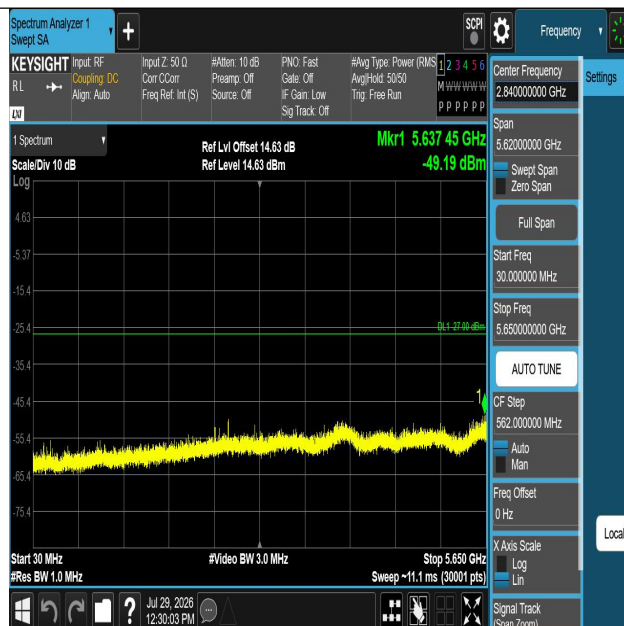
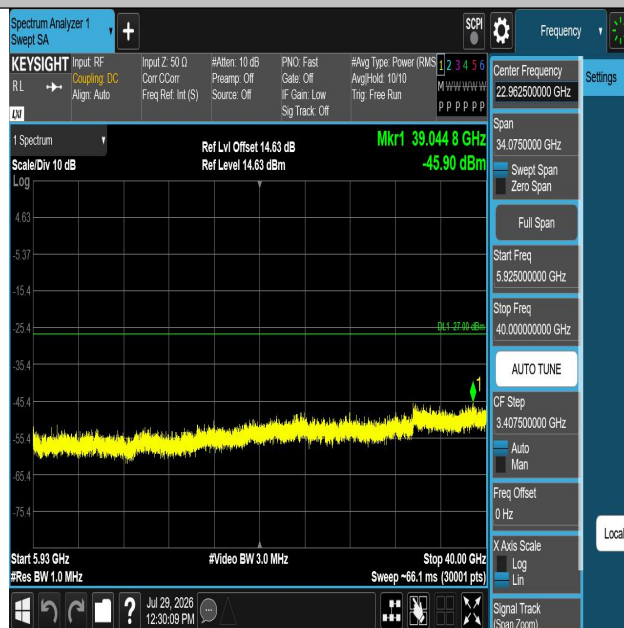




11N40SISO-Ant1-5795-30~5650-PASS



11N40SISO-Ant1-5795-5925~40000-PASS



6.6 Band edge measurements

Test Result:

B1:

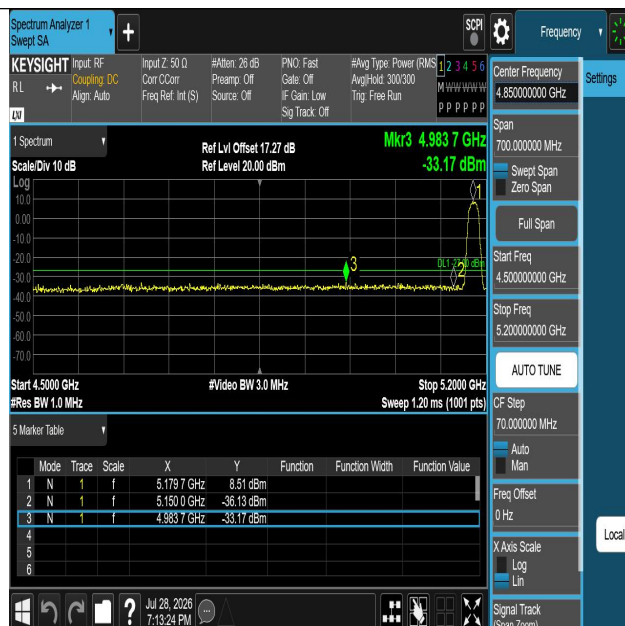
TestMode	Antenna	ChName	Frequency[MHz]	Result[dBm]	Limit[dBm]	Verdict
11A	Ant1	Low	5180	-33.17	≤ -27	PASS
11A	Ant1	High	5240	-33.90	≤ -27	PASS
11N20SISO	Ant1	Low	5180	-33.11	≤ -27	PASS
11N20SISO	Ant1	High	5240	-34.74	≤ -27	PASS
11N40SISO	Ant1	Low	5190	-33.00	≤ -27	PASS
11N40SISO	Ant1	High	5230	-34.22	≤ -27	PASS



