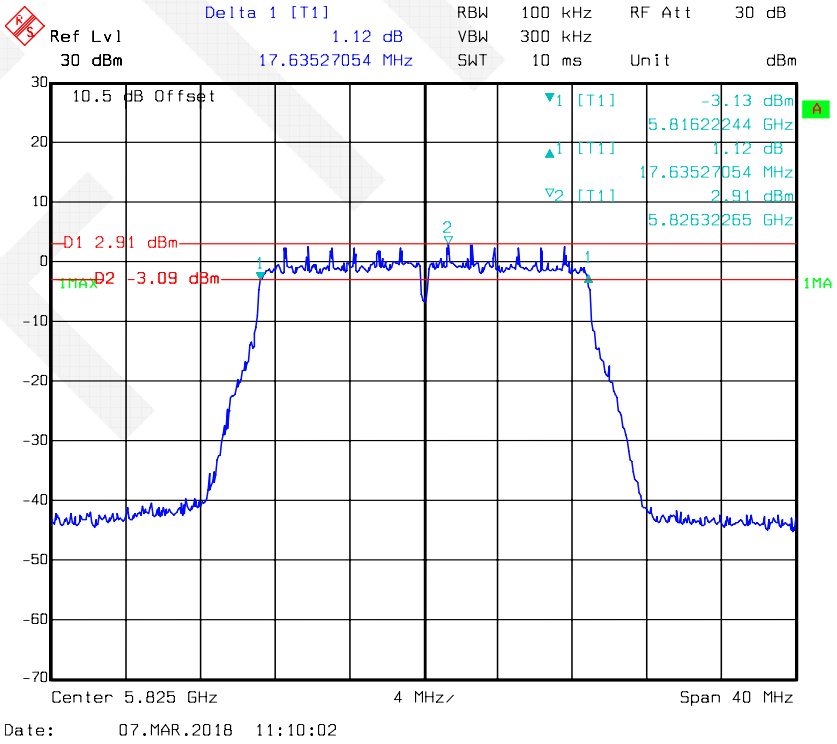
802.11n-HT20 mode, 6 dB Bandwidth-5745 MHz, Antenna 2



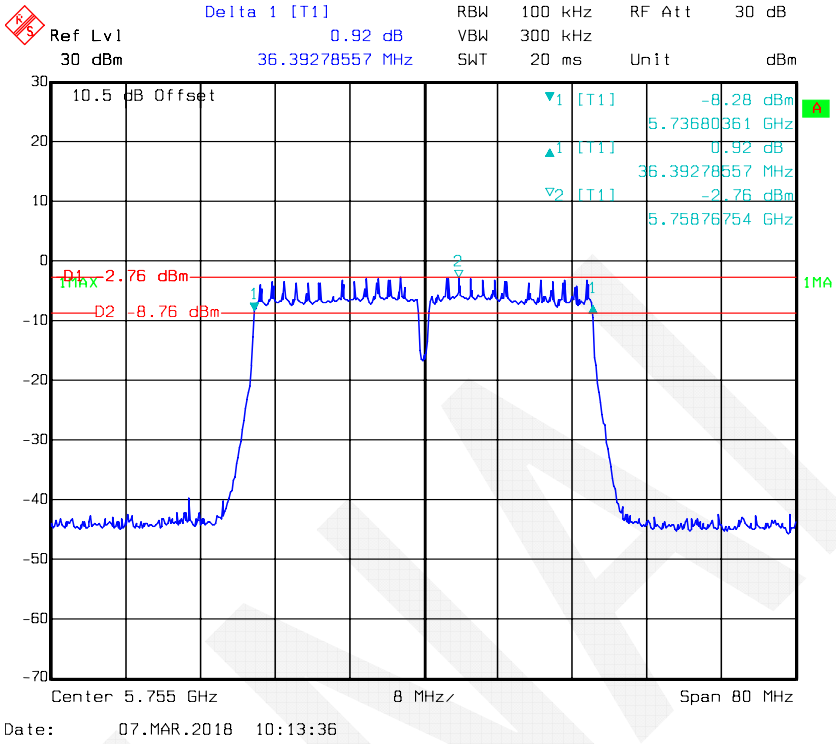
802.11n-HT20 mode, 6 dB Bandwidth-5785 MHz, Antenna 2



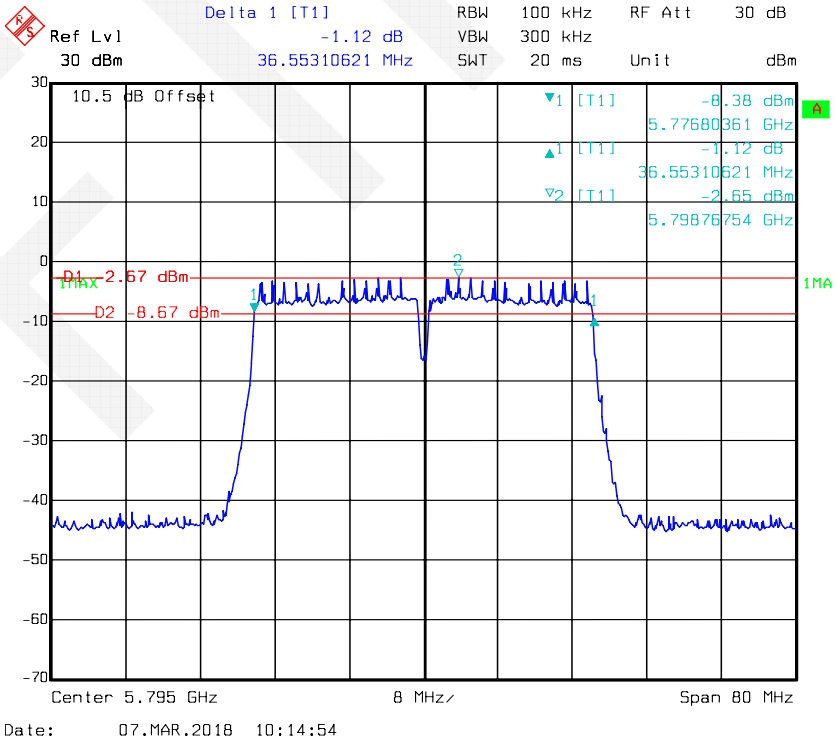
802.11n-HT20 mode, 6 dB Bandwidth-5825 MHz, Antenna 2



