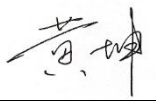
TEST REPORT

Applicant:	Quectel Wireless Solutions Co., Ltd.
EUT Description:	Wi-Fi 6E & Bluetooth Module
Model:	AF65E
Brand:	Quectel
FCC ID:	XMR2024AF65E
Standards:	FCC 47 CFR Part 15 Subpart C
Date of Receipt:	2024/12/19
Date of Test:	2024/12/19 to 2025/03/26
Date of Issue:	2025/03/26

TOWE. tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

the results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. It is the manufacturer's responsibility to assure that additional production units of the model are manufactured with identical electrical and mechanical components. All sample tested were in good operating condition throughout the entire test program. Measurement Uncertainties are published for informational purposes only and were not taken into account unless noted otherwise. without written approval of TOWE, the test report shall not be reproduced except in full.



Huang Kun
Approved By:

Chen Chengfu
Reviewed By:

Revision History

Rev.	Issue Date	Description	Revised by
01	2025/03/26	Original	Chen Chengfu

Summary of Test Results

Clause	FCC Part	Test Items	Result
4.1	§15.203/15.247(b)	Antenna Requirement	PASS
4.2	§15.207	AC Power Line Conducted Emission	N/A
4.3	§15.247 (b)(3)	Output Power	PASS
4.4	§15.247 (a)(2)	Occupied Bandwidth	Reporting purposes only
4.5	§15.247 (e)	Power Spectral Density	PASS
4.6	§15.247(d)	Band Edge for Conducted Emissions	PASS
4.7	§15.247(d)	Spurious RF Conducted Emissions	PASS
4.8	§15.205/15.209	Radiated Spurious emissions and Band Edge	PASS

Test Method: ANSI C63.10:2020, KDB 558074 D01 15.247 Mesa Guidance v05r02.

Remark:

1. Pass is EUT meets standard requirements.
2. N/A: Not applicable, the EUT is powered by DC Power.

Table of Contents

1 General Description

1.1 Lab Information

1.1.1 Testing Location

These measurements tests were conducted at the Sushi TOWE Wireless Testing(Shenzhen) Co., Ltd. facility located at F401 and F101, Building E, Hongwei Industrial Zone, Liuxian 3rd Road, Bao'an District, Shenzhen, China. The measurement facility is compliant with the test site requirements specified in ANSI C63.4-2014
Tel.: +86-755-27212361
Contact Email: info@towewireless.com

1.1.2 Test Facility / Accreditations

A2LA (Certificate Number: 7088.01)
This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).

FCC Designation No.: CN1353
Sushi TOWE Wireless Testing(Shenzhen) Co., Ltd. has been recognized as an accredited testing laboratory. Designation Number: CN1353.

ISED CAB identifier: CN0152
Sushi TOWE Wireless Testing(Shenzhen) Co., Ltd. has been recognized by ISED as an accredited testing laboratory.
CAB identifier: CN0152
Company Number: 31000

1.2 Client Information

1.2.1 Applicant

Applicant:	Quectel Wireless Solutions Co., Ltd.
Address:	Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai, China, 200233

1.2.2 Manufacturer

Manufacturer:	Quectel Wireless Solutions Co., Ltd.
Address:	Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai, China, 200233

1.3 Product Information

EUT Description:	Wi-Fi 6E & Bluetooth Module		
Model No.:	AF65E		
Brand:	Quectel		
Hardware Version:	R1.0		
Software Version:	NA		
SN.:	RF Conducted & RSE	D1A24K70R000097	
Modulation Type:	802.11b:	DSSS-DBPSK, DQPSK, CCK	
	802.11g&n:	OFDM-BPSK, QPSK, 16QAM, 64QAM	
	802.11ax:	OFDM/OFDMA-BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM	
Smart System:	☒SISO	802.11b/g/n/ax	/
	☒MIMO	802.11n/ax	(2)TX(2)RX
	☒CDD	802.11b/g	(2)TX(2)RX
Frequency Range:	2400 ~ 2483.5MHz		
Channel Frequency:	20M bandwidth Channel: 2412 ~ 2462MHz 40M bandwidth Channel: 2422 ~ 2452MHz		
Channel Number:	11:	802.11b/g/n20/ax20	
	7:	802.11n40/ax40	
Antenna Type:	☒ External, ☐ Integrated		
Antenna Gain:	Ant1 (dBi)	Ant2 (dBi)	
	0.2	0.2	
Remark: The above EUT's information was declared by applicant, please refer to the specifications or user's manual for more detailed description.			

2 Test Configuration

2.1 Test Channel

Frequency Channels							
Channel	**Frequency**	**Channel**	**Frequency**	**Channel**	**Frequency**	**Channel**	**Frequency**
1	2412MHz	4	2427MHz	7	2442MHz	10	2457MHz
2	2417MHz	5	2432MHz	8	2447MHz	11	2462MHz
3	2422MHz	6	2437MHz	9	2452MHz	/	

Remark:
In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

Modulation Type	**Test Channel**	**Test Frequency**
802.11b/g/n20 /ax20	The Lowest channel (CH1)	2412MHz
	The Middle channel (CH6)	2437MHz
	The Highest channel (CH11)	2462MHz
Modulation Type	**Test Channel**	**Test Frequency**
802.11n40/ax40	The Lowest channel (CH3)	2422MHz
	The Middle channel (CH6)	2437MHz
	The Highest channel (CH9)	2452MHz

2.2 Worst-case configuration and Mode

Modulation Type	**SISO - Data Rate**	**CDD/MIMO(2)TX(2)RX Data Rate**
802.11b	1 Mbps	2 Mbps
802.11g	6 Mbps	12 Mbps
802.11n20	MCS0 (6.5 Mbps)	MCS0 (13 Mbps)
802.11n40	MCS0 (13.5 Mbps)	MCS0 (27 Mbps)
802.11ax20	MCS0 (8.6 Mbps)	MCS0 (17.2 Mbps)
802.11ax40	MCS0 (17.2 Mbps)	MCS0 (34.4 Mbps)
Transmitting mode:	Keep the EUT was programmed to be in continuously transmitting mode.	
Normal Link:	Keep the EUT operation to normal function.	

RU Types & Channel Bandwidth:

RU Types	**ax20**	**ax40**
26-tone RU	26 tone_0 / 26 tone_8	/
52-tone RU	52 tone_37 / 52 tone_40	/
106-tone RU	106 tone_53 / 106 tone_54	/
242-tone RU	/	242 tone 61 / 242 tone 62

2.3 Support Unit used in test

Description	Manufacturer	Model	Serial Number
Development Board *	Quectel	AF65E-TE-A	E1A24K113000022
Development Board *	Quectel	AF68E-MTBF-TEA	E1A24D80K000132
Development Board *	Quectel	V2X&5G-EVB	E1Y24K640000088
Remark: *the information are provided by applicant.			

2.4 Test Environment

Temperature:	Normal: 15℃ ~ 35℃
Humidity:	45-56 % RH Ambient
Voltage:	DC 1.8V (Module Input)
Remark: The testing environment is within the scope of the EUT user manual and meets the requirements of the standard testing environment.	

2.5 Test RF Cable

For all conducted test items: The offset level is set spectrum analyzer to compensate the RF cable loss and attenuator factor between RF conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level will be exactly the RF output level.
The spectrum analyzer offset is derived from RF cable loss and attenuator factor.
Offset = RF cable loss + attenuator factor.

