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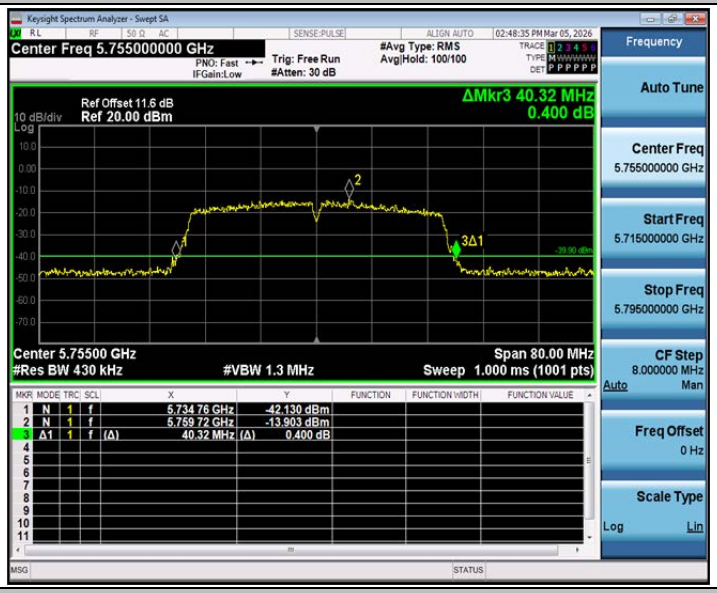
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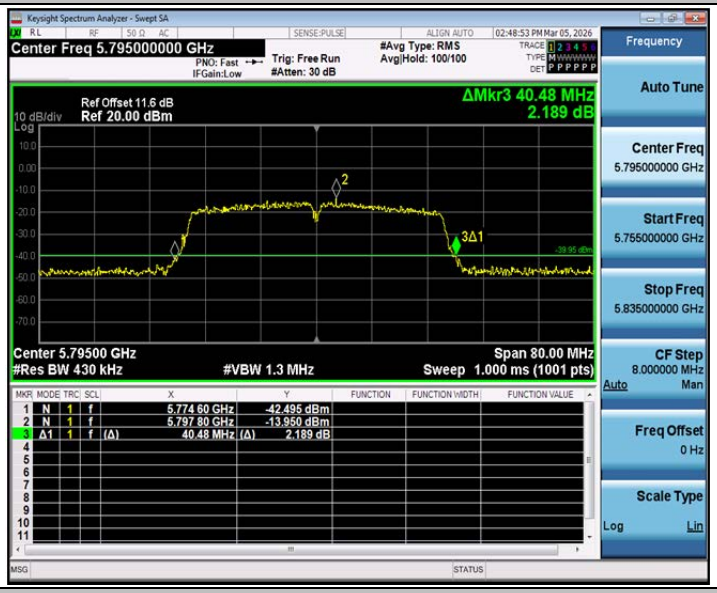
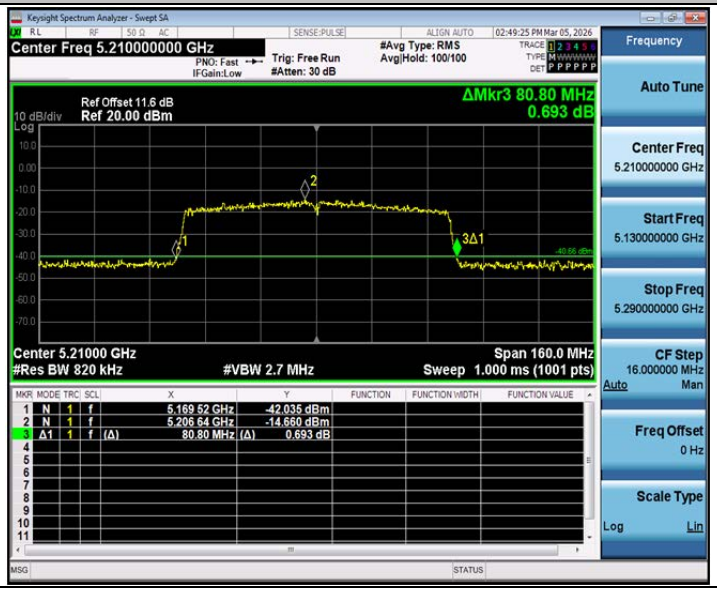

11AC80SISO_Ant1_5210


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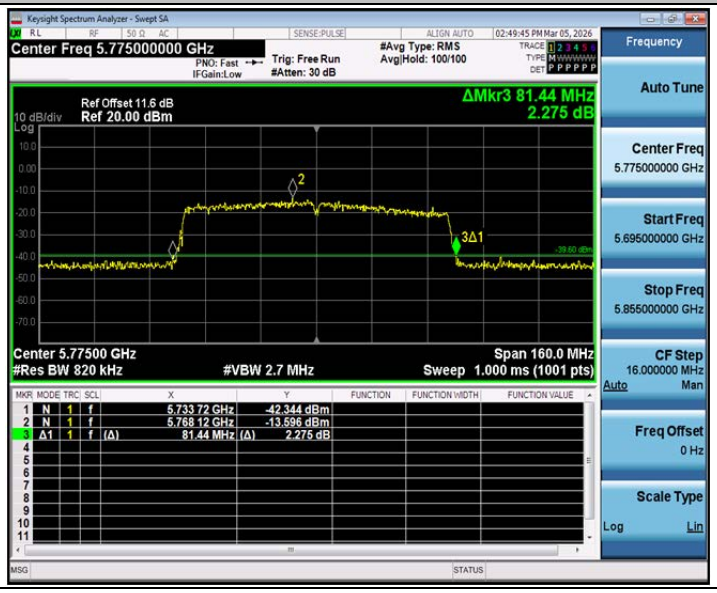


