BLE-2Mbps:

GFSK	
2404MHz	2404MHz (10GHz – 26GHz)
2404MHz (30MHz – 1GHz)	2404MHz(2.3GHz – 2.4GHz)
2404MHz(1GHz – 10GHz)	---
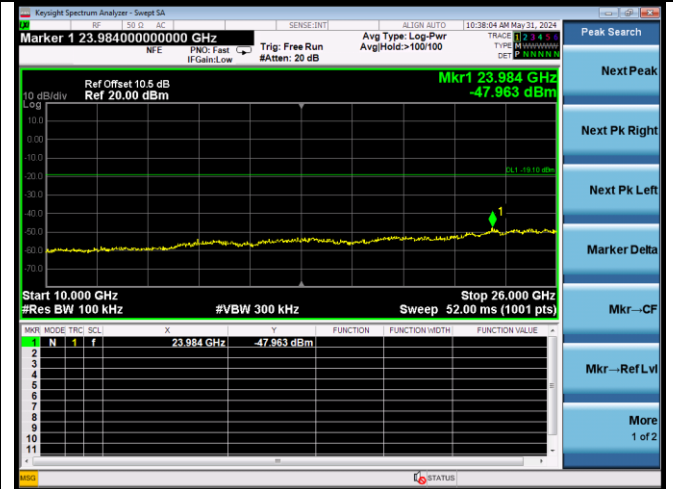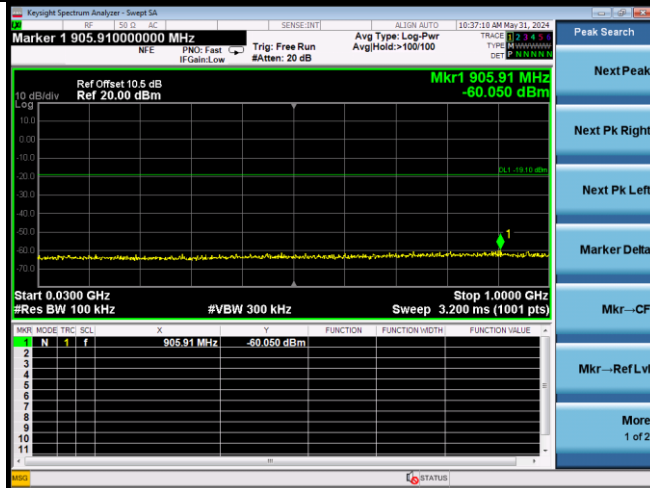
AUDIX Technology (Shenzhen) Co., Ltd.

