



TEST REPORT

FCC PART 15.247

Report Reference No.: CTL2411191033-WF01

Compiled by:
(position+printed name+signature)

Happy Guo
(File administrators)

Tested by:
(position+printed name+signature)

Wuqiang Wu
(Test Engineer)

Approved by:
(position+printed name+signature)

Ivan Xie
(Manager)



Product Name : laptop
Model/Type reference : T1568
List Model(s)..... : T140R, T140H, T156R, T156H, T160H, T160R, T173R, T173H, T1567
Trade Mark..... : N/A
FCC ID..... : 2BAGV-T1568

Applicant's name : Shenzhen Forwell Electronics Technology Co., Ltd.
Address of applicant : 2nd Floor, Building A, Shatang Beifangyongfa Science and Technology Park, Jincheng Rd., Shajing, Baoan Shenzhen, Guangdong, 518125 China

Test Firm..... : Shenzhen CTL Testing Technology Co., Ltd.
Address of Test Firm : Floor 1-A, Baisha Technology Park, No.3011, Shaheji Road, Nanshan District, Shenzhen, China 518055

Test specification..... :
Standard : FCC Part 15.247: Operation within the bands 902-928 MHz, 2400-2483.5 MHz and 5725-5850 MHz.
TRF Originator : Shenzhen CTL Testing Technology Co., Ltd.
Master TRF..... : Dated 2011-01

Date of receipt of test item : Nov. 22, 2024
Date of Test Date..... : Nov. 22, 2024-Jan. 08, 2025
Date of Issue : Jan. 09, 2025
Result..... : Pass

Shenzhen CTL Testing Technology Co., Ltd. All rights reserved.

This publication may be reproduced in whole or in part for non-commercial purposes as long as the Shenzhen CTL Testing Technology Co., Ltd. is acknowledged as copyright owner and source of the material. Shenzhen CTL Testing Technology Co., Ltd. takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.

TEST REPORT

Test Report No. :	CTL2411191033-WF01	Jan. 09, 2025
		Date of issue

Equipment under Test : laptop

Sample No : CTL2411191033

Model /Type : T1568

Listed Models : T140R, T140H, T156R, T156H, T160H, T160R, T173R,
T173H, T1567

Applicant : **Shenzhen Forwell Electronics Technology Co., Ltd.**

Address : 2nd Floor, Building A, Shatang Beifangyongfa Science and
Technology Park, Jincheng Rd., Shajing, Baoan
Shenzhen, Guangdong, 518125 China

Manufacturer : **Shenzhen Forwell Electronics Technology Co., Ltd.**

Address : 2nd Floor, Building A, Shatang Beifangyongfa Science and
Technology Park, Jincheng Rd., Shajing, Baoan
Shenzhen, Guangdong, 518125 China

Test result	Pass *
--------------------	---------------

*In the configuration tested, the EUT complied with the standards specified page 5.

The test results presented in this report relate only to the object tested.

This report shall not be reproduced, except in full, without the written approval of the issuing testing laboratory.

The device (Product Name: laptop) Models Name: T1568, T140R, T140H, T156R, T156H, T160H, T160R, T173R, T173H, T1567 have same electrical, PCB and BOM, only the colour and model' s names are different for marketing requirements.

** Modified History **

[illegible]

Table of Contents**Page**

1. SUMMARY	5
1.1. TEST STANDARDS	5
1.2. TEST DESCRIPTION	5
1.3. TEST FACILITY	6
1.4. STATEMENT OF THE MEASUREMENT UNCERTAINTY	6
2. GENERAL INFORMATION	8
2.1. ENVIRONMENTAL CONDITIONS	8
2.2. GENERAL DESCRIPTION OF EUT	8
2.3. DESCRIPTION OF TEST MODES AND TEST FREQUENCY	9
2.4. EQUIPMENTS USED DURING THE TEST	10
2.5. RELATED SUBMITTAL(S) / GRANT (S)	10
2.6. MODIFICATIONS	10
3. TEST CONDITIONS AND RESULTS	11
3.1. CONDUCTED EMISSIONS TEST	11
3.2. RADIATED EMISSIONS AND BAND EDGE	14
3.3. MAXIMUM PEAK OUTPUT POWER	24
3.4. 20dB BANDWIDTH	25
3.5. FREQUENCY SEPARATION	26
3.6. NUMBER OF HOPPING FREQUENCY	27
3.7. TIME OF OCCUPANCY (DWELL TIME)	28
3.8. OUT-OF-BAND EMISSIONS	29
3.9. PSEUDORANDOM FREQUENCY HOPPING SEQUENCE	30
3.10. ANTENNA REQUIREMENT	31
4. TEST SETUP PHOTOS OF THE EUT	32
5. PHOTOS OF THE EUT	34

1. SUMMARY

1.1. TEST STANDARDS

The tests were performed according to following standards:

[FCC Rules Part 15.247](#): Frequency Hopping, Direct Spread Spectrum and Hybrid Systems that are in operation within the bands of 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz

[ANSI C63.10: 2013](#): American National Standard for Testing Unlicensed Wireless Devices

1.2. Test Description

FCC PART 15.247		
FCC Part 15.207	AC Power Conducted Emission	PASS
FCC Part 15.247(a)(1)(i)	20dB Bandwidth	PASS
FCC Part 15.247(d)	Spurious RF Conducted Emission	PASS
FCC Part 15.247(b)	Maximum Peak Output Power	PASS
FCC Part 15.247(b)	Pseudorandom Frequency Hopping Sequence	PASS
FCC Part 15.247(a)(1)(iii)	Number of hopping frequency & Time of Occupancy	PASS
FCC Part 15.247(a)(1)	Frequency Separation	PASS
FCC Part 15.205/15.209	Radiated Emissions	PASS
FCC Part 15.247(d)	Band Edge Compliance of RF Emission	PASS
FCC Part 15.203/15.247 (b)	Antenna Requirement	PASS

1.3. Test Facility

1.3.1 Address of the test laboratory

Shenzhen CTL Testing Technology Co., Ltd.

Floor 1-A, Baisha Technology Park, No.3011 Shahexi Road, Nanshan District, Shenzhen, China 518055

There is one 3m semi-anechoic chamber and two line conducted labs for final test. The Test Sites meet the requirements in documents ANSI C63.10 and CISPR 32/EN 55032 requirements.

1.3.2 Laboratory accreditation

The test facility is recognized, certified, or accredited by the following organizations:

CNAS-Lab Code: L7497

Shenzhen CTL Testing Technology Co., Ltd. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC 17025: 2017 General Requirements) for the Competence of Testing and Calibration Laboratories.

A2LA-Lab Cert. No. 4343.01

Shenzhen CTL Testing Technology Co., Ltd, EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

IC Registration No.: 9618B

CAB identifier: CN0041

The 3m alternate test site of Shenzhen CTL Testing Technology Co., Ltd. EMC Laboratory has been registered by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements with Registration No.: 9618B.

