



FCC ID: P4Q-N653  
Report No.: T200407W01-RP7

IC: 2420C-N653

Page: 1 / 25  
Rev.: 01

**FCC 47 CFR PART 27 SUBPART L  
+  
INDUSTRY CANADA RSS-139**

**TEST REPORT**

**For**

**PRO 8475**

**Trade Name:  
MiTAC, Webfleet Solutions**

**Model: N653**

*Issued to*

|             |                                                                                                                |
|-------------|----------------------------------------------------------------------------------------------------------------|
| <b>FCC:</b> | <b>Mitac Digital Technology Corporation<br/>No.200, Wen Hwa 2nd Rd.,Kuei Shan Dist. Taoyuan, 33383 Taiwan</b>  |
| <b>IC:</b>  | <b>MiTAC Digital Technology Corporation<br/>No.200, Wenhua 2nd Rd.,, Guishan Dist. Taoyuan City 333 Taiwan</b> |

*Issued by*

**Compliance Certification Services Inc.  
Wugu Laboratory  
No.11, Wugong 6th Rd., Wugu Dist.,  
New Taipei City, Taiwan. (R.O.C.)  
Issued Date: June 9, 2020**

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

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Report No.: T200407W01-RP7

Page: 2 / 25

Rev.: 01

### Revision History

| Rev. | Issue Date   | Revisions                       | Effect Page | Revised By   |
|------|--------------|---------------------------------|-------------|--------------|
| 00   | May 21, 2020 | Initial Issue                   | ALL         | Allison Chen |
| 01   | June 9, 2020 | See the following note Rev.(01) | ALL         | Allison Chen |

**Rev.(01)**

1. Added test data for power table and radiated emission.
2. Revised product name: PRO 8475, and model name: N653.



Report No.: T200407W01-RP7

Page: 3 / 25

Rev.: 01

## TABLE OF CONTENTS

|                                        |                                                                    |            |
|----------------------------------------|--------------------------------------------------------------------|------------|
| <b>1</b>                               | <b>TEST RESULT CERTIFICATION.....</b>                              | <b>4</b>   |
| <b>2</b>                               | <b>EUT DESCRIPTION .....</b>                                       | <b>5</b>   |
| <b>3</b>                               | <b>TEST METHODOLOGY .....</b>                                      | <b>6</b>   |
| 3.1                                    | EUT CONFIGURATION .....                                            | 6          |
| 3.2                                    | DESCRIPTION OF TEST MODES.....                                     | 7          |
| <b>4</b>                               | <b>TEST SUMMERY .....</b>                                          | <b>8</b>   |
| <b>5</b>                               | <b>INSTRUMENT CALIBRATION.....</b>                                 | <b>9</b>   |
| 5.1                                    | MEASURING INSTRUMENT CALIBRATION.....                              | 9          |
| 5.2                                    | MEASUREMENT EQUIPMENT USED.....                                    | 9          |
| 5.3                                    | MEASUREMENT UNCERTAINTY .....                                      | 11         |
| <b>6</b>                               | <b>FACILITIES AND ACCREDITATIONS.....</b>                          | <b>12</b>  |
| 6.1                                    | FACILITIES.....                                                    | 12         |
| 6.2                                    | EQUIPMENT.....                                                     | 12         |
| 6.3                                    | LABORATORY ACCREDITATIONS AND LISTING .....                        | 12         |
| <b>7</b>                               | <b>SETUP OF EQUIPMENT UNDER TEST .....</b>                         | <b>13</b>  |
| 7.1                                    | SETUP CONFIGURATION OF EUT .....                                   | 13         |
| 7.2                                    | SUPPORT EQUIPMENT.....                                             | 13         |
| <b>8</b>                               | <b>FCC PART 27 REQUIREMENTS &amp; INDUSTRY CANADA RSS-139.....</b> | <b>14</b>  |
| 8.1                                    | EIRP MEASUREMENT .....                                             | 14         |
| 8.2                                    | SPURIOUS RADIATION MEASUREMENT .....                               | 16         |
| 8.3                                    | TEST DATA RE-USE SUMMARY .....                                     | 24         |
| <b>9</b>                               | <b>APPENDIX A PHOTOGRAPHS OF TEST SETUP .....</b>                  | <b>A-1</b> |
| <b>APPENDIX 1 - PHOTOGRAPHS OF EUT</b> |                                                                    |            |

## 1 TEST RESULT CERTIFICATION

**FCC Applicant:** Mitac Digital Technology Corporation  
No.200, Wen Hwa 2nd Rd.,Kuei Shan Dist. Taoyuan, 33383  
Taiwan

**IC Applicant:** MITAC Digital Technology Corporation  
No.200, Wenhua 2nd Rd., Guishan Dist. Taoyuan City 333  
Taiwan

**Manufacturer:** MITAC COMPUTER (KUNSHAN) CO., LTD.  
No. 269, 2nd Avenue, District A, Comprehensive Free Trade  
Zone, Kunshan, Jiangsu, P.R. China

**Equipment Under Test:** PRO 8475

**Trade Name:** MiTAC, Webfleet Solutions

**Model:** N653

**Date of Test:** June 1 ~ 6, 2020

| APPLICABLE STANDARDS                                                                                                                                   |                         |
|--------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| STANDARD                                                                                                                                               | TEST RESULT             |
| FCC 47 CFR PART 27 SUBPART L<br>+<br>RSS-139 Issue 3 2015                                                                                              | No non-compliance noted |
| Statements of Conformity                                                                                                                               |                         |
| Determination of compliance is based on the results of the compliance measurement,<br>not taking into account measurement instrumentation uncertainty. |                         |

### We hereby certify that:

The above equipment was tested by Compliance Certification Services Inc. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in TIA-603-E and the energy emitted by the sample EUT tested as described in this report is in compliance with radiated emission limits of FCC Rule FCC PART 27 Subpart L and IC RSS-139 Issue 3. The test results of this report relate only to the tested sample identified in this report.

Approved by:



---

Kevin Tsai  
Deputy Manager  
Compliance Certification Services Inc.

## 2 EUT DESCRIPTION

|                                    |                                                                                                                                                                           |
|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Product</b>                     | PRO 8475                                                                                                                                                                  |
| <b>Model</b>                       | N653                                                                                                                                                                      |
| <b>Model Discrepancy</b>           | Difference of the those trade names (list on this report) are just for marketing purpose only.                                                                            |
| <b>Trade</b>                       | MiTAC, Webfleet Solutions                                                                                                                                                 |
| <b>Received Date</b>               | April 7, 2020                                                                                                                                                             |
| <b>Power Supply</b>                | 1. Powered from Rechargeable Li-ion Polymer Battery.<br>Rating: 3.7VDC, 4000mAh, 14.8Wh<br>2. Powered from Cradle<br>Fleet cable 12/24V (Pogo power pin)<br>USB Type-C 5V |
| <b>Frequency Range</b>             | WCDMA / HSDPA / HSUPA Band IV: 1712.4-1752.6 MHz                                                                                                                          |
| <b>Transmit Power (EIRP Power)</b> | WCDMA Band IV: 23.17 dBm                                                                                                                                                  |
| <b>Antenna Specification</b>       | Antenna type: Integral<br>Band IV: 3.19 dBi                                                                                                                               |

**Remark:** 1. The sample selected for test was engineering sample that approximated to production product and was provided by manufacturer.  
2. For test mode WCDMA, HSUPA and HSDPA were pretest. The worst case was WCDMA in this test report



Report No.: T200407W01-RP7

Page: 6 / 25

Rev.: 01

### **3 TEST METHODOLOGY**

Both conducted and radiated testing were performed according to the procedures document on TIA-603-E and FCC CFR 47, Part 27 Subpart L.

