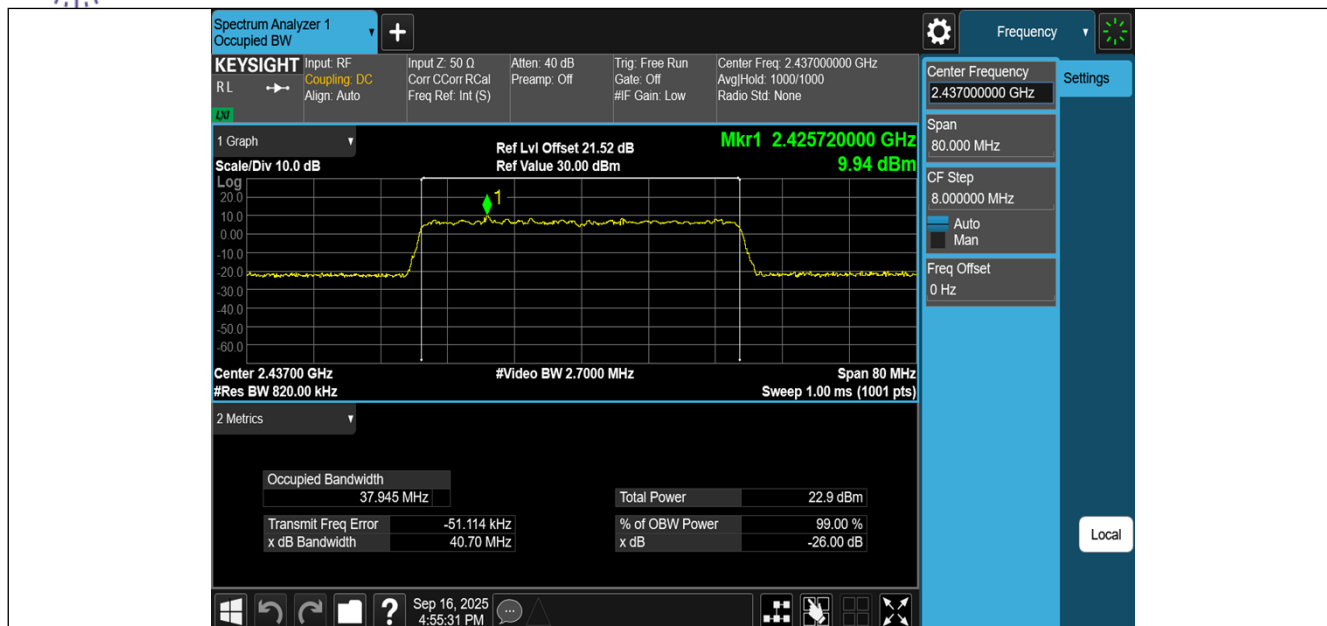
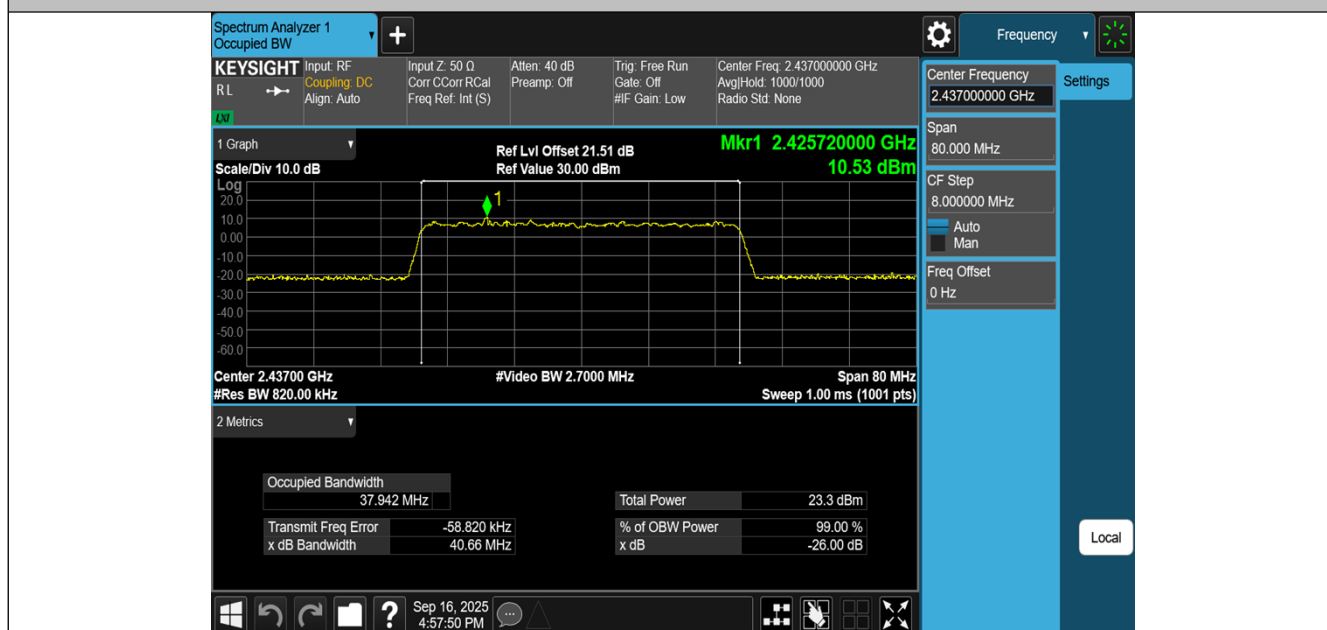
