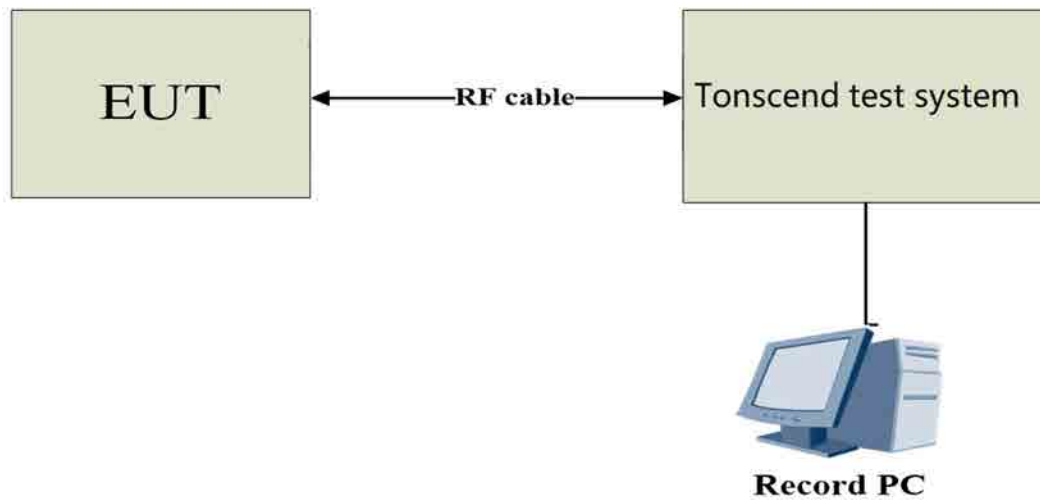


3.3.3 Test Setup



3.3.4 The Result

Conducted Spurious Emission

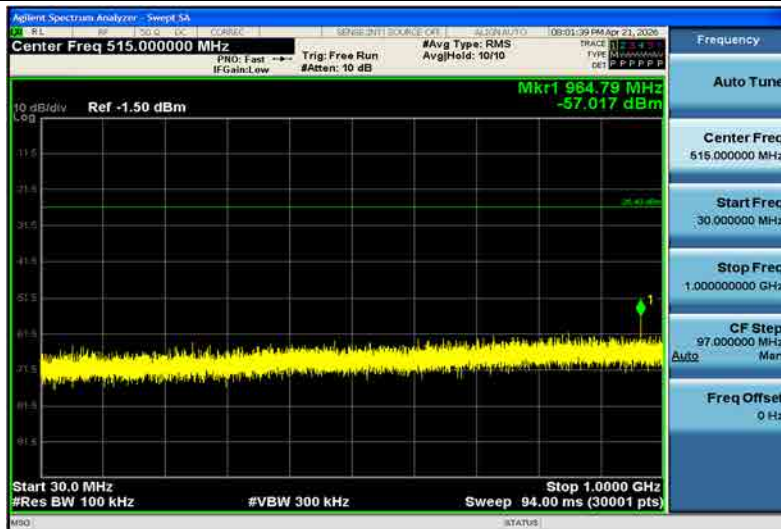
TestMode	Antenna	Frequency[MHz]	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	0~Reference	3.60	3.60	---	PASS
11B	Ant1	2412	30~1000	3.60	-57.02	≤-26.4	PASS
11B	Ant1	2412	1000~26500	3.60	-34.74	≤-26.4	PASS
11B	Ant1	2437	0~Reference	2.62	2.62	---	PASS
11B	Ant1	2437	30~1000	2.62	-58.61	≤-27.38	PASS
11B	Ant1	2437	1000~26500	2.62	-35.34	≤-27.38	PASS
11B	Ant1	2462	0~Reference	0.85	0.85	---	PASS
11B	Ant1	2462	30~1000	0.85	-58.4	≤-29.15	PASS
11B	Ant1	2462	1000~26500	0.85	-35.15	≤-29.15	PASS
11G	Ant1	2412	0~Reference	-4.00	-4.00	---	PASS
11G	Ant1	2412	30~1000	-4.00	-60.89	≤-34	PASS
11G	Ant1	2412	1000~26500	-4.00	-34.67	≤-34	PASS
11G	Ant1	2437	0~Reference	-3.01	-3.01	---	PASS
11G	Ant1	2437	30~1000	-3.01	-61.83	≤-33.01	PASS
11G	Ant1	2437	1000~26500	-3.01	-44.9	≤-33.01	PASS
11G	Ant1	2462	0~Reference	-3.35	-3.35	---	PASS
11G	Ant1	2462	30~1000	-3.35	-60.81	≤-33.35	PASS
11G	Ant1	2462	1000~26500	-3.35	-34.69	≤-33.35	PASS
11N20SISO	Ant1	2412	0~Reference	-3.79	-3.79	---	PASS
11N20SISO	Ant1	2412	30~1000	-3.79	-61.65	≤-33.79	PASS
11N20SISO	Ant1	2412	1000~26500	-3.79	-35.02	≤-33.79	PASS
11N20SISO	Ant1	2437	0~Reference	-2.83	-2.83	---	PASS
11N20SISO	Ant1	2437	30~1000	-2.83	-61.05	≤-32.83	PASS
11N20SISO	Ant1	2437	1000~26500	-2.83	-34.19	≤-32.83	PASS
11N20SISO	Ant1	2462	0~Reference	-2.84	-2.84	---	PASS
11N20SISO	Ant1	2462	30~1000	-2.84	-60.56	≤-32.84	PASS
11N20SISO	Ant1	2462	1000~26500	-2.84	-34.73	≤-32.84	PASS
11N40SISO	Ant1	2422	0~Reference	-6.26	-6.26	---	PASS
11N40SISO	Ant1	2422	30~1000	-6.26	-61.21	≤-36.26	PASS
11N40SISO	Ant1	2422	1000~26500	-6.26	-44.35	≤-36.26	PASS
11N40SISO	Ant1	2437	0~Reference	-5.17	-5.17	---	PASS
11N40SISO	Ant1	2437	30~1000	-5.17	-61.38	≤-35.17	PASS
11N40SISO	Ant1	2437	1000~26500	-5.17	-44.79	≤-35.17	PASS
11N40SISO	Ant1	2452	0~Reference	-6.08	-6.08	---	PASS
11N40SISO	Ant1	2452	30~1000	-6.08	-61.28	≤-36.08	PASS
11N40SISO	Ant1	2452	1000~26500	-6.08	-44.25	≤-36.08	PASS
11AX20SISO	Ant1	2412	0~Reference	-4.49	-4.49	---	PASS
11AX20SISO	Ant1	2412	30~1000	-4.49	-61.14	≤-34.49	PASS

11AX20SISO	Ant1	2412	1000~26500	-4.49	-45	≤ -34.49	PASS
11AX20SISO	Ant1	2437	0~Reference	-2.29	-2.29	---	PASS
11AX20SISO	Ant1	2437	30~1000	-2.29	-60.59	≤ -32.29	PASS
11AX20SISO	Ant1	2437	1000~26500	-2.29	-42.86	≤ -32.29	PASS
11AX20SISO	Ant1	2462	0~Reference	-2.81	-2.81	---	PASS
11AX20SISO	Ant1	2462	30~1000	-2.81	-60.85	≤ -32.81	PASS
11AX20SISO	Ant1	2462	1000~26500	-2.81	-44.63	≤ -32.81	PASS
11AX40SISO	Ant1	2422	0~Reference	-3.67	-3.67	---	PASS
11AX40SISO	Ant1	2422	30~1000	-3.67	-61.01	≤ -33.67	PASS
11AX40SISO	Ant1	2422	1000~26500	-3.67	-43.76	≤ -33.67	PASS
11AX40SISO	Ant1	2437	0~Reference	-3.24	-3.24	---	PASS
11AX40SISO	Ant1	2437	30~1000	-3.24	-61.91	≤ -33.24	PASS
11AX40SISO	Ant1	2437	1000~26500	-3.24	-45.37	≤ -33.24	PASS
11AX40SISO	Ant1	2452	0~Reference	-4.78	-4.78	---	PASS
11AX40SISO	Ant1	2452	30~1000	-4.78	-61.45	≤ -34.78	PASS
11AX40SISO	Ant1	2452	1000~26500	-4.78	-44.49	≤ -34.78	PASS

