



802.11ax20

Test Mode:5825					Test channel: High			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
11650	48.71	39.80	5.42	31.75	62.18	68.23	-6.05	V
17475	44.27	42.13	7.32	30.96	62.76	68.23	-5.47	V
23300	45.90	37.60	8.85	35.25	57.10	68.23	-11.13	V
11650	49.39	39.80	5.42	31.75	62.86	68.23	-5.37	H
17475	44.38	42.13	7.32	30.96	62.87	68.23	-5.36	H
23300	45.16	37.60	8.85	35.25	56.36	68.23	-11.87	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
11650	34.58	35.26	5.42	31.75	43.51	54	-10.49	V
17475	28.81	36.88	7.32	30.96	42.05	54	-11.95	V
23300	29.92	39.14	8.85	35.25	42.66	54	-11.34	V
11650	33.58	34.21	5.42	31.75	41.46	54	-12.54	H
17475	28.65	37.52	7.32	30.96	42.53	54	-11.47	H
23300	28.53	37.60	8.85	35.25	39.73	54	-14.27	H



802.11ax40

Test Mode:5190					Test channel:LOW			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10380	47.79	39.04	5.42	31.75	60.50	68.23	-7.73	V
15570	44.49	39.64	7.32	30.96	60.49	68.23	-7.74	V
20760	45.36	37.89	8.85	35.25	56.85	68.23	-11.38	V
10380	49.13	39.04	5.42	31.75	61.84	68.23	-6.39	H
15570	44.77	39.64	7.32	30.96	60.77	68.23	-7.46	H
20760	45.46	37.89	8.85	35.25	56.95	68.23	-11.28	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10380	35.50	39.04	5.42	31.75	48.21	54	-5.79	V
15570	29.04	39.64	7.32	30.96	45.04	54	-8.96	V
20760	27.97	37.89	8.85	35.25	39.46	54	-14.54	V
10380	32.85	39.04	5.42	31.75	45.56	54	-8.44	H
15570	28.67	39.64	7.32	30.96	44.67	54	-9.33	H
20760	28.90	37.89	8.85	35.25	40.39	54	-13.61	H



802.11ax40

Test Mode:5230					Test channel: High			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10460	47.51	39.28	5.42	31.75	60.46	68.23	-7.77	V
15690	44.50	39.79	7.32	30.96	60.65	68.23	-7.58	V
20920	45.12	37.70	8.85	35.25	56.42	68.23	-11.81	V
10460	49.20	39.28	5.42	31.75	62.15	68.23	-6.08	H
15690	44.46	39.79	7.32	30.96	60.61	68.23	-7.62	H
20920	45.42	37.70	8.85	35.25	56.72	68.23	-11.51	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10460	35.36	39.28	5.42	31.75	48.31	54	-5.69	V
15690	28.71	39.79	7.32	30.96	44.86	54	-9.14	V
20920	28.08	37.70	8.85	35.25	39.38	54	-14.62	V
10460	33.16	39.28	5.42	31.75	46.11	54	-7.89	H
15690	28.42	39.79	7.32	30.96	44.57	54	-9.43	H
20920	29.02	37.70	8.85	35.25	40.32	54	-13.68	H



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Test Mode: 5755					Test channel: High			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
11510	49.15	39.72	5.42	31.75	62.54	68.23	-5.69	V
17265	42.32	41.52	7.32	30.96	60.20	68.23	-8.03	V
23020	43.27	37.13	8.85	35.25	54.00	68.23	-14.23	V
11510	49.05	39.72	5.42	31.75	62.44	68.23	-5.79	H
17265	44.17	41.52	7.32	30.96	62.05	68.23	-6.18	H
23020	44.75	37.13	8.85	35.25	55.48	68.23	-12.75	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
11510	33.88	39.72	5.42	31.75	47.27	54	-6.73	V
17265	30.04	41.52	7.32	30.96	47.92	54	-6.08	V
23020	29.83	37.13	8.85	35.25	40.56	54	-13.44	V
11510	33.05	39.72	5.42	31.75	46.44	54	-7.56	H
17265	28.40	41.52	7.32	30.96	46.28	54	-7.72	H
23020	28.89	37.13	8.85	35.25	39.62	54	-14.38	H



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Test Mode: 5795					Test channel: High			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
11590	45.92	39.88	5.42	31.75	59.47	68.23	-8.76	V
17385	43.98	42.14	7.32	30.96	62.48	68.23	-5.75	V
23180	45.01	37.39	8.85	35.25	56.00	68.23	-12.23	V
11590	48.19	39.88	5.42	31.75	61.74	68.23	-6.49	H
17385	42.75	42.14	7.32	30.96	61.25	68.23	-6.98	H
23180	42.06	37.39	8.85	35.25	53.05	68.23	-15.18	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
11590	33.57	39.88	5.42	31.75	47.12	54	-6.88	V
17385	30.43	42.14	7.32	30.96	48.93	54	-5.07	V
23180	29.48	37.39	8.85	35.25	40.47	54	-13.53	V
11590	33.91	39.88	5.42	31.75	47.46	54	-6.54	H
17385	29.76	42.14	7.32	30.96	48.26	54	-5.74	H
23180	29.36	37.39	8.85	35.25	40.35	54	-13.65	H

Note:

1. The testing has been conformed to 40GHz.
2. All other emissions more than 30dB below the limit.
3. Factor = Antenna Factor + Cable Loss – Pre-amplifier.
Emission Level = Reading + Factor
Margin=Emission Level-Limit
4. X-Axis, Y-Axis and Z-Axis were investigated. The results above show only the worst case.



6.6 Restricted Band

Test Requirement : FCC Part15 E Section 15.407(b)

Test site : Measurement Distance: 3m

Test Limit :	Frequency	Limit (dBuV/m @3m)	Remark
	Above 1GHz	74	Peak Value
		54	Average Value

Test Procedure:

1. The EUT was placed on a styrofoam table which is 1.5m above ground plane.
2. EUT is set 3m away from the receiving antenna, which is moved from 1m to 4m to find out the maximum emissions. The spectrum was investigated from the lowest radio frequency signal generated in the device, without going below 9 kHz, up to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Repeat above procedures until the measurements for all frequencies are complete.
7. The radiation measurements are tested under 3-axes(X,Y,Z) position(X denotes lying on the table, Y denotes side stand and Z denotes vertical stand), After pre-test, It was found that the worse radiation emission was get at the X position. So the data shown was the X position only.
8. The test above 1GHz must be use the fully anechoic room, and the test below 1GHz use the half anechoic room

Test Result:

Worst case mode:		802.11a(6Mbps)		Test channel:		36		
NO.	Freq. [MHz]	level [dBμV/m]	Factor [dB]	Emission level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity	Detector Type
1	5150	50.69	6.53	57.22	68.23	11.01	H	Peak
2	5150	39.95	6.53	46.48	54	7.52	H	Average
3	5150	49.92	6.53	56.45	68.23	11.78	V	Peak
4	5150	38.38	6.53	44.91	54	9.09	V	Average

Worst case mode:		802.11a(6Mbps)		Test channel:		48		
NO.	Freq. [MHz]	level [dBμV/m]	Factor [dB]	Emission level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity	Detector Type
1	5350	50.08	6.56	56.64	68.23	11.59	H	Peak
2	5350	40.12	6.56	46.68	54	7.32	H	Average
3	5350	49.39	6.56	55.95	68.23	12.28	V	Peak
4	5350	38.18	6.56	44.74	54	9.26	V	Average

Worst case mode:		802.11a(6Mbps)		Test channel:		CH149(5745MHz)		
NO.	Freq. [MHz]	level [dBμV/m]	Factor [dB]	Emission level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity	Detector Type
1	5640	38.06	6.58	44.64	68.23	23.59	H	Peak
2	5640	38.24	6.58	44.82	54	9.18	H	Average
3	5640	37.8	6.58	44.38	68.23	23.85	V	Peak
4	5640	37.69	6.58	44.27	54	9.73	V	Average

Worst case mode:		802.11a(6Mbps)		Test channel:		CH 165(5825MHz)		
NO.	Freq. [MHz]	level [dBμV/m]	Factor [dB]	Emission level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity	Detector Type
1	5850	49.89	6.64	56.53	68.23	11.7	H	Peak
2	5850	40.49	6.64	47.13	54	6.87	H	Average
3	5850	48.77	6.64	55.41	68.23	12.82	V	Peak
4	5850	37.92	6.64	44.56	54	9.44	V	Average

Note: Only recorded the worst case in the report.



7 Emission Bandwidth and Occupied Bandwidth

Test Requirement	: FCC CFR47 Part 15 Section 15.407(a)(e)
Test Method	: ANSI C63.10-2020 According to FCC §15.407(a), 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.
Test Limit	: 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. As per FCC §15.407(e): for equipment operating in the band 5725 – 5850 MHz, the minimum 6 dB bandwidth of U-NII devices shall be 500 kHz.

7.1 Test Procedure

According to KDB 789033 D02 General UNII Test Procedures New Rules v02r01,
Emission Bandwidth (EBW)

a) Set RBW = approximately 1% of the emission bandwidth; b) Set the VBW > RBW; c) Detector = Peak; d) Trace mode = max hold; e) 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%; 99% Occupied Bandwidth
The 99% occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers are each equal to 0.5 % of the total mean power of the given emission. Measurement of the 99% occupied bandwidth is required only as a condition for using the optional band-edge measurement techniques described in II.G.3.d). Measurements of 99% occupied bandwidth may also optionally be used in lieu of the EBW to define the minimum frequency range over which the spectrum is integrated when measuring maximum conducted output power as described in II.E. However, the EBW must be measured to determine bandwidth dependent limits on maximum conducted output power in accordance with 15.407(a).

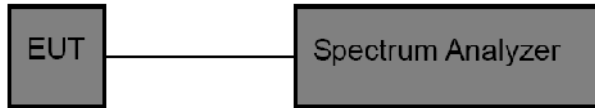
The following procedure shall be used for measuring (99 %) power bandwidth:

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 $\geq 3 \cdot$ RBW
5. Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.
6. Use the 99 % power bandwidth function of the instrument (if available).
7. If the instrument does not have a 99 % power bandwidth function, the trace data points are recovered and directly summed in power units. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5 % of the total is reached; that frequency is recorded as the lower frequency.



The process is repeated until 99.5 % of the total is reached; that frequency is recorded as the upper frequency. The 99% occupied bandwidth is the difference between these two frequencies.

7.2 Test setup



7.3 Test Result

PASS

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.

26 dB emission bandwidth:

TestMode	Antenna	Frequency[MHz]	26db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5180	19.400	5170.280	5189.680	---	---
11A	Ant1	5200	19.360	5190.360	5209.720	---	---
11A	Ant1	5240	19.360	5230.320	5249.680	---	---
11A	Ant1	5745	19.440	5735.320	5754.760	---	---
11A	Ant1	5785	19.560	5775.200	5794.760	---	---
11A	Ant1	5825	18.720	5815.760	5834.480	---	---
11N20SISO	Ant1	5180	19.440	5170.320	5189.760	---	---
11N20SISO	Ant1	5200	19.200	5190.360	5209.560	---	---
11N20SISO	Ant1	5240	19.520	5230.200	5249.720	---	---
11N20SISO	Ant1	5745	19.320	5735.440	5754.760	---	---
11N20SISO	Ant1	5785	19.400	5775.320	5794.720	---	---
11N20SISO	Ant1	5825	19.200	5815.440	5834.640	---	---
11N40SISO	Ant1	5190	40.480	5169.760	5210.240	---	---
11N40SISO	Ant1	5230	41.040	5209.440	5250.480	---	---
11N40SISO	Ant1	5755	40.720	5734.440	5775.160	---	---
11N40SISO	Ant1	5795	40.960	5774.280	5815.240	---	---
11AC20SISO	Ant1	5180	19.480	5170.240	5189.720	---	---
11AC20SISO	Ant1	5200	19.280	5190.360	5209.640	---	---
11AC20SISO	Ant1	5240	19.560	5230.200	5249.760	---	---
11AC20SISO	Ant1	5745	19.320	5735.440	5754.760	---	---
11AC20SISO	Ant1	5785	19.360	5775.280	5794.640	---	---
11AC20SISO	Ant1	5825	19.440	5815.200	5834.640	---	---
11AC40SISO	Ant1	5190	41.120	5169.520	5210.640	---	---
11AC40SISO	Ant1	5230	40.480	5209.920	5250.400	---	---
11AC40SISO	Ant1	5755	41.360	5734.680	5776.040	---	---
11AC40SISO	Ant1	5795	40.480	5774.600	5815.080	---	---
11AX20SISO	Ant1	5180	19.480	5170.240	5189.720	---	---
11AX20SISO	Ant1	5200	19.200	5190.360	5209.560	---	---
11AX20SISO	Ant1	5240	19.200	5230.440	5249.640	---	---
11AX20SISO	Ant1	5745	19.280	5735.240	5754.520	---	---
11AX20SISO	Ant1	5785	19.240	5775.360	5794.600	---	---
11AX20SISO	Ant1	5825	19.400	5815.200	5834.600	---	---
11AX40SISO	Ant1	5190	40.640	5169.280	5209.920	---	---



Report No.: PTC26061214701E-FC04

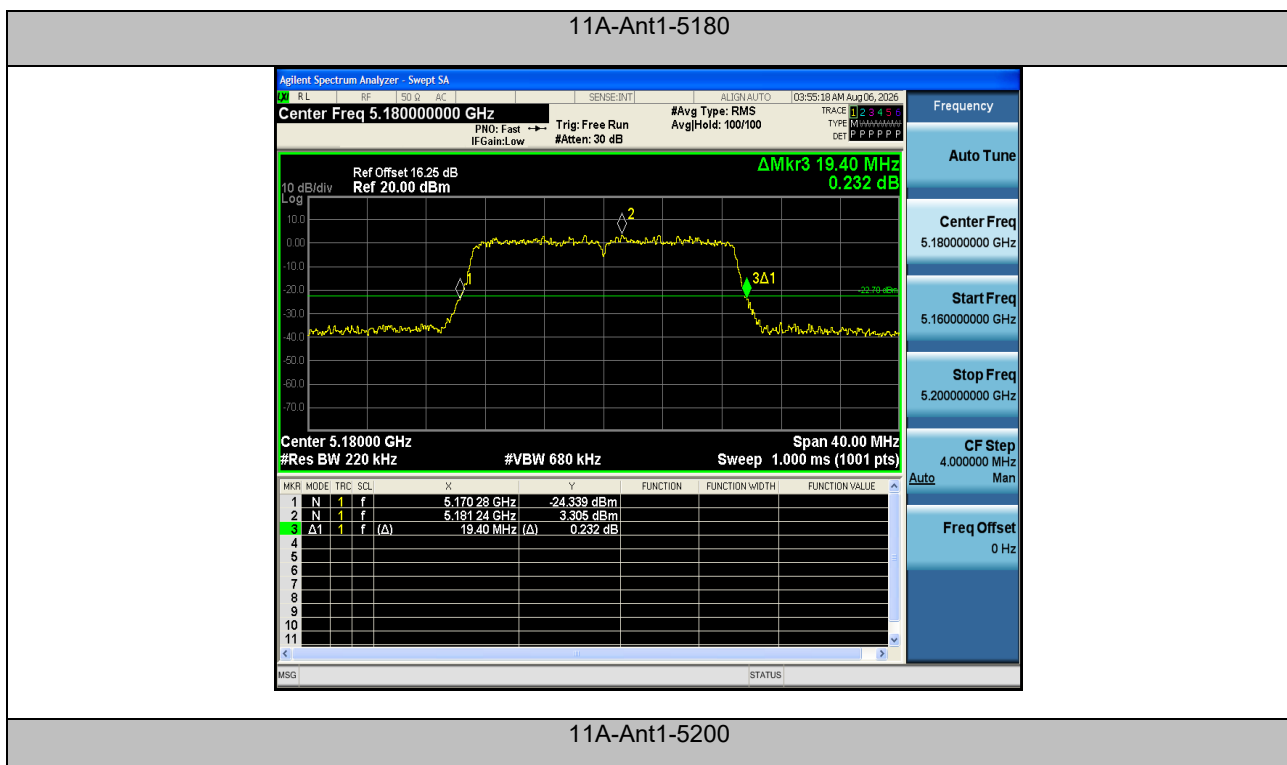
11AX40SISO	Ant1	5230	40.560	5209.680	5250.240	---	---
11AX40SISO	Ant1	5755	40.080	5735.080	5775.160	---	---
11AX40SISO	Ant1	5795	39.680	5775.000	5814.680	---	---

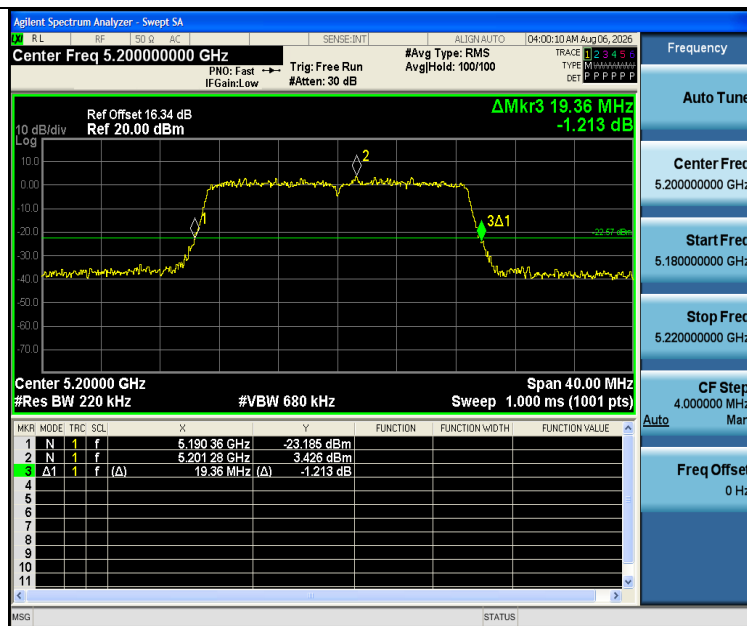


minimum 6 dB bandwidth:

TestMode	Antenna	Frequency[MHz]	6db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5745	17.560	5736.240	5753.800	0.5	PASS
11A	Ant1	5785	17.600	5776.200	5793.800	0.5	PASS
11A	Ant1	5825	16.280	5816.880	5833.160	0.5	PASS
11N20SISO	Ant1	5745	16.800	5736.640	5753.440	0.5	PASS
11N20SISO	Ant1	5785	17.520	5776.240	5793.760	0.5	PASS
11N20SISO	Ant1	5825	17.520	5816.240	5833.760	0.5	PASS
11N40SISO	Ant1	5755	33.840	5738.680	5772.520	0.5	PASS
11N40SISO	Ant1	5795	35.360	5777.080	5812.440	0.5	PASS
11AC20SISO	Ant1	5745	17.560	5736.240	5753.800	0.5	PASS
11AC20SISO	Ant1	5785	16.560	5776.840	5793.400	0.5	PASS
11AC20SISO	Ant1	5825	17.320	5816.240	5833.560	0.5	PASS
11AC40SISO	Ant1	5755	35.200	5737.400	5772.600	0.5	PASS
11AC40SISO	Ant1	5795	35.200	5777.400	5812.600	0.5	PASS
11AX20SISO	Ant1	5745	17.080	5736.440	5753.520	0.5	PASS
11AX20SISO	Ant1	5785	17.400	5776.360	5793.760	0.5	PASS
11AX20SISO	Ant1	5825	17.280	5816.240	5833.520	0.5	PASS
11AX40SISO	Ant1	5755	35.040	5737.480	5772.520	0.5	PASS
11AX40SISO	Ant1	5795	35.120	5777.400	5812.520	0.5	PASS

