

## FCC RF Exposure

EUT Description: Huizhoushi Chenxin Technology Co., LTD

Model No.: F21S,T08

FCC ID: 2BGEB-F21S

Equipment type: mobile equipment

### RF Exposure Evaluation

#### Limits

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                          |

f = frequency in MHz

Friis transmission formula:  $Pd = (P_{out} * G) / (4 * \pi * r^2)$

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

Pd is the limit of MPE, 1 mW/cm<sup>2</sup>. If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.

#### Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

**Test Result of RF Exposure Evaluation**

$$EIRP = E_{Meas} + 20 \log(d_{meas}) - 104.7$$

EIRP is the equivalent isotropically radiated power,

$E_{Meas}$  in dBm is the field strength of the emission at the measurement distance, in dB uV/m

$d_{Meas}$  is the measurement distance, in m

**BLE**

| Frequency(MHz) | Conducted power (dBm) | Max tune-up(mW) | Antenna Gain(dBi) | Min. distance(cm) | Calc. thresholds | limit |
|----------------|-----------------------|-----------------|-------------------|-------------------|------------------|-------|
| 2402           | 1.12                  | 1.294195841     | -2.9              | 20                | 0.000132047      | 1.0   |
| 2440           | 0.94                  | 1.241652308     | -2.9              | 20                | 0.000126686      | 1.0   |
| 2480           | 1.14                  | 1.300169578     | -2.9              | 20                | 0.000132657      | 1.0   |

Conclusion: No SAR is required