



# RF MPE Report

**Applicant:** Eagle Electronics Inc.  
**Address:** 114 Venture Dr Paraskala, OH 43062-9239 United States  
**Product:** LTE Cat1 bis Module  
**Model No.:** I4915Q-AF  
**Brand Name:** Eagle  
**FCC ID:** 2BNX7I4915QAFA  
**Standards:** 47 CFR Part 2.1091  
FCC KDB 447498 D01 v06  
**Report No.:** PD20250040-R3B  
**Issue Date:** 2025/04/14  
**Test Result:** PASS \*

\* Testing performed at Hefei Panwin Technology Co., Ltd. on the above equipment indicates the product meets the requirements of the relevant standards.

**Reviewed By:** Charlie Wang

**Approved By:** Alec Yang

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## Hefei Panwin Technology Co., Ltd.

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## Revision History

| Report No.     | Version | Description    | Issue Date | Note  |
|----------------|---------|----------------|------------|-------|
| PD20250040-R3B | 01      | Initial Report | 2025/04/14 | Valid |

### Remark 1:

- The samples tested have been evaluated in accordance with 47 CFR Part 2.1091 and FCC KDB 447498 D01 v06, and have been proven to meet the applicable limit requirements.

### Remark 2:

I4915Q-AF have two product definitions that one of which supports GNSS and the other does not support GNSS. Both product definitions share the same HW & SW design. The one does not support GNSS, just remove the GNSS-related components.

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## 1 Test Laboratory

### 1.1 Notes of the Test Report

This report is invalid without signature of auditor and approver or with any alterations. The report shall not be partially reproduced without written approval of the testing company. Entrusted test results are only responsible for incoming samples. If there is any objection to the testing report, it shall be raised to the testing company within 15 days from the date of receiving the report. In the test results, "NA" means "not applicable", and the test items marked with "Δ" are subcontracted projects.

### 1.2 Testing Laboratory

|              |                                                                                                                                |
|--------------|--------------------------------------------------------------------------------------------------------------------------------|
| Company Name | Hefei Panwin Technology Co., Ltd.                                                                                              |
| Address      | Floor 1, Zone E, Plant 2#, Mingzhu Industrial Park, No.106 Chuangxin Avenue, High-tech Zone, Hefei City, Anhui Province, China |
| Telephone    | +86-0551-63811775                                                                                                              |
| Post Code    | 230031                                                                                                                         |

## 2 General Description of Equipment under Test

### 2.1 Details of Application

|                      |                                                       |
|----------------------|-------------------------------------------------------|
| Applicant            | Eagle Electronics Inc.                                |
| Applicant Address    | 114 Venture Dr Paraskala, OH 43062-9239 United States |
| Manufacturer         | Eagle Electronics Inc.                                |
| Manufacturer Address | 114 Venture Dr Paraskala, OH 43062-9239 United States |

## 2.2 Details of EUT

|                                                                                                                                                                                                                                    |                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| Product                                                                                                                                                                                                                            | LTE Cat1 bis Module                                                              |
| Model                                                                                                                                                                                                                              | I4915Q-AF                                                                        |
| Hardware Version                                                                                                                                                                                                                   | R1.0                                                                             |
| Software Version                                                                                                                                                                                                                   | I4915QAFLGR01A01M04                                                              |
| Antenna Type                                                                                                                                                                                                                       | <input checked="" type="checkbox"/> External <input type="checkbox"/> Integrated |
| <b>Note:</b> The declared of product specification for EUT and/or Antenna presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification. |                                                                                  |

## 3 Test Condition

### 3.1 Laboratory Environment

|                                                                                                                                                                                                 |                     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| Temperature                                                                                                                                                                                     | Min.= 20℃, Max.=30℃ |
| Relative Humidity                                                                                                                                                                               | Min.= 25%, Max.=75% |
| Ground System Resistance                                                                                                                                                                        | < 1 Ω               |
| Ambient noise is checked and found very low and in compliance with requirement of standards.<br>Reflection of surrounding objects is minimized and in compliance with requirement of standards. |                     |

## 4 Maximum Permissible Exposure (MPE)

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.

| Table 1 to § 1.1310(e)(1)—Limits for Maximum Permissible Exposure (MPE) |                                     |                                     |                                        |                                |
|-------------------------------------------------------------------------|-------------------------------------|-------------------------------------|----------------------------------------|--------------------------------|
| Frequency Range<br>(MHz)                                                | Electric field<br>strength<br>(V/m) | Magnetic field<br>strength<br>(A/m) | Power density<br>(mW/cm <sup>2</sup> ) | Averaging<br>time<br>(minutes) |
| (i) Limits for Occupational/Controlled Exposure                         |                                     |                                     |                                        |                                |
| 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                             |
| 300–1,500                                                               | --                                  | --                                  | f/300                                  | <6                             |
| 1,500–100,000                                                           | --                                  | --                                  | 5                                      | <6                             |
| (ii) Limits for General Population/Uncontrolled Exposure                |                                     |                                     |                                        |                                |
| 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                            |
| 300–1,500                                                               | --                                  | --                                  | f/1500                                 | <30                            |
| 1,500–100,000                                                           | --                                  | --                                  | 1.0                                    | <30                            |
| f = frequency in MHz. * = Plane-wave equivalent power density.          |                                     |                                     |                                        |                                |

