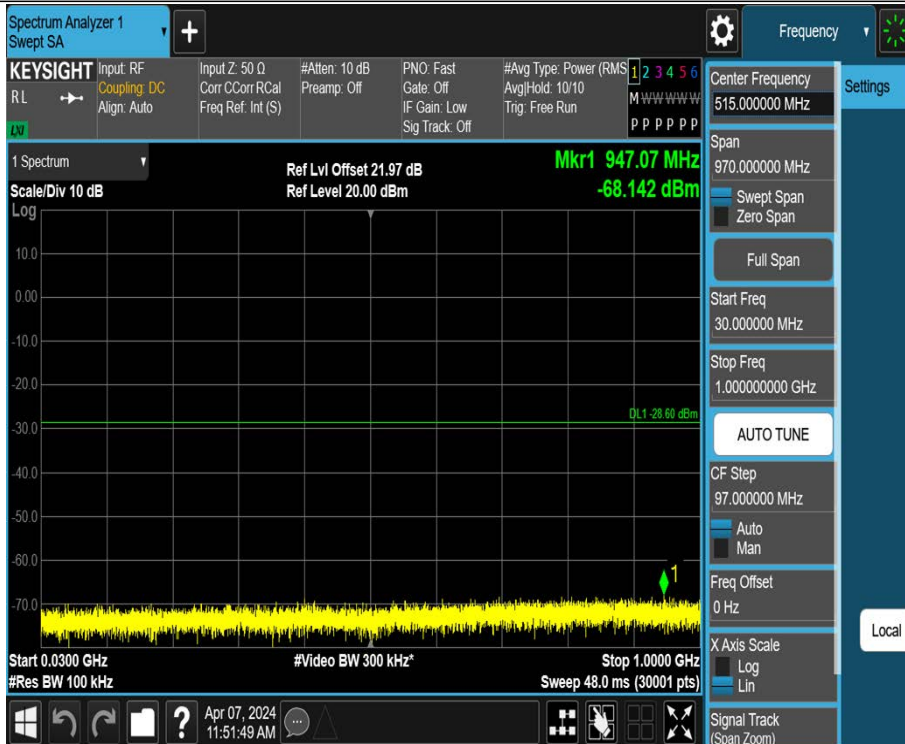


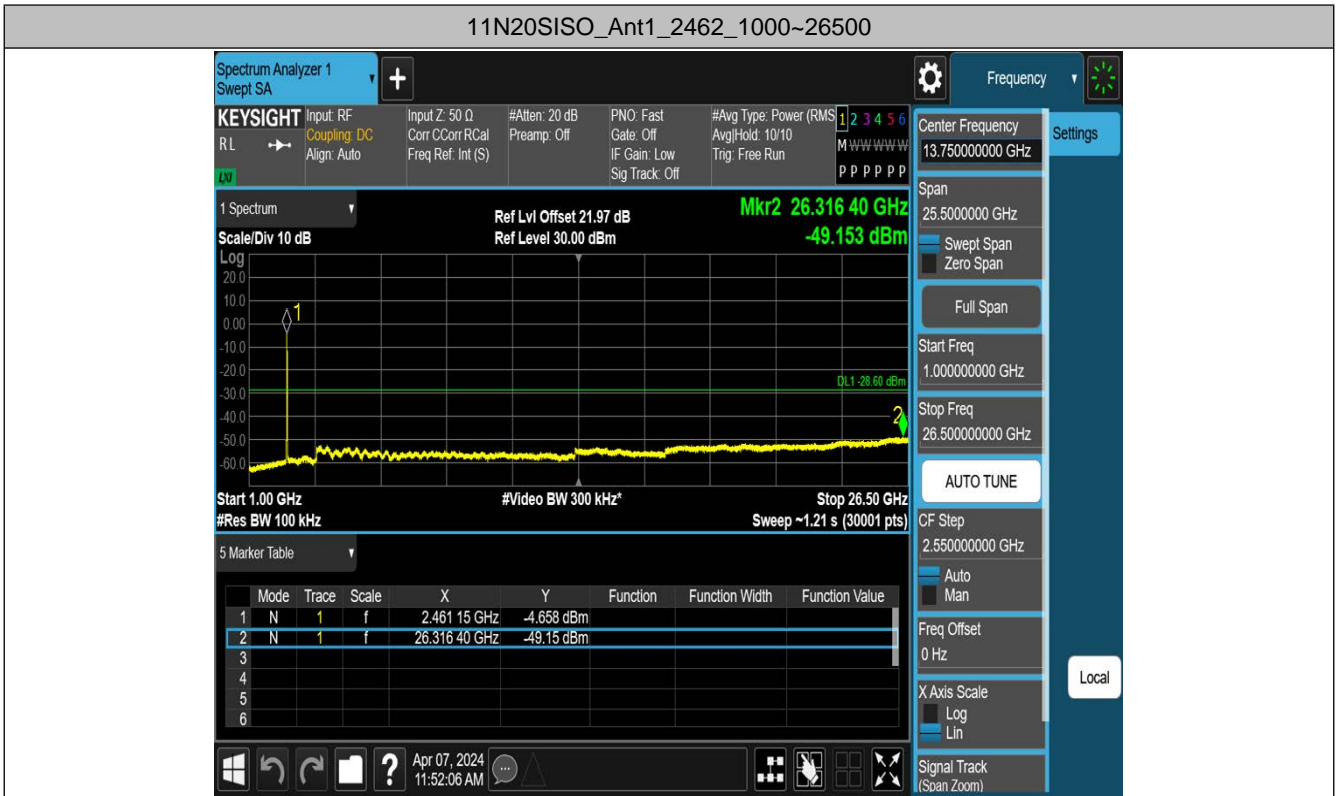
11N20SISO_Ant1_2462_0~Reference



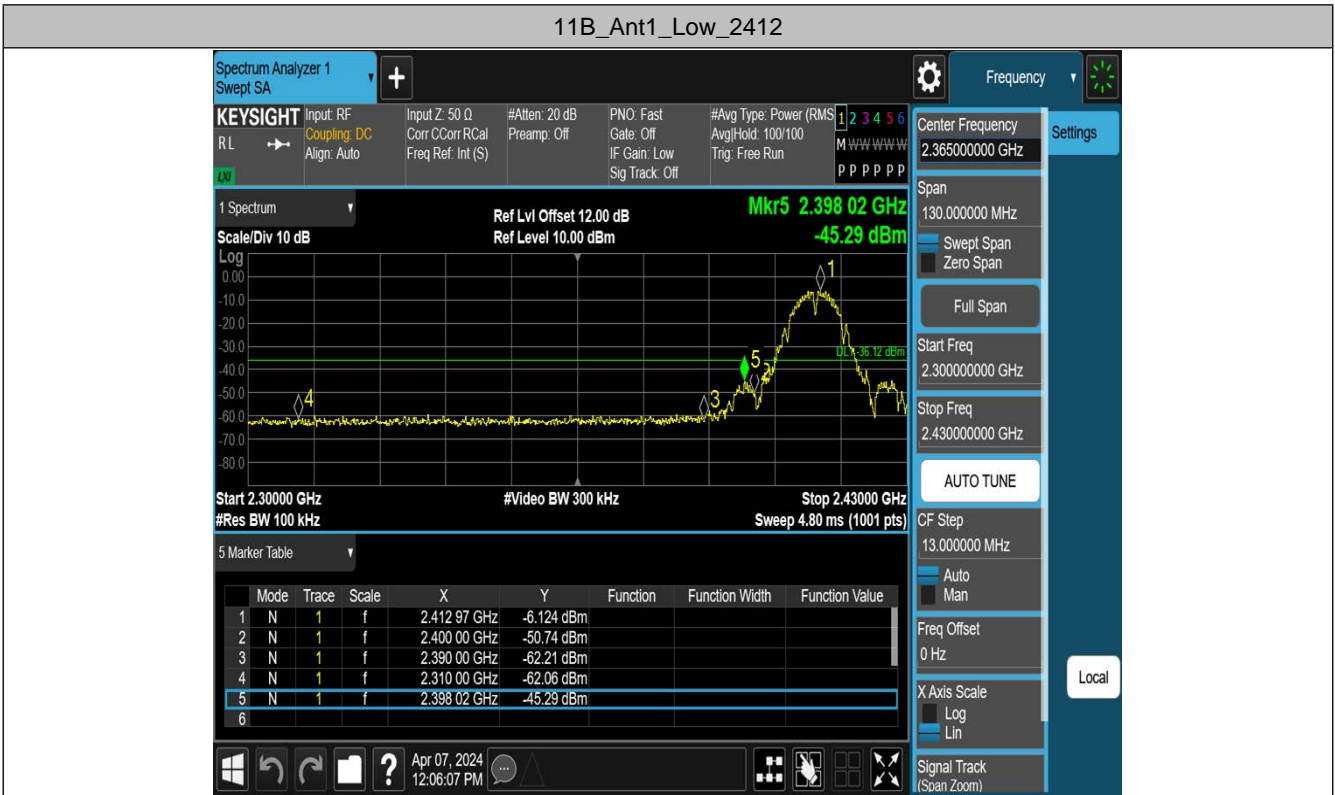
11N20SISO_Ant1_2462_30~1000



11N20SISO_Ant1_2462_1000~26500



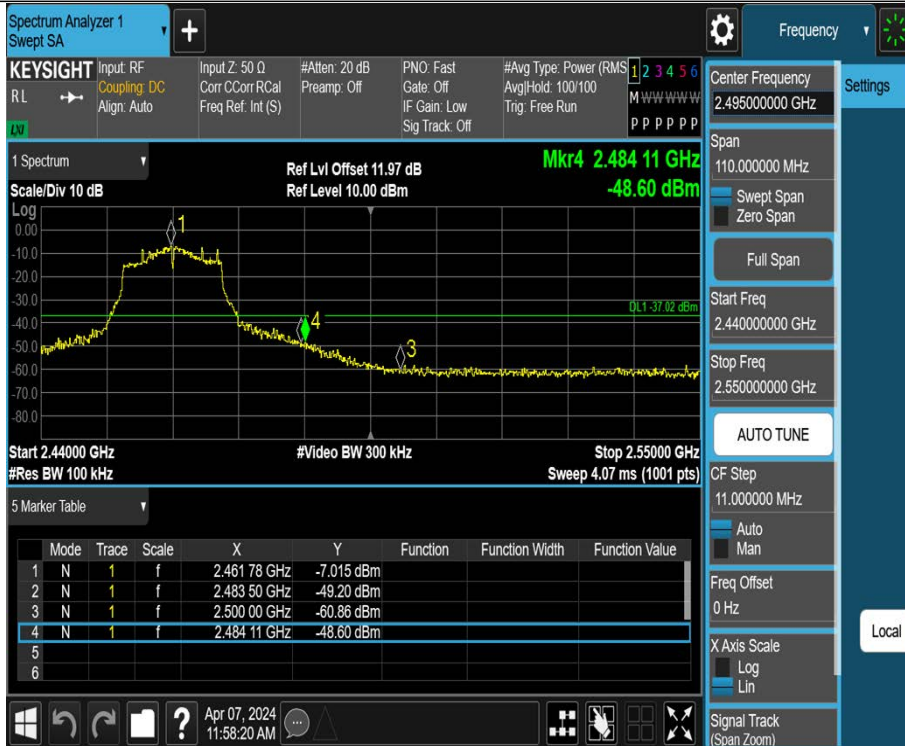
Band edge



11G_Ant1_Low_2412



11G_Ant1_High_2462



11N20SISO_Ant1_Low_2412



11N20SISO_Ant1_High_2462



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	
<input checked="" type="radio"/> Conducted Measurement	<input type="radio"/> Radiated Measurement
Test Channels	
<input checked="" type="radio"/> Lowest, Middle and Highest Channel	<input type="radio"/> Lowest and Highest Channel
