



Dolphin® 7850 Series
Microsoft® Windows® 5.0



User's Guide
-9/19/06

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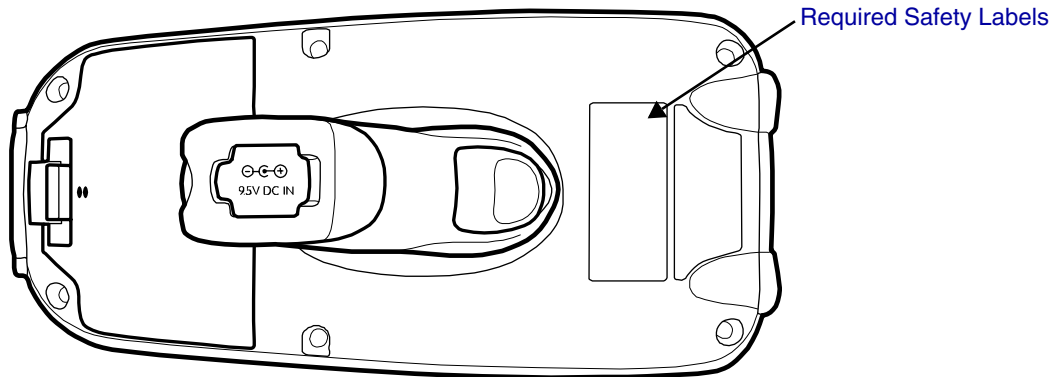
Limited Warranty 11-2

Agency Information

Required Safety Labels

Dolphin 7850 mobile computers meet or exceed the requirements of all applicable standards organizations for safe operation. However, as with any electrical equipment, the best way to ensure safe operation is to operate them according to the agency guidelines that follow. Please read these guidelines carefully before using your Dolphin mobile computer.

Location



Dolphin 7850 Series 802.11b (WLAN) and/or Bluetooth (WPAN)

Dolphin 7850 RF terminals are designed to comply with the most current applicable standards on safe levels of RF energy developed by the Institute of Electrical and Electronics Engineers (IEEE) and the American National Standards Institute (ANSI) and has been recommended for adoption by the Federal Communications Commission (FCC).

Required Safety Labels

The required safety labels that appears on the back of Dolphin 7850 terminals equipped with the following radios are as follows:

802.11b



802.11b and Bluetooth



Regulatory and Safety Approvals for all Dolphin Terminals

Parameter	Specification
U.S.A Canada European Community	FCC Part 15, Class B ICES-003 EN 55022 (CISPR 22) Class B EN60950:2000 EN60825-1:1994 + A11 + A2 EN55024:1998



The CE Mark on the product indicates that the system has been tested to and conforms with the provisions noted within the 89/336/EEC Electromagnetic Compatibility Directive and the 73/23/EEC and 93/68/EEC Low Voltage Directive.

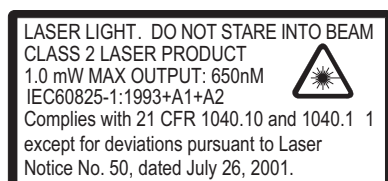
For further information, please contact:

Hand Held Products, Inc.
Nijverheidsweg 9
5627 BT Eindhoven
The Netherlands

Hand Held Products shall not be liable for use of our product with equipment (i.e., power supplies, personal computers, etc.) that is not CE marked and does not comply with the Low Voltage Directive.

Laser Safety Label

If the following label is attached to your product, it indicates the product contains a laser engine or laser aimer:



Laser Eye Safety Statement: This device has been tested in accordance with and complies with EN60825-1: 1993+A1+A2 and 21 CFR 1040.10 and 1040.11, except for deviations pursuant to Laser Notice No. 50, dated July 26, 2001. LASER LIGHT, DO NOT STARE INTO BEAM, CLASS 2 LASER PRODUCT, 1.0 mW MAX OUTPUT: 650nm.

Use of controls or adjustments or performance of procedures other than those specified in the user documentation may result in hazardous radiation exposure.

LED Safety Statement

This device has been tested in accordance with IEC60825-1 LED safety, and has been certified to be under the limits of a Class 1 LED device.

FCC Compliance

Dolphin terminals meet or exceed all applicable standards and have been manufactured to the highest level of quality.

Dolphin Batch Terminal

Dolphin Batch terminals comply 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.

Dolphin RF Terminal—802.11b and/or Bluetooth

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

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 in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet helpful: "Something About Interference." This is available at FCC local regional offices. Our company is not responsible for any radio or television interference caused by unauthorized modifications of this equipment or the substitution or attachment of connecting cables and equipment other than those specified by our company. The correction is the responsibility of the user. Use only shielded data cables with this system.

In accordance with FCC 15.21, changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

CAUTION! Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate the equipment.

RF, Regulatory, and Safety Agency Approvals—802.11b and/or Bluetooth

Parameter	Specification
RF Approvals	
U.S.A	FCC Part 15.247
Canada	RSS 210

R&TTE Compliance Statement—802.11b and/or Bluetooth

Dolphin RF terminals are in conformity with all essential requirements of the R&TTE Directive (1999/5/EC). This equipment has been assessed to the following standards as applicable:

Parameter	Specification
R&TTE	EN 300 328-2:2000 EN 301 489-1 (2002-08) EN 301 489-17 (2002-08) EN 60950:2000 EN 50361:2001

This product is marked with **CE 0682** ⓘ in accordance with the Class II product requirements specified in the R&TTE Directive, 1999/5/EC.

The equipment is intended for use throughout the European Community. Its authorization for use in France is restricted as follows:

PAN European Frequency Range: 2.402 - 2.480 GHz.

Restrictions in France are as follows:

- Indoor use - Maximum power (EIRP*) of 100 mW for the entire 2400-2483.5 MHz
- Outdoor use - Maximum power (EIRP*) of 100 mW for the 2400-2454 MHz band and maximum power (EIRP*) of 10 mW for the 2454-2483 MHz band.

Canadian Compliance

This Class B digital apparatus complies with Canadian ICES-003. 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.

To prevent radio interference to the licensed service, this device is intended to be operated indoors and away from windows to provide maximum shielding. Equipment (or its transmit antenna) installed outdoors is subject to licensing.

Cet appareil numérique de la Classe B est conforme à la norme NMB-003 du Canada.

For European Community Users

Hand Held Products complies with Directive 2002/69/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 27 January 2003 on waste electrical and electronic equipment (WEEE).

Waste Electrical and Electronic Equipment Information

This product has required the extraction and use of natural resources for its production. It may contain hazardous substances that could impact health and the environment, if not properly disposed.

In order to avoid the dissemination of those substances in our environment and to diminish the pressure on the natural resources, we encourage you to use the appropriate take-back systems for product disposal. Those systems will reuse or recycle most of the materials of the product you are disposing in a sound way.



The crossed out wheeled bin symbol informs you that the product should not be disposed of along with municipal waste and invites you to use the appropriate separate take-back systems for product disposal.

■ If you need more information on the collection, reuse, and recycling systems, please contact your local or regional waste administration.

You may also contact your supplier for more information on the environmental performances of this product.

Pacemakers, Hearing Aids and Other Electrically Powered Devices

Most manufacturers of medical devices adhere to the IEC 601-1-2 standard. This standard requires devices to operate properly in an EM Field with a strength of 3V/m over a frequency range of 26 to 1000MHz. The maximum allowable field strength emitted by the Dolphin is 0.3V/m according to Subpart B of Part 1 of the FCC rules. Therefore, the Dolphin RF has no effect on medical devices that meet the IEC specification.

Microwaves

The radio in the Dolphin RF terminal operates on the same frequency band as a microwave oven. Therefore, if you use a microwave within range of the Dolphin RF terminal you may notice performance degradation in your wireless network. However, both your microwave and your wireless network will continue to function. The Dolphin Batch terminal does not contain a radio, and therefore, is not affected by microwave ovens.