FCC ID: 2ACCJB225
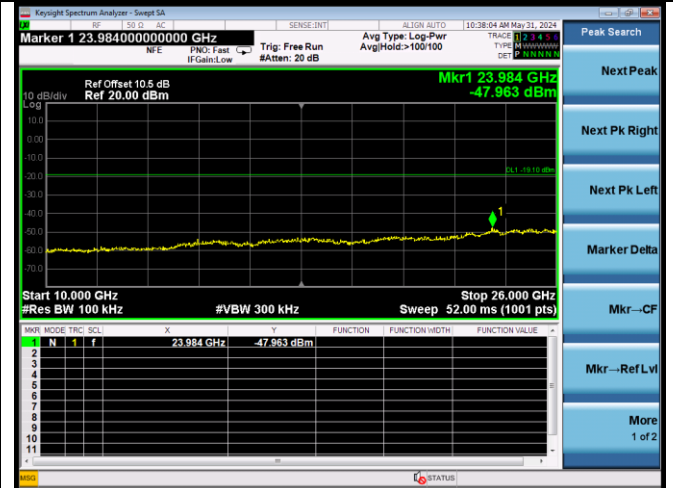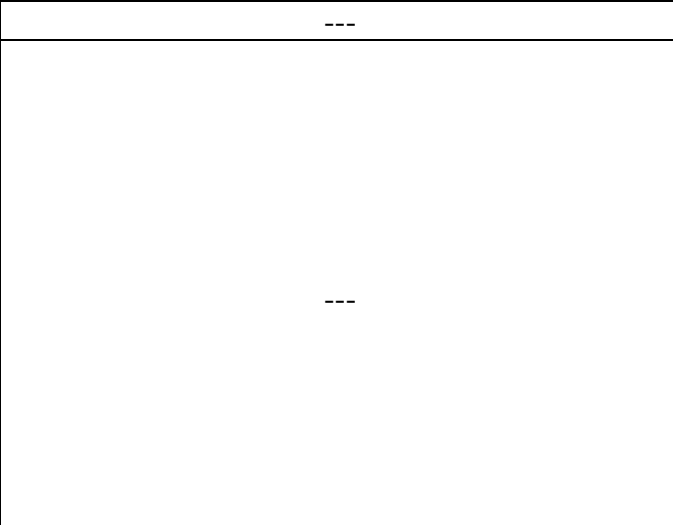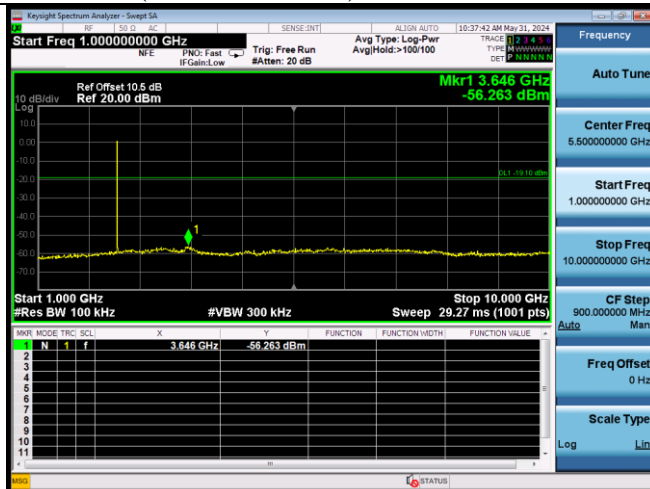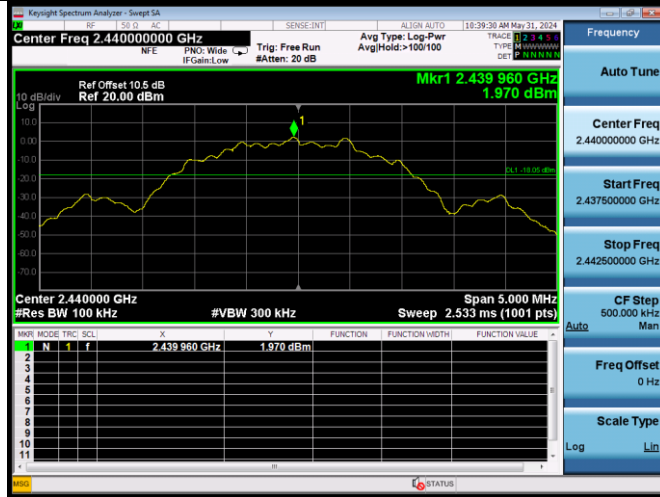
2440MHz	2440MHz(1GHz – 10GHz)
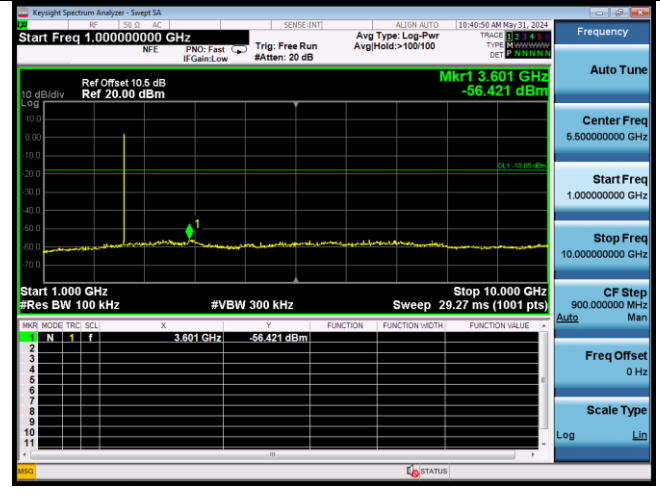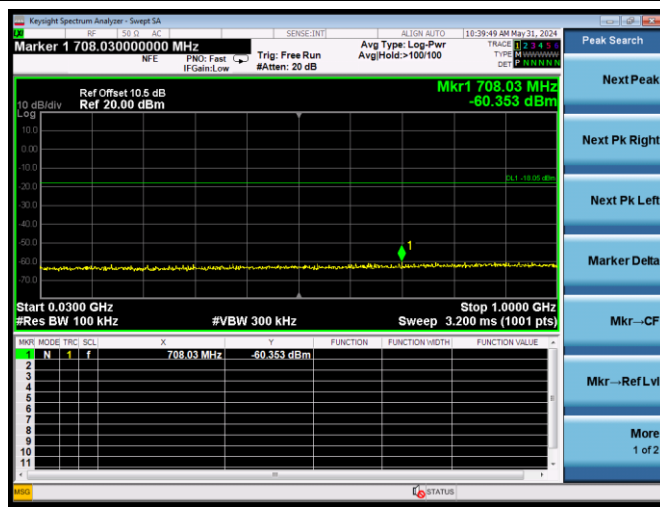
2440MHz(30MHz – 1GHz)	2440MHz(10GHz – 26GHz)
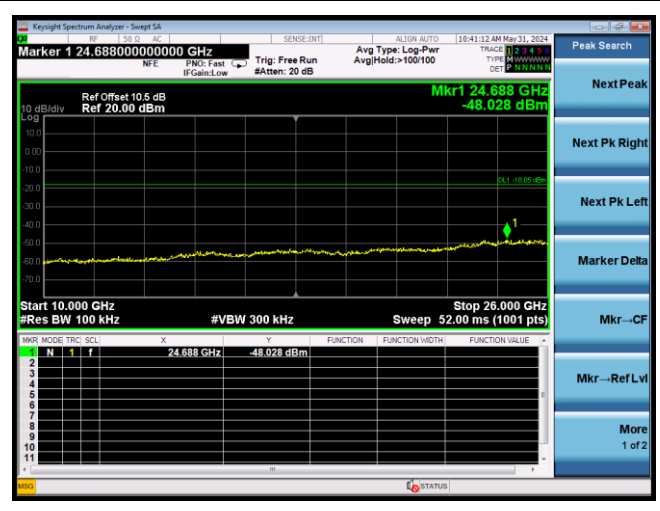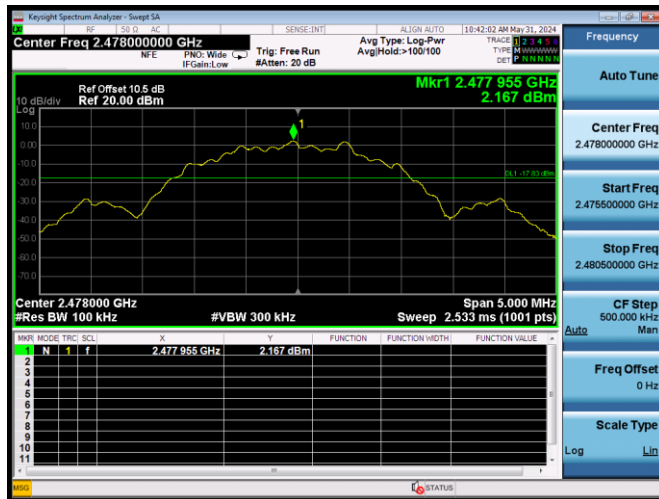
2478MHz	2478MHz(10GHz – 26GHz)
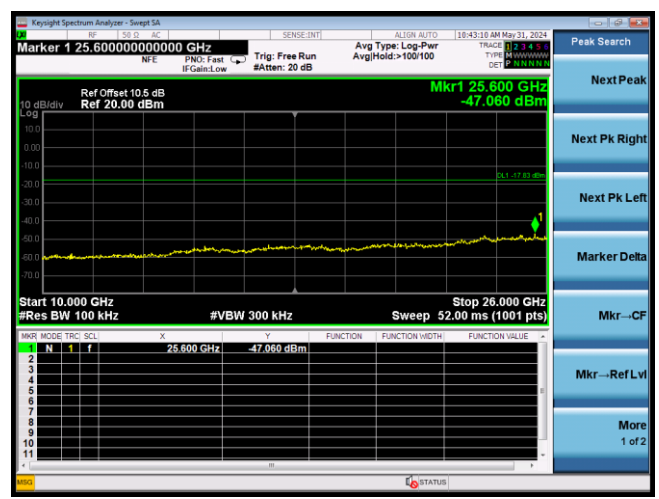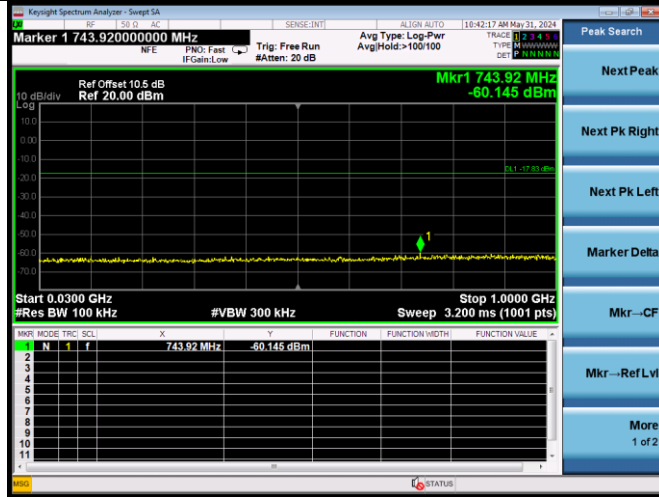
2478MHz(30MHz – 1GHz)	2478MHz(2.4GHz – 2.5GHz)
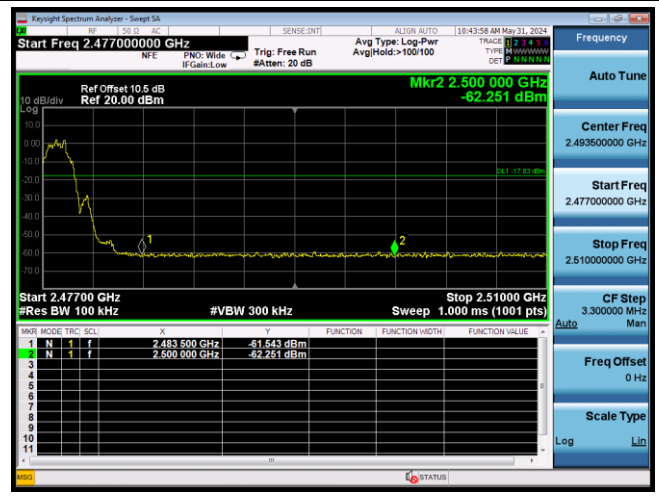
2478MHz(1GHz – 10GHz)	---
	---
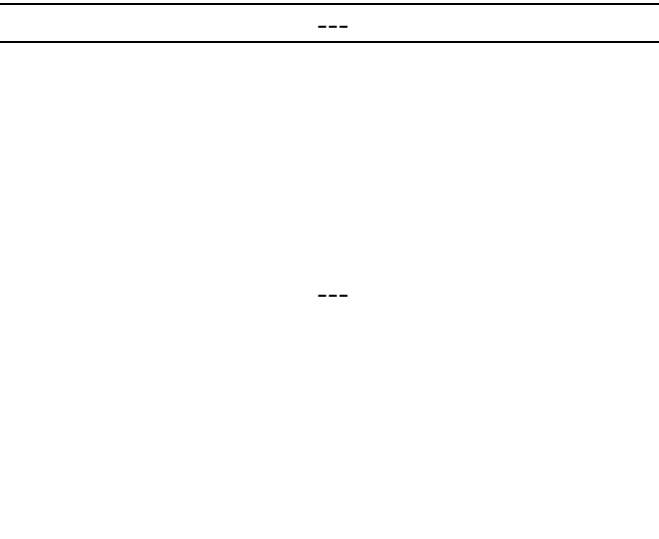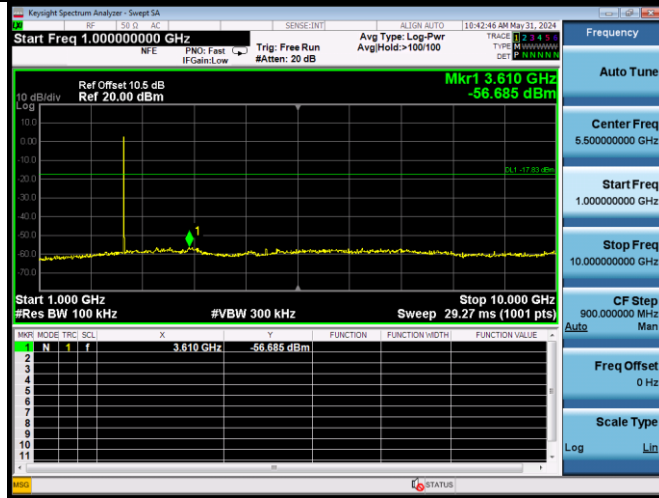
6. 6DB & 99% BANDWIDTH TEST