Both conducted and radiated testing were performed according to the procedures document on ANSI C63.26: 2015 and RSS-139.

#### **3.1 EUT CONFIGURATION**

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner that intends to maximize its emission characteristics in a continuous normal application.

### 3.2 DESCRIPTION OF TEST MODES

The EUT (model: N653) had been tested under operating condition.

The EUT be set in maximum power transmission via call box during testing.

#### 3.2.1 The worst mode of measurement

| Radiated Emission Measurement Above 1G |                                                                                                                                                                                                                                                                                               |
|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test Condition                         | Radiated Emission Above 1G                                                                                                                                                                                                                                                                    |
| Power supply Mode                      | Mode 1: EUT power by Battery<br>Mode 2: EUT+Cradle                                                                                                                                                                                                                                            |
| Worst Mode                             | <input checked="" type="checkbox"/> Mode 1 <input type="checkbox"/> Mode 2 <input type="checkbox"/> Mode 3 <input type="checkbox"/> Mode 4                                                                                                                                                    |
| Worst Position                         | <input type="checkbox"/> Placed in fixed position.<br><input type="checkbox"/> Placed in fixed position at X-Plane (E2-Plane)<br><input type="checkbox"/> Placed in fixed position at Y-Plane (E1-Plane)<br><input checked="" type="checkbox"/> Placed in fixed position at Z-Plane (H-Plane) |

| Radiated Emission Measurement Below 1G |                                                                                                                                            |
|----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| Test Condition                         | Radiated Emission Below 1G                                                                                                                 |
| Power supply Mode                      | Mode 1: EUT power by Battery<br>Mode 2: EUT+Cradle                                                                                         |
| Worst Mode                             | <input checked="" type="checkbox"/> Mode 1 <input type="checkbox"/> Mode 2 <input type="checkbox"/> Mode 3 <input type="checkbox"/> Mode 4 |

**Remark:**

1. The worst mode was record in this test report.
2. EUT pre-scanned in three axis ,X,Y, Z and two polarity, for radiated measurement. The worst case(Z-Plane) were recorded in this report



Report No.: T200407W01-RP7

Page: 8 / 25

Rev.: 01

## 4 TEST SUMMERY

| FCC Standard Section | IC Standard Secction                         | Report Section | Test Item                      | Result |
|----------------------|----------------------------------------------|----------------|--------------------------------|--------|
| -                    | -                                            | 2              | Antenna Requirement            | Pass   |
| 27.50(d)             | RSS-132, section 5.4<br>RSS-133, section 6.4 | 8.1            | EIRP Measurement               | Pass   |
| 27.53(h)             | RSS-132 section 5.5<br>RSS-133 section 6.5   | 8.2            | Spurious Radiation Measurement | Pass   |



Report No.: T200407W01-RP7

Page: 9 / 25

Rev.: 01

## 5 INSTRUMENT CALIBRATION

### 5.1 MEASURING INSTRUMENT CALIBRATION

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipment, which is traceable to recognized national standards.

### 5.2 MEASUREMENT EQUIPMENT USED

#### Equipment Used for Emissions Measurement

*Remark: Each piece of equipment is scheduled for calibration*

| RF Conducted Test Site              |              |         |        |            |            |
|-------------------------------------|--------------|---------|--------|------------|------------|
| Equipment                           | Manufacturer | Model   | S/N    | Cal Date   | Cal Due    |
| Coaxial Cable                       | Woken        | WC12    | CC003  | 06/28/2019 | 06/27/2020 |
| Wideband Radio Communication Tester | R&S          | CMW 500 | 116875 | 07/29/2019 | 07/28/2020 |
| Software                            | N/A          |         |        |            |            |

| 3M 966 Chamber Test Site               |                           |                        |                     |            |            |
|----------------------------------------|---------------------------|------------------------|---------------------|------------|------------|
| Equipment                              | Manufacturer              | Model                  | S/N                 | Cal Date   | Cal Due    |
| Band Reject Filters                    | MICRO TRONICS             | BRM 50702              | 120                 | 02/25/2020 | 02/24/2021 |
| Bilog Antenna                          | Sunol Sciences            | JB3                    | A030105             | 07/26/2019 | 07/25/2020 |
| Coaxial Cable                          | HUBER SUHNER              | SUCOFLEX 104PEA        | 20995               | 02/25/2020 | 02/24/2021 |
| Coaxial Cable                          | EMCI                      | EMC105                 | 190914+25111        | 09/20/2019 | 09/19/2020 |
| Digital Thermo-Hygro Meter             | WISEWIND                  | 1206                   | D07                 | 01/15/2020 | 01/14/2021 |
| double Ridged Guide Horn Antenna       | ETC                       | MCTD 1209              | DRH13M02003         | 10/04/2019 | 10/03/2020 |
| High Pass Filter                       | SOLVANG TECHNOLOGY INC.   | STI15                  | 9923                | 02/25/2020 | 02/24/2021 |
| High Pass Filters                      | MICRO TRONICS             | HPM13195               | 003                 | 02/25/2020 | 02/24/2021 |
| Horn Antenna                           | ETS LINDGREN              | 3116                   | 00026370            | 12/18/2019 | 12/17/2020 |
| Horn Antenna / Harmonic Mixer          | A-INFOMW / ROHDE&SCHWA RZ | LB-19-20-A / FS-Z60    | J202020872 / 100142 | 12/09/2019 | 12/08/2021 |
| Horn Antenna / Harmonic Mixer          | ROHDE&SCHWA RZ            | FH-PP-110 / FS-Z110    | 10003 / 100096      | 12/09/2019 | 12/08/2021 |
| Horn Antenna / Harmonic Mixer          | ROHDE&SCHWA RZ            | FH-PP-75 / FS-Z75      | 10001 / 100162      | 12/09/2019 | 12/08/2021 |
| Horn Antenna / Spectrum Analyzer Mixer | Radiometer Physics GmbH   | FH-PP-170 / SAM-170    | 10003 / 20011       | 12/09/2019 | 12/08/2021 |
| Horn Antenna / Spectrum Analyzer Mixer | Radiometer Physics GmbH   | FH-PP-220 / SAM-220    | 10003 / 20013       | 12/09/2019 | 12/08/2021 |
| Horn Antenna / Spectrum Analyzer Mixer | Radiometer Physics GmbH   | FH-PP-325 / SAM-325    | 10007 / 20048       | 12/09/2019 | 12/08/2021 |
| Loop Ant                               | COM-POWER                 | AL-130                 | 121051              | 03/27/2020 | 03/26/2021 |
| Pre-Amplifier                          | EMEC                      | EM330                  | 060609              | 02/25/2020 | 02/24/2021 |
| Pre-Amplifier                          | HP                        | 8449B                  | 3008A00965          | 02/25/2020 | 02/24/2021 |
| Pre-Amplifier                          | MITEQ                     | AMF-6F-180040 00-37-8P | 985646              | 06/18/2019 | 06/17/2020 |
| Signal Analyzer                        | Agilent                   | N9010A                 | MY52220817          | 03/19/2020 | 03/18/2021 |
| Antenna Tower                          | CCS                       | CC-A-1F                | N/A                 | N.C.R      | N.C.R      |
| Controller                             | CCS                       | CC-C-1F                | N/A                 | N.C.R      | N.C.R      |
| Turn Table                             | CCS                       | CC-T-1F                | N/A                 | N.C.R      | N.C.R      |
| Software                               | e3 6.11-20180413          |                        |                     |            |            |

