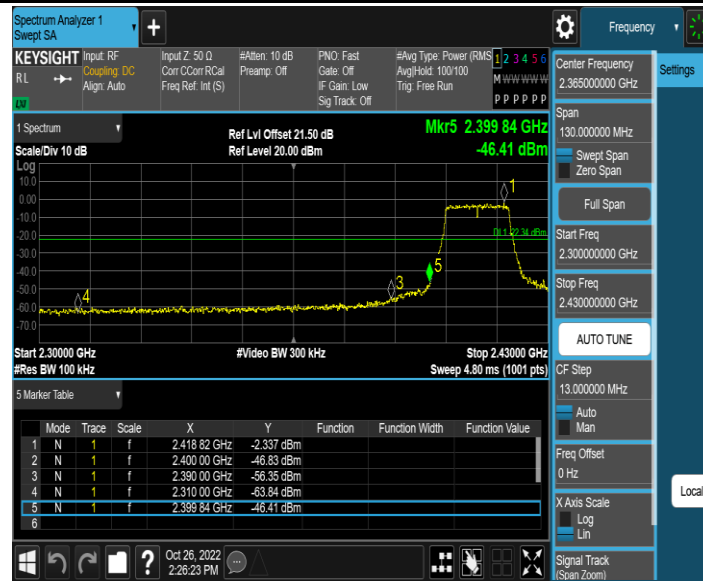
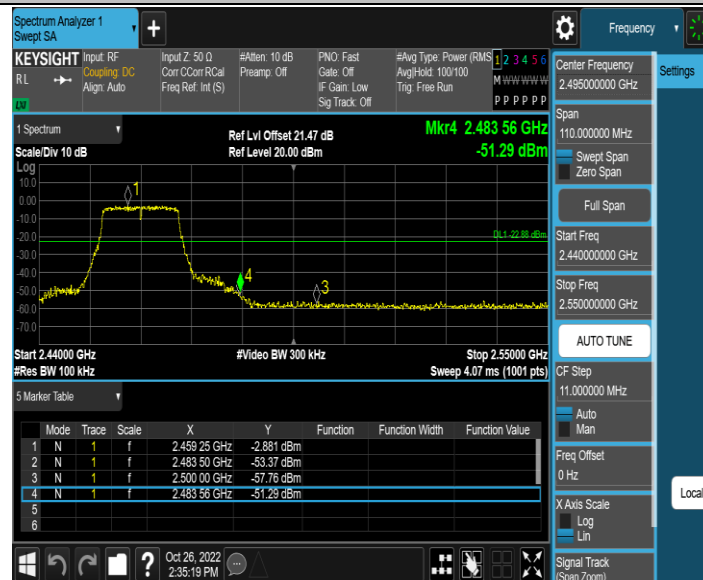




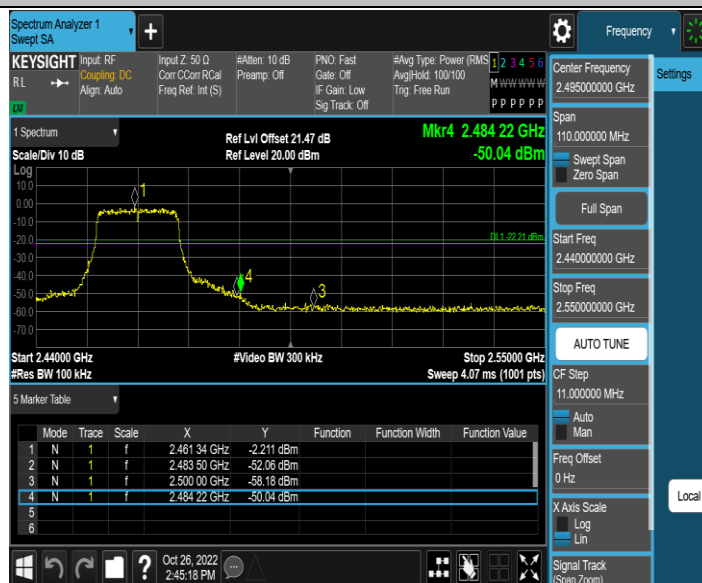
11G_Ant1_High_2462



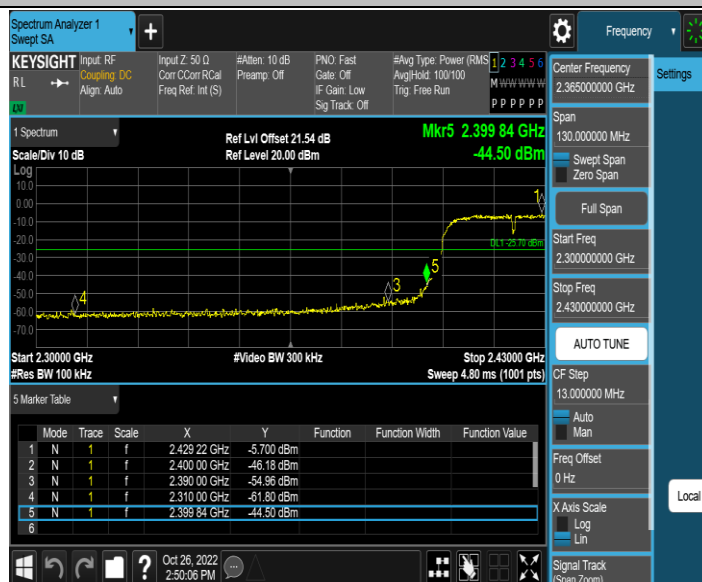
11N20SISO_Ant1_Low_2412



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 Peripherals

Support Equipment				
No.	Equipment	Brand Name	Model Name	Remarks
1	Type-C Cable	AWM	E101344	0.9m, No Shielding
2	Adaptor	FUSHIGANG	AS1201A-0502000 USU	NA
3	Record PC	Lenovo	M4500T	NA
4	Control PC	Lenovo	M4500T	NA