The crossed out wheeled bin symbol informs you that the product should not be disposed of along with municipal waste and invites you to use the appropriate separate take-back systems for product disposal.

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This chapter describes what to do with your Dolphin device when you first receive it.

Step 1. Unpack the Carton

Verify that the carton contains the following items:

- Dolphin 7850 mobile computer
- Main battery pack (7.4V Li-ion)
- Getting Started CD
- Dolphin 7850 Quick Start Guide

Be sure to keep the original packaging in the event that the Dolphin terminal should need to be returned for service. For details, see [Limited Warranty](#) on page 11-2.

If you ordered additional peripherals, accessories, or the Dolphin User CD, verify that they are included with the order.

Step 2. Install the Main Battery Pack



Use only the Li-ion battery packs provided by Hand Held Products. The use of any battery pack not sold/manufactured by Hand Held Products in a Dolphin terminal will void your warranty and may result in damage to the Dolphin terminal or battery.

For more information, see [Installing the Main Battery Pack](#) on page 3-9.

Step 3. Charge the Batteries

Dolphin batteries ship discharged of all power. Charge the main battery pack for a **minimum of four hours** before initial use.

For more information about Dolphin batteries, see [Charging Options](#) on page 3-9.

Step 4. Boot Terminal

INSTRUCTIONS PENDING FIRST BUILD

Using the Stylus

Use the stylus or your finger to select or enter information on the touch screen. The stylus functions as a mouse; generally, a tap is the same as a click.

Tap	Tap the touch screen once to open menu items and select options.
Drag	Hold the stylus on the screen and drag across the screen to select text and images.
Tap & hold	Tap and hold the stylus on an item and a pop-up menu appears. On the pop-up menu, tap the action of the task you want to perform.

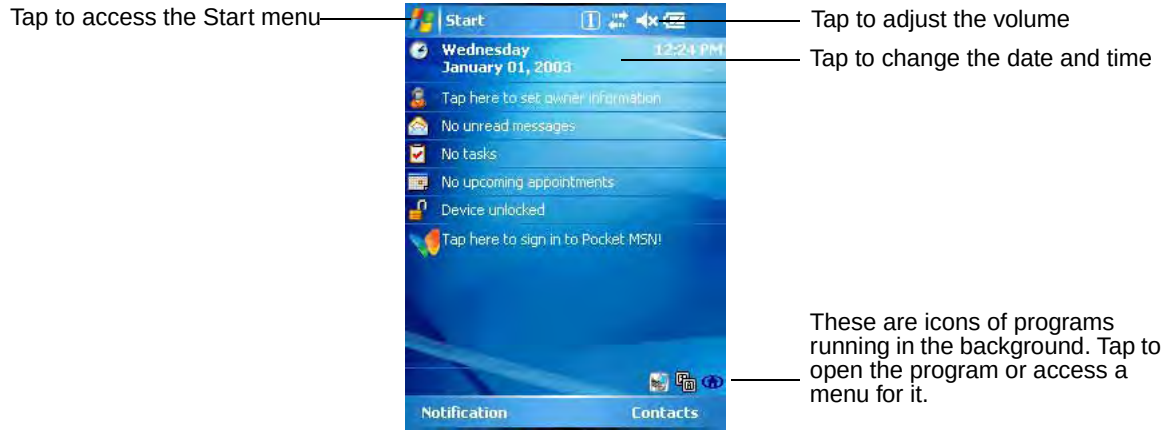


Use of other objects, such as paper clips, pencils, or ink pens can damage the touch screen and will void the warranty.

For more information about the touch screen see [Touch Screen Display](#) on page 3-3.

Today Screen

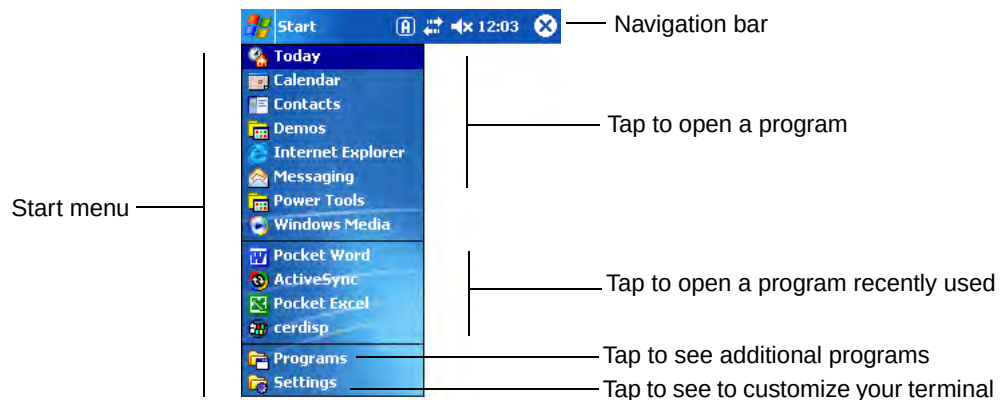
System resets (see [Resetting the Terminal](#) on page 3-13) end on the Today screen.



Note: You can also open the Today screen at any time by tapping Start > Today.

Navigation Bar

Located at the top of every screen, the Navigation bar provides access to the Start menu, shows the current time (from the system clock), and displays both status and keyboard status icons.



Command Bar

Located at the bottom of application screens, the Command bar includes application menus, buttons, and provides access to the Soft Input Panel (SIP).



The contents of the Command bar changes according to the open application.

Selecting Programs

The Start menu does not fit all installed programs. To see additional programs, tap **Start > Programs**.



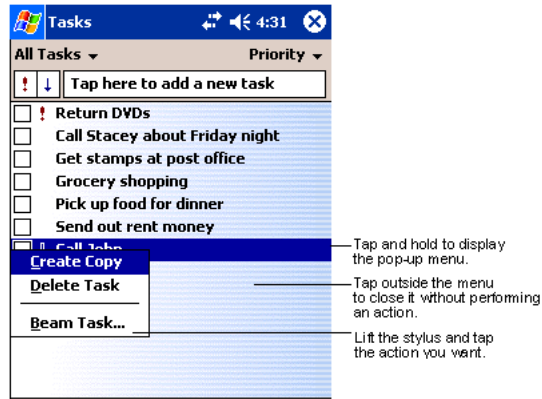
To open a program, tap once on the icon.

Pop-Up Menus

With pop-up menus, you can quickly choose an action for an item.

1. Tap and hold the stylus on the item name. The pop-up menu appears.
2. Lift the stylus, and tap the action you want to perform.

Note: To close the menu without performing an action, tap the screen anywhere outside the menu.

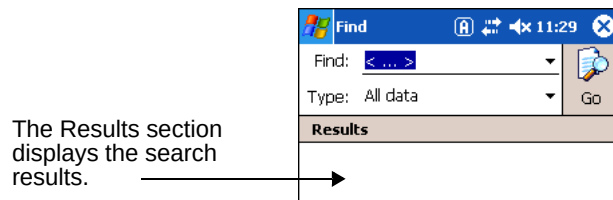


The contents of pop-up menus depend change according to the program you're in.

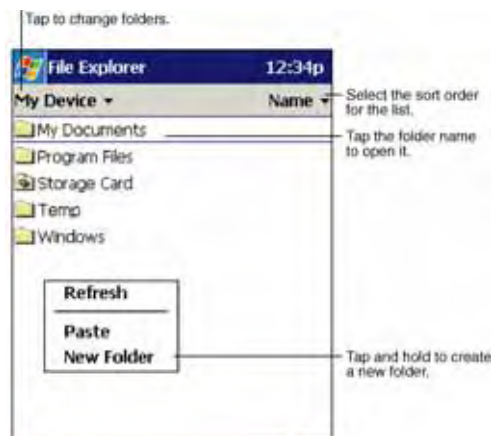
Finding and Organizing Information

You can use the Find feature or File Explorer to find and organize information.

