

Compliance with 47 CFR 15.247(i)

“Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the Commission's guidelines. See § 1.1307(b)(1) of this chapter.”

The EUT operates in the 902 – 928 MHz band with a peak output power of 21.38 mW EIRP. It is a hybrid spread spectrum transmitter that utilizes five hopping channels. The radio is part of a data logger that is installed on water service pipes. The EUT will only be used with a separation distance of 20 centimeters or greater between the antenna and the body of the user or nearby persons and can therefore be considered a mobile transmitter per 47 CFR 2.1091(b). The radio utilizes a single integral PCB etch antenna.

Since the transmit frequency is less than 1.5 GHz, and the output power is less than 1.5 W ERP, the EUT is categorically excluded from routine environmental evaluation per 47 CFR 2.1091(c).

The MPE estimates are as follows:

Table 1 in 47 CFR 1.1310 defines the maximum permissible exposure (MPE) for the general population as $(f_{\text{MHz}}/1500) \text{ mW/cm}^2$. The exposure level at a 20 cm distance from the EUT's transmitting antenna is calculated using the general equation:

$$S = (PG)/4\pi R^2$$

Where: S = power density (mW/cm^2)

P = power input to the antenna (mW)

G = numeric power gain relative to an isotropic radiator

R = distance to the center of the radiation of the antenna (20 cm = limit for MPE estimates)

PG = EIRP

Solving for S, the maximum power density 20 cm from the transmitting antenna is summarized in the following table:

MPE Estimate

FCC ID: RIC-MLOG01

Antenna Type	Manufacturer	Part No.	Transmit Frequency (MHz)	Max Peak Output Power - EIRP (mW)	Power Density @ 20 cm (mW/cm^2)	General Population Exposure Limit from 1.1310 (mW/cm^2)
PCB Etch	Flow Metrix	MLOG	902	21.38	0.004	0.601333333

The power density does not exceed 0.601 mW/cm^2 at 20 cm; therefore, the exposure condition is compliant with FCC rules.

The applicant's radio, FCC ID: RIC-MLOG01, is compliant with the requirements of 15.247(i).