3.4.3 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 shall be connected to the spectrum analyser, and the spectrum analyser is set as follow:

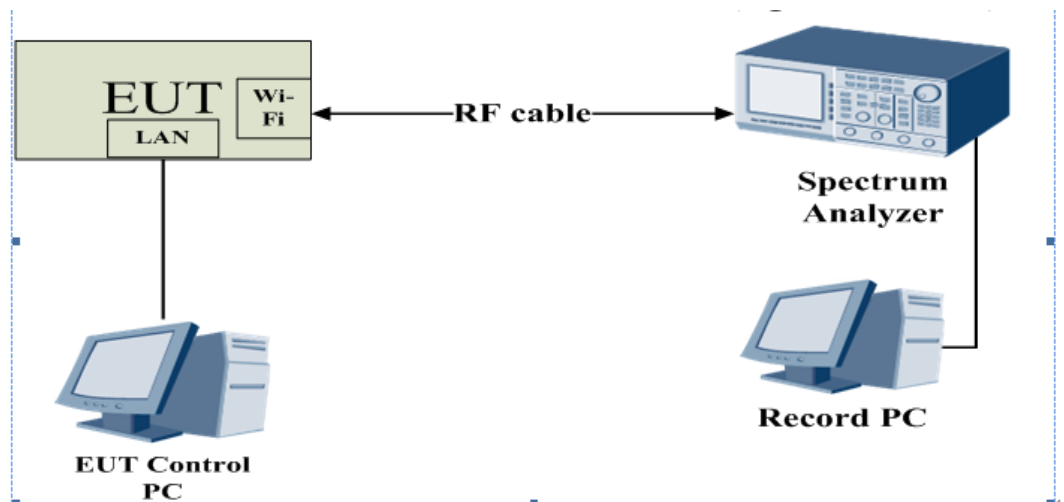
Centre Frequency	The centre frequency of the channel under test
RBW	100kHz
VBW	300kHz
Frequency span	2x Nominal Channel Bandwidth
Detector Mode	Peak
Trace Mode	Max Hold
Sweep Time	Auto Couple

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.

3.4.4 Test Setup



3.4.5 Test Result

6dB Bandwidth

TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	9.560	2407.440	2417.000	0.5	PASS
		2437	9.560	2432.440	2442.000	0.5	PASS
		2462	8.760	2457.440	2466.200	0.5	PASS
11G	Ant1	2412	16.360	2403.800	2420.160	0.5	PASS
		2437	16.360	2428.800	2445.160	0.5	PASS
		2462	16.400	2453.760	2470.160	0.5	PASS
11N20SISO	Ant1	2412	16.880	2403.560	2420.440	0.5	PASS
		2437	17.320	2428.440	2445.760	0.5	PASS
		2462	17.080	2453.440	2470.520	0.5	PASS
11N40SISO	Ant1	2422	32.480	2405.760	2438.240	0.5	PASS
		2437	32.240	2421.000	2453.240	0.5	PASS
		2452	32.240	2436.000	2468.240	0.5	PASS

