

Compliance with 47 CFR 2.1091

The EUT will be professionally installed and can only be used with a separation distance of 25 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 EUT has six antenna ports. Three antenna ports are for transmit and three for receive. The Base Station can accommodate 24 radios for a total and can be configured for either 3 sectors with 8 iDEN transmitters (FCC ID: PURMCSERIES10) per sector or an Omni system with 20 iDEN transmitters (FCC ID: PURMCSERIES10).

The maximum peak power was measured to be 166 mW (EIRP) per channel for FCC ID: PURMCSERIES10. The EUT meets the requirement that it will 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 (ref. 47 CFR 1.1307, 1.1310, 2.1091 and 2.1093. also OET Bulletin 65, Supplement 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 $(f/1500)$ mW/cm². The exposure level at a 25 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 (25 cm = distance for MPE estimates)

PG = EIRP

Solving for S, the maximum power densities 25 cm from the transmitting antennas are summarized in the following tables:

MPE Estimates for Self Co-located Device

FCC ID: PURMCSERIES10

iDEN Radio

Antenna Type	Antenna Part No.	Transmit Frequency (MHz)	Max Peak Conducted Output Power (mW)	Antenna Gain (dBi)	Minimum Antenna Cable Loss (dB)	Power Density @ 25 cm (mW/cm ²)	General Population Exposure Limit from 1.1310 (mW/cm ²)	Ratio of Power Density to the Exposure Limit
Omni		860	166	0	0	0.021	0.567333333	0.037

Worst Case Ratio of Power Density to the Exposure Limit = 0.058

Worst Case Co-located Exposure Condition

Per Note 24 shown below, the Sum of Worst Case Power Ratios cannot exceed 1.0

iDEN Radio Worst Case Ratio of Power Density to the Exposure Limit	Maximum Number of co-located Radios			Sum of Worst Case Ratios (Power Density to the Exposure Limit)	FCC Limit for Sum of Worst Case Ratios
0.03725	20			0.74509	1.0

PASS

Excerpts from TCB Training, April 3, 2002, “Mobile Transmitters”, Slide 6:

“Devices operating in multiple frequency bands

- *When RF exposure evaluation is required for TCB approval*
 - *Separate antennas – estimated minimum separation distances may be considered for the frequency bands that do not require evaluation or TCB approval, however, the estimated distance should take into account the effect of co-located transmitters. (Note 24)*

Note 24 According to multiple frequency exposure criteria, the ratio of field strength or power density to the applicable exposure limit at the exposure location should be determined for each transmitter and the sum of these ratios must not exceed 1.0 for the location to be compliant.”

The sum of the worst case ratio of power density to the exposure limit is less than 1.0. Therefore, the co-location configuration is compliant.