RF TEST REPORT

Applicant :	Tianhui Electric (Suzhou) Co., Limited
Address:	NO.1801 Pangjin Road, Wujiang Economic and Eechnological Development Zone, Suzhou City, Jiangsu Province, China
Manufacturer:	Tianhui Electric (Suzhou) Co., Limited
Address:	NO.1801 Pangjin Road, Wujiang Economic and Eechnological Development Zone, Suzhou City, Jiangsu Province, China
EUT Name:	Laser leveling instrument
Trade mark:	/
Model:	TRL550, TRL205, TRL280, TRL300, TRL360, TRL366, TRL380, TRL405, TRL410, TRL440, TRL525, TRL540, TRL680
FCC ID:	2BU5O-TRL550
Power supply:	Input: DC5V.2A Battery: DC14.8V,
Adapter information:	Input:AC 100-240V~ 50/60Hz 0.6A Output:DC 5±0.25V 2000mA
Sample Received Date:	Mar.19, 2026
Test Date:	Mar. 19, 2026~Apr. 03, 2026
Applicable Standards:	FCC 47, CFR Part 15.247
Test Result	Pass

Prepared by: Evan Fang

Evan Fang/Project Engineer

Approved by: Bruce zhang

Bruce Zhang/Technical Manager

HD Testing Technology (GuangDong) Co., Ltd.

Building 1, No.18, Shihuan Road, Dongcheng Subdistrict,

Dongguan, Guangdong, China

Tel: +86-0769-22221088

E-mail: info@hdt-lab.com

Website: www.hdt-lab.com

This report is governed by, and incorporates by reference, the conditions of testing as posted at the date of issuance of this report at http://www.hdt-lab.com/ and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. You have 15 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.

Revision History

Version	Date of Issue	Description
V00	April 28, 2026	Original Version

HD Testing Technology (GuangDong) Co., Ltd.

Building 1, No.18, Shihuan Road, Dongcheng Subdistrict,

Dongguan, Guangdong, China

Tel: +86-0769-22221088

E-mail: info@hdt-lab.com

Website: www.hdt-lab.com

This report is governed by, and incorporates by reference, the conditions of testing as posted at the date of issuance of this report at http://www.hdt-lab.com/ and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. You have 15 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.

TABLE OF CONTENTS

1. TEST SUMMARY 4
2. TEST SITE 5
2.1. Test Facility 5
2.2. Measurement Uncertainty 5
2.3. Test Environment Condition 5
3. TEST EQUIPMENT LIST 6
4. EUT DESCRIPTION 8
4.1. Description of Test Configuration 9
4.2. Equipment Modifications 9
5. TEST METHODOLOGY 10
5.1. EUT System Operation 10
5.2. Configuration and Mode 10
6. SETUP OF EQUIPMENT UNDER TEST 11
6.1. Description of Support Units 11
6.2. Block Diagram of EUT Configuration 11
6.3. EUT Exercise Software 12
7. TEST RESULTS AND MEASUREMENT DATA 13
7.1. Antenna Requirement 13
7.2. Maximum Conducted Output Power 14
7.3. 6db Bandwidth 15
7.4. Power Spectral Density 16
7.5. Out of Band Conducted Emission 17
7.6. Band Edge 19
7.7. Radiated Spurious Emissions 22
7.8. Conducted Emission 29
8. PHOTOGRAPHS OF TEST SET-UP 32
9. PHOTOGRAPHS OF EUT 33

HD Testing Technology (GuangDong) Co., Ltd.

Building 1, No.18, Shihuan Road, Dongcheng Subdistrict,

Dongguan, Guangdong, China

Tel: +86-0769-22221088

E-mail: info@hdt-lab.com

Website: www.hdt-lab.com

This report is governed by, and incorporates by reference, the conditions of testing as posted at the date of issuance of this report at http://www.hdt-lab.com/ and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. You have 15 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.

1. TEST SUMMARY

FCC Part 15C	Description of Test	Result
15.247(b)(4)&15.203	Antenna Requirement	Pass
15.247(b)(3)	Maximum Conducted Output power	Pass
15.247(a)(2)	6 dB Bandwidth	Pass
15.247(e)	Power Spectral Density	Pass
15.247(d)	Out of Band Conducted Emission	Pass
15.247(d)&15.205&15.209	Band edge	Pass
15.247(d)&15.205&15.209	Spurious Radiated Emission	Pass
15.207	Conducted Emission on AC Mains	Pass

HD Testing Technology (GuangDong) Co., Ltd.

Building 1, No.18, Shihuan Road, Dongcheng Subdistrict,

Dongguan, Guangdong, China

Tel: +86-0769-22221088

E-mail: info@hdt-lab.com

Website: www.hdt-lab.com

This report is governed by, and incorporates by reference, the conditions of testing as posted at the date of issuance of this report at http://www.hdt-lab.com/ and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. You have 15 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.

2. TEST SITE

2.1. Test Facility

HD Testing Technology (GuangDong) Co., Ltd.

Address: Building 1, No.18, Shihuan Road, Dongcheng Subdistrict, Dongguan, Guangdong, China

A2LA Certificate Number.:7547.01

FCC Designation Number:CN1419

FCC Test Firm Registration Number:361541

ISED Company Number:34332

ISED CAB identifier Number:CN0189

2.2. Measurement Uncertainty

Parameter	Uncertainty
Conducted Emission(150KHz-30MHz)	±3.2dB
Radiated Emission(30MHz-1GHz)	±4.7dB
Radiated Emission (1GHz-6GHz)	±5.1dB
Radiated Emission (6GHz-18GHz)	±5.1dB
Occupied bandwidth	±1.9%
Duty cycle	±0.11%
Power Spectral Density	±0.98 dB

Note 1: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

2.3. Test Environment Condition

Ambient Temperature:	24~25°C
Ambient Relative Humidity:	55~60 %

This report is governed by, and incorporates by reference, the conditions of testing as posted at the date of issuance of this report at http://www.hdt-lab.com/ and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. You have 15 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.