Occupied channel bandwidth

Test Mode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5180	17.678	5171.3420	5189.0200	---	---
11A	Ant1	5200	17.445	5191.4138	5208.8588	---	---
11A	Ant1	5240	17.788	5231.3230	5249.1110	---	---
11A	Ant1	5745	16.981	5736.5593	5753.5403	---	---
11A	Ant1	5785	17.043	5776.5053	5793.5483	---	---
11A	Ant1	5825	17.033	5816.5464	5833.5794	---	---
11N20SISO	Ant1	5180	19.147	5170.7609	5189.9079	---	---
11N20SISO	Ant1	5200	18.952	5190.7925	5209.7445	---	---
11N20SISO	Ant1	5240	20.465	5230.3019	5250.7669	---	---
11N20SISO	Ant1	5745	17.856	5736.0733	5753.9293	---	---
11N20SISO	Ant1	5785	18.883	5775.5883	5794.4713	---	---
11N20SISO	Ant1	5825	17.841	5816.0814	5833.9224	---	---
11N40SISO	Ant1	5190	38.641	5170.8518	5209.4928	---	---
11N40SISO	Ant1	5230	27.760	5190.1774	5217.9374	---	---
11N40SISO	Ant1	5755	36.350	5736.8540	5773.2040	---	---
11N40SISO	Ant1	5795	36.399	5776.8298	5813.2288	---	---
11AC20SISO	Ant1	5180	18.605	5170.8720	5189.4770	---	---
11AC20SISO	Ant1	5200	19.884	5190.5871	5210.4711	---	---
11AC20SISO	Ant1	5240	18.611	5230.8435	5249.4545	---	---
11AC20SISO	Ant1	5745	17.812	5736.1454	5753.9574	---	---
11AC20SISO	Ant1	5785	17.856	5776.1191	5793.9751	---	---
11AC20SISO	Ant1	5825	17.837	5816.1158	5833.9528	---	---
11AC40SISO	Ant1	5190	37.394	5171.5674	5208.9614	---	---
11AC40SISO	Ant1	5230	37.492	5211.4747	5248.9667	---	---
11AC40SISO	Ant1	5755	36.424	5736.8503	5773.2743	---	---
11AC40SISO	Ant1	5795	36.484	5776.8139	5813.2979	---	---
11AC80SISO	Ant1	5210	78.200	5171.3349	5249.5349	---	---
11AC80SISO	Ant1	5775	76.516	5736.7467	5813.2627	---	---

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

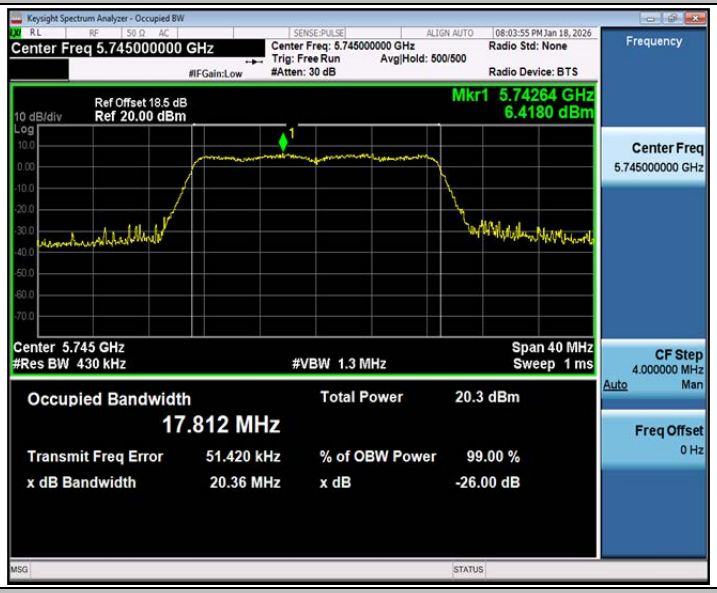
11N40SISO_Ant1_5755


11N40SISO_Ant1_5795

11AC20SISO_Ant1_5180

11AC20SISO_Ant1_5200


11AC20SISO_Ant1_5240

11AC20SISO_Ant1_5745

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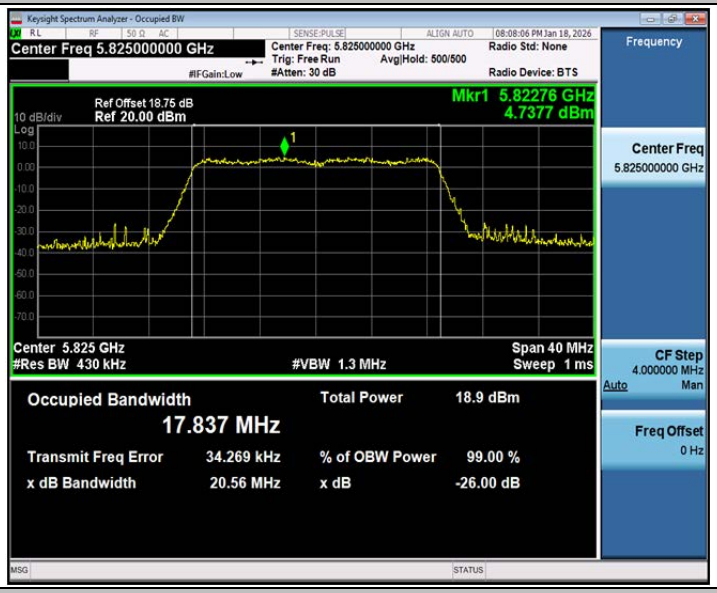
11AC20SISO_Ant1_5825

