

# FCC REPORT

**Applicant:** Telecell Mobile (H.K). Ltd

**Address of Applicant:** RM 1, 8/F Metro Centre 2, 21 Lam Hing Street. Kln Bay. Hong Kong

**Equipment Under Test (EUT)**

**Product Name:** Wi-Fi device

**Model No.:** T50R

**FCC ID:** 2ADX3T50R

**Applicable standards:** FCC CFR Title 47 Part 15 Subpart C Section 15.225

**Date of sample receipt:** 09 Mar., 2018

**Date of Test:** 09 Mar., to 03 Apr., 2018

**Date of report issue:** 03 Apr., 2018

**Test Result:** PASS\*

\* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:



Bruce Zhang  
Laboratory Manager

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product and does not permit the use of the CCIS product certification mark. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

This report may only be reproduced and distributed in full. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards.

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## 2 Version

| Version No. | Date          | Description |
|-------------|---------------|-------------|
| 00          | 03 Apr., 2018 | Original    |
|             |               |             |
|             |               |             |
|             |               |             |
|             |               |             |

Tested by:

YT Yang

Test Engineer

Date:

03 Apr., 2018

Reviewed by:

Wimer Zhang

Project Engineer

Date:

03 Apr., 2018

## 3 Contents

|                                                  | Page      |
|--------------------------------------------------|-----------|
| <b>1 COVER PAGE.....</b>                         | <b>1</b>  |
| <b>2 VERSION .....</b>                           | <b>2</b>  |
| <b>3 CONTENTS .....</b>                          | <b>3</b>  |
| <b>4 TEST SUMMARY.....</b>                       | <b>4</b>  |
| <b>5 GENERAL INFORMATION.....</b>                | <b>5</b>  |
| 5.1 CLIENT INFORMATION.....                      | 5         |
| 5.2 GENERAL DESCRIPTION OF E.U.T.....            | 5         |
| 5.3 TEST MODE .....                              | 6         |
| 5.4 DESCRIPTION OF SUPPORT UNITS.....            | 6         |
| 5.5 LABORATORY FACILITY.....                     | 6         |
| 5.6 LABORATORY LOCATION .....                    | 6         |
| 5.7 TEST INSTRUMENTSLIST.....                    | 7         |
| <b>6 TEST RESULTS AND MEASUREMENT DATA .....</b> | <b>8</b>  |
| 6.1 ANTENNA REQUIREMENT .....                    | 8         |
| 6.2 RADIATED EMISSION .....                      | 9         |
| 6.3 20dB BANDWIDTH .....                         | 14        |
| 6.4 FREQUENCY TOLERANCE.....                     | 16        |
| 6.5 CONDUCTED EMISSION .....                     | 18        |
| <b>7 TEST SETUP PHOTOS.....</b>                  | <b>21</b> |
| <b>8 EUT CONSTRUCTIONAL PHOTOS.....</b>          | <b>22</b> |

## 4 Test Summary

| Test Item                                | Section in CFR 47 | Result |
|------------------------------------------|-------------------|--------|
| Antenna requirement                      | 15.203            | Pass   |
| Field strength of the fundamental signal | 15.225 (a)        | Pass   |
| Spurious emissions                       | 15.225(d)& 15.209 | Pass   |
| 20dB Bandwidth                           | 15.215(c)         | Pass   |
| Frequency tolerance                      | 15.225 (e)        | Pass   |
| Conducted Emission                       | 15.207            | Pass   |

Remarks:

Pass: The EUT complies with the essential requirements in the standard.

## 5 General Information

### 5.1 Client Information

|                        |                                                                  |
|------------------------|------------------------------------------------------------------|
| Applicant:             | Telecell Mobile (H.K). Ltd                                       |
| Address:               | RM 1, 8/F Metro Centre 2, 21 Lam Hing Street. Kln Bay. Hong Kong |
| Manufacturer/ Factory: | Telecell Mobile (H.K). Ltd                                       |
| Address:               | RM 1, 8/F Metro Centre 2, 21 Lam Hing Street. Kln Bay. Hong Kong |

### 5.2 General Description of E.U.T.

|                      |                                                                            |
|----------------------|----------------------------------------------------------------------------|
| Product Name:        | Wi-Fi device                                                               |
| Model No.:           | T50R                                                                       |
| Operation Frequency: | 13.56MHz                                                                   |
| Channel numbers:     | 1                                                                          |
| Modulation type:     | ASK                                                                        |
| Antenna Type:        | Internal Antenna                                                           |
| Antenna gain:        | 0dBi                                                                       |
| Power supply:        | Rechargeable Li-ion polymer Battery DC3.8V, 4100mAh                        |
| AC adapter:          | Model No.: N8C<br>Input: AC110-240V 50/60Hz 0.3 A<br>Output: DC 5.0V, 2.0A |

## 5.3 Test mode

|                                                                                                                                                                                                                      |                                                   |       |       |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|-------|-------|
| Transmitting mode:                                                                                                                                                                                                   | Keep the EUT in transmitting mode with modulation |       |       |
| Pre-Test Mode:                                                                                                                                                                                                       |                                                   |       |       |
| CCIS has verified the construction and function in typical operation,The EUT was placed on three different polar directions;i.e. X axis, Y axis, Z axis. which was shown in this test report and defined as follows: |                                                   |       |       |
| Axis                                                                                                                                                                                                                 | X                                                 | Y     | Z     |
| Field Strength(dBuV/m)                                                                                                                                                                                               | 49.33                                             | 49.42 | 49.21 |
| Final Test Mode:                                                                                                                                                                                                     |                                                   |       |       |
| According to ANSI C63.4 standards, the test results are both the “worst case” and “worst setup”: Y axis (see the test setup photo).                                                                                  |                                                   |       |       |

