



11AC80SISO-Ant1-5210



11AC80SISO-Ant1-5290



11AC80SISO-Ant1-5530



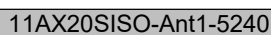
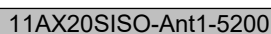
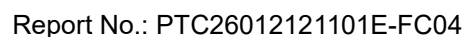
11AC80SISO-Ant1-5610



11AC80SISO-Ant1-5775



11AX20SISO-Ant1-5180





11AX20SISO-Ant1-5260



11AX20SISO-Ant1-5280



11AX20SISO-Ant1-5320



11AX20SISO-Ant1-5500



11AX20SISO-Ant1-5580



11AX20SISO-Ant1-5700



11AX20SISO-Ant1-5745



11AX20SISO-Ant1-5785



11AX20SISO-Ant1-5825



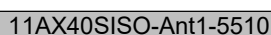
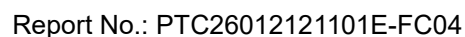
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11AX40SISO-Ant1-5230



11AX40SISO-Ant1-5270





11AX40SISO-Ant1-5550



11AX40SISO-Ant1-5670



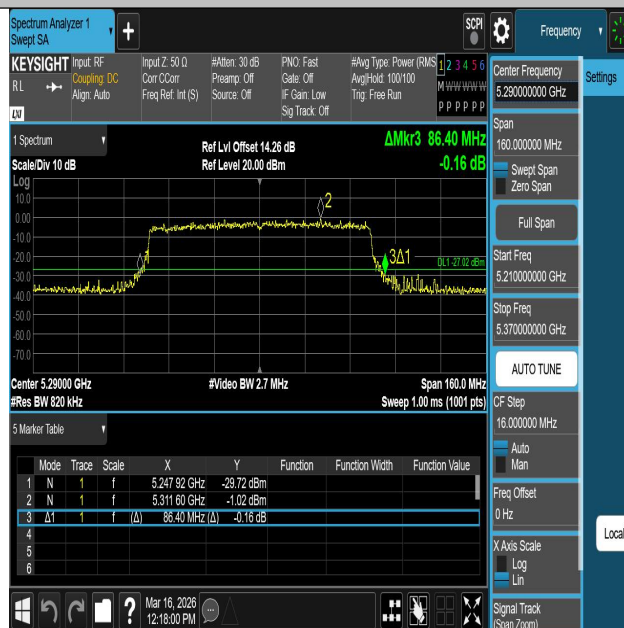
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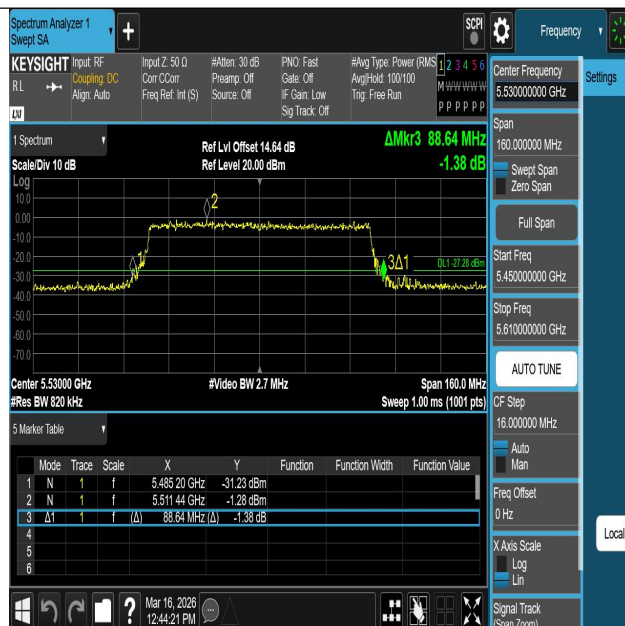
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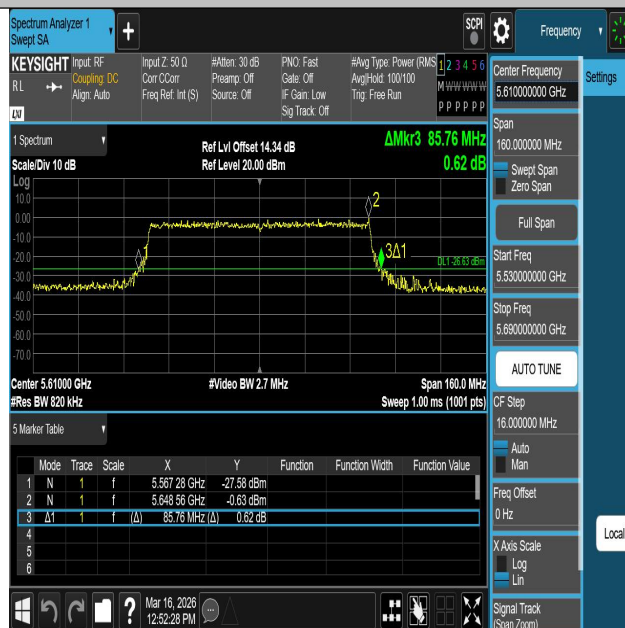
11AX80SISO-Ant1-5210



