

Owner's Manual

Enhanced PowerPad

Handheld
Data
Terminal



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6802970C30-B



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 - the damage or defect is caused by charging or using the battery in equipment or service other than the Product for which it is specified.
- H. Freight costs to the repair depot.
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- K. Normal and customary wear and tear.

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EPS – 48759 – O

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The FCC requires that manuals pertaining to Class A and Class B computing devices must contain warnings about possible interference with local residential radio and TV reception. This warning reads as follows:

NOTE: This equipment has been tested and found to comply with 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 or residential environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

This 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.
- (2) This device must accept any interference received, including interference that may cause undesired operation.

FCC Grant of Equipment Authorization

Radio	Network	Freq Band	Rated Power
GPRS	W-WAN	824.2-848MHz / 1850.2-1909.8MHz	0.6W / 1W
Bluetooth	W-PAN	2402 - 2480MHz	1.15 mW

For detailed product safety and RF exposure refer to Safety and General Information leaflet, Motorola publication Number 6802970C29.

Caution: Changes or modifications made in the radio terminal, not expressly approved by Motorola, will void the user's authority to operate the equipment.

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Microsoft and PocketPC 2003 are registered trademarks of Microsoft Corporation.

The Bluetooth trademarks are owned by their proprietor and used by Motorola, Inc. under license in the U.S. and other countries.

All other product or service names are the property of their respective owners.

Contents

COMPUTER SOFTWARE COPYRIGHTS.....	i
<i>Document Copyrights</i>	<i>i</i>
<i>Disclaimer</i>	<i>i</i>
<i>Commercial Warranty</i>	<i>ii</i>
<i>FCC INTERFERENCE WARNING</i>	<i>iv</i>
Introduction	1
What is the PowerPad Terminal	1
Unpacking	3
Charging the Battery	6
<i>Battery Installation and Removal</i>	<i>6</i>
<i>The Universal Office Dock (UOD) Unit</i>	<i>7</i>
<i>First Time Battery Charge</i>	<i>8</i>
<i>Routine Battery Charge</i>	<i>9</i>
<i>Battery Maintenance</i>	<i>9</i>
<i>Battery Storage</i>	<i>9</i>
<i>Extending Battery Life</i>	<i>10</i>
Using the PowerPad	11
<i>Turning On the PowerPad</i>	<i>11</i>
<i>Turning Off the PowerPad</i>	<i>11</i>
<i>Suspend Mode</i>	<i>11</i>
<i>LED Indicator Function</i>	<i>11</i>
<i>Using the Stylus Pen</i>	<i>12</i>
<i>Using the Keyboard</i>	<i>13</i>
<i>Key Assignment</i>	<i>13</i>
<i>Action Keys</i>	<i>14</i>
<i>Scanning with the PowerPad</i>	<i>15</i>

<i>Resetting the PowerPad</i>	16
Maintaining the PowerPad.....	17
Accessories	18
Troubleshooting	19
Safety Instructions	21
<i>PowerPad On-board Aircraft</i>	21
<i>Battery Disposal</i>	21
<i>Laser Safety</i>	21
<i>Battery Warnings and Disposal</i>	21
<i>To Prevent Injury Or Burns</i>	22
SPECIFICATIONS.....	23

Introduction

Motorola congratulates you on your purchase of the Enhanced PowerPad Handheld Data Terminal! Its unique functionality and features make this state-of-the-art ruggedized Personal Digital Assistant (PDA) superior for use in a wide range of applications.

Note that in this manual the Enhanced PowerPad is also referred to as PowerPad.

This manual covers the basic setup operations and use of the PowerPad terminal. Since your PowerPad applications are designed by your company or organization, this manual does not cover any of the software applications resident in your PowerPad. For software applications description, refer to the specific application manual or contact your company or organization representative for instructions.

The PowerPad network communication and power charge is through a Universal Office Dock (UOD) unit. Note that this manual briefly mentions the UOD. For detailed installation and operation of the UOD, refer to UOD User Manual, Motorola P.N. 98-08901C59.

What is the PowerPad Terminal

The PowerPad handheld data terminal is a ruggedized device, designed for field applications where fast data acquisition is required.

