

## DECLARATION OF CONFORMITY

GoBook III Environmental Test Criteria

**Type of Equipment: Ruggedized Laptop Computer with Radio and Telecommunication features.**

**Brand Name/Trade Mark:** GoBook III

**Model:** IX260+

**Manufacturer:** Itronix Corporation, 801 S. Stevens St., Spokane, WA 99204 USA

Telephone: 509-624-6600 FAX: 509-742-1672

Manufacturers authorized representative within the EU/EEA:

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The following standard or technical specifications have been met:

<u>Shock</u>	<u>Standard</u>	<u>Method</u>	<u>Result</u>
Drop	MIL STD 810F	516.5	Exceeds
<u>Vibration</u>			
Random & Sinusoidal	MIL STD 810F	514.5	Pass
Truck Transport	ASTM 4169	11.5.2	Pass
<u>Temperature</u>			
High Temp Storage & Operating	MIL STD 810F	501.4	Exceeds
Low Temp Storage & Operating	MIL STD 810F	502.4	Exceeds
Temperature Shock	MIL STD 810F	503.4	Exceeds
Cold Boot	Itronix Corporation		Pass
<u>Sealing</u>			
Water Resistance	MIL STD 810F	506.4	Pass
Water & Dust Ingress Protection	IEC 60529	IP-54	Pass
<u>Humidity</u>			
Low Pressure (9,144 meters)	MIL STD 810F	507.4	Pass
ESD (Electrostatic Discharge) 15kV	IEC	801-2	Pass
Mechanical Life Testing	Itronix Corporation		Pass

**The product complies with the standards listed above. Itronix Corporation has an internal product control system that ensures compliance between the manufactured products and the technical documentation.**

**Spokane, Washington**

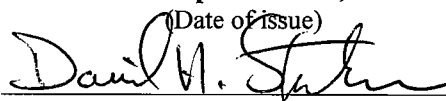
(Place of Issue)

**September 28, 2004**

(Date of Issue)

David Stockham, Sr. Manager Mechanical Engineering:

(Name & Function)

  
(Signature)

F. Ben Irwin, Sr. Vice President Product Development:

(Name & Function)

  
(Signature)

## GoBook III ENVIRONMENTAL TEST CRITERIA

TEST		STANDARD	DESCRIPTION
(Drop) Shock		MIL STD 810F, Method 516.5, Procedure IV, <i>Modified</i>	36" drop to 2" of plywood in the following attitudes at room temp: -26 drops. One drop to each face, edge and corner.  Modified: Only two test units to pass all drops. (Mil-Spec reads 5 units can be used to pass all drops) Height Modified from 48" to 36" <i>Unit is not operating</i>  External Antenna may Sustain Damage and is User Replaceable.
		MIL STD 810F, Method 514.5, Procedure I, Category 24, Fig. 514.5C-17	Fig.17: Power Spectral Density = .04 G <sup>2</sup> /Hz @ 20 to 1000 Hz, descending 6 dB/Oct to 2000 Hz. 60 minutes per axis, 3 axes.  <i>Unit is not operating</i>
Random & Sinusoidal Vibration		MIL STD 810F, Method 514.5, Procedure I, Category 24, Fig. 514.5C-18	Fig 18: Logarithmic sweeps 5 to 500 Hz Beginning at 0.20 inch [5mm] displacements, 30 minutes per axis, 3 axes.  <i>Unit is not operating.</i>
		ASTM 4169-99 Truck Assurance Level II Schedule E 11.5.2	Power Spectral Density ranges 0.00001 to 0.01 G <sup>2</sup> /Hz, Frequency range is 1 to 200 Hz. Overall GRMS is 0.52. 90 minutes per axis, 3 axes.  <i>Unit is operating and accessing the HDD</i>
Temperature	High	Storage	MIL STD 810F, Method 501.4, Procedure I. <i>(Modified +) Hot</i>  Temperature: 75°C [167°F] (Mil-Std reads 71°C [160°F]) Seven 24-hour cycles.  <i>Unit is not operating.</i>
		Operating	MIL STD 810F, Method 501.4, Procedure II. <i>(Modified +) Hot</i>  Temperature: 60°C [140°F] (Mil-Std reads 49°C [120°F]) Five 24-hour cycles.  <i>Unit is operating, running all tests in AMIDIAG in a continuous loop.</i>
	Low	Storage	MIL STD 810F, Method 502.4, Procedure I. <i>(Severe Cold +)</i>  Temperature: -55°C [-67°F] (Mil-Std reads -51°C [-60°F]) One 24-hour cycle.  <i>Unit is not operating.</i>
		Operating	MIL STD 810F, Method 502.4, Procedure II.  Temperature: -20°C [-4°F] (Mild Cold) One 24-hour cycle.  <i>Unit is operating, running all tests in AMIDIAG in a continuous loop.</i>

