



9. 6 dB DTS Bandwidth and 99 % Occupied Bandwidth

9.1. Block diagram of test setup

Same as section 8.1

9.2. Limits

CFR 47 FCC Part15 (15.247) Subpart C			
Section	Test Item	Limit	Frequency Range (MHz)
CFR 47 FCC 15.247(a)(2)	6 dB Bandwidth	≥ 500 kHz	2400-2483.5

9.3. Test Procedure

Connect the UUT to the spectrum analyzer and use the following settings:

Center Frequency	The center frequency of the channel under test
Detector	Peak
RBW	For 6 dB Bandwidth: 1 % to 5 % of the occupied bandwidth but not less than 100 kHz. For 99 % Occupied Bandwidth :1 % to 5 % of the occupied bandwidth
VBW	For 6 dB Bandwidth: $\geq 3 \times$ RBW For 99 % Occupied Bandwidth : $\geq 3 \times$ RBW
Trace	Max hold
Sweep	Auto couple

Allow the trace to stabilize and measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB and 99 % relative to the maximum level measured in the fundamental emission.

9.4. Results

6dB bandwidth:

Test Mode	Ant.	Freq. (MHz)	DTS BW (MHz)	FL (MHz)	FH (MHz)	Limit (MHz)	Verdict
11B	Ant1	2412	10.120	2406.960	2417.080	0.5	PASS
	Ant2	2412	10.120	2406.960	2417.080	0.5	PASS
	Ant1	2437	10.120	2431.960	2442.080	0.5	PASS
	Ant2	2437	10.080	2431.960	2442.040	0.5	PASS
	Ant1	2462	10.080	2457.000	2467.080	0.5	PASS
	Ant2	2462	10.120	2456.960	2467.080	0.5	PASS
11G	Ant1	2412	15.240	2404.120	2419.360	0.5	PASS
	Ant2	2412	15.600	2404.000	2419.600	0.5	PASS
	Ant1	2437	16.000	2429.000	2445.000	0.5	PASS
	Ant2	2437	15.880	2429.000	2444.880	0.5	PASS
	Ant1	2462	14.880	2454.920	2469.800	0.5	PASS
	Ant2	2462	15.760	2454.040	2469.800	0.5	PASS
11N20MIMO	Ant1	2412	16.560	2403.680	2420.240	0.5	PASS
	Ant2	2412	15.960	2403.600	2419.560	0.5	PASS
	Ant1	2437	17.160	2428.360	2445.520	0.5	PASS
	Ant2	2437	16.480	2428.680	2445.160	0.5	PASS
	Ant1	2462	16.280	2454.080	2470.360	0.5	PASS
	Ant2	2462	16.320	2453.720	2470.040	0.5	PASS
11N40MIMO	Ant1	2422	25.360	2407.200	2432.560	0.5	PASS
	Ant2	2422	34.080	2404.160	2438.240	0.5	PASS
	Ant1	2437	34.080	2419.240	2453.320	0.5	PASS
	Ant2	2437	34.080	2419.960	2454.040	0.5	PASS

	Ant1	2452	34.160	2434.640	2468.800	0.5	PASS
	Ant2	2452	34.240	2434.800	2469.040	0.5	PASS

Note: Offset=cable loss + Test system insertion loss

99 % bandwidth:

Test Mode	Ant.	Channel Freq. (MHz)	OCB (MHz)	FL (MHz)	FH (MHz)	Limit (MHz)	Verdict
11B	Ant1	2412	14.905	2404.5354	2419.4404	---	---
	Ant2	2412	14.970	2404.4920	2419.4620	---	---
	Ant1	2437	15.086	2429.4398	2444.5258	---	---
	Ant2	2437	15.078	2429.4344	2444.5124	---	---
	Ant1	2462	14.906	2454.5882	2469.4942	---	---
	Ant2	2462	15.462	2454.2159	2469.6779	---	---
11G	Ant1	2412	17.391	2403.2704	2420.6614	---	---
	Ant2	2412	17.543	2403.1155	2420.6585	---	---
	Ant1	2437	17.578	2428.1431	2445.7211	---	---
	Ant2	2437	17.847	2427.8772	2445.7242	---	---
	Ant1	2462	17.388	2453.4135	2470.8015	---	---
	Ant2	2462	17.748	2453.0684	2470.8164	---	---
11N20MIMO	Ant1	2412	18.447	2402.7566	2421.2036	---	---
	Ant2	2412	18.701	2402.5195	2421.2205	---	---
	Ant1	2437	19.106	2427.3213	2446.4273	---	---
	Ant2	2437	19.112	2427.1948	2446.3068	---	---
	Ant1	2462	18.410	2452.8022	2471.2122	---	---
	Ant2	2462	19.810	2452.2430	2472.0530	---	---
11N40MIMO	Ant1	2422	36.046	2403.9347	2439.9807	---	---
	Ant2	2422	36.150	2403.7583	2439.9083	---	---
	Ant1	2437	36.659	2418.4761	2455.1351	---	---
	Ant2	2437	36.769	2418.4021	2455.1711	---	---
	Ant1	2452	36.608	2433.6429	2470.2509	---	---
	Ant2	2452	36.763	2433.5018	2470.2648	---	---

