

# RF EXPOSURE EVALUATION REPORT

FCC ID : UXX-2022EG060KNA  
Equipment : LTE-A Cat 6 LGA Module  
Brand Name : Ericsson  
Model Name : EG060K-NA  
Applicant : Ericsson Enterprise Solutions, Inc.  
1100 W. Idaho St. Boise, ID 83702  
Manufacturer : Ericsson Enterprise Solutions, Inc.  
1100 W. Idaho St. Boise, ID 83702  
Standard : 47 CFR Part 2.1091

We, SPORTON INTERNATIONAL INC has been evaluated this product in accordance with 47 CFR Part2.1091 and it complies with applicable limit.

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code: 1190) and the FCC designation No. TW1190 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC evaluation.

The results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. Laboratory, the test report shall not be reproduced except in full.



Approved by: Cona Huang / Deputy Manager



**SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory**  
No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)



## **Table of Contents**

|                                                                        |          |
|------------------------------------------------------------------------|----------|
| <b>1. DESCRIPTION OF EQUIPMENT UNDER TEST (EUT) .....</b>              | <b>4</b> |
| <b>2. MAXIMUM RF AVERAGE OUTPUT POWER AMONG PRODUCTION UNITS .....</b> | <b>5</b> |
| <b>3. RF EXPOSURE LIMIT INTRODUCTION .....</b>                         | <b>6</b> |
| <b>4. RADIO FREQUENCY RADIATION EXPOSURE EVALUATION .....</b>          | <b>7</b> |
| 4.1. Standalone Power Density Calculation .....                        | 7        |
| 4.2. Collocated Power Density Calculation.....                         | 8        |



## History of this test report

| Report No.  | Version | Description             | Issued Date   |
|-------------|---------|-------------------------|---------------|
| FA441838-01 | Rev. 01 | Initial issue of report | Sep. 19, 2024 |
|             |         |                         |               |
|             |         |                         |               |
|             |         |                         |               |
|             |         |                         |               |
|             |         |                         |               |
|             |         |                         |               |
|             |         |                         |               |
|             |         |                         |               |
|             |         |                         |               |
|             |         |                         |               |
|             |         |                         |               |
|             |         |                         |               |
|             |         |                         |               |
|             |         |                         |               |

**1. Description of Equipment Under Test (EUT)**

| Product Feature & Specification         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| EUT Type                                | LTE-A Cat 6 LGA Module                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Brand Name                              | Ericsson                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Model Name                              | EG060K-NA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| FCC ID                                  | UXX-2022EG060KNA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Wireless Technology and Frequency Range | LTE Band 2: 1850 MHz ~ 1910 MHz<br>LTE Band 4: 1710 MHz ~ 1755 MHz<br>LTE Band 5: 824 MHz ~ 849 MHz<br>LTE Band 7: 2500 MHz ~ 2570 MHz<br>LTE Band 12: 699 MHz ~ 716 MHz<br>LTE Band 13: 777 MHz ~ 787 MHz<br>LTE Band 14: 788 MHz ~ 798 MHz<br>LTE Band 25: 1850 MHz ~ 1915 MHz<br>LTE Band 26: 814 MHz ~ 849 MHz<br>LTE Band 30: 2305 MHz ~ 2315 MHz<br>LTE Band 41: 2496 MHz ~ 2690 MHz<br>LTE Band 48: 3550 MHz ~ 3700 MHz<br>LTE Band 66: 1710 MHz ~ 1780 MHz<br>LTE Band 71: 663 MHz ~ 698 MHz |
| Mode                                    | LTE: QPSK, 16QAM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

**Reviewed by: Jason Wang****Report Producer: Paula Chen**

## **2. Maximum RF average output power among production units**

| Band        | Maximum Tune-up Power (dBm) |
|-------------|-----------------------------|
| LTE Band 2  | 25                          |
| LTE Band 4  | 25                          |
| LTE Band 5  | 25                          |
| LTE Band 7  | 25                          |
| LTE Band 12 | 25                          |
| LTE Band 13 | 25                          |
| LTE Band 14 | 25                          |
| LTE Band 25 | 25                          |
| LTE Band 26 | 25                          |
| LTE Band 30 | 21.18                       |
| LTE Band 41 | 25                          |
| LTE Band 48 | 20.2                        |
| LTE Band 66 | 25                          |
| LTE Band 71 | 25                          |