TEST	STANDARD	DESCRIPTION
Non-Operating Temperature Shock	MIL STD 810F, Method 503.4, Procedure I  <i>(Severe Cold +) (Modified +) Hot</i>	Low Temperature -55°C [-67°F] (Mil-Std reads -51°C[-60°F]) High Temperature: 75°C [167°F] (Mil-Std reads 71°C [160°F]) Four (4) cycles: <u>Begin</u> in low temperature <u>end</u> in low temperature. Four (4) hour minimum temperature stabilization in each temperature. Five (5) minute max exchange time.  <u>Unit is not operating.</u>
Cold Boot	<i>Itronix Developed</i> Test Basis: Manufacturers Spec. and testing results	0 degree C Hard Disk Drive boot-up test, repeat 5 times. Display CCFL to start at 0 degree C, repeat 5 times. Display luminance to meet SQA test plan specifications.
Water Resistance	MIL STD 810F Method 506.4, Procedure II, <i>Modified</i>	Water pressure of 40 PSIG [275.8 Kpa – Gauge] Minimum of 4 in/hr [100 mm/hr] Ten minutes per axis, 6 axes (Mil-Std reads 40 minutes per axis).  <u>Unit is not operating.</u>
Water Ingress Protection	IP 54 IEC 529, (EN 60529), (IEC 60529)	Water volume: Flow rate of 10.0 l/min ± 5% [2.64 gpm], spray nozzle with counterbalance shield removed Orientation: All practical directions (all external surfaces). Duration: 5 Minutes  <u>Unit is not operating.</u>
Dust Ingress Protection	IP 54 IEC 529, (EN 60529), (IEC 60529)	Particle size: smaller than 75 µm, Dust density: 2 kg/m <sup>3</sup> Duration: 8 hours. Category 2 Failure Criteria: No deposits of dust inside the enclosure.
Humidity	MIL STD 810F, Method 507.4	Temperature: Cycles between 30°C [86°F] and 60° [140°F] Humidity: 85% and 95% +/- 10% Ten 24-hour cycles.  <u>Unit is operating and accessing the HDD.</u>
Low Pressure	MIL STD 810F, Method 500.4, Procedure I, Procedure II. <i>(Modified+)</i>	Procedure I: Bring unit to PSIG @ <u>30,000 Ft</u> [9,144 meters]: Maximum rate of 2000 feet per minute. Vacuum to be held for one hour, @ Room Temp  <u>Unit is not operating.</u>  Procedure II: Bring unit to PSIG @ <u>10,000 Ft</u> [3048 meters]: Vacuum to be held for one hour, @ Room Temp  <u>Unit is operating and accessing the HDD</u>

TEST	STANDARD	DESCRIPTION
ESD	IEC 801-2	<p>+/- 4kV[Contact discharge]: No noticeable effect  +/- 8kV[Contact discharge]: No data or program loss, reboots, or resets.  +/- 15kV [Air discharge]: No component failure (hard error)  Test all external contacts, connectors, and screws with five discharges per polarity under the two conditions:</p> <p><i>Unit is operating, HDD accessing, on battery power.</i>  <i>Unit is operating, HDD accessing, on external power.</i></p>
Mechanical Life Testing	Cycling Mechanical components to verify five-year life expectancy	<p>Mechanical components such as display hinges and cabling, doors, keyboards, connectors, antenna etc. are <u>cycled the number of times they are expected to perform in the 5-year life of a rugged product:</u></p> <ul style="list-style-type: none"> <li>- display hinges: 5,200/year</li> <li>- power: 1,300/year</li> <li>- battery pack: 1,000/year</li> <li>- HDD Connector: 750/year</li> <li>- RJ-11: 1,300/year</li> <li>- RJ-45: 1,040/year</li> <li>- "D" Connectors: 1,040/year</li> <li>- USB: 1,040/year</li> <li>- keyboard keys: 100,000/year</li> <li>- vehicle cradle: 2,600/year</li> <li>- antenna: 5,200/year</li> <li>- Display harness: 5,200/year</li> <li>- Smart Card reader: 5,200/year</li> <li>- Fire Wire connector: 1,040/year</li> <li>- Other CTO options 10/lifetime (unless otherwise specified):</li> <li>- SIM for GPRS: 24/year</li> <li>- EL Keyboard Panel: Maintain at least 2 nits for 7,000 hours of use</li> </ul> <p>- Touch screen shall withstand repeated writing of 100,000 characters in a 30mm X 30mm with a load of 250 gf max at 100mm/sec without degradation in linearity (+/- 1.5%) or readability (optical performance). A special stylus will be used and will be replaced every 10,000 characters. The special stylus will be made of polyethylene or HDPE and have a spherical tip of .8mm.</p>