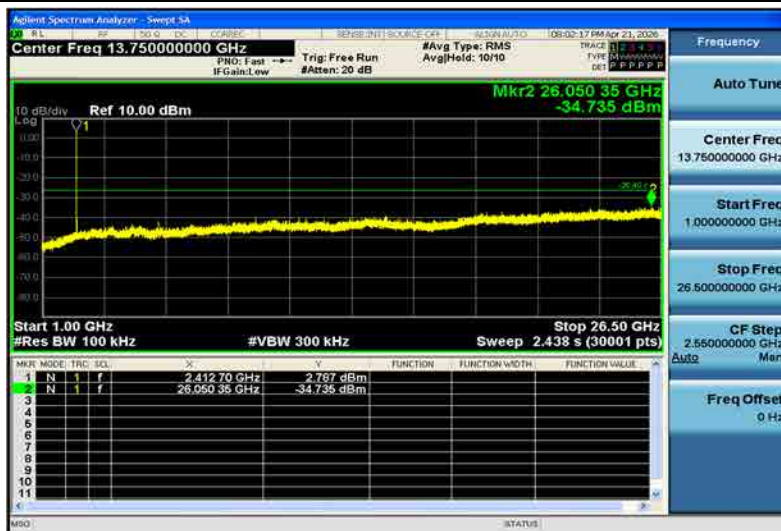
Test Graphs



11B-Ant1-2412-0~Reference-PASS



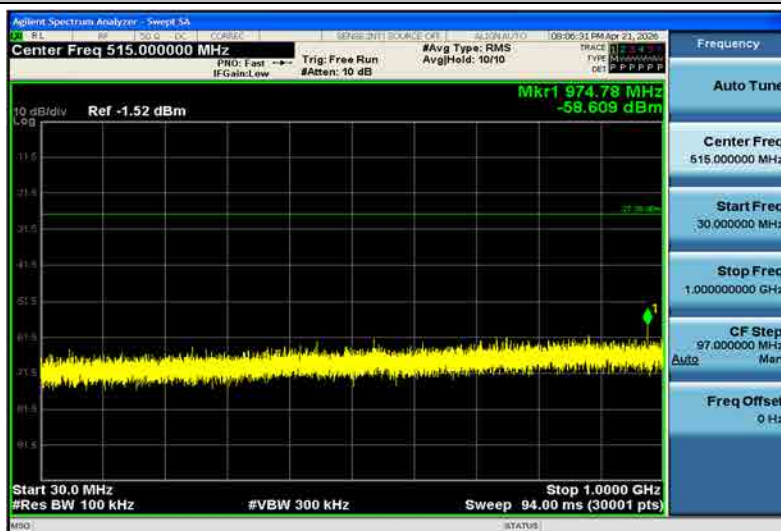
11B-Ant1-2412-30~1000-PASS



11B-Ant1-2412-1000~26500-PASS



11B-Ant1-2437-0-Reference-PASS



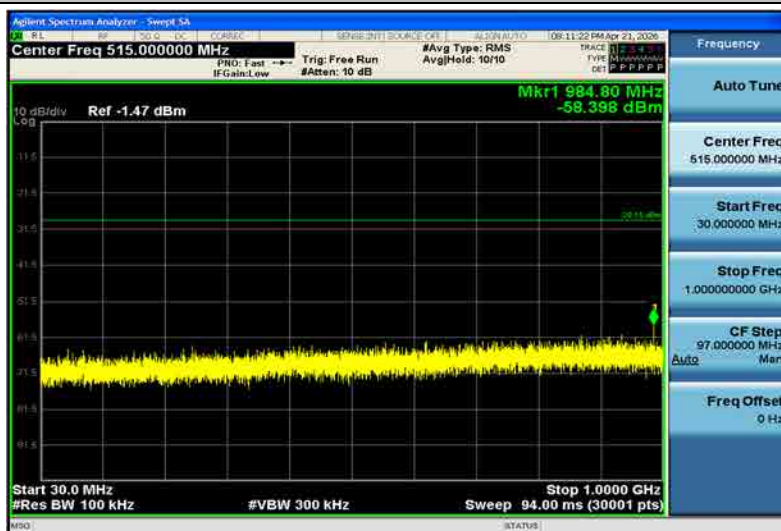
11B-Ant1-2437-30-1000-PASS



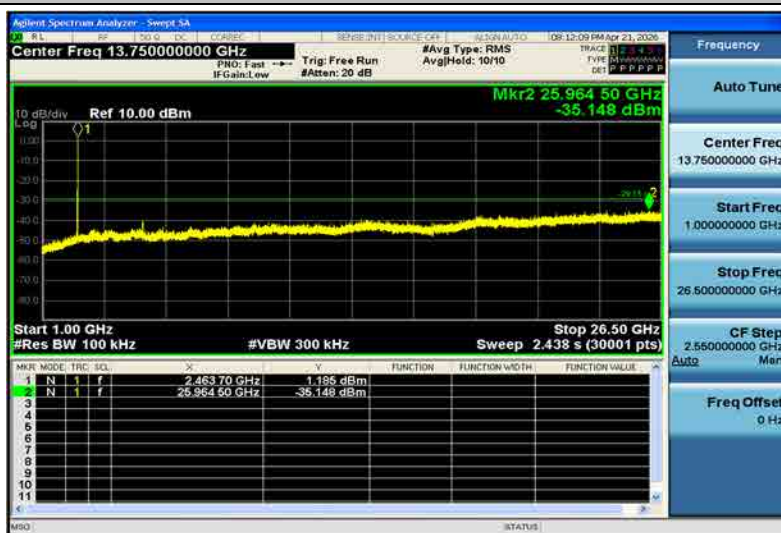
11B-Ant1-2437-1000-26500-PASS



11B-Ant1-2462-0-Reference-PASS



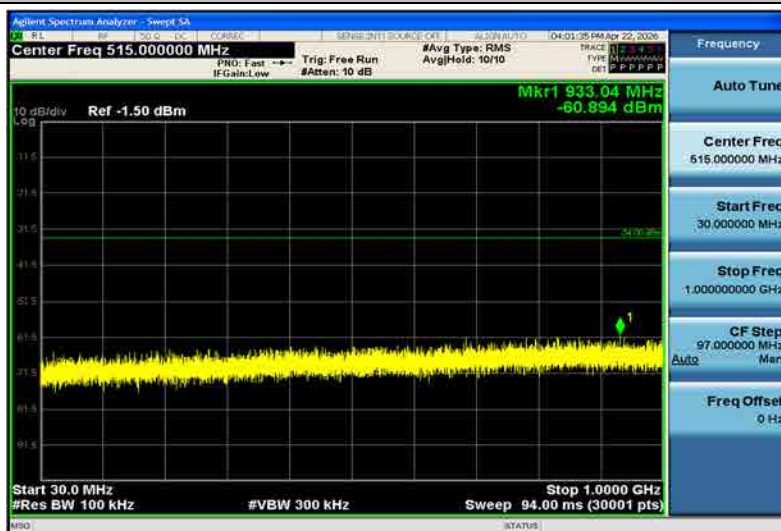
11B-Ant1-2462-30-1000-PASS



11B-Ant1-2462-1000-26500-PASS



11G-Ant1-2412-0-Reference-PASS



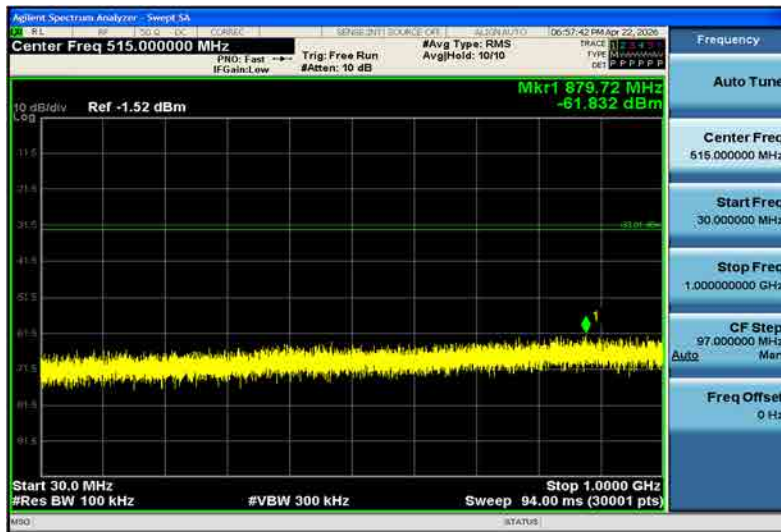
11G-Ant1-2412-30-1000-PASS



11G-Ant1-2412-1000-26500-PASS



11G-Ant1-2437-0~Reference-PASS



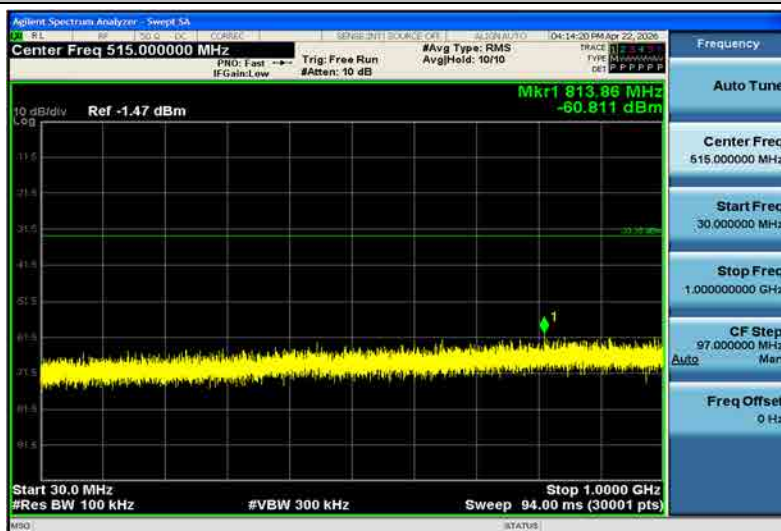
11G-Ant1-2437-30~1000-PASS



11G-Ant1-2437-1000~26500-PASS



11G-Ant1-2462-0~Reference-PASS



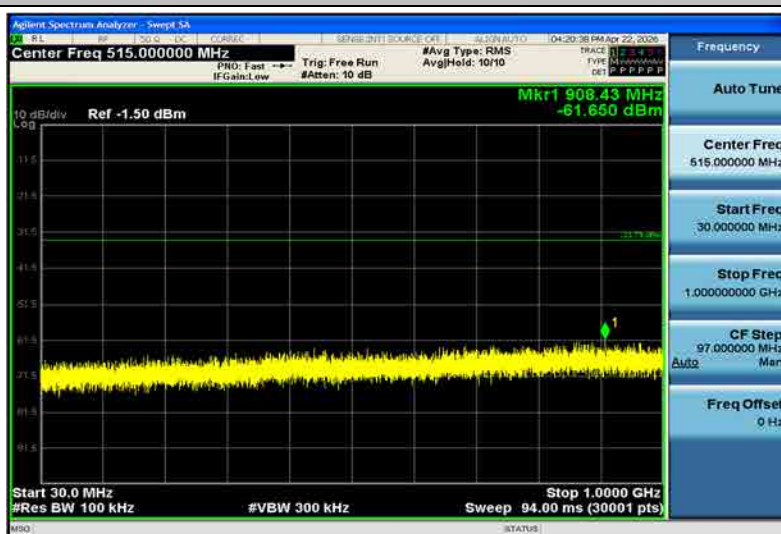
11G-Ant1-2462-30~1000-PASS



11G-Ant1-2462-1000~26500-PASS



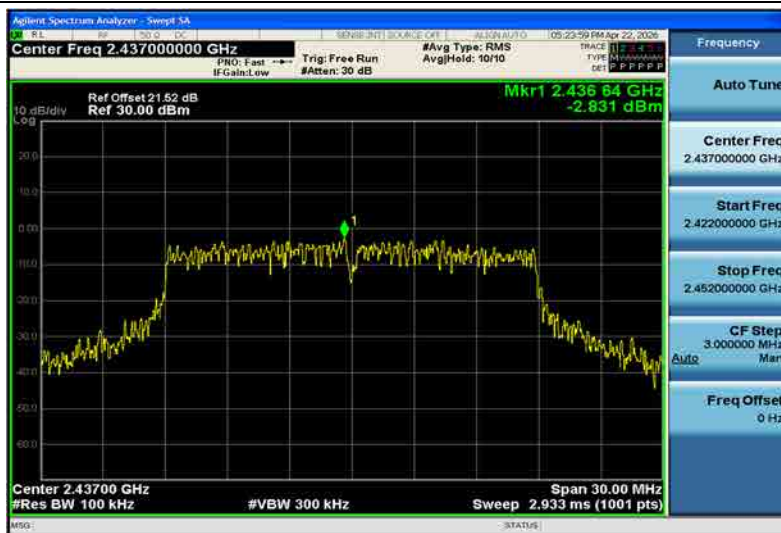
11N20SISO-Ant1-2412-0~Reference-PASS



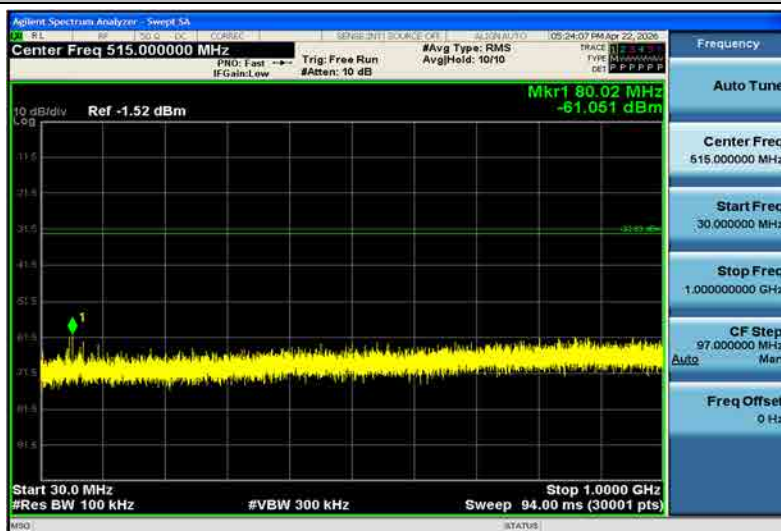
11N20SISO-Ant1-2412-30~1000-PASS



11N20SISO-Ant1-2412-1000~26500-PASS



11N20SISO-Ant1-2437-0~Reference-PASS



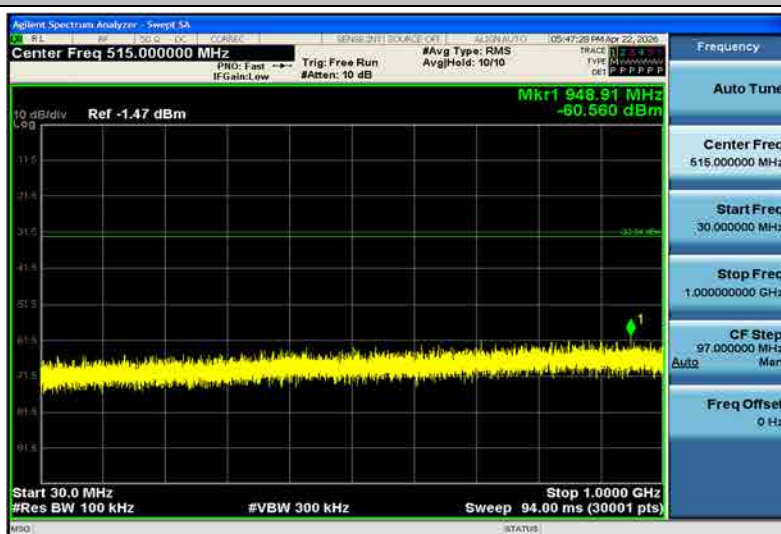
11N20SISO-Ant1-2437-30~1000-PASS



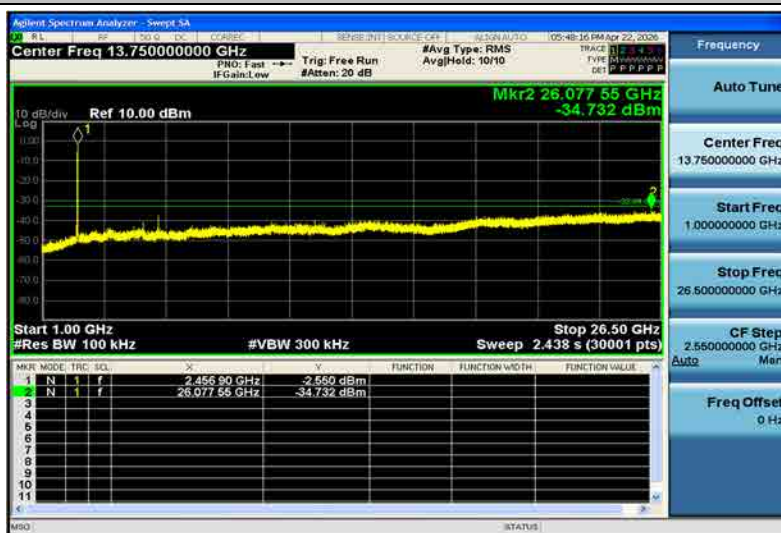
11N20SISO-Ant1-2437-1000~26500-PASS



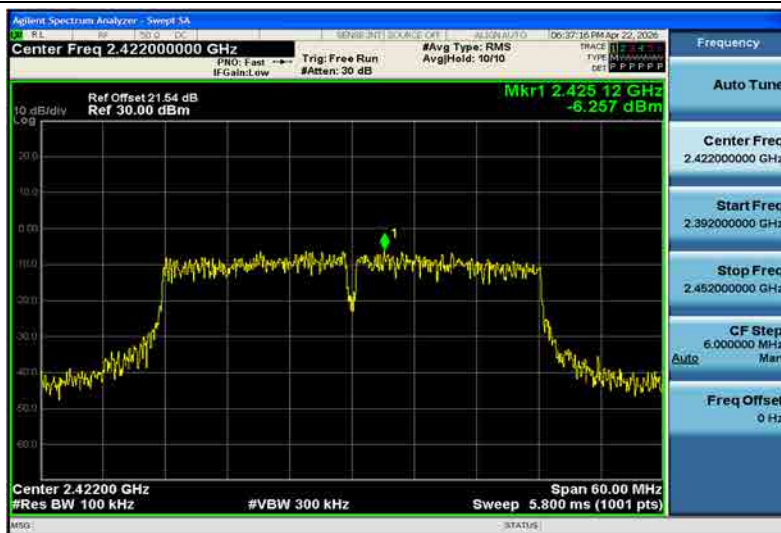
11N20SISO-Ant1-2462-0~Reference-PASS



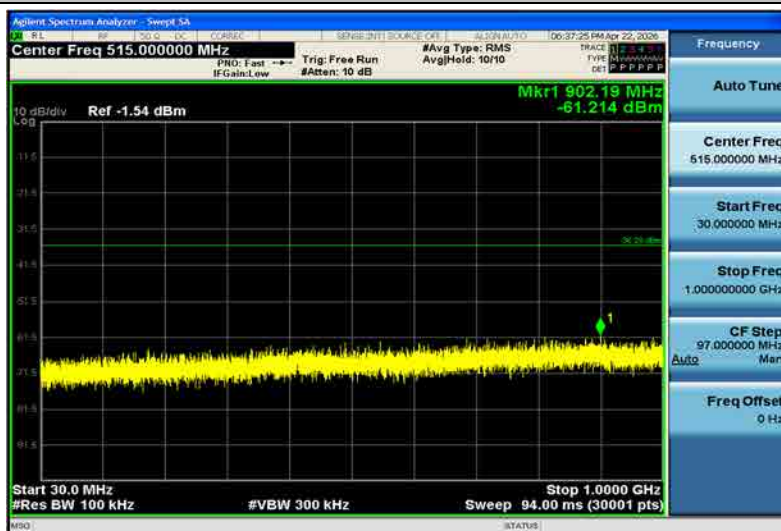
11N20SISO-Ant1-2462-30~1000-PASS



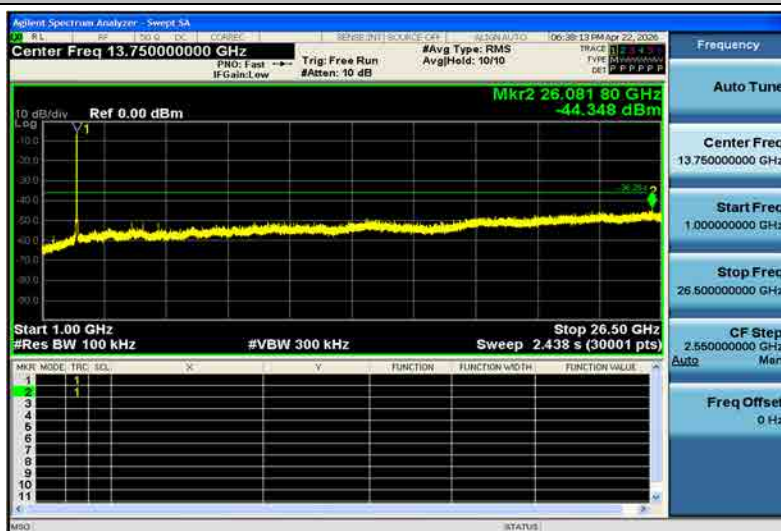
11N20SISO-Ant1-2462-1000~26500-PASS



11N40SISO-Ant1-2422-0~Reference-PASS



