# FCC/ISED RF TEST REPORT

ISSUED BY
Shenzhen BALUN Technology Co., Ltd.

FOR

## 2.4G RF transmitter

ISSUED TO
Medical Alarm Concepts

200 West Church Rd., Suite B, King of Prussia, PA, USA


Tested by: _____
Cao Shaodong
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Date Jul. 11, 2016

Approved by: _____
Liao Jianming
(Technical Director)
Date Jul. 11, 2016

| | |
|---|---|
| Report No.: | BL-SZ1660345-601 |
| EUT Type: | 2.4G RF transmitter |
| Model Name: | CS399-RB |
| Brand Name: | Ihelp+ |
| Test Standard: | 47 CFR Part 15 Subpart C |
| | RSS-210 Issue 8 (2010-12) |
| | RSS-Gen Issue 4 (2014-11) |
| FCC ID: | XWI-RB |
| ISED Number: | 8730A-RB |
| Test conclusion: | Pass |
| Test Date: | Jun. 18, 2016 ~ Jun. 27, 2016 |
| Date of Issue: | Jul. 11, 2016 |



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**Revision History**

| Version | Issue Date | Revisions |
|---|---|---|
| Rev. 01 | Jul. 1, 2016 | Initial Issue |
| Rev. 02 | Jul. 8, 2016 | Amend the peak limit of Radiated Emission |
| Rev. 03 | Jul. 11, 2016 | Add the description of 99% OBW measurement in chapter 5.2.3 |

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# 1 ADMINISTRATIVE DATA (GENERAL INFORMATION)

## 1.1 Identification of the Testing Laboratory

| | |
|---|---|
| Company Name | Shenzhen BALUN Technology Co., Ltd. |
| Address | Block B, 1st FL, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China |
| Phone Number | +86 755 6685 0100 |
| Fax Number | +86 755 6182 4271 |

## 1.2 Identification of the Responsible Testing Location

| | |
|---|---|
| Test Location | Shenzhen BALUN Technology Co., Ltd. |
| Address | Block B, 1st FL, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China |
| Accreditation Certificate | The laboratory has been listed by Industry Canada to perform electromagnetic emission measurements. The recognition numbers of test site are 11524A-1.<br>The laboratory has been listed by US Federal Communications Commission to perform electromagnetic emission measurements. The recognition numbers of test site are 832625.<br>The laboratory is a testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L6791. |
| Description | All measurement facilities used to collect the measurement data are located at Block B, FL 1, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China 518055 |

## 1.3 Laboratory Condition

| | |
|---|---|
| Ambient Temperature | 20 to 25℃ |
| Ambient Relative Humidity | 45% - 55% |
| Ambient Pressure | 100 kPa - 102 kPa |

## 1.4 Announce

(1) The test report reference to the report template version v4.1.

(2) The test report is invalid if not marked with the signatures of the persons responsible for preparing and approving the test report.

(3) The test report is invalid if there is any evidence and/or falsification.

(4) The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein.

(5) This document may not be altered or revised in any way unless done so by BALUN and all revisions are duly noted in the revisions section.

(6) Content of the test report, in part or in full, cannot be used for publicity and/or promotional purposes without prior written approval from the laboratory.

# 2 PRODUCT INFORMATION

## 2.1 Applicant Information

| | |
|---|---|
| Applicant | Medical Alarm Concepts |
| Address | 200 West Church Rd., Suite B, King of Prussia, PA, USA |

## 2.2 Manufacturer Information

| | |
|---|---|
| Manufacturer | Xi'an iHelp Wearable Electronic Co.Ltd |
| Address | Innovative Business Building No. 2, #69 Jinye Road, Xi'an, China |

## 2.3 Factory Information

| | |
|---|---|
| Factory | N/A |
| Address | N/A |

## 2.4 General Description for Equipment under Test (EUT)

| | |
|---|---|
| EUT Type | 2.4G RF transmitter |
| Model Name | CS399-RB |
| Hardware Version | V1.0 |
| Software Version | V1.0 |
| Network and Wireless connectivity | 2.4 GHz ISM band |
| Input Voltage | 3.0 V |
| Input Rated Current | N/A |
| Input Frequency | 2408MHz |
| About the Product | The equipment is 2.4G RF transmitter, it at 2.4 GHz ISM band. |

## 2.5 Ancillary Equipment

| | | |
|---|---|---|
| Ancillary Equipment 1 | Battery | |
| | Brand Name | N/A |
| | Model No. | CR2032 |
| | Serial No. | N/A |
| | Capacitance | 2032 mAh |
| | Rated Voltage | 3.0 V |
| | Limit Charge Voltage | 3.2 V |

## 2.6 Technical Information

| | |
|---|---|
| Modulation Type | FSK |
| Product Type | Portable |
| Frequency Range | 2408 MHz |
| Tested Channel | 1 |
| Antenna Type | PCB Antenna |
| Antenna Gain | 1 dBi (All involve the antenna gain test item, has been included in the final results) |
| About the Product | The EUT is 2.4G RF transmitter. |

## 2.7 Additional Instructions

EUT Software Settings:

| | |
|---|---|
| Mode | ☒ Special sample is used.<br>The sample provided by client to enable it under transmission condition continuously at specific channel frequencies individually when it power on. |

| Power level setup in software | | | |
|---|---|---|---|
| Test Software Version | N/A | | |
| Mode | Channel | Frequency (MHz) | Soft Set |
| FSK | 1 | 2408 | TX LEVEL is built-in set parameters and cannot be changed and selected. |

