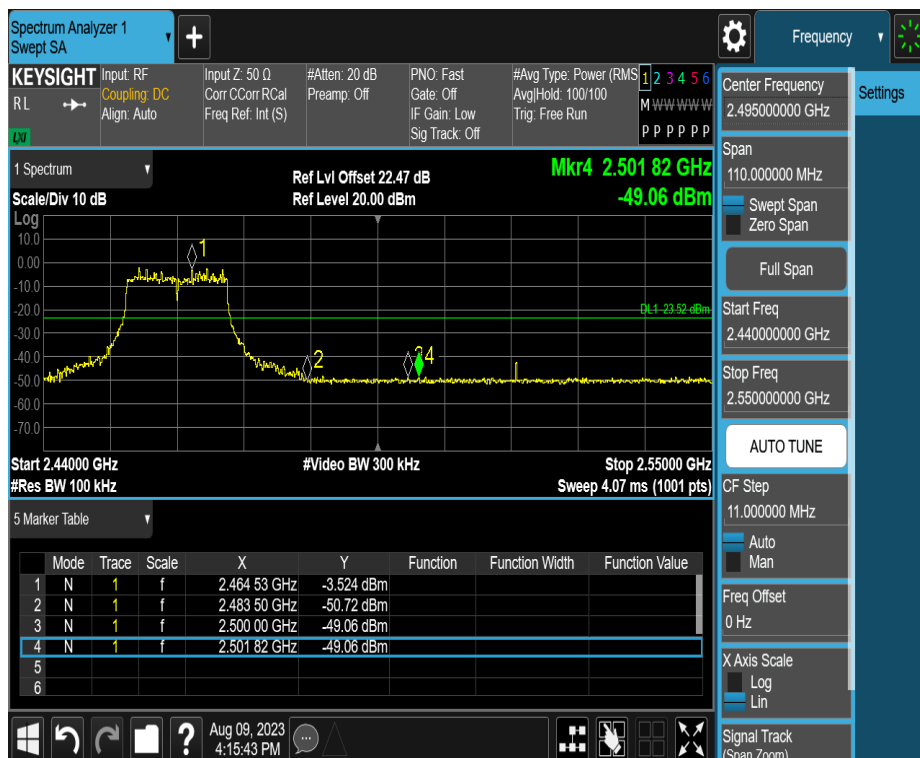


11G_Ant1_Low_2412



11G_Ant1_High_2462



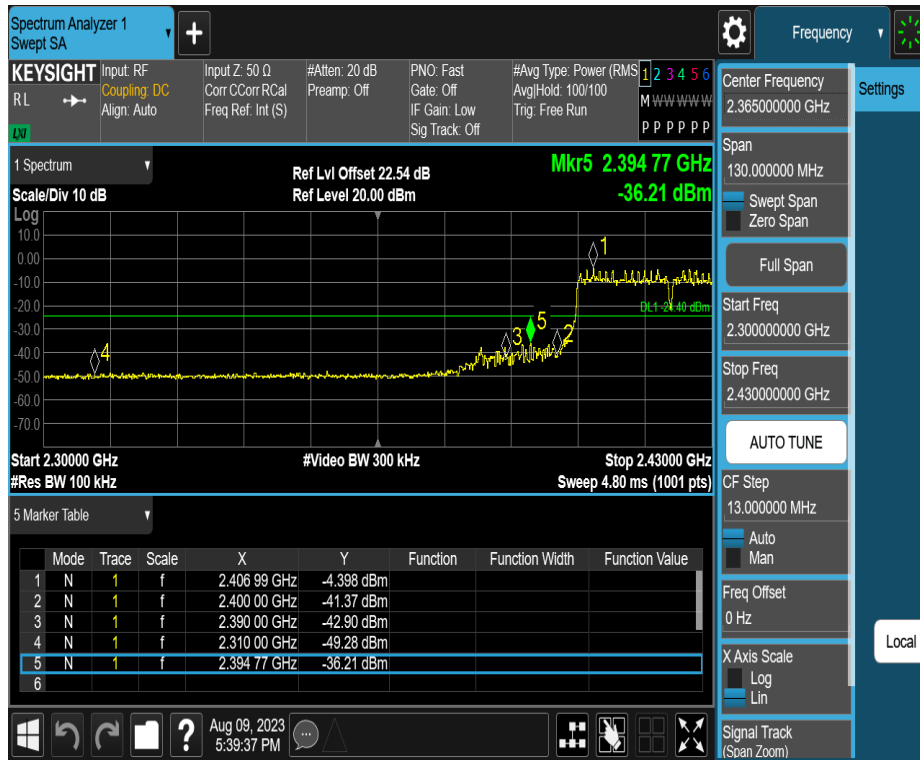
11N20SISO_Ant1_Low_2412



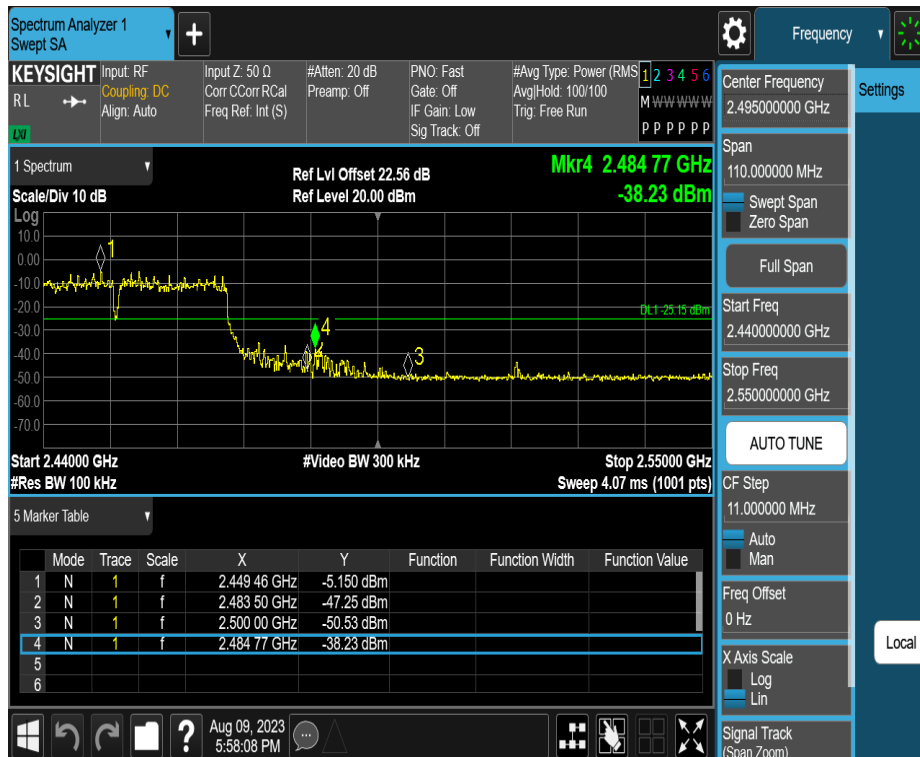
11N20SISO_Ant1_High_2462



11N40SISO_Ant1_Low_2422



11N40SISO_Ant1_High_2452



3.4 6dB Bandwidth&Occupied Channel 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:

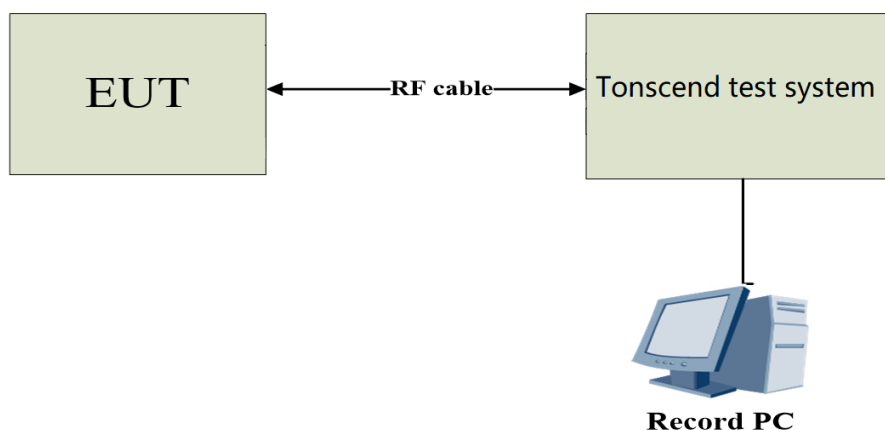
Centre Frequency	The centre frequency of the channel under test
RBW	100kHz
VBW	300kHz
Frequency span	2x Nominal Channel Bandwidth
Detector Mode	Peak
Trace Mode	Max Hold
Sweep Time	Auto Couple

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

Test Mode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	10.040	2406.960	2417.000	0.5	PASS
		2437	9.200	2431.760	2440.960	0.5	PASS
		2462	10.240	2456.720	2466.960	0.5	PASS
11G	Ant1	2412	16.360	2403.800	2420.160	0.5	PASS
		2437	16.400	2428.800	2445.200	0.5	PASS
		2462	16.400	2453.800	2470.200	0.5	PASS
11N20SISO	Ant1	2412	16.800	2403.920	2420.720	0.5	PASS
		2437	17.560	2428.200	2445.760	0.5	PASS
		2462	17.040	2453.480	2470.520	0.5	PASS
11N40SISO	Ant1	2422	35.680	2403.840	2439.520	0.5	PASS
		2437	35.040	2419.560	2454.600	0.5	PASS
		2452	35.520	2434.400	2469.920	0.5	PASS