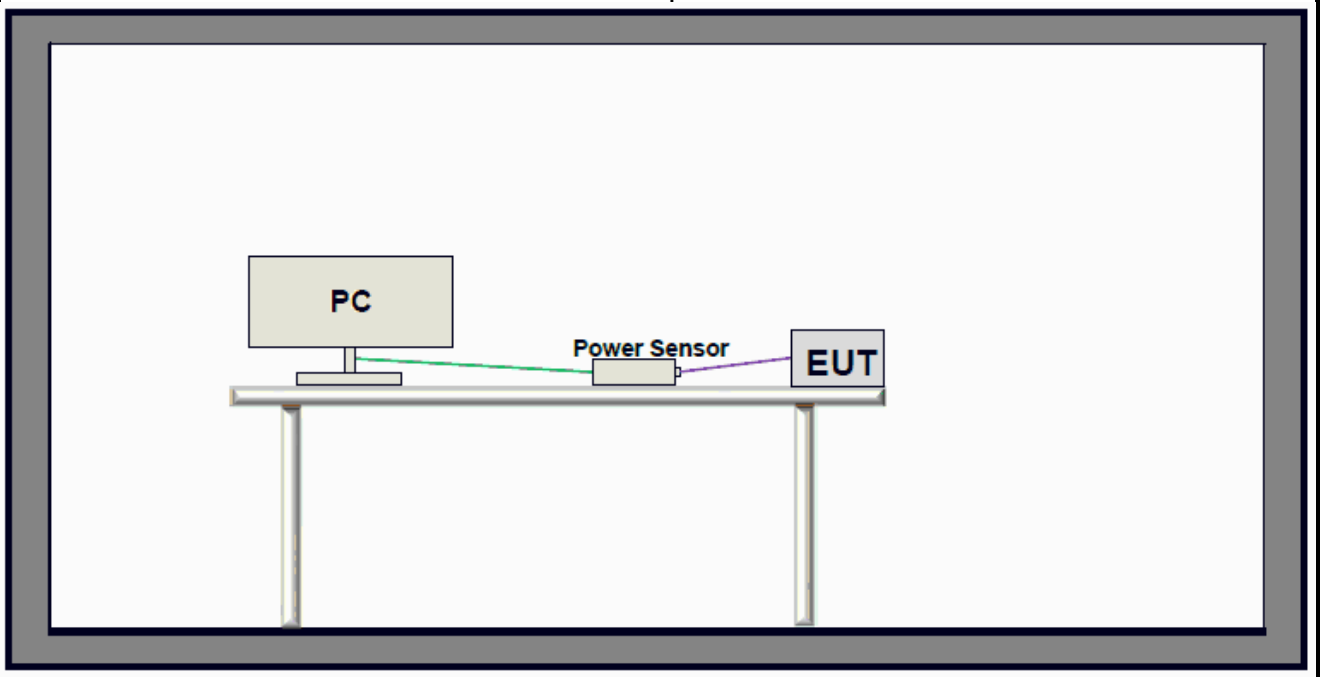
2.6 Modifications

No modifications were made during testing.

