



FCC CERTIFICATION TEST REPORT

Applicant	:	PEAG, LLC dba JLab
Address of Applicant	:	5927 Landau Ct. Carlsbad, CA 92008, USA
Manufacturer	:	GuangDong Simpreal Intelligent Technology Co., Ltd
Address of Manufacturer	:	Room 2408, JiaHong ZhenXing DaSha, DongGuan Avenue #13, DongCheng District, DongGuan City, GuangDong Province, P.R. China
Equipment under Test	:	Wireless Headset
Model No.	:	Epic Work ANC
FCC ID	:	2AHYV-EPICWRK
Test Standard(s)	:	FCC Rules and Regulations Part 15 Subpart C, ANSI C63.10:2013
Report No.	:	DDT-RE23101206-4E02
Issue Date	:	2024/02/06
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

Table of Contents

	Test report declares.....	4
1.	Summary of Test Results.....	7
2.	General Test Information	8
2.1.	Description of EUT.....	8
2.2.	Accessories of EUT	9
2.3.	Assistant equipment used for test.....	9
2.4.	Block diagram of EUT configuration for test.....	10
2.5.	Test environment conditions	10
2.6.	Deviations of test standard	10
2.7.	Test laboratory.....	10
2.8.	Measurement uncertainty	12
3.	Equipment Used During Conductive Test.....	13
4.	6 dB Bandwidth.....	14
4.1.	Block diagram of test setup.....	14
4.2.	Limits	14
4.3.	Test procedure.....	14
4.4.	Test result.....	15
4.5.	Test graphs.....	16
5.	99% Bandwidth.....	18
5.1.	Block diagram of test setup.....	18
5.2.	Limits	18
5.3.	Test procedure.....	18
5.4.	Test result.....	19
5.5.	Test graphs.....	20
6.	Maximum Peak Output Power	22
6.1.	Block diagram of test setup.....	22
6.2.	Limits	22
6.3.	Test procedure.....	22
6.4.	Test result.....	23
6.5.	Test graphs.....	24
7.	Power Spectral Density	26
7.1.	Block diagram of test setup.....	26
7.2.	Limits	26
7.3.	Test procedure.....	26
7.4.	Test result.....	27
7.5.	Test graphs.....	28
8.	Band Edge Compliance (Conducted Method).....	30

8.1.	Block diagram of test setup.....	30
8.2.	Limits	30
8.3.	Test procedure.....	30
8.4.	Test result.....	31
8.5.	Test graphs.....	32
9.	RF Conducted Spurious Emissions	34
9.1.	Block diagram of test setup.....	34
9.2.	Limits	34
9.3.	Test procedure.....	34
9.4.	Test result.....	35
9.5.	Test graphs.....	36
10.	Duty Cycle	42
10.1.	Block diagram of test setup.....	42
10.2.	Limit	42
10.3.	Test procedure.....	42
10.4.	Test result.....	43
10.5.	Test graphs.....	44
11.	Radiated Emission.....	46
11.1.	Test equipment.....	46
11.2.	Block diagram of test setup.....	46
11.3.	Limit	48
11.4.	Test Procedure	49
11.5.	Test result.....	50
12.	Emissions in Restricted Frequency Bands	67
12.1.	Test equipment.....	67
12.2.	Block diagram of test setup.....	67
12.3.	Limit	67
12.4.	Test procedure.....	67
12.5.	Test result.....	67
13.	Power Line Conducted Emission	76
13.1.	Test equipment.....	76
13.2.	Block diagram of test setup.....	76
13.3.	Power line conducted emission limits	76
13.4.	Test procedure.....	76
13.5.	Test result.....	77
14.	Antenna Requirements	82
14.1.	Limit	82
14.2.	Result	82

15.	Test Setup Photograph.....	83
16.	Photos of the EUT	86

Test Report Declare

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Equipment under Test	:	Wireless Headset
Model No.	:	Epic Work ANC
Manufacturer	:	GuangDong Simpreal Intelligent Technology Co., Ltd
Address of Manufacturer	:	Room 2408, JiaHong ZhenXing DaSha, DongGuan Avenue #13, DongCheng District, DongGuan City, GuangDong Province, P.R. China

Test Standard Used:

FCC Rules and Regulations Part 15 Subpart C

Test Procedure Used:

ANSI C63.10:2013

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-RE23101206-4E02		
Date of Receipt:	2023/11/21	Date of Test:	2023/11/21-2024/02/06

Prepared By:**Approved By:**

Ziqin Chen
Ziqin Chen/Engineer


Damon Hu
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	2024/02/06	

1. Summary of Test Results

Description of Test Item	Standard	Result
6 dB Bandwidth and 99% Bandwidth	FCC Part 15: 15.247(a)(2)	Pass
Peak Output Power	FCC Part 15: 15.247(b)(3)	Pass
Power Spectral Density	FCC Part 15: 15.247(e)	Pass
Band Edge Compliance (conducted method)	FCC Part 15: 15.247(d)	Pass
RF Conducted Spurious Emissions	FCC Part 15: 15.247(d)	Pass
Radiation Emission	FCC Part 15: 15.205 FCC Part 15: 15.209 FCC Part 15: 15.247(d)	Pass
Emission in Restricted Frequency Bands	FCC Part 15: 15.205 FCC Part 15: 15.209 FCC Part 15: 15.247(d)	Pass
Power Line Conducted Emission	FCC Part 15: 15.207(a)	Pass
Antenna Requirement	FCC Part 15: 15.203	Pass

2. General Test Information

2.1. Description of EUT

EUT Name	: Wireless Headset
Model Number	: Epic Work ANC
EUT Function Description	: Please reference user manual of this device
Power Supply	: USB 5V power supply or rechargeable battery
Radio Specification	: Bluetooth V5.3 (BR/EDR/LE)
Operation Frequency	: Bluetooth (BR/EDR/LE): 2402 MHz-2480 MHz
Modulation	: Bluetooth BR/EDR: GFSK, $\pi/4$ -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	: Chip Antenna
Max Antenna Gain(dBi)	: 1.91

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.

