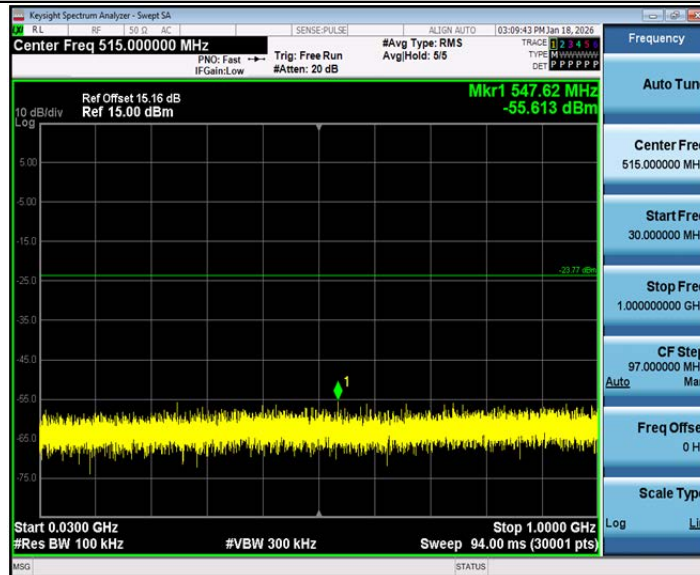


11G_Ant1_2437_0~Reference



11G_Ant1_2437_30~1000



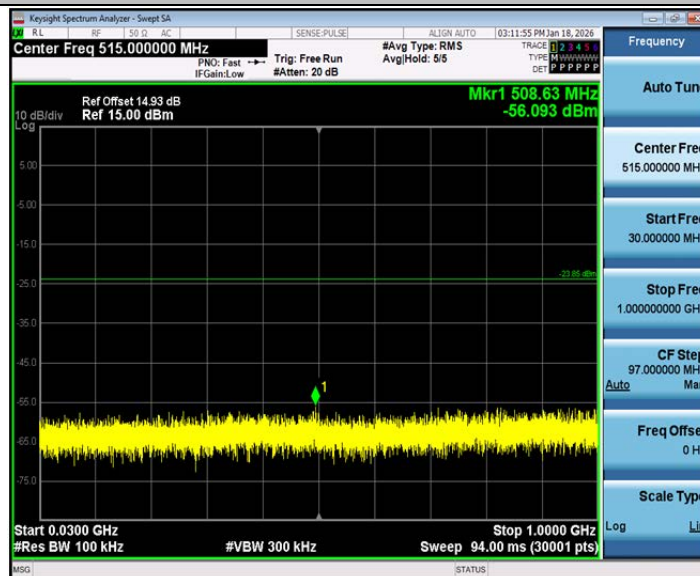
11G_Ant1_2437_1000~26500



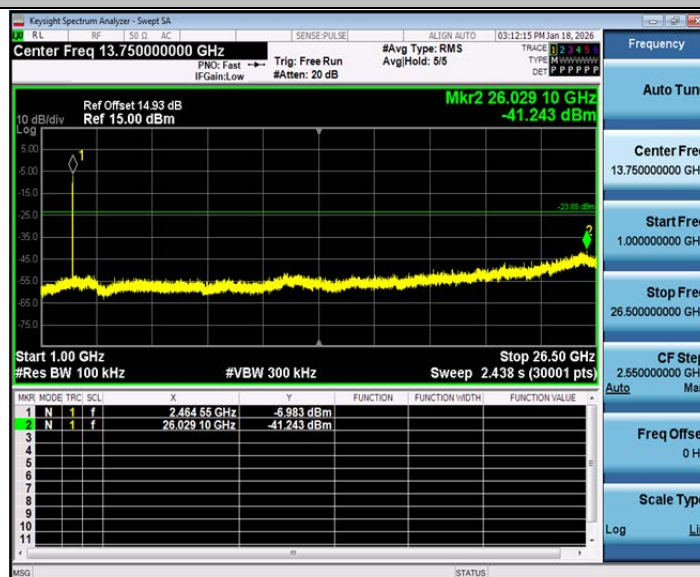
11G_Ant1_2462_0~Reference



11G_Ant1_2462_30~1000



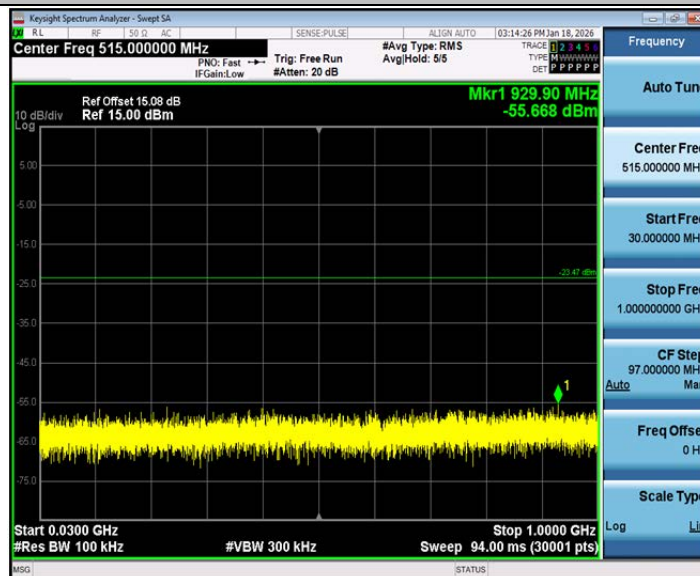
11G_Ant1_2462_1000~26500



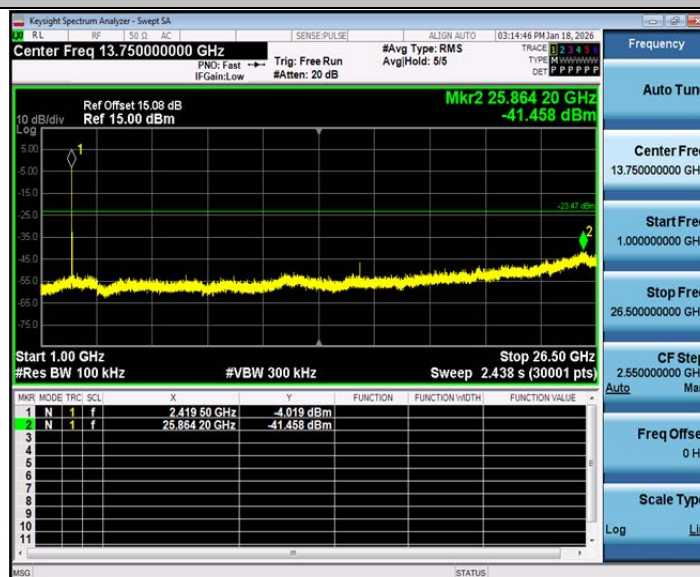
11N20SISO_Ant1_2412_0~Reference



11N20SISO_Ant1_2412_30~1000



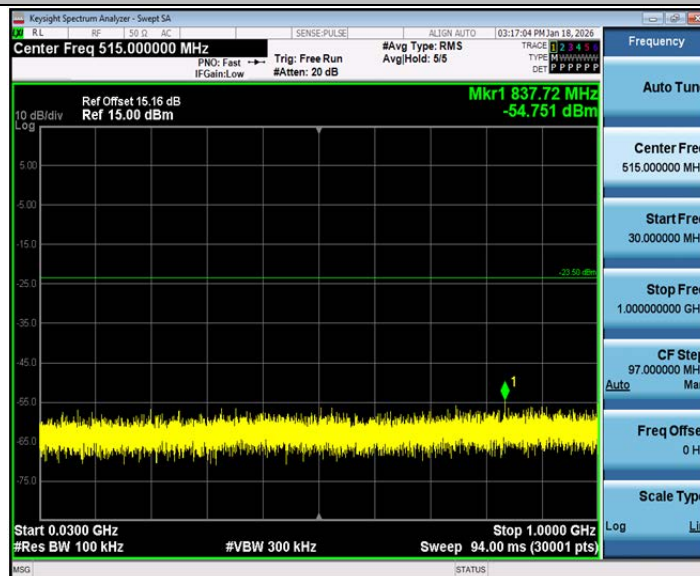
11N20SISO_Ant1_2412_1000~26500



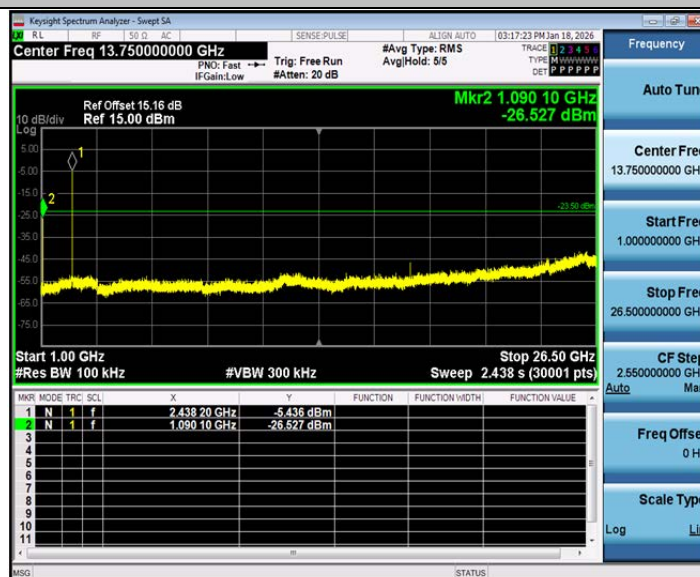
11N20SISO_Ant1_2437_0-Reference



11N20SISO_Ant1_2437_30-1000



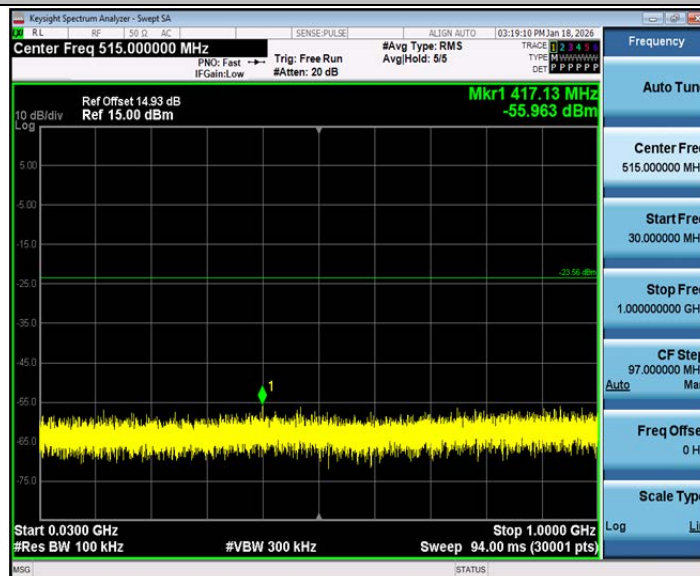
11N20SISO_Ant1_2437_1000-26500



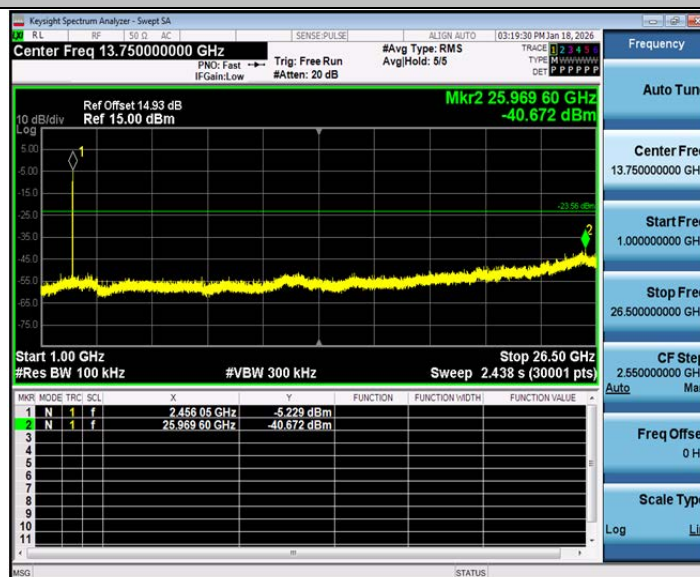
