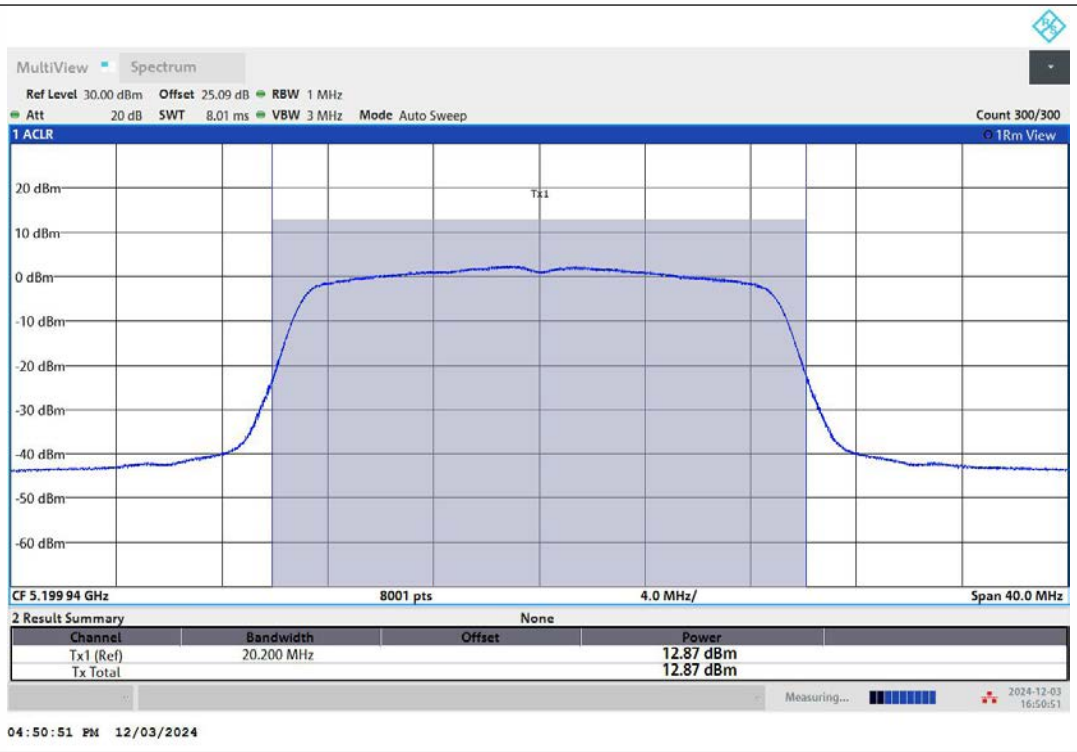
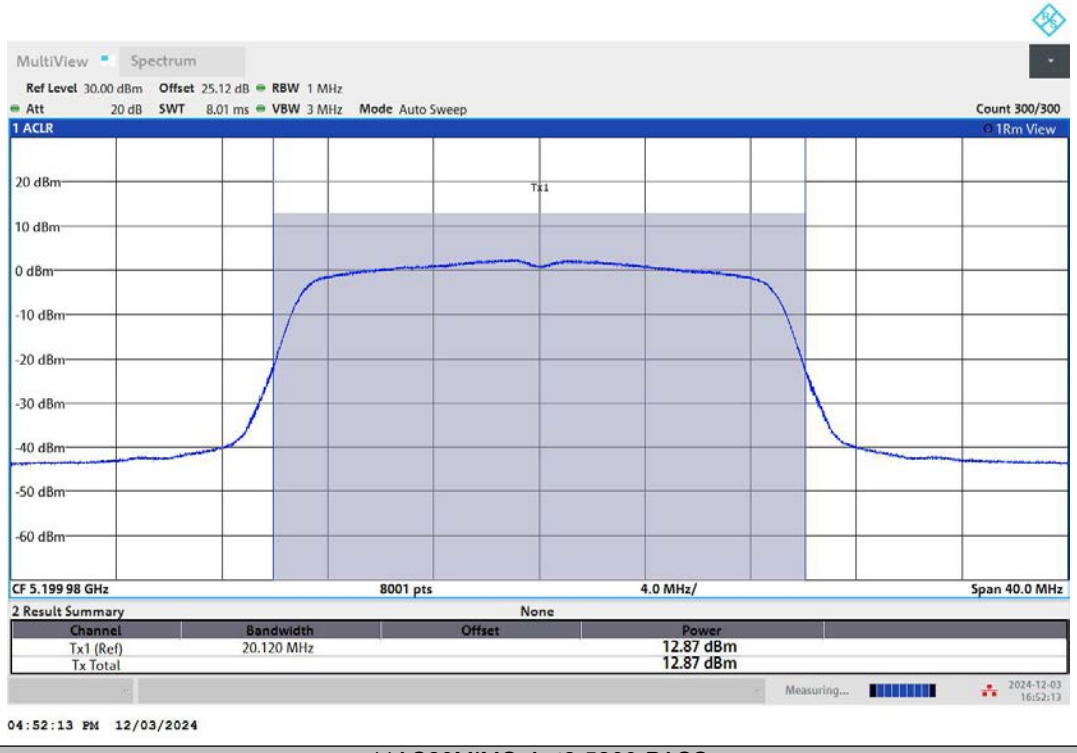
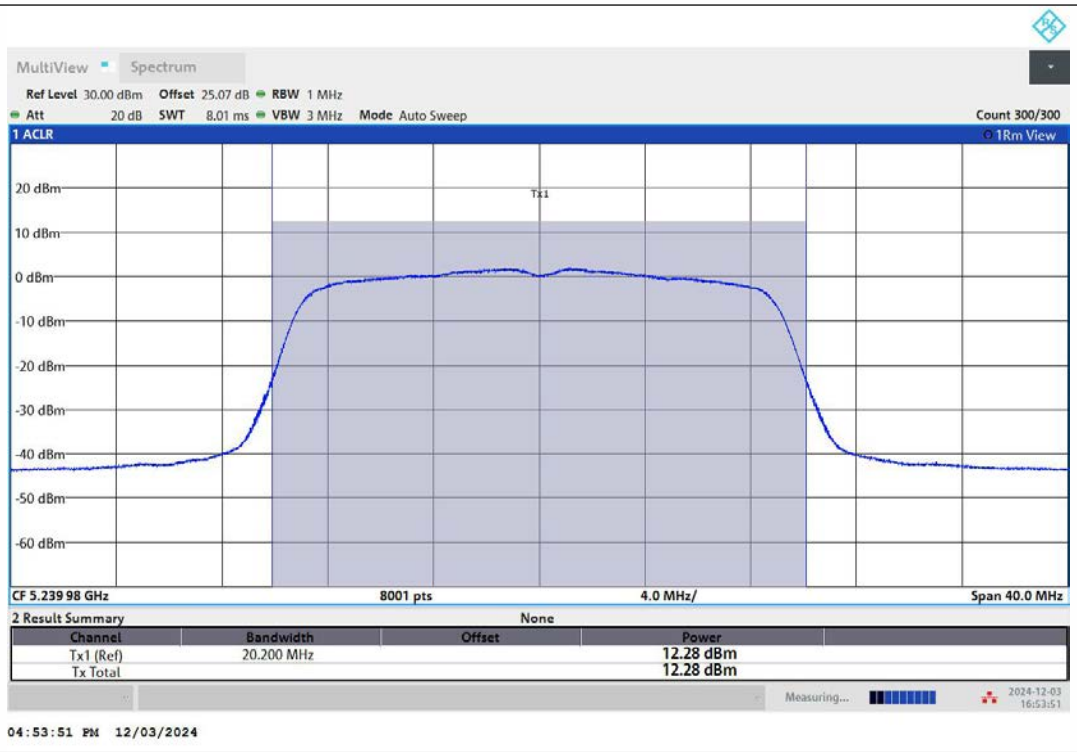


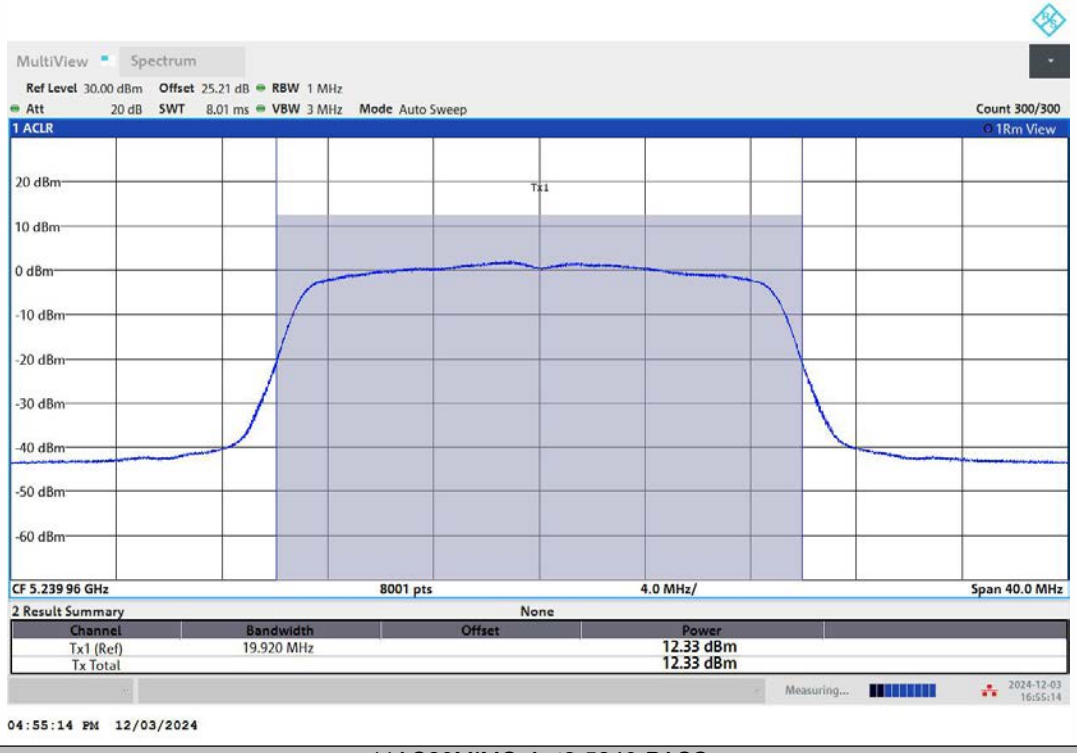
11AC20MIMO-Ant1-5200-PASS



11AC20MIMO-Ant2-5200-PASS



11AC20MIMO-Ant1-5240-PASS



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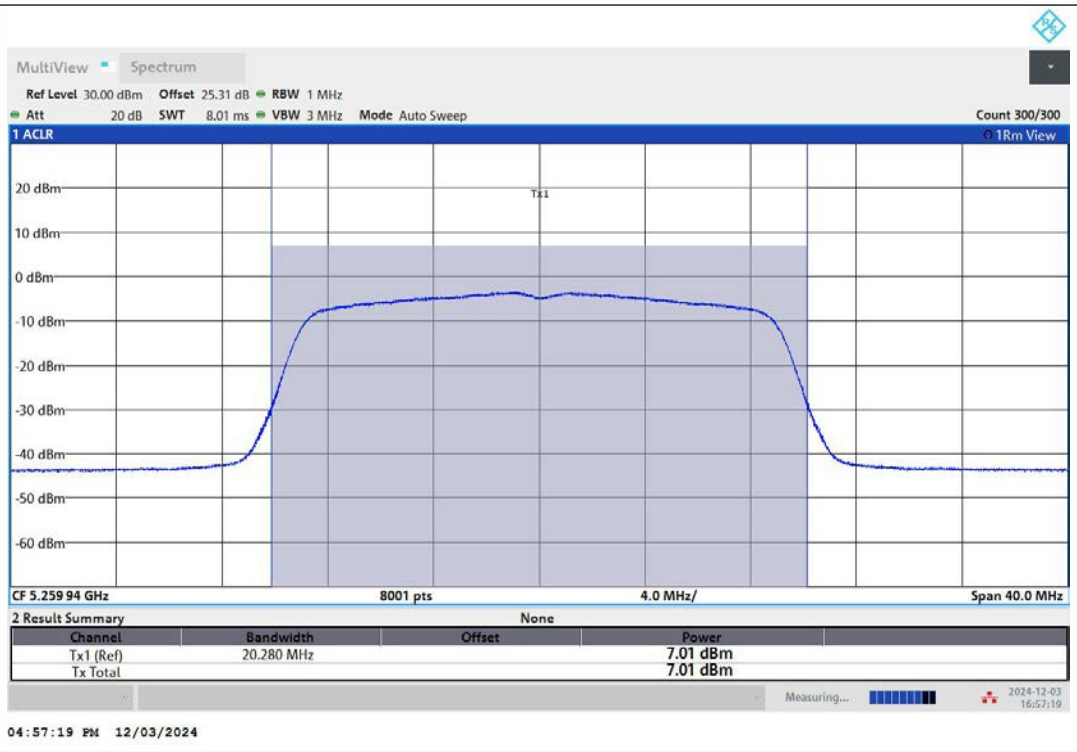
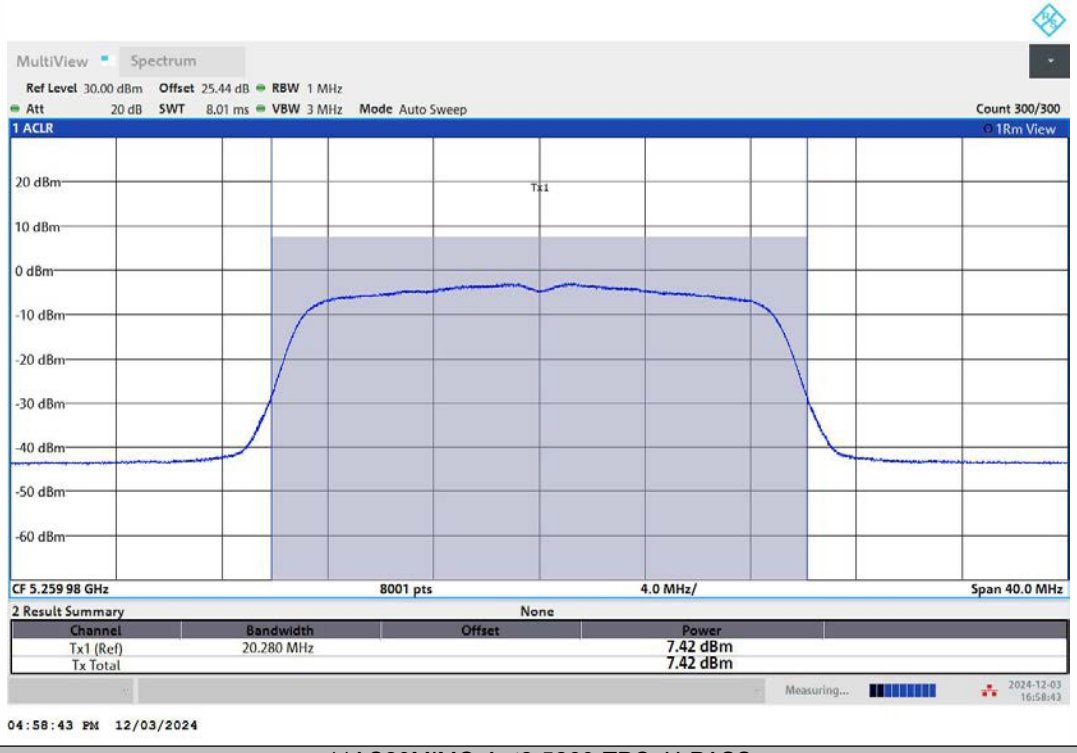
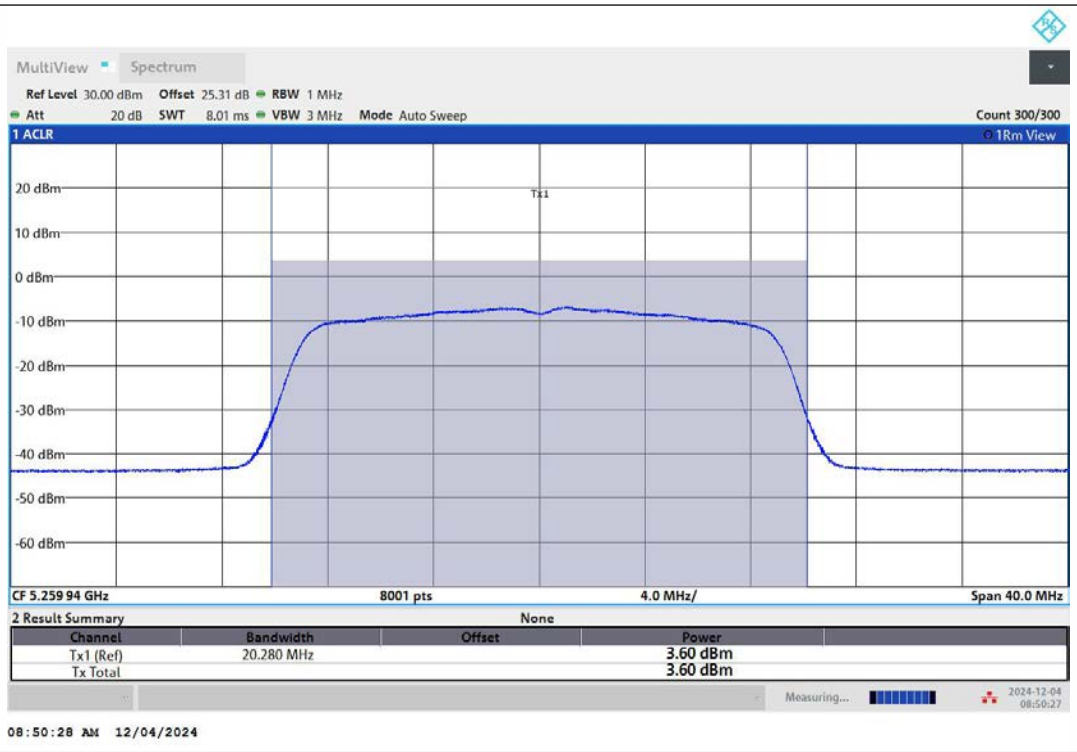


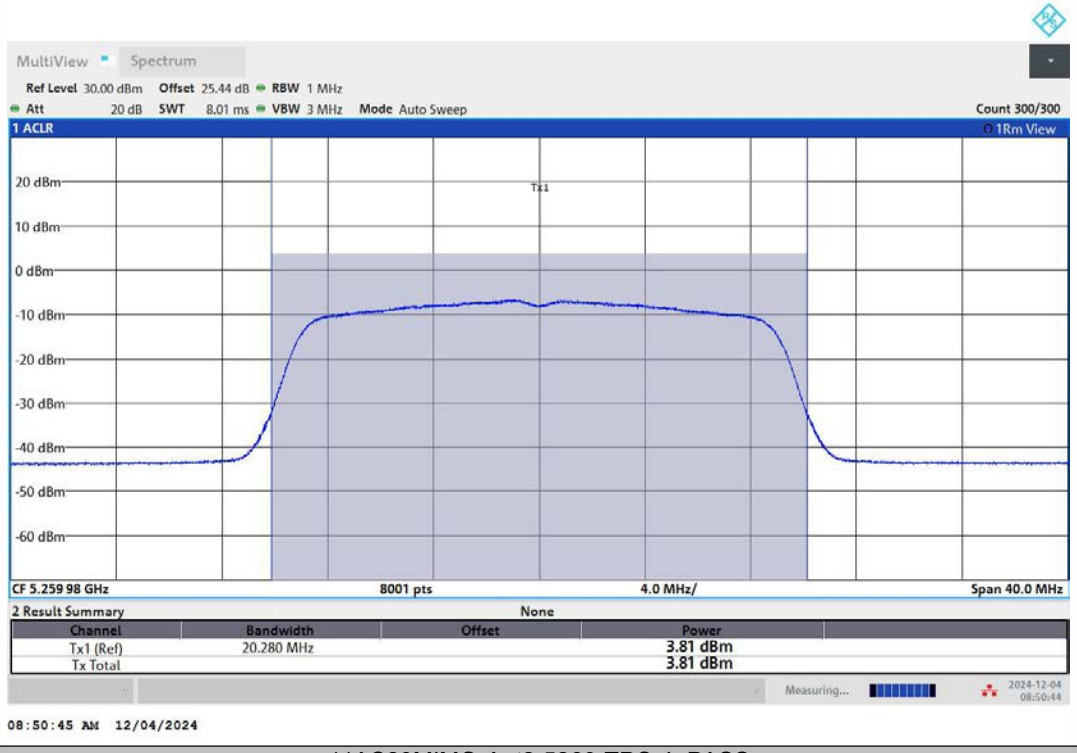
11AC20MIMO-Ant1-5260-TPC_H-PASS



11AC20MIMO-Ant2-5260-TPC_H-PASS



11AC20MIMO-Ant1-5260-TPC_L-PASS



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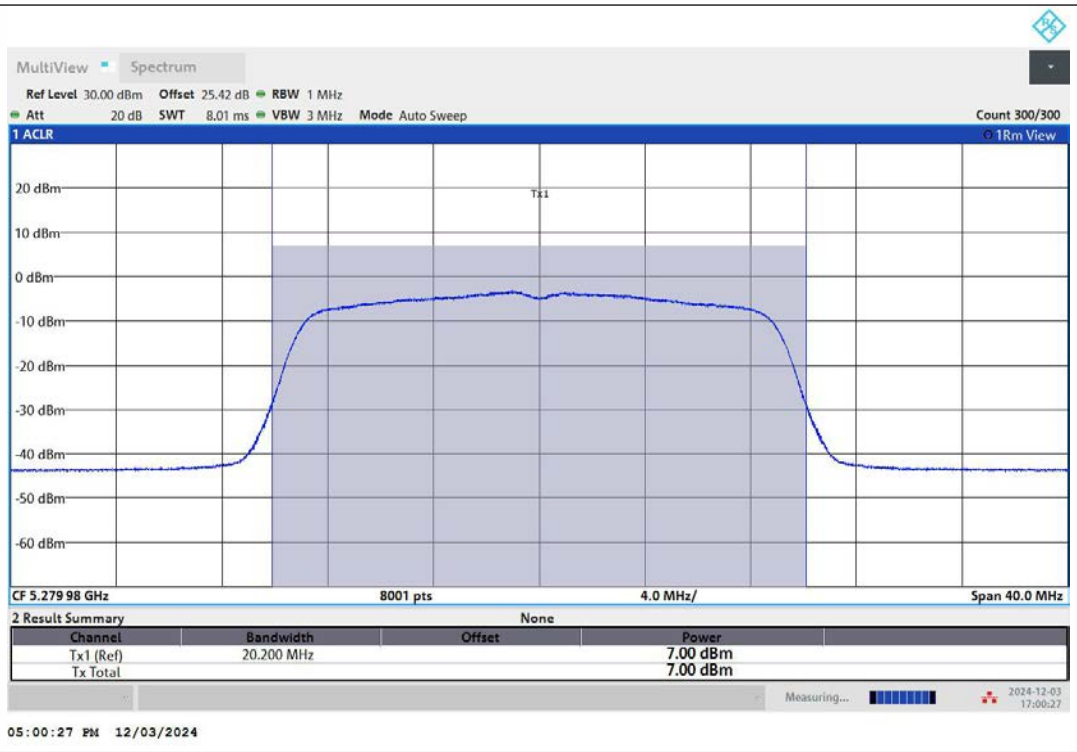
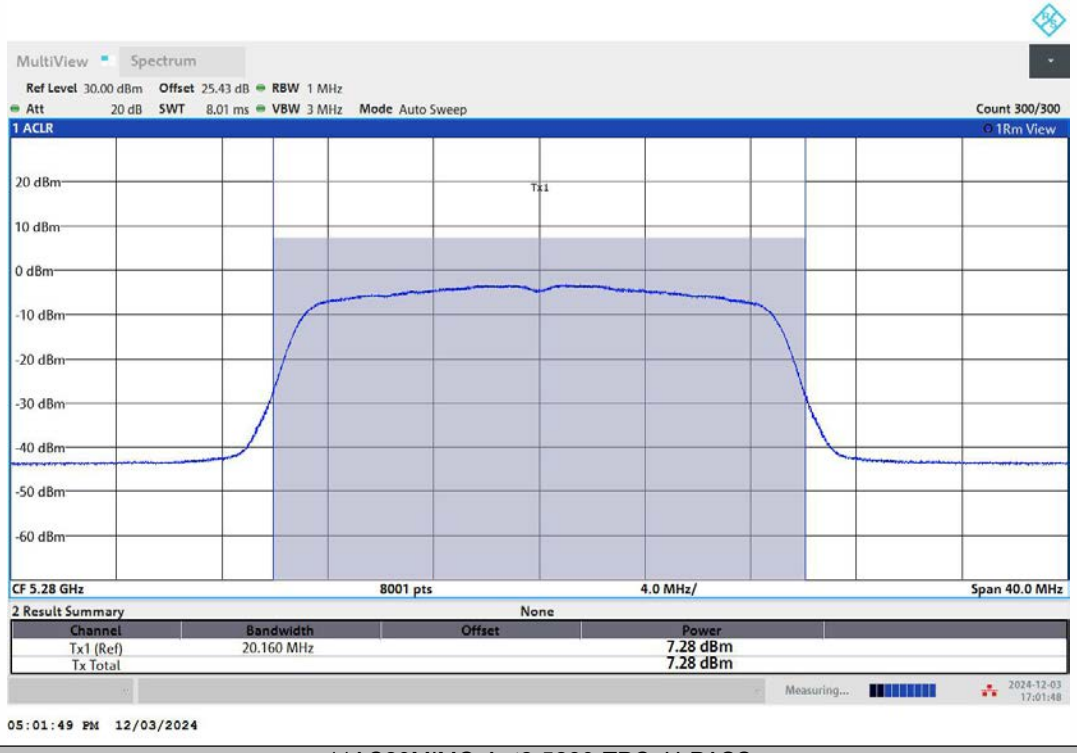


11AC20MIMO-Ant1-5280-TPC_H-PASS



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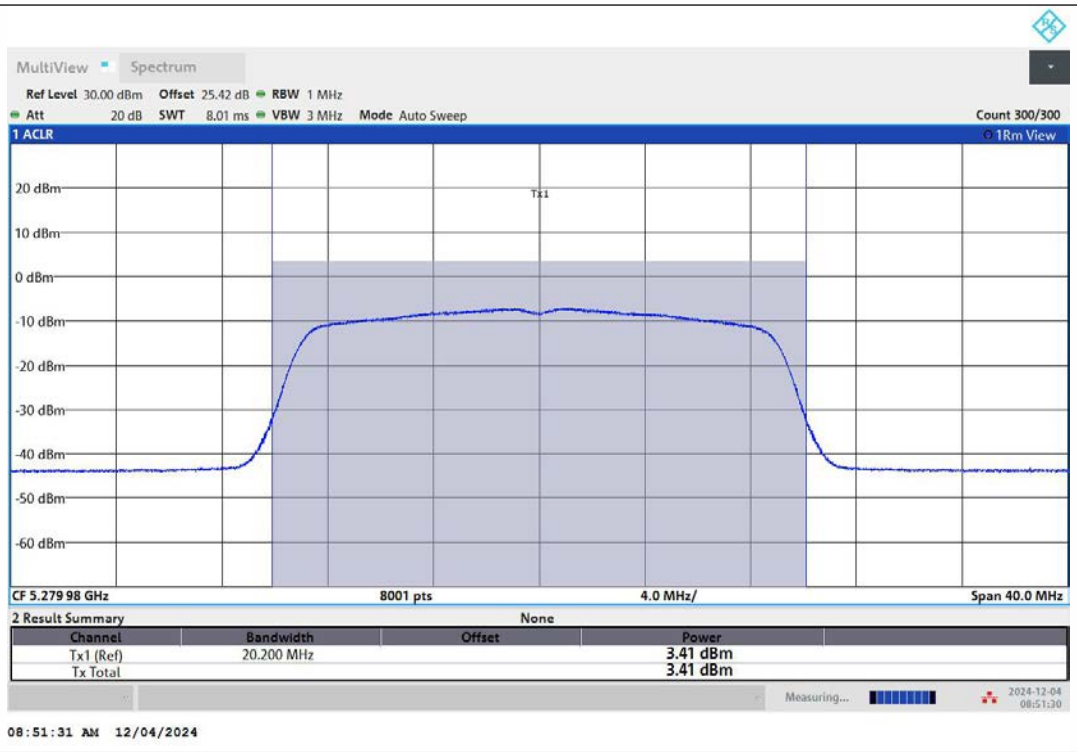

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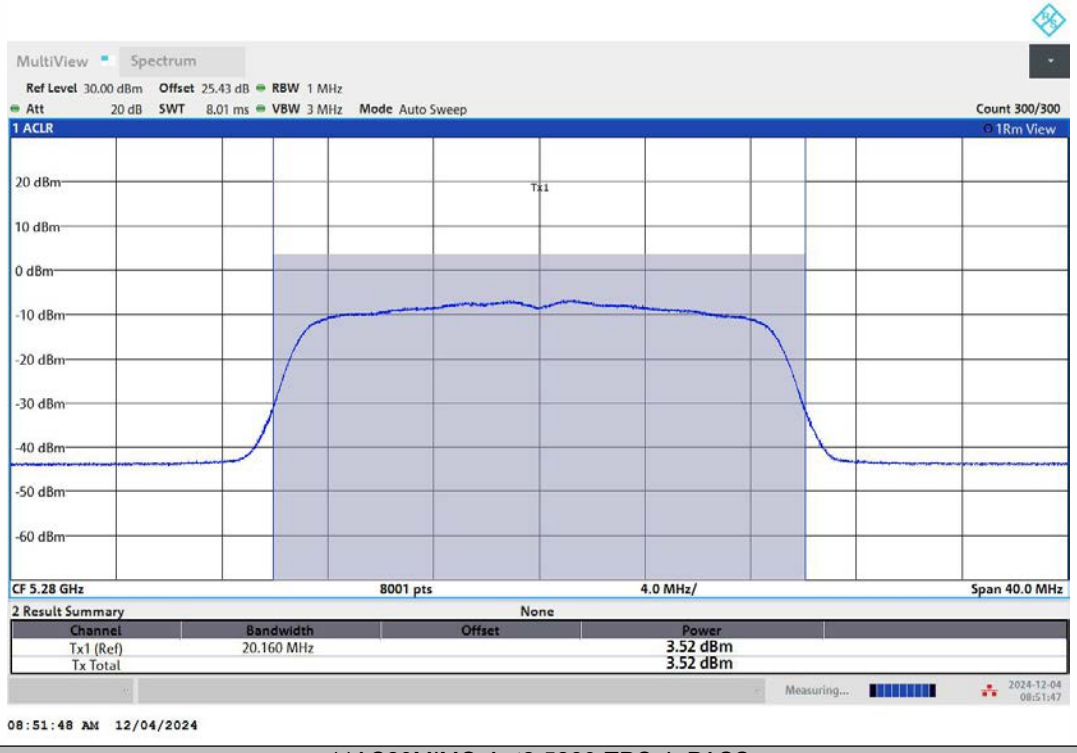

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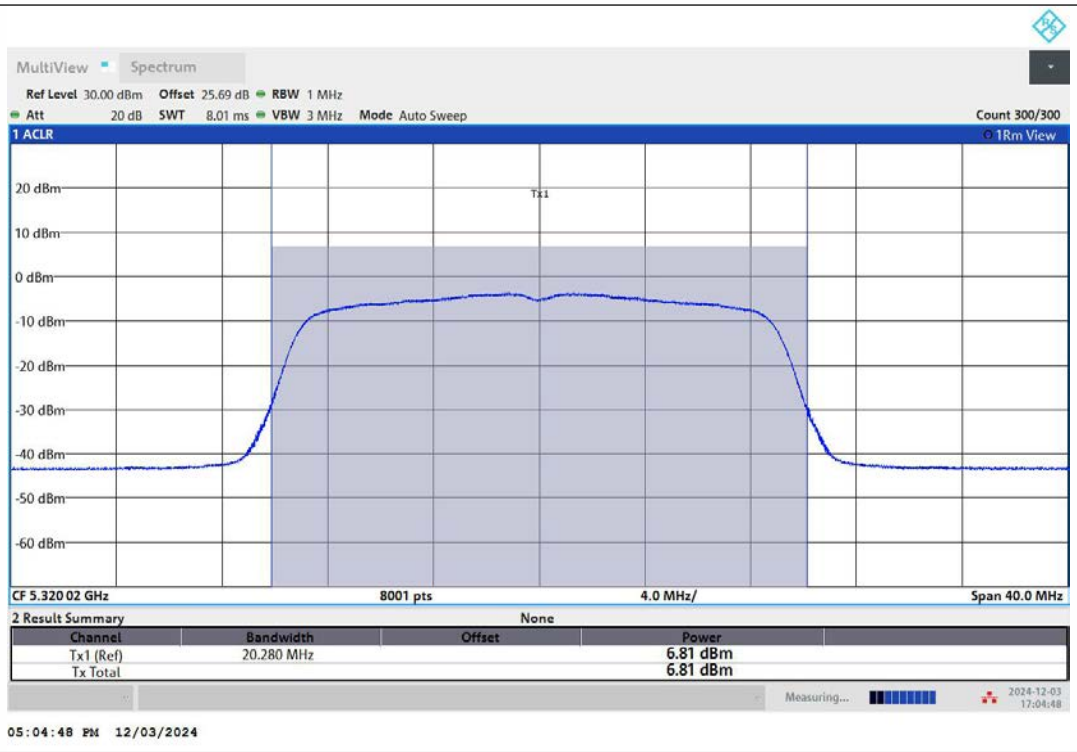

