

FCC Test Report

Report No.: AGC03061190604FE02

FCC ID : WAD-BTH108Q

APPLICATION PURPOSE : Original Equipment

PRODUCT DESIGNATION : Bluetooth True Wireless Headset

BRAND NAME : K-mate

MODEL NAME : BTH108Q, BTH108QL

APPLICANT : Zhongshan K-mate General Electronics Co., Ltd.

DATE OF ISSUE : Jul. 10, 2019

STANDARD(S) : FCC Part 15.247

REPORT VERSION : V1.0

Attestation of Global Compliance (Shenzhen) Co., Ltd

CAUTION:

This report shall not be reproduced except in full without the written permission of the test laboratory and shall not be quoted out of context.



Attestation of Global Compliance(Shenzhen)Co.,Ltd.

Add: 2/F., Building 2, No.1-4, Chaxi Sanwei Technial Industrial Park, Gushu,
Xixiang, Bao'an District, Shenzhen, Guangdong, China

Tel: +86-755 2523 4088 E-mail: agc@agc-cert.com Service Hotline:400 089 2118

REPORT REVISE RECORD

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Jul. 10, 2019	Valid	Initial Release



Attestation of Global Compliance(Shenzhen)Co.,Ltd.

Add: 2/F., Building 2, No.1-4, Chaxi Sanwei Technial Industrial Park, Gushu,
Xixiang, Bao'an District, Shenzhen, Guangdong, China

Tel: +86-755 2523 4088 E-mail: agc@agc-cert.com Service Hotline:400 089 2118

TABLE OF CONTENTS

1. VERIFICATION OF COMPLIANCE	5
2. GENERAL INFORMATION	6
2.1 PRODUCT DESCRIPTION.....	6
2.2. TABLE OF CARRIER FREQUENCYS	6
2.3 RELATED SUBMITTAL(S)/GRANT(S)	7
2.4 TEST METHODOLOGY	7
2.5 SPECIAL ACCESSORIES	7
2.6 EQUIPMENT MODIFICATIONS	7
3. MEASUREMENT UNCERTAINTY	8
4. DESCRIPTION OF TEST MODES.....	9
5. SYSTEM TEST CONFIGURATION	10
5.1 CONFIGURATION OF TESTED SYSTEM.....	10
5.2 EQUIPMENT USED IN TESTED SYSTEM	10
5.3. SUMMARY OF TEST RESULTS.....	10
6. TEST FACILITY	11
7. PEAK OUTPUT POWER	12
7.1. MEASUREMENT PROCEDURE	12
7.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)	12
7.3. LIMITS AND MEASUREMENT RESULT	13
8. 6 DB BANDWIDTH	15
8.1. MEASUREMENT PROCEDURE	15
8.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)	15
8.3. LIMITS AND MEASUREMENT RESULTS	15
9. CONDUCTED SPURIOUS EMISSION	17
9.1. MEASUREMENT PROCEDURE	17
9.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)	17
9.3. MEASUREMENT EQUIPMENT USED	17
9.4. LIMITS AND MEASUREMENT RESULT	17
10. MAXIMUM CONDUCTED OUTPUT POWER SPECTRAL DENSITY	22



Attestation of Global Compliance(Shenzhen)Co.,Ltd.

Add: 2/F., Building 2, No.1-4, Chaxi Sanwei Technial Industrial Park, Gushu,
Xixiang, Bao'an District, Shenzhen, Guangdong, China

Tel: +86-755 2523 4088 E-mail: agc@agc-cert.com Service Hotline:400 089 2118

10.1 MEASUREMENT PROCEDURE	22
10.2 TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)	22
10.3 MEASUREMENT EQUIPMENT USED	22
10.4 LIMITS AND MEASUREMENT RESULT	22
11. RADIATED EMISSION.....	24
11.1. MEASUREMENT PROCEDURE	24
11.2. TEST SETUP	25
11.3. LIMITS AND MEASUREMENT RESULT	26
11.4. TEST RESULT	26
APPENDIX A: PHOTOGRAPHS OF TEST SETUP	36
APPENDIX B: PHOTOGRAPHS OF EUT	37



Attestation of Global Compliance(Shenzhen)Co.,Ltd.

Add: 2/F., Building 2, No.1–4, Chaxi Sanwei Technial Industrial Park, Gushu,
Xixiang, Bao'an District, Shenzhen, Guangdong, China

Tel: +86-755 2523 4088 E-mail: agc@agc-cert.com Service Hotline:400 089 2118

1. VERIFICATION OF COMPLIANCE

Applicant	Zhongshan K-mate General Electronics Co., Ltd.
Address	NO.2, 5th Xinsheng Street, Gangkou Town, Zhongshan City, Guangdong, China
Manufacturer	Zhongshan K-mate General Electronics Co., Ltd.
Address	NO.2, 5th Xinsheng Street, Gangkou Town, Zhongshan City, Guangdong, China
Factory	Zhongshan K-mate General Electronics Co., Ltd.
Address	NO.2, 5th Xinsheng Street, Gangkou Town, Zhongshan City, Guangdong, China
Product Designation	Bluetooth True Wireless Headset
Brand Name	K-mate
Test Model	BTH108Q
Series Model	BTH108QL
Difference Description	All the same except for the model name and battery. Both the models had been tested, the BTH108Q is the worst case recorded in the report.
Date of test	Jun. 17, 2019 to Jul. 10, 2019
Deviation	None
Condition of Test Sample	Normal
Test Result	Pass
Report Template	AGCRT-US-BLE/RF

We hereby certify that:

The above equipment was tested by Attestation of Global Compliance (Shenzhen) Co., Ltd. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10 (2013) and the energy emitted by the sample EUT tested as described in this report is in compliance with radiated emission limits of FCC part 15.247.

Tested By

Sky Dong

Sky Dong(Dong Huihui)

Jul. 10, 2019

Reviewed By

Max Zhang

Max Zhang(Zhang Yi)

Jul. 10, 2019

Approved By

Forrest Lei

Forrest Lei(Lei Yonggang)

Authorized Officer

Jul. 10, 2019



Attestation of Global Compliance(Shenzhen)Co.,Ltd.

Add: 2/F., Building 2, No.1-4, Chaxi Sanwei Technial Industrial Park, Gushu, Xixiang, Bao'an District, Shenzhen, Guangdong, China

Tel: +86-755 2523 4088 E-mail: agc@agc-cert.com Service Hotline:400 089 2118

2.GENERAL INFORMATION

2.1 PRODUCT DESCRIPTION

The EUT is designed as a "Bluetooth True Wireless Headset". It is designed by way of utilizing the GFSK technology to achieve the system operation.

A major technical description of EUT is described as following

Operation Frequency	2.402 GHz to 2.480GHz
RF Output Power	-2.673dBm(Max)
Bluetooth Version	V 5.0
Modulation	BR <input type="checkbox"/> GFSK, EDR <input type="checkbox"/> $\pi/4$ -DQPSK, <input type="checkbox"/> 8DPSK BLE <input checked="" type="checkbox"/> GFSK 1Mbps <input type="checkbox"/> GFSK 2Mbps
Number of channels	40 Channel
Antenna Designation	Ceramic Antenna(Comply with requirements of the FCC part 15.203)
Antenna Gain	2.71dBi
Hardware Version	BTH108QMB-V08
Software Version	BTH108Q-V13
Power Supply	DC 3.7V by battery

Note: The EUT comprises left and right channel headsets, both are the same and have been tested. Only the test data of left headset recorded in this report.

2.2. TABLE OF CARRIER FREQUENCYS

Frequency Band	Channel Number	Frequency
2400~2483.5MHZ	0	2402MHZ
	1	2404MHZ
	:	:
	38	2478 MHZ
	39	2480 MHZ



Attestation of Global Compliance(Shenzhen)Co.,Ltd.

Add: 2/F., Building 2, No.1–4, Chaxi Sanwei Technial Industrial Park, Gushu,
Xixiang, Bao'an District, Shenzhen, Guangdong, China

Tel: +86-755 2523 4088 E-mail: agc@agc-cert.com Service Hotline:400 089 2118

2.3 RELATED SUBMITTAL(S)/GRANT(S)

This submittal(s) (test report) is intended for **FCC ID: WAD-BTH108Q** filing to comply with the FCC Part 15.247 requirements.

2.4 TEST METHODOLOGY

Both conducted and radiated testing was performed according to the procedures in ANSI C63.10 (2013). Radiated testing was performed at an antenna to EUT distance 3 meters.

2.5 SPECIAL ACCESSORIES

Refer to section 2.2.

2.6 EQUIPMENT MODIFICATIONS

Not available for this EUT intended for grant.



Attestation of Global Compliance(Shenzhen)Co.,Ltd.

Add: 2/F., Building 2, No.1-4, Chaxi Sanwei Technial Industrial Park, Gushu,
Xixiang, Bao'an District, Shenzhen, Guangdong, China

Tel: +86-755 2523 4088 E-mail: agc@agc-cert.com Service Hotline:400 089 2118

3. MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $y \pm U$, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95%.

- Uncertainty of Conducted Emission, $U_c = \pm 3.2 \text{ dB}$
- Uncertainty of Radiated Emission below 1GHz, $U_c = \pm 3.9 \text{ dB}$
- Uncertainty of Radiated Emission above 1GHz, $U_c = \pm 4.8 \text{ dB}$
- Uncertainty of total RF power, conducted, $U_c = \pm 0.8 \text{ dB}$
- Uncertainty of RF power density, conducted, $U_c = \pm 2.6 \text{ dB}$
- Uncertainty of spurious emissions, conducted, $U_c = \pm 2.7 \text{ dB}$
- Uncertainty of Occupied Channel Bandwidth: $U_c = \pm 2 \%$



Attestation of Global Compliance(Shenzhen)Co.,Ltd.

Add: 2/F., Building 2, No.1-4, Chaxi Sanwei Technial Industrial Park, Gushu,
Xixiang, Bao'an District, Shenzhen, Guangdong, China

Tel: +86-755 2523 4088 E-mail: agc@agc-cert.com Service Hotline:400 089 2118

4. DESCRIPTION OF TEST MODES

NO.	TEST MODE DESCRIPTION
1	Low channel TX
2	Middle channel TX
3	High channel TX

Note:

1. Only the result of the worst case was recorded in the report, if no other cases.
2. For Radiated Emission, 3axis were chosen for testing for each applicable mode.
3. For Conducted Test method, a temporary antenna connector is provided by the manufacturer.
4. The test software is the Qualcomm BlueSuite_3.1.4 which can set the EUT into the individual test modes.



Attestation of Global Compliance(Shenzhen)Co.,Ltd.

Add: 2/F., Building 2, No.1–4, Chaxi Sanwei Technical Industrial Park, Gushu,
Xixiang, Bao'an District, Shenzhen, Guangdong, China

Tel: +86-755 2523 4088 E-mail: agc@agc-cert.com Service Hotline:400 089 2118

5. SYSTEM TEST CONFIGURATION

5.1 CONFIGURATION OF TESTED SYSTEM



5.2 EQUIPMENT USED IN TESTED SYSTEM

Item	Equipment	Model No.	ID or Specification	Remark
1	Bluetooth True Wireless Headset	BTH108Q	WAD-BTH108Q	EUT

5.3. SUMMARY OF TEST RESULTS

FCC RULES	DESCRIPTION OF TEST	RESULT
15.247 (b)(3)	Peak Output Power	Compliant
15.247 (a)(2)	6 dB Bandwidth	Compliant
15.247 (d)	Conducted Spurious Emission	Compliant
15.247 (e)	Maximum Conducted Output Power Density	Compliant
15.209	Radiated Emission	Compliant
15.207	Conducted Emission	N/A

Note: The EUT can not use the BT function with charging



Attestation of Global Compliance(Shenzhen)Co.,Ltd.