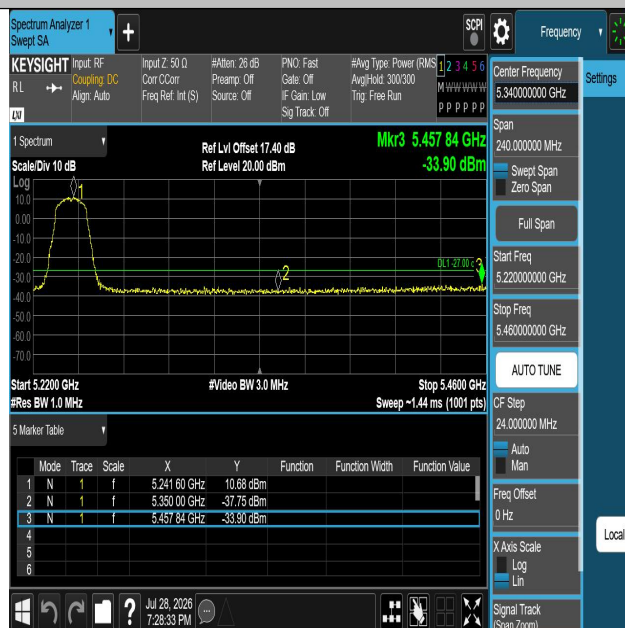
B4

TestMode	Antenna	ChName	Frequency[MHz]	FreqRange [MHz]	Result [dBm]	Limit [dBm]	Verdict
11A	Ant1	Low	5745	5720~5725	-35.21	≤16.34	PASS
11A	Ant1	Low	5745	5700~5720	-35.79	≤10.12	PASS
11A	Ant1	Low	5745	5650~5700	-33.64	≤-26.10	PASS
11A	Ant1	Low	5745	5645~5650	-33.54	≤-27	PASS
11A	Ant1	High	5825	5850~5855	-36.51	≤15.73	PASS
11A	Ant1	High	5825	5855~5875	-35.05	≤10.44	PASS
11A	Ant1	High	5825	5875~5925	-35.54	≤-26.71	PASS
11A	Ant1	High	5825	5925~5935	-34.56	≤-27	PASS
11N20SIS O	Ant1	Low	5745	5720~5725	-31.63	≤18.70	PASS
11N20SIS O	Ant1	Low	5745	5700~5720	-35.67	≤11.02	PASS
11N20SIS O	Ant1	Low	5745	5650~5700	-35.05	≤-26.79	PASS
11N20SIS O	Ant1	Low	5745	5645~5650	-34.90	≤-27	PASS
11N20SIS O	Ant1	High	5825	5850~5855	-37.13	≤16.34	PASS
11N20SIS O	Ant1	High	5825	5855~5875	-35.66	≤10.02	PASS
11N20SIS O	Ant1	High	5825	5875~5925	-35.42	≤-26.31	PASS
11N20SIS O	Ant1	High	5825	5925~5935	-35.08	≤-27	PASS
11N40SIS O	Ant1	Low	5755	5720~5725	-25.77	≤16.66	PASS
11N40SIS O	Ant1	Low	5755	5700~5720	-26.02	≤14.94	PASS
11N40SIS O	Ant1	Low	5755	5650~5700	-35.13	≤-26.90	PASS
11N40SIS O	Ant1	Low	5755	5645~5650	-33.39	≤-27	PASS
11N40SIS O	Ant1	High	5795	5850~5855	-36.72	≤15.66	PASS
11N40SIS O	Ant1	High	5795	5855~5875	-36.09	≤10.06	PASS
11N40SIS O	Ant1	High	5795	5875~5925	-34.57	≤-26.10	PASS
11N40SIS O	Ant1	High	5795	5925~5935	-35.18	≤-27	PASS

