



# FCC RF Test Report

**APPLICANT** : Motorola Mobility LLC  
**EQUIPMENT** : Mobile Cellular Phone  
**BRAND NAME** : Motorola  
**MODEL NAME** : XT2075-1  
**FCC ID** : IHDT56ZC1  
**STANDARD** : 47 CFR Part 2, 22, 24, 27  
**CLASSIFICATION** : PCS Licensed Transmitter Held to Ear (PCE)

The product was received on May 27, 2020 and completely tested on Jun. 24, 2020. We, Sporton International (Kunshan) Inc., would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.26-2015 and shown compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International (Kunshan) Inc., the test report shall not be reproduced except in full.

Jason Jia

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Reviewed by: Jason Jia / Supervisor

James Huang

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Approved by: James Huang / Manager



***Sporton International (Kunshan) Inc.***

***No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300  
People's Republic of China***



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## REVISION HISTORY

| REPORT NO.   | VERSION | DESCRIPTION             | ISSUED DATE   |
|--------------|---------|-------------------------|---------------|
| FG051103-01D | Rev. 01 | Initial issue of report | Aug. 05, 2020 |
|              |         |                         |               |
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|              |         |                         |               |



## SUMMARY OF TEST RESULT

| Report Section                                                                                                                                                                                                         | FCC Rule                                                                      | Description                                                                        | Limit                                 | Result | Remark                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|------------------------------------------------------------------------------------|---------------------------------------|--------|----------------------------------------------|
| 3.4                                                                                                                                                                                                                    | §2.1053<br>§22.917(a)<br>§24.238(a)<br>§27.53(c)(2)<br>§27.53(f)<br>§27.53(h) | Radiated Spurious Emission<br>(Band 2) (Band 4) (Band 5)<br>(Band 13)<br>(Band 66) | $< 43 + 10\log_{10}(P[\text{Watts}])$ | PASS   | Under limit<br>35.04 dB at<br>7560.00<br>MHz |
| <b>Remark :</b><br>This test report is for LTE inter band CA, only RSE is tested, all the other test items of LTE inter band CA were cover by LTE single carrier due to the CA power is reduced according to 3GPP MPR. |                                                                               |                                                                                    |                                       |        |                                              |



# 1 General Description

## 1.1 Applicant

**Motorola Mobility LLC**

222 W,Merchandise Mart Plaza,Chicago,IL60654 USA

## 1.2 Manufacturer

**Motorola Mobility LLC**

222 W,Merchandise Mart Plaza,Chicago,IL60654 USA

## 1.3 Product Feature of Equipment Under Test

| Product Feature                 |                                                                                                                                                                              |
|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Equipment                       | Mobile Cellular Phone                                                                                                                                                        |
| Brand Name                      | Motorola                                                                                                                                                                     |
| Model Name                      | XT2075-1                                                                                                                                                                     |
| FCC ID                          | IHDT56ZC1                                                                                                                                                                    |
| EUT supports Radios application | GSM/WCDMA/LTE /5G NR<br>WLAN 2.4GHz 802.11b/g/n HT20<br>WLAN 5GHz 802.11a/n HT20/HT40<br>WLAN 5GHz 802.11ac VHT20/VHT40/VHT80<br>Bluetooth BR/EDR/LE<br>FM Receiver/GNSS/NFC |
| IMEI Code                       | Radiation : 353614110011641                                                                                                                                                  |
| HW Version                      | DVT2                                                                                                                                                                         |
| SW Version                      | QPN30.37                                                                                                                                                                     |
| EUT Stage                       | Identical Prototype                                                                                                                                                          |

## 1.4 Product Specification of Equipment Under Test

| Standards-related Product Specification |                                                                                                                                                                                                    |
|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Tx Frequency</b>                     | LTE Band 2 : 1852.5 MHz ~ 1907.5 MHz<br>LTE Band 4 : 1712.5 MHz ~ 1752.5 MHz<br>LTE Band 5 : 826.5 MHz ~ 846.5 MHz<br>LTE Band 13 : 779.5 MHz ~ 784.5 MHz<br>LTE Band 66 : 1712.5 MHz ~ 1777.5 MHz |
| <b>Rx Frequency</b>                     | LTE Band 2 : 1932.5 MHz ~ 1987.5 MHz<br>LTE Band 4 : 2112.5 MHz ~ 2152.5 MHz<br>LTE Band 5 : 871.5 MHz ~ 891.5 MHz<br>LTE Band 13 : 748.5 MHz ~ 753.5 MHz<br>LTE Band 66 : 2112.5 MHz ~ 2197.5 MHz |
| <b>Bandwidth</b>                        | LTE Band 2 : 5MHz / 10MHz / 15MHz / 20MHz<br>LTE Band 4 : 5MHz / 10MHz / 15MHz / 20MHz<br>LTE Band 5 : 5MHz / 10MHz<br>LTE Band 13 : 5MHz / 10MHz<br>LTE Band 66 : 5MHz / 10MHz / 15MHz / 20MHz    |
| <b>CA Inter Bands</b>                   | 2A-4A, 2A-5A, 2A-13A, 2A-66A, 4A-5A, 4A-13A, 5A-66A, 13A-66A                                                                                                                                       |
| <b>Type of Modulation</b>               | QPSK / 16QAM / 64QAM                                                                                                                                                                               |

## 1.5 Modification of EUT

No modifications are made to the EUT during all test items.

## 1.6 Specification of Accessory

| Specification of Accessory |                   |                     |                   |            |
|----------------------------|-------------------|---------------------|-------------------|------------|
| <b>AC Adapter 1</b>        | <b>Brand Name</b> | Motorola (Chenyang) | <b>Model Name</b> | MC-201     |
| <b>AC Adapter 2</b>        | <b>Brand Name</b> | Motorola (Acbel)    | <b>Model Name</b> | MC-201     |
| <b>Battery</b>             | <b>Brand Name</b> | Motorola(Amperex)   | <b>Model Name</b> | LZ50       |
| <b>USB Cable 1</b>         | <b>Brand Name</b> | Motorola (Luxshare) | <b>Model Name</b> | SC18C24368 |
| <b>USB Cable 2</b>         | <b>Brand Name</b> | Motorola (Saibao)   | <b>Model Name</b> | SC18C24367 |

## 1.7 Testing Location

Sporton International (Kunshan) Inc. is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.02.

|                           |                                                                                                                                                                          |                            |                                       |
|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|---------------------------------------|
| <b>Test Firm</b>          | Sporton International (Kunshan) Inc.                                                                                                                                     |                            |                                       |
| <b>Test Site Location</b> | No. 1098, Pengxi North Road, Kunshan Economic Development Zone<br>Jiangsu Province 215300 People's Republic of China<br>TEL : +86-512-57900158<br>FAX : +86-512-57900958 |                            |                                       |
| <b>Test Site No.</b>      | <b>Sporton Site No.</b>                                                                                                                                                  | <b>FCC Designation No.</b> | <b>FCC Test Firm Registration No.</b> |
|                           | 03CH04-KS                                                                                                                                                                | CN1257                     | 314309                                |

## 1.8 Test Software

| Item | Site      | Manufacture | Name | Version      |
|------|-----------|-------------|------|--------------|
| 1.   | 03CH04-KS | AUDIX       | E3   | 6.2009-8-24a |

## 1.9 Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- 47 CFR Part 2, 22, 24, 27
- ANSI C63.26-2015
- FCC KDB 971168 D01 Power Meas License Digital Systems v03r01
- FCC KDB 412172 D01 Determining ERP and EIRP v01r01

### Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.



## 2 Test Configuration of Equipment Under Test

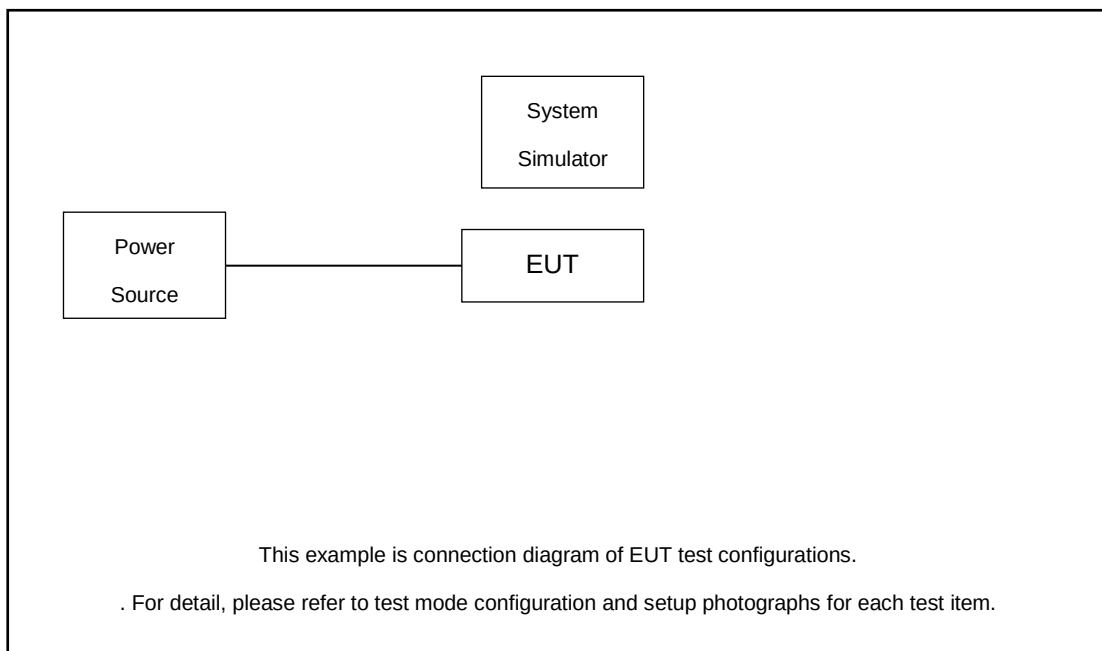
### 2.1 Test Mode

Antenna port conducted and radiated test items listed below are performed according to KDB 971168 D01 Power Meas License Digital Systems v03r01 with maximum output power.

