

May 14, 2001

Federal Communications Commission Equipment Approval Services 7435 Oakland Mills Road Columbia, MD 21046

Attn: Joe Dichoso

**SUBJECT:** Itronix Corporation

FCC ID: KBCIX250RIM902 Class II Permissive Change 731 Confirmation No.: EA100859 Correspondence Reference No.: 19240

#### Dear Joe:

On behalf of Itronix Corporation is an amendment in response to your e-mail dated May 14, 2001 requesting additional information for the subject application.

- 1. In the original application, antenna factor and cable loss method was used for ERP measurements. Since that time we have been instructed by the FCC to use signal substitution method, which was used during the Permissive Change testing in this filing. The following is a detailed description of the ERP signal substitution measurement method used: The EUT is first placed into the field test area at 3.0 meters. The field of maximum intensity is found by rotating the EUT approximately 360 degrees and changing the height of the receive antenna from 1 to 4 meters. Both horizontal and vertical polarizations are investigated. The field strength is recorded from a calibrated spectrum analyzer for each channel being performed. The EUT is then replaced with a calibrated dipole of a well-known gain. The dipole is fed through a directional coupler and the power at the coupler port is monitored. The field of maximum intensity is found for the dipole and the power adjusted in order to read the same on the spectrum analyzer that was found for the EUT. The feed point for the dipole is then connected to a calibrated power meter and the power adjusted to read the same as the coupler port previously recorded, to account for any mismatch in impedance, which may occur at the dipole antenna. The forward power for the dipole is then determined. The actual ERP level is determined by adding the forward power and the calibrated gain of the dipole. Attached is the calibration certificate and gain information of the dipole antenna used for the ERP measurements.
- 2. Attached is the applicable RF exposure manual warning statement for the IX550 rugged laptop PC.
- 3. We confirm that conducted output power measurements were made and are subsequently listed in the test report.

If you have any further questions or comments, please do not hesitate to contact me.

Sincerely,

Shawn McMillen General Manager Celltech Research Inc. Testing & Engineering Lab

cc: Itronix Corporation





Cert I.D. 6557

Lab Code 115844/1207.01

### P.O. Box 80589 78708-0589 2205 Kramer Lane, Austin, TX., 78753-4002 (512) 835-4684

# Certificate of Calibration Conformance Page 1 of 3

The instrument identifed below has been individually calibrated in compliance with the following standard(s):

ANSI C63.5 - 1988, American National Standard for Electromagnetic Compatibility-Radiated Emission Measurements in Electromagnetic Interference (EMI) Control-Calibration of Antennas, American National Standards Institute, Inc.

Environment: Laboratory MTE is maintained in a temperture controlled environment with ambient conditions from 18 to 28 C, relative humidity less than 90%. The instrument under test has been calibrated on an open air test site (OATS) with environment temperture conditions ranging from 0 to 40 C which has no known influences on measurement quality.

Manufacturer:

**EMCO** 

**Operating Range:** 

400 - 1000 MHz

Model Number:

3121C-DB4

Instrument Type:

**DIPOLE Balun 4** 

Date Code/SN:

0003 - 1494

Tracking Number:
Date Completed:

J 49718 04-Apr-00

Test Type:

3 and 10 Meter. Horizontal

Calibration Uncertainty:

03m

400 - 1000 MHz, +/-1.0 dB;

(95% Confidence Level)

10m

400 - 1000 MHz, +/-1.0 dB;

**Test Remarks:** 

None

Recall/Interval:

18 Month Factory Calibration Provided

Calibration Traceability: All Measuring and Test Equipment (M/TE) identified below are traceable to the National Institute for Standards and Technology (NIST). Calibration Laboratory and Quality System controls are compliant with the objectives of MIL-STD 45662A, ISO/IEC Guide 25 and ANSI/NCSL Z540-1.

Standards and Equipment Used: Make / Model / Name / S/N / Recall Date

**Condition of Instrument** 

On Release:

Anritsu

MS4623A Network Analyzer

992201

14-Jun-00

In Tolerance

**Calibration Completed By** 

Lee D. Thompson, Cal Lab Technician

Attested and Issued on 04-Apr-00

Rick Flores, Calibration Lab Manager



## Gain and Antenna Factors for Dipole Antenna Manufactured by EMC Test Systems

Model Number: DB-4 Serial Number: 1494

3.0 Meter Calibration

Polarization: Horizontal

Frequency (MHz)	Antenna Factor (dB/m)	Gain Numeric	Gain dBi
400	21.0	1.35	1.3
425	21.3	1.42	1.5
450	21.6	1.48	1.7
475	21.9	1.54	1.9
500	22.2	1.58	2.0
525	22.9	1.48	1.7
550	23.6	1.38	1.4
575	24.3	1.28	1.1
600	25.0	1.19	0.7
625	25.2	1.24	0.9
650	25.4	1.29	1.1
675	25.5	1.34	1.3
700	25.7	1.39	1.4
725	26.2	1.31	1.2
750	26.8	1.24	0.9
775	27.3	1.17	0.7
<b>800</b> A Subs	idiary <b>027.9</b> 500 Elec	tronics 4.40 poration	0.4
825	27.9	1.15	0.6
850	28.0	1.20	0.8
875	28.1	1.26	1.0
900	28.1	1.31	1.2
925	28.4	1.30	1.1
950	28.7	1.28	1.1
975	29.0	1.26	1.0
1000	29.3	1.24	0.9

### **Warnings and Cautions**

**WARNING** It is important that only authorized Itronix personnel attempt repairs on Itronix equipment as this might void any maintenance contract with your company. Unauthorized service personnel might be subject to shock hazard on some Itronix equipment if removal of protective covers is attempted.

The product you have purchased is powered by a rechargeable battery. The battery is recyclable and, under various state and local laws, it may be illegal to dispose of this battery into the municipal waste stream. Do not crush the battery or place it in a fire. Check with your local solid-waste officials for details on recycling options or proper disposal.

**CAUTION** Internal components of the GoBook (IX550) computer will be damaged if exposed to contaminants. When dust covers, the PC card door, or the battery door are open on the computer, shield the unit from all contaminants such as liquids, rain, snow, and dust.

WARNING "In order to comply with the FCC RF exposure requirements this device must be operated with a minimum seperation distance of 4 cm between the user/nearby persons and the antenna in its intended vertical operating position."

"The antenna location is fixed in the upper left edge of the display screen and is not to be relocated"

"The equipment has been approved to [Commission Decision "CTR21"] for pan-European single terminal connection to the Public Switched Telephone Network (PSTN). However, due to differences between individual PSTNs provided in different countries the approval does not, of itself, give an unconditional assurance of successful operation on every PSTN network termination point.

In the event of problems, you should contact your equipment supplier in the first instance.