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:

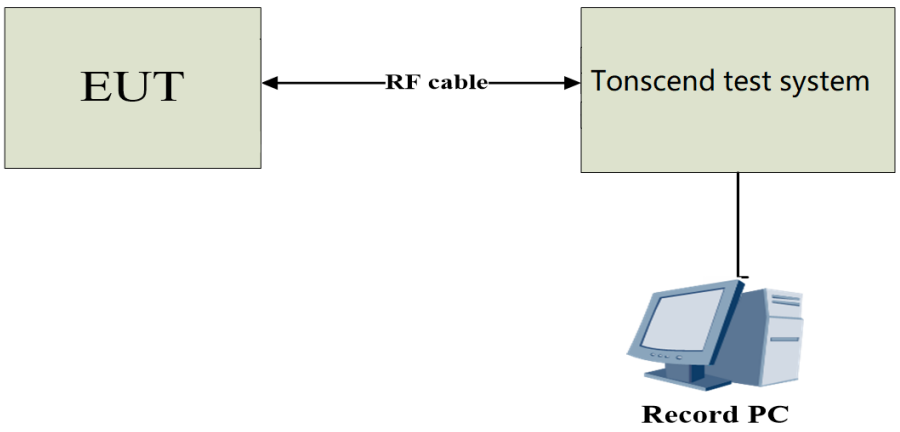
Centre Frequency	The centre frequency of the channel under test
RBW	100kHz
VBW	300kHz
Frequency span	2x Nominal Channel Bandwidth
Detector Mode	Peak
Trace Mode	Max Hold
Sweep Time	Auto Couple

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.

