



Test plots B4:

11A-Ant1-5745-PASS



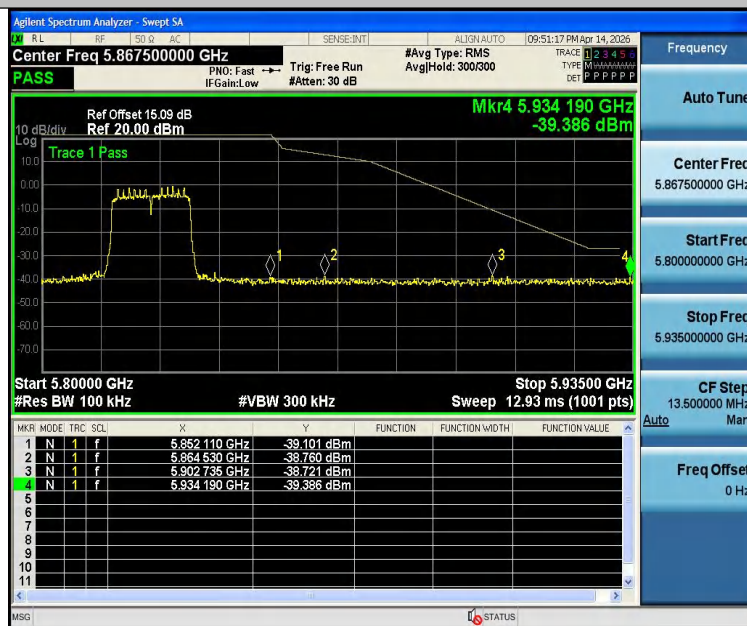
11A-Ant1-5825-PASS



11N20SISO-Ant1-5745-PASS



11N20SISO-Ant1-5825-PASS



11N40SISO-Ant1-5755-PASS



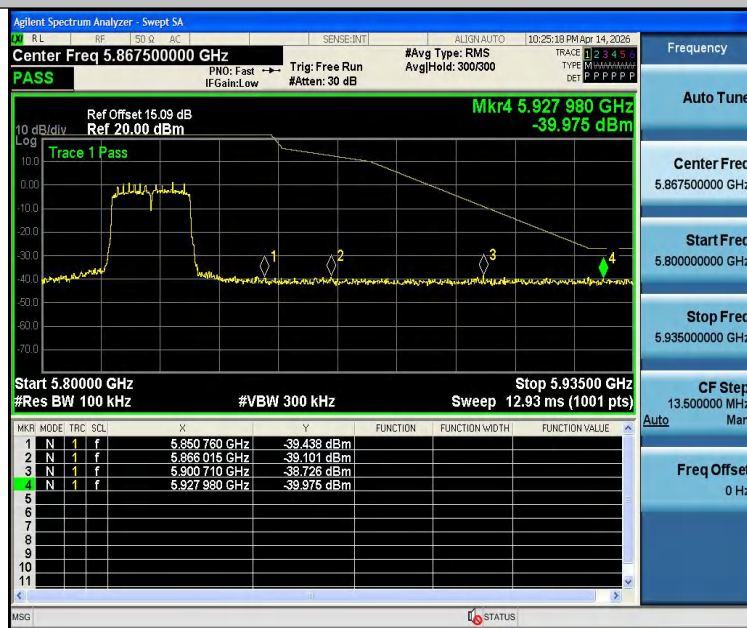
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11AC20SISO-Ant1-5745-PASS



