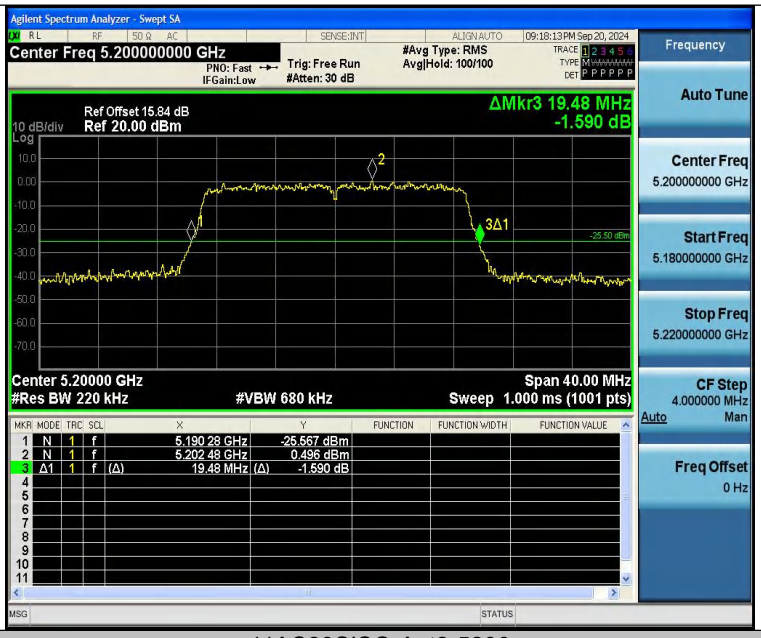
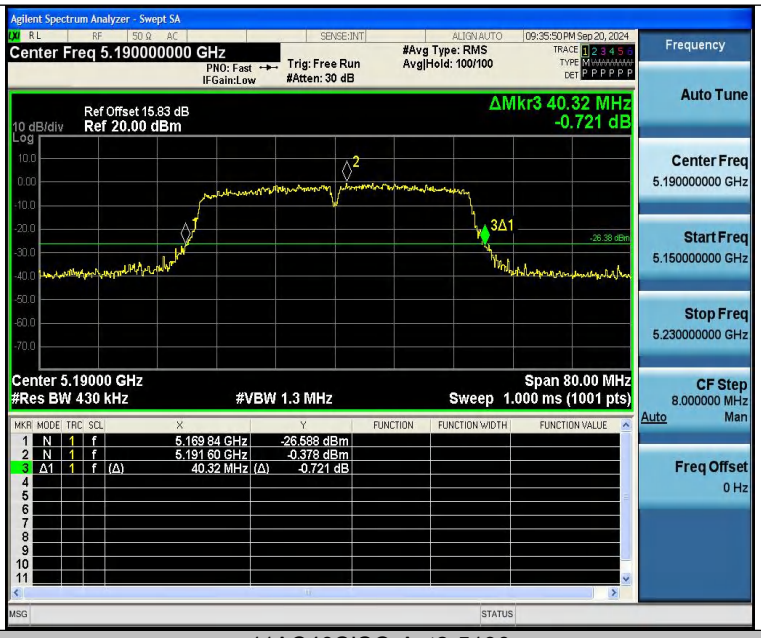


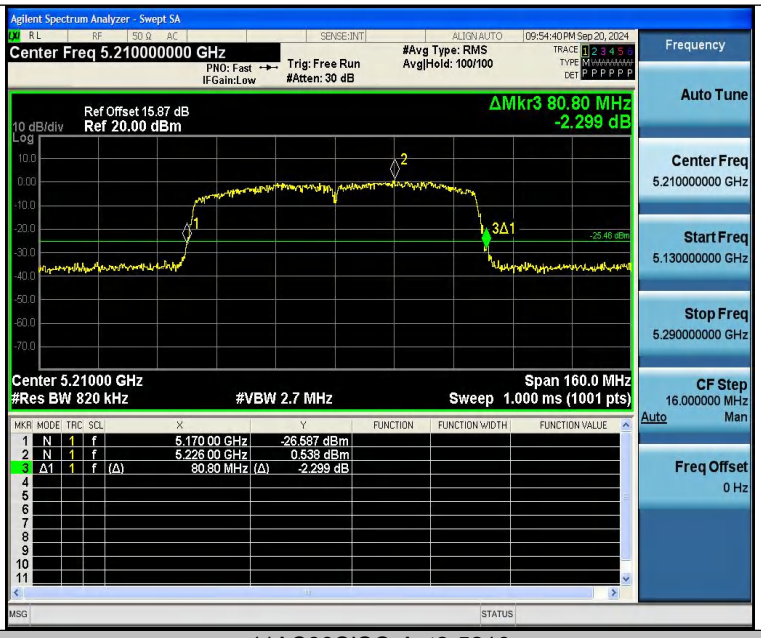
11AC20SISO-Ant2-5200

11AC20SISO-Ant2-5240



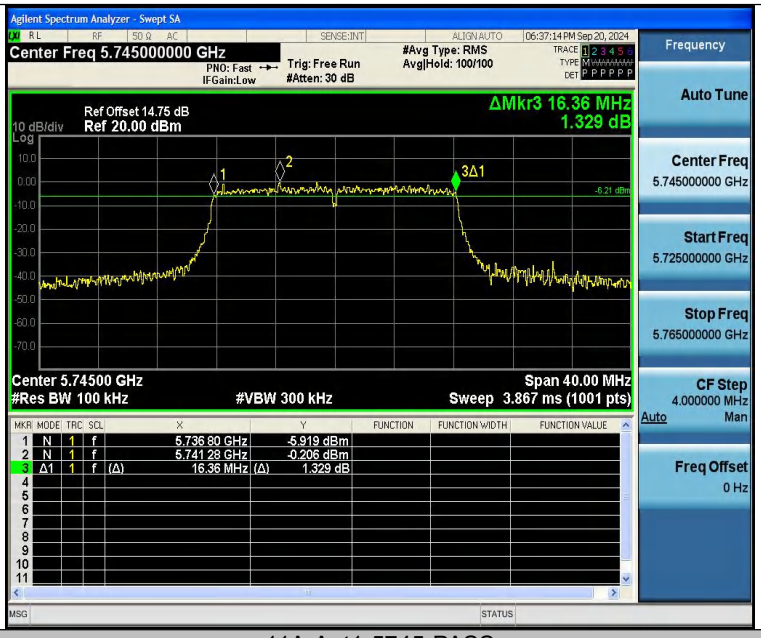
11AC40SISO-Ant2-5190

11AC40SISO-Ant2-5230

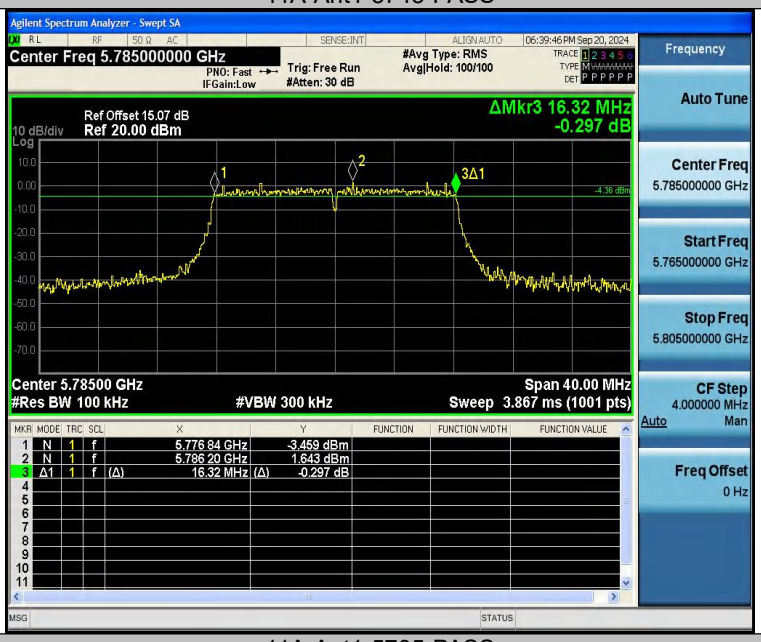


11AC80SISO-Ant2-5210

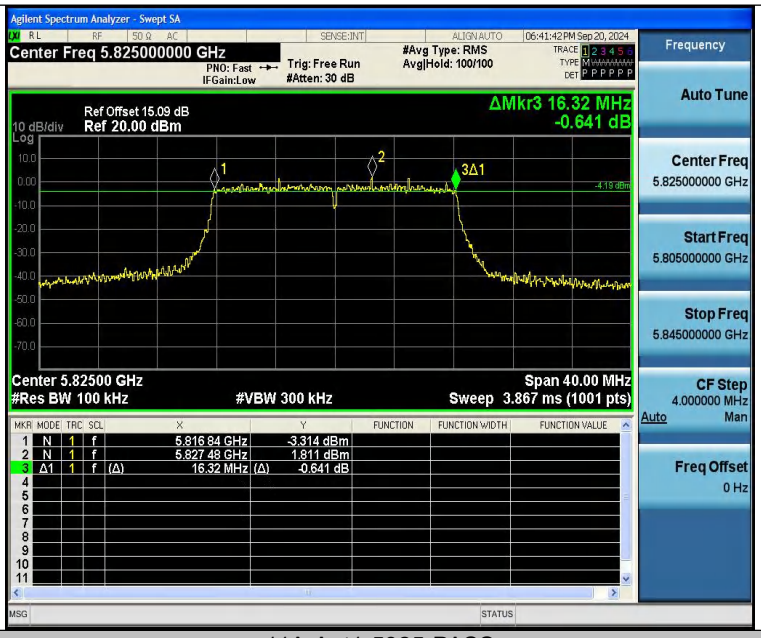
Min emission bandwidth Test Graphs:



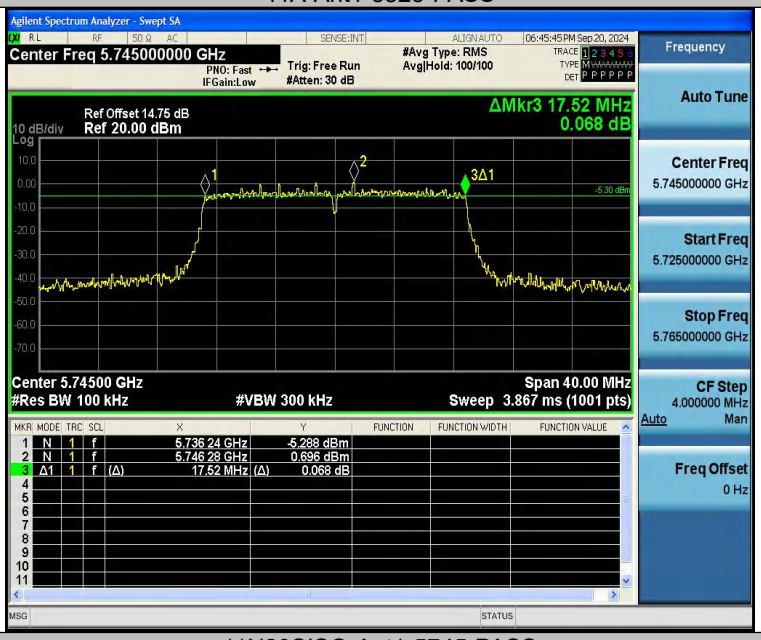
11A-Ant1-5745-PASS



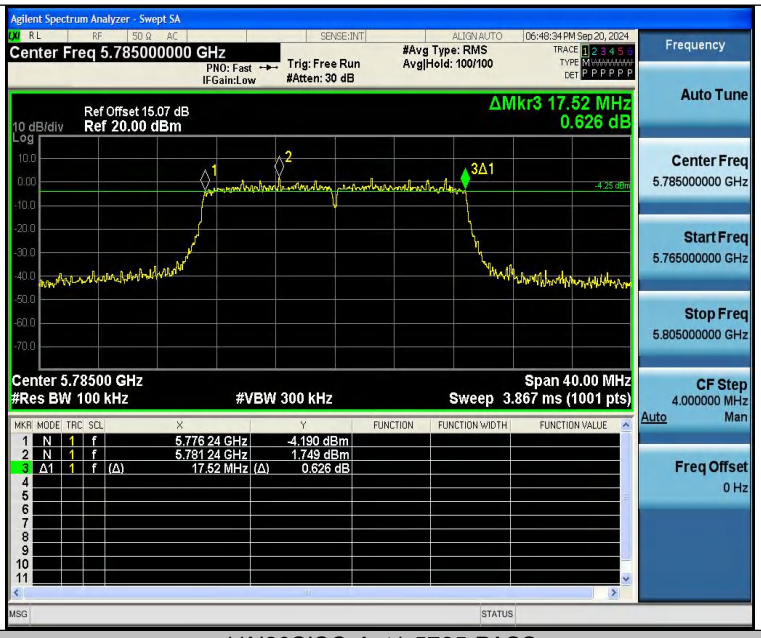
11A-Ant1-5785-PASS



11A-Ant1-5825-PASS



11N20SISO-Ant1-5745-PASS



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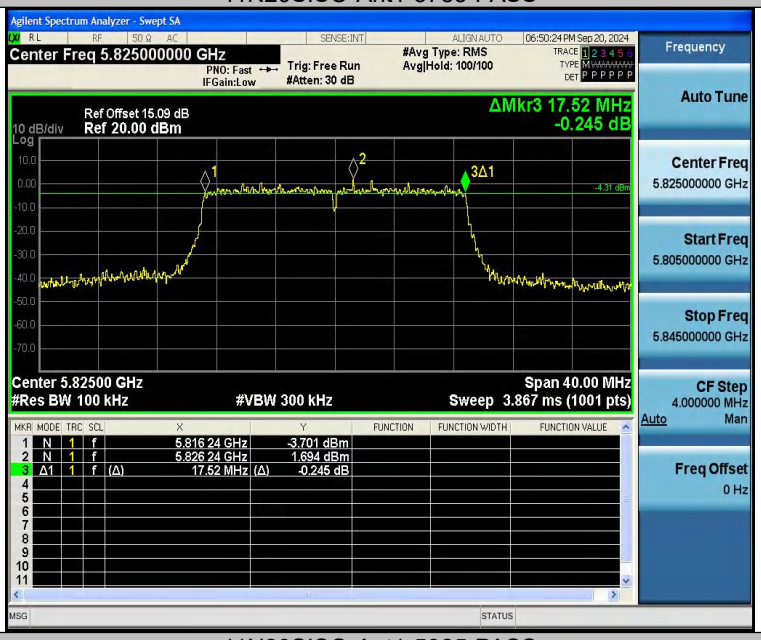

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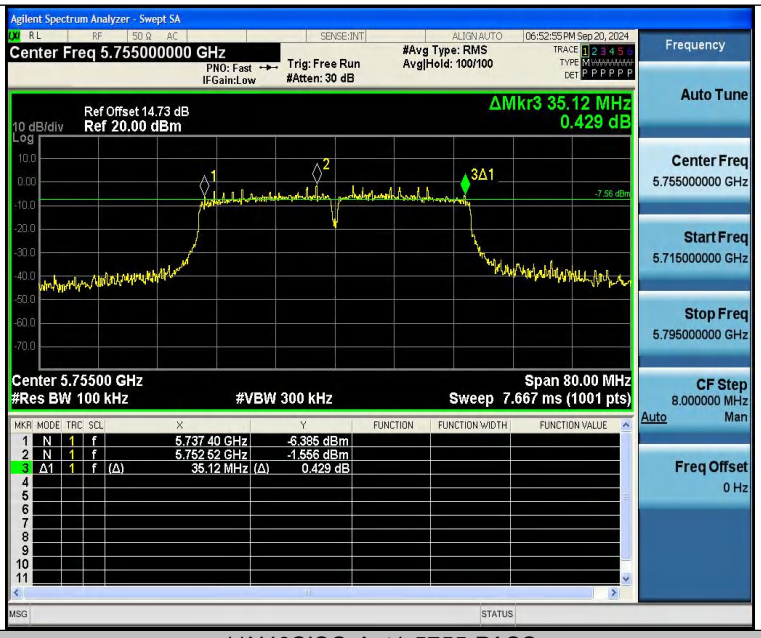

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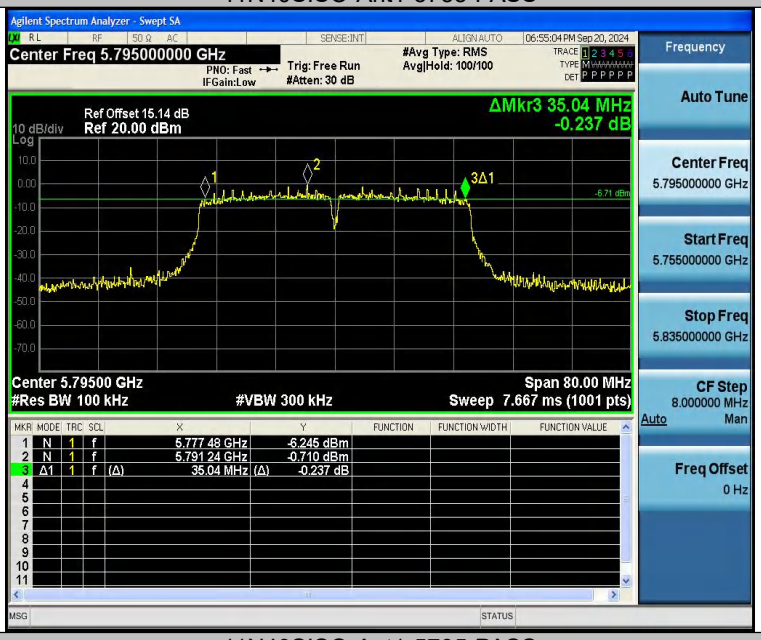

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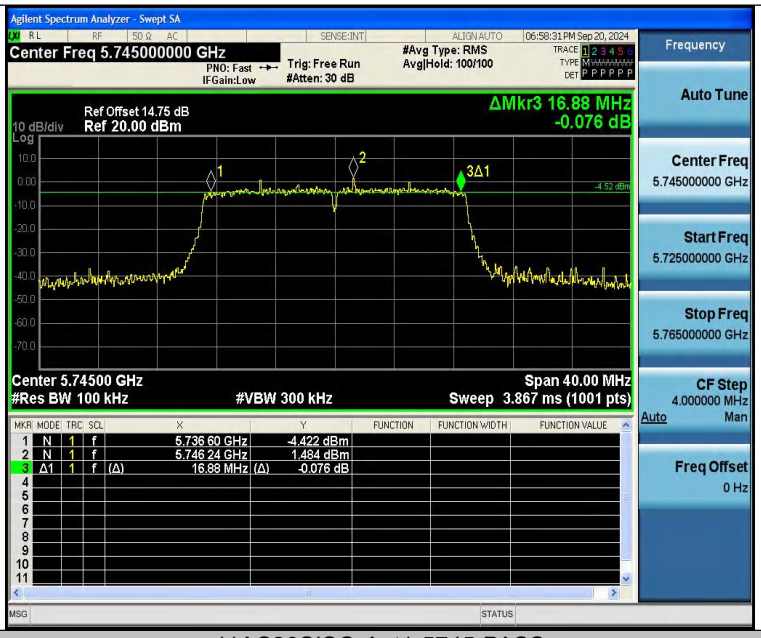

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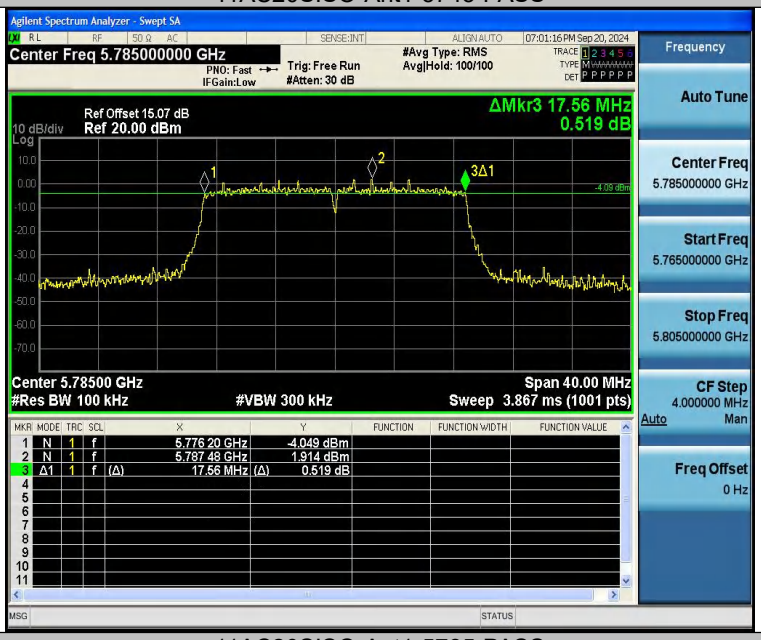
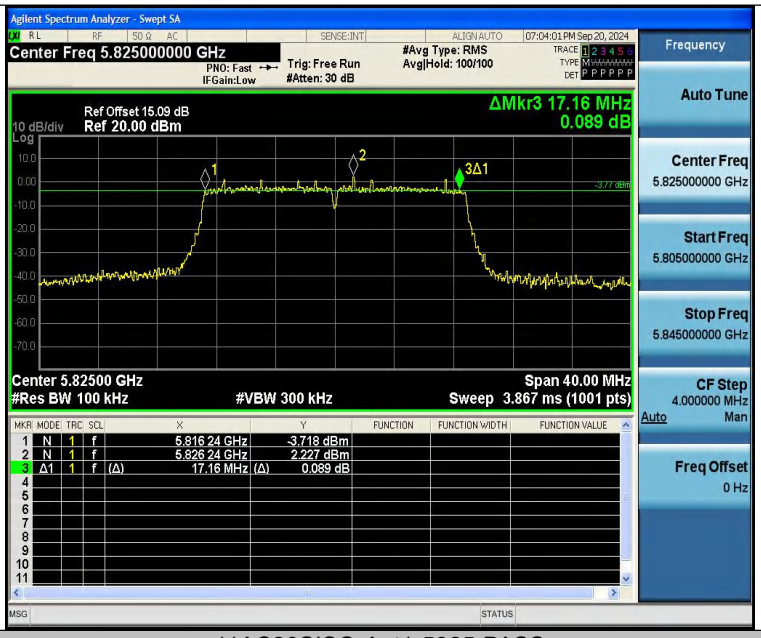
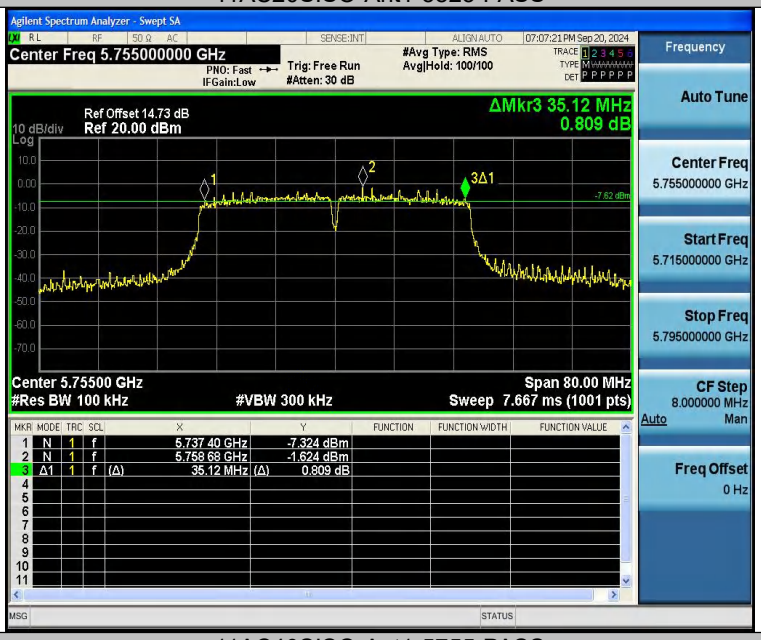


