

DECLARATION OF COMPLIANCE MPE EVALUATION REPORT

Test Lab

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Applicant Information

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FCC Rule Part(s):	47 CFR §24(E), §2.1091; §1.1310
IC Rule Part(s):	RSS-133 Issue 2, RSS-102 Issue 1 (Provisional)
FCC Classification:	PCS Licensed Transmitter worn on body (PCT)
IC Classification:	2GHz Personal Communication Services
Device Type:	Rugged Handheld PC with Sierra Wireless AirCard 750 PCS GPRS Modem (co-located with USI WM-BB-AG-01 802.11b & Bluetooth Transmitters)
Class II Permissive Change(s):	1. Add Itronix IX100X Vehicle Cradle (P/N: 50-0107-001) 2. Add MaxRad 3 dBi Gain Vehicle-Mount Antenna (P/N: WMLPVDB800/1900)
FCC IDENTIFIER:	KBCIX100XA750WLBT
IC IDENTIFIER:	1943A-IX100Xa
Model(s):	IX100XA750WLBT
Tx Frequency Range:	1850.2 - 1909.8 MHz
RF Conducted Output Power:	28.7 dBm Peak (1850.2 MHz) 28.6 dBm Peak (1880.0 MHz) 28.6 dBm Peak (1909.8 MHz)
Modulation Type:	GMSK
Max. No. of Time Slots Evaluated:	4 (Class 12)
Max. Source-Based Time-Av. Duty Cycle:	50 %
Max. Source-Based Time-Av. Cond. Pwr:	25.7 dBm Peak (1850.2 MHz)
Antenna Type(s) Evaluated:	MaxRad 3 dBi Gain Vehicle-Mount (P/N: WMLPVDB800/1900)

This device is compliant with localized Maximum Permissible Exposure (MPE) for Uncontrolled Exposure / General Population limits specified in FCC 47 CFR §1.1310 and 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.

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 Friesen
EMC Manager
Celltech Labs Inc.



1.1 MPE Calculation Data

1. MaxRad 3 dBi Gain Vehicle-Mount Antenna (P/N: WMLPVDB800/1900)

PCS GPRS

Tx Frequency: **1850.2** (MHz)
 Source-Based Time-Averaged Power at Antenna Input Terminal: **25.7** (dBm)
 3 dBi Antenna Gain minus 2.80 dB cable loss for 17 ft cable: **0.20** (dBi)

$$S = \frac{1.00}{4\pi R^2} \text{ (mW/cm}^2\text{)}$$

$$P = 371.5352 \text{ (mW)}$$

$$G = 1.05 \text{ (numeric)}$$

$$R = 5.56 \text{ (cm)}$$

S (mw/cm²) at 20cm

0.077314218



**MaxRad 3 dBi Gain
 Vehicle-Mount Antenna
 P/N: WMLPVDB800/1900**

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 (General Population / Uncontrolled Exposure environment) for the frequency range in the PCS GSM band (1850-1910 MHz) is 1.0 mW/cm². The data in this report demonstrates that the Itronix Corporation Model: IX100XA750WLBT Rugged Handheld PC FCC ID: KBCIX100XA750WLBT with internal Sierra Wireless AirCard 750 PCS GPRS Modem (co-located with USI WM-BB-AG-01 802.11b & Bluetooth Combo Transmitter), Itronix IX100X Vehicle Cradle (P/N: 50-0107-001), and MaxRad Vehicle-Mount Antenna (P/N: WMLPVDB800/1900), 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 antenna at time of purchase.**
- 2. The internal 802.11b and Bluetooth transmitters do not utilize the vehicle-mount antenna operation.**