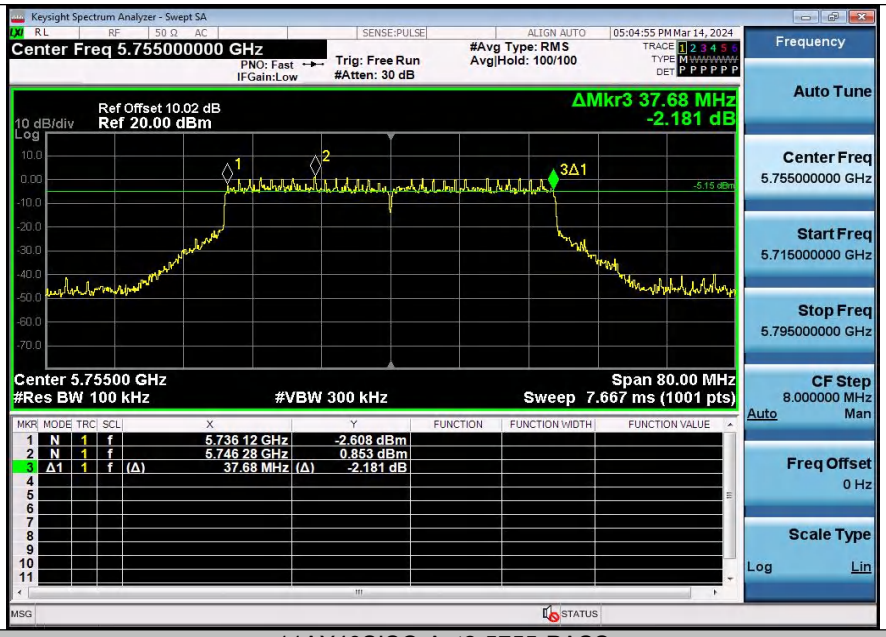
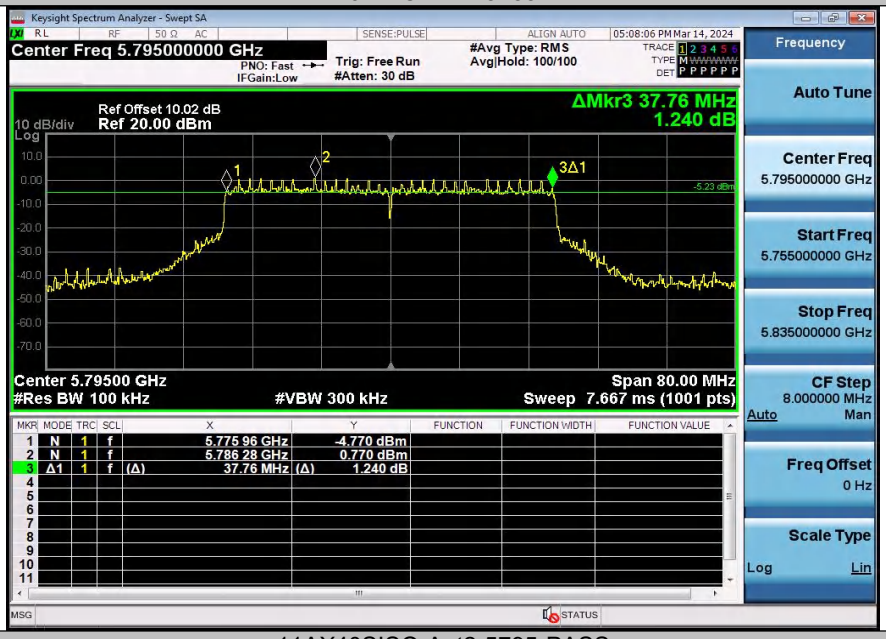
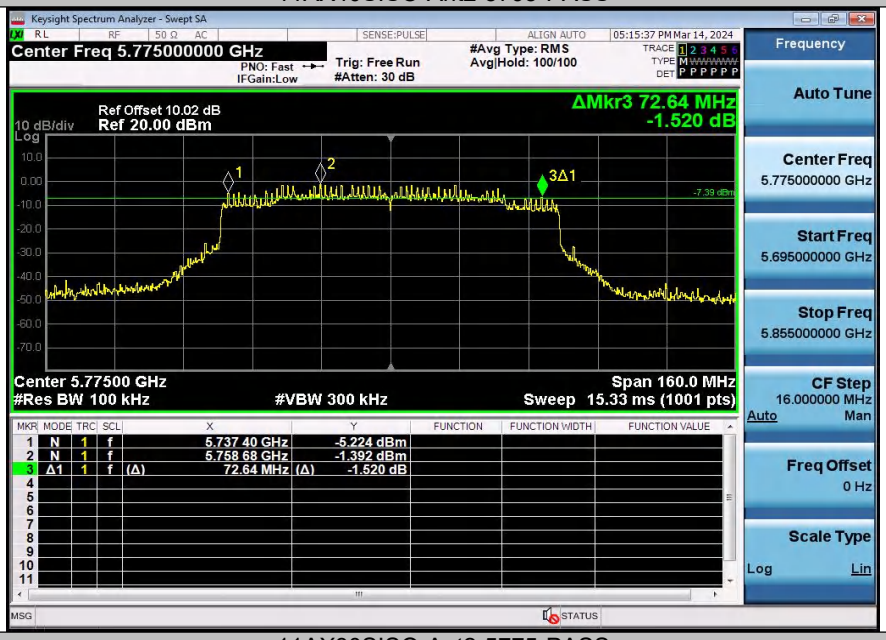


11AX40SISO-Ant2-5755-PASS



11AX40SISO-Ant2-5795-PASS



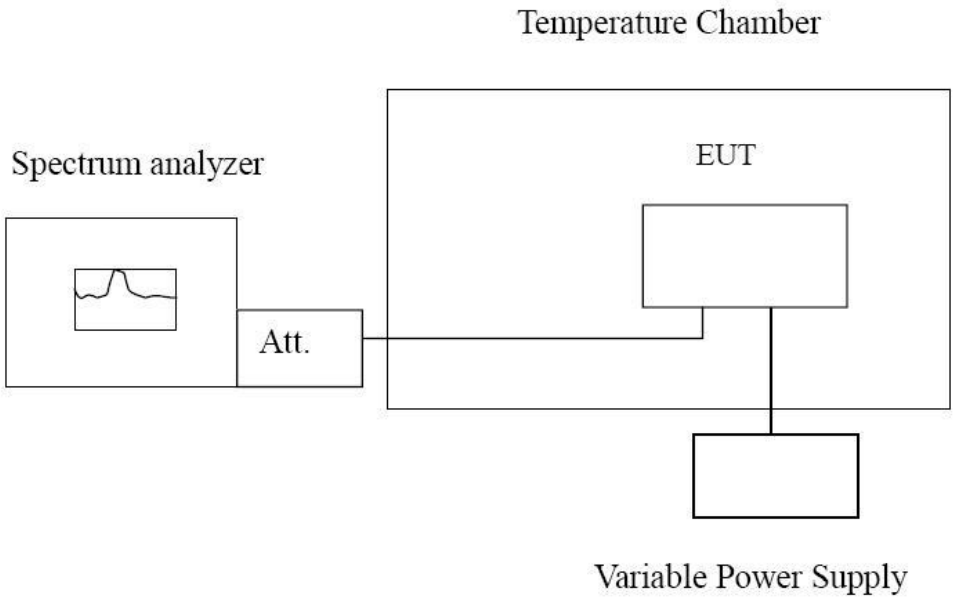
11AX80SISO-Ant2-5775-PASS

4.7 Frequency Stability

LIMIT

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the users manual.

TEST CONFIGURATION



TEST PROCEDURE

Frequency Stability under Temperature Variations:
The equipment under test was connected to an external AC or DC power supply and input rated voltage. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators. The EUT was placed inside the temperature chamber. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 20℃ operating frequency as reference frequency. Turn EUT off and set the chamber temperature to -30℃. After the temperature stabilized for approximately 30 minutes recorded the frequency. Repeat step measure with 10℃ increased per stage until the highest temperature of +50℃ reached.

Frequency Stability under Voltage Variations:
Set chamber temperature to 20℃. Use a variable AC power supply / DC power source to power the EUT and set the voltage to rated voltage. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency.
Reduce the input voltage to specify extreme voltage variation (±15%) and endpoint, record the maximum frequency change.