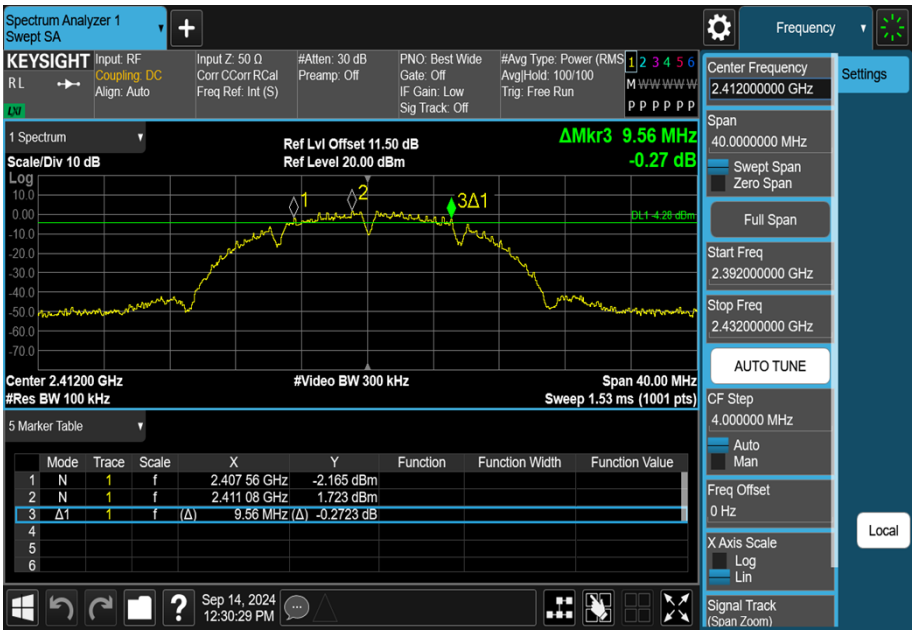
3.4.3 Test Setup



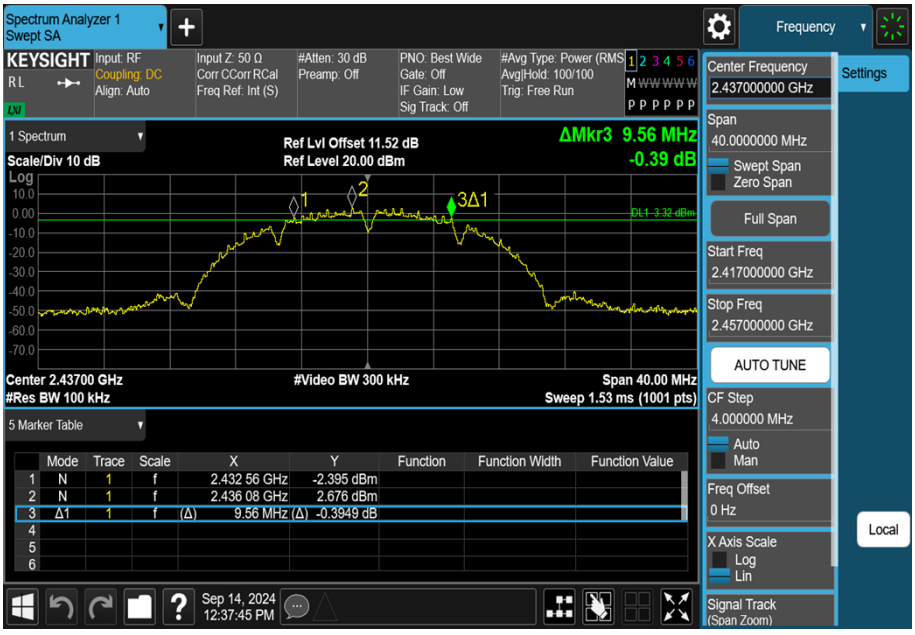
3.4.4 Test Result

DTS Bandwidth

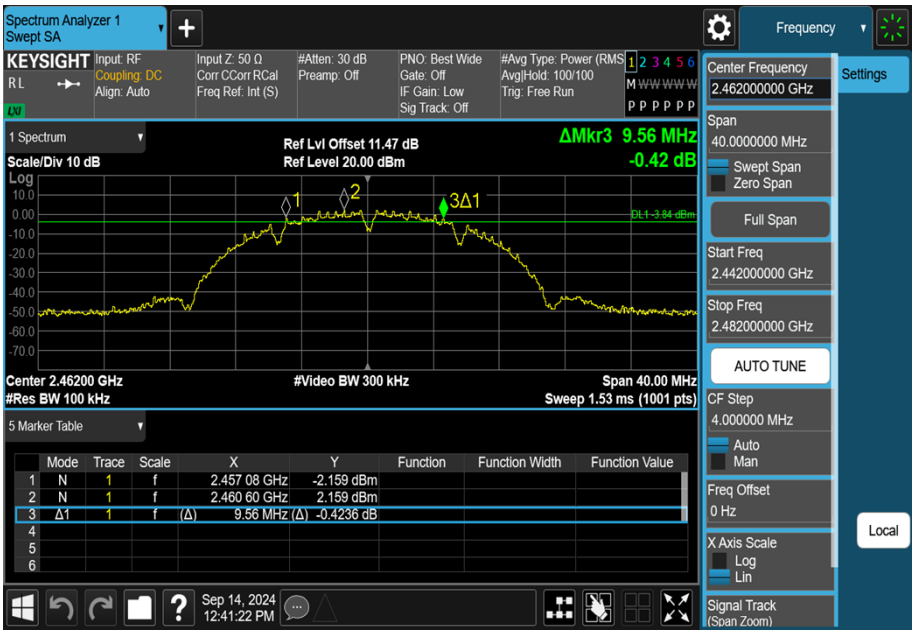
TestMode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	9.560	2407.560	2417.120	0.5	PASS
11B	Ant1	2437	9.560	2432.560	2442.120	0.5	PASS
11B	Ant1	2462	9.560	2457.080	2466.640	0.5	PASS
11G	Ant1	2412	16.240	2404.000	2420.240	0.5	PASS
11G	Ant1	2437	16.400	2428.880	2445.280	0.5	PASS
11G	Ant1	2462	16.320	2453.920	2470.240	0.5	PASS
11N20SISO	Ant1	2412	16.680	2404.160	2420.840	0.5	PASS
11N20SISO	Ant1	2437	17.600	2428.280	2445.880	0.5	PASS
11N20SISO	Ant1	2462	17.560	2453.320	2470.880	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