11N20SISO_Ant1_2462_0~Reference



11N20SISO_Ant1_2462_30~1000



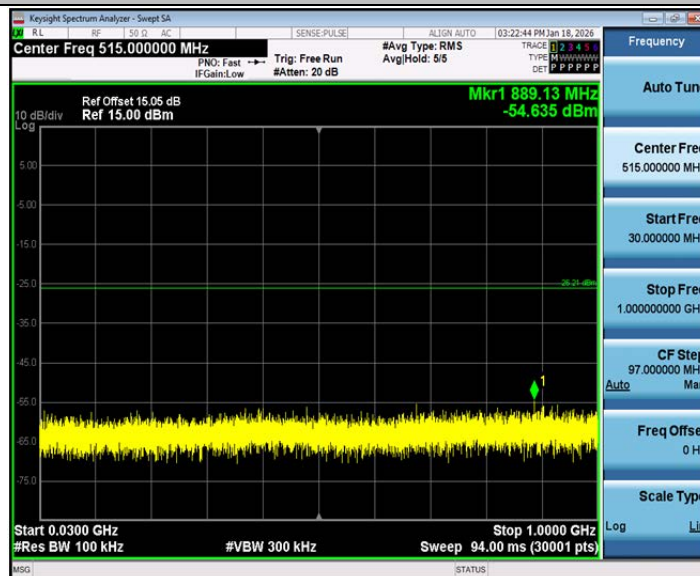
11N20SISO_Ant1_2462_1000~26500



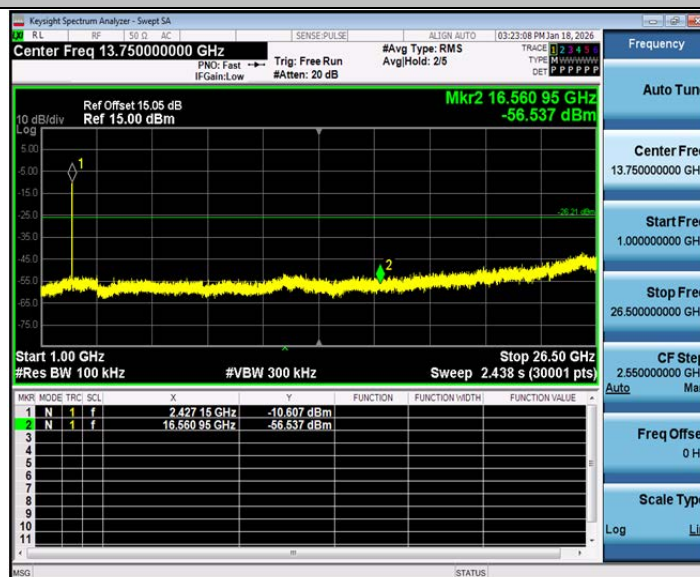
11N40SISO_Ant1_2422_0~Reference



11N40SISO_Ant1_2422_30~1000



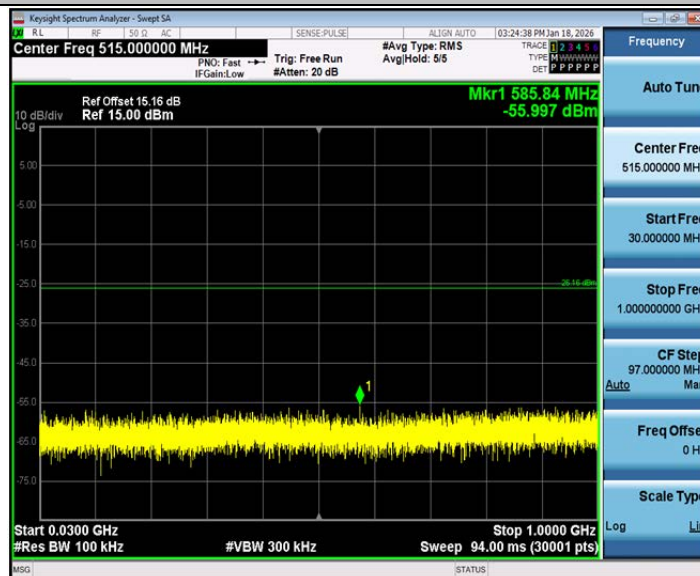
11N40SISO_Ant1_2422_1000~26500



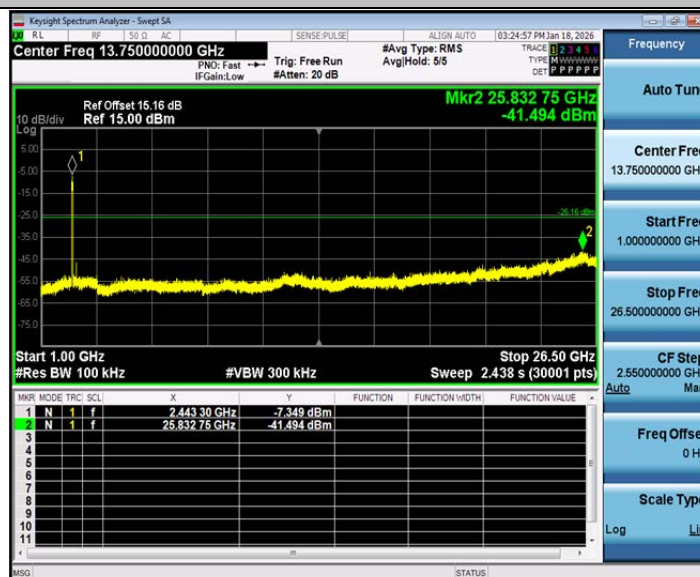
11N40SISO_Ant1_2437_0~Reference



11N40SISO_Ant1_2437_30~1000



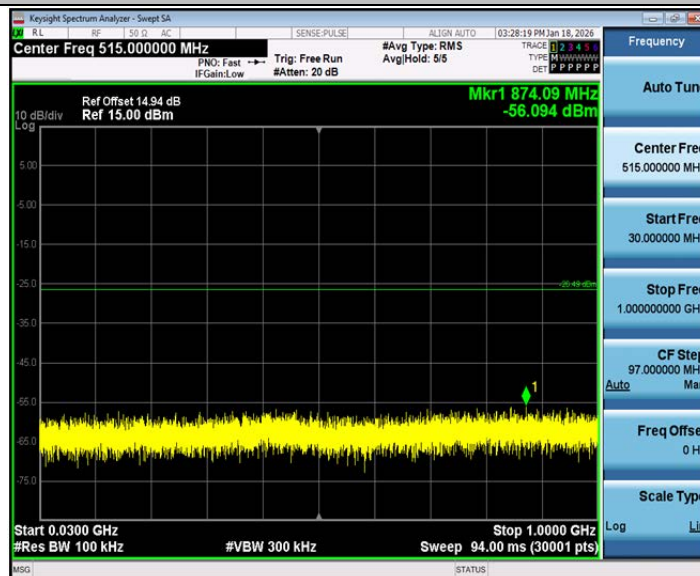
11N40SISO_Ant1_2437_1000~26500



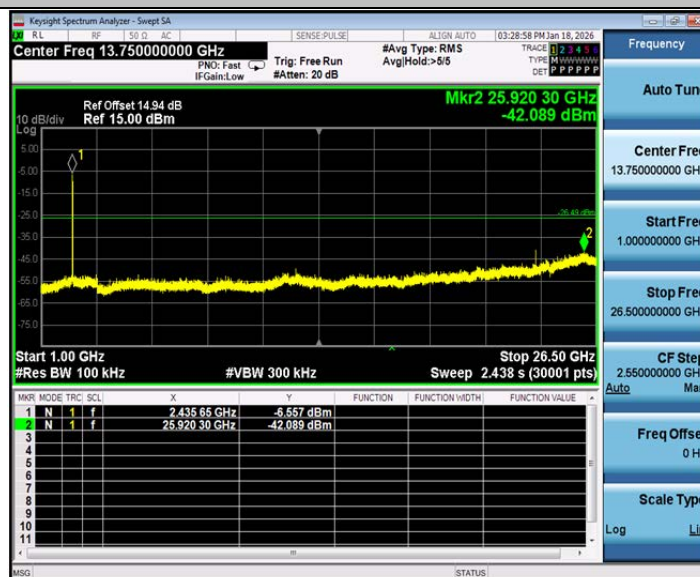
11N40SISO_Ant1_2452_0~Reference



11N40SISO_Ant1_2452_30~1000

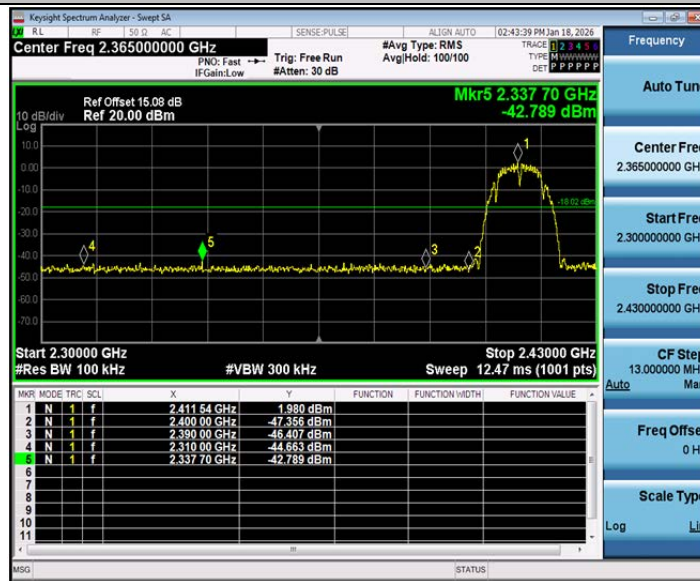


11N40SISO_Ant1_2452_1000~26500

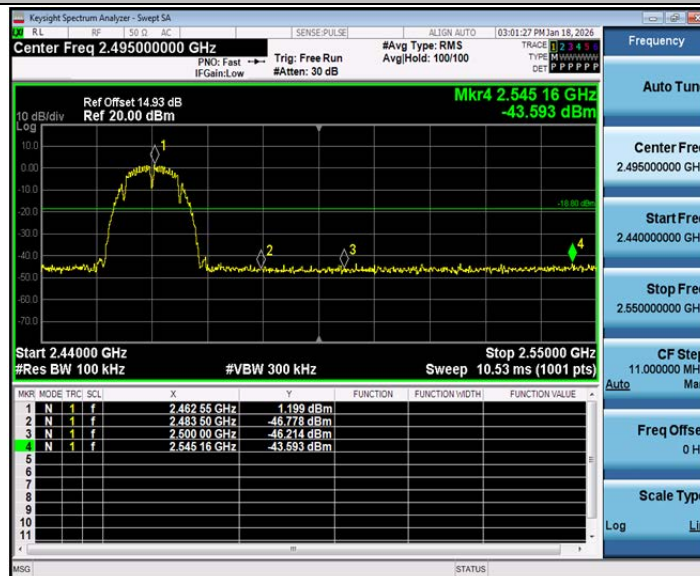


