RF EXPOSURE

5.1 RF Safety Requirements to 2.1091 for Mobile Transmitters

The unit under evaluation has one integral antenna. Ferguson Manufacturing calculated the MPE emission values for a RFM-10. They used the formula shown in OET Bulletin 65 and calculated the minimum distance between antenna and unsuspecting user as 20 cm.

5.1 RF Safety Requirements to 2.1091 for Mobile Transmitters – Cont.

Power Output

The EUT's maximum expected output power as shown in Section 2.6 was

Frequency of Fundamental (MHz)	Measurement (dBm)*	Measurement (mW)*	FCC Limit (Watt)
903.950	11.75	14.96	1.0
915.125	11.73	14.89	1.0
926.812	11.63	14.55	1.0

* Measurement includes 0.1 dB for cable loss

The maximum EIRP expected is with a +0 dBi gain wire antenna. This would yield and maximum EIRP of 11.75 dBm.

+11.75 dBm

Antilog (11.75 dBm/10) = 14.96 mW

MPE Calculations

MPE Calculations

The limits for this unit (uncontrolled exposure) are 1.0 mW/cm^2. Taking the RF Density Field Equation:

S = (EIRP in mW)/($4\pi R^2$) and solving for Density S at 20 cm.

S = 14.96 / 4 π 20^2

S = 14.96 / 5026.55

S = 0.003 mW/cm^2

All manual instructions will specify 20 cm for all installations.