The Find feature helps you quickly locate information. Tap **Start > Programs > Find**. Enter the text you want to find, select the data **Type**, and then tap **Go** to start the search.



You can also use the File Explorer to find and organize files and folders. Tap **Start > Programs > File Explorer**.



Move files by tapping and holding on the file, then tapping **Cut**, **Copy** or **Paste** on the pop-up menu.

The Dolphin 7850 Series includes a number of standard terminal configurations as well as charging and communication peripherals and accessories to maximize the efficiency of your application setting.

Standard Terminal Configurations

The standard Dolphin 7850 terminal configuration is:

- Microsoft Windows Mobile 5.0
- PXA270-312MHz processor
- 64MB RAM X 64MB Synchronous Flash standard
- 24-key calculator-style numeric with scrolling alpha or 38-key calculator-style numeric with full alpha
- 3.5 in. 1/4 VGA 240x320 TFT color display with hard-coat industrial touch panel
- 5300 or 5100 Standard Range (SR) image engine
- 802.11b radio (WLAN)

Configuration Options

The Dolphin 7850 Series offers you a number of configuration options to customize the Dolphin 7850 terminal to your business needs.

Radio Options	Bluetooth radio with WPAN functionality; see Wireless PAN Communication with Bluetooth on page 9-1.
Memory Expansion	128MB RAM & Flash options available Additional 64MB of RAM (for a total of 128MB RAM); see Memory on page 6-9.
Mass Storage	Factory-installed 256MB or 512MB Secure Digital (SD) storage card.
Image Engines	HP (High Performance) Laser scanner LR (Long Range) Laser scanner ALR (Advanced Long Range) Laser scanner

Dolphin 7850 Series Peripherals

The following items are sold separately and enhance your Dolphin 7850 terminal's capabilities.

Dolphin HomeBase™

The Dolphin HomeBase charging and communication cradle supports both RS-232 and USB communication, enabling your terminal to interface with the majority of PC-based enterprise systems. When a terminal is seated in the HomeBase, its main battery pack charges in less than four hours.

For more information, see [Dolphin HomeBase](#) on page 8-1.

Dolphin ChargeBase

The Dolphin ChargeBase is a four-slot charging cradle that holds, powers, and charges a terminal in each slot.

For more information, see [Dolphin ChargeBase](#) on page 11-1.

Dolphin Mobile Mount

The Dolphin Mobile Mount holds the terminal securely while allowing access to the most important hardware, such as the keyboards and connectors. You can install the Dolphin Mobile Mount to a stable surface to have a convenient place to store the terminal when not in use. For more information, see [Dolphin Mobile Mount](#) on page 13-1.

Dolphin Cables

The Dolphin 7850 Series includes a number of cable kits that enable you to charge and communicate with other devices.

For more information, see [Dolphin Cables](#) on page 10-1.

Dolphin QuadCharger™

The Dolphin QuadCharger is a four-slot charging station for Dolphin Li-ion battery packs that can charge each battery in less than four hours. The fourth slot features a battery analyzer that completely resets and re-calibrates a battery, then displays remaining capacity.

For more information, see [Dolphin QuadCharger](#) on page 9-1.

Dolphin 7850 Series Accessories

Each of the following items is sold separately to enhance your Dolphin 7850 terminal's capabilities.

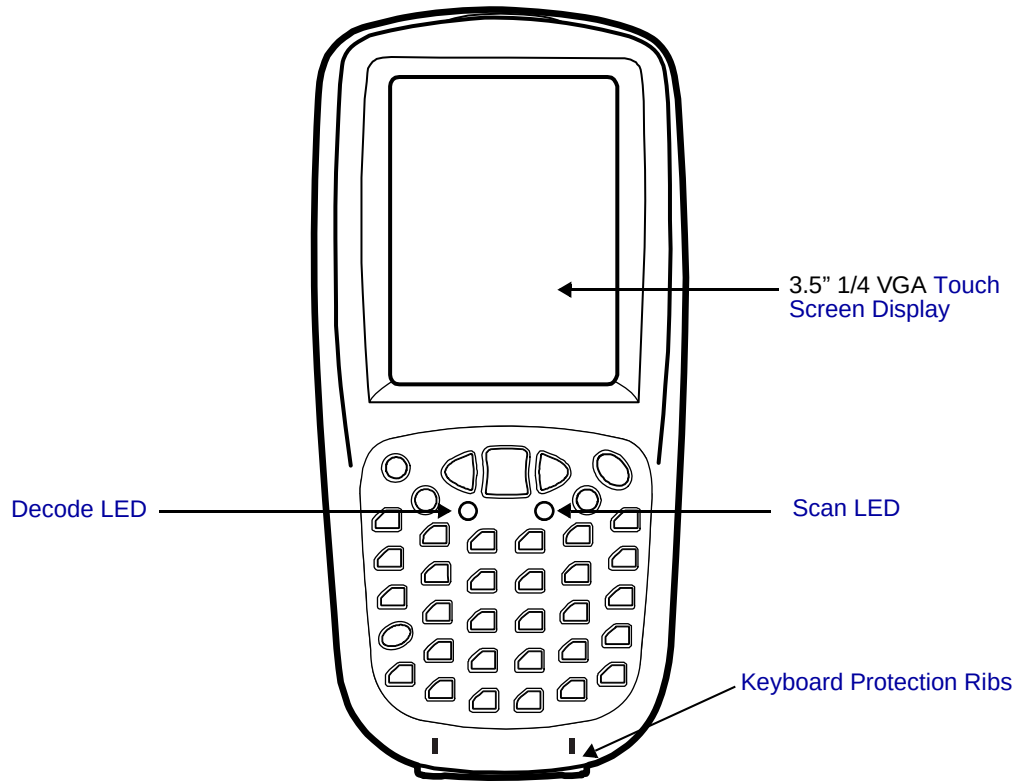
Protective Enclosure

This enclosure wraps around the terminal to protect it from wear and tear.

Li-ion Battery Pack

The 7.4Vdc, 14.8 watt hour Li-ion rechargeable battery pack provides the main power supply for Dolphin terminals.

Front Panel Features



Decode and Scan LEDs

The Scan LED lights red when you press the Scan trigger in scanning applications. The Decode LED lights green when a scanned bar code is successfully decoded.

Note: Both LEDs are user-programmable.

Keyboard Protection Ribs

The Dolphin 7850 has two keyboard options: 24-key numeric-alpha and 38-key numeric-shifted-alpha. These ribs protect the keyboard when the terminal is placed on a flat surface with the keyboard facing down.

For a complete overview of each keyboard, see [Using the Keyboards](#) on page 4-1.

Touch Screen Display

The Dolphin 7850 features a 3.5" 1/4 VGA (Video Graphic Array) display in TFT (Thin Film Transistor) color that is backlit for maximum viewability, then covered with an industrial touch screen for maximum durability. The display is a 262-, 144-color, transfective LCD (Liquid Crystal Display) covered by an industrial touch screen lens. The resolution is 240 x 320. For information about the backlight for the display, see [Backlight](#) on page 6-7.