Test Graphs:





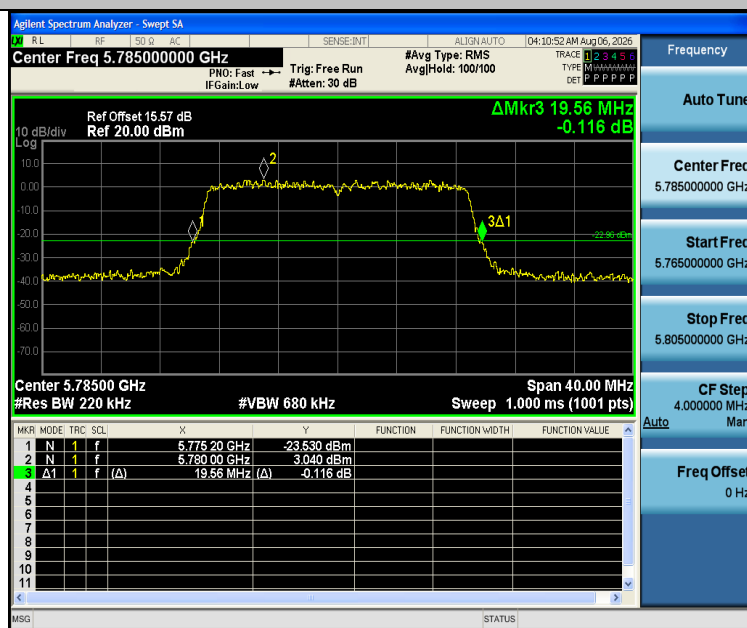
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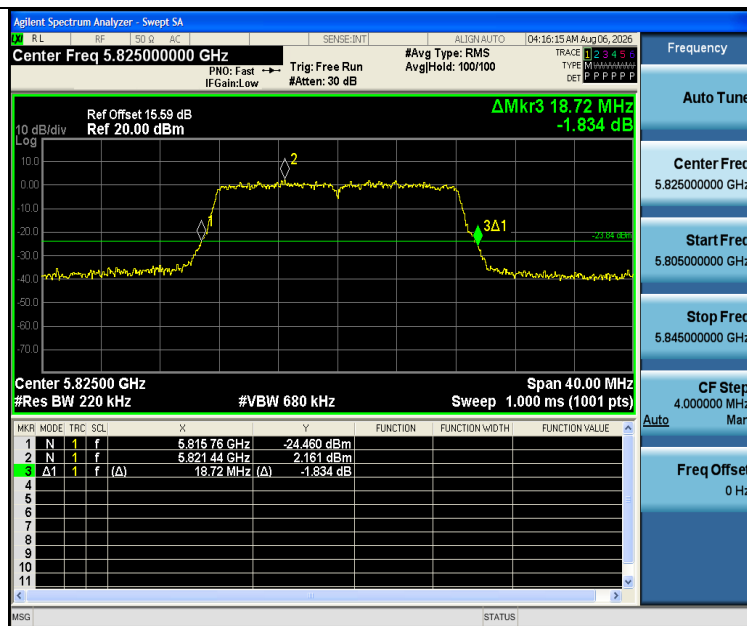
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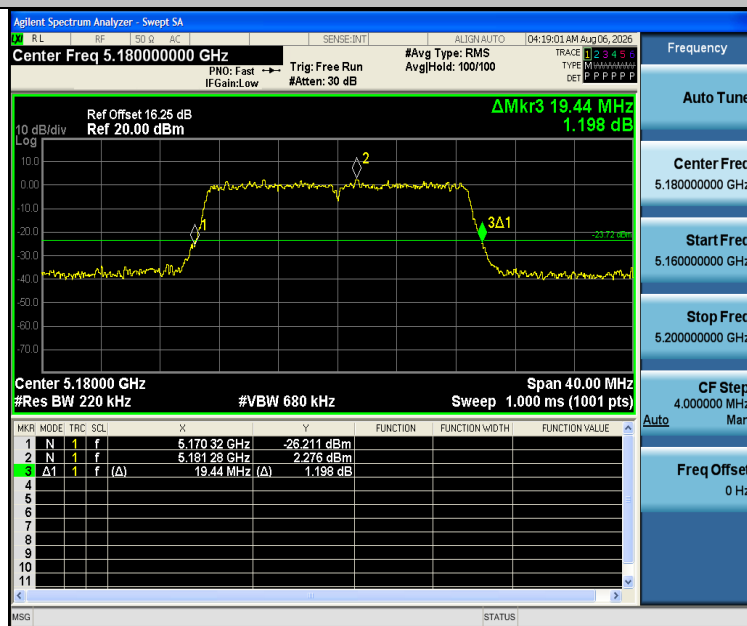
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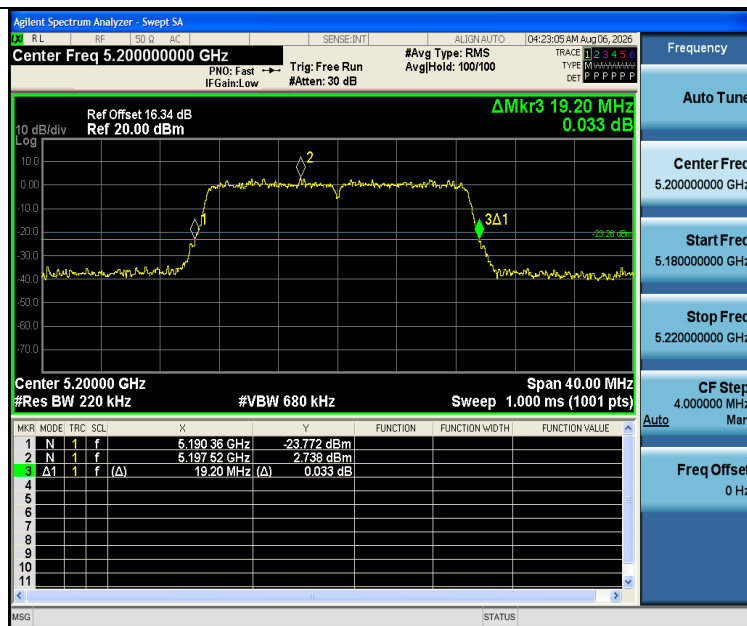
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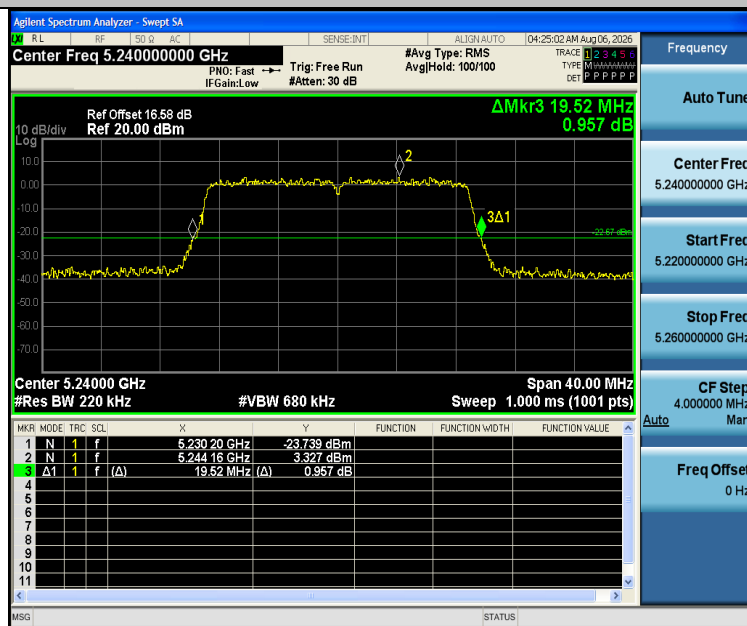
11N20SISO-Ant1-5180



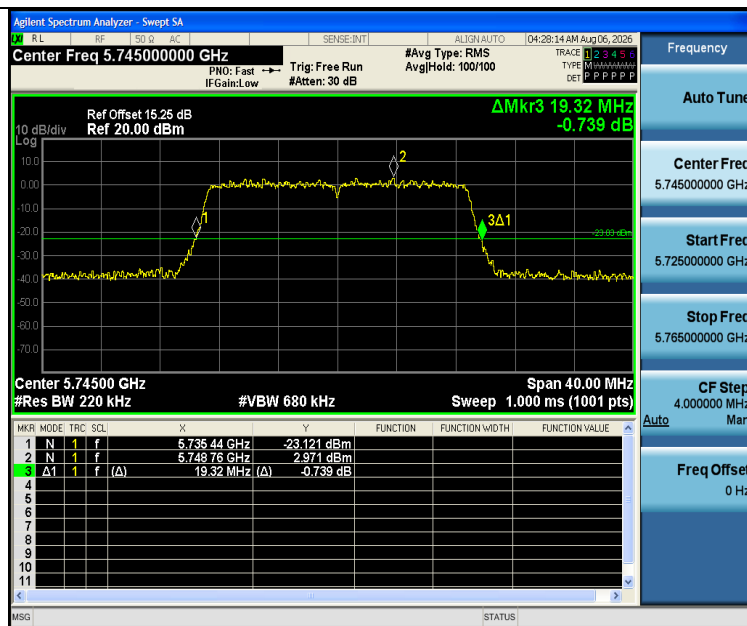
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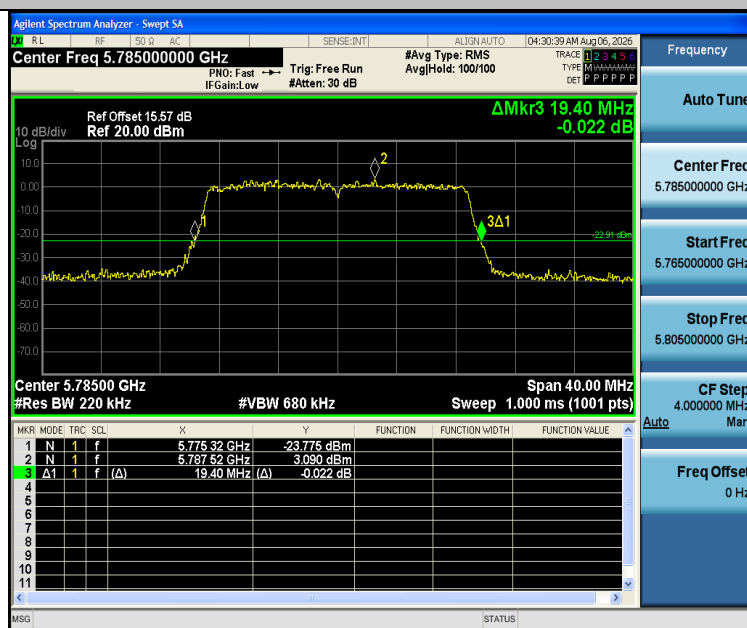
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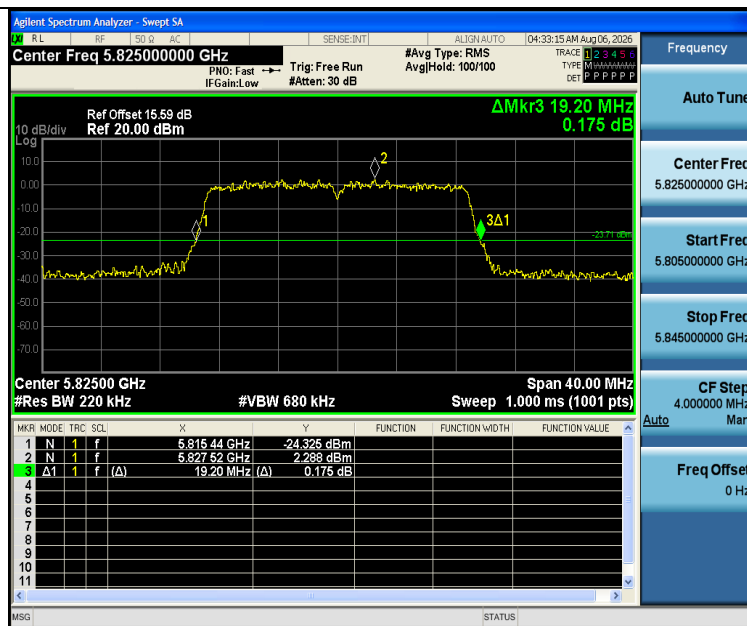
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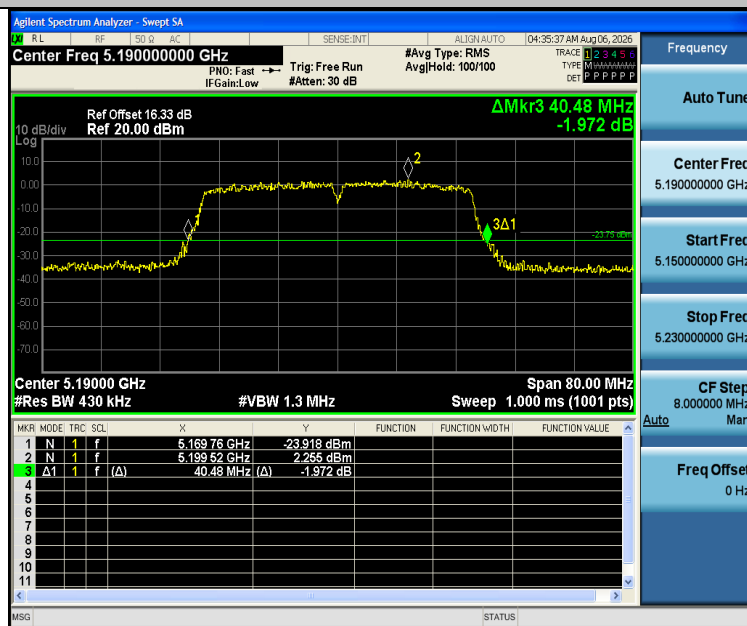
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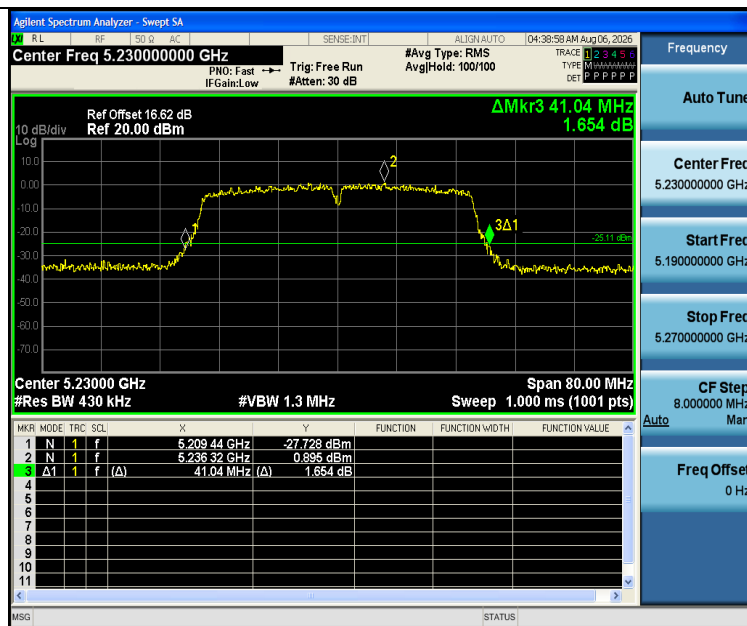
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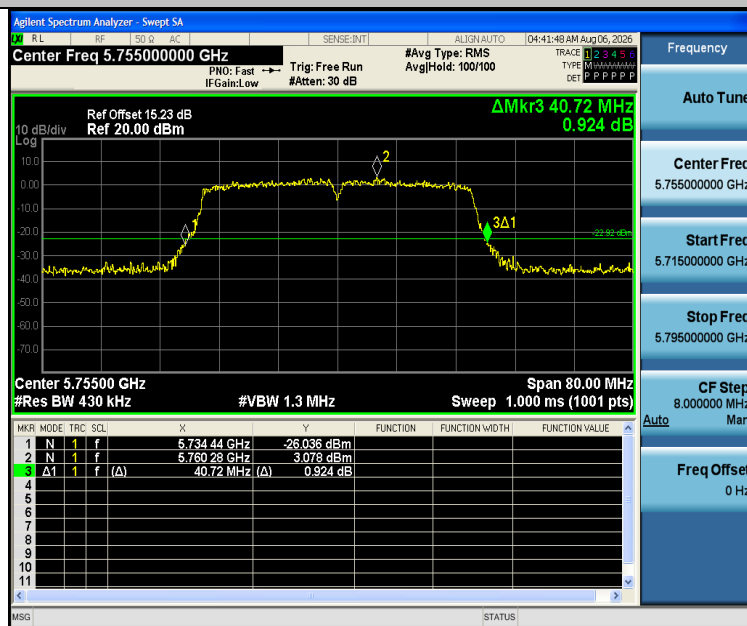
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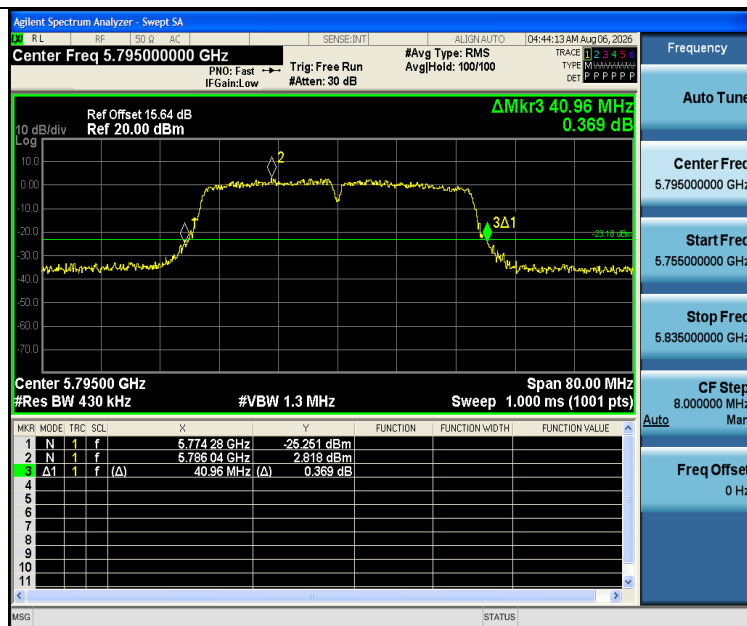
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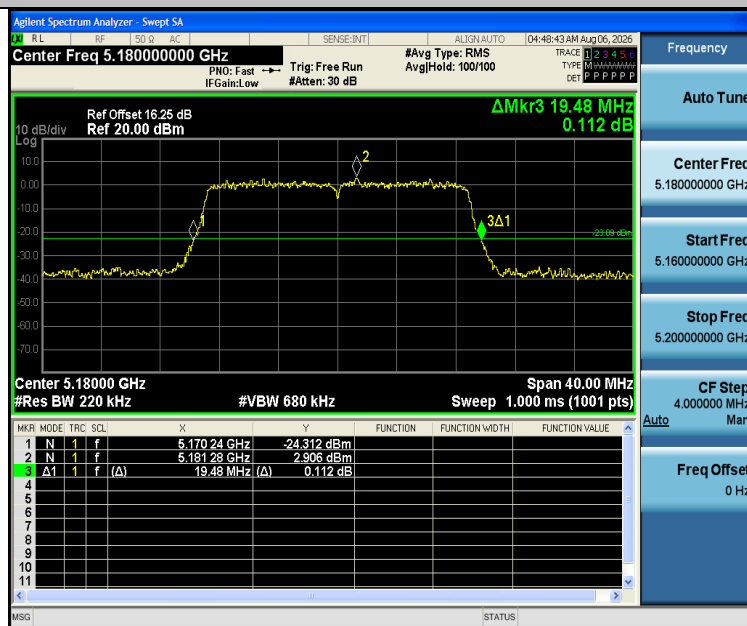
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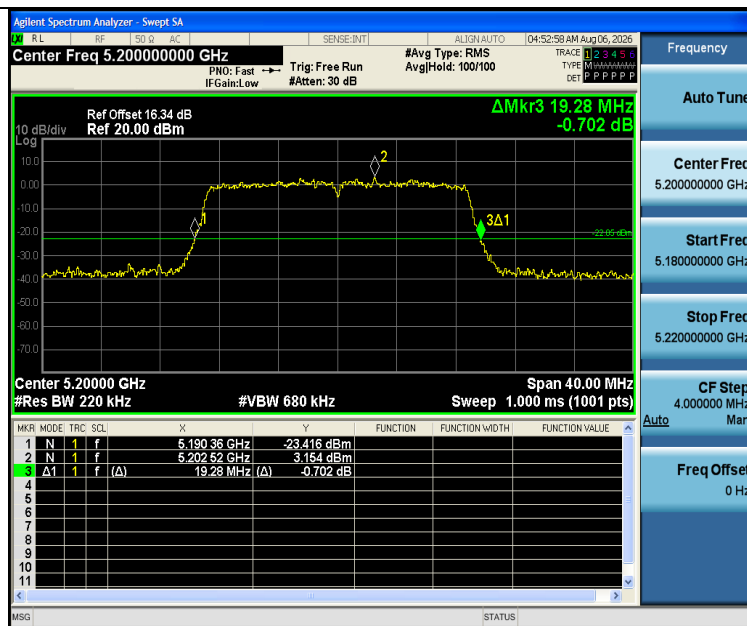
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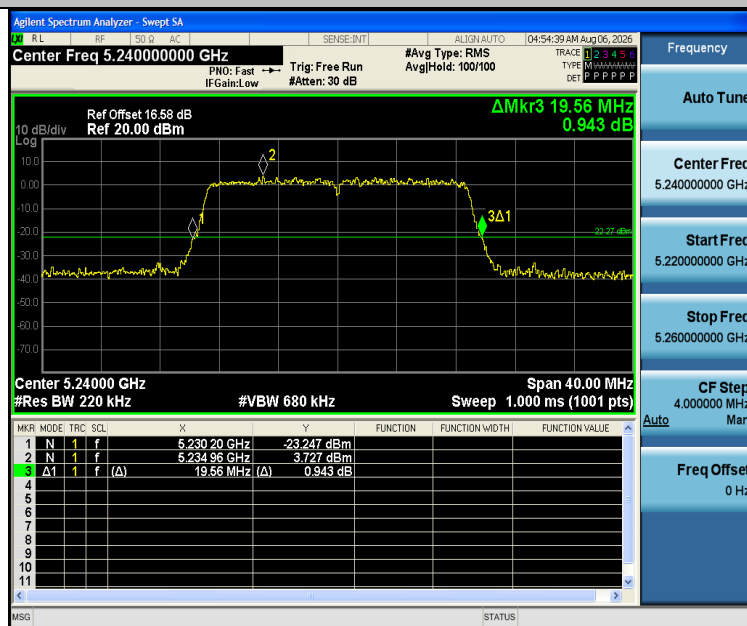
11AC20SISO-Ant1-5180