11B_Ant1_2412



11B_Ant1_2437



11B_Ant1_2462



11G_Ant1_2412



11G_Ant1_2437



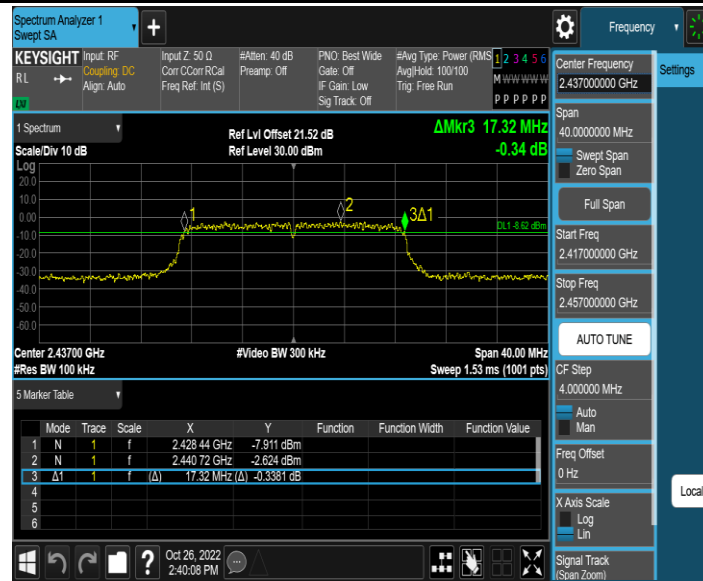
11G_Ant1_2462



11N20SISO_Ant1_2412



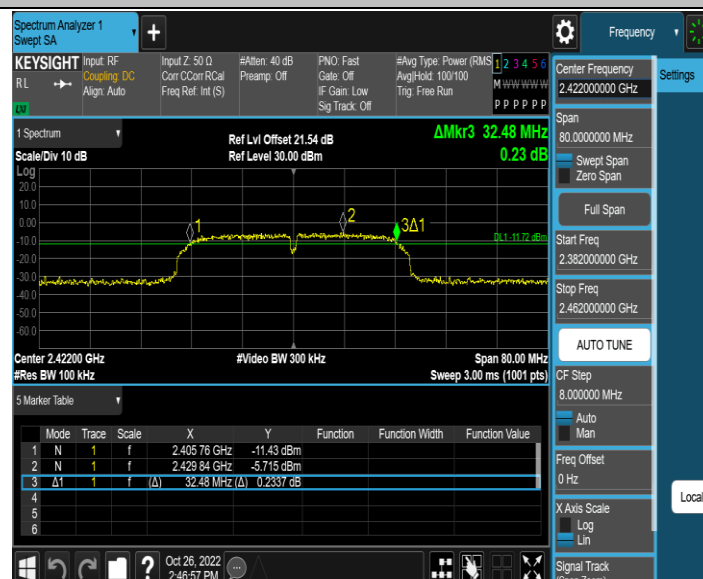
11N20SISO_Ant1_2437



11N20SISO_Ant1_2462



11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



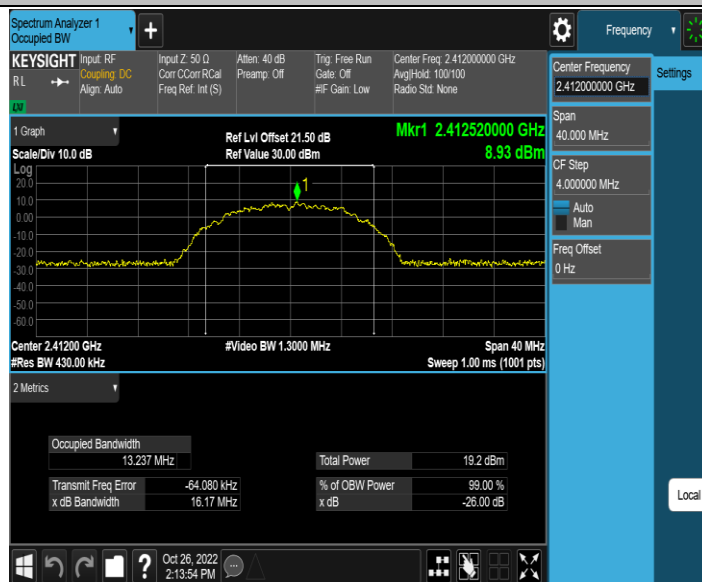
11N40SISO_Ant1_2452



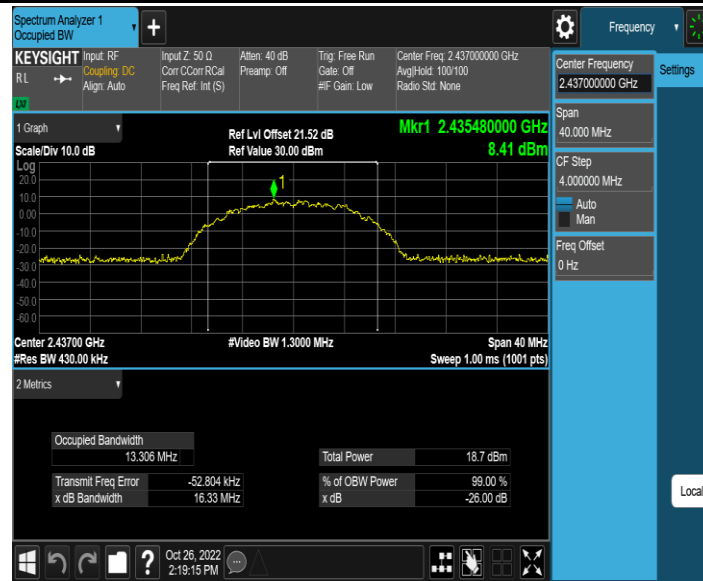
Occupied Channel Bandwidth

TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	13.237	2405.3174	2418.5544	---	---
		2437	13.306	2430.2942	2443.6002	---	---
		2462	13.267	2455.2956	2468.5626	---	---
11G	Ant1	2412	16.582	2403.7135	2420.2955	---	---
		2437	16.656	2428.6894	2445.3454	---	---
		2462	16.633	2453.6772	2470.3102	---	---
11N20SISO	Ant1	2412	17.383	2403.3156	2420.6986	---	---
		2437	17.394	2428.3007	2445.6947	---	---
		2462	17.444	2453.2641	2470.7081	---	---
11N40SISO	Ant1	2422	34.962	2404.6191	2439.5811	---	---
		2437	34.916	2419.6382	2454.5542	---	---
		2452	34.920	2434.6088	2469.5288	---	---