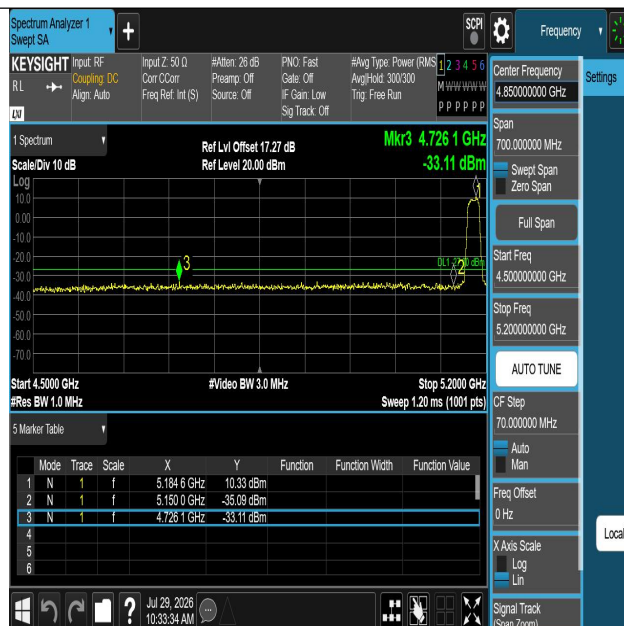
Note: The Max. Level has been corrected by the cable loss and antenna gain.