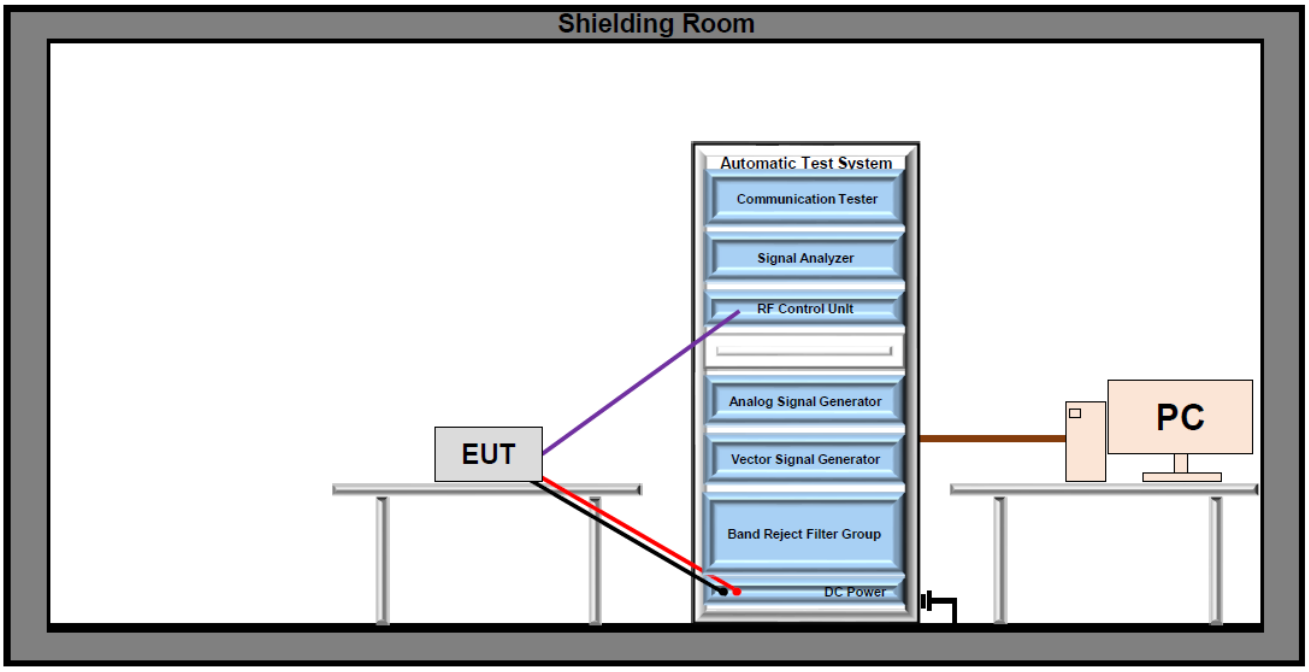
2.7 Test Setup Diagram

2.7.1 Conducted Configuration

Setup 1

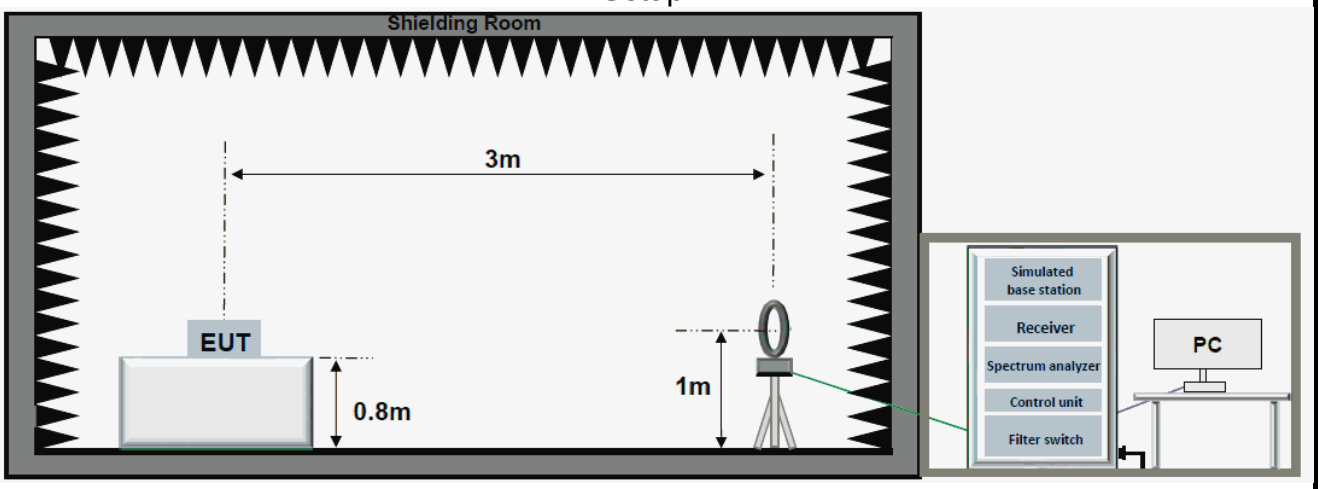


Setup 2

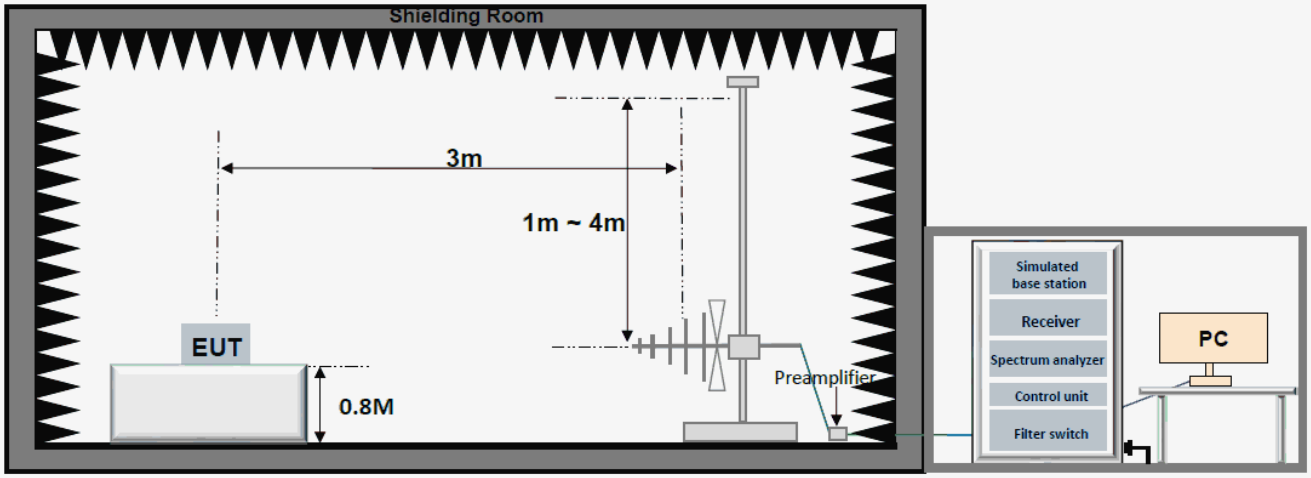


2.7.2 Radiated Configuration

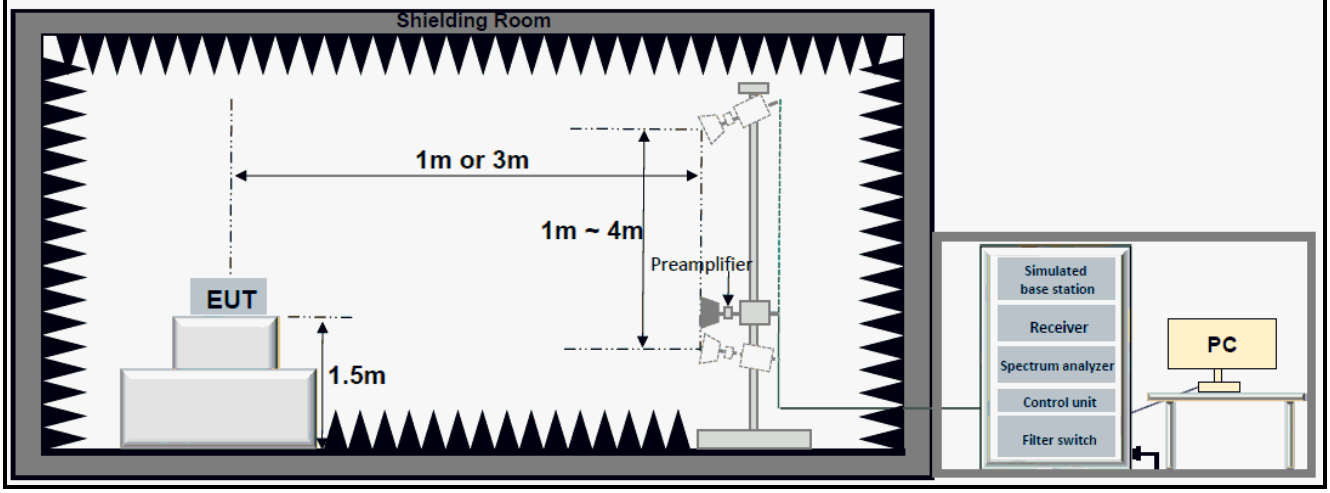
Setup 1



Setup 2



Setup 3



Directional gain calculations:

FCC KDB 662911 D01 Multiple Transmitter Output v02r01

If all antennas have the same gain, G_{ANT}, Directional gain = G_{ANT} + Array Gain, where Array Gain is as follows.

- For power spectral density (PSD) measurements on all devices
  Array Gain = 10 log(N_{ANT}/N_{SS}=1) dB
- For power measurements on IEEE 802.11 devices:
  Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;
  Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT};
  Array Gain = 5 log(N_{ANT}/N_{SS}=1) dB or 3 dB, whichever is less, for 20-MHz channel widths with $N_{ANT} \geq 5$.

Directional gain may be calculated by using the formulas applicable to equal gain antennas with G_{ANT} set equal to the gain of the antenna having the highest gain.

Unequal antenna gains, with equal transmit powers. For antenna gains given by G1, G2, …, GN dBi

- If transmit signals are correlated, then
  Directional gain = 10 log[($10^{G1/20} + 10^{G2/20} + \ldots + 10^{GN/20})^2 / N_{ANT}$] dBi [Note the "20"s in the denominator of each exponent and the square of the sum of terms; the object is to combine the signal levels coherently.]
- If all transmit signals are completely uncorrelated, then
  Directional gain = 10 log[($10^{G1/10} + 10^{G2/10} + \ldots + 10^{GN/10}$)/$N_{ANT}$] dBi

The Power and PSD limit should be modified if the directional gain of EUT is over 6dBi.

The EUT supports CDD System.

Transmit signals are completely correlated					
ANT Gain1 (dBi)	ANT Gain2 (dBi)	Directional gain For Power (dBi)	Directional gain For PSD (dBi)	Power Limit Reduction (dBm)	PSD Limit Reduction (dBm)
0.2	0.2	0.2	3.21	0	0

3 Equipment and Measurement Uncertainty

All test and measuring equipment utilized to perform the tests documented in this report are calibrated on a regular basis, whichever is less, and where applicable is traceable to recognized national standards.