3. TEST EQUIPMENT LIST

Equipment	Manufacturer	Model	Equipment No.	Cal. Date	Cal. Interval
EMI Test Receiver	Rohde&Schwarz	ESCI	HDT-EM-003	Mar. 02, 2026	1 Year
Pulse limiter	Rohde&Schwarz	ESH3-Z2	HDT-EM-001	Mar. 02, 2026	1 Year
LISN	Rohde&Schwarz	ENV216	HDT-EM-002	Mar. 02, 2026	1 Year
Shielding Room	Taihe Mao Rui Electronic Equipment Co., Ltd.	8m*4m*4m	HDT-EM-030	Oct. 12, 2024	5 Year
EMI Test Receiver	Rohde&Schwarz	ESCI7	HDT-EM-005	Mar. 02, 2026	1 Year
Logarithmic Periodic Broadband Antenna	SCHWARZBECK	VULB9168	HDT-EM-009	Mar. 06, 2025	3 Year
Preamplifier	HP	8447F	HDT-EM-010	Mar. 02, 2026	1 Year
Horn Antenna	SCHWARZBECK	BBHA 9120D	HDT-EM-039	Mar. 06, 2025	3 Year
Loop Antenna	Da Ze	ZN30900C	HDT-EM-053	May 16, 2025	3 Year
Preamplifier	/	1-18-53G22	HDT-EM-040	Mar. 02, 2026	1 Year
Anechoic Chamber	Taihe Mao Rui Electronic Equipment Co., Ltd.	9m*6m*6m	HDT-EM-030	Oct. 12, 2024	5 Year
Signal Analyzer	Keysight	N9020A	HDT-EM-038	Mar. 02, 2026	1 Year
Spectrum Analyzer	Rohde&Schwarz	FSV-40N	HDT-EM-069	Mar. 02, 2026	1 Year
18-40GHz	COM-MW	ZLB7-18-40G-77	HDT-EM-076	May 19, 2025	1 Year

HD Testing Technology (GuangDong) Co., Ltd.
Building 1, No.18, Shihuan Road, Dongcheng Subdistrict,
Dongguan, Guangdong, China
Tel: +86-0769-22221088
E-mail: info@hdt-lab.com
Website: www.hdt-lab.com

This report is governed by, and incorporates by reference, the conditions of testing as posted at the date of issuance of this report at http://www.hdt-lab.com/ and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. You have 15 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.

Antenna		7			
18-40GHz Preamplifier	QUANJUDA	LNA-18004000-50G35	HDT-EM-077	May 17, 2025	1 Year
Filter	WCS Technology	ZBSF6-C2400-2483.5-294	HDT-EM-070	May 17, 2025	1 Year
RF Cable	Rosenberger	/	HDT-EM-078	May 17, 2025	3 Year
RF Cable	COM-MW	DCA9-2.92M80002.92M3.6-1304	HDT-EM-079	May 17, 2025	3 Year
DC Power	Agilent	E3632A	HDT-EM-043	Mar. 02, 2026	1Year
Power switching box	WCS Technology	SMU-3002	HDT-EM-047	Apr. 16, 2025	1 Year
RF Test Software	WCS Technology	WCN-Regulatory	Version 25.03.2901		
EMI Test Software	Tonscend	JS32-CE	Version 5.0.0		
EMI Test Software	Tonscend	JS32-RE	Version 5.0.0		

Note:The attenuator is integrated into the Power Switch Box and taken into consideration during testing.

HD Testing Technology (GuangDong) Co., Ltd.
Building 1, No.18, Shihuan Road, Dongcheng Subdistrict,
Dongguan, Guangdong, China
Tel: +86-0769-22221088
E-mail: info@hdt-lab.com
Website: www.hdt-lab.com

This report is governed by, and incorporates by reference, the conditions of testing as posted at the date of issuance of this report at http://www.hdt-lab.com/ and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. You have 15 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.

4. EUT DESCRIPTION

Product:	Laser leveling instrument
Test Model:	TRL550
Additional Model:	TRL205, TRL280, TRL300, TRL360, TRL366, TRL380, TRL405, TRL410, TRL440, TRL525, TRL540, TRL680
Rating:	Input: DC 5V.2A Battery: DC14.8V
FCC ID:	2BU5O-TRL550
Antenna Type:	PCB Antenna
Antenna Gain:	-0.58dBi
Specification	Bluetooth BLE
Operation Frequency:	2402-2480MHz
Number of Channels:	40
Modulation Type:	GFSK
Hardware Version:	N/A
Software Version:	N/A

Note:
1) For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.
2) Antenna gain was provided by the applicant/ manufacturer, and the applicant/ manufacturer is responsible for its validity.
3) The product model TRL550 is the same PCB layout, electronic schematic and Antenna with TRL205, TRL280, TRL300, TRL360, TRL366, TRL380, TRL405, TRL410, TRL440, TRL525, TRL540, TRL680.Only the models is not difference.
4) The test results in the report only apply to the tested sample.

This report is governed by, and incorporates by reference, the conditions of testing as posted at the date of issuance of this report at http://www.hdt-lab.com/ and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. You have 15 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.

4.1. Description of Test Configuration

Channel List for Bluetooth:

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

Test Channel

- Low Channel:2402MHz
- Middle Channel: 2440MHz
- High Channel:2480MHz

4.2. Equipment Modifications

Any modifications installed previous to testing by Tianhui Electric (Suzhou) Co., Limited will be incorporated in each production model sold / leased in the United States.

No modifications were installed by HD Testing Technology (GuangDong) Co., Ltd..

This report is governed by, and incorporates by reference, the conditions of testing as posted at the date of issuance of this report at http://www.hdt-lab.com/ and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. You have 15 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.

5. TEST METHODOLOGY

Both AC mains line-conducted and radiated emission measurements were performed according to the procedures in ANSI C63.10-2020 and KDB 558074 D01 DTS Meas Guidance v04.

5.1. EUT System Operation

For emissions testing, the equipment under test (EUT) setup to transmit continuously to simplify the measurement methodology. Care was taken to ensure proper power supply voltages during testing. During testing, all cables were manipulated to produce worst case emissions. The EUT was powered by DC 5V from adapter during the test.

5.2. Configuration and Mode

We have verified the construction and function in typical operation. All the test modes were carried out with the EUT in transmitting operation, which was shown in this test report and defined as follows.	
Based on the baseline scan, the worst-case data rates were:	
Mode	Data rate
GFSK	BLE 1M

This report is governed by, and incorporates by reference, the conditions of testing as posted at the date of issuance of this report at http://www.hdt-lab.com/ and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. You have 15 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.

6. SETUP OF EQUIPMENT UNDER TEST

6.1. Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Support Equipment

No.	Equipment	Model	Serial No.	Manufacturer
1	Notebook	Lenovo Rescuer 15ISK	PF0GS9S1	Lenovo
2	/	/	/	/

Support Cable

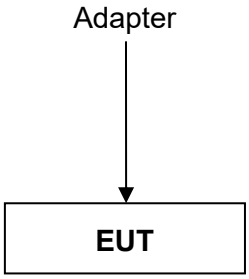
No.	Description	Shield	Length	Manufacturer
1	/	/	/	/
2	/	/	/	/

Note: 1) All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.

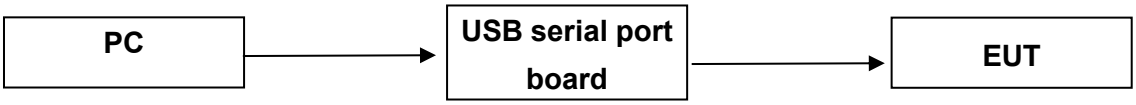
2) Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

6.2. Block Diagram of EUT Configuration

Conducted and radiated emission configuration



RF Conducted configuration



This report is governed by, and incorporates by reference, the conditions of testing as posted at the date of issuance of this report at http://www.hdt-lab.com/ and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. You have 15 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.