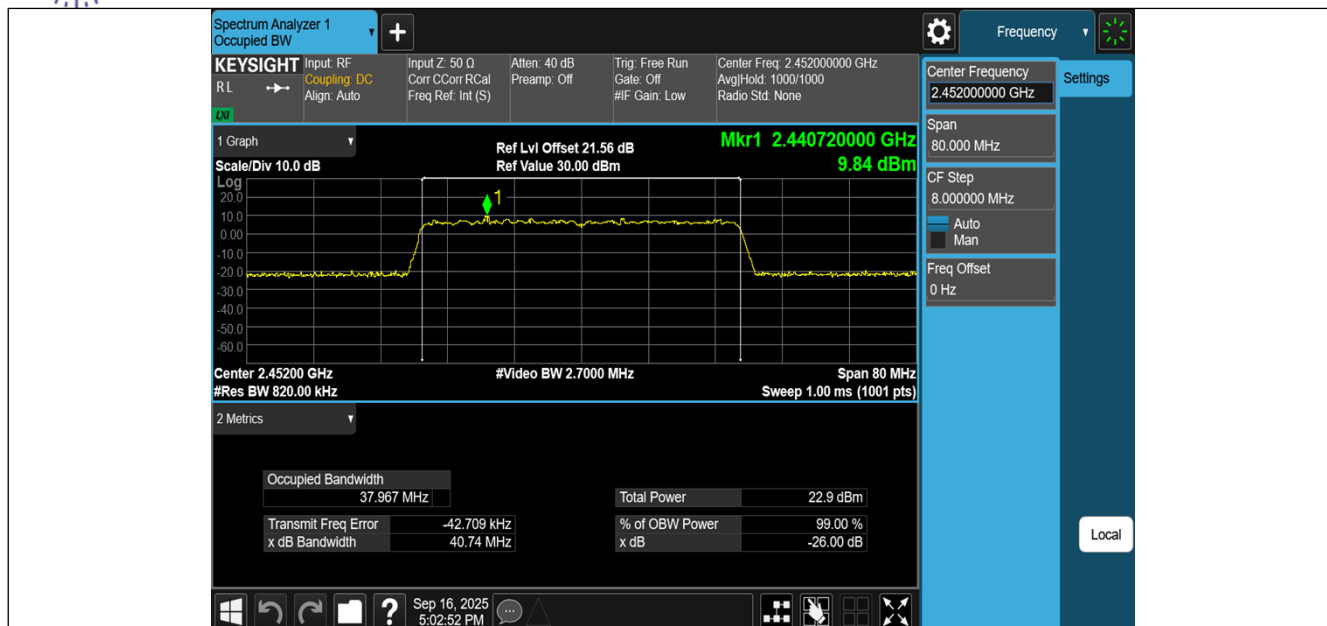




