RF Test Report

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
Product:	Wi-Fi & Bluetooth Module
Model No.:	FCM561D-P
Brand Name:	QUECTEL
FCC ID:	XMR2023FCM561DP
Standards:	FCC CFR47 Part 15C
Report No.:	PD20230183RF07
Issue Date:	2024/01/08
Test Result:	PASS *

* **The above equipment has been tested and compliance with the requirement of the relative standards by Hefei Panwin Technology Co., Ltd.**

Reviewed By: Charlie Wang **Approved By:** Alec Yang

Hefei Panwin Technology Co., Ltd.

Floor 1, Zone E, Plant 2#, Mingzhu Industrial Park, No.106 Chuangxin Avenue, High-tech Zone, Hefei City, Anhui Province,China

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Revision History

Report No.	Version	Description	Issue Date	Note
PD20230183RF07	1	Initial Report	2024/01/08	Valid

CONTENTS

Test Summary

No.	Test Case	FCC Rules	Verdict
1	Output Power Measurement	15.247(b)	PASS
2	6dB and 99% Bandwidth Measurement	15.247(a)(2)	PASS
3	Power Spectral Density Measurement	15.247(e)	PASS
4	Conducted Band Edges and Spurious Emission Measurement	15.247(d)	PASS
5	Radiated Band Edges and Spurious Emission Measurement	15.247(d)	PASS
6	AC Conducted Emission Measurement	15.207	NA
7	Antenna Requirements	15.203 & 15.247(b)	PASS
Date of Testing:2023/11/13 to 2023/11/20 Date of Sample Received: 2023/11/07			
• We, Hefei Panwin Technology Co., Ltd., would like to declare that the tested sample has been evaluated in accordance with the procedures given in applied standard(s) in **Section 2.3** of this report and shown compliance with the applicable technical standards. • All indications of PASS/FAIL in this report are based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only.			

1 General Information

1.1 Notes of the Test Report

This report is invalid without signature of auditor and approver or with any alterations. The report shall not be partially reproduced without written approval of the testing company. Entrusted test results are only responsible for incoming samples. If there is any objection to the testing report, it shall be raised to the testing company within 15 days from the date of receiving the report. In the test results, "NA" means "not applicable", and the test items marked with "Δ" are subcontracted projects.

1.2 Test Facility

FCC (Designation number: CN1361, Test Firm Registration Number: 473156)

Hefei Panwin Technology Co., Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform measurements.

A2LA (Certificate Number: 6849.01)

Hefei Panwin Technology Co., Ltd. has been listed by American Association for Laboratory Accreditation to perform measurement.

1.3 Testing Laboratory

Company Name	Hefei Panwin Technology Co., Ltd.
Address	Floor 1, Zone E, Plant 2#, Mingzhu Industrial Park, No.106 Chuangxin Avenue, High-tech Zone, Hefei City, Anhui Province,China
Telephone	+86-0551-63811775
Post Code	230031

2 General Description of Equipment under Test

2.1 Details of Application

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

2.2 General Information

Product	Wi-Fi & Bluetooth Module
Model	FCM561D-P
SN	1. E1823G51F000027 2. E1823G51F000026
Hardware Version	R1.0
Software Version	NA
Antenna Type	PCB Antenna
Antenna Gain	1.0 dBi
Additional Beamforming Gain	NA
Max. Conducted Power	BLE: 8.57dBm
Operating temperature range	-40 °C to 85 °C
Operating voltage range	3.0 V to 3.6 V; Rated Power Supply Voltage 3.3V
Type of Modulation	Bluetooth LE 5.2: GFSK
Operating Frequency Range(s)	Bluetooth LE: 2402 to 2480MHz
Note: The declared of product specification for EUT and/or Antenna presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.	

2.3 Applicable Standard(s)

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- 47 CFR Part 15 Subpart C §15.247
- FCC KDB 558074 D01 15.247 Meas Guidance v05r02
- ANSI C63.10-2013

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.

3 Test Condition

3.1 Test Configuration

Test mode

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture). The worst cases were recorded in this report.

Radiated measurements are performed by rotating the EUT in three different orthogonal test planes (Z, X, Y axis), receiver antenna polarization (horizontal and vertical), the worst emission was found in Z position and the worst case was recorded.

AC power line Conducted Emission was tested under maximum output power.