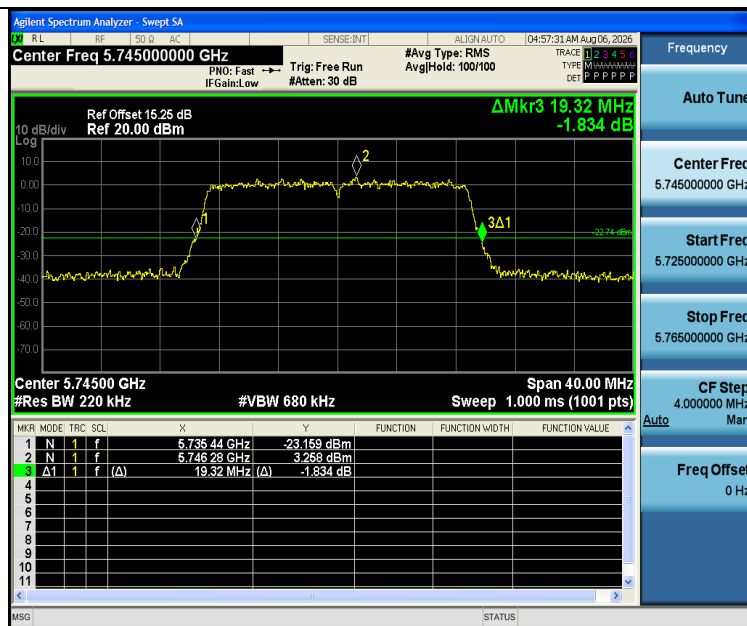
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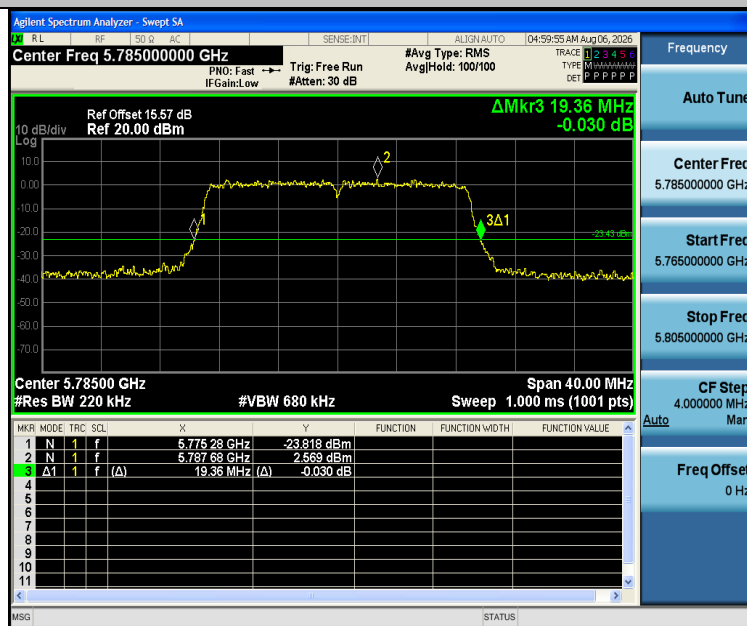
11AC20SISO-Ant1-5240



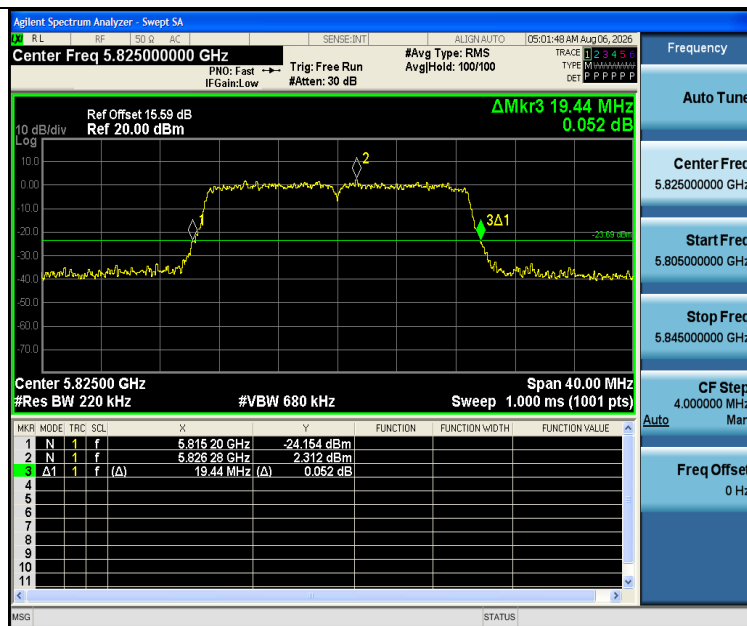
11AC20SISO-Ant1-5745



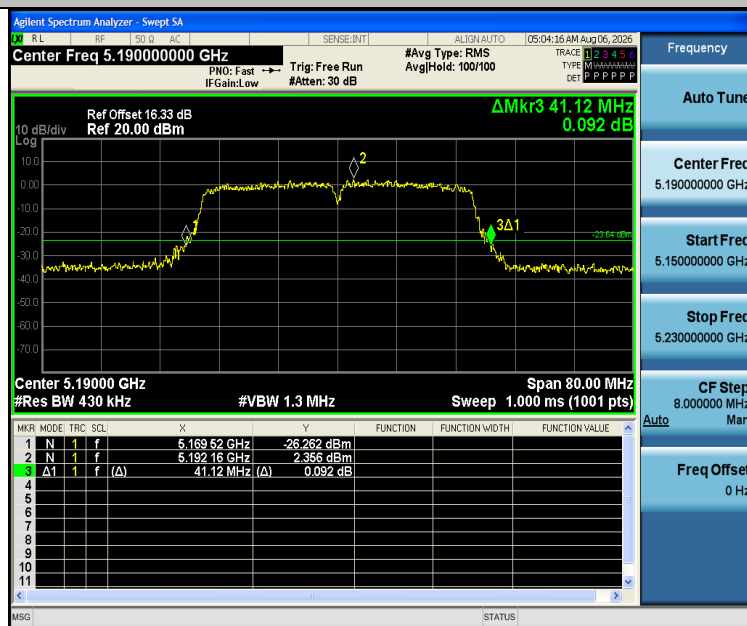
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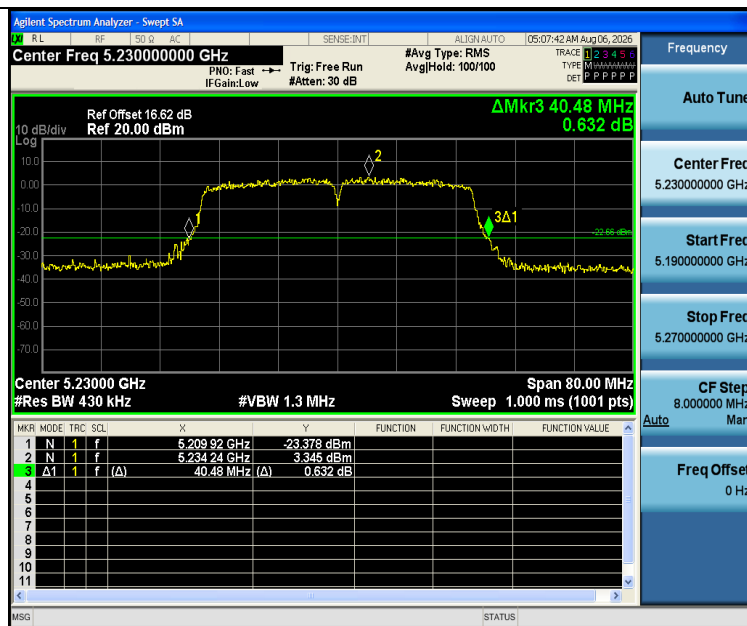
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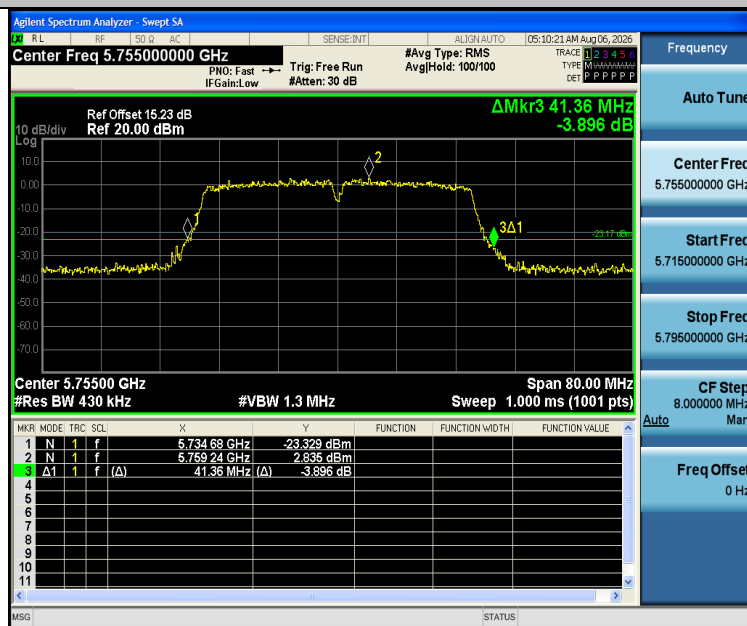
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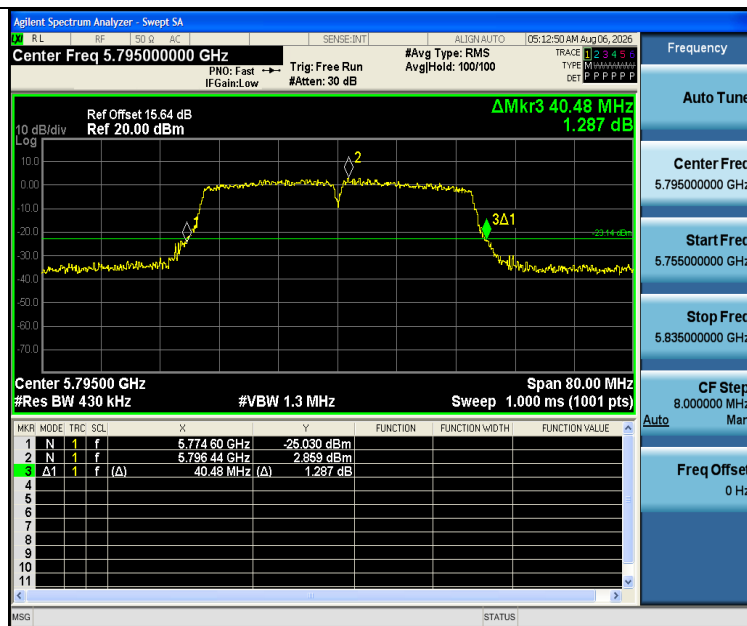
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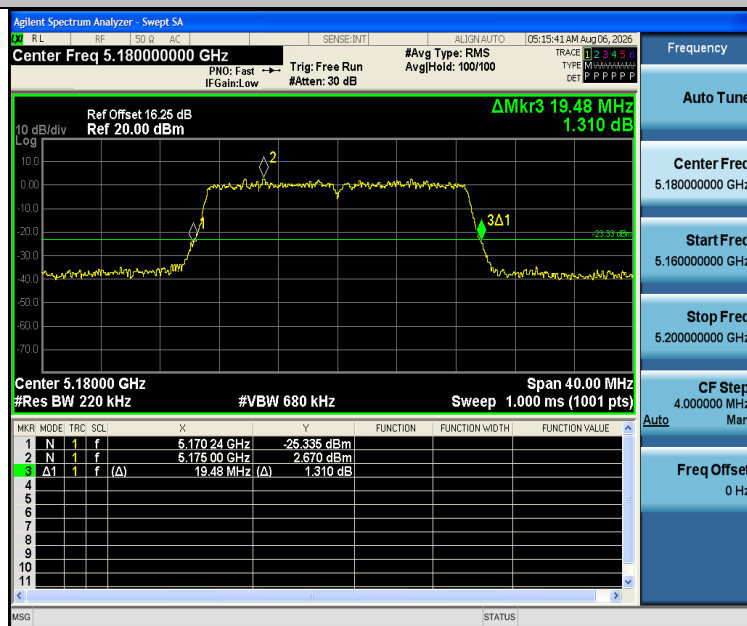
11AC40SISO-Ant1-5755



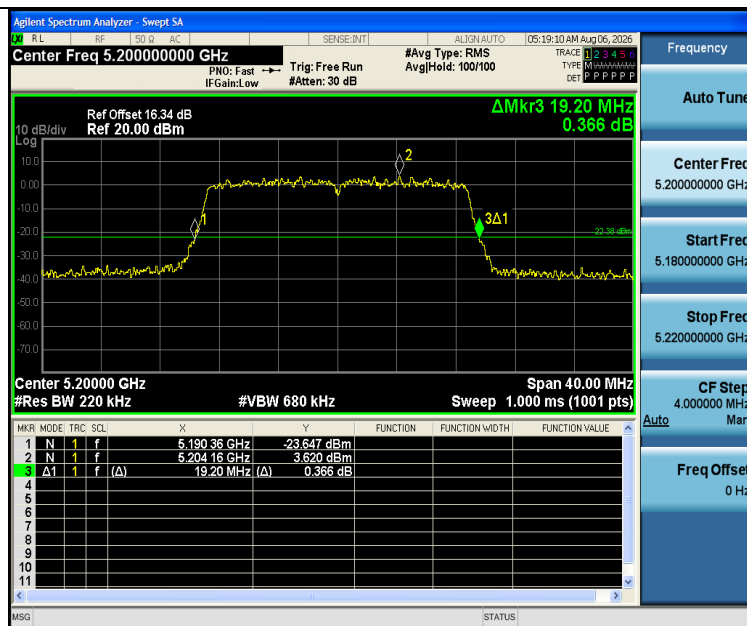
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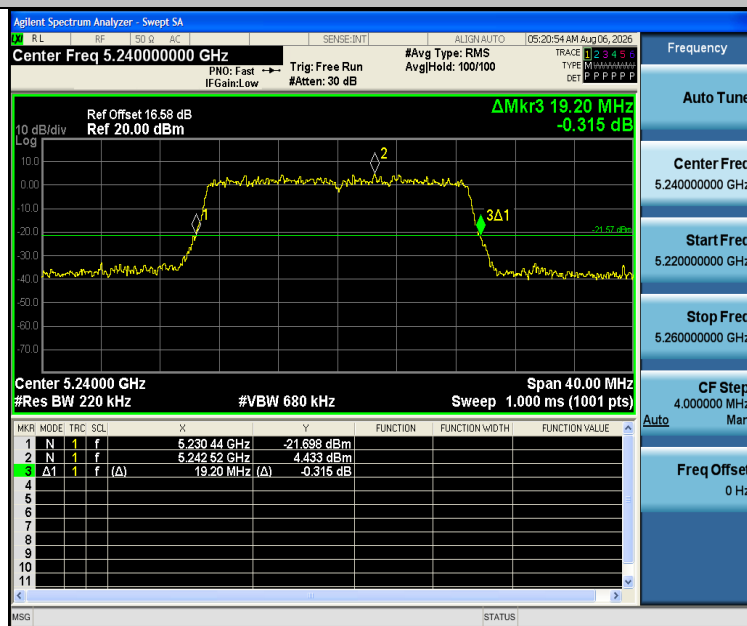
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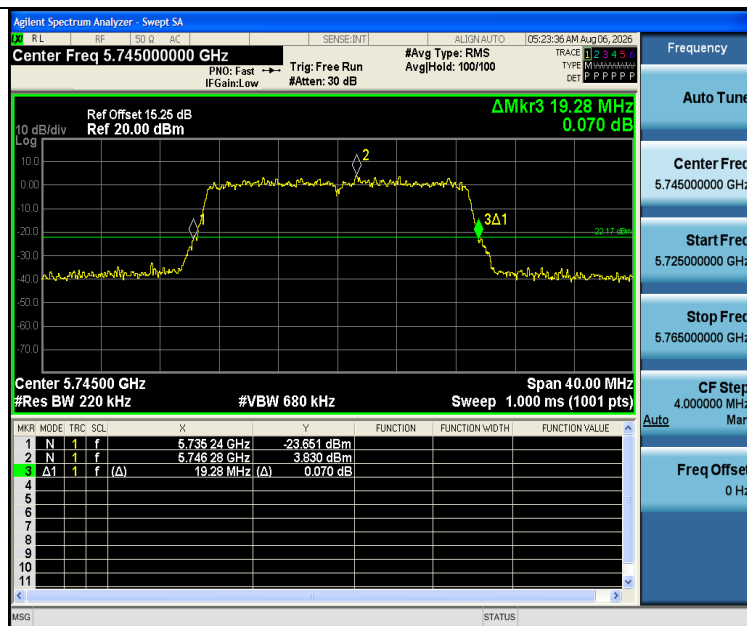
11AX20SISO-Ant1-5200