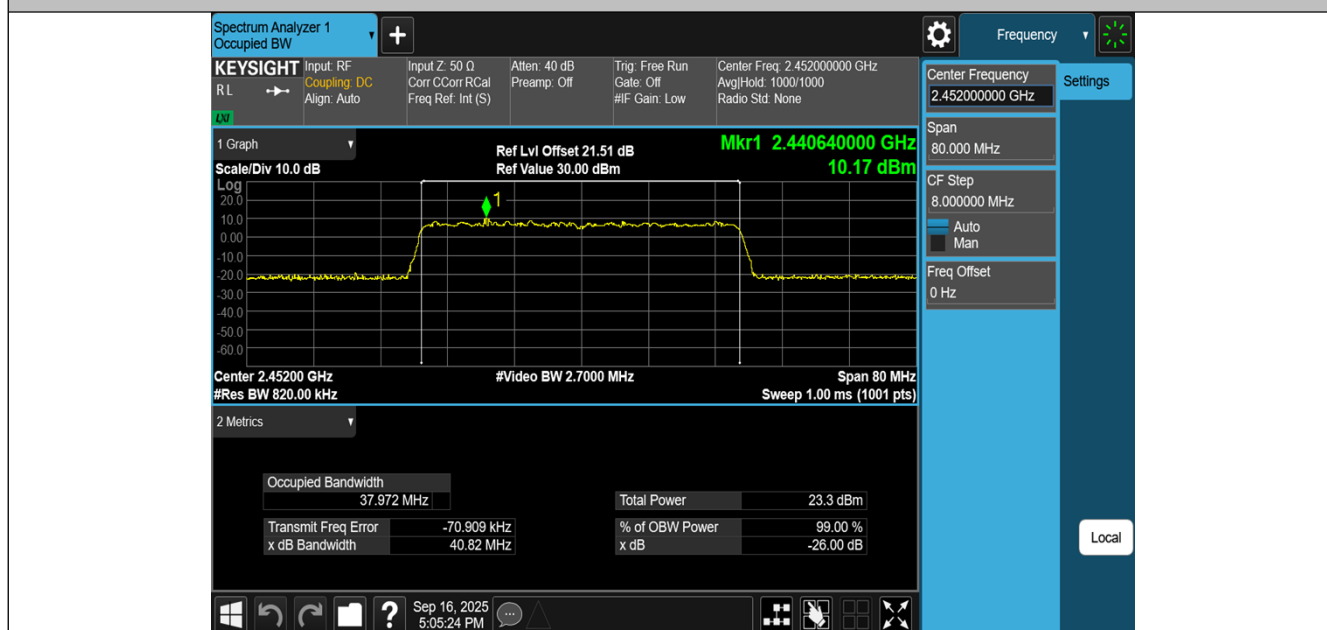
11AX40MIMO-Ant1-2437



11AX40MIMO-Ant2-2437



11AX40MIMO-Ant1-2452



11AX40MIMO-Ant2-2452

3.5 Maximum conducted output power

3.5.1 Limit

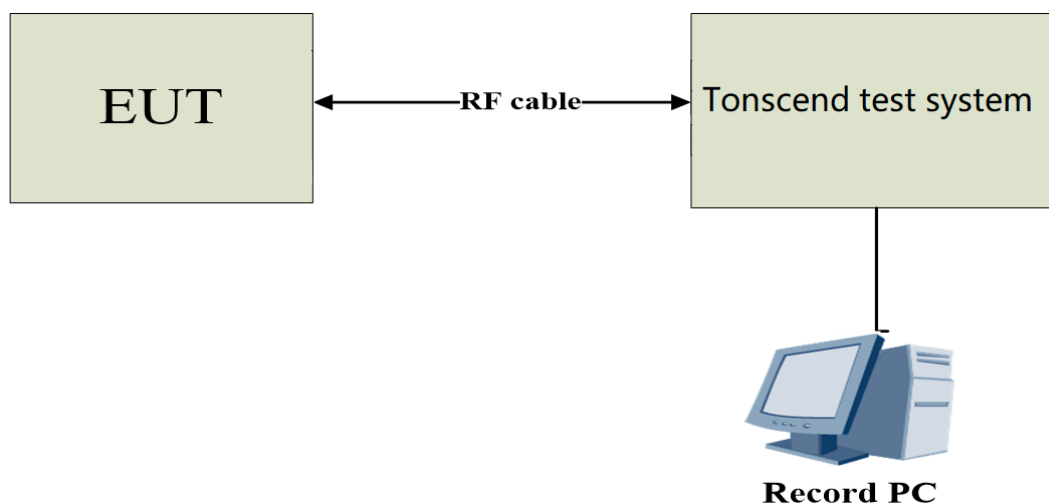
For systems using digital modulation in the 2400~2483.5MHz, The Maximum output Power shall not exceed 1W (30dBm)

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 11.9.2.3 (for averaging power) of ANSI C63.10-2020 of KDB 662911 D01 Multiple Transmitter Output v02r01.

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		MPTool		
Frequency (MHz)		2412	2437	2462
IEEE 802.11b	Ant1	16	16	16
	Ant2	16	16	16
IEEE 802.11g	Ant1	16	16	16
	Ant2	16	16	16
IEEE 802.11n (20MHz)		16	16	16
IEEE 802.11ax (20MHz)		16	16	16
Frequency (MHz)		2422	2437	2452
IEEE 802.11n (40MHz)		16	16	16
IEEE 802.11ax (40MHz)		16	16	16

