RF TEST REPORT

Report No.: SET2022-08336

Product Name: Sleeptracker-AI® Sleep Monitoring System

Model No.: STS-60

FCC ID: 2AF2O-STS60

IC: 20700-STS60

Applicant: Fullpower Technologies, Inc

Address: 1200 Pacific Ave, Suite 300, Santa Cruz，CA 95060, USA

Dates of Testing: 2022.05.23-2022.06.29

Issued by: CCIC Southern Testing Co., Ltd.

Lab Location: Electronic Testing Building, No. 43 Shahe Road, Xili Street, Nanshan District, Shenzhen, Guangdong, China.

Tel: 86 755 26627338 **Fax:** 86 755 26627238

Test Report

Product Name.....:	Sleeptracker-AI® Sleep Monitoring System
Brand Name.....:	N/A
Trade Name.....:	N/A
Applicant.....:	Fullpower Technologies, Inc
Applicant Address.....:	1200 Pacific Ave, Suite 300, Santa Cruz，CA 95060, USA
Manufacturer.....:	Trivo (Taicang) Technologies Co., Ltd
Manufacturer Address .....:	Building 9, Yusheng Industry Park, No.33 North Changsheng Road, Taicang, Jiangsu, China
Test Standards.....:	47 CFR Part 15 Subpart C ANSI C63.10-2013 RSS-Gen Issue 5, Feb 2021 RSS-247 Issue 2, Feb 2017
Test Result.....:	PASS

Tested by .....: 2022.08.01

Chuiwang Zhang, Test Engineer

Reviewed by .....: 2022.08.01

Chris You, Senior Engineer

Approved by .....: 2022.08.01

ShuangwenZhang, Manager

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Change History		
Issue	Date	Reason for change
1.0	2022.08.01	First edition

1. General Information

1.1. EUT Description

Product Name	Sleeptracker-AI® Sleep Monitoring System
Frequency Range	2402MHz~2480MHz
Channel Number	79
Bit Rate of Transmitter	1/2/3Mbps
Modulation Type	GFSK, π/4-DQPSK, 8DPSK
Antenna Type	PCB Antenna
Antenna Gain	-3.3dBi
Power supply	DC 5V from Adapter

Note 1: For a more detailed description, please refer to Specification or User's Manual supplied by the applicant and/or manufacturer.

Note 2: a. When power on, the EUT will scan the whole frequency until aConnection command from the other BT devices.

b. When receiving the signal from the other BT devices, The EUT transmit aresponse signal.

c. The other devices receive the response signal and recognize it, then send aconnection command to establish the connection.

d. After the connection establish successfully, the data transmission is beginning.At the same time, the both devices will shift frequencies in synchronization per asame pseudo randomly ordered list of hopping frequencies, the hopping rate is1600 times per second.

e. The bandwidth of the receiver, which is set to a fixed width by the software.

Note 3: Bluetooth signal has 9 packages 1DH1, 1DH3, 1DH5, 2DH1, 2DH3, 2DH5, 3DH1, 3DH3, 3DH5, DH5 package is largest, we are testing DH5 in the document.

1.2. Test Standards and Results

The purpose of the report is to conduct testing according to the following FCC/IC certification standards:

No.	Identity	Document Title
1	47 CFR Part 15 Subpart C	Radio Frequency Devices
2	ANSI C63.10-2013	American National Standard for Testing Unlicensed Wireless Devices
3	KDB 558074 D01 15.247 Meas Guidance v05r02	Cuidance for Compliance Measurement on Digital Transmission Systems, Frequency Hopping Spread Spectrum Systems, and Hybrid System Devices Operating under Section 15.247 of the FCC Rules
4	RSS-Gen Issue 5, Feb 2021	General Requirements for Compliance of Radio Apparatus
5	RSS-247 Issue 2, Feb 2017	Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices

Test detailed items/section required by FCC/IC rules and results are as below:

No.	Section in CFR 47	IC Rules	Description	Result
1	15.203 15.247(c)	RSS-GEN, 6.8 RSS-247, 5.4(f)	Antenna Requirement	PASS
2	15.247 (a)(1)(iii)	RSS-247, 5.1(d)	Number of Hopping Frequency	PASS
3	15.247 (b)(1)	RSS-247, 5.4(b)	Peak Output Power	PASS
4	15.247 (a)(1)	RSS-GEN, 6.7 RSS-247, 5.1(a)	20dB and 99% Occupied Bandwidth	PASS
5	15.247 (a)(1)	RSS-247, 5.1(b)	Carrier Frequency Separation	PASS
6	15.247 (a)(1)(iii)	RSS-247, 5.1(d)	Time of Occupancy (Dwell time)	PASS
7	15.247(d)	RSS-GEN, 6.13 RSS-247, 5.5	Conducted Band Edge and Spurious Emission	PASS
8	15.207	RSS-GEN, 8.8	AC Power Line Conducted Emission	PASS
9	15.205 15.209 15.247(c)	RSS-GEN, 8.9 RSS-GEN, 8.10 RSS-247, 5.5	Radiated Band Edges and Spurious Emission	PASS

Note 1: The tests of Conducted Emission and Radiated Emission were performed according to the method of measurements prescribed in ANSI C63.10-2013.

Note 2: These RF tests were performed according to the method of measurements prescribed in KDB 558074 D01 15.247 Meas Guidance v05r02.

1.3. Frequency Hopping System Requirements

1.3.1. Standard Applicable

According to FCC Part 15.247(a)(1), The system shall hop to channel frequencies that are selected at the systemhopping rate from a pseudo randomly ordered list of hopping frequencies. Each frequency must be used equallyon the average by each transmitter. The system receivers shall have input bandwidths that match the hoppingchannel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with thetransmitted signals.

(g) Frequency hopping spread spectrum systems are not required to employ all available hopping channels duringeach transmission. However, the system, consisting of both the transmitter and the receiver, must be designed tocomply with all of the regulations in this section should the transmitter be presented with a continuous data (orinformation) stream. In addition, a system employing short transmission bursts must comply with the definition ofa frequency hopping system and must distribute its transmissions over the minimum number of hopping channelsspecified in this section.

(h) The incorporation of intelligence within a frequency hopping spread spectrum system that permits the systemto recognize other users within the spectrum band so that it individually andindependently chooses and adapts itshopsets to avoid hopping on occupied channels is permitted. The coordination of frequency hopping systems inany other manner for the express purpose of avoiding the simultaneous occupancy of individual hoppingfrequencies by multiple transmitters is not permitted.

1.3.2. Frequency Hopping System

This transmitter device is frequency hopping device, and complies with FCC part 15.247 rule.

This device uses Bluetooth radio which operates in 2400-2483.5 MHz band. Bluetooth uses a radio technologycalled frequency-hopping spread spectrum, which chops up the data being sent and transmits chunks of it on up to79 bands (1 MHz each; centred from 2402 to 2480 MHz) in the range 2,400-2,483.5 MHz. The transmitterswitches hop frequencies 1,600 times per second to assure a high degree of data security. All Bluetooth devicesparticipating in a given piconet are synchronized to the frequency-hopping channel for the piconet. The frequency hopping sequence is determined by the master's device address and the phase of the hopping sequence (thefrequency to hop at a specific time) is determined by the master's internal clock. Therefore, all slaves in a piconetmust know the master's device address and must synchronize their clocks with the master's clock.

Adaptive Frequency Hopping (AFH) was introduced in the Bluetooth specification to provide an effective way fora Bluetooth radio to counteract normal interference. AFH identifies "bad" channels, where either other wirelessdevices are interfering with the Bluetooth signal or the Bluetooth signal is interfering with another device. TheAFH-enabled Bluetooth device will then communicate with other devices within its piconet to share details of anyidentified bad channels. The devices will then switch to alternative available "good" channels, away from theareas of interference, thus having no impact on the bandwidth used.

This device was tested with a bluetooth system receiver to check that the device maintained hopping synchronization, and the device complied with these requirements for ANSI C63.10-2013 and FCC Part 15.247 rule.

Carrier Frequency and channel List:

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
0	2402MHz	20	2422MHz	40	2442MHz	60	2462MHz
1	2403MHz	21	2423MHz	41	2443MHz	61	2463MHz
2	2404MHz	22	2424MHz	42	2444MHz	62	2464MHz
3	2405MHz	23	2425MHz	43	2445MHz	63	2465MHz
4	2406MHz	24	2426MHz	44	2446MHz	64	2466MHz
5	2407MHz	25	2427MHz	45	2447MHz	65	2467MHz
…	…	…	…	…	…	…	…
15	2417MHz	35	2437MHz	55	2457MHz	75	2477MHz
16	2418MHz	36	2438MHz	56	2458MHz	76	2478MHz
17	2419MHz	37	2439MHz	57	2459MHz	77	2479MHz
18	2420MHz	38	2440MHz	58	2460MHz	78	2480MHz
19	2421MHz	39	2441MHz	59	2461MHz		

Note 1: F(MHz) = 2402+1*n (0<=n<=78).

Note 2: Channel 0, 39 &78 selected for GFSK, π/4-DQPSK and 8DPSK as Lowest, Middle and Highest Channel.

1.4. Table for Supporting Units

No.	Equipment	Brand Name	Model Name	Manufacturer	Serial No.	Note
1	Laptop	HP	TPN-Q221	HP	5CD14347QB	FCC DOC

1.5. EUT Operation Test Setup

For RF test items, an engineering test program was provided and enable to make EUT transmitting.

1.6. Test environment and mode

During the measurement, the environmental conditions were within the listed ranges:

Operating Environment	
Temperature	15°C - 35°C
Humidity	30% -60%
Atmospheric Pressure	86KPa-106KPa
Test mode:	
Non-hopping mode:	Keep the EUT in continuous transmitting mode with worst case data rate.
Hopping mode:	Keep the EUT in hopping mode.

1.7. Facilities and Accreditations

FCC-Registration No.: 406086

CCIC Southern Testing Co., Ltd EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files. Designation Number: CN1283, valid time is until April 19th, 2023.

ISED Registration: 11185A-1

CCIC Southern Testing Co., Ltd. EMC Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 11185A-1 on Aug. 04, 2016, valid time is until Jun. 30th, 2023.

A2LA Code: 5721.01

CCIC-SET is a third party testing organization accredited by A2LA according to ISO/IEC 17025.

2. Test Requirement

2.1. Antenna requirement

2.1.1. Applicable Standard

According to FCC 15.203, 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 shall be considered sufficient to comply with the provisions of this section.

And according to FCC 47 CFR Section 15.247(c), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

2.1.2. Antenna Information

Antenna Category: PCB Antenna

The PCB antenna is directly connected to the EUT's antenna port and cannot be removed.

Antenna General Information:

No.	EUT	Operating frequency range	Ant. Type	Ant. Gain
1	Sleeptracker-AI® Sleep Monitoring System	2412-2462MHz	PCB	-3.3dBi

2.1.3. Result: comply

The EUT has a permanently and irreplaceable attached antenna. Please refer to the EUT internal photos.

2.2. Number of Hopping Frequency

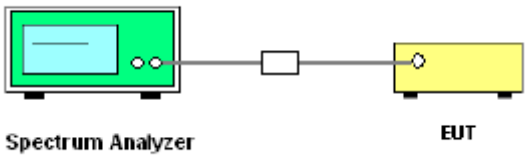
2.2.1. Limit of Number of Hopping Frequency

Frequency hopping systems operating in the 2400MHz to 2483.5MHz bands shall use at least 15 hopping frequencies.

2.2.2. Measuring Instruments

The measuring equipment is listed in the section 3 of this test report.

2.2.3. Test Setup



2.2.4. Test Procedure

1. The testing follows the Measurement Procedure of ANSI C63.10-2013 Section 7.8.3.
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. Enable the EUT hopping function.
5. Use the following spectrum analyzer settings:

   Span: The frequency band of operation / RBW: Set the RBW to less than 30% of the channel spacing or the 20 dB bandwidth, Whichever is smaller / VBW ≥ RBW / Sweep: Auto / Detector function: Peak / Trace: Max hold / Allow the trace to stabilize.
6. The number of hopping frequency used is defined as the number of total channel.
7. Record the measurement results in the test report.

2.2.5. Test Results of Number of Hopping Frequency

Please refer to Appendix A for detail

2.3. Maximum Conducted Output Power

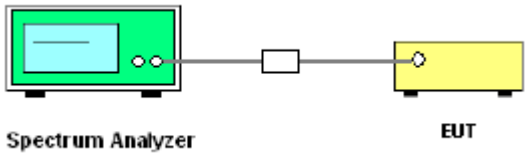
2.3.1. Limit of Peak Output Power

For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts. The e.i.r.p. shall not exceed 4 W.

2.3.2. Measuring Instruments

The measuring equipment is listed in the section 3 of this test report.

