FCC AND ISED CERTIFICATION TEST REPORT

Applicant	:	D&M Holdings Inc.
Address of Applicant	:	2-1 Nisshin-cho, Kawasaki-ku, Kawasaki-shi, Kanagawa, 210-8569 Japan
Manufacturer	:	D&M Holdings Inc.
Address of Manufacturer	:	2-1 Nisshin-cho, Kawasaki-ku, Kawasaki-shi, Kanagawa, 210-8569 Japan
Equipment under Test	:	SOUND BAR
Model No.	:	DHT-S218
FCC ID	:	BV2-DHT-S218
IC	:	10369A-DHTS218
Test Standard(s)	:	FCC Rules and Regulations Part 15 Subpart C, RSS-247 Issue 3 August 2023, ANSI C63.10:2013, RSS-Gen Issue 5, Apr. 2018, Amendment 2 (February 2021)
Report No.	:	DDT-RE23101904-2E05
Issue Date	:	2023/12/18
Issue By	:	Guangdong Dongdian Testing Service Co., Ltd.
Address of Laboratory	:	Unit 2, Building 1, No. 17, Zongbu 2nd Road, Songshan Lake Park, Dongguan, Guangdong, China, 523808

REPORT

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Test Report Declare

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Test Standard Used:

FCC Rules and Regulations Part 15 Subpart C, RSS-247 Issue 3 August 2023.

Test Procedure Used:

ANSI C63.10:2013, RSS-Gen Issue 5, Apr. 2018, Amendment 2 (February 2021)

We Declare:

The equipment described above is tested by Guangdong Dongdian Testing Service Co., Ltd. and in the configuration tested the equipment complied with the standards specified above. The test results are contained in this test report and Guangdong Dongdian Testing Service Co., Ltd. is assumed of full responsibility for the accuracy and completeness of these tests.

After test and evaluation, our opinion is that the equipment provided for test compliance with the requirement of the above standards.

Report No.:	DDT-RE23101904-2E05		
Date of Receipt:	2023/10/26	**Date of Test:**	2023/10/26-2023/12/18

Prepared By:

Tiger Mo

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Tiger Mo/Engineer

Approved By:

GUANGDONG DONGDIAN TESTING SERVICE CO.,LTD. 广东东电检测技术有限公司 检验检测专用章

Damon Hu

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Damon Hu/EMC Manager

Note: This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of Guangdong Dongdian Testing Service Co., Ltd.

Revision History

Rev.	Revisions	Issue Date	Revised By
---	Initial issue	2023/12/18	

1. Summary of Test Results

Description of Test Item	Standard	Result
6 dB Bandwidth and 99% Bandwidth	FCC Part 15: 15.247(a)(2) RSS-247 Issue 3 clause 5.2(a) RSS-Gen Issue 5 clause 6.7	Pass
Peak Output Power	FCC Part 15: 15.247(b)(3) RSS-247 Issue 3 clause 5.4(d)	Pass
Power Spectral Density	FCC Part 15:15.247(e) RSS-247 Issue 3 clause 5.2(b)	Pass
Band Edge Compliance (conducted method)	FCC Part 15: 15.247(d) RSS-247 Issue 3 clause 5.5	Pass
RF Conducted Spurious Emissions	FCC Part 15: 15.247(d) RSS-247 Issue 3 clause 5.5	Pass
Radiation Emission	FCC Part 15: 15.205 FCC Part 15: 15.209 FCC Part 15: 15.247(d) RSS-247 Issue 3 clause 5.5 RSS-Gen Issue 5 clause 8.9 RSS-Gen Issue 5 clause 8.10	Pass
Emission in Restricted Frequency Bands	FCC Part 15: 15.205 FCC Part 15: 15.209 FCC Part 15: 15.247(d) RSS-247 Issue 3 clause 5.5 RSS-Gen Issue 5 clause 8.9 RSS-Gen Issue 5 clause 8.10	Pass
Power Line Conducted Emission	FCC Part 15: 15.207(a) RSS-Gen Issue 5 clause 8.8	Pass
Antenna Requirement	FCC Part 15: 15.203 RSS-Gen Issue 5 clause 6.8	Pass

2. General Test Information

2.1. Description of EUT

EUT Name	:	SOUND BAR
Model Number	:	DHT-S218
EUT Function Description	:	Please reference user manual of this device
Power Supply	:	100-240V~50/60Hz 40W
Radio Specification	:	Bluetooth V5.0 (BR/EDR/LE)
Operation Frequency	:	Bluetooth (BR/EDR/LE): 2402 MHz-2480 MHz
Modulation	:	Bluetooth BR/EDR: GFSK, π/4-DQPSK, 8DPSK Bluetooth LE: GFSK

Note 1: "☒" means to be chosen or applicable; "□" means don't to be chosen or not applicable; This note applies to entire report.

Note 2: This report only for Bluetooth LE 1Mbps, 2 Mbps.

Note 3: Antenna information:

Bluetooth Antenna information		
Antenna Type	:	PCB
Antenna Gain(dBi)	:	2.4

Note 4: Bluetooth LE Channel information:

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

1	2404	15	2432	29	2460
2	2406	16	2434	30	2462
3	2408	17	2436	31	2464
4	2410	18	2438	32	2466
5	2412	19	2440	33	2468
6	2414	20	2442	34	2470
7	2416	21	2444	35	2472
8	2418	22	2446	36	2474
9	2420	23	2448	37	2476
10	2422	24	2450	38	2478
11	2424	25	2452	39	2480
12	2426	26	2454		
13	2428	27	2456		
The channels denoted with the grey background are excluded, because they are primary advertising channel only for the Bluetooth LE 1Mbps according to the Bluetooth Core Specification.					

Note 5: The above EUT information is declared by manufacturer and for more detailed features description please refer to the manufacturer's specifications or User's Manual. The above Antenna information is declared by manufacturer and for more detailed features description please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

2.2. Accessories of EUT

Description of Accessories	Manufacturer	Model number	Description	Remark
N/A	N/A	N/A	N/A	N/A

2.3. Assistant equipment used for test

Assistant equipment	Manufacturer	Model number	EMC Compliance	SN
N/A	N/A	N/A	N/A	N/A

2.4. Block diagram of EUT configuration for test

Test software: FCC_Test_Tools_v2.25.exe

The test software was used to control EUT work in Continuous Tx mode, and select test channel, wireless mode as below table:

The pathloss of external cable: 0.5dB (According to the manufacturer's claims)

Tested mode, channel, information			
Mode	Setting Tx Power	Channel	Frequency (MHz)
GFSK 1M	8	CH0	2402
	8	CH19	2440
	8	CH39	2480
GFSK 2M	8	CH1	2404
	8	CH19	2440
	8	CH38	2478

2.5. Test environment conditions

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

Temperature range:	+15℃ to +35 ℃
Humidity range:	20% to 75%
Pressure range:	86 kPa to106 kPa

Note: The specific temperature and humidity information of each test item refers to the temperature and humidity record in the corresponding test data.

2.6. Deviations of test standard

No deviation.

2.7. Test laboratory

Guangdong Dongdian Testing Service Co., Ltd.

Unit 2,Building 1,No.17,Zongbu 2nd Road, Songshan Lake Park, Dongguan, Guangdong, China, 523808

Tel.: +86-0769-38826678, http://www.dgddt.com, Email: ddt@dgddt.com.

CNAS Accreditation No. L6451; A2LA Accreditation Number: 3870.01

FCC Designation Number: CN1182, Test Firm Registration Number: 540522

Innovation, Science and Economic Development Canada Site Registration Number: 10288A

Conformity Assessment Body identifier: CN0048

VCCI facility registration number: C-20087, T-20088, R-20123, R-20155, G-20118

2.8. Measurement uncertainty

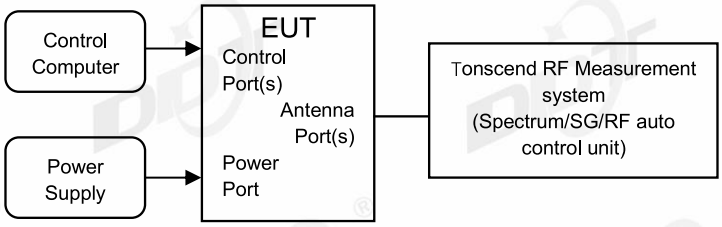
Test Item	Uncertainty
Bandwidth	1.1%
Peak Output Power (Conducted) (Spectrum analyzer)	0.86 dB (10 MHz ≤ f < 3.6 GHz);
	1.38 dB (3.6 GHz ≤ f < 8 GHz)
Peak Output Power (Conducted) (Power Sensor)	0.74 dB
Power Spectral Density	0.74 dB (10 MHz ≤ f < 3.6 GHz);
	1.38 dB (3.6 GHz ≤ f < 8 GHz)
Frequencies Stability	6.7×10^{-8} (Antenna couple method)
	5.5×10^{-8} (Conducted method)
Conducted spurious emissions	0.86 dB (10 MHz ≤ f < 3.6 GHz);
	1.40 dB (3.6 GHz ≤ f < 8 GHz)
	1.66 dB (8 GHz ≤ f < 26.5 GHz)
Uncertainty for radio frequency (RBW < 20 kHz)	3×10^{-8}
Temperature	0.4 ℃
Humidity	2 %
Uncertainty for Radiation Emission test (9 kHz – 30 MHz)	3.44 dB
Uncertainty for Radiation Emission test (30 MHz - 1 GHz)	4.70 dB (Antenna Polarize: V)
	4.84 dB (Antenna Polarize: H)
Uncertainty for Radiation Emission test (1 GHz - 40 GHz)	4.10 dB (1 - 6 GHz)
	4.40 dB (6 GHz - 18 GHz)
	3.54 dB (18 GHz - 26 GHz)
	4.30 dB (26 GHz - 40 GHz)
Uncertainty for Power line conduction emission test	3.34dB (150KHz-30MHz)
	3.72dB (9KHz-150KHz)
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.	

3. Equipment Used During Conductive Test

Equipment	Manufacturer	Model No.	Serial Number	Due Date
☒RF Connected Test (RF Measurement System 4#)				
Signal &Spectrum Analyzer	R&S	FSV3044	101173	2024/04/22
Wideband Radio Communication Tester	R&S	CMW500	168801	2024/04/26
MXG Vector Signal Generator	Agilent	N5182A	MY48180737	2024/04/26
PSG Vector Signal Generator	Agilent	E8267D	US49060192	2024/09/05
RF Control Unit	Tonsend	JS0806-2	21I8060485	2024/04/26
TEMP&HUMI Programmable Chamber	ZHIXIANG	ZXGDJS-150L	ZX170110-A	2024/05/14
Test Software	Tonscend	JS1120-3	Ver.3.2.22	N/A

4. 6 dB Bandwidth

4.1. Block diagram of test setup



4.2. Limits

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

4.3. Test procedure

(1) The test according to ANSI C63.10-2013 clause 11.8.
(2) Connect EUT's antenna output to spectrum analyzer by RF cable, the path loss was compensated to the results
(3) Set the EUT as maximum power setting and enable the EUT transmit continuously
(4) Use the following spectrum analyzer settings for 6 dB Bandwidth:

RBW:	100 kHz
VBW:	≥ [3 × RBW]
Detector Mode:	Peak
Sweep time:	Auto
Trace mode	Max hold

(5) Allow the trace to stabilize, measure the 6 dB bandwidth of signal, and record the results in the report.

