# APPLICATION CERTIFICATION FCC Part 15C
On Behalf of
Libre Home Inc

Wireless Smart Remote

Model No.: RMT

FCC ID: 2AQXA-RMT

| | | |
|---|---|---|
| Prepared for | : | Libre Home Inc |
| Address | : | 13 Crestview Ter. Montvale, New Jersey, United States 07645 |
| Prepared by | : | Shenzhen Accurate Technology Co., Ltd. |
| Address | : | 1/F., Building A, Changyuan New Material Port, Science & Industry Park, Nanshan District, Shenzhen, Guangdong, P.R. China. |
| | | Tel: (0755) 26503290<br>Fax: (0755) 26503396 |

| | | |
|---|---|---|
| Report No. | : | ATE20191314 |
| Date of Test | : | Sep. 02, 2019-Sep. 12, 2019 |
| Date of Report | : | Sep. 19, 2019 |

# TABLE OF CONTENTS

Description Page

Test Report Certification
**1. GENERAL INFORMATION ..... 5**
1.1. Description of Device (EUT) ..... 5
1.2. Carrier Frequency of Channels ..... 5
1.3. Special Accessory and Auxiliary Equipment ..... 5
1.4. Description of Test Facility ..... 6
1.5. Measurement Uncertainty ..... 6
**2. MEASURING DEVICE AND TEST EQUIPMENT ..... 7**
2.1. For Radiated Emission Measurement ..... 7
**3. OPERATION OF EUT DURING TESTING ..... 8**
3.1. Operating Mode ..... 8
3.2. Configuration and peripherals ..... 8
**4. TEST PROCEDURES AND RESULTS ..... 9**
**5. 6DB BANDWIDTH MEASUREMENT ..... 10**
5.1. Block Diagram of Test Setup ..... 10
5.2. The Requirement For Section 15.247(a)(2) ..... 10
5.3. EUT Configuration on Measurement ..... 10
5.4. Operating Condition of EUT ..... 10
5.5. Test Procedure ..... 10
5.6. Test Result ..... 11
**6. MAXIMUM PEAK OUTPUT POWER ..... 13**
6.1. Block Diagram of Test Setup ..... 13
6.2. The Requirement For Section 15.247(b)(3) ..... 13
6.3. EUT Configuration on Measurement ..... 13
6.4. Operating Condition of EUT ..... 13
6.5. Test Procedure ..... 13
6.6. Test Result ..... 14
**7. POWER SPECTRAL DENSITY MEASUREMENT ..... 16**
7.1. Block Diagram of Test Setup ..... 16
7.2. The Requirement For Section 15.247(e) ..... 16
7.3. EUT Configuration on Measurement ..... 16
7.4. Operating Condition of EUT ..... 16
7.5. Test Procedure ..... 16
7.6. Test Result ..... 17
**8. BAND EDGE COMPLIANCE TEST ..... 19**
8.1. Block Diagram of Test Setup ..... 19
8.2. The Requirement For Section 15.247(d) ..... 19
8.3. EUT Configuration on Measurement ..... 19
8.4. Operating Condition of EUT ..... 19
8.5. Test Procedure ..... 20
8.6. Test Result ..... 20
**9. RADIATED SPURIOUS EMISSION TEST ..... 26**
9.1. Block Diagram of Test Setup ..... 26
9.2. The Limit For Section 15.247(d) ..... 28
9.3. Restricted bands of operation ..... 28

9.4. Configuration of EUT on Measurement ..... 29
9.5. Operating Condition of EUT ..... 29
9.6. Test Procedure ..... 29
9.7. Data Sample ..... 30
9.8. The Field Strength of Radiation Emission Measurement Results ..... 30
**10. ANTENNA REQUIREMENT ..... 43**
10.1. The Requirement ..... 43
10.2. Antenna Construction ..... 43

# Test Report Certification

| | | |
|---|---|---|
| Applicant | : | Libre Home Inc |
| Address | : | 13 Crestview Ter. Montvale, New Jersey, United States 07645 |
| Product | : | Wireless Smart Remote |
| Model No. | : | RMT |
| Trade name | : | Libre Home |

Measurement Procedure Used:

**FCC Rules and Regulations Part 15 Subpart C Section 15.247**
**ANSI C63.10: 2013**

The EUT was tested according to DTS test procedure of April 02, 2019 KDB558074 D01 DTS Meas Guidance v05r02 for compliance to FCC 47CFR 15.247 requirements

The device described above is tested by SHENZHEN ACCURATE TECHNOLOGY CO. LTD to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart C Section 15.247 limits. The measurement results are contained in this test report and SHENZHEN ACCURATE TECHNOLOGY CO. LTD is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the Equipment Under Test (EUT) is to be technically compliant with the FCC requirements.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of SHENZHEN ACCURATE TECHNOLOGY CO. LTD.

| | |
|---|---|
| Date of Test : | Sep. 02, 2019-Sep. 12, 2019 |
| Date of Report: | Sep. 19, 2019 |
| Prepared by : | ( Tim Zhang, Engineer) |
| Approved & Authorized Signer : | (Sean Liu, Manager) |

# 1. GENERAL INFORMATION

## 1.1.Description of Device (EUT)

| | | |
|---|---|---|
| EUT | : | Wireless Smart Remote |
| Model Number | : | RMT |
| Radio device | : | Zigbee |
| Frequency Range | : | 2405MHz-2480MHz |
| Number of Channels | : | 16 |
| Antenna Gain | : | 2dBi |
| Antenna type | : | PCB Antenna |
| Power Supply | : | DC 3V |
| Modulation mode | : | OQPSK |
| Applicant | : | Libre Home Inc |
| Address | : | 13 Crestview Ter. Montvale, New Jersey, United States 07645 |
| Date of sample received | : | Aug. 23, 2019 |
| Date of Test | : | Sep. 02, 2019-Sep. 12, 2019 |
| Sample Number | : | 1901071 |

## 1.2.Carrier Frequency of Channels

| Channel | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) |
|---|---|---|---|---|---|---|---|
| 11 | 2405 | 15 | 2425 | 19 | 2445 | 23 | 2465 |
| 12 | 2410 | 16 | 2430 | 20 | 2450 | 24 | 2470 |
| 13 | 2415 | 17 | 2435 | 21 | 2455 | 25 | 2475 |
| 14 | 2420 | 18 | 2440 | 22 | 2460 | 26 | 2480 |

## 1.3.Special Accessory and Auxiliary Equipment

N/A

## 1.4.Description of Test Facility

| | | |
|---|---|---|
| EMC Lab | : | Recognition of accreditation by Federal Communications Commission (FCC)<br>The Designation Number is CN1189<br>The Registration Number is 708358<br><br>Listed by Innovation, Science and Economic Development Canada (ISEDC)<br>The Registration Number is 5077A-2<br><br>Accredited by China National Accreditation Service for Conformity Assessment (CNAS)<br>The Registration Number is CNAS L3193<br><br>Accredited by American Association for Laboratory Accreditation (A2LA)<br>The Certificate Number is 4297.01 |
| Name of Firm | : | Shenzhen Accurate Technology Co., Ltd. |
| Site Location | : | 1/F., Building A, Changyuan New Material Port, Science & Industry Park, Nanshan District, Shenzhen, Guangdong, P.R. China |

## 1.5.Measurement Uncertainty

| | | |
|---|---|---|
| Conducted Emission Expanded Uncertainty (Mains ports, 9kHz-30MHz) | = | 2.72dB, k=2 |
| Radiated emission expanded uncertainty (9kHz-30MHz) | = | 2.66dB, k=2 |
| Radiated emission expanded uncertainty (30MHz-1000MHz) | = | 4.28dB, k=2 |
| Radiated emission expanded uncertainty (1G-18GHz) | = | 4.98dB, k=2 |
| Radiated emission expanded uncertainty (18G-26.5GHz) | = | 5.06dB, k=2 |

# 2. MEASURING DEVICE AND TEST EQUIPMENT

## 2.1.For Radiated Emission Measurement

| Item | Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Cal. Interval |
|---|---|---|---|---|---|---|
| 1. | Spectrum Analyzer | Agilent | E7405A | MY45115511 | Jan.05, 2019 | 1 Year |
| 2. | Spectrum Analyzer | Rohde&Schwarz | FSV40 | 101495 | Jan.05, 2019 | 1 Year |
| 3. | Test Receiver | Rohde&Schwarz | ESCS30 | 100307 | Jan.05, 2019 | 1 Year |
| 4. | Test Receiver | Rohde& Schwarz | ESPI | 100396/003 | Jan.05, 2019 | 1 Year |
| 5. | Test Receiver | Rohde& Schwarz | ESPI | 101526/003 | Jan.05, 2019 | 1 Year |
| 6. | Test Receiver | Rohde& Schwarz | ESR | 101817 | Jan.05, 2019 | 1 Year |
| 7. | Bilog Antenna | Schwarzbeck | VULB9163 | 9163-194 | Jan.05, 2019 | 1 Year |
| 8. | Bilog Antenna | Schwarzbeck | VULB9163 | 9163-323 | Jan.05, 2019 | 1 Year |
| 9. | Log.-Per.Antenna | Schwarzbeck | VUSLP 9111B | 9111B-074 | Jan.05, 2019 | 1 Year |
| 10. | Biconical Broad Band Antenna | Schwarzbeck | VHBB 9124+BBA 9106 | 9124-617 | Jan.05, 2019 | 1 Year |
| 11. | Loop Antenna | Schwarzbeck | FMZB1516 | 1516131 | Jan.05, 2019 | 1 Year |
| 12. | Horn Antenna | Schwarzbeck | BBHA9120D | 9120D-655 | Jan.05, 2019 | 1 Year |
| 13. | Horn Antenna | Schwarzbeck | BBHA9120D | 9120D-1067 | Jan.05, 2019 | 1 Year |
| 14. | Vertical Active Monopole Antenna | Schwarzbeck | VAMP 9243 | 9243-370 | Jan.05, 2019 | 1 Year |
| 15. | RF Switching Unit+PreAMP | Compliance Direction | RSU-M2 | 38322 | Jan.05, 2019 | 1 Year |
| 16. | Pre-Amplifier | Agilent | 8447D | 294A10619 | Jan.05, 2019 | 1 Year |
| 17. | Pre-Amplifier | Rohde&Schwarz | CBLU11835 40-01 | 3791 | Jan.05, 2019 | 1 Year |
| 18. | 50 Coaxial Switch | Anritsu Corp | MP59B | 6200237248 | Jan.05, 2019 | 1 Year |
| 19. | 50 Coaxial Switch | Anritsu Corp | MP59B | 6200506474 | Jan.05, 2019 | 1 Year |
| 20. | RF Coaxial Cable | Schwarzbeck | N-5m | No.1 | Jan.05, 2019 | 1 Year |
| 21. | RF Coaxial Cable | Schwarzbeck | N-1m | No.6 | Jan.05, 2019 | 1 Year |
| 22. | RF Coaxial Cable | Schwarzbeck | N-1m | No.7 | Jan.05, 2019 | 1 Year |
| 23. | RF Coaxial Cable | SUHNER | N-3m | No.8 | Jan.05, 2019 | 1 Year |
| 24. | RF Coaxial Cable | RESENBERGER | N-3.5m | No.9 | Jan.05, 2019 | 1 Year |
| 25. | RF Coaxial Cable | SUHNER | N-6m | No.10 | Jan.05, 2019 | 1 Year |
| 26. | RF Coaxial Cable | RESENBERGER | N-12m | No.11 | Jan.05, 2019 | 1 Year |
| 27. | RF Coaxial Cable | RESENBERGER | N-0.5m | No.12 | Jan.05, 2019 | 1 Year |
| 28. | RF Coaxial Cable | SUHNER | N-2m | No.13 | Jan.05, 2019 | 1 Year |
| 29. | RF Coaxial Cable | SUHNER | N-0.5m | No.15 | Jan.05, 2019 | 1 Year |
| 30. | RF Coaxial Cable | SUHNER | N-2m | No.16 | Jan.05, 2019 | 1 Year |
| 31. | RF Coaxial Cable | RESENBERGER | N-6m | No.17 | Jan.05, 2019 | 1 Year |
| Radiated Emission Measurement Software: EZ_EMC V1.1.4.2 | | | | | | |

# 3. OPERATION OF EUT DURING TESTING

## 3.1.Operating Mode

The mode is used: **Transmitting mode**

Low Channel: 2405MHz
Middle Channel: 2450MHz
High Channel: 2480MHz

## 3.2.Configuration and peripherals

EUT

Figure 1 Setup: Transmitting mode

(EUT: Wireless Smart Remote)

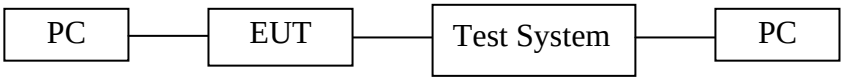
# 4. TEST PROCEDURES AND RESULTS

| FCC Rules | Description of Test | Result |
|---|---|---|
| Section 15.247(a)(2) | 6dB Bandwidth Test | Compliant |
| Section 15.247(e) | Power Spectral Density Test | Compliant |
| Section 15.247(b)(3) | Maximum Peak Output Power Test | Compliant |
| Section 15.247(d) | Band Edge Compliance Test | Compliant |
| Section 15.247(d)<br>Section 15.209 | Radiated Spurious Emission Test | Compliant |
| Section 15.247(d) | Conducted Spurious Emission Test | Compliant |
| Section 15.207 | AC Power Line Conducted Emission Test | N/A |
| Section 15.203 | Antenna Requirement | Compliant |

Note: The power supply mode of the EUT is DC 3V, According to the FCC standard's requirements, conducted emission is not applicable.

# 5. 6DB BANDWIDTH MEASUREMENT

## 5.1.Block Diagram of Test Setup




## 5.2.The Requirement For Section 15.247(a)(2)

Section 15.247(a)(2): Systems using digital modulation techniques may operate in the 902-928MHz, 2400-2483.5MHz, and 5725-5850MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

## 5.3.EUT Configuration on Measurement

The equipment is installed on the emission measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

## 5.4.Operating Condition of EUT

5.4.1.Setup the EUT and simulator as shown as Section 5.1.

5.4.2.Turn on the power of all equipment.

5.4.3.Let the EUT work in TX modes measure it. The transmit frequency are 2405-2480MHz. We select 2405MHz, 2450MHz, and 2480MHz TX frequency to transmit.

## 5.5.Test Procedure

5.5.1.The transmitter output was connected to the spectrum analyzer through a low loss cable.

5.5.2.Set RBW of spectrum analyzer to 100 kHz and VBW to 300 kHz.

5.5.3.The 6dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6dB.