## 5.4 Description of Support Units

|     |
|-----|
| N/A |
|-----|

## 5.5 Laboratory Facility

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>The test facility is recognized, certified, or accredited by the following organizations:</p> <ul style="list-style-type: none"> <li>● <b>FCC - Registration No.: 727551</b><br/>Shenzhen Zhongjian Nanfang Testing Co., Ltd. has been accredited as a testing laboratory by FCC (Federal Communications Commission). The Registration No. is 727551.</li> <li>● <b>IC - Registration No.: 10106A-1</b><br/>The 3m Semi-anechoic chamber of Shenzhen Zhongjian Nanfang Testing Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 10106A-1.</li> <li>● <b>CNAS - Registration No.: CNAS L6048</b><br/>Shenzhen Zhongjian Nanfang Testing Co., Ltd. is accredited to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration laboratories for the competence of testing. The Registration No. is CNAS L6048.</li> <li>● <b>A2LA - Registration No.: 4346.01</b><br/>This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 General requirements for the competence of testing and calibration laboratories. The test scope can be found as below link: <a href="https://portal.a2la.org/scopepdf/4346-01.pdf">https://portal.a2la.org/scopepdf/4346-01.pdf</a></li> </ul> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## 5.6 Laboratory Location

|                                                                                                                                                                                                                                                                                                       |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Shenzhen Zhongjian Nanfang Testing Co., Ltd.<br/>Address: No. B-C, 1/F., Building 2, Laodong No.2 Industrial Park, Xixiang Road,<br/>Bao'an District, Shenzhen, Guangdong, China<br/>Tel: +86-755-23118282, Fax: +86-755-23116366<br/>Email: info@ccis-cb.com, Website: http://www.ccis-cb.com</p> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## 5.7 Test Instrumentslist

| Radiated Emission: |                                  |                                      |           |               |                         |                             |
|--------------------|----------------------------------|--------------------------------------|-----------|---------------|-------------------------|-----------------------------|
| Item               | Test Equipment                   | Manufacturer                         | Model No. | Inventory No. | Cal. Date<br>(mm-dd-yy) | Cal. Due date<br>(mm-dd-yy) |
| 1                  | EMI Test Receiver                | Rohde & Schwarz                      | ESCI      | CCIS0002      | 02-25-2018              | 02-24-2019                  |
| 2                  | Loop Antenna                     | Com-power                            | AL-130    | CCS078        | 02-25-2018              | 02-24-2019                  |
| 2                  | BiConiLog Antenna                | SCHWARZBECK<br>MESS-ELEKTRONIK       | VULB9163  | CCIS0005      | 02-25-2018              | 02-24-2019                  |
| 3                  | Double -ridged<br>waveguide horn | SCHWARZBECK<br>MESS-ELEKTRONIK       | BBHA9120D | CCIS0006      | 02-25-2018              | 02-24-2019                  |
| 4                  | Amplifier<br>(10kHz-1.3GHz)      | HP                                   | 8447D     | CCIS0003      | 02-25-2018              | 02-24-2019                  |
| 5                  | Amplifier<br>(1GHz-18GHz)        | Compliance<br>Direction Systems Inc. | PAP-1G18  | CCIS0011      | 02-25-2018              | 02-24-2019                  |
| 6                  | Spectrum analyzer                | Rohde & Schwarz                      | FSP30     | CCIS0023      | 02-25-2018              | 02-24-2019                  |

| Conducted Emission: |                   |                    |                       |               |                        |                        |
|---------------------|-------------------|--------------------|-----------------------|---------------|------------------------|------------------------|
| Item                | Test Equipment    | Manufacturer       | Model No.             | Inventory No. | Cal.Date<br>(mm-dd-yy) | Cal.Date<br>(mm-dd-yy) |
| 1                   | Shielding Room    | ZhongShuo Electron | 11.0(L)x4.0(W)x3.0(H) | CCIS0061      | 07-22-2017             | 07-21-2020             |
| 2                   | EMI Test Receiver | Rohde & Schwarz    | ESCI                  | CCIS0002      | 02-25-2018             | 02-24-2019             |
| 3                   | LISN              | CHASE              | MN2050D               | CCIS0074      | 02-25-2018             | 02-24-2019             |
| 4                   | EMI Test Software | AUDIX              | E3                    | N/A           | N/A                    | N/A                    |

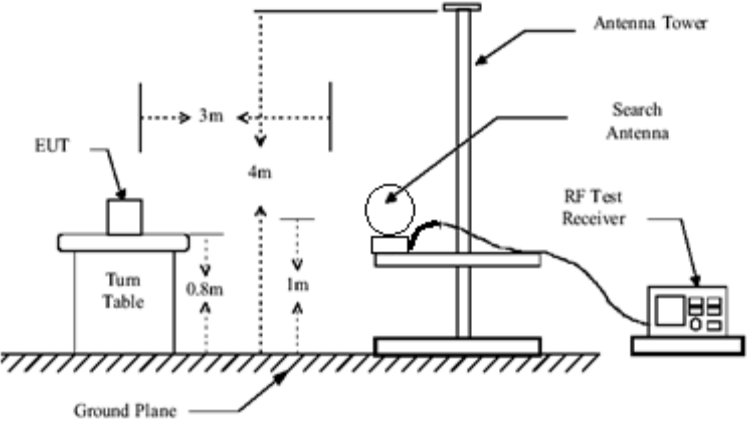
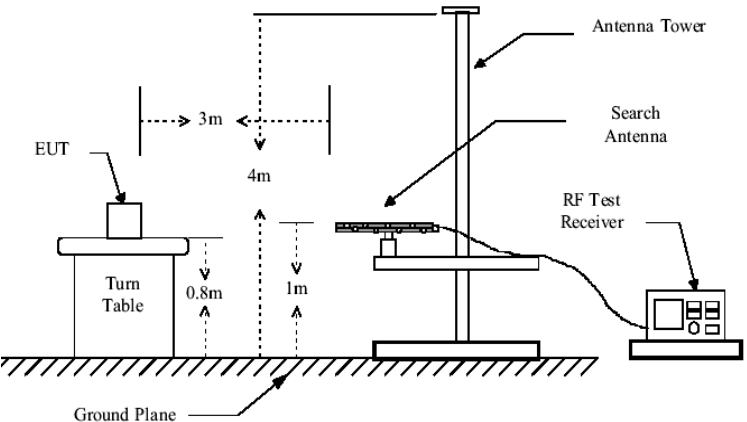
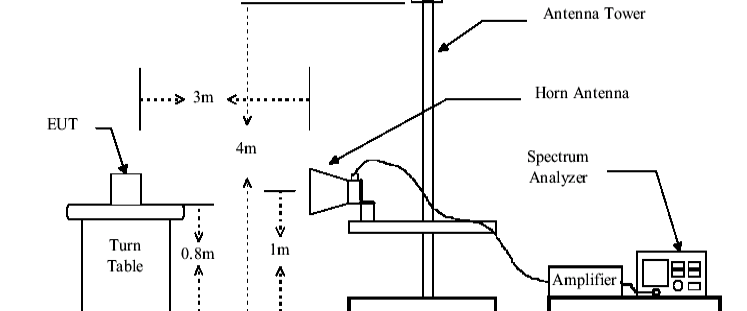
## 6 Test results and Measurement Data