Add: 2/F., Building 2, No.1-4, Chaxi Sanwei Technial Industrial Park, Gushu,
Xixiang, Bao'an District, Shenzhen, Guangdong, China

Tel: +86-755 2523 4088 E-mail: agc@agc-cert.com Service Hotline:400 089 2118

6. TEST FACILITY

Test Site	Attestation of Global Compliance (Shenzhen) Co., Ltd
Location	1-2/F, Building 19, Junfeng Industrial Park, Chongqing Road, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China
Designation Number	CN1259
FCC Test Firm Registration Number	975832
A2LA Cert. No.	5054.02
Description	Attestation of Global Compliance(Shenzhen) Co., Ltd is accredited by A2LA

TEST EQUIPMENT OF RADIATED EMISSION TEST

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due
TEST RECEIVER	R&S	ESCI	10096	Jun. 12, 2019	Jun. 26, 2020
EXA Signal Analyzer	Agilent	N9010A	MY53470504	Dec. 20, 2018	Dec. 19, 2019
2.4GHz Fliter	EM Electronics	2400-2500MHz	N/A	Feb. 27, 2019	Feb. 26, 2020
Attenuator	ZHINAN	E-002	N/A	Aug. 28, 2018	Aug. 27, 2019
Horn antenna	SCHWARZBECK	BBHA 9170	#768	Sep. 21, 2017	Sep. 20, 2020
Active loop antenna (9K-30MHz)	ZHINAN	ZN30900C	18051	Jun. 14, 2018	Jun. 13, 2020
Double-Ridged Waveguide Horn	ETS LINDGREN	3117	00034609	May. 26, 2018	May. 25, 2020
Broadband Preamplifier	ETS LINDGREN	3117PA	00225134	Oct. 25, 2018	Oct. 24, 2019
ANTENNA	SCHWARZBECK	VULB9168	D69250	Sep. 28, 2017	Sep. 27, 2019



Attestation of Global Compliance(Shenzhen)Co.,Ltd.

Add: 2/F., Building 2, No.1-4, Chaxi Sanwei Technial Industrial Park, Gushu, Xixiang, Bao'an District, Shenzhen, Guangdong, China

Tel: +86-755 2523 4088 E-mail: agc@agc-cert.com Service Hotline:400 089 2118

7. PEAK OUTPUT POWER

7.1. MEASUREMENT PROCEDURE

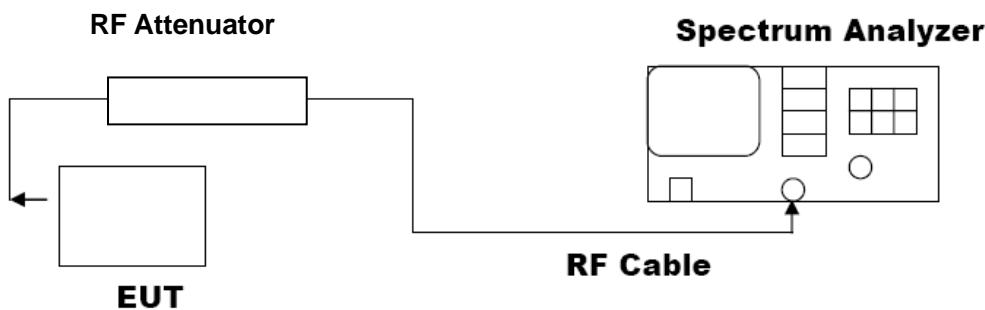
For peak power test:

1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
2. $RBW \geq DTS$ bandwidth
3. $VBW \geq 3 \times RBW$.
4. $SPAN \geq VBW$.
5. Sweep: Auto.
6. Detector function: Peak.
7. Trace: Max hold.

Allow trace to stabilize. Use the marker-to-peak function to set the marker to the peak of the emission. The indicated level is the peak output power, after any corrections for external attenuators and cables.

7.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

PEAK POWER TEST SETUP



Attestation of Global Compliance(Shenzhen)Co.,Ltd.

Add: 2/F., Building 2, No.1-4, Chaxi Sanwei Technial Industrial Park, Gushu,
Xixiang, Bao'an District, Shenzhen, Guangdong, China

Tel: +86-755 2523 4088 E-mail: agc@agc-cert.com Service Hotline:400 089 2118

7.3. LIMITS AND MEASUREMENT RESULT

PEAK OUTPUT POWER MEASUREMENT RESULT FOR GFSK MOUDULATION			
Frequency (GHz)	Peak Power (dBm)	Applicable Limits (dBm)	Pass or Fail
2.402	-2.937	30	Pass
2.440	-2.729	30	Pass
2.480	-2.673	30	Pass

CH0



Attestation of Global Compliance(Shenzhen)Co.,Ltd.

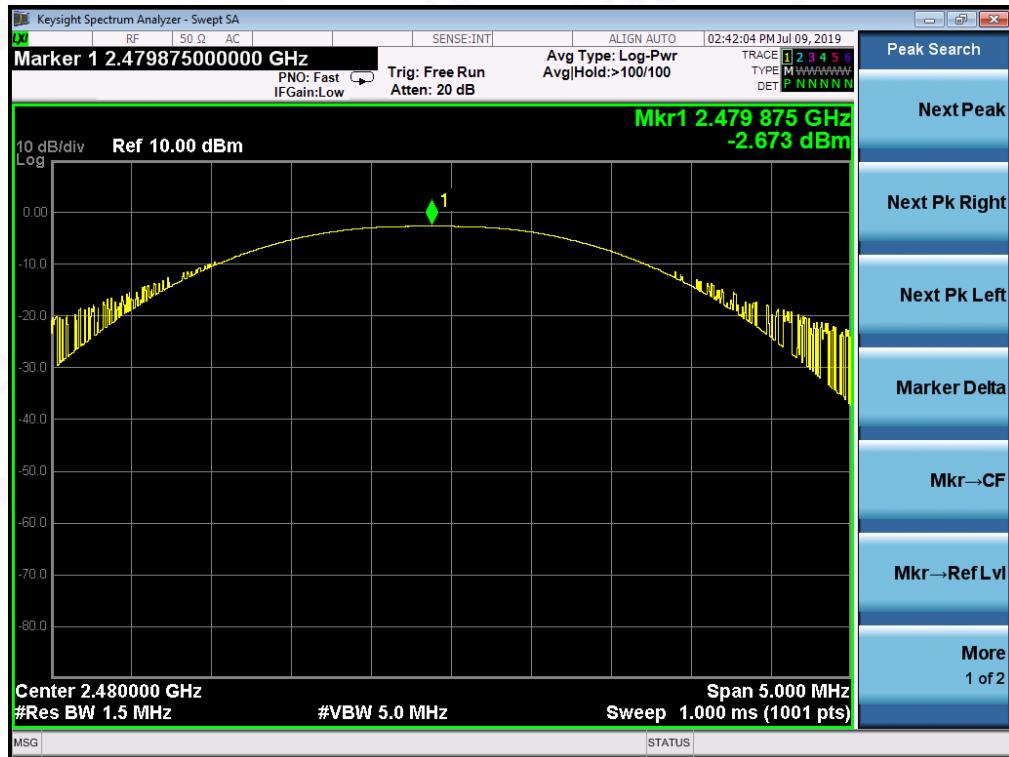
 Add: 2/F., Building 2, No.1–4, Chaxi Sanwei Technial Industrial Park, Gushu,
 Xixiang, Bao'an District, Shenzhen, Guangdong, China

Tel: +86-755 2523 4088 E-mail: agc@agc-cert.com Service Hotline:400 089 2118

CH19



CH39



Attestation of Global Compliance(Shenzhen)Co.,Ltd.

Add: 2/F., Building 2, No.1–4, Chaxi Sanwei Technial Industrial Park, Gushu,
 Xixiang, Bao'an District, Shenzhen, Guangdong, China

Tel: +86-755 2523 4088 E-mail: agc@agc-cert.com

Service Hotline:400 089 2118

8. 6 DB BANDWIDTH

8.1. MEASUREMENT PROCEDURE

1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
2. Set the EUT Work on the top, the middle and the bottom operation frequency individually.
3. Set SPA Centre Frequency = Operation Frequency, RBW= 100 KHz, VBW \geqslant 3 \times RBW.
4. Set SPA Trace 1 Max hold, then View.

Note: The EUT was tested according to ANSI C63.10 for compliance to FCC PART 15.247 requirements.

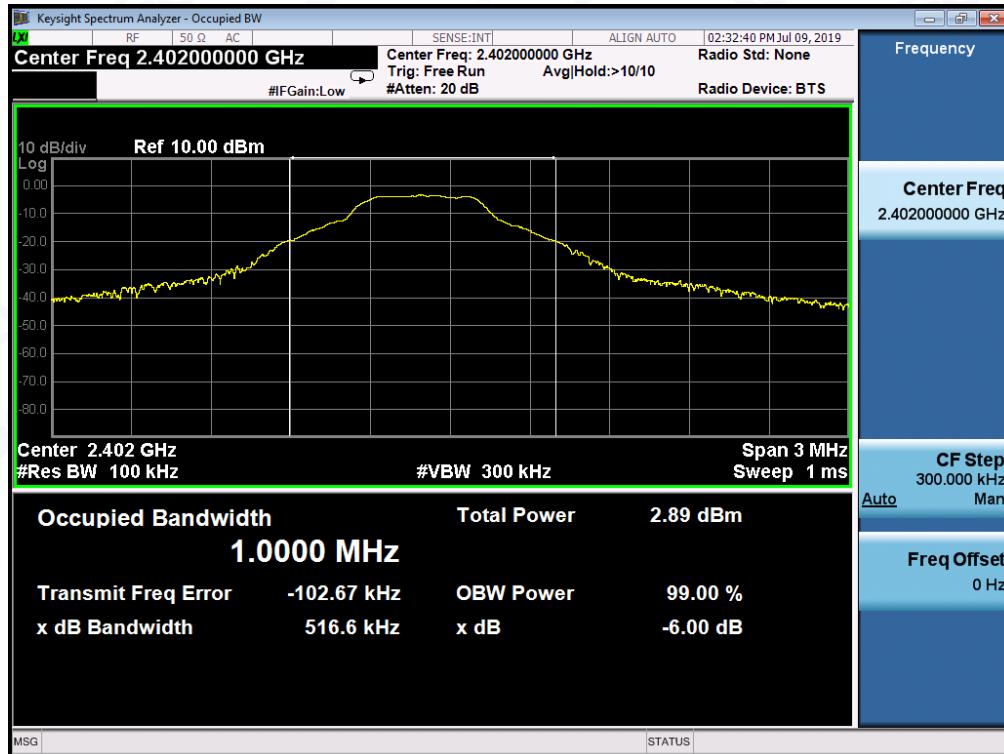
8.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

The same as described in section 7.2.

8.3. LIMITS AND MEASUREMENT RESULTS

LIMITS AND MEASUREMENT RESULT			
Applicable Limits	Applicable Limits		
	Test Data (kHz)		Criteria
>500KHZ	Low Channel	516.6	PASS
	Middle Channel	514.7	PASS
	High Channel	516.0	PASS

TEST PLOT OF BANDWIDTH FOR LOW CHANNEL



Attestation of Global Compliance(Shenzhen)Co.,Ltd.