Radiated measurements are performed by rotating the EUT in three different orthogonal test planes to find the maximum emission.

| Test Items                 | Band                                                                                                                                                                                                                                                                                                                                                                                | Bandwidth (MHz) |   |    |    |    | Modulation |       |       | RB # |      |      | Test Channel |   |   |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|---|----|----|----|------------|-------|-------|------|------|------|--------------|---|---|
|                            |                                                                                                                                                                                                                                                                                                                                                                                     | -               | 5 | 10 | 15 | 20 | QPSK       | 16QAM | 64QAM | 1    | Half | Full | L            | M | H |
| Radiated Spurious Emission | 2A-4A                                                                                                                                                                                                                                                                                                                                                                               | Worst Case      |   |    |    |    |            |       |       |      |      |      | v            | v | v |
|                            | 2A-5A                                                                                                                                                                                                                                                                                                                                                                               | Worst Case      |   |    |    |    |            |       |       |      |      |      | v            | v | v |
|                            | 2A-13A                                                                                                                                                                                                                                                                                                                                                                              | Worst Case      |   |    |    |    |            |       |       |      |      |      | v            | v | v |
|                            | 2A-66A                                                                                                                                                                                                                                                                                                                                                                              | Worst Case      |   |    |    |    |            |       |       |      |      |      | v            | v | v |
|                            | 4A-5A                                                                                                                                                                                                                                                                                                                                                                               | Worst Case      |   |    |    |    |            |       |       |      |      |      | v            | v | v |
|                            | 4A-13A                                                                                                                                                                                                                                                                                                                                                                              | Worst Case      |   |    |    |    |            |       |       |      |      |      | v            | v | v |
|                            | 5A-66A                                                                                                                                                                                                                                                                                                                                                                              | Worst Case      |   |    |    |    |            |       |       |      |      |      | v            | v | v |
|                            | 13A-66A                                                                                                                                                                                                                                                                                                                                                                             | Worst Case      |   |    |    |    |            |       |       |      |      |      | v            | v | v |
| Note                       | 1. The mark “v ” means that this configuration is chosen for testing<br>2. The mark “-” means that this bandwidth is not supported.<br>3. The device is investigated from 30MHz to 10 times of fundamental signal for radiated spurious emission test under different RB size/offset and modulations in exploratory test. Subsequently, only the worst case emissions are reported. |                 |   |    |    |    |            |       |       |      |      |      |              |   |   |

## 2.2 Connection Diagram of Test System



## 2.3 Support Unit used in test configuration and system

| Item | Equipment        | Trade Name | Model No. | FCC ID | Data Cable | Power Cord        |
|------|------------------|------------|-----------|--------|------------|-------------------|
| 1.   | LTE Base Station | Anritsu    | MT8820C   | N/A    | N/A        | Unshielded, 1.8 m |



## 2.4 Frequency List of Low/Middle/High Channels

| LTE Band 2 Channel and Frequency List |                        |        |        |         |
|---------------------------------------|------------------------|--------|--------|---------|
| BW [MHz]                              | Channel/Frequency(MHz) | Lowest | Middle | Highest |
| 20                                    | Channel                | 18700  | 18900  | 19100   |
|                                       | Frequency              | 1860   | 1880   | 1900    |
| 15                                    | Channel                | 18675  | 18900  | 19125   |
|                                       | Frequency              | 1857.5 | 1880   | 1902.5  |
| 10                                    | Channel                | 18650  | 18900  | 19150   |
|                                       | Frequency              | 1855   | 1880   | 1905    |
| 5                                     | Channel                | 18625  | 18900  | 19175   |
|                                       | Frequency              | 1852.5 | 1880   | 1907.5  |

| LTE Band 4 Channel and Frequency List |                        |        |        |         |
|---------------------------------------|------------------------|--------|--------|---------|
| BW [MHz]                              | Channel/Frequency(MHz) | Lowest | Middle | Highest |
| 20                                    | Channel                | 20050  | 20175  | 20300   |
|                                       | Frequency              | 1720   | 1732.5 | 1745    |
| 15                                    | Channel                | 20025  | 20175  | 20325   |
|                                       | Frequency              | 1717.5 | 1732.5 | 1747.5  |
| 10                                    | Channel                | 20000  | 20175  | 20350   |
|                                       | Frequency              | 1715   | 1732.5 | 1750    |
| 5                                     | Channel                | 19975  | 20175  | 20375   |
|                                       | Frequency              | 1712.5 | 1732.5 | 1752.5  |

| LTE Band 5 Channel and Frequency List |                        |        |        |         |
|---------------------------------------|------------------------|--------|--------|---------|
| BW [MHz]                              | Channel/Frequency(MHz) | Lowest | Middle | Highest |
| 10                                    | Channel                | 20450  | 20525  | 20600   |
|                                       | Frequency              | 829    | 836.5  | 844     |
| 5                                     | Channel                | 20425  | 20525  | 20625   |
|                                       | Frequency              | 826.5  | 836.5  | 846.5   |
| 3                                     | Channel                | 20415  | 20525  | 20635   |
|                                       | Frequency              | 825.5  | 836.5  | 847.5   |
| 1.4                                   | Channel                | 20407  | 20525  | 20643   |
|                                       | Frequency              | 824.7  | 836.5  | 848.3   |



| LTE Band 13 Channel and Frequency List |                        |        |        |         |
|----------------------------------------|------------------------|--------|--------|---------|
| BW [MHz]                               | Channel/Frequency(MHz) | Lowest | Middle | Highest |
| 10                                     | Channel                | -      | 23230  | -       |
|                                        | Frequency              | -      | 782    | -       |
| 5                                      | Channel                | 23205  | 23230  | 23255   |
|                                        | Frequency              | 779.5  | 782    | 784.5   |

| LTE Band 66 Channel and Frequency List |                        |        |        |         |
|----------------------------------------|------------------------|--------|--------|---------|
| BW [MHz]                               | Channel/Frequency(MHz) | Lowest | Middle | Highest |
| 20                                     | Channel                | 132072 | 132322 | 132572  |
|                                        | Frequency              | 1720   | 1745   | 1770    |
| 15                                     | Channel                | 132047 | 132322 | 132597  |
|                                        | Frequency              | 1717.5 | 1745   | 1772.5  |
| 10                                     | Channel                | 132022 | 132322 | 132622  |
|                                        | Frequency              | 1715   | 1745   | 1775    |
| 5                                      | Channel                | 131997 | 132322 | 132647  |
|                                        | Frequency              | 1712.5 | 1745   | 1777.5  |

