



FCC ID: UDV-201710  
Report No.: T201221W04-RP3

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Rev.: 01

## FCC 47 CFR PART 27 SUBPART L

### TEST REPORT

For

### LTE-FDD/HSPA MODULE

Model No.: SIM7600AH

Trade Name: SIMCOM

Issued to

**Shanghai Simcom Ltd.**  
**SIM Technology Building, No.633, Jinzhong Road, Changning District, Shanghai,**  
**P.R. China 200233**

Issued by

**Compliance Certification Services Inc.**  
**Wugu Laboratory**  
**No.11, Wugong 6th Rd., Wugu Dist.,**  
**New Taipei City, Taiwan. (R.O.C.)**  
**Issued Date: March 11, 2021**

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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### **Revision History**

| Rev. | Issue Date        | Revisions                       | Effect Page | Revised By |
|------|-------------------|---------------------------------|-------------|------------|
| 00   | February 05, 2021 | Initial Issue                   | ALL         | Mita Wu    |
| 01   | March 11, 2021    | See the following note Rev.(01) | P.15-20     | Mita Wu    |

#### **Rev.(01)**

1. Revised EIRP measurement.



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## 1. TEST RESULT CERTIFICATION

**Applicant:** Shanghai Simcom Ltd.  
SIM Technology Building, No. 633, Jinzhong Road,  
Changning District, Shanghai, P.R. China 200233

**Manufacturer:** Shanghai Simcom Ltd.  
SIM Technology Building, No. 633, Jinzhong Road, Changning  
District, Shanghai, P.R. China 200233

**Equipment Under Test:** LTE-FDD/HSPA MODULE

**Trade Name:** SIMCOM

**Model No.:** SIM7600AH

**Date of Test:** December 30, 2020 ~ December 31, 2020

| APPLICABLE STANDARDS                                                                                                                                |                         |
|-----------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| Standard                                                                                                                                            | TEST RESULT             |
| FCC Part 27, Subpart C, L, FCC Part 2                                                                                                               | No non-compliance noted |
| Statements of Conformity                                                                                                                            |                         |
| Determination of compliance is based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty. |                         |

The above equipment has been tested by Compliance Certification Services Inc., and found compliance with the requirements set forth in the technical standards mentioned above. The results of testing in this report apply only to the product/system, which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

Approved by:



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Kevin Tsai  
Deputy Manager  
Compliance Certification Services Inc.

## 2. EUT DESCRIPTION

|                                    |                                                                                                                         |                                     |
|------------------------------------|-------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| <b>Product</b>                     | LTE-FDD/HSPA MODULE                                                                                                     |                                     |
| <b>Model No.</b>                   | SIM7600AH                                                                                                               |                                     |
| <b>Model Discrepancy</b>           | N/A                                                                                                                     |                                     |
| <b>Trade</b>                       | SIMCOM                                                                                                                  |                                     |
| <b>Received Date</b>               | December 21, 2020                                                                                                       |                                     |
| <b>Power Supply</b>                | Power from Adapter.<br>CHANNEL WELL TECHNOLOGY / KPL-050F-VI<br>I/P: 100-240VAC, 50/60Hz, 1.7A<br>O/P: 12VDC, 4.17A 50W |                                     |
| <b>Modulation Technology</b>       | LTE Band 4                                                                                                              | QPSK, 16QAM                         |
| <b>Frequency Range</b>             | LTE Band 4<br>Channel Bandwidth: 1.4MHz                                                                                 | 1710.7MHz ~1754.3MHz                |
|                                    | LTE Band 4<br>Channel Bandwidth: 3MHz                                                                                   | 1711.5MHz ~ 1753.4MHz               |
|                                    | LTE Band 4<br>Channel Bandwidth: 5MHz                                                                                   | 1712.5MHz ~1752.5MHz                |
|                                    | LTE Band 4<br>Channel Bandwidth: 10MHz                                                                                  | 1715.0MHz ~1750.0MHz                |
|                                    | LTE Band 4<br>Channel Bandwidth: 15MHz                                                                                  | 1717.5MHz ~ 1747.5MHz               |
|                                    | LTE Band 4<br>Channel Bandwidth: 20MHz                                                                                  | 1720MHz ~1745MHz                    |
| <b>Transmit Power (EIRP Power)</b> | LTE Band 4<br>Channel Bandwidth: 1.4MHz                                                                                 | QPSK: 21.77 dBm<br>16QAM: 21.62 dBm |
|                                    | LTE Band 4<br>Channel Bandwidth: 3MHz                                                                                   | QPSK: 21.78 dBm<br>16QAM: 21.63 dBm |
|                                    | LTE Band 4<br>Channel Bandwidth: 5MHz                                                                                   | QPSK: 21.79 dBm<br>16QAM: 21.64 dBm |
|                                    | LTE Band 4<br>Channel Bandwidth: 10MHz                                                                                  | QPSK: 21.81 dBm<br>16QAM: 21.66 dBm |
|                                    | LTE Band 4<br>Channel Bandwidth: 15MHz                                                                                  | QPSK: 21.83 dBm<br>16QAM: 21.68 dBm |
|                                    | LTE Band 4<br>Channel Bandwidth: 20MHz                                                                                  | QPSK: 21.89 dBm<br>16QAM: 21.74 dBm |
| <b>Antenna Specification</b>       | FPC Antenna<br>Band 4 Gain: -0.10 dBi                                                                                   |                                     |



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|                                   |                                                                                                                                                                                                                                                                                                              |
|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Class II Permissive Change</b> | <ol style="list-style-type: none"><li>1. To allow mobile configuration in the SPX Sandpiper Digital Display.<br/>(Brand name: Connectpoint; Model No.: CP32; FCC ID: 2AVTJ-CP32)</li><li>2. To add the type of antenna<br/>(Brand Name:TSKY; Model No.: A8-A006-00615)</li><li>3. To disable WCDMA</li></ol> |
|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

**Remark:**

1. The above EUT information was declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.
2. Disclaimer: Antenna information is provided by the applicant, test results of this report are applicable to the sample EUT received.

### 3. TEST METHODOLOGY

#### 3.1 DESCRIPTION OF TEST TYPE

The EUT (model: SIM7600AH) had been tested under operating condition.

Software used to control the EUT for staying in continuous transmitting mode was programmed.