FCC-Registration No.: 399832

Designation No.: CN1216

Shenzhen CTL Testing Technology Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 399832.

1.4. Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 "Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements" and is documented in the Shenzhen CTL Testing Technology Co., Ltd. quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for CTL laboratory is reported:

Test	Measurement Uncertainty	Notes
Transmitter power conducted	±0.57 dB	(1)
Transmitter power Radiated	±2.20 dB	(1)
Conducted spurious emission 9KHz-40 GHz	±1.60 dB	(1)
Occupied Bandwidth	±0.20ppm	(1)
Radiated Emission 9KHz~30MHz	±3.40dB	(1)

Radiated Emission 30~1000MHz	$\pm 4.10\text{dB}$	(1)
Radiated Emission Above 1GHz	$\pm 4.32\text{dB}$	(1)
Conducted Disturbance 0.15~30MHz	$\pm 3.20\text{dB}$	(1)

(1) This uncertainty represents an expanded uncertainty expressed at approximately the 95%

(2) confidence level using a coverage factor of $k=2$.

2. GENERAL INFORMATION

2.1. Environmental conditions

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

Normal Temperature:	25°C
Relative Humidity:	55 %
Air Pressure:	101 kPa

2.2. General Description of EUT

Product Name:	laptop
Model/Type reference:	T1568
Power supply:	AC100V/60Hz&Powered by a 11.4V DC battery
Adapter information:	MODEL: JHD-AD065B-190342BA-A INPUT: 100-240V,50/60Hz 1.5A OUTPUT: 19V---3.42A 64.98W
Bluetooth:	
Version:	Supported BR/EDR
Modulation:	GFSK, Pi/4DQPSK, 8DPSK
Operation frequency:	2402MHz~2480MHz
Channel number:	79
Channel separation:	1MHz
Antenna type:	ANT1: FPC Antenna ANT2: FPC Antenna
Antenna gain:	ANT1: 1.35dBi ANT2: 1.37dBi

Note 1: For more details, please refer to the user's manual of the EUT.

Note 2: Antenna gain provided by the applicant.

2.3. Description of Test Modes and Test Frequency

The Applicant provides communication tools software to control the EUT for staying in continuous transmitting and receiving mode for testing. There are 79 channels provided to the EUT and Channel 00/39/78 were selected to test.

Operation Frequency :

Channel	Frequency (MHz)
00	2402
01	2403
⋮	⋮
38	2440
39	2441
40	2442
⋮	⋮
77	2479
78	2480

Preliminary tests were performed in each mode and packet length of BT, and found worst case as bellow, finally test were conducted at those mode and recorded in this report.

Test Item	Worst case
Conducted Emissions	Charging mode
Radiated Emissions and Band Edge	DH5
Maximum Conducted Output Power	DH5/2DH5/3DH5
20dB Bandwidth	DH5/2DH5/3DH5
Frequency Separation	DH5/2DH5/3DH5 Middle channel
Number of hopping frequency	DH5/2DH5/3DH5
Time of Occupancy (Dwell Time)	DH1/DH3/DH5 Middle channel 2DH1/2DH3/2DH5 Middle channel 3DH1/3DH3/3DH5 Middle channel
Out-of-band Emissions	DH5/2DH5/3DH5

There was 3 test Modes. TM1 to TM3 were shown below:

- TM1 : Operate in Bluetooth mode;
- TM2 : Operate in Charging mode;
- TM3 : Idle mode.

***Note:

1. All test modes were tested, but we only recorded the worst case in this report.

2.4. Equipments Used during the Test

Test Equipment	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Due Date
LISN	R&S	ESH2-Z5	860014/010	2024/04/30	2025/04/29
Double cone logarithmic antenna	Schwarzbeck	VULB 9168	824	2023/02/13	2026/02/12
EMI Test Receiver	R&S	ESCI	1166.5950.03	2024/04/30	2025/04/29
Spectrum Analyzer	Agilent	N9020A	US46220290	2024/05/02	2025/05/01
Spectrum Analyzer	Keysight	N9020A	MY53420874	2024/05/02	2025/05/01
Horn Antenna	Sunol Sciences Corp.	DRH-118	A062013	2024/12/21	2025/12/20
Active Loop Antenna	Da Ze	ZN30900A	/	2024/04/30	2025/04/29
Amplifier	Agilent	8449B	3008A02306	2024/04/30	2025/04/29
Amplifier	Brief&Smart	LNA-4018	2104197	2024/05/03	2025/05/02
Temperature/Humidity Meter	Ji Yu	MC501	/	2024/05/04	2025/05/03
Power measurement module	TSTPASS	TSPS2023R	TSCB220016	2024/05/03	2025/05/02
Power Sensor	Agilent	U2021XA	MY53340004	2024/05/04	2025/05/03
Power Sensor	Agilent	U2021XA	MY54080012	2024/05/03	2025/05/02
Spectrum Analyzer	RS	FSP	1164.4391.38	2024/05/03	2025/05/02
Test Software					
Name of Software			Version		
TST-PASS			V2.0		
EZ_EMG(Below 1GHz)			V1.1.4.2		
EZ_EMG((Above 1GHz)			V1.1.4.2		

2.5. Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended to comply with Section 15.247 of the FCC Part 15, Subpart C Rules.

2.6. Modifications

No modifications were implemented to meet testing criteria.

3. TEST CONDITIONS AND RESULTS

3.1. Conducted Emissions Test

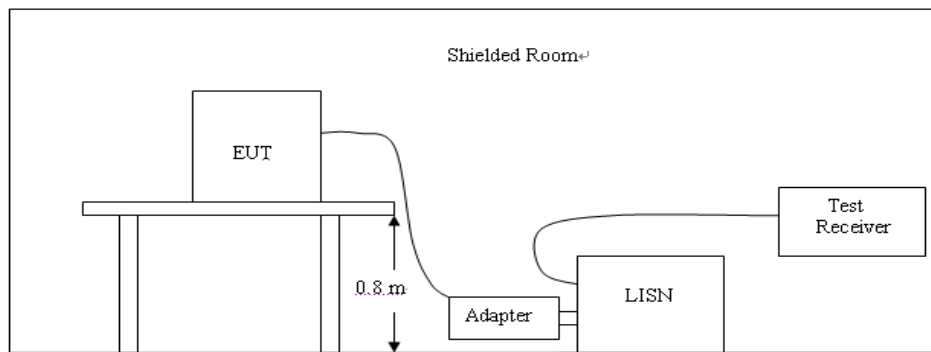
LIMIT

FCC CFR Title 47 Part 15 Subpart C Section 15.207

Frequency range (MHz)	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 CONFIGURATION



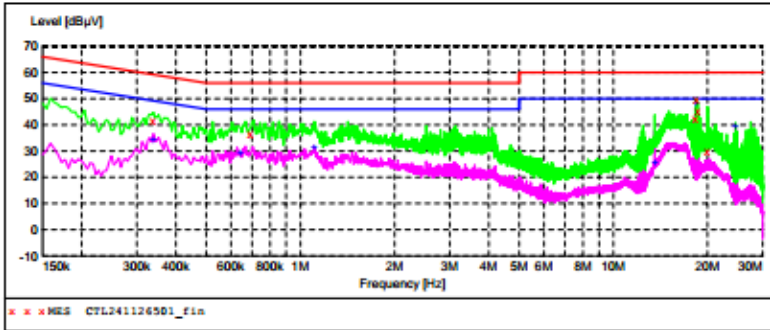
TEST PROCEDURE

1. The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. The EUT is a Speaker; a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.10:2013.
2. Support equipment, if needed, was placed as per ANSI C63.10:2013.
3. All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10:2013.
4. The adapter received AC120V/60Hz power through a Line Impedance Stabilization Network (LISN) which supplied power source and was grounded to the ground plane.
5. All support equipments received AC power from a second LISN, if any.
6. The EUT test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
7. Analyzer / Receiver scanned from 150 KHz to 30MHz for emissions in each of the test modes.
8. During the above scans, the emissions were maximized by cable manipulation.