2.3.3. Test Setup



2.3.4. Test Procedures

1. The testing follows the Measurement Procedure of ANSI C63.10-2013 Section 7.8.5.
2. The RF output of EUT was connected to Spectrum analyzer by RF cable and attenuator. The pathloss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Use the following spectrum analyzer settings:

   Set span to be Approximately five times the 20 dB bandwidth, centered on a hopping channel / RBW > 20 dB bandwidth of the emission being measured / VBW ≥ RBW / Sweep: Auto / Detector function: Peak / Trace: Max hold / Allow trace to stabilize / Use the marker-to-peak function to set the marker to the peak of the emission.
5. Record the measurement results in the test report.

2.3.5. Test Result of Peak Output Power

Please refer to Appendix A for detail

2.4. 20dB and 99% Bandwidth

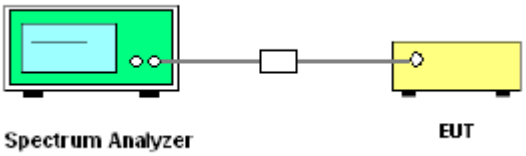
2.4.1. Definition

According to FCC §15.247(a)(1), the 20dB bandwidth is known as the 99% emission bandwidth, or 20dB bandwidth (10*log1% = 20dB) taking the total RF output power.

2.4.2. Measuring Instruments

The measuring equipment is listed in the section 3 of this test report.

2.4.3. Test Setup



2.4.4. Test Procedure

1. The testing follows the Measurement Procedure of ANSI C63.10-2013 Section 7.8.7.
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. Use the following spectrum analyzer settings:

   Using the X dB bandwidth mode of the instrument's automatic bandwidth measurement function, X is set to 20 dB / The spectrum analyzer center frequency is set to the EUT channel center frequency / Set span to be approximately 2 to 5 times the OBW / RBW ≥ 1% to 5% of the OBW / VBW shall be approximately three times RBW / Sweep: Auto / Detector mode: Peak / Trace mode: Max hold.
5. Record the measurement results in the test report.

2.4.5. Test Results of 20dB Bandwidth

Please refer to Appendix A for detail

2.5. Carried Frequency Separation

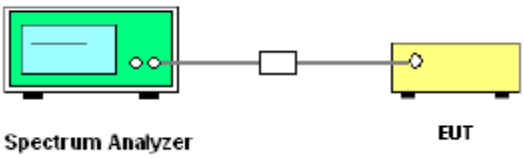
2.5.1. Limit of Carried Frequency Separation

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25kHz or two-thirds of the 20dB bandwidth of the hopping channel, whichever is greater.

2.5.2. Measuring Instruments

The measuring equipment is listed in the section 3 of this test report.

2.5.3. Test Setup



2.5.4. Test Procedure

1. The testing follows the Measurement Procedure of ANSI C63.10-2013 Section 7.8.2.
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. Enable the EUT hopping function.
5. Use the following spectrum analyzer settings:

   Span: wide enough to capture the peaks of two adjacent channels /

   RBW: Start with the RBW set to approximately 30% of the channel spacing / VBW ≥ RBW /

   Sweep: Auto / Detector function: Peak / Trace: Max hold / Allow the trace to stabilize /

   Use the marker-delta function to determine the separation between the peaks of the adjacent channels.
6. Record the measurement results in the test report.

2.5.5. Test Results of Carried Frequency Separation

Please refer to Appendix A for detail

2.6. Dwell time

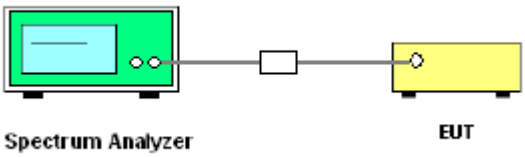
2.6.1. Limit of Dwell Time

The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.

2.6.2. Measuring Instruments

The measuring equipment is listed in the section 3 of this test report.

2.6.3. Test Setup



2.6.4. Test Procedure

1. The testing follows the Measurement Procedure of ANSI C63.10-2013 Section 7.8.4.
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. Enable the EUT hopping function.
5. Use the following spectrum analyzer settings:

   Span: Zero span, centered on a hopping channel / RBW shall be ≤ channel spacing and where possible RBW should be set >> 1 / T, where T is the expected dwell time per channel / VBW ≥ RBW / Sweep: As necessary to capture the entire dwell time per hopping channel / Detector function: Peak / Trace: Max hold.
6. Record the measurement results in the test report.

2.6.5. Test Results of Dwell Time

Please refer to Appendix A for detail

2.7. Conducted Spurious Emissions

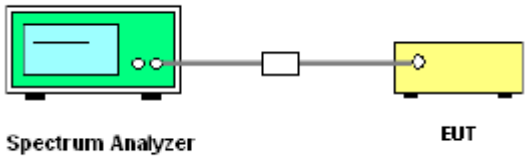
2.7.1. Limit of Conducted Spurious Emissions

In any 100 kHz bandwidth outside the frequency band in which the intentional radiator is perating, 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.

2.7.2. Measuring Instruments

The measuring equipment is listed in the section 3 of this test report.

2.7.3. Test Setup



2.7.4. Test Procedure

1. The testing follows the Measurement Procedure of ANSI C63.10-2013 Section 7.8.8
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. Use the following spectrum analyzer settings:

   Set the frequency range to 30MHz~25GHz / RBW: 100kHz / VBW: 300kHz / Detector: Peak / Sweep time: Auto couple / Trace mode: Max hold / Allow trace to fully stabilize / Use the peak marker function to determine the maximum amplitude level.
5. Record the measurement results in the test report.
6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

2.7.5. Test Results of Conducted Spurious Emissions

Please refer to Appendix A for detail

2.8. Conducted Band Edge

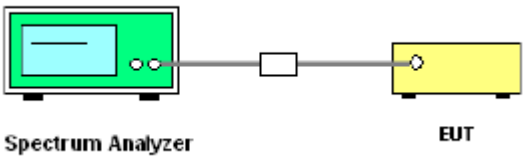
2.8.1. Limit of Conducted Band Edge

In any 100 kHz bandwidth outside the frequency band in which the intentional radiator is perating, 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.

2.8.2. Measuring Instruments

The measuring equipment is listed in the section 3 of this test report.

2.8.3. Test Setup



2.8.1. Test Procedure

1. The testing follows the Measurement Procedure of ANSI C63.10-2013 Section 7.8.6.
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. Use the following spectrum analyzer settings:

   Span: Wide enough to capture the peak level of the emission operating on the channel closest to the band edge, as well as any modulation products that fall outside of the authorized band of operation / RBW: 100kHz / VBW: 300kHz / Detector: Peak / Sweep time: Auto couple / Trace mode: Max hold / Allow trace to fully stabilize / Use the peak marker function to determine the maximum power level.
5. Enable hopping function of the EUT and then repeat step 3 and 4.
6. Record the measurement results in the test report.
7. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

2.8.2. Test Results of Conducted Band Edge

Please refer to Appendix A for detail

2.9. Radiated Band Edges and Spurious Emission

2.9.1. Limit of Radiated Band Edges and Spurious Emission

In any 100 kHz bandwidth outside the frequency band in which the 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. If the transmitter uses an RMS average conducted power limit, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. In addition, radiated emissions which fall in the estricted bands, as defi ned in §15.205(a), must also comply with the radiated emission limits specifi ed in §15.209(a).

§15.209(a) Radiated emission limits:

Frequency (MHz)	Field Strength (μV/m)	Measurement Distance (m)
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	3
Above 960	500	3

Restricted bands of operation refer to §15.205 (a):

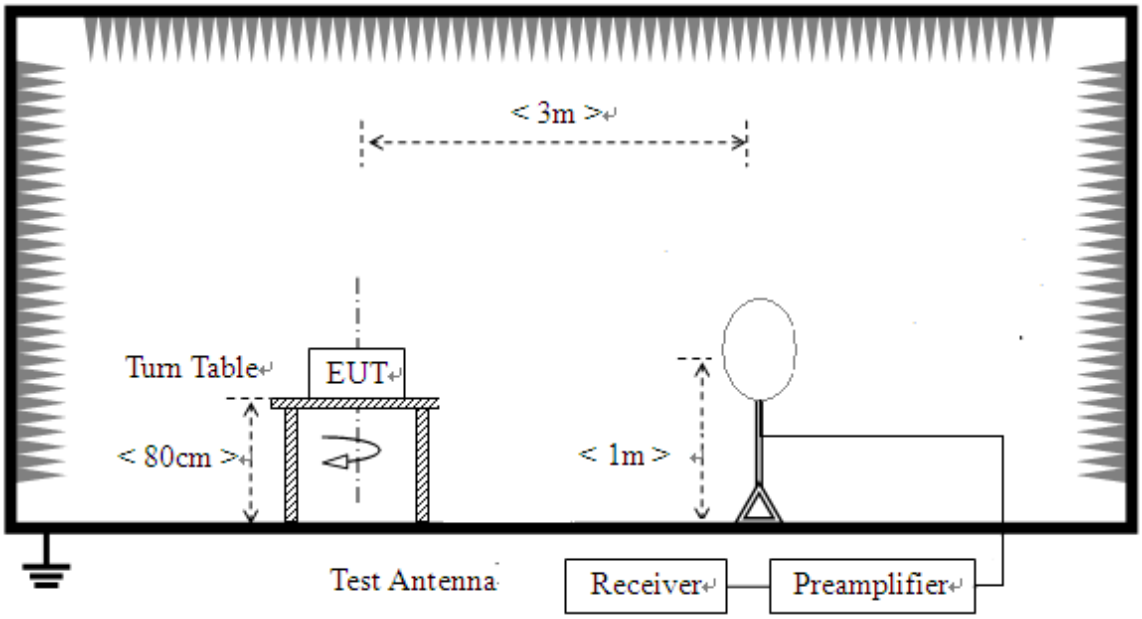
MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
[1]0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	([2])
13.36-13.41	/	/	/
Note: [1]Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz. [2]Above 38.6.			

2.9.2. Measuring Instruments

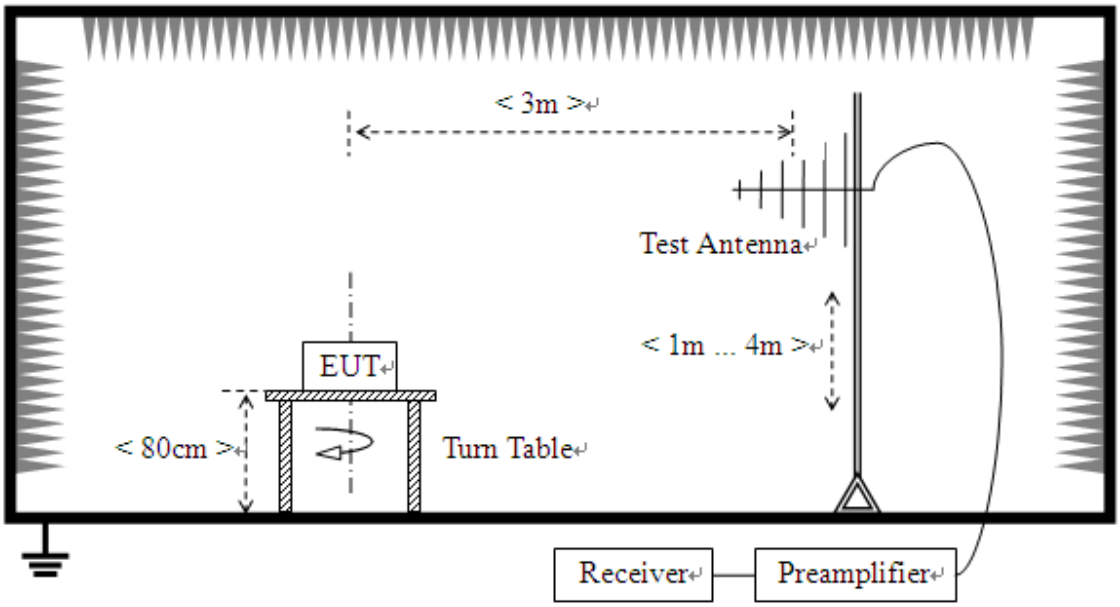
The measuring equipment is listed in the section 3 of this test report.