3.1 Test Equipment List

Description	Manufacturer	Model	SN	Last Due	Cal Due
Signal Analyzer	Keysight	N9020A	US46470429	2024/03/25	2025/03/24
				2025/03/14	2026/03/13
EXA Signal Analyzer, Multi-touch	Keysight	N9010B	MY63440541	2024/05/30	2025/05/29
Power Sensor	Anritsu	MA24408A	12520	2024/05/30	2025/05/29
Measurement Software	Tonscend	TS1120-3	10659	N/A	N/A

Radiated Emission					
Description	**Manufacturer**	**Model**	**SN**	**Last Due**	**Cal Due**
Biconic Logarithmic Periodic Antennas	Schwarzbeck	VULB9163	1643	2023/06/25	2025/06/24
Double-Ridged Horn Antennas	Schwarzbeck	BBHA 9120D	2809	2023/06/25	2025/06/24
Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	1290	2023/06/25	2025/06/24
Loop Antenna	Schwarzbeck	FMZB 1519C	1519C-028	2023/06/29	2025/06/28
Signal Analyzer	Keysight	N9020A	MY49100252	2024/03/25	2025/03/24
				2025/03/11	2026/03/10
EXA Signal Analyzer, Multi-touch	Keysight	N9010B	MY63440541	2024/05/30	2025/05/29
Wideband Radio Communication Tester	R&S	CMW500	150645	2024/03/25	2025/03/24
				2025/03/11	2026/03/10
Low Noise Amplifier	Tonscend	TAP9K3G40	AP23A8060273	2023/04/08	2025/04/07
				2025/03/11	2027/03/10
Low Noise Amplifier	Tonscend	TAP01018050	AP22G806258	2023/04/08	2025/04/07
				2025/03/11	2027/03/10
Low Noise Amplifier	Tonscend	TAP18040048	AP22G806247	2023/04/08	2025/04/07
				2025/03/11	2027/03/10
Hygrometer	BINGYU	HTC-1	N/A	2023/06/01	2025/05/31
Test Software	Tonscend	TS+	Version: 5.0.0	N/A	N/A

3.2 Measurement Uncertainty

Parameter	U_{lab}
Frequency Error	679.98Hz
Output Power	0.76dB
Conducted Spurious Emissions	2.22dB
Radiated Emissions(9kHz~30MHz)	2.40dB
Radiated Emissions(30MHz~1000MHz)	4.66dB
Radiated Emissions(1GHz~18GHz)	5.42dB
Radiated Emissions(18GHz~40GHz)	5.46dB

Uncertainty figures are valid to a confidence level of 95%

4 Test Results

4.1 Antenna Requirement

Standard Applicable:	47 CFR Part 15C Section 15.203 /247(b)
15.203 requirement: An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. 15.247(b) (4) requirement: The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.	
The antenna gain and type as provided by the manufacturer are as follows: The antenna Type is Dipole. With Antenna gain is 0.2(Ant1); 0.2(Ant2); Antenna Anti-Replacement Construction: An embedded-in antenna design is used.	

4.2 Output Power

Limits

If with directional antenna gains less than 6 dBi, the limit is 30dBm.

Test Procedure

ANSI C63.10:2020 Section 11.9.1.2(PKPM1) or 11.9.2.3.2(AVGPM-G)

Test Settings

1. Set to the maximum power setting and enable the EUT transmit continuously.
2. The power output was measured on the EUT antenna port using RF Cable with attenuator connected to a power meter via wideband power sensor. Peak output power was read directly from power meter.
3. Measure and record the results in the test report.

Test Setup

Refer to section 2.7.1 Setup 1 for details.

Measuring Instruments

The measuring equipment is listed in the section 3.1 of this test report.

Test Result

The detailed test data see: **Appendix.**

4.3 Occupied Bandwidth

Limits

DTSBW: The minimum 6 dB bandwidth shall be at least 500 kHz.
99%BW: None, for reporting purposes only.

Test Procedure

ANSI C63.10:2020 Section 11.8.2 and 6.9.3

Test Settings

1. Set to the maximum power setting and enable the EUT transmit continuously.
2. The transmitter output is connected to a spectrum analyzer:
3. RBW = 100kHz(DTS)
4. RBW = 1% - 5%(99%BW)
5. VBW ≥ 3 times the RBW
6. Sweep = Auto
7. Detector = Peak
8. Trace = Max hold
9. The trace was allowed to stabilize
10. Measure and record the results in the test report.

Test Notes

DTS: The signal analyzers' automatic bandwidth measurement capability of the spectrum analyzer was used to perform the 6dB bandwidth measurement. The "X" dB bandwidth parameter was set to X= 6. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.

Test Setup

Refer to section 2.7.1 Setup 2 for details.

Measuring Instruments

The measuring equipment is listed in the section 3.1 of this test report.

Test Result

The detailed test data see: **Appendix.**

4.4 Power Spectral Density

Limits

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

Test Procedure

ANSI C63.10:2020 Section 11.10.2(PKPSD)

Test Settings

1. Set to the maximum power setting and enable the EUT transmit continuously
2. The transmitter output is connected to a spectrum analyzer
3. 3kHz ≤ RBW ≤ 100 kHz
   (If measured value exceeds requirement, then reduce RBW (but no less than 3 kHz) and repeat.)
4. VBW ≥ 3 times the RBW
5. Span = 1.5 times the DTS bandwidth
6. Sweep = Auto
7. Detector = Peak
8. Trace = Max hold
9. The trace was allowed to stabilize
10. Measure and record the results in the test report.

Test Setup

Refer to section 2.7.1 Setup 2 for details.

Measuring Instruments

The measuring equipment is listed in the section 3.1 of this test report.

Test Result

The detailed test data see: **Appendix.**

4.5 Band Edge for Conducted Emissions

Limits

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated. intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits.

If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph 15.247(b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.

Test Procedure

ANSI C63.10:2020 Section 11.11.3

Test Settings

1. Set to the maximum power setting and enable the EUT transmit continuously
2. The transmitter output is connected to a spectrum analyzer
3. RBW = 100kHz
4. VBW = 300kHz
5. Point ≥ 2 x span/RBW
6. Sweep = Auto
7. Detector = Peak
8. Trace = Max hold
9. The trace was allowed to stabilize
10. Measure and record the results in the test report

Test Setup

Refer to section 2.7.1 Setup 2 for details.

Measuring Instruments

The measuring equipment is listed in the section 3.1 of this test report.

Test Result

The detailed test data see: **Appendix.**

4.6 Spurious RF Conducted Emissions

Limits

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated. intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits.

If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph 15.247(b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.

Test Procedure

ANSI C63.10:2020 Section 11.11.3

Test Settings

1. Set to the maximum power setting and enable the EUT transmit continuously.
2. Activate frequency hopping function if necessary.
3. The transmitter output is connected to a spectrum analyzer
4. The spectrum from 30MHz - 26.5GHz
5. RBW = 100kHz
6. VBW = 300kHz
7. Sweep = Auto
8. Detector = Peak
9. Trace = Max hold
10. The trace was allowed to stabilize
11. Measure and record the results in the test report

Test Setup

Refer to section 2.7.1 Setup 2 for details.

Measuring Instruments

The measuring equipment is listed in the section 3.1 of this test report.