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



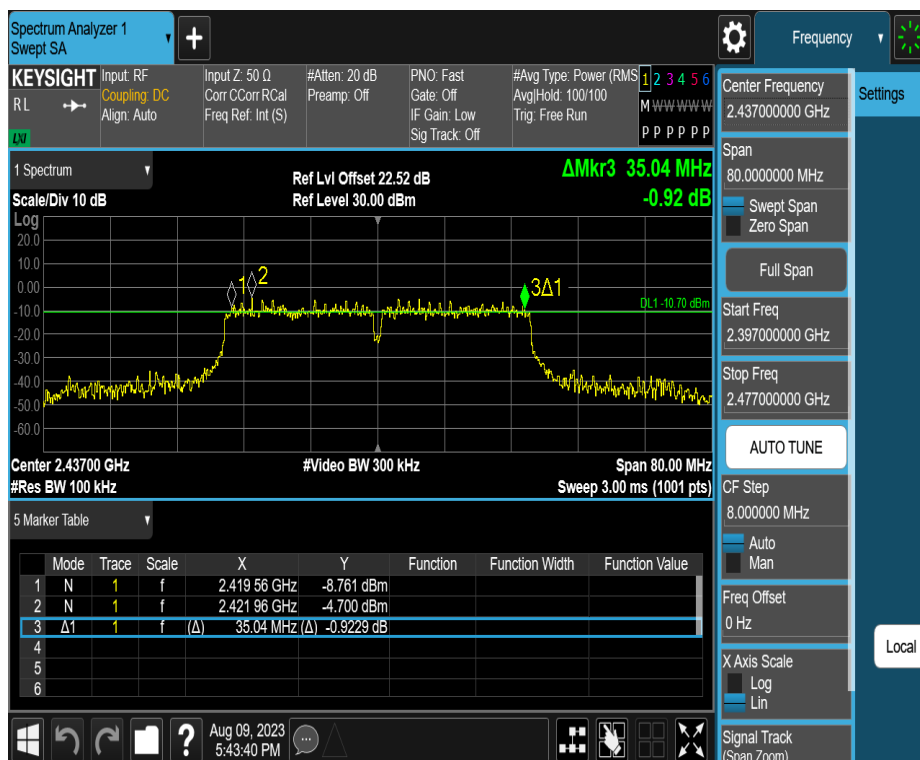
11N20SISO_Ant1_2462



11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



11N40SISO_Ant1_2452

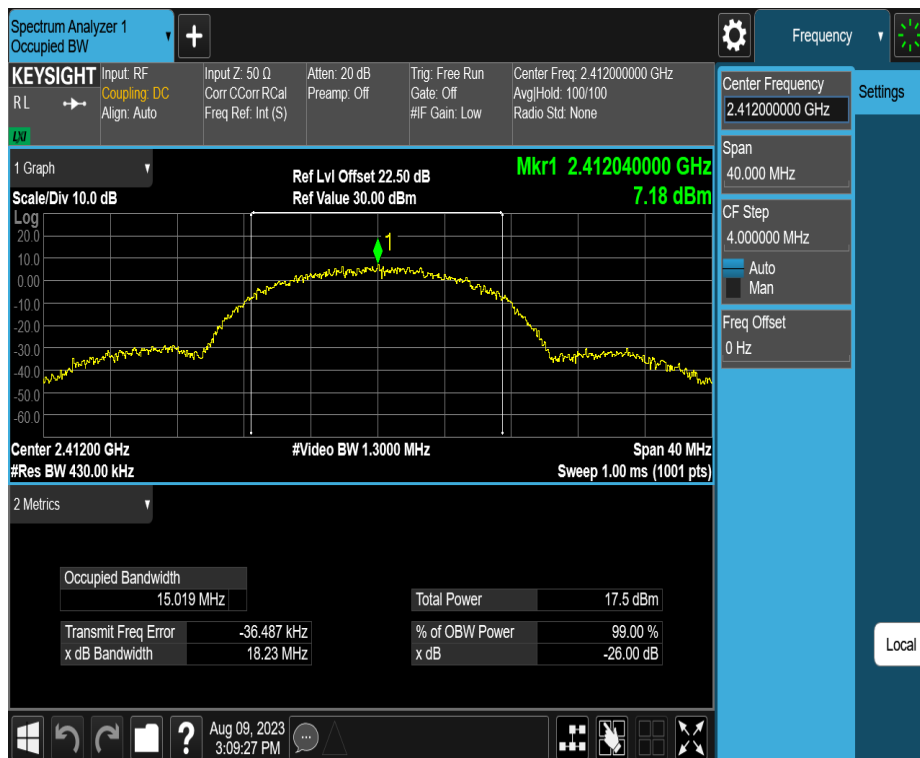


Occupied Channel Bandwidth

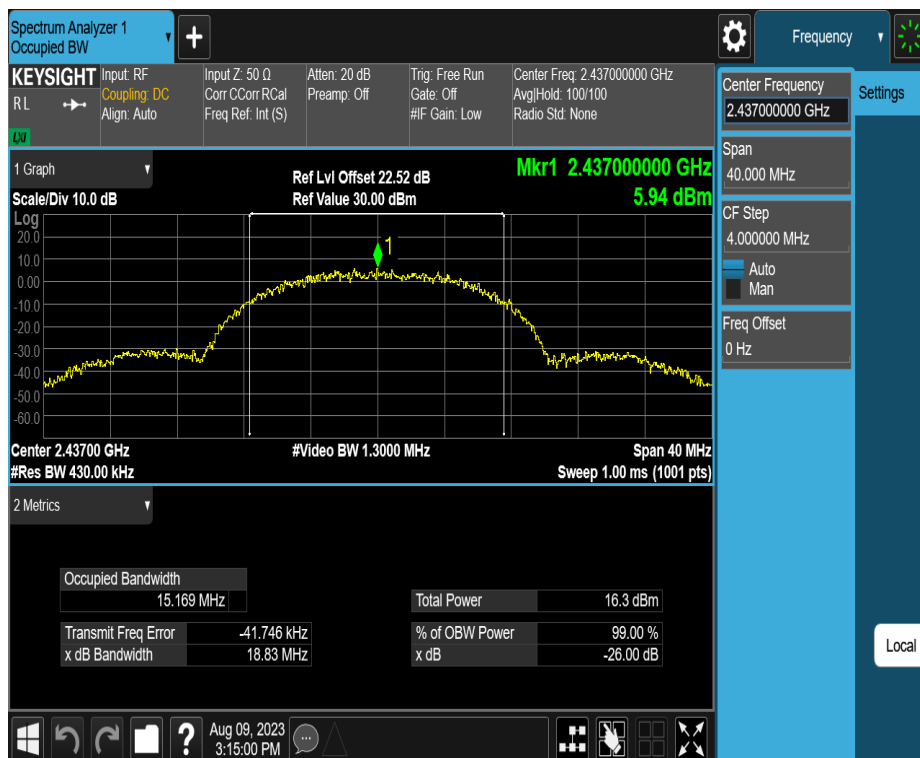
Test Mode	Antenna	Channel Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	15.019	2404.4540	2419.4730	---	---
		2437	15.169	2429.3738	2444.5428	---	---
		2462	15.000	2454.4956	2469.4956	---	---
11G	Ant1	2412	16.613	2403.7018	2420.3148	---	---
		2437	16.747	2428.6155	2445.3625	---	---
		2462	16.797	2453.5706	2470.3676	---	---
11N20SISO	Ant1	2412	17.834	2403.0200	2420.8540	---	---
		2437	17.865	2428.0564	2445.9214	---	---
		2462	17.822	2453.0228	2470.8448	---	---
11N40SISO	Ant1	2422	36.297	2403.8216	2440.1186	---	---
		2437	36.476	2418.8182	2455.2942	---	---
		2452	36.374	2433.8137	2470.1877	---	---

