

MPE Analysis Report

The Equipment Under Test (EUT), is MB25 Bluetooth Transceiver which contains a Bluetooth module for wireless audio features. The sample supplied operated on 79 channels, normally at 2402 - 2480MHz. The channels are separated with 1MHz spacing. The EUT is powered by USB port (5VDC).

RF conducted power range: -10dBm to 5dBm

Antenna Model: 380B

Antenna Type: External, Detachable, with reverse-SMA connector
Antenna Gain: 3dBi

Antenna Model: FS-441

Antenna Type: External, Detachable, with reverse-SMA connector
Antenna Gain: 5dBi

For Maximum Permissible Exposure (MPE) evaluation of the EUT, the maximum power density at 20 cm from this transmitter shall be less than the General Population / Uncontrolled MPE limit in OET Bulletin 65.

And the maximum source-based time-averaging duty factor is 100%. From these data, the exposed power density at a distance (R) of 20cm from the center of radiation of the antenna can be calculated according to OET Bulletin 65 as follow:

The radiated power = 5dBm + 5dBi = 10dBm (10 mW)

The radiated (EIRP) source-based time-averaging output power
= (10 * 1) mW
= 10 mW

The power density at 20 cm from the antenna
= EIRP / 4πR²
= 0.002 mW cm⁻²

In the frequency range of 1,500 - 100,000MHz, the MPE limit is 1.0 mWcm⁻² for general population and uncontrolled exposure. As the measured power density at 20cm from the transmitter is lower than the MPE limit, the compliance to the MPE limit can be ensured by indicating the minimum 20cm separation between the transmitter's radiating structures and body of the user or nearby persons.

The following RF exposure statement is proposed to be included in the user manual:

“ FCC RF Radiation Exposure Statement

Caution: To maintain compliance with the FCC's RF exposure guidelines, place the Internet Music System at least 20cm from nearby persons.”