Test Mode	Data Rate
Bluetooth LE	125kbps
	500kbps
	1Mbps
	2Mbps

3.2 Carrier Frequency and Channel

Frequency Band	Channel	Freq.(MHz)	Channel	Freq.(MHz
2400-2483.5 MHz	0	2402	21	2444
	1	2404	22	2446
	2	2406	23	2448
	3	2408	24	2450
	4	2410	25	2452
	5	2412	26	2454
	6	2414	27	2456
	7	2416	28	2458
	8	2418	29	2460
	9	2420	30	2462
	10	2422	31	2464
	11	2424	32	2466
	12	2426	33	2468
	13	2428	34	2470
	14	2430	35	2472
	15	2432	36	2474
	16	2434	37	2476
	17	2436	38	2478
	18	2438	39	2480
	19	2440	-	-
	20	2442	-	-

3.3 Equipment List

Instrument	Manufacturer	Model	Asset No.	Cal. Interval	Cal. Due Date
EMI Test Receiver	R&S	ESR7	PWB0023	1 Year	2024/10/11
Spectrum Analyzer	R&S	FSV3044	PWB0024	1 Year	2024/10/11
Loop Antenna	R&S	HFH2-Z2E	PWB0026	1 Year	2024/10/21
TRILOG Broadband Antenna	Schwarzbeck	VULB9162	PWB0029	1 Year	2024/10/14
Double-Ridged Guide Antenna	ETS-Lindgren	3117	PWB0031	1 Year	2024/10/12
k Type Horn Antenna	Steatite Antennas	QMS-00880	PWB0035	1 Year	2024/10/17
Spectrum Analyzer	KEYSIGHT	N9020B	PWC0055	1 Year	2024/10/11
Vector Signal Generator	R&S	SMBV100B	PWC0011	1 Year	2024/10/11
Power Meter Unit	Tonscend	JS0806-2-8CH	PWC0013	1 Year	2024/10/13
DC Power	KEYSIGHT	E3640A	PWC0046	1 Year	2024/10/11
Anechoic Chamber	ETS.LINDGREN	Fact 3-2m	PWB0003	3 Years	2024/08/28
Shielded Chamber	Maorui	MR543	PWC0041	3 Years	2026/08/26
Pre-Amplifier	R&S	SCU18F	PWB0034	1 Year	2024/10/11
Pre-Amplifier	R&S	SCU40F1	PWB0036	1 Year	2024/10/11
Pre-Amplifier	COM-MW	DLNA8	PWB0094	1 Year	2024/11/08
Test Software	Tonseced	JS1120-3 V3.2.22	/	/	/
Test Software	R&S	ELEKTRA 4.20.2	/	/	/

3.4 Support Equipment List

Equipment	Manufacturer	Description	Model	Serial Number
EVB	QUECTEL	NA	NA	NA
USB Cable	NA	NA	NA	NA

3.5 Test Uncertainty

No.	Parameter	Uncertainty
1	DTS Bandwidth	1.9 %
2	Occupied channel bandwidth	1.9 %
3	Duty Cycle	0.11 %
4	Maximum Conducted Output Power	1.18 dB
5	Maximum Power Spectral Density Level	0.98 dB
6	Band-edge Compliance	1.21 dB
7	Unwanted Emissions In Non-restricted Frequency Bands	9kHz-7GHz: 1.21 dB 7GHz-40GHz: 3.31 dB
11	Radiated Spurious Emission	4.46 dB
12	Temperature	3 °C
13	Humidity	1.3 %
14	Supply Voltages	0.006 V

4 Test Items Description

Ambient condition

Shielded Chamber

Temperature [°C]	23.4 to 24.2
Humidity [%RH]	31 to 37
Pressure [kPa]	101.8 to 102.3

Anechoic Chamber

Temperature [°C]	17.0 to 25.1
Humidity [%RH]	33 to 47
Pressure [kPa]	100.9 to 102.6

4.1 Output Power Measurement

4.1.1 Limit of Output Power

For systems using digital modulation in the 2400-2483.5MHz, the limit for peak output power is 30dBm.

If transmitting antenna of directional gain greater than 6dBi is used, the peak output power from the intentional radiator shall be reduced below the above stated value by the amount in dB that the directional gain of the antenna exceeds 6 dBi. In case of point-to-point operation, the limit has to be reduced by 1dB for every 3dB that the directional gain of the antenna exceeds 6dBi.