Environmental conditions	
<input checked="" type="radio"/> Normal	<input type="radio"/> 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:

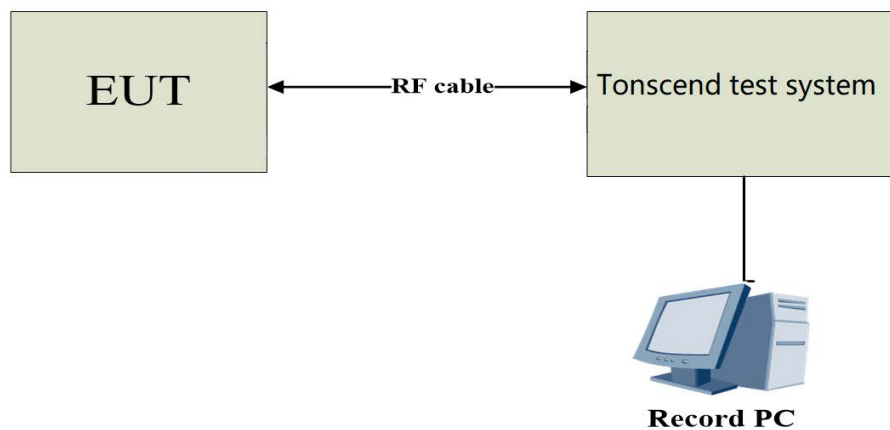
Centre Frequency	The centre frequency of the channel under test
RBW	100kHz
VBW	300kHz
Frequency span	2x Nominal Channel Bandwidth
Detector Mode	Peak
Trace Mode	Max Hold
Sweep Time	Auto Couple

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	7.040	2408.480	2415.520	0.5	PASS
		2437	6.600	2433.920	2440.520	0.5	PASS
		2462	6.600	2458.920	2465.520	0.5	PASS
11G	Ant1	2412	12.360	2407.200	2419.560	0.5	PASS
		2437	15.320	2429.400	2444.720	0.5	PASS
		2462	12.760	2455.720	2468.480	0.5	PASS
11N20SISO	Ant1	2412	16.080	2404.400	2420.480	0.5	PASS
		2437	15.840	2429.520	2445.360	0.5	PASS
		2462	15.120	2454.400	2469.520	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



Occupied Channel Bandwidth

Test Mode	Antenna	Channel Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	11.367	2406.3686	2417.7356	---	---
		2437	11.310	2431.4187	2442.7287	---	---
		2462	11.367	2456.4159	2467.7829	---	---
11G	Ant1	2412	16.983	2403.5603	2420.5433	---	---
		2437	16.877	2428.6273	2445.5043	---	---
		2462	16.748	2453.6826	2470.4306	---	---
11N20SISO	Ant1	2412	17.888	2403.1196	2421.0076	---	---
		2437	17.967	2428.1012	2446.0682	---	---
		2462	17.772	2453.1717	2470.9437	---	---