### 5.3 MEASUREMENT UNCERTAINTY

| PARAMETER                             | UNCERTAINTY |
|---------------------------------------|-------------|
| AC Powerline Conducted Emission       | +/- 1.2575  |
| Emission bandwidth, 20dB bandwidth    | +/- 0.0014  |
| RF output power, conducted            | +/- 1.14    |
| Power density, conducted              | +/- 1.40    |
| 3M Semi Anechoic Chamber / 30M~200M   | +/- 4.12    |
| 3M Semi Anechoic Chamber / 200M~1000M | +/- 4.68    |
| 3M Semi Anechoic Chamber / 1G~8G      | +/- 5.18    |
| 3M Semi Anechoic Chamber / 8G~18G     | +/- 5.47    |
| 3M Semi Anechoic Chamber / 18G~26G    | +/- 3.81    |
| 3M Semi Anechoic Chamber / 26G~40G    | +/- 3.87    |

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



Report No.: T200407W01-RP7

Page: 12 / 25

Rev.: 01

## 6 FACILITIES AND ACCREDITATIONS

### 6.1 FACILITIES

All measurement facilities used to collect the measurement data are located at

☐ No.199, Chunghsen Road, Hsintien City, Taipei Hsien, Taiwan, R.O.C.

Tel: 886-2-2217-0894 / Fax: 886-2-2217-1029

☒ No.11, Wugong 6th Rd., Wugu Dist., New Taipei City, Taiwan. (R.O.C.)

Tel: 886-2-2299-9720 / Fax: 886-2-2298-4045

The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.10: 2013 and CISPR Publication 22.

### 6.2 EQUIPMENT

Radiated emissions are measured with one or more of the following types of linearly polarized antennas: tuned dipole, biconical, log periodic, bi-log, and/or ridged waveguide, horn. Spectrum analyzers with pre-selectors and quasi-peak detectors are used to perform radiated measurements.

Conducted emissions are measured with Line Impedance Stabilization Networks and EMI Test Receivers.

Calibrated wideband preamplifiers, coaxial cables, and coaxial attenuators are also used for making measurements.

All receiving equipment conforms to CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."

### 6.3 LABORATORY ACCREDITATIONS AND LISTING

The test facilities used to perform radiated and conducted emissions tests are accredited by American Association for Laboratory Accreditation Program for the specific scope accreditation under Lab Code: 0824-01 to perform Electromagnetic Interference tests according to FCC Part 15 and CISPR 22 requirements. In addition, the test facilities are listed with Industry Canada, Certification and Engineering Bureau, IC 2324G-1 for 3M Semi Anechoic Chamber A, 2324G-2 for 3M Semi Anechoic Chamber B.



Report No.: T200407W01-RP7

Page: 13 / 25

Rev.: 01

## 7 SETUP OF EQUIPMENT UNDER TEST

### 7.1 SETUP CONFIGURATION OF EUT

See test photographs attached in Appendix II for the actual connections between EUT and support equipment.

### 7.2 SUPPORT EQUIPMENT

| Support Equipment |                    |         |                  |            |          |       |
|-------------------|--------------------|---------|------------------|------------|----------|-------|
| No.               | Equipment          | Brand   | Model            | Series No. | FCC ID   | IC ID |
| 1                 | NB(L)              | Toshiba | PORTEGE<br>R30-A | N/A        | PD97260H | N/A   |
| 2                 | DC Power<br>Source | Agilent | E3640A           | N/A        | N/A      | N/A   |

**Remark:**

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.



Report No.: T200407W01-RP7

Page: 14 / 25

Rev.: 01

## **8 FCC PART 27 REQUIREMENTS & INDUSTRY CANADA RSS-139**

### **8.1 EIRP MEASUREMENT**

#### **LIMIT**

FCC Part 27.50(d)(4)

Fixed, mobile, and portable (handheld) stations operating in the 1710-1755 MHz band and mobile and portable stations operating in the 1695-1710MHz and 1755-1780 MHz bands are limited to 1 watt EIRP.

RSS-139 section 6.5

The equivalent isotropically radiated power (e.i.r.p.) for mobile and portable transmitters shall not exceed one watt. The e.i.r.p. for fixed and base stations in the band 1710-1780 MHz shall not exceed 1 watt.

#### **TEST PROCEDURES**

##### **CONDUCTED POWER MEASUREMENT:**

1. The transmitter output power was connected to the call box.
2. Set EUT at maximum output power via call box.
3. Set Call box at lowest, middle and highest channels for each band and modulation.

#### **TEST RESULTS**

*No non-compliance noted.*

**Remark:** *The value of factor includes both the loss of cable and external attenuator*

**Band VI**  
**WCDMA:**

| Band             | Data Rate<br>or<br>Sub-test | UL/DL<br>Channel No. | Frequency<br>(MHz) | Average<br>power<br>(dBm) | EIRP<br>(dBm) | Output Power<br>(W) |
|------------------|-----------------------------|----------------------|--------------------|---------------------------|---------------|---------------------|
| WCDMA<br>Band VI | RMC<br>12.2Kbps             | 1312/1537            | 1712.4             | 21.3                      | 24.5          | 0.2818              |
|                  |                             | 1413/1638            | 1732.6             | 21.7                      | <b>24.9</b>   | 0.3090              |
|                  |                             | 1513/1738            | 1752.6             | 21.5                      | 24.7          | 0.2951              |

**HSUPA:**

| Band     | Data Rate<br>or<br>Sub-test | UL/DL<br>Channel No. | Frequency<br>(MHz) | Average<br>power(dBm) | EIRP<br>(dBm) | Output Power<br>(W) |
|----------|-----------------------------|----------------------|--------------------|-----------------------|---------------|---------------------|
| HSUPA VI | 1                           | 1312/1537            | 1712.4             | 21.0                  | 24.2          | 0.2630              |
|          |                             | 1413/1638            | 1732.6             | 22.2                  | 25.4          | 0.3467              |
|          |                             | 1513/1738            | 1752.6             | 22.4                  | <b>25.6</b>   | 0.3631              |
|          | 2                           | 1312/1537            | 1712.4             | 22.4                  | 25.6          | 0.3631              |
|          |                             | 1413/1638            | 1732.6             | 22.1                  | 25.3          | 0.3388              |
|          |                             | 1513/1738            | 1752.6             | 22.0                  | 25.2          | 0.3311              |
|          | 3                           | 1312/1537            | 1712.4             | 22.1                  | 25.3          | 0.3388              |
|          |                             | 1413/1638            | 1732.6             | 22.2                  | 25.4          | 0.3467              |
|          |                             | 1513/1738            | 1752.6             | 22.1                  | 25.3          | 0.3388              |
|          | 4                           | 1312/1537            | 1712.4             | 21.8                  | 25.0          | 0.3162              |
|          |                             | 1413/1638            | 1732.6             | 21.8                  | 25.0          | 0.3162              |
|          |                             | 1513/1738            | 1752.6             | 21.7                  | 24.9          | 0.3090              |
|          | 5                           | 1312/1537            | 1712.4             | 21.1                  | 24.3          | 0.2692              |
|          |                             | 1413/1638            | 1732.6             | 22.4                  | 25.6          | 0.3631              |
|          |                             | 1513/1738            | 1752.6             | 22.2                  | 25.4          | 0.3467              |