6.3. EUT Exercise Software

Test software:FCC Assist

Version:1.1.5

Mode	Frequency	Power setting
GFSK	2402	3
GFSK	2440	3
GFSK	2480	3

HD Testing Technology (GuangDong) Co., Ltd.

Building 1, No.18, Shihuan Road, Dongcheng Subdistrict,

Dongguan, Guangdong, China

Tel: +86-0769-22221088

E-mail: info@hdt-lab.com

Website: www.hdt-lab.com

This report is governed by, and incorporates by reference, the conditions of testing as posted at the date of issuance of this report at http://www.hdt-lab.com/ and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. You have 15 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.

7. TEST RESULTS AND MEASUREMENT DATA

7.1. Antenna Requirement

Test Requirement:	FCC Part Part 15.203 An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. FCC Part 15.247(b)(4) The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi.if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.
Test Result:	According to the manufacturer declared, the EUT has a PCB antenna, the Maximum directional gain of antenna is -0.58dBi, and the antenna connector is designed with permanent attachment and no consideration of replacement. Therefore the EUT is considered sufficient to comply with the provision. Refer to EUT Photo for further details.

HD Testing Technology (GuangDong) Co., Ltd.

Building 1, No.18, Shihuan Road, Dongcheng Subdistrict,

Dongguan, Guangdong, China

Tel: +86-0769-22221088

E-mail: info@hdt-lab.com

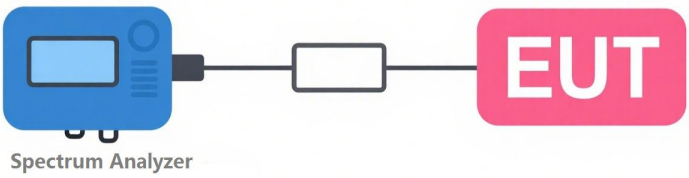
Website: www.hdt-lab.com

This report is governed by, and incorporates by reference, the conditions of testing as posted at the date of issuance of this report at http://www.hdt-lab.com/ and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. You have 15 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.

7.2. Maximum Conducted Output Power

Test Requirement:	FCC Part 15.247 (b)(3)
Test Mode:	Transmitting mode with modulation
Limit:	For antennas with gains of 6 dBi or less, maximum allowed Transmitter output is 1 watt (+30 dBm).
Test Procedure:	Set spectrum analyzer as following: Set the RBW≥DTS bandwidth. Set VBW≥3 x RBW. Set span≥3 x RBW Sweep time = auto couple. Detector = peak. Trace mode = max hold. Allow trace to fully stabilize. Use peak marker function to determine the peak amplitude level.
Test Result:	PASS

7.2.1. Test Setup:



7.2.2. Test Result

Please refer to Appendix A:Test Results of Bluetooth BLE

HD Testing Technology (GuangDong) Co., Ltd.

Building 1, No.18, Shihuan Road, Dongcheng Subdistrict,

Dongguan, Guangdong, China

Tel: +86-0769-22221088

E-mail: info@hdt-lab.com

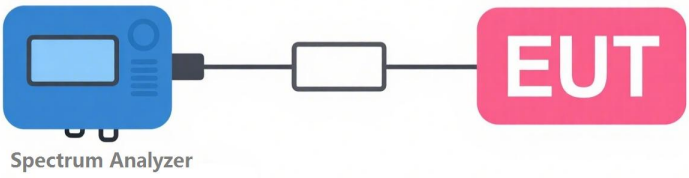
Website: www.hdt-lab.com

This report is governed by, and incorporates by reference, the conditions of testing as posted at the date of issuance of this report at http://www.hdt-lab.com/ and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. You have 15 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.

7.3. 6db Bandwidth

Test Requirement:	FCC Part 15.247 (a)(2)
Test Mode:	Transmitting mode with modulation
Limit:	The 6 dB Bandwidth is at least 500 kHz.
Test Procedure:	Set spectrum analyzer as following: Set RBW= 100kHz. Set VBW= 300kHz. Detector =Peak. Trace mode = max hold. Sweep= auto couple. Allow the trace to stabilize. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points(upper and lower) that are attenuated by 6dB relative to the maximum level measured in the fundamental emission
Test Result:	PASS

7.3.1. Test Setup:



7.3.2. Test Result

Please refer to Appendix A:Test Results of Bluetooth BLE.

HD Testing Technology (GuangDong) Co., Ltd.

Building 1, No.18, Shihuan Road, Dongcheng Subdistrict,

Dongguan, Guangdong, China

Tel: +86-0769-22221088

E-mail: info@hdt-lab.com

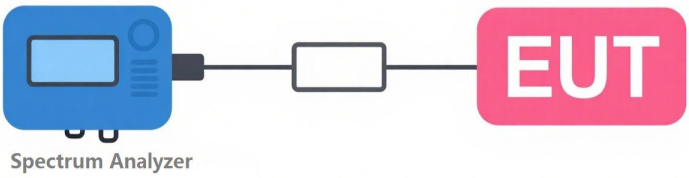
Website: www.hdt-lab.com

This report is governed by, and incorporates by reference, the conditions of testing as posted at the date of issuance of this report at http://www.hdt-lab.com/ and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. You have 15 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.

7.4. Power Spectral Density

Test Requirement:	FCC Part 15.247 (e)
Test Mode:	Transmitting mode with modulation
Limit:	The Power Density does not exceed 8dBm/3 kHz.
Test Procedure:	Set spectrum analyzer as following: Set RBW≥3kHz. Set VBW≥3 x RBW. Set span to 1.5 times the DTS bandwidth Sweep time = auto couple. Detector = peak. Trace mode = max hold. Allow trace to fully stabilize. Use peak marker function to determine the peak amplitude level.
Test Result:	PASS

7.4.1. Test Setup



7.4.2. Test Result

Please refer to Appendix A:Test Results of Bluetooth BLE

HD Testing Technology (GuangDong) Co., Ltd.

Building 1, No.18, Shihuan Road, Dongcheng Subdistrict,

Dongguan, Guangdong, China

Tel: +86-0769-22221088

E-mail: info@hdt-lab.com

Website: www.hdt-lab.com

This report is governed by, and incorporates by reference, the conditions of testing as posted at the date of issuance of this report at http://www.hdt-lab.com/ and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. You have 15 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.