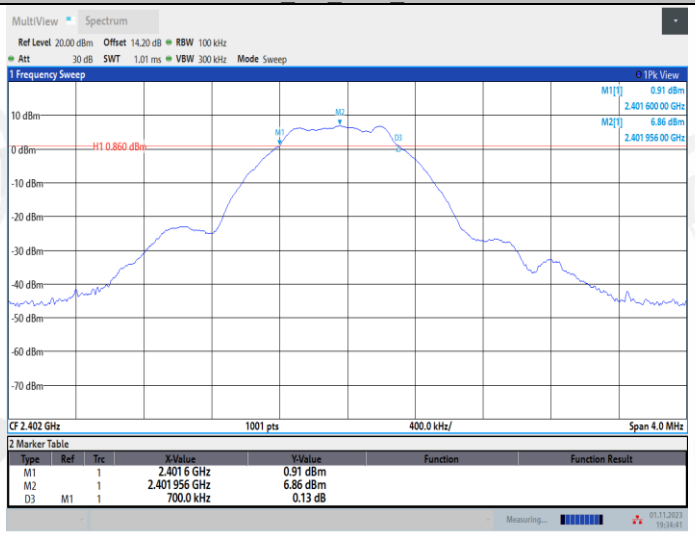
4.4. Test result

Test Site:	RF Measurement System 4#	Test Date:	2023.11.01
Ambient Condition:	25.4℃,53.6%RH	Test Engineer:	Zhongyao
Equipment under Test:	SOUND BAR	Model No.:	DHT-S218
Sample Number:	S23101904-02	Test Power Supply:	AC 120V

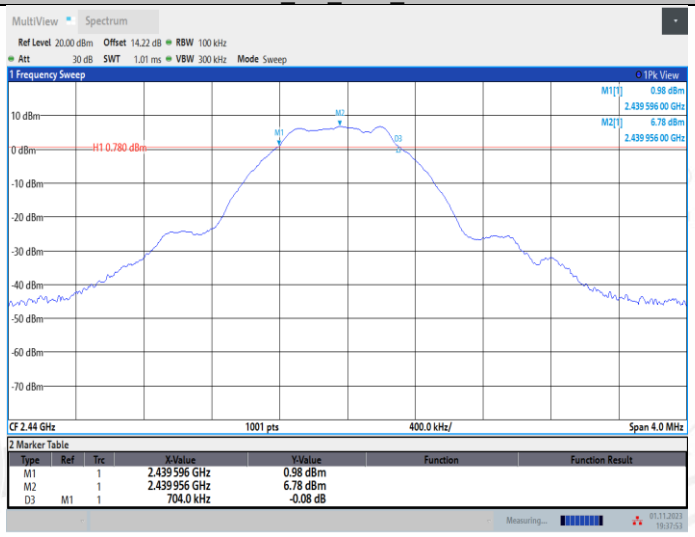
Test Mode	Antenna	Frequency [MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit [MHz]	Verdict
BLE_1M	Ant1	2402	0.70	2401.60	2402.30	0.5	PASS
		2440	0.70	2439.60	2440.30	0.5	PASS
		2480	0.71	2479.58	2480.30	0.5	PASS
BLE_2M	Ant1	2404	1.17	2403.36	2404.53	0.5	PASS
		2440	1.17	2439.36	2440.53	0.5	PASS
		2478	1.17	2477.36	2478.53	0.5	PASS

4.5. Test graphs

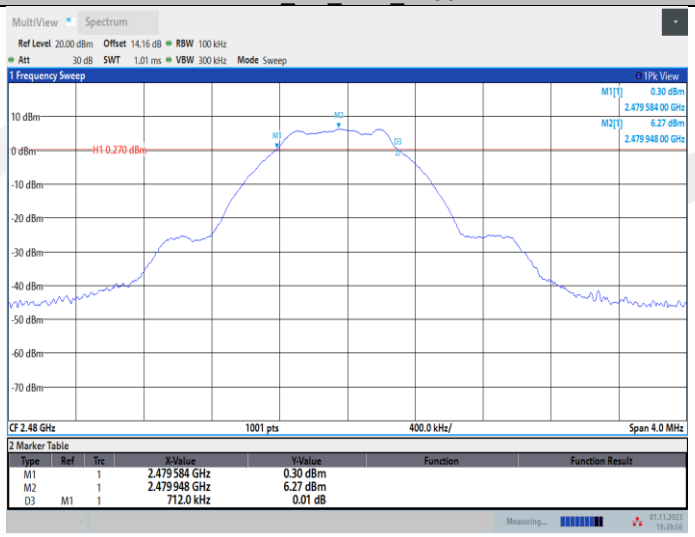
BLE_1M_Ant1_2402



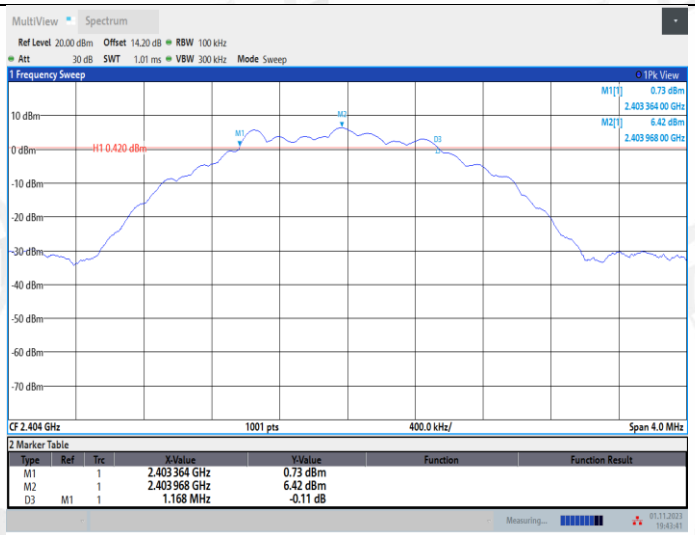
BLE_1M_Ant1_2440



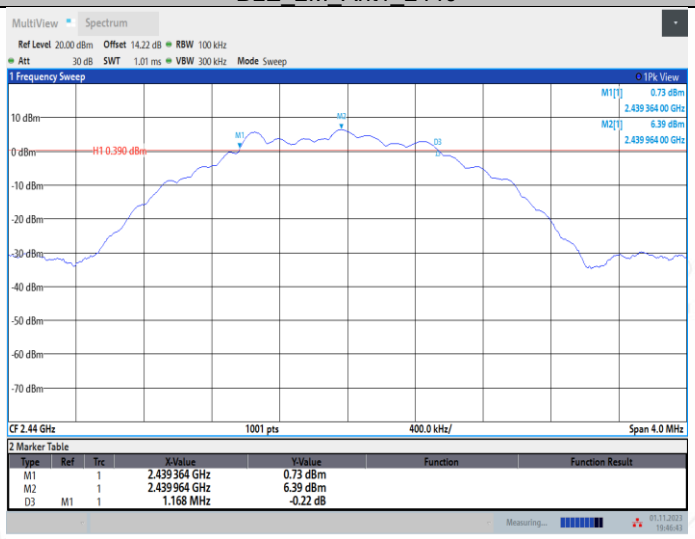
BLE_1M_Ant1_2480



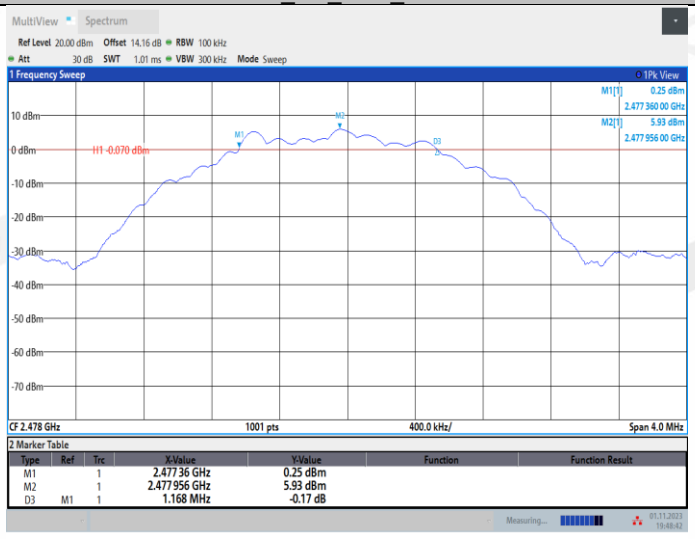
BLE_2M_Ant1_2404



BLE_2M_Ant1_2440

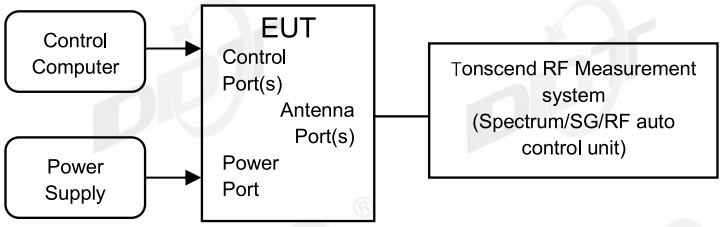


BLE_2M_Ant1_2478



5. 99% Bandwidth

5.1. Block diagram of test setup



5.2. Limits

Just for Report.

5.3. Test procedure

(1) The test according to ANSI C63.10-2013 clause 6.9.3.
(2) Connect EUT's antenna output to spectrum analyzer by RF cable, the path loss was compensated to the results
(3) Set the EUT as maximum power setting and enable the EUT transmit continuously
(4) Use the following spectrum analyzer settings for the 99% Bandwidth:

RBW:	1% to 5% of the OBW
VBW:	approximately three times RBW
Span:	between 1.5 times and 5.0 times the OBW
Detector Mode:	Peak
Sweep time:	Auto
Trace mode	Max hold

(5) Allow the trace to stabilize, measure the 99% bandwidth of signal, and record the results in the report.

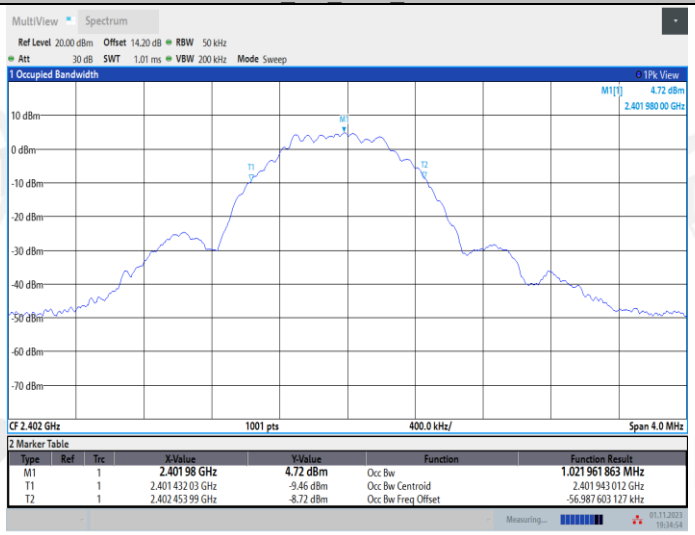
5.4. Test result

Test Site:	RF Measurement System 4#	Test Date:	2023.11.01
Ambient Condition:	25.4℃,53.6%RH	Test Engineer:	Zhongyao
Equipment under Test:	SOUND BAR	Model No.:	DHT-S218
Sample Number:	S23101904-02	Test Power Supply:	AC 120V

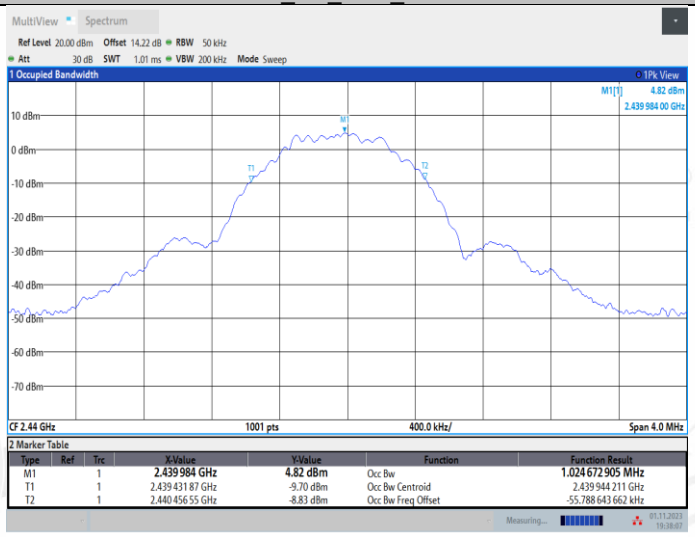
Test Mode	Antenna	Frequency [MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit [MHz]	Verdict
BLE_1M	Ant1	2402	1.022	2401.4320	2402.4540	---	---
		2440	1.025	2439.4319	2440.4565	---	---
		2480	1.022	2479.4292	2480.4513	---	---
BLE_2M	Ant1	2404	1.967	2402.9643	2404.9308	---	---
		2440	1.968	2438.9626	2440.9303	---	---
		2478	1.968	2476.9590	2478.9272	---	---