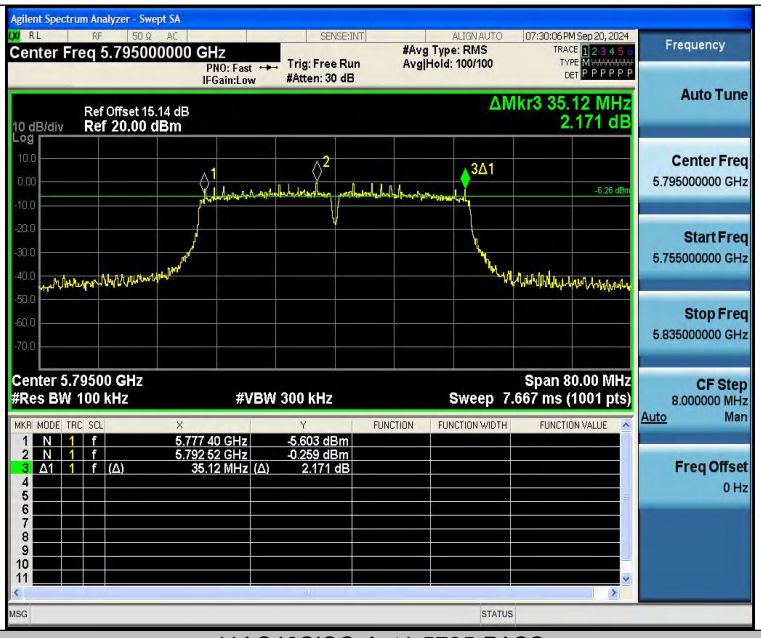
11AC20SISO-Ant1-5785-PASS



11AC20SISO-Ant1-5825-PASS



11AC40SISO-Ant1-5755-PASS



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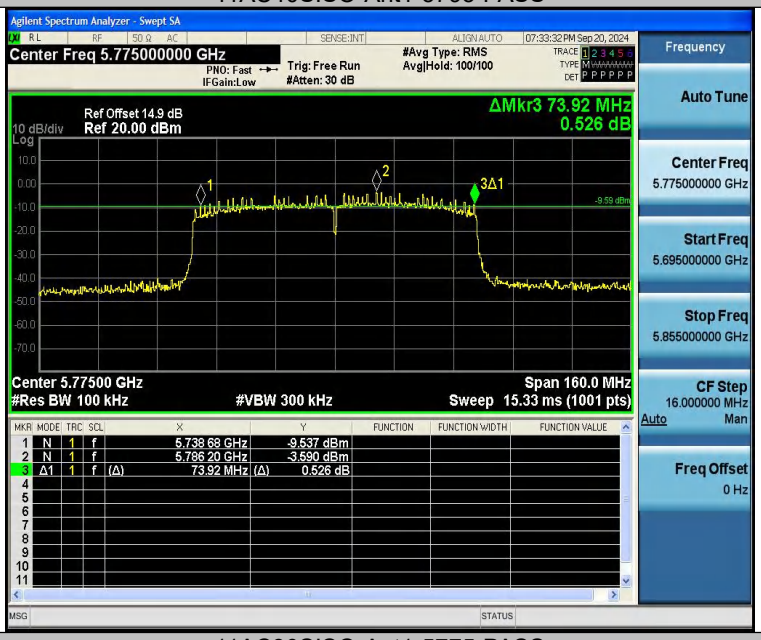
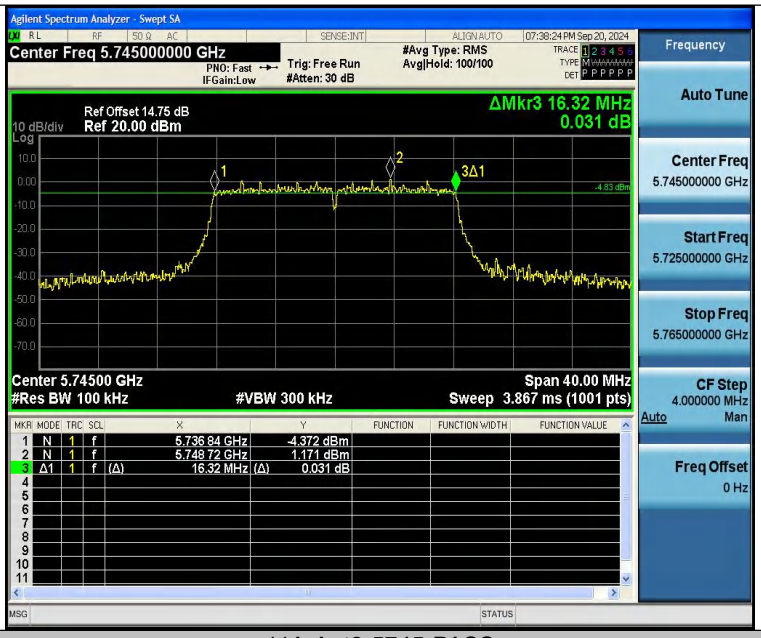
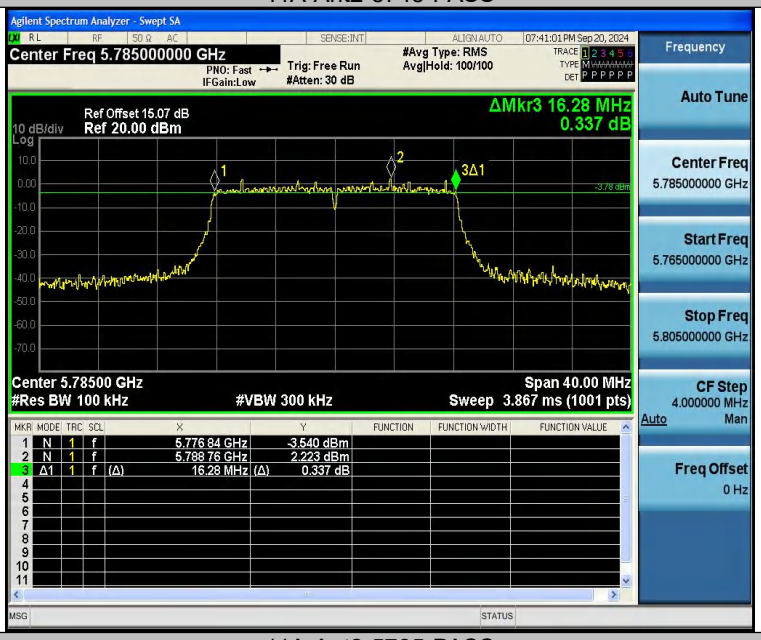