11AC40SISO_Ant1_5190

11AC40SISO_Ant1_5230


11AC40SISO_Ant1_5755

11AC40SISO_Ant1_5795

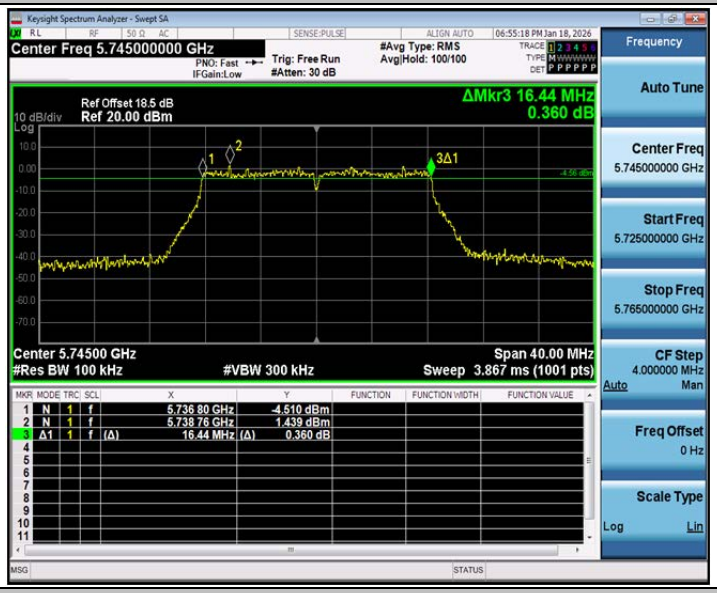
11AC80SISO_Ant1_5210


11AC80SISO_Ant1_5775

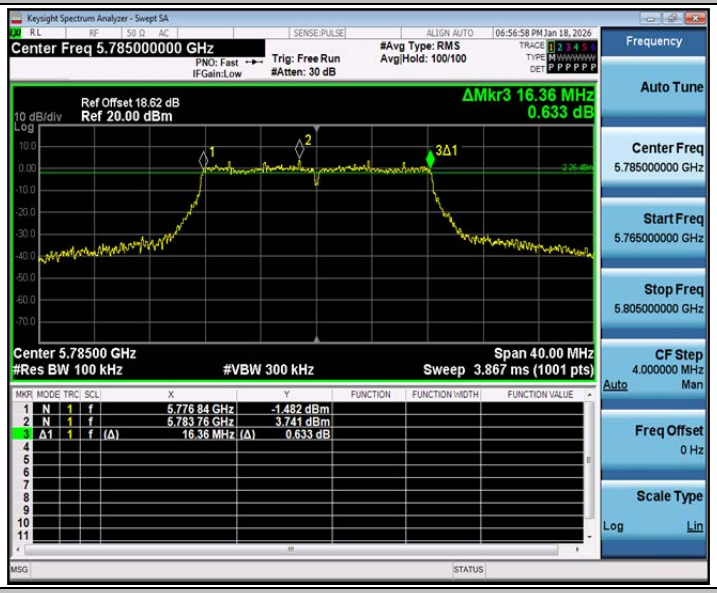

Min emission bandwidth

Test Mode	Antenna	Frequency[MHz]	6dB EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5745	16.440	5736.800	5753.240	0.5	PASS
11A	Ant1	5785	16.360	5776.840	5793.200	0.5	PASS
11A	Ant1	5825	16.400	5816.840	5833.240	0.5	PASS
11N20SISO	Ant1	5745	17.560	5736.200	5753.760	0.5	PASS
11N20SISO	Ant1	5785	18.000	5775.880	5793.880	0.5	PASS
11N20SISO	Ant1	5825	17.600	5816.200	5833.800	0.5	PASS
11N40SISO	Ant1	5755	35.760	5736.840	5772.600	0.5	PASS
11N40SISO	Ant1	5795	36.000	5777.160	5813.160	0.5	PASS
11AC20SISO	Ant1	5745	17.520	5736.280	5753.800	0.5	PASS
11AC20SISO	Ant1	5785	17.480	5776.280	5793.760	0.5	PASS
11AC20SISO	Ant1	5825	17.080	5816.480	5833.560	0.5	PASS
11AC40SISO	Ant1	5755	35.440	5737.160	5772.600	0.5	PASS
11AC40SISO	Ant1	5795	35.200	5777.480	5812.680	0.5	PASS
11AC80SISO	Ant1	5775	76.320	5736.920	5813.240	0.5	PASS