TEST RESULTS

Record worst case as below:

Ant 1

Reference Frequency: 802.11ac channel=36 frequency=5180MHz					
Voltage (V)	Temperature (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
20.0	-30	137.54	0.02655	Within the band of operation	Pass
	-20	146.32	0.02825		
	-10	131.68	0.02542		
	0	127.82	0.02468		
	10	134.21	0.02591		
	20	142.35	0.02748		
	30	137.52	0.02655		
	40	129.13	0.02493		
	50	144.65	0.02792		
22.0	25	138.46	0.02673		
18.0	25	132.58	0.02559		

Reference Frequency: 802.11ac channel=149 frequency=5745MHz					
Voltage (V)	Temperature (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
20.0	-30	125.13	0.02178	Within the band of operation	Pass
	-20	133.28	0.02320		
	-10	126.41	0.02200		
	0	122.38	0.02130		
	10	134.72	0.02345		
	20	136.81	0.02381		
	30	132.09	0.02299		
	40	137.26	0.02389		
	50	134.61	0.02343		
22.0	25	126.59	0.02203		
18.0	25	130.84	0.02277		

Ant 2

Reference Frequency: 802.11ac channel=36 frequency=5180MHz					
Voltage (V)	Temperature (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
20.0	-30	136.28	0.02631	Within the band of operation	Pass
	-20	137.39	0.02652		
	-10	140.53	0.02713		
	0	139.74	0.02698		
	10	130.85	0.02526		
	20	133.26	0.02573		
	30	141.32	0.02728		
	40	138.75	0.02679		
	50	136.42	0.02634		
22.0	25	130.83	0.02526		
18.0	25	135.17	0.02609		

Reference Frequency: 802.11ac channel=149 frequency=5745MHz					
Voltage (V)	Temperature (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
20.0	-30	131.46	0.02288	Within the band of operation	Pass
	-20	125.34	0.02182		
	-10	129.68	0.02257		
	0	133.52	0.02324		
	10	130.91	0.02279		
	20	128.57	0.02238		
	30	134.48	0.02341		
	40	131.73	0.02293		
	50	128.59	0.02238		
22.0	25	136.42	0.02375		
18.0	25	132.87	0.02313		

4.8 Automatically Discontinue Transmission

Standard Applicable

FCC CFR Title 47 Part 15 Subpart C Section 15.407(c):

The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. These provisions are not intended to preclude the transmission of control or signalling information or the use of repetitive codes used by certain digital technologies to complete frame or burst intervals. Applicants shall include in their application for equipment authorization a description of how this requirement is met.

Test Result:

Declared by applicants that the device will automatically discontinue transmission in case of either absence of information to transmit or operational failure.

4.9 Band edge for RF Conducted Emissions

Limit

1) For transmitters operating in the 5.15 – 5.25 GHz band: All emissions outside of the 5.15 – 5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

2) For transmitters operating solely in the 5.725 – 5.850 GHz band.

All emissions shall be limited to a level of −27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

Test Procedure

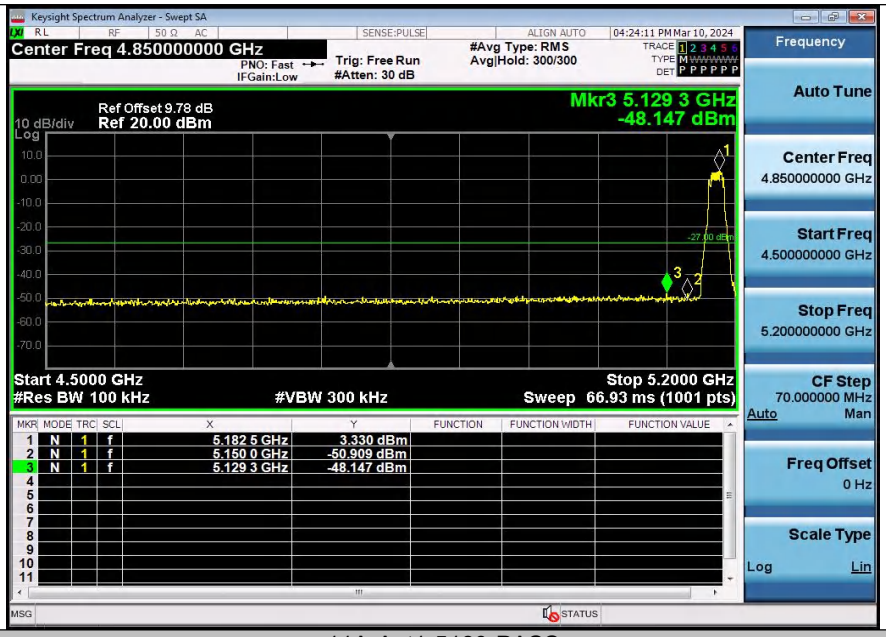
Connect the transmitter output to spectrum analyzer using a low loss RF cable, and set the spectrum analyzer to RBW=100 kHz, VBW= 300 kHz, peak detector , and max hold.

Test Configuration

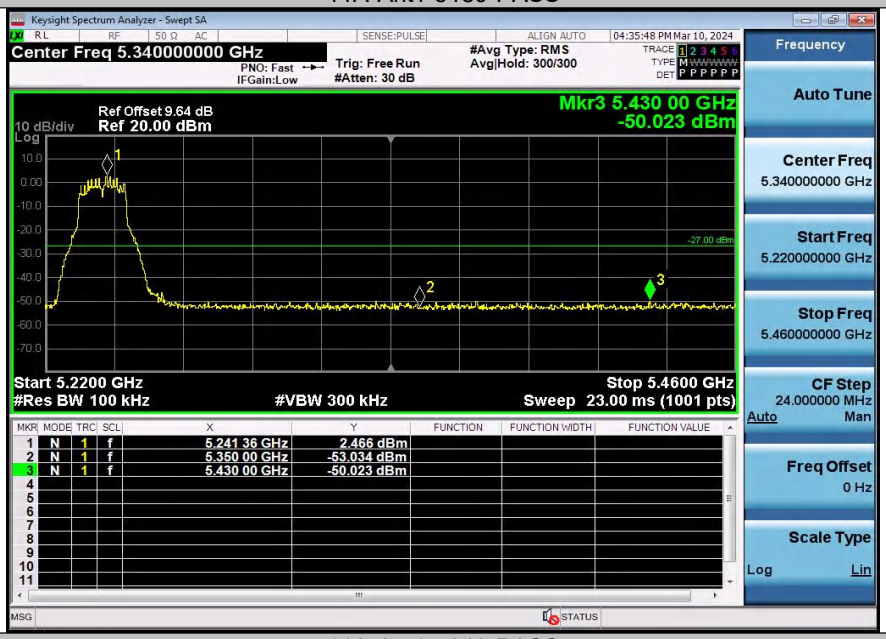
Test Results

Test plot as follows:

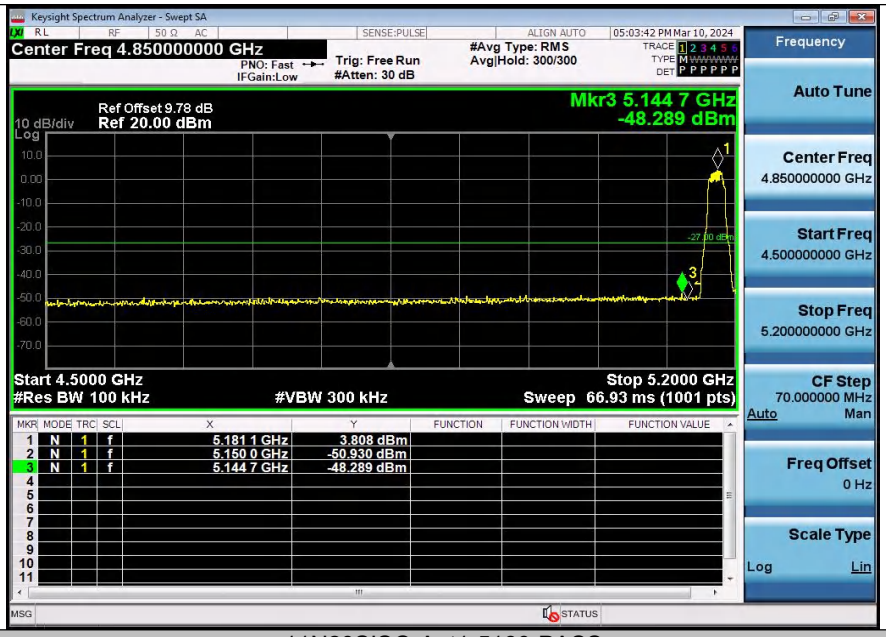
Ant 1



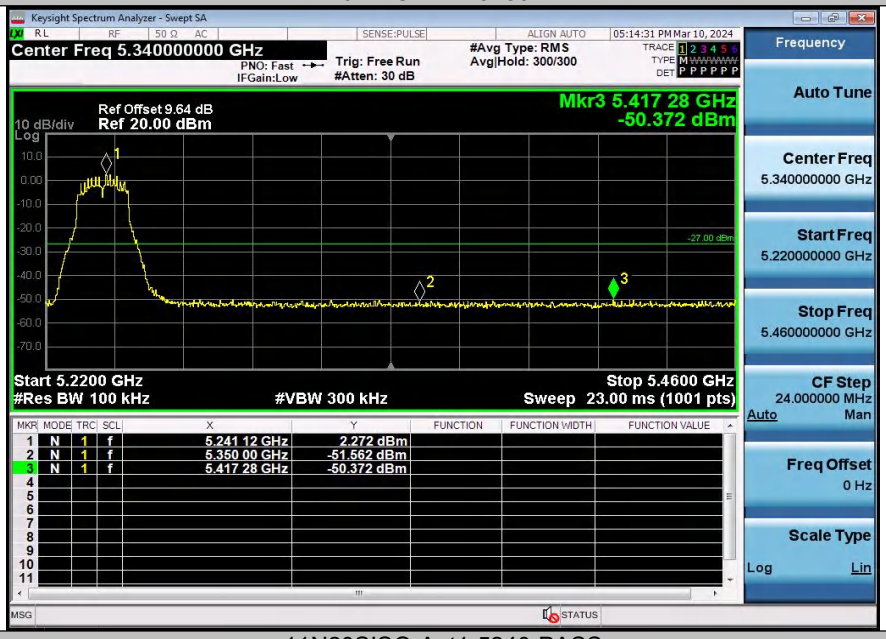
11A-Ant1-5180-PASS



11A-Ant1-5240-PASS



11N20SISO-Ant1-5180-PASS



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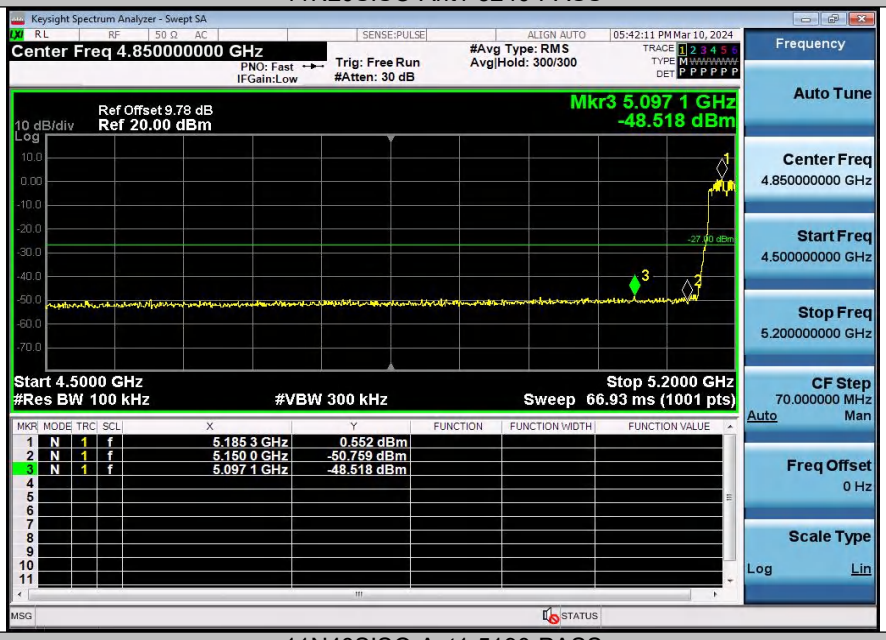

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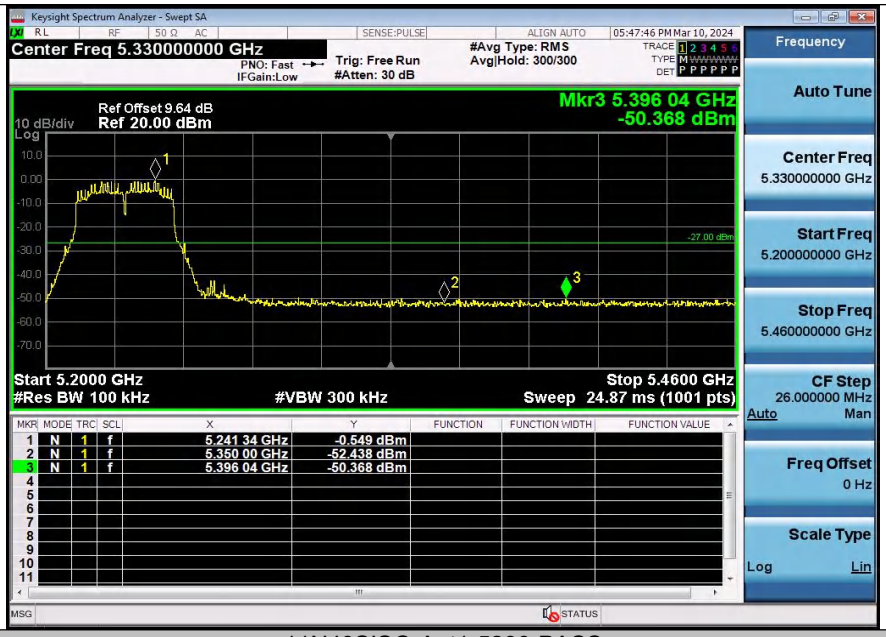

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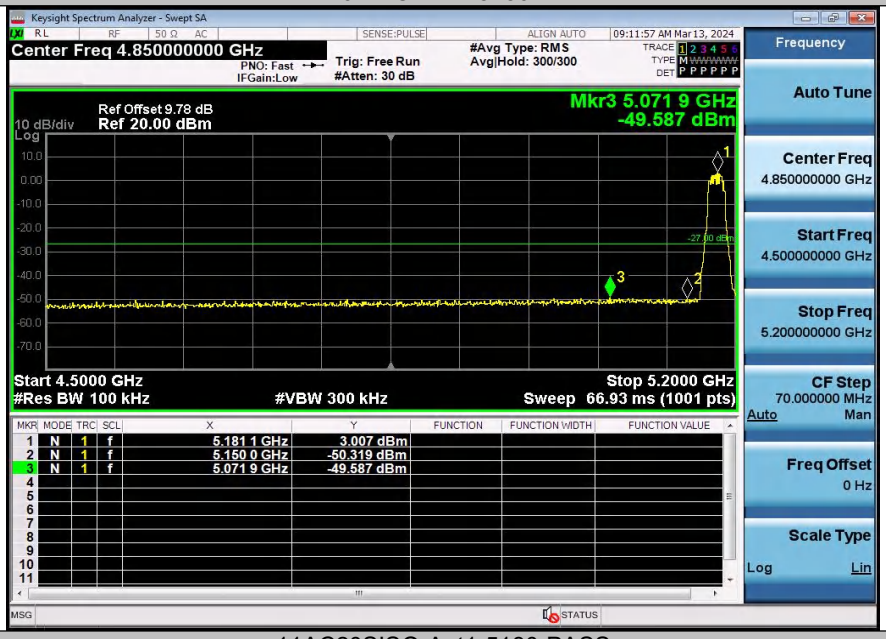