Band edge

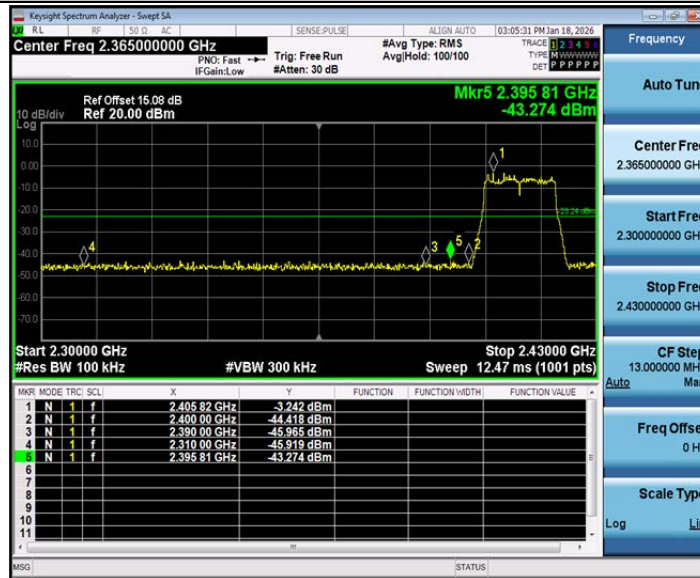
11B_Ant1_Low_2412



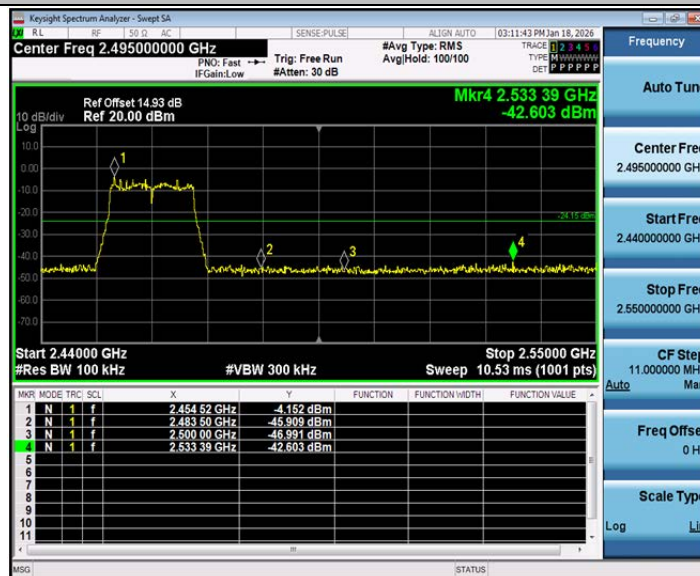
11B_Ant1_High_2462



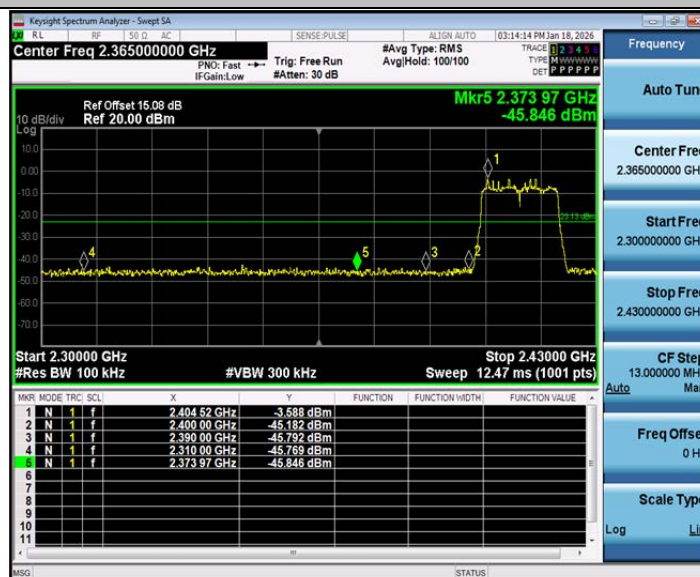
11G_Ant1_Low_2412



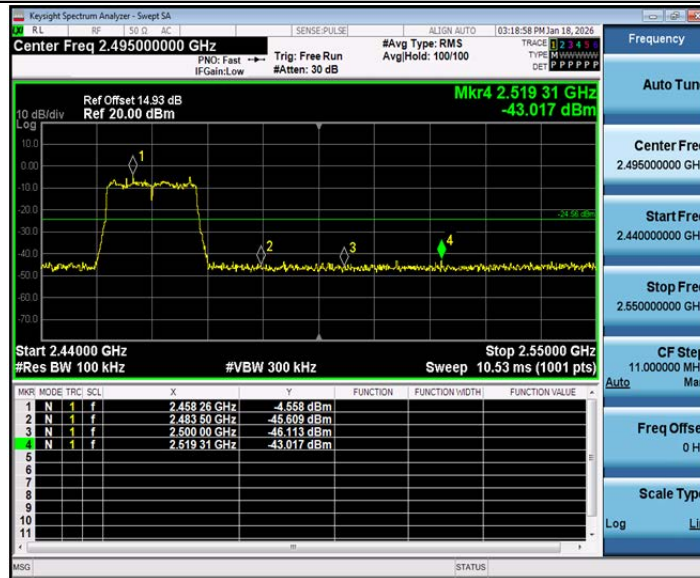
11G_Ant1_High_2462



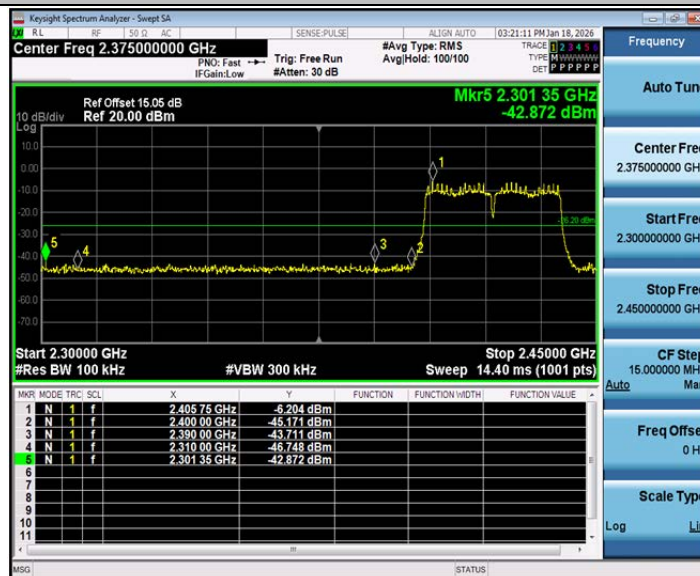
11N20ISO_Ant1_Low_2412



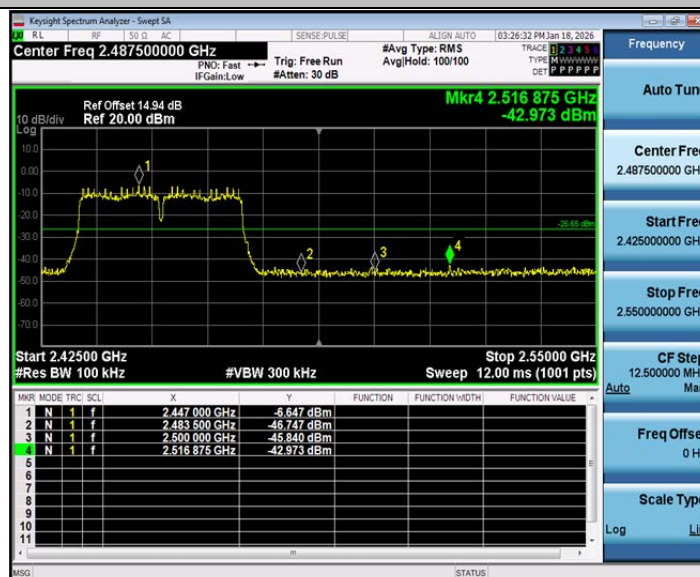
11N20SISO_Ant1_High_2462



11N40SISO_Ant1_Low_2422



11N40SISO_Ant1_High_2452



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 tonscond test system, and the spectrum analyser is set as follow:

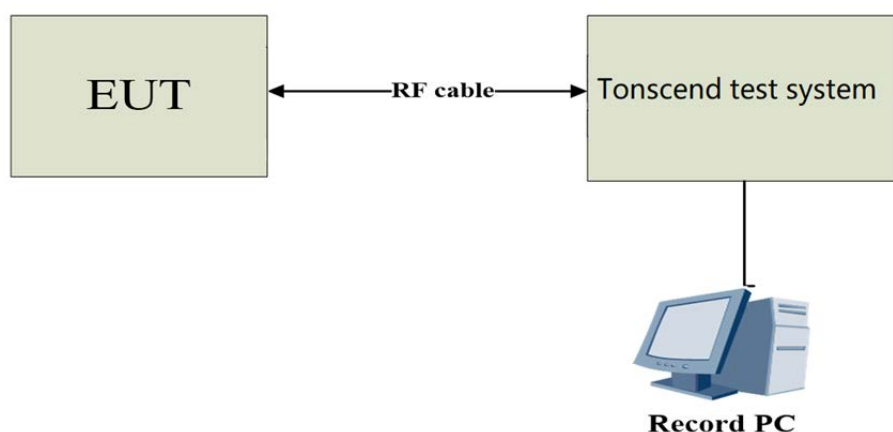
Centre Frequency	The centre frequency of the channel under test
RBW	1%~5% OBW but not less than 100 kHz.
VBW	≥ 3 RBW
Frequency span	2x Nominal Channel Bandwidth
Detector Mode	Peak
Trace Mode	Max Hold
Sweep Time	Auto Couple

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

Test Mode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	9.080	2407.480	2416.560	0.5	PASS
		2437	9.080	2432.480	2441.560	0.5	PASS
		2462	9.080	2457.480	2466.560	0.5	PASS
11G	Ant1	2412	16.400	2403.800	2420.200	0.5	PASS
		2437	16.440	2428.800	2445.240	0.5	PASS
		2462	16.360	2453.840	2470.200	0.5	PASS
11N20SISO	Ant1	2412	17.640	2403.200	2420.840	0.5	PASS
		2437	17.640	2428.200	2445.840	0.5	PASS
		2462	17.600	2453.240	2470.840	0.5	PASS
11N40SISO	Ant1	2422	36.400	2403.840	2440.240	0.5	PASS
		2437	36.400	2418.840	2455.240	0.5	PASS
		2452	36.160	2433.920	2470.080	0.5	PASS