### 6.1 Antenna requirement

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                             |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|
| <b>Standard requirement:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                      | FCC Part15 C Section 15.203 |
| <p>15.203 requirement:<br/>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, 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.</p> |                             |
| <b>E.U.T Antenna:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                             |
| The EUT make use of an integrated antenna, The typical gain of the antenna is 0dBi.                                                                                                                                                                                                                                                                                                                                                                                               |                             |
|                                                                                                                                                                                                                                                                                                                                                                                                |                             |

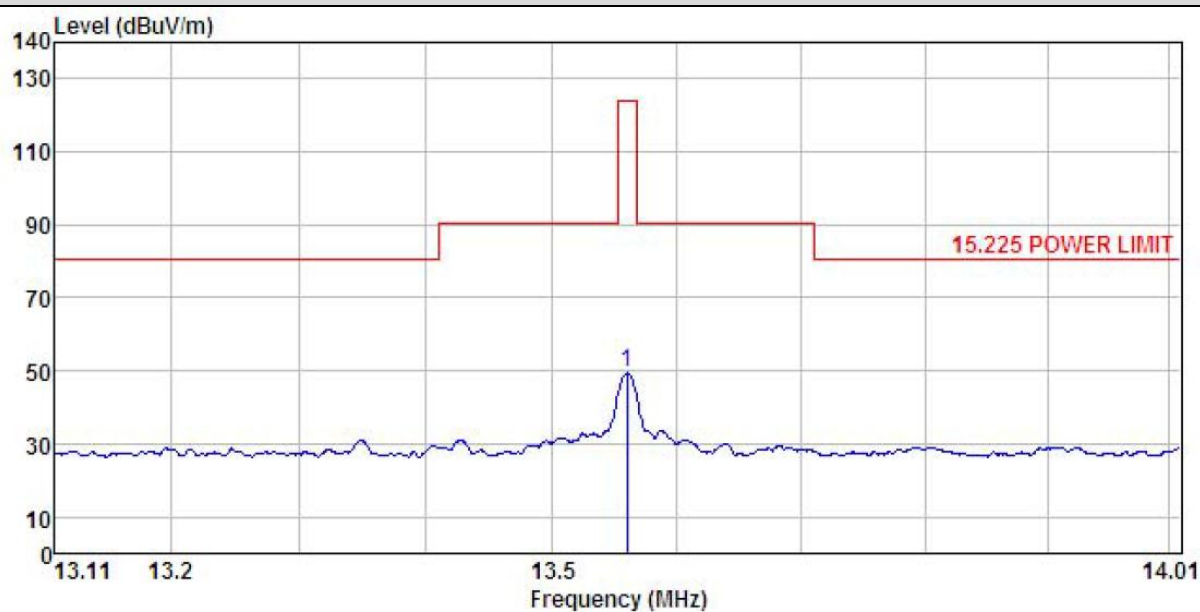
## 6.2 Radiated Emission

|                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |            |                   |        |                    |
|---------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-------------------|--------|--------------------|
| Test Requirement:                                       | FCC Part15 C Section 15.225(a) and 15.209                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |            |                   |        |                    |
| Test Method:                                            | ANSI C63.10: 2013                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            |                   |        |                    |
| Test Frequency Range:                                   | 9 kHz to 1000MHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            |                   |        |                    |
| Test site:                                              | Measurement Distance: 3m(Semi-Anechoic Chamber)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |            |                   |        |                    |
| Receiver setup:                                         | Frequency                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Detector   | RBW               | VBW    | Remark             |
|                                                         | 9kHz-150kHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Quasi-peak | 200Hz             | 600Hz  | Quasi-peak Value   |
|                                                         | 150kHz-30MHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Quasi-peak | 9kHz              | 30kHz  | Quasi-peak Value   |
|                                                         | 30MHz-1GHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Quasi-peak | 120kHz            | 300KHz | Quasi-peak Value   |
|                                                         | Above 1GHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Peak       | 1MHz              | 3MHz   | Peak Value         |
| Limit:<br>(Field strength of the<br>fundamental signal) | Frequency                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |            | Limit (uV/m @30m) |        | Limit (dBuV/m @3m) |
|                                                         | 13.553MHz-13.567MHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | 15848             |        | 124.0              |
|                                                         | 13.410MHz-13.553MHz &<br>13.567MHz-13.710MHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |            | 334               |        | 90.5               |
|                                                         | 13.110MHz-13.410MHz &<br>13.710MHz-14.010MHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |            | 106               |        | 80.5               |
|                                                         | Remark: Per FCC part 15.31, when performing measurements at a closer distance than specified, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            |                   |        |                    |
| Limit:<br>(Spurious Emissions)                          | Frequency (MHz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |            | Limit (uV/m @3m)  |        | Distance (m)       |
|                                                         | 0.009-0.490                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            | 2400/F(kHz)       |        | 300                |
|                                                         | 0.490-1.705                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            | 24000/F(kHz)      |        | 30                 |
|                                                         | 1.705-30                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |            | 30                |        | 30                 |
|                                                         | 30-88                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |            | 100               |        | 3                  |
|                                                         | 88-216                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |            | 150               |        | 3                  |
|                                                         | 216-960                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |            | 200               |        | 3                  |
|                                                         | Above 1GHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |            | 500               |        | 3                  |
| Test Procedure:                                         | <p>a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.</p> <p>b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.</p> <p>c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.</p> <p>d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotating table was turned from 0 degrees to 360 degrees to find the maximum reading.</p> <p>e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.</p> <p>f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.</p> |            |                   |        |                    |

