

RF Exposure evaluation

According to 447498 D04 Interim General RF Exposure Guidance v01

$$P_{th} (\text{mW}) = ERP_{20 \text{ cm}} (\text{mW}) = \begin{cases} 2040f & 0.3 \text{ GHz} \leq f < 1.5 \text{ GHz} \\ 3060 & 1.5 \text{ GHz} \leq f \leq 6 \text{ GHz} \end{cases} \quad (\text{B.1})$$

$$P_{th} (\text{mW}) = \begin{cases} ERP_{20 \text{ cm}}(d/20 \text{ cm})^x & d \leq 20 \text{ cm} \\ ERP_{20 \text{ cm}} & 20 \text{ cm} < d \leq 40 \text{ cm} \end{cases}$$

where

$$x = -\log_{10} \left(\frac{60}{ERP_{20 \text{ cm}} \sqrt{f}} \right)$$

and f is in GHz, d is the separation distance (cm), and $ERP_{20\text{cm}}$ is per Formula (B.1).

Ant gain = 8.02dBi (8.02-2.15=5.87dBd)

MAX output power : 14.84dBm@2440.4MHz

$$-\log \{ 60 / (3060 \times \sqrt{2.4404}) \} = 1.9$$

$$3060 \times \{ (8.5/20)^{1.9} \} = 602$$

So Limit=602mW

$$ERP = 14.84 \text{ dBm} + 5.87 \text{ dBd} = 20.71 \text{ dBm}$$

WORSE CASE: 20.71dBm

$$10^{2.071} = 118 \text{ mW} < 602 \text{ mW}$$

Then SAR evaluation is not required

Remark:

The shortest distance between antenna and The manual part is 85mm.

