



RF exposure evaluation

Subject: FCC Application for FCC ID: ZME-CFD

According to 447498 D01 General RF Exposure Guidance v06

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances \leq 50 mm are determined by:

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR, where}$

$f(\text{GHz})$ is the RF channel transmit frequency in GHz

Power and distance are rounded to the nearest mW and mm before calculation

The result is rounded to one decimal place for comparison

$$\text{eirp} = \text{pt} \times \text{gt} = (E \times d)^2 / 30$$

where:

pt = transmitter output power in watts,

gt = numeric gain of the transmitting antenna (unitless),

E = electric field strength in V/m --- $10^{(\text{dBuV/m})/20} / 10^6$

d = measurement distance in meters (m) --- 3m

$$\text{So } \text{pt} = (E \times d)^2 / (30 \times \text{gt})$$

Field strength = 85.32 dBuV/m @3m (2401.35 MHz) (Test Report page 46/80)

Ant gain = -1.73 dBi ;so Ant numeric gain = $10^{(-1.73/10)} = 0.671$

$$\text{So } \text{pt} = \{ [10^{(85.32/20)} / 10^6] \times 3 \}^2 / (30 \times 0.671) \times 1000 \text{ mW} = 0.152 \text{ mW}$$

$$\text{So } (0.152 \text{ mW} / 5 \text{ mm}) \times \sqrt{2.40135} = 0.00118 < 3$$

Then SAR testing/evaluation is not required