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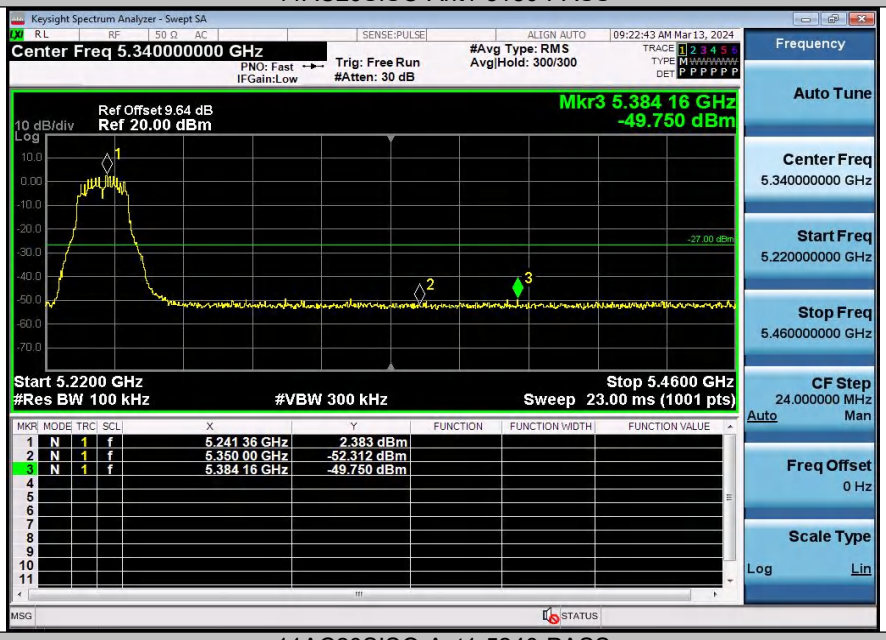

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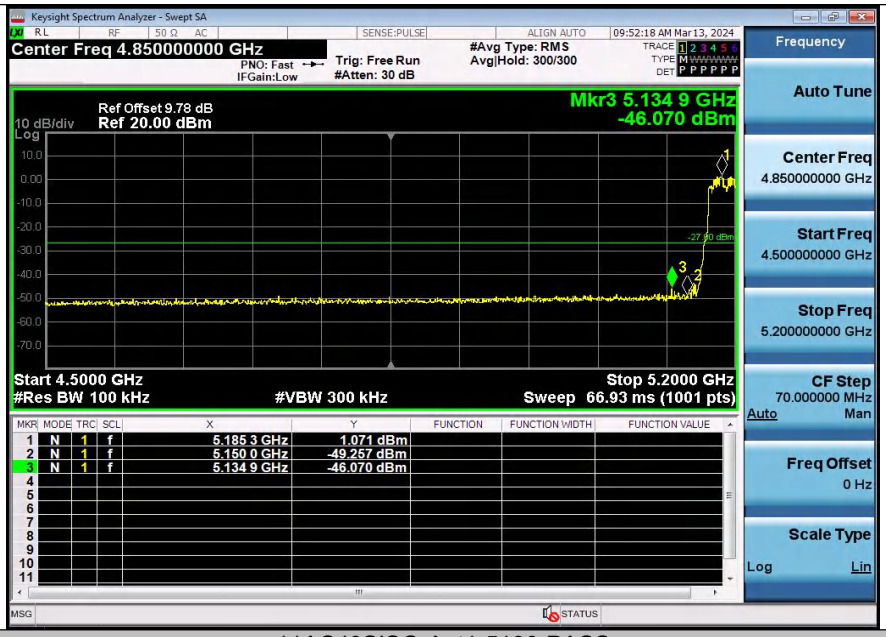
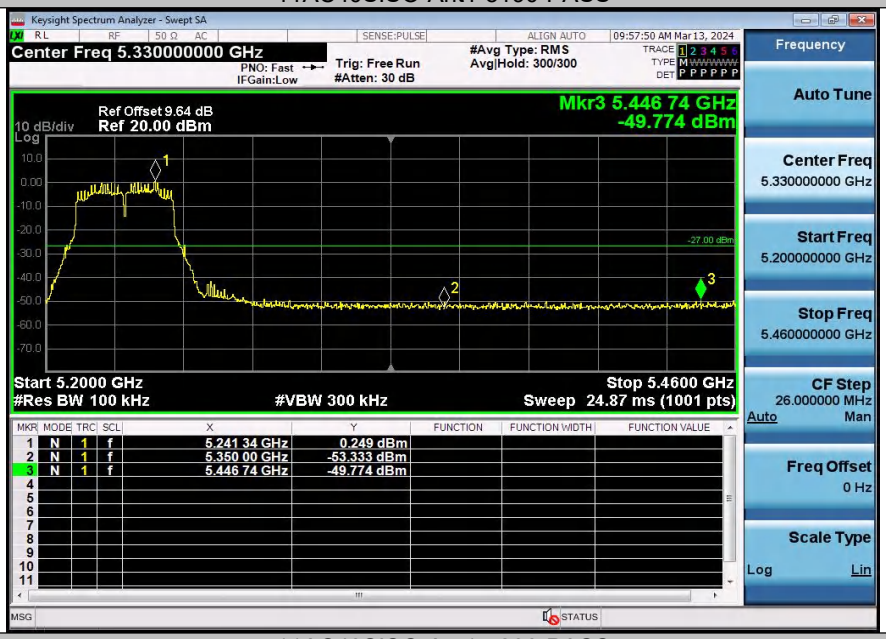


11AC40SISO-Ant1-5190-PASS



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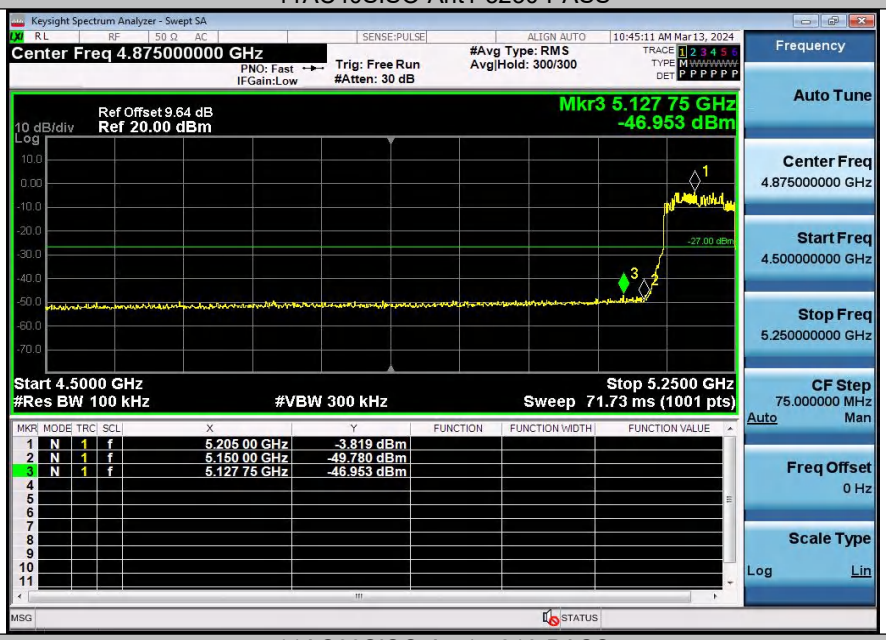

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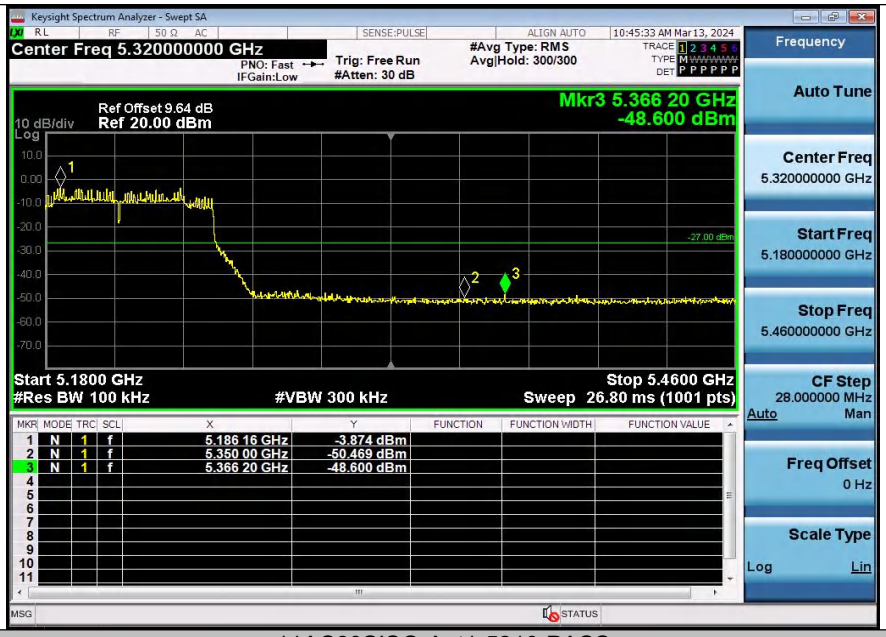

