



# User Manual

Version 1.00

Part Number:



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## **Dear Valued Customer,**

At Kontron Mobile Computing, we strive to be the worldwide leader in customer-specific computing solutions for demanding environments. Our mission is to provide you with a total system solution for your field automation needs.

The ReVolution convertible laptop/tablet is a computing platform designed for off-site and in-vehicle users requiring remote, high-powered computing capabilities. The ReVolution expands to integrate multiple technologies into one powerful solution specific to your application needs.

Kontron Mobile Computing has built its reputation around the endurance of its products in demanding environments. The ReVolution meets strict standards for computing equipment in shock, vibration, temperature, humidity and altitude testing. It withstands the toughest conditions and proves itself again and again in mission-critical field applications.

When we deliver your new ReVolution, our job at Kontron Mobile Computing will have just begun. We will do what it takes to ensure your complete satisfaction with our services and your ReVolution. We want this to be the beginning of a long and outstanding experience for you, our valued customer.

Kontron Mobile Computing  
7631 Anagram Drive  
Eden Prairie, MN 55344-7310

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## Technical Alteration Disclaimer

The information contained in this manual may be subject to technical alteration, as a result of the continual upgrading of our products. The attached documentation does not guarantee the technical processes or product characteristics described in the manual.

Kontron Mobile Computing does not accept any liability for printing errors or other inaccuracies in this manual. This manual only contains a general description of technical processes and instructions that may not be applicable in every case. If in doubt, please contact your nearest Kontron Mobile Computing representative or office listed in the "Technical Support" section of this manual.

## Copyright Notice

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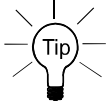
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## Symbols used in this Manual

| Symbol                                                                            | Meaning                                                                                                                                                                                                           |
|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | This symbol indicates the danger of injury to the user or the risk of damage to the product if the corresponding warning notices are not observed. It may also cause interference with radio-sensitive equipment. |
|  | This symbol indicates that the product or parts that may be damaged if the corresponding warning notices are not observed.                                                                                        |
|  | This symbol indicates general information about the product and the user manual.                                                                                                                                  |
|  | This symbol precedes helpful hints and tips for daily use.                                                                                                                                                        |
| <i>SYSM</i>                                                                       | Program names are printed in <i>italics</i> .                                                                                                                                                                     |
| format a:                                                                         | Commands are printed in Courier.                                                                                                                                                                                  |

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## Introduction to User Manual

The *ReVolution User Manual* provides information to assist in using your ReVolution computer in the most productive manner for your organization. It includes safety instructions, care and maintenance advice, and photographs of the ReVolution, specific components and accessories.

The manual also includes a "Getting Started" section for first-time operations, or as a refresher on starting up the system. The "Modifying the System" section describes how to use and adjust the components and devices. Refer to the "Technical Data" section for component specifications, and the "Technical Appendices" section for programming information. The "Customer Service" section offers technical support contact information.

To obtain additional copies of this user manual, or to view it online:

1. Insert the ReVolution Utilities CD that came with the original shipment of your ReVolution computer. This contains an electronic copy of the manual.
2. Go to [www.kontronmobile.com](http://www.kontronmobile.com). Select the following path: Technical Support → Technical Search → Manual
3. Call or write the Kontron Technical Support department to order additional hard copies. Contact information is located on the Technical Support page.

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# Safety Instructions



Please read this section carefully and observe the following instructions – and those on the computer - for your own safety and correct use of the ReVolution.

Kontron Mobile Computing built and tested the ReVolution computer in accordance with EN60950. In order to maintain this condition and ensure safe operation, you must observe the instructions and warnings contained here and elsewhere in this manual.



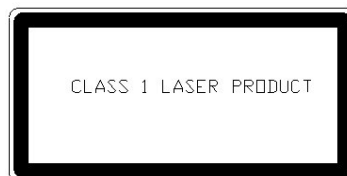
**Do not operate the ReVolution in areas sensitive to radio interference, such as airplanes and hospitals.** There is no means to shut off the Bluetooth and WLAN radios installed in the system.