Note: Offset=cable loss + Test system insertion loss

9.5. Original test data

6dB bandwidth:

11B_Ant1_2412









11N20MIMO_Ant1_2462



11N20MIMO_Ant2_2462



11N40MIMO Ant1 2422





11N40MIMO_Ant1_2452



11N40MIMO_Ant2_2452



99 % bandwidth:

11B Ant1 2412



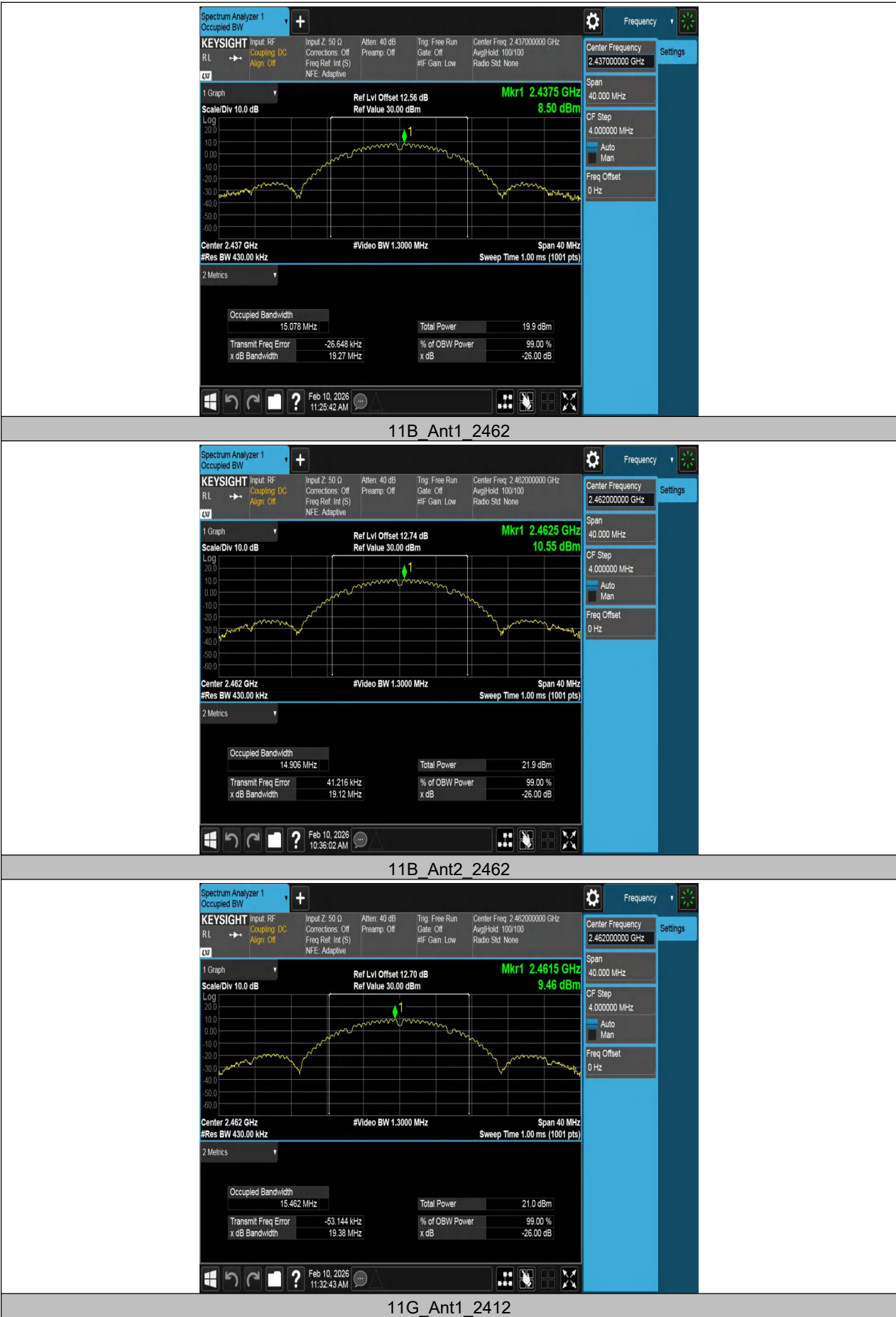
11B_Ant2_2412



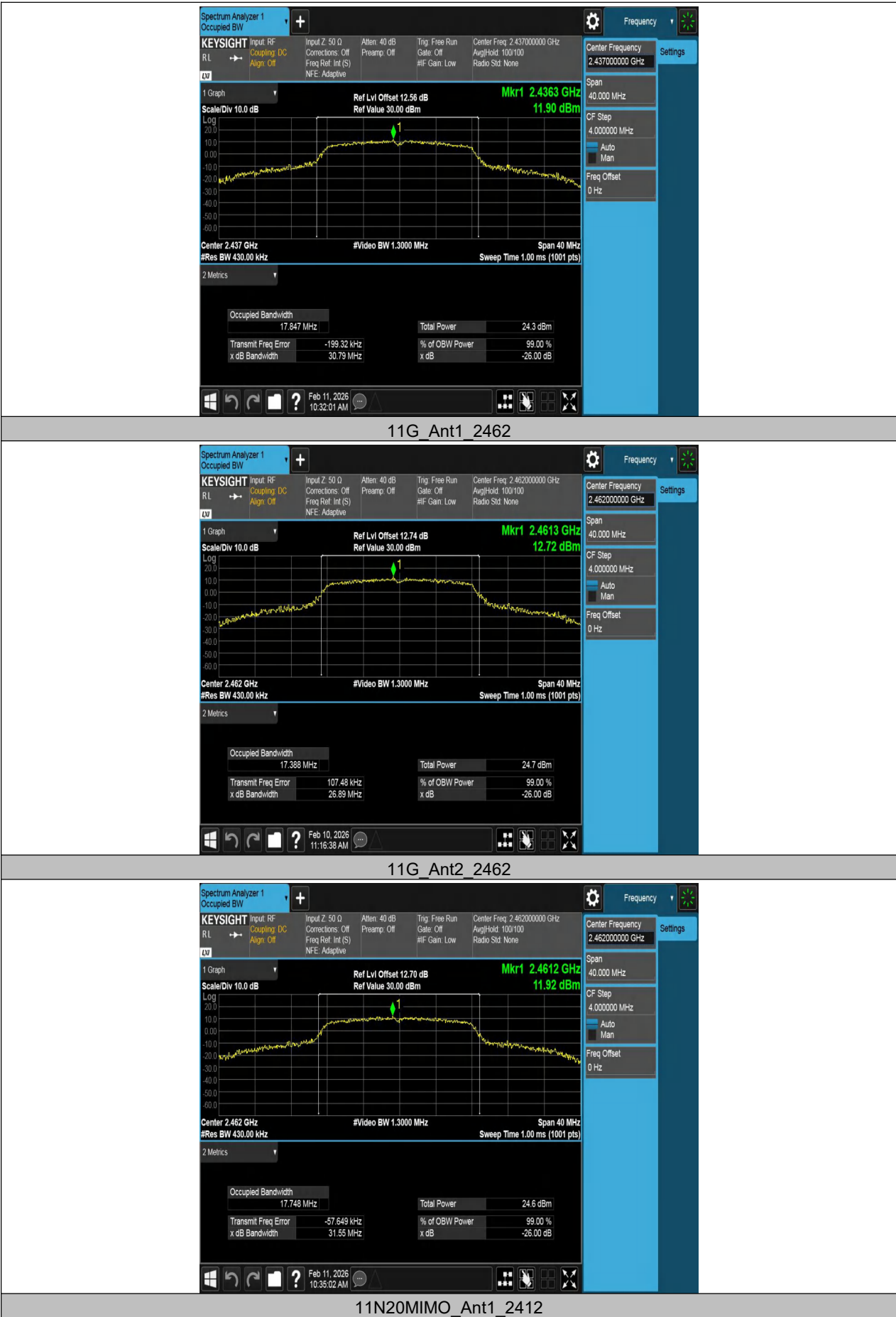
11B_Ant1_2437



11B_Ant2_2437









11N20MIMO_Ant2_2412

Spectrum Analyzer 1

Occupied BW

KEYSIGHT

Input: RF

RL

Coupling: DC

Align: Off

Input Z: 50 Ω

Corrections: Off

Freq Ref: Int (S)