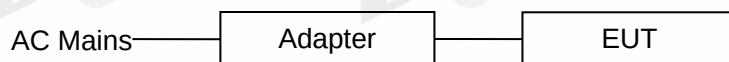
2.2. Accessories of EUT

Description of Accessories	Manufacturer	Model number	Description	Remark
Type-C cable	/	/	/	Length: 144cm
Charging base	/	/	/	/
Dongle	/	/	/	/

2.3. Assistant equipment used for test

Assistant equipment	Manufacturer	Model number	EMC Compliance	SN
NoteBook	Lenovo	Ryzen 5 PRO 3500U	N/A	00425-00000-00002-AA135
Adapter	SAMSUNG	EP-TA200	Input: 100-240~, 50/60Hz, 0.5A; Output: 9V/1.67A or 5V/2A	N/A

2.4. Block diagram of EUT configuration for test



Test software: BQB.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	Default	CH0	2402
	Default	CH19	2440
	Default	CH39	2480
GFSK 2M	Default	CH1	2404
	Default	CH19	2440
	Default	CH38	2478

2.5. Test environment conditions

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

Temperature range:	+15°C to +35 °C
Humidity range:	20% to 75%
Pressure range:	86 kPa to 106 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.

Add.: 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

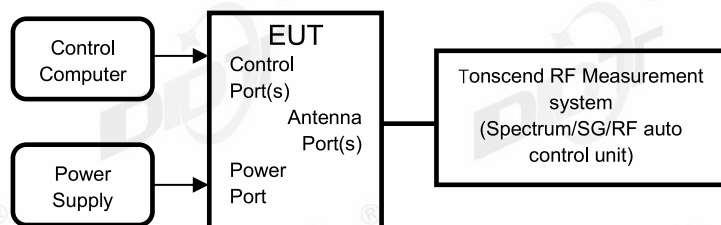
Test Item	Uncertainty
Bandwidth	1.1%
Peak Output Power (Conducted) (Spectrum analyzer)	0.86 dB ($10 \text{ MHz} \leq f < 3.6 \text{ GHz}$);
	1.38 dB ($3.6 \text{ GHz} \leq f < 8 \text{ GHz}$)
Peak Output Power (Conducted) (Power Sensor)	0.74 dB
Power Spectral Density	0.74 dB ($10 \text{ MHz} \leq f < 3.6 \text{ GHz}$);
	1.38 dB ($3.6 \text{ GHz} \leq f < 8 \text{ GHz}$)
Frequencies Stability	6.7×10^{-8} (Antenna couple method)
	5.5×10^{-8} (Conducted method)
Conducted spurious emissions	0.86 dB ($10 \text{ MHz} \leq f < 3.6 \text{ GHz}$);
	1.40 dB ($3.6 \text{ GHz} \leq f < 8 \text{ GHz}$)
	1.66 dB ($8 \text{ GHz} \leq f < 26.5 \text{ GHz}$)
Uncertainty for radio frequency (RBW < 20 kHz)	3×10^{-8}
Temperature	0.4 °C
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:	$\geq [3 \times \text{RBW}]$
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 Engineer:	Zoe	Test Site:	RF Measurement System 4#
Ambient Condition:	24.0℃,54.2%RH	Test Date:	2023.12.15-2023.12.20
Test Power Supply:	Battery	EUT:	Wireless Headset
Sample Number:	S23101206-07	Model No.:	Epic Work ANC

Test Mode	Antenna	Frequency [MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit [MHz]	Verdict
BLE_1M	Ant1	2402	0.66	2401.68	2402.34	0.5	PASS
		2440	0.66	2439.68	2440.34	0.5	PASS
		2480	0.66	2479.68	2480.34	0.5	PASS
BLE_2M	Ant1	2404	1.12	2403.45	2404.57	0.5	PASS
		2440	1.13	2439.45	2440.58	0.5	PASS
		2478	1.12	2477.45	2478.57	0.5	PASS

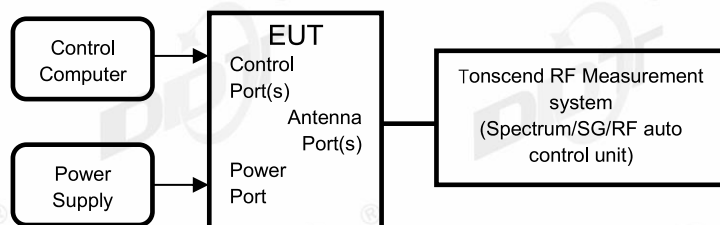
4.5. Test graphs





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:

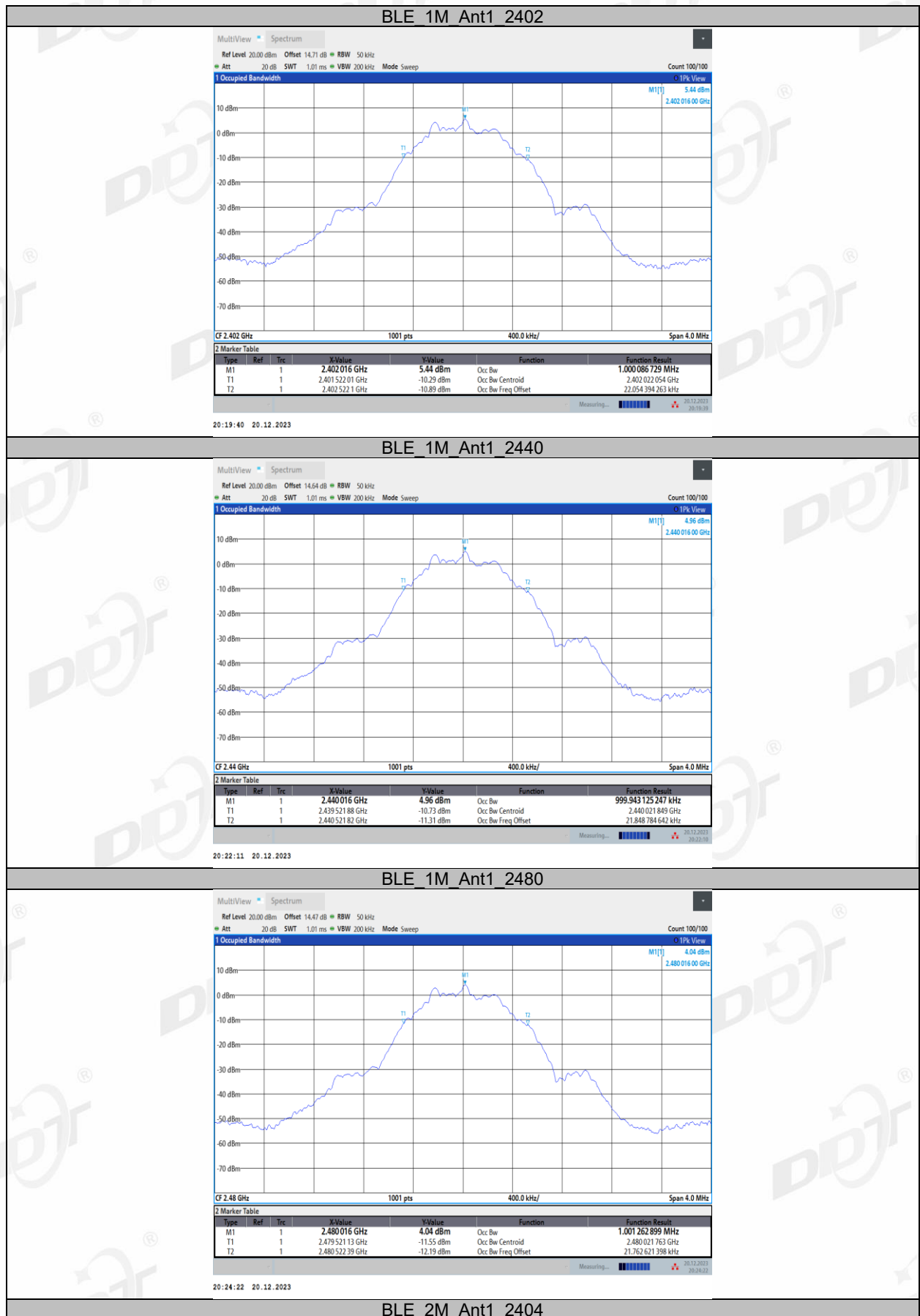
RBW:	1% to 5% of the OBW
VBW:	approximately three times RBW
Span:	between 1.5 times and 5.0 times the OBW
Detector Mode:	Peak
Sweep time:	Auto
Trace mode	Max hold
- (5) Allow the trace to stabilize, measure the 99% bandwidth of signal, and record the results in the report.