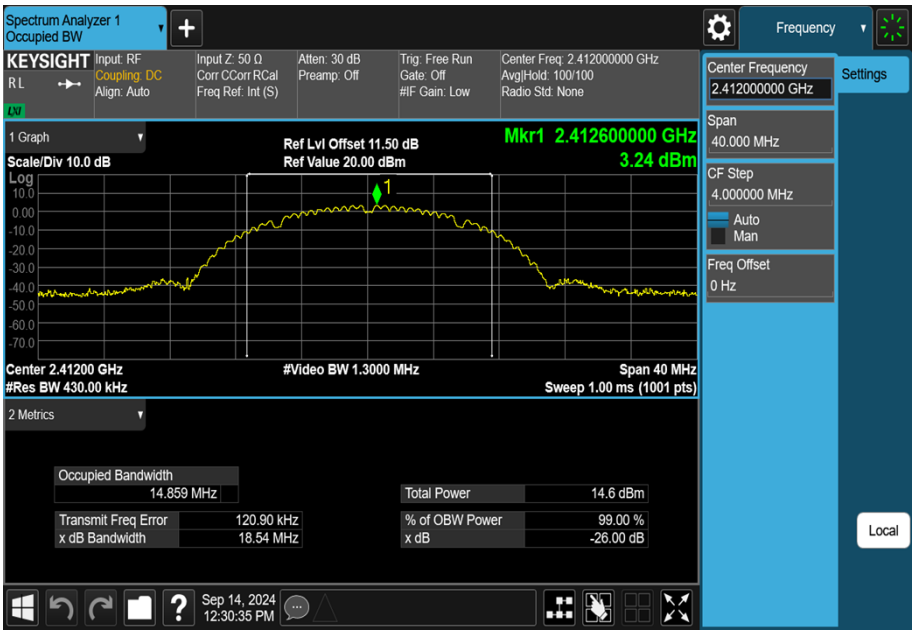
11N20SISO-Ant1-2412-PASS

11N20SISO-Ant1-2437-PASS

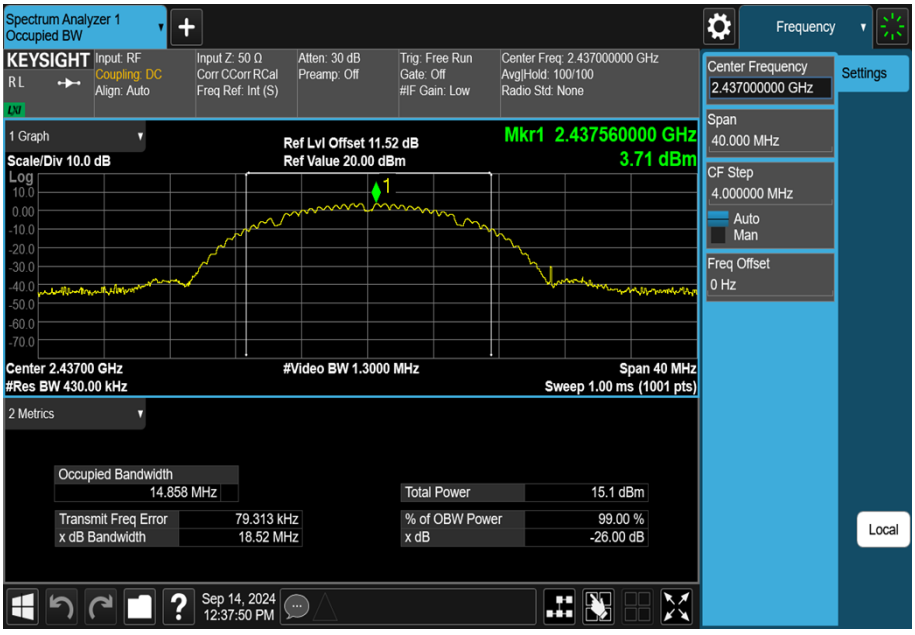
11N20SISO-Ant1-2462-PASS

Occupied Channel Bandwidth

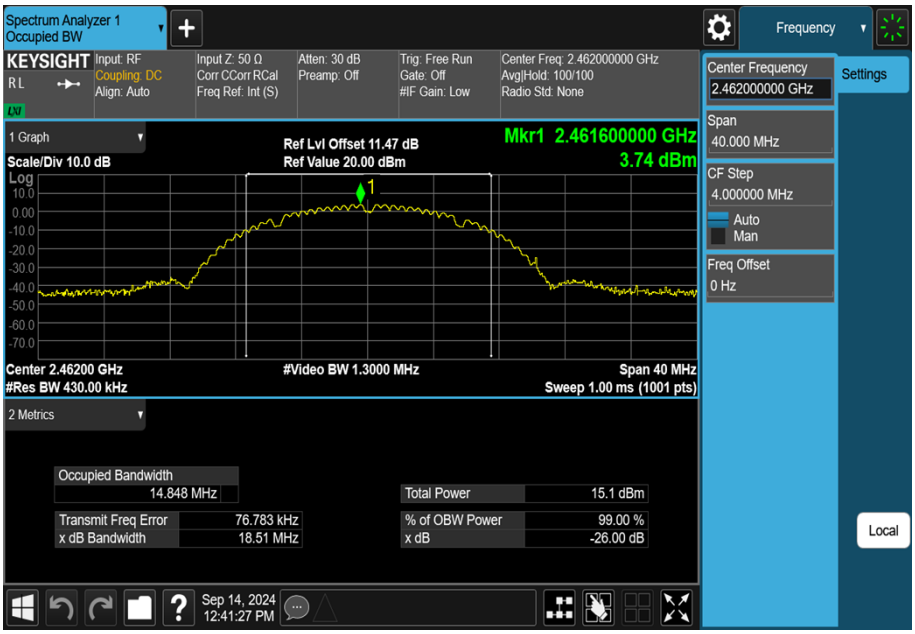
TestMode	Antenna	Channel Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	14.859	2404.6914	2419.5504	---	---
11B	Ant1	2437	14.858	2429.6503	2444.5083	---	---
11B	Ant1	2462	14.848	2454.6528	2469.5008	---	---
11G	Ant1	2412	17.032	2403.6001	2420.6321	---	---
11G	Ant1	2437	16.995	2428.6168	2445.6118	---	---
11G	Ant1	2462	17.089	2453.5179	2470.6069	---	---
11N20SISO	Ant1	2412	18.182	2403.0199	2421.2019	---	---
11N20SISO	Ant1	2437	18.064	2428.0491	2446.1131	---	---
11N20SISO	Ant1	2462	18.086	2452.9875	2471.0735	---	---