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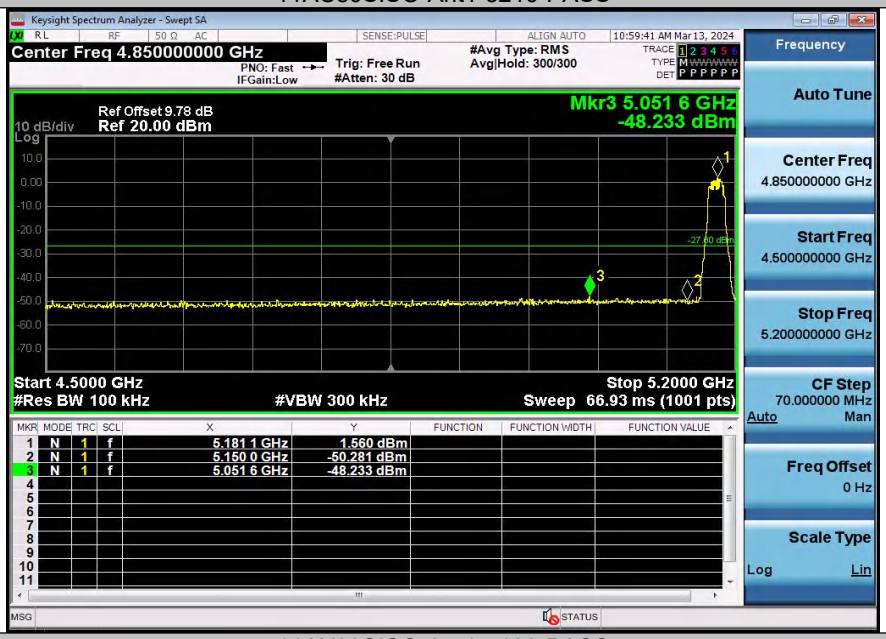
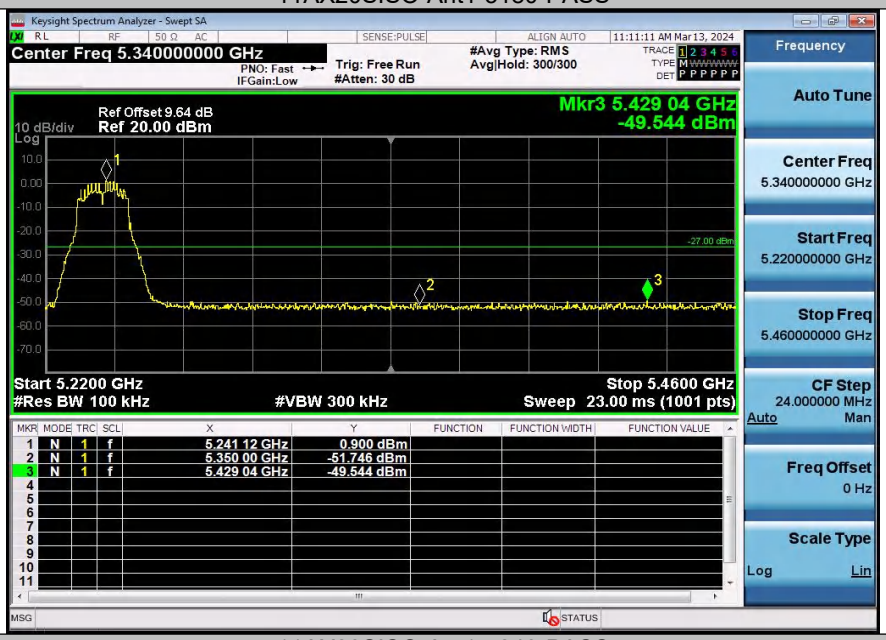
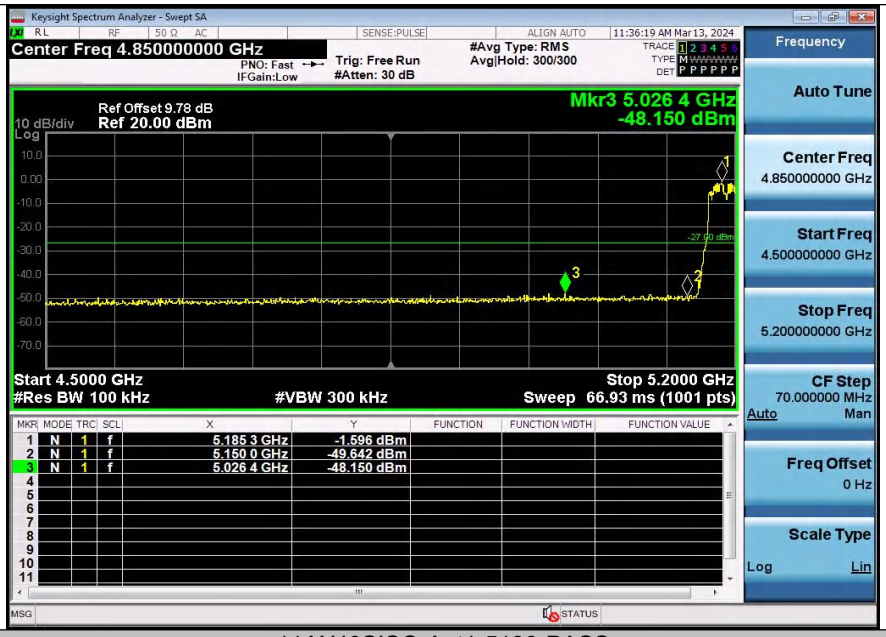


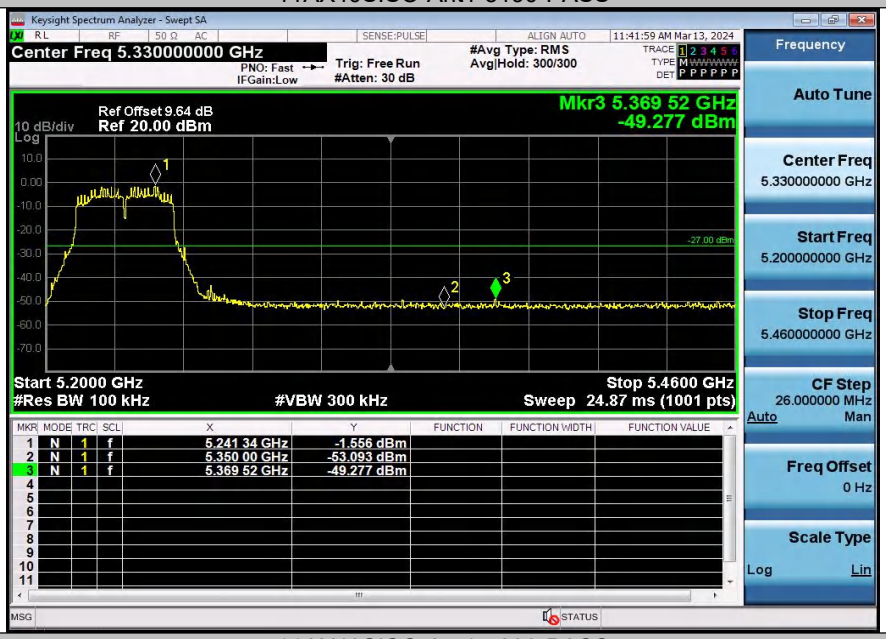
11AX20SISO-Ant1-5180-PASS



11AX20SISO-Ant1-5240-PASS



11AX40SISO-Ant1-5190-PASS



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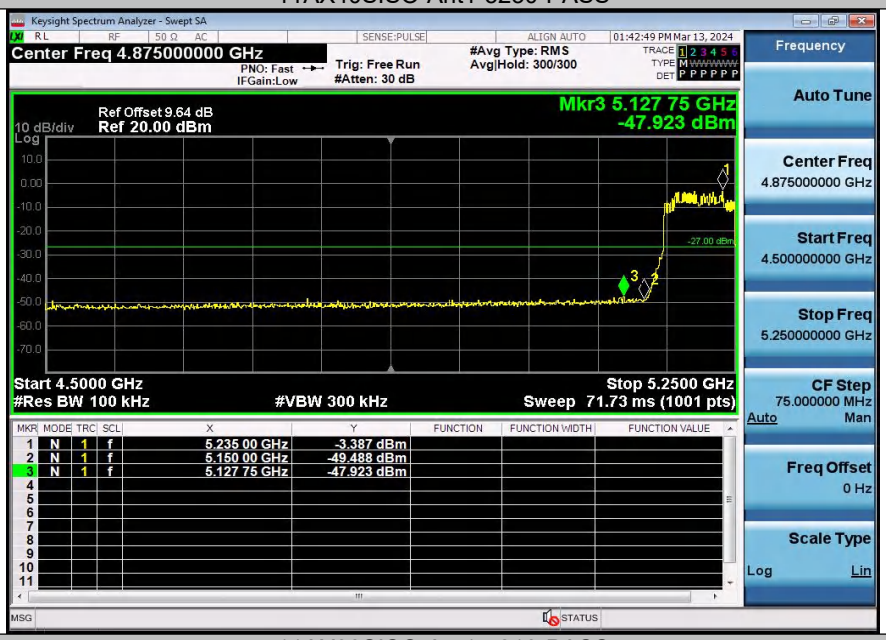