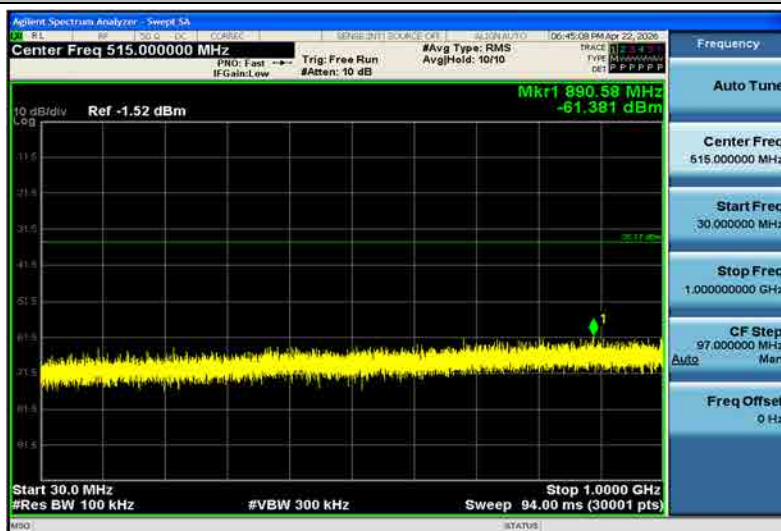
11N40SISO-Ant1-2422-30~1000-PASS



11N40SISO-Ant1-2422-1000~26500-PASS



11N40SISO-Ant1-2437-0~Reference-PASS



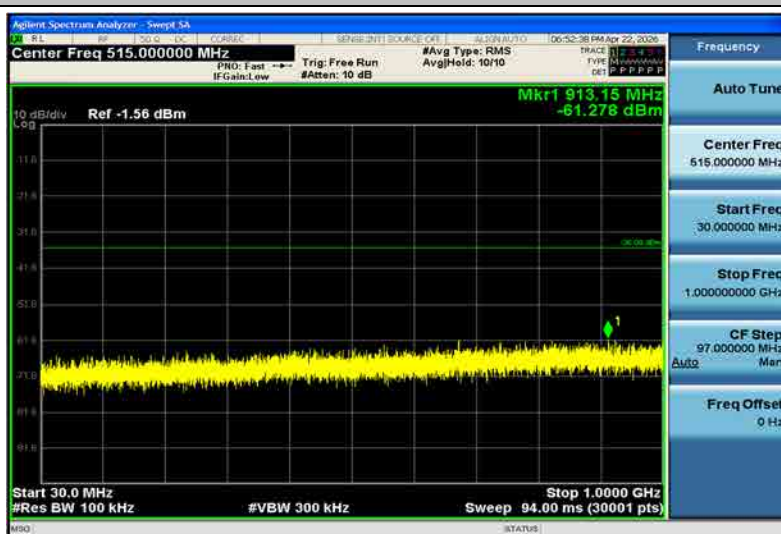
11N40SISO-Ant1-2437-30~1000-PASS



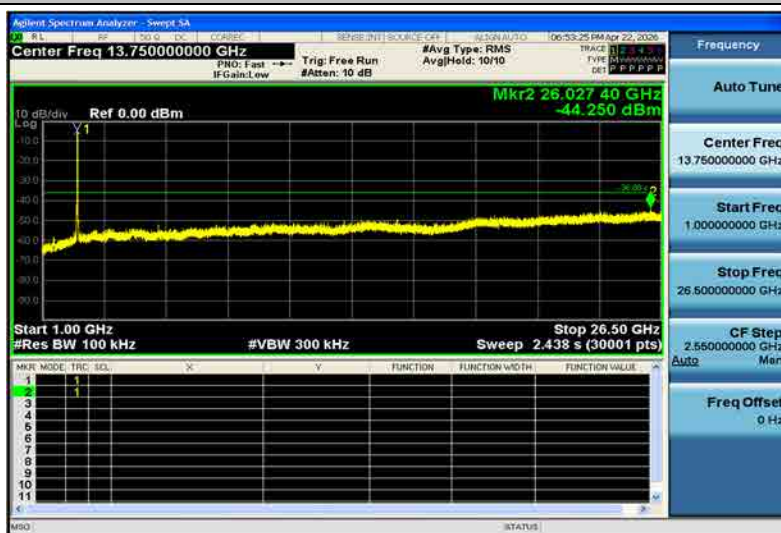
11N40SISO-Ant1-2437-1000~26500-PASS



11N40SISO-Ant1-2452-0~Reference-PASS



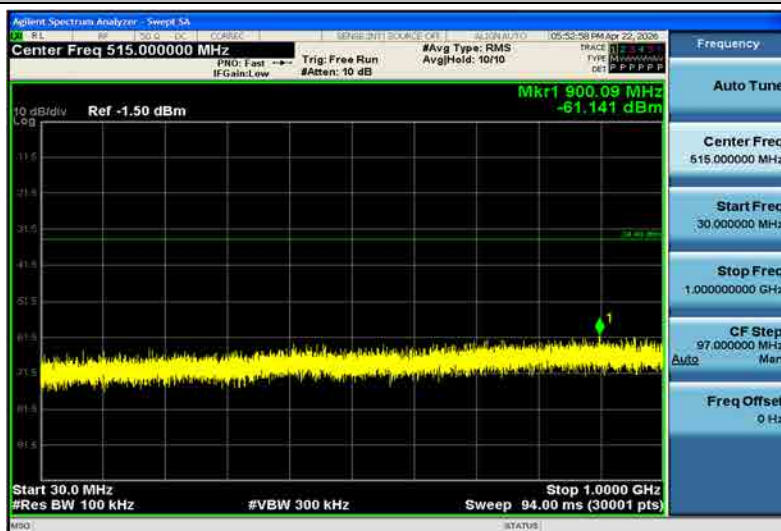
11N40SISO-Ant1-2452-30~1000-PASS



11N40SISO-Ant1-2452-1000~26500-PASS



11AX20SISO-Ant1-2412-0-Reference-PASS



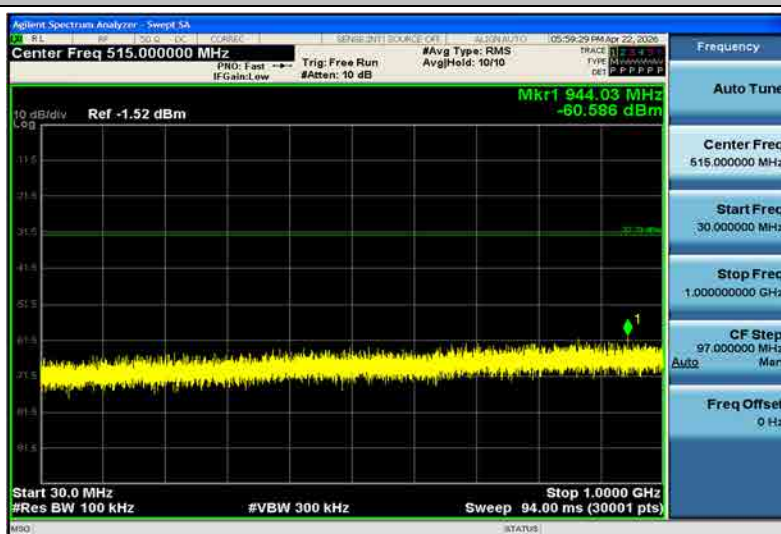
11AX20SISO-Ant1-2412-30-1000-PASS



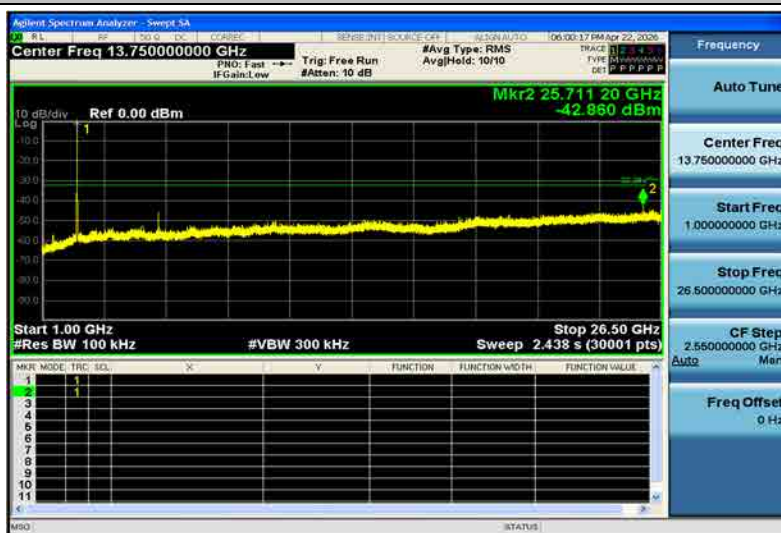
11AX20SISO-Ant1-2412-1000-26500-PASS



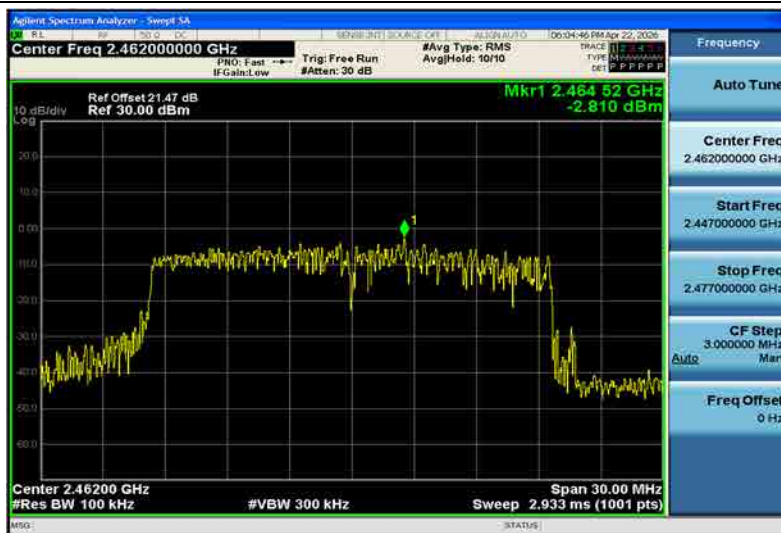
11AX20SISO-Ant1-2437-0-Reference-PASS



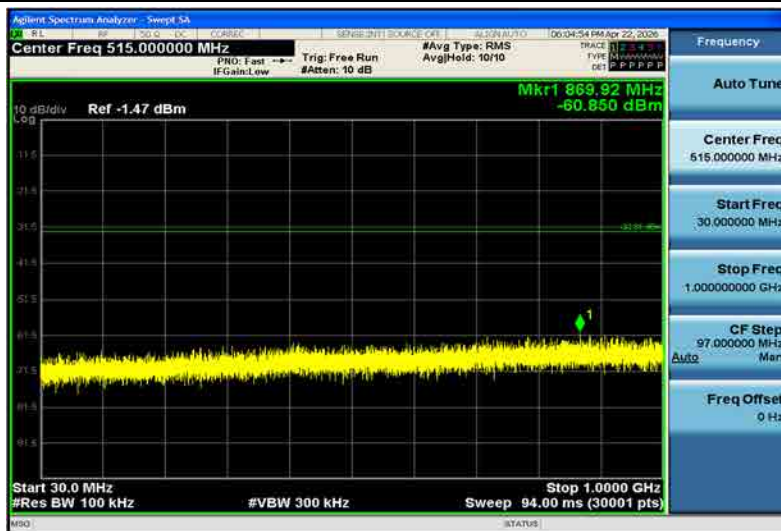
11AX20SISO-Ant1-2437-30-1000-PASS



11AX20SISO-Ant1-2437-1000-26500-PASS



11AX20SISO-Ant1-2462-0-Reference-PASS



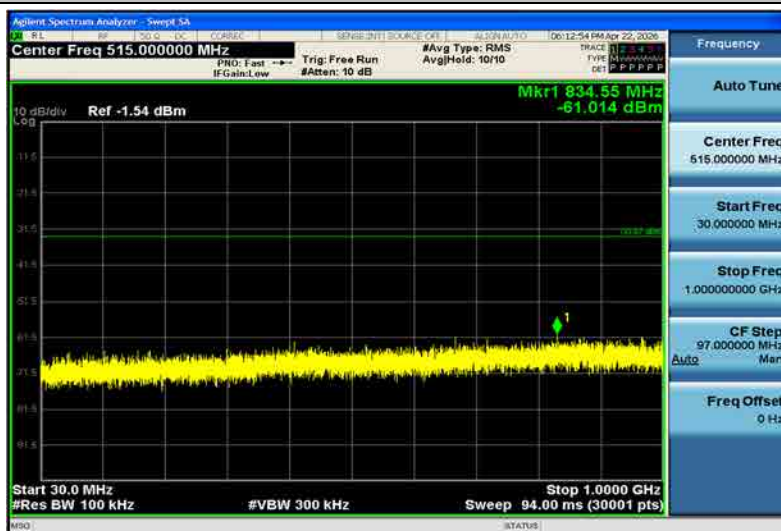
11AX20SISO-Ant1-2462-30-1000-PASS



11AX20SISO-Ant1-2462-1000-26500-PASS



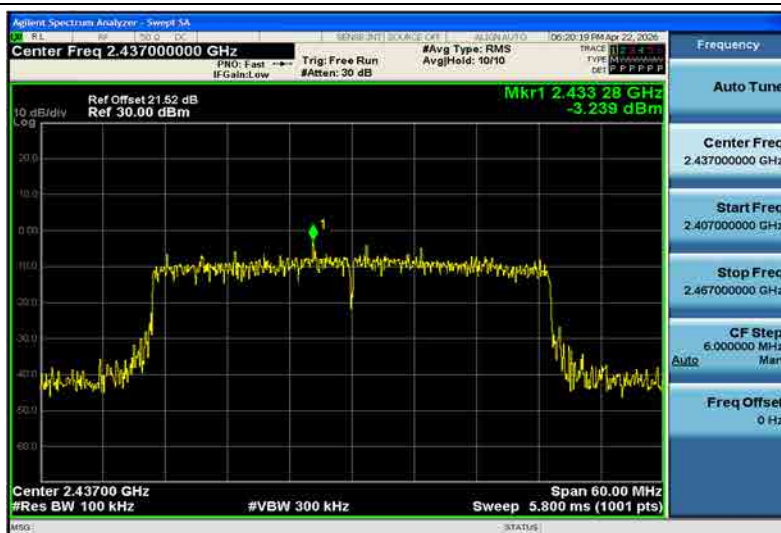
11AX40SISO-Ant1-2422-0-Reference-PASS



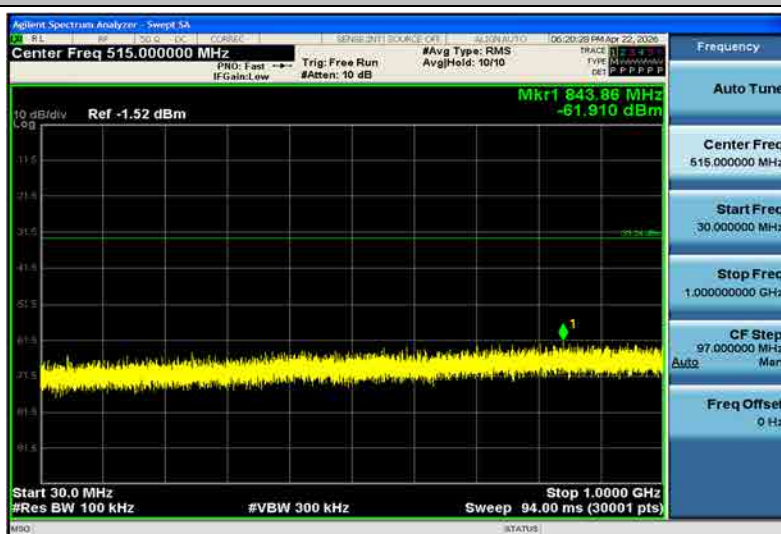
11AX40SISO-Ant1-2422-30-1000-PASS



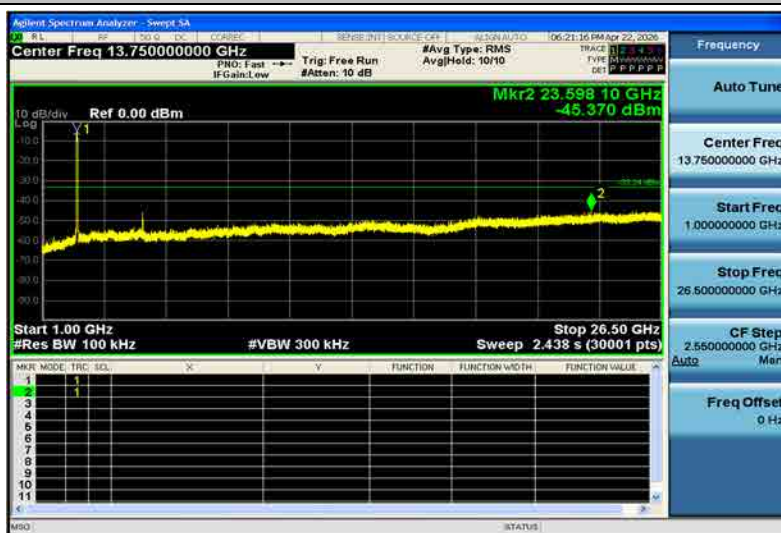
11AX40SISO-Ant1-2422-1000-26500-PASS



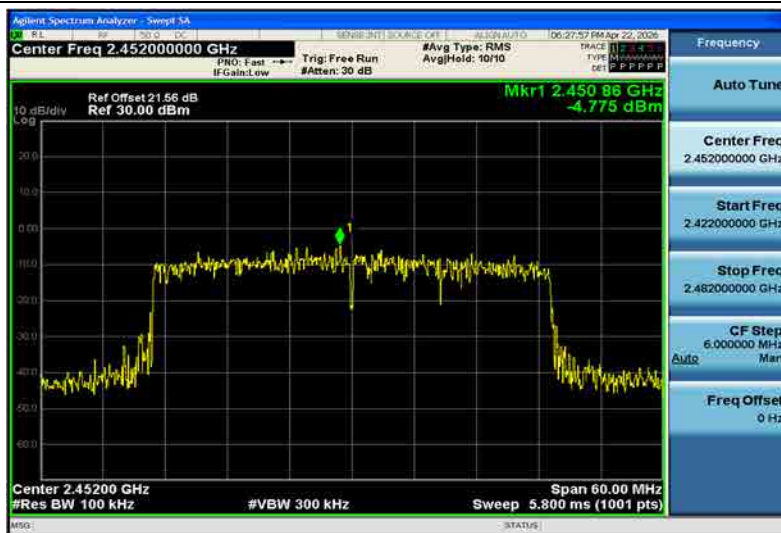
11AX40SISO-Ant1-2437-0-Reference-PASS



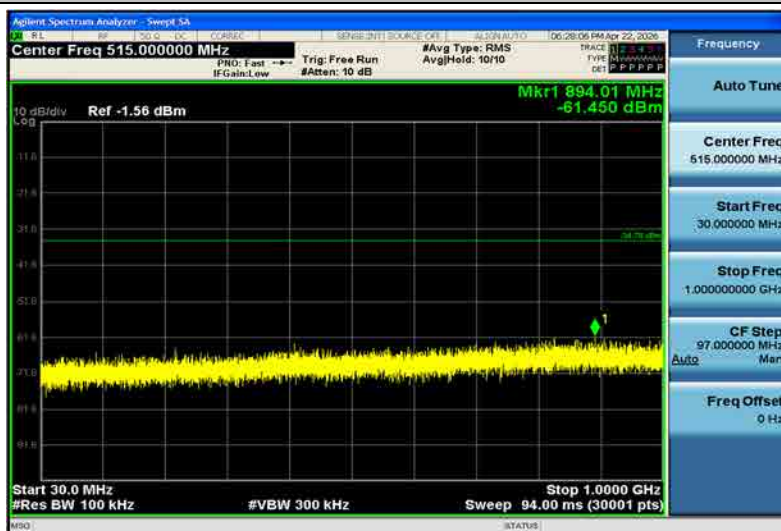
11AX40SISO-Ant1-2437-30-1000-PASS



11AX40SISO-Ant1-2437-1000-26500-PASS



11AX40SISO-Ant1-2452-0-Reference-PASS



11AX40SISO-Ant1-2452-30-1000-PASS