11B_Ant1_2412



11B_Ant1_2437



11B_Ant1_2462



11G_Ant1_2412



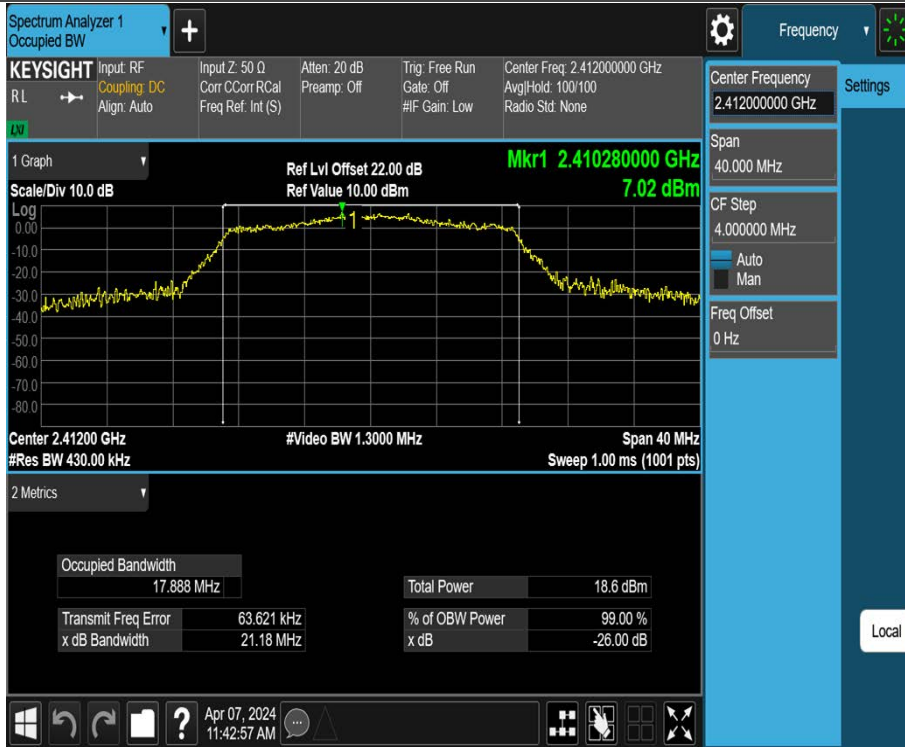
11G_Ant1_2437



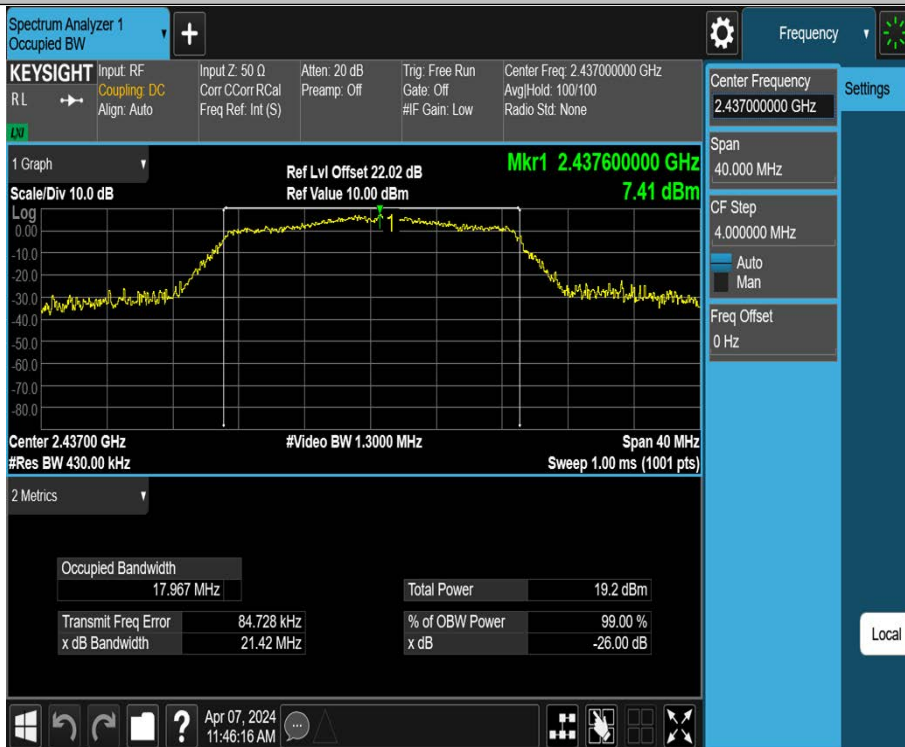
11G_Ant1_2462



11N20SISO_Ant1_2412



11N20SISO_Ant1_2437





3.5 Maximum conducted output power

3.5.1 Limit

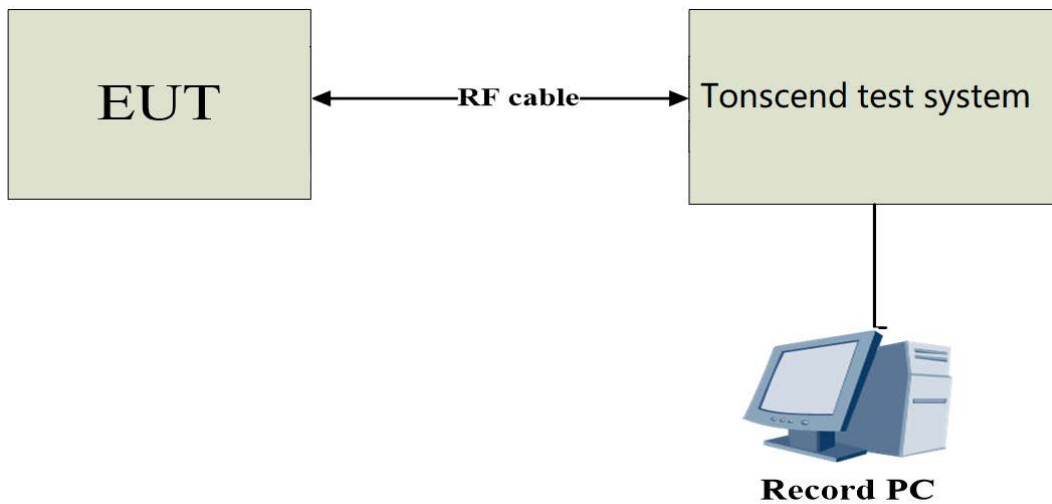
For systems using digital modulation in the 2400~2483.5MHz, The Maximum output Power shall not exceed 1W(30dBm)

3.5.2 Test Procedure

Test Method	
<input checked="" type="radio"/> Conducted Measurement	<input type="radio"/> Radiated Measurement
Test Channels	
<input checked="" type="radio"/> Lowest, Middle and Highest Channel	<input type="radio"/> Lowest and Highest Channel
Environmental conditions	
<input checked="" type="radio"/> Normal	<input type="radio"/> 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 11.9.2.3 (for average power) of ANSI C63.10-2013.

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	cmd.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