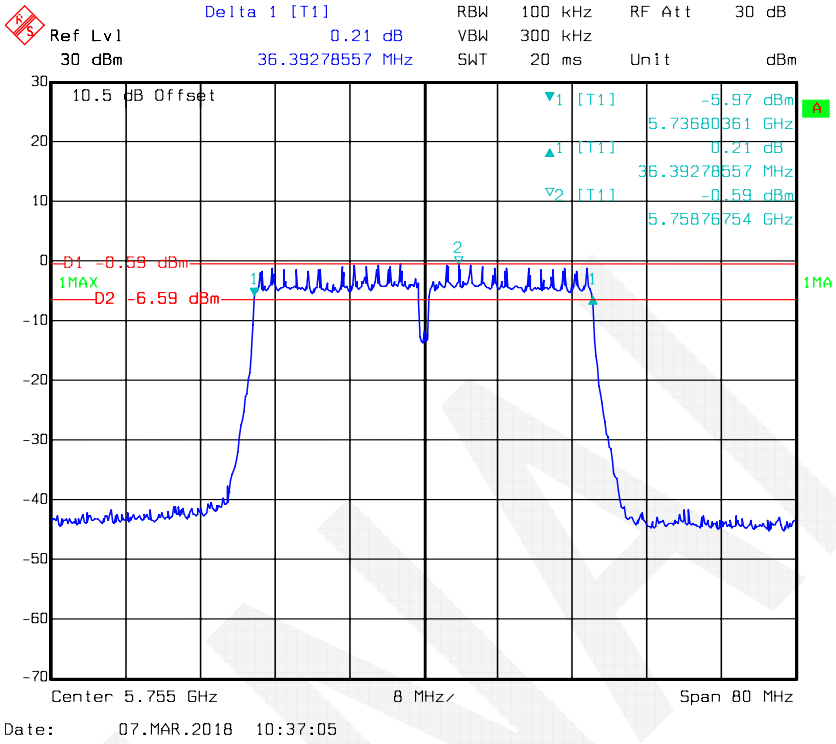
802.11n-HT40 mode, 6 dB Bandwidth-5755 MHz, Antenna 0



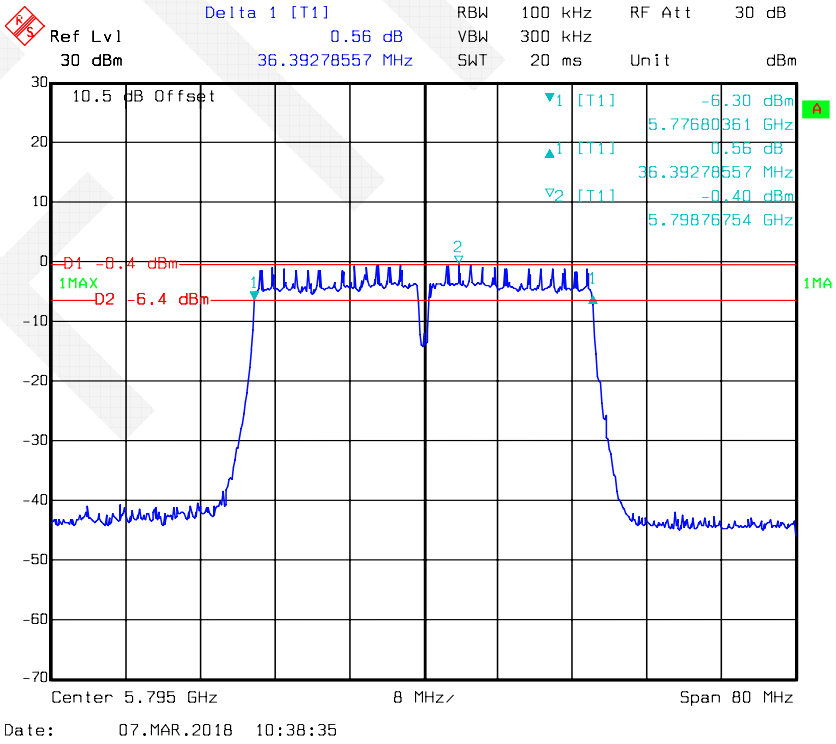
802.11n-HT40 mode, 6 dB Bandwidth-5795 MHz, Antenna 0