Test Graphs

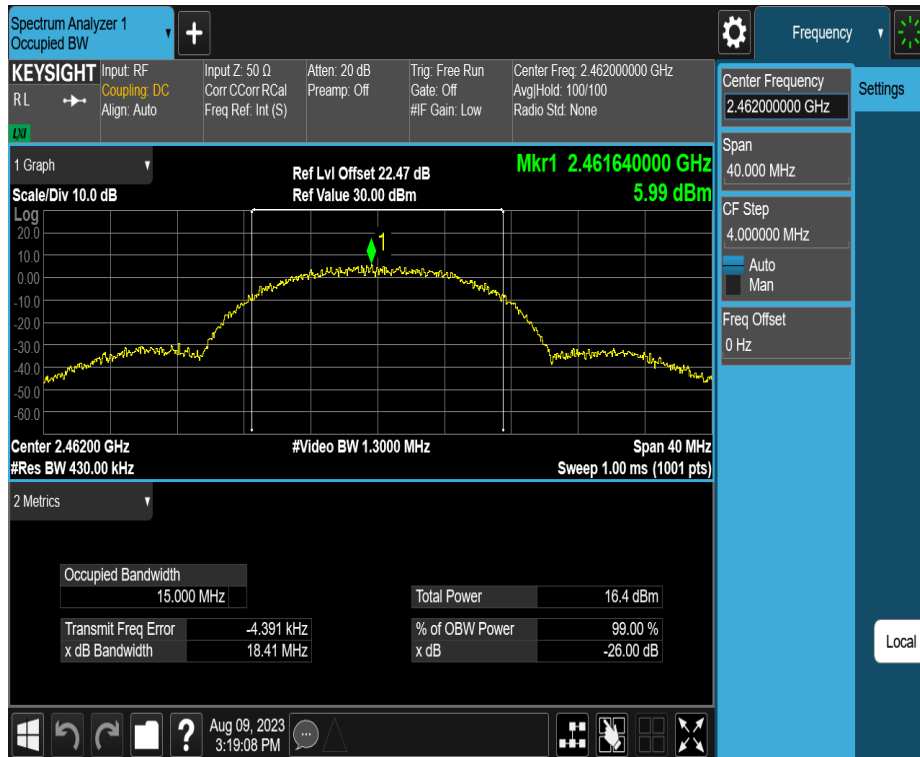
11B_Ant1_2412



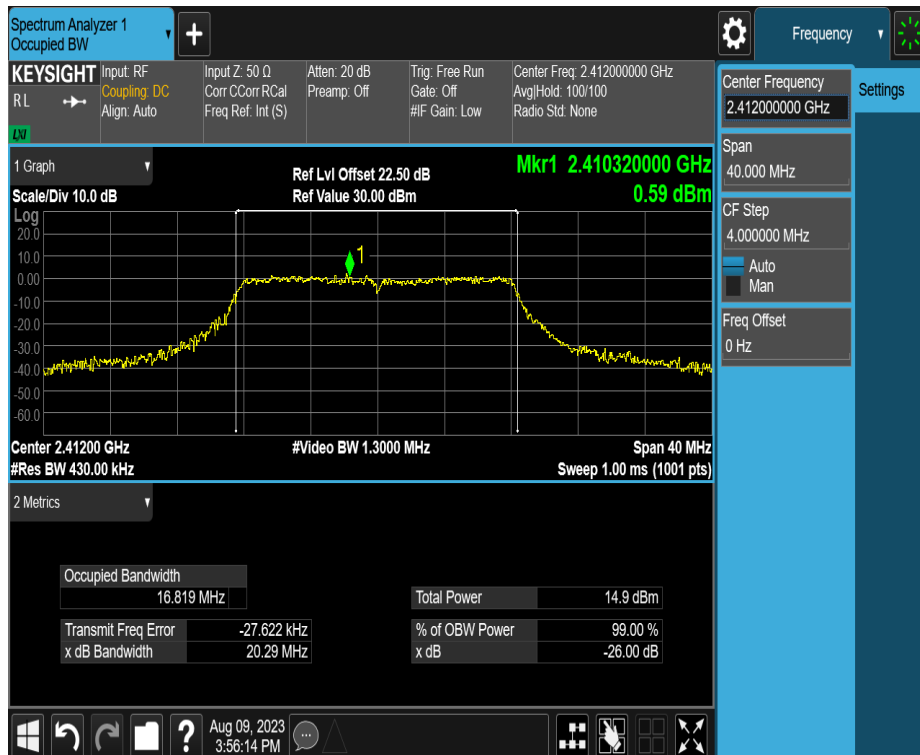
11B_Ant1_2437



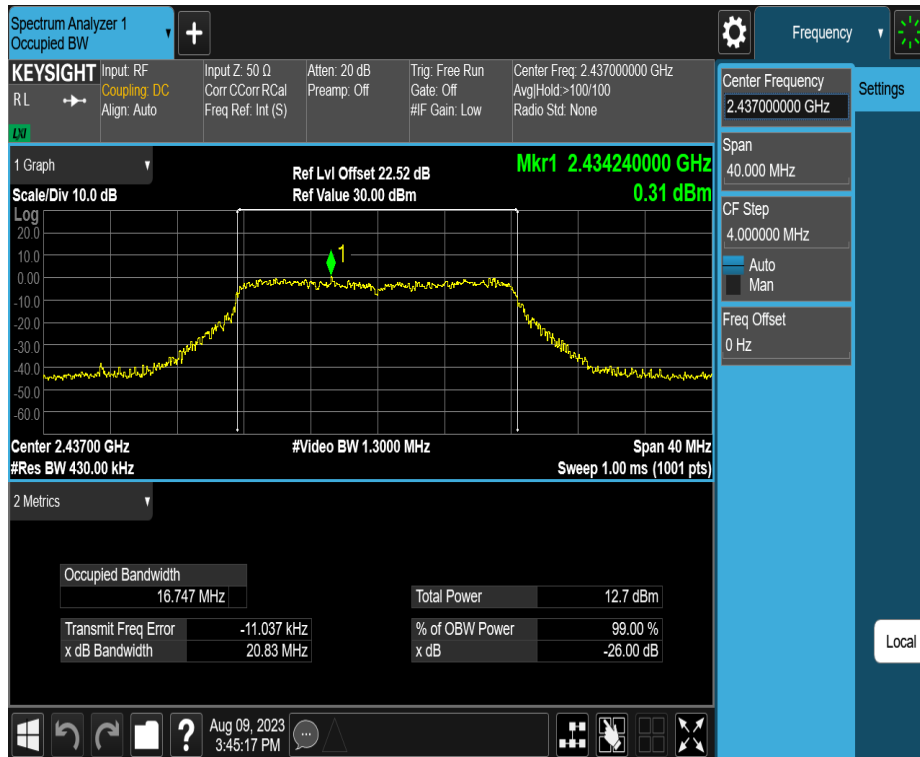
11B_Ant1_2462



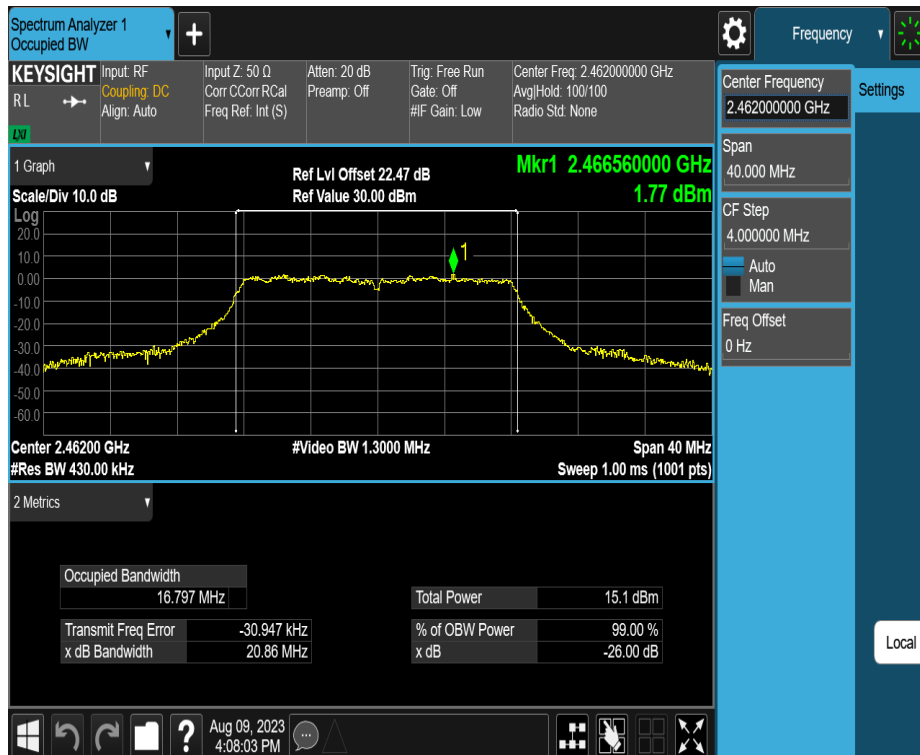
11G_Ant1_2412



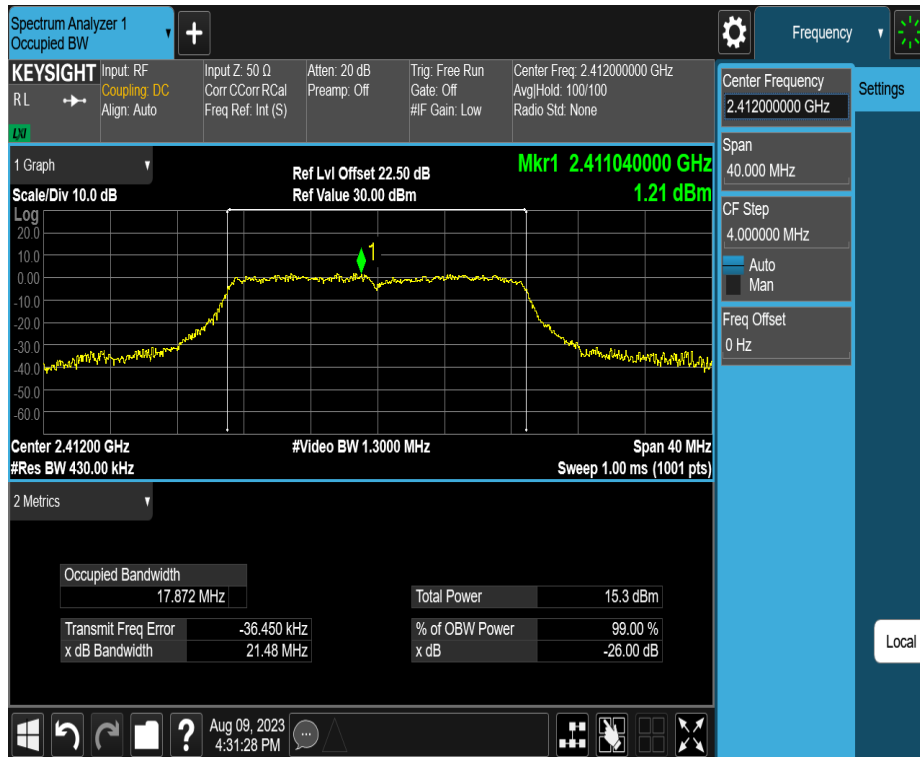
11G_Ant1_2437



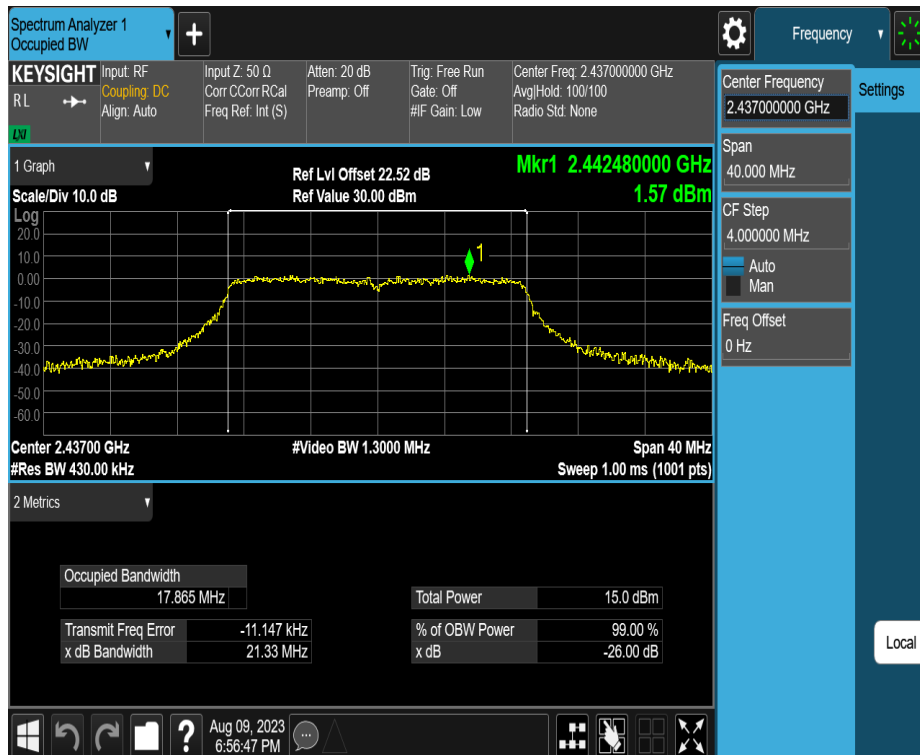
11G_Ant1_2462



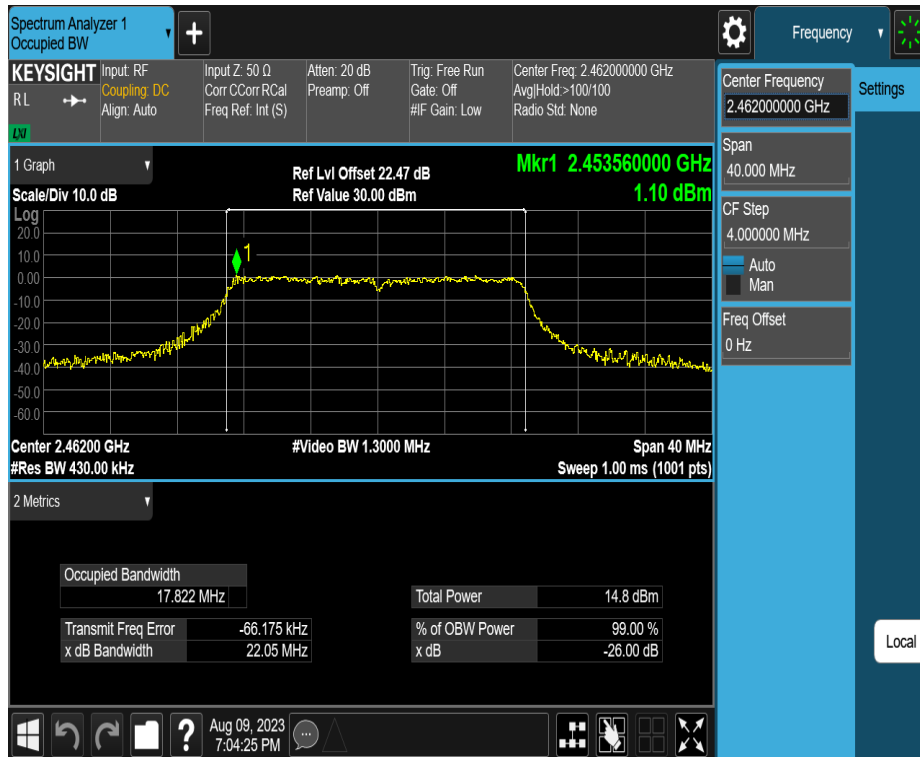
11N20SISO_Ant1_2412



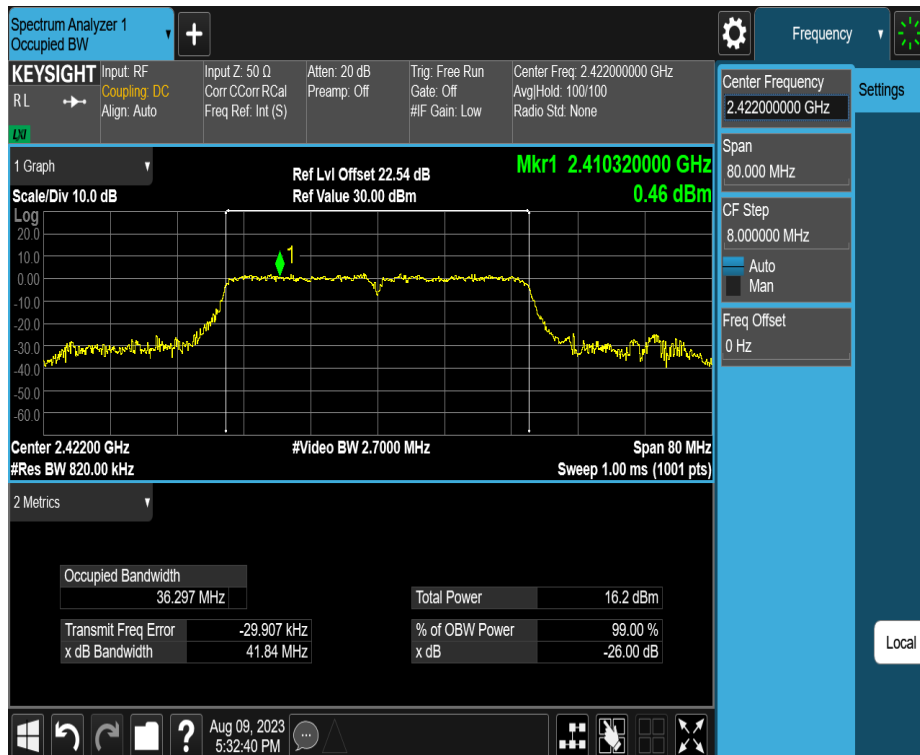
11N20SISO_Ant1_2437



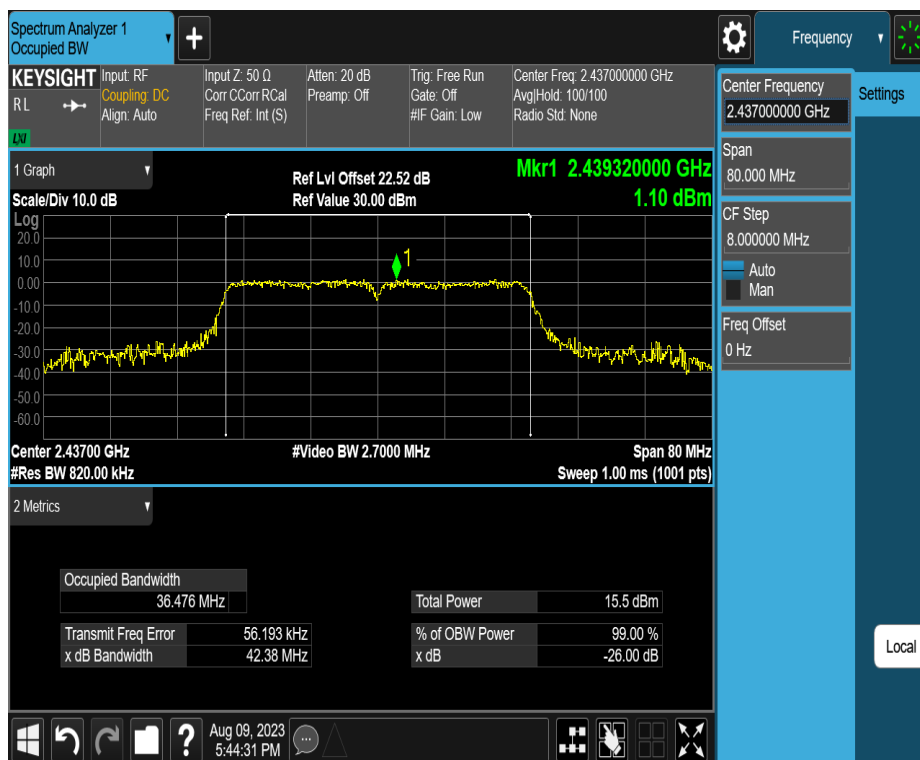
11N20SISO_Ant1_2462



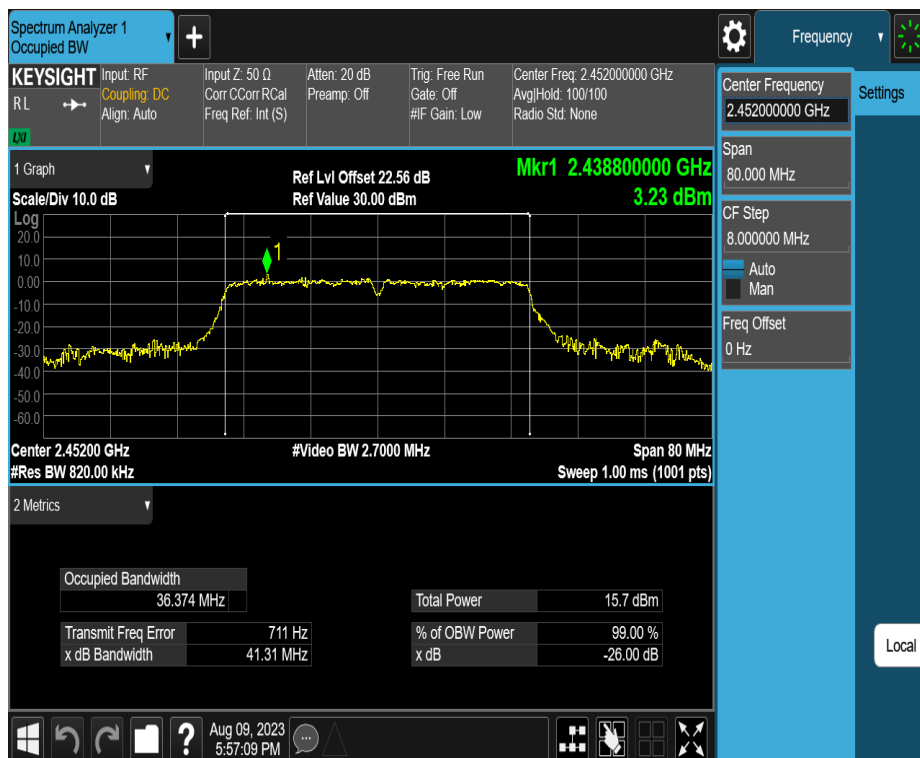
11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