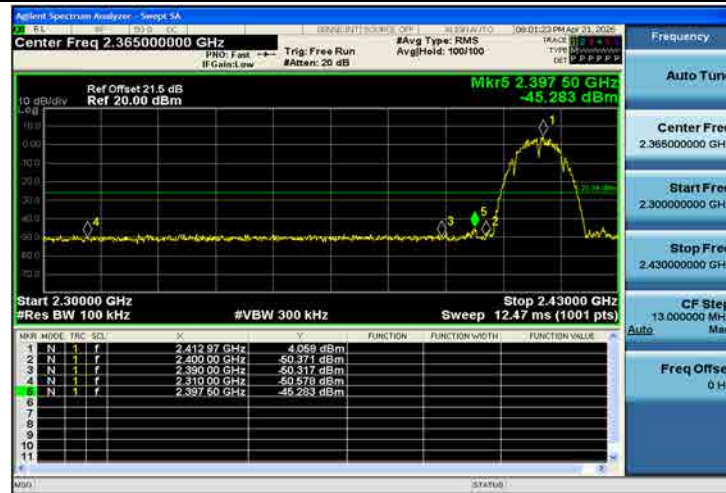


11AX40SISO-Ant1-2452-1000-26500-PASS

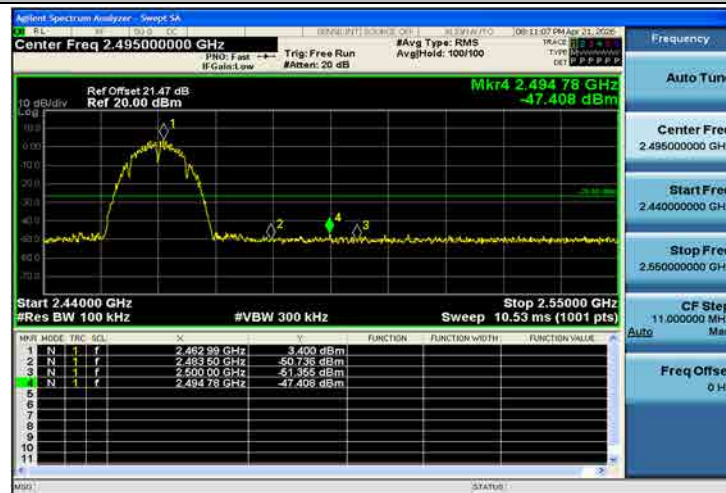
Band edge

Test Mode	Antenna	Ch Name	Frequency[MHz]	Ref Level[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	4.06	-45.28	≤-25.94	PASS
11B	Ant1	High	2462	3.40	-47.41	≤-26.6	PASS
11G	Ant1	Low	2412	2.16	-28.01	≤-27.84	PASS
11G	Ant1	High	2462	0.61	-47.53	≤-29.4	PASS
11N20SISO	Ant1	Low	2412	-5.91	-45.51	≤-35.91	PASS
11N20SISO	Ant1	High	2462	-0.22	-46.22	≤-30.22	PASS
11N40SISO	Ant1	Low	2422	-2.01	-32.25	≤-32.01	PASS
11N40SISO	Ant1	High	2452	0.56	-37.83	≤-29.44	PASS
11AX20SISO	Ant1	Low	2412	3.53	-27.21	≤-26.47	PASS
11AX20SISO	Ant1	High	2462	2.95	-39.69	≤-27.05	PASS
11AX40SISO	Ant1	Low	2422	0.67	-32.1	≤-29.33	PASS
11AX40SISO	Ant1	High	2452	-0.17	-35.46	≤-30.17	PASS

Test Graphs



11B-Ant1-2412-PASS



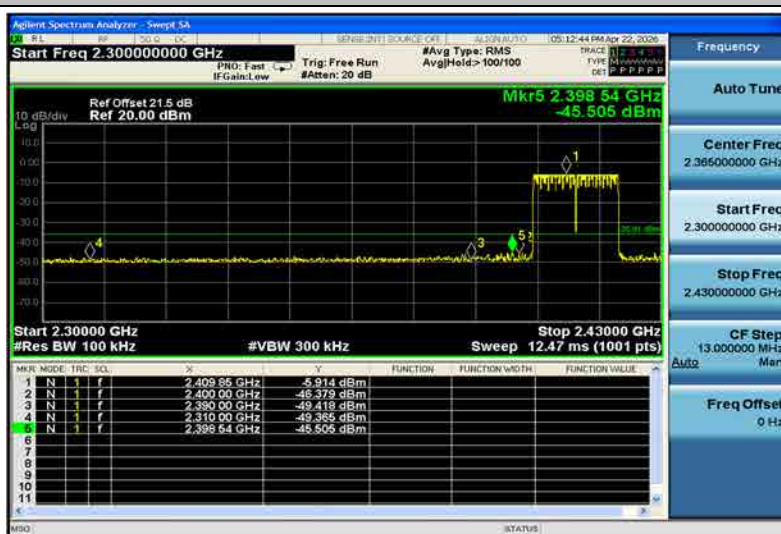
11B-Ant1-2462-PASS



11G-Ant1-2412-PASS



11G-Ant1-2462-PASS



11N20SISO-Ant1-2412-PASS



11N20SISO-Ant1-2462-PASS



11N40SISO-Ant1-2422-PASS



11N40SISO-Ant1-2452-PASS



11AX20SISO-Ant1-2412-PASS



11AX20SISO-Ant1-2462-PASS



11AX40SISO-Ant1-2422-PASS



11AX40SISO-Ant1-2452-PASS

3.4 6dB Bandwidth

3.4.1 Limit

For direct sequence systems, the minimum 6dB bandwidth shall be at least 500kHz

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 connected to the tonscend test system, and the spectrum analyser is set as follow:

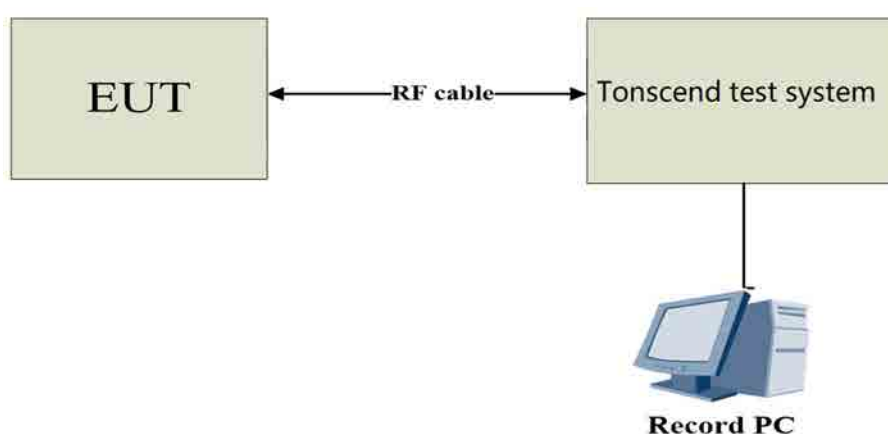
Centre Frequency	The centre frequency of the channel under test
RBW	1%~5% OBW but not less than 100 kHz.
VBW	≥ 3 RBW
Frequency span	2x Nominal Channel Bandwidth