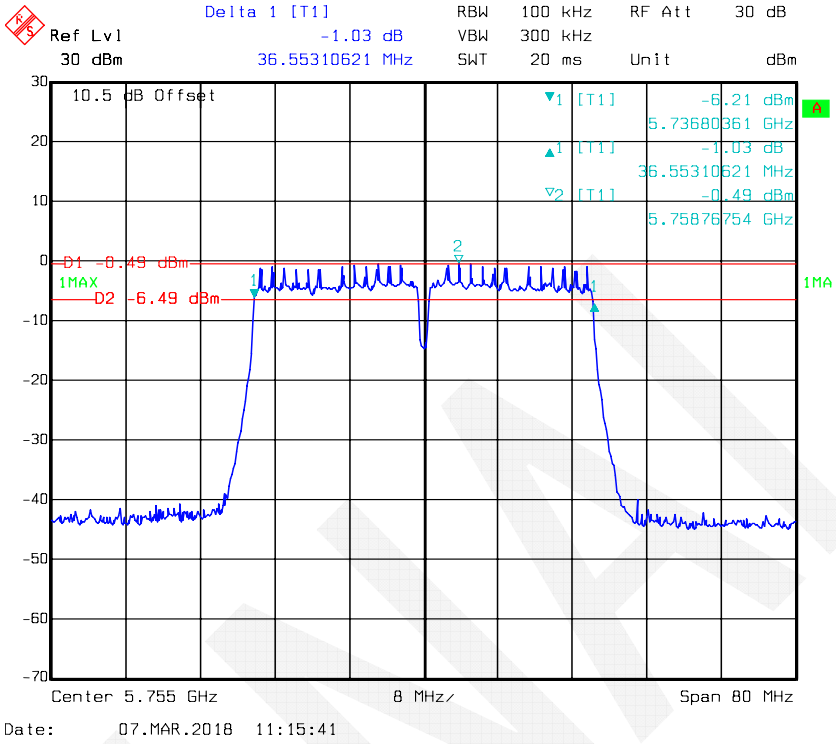
802.11n-HT40 mode, 6 dB Bandwidth-5755 MHz, Antenna 1



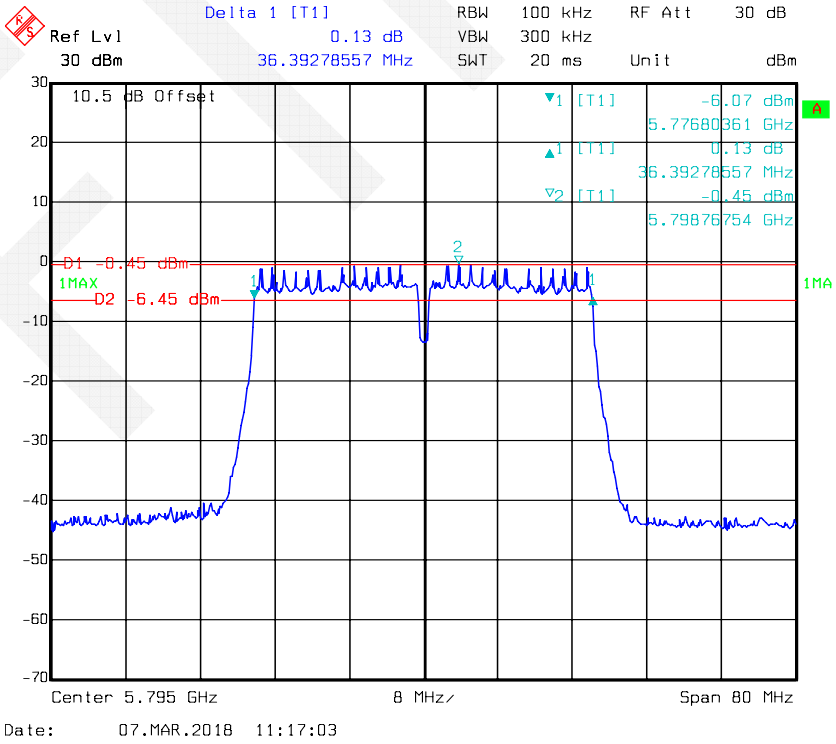
802.11n-HT40 mode, 6 dB Bandwidth-5795 MHz, Antenna 1



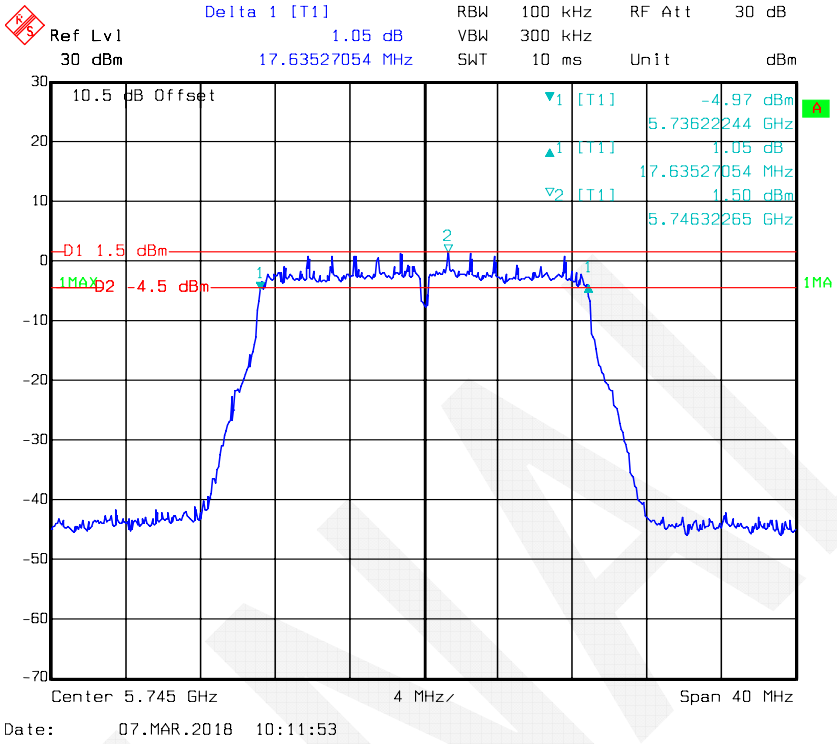
802.11n-HT40 mode, 6 dB Bandwidth-5755 MHz, Antenna 2