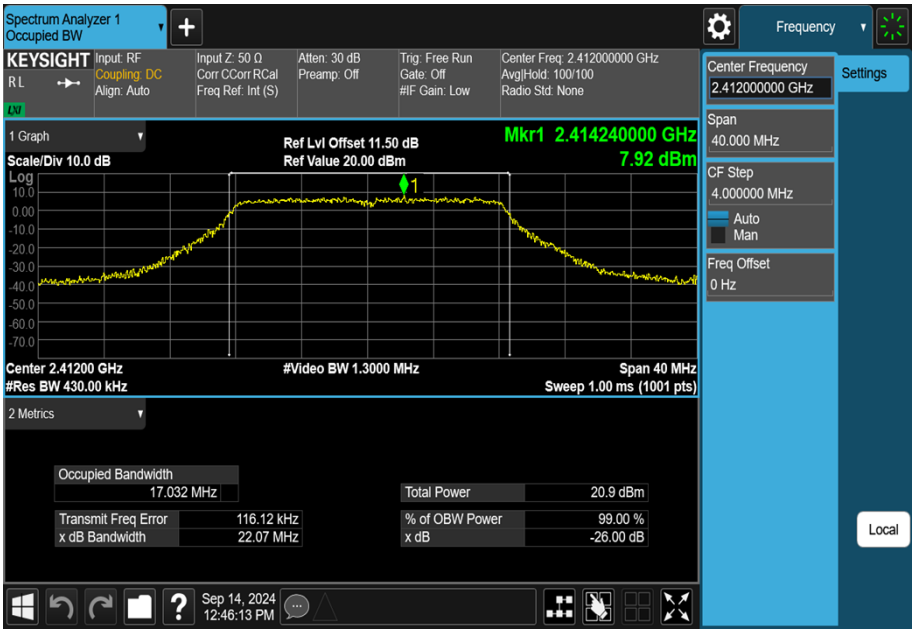
11B-Ant1-2412



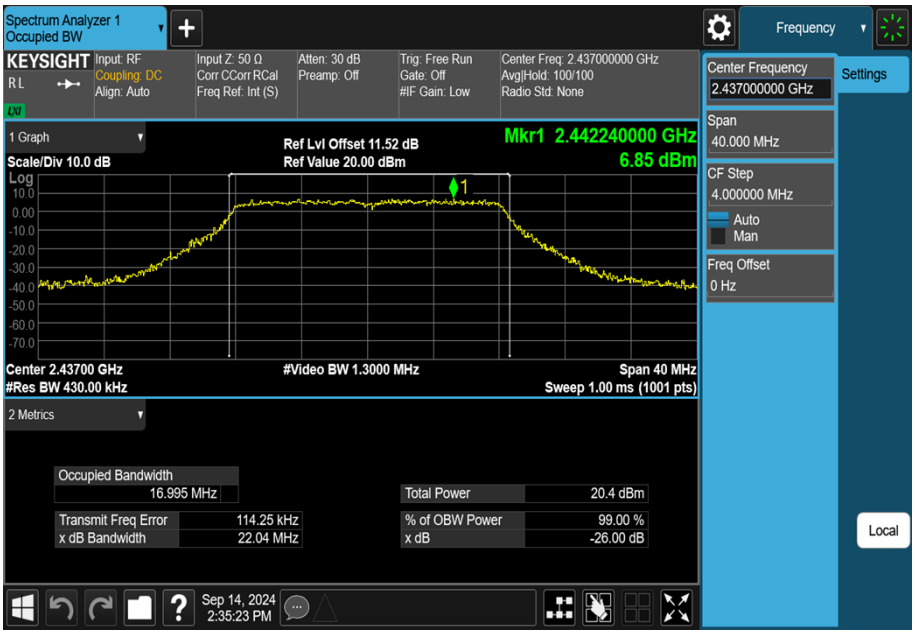
11B-Ant1-2437



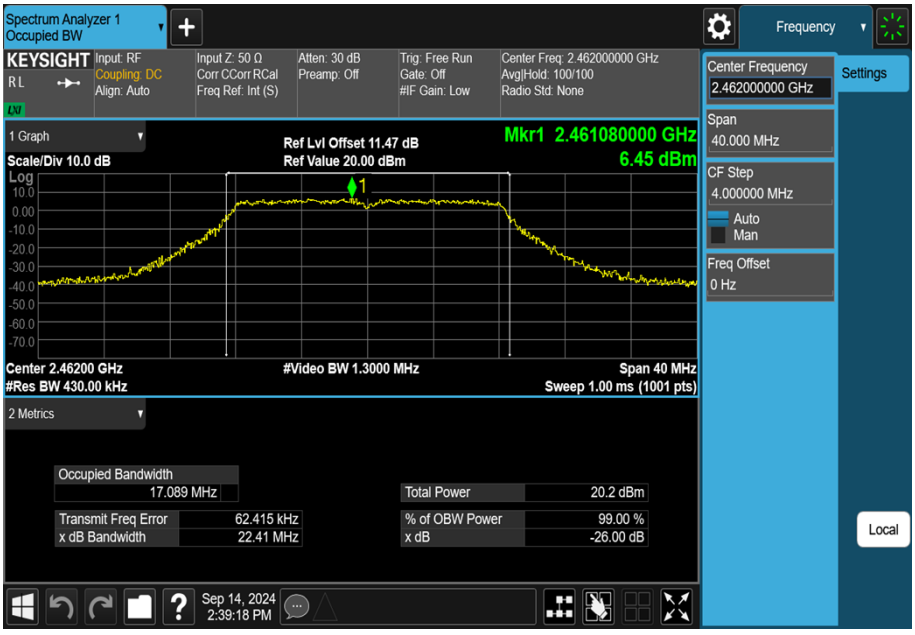
11B-Ant1-2462



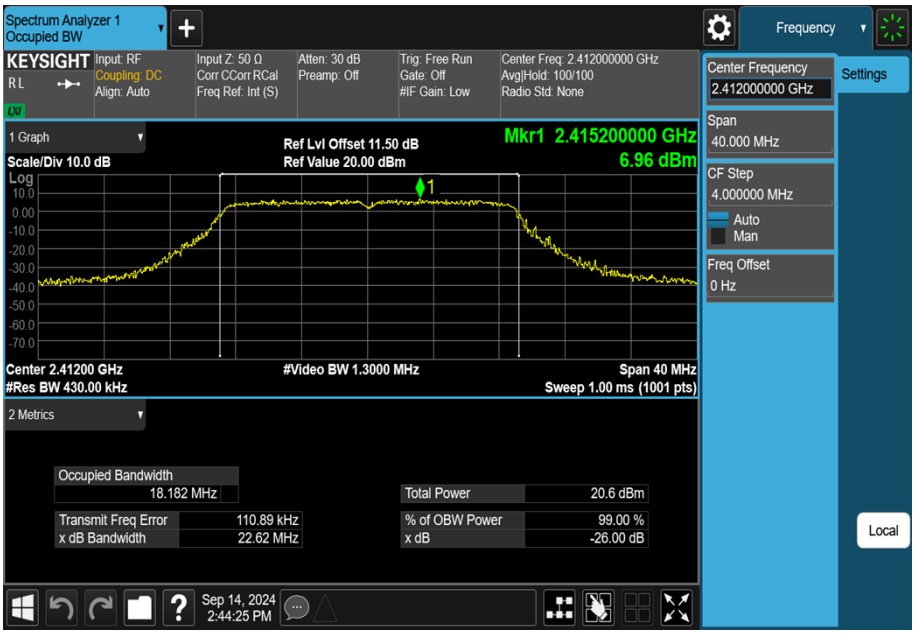
11G-Ant1-2412



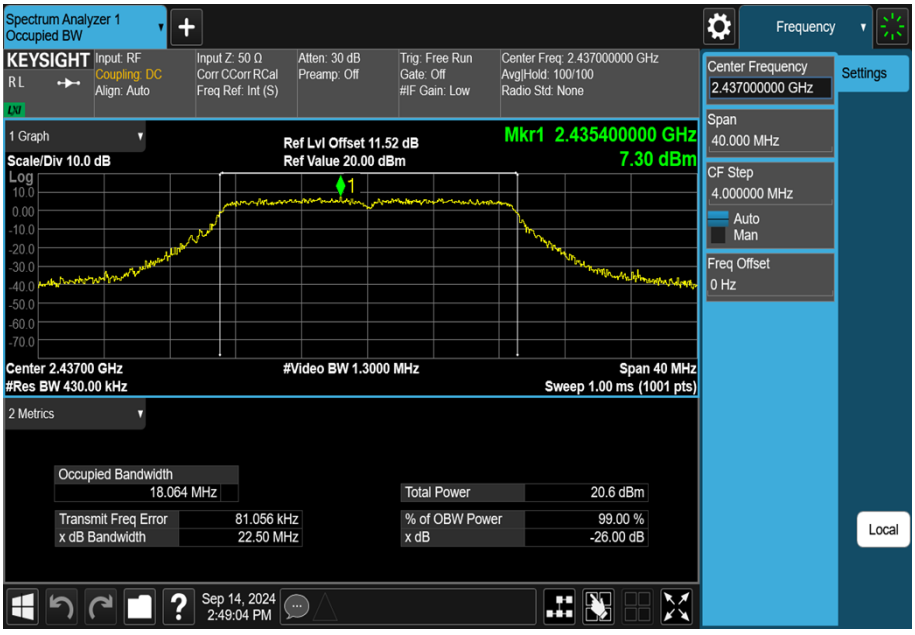
11G-Ant1-2437



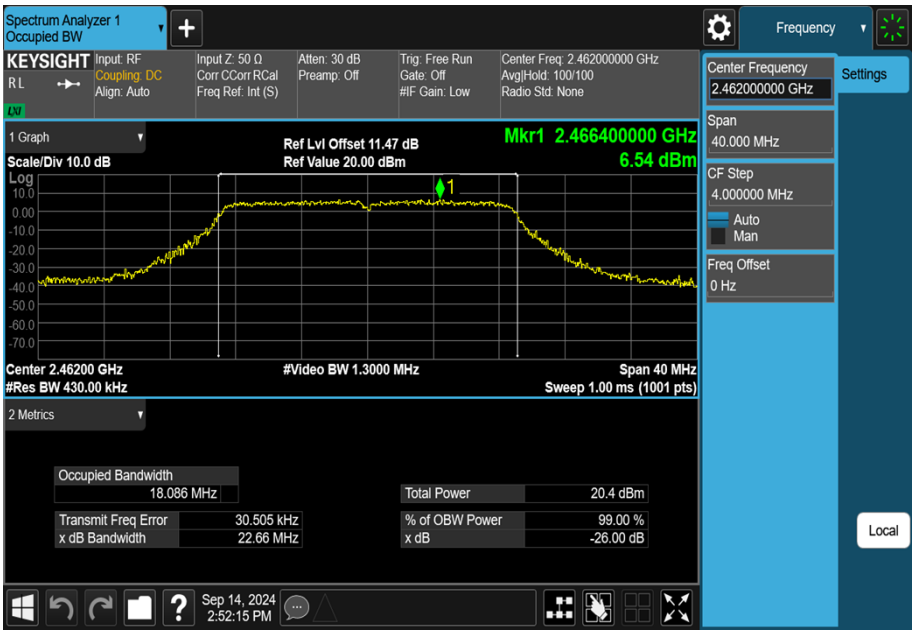
11G-Ant1-2462



11N20SISO-Ant1-2412



11N20SISO-Ant1-2437



11N20SISO-Ant1-2462

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)

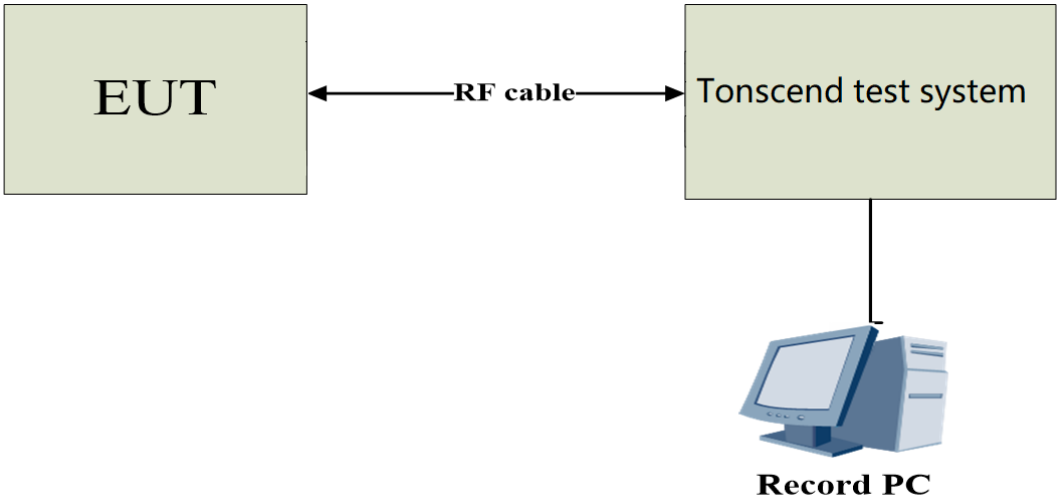
3.5.2 Test Procedure

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 tonscend 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 11.9.1.3 (for peak 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	QATool_Dbg		
Frequency (MHz)	2412	2437	2462