#### LTE Band 4: 1710MHz ~ 1755MHz

Three channels had been tested for each channel bandwidth.

| Channel Bandwidth | 1.4MHz  |                 | 3MHz    |                 | 5MHz    |                 |
|-------------------|---------|-----------------|---------|-----------------|---------|-----------------|
|                   | Channel | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) |
| Low CH            | 19957   | 1710.7          | 19965   | 1711.5          | 19975   | 1712.5          |
| Middle CH         | 20175   | 1732.5          | 20175   | 1732.5          | 20175   | 1732.5          |
| High CH           | 20393   | 1754.3          | 20384   | 1753.4          | 20375   | 1752.5          |
| Channel Bandwidth | 10MHz   |                 | 15MHz   |                 | 20MHz   |                 |
|                   | Channel | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) |
| Low CH            | 20000   | 1715.0          | 20025   | 1717.5          | 20050   | 1720.00         |
| Middle CH         | 20175   | 1732.5          | 20175   | 1732.5          | 20175   | 1732.50         |
| High CH           | 20350   | 1750.0          | 20325   | 1747.5          | 20300   | 1745.00         |

## 3.2 THE WORST MODE OF MEASUREMENT

### 3.2.1 The worst mode of measurement

| Radiated Emission Measurement |                                                                                                                                                                                                                                                                                               |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test Condition                | Radiated Emission Above 1G                                                                                                                                                                                                                                                                    |
| Power supply Mode             | Mode 1: EUT power by Adapter                                                                                                                                                                                                                                                                  |
| 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 checked="" 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 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 Adapter                                                                                                               |
| 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(X-Plane) were recorded in this report

## 4. TEST SUMMARY

| FCC Standard Section | Report Section | Test Item                      | Result |
|----------------------|----------------|--------------------------------|--------|
| -                    | 2              | Antenna Requirement            | Pass   |
| 27.50(d)             | 8.1            | EIRP Measurement               | Pass   |
| 27.53(h)             | 8.2            | Spurious Radiation Measurement | Pass   |

## 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 once a year.

| RF Conducted Test Site       |                    |            |            |            |            |
|------------------------------|--------------------|------------|------------|------------|------------|
| Equipment                    | Manufacturer       | Model      | S/N        | Cal Date   | Cal Due    |
| Coaxial Cable                | Woken              | WC12       | CC001      | 06/29/2020 | 06/28/2021 |
| Signal Analyzer              | R&S                | FSV 40     | 101073     | 09/17/2020 | 09/16/2021 |
| Radio Communication Analyzer | Anritsu            | MT-8820C   | 6201240043 | 07/17/2020 | 07/16/2021 |
| Power Divider                | Solvang Technology | STI08-0015 | 008        | 08/05/2020 | 08/04/2021 |
| Power Meter                  | Anritsu            | ML2487A    | 6K00003260 | 05/21/2020 | 05/20/2021 |
| Power Seneor                 | Anritsu            | MA2490A    | 032910     | 05/21/2020 | 05/20/2021 |
| 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         | 07/24/2020 | 07/23/2021 |
| Coaxial Cable                    | HUBER SUHNER     | SUCOFLEX 104PEA | 20995           | 02/25/2020 | 02/24/2021 |
| Coaxial Cable                    | EMCI             | EMC105          | 190914+327109/4 | 09/19/2020 | 09/18/2021 |
| Digital Thermo-Hygro Meter       | WISEWIND         | 1206            | D07             | 01/15/2020 | 01/14/2021 |
| double Ridged Guide Horn Antenna | ETC              | MCTD 1209       | DRH13M02003     | 09/30/2020 | 09/29/2021 |
| 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 |
| PSA Series Spectrum Analyzer     | Agilent          | E4446A          | MY46180323      | 07/24/2020 | 07/23/2021 |
| Radio Communication Analyzer     | Anritsu          | MT-8820C        | 6201240043      | 07/17/2020 | 07/16/2021 |
| 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.

## 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 24891, Taiwan. (R.O.C.)

Tel: 886-2-2299-9720 / Fax: 886-2-2299-9721

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."



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## 7. SETUP OF EQUIPMENT UNDER TEST

### 7.1 SETUP CONFIGURATION OF EUT

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

### 7.2 SUPPORT EQUIPMENT

| No | Equipment | Brand  | Model   | Series No. | FCC ID |
|----|-----------|--------|---------|------------|--------|
| 1  | NB        | Lenovo | TP0005A | 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.

## **8. TEST PROCEDURE AND RESULT**

### **8.1 EIRP MEASUREMENT**

#### **LIMIT**

**According to FCC §2.1046**

**FCC 27.50 (d) (4):** Fixed, mobile, and portable (handheld) stations operating in the 1710-1755MHz band and mobile and portable stations operating in the 1695-1710MHz and 1755-1780MHz bands are limited to 1 watt EIRP.

#### **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.

Temperature: 23.2°C  
Humidity: 55 % RH

Test Date: December 31, 2020  
Tested by: Jerry Chang

### LTE Band 4

| Band   | BW (MHz) | Channel | Frequency (MHz) | Mode  | UL RB Allocation | UL RB Start | MPR | Average power (dBm) | E.I.R.P. Power |
|--------|----------|---------|-----------------|-------|------------------|-------------|-----|---------------------|----------------|
| Band 4 | 1.4M     | 19957   | 1710.7          | QPSK  | 1                | 0           | 0   | 20.96               | 20.86          |
|        |          |         |                 |       | 1                | 2           | 0   | 21.78               | <b>21.68</b>   |
|        |          |         |                 |       | 1                | 5           | 0   | 21.71               | 21.61          |
|        |          |         |                 |       | 3                | 0           | 1   | 20.89               | 20.79          |
|        |          |         |                 |       | 3                | 1           | 1   | 20.56               | 20.46          |
|        |          |         |                 |       | 3                | 2           | 1   | 20.60               | 20.50          |
|        |          |         |                 |       | 6                | 0           | 1   | 20.67               | 20.57          |
|        |          |         |                 | 16QAM | 1                | 0           | 1   | 21.14               | 21.04          |
|        |          |         |                 |       | 1                | 2           | 1   | 21.58               | 21.48          |
|        |          |         |                 |       | 1                | 5           | 1   | 21.64               | <b>21.54</b>   |
|        |          |         |                 |       | 3                | 0           | 2   | 19.96               | 19.86          |
|        |          |         |                 |       | 3                | 1           | 2   | 19.82               | 19.72          |
|        |          |         |                 |       | 3                | 2           | 2   | 19.80               | 19.70          |
|        |          |         |                 |       | 6                | 0           | 2   | 19.82               | 19.72          |
|        |          | 20175   | 1732.5          | QPSK  | 1                | 0           | 0   | 21.87               | <b>21.77</b>   |
|        |          |         |                 |       | 1                | 2           | 0   | 21.81               | 21.71          |
|        |          |         |                 |       | 1                | 5           | 0   | 21.77               | 21.67          |
|        |          |         |                 |       | 3                | 0           | 1   | 20.98               | 20.88          |
|        |          |         |                 |       | 3                | 1           | 1   | 20.97               | 20.87          |
|        |          |         |                 |       | 3                | 2           | 1   | 20.95               | 20.85          |
|        |          |         |                 |       | 6                | 0           | 1   | 20.93               | 20.83          |
|        |          |         |                 | 16QAM | 1                | 0           | 1   | 21.43               | 21.33          |
|        |          |         |                 |       | 1                | 2           | 1   | 21.72               | <b>21.62</b>   |
|        |          |         |                 |       | 1                | 5           | 1   | 21.49               | 21.39          |
|        |          |         |                 |       | 3                | 0           | 2   | 20.09               | 19.99          |
|        |          |         |                 |       | 3                | 1           | 2   | 19.96               | 19.86          |
|        |          |         |                 |       | 3                | 2           | 2   | 20.04               | 19.94          |
|        |          | 20392   | 1754.2          | QPSK  | 6                | 0           | 2   | 19.99               | 19.89          |
|        |          |         |                 |       | 1                | 0           | 0   | 21.86               | <b>21.76</b>   |
|        |          |         |                 |       | 1                | 2           | 0   | 21.79               | 21.69          |
|        |          |         |                 |       | 1                | 5           | 0   | 21.75               | 21.65          |
|        |          |         |                 |       | 3                | 0           | 1   | 21.15               | 21.05          |
|        |          |         |                 |       | 3                | 1           | 1   | 20.90               | 20.80          |
|        |          |         |                 |       | 3                | 2           | 1   | 20.82               | 20.72          |
|        |          |         |                 |       | 6                | 0           | 1   | 20.96               | 20.86          |
|        |          |         |                 | 16QAM | 1                | 0           | 1   | 21.16               | <b>21.06</b>   |
|        |          |         |                 |       | 1                | 2           | 1   | 21.04               | 20.94          |
|        |          |         |                 |       | 1                | 5           | 1   | 20.79               | 20.69          |
|        |          |         |                 |       | 3                | 0           | 2   | 20.08               | 19.98          |
|        |          |         |                 |       | 3                | 1           | 2   | 20.04               | 19.94          |
|        |          |         |                 |       | 3                | 2           | 2   | 20.03               | 19.93          |
|        |          |         |                 |       | 6                | 0           | 2   | 19.96               | 19.86          |

