

RF exposure exhibit

FCC RF Exposure Requirements

General information:

FCCID: QPL100

Modulation: FM

Device category: Mobile / Part 2.1091

Environment: General Population/Uncontrolled Exposure

Antenna:

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

This device has provisions for operation in a vehicle.

Configuration	Antenna p/n	Type	Max. Gain (dBi)
Passenger car	-	-	3

Operating configuration and exposure conditions:

The conducted output power is 46.5dBm = 45 Watt for the band 450-470MHz.

The duty cycle is typically 0.2% for a 20 msec in a 10 second period. For the purpose of this evaluation, a maximum duty cycle of 1% is considered. The duty cycle is set by protocol firmware at the time of manufacture. The user does not have access to such adjustments.

- Vehicle Operation: The maximum antenna gain that can be used is 3dBi. A coaxial cable of the type RG174 has a loss of at least 3dB for a length of 15 feet. Yet - no cable loss was considered for this evaluation.

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 is 0.3mW/cm² for the worst-case frequency below 1500MHz, which is for 450MHz.

Channel Frequency: 450MHz

Minimum Separation Distance			Max. Antenna Gain (dBi) / Minimum Cable Loss (dB)		
			3dBi / 0dB	-	-
Freq (MHz)	Power Conducted (W)	Duty Cycle (%)	(cm)	(cm)	(cm)
470	45	1 (F2D)	15.4	-	-
-	-	-	-	-	-

Conclusion:

The device complies with the MPE requirements when installed at a separation distance of 16cm between the antenna, including any radiating structure, and any persons when normally operated.