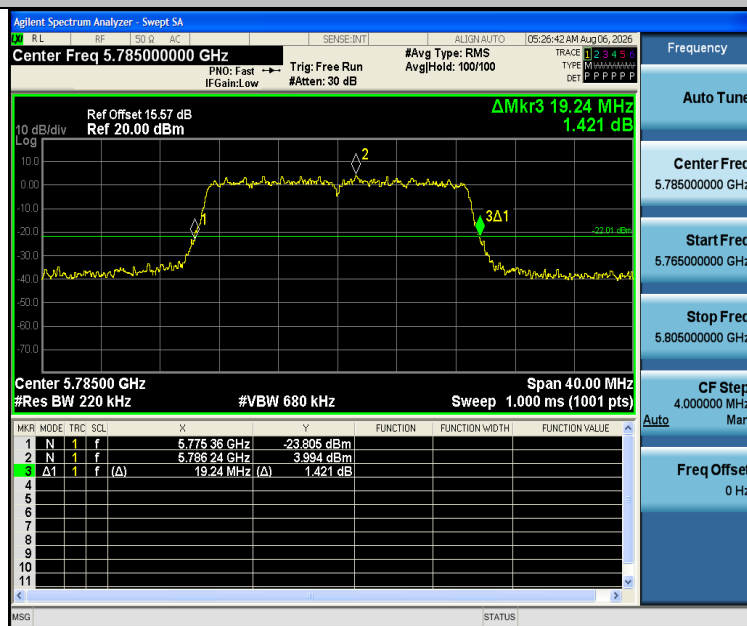
11AX20SISO-Ant1-5240



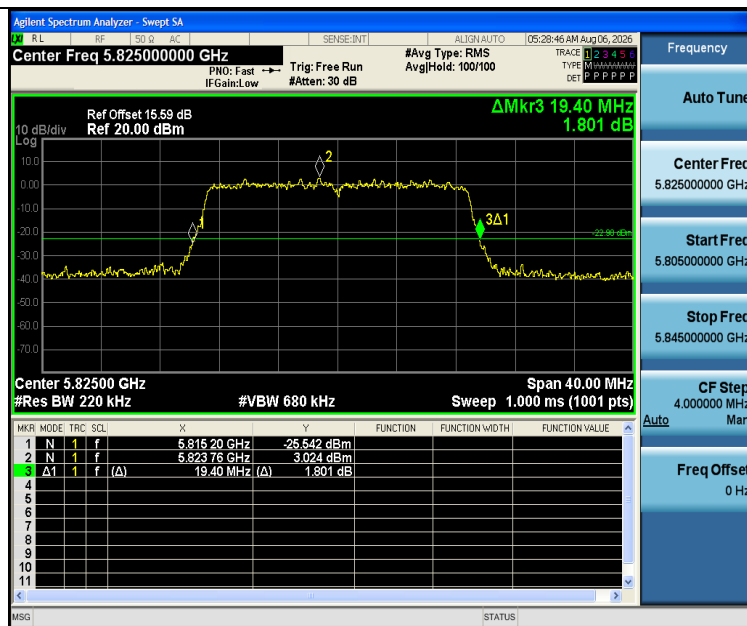
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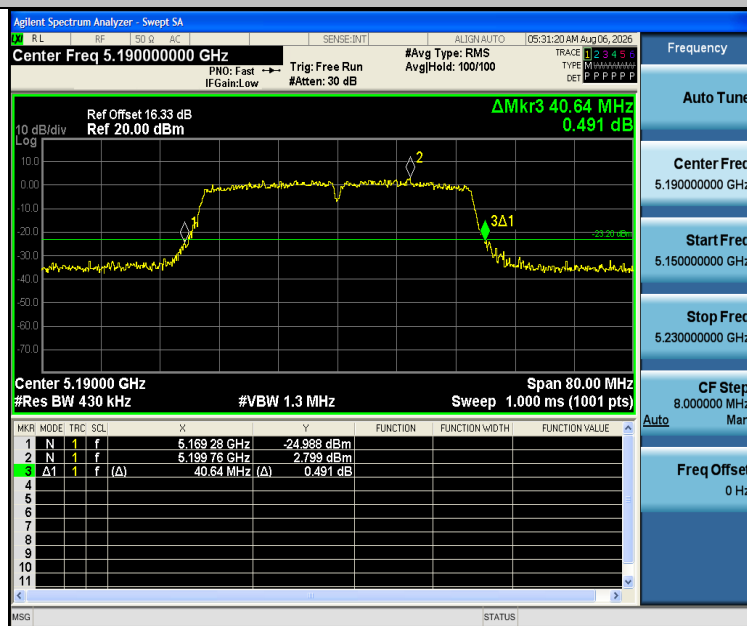
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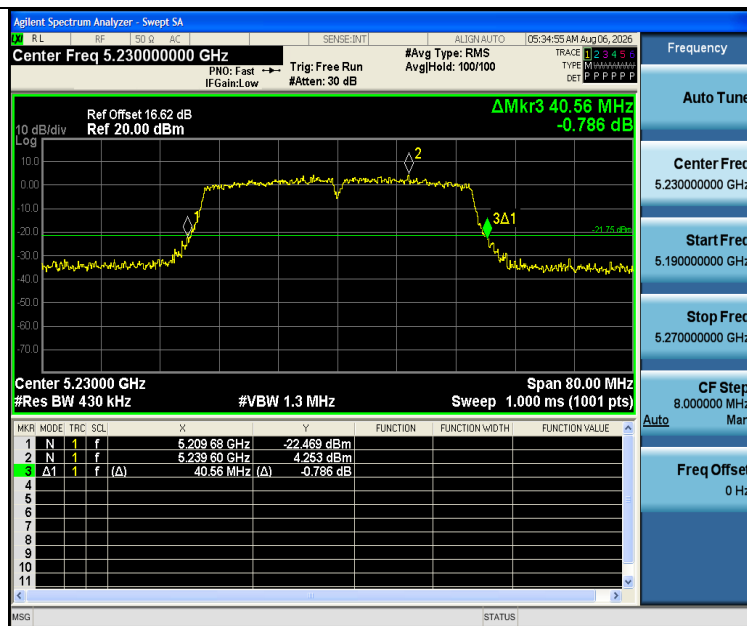
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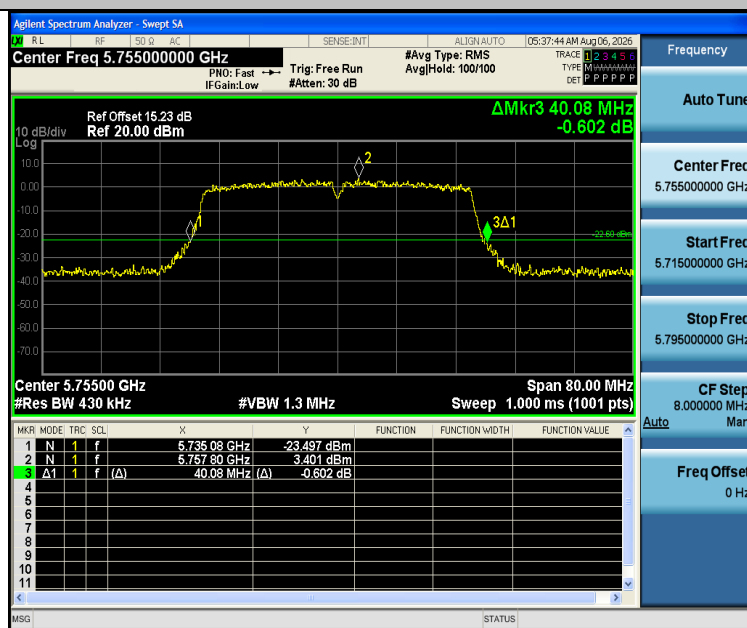
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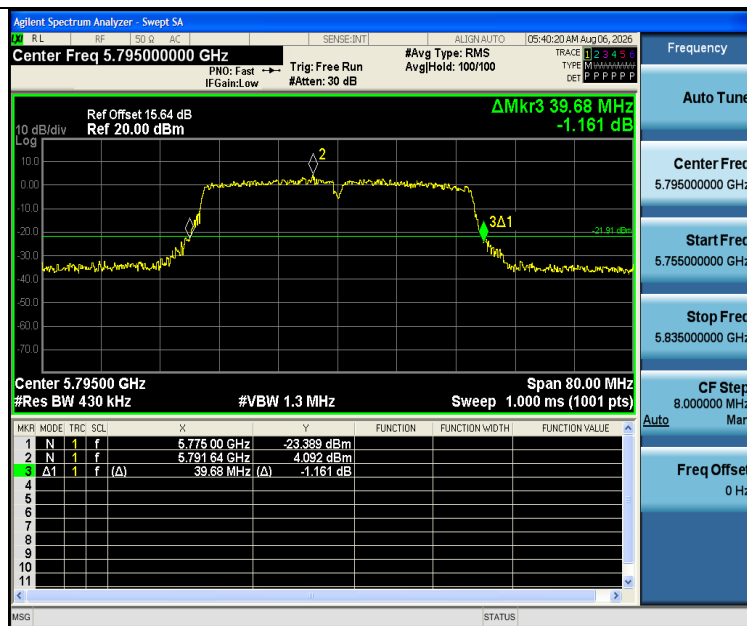
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11AX40SISO-Ant1-5755



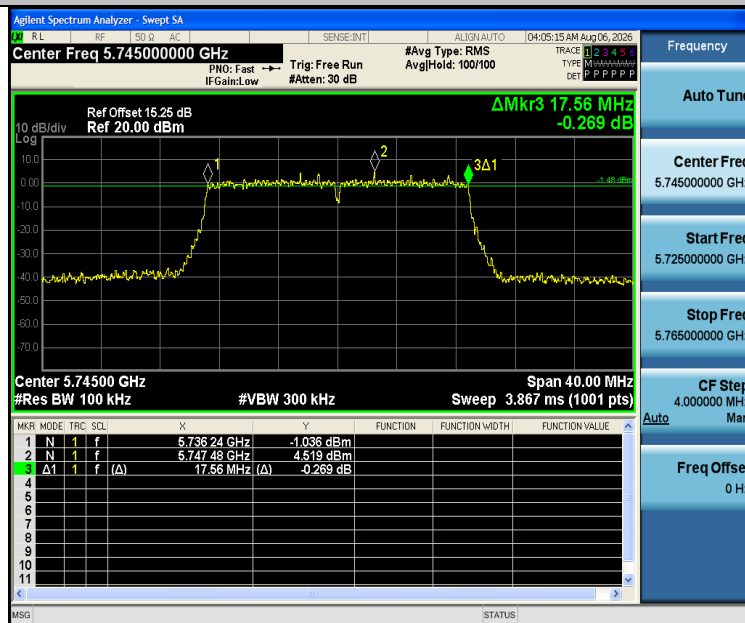
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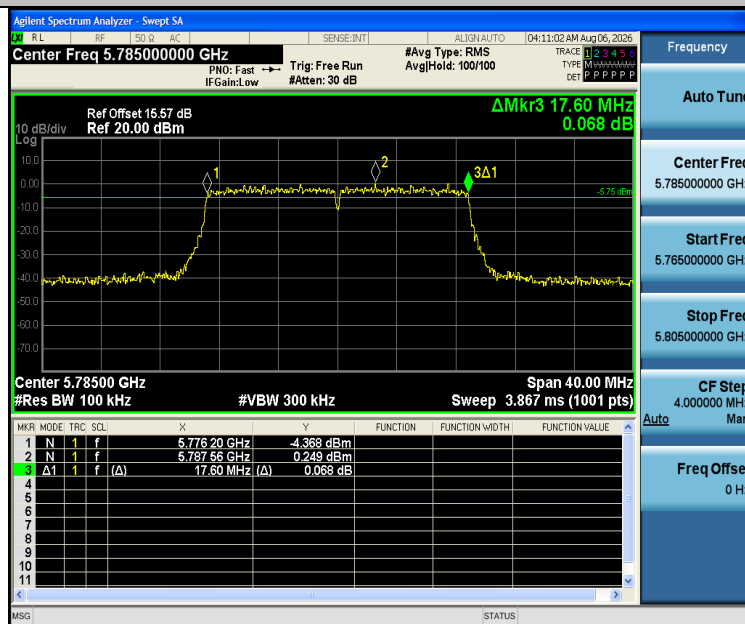


Min emission bandwidth Test Graphs:

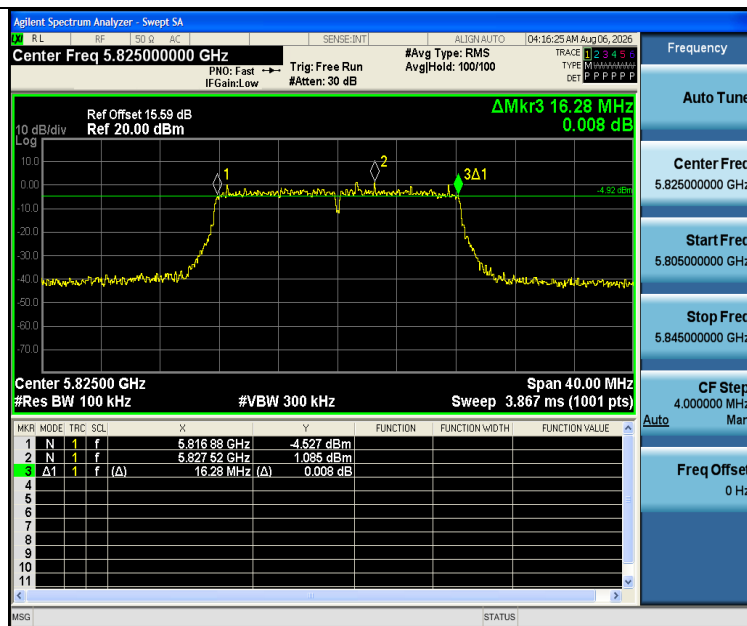
11A-Ant1-5745-PASS



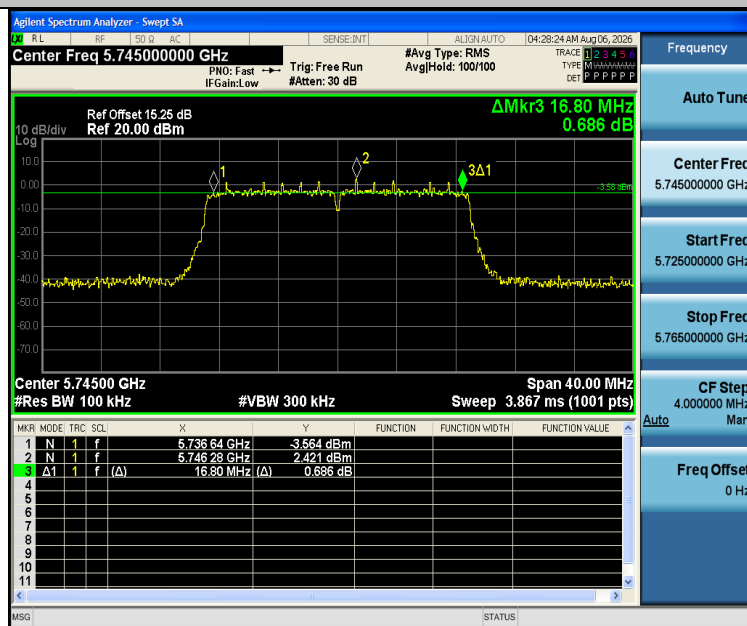
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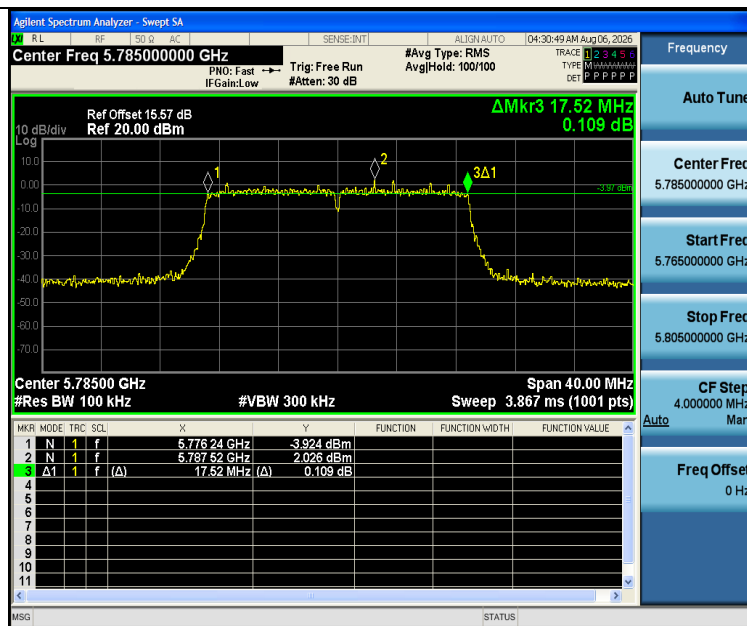
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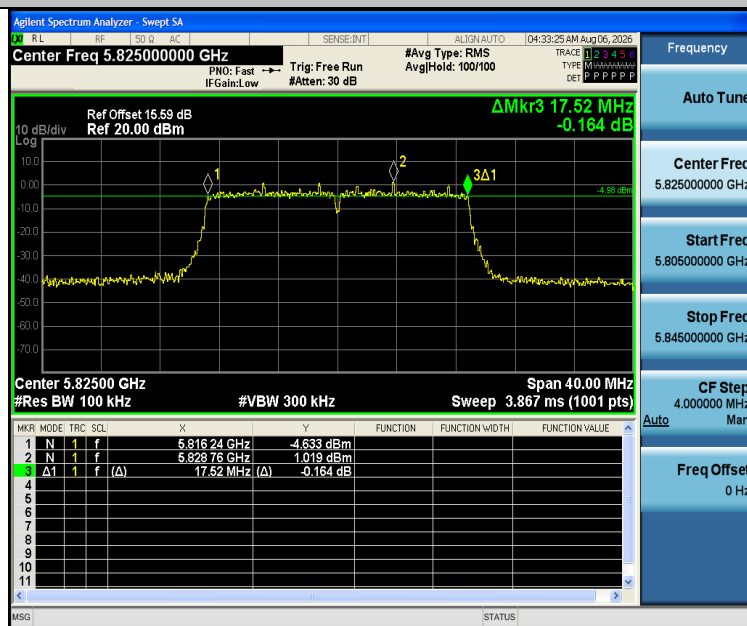
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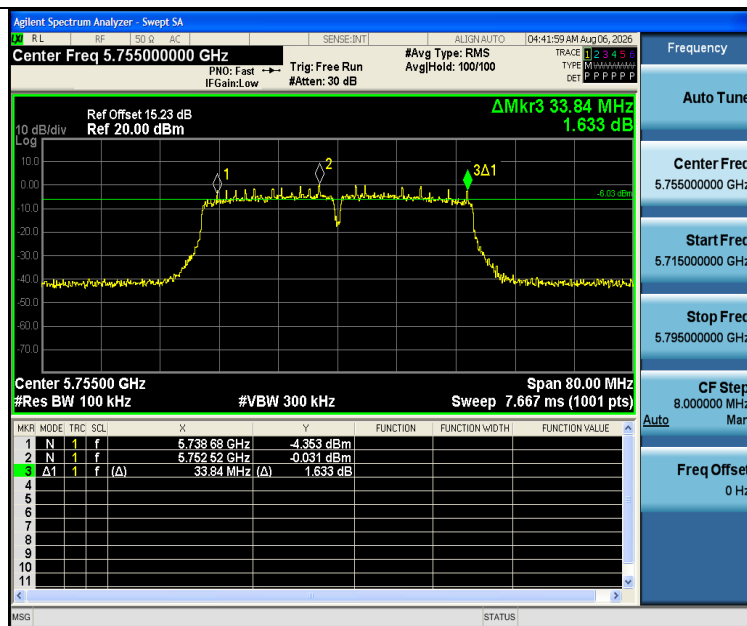
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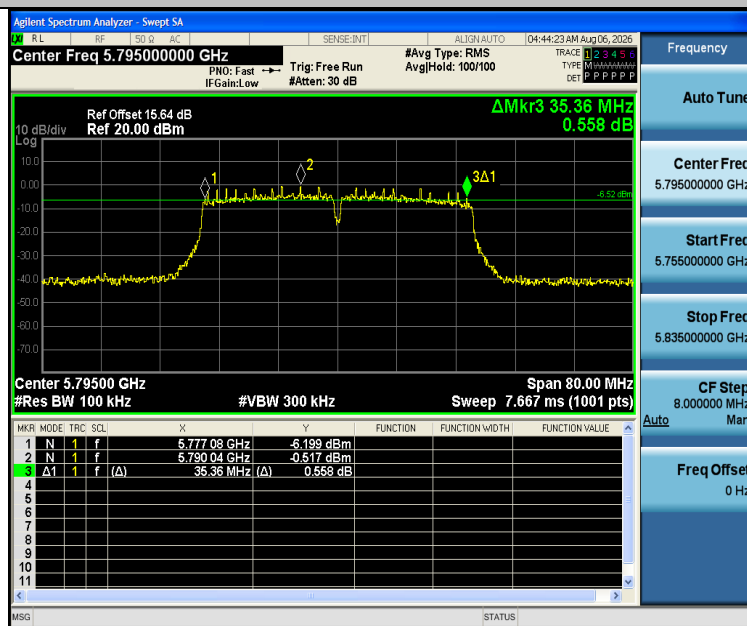
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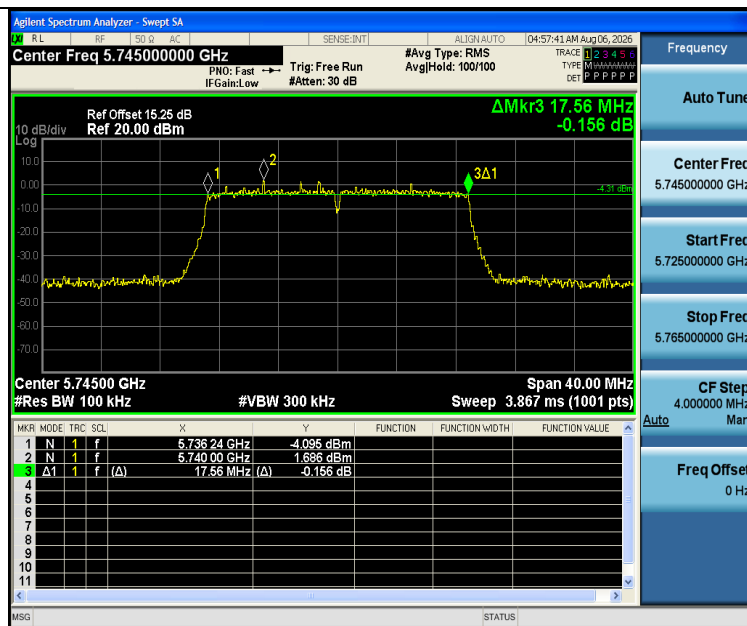
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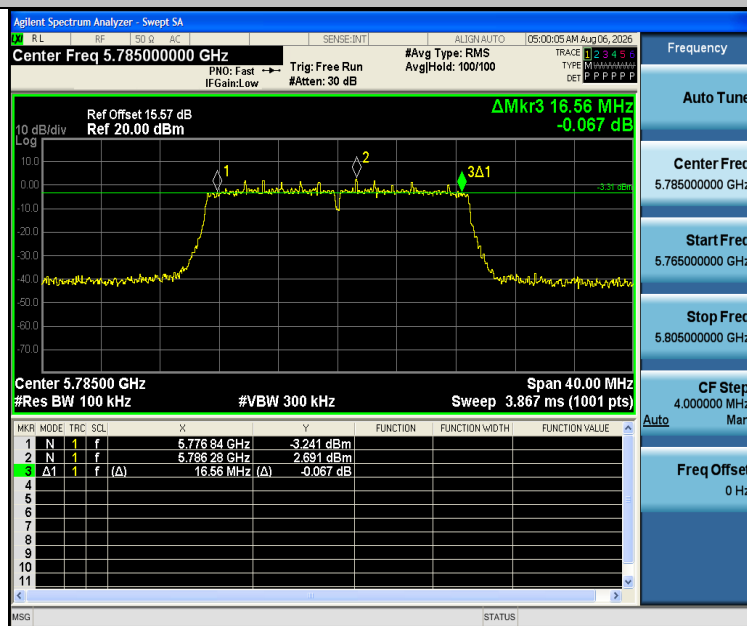
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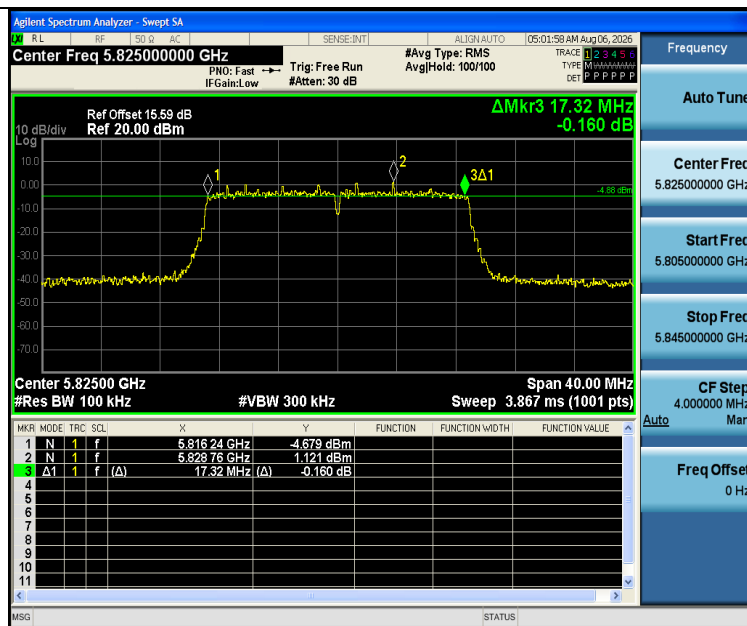
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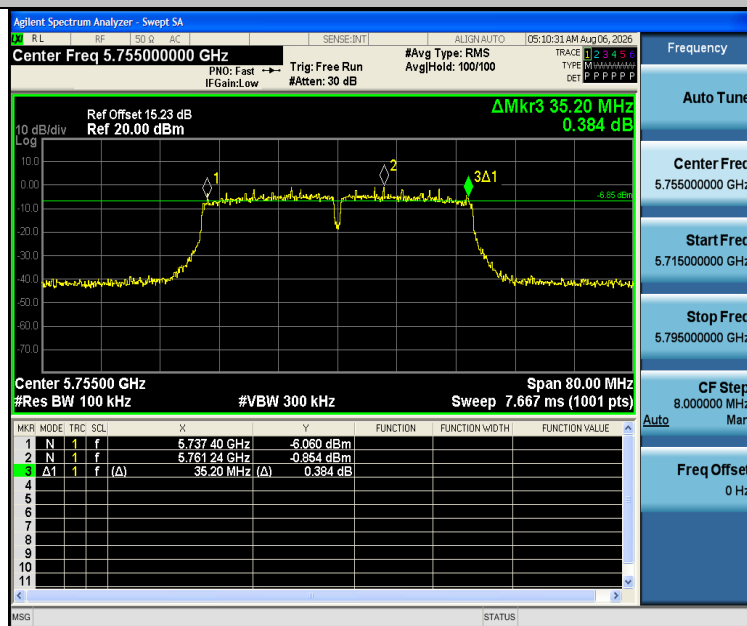
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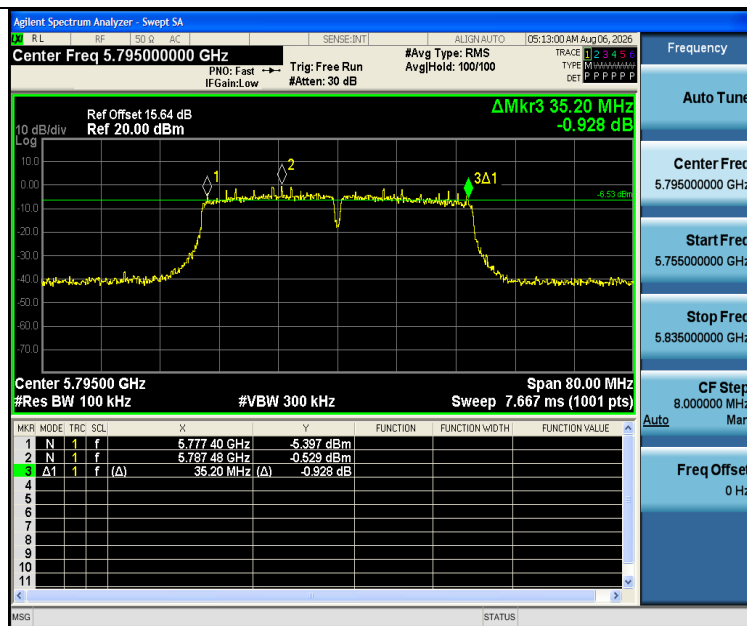
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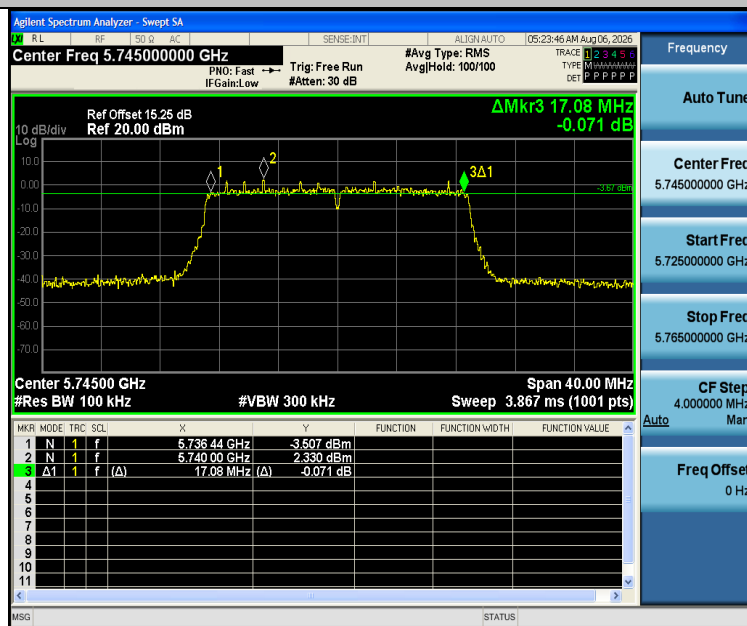
11AC40SISO-Ant1-5755-PASS



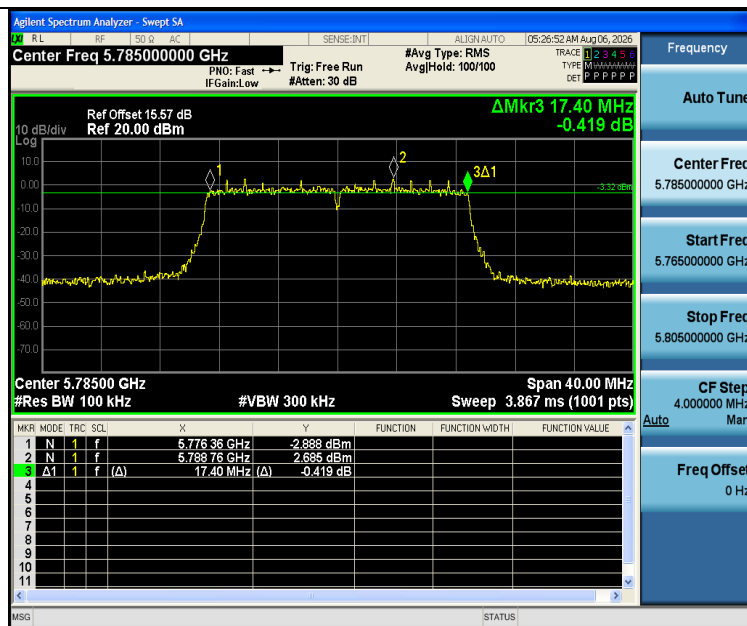
11AC40SISO-Ant1-5795-PASS



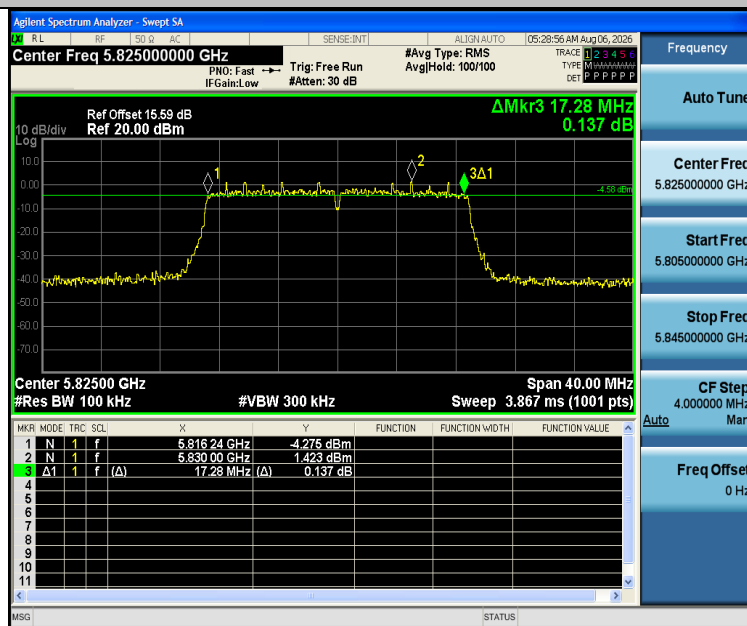
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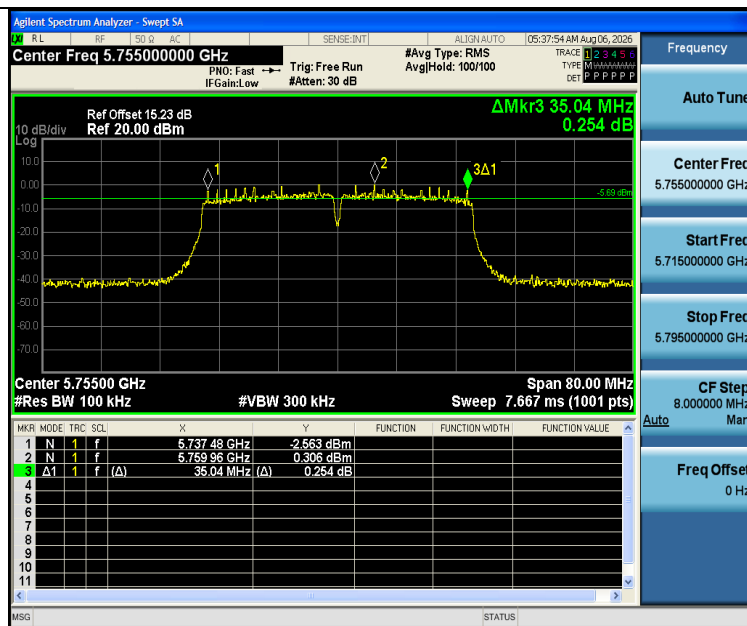
11AX20SISO-Ant1-5785-PASS