### 3. RF Exposure Limit Introduction

According to ANSI/IEEE C95.1-1992, the criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radio frequency (RF) radiation as specified in §1.1310.

| Frequency range (MHz)                                          | Electric field strength (V/m) | Magnetic field strength (A/m) | Power density (mW/cm <sup>2</sup> ) | Averaging time (minutes) |
|----------------------------------------------------------------|-------------------------------|-------------------------------|-------------------------------------|--------------------------|
| <b>(A) Limits for Occupational/Controlled Exposures</b>        |                               |                               |                                     |                          |
| 0.3-3.0                                                        | 614                           | 1.63                          | *(100)                              | 6                        |
| 3.0-30                                                         | 1842/f                        | 4.89/f                        | *(900/f <sup>2</sup> )              | 6                        |
| 30-300                                                         | 61.4                          | 0.163                         | 1.0                                 | 6                        |
| 300-1500                                                       |                               |                               | f/300                               | 6                        |
| 1500-100,000                                                   |                               |                               | 5                                   | 6                        |
| <b>(B) Limits for General Population/Uncontrolled Exposure</b> |                               |                               |                                     |                          |
| 0.3-1.34                                                       | 614                           | 1.63                          | *(100)                              | 30                       |
| 1.34-30                                                        | 824/f                         | 2.19/f                        | *(180/f <sup>2</sup> )              | 30                       |
| 30-300                                                         | 27.5                          | 0.073                         | 0.2                                 | 30                       |
| 300-1500                                                       |                               |                               | f/1500                              | 30                       |
| 1500-100,000                                                   |                               |                               | 1.0                                 | 30                       |

The MPE was calculated at 20 cm to show compliance with the power density limit.

The following formula was used to calculate the Power Density:

$$S = \frac{PG}{4\pi R^2}$$

Where:

S = Power Density

P = Output Power at Antenna Terminals

G = Gain of Transmit Antenna (linear gain)

