



# Radio Exposure Evaluation Report

**FCC ID** : XNI-ID211008  
**Contain FCC ID** : XMR2020BG95M1  
**Equipment** : Cellular Router Gen2 Telematics Only  
**Brand Name** : LCI  
**Model Name** : 2021015319  
**Applicant** : Lippert Components  
6801 15 Mile Road Sterling Heights Michigan  
United States 48312  
**Manufacturer** : Lippert Components  
6801 15 Mile Road Sterling Heights Michigan  
United States 48312  
**Standard** : 47 CFR FCC Part 2 Subpart J, section 2.1091

The product was received on Apr. 27, 2021, and testing was started from May 05, 2021 and completed on May 06, 2021. We, SPORTON INTERNATIONAL INC. Hsinhua Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in 47 CFR FCC Part 2 Subpart J, section 2.1091 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 INC. Hsinhua Laboratory, the test report shall not be reproduced except in full.

Approved by: Allen Lin

**SPORTON INTERNATIONAL INC. Hsinhua Laboratory**  
No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333411, Taiwan (R.O.C.)



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**Photographs of EUT V01**





### Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
2	-	Exposure evaluation	PASS	-

<b>Declaration of Conformity:</b>
The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.
<b>Comments and Explanations:</b>
None

Reviewed by: Sam Tsai  
Report Producer: Ann Hou

# 1 General Description

## 1.1 Information

### 1.1.1 EUT General Information

RF General Information			
Evaluation Mode	Frequency Range (MHz)	Operating Frequency (MHz)	Modulation Type
Bluetooth	2400-2483.5	2402-2480	LE: DSSS (GFSK)
LTE Band 2	1850-1910	1850.7-1909.3	QPSK, 16QAM
LTE Band 4	1710-1755	1710.7-1754.3	QPSK, 16QAM
LTE Band 5	824-849	824.7-848.3	QPSK, 16QAM
LTE Band 12	699-716	699.7-715.3	QPSK, 16QAM
LTE Band 13	777-787	779.5-784.5	QPSK, 16QAM
LTE Band 14	788-798	790.5-795.5	QPSK, 16QAM
LTE Band 25	1850-1915	1850.7-1914.3	QPSK, 16QAM
LTE Band 26	814-849	814.7-848.3	QPSK, 16QAM
LTE Band 66	1710-1780	1710.7-1779.3	QPSK, 16QAM
LTE Band 85	698-716	699.7-715.3	QPSK, 16QAM

### 1.1.2 Antenna Information

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	-	-	PCB monopole antenna	N/A	1.85

For BT function:

For IEEE 802.15.1 Bluetooth mode (1TX/1RX)

Ant. 1 (port 1) could transmit/receive.

## 1.2 Testing Location

<b>Test Lab. : Sporton International Inc. Hsinhua Laboratory</b>		
<input checked="" type="checkbox"/>	Hsinhua (TAF: 3785)	ADD: No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333411, Taiwan (R.O.C.)
		TEL: 886-3-327-3456      FAX: 886-3-327-0973
Test site Designation No. TW3785 with FCC.		

## 2 Maximum Permissible Exposure

### 2.1 Limit of Maximum Permissible Exposure

(A) Limits for Occupational / Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm <sup>2</sup> )	Averaging Time  E  <sup>2</sup> , H  <sup>2</sup> or S (minutes)
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) Limits for General Population / Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm <sup>2</sup> )	Averaging Time  E  <sup>2</sup> , H  <sup>2</sup> or S (minutes)
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

Note: f = frequency in MHz ; \*Plane-wave equivalent power density

#### Multiple Transmitters Condition

Co-location as simultaneously transmitting (co-transmitting) and the evaluation shall be consider that simultaneous transmissions from co-located devices the individual transmitters are evaluated separately. After sum of the individual value (basic restriction / reference level) are measured/calculated also have to under basic restriction / reference level.

Co-transmitting mode: LTE + Bluetooth

### 2.2 MPE Calculation Method

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:

$$E \text{ (V/m)} = \frac{\sqrt{30 \times P \times G}}{d} \qquad \text{Power Density: } Pd \text{ (W/m}^2\text{)} = \frac{E^2}{377}$$

**E** = Electric field (V/m)

**P** = RF output power (W)

**G** = EUT Antenna numeric gain (numeric)

**d** = Separation distance between radiator and human body (m)

The formula can be changed to

$$Pd = \frac{30 \times P \times G}{377 \times d^2}$$



### 2.3 Calculated Result and Limit

Exposure Environment: General Population / Uncontrolled Exposure

#### Colocation

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm <sup>2</sup> )	S Limit (mW/cm <sup>2</sup> )	Ratio (S/Limit)
2.4G;BT-LE	1.85	-1.83	0.02	0.00	0.02	0.00100	20	0.00020	1.00000	0.00020
LTE;B85;W7D	4.00	21.26	25.26	0.00	25.26	0.33574	20	0.06679	0.47400	0.14091
									Sum Ratio	0.14111
									Ratio Limit	1

—————THE END—————