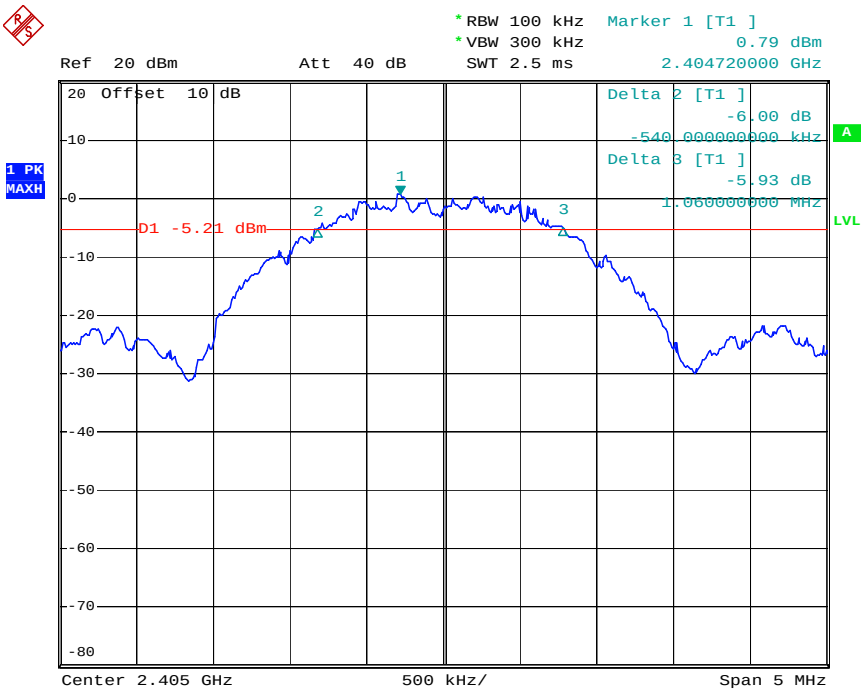
## 5.6.Test Result

The test data of zigbee:

| Channel | Frequency (MHz) | 6 dB Bandwidth (MHz) | Minimum Limit(MHz) | PASS/FAIL |
|---|---|---|---|---|
| 11 | 2405 | 1.600 | 0.5 | PASS |
| 20 | 2450 | 1.640 | 0.5 | PASS |
| 26 | 2480 | 1.630 | 0.5 | PASS |

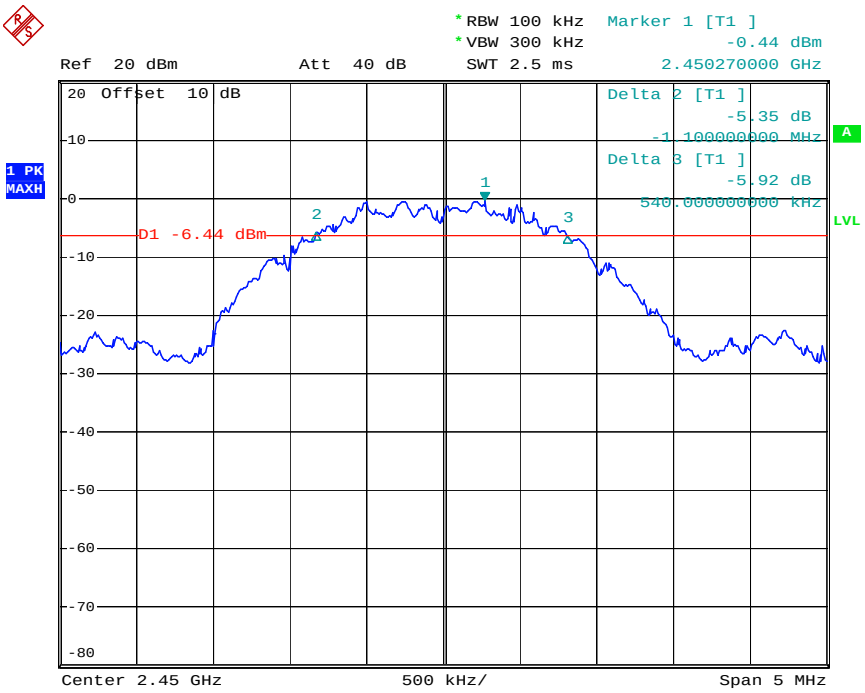
The spectrum analyzer plots are attached as below.

*channel 11*



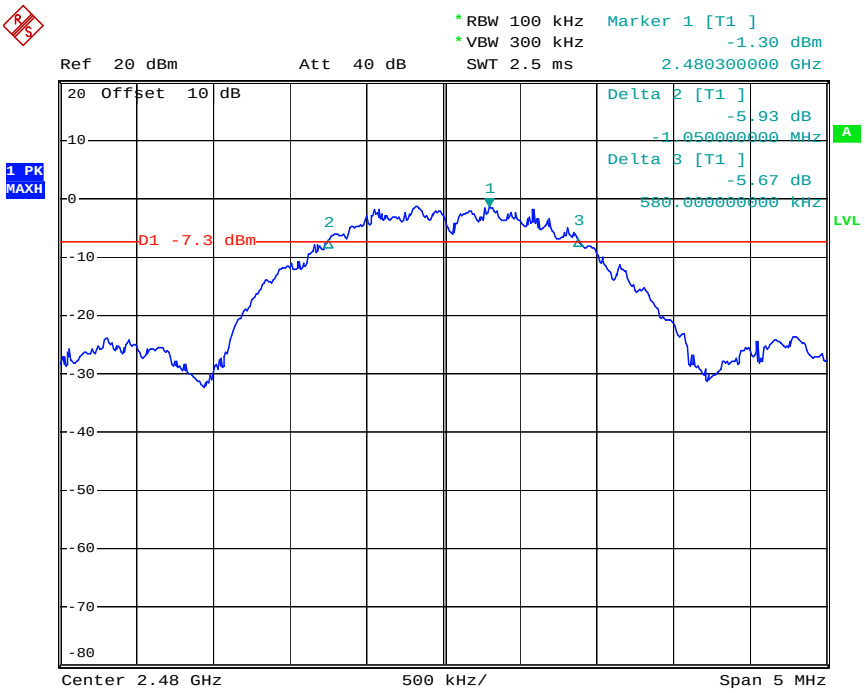

Date: 12.SEP.2019 16:38:25

*channel 20*




Date: 12.SEP.2019 16:44:13

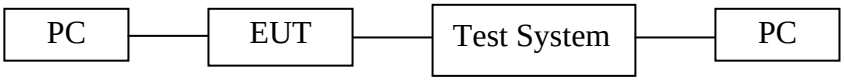
*channel 26*




Date: 12.SEP.2019 17:12:47

# 6. MAXIMUM PEAK OUTPUT POWER

## 6.1.Block Diagram of Test Setup




## 6.2.The Requirement For Section 15.247(b)(3)

Section 15.247(b)(3): For systems using digital modulation in the 902-928MHz, 2400-2483.5MHz, and 5725-5850MHz bands: 1 Watt.

## 6.3.EUT Configuration on Measurement

The equipment are installed on the emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

## 6.4.Operating Condition of EUT

6.4.1.Setup the EUT and simulator as shown as Section 6.1.

6.4.2.Turn on the power of all equipment.

6.4.3.Let the EUT work in TX modes measure it. The transmit frequency are 2405-2480MHz. We select 2405MHz, 2450MHz, and 2480MHz TX frequency to transmit.

## 6.5.Test Procedure

6.5.1.The transmitter output was connected to the spectrum analyzer through a low loss cable.

6.5.2.Set RBW of spectrum analyzer to 3MHz and VBW to 10MHz.

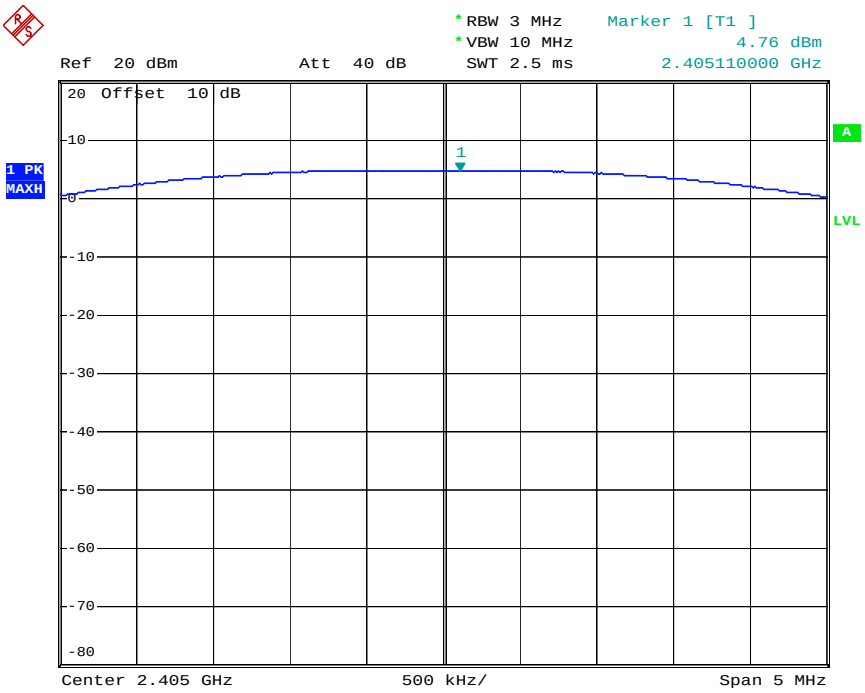
6.5.3.Measurement the maximum peak output power.

## 6.6.Test Result

| Channel | Frequency (MHz) | Peak Power Output (dBm) | Peak Power Limit (dBm) | Pass / Fail |
|---|---|---|---|---|
| 11 | 2405 | 4.76 | 30 | PASS |
| 20 | 2450 | 4.00 | 30 | PASS |
| 26 | 2480 | 3.27 | 30 | PASS |

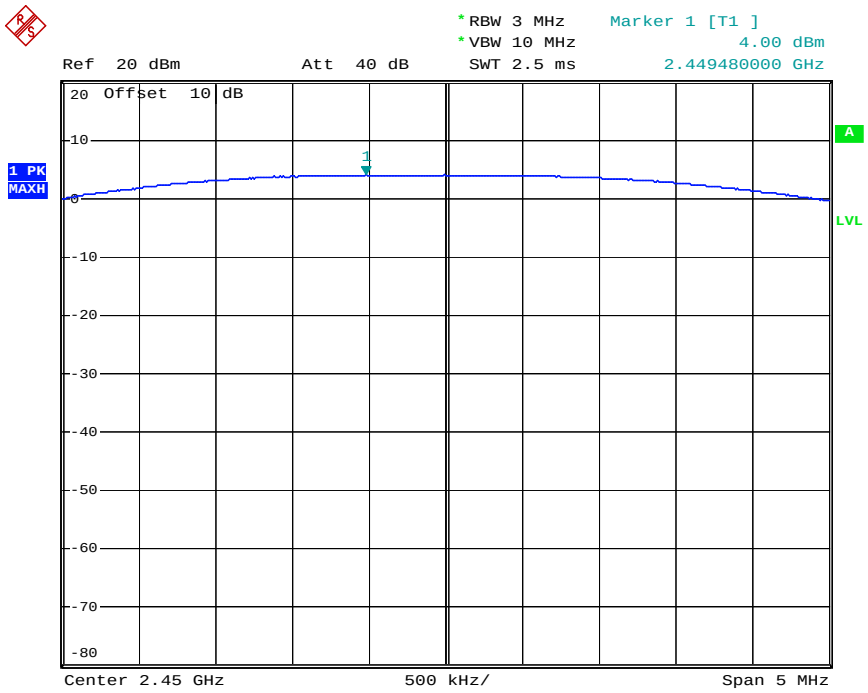
The spectrum analyzer plots are attached as below.

*channel 11*



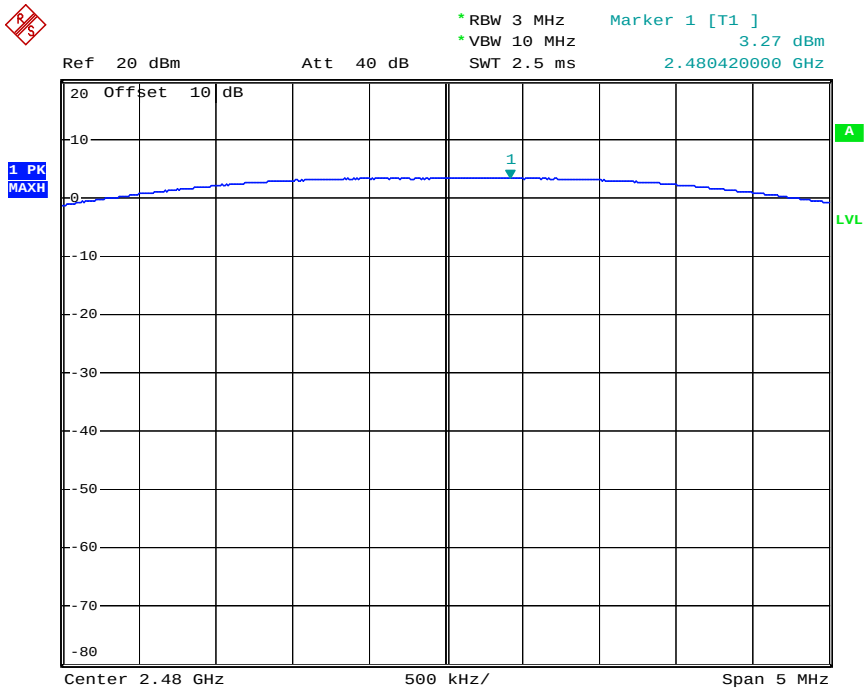

Date: 12.SEP.2019 16:40:18

*channel 20*




Date: 12.SEP.2019 16:42:45

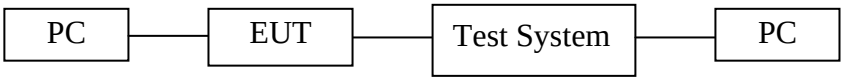
*channel 26*




Date: 12.SEP.2019 17:14:21

# 7. POWER SPECTRAL DENSITY MEASUREMENT

## 7.1.Block Diagram of Test Setup




## 7.2.The Requirement For Section 15.247(e)

Section 15.247(e): For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

## 7.3.EUT Configuration on Measurement

The equipment are installed on the emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

## 7.4.Operating Condition of EUT

7.4.1.Setup the EUT and simulator as shown as Section 7.1.

7.4.2.Turn on the power of all equipment.