The PowerPad carries the functionality of a state-of-the-art Personal Digital Assistant (PDA) that enables portable access to mobile applications, such as mobile messaging, queries and Computer Aided Dispatch.

It contains a variety of options, including built-in barcode scanner (for 1D and 2D labels), Bluetooth® and General Packet Radio Ser-

vice (GPRS) radios, all with internal antennas for increased ruggedization.

The 3.5" color touch screen with illumination enables easy access to various applications and signature capture in all light conditions. The IrDA port serves for data exchange between the PowerPad and data network using the Universal Office Dock (UOD) unit.

The PocketPC 2003[®]-based operating system supports multimedia and audio applications, using a built-in microphone, speaker and buzzer. A removable CompactFlash (accessed only by service) is used for memory expansion and operating system updates.

The PowerPad is powered by a 7.2V 1800 mAh Lithium-Ion battery pack that supports 12 hours of typical operation. The battery is fully recharged within three hours, using the UOD unit.

Unpacking

The PowerPad package includes the following items:

- One PowerPad unit
- One 7.2V 1800 mAh Li-ion battery pack
- One Stylus pen
- This Owner's Manual
- Safety and General Information leaflet, Motorola P.N., 6802970C29

Carefully unpack each item from the shipping carton. Check all items for shipping damage, and check that you have received all items ordered. If there is damage or missing items, retain the shipping carton for inspection.

The battery is shipped from factory uncharged and not installed. Charge the battery fully for 24 hours before using the PowerPad for the first time.

The PowerPad is shipped with a plastic film, protecting the screen. Before usage, remove the film and use a soft cloth to buff the display. This ensures smooth gliding of the Stylus pen over the surface.

PowerPad Parts



Figure 1. PowerPad - Front View

Note that the gray and blue colors in picture are for illustration clarity purposes only and do not reflect the actual color of the unit.

Barcode Scanner LASER Window (see page 15)

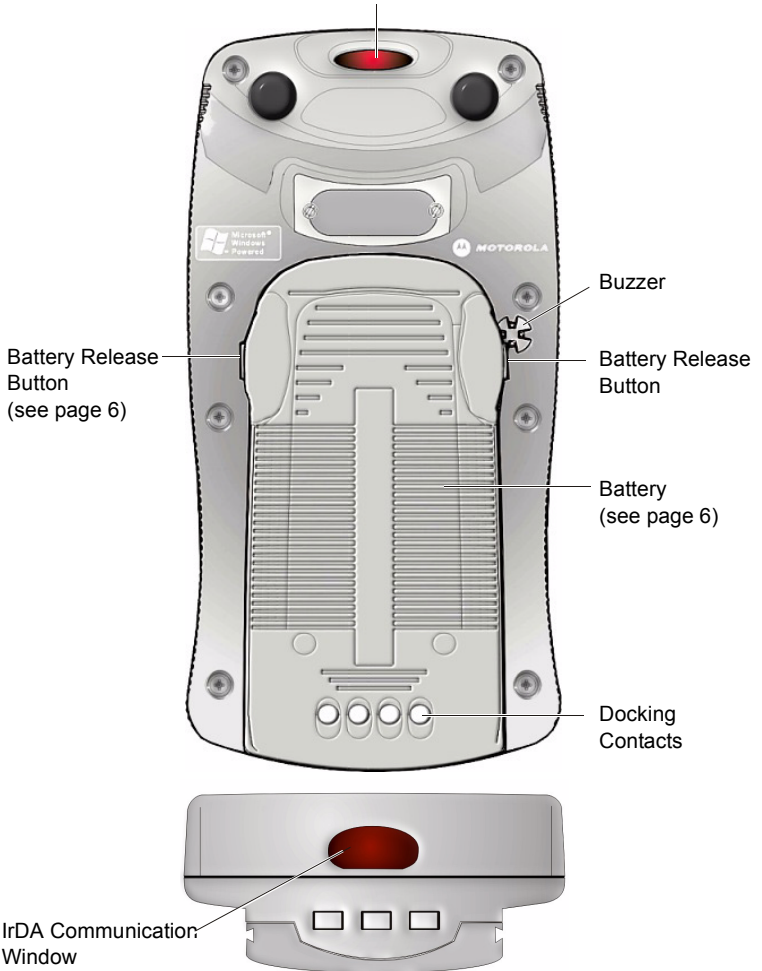


Figure 2. PowerPad - Back View

Charging the Battery

The battery is shipped from the factory uncharged and not installed. Charge the battery before using the PowerPad for the first time.