IEEE 802.11b	75	75	75
IEEE 802.11g	85	85	85
IEEE 802.11n (20MHz)	85	85	85

3.5.5 The Result

Test Mode	Antenna	Frequency[MHz]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	13.80	≤30.00	PASS
11B	Ant1	2437	14.56	≤30.00	PASS
11B	Ant1	2462	14.58	≤30.00	PASS
11G	Ant1	2412	22.01	≤30.00	PASS
11G	Ant1	2437	21.81	≤30.00	PASS
11G	Ant1	2462	21.51	≤30.00	PASS
11N20SISO	Ant1	2412	21.54	≤30.00	PASS
11N20SISO	Ant1	2437	21.76	≤30.00	PASS
11N20SISO	Ant1	2462	**22.03**	≤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

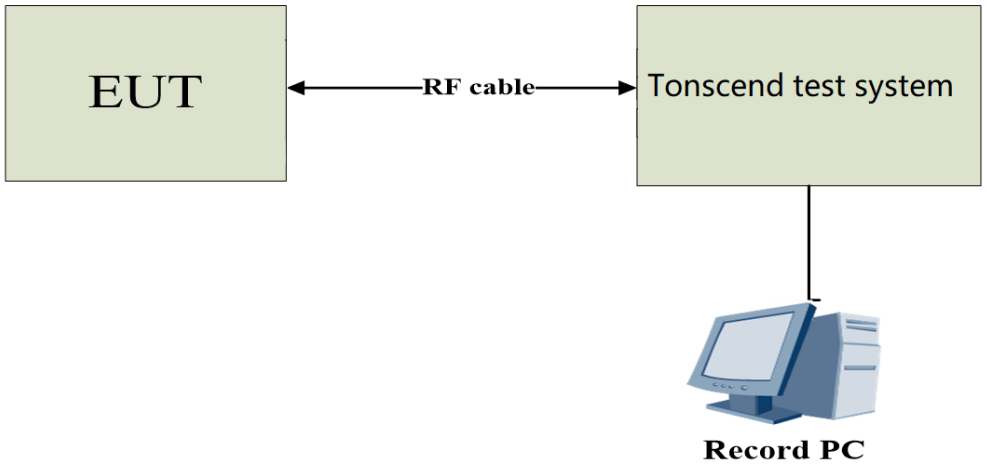
Test Method	
●Conducted Measurement	○Radiated Measurement
Test Channels	
●Lowest, Middle and Highest Channel	○ Lowest and Highest Channel
Environmental conditions	
●Normal	○Normal and Extreme
Note:●:Test ○:No Test	

