

## DECLARATION OF COMPLIANCE MPE EVALUATION REPORT

### Test Lab

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### Applicant Information

**ITRONIX CORPORATION**

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<b>FCC Rule Part(s):</b>	47 CFR §90; 15.247; §2.1091; §1.1310
<b>FCC Classification:</b>	Licensed Non-Broadcast Station Transmitter (TNB)
<b>Device Description:</b>	Rugged Laptop PC with Wavenet BM3-900M Mobitex Radio Modem with Swivel Dipole Antenna, (3) Vehicle-Mount Antennas, & Vehicle Cradle
<b>FCC IDENTIFER:</b>	KBCIX260PLUSBM390
<b>Model(s):</b>	IX260PLUSBM3900
<b>Tx Frequency Range(s):</b>	896.0 - 901.0 MHz
<b>Max. RF Conducted Power:</b>	33.2 dBm (Peak)
<b>Source-Based Time-Av. Power:</b>	28.0 dBm (Peak Conducted)
<b>Max. Duty Cycle Evaluated:</b>	30 % (Source-Based Time-Averaged)
<b>Antenna Type(s):</b>	Ittronix IX260+ External Swivel Dipole MaxRad Z563 Vehicle-Mount - Unity Gain MaxRad Z567 Vehicle-Mount - 5 dB Gain MaxRad Z573 Vehicle-Mount - 5 dB Gain

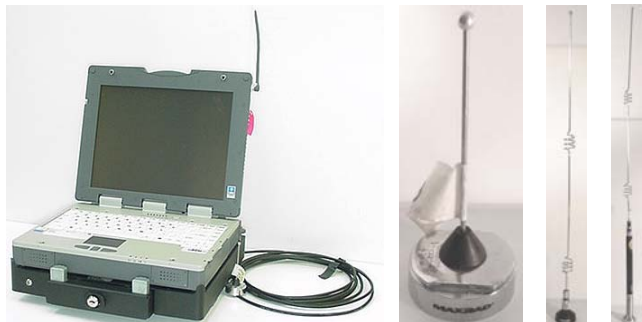
This mobile device is compliant with localized Maximum Permissible Exposure (MPE) for the Uncontrolled Exposure / General Population limits specified in FCC 47 CFR §1.1310, in accordance with the requirements of FCC OET Bulletin 65, Edition 97-01, ANSI / IEEE C95.1-1992, and ANSI / IEEE C95.3-1992.

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.

This evaluation report shall not be reproduced partially, or in full, without the prior written approval of Celltech Labs Inc. The results and statements contained in this report pertain only to the device(s) evaluated.



**Duane M. Friesen**  
EMC Manager  
Celltech Labs Inc.



## 1.1 MPE Calculation Data

### 1. Itronix IX260+ Swivel Dipole Antenna

Tx Frequency: 900.0 (MHz)  
 Source-Based Time-Averaged Power at Antenna Input Terminal: 28.0 (dBm)  
 Antenna gain: 2.6 (dBi)

S= 0.60 (mW/cm<sup>2</sup>)  
 P= 630.9573 (mW)  
 G= 1.82 (numeric)

**R = 12.34 (cm)**

S (mw/cm<sup>2</sup>) at 20cm

0.228170434



Itronix IX260+  
Swivel Dipole  
Antenna

### 2. MaxRad Z563 Unity Gain Vehicle Antenna

Tx Frequency: 900.0 (MHz)  
 Source-Based Time-Averaged Power at Antenna Input Terminal: 28.0 (dBm)  
 Antenna Gain (including 1.89 dB cable loss for 17ft cable): 0.25 (dBi)

S= 0.60 (mW/cm<sup>2</sup>)  
 P= 630.9573 (mW)  
 G= 1.06 (numeric)

**R = 9.41 (cm)**

S (mw/cm<sup>2</sup>) at 20cm

0.132818744



Z563

### 3. MaxRad Z567 & Z573 5 dBd Gain Vehicle Antennas

Tx Frequency: 900.0 (MHz)  
 Source-Based Time-Averaged Power at Antenna Input Terminal: 28.0 (dBm)  
 Antenna Gain (including 1.89 dB cable loss for 17ft cable): 5.25 (dBi)

S= 0.60 (mW/cm<sup>2</sup>)  
 P= 630.9573 (mW)  
 G= 3.35 (numeric)

**R = 16.74 (cm)**

S (mw/cm<sup>2</sup>) at 20cm

0.420009746



Z567 Z573

## 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 <sup>2</sup> )	Average Time (minutes)
<b>(A)Limits For Occupational / Control Exposures</b>				
30-300	61.4	0.163	1.0	6
300-1500	...	...	F/300	6
1500-100,000	...	...	5	6
<b>(B)Limits For General Population / Uncontrolled Exposure</b>				
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<sup>2</sup> (F/1500) for the General Population / Uncontrolled Exposure environment. The data in this report demonstrates that the Itronix Corporation Model: IX260PLUSBM3900 Rugged Laptop PC FCC ID: KBCIX260PLUSBM390, with Wavenet BM3-900M Mobitex Radio Modem utilizing an external swivel dipole antenna and (3) vehicle-mount antennas with vehicle cradle, complies with the Maximum Permissible Exposure (MPE) requirements specified in FCC §2.1091, §1.1310, and OET Bulletin 65 (Edition 97-01), for the General Population / Uncontrolled Exposure environment.

### Notes:

- The 17 ft antenna cable is supplied with and connected to the vehicle antennas at time of purchase.