- ☐ Operate the ReVolution in accordance with the instructions for use.
- ☐ Make sure electrical receptacles match the regulations in your area.
- ☐ Place cables, especially the power cable, out of traffic areas where people could trip over them.
- ☐ Do not put an AC power connection in sockets shared by a number of other power users.
- ☐ Do not use an extension cable.
- ☐ Plug the power cable into a nearby socket to prevent an accidental disconnection.
- ☐ Use only the cables supplied by Kontron.
- ☐ Do not place the ReVolution in the proximity of heat sources or in a damp location. Make sure it has adequate ventilation.
- ☐ Connect to ReVolution interfaces: only devices and components that meet the requirements of a SELV circuit (security low voltage output) in accordance with EN60950.
- ☐ Lock or screw down all plugs on the connection cables to the housing.
- ☐ You may not safely operate the ReVolution if:
  - it has visible damage or
  - it no longer functions.Shut down the computer and secure it against unintentional operation.
- ☐ Any extensions to the computer must meet legal stipulations and the device specifications.
- ☐ Only authorized Kontron technical repair personnel may perform assembly, extensions, new settings, alterations or repairs while under warranty.
- ☐ Only use original accessories approved by Kontron.

## Operation of Laser Source Devices



Class 1 laser products typically contain a label similar to the following. Use caution when dealing with such devices.



The CD-ROM, CD-RW, DVD, DVD/CD-RW Combo modules and others contain a light-emitting diode (classified in accordance with IEC 825-1:1993: LASER CLASS 1) and must not be opened. When the cover is opened, invisible laser radiation is emitted. Do not expose yourself to this radiation.

---

## Safety Instructions for the CMOS Lithium Battery

The CPU board is equipped with an internal, rechargeable CMOS lithium battery. Please refer to the “Technical Data” section for information about battery type.

- ☐ This battery is not user-replaceable.
- ☐ Kontron shall not assume any warranty obligation if any attempt is made to replace the battery by individuals other than those at Kontron repair facilities.
- ☐ Please observe local regulations for the disposal of the battery and the disposal information of the battery-manufacturers.

## Safety Instructions for the Removable Lithium Battery Modules

The ReVolution is equipped with a removable lithium battery. Please observe following instructions:

- ☐ Refer to the “Getting Started” and “Technical Data” sections for information about the battery type.
- ☐ Only use batteries supplied by Kontron.
- ☐ Kontron shall not assume any warranty obligation if a different battery, a different battery type or a different power source is used.
- ☐ Please observe local regulations for the disposal of the battery and the disposal information of the battery-manufacturers.

## FCC Statement

**Note:** This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the user manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area may cause harmful interference in which case the user will be required to correct the interference at their own expense.

### Canadian Notice

This digital apparatus does not exceed the Class B limits for radio noise for digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

### European Union Notice

**Warning:** This is a Class B product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures to mitigate such interference.

### CAUTION

**Danger of explosion** if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

### ACHTUNG

**Explosionsgefahr** bei falsch eingesetzter Batterie. Batteriewechsel nur mit gleichen oder ähnlichen, vom Hersteller empfohlenen, Batterien.

### WARNING

Only authorized service personnel should attempt to repair this equipment. Improper repairs can create a safety hazard.

### WARNUNG

**Lebensgefahr** Achtung, nur autorisiertes Kundendienst Fachpersonal darf dieses Gerät reparieren. Falsche Reparaturen können lebensgefährlich sein.

## FCC Caution

1. The device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

## 2. FCC RF Radiation Exposure Statement

This device was tested for compliance with FCC RF Exposure (SAR) limits in typical lap held operations with the back side of the notebook computer directly contacted to the human body. To maintain compliance with FCC RF exposure compliance requirements, avoid direct contact to the transmitting antenna during transmitting. This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter. Use only the supplied or an approved antenna. Unauthorized antennas, modifications, or attachments could result in violation of FCC regulations.

3. This device must not be co-located or operating in conjunction with any other antenna or transmitter.

4. Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user authority to operate the equipment.

# Care and Maintenance

## Display

Use a soft cloth to clean the display. You can use a slightly dampened cloth if display is soiled but DO NOT use any abrasive substances or materials on the display surface.