6.1. Limit

For direct sequence systems, the minimum 6dB bandwidth shall be at least 500kHz.

6.2. Test Procedure

Use the test method descried in ANSI C63.10 clause 11.8.2:
The automatic bandwidth measurement capability of an instrument may be employed using the X dB bandwidth mode with X set to 6 dB, if the functionality described in 11.8.1 (i.e., RBW = 100 kHz, VBW $\geq 3 \times$ RBW, and peak detector with maximum hold) is implemented by the instrumentation function. When using this capability, care shall be taken so that the bandwidth measurement is not influenced by any intermediate power nulls in the fundamental emission that might be ≥ 6 dB.

Use the test method descried in ANSI C63.10 clause 6.9.2:
The occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers are each equal to 0.5% of the total mean power of the given emission. The following procedure shall be used for measuring 99% power bandwidth:
a) The instrument center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be between 1.5 times and 5.0 times the OBW.
b) The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW, and VBW shall be approximately three times the RBW, unless otherwise specified by the applicable requirement.
c) Set the reference level of the instrument as required, keeping the signal from exceeding the maximum input mixer level for linear operation. In general, the peak of the spectral envelope shall be more than [10 log (OBW/RBW)] below the reference level. Specific guidance is given in 4.1.5.2.
d) Step a) through step c) might require iteration to adjust within the specified range.
e) Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.
f) Use the 99% power bandwidth function of the instrument (if available) and report the measured bandwidth.

g) If the instrument does not have a 99% power bandwidth function, then the trace data points are recovered and directly summed in linear power terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5% of the total is reached; that frequency is recorded as the upper frequency. The 99% power bandwidth is the difference between these two frequencies.

h) The occupied bandwidth shall be reported by providing plot(s) of the measuring instrument display; the plot axes and the scale units per division shall be clearly labeled. Tabular data may be reported in addition to the plot(s).

6.3. Test Results

BLE-1Mbps:

EUT: Tablet PC		
M/N: 8188X		
Test date: 2024-05-31	Pressure: 101.3±1.0 kpa	Humidity: 52.4±3.0%
Tested by: Lili	Test site: RF site	Temperature: 23.1±0.6℃

Test Mode	Frequency (MHz)	-6dB Bandwidth (KHz)	Limit (KHz)
GFSK	2402	673.6	≥500
	2440	669.7	≥500
	2480	672.4	≥500
Conclusion：PASS			
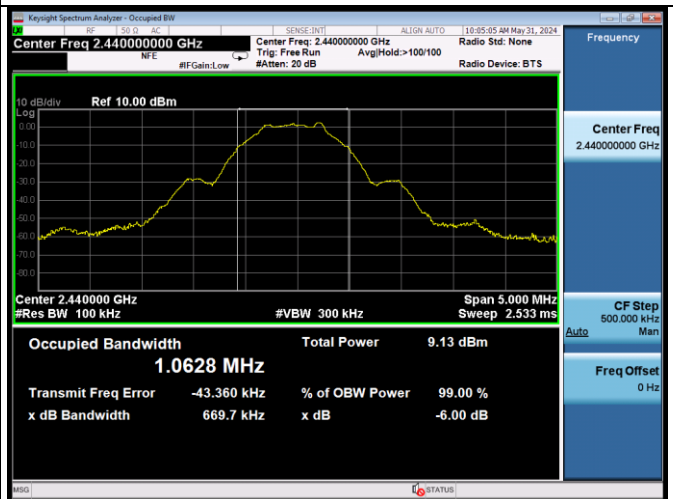
GFSK	
2402MHz	2440MHz

2480MHz	---

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BLE-1Mbps:

EUT: Tablet PC		
M/N: 8188X		
Test date: 2024-05-31	Pressure: 101.3±1.0 kpa	Humidity: 52.4±3.0%
Tested by: Lili	Test site: RF site	Temperature: 23.1±0.6℃

Test Mode	CH	99%Bandwidth (MHz)	Limit (MHz)
GFSK	2402	1044.6	N/A
	2440	1047.4	
	2480	1044.1	
Conclusion: Pass			

GFSK	
2402MHz	2440MHz

2480MHz	---

AUDIX Technology (Shenzhen) Co., Ltd.