**HSDPA:**

| Band     | Data Rate<br>or<br>Sub-test | UL/DL<br>Channel No. | Frequency<br>(MHz) | Average<br>power<br>(dBm) | EIRP<br>(dBm) | Output Power<br>(W) |
|----------|-----------------------------|----------------------|--------------------|---------------------------|---------------|---------------------|
| HSDPA VI | 1                           | 1312/1537            | 1712.4             | 21.4                      | 24.6          | 0.2884              |
|          |                             | 1413/1638            | 1732.6             | 21.8                      | 25.0          | 0.3162              |
|          |                             | 1513/1738            | 1752.6             | 21.8                      | 25.0          | 0.3162              |
|          | 2                           | 1312/1537            | 1712.4             | 21.7                      | 24.9          | 0.3090              |
|          |                             | 1413/1638            | 1732.6             | 21.8                      | <b>25.0</b>   | 0.3162              |
|          |                             | 1513/1738            | 1752.6             | 21.7                      | 24.9          | 0.3090              |
|          | 3                           | 1312/1537            | 1712.4             | 21.3                      | 24.5          | 0.2818              |
|          |                             | 1413/1638            | 1732.6             | 21.7                      | 24.9          | 0.3090              |
|          |                             | 1513/1738            | 1752.6             | 21.4                      | 24.6          | 0.2884              |
|          | 4                           | 1312/1537            | 1712.4             | 21.2                      | 24.4          | 0.2754              |
|          |                             | 1413/1638            | 1732.6             | 21.7                      | 24.9          | 0.3090              |
|          |                             | 1513/1738            | 1752.6             | 21.7                      | 24.8          | 0.3020              |

## 8.2 SPURIOUS RADIATION MEASUREMENT

### LIMIT

FCC §27.53 (h)

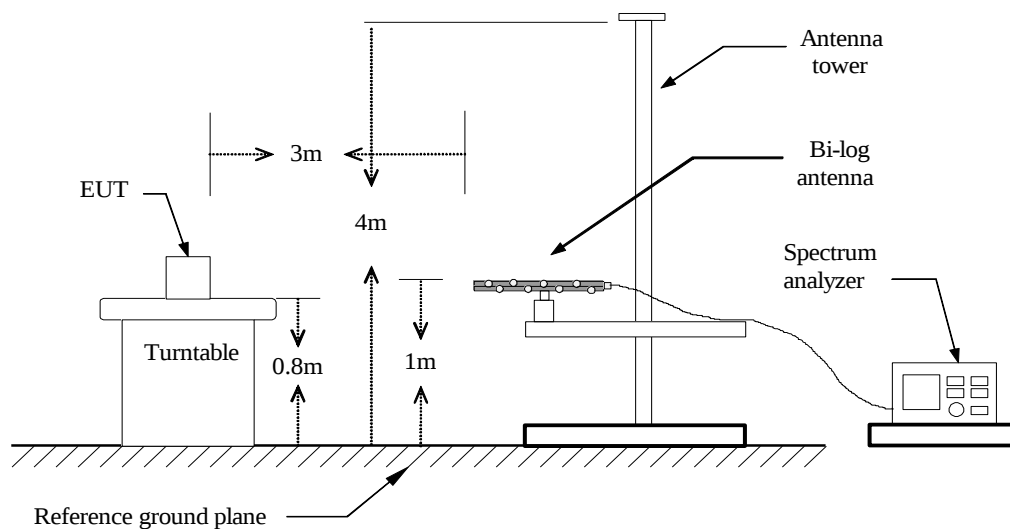
The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least  $43 + 10 \log_{10} (P)$  dB.

RSS-139 section 6.6

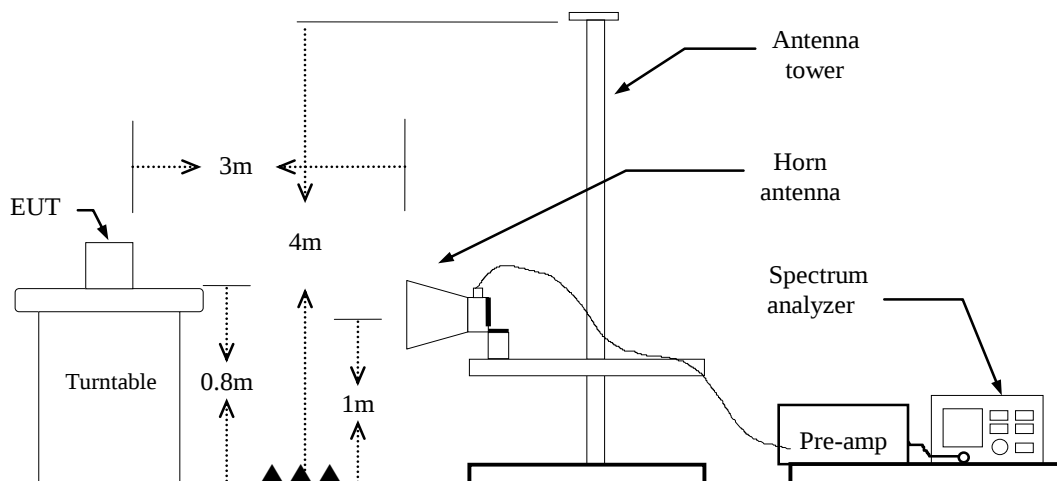
The mean power of emission must be attenuated below the mean power of the non-modulated carrier (P) on any frequency twice or more than twice the fundamental frequency by at least  $43 + 10 \log P$  dB.