11AX80SISO-Ant1-5290



11AX80SISO-Ant1-5530



11AX80SISO-Ant1-5610



11AX80SISO-Ant1-5775



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	47.50	6.53	54.03	68.2	14.17	H	Peak
2	5150	35.16	6.53	41.69	54	12.31	H	Average
3	5150	50.44	6.53	56.97	68.2	11.23	V	Peak
4	5150	37.18	6.53	43.71	54	10.29	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	48.07	6.56	54.63	68.2	13.57	H	Peak
2	5350	38.69	6.56	45.25	54	8.75	H	Average
3	5350	47.28	6.56	53.84	68.2	14.36	V	Peak
4	5350	35.29	6.56	41.85	54	12.15	V	Average

Worst case mode:		802.11a(6Mbps)		Test channel:		149		
NO.	Freq. [MHz]	level [dBμV/m]	Factor [dB]	Emission level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity	Detector Type
1	5460	47.70	6.56	54.26	68.2	13.94	H	Peak
2	5460	39.63	6.56	46.19	54	7.81	H	Average
3	5460	46.31	6.56	52.87	68.2	15.33	V	Peak
4	5460	34.33	6.56	40.89	54	13.11	V	Average

Worst case mode:		802.11a(6Mbps)		Test channel:		165		
NO.	Freq. [MHz]	level [dBμV/m]	Factor [dB]	Emission level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity	Detector Type
1	5850	48.34	6.64	54.98	68.2	13.22	H	Peak
2	5850	36.31	6.64	42.95	54	11.05	H	Average
3	5850	45.49	6.64	52.13	68.2	16.07	V	Peak
4	5850	33.72	6.64	40.36	54	13.64	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
Test Limit	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. 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).

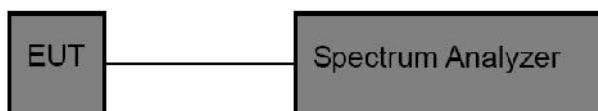
The following procedure shall be used for measuring (99 %) power bandwidth:

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	16.845	5171.5791	5188.4241	---	---
11A	Ant1	5200	16.878	5191.5505	5208.4285	---	---
11A	Ant1	5240	16.952	5231.5236	5248.4756	---	---
11A	Ant1	5260	16.918	5251.5250	5268.4430	---	---
11A	Ant1	5280	16.888	5271.5357	5288.4237	---	---
11A	Ant1	5320	16.908	5311.5368	5328.4448	---	---
11A	Ant1	5500	17.126	5491.4122	5508.5382	---	---
11A	Ant1	5580	17.058	5571.4568	5588.5148	---	---
11A	Ant1	5700	17.046	5691.4418	5708.4878	---	---
11A	Ant1	5745	17.094	5736.4219	5753.5159	---	---
11A	Ant1	5785	17.096	5776.4025	5793.4985	---	---
11A	Ant1	5825	17.053	5816.4457	5833.4987	---	---
11N20SISO	Ant1	5180	17.976	5171.0131	5188.9891	---	---
11N20SISO	Ant1	5200	17.939	5191.0497	5208.9887	---	---
11N20SISO	Ant1	5240	17.942	5231.0423	5248.9843	---	---
11N20SISO	Ant1	5260	17.963	5251.0603	5269.0233	---	---
11N20SISO	Ant1	5280	17.909	5271.0577	5288.9667	---	---