BLE-2Mbps:

EUT: Tablet PC		
M/N: 8188X		
Test date: 2024-05-31	Pressure: 101.3±1.0 kpa	Humidity: 52.4±3.0%
Tested by: Lili	Test site: RF site	Temperature: 23.1±0.6℃

Test Mode	Frequency (MHz)	-6dB Bandwidth (KHz)	Limit (KHz)
GFSK	2404	1171	≥500
	2440	1167	≥500
	2478	1171	≥500
Conclusion：PASS			

GFSK

2404MHz	2440MHz

2478MHz	---

BLE-2Mbps:

EUT: Tablet PC		
M/N: 8188X		
Test date: 2024-05-31	Pressure: 101.3±1.0 kpa	Humidity: 52.4±3.0%
Tested by: Lili	Test site: RF site	Temperature: 23.1±0.6℃

Test Mode	CH	99%Bandwidth (MHz)	Limit (MHz)
GFSK	2404	2089.2	N/A
	2440	2090.1	
	2478	2084.4	
Conclusion: Pass			

GFSK	
2402MHz	2440MHz

2480MHz	---

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7. MAXIMUM PEAK OUTPUT POWER TEST

7.1. Limit

For systems using digital modulation in the 2400—2483.5MHz, The Peak out put Power shall not exceed 1W(30dBm).

7.2. Test Procedure

Use the test method descried in ANSI C63.10 clause 11.9.1.3:
For Peak output power: Connected the EUT's Antenna port to PXA signal analyzer;
For Average power: Connected the EUT's Antenna port to Power sensor and power meter;

7.3. Test Results

EUT: Tablet PC		
M/N: 8188X		
Test date: 2024-05-28	Pressure: 102.4±2.0 kpa	Humidity: 54.7±3.0%
Tested by: Lili	Test site: RF site	Temperature: 23.6±0.6℃

BLE-1Mbps:

Test Mode	Frequency (MHz)	Power Setting	Peak output Power（dBm）	Limit (dBm)
GFSK	2402	7	1.271	30
	2440	7	2.434	30
	2480	7	2.695	30
Conclusion: PASS				

BLE-2Mbps:

Test Mode	Frequency (MHz)	Power Setting	Peak output Power（dBm）	Limit (dBm)
GFSK	2404	7	1.577	30
	2440	7	2.505	30
	2478	7	2.770	30
Conclusion: PASS				

BLE-1Mbps:

GFSK	
2402MHz	2440MHz
2480MHz	---
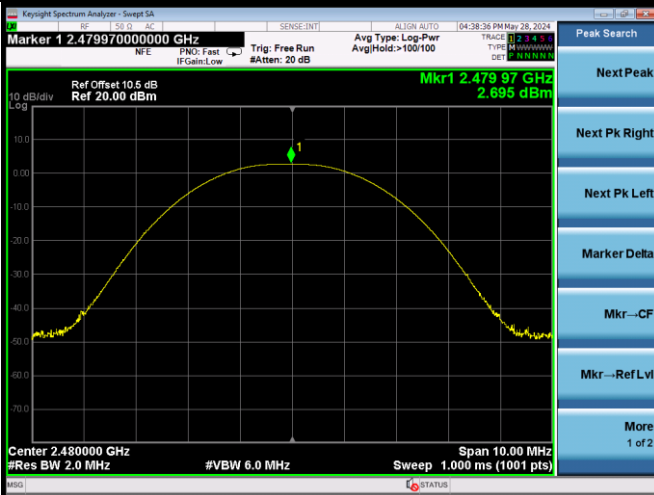
BLE-2Mbps:

GFSK	
2404MHz	2440MHz
2478MHz	---

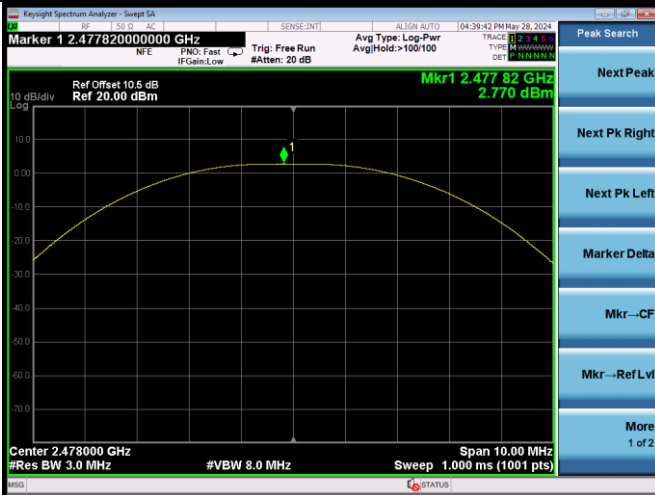## 8. BAND EDGE COMPLIANCE TEST

8.1. Limit

All the lower and upper band-edges emissions appearing within 2310MHz to 2390MHz and 2483.5MHz to 2500MHz restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions outside operation frequency band 2400MHz to 2483.5MHz shall be at least 20dB below the fundamental emissions, or comply with 15.209 limits.

8.2. Test Produce

Use the test method descried in ANSI C63.10 clause 6.10:

For upper band emissions that are up to two bandwidths(2MHz) away (2483.5MHz to 2485.5MHz）from the band-edge use below produce:

1. Choose a spectrum analyzer span that encompasses both the peak of the fundamental emission and the band-edge emission under investigation. Set the analyzer RBW to 100KHz and with a video bandwidth 300KHz. Record the peak levels of the fundamental emission and the relevant band-edge emission, Observe the stored trace and measure the amplitude delta between the peak of the fundamental and the peak of the band-edge emission. This is not a field strength measurement, it is only a relative measurement to determine the amount by which the emission drops at the band edge relative to the highest fundamental emission level.

2. Subtract the delta measured in step (1) from the maximum field strengths measured in clause 4 .The resultant field strengths are then used to determine band-edge compliance as required by Section 15.205

For emissions above two bandwidths away from the band-edge use below produce:

1. The EUT is placed on a turntable, which is 0.8m above the ground plane and worked at highest radiated power.

2. The turntable was rotated for 360 degrees to determine the position of maximum emission level.

3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.

4. Set the spectrum analyzer in the following setting in order to capture the lower and upperband-edges of the emission:
   (a) PEAK: RBW=1MHz ;VBW=3MHz, PK detector, Sweep=AUTO
   (b) This is pulse Modulation device a duty cycle factor was used to calculate average level based measured peak level.

8.3. Test Results

Pass (The testing data was attached in the next pages.)

Note: If the PK measured levels comply with average limit, then the average level were deemed to comply with average limit.