TEST RESULTS

Line:	L
Test Modes	TM2

SCAN TABLE: "Voltage (9K-30M)FIN"
Short Description: 150K-30M Voltage



MEASUREMENT RESULT: "CTL241126501_fin"

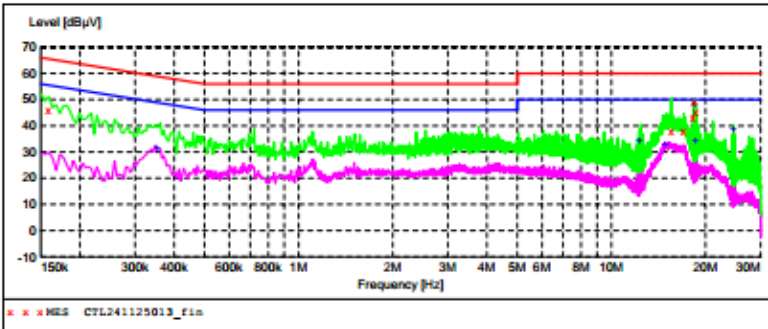
11/26/2024 9:48AM

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.339000	41.50	10.0	59	17.7	QP	L1	GND
0.690000	36.40	10.0	56	19.6	QP	L1	GND
18.276000	42.20	11.2	60	17.8	QP	L1	GND
18.433500	49.30	11.2	60	10.7	QP	L1	GND
18.595500	45.40	11.2	60	14.6	QP	L1	GND
19.977000	29.70	11.2	60	30.3	QP	L1	GND

MEASUREMENT RESULT: "CTL241126501_fin2"

11/26/2024 9:48AM

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.339000	34.60	10.0	49	14.6	AV	L1	GND
0.640500	28.90	10.0	46	17.1	AV	L1	GND
1.108500	31.20	10.1	46	14.8	AV	L1	GND
13.582500	25.10	11.0	50	24.9	AV	L1	GND
18.433500	48.10	11.2	50	1.9	AV	L1	GND
24.576000	39.40	10.6	50	10.6	AV	L1	GND

Line:	N																																																																																																																
Test Modes	TM2																																																																																																																
SCAN TABLE: "Voltage (9K-30M)FIN" Short Description: 150K-30M Voltage  MEASUREMENT RESULT: "CTL241125013_fin" 11/26/2024 9:13AM <table><tr><th>Frequency MHz</th><th>Level dBµV</th><th>Transd dB</th><th>Limit dBµV</th><th>Margin dB</th><th>Detector</th><th>Line</th><th>FE</th></tr><tr><td>0.159000</td><td>46.10</td><td>10.0</td><td>66</td><td>19.4</td><td>QP</td><td>N</td><td>GND</td></tr><tr><td>15.549000</td><td>37.90</td><td>11.2</td><td>60</td><td>22.1</td><td>QP</td><td>N</td><td>GND</td></tr><tr><td>17.038500</td><td>37.80</td><td>11.2</td><td>60</td><td>22.2</td><td>QP</td><td>N</td><td>GND</td></tr><tr><td>18.267000</td><td>42.80</td><td>11.2</td><td>60</td><td>17.2</td><td>QP</td><td>N</td><td>GND</td></tr><tr><td>18.433500</td><td>49.10</td><td>11.2</td><td>60</td><td>10.9</td><td>QP</td><td>N</td><td>GND</td></tr><tr><td>18.595500</td><td>45.10</td><td>11.2</td><td>60</td><td>14.9</td><td>QP</td><td>N</td><td>GND</td></tr></table> MEASUREMENT RESULT: "CTL241125013_fin2" 11/26/2024 9:13AM <table><tr><th>Frequency MHz</th><th>Level dBµV</th><th>Transd dB</th><th>Limit dBµV</th><th>Margin dB</th><th>Detector</th><th>Line</th><th>FE</th></tr><tr><td>0.352500</td><td>31.20</td><td>10.0</td><td>49</td><td>17.7</td><td>AV</td><td>N</td><td>GND</td></tr><tr><td>12.291000</td><td>34.60</td><td>10.9</td><td>50</td><td>15.4</td><td>AV</td><td>N</td><td>GND</td></tr><tr><td>14.874000</td><td>32.40</td><td>11.1</td><td>50</td><td>17.6</td><td>AV</td><td>N</td><td>GND</td></tr><tr><td>18.433500</td><td>47.90</td><td>11.2</td><td>50</td><td>2.1</td><td>AV</td><td>N</td><td>GND</td></tr><tr><td>18.595500</td><td>34.60</td><td>11.2</td><td>50</td><td>15.4</td><td>AV</td><td>N</td><td>GND</td></tr><tr><td>24.576000</td><td>38.90</td><td>10.6</td><td>50</td><td>11.1</td><td>AV</td><td>N</td><td>GND</td></tr></table>		Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	FE	0.159000	46.10	10.0	66	19.4	QP	N	GND	15.549000	37.90	11.2	60	22.1	QP	N	GND	17.038500	37.80	11.2	60	22.2	QP	N	GND	18.267000	42.80	11.2	60	17.2	QP	N	GND	18.433500	49.10	11.2	60	10.9	QP	N	GND	18.595500	45.10	11.2	60	14.9	QP	N	GND	Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	FE	0.352500	31.20	10.0	49	17.7	AV	N	GND	12.291000	34.60	10.9	50	15.4	AV	N	GND	14.874000	32.40	11.1	50	17.6	AV	N	GND	18.433500	47.90	11.2	50	2.1	AV	N	GND	18.595500	34.60	11.2	50	15.4	AV	N	GND	24.576000	38.90	10.6	50	11.1	AV	N	GND
Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	FE																																																																																																										
0.159000	46.10	10.0	66	19.4	QP	N	GND																																																																																																										
15.549000	37.90	11.2	60	22.1	QP	N	GND																																																																																																										
17.038500	37.80	11.2	60	22.2	QP	N	GND																																																																																																										
18.267000	42.80	11.2	60	17.2	QP	N	GND																																																																																																										
18.433500	49.10	11.2	60	10.9	QP	N	GND																																																																																																										
18.595500	45.10	11.2	60	14.9	QP	N	GND																																																																																																										
Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	FE																																																																																																										
0.352500	31.20	10.0	49	17.7	AV	N	GND																																																																																																										
12.291000	34.60	10.9	50	15.4	AV	N	GND																																																																																																										
14.874000	32.40	11.1	50	17.6	AV	N	GND																																																																																																										
18.433500	47.90	11.2	50	2.1	AV	N	GND																																																																																																										
18.595500	34.60	11.2	50	15.4	AV	N	GND																																																																																																										
24.576000	38.90	10.6	50	11.1	AV	N	GND																																																																																																										

3.2. Radiated Emissions and Band Edge

Limit

For intentional device, according to § 15.209(a), the general requirement of field strength of radiated emission out of authorized band shall not exceed the following table at a 3 meters measurement distance.