7.5. Out of Band Conducted Emission

<table>
<tr><td>Test Requirement:</td><td>FCC Part15.247 (d)</td></tr>
<tr><td>Test Mode:</td><td>Transmitting mode with modulation</td></tr>
<tr><td>Limit:</td><td>At least 20 dB below the highest level of the desired power in the pass band.
<table>
<tr><td>Frequency Range (MHz)</td><td>Field Strength (microvolts/meter)</td><td>Measurement Distance(meters)</td></tr>
<tr><td>0.009~0.490</td><td>2400/F(kHz)</td><td>300</td></tr>
<tr><td>0.490~1.705</td><td>24000/F(kHz)</td><td>30</td></tr>
<tr><td>1.705~30.0</td><td>30</td><td>30</td></tr>
<tr><td>30-88</td><td>100</td><td>3</td></tr>
<tr><td>88-216</td><td>150</td><td>3</td></tr>
<tr><td>216-960</td><td>200</td><td>3</td></tr>
<tr><td>Above 960</td><td>500</td><td>3</td></tr>
</table></td></tr>
<tr><td>Test Procedure:</td><td>Measurement Procedure -Reference Level
Set the RBW = 100 kHz.
Set the VBW ≥ 300 kHz.
Detector = peak.
Sweep time = auto couple
Trace mode = max hold.。
Allow trace to fully stabilize.
Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.
Measurement Procedure -Unwanted Emission Level
Set RBW = 100 kHz.
Set VBW ≥ 300 kHz.
Set span to encompass the spectrum to be examined.
Detector = peak.
Trace Mode = max hold.
Sweep = auto couple.</td></tr>
<tr><td>Test Result:</td><td>PASS</td></tr>
</table>

HD Testing Technology (GuangDong) Co., Ltd.

Building 1, No.18, Shihuan Road, Dongcheng Subdistrict,

Dongguan, Guangdong, China

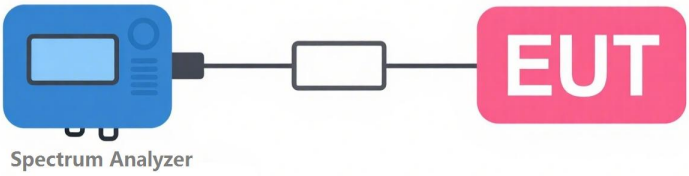
Tel: +86-0769-22221088

E-mail: info@hdt-lab.com

Website: www.hdt-lab.com

This report is governed by, and incorporates by reference, the conditions of testing as posted at the date of issuance of this report at http://www.hdt-lab.com/ and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. You have 15 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.

7.5.1. Test Setup:



7.5.2. Test Result

Please refer to Appendix A:Test Results of Bluetooth BLE

HD Testing Technology (GuangDong) Co., Ltd.

Building 1, No.18, Shihuan Road, Dongcheng Subdistrict,

Dongguan, Guangdong, China

Tel: +86-0769-22221088

E-mail: info@hdt-lab.com

Website: www.hdt-lab.com

This report is governed by, and incorporates by reference, the conditions of testing as posted at the date of issuance of this report at http://www.hdt-lab.com/ and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. You have 15 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.

7.6. Band Edge

Test Requirement:	FCC Part15 C 15.247(d), 15.205, 15.209
Test Mode:	Transmitting mode with modulation
Limit:	

Frequency Range (MHz)	Field Strength (microvolts/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

Test Procedure:

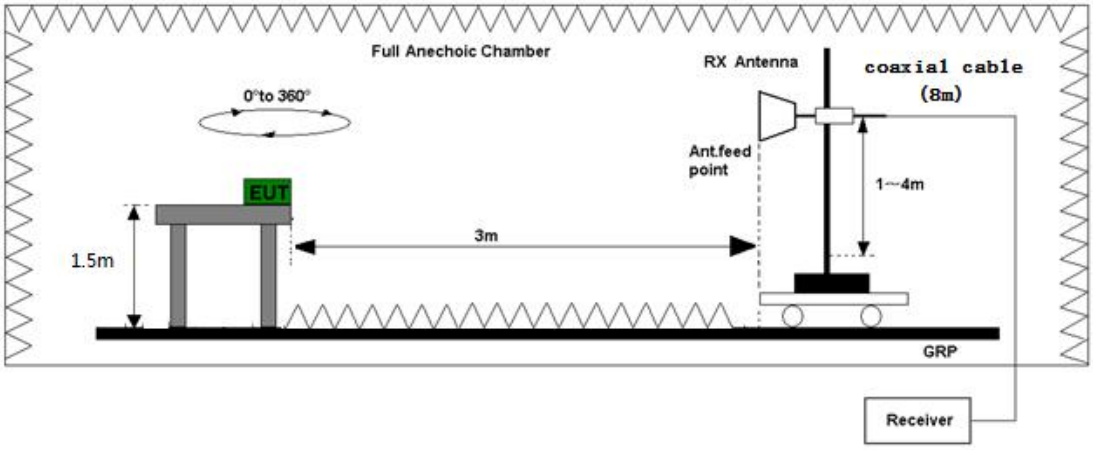
1. The EUT was placed on a turntable with 1.5 meter for frequency above 1GHz respectively above ground.
2. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
3. For each suspected emission, the EUT was arranged to its worst case and then tune the Antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level to comply with the guidelines.
4.Set to the maximum power setting and enable the EUT transmit continuously.

Test Result: PASS

HD Testing Technology (GuangDong) Co., Ltd.
Building 1, No.18, Shihuan Road, Dongcheng Subdistrict,
Dongguan, Guangdong, China
Tel: +86-0769-22221088
E-mail: info@hdt-lab.com
Website: www.hdt-lab.com

This report is governed by, and incorporates by reference, the conditions of testing as posted at the date of issuance of this report at http://www.hdt-lab.com/ and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. You have 15 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.

7.6.1. Test Setup:



Test set-up of radiated disturbance (30MHz to 1GHz)

7.6.2. Test Result

Test Voltage	DC 5V from adapter(AC120V/60Hz)

HD Testing Technology (GuangDong) Co., Ltd.

Building 1, No.18, Shihuan Road, Dongcheng Subdistrict,

Dongguan, Guangdong, China

Tel: +86-0769-22221088

E-mail: info@hdt-lab.com

Website: www.hdt-lab.com

This report is governed by, and incorporates by reference, the conditions of testing as posted at the date of issuance of this report at http://www.hdt-lab.com/ and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. You have 15 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.

GFSK-2402MHz:

Suspected Data List											
NO.	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Det	Pol	Verdict
1	2390.02	60.75	37.31	-23.44	74.00	36.69	150	144	PK	Horizontal:	PASS
2	2390.77	50.92	27.48	-23.44	54.00	26.52	150	175	AV	Horizontal:	PASS

Suspected Data List											
NO.	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Det	Pol	Verdict
1	2390.33	64.61	41.17	-23.44	74.00	32.83	150	214	PK	Vertical	PASS
2	2389.95	51.86	28.42	-23.44	54.00	25.58	150	158	AV	Vertical	PASS

Note:(1)Emission Level=Reading-Factor

(2)Factor=Pre-Amp.Gain+Antenna Gain+Cable loss

(3)Margin=limit-Level

GFSK-2480MHz:

Suspected Data List											
NO.	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Det	Pol	Verdict
1	2483.57	59.52	36.07	-23.45	74.00	37.93	150	165	PK	Horizontal:	2483.57
1	2483.43	51.22	27.77	-23.45	54.00	26.23	150	214	AV	Horizontal:	PASS

Suspected Data List											
NO.	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Det	Pol	Verdict
1	2483.47	62.23	38.78	-23.45	74.00	35.22	150	165	PK	Vertical	PASS
1	2483.58	51.22	27.77	-23.45	54.00	26.23	150	210	AV	Vertical	PASS

Note:(1)Emission Level=Reading-Factor

(2)Factor=Antenna Factor+ Cable Loss - Amplifier Factor

(3)Margin=limit-Level

HD Testing Technology (GuangDong) Co., Ltd.

