DECLARATION OF COMPLIANCE
MPE EVALUATION REPORT

Test Lab

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Applicant Information

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FCC Rule Part(s):	**47 CFR §90; 15.247; §2.1091; §1.1310**
IC Rule Part(s):	**RSS-119 Issue 6; RSS-210 Issue 5; RSS-102 Issue 1 (Provisional)**
FCC Classification:	**Licensed Non-Broadcast Station Transmitter (TNB)**
IC Classification:	**Land Mobile Radio Transmitter**
Device Type:	**Rugged Laptop PC with Wavenet BM3-900M Mobitex Radio Modem (co-located with Cisco MPI-350 Mini-PCI 2.4GHz DSSS WLAN Card) with External Dipole Antenna, Internal WLAN Antenna, (3) Mobile Vehicle-Mount Antennas, & Vehicle Cradle**
FCC ID:	**KBCIX260MPIBM3900**
Model(s):	**IX260**
Tx Frequency Range(s):	**896.0 - 901.0 MHz (Mobitex)** **2412 - 2462 MHz (WLAN)**
Max. RF Conducted Power:	**33.0 dBm Peak (Mobitex) / 21.2 dBm Peak (WLAN)**
Source Based Time Av. Power:	**27.8 dBm Conducted (Mobitex - 30% Duty Cycle)**
Antenna Type(s):	**Itronix IX260 External Swivel Dipole (Mobitex)** **Rangestar 802.11b Surface-Mount P/N: 100929 (WLAN)** **MaxRad Model: Z563 Mobile Vehicle-Mount - Unity Gain (Mobitex)** **MaxRad Model: Z567 Mobile Vehicle-Mount - 5 dB Gain (Mobitex)** **MaxRad Model: Z573 Mobile Vehicle-Mount - 5 dB Gain (Mobitex)**

This mobile device with co-located transmitters is compliant with localized Maximum Permissible Exposure (MPE) for Uncontrolled Exposure / General Population limits specified in FCC 47 CFR §1.1310 & Industry Canada RSS-102 Issue 1 (Provisional), in accordance with the requirements of FCC OET Bulletin 65, Edition 97-01, Health Canada's Safety Code 6, ANSI / IEEE C95.1-1992, and ANSI / IEEE C95.3-1992.

I attest to the accuracy of data. All measurements and/or calculations were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

Russell Pipe
Senior Compliance Technologist
Celltech Labs Inc.



1.1 MPE Calculation Data

1. Itronix IX260 Swivel Dipole Antenna

Tx Frequency:	900.00	(MHz)
Source Based Time Averaged Power at Antenna Input Terminal:	27.80	(dBm)
Antenna gain:	2.60	(dBi)

S=	0.60	(mW/cm^2)
P=	602.5596	(mW)
G=	1.82	(numeric)

R = 12.06 (cm)

Field Density @ 20 cm = 0.218 (mW/cm^2)

Itronix IX260
Swivel Dipole Antenna

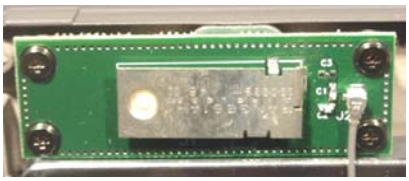
2. Rangestar 802.11b Internal Antenna

Tx Frequency:	2450.00	(MHz)
Maximum Peak Power at Antenna Input Terminal:	21.20	(dBm)
Antenna gain:	4.50	(dBi)

S=	1.00	(mW/cm^2)
P=	131.8257	(mW)
G=	2.82	(numeric)

R = 5.44 (cm)

Field Density @ 20 cm = 0.074 (mW/cm^2)



Rangestar 802.11b Internal Antenna

According to FCC training materials (May 2003):

Multiple frequency exposure criteria, the ratio of field strength or power density to the applicable exposure limit at the exposure location should be determined for each transmitter and the sum of these ratios must not exceed 1.0.

Ratio 1	Ratio 2	Limit
0.218/0.6	0.074/1.0	**< 1.0**
= 0.363	= 0.074	**< 1.0**
Sum = 0.437 (mW/cm^2)		**< 1.0**

3. MaxRad Z563 Unity Gain Antenna


Z563

Tx Frequency:	900.00	(MHz)
Source Based Time Averaged Power at Antenna Input Terminal:	27.80	(dBm)
Antenna Gain (including 1.89 dB cable loss for 17 ft cable):	0.25	(dBi)

S=	0.60	(mW/cm^2)
P=	602.5596	(mW)
G=	1.06	(numeric)

R = 9.20 (cm)

Field Density @ 20 cm = 0.127 (mW/cm^2)

4. MaxRad Z567 & Z573 5 dBd Gain Antennas


Z567


Z573

Tx Frequency:	900.00	(MHz)
Source Based Time Averaged Power at Antenna Input Terminal:	27.80	(dBm)
Antenna gain (including 1.89 dB cable loss for 17 ft cable):	5.25	(dBi)

S=	0.60	(mW/cm^2)
P=	602.5596	(mW)
G=	3.35	(numeric)

R = 16.36 (cm)

Field Density @ 20 cm = 0.401 (mW/cm^2)

2.1 Calculation to determine MPE

$$S = \frac{PG}{4\pi R^2}$$

$$R = \sqrt{\frac{PG}{4\pi S}}$$

S= power density
P= power input to the antenna
G= power gain of the antenna in the direction of interest relative to an isotropic radiator
R= distance to the center of radiation of the antenna

3.1 MPE Limits

According to FCC 47 CFR 1.1310: The criteria listed in the following table shall be used to evaluate the environmental impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b).

LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm^2)	Average Time (minutes)
(A)Limits For Occupational / Control Exposures				
30-300	61.4	0.163	1.0	6
300-1500	…	…	F/300	6
1500-100,000	…	…	5	6
(B)Limits For General Population / Uncontrolled Exposure				
30-300	27.5	0.073	0.2	30
300-1500	…	…	F/1500	30
1500-100,000	…	…	1.0	30

F = Frequency in MHz

4.1 Summary

The Maximum Permissible Exposure (MPE) limit for the frequency range in the Mobitex band (900MHz) is 0.6 mW/cm^2 (F/1500), and 1.0 mW/cm^2 in the 2450MHz frequency range for the General Population / Uncontrolled Exposure environment. The data in this report demonstrates that the Itronix Corporation Model: IX260 Rugged Laptop PC FCC ID: KBCIX260MPIBM3900 with Wavenet BM3-900M Mobitex Radio Modem, external dipole antenna, and (3) mobile vehicle-mount antennas, co-located with Cisco MPI-350 Mini-PCI DSSS WLAN Card and internal dual surface-mount antenna, complies with the Maximum Permissible Exposure (MPE) requirements specified in FCC §2.1091, §1.1310, OET Bulletin 65 (Edition 97-01), and Health Canada's Safety Code 6 for the General Population / Uncontrolled Exposure environment.

Notes:

1. The 17 ft antenna cable is supplied with and connected to the vehicle antennas at time of purchase.
2. The manufacturer's specifications for the Wavenet BM3-900M Mobitex radio modem list 2.0 Watts conducted as the maximum conducted power level capability of this card (per operational description exhibit in the Part 90 application).