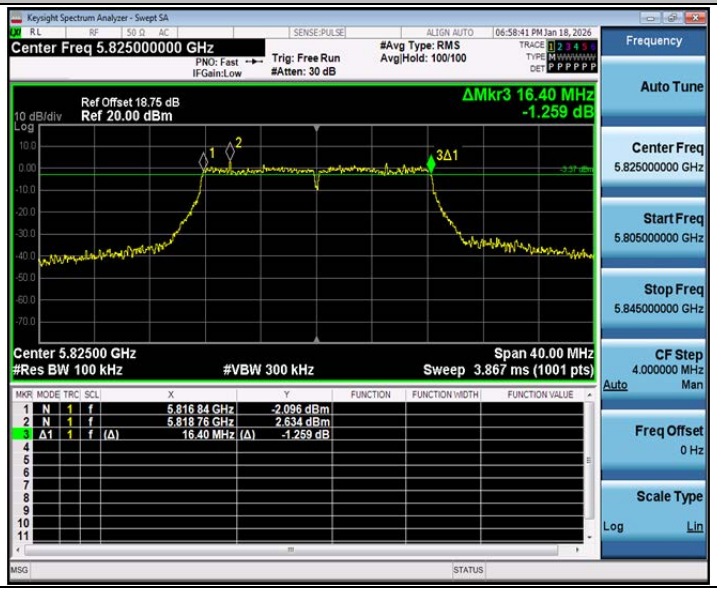
11A_Ant1_5745



11A_Ant1_5785



11A_Ant1_5825



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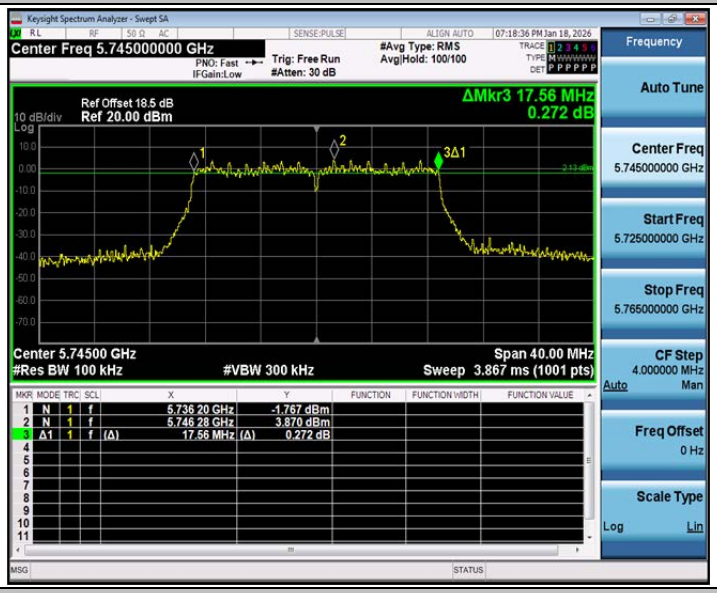
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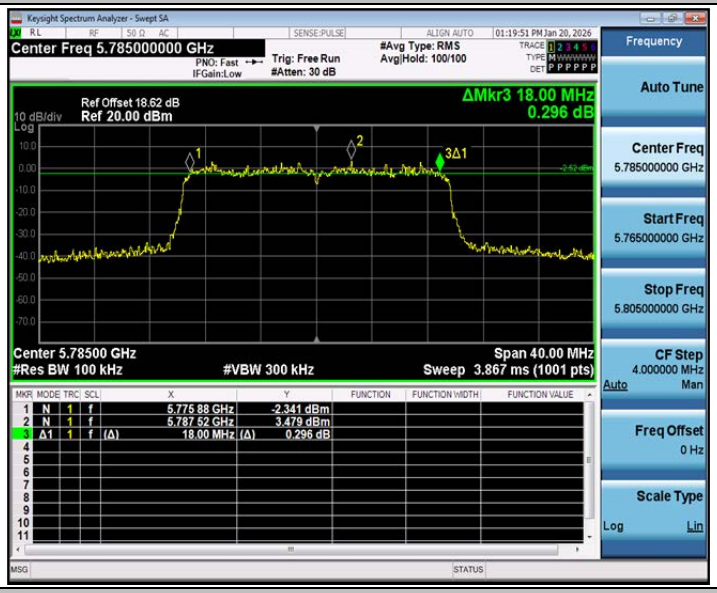
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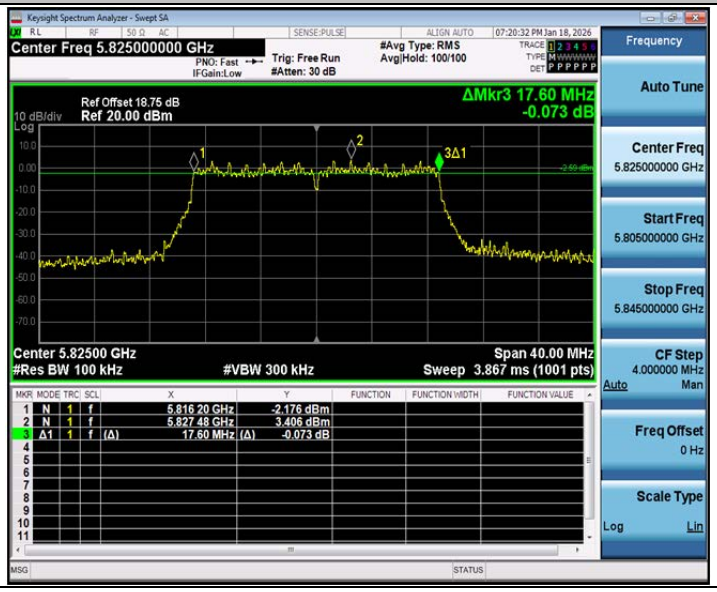

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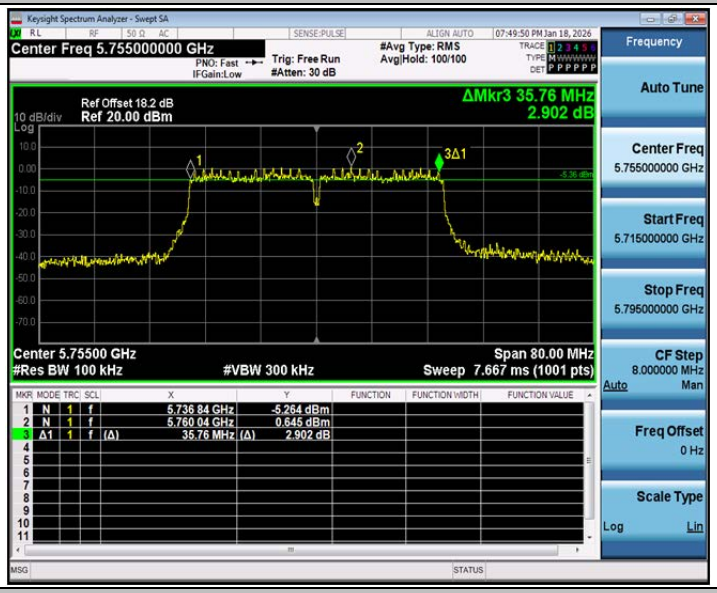
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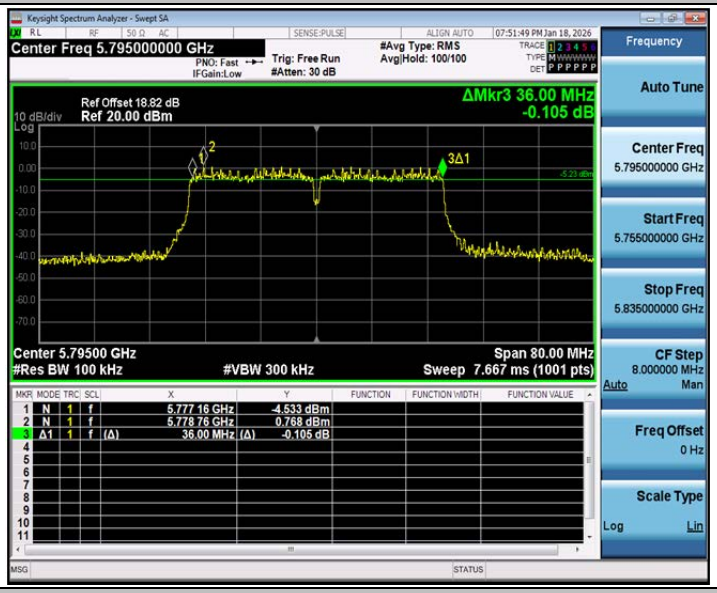
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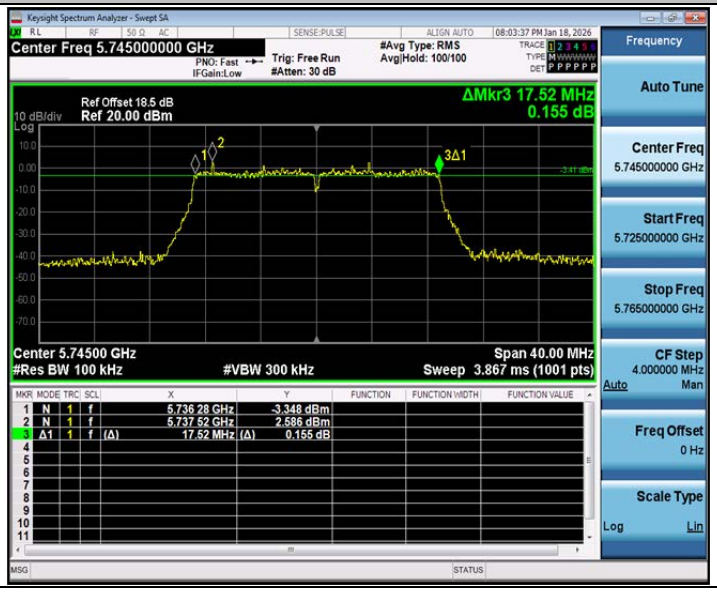

