

## RF Exposure

### 1. Standard Requirement

According to §15.247 (i) and §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

### 2. Limits :

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:

$$\left[ \frac{(\text{max. power of channel, including tune-up tolerance, mW})}{(\text{min. test separation distance, mm})} \right] \cdot [\sqrt{f_{(\text{GHz})}}] \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR,}^{16} \text{ where}$$

- $f_{(\text{GHz})}$  is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation<sup>17</sup>
- The result is rounded to one decimal place for comparison

The test exclusions are applicable only when the minimum *test separation distance* is  $\leq 50$  mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum *test separation distance* is  $< 5$  mm, a distance of 5 mm is applied to determine SAR test exclusion.

### 3. EUT RF Exposure

The max. power of channel, including tune-up tolerance is -5.26dBm in high channel(2.480GHz); -5.26dBm logarithmic terms convert to numeric result is nearly 0.30mW.

According to the formula. Calculate the EIRP test result:

$$[(\text{max.power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] * [\sqrt{f(\text{GHz})}]$$

General RF Exposure =  $(0.30\text{mW} / 5\text{mm}) \times \sqrt{2.480\text{GHz}} = 0.09 \cdots \textcircled{1}$

SAR requirement:  $S=3.0 \cdots \textcircled{2}$ ;

$\textcircled{1} < \textcircled{2}$ .

**So the SAR report is not required.**