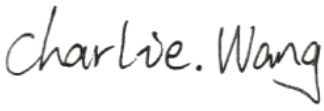
RF MPE Report

Applicant:	Eagle Electronics Inc.
Address:	114 Venture Dr Paraskala, OH 43062-9239 United States
Product:	LTE Cat1 bis Module
Model No.:	I4915Q-NA
Brand Name:	Eagle
FCC ID:	2BNX7I4915QNAA
Standards:	47 CFR Part 2.1091 FCC KDB 447498 D01 v06
Report No.:	PD20250041-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

Hefei Panwin Technology Co., Ltd.

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Revision History

Report No.	Version	Description	Issue Date	Note
PD20250041-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-NA and I4915Q-AF are all 4G modules. They use the same chipset and share the same software design. The main difference is that they have partial layout and components differences due to the different frequencies' configuration.

I4915Q-NA 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-NA
Hardware Version	R1.0
Software Version	I4915QNALGR01A01M04
Antenna Type	☑ External ☐ Integrated
Note: 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. 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 (MHz)	**Electric field strength (V/m)**	**Magnetic field strength (A/m)**	**Power density (mW/cm^2)**	**Averaging time (minutes)**
(i) Limits for Occupational/Controlled Exposure				
0.3–3.0	614	1.63	*(100)	≤6
3.0–30	1842/f	4.89/f	*($900/f^2$)	<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	*($180/f^2$)	<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^2)

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 66	1710 to 1780	25.00	2.00

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^2)	MPE Limit (mW/cm^2)	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 66	1710	25.00	2.00	1.000	0.0997	1.0000	0.0997	12.0	5.0	5.0

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.