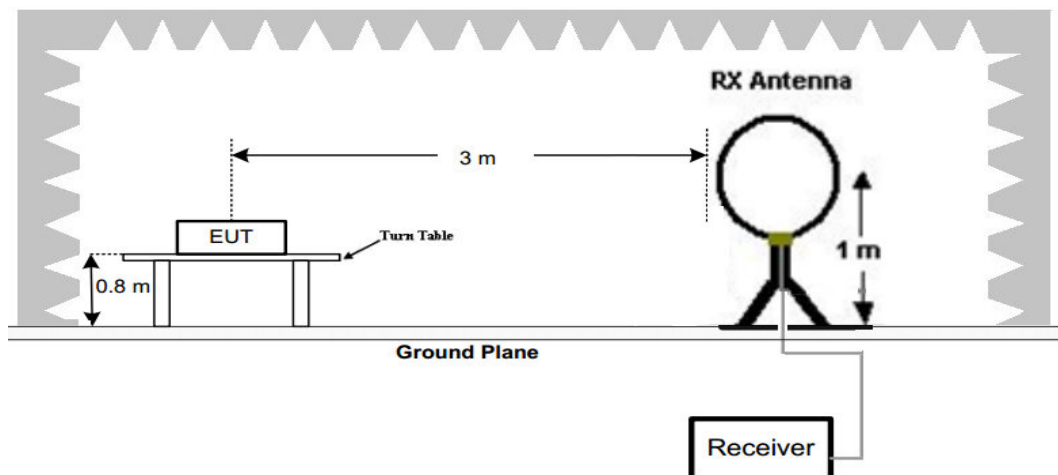
In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a)

Radiated emission limits

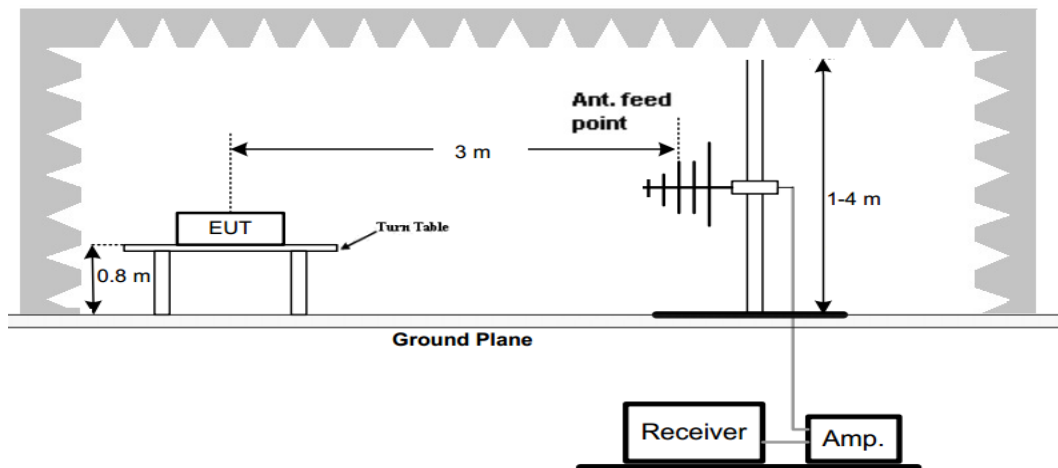
Frequency (MHz)	Distance (Meters)	Radiated (dB μ V/m)	Radiated (μ V/m)
0.009-0.49	3	$20\log(2400/F(\text{KHz})) + 40\log(300/3)$	$2400/F(\text{KHz})$
0.49-1.705	3	$20\log(24000/F(\text{KHz})) + 40\log(30/3)$	$24000/F(\text{KHz})$
1.705-30	3	$20\log(30) + 40\log(30/3)$	30
30-88	3	40.0	100
88-216	3	43.5	150
216-960	3	46.0	200
Above 960	3	54.0	500

TEST CONFIGURATION

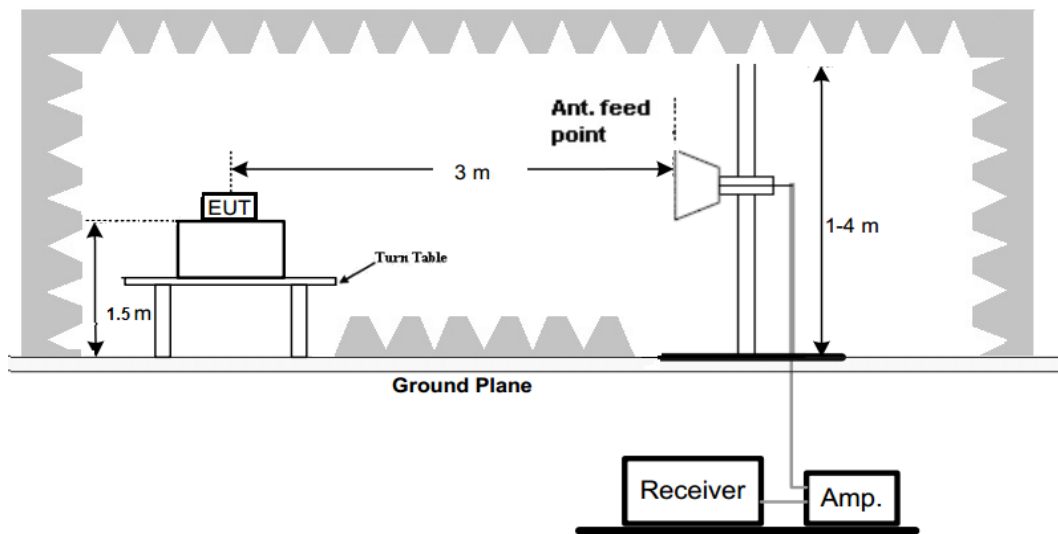
(A) Radiated Emission Test Set-Up, Frequency Below 30MHz



(B) Radiated Emission Test Set-Up, Frequency below 1000MHz



(C) Radiated Emission Test Set-Up, Frequency above 1000MHz



Test Procedure

1. Below 1GHz measurement the EUT is placed on a turntable which is 0.8m above ground plane, and above 1GHz measurement EUT was placed on a low permittivity and low loss tangent turn table which is 1.5m above ground plane.
2. Maximum procedure was performed by raising the receiving antenna from 1m to 4m and rotating the turn table from 0° to 360° to acquire the highest emissions from EUT
3. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
4. Repeat above procedures until all frequency measurements have been completed.
5. The EUT was pretested with 3 orientations placed on the table for the radiated emission measurement –X, Y, and Z-plane. The X-plane results were found as the worst case and were shown in this report.