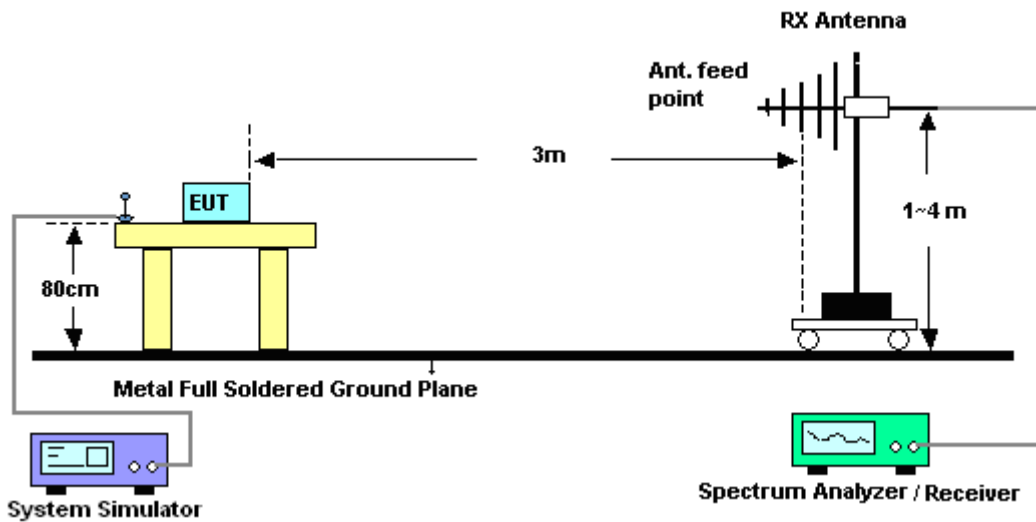
### 3 Radiated Test Items

#### 3.1 Measuring Instruments

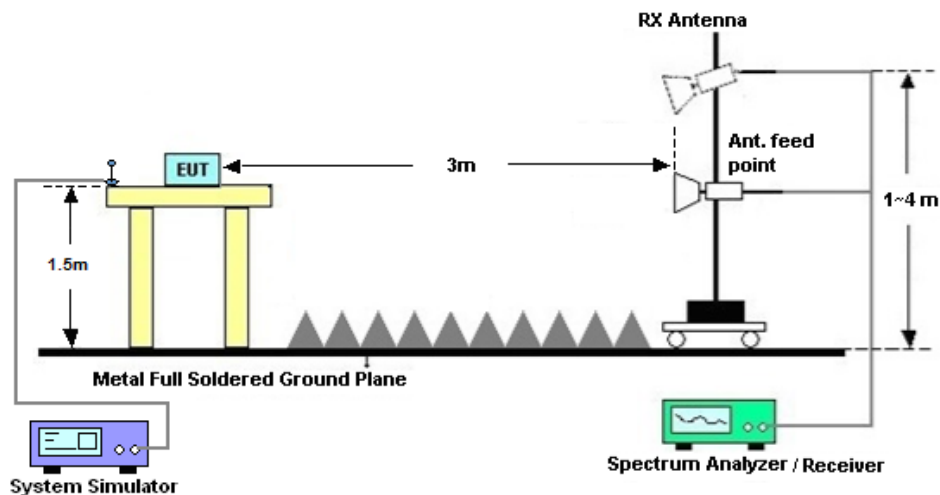
See list of measuring instruments of this test report.

#### 3.2 Test Setup

##### 3.2.1 For radiated test from 30MHz to 1GHz



##### 3.2.2 For radiated test above 1GHz



#### 3.3 Test Result of Radiated Test

Please refer to Appendix B.



### **3.4 Radiated Spurious Emission**

#### **3.4.1 Description of Radiated Spurious Emission**

The radiated spurious emission was measured by substitution method according to ANSI C63.26. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least  $43 + 10 \log (P)$  dB.

For LTE Band 13

For operations in the 746-758 MHz, 775-788 MHz, and 805-806 MHz bands, emissions in the band 1559-1610 MHz shall be limited to  $-70$  dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and  $-80$  dBW EIRP for discrete emissions of less than 700 Hz bandwidth.

The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

#### **3.4.2 Test Procedures**

1. The testing follows ANSI C63.26 Section 5.5
2. The EUT was placed on a turntable with 0.8 meter height for frequency below 1GHz and 1.5 meter height for frequency above 1GHz respectively above ground.
3. The EUT was set 3 meters from the receiving antenna mounted on the antenna tower.
4. The table was rotated 360 degrees to determine the position of the highest spurious emission.
5. The height of the receiving antenna is varied between 1m to 4m to search the maximum spurious emission for both horizontal and vertical polarizations.
6. During the measurement, the system simulator parameters were set to force the EUT transmitting at maximum output power.
7. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
8. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
9. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
10.  $\text{EIRP (dBm)} = \text{S.G. Power} - \text{Tx Cable Loss} + \text{Tx Antenna Gain}$
11.  $\text{ERP (dBm)} = \text{EIRP} - 2.15$
12. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

The limit line is derived from  $43 + 10\log(P)$ dB below the transmitter power P(Watts)  
 $= P(W) - [43 + 10\log(P)] \text{ (dB)}$   
 $= [30 + 10\log(P)] \text{ (dBm)} - [43 + 10\log(P)] \text{ (dB)}$   
 $= -13\text{dBm}.$



## 4 List of Measuring Equipment

| Instrument            | Manufacturer | Model No.                | Serial No. | Characteristics   | Calibration Date | Test Date     | Due Date      | Remark                |
|-----------------------|--------------|--------------------------|------------|-------------------|------------------|---------------|---------------|-----------------------|
| EXA Spectrum Analyzer | Keysight     | N9010A                   | MY55150244 | 10Hz-44G,MAX 30dB | Apr. 15, 2020    | Jun. 24, 2020 | Apr. 14, 2021 | Radiation (03CH04-KS) |
| Bilog Antenna         | TeseQ        | CBL6111D                 | 49922      | 30MHz-1GHz        | Jan. 02, 2020    | Jun. 24, 2020 | Jan. 03, 2021 | Radiation (03CH04-KS) |
| Horn Antenna          | Schwarzbeck  | BBHA9120D                | 1356       | 1GHz~18GHz        | Apr. 20, 2020    | Jun. 24, 2020 | Apr. 19, 2021 | Radiation (03CH04-KS) |
| SHF-EHF Horn          | Com-power    | AH-840                   | 101115     | 18GHz~40GHz       | Nov. 10, 2019    | Jun. 24, 2020 | Nov. 09, 2020 | Radiation (03CH04-KS) |
| Amplifier             | SONOMA       | 310N                     | 187289     | 9KHz-1GHz         | Jan. 02, 2020    | Jun. 24, 2020 | Jan. 03, 2021 | Radiation (03CH04-KS) |
| Amplifier             | MITEQ        | EM18G40G GA              | 060728     | 18~40GHz          | Jan. 08, 2020    | Jun. 24, 2020 | Jan. 07, 2021 | Radiation (03CH04-KS) |
| high gain Amplifier   | MITEQ        | AMF-7D-00 101800-30-1 0P | 2025788    | 1Ghz-18Ghz        | Jan. 02, 2020    | Jun. 24, 2020 | Jan. 03, 2021 | Radiation (03CH04-KS) |
| Amplifier             | Keysight     | 83017A                   | MY57280106 | 500MHz~26.5GHz    | Oct. 15, 2019    | Jun. 24, 2020 | Oct. 14, 2020 | Radiation (03CH04-KS) |
| AC Power Source       | Chroma       | 61601                    | F104090004 | N/A               | NCR              | Jun. 24, 2020 | NCR           | Radiation (03CH04-KS) |
| Turn Table            | ChamPro      | EM 1000-T                | 060762-T   | 0~360 degree      | NCR              | Jun. 24, 2020 | NCR           | Radiation (03CH04-KS) |
| Antenna Mast          | ChamPro      | EM 1000-A                | 060762-A   | 1 m~4 m           | NCR              | Jun. 24, 2020 | NCR           | Radiation (03CH04-KS) |

NCR: No Calibration Required



## 5 Uncertainty of Evaluation

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI 63.26-2015. All the measurement uncertainty value were shown with a coverage  $K=2$  to indicate 95% level of confidence. The measurement data show herein meets or exceeds the CISPR measurement uncertainty values specified in CISPR 16-4-2 and can be compared directly to specified limit to determine compliance.

### Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

|                                                                         |       |
|-------------------------------------------------------------------------|-------|
| Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ ) | 3.3dB |
|-------------------------------------------------------------------------|-------|

### Uncertainty of Radiated Emission Measurement (1 GHz ~ 18 GHz)

|                                                                         |       |
|-------------------------------------------------------------------------|-------|
| Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ ) | 2.8dB |
|-------------------------------------------------------------------------|-------|

### Uncertainty of Radiated Emission Measurement (18 GHz ~ 40 GHz)

|                                                                         |       |
|-------------------------------------------------------------------------|-------|
| Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ ) | 2.8dB |
|-------------------------------------------------------------------------|-------|



