



# RF EXPOSURE MEASUREMENT AND TEST REPORT

For

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**FCC ID: 2AJULC10G-CP**

|                                        |                                                                                                                                                                                                |
|----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Report Type:</b><br>Original Report | <b>Product Type:</b><br>Repeater                                                                                                                                                               |
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| <b>Report Number:</b> RSC160118006B    |                                                                                                                                                                                                |
| <b>Report Date:</b> 2016-09-01         |                                                                                                                                                                                                |
| <b>Reviewed By:</b> EMC Leader         | <i>Henry Ding</i>                                                                                                                                                                              |
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## **FCC §1.1307(b) & §2.1091 - MAXIMUM PERMISSIBLE EXPOSURE (MPE)**

### **Applicable Standard**

According to subpart §1.1310, systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

Limits for Maximum Permissible Exposure (MPE) (§1.1310, §2.1091)

| <b>(B) Limits for General Population/Uncontrolled Exposure</b> |                               |                               |                                     |                          |
|----------------------------------------------------------------|-------------------------------|-------------------------------|-------------------------------------|--------------------------|
| Frequency Range (MHz)                                          | Electric Field Strength (V/m) | Magnetic Field Strength (A/m) | Power Density (mW/cm <sup>2</sup> ) | Averaging Time (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                       |

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

According to §1.1310 and §2.1091 RF exposure is calculated.

### **Calculated Formulary:**

Predication of MPE limit at a given distance

$S = PG/4\pi R^2$  = power density (in appropriate units, e.g. mW/cm<sup>2</sup>);

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

G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain;

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

### **Calculated Data:**

| Mode     | Frequency Band | Antenna Gain |           | Cable Loss | Max Tune-up Conducted Power |         | Evaluation Distance (cm) | Power Density (mW/cm <sup>2</sup> ) | MPE Limit (mW/cm <sup>2</sup> ) |
|----------|----------------|--------------|-----------|------------|-----------------------------|---------|--------------------------|-------------------------------------|---------------------------------|
|          |                | (dBi)        | (numeric) |            | (dBm)                       | (mW)    |                          |                                     |                                 |
| Uplink   | 824-849        | 10.0         | 10.0      | 4.5        | 21.00                       | 125.893 | 20.00                    | 0.0889                              | 0.55                            |
|          | 1850-1910      | 10.0         | 10.0      | 5.0        | 21.00                       | 125.893 | 20.00                    | 0.0792                              | 1.00                            |
| Downlink | 869-894        | 10.0         | 10.0      | 2.5        | 2.00                        | 1.585   | 20.00                    | 0.0018                              | 0.58                            |
|          | 1930-1990      | 10.0         | 10.0      | 3.0        | 2.00                        | 1.585   | 20.00                    | 0.0016                              | 1.00                            |

Note: The power was used for evaluation is rated power including tolerance.

The worst antenna kitting is option 2 from outdoor antenna and option 2 for indoor antenna. Please refer the user manual.

**Result:** The device meet FCC MPE at 20 cm distance.