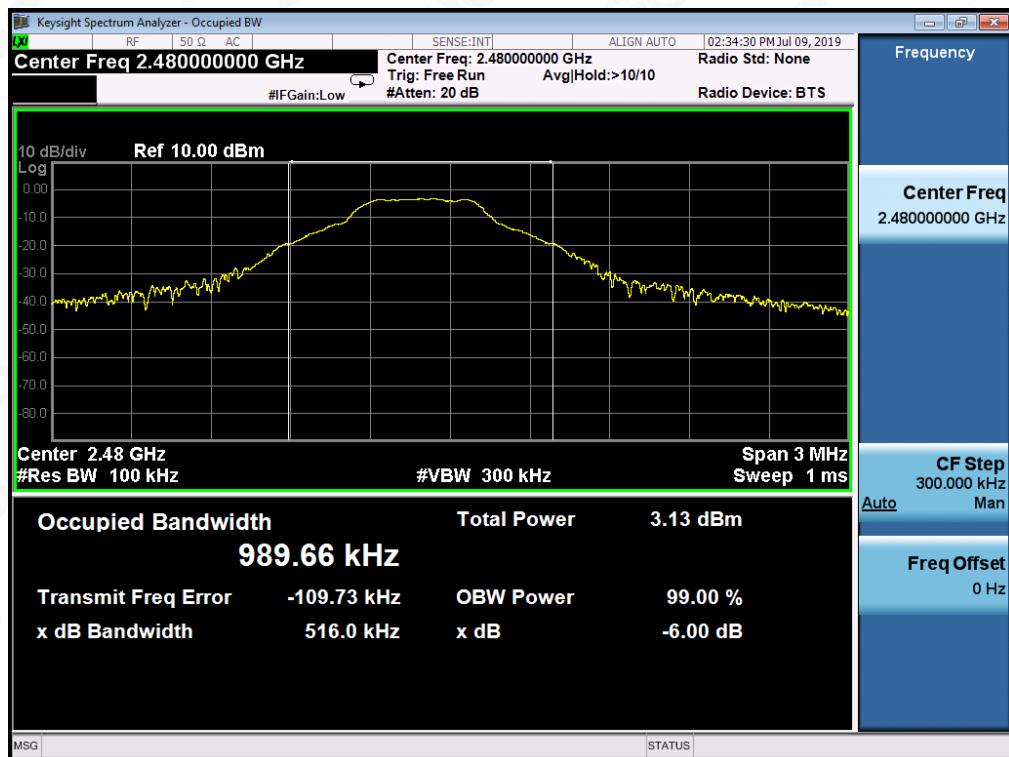
Add: 2/F., Building 2, No.1–4, Chaxi Sanwei Technial Industrial Park, Gushu, Xixiang, Bao'an District, Shenzhen, Guangdong, China

Tel: +86-755 2523 4088 E-mail: agc@agc-cert.com Service Hotline:400 089 2118

TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL



TEST PLOT OF BANDWIDTH FOR HIGH CHANNEL



Attestation of Global Compliance(Shenzhen)Co.,Ltd.

Add: 2/F., Building 2, No.1-4, Chaxi Sanwei Technial Industrial Park, Gushu,
 Xixiang, Bao'an District, Shenzhen, Guangdong, China
 Tel: +86-755 2523 4088 E-mail: agc@agc-cert.com

Service Hotline:400 089 2118

9. CONDUCTED SPURIOUS EMISSION

9.1. MEASUREMENT PROCEDURE

1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
2. Set the EUT Work on the top, the middle and the bottom operation frequency individually.
3. Set SPA Trace 1 Max hold, then View.

Note: The EUT was tested according to ANSI C63.10 for compliance to FCC PART 15.247 requirements.

9.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

The same as described in section 7.2.

9.3. MEASUREMENT EQUIPMENT USED

The same as described in section 6.

9.4. LIMITS AND MEASUREMENT RESULT

LIMITS AND MEASUREMENT RESULT		
Applicable Limits	Measurement Result	
	Test Data	Criteria
In any 100 KHz Bandwidth Outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produce by the intentional radiator shall be at least 20 dB below that in 100KHz bandwidth within the band that contains the highest level of the desired power.	At least -20dBc than the reference level	PASS PASS

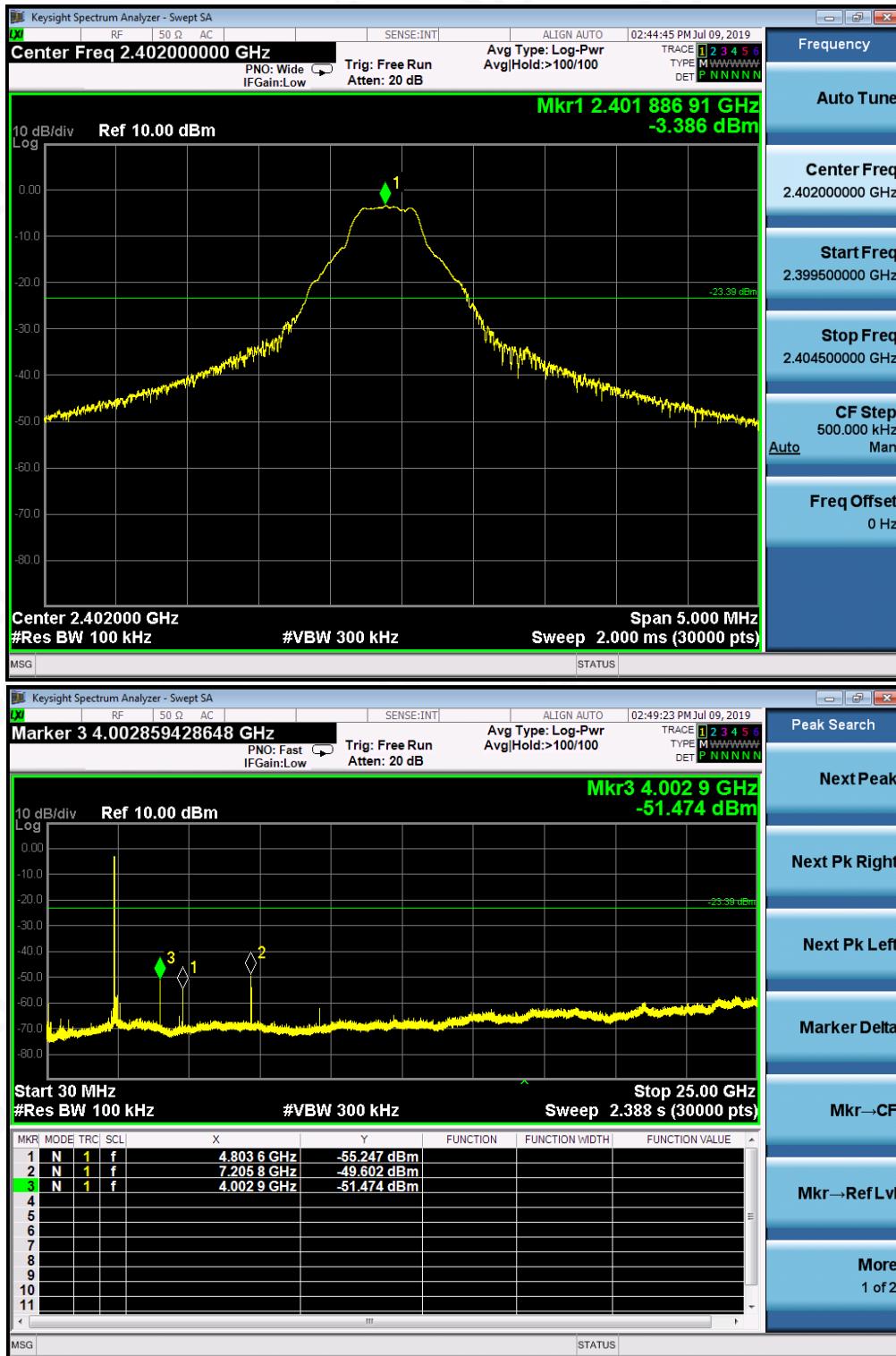


Attestation of Global Compliance(Shenzhen)Co.,Ltd.

Add: 2/F., Building 2, No.1-4, Chaxi Sanwei Technial Industrial Park, Gushu,
Xixiang, Bao'an District, Shenzhen, Guangdong, China

Tel: +86-755 2523 4088 E-mail: agc@agc-cert.com Service Hotline:400 089 2118

TEST RESULT FOR ENTIRE FREQUENCY RANGE GFSK MODULATION IN LOW CHANNEL

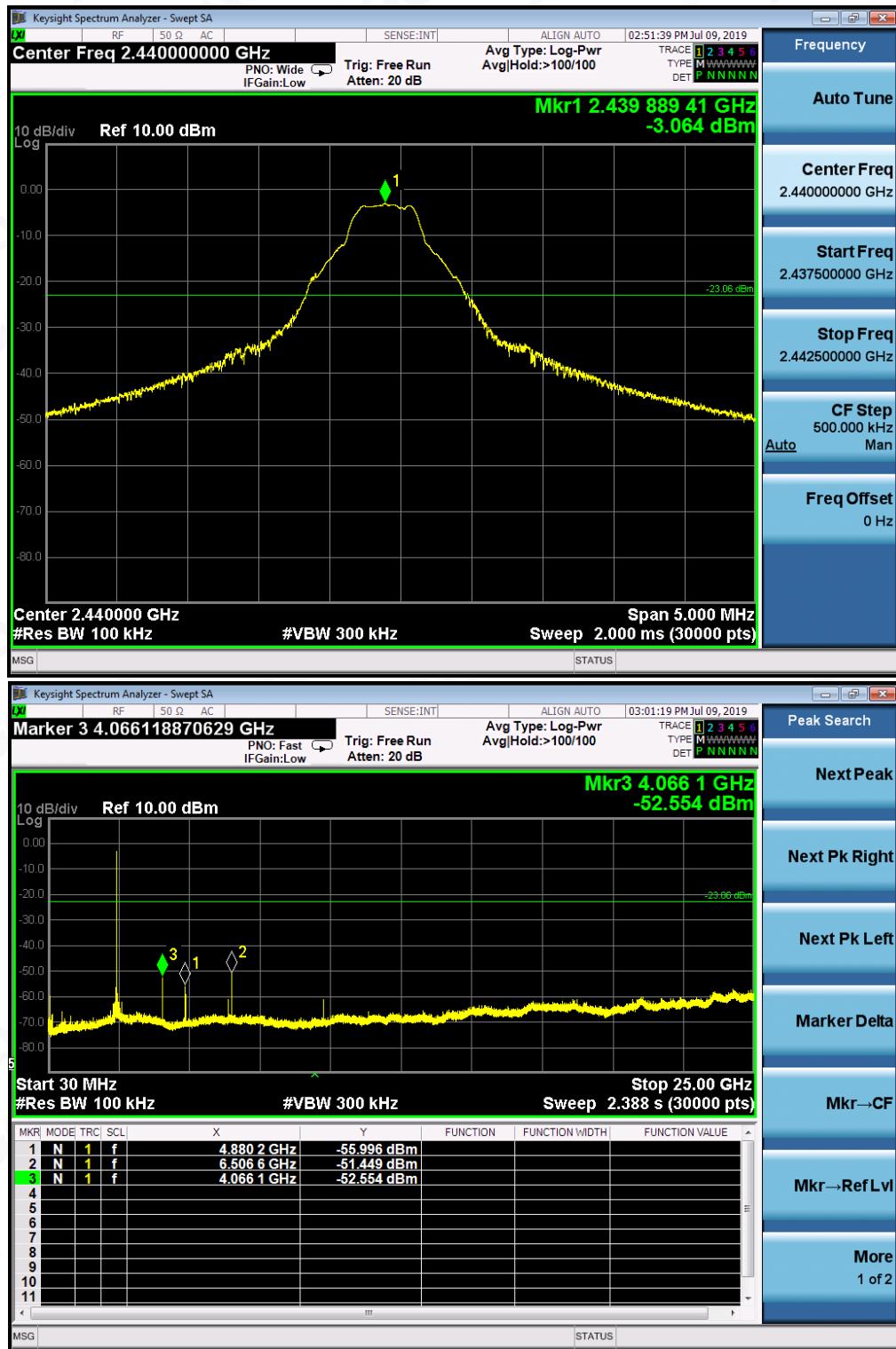


Attestation of Global Compliance(Shenzhen)Co.,Ltd.