## Appendix A. Test Results of Radiated Test

### Radiated Spurious Emission

#### Ant 2 / Ant 1

| ULCA_2A-4A                                 |                      |                 |                  |                         |                          |                            |                             |                       |
|--------------------------------------------|----------------------|-----------------|------------------|-------------------------|--------------------------|----------------------------|-----------------------------|-----------------------|
| Channel                                    | Frequency<br>( MHz ) | EIRP<br>( dBm ) | Limit<br>( dBm ) | Over<br>Limit<br>( dB ) | S.G.<br>Power<br>( dBm ) | TX Cable<br>loss<br>( dB ) | TX Antenna<br>Gain<br>(dBi) | Polarization<br>(H/V) |
| LTE B2<br>BW 20MHz<br>Lowest<br>1RB0,QPSK  | 3702                 | -57.61          | -13              | -44.61                  | -64.30                   | 1.75                       | 8.44                        | H                     |
|                                            | 5553                 | -53.92          | -13              | -40.92                  | -62.34                   | 1.94                       | 10.36                       | H                     |
|                                            | 7404                 | -48.98          | -13              | -35.98                  | -58.22                   | 2.47                       | 11.71                       | H                     |
|                                            | 3702                 | -57.49          | -13              | -44.49                  | -64.18                   | 1.75                       | 8.44                        | V                     |
|                                            | 5553                 | -53.32          | -13              | -40.32                  | -61.74                   | 1.94                       | 10.36                       | V                     |
|                                            | 7404                 | -48.82          | -13              | -35.82                  | -58.06                   | 2.47                       | 11.71                       | V                     |
| LTE B4<br>BW 20MHz<br>Lowest<br>1RB0,QPSK  | 3423                 | -60.55          | -13              | -47.55                  | -66.81                   | 1.843                      | 8.10                        | H                     |
|                                            | 5133                 | -53.88          | -13              | -40.88                  | -62.80                   | 2.58                       | 11.50                       | H                     |
|                                            | 6840                 | -50.94          | -13              | -37.94                  | -60.70                   | 3.49                       | 13.24                       | H                     |
|                                            | 3423                 | -60.30          | -13              | -47.30                  | -66.56                   | 1.84                       | 8.10                        | V                     |
|                                            | 5133                 | -54.13          | -13              | -41.13                  | -63.05                   | 2.58                       | 11.50                       | V                     |
|                                            | 6840                 | -50.47          | -13              | -37.47                  | -60.23                   | 3.49                       | 13.24                       | V                     |
| LTE B2<br>BW 20MHz<br>Middle<br>1RB0,QPSK  | 3741                 | -55.56          | -13              | -42.56                  | -62.25                   | 1.75                       | 8.44                        | H                     |
|                                            | 5613                 | -52.22          | -13              | -39.22                  | -60.64                   | 1.94                       | 10.36                       | H                     |
|                                            | 7488                 | -48.70          | -13              | -35.70                  | -57.94                   | 2.47                       | 11.71                       | H                     |
|                                            | 3741                 | -57.18          | -13              | -44.18                  | -63.87                   | 1.75                       | 8.44                        | V                     |
|                                            | 5613                 | -53.62          | -13              | -40.62                  | -62.04                   | 1.94                       | 10.36                       | V                     |
|                                            | 7488                 | -48.13          | -13              | -35.13                  | -57.37                   | 2.47                       | 11.71                       | V                     |
| LTE B4<br>BW 20MHz<br>Middle<br>1RB0,QPSK  | 3447                 | -59.81          | -13              | -46.81                  | -66.07                   | 1.843                      | 8.10                        | H                     |
|                                            | 5172                 | -54.01          | -13              | -41.01                  | -62.93                   | 2.58                       | 11.50                       | H                     |
|                                            | 6900                 | -50.57          | -13              | -37.57                  | -60.33                   | 3.49                       | 13.24                       | H                     |
|                                            | 3447                 | -60.03          | -13              | -47.03                  | -66.29                   | 1.84                       | 8.10                        | V                     |
|                                            | 5172                 | -54.11          | -13              | -41.11                  | -63.03                   | 2.58                       | 11.50                       | V                     |
|                                            | 6900                 | -50.10          | -13              | -37.10                  | -59.86                   | 3.49                       | 13.24                       | V                     |
| LTE B2<br>BW 20MHz<br>Highest<br>1RB0,QPSK | 3783                 | -57.38          | -13              | -44.38                  | -64.07                   | 1.75                       | 8.44                        | H                     |
|                                            | 5673                 | -53.59          | -13              | -40.59                  | -62.01                   | 1.94                       | 10.36                       | H                     |
|                                            | 7560                 | -48.65          | -13              | -35.65                  | -57.89                   | 2.47                       | 11.71                       | H                     |
|                                            | 3783                 | -57.26          | -13              | -44.26                  | -63.95                   | 1.75                       | 8.44                        | V                     |
|                                            | 5673                 | -53.55          | -13              | -40.55                  | -61.97                   | 1.94                       | 10.36                       | V                     |
|                                            | 7560                 | -48.40          | -13              | -35.40                  | -57.64                   | 2.47                       | 11.71                       | V                     |
| LTE B4<br>BW 20MHz<br>Highest<br>1RB0,QPSK | 3471                 | -60.30          | -13              | -47.30                  | -66.56                   | 1.843                      | 8.10                        | H                     |
|                                            | 5208                 | -54.34          | -13              | -41.34                  | -63.26                   | 2.58                       | 11.50                       | H                     |
|                                            | 6948                 | -50.68          | -13              | -37.68                  | -60.44                   | 3.49                       | 13.24                       | H                     |
|                                            | 3471                 | -60.24          | -13              | -47.24                  | -66.50                   | 1.84                       | 8.10                        | V                     |
|                                            | 5208                 | -54.55          | -13              | -41.55                  | -63.47                   | 2.58                       | 11.50                       | V                     |
|                                            | 6948                 | -50.46          | -13              | -37.46                  | -60.22                   | 3.49                       | 13.24                       | V                     |

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.



| ULCA_2A-5A                                 |                   |              |               |                   |                    |                      |                       |                    |
|--------------------------------------------|-------------------|--------------|---------------|-------------------|--------------------|----------------------|-----------------------|--------------------|
| Channel                                    | Frequency ( MHz ) | EIRP ( dBm ) | Limit ( dBm ) | Over Limit ( dB ) | S.G. Power ( dBm ) | TX Cable loss ( dB ) | TX Antenna Gain (dBi) | Polarization (H/V) |
| LTE B2<br>BW 20MHz<br>Lowest<br>1RB0,QPSK  | 3700              | -57.84       | -13           | -44.84            | -70.10             | 2.64                 | 14.90                 | H                  |
|                                            | 5555              | -54.11       | -13           | -41.11            | -65.97             | 2.94                 | 14.80                 | H                  |
|                                            | 7404              | -49.01       | -13           | -36.01            | -58.78             | 3.39                 | 13.16                 | H                  |
|                                            | 3700              | -57.88       | -13           | -44.88            | -70.14             | 2.64                 | 14.90                 | V                  |
|                                            | 5553.27           | -54.32       | -13           | -41.32            | -66.18             | 2.94                 | 14.80                 | V                  |
|                                            | 7404              | -48.61       | -13           | -35.61            | -58.38             | 3.39                 | 13.16                 | V                  |
| LTE B5<br>BW 10MHz<br>Lowest<br>1RB0,QPSK  | 1650              | -67.69       | -13           | -54.69            | -74.66             | 1.58                 | 10.70                 | H                  |
|                                            | 2475              | -61.51       | -13           | -48.51            | -69.76             | 2.102                | 12.50                 | H                  |
|                                            | 3300              | -60.34       | -13           | -47.34            | -69.23             | 2.856                | 13.90                 | H                  |
|                                            | 1650              | -67.00       | -13           | -54.00            | -73.97             | 1.58                 | 10.70                 | V                  |
|                                            | 2475              | -61.03       | -13           | -48.03            | -69.28             | 2.10                 | 12.50                 | V                  |
|                                            | 3300              | -60.56       | -13           | -47.56            | -69.45             | 2.86                 | 13.90                 | V                  |
| LTE B2<br>BW 20MHz<br>Middle<br>1RB0,QPSK  | 3741              | -54.32       | -13           | -41.32            | -66.58             | 2.64                 | 14.90                 | H                  |
|                                            | 5613.27           | -53.86       | -13           | -40.86            | -65.72             | 2.94                 | 14.80                 | H                  |
|                                            | 7488              | -48.83       | -13           | -35.83            | -58.60             | 3.39                 | 13.16                 | H                  |
|                                            | 3742.18           | -57.58       | -13           | -44.58            | -69.84             | 2.64                 | 14.90                 | V                  |
|                                            | 5613              | -53.75       | -13           | -40.75            | -65.61             | 2.94                 | 14.80                 | V                  |
|                                            | 7488              | -48.12       | -13           | -35.12            | -57.89             | 3.39                 | 13.16                 | V                  |
| LTE B5<br>BW 10MHz<br>Middle<br>1RB0,QPSK  | 1665              | -65.17       | -13           | -52.17            | -72.14             | 1.58                 | 10.70                 | H                  |
|                                            | 2495              | -62.30       | -13           | -49.30            | -70.55             | 2.102                | 12.50                 | H                  |
|                                            | 3327              | -60.53       | -13           | -47.53            | -69.42             | 2.856                | 13.90                 | H                  |
|                                            | 1665              | -64.74       | -13           | -51.74            | -71.71             | 1.58                 | 10.70                 | V                  |
|                                            | 2495              | -61.71       | -13           | -48.71            | -69.96             | 2.10                 | 12.50                 | V                  |
|                                            | 3327              | -60.75       | -13           | -47.75            | -69.64             | 2.86                 | 13.90                 | V                  |
| LTE B2<br>BW 20MHz<br>Highest<br>1RB0,QPSK | 3780              | -57.71       | -13           | -44.71            | -69.97             | 2.64                 | 14.90                 | H                  |
|                                            | 5673.27           | -53.96       | -13           | -40.96            | -65.82             | 2.94                 | 14.80                 | H                  |
|                                            | 7560              | -48.41       | -13           | -35.41            | -58.18             | 3.39                 | 13.16                 | H                  |
|                                            | 3780              | -57.64       | -13           | -44.64            | -69.90             | 2.64                 | 14.90                 | V                  |
|                                            | 5675              | -53.88       | -13           | -40.88            | -65.74             | 2.94                 | 14.80                 | V                  |
|                                            | 7560              | -48.04       | -13           | -35.04            | -57.81             | 3.39                 | 13.16                 | V                  |
| LTE B5<br>BW 10MHz<br>Highest<br>1RB0,QPSK | 1680              | -67.22       | -13           | -54.22            | -74.19             | 1.58                 | 10.70                 | H                  |
|                                            | 2520              | -61.47       | -13           | -48.47            | -69.72             | 2.102                | 12.50                 | H                  |
|                                            | 3360              | -60.37       | -13           | -47.37            | -69.26             | 2.856                | 13.90                 | H                  |
|                                            | 1680              | -66.63       | -13           | -53.63            | -73.60             | 1.58                 | 10.70                 | V                  |
|                                            | 2520              | -61.37       | -13           | -48.37            | -69.62             | 2.10                 | 12.50                 | V                  |
|                                            | 3360              | -60.80       | -13           | -47.80            | -69.69             | 2.86                 | 13.90                 | V                  |

