

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:

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

- f (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

Worse case of 2.4G is as below: [2412MHz 8.37dBm

(6.87mW) output power]

$(6.87\text{mW} / 5\text{mm}) \cdot [\sqrt{2.412 \text{ (GHz)}}] = 2.13 < 3.0$ for 1-g SAR

Worse case of 5G is as below: [5240MHz 7.75dBm

(5.96mW) output power]

$(5.96\text{mW} / 5\text{mm}) \cdot [\sqrt{5.240 \text{ (GHz)}}] = 2.73 < 3.0$ for 1-g SAR

Then SAR evaluation is not required