Test Result

The detailed test data see: **Appendix.**

4.7 Radiated Spurious Emissions and Band Edge

Limits

Spurious emissions are permitted in an of the frequency bands:

MHz	MHz	MHz	MHz	GHz	GHz
0.090 - 0.110	12.29 - 12.293	149.9 - 150.05	1660 - 1710	4.5 - 5.15	14.47 - 14.5
0.495 - 0.505	12.51975 - 1252025	156.52475 - 156.52525	1718.8 - 1722.2	5.35 - 5.46	15.35 - 16.2
2.1735 - 2.1905	12.5767 - 12.57725	156.7 - 156.9	2200 - 2300	7.25 - 7.75	17.7 - 21.4
4.125 - 128	13.36 - 13.41	162.0125 - 167.17	2310 - 2390	8.025 - 8.5	22.01 - 23.12
4.17725 - 4.17775	16.42 - 16.423	167.72 - 173.2	2483.5 - 2500	9.0 - 9.2	23.6 - 24.0
4.20725 - 4.20775	16.69475 - 16.69525	240 - 285	2655 - 2900	9.3 - 9.5	31.2 - 31.8
6.215 - 6.218	1680425 - 1680475	322 - 335.4	3260 - 3267	10.6 - 12.7	36.43 - 36.5
6.26775 - 6.26825	25.5 - 25.67	399.9 - 410	3332 - 3339	13.25 - 13.4	
6.31175 - 6.31225	37.5 - 38.25	608 - 614	3345.8 - 3358		
8.291 - 8.294	73 - 74.6	960 - 1240	3600 - 4400		
8.362 - 8.366	74.8 - 75.2	1300 - 1427			
8.37625 - 8.38675	108 - 121.94	1435 - 1626.5			
8.41425 - 8.41475	123 - 138	1645.5 - 1646.5			

Radiated disturbance of an intentional radiator:

Frequency	Field strength (μV/m)	Limit (dBμV/m)	Remark	Measurement distance (m)
0.009MHz-0.490MHz	2400/F(kHz)	-	-	300
0.490MHz-1.705MHz	24000/F(kHz)	-	-	30
1.705MHz-30MHz	30	-	-	30
30MHz-88MHz	100	40.0	Quasi-peak	3
88MHz-216MHz	150	43.5	Quasi-peak	3
216MHz-960MHz	200	46.0	Quasi-peak	3
960MHz-1GHz	500	54.0	Quasi-peak	3
Above 1GHz	500	74.0	Peak	3
		54.0	Average	

Test Procedure

ANSI C63.10:2020 Section 6.4 & 6.5 & 6.6

Test Settings

1. For radiated emissions measurements performed at frequencies less than or equal to 1GHz, the EUT shall be placed on a RF-transparent table or support at a nominal height of 80cm above the reference ground plane.
2. For radiated emissions measurements performed at frequencies above 1GHz, the EUT shall be placed on a RF-transparent table or support at a nominal height of 150cm above the ground plane.
3. Radiated measurements shall be made with the measurement antenna positioned in both horizontal and vertical polarization. The measurement antenna shall be varied from 1m to 4m in height above the reference ground in a search for the relative positioning that produces the maximum radiated signal level (i.e, field strength or received power), when orienting the measurement antenna in vertical polarization, the minimum height of the lowest element of the antenna shall clear the site reference ground plane by at least 25cm.
4. For each suspected emission, the EUT was ranged its worst case and then tune the antenna tower(from 1~4m) and turntable(from 0~360°) find the maximum reading. Preamplifier and a high pass filter are used for the test in order get better signal level comply with the guidelines.
5. Set to the maximum power setting and enable the EUT transmit continuously.
6. The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.
7. spectrum analyzer setting:

   Measurements 30MHz ~ 1000MHz: RBW = 120 kHz; VBW ≥ 300 kHz; Detector = Peak

Measurements Above 1000MHz: RBW = 1 MHz; VBW ≥ 3 MHz; Detector = Peak

Average Measurements Above 1000MHz:

RBW = 1 MHz, VBW ≥ 1/T, with peak detector for average measurements.

8. The field strength is calculated by adding the Antenna Factor, Cable Factor. The basic equation with a sample calculation is as follows:

   Level = Reading(dBμV) + AF(dB/m) + Factor(dB):

   AF = Antenna Factor(dB/m)

   Factor = Cable Factor(dB) - Preamplifier gain(dB)

   Margin = Limit(dBμV/m) – Level(dBμV/m)

9. Repeat above procedures until all frequencies measured was complete.
10. Measure and record the results in the test report.

Test Notes

1. Emissions below 18GHz were measured at a 3-meter test distance while emissions above 18GHz were measured at a 1-meter test distance with the application of a distance correction factor.
2. Radiated spurious emissions were investigated from 9kHz to 30MHz, 30MHz-1GHz and above 1GHz. the disturbance between 9kHz to 30MHz, 30MHz-1GHz and 18GHz to 40GHz was very low. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be recorded, so only the harmonics had been displayed.
3. The "-" shown in the following RSE tables are used to denote a noise floor measurement.

Test Setup

Refer to section 2.7.2 for details.

Measuring Instruments

The measuring equipment is listed in the section 3.1 of this test report.

Test Result

The detailed test data see: **Appendix.**

5 Test Setup Photos

The detailed test data see: **Appendix A - BTWIFI Setup Photos**

Appendix

DTS Bandwidth

Test Result

TestMode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11b-CDD	Ant1	2412	8.080	2407.960	2416.040	0.5	PASS
11b-CDD	Ant2	2412	9.080	2406.960	2416.040	0.5	PASS
11b-CDD	Ant1	2437	8.080	2432.960	2441.040	0.5	PASS
11b-CDD	Ant2	2437	8.560	2432.960	2441.520	0.5	PASS
11b-CDD	Ant1	2462	7.080	2458.440	2465.520	0.5	PASS
11b-CDD	Ant2	2462	7.080	2458.480	2465.560	0.5	PASS
11g-CDD	Ant1	2412	16.320	2403.840	2420.160	0.5	PASS
11g-CDD	Ant2	2412	11.920	2405.720	2417.640	0.5	PASS
11g-CDD	Ant1	2437	16.320	2428.840	2445.160	0.5	PASS
11g-CDD	Ant2	2437	15.680	2428.840	2444.520	0.5	PASS
11g-CDD	Ant1	2462	16.040	2453.840	2469.880	0.5	PASS
11g-CDD	Ant2	2462	16.320	2453.840	2470.160	0.5	PASS
11n20MIMO	Ant1	2412	16.800	2403.600	2420.400	0.5	PASS
11n20MIMO	Ant2	2412	17.040	2403.480	2420.520	0.5	PASS
11n20MIMO	Ant1	2437	17.520	2428.240	2445.760	0.5	PASS
11n20MIMO	Ant2	2437	17.240	2428.520	2445.760	0.5	PASS
11n20MIMO	Ant1	2462	17.560	2453.200	2470.760	0.5	PASS
11n20MIMO	Ant2	2462	17.520	2453.240	2470.760	0.5	PASS
11n40MIMO	Ant1	2422	36.160	2404.000	2440.160	0.5	PASS
11n40MIMO	Ant2	2422	31.920	2406.720	2438.640	0.5	PASS
11n40MIMO	Ant1	2437	30.640	2422.840	2453.480	0.5	PASS
11n40MIMO	Ant2	2437	36.320	2418.840	2455.160	0.5	PASS
11n40MIMO	Ant1	2452	19.920	2440.960	2460.880	0.5	PASS
11n40MIMO	Ant2	2452	33.680	2434.480	2468.160	0.5	PASS
11ax20MIMO	Ant1	2412	17.840	2403.000	2420.840	0.5	PASS
11ax20MIMO	Ant2	2412	18.120	2403.040	2421.160	0.5	PASS
11ax20MIMO	Ant1	2437	18.480	2427.640	2446.120	0.5	PASS
11ax20MIMO	Ant2	2437	17.000	2428.320	2445.320	0.5	PASS
11ax20MIMO	Ant1	2462	18.480	2452.680	2471.160	0.5	PASS
11ax20MIMO	Ant2	2462	18.680	2452.600	2471.280	0.5	PASS
11ax40MIMO	Ant1	2422	32.000	2407.680	2439.680	0.5	PASS
11ax40MIMO	Ant2	2422	36.000	2404.640	2440.640	0.5	PASS
11ax40MIMO	Ant1	2437	36.480	2418.920	2455.400	0.5	PASS
11ax40MIMO	Ant2	2437	23.600	2426.120	2449.720	0.5	PASS
11ax40MIMO	Ant1	2452	29.360	2433.920	2463.280	0.5	PASS
11ax40MIMO	Ant2	2452	28.880	2438.160	2467.040	0.5	PASS