5.5. Test graphs

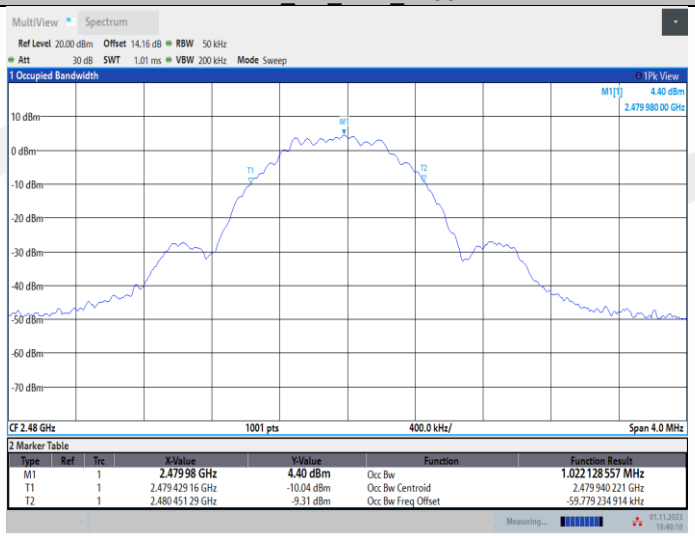
BLE_1M_Ant1_2402



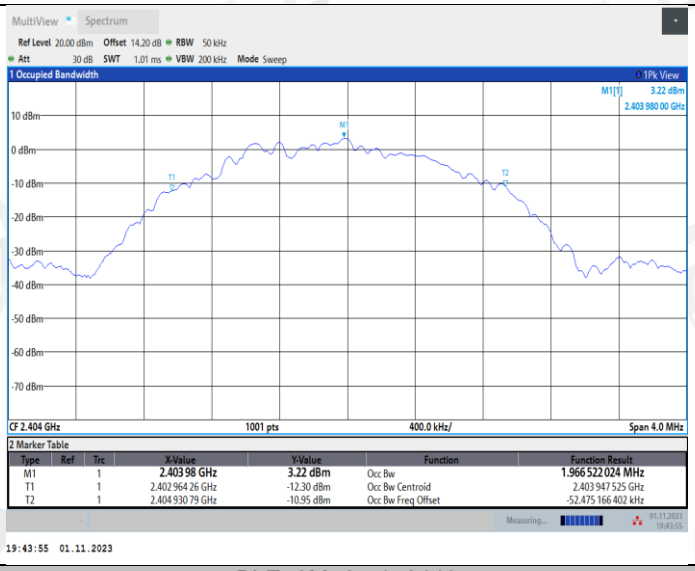
BLE_1M_Ant1_2440



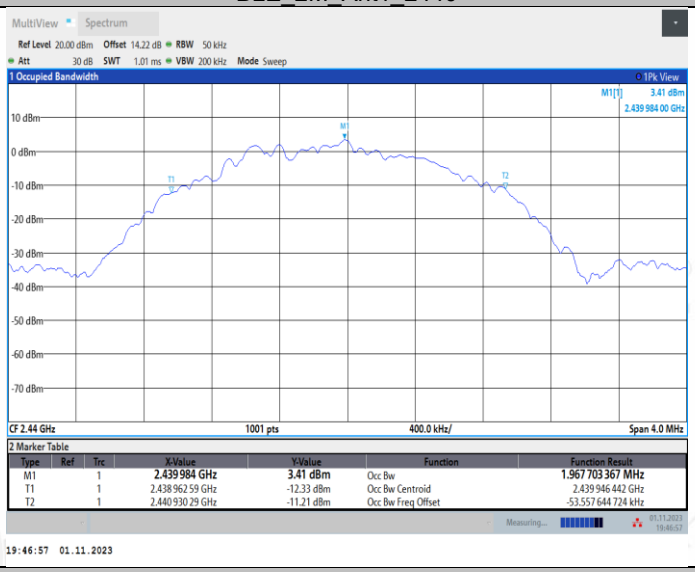
BLE_1M_Ant1_2480



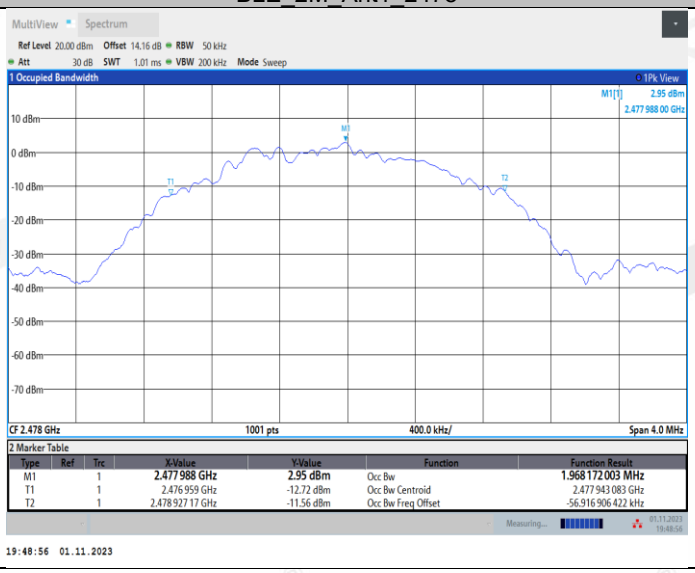
BLE_2M_Ant1_2404



BLE_2M_Ant1_2440

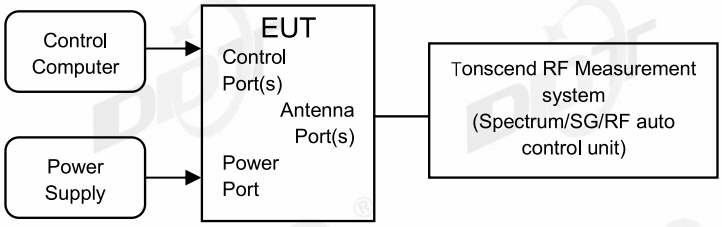


BLE_2M_Ant1_2478



6. Maximum Peak Output Power

6.1. Block diagram of test setup



6.2. Limits

For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. If transmitting antennas of directional gain greater than 6dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi, the e.i.r.p shall not exceed 4W.

6.3. Test procedure

(1) The test according to ANSI C63.10-2013 clause 11.9.1.1.
(2) Connect EUT's antenna output to spectrum analyzer by RF cable, the path loss was compensated to the results.
(3) Set the EUT as maximum power setting and enable the EUT transmit continuously.
(4) Use the following spectrum analyzer settings for the maximum peak output power measurement:

RBW:	≥DTS bandwidth
VBW:	≥3 x RBW
Span	≥3 x RBW
Detector Mode:	Peak
Sweep time:	Auto
Trace mode	Max hold

(5) Allow the trace to stabilize, use peak marker function to determine the peak amplitude level.

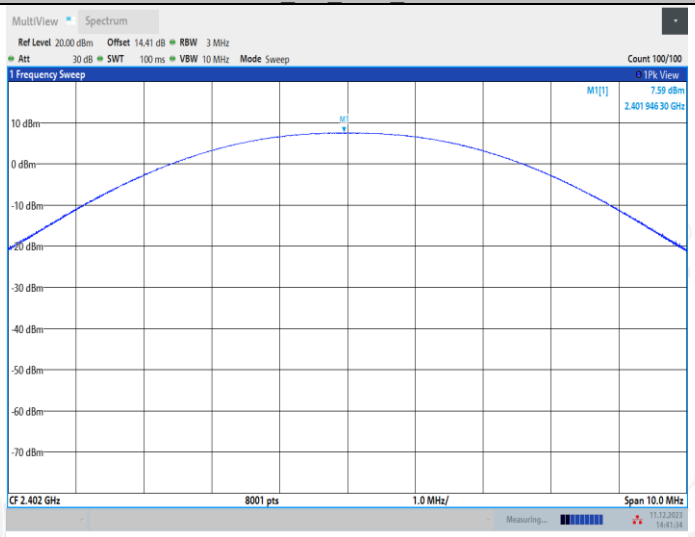
6.4. Test result

Test Site:	RF Measurement System 4#	Test Date:	2023.12.11
Ambient Condition:	25.4℃,53.6%RH	Test Engineer:	Zhongyao
Equipment under Test:	SOUND BAR	Model No.:	DHT-S218
Sample Number:	S23101904-02	Test Power Supply:	AC 120V

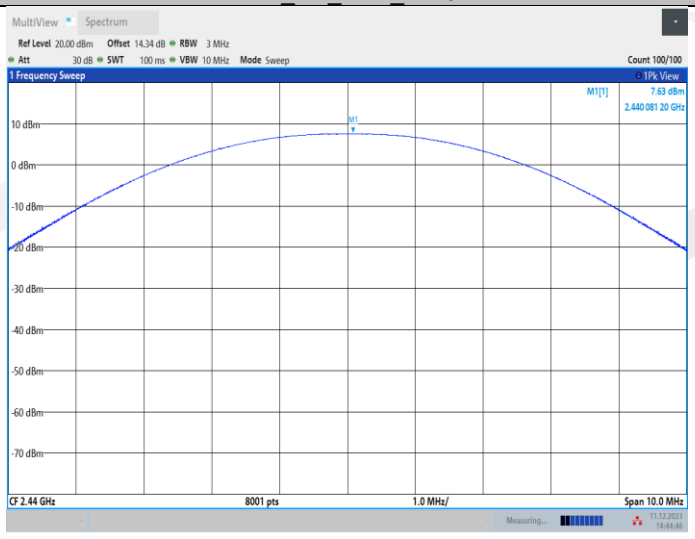
TestMode	Antenna	Frequency[MHz]	Conducted Peak Power[dBm]	Conducted Limit[dBm]	EIRP[dBm]	EIRP Limit[dBm]	Verdict
BLE_1M	Ant1	2402	7.59	≤30	9.99	≤36	PASS
		2440	7.63	≤30	10.03	≤36	PASS
		2480	7.68	≤30	10.08	≤36	PASS
BLE_2M	Ant1	2404	7.34	≤30	9.74	≤36	PASS
		2440	7.53	≤30	9.93	≤36	PASS
		2478	7.49	≤30	9.89	≤36	PASS

6.5. Test graphs

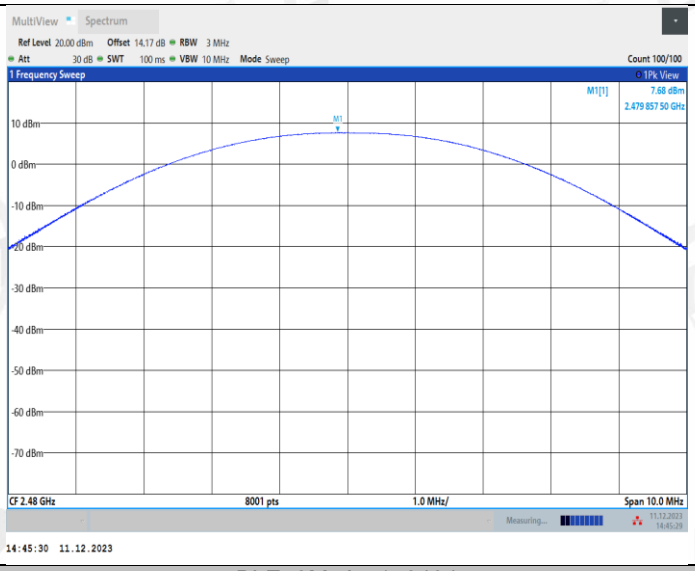
BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480