3.5.5 The Result

Test Mode	Antenna	Frequency[MHz]	Maximum conducted output Power [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	12.98	≤30.00	PASS
		2437	13.64	≤30.00	PASS
		2462	14.34	≤30.00	PASS
11G	Ant1	2412	12.80	≤30.00	PASS
		2437	13.56	≤30.00	PASS
		2462	14.39	≤30.00	PASS
11N20SISO	Ant1	2412	12.42	≤30.00	PASS
		2437	13.09	≤30.00	PASS
		2462	13.94	≤30.00	PASS

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

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

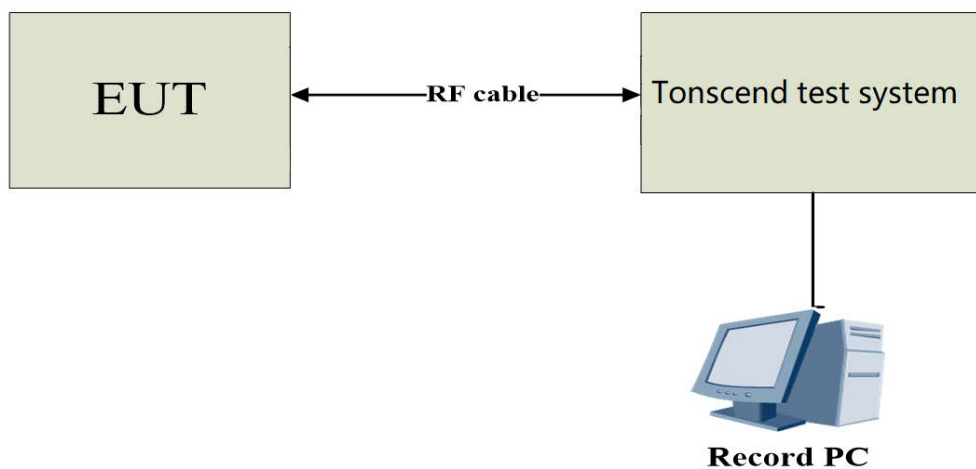
Test Method	
<input checked="" type="radio"/> Conducted Measurement	<input type="radio"/> Radiated Measurement
Test Channels	
<input checked="" type="radio"/> Lowest, Middle and Highest Channel	<input type="radio"/> Lowest and Highest Channel
Environmental conditions	
<input checked="" type="radio"/> Normal	<input type="radio"/> 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.

b) Spectrum analyser settings as following:

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

3.6.3 Test Setup

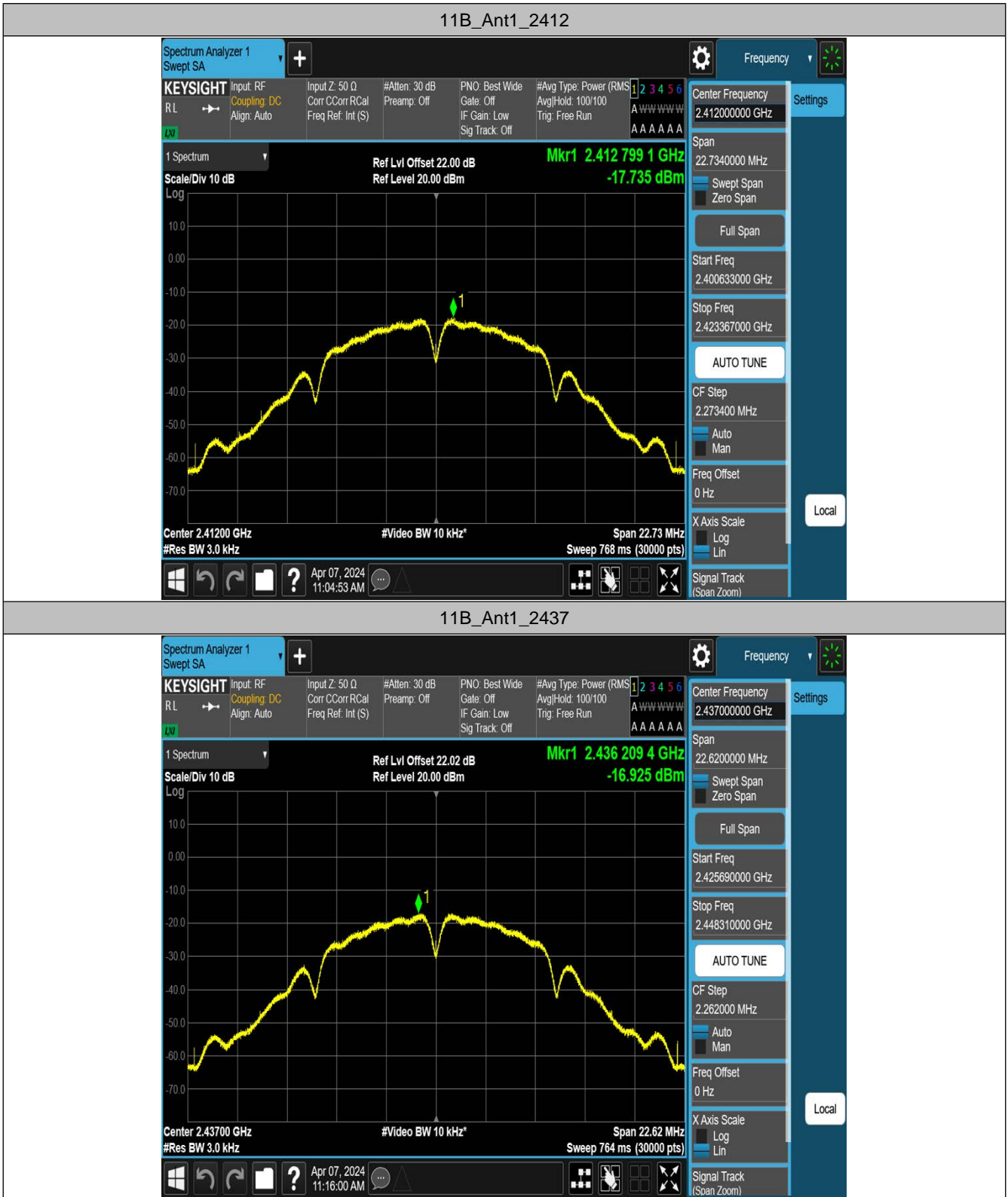


3.6.4 The Result

Test Mode	Antenna	Frequency[MHz]	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-17.74	≤8.00	PASS
		2437	-16.93	≤8.00	PASS
		2462	-16.35	≤8.00	PASS
11G	Ant1	2412	-16.46	≤8.00	PASS
		2437	-15.26	≤8.00	PASS
		2462	-14.45	≤8.00	PASS
11N20SISO	Ant1	2412	-18.94	≤8.00	PASS
		2437	-18.51	≤8.00	PASS
		2462	-17.29	≤8.00	PASS

Note: The duty cycle factor and line loss are compensated in the test graph.