2.9.3. Test Setup

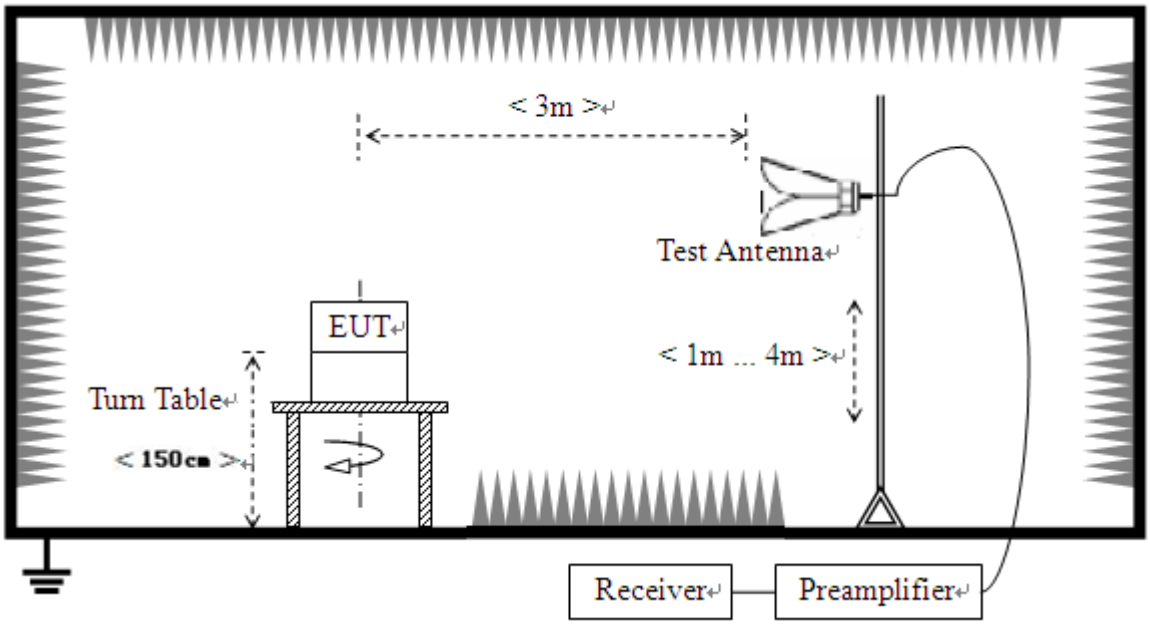
For radiated emissions from 9kHz to 30MHz



For radiated emissions from 30MHz to1GHz



For radiated emissions above 1GHz



2.9.4. Test Procedure

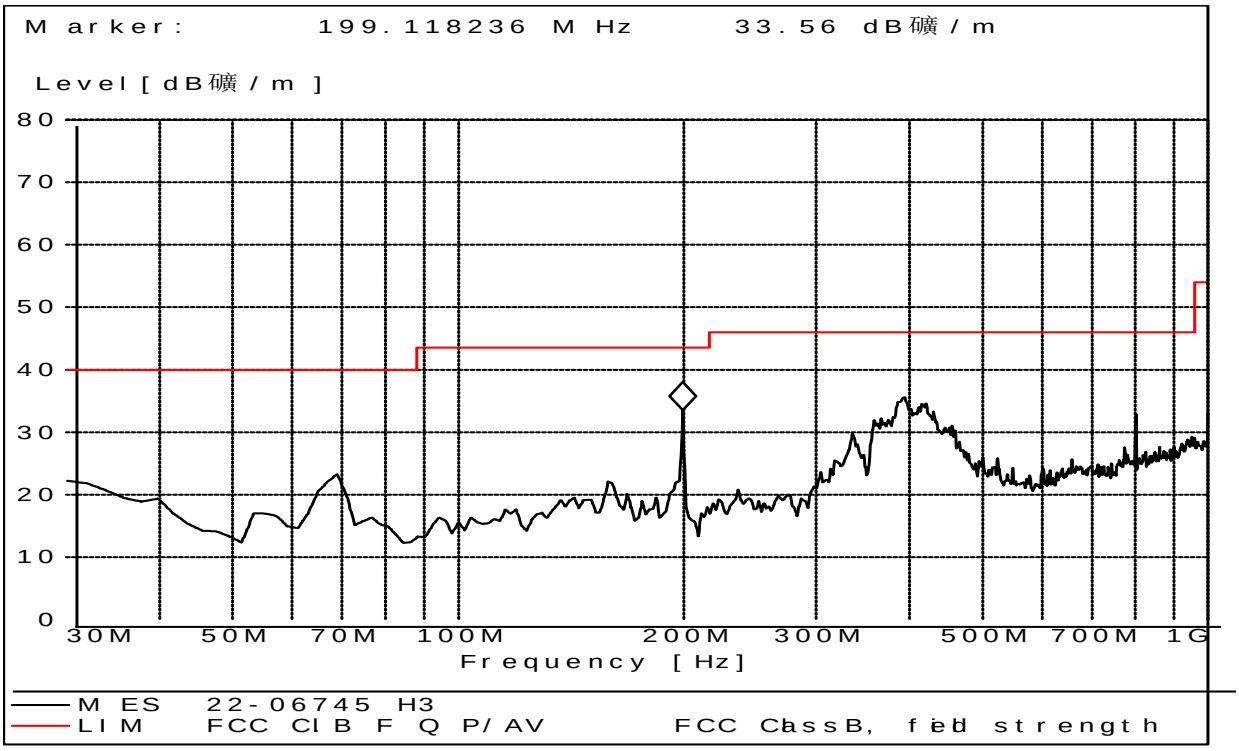
1. The EUT was placed on the top of a rotating table 0.8m for below 1GHz and 1.5m for above 1GHz above the ground at a 3 meters semi-anechoic chamber.
2. The EUT was set 3 meters from the interference receiving antenna, which was mounted on thetop of a variable height antenna tower.
3. Height of receiving antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
5. Set to the maximum power setting and enable the EUT transmit continuously.
6. Use the following spectrum analyzer settings:
   (1) Span shall wide enough to fully capture the emission being measured.
   (2) Set RBW = 100kHz for f < 1GHz, RBW = 1MHz for f > 1GHz ; VBW ≥ RBW; Sweep = Auto; Detector function = Peak; Trace = Max hold.
   (3) For average measurement: use duty cycle correction factor method per 15.35(c).
   Duty cycle = On time/100 milliseconds.
   On time = $N_1*L_1+N_2*L_2+...+N_{n-1}*LN_{n-1}+Nn*Ln$.
   Where N_1 is number of type 1 pulses, L1 is length of type 1 pulses, etc.
   Average Emission Level = Peak Emission Level + 20*log(Duty cycle).
7. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = L*evel.*

2.9.5. Test Results of Radiated Band Edge and Spurious Emission

For 9kHz to 30MHz

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

For 30MHz to 1000MHz

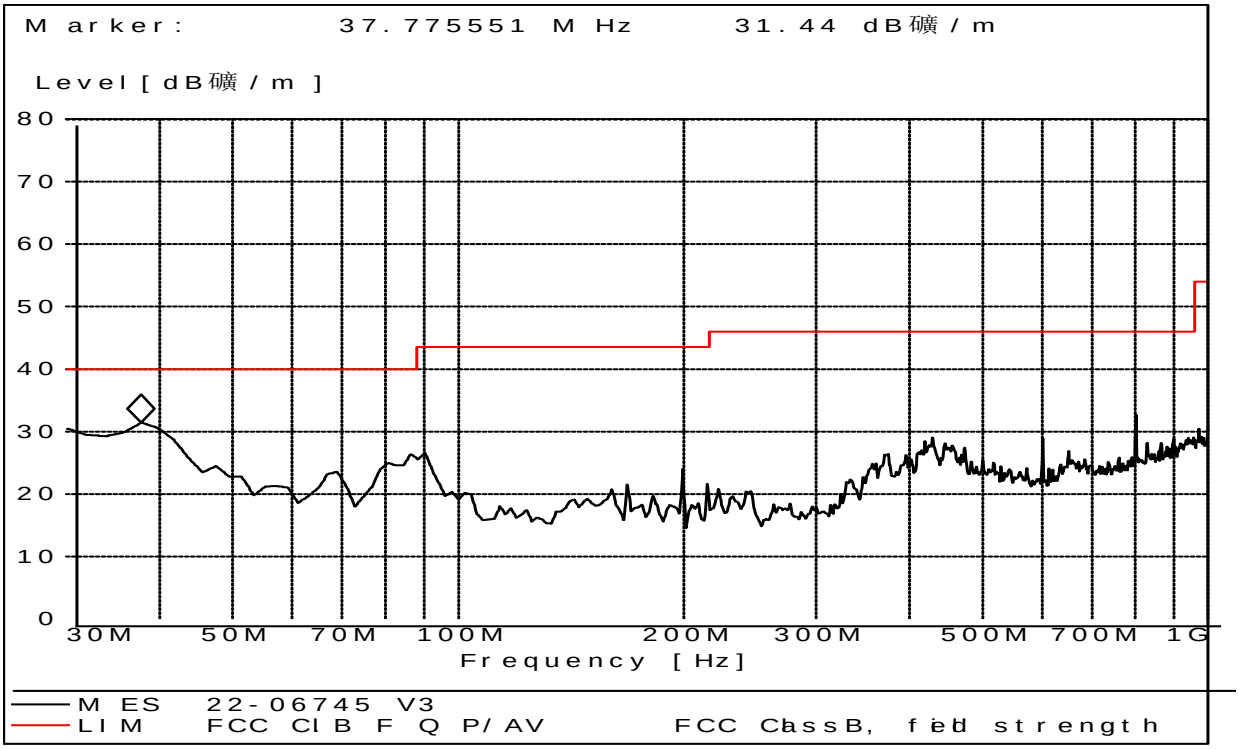


Frequency (MHz)	QuasiPeak (dBµV/m)	Bandwidth (kHz)	Corr.Factor (dB/m)	Antenna height (cm)	Limit (dBµV/m)	Margin (dB)	Polarity
68.560000	22.31	120.000	6.1	100.0	40.0	17.69	Horizontal
76.560000	16.20	120.000	6.8	100.0	40.0	23.80	Horizontal
158.566000	20.00	120.000	12.4	100.0	43.5	23.50	Horizontal
199.560000	32.14	120.000	10.0	100.0	43.5	11.36	Horizontal
393.560000	34.14	120.000	16.9	100.0	46.0	11.86	Horizontal
801.560000	31.29	120.000	23.0	100.0	46.0	14.71	Horizontal

Test Result : Pass

Remark:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB).
3. Margin value = Limit value – Emission Level.
4. The other emission levels were very low against the limit.
5. All of the EUT Configure Mode were tested and found GFSK -2402MHz mode is the worst mode, the worst case is recorded in this report.



Frequency (MHz)	QuasiPeak (dBµV/m)	Bandwidth (kHz)	Corr.Factor (dB/m)	Antenna height (cm)	Limit (dBµV/m)	Margin (dB)	Polarity
30.000000	29.51	120.000	19.3	100.0	40.0	10.49	Vertical
37.560000	31.02	120.000	16.7	100.0	40.0	8.98	Vertical
90.250000	24.13	120.000	9.9	100.0	43.5	19.37	Vertical
199.560000	24.00	120.000	10.0	100.0	43.5	19.50	Vertical
428.650000	28.61	120.000	17.9	100.0	46.0	17.39	Vertical
801.560000	30.58	120.000	23.0	100.0	46.0	15.42	Vertical

Test Result : Pass

Remark:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB).
3. Margin value = Limit value – Emission Level.
4. The other emission levels were very low against the limit.
5. All of the EUT Configure Mode were tested and found GFSK -2402MHz mode is the worst mode, the worst case is recorded in this report.

For 1GHz to 25GHz

GFSK_2402MHz									
Frequency (MHz)	Emssion Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Correction Factor (dB/m)	Polarity	Detector
2390.00	46.37	74.00	-27.63	1.70	180	45.07	1.30	Horizontal	Peak
2390.00	40.24	54.00	-13.76	1.70	180	38.94	1.30	Horizontal	Average
4804.00	52.20	74.00	-21.80	1.70	180	45.80	6.40	Horizontal	Peak
4804.00	48.43	54.00	-5.57	1.70	180	42.03	6.40	Horizontal	Average
7206.00	51.07	74.00	-22.93	1.70	180	41.77	9.30	Horizontal	Peak
7206.00	41.83	54.00	-12.17	1.70	180	32.53	9.30	Horizontal	Average
2390.00	45.41	74.00	-28.59	1.80	210	44.11	1.30	Vertical	Peak
2390.00	39.13	54.00	-14.87	1.80	210	37.83	1.30	Vertical	Average
4804.00	53.28	74.00	-20.72	1.80	210	46.88	6.40	Vertical	Peak
4804.00	41.09	54.00	-12.91	1.80	210	34.69	6.40	Vertical	Average
7206.00	51.66	74.00	-22.34	1.80	210	42.36	9.30	Vertical	Peak
7206.00	41.55	54.00	-12.45	1.80	210	32.25	9.30	Vertical	Average
GFSK_2441MHz									
Frequency (MHz)	Emssion Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Correction Factor (dB/m)	Polarity	Detector
4882.00	52.42	74.00	-21.58	1.70	180	46.02	6.40	Horizontal	Peak
4882.00	48.85	54.00	-5.15	1.70	180	42.45	6.40	Horizontal	Average
7323.00	50.64	74.00	-23.36	1.70	180	41.24	9.40	Horizontal	Peak
7323.00	41.71	54.00	-12.29	1.70	180	32.31	9.40	Horizontal	Average
4882.00	52.97	74.00	-21.03	1.80	210	46.57	6.40	Vertical	Peak
4882.00	41.16	54.00	-12.84	1.80	210	34.76	6.40	Vertical	Average
7323.00	51.88	74.00	-22.12	1.80	210	42.48	9.40	Vertical	Peak
7323.00	41.31	54.00	-12.69	1.80	210	31.91	9.40	Vertical	Average

Remark:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)

2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) - Pre-Amplifier Factor(dB)

3. Margin value = Emission Level – Limit value

4.The emission levels of other frequencies are very lower than the limit and not show in test report.