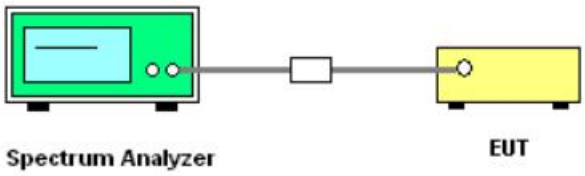
4.1.2 Measuring Instruments

The section 3.3 of List of Measuring Equipment of this test report is used for test.

4.1.3 Test Procedures

1. The testing follows the Measurement Procedure of ANSI C63.10-2013 clause 11.9.1.1 instrument with a resolution bandwidth that is greater than the DTS bandwidth.
2. The RF output of EUT was connected to the power meter by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Measure the conducted output power and record the results in the test report.
5. Duty factor =10 log (1/x), where x is the measured duty cycle.

4.1.4 Test Setup



4.1.5Test Results

See Appendix A.1.

4.2 6dB and 99% Bandwidth Measurement

4.2.1 Limit of 6dB and 99% Bandwidth

The minimum 6 dB bandwidth shall be at least 500 kHz

4.2.2 Measuring Instruments

The section 3.3 of List of Measuring Equipment of this test report is used for test.

4.2.3 Test Procedures

1. The testing follows ANSI C63.10-2013 clause 11.8.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. Set the Video bandwidth (VBW) = 300 kHz. In order to make an accurate measurement. The 6 dB bandwidth must be greater than 500 kHz.
5. For 99% Bandwidth Measurement, the spectrum analyzer's resolution bandwidth (RBW) is set 1% to 5% of the 99% OBW and the VBW is set to 3 times of the RBW.
6. Measure and record the results in the test report.

4.2.4 Test Setup

4.2.5 Test Results

See Appendix A.2.

4.3 Power Spectral Density Measurement

4.3.1 Limit of Power Spectral Density

Rule Part 15.247(e) specifies that" 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.

4.3.2 Measuring Instruments

The section 3.3 of List of Measuring Equipment of this test report is used for test.

4.3.3 Test Procedures

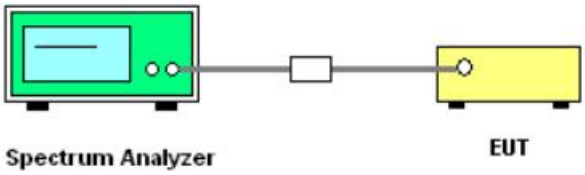
The testing follows ANSI C63.10-2013 clause 11.10.5.

Method AVGPSD-2 uses trace averaging across ON and OFF times of the EUT transmissions, followed by duty cycle correction.

The following procedure is applicable when the EUT cannot be configured to transmit continuously (i.e., D < 98%), when sweep triggering/signal gating cannot be used to measure only when the EUT is transmitting at its maximum power control level, and when the transmission duty cycle is constant (i.e., duty cycle variations are less than ±2%):

1. Measure the duty cycle (D) of the transmitter output signal as described in 11.6.
2. Set instrument center frequency to DTS channel center frequency.
3. Set span to at least 1.5 times the OBW.
4. Set RBW to: 3 kHz ≤ RBW ≤ 100 kHz.
5. Set VBW ≥ [3 × RBW].
6. Detector = power averaging (rms) or sample detector (when rms not available).
7. Ensure that the number of measurement points in the sweep ≥ [2 × span / RBW].
8. Sweep time = auto couple.
9. Do not use sweep triggering; allow sweep to "free run."
10. Employ trace averaging (rms) mode over a minimum of 100 traces.
11. Use the peak marker function to determine the maximum amplitude level.
12. Add [10 log (1 / D)], where D is the duty cycle measured in step a), to the measured PSD to compute the average PSD during the actual transmission time.
13. If measured value exceeds requirement specified by regulatory agency, then reduce RBW (but no less than 3 kHz) and repeat (note that this may require zooming in on the emission of interest and reducing the span to meet the minimum measurement point requirement as the RBW is reduced).

4.3.4 Test Setup



4.3.5 Test Result of Power Spectral Density

Please refer to Appendix A.3.