**Test plots :
B1**

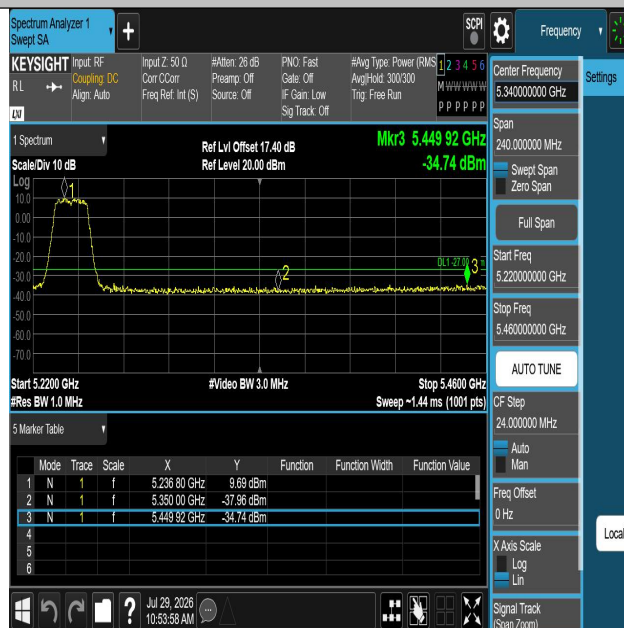
11A-Ant1-5180-PASS



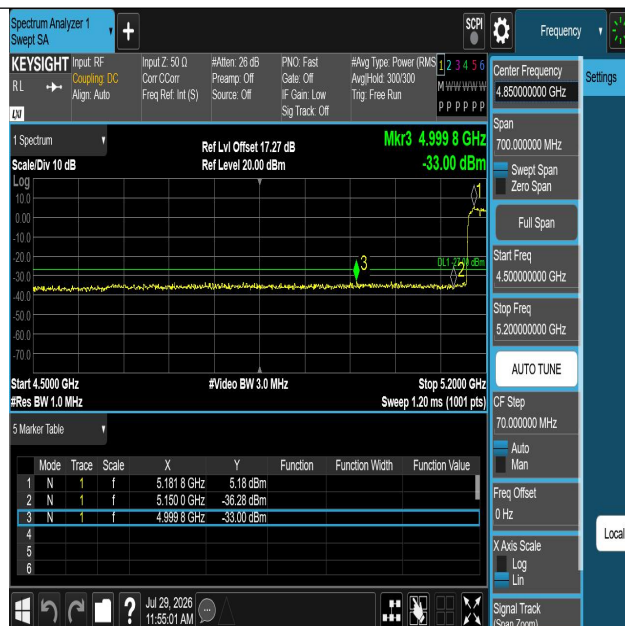
11A-Ant1-5240-PASS



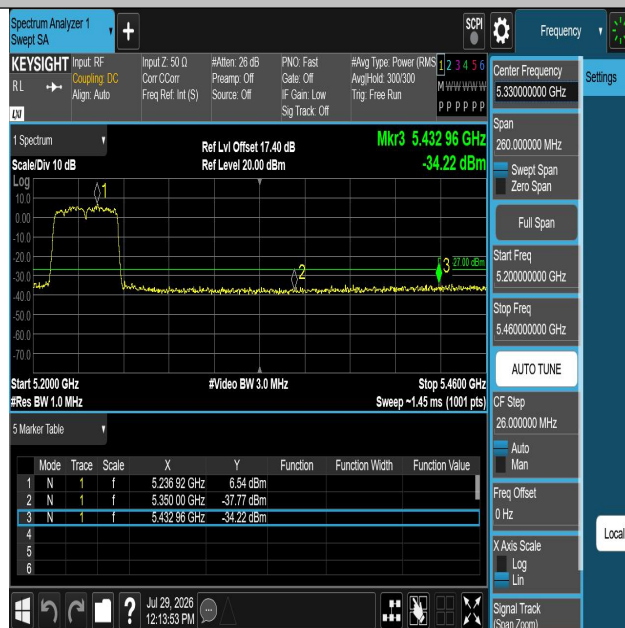
11N20SISO-Ant1-5180-PASS



11N20SISO-Ant1-5240-PASS



11N40SISO-Ant1-5190-PASS



11N40SISO-Ant1-5230-PASS



Test Graphs B4



11A-Ant1-5745-PASS



11A-Ant1-5825-PASS



11N20SISO-Ant1-5745-PASS



11N20SISO-Ant1-5825-PASS



11N40SISO-Ant1-5755-PASS



11N40SISO-Ant1-5795-PASS



6.7 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	45.45	6.53	51.98	68.2	16.22	H	Peak
2	5150	33.76	6.53	40.29	54	13.71	H	Average
3	5150	51.26	6.53	57.79	68.2	10.41	V	Peak
4	5150	39.75	6.53	46.28	54	7.72	V	Average



Worst case mode:		802.11a(6Mbps)		Test channel:		165		
NO.	Freq. [MHz]	level [dB μ V/m]	Factor [dB]	Emission level [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]	Polarity	Detector Type
1	5850	47.25	6.64	53.89	68.2	14.31	H	Peak
2	5850	36.02	6.64	42.66	54	11.34	H	Average
3	5850	43.71	6.64	50.35	68.2	17.85	V	Peak
4	5850	38.28	6.64	44.92	54	9.08	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).

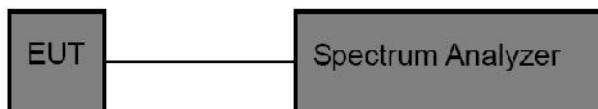
The following procedure shall be used for measuring (99 %) power bandwidth:

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.

99% occupied bandwidth:

TestMode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5180	16.524	5171.7911	5188.3151	---	---
11A	Ant1	5200	16.440	5191.8037	5208.2437	---	---
11A	Ant1	5240	16.493	5231.8316	5248.3246	---	---
11A	Ant1	5745	16.562	5736.7431	5753.3051	---	---
11A	Ant1	5785	16.508	5776.7199	5793.2279	---	---
11A	Ant1	5825	16.475	5816.7652	5833.2402	---	---
11N20SISO	Ant1	5180	17.849	5171.1166	5188.9656	---	---
11N20SISO	Ant1	5200	17.768	5191.1017	5208.8697	---	---
11N20SISO	Ant1	5240	17.775	5231.1231	5248.8981	---	---
11N20SISO	Ant1	5745	17.792	5736.0965	5753.8885	---	---
11N20SISO	Ant1	5785	17.741	5776.1281	5793.8691	---	---
11N20SISO	Ant1	5825	17.888	5816.0697	5833.9577	---	---
11N40SISO	Ant1	5190	35.945	5172.1258	5208.0708	---	---
11N40SISO	Ant1	5230	35.901	5212.1501	5248.0511	---	---
11N40SISO	Ant1	5755	35.909	5737.0097	5772.9187	---	---
11N40SISO	Ant1	5795	35.840	5777.0916	5812.9316	---	---