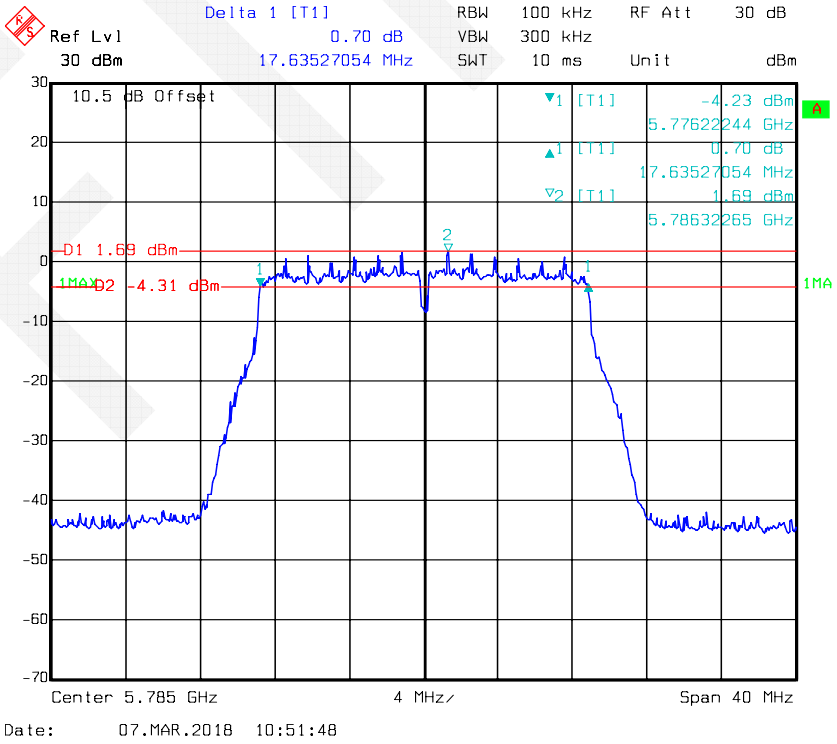
802.11n-HT40 mode, 6 dB Bandwidth-5795 MHz, Antenna 2



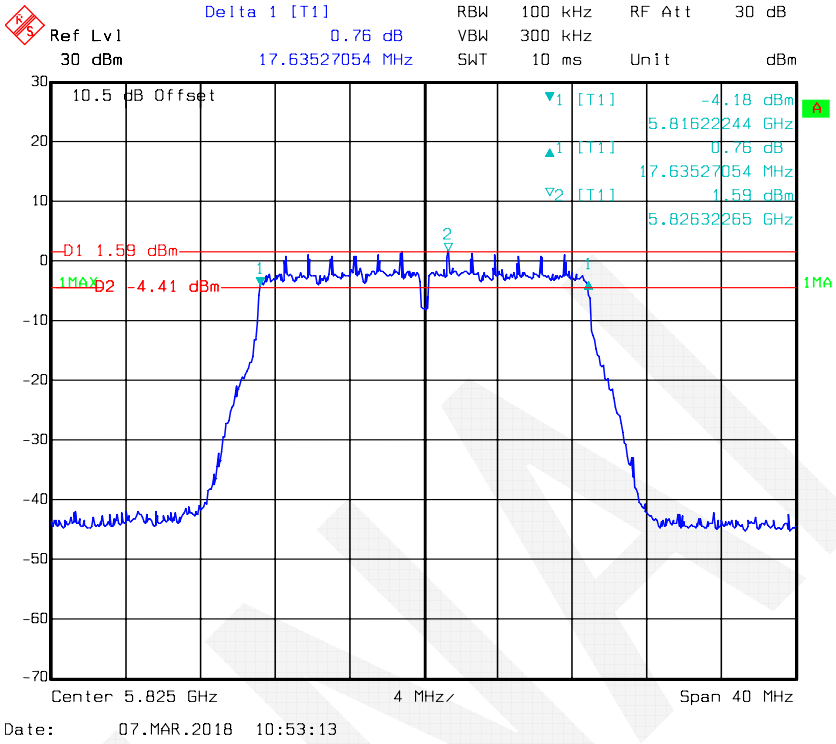
802.11ac20 mode, 6 dB Bandwidth-5745 MHz, Antenna 0



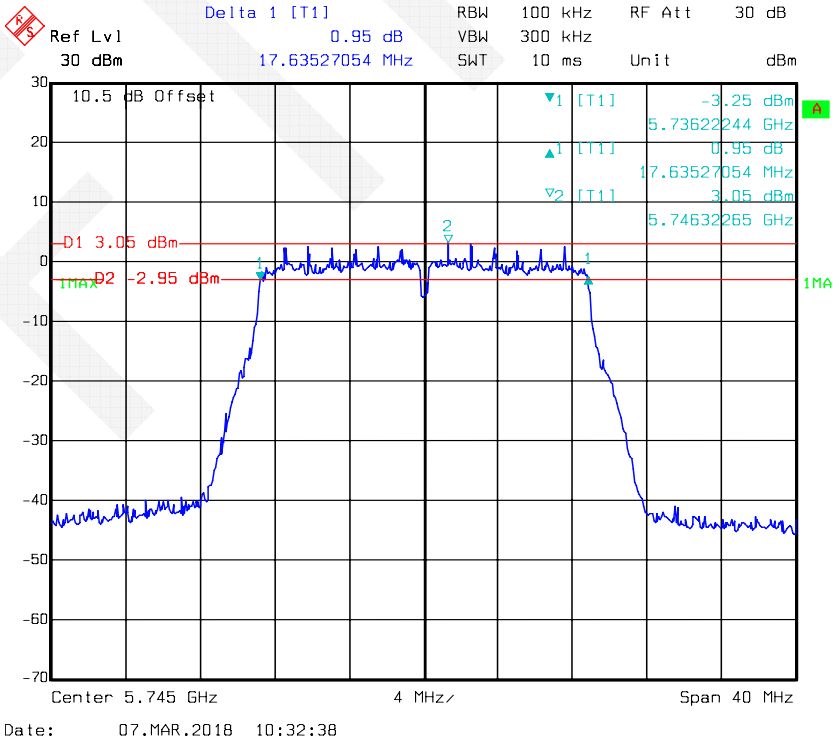
802.11ac20 mode, 6 dB Bandwidth-5785 MHz, Antenna 0