Detector Mode	Peak
Trace Mode	Max Hold
Sweep Time	Auto Couple

b) Wait for the trace to stabilize then find the peak value of the trace and place the analyser marker on this peak.

c) Use the -6dB bandwidth function of the spectrum analyser to measure the 6dB Bandwidth of the EUT. This value shall be recorded.

d) Make sure that the power envelope is sufficiently above the noise floor of the analyser to avoid the noise signals left and right from the power envelope being taken into account by this measurement.

3.4.3 Test Setup



3.4.4 Test Result

DTS Bandwidth

TestMode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	9.120	2407.480	2416.600	0.5	PASS
11B	Ant1	2437	9.120	2432.440	2441.560	0.5	PASS
11B	Ant1	2462	9.120	2457.440	2466.560	0.5	PASS
11G	Ant1	2412	16.560	2403.800	2420.360	0.5	PASS
11G	Ant1	2437	16.360	2428.840	2445.200	0.5	PASS
11G	Ant1	2462	16.320	2453.880	2470.200	0.5	PASS
11N20SISO	Ant1	2412	17.520	2403.240	2420.760	0.5	PASS
11N20SISO	Ant1	2437	17.560	2428.200	2445.760	0.5	PASS
11N20SISO	Ant1	2462	17.200	2453.240	2470.440	0.5	PASS
11N40SISO	Ant1	2422	36.080	2404.000	2440.080	0.5	PASS
11N40SISO	Ant1	2437	36.160	2418.840	2455.000	0.5	PASS
11N40SISO	Ant1	2452	36.240	2433.840	2470.080	0.5	PASS
11AX20SISO	Ant1	2412	18.520	2402.960	2421.480	0.5	PASS
11AX20SISO	Ant1	2437	18.520	2427.560	2446.080	0.5	PASS
11AX20SISO	Ant1	2462	18.720	2452.680	2471.400	0.5	PASS
11AX40SISO	Ant1	2422	37.680	2403.200	2440.880	0.5	PASS
11AX40SISO	Ant1	2437	37.520	2418.040	2455.560	0.5	PASS
11AX40SISO	Ant1	2452	37.600	2433.120	2470.720	0.5	PASS