11B_Ant1_2412



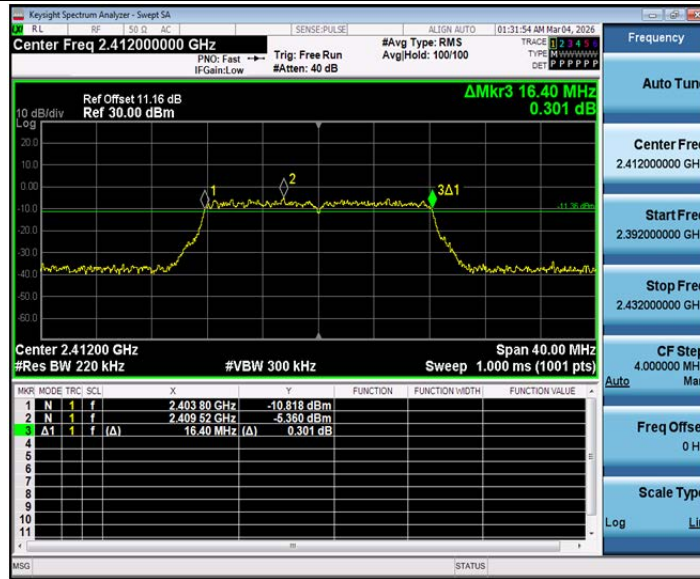
11B_Ant1_2437



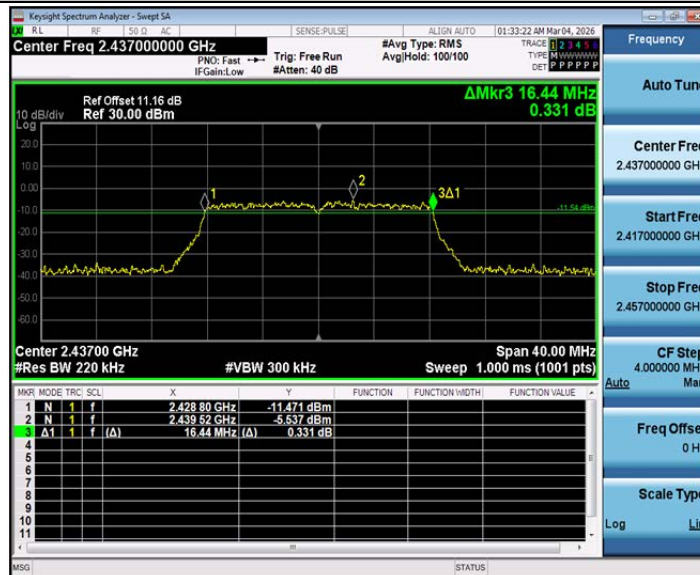
11B_Ant1_2462



11G_Ant1_2412



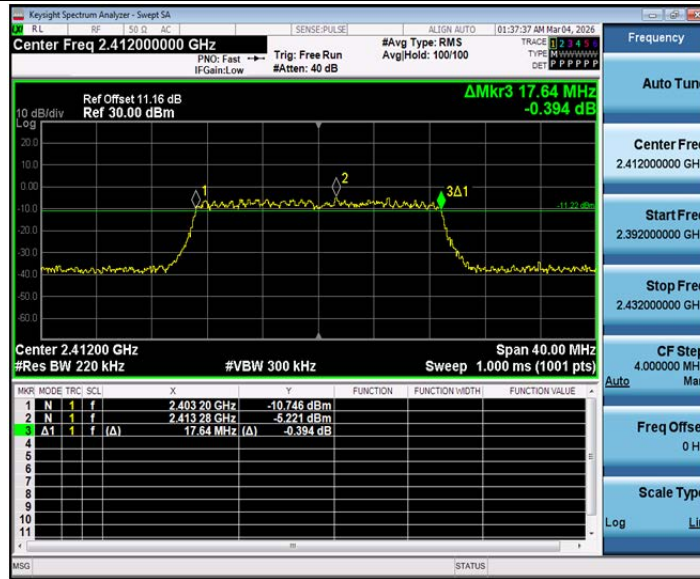
11G_Ant1_2437



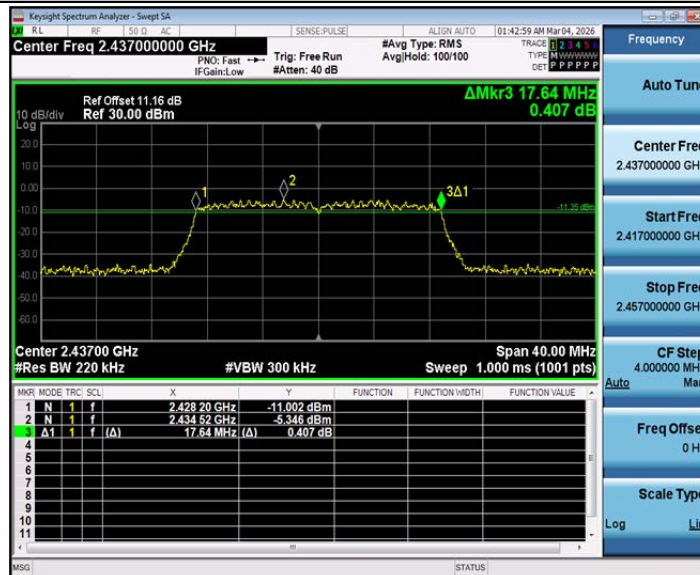
11G_Ant1_2462



11N20SISO_Ant1_2412



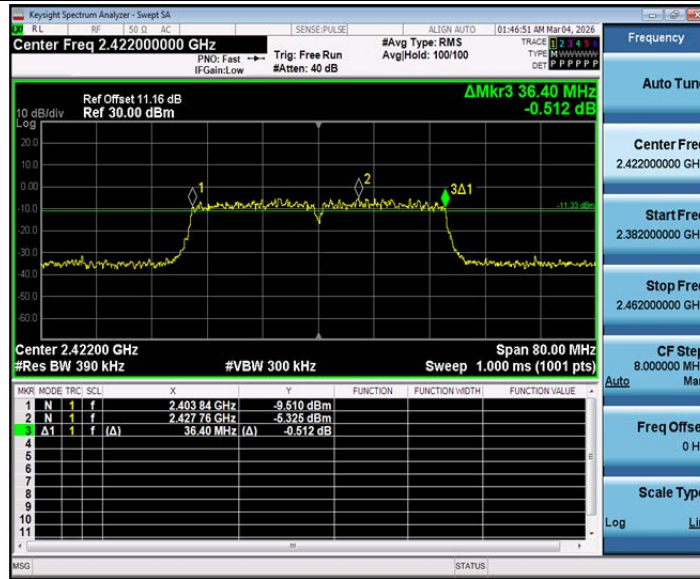
11N20SISO_Ant1_2437



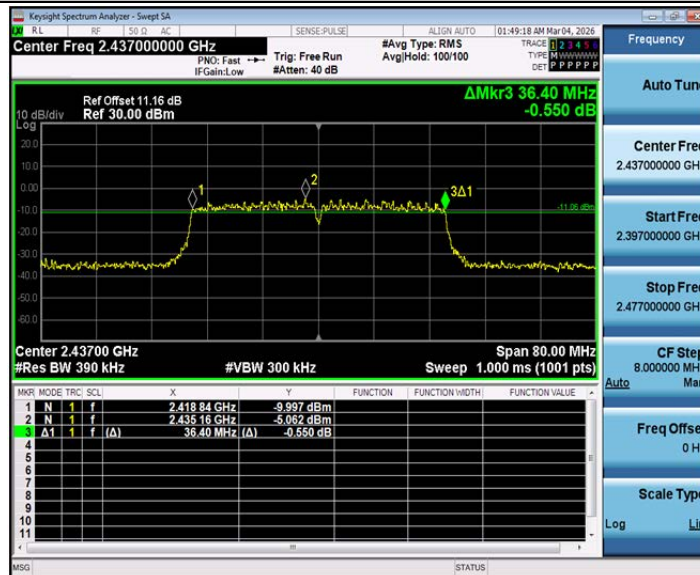
11N20SISO_Ant1_2462



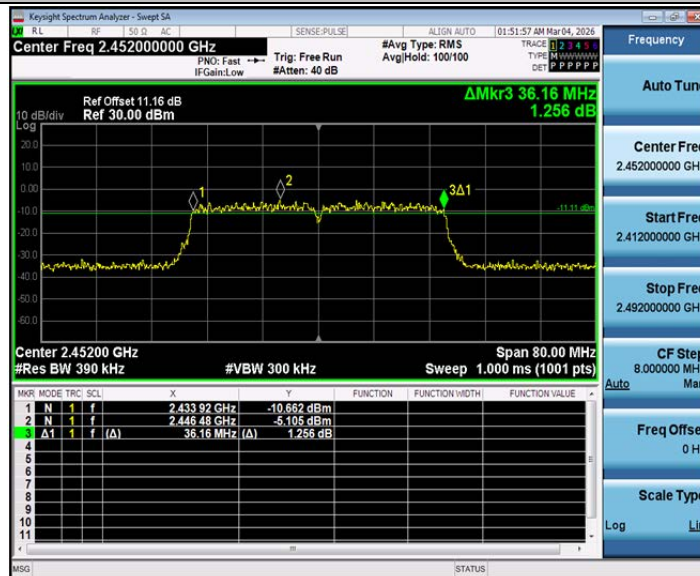
11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



11N40SISO_Ant1_2452



Occupied Channel Bandwidth

Test Mode	Antenna	Channel Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	13.843	2405.1058	2418.9488	---	---
		2437	13.839	2430.0832	2443.9222	---	---
		2462	13.857	2455.0755	2468.9325	---	---
11G	Ant1	2412	16.946	2403.5609	2420.5069	---	---
		2437	17.038	2428.5270	2445.5650	---	---
		2462	17.010	2453.4827	2470.4927	---	---
11N20SISO	Ant1	2412	17.922	2403.0597	2420.9817	---	---
		2437	17.895	2428.0805	2445.9755	---	---
		2462	17.908	2453.0612	2470.9692	---	---
11N40SISO	Ant1	2422	36.514	2403.7790	2440.2930	---	---
		2437	36.599	2418.7284	2455.3274	---	---
		2452	36.567	2433.6825	2470.2495	---	---