Battery Installation and Removal

Important Note: The PowerPad enables you to replace batteries without losing information stored in its memory. To avoid losing information stored in the memory, a charged battery must be installed within 8 hours after removing the empty battery.

Do not remove battery while the LED indicator of the PowerPad shows red.

To install the battery:

1. Insert the battery, bottom end first, into the battery compartment (see Figure 3).
2. Carefully press the battery top downward until it clicks into place. When PowerPad is powered by battery installation for the first time, see note in “Turning On the PowerPad” on page 11.

To remove the battery:

1. Turn the PowerPad off by holding the Power button pressed (see Figure 1), for at least four seconds.
2. Press the Release Buttons on the battery sides (see Figure 3) and pull the away battery from the PowerPad.

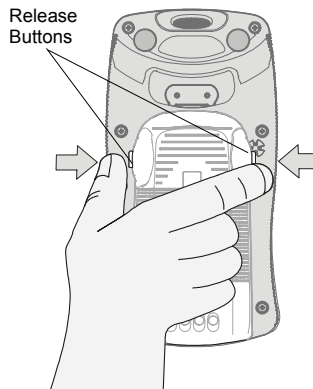
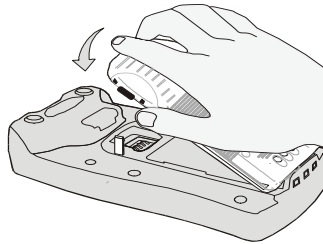


Figure 3. Battery Installation and Removal

The Universal Office Dock (UOD) Unit

The UOD unit is used for charging the PowerPad battery and communicating with the PowerPad through an IrDA port. Each UOD unit has nine slots. Each slot may accommodate either a PowerPad with a battery attached, or a battery (stand-alone). Each of the nine slots has a status LED with an associated number. The LEDs are laid out in the same order as the slots. When a slot is empty, its corresponding LED is Off. When a battery or a PowerPad with a battery is inserted to a slot, the slot LED turns On, indicating the battery charge (see Table 1). The battery power can also be tested by pressing the battery power TEST button (see Figure 5).

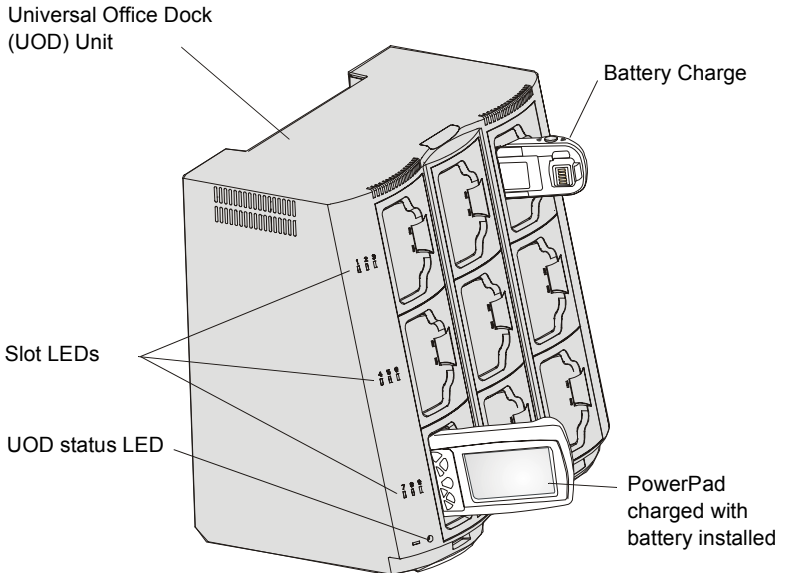


Figure 4. Universal Office Dock (UOD) Unit

Table 1: Status of a UOD Slot LED During Battery Charge

Slot LED Status	Indication
No Light	No device inserted.
Blinking Amber	Battery temperature out of tolerance and charging has been temporarily stopped.
Solid Amber	PowerPad Battery is being charged.
Solid Green	PowerPad Battery is at least 90% charged after 2.5 hours and fully charged after 3.
Solid Red	PowerPad Battery is not fully charged after 3 hours of charging, and is considered failed.