3.5.5 The Result

Test Mode	Antenna	Frequency[MHz]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant2	2412	14.78	≤30.00	PASS
11B	Ant1	2412	14.64	≤30.00	PASS
11B	Ant1	2437	14.24	≤30.00	PASS
11B	Ant2	2437	14.61	≤30.00	PASS
11B	Ant1	2462	14.19	≤30.00	PASS
11B	Ant2	2462	14.62	≤30.00	PASS
11G	Ant1	2412	14.58	≤30.00	PASS
11G	Ant2	2412	14.72	≤30.00	PASS
11G	Ant1	2437	14.24	≤30.00	PASS
11G	Ant2	2437	14.77	≤30.00	PASS
11G	Ant1	2462	14.60	≤30.00	PASS
11G	Ant2	2462	14.77	≤30.00	PASS
11N20MIMO	Ant1	2412	14.75	≤30.00	PASS
11N20MIMO	Ant2	2412	14.80	≤30.00	PASS
11N20MIMO	total	2412	17.79	≤30.00	PASS
11N20MIMO	Ant1	2437	14.49	≤30.00	PASS
11N20MIMO	Ant2	2437	14.53	≤30.00	PASS
11N20MIMO	total	2437	17.52	≤30.00	PASS
11N20MIMO	Ant1	2462	14.52	≤30.00	PASS
11N20MIMO	Ant2	2462	14.53	≤30.00	PASS
11N20MIMO	total	2462	17.54	≤30.00	PASS
11N40MIMO	Ant1	2422	14.54	≤30.00	PASS
11N40MIMO	Ant2	2422	14.96	≤30.00	PASS
11N40MIMO	total	2422	17.77	≤30.00	PASS
11N40MIMO	Ant1	2437	14.55	≤30.00	PASS
11N40MIMO	Ant2	2437	14.61	≤30.00	PASS
11N40MIMO	total	2437	17.59	≤30.00	PASS
11N40MIMO	Ant1	2452	14.48	≤30.00	PASS
11N40MIMO	Ant2	2452	14.44	≤30.00	PASS
11N40MIMO	total	2452	17.47	≤30.00	PASS
11AX20MIMO	Ant1	2412	14.85	≤30.00	PASS
11AX20MIMO	Ant2	2412	14.84	≤30.00	PASS
11AX20MIMO	total	2412	17.86	≤30.00	PASS
11AX20MIMO	Ant1	2437	14.54	≤30.00	PASS
11AX20MIMO	Ant2	2437	14.87	≤30.00	PASS
11AX20MIMO	total	2437	17.72	≤30.00	PASS
11AX20MIMO	Ant1	2462	14.56	≤30.00	PASS
11AX20MIMO	Ant2	2462	14.76	≤30.00	PASS
11AX20MIMO	total	2462	17.67	≤30.00	PASS

11AX40MIMO	Ant1	2422	14.71	≤30.00	PASS
11AX40MIMO	Ant2	2422	14.93	≤30.00	PASS
11AX40MIMO	total	2422	17.83	≤30.00	PASS
11AX40MIMO	Ant1	2437	14.54	≤30.00	PASS
11AX40MIMO	Ant2	2437	14.93	≤30.00	PASS
11AX40MIMO	total	2437	17.75	≤30.00	PASS
11AX40MIMO	Ant1	2452	14.48	≤30.00	PASS
11AX40MIMO	Ant2	2452	14.87	≤30.00	PASS
11AX40MIMO	total	2452	17.69	≤30.00	PASS

Note:

Cable Loss and duty cycle factor are compensated in the average conducted output power.

for mimo mode: Directional gain = $G_{ANT} + 10 \log(N_{ANT})$ dBi=2.62+3.01=5.63dBi

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

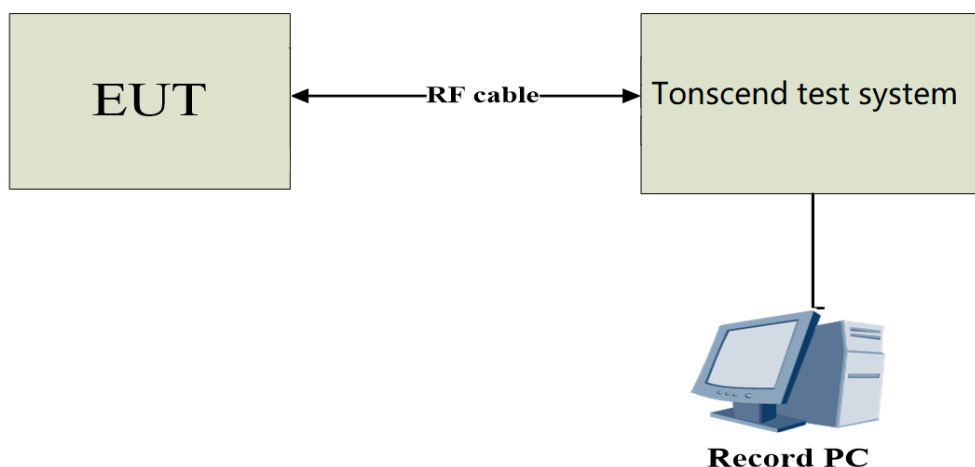
Test Method	
☒ Conducted Measurement	☐ Radiated Measurement
Test Channels	
☒ Lowest, Middle and Highest Channel	☐ Lowest and Highest Channel
Environmental conditions	
☒ Normal	☐ Normal and Extreme
Note: ☒ : Test ☐ : No Test	