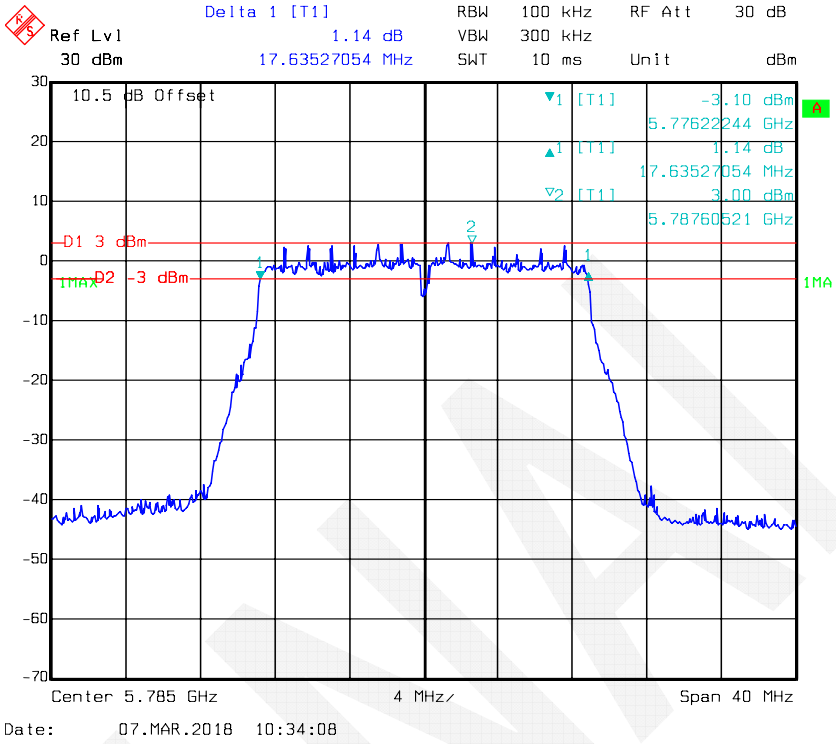
802.11ac20 mode, 6 dB Bandwidth-5825 MHz, Antenna 0



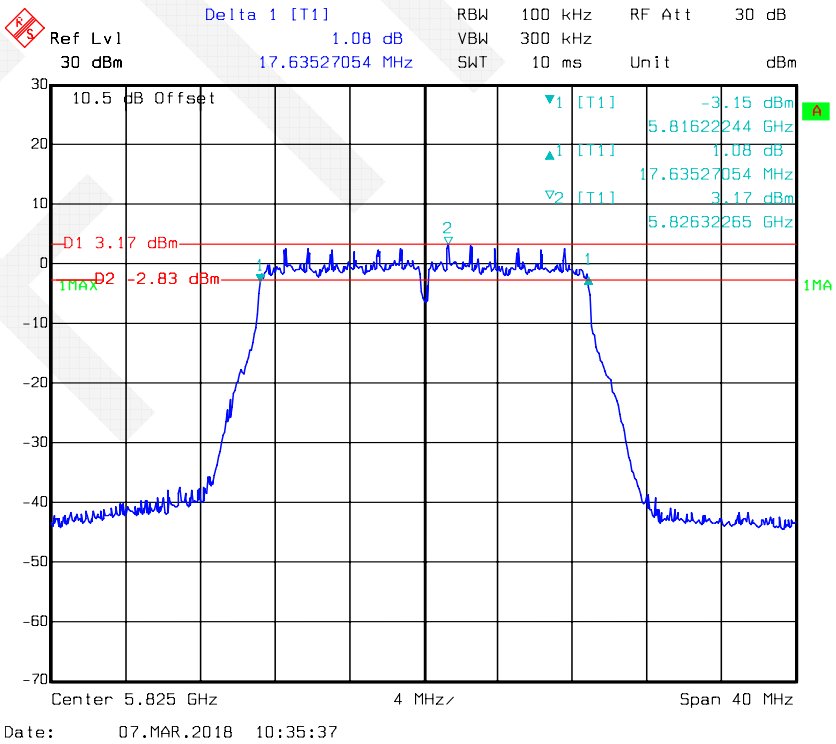
802.11ac20 mode, 6 dB Bandwidth-5745 MHz, Antenna 1