Building 1, No.18, Shihuan Road, Dongcheng Subdistrict,

Dongguan, Guangdong, China

Tel: +86-0769-22221088

E-mail: info@hdt-lab.com

Website: www.hdt-lab.com

This report is governed by, and incorporates by reference, the conditions of testing as posted at the date of issuance of this report at http://www.hdt-lab.com/ and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. You have 15 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.

7.7. Radiated Spurious Emissions

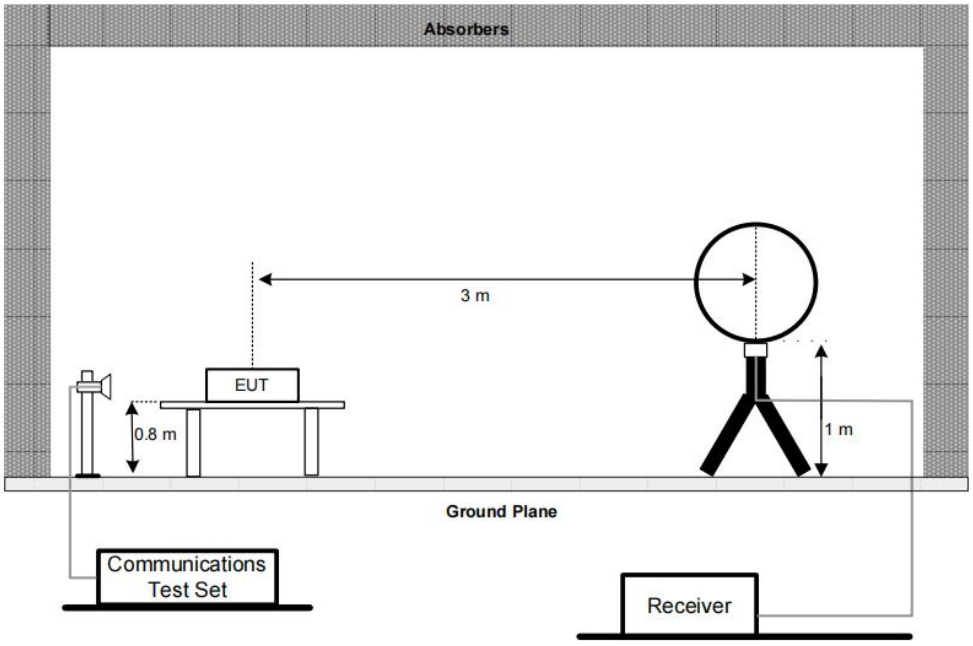
Test Requirement:	FCC Part15 C 15.247(d), 15.205, 15.209
Test Mode:	Transmitting mode with modulation
Limit:	

Frequency Range (MHz)	Field Strength (microvolts/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

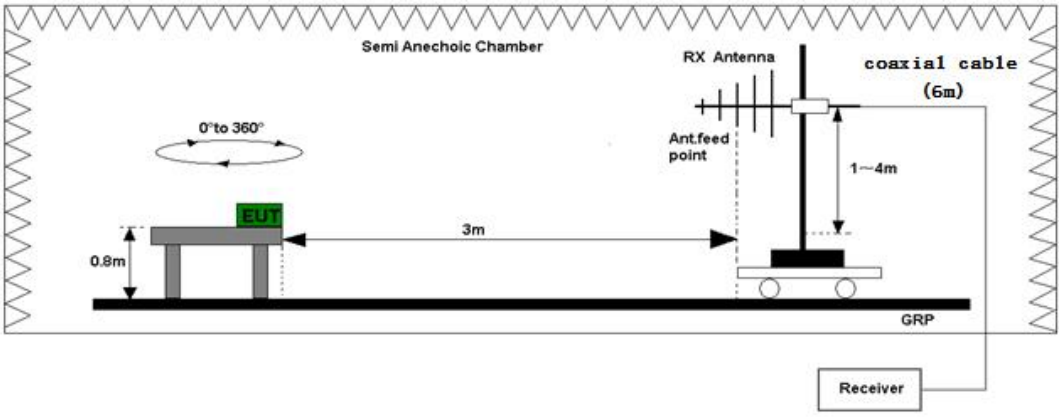
Test Procedure:	Radiated emission measurements were performed from 9kHz to tenth harmonic or 40GHz. The EUT for testing is arranged on a styrene turntable. If some peripherals apply to the EUT, the peripherals will be connected to EUT and the whole system. During the test, all cables were arranged to produce worst-case emissions. The signal is maximized through rotation. The height of antenna and polarization is changing constantly for exploring for maximum signal level. The height of antenna can be up to 4 meters and down to 1 meter.
Test Result:	Pass

This report is governed by, and incorporates by reference, the conditions of testing as posted at the date of issuance of this report at http://www.hdt-lab.com/ and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. You have 15 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.

7.7.1. Test Setup:

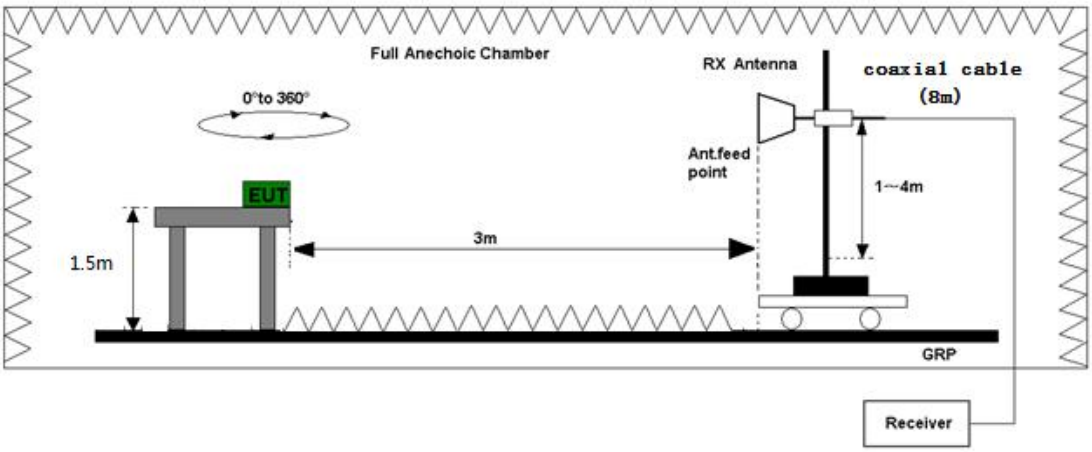


Test set-up of radiated disturbance (Up to 30MHz)



Test set-up of radiated disturbance (30MHz to 1GHz)

This report is governed by, and incorporates by reference, the conditions of testing as posted at the date of issuance of this report at http://www.hdt-lab.com/ and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. You have 15 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.