11B_Ant1_2412



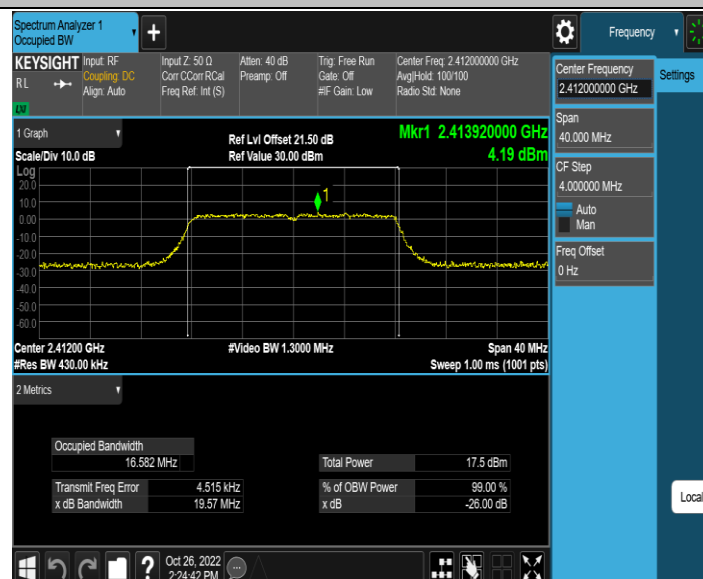
11B_Ant1_2437



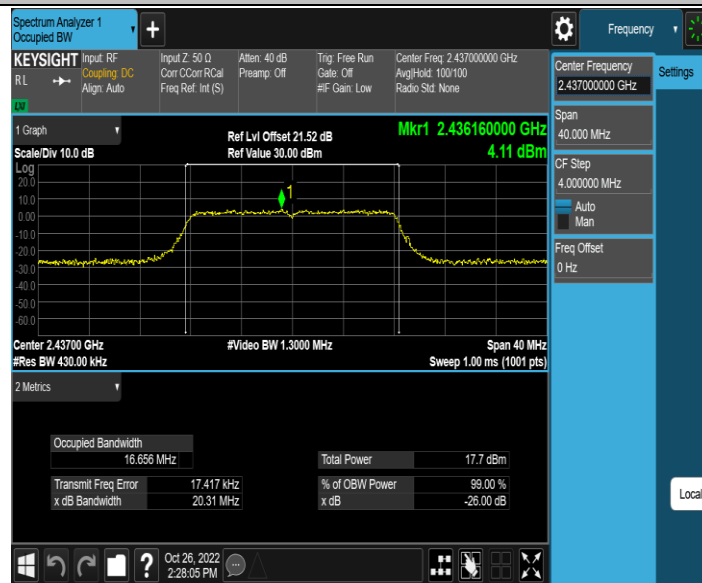
11B_Ant1_2462



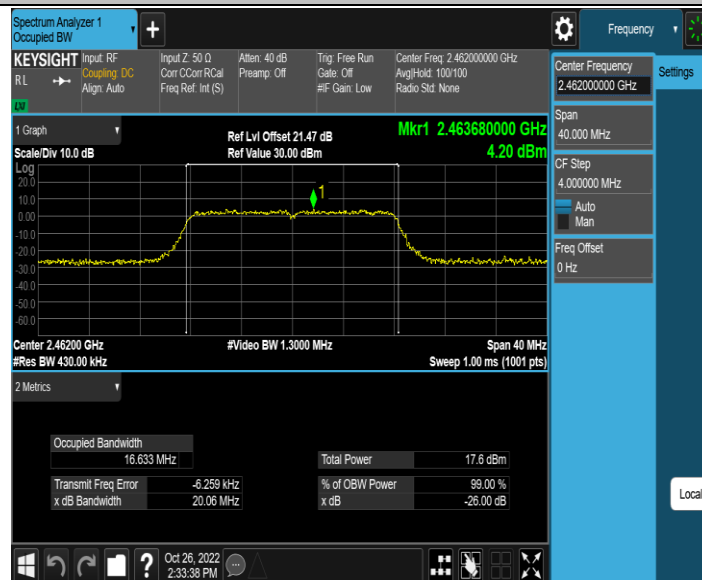
11G_Ant1_2412



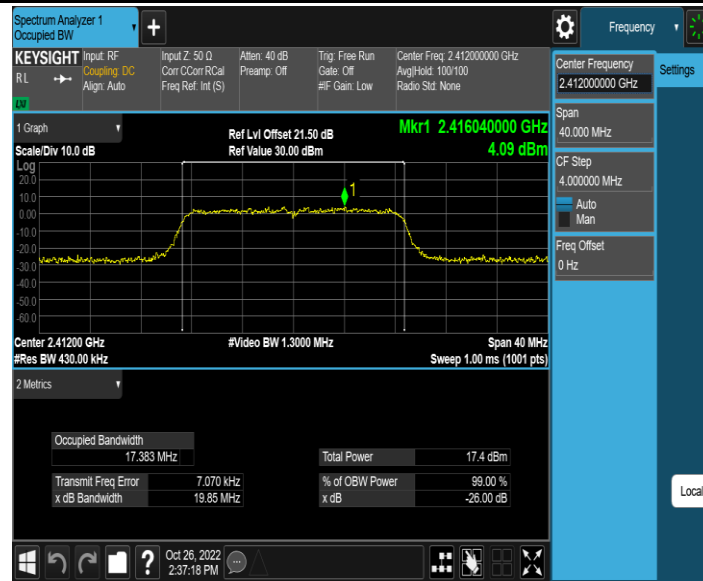
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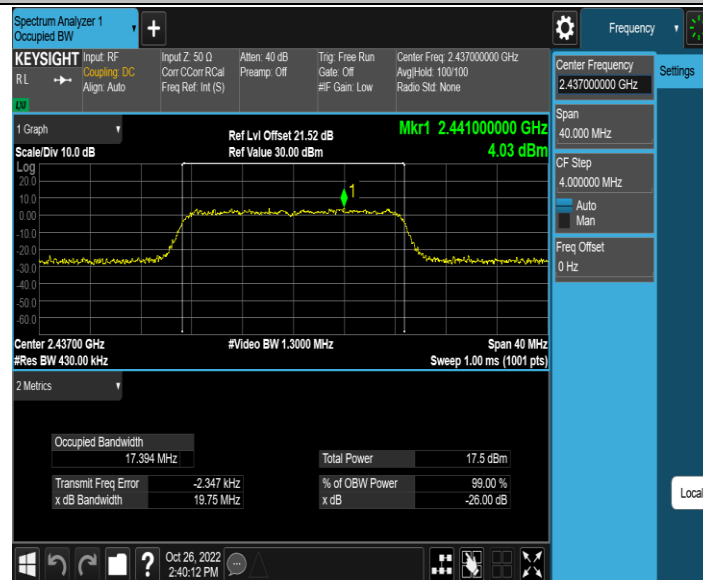
11G_Ant1_2462