Add: 2/F., Building 2, No.1–4, Chaxi Sanwei Technial Industrial Park, Gushu,
Xixiang, Bao'an District, Shenzhen, Guangdong, China
Tel: +86-755 2523 4088 E-mail: agc@agc-cert.com

Service Hotline:400 089 2118

GFSK MODULATION IN MIDDLE CHANNEL

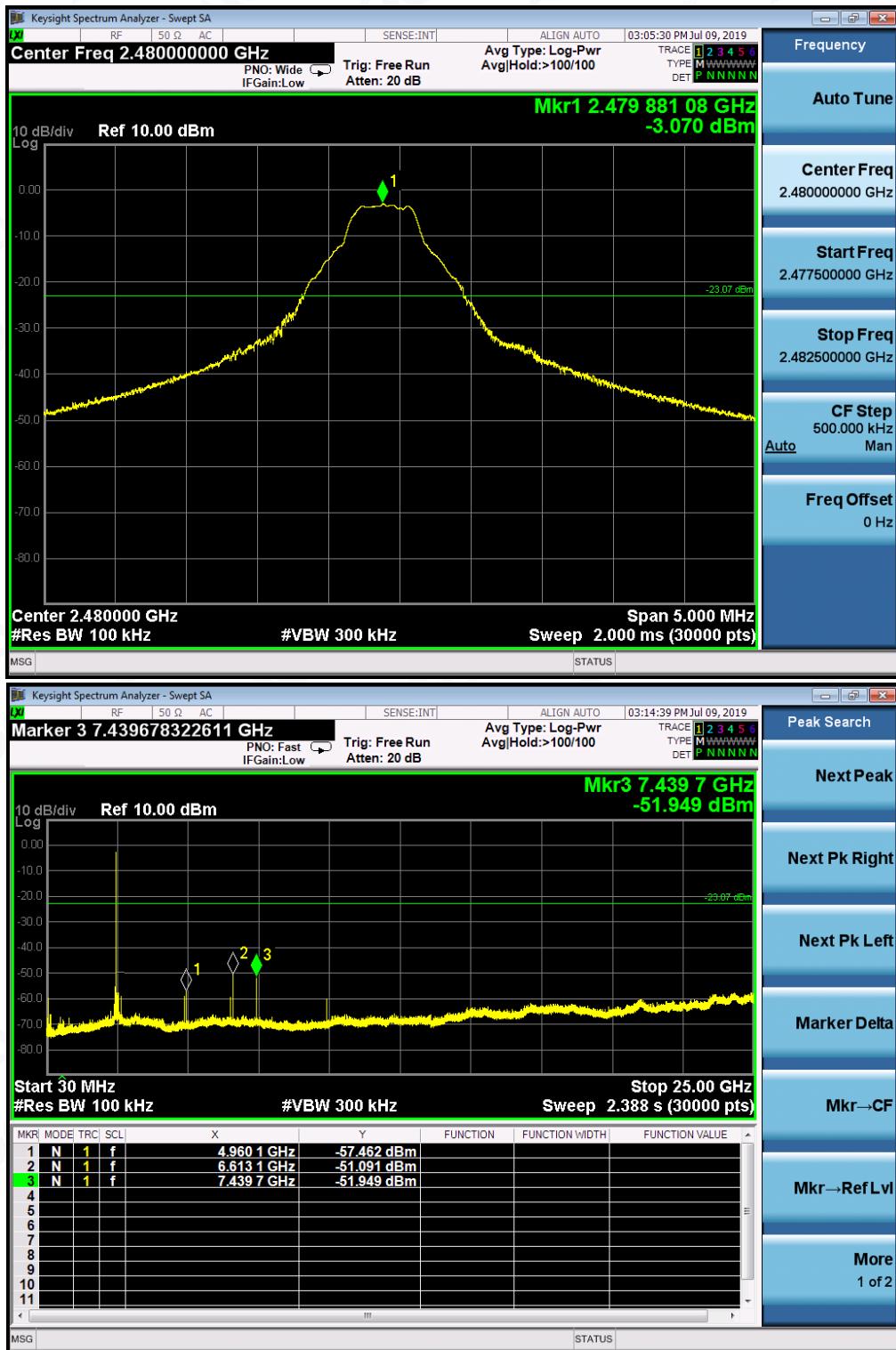


Attestation of Global Compliance(Shenzhen)Co.,Ltd.

 Add: 2/F., Building 2, No.1–4, Chaxi Sanwei Technial Industrial Park, Gushu,
 Xixiang, Bao'an District, Shenzhen, Guangdong, China
 Tel: +86-755 2523 4088 E-mail: agc@agc-cert.com

Service Hotline:400 089 2118

GFSK MODULATION IN HIGH CHANNEL



Note: The peak emissions without marker on the above plots are fundamental wave and need not to compare with the limit.

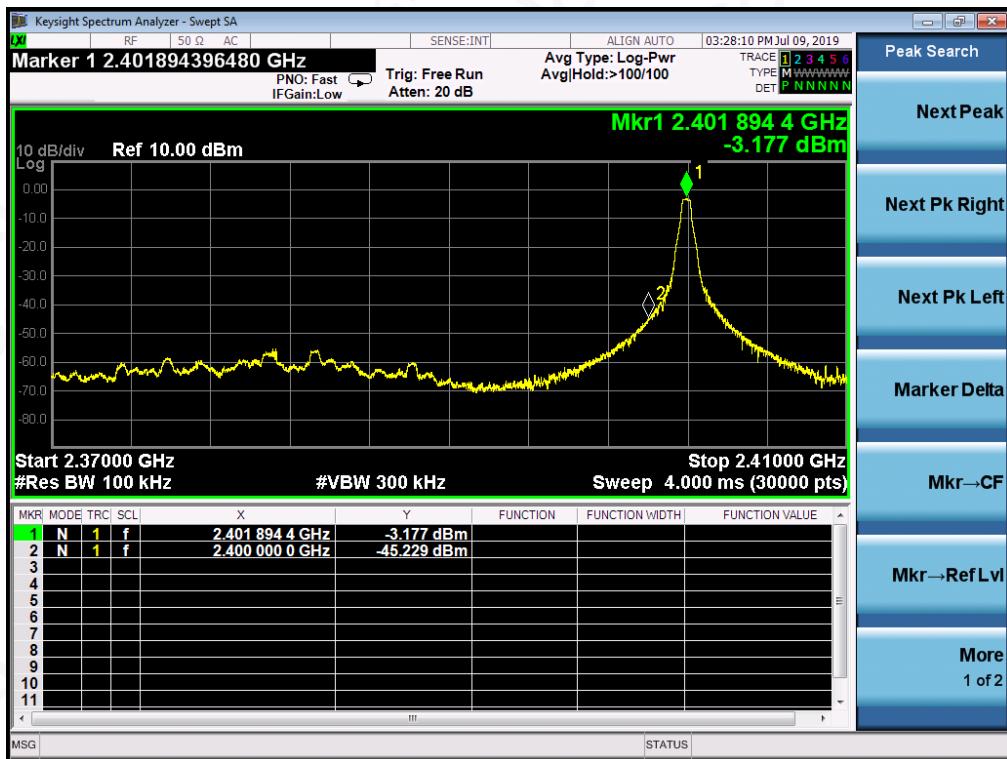


Attestation of Global Compliance(Shenzhen)Co.,Ltd.

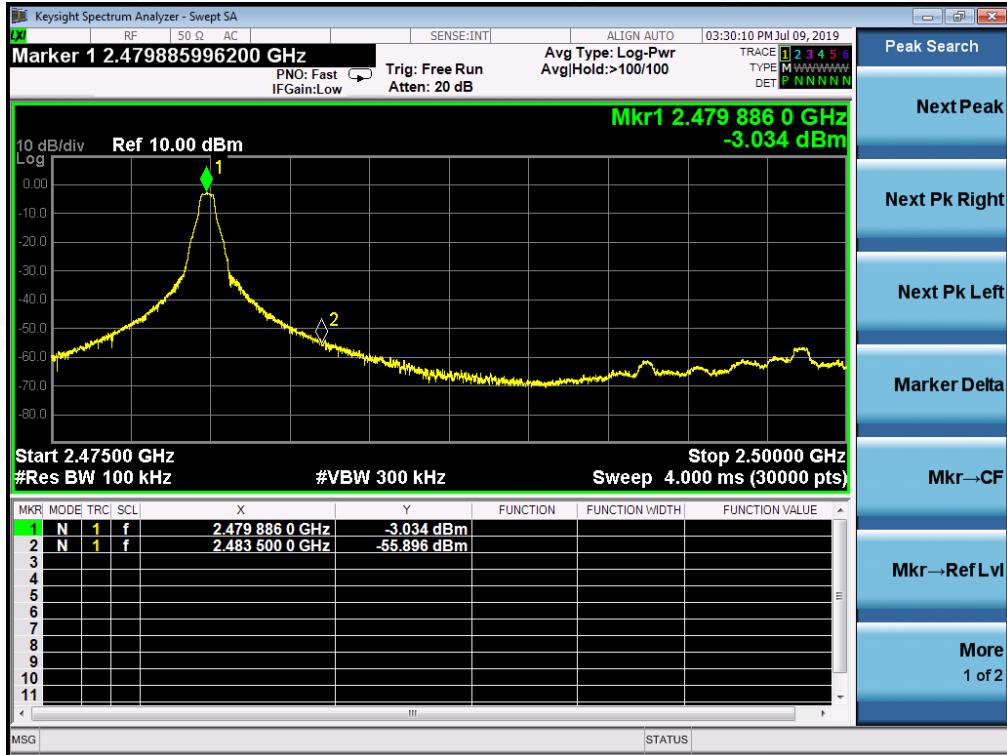
Add: 2/F., Building 2, No.1–4, Chaxi Sanwei Technial Industrial Park, Gushu,
Xixiang, Bao'an District, Shenzhen, Guangdong, China
Tel: +86-755 2523 4088 E-mail: agc@agc-cert.com

Service Hotline:400 089 2118

TEST RESULT FOR BAND EDGE GFSK MODULATION IN LOW CHANNEL



GFSK MODULATION IN HIGH CHANNEL



Attestation of Global Compliance(Shenzhen)Co.,Ltd.

Add: 2/F., Building 2, No.1–4, Chaxi Sanwei Technial Industrial Park, Gushu, Xixiang, Bao'an District, Shenzhen, Guangdong, China

Tel: +86-755 2523 4088 E-mail: agc@agc-cert.com

Service Hotline:400 089 2118

10. MAXIMUM CONDUCTED OUTPUT POWER SPECTRAL DENSITY

10.1 MEASUREMENT PROCEDURE

- (1). Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
- (2). Set the EUT Work on the top, the middle and the bottom operation frequency individually.
- (3). Set SPA Trace 1 Max hold, then View.

Note: The method of PKPSD in the KDB 558074 item 10.2 was used in this testing.

10.2 TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

Refer To Section 7.2.