NFE: Adaptive

Atten: 40 dB

Preamp: Off

Trig: Free Run

Gate: Off

#IF Gain: Low

Center Freq: 2.412000000 GHz

Avg/Hold: 100/100

Radio Std: None

Center Frequency

2.412000000 GHz

Settings

Span

40.000 MHz

CF Step

4.000000 MHz

Auto

Man

Freq Offset

0 Hz

1 Graph

Ref Lvl Offset 12.65 dB

Ref Value 30.00 dBm

Mkr1 2.4126 GHz

12.52 dBm

Scale/Div 10.0 dB

Log

20.0

10.0

0.00

-10.0

-20.0

-30.0

-40.0

-50.0

-60.0

Center 2.412 GHz

#Video BW 1.3000 MHz

Span 40 MHz

#Res BW 430.00 kHz

Sweep Time 1.00 ms (1001 pts)

2 Metrics

Occupied Bandwidth

18.701 MHz

Total Power

24.9 dBm

Transmit Freq Error

-130.00 kHz

% of OBW Power

99.00 %

x dB Bandwidth

32.59 MHz

x dB

-26.00 dB

Feb 11, 2026

10:39:20 AM

11N20MIMO_Ant1_2437

Spectrum Analyzer 1

Occupied BW

KEYSIGHT

Input: RF

RL

Coupling: DC

Align: Off

Input Z: 50 Ω

Corrections: Off

Freq Ref: Int (S)

NFE: Adaptive

Atten: 40 dB

Preamp: Off

Trig: Free Run

Gate: Off

#IF Gain: Low

Center Freq: 2.437000000 GHz

Avg/Hold: 100/100

Radio Std: None

Center Frequency

2.437000000 GHz

Settings

Span

40.000 MHz

CF Step

4.000000 MHz

Auto

Man

Freq Offset

0 Hz

1 Graph

Ref Lvl Offset 12.58 dB

Ref Value 30.00 dBm

Mkr1 2.4377 GHz

11.35 dBm

Scale/Div 10.0 dB

Log

20.0

10.0

0.00

-10.0

-20.0

-30.0

-40.0

-50.0

-60.0

Center 2.437 GHz

#Video BW 1.3000 MHz

Span 40 MHz

#Res BW 430.00 kHz

Sweep Time 1.00 ms (1001 pts)

2 Metrics

Occupied Bandwidth

19.106 MHz

Total Power

24.1 dBm

Transmit Freq Error

-125.71 kHz

% of OBW Power

99.00 %

x dB Bandwidth

34.49 MHz

x dB

-26.00 dB

Feb 11, 2026

10:41:05 AM

11N20MIMO_Ant2_2437



Spectrum Analyzer 1

Occupied BW

KEYSIGHT

Input: RF

RL

Input Z: 50 Ω

Corrections: Off

Freq Ref: Int (S)

NFE: Adaptive

Atten: 40 dB

Preamp: Off

Trig: Free Run

Gate: Off

#IF Gain: Low

Center Freq: 2.46200000 GHz

Avg/Hold: 100/100

Radio Std: None

Center Frequency

2.46200000 GHz

Span

40.000 MHz

CF Step

4.000000 MHz

Auto

Man

Freq Offset

0 Hz

Settings

1 Graph

Ref Lvl Offset 12.74 dB

Ref Value 30.00 dBm

Mkr1 2.4627 GHz

13.19 dBm

Scale/Div 10.0 dB

Log

20.0

10.0

0.00

-10.0

-20.0

-30.0

-40.0

-50.0

-60.0

Center 2.462 GHz

#Video BW 1.3000 MHz

Span 40 MHz

#Res BW 430.00 kHz

Sweep Time 1.00 ms (1001 pts)