GFSK_2480MHz									
Frequency (MHz)	Emssion Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Correction Factor (dB/m)	Polarity	Detector
2483.50	45.38	74.00	-28.62	1.70	180	42.78	2.60	Horizontal	Peak
2483.50	36.55	54.00	-17.45	1.70	180	33.95	2.60	Horizontal	Average
4960.00	45.18	74.00	-28.82	1.70	180	38.48	6.70	Horizontal	Peak
4960.00	36.30	54.00	-17.70	1.70	180	29.60	6.70	Horizontal	Average
7440.00	50.42	74.00	-23.58	1.70	180	40.92	9.50	Horizontal	Peak
7440.00	40.52	54.00	-13.48	1.70	180	31.02	9.50	Horizontal	Average
2483.50	45.39	74.00	-28.61	1.80	210	42.79	2.60	Vertical	Peak
2483.50	37.82	54.00	-16.18	1.80	210	35.22	2.60	Vertical	Average
4960.00	48.70	74.00	-25.30	1.80	210	42.00	6.70	Vertical	Peak
4960.00	39.90	54.00	-14.10	1.80	210	33.20	6.70	Vertical	Average
7440.00	51.38	74.00	-22.62	1.80	210	41.88	9.50	Vertical	Peak
7440.00	41.20	54.00	-12.80	1.80	210	31.70	9.50	Vertical	Average

Remark:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)

2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) - Pre-Amplifier Factor(dB)

3. Margin value = Emission Level – Limit value

4.The emission levels of other frequencies are very lower than the limit and not show in test report.

π/4-DQPSK _2402MHz									
Frequency (MHz)	Emssion Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Correction Factor (dB/m)	Polarity	Detector
2390.00	46.78	74.00	-27.22	1.70	180	45.48	1.30	Horizontal	Peak
2390.00	40.65	54.00	-13.35	1.70	180	39.35	1.30	Horizontal	Average
4804.00	51.97	74.00	-22.03	1.70	180	45.57	6.40	Horizontal	Peak
4804.00	48.65	54.00	-5.35	1.70	180	42.25	6.40	Horizontal	Average
7206.00	51.15	74.00	-22.85	1.70	180	41.85	9.30	Horizontal	Peak
7206.00	41.80	54.00	-12.20	1.70	180	32.50	9.30	Horizontal	Average
2390.00	44.97	74.00	-29.03	1.80	210	43.67	1.30	Vertical	Peak
2390.00	38.94	54.00	-15.06	1.80	210	37.64	1.30	Vertical	Average
4804.00	52.82	74.00	-21.18	1.80	210	46.42	6.40	Vertical	Peak
4804.00	40.93	54.00	-13.07	1.80	210	34.53	6.40	Vertical	Average
7206.00	51.59	74.00	-22.41	1.80	210	42.29	9.30	Vertical	Peak
7206.00	41.10	54.00	-12.90	1.80	210	31.80	9.30	Vertical	Average
π/4-DQPSK _2441MHz									
Frequency (MHz)	Emssion Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Correction Factor (dB/m)	Polarity	Detector
4882.00	52.06	74.00	-21.94	1.70	180	45.66	6.40	Horizontal	Peak
4882.00	48.47	54.00	-5.53	1.70	180	42.07	6.40	Horizontal	Average
7323.00	50.35	74.00	-23.65	1.70	180	40.95	9.40	Horizontal	Peak
7323.00	41.88	54.00	-12.12	1.70	180	32.48	9.40	Horizontal	Average
4882.00	53.28	74.00	-20.72	1.80	210	46.88	6.40	Vertical	Peak
4882.00	41.62	54.00	-12.38	1.80	210	35.22	6.40	Vertical	Average
7323.00	51.91	74.00	-22.09	1.80	210	42.51	9.40	Vertical	Peak
7323.00	41.34	54.00	-12.66	1.80	210	31.94	9.40	Vertical	Average

Remark:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)

2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) - Pre-Amplifier Factor(dB)

3. Margin value = Emission Level – Limit value

4.The emission levels of other frequencies are very lower than the limit and not show in test report.

π/4-DQPSK _2480MHz									
Frequency (MHz)	Emssion Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Correction Factor (dB/m)	Polarity	Detector
2483.50	45.67	74.00	-28.33	1.70	180	43.07	2.60	Horizontal	Peak
2483.50	36.58	54.00	-17.42	1.70	180	33.98	2.60	Horizontal	Average
4960.00	44.76	74.00	-29.24	1.70	180	38.06	6.70	Horizontal	Peak
4960.00	36.31	54.00	-17.69	1.70	180	29.61	6.70	Horizontal	Average
7440.00	50.41	74.00	-23.59	1.70	180	40.91	9.50	Horizontal	Peak
7440.00	40.04	54.00	-13.96	1.70	180	30.54	9.50	Horizontal	Average
2483.50	45.77	74.00	-28.23	1.80	210	43.17	2.60	Vertical	Peak
2483.50	37.81	54.00	-16.19	1.80	210	35.21	2.60	Vertical	Average
4960.00	49.17	74.00	-24.83	1.80	210	42.47	6.70	Vertical	Peak
4960.00	39.44	54.00	-14.56	1.80	210	32.74	6.70	Vertical	Average
7440.00	51.17	74.00	-22.83	1.80	210	41.67	9.50	Vertical	Peak
7440.00	41.49	54.00	-12.51	1.80	210	31.99	9.50	Vertical	Average

Remark:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)

2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) - Pre-Amplifier Factor(dB)

3. Margin value = Emission Level – Limit value

4.The emission levels of other frequencies are very lower than the limit and not show in test report.

8DPSK _2402MHz									
Frequency (MHz)	Emssion Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Correction Factor (dB/m)	Polarity	Detector
2390.00	46.35	74.00	-27.65	1.70	180	45.05	1.30	Horizontal	Peak
2390.00	40.95	54.00	-13.05	1.70	180	39.65	1.30	Horizontal	Average
4804.00	51.58	74.00	-22.42	1.70	180	45.18	6.40	Horizontal	Peak
4804.00	48.67	54.00	-5.33	1.70	180	42.27	6.40	Horizontal	Average
7206.00	51.15	74.00	-22.85	1.70	180	41.85	9.30	Horizontal	Peak
7206.00	41.44	54.00	-12.56	1.70	180	32.14	9.30	Horizontal	Average
2390.00	44.66	74.00	-29.34	1.80	210	43.36	1.30	Vertical	Peak
2390.00	38.76	54.00	-15.24	1.80	210	37.46	1.30	Vertical	Average
4804.00	53.22	74.00	-20.78	1.80	210	46.82	6.40	Vertical	Peak
4804.00	41.41	54.00	-12.59	1.80	210	35.01	6.40	Vertical	Average
7206.00	51.09	74.00	-22.91	1.80	210	41.79	9.30	Vertical	Peak
7206.00	40.80	54.00	-13.20	1.80	210	31.50	9.30	Vertical	Average
8DPSK _2441MHz									
Frequency (MHz)	Emssion Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Correction Factor (dB/m)	Polarity	Detector
4882.00	51.82	74.00	-22.18	1.70	180	45.42	6.40	Horizontal	Peak
4882.00	48.49	54.00	-5.51	1.70	180	42.09	6.40	Horizontal	Average
7323.00	50.43	74.00	-23.57	1.70	180	41.03	9.40	Horizontal	Peak
7323.00	41.76	54.00	-12.24	1.70	180	32.36	9.40	Horizontal	Average
4882.00	52.82	74.00	-21.18	1.80	210	46.42	6.40	Vertical	Peak
4882.00	41.66	54.00	-12.34	1.80	210	35.26	6.40	Vertical	Average
7323.00	51.50	74.00	-22.50	1.80	210	42.10	9.40	Vertical	Peak
7323.00	41.53	54.00	-12.47	1.80	210	32.13	9.40	Vertical	Average

Remark:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)

2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) - Pre-Amplifier Factor(dB)

3. Margin value = Emission Level – Limit value

4.The emission levels of other frequencies are very lower than the limit and not show in test report.

8DPSK _2480MHz									
Frequency (MHz)	Emssion Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Correction Factor (dB/m)	Polarity	Detector
2483.50	45.26	74.00	-28.74	1.70	180	42.66	2.60	Horizontal	Peak
2483.50	36.08	54.00	-17.92	1.70	180	33.48	2.60	Horizontal	Average
4960.00	44.88	74.00	-29.12	1.70	180	38.18	6.70	Horizontal	Peak
4960.00	35.85	54.00	-18.15	1.70	180	29.15	6.70	Horizontal	Average
7440.00	49.91	74.00	-24.09	1.70	180	40.41	9.50	Horizontal	Peak
7440.00	39.97	54.00	-14.03	1.70	180	30.47	9.50	Horizontal	Average
2483.50	45.92	74.00	-28.08	1.80	210	43.32	2.60	Vertical	Peak
2483.50	37.56	54.00	-16.44	1.80	210	34.96	2.60	Vertical	Average
4960.00	48.84	74.00	-25.16	1.80	210	42.14	6.70	Vertical	Peak
4960.00	39.60	54.00	-14.40	1.80	210	32.90	6.70	Vertical	Average
7440.00	51.39	74.00	-22.61	1.80	210	41.89	9.50	Vertical	Peak
7440.00	41.03	54.00	-12.97	1.80	210	31.53	9.50	Vertical	Average

Remark:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)

2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) - Pre-Amplifier Factor(dB)

3. Margin value = Emission Level – Limit value

4.The emission levels of other frequencies are very lower than the limit and not show in test report.

2.10. AC Power Line Conducted Emission

2.10.1. Limit of AC Power Line Conducted Emission

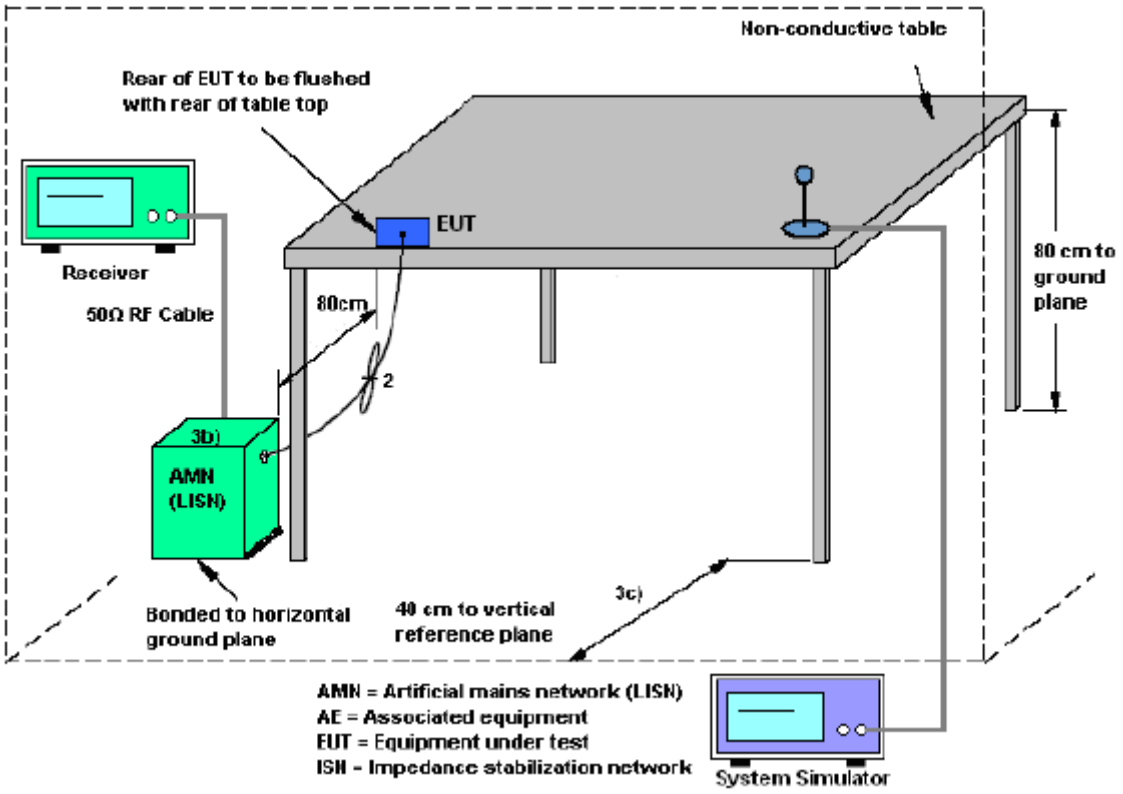
For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

Frequency range (MHz)	Conducted Limit (dBμV)	
	Quai-peak	Average
0.15 - 0.50	66 to 56	56 to 46
0.50 - 5	56	46
5 - 30	60	50

2.10.2. Measuring Instruments

The measuring equipment is listed in the section 3 of this test report.