# 3 SUMMARY OF TEST RESULTS

## 3.1 Test Standards

| No. | Identity | Document Title |
|---|---|---|
| 1 | 47 CFR Part 15, Subpart C (10-1-14 Edition) | Intentional Radiators |
| 2 | ANSI C63.10-2013 | American National Standard for Testing Unlicensed Wireless Devices |
| 3 | Canada RSS-210 Issue 8 (2010-12) | General Requirements for Compliance of Radio Apparatus |
| 4 | Canada RSS-Gen Issue 4 (2014-11) | Digital Transmission Systems (DTSs), Frequency Hopping Systems(FHSs) and Licence-Exemp Local Area Network (LE-LAN) Devices |

## 3.2 Verdict

| No. | Description | FCC Part No. | ISED Part No. | Test Result | Verdict |
|---|---|---|---|---|---|
| 1 | Antenna Requirement | 15.203 | RSS-210, 5.4 | -- | Pass Note1 |
| 2 | 20 dB Bandwidth | 15.215(c) | RSS-Gen 6.6 | ANNEX A.1 | Pass |
| 3 | AC Conducted Emission | 15.207 | RSS-Gen 8.8 | ANNEX A.2 | N/A Note2 |
| 4 | Radiated Spurious Emission | 15.249(a) | RSS-210 2.5 | ANNEX A.3 | Pass |
| 5 | Band Edge (Restricted-band band-edge) | 15.249(a) | RSS-210 8.5 | ANNEX A.4 | Pass |
| Note 1: The EUT has a permanently and irreplaceable attached antenna, which complies with the requirement FCC 15.203.<br>Note 2: The EUT is supported by battery only, and not applicable AC Conducted Emission. | | | | | |

# 4 GENERAL TEST CONFIGURATIONS

## 4.1 Test Environments

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

| | | |
|---|---|---|
| Relative Humidity | 45% - 55% | |
| Atmospheric Pressure | 100 kPa - 102 kPa | |
| Temperature | NT (Normal Temperature) | +22℃ to +25℃ |
| Working Voltage of the EUT | NV (Normal Voltage) | 3. 0 V |

## 4.2 Test Equipment List

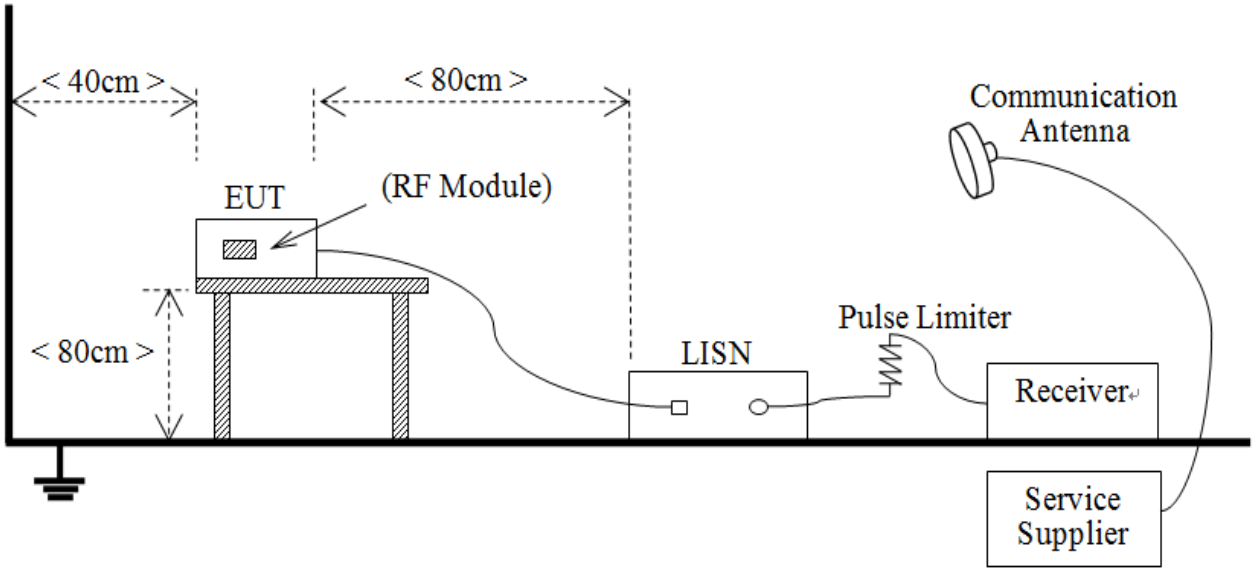
| Description | Manufacturer | Model | Serial No. | Cal. Date | Cal. Due |
|---|---|---|---|---|---|
| Spectrum Analyzer | ROHDE&SCHWARZ | FSV-30 | 103118 | 2015.07.01 | 2016.07.15 |
| Vector Signal Generator | ROHDE&SCHWARZ | SMBV100A | 177746 | 2015.07.01 | 2016.07.15 |
| Signal Generator | ROHDE&SCHWARZ | SMB100A | 260592 | 2015.07.01 | 2017.06.30 |
| Switch Unit with OSP-B157 | ROHDE&SCHWARZ | OSP120 | 101270 | 2015.07.01 | 2016.07.15 |
| Spectrum Analyzer | AGILENT | E4440A | MY45304434 | 2015.07.01 | 2016.10.17 |
| EMI Receiver | ROHDE&SCHWARZ | ESRP | 101036 | 2015.07.01 | 2016.07.13 |
| LISN | SCHWARZBECK | NSLK 8127 | 8127-687 | 2015.07.01 | 2016.07.13 |
| Bluetooth Tester | ROHDE&SCHWARZ | CBT | 101005 | 2015.07.01 | 2016.07.15 |
| Power Splitter | KMW | DCPD-LDC | 1305003215 | 2015.07.01 | 2016.07.20 |
| Power Sensor | ROHDE&SCHWARZ | NRP-Z21 | 103971 | 2015.07.01 | 2016.07.20 |
| Attenuator (20 dB) | KMW | ZA-S1-201 | 110617091 | -- | -- |
| Attenuator (6 dB) | KMW | ZA-S1-61 | 1305003189 | -- | -- |
| DC Power Supply | ROHDE&SCHWARZ | HMP2020 | 018141664 | 2015.07.01 | 2016.07.16 |
| Temperature Chamber | ANGELANTIONI SCIENCE | NTH64-40A | 1310 | 2015.07.01 | 2016.08.06 |
| Test Antenna-Loop(9 kHz-30 MHz) | SCHWARZBECK | FMZB 1519 | 1519-037 | 2015.07.01 | 2017.07.21 |
| Test Antenna-Bi-Log(30 MHz-3 GHz) | SCHWARZBECK | VULB 9163 | 9163-624 | 2015.07.01 | 2017.07.21 |
| Test Antenna-Horn(1-18 GHz) | SCHWARZBECK | BBHA 9120D | 9120D-1148 | 2015.07.01 | 2017.07.21 |
| Test Antenna-Horn(15-26.5 GHz) | SCHWARZBECK | BBHA 9170 | 9170-305 | 2015.07.01 | 2017.07.21 |
| Anechoic Chamber | RAINFORD | 9m*6m*6m | N/A | 2015.02.28 | 2017.02.27 |
| Shielded Enclosure | ChangNing | CN-130701 | 130703 | -- | -- |