TEST RESULTS

Remark:

1. We measured Radiated Emission at GFSK, $\pi/4$ DQPSK and 8DPSK mode from 9 KHz to 25GHz and recorded worst case at GFSK DH5 mode (Antenna 1).
2. For below 1GHz testing recorded worst at GFSK DH5(Antenna 1) low channel.
3. Radiated emission test from 9 KHz to 10th harmonic of fundamental was verified, Found the emission level are attenuated 20dB below the limits from 9 kHz to 30MHz, so it does not recorded in report.

For 30MHz-1GHz

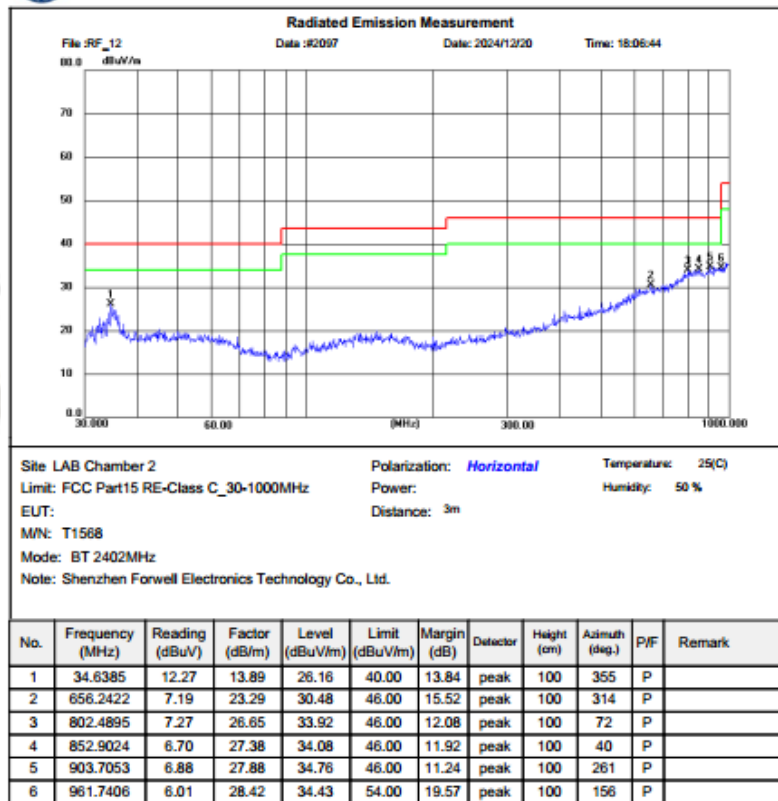
Horizontal

Test Modes

TM1



Shenzhen CTL Testing Technology Co., Ltd
Tel: +86-755-89486194



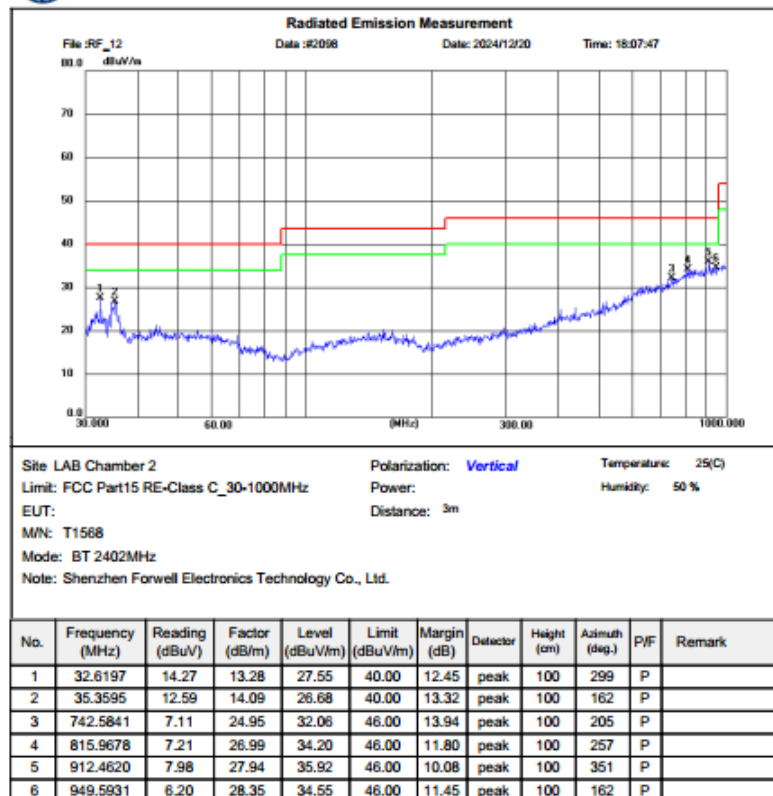
Vertical

Test Modes

TM1



Shenzhen CTL Testing Technology Co., Ltd
Tel: +86-755-89486194



For 1GHz to 25GHz

Note: GFSK, Pi/4 DQPSK, and 8DPSK have all been tested, and the report only records the worst-case GFSK (Antenna 1).

CH00

Horizontal

Shenzhen CTL Testing Technology Co., Ltd
Tel: +86-755-89486194

Radiated Emission Measurement

File :RF_11 Data :#1821 Date: 2024/11/28 Time: 23:34:55

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	1788.375	60.94	-20.15	40.79	74.00	33.21	peak	150	67	P	
2	3998.375	53.31	-10.31	43.00	74.00	31.00	peak	150	309	P	
3	8212.250	49.75	-2.44	47.31	74.00	26.69	peak	150	235	P	
4	12013.875	47.41	2.21	49.62	74.00	24.38	peak	150	235	P	
5	14311.000	46.79	2.79	49.58	74.00	24.42	peak	150	267	P	
6	16508.250	44.28	6.20	50.48	74.00	23.52	peak	150	24	P	

Site: LAB Chamber 2 Polarization: **Horizontal** Temperature: 25(C)
Limit: FCC Part15 RE-Class C_Above 1GHz_PK Power: Humidity: 50 %
EUT: Distance: 3m
M/N: T1568
Mode: BT 2402MHz TX
Note: Shenzhen Forwell Electronics Technology Co., Ltd.