Test Graphs

11b-CDD-Ant1-2412-PASS

11b-CDD-Ant2-2412-PASS

11b-CDD-Ant1-2437-PASS

11b-CDD-Ant2-2437-PASS

11b-CDD-Ant1-2462-PASS

11b-CDD-Ant2-2462-PASS

11g-CDD-Ant1-2412-PASS

11g-CDD-Ant2-2412-PASS

11g-CDD-Ant1-2437-PASS

11g-CDD-Ant2-2437-PASS

11g-CDD-Ant1-2462-PASS

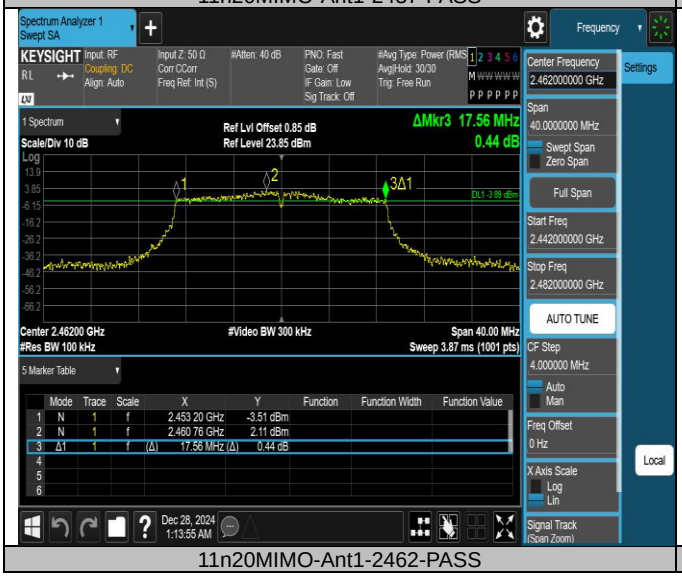
11g-CDD-Ant2-2462-PASS

11n20MIMO-Ant1-2412-PASS

11n20MIMO-Ant2-2412-PASS

11n20MIMO-Ant1-2437-PASS

11n20MIMO-Ant2-2437-PASS



11n20MIMO-Ant1-2462-PASS

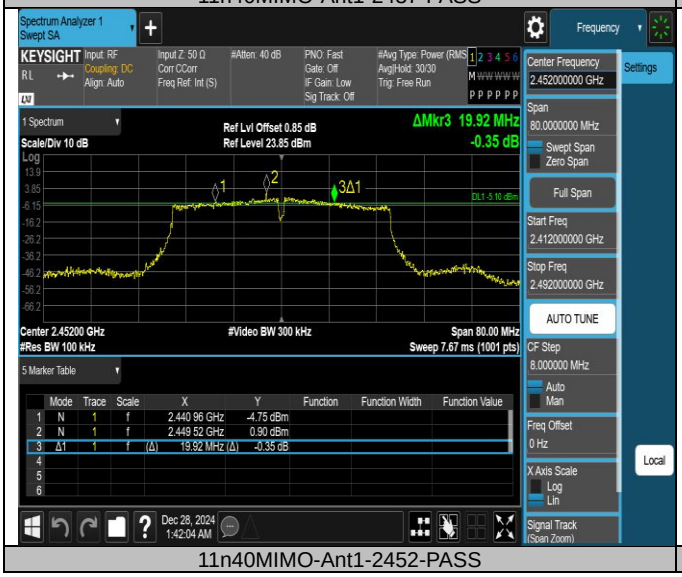
11n20MIMO-Ant2-2462-PASS

11n40MIMO-Ant1-2422-PASS

11n40MIMO-Ant2-2422-PASS

11n40MIMO-Ant1-2437-PASS

11n40MIMO-Ant2-2437-PASS



11n40MIMO-Ant1-2452-PASS

11n40MIMO-Ant2-2452-PASS

11ax20MIMO-Ant1-2412-PASS

11ax20MIMO-Ant2-2412-PASS

11ax20MIMO-Ant1-2437-PASS

11ax20MIMO-Ant2-2437-PASS

11ax20MIMO-Ant1-2462-PASS

11ax20MIMO-Ant2-2462-PASS

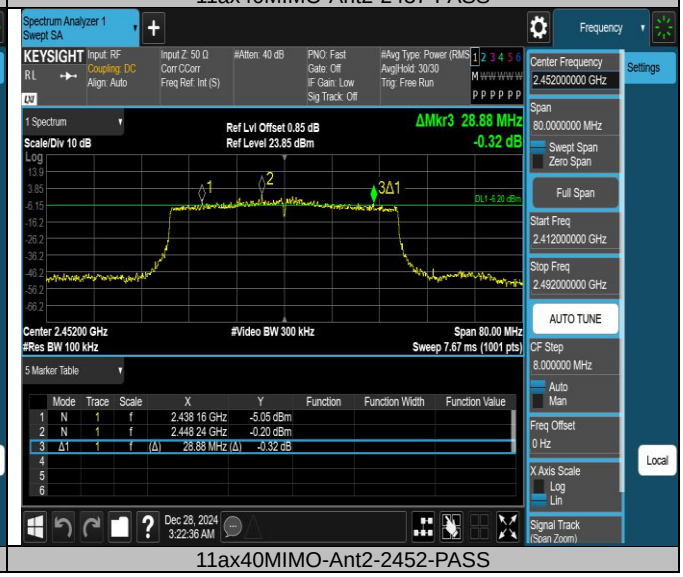
11ax40MIMO-Ant1-2422-PASS

11ax40MIMO-Ant2-2422-PASS

11ax40MIMO-Ant1-2437-PASS

11ax40MIMO-Ant2-2437-PASS

11ax40MIMO-Ant1-2452-PASS



11ax40MIMO-Ant2-2452-PASS

Occupied Channel Bandwidth

Test Result

TestMode	Antenna	Channel Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11b-CDD	Ant1	2412	13.866	2405.1288	2418.9948	---	---
11b-CDD	Ant2	2412	14.864	2404.5140	2419.3780	---	---
11b-CDD	Ant1	2437	13.171	2430.3188	2443.4898	---	---
11b-CDD	Ant2	2437	13.080	2430.4746	2443.5546	---	---
11b-CDD	Ant1	2462	13.144	2455.3303	2468.4743	---	---
11b-CDD	Ant2	2462	13.085	2455.4379	2468.5229	---	---
11g-CDD	Ant1	2412	16.354	2403.8414	2420.1954	---	---
11g-CDD	Ant2	2412	16.384	2403.8474	2420.2314	---	---
11g-CDD	Ant1	2437	16.414	2428.7851	2445.1991	---	---
11g-CDD	Ant2	2437	16.423	2428.7881	2445.2111	---	---
11g-CDD	Ant1	2462	16.428	2453.7725	2470.2005	---	---
11g-CDD	Ant2	2462	16.405	2453.7960	2470.2010	---	---
11n20MIMO	Ant1	2412	17.580	2403.2215	2420.8015	---	---
11n20MIMO	Ant2	2412	17.510	2403.2806	2420.7906	---	---
11n20MIMO	Ant1	2437	17.636	2428.1607	2445.7967	---	---
11n20MIMO	Ant2	2437	17.579	2428.2085	2445.7875	---	---
11n20MIMO	Ant1	2462	17.602	2453.1763	2470.7783	---	---
11n20MIMO	Ant2	2462	17.610	2453.1876	2470.7976	---	---
11n40MIMO	Ant1	2422	35.937	2404.0429	2439.9799	---	---
11n40MIMO	Ant2	2422	35.926	2404.0663	2439.9923	---	---
11n40MIMO	Ant1	2437	36.012	2419.0183	2455.0303	---	---
11n40MIMO	Ant2	2437	35.951	2419.0282	2454.9792	---	---
11n40MIMO	Ant1	2452	35.942	2433.9920	2469.9340	---	---
11n40MIMO	Ant2	2452	35.999	2433.9654	2469.9644	---	---
11ax20MIMO	Ant1	2412	18.949	2402.5407	2421.4897	---	---
11ax20MIMO	Ant2	2412	18.821	2402.6160	2421.4370	---	---
11ax20MIMO	Ant1	2437	18.893	2427.5743	2446.4673	---	---
11ax20MIMO	Ant2	2437	18.866	2427.5745	2446.4405	---	---
11ax20MIMO	Ant1	2462	18.932	2452.5276	2471.4596	---	---
11ax20MIMO	Ant2	2462	18.831	2452.5945	2471.4255	---	---
11ax40MIMO	Ant1	2422	37.617	2403.2384	2440.8554	---	---
11ax40MIMO	Ant2	2422	37.605	2403.2658	2440.8708	---	---
11ax40MIMO	Ant1	2437	37.649	2418.2090	2455.8580	---	---
11ax40MIMO	Ant2	2437	37.693	2418.1950	2455.8880	---	---
11ax40MIMO	Ant1	2452	37.744	2433.0420	2470.7860	---	---
11ax40MIMO	Ant2	2452	37.727	2433.0503	2470.7773	---	---