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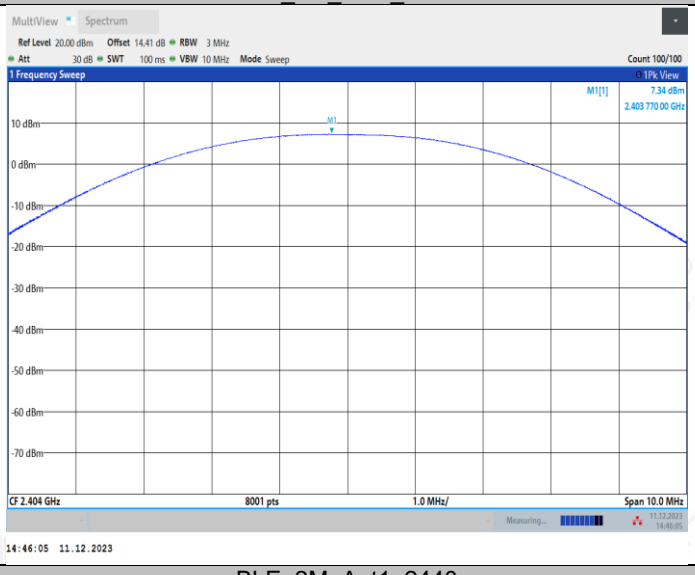

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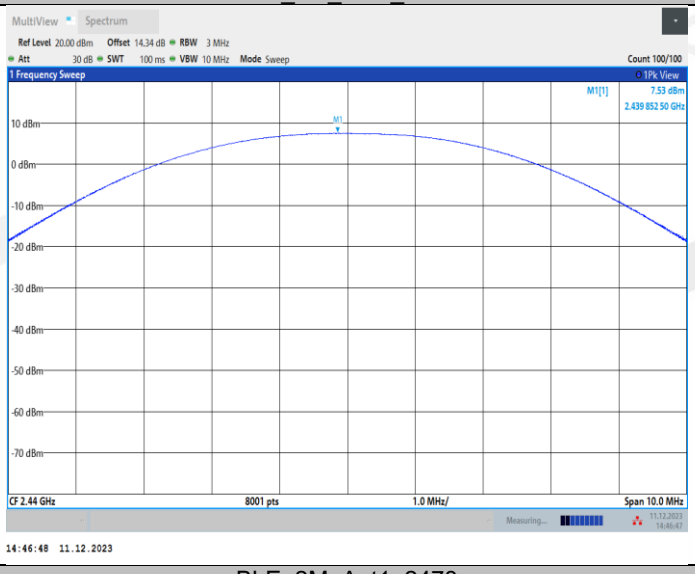

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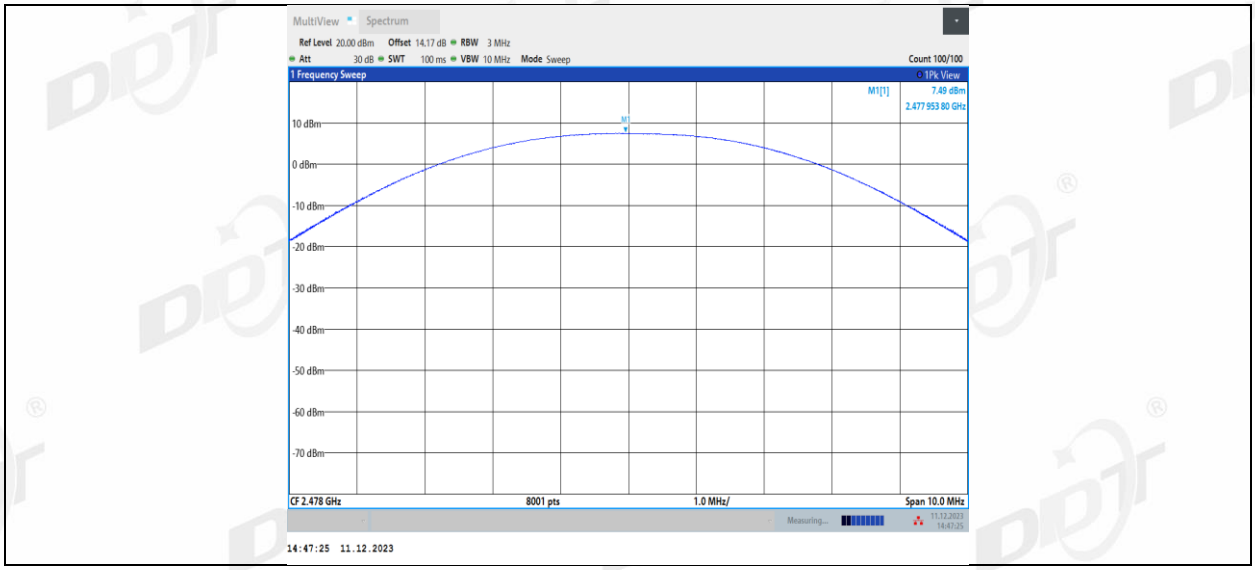
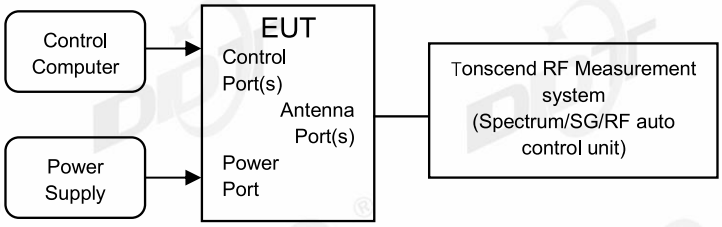

MultiView
Spectrum
Ref Level 20.00 dBm Offset 14.17 dB RBW 3 MHz
Att 30 dB SWT 100 ms VBW 10 MHz Mode Sweep
Count 100/100
1 Frequency Sweep
1Pk View
M1[1]
7.49 dBm
2.477 953 80 GHz
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
CF 2.478 GHz
8001 pts
1.0 MHz/
Span 10.0 MHz
Measuring...
14:47:25 11.12.2023

7. Power Spectral Density

7.1. Block diagram of test setup



7.2. Limits

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

7.3. Test procedure

(1) The test according to ANSI C63.10-2013 clause 11.10.2.
(2) Connect EUT's antenna output to spectrum analyzer by RF cable, the path loss was compensated to the results.
(3) Set the EUT as maximum power setting and enable the EUT transmit continuously.
(4) Use the following spectrum analyzer settings for Power Spectral Density measurement:

Center frequency	DTS Channel center frequency
RBW:	3 kHz ≤ RBW ≤ 100 kHz
VBW:	≥ 3RBW
Span	1.5 times the DTS bandwidth
Detector Mode:	Peak
Sweep time:	Auto
Trace mode	Max hold

(5) Allow the trace to stabilize, use the peak marker function to determine the maximum amplitude level within the RBW.

If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

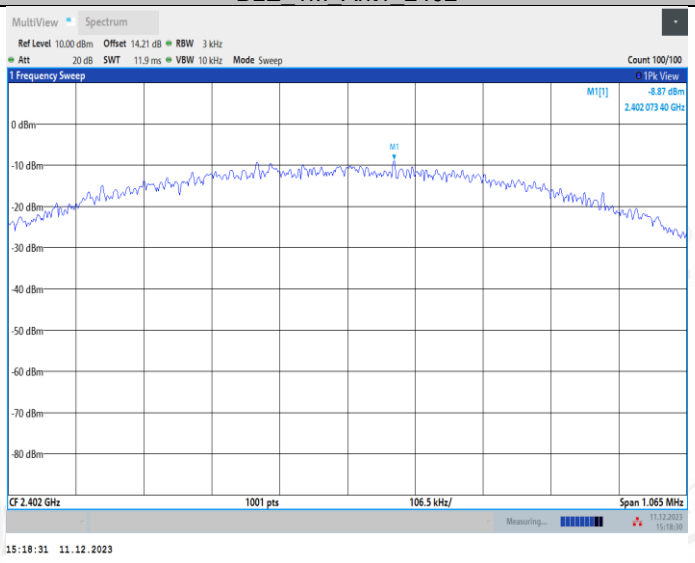
7.4. Test result

Test Site:	RF Measurement System 4#	Test Date:	2023.12.11
Ambient Condition:	25.4℃,53.6%RH	Test Engineer:	Zhongyao
Equipment under Test:	SOUND BAR	Model No.:	DHT-S218
Sample Number:	S23101904-02	Test Power Supply:	AC 120V

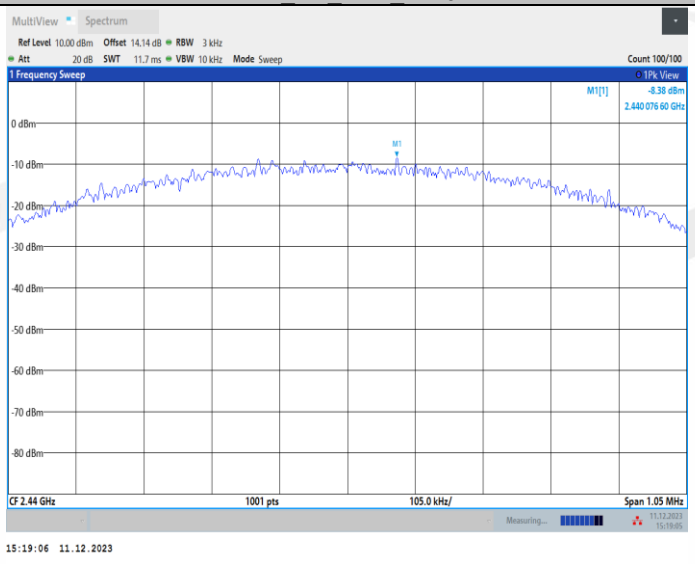
TestMode	Antenna	Frequency[MHz]	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-8.87	≤8.00	PASS
		2440	-8.38	≤8.00	PASS
		2480	-8.42	≤8.00	PASS
BLE_2M	Ant1	2404	-12.19	≤8.00	PASS
		2440	-11.83	≤8.00	PASS
		2478	-11.97	≤8.00	PASS