## Other Areas

Clean all other areas of the ReVolution with a damp, soft cloth. You may dampen the cloth with a mild household cleaner or simply water. If a mild household cleaner is used, wipe again with a damp cloth only and then with a dry cloth.



- *Do not use strong solvents, such as benzene, thinner or rubbing alcohol that could discolor paint or plastic.*
- *Do not use commercial household cleaners or cosmetics, as they may harm the surface.*
- *Do not spray water, as liquid damages the computer or causes it to work improperly.*
- *TOUCH PAD: Avoid using sharp objects such as pen or pencil tips because they can permanently damage the touch pad's surface. Use the stylus provided.*
- *TOUCHSCREEN Avoid using sharp objects such as pen or pencil tips because they can permanently damage the touch pad's surface. Use the stylus provided.*

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## Base Unit and Optional Parts

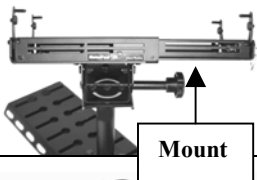
This section displays the base unit and optional parts of the ReVolution laptop and tablet computer. Get in touch with your Kontron sales representative for order information.

### Base Units

|                                                                                   | Description                                                                                                                                                                                                                                                                                               |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>Convertible Laptop and Tablet Standard Components:</p> <ul style="list-style-type: none"><li>• Resistive Matrix Touchscreen</li><li>• Master Hard Drive</li><li>• CD-ROM Drive</li><li>• Battery Pack</li><li>• AC/DC Adapter</li><li>• Power Cord</li><li>• Stylus</li><li>• Shoulder Strap</li></ul> |

### Optional Parts

|                                                                                     | Description                                                        |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------|
|  | Master Removable Hard Drive Module – 40GB std; upgradeable to 60GB |
|  | CD-ROM Drive Module                                                |
|                                                                                     | CD-RW Drive Module                                                 |
|                                                                                     | DVD Drive Module                                                   |
|                                                                                     | DVD/CD-RW Combo Module                                             |
|                                                                                     | Floppy Disk Drive Module                                           |
|                                                                                     | Slave Removable Hard Drive Module – 40GB or 60GB                   |
|  | Backlit, Sealed Keyboard                                           |

|                                                                                     | Description                                          |
|-------------------------------------------------------------------------------------|------------------------------------------------------|
|    | Battery Pack                                         |
|    | External Battery Charger                             |
|    | I/O Extension Stick<br>(Port Replicator)             |
|    | Hard Case                                            |
|   | Soft Case                                            |
|  | Shoulder Strap                                       |
|  | In-Vehicle Mount with or without Docking Station     |
|  | AC Power Adapter                                     |
|  | DC to DC Converter, 11-32 VDC                        |
|  | DC Power Cord with cigarette lighter plug,<br>12 ft. |

---

# The ReVolution Convertible Laptop and Tablet

Before using your ReVolution convertible laptop/tablet computer, please take a few minutes to learn about its features. This section displays “at a glance” the components and options.



The ReVolution converts from a laptop to a tablet – and back! Switch-It™ is the unique hinge that turns the display 180° clockwise. The ReVolution consists of the following additional features:

- QuickSilver™ CPU module with 1.06 GHz (or higher) Intel Mobile Pentium III-M processor
- Rugged, lightweight, magnesium alloy construction tested to specific U.S. Military and NEMA standards for resistance to shock, vibration, water, temperature and dust
- 40GB master removable hard drive (60GB upgrade)
- 128 MB SDRAM (upgradeable to 640 MB)
- CD-ROM drive module
- Windows XP Professional, 2000 Professional and Windows 98SE operating system support
- Bluetooth technology for wireless PAN connectivity
- 2 PCMCIA slots
- Spread Spectrum wireless LAN connectivity
- 56Kb Modem (V.90)
- Video RAM, 8-48MB (shared)
- Wide range of optional components