| Band   | BW (MHz) | Channel | Frequency (MHz) | Mode  | UL RB Allocation | UL RB Start | MPR | Average power (dBm) | E.I.R.P. Power |
|--------|----------|---------|-----------------|-------|------------------|-------------|-----|---------------------|----------------|
| Band 4 | 3M       | 19965   | 1711.5          | QPSK  | 1                | 0           | 0   | 20.97               | 20.87          |
|        |          |         |                 |       | 1                | 7           | 0   | 21.79               | <b>21.69</b>   |
|        |          |         |                 |       | 1                | 14          | 0   | 21.72               | 21.62          |
|        |          |         |                 |       | 8                | 0           | 1   | 20.90               | 20.80          |
|        |          |         |                 |       | 8                | 4           | 1   | 20.57               | 20.47          |
|        |          |         |                 |       | 8                | 7           | 1   | 20.61               | 20.51          |
|        |          |         |                 |       | 15               | 0           | 1   | 20.68               | 20.58          |
|        |          |         |                 | 16QAM | 1                | 0           | 1   | 21.15               | 21.05          |
|        |          |         |                 |       | 1                | 7           | 1   | 21.59               | 21.49          |
|        |          |         |                 |       | 1                | 14          | 1   | 21.65               | <b>21.55</b>   |
|        |          |         |                 |       | 8                | 0           | 2   | 19.97               | 19.87          |
|        |          |         |                 |       | 8                | 4           | 2   | 19.83               | 19.73          |
|        |          |         |                 |       | 8                | 7           | 2   | 19.81               | 19.71          |
|        |          |         |                 |       | 15               | 0           | 2   | 19.83               | 19.73          |
|        |          | 20175   | 1732.5          | QPSK  | 1                | 0           | 0   | 21.88               | <b>21.78</b>   |
|        |          |         |                 |       | 1                | 7           | 0   | 21.82               | 21.72          |
|        |          |         |                 |       | 1                | 14          | 0   | 21.78               | 21.68          |
|        |          |         |                 |       | 8                | 0           | 1   | 20.99               | 20.89          |
|        |          |         |                 |       | 8                | 4           | 1   | 20.98               | 20.88          |
|        |          |         |                 |       | 8                | 7           | 1   | 20.96               | 20.86          |
|        |          |         |                 |       | 15               | 0           | 1   | 20.94               | 20.84          |
|        |          |         |                 | 16QAM | 1                | 0           | 1   | 21.44               | 21.34          |
|        |          |         |                 |       | 1                | 7           | 1   | 21.73               | <b>21.63</b>   |
|        |          |         |                 |       | 1                | 14          | 1   | 21.50               | 21.40          |
|        |          |         |                 |       | 8                | 0           | 2   | 20.10               | 20.00          |
|        |          |         |                 |       | 8                | 4           | 2   | 19.97               | 19.87          |
|        |          |         |                 |       | 8                | 7           | 2   | 20.05               | 19.95          |
|        |          |         |                 |       | 15               | 0           | 2   | 20.00               | 19.90          |
|        |          | 20384   | 1753.4          | QPSK  | 1                | 0           | 0   | 21.87               | <b>21.77</b>   |
|        |          |         |                 |       | 1                | 7           | 0   | 21.80               | 21.70          |
|        |          |         |                 |       | 1                | 14          | 0   | 21.76               | 21.66          |
|        |          |         |                 |       | 8                | 0           | 1   | 21.16               | 21.06          |
|        |          |         |                 |       | 8                | 4           | 1   | 20.91               | 20.81          |
|        |          |         |                 |       | 8                | 7           | 1   | 20.83               | 20.73          |
|        |          |         |                 |       | 15               | 0           | 1   | 20.97               | 20.87          |
|        |          |         |                 | 16QAM | 1                | 0           | 1   | 21.17               | <b>21.07</b>   |
|        |          |         |                 |       | 1                | 7           | 1   | 21.05               | 20.95          |
|        |          |         |                 |       | 1                | 14          | 1   | 20.80               | 20.70          |
|        |          |         |                 |       | 8                | 0           | 2   | 20.09               | 19.99          |
|        |          |         |                 |       | 8                | 4           | 2   | 20.05               | 19.95          |
|        |          |         |                 |       | 8                | 7           | 2   | 20.04               | 19.94          |
|        |          |         |                 |       | 15               | 0           | 2   | 19.97               | 19.87          |