4.4 Conducted Band Edges and Spurious Emission Measurement

4.4.1 Limit of Conducted Band Edges and Spurious Emission

All harmonics/spurious must be at least 20 dB down from the highest emission level within the authorized band， In any 100 kHz bandwidth outside of the authorized frequency band, the emissions which fall in the non-restricted bands shall be attenuated at least 20 dB relative to the maximum PSD level in 100 kHz by RF conducted measurement.

4.4.2 Measuring Instruments

The section 3.3 of List of Measuring Equipment of this test report is used for test

4.4.3 Test Procedure

1. The testing follows ANSI C63.10-2013 clause 11.13.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Set RBW = 100 kHz, VBW=300 kHz, Peak Detector. Unwanted Emissions measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz when maximum peak conducted output power procedure is used. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.
5. Measure and record the results in the test report.
6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

4.4.4 Test Setup

4.4.5 Test Result

Please refer to Appendix A.4.

4.5 Radiated Band Edges and Spurious Emission Measurement

4.5.1 Limit of Radiated Band Edges and Spurious Emission

In any 100 kHz bandwidth outside the intentional radiator frequency band, all harmonics/spurious must be at least 20 dB below the highest emission level within the authorized band. If the output power of this device was measured by spectrum analyzer, the attenuation under this paragraph shall be 30 dB instead of 20 dB. In addition, radiated emissions which fall in the restricted bands must also comply with the limits as below.

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705 - 30.0	30	30
30-88	100	3
88 -216	150	3
216 - 960	200	8
Above 960	500	3

4.5.2 Measuring Instruments

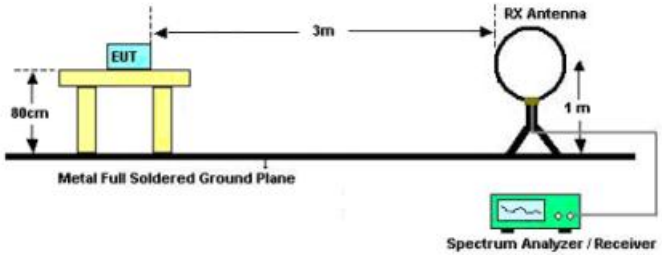
The section 3.3 of List of Measuring Equipment of this test report is used for test.

4.5.3 Test Procedures

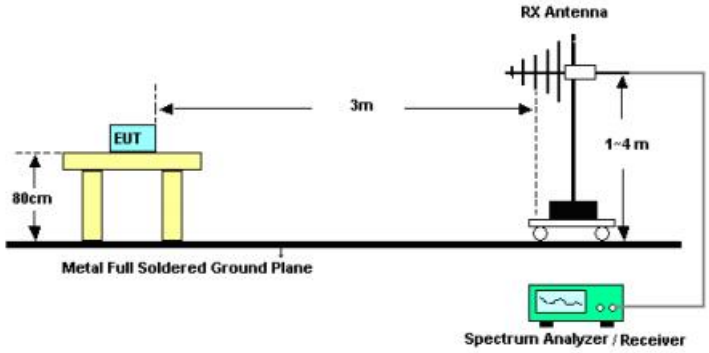
1. The testing follows ANSI C63.10-2013 clause 11.11 & 11.12
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level.
3. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
5. Corrected Reading: Antenna Factor + Cable Loss + Read Level -Preamp Factor = Level
6. For testing below 1GHz, if the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then peak values of EUT will be reported, otherwise, the emissions will be repeated one by one using the CISPR quasi-peak method and reported.
7. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than peak limit (that means the emission level in average mode also complies with the limit in average mode), then peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
8. Use the following spectrum analyzer settings:
   (1) Span shall wide enough to fully capture the emission being measured.
   (2) Set RBW=100 kHz for f < 1 GHz; VBW ≥ RBW; Sweep = auto; Detector function = peak; Trace = max hold.
   (3) Set RBW = 1 MHz, VBW= 3MHz for ≥ 1 GHz for peak measurement
   For average measurement:
   VBW= 10 Hz, when duty cycle is no less than 98 percent.
   VBW ≥ 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

4.5.4 Test Setup

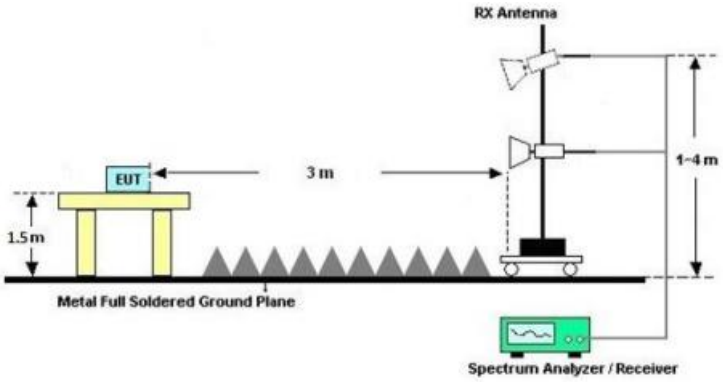
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



4.5.5 Test Results of Radiated Spurious Emissions (9 kHz ~ 30 MHz)

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line was not reported.