CH00

Vertical

Shenzhen CTL Testing Technology Co., Ltd
Tel: +86-755-89486194

Radiated Emission Measurement

File :RF_11 Data :#1822 Date: 2024/11/28 Time: 23:35:58

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	3188.750	55.48	-13.17	42.31	74.00	31.69	peak	150	338	P	
2	4795.250	52.17	-8.11	44.06	74.00	29.94	peak	150	64	P	
3	7987.000	51.19	-3.02	48.17	74.00	25.83	peak	150	327	P	
4	10362.750	53.62	0.02	53.64	74.00	20.36	peak	150	191	P	
5	13522.625	46.78	3.93	50.71	74.00	23.29	peak	150	285	P	
6	16219.250	45.50	5.29	50.79	74.00	23.21	peak	150	159	P	

Site: LAB Chamber 2 Polarization: **Vertical** Temperature: 25(C)
Limit: FCC Part15 RE-Class C_Above 1GHz_PK Power: Humidity: 50 %
EUT: Distance: 3m
M/N: T1568
Mode: BT 2402MHz TX
Note: Shenzhen Forwell Electronics Technology Co., Ltd.

Remark: Level(dBuV/m)=Reading(dBuV)+Factor(dB/m)

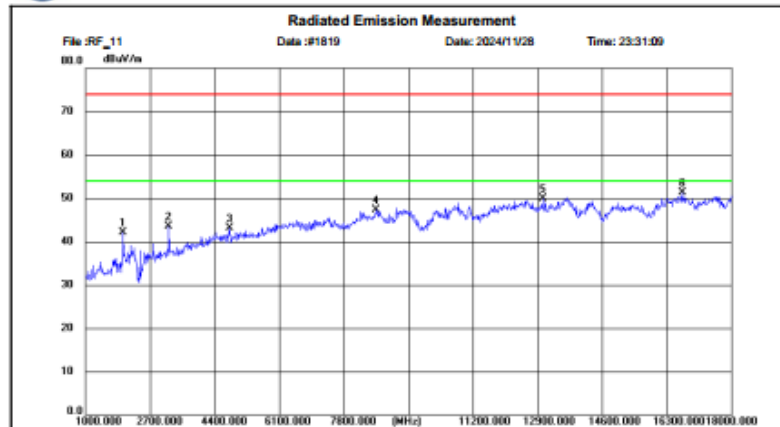
Margin= Limit(dBuV/m)- Level(dBuV/m)

CH39

Horizontal



Shenzhen CTL Testing Technology Co., Ltd
Tel: +86-755-89486194



Site: LAB Chamber 2

Polarization: **Horizontal**

Temperature: 25(C)

Limit: FCC Part15 RE-Class C_Above 1GHz_PK

Power:

Humidity: 50 %

EUT:

Distance: 3m

M/N: T1568

Mode: BT 2441MHz TX

Note: Shenzhen Forwell Electronics Technology Co., Ltd.

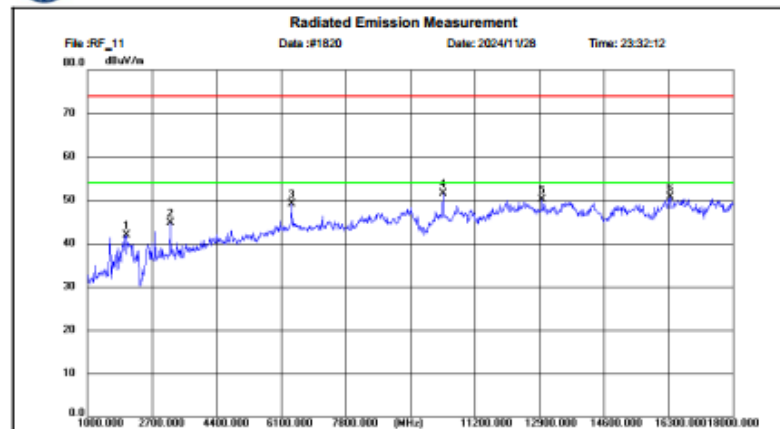
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	1996.625	60.96	-18.82	42.16	74.00	31.84	peak	150	349	P	
2	3193.000	56.57	-13.16	43.41	74.00	30.59	peak	150	159	P	
3	4791.000	51.17	-8.12	43.05	74.00	30.95	peak	150	159	P	
4	8664.875	48.62	-1.34	47.28	74.00	26.72	peak	150	297	P	
5	13050.875	47.65	2.21	49.86	74.00	24.14	peak	150	137	P	
6	16722.875	44.82	6.51	51.33	74.00	22.67	peak	150	180	P	

CH39

Vertical



Shenzhen CTL Testing Technology Co., Ltd
Tel: +86-755-89486194



Site: LAB Chamber 2

Polarization: **Vertical**

Temperature: 25(C)

Limit: FCC Part15 RE-Class C_Above 1GHz_PK

Power:

Humidity: 50 %

EUT:

Distance: 3m

M/N: T1568

Mode: BT 2441MHz TX

Note: Shenzhen Forwell Electronics Technology Co., Ltd.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	2024.250	60.59	-18.61	41.98	74.00	32.02	peak	150	233	P	
2	3186.625	57.86	-13.20	44.66	74.00	29.34	peak	150	358	P	
3	6384.750	53.72	-4.60	49.12	74.00	24.88	peak	150	358	P	
4	10371.250	51.49	0.02	51.51	74.00	22.49	peak	150	169	P	
5	12987.125	48.20	1.95	50.15	74.00	23.85	peak	150	179	P	
6	16351.000	44.95	5.67	50.62	74.00	23.38	peak	150	106	P	

Remark: Level(dBuV/m)=Reading(dBuV)+Factor(dB/m)

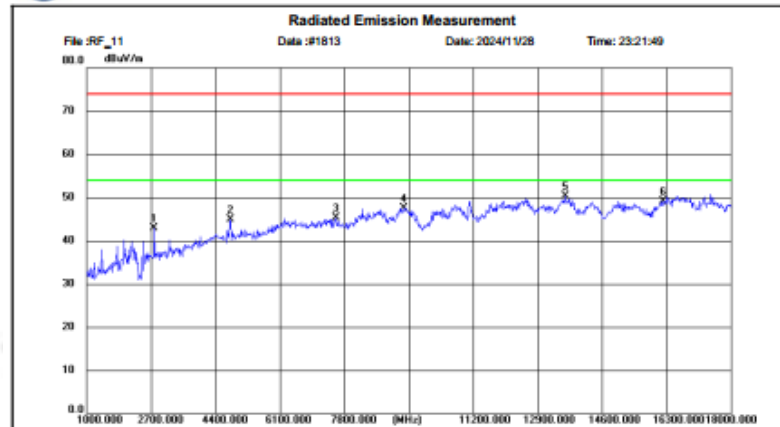
Margin= Limit(dBuV/m)- Level(dBuV/m)

CH78

Horizontal



Shenzhen CTL Testing Technology Co., Ltd
Tel: +86-755-89486194



Site: LAB Chamber 2 Polarization: **Horizontal** Temperature: 25(C)
Limit: FCC Part15 RE-Class C_Above 1GHz_PK Power: Humidity: 50 %
EUT: Distance: 3m
M/N: T1568
Mode: BT 2480MHz TX
Note: Shenzhen Forwell Electronics Technology Co., Ltd.