11AC20SISO-Ant1-5825-PASS



11AC40SISO-Ant1-5755-PASS



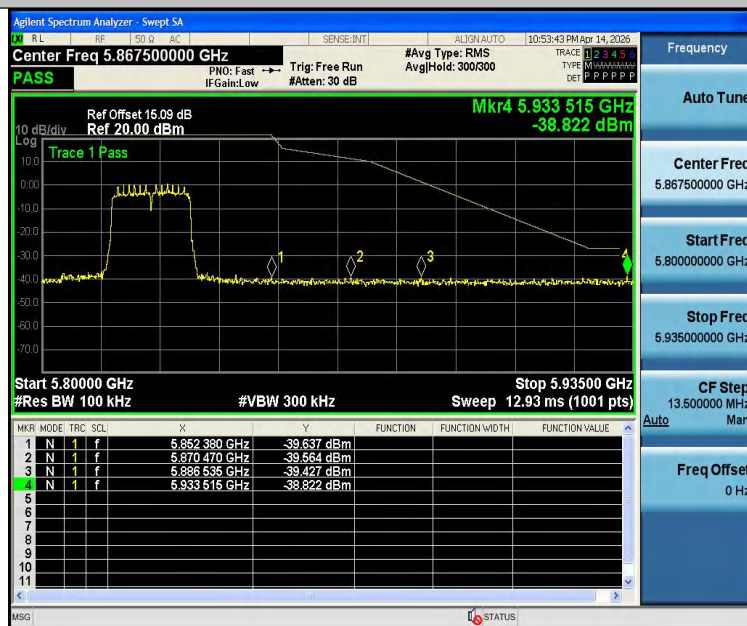
11AC40SISO-Ant1-5795-PASS



11AX20SISO-Ant1-5745-PASS



11AX20SISO-Ant1-5825-PASS



11AX40SISO-Ant1-5755-PASS



11AX40SISO-Ant1-5795-PASS





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 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:

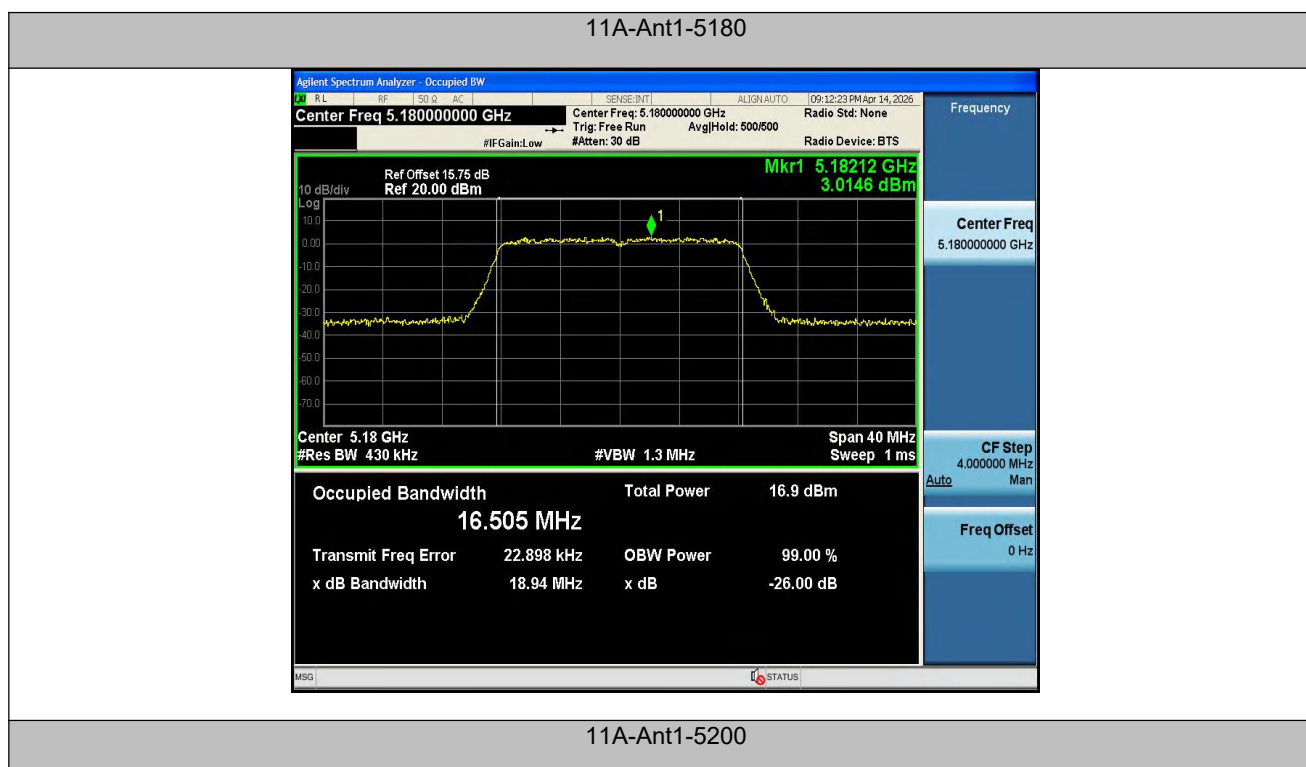
TestMode	Antenna	Frequency[MHz]	26db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5180	16.505	5171.7704	5188.2754	---	---
11A	Ant1	5200	16.494	5191.7662	5208.2602	---	---
11A	Ant1	5240	16.514	5231.7495	5248.2635	---	---
11A	Ant1	5745	16.502	5736.7751	5753.2771	---	---
11A	Ant1	5785	16.534	5776.7524	5793.2864	---	---
11A	Ant1	5825	16.514	5816.7851	5833.2991	---	---
11N20SISO	Ant1	5180	17.654	5171.1897	5188.8437	---	---
11N20SISO	Ant1	5200	17.644	5191.1789	5208.8229	---	---
11N20SISO	Ant1	5240	17.659	5231.1658	5248.8248	---	---
11N20SISO	Ant1	5745	17.662	5736.1773	5753.8393	---	---
11N20SISO	Ant1	5785	17.651	5776.1839	5793.8349	---	---
11N20SISO	Ant1	5825	17.657	5816.2024	5833.8594	---	---
11N40SISO	Ant1	5190	36.386	5171.7409	5208.1269	---	---
11N40SISO	Ant1	5230	36.210	5211.8525	5248.0625	---	---
11N40SISO	Ant1	5755	36.363	5736.7991	5773.1621	---	---
11N40SISO	Ant1	5795	36.340	5776.7477	5813.0877	---	---
11AC20SISO	Ant1	5180	17.638	5171.2039	5188.8419	---	---
11AC20SISO	Ant1	5200	17.635	5191.1874	5208.8224	---	---
11AC20SISO	Ant1	5240	17.654	5231.1648	5248.8188	---	---
11AC20SISO	Ant1	5745	17.639	5736.1918	5753.8308	---	---
11AC20SISO	Ant1	5785	17.643	5776.1873	5793.8303	---	---
11AC20SISO	Ant1	5825	17.655	5816.2033	5833.8583	---	---
11AC40SISO	Ant1	5190	36.259	5171.9616	5208.2206	---	---
11AC40SISO	Ant1	5230	36.230	5211.9400	5248.1700	---	---
11AC40SISO	Ant1	5755	36.259	5736.9983	5773.2573	---	---
11AC40SISO	Ant1	5795	36.224	5776.9297	5813.1537	---	---
11AX20SISO	Ant1	5180	17.639	5171.1986	5188.8376	---	---
11AX20SISO	Ant1	5200	17.627	5191.1968	5208.8238	---	---
11AX20SISO	Ant1	5240	17.646	5231.1751	5248.8211	---	---
11AX20SISO	Ant1	5745	17.646	5736.1888	5753.8348	---	---
11AX20SISO	Ant1	5785	17.642	5776.1859	5793.8279	---	---
11AX20SISO	Ant1	5825	17.645	5816.1872	5833.8322	---	---
11AX40SISO	Ant1	5190	36.135	5171.9377	5208.0727	---	---
11AX40SISO	Ant1	5230	36.191	5211.8356	5248.0266	---	---
11AX40SISO	Ant1	5755	36.184	5736.9390	5773.1230	---	---
11AX40SISO	Ant1	5795	36.147	5776.8828	5813.0298	---	---



minimum 6 dB bandwidth:

TestMode	Antenna	Frequency[MHz]	6db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5745	15.080	5737.480	5752.560	0.5	PASS
11A	Ant1	5785	15.120	5777.440	5792.560	0.5	PASS
11A	Ant1	5825	15.120	5817.440	5832.560	0.5	PASS
11N20SISO	Ant1	5745	15.120	5737.440	5752.560	0.5	PASS
11N20SISO	Ant1	5785	15.120	5777.440	5792.560	0.5	PASS
11N20SISO	Ant1	5825	15.080	5817.480	5832.560	0.5	PASS
11N40SISO	Ant1	5755	35.120	5737.480	5772.600	0.5	PASS
11N40SISO	Ant1	5795	35.040	5777.480	5812.520	0.5	PASS
11AC20SISO	Ant1	5745	15.120	5737.440	5752.560	0.5	PASS
11AC20SISO	Ant1	5785	15.120	5777.440	5792.560	0.5	PASS
11AC20SISO	Ant1	5825	15.120	5817.440	5832.560	0.5	PASS
11AC40SISO	Ant1	5755	35.040	5737.480	5772.520	0.5	PASS
11AC40SISO	Ant1	5795	35.040	5777.480	5812.520	0.5	PASS
11AX20SISO	Ant1	5745	16.400	5737.440	5753.840	0.5	PASS
11AX20SISO	Ant1	5785	16.400	5777.440	5793.840	0.5	PASS
11AX20SISO	Ant1	5825	16.360	5817.480	5833.840	0.5	PASS
11AX40SISO	Ant1	5755	35.120	5737.480	5772.600	0.5	PASS
11AX40SISO	Ant1	5795	35.040	5777.480	5812.520	0.5	PASS

Test Graphs:





11A-Ant1-5240



11A-Ant1-5745



11A-Ant1-5785



11A-Ant1-5825



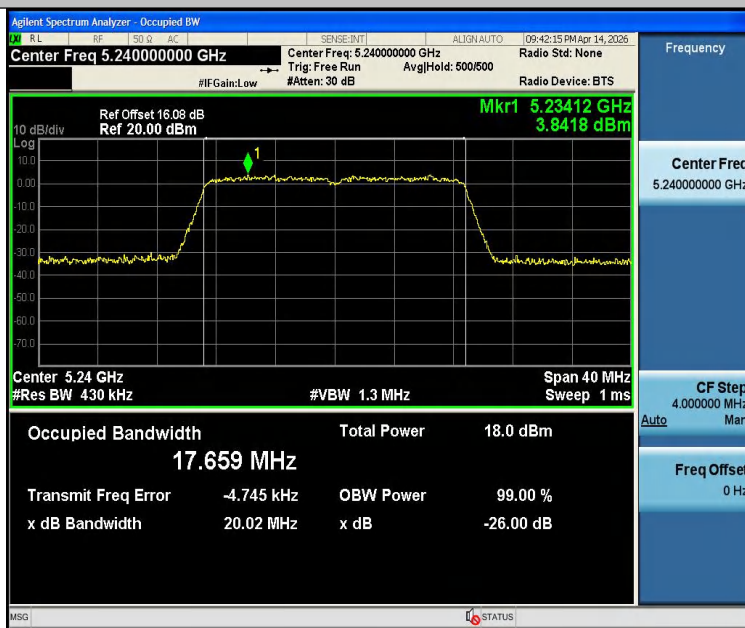
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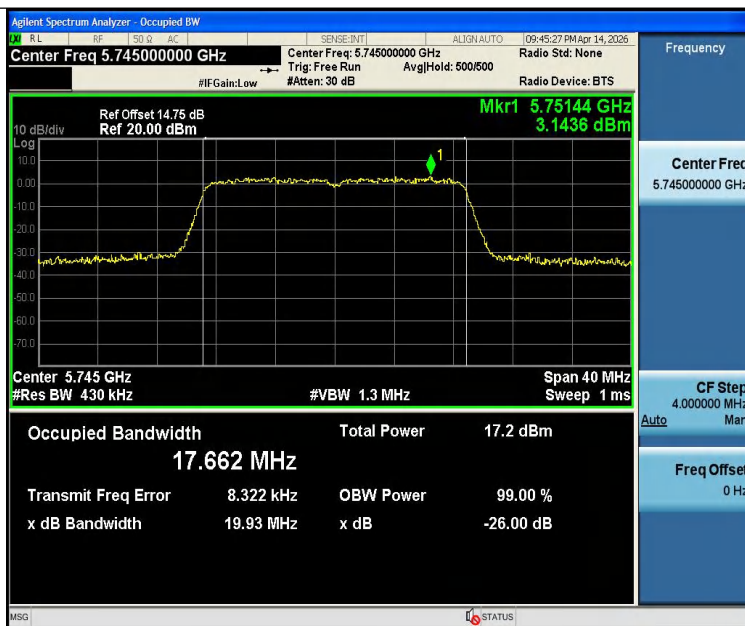
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11N20SISO-Ant1-5240