Test Graphs

11b-CDD-Ant1-2412

11b-CDD-Ant2-2412

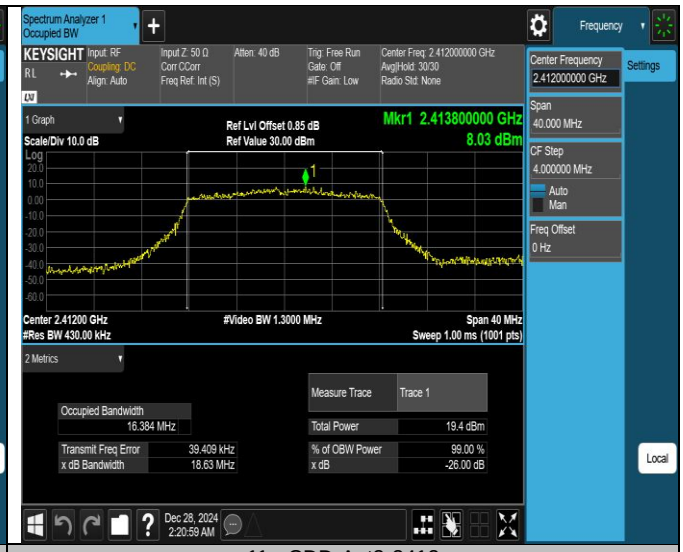
11b-CDD-Ant1-2437

11b-CDD-Ant2-2437

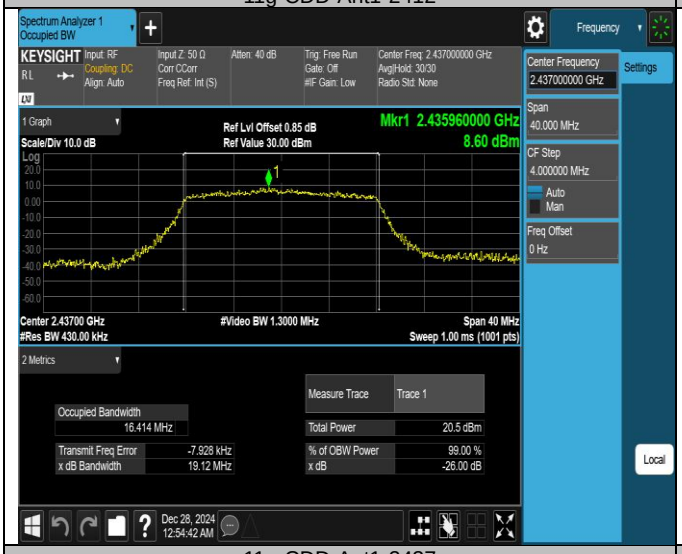
11b-CDD-Ant1-2462

11b-CDD-Ant2-2462

11g-CDD-Ant1-2412

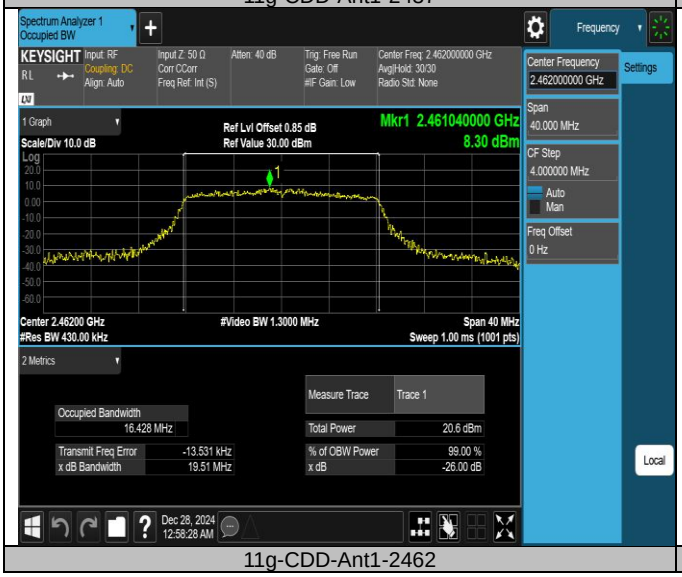


11g-CDD-Ant2-2412

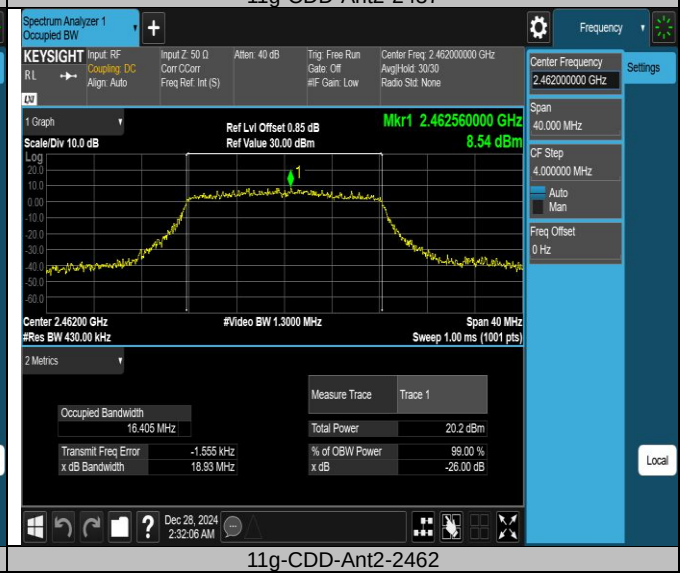


11g-CDD-Ant1-2437

11g-CDD-Ant2-2437