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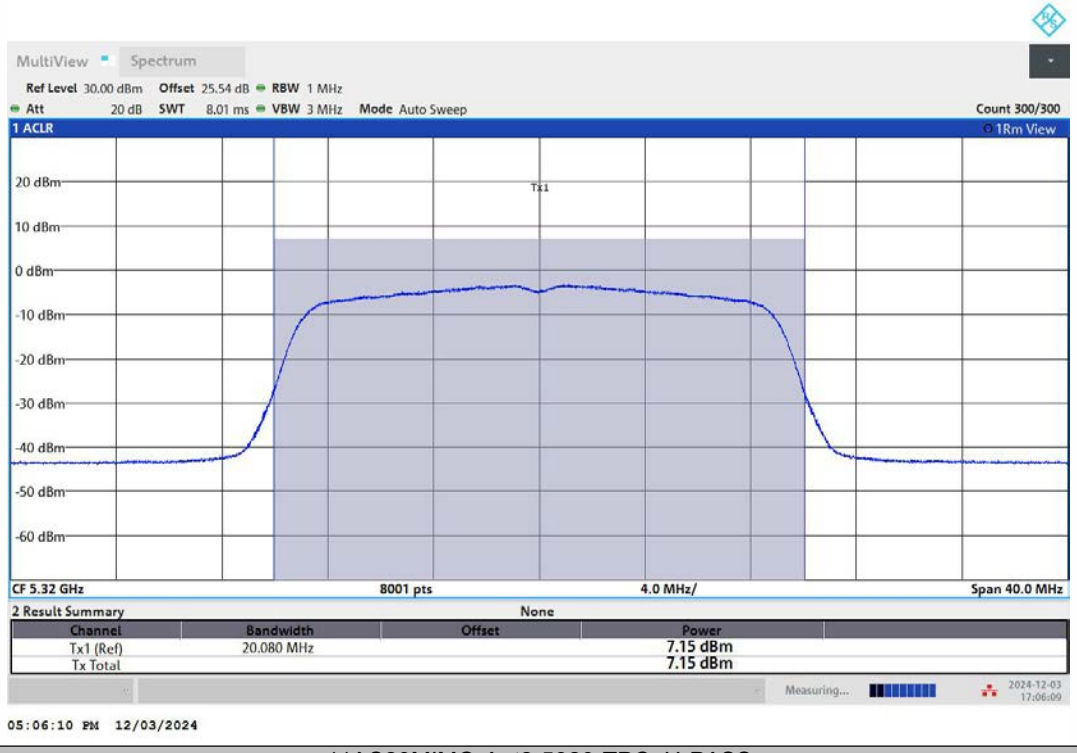
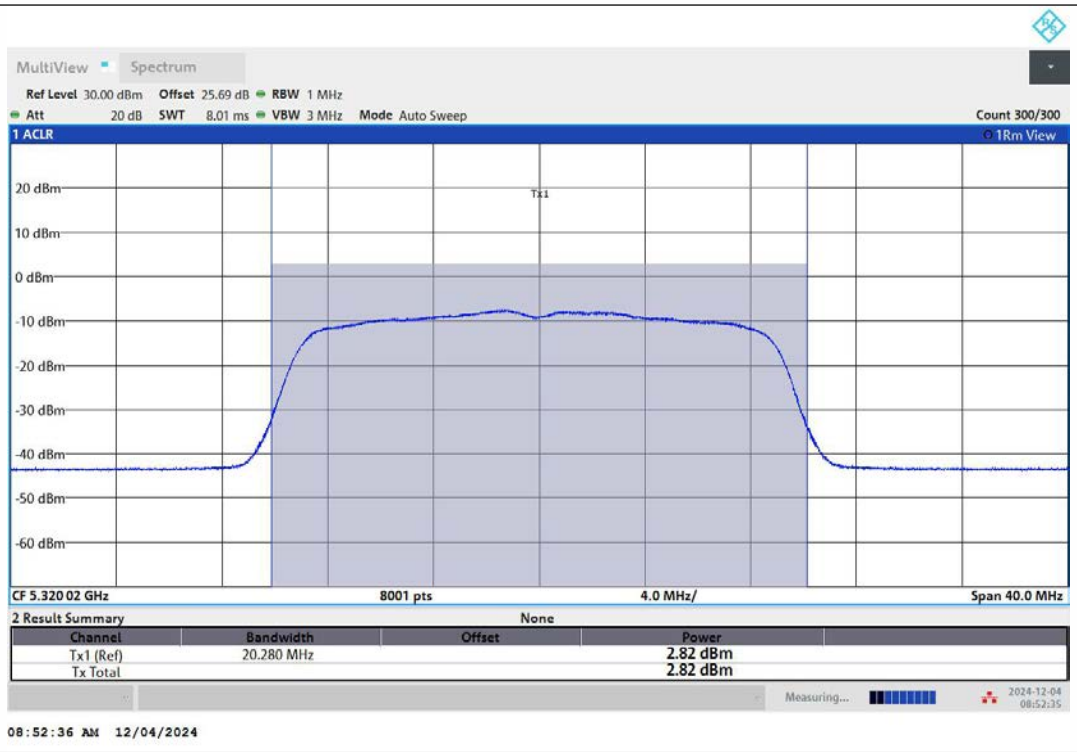
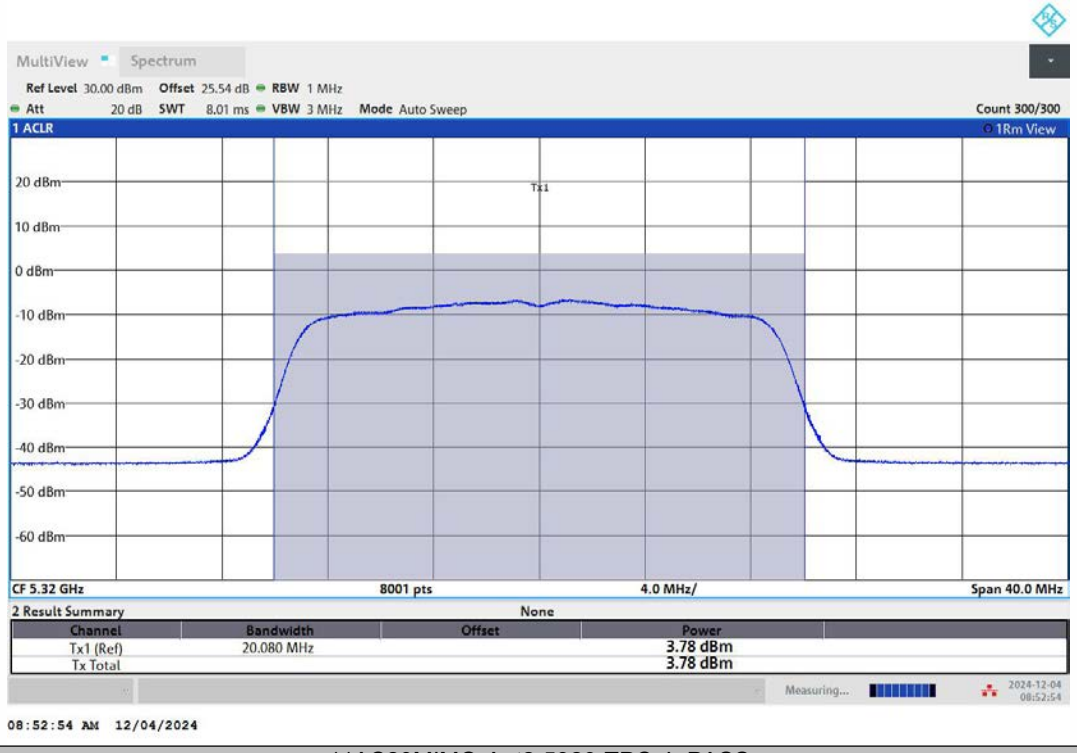


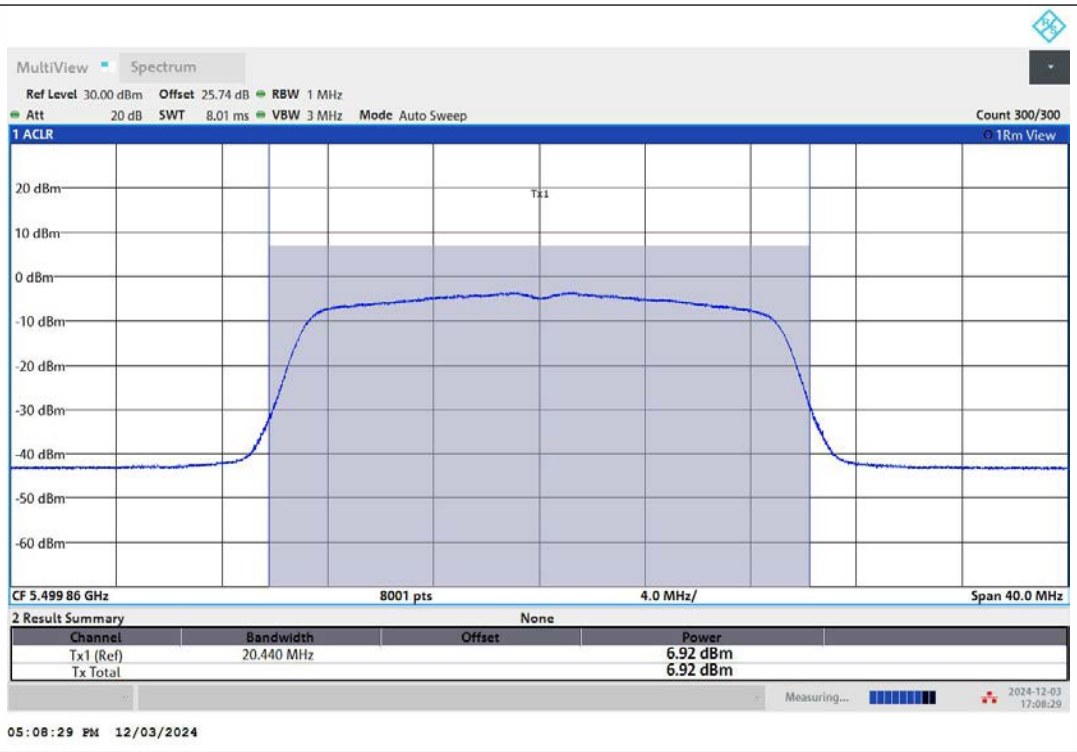
11AC20MIMO-Ant2-5320-TPC_H-PASS



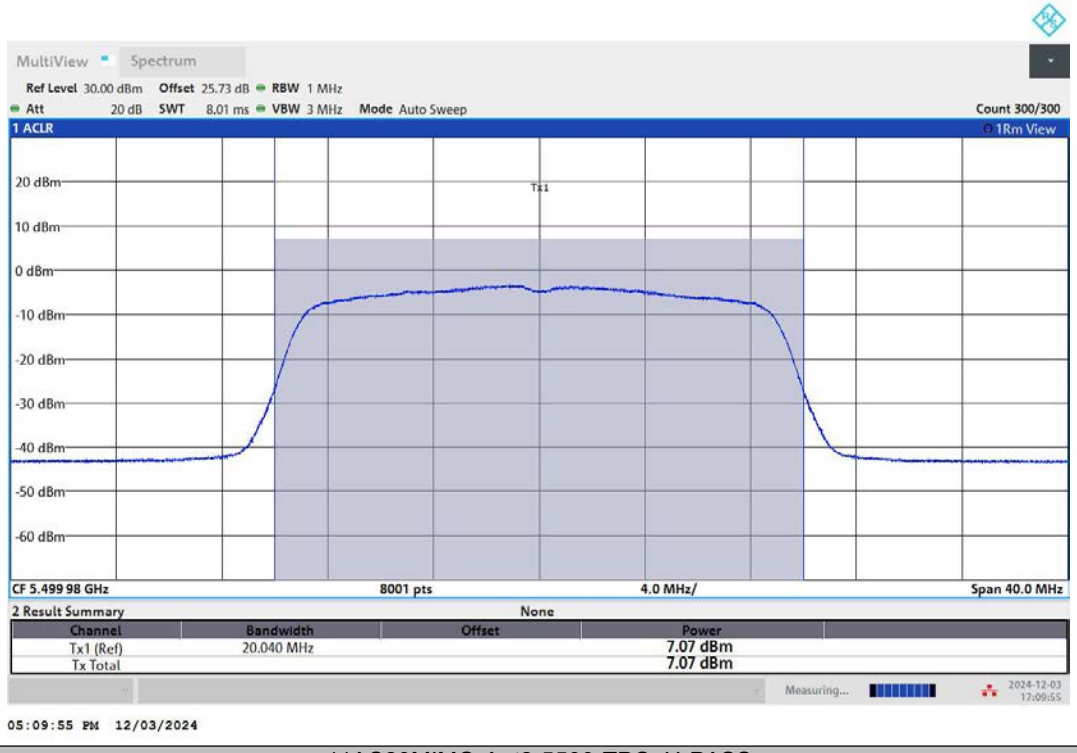
11AC20MIMO-Ant1-5320-TPC_L-PASS



11AC20MIMO-Ant2-5320-TPC_L-PASS



11AC20MIMO-Ant1-5500-TPC_H-PASS



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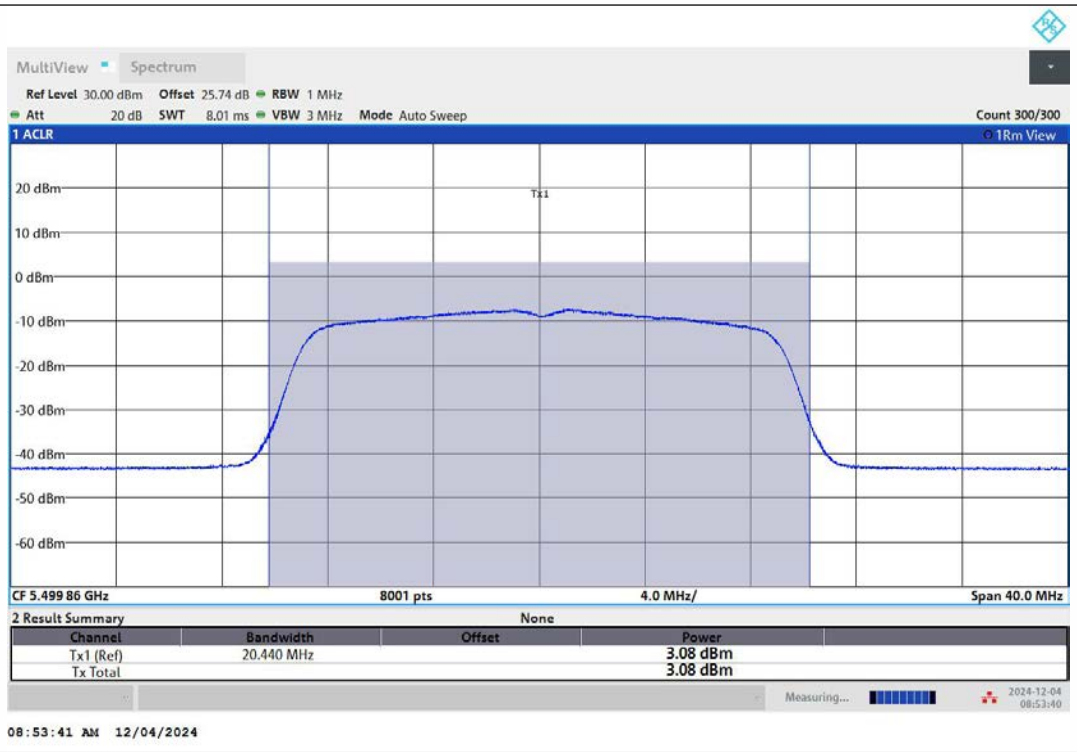
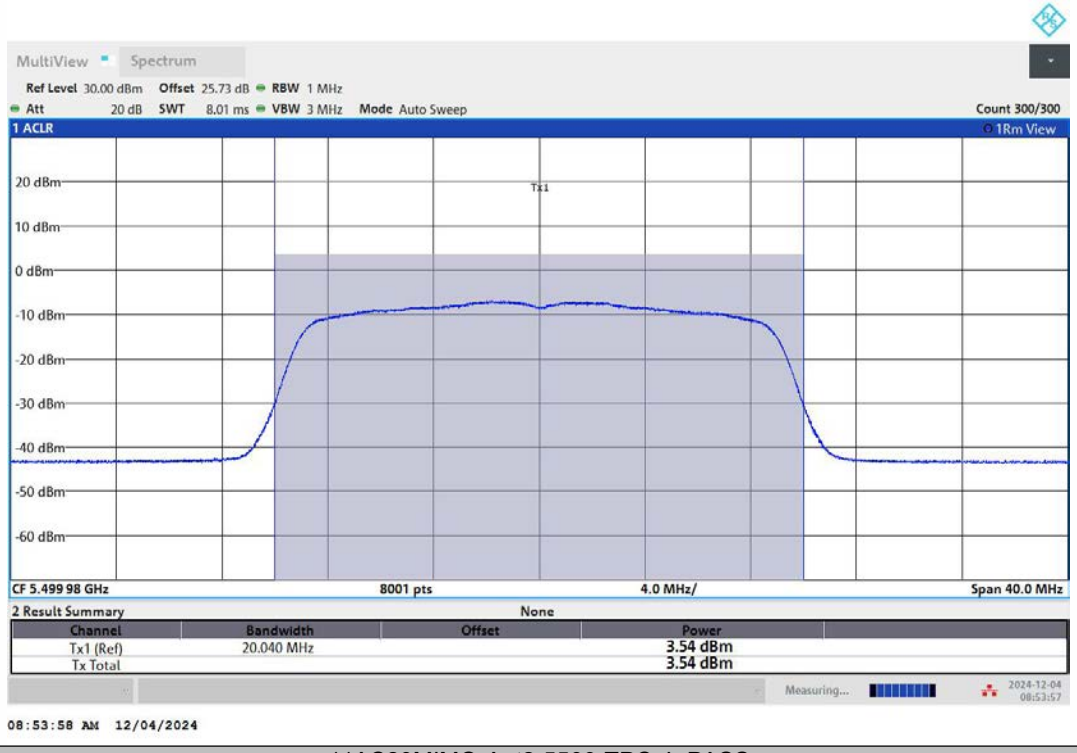
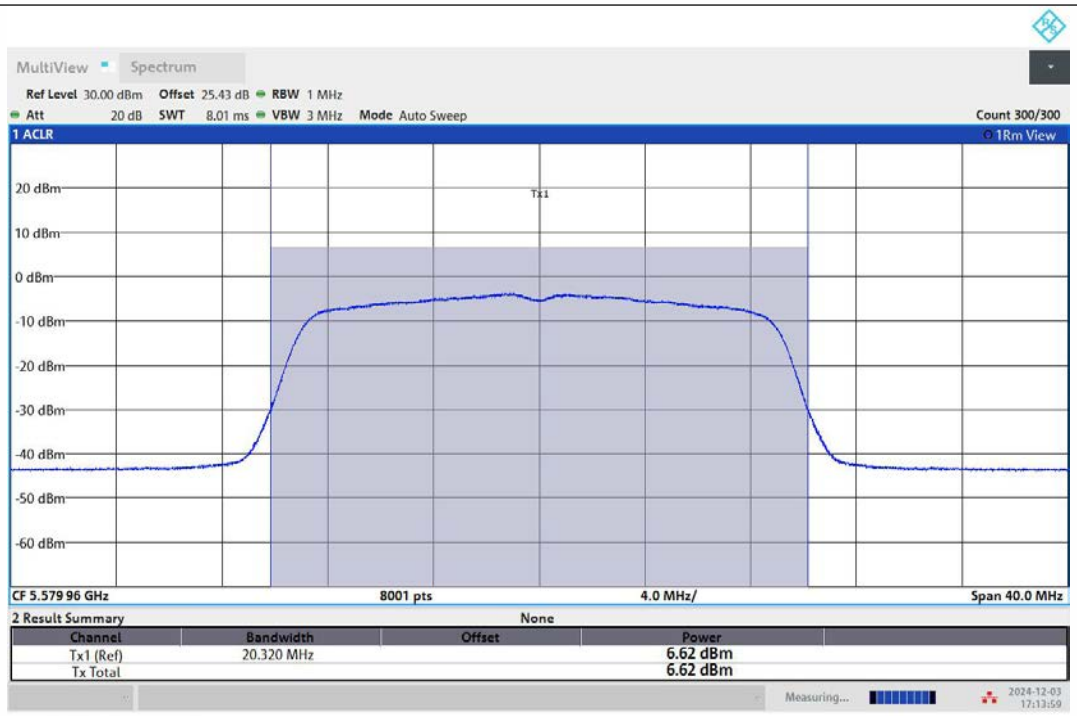


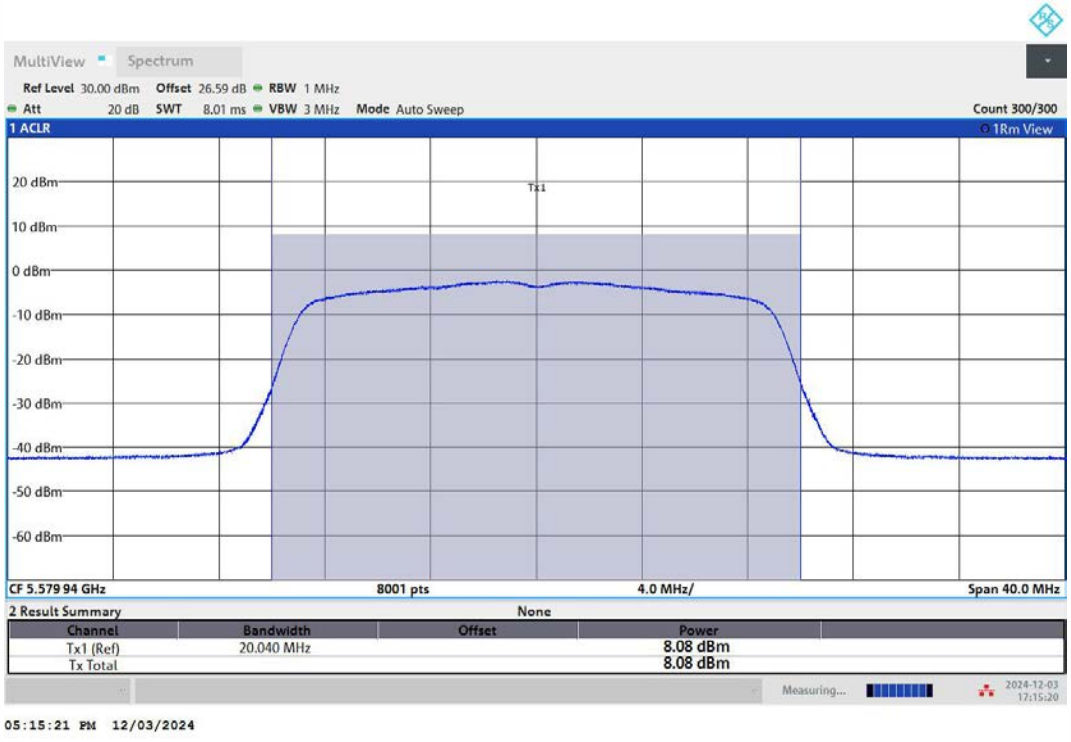
11AC20MIMO-Ant1-5500-TPC_L-PASS



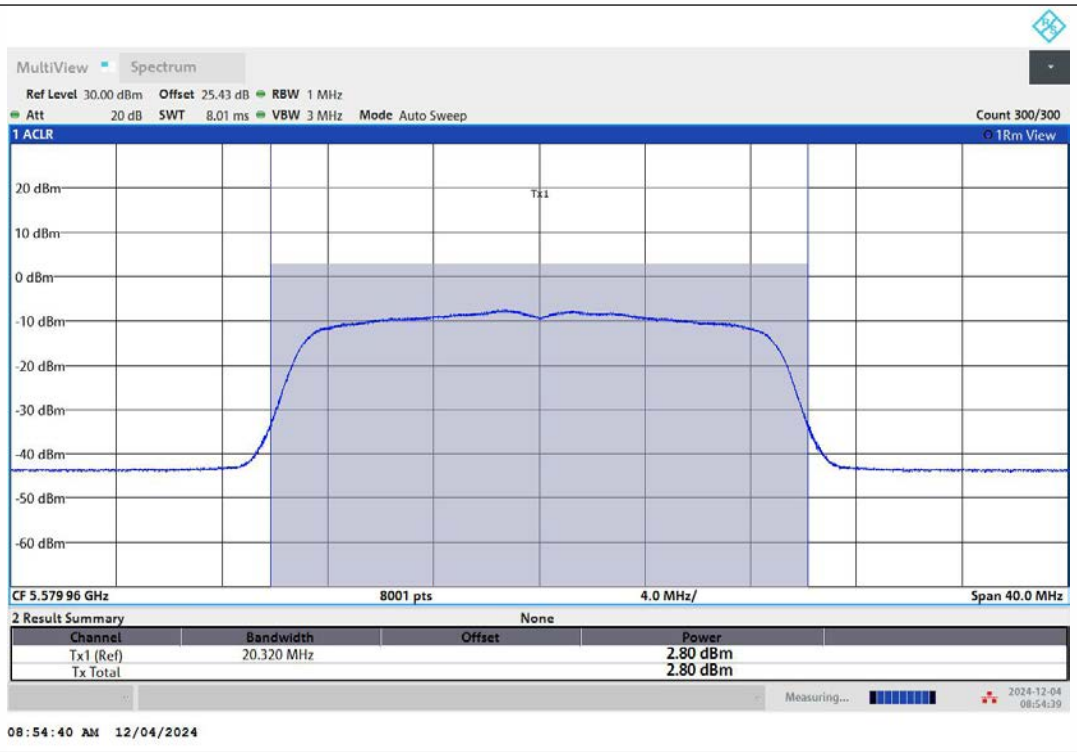
11AC20MIMO-Ant2-5500-TPC_L-PASS



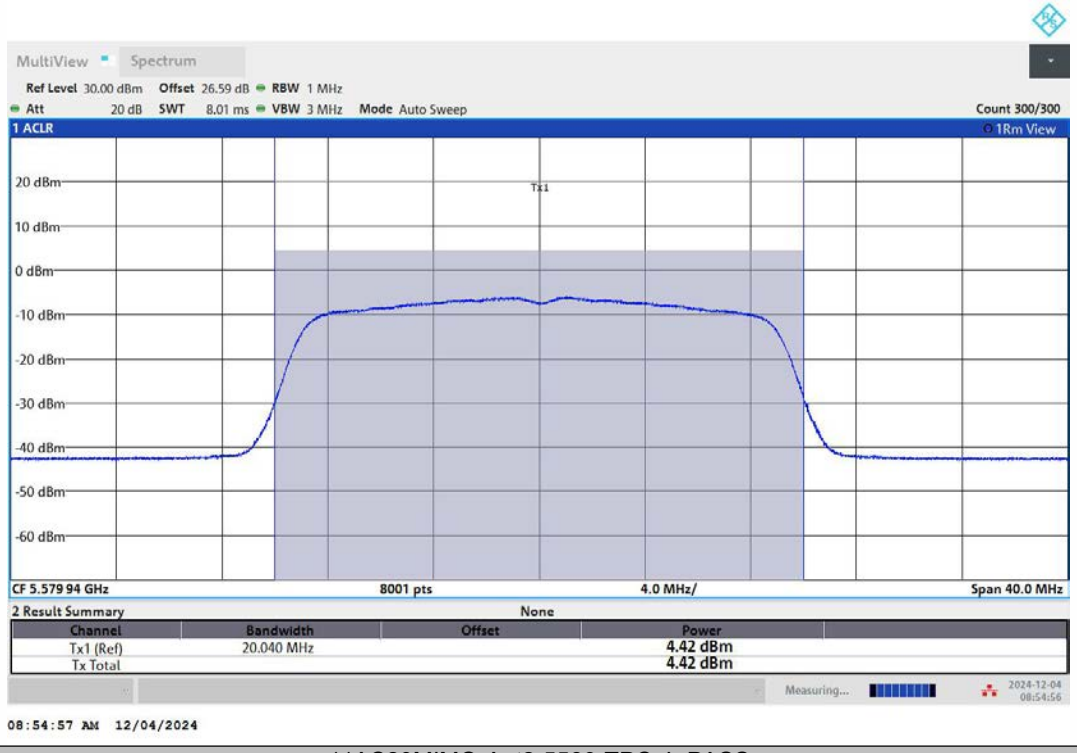
11AC20MIMO-Ant1-5580-TPC_H-PASS



11AC20MIMO-Ant2-5580-TPC_H-PASS



11AC20MIMO-Ant1-5580-TPC_L-PASS



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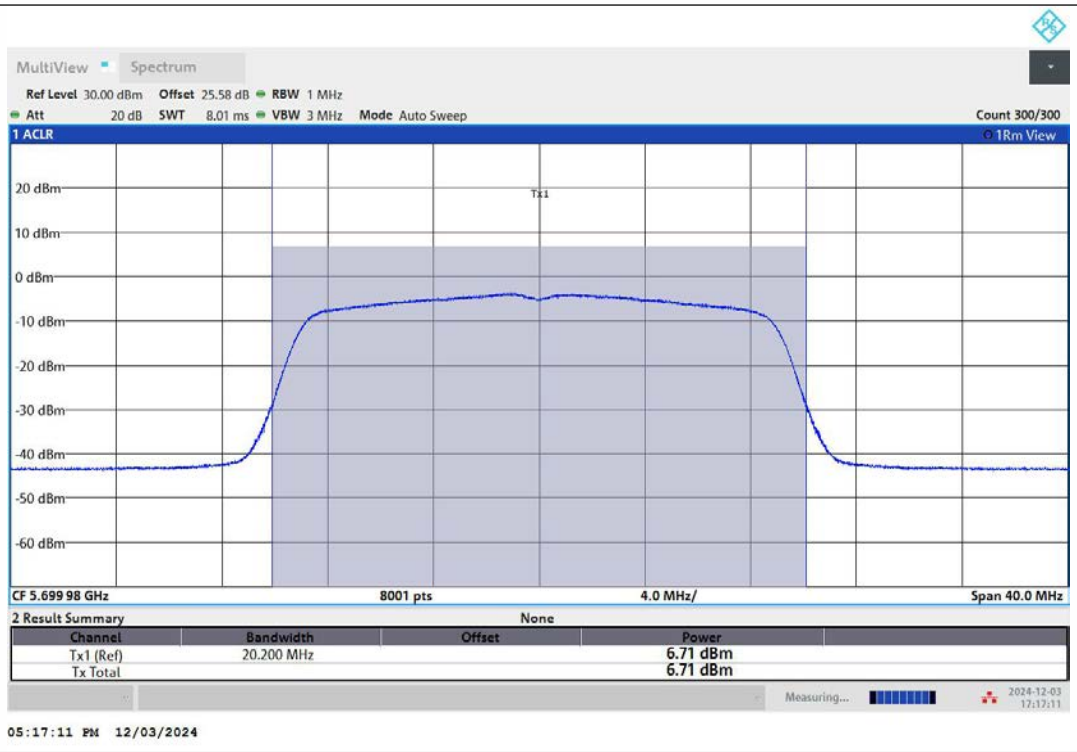
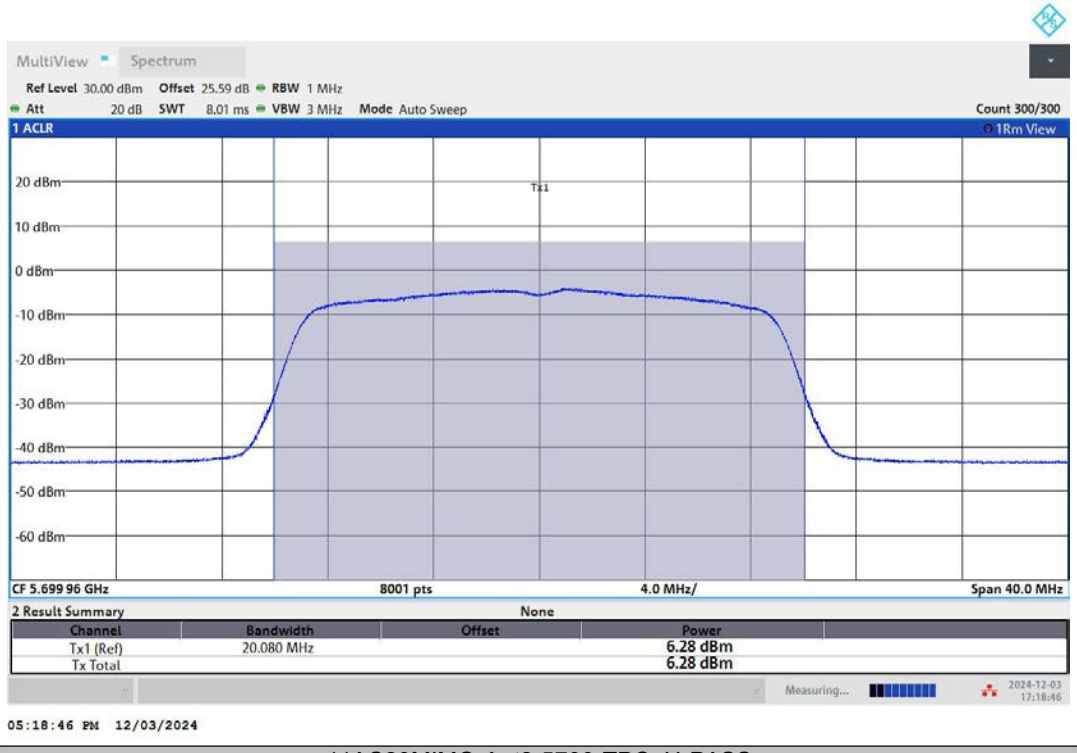