2.10.3. Test Setup



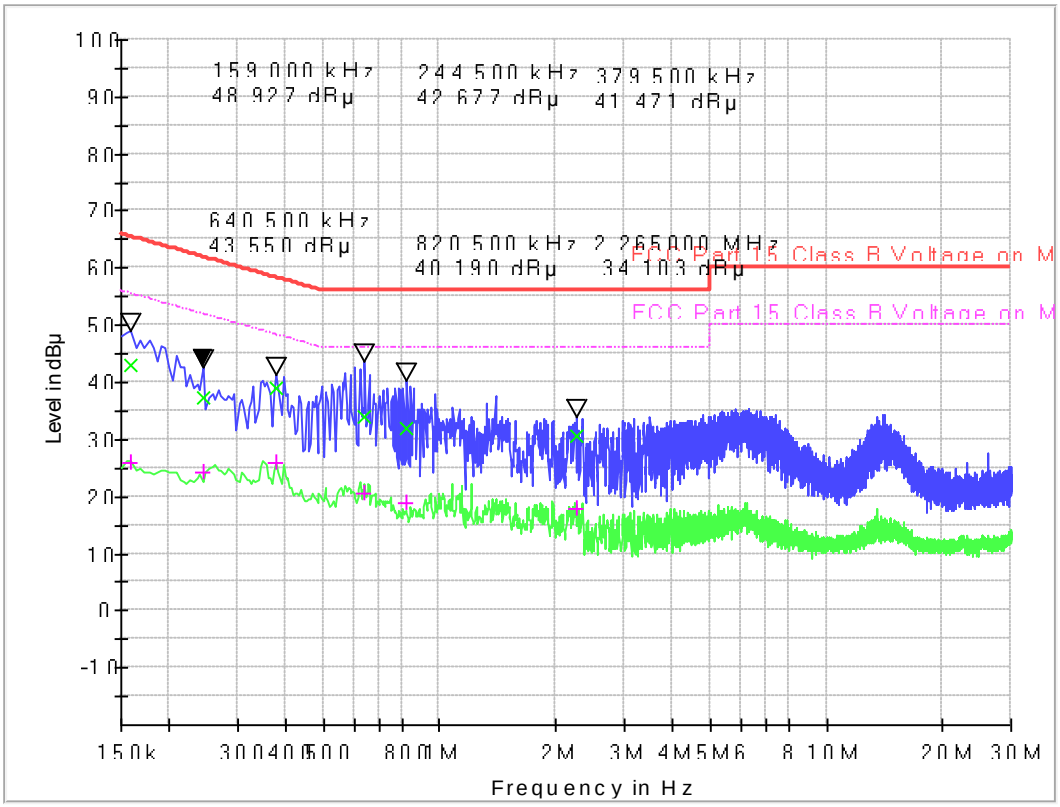
2.10.4. Test Procedures

1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least80 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 micrometry 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.

2.10.5. Test Results of AC Power Line Conducted Emission

The EUT configuration of the emission tests is Bluetooth Link + USB Cable (Charging from Adapter).

Line Phase



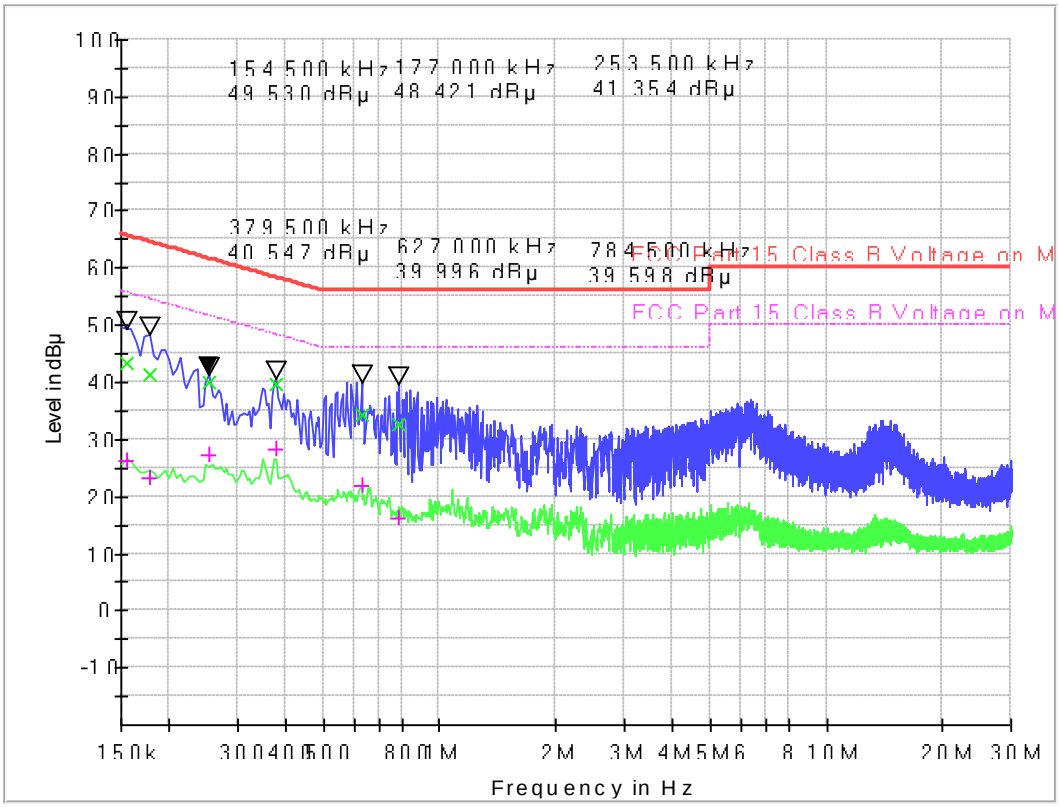
Frequency (MHz)	QuasiPeak (dB µ V)	Average (dB µ V)	Cabel Loss (dB)	Corr.Factor (dB)	Margin - QPK	Limit - QPK (dB µ V)	Margin - AV (dB)	Limit - AV (dB µ V)
0.159000	43.08	26.02	0.2	10.2	22.44	65.5	29.50	55.5
0.244500	37.32	24.18	0.2	10.2	24.62	61.9	27.76	51.9
0.379500	39.08	26.03	0.2	10.2	19.21	58.3	22.26	48.3
0.640500	34.03	20.70	0.2	10.2	1.97	56.0	25.30	46.0
0.820500	32.08	18.98	0.2	10.2	23.92	56.0	27.02	46.0
2.265000	30.51	17.96	0.2	10.2	25.49	56.0	28.04	46.0

Test Result : Pass

Remark:

1. Correction factor = Cabel loss+ attenuation factor.
2. attenuation factor = 10dB.

Neutral Phase



Frequency (MHz)	QuasiPeak (dB µ V)	Average (dB µ V)	Cabel Loss (dB)	Corr.Factor (dB)	Margin - QPK (dB)	Limit - QPK (dB µ V)	Margin - AV (dB)	Limit - AV (dB µ V)
0.154500	43.41	26.25	0.2	10.2	22.34	65.8	29.50	55.8
0.177000	41.33	23.33	0.2	10.2	23.30	64.6	31.30	54.6
0.253500	40.01	27.21	0.2	10.2	21.63	61.6	24.43	51.6
0.379500	39.50	28.26	0.2	10.2	18.79	58.3	20.03	48.3
0.627000	34.38	21.93	0.2	10.2	21.62	56.0	24.07	46.0
0.784500	32.54	16.13	0.2	10.2	23.46	56.0	29.87	46.0

Test Result : Pass

Remark:

1. Correction factor = Cabel loss+ attenuation factor.
2. attenuation factor = 10dB.

3. List of measuring equipment

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal Date	Due Date
1	EMI Test Receiver	ROHDE&SCHWARZ	ESW26	A180502935	2021.08.03	2022.08.02
2	5M Anechoic Chamber	Albatross	SAC-5MAC 12.8x6.8x6.4m	A0304210	2019.03.25	2023.03.24
3	Loop Antenna	Schwarz beck	HFH2-Z2	A0304220	2022.05.02	2025.05.01
4	Broadband antenna (30MHz~1GHz)	R&S	HL562	A0304224	2020.06.19	2023.06.18
5	EMI Horn Ant. (1-18G)	ETC	1209	A150402241	2021.01.02	2024.01.01
6	Horn antenna (18GHz~26.5GHz)	AR	AT4510	A0804450	2020.06.19	2023.06.18
7	Amplifier 30M~1GHz	MILMEGA	80RF1000-10004	A140101634	2020.09.22	2023.09.21
8	Amplifier 1G~18GHz	MILMEGA	AS0104R-800/400	A160302517	2021.12.23	2022.12.22
9	Spectrum Analyzer	KEYSIGHT	N9030A	A160702554	2022.03.25	2023.03.24
10	Test Receiver	R&S	ESIB7	A0501375	2022.04.18	2023.04.17
11	Broadband Ant.	2786	ETC	A150402240	2021.09.16	2024.03.03
12	3M Anechoic Chamber	Albatross	SAC-3MAC 9*6*6m	A0412375	2019.03.26	2023.03.25
13	Temperature chamber	TABAI	PS-232	A8708054	2021.09.24	2022.09.23
14	Wideband Radio Communication tester	R&S	CMW500	A130101034	2021.01.26	2023.01.25
15	Test Receiver	KEYSIGHT	N9038A	A141202036	2021.09.20	2022.08.04
16	LISN	ROHDE&SCHWARZ	ENV216	A140701847	2021.09.21	2022.08.02
17	Cable	MATCHING PAD	W7	/	2021.08.01	2022.08.02

4. Uncertainty of Evaluation

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI C63.10-2013. All the measurement uncertainty value were shown with a coverage K=2 to indicate 95% level of confidence . The measurement data show herein meets or exceeds the CISPR measurement uncertainty values specified in CISPR 16-4-2 and can be compared directly to specified limit to determine compliance.

Uncertainty of AC Power Line Conducted Emission Measurement (150KHz~30MHz)

Measuring Uncertainty for a level of confidence of 95%(U=2Uc(y))	2.8dB

Uncertainty of Radiated Emission Measurement (9KHz~30MHz)

Measuring Uncertainty for a level of confidence of 95%(U=2Uc(y))	3.5dB

Uncertainty of Radiated Emission Measurement (30MHz~1GHz)

Measuring Uncertainty for a level of confidence of 95%(U=2Uc(y))	3.91dB

Uncertainty of Radiated Emission Measurement (1GHz~18GHz)

Measuring Uncertainty for a level of confidence of 95%(U=2Uc(y))	4.5dB

Uncertainty of Radiated Emission Measurement (18GHz~40GHz)

Measuring Uncertainty for a level of confidence of 95%(U=2Uc(y))	4.9dB

Uncertainty of RF Conducted Measurement (9KHz~40GHz)

