

RF Exposure evaluation

According to 447498 D04 Interim General RF Exposure Guidance v01

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

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

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). The example values shown in Table B.2 are for illustration only.

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

2.4G mode

Frequency (MHz)	Output power to antenna (dBm)	Ant gain(dBi)	EIRP(dBm)	ERP(dBm)	ERP(mw)	Distance (cm)	P _{th} (mW)
2408	6.19	1	7.19	5.04	3.19	1	10.4

ERP = EIRP -2.15 dB

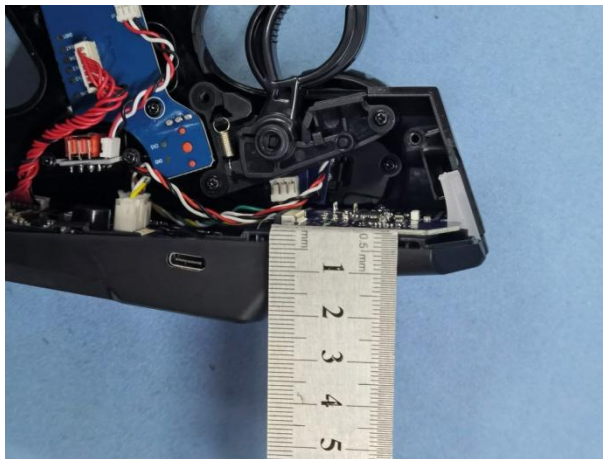
WORSE CASE

5.24mW<10.4mW

Then SAR evaluation is not required

Remark:

The shortest distance between antenna and The manual part is 1cm.



BLE mode

Frequency (MHz)	Output power to antenna (dBm)	Ant gain(dBi)	EIRP(dBm)	ERP(dBm)	ERP(mw)	Distance (cm)	P _{th} (mW)
2480	-0.75	2.29	1.54	-0.61	0.87	2	38.1

ERP = EIRP -2.15 dB

WORSE CASE

1.43mW<38.1mW

Then SAR evaluation is not required

Remark:

The shortest distance between antenna and The manual part is 2cm.