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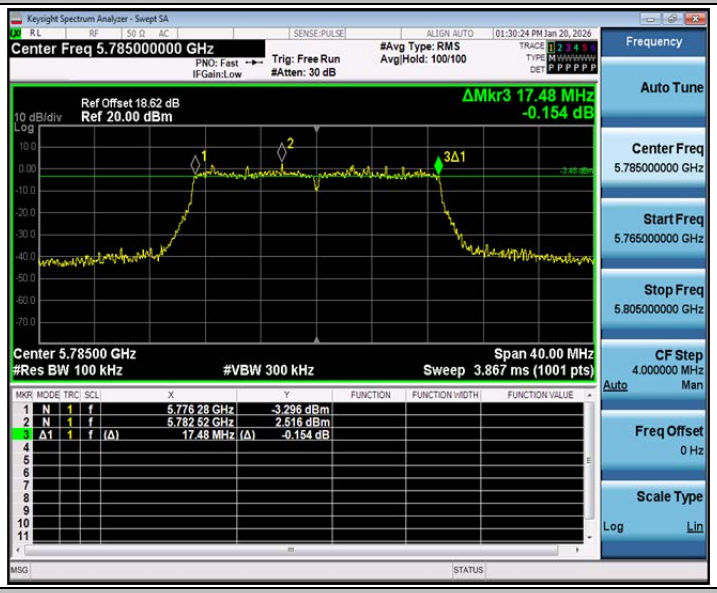
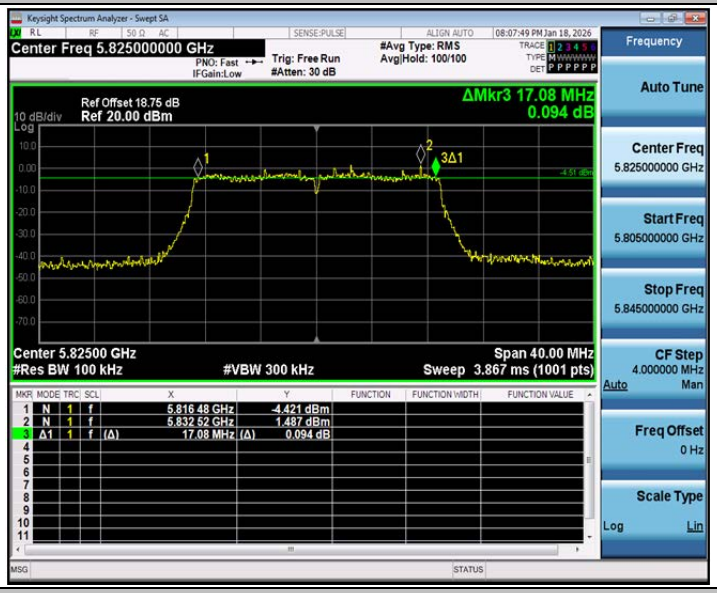
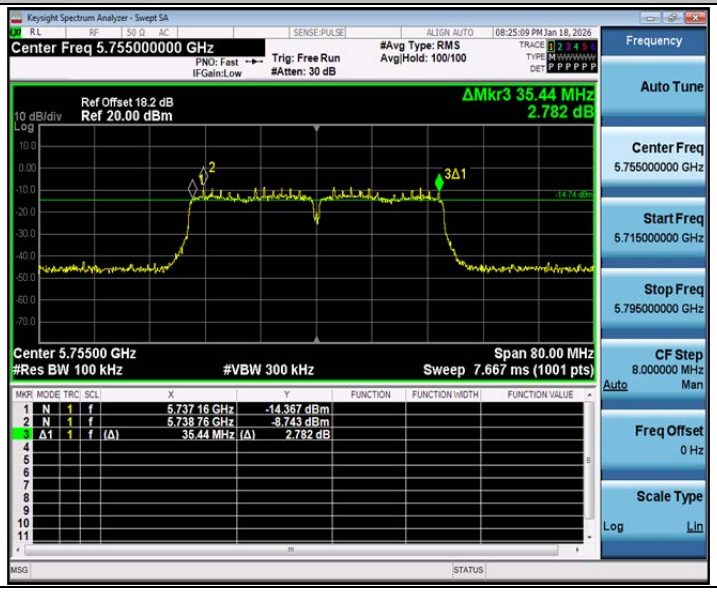
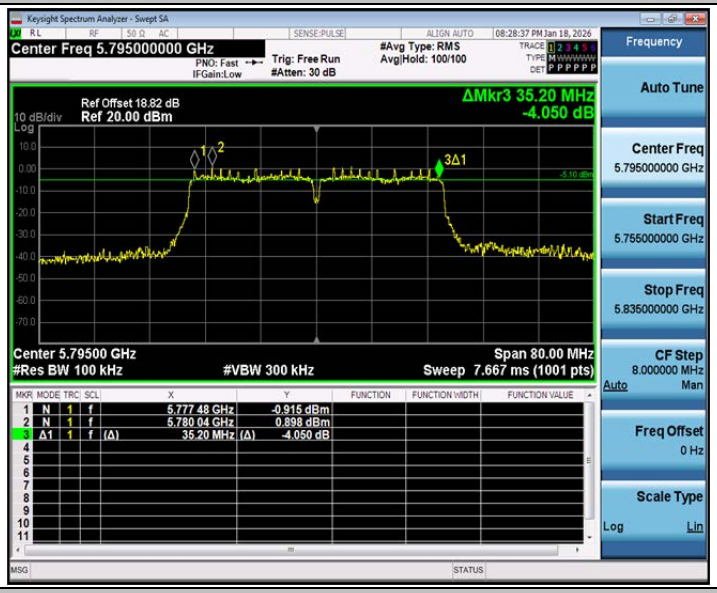
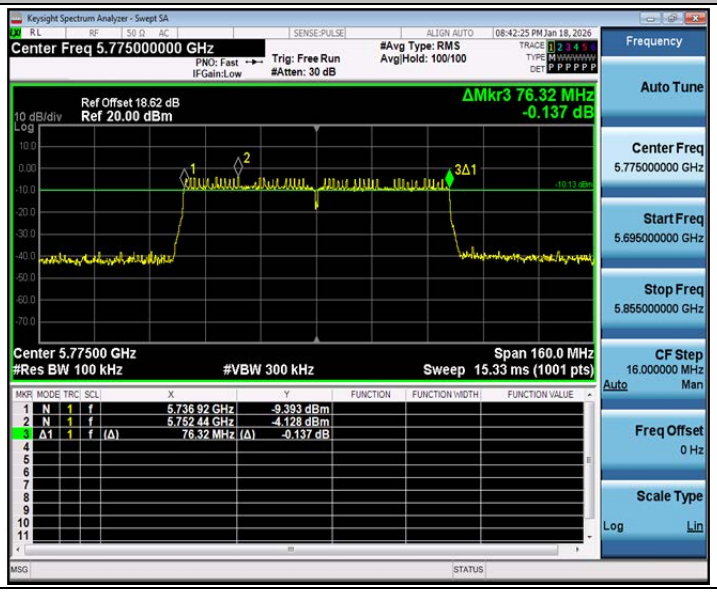