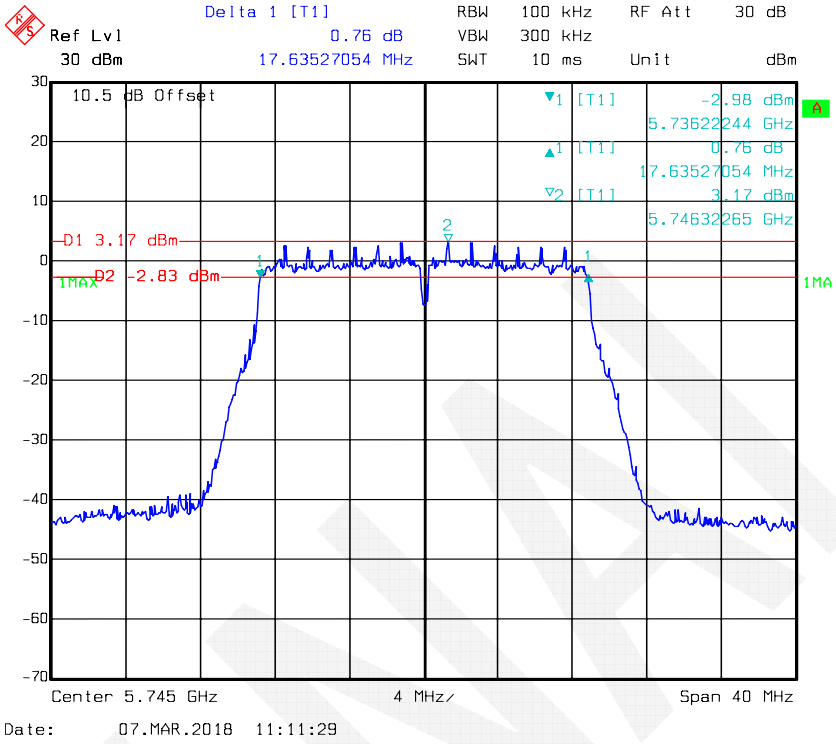
802.11ac20 mode, 6 dB Bandwidth-5785 MHz, Antenna 1



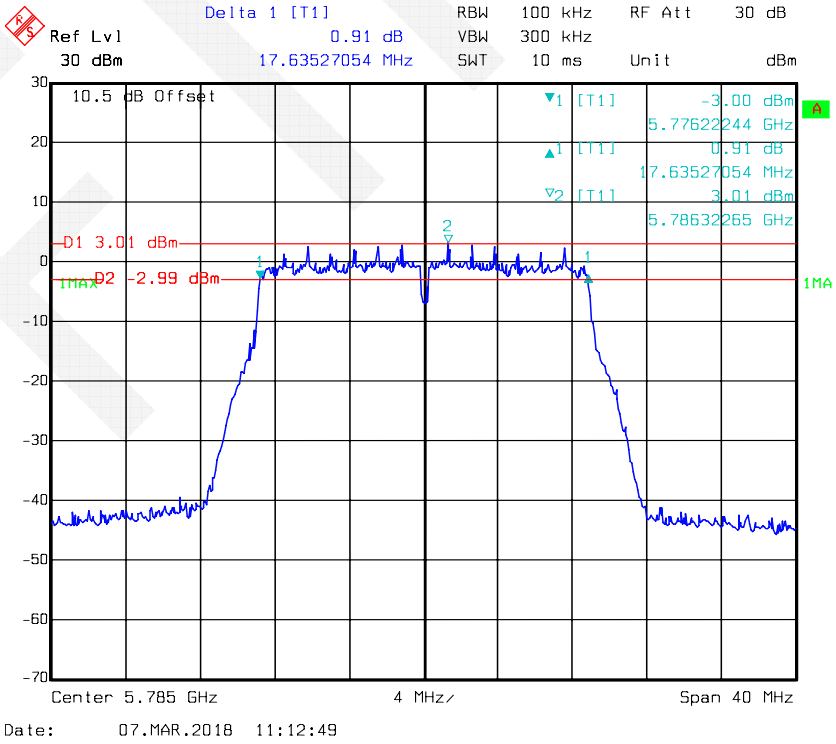
802.11ac20 mode, 6 dB Bandwidth-5825 MHz, Antenna 1



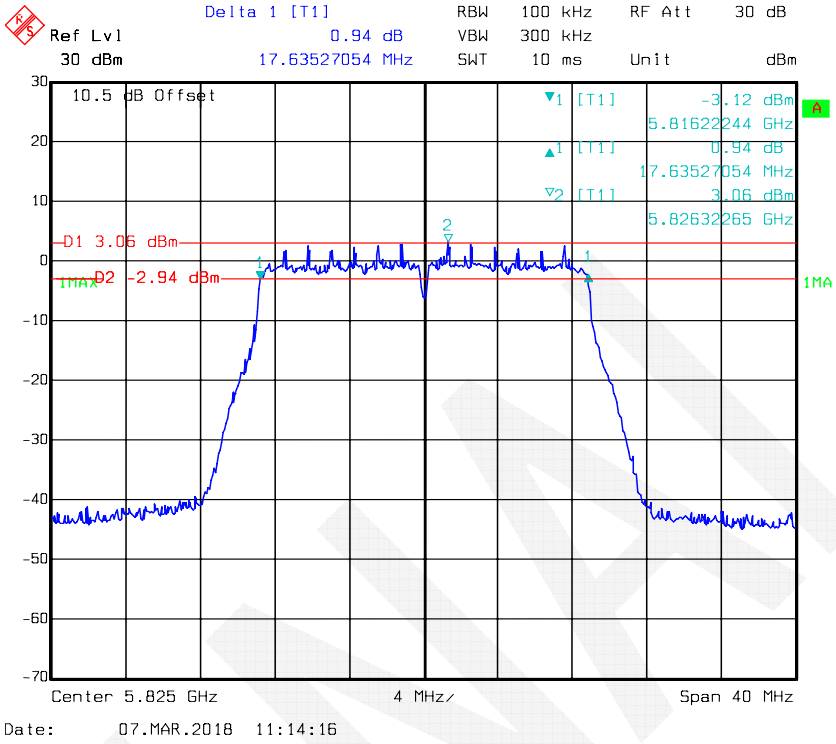
802.11ac20 mode, 6 dB Bandwidth-5745 MHz, Antenna 2