## Drive Options:

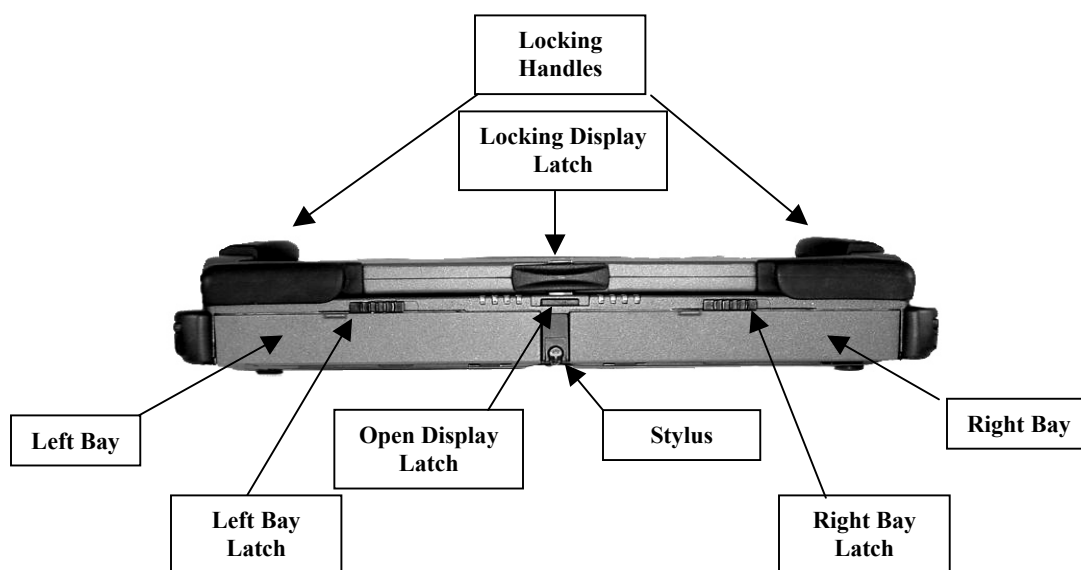
- CD-ROM module
- CD-RW module
- 40 GB or 60 GB slave removable hard drive
- DVD module
- DVD/CD-RW combo
- Floppy Disk Drive module

You can configure the ReVolution for almost any application, through the user-friendly Phoenix BIOS setup, outlined in the “Technical Appendices” section.

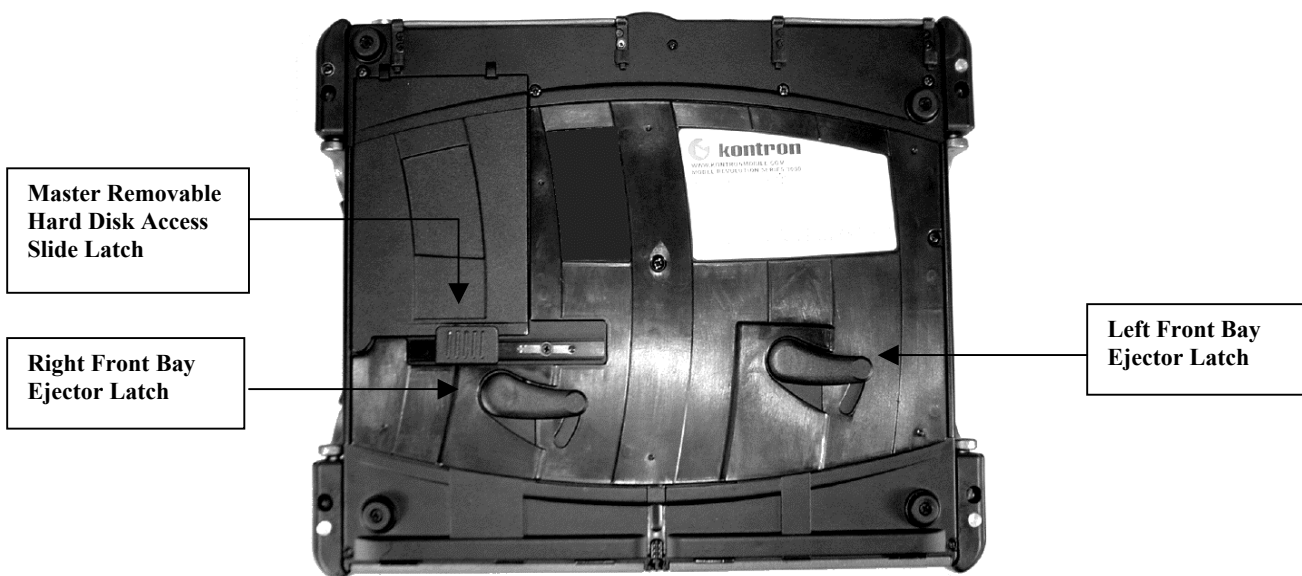
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## ReVolution at a Glance