11AC20SISO_Ant1_5825

11AC40SISO_Ant1_5755


11AC40SISO_Ant1_5795

11AC80SISO_Ant1_5775


3.4 Conducted Output Power

3.4.1 Limit

FCC Part15, Subpart E (15.407)			
Section	Test Item	Limit	Frequency Range (MHz)
15.407(a)	Conducted Output Power	Master device: 1 Watt (30 dBm) Client device: 250 mW (23.98 dBm)	5150-5250
		250 mW (23.98 dBm)	5250-5350
		250 mW (23.98 dBm)	5470-5725
		1 Watt (30dBm)	5725-5850

Note:

a. For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 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.

b. For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10log B, where B is the 26dB Bandwidth in megahertz.

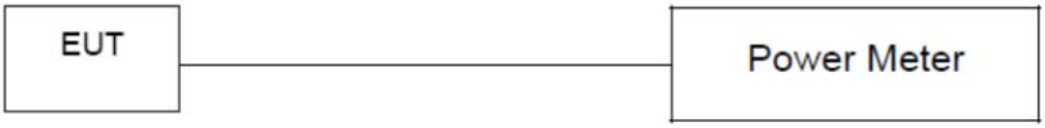
3.4.2 Test Procedure

Test Method	
●Conducted Measurement	○Radiated Measurement
Test Channels	
●Lowest, Middle and Highest Channel	○ Lowest and Highest Channel
Environmental conditions	
●Normal	○Normal and Extreme
Note:●:Test ○:No Test	

a) The EUT was directly connected to the power meter and antenna output port as show in the block diagram below.

b) Test was performed in accordance with method of FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.

3.4.3 Test Setup



3.4.4 Table of Parameters of Text Software Setting

UNII-1			
Test Software Version	adb.exe		
Frequency (MHz)	5180	5200	5240
IEEE 802.11a	Default	Default	Default
IEEE 802.11n20	Default	Default	Default
IEEE 802.11ac20	Default	Default	Default
Frequency (MHz)	5190	5230	
IEEE 802.11n40	Default	Default	
IEEE 802.11ac40	Default	Default	
Frequency (MHz)	5210		
IEEE 802.11ac80	Default		

UNII-3			
Test Software Version	adb.exe		
Frequency (MHz)	5745	5785	5825
IEEE 802.11a	Default	Default	Default
IEEE 802.11n20	Default	Default	Default
IEEE 802.11ac20	Default	Default	Default
Frequency (MHz)	5755	5795	
IEEE 802.11n40	Default	Default	
IEEE 802.11ac40	Default	Default	
Frequency (MHz)	5775		
IEEE 802.11ac80	Default		

3.4.5 The Result

Test Mode	Antenna	Frequency[MHz]	Result [dBm]	Limit [dBm]	Verdict
11A	Ant1	5180	15.64	≤23.98	PASS
11A	Ant1	5200	15.10	≤23.98	PASS
11A	Ant1	5240	15.28	≤23.98	PASS
11A	Ant1	5745	13.36	≤30.00	PASS
11A	Ant1	5785	15.51	≤30.00	PASS
11A	Ant1	5825	14.34	≤30.00	PASS
11N20SISO	Ant1	5180	15.64	≤23.98	PASS
11N20SISO	Ant1	5200	16.18	≤23.98	PASS
11N20SISO	Ant1	5240	16.14	≤23.98	PASS
11N20SISO	Ant1	5745	14.60	≤30.00	PASS
11N20SISO	Ant1	5785	14.42	≤30.00	PASS
11N20SISO	Ant1	5825	15.00	≤30.00	PASS
11N40SISO	Ant1	5190	13.01	≤23.98	PASS
11N40SISO	Ant1	5230	13.18	≤23.98	PASS
11N40SISO	Ant1	5755	14.01	≤30.00	PASS
11N40SISO	Ant1	5795	14.17	≤30.00	PASS
11AC20SISO	Ant1	5180	15.79	≤23.98	PASS
11AC20SISO	Ant1	5200	16.46	≤23.98	PASS
11AC20SISO	Ant1	5240	15.60	≤23.98	PASS
11AC20SISO	Ant1	5745	12.79	≤30.00	PASS
11AC20SISO	Ant1	5785	13.42	≤30.00	PASS
11AC20SISO	Ant1	5825	12.36	≤30.00	PASS
11AC40SISO	Ant1	5190	14.95	≤23.98	PASS
11AC40SISO	Ant1	5230	16.68	≤23.98	PASS
11AC40SISO	Ant1	5755	14.32	≤30.00	PASS
11AC40SISO	Ant1	5795	14.82	≤30.00	PASS
11AC80SISO	Ant1	5210	16.42	≤23.98	PASS
11AC80SISO	Ant1	5775	12.81	≤30.00	PASS

Note: The duty cycle factor and line loss are compensated in the average conducted output power.