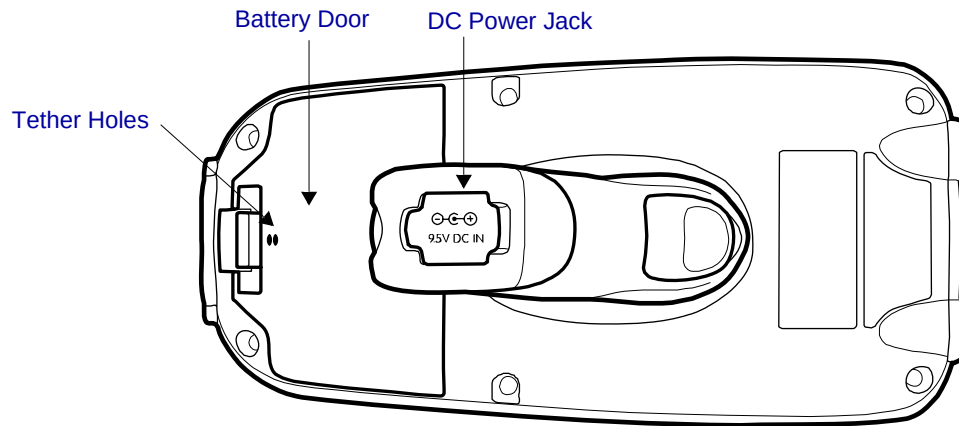
Hand Held Products recommends using screen protectors to protect the touch screen; especially when used with applications that require high-volume interfacing with the touch screen. Screen protectors help prevent damage to the touch screen display and are easily installed.

For touch screen input, use the stylus included with the terminal or your finger. The method you choose depends on which one is most appropriate for your application. While there is a great deal of variation in different applications, for buttons or icons that are close together, you generally achieve greater accuracy with the stylus; see [Using the Stylus](#) on page 2-1.



Use of objects, such as paper clips, pencils, or ink pens on the touch screen can damage the input panel and will void the warranty.

Back Panel Features



Battery Door

The battery door covers and secures the main battery pack in the battery well. There is a mechanical switch on the terminal that puts the terminal in suspend mode (see page [3-13](#)) while the battery door is open. This door must be closed for the terminal to resume operation. For more information, see [Installing the Main Battery Pack](#) on page [3-9](#).

DC Power Jack

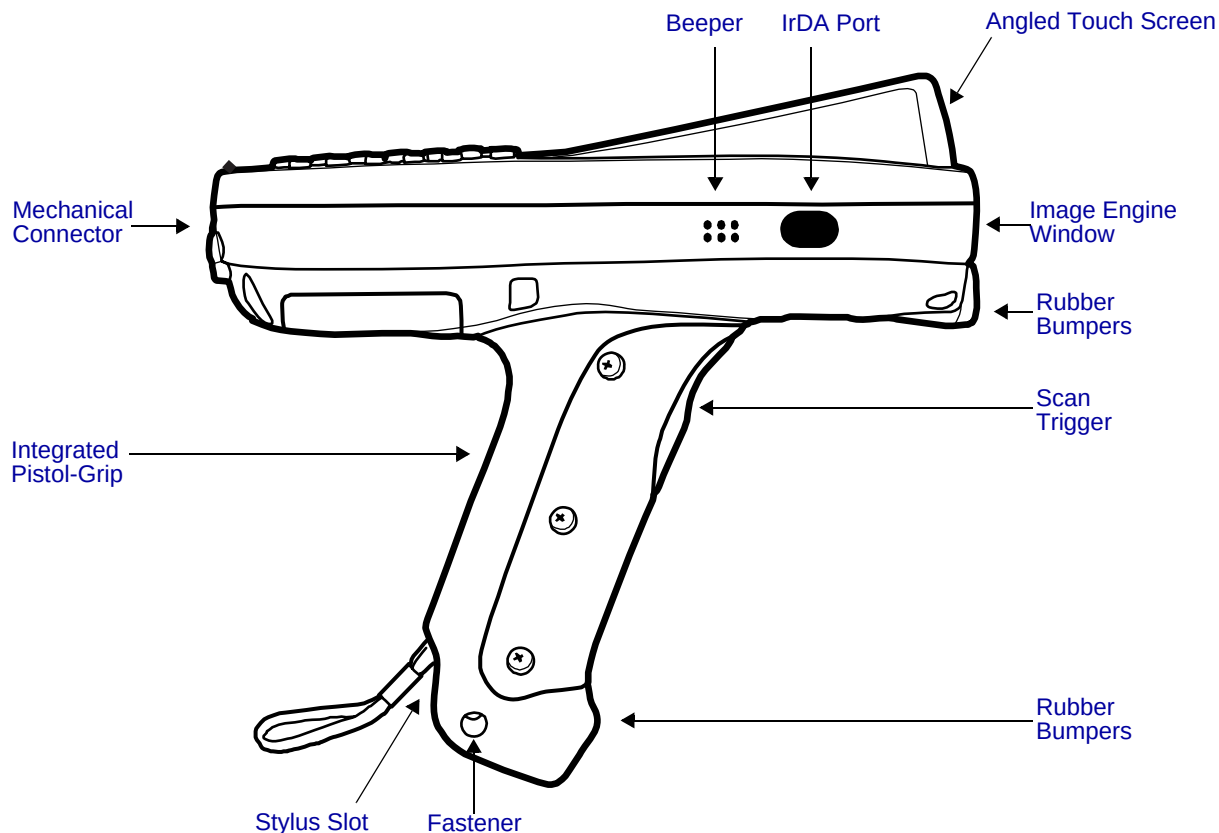
Located on the bottom of the pistol-grip handle, the 9.5V DC power jack receives external power from the Dolphin Power Cable. When connected to the Dolphin Power Cable, the terminal is powered and the main battery pack is charging.

For more information, see [Using the Dolphin Power Cable](#) on page [10-2](#).

Tether Holes

Loop one end of the optional battery door tether through these holes. For for information, see [Battery Door Tether](#) on page [3-6](#).

Side Panel Features



Note: This graphic shows the right side of the Dolphin 7850 terminal.

Angled Touch Screen

The touch screen display (see page 3-3) tilts up toward the user, which helps prevent glare and increases viewability in low-light conditions. Most important, the tilted display helps you read decoded data without having to tilt your wrist up repeatedly.

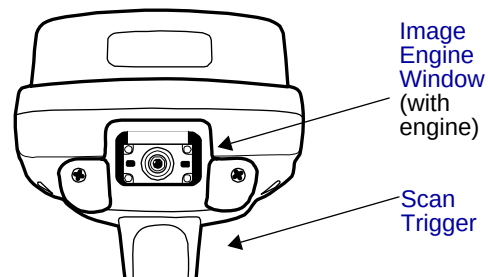
Beeper

The beeper sounds during decoding to indicate a good or bad scan.

Image Engine Window

The image engine reads and decodes most popular bar code symbologies; see [Supported Bar Code Symbologies](#) on page 5-2. In addition, the engine captures images like a digital camera.

The image engine points straight out the image engine window; simply point and scan. There are several image engine configurations available. For details on each, see [Available Image Engines](#) on page 5-1.



Integrated Pistol-Grip

The pistol-grip handle is integrated into the terminal and is not removable, which makes the unit more durable in the field. The handle is also positioned so that the terminal is balanced in your hand for added comfort when using the unit over long periods of time.

IrDA Port

This is infrared port IrDA-enabled (Infrared Data Association) and communicates with other IrDA-enabled devices such as PCs, printers, modems, or other Dolphin 7850 terminals. Maximum data transfer speed is 115 Kbps. For more information, see [Using Infrared](#) on page 7-20.

Scan Trigger

The front of the pistol-grip handle contains a scan trigger that activates the image engine. The scan trigger also wakes the terminal from [Suspend Mode](#) (see page 3-13).

Stylus Slot

Dolphin 7850 terminals ship with a stylus inserted into the pistol-grip handle. Stores the stylus in this slot when you're not using it. For more information about the stylus, see [Using the Stylus](#) on page 2-1.

Fastener

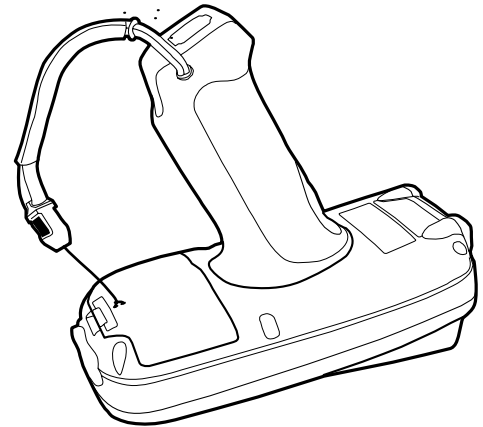
This hole through the bottom of the pistol-grip handle is used as a fastener to attach certain hardware accessories to the terminal.