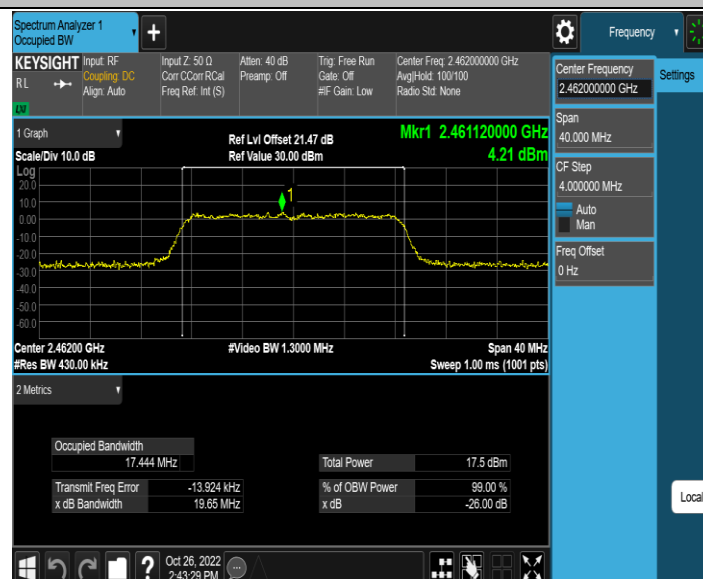
11N20SISO_Ant1_2412



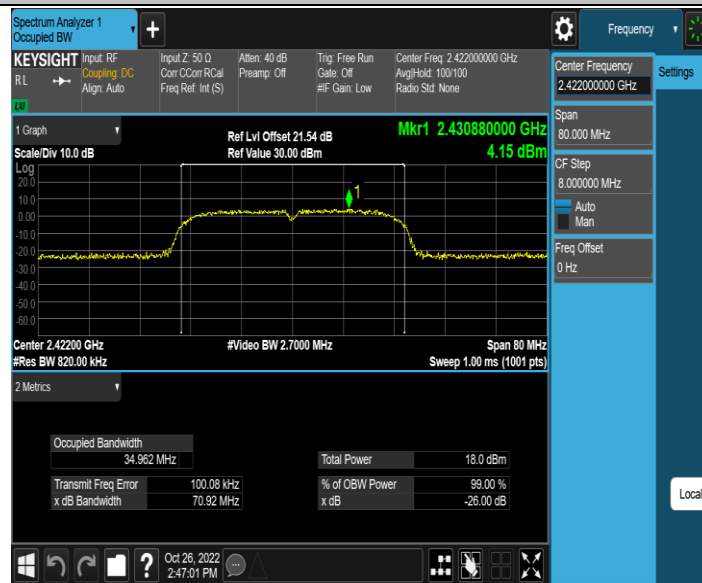
11N20SISO_Ant1_2437



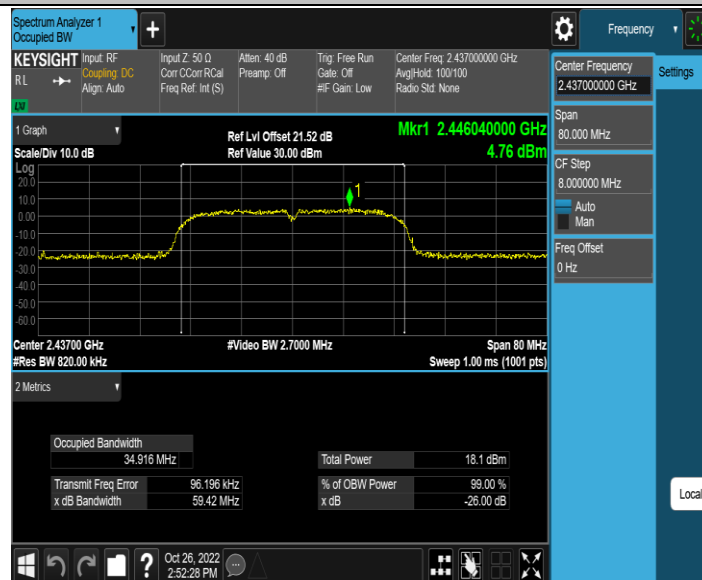
11N20SISO_Ant1_2462



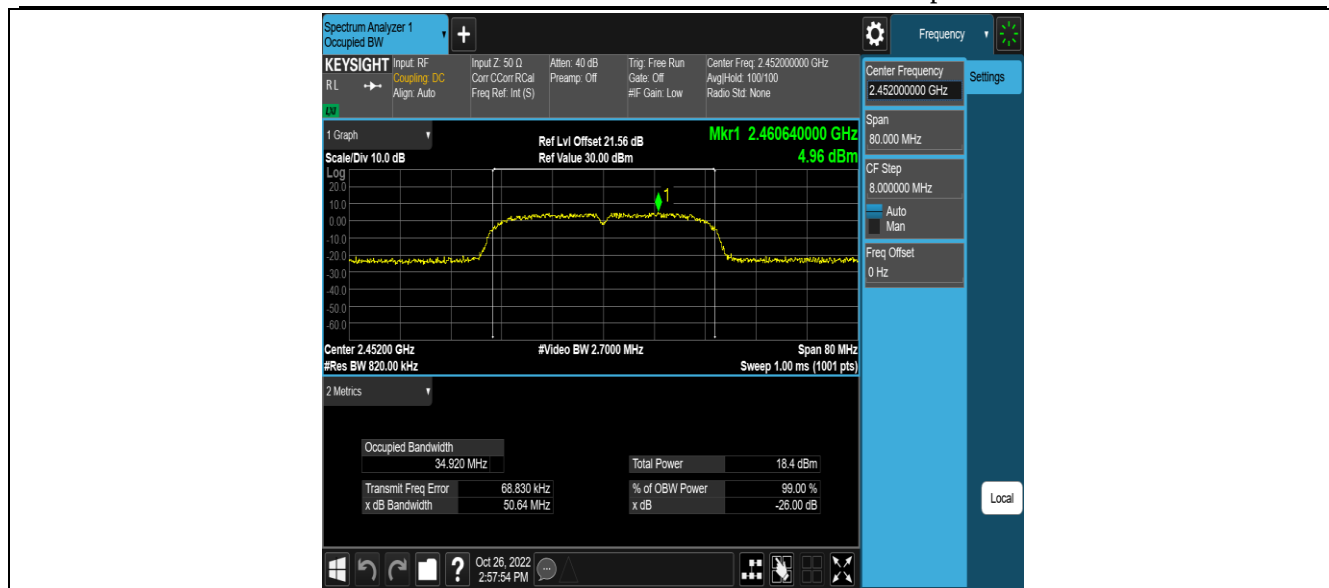
11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



11N40SISO_Ant1_2452



3.5 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 Peripherals

Support Equipment				
No.	Equipment	Brand Name	Model Name	Remarks
1	Type-C Cable	AWM	E101344	0.9m,No Shielding
2	Adaptor	FUSHIGANG	AS1201A-0502000 USU	NA
3	Record PC	Lenovo	M4500T	NA
4	Control PC	Lenovo	M4500T	NA

3.5.3 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 power meter and antenna output port as show in the block diagram below.
- The maximum output power was performed in accordance with method 11.9.2.3 of ANSI C63.10.

