OSBORNE COINAGE®

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Federal Communications Commission

Equipment Authorization Branch

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RF Exposure Calculation

FCC ID: ZOD-RF24A1

FCC Part 15 Certification

- **End-users may not be provided with the module installation instructions. Integrators and installers must be provided with transmitter operating conditions for satisfying RF exposure compliance.**
- **For portable applications OEM integrators / end users need no SAR evaluation. The max sourced-based time-averaged output of 7.96 mW is below the low threshold of 24 mW for distance < 2.5 cm.**
- **Section 15.203: Antenna requirement**

  "An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replace by the user, but the use of a standard antenna jack or electrical connector is prohibited."

  The antennas on this device are soldered in place.

RF Exposure Calculations based on OET 65 guidelines:

Maximum Permissible Exposure (MPE) Limits for General Population / Uncontrolled Exposure in the 1500 – 100000 MHz frequency range is shown in Table 1 (B) of OET 65 as 1.0 mW/cm^2 power density , S, averaged over 30 minutes.

Maximum Conducted Power for Transmitting device is 3 dBm + 3 dBm max tol. = 6 dBm, or 3.98 mW.
The maximum numerical gain of each antenna (powered singularly) is 2.0.

Although the radiation is intermittent , using 100% duty cycle we have:

Description	**Value**		
Maximum Conducted Power (P)	**3.98 mW**		
Maximum antenna gain (G)	**2.0**		
Calculated Radiated Power	**7.96 mW**		
$S = \frac{P \cdot G}{4 \cdot \pi \cdot d^2}$			
d [cm]	**5.0 cm**	**2.5 cm**	**1.0 cm**
S [mW]/cm^2	**.253 mW**	**.101 mW**	**.633 mW**
Min Safe Distance **d =** $\sqrt{\frac{P \cdot G}{4 \cdot \pi \cdot S}}$ **where P · G = 7.96, S= 1 mW**	**.8 [cm]**		

The device power density is in compliance with the MPE limit of 1 mW / cm^2 for distances > 2.5 cm.

The following RF exposure statement is included in the installation manual:

"FCC RF Radiation Exposure Statement: This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed with a minimum distance of 2.5 cm between the radiator and the body of humans."