|                            |                                                                                                                                                                                                                                                                                                                   |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Test setup:</p>         | <p>9kHz-30MHz</p>  <p>30MHz-1GHz</p>  <p>Above 1GHz</p>  |
| <p>Test Instruments:</p>   | <p>Refer to section 5.7 for details</p>                                                                                                                                                                                                                                                                           |
| <p>Test mode:</p>          | <p>Refer to section 5.3 for details</p>                                                                                                                                                                                                                                                                           |
| <p>Measurement Record:</p> | <p>Uncertainty:±4.88 dB</p>                                                                                                                                                                                                                                                                                       |
| <p>Test results:</p>       | <p>Pass</p>                                                                                                                                                                                                                                                                                                       |
| <p>Remark:</p>             | <p>The emission levels of 9 kHz~30 MHz are background noise and very lower than the limit, not show in test report.</p>                                                                                                                                                                                           |

## Measurement Data:

## Field Strength Of The Fundamental Signal



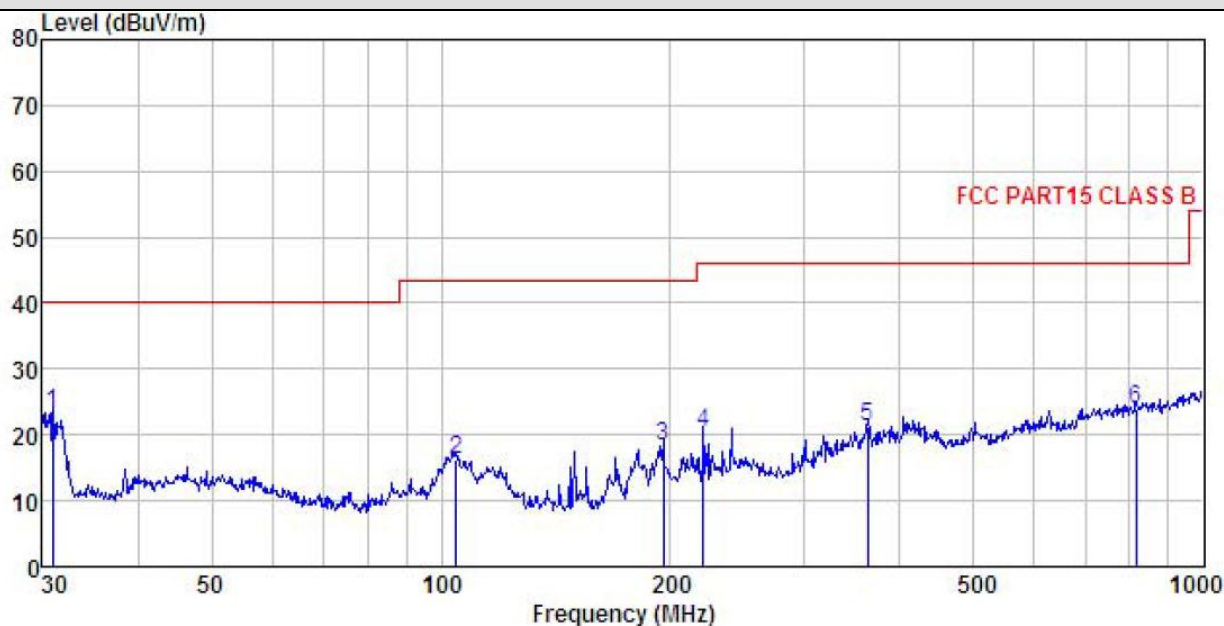
Site : 3m chamber  
Condition : 15.225 POWER LIMIT 3m LOOP-FMVB 1519B VERTICAL  
EUT : Wi-Fi device  
Model : T50R  
Test mode : NFC Mode  
Power Rating : AC120V/60Hz  
Environment : Temp:25.5°C Humi:55% 101KPa  
Test Engineer: YT  
REMARK :

|   | Freq   | Read  | Antenna | Cable | Preamp | Level  | Limit  | Over   |        |
|---|--------|-------|---------|-------|--------|--------|--------|--------|--------|
|   | MHz    | Level | Factor  | Loss  | Factor | Level  | Line   | Limit  | Remark |
|   | MHz    | dBuV  | dB/m    | dB    | dB     | dBuV/m | dBuV/m | dB     |        |
| 1 | 13.560 | 29.36 | 19.42   | 0.64  | 0.00   | 49.42  | 124.00 | -74.58 |        |