3.5 Power Spectral Density

3.5.1 Limit

FCC Part15, Subpart E (15.407)			
Section	Test Item	Limit	Frequency Range (MHz)
15.407(a)	Power Spectral Density	Master device: 17 dBm/MHz Client device: 11 dBm/MHz	5150-5250
		11 dBm/MHz	5250-5350
		11 dBm/MHz	5470-5725
		30 dBm/500 kHz	5725-5850

Note:

1. For UNII-3, according to KDB publication 789033 D02 General UNII Test Procedures New Rules v02r01, section II.F.5., it is acceptable to set RBW at 300kHz and VBW at 1500kHz if the spectrum analyzer does not have 500 kHz RBW. Then, add 10 log (500 kHz/300 kHz) to the measured result, i.e. 2.22 dB.
2. During the test of U-NII 3 PSD, the measurement result with RBW=300kHz has been added 2.22 dB by compensating offset, offset=cable loss+duty factor+10log(500kHz/300kHz).

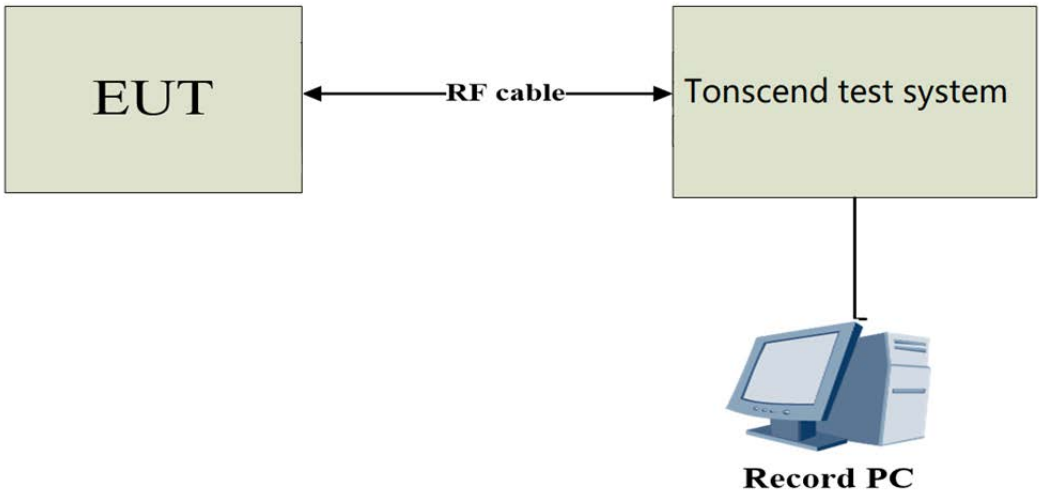
3.5.2 Test Procedure

Test Method	
●Conducted Measurement	○Radiated Measurement
Test Channels	
●Lowest, Middle and Highest Channel	○ Lowest and Highest Channel
Environmental conditions	
●Normal	○Normal and Extreme
Note:●:Test ○:No Test	

a) The EUT was directly connected to the tonscend test system and antenna output port as show in the block diagram below. Spectrum analyser settings as following:

Centre Frequency	The centre frequency of the channel under test
RBW	= 1 MHz (Band1/2/3); = 300kHz (Band4)
VBW	≥3 x RBW
Frequency span	2 x Nominal Channel Bandwidth
Detector Mode	RMS
Trace Mode	Max Hold
Sweep Time	Auto Couple

3.5.3 Test Setup



3.5.4 The Result

Test Mode	Antenna	Frequency[MHz]	Result [dBm/MHz]	Limit[dBm/MHz]	Verdict
11A	Ant1	5180	4.84	≤11.00	PASS
11A	Ant1	5200	4.52	≤11.00	PASS
11A	Ant1	5240	4.64	≤11.00	PASS
11N20SISO	Ant1	5180	4.67	≤11.00	PASS
11N20SISO	Ant1	5200	5.21	≤11.00	PASS
11N20SISO	Ant1	5240	5.14	≤11.00	PASS
11N40SISO	Ant1	5190	-0.95	≤11.00	PASS
11N40SISO	Ant1	5230	2.64	≤11.00	PASS
11AC20SISO	Ant1	5180	4.64	≤11.00	PASS
11AC20SISO	Ant1	5200	5.52	≤11.00	PASS
11AC20SISO	Ant1	5240	4.70	≤11.00	PASS
11AC40SISO	Ant1	5190	0.93	≤11.00	PASS
11AC40SISO	Ant1	5230	2.21	≤11.00	PASS
11AC80SISO	Ant1	5210	-1.22	≤11.00	PASS

Test Mode	Antenna	Frequency[MHz]	Result [dBm/500kHz]	Limit[dBm/500kHz]	Verdict
11A	Ant1	5745	-0.26	≤30.00	PASS
11A	Ant1	5785	1.95	≤30.00	PASS
11A	Ant1	5825	0.97	≤30.00	PASS
11N20SISO	Ant1	5745	1.59	≤30.00	PASS
11N20SISO	Ant1	5785	0.63	≤30.00	PASS
11N20SISO	Ant1	5825	1.80	≤30.00	PASS
11N40SISO	Ant1	5755	-1.45	≤30.00	PASS
11N40SISO	Ant1	5795	-1.50	≤30.00	PASS
11AC20SISO	Ant1	5745	-0.35	≤30.00	PASS
11AC20SISO	Ant1	5785	-0.39	≤30.00	PASS
11AC20SISO	Ant1	5825	-1.24	≤30.00	PASS
11AC40SISO	Ant1	5755	-2.71	≤30.00	PASS
11AC40SISO	Ant1	5795	-2.23	≤30.00	PASS
11AC80SISO	Ant1	5775	-7.15	≤30.00	PASS

Note: The Duty Cycle Factor and line loss are compensated in the test system

For UNII-3, according to KDB publication 789033 D02 General UNII Test Procedures New Rules v02r01, section II.F.5., it is acceptable to set RBW at 300kHz and VBW at 1500kHz if the spectrum analyzer does not have 500 kHz RBW. Then, add 10 log (500 kHz/300 kHz) to the measured result, i.e. 2.22 dB.