R = Distance from Transmitting Antenna



## **4. Radio Frequency Radiation Exposure Evaluation**

### **4.1. Standalone Power Density Calculation**

| Band        | Antenna Gain (dBi) | Maximum Power (dBm) | Maximum ERP (dBm) | Maximum ERP (W) | Maximum EIRP (dBm) | Maximum EIRP (W) | Maximum ERP Limit (W) | Maximum EIRP Limit (W) | Maximum PG (mW) | Power Density at 20cm (mW/cm <sup>2</sup> ) | Limit (mW/cm <sup>2</sup> ) |
|-------------|--------------------|---------------------|-------------------|-----------------|--------------------|------------------|-----------------------|------------------------|-----------------|---------------------------------------------|-----------------------------|
| LTE Band 2  | 8.00               | 25.00               | 30.850            | 1.216           | 33.000             | 1.995            | 2.000                 | 2.000                  | 1995.262        | 0.397                                       | 1.000                       |
| LTE Band 4  | 5.00               | 25.00               | 27.850            | 0.610           | 30.000             | 1.000            | 1.000                 | 1.000                  | 1000.000        | 0.199                                       | 1.000                       |
| LTE Band 5  | 6.00               | 25.00               | 28.850            | 0.767           | 31.000             | 1.259            | 7.000                 | 7.000                  | 1258.925        | 0.251                                       | 0.549                       |
| LTE Band 7  | 8.00               | 25.00               | 30.850            | 1.216           | 33.000             | 1.995            | 2.000                 | 2.000                  | 1995.262        | 0.397                                       | 1.000                       |
| LTE Band 12 | 5.50               | 25.00               | 28.350            | 0.684           | 30.500             | 1.122            | 3.000                 | 3.000                  | 1122.018        | 0.223                                       | 0.466                       |
| LTE Band 13 | 5.50               | 25.00               | 28.350            | 0.684           | 30.500             | 1.122            | 3.000                 | 3.000                  | 1122.018        | 0.223                                       | 0.518                       |
| LTE Band 14 | 5.50               | 25.00               | 28.350            | 0.684           | 30.500             | 1.122            | 3.000                 | 3.000                  | 1122.018        | 0.223                                       | 0.525                       |
| LTE Band 25 | 8.00               | 25.00               | 30.850            | 1.216           | 33.000             | 1.995            | 2.000                 | 2.000                  | 1995.262        | 0.397                                       | 1.000                       |
| LTE Band 26 | 6.00               | 25.00               | 28.850            | 0.767           | 31.000             | 1.259            | 7.000                 | 7.000                  | 1258.925        | 0.251                                       | 0.543                       |
| LTE Band 30 | 2.80               | 21.18               | 21.830            | 0.152           | 23.980             | 0.250            | 0.250                 | 0.250                  | 250.035         | 0.050                                       | 1.000                       |
| LTE Band 41 | 8.00               | 25.00               | 30.850            | 1.216           | 33.000             | 1.995            | 2.000                 | 2.000                  | 1995.262        | 0.397                                       | 1.000                       |
| LTE Band 48 | 2.80               | 20.20               | 20.850            | 0.122           | 23.000             | 0.200            | 0.200                 | 0.200                  | 199.526         | 0.040                                       | 1.000                       |
| LTE Band 66 | 5.00               | 25.00               | 27.850            | 0.610           | 30.000             | 1.000            | 1.000                 | 1.000                  | 1000.000        | 0.199                                       | 1.000                       |
| LTE Band 71 | 5.00               | 25.00               | 27.850            | 0.610           | 30.000             | 1.000            | 3.000                 | 3.000                  | 1000.000        | 0.199                                       | 0.442                       |

## 4.2. Collocated Power Density Calculation

**Note:**

1. This MPE analysis is applicable to any collocated transmitters, with the maximum EIRP for WLAN assumed to be 30 dBm and the maximum EIRP for BT assumed to be 20 dBm.
2.  $\Sigma$  (Power Density / Limit): This is a summation of [(power density for each transmitter/antenna included in the simultaneous transmission)/ (corresponding MPE limit)], for WWAN + WLAN + Bluetooth.
3. Considering the WWAN module collocation with the WLAN and Bluetooth transmitter of the EIRP performance listed in the table above, the aggregated (power density /limit) is smaller than 1, and MPE of all collocated transmitters is compliant.