3.5.4 Test Setup



3.5.5 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	EspRFTestTool_v2.8_Manual		
Frequency (MHz)	2412	2442	2472
IEEE 802.11b	0	0	0
IEEE 802.11g	0	0	0
IEEE 802.11n (20MHz)	0	0	0
Frequency (MHz)	2422	2442	2462
IEEE 802.11n (40MHz)	0	0	0

3.5.6 The Result

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	2412	18.94	≤30.00	PASS
		2437	18.44	≤30.00	PASS
		2462	18.59	≤30.00	PASS
11G	Ant1	2412	18.22	≤30.00	PASS
		2437	18.34	≤30.00	PASS
		2462	18.13	≤30.00	PASS
11N20SISO	Ant1	2412	18.06	≤30.00	PASS
		2437	18.22	≤30.00	PASS
		2462	18.14	≤30.00	PASS
11N40SISO	Ant1	2422	17.96	≤30.00	PASS
		2437	18.22	≤30.00	PASS
		2452	18.55	≤30.00	PASS

Note: The Duty Cycle Factor is compensated in the graph.

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 transmission.

3.6.2 Test Peripherals

Support Equipment				
No.	Equipment	Brand Name	Model Name	Remarks
1	Type-C Cable	AWM	E101344	0.9m, No Shielding
2	Adaptor	FUSHIGANG	AS1201A-0502000 USU	NA
3	Record PC	Lenovo	M4500T	NA
4	Control PC	Lenovo	M4500T	NA

3.6.3 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	

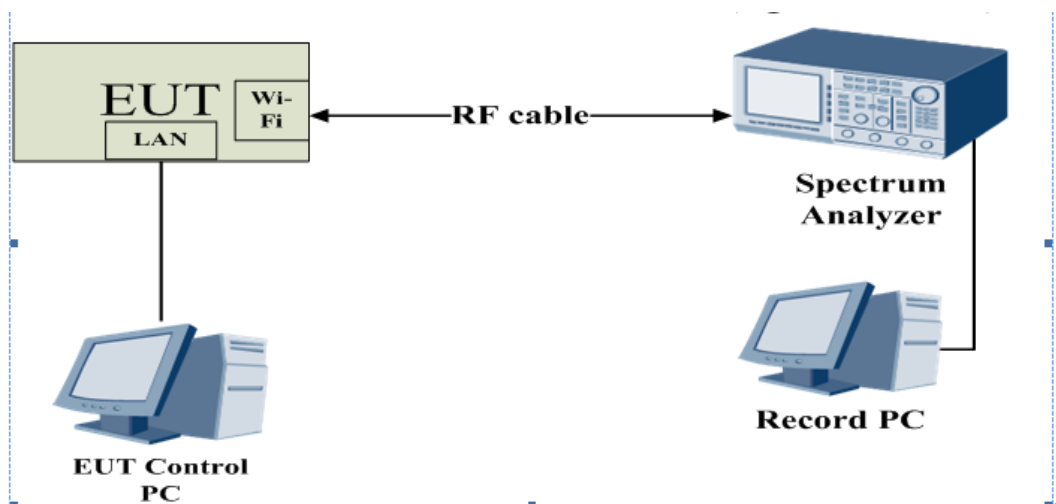
a) The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below. Spectrum analyser settings as following:

RBW	3 kHz
VBW	10 kHz
Detector Mode	Peak
Trace Mode	Max Hold
Sweep Time	Auto

b) Wait for the trace to stabilize. Use the peak marker function to determine the maximum amplitude level within the RBW.

c) The value defined in step b shall be compared to the limits and be recorded .

3.6.4 Test Setup



3.6.5 The Result

TestMode	Antenna	Channel	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-10.90	≤8.00	PASS
		2437	-11.30	≤8.00	PASS
		2462	-10.93	≤8.00	PASS
11G	Ant1	2412	-17.36	≤8.00	PASS
		2437	-17.01	≤8.00	PASS
		2462	-17.06	≤8.00	PASS
11N20SISO	Ant1	2412	-16.91	≤8.00	PASS
		2437	-16.70	≤8.00	PASS
		2462	-16.54	≤8.00	PASS
11N40SISO	Ant1	2422	-17.53	≤8.00	PASS
		2437	-17.32	≤8.00	PASS
		2452	-16.98	≤8.00	PASS

Note: The Duty Cycle Factor is compensated in the graph.