First Time Battery Charge

The first time battery charge ensures maximum start capacity for the battery. Charge your new battery for at least 24 continuous hours before using it or until the LED indicator of the UOD shows green. During the charge, the LED indicator of the PowerPad shows green and blinks quickly. The UOD charges your battery effectively when it is at room temperature [approx. 68°F (20° C)]. Battery charging temperature range is 32°F to 113°F (0°C to 45°C).

To test the power capacity of the battery; press the TEST pad on back side of the battery and view the power level indicator.

Routine Battery Charge

A battery is charged to 90% of its full capacity after approximately two and a half hours, and is fully charged after three hours, excluding out-of-range periods. During the charge, the LED indicator of the PowerPad shows green and blinks quickly. Note that the PowerPad can be in either On, Off or Suspend mode while charging.

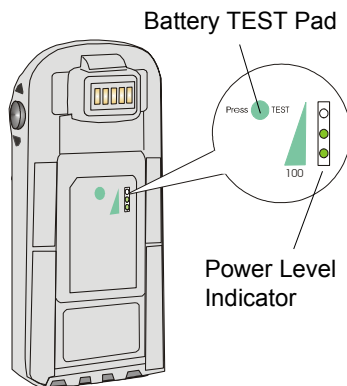


Figure 5. Battery Power Test

Important: The battery will not charge if the PowerPad or battery is not properly locked inside the UOD slot.

Battery Maintenance

The performance of the rechargeable battery delivered with your PowerPad depends on the way the battery is treated. Therefore, to comply with the Motorola warranty for batteries and to assure high performance and a long life for your Motorola rechargeable battery, please read and follow the maintenance rules stated below.

Battery Storage

Do not store your battery where the temperatures exceed 140°F (60°C) or fall below 4°F (-20°C).

New Lithium-Ion batteries (i.e. batteries that have never been charged before) may be stored for up to 3 months in well-ventilated, cool and dry areas without significant loss in lifespan.

Batteries which have already been charged and then stored for more than 2 months should be recharged before use.

Extending Battery Life

A battery is an expendable part and may need replacing during the life of the PowerPad. To ensure maximum service life of your PowerPad, always replace the battery with a genuine Motorola replacement.

Your UOD will charge your battery effectively when it is at room temperature [approx. 68°F (20° C)]. Battery charging temperature range is 32°F to 113°F (0°C to 45°C).

Using the PowerPad

Turning On the PowerPad

Press the Power button to turn On the PowerPad (see Figure 7) - when turned On, the last displayed screen will be shown again.

Note: The PowerPad powers On immediately when the battery is installed for the first time or after Cold Reset (see page 16) - the Motorola logo will show for about 30 seconds and you will be required to follow on-screen alignment (calibration) instructions.

Turning Off the PowerPad

When the PowerPad is On, hold the Power button pressed (see Figure 7) for at least four seconds.

When the battery is removed (see “Battery Installation and Removal”) from the PowerPad during operation, the PowerPad turns off automatically. To resume operation, press the Power button.

Suspend Mode

When the PowerPad is On, press the Power button (see Figure 7) to enter Suspend mode. During Suspend mode the display turns off and the LED indicator slowly blinks green. To resume operation, press the Power button again.

In Suspend mode, battery power is saved by turning off the display and computer sections of the PowerPad. During Suspend mode, the GPRS and Bluetooth radios continue to operate. When the PowerPad resumes operation, it returns to the screen shown prior to Suspend mode.

Use Suspend mode as often as possible to save battery power.

LED Indicator Function

LED shows red - do not remove battery.

LED slowly blinks green - PowerPad in Suspend mode.

LED quickly blinks green - PowerPad is charged in UOD unit.