7.5. Test graphs

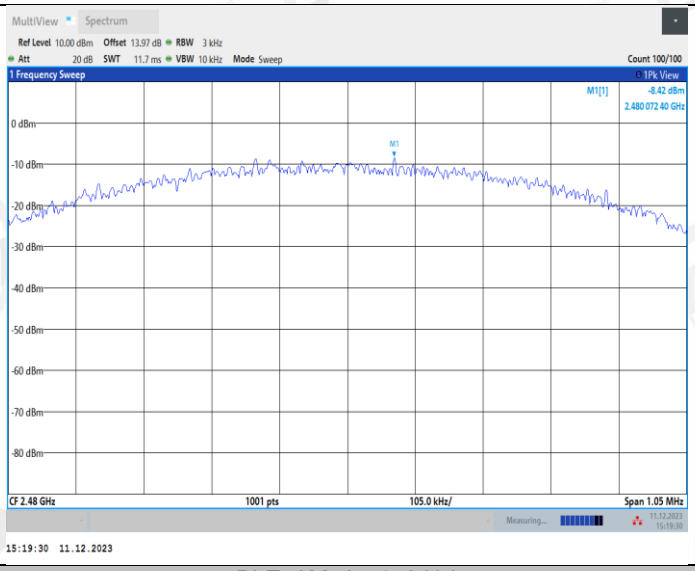
BLE_1M_Ant1_2402



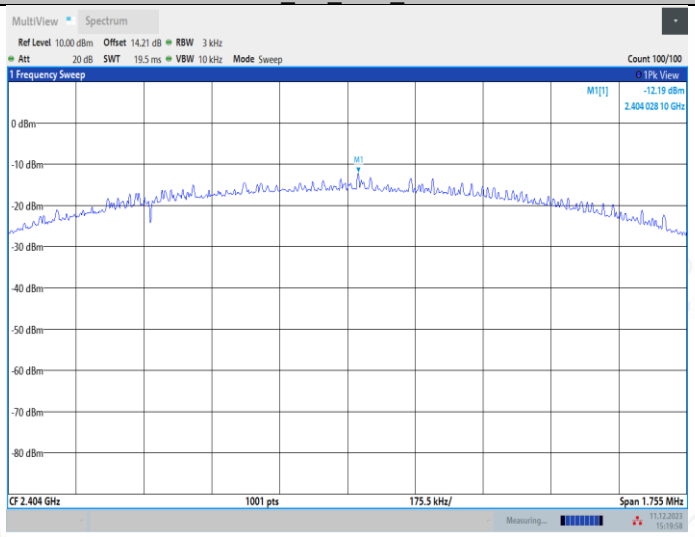
BLE_1M_Ant1_2440



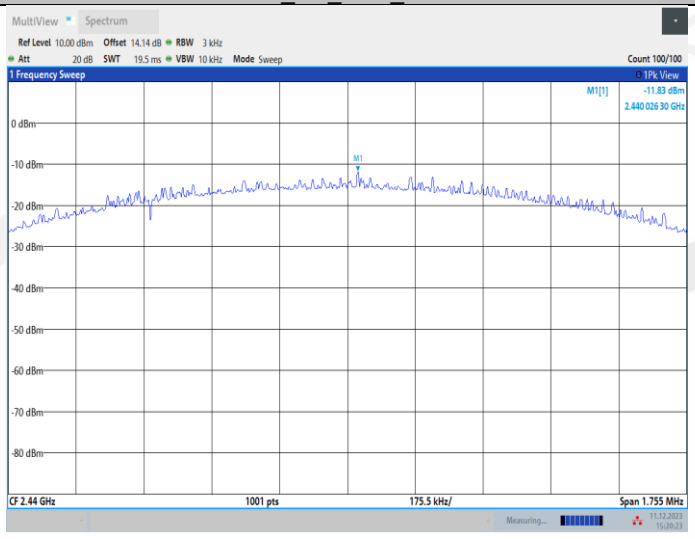
BLE_1M_Ant1_2480



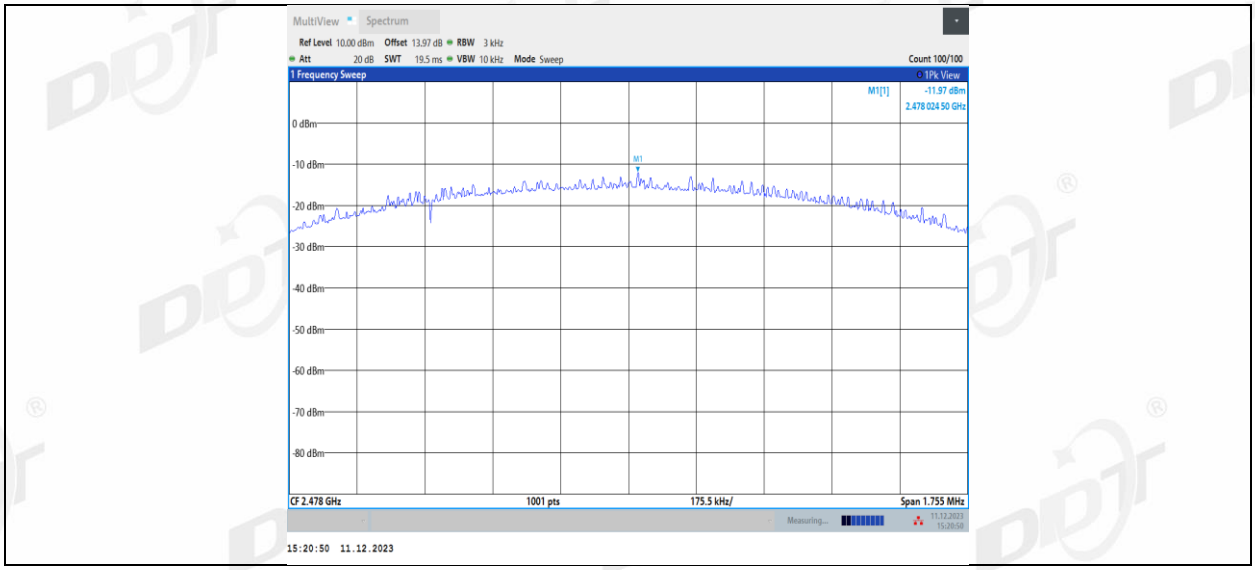
BLE_2M_Ant1_2404



BLE_2M_Ant1_2440

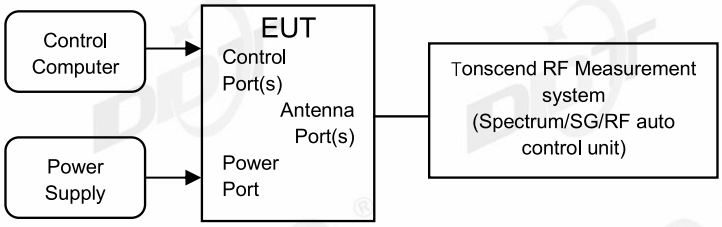


BLE_2M_Ant1_2478


MultiView
Spectrum
Ref Level 10.00 dBm Offset 13.97 dB RBW 3 kHz
Att 20 dB SWT 19.5 ms VBW 10 kHz Mode Sweep
Count 100/100
1 Frequency Sweep
1Pk View
M1[1]
-11.97 dBm
2.478 024 50 GHz
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
-80 dBm
M1
CF 2.478 GHz
1001 pts
175.5 kHz/
Span 1.755 MHz
Measuring...
11.12.2023
15:20:50
15:20:50 11.12.2023

8. Band Edge Compliance (Conducted Method)

8.1. Block diagram of test setup



8.2. Limits

In any 100 kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator in operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power.

8.3. Test procedure

(1) Connect EUT's antenna output to spectrum analyzer by RF cable.

(2) Establish a reference level by using the following procedure:

RBW:	100 kHz
VBW:	300 kHz
Span	Encompass frequency range to be measured
Detector Mode:	Peak
Sweep time:	Auto
Trace mode	Max hold

(3) Allow the trace to stabilize, use the peak marker function to determine the maximum peak power level to establish the reference level.

(4) Then mark the maximum amplitude of all unwanted emissions outside of the authorized frequency band.

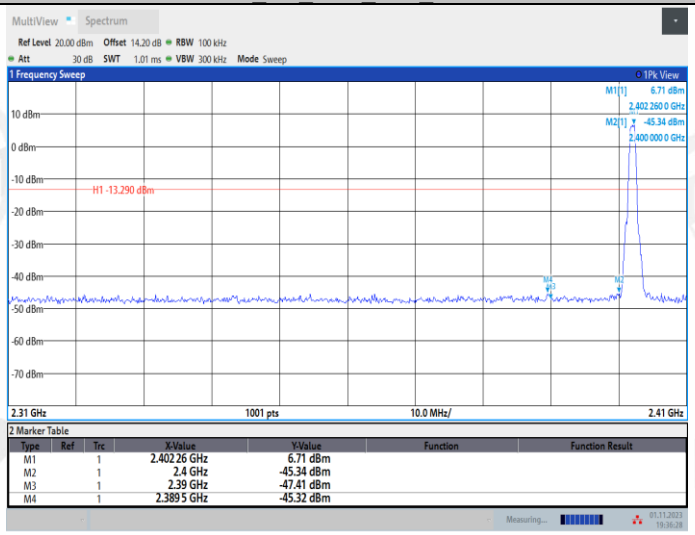
8.4. Test result

Test Site:	RF Measurement System 4#	Test Date:	2023.11.01
Ambient Condition:	25.4℃,53.6%RH	Test Engineer:	Zhongyao
Equipment under Test:	SOUND BAR	Model No.:	DHT-S218
Sample Number:	S23101904-02	Test Power Supply:	AC 120V

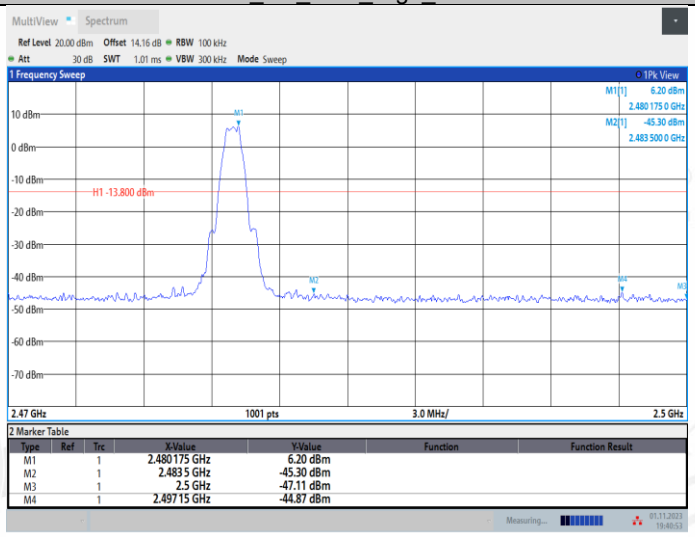
EUT Set Mode	CH or Frequency	Measured Range	Verdict
GFSK 1M	2402	2.310 GHz - 2.410 GHz	Pass
	2480	2.470 GHz - 2.500 GHz	Pass
GFSK 2M	2404	2.310 GHz - 2.410 GHz	Pass
	2478	2.470 GHz - 2.500 GHz	Pass

8.5. Test graphs

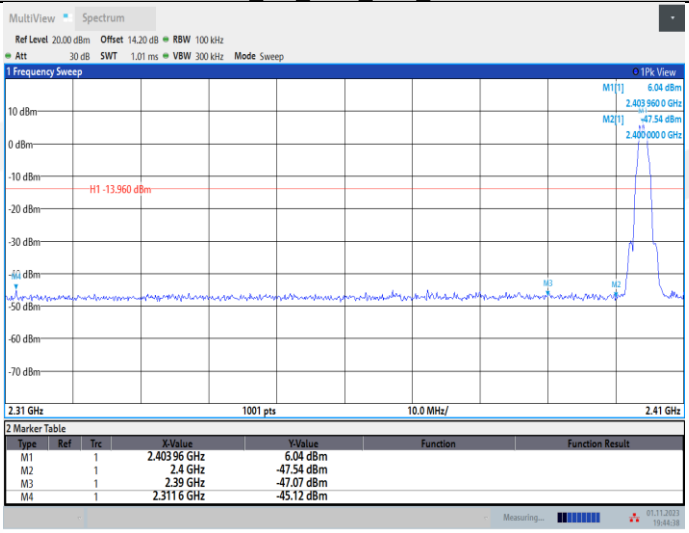
BLE_1M_Ant1_Low_2402



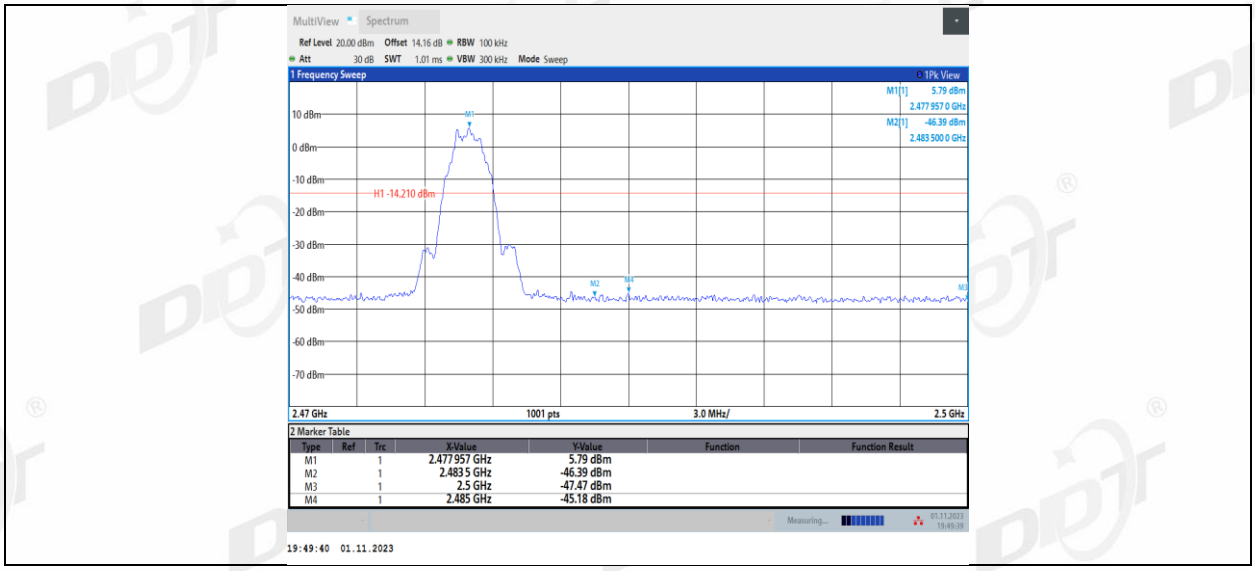
BLE_1M_Ant1_High_2480



BLE_2M_Ant1_Low_2404

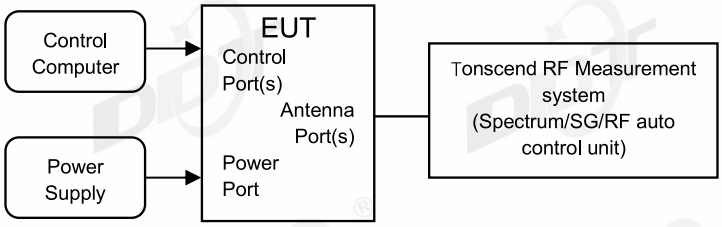


BLE_2M_Ant1_High_2478


MultiView
Spectrum
Ref Level 20.00 dBm Offset 14.16 dB RBW 100 kHz
Att 30 dB SWT 1.01 ms VBW 300 kHz Mode Sweep
1 Frequency Sweep
1Pk View
M1[1] 5.79 dBm
2.477 957 0 GHz
M2[1] -46.39 dBm
2.483 500 0 GHz
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
H1 -14.210 dBm
2.47 GHz
1001 pts
3.0 MHz/
2.5 GHz
2 Marker Table
Type Ref Trc X-Value Y-Value Function Function Result
M1 1 2.477 957 GHz 5.79 dBm
M2 1 2.483 5 GHz -46.39 dBm
M3 1 2.5 GHz -47.47 dBm
M4 1 2.485 GHz -45.18 dBm
Measuring...
19:49:40 01.11.2023

9. RF Conducted Spurious Emissions

9.1. Block diagram of test setup



9.2. Limits

In any 100 kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator in operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power.