5.4. Test result

Test Engineer:	Zoe	Test Site:	RF Measurement System 4#
Ambient Condition:	24.0℃,54.2%RH	Test Date:	2023.12.15-2023.12.20
Test Power Supply:	Battery	EUT:	Wireless Headset
Sample Number:	S23101206-07	Model No.:	Epic Work ANC

Test Mode	Antenna	Frequency [MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit [MHz]	Verdict
BLE_1M	Ant1	2402	1.000	2401.5220	2402.5221	---	---
		2440	1.000	2439.5219	2440.5218	---	---
		2480	1.001	2479.5211	2480.5224	---	---
BLE_2M	Ant1	2404	1.971	2403.0454	2405.0161	---	---
		2440	1.971	2439.0451	2441.0161	---	---
		2478	1.971	2477.0448	2479.0154	---	---

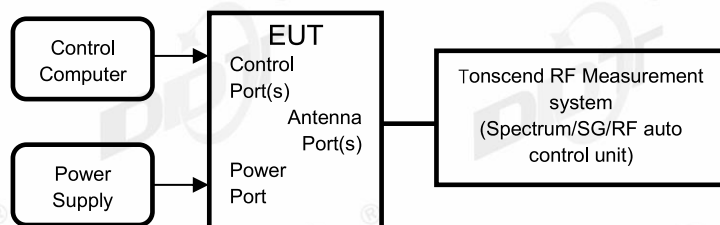
5.5. Test graphs





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:

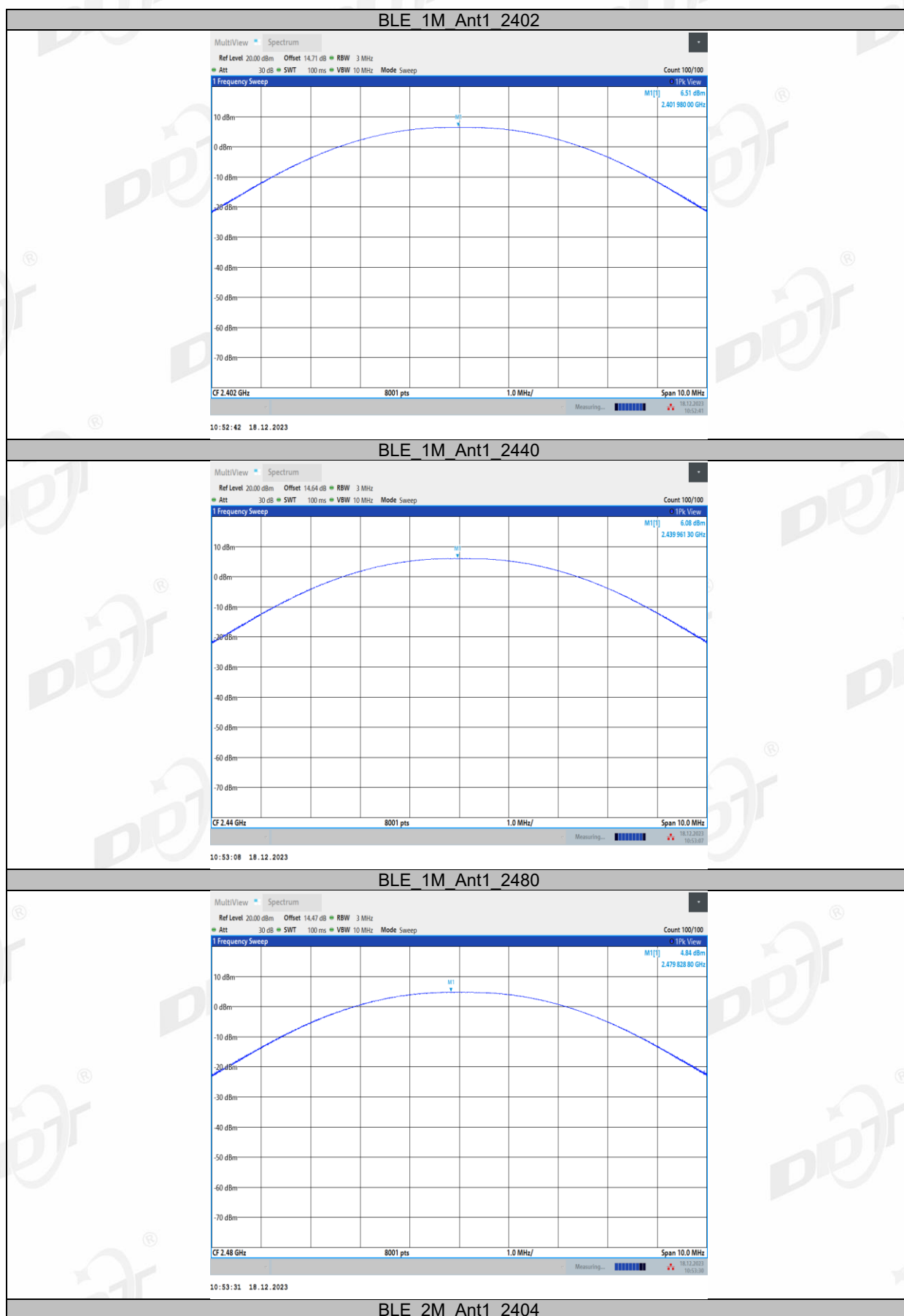
RBW:	≥DTS bandwidth
VBW:	≥3 x RBW
Span	≥3 x RBW
Detector Mode:	Peak
Sweep time:	Auto
Trace mode	Max hold
- (5) Allow the trace to stabilize, use peak marker function to determine the peak amplitude level.