Measuring Uncertainty for a level of confidence of 95%(U=2Uc(y))	1.3dB

Appendix A

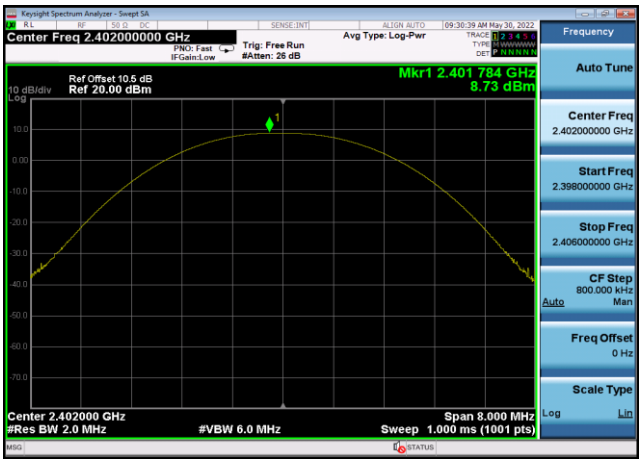
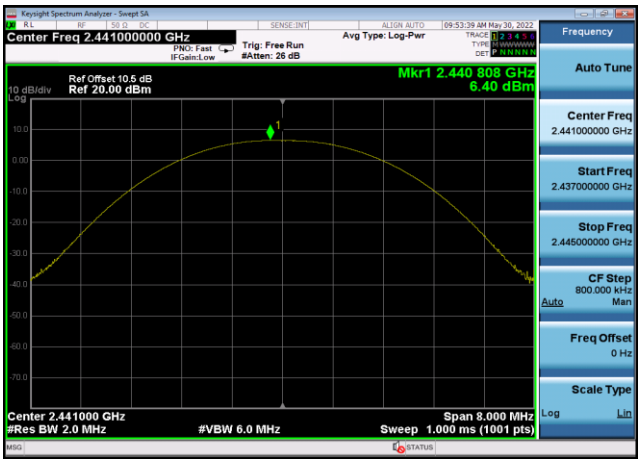
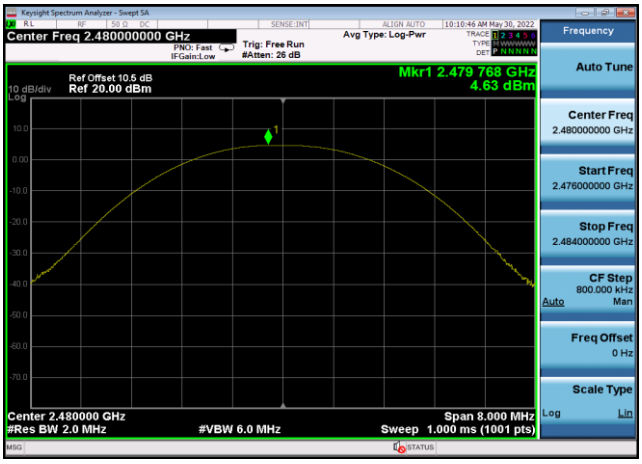
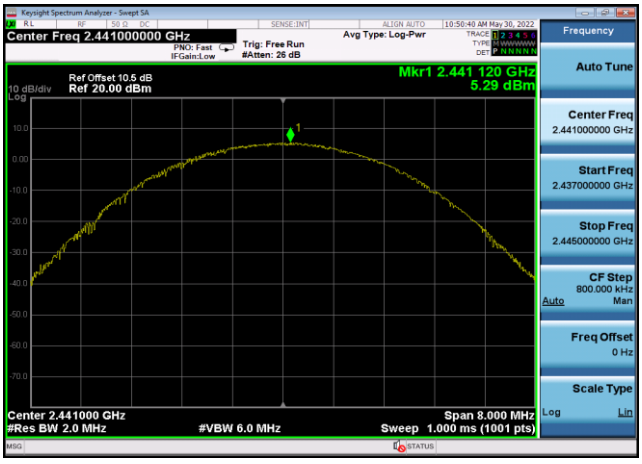
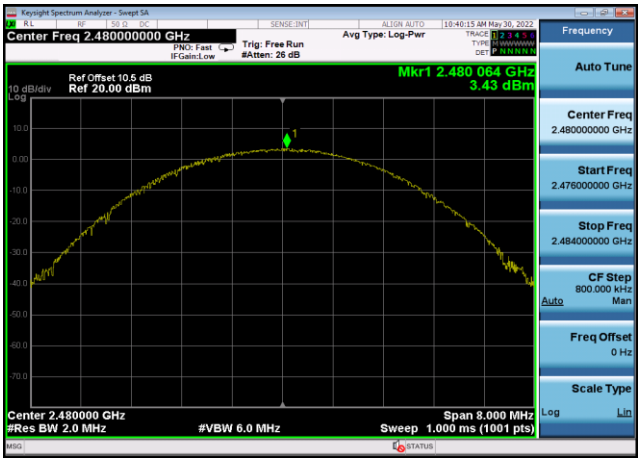
RF Output Power
Test Result and Data

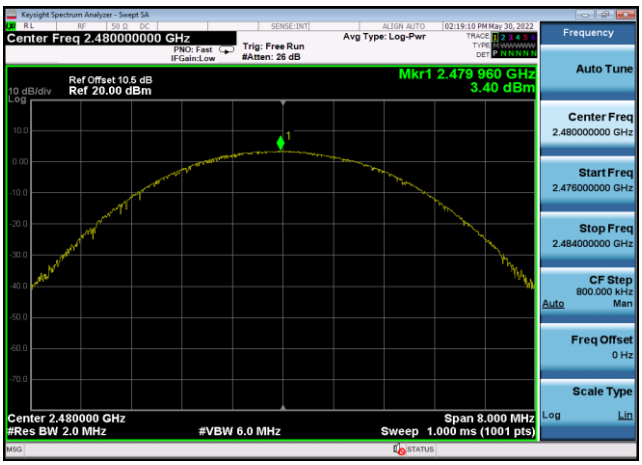
Output Power							
Mode	Test Frequency	Packet Type	Power (dBm)	EIRP (dBm)	Conducted Power Limit (dBm)	EIRP Limit(dBm)	Result
GFSK	2402	DH5	8.73	5.43	30	36.02	Pass
GFSK	2441	DH5	6.40	3.10	30	36.02	Pass
GFSK	2480	DH5	4.63	1.33	30	36.02	Pass
π/4-DQPSK	2402	2DH5	7.66	4.36	21	36.02	Pass
π/4-DQPSK	2441	2DH5	5.29	1.99	21	36.02	Pass
π/4-DQPSK	2480	2DH5	3.43	0.13	21	36.02	Pass
8DPSK	2402	3DH5	7.29	3.99	21	36.02	Pass
8DPSK	2441	3DH5	4.92	1.62	21	36.02	Pass
8DPSK	2480	3DH5	3.40	0.10	21	36.02	Pass

Note:

1) Antenna Gain: -3.3dBi.

2) Total EIRP = Total Power + Antenna Gain.

Output Power：GFSK,2402MHz,DH5	Output Power：GFSK,2441MHz,DH5
	
Output Power：GFSK,2480MHz,DH5	**Output Power：DQPSK,2402MHz,2DH5**
	
Output Power：DQPSK,2441MHz,2DH5	**Output Power：DQPSK,2480MHz,2DH5**
	

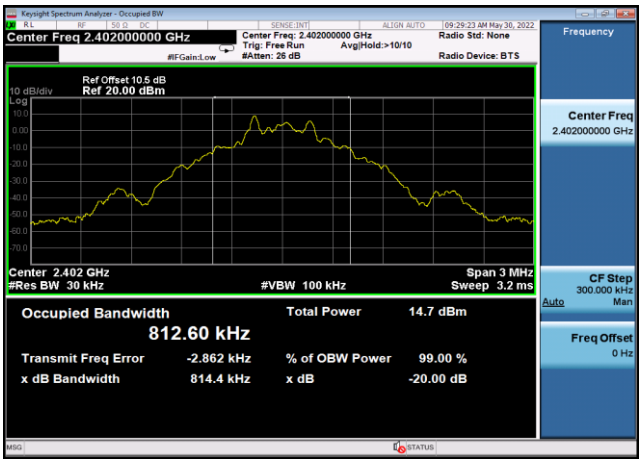
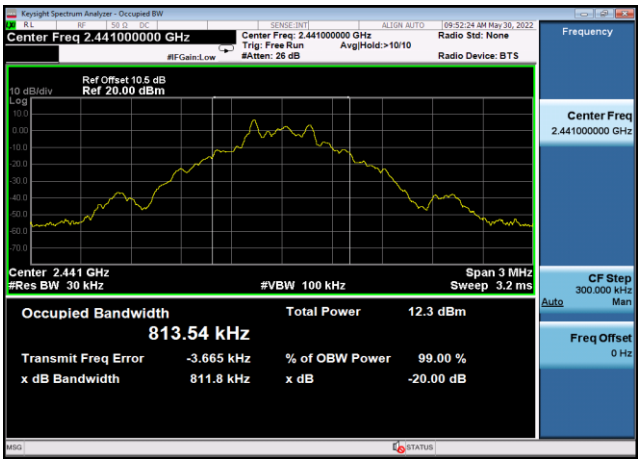
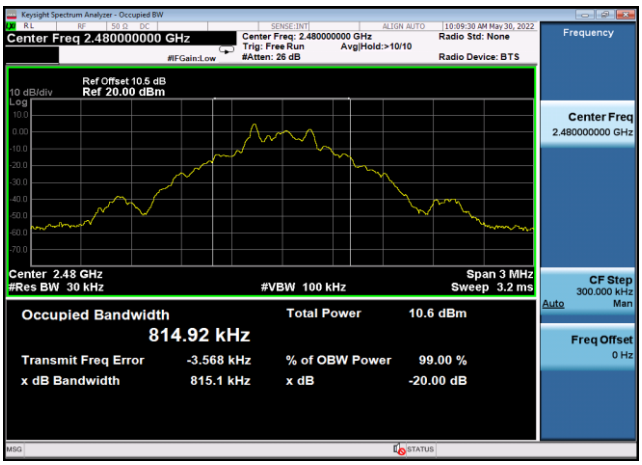
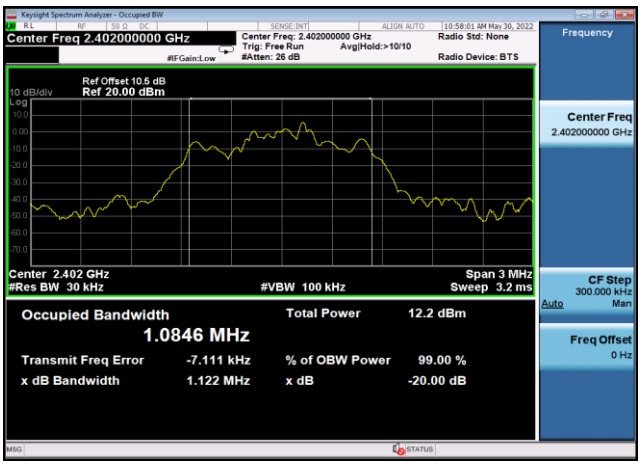
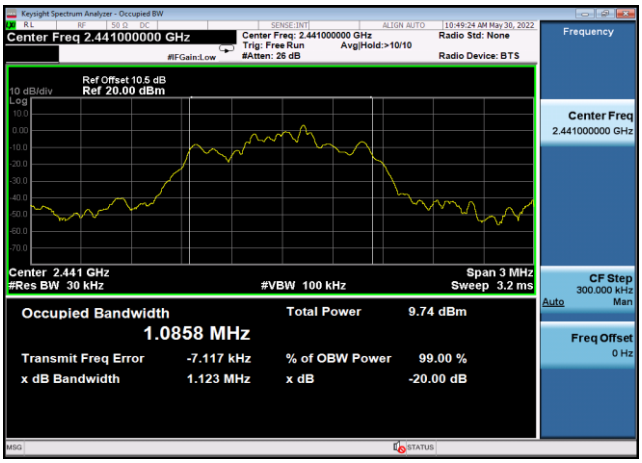
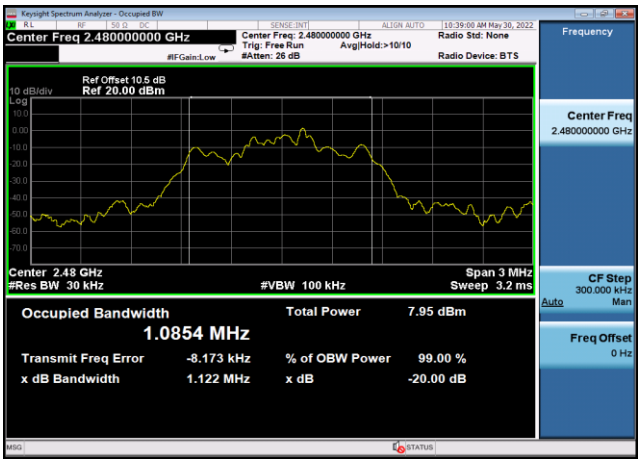
Output Power：8DPSK,2402MHz,3DH5	Output Power：8DPSK,2441MHz,3DH5
	
Output Power：8DPSK,2480MHz,3DH5	
	

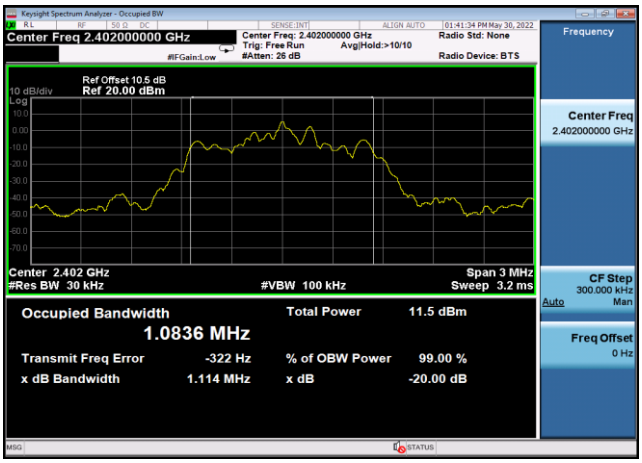
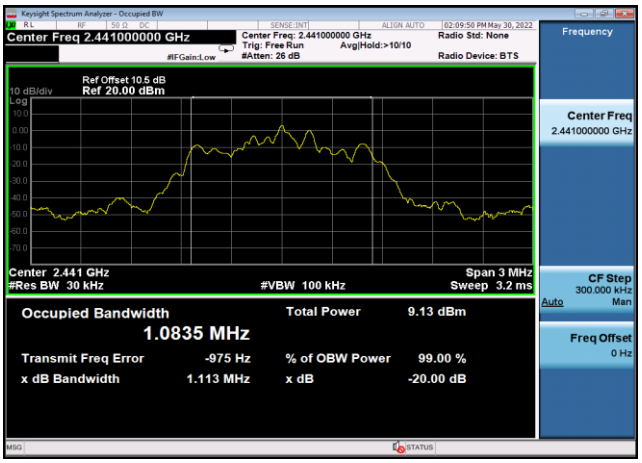
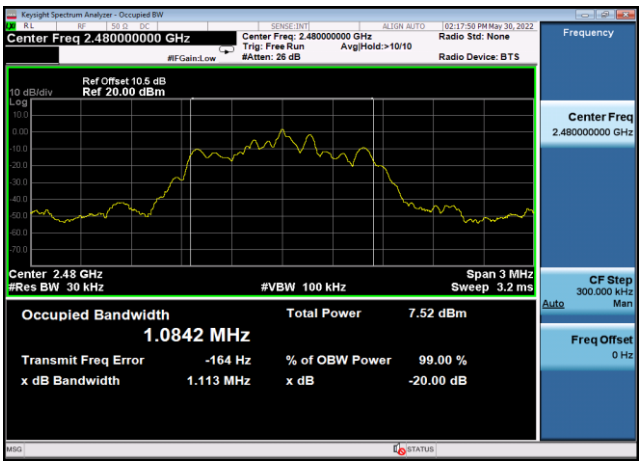
20dB and 99% Bandwidth