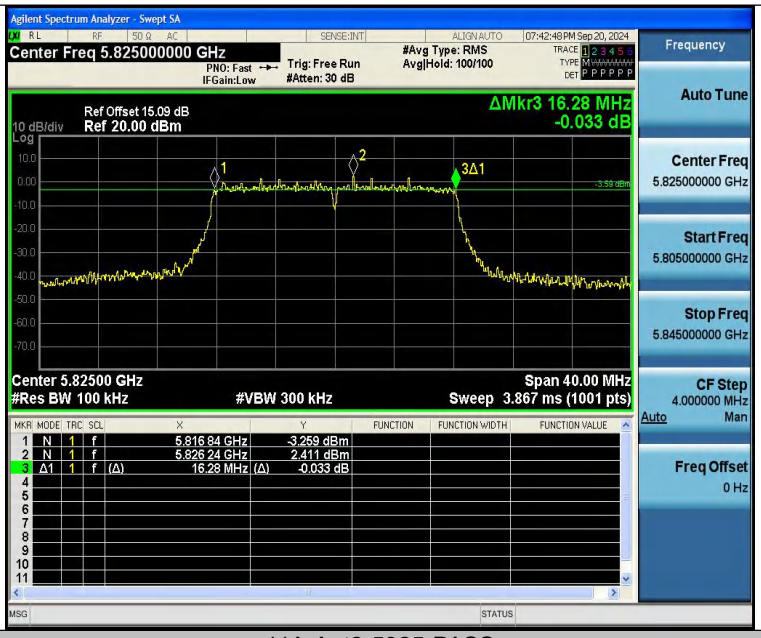
11AC80SISO-Ant1-5775-PASS



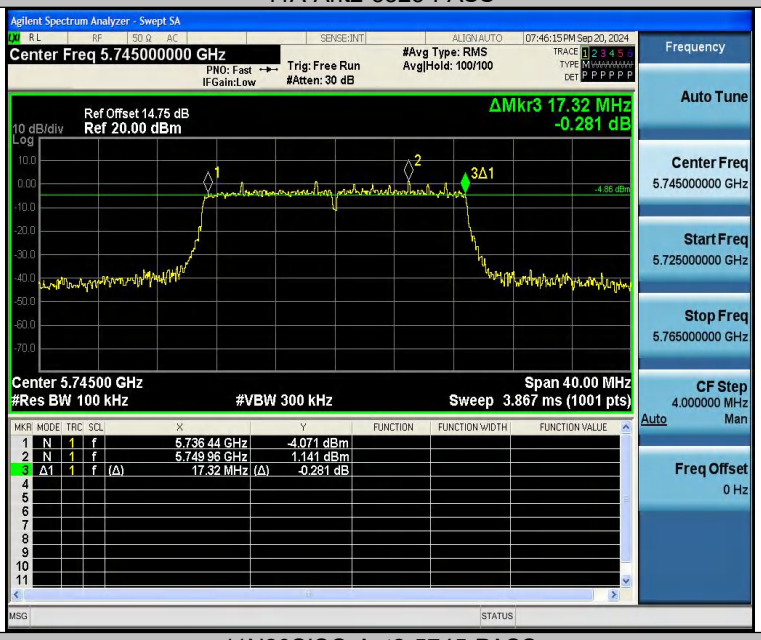
11A-Ant2-5745-PASS



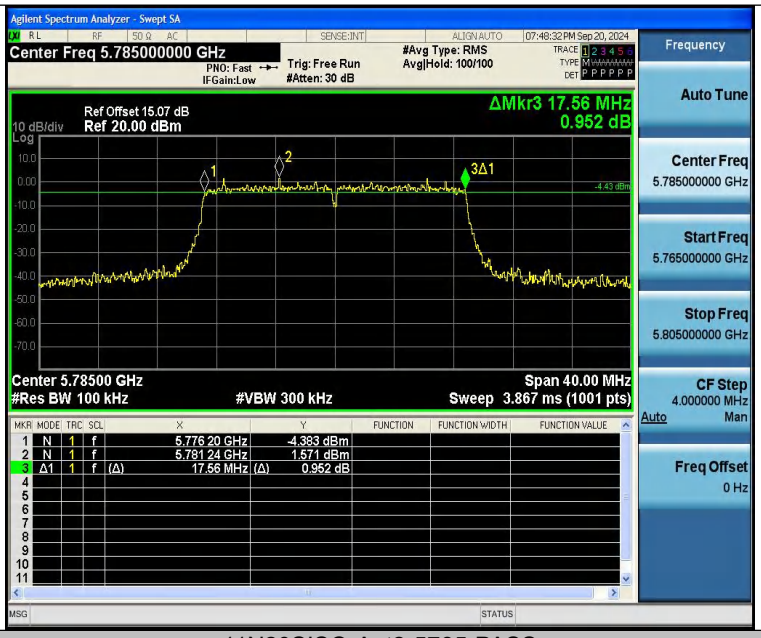
11A-Ant2-5785-PASS



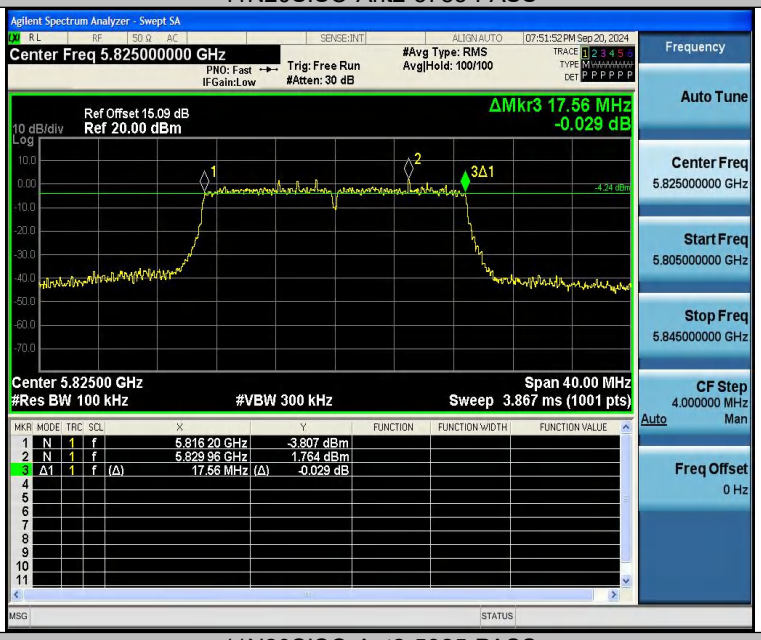
11A-Ant2-5825-PASS



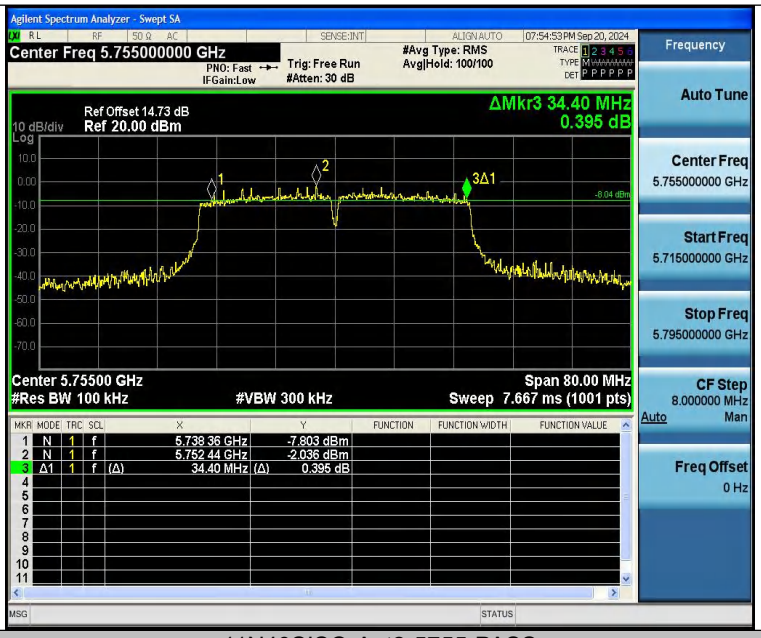
11N20SISO-Ant2-5745-PASS



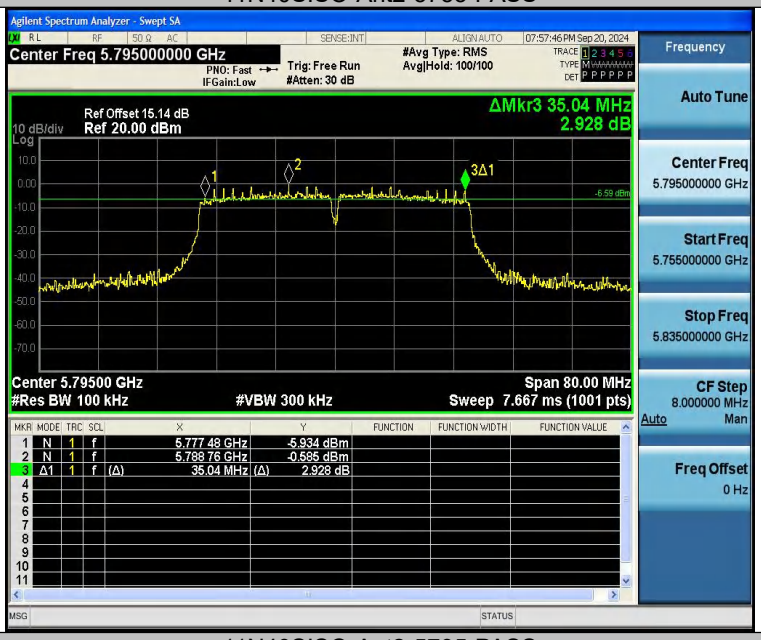
11N20SISO-Ant2-5785-PASS



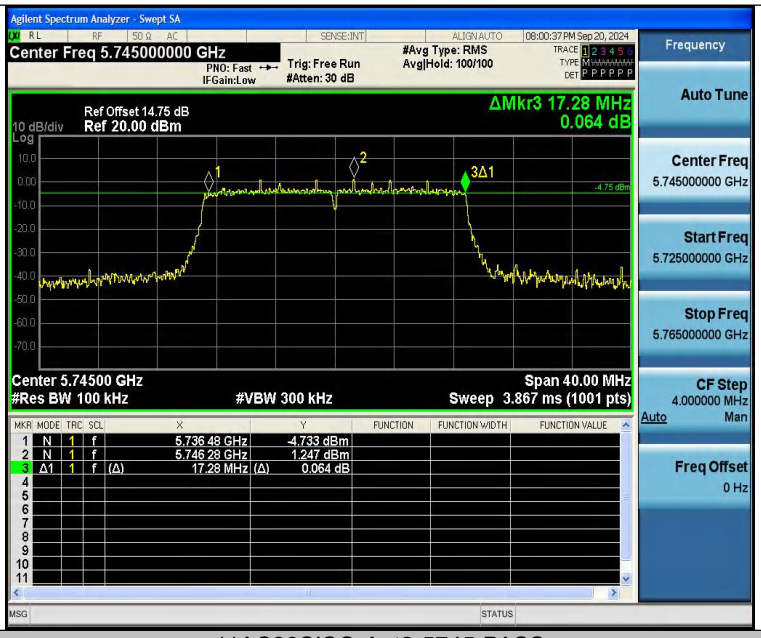
11N20SISO-Ant2-5825-PASS



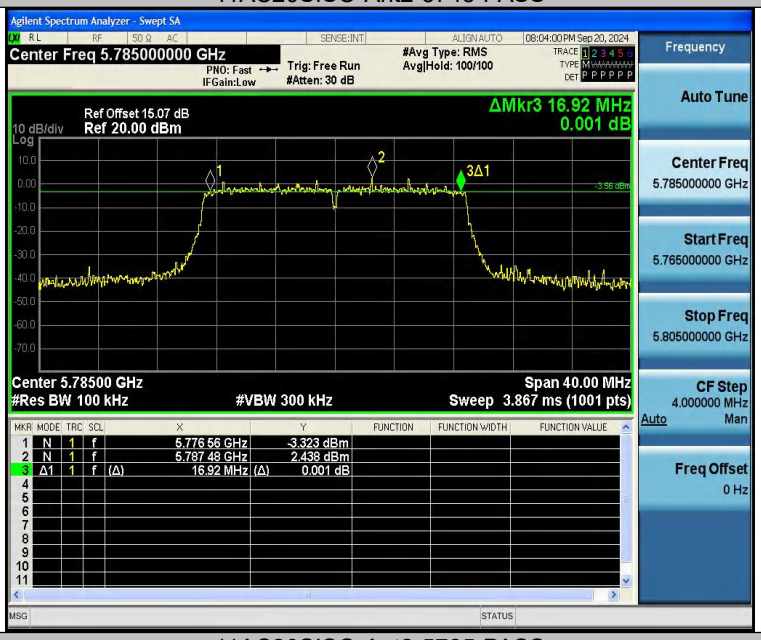
11N40SISO-Ant2-5755-PASS



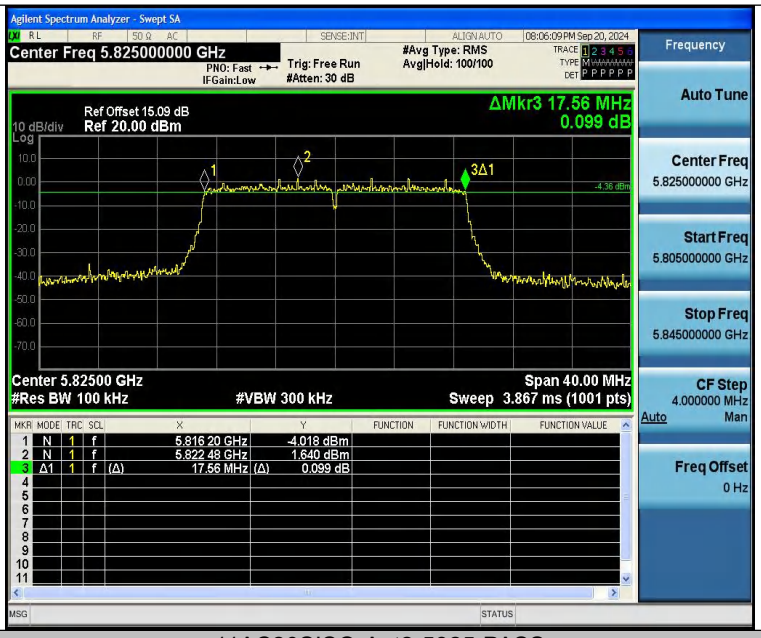
11N40SISO-Ant2-5795-PASS



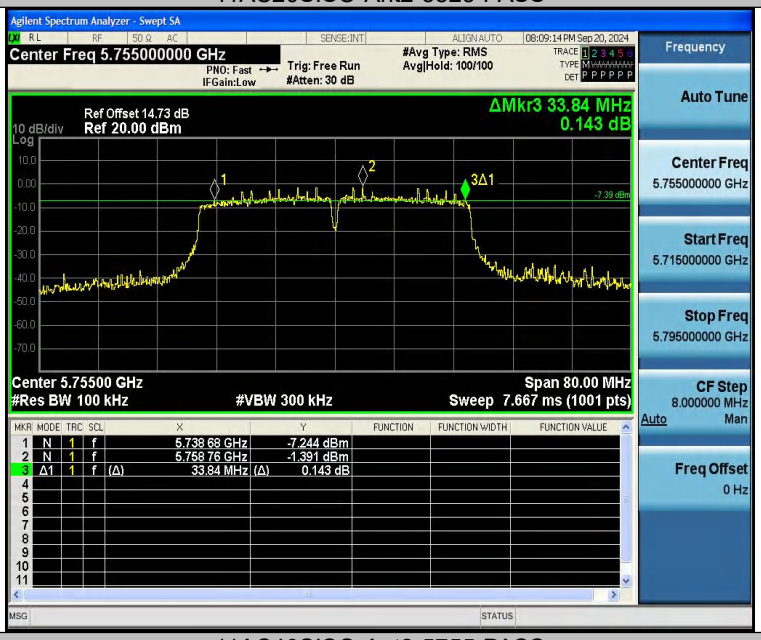
11AC20SISO-Ant2-5745-PASS



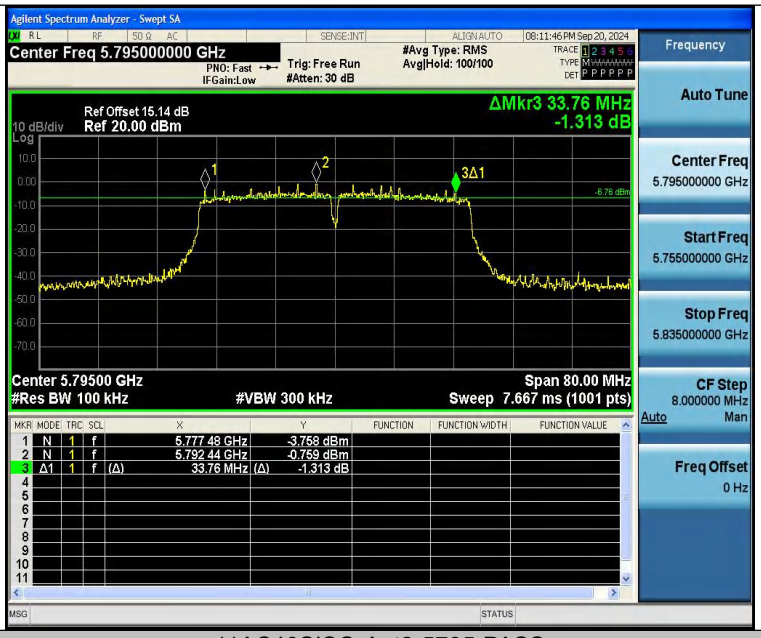
11AC20SISO-Ant2-5785-PASS



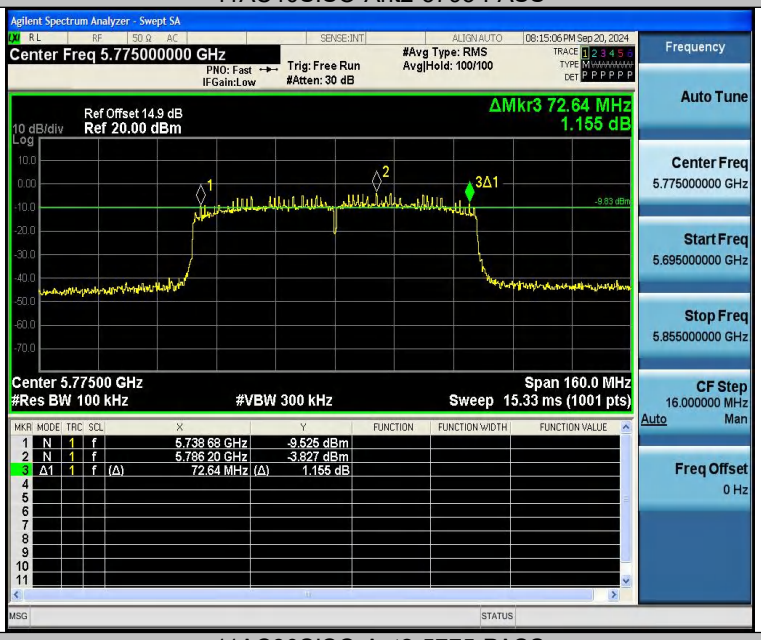
11AC20SISO-Ant2-5825-PASS



11AC40SISO-Ant2-5755-PASS



11AC40SISO-Ant2-5795-PASS

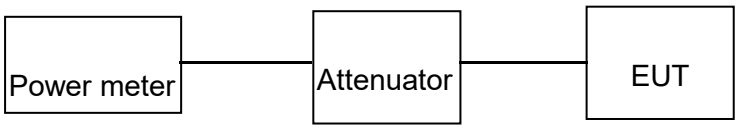


11AC80SISO-Ant2-5775-PASS

8 Maximum Conducted Output Power

Test Requirement	:	FCC CFR47 Part 15 Section 15.407(a)
Test Method	:	ANSI C63.10:2013
Test Limit	:	For 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. 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, 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.

8.1 Test Setup



8.2 Test Procedure

According to KDB 789033 D02 General UNII Test Procedures New Rules v02r01, The use Power Meter 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 a Power meter.

8.3 Test Result

Test Mode	Antenna	Frequency[MHz]	Result [dBm]	Limit [dBm]	Verdict
11A	Ant1	5180	11.71	≤23.98	PASS
11A	Ant1	5200	12.59	≤23.98	PASS
11A	Ant1	5240	**13.74**	≤23.98	PASS
11N20SISO	Ant1	5180	9.87	≤23.98	PASS
11N20SISO	Ant1	5200	10.71	≤23.98	PASS
11N20SISO	Ant1	5240	13.18	≤23.98	PASS
11N40SISO	Ant1	5190	9.87	≤23.98	PASS
11N40SISO	Ant1	5230	12.20	≤23.98	PASS
11AC20SISO	Ant1	5180	9.55	≤23.98	PASS
11AC20SISO	Ant1	5200	10.63	≤23.98	PASS
11AC20SISO	Ant1	5240	12.58	≤23.98	PASS
11AC40SISO	Ant1	5190	9.95	≤23.98	PASS
11AC40SISO	Ant1	5230	12.87	≤23.98	PASS
11AC80SISO	Ant1	5210	8.94	≤23.98	PASS
11A	Ant1	5745	12.14	≤30.00	PASS
11A	Ant1	5785	13.35	≤30.00	PASS
11A	Ant1	5825	13.06	≤30.00	PASS
11N20SISO	Ant1	5745	11.95	≤30.00	PASS
11N20SISO	Ant1	5785	13.42	≤30.00	PASS
11N20SISO	Ant1	5825	13.05	≤30.00	PASS
11N40SISO	Ant1	5755	11.85	≤30.00	PASS
11N40SISO	Ant1	5795	13.18	≤30.00	PASS
