APPENDIX A: RF EXPOSURE INFORMATION

FCC RULES AND REGULATIONS PART 1.1307, 1.1310, 2.1091, 2.1093:

1. General Information:
FCCID: O6YUTS-EA7H74B
Environment: Occupational User/Controlled Exposure
Device category: Portable per Part 2.1093

2. Operating Configurations and Test Conditions:

2.1 Antenna Type(s):

Antenna	Type	Gain (dBi)	Gain (numeric)
UT STARCOM, INC.	OMNI- DIRECTIONAL	2.4	1.74

Operating Conditions:

The UTS-EA7H74B has an internal 2.4 dBi antenna used to communicate within a PHS telephony communications system.

Test signal, Time-averaging, Maximum Measured Output Power:

Modulation Type/Mode: TDMA-TDD

Frequency Range	Frequency Tolerance (ppm)	Emission Designator
1893.65-1909.95 MHz	13	280KDXW

Output Power (Watt/dBm)	High (Watt)	High (dBm)	Time averaging (12.5% Duty Cycle = -8.9 dB)
EIRP	0.110	20.4	11.5 dBm / 0.014W

Duty cycle is based on a 12.5 % (-8.9 dB) correction.

Calculation:
10 log (.125) = -8.9 dB

From FCC 1.1310 table 1A, the maximum permissible RF exposure for an uncontrolled environment is 1 mW/cm^2.

The Electric field generated for a $1mW/cm^2$ exposure (S) is calculated as follows:

$$S = \frac{E^2}{Z}$$

where:
S = Power density
E = Electric field
Z = Impedance.

$$E(V/m) = \sqrt{S \times Z}$$

If 1 mW/cm^2 = 10 W/m^2

The impedance of free space is 337 ohms, where E and H fields are perpendicular.

Thus:

$$E(V/m) = \sqrt{10 \times 377} = 61.4 \text{ V/m}$$

MPE Calculation:
The maximum distance, from the antenna at which MPE is met or exceeded, is calculated from the equation relating field strength E in V/m, transmit power P in Watts, transmit antenna numeric gain G, and separation distance in meters above and solving for d below:

$$d = \frac{\sqrt{30 \times P \times G}}{E} \qquad 0.014m = \frac{\sqrt{30 \times 0.014 \times 1.74}}{61.4}$$

The limit for general population/uncontrolled exposure environment is 1 mW / cm^2

SEPARATION DISTANCE:

Separation Distance [A]	**Antenna Gain (dBi)**	
	+7	
Power[B] (Watt)	(in)	(cm)
0.014	0.6	1.4

Notes:
[A] = Distances are calculated for the largest (worst-case) separation distance as applicable
[B] = Measured output power