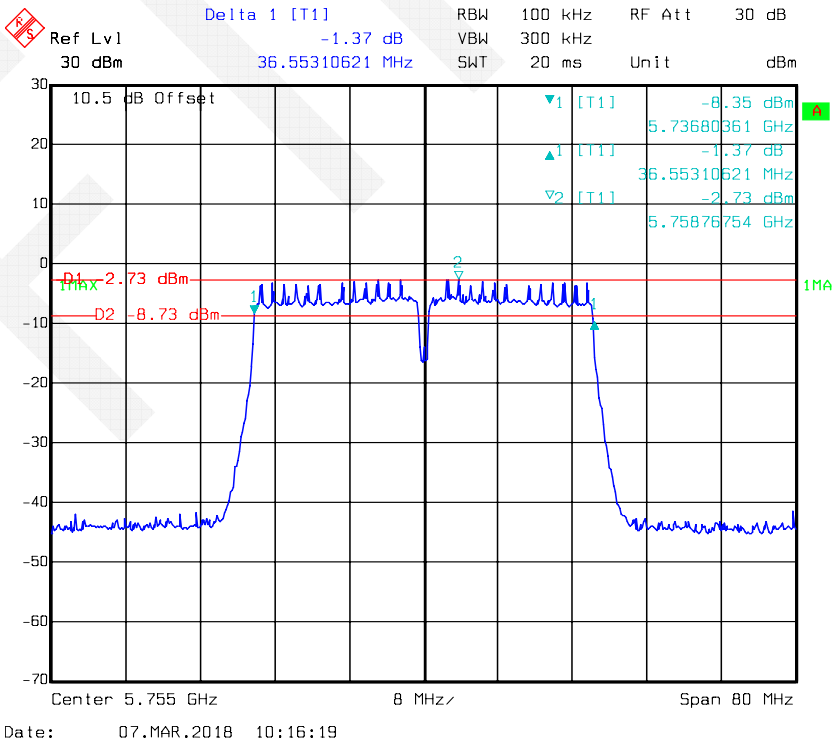
802.11ac20 mode, 6 dB Bandwidth-5785 MHz, Antenna 2



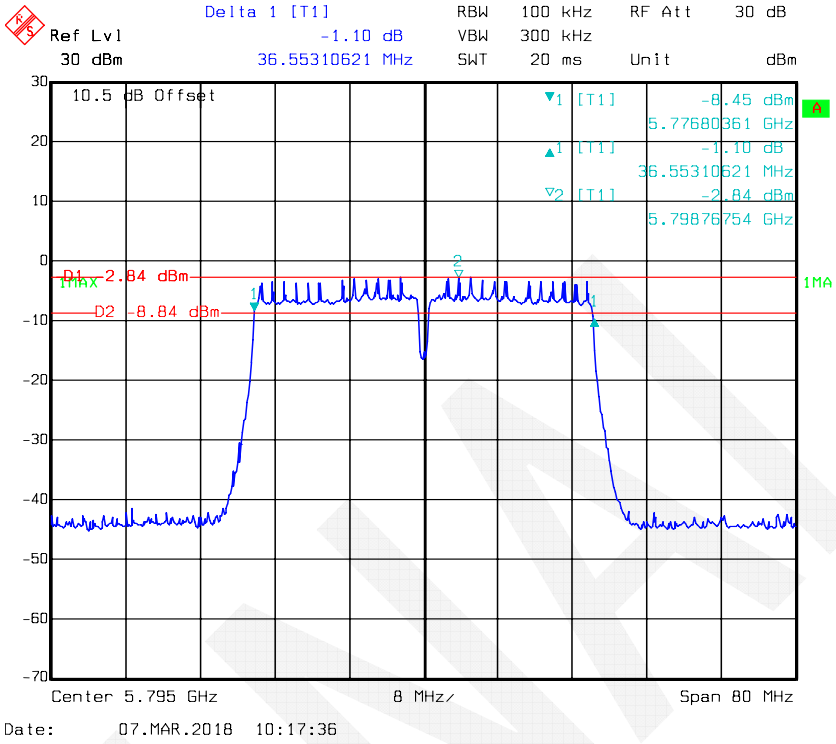
802.11ac20 mode, 6 dB Bandwidth-5825 MHz, Antenna 2