7.4.3.Let the EUT work in TX modes measure it. The transmit frequency are 2405-2480MHz. We select 2405MHz, 2450MHz, and 2480MHz TX frequency to transmit.

## 7.5.Test Procedure

7.5.1.The transmitter output was connected to the spectrum analyzer through a low loss cable.

7.5.2.Measurement Procedure PKPSD:

7.5.3.This procedure must be used if maximum peak conducted output power was used to demonstrate compliance to the fundamental output power limit, and is optional if the maximum (average) conducted output power was used to demonstrate compliance.

1. Set analyzer center frequency to DTS channel center frequency.
2. Set the span to 1.5 times the DTS channel bandwidth.
3. Set the RBW to: 3 kHz ≤ RBW ≤ 100 kHz.

4. Set the VBW ⩾ 3 x RBW.
5. Detector = peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum amplitude level.
10. If measured value exceeds limit, reduce RBW (no less than 3kHz) and repeat.

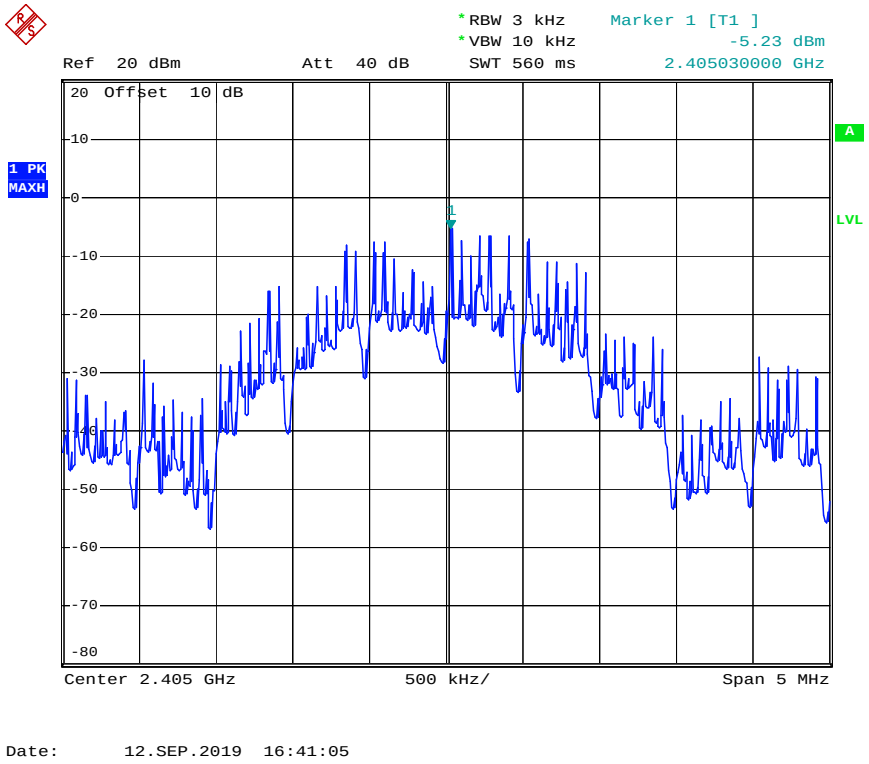
7.5.4.Measurement the maximum power spectral density.

## 7.6.Test Result

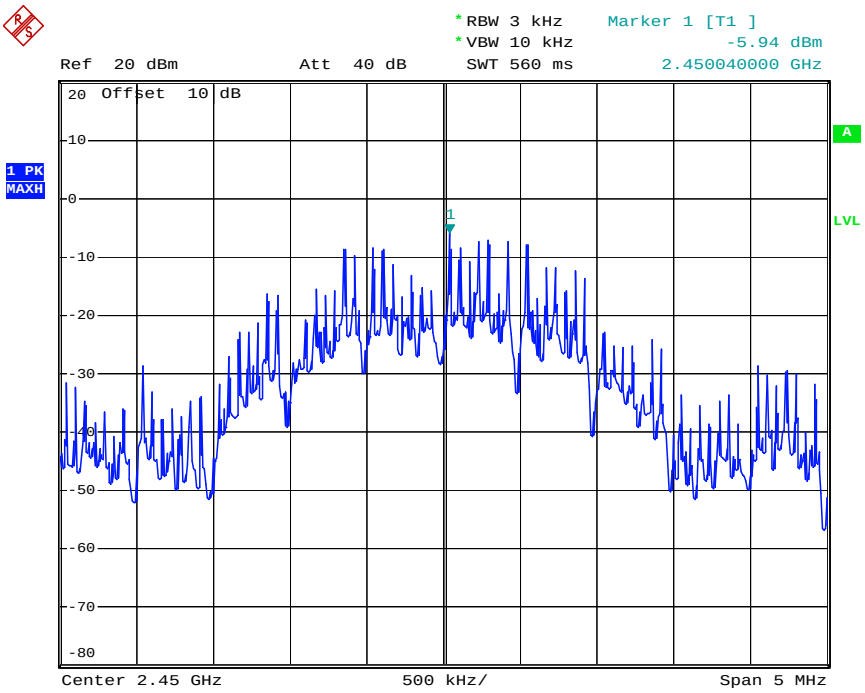
| CHANNEL NUMBER | FREQUENCY (MHz ) | PSD (dBm/3KHz) | LIMIT (dBm/3KHz) | PASS/FAIL |
|---|---|---|---|---|
| 11 | 2405 | -5.23 | 8 | PASS |
| 20 | 2450 | -5.94 | 8 | PASS |
| 26 | 2480 | -6.82 | 8 | PASS |

The spectrum analyzer plots are attached as below.

*channel 11*

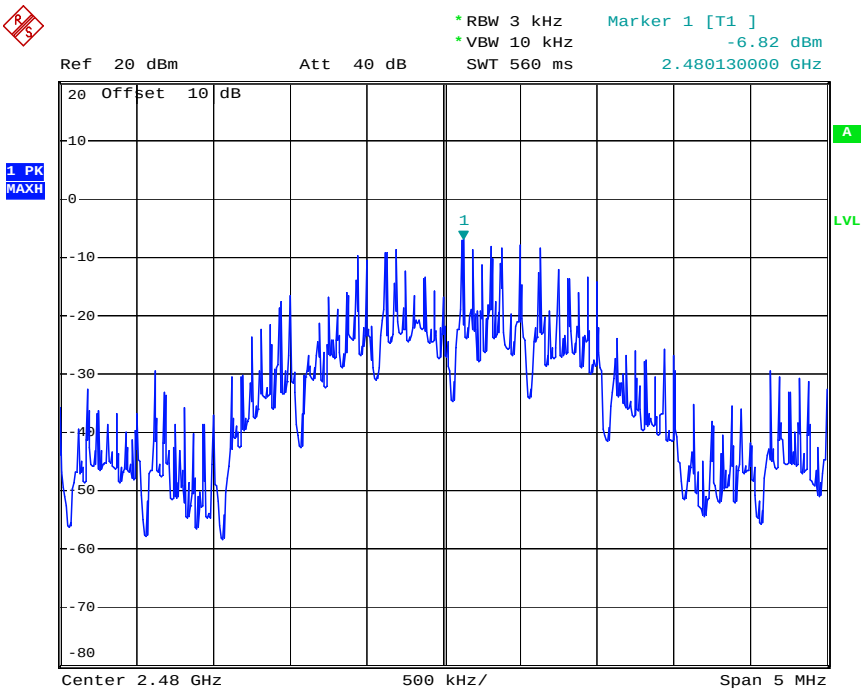


*channel 20*




Date: 12.SEP.2019 16:42:28

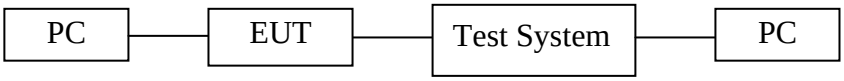
*channel 26*




Date: 12.SEP.2019 17:14:50

# 8. BAND EDGE COMPLIANCE TEST

## 8.1.Block Diagram of Test Setup




## 8.2.The Requirement For Section 15.247(d)

Section 15.247(d): In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).

## 8.3.EUT Configuration on Measurement

The equipment are installed on the emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

## 8.4.Operating Condition of EUT

8.4.1.Setup the EUT and simulator as shown as Section 8.1.

8.4.2.Turn on the power of all equipment.

8.4.3.Let the EUT work in TX modes measure it. The transmit frequency are 2405-2480MHz. We select 2405MHz, 2480MHz TX frequency to transmit.

## 8.5.Test Procedure

Conducted Band Edge:

8.5.1.The transmitter output was connected to the spectrum analyzer via a low loss cable.

8.5.2.Set RBW of spectrum analyzer to 100 kHz and VBW to 300 kHz.

8.5.3. Radiate Band Edge:

8.5.4.The EUT is placed on a turntable, which is 1.5m above the ground plane and worked at highest radiated power.

8.5.5.The turntable was rotated for 360 degrees to determine the position of maximum emission level.

8.5.6.EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.

8.5.7.Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission:

8.5.8.RBW=1MHz, VBW=1MHz

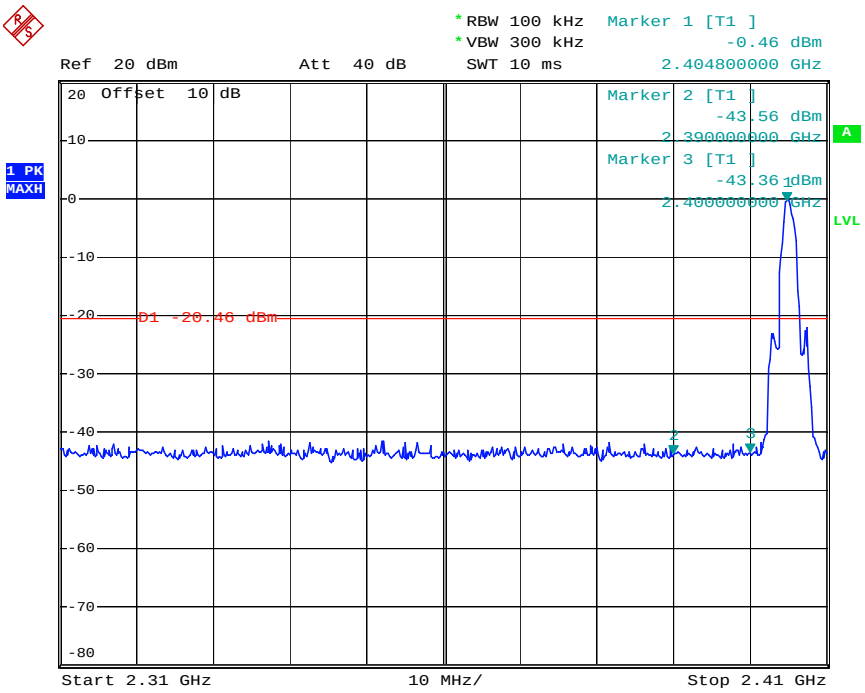
8.5.9.The band edges was measured and recorded.

## 8.6.Test Result

**Pass**

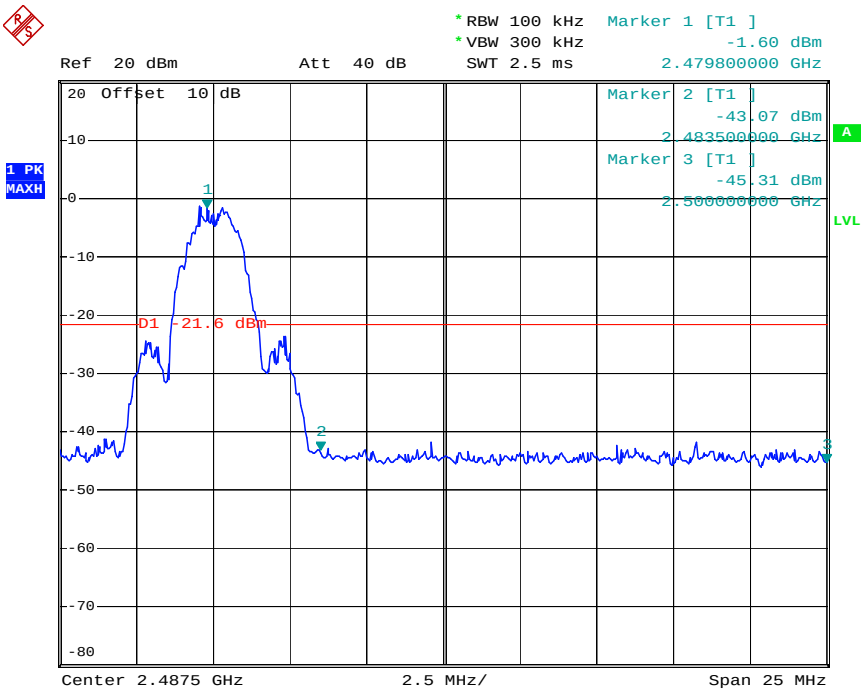
| Frequency | Delta peak to band emission | Limit(dBc) |
|---|---|---|
| 2.4GHz | 42.90 | 20 |
| 2.4835GHz | 41.47 | 20 |