### Test Configuration

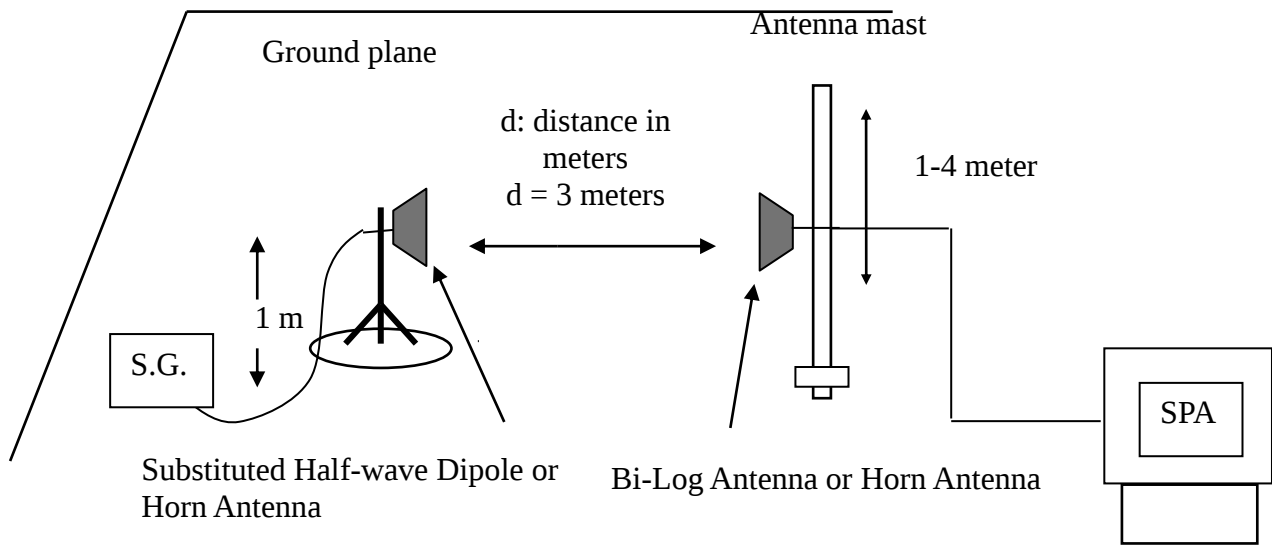
#### Below 1 GHz



#### Above 1 GHz



## Substituted Method Test Set-up



## TEST PROCEDURE

1. According to KDB 971168 D01 Power Meas License Digital System and TIA-603-E Section 2.2.12.
2. The EUT was placed on a turntable
  - (1) Below 1G : 0.8m
  - (2) Above 1G : 0.8m
  - (3) EUT set 3m from the receiving antenna
  - (4) The table was rotated 360 degrees of the highest spurious emission to determine the position.
3. Set the spectrum analyzer , RBW=1MHz, VBW=3MHz.
4. A horn antenna was driven by a signal generator.
5. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission

$$ERP = \text{S.G. output (dBm)} + \text{Antenna Gain (dBi)} - \text{Cable (dB)} - 2.15$$

$$EIRP = \text{S.G. output (dBm)} + \text{Antenna Gain (dBi)} - \text{Cable (dB)}$$

## TEST RESULTS

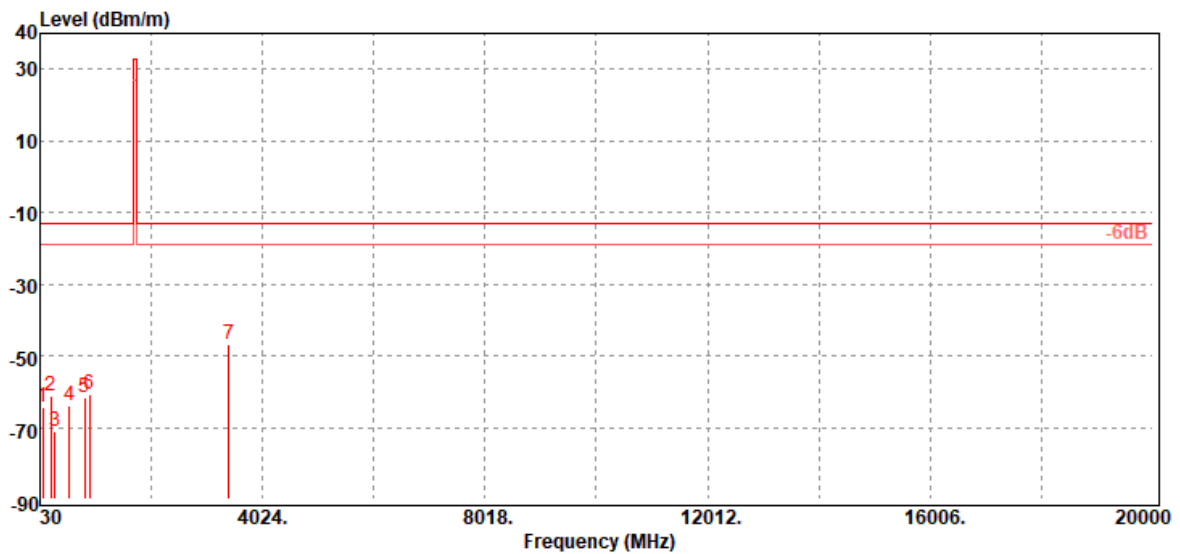
Refer to the attached tabular data sheets.



Report No.: T200407W01-RP7

**Radiated Spurious Emission Measurement Result**

|                        |                                          |                   |              |
|------------------------|------------------------------------------|-------------------|--------------|
| <b>Operation Mode:</b> | WCDMA 12.2k RMC<br>Band IV / TX / Low CH | <b>Test Date:</b> | June 6, 2020 |
| <b>Temperature:</b>    | 24.9°C                                   | <b>Tested by:</b> | Jerry Chang  |
| <b>Humidity:</b>       | 51 %RH                                   | <b>Polarity:</b>  | Ver.         |