Test set-up of radiated disturbance (Above 1GHz)

7.7.2. Test Result

Test Voltage	DC 5V from adapter(AC120V/60Hz)

HD Testing Technology (GuangDong) Co., Ltd.

Building 1, No.18, Shihuan Road, Dongcheng Subdistrict,

Dongguan, Guangdong, China

Tel: +86-0769-22221088

E-mail: info@hdt-lab.com

Website: www.hdt-lab.com

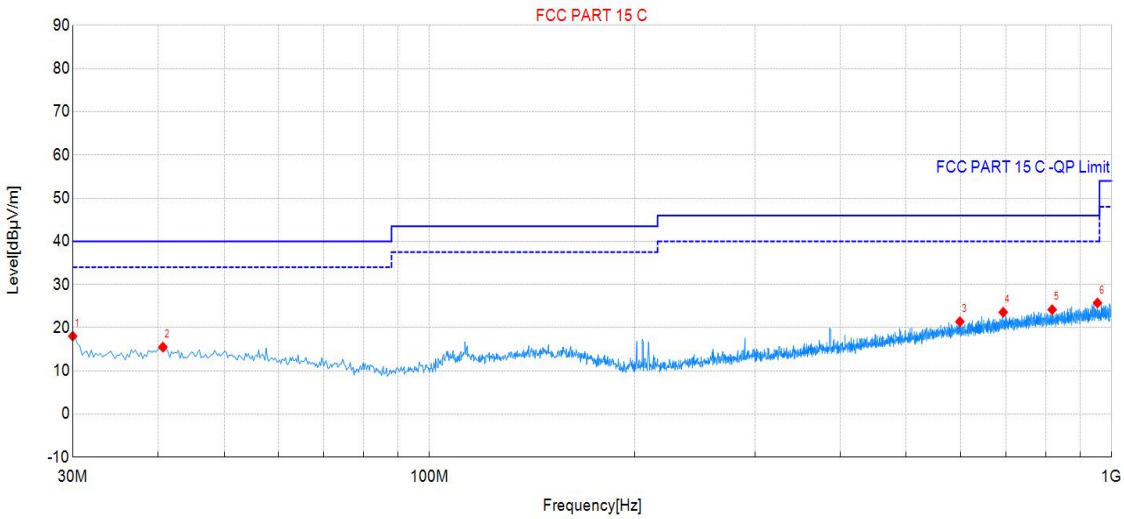
This report is governed by, and incorporates by reference, the conditions of testing as posted at the date of issuance of this report at http://www.hdt-lab.com/ and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. You have 15 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.

Worst-case Spurious Emission below 1GHz

GFSK-2402MHz

Please refer to the following diagram:

Vertical:



Suspected Data List											
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Det	Pol	Verdict
1	30.00	35.84	18.05	-17.79	40.00	21.95	100	212	QP	Vertical	PASS
2	40.67	32.54	15.52	-17.02	40.00	24.48	100	15	QP	Vertical	PASS
3	599.15	31.52	21.40	-10.12	46.00	24.60	100	109	QP	Vertical	PASS
4	693.48	32.48	23.60	-8.88	46.00	22.40	100	360	QP	Vertical	PASS
5	818.13	31.98	24.19	-7.79	46.00	21.81	100	194	QP	Vertical	PASS
6	953.20	32.54	25.75	-6.79	46.00	20.25	100	324	QP	Vertical	PASS

Note:(1)Level=Reading+Factor

(2)Margin=Limit-Level

(3)Factor=Antenna Factor+ Cable Loss - Amplifier Factor

HD Testing Technology (GuangDong) Co., Ltd.

Building 1, No.18, Shihuan Road, Dongcheng Subdistrict,

Dongguan, Guangdong, China

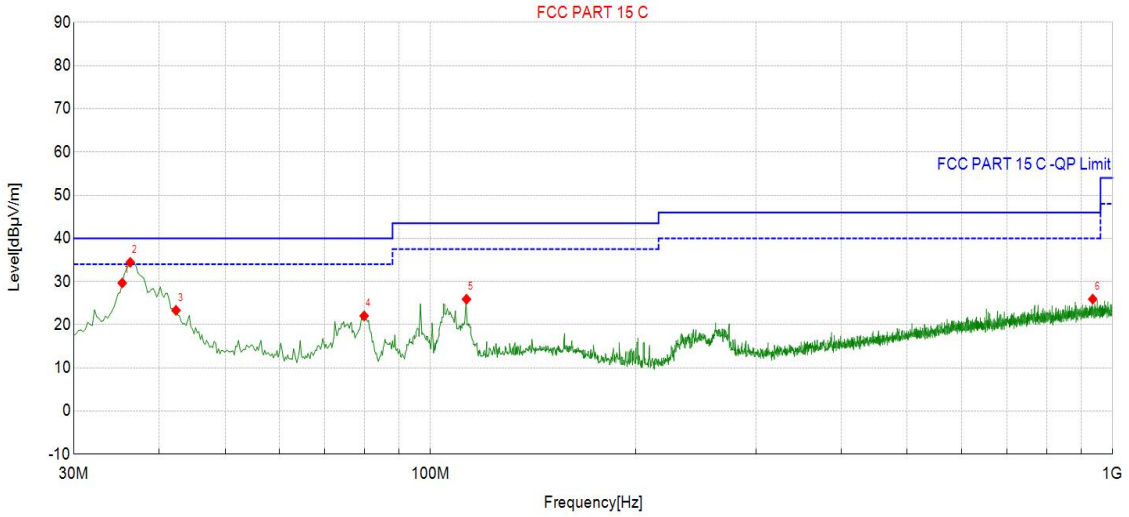
Tel: +86-0769-22221088

E-mail: info@hdt-lab.com

Website: www.hdt-lab.com

This report is governed by, and incorporates by reference, the conditions of testing as posted at the date of issuance of this report at http://www.hdt-lab.com/ and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. You have 15 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.

Horizontal:



Suspected Data List											
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Det	Pol	Verdict
1	35.34	47.13	29.67	-17.46	40.00	10.33	100	296	QP	Horizontal	PASS
2	36.31	51.82	34.45	-17.37	40.00	5.55	100	288	QP	Horizontal	PASS
3	42.37	40.38	23.33	-17.05	40.00	16.67	100	359	QP	Horizontal	PASS
4	79.96	42.70	22.04	-20.66	40.00	17.96	100	296	QP	Horizontal	PASS
5	112.94	44.45	25.91	-18.54	43.50	17.59	100	127	QP	Horizontal	PASS
6	935.01	32.87	25.94	-6.93	46.00	20.06	100	137	QP	Horizontal	PASS

Note:(1)Level=Reading+Factor

(2)Margin=Limit-Level

(3)Factor=Antenna Factor+ Cable Loss - Amplifier Factor

HD Testing Technology (GuangDong) Co., Ltd.