| Band   | BW (MHz) | Channel | Frequency (MHz) | Mode  | UL RB Allocation | UL RB Start | MPR | Average power (dBm) | E.I.R.P. Power |
|--------|----------|---------|-----------------|-------|------------------|-------------|-----|---------------------|----------------|
| Band 4 | 5M       | 19975   | 1712.5          | QPSK  | 1                | 0           | 0   | 20.99               | 20.89          |
|        |          |         |                 |       | 1                | 12          | 0   | 21.81               | <b>21.71</b>   |
|        |          |         |                 |       | 1                | 24          | 0   | 21.74               | 21.64          |
|        |          |         |                 |       | 12               | 0           | 1   | 20.92               | 20.82          |
|        |          |         |                 |       | 12               | 6           | 1   | 20.59               | 20.49          |
|        |          |         |                 |       | 12               | 11          | 1   | 20.63               | 20.53          |
|        |          |         |                 |       | 25               | 0           | 1   | 20.70               | 20.60          |
|        |          |         |                 | 16QAM | 1                | 0           | 1   | 21.17               | 21.07          |
|        |          |         |                 |       | 1                | 12          | 1   | 21.61               | 21.51          |
|        |          |         |                 |       | 1                | 24          | 1   | 21.67               | <b>21.57</b>   |
|        |          |         |                 |       | 12               | 0           | 2   | 19.99               | 19.89          |
|        |          |         |                 |       | 12               | 6           | 2   | 19.85               | 19.75          |
|        |          |         |                 |       | 12               | 11          | 2   | 19.83               | 19.73          |
|        |          |         |                 |       | 25               | 0           | 2   | 19.85               | 19.75          |
|        |          | 20175   | 1732.5          | QPSK  | 1                | 0           | 0   | 21.89               | <b>21.79</b>   |
|        |          |         |                 |       | 1                | 12          | 0   | 21.83               | 21.73          |
|        |          |         |                 |       | 1                | 24          | 0   | 21.79               | 21.69          |
|        |          |         |                 |       | 12               | 0           | 1   | 21.00               | 20.90          |
|        |          |         |                 |       | 12               | 6           | 1   | 20.99               | 20.89          |
|        |          |         |                 |       | 12               | 11          | 1   | 20.97               | 20.87          |
|        |          |         |                 |       | 25               | 0           | 1   | 20.95               | 20.85          |
|        |          |         |                 | 16QAM | 1                | 0           | 1   | 21.45               | 21.35          |
|        |          |         |                 |       | 1                | 12          | 1   | 21.74               | <b>21.64</b>   |
|        |          |         |                 |       | 1                | 24          | 1   | 21.51               | 21.41          |
|        |          |         |                 |       | 12               | 0           | 2   | 20.11               | 20.01          |
|        |          |         |                 |       | 12               | 6           | 2   | 19.98               | 19.88          |
|        |          |         |                 |       | 12               | 11          | 2   | 20.06               | 19.96          |
|        |          |         |                 |       | 25               | 0           | 2   | 20.01               | 19.91          |
|        |          | 20375   | 1752.5          | QPSK  | 1                | 0           | 0   | 21.88               | <b>21.78</b>   |
|        |          |         |                 |       | 1                | 12          | 0   | 21.81               | 21.71          |
|        |          |         |                 |       | 1                | 24          | 0   | 21.77               | 21.67          |
|        |          |         |                 |       | 12               | 0           | 1   | 21.17               | 21.07          |
|        |          |         |                 |       | 12               | 6           | 1   | 20.92               | 20.82          |
|        |          |         |                 |       | 12               | 11          | 1   | 20.84               | 20.74          |
|        |          |         |                 |       | 25               | 0           | 1   | 20.98               | 20.88          |
|        |          |         |                 | 16QAM | 1                | 0           | 1   | 21.18               | <b>21.08</b>   |
|        |          |         |                 |       | 1                | 12          | 1   | 21.06               | 20.96          |
|        |          |         |                 |       | 1                | 24          | 1   | 20.81               | 20.71          |
|        |          |         |                 |       | 12               | 0           | 2   | 20.10               | 20.00          |
|        |          |         |                 |       | 12               | 6           | 2   | 20.06               | 19.96          |
|        |          |         |                 |       | 12               | 11          | 2   | 20.05               | 19.95          |
|        |          |         |                 |       | 25               | 0           | 2   | 19.98               | 19.88          |

| Band   | BW (MHz) | Channel | Frequency (MHz) | Mode  | UL RB Allocation | UL RB Start | MPR | Average power (dBm) | E.I.R.P. Power |
|--------|----------|---------|-----------------|-------|------------------|-------------|-----|---------------------|----------------|
| Band 4 | 10M      | 20000   | 1715.0          | QPSK  | 1                | 0           | 0   | 21.00               | 20.90          |
|        |          |         |                 |       | 1                | 24          | 0   | 21.82               | <b>21.72</b>   |
|        |          |         |                 |       | 1                | 49          | 0   | 21.75               | 21.65          |
|        |          |         |                 |       | 25               | 0           | 1   | 20.93               | 20.83          |
|        |          |         |                 |       | 25               | 12          | 1   | 20.60               | 20.50          |
|        |          |         |                 |       | 25               | 24          | 1   | 20.64               | 20.54          |
|        |          |         |                 |       | 50               | 0           | 1   | 20.71               | 20.61          |
|        |          |         |                 | 16QAM | 1                | 0           | 1   | 21.18               | 21.08          |
|        |          |         |                 |       | 1                | 24          | 1   | 21.62               | 21.52          |
|        |          |         |                 |       | 1                | 49          | 1   | 21.68               | <b>21.58</b>   |
|        |          |         |                 |       | 25               | 0           | 2   | 20.00               | 19.90          |
|        |          |         |                 |       | 25               | 12          | 2   | 19.86               | 19.76          |
|        |          |         |                 |       | 25               | 24          | 2   | 19.84               | 19.74          |
|        |          |         |                 |       | 50               | 0           | 2   | 19.86               | 19.76          |
|        |          | 20175   | 1732.5          | QPSK  | 1                | 0           | 0   | 21.91               | <b>21.81</b>   |
|        |          |         |                 |       | 1                | 24          | 0   | 21.85               | 21.75          |
|        |          |         |                 |       | 1                | 49          | 0   | 21.81               | 21.71          |
|        |          |         |                 |       | 25               | 0           | 1   | 21.02               | 20.92          |
|        |          |         |                 |       | 25               | 12          | 1   | 21.01               | 20.91          |
|        |          |         |                 |       | 25               | 24          | 1   | 20.99               | 20.89          |
|        |          |         |                 |       | 50               | 0           | 1   | 20.97               | 20.87          |
|        |          |         |                 | 16QAM | 1                | 0           | 1   | 21.47               | 21.37          |
|        |          |         |                 |       | 1                | 24          | 1   | 21.76               | <b>21.66</b>   |
|        |          |         |                 |       | 1                | 49          | 1   | 21.53               | 21.43          |
|        |          |         |                 |       | 25               | 0           | 2   | 20.13               | 20.03          |
|        |          |         |                 |       | 25               | 12          | 2   | 20.00               | 19.90          |
|        |          |         |                 |       | 25               | 24          | 2   | 20.08               | 19.98          |
|        |          |         |                 |       | 50               | 0           | 2   | 20.03               | 19.93          |
|        |          | 20350   | 1750.0          | QPSK  | 1                | 0           | 0   | 21.91               | <b>21.81</b>   |
|        |          |         |                 |       | 1                | 24          | 0   | 21.84               | 21.74          |
|        |          |         |                 |       | 1                | 49          | 0   | 21.80               | 21.70          |
|        |          |         |                 |       | 25               | 0           | 1   | 21.20               | 21.10          |
|        |          |         |                 |       | 25               | 12          | 1   | 20.95               | 20.85          |
|        |          |         |                 |       | 25               | 24          | 1   | 20.87               | 20.77          |
|        |          |         |                 |       | 50               | 0           | 1   | 21.01               | 20.91          |
|        |          |         |                 | 16QAM | 1                | 0           | 1   | 21.21               | <b>21.11</b>   |
|        |          |         |                 |       | 1                | 24          | 1   | 21.09               | 20.99          |
|        |          |         |                 |       | 1                | 49          | 1   | 20.84               | 20.74          |
|        |          |         |                 |       | 25               | 0           | 2   | 20.13               | 20.03          |
|        |          |         |                 |       | 25               | 12          | 2   | 20.09               | 19.99          |
|        |          |         |                 |       | 25               | 24          | 2   | 20.08               | 19.98          |
|        |          |         |                 |       | 50               | 0           | 2   | 20.01               | 19.91          |