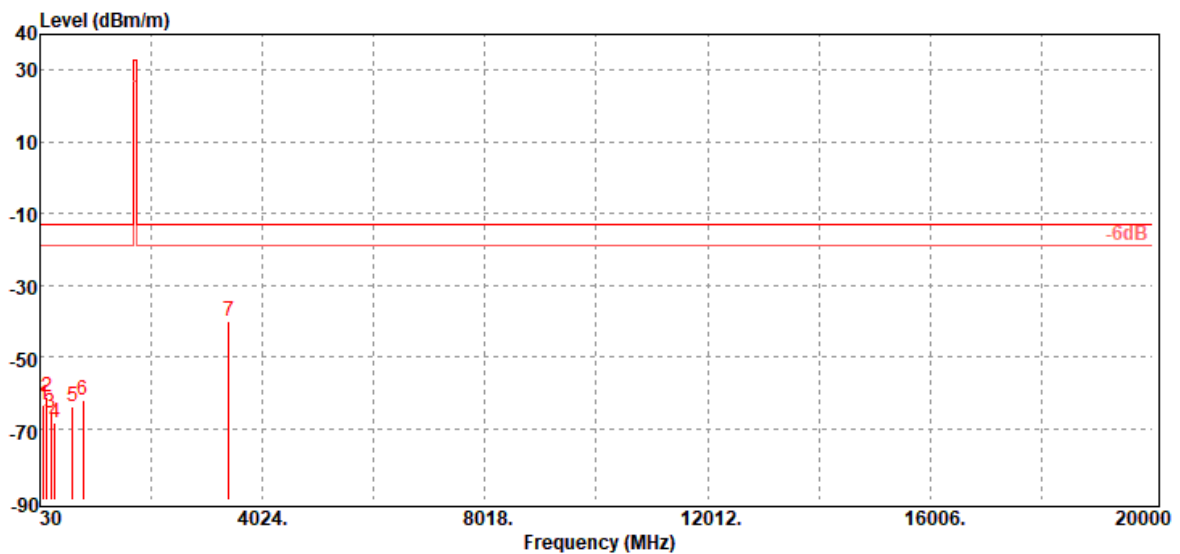


| Freq.<br>(MHz) | ERP/EIRP<br>(dBm) | SG<br>Output Level<br>(dBm) | Antenna<br>Gain<br>(dBd/dBi) | Cable<br>Loss<br>(dB) | Limit<br>(dBm) | Margin<br>(dB) | Antenna<br>Polarization<br>(V/H) |
|----------------|-------------------|-----------------------------|------------------------------|-----------------------|----------------|----------------|----------------------------------|
| 77.53          | -64.50            | -55.13                      | -8.65                        | -0.72                 | -13.00         | -51.50         | V                                |
| 219.15         | -61.41            | -58.17                      | -2.02                        | -1.22                 | -13.00         | -48.41         | V                                |
| 298.69         | -70.90            | -67.44                      | -2.03                        | -1.43                 | -13.00         | -57.90         | V                                |
| 555.74         | -64.03            | -60.76                      | -1.31                        | -1.96                 | -13.00         | -51.03         | V                                |
| 835.10         | -61.87            | -57.94                      | -1.50                        | -2.43                 | -13.00         | -48.87         | V                                |
| 922.40         | -60.59            | -56.71                      | -1.30                        | -2.58                 | -13.00         | -47.59         | V                                |
| 3424.80        | -46.94            | -54.19                      | 12.75                        | -5.50                 | -13.00         | -33.94         | V                                |



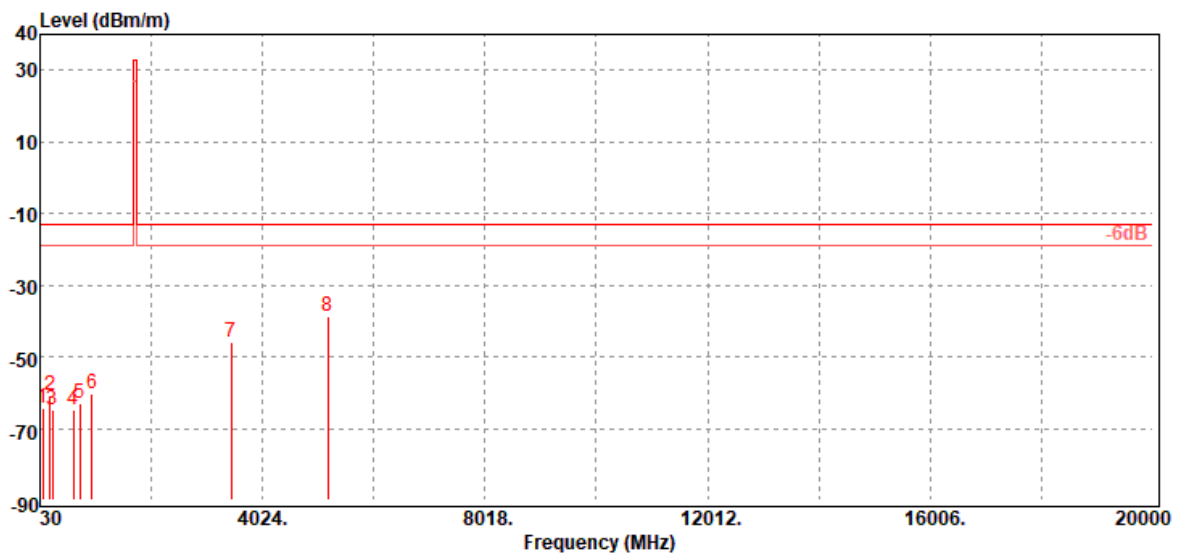
Report No.: T200407W01-RP7

|                        |                                          |                   |              |
|------------------------|------------------------------------------|-------------------|--------------|
| <b>Operation Mode:</b> | WCDMA 12.2k RMC<br>Band IV / TX / Low CH | <b>Test Date:</b> | June 6, 2020 |
| <b>Temperature:</b>    | 24.9°C                                   | <b>Tested by:</b> | Jerry Chang  |
| <b>Humidity:</b>       | 51 %RH                                   | <b>Polarity:</b>  | Hor.         |



| Freq.<br>(MHz) | ERP/EIRP<br>(dBm) | SG<br>Output Level<br>(dBm) | Antenna<br>Gain<br>(dBd/dBi) | Cable<br>Loss<br>(dB) | Limit<br>(dBm) | Margin<br>(dB) | Antenna<br>Polarization<br>(V/H) |
|----------------|-------------------|-----------------------------|------------------------------|-----------------------|----------------|----------------|----------------------------------|
| 91.11          | -63.54            | -55.85                      | -6.91                        | -0.78                 | -13.00         | -50.54         | H                                |
| 158.04         | -61.10            | -53.67                      | -6.40                        | -1.03                 | -13.00         | -48.10         | H                                |
| 222.06         | -65.54            | -62.36                      | -1.96                        | -1.22                 | -13.00         | -52.54         | H                                |
| 296.75         | -68.62            | -65.13                      | -2.07                        | -1.42                 | -13.00         | -55.62         | H                                |
| 619.76         | -64.13            | -60.63                      | -1.40                        | -2.10                 | -13.00         | -51.13         | H                                |
| 799.21         | -62.10            | -58.45                      | -1.28                        | -2.37                 | -13.00         | -49.10         | H                                |
| 3424.80        | -39.88            | -47.13                      | 12.75                        | -5.50                 | -13.00         | -26.88         | H                                |

|                        |                                          |                   |              |
|------------------------|------------------------------------------|-------------------|--------------|
| <b>Operation Mode:</b> | WCDMA 12.2k RMC<br>Band IV / TX / Mid CH | <b>Test Date:</b> | June 6, 2020 |
| <b>Temperature:</b>    | 24.9°C                                   | <b>Tested by:</b> | Jerry Chang  |
| <b>Humidity:</b>       | 51 %RH                                   | <b>Polarity:</b>  | Ver.         |