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.



| ULCA_2A-66A                                 |                      |                 |                  |                         |                          |                            |                             |                       |
|---------------------------------------------|----------------------|-----------------|------------------|-------------------------|--------------------------|----------------------------|-----------------------------|-----------------------|
| Channel                                     | Frequency<br>( MHz ) | EIRP<br>( dBm ) | Limit<br>( dBm ) | Over<br>Limit<br>( dB ) | S.G.<br>Power<br>( dBm ) | TX Cable<br>loss<br>( dB ) | TX Antenna<br>Gain<br>(dBi) | Polarization<br>(H/V) |
| LTE B2<br>BW 20MHz<br>Lowest<br>1RB0,QPSK   | 3702                 | -57.73          | -13              | -44.73                  | -66.04                   | 2.19                       | 10.50                       | H                     |
|                                             | 5553                 | -53.79          | -13              | -40.79                  | -63.77                   | 2.80                       | 12.78                       | H                     |
|                                             | 7404                 | -49.33          | -13              | -36.33                  | -59.51                   | 3.83                       | 14.01                       | H                     |
|                                             | 3702                 | -57.72          | -13              | -44.72                  | -66.03                   | 2.19                       | 10.50                       | V                     |
|                                             | 5553                 | -53.81          | -13              | -40.81                  | -63.79                   | 2.80                       | 12.78                       | V                     |
|                                             | 7404                 | -49.15          | -13              | -36.15                  | -59.33                   | 3.83                       | 14.01                       | V                     |
| LTE B66<br>BW 20MHz<br>Lowest<br>1RB0,QPSK  | 3423                 | -60.64          | -13              | -47.64                  | -67.33                   | 1.75                       | 8.44                        | H                     |
|                                             | 5133                 | -54.27          | -13              | -41.27                  | -62.69                   | 1.94                       | 10.36                       | H                     |
|                                             | 6840                 | -51.17          | -13              | -38.17                  | -60.41                   | 2.47                       | 11.71                       | H                     |
|                                             | 3423                 | -60.64          | -13              | -47.64                  | -67.33                   | 1.75                       | 8.44                        | V                     |
|                                             | 5133                 | -54.14          | -13              | -41.14                  | -62.56                   | 1.94                       | 10.36                       | V                     |
|                                             | 6840                 | -50.64          | -13              | -37.64                  | -59.88                   | 2.47                       | 11.71                       | V                     |
| LTE B2<br>BW 20MHz<br>Middle<br>1RB0,QPSK   | 3741                 | -57.08          | -13              | -44.08                  | -65.39                   | 2.19                       | 10.50                       | H                     |
|                                             | 5613                 | -53.61          | -13              | -40.61                  | -63.59                   | 2.80                       | 12.78                       | H                     |
|                                             | 7488                 | -48.96          | -13              | -35.96                  | -59.14                   | 3.83                       | 14.01                       | H                     |
|                                             | 3741                 | -56.99          | -13              | -43.99                  | -65.30                   | 2.19                       | 10.50                       | V                     |
|                                             | 5613                 | -52.69          | -13              | -39.69                  | -62.67                   | 2.80                       | 12.78                       | V                     |
|                                             | 7488                 | -48.63          | -13              | -35.63                  | -58.81                   | 3.83                       | 14.01                       | V                     |
| LTE B66<br>BW 20MHz<br>Middle<br>1RB0,QPSK  | 3471                 | -60.32          | -13              | -47.32                  | -67.01                   | 1.75                       | 8.44                        | H                     |
|                                             | 5208                 | -54.44          | -13              | -41.44                  | -62.86                   | 1.94                       | 10.36                       | H                     |
|                                             | 6948                 | -50.83          | -13              | -37.83                  | -60.07                   | 2.47                       | 11.71                       | H                     |
|                                             | 3471                 | -59.94          | -13              | -46.94                  | -66.63                   | 1.75                       | 8.44                        | V                     |
|                                             | 5208                 | -54.15          | -13              | -41.15                  | -62.57                   | 1.94                       | 10.36                       | V                     |
|                                             | 6948                 | -50.43          | -13              | -37.43                  | -59.67                   | 2.47                       | 11.71                       | V                     |
| LTE B2<br>BW 20MHz<br>Highest<br>1RB0,QPSK  | 3783                 | -57.05          | -13              | -44.05                  | -65.36                   | 2.19                       | 10.50                       | H                     |
|                                             | 5673                 | -53.48          | -13              | -40.48                  | -63.46                   | 2.80                       | 12.78                       | H                     |
|                                             | 7560                 | -48.60          | -13              | -35.60                  | -58.78                   | 3.83                       | 14.01                       | H                     |
|                                             | 3783                 | -57.31          | -13              | -44.31                  | -65.62                   | 2.19                       | 10.50                       | V                     |
|                                             | 5673                 | -53.18          | -13              | -40.18                  | -63.16                   | 2.80                       | 12.78                       | V                     |
|                                             | 7560                 | -48.70          | -13              | -35.70                  | -58.88                   | 3.83                       | 14.01                       | V                     |
| LTE B66<br>BW 20MHz<br>Highest<br>1RB0,QPSK | 3522                 | -60.27          | -13              | -47.27                  | -66.96                   | 1.75                       | 8.44                        | H                     |
|                                             | 5283                 | -55.18          | -13              | -42.18                  | -63.60                   | 1.94                       | 10.36                       | H                     |
|                                             | 7044                 | -50.49          | -13              | -37.49                  | -59.73                   | 2.47                       | 11.71                       | H                     |
|                                             | 3522                 | -60.18          | -13              | -47.18                  | -66.87                   | 1.75                       | 8.44                        | V                     |
|                                             | 5283                 | -55.16          | -13              | -42.16                  | -63.58                   | 1.94                       | 10.36                       | V                     |
|                                             | 7044                 | -50.24          | -13              | -37.24                  | -59.48                   | 2.47                       | 11.71                       | V                     |

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.