BLE-1Mbps:

Data: **9**   File: F:\2024 Report\J\JIEKAI\A1Z2405015\FCC\8188X\BT.EM6 (88)

Date: 2024-06-28
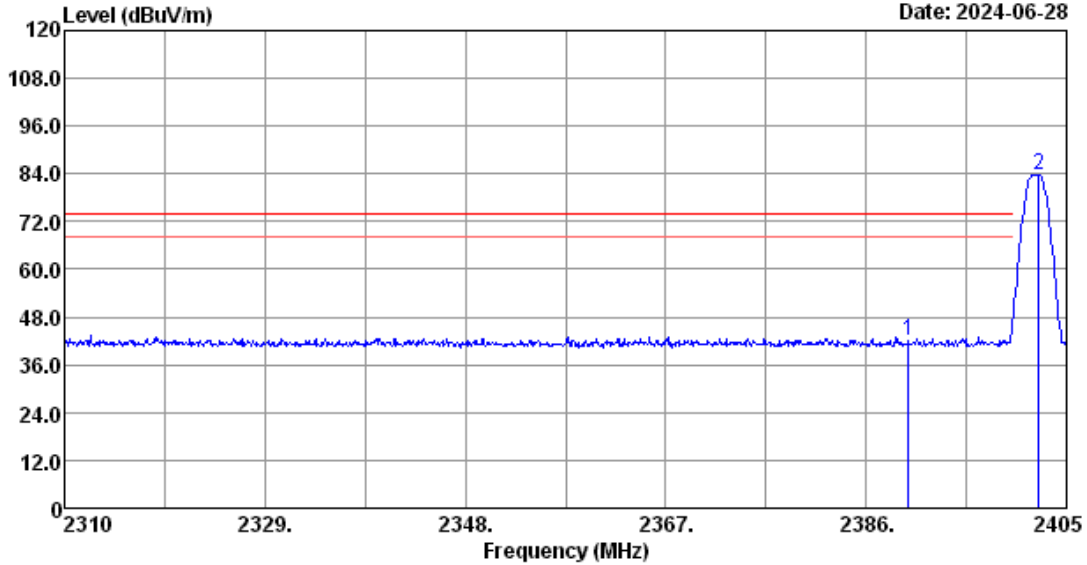
```
Site no.     : 3m Chamber              Data no.  : 9
Dis. / Ant.  : 3m   2023 MCTD1209-3006  Ant. pol. : VERTICAL
Limit        : FCC PART 15C PEAK
Env. / Ins.  : 23.2*C/52.5%             Engineer  : winter
Test Mode    : BLE1M 2402MHz TX Mode
```

		Ant.	Cable		Amp	Emission			
No.	Freq.	Factor	Loss	Reading	factor	Level	Limits	Margin	Remark
	(MHz)	(dB/m)	(dB)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
1	2390.00	27.62	2.83	43.11	31.70	41.86	74.00	32.14	Peak
2	2402.34	27.61	2.84	85.14	31.70	83.89	------	------	Peak

```
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
            -Amp factor.
         2. The emission levels that are 20dB below the official
            limit are not reported.
```

Data: 10   File: F:\2024 Report\J\JIEKAI\A1Z2405015\FCC\8188X\BT.EM6 (88)

Date: 2024-06-28

Site no.	: 3m Chamber
Dis. / Ant.	: 3m 2023 MCTD1209-3006
Limit	: FCC PART 15C PEAK
Env. / Ins.	: 23.2*C/52.5%
Test Mode	: BLE1M 2402MHz TX Mode

Ant. pol.	: HORIZONTAL
Data no.	: 10
Engineer	: winter

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2390.00	27.62	2.83	43.38	31.70	42.13	74.00	31.87	Peak
2	2402.34	27.61	2.84	97.52	31.70	96.27	------	------	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
            -Amp factor.
         2. The emission levels that are 20dB below the official
            limit are not reported.

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Data: 11   File: F:\2024 Report\J\JIEKAI\A1Z2405015\FCC\8188X\BT.EM6 (88)   Date: 2024-06-28

Site no.	: 3m Chamber	Data no.	: 11
Dis. / Ant.	: 3m 2023 MCTD1209-3006	Ant. pol.	: VERTICAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23.2*C/52.5%	Engineer	: winter
Test Mode	: BLE1M 2480MHz TX Mode		

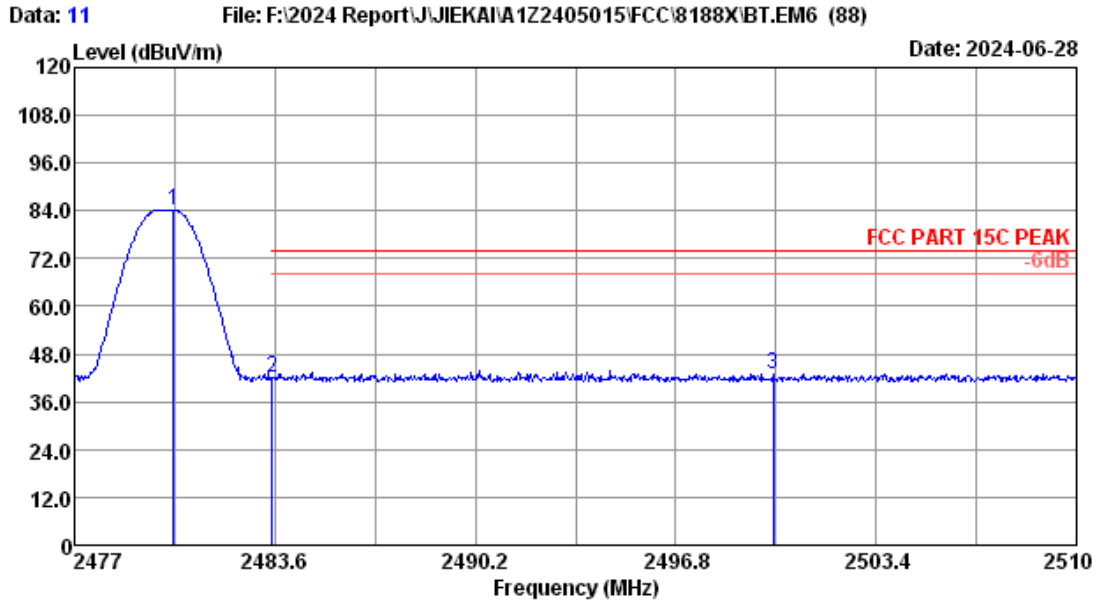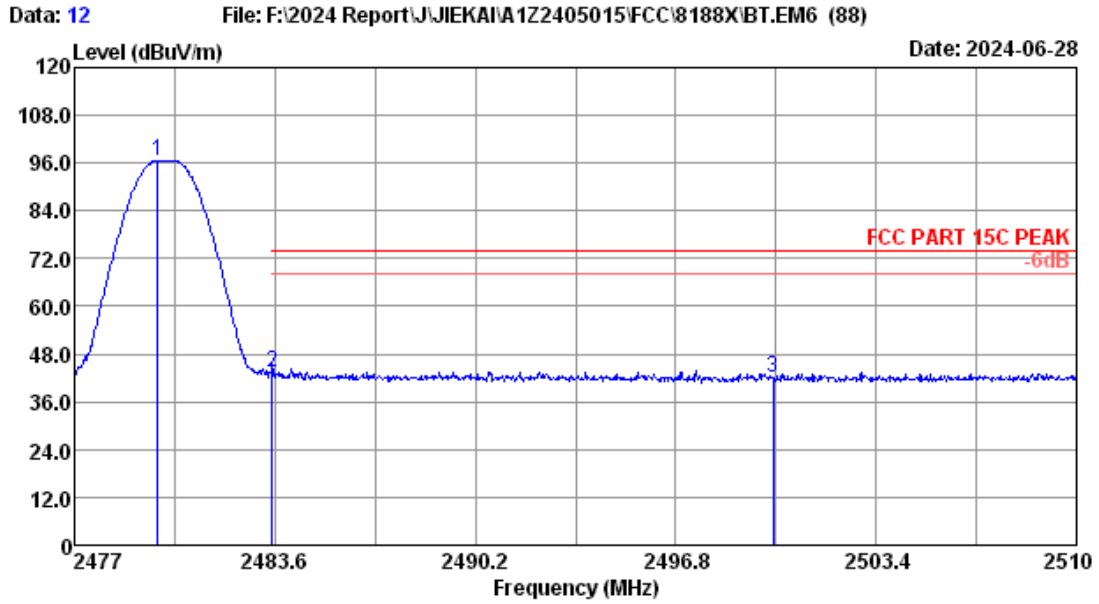| No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2480.27	27.80	2.88	85.16	31.66	84.18	------	------	Peak
2	2483.50	27.80	2.88	42.90	31.66	41.92	74.00	32.08	Peak
3	2500.00	27.80	2.88	44.09	31.65	43.12	74.00	30.88	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
            -Amp factor.
         2. The emission levels that are 20dB below the official
            limit are not reported.