11N20SISO	Ant1	5320	17.937	5311.0268	5328.9638	---	---
11N20SISO	Ant1	5500	18.079	5490.9382	5509.0172	---	---
11N20SISO	Ant1	5580	18.073	5570.9697	5589.0427	---	---
11N20SISO	Ant1	5700	18.118	5690.9133	5709.0313	---	---
11N20SISO	Ant1	5745	18.083	5735.9716	5754.0546	---	---
11N20SISO	Ant1	5785	18.074	5775.9655	5794.0395	---	---
11N20SISO	Ant1	5825	18.108	5815.9320	5834.0400	---	---
11N40SISO	Ant1	5190	37.235	5171.4524	5208.6874	---	---
11N40SISO	Ant1	5230	37.318	5211.4473	5248.7653	---	---
11N40SISO	Ant1	5270	37.155	5251.5426	5288.6976	---	---
11N40SISO	Ant1	5310	37.236	5291.4214	5328.6574	---	---
11N40SISO	Ant1	5510	37.427	5491.3077	5528.7347	---	---
11N40SISO	Ant1	5550	37.622	5531.2008	5568.8228	---	---
11N40SISO	Ant1	5670	37.492	5651.3143	5688.8063	---	---
11N40SISO	Ant1	5755	37.529	5736.1933	5773.7223	---	---
11N40SISO	Ant1	5795	36.689	5776.7401	5813.4291	---	---
11AC20SISO	Ant1	5180	17.916	5171.0576	5188.9736	---	---
11AC20SISO	Ant1	5200	17.949	5191.0255	5208.9745	---	---
11AC20SISO	Ant1	5240	17.922	5231.0450	5248.9670	---	---
11AC20SISO	Ant1	5260	17.929	5251.0678	5268.9968	---	---
11AC20SISO	Ant1	5280	17.935	5271.0522	5288.9872	---	---
11AC20SISO	Ant1	5320	17.966	5311.0268	5328.9928	---	---
11AC20SISO	Ant1	5500	18.151	5490.9545	5509.1055	---	---
11AC20SISO	Ant1	5580	18.067	5570.9846	5589.0516	---	---
11AC20SISO	Ant1	5700	18.112	5690.9296	5709.0416	---	---
11AC20SISO	Ant1	5745	18.127	5735.9347	5754.0617	---	---
11AC20SISO	Ant1	5785	18.130	5775.9434	5794.0734	---	---
11AC20SISO	Ant1	5825	18.119	5815.9274	5834.0464	---	---
11AC40SISO	Ant1	5190	36.487	5171.8449	5208.3319	---	---



11AC40SISO	Ant1	5230	36.656	5211.7324	5248.3884	---	---
11AC40SISO	Ant1	5270	36.457	5251.8962	5288.3532	---	---
11AC40SISO	Ant1	5310	36.435	5291.8633	5328.2983	---	---
11AC40SISO	Ant1	5510	36.618	5491.7200	5528.3380	---	---
11AC40SISO	Ant1	5550	36.696	5531.6860	5568.3820	---	---
11AC40SISO	Ant1	5670	36.743	5651.6344	5688.3774	---	---
11AC40SISO	Ant1	5755	36.685	5736.6420	5773.3270	---	---
11AC40SISO	Ant1	5795	37.626	5776.1843	5813.8103	---	---
11AC80SISO	Ant1	5210	76.284	5172.1229	5248.4069	---	---
11AC80SISO	Ant1	5290	76.240	5252.2346	5328.4746	---	---
11AC80SISO	Ant1	5530	76.702	5491.7265	5568.4285	---	---
11AC80SISO	Ant1	5610	76.722	5571.7499	5648.4719	---	---
11AC80SISO	Ant1	5775	76.836	5736.6771	5813.5131	---	---
11AX20SISO	Ant1	5180	19.481	5170.3391	5189.8201	---	---
11AX20SISO	Ant1	5200	19.510	5190.3017	5209.8117	---	---
11AX20SISO	Ant1	5240	19.502	5230.3191	5249.8211	---	---
11AX20SISO	Ant1	5260	19.502	5250.3676	5269.8696	---	---
11AX20SISO	Ant1	5280	19.494	5270.3324	5289.8264	---	---
11AX20SISO	Ant1	5320	19.586	5310.2108	5329.7968	---	---
11AX20SISO	Ant1	5500	19.670	5490.1707	5509.8407	---	---
11AX20SISO	Ant1	5580	19.632	5570.1936	5589.8256	---	---
11AX20SISO	Ant1	5700	19.728	5690.1264	5709.8544	---	---
11AX20SISO	Ant1	5745	19.051	5735.5080	5754.5590	---	---
11AX20SISO	Ant1	5785	19.107	5775.4286	5794.5356	---	---
11AX20SISO	Ant1	5825	19.064	5815.4609	5834.5249	---	---
11AX40SISO	Ant1	5190	37.516	5171.3204	5208.8364	---	---
11AX40SISO	Ant1	5230	37.727	5211.2227	5248.9497	---	---
11AX40SISO	Ant1	5270	37.701	5251.2141	5288.9151	---	---
11AX40SISO	Ant1	5310	37.674	5291.2081	5328.8821	---	---



11AX40SISO	Ant1	5510	37.913	5491.0630	5528.9760	---	---
11AX40SISO	Ant1	5550	37.971	5531.0270	5568.9980	---	---
11AX40SISO	Ant1	5670	37.905	5651.1147	5689.0197	---	---
11AX40SISO	Ant1	5755	37.897	5736.0855	5773.9825	---	---
11AX40SISO	Ant1	5795	37.961	5776.0333	5813.9943	---	---
11AX80SISO	Ant1	5210	77.838	5171.3127	5249.1507	---	---
11AX80SISO	Ant1	5290	77.714	5251.4592	5329.1732	---	---
11AX80SISO	Ant1	5530	78.383	5490.9022	5569.2852	---	---
11AX80SISO	Ant1	5610	78.204	5571.1236	5649.3276	---	---
11AX80SISO	Ant1	5775	78.097	5736.0591	5814.1561	---	---

Test Graphs:





11A-Ant1-5200



11A-Ant1-5240