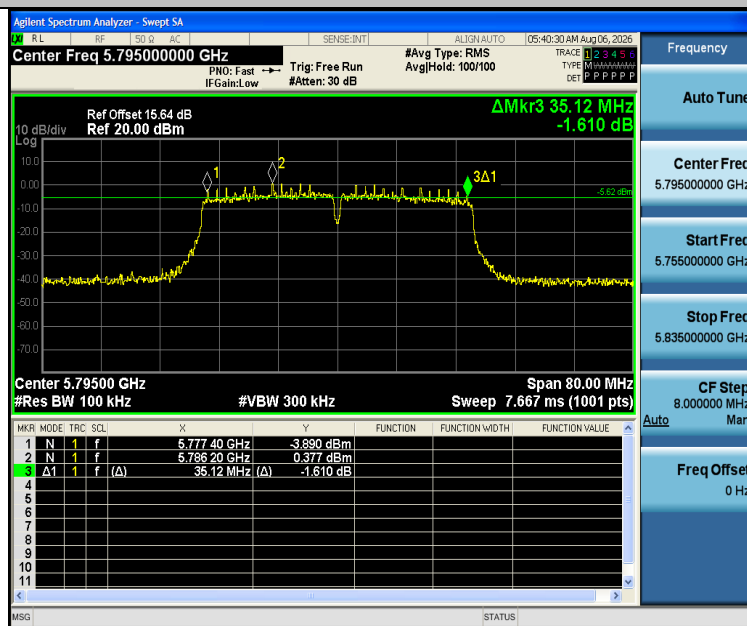
11AX20SISO-Ant1-5825-PASS



11AX40SISO-Ant1-5755-PASS



11AX40SISO-Ant1-5795-PASS



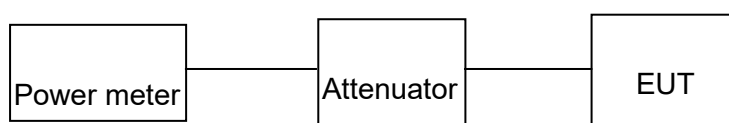


8 Maximum Conducted Output Power

Test Requirement	: FCC CFR47 Part 15 Section 15.407(a)
Test Method	: ANSI C63.10-2020
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]	Channel Power [dBm]	Duty Cycle [%]	DC Factor [dBm]	Result [dBm]	Limit [dBm]	Verdict
11A	Ant1	5180	11.69	71.75	1.44	13.13	≤23.98	PASS
11A	Ant1	5200	11.81	71.35	1.47	13.28	≤23.98	PASS
11A	Ant1	5240	12.74	71.75	1.44	14.18	≤23.98	PASS
11A	Ant1	5745	11.80	71.75	1.44	13.24	≤30.00	PASS
11A	Ant1	5785	11.82	71.75	1.44	13.26	≤30.00	PASS
11A	Ant1	5825	10.84	72.73	1.38	12.22	≤30.00	PASS
11N20SISO	Ant1	5180	10.99	71.75	1.44	12.43	≤23.98	PASS
11N20SISO	Ant1	5200	11.32	71.35	1.47	12.79	≤23.98	PASS
11N20SISO	Ant1	5240	12.40	71.35	1.47	13.87	≤23.98	PASS
11N20SISO	Ant1	5745	11.48	71.75	1.44	12.92	≤30.00	PASS
11N20SISO	Ant1	5785	11.62	71.91	1.43	13.05	≤30.00	PASS
11N20SISO	Ant1	5825	10.79	71.35	1.47	12.26	≤30.00	PASS
11N40SISO	Ant1	5190	9.86	55.75	2.54	12.40	≤23.98	PASS
11N40SISO	Ant1	5230	8.62	56.14	2.51	11.13	≤23.98	PASS
11N40SISO	Ant1	5755	10.59	56.14	2.51	13.10	≤30.00	PASS
11N40SISO	Ant1	5795	10.51	55.75	2.54	13.05	≤30.00	PASS
11AC20SISO	Ant1	5180	11.15	71.75	1.44	12.59	≤23.98	PASS
11AC20SISO	Ant1	5200	11.67	71.91	1.43	13.10	≤23.98	PASS
11AC20SISO	Ant1	5240	12.41	71.91	1.43	13.84	≤23.98	PASS
11AC20SISO	Ant1	5745	11.54	71.35	1.47	13.01	≤30.00	PASS
11AC20SISO	Ant1	5785	11.68	71.35	1.47	13.15	≤30.00	PASS
11AC20SISO	Ant1	5825	10.64	71.91	1.43	12.07	≤30.00	PASS
11AC40SISO	Ant1	5190	10.05	55.26	2.58	12.63	≤23.98	PASS
11AC40SISO	Ant1	5230	11.38	56.14	2.51	13.89	≤23.98	PASS
11AC40SISO	Ant1	5755	10.68	56.14	2.51	13.19	≤30.00	PASS
11AC40SISO	Ant1	5795	10.64	56.14	2.51	13.15	≤30.00	PASS
11AX20SISO	Ant1	5180	10.66	57.26	2.42	13.08	≤23.98	PASS
11AX20SISO	Ant1	5200	11.07	57.26	2.42	13.49	≤23.98	PASS
11AX20SISO	Ant1	5240	12.45	56.41	2.49	14.94	≤23.98	PASS
11AX20SISO	Ant1	5745	10.93	56.41	2.49	13.42	≤30.00	PASS
11AX20SISO	Ant1	5785	11.34	56.90	2.45	13.79	≤30.00	PASS
11AX20SISO	Ant1	5825	10.25	57.26	2.42	12.67	≤30.00	PASS
11AX40SISO	Ant1	5190	9.34	40.00	3.98	13.32	≤23.98	PASS
11AX40SISO	Ant1	5230	10.61	40.00	3.98	14.59	≤23.98	PASS
11AX40SISO	Ant1	5755	9.69	40.48	3.93	13.62	≤30.00	PASS
11AX40SISO	Ant1	5795	9.71	40.00	3.98	13.69	≤30.00	PASS



9 Power Spectral density

Test Requirement	: FCC CFR47 Part 15 Section 15.2407(a)
Test Method	: ANSI C63.10-2020
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-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

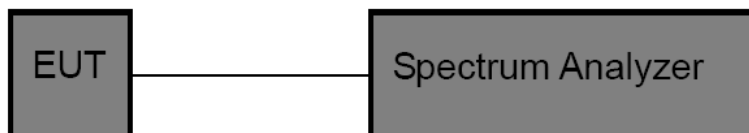


9.1 Test Procedure

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	1.61	≤11.00	PASS
11A	Ant1	5200	2.4	≤11.00	PASS
11A	Ant1	5240	3.42	≤11.00	PASS
11N20SISO	Ant1	5180	1.3	≤11.00	PASS
11N20SISO	Ant1	5200	1.76	≤11.00	PASS
11N20SISO	Ant1	5240	2.7	≤11.00	PASS
11N40SISO	Ant1	5190	-0.75	≤11.00	PASS
11N40SISO	Ant1	5230	-2.03	≤11.00	PASS
11AC20SISO	Ant1	5180	1.5	≤11.00	PASS
11AC20SISO	Ant1	5200	1.77	≤11.00	PASS
11AC20SISO	Ant1	5240	2.86	≤11.00	PASS
11AC40SISO	Ant1	5190	-0.75	≤11.00	PASS
11AC40SISO	Ant1	5230	0.26	≤11.00	PASS
11AX20SISO	Ant1	5180	1.96	≤11.00	PASS
11AX20SISO	Ant1	5200	2.68	≤11.00	PASS
11AX20SISO	Ant1	5240	3.35	≤11.00	PASS
11AX40SISO	Ant1	5190	0.29	≤11.00	PASS
11AX40SISO	Ant1	5230	1.53	≤11.00	PASS

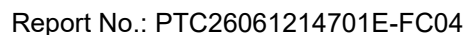
TestMode	Antenna	Frequency[MHz]	Result [dBm/300kHz]	Result [dBm/500kHz]	Result [dBm/500kHz]	Verdict
11A	Ant1	5745	-0.59	1.63	≤30.00	PASS
11A	Ant1	5785	-0.82	1.40	≤30.00	PASS
11A	Ant1	5825	-1.78	0.44	≤30.00	PASS
11N20SISO	Ant1	5745	-0.87	1.35	≤30.00	PASS
11N20SISO	Ant1	5785	-0.83	1.39	≤30.00	PASS
11N20SISO	Ant1	5825	-1.76	0.46	≤30.00	PASS
11N40SISO	Ant1	5755	-3.18	-0.96	≤30.00	PASS
11N40SISO	Ant1	5795	-3.32	-1.10	≤30.00	PASS
11AC20SISO	Ant1	5745	-0.89	1.33	≤30.00	PASS



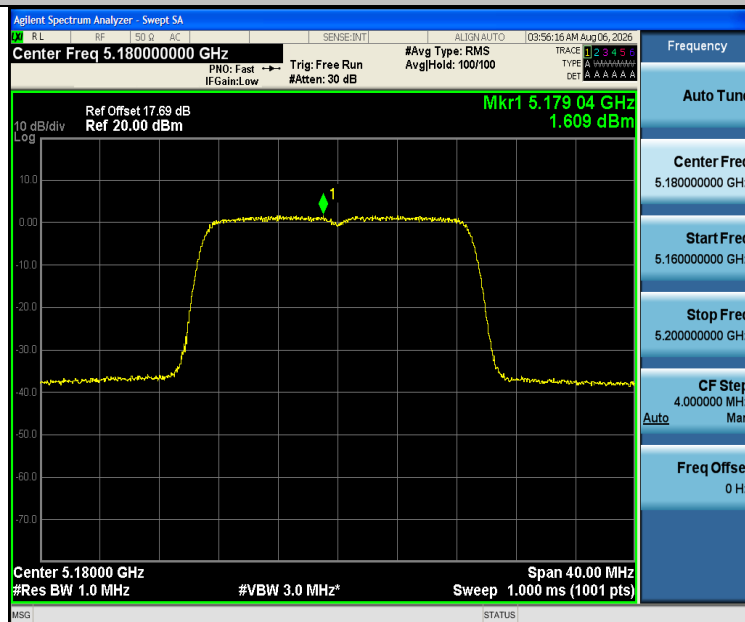
11AC20SISO	Ant1	5785	-0.63	1.59	≤30.00	PASS
11AC20SISO	Ant1	5825	-1.99	0.23	≤30.00	PASS
11AC40SISO	Ant1	5755	-3.07	-0.85	≤30.00	PASS
11AC40SISO	Ant1	5795	-2.93	-0.71	≤30.00	PASS
11AX20SISO	Ant1	5745	-0.25	1.97	≤30.00	PASS
11AX20SISO	Ant1	5785	0	2.22	≤30.00	PASS
11AX20SISO	Ant1	5825	-1.1	1.12	≤30.00	PASS
11AX40SISO	Ant1	5755	-1.42	1.63	≤30.00	PASS
11AX40SISO	Ant1	5795	-2.21	1.40	≤30.00	PASS

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

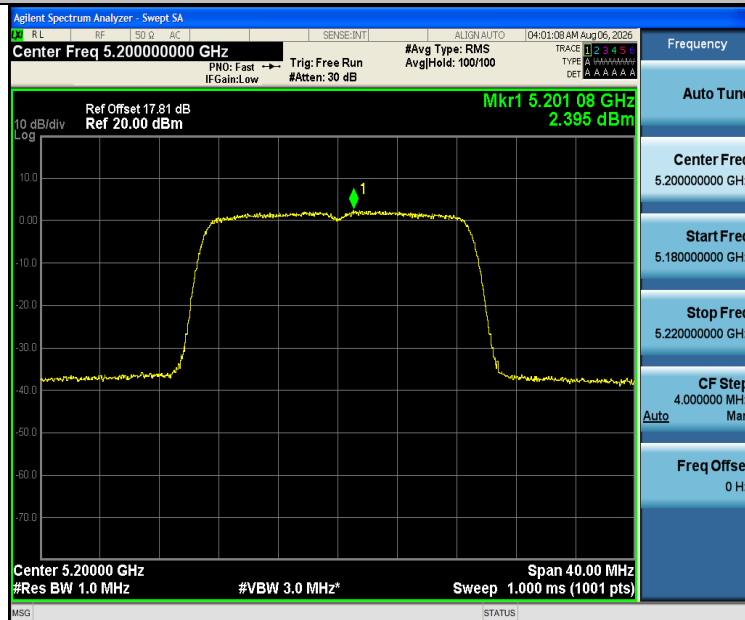
2. in the band 5.725–5.85 GHz the test RBW select 300KHz,so the measured result corrected by Result+10 log (500 kHz/300kHz).