Test Result and Data

BT Occupied 20dB Bandwidth				
Mode	Test Frequency	Packet Type	20dB Bandwidth (kHz)	Result
GFSK	2402	DH5	814.387	Pass
GFSK	2441	DH5	811.804	Pass
GFSK	2480	DH5	815.075	Pass
π/4-DQPSK	2402	2DH5	1122.334	Pass
π/4-DQPSK	2441	2DH5	1123.197	Pass
π/4-DQPSK	2480	2DH5	1122.201	Pass
8DPSK	2402	3DH5	1113.580	Pass
8DPSK	2441	3DH5	1112.875	Pass
8DPSK	2480	3DH5	1112.867	Pass

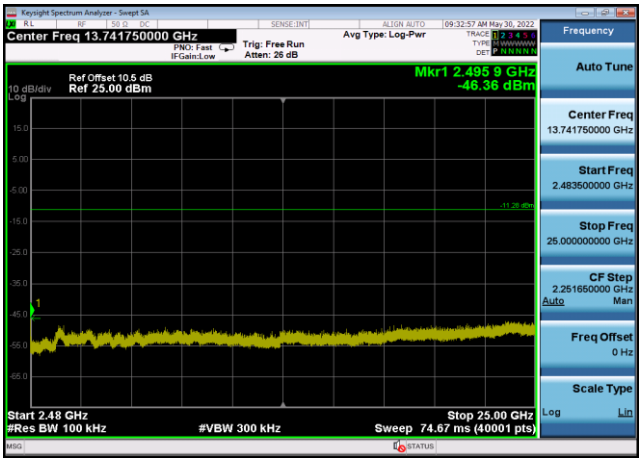
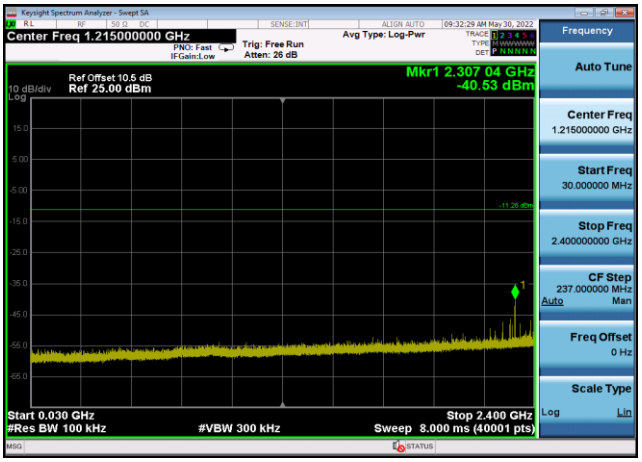
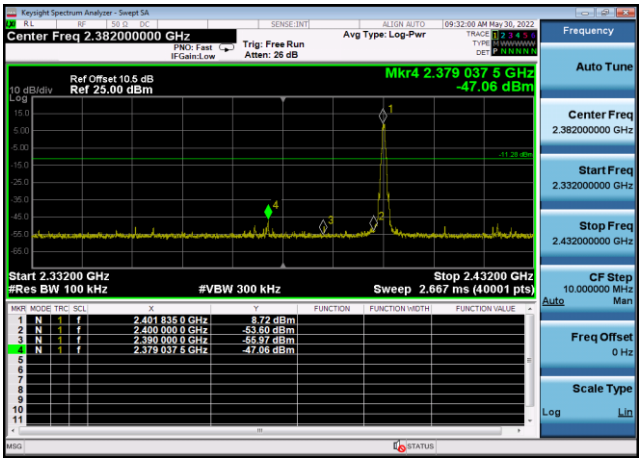
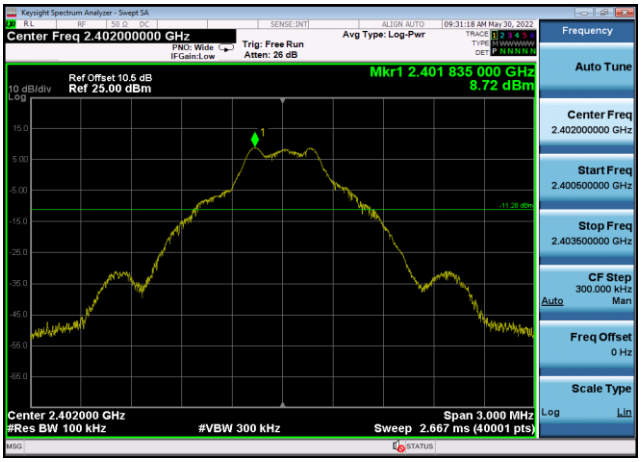
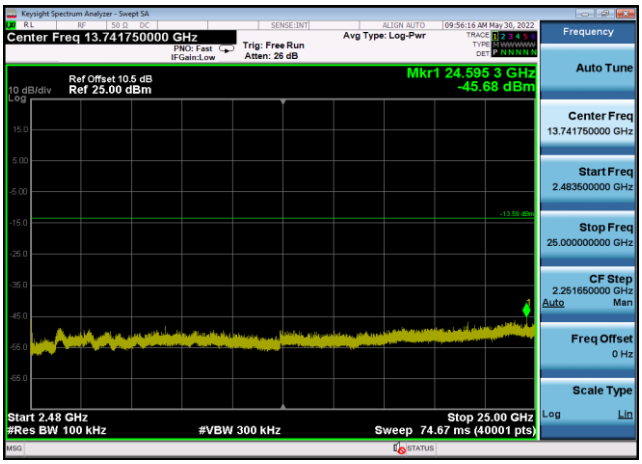
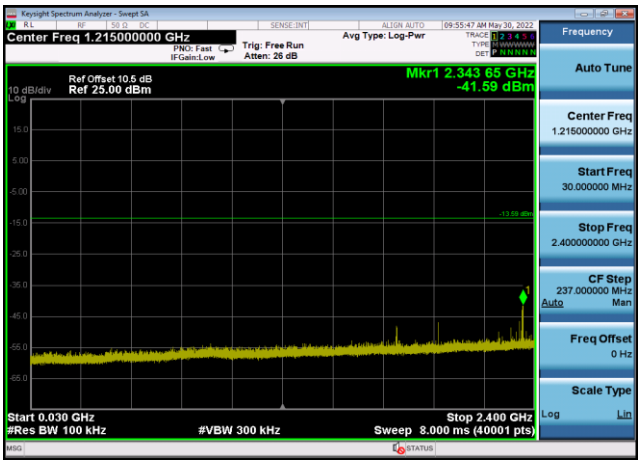
BT 99% Occupied Bandwidth				
Mode	Test Frequency	Packet Type	99% OBW (kHz)	Result
GFSK	2402	DH5	812.60	Pass
GFSK	2441	DH5	813.54	Pass
GFSK	2480	DH5	814.92	Pass
DQPSK	2402	2DH5	1084.6	Pass
DQPSK	2441	2DH5	1085.8	Pass
DQPSK	2480	2DH5	1085.4	Pass
8DPSK	2402	3DH5	1083.6	Pass
8DPSK	2441	3DH5	1083.5	Pass
8DPSK	2480	3DH5	1084.2	Pass

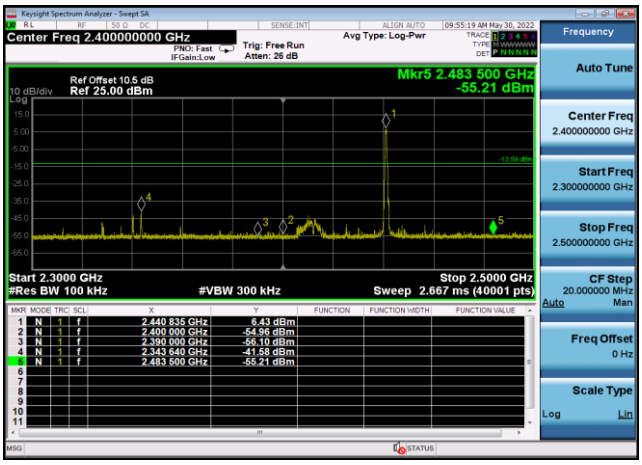
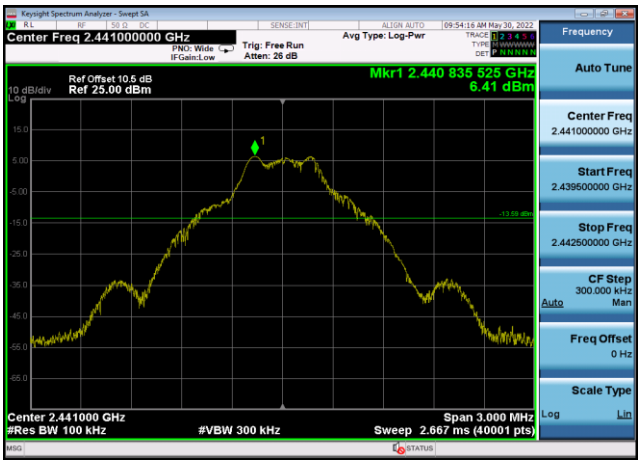
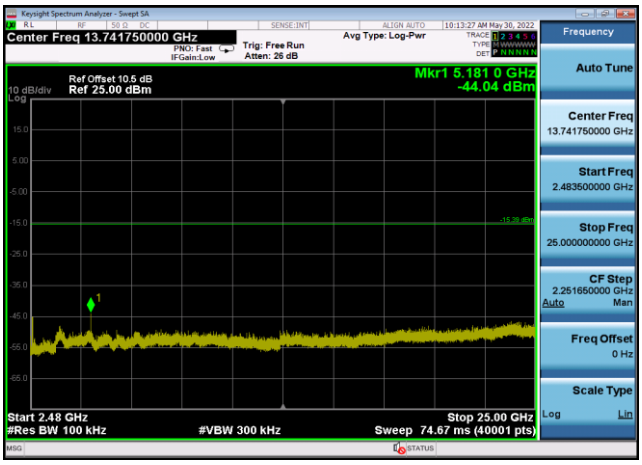
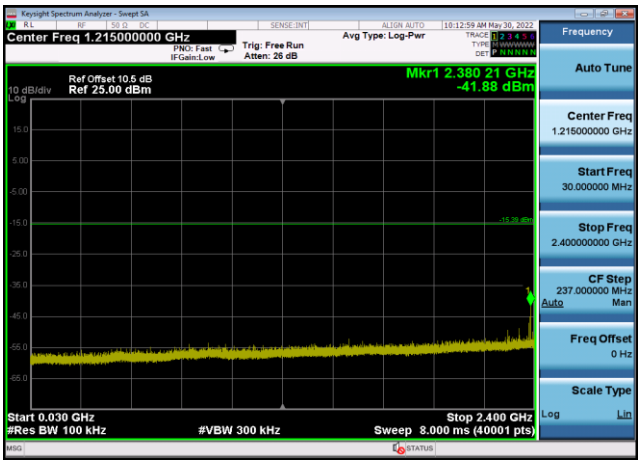
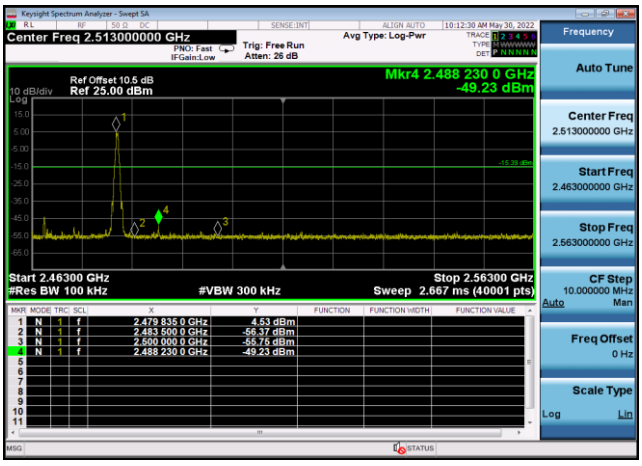
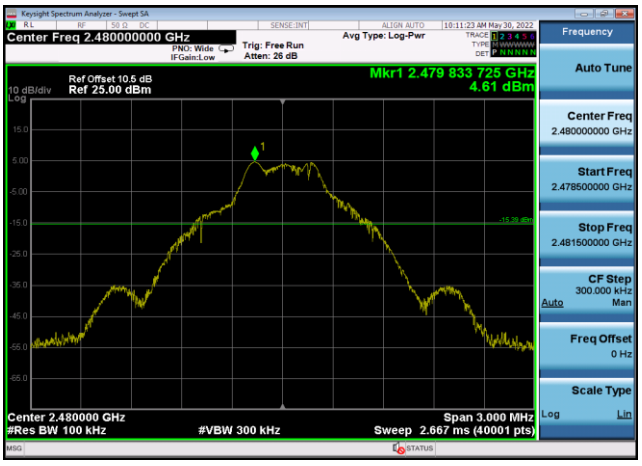
20dB Bandwidth：GFSK,2402MHz,DH5	20dB Bandwidth：GFSK,2441MHz,DH5
	