11B-Ant1-2412-PASS



11B-Ant1-2437-PASS



11B-Ant1-2462-PASS



11G-Ant1-2412-PASS



11G-Ant1-2437-PASS



11G-Ant1-2462-PASS



11N20SISO-Ant1-2412-PASS



11N20SISO-Ant1-2437-PASS



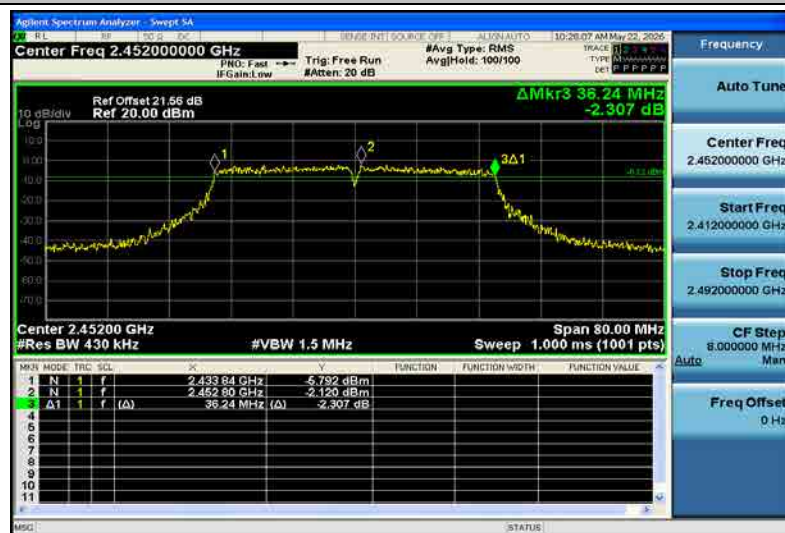
11N20SISO-Ant1-2462-PASS



11N40SISO-Ant1-2422-PASS



11N40SISO-Ant1-2437-PASS



11N40SISO-Ant1-2452-PASS



11AX20SISO-Ant1-2412-PASS



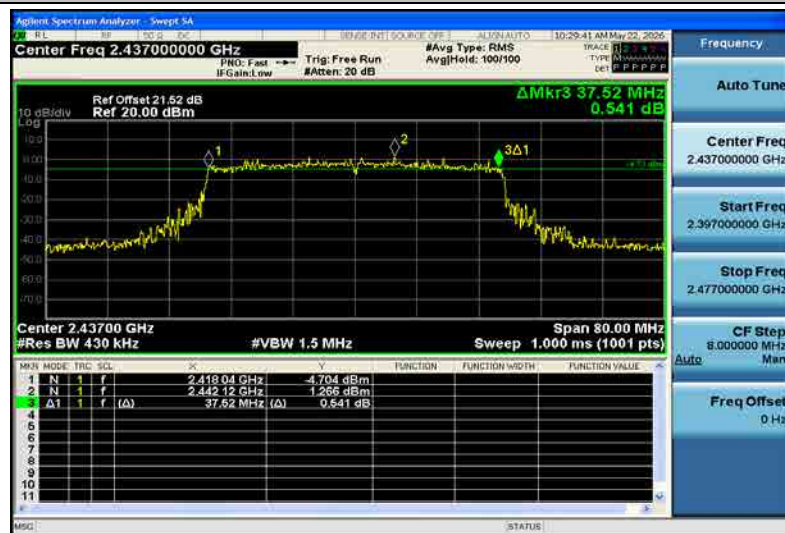
11AX20SISO-Ant1-2437-PASS



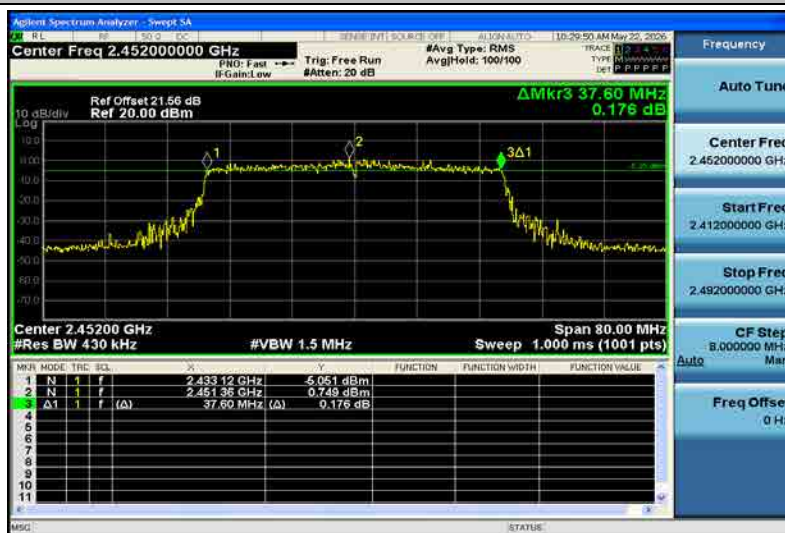
11AX20SISO-Ant1-2462-PASS



11AX40SISO-Ant1-2422-PASS



11AX40SISO-Ant1-2437-PASS

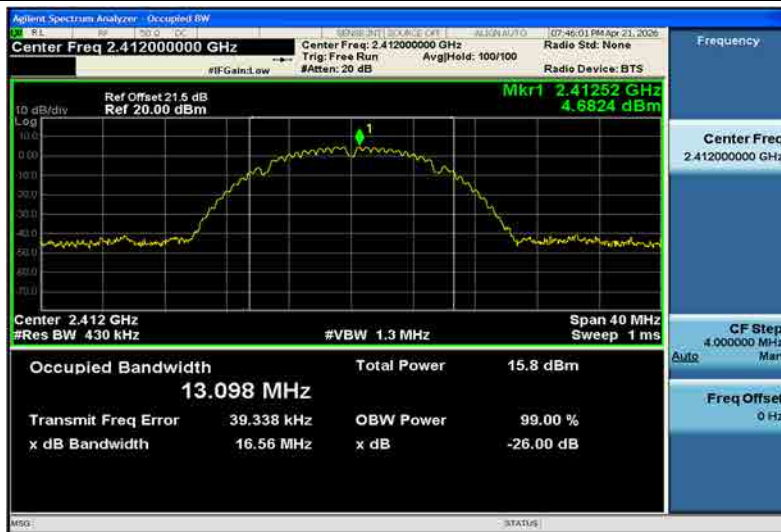


11AX40SISO-Ant1-2452-PASS

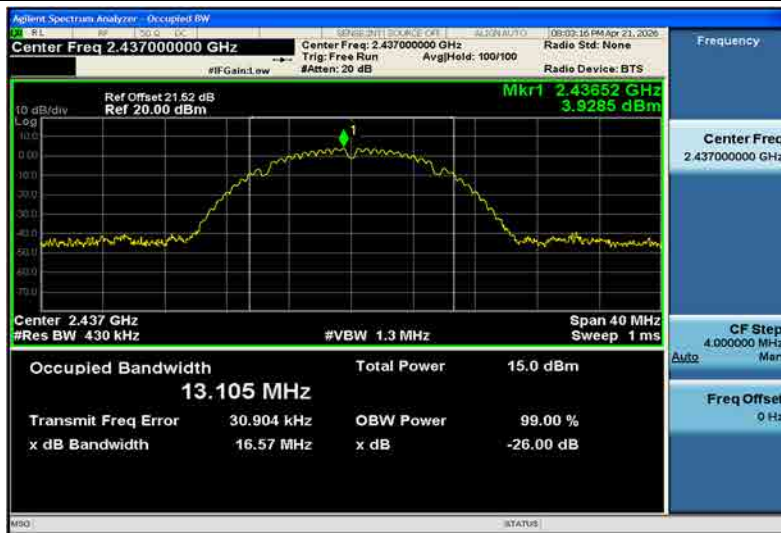
Occupied Channel Bandwidth

TestMode	Antenna	Channel Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	13.098	2405.4903	2418.5883	---	---
11B	Ant1	2437	13.105	2430.4784	2443.5834	---	---
11B	Ant1	2462	13.077	2455.5038	2468.5808	---	---
11G	Ant1	2412	16.825	2403.6550	2420.4800	---	---
11G	Ant1	2437	16.979	2428.4701	2445.4491	---	---
11G	Ant1	2462	17.130	2453.3728	2470.5028	---	---
11N20SISO	Ant1	2412	18.440	2402.7532	2421.1932	---	---
11N20SISO	Ant1	2437	18.369	2427.7567	2446.1257	---	---
11N20SISO	Ant1	2462	18.258	2452.8565	2471.1145	---	---
11N40SISO	Ant1	2422	36.457	2403.7033	2440.1603	---	---
11N40SISO	Ant1	2437	36.563	2418.6355	2455.1985	---	---
11N40SISO	Ant1	2452	36.550	2433.6432	2470.1932	---	---
11AX20SISO	Ant1	2412	19.148	2402.4606	2421.6086	---	---
11AX20SISO	Ant1	2437	19.191	2427.3785	2446.5695	---	---
11AX20SISO	Ant1	2462	19.056	2452.4277	2471.4837	---	---
11AX40SISO	Ant1	2422	37.939	2403.0499	2440.9889	---	---
11AX40SISO	Ant1	2437	37.926	2418.0602	2455.9862	---	---
11AX40SISO	Ant1	2452	37.881	2433.0263	2470.9073	---	---