Stylus Tether

The optional stylus tether is a coiled elastic cord with two ends: one end hooks onto the end of the stylus and the other end loops through this fastener hole. The stylus is then attached to the terminal, which prevents you from losing the stylus should you accidentally drop it.

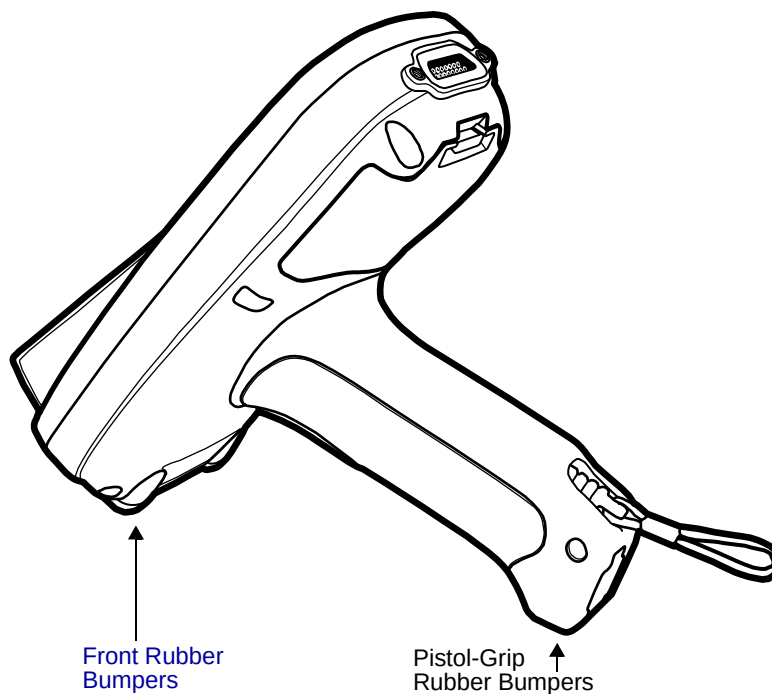
Battery Door Tether

The battery door tether loops through the stylus fastener hole on one end and loops through the two holes on the back of the battery door. The tether keeps the battery door attached to the terminal when the battery door is opened or removed from the back panel.



Rubber Bumpers

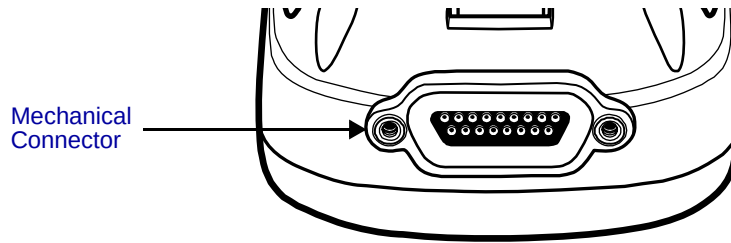
There are two sets of rubber bumpers: one set below the image engine window and the other set on the bottom of the pistol-grip handle. Rubber bumpers enable you to set the terminal down on a flat surface with easy access to the handle, so that you can pick up and put down the terminal with ease.



Front Rubber Bumpers

The front rubber bumpers enable you to rest the terminal on a flat surface without damaging the image engine window.

Bottom Panel Features

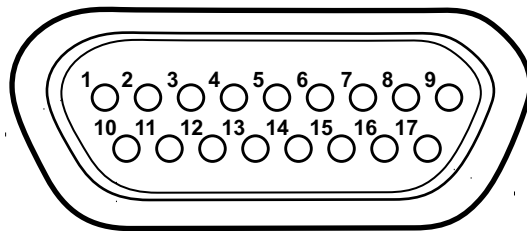


Mechanical Connector

The custom, industrial-grade, mechanical connector has 17 pins that are designed to work exclusively with Dolphin 7850 Series peripherals and cables. This connector powers the terminal, charges the main battery, and facilitates communication with a host PC via Microsoft ActiveSync. The mechanical connector can communicate via RS-232 (up to 115 Kbps) or USB (up to 12 Mbps). For more information about ActiveSync communication, see [Using ActiveSync](#) on page 7-3.

Pin Table

The pins on the mechanical connector are as follows:



Pin #	Description
1	+USB
2	PWR
3	N/C
4	N/C
5	N/C
6	N/C
7	GND
8	5V OUT
9	DTR
10	-USB
11	USB DET
12	RI
13	DSR
14	RXD
15	RTS
16	TXD
17	CTS

Note: Signals referenced are for a DTE device.

Battery Power

The Dolphin 7850 features intelligent battery technology with two types of battery power:

- The main battery pack installed under the battery door on the back panel.
- The backup battery located inside the terminal.

Both batteries work together to prevent data loss when the terminal is used over long periods of time.

Both batteries must be charged to full capacity before using the Dolphin 7850 for the first time!

Main Battery Pack



Use only the Li-ion battery packs provided by Hand Held Products. The use of any battery pack not sold/manufactured by Hand Held Products in a Dolphin terminal will void your warranty and may result in damage to the Dolphin terminal or battery.

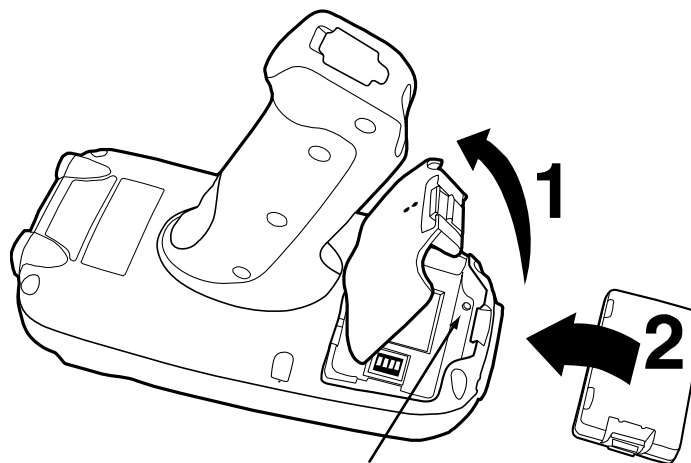
The 7.4V, 14.8 watt hour Li-ion battery pack is the primary power source for the Dolphin terminal and the internal backup battery. The Li-ion battery is designed to operate in a temperature range of -10 to 50° C (14 to 122° F).

Installing the Main Battery Pack

Put the terminal in suspend mode (see [Suspend Mode](#) on page 3-13) before installing a new battery. Press Blue + Backlight keys.



The battery door contains a mechanical switch that automatically suspends terminal operation while open. Because of this switch, the terminal will not resume normal operations until the battery door is closed.



Mechanical Switch

Charging Options

When the battery is installed in the terminal, you can insert the terminal into any one of the following peripherals to charge the main battery pack:

- [Dolphin HomeBase](#) (see page 8-1)
- [Dolphin ChargeBase](#) (see page 11-1)
- One of the Dolphin charging cables (see page 10-1)

To fully charge the Li-ion battery before installing it in the terminal, use the

- [Dolphin QuadCharger](#) (see page 9-1)
- [Auxiliary Battery Well](#) of the Dolphin HomeBase (see page 8-3)

Charge Time

The Li-ion battery pack requires four hours to charge to full capacity.

Internal Backup Battery

Located inside the terminal, the backup battery is a 3.6V nickel metal hydride (NiMH) battery.