## Spurious Emissions

Test frequency range: 30MHz-1000MHz

Test Polarization: Horizontal



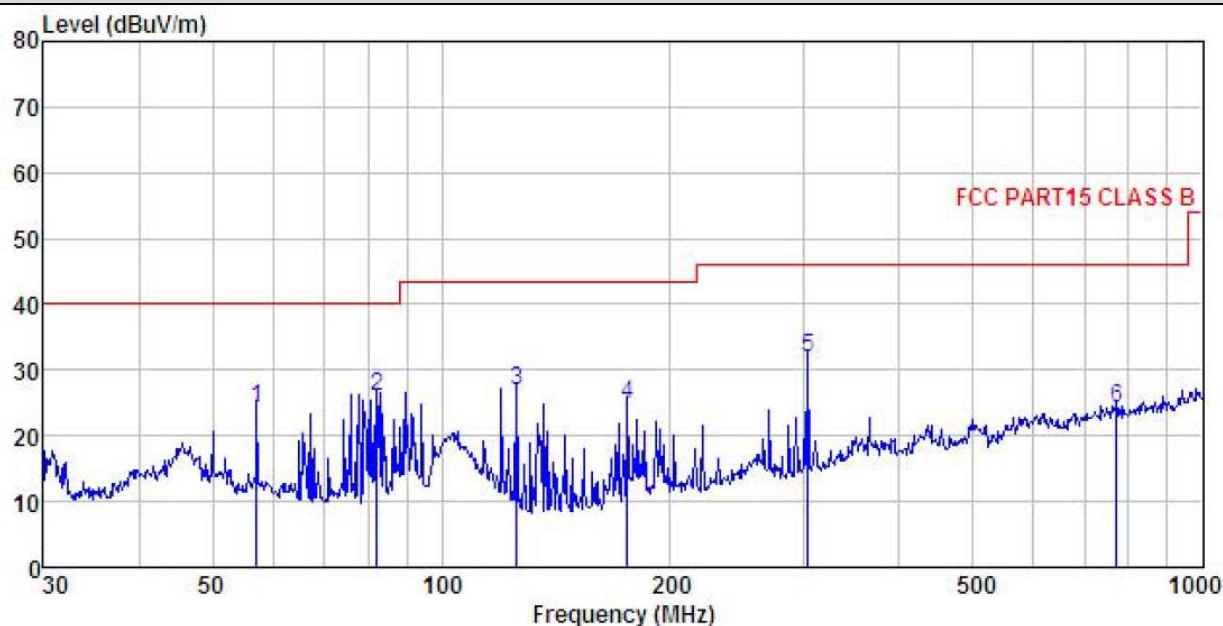
Site : 3m chamber  
 Condition : FCC PART15 CLASS B 3m VULB9163(30M2G) HORIZONTAL  
 EUT : Wi-Fi device  
 Model : T50R  
 Test mode : NFC Mode  
 Power Rating : AC120V/60Hz  
 Environment : Temp:25.5°C Humi:55% 101KPa  
 Test Engineer: YT  
 REMARK :

|   | Freq    | ReadAntenna | Cable  | Preamp | Level  | Limit  | Over   |           |
|---|---------|-------------|--------|--------|--------|--------|--------|-----------|
|   |         | Level       | Factor | Loss   | Factor | Line   | Limit  | Remark    |
|   | MHz     | dBuV        | dB/m   | dB     | dB     | dBuV/m | dBuV/m | dB        |
| 1 | 30.962  | 41.26       | 11.20  | 0.78   | 29.97  | 23.27  | 40.00  | -16.73 QP |
| 2 | 104.536 | 31.56       | 12.12  | 1.99   | 29.50  | 16.17  | 43.50  | -27.33 QP |
| 3 | 195.822 | 33.26       | 10.94  | 2.84   | 28.86  | 18.18  | 43.50  | -25.32 QP |
| 4 | 220.617 | 34.79       | 11.30  | 2.85   | 28.70  | 20.24  | 46.00  | -25.76 QP |
| 5 | 362.985 | 32.04       | 14.61  | 3.09   | 28.62  | 21.12  | 46.00  | -24.88 QP |
| 6 | 815.968 | 27.80       | 19.99  | 4.30   | 28.13  | 23.96  | 46.00  | -22.04 QP |

## Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.
2. The emission levels of other frequencies are very lower than the limit and not show in test report.

Test Polarization: Vertical



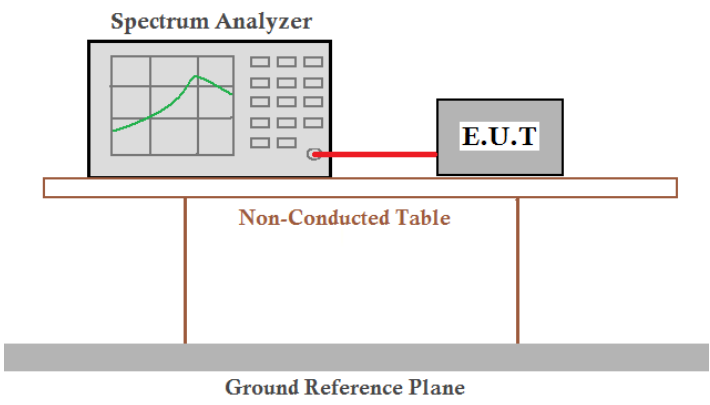
Site : 3m chamber  
 Condition : FCC PART15 CLASS B 3m VULB9163(30M2G) VERTICAL  
 EUT : Wi-Fi device  
 Model : T50R  
 Test mode : NFC Mode  
 Power Rating : AC120V/60Hz  
 Environment : Temp:25.5°C Humi:55% 101KPa  
 Test Engineer: YT  
 REMARK :

|   | Freq    | Read  | Antenna | Cable | Preamp | Level  | Limit  | Over   |        |
|---|---------|-------|---------|-------|--------|--------|--------|--------|--------|
|   | MHz     | Level | Factor  | Loss  | Factor | dBuV/m | dBuV/m | Limit  | Remark |
|   |         | dBuV  | dB/m    | dB    | dB     |        |        | dB     |        |
| 1 | 57.191  | 39.65 | 13.12   | 1.37  | 29.79  | 24.35  | 40.00  | -15.65 | QP     |
| 2 | 82.359  | 44.39 | 9.34    | 1.76  | 29.62  | 25.87  | 40.00  | -14.13 | QP     |
| 3 | 125.446 | 44.25 | 9.62    | 2.24  | 29.36  | 26.75  | 43.50  | -16.75 | QP     |
| 4 | 175.652 | 41.85 | 9.30    | 2.70  | 29.01  | 24.84  | 43.50  | -18.66 | QP     |
| 5 | 303.544 | 44.02 | 13.43   | 2.95  | 28.46  | 31.94  | 46.00  | -14.06 | QP     |
| 6 | 771.449 | 28.65 | 19.58   | 4.36  | 28.36  | 24.23  | 46.00  | -21.77 | QP     |

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.
2. The emission levels of other frequencies are very lower than the limit and not show in test report.