11N20SISO-Ant1-5745



11N20SISO-Ant1-5785



11N20SISO-Ant1-5825



11N40SISO-Ant1-5190



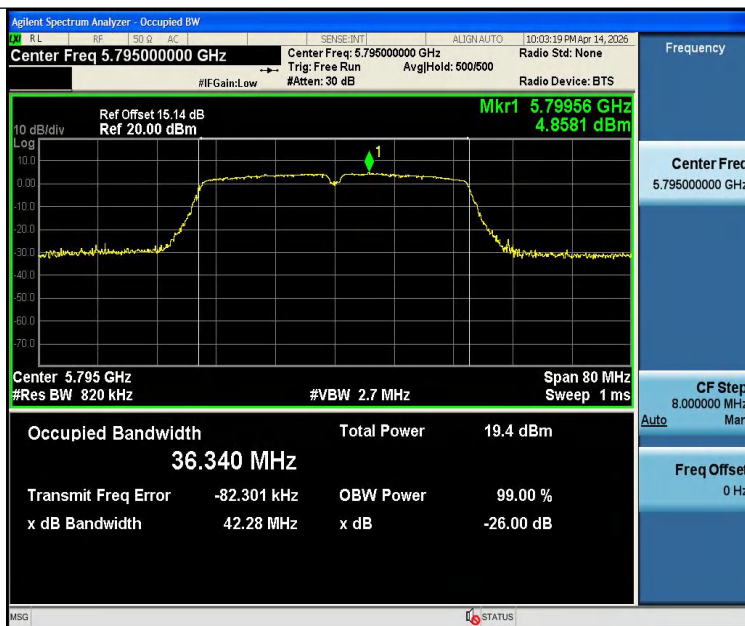
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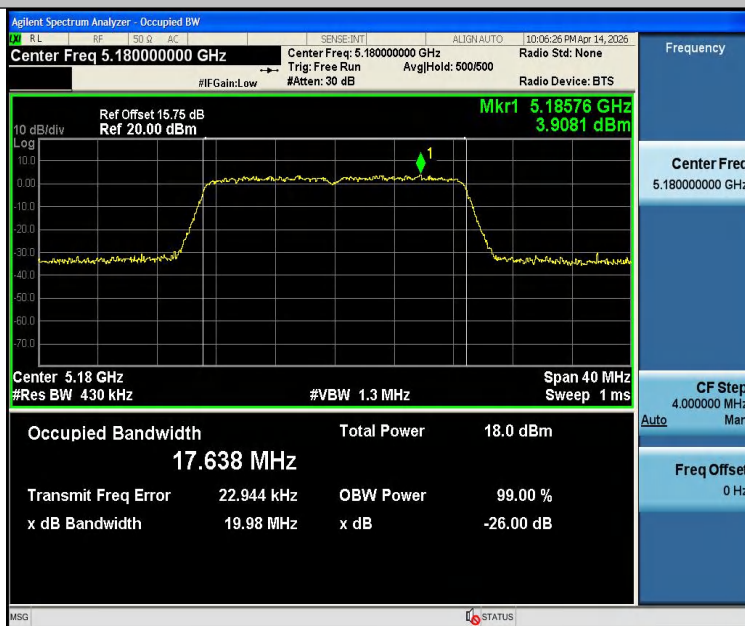
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11N40SISO-Ant1-5795



