

Exhibit 13 RF Exposure

The following table is an analysis of the maximum permissible exposure (MPE) information for the GIK-1700 antenna. The analysis was performed in reference to FCC OET Bulletin 65. The maximum EIRP power used for the MPE calculation includes calibration error and the peak gain to represent the worst case radiated transmit power. The cable losses for the calculation are also factored into the worst case radiated power by taking the maximum power measurement at the antenna output of the associated cable(s). The worst-case separation distance is calculated to be 15.76 cm.

Page1 of the Installation Instructions (Exhibit 7) specifies the minimum separation distance for the antenna to insure FCC RF safety requirements are satisfied. The minimum separation is specified at 25 cm (10 inches) The separation distance specified in the warning statement of the manual is farther then the calculated distances in order to provide an increased safety margin to the user.

It should be noted that these separation distance was specified in reference to the more stringent IRPA Uncontrolled environment guidelines.

Globalstar Hands-Free Kit GIK-1700 Uncontrolled/General Public Maximum Permissible Exposure Distance Calculations

References: International Radiation Protection Association (IRPA) Guidelines on Protection Against Non-Ionizing Radiation, 1991
 47 CFR Ch.1 (10-1-97 Edition) Part 1, Section 1.1310
 FCC OST Bulletin No. 65, 1985

Input numerical values are in **boldface**.
 Calculated values are in plain text.

Max. Antenna Power = **891** mW
 = 29.50 dBm
 Calibration Error Tolerance = **0.0** dB *Calibration error is factored into the RF calibration table
 Minimum Cable Loss **0.0** **Power is measured at cable output so cable loss is not considered
 Max. Antenna Gain = **4.5** dBic
 EIRP = 2511 mW 1523.62 mW
 = 34.00 dBm EIRP 31.83 dBm ERP

1991 IRPA Guidelines Uncontrolled MPE = $f/2000$ mW/cm²; f = frequency in MHz
 1997 FCC Uncontrolled MPE = 1.0 mW/cm²

Far-Field Power Density Calculations

Elemental Dipole Far-Field Distance = $\lambda/(2\pi)$
 Aperture Near-Field Bound = $D^2/(4\lambda)$
 Radiating Near-Field Bound = D^2/λ

Free Space
 100% Ground Reflection
 Radio Broadcast Towers
 (60% Ground Reflection per EPA)

(in phase addition, worst case)
 P.d = $EIRP/(4 * \pi * r^2)$
 P.d = $EIRP/(\pi * r^2)$
 P.d = $(1.6)^2 * EIRP/(4 * \pi * r^2)$
 = $0.64 EIRP/(\pi * r^2)$

IRPA Guideline Uncontrolled MPE Safe Approach Distance

Frequency (MHz)	Wavelength (cm)	Elemental Dipole Far-Field Dist. (cm)	IRPA MPE (mW/cm ²)	Distance to Free Space MPE (cm)	Distance to 100% Ground Reflection MPE (cm)
1610	18.63	2.97	0.805	15.76	31.51
1618	18.54	2.95	0.809	15.72	31.43
1621.35	18.50	2.94	0.811	15.70	31.40
1626.5	18.44	2.94	0.813	15.68	31.35

FCC Uncontrolled MPE Safe Approach Distance

Frequency (MHz)	Wavelength (cm)	Elemental Dipole Far-Field Dist. (cm)	FCC MPE (mW/cm ²)	Distance to Free Space MPE (cm)	Distance to 100% Ground Reflection MPE (cm)
1610	18.63	2.97	1.000	14.14	28.27
1618	18.54	2.95	1.000	14.14	28.27
1621.35	18.50	2.94	1.000	14.14	28.27
1626.5	18.44	2.94	1.000	14.14	28.27

