RF Exposure evaluation

According to 447498 D04 Interim General RF Exposure Guidance v01

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

where

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

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

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 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)/106
d = measurement distance in meters (m)---3m
Sopt = (EXd)2/30 x gt

Ant gain =3.0dBi so Ant numeric gain= 1.995

Field strength =94.95dBµV/m @3m@2480.99MHz

So Pt={ $[10^{(94.95/20)}/10^6$ x3$]^2$/(30x1.995)}x1000 mW = 0.47mW

ERP=0.47x1.22=0.57 <2.72mW
Then SAR evaluation is not required