Data: 12   File: F:\2024 Report\J\JIEKAI\A1Z2405015\FCC\8188X\BT.EM6 (88)   Date: 2024-06-28

Site no.   : 3m Chamber   Data no.   : 12
Dis. / Ant.   : 3m   2023 MCTD1209-3006   Ant. pol. : VERTICAL
Limit   : FCC PART 15C PEAK
Env. / Ins.   : 23.2*C/52.5%   Engineer : winter
Test Mode   : BLE1M 2480MHz TX Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2479.74	27.80	2.88	97.62	31.66	96.64	------	------	Peak
2	2483.50	27.80	2.88	44.50	31.66	43.52	74.00	30.48	Peak
3	2500.00	27.80	2.88	42.94	31.65	41.97	74.00	32.03	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading -Amp factor.
2. The emission levels that are 20dB below the official limit are not reported.

BLE-2Mbps:


```
Data: 13              File: F:\2024 Report\J\JIEKAI\A1Z2405015\FCC\8188X\BT.EM6 (88)
```
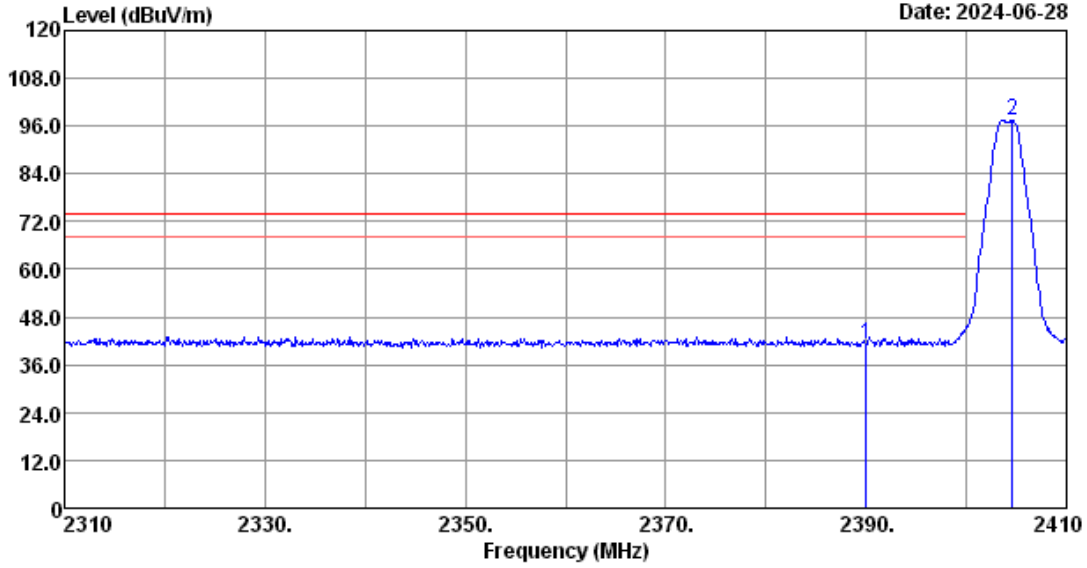
```
Site no.     : 3m Chamber              Data no.   : 13
Dis. / Ant.  : 3m    2023 MCTD1209-3006   Ant. pol. : HORIZONTAL
Limit        : FCC PART 15C PEAK
Env. / Ins.  : 23.2*C/52.5%               Engineer  : winter
Test Mode    : BLE2M 2404MHz TX Mode
```

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2390.00	27.62	2.83	42.48	31.70	41.23	74.00	32.77	Peak
2	2404.60	27.62	2.84	98.70	31.70	97.46	------	------	Peak

```
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
            -Amp factor.
         2. The emission levels that are 20dB below the official
            limit are not reported.
```

Data: 14   File: F:\2024 Report\J\JIEKAI\A1Z2405015\FCC\8188X\BT.EM6 (88)
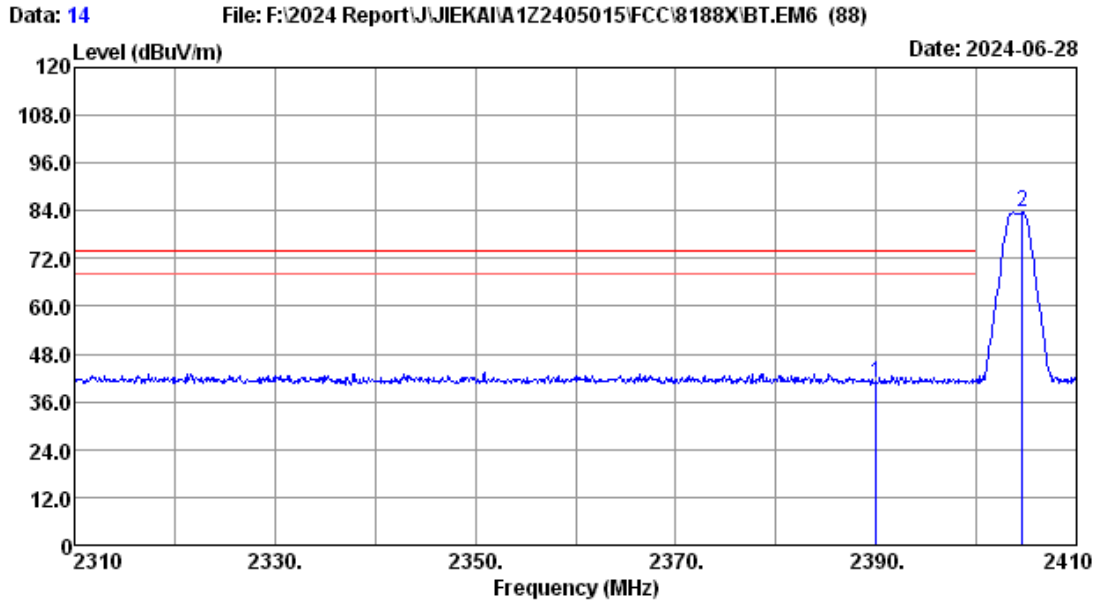
Date: 2024-06-28

