6.1 RF Safety Requirements to 2.1091 for Mobile Transmitters

Power Output

The EUT's maximum expected output power is shown in section 2.7 is

Frequency of Fundamental (MHz)	Measurement (Watt)*	Antenna Gain (dBi)	P_{ERP} (Watt)
915.0	0.2328	0.0	0.2328

Source Based Time Averaging

Additionally, source based time averaging may be applied as the worse case duty cycle is given as follows:

Worse Case Duty Cycle:
There is a 'supervisory delay' between the end of one message burst and the beginning of the next message. The supervisory delay is 1.5 times the last transmission with a maximum per transmission of 40 ms.

Duty cycle = (on time)/(total time) = 40/100 = 40 %

This yields for a duty cycle correction of 10 log (0.40) = -4.0 dB

Therefore the maximum EIRP may be expected to be

10 log (232.8 mW) = +23.7 dBm

23.7 dBm – 4.0 dB = +19.7 dBm

Antilog(19.7 dBm/10) = 93.3 mW

MPE Calculations

The limits for this unit (uncontrolled exposure) are 0.61 mW/cm^2 for 915 MHz. Taking the RF Denisty Field Equation:

S = (EIRP in mW)/($4\pi R^2$) and solving for Distance R

R = SQRT (EIRP in mW)/($S4\pi$)

Solving the above equation yields

R (cm) = SQRT (93.3(mw))/(0.61(mW/cm^2)*4*π) = 3.5 cm

Since the EUT is designed only for mobile applications (where the expected separation distance between antenna and humans is greater than 20 cm), all manual instructions have specified 20 cm as the minimum exposure distance.