There is a comparison data of both open-field test site and semi-Anechoic chamber, and the result came out very similar.

4.5.6 Test Result of Radiated Spurious at Band Edges

Please refer to Appendix B.1.

4.5.7 Test Result of Radiated Spurious Emission (30MHz ~ 10th Harmonic or 40GHzwhichever is lower)

Please refer to Appendix B.1.

4.5.8 Duty Cycle

Please refer to Appendix B.2.

4.6 AC Conducted Emission Measurement

4.6.1 Limit of AC Conducted Emission

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

Frequency of emission (MHz)	Conducted limit (dBμV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

Decreases with the logarithm of the frequency.

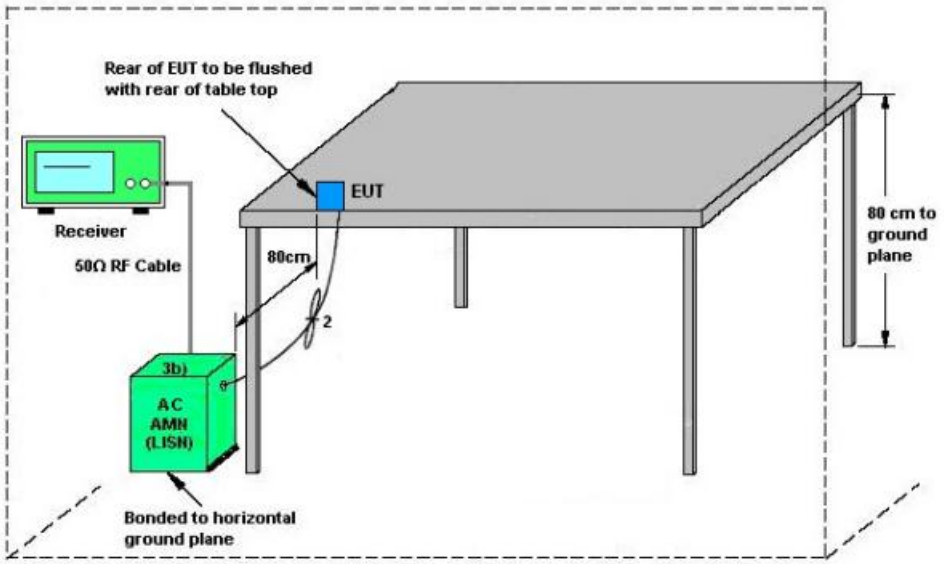
4.6.2 Measuring Instruments

The section 3.3 of List of Measuring Equipment of this test report is used for test.

4.6.3 Test Procedures

1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
6. Both sides of AC line were checked for maximum conducted interference.
7. The frequency range from 150 kHz to 30 MHz was searched.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth (IF Bandwidth = 9kHz) with Maximum Hold Mode. Then measurement is also conducted by Average Detector and Quasi-Peak Detector Function respectively.

4.6.4 Test Setup



AMN = Artificial mains network (LISN)
AE = Associated equipment
EUT = Equipment under test
ISN = Impedance stabilization network

4.6.5 Test Result

Please refer to Appendix A.5.

Remark: The sample is powered by USB. This test item is not applicable.

4.7 Antenna Requirements

4.7.1 Standard Applicable

If directional gain of transmitting antennas is greater than 6dBi, the power shall be reduced by the same level in dB comparing to gain minus 6dBi. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the rule.

4.7.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

4.7.3 Antenna Gain

The antenna peak gain of EUT is less than 6 dBi. Therefore, it is not necessary to reduce maximum peak output power limit.