Building 1, No.18, Shihuan Road, Dongcheng Subdistrict,

Dongguan, Guangdong, China

Tel: +86-0769-22221088

E-mail: info@hdt-lab.com

Website: www.hdt-lab.com

This report is governed by, and incorporates by reference, the conditions of testing as posted at the date of issuance of this report at http://www.hdt-lab.com/ and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. You have 15 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.

Radiated Emissions (above 1GHz）

GFSK-2402MHz:

Suspected Data List											
NO.	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Det	Pol	Verdict
1	4804.99	66.30	49.27	-18.96	74.00	24.73	150	124	PK	Horizontal:	PASS
3	4804.79	58.85	41.9	-18.96	54.00	32.10	150	142	AV	Horizontal:	PASS

Suspected Data List											
NO.	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Det	Pol	Verdict
1	4804.36	70.56	51.6	-18.96	74.00	22.40	150	256	PK	Vertical	PASS
2	4804.76	60.14	40.09	-18.96	54.00	13.91	150	172	AV	Vertical	PASS

GFSK-2440MHz:

Suspected Data List											
NO.	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Det	Pol	Verdict
1	4880.58	70.33	51.45	-18.87	74.00	22.55	150	140	PK	Horizontal:	PASS
2	4880.58	60.21	41.34	-18.87	54.00	12.66	150	263	AV	Horizontal:	PASS

Suspected Data List											
NO.	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Det	Pol	Verdict
1	4880.58	66.81	47.93	-18.87	74.00	26.07	150	187	PK	Vertical	PASS
2	4880.58	56.63	37.76	-18.87	54.00	16.24	150	102	AV	Vertical	PASS

HD Testing Technology (GuangDong) Co., Ltd.

Building 1, No.18, Shihuan Road, Dongcheng Subdistrict,

Dongguan, Guangdong, China

Tel: +86-0769-22221088

E-mail: info@hdt-lab.com

Website: www.hdt-lab.com

This report is governed by, and incorporates by reference, the conditions of testing as posted at the date of issuance of this report at http://www.hdt-lab.com/ and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. You have 15 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.

GFSK-2480MHz:

Suspected Data List											
NO.	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Det	Pol	Verdict
1	4960.19	69.37	50.63	-18.74	74.00	23.37	150	201	PK	Horizontal:	PASS
2	4960.19	57.11	38.37	-18.74	54.00	15.63	150	147	AV	Horizontal:	PASS

Suspected Data List											
NO.	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Det	Pol	Verdict
1	4960.19	64.30	45.56	-18.74	74.00	28.44	150	140	PK	Vertical	PASS
2	4960.19	53.88	35.14	-18.74	54.00	18.86	150	97	AV	Vertical	PASS

Note:(1)Level=Reading+Factor

(2)Margin=Limit-Level

(3)Factor=Antenna Factor+ Cable Loss - Amplifier Factor

HD Testing Technology (GuangDong) Co., Ltd.

Building 1, No.18, Shihuan Road, Dongcheng Subdistrict,

Dongguan, Guangdong, China

Tel: +86-0769-22221088

E-mail: info@hdt-lab.com

Website: www.hdt-lab.com

This report is governed by, and incorporates by reference, the conditions of testing as posted at the date of issuance of this report at http://www.hdt-lab.com/ and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. You have 15 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.

7.8. Conducted Emission

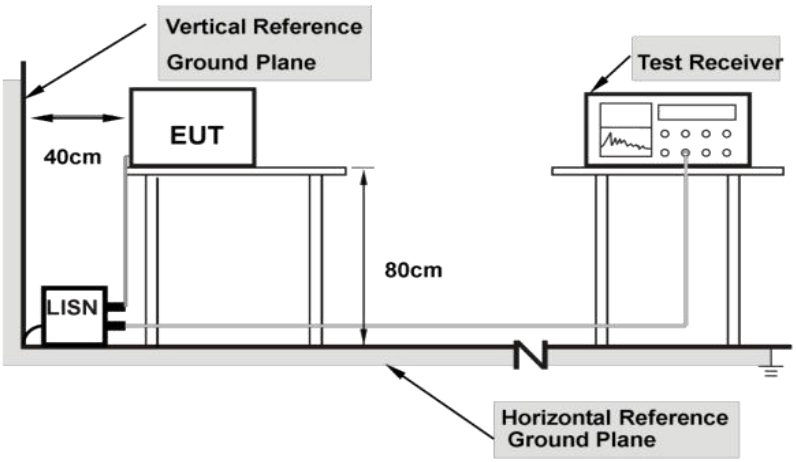
Test Requirement:	FCC Part 15.207(a)
Test Mode:	Transmitting mode with modulation
Limit:	

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

Test Procedure:	For tabletop equipment, the EUT along with its peripherals were placed on a 1.0m(W)×1.5m(L) and 0.8m in height wooden table. The EUT was adjusted to maintain a 0.4 meter space from a vertical reference plane. The EUT was connected to power mains through a line impedance stabilization network (LISN), which provided 50 ohm coupling impedance for measuring instrument and the chassis ground was bounded to the TRL550 ground plane of shielded room. The excess power cable between the EUT and the LISN was bundled.
Test Result:	Pass

7.8.1. Test Setup



This report is governed by, and incorporates by reference, the conditions of testing as posted at the date of issuance of this report at http://www.hdt-lab.com/ and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. You have 15 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.

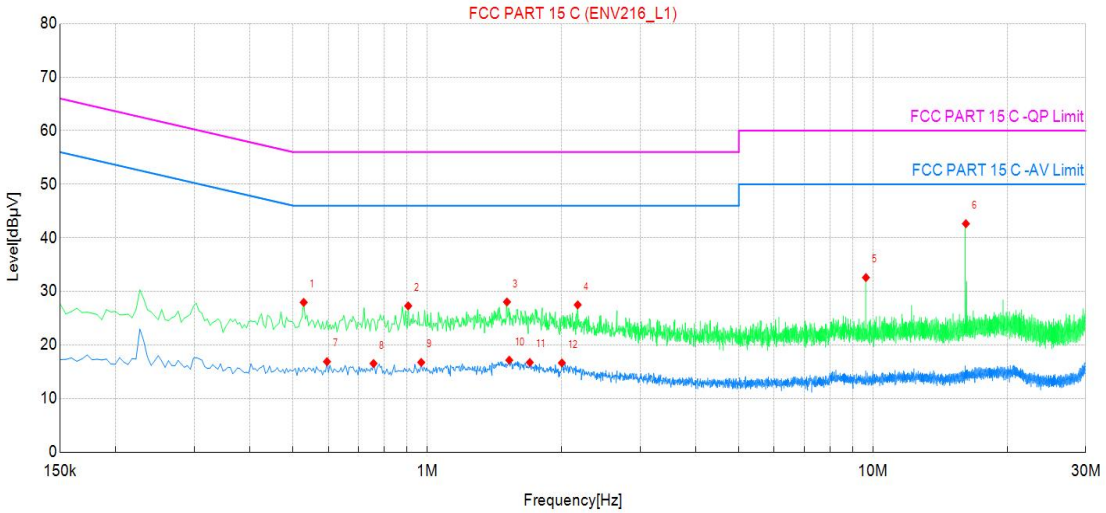
7.8.2. Test Result

Test Voltage	DC 5V from adapter(AC120V/60Hz)