11N40SISO_Ant1_2452



3.5 Maximum conducted output power

3.5.1 Limit

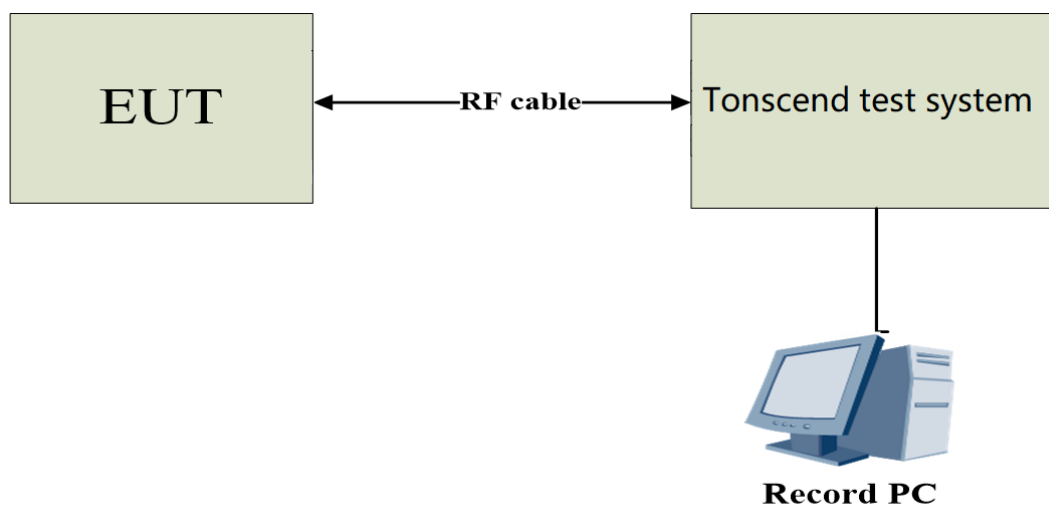
For systems using digital modulation in the 2400~2483.5MHz, The Maximum output Power shall not exceed 1W(30dBm)

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 tonscond test system and antenna output port as show in the block diagram below.
- The maximum conducted output power was performed in accordance with method 11.9.1.3 (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 Software Version	Command		
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	16.58	≤30.00	PASS