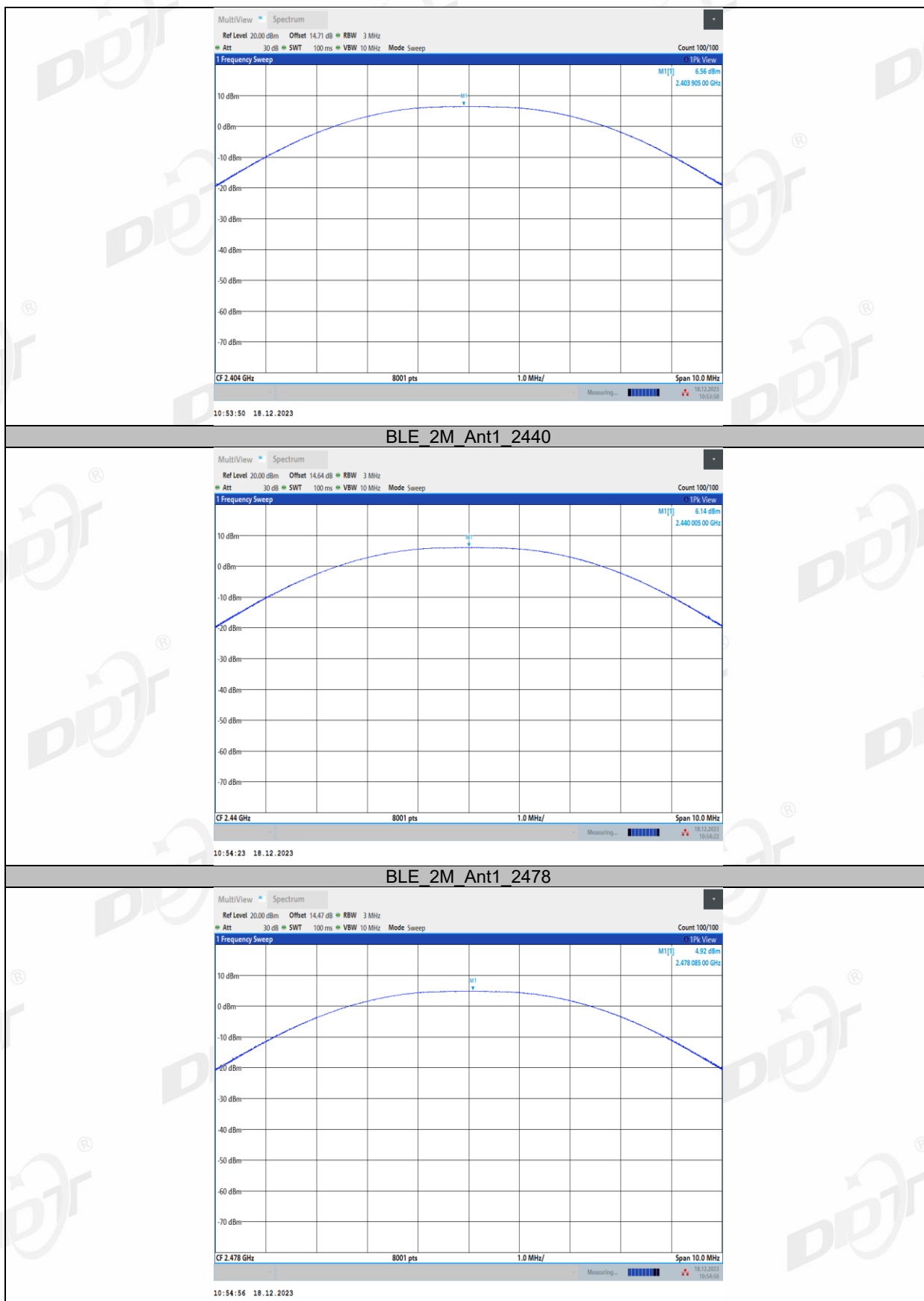
6.4. Test result

Test Engineer:	Zoe	Test Site:	RF Measurement System 4#
Ambient Condition:	24.0℃,54.2%RH	Test Date:	2023.12.15-2023.12.20
Test Power Supply:	Battery	EUT:	Wireless Headset
Sample Number:	S23101206-07	Model No.:	Epic Work ANC

Test Mode	Antenna	Frequency [MHz]	Conducted Peak Power[dBm]	Conducted Limit[dBm]	EIRP[dBm]	EIRP Limit[dBm]	Verdict
BLE_1M	Ant1	2402	6.51	≤30	8.42	≤36	PASS
		2440	6.08	≤30	7.99	≤36	PASS
		2480	4.84	≤30	6.75	≤36	PASS
BLE_2M	Ant1	2404	6.56	≤30	8.47	≤36	PASS
		2440	6.14	≤30	8.05	≤36	PASS
		2478	4.92	≤30	6.83	≤36	PASS

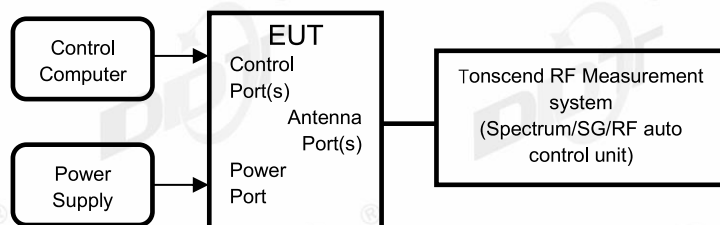
6.5. Test graphs





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:

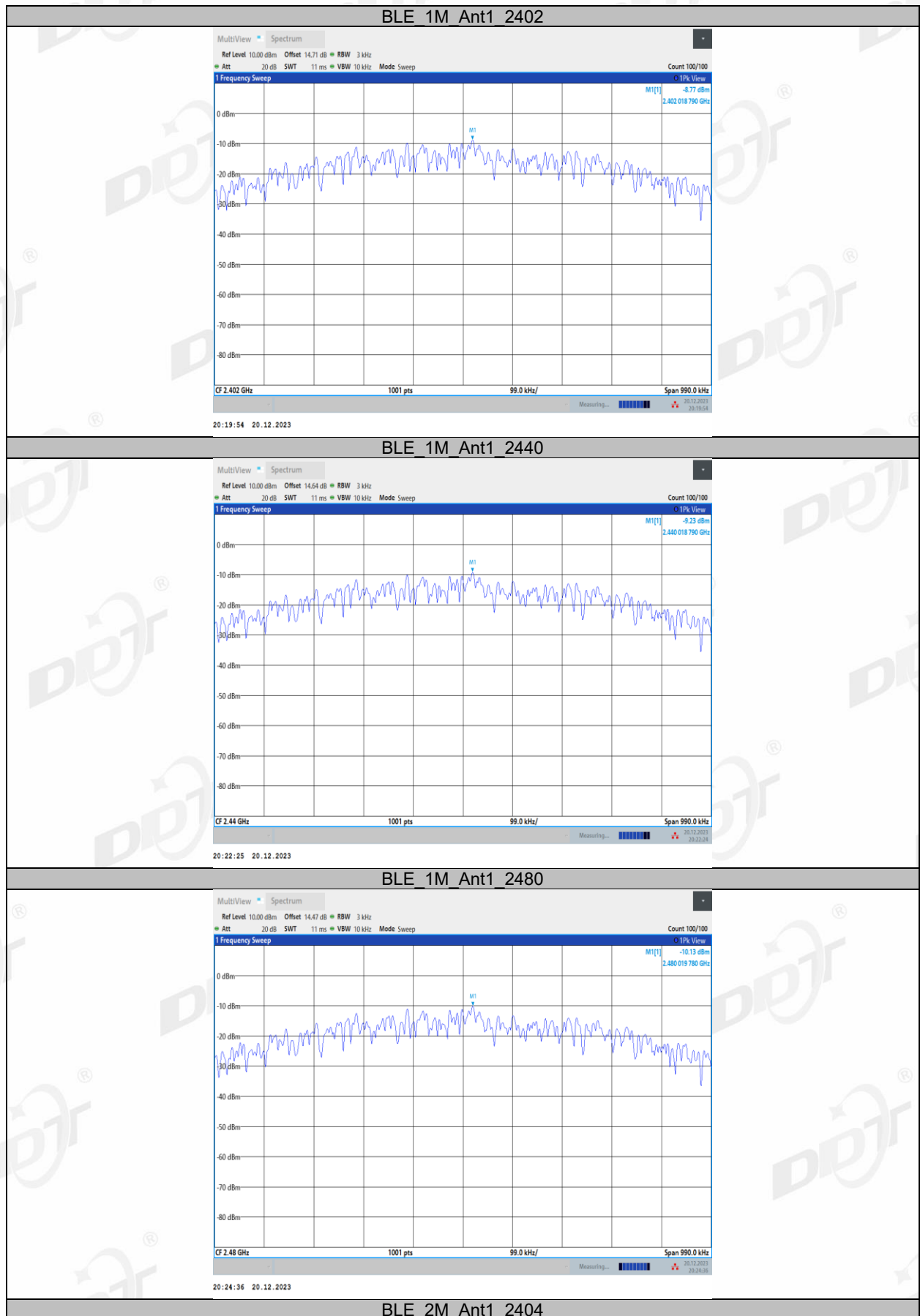
Center frequency	DTS Channel center frequency
RBW:	$3\text{ kHz} \leq \text{RBW} \leq 100\text{ kHz}$
VBW:	$\geq 3\text{RBW}$
Span	1.5 times the DTS bandwidth
Detector Mode:	Peak
Sweep time:	Auto
Trace mode	Max hold
 - (5) Allow the trace to stabilize, use the peak marker function to determine the maximum amplitude level within the RBW.
- If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