## 4.3 Description of Test Setup

### 4.3.1 For Antenna Port Test

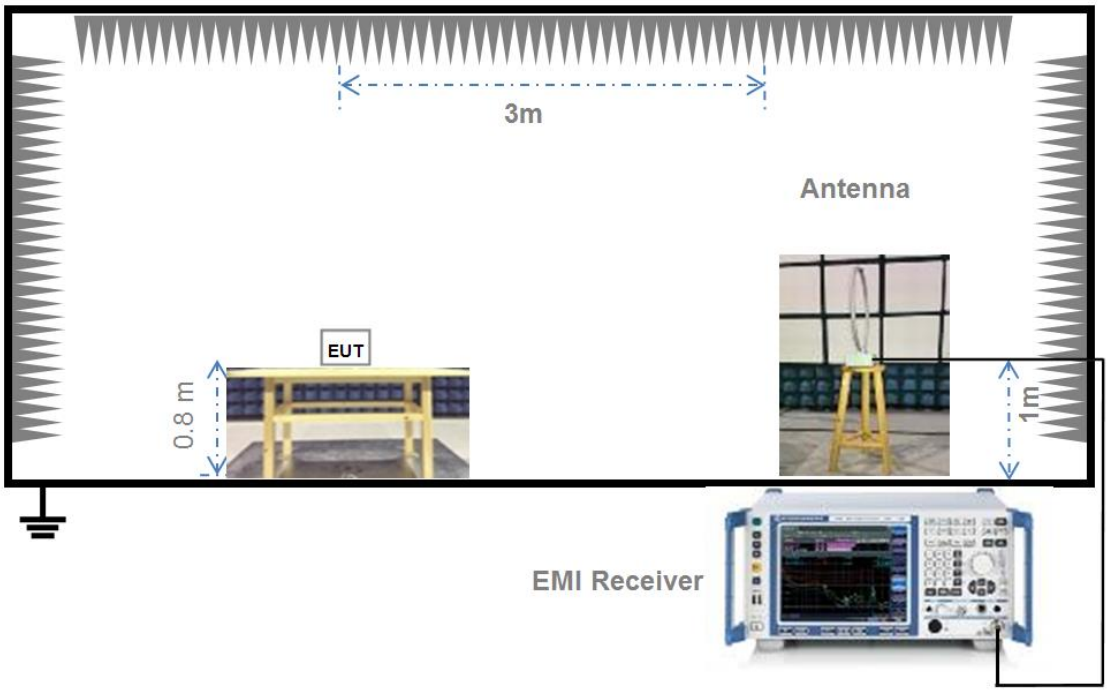

**(Diagram 1)**

### 4.3.2 For AC Power Supply Port Test



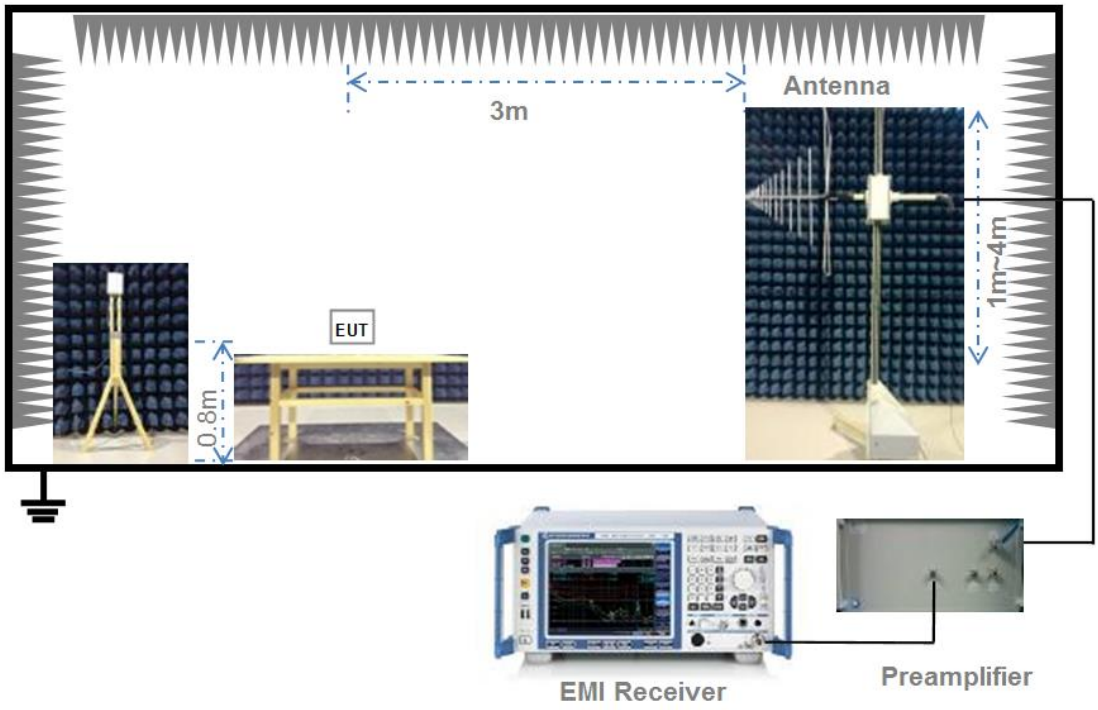

**(Diagram 2)**

4.3.3 For Radiated Test (Below 30 MHz)



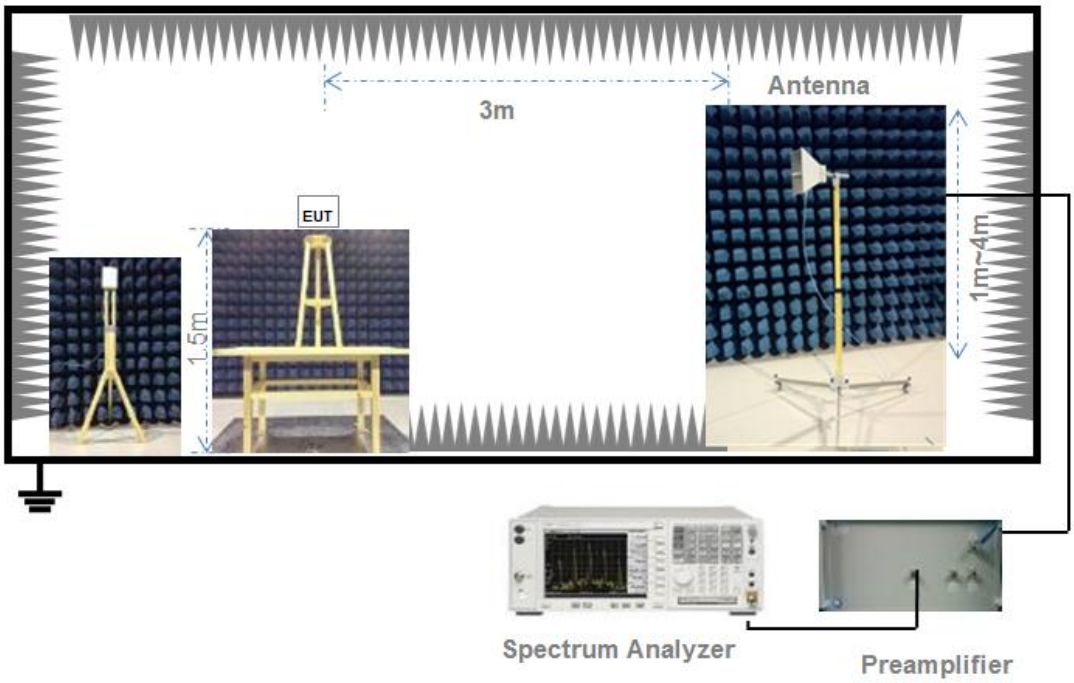

**(Diagram 3)**

4.3.4 For Radiated Test (30 MHz-1 GHz)




**(Diagram 4)**

4.3.5 For Radiated Test (Above 1 GHz)




**(Diagram 5)**

# 5 TEST ITEMS

## 5.1 Antenna Requirements

### 5.1.1 Standard Applicable

FCC §15.203 & 15.247(b); RSS-210, 5.4 (6)

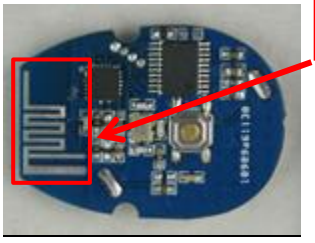
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of § 15.211, § 15.213, § 15.217, § 15.219, or § 15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with § 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

If directional gain of transmitting antennas is greater than 6 dBi, the power shall be reduced by the same level in dB comparing to gain minus 6 dBi. For the fixed point-to-point operation, the power shall be reduced by one dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi. 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 FCC rule.

### 5.1.2 Antenna Anti-Replacement Construction

The Antenna Anti-Replacement as following method:

| Protected Method | Description |
|---|---|
| The antenna is An embedded-in | An embedded-in antenna design is used. |

| Reference Documents | Item |
|---|---|
| Photo |  PCB Antenna |

### 5.1.3 Antenna Gain

The antenna peak gain of EUT is less than 6 dBi. Therefore, it is not necessary to reduce maximum peak output power limit.

## 5.2 20 dB Bandwidth and 99% Occupied Bandwidth

### 5.2.1 Limit

FCC §15.215(c); RSS-Gen 6.6

Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§ 15.217 through 15.257 and in Subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.

### 5.2.2 Test Setups

See section 4.3.1 for test setup description for the antenna port. The photo of test setup please refer to ANNEX B.

### 5.2.3 Test Procedure

**For 20 dB Bandwidth**

Use the following spectrum analyzer settings:

Span = approximately 2 to 3 times the 20 dB bandwidth, centered on a hopping channel

RBW ≥ 1% of the 20 dB bandwidth

VBW ≥ RBW

Sweep = auto

Detector function = peak

Trace = max hold

**For 99% Occupied Bandwidth**

Use the following spectrum analyzer settings:

Span = capture the emission skirts.