11AC20MIMO-Ant1-5700-TPC_H-PASS



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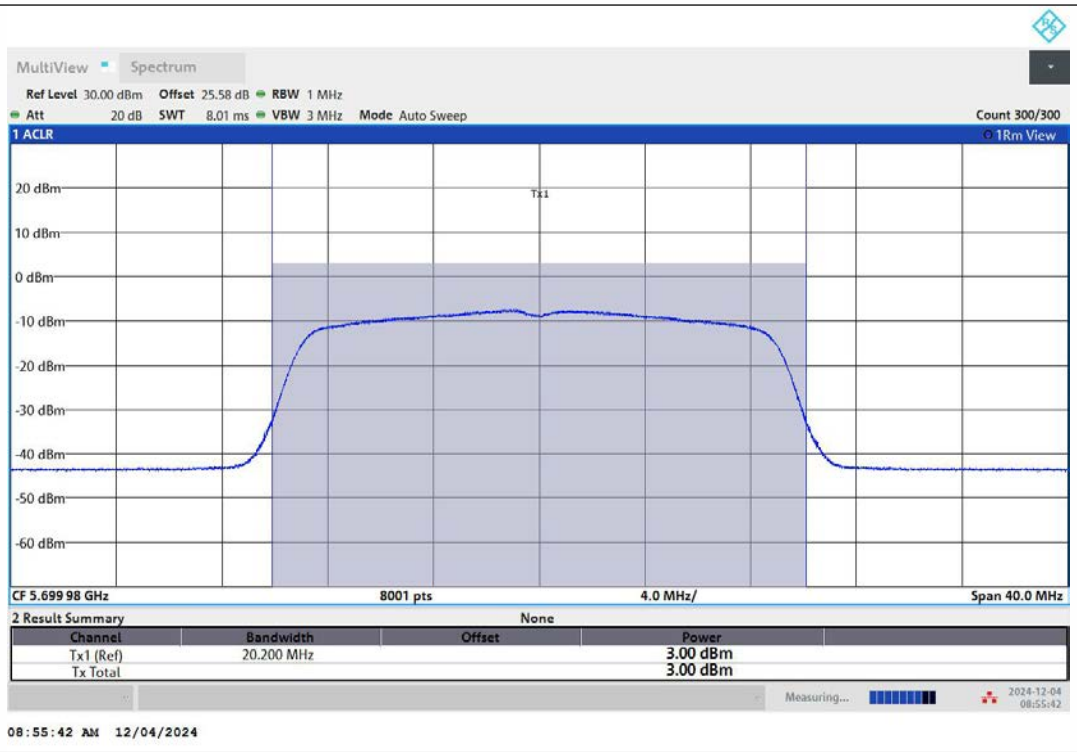

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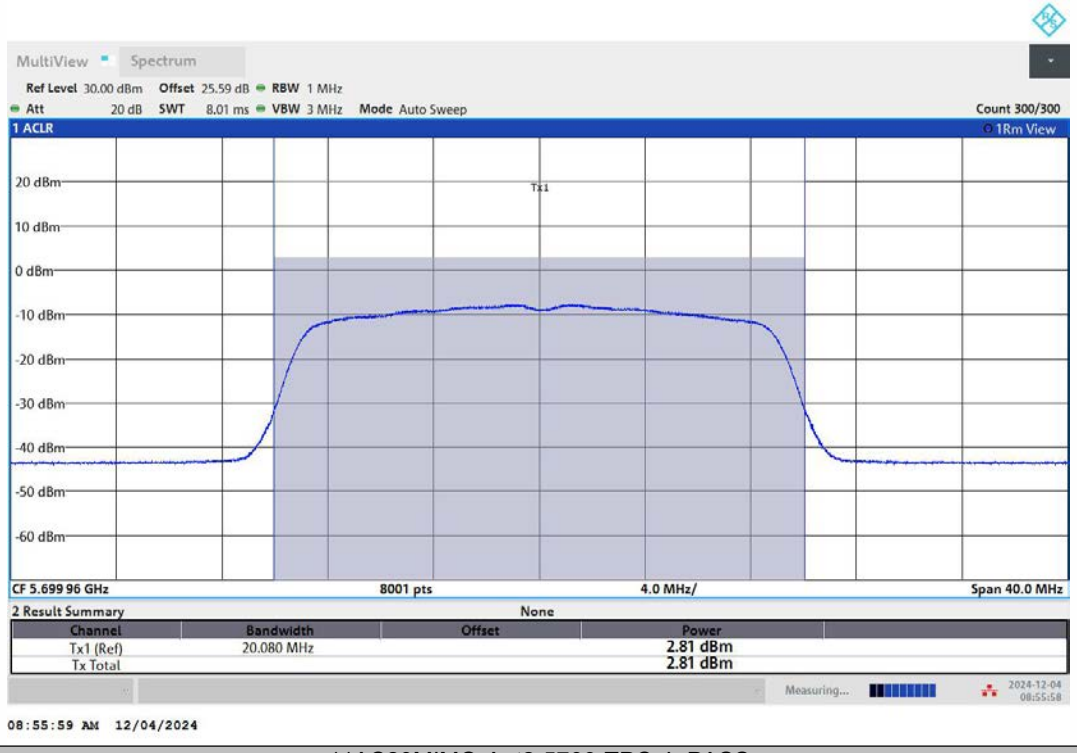

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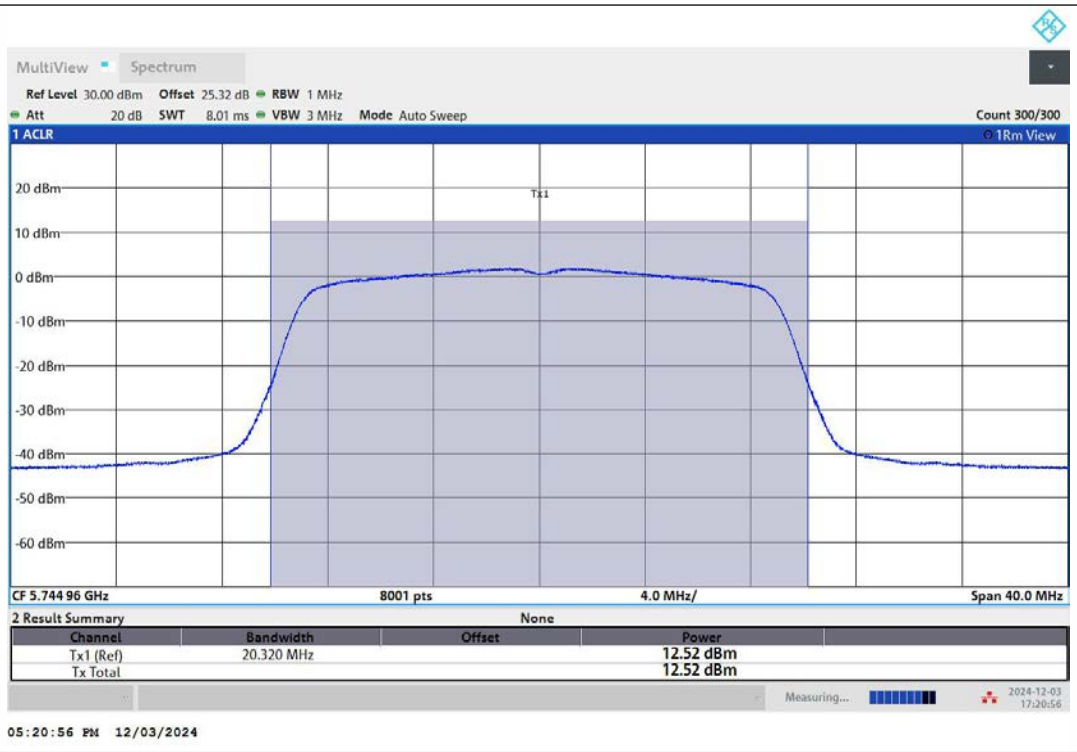
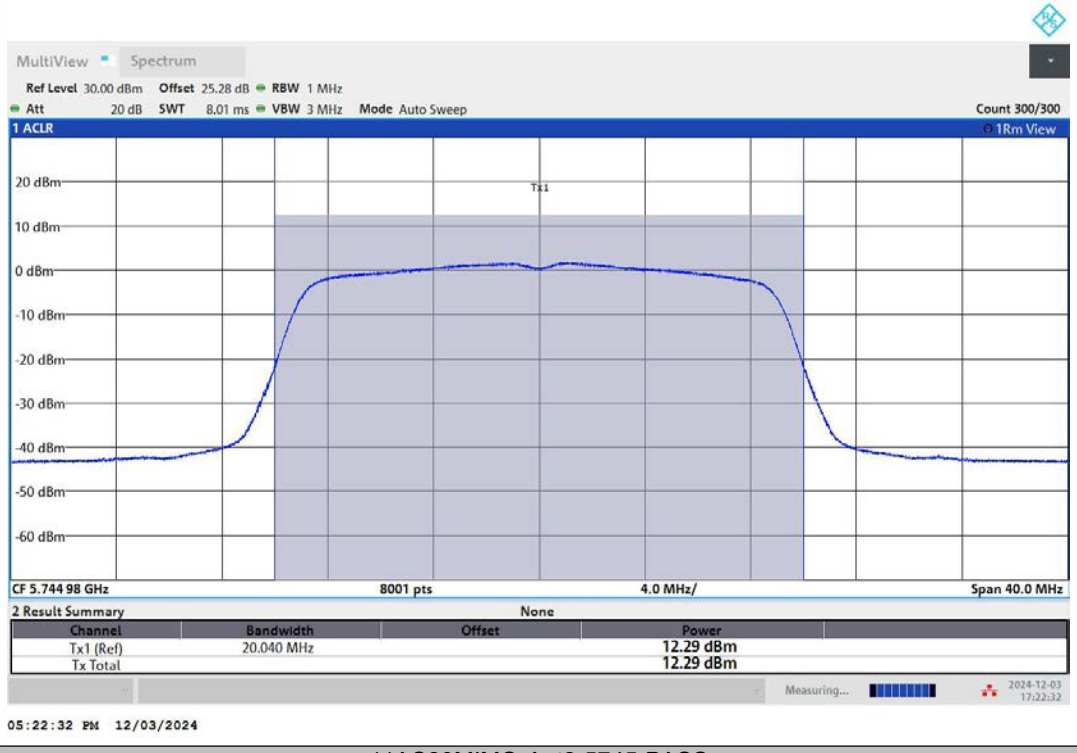
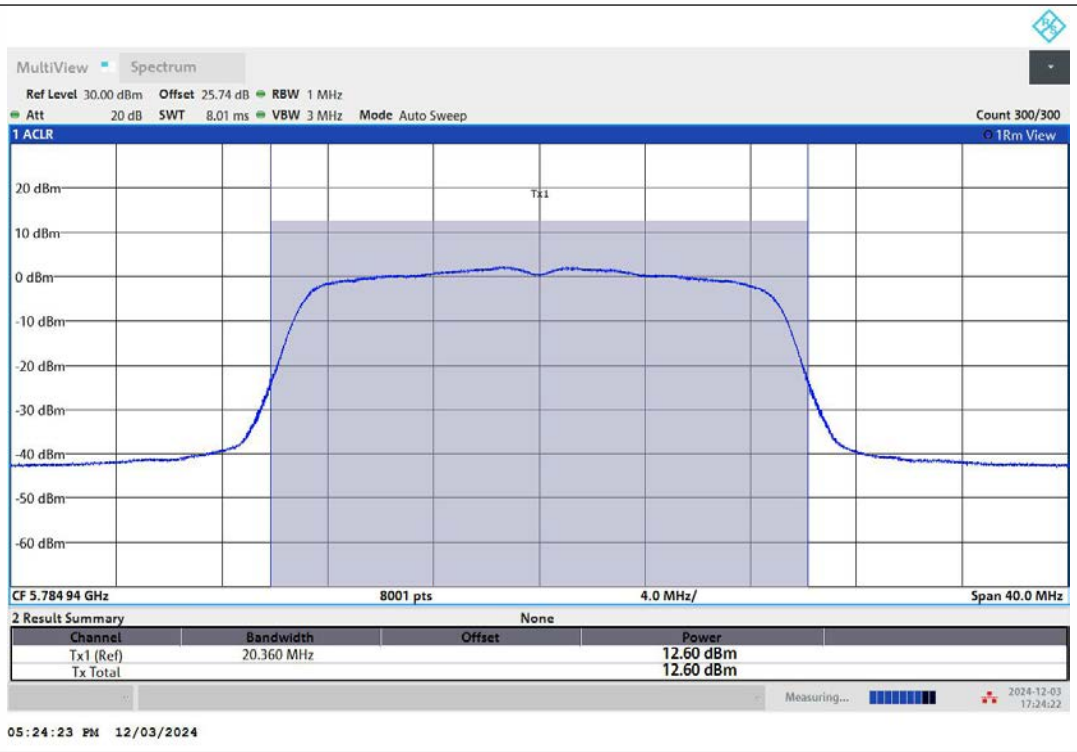


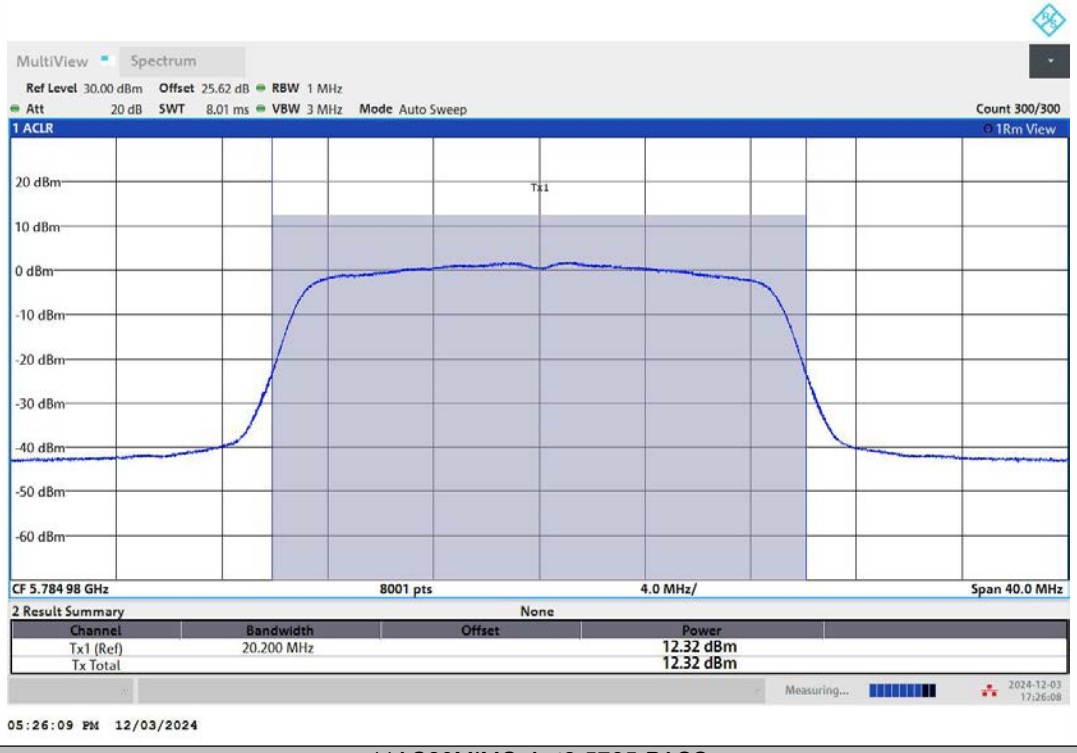
11AC20MIMO-Ant1-5745-PASS



11AC20MIMO-Ant2-5745-PASS



11AC20MIMO-Ant1-5785-PASS



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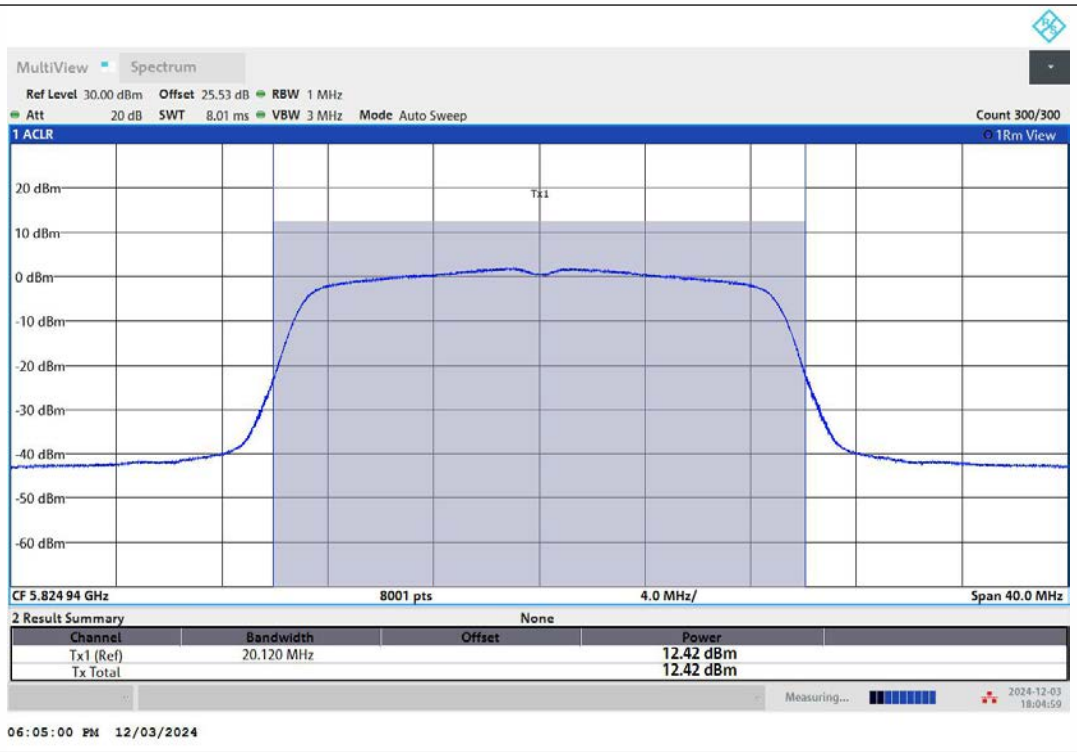
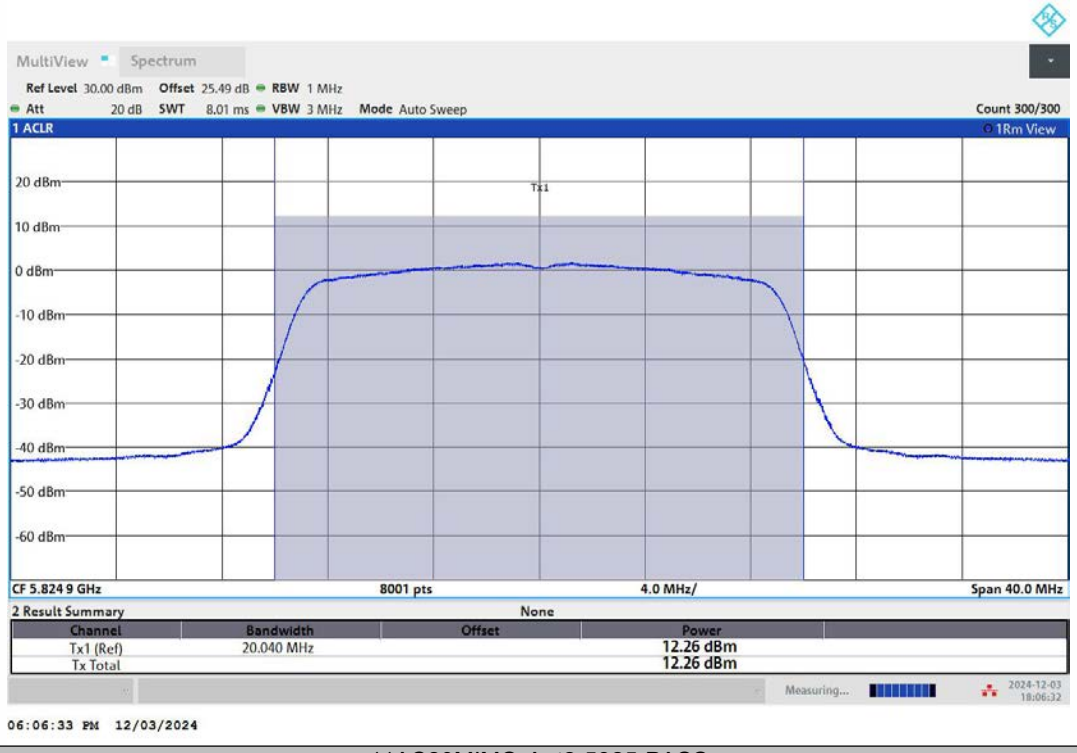
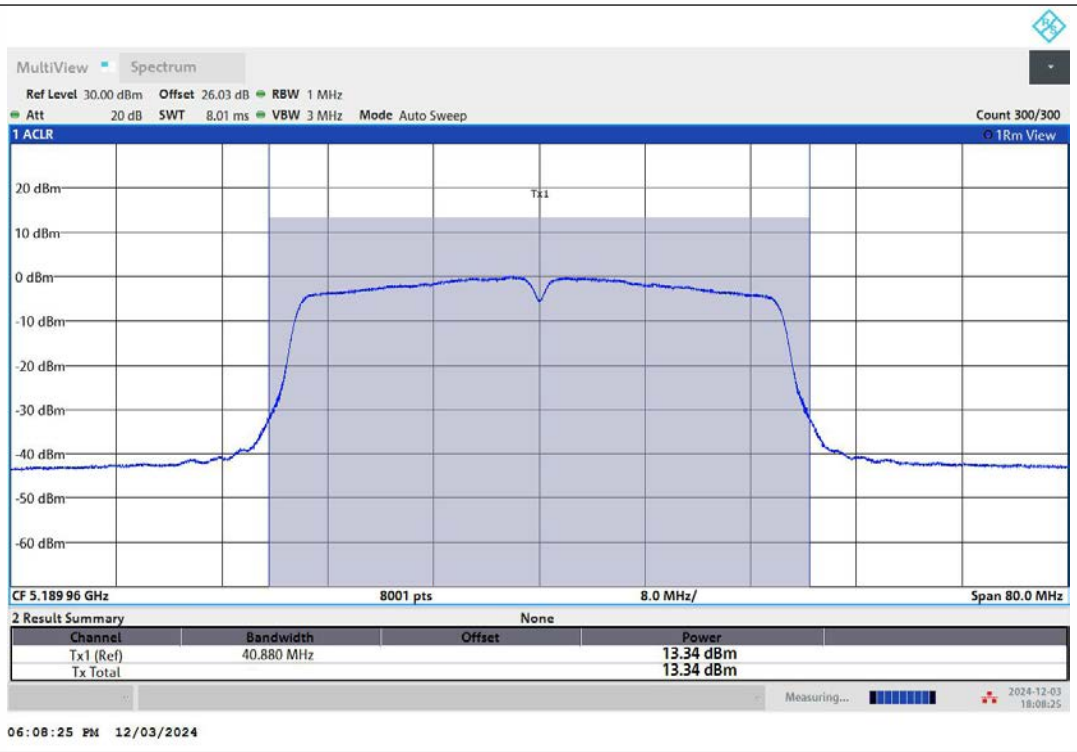


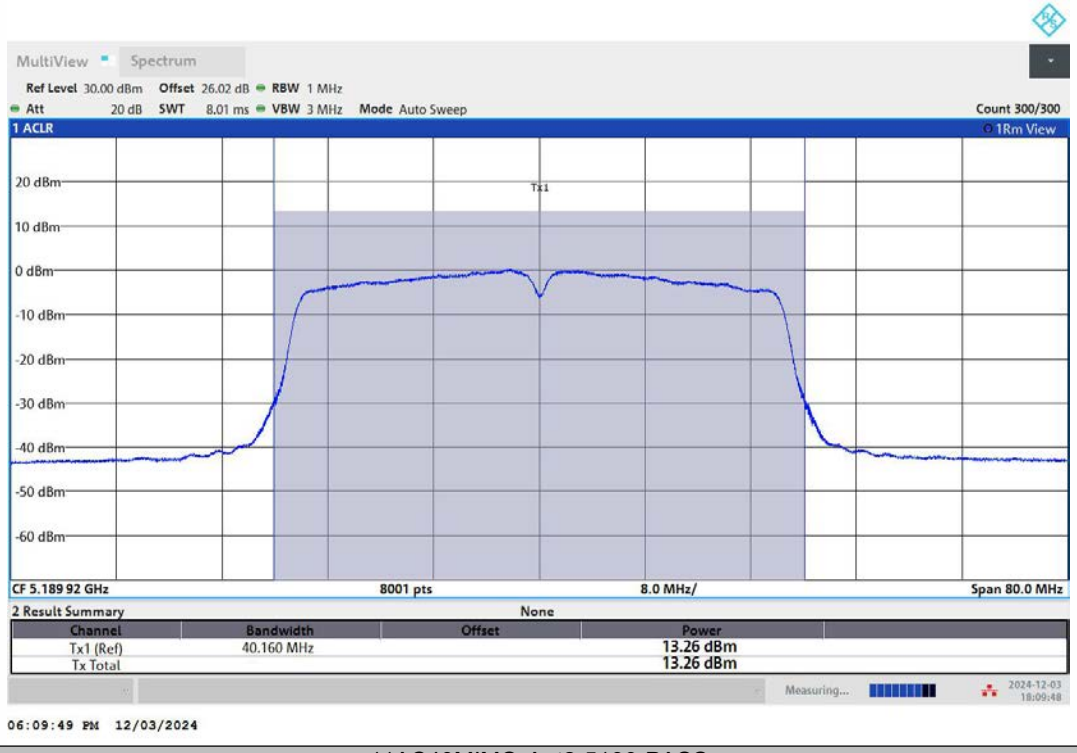
11AC20MIMO-Ant1-5825-PASS



11AC20MIMO-Ant2-5825-PASS



11AC40MIMO-Ant1-5190-PASS



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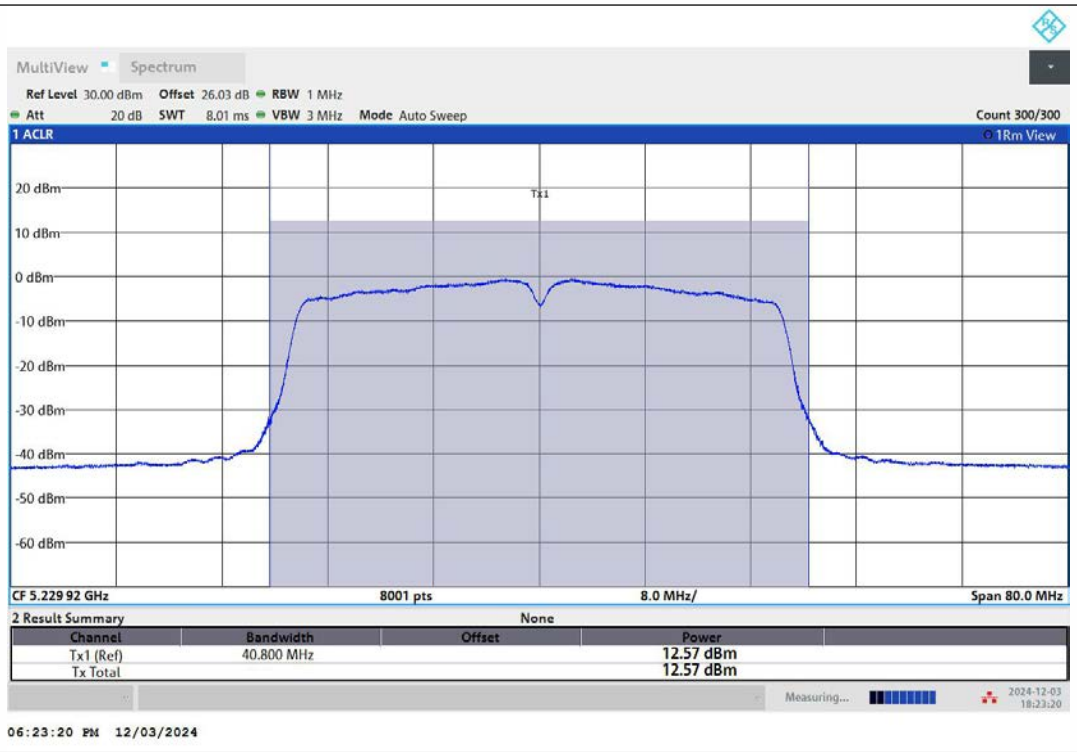
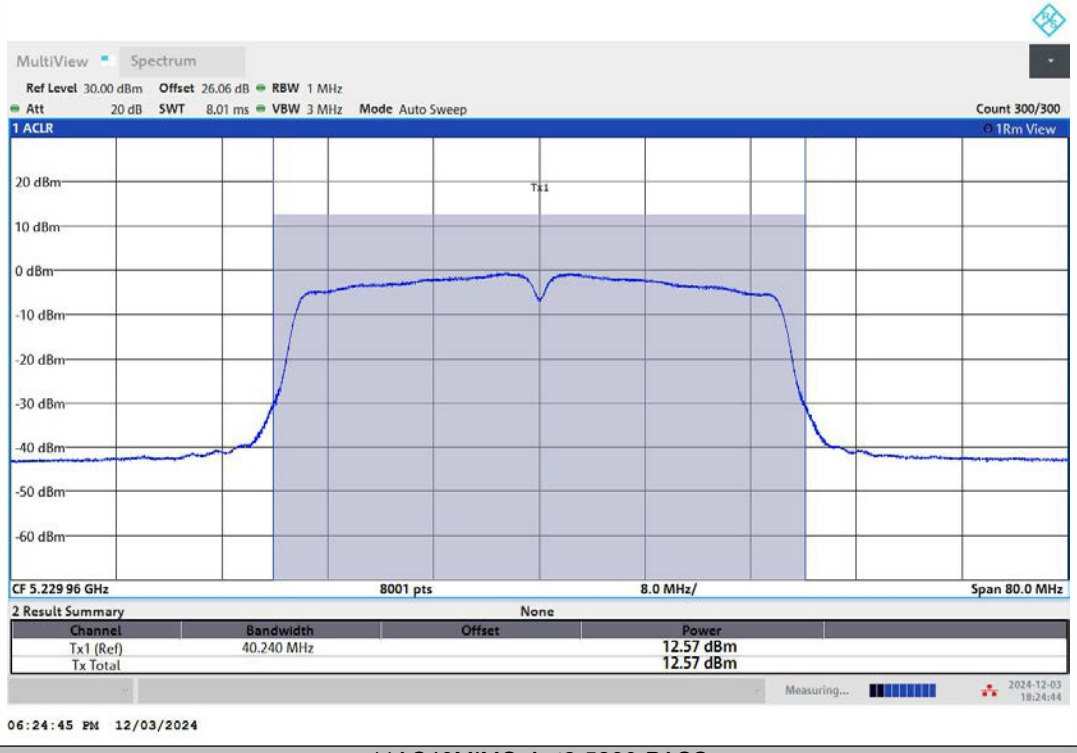
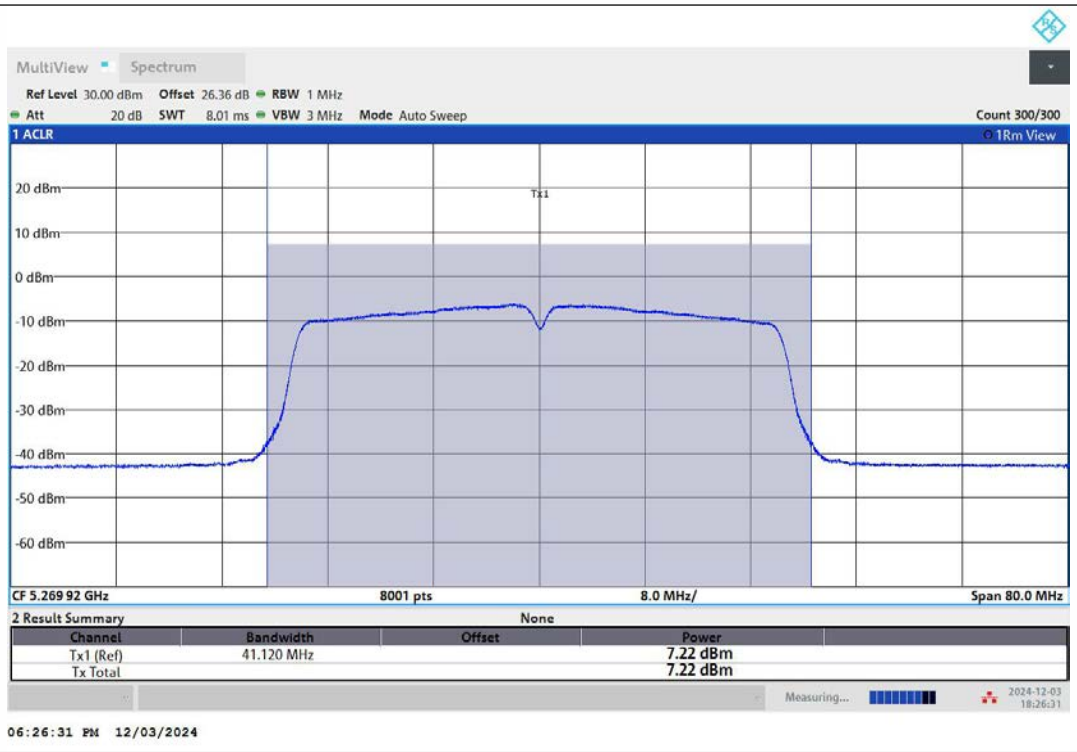