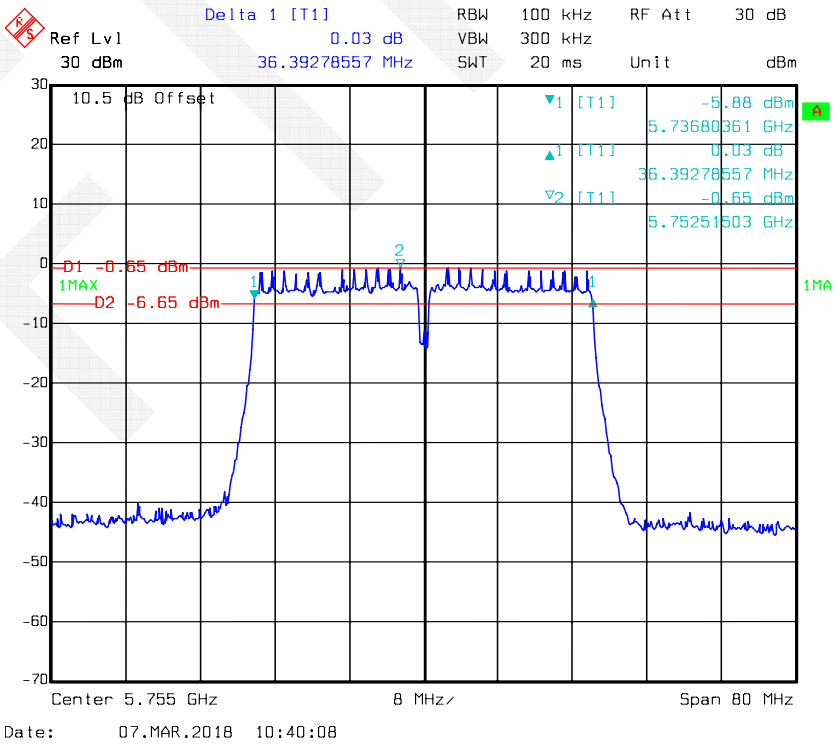
802.11ac40 mode, 6 dB Bandwidth-5755 MHz, Antenna 0



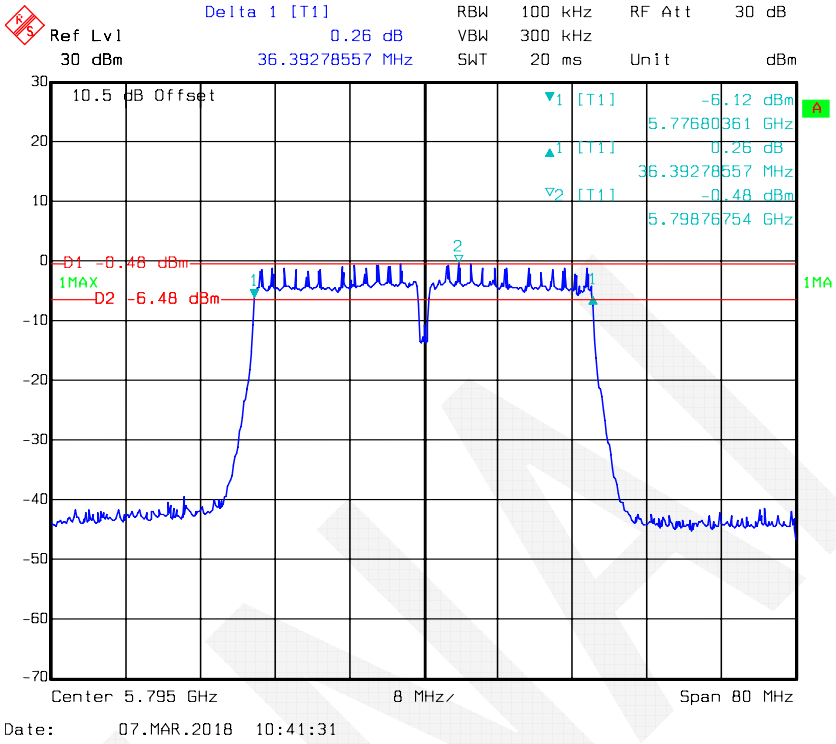
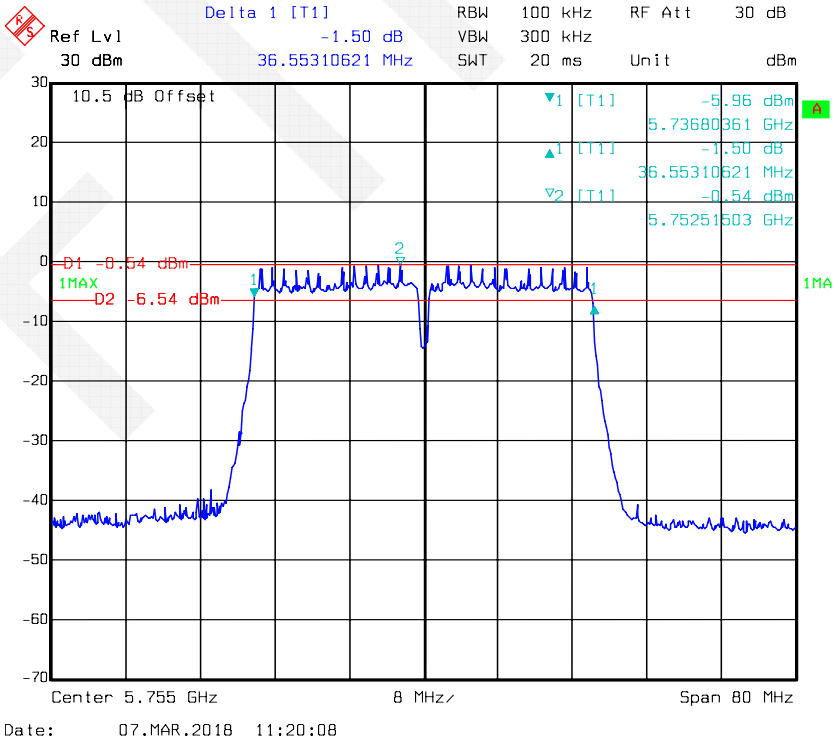
802.11ac40 mode, 6 dB Bandwidth-5795 MHz, Antenna 0



802.11ac40 mode, 6 dB Bandwidth-5755 MHz, Antenna 1



802.11ac40 mode, 6 dB Bandwidth-5795 MHz, Antenna 1



802.11ac40 mode, 6 dB Bandwidth-5755 MHz, Antenna 2