Using the Stylus Pen

The Stylus pen selects items and enters information. Use the pen as you use your PC mouse.

- To open and select screen items, tap on the item with the pen.
- To drag text or image items, hold the pen on the item and drag across the screen.
- To see a list of actions available for a specific item, tap-and-hold the pen on an item. When the pop-up menu appears, tap the action you want to perform.



Figure 6. Using the Stylus Pen

Using the Keyboard

Key Assignment

Figure 7 describes the PowerPad keyboard.

Note: Key assignment may vary by application. Therefore, your keyboard may not function as described.

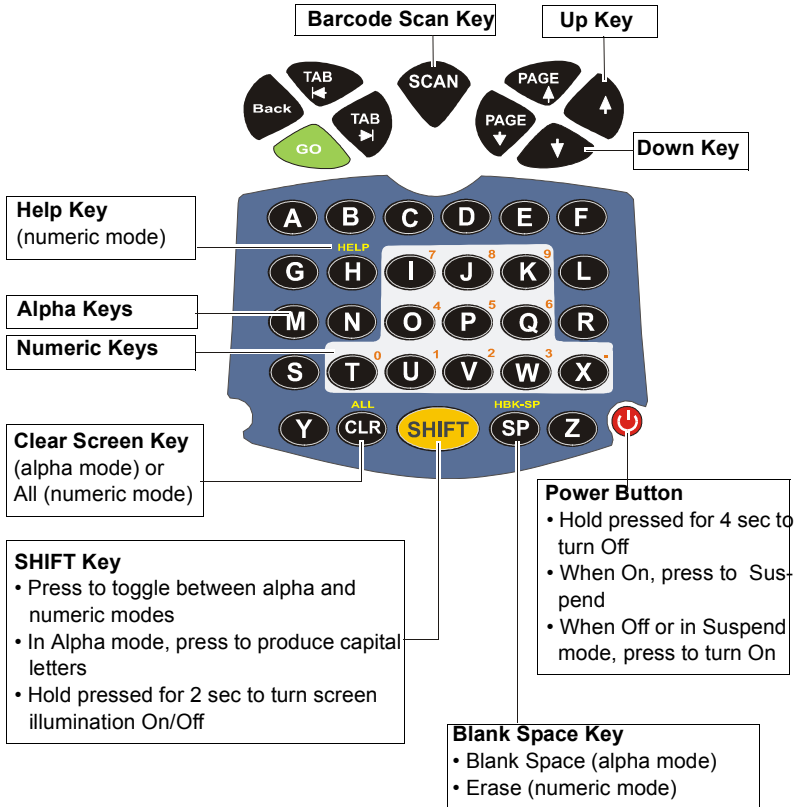


Figure 7. PowerPad - Key Function

Action Keys

Table 2 describes the action keys combinations.

Table 2: Action Keys Combinations

Action	Key Combination
Warm Reset (see also “Resetting the PowerPad”)	H + CLR + GO
Lower Case to Upper Case Letters (default is lower case)	SHIFT + any alphabet key
Audio Recording	SHIFT + SP + R
Audio Volume	Increase: SHIFT + SP + UP Decrease: SHIFT + SP + DOWN
Touch Screen Calibration	SHIFT + SP + C
Display Illumination Intensity	Increase: SHIFT + UP Decrease: SHIFT + DOWN
Keyboard Back light Intensity	Increase: SHIFT + PAGE UP Decrease: SHIFT + PAGE DOWN
Virtual Keyboard	Open/Close: SHIFT + SCAN + SP
PocketPC 2003 Menu	SP + SCAN

Scanning with the PowerPad

The PowerPad has an integrated Laser scanner which gathers data by scanning barcodes. The PowerPad is equipped with a SCAN trigger button, designed for both left-handed and right-handed users (see Figure 8). The button is located at the center of the terminal navigation key panel.

To scan 1D (one dimensional) barcodes; aim the scanner at the barcode and press the SCAN trigger button (see Figure 8). To scan 2D barcodes; aim the scanner at the barcode top, press the SCAN trigger button and move the beam vertically down on the barcode (see Figure 8). Ensure that the red scan beam covers the entire barcode area. A beep sound indicates a successful decode.