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 OBW bandwidth
RBW	3 kHz
VBW	10 kHz
Detector	averaging
Trace	Average
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	-16.94	≤8.00	PASS
11B	Ant2	2412	-16.16	≤8.00	PASS
11B	total	2412	-13.52	≤8.00	PASS
11B	Ant1	2437	-15.82	≤8.00	PASS
11B	Ant2	2437	-16.26	≤8.00	PASS
11B	total	2437	-13.02	≤8.00	PASS
11B	Ant1	2462	-16.74	≤8.00	PASS
11B	Ant2	2462	-16.49	≤8.00	PASS
11B	total	2462	-13.60	≤8.00	PASS
11G	Ant1	2412	-16.43	≤8.00	PASS
11G	Ant2	2412	-16.73	≤8.00	PASS
11G	total	2412	-13.57	≤8.00	PASS
11G	Ant1	2437	-17.26	≤8.00	PASS
11G	Ant2	2437	-16.79	≤8.00	PASS
11G	total	2437	-14.01	≤8.00	PASS
11G	Ant1	2462	-16.14	≤8.00	PASS
11G	Ant2	2462	-16.24	≤8.00	PASS
11G	total	2462	-13.18	≤8.00	PASS
11N20MIMO	Ant1	2412	-17.24	≤8.00	PASS
11N20MIMO	Ant2	2412	-17.27	≤8.00	PASS
11N20MIMO	total	2412	-14.24	≤8.00	PASS
11N20MIMO	Ant1	2437	-16.51	≤8.00	PASS
11N20MIMO	Ant2	2437	-17.85	≤8.00	PASS
11N20MIMO	total	2437	-14.12	≤8.00	PASS
11N20MIMO	Ant2	2462	-16.54	≤8.00	PASS
11N20MIMO	total	2462	-13.92	≤8.00	PASS
11N20MIMO	Ant1	2462	-17.37	≤8.00	PASS
11N40MIMO	Ant2	2422	-18.88	≤8.00	PASS
11N40MIMO	total	2422	-15.79	≤8.00	PASS
11N40MIMO	Ant1	2422	-18.72	≤8.00	PASS
11N40MIMO	Ant2	2437	-19.04	≤8.00	PASS
11N40MIMO	total	2437	-16.15	≤8.00	PASS
11N40MIMO	Ant1	2437	-19.28	≤8.00	PASS
11N40MIMO	Ant2	2452	-18.31	≤8.00	PASS
11N40MIMO	total	2452	-15.64	≤8.00	PASS
11N40MIMO	Ant1	2452	-19.01	≤8.00	PASS
11AX20MIMO	Ant2	2412	-16.32	≤8.00	PASS
11AX20MIMO	total	2412	-12.74	≤8.00	PASS
11AX20MIMO	Ant1	2412	-15.25	≤8.00	PASS
11AX20MIMO	Ant2	2437	-16.43	≤8.00	PASS

11AX20MIMO	total	2437	-13.33	≤8.00	PASS
11AX20MIMO	Ant1	2437	-16.25	≤8.00	PASS
11AX20MIMO	Ant2	2462	-16.58	≤8.00	PASS
11AX20MIMO	total	2462	-12.65	≤8.00	PASS
11AX20MIMO	Ant1	2462	-14.90	≤8.00	PASS
11AX40MIMO	Ant2	2422	-16.61	≤8.00	PASS
11AX40MIMO	total	2422	-13.88	≤8.00	PASS
11AX40MIMO	Ant1	2422	-17.20	≤8.00	PASS
11AX40MIMO	Ant2	2437	-15.92	≤8.00	PASS
11AX40MIMO	Ant1	2437	-17.14	≤8.00	PASS
11AX40MIMO	total	2437	-13.48	≤8.00	PASS
11AX40MIMO	Ant2	2452	-17.41	≤8.00	PASS
11AX40MIMO	Ant1	2452	-17.68	≤8.00	PASS
11AX40MIMO	total	2452	-14.53	≤8.00	PASS