| Band   | BW (MHz) | Channel | Frequency (MHz) | Mode  | UL RB Allocation | UL RB Start | MPR | Average power (dBm) | E.I.R.P. Power |
|--------|----------|---------|-----------------|-------|------------------|-------------|-----|---------------------|----------------|
| Band 4 | 15M      | 20025   | 1717.5          | QPSK  | 1                | 0           | 0   | 21.03               | 20.93          |
|        |          |         |                 |       | 1                | 37          | 0   | 21.85               | <b>21.75</b>   |
|        |          |         |                 |       | 1                | 74          | 0   | 21.78               | 21.68          |
|        |          |         |                 |       | 36               | 0           | 1   | 20.96               | 20.86          |
|        |          |         |                 |       | 36               | 18          | 1   | 20.63               | 20.53          |
|        |          |         |                 |       | 36               | 35          | 1   | 20.67               | 20.57          |
|        |          |         |                 |       | 75               | 0           | 1   | 20.74               | 20.64          |
|        |          |         |                 | 16QAM | 1                | 0           | 1   | 21.21               | 21.11          |
|        |          |         |                 |       | 1                | 37          | 1   | 21.65               | 21.55          |
|        |          |         |                 |       | 1                | 74          | 1   | 21.71               | <b>21.61</b>   |
|        |          |         |                 |       | 36               | 0           | 2   | 20.03               | 19.93          |
|        |          |         |                 |       | 36               | 18          | 2   | 19.89               | 19.79          |
|        |          |         |                 |       | 36               | 35          | 2   | 19.87               | 19.77          |
|        |          |         |                 |       | 75               | 0           | 2   | 19.89               | 19.79          |
|        |          | 20175   | 1732.5          | QPSK  | 1                | 0           | 0   | 21.93               | <b>21.83</b>   |
|        |          |         |                 |       | 1                | 37          | 0   | 21.87               | 21.77          |
|        |          |         |                 |       | 1                | 74          | 0   | 21.83               | 21.73          |
|        |          |         |                 |       | 36               | 0           | 1   | 21.04               | 20.94          |
|        |          |         |                 |       | 36               | 18          | 1   | 21.03               | 20.93          |
|        |          |         |                 |       | 36               | 35          | 1   | 21.01               | 20.91          |
|        |          |         |                 |       | 75               | 0           | 1   | 20.99               | 20.89          |
|        |          |         |                 | 16QAM | 1                | 0           | 1   | 21.49               | 21.39          |
|        |          |         |                 |       | 1                | 37          | 1   | 21.78               | <b>21.68</b>   |
|        |          |         |                 |       | 1                | 74          | 1   | 21.55               | 21.45          |
|        |          |         |                 |       | 36               | 0           | 2   | 20.15               | 20.05          |
|        |          |         |                 |       | 36               | 18          | 2   | 20.02               | 19.92          |
|        |          |         |                 |       | 36               | 35          | 2   | 20.10               | 20.00          |
|        |          |         |                 |       | 75               | 0           | 2   | 20.05               | 19.95          |
|        |          | 20325   | 1747.5          | QPSK  | 1                | 0           | 0   | 21.93               | <b>21.83</b>   |
|        |          |         |                 |       | 1                | 37          | 0   | 21.86               | 21.76          |
|        |          |         |                 |       | 1                | 74          | 0   | 21.82               | 21.72          |
|        |          |         |                 |       | 36               | 0           | 1   | 21.22               | 21.12          |
|        |          |         |                 |       | 36               | 18          | 1   | 20.97               | 20.87          |
|        |          |         |                 |       | 36               | 35          | 1   | 20.89               | 20.79          |
|        |          |         |                 |       | 75               | 0           | 1   | 21.03               | 20.93          |
|        |          |         |                 | 16QAM | 1                | 0           | 1   | 21.23               | <b>21.13</b>   |
|        |          |         |                 |       | 1                | 37          | 1   | 21.11               | 21.01          |
|        |          |         |                 |       | 1                | 74          | 1   | 20.86               | 20.76          |
|        |          |         |                 |       | 36               | 0           | 2   | 20.15               | 20.05          |
|        |          |         |                 |       | 36               | 18          | 2   | 20.11               | 20.01          |
|        |          |         |                 |       | 36               | 35          | 2   | 20.10               | 20.00          |
|        |          |         |                 |       | 75               | 0           | 2   | 20.03               | 19.93          |

| Band   | BW (MHz) | Channel | Frequency (MHz) | Mode  | UL RB Allocation | UL RB Start | MPR | Average power (dBm) | E.I.R.P. Power |
|--------|----------|---------|-----------------|-------|------------------|-------------|-----|---------------------|----------------|
| Band 4 | 20M      | 20050   | 1720.0          | QPSK  | 1                | 0           | 0   | 21.11               | 21.01          |
|        |          |         |                 |       | 1                | 49          | 0   | 21.93               | <b>21.83</b>   |
|        |          |         |                 |       | 1                | 99          | 0   | 21.86               | 21.76          |
|        |          |         |                 |       | 50               | 0           | 1   | 21.04               | 20.94          |
|        |          |         |                 |       | 50               | 24          | 1   | 20.71               | 20.61          |
|        |          |         |                 |       | 50               | 49          | 1   | 20.75               | 20.65          |
|        |          |         |                 |       | 100              | 0           | 1   | 20.82               | 20.72          |
|        |          |         |                 | 16QAM | 1                | 0           | 1   | 21.29               | 21.19          |
|        |          |         |                 |       | 1                | 49          | 1   | 21.73               | 21.63          |
|        |          |         |                 |       | 1                | 99          | 1   | 21.79               | <b>21.69</b>   |
|        |          |         |                 |       | 50               | 0           | 2   | 20.11               | 20.01          |
|        |          |         |                 |       | 50               | 24          | 2   | 19.97               | 19.87          |
|        |          |         |                 |       | 50               | 49          | 2   | 19.95               | 19.85          |
|        |          |         |                 |       | 100              | 0           | 2   | 19.97               | 19.87          |
|        |          | 20175   | 1732.5          | QPSK  | 1                | 0           | 0   | 21.99               | <b>21.89</b>   |
|        |          |         |                 |       | 1                | 49          | 0   | 21.93               | 21.83          |
|        |          |         |                 |       | 1                | 99          | 0   | 21.89               | 21.79          |
|        |          |         |                 |       | 50               | 0           | 1   | 21.10               | 21.00          |
|        |          |         |                 |       | 50               | 24          | 1   | 21.09               | 20.99          |
|        |          |         |                 |       | 50               | 49          | 1   | 21.07               | 20.97          |
|        |          |         |                 |       | 100              | 0           | 1   | 21.05               | 20.95          |
|        |          |         |                 | 16QAM | 1                | 0           | 1   | 21.55               | 21.45          |
|        |          |         |                 |       | 1                | 49          | 1   | 21.84               | <b>21.74</b>   |
|        |          |         |                 |       | 1                | 99          | 1   | 21.61               | 21.51          |
|        |          |         |                 |       | 50               | 0           | 2   | 20.21               | 20.11          |
|        |          |         |                 |       | 50               | 24          | 2   | 20.08               | 19.98          |
|        |          |         |                 |       | 50               | 49          | 2   | 20.16               | 20.06          |
|        |          |         |                 |       | 100              | 0           | 2   | 20.11               | 20.01          |
|        |          | 20300   | 1745.0          | QPSK  | 1                | 0           | 0   | 21.98               | <b>21.88</b>   |
|        |          |         |                 |       | 1                | 49          | 0   | 21.91               | 21.81          |
|        |          |         |                 |       | 1                | 99          | 0   | 21.87               | 21.77          |
|        |          |         |                 |       | 50               | 0           | 1   | 21.27               | 21.17          |
|        |          |         |                 |       | 50               | 24          | 1   | 21.02               | 20.92          |
|        |          |         |                 |       | 50               | 49          | 1   | 20.94               | 20.84          |
|        |          |         |                 |       | 100              | 0           | 1   | 21.08               | 20.98          |
|        |          |         |                 | 16QAM | 1                | 0           | 1   | 21.28               | <b>21.18</b>   |
|        |          |         |                 |       | 1                | 49          | 1   | 21.16               | 21.06          |
|        |          |         |                 |       | 1                | 99          | 1   | 20.91               | 20.81          |
|        |          |         |                 |       | 50               | 0           | 2   | 20.20               | 20.10          |
|        |          |         |                 |       | 50               | 24          | 2   | 20.16               | 20.06          |
|        |          |         |                 |       | 50               | 49          | 2   | 20.15               | 20.05          |
|        |          |         |                 |       | 100              | 0           | 2   | 20.08               | 19.98          |

## 8.2 RADIATED EMISSION MEASUREMENT

### LIMITS

#### **FCC §27.53(h), Band 4**

(h) AWS emission limits—(1) General protection levels. Except as otherwise specified below, for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, 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.