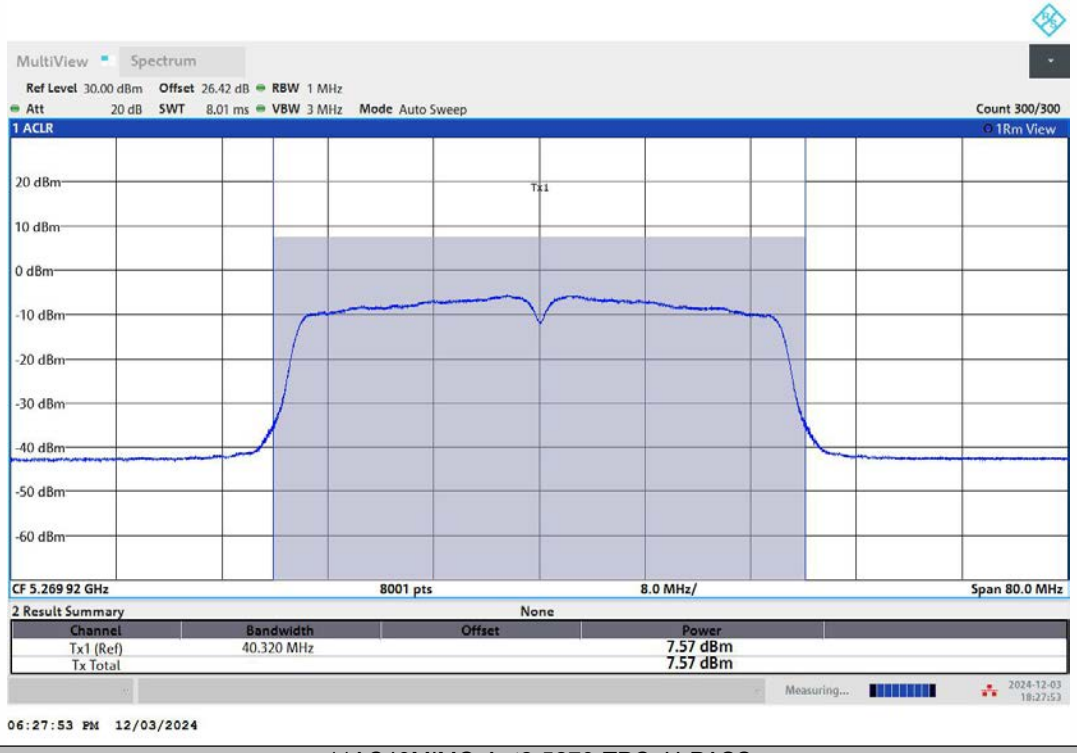
11AC40MIMO-Ant1-5230-PASS



11AC40MIMO-Ant2-5230-PASS



11AC40MIMO-Ant1-5270-TPC_H-PASS



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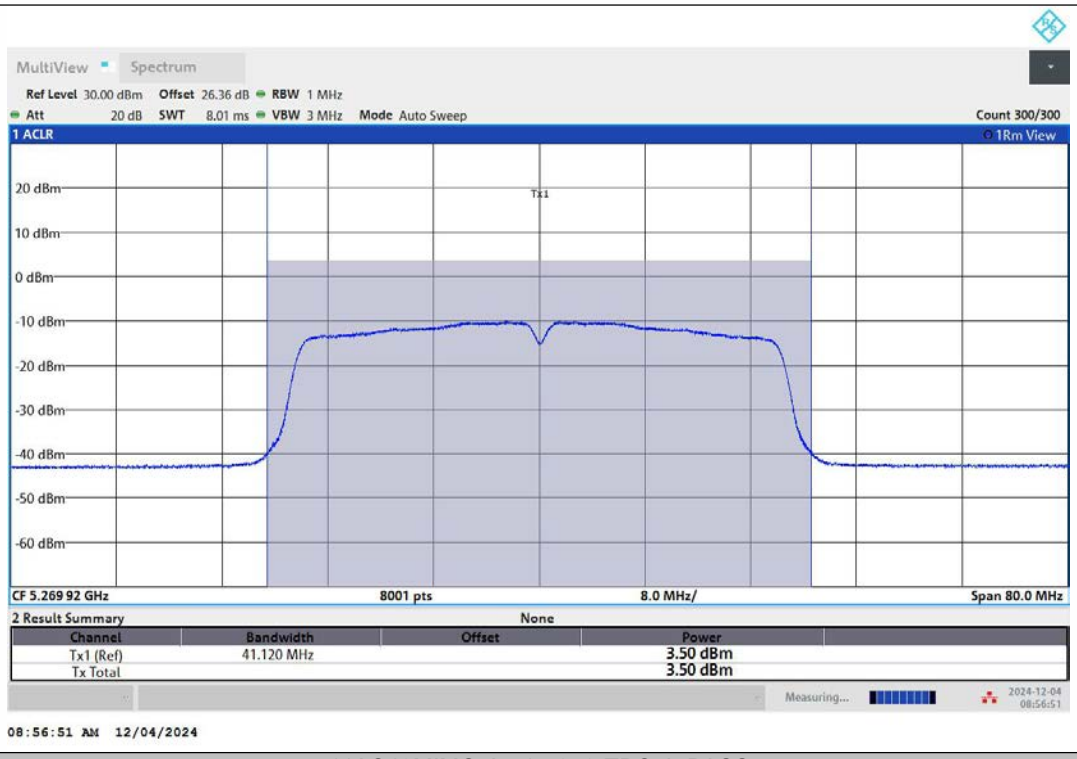
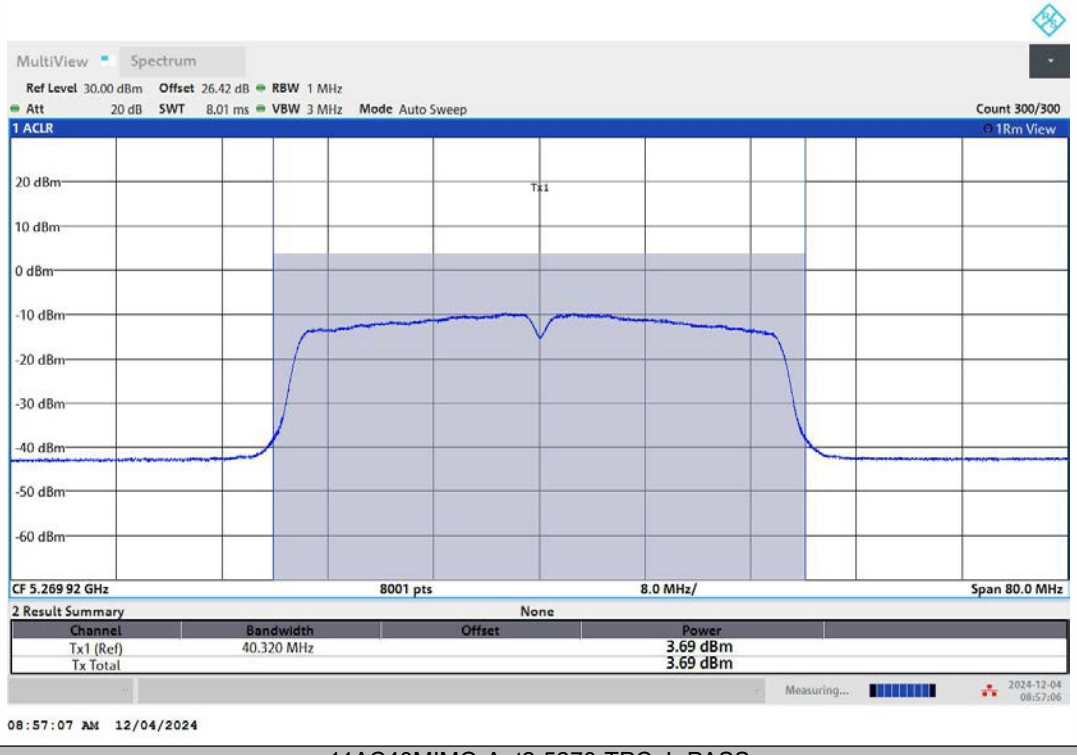


11AC40MIMO-Ant1-5270-TPC_L-PASS



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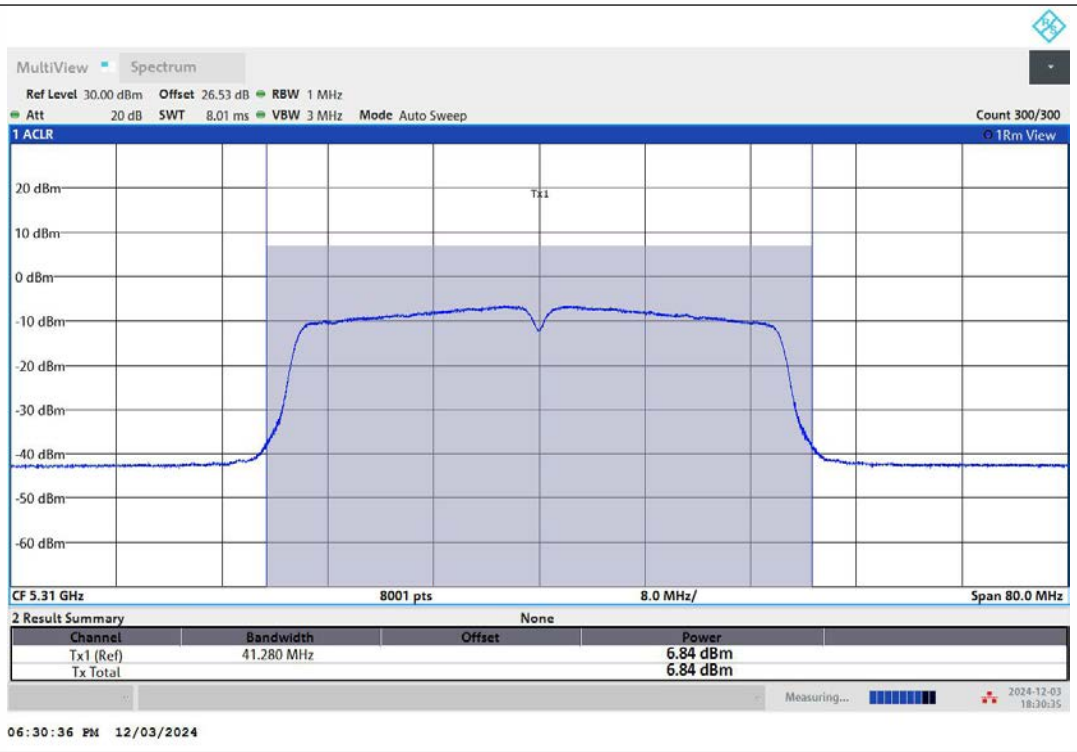

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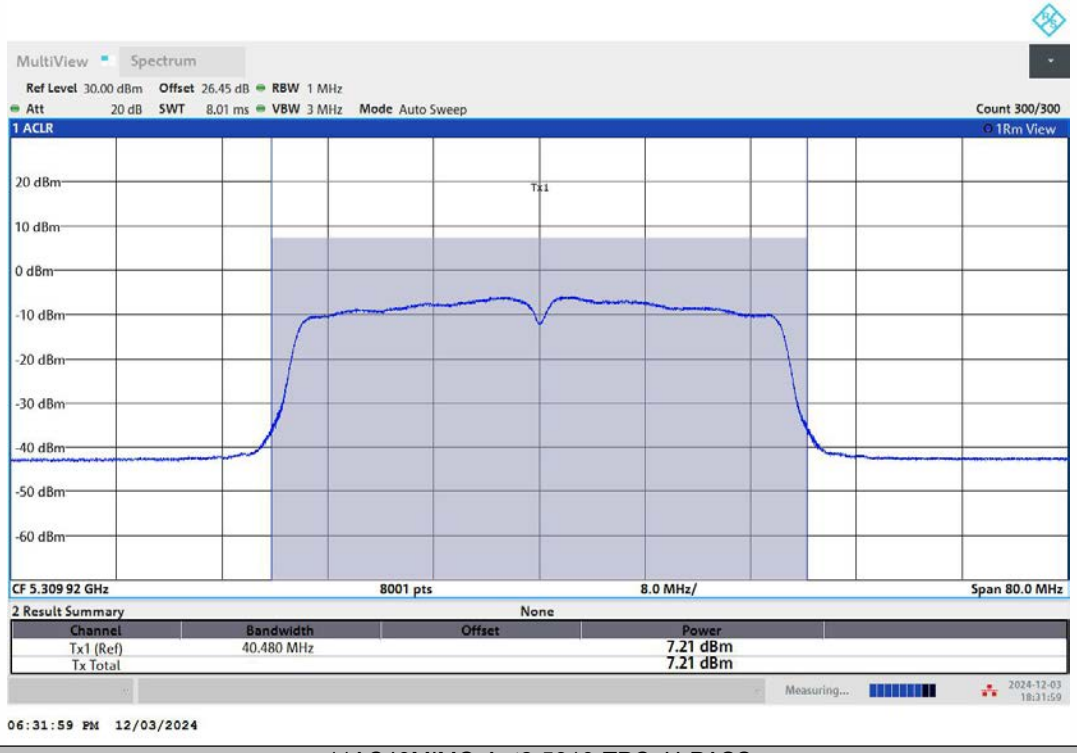
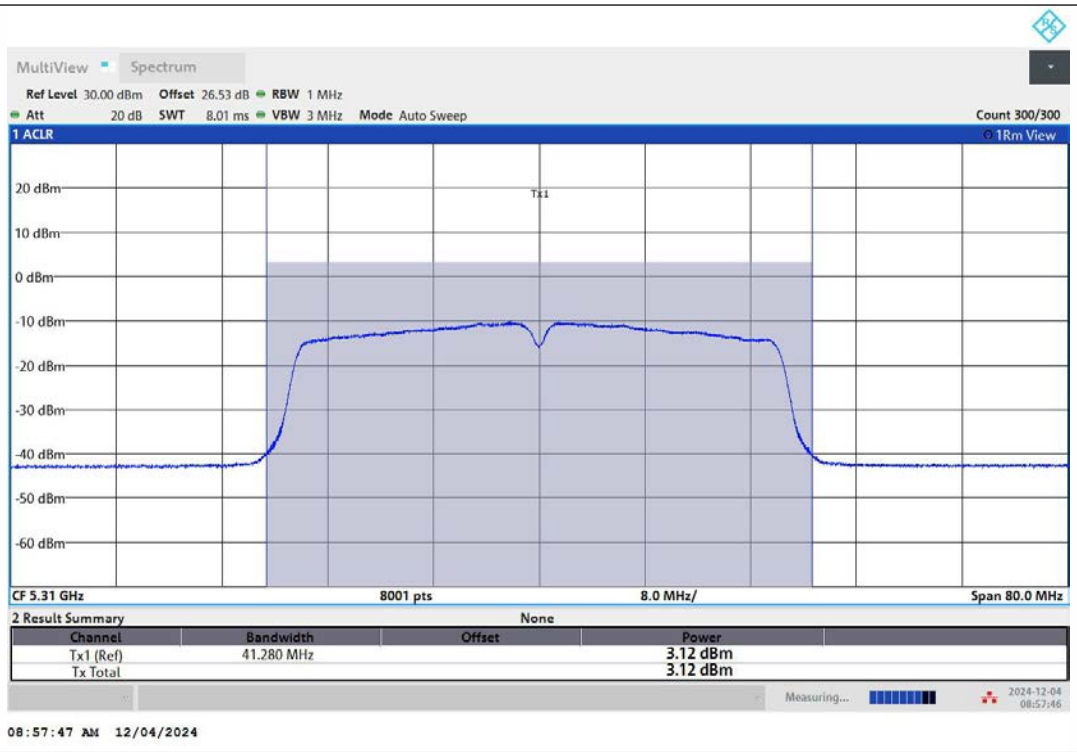


11AC40MIMO-Ant2-5310-TPC_H-PASS



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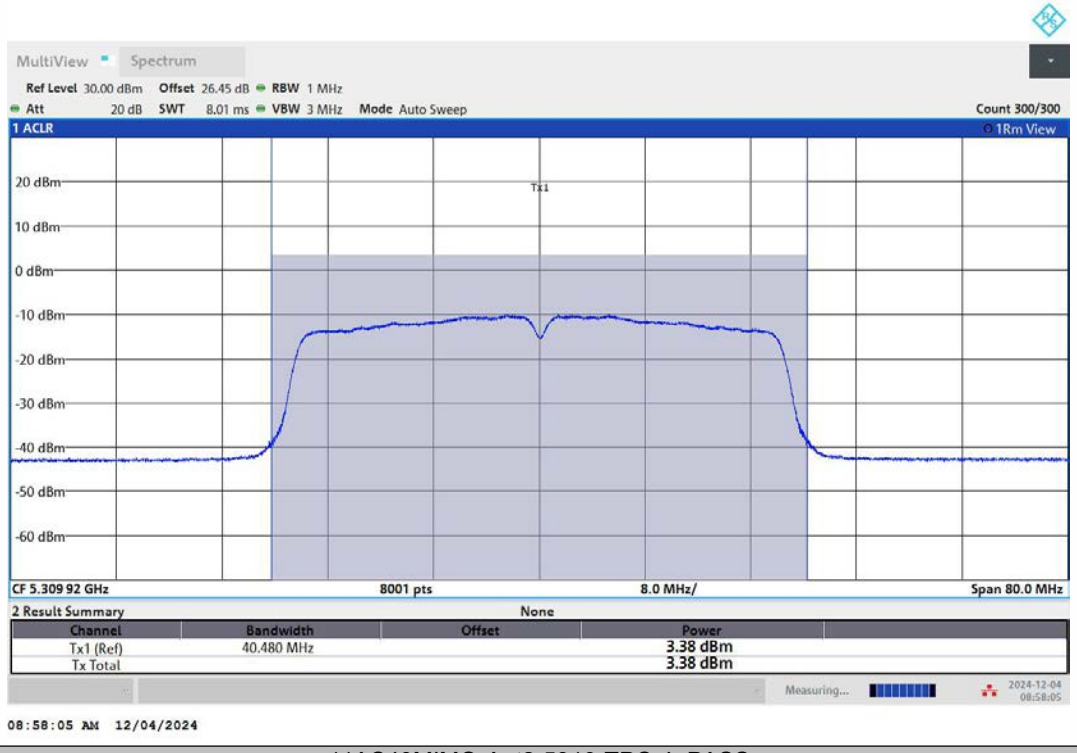

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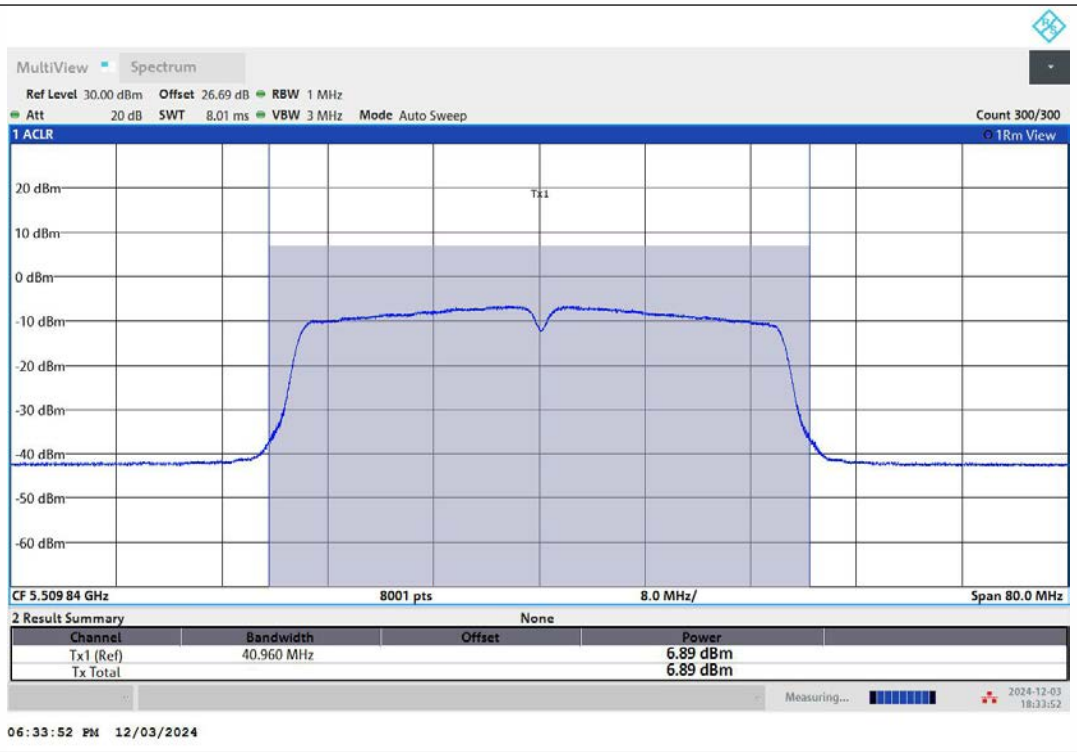
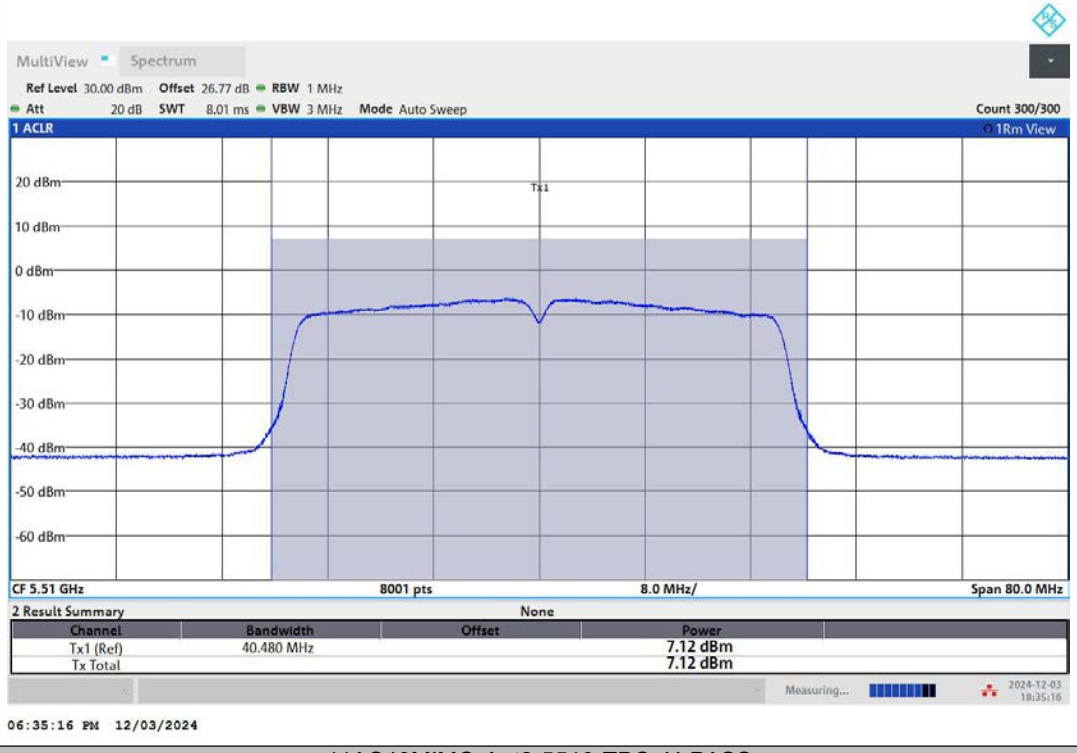


11AC40MIMO-Ant1-5510-TPC_H-PASS



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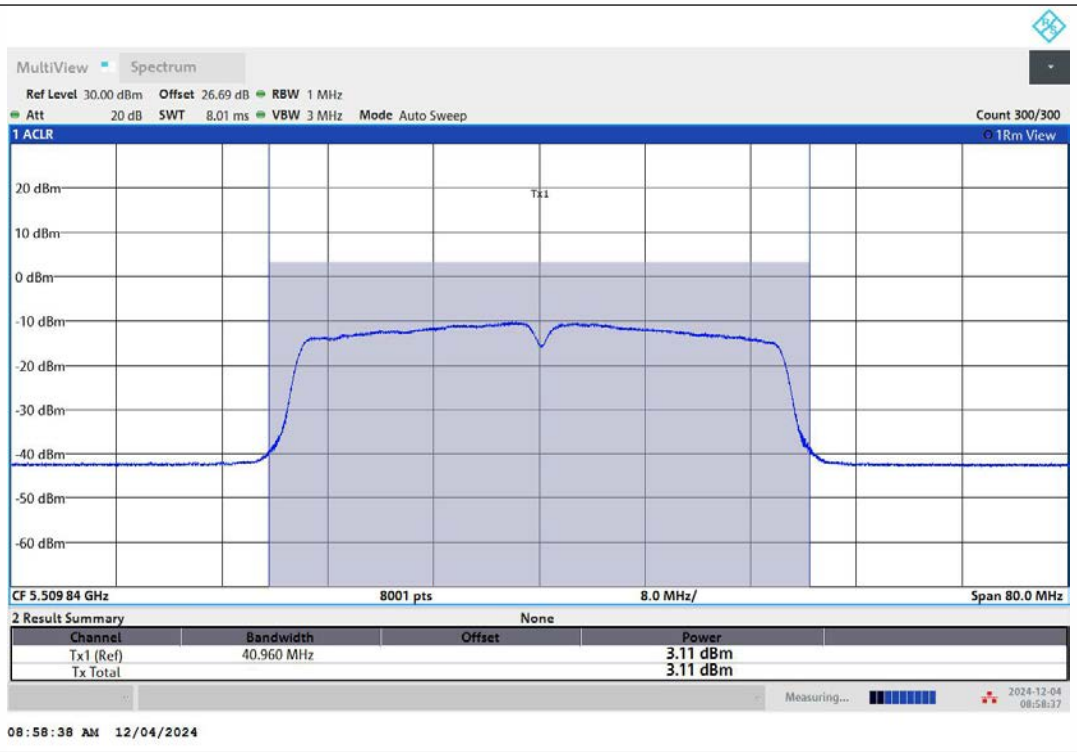
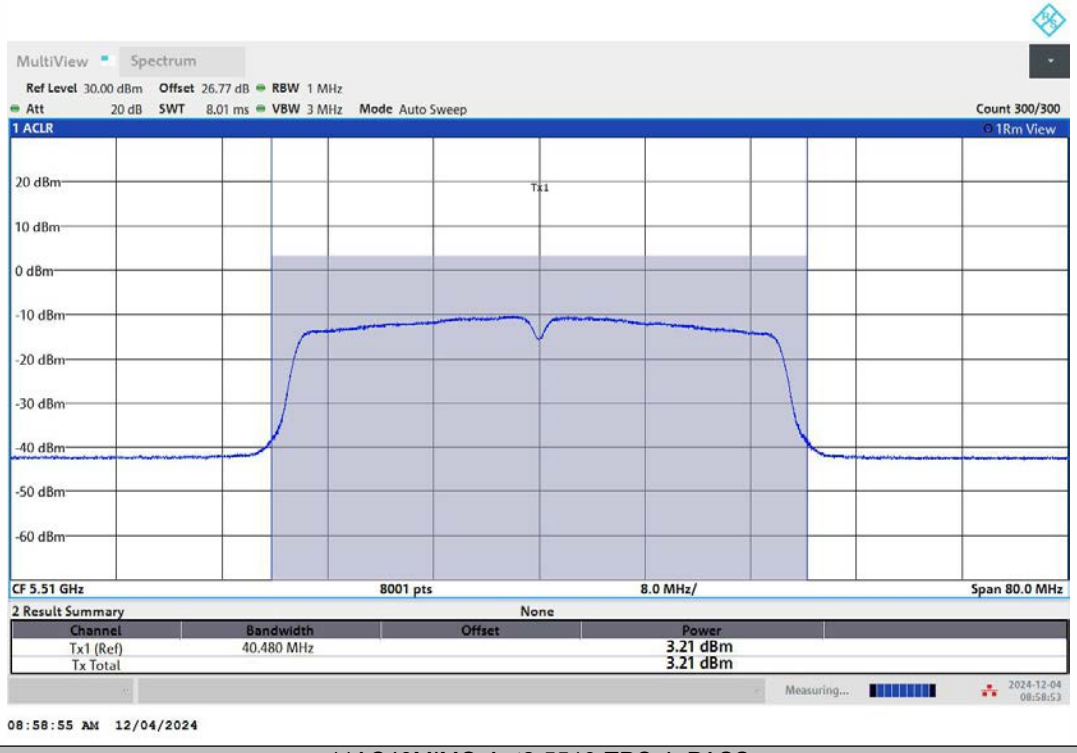
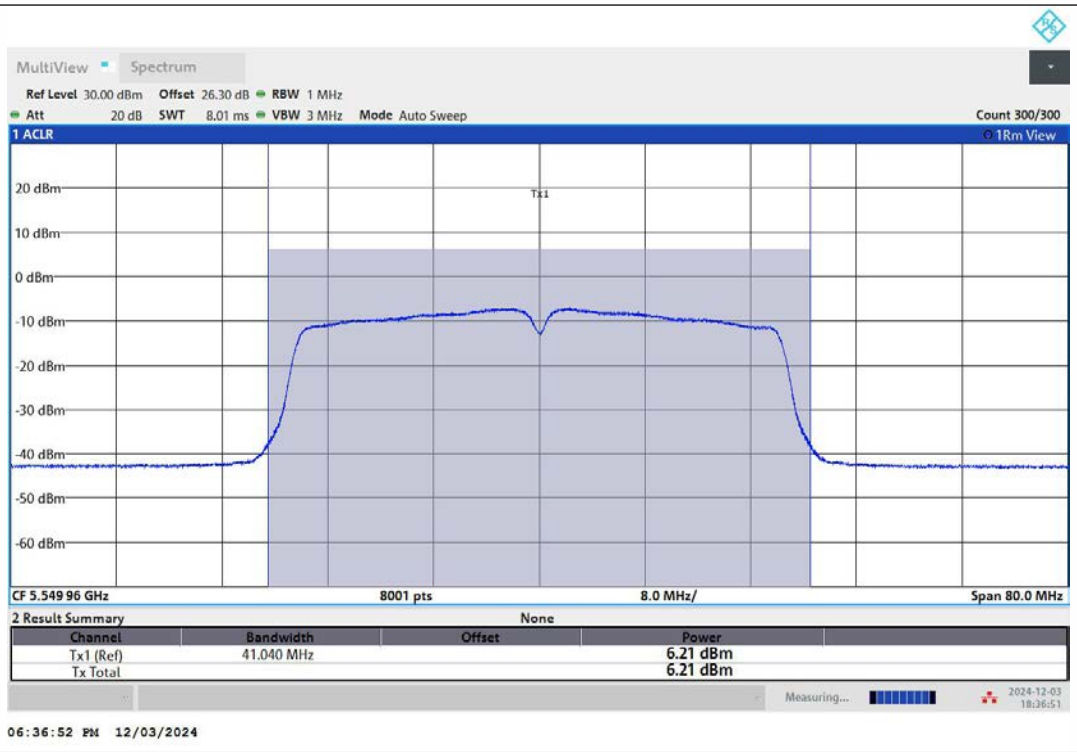


