

RF Exposure evaluation

According to KDB 447498 D01 General RF Exposure Guidance v05
The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6
GHz at test separation distances ≤ 50 mm are determined by:
[(max. power of channel, including tune-up tolerance, mW) / (min.
test separation distance, mm)] $\cdot [\sqrt{f(\text{GHz})}] \leq 3.0$ for 1-g SAR and
 ≤ 7.5 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

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

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

Field strength = 99.09 dBuV/m @3m

Ant gain=2 dBi; so Ant numeric gain=1.585

So pt={ $[10^{(99.09/20)}/10^6 \times 3]^2/30 \times 1 \times 1000$ } mW = 2.433 mW

So $(2.433 \text{ mW}/5\text{mm}) \times \sqrt{2.402\text{GHz}} = 0.754 < 3$

Then SAR evaluation is not required