*channel 11*




Date: 12.SEP.2019 16:39:43

*channel 26*



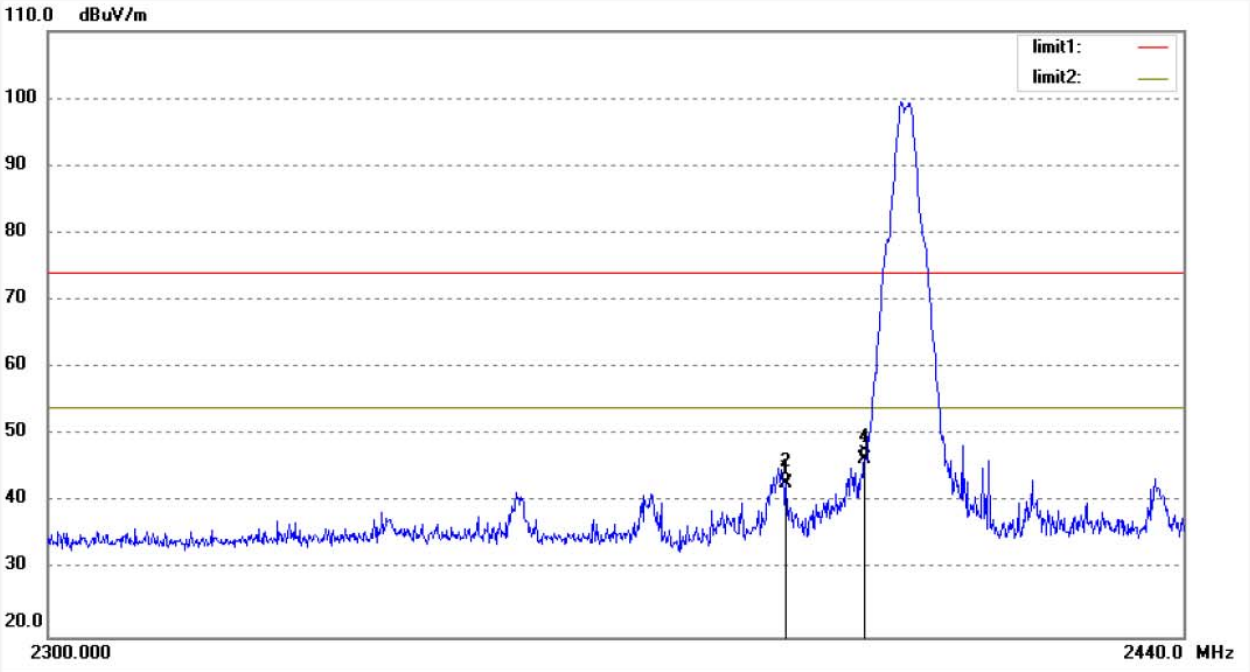

Date: 12.SEP.2019 17:13:43

# Radiated Band Edge Result

ACCURATE TECHNOLOGY CO., LTD.
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China
Site: 1# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

| | |
|---|---|
| Job No.: FRANK2019-W #182 | Polarization: Horizontal |
| Standard: FCC PK | Power Source: DC 3V |
| Test item: Radiation Test | Date: 2019/09/02 |
| Temp.( C)/Hum.(%) 25 C / 55 % | Time: 15:53:47 |
| EUT: Wireless Smart Remote | Engineer Signature: CHARLEY |
| Mode: TX 2405MHz | Distance: 3m |
| Model: RMT | |
| Applicant: Libre Home Inc | |

Note: Report NO.:ATE20191314

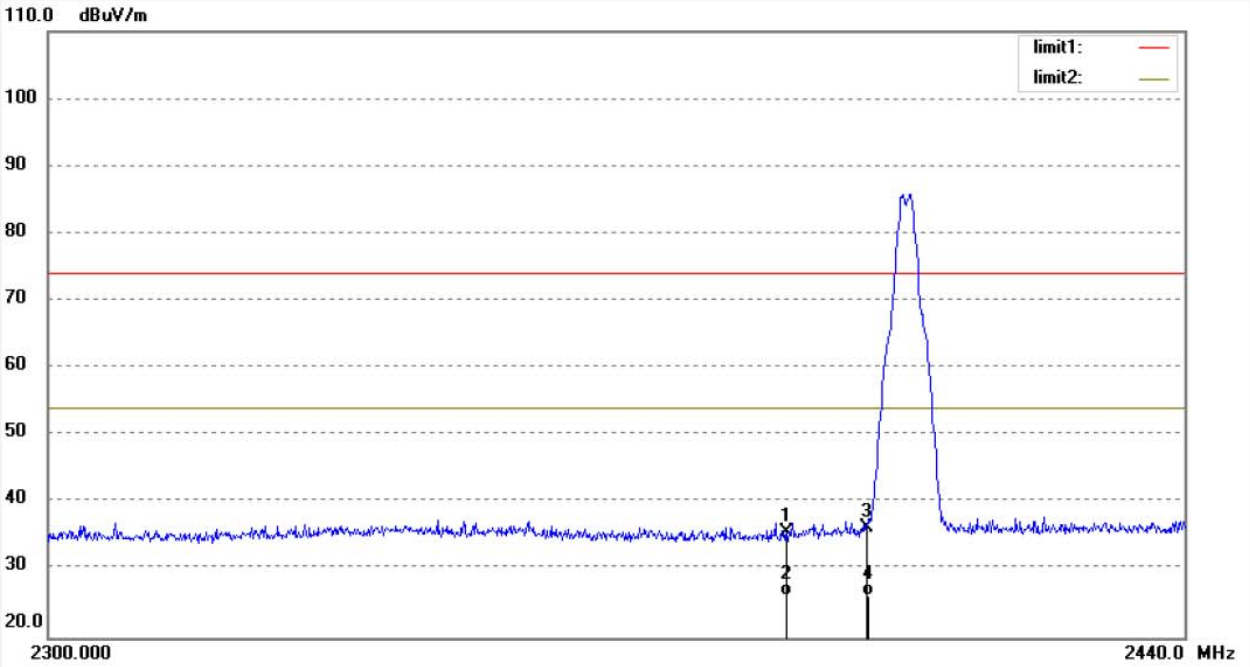



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2390.000 | 49.17 | -6.32 | 42.85 | 74.00 | -31.15 | peak | 200 | 58 | |
| 2 | 2390.000 | 49.17 | -6.32 | 42.85 | 54.00 | -11.15 | AVG | 200 | 221 | |
| 3 | 2400.000 | 52.60 | -6.27 | 46.33 | 74.00 | -27.67 | peak | 200 | 93 | |
| 4 | 2400.000 | 52.60 | -6.27 | 46.33 | 54.00 | -7.67 | AVG | 200 | 211 | |

ACCURATE TECHNOLOGY CO., LTD.
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China
Site: 1# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

| | |
|---|---|
| Job No.: FRANK2019-W #181 | Polarization: Vertical |
| Standard: FCC PK | Power Source: DC 3V |
| Test item: Radiation Test | Date: 2019/09/02 |
| Temp.( C)/Hum.(%) 25 C / 55 % | Time: 15:52:10 |
| EUT: Wireless Smart Remote | Engineer Signature: CHARLEY |
| Mode: TX 2405MHz | Distance: 3m |
| Model: RMT | |
| Applicant: Libre Home Inc | |

Note: Report NO.:ATE20191314

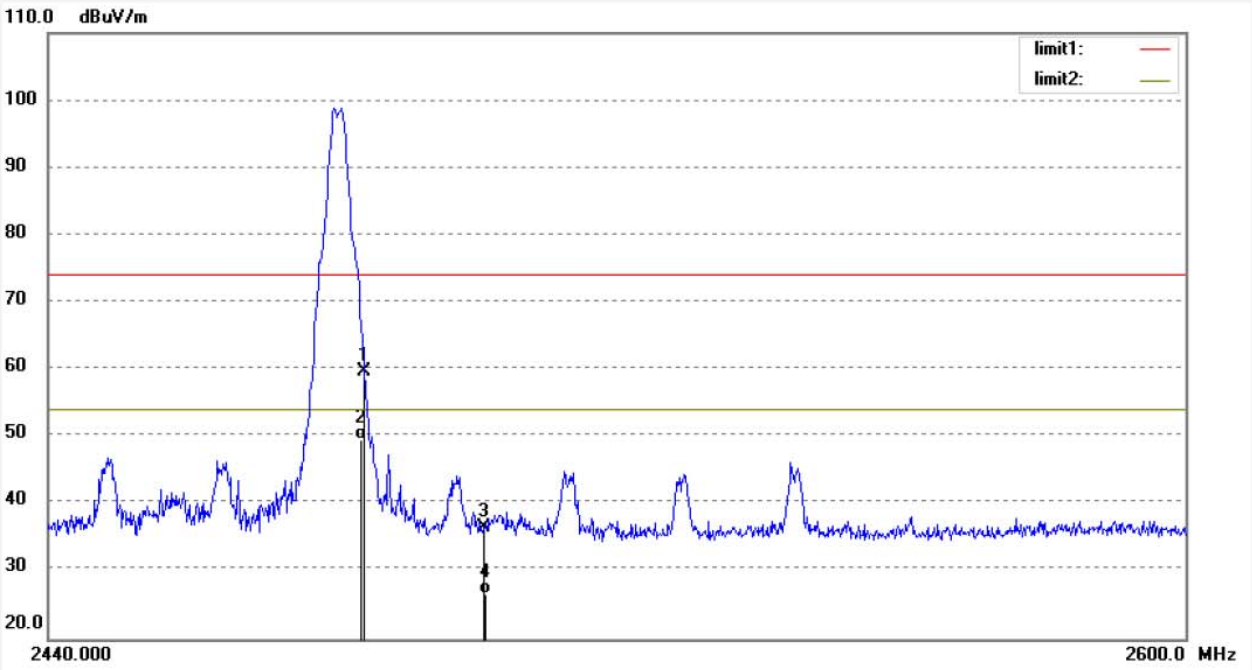



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2390.000 | 41.90 | -6.32 | 35.58 | 74.00 | -38.42 | peak | 150 | 215 | |
| 2 | 2390.000 | 32.45 | -6.32 | 26.13 | 54.00 | -27.87 | AVG | 150 | 58 | |
| 3 | 2400.000 | 42.54 | -6.27 | 36.27 | 74.00 | -37.73 | peak | 150 | 332 | |
| 4 | 2400.000 | 32.48 | -6.27 | 26.21 | 54.00 | -27.79 | AVG | 150 | 193 | |

ACCURATE TECHNOLOGY CO., LTD.
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China
Site: 1# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

| | |
|---|---|
| Job No.: FRANK2019-W #183 | Polarization: Horizontal |
| Standard: FCC PK | Power Source: DC 3V |
| Test item: Radiation Test | Date: 2019/09/02 |
| Temp.( C)/Hum.(%) 25 C / 55 % | Time: 15:56:01 |
| EUT: Wireless Smart Remote | Engineer Signature: CHARLEY |
| Mode: TX 2480MHz | Distance: 3m |
| Model: RMT | |
| Applicant: Libre Home Inc | |

Note: Report NO.:ATE20191314

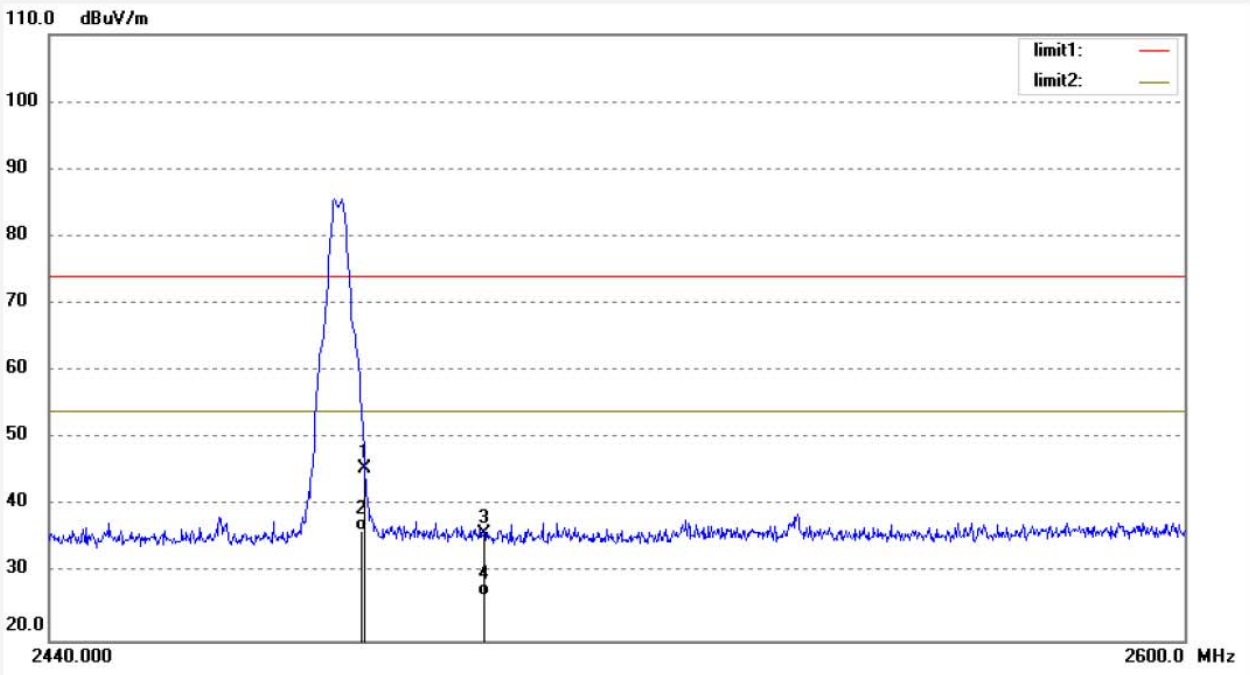



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2483.500 | 65.52 | -5.89 | 59.63 | 74.00 | -14.37 | peak | 200 | 63 | |
| 2 | 2483.500 | 55.45 | -5.89 | 49.56 | 54.00 | -4.44 | AVG | 200 | 105 | |
| 3 | 2500.000 | 42.35 | -5.81 | 36.54 | 74.00 | -37.46 | peak | 200 | 62 | |
| 4 | 2500.000 | 32.49 | -5.81 | 26.68 | 54.00 | -27.32 | AVG | 200 | 193 | |

ACCURATE TECHNOLOGY CO., LTD.
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China
Site: 1# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

| | |
|---|---|
| Job No.: FRANK2019-W #184 | Polarization: Vertical |
| Standard: FCC PK | Power Source: DC 3V |
| Test item: Radiation Test | Date: 2019/09/02 |
| Temp.( C)/Hum.(%) 25 C / 55 % | Time: 15:57:31 |
| EUT: Wireless Smart Remote | Engineer Signature: CHARLEY |
| Mode: TX 2480MHz | Distance: 3m |
| Model: RMT | |
| Applicant: Libre Home Inc | |

Note: Report NO.:ATE20191314




| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2483.500 | 51.41 | -5.89 | 45.52 | 74.00 | -28.48 | peak | 150 | 93 | |
| 2 | 2483.500 | 42.15 | -5.89 | 36.26 | 54.00 | -17.74 | AVG | 150 | 325 | |
| 3 | 2500.000 | 41.61 | -5.81 | 35.80 | 74.00 | -38.20 | peak | 150 | 119 | |
| 4 | 2500.000 | 32.49 | -5.81 | 26.68 | 54.00 | -27.32 | AVG | 150 | 41 | |

Note:

1. Emissions attenuated more than 20 dB below the permissible value are not reported.
2. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:

   Result = Reading + Corrected Factor

# 9. RADIATED SPURIOUS EMISSION TEST

## 9.1.Block Diagram of Test Setup

### 9.1.1. Block diagram of connection between the EUT and peripherals

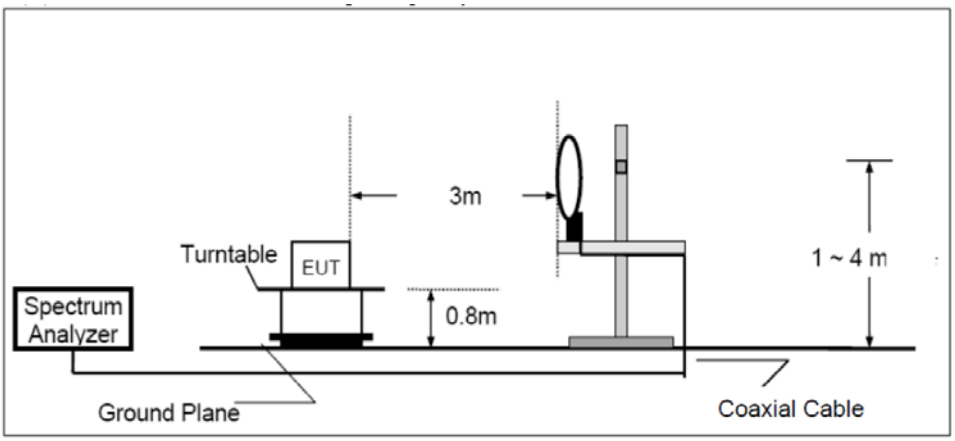
EUT

Figure 1 Setup: Transmitting mode

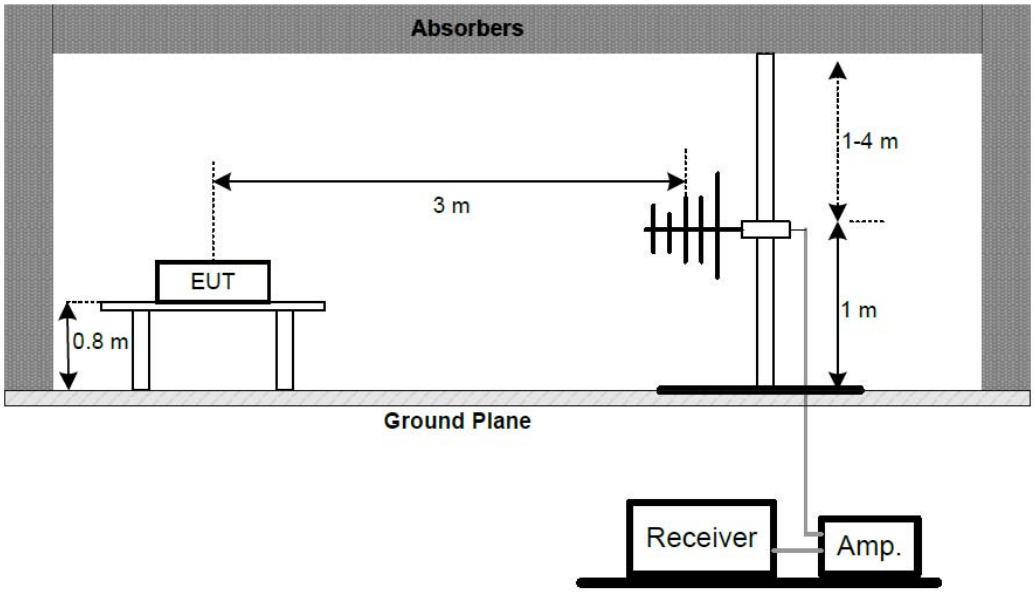
(EUT: Wireless Smart Remote)

### 9.1.2.Semi-Anechoic Chamber Test Setup Diagram

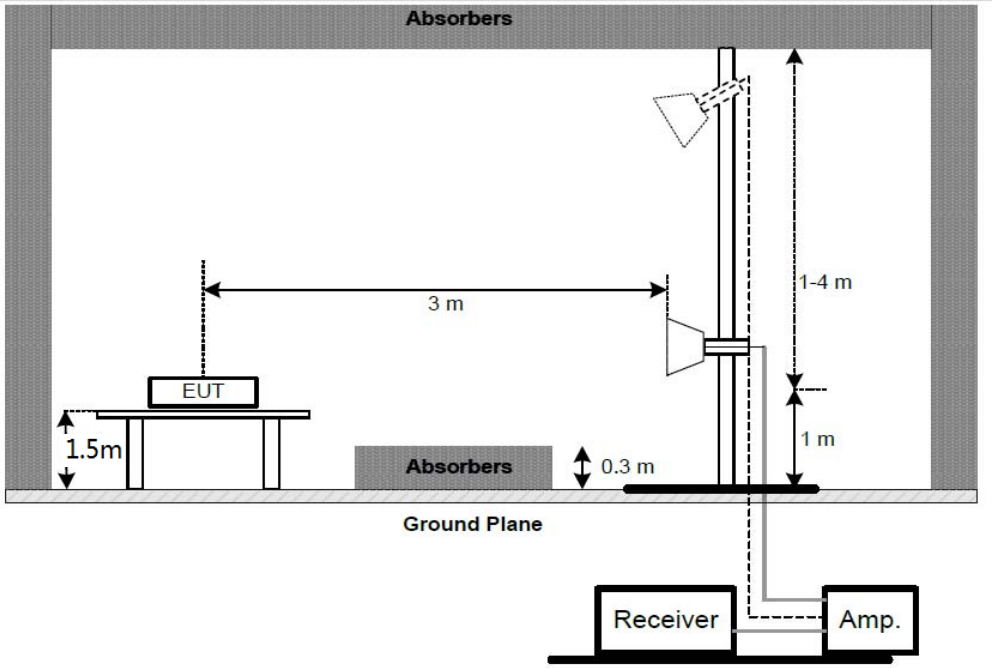
(A) Radiated Emission Test Set-Up, Frequency below 30MHz



(B) Radiated Emission Test Set-Up, Frequency below 1GHz




(C) Radiated Emission Test Set-Up, Frequency Above 1GHz



## 9.2.The Limit For Section 15.247(d)

Section 15.247(d): In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).

## 9.3.Restricted bands of operation

### 9.3.1.FCC Part 15.205 Restricted bands of operation

(a) Except as shown in paragraph (d) of this section, Only spurious emissions are permitted in any of the frequency bands listed below:

| MHz | MHz | MHz | GHz |
|---|---|---|---|
| 0.090-0.110 | 16.42-16.423 | 399.9-410 | 4.5-5.15 |
| [1]0.495-0.505 | 16.69475-16.69525 | 608-614 | 5.35-5.46 |
| 2.1735-2.1905 | 16.80425-16.80475 | 960-1240 | 7.25-7.75 |
| 4.125-4.128 | 25.5-25.67 | 1300-1427 | 8.025-8.5 |
| 4.17725-4.17775 | 37.5-38.25 | 1435-1626.5 | 9.0-9.2 |
| 4.20725-4.20775 | 73-74.6 | 1645.5-1646.5 | 9.3-9.5 |
| 6.215-6.218 | 74.8-75.2 | 1660-1710 | 10.6-12.7 |
| 6.26775-6.26825 | 108-121.94 | 1718.8-1722.2 | 13.25-13.4 |
| 6.31175-6.31225 | 123-138 | 2200-2300 | 14.47-14.5 |
| 8.291-8.294 | 149.9-150.05 | 2310-2390 | 15.35-16.2 |
| 8.362-8.366 | 156.52475-156.52525 | 2483.5-2500 | 17.7-21.4 |
| 8.37625-8.38675 | 156.7-156.9 | 2690-2900 | 22.01-23.12 |
| 8.41425-8.41475 | 162.0125-167.17 | 3260-3267 | 23.6-24.0 |
| 12.29-12.293 | 167.72-173.2 | 3332-3339 | 31.2-31.8 |
| 12.51975-12.52025 | 240-285 | 3345.8-3358 | 36.43-36.5 |
| 12.57675-12.57725 | 322-335.4 | 3600-4400 | ([2]) |
| 13.36-13.41 | | | |

[1]Until February 1, 1999, this restricted band shall be 0.490-0.510
[2]Above 38.6

(b) Except as provided in paragraphs (d) and (e), the field strength of emission appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000MHz, Compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000MHz, compliance with the emission limits in Section15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

## 9.4. Configuration of EUT on Measurement

The equipment are installed on Radiated Emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

## 9.5. Operating Condition of EUT

9.5.1. Setup the EUT and simulator as shown as Section 9.1.

9.5.2. Turn on the power of all equipment.

9.5.3. Let the EUT work in TX modes measure it. The transmit frequency are 2405-2480MHz. We select 2405MHz, 2450MHz, and 2480MHz TX frequency to transmit.

## 9.6. Test Procedure

The EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground(Below 1GHz). The EUT and its simulators are placed on a turntable, which is 1.5 meter high above ground(Above 1GHz). The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bi-log antenna) is used as receiving antenna. Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission levels, all of the EUT location must be manipulated according to ANSI C63.10:2013 on radiated emission measurement. The EUT was tested in 3 orthogonal planes.

The bandwidth of test receiver is set at 9 kHz in below 30MHz. and set at 120 kHz in 30-1000MHz, and 1MHz in above 1000MHz.

The frequency range from 9 kHz to 25GHz is checked.
The final measurement in band 9-90 kHz, 110-490 kHz and above 1000MHz is performed with Average detector. Except those frequency bands mention above, the final measurement for frequencies below 1000MHz is performed with Quasi Peak detector.
The field strength is calculated by adding the antenna factor, and cable loss, and subtracting the amplifier gain from the measured reading. The basic equation calculation is as follows:
Result = Reading + Corrected Factor
Where Corrected Factor = Antenna Factor + Cable Loss – Amplifier Gain

## 9.7.Data Sample

| Frequency (MHz) | Reading (dBμv) | Factor (dB/m) | Result (dBμv/m) | Limit (dBμv/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|
| X.XX | 28.66 | -15.19 | 13.47 | 40.0 | -26.53 | QP |

Frequency(MHz) = Emission frequency in MHz
Reading(dBμv) = Uncorrected Analyzer/Receiver reading
Factor (dB/m) = Antenna factor + Cable Loss – Amplifier gain
Result(dBμv/m) = Reading(dBμv) + Factor(dB/m)
Limit (dBμv/m) = Limit stated in standard
Margin (dB) = Result(dBμv/m) - Limit (dBμv/m)
QP = Quasi-peak Reading

Calculation Formula:
Margin(dB) = Result (dBμV/m)–Limit(dBμV/m)
Result(dBμV/m)= Reading(dBμV)+ Factor(dB/m)

The “Margin” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -7dB means the emission is 7dB below the limit.

## 9.8.The Field Strength of Radiation Emission Measurement Results

PASS.

**Note: 1. Emissions attenuated more than 20 dB below the permissible value are not reported.**

**2. *: Denotes restricted band of operation.**

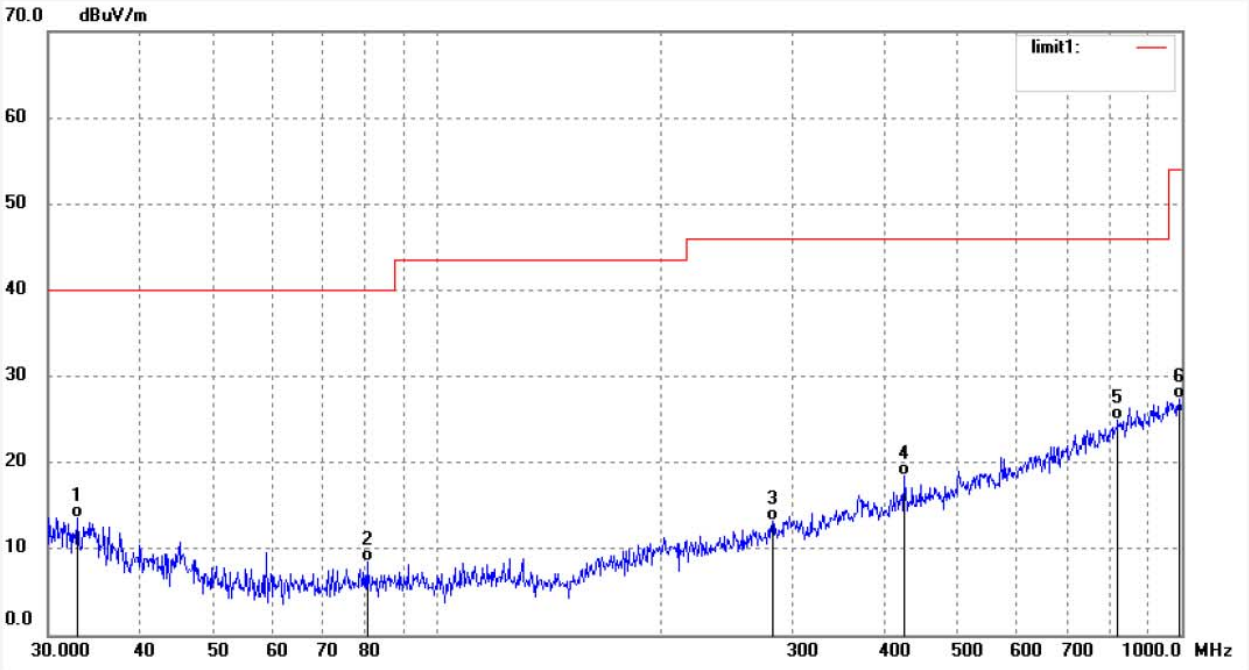
**3. The radiation emissions from 9kHz-30MHz and 18-25GHz are not reported, because the test values lower than the limits of 20dB.**

**Below 1GHz**

**ACCURATE TECHNOLOGY CO., LTD.**
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China
Site: 1# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

| | |
|---|---|
| Job No.: FRANK2019-W #191 | Polarization: Horizontal |
| Standard: FCC Class B 3M Radiated | Power Source: DC 3V |
| Test item: Radiation Test | Date: 2019/09/02 |
| Temp.( C)/Hum.(%) 25 C / 55 % | Time: 16:14:00 |
| EUT: Wireless Smart Remote | Engineer Signature: CHARLEY |
| Mode: TX 2405MHz | Distance: 3m |
| Model: RMT | |
| Applicant: Libre Home Inc | |