RBW = 1% to 5% of the occupied bandwidth

VBW ≥ 3RBW

Sweep = auto

Detector function = peak

Trace = max hold

### 5.2.4 Test Result

Please refer to ANNEX A.1

## 5.3 AC Conducted Emission

### 5.3.1 Limit

FCC §15.207; RSS-Gen 8.8

For an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50μH/50Ω line impedance stabilization network (LISN).

| Frequency range (MHz) | Conducted Limit (dBμV) | |
|---|---|---|
| | Quai-peak | Average |
| 0.15 - 0.50 | 66 to 56 | 56 to 46 |
| 0.50 - 5 | 56 | 46 |
| 0.50 - 30 | 60 | 50 |

### 5.3.2 Test Setups

See section 4.3.1 for test setup description for the antenna port. The photo of test setup please refer to ANNEX B.

### 5.3.3 Test Procedure

The maximum conducted interference is searched using Peak (PK), if the emission levels more than the AV and QP limits, and that have narrow margins from the AV and QP limits will be re-measured with AV and QP detectors. Tests for both L phase and N phase lines of the power mains connected to the EUT are performed.
Devices subject to Part 15 must be tested for all available U.S. voltages and frequencies (such as a nominal 120 VAC, 50/60 Hz and 240 VAC, 50/60 Hz) for which the device is capable of operation. A device rated for 50/60 Hz operation need not be tested at both frequencies provided the radiated and line conducted emissions are the same at both frequencies.

### 5.3.4 Test Result

Please refer to ANNEX A.2.

## 5.4 Radiated Spurious Emission

### 5.4.1 Limit

FCC §15.249(a); RSS-210 2.5

Except as provided in paragraph (a) of this section, the field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

| Frequency (MHz) | Field Strength of Fundamental (mV/m) | Field Strength of Harmonics (μV/m) |
|---|---|---|
| 902-928 | 50 | 500 |
| 2400-2483.5 | 50 | 500 |
| 5725-5875 | 50 | 500 |
| 24000-24250 | 250 | 2500 |

According to FCC section 15.209 (a), except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

| Frequency (MHz) | Field Strength (μV/m) | Measurement Distance (m) |
|---|---|---|
| 0.009 - 0.490 | 2400/F(kHz) | 300 |
| 0.490 - 1.705 | 24000/F(kHz) | 30 |
| 1.705 - 30.0 | 30 | 30 |
| 30 - 88 | 100 | 3 |
| 88 - 216 | 150 | 3 |
| 216 - 960 | 200 | 3 |
| Above 960 | 500 | 3 |

Note:

1. For Above 1000 MHz, the emission limit in this paragraph is based on measurement instrumentation employing an average detector, measurement using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit.

2. For above 1000 MHz, limit field strength of harmonics: 54dBuV/m@3m (AV) and 74dBuV/m@3m (PK).

### 5.4.2 Test Setups

See section 4.3.2-4.3.5 for test setup description for the antenna port. The photo of test setup please refer to ANNEX B.

### 5.4.3 Test Procedure

The measurement frequency range is from 9 kHz to the 10th harmonic of the fundamental frequency. The Turn Table is actuated to turn from 0° to 360°, and both horizontal and vertical polarizations of the Test Antenna are used to find the maximum radiated power. Mid channels on all channel bandwidth verified. Only the worst RB size/offset presented. The power of the EUT transmitting frequency should be ignored.

All Spurious Emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition was recorded in this test report.
Use the following spectrum analyzer settings:
Span = wide enough to fully capture the emission being measured

RBW = 1 MHz for f ≥ 1 GHz, 100 kHz for f < 1 GHz
VBW ≥ RBW
Sweep = auto
Detector function = peak
Trace = max hold

### 5.4.4 Test Result

Please refer to ANNEX A.3.

## 5.5 Band Edge (Restricted-band band-edge)

### 5.5.1 Limit

FCC §15.249(a); RSS-210 A8.5

Radiated emission outside the frequency band attenuation below the general limits specified in FCC section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in FCC section 15.205(a), must also comply with the radiated emission limits specified in FCC section 15.209(a).

### 5.5.2 Test Setups

See section 4.3.3 to 4.3.5 for test setup description for the antenna port. The photo of test setup please refer to ANNEX B.

### 5.5.3 Test Procedure

The measurement frequency range is from 9 kHz to the 10th harmonic of the fundamental frequency. The Turn Table is actuated to turn from 0° to 360°, and both horizontal and vertical polarizations of the Test Antenna are used to find the maximum radiated power. Mid channels on all channel bandwidth verified. Only the worst RB size/offset presented.

The power of the EUT transmitting frequency should be ignored.

All Spurious Emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition was recorded in this test report.

Use the following spectrum analyzer settings:

Span = wide enough to fully capture the emission being measured
RBW = 1 MHz for f ≥ 1 GHz, 100 kHz for f < 1 GHz
VBW ≥ RBW
Sweep = auto
Detector function = peak
Trace = max hold

For measurement below 1GHz, If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported, Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.

### 5.5.4 Test Result

Please refer to ANNEX A.4.