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

b) Spectrum analyser settings as following:

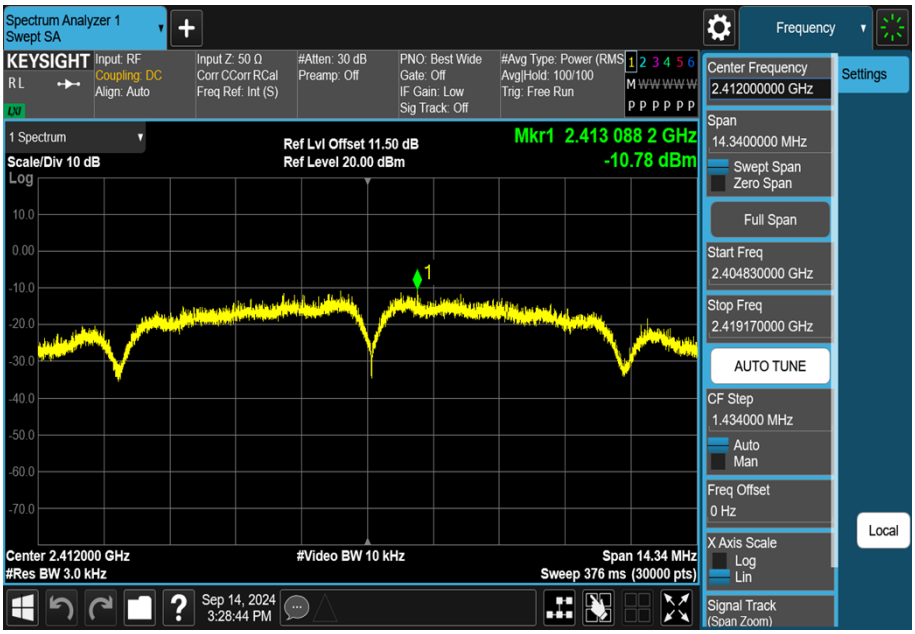
Spectrum Parameters	Setting
Span Frequency	1.5 times the DTS bandwidth
RBW	3 kHz
VBW	10 kHz
Detector	peak
Trace	Max Hold
Sweep Time	Auto

3.6.3 Test Setup

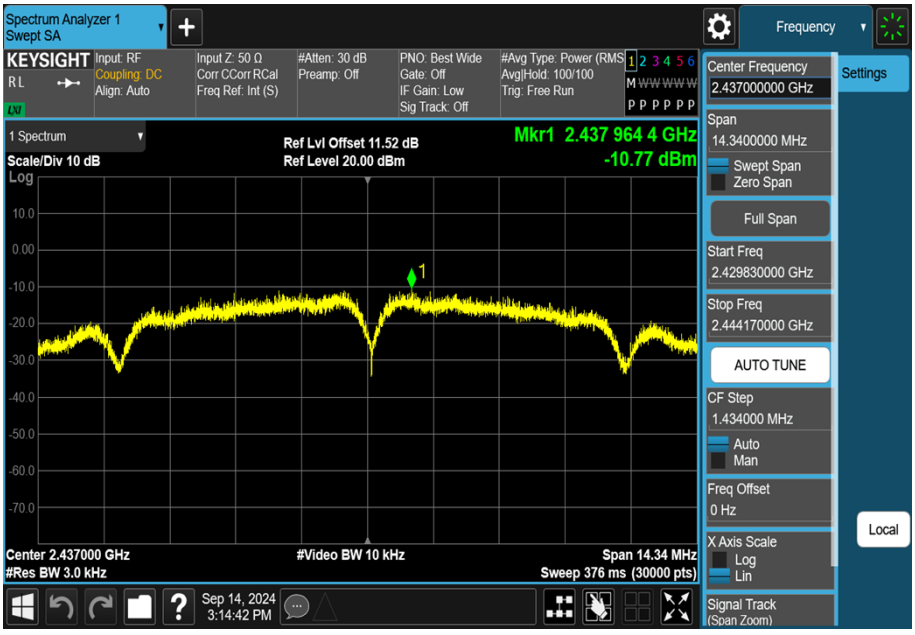


3.6.4 The Result

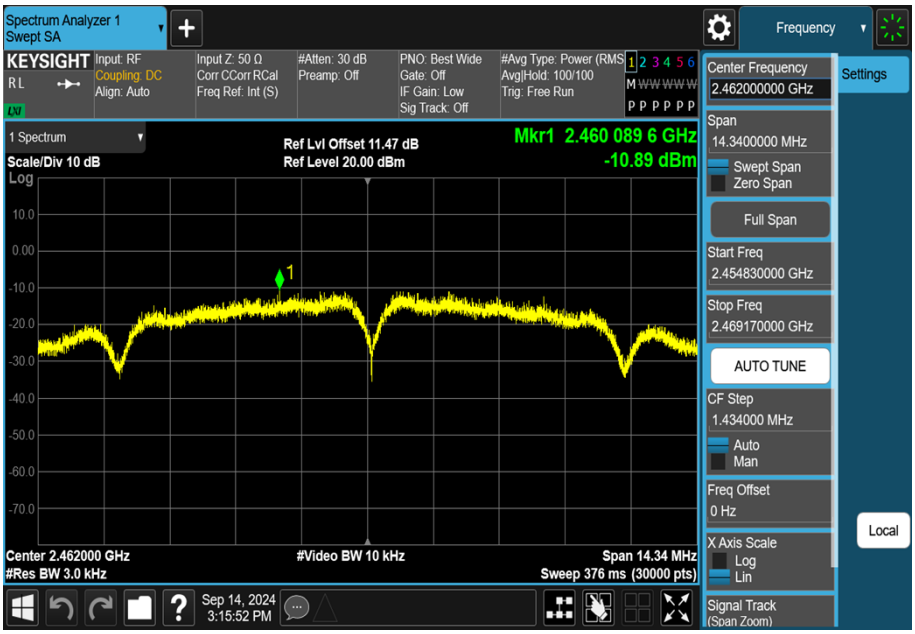
TestMode	Antenna	Frequency[MHz]	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-10.78	≤8.00	PASS
11B	Ant1	2437	-10.77	≤8.00	PASS
11B	Ant1	2462	-10.89	≤8.00	PASS
11G	Ant1	2412	-10.43	≤8.00	PASS
11G	Ant1	2437	-10.83	≤8.00	PASS
11G	Ant1	2462	-11.15	≤8.00	PASS
11N20SISO	Ant1	2412	-10.32	≤8.00	PASS
11N20SISO	Ant1	2437	-10.97	≤8.00	PASS
11N20SISO	Ant1	2462	-10.68	≤8.00	PASS