9.3. Test procedure

(1) Connect EUT's antenna output to spectrum analyzer by RF cable.

(2) Establish a reference level by using the following procedure:

Center frequency	Test frequency
RBW:	100 kHz
VBW:	300 kHz
Span	Wide enough to capture the peak level of the in-band emission
Detector Mode:	Peak
Sweep time:	Auto
Trace mode	Max hold

(3) Allow the trace to stabilize, use the peak marker function to determine the maximum peak power level to establish the reference level.

(4) Set the spectrum analyzer as follows:

RBW:	100 kHz
VBW:	300 kHz
Span	Encompass frequency range to be measured
Number of measurement points	≥Span/RBW
Detector Mode:	Peak
Sweep time:	Auto
Trace mode	Max hold

Allow the trace to stabilize, use the peak marker function to determine the maximum amplitude of all unwanted emissions outside of the authorized frequency band

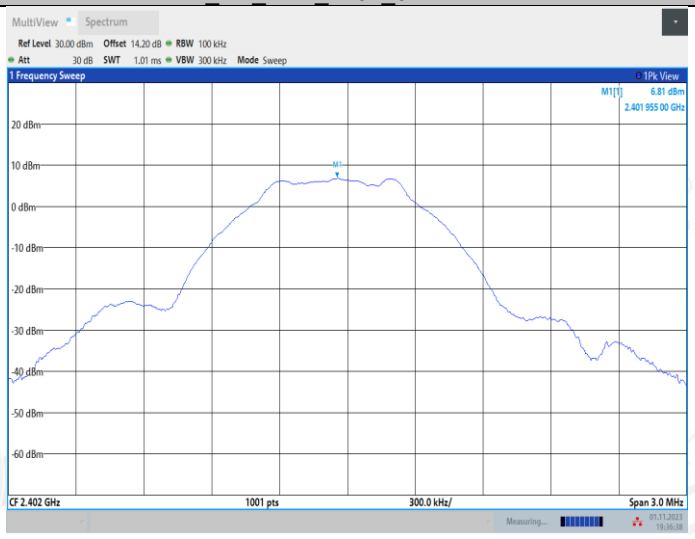
9.4. Test result

Test Site:	RF Measurement System 4#	Test Date:	2023.11.01
Ambient Condition:	25.4℃,53.6%RH	Test Engineer:	Zhongyao
Equipment under Test:	SOUND BAR	Model No.:	DHT-S218
Sample Number:	S23101904-02	Test Power Supply:	AC 120V

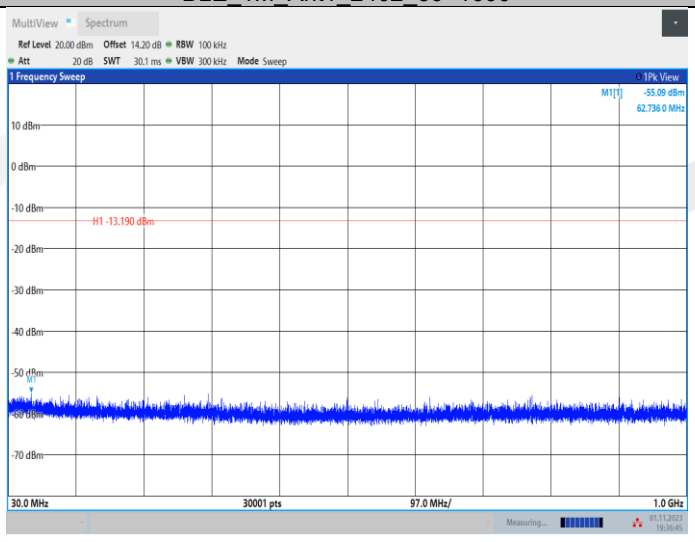
Mode	Freq. (MHz)	Verdict
GFSK 1M	2402	Pass
	2440	Pass
	2480	Pass
GFSK 2M	2404	Pass
	2440	Pass
	2478	Pass