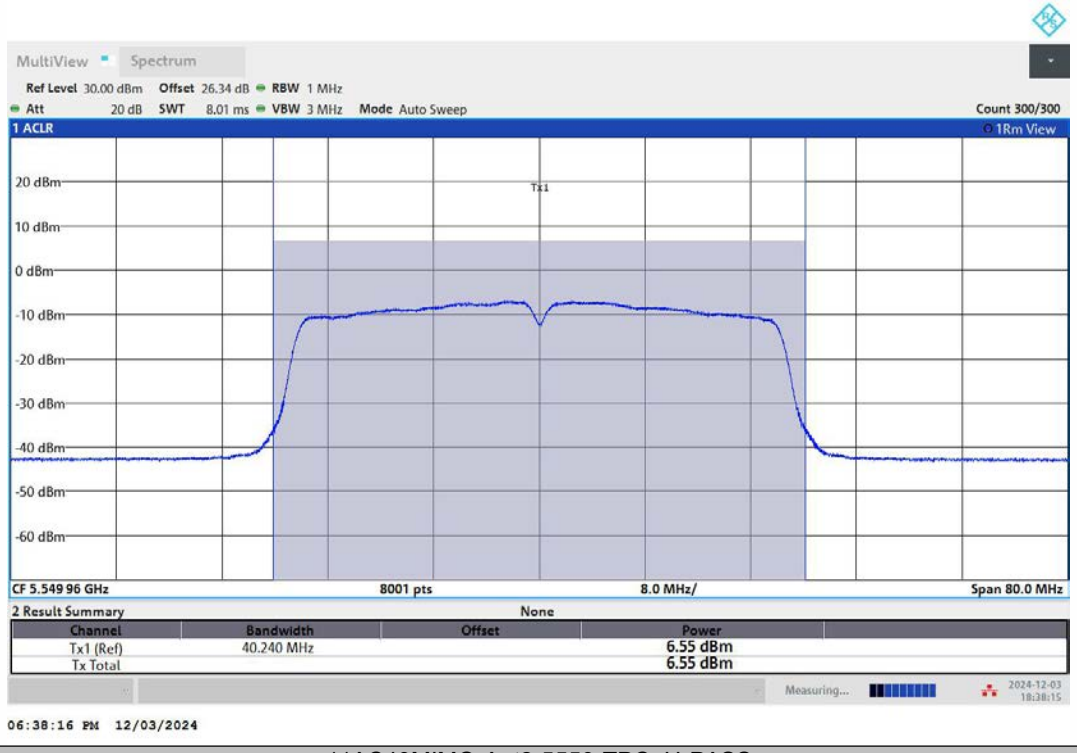
11AC40MIMO-Ant1-5510-TPC_L-PASS



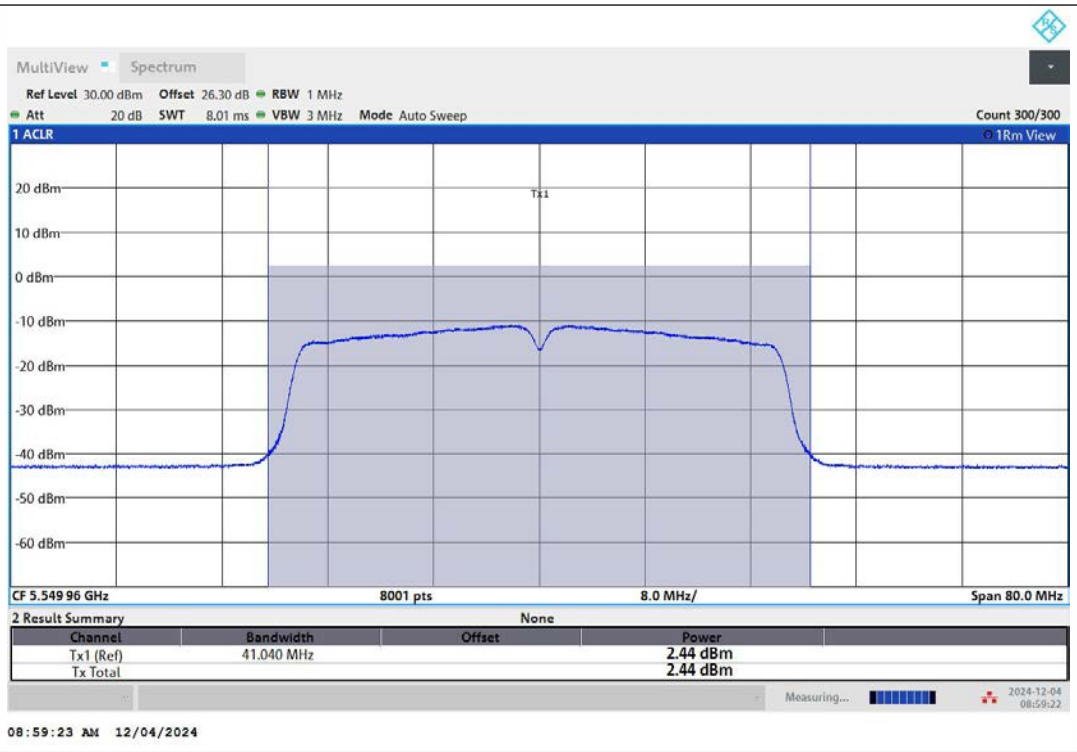
11AC40MIMO-Ant2-5510-TPC_L-PASS



11AC40MIMO-Ant1-5550-TPC_H-PASS



11AC40MIMO-Ant2-5550-TPC_H-PASS



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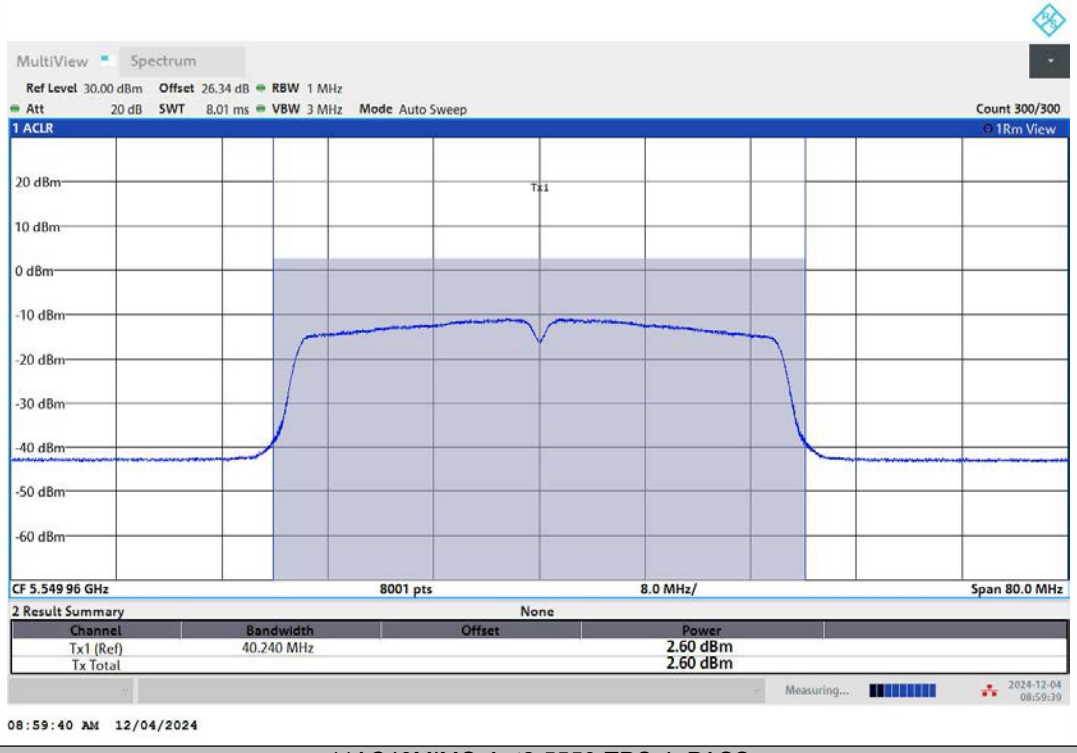
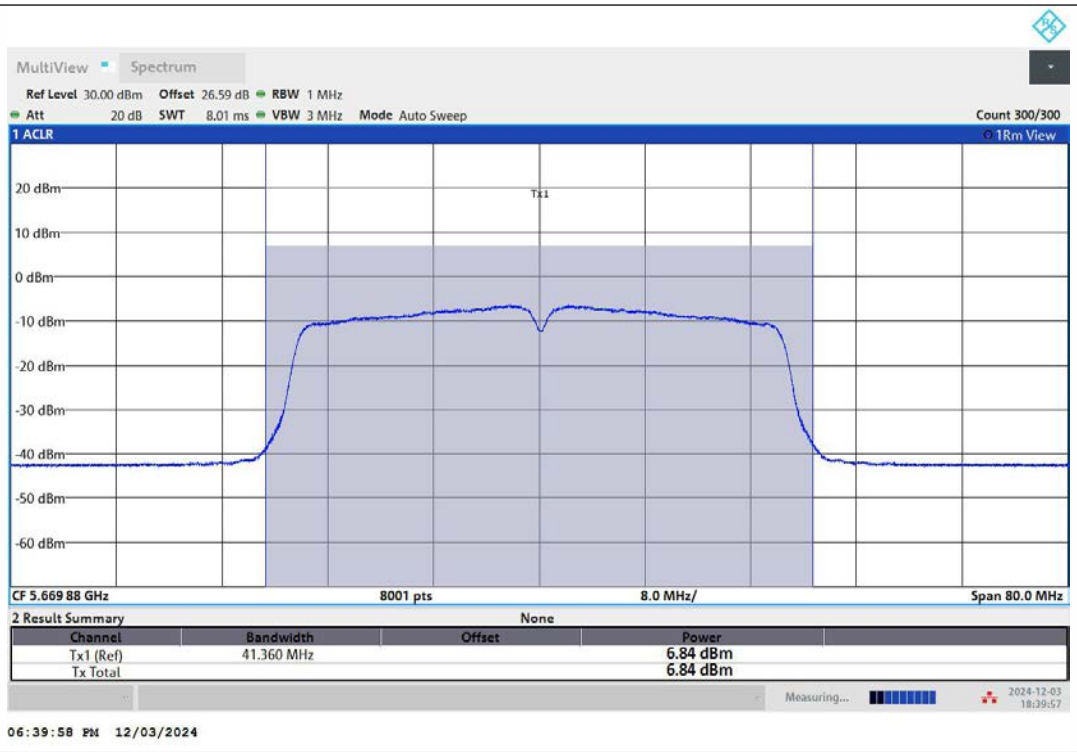
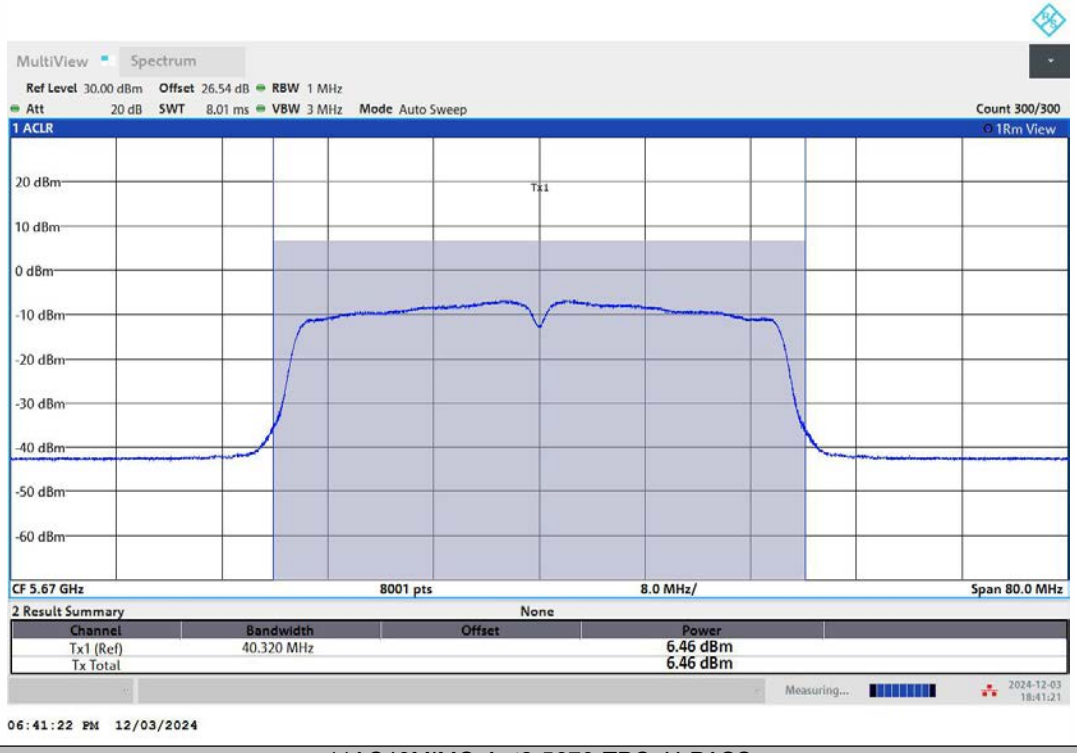