11AC20SISO	Ant1	5745	12.16	≤30.00	PASS
11AC20SISO	Ant1	5785	13.39	≤30.00	PASS
11AC20SISO	Ant1	5825	13.09	≤30.00	PASS
11AC40SISO	Ant1	5755	12.46	≤30.00	PASS
11AC40SISO	Ant1	5795	13.42	≤30.00	PASS
11AC80SISO	Ant1	5775	12.40	≤30.00	PASS
11A	Ant2	5745	12.44	≤30.00	PASS
11A	Ant2	5785	13.53	≤30.00	PASS
11A	Ant2	5825	13.18	≤30.00	PASS
11N20SISO	Ant2	5745	12.38	≤30.00	PASS
11N20SISO	Ant2	5785	13.22	≤30.00	PASS
11N20SISO	Ant2	5825	13.32	≤30.00	PASS
11N40SISO	Ant2	5755	12.13	≤30.00	PASS
11N40SISO	Ant2	5795	**13.69**	≤30.00	PASS
11AC20SISO	Ant2	5745	12.15	≤30.00	PASS
11AC20SISO	Ant2	5785	13.49	≤30.00	PASS
11AC20SISO	Ant2	5825	13.25	≤30.00	PASS
11AC40SISO	Ant2	5755	12.21	≤30.00	PASS
11AC40SISO	Ant2	5795	12.94	≤30.00	PASS
11AC80SISO	Ant2	5775	12.19	≤30.00	PASS
11A	Ant2	5180	9.87	≤23.98	PASS
11A	Ant2	5200	10.85	≤23.98	PASS
11A	Ant2	5240	12.46	≤23.98	PASS
11N20SISO	Ant2	5180	9.47	≤23.98	PASS
11N20SISO	Ant2	5200	10.74	≤23.98	PASS

11N20SISO	Ant2	5240	12.33	≤23.98	PASS
11N40SISO	Ant2	5190	10.04	≤23.98	PASS
11N40SISO	Ant2	5230	12.06	≤23.98	PASS
11AC20SISO	Ant2	5180	9.68	≤23.98	PASS
11AC20SISO	Ant2	5200	10.78	≤23.98	PASS
11AC20SISO	Ant2	5240	12.30	≤23.98	PASS
11AC40SISO	Ant2	5190	10.23	≤23.98	PASS
11AC40SISO	Ant2	5230	12.17	≤23.98	PASS
11AC80SISO	Ant2	5210	10.91	≤23.98	PASS

9 Power Spectral density

Test Requirement	:	FCC CFR47 Part 15 Section 15.2407(a)
Test Method	:	ANSI C63.10:2013
Test Limit	:	For 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. 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, 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-kHzband. 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-tomultipoint 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

9.1 Test Procedure

According to KDB 789033 D02 General UNII Test Procedures New Rules v02r01 and ANSI 63.10: 2013 Sec 10.3.7.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 Section 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 the RBW to 1 MHz.

b) Set the VBW to be at least 1 MHz (a VBW of 3 MHz is desirable).

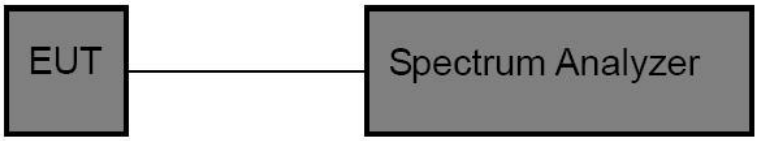
c) Set the frequency span to examine the spectrum across a convenient frequency segment (e.g., 600 MHz).

d) Select the power averaging (rms) detector.

e) Set the sweep time so that there is no more than a 1 ms integration period over each measurement bin.

