

Client:	Elastic Care
Product Name/Model:	Lifepath-C
FCC ID:	2BA2T-LPC1
Reference	FCC KDB 447498 D04 v01

# FCC RF Exposure

Where the Device Under Test (DUT) can be shown to meet the requirements for an exemption pursuant to FCC 47 CFR §1.1307(b)(3), an evaluation is not required with respect to the limits on human exposure to RF emissions provided in FCC 47 CFR §1.1310.

## 1. Determination of Exemption

As per 47 CFR §1.1307(b)(3), for single RF sources (i.e., any single fixed RF source, mobile device, or portable device), a single RF source is exempt if:

- A. **1-mW Test Exemption:** The available maximum time-averaged power is no more than 1 mW, regardless of separation distance. This exemption may not be used in conjunction with other exemption criteria other than those in paragraph (b)(3)(ii)(A) of this section. Medical implant devices may only use this exemption and that in paragraph (b)(3)(ii)(A);
- B. **SAR-Based Exemption:** The available maximum time-averaged power or effective radiated power (ERP), whichever is greater, is less than or equal to the threshold  $P_{th}$  (mW) described in the following formula. This method shall only be used at separation distances (cm) from 0.5 centimeters to 40 centimeters and at frequencies from 0.3 GHz to 6 GHz (inclusive).  $P_{th}$  is given by:

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

Where

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

And

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

$d$  = the minimum separation distance (cm) in any direction from any part of the device antenna(s) or radiating structure(s) to the body of the device user.

- C. **MPE-Based Exemption:** Using Table 1 and the minimum separation distance (R in meters) from the body of a nearby person for the frequency (f in MHz) at which the source operates, the ERP (watts) is no more than the calculated value prescribed for that frequency. For the exemption in Table 1 to apply, R must be at least  $\lambda/2\pi$ , where  $\lambda$  is the free-space operating wavelength in meters. If the ERP of a single RF source is not easily obtained, then the available maximum time-averaged power may be used in lieu of ERP if the physical dimensions of the radiating structure(s) do not exceed the electrical length of  $\lambda/4$  or if the antenna gain is less than that of a half-wave dipole (1.64 linear value).

Table 1 of § 1.1307(b)(3)(i)(C) - Single RF Sources Subject to Routine Environmental Evaluation

RF Source Frequency (MHz)	Threshold ERP (Watts)
0.3-1.34	$1,920 R^2$
1.34-30	$3,450 R^2/f^2$
30-300	$3.83 R^2$
300-1,500	$0.0128 R^2f$
1,500-100,000	$19.2 R^2$

## 2. RF Exposure Evaluation

The DUT is a portable device designed to be used in other than fixed locations and generally used in such a way that the RF source's radiating structure is within 20 centimeters of the body of the user.

## 2.1 DUT RF Output Power

Evaluation Frequency (MHz)	Max Conducted Power (dBm)	Max Conducted Power (mW)	Duty Cycle (%)	Duty Cycle (numerical)	Max Average Conducted Power (mW)	Max Average Conducted Power (dBm)	Max Antenna Gain (dBi)	Max Average EIRP (dBm)	Max Average ERP (dBm)	Max Average ERP (mW)	Minimum Separation Distance (cm)
2402	6.69	4.67	10.5	0.105	0.490	-3.10	3.58	0.482	-1.668	0.681	0.15
2440	6.82	4.81	10.5	0.105	0.505	-2.97	3.58	0.612	-1.538	0.702	0.15
2480	6.98	4.99	10.5	0.105	0.524	-2.81	3.58	0.772	-1.378	<b>0.728</b>	0.15

Notes:

1. Average Conducted Power = Conducted Power (mW) \* Duty Cycle
2. Average EIRP (dBm) = Average conducted power (dBm) + Antenna Gain (dBi)
3. ERP (dBm) = EIRP (dBm) – 2.15
4. Max out of Conducted and Radiated measurements used for calculations.

## 2.2 1-mW Test Exemption

Evaluation Frequency (MHz)	Max Time-Averaged Output E.R.P. (mW)	Limit For Test Exemption (mW)	Result
2402	0.681	1	Pass
2440	0.702	1	Pass
2480	0.728	1	Pass

According to 47 CFR §1.1307(b)(3)(i)(A), this device complies with the RF exposure test exemption.