### Front Panel

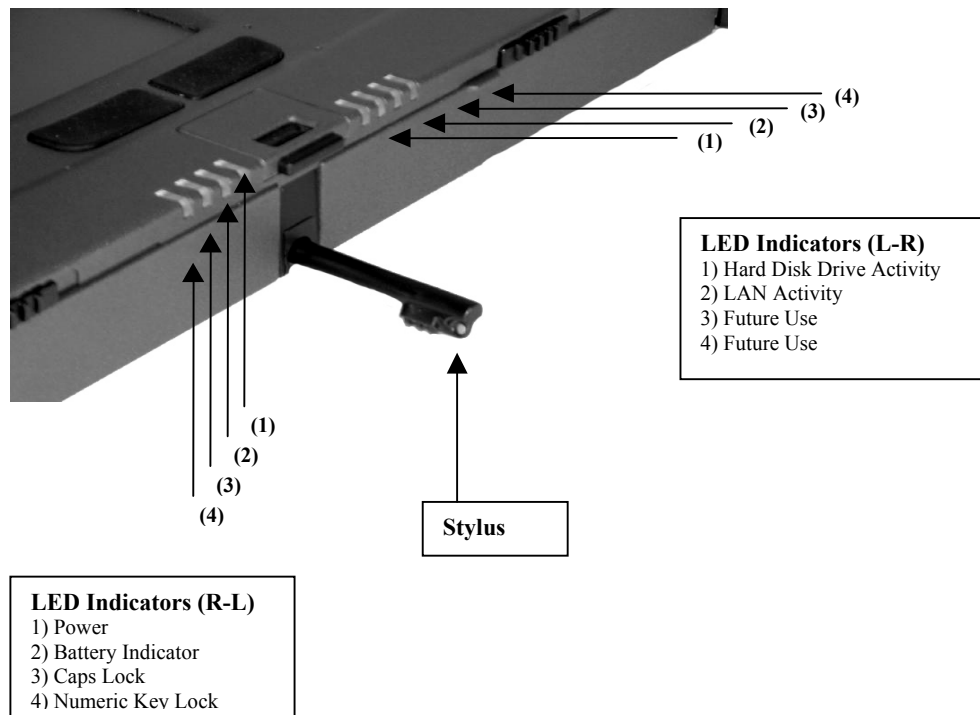


### Bottom Panel

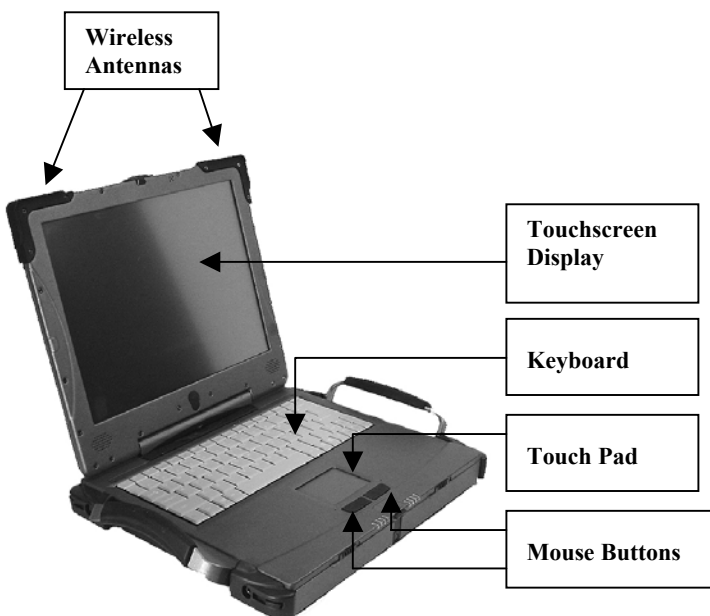




## Front Panel – LEDs