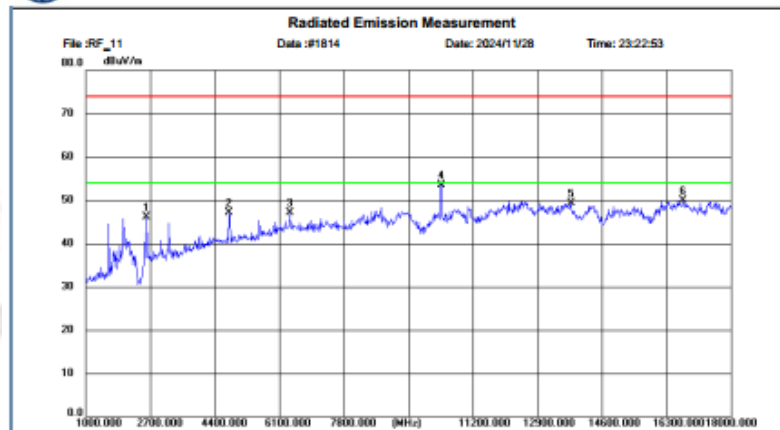
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	2793.500	57.93	-15.08	42.85	74.00	31.15	peak	150	226	P	
2	4793.125	52.96	-8.10	44.86	74.00	29.14	peak	150	215	P	
3	7579.000	48.10	-2.77	45.33	74.00	28.67	peak	150	44	P	
4	9385.250	47.30	0.20	47.50	74.00	26.50	peak	150	44	P	
5	13631.000	46.38	3.95	50.33	74.00	23.67	peak	150	299	P	
6	16219.250	43.80	5.29	49.09	74.00	24.91	peak	150	183	P	

CH78

Vertical



Shenzhen CTL Testing Technology Co., Ltd
Tel: +86-755-89486194



Site: LAB Chamber 2 Polarization: **Vertical** Temperature: 25(C)
Limit: FCC Part15 RE-Class C_Above 1GHz_PK Power: Humidity: 50 %
EUT: Distance: 3m
M/N: T1568
Mode: BT 2480MHz TX
Note: Shenzhen Forwell Electronics Technology Co., Ltd.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	2598.000	62.31	-16.18	46.13	74.00	27.87	peak	150	72	P	
2	4782.500	55.31	-8.13	47.18	74.00	26.82	peak	150	327	P	
3	6399.625	51.77	-4.59	47.18	74.00	26.82	peak	150	50	P	
4	10375.500	53.40	0.01	53.41	74.00	20.59	peak	150	167	P	
5	13798.875	45.63	3.73	49.36	74.00	24.64	peak	150	8	P	
6	16752.625	43.43	6.53	49.96	74.00	24.04	peak	150	327	P	

Remark: Level(dBuV/m)=Reading(dBuV)+Factor(dB/m)
Margin= Limit(dBuV/m)- Level(dBuV/m)

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m)
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) - Pre-amplifier Factor
3. Margin value = Limit value - Emission level.
4. -- Mean the PK detector measured value is below average limit.
5. RBW1MHz VBW3MHz Peak detector is for PK value; RBW 1MHz VBW10Hz Peak detector is for AV value.
6. Other emissions are attenuated 20dB below the limits from 9kHz to 30MHz, so it does not recorded in report.
7. 18GHz-26GHz not recorded for no spurious point have a margin of less than 6 dB with respect to the limits.

Results of Band Edge

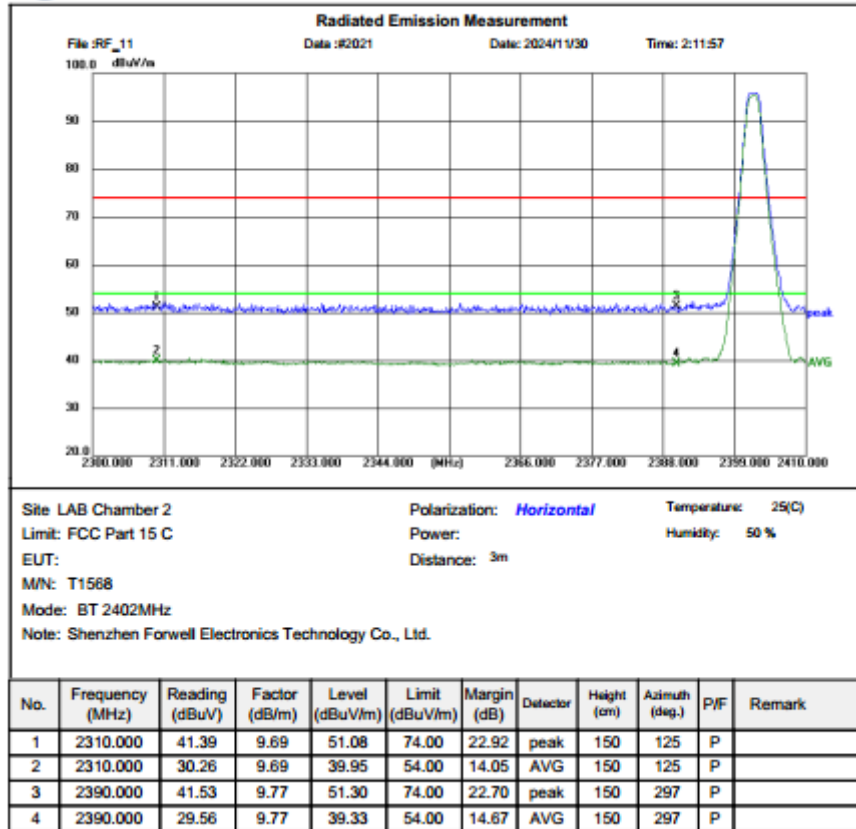
Note: GFSK, Pi/4 DQPSK and 8DPSK all have been tested, only worse case GFSK (Antenna 1) is reported.