| Band            | Antenna Gain (dBi) | Maximum Power (dBm) | Maximum EIRP (dBm) | Maximum EIRP (W) | Maximum PG (mW) | Power Density at 20cm (mW/cm <sup>2</sup> ) | Limit (mW/cm <sup>2</sup> ) | Power Density / Limit |
|-----------------|--------------------|---------------------|--------------------|------------------|-----------------|---------------------------------------------|-----------------------------|-----------------------|
| LTE Band 2      | 6.00               | 25.00               | 31.0               | 1.26             | 1258.93         | 0.251                                       | 1.000                       | 0.251                 |
| LTE Band 4      | 5.00               | 25.00               | 30.0               | 1.00             | 1000.00         | 0.199                                       | 1.000                       | 0.199                 |
| LTE Band 5      | 3.50               | 25.00               | 28.5               | 0.71             | 707.95          | 0.141                                       | 0.549                       | 0.257                 |
| LTE Band 7      | 7.00               | 25.00               | 32.0               | 1.58             | 1584.89         | 0.315                                       | 1.000                       | 0.315                 |
| LTE Band 12     | 3.00               | 25.00               | 28.0               | 0.63             | 630.96          | 0.126                                       | 0.466                       | 0.270                 |
| LTE Band 13     | 3.50               | 25.00               | 28.5               | 0.71             | 707.95          | 0.141                                       | 0.518                       | 0.272                 |
| LTE Band 14     | 3.50               | 25.00               | 28.5               | 0.71             | 707.95          | 0.141                                       | 0.525                       | 0.268                 |
| LTE Band 25     | 6.00               | 25.00               | 31.0               | 1.26             | 1258.93         | 0.251                                       | 1.000                       | 0.251                 |
| LTE Band 26     | 3.50               | 25.00               | 28.5               | 0.71             | 707.95          | 0.141                                       | 0.543                       | 0.260                 |
| LTE Band 30     | 2.80               | 21.18               | 24.0               | 0.25             | 250.03          | 0.050                                       | 1.000                       | 0.050                 |
| LTE Band 41     | 7.00               | 25.00               | 32.0               | 1.58             | 1584.89         | 0.315                                       | 1.000                       | 0.315                 |
| LTE Band 48     | 2.80               | 20.20               | 23.0               | 0.20             | 199.53          | 0.040                                       | 1.000                       | 0.040                 |
| LTE Band 66     | 5.00               | 25.00               | 30.0               | 1.00             | 1000.00         | 0.199                                       | 1.000                       | 0.199                 |
| LTE Band 71     | 3.00               | 25.00               | 28.0               | 0.63             | 630.96          | 0.126                                       | 0.442                       | 0.284                 |
| WLAN2.4GHz Band |                    |                     | 30.0               | 1.00             | 1000.00         | 0.199                                       | 1.000                       | 0.199                 |
| WLAN5GHz Band   |                    |                     | 30.0               | 1.00             | 1000.00         | 0.199                                       | 1.000                       | 0.199                 |
| Bluetooth       |                    |                     | 20.0               | 0.10             | 100.00          | 0.020                                       | 1.000                       | 0.020                 |

| Maximum WWAN Power Density / Limit | Maximum WLAN Power Density / Limit | Maximum Bluetooth Power Density / Limit | $\Sigma$ (Power Density / Limit) of WWAN + WLAN + Bluetooth |
|------------------------------------|------------------------------------|-----------------------------------------|-------------------------------------------------------------|
| 0.315                              | 0.199                              | 0.020                                   | 0.534                                                       |

**Conclusion:**

Based on FCC 47 CFR §1.1307, the analysis concludes that this product when transmitting in standalone within a host device, is compliant with the FCC RF exposure requirements in mobile exposure condition, provided the conducted power and antenna gain do not exceed the limits for each given frequency band per wireless technology as follow table:

| Device    | Technology | Band        | Maximum Conducted Power (dBm) | Standalone Maximum Antenna Gain (dBi) | Collocated Maximum Antenna Gain (dBi) |
|-----------|------------|-------------|-------------------------------|---------------------------------------|---------------------------------------|
| EG060K-NA | LTE        | LTE Band 2  | 25.0                          | 8.0                                   | 6.0                                   |
|           |            | LTE Band 4  | 25.0                          | 5.0                                   | 5.0                                   |
|           |            | LTE Band 5  | 25.0                          | 6.0                                   | 3.5                                   |
|           |            | LTE Band 7  | 25.0                          | 8.0                                   | 7.0                                   |
|           |            | LTE Band 12 | 25.0                          | 5.5                                   | 3.0                                   |
|           |            | LTE Band 13 | 25.0                          | 5.5                                   | 3.5                                   |
|           |            | LTE Band 14 | 25.0                          | 5.5                                   | 3.5                                   |
|           |            | LTE Band 25 | 25.0                          | 8.0                                   | 6.0                                   |
|           |            | LTE Band 26 | 25.0                          | 6.0                                   | 3.5                                   |
|           |            | LTE Band 30 | 21.18                         | 2.8                                   | 2.8                                   |
|           |            | LTE Band 41 | 25.0                          | 8.0                                   | 7.0                                   |
|           |            | LTE Band 48 | 20.2                          | 2.8                                   | 2.8                                   |
|           |            | LTE Band 66 | 25.0                          | 5.0                                   | 5.0                                   |
|           |            | LTE Band 71 | 25.0                          | 5.0                                   | 3.0                                   |