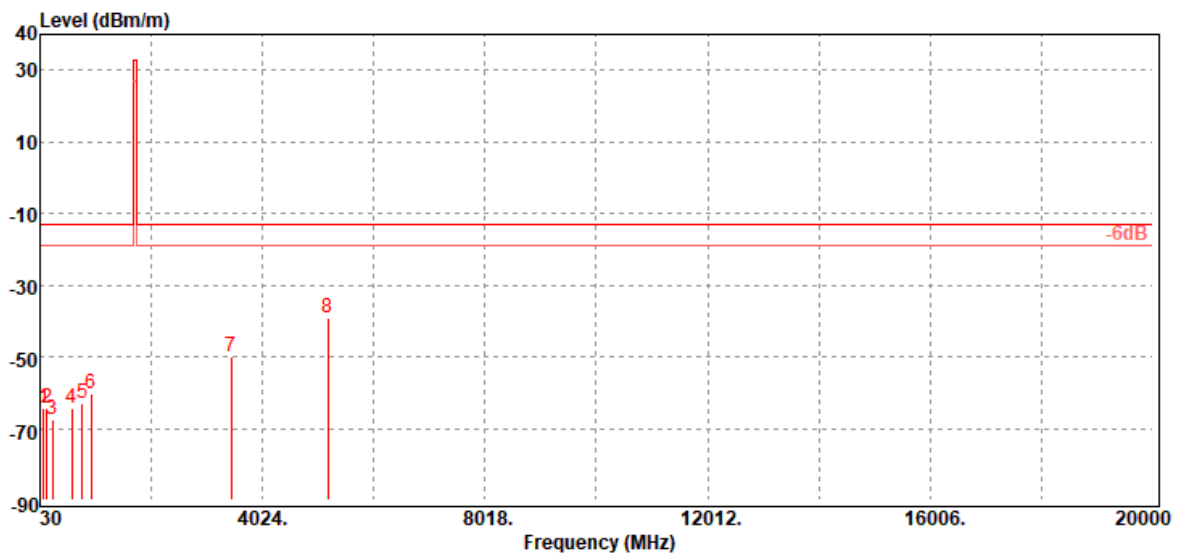


| Freq.<br>(MHz) | ERP/EIRP<br>(dBm) | SG<br>Output Level<br>(dBm) | Antenna<br>Gain<br>(dBd/dBi) | Cable<br>Loss<br>(dB) | Limit<br>(dBm) | Margin<br>(dB) | Antenna<br>Polarization<br>(V/H) |
|----------------|-------------------|-----------------------------|------------------------------|-----------------------|----------------|----------------|----------------------------------|
| 76.56          | -64.35            | -54.84                      | -8.79                        | -0.72                 | -13.00         | -51.35         | V                                |
| 207.51         | -60.91            | -57.28                      | -2.45                        | -1.18                 | -13.00         | -47.91         | V                                |
| 255.04         | -64.92            | -62.01                      | -1.60                        | -1.31                 | -13.00         | -51.92         | V                                |
| 629.46         | -64.84            | -61.23                      | -1.49                        | -2.12                 | -13.00         | -51.84         | V                                |
| 742.95         | -62.89            | -59.23                      | -1.36                        | -2.30                 | -13.00         | -49.89         | V                                |
| 966.05         | -60.53            | -56.60                      | -1.30                        | -2.63                 | -13.00         | -47.53         | V                                |
| 3465.20        | -46.07            | -53.18                      | 12.64                        | -5.53                 | -13.00         | -33.07         | V                                |
| 5197.80        | -38.87            | -45.11                      | 12.99                        | -6.75                 | -13.00         | -25.87         | V                                |



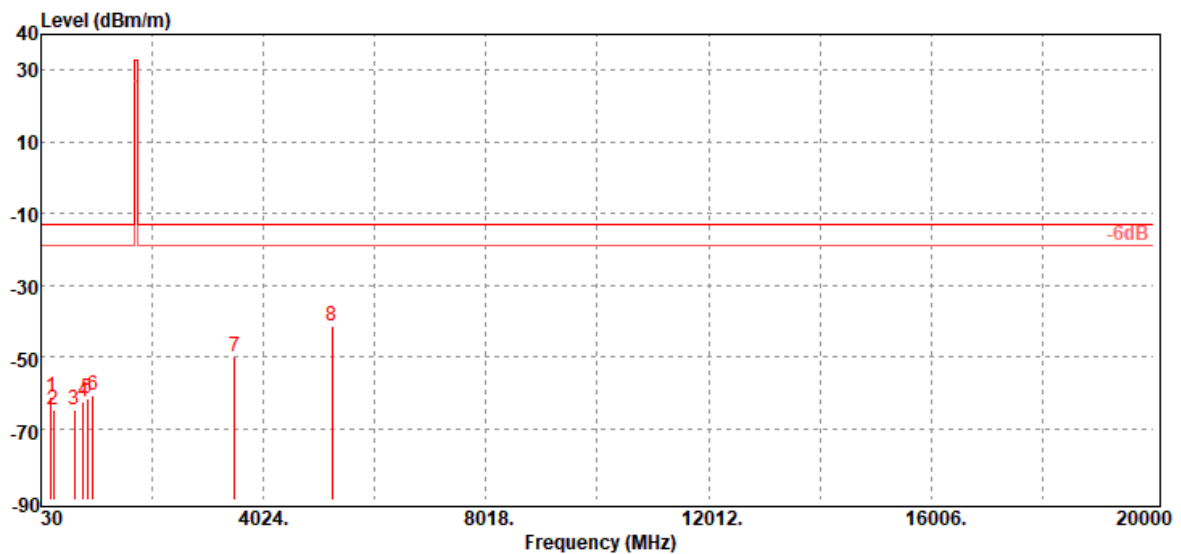
Report No.: T200407W01-RP7

|                 |                                          |            |              |
|-----------------|------------------------------------------|------------|--------------|
| Operation Mode: | WCDMA 12.2k RMC<br>Band IV / TX / Mid CH | Test Date: | June 6, 2020 |
| Temperature:    | 24.9°C                                   | Tested by: | Jerry Chang  |
| Humidity:       | 51 %RH                                   | Polarity:  | Hor.         |



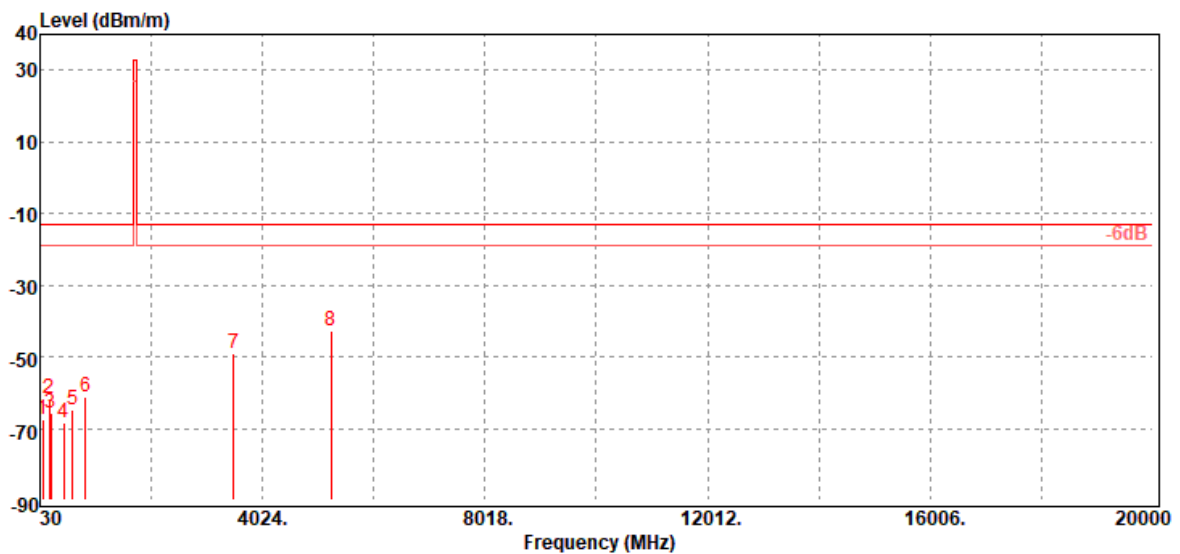
| Freq.<br>(MHz) | ERP/EIRP<br>(dBm) | SG<br>Output Level<br>(dBm) | Antenna<br>Gain<br>(dBd/dBi) | Cable<br>Loss<br>(dB) | Limit<br>(dBm) | Margin<br>(dB) | Antenna<br>Polarization<br>(V/H) |
|----------------|-------------------|-----------------------------|------------------------------|-----------------------|----------------|----------------|----------------------------------|
| 88.20          | -64.42            | -56.49                      | -7.16                        | -0.77                 | -13.00         | -51.42         | H                                |
| 149.31         | -64.24            | -56.07                      | -7.17                        | -1.00                 | -13.00         | -51.24         | H                                |
| 255.04         | -67.44            | -64.53                      | -1.60                        | -1.31                 | -13.00         | -54.44         | H                                |
| 595.51         | -64.14            | -61.27                      | -0.81                        | -2.06                 | -13.00         | -51.14         | H                                |
| 783.69         | -63.05            | -59.35                      | -1.35                        | -2.35                 | -13.00         | -50.05         | H                                |
| 952.47         | -60.25            | -56.43                      | -1.20                        | -2.62                 | -13.00         | -47.25         | H                                |
| 3465.20        | -50.01            | -57.12                      | 12.64                        | -5.53                 | -13.00         | -37.01         | H                                |
| 5197.80        | -39.31            | -45.55                      | 12.99                        | -6.75                 | -13.00         | -26.31         | H                                |