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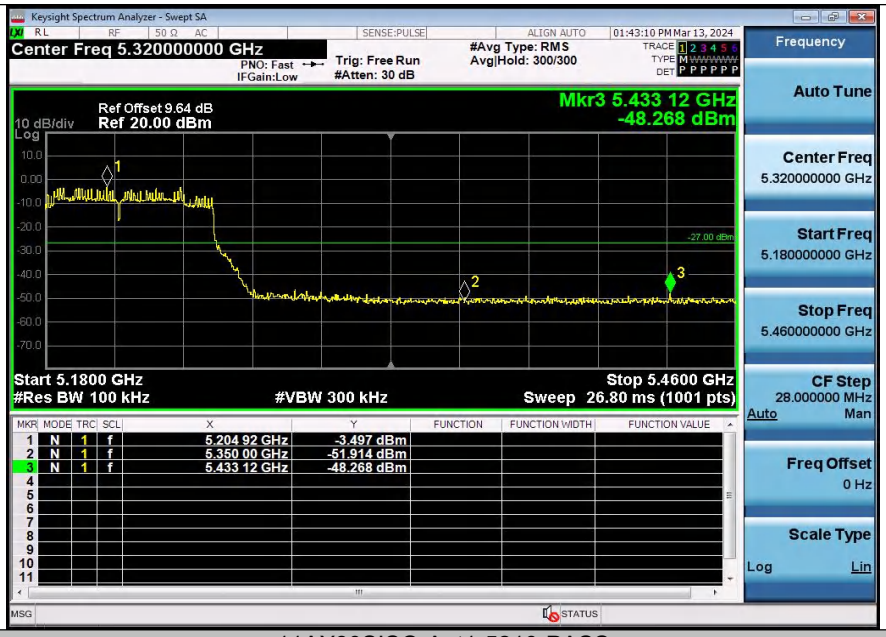

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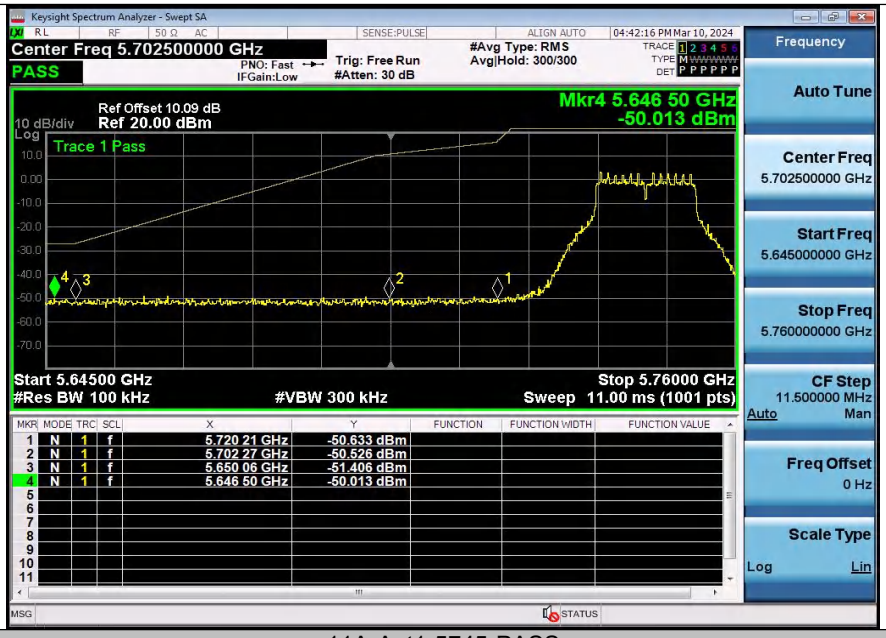
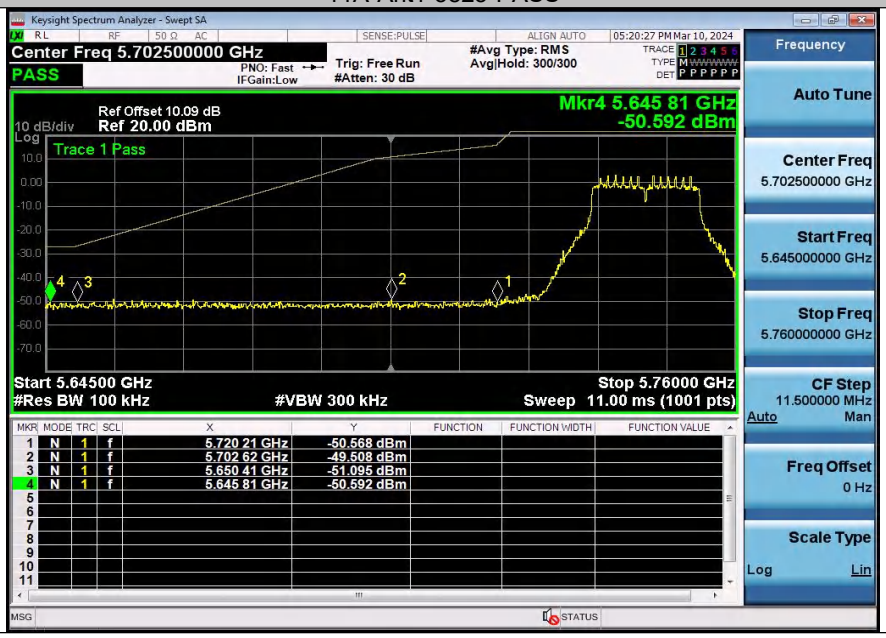


11A-Ant1-5745-PASS

11A-Ant1-5825-PASS



11N20SISO-Ant1-5745-PASS

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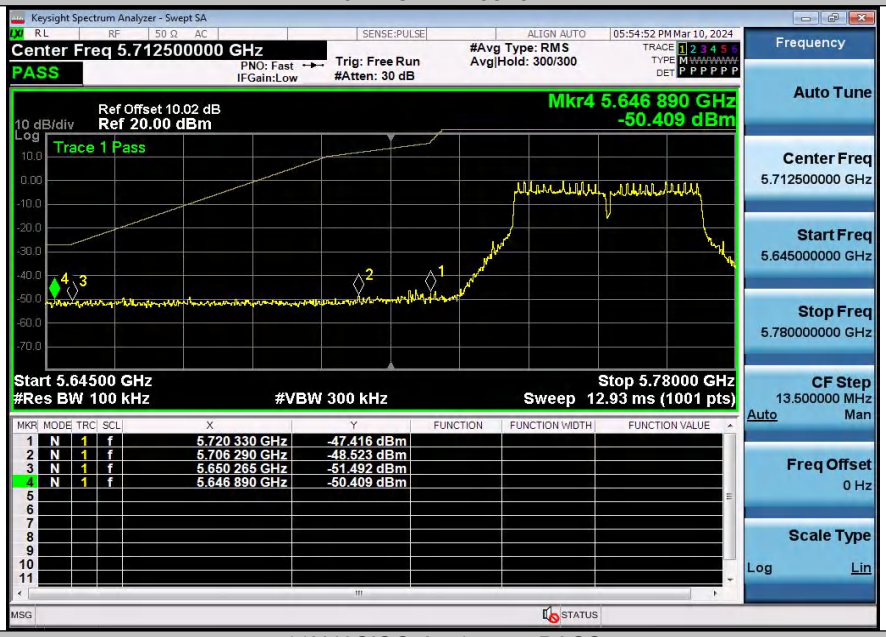
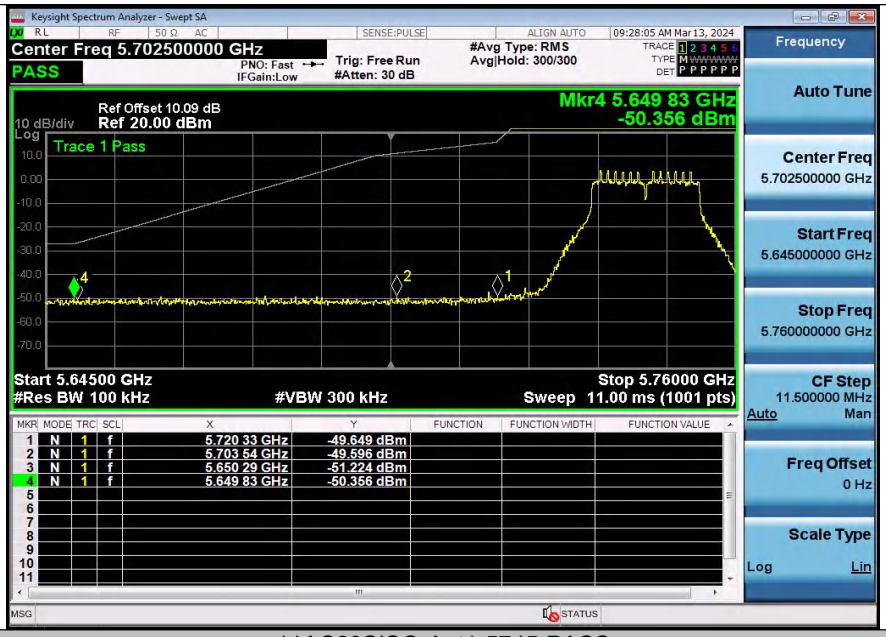