		2437	15.94	≤30.00	PASS
		2462	15.87	≤30.00	PASS
11G	Ant1	2412	16.37	≤30.00	PASS
		2437	16.61	≤30.00	PASS
		2462	15.70	≤30.00	PASS
11N20SISO	Ant1	2412	16.53	≤30.00	PASS
		2437	15.59	≤30.00	PASS
		2462	15.35	≤30.00	PASS
11N40SISO	Ant1	2422	16.42	≤30.00	PASS
		2437	15.45	≤30.00	PASS
		2452	16.17	≤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

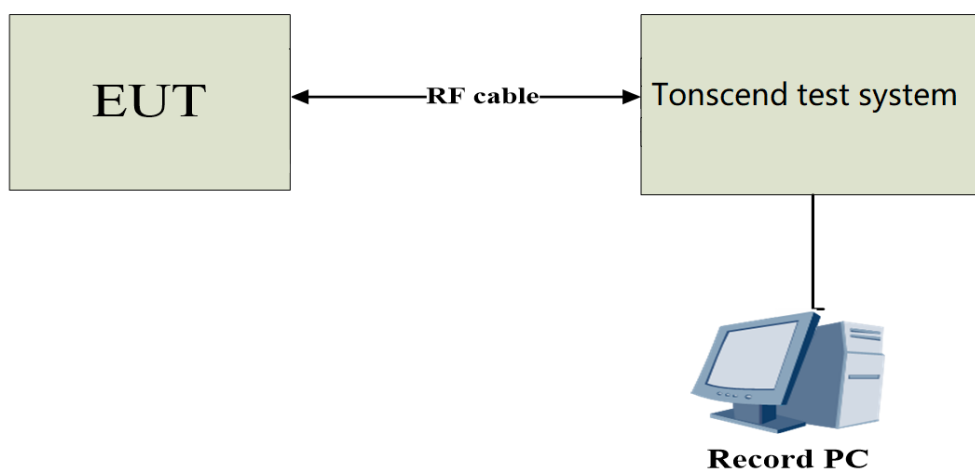
Test Method	
☒ Conducted Measurement	☐ Radiated Measurement
Test Channels	
☒ Lowest, Middle and Highest Channel	☐ Lowest and Highest Channel
Environmental conditions	
☒ Normal	☐ Normal and Extreme
Note: ☒ : Test ☐ : No Test	