# ANNEX A TEST RESULT

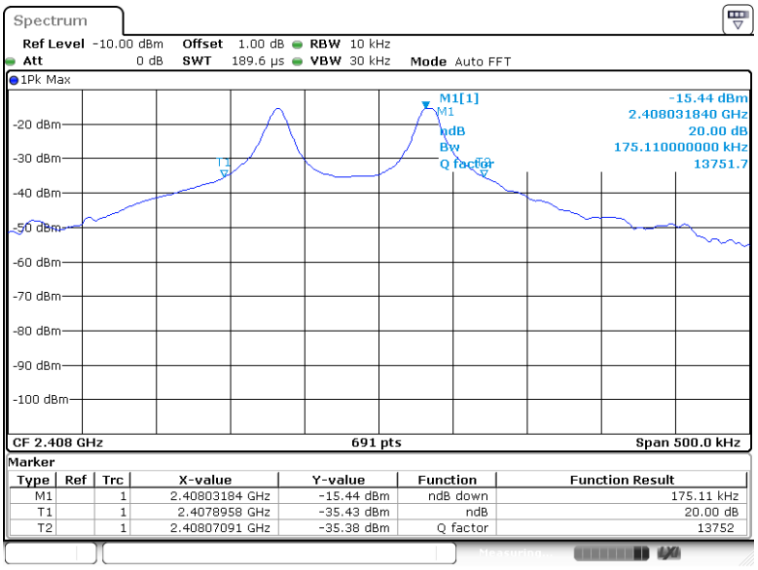
## A.1 20dB bandwidth

Test Data

| Frequency (MHz) | 20 dB Bandwidth (KHz) | 99% Bandwidth (KHz) |
|---|---|---|
| 2480 | 175.11 | 209.12 |

Test plots

20 dB Bandwidth

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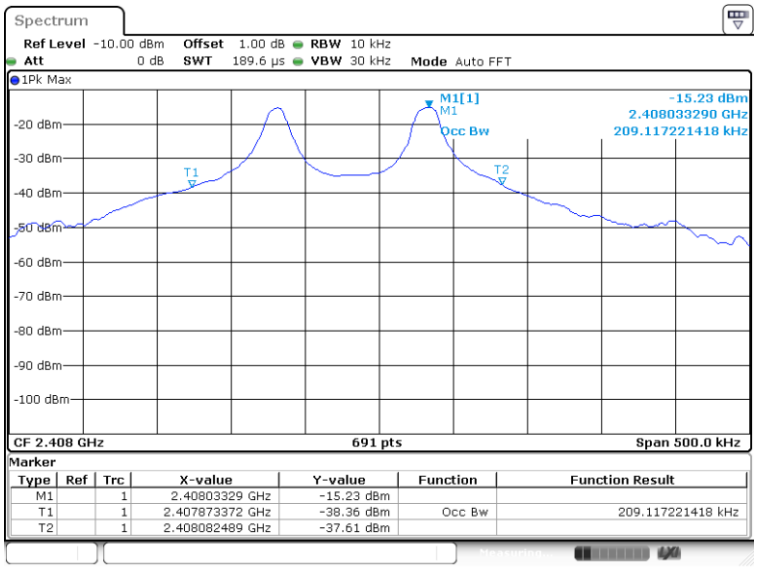
99% Bandwidth




Date: 27.JUN.2016 11:03:54

## A.2 AC Conducted Emission

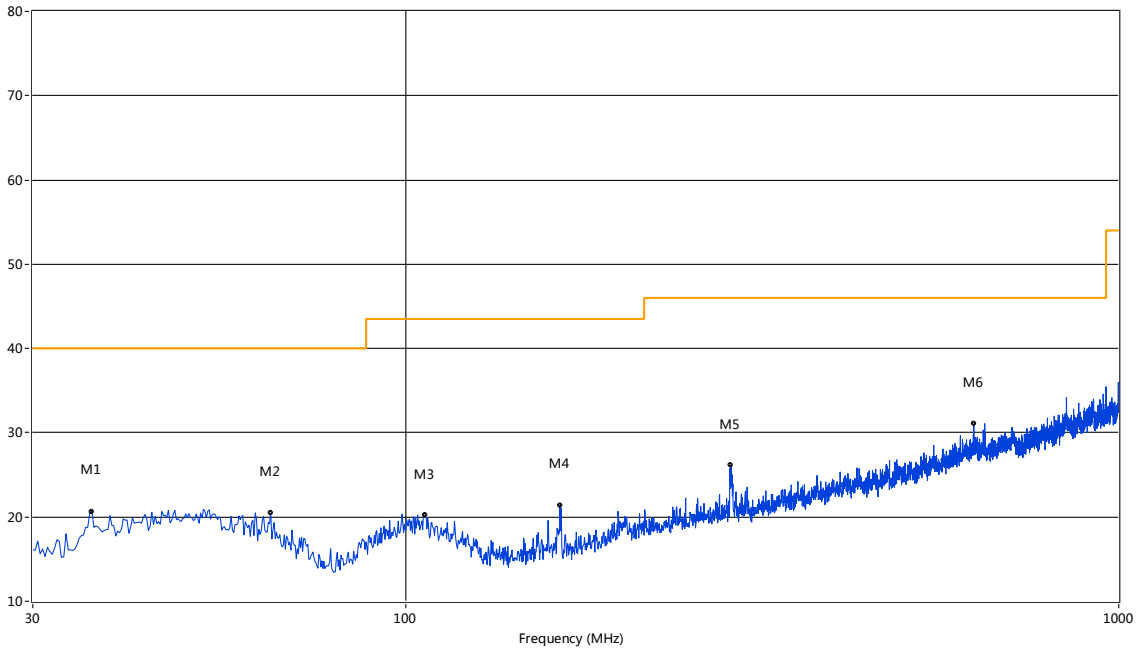
Not Applicable.

## A.3 Radiated Emission

The low frequency, which started from 9 kHz to 30 MHz, was pre-scanned and the result which was 20 dB lower than the limit line per 15.31(o) was not reported.