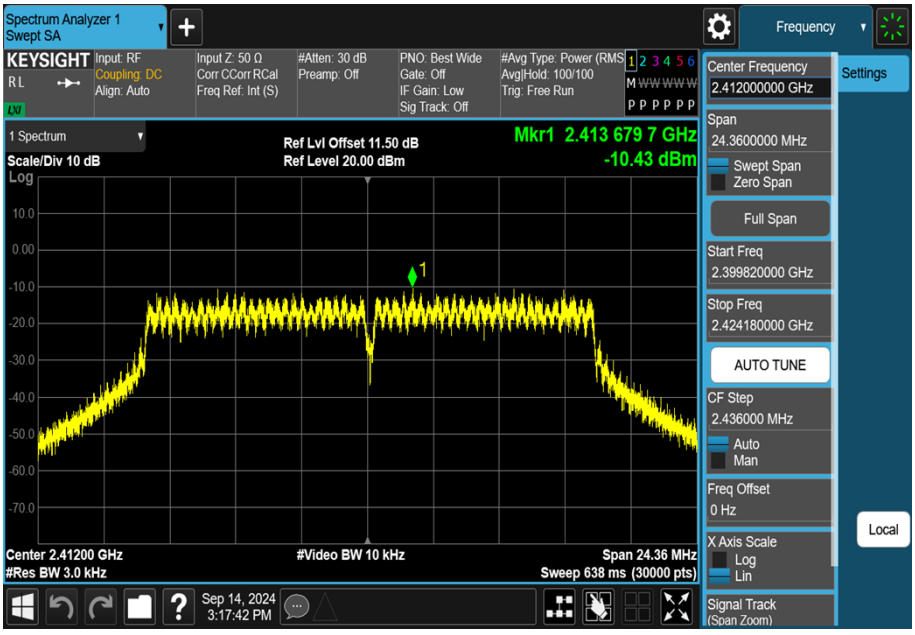
11B-Ant1-2412-PASS



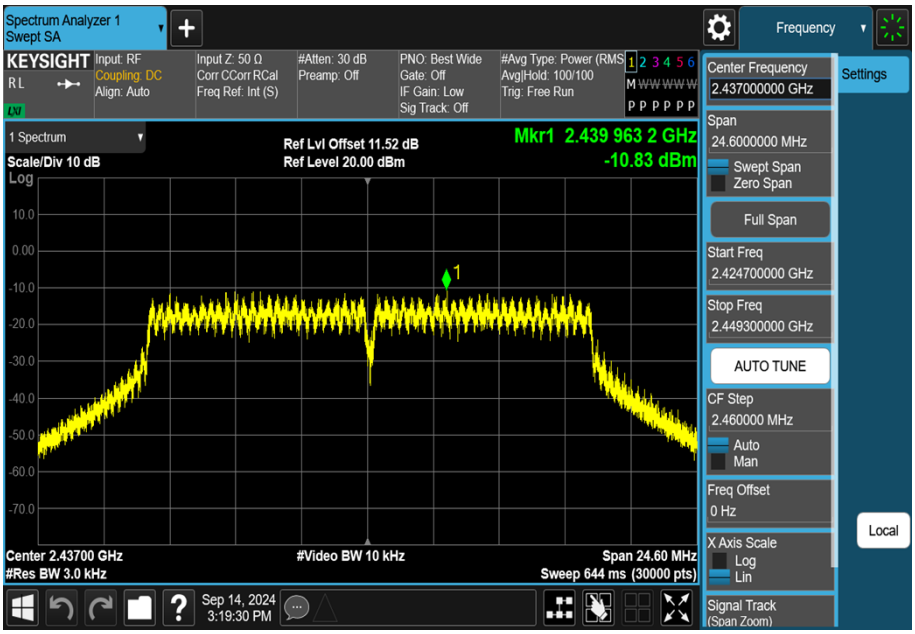
11B-Ant1-2437-PASS



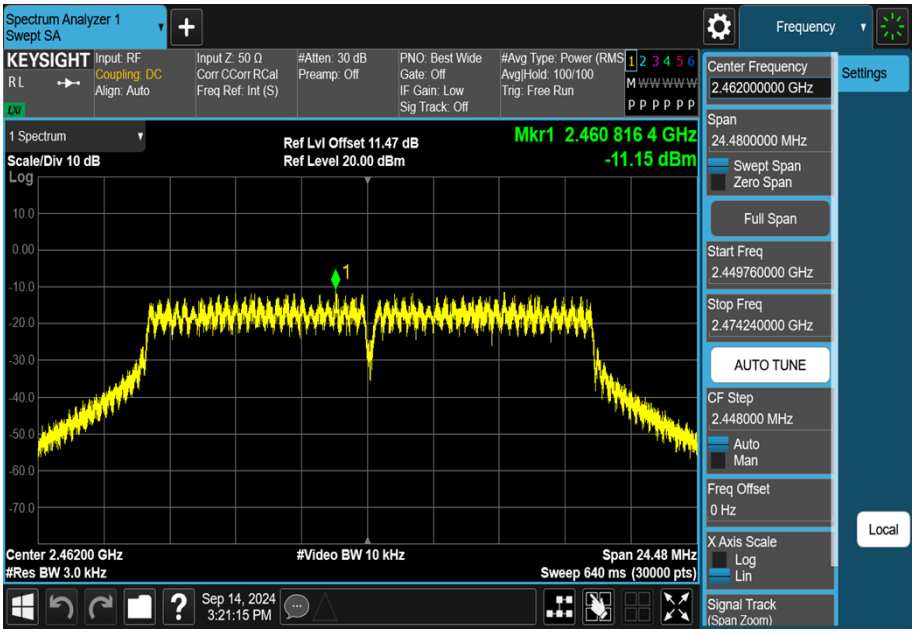
11B-Ant1-2462-PASS



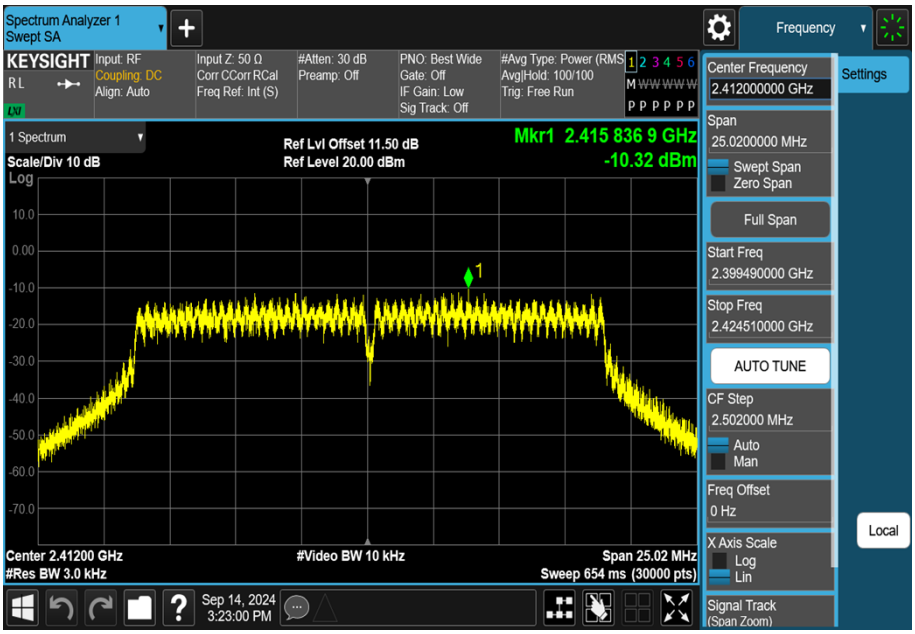
11G-Ant1-2412-PASS



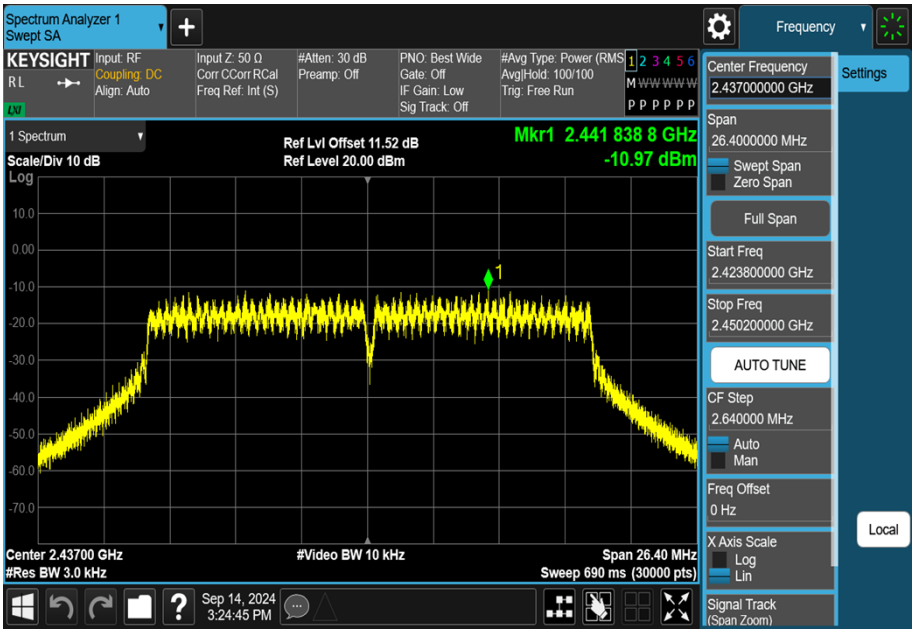
11G-Ant1-2437-PASS



11G-Ant1-2462-PASS