The internal backup battery prevents the terminal from being reset when you remove the main battery pack. The backup battery retains RAM data and allows the real-time clock to remain operational for up to 30 minutes. If the terminal is left without the main battery pack for more than 30 minutes, the internal backup battery discharges and needs to be recharged to function according to specifications.

Note: Even if the internal backup battery fails, data and programs stored in Flash memory are not totally lost. However, the terminal automatically cold boots when you install a fully charged battery pack and you need to reset the real-time clock.

Charging

The internal backup battery charges off the main battery pack and requires eight hours charge time to backup RAM data for 30 minutes. You can begin using the Dolphin terminal after charging the main battery for four hours; however, the internal backup battery will continue to charge off the main battery.

To ensure that the internal backup battery functions properly, maintain a consistent power supply for the first eight hours of terminal operation. This power supply can be external power (using a charging peripheral) or an installed, charged battery pack or a combination of both.

Guidelines

Follow these guidelines to maximize the life of the Dolphin's internal backup battery:

- Keep a charged Li-ion battery pack in the Dolphin terminal.
- Keep the Dolphin terminal connected to a power source when the terminal is not in use.

Managing Battery Power

Data and files saved on the Dolphin terminal may be stored in RAM memory; therefore, maintain a continuous power supply to the terminal to help prevent data loss. When you remove a battery pack, insert another charged battery pack in the Dolphin. If the main battery pack is low, insert the terminal into a charging peripheral to power the terminal and begin recharging the battery.

*Note: If the main battery is low and the terminal is in suspend mode, pressing the SCAN trigger does **not** wake the Dolphin terminal; you must replace the discharged battery with a fully charged battery.*

Default Low and Critical Battery Points

The Dolphin terminal ships with default low and critical battery points programmed in the following registry parameters:

[HKEY_LOCAL_MACHINE\System\CurrentControlSet\Control\Power\LowBatt]

[HKEY_LOCAL_MACHINE\System\CurrentControlSet\Control\Power\CriticalBatt]

The Navigation bar at the top of the each screen displays battery warning icons when the main battery reaches the low, then critical battery points.

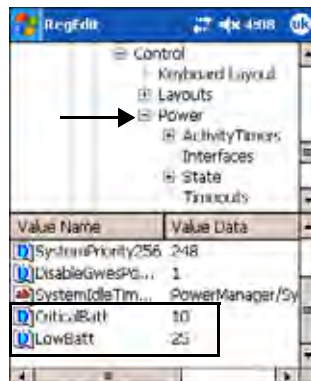
Registry Parameter	Description
LowBatt 	Sets the Low Battery point. The default is 25% (Hexadecimal=19). This is the point at which the user is warned that the battery is low; the user is notified only once for a low battery.
CriticalBatt 	Sets the Critical Battery point. The default is 10% (Hexadecimal=a). This is the point at which the user is warned that the battery charge is very low. This warning is posted every three minutes until the situation is corrected.

Note: Battery power warnings do not appear when the terminal is running on external power.

Setting Critical and Low Battery Points

Developers can re-reset the default battery points in the RegEdit Power Tool.

1. Tap **Start > Power Tools > RegEdit**.
2. Drill-down to **HKEY_LOCAL_MACHINE > System > CurrentControlSet > Control > Power**. The CriticalBatt and LowBatt values appear in the list.

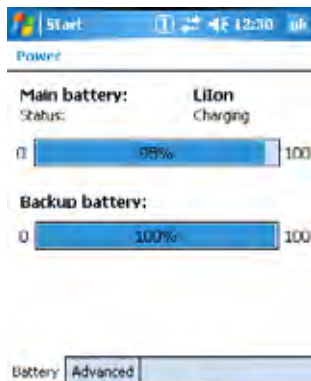


3. Tap the **Value Name** to change the Value Data. You can reset the Value Data from 0 (no warning) to 99 (would warn whenever the charge drops below 99%).
4. Tap **OK** to save changes.

Note: For more information about the RegEdit Power Tool, refer to the Dolphin Power Tools User's Guide, which is available for download at www.handheld.com.

Checking Battery Power

Tap **Start > Settings > System tab > Power**. The Battery tab opens displaying the charge status of both the main and backup batteries.



For more information, see [Power](#) on page 6-11.

Storage Guidelines

To maintain optimal battery performance, follow these storage guidelines:

- Avoid storing batteries outside the specified range of -4 to 104° F (-20 to 40°C) or in extremely high humidity.
- For prolonged storage, do not keep batteries stored in a charger that is connected to a power source.

Guidelines for Battery Use and Disposal

The following are general guidelines for the safe use and disposal of batteries:

- Use only the battery supplied, recommended, or approved by Hand Held Products.

-
- Replace defective batteries immediately; using a defective battery could damage the Dolphin terminal.
 - Never throw a used battery in the trash. It contains heavy metals and should be recycled according to local guidelines.
 - Don't short-circuit a battery or throw it into a fire. It can explode and cause severe personal injury.
 - Excessive discharge damages a battery. Recharge the battery when your terminal indicates low battery power.
 - Although your battery can be recharged many times, it will eventually be depleted. Replace it after the battery is unable to hold an adequate charge.
 - If you are not sure the battery or charger is working properly, please send it to Hand Held Products or an authorized Hand Held Products service center for inspection.

Resetting the Terminal

There are two ways to reset the Dolphin terminal: a soft reset and a hard reset.

Soft Reset (Warm Boot)

A soft reset re-boots the device without losing RAM data. You would perform a soft reset 1) when the terminal fails to respond, 2) after installing software applications that require a reboot, or 3) after making changes to certain system settings.

1. Press and hold the Red  + ESC  keys for approximately five seconds. The screen turns white and the decode and scan LEDs flash for approximately three seconds.
2. When the reset is complete, the Today screen displays.

Hard Reset (Cold Boot)



A hard reset erases all of the data and applications stored in RAM memory and launches Autoinstall, which re-initializes the terminal.

1. Press and hold the Red  + Tab  keys for approximately five seconds. The screen turns white and the decode and scan LEDs light for approximately three seconds.
2. The terminal re-initializes; see [Boot Terminal](#) on page 2-1.

Note: Hard resets automatically launch a soft reset before ending on the Today screen.

Set the time and date after each hard reset to ensure that the system clock is real-time. Tap the date on the Today screen to open the Clock setting and set the time and date.



Suspend Mode

Suspend mode suspends terminal operation. The terminal appears to be “off” when in suspend mode.

The terminal is programmed to go into suspend mode automatically when inactive for a specified period of time. You can set this time period in the Power setting. For details, see the **Advanced Tab** section of the [Power](#) (see page 6-11) setting.

To Put the Terminal in Suspend Mode

Press the Blue  + Backlight  keys. You should put the terminal in suspend mode when you change the battery pack; see [Installing the Main Battery Pack](#) on page 3-9.

To Resume Terminal Operation

To resume terminal operation (or “wake” the terminal),

- Press the Backlight key .
- Press the [Scan Trigger](#) (see page 3-5).

Troubleshooting

If the terminal does not wake when you press the scan trigger,

- The battery door may not be fully closed. The mechanical switch in the battery door prevents the terminal from resuming operations unless the door is closed.
- The main battery might be too low to resume operations. Remove the battery and install a fully charged battery or connect the terminal to a Dolphin charging peripheral.