Appendix A – Test Results of Conducted Test

A.1 Conducted Output Power

Test Result Peak

Test Mode	Antenna	Frequency [MHz]	Conducted Peak Power[dBm]	Conducted Limit[dBm]	EIRP[dBm]	EIRP Limit[dBm]	Verdict
BLE_1M	Ant1	2402	7.12	≤30	8.12	≤36	PASS
BLE_1M	Ant1	2440	7.57	≤30	8.57	≤36	PASS
BLE_1M	Ant1	2480	6.96	≤30	7.96	≤36	PASS
BLE_2M	Ant1	2402	7.04	≤30	8.04	≤36	PASS
BLE_2M	Ant1	2440	7.40	≤30	8.40	≤36	PASS
BLE_2M	Ant1	2480	6.87	≤30	7.87	≤36	PASS
BLE_125K	Ant1	2402	7.18	≤30	8.18	≤36	PASS
BLE_125K	Ant1	2440	7.47	≤30	8.47	≤36	PASS
BLE_125K	Ant1	2480	6.99	≤30	7.99	≤36	PASS
BLE_500K	Ant1	2402	7.00	≤30	8.00	≤36	PASS
BLE_500K	Ant1	2440	7.33	≤30	8.33	≤36	PASS
BLE_500K	Ant1	2480	6.88	≤30	7.88	≤36	PASS

A.2 6dB and 99% Bandwidth

Test Result 6dB Bandwidth

Test Mode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.676	2401.644	2402.320	0.5	PASS
BLE_1M	Ant1	2440	0.680	2439.644	2440.324	0.5	PASS
BLE_1M	Ant1	2480	0.668	2479.652	2480.320	0.5	PASS
BLE_2M	Ant1	2402	1.124	2401.416	2402.540	0.5	PASS
BLE_2M	Ant1	2440	1.124	2439.420	2440.544	0.5	PASS
BLE_2M	Ant1	2480	1.124	2479.416	2480.540	0.5	PASS
BLE_125K	Ant1	2402	0.668	2401.656	2402.324	0.5	PASS
BLE_125K	Ant1	2440	0.668	2439.656	2440.324	0.5	PASS
BLE_125K	Ant1	2480	0.668	2479.656	2480.324	0.5	PASS
BLE_500K	Ant1	2402	0.652	2401.664	2402.316	0.5	PASS
BLE_500K	Ant1	2440	0.648	2439.668	2440.316	0.5	PASS
BLE_500K	Ant1	2480	0.644	2479.664	2480.308	0.5	PASS

Test Result 99% Bandwidth

Test Mode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]
BLE_1M	Ant1	2402	1.0230	2401.4898	2402.5128
BLE_1M	Ant1	2440	1.0230	2439.4892	2440.5122
BLE_1M	Ant1	2480	1.0222	2479.4881	2480.5103
BLE_2M	Ant1	2402	2.0194	2400.9914	2403.0108
BLE_2M	Ant1	2440	2.0148	2438.9988	2441.0136
BLE_2M	Ant1	2480	2.0156	2478.9957	2481.0113
BLE_125K	Ant1	2402	1.0359	2401.4639	2402.4998
BLE_125K	Ant1	2440	1.0365	2439.4658	2440.5023
BLE_125K	Ant1	2480	1.0372	2479.4614	2480.4986
BLE_500K	Ant1	2402	1.0135	2401.4785	2402.4920
BLE_500K	Ant1	2440	1.0101	2439.4805	2440.4906
BLE_500K	Ant1	2480	1.0072	2479.4807	2480.4879

