

RF EXPOSURE EVALUATION

EUT Specification

| | |
|---------------------------------------|---|
| EUT | Active Speaker |
| Frequency band (Operating) | <input type="checkbox"/> WLAN: 2.412GHz ~ 2.462GHz <input type="checkbox"/> WLAN: 5.18GHz ~ 5.32GHz / 5.50GHz ~ 5.70GHz <input type="checkbox"/> WLAN: 5.745GHz ~ 5825GHz <input checked="" type="checkbox"/> Others(Bluetooth: 2.402GHz ~ 2.480GHz) |
| Device category | <input type="checkbox"/> Portable (<20cm separation) <input checked="" type="checkbox"/> Mobile (>20cm separation) <input type="checkbox"/> Others ____ |
| Antenna diversity | <input checked="" type="checkbox"/> Single antenna <input type="checkbox"/> Multiple antennas <input type="checkbox"/> Tx diversity <input type="checkbox"/> Rx diversity <input type="checkbox"/> Tx/Rx diversity |
| Max. output power | 0.13 dBm (1.03mW) |
| Antenna gain | 0 dBi |
| Evaluation applied | <input checked="" type="checkbox"/> MPE Evaluation <input type="checkbox"/> SAR Evaluation |

Limits for Maximum Permissible Exposure (MPE)

| Frequency Range(MHz) | Electric Field Strength(V/m) | Magnetic Field Strength(A/m) | Power Density(mW/cm ²) |
|----------------------|------------------------------|------------------------------|------------------------------------|
| 300-1500 | -- | -- | F/1500 |
| 1500-100000 | -- | -- | 1 |

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

Where

P_d = Power density in mW/cm²

P_{out} =output power to antenna in Mw

G = gain of antenna in linear scale

π =3.1416

R = distance between observation point and center of the radiator in cm

P_d the limit of MPE, 1mW/cm². If we know the maximum gain of the antenna and total power input to the antenna, through the calculation, we will know the distance where the MPE limit is reached.

Measurement Result

| Channel | Gain | Channel Frequency (MHz) | Max Output power (dBm) | Tolerance | Max Tune-UP power (mW) | Power density at 20cm (mW/ cm ²) | Power density Limits (mW/cm ²) |
|------------------|------|-------------------------|------------------------|-----------|------------------------|--|--|
| GFSK | | | | | | | |
| Low | 0 | 2402 | -1.92 | ±0.5 | 0.72 | 0.00014 | 1 |
| Middle | 0 | 2441 | -0.63 | ±0.5 | 0.97 | 0.00019 | 1 |
| High | 0 | 2480 | -0.54 | ±0.5 | 0.99 | 0.00020 | 1 |
| π/4-DQPSK | | | | | | | |
| Low | 0 | 2402 | -0.97 | ±0.5 | 0.90 | 0.00018 | 1 |
| Middle | 0 | 2441 | -0.26 | ±0.5 | 1.06 | 0.00021 | 1 |
| High | 0 | 2480 | -0.13 | ±0.5 | 1.09 | 0.00022 | 1 |
| 8DPSK | | | | | | | |
| Low | 0 | 2402 | -0.69 | ±0.5 | 0.96 | 0.00019 | 1 |
| Middle | 0 | 2441 | -0.01 | ±0.5 | 1.12 | 0.00022 | 1 |
| High | 0 | 2480 | 0.13 | ±0.5 | 1.16 | 0.00023 | 1 |