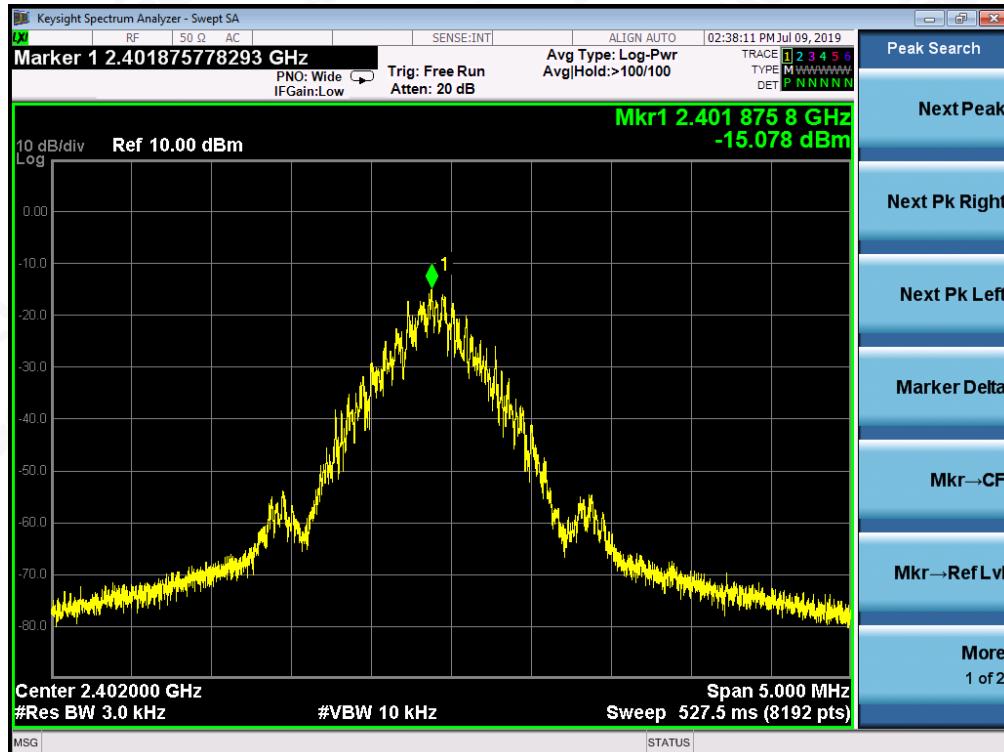
10.3 MEASUREMENT EQUIPMENT USED

Refer To Section 6.

10.4 LIMITS AND MEASUREMENT RESULT

Channel No.	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Result
Low Channel	-15.078	8	Pass
Middle Channel	-14.785	8	Pass
High Channel	-14.787	8	Pass

TEST PLOT OF SPECTRAL DENSITY FOR LOW CHANNEL

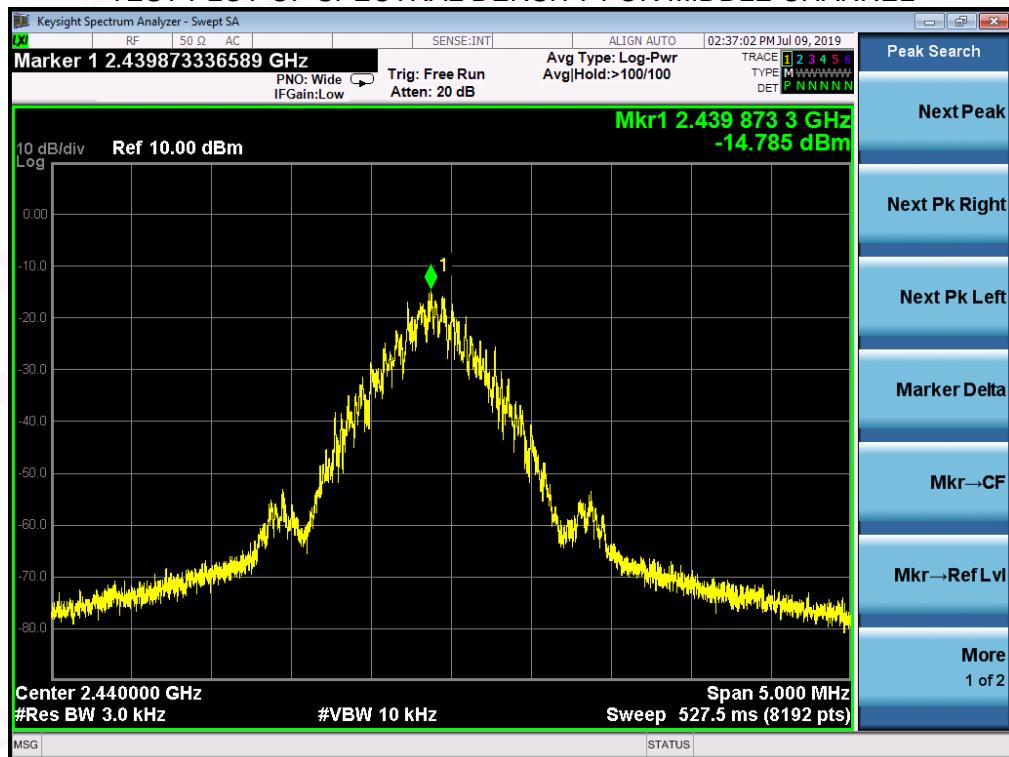


Attestation of Global Compliance(Shenzhen)Co.,Ltd.

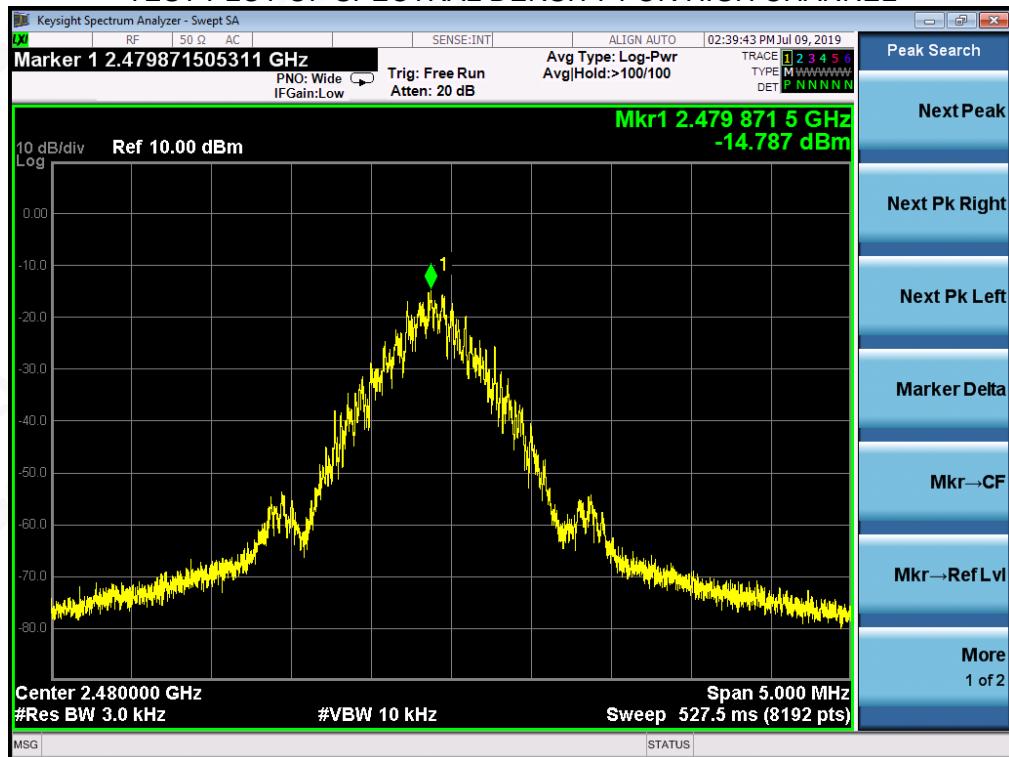
Add: 2/F., Building 2, No.1–4, Chaxi Sanwei Technial Industrial Park, Gushu,
Xixiang, Bao'an District, Shenzhen, Guangdong, China
Tel: +86-755 2523 4088 E-mail: agc@agc-cert.com

Service Hotline:400 089 2118

TEST PLOT OF SPECTRAL DENSITY FOR MIDDLE CHANNEL



TEST PLOT OF SPECTRAL DENSITY FOR HIGH CHANNEL



Attestation of Global Compliance(Shenzhen)Co.,Ltd.

Add: 2/F., Building 2, No.1–4, Chaxi Sanwei Technial Industrial Park, Gushu,
Xixiang, Bao'an District, Shenzhen, Guangdong, China

Tel: +86-755 2523 4088 E-mail: agc@agc-cert.com

Service Hotline:400 089 2118

11. RADIATED EMISSION

11.1. MEASUREMENT PROCEDURE

1. The EUT was placed on the top of the turntable 0.8 or 1.5 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
4. For each suspected emissions, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
6. For emissions above 1GHz, use 1MHz RBW and 3MHz VBW for peak reading. Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.
7. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum values.
8. If the emissions level of the EUT in peak mode was 3 dB lower than the average limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method for below 1GHz.
9. For testing above 1GHz, the emissions level of the EUT in peak mode was lower than average limit (that means the emissions level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
10. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. High - Low scan is not required in this case.



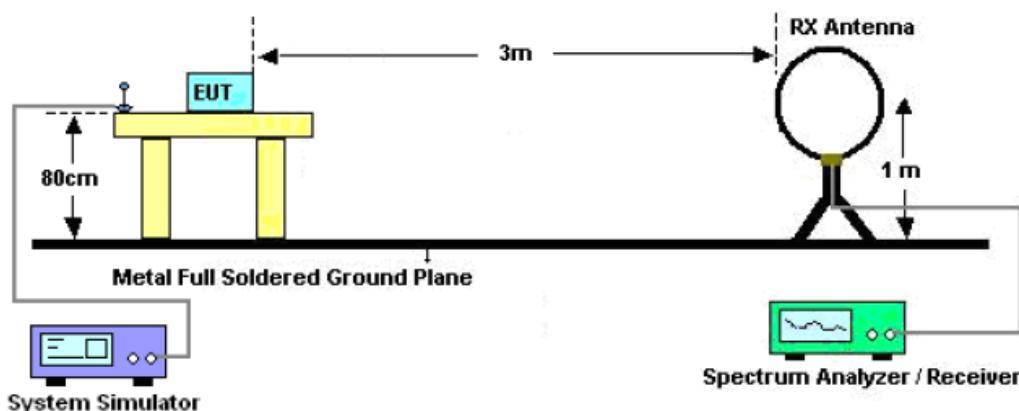
Attestation of Global Compliance(Shenzhen)Co.,Ltd.

Add: 2/F., Building 2, No.1-4, Chaxi Sanwei Technial Industrial Park, Gushu,
Xixiang, Bao'an District, Shenzhen, Guangdong, China

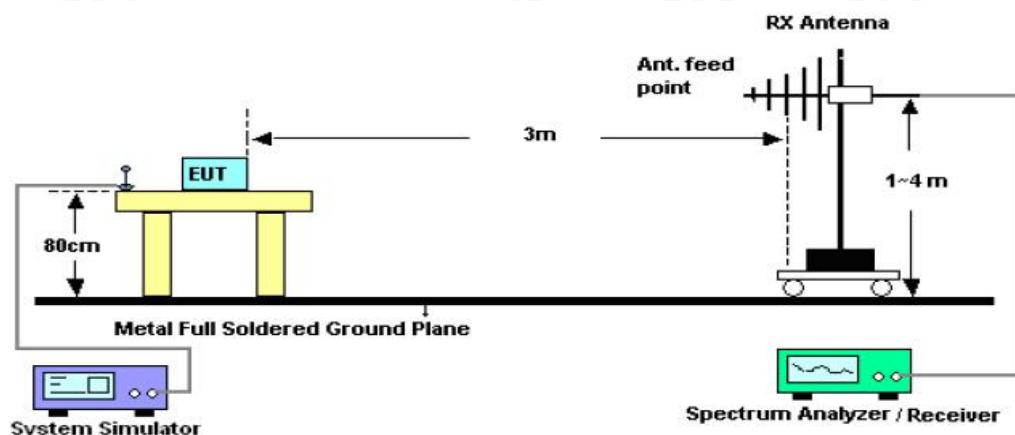
Tel: +86-755 2523 4088 E-mail: agc@agc-cert.com Service Hotline:400 089 2118

11.2. TEST SETUP

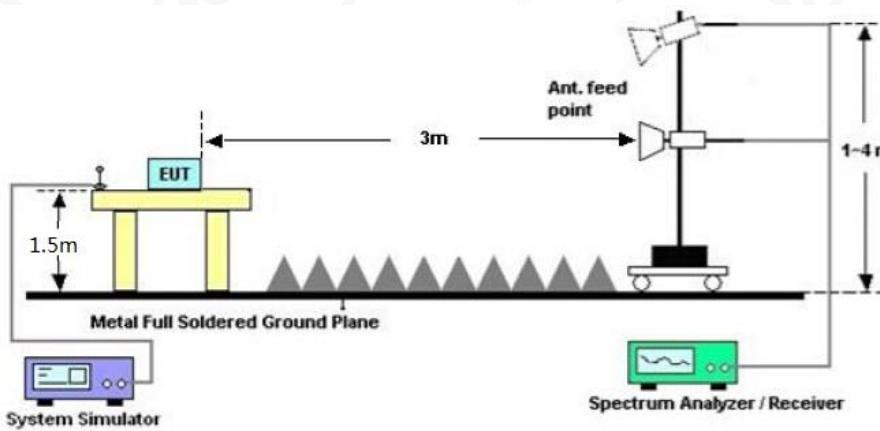
Radiated Emission Test-Setup Frequency Below 30MHz



RADIATED EMISSION TEST SETUP 30MHz-1000MHz



RADIATED EMISSION TEST SETUP ABOVE 1000MHz



Attestation of Global Compliance(Shenzhen)Co.,Ltd.