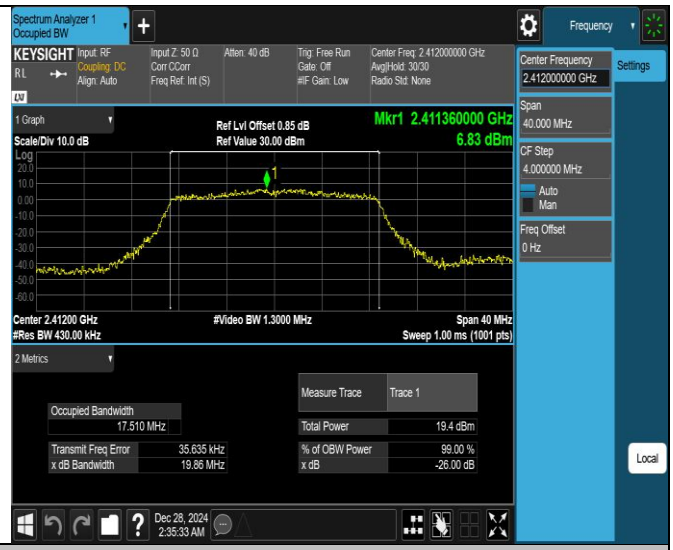


11g-CDD-Ant1-2462

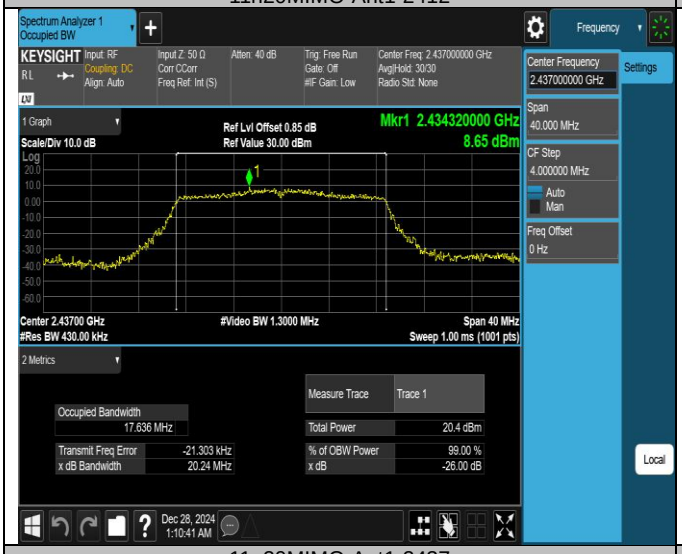


11g-CDD-Ant2-2462

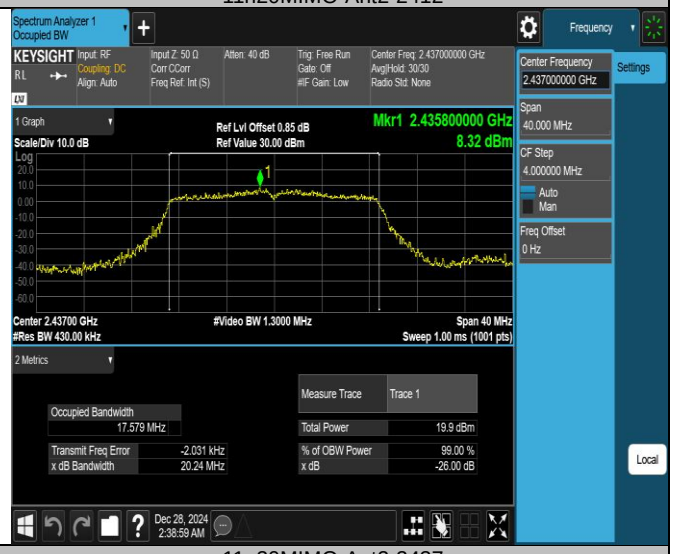
11n20MIMO-Ant1-2412



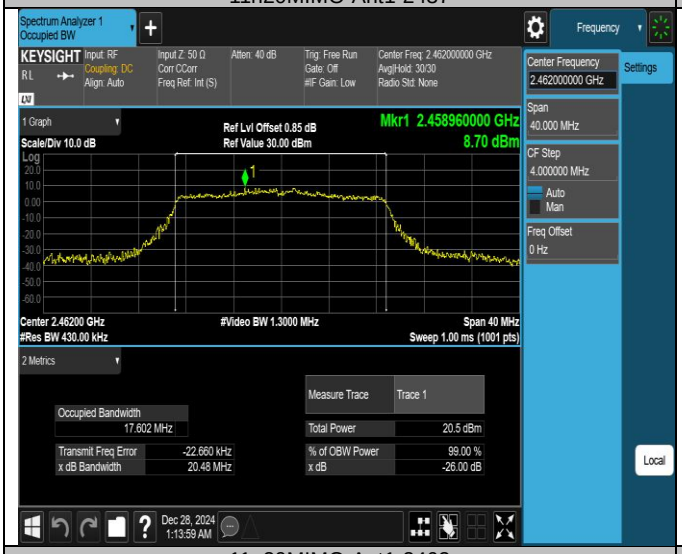
11n20MIMO-Ant2-2412



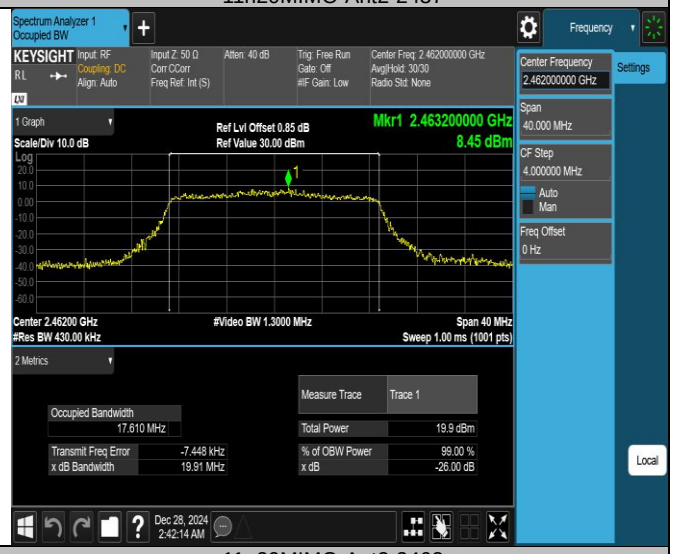
11n20MIMO-Ant1-2437



11n20MIMO-Ant2-2437



11n20MIMO-Ant1-2462



11n20MIMO-Ant2-2462