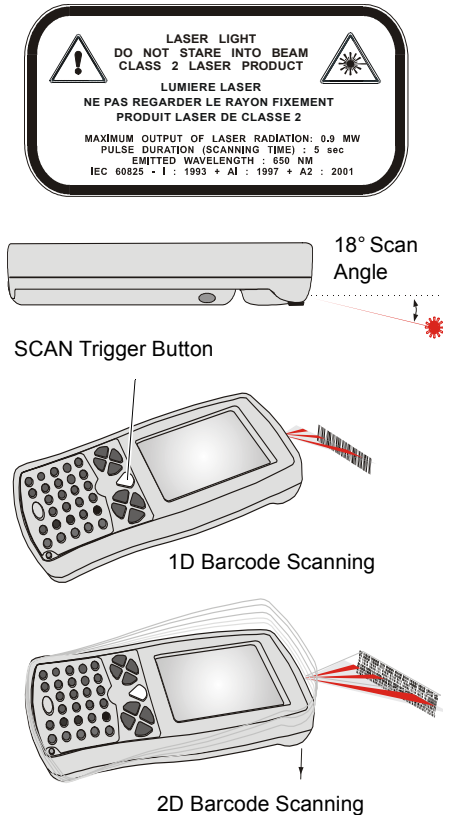


Figure 8. Scanning with the PowerPad

Resetting the PowerPad

You may need to reset your PowerPad; for example, you may reset due to communication cut-off, or if the operating system stops responding.

If your PowerPad stops responding, do the following actions:

Warm Reset

Important Note: When the PowerPad is warm reset, all recorded information remains stored in memory.

Simultaneously, press keys **H + CLR + GO** (see Figure 9); the PowerPad will function again.

If your PowerPad still does not respond, perform “Cold Reset”:

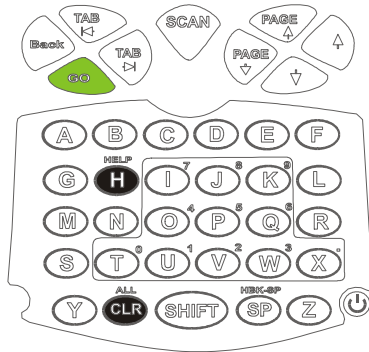


Figure 9. Warm Reset

Cold Reset

Cold reset restarts the PowerPad by erasing all stored records and entries.

Do Not perform Cold reset unless Warm reset fails to solve your problem.

Cold reset is performed by removing the battery and inserting the Stylus tip into the hole located on the back side of the PowerPad (see Figure 10).

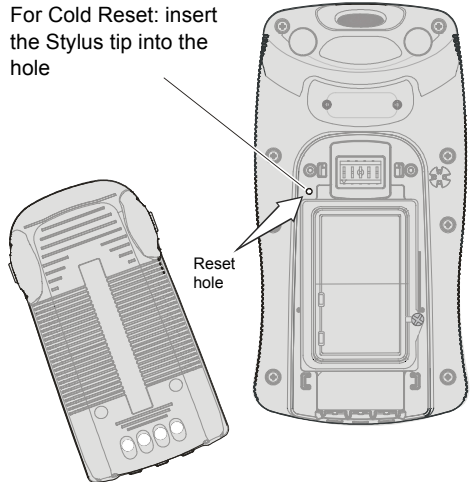


Figure 10. Cold Reset

Maintaining the PowerPad

In order to maintain your PowerPad in good working order:

- Do not scratch the screen. Use only Motorola supplied stylus pen with the touch screen.
- Never use a pen or pencil or any sharp object on the screen.
- Although your PowerPad is water and dust resistant, do not expose it to rain or moisture for long periods of time.
- Protect your PowerPad from temperature extremes. Do not leave the PowerPad on the dashboard of a car on a hot day, and keep the PowerPad away from hot places.
- Do not drop your PowerPad or subject it to strong impact.
- Do not store or use your PowerPad in any location that is extremely dusty, damp or wet.

- If the battery contacts, screen or surface of the PowerPad become dirty, use a soft lint free cloth moistened with diluted Isopropyl Alcohol (IPA) solution to remove dirt. The Isopropyl Alcohol (IPA) can be diluted with water up to 20%.