### TEST PROCEDURES

1. According to KDB 971168 D01 and TIA-603-E.
2. The EUT was placed on a turntable
  - (1) Below 1G : 0.8m
  - (2) Above 1G : 1.5m
  - (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.

**Test Results****LTE Band 4 / BW: 20MHz / QPSK / RB =1, RB Offset = 0****Operation Mode:** Tx / Low CH**Test Date:**

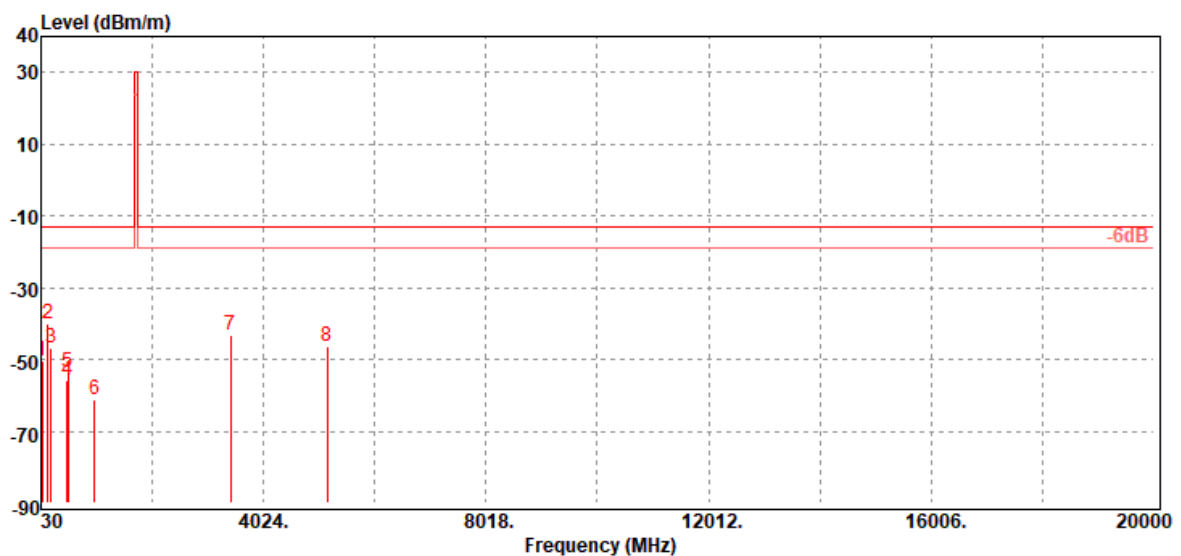
December 30, 2020

**Temperature:** 20°C**Tested by:**

Jerry Chang

**Humidity:** 65% RH**Polarity:**

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) |
|--------------|-----------------|---------------------------|----------------------------|---------------------|--------------|--------------|----------------------------------|
| 51.34        | -50.51          | -38.57                    | -11.36                     | -0.58               | -13.00       | -37.51       | V                                |
| 149.31       | -39.94          | -31.77                    | -7.17                      | -1.00               | -13.00       | -26.94       | V                                |
| 209.45       | -46.60          | -43.23                    | -2.18                      | -1.19               | -13.00       | -33.60       | V                                |
| 500.45       | -55.88          | -52.02                    | -1.99                      | -1.87               | -13.00       | -42.88       | V                                |
| 519.85       | -53.77          | -50.46                    | -1.40                      | -1.91               | -13.00       | -40.77       | V                                |
| 985.45       | -61.29          | -57.23                    | -1.40                      | -2.66               | -13.00       | -48.29       | V                                |
| 3440.00      | -43.28          | -50.49                    | 12.72                      | -5.51               | -13.00       | -30.28       | V                                |
| 5160.00      | -46.17          | -52.22                    | 12.76                      | -6.71               | -13.00       | -33.17       | V                                |

**Operation Mode:** Tx / Low CH

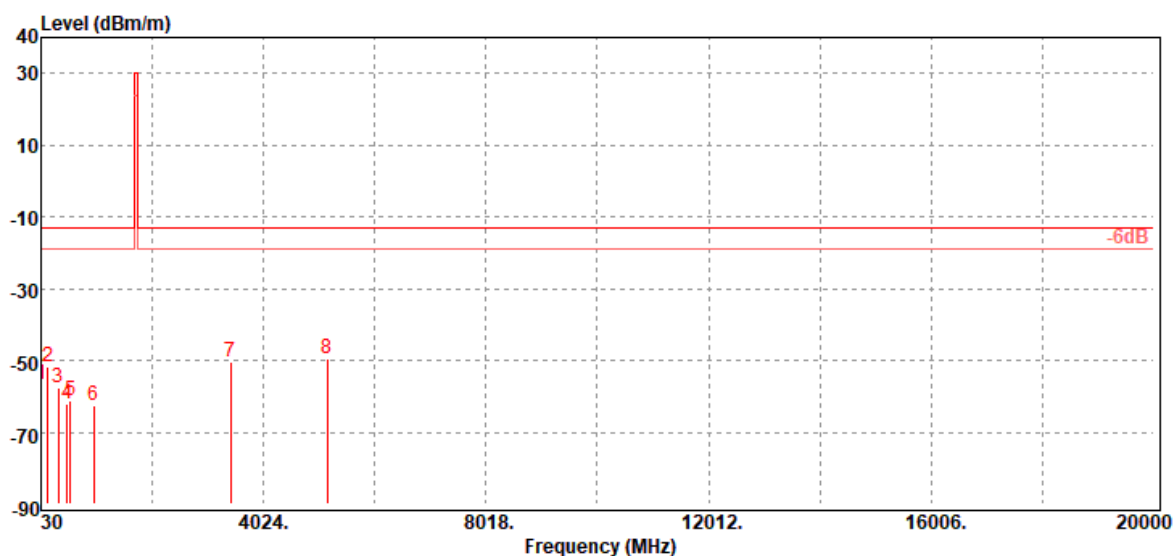
**Test Date:** December 30, 2020

**Temperature:** 20°C

**Tested by:** Jerry Chang

**Humidity:** 65% 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) |
|--------------|-----------------|---------------------------|----------------------------|---------------------|--------------|--------------|----------------------------------|
| 31.94        | -56.73          | -28.10                    | -28.16                     | -0.47               | -13.00       | -43.73       | H                                |
| 148.34       | -51.56          | -43.29                    | -7.27                      | -1.00               | -13.00       | -38.56       | H                                |
| 338.46       | -57.62          | -54.57                    | -1.53                      | -1.52               | -13.00       | -44.62       | H                                |
| 500.45       | -62.26          | -58.40                    | -1.99                      | -1.87               | -13.00       | -49.26       | H                                |
| 560.59       | -61.37          | -58.00                    | -1.40                      | -1.97               | -13.00       | -48.37       | H                                |
| 975.75       | -62.50          | -58.48                    | -1.38                      | -2.64               | -13.00       | -49.50       | H                                |
| 3440.00      | -50.36          | -57.57                    | 12.72                      | -5.51               | -13.00       | -37.36       | H                                |
| 5160.00      | -49.39          | -55.44                    | 12.76                      | -6.71               | -13.00       | -36.39       | H                                |