Note: Report NO.:ATE20191314



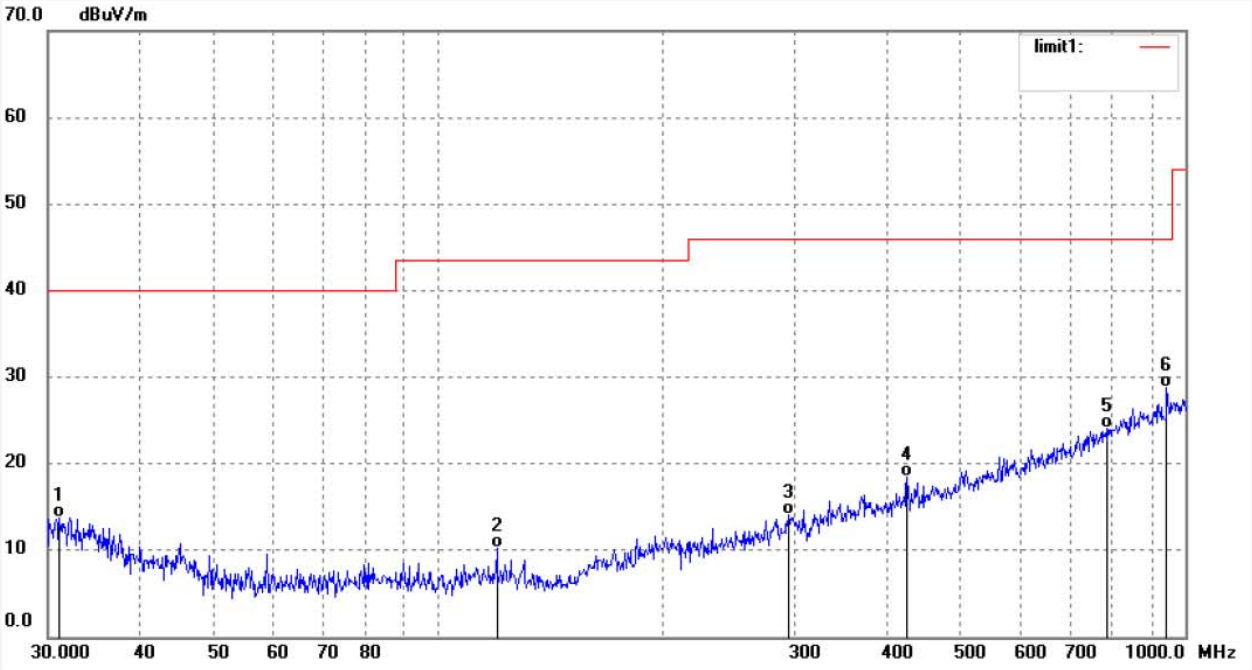

| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 32.8697 | 34.55 | -20.91 | 13.64 | 40.00 | -26.36 | QP | 200 | 82 | |
| 2 | 80.5207 | 35.93 | -27.41 | 8.52 | 40.00 | -31.48 | QP | 200 | 221 | |
| 3 | 282.2701 | 35.16 | -22.01 | 13.15 | 46.00 | -32.85 | QP | 200 | 301 | |
| 4 | 424.2998 | 36.44 | -17.94 | 18.50 | 46.00 | -27.50 | QP | 200 | 89 | |
| 5 | 821.3871 | 33.46 | -8.58 | 24.88 | 46.00 | -21.12 | QP | 200 | 221 | |
| 6 | 992.9973 | 32.61 | -5.19 | 27.42 | 54.00 | -26.58 | QP | 200 | 193 | |

ACCURATE TECHNOLOGY CO., LTD.
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China
Site: 1# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: FRANK2019-W #192
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp.( C)/Hum.(%) 25 C / 55 %
EUT: Wireless Smart Remote
Mode: TX 2405MHz
Model: RMT
Applicant: Libre Home Inc

Polarization: Vertical
Power Source: DC 3V
Date: 2019/09/02
Time: 16:14:08
Engineer Signature: CHARLEY
Distance: 3m

Note: Report NO.:ATE20191314



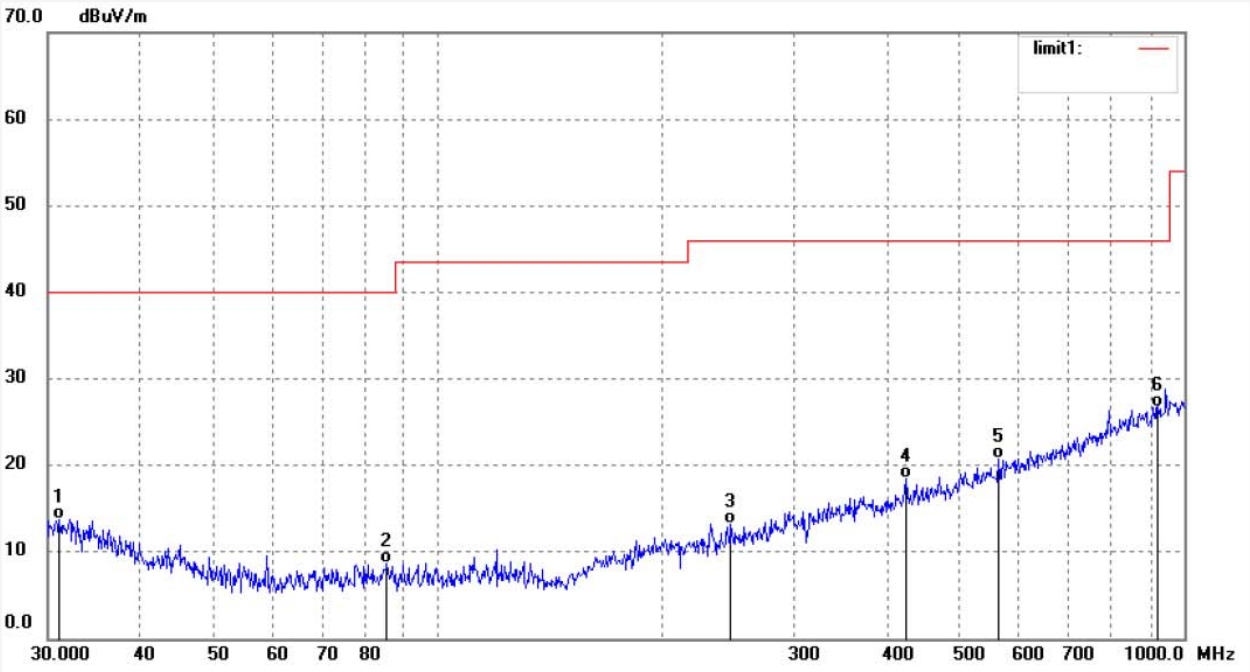

| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 31.0728 | 34.27 | -20.47 | 13.80 | 40.00 | -26.20 | QP | 100 | 201 | |
| 2 | 119.7672 | 37.63 | -27.43 | 10.20 | 43.50 | -33.30 | QP | 100 | 166 | |
| 3 | 294.4259 | 35.47 | -21.45 | 14.02 | 46.00 | -31.98 | QP | 100 | 83 | |
| 4 | 424.2998 | 36.44 | -17.94 | 18.50 | 46.00 | -27.50 | QP | 100 | 210 | |
| 5 | 784.7128 | 33.43 | -9.40 | 24.03 | 46.00 | -21.97 | QP | 100 | 63 | |
| 6 | 945.3336 | 35.25 | -6.41 | 28.84 | 46.00 | -17.16 | QP | 100 | 112 | |

ACCURATE TECHNOLOGY CO., LTD.
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China
Site: 1# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: FRANK2019-W #194
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp.( C)/Hum.(%) 25 C / 55 %
EUT: Wireless Smart Remote
Mode: TX 2450MHz
Model: RMT
Applicant: Libre Home Inc

Polarization: Horizontal
Power Source: DC 3V
Date: 2019/09/02
Time: 16:14:23
Engineer Signature: CHARLEY
Distance: 3m

Note: Report NO.:ATE20191314



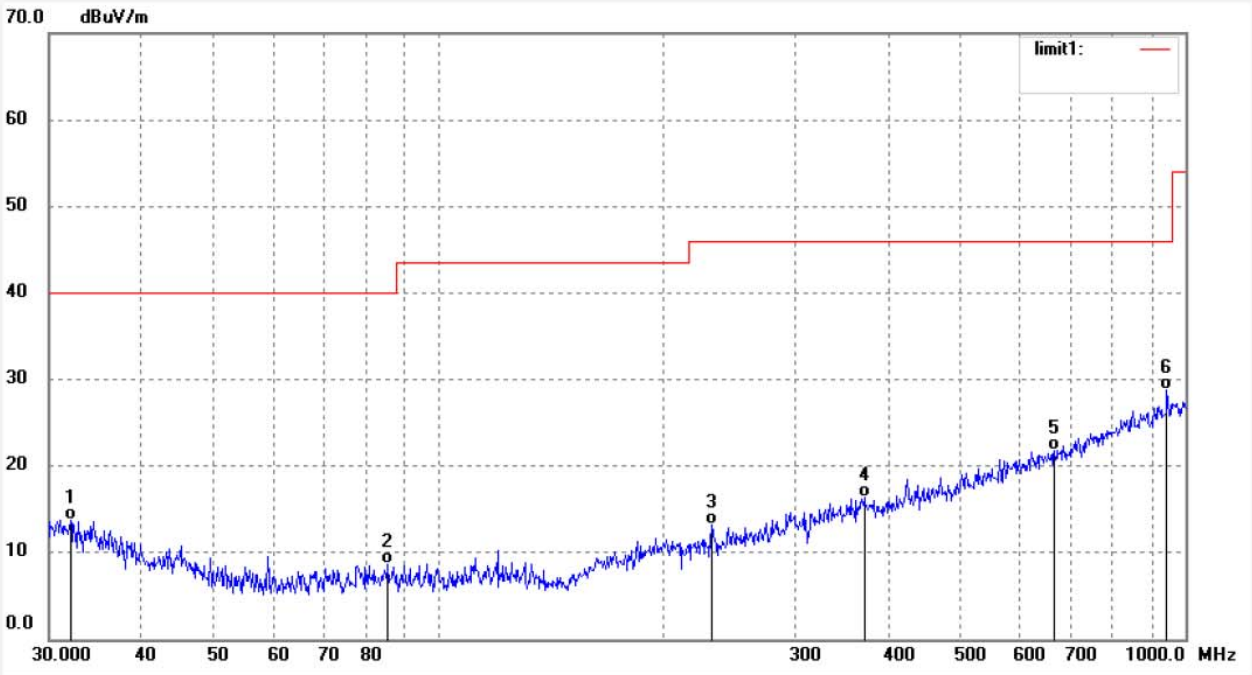

| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 31.0728 | 34.27 | -20.47 | 13.80 | 40.00 | -26.20 | QP | 200 | 21 | |
| 2 | 85.4769 | 36.18 | -27.45 | 8.73 | 40.00 | -31.27 | QP | 200 | 320 | |
| 3 | 246.9901 | 36.93 | -23.66 | 13.27 | 46.00 | -32.73 | QP | 200 | 98 | |
| 4 | 424.2998 | 36.44 | -17.94 | 18.50 | 46.00 | -27.50 | QP | 200 | 221 | |
| 5 | 563.9923 | 35.29 | -14.49 | 20.80 | 46.00 | -25.20 | QP | 200 | 63 | |
| 6 | 915.9076 | 33.53 | -6.91 | 26.62 | 46.00 | -19.38 | QP | 200 | 136 | |

ACCURATE TECHNOLOGY CO., LTD.
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China
Site: 1# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: FRANK2019-W #193
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp.( C)/Hum.(%) 25 C / 55 %
EUT: Wireless Smart Remote
Mode: TX 2450MHz
Model: RMT
Applicant: Libre Home Inc

Polarization: Vertical
Power Source: DC 3V
Date: 2019/09/02
Time: 16:14:21
Engineer Signature: CHARLEY
Distance: 3m

Note: Report NO.:ATE20191314



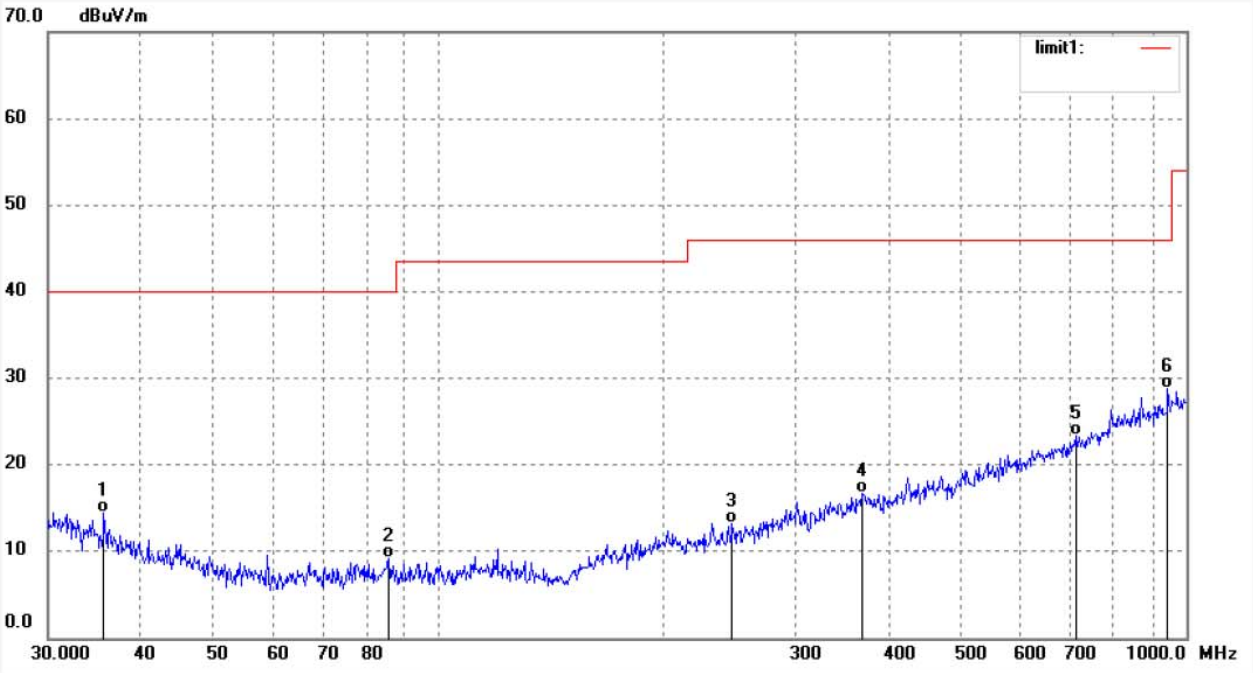

| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 32.0711 | 34.47 | -20.72 | 13.75 | 40.00 | -26.25 | QP | 100 | 213 | |
| 2 | 85.4769 | 36.18 | -27.45 | 8.73 | 40.00 | -31.27 | QP | 100 | 85 | |
| 3 | 231.8531 | 36.99 | -23.85 | 13.14 | 46.00 | -32.86 | QP | 100 | 112 | |
| 4 | 371.2678 | 35.06 | -18.75 | 16.31 | 46.00 | -29.69 | QP | 100 | 320 | |
| 5 | 667.6023 | 33.93 | -12.21 | 21.72 | 46.00 | -24.28 | QP | 100 | 63 | |
| 6 | 945.3336 | 35.25 | -6.41 | 28.84 | 46.00 | -17.16 | QP | 100 | 198 | |