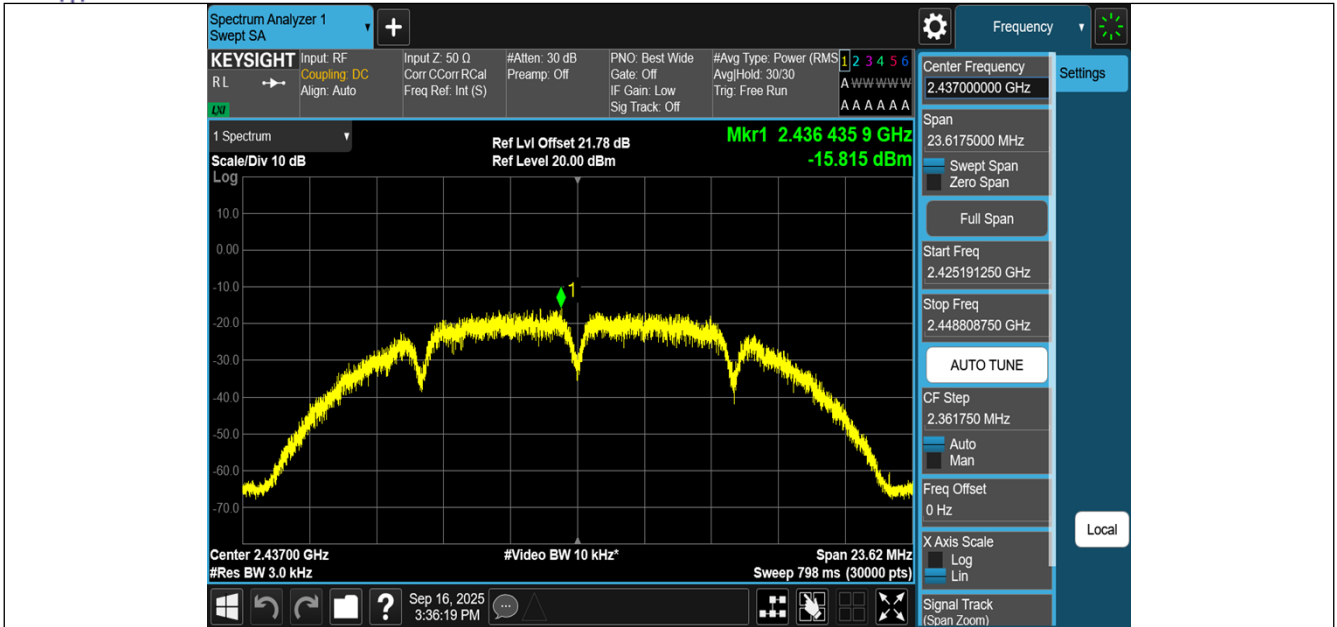
Note:

The duty cycle and line loss have been compensated in the test chart.