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

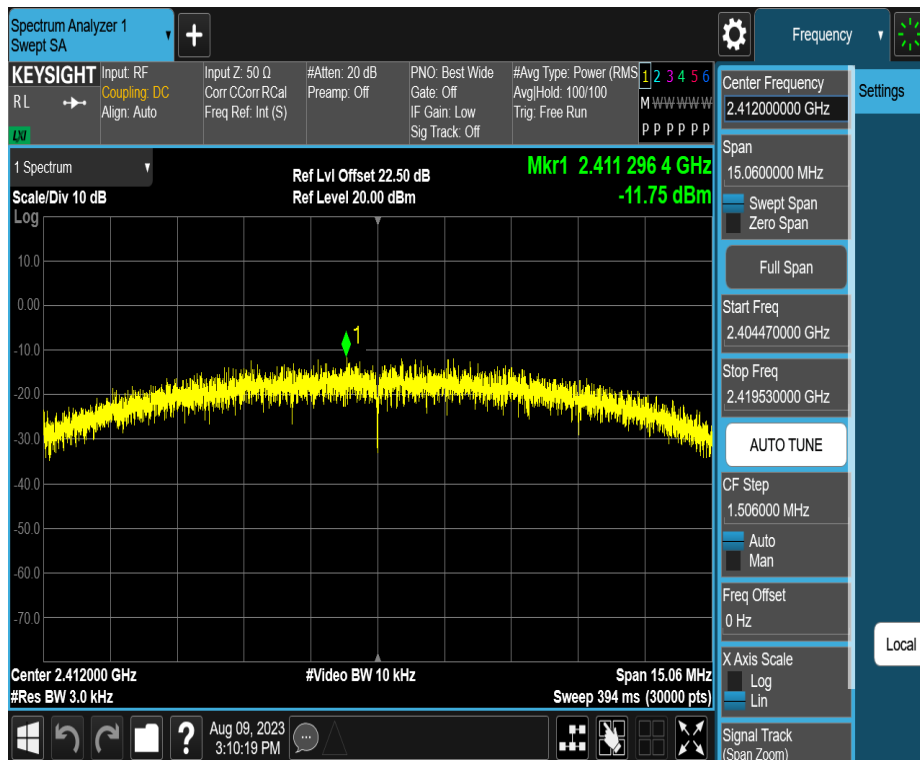


3.6.4 The Result

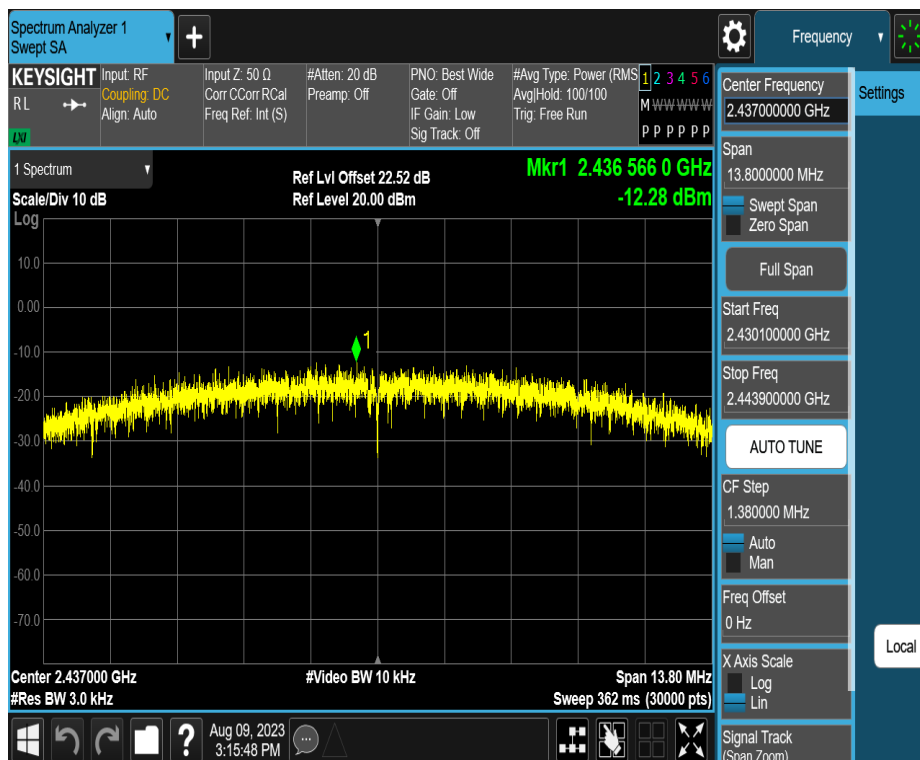
Test Mode	Antenna	Frequency[MHz]	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-11.75	≤8.00	PASS
		2437	-12.28	≤8.00	PASS
		2462	-12.84	≤8.00	PASS
11G	Ant1	2412	-17.34	≤8.00	PASS
		2437	-16.31	≤8.00	PASS
		2462	-17.12	≤8.00	PASS
11N20SISO	Ant1	2412	-17.62	≤8.00	PASS
		2437	-16.93	≤8.00	PASS
		2462	-17.61	≤8.00	PASS
11N40SISO	Ant1	2422	-20.72	≤8.00	PASS
		2437	-21.41	≤8.00	PASS
		2452	-21.65	≤8.00	PASS