11B_Ant1_2412



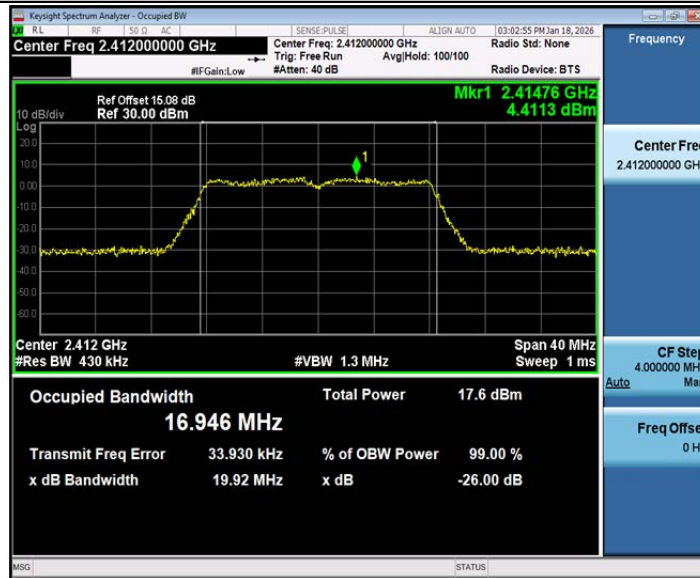
11B_Ant1_2437



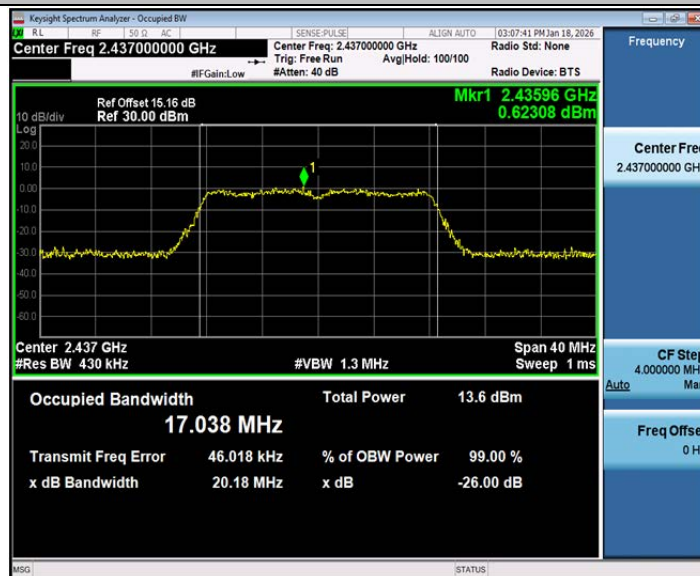
11B_Ant1_2462



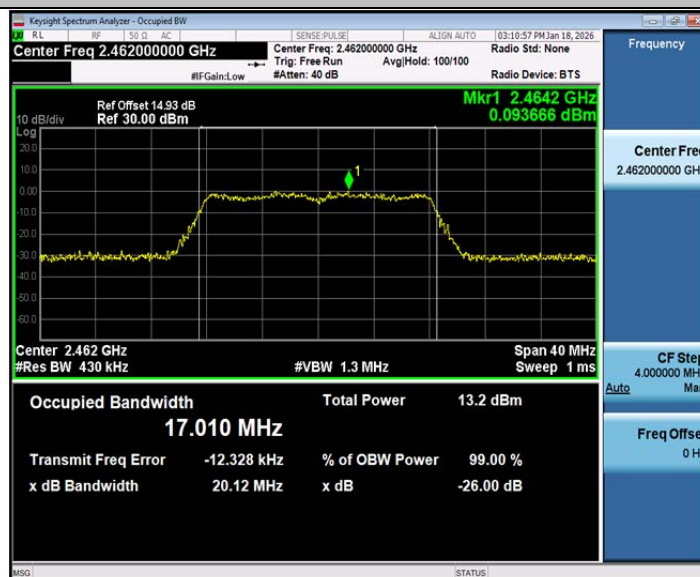
11G_Ant1_2412



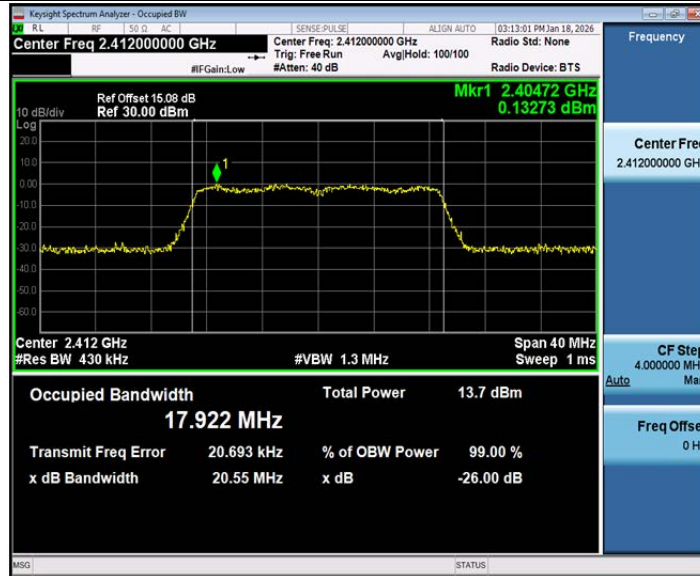
11G_Ant1_2437



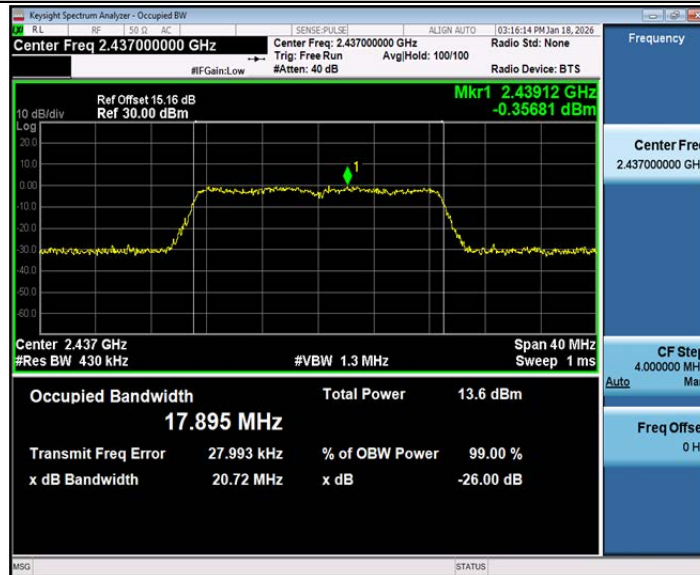
11G_Ant1_2462



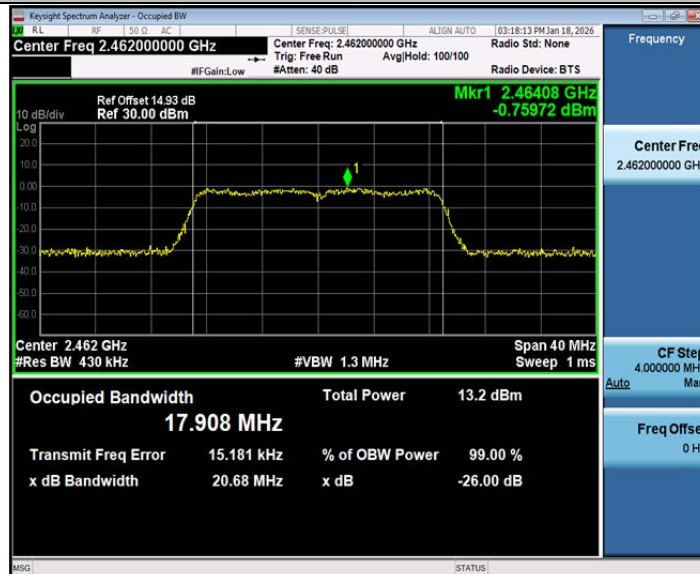
11N20SISO_Ant1_2412



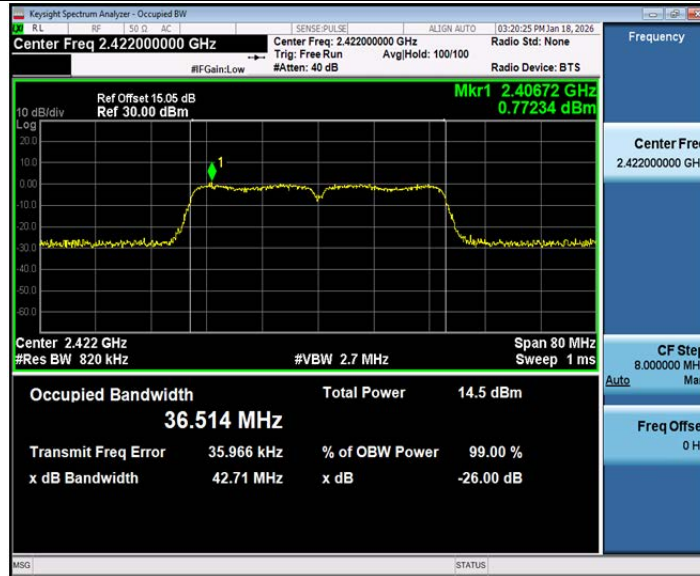
11N20SISO_Ant1_2437



11N20SISO_Ant1_2462



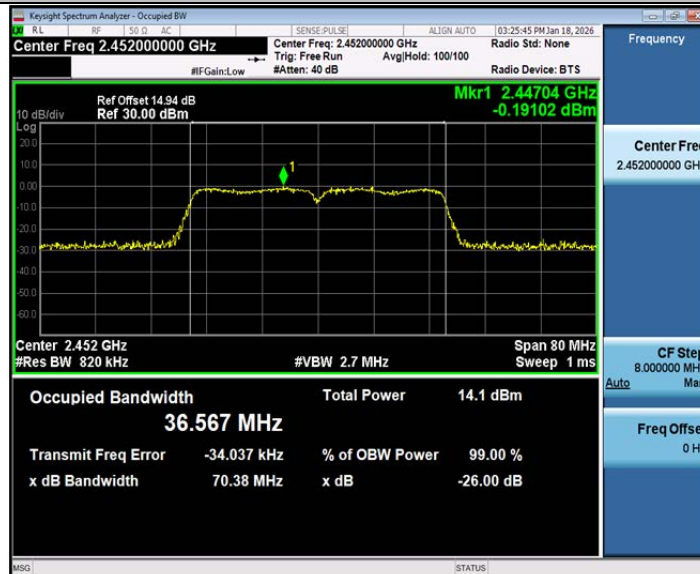
11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