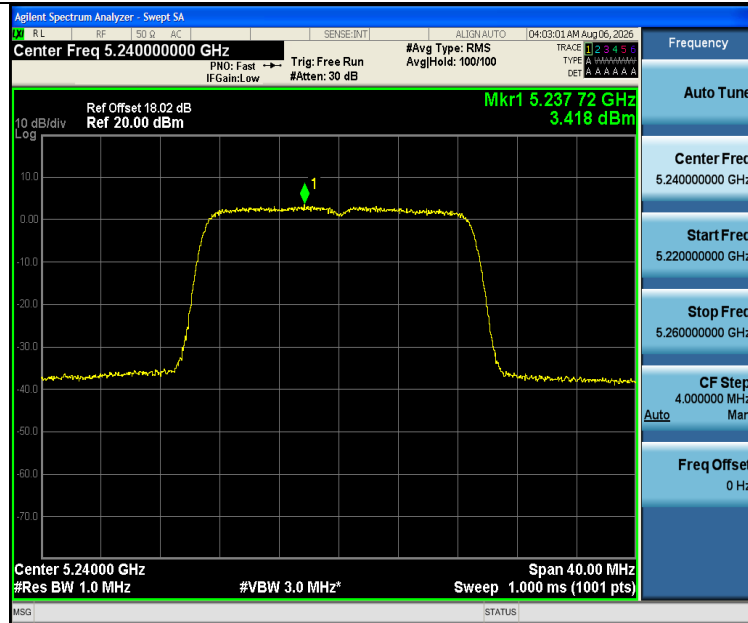
11A-Ant1-5180-PASS



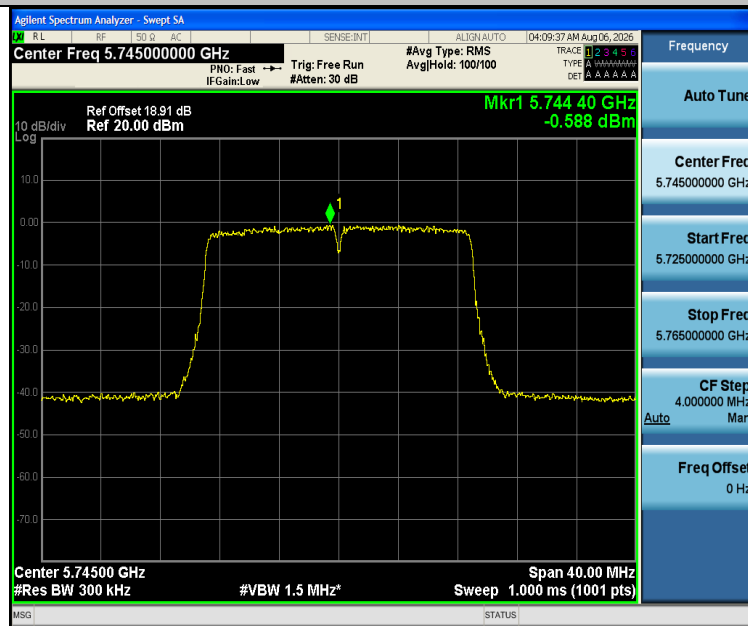
11A-Ant1-5200-PASS



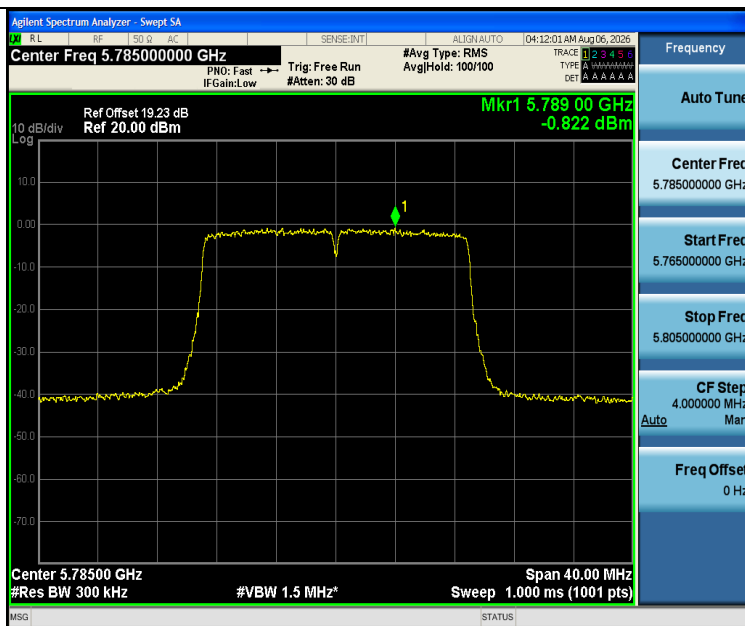
11A-Ant1-5240-PASS



11A-Ant1-5745-PASS



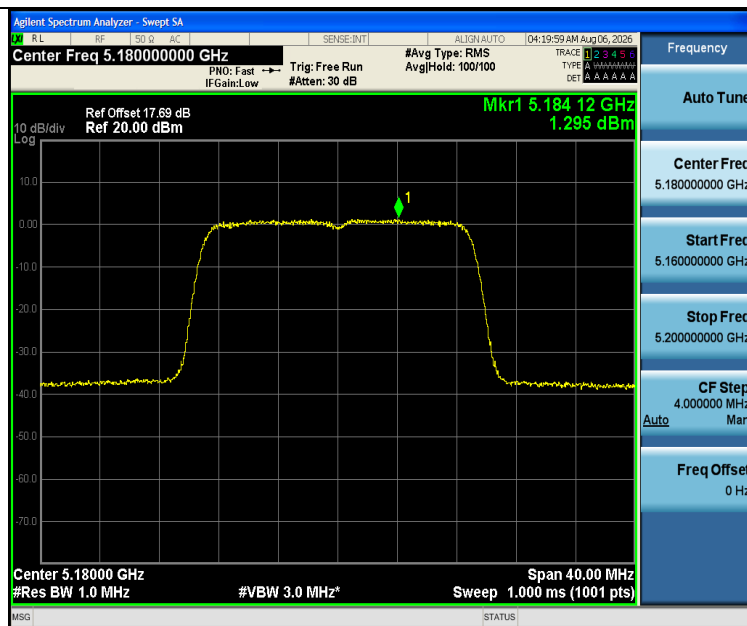
11A-Ant1-5785-PASS



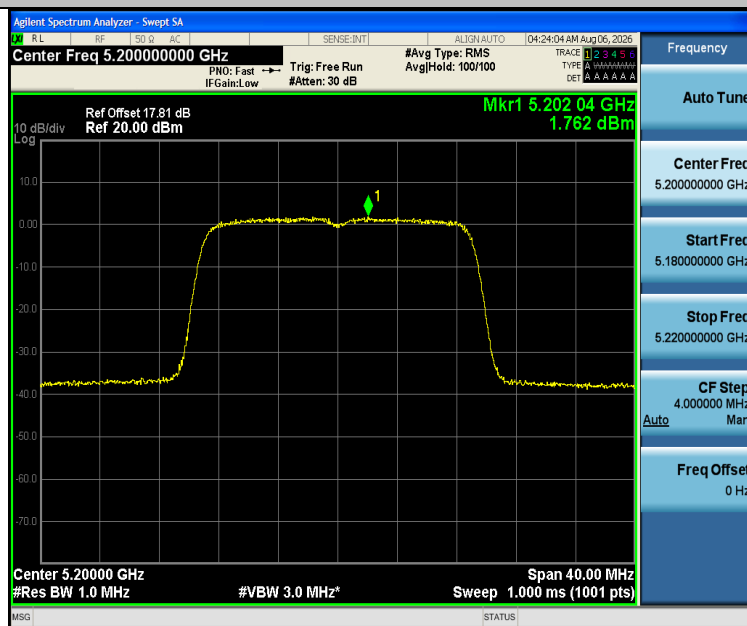
11A-Ant1-5825-PASS



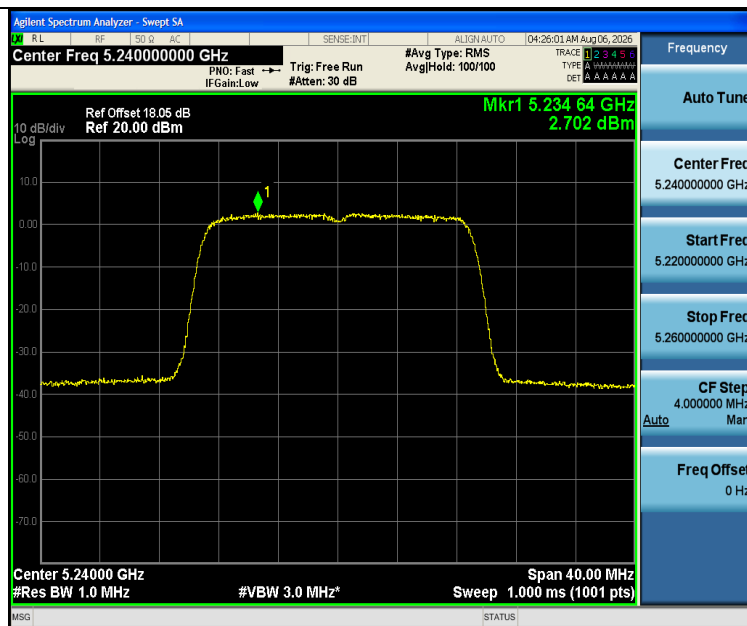
11N20SISO-Ant1-5180-PASS



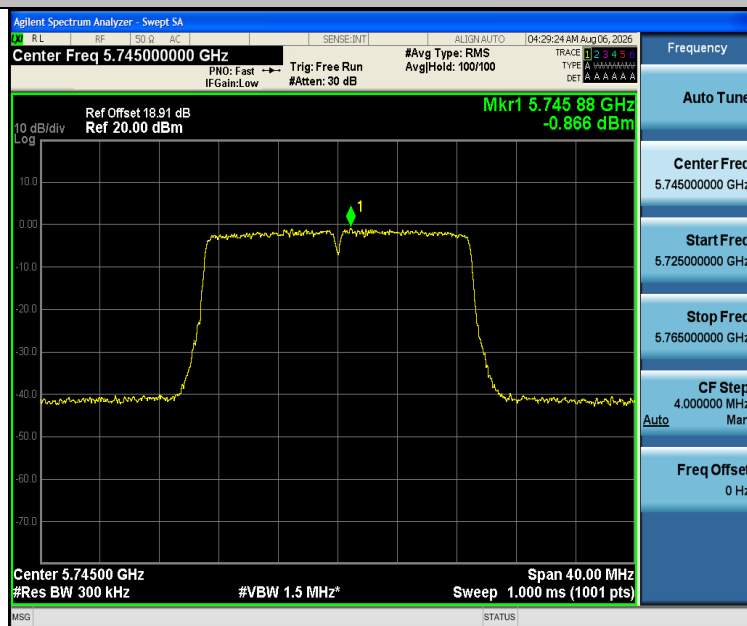
11N20SISO-Ant1-5200-PASS



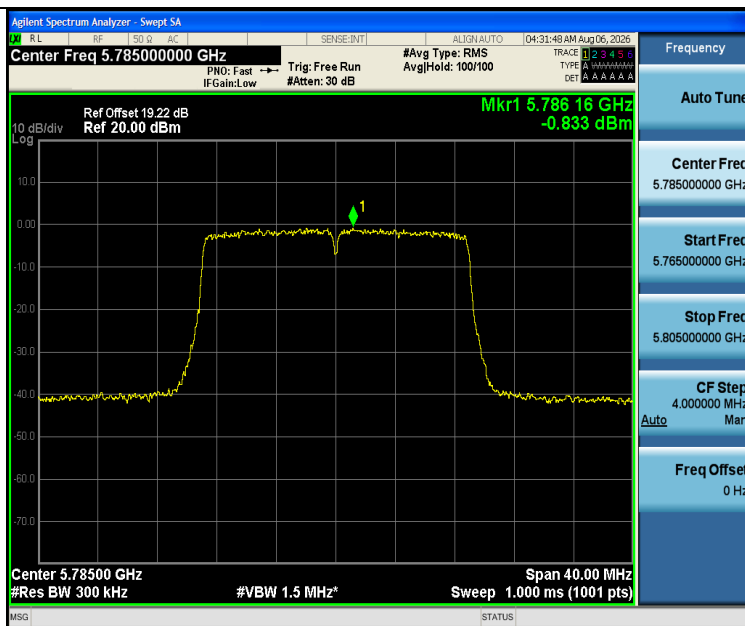
11N20SISO-Ant1-5240-PASS



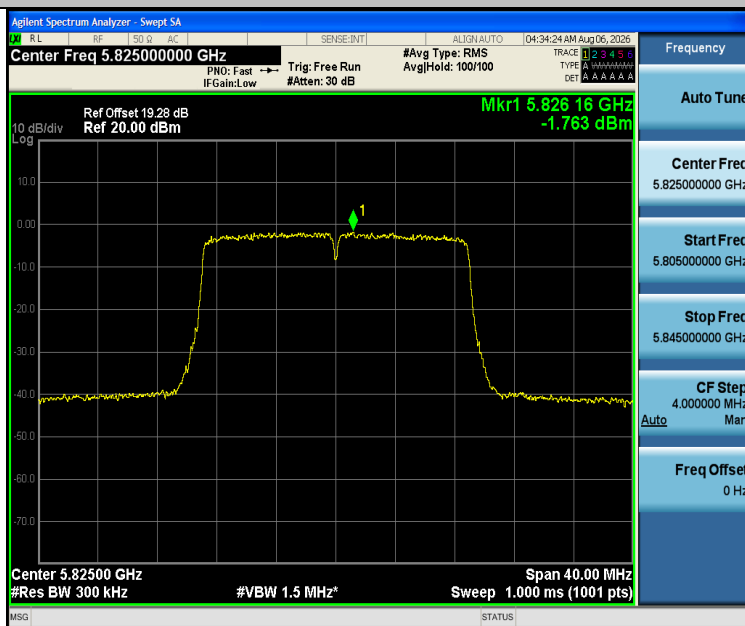
11N20SISO-Ant1-5745-PASS



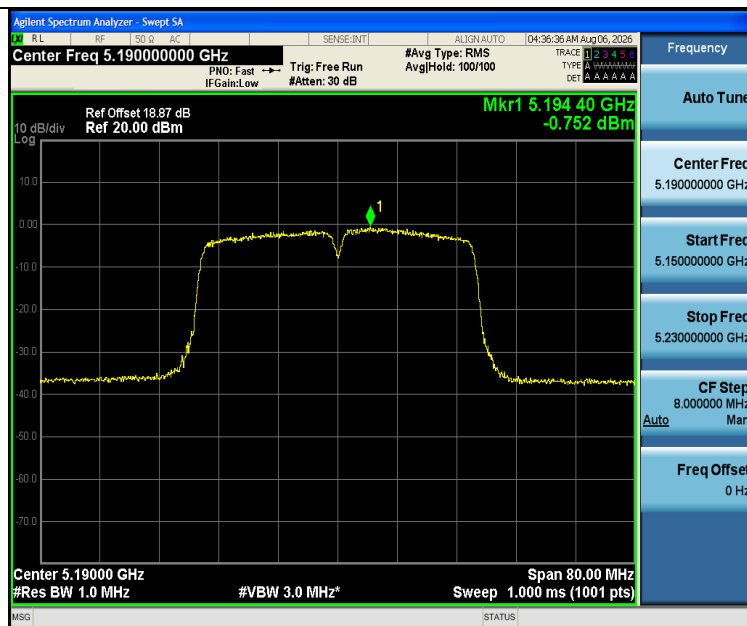
11N20SISO-Ant1-5785-PASS



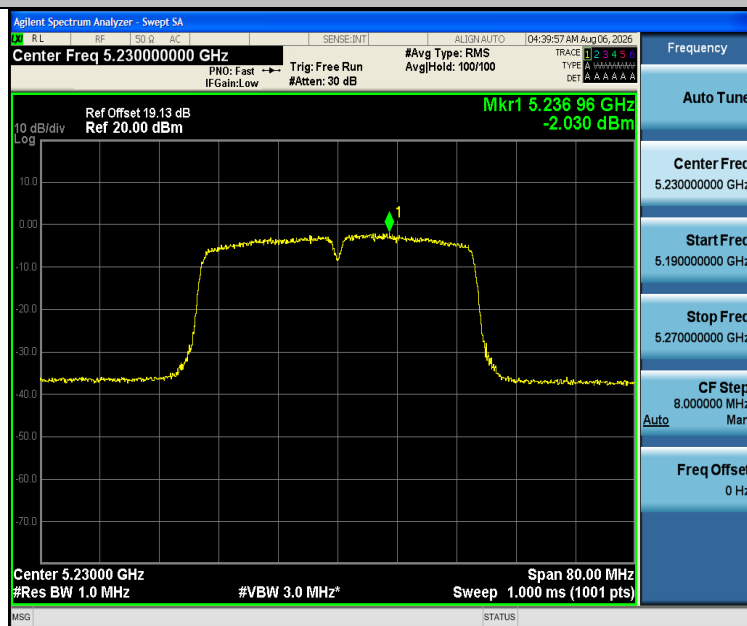
11N20SISO-Ant1-5825-PASS



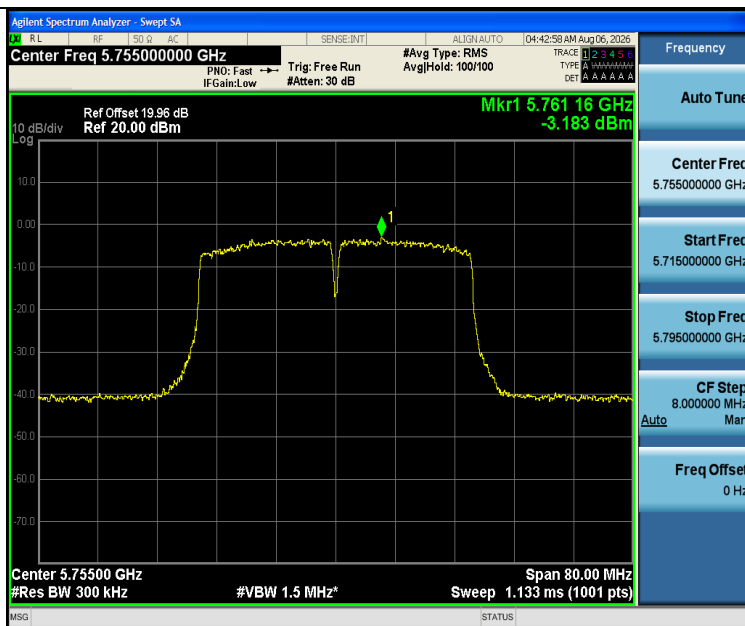
11N40SISO-Ant1-5190-PASS



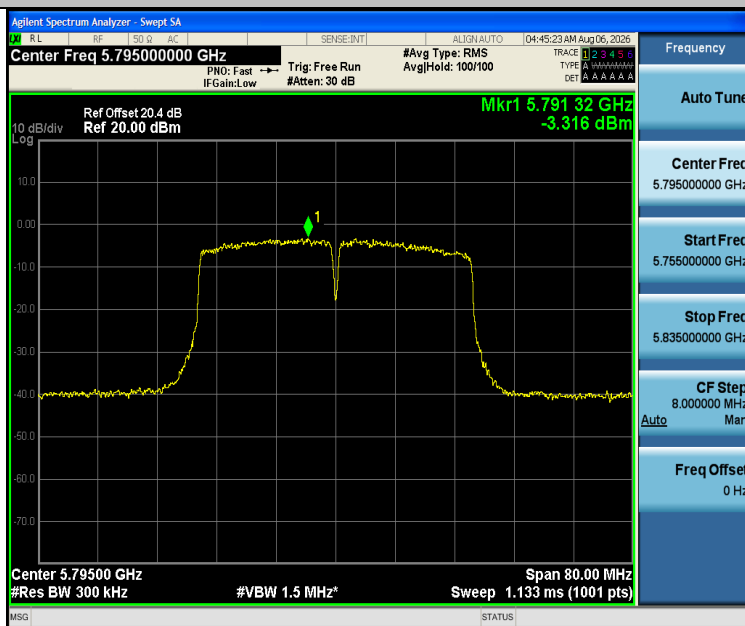
11N40SISO-Ant1-5230-PASS



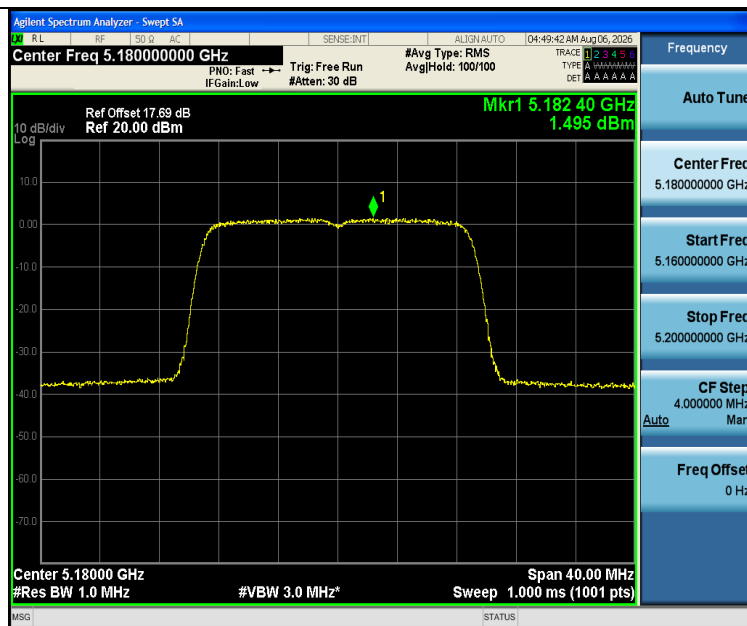
11N40SISO-Ant1-5755-PASS



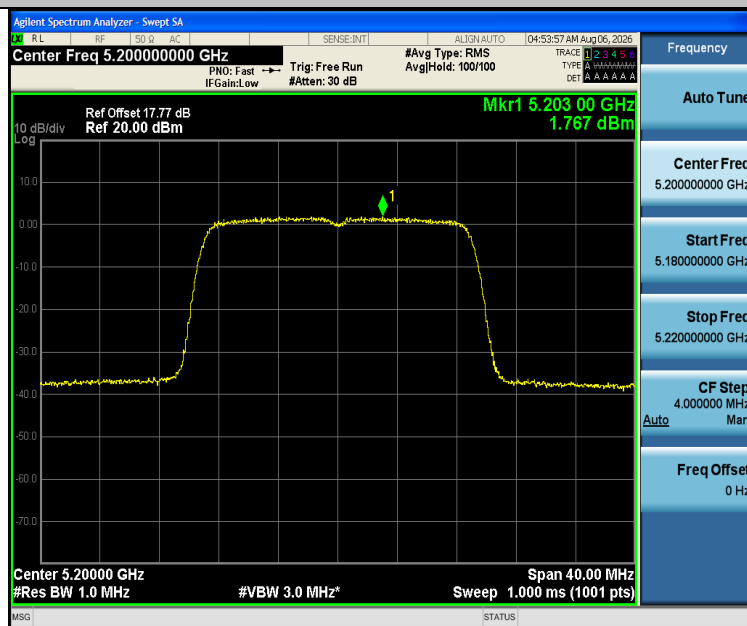
11N40SISO-Ant1-5795-PASS



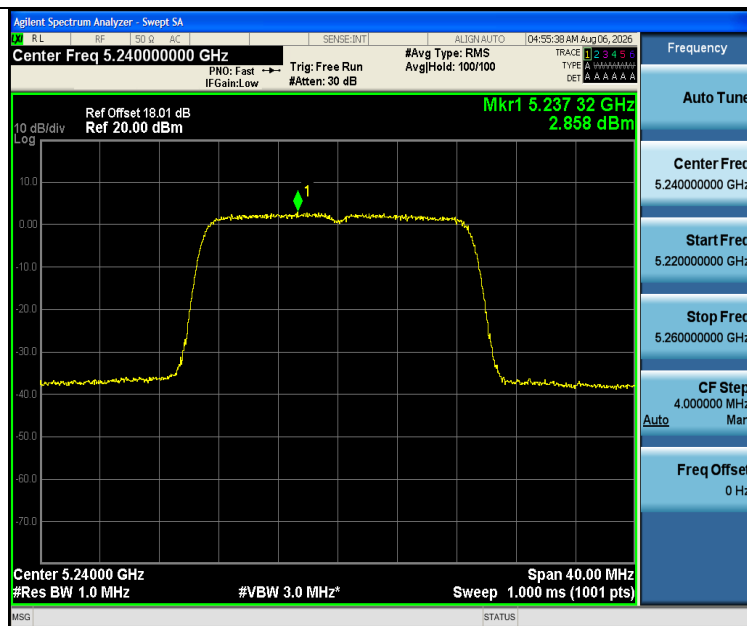
11AC20SISO-Ant1-5180-PASS