Site no.   : 3m Chamber   Data no.   : 14
Dis. / Ant.   : 3m   2023 MCTD1209-3006   Ant. pol. : VERTICAL
Limit   : FCC PART 15C PEAK
Env. / Ins.   : 23.2*C/52.5%   Engineer : winter
Test Mode   : BLE2M 2404MHz TX Mode

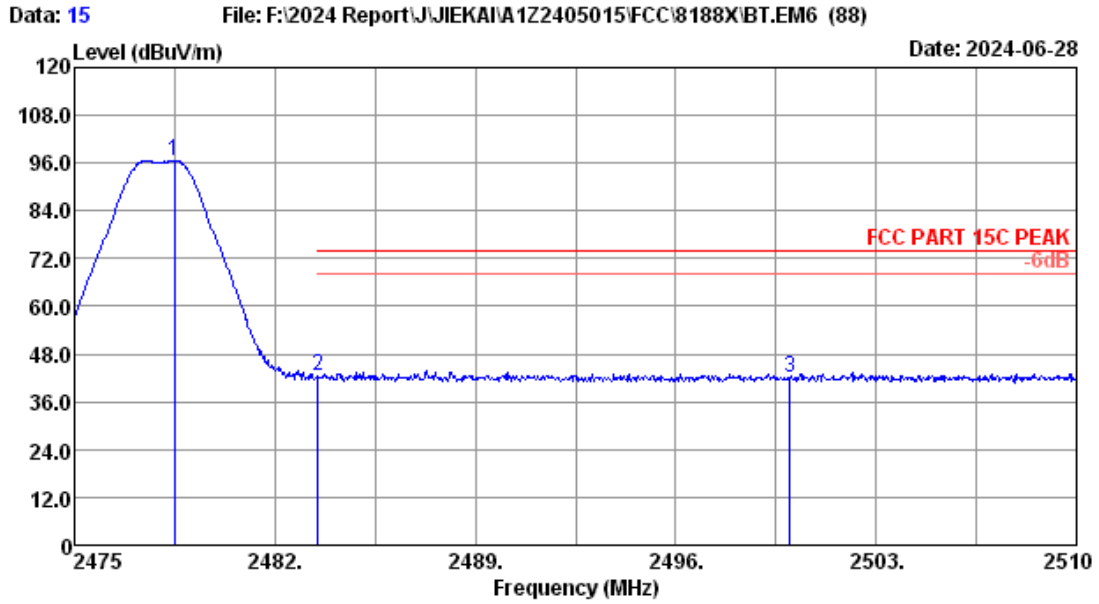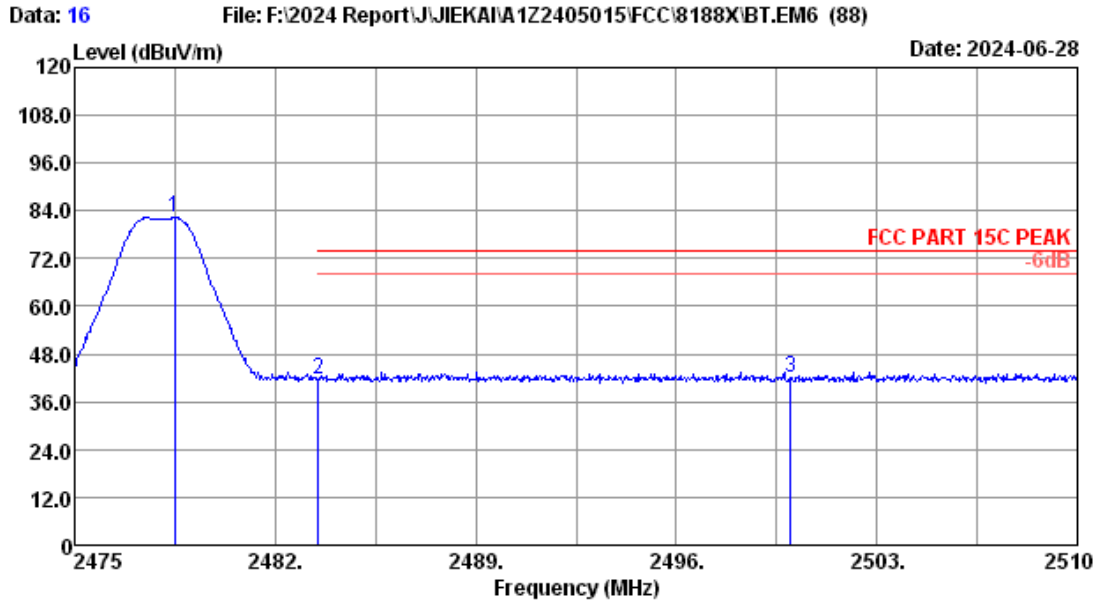| No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2390.00	27.62	2.83	42.10	31.70	40.85	74.00	33.15	Peak
2	2404.60	27.62	2.84	84.80	31.70	83.56	------	------	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
            -Amp factor.
         2. The emission levels that are 20dB below the official
            limit are not reported.

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Data: 15   File: F:\2024 Report\J\JIEKAI\A1Z2405015\FCC\8188X\BT.EM6 (88)

Date: 2024-06-28


```
Site no.      : 3m Chamber               Data no.  : 15
Dis. / Ant.   : 3m   2023 MCTD1209-3006  Ant. pol. : HORIZONTAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : 23.2*C/52.5%             Engineer  : winter
Test Mode     : BLE2M 2478MHz TX Mode
```

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2478.50	27.80	2.87	97.62	31.66	96.63	------	------	Peak
2	2483.50	27.80	2.88	43.36	31.66	42.38	74.00	31.62	Peak
3	2500.00	27.80	2.88	42.85	31.65	41.88	74.00	32.12	Peak

```
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
            -Amp factor.
         2. The emission levels that are 20dB below the official
            limit are not reported.
```

Data: 16   File: F:\2024 Report\J\JIEKAI\A1Z2405015\FCC\8188X\BT.EM6 (88)

Date: 2024-06-28


```
Site no.      : 3m Chamber                Data no.  : 16
Dis. / Ant.   : 3m   2023 MCTD1209-3006   Ant. pol. : VERTICAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : 23.2*C/52.5%              Engineer  : winter
Test Mode     : BLE2M 2478MHz TX Mode
```

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Amp factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2478.50	27.80	2.87	83.32	31.66	82.33	------	------	Peak
2	2483.50	27.80	2.88	42.82	31.66	41.84	74.00	32.16	Peak
3	2500.00	27.80	2.88	43.14	31.65	42.17	74.00	31.83	Peak

```
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading
            -Amp factor.
         2. The emission levels that are 20dB below the official
            limit are not reported.
```

9. POWER SPECTRAL DENSITY TEST

9.1. Block Diagram of Test Setup

Please reference to section 2.4.

9.2. Limit

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

9.3. Test Procedure

Use the test method descried in ANSI C63.10 clause 11.10.2:
a)   Set analyzer center frequency to DTS channel center frequency.
b)   Set the span to 1.5 times the DTS bandwidth.
c)   Set the RBW to 3 kHz ≤ RBW ≤ 100 kHz.
d)   Set the VBW ≥ [3 × RBW].
e)   Detector = peak.
f)   Sweep time = auto couple.
g)   Trace mode = max hold.
h)   Allow trace to fully stabilize.
i)   Use the peak marker function to determine the maximum amplitude level within the RBW.
j)   If measured value exceeds requirement, then reduce RBW (but no less than 3 kHz) and repeat.