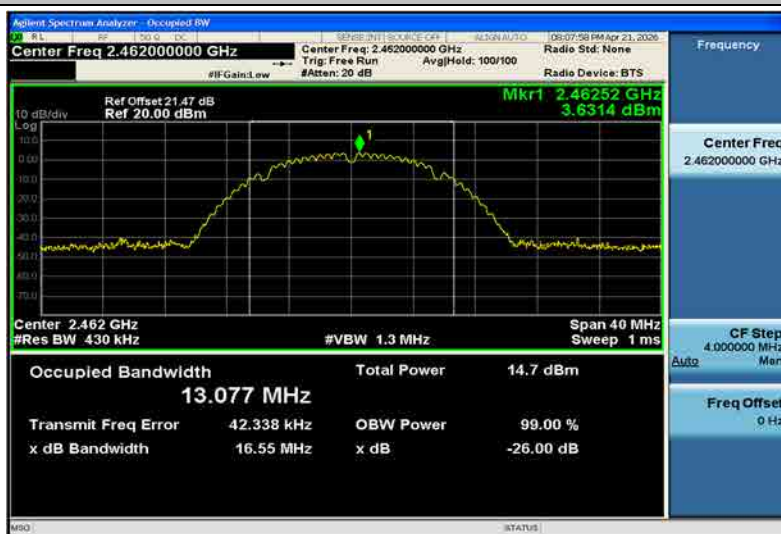
Test Graphs



11B-Ant1-2412



11B-Ant1-2437



11B-Ant1-2462



11G-Ant1-2412



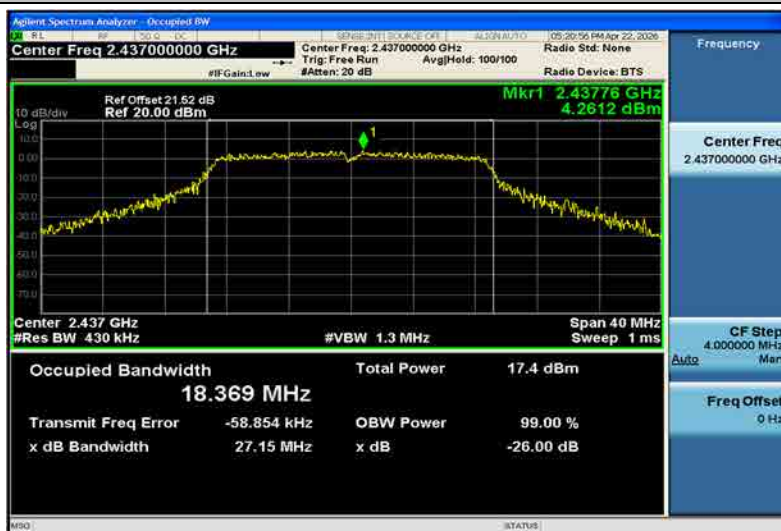
11G-Ant1-2437



11G-Ant1-2462



11N20SISO-Ant1-2412



11N20SISO-Ant1-2437



11N20SISO-Ant1-2462



11N40SISO-Ant1-2422



11N40SISO-Ant1-2437



11N40SISO-Ant1-2452



11AX20SISO-Ant1-2412



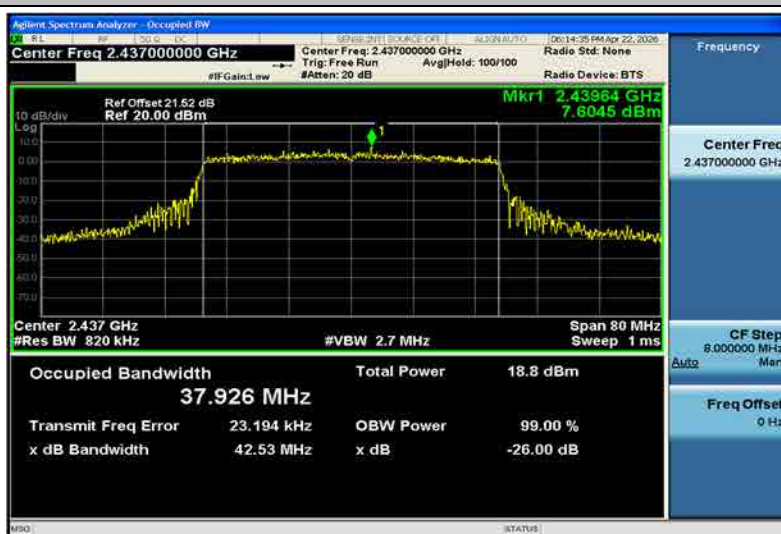
11AX20SISO-Ant1-2437



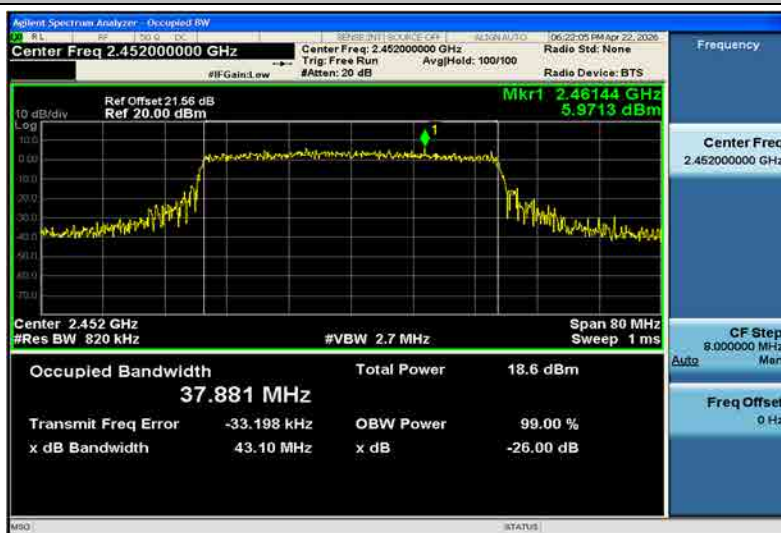
11AX20SISO-Ant1-2462



11AX40SISO-Ant1-2422



11AX40SISO-Ant1-2437



11AX40SISO-Ant1-2452

3.5 Maximum conducted output power

3.5.1 Limit

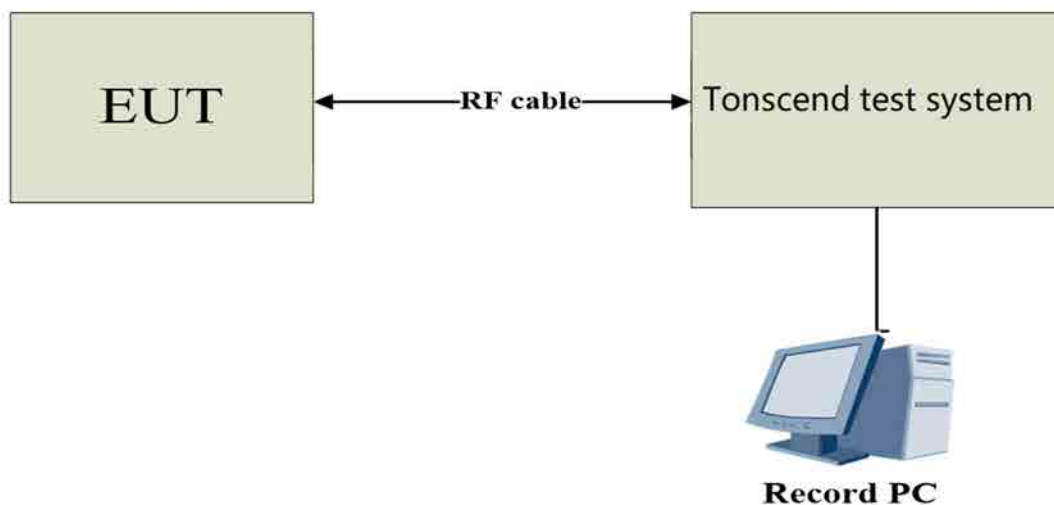
For systems using digital modulation in the 2400~2483.5MHz, The Maximum output Power shall not exceed 1W(30dBm)

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	

- The EUT was directly connected to the tonscend test system and antenna output port as show in the block diagram below.
- The maximum conducted output power was performed in accordance with method 11.9.1.2 (for peak power) of ANSI C63.10-2020.

3.5.3 Test Setup



3.5.4 Table of Parameters of Text Software Setting

During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.

For Power setting value			
Test Mode	Power Level Setting defined by Manufacturer		
Test Software Version	MobaXterm		
Frequency (MHz)	2412	2437	2462
IEEE 802.11b	Default	Default	Default
IEEE 802.11g	Default	Default	Default
IEEE 802.11n(20)	Default	Default	Default
IEEE 802.11ax(20)	Default	Default	Default
Frequency (MHz)	2422	2437	2452
IEEE 802.11n(40)	Default	Default	Default
IEEE 802.11ax(40)	Default	Default	Default

3.5.5 The Result

Test Mode	Antenna	Frequency[MHz]	Maximum conducted output Power [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	12.69	≤30.00	PASS
		2437	12.07	≤30.00	PASS
		2462	11.72	≤30.00	PASS
11G	Ant1	2412	10.24	≤30.00	PASS
		2437	12.81	≤30.00	PASS
		2462	11.35	≤30.00	PASS
11N20SISO	Ant1	2412	11.56	≤30.00	PASS
		2437	11.79	≤30.00	PASS
		2462	11.60	≤30.00	PASS
11N40SISO	Ant1	2422	11.36	≤30.00	PASS
		2437	11.93	≤30.00	PASS
		2452	11.98	≤30.00	PASS
11ax20SISO	Ant1	2412	11.14	≤30.00	PASS
		2437	11.55	≤30.00	PASS
		2462	11.41	≤30.00	PASS
11ax40SISO	Ant1	2422	11.26	≤30.00	PASS
		2437	11.97	≤30.00	PASS
		2452	11.59	≤30.00	PASS

3.6 Power Spectral Density

3.6.1 Limit

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3kHz band during any time interval of continuous transmitting.

3.6.2 Test Procedure

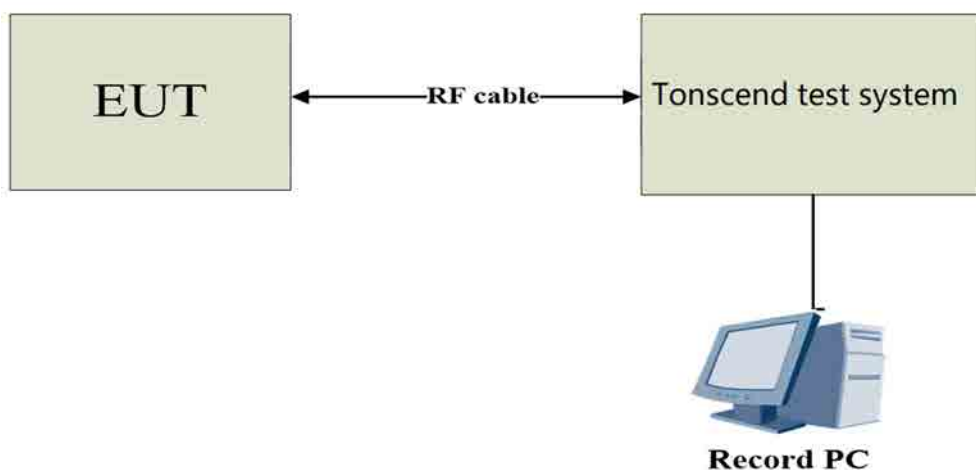
Test Method	
☒ Conducted Measurement	☐ Radiated Measurement
Test Channels	
☒ Lowest, Middle and Highest Channel	☐ Lowest and Highest Channel
Environmental conditions	
☒ Normal	☐ Normal and Extreme
Note: ☒ : Test ☐ : No Test	

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

b) Spectrum analyser settings as following:

Spectrum Parameters	Setting
Span Frequency	1.5 times the DTS bandwidth
RBW	3 kHz
VBW	10 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

3.6.3 Test Setup



3.6.4 The Result

Test Mode	Antenna	Frequency[MHz]	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-16.94	≤8.00	PASS
		2437	-17.62	≤8.00	PASS
		2462	-17.69	≤8.00	PASS
11G	Ant1	2412	-22.37	≤8.00	PASS
		2437	-21.00	≤8.00	PASS
		2462	-21.35	≤8.00	PASS
11N20SISO	Ant1	2412	-21.71	≤8.00	PASS
		2437	-21.38	≤8.00	PASS
		2462	-22.02	≤8.00	PASS
11N40SISO	Ant1	2422	-25.74	≤8.00	PASS
		2437	-25.23	≤8.00	PASS
		2452	-25.54	≤8.00	PASS
11ax20SISO	Ant1	2412	-23.35	≤8.00	PASS
		2437	-22.48	≤8.00	PASS
		2462	-23.19	≤8.00	PASS
11ax40SISO	Ant1	2422	-27.16	≤8.00	PASS
		2437	-26.82	≤8.00	PASS
		2452	-27.04	≤8.00	PASS