Accessories

The following Motorola approved accessories are for use with your terminal.

Table 3: Accessories

Motorola Approved Accessory	Part Number
Battery	FTN6032
Stylus	FLN9805
Holster	FHN6498

It is the responsibility of the user to use only the approved accessories supplied for this product, as detailed in Table 3 . Motorola is not responsible for the use of accessories not approved for this product.

For more information on the availability of these accessories, please call your company supplier.

Troubleshooting

Table 4: Troubleshooting the PowerPad

Problem	Cause	Solution
PowerPad does not turn On	Battery is not installed properly or not charged	Ensure proper battery installation in PowerPad. Charge or replace the battery
	PowerPad in Suspend mode	Press the Power Button
Battery does not charge in UOD	PowerPad is not locked in UOD	Reinstall PowerPad in UOD. Lock the PowerPad properly in UOD. (See that the UOD LED is On and charge for three hours)
	PowerPad or UOD Dock contacts are not clean	Clean contacts and remove dust and objects from within the UOD
	Battery temperature is out of range	Ensure that the battery temperature range is 32°F to 113°F (0°C to 45°C)
	Bad battery	Replace battery
PowerPad does not detect scan input	LASER beam does not cover the entire barcode symbol	Scan again and make sure that the entire barcode symbol is covered
	Unreadable barcode	Be sure the barcode symbol is not covered or damaged

Table 4: Troubleshooting the PowerPad

Problem	Cause	Solution
PowerPad does not respond	Problem in PowerPad operating system or communication network	<p>Execute Warm reset by simultaneously pressing soft keys H+CLR+GO for at least one second; the PowerPad should function again</p> <p>If PowerPad still does not respond, perform Cold rest (see “Resetting the PowerPad” on page 16). The operation system will reboot after about 30 seconds</p>
Incomplete or no data transmission between PowerPad and UOD	Communication software was incorrectly installed or configured	Refer to the UOD user manual or see your system administrator
	IrDA communication window is obscured	Make sure that the IrDA window of the PowerPad is clean and has a clear line of sight with the IrDA window of the UOD

Safety Instructions



Laser Safety

- DANGER - LASER LIGHT WHEN OPEN, AVOID DIRECT EYE EXPOSURE
- CAUTION - LASER LIGHT - DO NOT STARE INTO BEAM
- CLASS II LASER PRODUCT, 650 nm LASER, 0.9 mW MAX. OUTPUT, COMPLIES WITH 21 CFR 1040.10 & 1040.11, IEC60825-1:1993 + A1:1997 + A2: 2001
- Do not aim the beam at a human eye
- Press the "SCAN" button only when the aperture is aimed at the barcode
- CAUTION - Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure



Battery Warnings and Disposal

PowerPad On-board Aircraft

Always remove the battery from the PowerPad when shipped via air. Any use of the PowerPad must be in accordance with applicable regulations per airline crew instructions.

Battery Disposal

Batteries must be recycled or disposed of properly in accordance with local requirements. Recycling facilities may not exist in all areas. Please contact your local environmental agency for more information regarding proper disposal.

To Prevent Injury Or Burns

- USE ONLY SPECIFIED BATTERIES AND CHARGERS.
- DO NOT DISPOSE OF ANY BATTERIES IN FIRE, AS THEY MAY EXPLODE!
- DO NOT PUNCTURE OR ALLOW METAL TO CONTACT THE BATTERY TERMINALS.
- DO NOT DISPOSE OF IN WATER.
- DO NOT DISASSEMBLE.
- DO NOT STORE ABOVE 140°F (60°C) OR BELOW 4°F (-20°C)

SPECIFICATIONS

PHYSICAL SPECIFICATIONS	
Weight	23.5 ± 0.3oz (666 ± 10g)
Dimensions	Width x Length x Depth: 4.1 x 8 x 1.9" (104 x 202 x 48 mm)