11N20SISO-Ant1-2412-PASS



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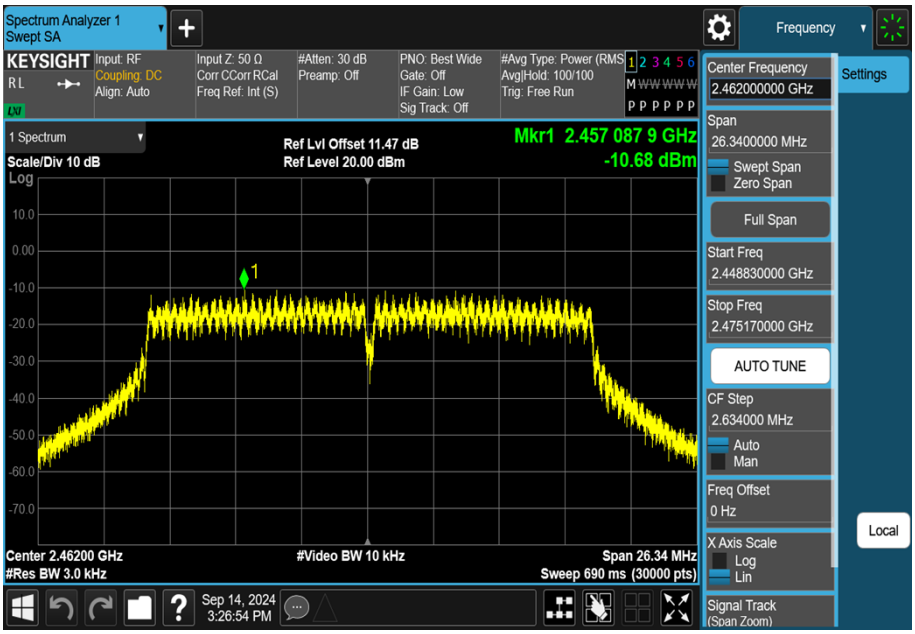

11N20SISO-Ant1-2462-PASS

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.

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

Tel: 0755-26024411

Email: service@hy-lab.cn

End of Test Report