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

9.2 Test Setup



9.3 Test Result

Pre-scan has been conducted to determine the worst-case mode from all possible combinations between available modulations / data rates and antenna ports.

Following channel was selected for the final test as listed below

TestMode	Antenna	Frequency[MHz]	Result [dBm/MHz]	Limit[dBm/MHz]	Verdict
11A	Ant1	5180	1.18	≤11.00	PASS
11A	Ant1	5200	1.5	≤11.00	PASS
11A	Ant1	5240	3.01	≤11.00	PASS
11N20SISO	Ant1	5180	-1.28	≤11.00	PASS
11N20SISO	Ant1	5200	-0.38	≤11.00	PASS
11N20SISO	Ant1	5240	1.96	≤11.00	PASS
11N40SISO	Ant1	5190	-3.18	≤11.00	PASS
11N40SISO	Ant1	5230	-1.04	≤11.00	PASS
11AC20SISO	Ant1	5180	-1.48	≤11.00	PASS
11AC20SISO	Ant1	5200	-0.33	≤11.00	PASS
11AC20SISO	Ant1	5240	1.44	≤11.00	PASS
11AC40SISO	Ant1	5190	-3.5	≤11.00	PASS
11AC40SISO	Ant1	5230	-0.89	≤11.00	PASS
11AC80SISO	Ant1	5210	-7.46	≤11.00	PASS
11A	Ant1	5745	-1.69	≤30.00	PASS
11A	Ant1	5785	-0.61	≤30.00	PASS
11A	Ant1	5825	-0.68	≤30.00	PASS
11N20SISO	Ant1	5745	-2.16	≤30.00	PASS
11N20SISO	Ant1	5785	-0.41	≤30.00	PASS
11N20SISO	Ant1	5825	-1.11	≤30.00	PASS
11N40SISO	Ant1	5755	-4.32	≤30.00	PASS
11N40SISO	Ant1	5795	-3.53	≤30.00	PASS
11AC20SISO	Ant1	5745	-2	≤30.00	PASS
11AC20SISO	Ant1	5785	-0.66	≤30.00	PASS
11AC20SISO	Ant1	5825	-0.84	≤30.00	PASS
11AC40SISO	Ant1	5755	-4.27	≤30.00	PASS
11AC40SISO	Ant1	5795	-3.35	≤30.00	PASS
11AC80SISO	Ant1	5775	-6.28	≤30.00	PASS

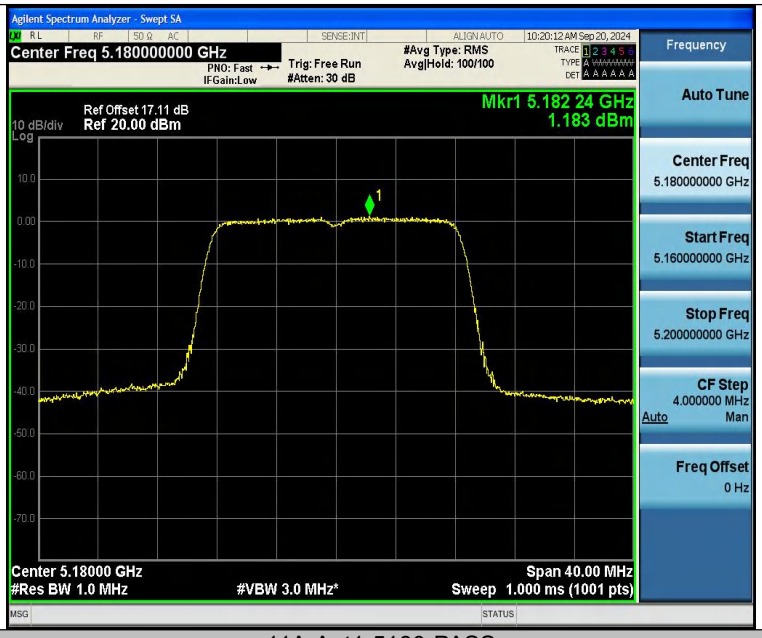
11A	Ant2	5745	-1.37	≤30.00	PASS
11A	Ant2	5785	-0.12	≤30.00	PASS
11A	Ant2	5825	-0.76	≤30.00	PASS
11N20SISO	Ant2	5745	-1.74	≤30.00	PASS
11N20SISO	Ant2	5785	-0.66	≤30.00	PASS
11N20SISO	Ant2	5825	-0.81	≤30.00	PASS
11N40SISO	Ant2	5755	-4.08	≤30.00	PASS
11N40SISO	Ant2	5795	-3.07	≤30.00	PASS
11AC20SISO	Ant2	5745	-1.83	≤30.00	PASS
11AC20SISO	Ant2	5785	-0.2	≤30.00	PASS
11AC20SISO	Ant2	5825	-0.67	≤30.00	PASS
11AC40SISO	Ant2	5755	-4.06	≤30.00	PASS

11AC40SISO	Ant2	5795	-3.22	≤30.00	PASS
11AC80SISO	Ant2	5775	-6.68	≤30.00	PASS
11A	Ant2	5180	-0.93	≤11.00	PASS
11A	Ant2	5200	-0.25	≤11.00	PASS
11A	Ant2	5240	1.46	≤11.00	PASS
11N20SISO	Ant2	5180	-1.92	≤11.00	PASS
11N20SISO	Ant2	5200	-0.71	≤11.00	PASS
11N20SISO	Ant2	5240	1.1	≤11.00	PASS
11N40SISO	Ant2	5190	-2.92	≤11.00	PASS
11N40SISO	Ant2	5230	-1.39	≤11.00	PASS
11AC20SISO	Ant2	5180	-1.62	≤11.00	PASS
11AC20SISO	Ant2	5200	-0.33	≤11.00	PASS
11AC20SISO	Ant2	5240	1.29	≤11.00	PASS
11AC40SISO	Ant2	5190	-3.08	≤11.00	PASS
11AC40SISO	Ant2	5230	-1.32	≤11.00	PASS
11AC80SISO	Ant2	5210	-5.14	≤11.00	PASS

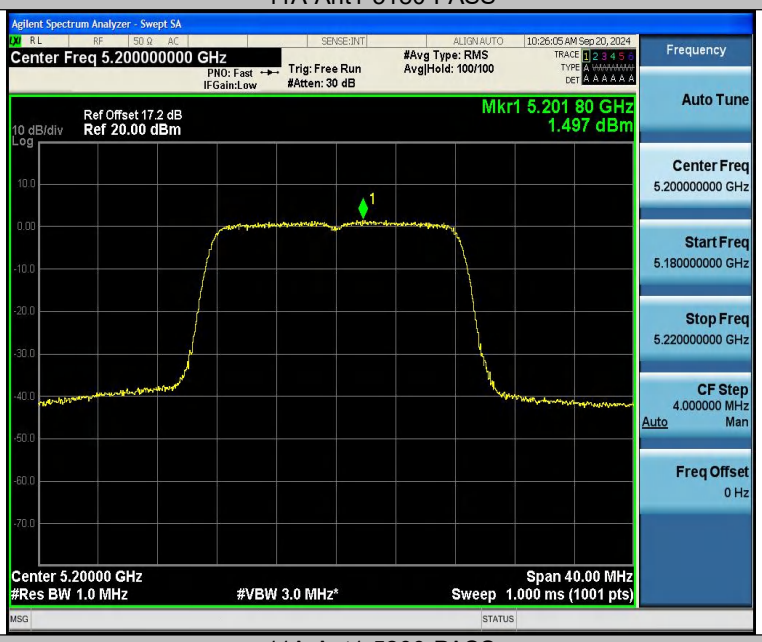
Note：1.The Result and Limit Unit is dBm/500 kHz in the band 5.725–5.85 GHz.

2. in the band 5.725−5.85 GHz the test RBW select 300KHz,so the measured result corrected by Result+10 log (500 kHz/300kHz).

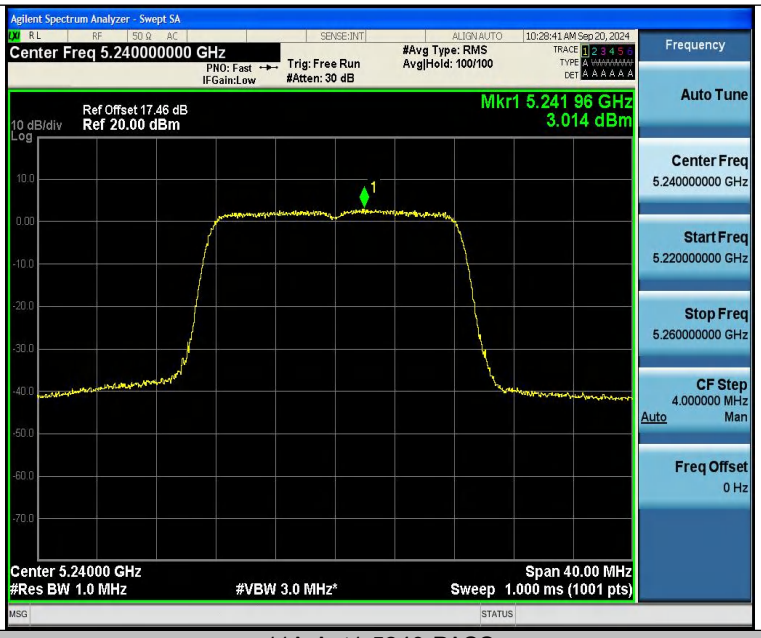
Test Graphs:



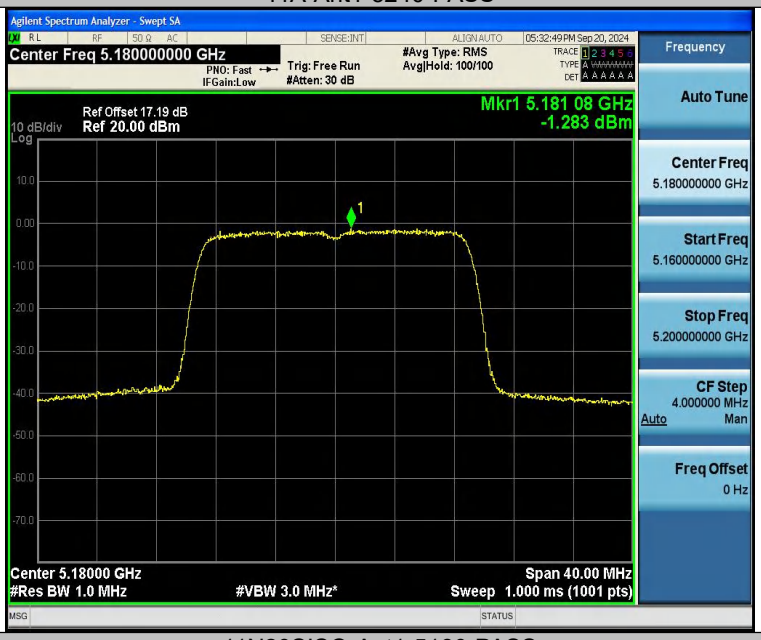
11A-Ant1-5180-PASS



11A-Ant1-5200-PASS



11A-Ant1-5240-PASS



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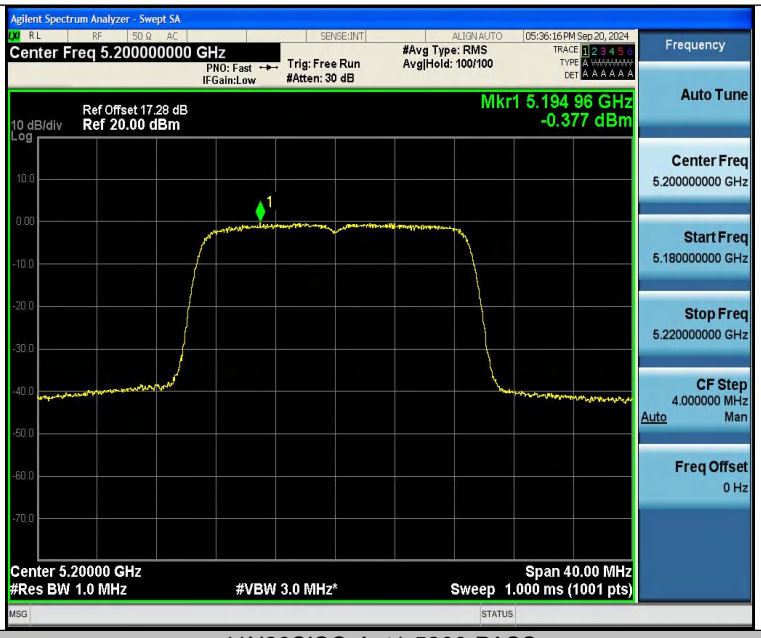