11N40SISO-Ant1-5755-PASS

11N40SISO-Ant1-5795-PASS

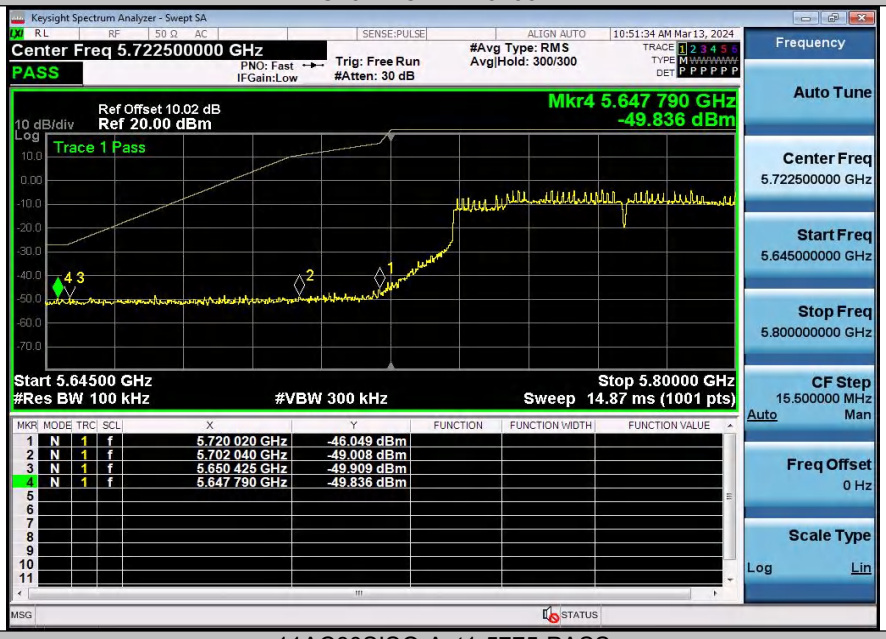


11AC20SISO-Ant1-5745-PASS

11AC20SISO-Ant1-5825-PASS

11AC40SISO-Ant1-5755-PASS

11AC40SISO-Ant1-5795-PASS



11AC80SISO-Ant1-5775-PASS

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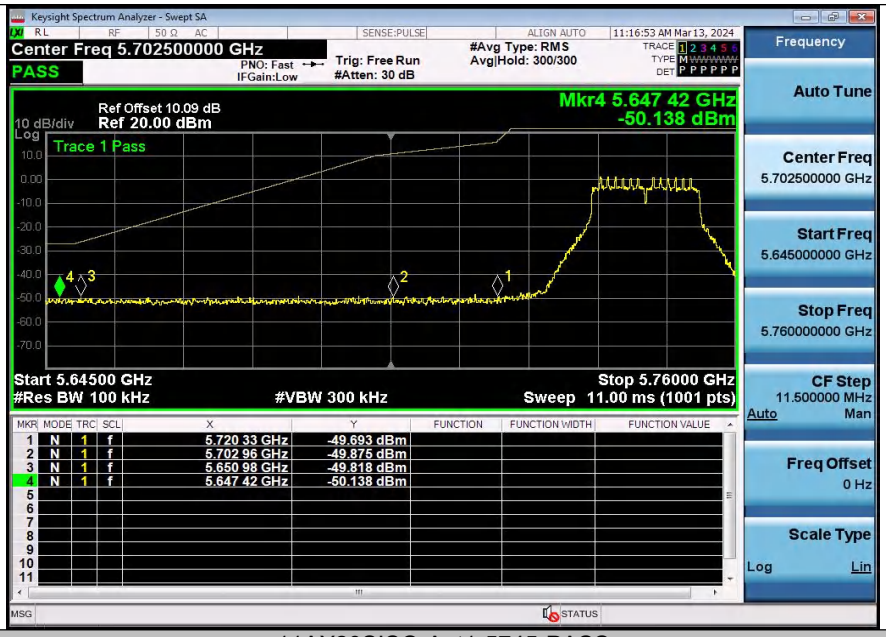

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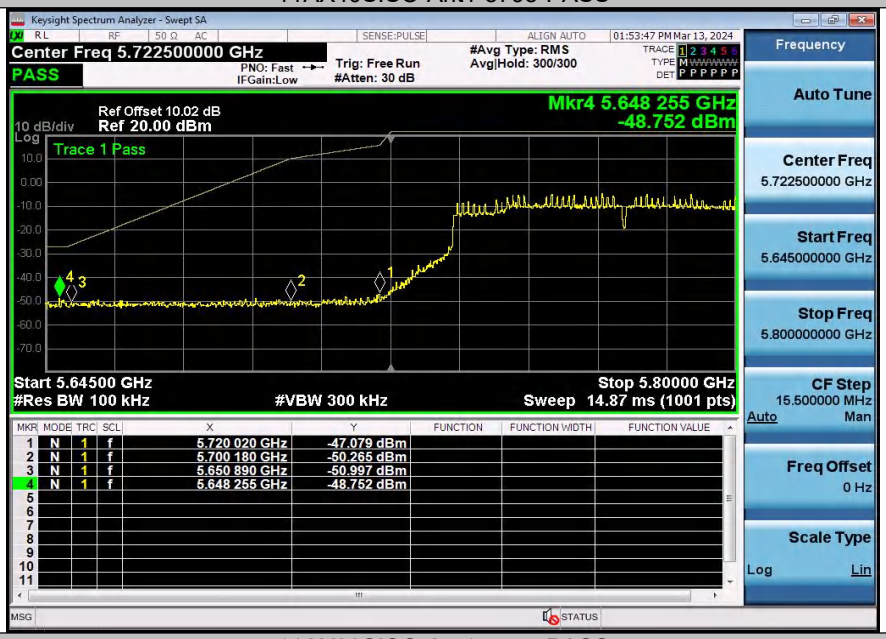
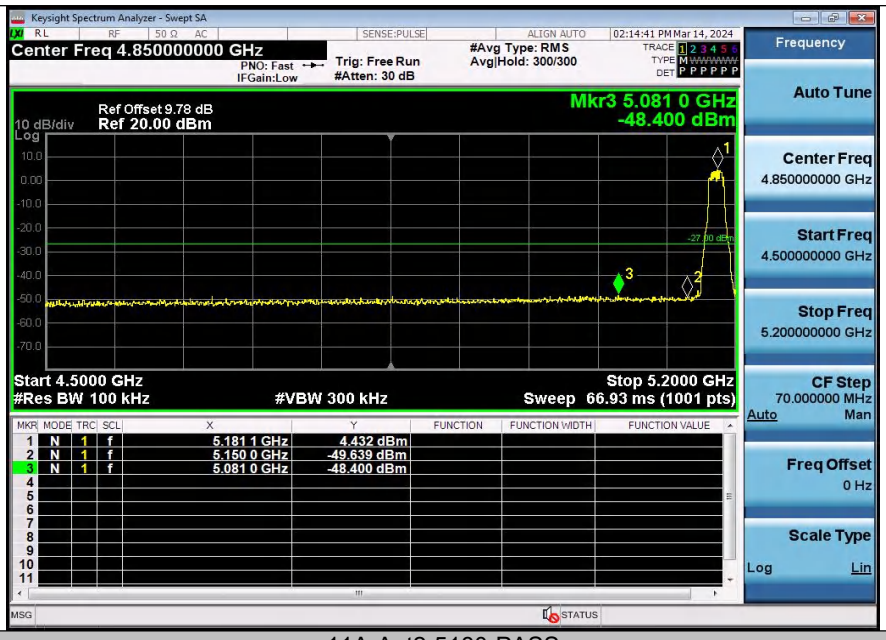