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Operation Mode: Tx / Mid CH

Test Date:

December 30, 2020

Temperature: 20°C

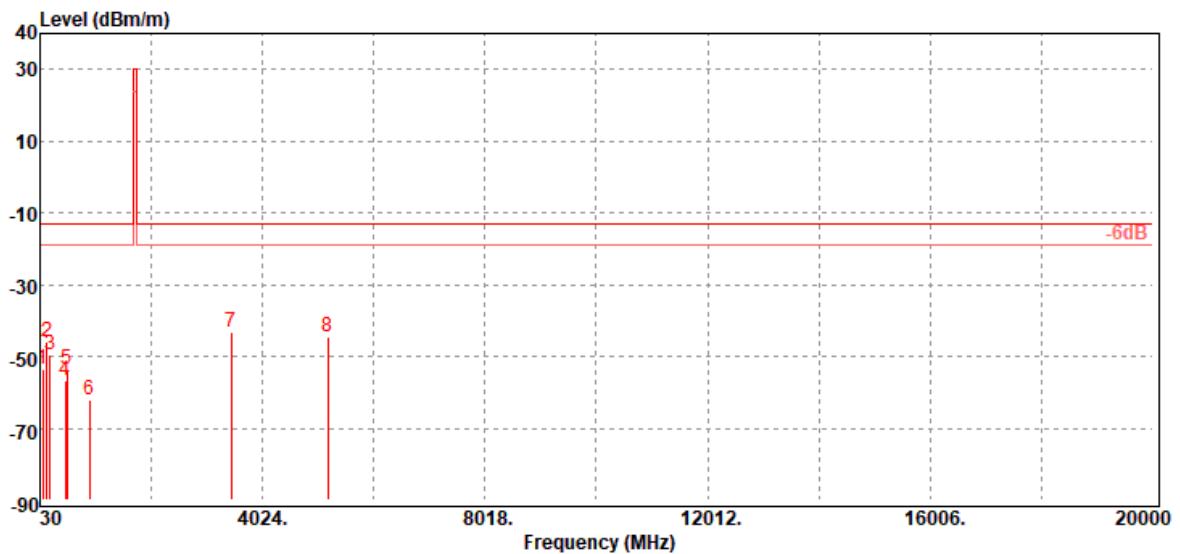
Tested by:

Jerry Chang

Humidity: 65% RH

Polarity:

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) |
|--------------|-----------------|---------------------------|----------------------------|---------------------|--------------|--------------|----------------------------------|
| 80.44        | -53.77          | -44.58                    | -8.46                      | -0.73               | -13.00       | -40.77       | V                                |
| 149.31       | -45.70          | -37.53                    | -7.17                      | -1.00               | -13.00       | -32.70       | V                                |
| 209.45       | -49.71          | -46.34                    | -2.18                      | -1.19               | -13.00       | -36.71       | V                                |
| 479.11       | -56.79          | -52.57                    | -2.40                      | -1.82               | -13.00       | -43.79       | V                                |
| 519.85       | -53.78          | -50.47                    | -1.40                      | -1.91               | -13.00       | -40.78       | V                                |
| 924.34       | -61.97          | -58.09                    | -1.30                      | -2.58               | -13.00       | -48.97       | V                                |
| 3465.00      | -43.11          | -50.22                    | 12.64                      | -5.53               | -13.00       | -30.11       | V                                |
| 5197.50      | -44.57          | -50.80                    | 12.98                      | -6.75               | -13.00       | -31.57       | V                                |

**Operation Mode:** Tx / Mid CH

**Test Date:**

December 30, 2020

**Temperature:** 20°C

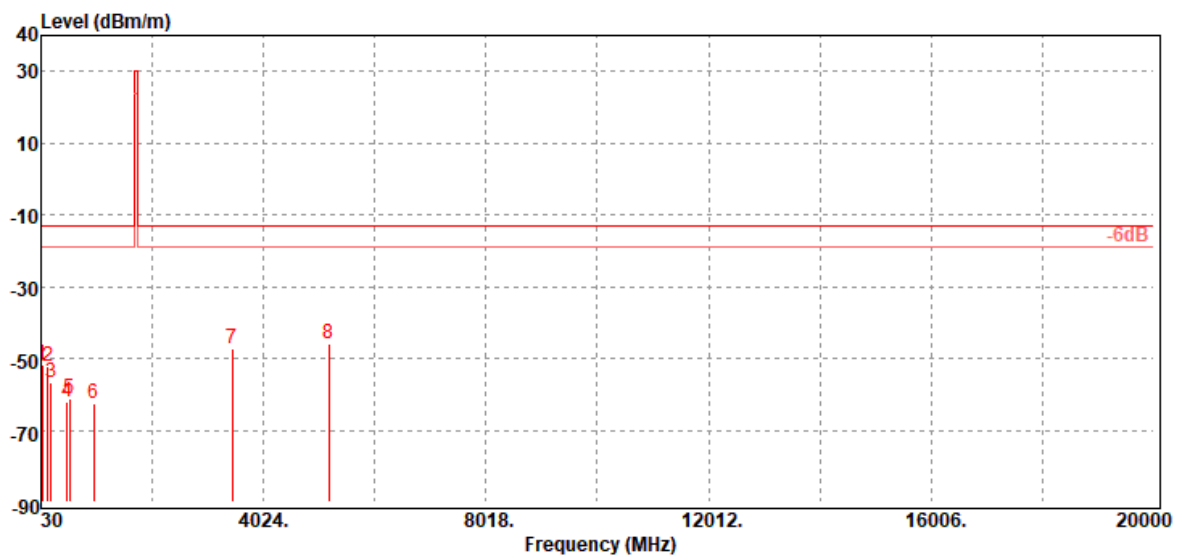
**Tested by:**

Jerry Chang

**Humidity:** 65% 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) |
|--------------|-----------------|---------------------------|----------------------------|---------------------|--------------|--------------|----------------------------------|
| 52.31        | -51.64          | -40.01                    | -11.04                     | -0.59               | -13.00       | -38.64       | H                                |
| 148.34       | -52.04          | -43.77                    | -7.27                      | -1.00               | -13.00       | -39.04       | H                                |
| 214.30       | -56.53          | -53.23                    | -2.10                      | -1.20               | -13.00       | -43.53       | H                                |
| 500.45       | -61.95          | -58.09                    | -1.99                      | -1.87               | -13.00       | -48.95       | H                                |
| 541.19       | -61.15          | -57.93                    | -1.28                      | -1.94               | -13.00       | -48.15       | H                                |
| 970.90       | -62.45          | -58.49                    | -1.32                      | -2.64               | -13.00       | -49.45       | H                                |
| 3465.00      | -47.10          | -54.21                    | 12.64                      | -5.53               | -13.00       | -34.10       | H                                |
| 5197.50      | -45.98          | -52.21                    | 12.98                      | -6.75               | -13.00       | -32.98       | H                                |