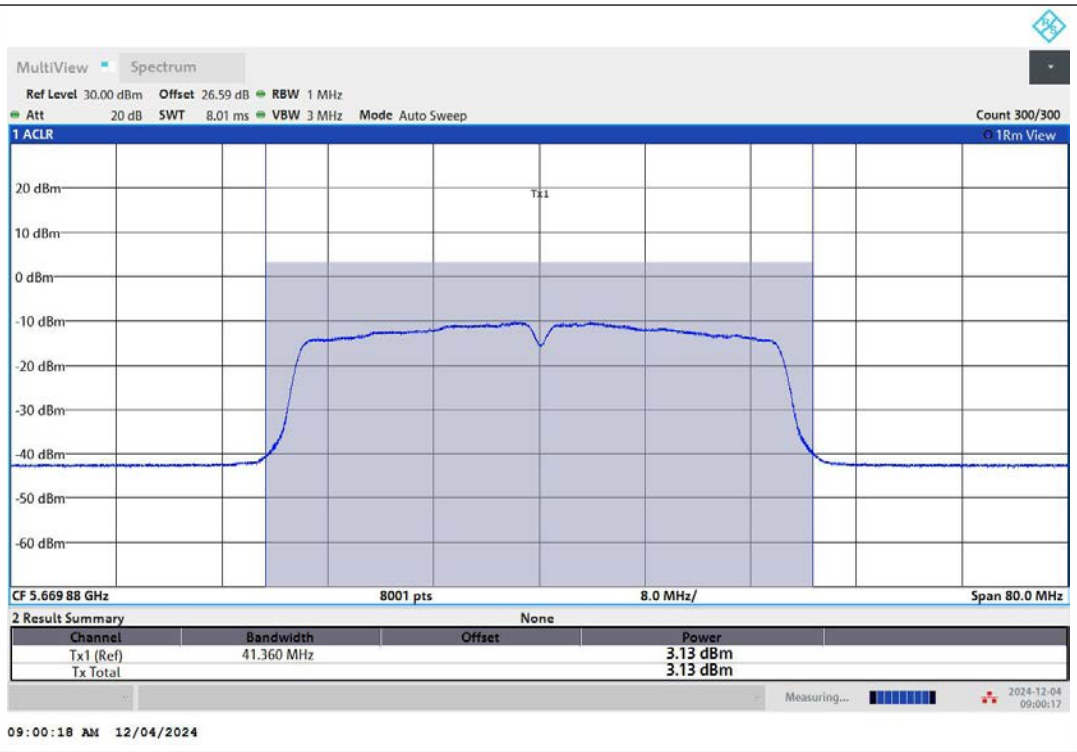
11AC40MIMO-Ant2-5550-TPC_L-PASS



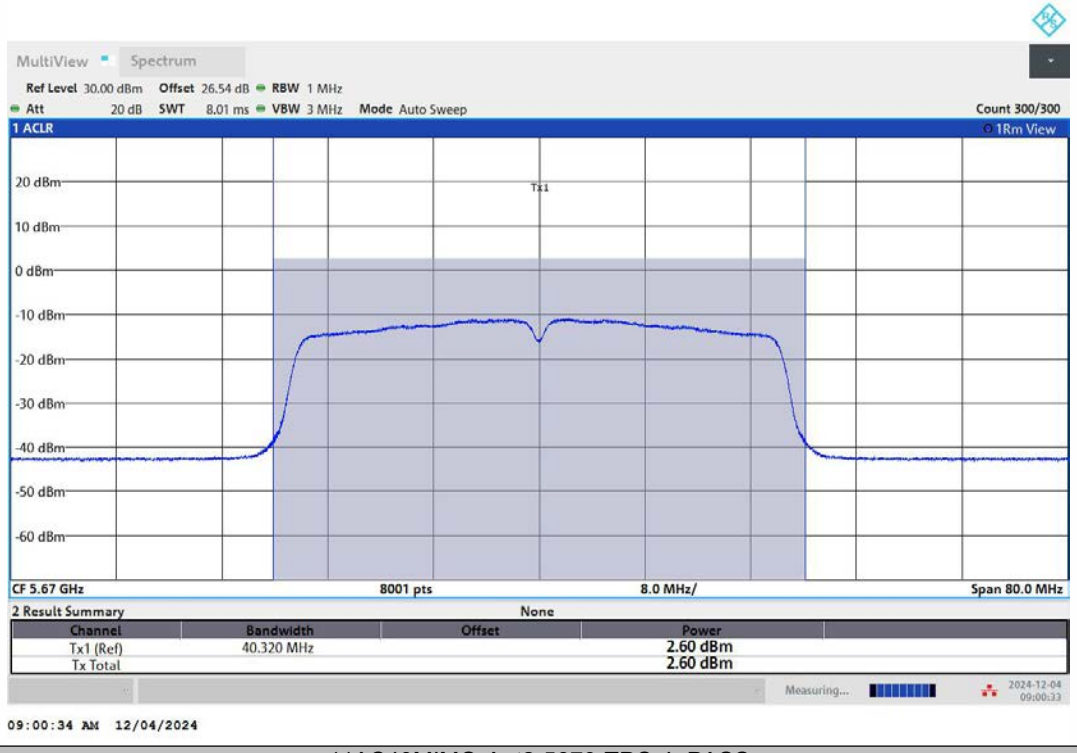
11AC40MIMO-Ant1-5670-TPC_H-PASS



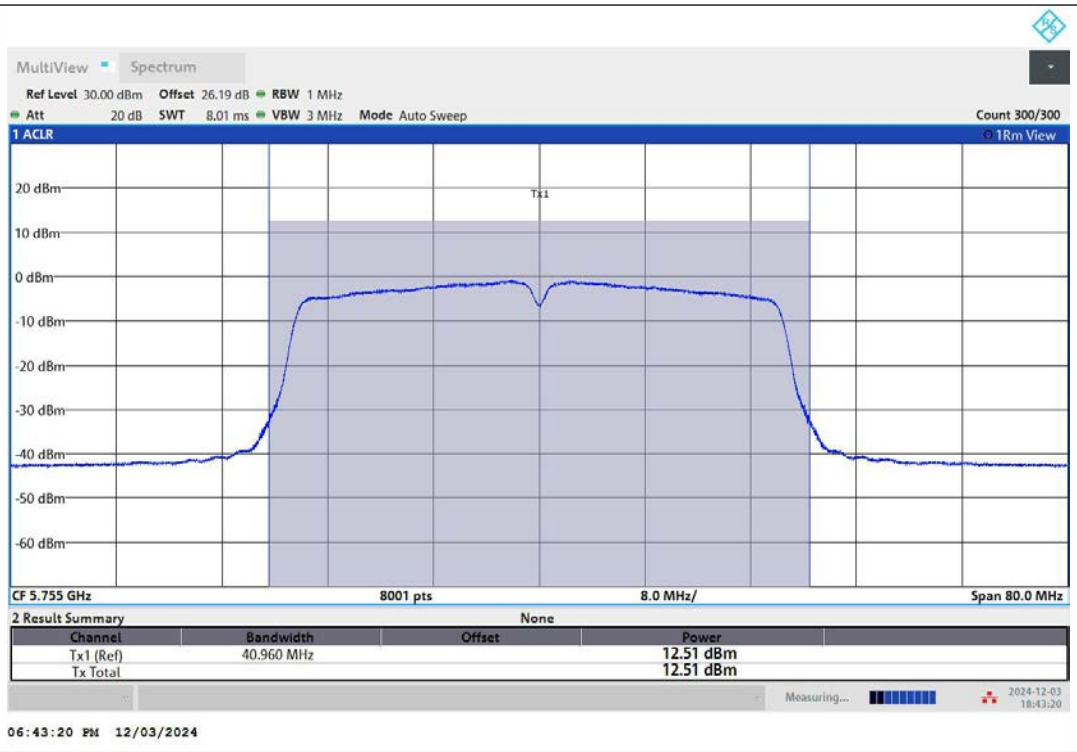
11AC40MIMO-Ant2-5670-TPC_H-PASS



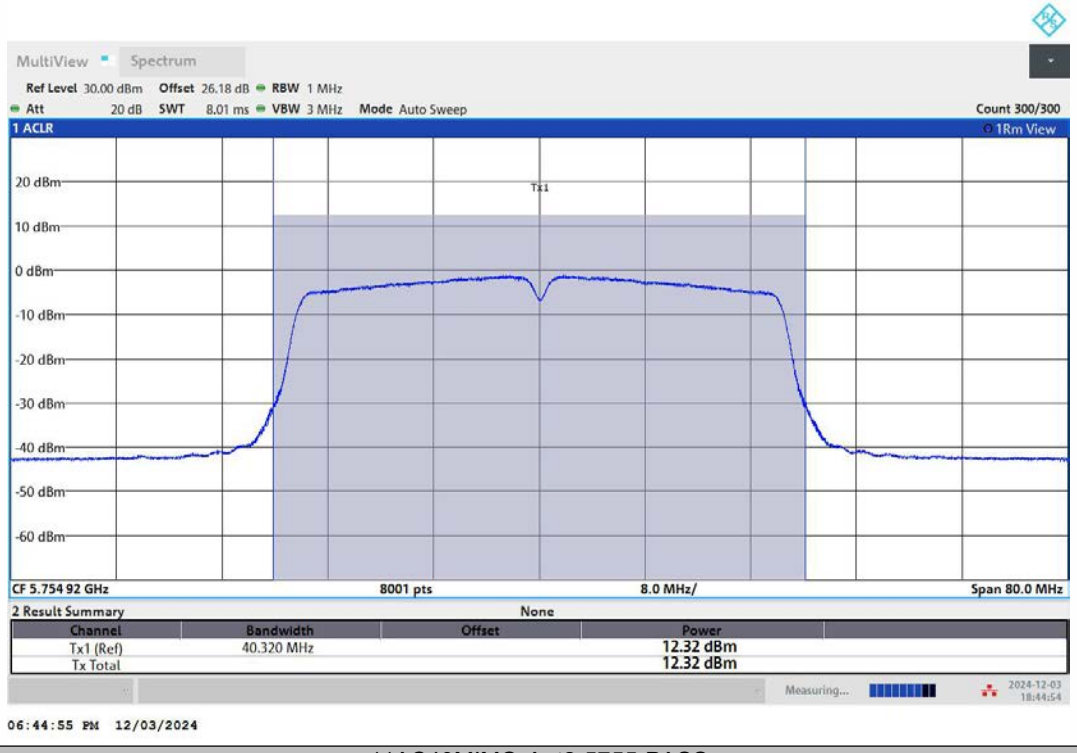
11AC40MIMO-Ant1-5670-TPC_L-PASS



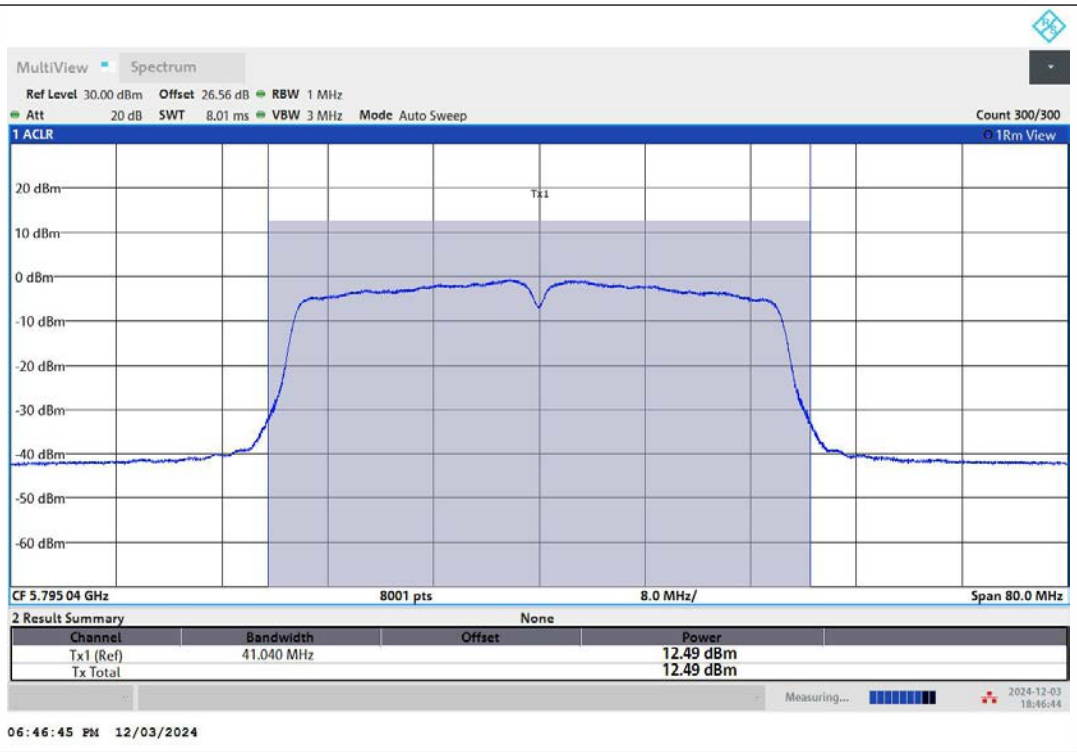
11AC40MIMO-Ant2-5670-TPC_L-PASS



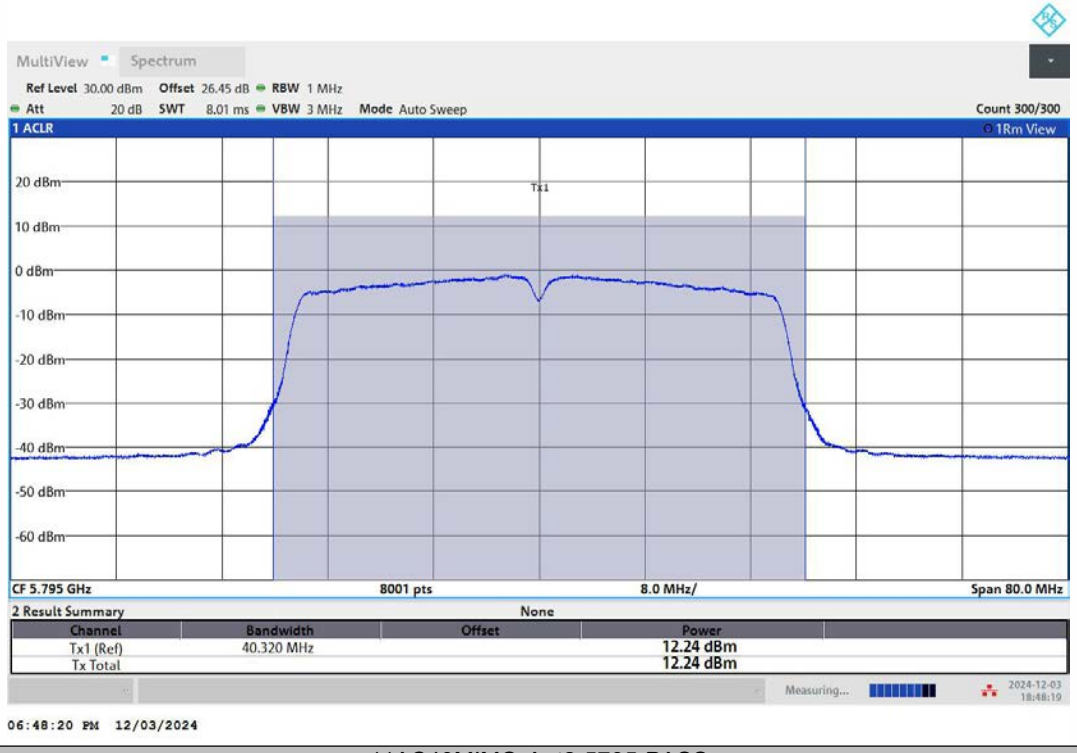
11AC40MIMO-Ant1-5755-PASS



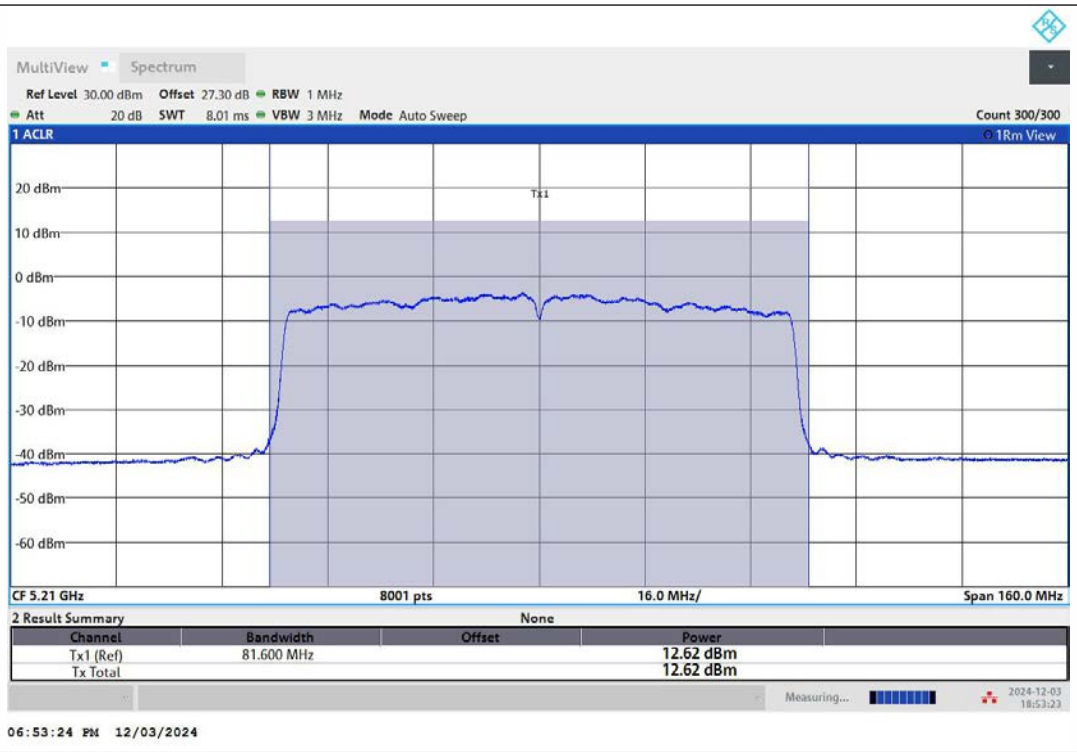
11AC40MIMO-Ant2-5755-PASS



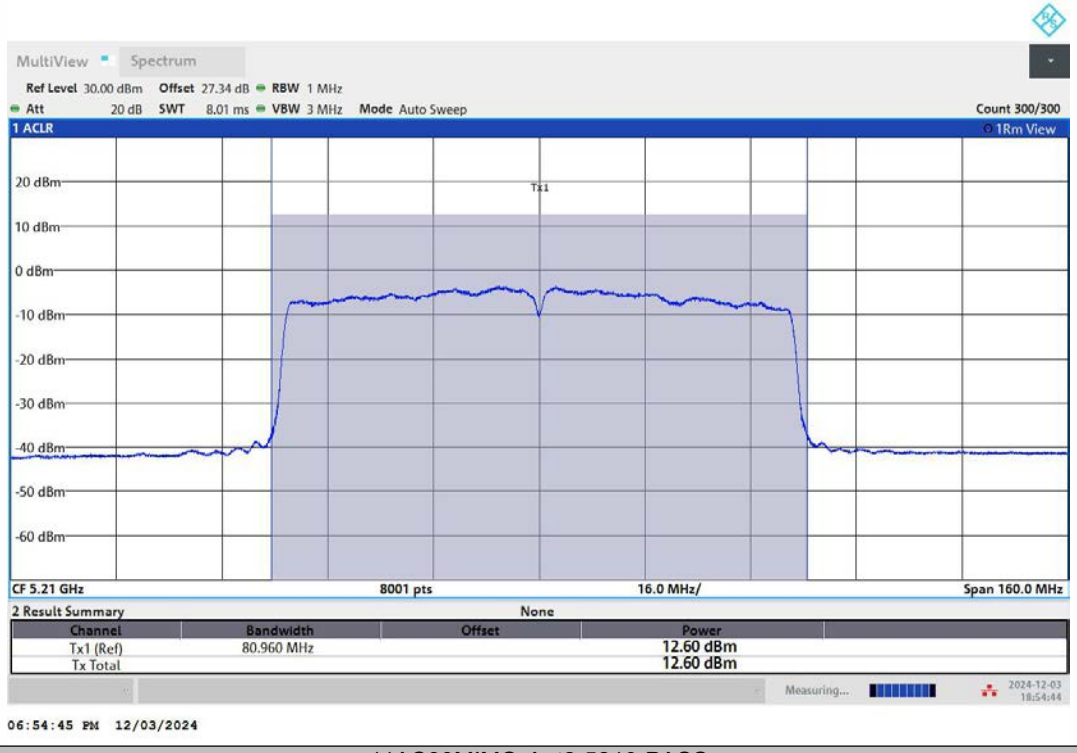
11AC40MIMO-Ant1-5795-PASS



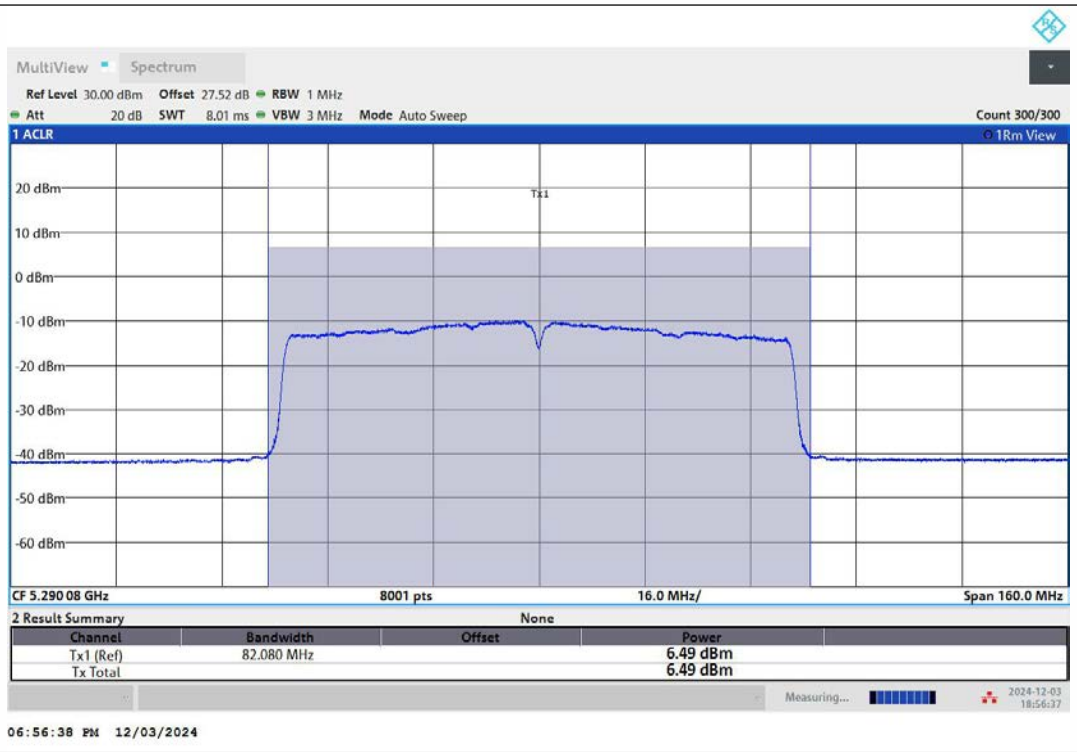
11AC40MIMO-Ant2-5795-PASS



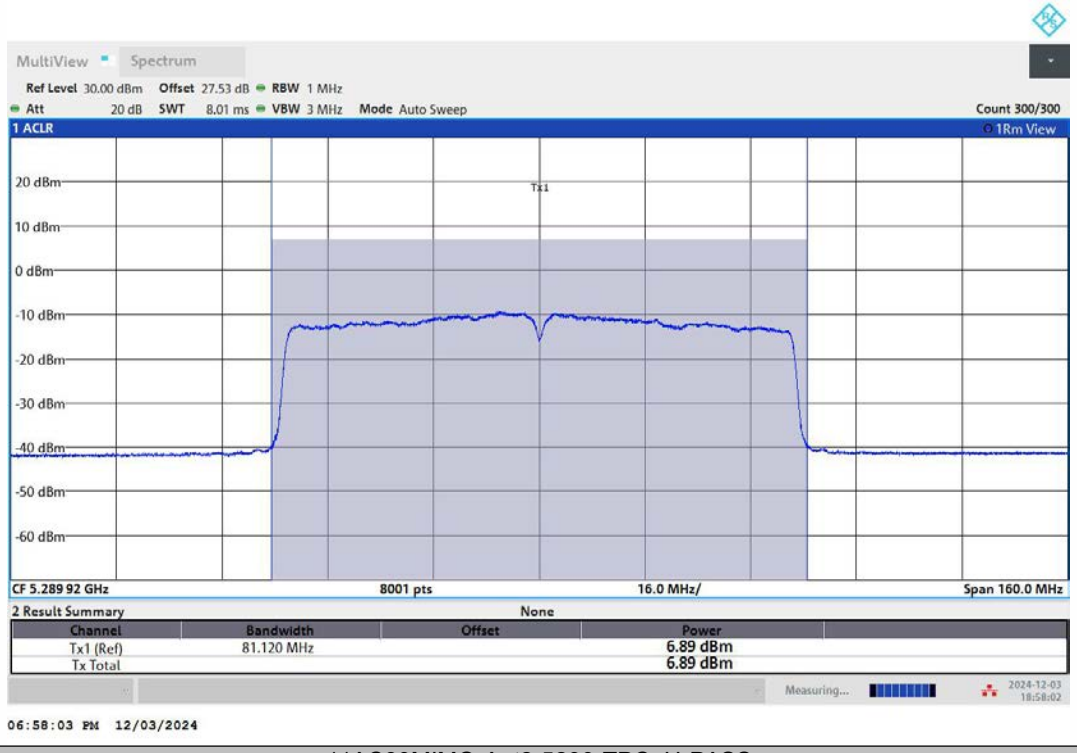
11AC80MIMO-Ant1-5210-PASS



11AC80MIMO-Ant2-5210-PASS

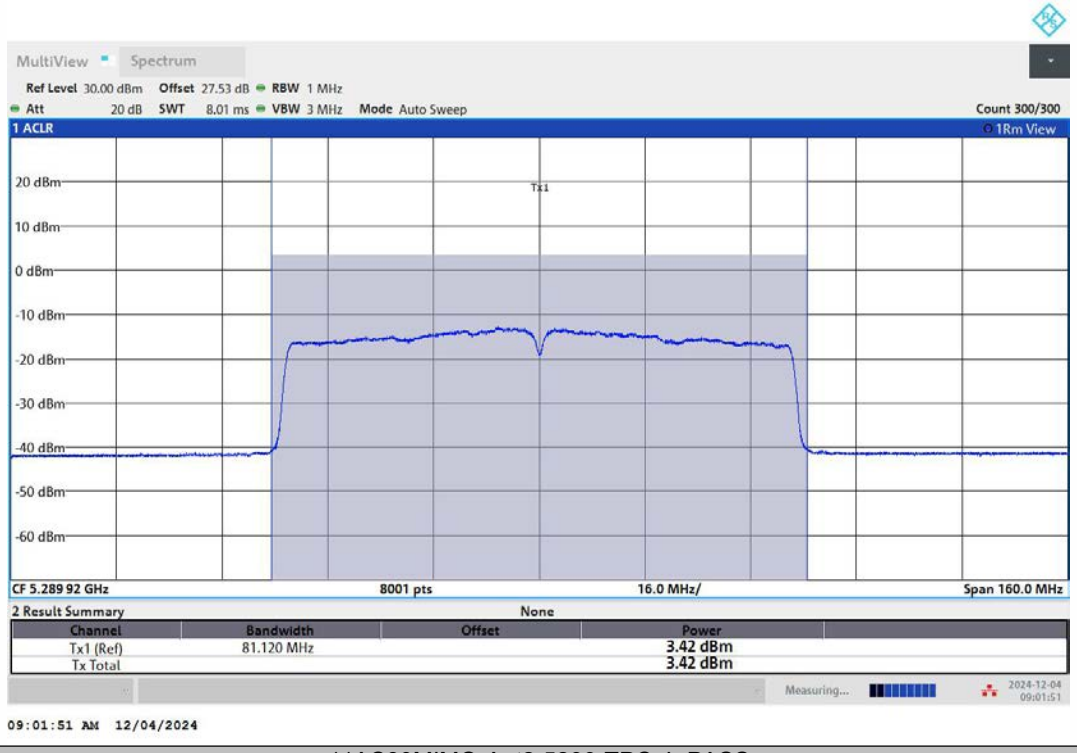


11AC80MIMO-Ant1-5290-TPC_H-PASS

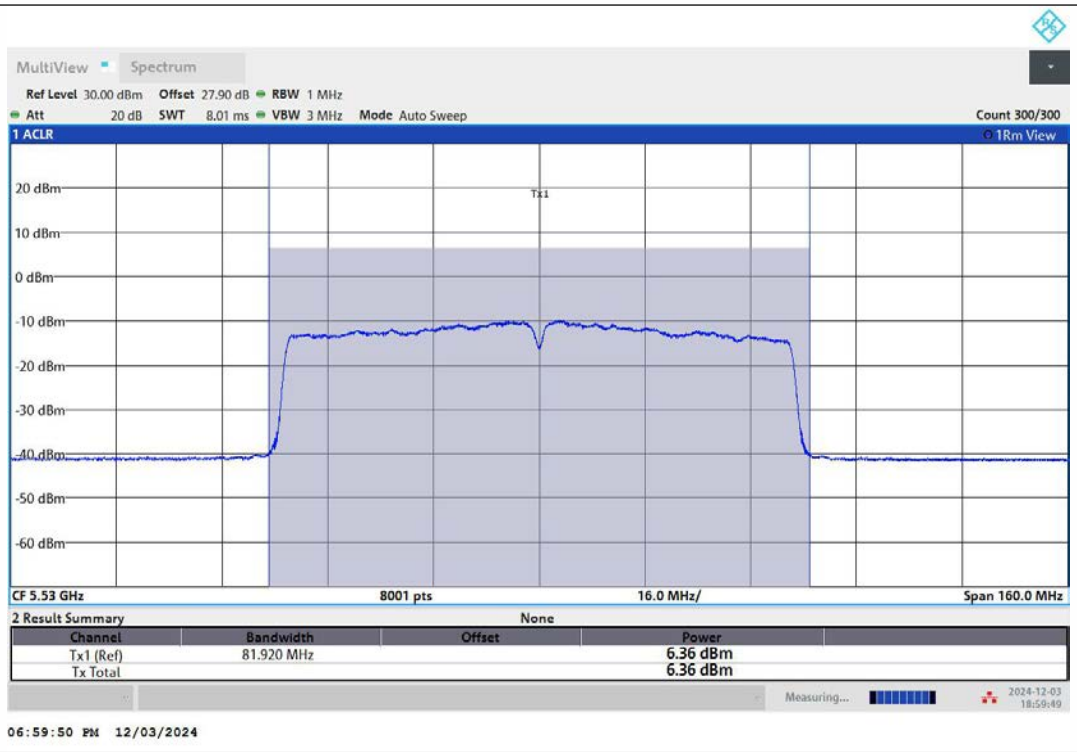


11AC80MIMO-Ant2-5290-TPC_H-PASS

11AC80MIMO-Ant1-5290-TPC_L-PASS

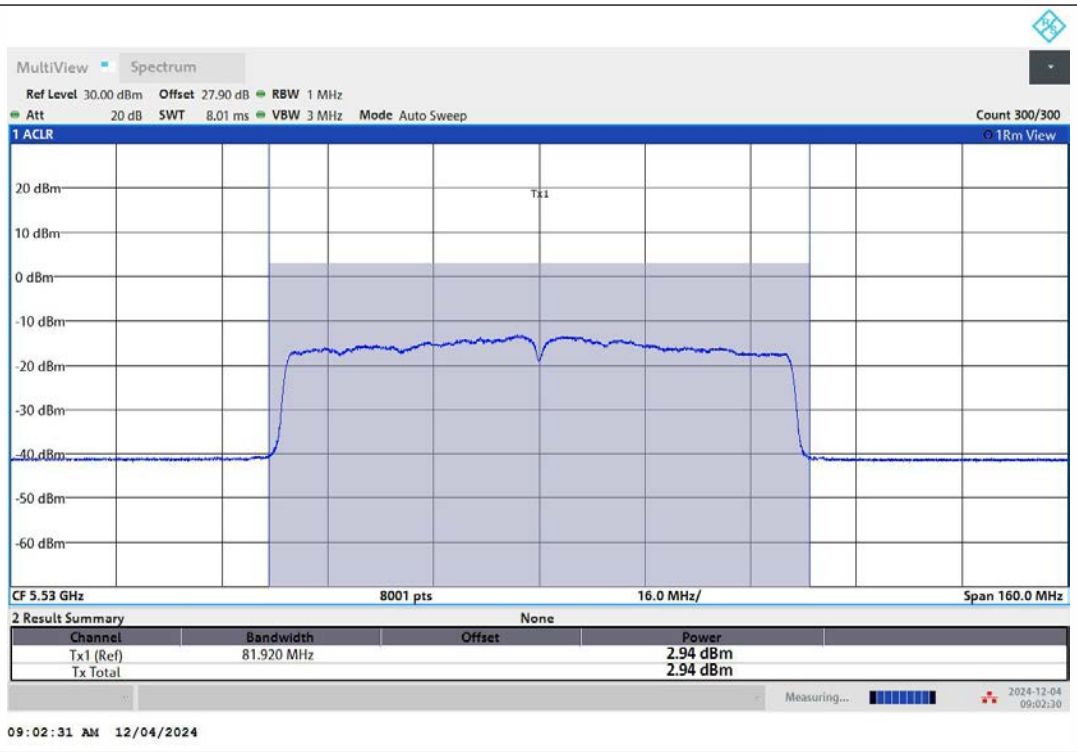


11AC80MIMO-Ant2-5290-TPC_L-PASS

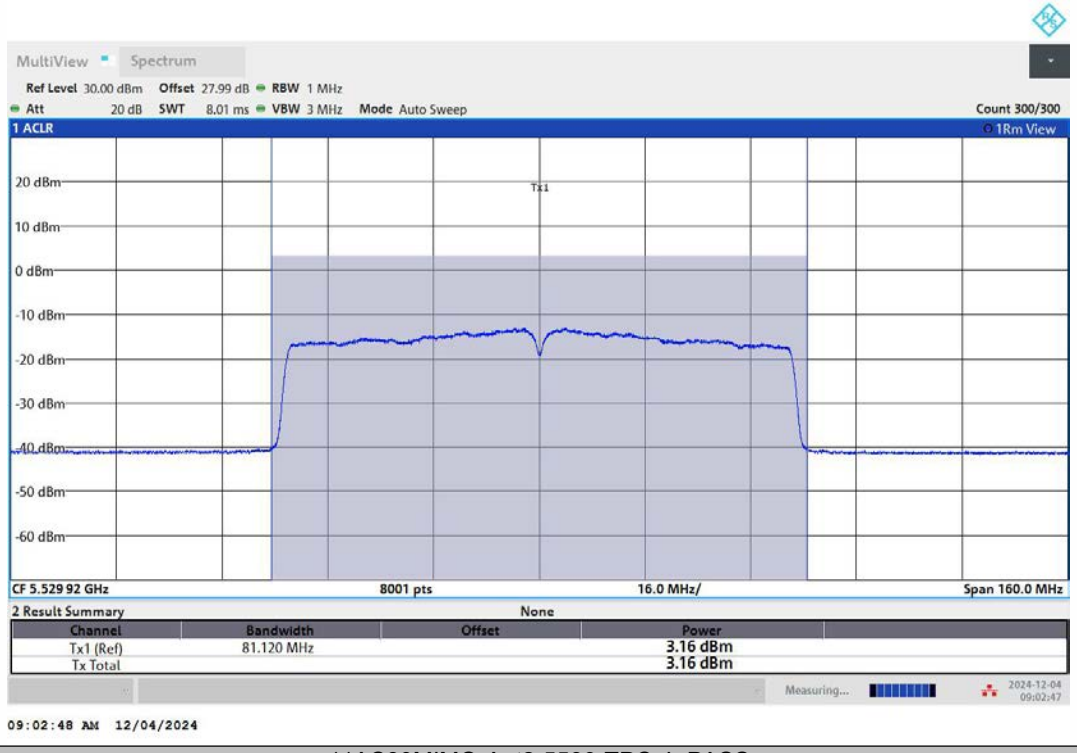


11AC80MIMO-Ant1-5530-TPC_H-PASS

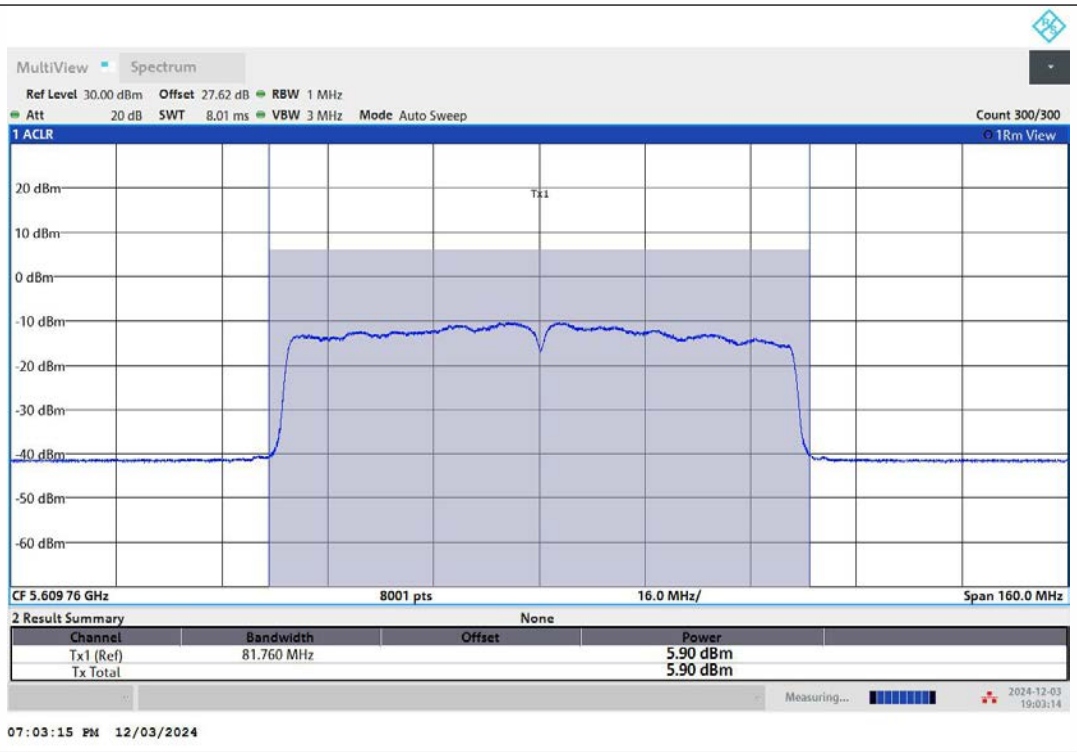
11AC80MIMO-Ant2-5530-TPC_H-PASS



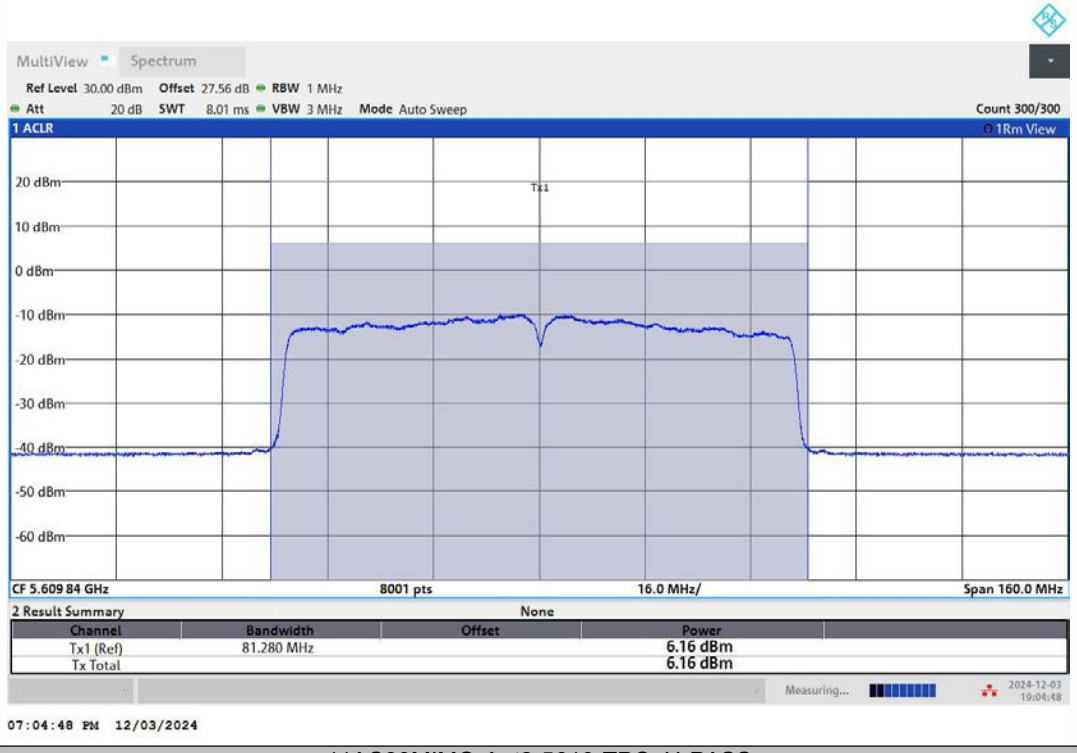
11AC80MIMO-Ant1-5530-TPC_L-PASS



11AC80MIMO-Ant2-5530-TPC_L-PASS

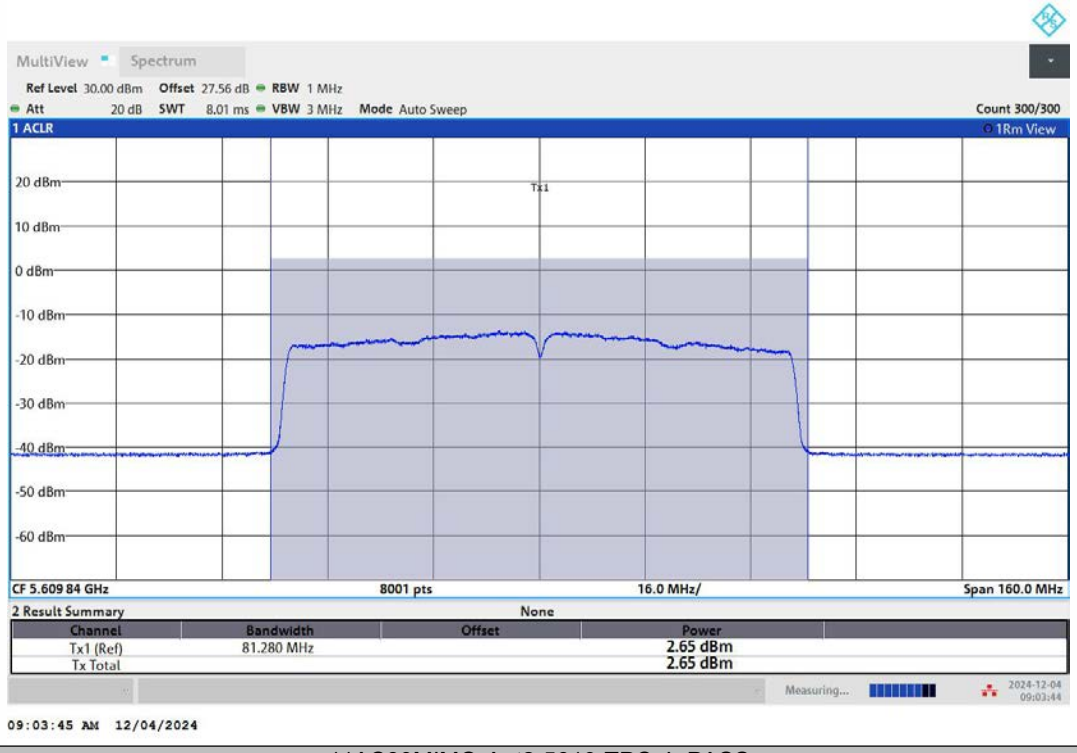


11AC80MIMO-Ant1-5610-TPC_H-PASS

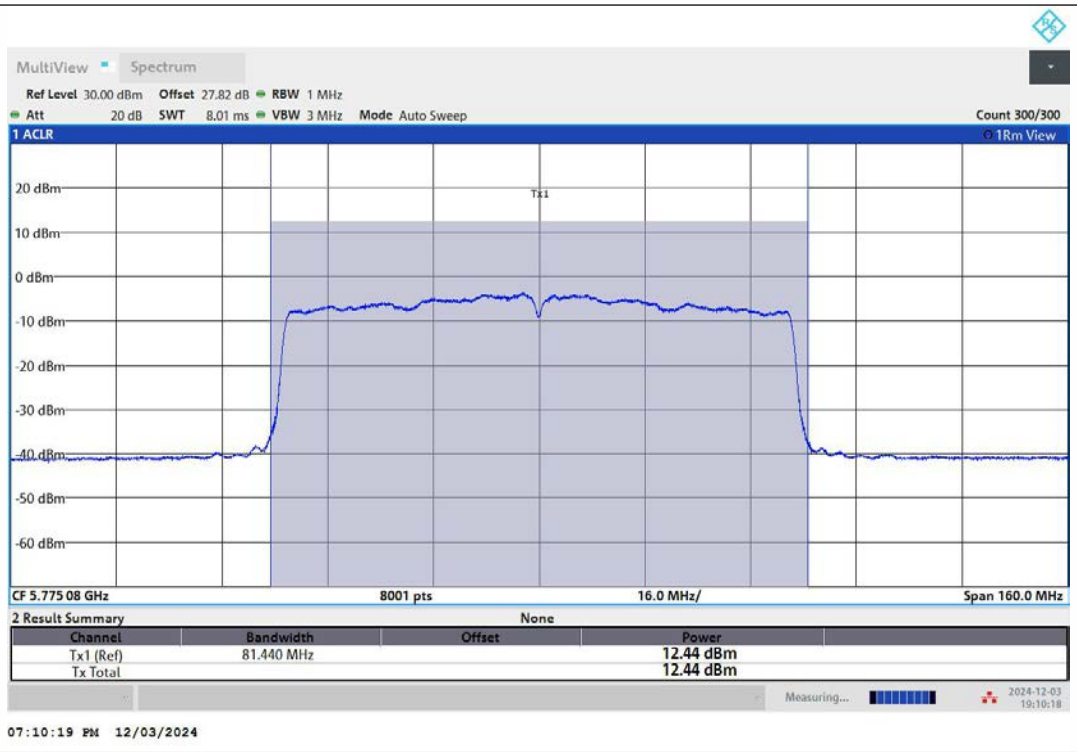


11AC80MIMO-Ant2-5610-TPC_H-PASS

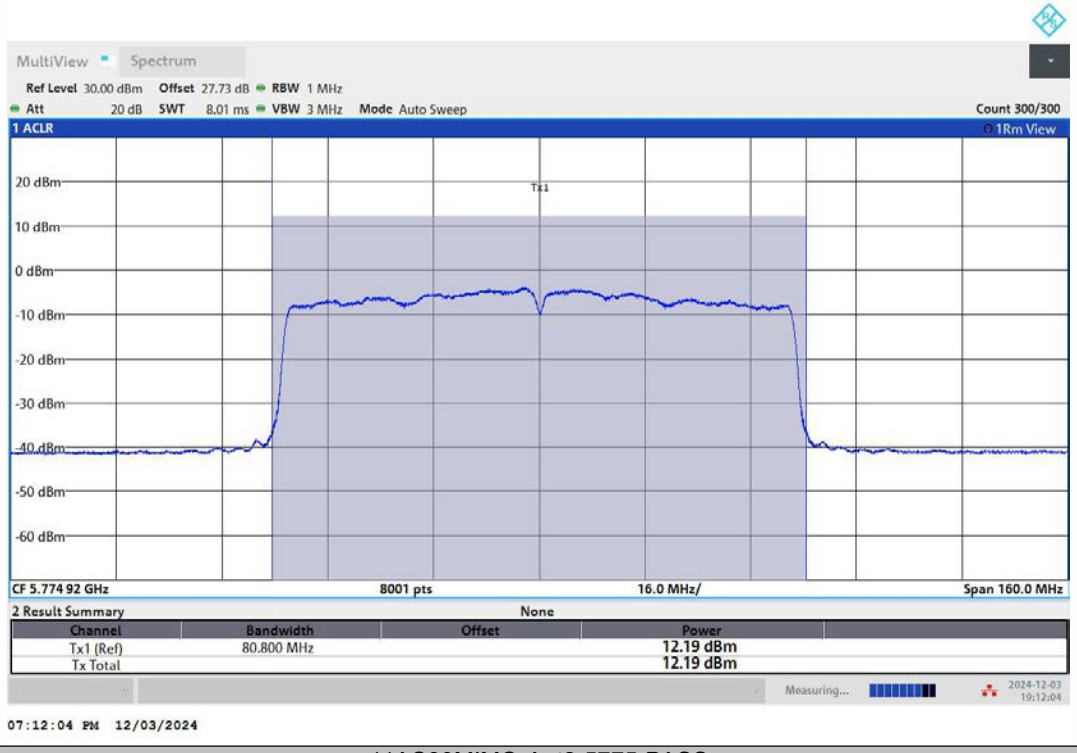
11AC80MIMO-Ant1-5610-TPC_L-PASS



11AC80MIMO-Ant2-5610-TPC_L-PASS



11AC80MIMO-Ant1-5775-PASS



11AC80MIMO-Ant2-5775-PASS

8.3 MAXIMUM PEAK POWER DENSITY

8.3.1 Applicable Standard

According to FCC Part 15.407(a)(1) for UNII Band I
According to FCC Part 15.407(a)(2) for UNII Band II-A and UNII Band II-C
According to FCC Part 15.407(a)(3) for UNII Band III
According to 789033 D02 Section II(F)

8.3.2 Conformance Limit

■ For the band 5.15-5.25 GHz

(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. 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).
(a) (1) (ii) For an indoor 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. 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.
(a) (1) (iii) For fixed point-to-point access points 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. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. 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.
(a) (1) (iv) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. 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.

■ For the 5.25-5.35 GHz and 5.47-5.725 GHz

(b) (2) the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 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.

■ For the band 5.725-5.85 GHz

(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.

8.3.3 Test Configuration

Test according to clause 6.1 radio frequency test setup 1.

8.3.4 Test Procedure

Methods refer to FCC KDB 789033.

For devices operating in the bands 5.15-5.25 GHz, 5.25-5.35 GHz, and 5.47-5.725 GHz, the above procedures make use of 1 MHz RBW to satisfy directly the 1 MHz reference bandwidth specified in § 15.407(a)(5). For devices operating in the band 5.725-5.85 GHz, the rules specify a measurement bandwidth of 500 kHz. Many spectrum analyzers do not have 500 kHz RBW, thus a narrower RBW may need to be used. The rules permit the use of a RBWs less than 1 MHz, or 500 kHz, "provided that the measured power is integrated over the full reference bandwidth" to show the total power over the specified measurement bandwidth (i.e., 1 MHz, or 500 kHz). If measurements are performed using a reduced resolution bandwidth (< 1 MHz, or < 500 kHz) and integrated over 1 MHz, or 500 KHz bandwidth, the following adjustments to the procedures apply:

a) Set RBW ≥ 1/T, where T is defined in section II.B.I.a).

b) Set VBW ≥ 3 RBW.

c) If measurement bandwidth of Maximum PSD is specified in 500 kHz, add 10log(500kHz/RBW) to the measured result, whereas RBW (< 500 KHz) is the reduced resolution bandwidth of the spectrum analyzer set during measurement.

d) If measurement bandwidth of Maximum PSD is specified in 1 MHz, add 10log(1MHz/RBW) to the measured result, whereas RBW (< 1 MHz) is the reduced resolution bandwidth of spectrum analyzer set during measurement.

e) Care must be taken to ensure that the measurements are performed during a period of continuous transmission or are corrected upward for duty cycle.

Note: As a practical matter, it is recommended to use reduced RBW of 100 KHz for the sections.

5.c) and 5.d) above, since RBW=100 KHZ is available on nearly all spectrum analyzers.

8.3.5 Test Results

Temperature :	25℃	ATM Pressure::	1011 mbar
Humidity :	60 %	Test Engineer:	GJ

Power Density

For 802.11a, the limit as below.

Frequency [MHz]	Limit[dBm/MHz]
5150~5250MHz Band	17
5250~5350MHz Band	11
5470~5725MHz Band	11
5725~5850MHz Band	30

For others, the limit as below.