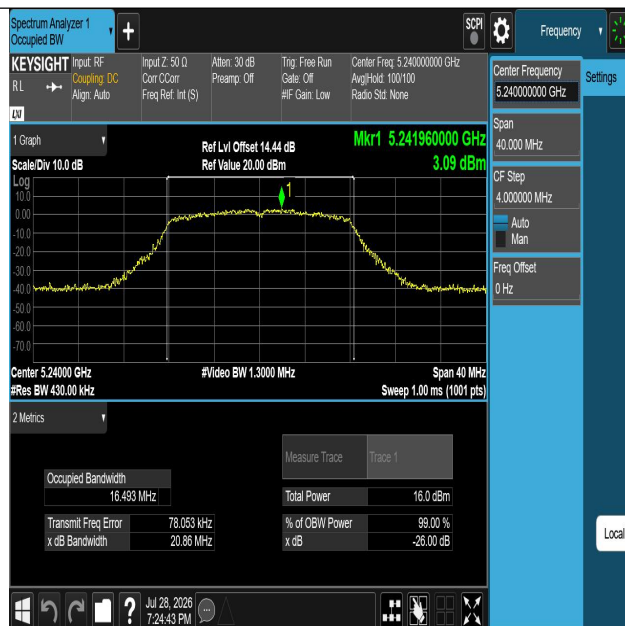
Test Graphs:



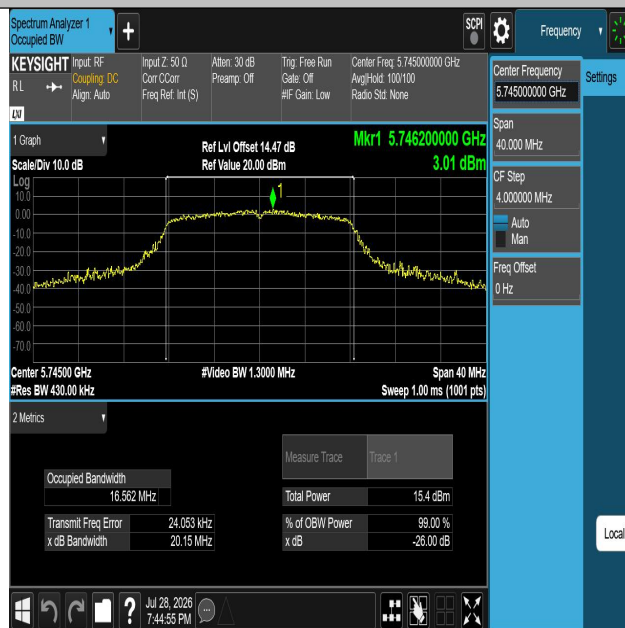
11A-Ant1-5180



11A-Ant1-5200



11A-Ant1-5240



11A-Ant1-5745



11A-Ant1-5785



11A-Ant1-5825



11N20SISO-Ant1-5180



11N20SISO-Ant1-5200



11N20SISO-Ant1-5240



11N20SISO-Ant1-5745



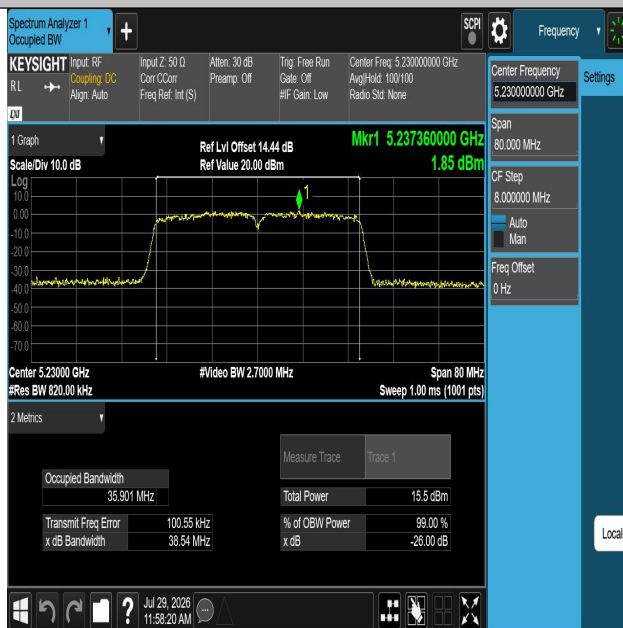
11N20SISO-Ant1-5785



11N20SISO-Ant1-5825



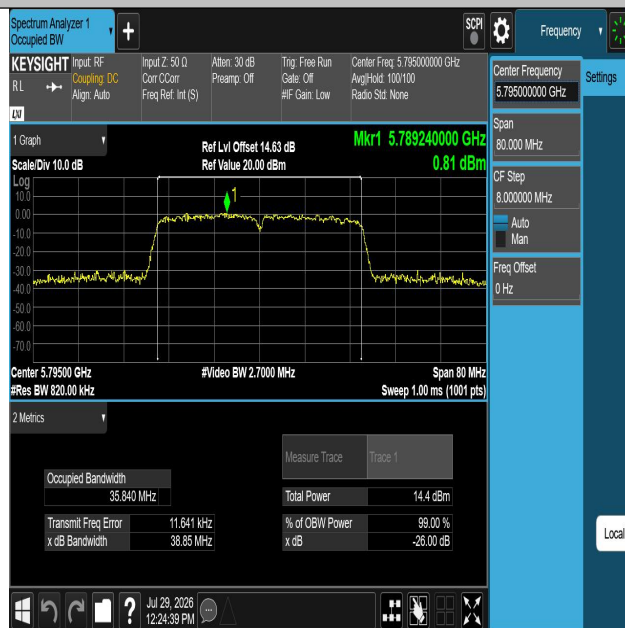
11N40SISO-Ant1-5190



11N40SISO-Ant1-5230



11N40SISO-Ant1-5755



11N40SISO-Ant1-5795

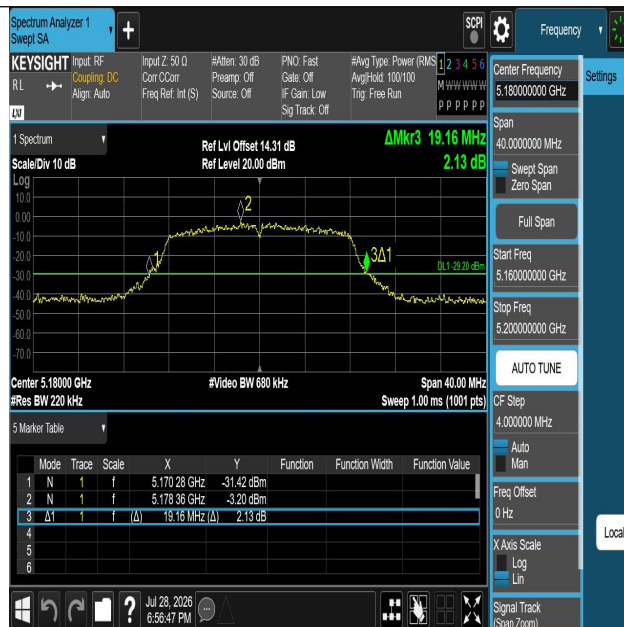


26 dB emission bandwidth:

TestMode	Antenna	Frequency[MHz]	26db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5180	19.160	5170.280	5189.440	---	---
11A	Ant1	5200	19.920	5189.920	5209.840	---	---
11A	Ant1	5240	19.480	5230.200	5249.680	---	---
11A	Ant1	5745	19.120	5735.480	5754.600	---	---
11A	Ant1	5785	19.440	5775.280	5794.720	---	---
11A	Ant1	5825	19.400	5815.040	5834.440	---	---
11N20SISO	Ant1	5180	20.520	5169.880	5190.400	---	---
11N20SISO	Ant1	5200	20.440	5189.640	5210.080	---	---
11N20SISO	Ant1	5240	20.440	5229.880	5250.320	---	---
11N20SISO	Ant1	5745	20.480	5734.720	5755.200	---	---
11N20SISO	Ant1	5785	20.880	5774.760	5795.640	---	---
11N20SISO	Ant1	5825	20.920	5814.520	5835.440	---	---
11N40SISO	Ant1	5190	38.480	5170.800	5209.280	---	---
11N40SISO	Ant1	5230	38.080	5211.040	5249.120	---	---
11N40SISO	Ant1	5755	38.080	5735.960	5774.040	---	---
11N40SISO	Ant1	5795	38.240	5775.800	5814.040	---	---



26 dB emission bandwidth Test Graphs:



11A-Ant1-5180



11A-Ant1-5200



11A-Ant1-5240



11A-Ant1-5745