11B_Ant1_2412



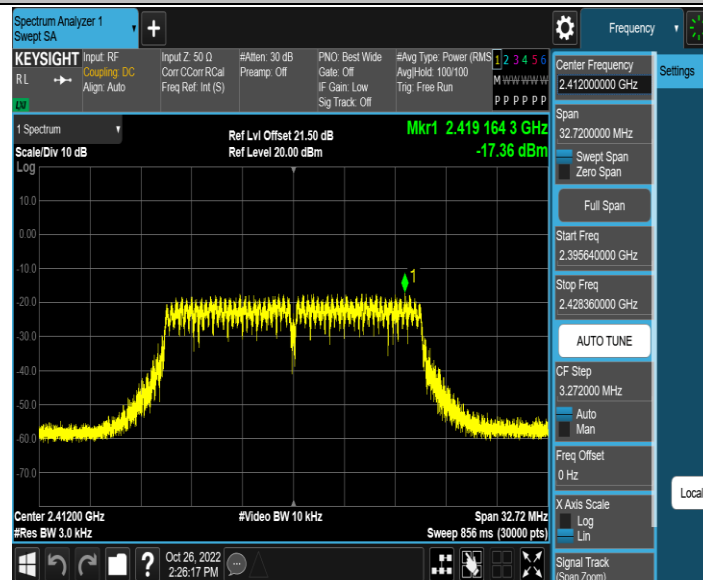
11B_Ant1_2437



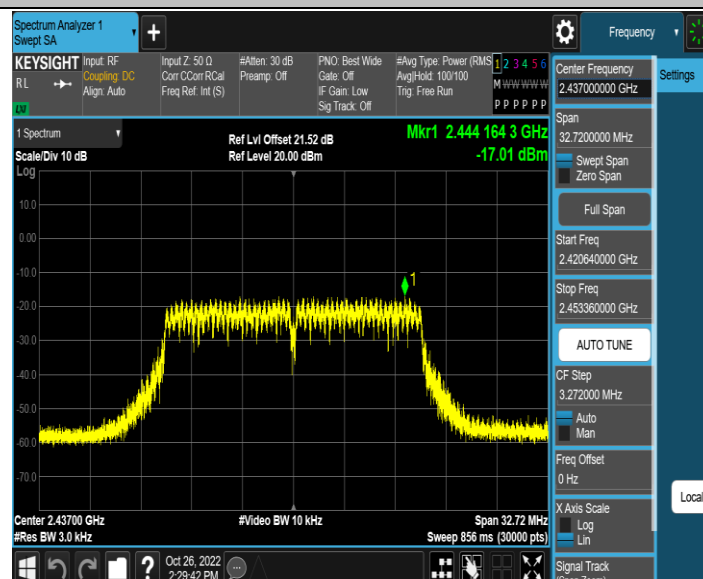
11B_Ant1_2462



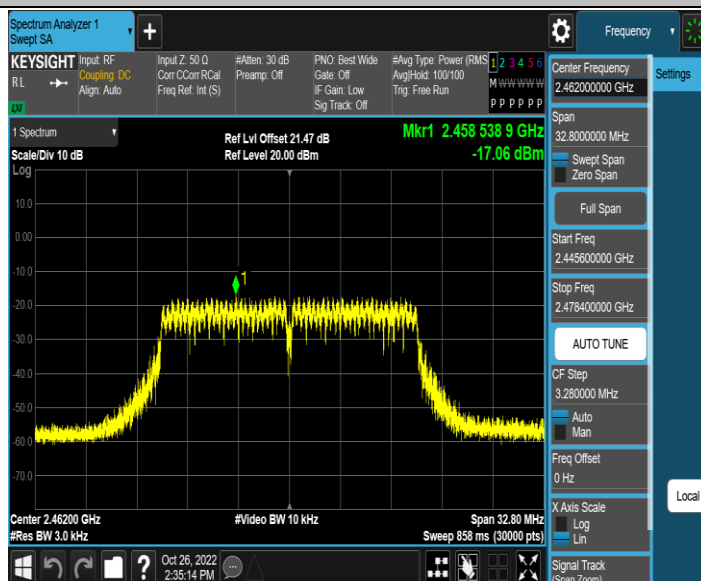
11G_Ant1_2412



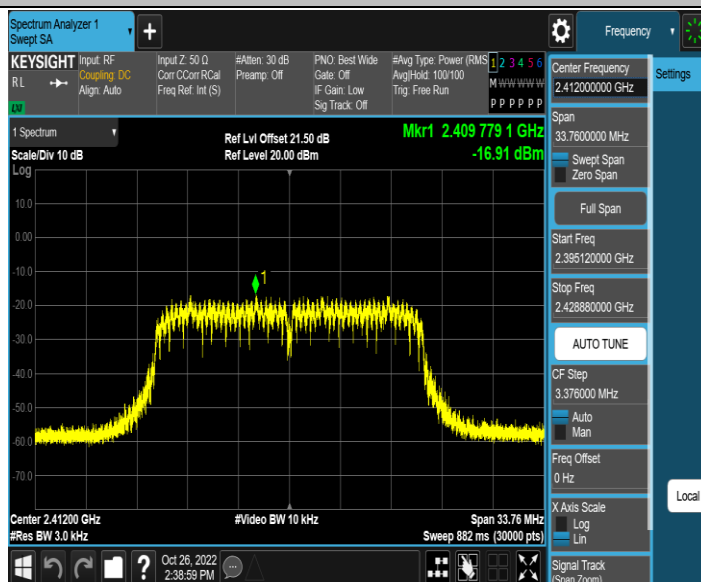
11G_Ant1_2437



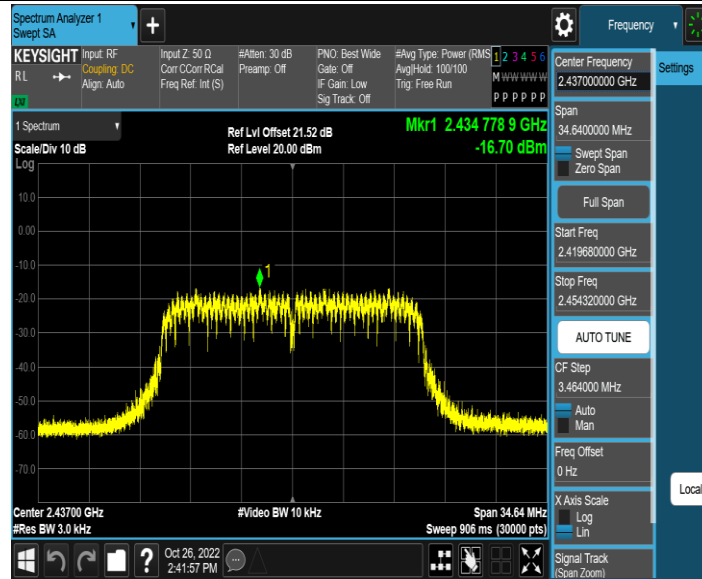
11G_Ant1_2462