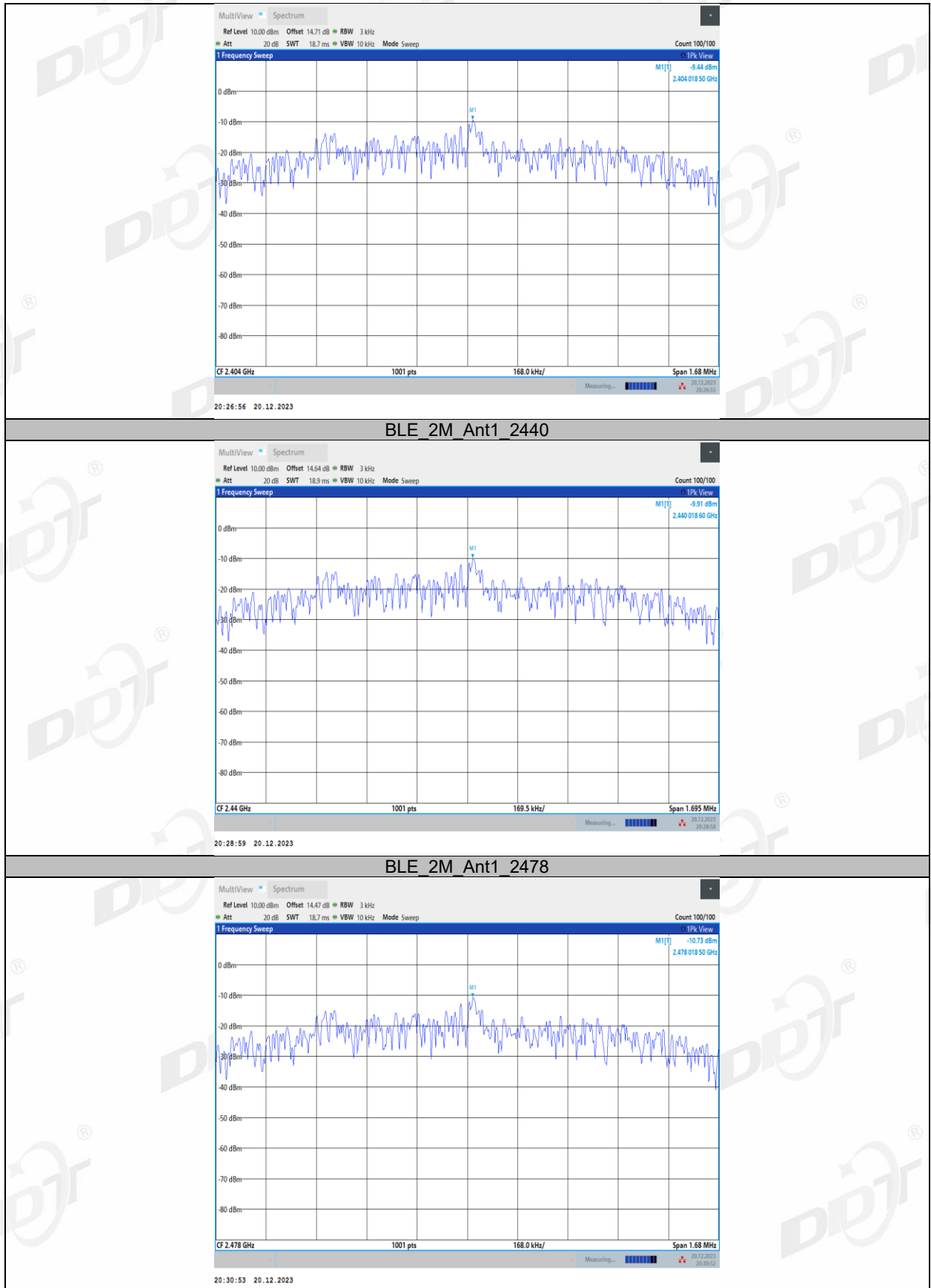
7.4. Test result

Test Engineer:	Zoe	Test Site:	RF Measurement System 4#
Ambient Condition:	24.0℃,54.2%RH	Test Date:	2023.12.15-2023.12.20
Test Power Supply:	Battery	EUT:	Wireless Headset
Sample Number:	S23101206-07	Model No.:	Epic Work ANC

Test Mode	Antenna	Frequency [MHz]	Result [dBm/3kHz]	Limit [dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-8.77	≤8.00	PASS
		2440	-9.23	≤8.00	PASS
		2480	-10.13	≤8.00	PASS
BLE_2M	Ant1	2404	-9.44	≤8.00	PASS
		2440	-9.91	≤8.00	PASS
		2478	-10.73	≤8.00	PASS

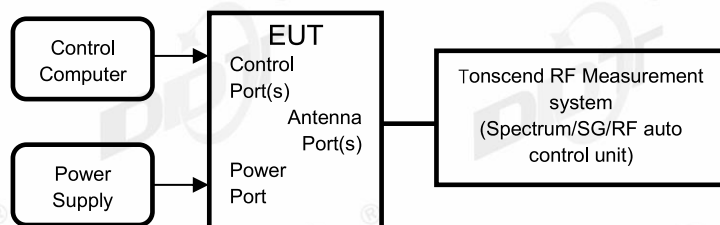
7.5. Test graphs





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

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.

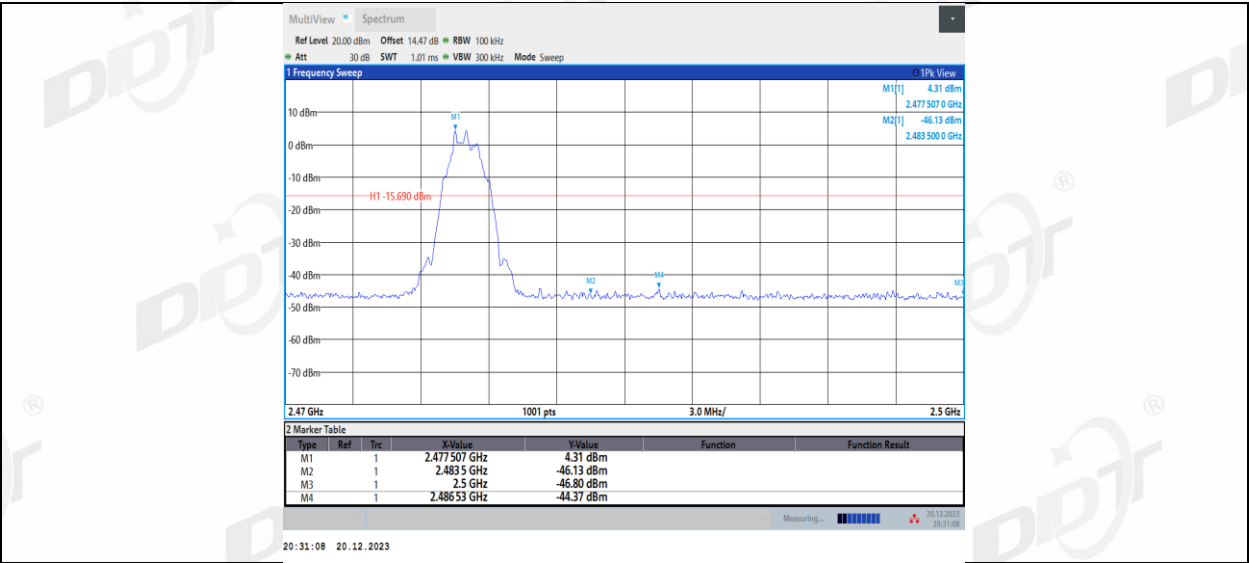
8.4. Test result

Test Engineer:	Zoe	Test Site:	RF Measurement System 4#
Ambient Condition:	24.0℃,54.2%RH	Test Date:	2023.12.15-2023.12.20
Test Power Supply:	Battery	EUT:	Wireless Headset
Sample Number:	S23101206-07	Model No.:	Epic Work ANC

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

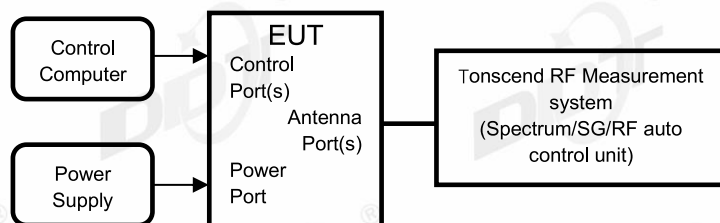
8.5. Test graphs





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

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	$\geq \text{Span/RBW}$
Detector Mode:	Peak
Sweep time:	Auto
Trace mode	Max hold