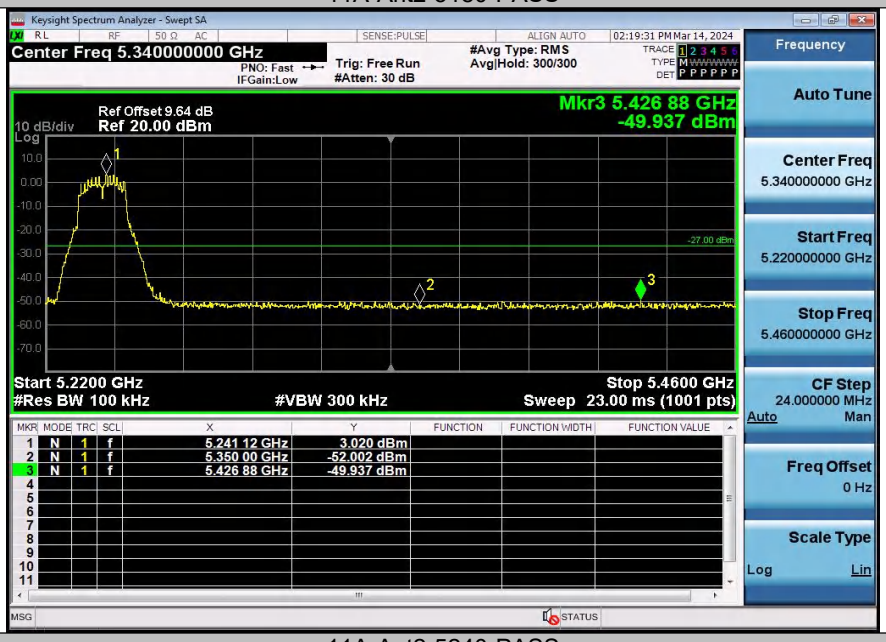
11AX80SISO-Ant1-5775-PASS

11AX80SISO-Ant1-5775-PASS

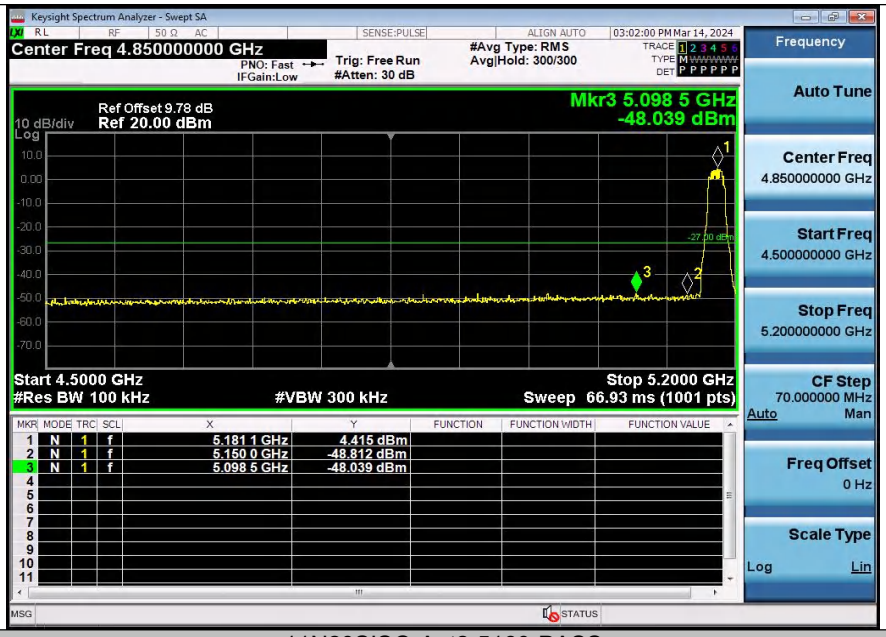
Ant 2



11A-Ant2-5180-PASS



11A-Ant2-5240-PASS



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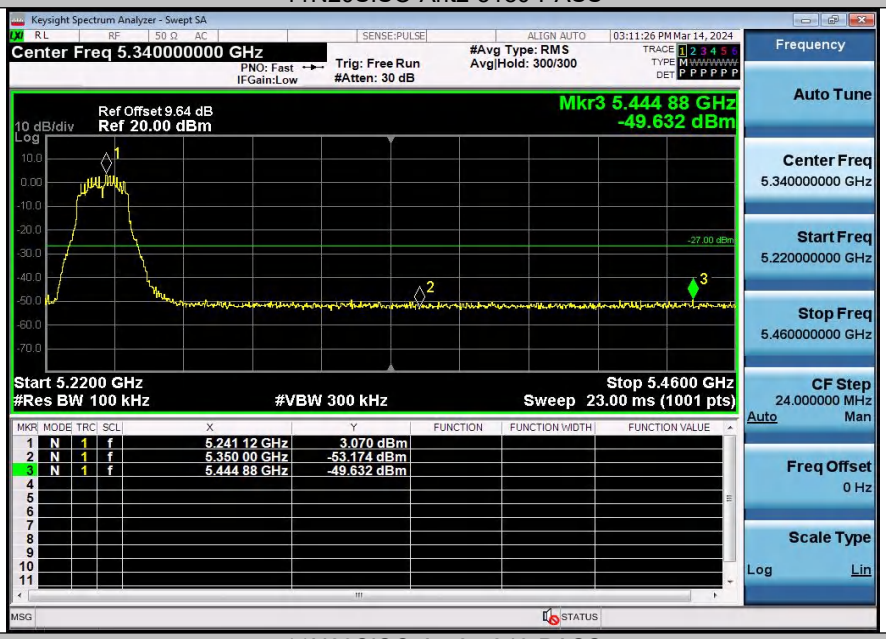

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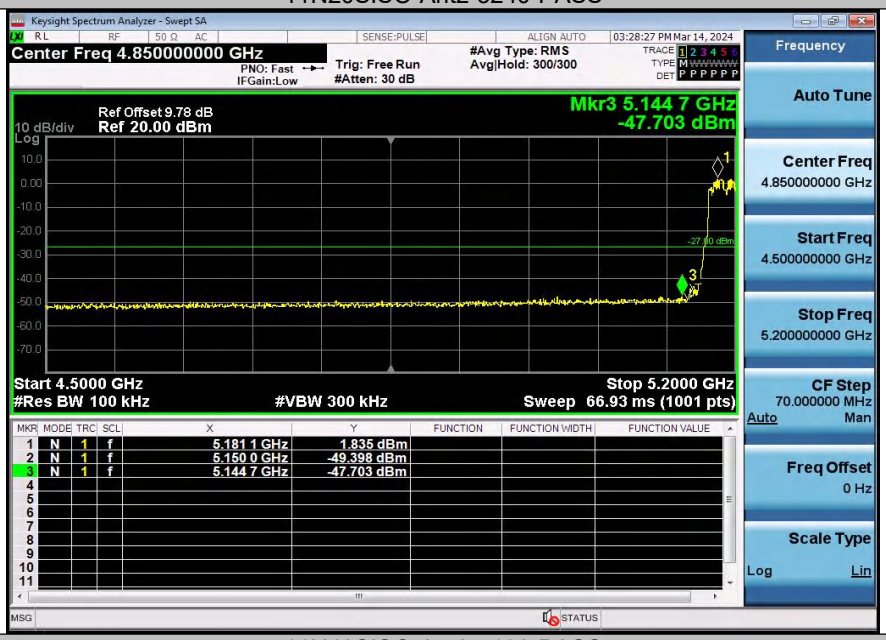

11N40SISO-Ant2-5190-PASS