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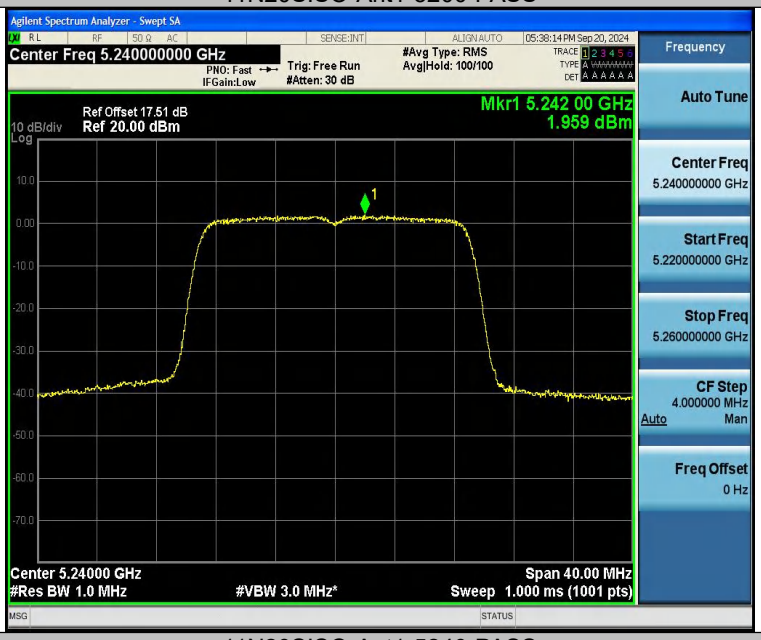

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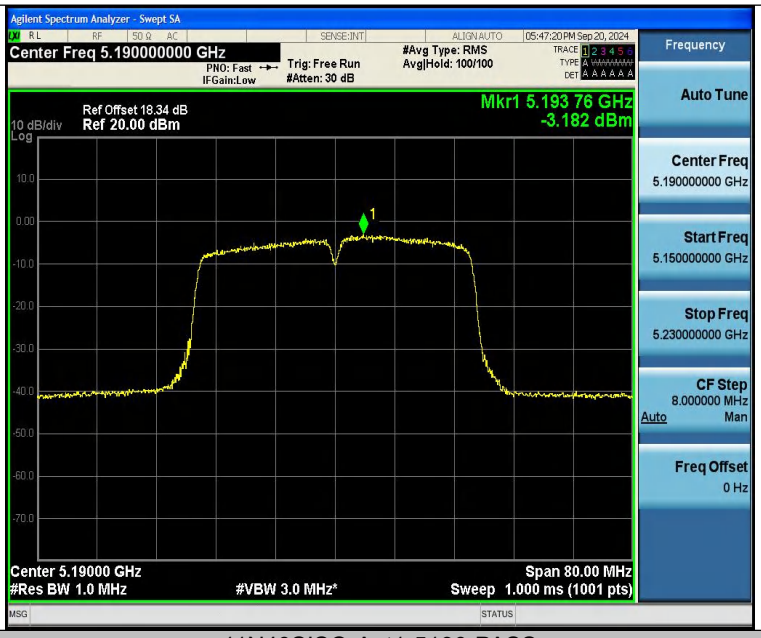
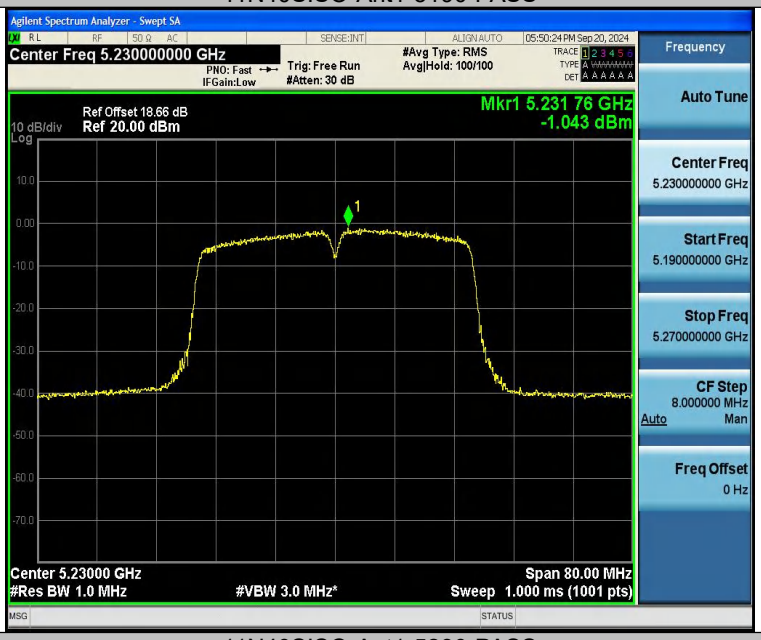
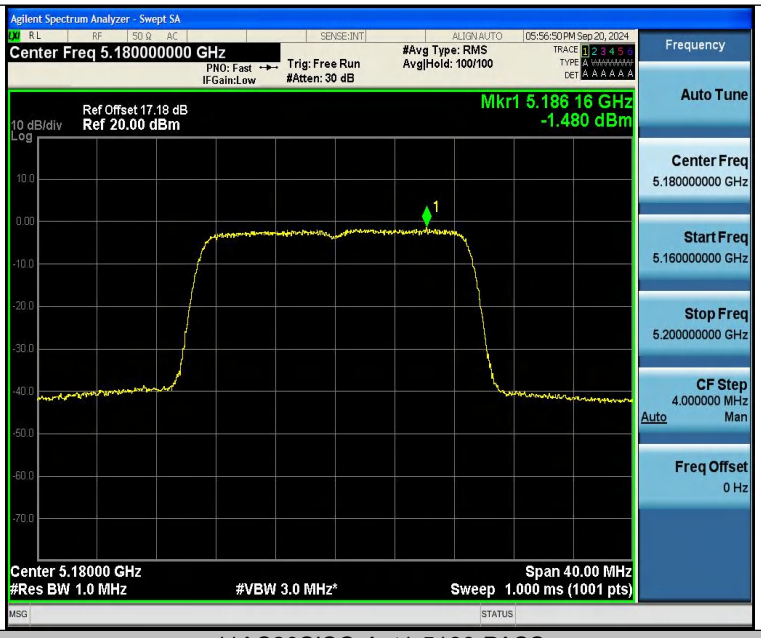