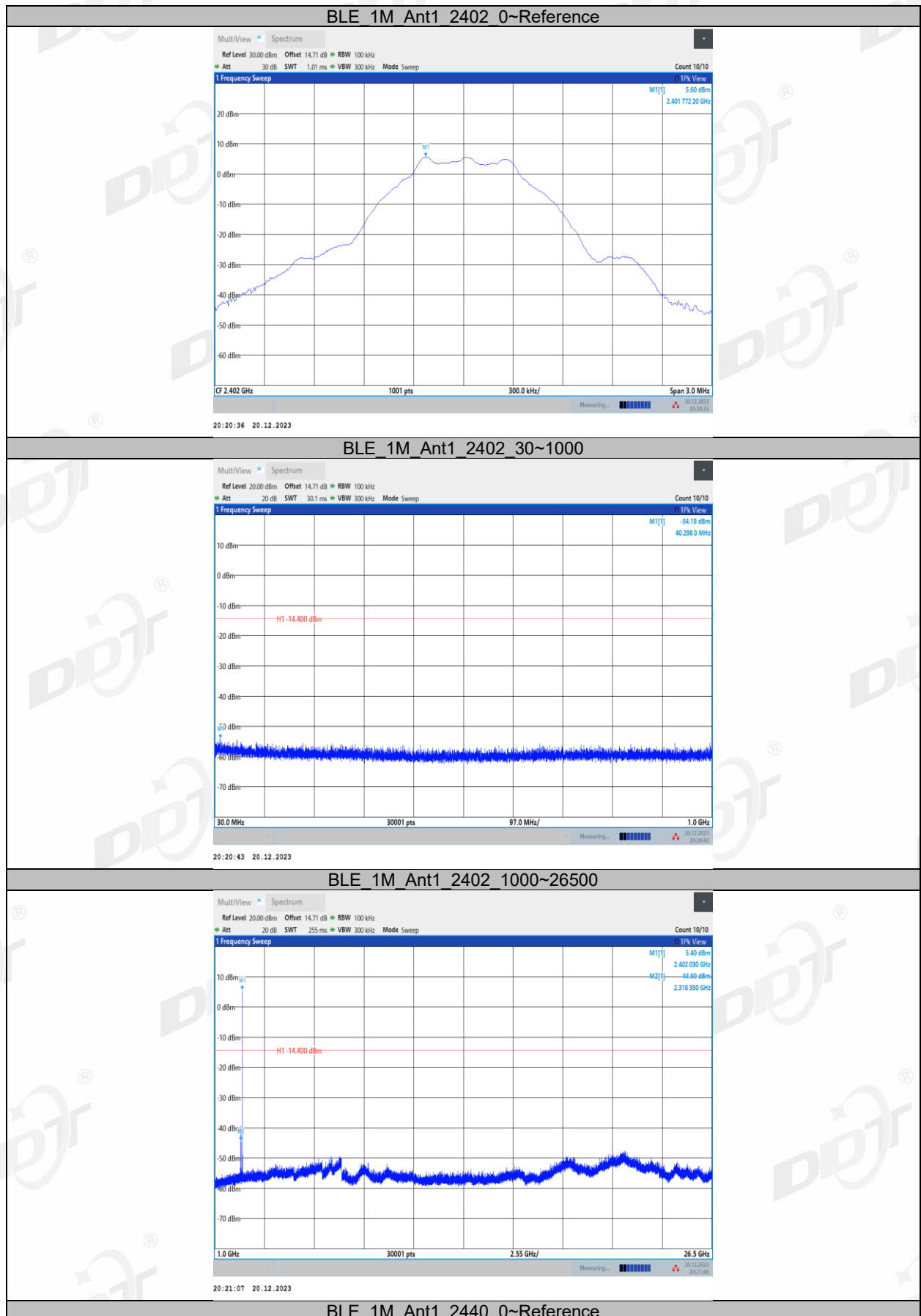
Allow the trace to stabilize, use the peak marker function to determine the maximum amplitude of all unwanted emissions outside of the authorized frequency band

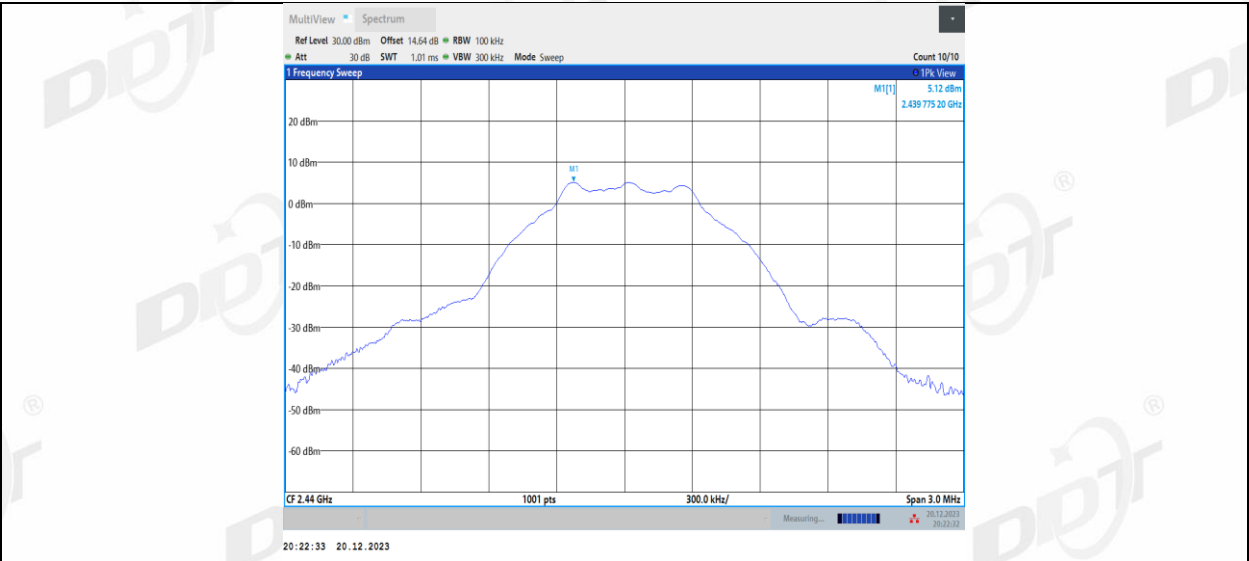
9.4. Test result

Test Engineer:	Zoe	Test Site:	RF Measurement System 4#
Ambient Condition:	24.0℃,54.2%RH	Test Date:	2023.12.15-2023.12.20
Test Power Supply:	Battery	EUT:	Wireless Headset
Sample Number:	S23101206-07	Model No.:	Epic Work ANC