Test Graphs

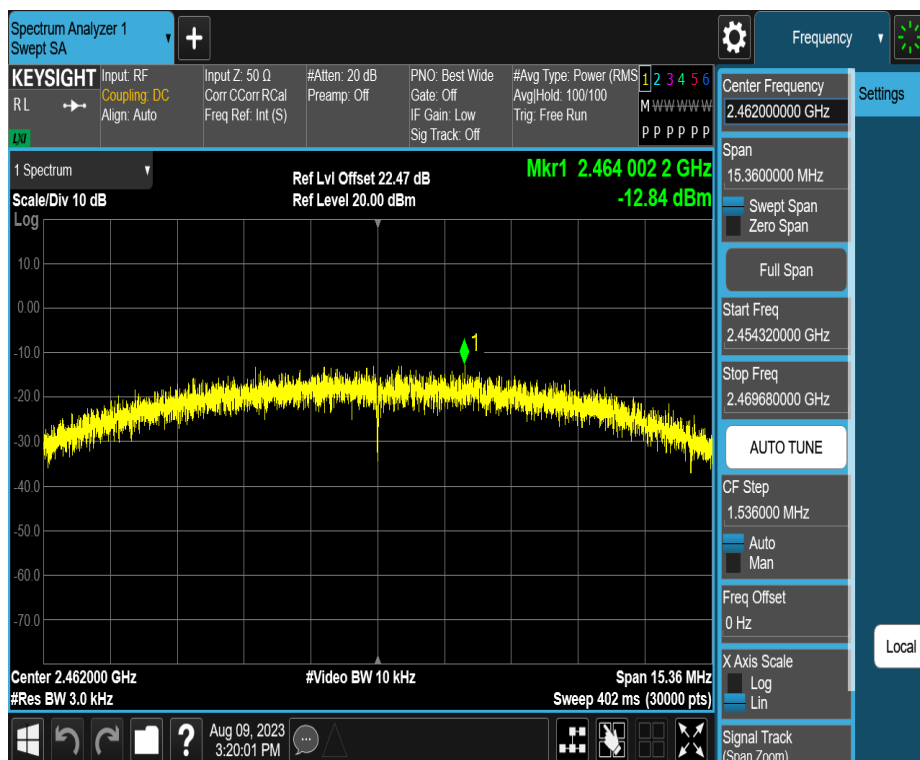
11B_Ant1_2412



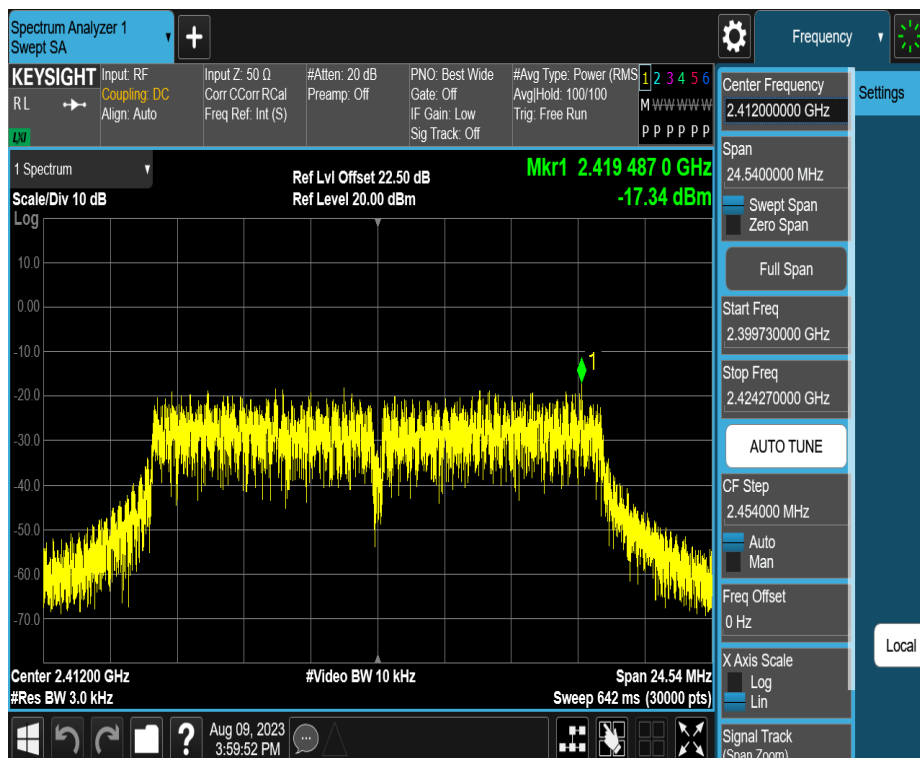
11B_Ant1_2437



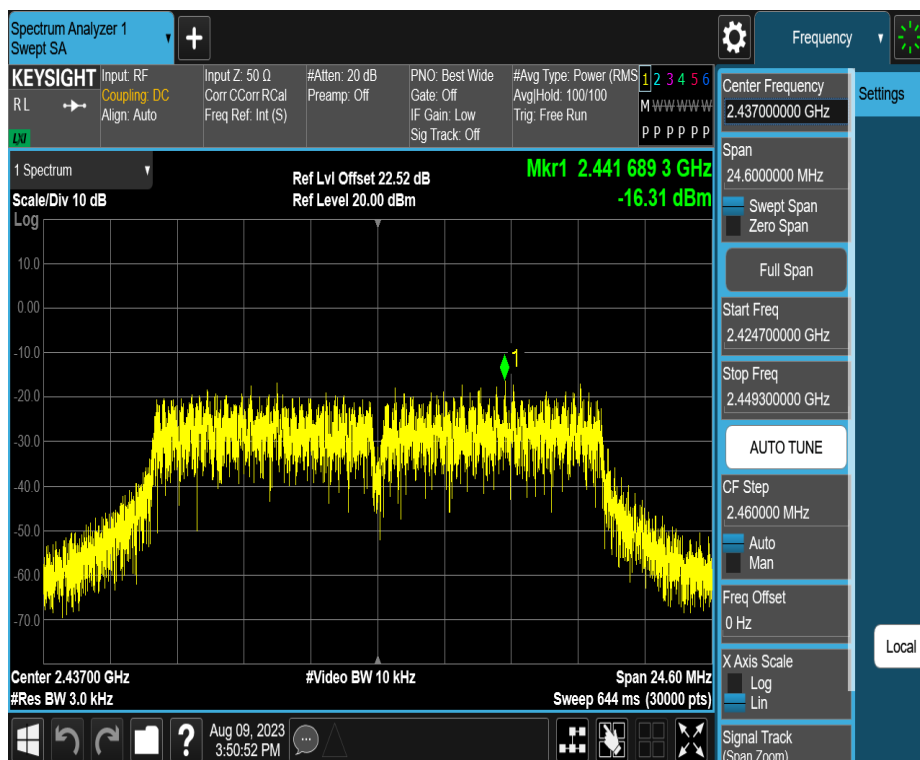
11B_Ant1_2462



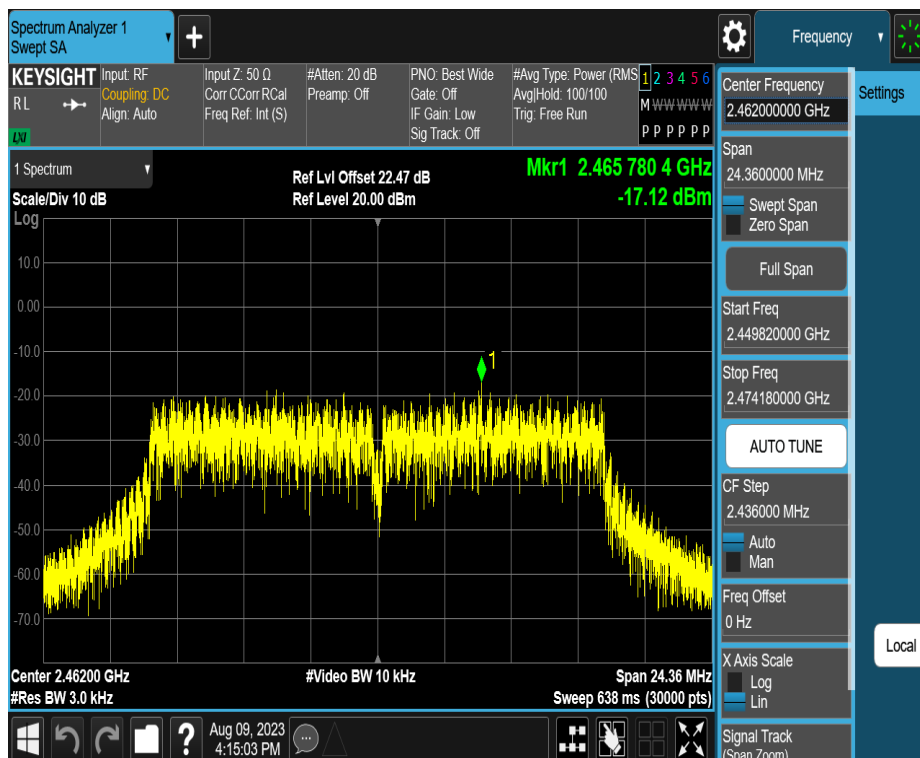
11G_Ant1_2412



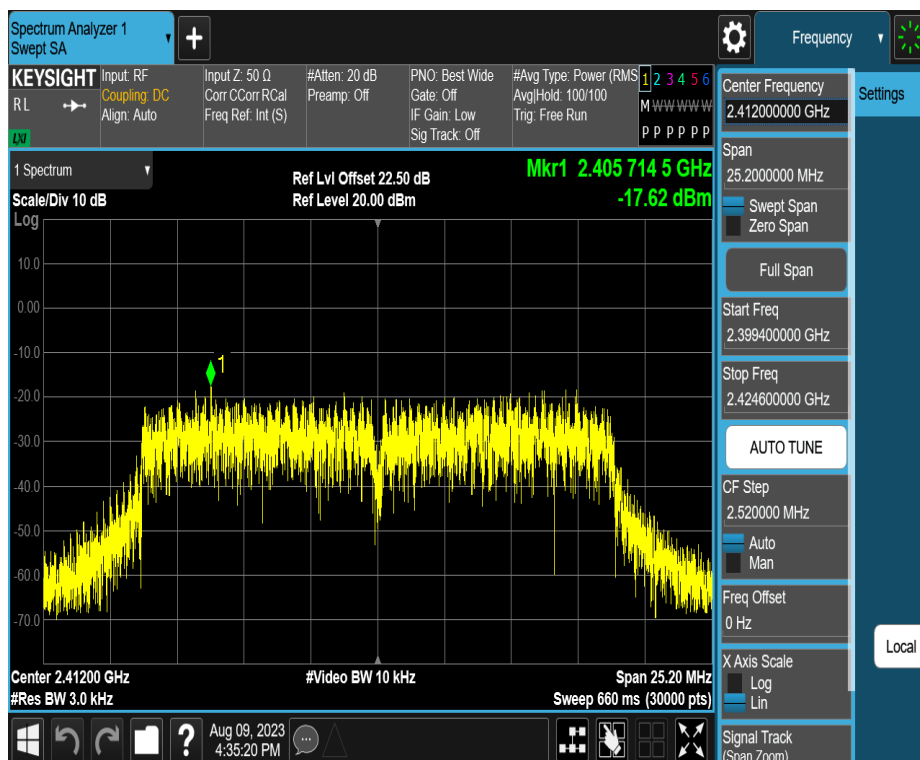
11G_Ant1_2437



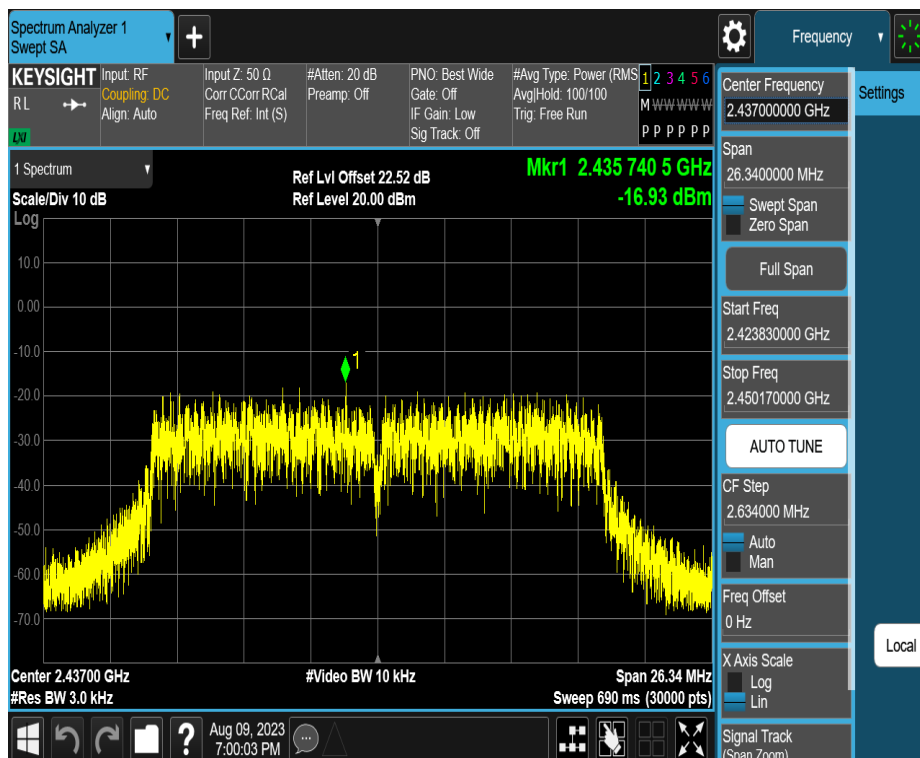