20dB Bandwidth：GFSK,2480MHz,DH5	20dB Bandwidth：DQPSK,2402MHz,2DH5
	
20dB Bandwidth：DQPSK,2441MHz,2DH5	20dB Bandwidth：DQPSK,2480MHz,2DH5
	

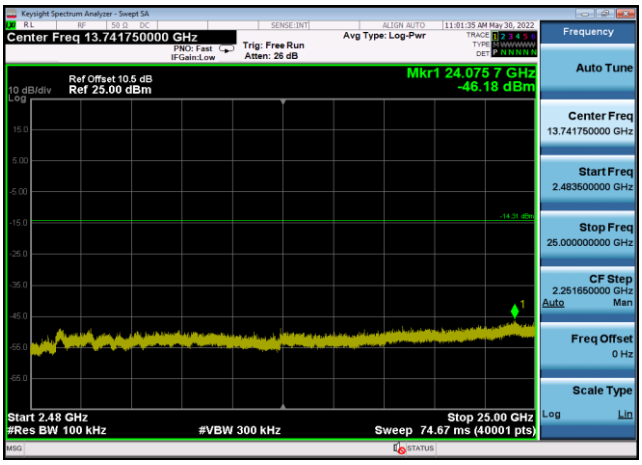
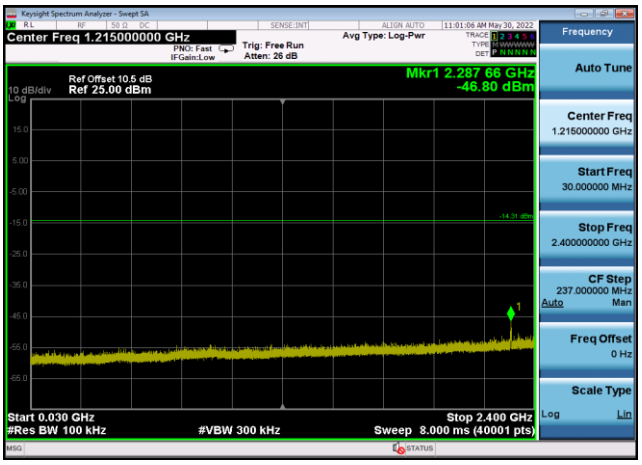
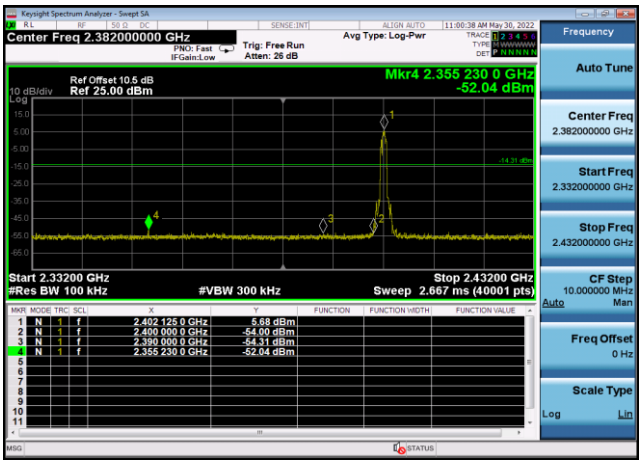
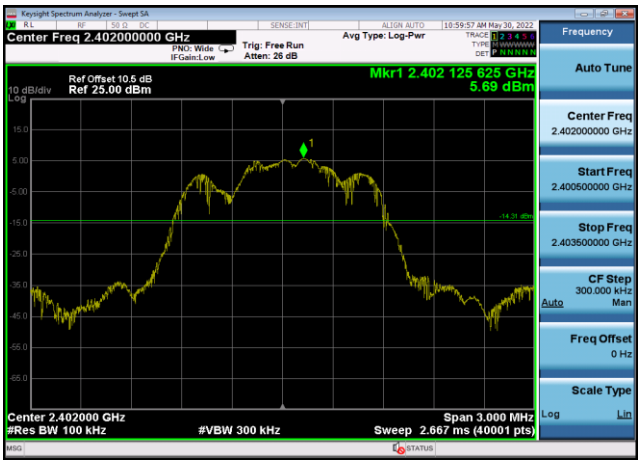
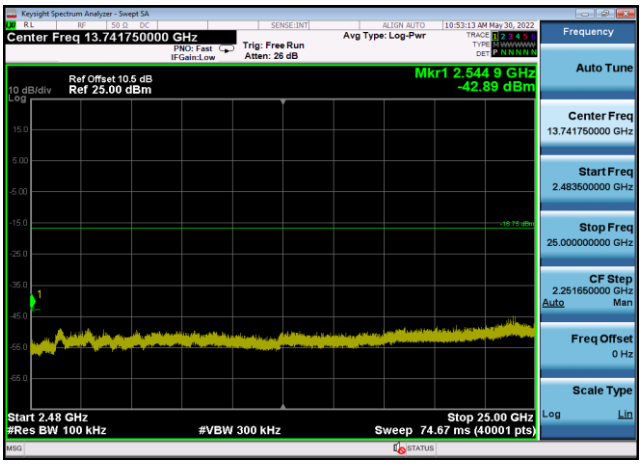
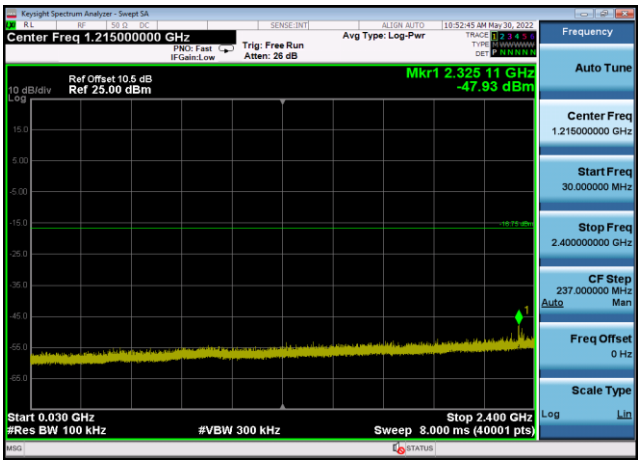
20dB Bandwidth：8DPSK,2402MHz,3DH5	20dB Bandwidth：8DPSK,2441MHz,3DH5
	
20dB Bandwidth：8DPSK,2480MHz,3DH5	
	

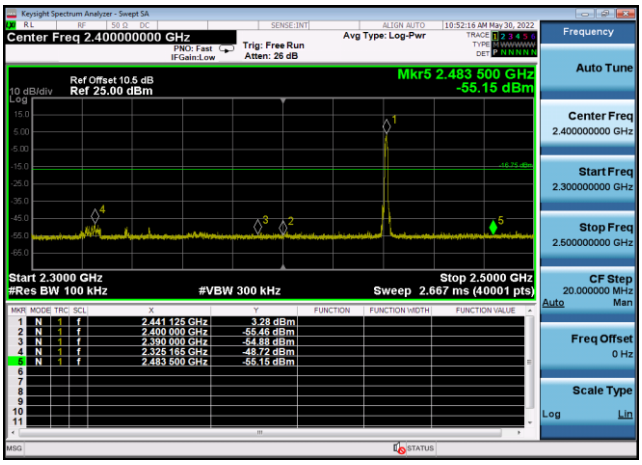
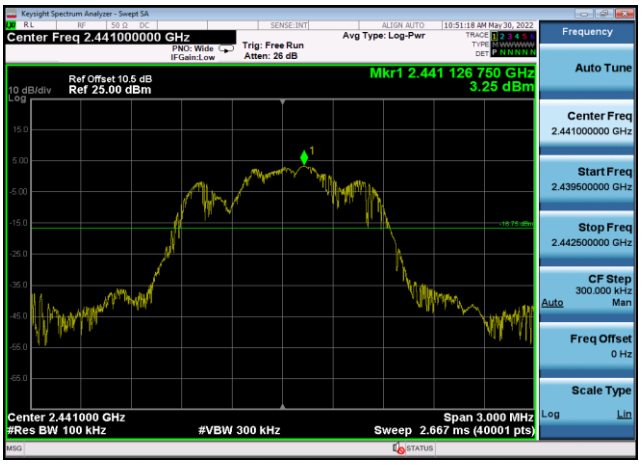
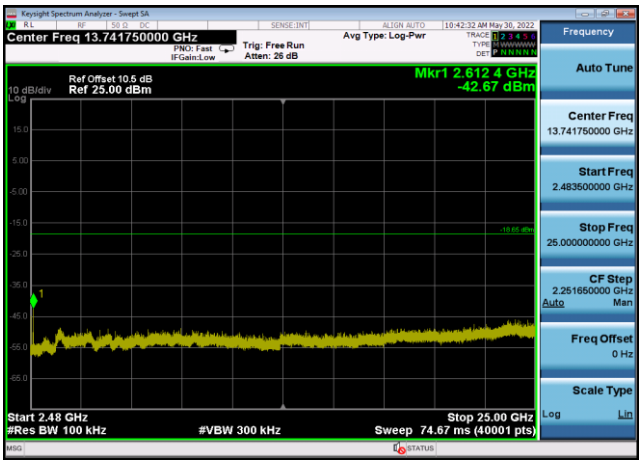
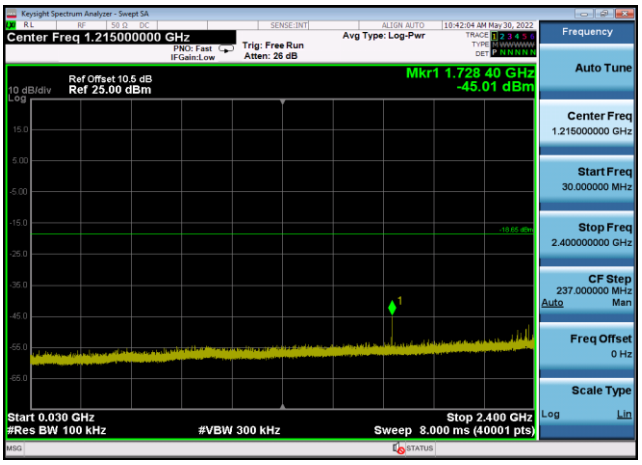
Transmitter Spurious Emission and Bandedge

Test Result and Data

Conducted Emission：GFSK,2402,DH5 ,2483.5MHz~25000MHz	Conducted Emission：GFSK,2402,DH5 ,30MHz~2400MHz
	
Conducted Emission：GFSK,2402,DH5 ,Band Edge HoppingOFF	Conducted Emission：GFSK,2402,DH5 ,Reference Level
	
Conducted Emission：GFSK,2441,DH5 ,2483.5MHz~25000MHz	Conducted Emission：GFSK,2441,DH5 ,30MHz~2400MHz
	

Conducted Emission：GFSK,2441,DH5 ,Band Edge HoppingOFF	Conducted Emission：GFSK,2441,DH5 ,Reference Level
	
Conducted Emission：GFSK,2480,DH5 ,2483.5MHz~25000MHz	Conducted Emission：GFSK,2480,DH5 ,30MHz~2400MHz
	
Conducted Emission：GFSK,2480,DH5 ,Band Edge HoppingOFF	Conducted Emission：GFSK,2480,DH5 ,Reference Level
	

Conducted Emission：DQPSK,2402,2DH5 ,2483.5MHz~25000MHz	Conducted Emission：DQPSK,2402,2DH5 ,30MHz~2400MHz
	
Conducted Emission：DQPSK,2402,2DH5 ,Band Edge HoppingOFF	Conducted Emission：DQPSK,2402,2DH5 ,Reference Level
	
Conducted Emission：DQPSK,2441,2DH5 ,2483.5MHz~25000MHz	Conducted Emission：DQPSK,2441,2DH5 ,30MHz~2400MHz
	

Conducted Emission：DQPSK,2441,2DH5 ,Band Edge HoppingOFF	Conducted Emission：DQPSK,2441,2DH5 ,Reference Level
	
Conducted Emission：DQPSK,2480,2DH5 ,2483.5MHz~25000MHz	Conducted Emission：DQPSK,2480,2DH5 ,30MHz~2400MHz
	
Conducted Emission：DQPSK,2480,2DH5 ,Band Edge HoppingOFF	Conducted Emission：DQPSK,2480,2DH5 ,Reference Level