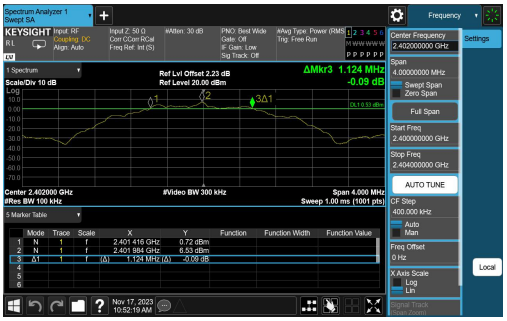
Test Graphs_6dB Bandwidth

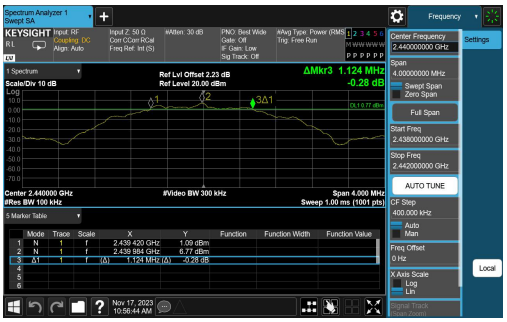
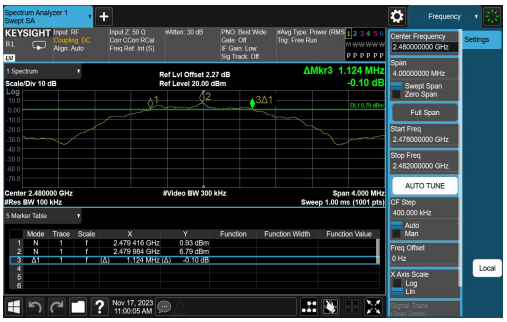
BLE_1M-Ant1-2402-PASS

BLE_1M-Ant1-2440-PASS

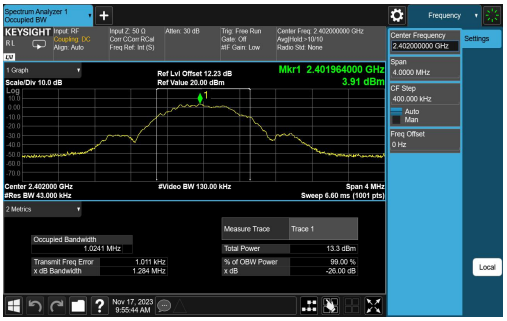
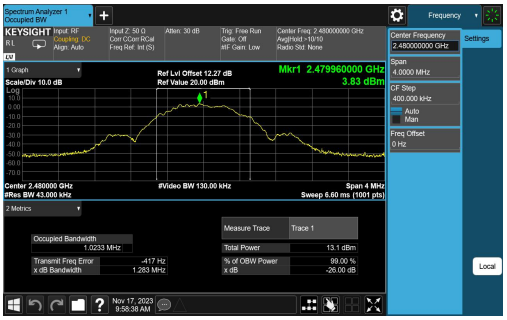
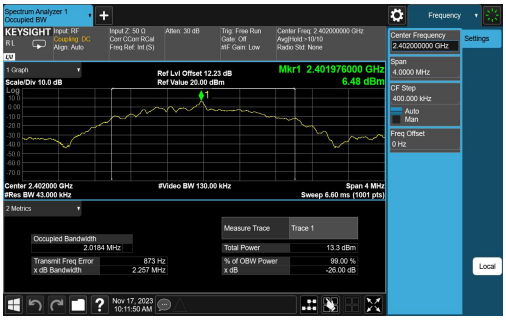
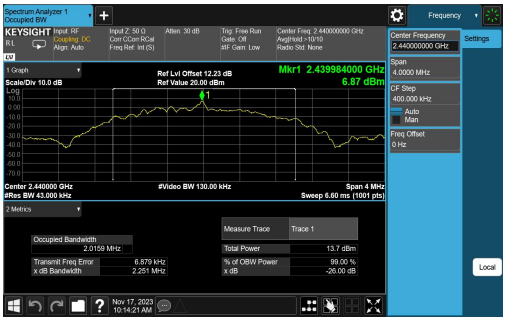
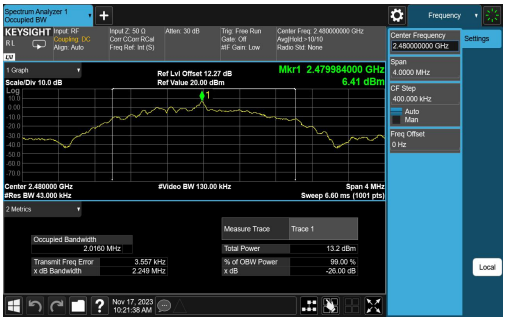
BLE_1M-Ant1-2480-PASS