Frequency [MHz]	Limit[dBm/MHz]
5150~5250MHz Band	7.44
5250~5350MHz Band	1.44
5470~5725MHz Band	1.44
5725~5850MHz Band	20.44

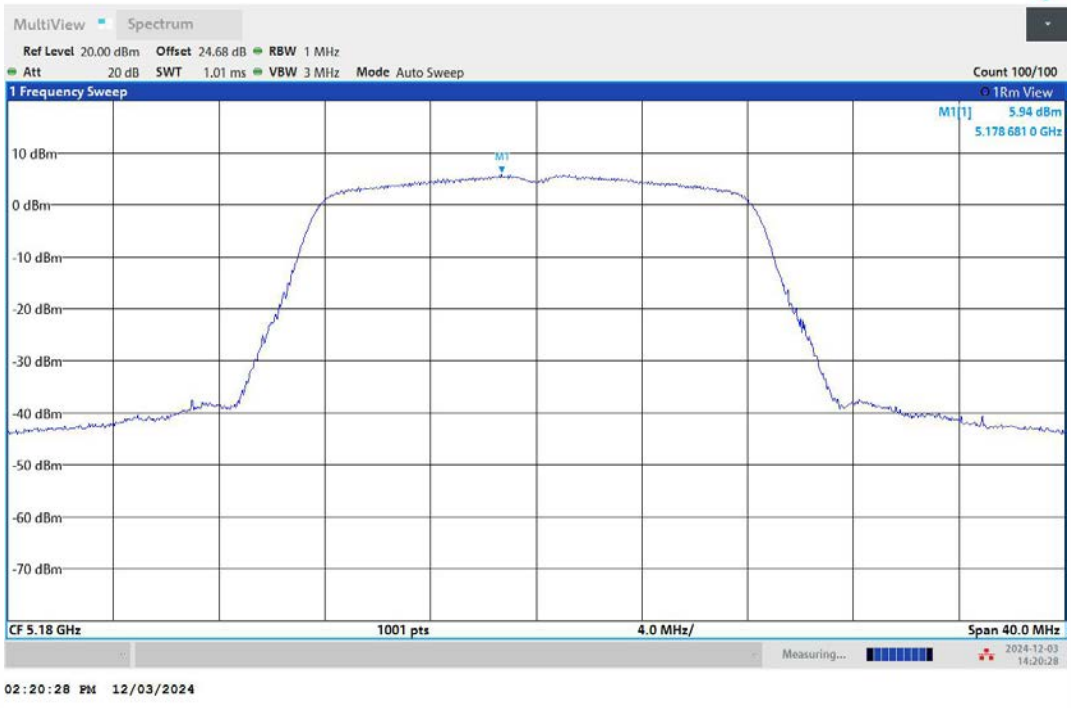
TestMode	Antenna	Frequency[MHz]	Result [dBm/MHz]	Verdict
11A	Ant1	5180	5.94	PASS
11A	Ant2	5180	5.29	PASS
11A	Ant1	5200	5.82	PASS
11A	Ant2	5200	4.79	PASS
11A	Ant1	5240	5.05	PASS
11A	Ant2	5240	4.79	PASS
11A	Ant1	5260	0.00	PASS
11A	Ant2	5260	-0.14	PASS
11A	Ant1	5280	-0.74	PASS
11A	Ant2	5280	-0.79	PASS
11A	Ant2	5320	-0.57	PASS
11A	Ant1	5320	-1.03	PASS
11A	Ant2	5500	-0.42	PASS
11A	Ant1	5500	-0.35	PASS
11A	Ant2	5580	-0.97	PASS
11A	Ant1	5580	-0.77	PASS
11A	Ant2	5700	-1.94	PASS
11A	Ant1	5700	-0.62	PASS
11A	Ant2	5745	1.30	PASS
11A	Ant1	5745	2.16	PASS
11A	Ant2	5785	1.66	PASS
11A	Ant1	5785	2.15	PASS
11A	Ant2	5825	1.32	PASS
11A	Ant1	5825	2.10	PASS
11N20MIMO	Ant1	5180	2.72	PASS
11N20MIMO	Ant2	5180	2.67	PASS
11N20MIMO	total	5180	5.71	PASS

11N20MIMO	Ant1	5200	2.24	PASS
11N20MIMO	Ant2	5200	2.09	PASS
11N20MIMO	total	5200	5.18	PASS
11N20MIMO	Ant1	5240	1.50	PASS
11N20MIMO	Ant2	5240	1.46	PASS
11N20MIMO	total	5240	4.49	PASS
11N20MIMO	Ant1	5260	-3.24	PASS
11N20MIMO	Ant2	5260	-3.37	PASS
11N20MIMO	total	5260	-0.29	PASS
11N20MIMO	Ant1	5280	-3.55	PASS
11N20MIMO	Ant2	5280	-3.35	PASS
11N20MIMO	total	5280	-0.44	PASS
11N20MIMO	Ant1	5320	-3.97	PASS
11N20MIMO	Ant2	5320	-3.60	PASS
11N20MIMO	total	5320	-0.77	PASS
11N20MIMO	Ant1	5500	-3.71	PASS
11N20MIMO	Ant2	5500	-3.52	PASS
11N20MIMO	total	5500	-0.60	PASS
11N20MIMO	Ant1	5580	-3.82	PASS
11N20MIMO	Ant2	5580	-3.93	PASS
11N20MIMO	total	5580	-0.86	PASS
11N20MIMO	Ant1	5700	-4.02	PASS
11N20MIMO	Ant2	5700	-4.57	PASS
11N20MIMO	total	5700	-1.28	PASS
11N20MIMO	Ant1	5745	-0.80	PASS
11N20MIMO	Ant2	5745	-1.33	PASS
11N20MIMO	total	5745	1.95	PASS
11N20MIMO	Ant1	5785	-1.16	PASS
11N20MIMO	Ant2	5785	-0.96	PASS
11N20MIMO	total	5785	1.95	PASS
11N20MIMO	Ant1	5825	-1.27	PASS
11N20MIMO	Ant2	5825	-1.69	PASS
11N20MIMO	total	5825	1.54	PASS
11N40MIMO	Ant1	5190	-0.21	PASS
11N40MIMO	Ant2	5190	-0.55	PASS
11N40MIMO	total	5190	2.63	PASS
11N40MIMO	Ant1	5230	-0.67	PASS
11N40MIMO	Ant2	5230	-1.18	PASS
11N40MIMO	total	5230	2.09	PASS
11N40MIMO	Ant1	5270	-5.99	PASS
11N40MIMO	Ant2	5270	-5.65	PASS
11N40MIMO	total	5270	-2.81	PASS
11N40MIMO	Ant1	5310	-6.53	PASS
11N40MIMO	Ant2	5310	-6.18	PASS
11N40MIMO	total	5310	-3.34	PASS
11N40MIMO	Ant1	5510	-6.56	PASS
11N40MIMO	Ant2	5510	-6.19	PASS
11N40MIMO	total	5510	-3.36	PASS
11N40MIMO	Ant1	5550	-7.01	PASS
11N40MIMO	Ant2	5550	-6.74	PASS
11N40MIMO	total	5550	-3.86	PASS
11N40MIMO	Ant1	5670	-6.64	PASS
11N40MIMO	Ant2	5670	-7.28	PASS
11N40MIMO	total	5670	-3.94	PASS
11N40MIMO	Ant1	5755	-4.04	PASS
11N40MIMO	Ant2	5755	-3.98	PASS
11N40MIMO	total	5755	-1.00	PASS
11N40MIMO	Ant1	5795	-3.60	PASS
11N40MIMO	Ant2	5795	6.12	PASS
11N40MIMO	total	5795	6.56	PASS
11AC20MIMO	Ant1	5180	3.35	PASS

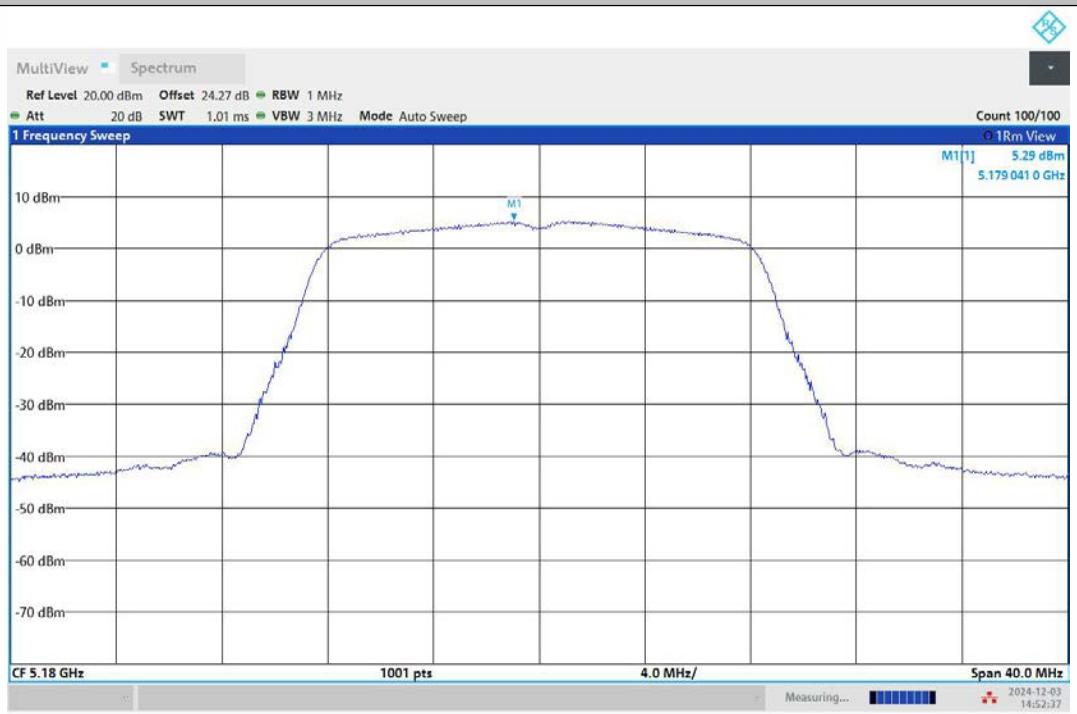
11AC20MIMO	Ant2	5180	3.02	PASS
11AC20MIMO	total	5180	6.20	PASS
11AC20MIMO	Ant1	5200	2.26	PASS
11AC20MIMO	Ant2	5200	2.61	PASS
11AC20MIMO	total	5200	5.45	PASS
11AC20MIMO	Ant1	5240	2.02	PASS
11AC20MIMO	Ant2	5240	2.04	PASS
11AC20MIMO	total	5240	5.04	PASS
11AC20MIMO	Ant1	5260	-3.26	PASS
11AC20MIMO	Ant2	5260	-2.89	PASS
11AC20MIMO	total	5260	-0.06	PASS
11AC20MIMO	Ant1	5280	-3.25	PASS
11AC20MIMO	Ant2	5280	-3.02	PASS
11AC20MIMO	total	5280	-0.12	PASS
11AC20MIMO	Ant1	5320	-3.51	PASS
11AC20MIMO	Ant2	5320	-3.47	PASS
11AC20MIMO	total	5320	-0.48	PASS
11AC20MIMO	Ant1	5500	-3.27	PASS
11AC20MIMO	Ant2	5500	-3.33	PASS
11AC20MIMO	total	5500	-0.29	PASS
11AC20MIMO	Ant1	5580	-3.53	PASS
11AC20MIMO	Ant2	5580	-2.73	PASS
11AC20MIMO	total	5580	-0.10	PASS
11AC20MIMO	Ant1	5700	-3.50	PASS
11AC20MIMO	Ant2	5700	-4.14	PASS
11AC20MIMO	total	5700	-0.80	PASS
11AC20MIMO	Ant1	5745	-0.41	PASS
11AC20MIMO	Ant2	5745	-0.95	PASS
11AC20MIMO	total	5745	2.34	PASS
11AC20MIMO	Ant1	5785	-0.54	PASS
11AC20MIMO	Ant2	5785	-0.77	PASS
11AC20MIMO	total	5785	2.36	PASS
11AC20MIMO	Ant1	5825	-0.92	PASS
11AC20MIMO	Ant2	5825	-0.61	PASS
11AC20MIMO	total	5825	2.25	PASS
11AC40MIMO	Ant1	5190	0.39	PASS
11AC40MIMO	Ant2	5190	0.13	PASS
11AC40MIMO	total	5190	3.27	PASS
11AC40MIMO	Ant1	5230	-0.74	PASS
11AC40MIMO	Ant2	5230	-0.61	PASS
11AC40MIMO	total	5230	2.34	PASS
11AC40MIMO	Ant1	5270	-5.91	PASS
11AC40MIMO	Ant2	5270	-5.40	PASS
11AC40MIMO	total	5270	-2.64	PASS
11AC40MIMO	Ant1	5310	-6.43	PASS
11AC40MIMO	Ant2	5310	-5.71	PASS
11AC40MIMO	total	5310	-3.04	PASS
11AC40MIMO	Ant1	5510	-6.34	PASS
11AC40MIMO	Ant2	5510	-5.99	PASS
11AC40MIMO	total	5510	-3.15	PASS
11AC40MIMO	Ant1	5550	-7.13	PASS
11AC40MIMO	Ant2	5550	-6.36	PASS
11AC40MIMO	total	5550	-3.72	PASS
11AC40MIMO	Ant1	5670	-6.69	PASS
11AC40MIMO	Ant2	5670	-7.03	PASS
11AC40MIMO	total	5670	-3.85	PASS
11AC40MIMO	Ant1	5755	-3.69	PASS
11AC40MIMO	Ant2	5755	-3.87	PASS
11AC40MIMO	total	5755	-0.77	PASS
11AC40MIMO	Ant1	5795	-4.09	PASS
11AC40MIMO	Ant2	5795	-3.55	PASS

11AC40MIMO	total	5795	-0.80	PASS
11AC80MIMO	Ant1	5210	-3.86	PASS
11AC80MIMO	Ant2	5210	-3.48	PASS
11AC80MIMO	total	5210	-0.66	PASS
11AC80MIMO	Ant1	5290	-9.67	PASS
11AC80MIMO	Ant2	5290	-9.05	PASS
11AC80MIMO	total	5290	-6.34	PASS
11AC80MIMO	Ant1	5530	-9.69	PASS
11AC80MIMO	Ant2	5530	-9.86	PASS
11AC80MIMO	total	5530	-6.76	PASS
11AC80MIMO	Ant1	5610	-10.22	PASS
11AC80MIMO	Ant2	5610	-9.69	PASS
11AC80MIMO	total	5610	-6.94	PASS
11AC80MIMO	Ant1	5775	-6.55	PASS
11AC80MIMO	Ant2	5775	-6.67	PASS
11AC80MIMO	total	5775	-3.60	PASS

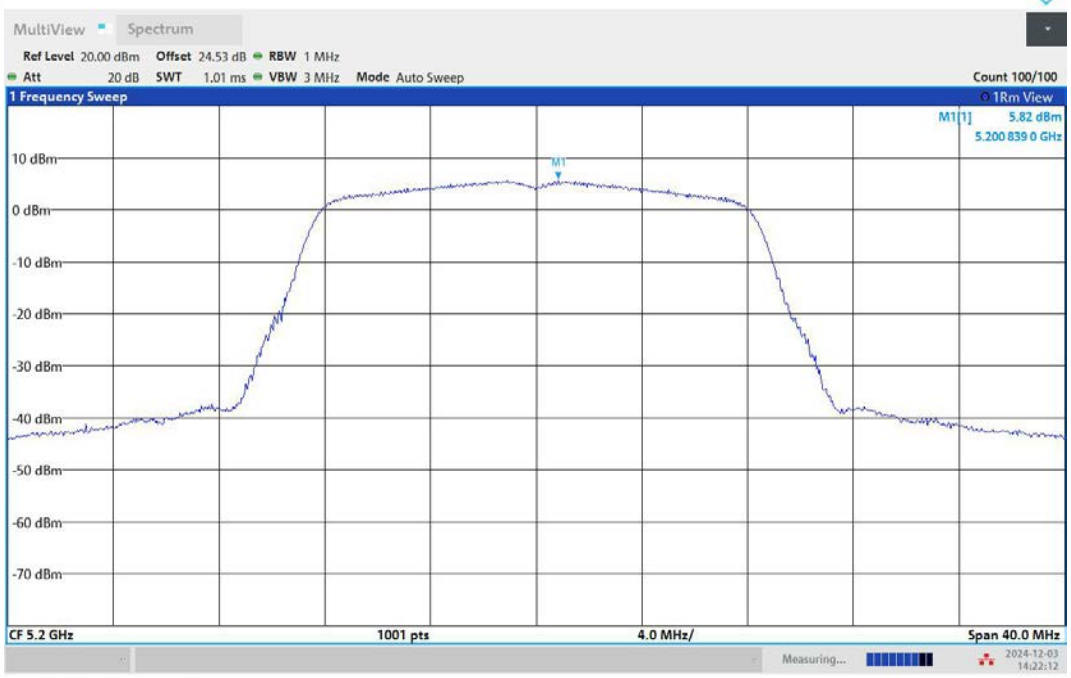
Power Density Test Graphs



11A-Ant1-5180-PASS



11A-Ant2-5180-PASS



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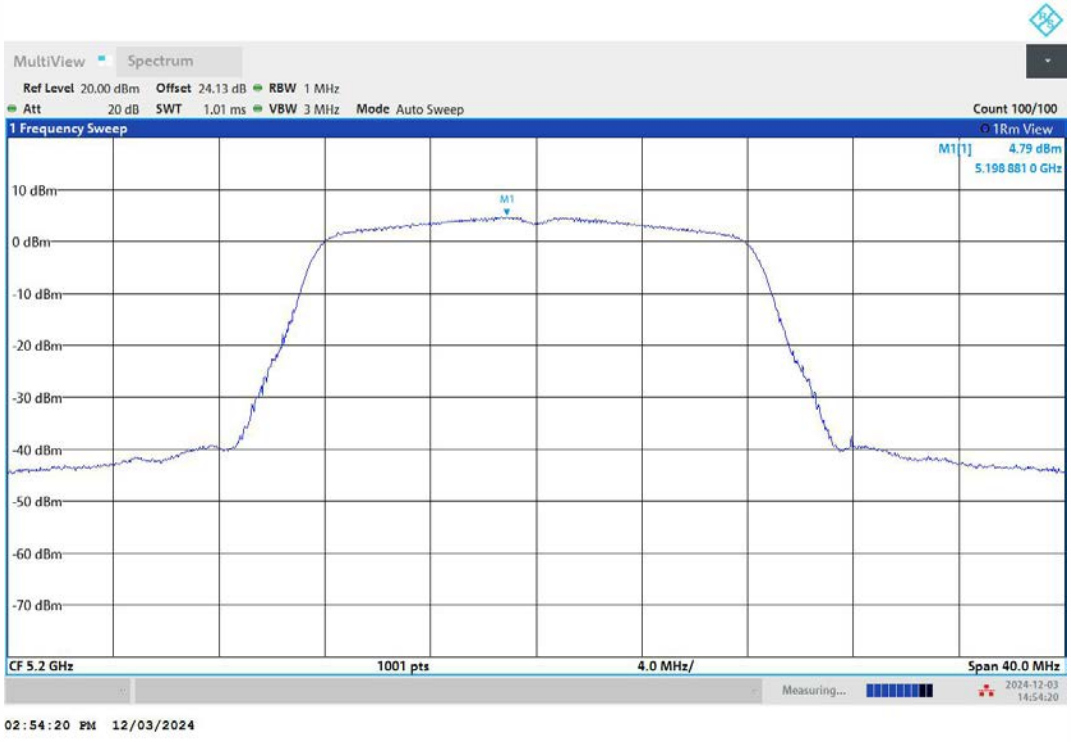
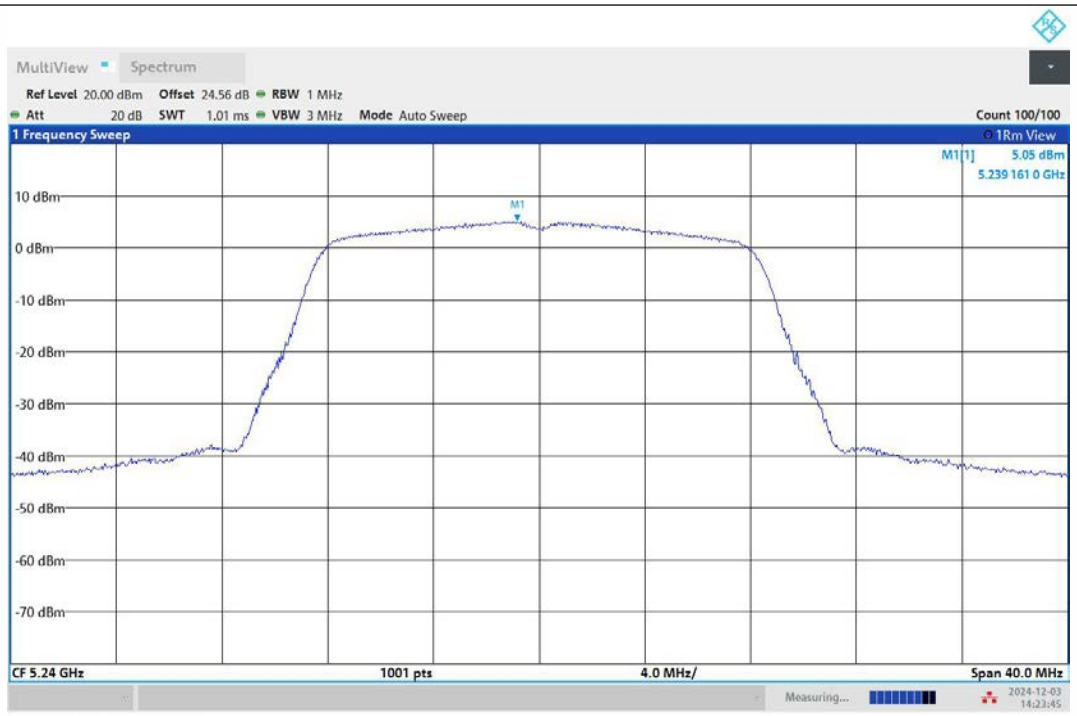


11A-Ant2-5200-PASS



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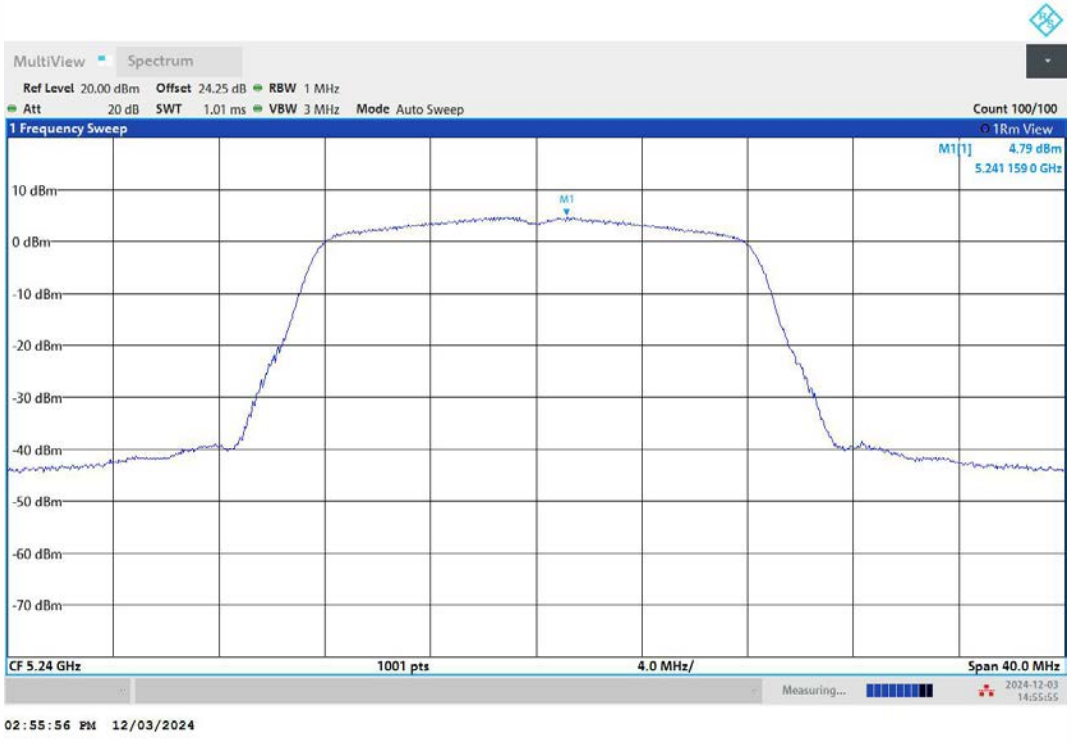
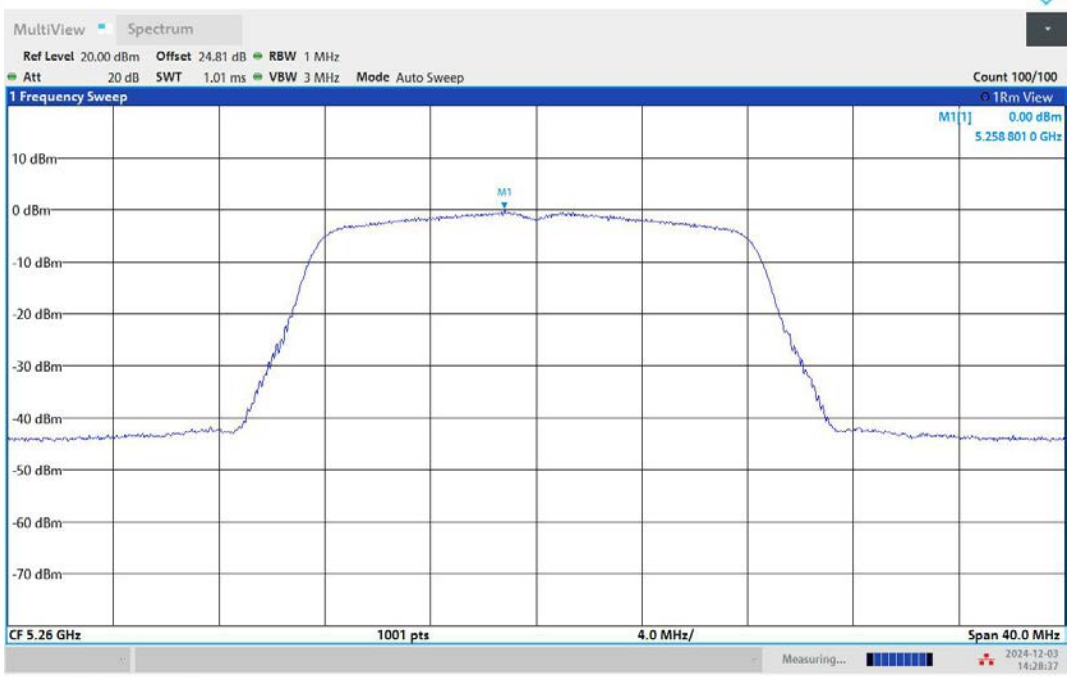


11A-Ant2-5240-PASS



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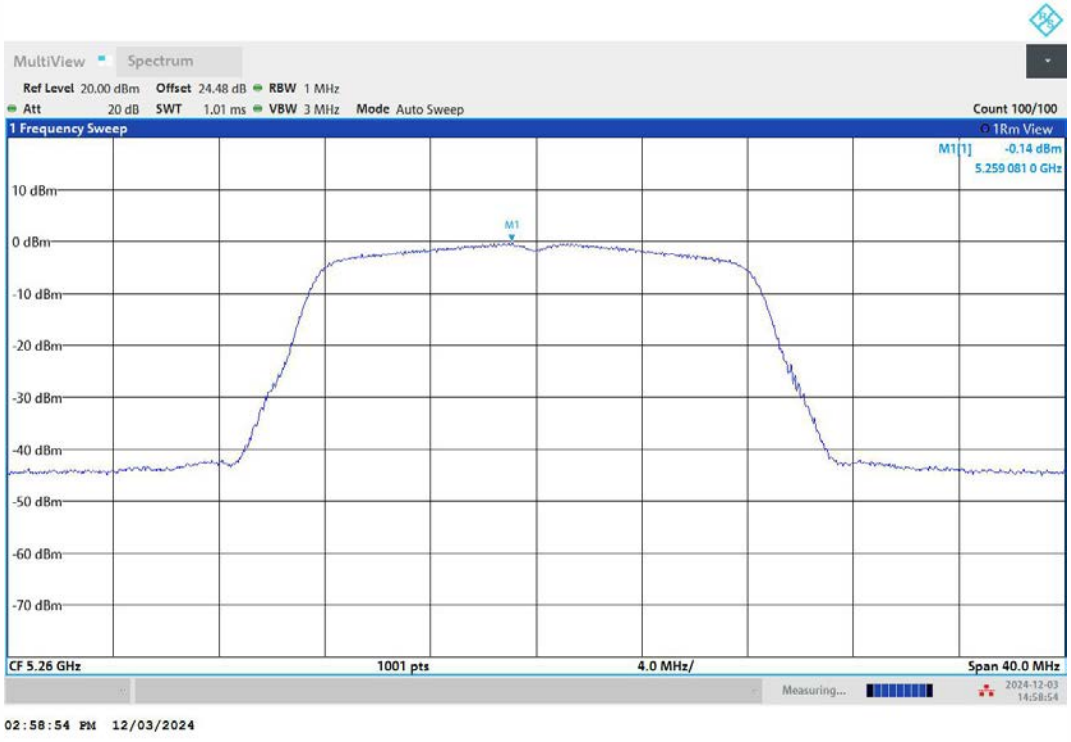
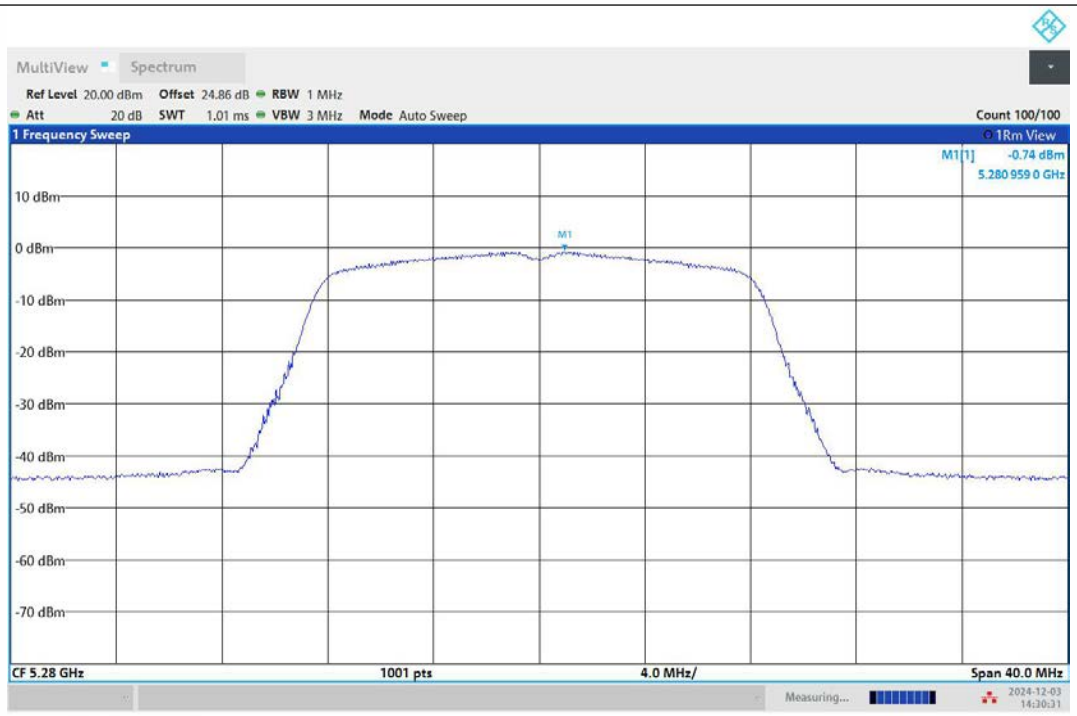


11A-Ant2-5260-PASS



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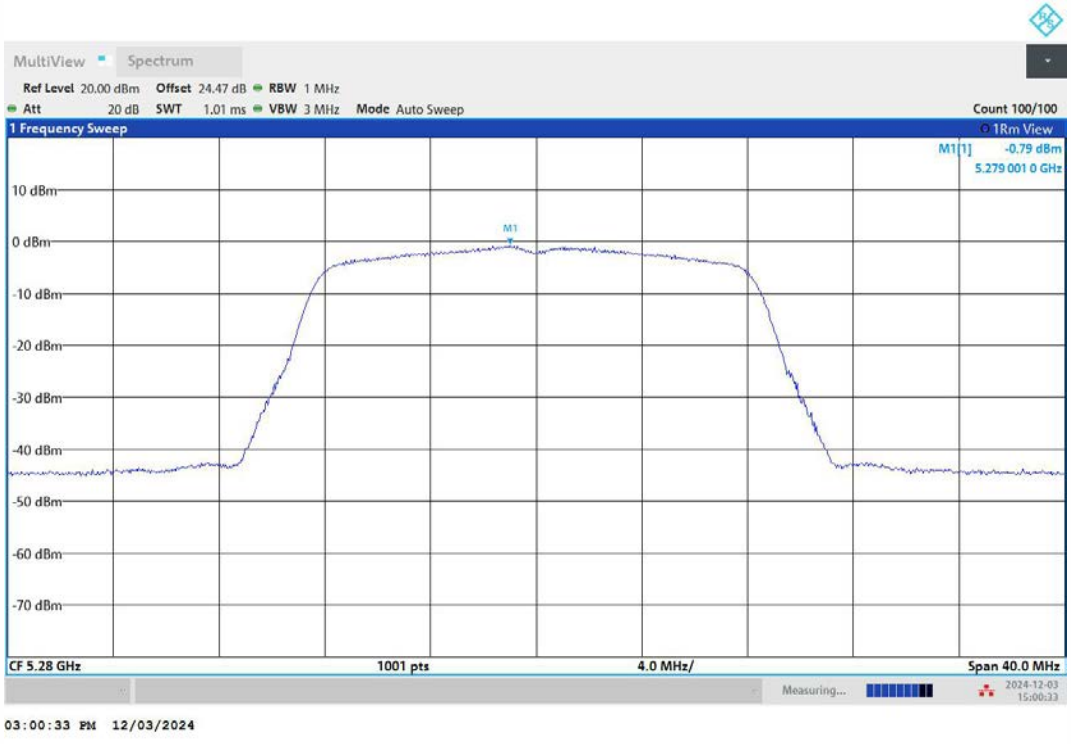

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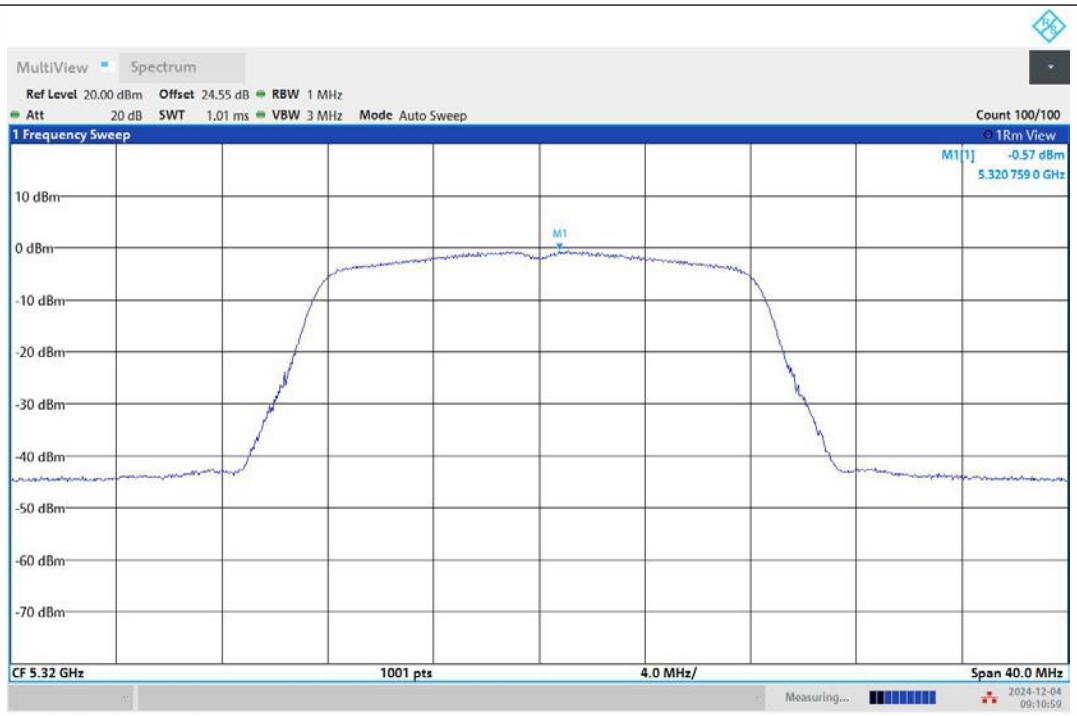

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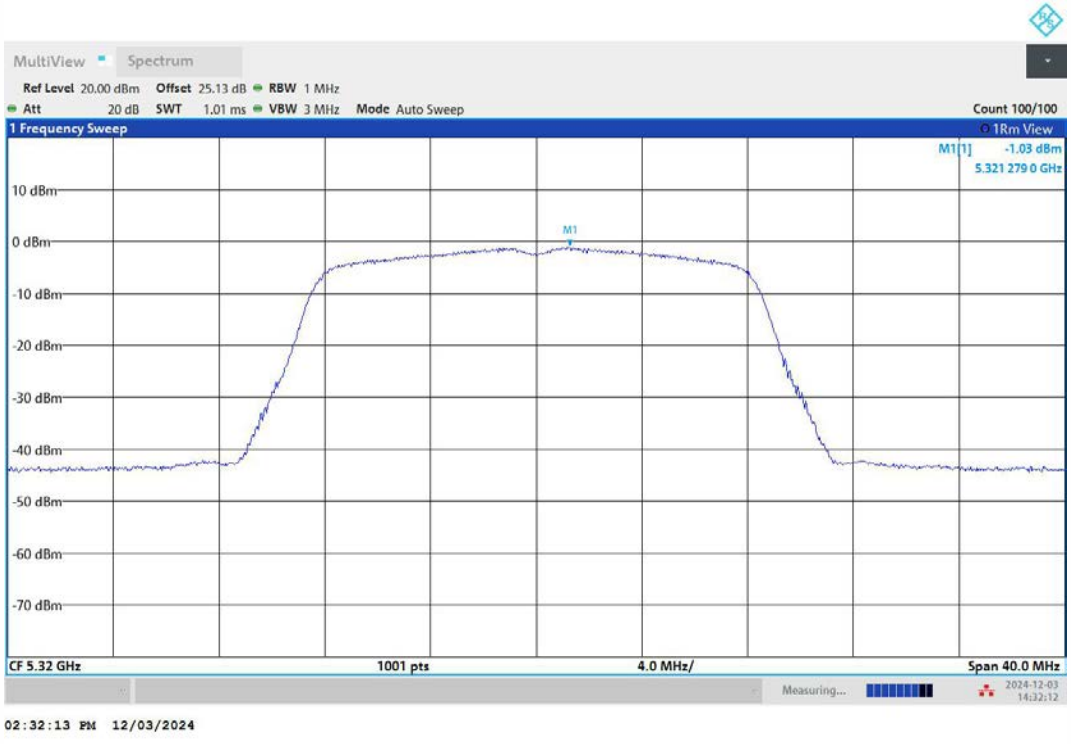