## 6.3 20dB Bandwidth

|                   |                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test Requirement: | FCC Part15 C Section 15.215 (c)                                                                                                                                                                                                                                                                                                                                                   |
| Test Method:      | ANSI C63.4:2014                                                                                                                                                                                                                                                                                                                                                                   |
| Receiver setup:   | RBW=200Hz, VBW=300Hz, detector: Peak                                                                                                                                                                                                                                                                                                                                              |
| Limit:            | The fundamental emission be kept within atleast the central 80% of the permitted band                                                                                                                                                                                                                                                                                             |
| Test Procedure:   | <ol style="list-style-type: none"> <li>1. According to the follow Test-setup, keep the relative position between the artificial antenna and the EUT.</li> <li>2. Set the EUT to proper test channel.</li> <li>3. Max hold the radiated emissions, mark the peak power frequency point and the -20dB upper and lower frequency points.</li> <li>4. Read 20dB bandwidth.</li> </ol> |
| Test setup:       |  <p>The diagram illustrates the test setup. A Spectrum Analyzer is connected via a red cable to an E.U.T. (Equipment Under Test). Both are placed on a Non-Conducted Table. Below the table is a Ground Reference Plane.</p>                                                                   |
| Test Instruments: | Refer to section 5.7 for details                                                                                                                                                                                                                                                                                                                                                  |
| Test mode:        | Refer to section 5.3 for details                                                                                                                                                                                                                                                                                                                                                  |
| Test results:     | Passed                                                                                                                                                                                                                                                                                                                                                                            |

### Measurement Data

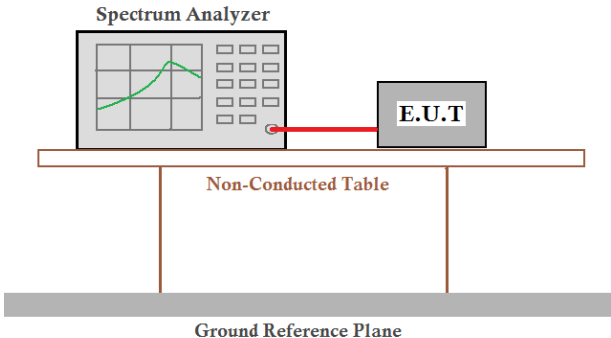
| 20dB bandwidth (kHz) | Limit (kHz) | Results |
|----------------------|-------------|---------|
| 0.532                | 11.2        | Passed  |

Note: For 13.56MHz, permitted Band is 14 kHz, so the Limit is 11.2 kHz.

Test plot as follows:



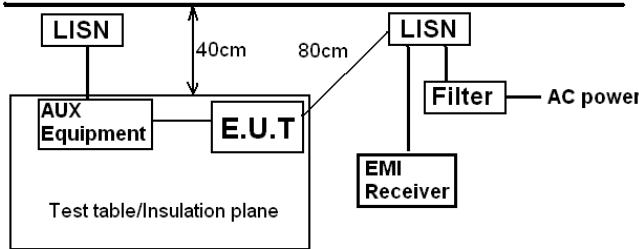
## 6.4 Frequency Tolerance

|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test Requirement: | FCC Part15 C Section 15.225 (e)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Test Method:      | ANSI C63.10: 2013                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Receiver setup:   | RBW=200Hz, VBW=300Hz, span=14kHz, detector: Peak                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Limit:            | ±0.01% of the operating frequency                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Test mode:        | Transmitting mode                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Test Procedure:   | <p><b>Frequency stability V.S. Temperature measurement</b></p> <ol style="list-style-type: none"> <li>1. The equipment under test was powered by a fresh battery.</li> <li>2. RF output was connected to spectrum analyzer via feed through attenuators.</li> <li>3. The EUT was placed inside the temperature chamber.</li> <li>4. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 20°C operating frequency as reference frequency.</li> <li>5. Turn EUT off and set the chamber temperature to –20°C. After the temperature stabilized for approximately 30 minutes recorded the frequency.</li> <li>6. Repeat step measure with 10°C increased per stage until the highest temperature of +50°C reached</li> </ol> <p><b>Frequency stability V.S. Voltage measurement</b></p> <ol style="list-style-type: none"> <li>1. Set chamber temperature to 20°C. Use a variable DC power source to power the EUT and set the voltage to rated voltage.</li> <li>2. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency.</li> </ol> <p>Reduce the input voltage to specify extreme voltage variation (+/- 15%) and endpoint, record the maximum frequency change.</p> |
| Test setup:       |  <p>The diagram illustrates the test setup. A Spectrum Analyzer is connected to an E.U.T. (Equipment Under Test) via a red cable. Both the Spectrum Analyzer and the E.U.T. are placed on a Non-Conducted Table. The table is supported by a Ground Reference Plane.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Test Instruments: | Refer to section 5.7 for details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Test mode:        | Refer to section 5.3 for details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Test results:     | Passed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

