

## RF Exposure evaluation

According to 447498 D04 Interim General RF Exposure Guidance v01

$$P_{th} \text{ (mW)} = \begin{cases} ERP_{20 \text{ cm}} (d/20 \text{ cm})^x & d \leq 20 \text{ cm} \\ ERP_{20 \text{ cm}} & 20 \text{ cm} < d \leq 40 \text{ cm} \end{cases} \quad (\text{B.2})$$

where

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

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

Table B.2—Example Power Thresholds (mW)

Frequency (MHz)	Distance (mm)										
		5	10	15	20	25	30	35	40	45	50
300		39	65	88	110	129	148	166	184	201	217
450		22	44	67	89	112	135	158	180	203	226
835		9	25	44	66	90	116	145	175	207	240
1900		3	12	26	44	66	92	122	157	195	236
2450		3	10	22	38	59	83	111	143	179	219
3600		2	8	18	32	49	71	96	125	158	195
5800		1	6	14	25	40	58	80	106	136	169

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

where:

pt = transmitter output power in watts,

gt = numeric gain of the transmitting antenna (unitless),

E = electric field strength in V/m, ---  $10((\text{dBuV/m})/20)/106$

d = measurement distance in meters (m)---3m

$$Sopt = (EXd)^{2/30} \times gt$$

Ant gain =1.5dBi so Ant numeric gain= 1.413

Field strength =100.23dBuV/m @3m@2433MHz

$$eirp = 100.23 - 95.2 = 5.03 \text{ dBm}$$

$$erp = 5.03 - 2.15 = 2.88 \text{ dBm}$$

$$\text{output power} = 5.03 - 1.5 = 3.53 \text{ dBm}$$

$$10^{0.353} = 2.254 \text{ mW} < 2.715 \text{ mW}$$

Then SAR evaluation is not required