| ULCA 4A-13A                                 |                      |                 |                  |                         |                          |                            |                             |                       |
|---------------------------------------------|----------------------|-----------------|------------------|-------------------------|--------------------------|----------------------------|-----------------------------|-----------------------|
| Channel                                     | Frequency<br>( MHz ) | EIRP<br>( dBm ) | Limit<br>( dBm ) | Over<br>Limit<br>( dB ) | S.G.<br>Power<br>( dBm ) | TX Cable<br>loss<br>( dB ) | TX Antenna<br>Gain<br>(dBi) | Polarization<br>(H/V) |
| LTE B4<br>BW 20MHz<br>Lowest<br>1RB0,QPSK   | 3423                 | -60.64          | -13              | -47.64                  | -71.38                   | 2.604                      | 13.34                       | H                     |
|                                             | 5133                 | -54.03          | -13              | -41.03                  | -64.54                   | 3.011                      | 13.52                       | H                     |
|                                             | 6840                 | -50.79          | -13              | -37.79                  | -60.99                   | 3.271                      | 13.47                       | H                     |
|                                             | 3423                 | -60.59          | -13              | -47.59                  | -71.33                   | 2.604                      | 13.34                       | V                     |
|                                             | 5133                 | -53.94          | -13              | -40.94                  | -64.45                   | 3.011                      | 13.52                       | V                     |
|                                             | 6840                 | -51.47          | -13              | -38.47                  | -61.67                   | 3.271                      | 13.47                       | V                     |
| LTE B13<br>BW 10MHz<br>Lowest<br>1RB0,QPSK  | 1556                 | -65.43          | -13              | -52.43                  | -68.06                   | 1.09                       | 5.87                        | H                     |
|                                             | 2332                 | -63.31          | -13              | -50.31                  | -65.71                   | 1.37                       | 5.92                        | H                     |
|                                             | 3111                 | -61.10          | -13              | -48.10                  | -64.99                   | 1.64                       | 7.68                        | H                     |
|                                             | 1556                 | -65.12          | -13              | -52.12                  | -67.75                   | 1.09                       | 5.87                        | V                     |
|                                             | 2332                 | -62.55          | -13              | -49.55                  | -64.95                   | 1.37                       | 5.92                        | V                     |
|                                             | 3111                 | -61.31          | -13              | -48.31                  | -65.20                   | 1.64                       | 7.68                        | V                     |
| LTE B4<br>BW 20MHz<br>Middle<br>1RB0,QPSK   | 3447                 | -60.45          | -13              | -47.45                  | -71.19                   | 2.604                      | 13.34                       | H                     |
|                                             | 5172                 | -54.49          | -13              | -41.49                  | -65.00                   | 3.011                      | 13.52                       | H                     |
|                                             | 6900                 | -51.07          | -13              | -38.07                  | -61.27                   | 3.271                      | 13.47                       | H                     |
|                                             | 3447                 | -60.33          | -13              | -47.33                  | -71.07                   | 2.604                      | 13.34                       | V                     |
|                                             | 5172                 | -54.00          | -13              | -41.00                  | -64.51                   | 3.011                      | 13.52                       | V                     |
|                                             | 6900                 | -50.57          | -13              | -37.57                  | -60.77                   | 3.271                      | 13.47                       | V                     |
| LTE B13<br>BW 10MHz<br>Middle<br>1RB0,QPSK  | 1556                 | -65.33          | -13              | -52.33                  | -67.96                   | 1.09                       | 5.87                        | H                     |
|                                             | 2332                 | -63.36          | -13              | -50.36                  | -65.76                   | 1.37                       | 5.92                        | H                     |
|                                             | 3111                 | -61.48          | -13              | -48.48                  | -65.37                   | 1.64                       | 7.68                        | H                     |
|                                             | 1556                 | -64.53          | -13              | -51.53                  | -67.16                   | 1.09                       | 5.87                        | V                     |
|                                             | 2332                 | -63.16          | -13              | -50.16                  | -65.56                   | 1.37                       | 5.92                        | V                     |
|                                             | 3111                 | -60.93          | -13              | -47.93                  | -64.82                   | 1.64                       | 7.68                        | V                     |
| LTE B4<br>BW 20MHz<br>Highest<br>1RB0,QPSK  | 3471                 | -60.39          | -13              | -47.39                  | -71.13                   | 2.604                      | 13.34                       | H                     |
|                                             | 5208                 | -54.21          | -13              | -41.21                  | -64.72                   | 3.011                      | 13.52                       | H                     |
|                                             | 6948                 | -50.72          | -13              | -37.72                  | -60.92                   | 3.271                      | 13.47                       | H                     |
|                                             | 3471                 | -60.65          | -13              | -47.65                  | -71.39                   | 2.604                      | 13.34                       | V                     |
|                                             | 5208                 | -54.85          | -13              | -41.85                  | -65.36                   | 3.011                      | 13.52                       | V                     |
|                                             | 6948                 | -50.59          | -13              | -37.59                  | -60.79                   | 3.271                      | 13.47                       | V                     |
| LTE B13<br>BW 10MHz<br>Highest<br>1RB0,QPSK | 1556                 | -65.33          | -13              | -52.33                  | -67.96                   | 1.09                       | 5.87                        | H                     |
|                                             | 2332                 | -63.42          | -13              | -50.42                  | -65.82                   | 1.37                       | 5.92                        | H                     |
|                                             | 3111                 | -61.33          | -13              | -48.33                  | -65.22                   | 1.64                       | 7.68                        | H                     |
|                                             | 1556                 | -65.18          | -13              | -52.18                  | -67.81                   | 1.09                       | 5.87                        | V                     |
|                                             | 2332                 | -63.19          | -13              | -50.19                  | -65.59                   | 1.37                       | 5.92                        | V                     |
|                                             | 3111                 | -61.26          | -13              | -48.26                  | -65.15                   | 1.64                       | 7.68                        | V                     |

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.



| ULCA_66A-5A                                 |                      |                 |                  |                         |                          |                            |                             |                       |
|---------------------------------------------|----------------------|-----------------|------------------|-------------------------|--------------------------|----------------------------|-----------------------------|-----------------------|
| Channel                                     | Frequency<br>( MHz ) | EIRP<br>( dBm ) | Limit<br>( dBm ) | Over<br>Limit<br>( dB ) | S.G.<br>Power<br>( dBm ) | TX Cable<br>loss<br>( dB ) | TX Antenna<br>Gain<br>(dBi) | Polarization<br>(H/V) |
| LTE B66<br>BW 20MHz<br>Lowest<br>1RB0,QPSK  | 1650                 | -65.19          | -13              | -52.19                  | -72.16                   | 1.58                       | 10.70                       | H                     |
|                                             | 2475                 | -53.23          | -13              | -40.23                  | -61.48                   | 2.102                      | 12.50                       | H                     |
|                                             | 3300                 | -60.32          | -13              | -47.32                  | -69.21                   | 2.856                      | 13.90                       | H                     |
|                                             | 1650                 | -64.29          | -13              | -51.29                  | -71.26                   | 1.58                       | 10.70                       | V                     |
|                                             | 2475                 | -52.34          | -13              | -39.34                  | -60.59                   | 2.10                       | 12.50                       | V                     |
|                                             | 3300                 | -60.45          | -13              | -47.45                  | -69.34                   | 2.86                       | 13.90                       | V                     |
| LTE B5<br>BW 10MHz<br>Lowest<br>1RB0,QPSK   | 3420                 | -60.06          | -13              | -47.06                  | -70.80                   | 2.604                      | 13.34                       | H                     |
|                                             | 5135                 | -53.95          | -13              | -40.95                  | -64.46                   | 3.011                      | 13.52                       | H                     |
|                                             | 6840                 | -50.94          | -13              | -37.94                  | -61.14                   | 3.271                      | 13.47                       | H                     |
|                                             | 3420                 | -60.27          | -13              | -47.27                  | -71.01                   | 2.604                      | 13.34                       | V                     |
|                                             | 5135                 | -54.07          | -13              | -41.07                  | -64.58                   | 3.011                      | 13.52                       | V                     |
|                                             | 6840                 | -50.73          | -13              | -37.73                  | -60.93                   | 3.271                      | 13.47                       | V                     |
| LTE B66<br>BW 20MHz<br>Middle<br>1RB0,QPSK  | 1665                 | -65.26          | -13              | -52.26                  | -72.23                   | 1.58                       | 10.70                       | H                     |
|                                             | 2495                 | -52.05          | -13              | -39.05                  | -60.30                   | 2.102                      | 12.50                       | H                     |
|                                             | 3330                 | -60.35          | -13              | -47.35                  | -69.24                   | 2.856                      | 13.90                       | H                     |
|                                             | 1665                 | -64.58          | -13              | -51.58                  | -71.55                   | 1.58                       | 10.70                       | V                     |
|                                             | 2495                 | -50.79          | -13              | -37.79                  | -59.04                   | 2.10                       | 12.50                       | V                     |
|                                             | 3330                 | -60.15          | -13              | -47.15                  | -69.04                   | 2.86                       | 13.90                       | V                     |
| LTE B5<br>BW 10MHz<br>Middle<br>1RB0,QPSK   | 3740                 | -57.78          | -13              | -44.78                  | -68.52                   | 2.604                      | 13.34                       | H                     |
|                                             | 5210                 | -54.45          | -13              | -41.45                  | -64.96                   | 3.011                      | 13.52                       | H                     |
|                                             | 6948                 | -50.59          | -13              | -37.59                  | -60.79                   | 3.271                      | 13.47                       | H                     |
|                                             | 3740                 | -57.54          | -13              | -44.54                  | -68.28                   | 2.604                      | 13.34                       | V                     |
|                                             | 5210                 | -54.43          | -13              | -41.43                  | -64.94                   | 3.011                      | 13.52                       | V                     |
|                                             | 6948                 | -50.24          | -13              | -37.24                  | -60.44                   | 3.271                      | 13.47                       | V                     |
| LTE B66<br>BW 20MHz<br>Highest<br>1RB0,QPSK | 1680                 | -65.20          | -13              | -52.20                  | -72.17                   | 1.58                       | 10.70                       | H                     |
|                                             | 2520                 | -53.73          | -13              | -40.73                  | -61.98                   | 2.102                      | 12.50                       | H                     |
|                                             | 3360                 | -60.27          | -13              | -47.27                  | -69.16                   | 2.856                      | 13.90                       | H                     |
|                                             | 1680                 | -64.58          | -13              | -51.58                  | -71.55                   | 1.58                       | 10.70                       | V                     |
|                                             | 2520                 | -55.23          | -13              | -42.23                  | -63.48                   | 2.10                       | 12.50                       | V                     |
|                                             | 3360                 | -60.45          | -13              | -47.45                  | -69.34                   | 2.86                       | 13.90                       | V                     |
| LTE B5<br>BW 10MHz<br>Highest<br>1RB0,QPSK  | 3520                 | -59.41          | -13              | -46.41                  | -70.15                   | 2.604                      | 13.34                       | H                     |
|                                             | 5285                 | -55.33          | -13              | -42.33                  | -65.84                   | 3.011                      | 13.52                       | H                     |
|                                             | 7044                 | -49.96          | -13              | -36.96                  | -60.16                   | 3.271                      | 13.47                       | H                     |
|                                             | 3520                 | -59.71          | -13              | -46.71                  | -70.45                   | 2.604                      | 13.34                       | V                     |
|                                             | 5285                 | -55.22          | -13              | -42.22                  | -65.73                   | 3.011                      | 13.52                       | V                     |
|                                             | 7044                 | -49.75          | -13              | -36.75                  | -59.95                   | 3.271                      | 13.47                       | V                     |