Worst-case:GFSK-2402MHz

Please refer to the following diagram:

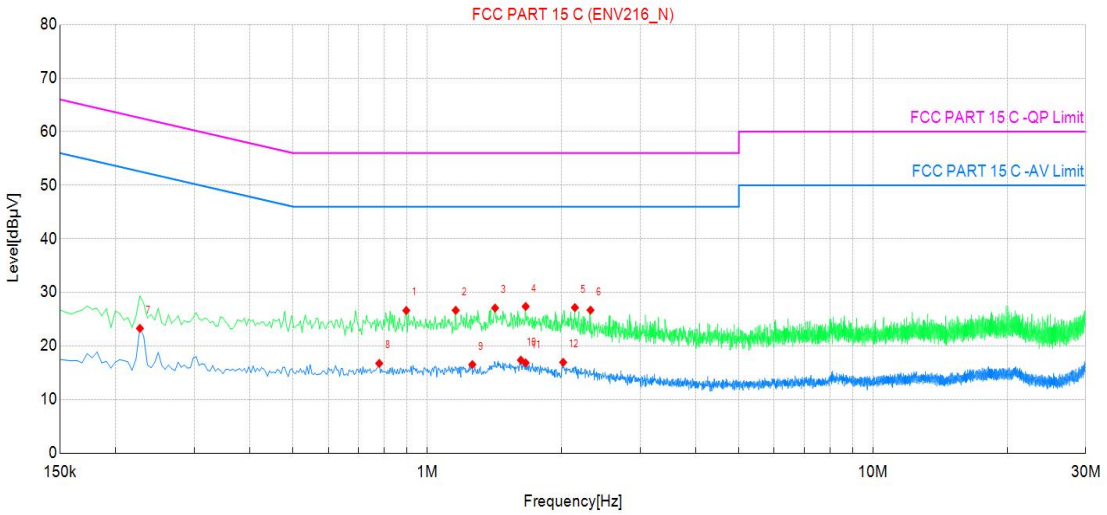
Line:



Suspected Data List									
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV]	Factor [dB]	Limit [dBµV]	Margin [dB]	Phase	Detector	Verdict
1	0.528000	8.83	27.95	19.12	56.00	28.05	L1	QP	PASS
2	0.906000	8.06	27.29	19.23	56.00	28.71	L1	QP	PASS
3	1.509000	8.83	28.03	19.20	56.00	27.97	L1	QP	PASS
4	2.175000	8.29	27.49	19.20	56.00	28.51	L1	QP	PASS
5	9.640500	13.17	32.59	19.42	60.00	27.41	L1	QP	PASS
6	16.156500	23.33	42.63	19.30	60.00	17.37	L1	QP	PASS
7	0.595500	-2.30	16.89	19.19	46.00	29.11	L1	AV	PASS
8	0.757500	-2.73	16.54	19.27	46.00	29.46	L1	AV	PASS
9	0.969000	-2.46	16.75	19.21	46.00	29.25	L1	AV	PASS
10	1.527000	-2.04	17.16	19.20	46.00	28.84	L1	AV	PASS
11	1.698000	-2.46	16.74	19.20	46.00	29.26	L1	AV	PASS
12	2.004000	-2.55	16.65	19.20	46.00	29.35	L1	AV	PASS

This report is governed by, and incorporates by reference, the conditions of testing as posted at the date of issuance of this report at http://www.hdt-lab.com/ and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. You have 15 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.

Neutral:



Suspected Data List									
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV]	Factor [dB]	Limit [dBµV]	Margin [dB]	Phase	Detector	Verdict
1	0.897000	7.39	26.62	19.23	56.00	29.38	N	QP	PASS
2	1.158000	7.46	26.66	19.20	56.00	29.34	N	QP	PASS
3	1.419000	7.89	27.09	19.20	56.00	28.91	N	QP	PASS
4	1.662000	8.17	27.37	19.20	56.00	28.63	N	QP	PASS
5	2.143500	7.97	27.16	19.19	56.00	28.84	N	QP	PASS
6	2.323500	7.50	26.69	19.19	56.00	29.31	N	QP	PASS
7	0.226500	4.09	23.28	19.19	52.69	29.41	N	AV	PASS
8	0.780000	-2.53	16.74	19.27	46.00	29.26	N	AV	PASS
9	1.261500	-2.67	16.53	19.20	46.00	29.47	N	AV	PASS
10	1.621500	-1.84	17.36	19.20	46.00	28.64	N	AV	PASS
11	1.662000	-2.35	16.85	19.20	46.00	29.15	N	AV	PASS
12	2.017500	-2.25	16.95	19.20	46.00	29.05	N	AV	PASS

Note:(1)Level=Reading+Factor

(2)Margin=Limit-Level

HD Testing Technology (GuangDong) Co., Ltd.

Building 1, No.18, Shihuan Road, Dongcheng Subdistrict,

Dongguan, Guangdong, China

Tel: +86-0769-22221088

E-mail: info@hdt-lab.com

Website: www.hdt-lab.com

This report is governed by, and incorporates by reference, the conditions of testing as posted at the date of issuance of this report at http://www.hdt-lab.com/ and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. You have 15 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.

8. PHOTOGRAPHS OF TEST SET-UP

For photographs of the test set-up, refer to the appendix file.(Test Setup Photo)

HD Testing Technology (GuangDong) Co., Ltd.

Building 1, No.18, Shihuan Road, Dongcheng Subdistrict,

Dongguan, Guangdong, China

Tel: +86-0769-22221088

E-mail: info@hdt-lab.com

Website: www.hdt-lab.com

This report is governed by, and incorporates by reference, the conditions of testing as posted at the date of issuance of this report at http://www.hdt-lab.com/ and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. You have 15 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.

9. PHOTOGRAPHS OF EUT

For photographs of the EUT, refer to the appendix file(EUT External Photos and EUT Internal Photos).

*** End of Report ***

HD Testing Technology (GuangDong) Co., Ltd.

Building 1, No.18, Shihuan Road, Dongcheng Subdistrict,

Dongguan, Guangdong, China

Tel: +86-0769-22221088

E-mail: info@hdt-lab.com

Website: www.hdt-lab.com

This report is governed by, and incorporates by reference, the conditions of testing as posted at the date of issuance of this report at http://www.hdt-lab.com/ and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. You have 15 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.