Add: 2/F., Building 2, No.1-4, Chaxi Sanwei Technial Industrial Park, Gushu,
Xixiang, Bao'an District, Shenzhen, Guangdong, China

Tel: +86-755 2523 4088 E-mail: agc@agc-cert.com Service Hotline:400 089 2118

11.3. LIMITS AND MEASUREMENT RESULT

15.209 Limit in the below table has to be followed

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

Note: All modes were tested For restricted band radiated emission,
the test records reported below are the worst result compared to other modes.

11.4. TEST RESULT**RADIATED EMISSION BELOW 30MHZ**

No emission found between lowest internal used/generated frequencies to 30MHz.



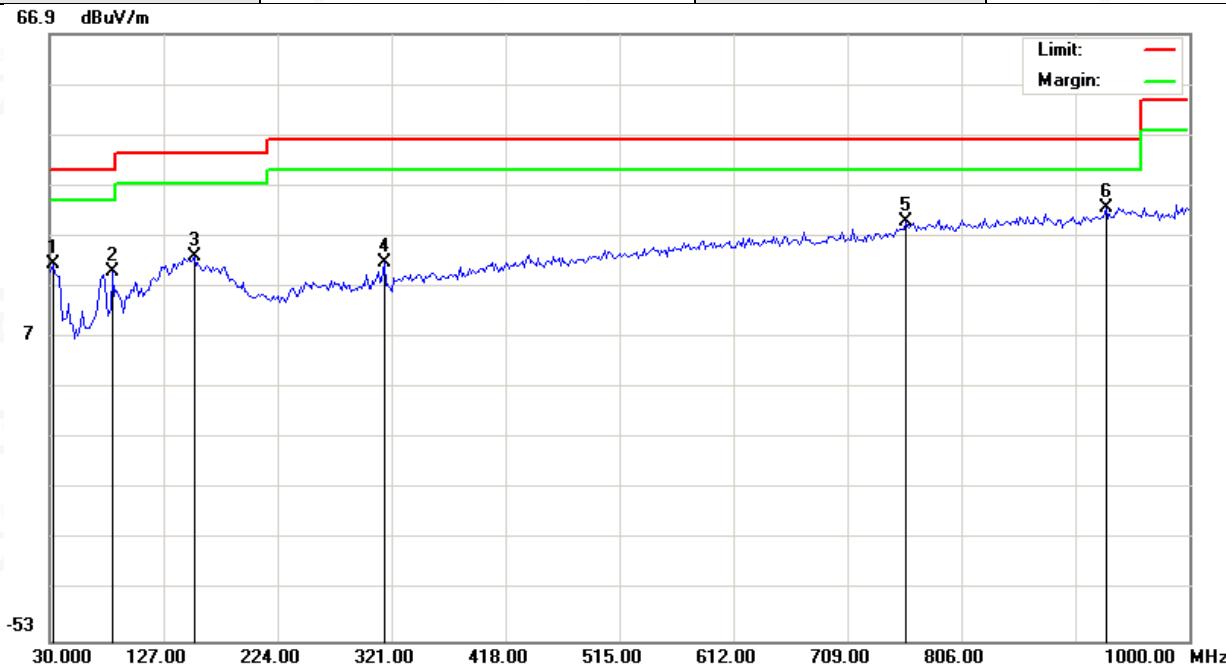
Attestation of Global Compliance(Shenzhen)Co.,Ltd.

Add: 2/F., Building 2, No.1~4, Chaxi Sanwei Technial Industrial Park, Gushu,
Xixiang, Bao'an District, Shenzhen, Guangdong, China

Tel: +86-755 2523 4088 E-mail: agc@agc-cert.com Service Hotline:400 089 2118

RADIATED EMISSION BELOW 1GHZ

EUT	Bluetooth True Wireless Headset	Model Name	BTH108Q
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 1	Antenna	Horizontal



No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB				
1		33.2333	6.02	15.58	21.60	40.00	-18.40	peak			
2		83.3500	12.94	7.02	19.96	40.00	-20.04	peak			
3		152.8667	2.70	20.26	22.96	43.50	-20.54	peak			
4		314.5333	4.09	17.76	21.85	46.00	-24.15	peak			
5		759.1167	2.18	27.71	29.89	46.00	-16.11	peak			
6	*	928.8667	2.50	30.03	32.53	46.00	-13.47	peak			

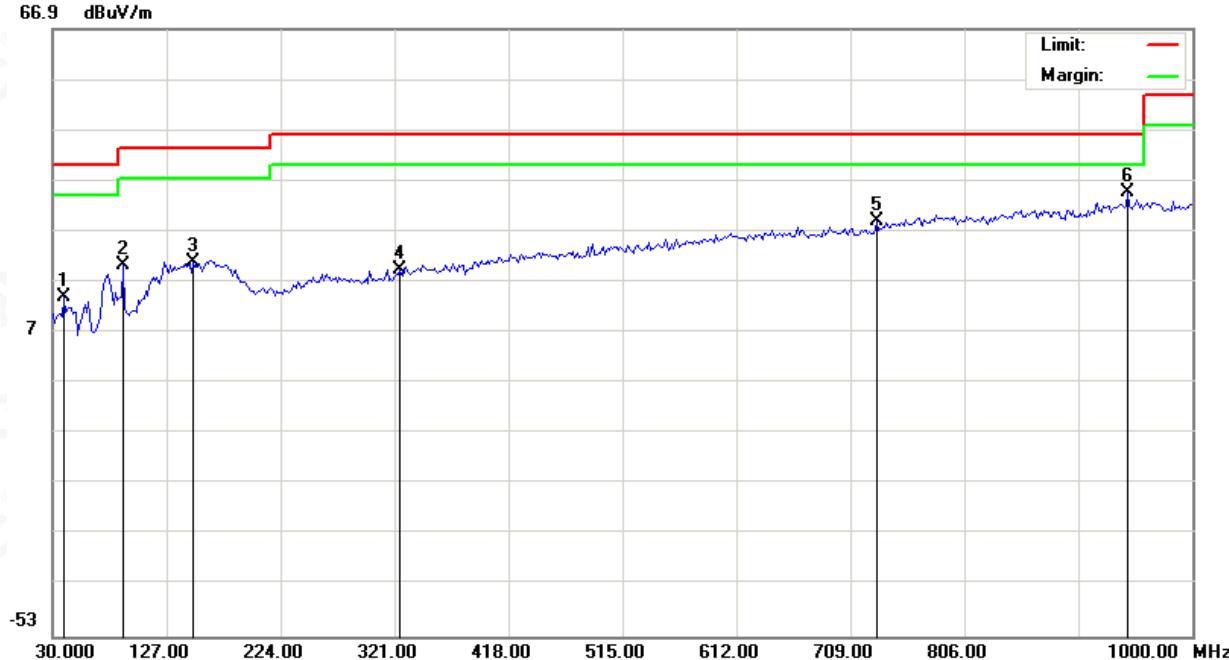
RESULT: PASS


Attestation of Global Compliance(Shenzhen)Co.,Ltd.

 Add: 2/F., Building 2, No.1–4, Chaxi Sanwei Technial Industrial Park, Gushu,
 Xixiang, Bao'an District, Shenzhen, Guangdong, China

Tel: +86-755 2523 4088 E-mail: agc@agc-cert.com Service Hotline:400 089 2118

EUT	Bluetooth True Wireless Headset	Model Name	BTH108Q
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 1	Antenna	Vertical



No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		39.7000	4.07	9.79	13.86	40.00	-26.14	peak			
2		89.8164	11.73	8.39	20.12	43.50	-23.38	peak			
3		149.6331	0.54	20.31	20.85	43.50	-22.65	peak			
4		325.8500	1.18	18.32	19.50	46.00	-26.50	peak			
5		731.6331	2.51	26.43	28.94	46.00	-17.06	peak			
6	*	945.0333	4.32	30.40	34.72	46.00	-11.28	peak			

RESULT: PASS

Note:

- Factor=Antenna Factor + Cable loss, Margin=Measurement-Limit.
- All test modes had been tested. The mode 1 is the worst case and recorded in the report.



Attestation of Global Compliance(Shenzhen)Co.,Ltd.

 Add: 2/F., Building 2, No.1–4, Chaxi Sanwei Technial Industrial Park, Gushu,
 Xixiang, Bao'an District, Shenzhen, Guangdong, China

Tel: +86-755 2523 4088 E-mail: agc@agc-cert.com Service Hotline:400 089 2118

RADIATED EMISSION ABOVE 1GHZ

EUT	Bluetooth True Wireless Headset	Model Name	BTH108Q
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 1	Antenna	Horizontal

Frequency (MHz)	Meter Reading (dB μ V)	Factor (dB)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Value Type
4804.000	41.92	0.08	42	74	-32	peak
4804.000	38.26	0.08	38.34	54	-15.66	Avg
7206.000	42.54	2.21	44.75	74	-29.25	peak
7206.000	37.93	2.21	40.14	54	-13.86	Avg

Remark:

Factor = Antenna Factor + Cable Loss – Pre-amplifier.

EUT	Bluetooth True Wireless Headset	Model Name	BTH108Q
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 1	Antenna	Vertical

Frequency (MHz)	Meter Reading (dB μ V)	Factor (dB)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Value Type
4804.000	40.51	0.08	40.59	74	-33.41	peak
4804.000	36.56	0.08	36.64	54	-17.36	Avg
7206.000	39.93	2.21	42.14	74	-31.86	peak
7206.000	35.91	2.21	38.12	54	-15.88	Avg

Remark:

Factor = Antenna Factor + Cable Loss – Pre-amplifier.



Attestation of Global Compliance(Shenzhen)Co.,Ltd.

Add: 2/F., Building 2, No.1–4, Chaxi Sanwei Technial Industrial Park, Gushu,
Xixiang, Bao'an District, Shenzhen, Guangdong, China

Tel: +86-755 2523 4088 E-mail: agc@agc-cert.com Service Hotline:400 089 2118

EUT	Bluetooth True Wireless Headset	Model Name	BTH108Q
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 2	Antenna	Horizontal

Frequency (MHz)	Meter Reading (dB μ V)	Factor (dB)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Value Type
4880.000	41.08	0.14	41.22	74	-32.78	peak
4880.000	37.14	0.14	37.28	54	-16.72	Avg
7320.000	41.46	2.36	43.82	74	-30.18	peak
7320.000	37.81	2.36	40.17	54	-13.83	Avg

Remark:

Factor = Antenna Factor + Cable Loss – Pre-amplifier.