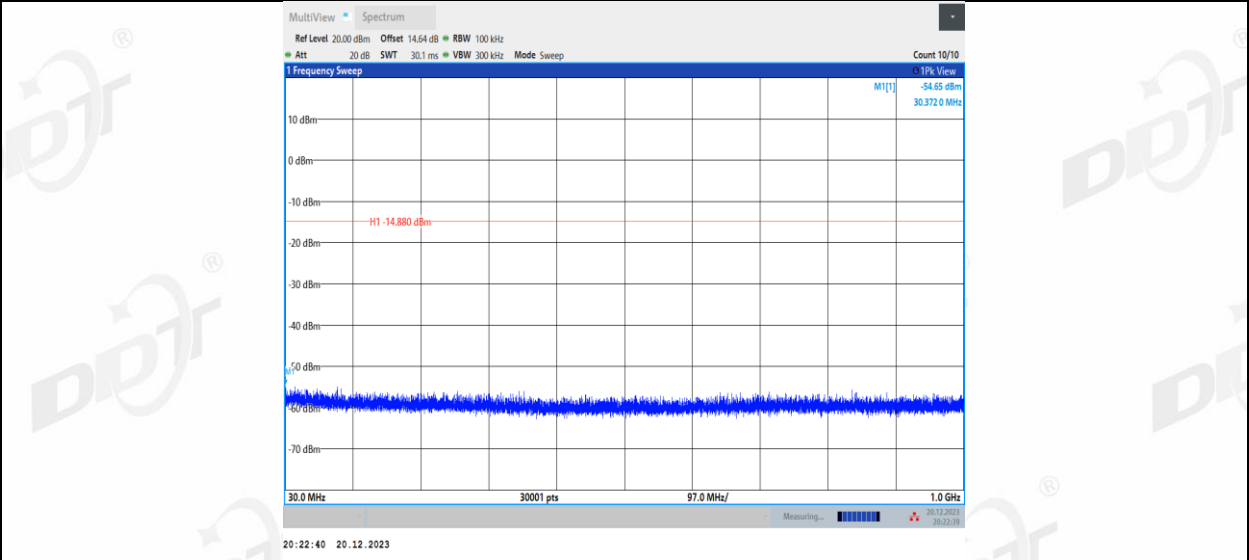
Mode	Freq. (MHz)	Verdict
GFSK 1M	2402	Pass
	2440	Pass
	2480	Pass
GFSK 2M	2404	Pass
	2440	Pass
	2478	Pass

9.5. Test graphs

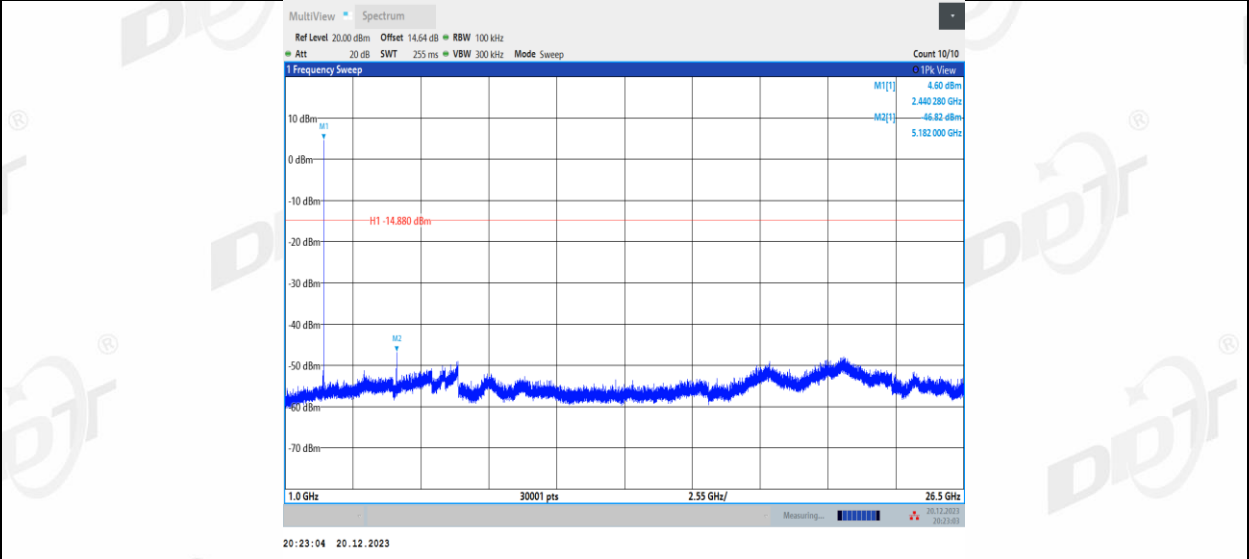




BLE_1M_Ant1_2440_30~1000



BLE_1M_Ant1_2440_1000~26500



BLE_1M_Ant1_2480_0~Reference



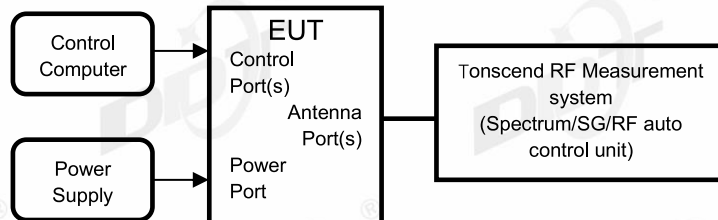






10. Duty Cycle

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 Engineer:	Zoe	Test Site:	RF Measurement System 4#
Ambient Condition:	24.0℃,54.2%RH	Test Date:	2023.12.15-2023.12.20
Test Power Supply:	Battery	EUT:	Wireless Headset
Sample Number:	S23101206-07	Model No.:	Epic Work ANC

Test Mode	Antenna	Frequency [MHz]	ON Time [ms]	Period [ms]	Duty Cycle [%]	Duty Cycle Factor[dB]
BLE_1M	Ant1	2402	0.41	0.62	66.13	1.80
		2440	0.42	0.63	66.67	1.76
		2480	0.42	0.63	66.67	1.76
BLE_2M	Ant1	2404	0.23	0.62	37.10	4.31
		2440	0.23	0.63	36.51	4.38
		2478	0.23	0.63	36.51	4.38

10.5. Test graphs