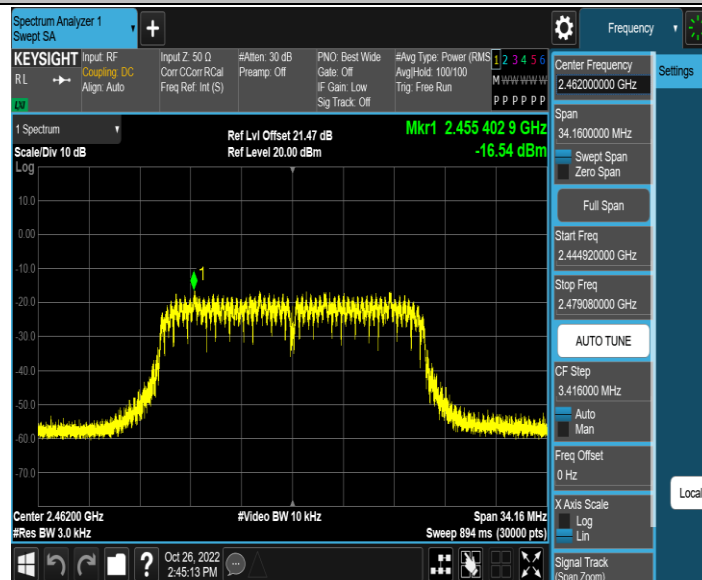
11N20SISO_Ant1_2412



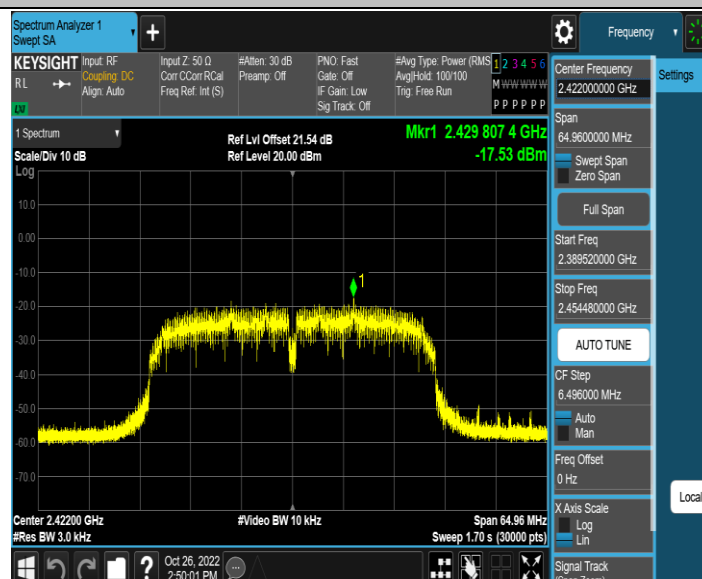
11N20SISO_Ant1_2437



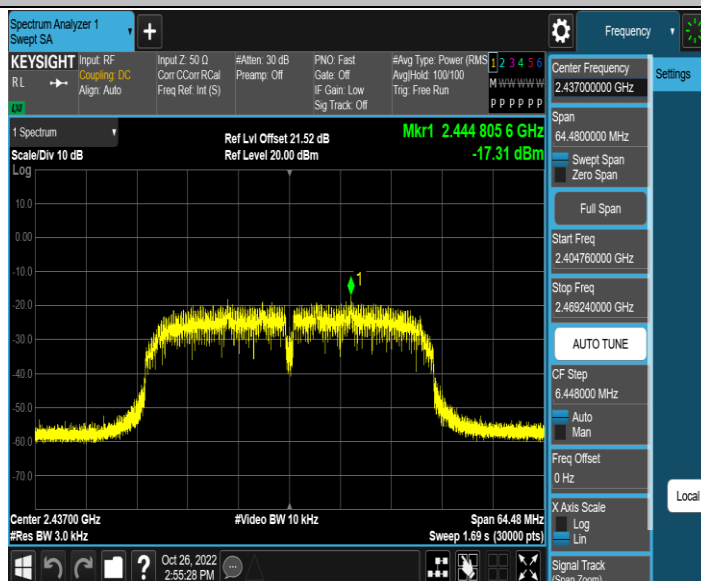
11N20SISO_Ant1_2462



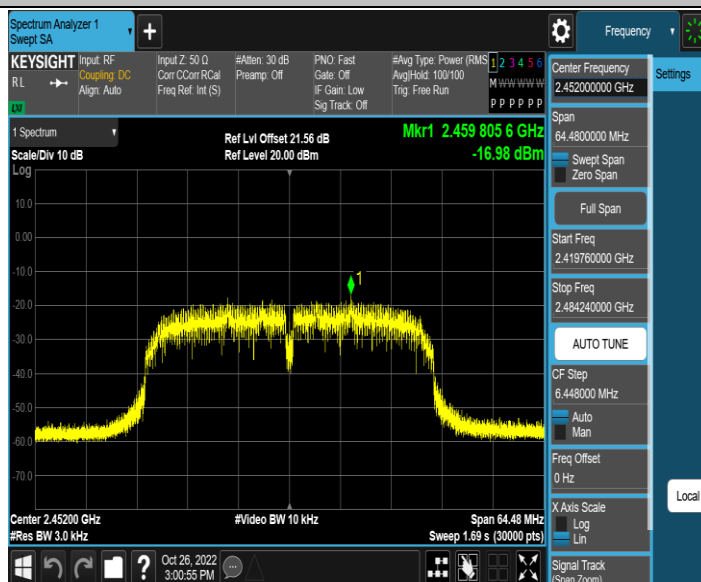
11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



11N40SISO_Ant1_2452



(END OF REPORT)