2 Metrics

Occupied Bandwidth

18.410 MHz

Total Power

26.0 dBm

Transmit Freq Error

7.211 kHz

% of OBW Power

99.00 %

x dB Bandwidth

31.24 MHz

x dB

-26.00 dB

Feb 11, 2026

10:44:19 AM

11N20MIMO_Ant2_2462

Spectrum Analyzer 1

Occupied BW

KEYSIGHT

Input: RF

RL

Input Z: 50 Ω

Corrections: Off

Freq Ref: Int (S)

NFE: Adaptive

Atten: 40 dB

Preamp: Off

Trig: Free Run

Gate: Off

#IF Gain: Low

Center Freq: 2.46200000 GHz

Avg/Hold: 100/100

Radio Std: None

Center Frequency

2.46200000 GHz

Span

40.000 MHz

CF Step

4.000000 MHz

Auto

Man

Freq Offset

0 Hz

Settings

1 Graph

Ref Lvl Offset 12.70 dB

Ref Value 30.00 dBm

Mkr1 2.4626 GHz

14.32 dBm

Scale/Div 10.0 dB

Log

20.0

10.0

0.00

-10.0

-20.0

-30.0

-40.0

-50.0

-60.0

Center 2.462 GHz

#Video BW 1.3000 MHz

Span 40 MHz

#Res BW 430.00 kHz

Sweep Time 1.00 ms (1001 pts)

2 Metrics

Occupied Bandwidth

19.810 MHz

Total Power

26.5 dBm

Transmit Freq Error

148.02 kHz

% of OBW Power

99.00 %

x dB Bandwidth

35.46 MHz

x dB

-26.00 dB

Feb 11, 2026

10:44:23 AM

11N40MIMO_Ant1_2422





10. Conducted Output Power

10.1. Block diagram of test setup

Same as section 8.1

10.2. Limits

CFR 47 FCC Part15 (15.247) Subpart C			
Section	Test Item	Limit	Frequency Range (MHz)
CFR 47 FCC 15.247(b)(3)	Average Output Power	1 watt or 30 dBm	2400-2483.5

10.3. Test Procedure

- (1) The test according to ANSI C63.10 clause 11.9.2.3.
- (2) Connect EUT's antenna output to RF power meter by RF cable, the path loss was compensated to the results.
- (3) Set the EUT as maximum power setting and enable the EUT transmit continuously, If the transmitter does not transmit continuously, measure the duty cycle, D, of the transmitter output signal.
- (4) Measure the average power of the transmitter. This measurement is an average over both the ON and OFF periods of the transmitter.
- (5) Adjust the measurement in dBm by adding $[10 \log (1/D)]$, where D is the duty cycle.
- (6) Record the RF average power of each antenna port.

10.4. Results

Test Mode	Ant.	Freq. (MHz)	Average Power (dBm)	Conducted Power Limit (dBm)	Verdict
11B	Ant1	2412	18.37	≤ 30.00	PASS
	Ant2	2412	16.13	≤ 30.00	PASS
	Ant1	2437	19.07	≤ 30.00	PASS
	Ant2	2437	14.61	≤ 30.00	PASS
	Ant1	2462	20.06	≤ 30.00	PASS
	Ant2	2462	14.09	≤ 30.00	PASS
11G	Ant1	2412	13.63	≤ 30.00	PASS
	Ant2	2412	14.17	≤ 30.00	PASS
	Ant1	2437	14.60	≤ 30.00	PASS
	Ant2	2437	14.07	≤ 30.00	PASS
	Ant1	2462	14.65	≤ 30.00	PASS
	Ant2	2462	14.68	≤ 30.00	PASS
11N20MIMO	Ant1	2412	14.24	≤ 30.00	PASS
	Ant2	2412	14.78	≤ 30.00	PASS
	total	2412	17.53	≤ 29.62	PASS
	Ant1	2437	14.78	≤ 30.00	PASS
	Ant2	2437	14.79	≤ 30.00	PASS
	total	2437	17.80	≤ 29.62	PASS
	Ant1	2462	14.67	≤ 30.00	PASS
	Ant2	2462	15.14	≤ 30.00	PASS
	total	2462	17.92	≤ 29.62	PASS
11N40MIMO	Ant1	2422	10.89	≤ 30.00	PASS
	Ant2	2422	11.31	≤ 30.00	PASS
	total	2422	14.12	≤ 29.62	PASS
	Ant1	2437	11.61	≤ 30.00	PASS
	Ant2	2437	11.23	≤ 30.00	PASS
	total	2437	14.43	≤ 29.62	PASS