11G_Ant1_2462



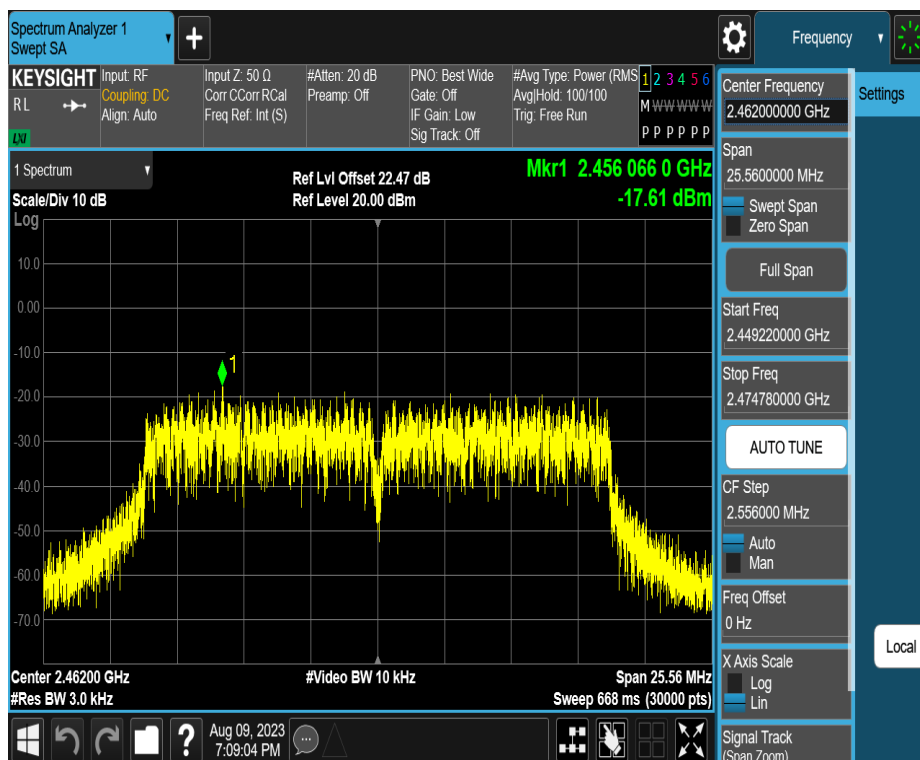
11N20SISO_Ant1_2412



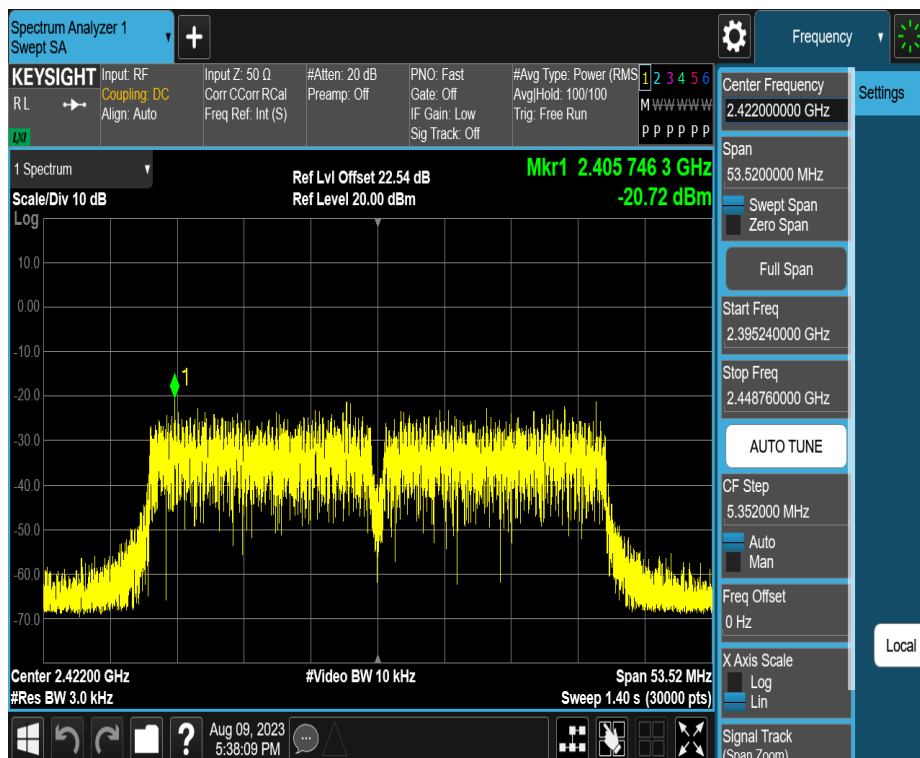
11N20SISO_Ant1_2437



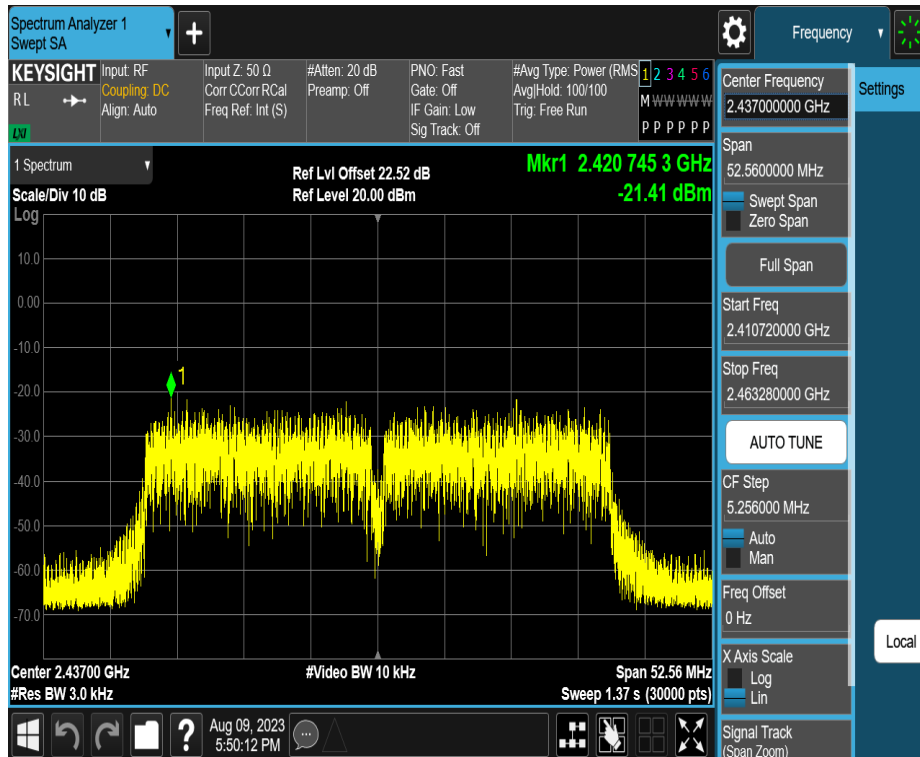
11N20SISO_Ant1_2462



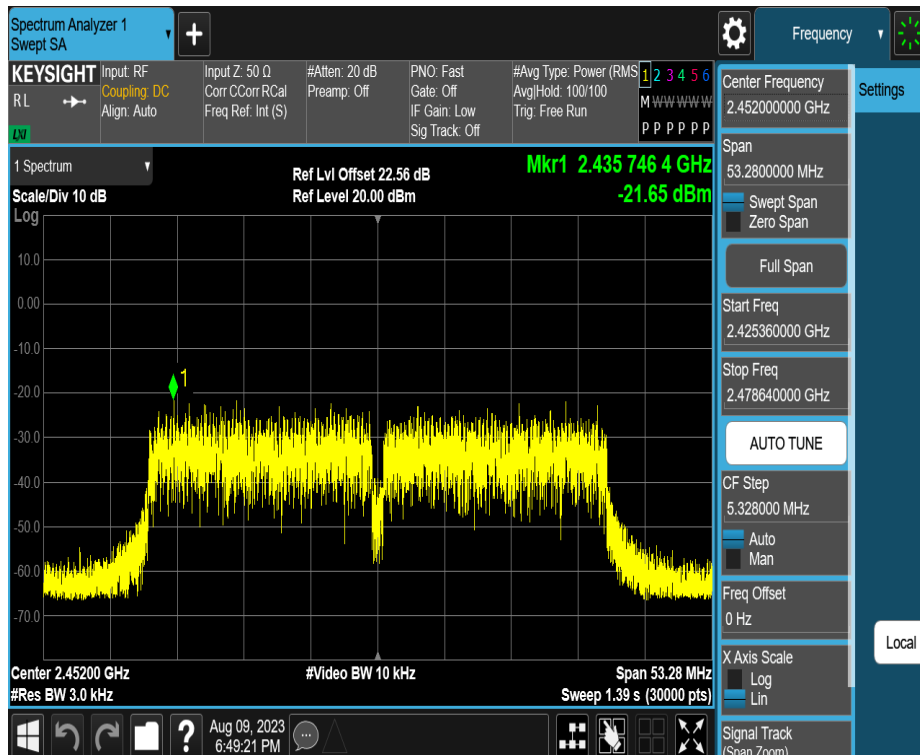
11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



11N40SISO_Ant1_2452



End of Test Report