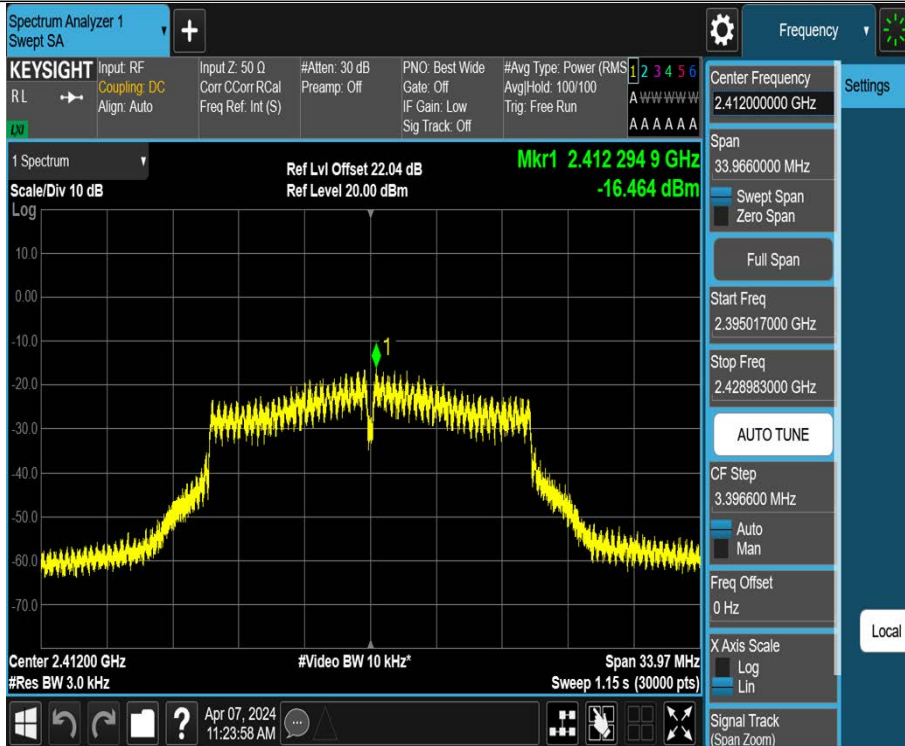
Test graph



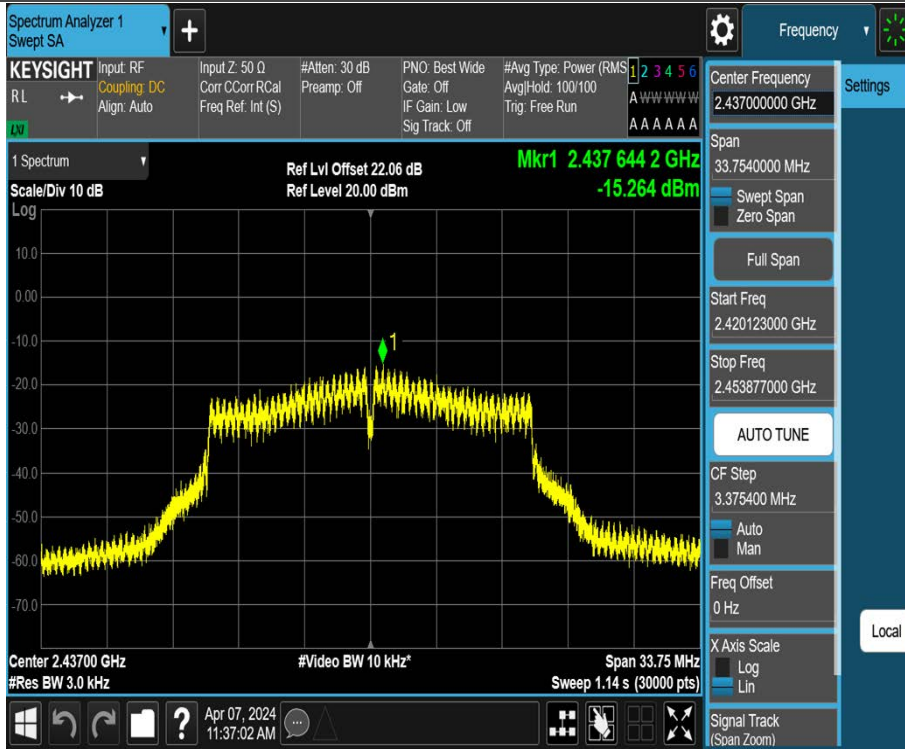
11B_Ant1_2462



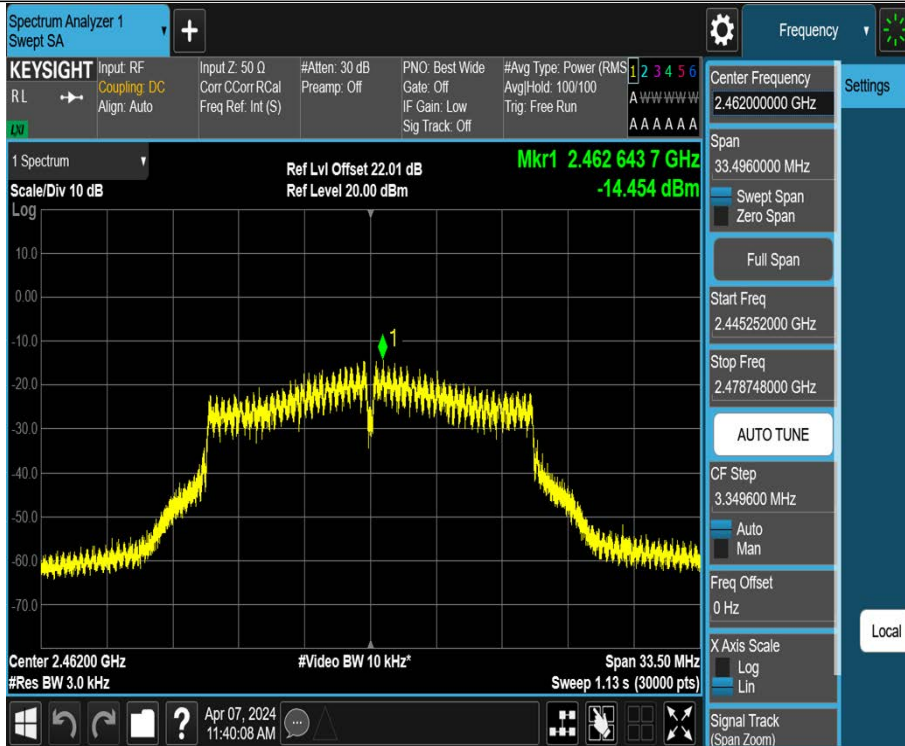
11G_Ant1_2412



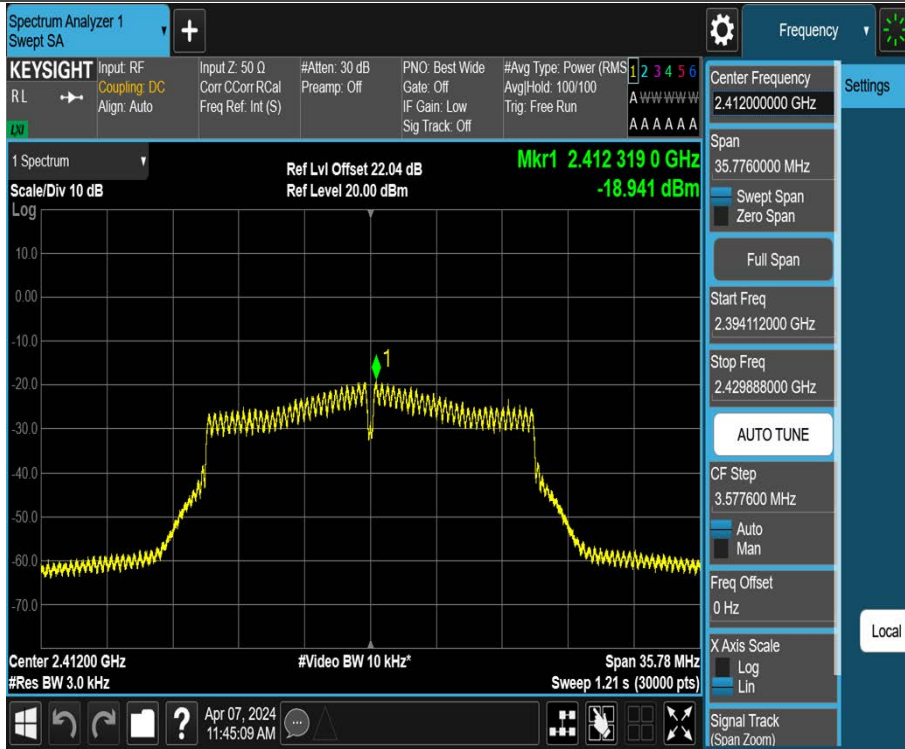
11G_Ant1_2437



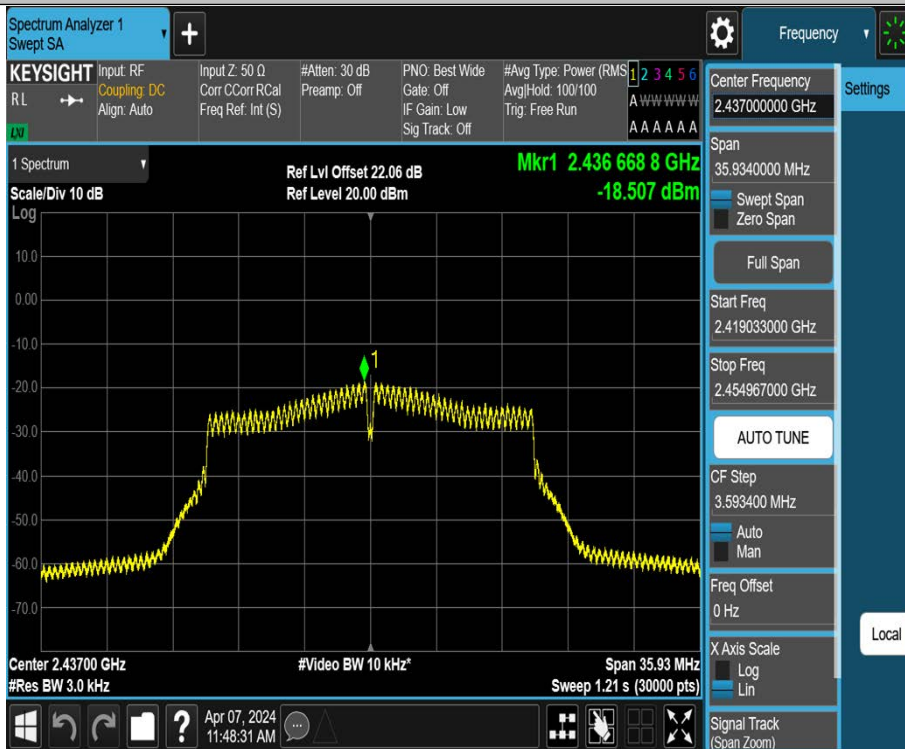
11G_Ant1_2462



11N20SISO_Ant1_2412



11N20SISO_Ant1_2437



11N20SISO_Ant1_2462



Statement

1. The report is invalid without the official seal or special seal of Shenzhen Haiyun Standard Technology 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 Technology Co., Ltd.

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Tel: 0755-26024411

Email: service@hy-lab.cn

End of Test Report