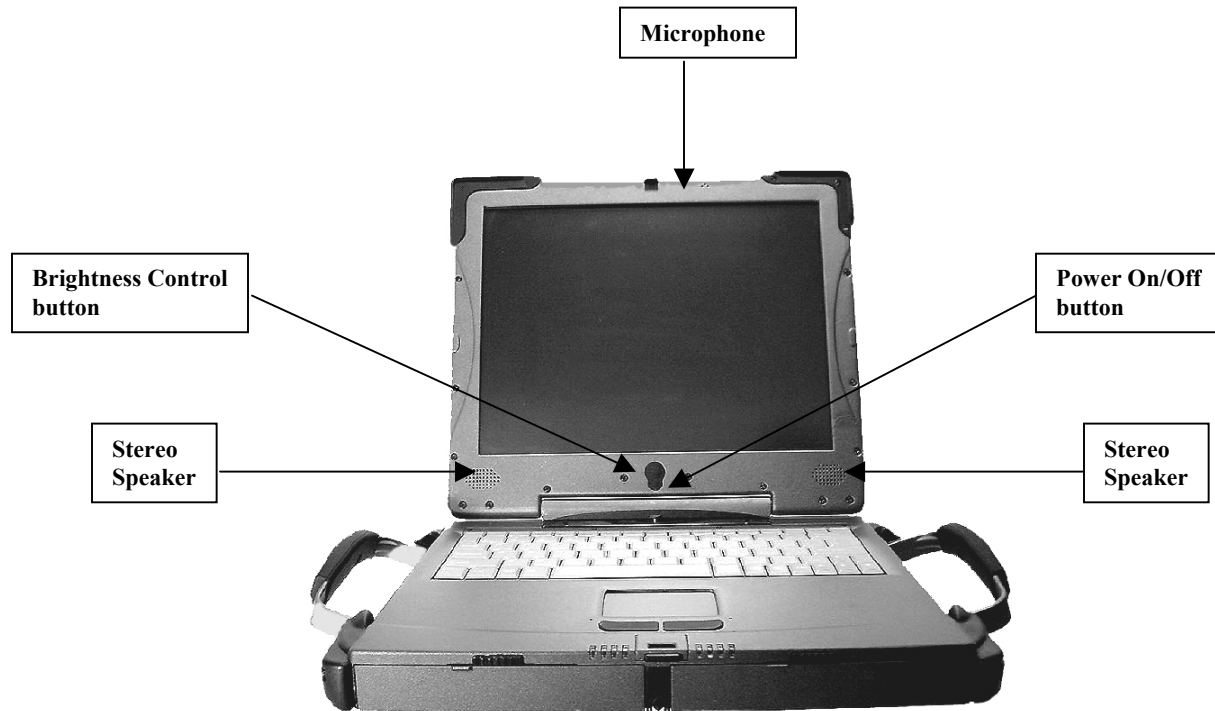


## Front Laptop View



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## Front Laptop View (continued)