During the test of U-NII 3 PSD, the measurement result with RBW=300kHz has been added 2.22 dB by compensating offset, offset=cable loss+duty cycle factor+10log(500kHz/300kHz).

11A_Ant1_5180

11A_Ant1_5200

11A_Ant1_5240

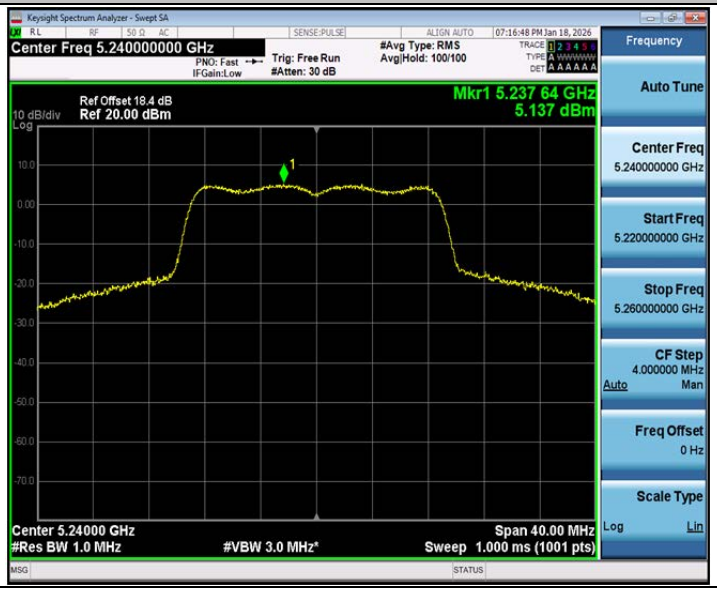

11A_Ant1_5745

11A_Ant1_5785

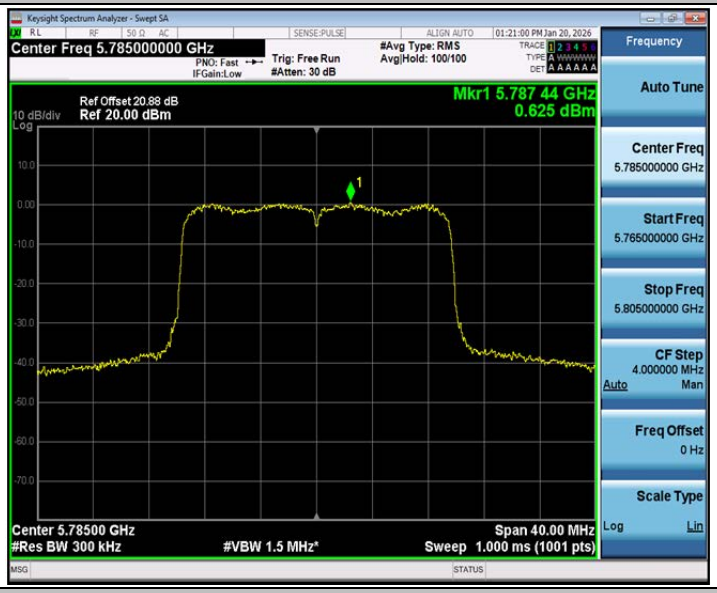
11A_Ant1_5825

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

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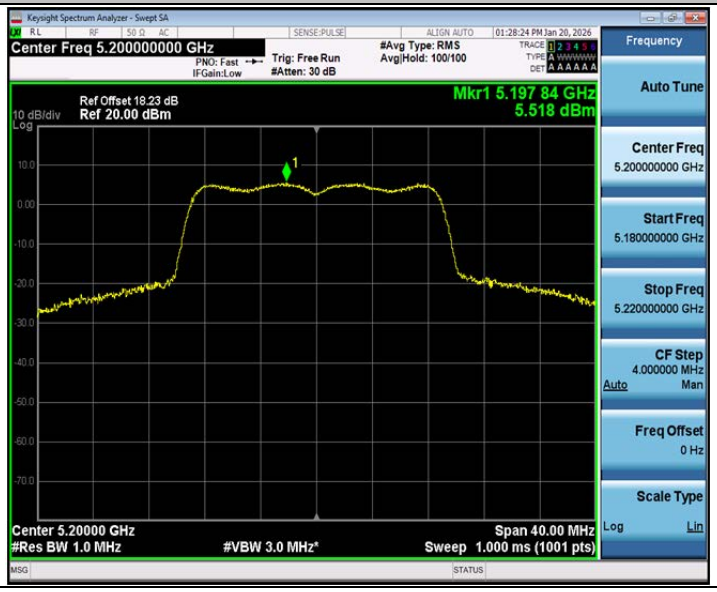

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11AC40SISO_Ant1_5230


11AC40SISO_Ant1_5755

11AC40SISO_Ant1_5795

11AC80SISO_Ant1_5210


11AC80SISO_Ant1_5775


Statement

1. The report is invalid without the official seal or special seal of Shenzhen Haiyun Standard Technical Co., Ltd. (hereinafter referred to as the unit).
2. The report is invalid without the signature of the approver.
3. The report is invalid if altered arbitrarily.
4. The report shall not be partially copied without the written approval of the unit.
5. The reported test results are only valid for the tested samples.
6. If there is any objection to the test report, it shall be submitted to the test unit within 15 days from the date of receiving the report, and the overdue shall not be accepted.

Shenzhen Haiyun Standard Technical Co., Ltd.

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(END OF REPORT)