EUT	Bluetooth True Wireless Headset	Model Name	BTH108Q
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 2	Antenna	Vertical

Frequency (MHz)	Meter Reading (dB μ V)	Factor (dB)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Value Type
4880.000	39.8	0.14	39.94	74	-34.06	peak
4880.000	35.57	0.14	35.71	54	-18.29	Avg
7320.000	40.46	2.36	42.82	74	-31.18	peak
7320.000	35.92	2.36	38.28	54	-15.72	Avg

Remark:

Factor = Antenna Factor + Cable Loss – Pre-amplifier.



Attestation of Global Compliance(Shenzhen)Co.,Ltd.

Add: 2/F., Building 2, No.1–4, Chaxi Sanwei Technial Industrial Park, Gushu,
Xixiang, Bao'an District, Shenzhen, Guangdong, China

Tel: +86-755 2523 4088 E-mail: agc@agc-cert.com Service Hotline:400 089 2118

EUT	Bluetooth True Wireless Headset	Model Name	BTH108Q
Temperature	25 ° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 3	Antenna	Horizontal

Frequency (MHz)	Meter Reading (dB μ V)	Factor (dB)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Value Type
4960.000	40.38	0.22	40.6	74	-33.4	peak
4960.000	35.53	0.22	35.75	54	-18.25	Avg
7440.000	41.17	2.64	43.81	74	-30.19	peak
7440.000	36.92	2.64	39.56	54	-14.44	Avg

Remark:

Factor = Antenna Factor + Cable Loss – Pre-amplifier.

EUT	Bluetooth True Wireless Headset	Model Name	BTH108Q
Temperature	25 ° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 3	Antenna	Vertical

Frequency (MHz)	Meter Reading (dB μ V)	Factor (dB)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Value Type
4960.000	38.8	0.22	39.02	74	-34.98	peak
4960.000	33.82	0.22	34.04	54	-19.96	Avg
7440.000	39.25	2.64	41.89	74	-32.11	peak
7440.000	34.59	2.64	37.23	54	-16.77	Avg

Remark:

Factor = Antenna Factor + Cable Loss – Pre-amplifier.

RESULT: PASS

Note:

Other emissions from 1G to 25 GHz are considered as ambient noise. No recording in the test report.

Factor = Antenna Factor + Cable loss - Amplifier gain, Over=Measure-Limit.

The “Factor” value can be calculated automatically by software of measurement system.



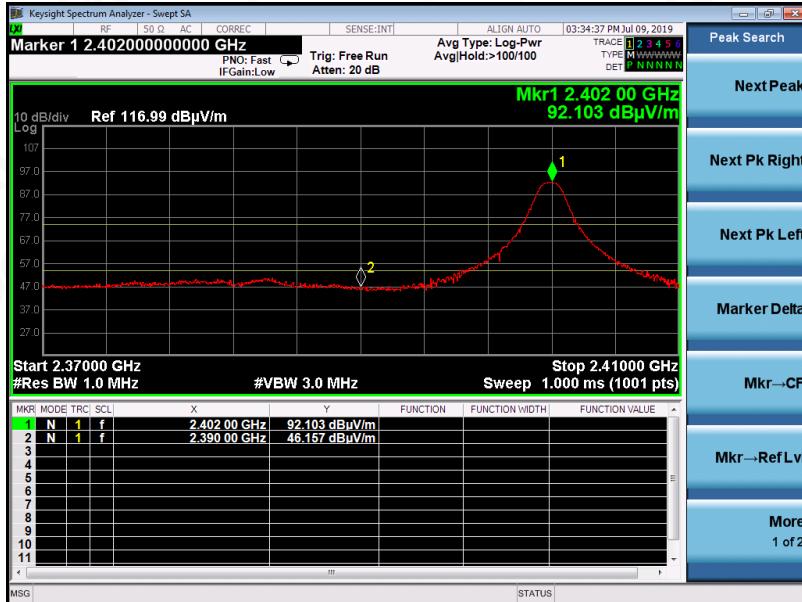
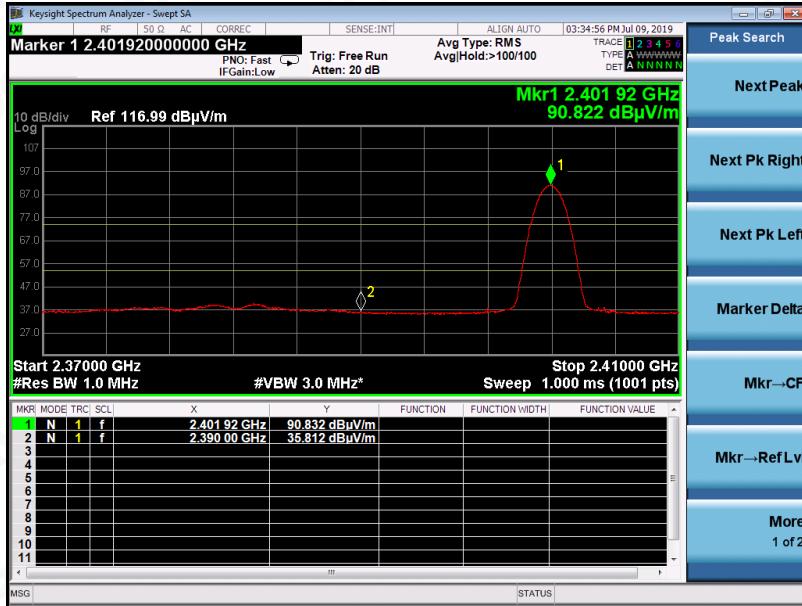
Attestation of Global Compliance(Shenzhen)Co.,Ltd.

Add: 2/F., Building 2, No.1–4, Chaxi Sanwei Technial Industrial Park, Gushu,
Xixiang, Bao'an District, Shenzhen, Guangdong, China

Tel: +86-755 2523 4088 E-mail: agc@agc-cert.com Service Hotline:400 089 2118

TEST RESULT FOR RESTRICTED BANDS REQUIREMENTS

EUT	Bluetooth True Wireless Headset	Model Name	BTH108Q
Temperature	25 ° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 1	Antenna	Horizontal

PK

AV

RESULT: PASS

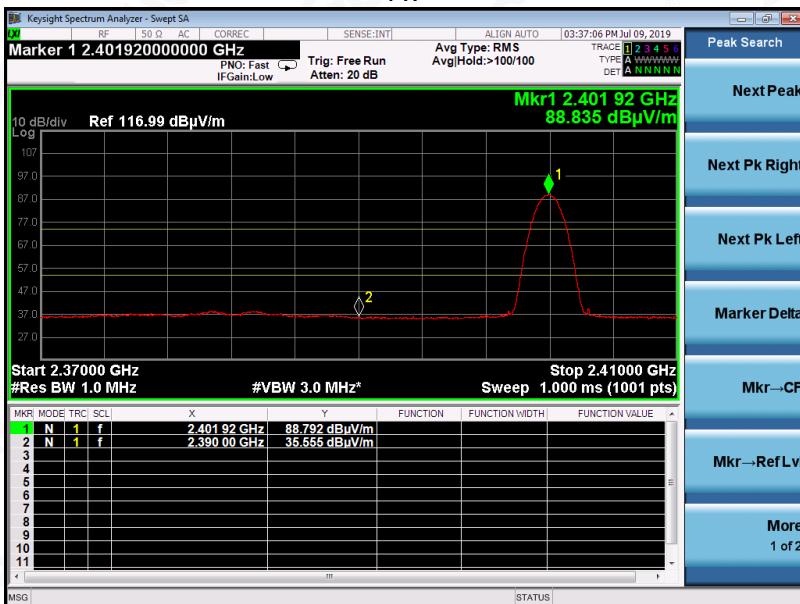

Attestation of Global Compliance(Shenzhen)Co.,Ltd.

Add: 2/F., Building 2, No.1–4, Chaxi Sanwei Technial Industrial Park, Gushu, Xixiang, Bao'an District, Shenzhen, Guangdong, China

Tel: +86-755 2523 4088 E-mail: agc@agc-cert.com Service Hotline:400 089 2118

EUT	Bluetooth True Wireless Headset	Model Name	BTH108Q
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 1	Antenna	Vertical

PK

AV

RESULT: PASS


Attestation of Global Compliance(Shenzhen)Co.,Ltd.

 Add: 2/F., Building 2, No.1–4, Chaxi Sanwei Technial Industrial Park, Gushu,
 Xixiang, Bao'an District, Shenzhen, Guangdong, China

Tel: +86-755 2523 4088 E-mail: agc@agc-cert.com Service Hotline:400 089 2118

EUT	Bluetooth True Wireless Headset	Model Name	BTH108Q
Temperature	25 ° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 3	Antenna	Horizontal

PK



AV


RESULT: PASS


Attestation of Global Compliance(Shenzhen)Co.,Ltd.

 Add: 2/F., Building 2, No.1–4, Chaxi Sanwei Technial Industrial Park, Gushu,
 Xiang, Bao'an District, Shenzhen, Guangdong, China

Tel: +86-755 2523 4088 E-mail: agc@agc-cert.com Service Hotline:400 089 2118

EUT	Bluetooth True Wireless Headset	Model Name	BTH108Q
Temperature	25 ° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 3	Antenna	Vertical

PK

AV


RESULT: PASS

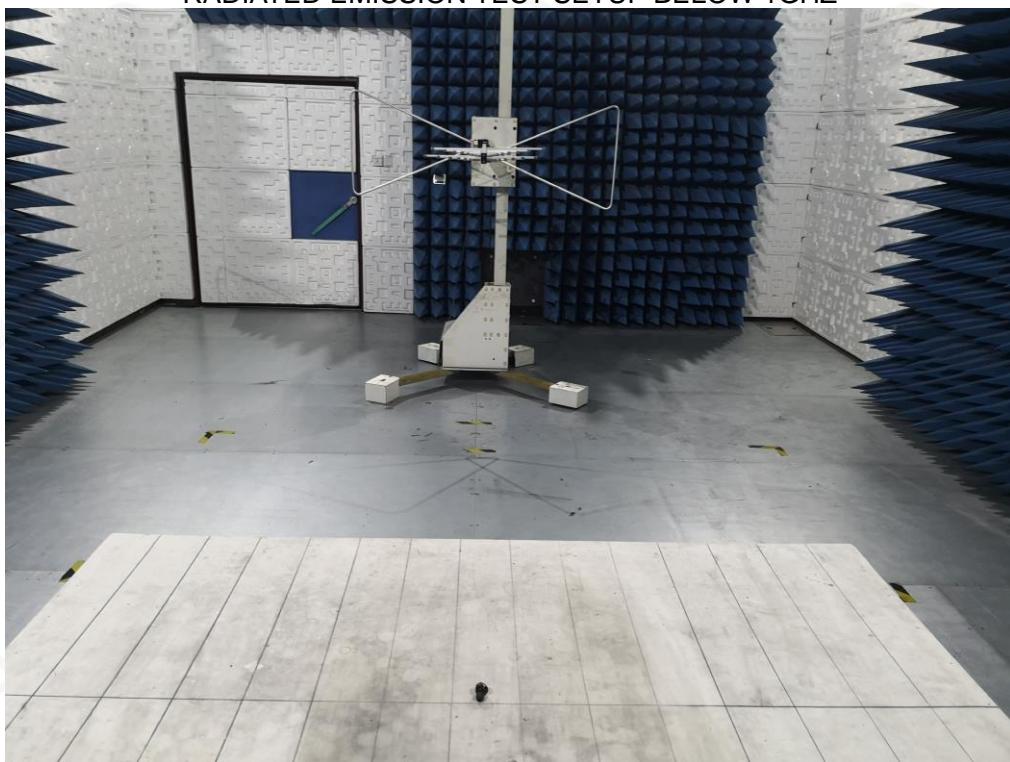
Note: The factor had been edited in the "Input Correction" of the Spectrum Analyzer. So the Amplitude of test plots is equal to Reading level plus the Factor in dB. Use the A dB(μ V) to represent the Amplitude. Use the F dB(μ V/m) to represent the Field Strength. So A=F.