ACCURATE TECHNOLOGY CO., LTD.
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China
Site: 1# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: FRANK2019-W #195
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp.( C)/Hum.(%) 25 C / 55 %
EUT: Wireless Smart Remote
Mode: TX 2480MHz
Model: RMT
Applicant: Libre Home Inc

Polarization: Horizontal
Power Source: DC 3V
Date: 2019/09/02
Time: 16:14:46
Engineer Signature: CHARLEY
Distance: 3m

Note: Report NO.:ATE20191314

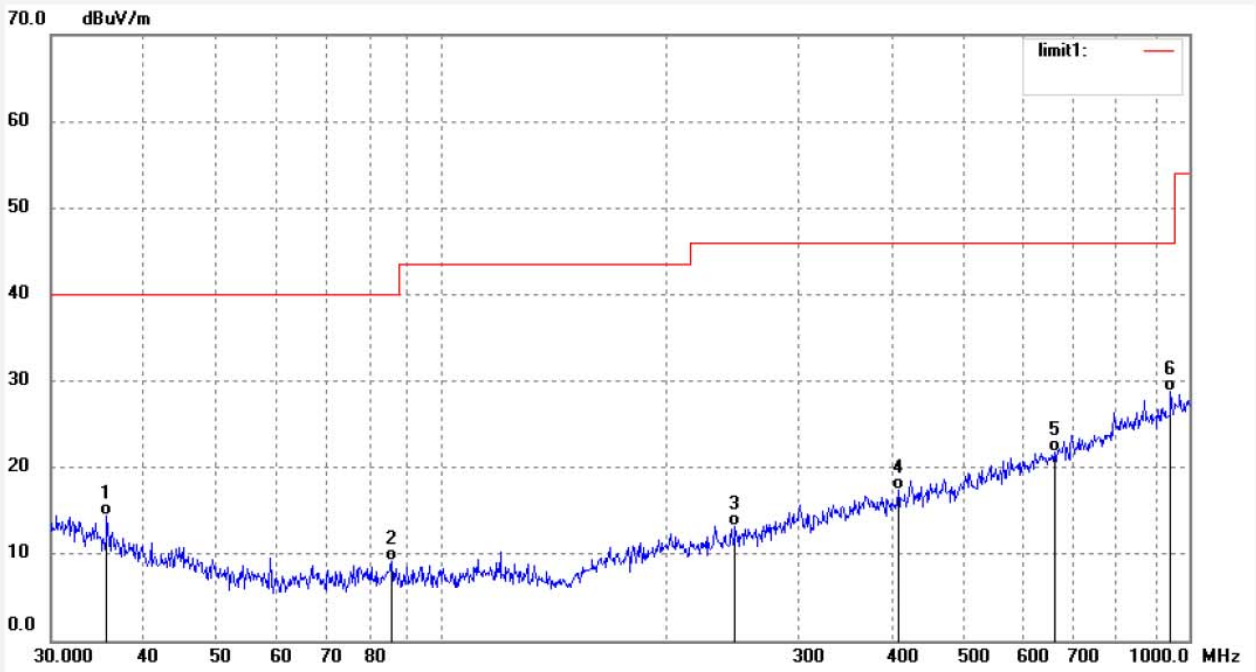



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 35.6362 | 36.12 | -21.72 | 14.40 | 40.00 | -25.60 | QP | 200 | 218 | |
| 2 | 85.7776 | 36.66 | -27.45 | 9.21 | 40.00 | -30.79 | QP | 200 | 325 | |
| 3 | 246.9901 | 36.93 | -23.66 | 13.27 | 46.00 | -32.73 | QP | 200 | 156 | |
| 4 | 368.6681 | 35.49 | -18.80 | 16.69 | 46.00 | -29.31 | QP | 200 | 62 | |
| 5 | 711.1884 | 34.53 | -11.21 | 23.32 | 46.00 | -22.68 | QP | 200 | 332 | |
| 6 | 945.3336 | 35.25 | -6.41 | 28.84 | 46.00 | -17.16 | QP | 200 | 193 | |

**ACCURATE TECHNOLOGY CO., LTD.**
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China
Site: 1# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

| | |
|---|---|
| Job No.: FRANK2019-W #196 | Polarization: Vertical |
| Standard: FCC Class B 3M Radiated | Power Source: DC 3V |
| Test item: Radiation Test | Date: 2019/09/02 |
| Temp.( C)/Hum.(%) 25 C / 55 % | Time: 16:14:50 |
| EUT: Wireless Smart Remote | Engineer Signature: CHARLEY |
| Mode: TX 2480MHz | Distance: 3m |
| Model: RMT | |
| Applicant: Libre Home Inc | |

Note: Report NO.:ATE20191314



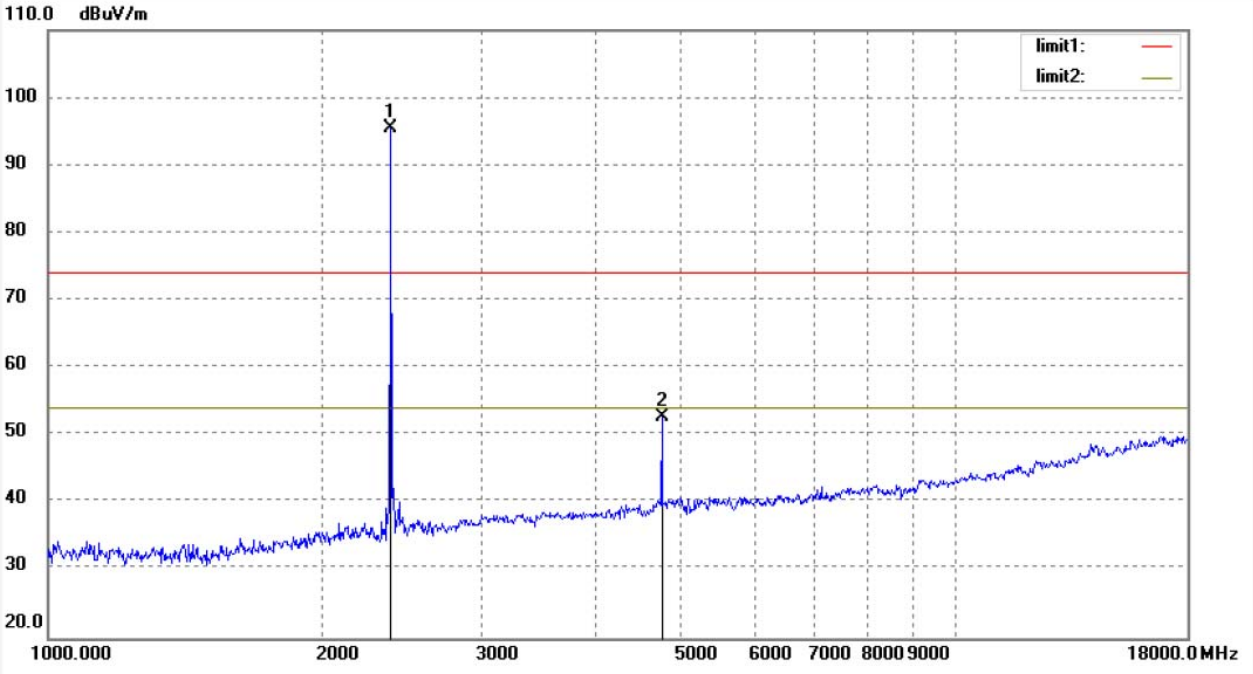

| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 35.6362 | 36.12 | -21.72 | 14.40 | 40.00 | -25.60 | QP | 100 | 256 | |
| 2 | 85.7776 | 36.66 | -27.45 | 9.21 | 40.00 | -30.79 | QP | 100 | 321 | |
| 3 | 246.9901 | 36.93 | -23.66 | 13.27 | 46.00 | -32.73 | QP | 100 | 65 | |
| 4 | 408.2137 | 35.53 | -18.16 | 17.37 | 46.00 | -28.63 | QP | 100 | 311 | |
| 5 | 660.6024 | 34.20 | -12.38 | 21.82 | 46.00 | -24.18 | QP | 100 | 63 | |
| 6 | 945.3336 | 35.25 | -6.41 | 28.84 | 46.00 | -17.16 | QP | 100 | 149 | |

**Above 1GHz**

**ACCURATE TECHNOLOGY CO., LTD.**
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China
Site: 1# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

| | |
|---|---|
| Job No.: FRANK2019-W #190 | Polarization: Horizontal |
| Standard: FCC PK | Power Source: DC 3V |
| Test item: Radiation Test | Date: 2019/09/02 |
| Temp.( C)/Hum.(%) 25 C / 55 % | Time: 16:11:54 |
| EUT: Wireless Smart Remote | Engineer Signature: CHARLEY |
| Mode: TX 2405MHz | Distance: 3m |
| Model: RMT | |
| Applicant: Libre Home Inc | |

Note: Report NO.:ATE20191314

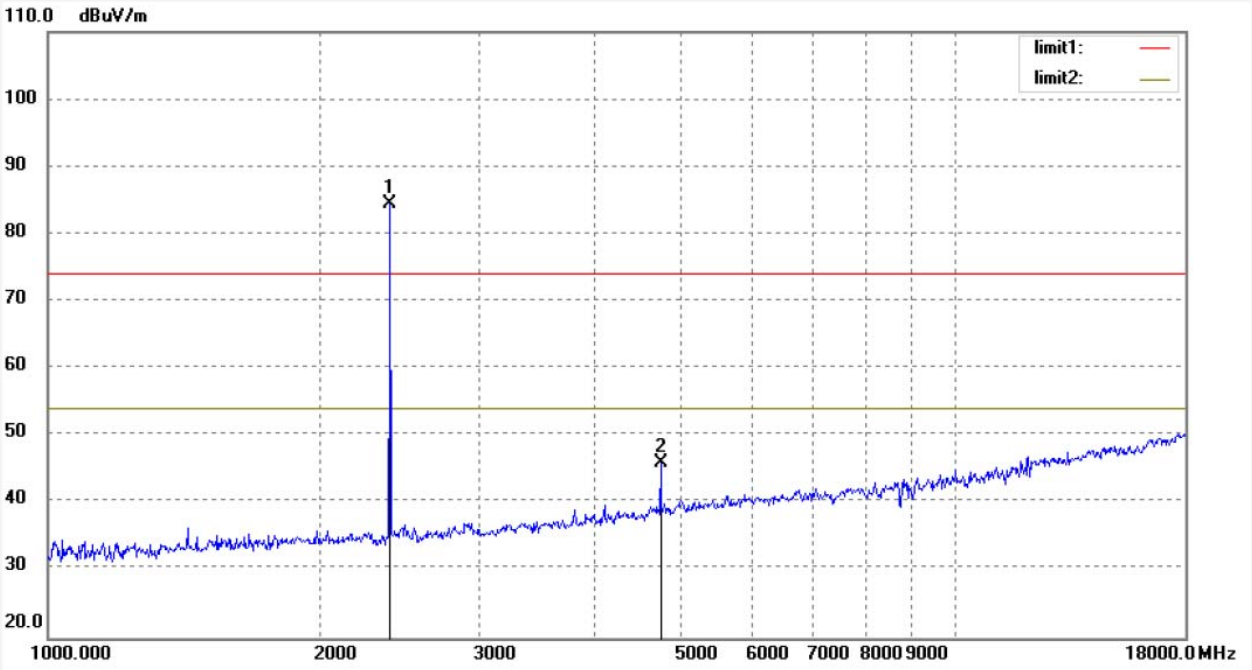



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2405.359 | 101.86 | -6.33 | 95.53 | | | peak | 200 | 66 | |
| 2 | 4810.751 | 52.04 | 0.76 | 52.80 | 74.00 | -21.20 | peak | 250 | 193 | |

ACCURATE TECHNOLOGY CO., LTD.
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China
Site: 1# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

| | |
|---|---|
| Job No.: FRANK2019-W #189 | Polarization: Vertical |
| Standard: FCC PK | Power Source: DC 3V |
| Test item: Radiation Test | Date: 2019/09/02 |
| Temp.( C)/Hum.(%) 25 C / 55 % | Time: 16:10:34 |
| EUT: Wireless Smart Remote | Engineer Signature: CHARLEY |
| Mode: TX 2405MHz | Distance: 3m |
| Model: RMT | |
| Applicant: Libre Home Inc | |

Note: Report NO.:ATE20191314

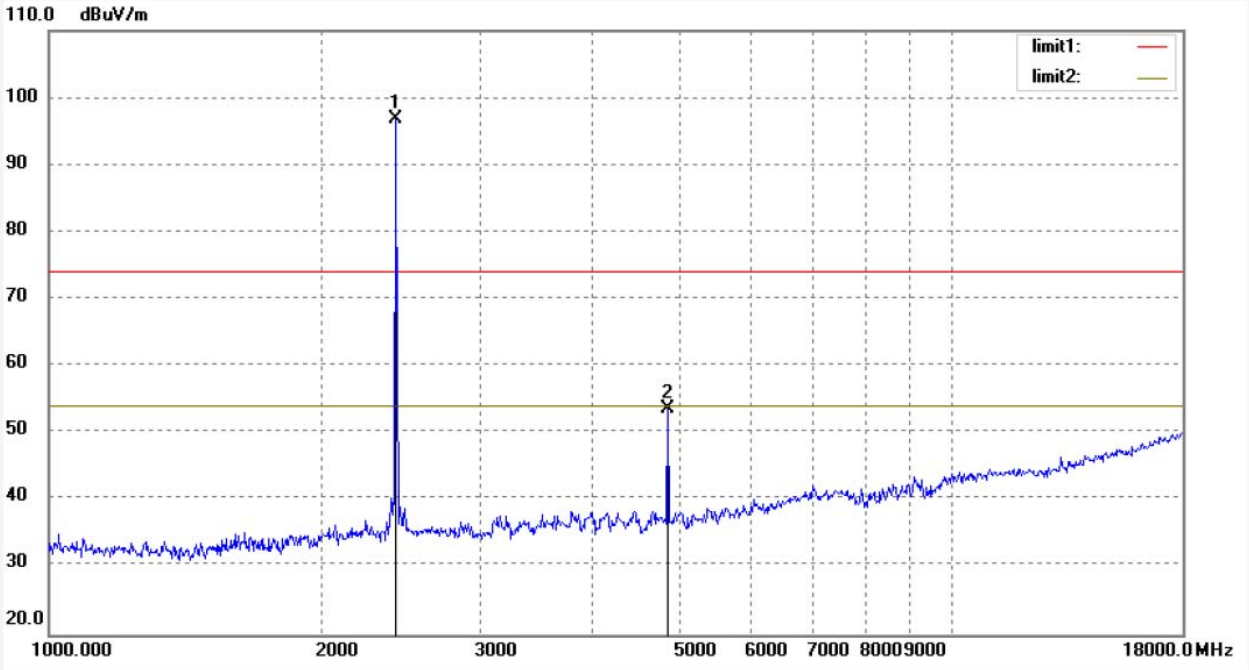



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2405.359 | 90.86 | -6.33 | 84.53 | | | peak | 150 | 93 | |
| 2 | 4810.751 | 45.30 | 0.76 | 46.06 | 74.00 | -27.94 | peak | 150 | 103 | |

