

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 is a Bluetooth USB Dongle that operates in the 2400-2483.5MHz band. The F-0550A can be plugged into the USB port of a notebook or desktop pc or into the USB extension docking station provided with the unit. The F-0550A will typically 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 F-0550A has a single internal antenna with a maximum peak gain of 2.99dBi. The maximum peak conducted output power of the device is 2.89mW.

The maximum peak power is 5.75 mW (EIRP). In cases where the USB dongle is closer than 20 centimeters to the torso (e.g. laptop use of a notebook computer), both the peak conducted and effective radiated powers are below the low power threshold of 25 mW. Therefore the EUT does not require SAR evaluation per 2.1093. The EUT is not subject to routine environmental evaluation per 47 CFR 2.1091. Per 47 CFR 1.1310, the EUT must meet the General Population/Uncontrolled exposure limits listed in Table 1.

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/cm²)

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:

FCC ID: DZL-F-0550A

Antenna Type	Antenna Part No.	Transmit Frequency (MHz)	Max Peak Conducted Output Power (mW)	Antenna Gain (dBi)	Minimum Antenna Cable Loss (dB)	Power Density @ 20 cm (mW/cm ²)	General Population Exposure Limit from 1.1310 (mW/cm ²)
Chip	Johanson part # 190482-0000	2400	2.89	2.99	0	0.001	1

The power density does not exceed 1.0 mW/cm² at 20 cm; therefore, the exposure condition is compliant with FCC rules.

The applicant’s radio, FCC ID: DZL-F-0550A, is compliant with the requirements of 15.247.