

SECTION RF Exposure

1. SUMMARY OF TEST RESULTS

| Requirements | FCC Rule | Compliance |
|------------------------|------------------|------------|
| RF Exposure evaluation | 1.1310 2.1091 | Complied |

2. MPE Evaluation of Mobile Device

2.1 Rule

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environmental impact of human exposure to radio-frequency (RF) radiation as specified in 1.1307(b)

Limits for Maximum Permissible Exposure (MPE)

| Frequency range (MHz) | Power density (mW/cm ²) | Averaging time (minutes) |
|---|-------------------------------------|--------------------------|
| (A) Limits for Occupational/Controlled Exposure | | |
| 300-1,500 | f/300 | 6 |
| 1,500-100,000 | 5 | 6 |
| (B) Limits for General Population/Uncontrolled Exposure | | |
| 300-1,500 | f/1500 | 30 |
| 1,500-100,000 | 1.0 | 30 |

Note) f = Frequency in MHz

Friis Formula

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

Where

P_d = power density in mW/cm^2

P_{out} = 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

P_d is the limit of MPE, 1 mW/cm^2 . 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.

1.2 Test Results - Complied

- SAR test exclusion thresholds

| Mode | Frequency (MHz) | Conducted Output Power (dBm) | Conducted Output Power (mW) | Min. Test Separation Distance (mm) | SAR Test Exclusion Thresholds |
|-------------|-----------------|------------------------------|-----------------------------|------------------------------------|-------------------------------|
| GFSK_1 Mbps | 2 480 | 1.00 | 1.26 | 5.00 | ≤ 7.5 for 10-g SAR |

$= [(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}]$

Bluetooth Low Energy = $[(1.26) / (5)] \cdot [\sqrt{2.480}] = 0.40$

- Target power and Tolerance, Max tune up power

| Mode | Frequency (MHz) | Target Power (dBm) | Tolerance (dB) | Max Tune up Power (dBm) | Average Power (dBm) | Measured Average Power (dBm) |
|-------------|-----------------|--------------------|----------------|-------------------------|---------------------|------------------------------|
| GFSK_1 Mbps | 2 402 | 0.0 | ± 1.0 | 1.0 | -0.79 | -2.82 |
| | 2 440 | 0.0 | ± 1.0 | 1.0 | -0.39 | -2.42 |
| | 2 480 | 0.0 | ± 1.0 | 1.0 | -0.34 | -2.37 |

Note 1): Average Power(dBm) = Measured Average Power(dBm) + D.C.C.F(dB)

Note 2): Measured Average Power was tested by Power meter & sensor(VBW = 50 MHz)

1.3 RF Exposure Compliance Issue

Therefore, EUT is not required the SAR Evaluation.