

## RF Exposure evaluation

According to 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  $\leq 50$  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

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

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

Ant gain = 3 dBi ; so Ant numeric gain= 2

Field strength = 91.05 dBuV/m @ 3m  
So  $\text{Pt} = \{ [10^{(91.05/20)/10^6} \times 3]^2/30 \times 2 \} \times 1000 \text{ mW} = 0.191 \text{ mW}$

So  $(0.191 \text{ mW}/5\text{mm}) \times \sqrt{5.740 \text{ GHz}} = 0.0915 < 3$

Then SAR evaluation is not required