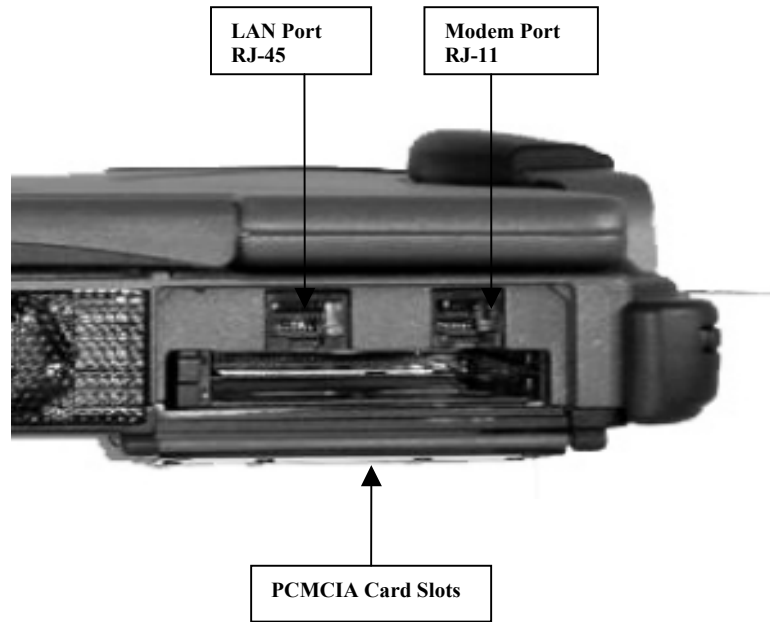
## Interface Panel

The Interface Panel along the back spine of the ReVolution provides access to the ports and operating controls described on the following page.

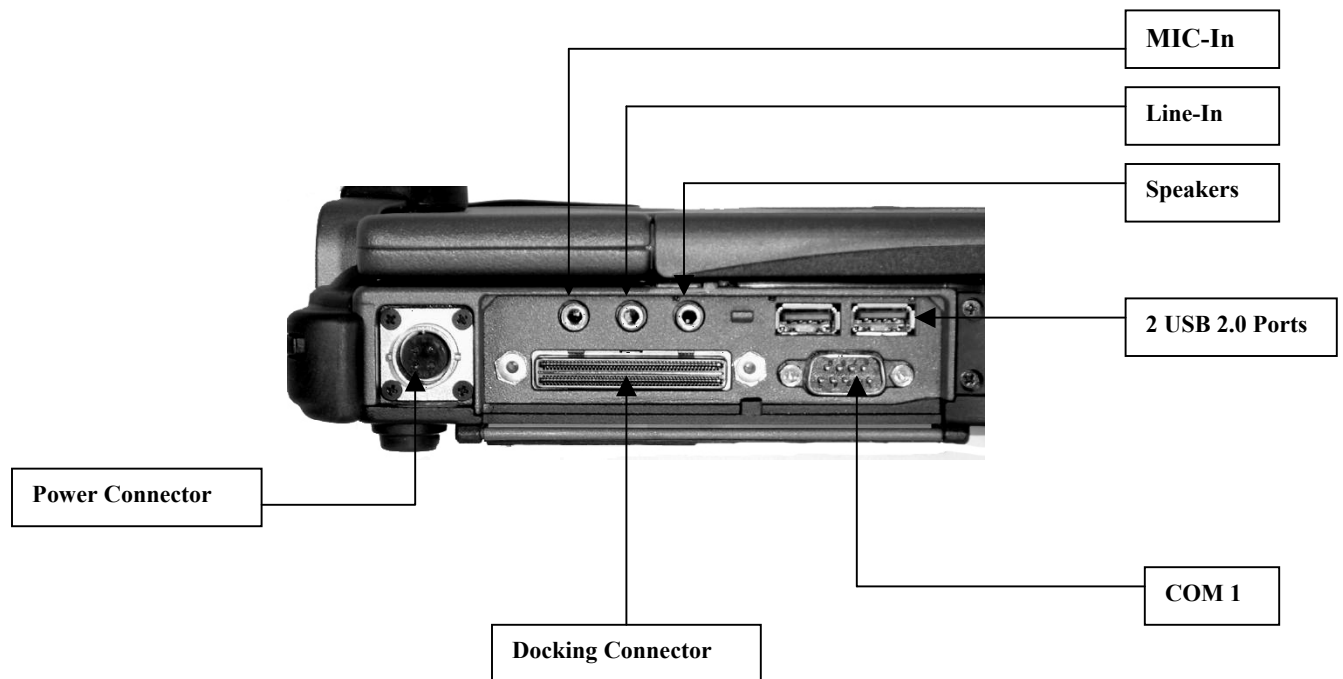


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## Interface Panel – Right Side



## Interface Panel - Left Side



## I/O Extension Stick (Port Replicator)

The I/O Extension Stick fits into the docking connector on the back interface panel, and provides additional I/O ports not standard on the back interface panel.



- ***If PS2 or USB devices are attached to the I/O Extension Stick, and the I/O Stick is “hotplugged” (the system is running), these devices may fail to run. The system must be rebooted. If these devices are plugged into the I/O Stick after it is plugged into the system, they will operate normally.***