11N40SISO_Ant1_2452



3.5 Maximum conducted output power

3.5.1 Limit

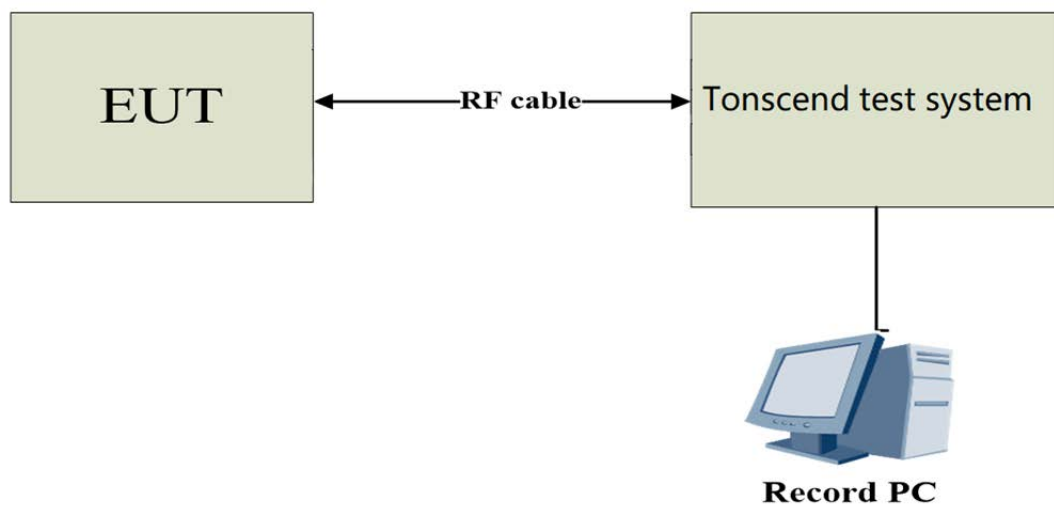
For systems using digital modulation in the 2400~2483.5MHz, The Maximum output Power shall not exceed 1W(30dBm)

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	

- a) The EUT was directly connected to the tonskend test system and antenna output port as show in the block diagram below.
- b) 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	adb.exe		
Frequency (MHz)	2412	2437	2462
IEEE 802.11b	Default	Default	Default
IEEE 802.11g	Default	Default	Default
IEEE 802.11n(20)	Default	Default	Default
Frequency (MHz)	2422	2437	2452
IEEE 802.11n(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	15.32	≤30.00	PASS
		2437	15.35	≤30.00	PASS
		2462	14.69	≤30.00	PASS
11G	Ant1	2412	16.83	≤30.00	PASS
		2437	15.68	≤30.00	PASS
		2462	15.30	≤30.00	PASS
11N20SISO	Ant1	2412	15.83	≤30.00	PASS
		2437	15.78	≤30.00	PASS
		2462	15.32	≤30.00	PASS
11N40SISO	Ant1	2422	15.96	≤30.00	PASS
		2437	15.88	≤30.00	PASS
		2452	15.43	≤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

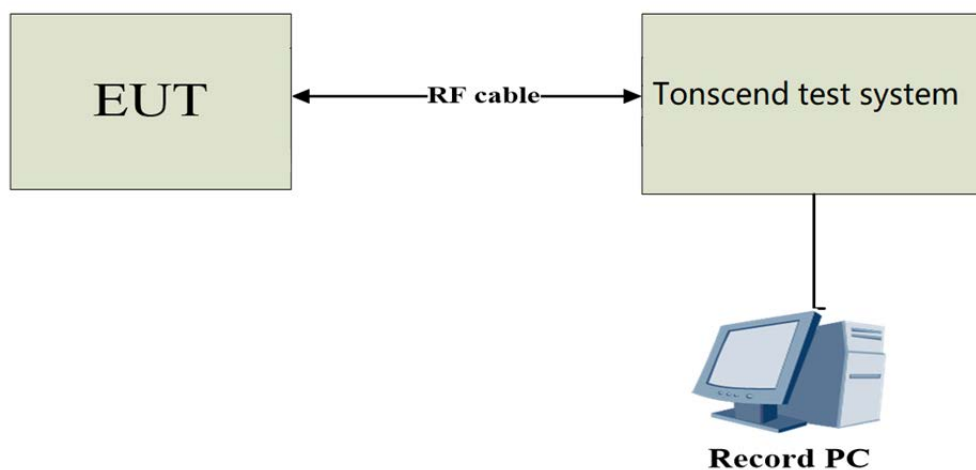
Test Method	
☒ Conducted Measurement	☐ Radiated Measurement
Test Channels	
☒ Lowest, Middle and Highest Channel	☐ Lowest and Highest Channel
Environmental conditions	
☒ Normal	☐ Normal and Extreme
Note: ☒ : Test ☐ : No Test	

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

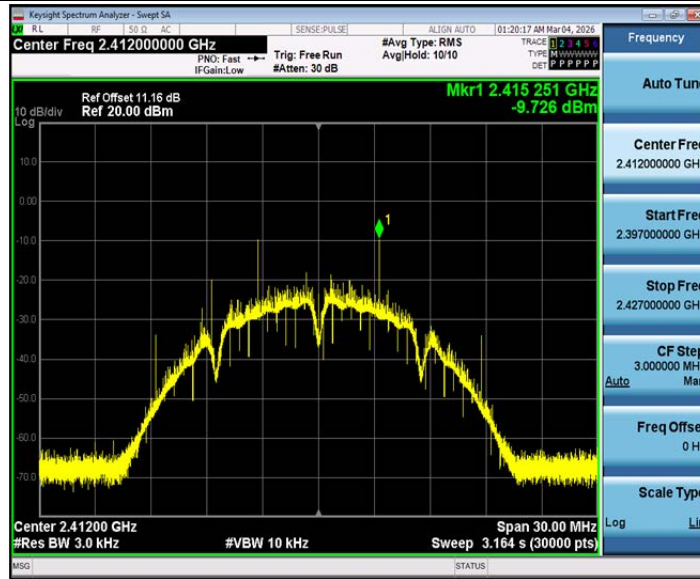
3.6.3 Test Setup



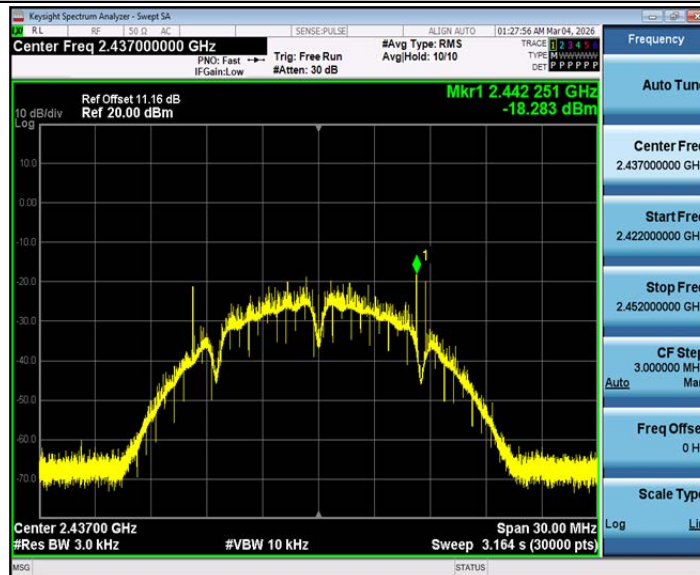
3.6.4 The Result

Test Mode	Antenna	Frequency[MHz]	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-9.73	≤8.00	PASS
		2437	-18.28	≤8.00	PASS
		2462	-19.16	≤8.00	PASS
11G	Ant1	2412	-22.51	≤8.00	PASS
		2437	-22.30	≤8.00	PASS
		2462	-21.58	≤8.00	PASS
11N20SISO	Ant1	2412	-21.06	≤8.00	PASS
		2437	-21.30	≤8.00	PASS
		2462	-20.90	≤8.00	PASS
11N40SISO	Ant1	2422	-23.77	≤8.00	PASS
		2437	-24.19	≤8.00	PASS
		2452	-24.15	≤8.00	PASS