Reflyoffset= duty cycle factor+ Cable Loss

Test graph





11B-Ant1-2437-PASS



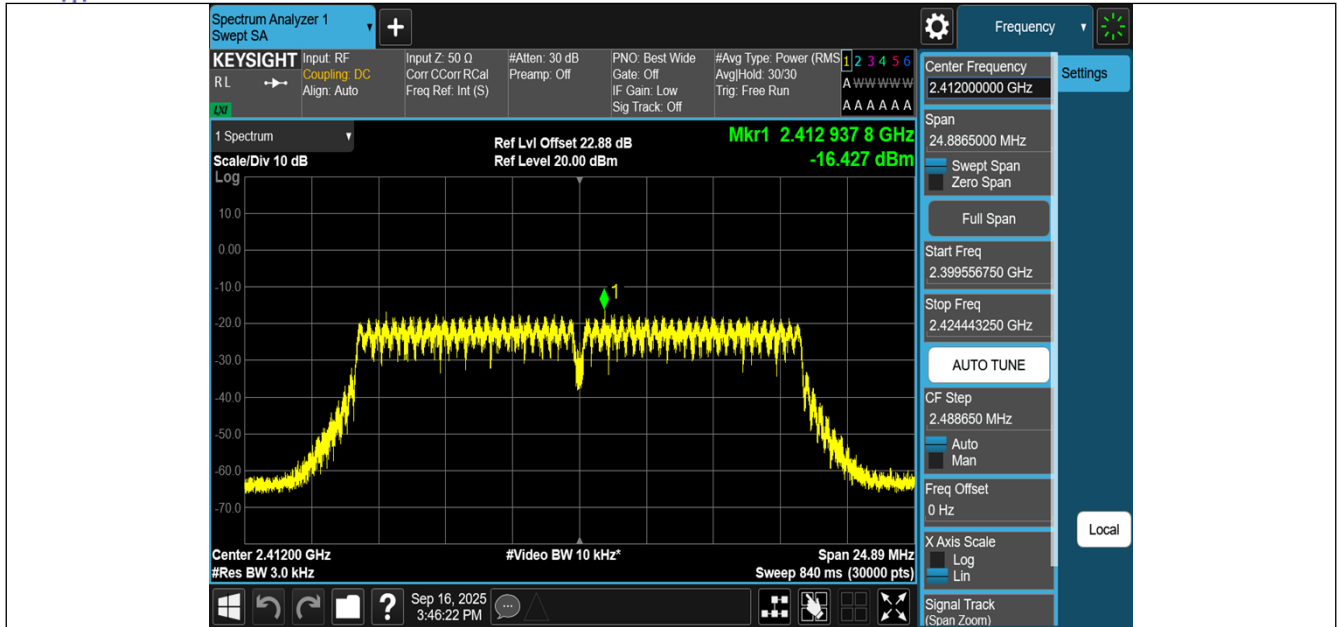
11B-Ant2-2437-PASS



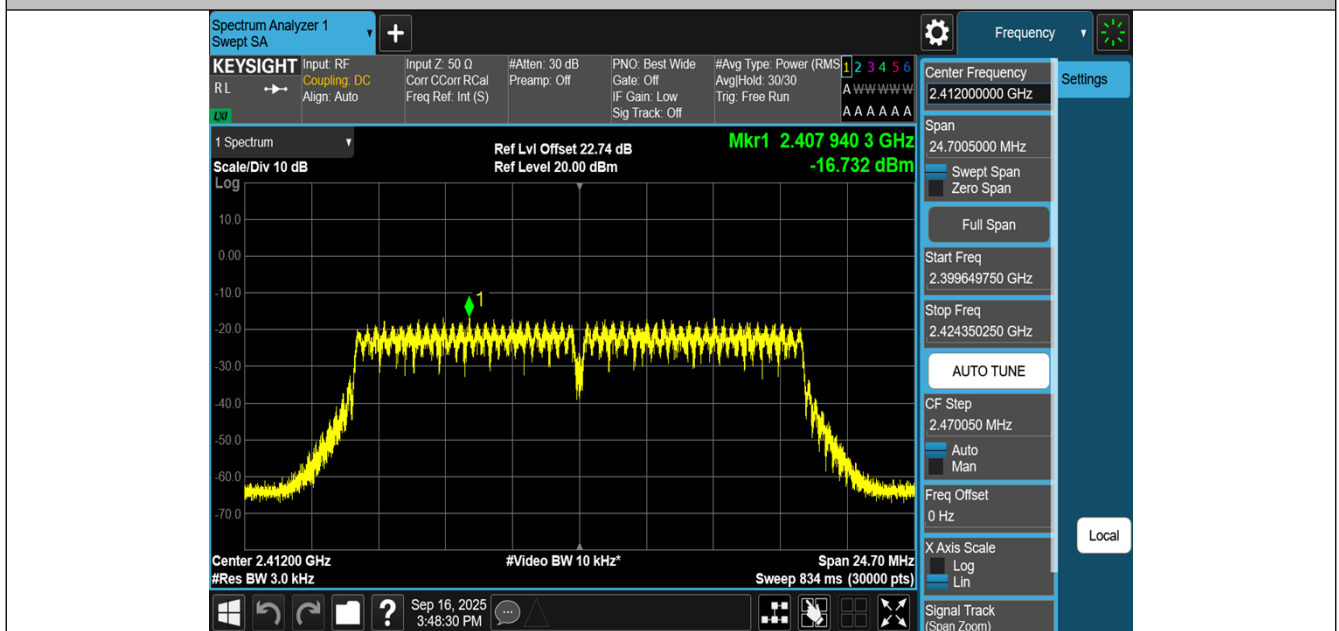
11B-Ant1-2462-PASS