9.5. Test graphs

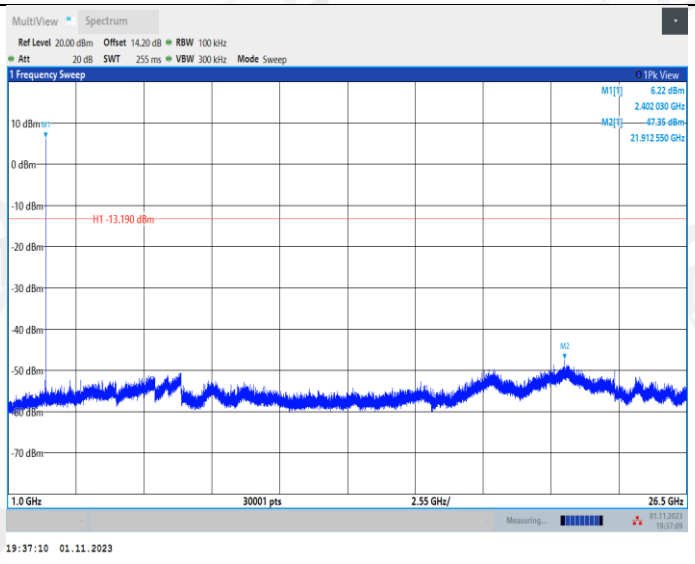
BLE_1M_Ant1_2402_0~Reference



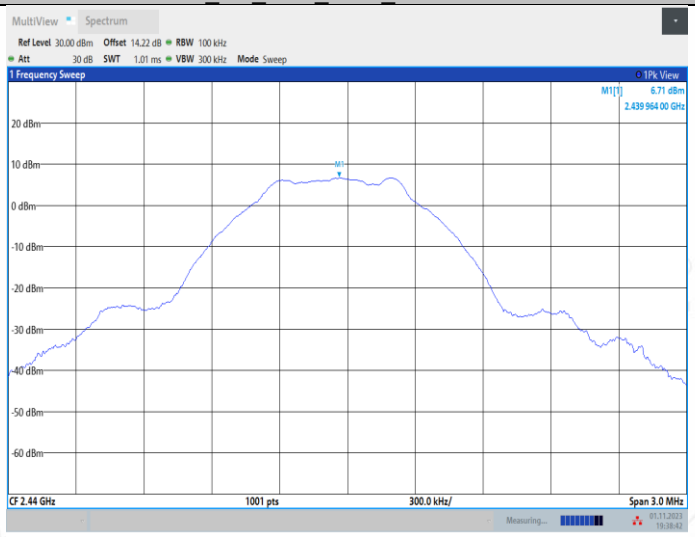
BLE_1M_Ant1_2402_30~1000



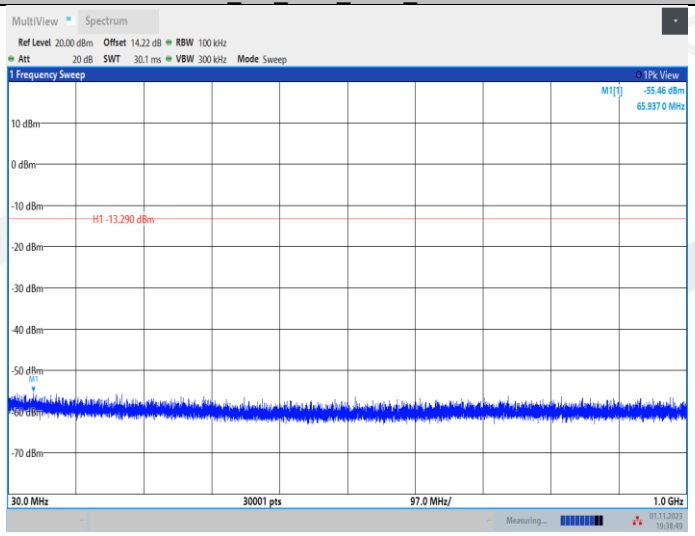
BLE_1M_Ant1_2402_1000~26500



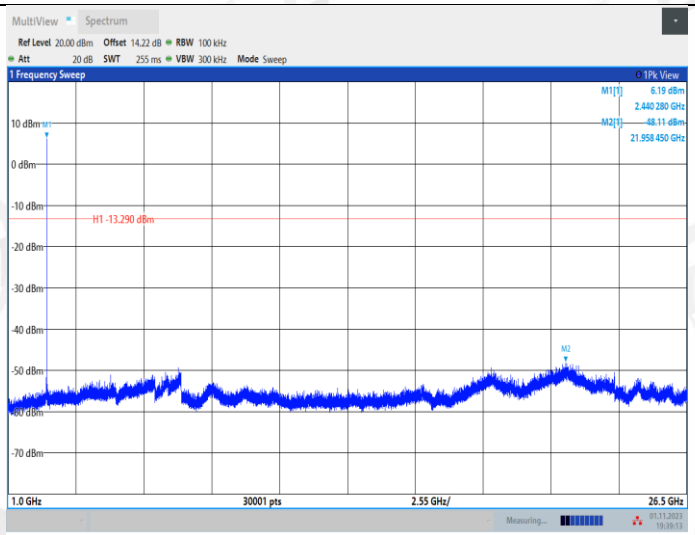
BLE_1M_Ant1_2440_0~Reference



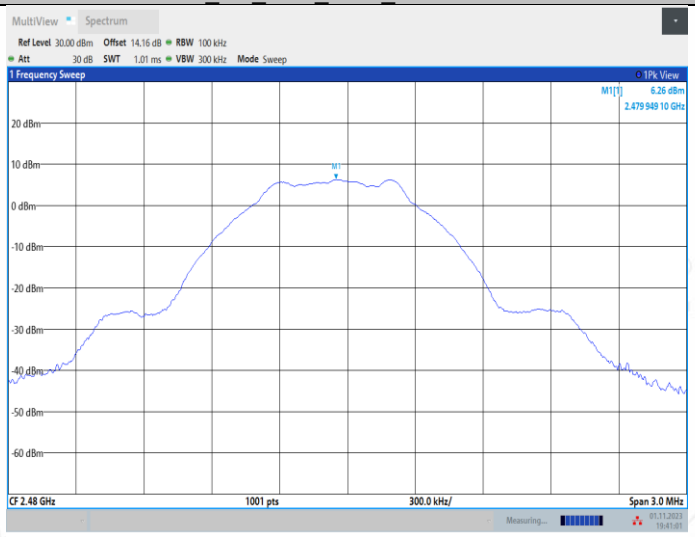
BLE_1M_Ant1_2440_30~1000



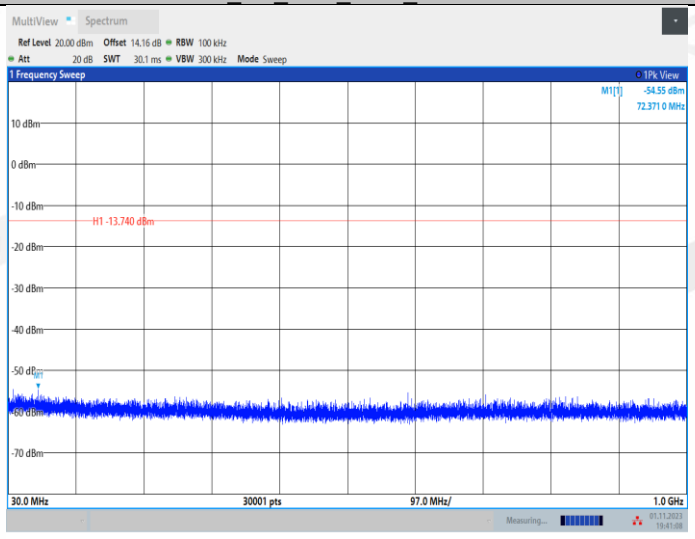
BLE_1M_Ant1_2440_1000~26500



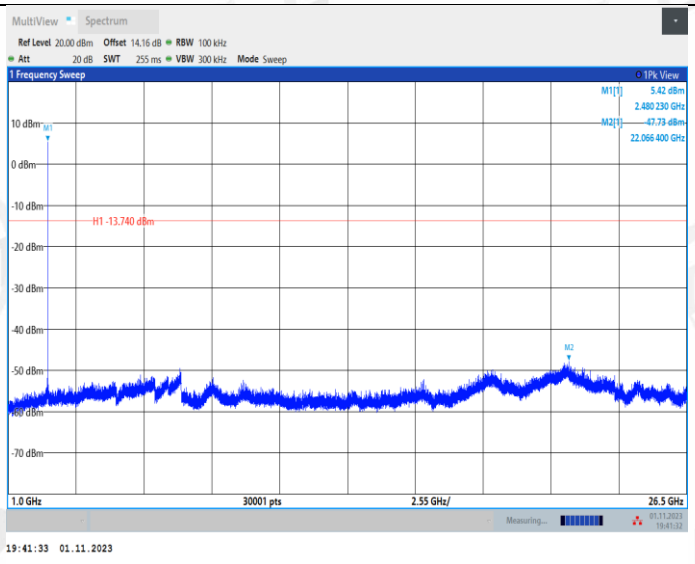
BLE_1M_Ant1_2480_0~Reference



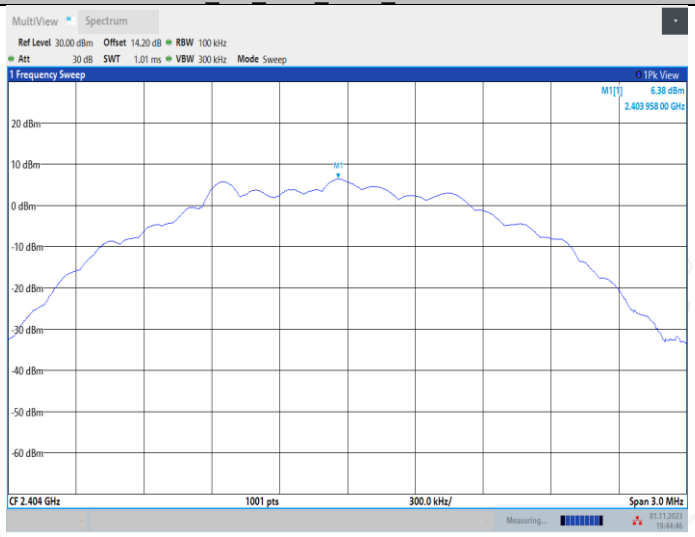
BLE_1M_Ant1_2480_30~1000



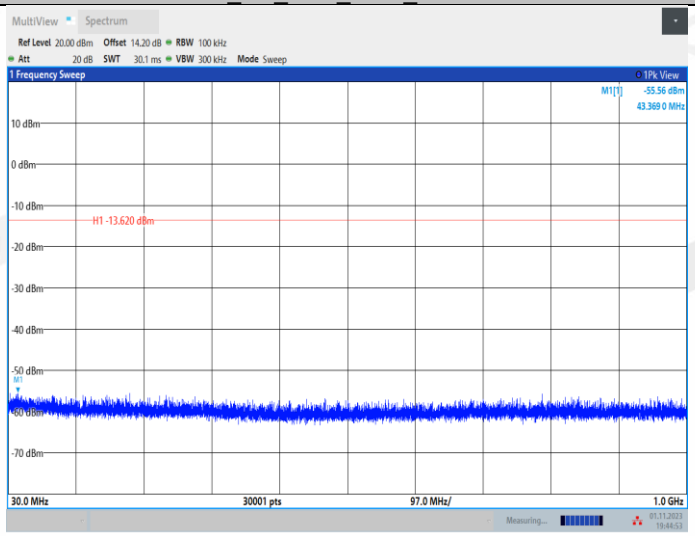
BLE_1M_Ant1_2480_1000~26500



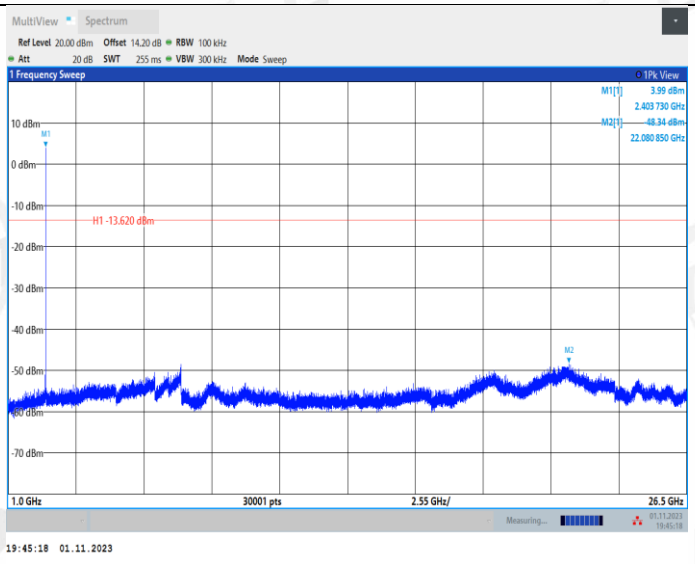
BLE_2M_Ant1_2404_0~Reference



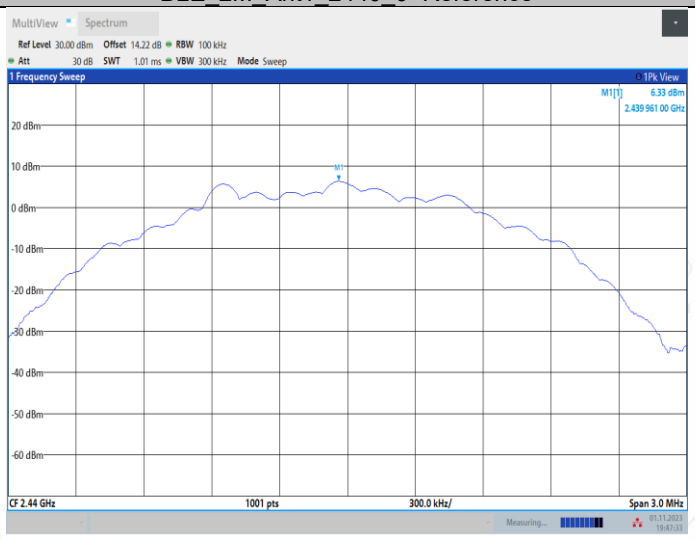
BLE_2M_Ant1_2404_30~1000



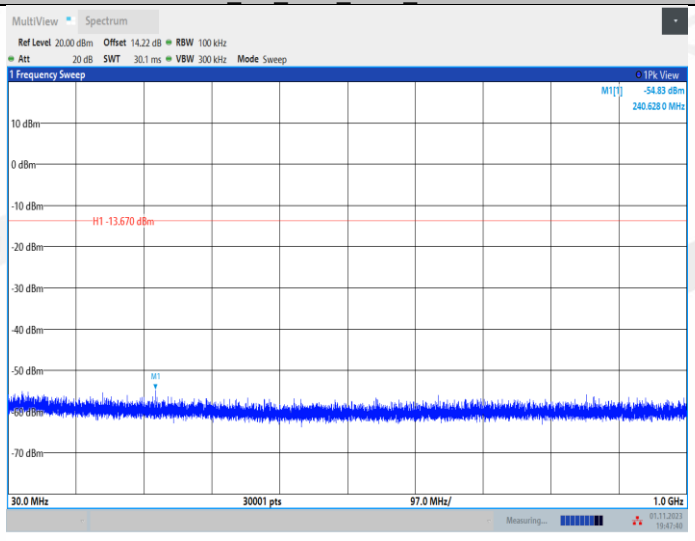
BLE_2M_Ant1_2404_1000~26500



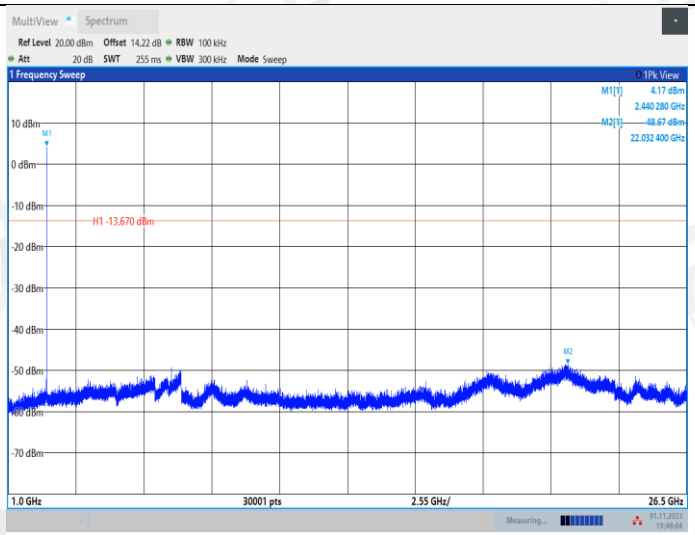
BLE_2M_Ant1_2440_0~Reference



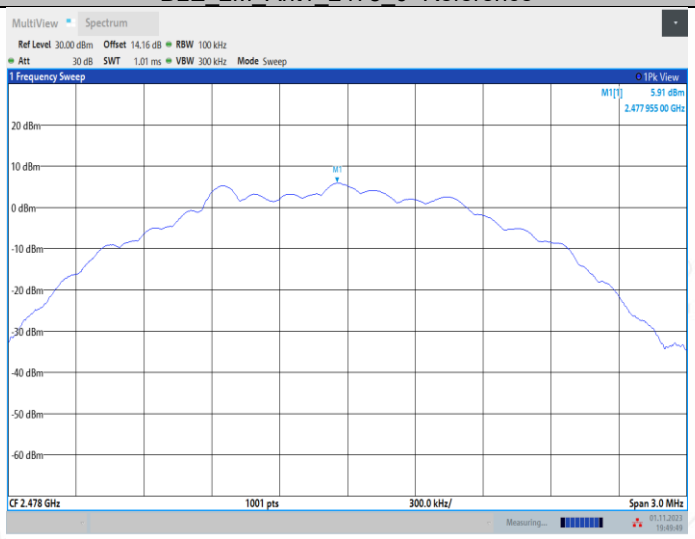
BLE_2M_Ant1_2440_30~1000



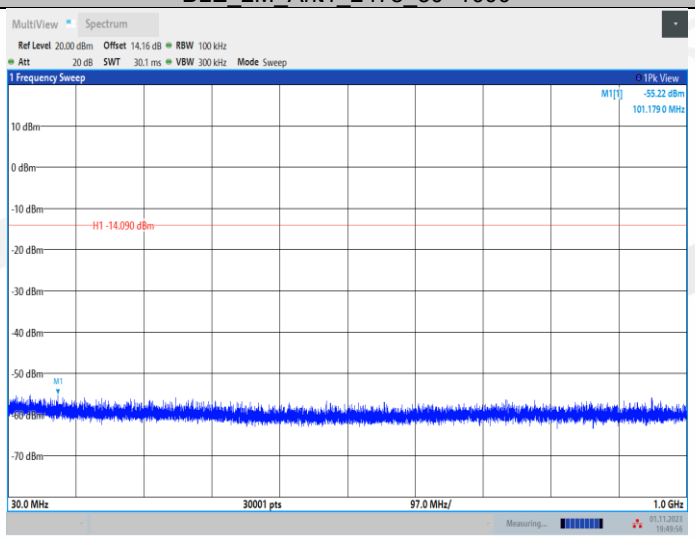
BLE_2M_Ant1_2440_1000~26500



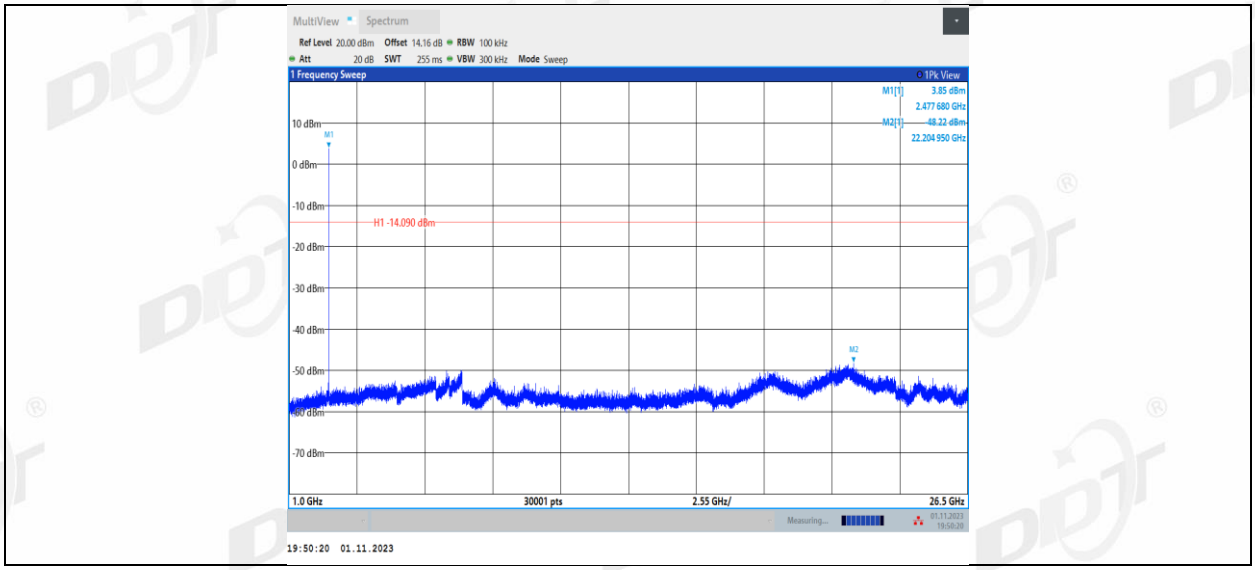
BLE_2M_Ant1_2478_0~Reference



BLE_2M_Ant1_2478_30~1000

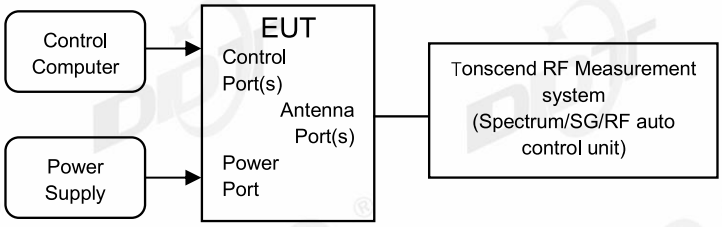


BLE_2M_Ant1_2478_1000~26500


MultiView
Spectrum
Ref Level 20.00 dBm Offset 14.16 dB RBW 100 kHz
Att 20 dB SWT 255 ms VBW 300 kHz Mode Sweep
1 Frequency Sweep
1Pk View
M1[1] 3.85 dBm
2.477 680 GHz
M2[1] -48.22 dBm
22.204 950 GHz
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-70 dBm
H1 -14.090 dBm
M1
M2
1.0 GHz
30001 pts
2.55 GHz/
26.5 GHz
Measuring...
