

Compliance with 47 CFR 2.1091 and 1.1310

The EUT is a low power, 2.4 GHz radio module operating under FCC 15.247. 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 antennas are either a 12 dBi Mini Panel antenna or a 0 dBi integrated PCB trace antenna. The maximum peak conducted output power is 1.049 mW.

The maximum peak power is 20.18 mW (EIRP) for FCC ID: SEJ-80446. The transmit frequency is in the 2.4 GHz band. Since the transmit frequency is greater than 1.5 GHz, and the output power is less than 3.0 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 1 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:

FCC ID: SEJ-80446

Antenna Type	Antenna Manufacturer	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)
Mini Panel	L-Com	HG2412P	2.4	1.049	12	0	0.00330754	1
PCB Etch	Zonar	n/a	2.4	1.049	0	0	0.00020869	1

The power density does not exceed 0.0033 mW/cm^2 at 20 cm; therefore, the exposure condition is compliant with FCC rules.