|                        |                                           |                   |              |
|------------------------|-------------------------------------------|-------------------|--------------|
| <b>Operation Mode:</b> | WCDMA 12.2k RMC<br>Band IV / TX / High CH | <b>Test Date:</b> | June 6, 2020 |
| <b>Temperature:</b>    | 24.9°C                                    | <b>Tested by:</b> | Jerry Chang  |
| <b>Humidity:</b>       | 51 %RH                                    | <b>Polarity:</b>  | Ver.         |



| Freq.<br>(MHz) | ERP/EIRP<br>(dBm) | SG<br>Output Level<br>(dBm) | Antenna<br>Gain<br>(dBd/dBi) | Cable<br>Loss<br>(dB) | Limit<br>(dBm) | Margin<br>(dB) | Antenna<br>Polarization<br>(V/H) |
|----------------|-------------------|-----------------------------|------------------------------|-----------------------|----------------|----------------|----------------------------------|
| 212.36         | -61.06            | -57.76                      | -2.10                        | -1.20                 | -13.00         | -48.06         | V                                |
| 248.25         | -64.97            | -61.84                      | -1.83                        | -1.30                 | -13.00         | -51.97         | V                                |
| 623.64         | -64.74            | -61.23                      | -1.40                        | -2.11                 | -13.00         | -51.74         | V                                |
| 791.45         | -62.49            | -58.86                      | -1.27                        | -2.36                 | -13.00         | -49.49         | V                                |
| 866.14         | -61.51            | -57.75                      | -1.28                        | -2.48                 | -13.00         | -48.51         | V                                |
| 961.20         | -60.69            | -56.76                      | -1.30                        | -2.63                 | -13.00         | -47.69         | V                                |
| 3505.20        | -49.86            | -56.79                      | 12.49                        | -5.56                 | -13.00         | -36.86         | V                                |
| 5257.80        | -41.43            | -47.82                      | 13.20                        | -6.81                 | -13.00         | -28.43         | V                                |

|                        |                                           |                   |              |
|------------------------|-------------------------------------------|-------------------|--------------|
| <b>Operation Mode:</b> | WCDMA 12.2k RMC<br>Band IV / TX / High CH | <b>Test Date:</b> | June 6, 2020 |
| <b>Temperature:</b>    | 24.9°C                                    | <b>Tested by:</b> | Jerry Chang  |
| <b>Humidity:</b>       | 51 %RH                                    | <b>Polarity:</b>  | Hor.         |



| Freq.<br>(MHz) | ERP/EIRP<br>(dBm) | SG<br>Output Level<br>(dBm) | Antenna<br>Gain<br>(dBd/dBi) | Cable<br>Loss<br>(dB) | Limit<br>(dBm) | Margin<br>(dB) | Antenna<br>Polarization<br>(V/H) |
|----------------|-------------------|-----------------------------|------------------------------|-----------------------|----------------|----------------|----------------------------------|
| 86.26          | -67.65            | -59.34                      | -7.55                        | -0.76                 | -13.00         | -54.65         | H                                |
| 190.05         | -61.56            | -56.43                      | -4.00                        | -1.13                 | -13.00         | -48.56         | H                                |
| 226.91         | -65.70            | -62.48                      | -1.98                        | -1.24                 | -13.00         | -52.70         | H                                |
| 450.01         | -68.42            | -64.56                      | -2.10                        | -1.76                 | -13.00         | -55.42         | H                                |
| 618.79         | -64.71            | -61.23                      | -1.38                        | -2.10                 | -13.00         | -51.71         | H                                |
| 852.56         | -61.33            | -57.57                      | -1.30                        | -2.46                 | -13.00         | -48.33         | H                                |
| 3505.20        | -49.28            | -56.21                      | 12.49                        | -5.56                 | -13.00         | -36.28         | H                                |
| 5257.80        | -42.79            | -49.18                      | 13.20                        | -6.81                 | -13.00         | -29.79         | H                                |



Report No.: T200407W01-RP7

Page: 24 / 25

Rev.: 01

### 8.3 TEST DATA RE-USE SUMMARY

#### **Introduction Section:**

The application re-uses data collected on a similar device. The subject device of this application (Model: N653, FCC ID: P4Q-N653, IC: 2420C-N653) is electrically identical to the reference device (Model: N635, FCC ID: P4Q-N635A, IC: 2420C-N635A) for the portions of the circuitry corresponding to the data being re-used, as treated by KDB Publication 484596 D01.

#### **Differences Brief Description:**

The WLAN, WWAN, BT and RFID hardware of this device are identical to the implementation in

FCC ID: P4Q-N653.

IC: 2420C-N653

The Product Equality Declaration document includes detailed information about the changes between the devices. The data from that application has been verified through appropriate spot checks to demonstrate compliance for this device as shown in the summary table below.



Report No.: T200407W01-RP7

Page: 25 / 25

Rev.: 01

### Spot Check Verification Result Summary

| Equipment Class   | Reference FCC ID / IC No. | Folder Test    | Report Title/ Section                                                        |
|-------------------|---------------------------|----------------|------------------------------------------------------------------------------|
| Part 27 / RSS-139 | P4Q-N635A / 2420C-N635A   | T191105W01-RP7 | All Section<br>(Except for EIRP Measurement, Spurious Radiation Measurement) |

### Summery of the spot check for Unlicensed bands and Licensed bands

In order to confirm hardware similarity of the subject device with the reference device, we used same setting power to radiated emission measurement were performed on the subject device for the Band edge and Harmonic, the test result were similar with FCC ID: P4Q-N635A / IC: 2420C-N635A.

### WWAN: WCDMA

| Report  | Test Item | Frequency (MHz) | P4Q-N635A / 2420C-N635A  |          | P4Q-N653 / 2420C-N653    |          | Gap (dB) |
|---------|-----------|-----------------|--------------------------|----------|--------------------------|----------|----------|
|         |           |                 | Measured Frequency (MHz) | EIRP/ERP | Measured Frequency (MHz) | EIRP/ERP |          |
| Band IV | RSE       | 1732.6          | 5197.8                   | -38.79   | 5197.8                   | -38.87   | 0.08     |

- End of Test Report -