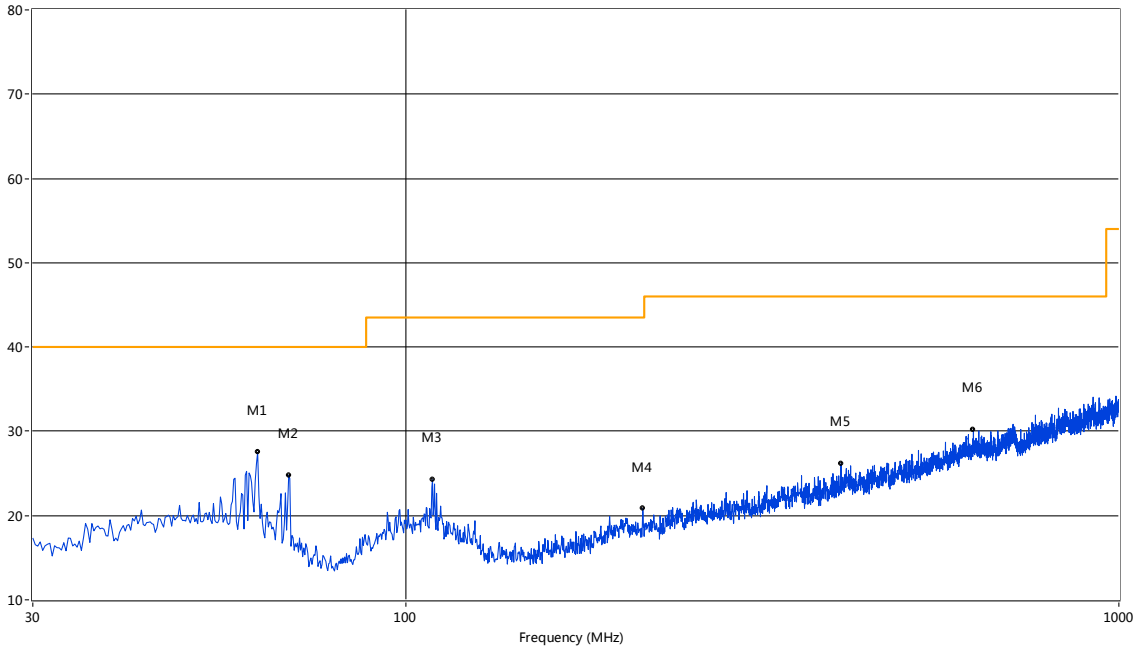
Note 1: The EUT is working in the Normal link mode below 1 GHz.

Low Channel 30 MHz to 1 GHz, ANT V




| No. | Frequency (MHz) | Results (dBuV/m) | Factor (dB) | Limit (dBuV/m) | Margin (dB) | Detector | Table (o) | Height (cm) | ANT | Verdict |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 36.30 | 20.65 | -20.90 | 40.0 | 19.35 | Peak | 85.10 | 100 | Vertical | N/A |
| 1** | 36.30 | 18.56 | -20.90 | 40.0 | 21.44 | QP | 85.10 | 100 | Vertical | Pass |
| 2 | 64.67 | 20.44 | -20.61 | 40.0 | 19.56 | Peak | 81.90 | 100 | Vertical | N/A |
| 2** | 64.67 | 17.36 | -20.61 | 40.0 | 22.64 | QP | 81.90 | 100 | Vertical | Pass |
| 3 | 106.37 | 20.18 | -20.19 | 43.5 | 23.32 | Peak | 249.40 | 100 | Vertical | N/A |
| 3** | 106.37 | 20.12 | -20.19 | 43.5 | 23.38 | QP | 249.40 | 100 | Vertical | Pass |
| 4 | 164.55 | 21.30 | -22.87 | 43.5 | 22.20 | Peak | 185.70 | 100 | Vertical | N/A |
| 4** | 164.55 | 21.38 | -22.87 | 43.5 | 22.12 | QP | 185.70 | 100 | Vertical | Pass |
| 5 | 286.02 | 26.12 | -18.22 | 46.0 | 19.88 | Peak | 360.00 | 100 | Vertical | N/A |
| 5** | 286.02 | 23.00 | -18.22 | 46.0 | 23.00 | QP | 360.00 | 100 | Vertical | Pass |
| 6 | 626.16 | 31.01 | -10.26 | 46.0 | 14.99 | Peak | 141.90 | 100 | Vertical | N/A |
| 6** | 626.16 | 23.09 | -10.26 | 46.0 | 22.91 | QP | 141.90 | 100 | Vertical | Pass |

## Low Channel 30 MHz to 1 GHz, ANT H




| No. | Frequency (MHz) | Results (dBuV/m) | Factor (dB) | Limit (dBuV/m) | Margin (dB) | Detector | Table (o) | Height (cm) | ANT | Verdict |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 62.00 | 27.51 | -20.38 | 40.0 | 12.49 | Peak | 238.70 | 100 | Horizontal | N/A |
| 1** | 62.00 | 20.05 | -20.38 | 40.0 | 19.95 | QP | 238.70 | 100 | Horizontal | Pass |
| 2 | 68.55 | 24.77 | -22.06 | 40.0 | 15.23 | Peak | 238.70 | 100 | Horizontal | N/A |
| 2** | 68.55 | 19.97 | -22.06 | 40.0 | 20.03 | QP | 238.70 | 100 | Horizontal | Pass |
| 3 | 109.04 | 24.25 | -20.23 | 43.5 | 19.25 | Peak | 71.30 | 100 | Horizontal | N/A |
| 3** | 109.04 | 22.74 | -20.23 | 43.5 | 20.76 | QP | 71.30 | 100 | Horizontal | Pass |
| 4 | 214.98 | 20.82 | -20.05 | 43.5 | 22.68 | Peak | 111.10 | 100 | Horizontal | N/A |
| 4** | 214.98 | 20.50 | -20.05 | 43.5 | 23.00 | QP | 111.10 | 100 | Horizontal | Pass |
| 5 | 407.72 | 26.13 | -14.95 | 46.0 | 19.87 | Peak | 104.40 | 100 | Horizontal | N/A |
| 5** | 407.72 | 22.89 | -14.95 | 46.0 | 23.11 | QP | 104.40 | 100 | Horizontal | Pass |
| 6 | 625.19 | 30.19 | -10.25 | 46.0 | 15.81 | Peak | 268.40 | 100 | Horizontal | N/A |
| 6** | 625.19 | 23.12 | -10.25 | 46.0 | 22.88 | QP | 268.40 | 100 | Horizontal | Pass |

Test Data (1 GHz ~ 10th Harmonic)

Note 1: The marked spikes near 2408 MHz is the fundamental signal.

