

MPE CALCULATIONS BT001 & BT002

For FCC and BT001 equipment

1-g SAR is calculated for BT001 equipment, the value is 1.7 which is less than the test exclusion threshold value of 3.

$$SAR_{1-g} = (3.68 + 2.7 + 1.0) \text{ dBm} / 5 \text{ mm} * \text{SQRT}(2.402) = 5.47 \text{ mW} / 5 \text{ mm} * 1.55 = 1.7$$

Where

Maximum peak output power = 3.68 dBm

Peak antenna gain = 2.7 dBi

Tune up tolerance = 1.0 dB

Operating frequency = 2.402 GHz

Minimum distance = 5mm

For FCC and BT002 equipment

1-g SAR is calculated for BT002 equipment, the value is 2.29 which is less than the test exclusion threshold value of 3.

$$SAR_{1-g} = (3.68 + 4.0 + 1.0) \text{ dBm} / 5 \text{ mm} * \text{SQRT}(2.402) = 7.38 \text{ mW} / 5 \text{ mm} * 1.55 = 2.29$$

Where

Maximum peak output power = 3.68 dBm

Peak antenna gain = 4.0 dBi

Tune up tolerance = 1.0 dB

Operating frequency = 2.402 GHz

Minimum distance = 5mm

For ISED and BT001 equipment

Source-based and time-averaged output power is calculated for BT001 equipment, the value is 0.11mW which is less than the exemption limit of 4mW according to RSS-102 section 2.5.1, under frequency condition of 2450MHz and separation distance condition of 5mm.

$$P_{MAX} = (3.68 + 2.7 + 1.0) \text{ dBm} * 0.02 = 5.47 \text{ mW} * 0.02 = 0.11 \text{ mW}$$

Where

Maximum peak output power = 3.68 dBm

Peak antenna gain = 2.7 dBi

Tune up tolerance = 1.0 dB

Duty cycle = 2% = 0.02

For ISED and BT002 equipment

Source-based and time-averaged output power is calculated for BT001 equipment, the value is 0.15mW which is less than the exemption limit of 4mW according to RSS-102 section 2.5.1, under frequency condition of 2450MHz and separation distance condition of 5mm.

$$P_{MAX} = (3.68 + 4.0 + 1.0) \text{ dBm} * 0.02 = 7.38 \text{ mW} * 0.02 = 0.15 \text{ mW}$$

Where

Maximum peak output power = 3.68 dBm

Peak antenna gain = 4 dBi

Tune up tolerance = 1.0 dB

Duty cycle = 2% = 0.02