ACCURATE TECHNOLOGY CO., LTD.
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China
Site: 1# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

| | |
|---|---|
| Job No.: FRANK2019-W #187 | Polarization: Horizontal |
| Standard: FCC PK | Power Source: DC 3V |
| Test item: Radiation Test | Date: 2019/09/02 |
| Temp.( C)/Hum.(%) 25 C / 55 % | Time: 16:04:21 |
| EUT: Wireless Smart Remote | Engineer Signature: CHARLEY |
| Mode: TX 2450MHz | Distance: 3m |
| Model: RMT | |
| Applicant: Libre Home Inc | |

Note: Report NO.:ATE20191314

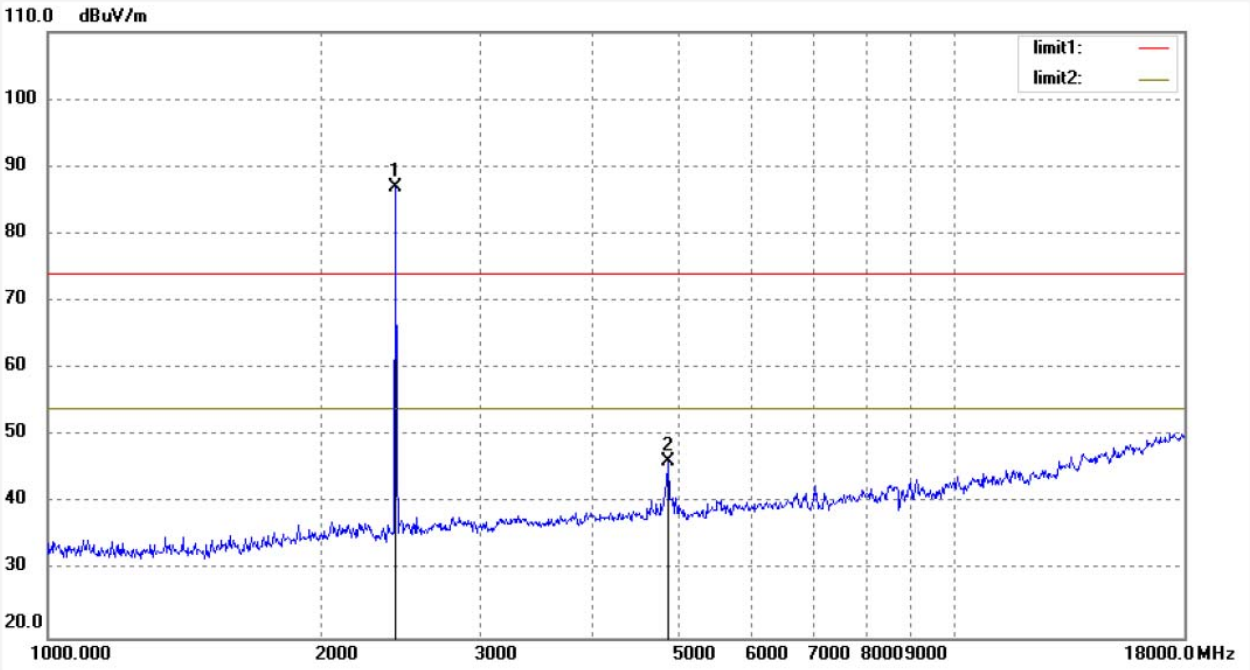



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2450.262 | 103.08 | -6.17 | 96.91 | | | peak | 250 | 179 | |
| 2 | 4900.438 | 52.50 | 1.19 | 53.69 | 74.00 | -20.31 | peak | 250 | 33 | |

ACCURATE TECHNOLOGY CO., LTD.
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China
Site: 1# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

| | |
|---|---|
| Job No.: FRANK2019-W #188 | Polarization: Vertical |
| Standard: FCC PK | Power Source: DC 3V |
| Test item: Radiation Test | Date: 2019/09/02 |
| Temp.( C)/Hum.(%) 25 C / 55 % | Time: 16:07:15 |
| EUT: Wireless Smart Remote | Engineer Signature: CHARLEY |
| Mode: TX 2450MHz | Distance: 3m |
| Model: RMT | |
| Applicant: Libre Home Inc | |

Note: Report NO.:ATE20191314

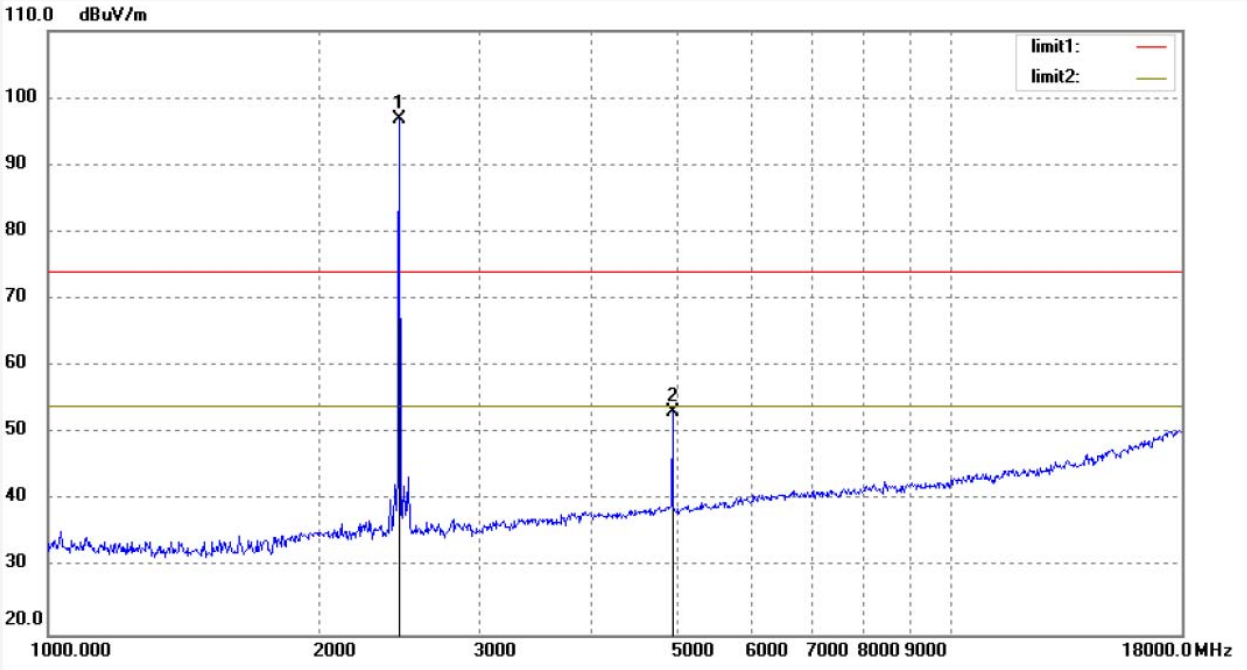



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2450.262 | 93.19 | -6.17 | 87.02 | | | peak | 150 | 93 | |
| 2 | 4900.438 | 45.11 | 1.19 | 46.30 | 74.00 | -27.70 | peak | 150 | 148 | |

ACCURATE TECHNOLOGY CO., LTD.
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China
Site: 1# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

| | |
|---|---|
| Job No.: FRANK2019-W #186 | Polarization: Horizontal |
| Standard: FCC PK | Power Source: DC 3V |
| Test item: Radiation Test | Date: 2019/09/02 |
| Temp.( C)/Hum.(%) 25 C / 55 % | Time: 16:02:19 |
| EUT: Wireless Smart Remote | Engineer Signature: CHARLEY |
| Mode: TX 2480MHz | Distance: 3m |
| Model: RMT | |
| Applicant: Libre Home Inc | |

Note: Report NO.:ATE20191314

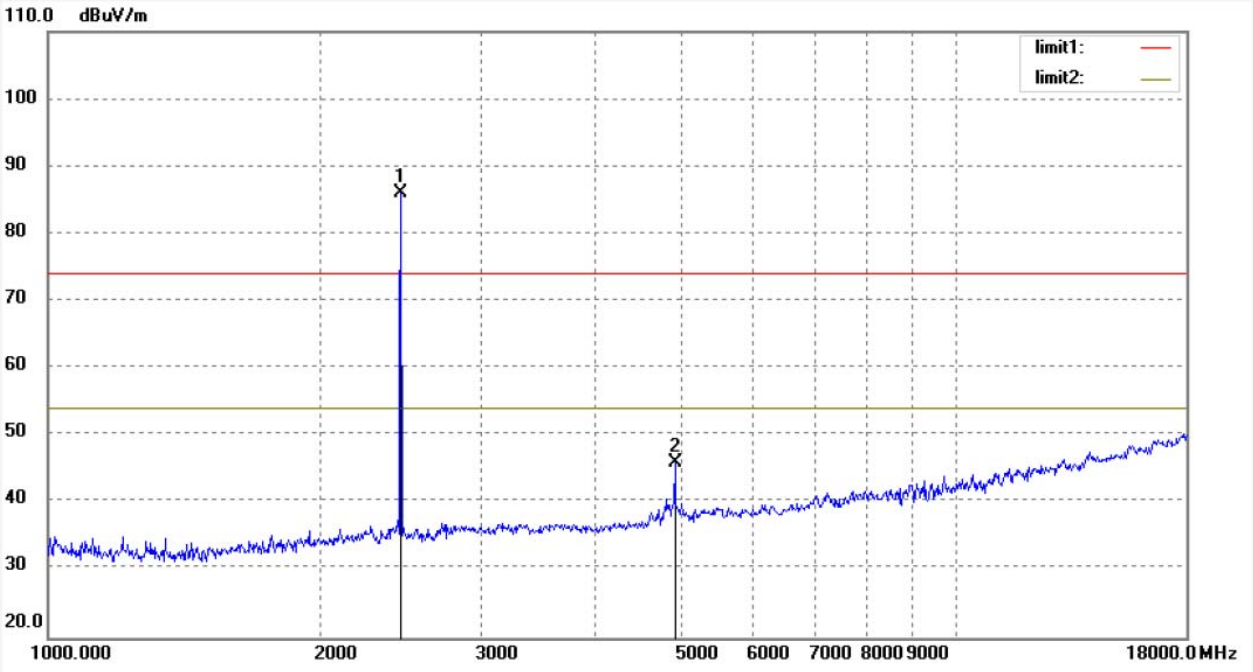



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2480.034 | 102.94 | -6.04 | 96.90 | | | peak | 200 | 93 | |
| 2 | 4960.444 | 51.62 | 1.50 | 53.12 | 74.00 | -20.88 | peak | 200 | 148 | |

ACCURATE TECHNOLOGY CO., LTD.
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China
Site: 1# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

| | |
|---|---|
| Job No.: FRANK2019-W #185 | Polarization: Vertical |
| Standard: FCC PK | Power Source: DC 3V |
| Test item: Radiation Test | Date: 2019/09/02 |
| Temp.( C)/Hum.(%) 25 C / 55 % | Time: 15:59:58 |
| EUT: Wireless Smart Remote | Engineer Signature: CHARLEY |
| Mode: TX 2480MHz | Distance: 3m |
| Model: RMT | |
| Applicant: Libre Home Inc | |

Note: Report NO.:ATE20191314




| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2480.034 | 92.13 | -6.04 | 86.09 | | | peak | 150 | 93 | |
| 2 | 4960.444 | 44.47 | 1.50 | 45.97 | 74.00 | -28.03 | peak | 150 | 108 | |

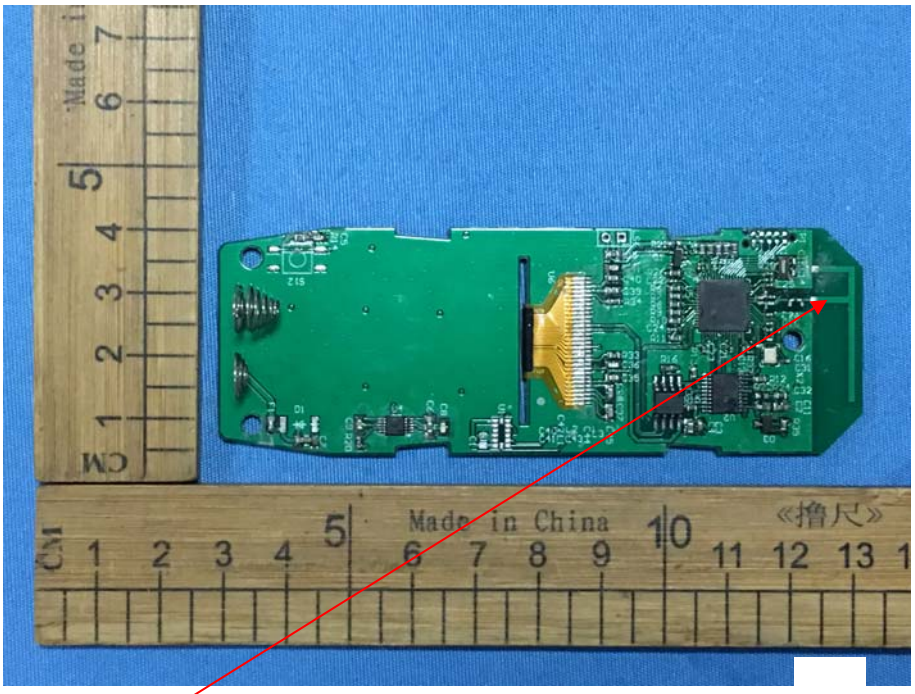
# 10. ANTENNA REQUIREMENT

## 10.1. The Requirement

According to Section 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.

## 10.2. Antenna Construction

Device is equipped with permanent attached antenna, which isn't displaced by other antenna. The Antenna gain of EUT is 2dBi. Therefore, the equipment complies with the antenna requirement of Section 15.203.




**Antenna**