

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 =3.04dBi (3.04-2.15= 0.89dBd)
 MAX output power: 15.26dBm@2440.4MHz
 $-\log\{60/ (3060 \times \sqrt{2.4404})\}=1.9$
 $3060 \times \{(2.5/20)^{1.9}\}=58.7$
 So Limit=58.7mW

ERP=15.26dBm+0.89dBd=16.15dBm

WORSE CASE: 16.15dBm

$10^{1.615}=41.2\text{mW} < 58.7\text{mW}$

Then SAR evaluation is not required

Remark:

The shortest distance between antenna and The manual part is 25mm.

