

# FCC RF Exposure Requirements

## General information:

FCCID: RD5-LCC0308

Device category: Mobile per Part 2.1091

Environment: General Population/Uncontrolled Exposure

Mobile devices that operate in the PCS Services, authorized under part 24 of this chapter are subject to routine environmental evaluation for RF exposure prior to equipment authorization or use if they operate at frequencies of 1.5 GHz or below and their effective radiated power (ERP) is 1.5 watts or more.

However, compliance with the power density limits of 1.1310 is required.

## Antenna:

The manufacturer does not specify any antenna to be used with this device.

This device has provisions for operation in a vehicle, a boat, or at a fixed location.

Configuration	Antenna p/n	Type	Max. Gain (dBi/dBd)
Vehicle	Any	-	5dBd
Boat	Any	-	5dBd
Fixed	Any	-	5dBd

## Operating configuration and exposure conditions:

The maximum conducted output power is 0.508Watt, which yields an EIRP of 2.46W with a 5dBd antenna gain and no cable loss. Part 2.1091 states that devices are excluded from routine evaluation if the EIRP is less than 2.46Watt (or 1.5WERP).

## MPE Calculation:

The minimum separation distance is calculated as follows:

$$E(V/m) = \frac{\sqrt{30 \times P \times G}}{d}$$

$$\text{Power density: } P_d(mW/cm^2) = \frac{E^2}{3770}$$

The limit for general population/uncontrolled exposure environment above 1500MHz is 1mW/cm<sup>2</sup>.

The conducted power output is 0.508 Watt.

Power Density at 20 cm distance		Max. Antenna Gain (dBi) / Minimum Cable Loss (dB)		
		7dBi / 0dB	- dBd / -dB	-
Power EIRP (W)	Duty Cycle (%)	(mW/cm <sup>2</sup> )	(mW/cm <sup>2</sup> )	(mW/cm <sup>2</sup> )
2.46	100 (CDMA)	0.51	-	-
-	-	-	-	-

**Conclusion:**

The device complies with the MPE requirements by providing a safe separation distance of 20 cm between the antenna, including any radiating structure, and any persons when normally operated.

**Proposed RF exposure safety information to include in User's Manual:**

**“FCC RF Exposure Requirements:**

The antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

The antenna installation and operating configurations of this transmitter, including antenna gain and cable loss, must not exceed a total gain of 5dBd(7dBi) and must satisfy the MPE categorical Exclusion Requirements of §2.1091.”