9.4. Test Results

EUT: Tablet PC		
M/N: 8188X		
Test date: 2024-05-31	Pressure: 101.3±1.0 kpa	Humidity: 52.4±3.0%
Tested by: Lili	Test site: RF site	Temperature: 23.1±0.6℃

BLE-1Mbps:

Test Mode	Frequency (MHz)	Power density （dBm/3KHz）	Limit (dBm/3KHz)
GFSK	2402	-15.086	8
	2440	-13.812	8
	2480	-13.651	8
Conclusion：PASS			

BLE-2Mbps:

Test Mode	Frequency (MHz)	Power density （dBm/3KHz）	Limit (dBm/3KHz)
GFSK	2404	-17.041	8
	2440	-15.950	8
	2478	-15.767	8
Conclusion：PASS			

AUDIX Technology (Shenzhen) Co., Ltd.

BLE-1Mbps:

GFSK	
2402MHz	2440MHz
2480MHz	---

BLE-2Mbps:

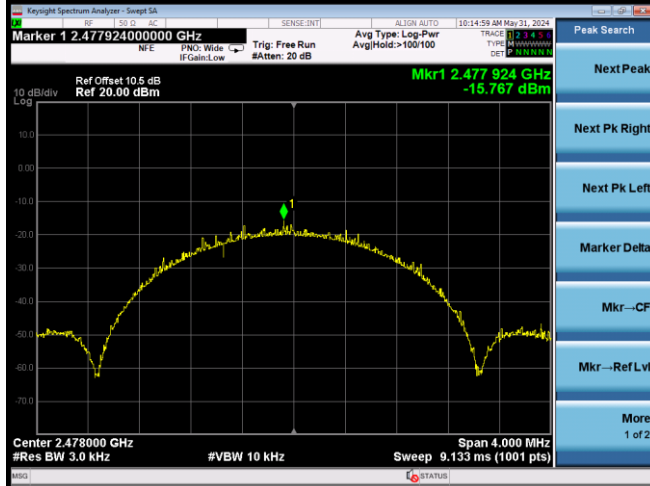| GFSK	
2404MHz	2440MHz
2478MHz	---

AUDIX Technology (Shenzhen) Co., Ltd.
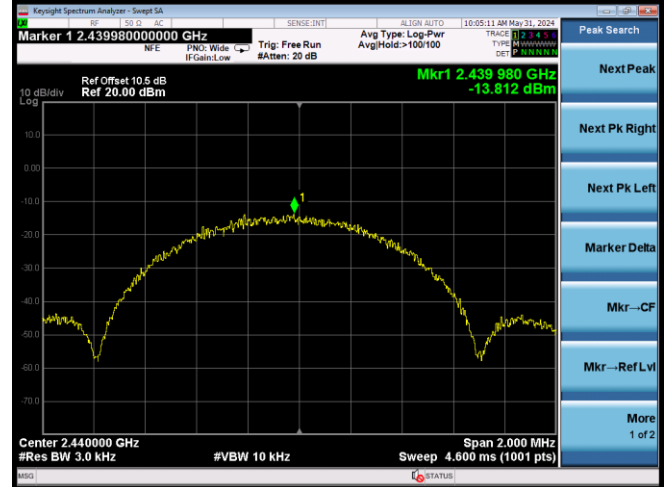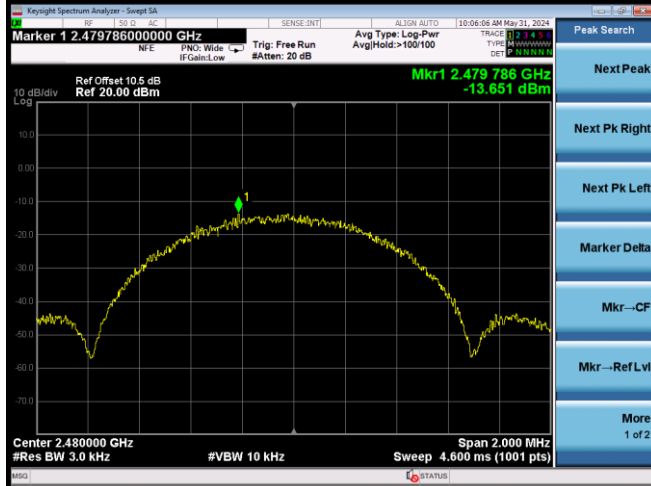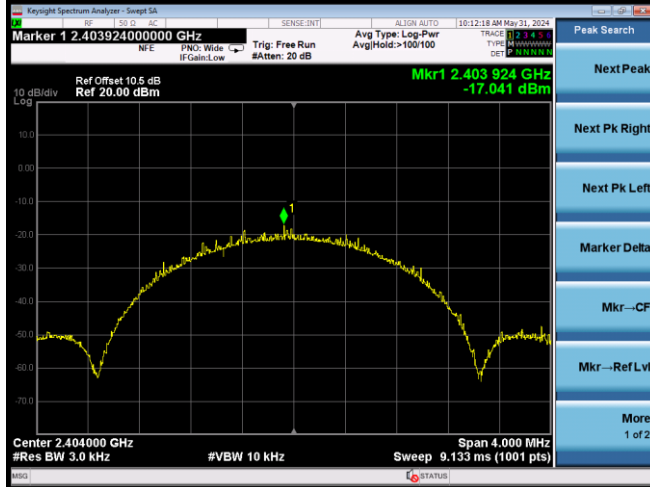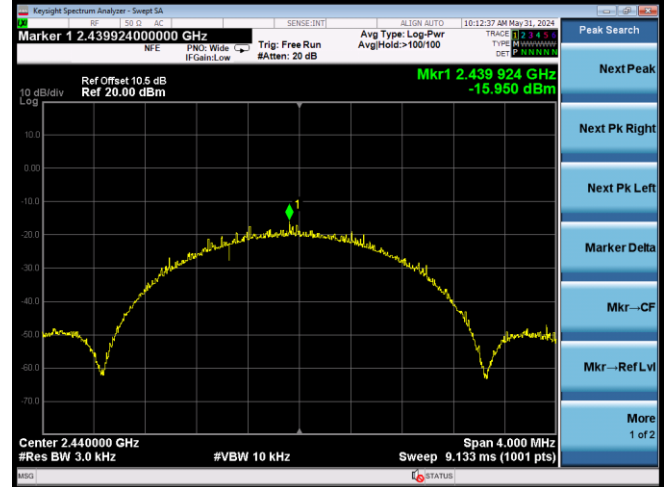
10. ANTENNA REQUIREMENT

10.1. STANDARD APPLICABLE

For intentional device, according to FCC 47 CFR Section 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. And according to FCC 47 CFR Section 15.247 (b), 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.

10.2. ANTENNA CONNECTED CONSTRUCTION

The antennas used for this product is PIFA Antenna that no antenna other than that furnished by the responsible party shall be used with the device, the maximum peak gain of the transmit antenna is 1.92dBi.

11. DEVIATION TO TEST SPECIFICATIONS

[NONE]