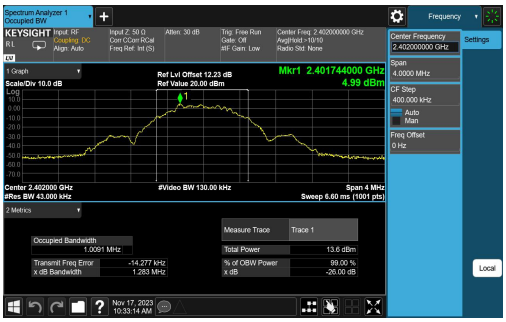
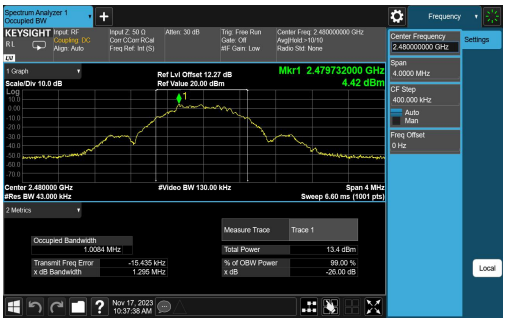
BLE_2M-Ant1-2402-PASS



BLE_2M-Ant1-2440-PASS	BLE_2M-Ant1-2480-PASS
	
BLE_125K-Ant1-2402-PASS	BLE_125K-Ant1-2440-PASS
	
BLE_125K-Ant1-2480-PASS	BLE_500K-Ant1-2402-PASS
	
BLE_500K-Ant1-2440-PASS	BLE_500K-Ant1-2480-PASS
	

Test Graphs_99% Bandwidth

BLE_1M-Ant1-2402	BLE_1M-Ant1-2440
	
BLE_1M-Ant1-2480	**BLE_2M-Ant1-2402**
	
BLE_2M-Ant1-2440	**BLE_2M-Ant1-2480**
	
BLE_125K-Ant1-2402	**BLE_125K-Ant1-2440**
	

BLE_125K-Ant1-2480	BLE_500K-Ant1-2402
	
BLE_500K-Ant1-2440	**BLE_500K-Ant1-2480**
	

A.3 Power Spectral Density

Test Result

Test Mode	Antenna	Frequency[MHz]	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-8.04	≤8.00	PASS
BLE_1M	Ant1	2440	-7.60	≤8.00	PASS
BLE_1M	Ant1	2480	-8.06	≤8.00	PASS
BLE_2M	Ant1	2402	-8.52	≤8.00	PASS
BLE_2M	Ant1	2440	-8.53	≤8.00	PASS
BLE_2M	Ant1	2480	-9.06	≤8.00	PASS
BLE_125K	Ant1	2402	0.58	≤8.00	PASS
BLE_125K	Ant1	2440	0.88	≤8.00	PASS
BLE_125K	Ant1	2480	0.36	≤8.00	PASS
BLE_500K	Ant1	2402	0.38	≤8.00	PASS
BLE_500K	Ant1	2440	0.71	≤8.00	PASS
BLE_500K	Ant1	2480	0.29	≤8.00	PASS

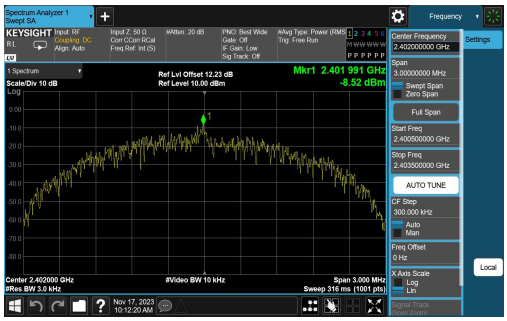
Test Graphs

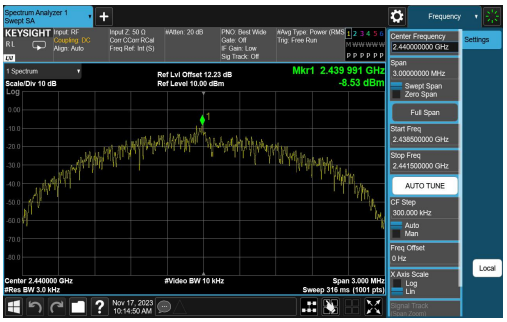
BLE_1M-Ant1-2402-PASS

BLE_1M-Ant1-2440-PASS

BLE_1M-Ant1-2480-PASS

BLE_2M-Ant1-2402-PASS



BLE_2M-Ant1-2440-PASS	BLE_2M-Ant1-2480-PASS
	
BLE_125K-Ant1-2402-PASS	BLE_125K-Ant1-2440-PASS
	
BLE_125K-Ant1-2480-PASS	BLE_500K-Ant1-2402-PASS
	
BLE_500K-Ant1-2440-PASS	BLE_500K-Ant1-2480-PASS