The transmitter is using external antennas that operate at 20 cm or more from nearby persons. The maximum permitted level is calculated using the general equation:

$$S = PG / 4\pi R^2$$

Where:

**S** = power density (in appropriate units, e.g. Wm<sup>2</sup>)

**P** = power input to the antenna (in appropriate units, e.g., W)

**G** = power gain of the antenna in the direction of interest relative to an isotropic radiator

**R** = distance to the center of radiation of the antenna (appropriate units, e.g., m)

Solve S, the power density at 20 cm is shown in Appendix A, so the limit is kept.

----- THE END -----

## ANNEX A: RF Exposure Evaluation

### Maximum Measured Conducted Output Power and Antenna Gain

| Band        | TX Freq. (MHz) | Maximum conducted output power (dBm) | Maximum Antenna Gain (dBi) |
|-------------|----------------|--------------------------------------|----------------------------|
| LTE Band 2  | 1850 to 1910   | 25.00                                | 1.59                       |
| LTE Band 4  | 1710 to 1755   | 25.00                                | 2.00                       |
| LTE Band 5  | 824 to 849     | 25.00                                | 2.13                       |
| LTE Band 12 | 699 to 716     | 25.00                                | 3.26                       |
| LTE Band 13 | 777 to 787     | 25.00                                | 4.45                       |
| LTE Band 14 | 788 to 798     | 25.00                                | 3.63                       |
| LTE Band 66 | 1710 to 1780   | 25.00                                | 2.00                       |
| LTE Band 71 | 663 to 698     | 25.00                                | 1.66                       |

## Test Results of Maximum Permissible Exposure

| Band        | Frequency (MHz) | Maximum Power (dBm) | Antenna Gain (dBi) | FCC ERP/EIRP Limit(W) | FCC MPE Result (mW/cm <sup>2</sup> ) | MPE Limit (mW/cm <sup>2</sup> ) | FCC MPE Result / FCC MPE Limit Ratio | Ant Gain to Meet FCC MPE limit (dBi) | Ant Gain to Meet FCC ERP/EIRP limit (dBi) | Max Gain Allowed (dBi) |
|-------------|-----------------|---------------------|--------------------|-----------------------|--------------------------------------|---------------------------------|--------------------------------------|--------------------------------------|-------------------------------------------|------------------------|
| LTE Band 2  | 1850            | 25.00               | 1.59               | 2.000                 | 0.0907                               | 1.0000                          | 0.0907                               | 12.0                                 | 8.0                                       | 8.0                    |
| LTE Band 4  | 1710            | 25.00               | 2.00               | 1.000                 | 0.0997                               | 1.0000                          | 0.0997                               | 12.0                                 | 5.0                                       | 5.0                    |
| LTE Band 5  | 824             | 25.00               | 2.13               | 7.000                 | 0.1027                               | 0.5493                          | 0.1870                               | 9.4                                  | 13.5                                      | 9.4                    |
| LTE Band 12 | 699             | 25.00               | 3.26               | 3.000                 | 0.1333                               | 0.4660                          | 0.2860                               | 8.7                                  | 9.8                                       | 8.7                    |
| LTE Band 13 | 777             | 25.00               | 4.45               | 3.000                 | 0.1753                               | 0.5180                          | 0.3384                               | 9.2                                  | 9.8                                       | 9.2                    |
| LTE Band 14 | 788             | 25.00               | 3.63               | 3.000                 | 0.1451                               | 0.5253                          | 0.2762                               | 9.2                                  | 9.8                                       | 9.2                    |
| LTE Band 66 | 1710            | 25.00               | 2.00               | 1.000                 | 0.0997                               | 1.0000                          | 0.0997                               | 12.0                                 | 5.0                                       | 5.0                    |
| LTE Band 71 | 663             | 25.00               | 1.66               | 3.000                 | 0.0922                               | 0.4420                          | 0.2086                               | 8.5                                  | 9.8                                       | 8.5                    |

**Note 1:** For mobile or fixed location transmitters, minimum separation distance is 20cm, even if calculations indicate EMF distance is less.

**Note 2:** For conservativeness, the lowest uplink frequency of each band is used to determine the MPE limit of that band.

**Note 3:** Chose the maximum RF output tune up power of all antennas among same frequency WWAN bands and the maximum antenna gain to perform MPE calculation conservatively.

## ANNEX B: The EUT Appearance

The EUT Appearance (internal and external photographs) are submitted separately.