CH00

Horizontal



Shenzhen CTL Testing Technology Co., Ltd
Tel: +86-755-89486194

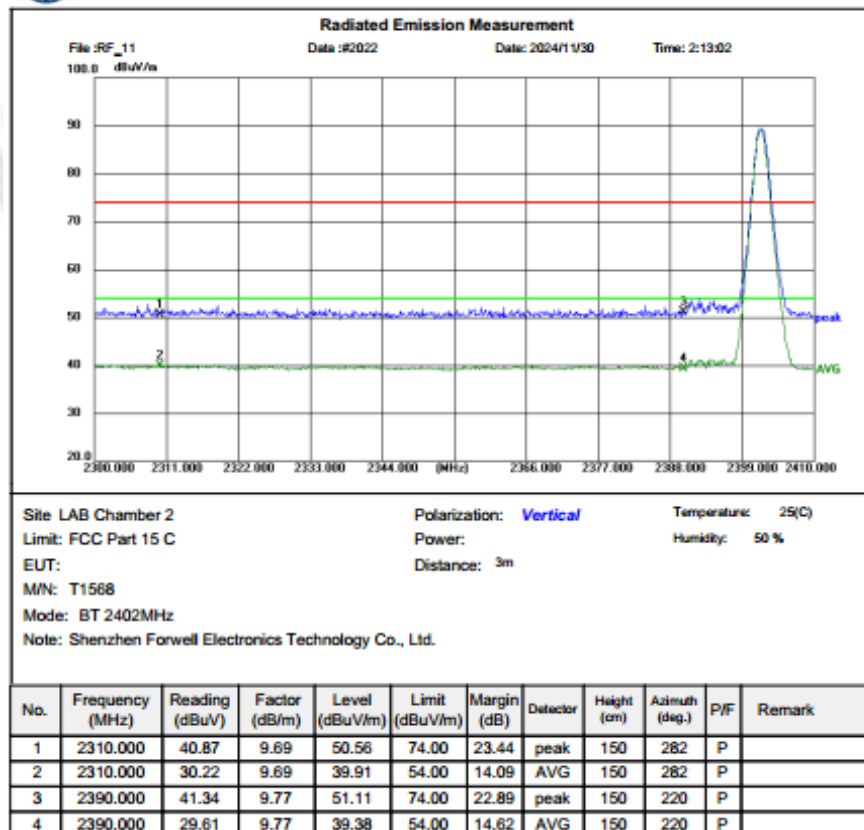


CH00

Vertical



Shenzhen CTL Testing Technology Co., Ltd
Tel: +86-755-89486194

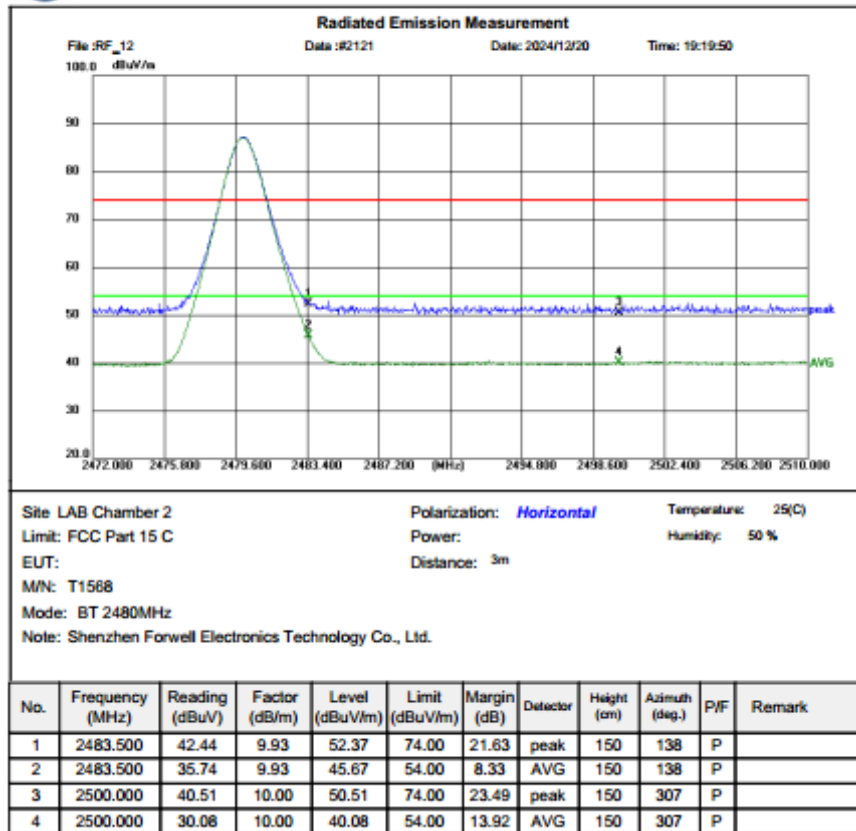


CH78

Horizontal



Shenzhen CTL Testing Technology Co., Ltd
Tel: +86-755-89486194

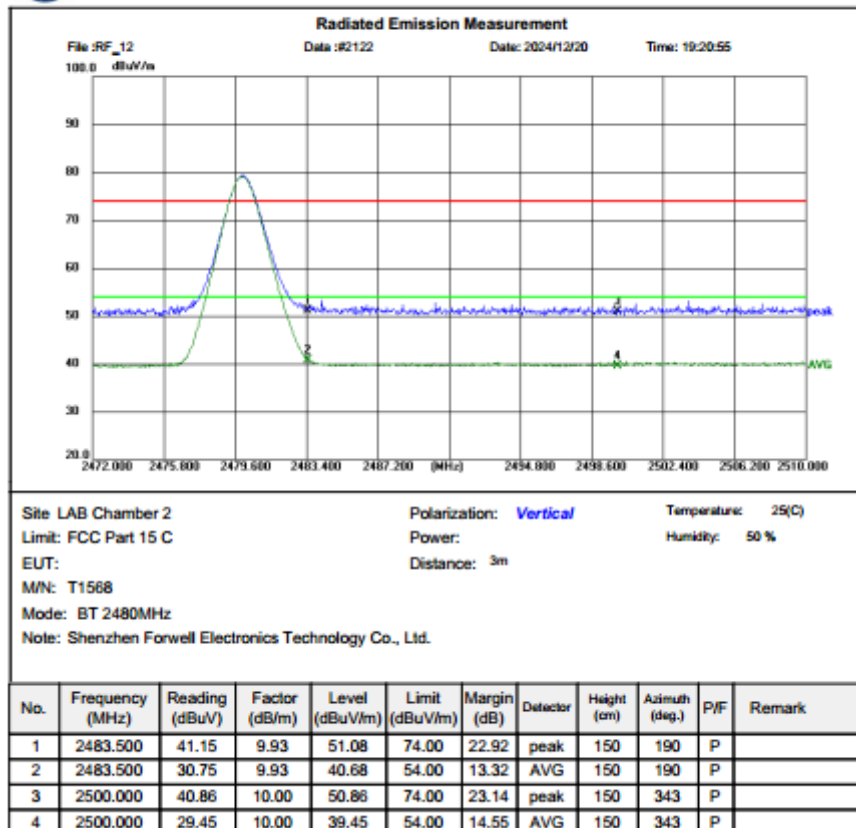


CH78

Vertical



Shenzhen CTL Testing Technology Co., Ltd
Tel: +86-755-89486194



REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m)
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) - Pre-amplifier Factor
3. Margin value = Limit value - Emission level.
4. -- Mean the PK detector measured value is below average limit.
5. RBW 1MHz VBW 3MHz Peak detector is for PK value; RBW 1MHz VBW 10Hz Peak detector is for AV value.
6. For fundamental frequency, RBW 3MHz VBW 3MHz Peak detector is for PK Value; RFI detector is for AV value.
7. Other emissions are attenuated 20dB below the limits from 9kHz to 30MHz, so it does not recorded in report.