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.



| ULCA_66A-13A                                |                      |                 |                  |                         |                          |                            |                             |                       |
|---------------------------------------------|----------------------|-----------------|------------------|-------------------------|--------------------------|----------------------------|-----------------------------|-----------------------|
| Channel                                     | Frequency<br>( MHz ) | EIRP<br>( dBm ) | Limit<br>( dBm ) | Over<br>Limit<br>( dB ) | S.G.<br>Power<br>( dBm ) | TX Cable<br>loss<br>( dB ) | TX Antenna<br>Gain<br>(dBi) | Polarization<br>(H/V) |
| LTE B66<br>BW 20MHz<br>Lowest<br>1RB0,QPSK  | 3423                 | -62.55          | -13              | -49.55                  | -65.18                   | 1.09                       | 5.87                        | H                     |
|                                             | 5133                 | -56.02          | -13              | -43.02                  | -58.42                   | 1.37                       | 5.92                        | H                     |
|                                             | 6840                 | -50.89          | -13              | -37.89                  | -54.78                   | 1.64                       | 7.68                        | H                     |
|                                             | 3423                 | -60.66          | -13              | -47.66                  | -63.29                   | 1.09                       | 5.87                        | V                     |
|                                             | 5133                 | -53.98          | -13              | -40.98                  | -56.38                   | 1.37                       | 5.92                        | V                     |
|                                             | 6840                 | -50.11          | -13              | -37.11                  | -54.00                   | 1.64                       | 7.68                        | V                     |
| LTE B13<br>BW 10MHz<br>Lowest<br>1RB0,QPSK  | 1554.7               | -67.32          | -13              | -54.32                  | -78.06                   | 2.604                      | 13.34                       | H                     |
|                                             | 2333                 | -65.54          | -13              | -52.54                  | -76.05                   | 3.011                      | 13.52                       | H                     |
|                                             | 3111.3               | -62.80          | -13              | -49.80                  | -73.00                   | 3.271                      | 13.47                       | H                     |
|                                             | 1554.7               | -67.15          | -13              | -54.15                  | -77.89                   | 2.604                      | 13.34                       | V                     |
|                                             | 2333                 | -65.25          | -13              | -52.25                  | -75.76                   | 3.011                      | 13.52                       | V                     |
|                                             | 3111.3               | -62.64          | -13              | -49.64                  | -72.84                   | 3.271                      | 13.47                       | V                     |
| LTE B66<br>BW 20MHz<br>Middle<br>1RB0,QPSK  | 3471                 | -59.94          | -13              | -46.94                  | -62.57                   | 1.09                       | 5.87                        | H                     |
|                                             | 5208                 | -51.55          | -13              | -38.55                  | -53.95                   | 1.37                       | 5.92                        | H                     |
|                                             | 6948                 | -49.90          | -13              | -36.90                  | -53.79                   | 1.64                       | 7.68                        | H                     |
|                                             | 3471                 | -60.44          | -13              | -47.44                  | -63.07                   | 1.09                       | 5.87                        | V                     |
|                                             | 5208                 | -53.43          | -13              | -40.43                  | -55.83                   | 1.37                       | 5.92                        | V                     |
|                                             | 6948                 | -50.48          | -13              | -37.48                  | -54.37                   | 1.64                       | 7.68                        | V                     |
| LTE B13<br>BW 10MHz<br>Middle<br>1RB0,QPSK  | 1555                 | -65.01          | -13              | -52.01                  | -75.75                   | 2.604                      | 13.34                       | H                     |
|                                             | 2335                 | -63.11          | -13              | -50.11                  | -73.62                   | 3.011                      | 13.52                       | H                     |
|                                             | 3110                 | -60.53          | -13              | -47.53                  | -70.73                   | 3.271                      | 13.47                       | H                     |
|                                             | 1555                 | -65.06          | -13              | -52.06                  | -75.80                   | 2.604                      | 13.34                       | V                     |
|                                             | 2335                 | -63.14          | -13              | -50.14                  | -73.65                   | 3.011                      | 13.52                       | V                     |
|                                             | 3110                 | -60.30          | -13              | -47.30                  | -70.50                   | 3.271                      | 13.47                       | V                     |
| LTE B66<br>BW 20MHz<br>Highest<br>1RB0,QPSK | 3522                 | -62.13          | -13              | -49.13                  | -64.76                   | 1.09                       | 5.87                        | H                     |
|                                             | 5283                 | -54.93          | -13              | -41.93                  | -57.33                   | 1.37                       | 5.92                        | H                     |
|                                             | 7044                 | -52.16          | -13              | -39.16                  | -56.05                   | 1.64                       | 7.68                        | H                     |
|                                             | 3522                 | -61.94          | -13              | -48.94                  | -64.57                   | 1.09                       | 5.87                        | V                     |
|                                             | 5283                 | -53.48          | -13              | -40.48                  | -55.88                   | 1.37                       | 5.92                        | V                     |
|                                             | 7044                 | -51.90          | -13              | -38.90                  | -55.79                   | 1.64                       | 7.68                        | V                     |
| LTE B13<br>BW 10MHz<br>Highest<br>1RB0,QPSK | 1554.7               | -67.17          | -13              | -54.17                  | -77.91                   | 2.604                      | 13.34                       | H                     |
|                                             | 2333                 | -65.26          | -13              | -52.26                  | -75.77                   | 3.011                      | 13.52                       | H                     |
|                                             | 3111.3               | -62.60          | -13              | -49.60                  | -72.80                   | 3.271                      | 13.47                       | H                     |
|                                             | 1554.7               | -67.11          | -13              | -54.11                  | -77.85                   | 2.604                      | 13.34                       | V                     |
|                                             | 2333                 | -65.05          | -13              | -52.05                  | -75.56                   | 3.011                      | 13.52                       | V                     |
|                                             | 3111.3               | -62.76          | -13              | -49.76                  | -72.96                   | 3.271                      | 13.47                       | V                     |

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.