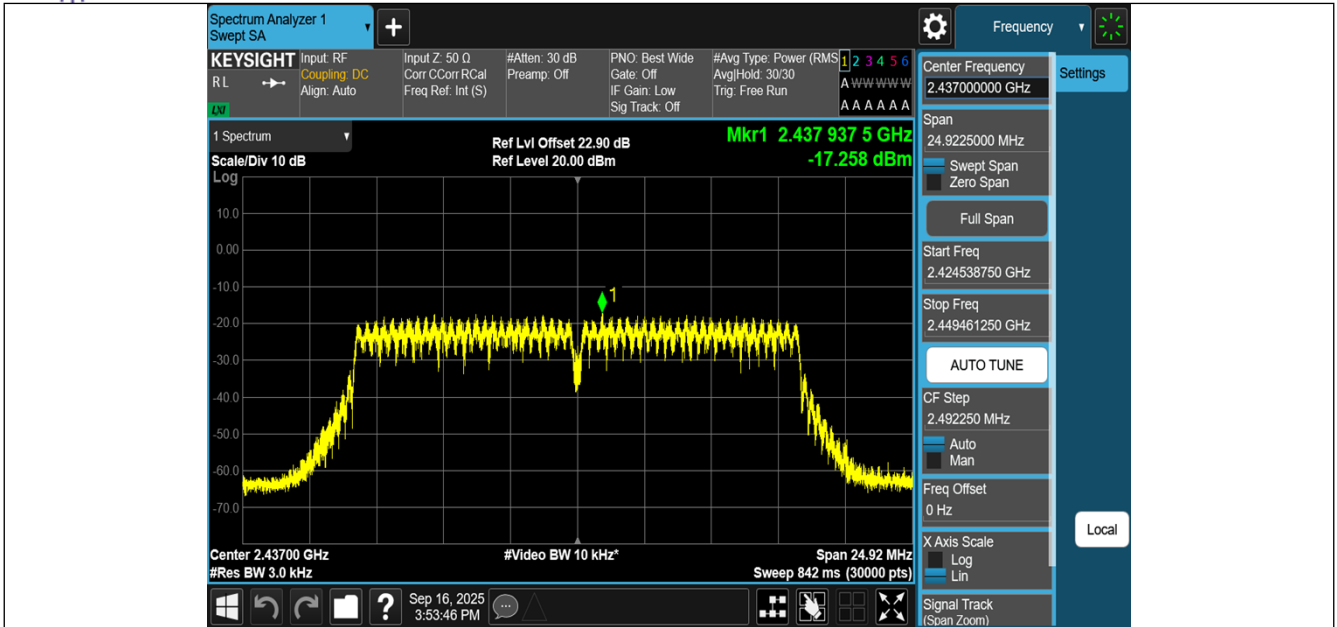
11B-Ant2-2462-PASS



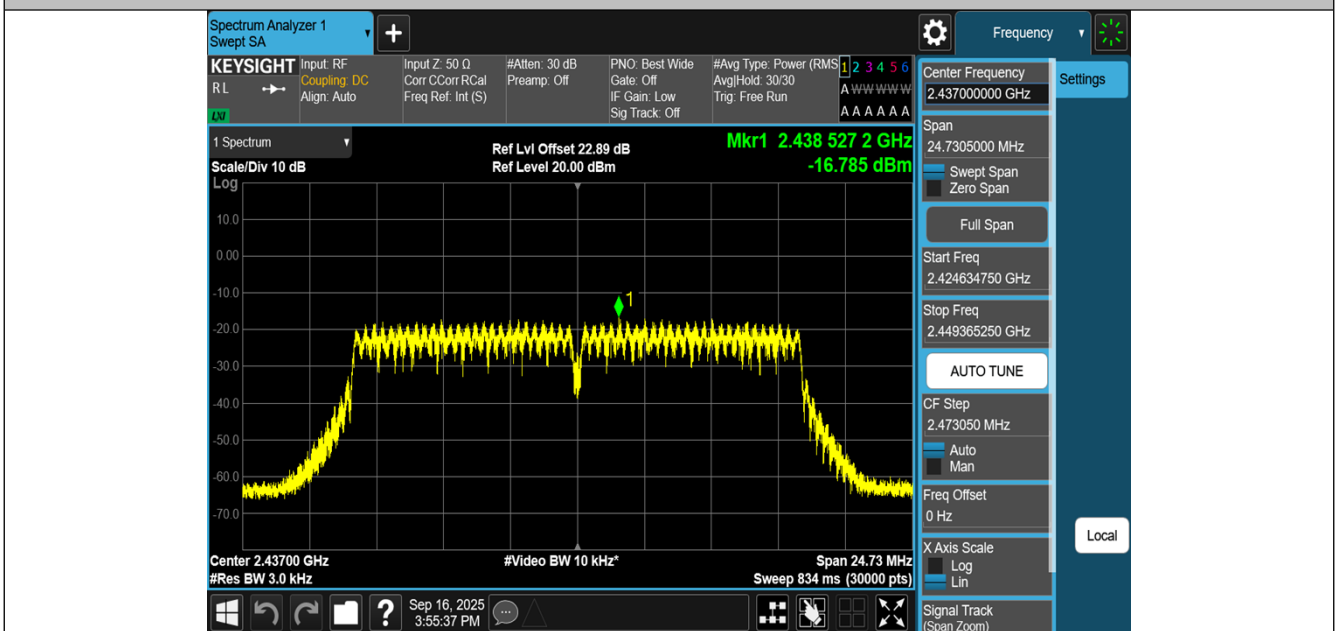
11G-Ant1-2412-PASS



11G-Ant2-2412-PASS



11G-Ant1-2437-PASS



11G-Ant2-2437-PASS