Rhein Tech Laboratories
360 Herndon Parkway
Herndon, VA 20170
www.rheintech.com
RTL WO#: 2002141

UTStarcom, Inc.
Model: 708J
FCC ID: O6YUTS-708J
Class II Permissive Change
October 29, 2002

APPENDIX A: RF EXPOSURE INFORMATION

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

General Information:
FCCID: O6YUTS-708J
Environment: Occupational User/Controlled Exposure
Device category: Portable per Part 2.1093

OPERATING CONFIGURATIONS AND TEST CONDITIONS:

Antenna Type(s):

ANTENNA	TYPE	GAIN (dBi)	GAIN (NUMERIC)
UT STARCOM, INC.	OMNI- DIRECTIONAL	2.4	1.74

Operating Conditions:

The 708J 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	1.8	273KDXW

OUTPUT POWER (WATT/DBM)	HIGH (WATT)	HIGH (DBM)	TIME AVERAGING (12.5% DUTY CYCLE = -8.9 DB)
EIRP	0.1096	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

Rhein Tech Laboratories
360 Herndon Parkway
Herndon, VA 20170
www.rheintech.com
RTL WO#: 2002141

UTStarcom, Inc.
Model: 708J
FCC ID: O6YUTS-708J
Class II Permissive Change
October 29, 2002

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

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