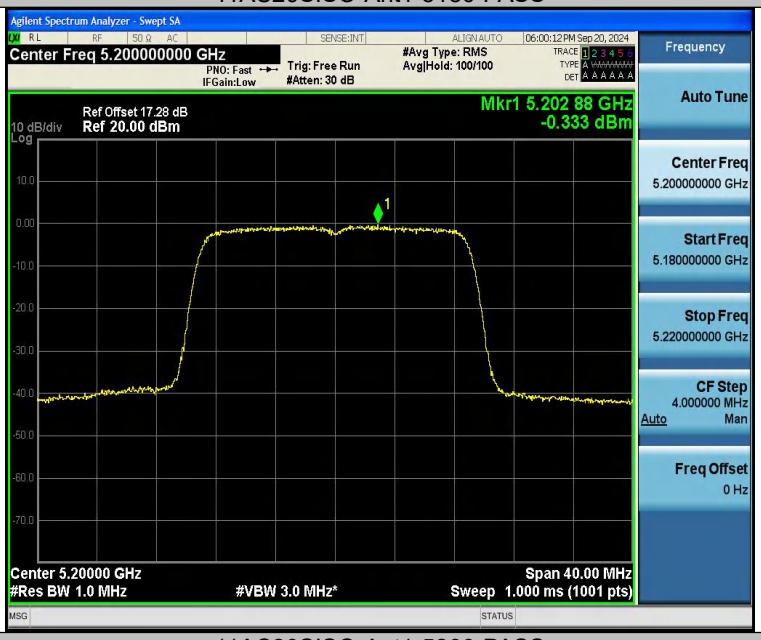
11N40SISO-Ant1-5190-PASS



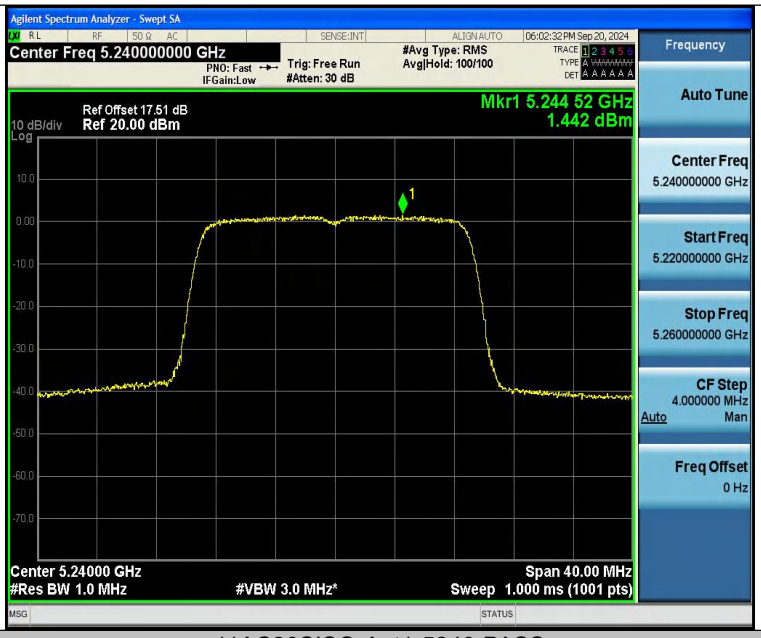
11N40SISO-Ant1-5230-PASS



11AC20SISO-Ant1-5180-PASS



11AC20SISO-Ant1-5200-PASS



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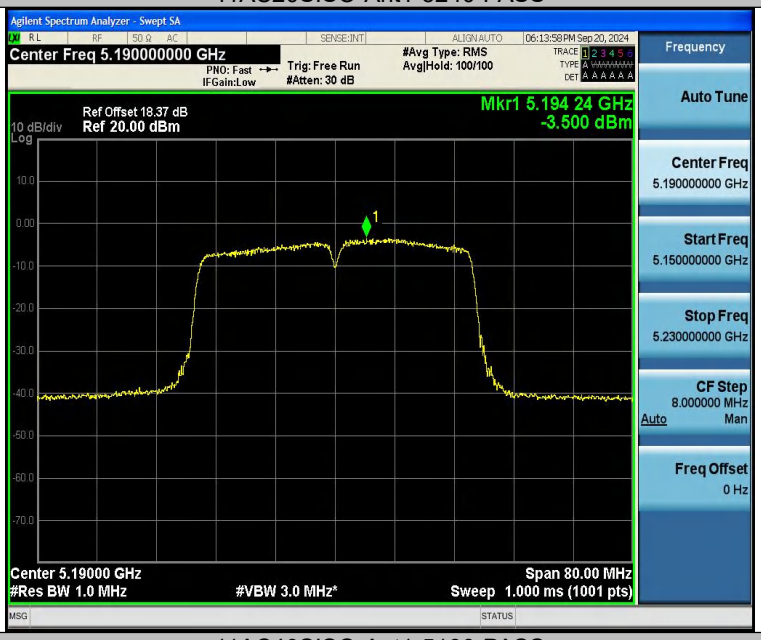
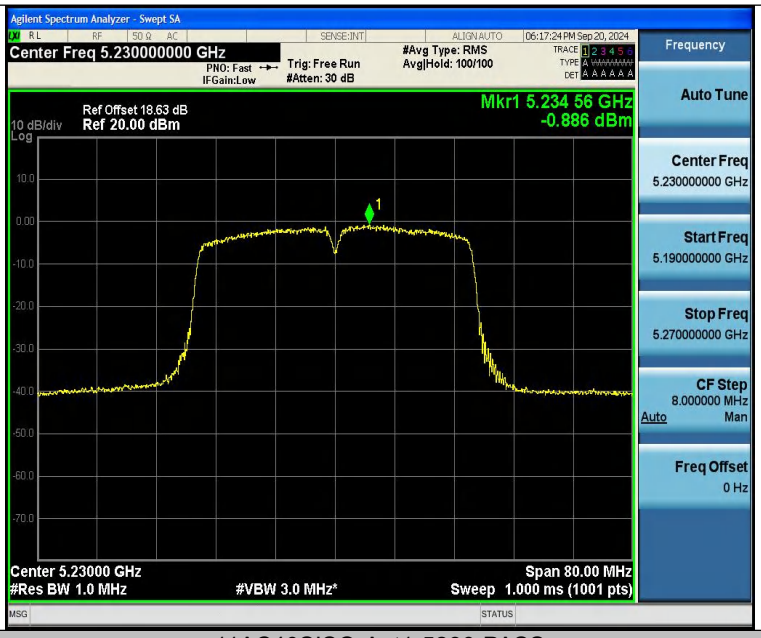
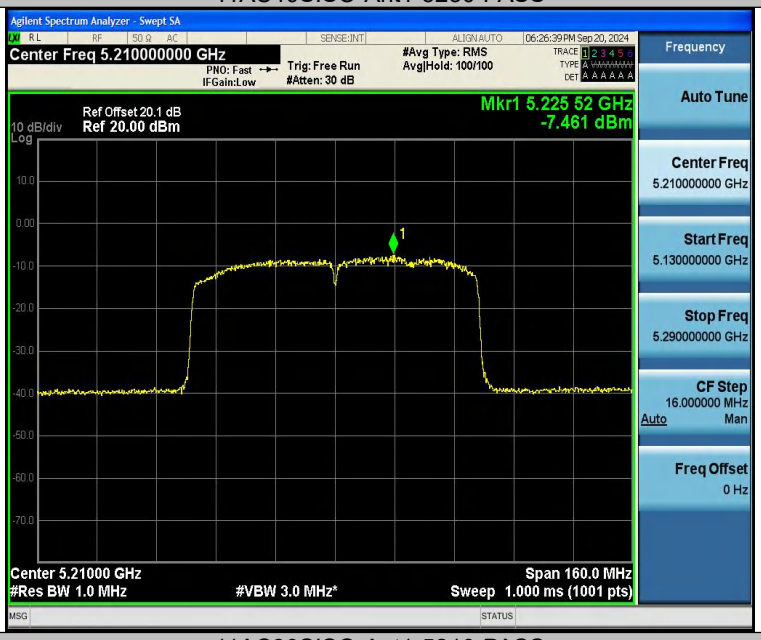


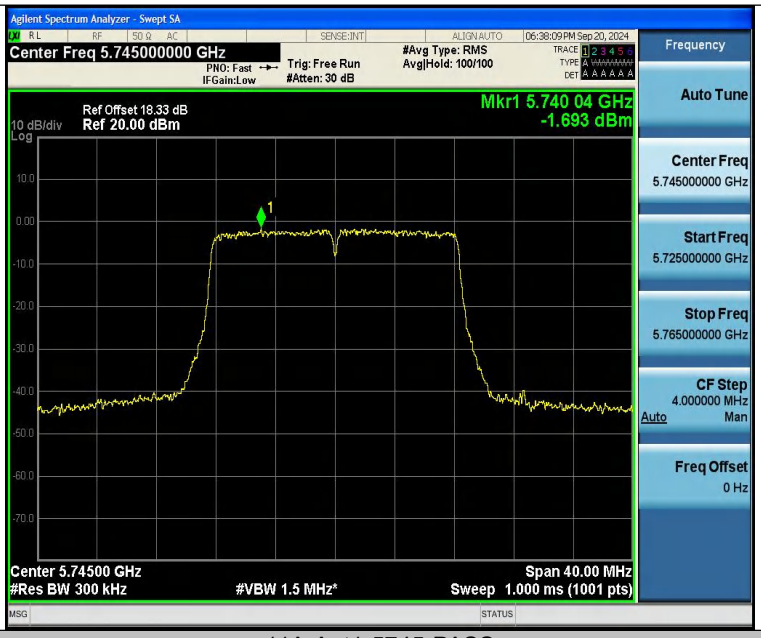
11AC40SISO-Ant1-5190-PASS



11AC40SISO-Ant1-5230-PASS

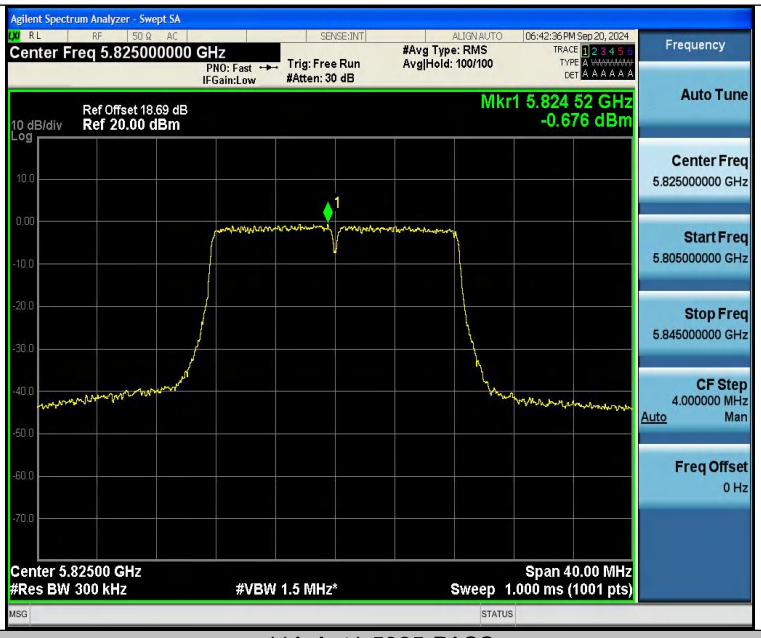


11AC80SISO-Ant1-5210-PASS



11A-Ant1-5745-PASS

11A-Ant1-5785-PASS

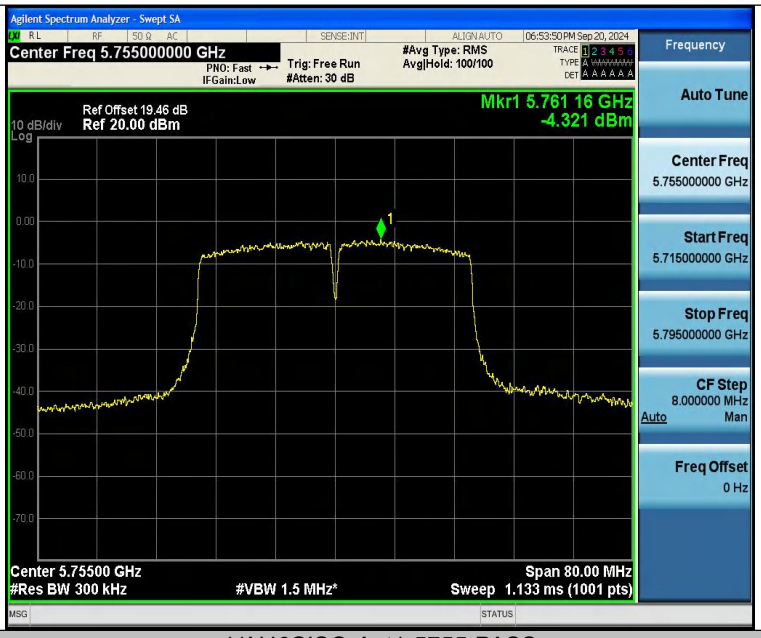


11A-Ant1-5825-PASS

11N20SISO-Ant1-5745-PASS

11N20SISO-Ant1-5785-PASS

11N20SISO-Ant1-5825-PASS



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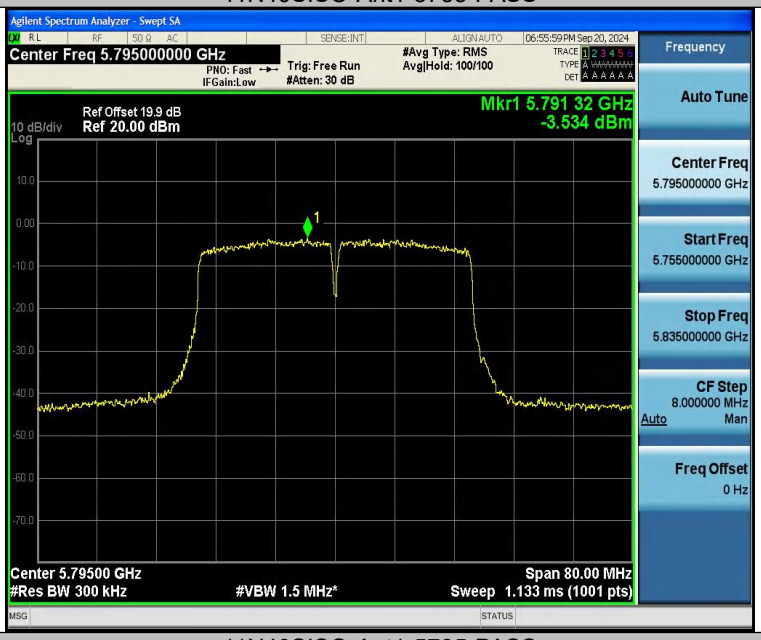

11N40SISO-Ant1-5795-PASS