19:50:20 01.11.2023

10. Duty Cycle

10.1. Block diagram of test setup



10.2. Limit

Just for Report.

10.3. Test procedure

(1) Connected the EUT's antenna port to the Spectrum Analyzer by suitable attenuator, The cable loss and attenuator loss have been put into spectrum analyzer as amplitude offset.
set the Spectrum Analyzer as below:
Centre Frequency: The centre frequency of the middle hopping channel.
Resolution BW: 10 MHz.
Video BW: 10 MHz.
Span: Zero span.
Detector: Peak.
Trace Mode: Clear Write.
Sweep: Video Trigger

(2) When the trace is complete, measure the sending time of 1 burst and the duty cycle of 1 burst cycle.

(3) Calculate dwell time follow below formula:
Duty cycle= Pulse's on time / Burst cycle

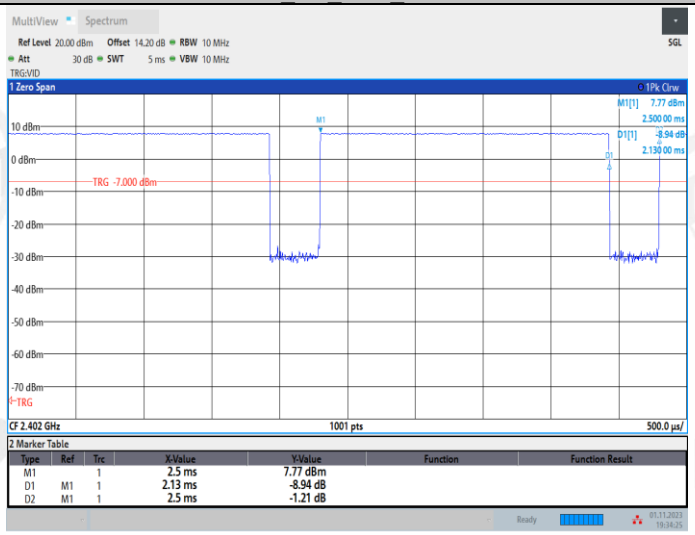
10.4. Test result

Test Site:	RF Measurement System 4#	Test Date:	2023.11.01
Ambient Condition:	25.4℃,53.6%RH	Test Engineer:	Zhongyao
Equipment under Test:	SOUND BAR	Model No.:	DHT-S218
Sample Number:	S23101904-02	Test Power Supply:	AC 120V

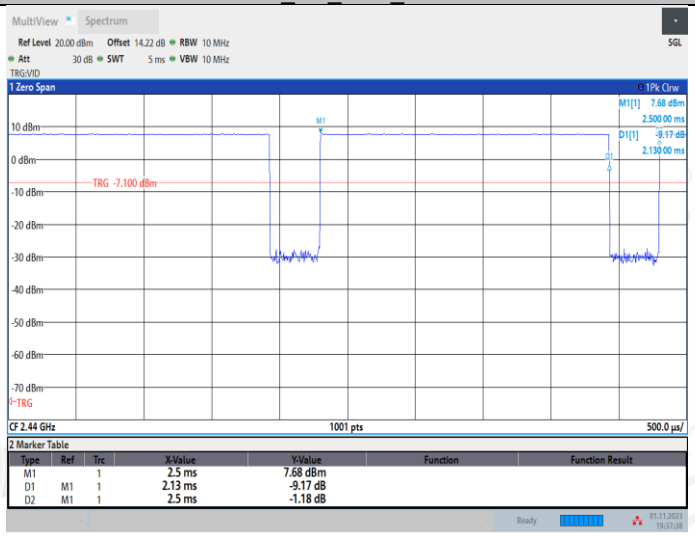
Test Mode	Antenna	Frequency [MHz]	ON Time [ms]	Period [ms]	Duty Cycle [%]	Duty Cycle Factor[dB]
BLE_1M	Ant1	2402	2.13	2.50	85.20	0.70
		2440	2.13	2.50	85.20	0.70
		2480	2.13	2.50	85.20	0.70
BLE_2M	Ant1	2404	1.07	1.25	85.60	0.68
		2440	1.07	1.25	85.60	0.68
		2478	1.07	1.25	85.60	0.68

10.5. Test graphs

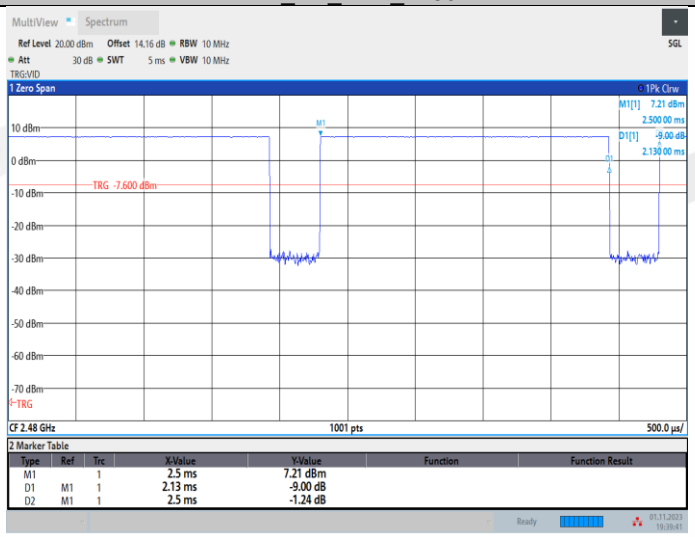
BLE_1M_Ant1_2402



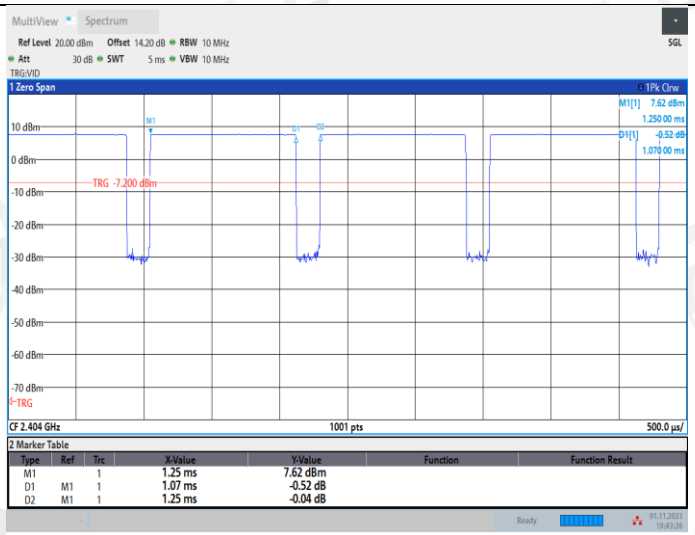
BLE_1M_Ant1_2440



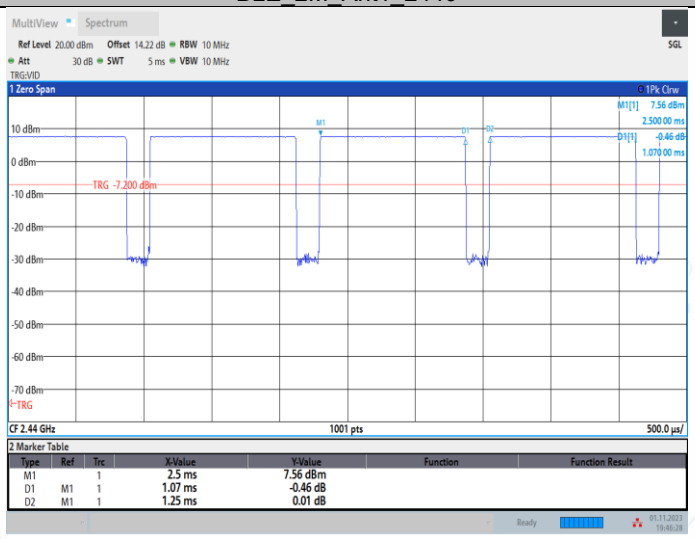
BLE_1M_Ant1_2480



BLE_2M_Ant1_2404



BLE_2M_Ant1_2440



BLE_2M_Ant1_2478