RF Exposure evaluation

According to 447498 D04 Interim General RF Exposure Guidance v01

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

where

$$x = -\log_{10}\left(\frac{60}{ERP_{50 \text{ cm}}\sqrt{f}}\right)$$

and f is in GHz, d is the separation distance (cm), and ERP_{20m} is per Formula (B.1). The example values shown in Table B.2 are for illustration only.

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

Table B.2—Example Power Thresholds (mW)

	Distance (mm)										
		5	10	15	20	25	30	35	40	45	50
Frequency (MHz)	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 x 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, --- $10^{((dBuV/m)/20)}/10^6$

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

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

Ant gain =3.49dBi so Ant numeric gain= 2.23

Field strength =93.95dB μ V/m @3m@2402MHz

So Pt={
$$[10^{(93.95/20)}/10^6 \text{ x3}]^2/(30\text{x2.23})}\text{x}1000 \text{ mW} = 0.33\text{mW}$$
 <2.79 mW

Then SAR evaluation is not required