ELECTRICAL SPECIFICATIONS	
Processor type	Intel SA1110 running at 206MHz
Memory	Flash: 32 MB, SDRAM: 64 MB
Non-Volatile Memory	Compact Flash 128 MB
Display	3.5" color, transfective, native portrait LCD with illumination. Resolution: 240 x 320 pixels (1/4 VGA) Viewing angle ± 35° in both X and Y axis. Viewing area smaller by about 2 mm all around
Touch Screen	65,000 signatures (<1% linearity change) 65,000 to 85,000 signatures (<4% linearity change) Operating force < 100 grams with stylus
Keyboard	39 keys: 8 Navigation keys, Scan key, 28 alphanumeric keys and Power On/Off key. Software controlled backlighting (On/Off only)
Status Indicator	Tricolor LED, Software controlled

Audio	<p>Microphone: For Mono sound recording</p> <p>Speaker: Mono</p> <p>(Bluetooth audio support as a remote microphone and speaker)</p> <p>Beeper: Piezo buzzer with adjustable tones, maximum sound level is 85 db for audio notification of proper scans</p>
Personal Area Network (PAN)	Bluetooth RF communication to wireless phones and accessories
Barcode Scanner	2D high-speed LASER (manual scan) support for common barcode symbologies including PDF417
Main Battery	Lithium-Ion, 7.2V, 1800 mAh supporting 12 hours typical operation. Fully recharged within 3 hours in UOD.
Backup Battery	Rechargeable Lithium coin cell, 90 mAh for 8 hours retention of real-time clock and DRAM memory
SOFTWARE	
Operating System	PocketPC 2003
Program Loader	Via IrDA port or Bluetooth radio
Power Management	As supported by PocketPC 2003: On, Idle, Hibernate, Docked (2), Battery Out

Communication

Personal Area Network (PAN): Bluetooth RF communication to wireless phones and accessories

Wireless Wide Area Network (WWAN): Data-only GPRS compatible dual-band for USA (850 MHz & 1900 MHz)

Infra-red (IrDA): supporting SIR 9.6K/ bits to 115.2 kbit/s and FIR 4 Mbit/s data rates. All PocketPC 2003 IR layers

Index

Numerics

2D barcodes 15

A

Accessories 18

Action Keys 14

Aircraft 21

Alpha Keys 13

Alphabet Keys 4

Audio Recording 14

Audio Volume 14

B

Back light Intensity 14

Barcode Scan Key 13

Battery Charge 8

Battery charging temperature 8

battery contacts 18

Battery Maintenance 9

Battery Power Test 9

Battery Storage 9

Battery Warnings 21

beep sound 15

Blank Space Key 13

Blinking Amber 8

C

Charging 6

Clean 18

Clear Screen Key 13

Cold Rese 17

cool and dry areas 9

D

Disposal 21

Down Key 13

E

Extending Battery Life 10

H

Help Key 13

Holster 18

I

Illumination Intensity 14

Injury 22

Install Battery 6

Isopropyl Alcohol 18

K

Keys Assignment 13

L

Laser Warning 15

LED blinks fast 9

LED Indicator 11

LED shows green 9

LED shows red 11

Lithium-Ion 2

M

Maintaining 17

Microphone 4

N

Navigation Key Panel 4

Numeric Keys 4

P

PocketPC 2003 Menu 14

Power Button 13

Power Level Indicator 9

PowerPad Parts 4

R

Remove Battery 6

Reset hole 17

Resetting 16

resume operation 11

room temperature 8

S

Safety 3

Safety Instructions 21

scan 1D 15

Scan Angle 15

SCAN trigger 15

Scanning 15

Screen Calibration 14

SHIFT Key 13

Slot LEDs 7

Solid Amber 8

Solid Green 8

Solid Red 8

Speaker 4

storage temperatures 9

store 17

Suspend Mode 11

T

TEST pad 9

Touch Sensitive Screen 4

Troubleshooting 19

Turning Off 11

Turning On 11

U

Universal Office Docking 7

Unpacking 3

UOD User Manual 1

Up Key 13

V

Virtual Keyboard 14

W

Warm Reset 16

***HOW TO REACH US:
Commercial, Government and
Industrial Solutions Sector***

1301 E. Algonquin Road,
Schaumburg, IL 60196

Tel: 1-888-567-7347 (inside the US)

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