11B_Ant1_2412



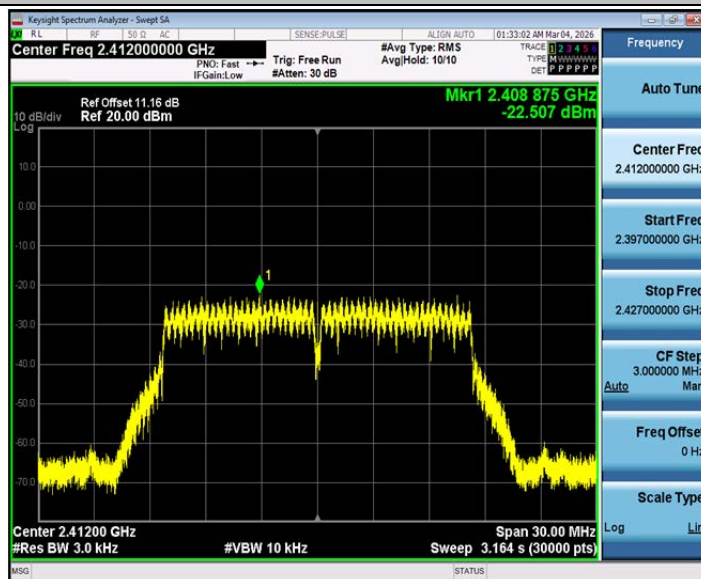
11B_Ant1_2437



11B_Ant1_2462



11G_Ant1_2412



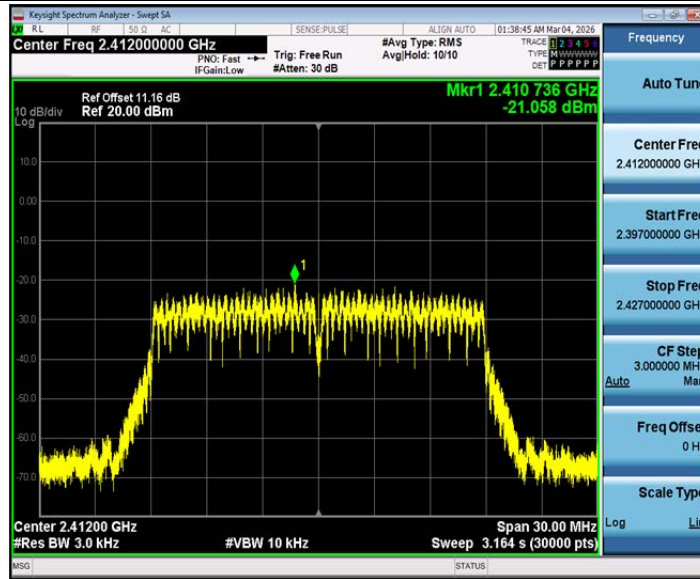
11G_Ant1_2437



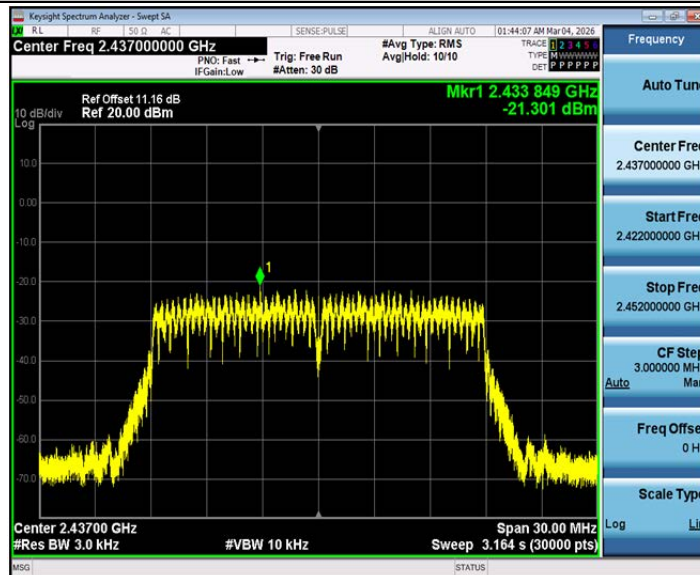
11G_Ant1_2462



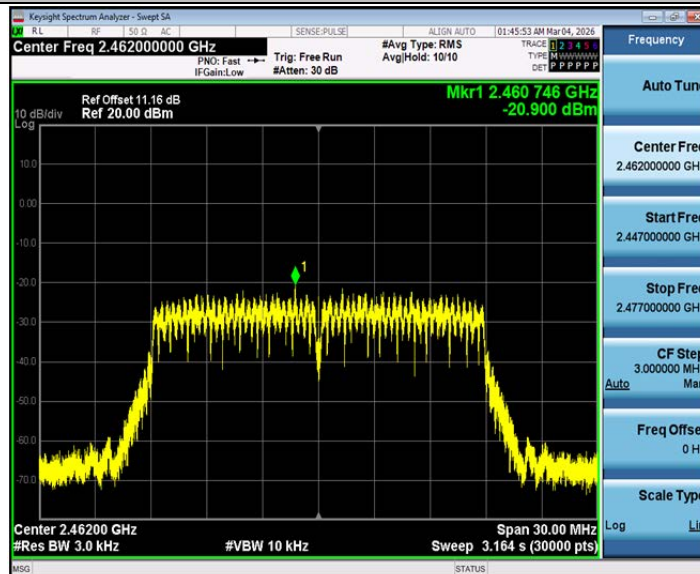
11N20SISO_Ant1_2412



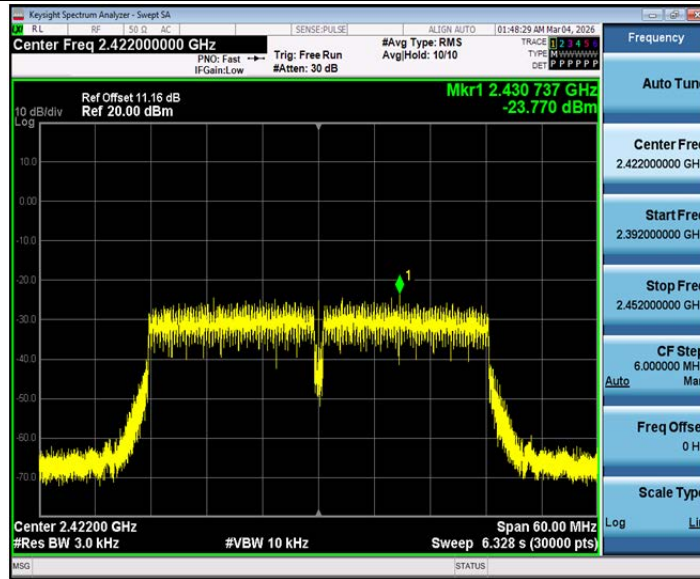
11N20SISO_Ant1_2437



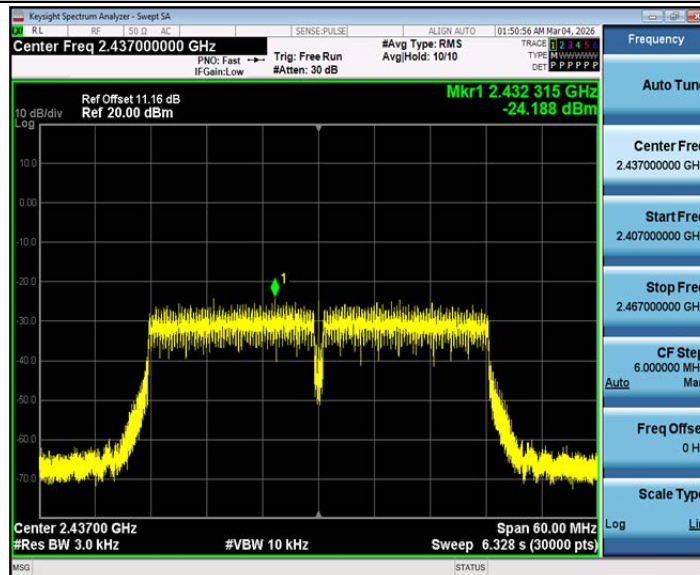
11N20SISO_Ant1_2462



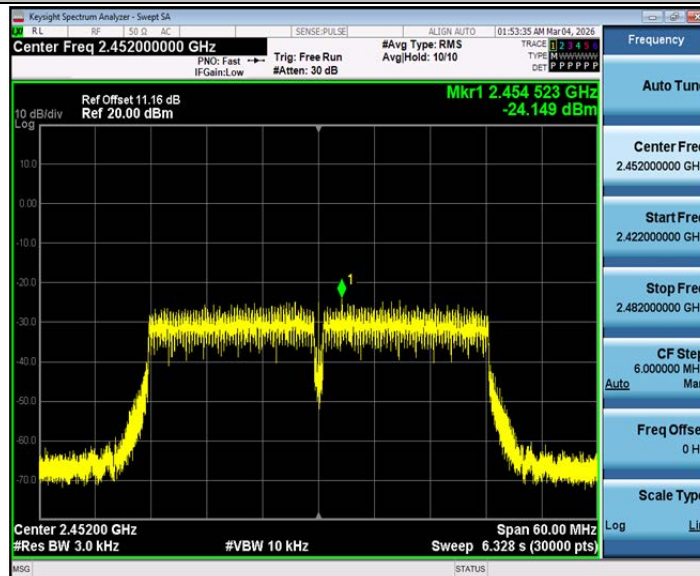
11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



11N40SISO_Ant1_2452



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.

Address: Room 110, 111, 112, 113, 115, 116, Block B, Jinyuan Business Building, No. 302, Xixiang Avenue, Labor Community, Xixiang Street, Baoan District, Shenzhen, China

End of Test Report