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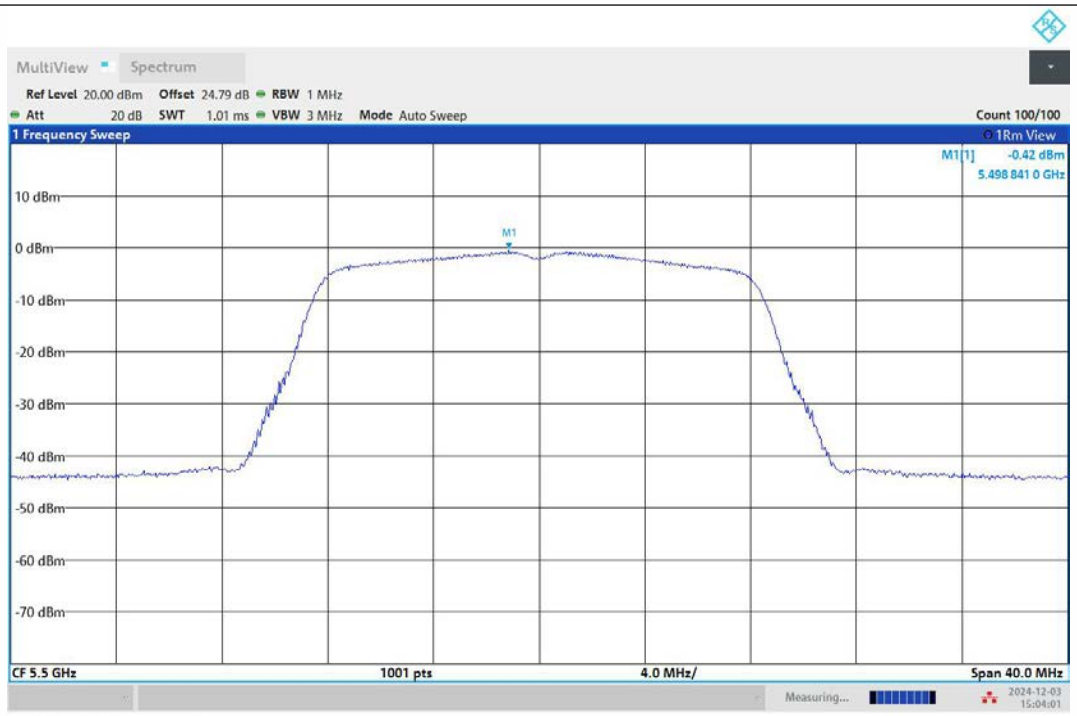
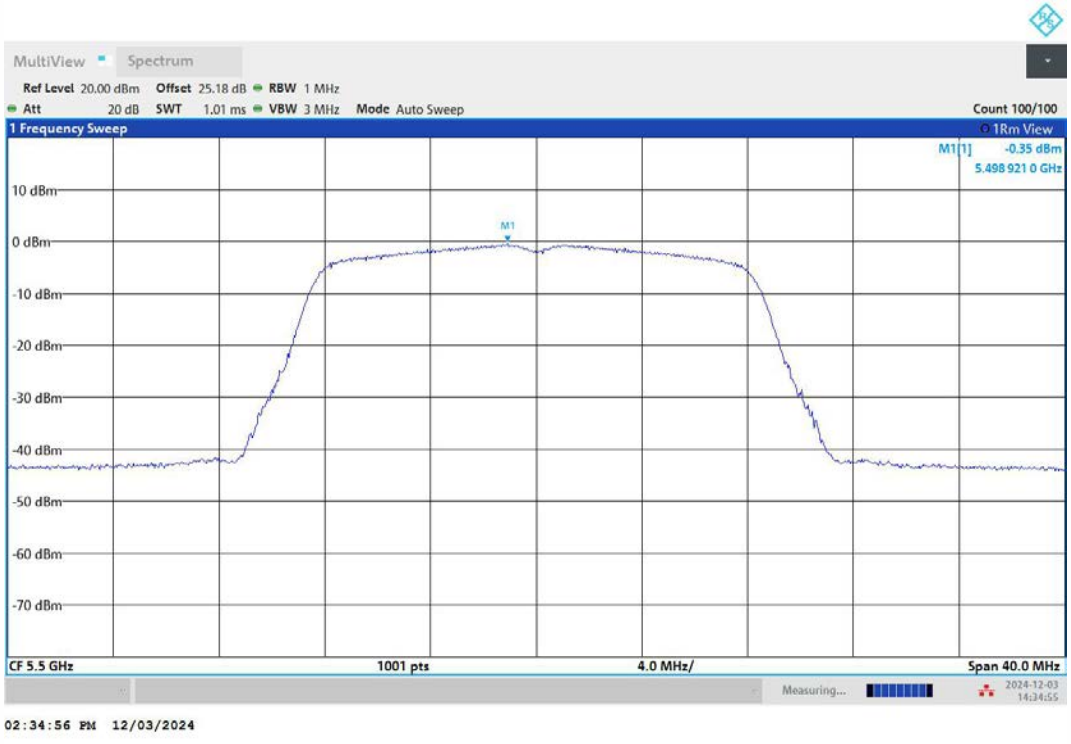


11A-Ant2-5500-PASS



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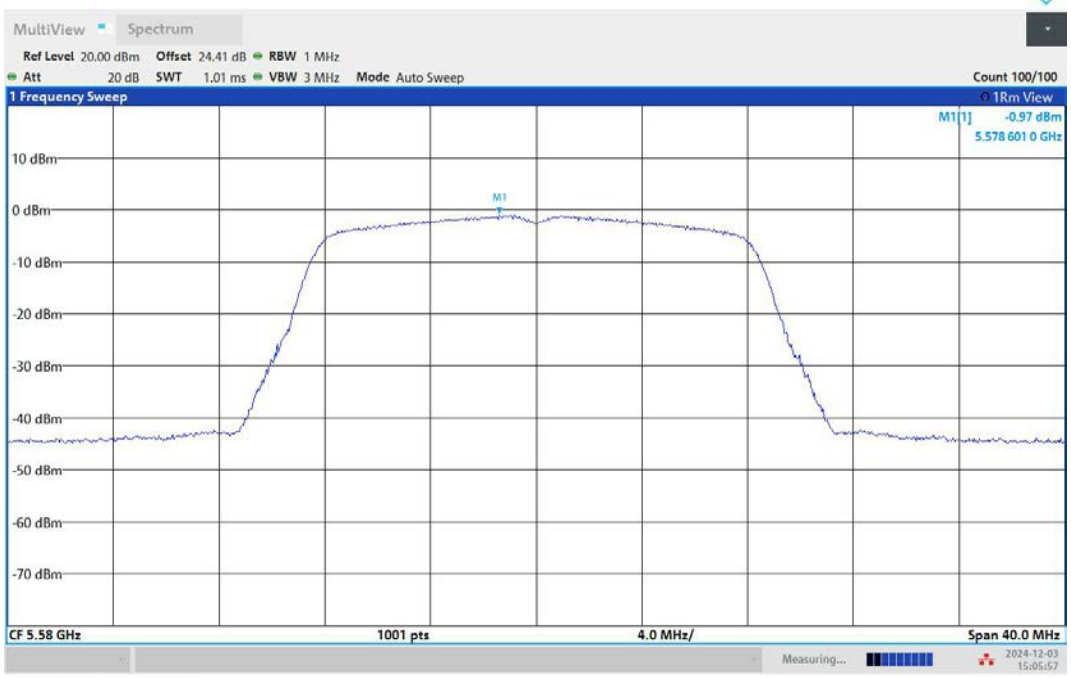
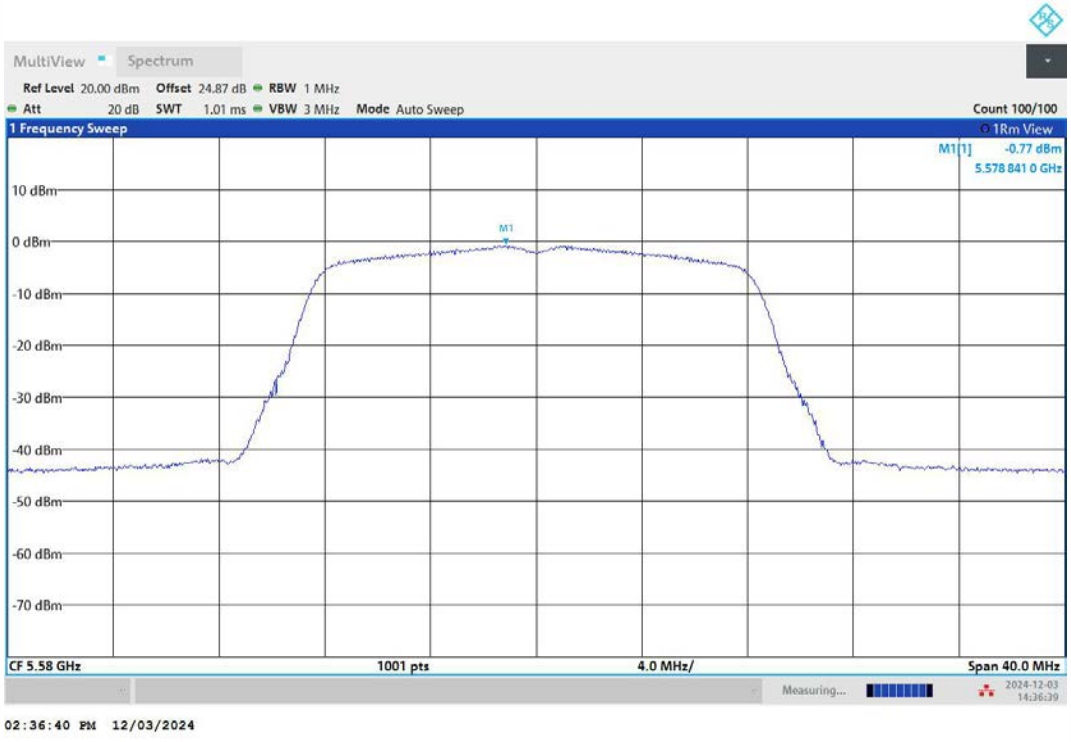


11A-Ant2-5580-PASS



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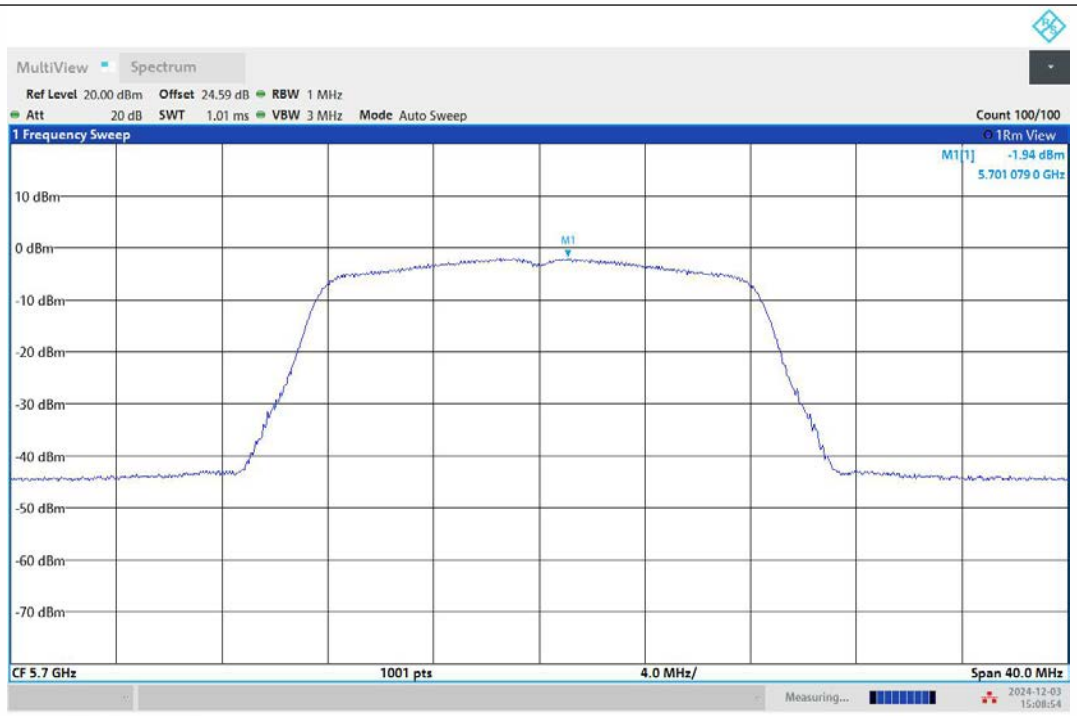

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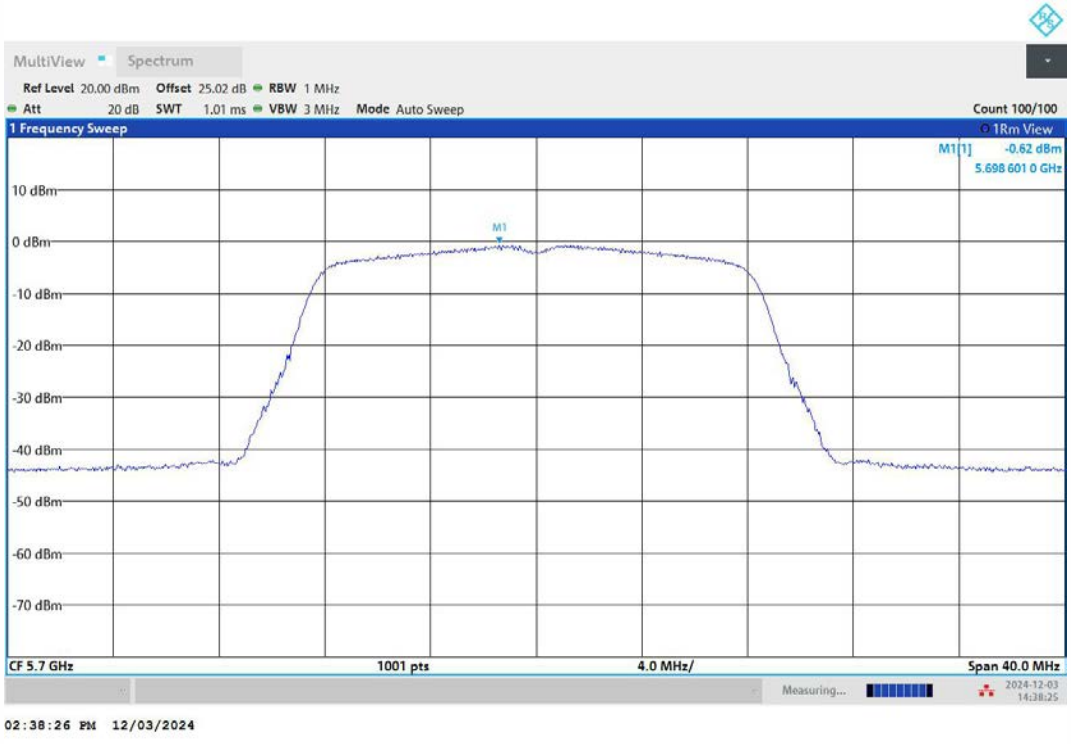

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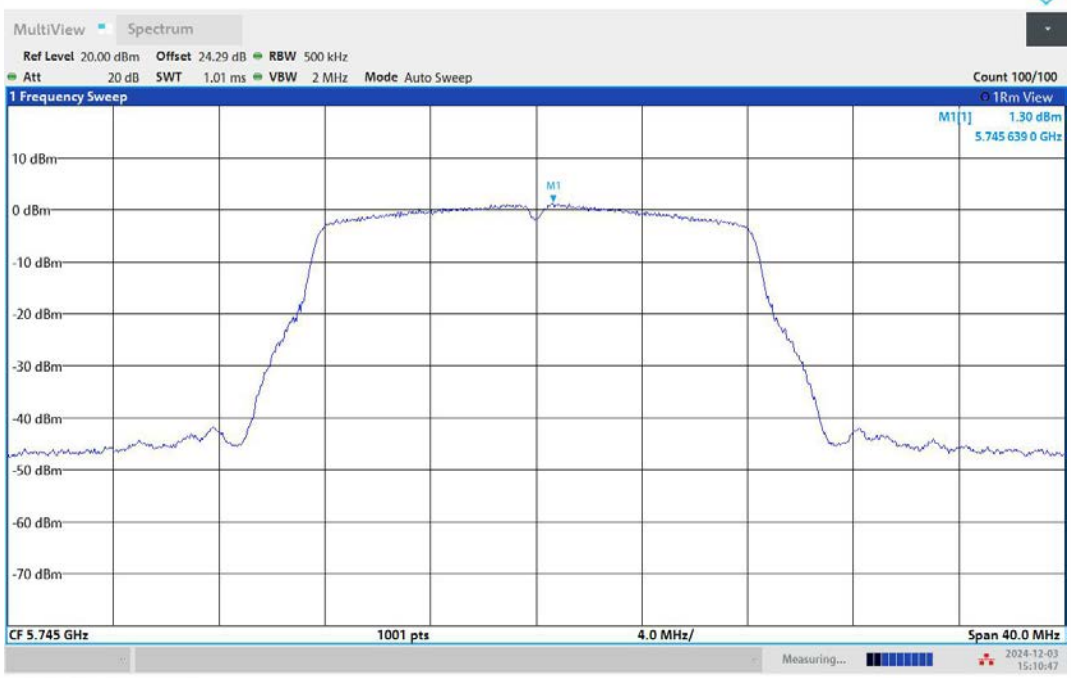
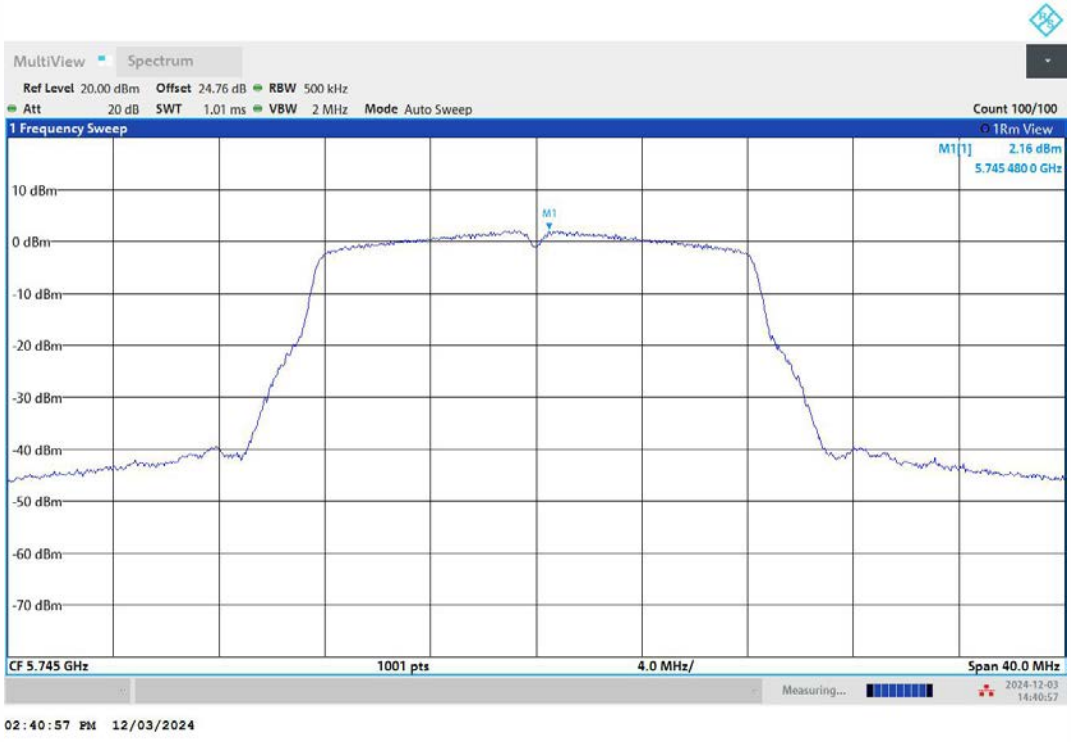
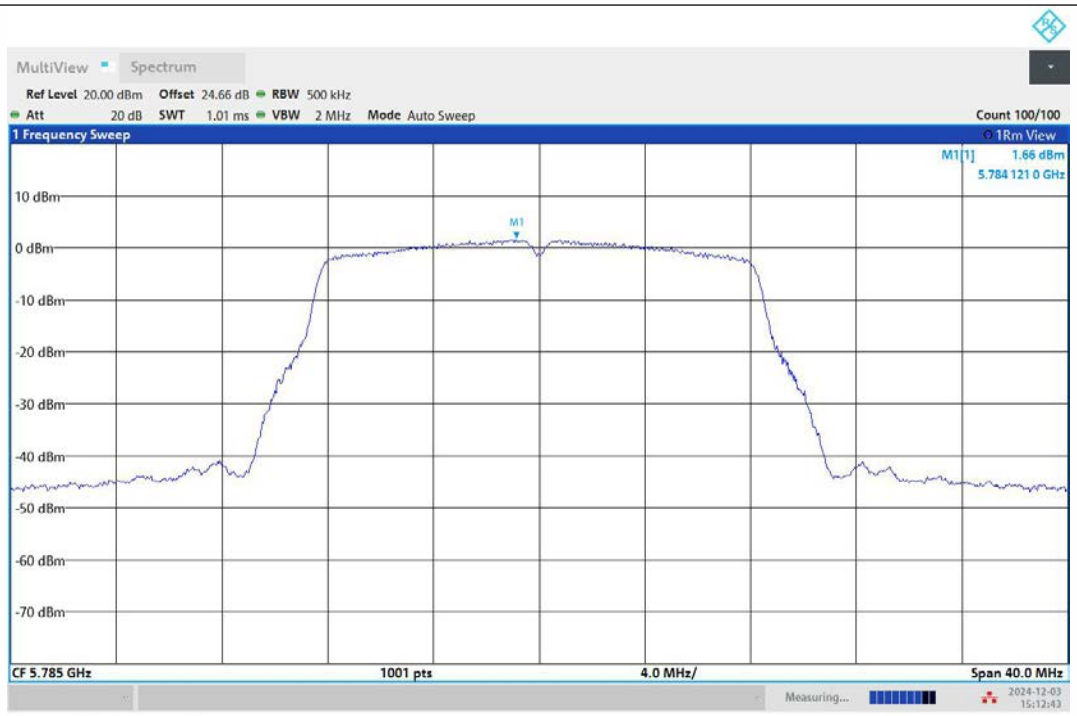


11A-Ant2-5745-PASS



11A-Ant1-5745-PASS



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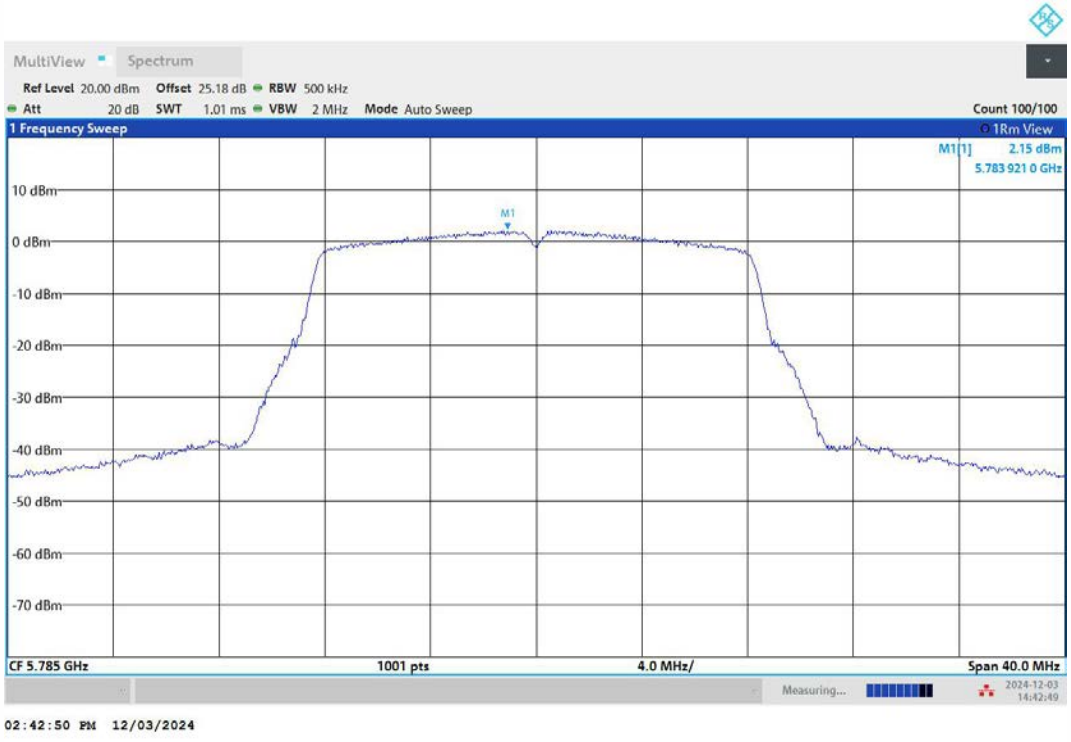
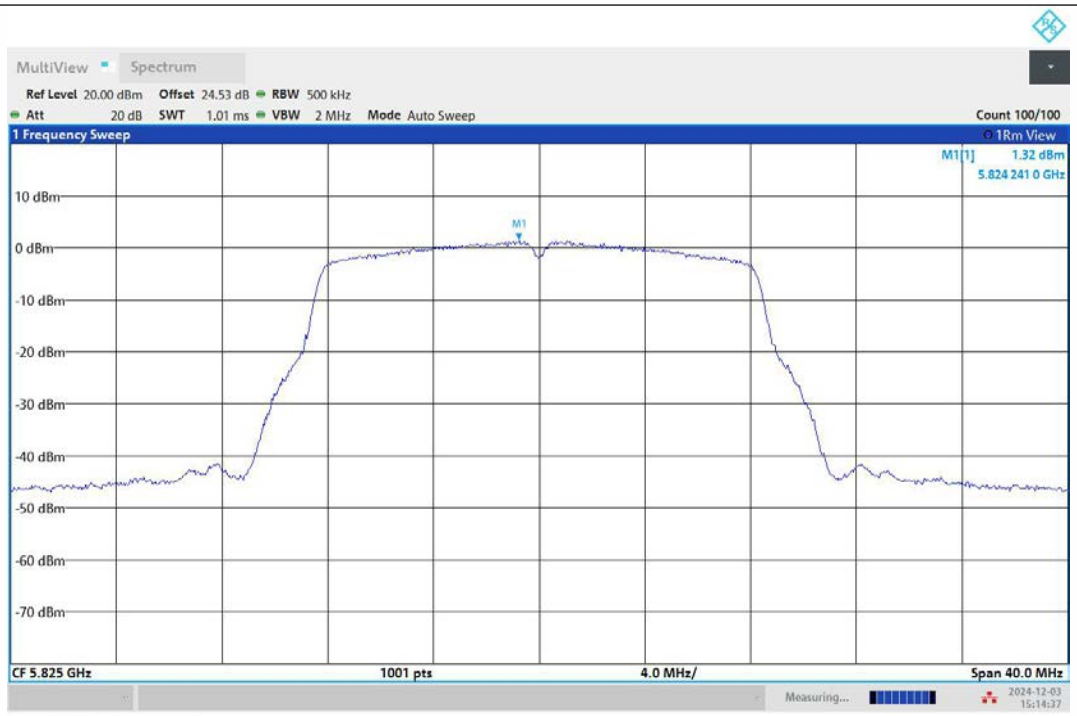
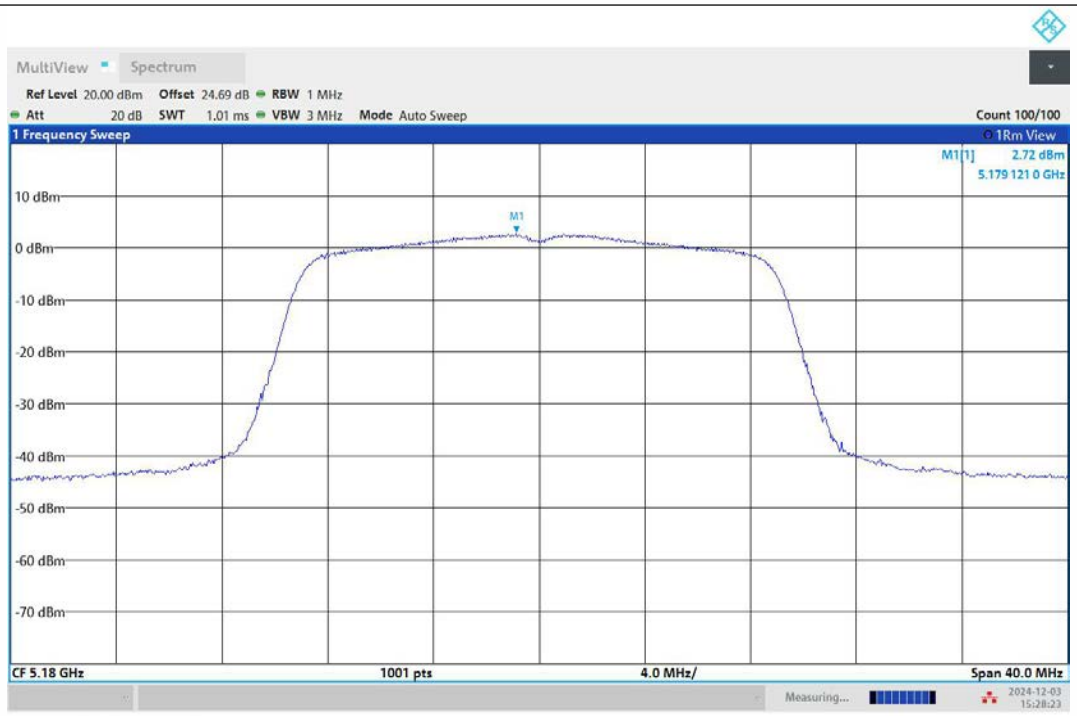


11A-Ant1-5785-PASS

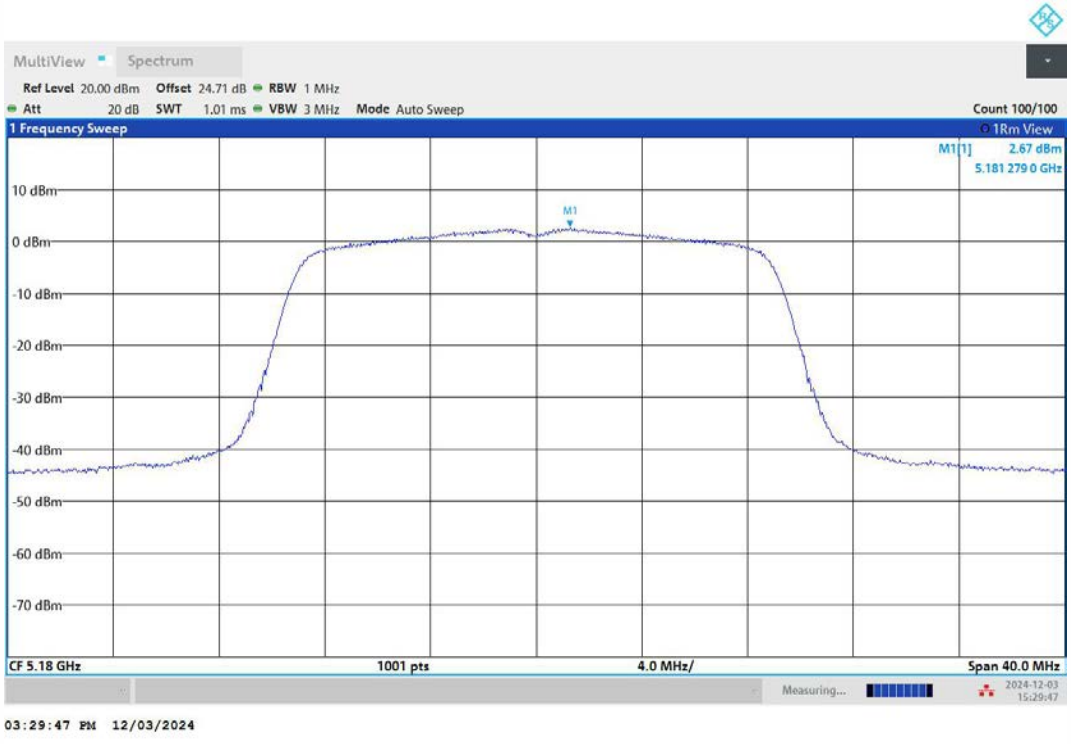


11A-Ant2-5825-PASS

11A-Ant1-5825-PASS



11N20MIMO-Ant1-5180-PASS



11N20MIMO-Ant2-5180-PASS