**Measurement Data**

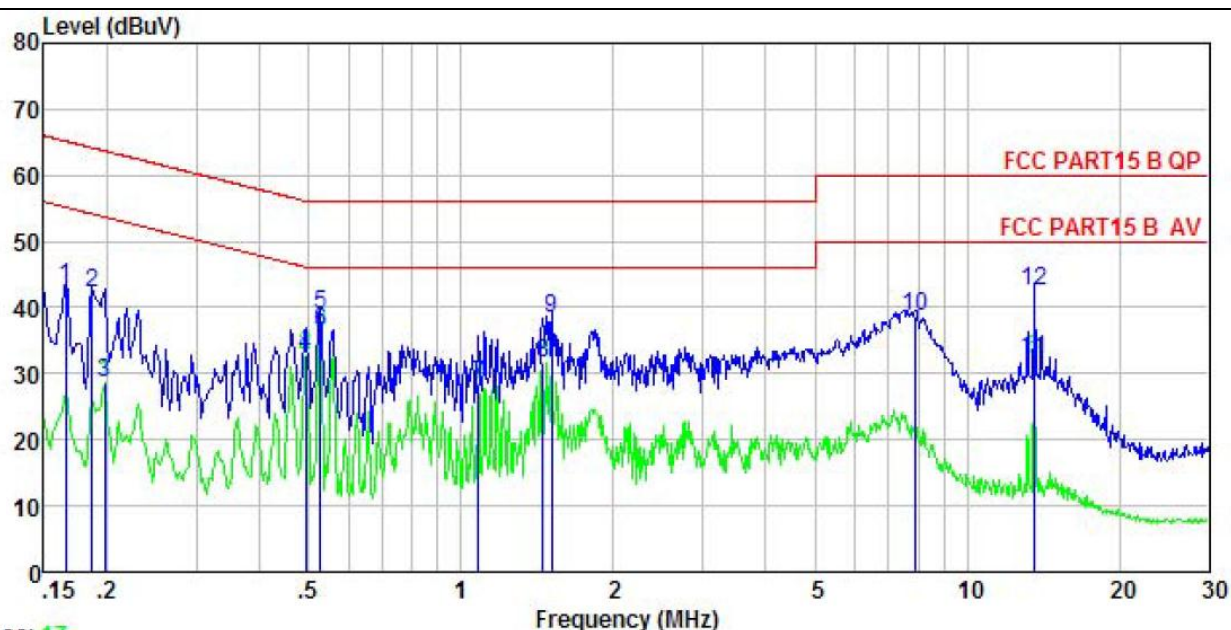
| Temperature<br>(°C) | Voltage<br>(Vdc) | Frequency Tolerance<br>(MHz) | Frequency Error<br>(%) | Limit<br>(%) |
|---------------------|------------------|------------------------------|------------------------|--------------|
| -20                 | 3.80             | 13.56011                     | 0.001                  | ±0.01        |
| +50                 | 3.80             | 13.56010                     | 0.001                  | ±0.01        |
| +20                 | 3.50             | 13.56007                     | 0.001                  | ±0.01        |
| +20                 | 4.20             | 13.56009                     | 0.001                  | ±0.01        |

## 6.5 Conducted Emission

|                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |              |         |           |         |        |
|--------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|---------|-----------|---------|--------|
| Test Requirement:                                | FCC Part15 B Section 15.207                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |              |         |           |         |        |
| Test Method:                                     | ANSI C63.4:2014                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |              |         |           |         |        |
| TestFrequencyRange:                              | 150kHz to 30MHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |              |         |           |         |        |
| Class / Severity:                                | Class B                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |              |         |           |         |        |
| Receiver setup:                                  | RBW=9kHz, VBW=30kHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |              |         |           |         |        |
| Limit:                                           | Frequency range (MHz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Limit (dBμV) |         |           |         |        |
|                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Quasi-peak   |         | Average   |         |        |
|                                                  | 0.15-0.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 66 to 56*    |         | 56 to 46* |         |        |
|                                                  | 0.5-5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 56           |         | 46        |         |        |
|                                                  | 0.5-30                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 60           |         | 50        |         |        |
| * Decreases with the logarithm of the frequency. |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |              |         |           |         |        |
| Test setup:                                      | <div><p style="text-align: center;"><b>Reference Plane</b></p><p>Remark:<br/>E.U.T: Equipment Under Test<br/>LISN: Line Impedance Stabilization Network<br/>Test table height=0.8m</p></div>                                                                                                                                                                                                                                                                                                                                                                                                                                                   |              |         |           |         |        |
| Test procedure                                   | <div><div>1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.).It provide a 50ohm/50uH coupling impedance for the measuring equipment.</div><div>2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs).</div><div>3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4: 2003 on conducted measurement.</div></div> |              |         |           |         |        |
| Test environment:                                | Temp.:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 23°C         | Humid.: | 56%       | Press.: | 101kPa |
| Measurement Record:                              | Uncertainty: 3.28dB                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |              |         |           |         |        |
| Test Instruments:                                | Refer to section 5.7 for details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |              |         |           |         |        |
| Test mode:                                       | Refer to section 5.3 for details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |              |         |           |         |        |
| Test results:                                    | Pass                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |              |         |           |         |        |

Measurement Data:

Line:

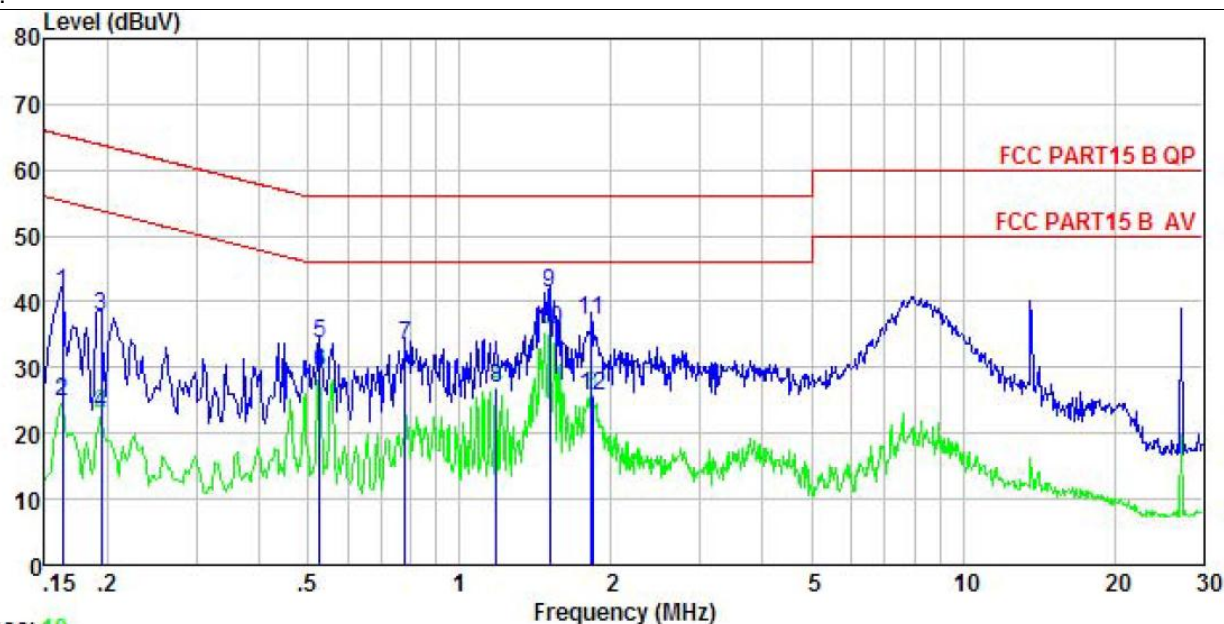


Trace: 17

Site : CCIS Shielding Room  
 Condition : FCC PART15 B QP LISN(RS) LINE  
 EUT : Wifi Device  
 Model : T50R  
 Test Mode : NFC mode  
 Power Rating : AC 120V/60Hz  
 Environment : Temp: 23 °C Humi:56% Atmos:101KPa  
 Test Engineer: YT  
 Remark :

|    | Freq   | Read  | LISN   | Cable | Level | Limit | Over   |         |
|----|--------|-------|--------|-------|-------|-------|--------|---------|
|    | MHz    | Level | Factor | Loss  | dBuV  | Line  | Limit  | Remark  |
|    | MHz    | dBuV  | dB     | dB    | dBuV  | dBuV  | dB     |         |
| 1  | 0.166  | 31.60 | 0.71   | 10.77 | 43.08 | 65.16 | -22.08 | QP      |
| 2  | 0.186  | 30.63 | 0.73   | 10.76 | 42.12 | 64.20 | -22.08 | QP      |
| 3  | 0.198  | 17.14 | 0.73   | 10.76 | 28.63 | 53.71 | -25.08 | Average |
| 4  | 0.494  | 21.37 | 0.76   | 10.76 | 32.89 | 46.10 | -13.21 | Average |
| 5  | 0.527  | 27.46 | 0.76   | 10.76 | 38.98 | 56.00 | -17.02 | QP      |
| 6  | 0.527  | 24.93 | 0.76   | 10.76 | 36.45 | 46.00 | -9.55  | Average |
| 7  | 1.082  | 16.58 | 0.78   | 10.88 | 28.24 | 46.00 | -17.76 | Average |
| 8  | 1.449  | 20.00 | 0.78   | 10.92 | 31.70 | 46.00 | -14.30 | Average |
| 9  | 1.511  | 26.75 | 0.78   | 10.92 | 38.45 | 56.00 | -17.55 | QP      |
| 10 | 7.893  | 27.13 | 0.73   | 10.84 | 38.70 | 60.00 | -21.30 | QP      |
| 11 | 13.551 | 20.69 | 0.71   | 10.91 | 32.31 | 50.00 | -17.69 | Average |
| 12 | 13.623 | 30.96 | 0.71   | 10.91 | 42.58 | 60.00 | -17.42 | QP      |

Neutral:



Trace: 19

Site : CCIS Shielding Room  
 Condition : FCC PART15 B QP LISN(RS) NEUTRAL  
 EUT : Wifi Device  
 Model : T50R  
 Test Mode : NFC mode  
 Power Rating : AC 120V/60Hz  
 Environment : Temp: 23 °C Humi:56% Atmos:101KPa  
 Test Engineer: YT  
 Remark :

|    | Freq  | Read Level | LISN Factor | Cable Loss | Level | Limit Line | Over Limit | Remark  |
|----|-------|------------|-------------|------------|-------|------------|------------|---------|
|    | MHz   | dBuV       | dB          | dB         | dBuV  | dBuV       | dB         |         |
| 1  | 0.162 | 29.93      | 0.70        | 10.77      | 41.40 | 65.34      | -23.94     | QP      |
| 2  | 0.162 | 13.38      | 0.70        | 10.77      | 24.85 | 55.34      | -30.49     | Average |
| 3  | 0.194 | 26.37      | 0.66        | 10.76      | 37.79 | 63.84      | -26.05     | QP      |
| 4  | 0.194 | 11.53      | 0.66        | 10.76      | 22.95 | 53.84      | -30.89     | Average |
| 5  | 0.527 | 22.27      | 0.61        | 10.76      | 33.64 | 56.00      | -22.36     | QP      |
| 6  | 0.527 | 17.79      | 0.61        | 10.76      | 29.16 | 46.00      | -16.84     | Average |
| 7  | 0.779 | 22.03      | 0.65        | 10.80      | 33.48 | 56.00      | -22.52     | QP      |
| 8  | 1.184 | 15.44      | 0.67        | 10.89      | 27.00 | 46.00      | -19.00     | Average |
| 9  | 1.511 | 29.82      | 0.67        | 10.92      | 41.41 | 56.00      | -14.59     | QP      |
| 10 | 1.511 | 24.20      | 0.67        | 10.92      | 35.79 | 46.00      | -10.21     | Average |
| 11 | 1.829 | 25.72      | 0.67        | 10.95      | 37.34 | 56.00      | -18.66     | QP      |
| 12 | 1.839 | 14.02      | 0.67        | 10.95      | 25.64 | 46.00      | -20.36     | Average |