11AC20SISO-Ant1-5180



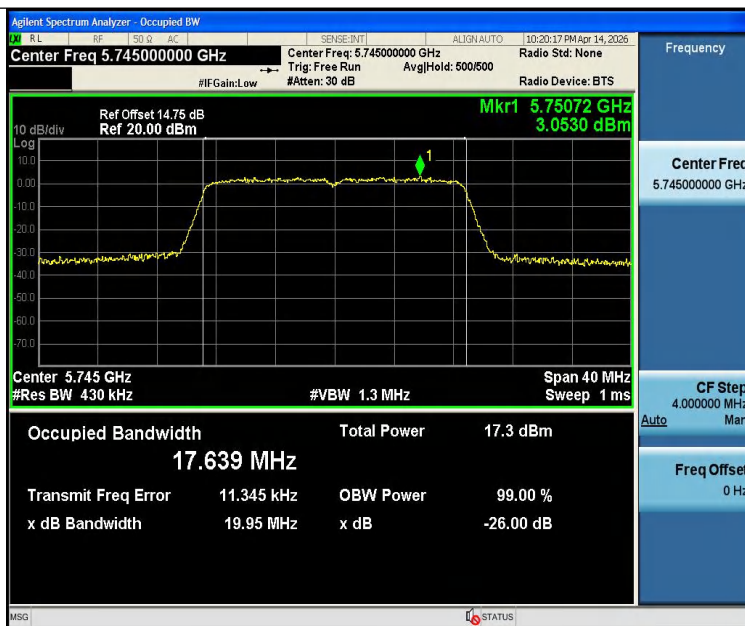
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11AC20SISO-Ant1-5240



11AC20SISO-Ant1-5745



11AC20SISO-Ant1-5785



11AC20SISO-Ant1-5825



11AC40SISO-Ant1-5190



11AC40SISO-Ant1-5230



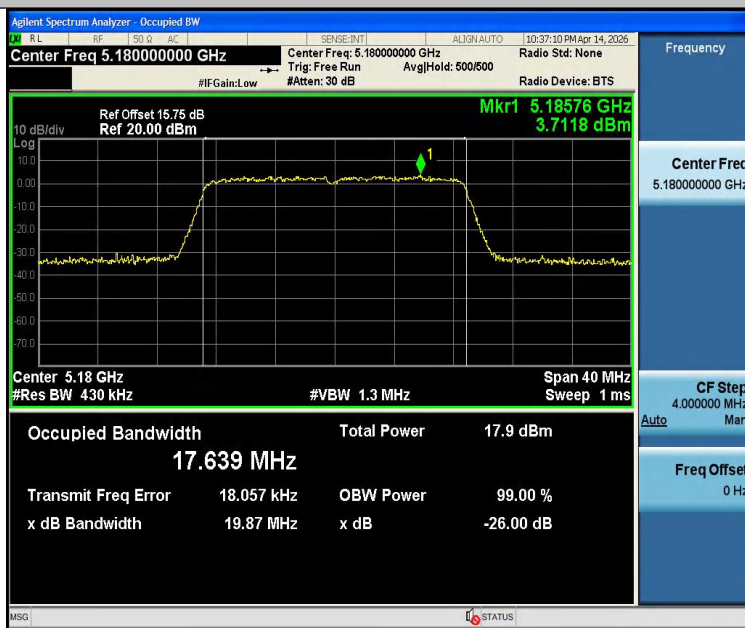
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11AC40SISO-Ant1-5795