Dolphin 7850 Technical Specifications

System Architecture	
Processor:	Intel X-Scale PXA255 400MHz; see About on page 6-7.
Operating Platform:	Windows Mobile 5.0
Memory:	64MB RAM X 64MB ROM (Flash) 128MB RAM high memory optional See Memory on page 6-9.
Data Inputs	
Imager/Scanner:	See Available Image Engines on page 5-1.
1D Symbologies:	See 1D Symbologies on page 5-2.
2D Symbologies:	See 2D Symbologies on page 5-2.
Composite Codes	See Composite Codes on page 5-2.
OCR:	See OCR on page 5-2.
Postal Codes	See Postal Codes on page 5-2.
Two Keyboard Options:	24-key numeric-alpha 38-key numeric-shifted-alpha See Using the Keyboards on page 4-1.
Data Outputs	
Display:	See Touch Screen Display on page 3-3.
I/O Ports:	Industrial-grade mechanical connector supports ActiveSync communication, see Mechanical Connector on page 3-8. Charging via cradles and AC adapter cables; see Charging Options on page 3-9. Integrated IrDA port; see Using Infrared on page 7-20.
Mass Storage:	Secure Digital (SD) memory interface; see Memory on page 6-9.
Wireless Radio Options	
WLAN:	IEEE 802.11b DSSS Authentication Methodologies: LEAP, MD5, TLS, TTLS, PEAP, and WEP See Wireless LAN Communication with 802.11b on page 8-1.
WPAN:	Bluetooth radio (Class 2) See Wireless PAN Communication with Bluetooth on page 9-1.
Physical	
Dimensions:	Main housing: 7.1"L x 3.3"W x 1.4"D (180 x 84 x 36 mm) Handle: 4.6"L x 1.6" W x 1"D (117 x 41 x 25 mm)
Weight:	Batch: ? WLAN: ? WPAN: ? WLAN/WPAN: ?
Operating Temperature:	32° to 122°F (0°C to 50°C)

Dolphin 7850 Technical Specifications

Storage Temperature:	-4 to 158°F (-20°C to 70°C)
Humidity:	95% humidity, non-condensing
ESD:	?? KVA on all surfaces
Impact Resistance:	Withstands multiple 5ft (1.5m) drops onto concrete
Environmental Resistance:	Independently certified to meet IP54 standards for moisture and particle resistance
Power:	Lithium-Ion battery technology, 7.4Vdc, 14.8 watt-hour main battery with hot-swappable design for fast replacement in the field. See Battery Power on page 3-9.
Other:	Integrated stylus; see Stylus Slot on page 3-6. Optional tether; see Fastener on page 3-6.
Peripherals/Accessories	
Dolphin HomeBase	Charging/communication cradle with auxiliary battery well. Transfers data via RS-232 or USB. See Dolphin HomeBase on page 8-1.
Dolphin ChargeBase	Four-slot charging cradle that holds, powers, and charges a terminal in each slot. See Dolphin ChargeBase on page 11-1.
Dolphin Cable Kits	USB or serial cables that charge and communicate with the terminal directly, without a cradle. See Dolphin Cables on page 10-1.
Dolphin QuadCharger	Four-slot battery charger that charges four batteries in under four hours. One slot doubles as a battery analyzer. See Dolphin QuadCharger on page 9-1.
Li-Ion Battery Pack	7.4Vdc, 14.8 watt hour Li-ion rechargeable main battery for the Dolphin. See Battery Power on page 3-9.
Regulatory Approvals	
FCC-CE-Radio Country:	US/Canada, R&TTE

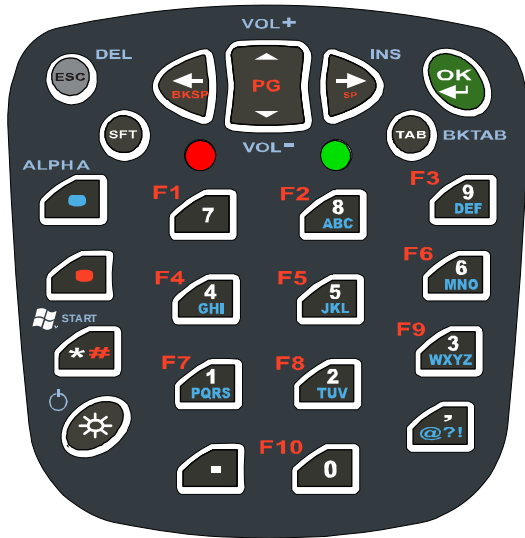
Using the Keyboards

Overview

The keyboard buttons are recessed under the overlay for maximum durability. The keyboard panel is backlit for maximum viewability in various lighting conditions.

The Dolphin 7850 has two keyboard options:

24-key Keyboard



38-key Keyboard



Calculator Style Numbering

Both Dolphin 7850 keyboards default to numeric mode and feature calculator-style numbering for ease-of-use in the field.

LEDs

The terminal's LEDs are in the center of the keyboard.

Scan LED The LED on the right lights green when you press the Scan trigger in scanning applications.

Decode LED The LED on the left lights red when a scanned bar code is successfully decoded.

Note: Both LEDs are user-programmable.

Color-Coding

Keyboard overlays are color-coded to indicate the functions performed or characters typed when the color-coded key is pressed with the red or blue modifier key.

Mode Indicator

Dolphin terminals have a Keyboard Status Power Tool (**Start > Power Tools > Keyboard Status** ) that displays an icon in the Navigation bar to indicate if the keyboard is in alpha or number mode. Keyboard Status is active by default.

-  Indicates that the keyboard is in numeric mode.
-  Indicates that the keyboard is in alpha mode, upper case.
-  Indicates that the keyboard is in alpha mode, lower case.

Key Types

In addition to the standard number and letter keys, both keyboards contain three types of keys:

1. Function Keys - [Using the Function Keys](#) (see page 4-2)
2. Navigation Keys - [Using the Navigation Keys](#) (see page 4-3)
3. Modifier Keys - [Using the Modifier Keys](#) (see page 4-3)

Using the Function Keys

Function keys perform specific functions and usually have the name of the function they perform.

Name	Key	Function
Backlight		Toggles the keyboard backlight on and off.
Backspace (BKSP)		To backspace, press Red + left arrow. Backspace moves the cursor back one space and deletes each time the key combination is pressed. If you are typing text, a character is deleted each time you backspace.
Backtab (BKTAB)		To backtab, press the Red + TAB. Backtab moves the cursor back to the previous tab stop or field (on a form or application window).
Delete (DEL)		To delete, press Blue + ESC. Deletes the next character forward. One character is deleted each time the key combination is pressed.
Escape		Cancels an action.
OK		Functions as an Enter key.
Resume		Resume the terminal by pressing Blue + Backlight. <i>Note: You can also press the Scan trigger on the handle.</i>
Space (SP)		To space, press Red + right arrow. Space moves the cursor one space forward. If you are typing text, it moves the text one space forward as well.
Tab		Moves the cursor to the next tab stop or field (on a form or application window).

Note: There is no SCAN key on the Dolphin 7850 keyboard; scanning is initiated with the [Scan Trigger](#) (page 3-5).

Using the Navigation Keys

Located in the center of each keyboard for easy access with either hand, the navigation keys enable you to navigate the cursor through an application screen.

Press	To ...
	Move the cursor up one row or line. Move the cursor down one row or line.
	Move the cursor one character to the right.
	Move the cursor one character to the left.

The navigation keys perform additional system functions when pressed in combination with the Blue and Red modifier keys. For details, see the key combination tables for the [24-key Keyboard](#) (page 4-4) and the [38-Key Keyboard](#) (page 4-7).

Additional functionality of the navigation keys varies according to the application in use.