## Ant 2 / Ant 2

| ULCA_2A-13A                                 |                      |                 |                  |                         |                          |                            |                             |                       |
|---------------------------------------------|----------------------|-----------------|------------------|-------------------------|--------------------------|----------------------------|-----------------------------|-----------------------|
| Channel                                     | Frequency<br>( MHz ) | EIRP<br>( dBm ) | Limit<br>( dBm ) | Over<br>Limit<br>( dB ) | S.G.<br>Power<br>( dBm ) | TX Cable<br>loss<br>( dB ) | TX Antenna<br>Gain<br>(dBi) | Polarization<br>(H/V) |
| LTE B2<br>BW 20MHz<br>Lowest<br>1RB0,QPSK   | 1556                 | -65.23          | -13              | -52.23                  | -67.86                   | 1.09                       | 5.87                        | H                     |
|                                             | 2332                 | -62.69          | -13              | -49.69                  | -65.09                   | 1.37                       | 5.92                        | H                     |
|                                             | 3111                 | -60.45          | -13              | -47.45                  | -64.34                   | 1.64                       | 7.68                        | H                     |
|                                             | 1556                 | -64.46          | -13              | -51.46                  | -67.09                   | 1.09                       | 5.87                        | V                     |
|                                             | 2332                 | -62.82          | -13              | -49.82                  | -65.22                   | 1.37                       | 5.92                        | V                     |
|                                             | 3111                 | -60.93          | -13              | -47.93                  | -64.82                   | 1.64                       | 7.68                        | V                     |
| LTE B13<br>BW 10MHz<br>Lowest<br>1RB0,QPSK  | 3702                 | -55.12          | -13              | -42.12                  | -67.38                   | 2.64                       | 14.90                       | H                     |
|                                             | 5553                 | -52.73          | -13              | -39.73                  | -64.59                   | 2.94                       | 14.80                       | H                     |
|                                             | 7404                 | -48.66          | -13              | -35.66                  | -58.43                   | 3.39                       | 13.16                       | H                     |
|                                             | 3702                 | -57.30          | -13              | -44.30                  | -69.56                   | 2.64                       | 14.90                       | V                     |
|                                             | 5553                 | -53.57          | -13              | -40.57                  | -65.43                   | 2.94                       | 14.80                       | V                     |
|                                             | 7404                 | -48.89          | -13              | -35.89                  | -58.66                   | 3.39                       | 13.16                       | V                     |
| LTE B2<br>BW 20MHz<br>Middle<br>1RB0,QPSK   | 1556                 | -65.23          | -13              | -52.23                  | -67.86                   | 1.09                       | 5.87                        | H                     |
|                                             | 2332                 | -62.69          | -13              | -49.69                  | -65.09                   | 1.37                       | 5.92                        | H                     |
|                                             | 3111                 | -60.79          | -13              | -47.79                  | -64.68                   | 1.64                       | 7.68                        | H                     |
|                                             | 1556                 | -64.46          | -13              | -51.46                  | -67.09                   | 1.09                       | 5.87                        | V                     |
|                                             | 2332                 | -62.82          | -13              | -49.82                  | -65.22                   | 1.37                       | 5.92                        | V                     |
|                                             | 3111                 | -60.74          | -13              | -47.74                  | -64.63                   | 1.64                       | 7.68                        | V                     |
| LTE B13<br>BW 10MHz<br>Middle<br>1RB0,QPSK  | 3741                 | -51.04          | -13              | -38.04                  | -63.30                   | 2.64                       | 14.90                       | H                     |
|                                             | 5613                 | -53.05          | -13              | -40.05                  | -64.91                   | 2.94                       | 14.80                       | H                     |
|                                             | 7488                 | -48.30          | -13              | -35.30                  | -58.07                   | 3.39                       | 13.16                       | H                     |
|                                             | 3741                 | -56.85          | -13              | -43.85                  | -69.11                   | 2.64                       | 14.90                       | V                     |
|                                             | 5613                 | -53.62          | -13              | -40.62                  | -65.48                   | 2.94                       | 14.80                       | V                     |
|                                             | 7488                 | -48.55          | -13              | -35.55                  | -58.32                   | 3.39                       | 13.16                       | V                     |
| LTE B2<br>BW 20MHz<br>Highest<br>1RB0,QPSK  | 1556                 | -65.23          | -13              | -52.23                  | -67.86                   | 1.09                       | 5.87                        | H                     |
|                                             | 2332                 | -62.69          | -13              | -49.69                  | -65.09                   | 1.37                       | 5.92                        | H                     |
|                                             | 3111                 | -60.99          | -13              | -47.99                  | -64.88                   | 1.64                       | 7.68                        | H                     |
|                                             | 1556                 | -64.46          | -13              | -51.46                  | -67.09                   | 1.09                       | 5.87                        | V                     |
|                                             | 2332                 | -62.82          | -13              | -49.82                  | -65.22                   | 1.37                       | 5.92                        | V                     |
|                                             | 3111                 | -60.97          | -13              | -47.97                  | -64.86                   | 1.64                       | 7.68                        | V                     |
| LTE B13<br>BW 10MHz<br>Highest<br>1RB0,QPSK | 3783                 | -53.56          | -13              | -40.56                  | -65.82                   | 2.64                       | 14.90                       | H                     |
|                                             | 5673                 | -53.51          | -13              | -40.51                  | -65.37                   | 2.94                       | 14.80                       | H                     |
|                                             | 7560                 | -48.14          | -13              | -35.14                  | -57.91                   | 3.39                       | 13.16                       | H                     |
|                                             | 3783                 | -57.32          | -13              | -44.32                  | -69.58                   | 2.64                       | 14.90                       | V                     |
|                                             | 5673                 | -53.13          | -13              | -40.13                  | -64.99                   | 2.94                       | 14.80                       | V                     |
|                                             | 7560                 | -48.14          | -13              | -35.14                  | -57.91                   | 3.39                       | 13.16                       | V                     |

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.



## Ant 1 / Ant 2

| ULCA 4A-5A                                 |                   |              |               |                   |                    |                      |                       |                    |
|--------------------------------------------|-------------------|--------------|---------------|-------------------|--------------------|----------------------|-----------------------|--------------------|
| Channel                                    | Frequency ( MHz ) | EIRP ( dBm ) | Limit ( dBm ) | Over Limit ( dB ) | S.G. Power ( dBm ) | TX Cable loss ( dB ) | TX Antenna Gain (dBi) | Polarization (H/V) |
| LTE B4<br>BW 20MHz<br>Lowest<br>1RB0,QPSK  | 3420              | -60.03       | -13           | -47.03            | -70.77             | 2.604                | 13.34                 | H                  |
|                                            | 5135              | -54.13       | -13           | -41.13            | -64.64             | 3.011                | 13.52                 | H                  |
|                                            | 6840              | -50.43       | -13           | -37.43            | -60.63             | 3.271                | 13.47                 | H                  |
|                                            | 3420              | -59.74       | -13           | -46.74            | -70.48             | 2.604                | 13.34                 | V                  |
|                                            | 5135              | -53.97       | -13           | -40.97            | -64.48             | 3.011                | 13.52                 | V                  |
|                                            | 6840              | -50.57       | -13           | -37.57            | -60.77             | 3.271                | 13.47                 | V                  |
| LTE B5<br>BW 40MHz<br>Lowest<br>1RB0,QPSK  | 1650              | -65.83       | -13           | -52.83            | -72.80             | 1.58                 | 10.70                 | H                  |
|                                            | 2475              | -63.06       | -13           | -50.06            | -71.31             | 2.102                | 12.50                 | H                  |
|                                            | 3300              | -60.32       | -13           | -47.32            | -69.21             | 2.856                | 13.90                 | H                  |
|                                            | 1650              | -65.09       | -13           | -52.09            | -72.06             | 1.58                 | 10.70                 | V                  |
|                                            | 2475              | -62.24       | -13           | -49.24            | -70.49             | 2.10                 | 12.50                 | V                  |
|                                            | 3300              | -60.02       | -13           | -47.02            | -68.91             | 2.86                 | 13.90                 | V                  |
| LTE B4<br>BW 20MHz<br>Middle<br>1RB0,QPSK  | 3447              | -59.13       | -13           | -46.13            | -69.87             | 2.604                | 13.34                 | H                  |
|                                            | 5172              | -53.69       | -13           | -40.69            | -64.20             | 3.011                | 13.52                 | H                  |
|                                            | 6900              | -50.61       | -13           | -37.61            | -60.81             | 3.271                | 13.47                 | H                  |
|                                            | 3447              | -59.90       | -13           | -46.90            | -70.64             | 2.604                | 13.34                 | V                  |
|                                            | 5172              | -53.93       | -13           | -40.93            | -64.44             | 3.011                | 13.52                 | V                  |
|                                            | 6900              | -50.20       | -13           | -37.20            | -60.40             | 3.271                | 13.47                 | V                  |
| LTE B5<br>BW 40MHz<br>Middle<br>1RB0,QPSK  | 1664.18           | -64.97       | -13           | -51.97            | -71.94             | 1.58                 | 10.70                 | H                  |
|                                            | 2496              | -62.13       | -13           | -49.13            | -70.38             | 2.102                | 12.50                 | H                  |
|                                            | 3327              | -60.04       | -13           | -47.04            | -68.93             | 2.856                | 13.90                 | H                  |
|                                            | 1664              | -64.83       | -13           | -51.83            | -71.80             | 1.58                 | 10.70                 | V                  |
|                                            | 2496.27           | -61.95       | -13           | -48.95            | -70.20             | 2.10                 | 12.50                 | V                  |
|                                            | 3327              | -60.27       | -13           | -47.27            | -69.16             | 2.86                 | 13.90                 | V                  |
| LTE B4<br>BW 20MHz<br>Highest<br>1RB0,QPSK | 3470              | -59.30       | -13           | -46.30            | -70.04             | 2.604                | 13.34                 | H                  |
|                                            | 5210              | -54.56       | -13           | -41.56            | -65.07             | 3.011                | 13.52                 | H                  |
|                                            | 6948              | -50.23       | -13           | -37.23            | -60.43             | 3.271                | 13.47                 | H                  |
|                                            | 3470              | -60.02       | -13           | -47.02            | -70.76             | 2.604                | 13.34                 | V                  |
|                                            | 5210              | -54.50       | -13           | -41.50            | -65.01             | 3.011                | 13.52                 | V                  |
|                                            | 6948              | -50.10       | -13           | -37.10            | -60.30             | 3.271                | 13.47                 | V                  |
| LTE B5<br>BW 10MHz<br>Highest<br>1RB0,QPSK | 1680              | -65.32       | -13           | -52.32            | -72.29             | 1.58                 | 10.70                 | H                  |
|                                            | 2520              | -62.62       | -13           | -49.62            | -70.87             | 2.102                | 12.50                 | H                  |
|                                            | 3360              | -60.08       | -13           | -47.08            | -68.97             | 2.856                | 13.90                 | H                  |
|                                            | 1680              | -65.13       | -13           | -52.13            | -72.10             | 1.58                 | 10.70                 | V                  |
|                                            | 2520              | -62.68       | -13           | -49.68            | -70.93             | 2.10                 | 12.50                 | V                  |
|                                            | 3360              | -60.08       | -13           | -47.08            | -68.97             | 2.86                 | 13.90                 | V                  |

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.