Attestation of Global Compliance(Shenzhen)Co.,Ltd.

Add: 2/F., Building 2, No.1–4, Chaxi Sanwei Technial Industrial Park, Gushu,
Xiang, Bao'an District, Shenzhen, Guangdong, China

Tel: +86-755 2523 4088 E-mail: agc@agc-cert.com Service Hotline:400 089 2118

APPENDIX A: PHOTOGRAPHS OF TEST SETUP**RADIATED EMISSION TEST SETUP BELOW 1GHZ****RADIATED EMISSION TEST SETUP ABOVE 1GHZ**

Attestation of Global Compliance(Shenzhen)Co.,Ltd.

Add: 2/F., Building 2, No.1-4, Chaxi Sanwei Technial Industrial Park, Gushu,
Xixiang, Bao'an District, Shenzhen, Guangdong, China

Tel: +86-755 2523 4088 E-mail: agc@agc-cert.com Service Hotline:400 089 2118

APPENDIX B: PHOTOGRAPHS OF EUT**Test model: BTH108Q****ALL VIEW OF EUT**

Attestation of Global Compliance(Shenzhen)Co.,Ltd.

Add: 2/F., Building 2, No.1-4, Chaxi Sanwei Technial Industrial Park, Gushu,
Xixiang, Bao'an District, Shenzhen, Guangdong, China

Tel: +86-755 2523 4088 E-mail: agc@agc-cert.com Service Hotline:400 089 2118

TOP VIEW OF EUT



BOTTOM VIEW OF EUT



Attestation of Global Compliance(Shenzhen)Co.,Ltd.

Add: 2/F., Building 2, No.1-4, Chaxi Sanwei Technial Industrial Park, Gushu,
Xixiang, Bao'an District, Shenzhen, Guangdong, China

Tel: +86-755 2523 4088 E-mail: agc@agc-cert.com Service Hotline:400 089 2118

FRONT VIEW OF EUT



BACK VIEW OF EUT



Attestation of Global Compliance(Shenzhen)Co.,Ltd.

Add: 2/F., Building 2, No.1-4, Chaxi Sanwei Technial Industrial Park, Gushu,
Xixiang, Bao'an District, Shenzhen, Guangdong, China

Tel: +86-755 2523 4088 E-mail: agc@agc-cert.com Service Hotline:400 089 2118

LEFT VIEW OF EUT



RIGHT VIEW OF EUT



Attestation of Global Compliance(Shenzhen)Co.,Ltd.

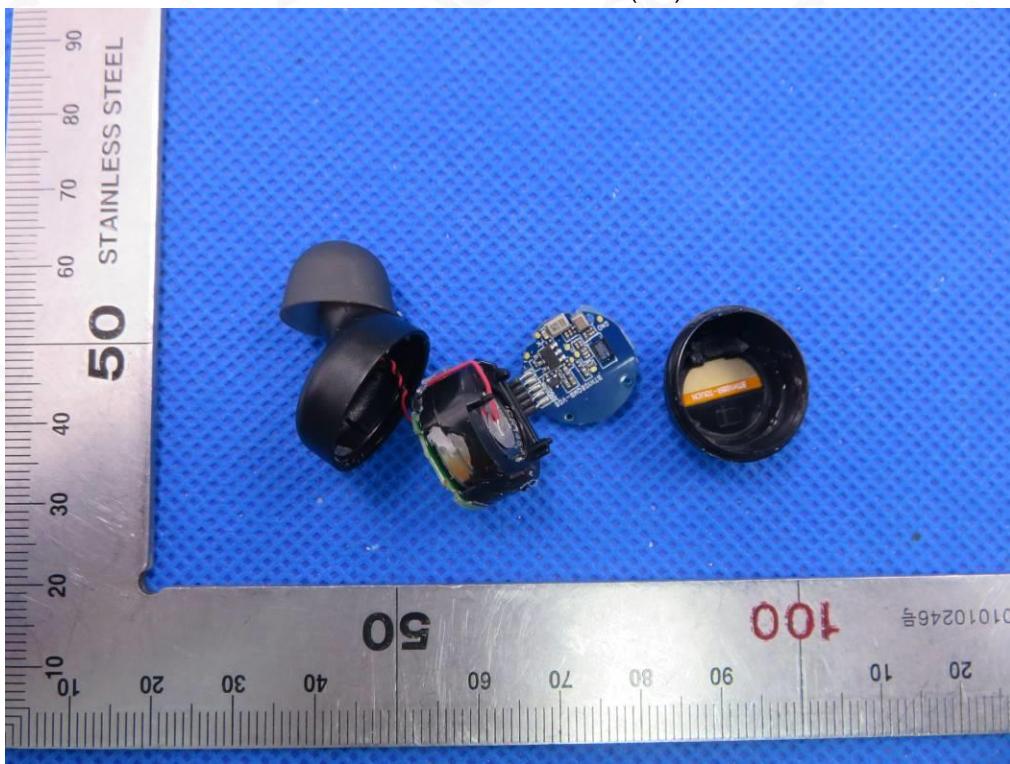
Add: 2/F., Building 2, No.1-4, Chaxi Sanwei Technial Industrial Park, Gushu,
Xixiang, Bao'an District, Shenzhen, Guangdong, China

Tel: +86-755 2523 4088 E-mail: agc@agc-cert.com Service Hotline:400 089 2118

VIEW OF EUT(PORT)



OPEN VIEW OF EUT-1(left)

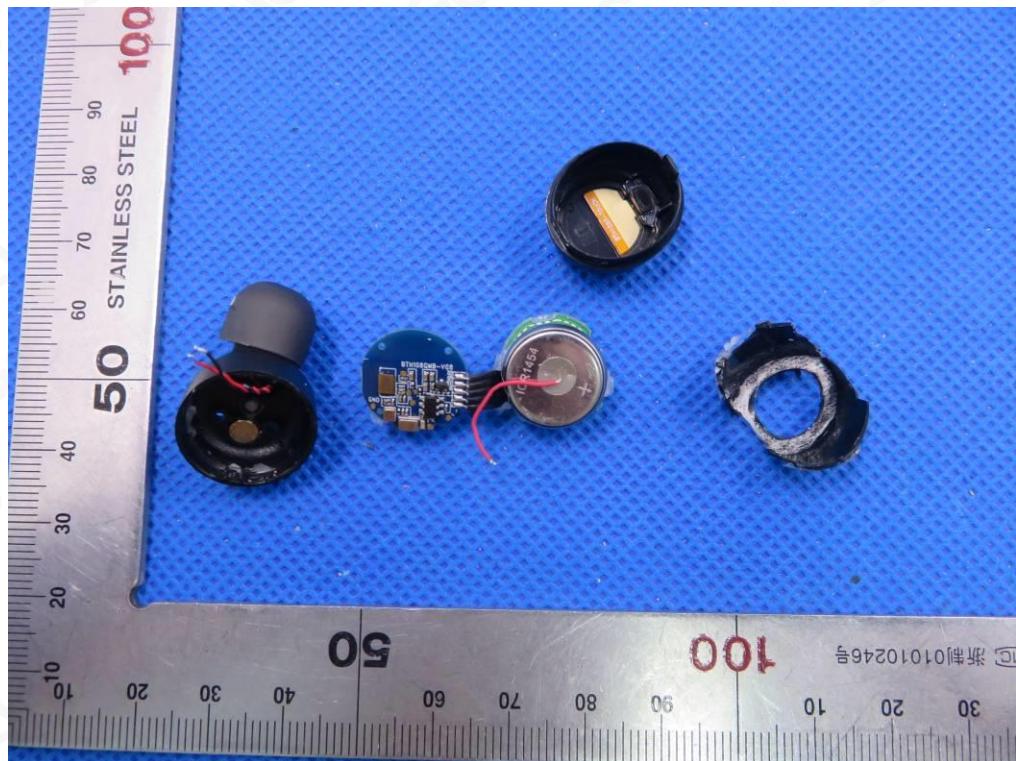


Attestation of Global Compliance(Shenzhen)Co.,Ltd.

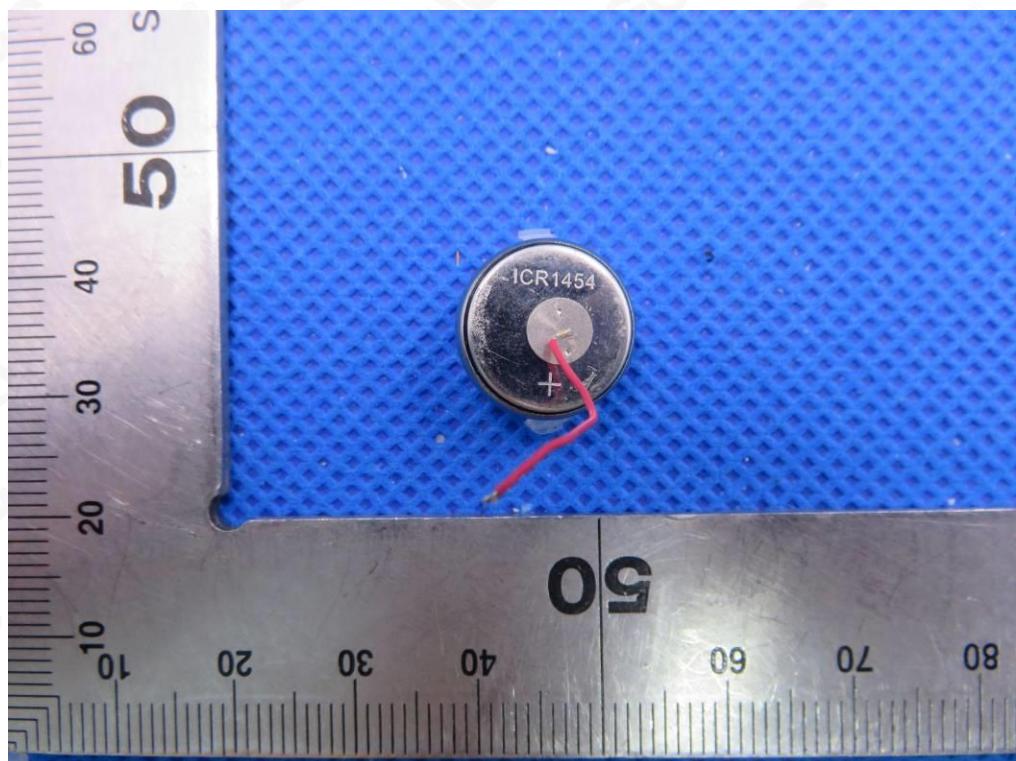
Add: 2/F., Building 2, No.1-4, Chaxi Sanwei Technial Industrial Park, Gushu,
Xixiang, Bao'an District, Shenzhen, Guangdong, China

Tel: +86-755 2523 4088 E-mail: agc@agc-cert.com Service Hotline:400 089 2118

OPEN VIEW OF EUT-2



VIEW OF BATTERY



Attestation of Global Compliance(Shenzhen)Co.,Ltd.

Add: 2/F., Building 2, No.1-4, Chaxi Sanwei Technial Industrial Park, Gushu,
Xixiang, Bao'an District, Shenzhen, Guangdong, China

Tel: +86-755 2523 4088 E-mail: agc@agc-cert.com Service Hotline:400 089 2118