

RF Exposure evaluation

FCC ID: 2ASR9-J

According to 447498 D04 Interim General RF Exposure Guidance v01

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

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

where

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

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

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
			100	100				100	1. C		

 $ERP/EIRP = P_T+G_T - L_C$

ERP/EIRP is the equivalent (or effective) radiated power [in same units as P_T, typically dBW, dBm, or power spectral density (psd)], relative to either a dipole antenna (ERP) or an isotropic antenna (EIRP).

 P_T is the transmitter output power, in dBW, dBm, or psd (power over a specified reference bandwidth).

G_T is the gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP).

 L_{C} is the signal attenuation in the connecting cable between the transmitter and the antenna, in dB.

For	BΤ	EDR	mode
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Frequency (MHz)	Output power to antenna (dBm)	Ant gain(dBi)	EIRP(dBm)	ERP(dBm)	ERP(mw)	Distance (cm)	P _{th} (mW)
2480	3.60	1.95	5.55	3.4	2.19	0.5	2.7

ERP = EIRP - 2.15 dB

WORSE CASE

2.19mW<2.7mW

Remark:

Then SAR evaluation is not required