

## RF Exposure Evaluation

### LIMIT

The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b)

Limits for Maximum Permissible Exposure (MPE)

| Frequency range<br>(MHz)                                | Electric field<br>strength<br>(V/m) | Magnetic field strength<br>(A/m) | Power density<br>(mW/cm <sup>2</sup> ) | Averaging time<br>(minutes) |
|---------------------------------------------------------|-------------------------------------|----------------------------------|----------------------------------------|-----------------------------|
| (A) Limits for Occupational/Controlled Exposures        |                                     |                                  |                                        |                             |
| 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 |                                     |                                  |                                        |                             |
| 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

### EVALUATION METHOD

Transmission formula:  $Pd = (Pout * G) / (4 * \pi * r^2)$

Where

**Pd** = power density in mW/cm<sup>2</sup>, **Pout** = output power to antenna in mW, **G** = gain of antenna in linear scale;

**Pi** = 3.1416, **R** = distance between observation point and center of the radiator in cm

### TEST RESULT

☒ **Passed**

☐ **Not Applicable**

| Type    | Conducted Average<br>Power (dBm) | Maximum<br>Tune-up (dBm) | Power Density<br>(mW/cm <sup>2</sup> ) | Limit (mW/cm <sup>2</sup> ) | Result |
|---------|----------------------------------|--------------------------|----------------------------------------|-----------------------------|--------|
| BT-EDR  | -1.88                            | -1.50                    | 0.0003                                 | 1.0000                      | Pass   |
| BT-BLE  | 3.40                             | 4.00                     | 0.0011                                 | 1.0000                      | Pass   |
| 802.11b | 12.54                            | 13.00                    | 0.0091                                 | 1.0000                      | Pass   |

Note:

- 1) The maximum antenna gain is 3.6dBi
- 2) The exposure evaluation safety distance is 20cm.