Note 2: Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Note 3: Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in §15.209, whichever is the lesser attenuation.

Note 4: Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin>20 dB from the applicable limit) and considered that's already beyond the background noise floor.

Note 5: Radiated emissions measured in frequency above 1000 MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.

CHANNEL 1 GHz to 25 GHz, ANT V

| No. | Frequency (MHz) | Results (dBuV/m) | Factor (dB) | Limit (dBuV/m) | Margin (dB) | Detector | Table (o) | Height (cm) | ANT | Verdict |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2408.15 | 82.28 | -0.15 | 114.0 | 31.72 | Peak | 304.40 | 150 | Vertical | Pass |
| 2 | 3639.59 | 47.72 | 10.08 | 74.0 | 26.28 | Peak | 307.90 | 150 | Vertical | Pass |
| 3 | 4707.32 | 52.11 | 13.34 | 74.0 | 21.89 | Peak | 345.20 | 150 | Vertical | Pass |
| 4 | 6426.79 | 51.40 | 18.46 | 74.0 | 22.60 | Peak | 150.7 | 150 | Vertical | Pass |
| 5 | 17585.69 | 42.78 | 9.02 | 74.0 | 31.22 | Peak | 159 | 150 | Vertical | Pass |
| 6 | 19918.47 | 46.55 | 11.96 | 74.0 | 27.45 | Peak | 171 | 150 | Vertical | Pass |

CHANNEL 1 GHz to 25 GHz, ANT H

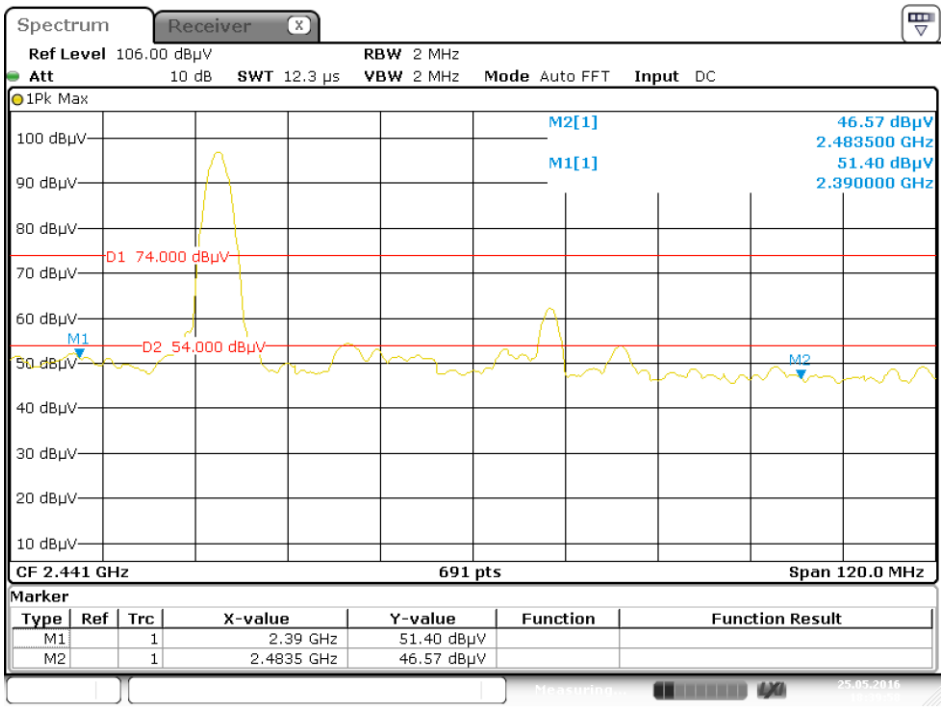
| No. | Frequency (MHz) | Results (dBuV/m) | Factor (dB) | Limit (dBuV/m) | Margin (dB) | Detector | Table (o) | Height (cm) | ANT | Verdict |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2408.15 | 78.51 | -0.15 | 114.0 | 35.49 | Peak | 39.20 | 150 | Horizontal | Pass |
| 2 | 3767.81 | 47.97 | 10.42 | 74.0 | 26.03 | Peak | 155.50 | 150 | Horizontal | Pass |
| 3 | 4690.08 | 51.43 | 13.22 | 74.0 | 22.57 | Peak | 99.50 | 150 | Horizontal | Pass |
| 4 | 9740.02 | 46.04 | 15.51 | 74.0 | 27.96 | Peak | 182.9 | 150 | Horizontal | Pass |
| 5 | 15037.85 | 46.84 | 9.13 | 74.0 | 27.16 | Peak | 34.1 | 150 | Horizontal | Pass |
| 6 | 20118.14 | 47.08 | 8.28 | 74.0 | 26.92 | Peak | 107.3 | 150 | Horizontal | Pass |

## A.4 Band Edge (Restricted-band band-edge)

Test Data

The channel is tested to verify the band edge emissions. Please refer to the following the plots for emissions values.

Test Plots



# ANNEX B TEST SETUP PHOTOS

Please refer the document “BL-SZ1660345-AR.PDF”.

# ANNEX C EUT EXTERNAL PHOTOS

Please refer the document “BL- SZ1660345-AW.PDF”.

# ANNEX D EUT INTERNAL PHOTOS

Please refer the document “BL- SZ1660345-AI.PDF”.

--END OF REPORT--