Test Graphs



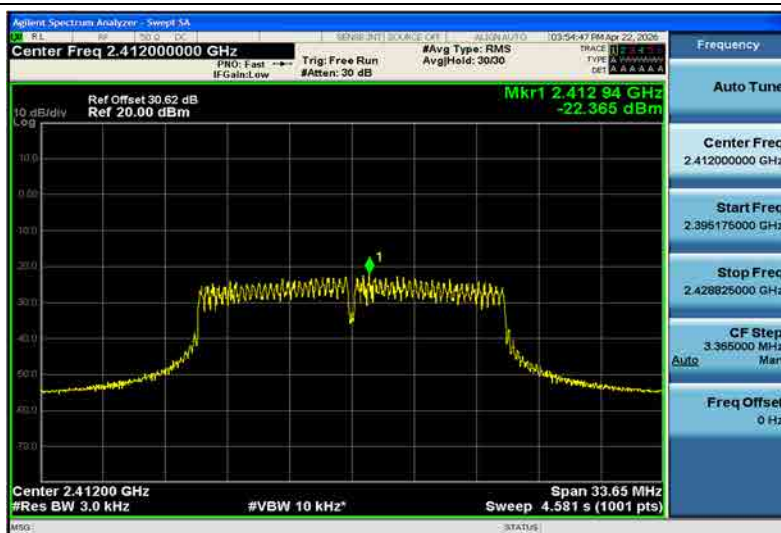
11B-Ant1-2412-PASS



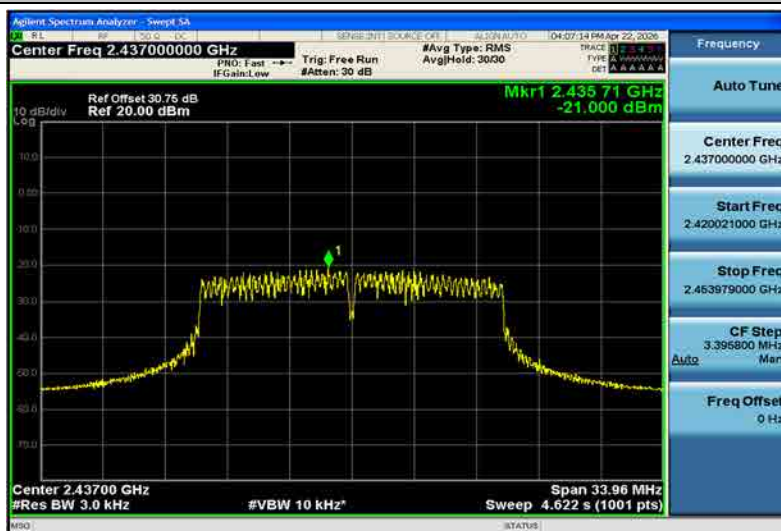
11B-Ant1-2437-PASS



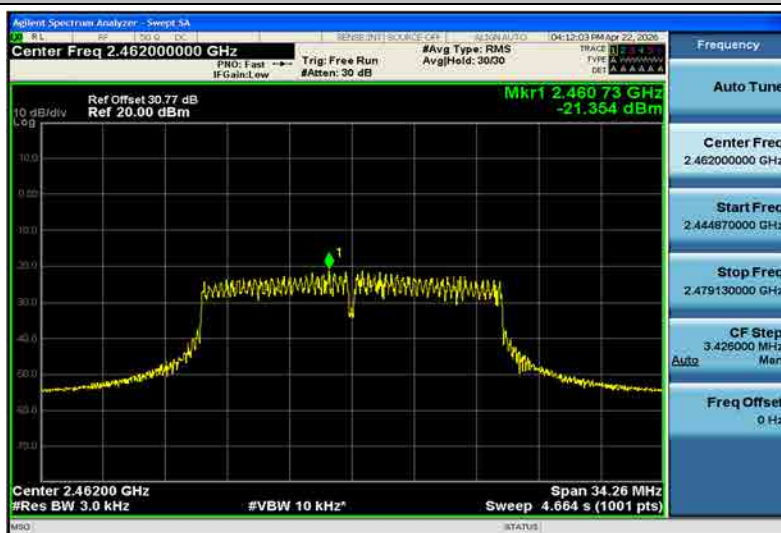
11B-Ant1-2462-PASS



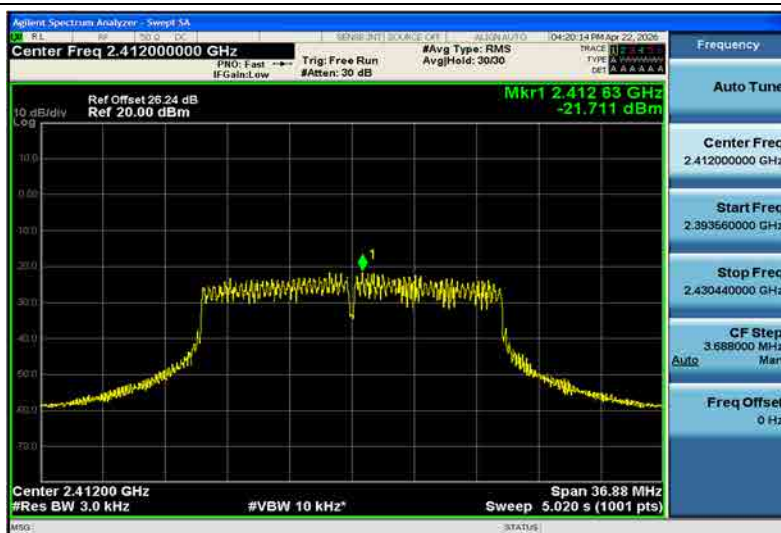
11G-Ant1-2412-PASS



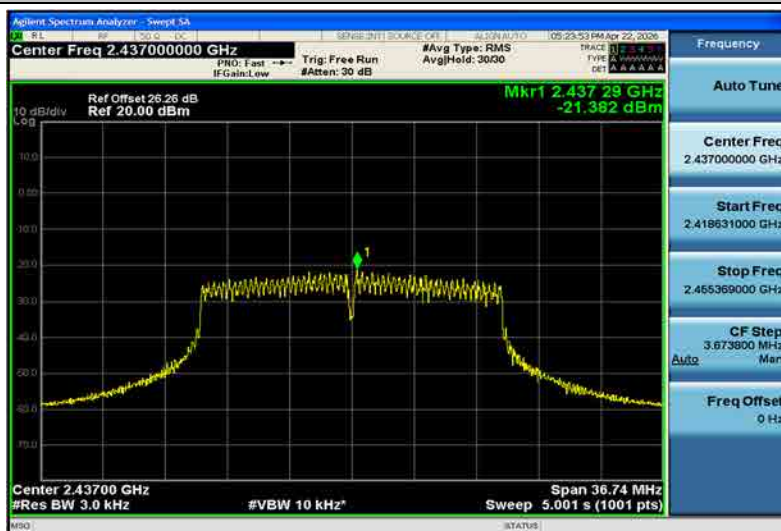
11G-Ant1-2437-PASS



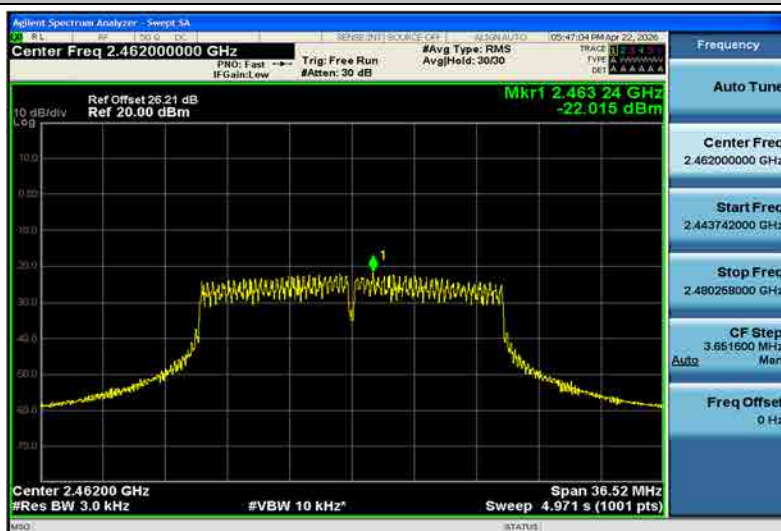
11G-Ant1-2462-PASS



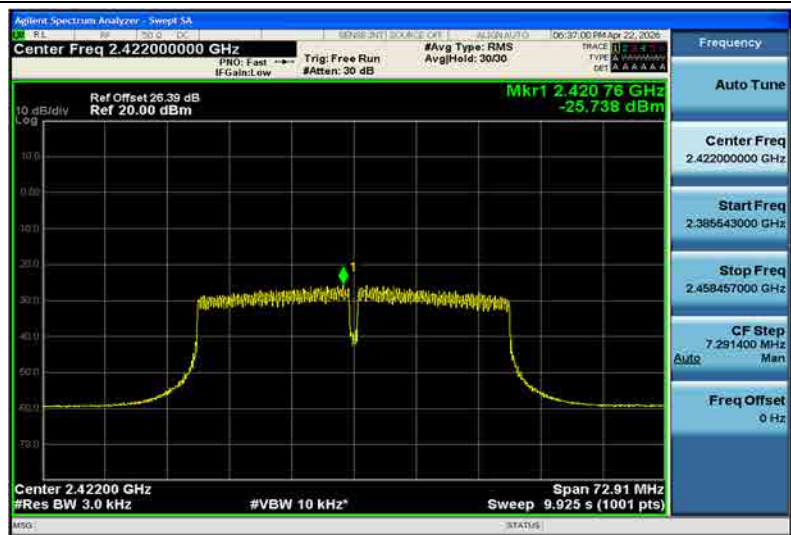
11N20SISO-Ant1-2412-PASS



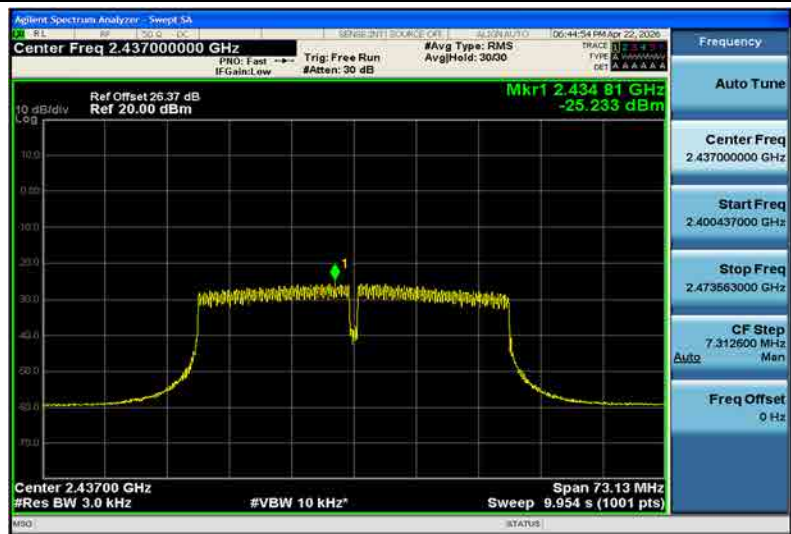
11N20SISO-Ant1-2437-PASS



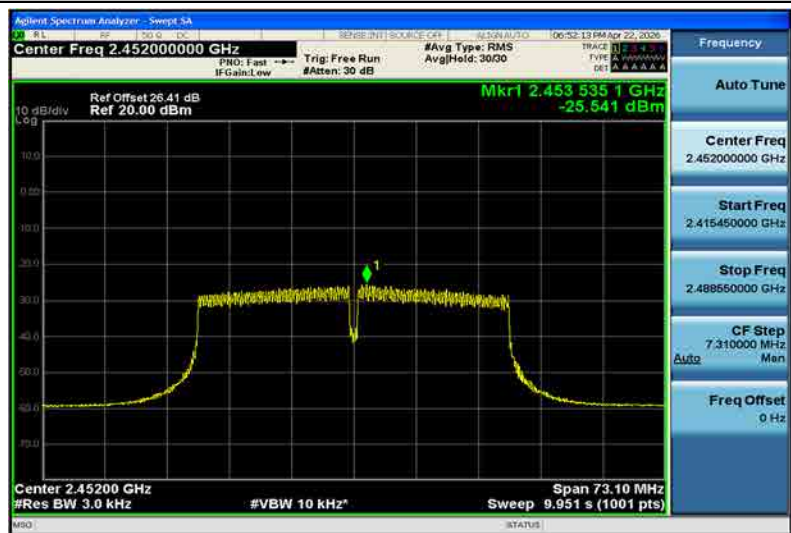
11N20SISO-Ant1-2462-PASS



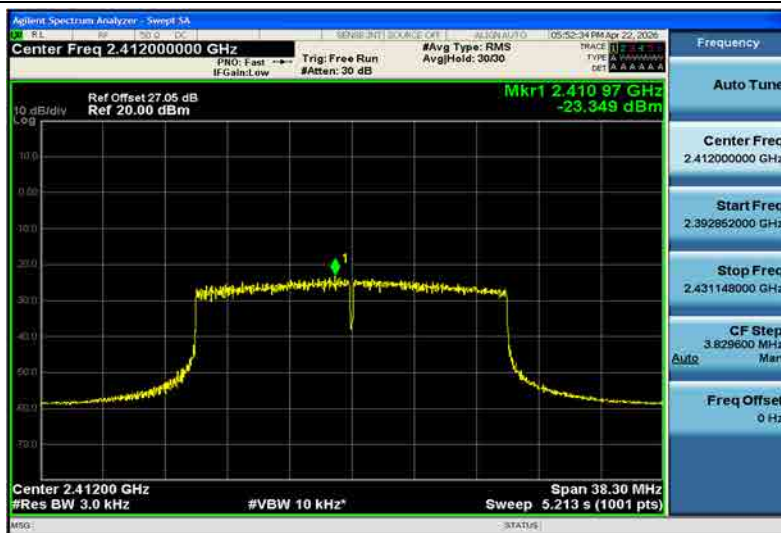
11N40SISO-Ant1-2422-PASS



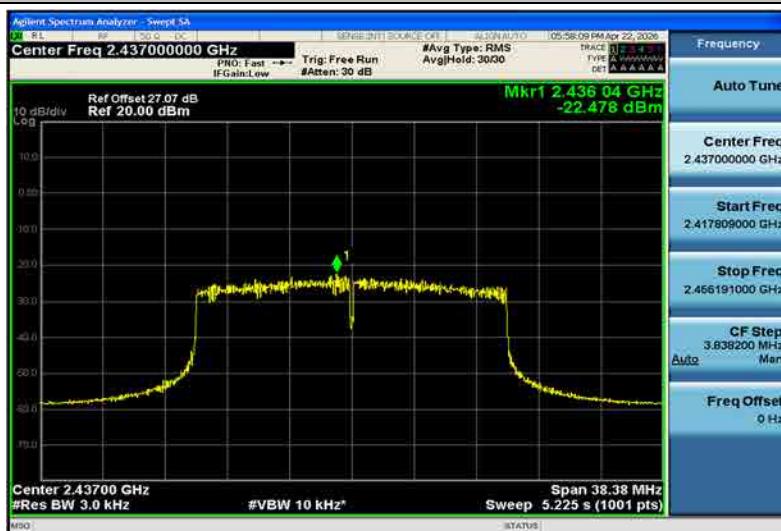
11N40SISO-Ant1-2437-PASS



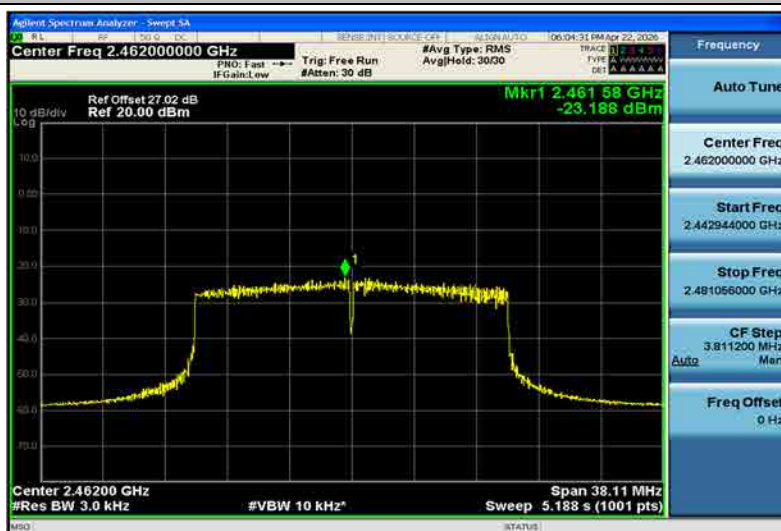
11N40SISO-Ant1-2452-PASS



11AX20SISO-Ant1-2412-PASS



11AX20SISO-Ant1-2437-PASS



11AX20SISO-Ant1-2462-PASS



11AX40SISO-Ant1-2422-PASS



11AX40SISO-Ant1-2437-PASS



11AX40SISO-Ant1-2452-PASS

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 Test Report