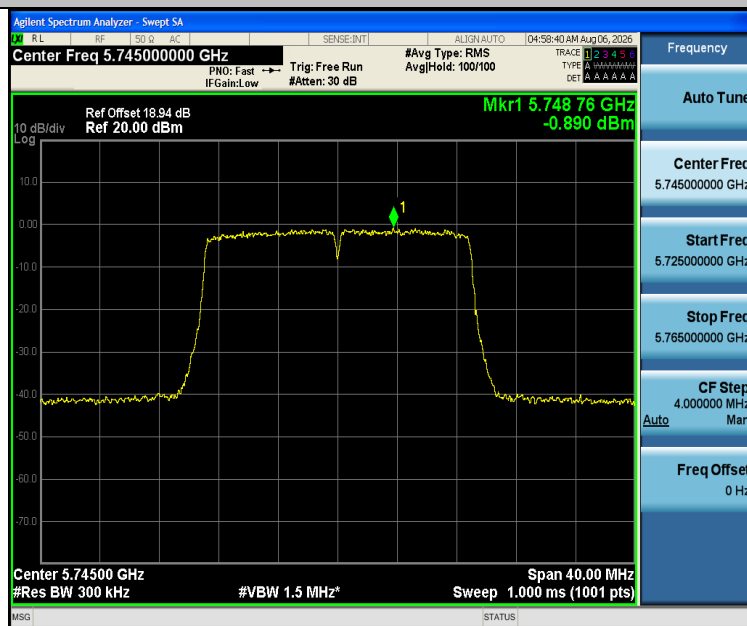
11AC20SISO-Ant1-5200-PASS



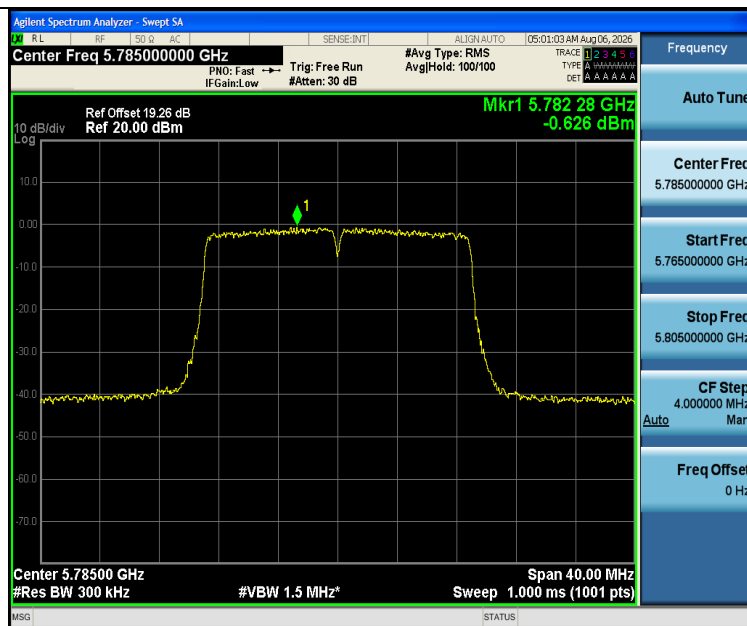
11AC20SISO-Ant1-5240-PASS



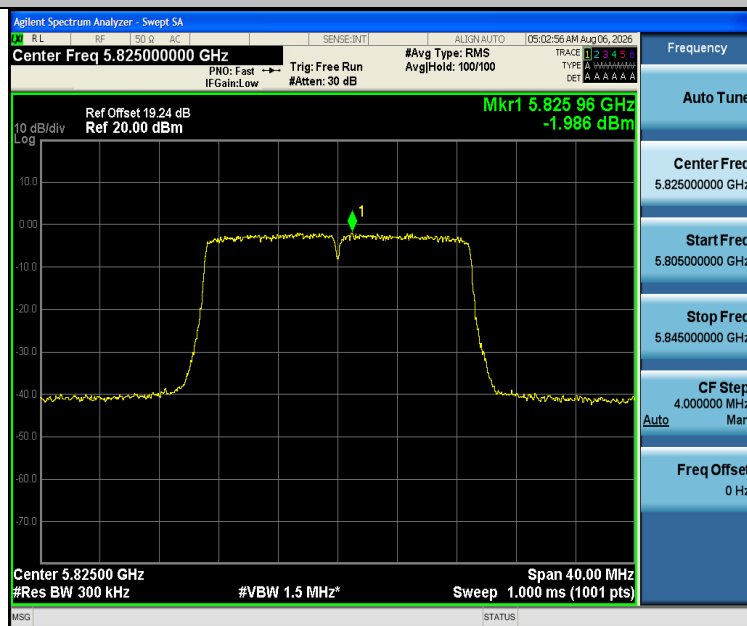
11AC20SISO-Ant1-5745-PASS



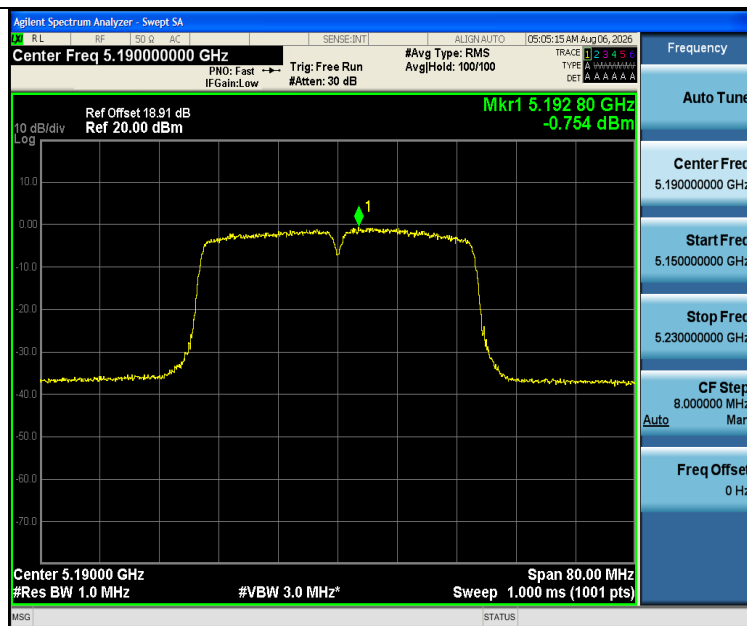
11AC20SISO-Ant1-5785-PASS



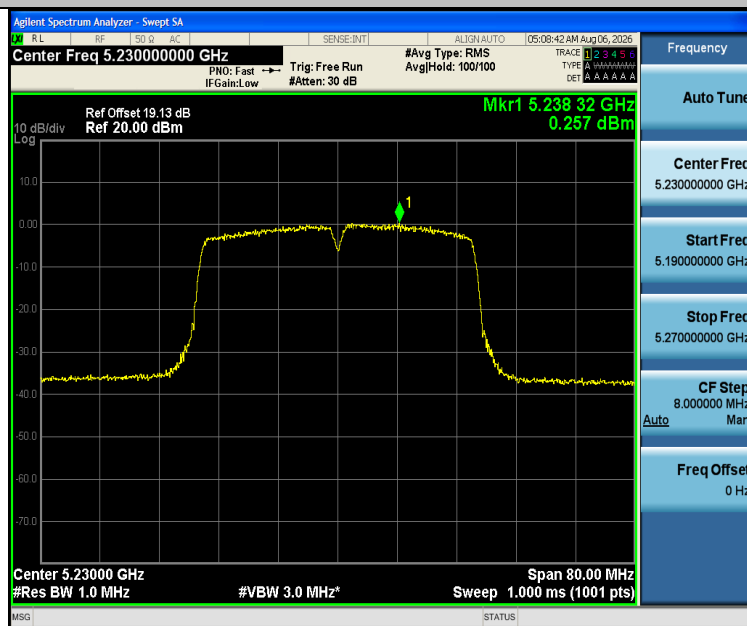
11AC20SISO-Ant1-5825-PASS



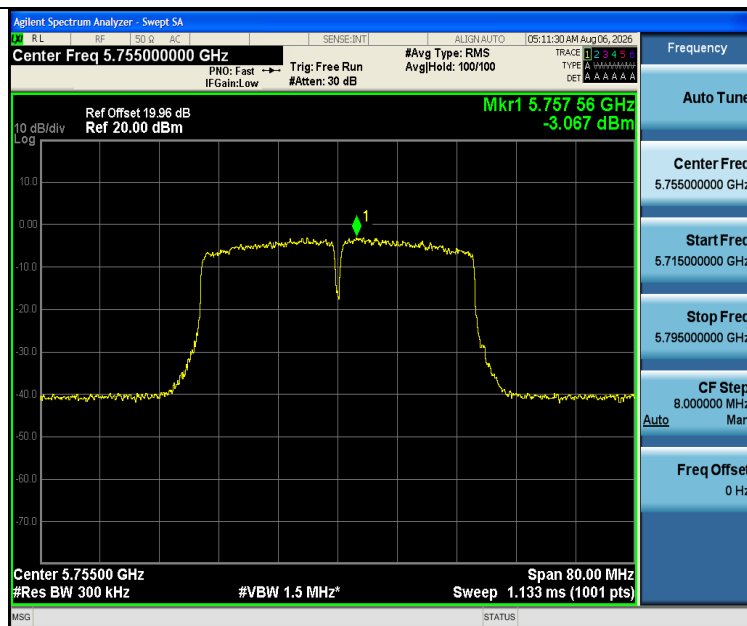
11AC40SISO-Ant1-5190-PASS



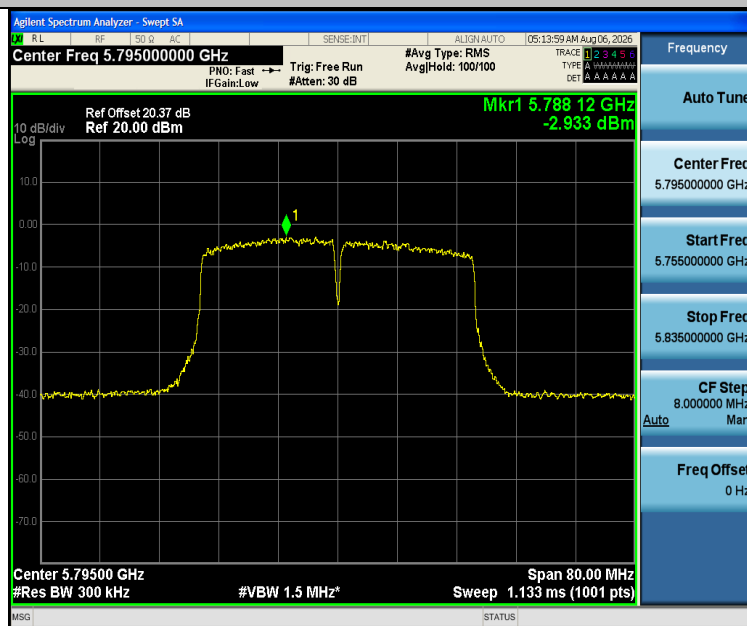
11AC40SISO-Ant1-5230-PASS



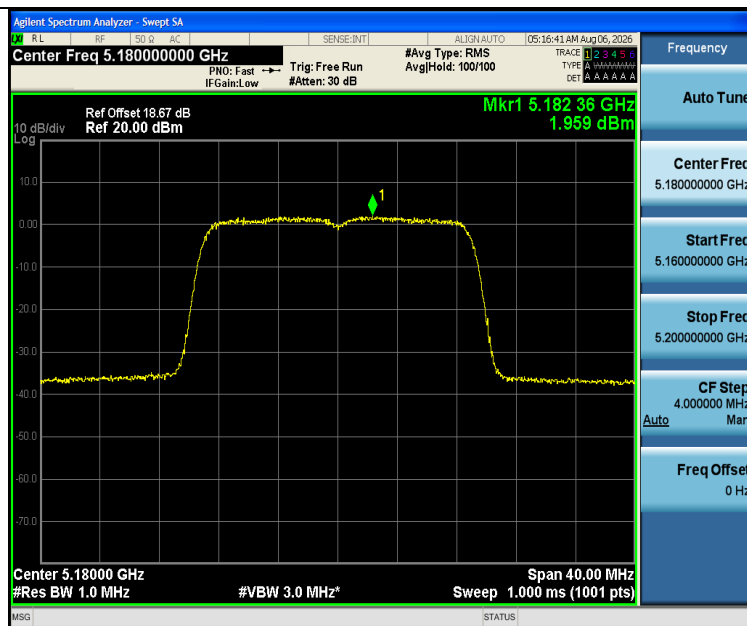
11AC40SISO-Ant1-5755-PASS



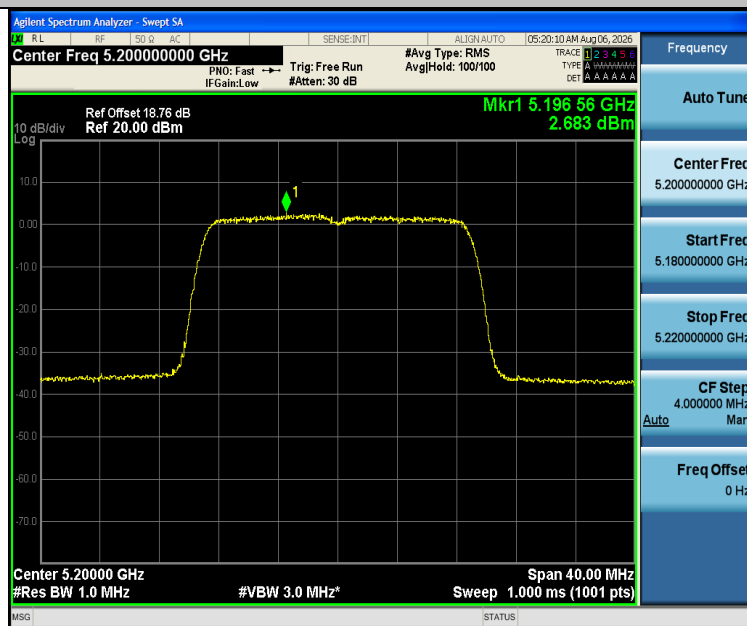
11AC40SISO-Ant1-5795-PASS



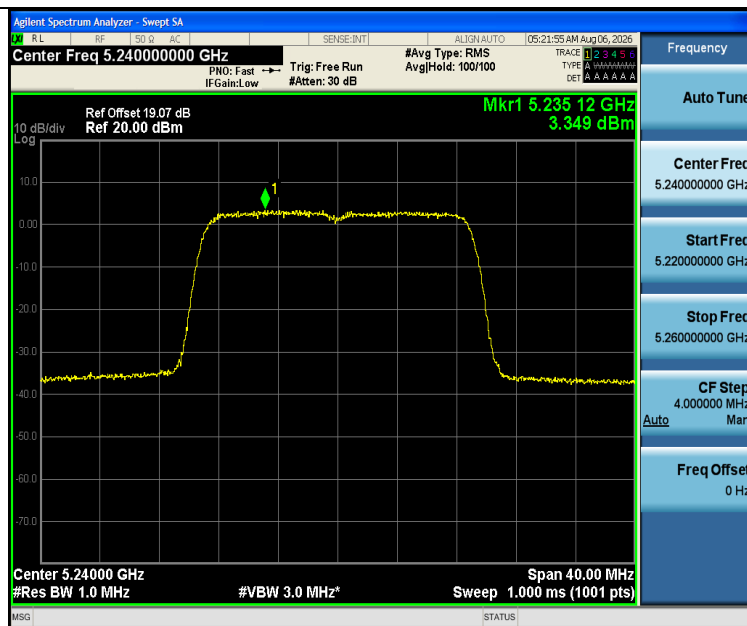
11AX20SISO-Ant1-5180-PASS



11AX20SISO-Ant1-5200-PASS



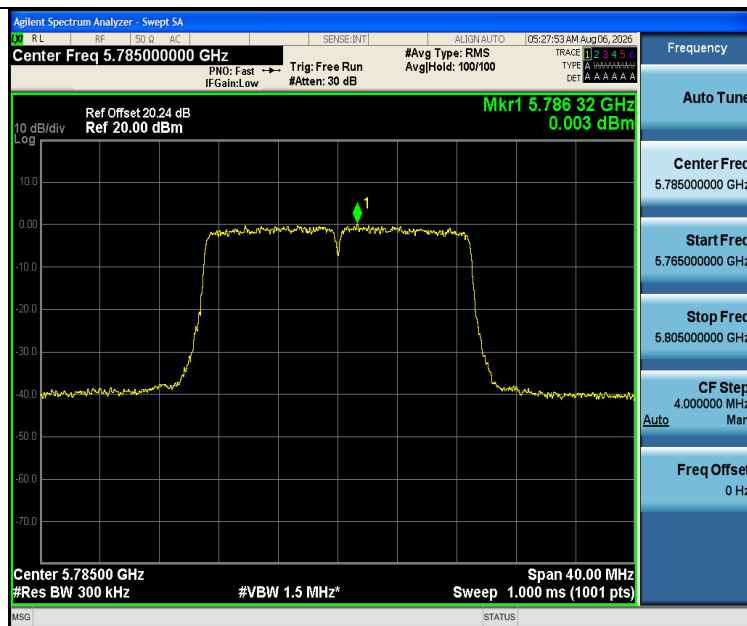
11AX20SISO-Ant1-5240-PASS



11AX20SISO-Ant1-5745-PASS



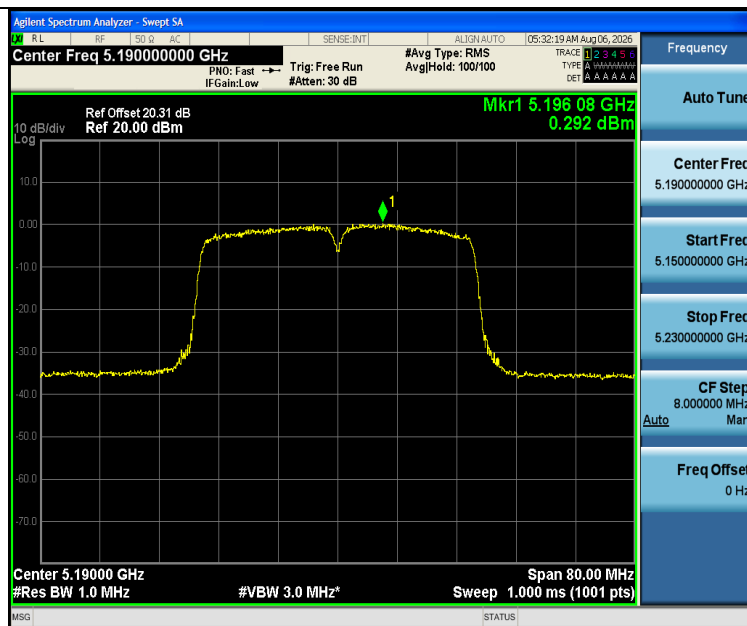
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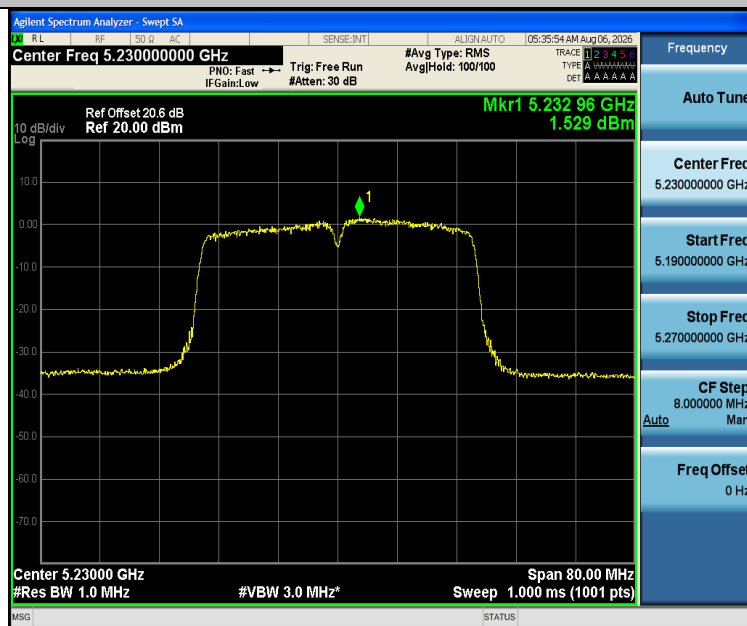
11AX20SISO-Ant1-5825-PASS



11AX40SISO-Ant1-5190-PASS



11AX40SISO-Ant1-5230-PASS



11AX40SISO-Ant1-5755-PASS