**Operation Mode:** Tx / High CH

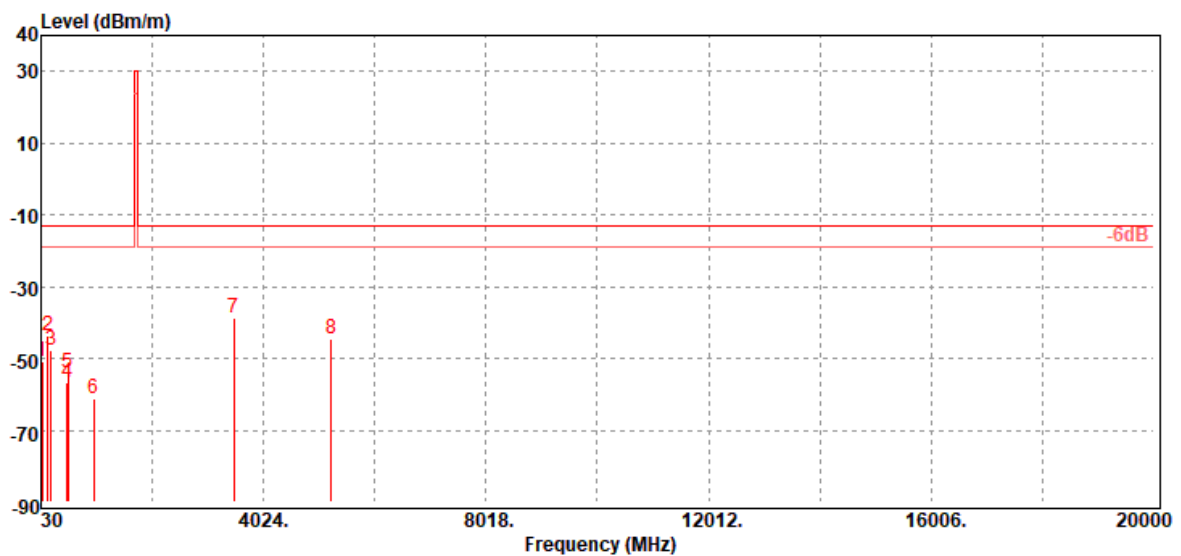
**Test Date:** December 30, 2020

**Temperature:** 20°C

**Tested by:** Jerry Chang

**Humidity:** 65% RH

**Polarity:** 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) |
|--------------|-----------------|---------------------------|----------------------------|---------------------|--------------|--------------|----------------------------------|
| 51.34        | -50.84          | -38.90                    | -11.36                     | -0.58               | -13.00       | -37.84       | V                                |
| 149.31       | -43.70          | -35.53                    | -7.17                      | -1.00               | -13.00       | -30.70       | V                                |
| 209.45       | -47.79          | -44.42                    | -2.18                      | -1.19               | -13.00       | -34.79       | V                                |
| 500.45       | -56.62          | -52.76                    | -1.99                      | -1.87               | -13.00       | -43.62       | V                                |
| 519.85       | -53.81          | -50.50                    | -1.40                      | -1.91               | -13.00       | -40.81       | V                                |
| 977.69       | -61.01          | -57.01                    | -1.35                      | -2.65               | -13.00       | -48.01       | V                                |
| 3490.00      | -38.49          | -45.48                    | 12.54                      | -5.55               | -13.00       | -25.49       | V                                |
| 5235.00      | -44.56          | -50.91                    | 13.14                      | -6.79               | -13.00       | -31.56       | V                                |



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Operation Mode: Tx / High CH

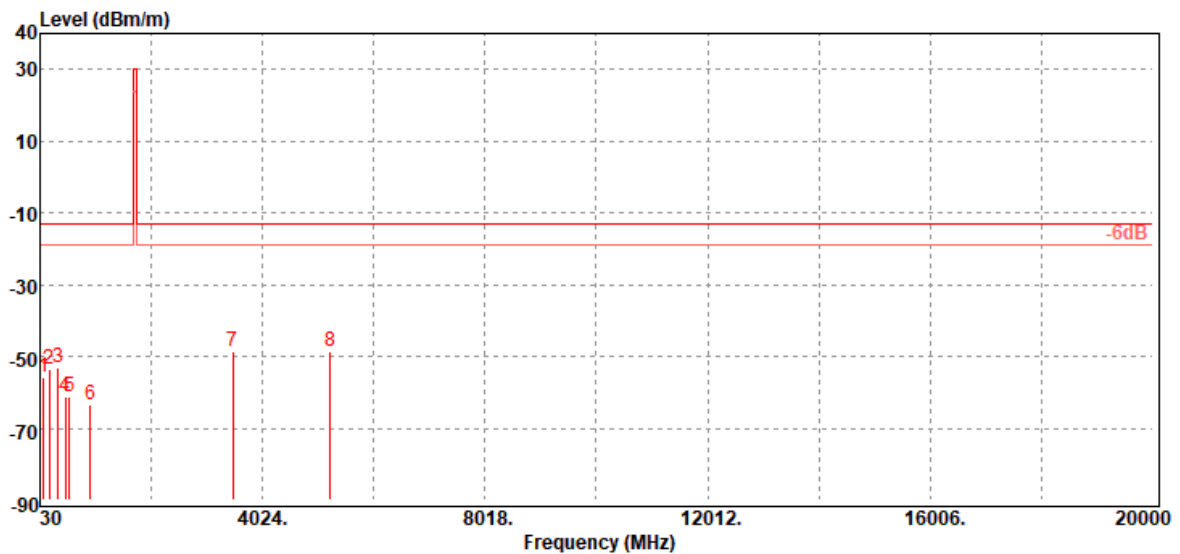
Test Date: December 30, 2020

Temperature: 20°C

Tested by: Jerry Chang

Humidity: 65% 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) |
|--------------|-----------------|---------------------------|----------------------------|---------------------|--------------|--------------|----------------------------------|
| 99.84        | -55.80          | -46.73                    | -8.25                      | -0.82               | -13.00       | -42.80       | H                                |
| 197.81       | -53.53          | -47.79                    | -4.58                      | -1.16               | -13.00       | -40.53       | H                                |
| 350.10       | -52.93          | -49.88                    | -1.50                      | -1.55               | -13.00       | -39.93       | H                                |
| 479.11       | -61.21          | -56.99                    | -2.40                      | -1.82               | -13.00       | -48.21       | H                                |
| 560.59       | -61.07          | -57.70                    | -1.40                      | -1.97               | -13.00       | -48.07       | H                                |
| 932.10       | -63.49          | -59.60                    | -1.30                      | -2.59               | -13.00       | -50.49       | H                                |
| 3490.00      | -48.64          | -55.63                    | 12.54                      | -5.55               | -13.00       | -35.64       | H                                |
| 5235.00      | -48.66          | -55.01                    | 13.14                      | -6.79               | -13.00       | -35.66       | H                                |

- End of Test Report -