11AX20SISO-Ant1-5180



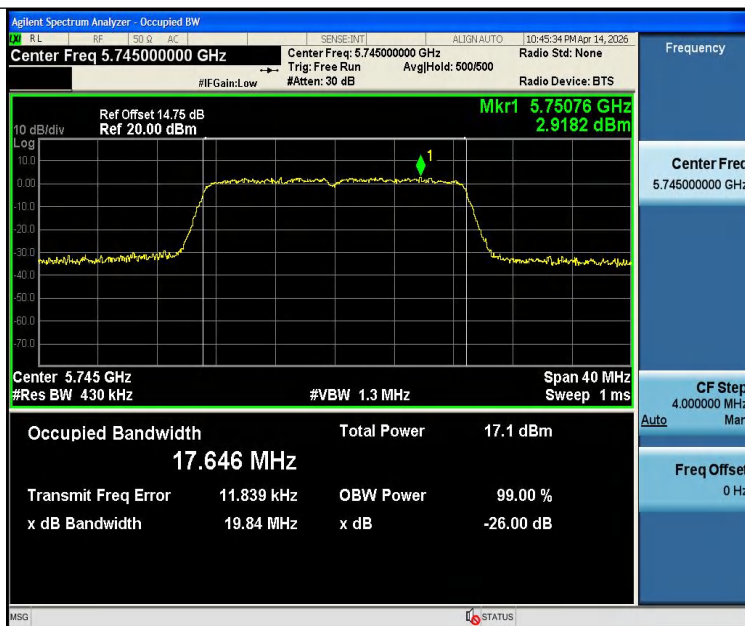
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11AX20SISO-Ant1-5745



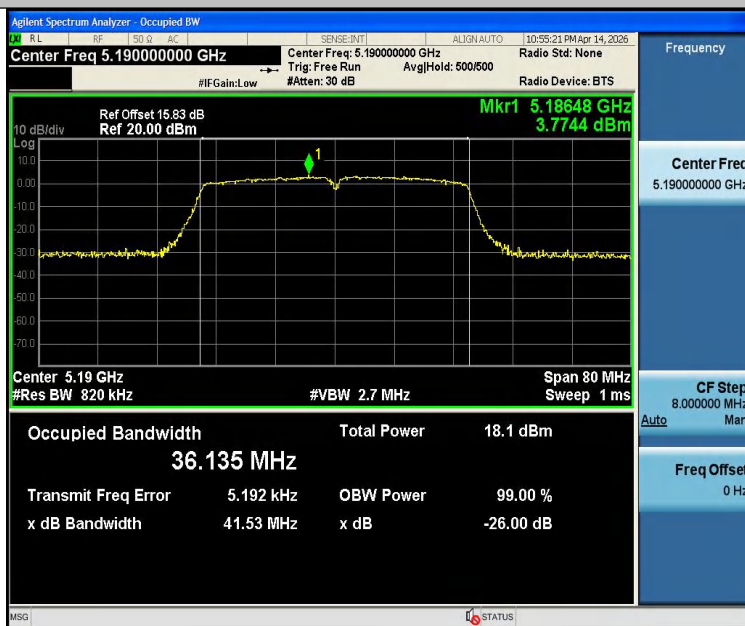
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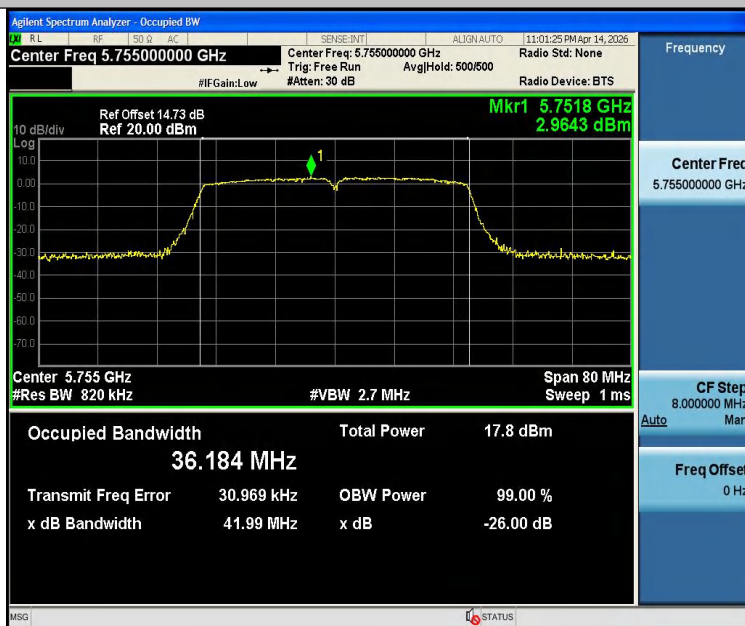
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11AX40SISO-Ant1-5230



11AX40SISO-Ant1-5755



11AX40SISO-Ant1-5795