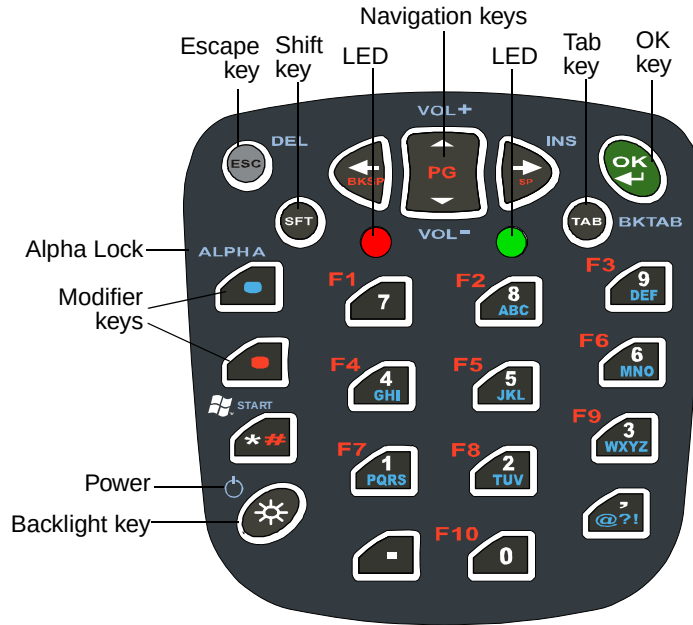
Using the Modifier Keys

Modifier keys modify the next key pressed to perform functions or type special characters. The Dolphin 7850 has Blue and Red modifier keys with a color-coded overlay so you can see what the key combination does.

Name	Key	Function
Shift		Provides shift functionality for application windows. Tap once to modify the next letter pressed. Tap twice for caps lock.
Blue and Red		Modifies the next key pressed. The overlay of each keyboard is color-coded to indicate the character typed or function performed with both keys.
Alpha		*Toggles the keyboard between alpha and numeric modes. *Alpha key only on the 38-key keyboard.

24-key Keyboard

The following graphic displays the 24-key numeric keyboard.



Toggling Between Alpha and Numeric Modes

The 24-key keyboard defaults to numeric mode. Numeric mode is when you type numbers with the number keys. Alpha mode is when you type the letters or characters indicated in blue on the number keys.

- Double-tap the Blue modifier key to toggle between alpha and numeric modes.
- Single-tap the Blue modifier key to toggle to alpha or numeric mode only for the next key pressed. The keyboard returns to the previous state before the next key pressed.
- Press and hold the Blue modifier key to toggle to alpha or numeric mode for all keys pressed until the Blue modifier key is released.

Alpha Mode

Please note that when typing in alpha mode, you must use the same multi-press method you would use when typing letters on a phone keypad. Each key press types the next letter in the sequence as displayed by the alpha indicator.

You can still use the Blue modifier key for regular Blue key combinations in alpha mode; just press the Blue modifier key and the next key. For combinations, see [24-key Blue Key Combinations](#) on page 4-5.

Shift Functionality in Alpha Mode

The SFT key performs all the normal windows shift key functions alpha mode, including capitalizing one letter. On the 24-key keyboard, the SFT key also toggles caps lock on and off.

- Single-tap the SFT key to modify the next key pressed; if this is a letter, that letter is capitalized.
- Double-tap the SFT key to toggle caps lock on and off in alpha mode.

Note: Check the mode indicator (see [Mode Indicator](#) on page 4-1) in the Navigation bar to see what mode the keyboard is in.

24-key Blue Key Combinations

Alpha Mode

Double-tap the Blue modifier key to switch to Alpha mode.

Key	Character Lower case	Character Upper case: SFT once for the next key SFT twice for caps lock
8	abc	ABC
9	def	DEF
4	ghi	GHI
5	jkl	JKL
6	mno	MNO
1	pqrs	PQRS
2	tuv	TUV
3	wxyz	WXYZ
*	*	*
,	@ ? !	@ ? !

Functions

Press the Blue key once in combination with the next key.

Key Combination	Function
Blue + Backlight	Suspend
Blue + ESC	Delete
Blue + Tab	Backtab
Blue + Up Arrow	Volume up
Blue + Down Arrow	Volume down
Blue + Right Arrow	Insert

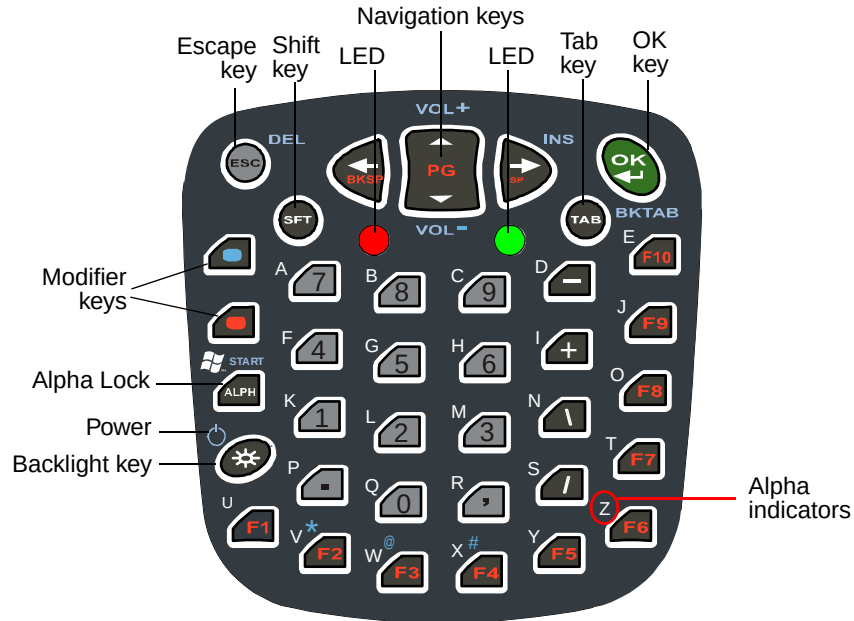
Red Key Combinations

Key Combination	Function/Special Character
Red + Left Arrow	Backspace
Red + Right Arrow	Space
Red + Up Arrow	Page up
Red + Down Arrow	Page down
Red + ESC (hold)	Soft reset (warm boot)

Key Combination	Function/Special Character
Red + TAB (hold)	Hard reset (cold boot)
Red + 1	F7
Red + 2	F8
Red + 3	F9
Red + 4	F4
Red + 5	F5
Red + 6	F6
Red + 7	F1
Red + 8	F2
Red + 9	F3
Red + 0	F10
Red + *	#

38-Key Keyboard

The following graphic displays the 38-key alpha keyboard.



Toggling Between Numeric and Alpha Modes

The 38-key keyboard defaults to numeric mode. Numeric mode is when you type numbers with the number keys. Alpha mode is when you type the letter indicated on the overlay when you press the number key.

Alpha Mode

Single-tap the ALPH key  to toggle to alpha or numeric mode only for the next key pressed. The keyboard returns to the previous state before the next key pressed.

Shift Functionality in Alpha Mode

The SFT key performs all the normal windows shift key functions in alpha mode, including capitalizing one letter. On the 38-key keyboard, the SFT key also toggles caps lock on and off.

- Single-tap the SFT key to modify the next key pressed; if this is a letter, that letter is capitalized.
- Double-tap the SFT key to toggle caps lock on and off in alpha mode.

Note: Check the mode indicator (see [Mode Indicator](#) on page 4-1) in the Navigation bar to see what mode the keyboard is in.

Alpha Mode Keys

Single-tap the ALPH key to switch to alpha mode.

Key	Character Lower case	Character Upper case: SFT once for the next key SFT twice for caps lock
7	a	A
8	b	B
9	c	C
-	d	D
F10	e	E
4	f	F
5	g	G
6	h	H
+	i	I
F9	j	J
1	k	K
2	l	L
3	m	M
\	n	N
F8	o	O
.	p	P
0	q	Q
,	r	R
/	s	S
F7	t	T
F1	u	U
F2	v	V
F3	w	W
F4	x	X
F5	y	Y
F6	z	Z

Blue Key Combinations

Key Combination	Function
Blue + Backlight	Suspend/Resume
Blue + ESC	Delete
Blue + Right Arrow	Insert
Blue + Up Arrow	Volume up
Blue + Down Arrow	Volume down
Blue + ALPH	Start menu
Blue + Tab	Backtab
Blue + F2	*
Blue + F3	@
Blue + F4	#

Red Key Combinations

Key Combination	Function
Red + Left Arrow	Backspace
Red + Right Arrow	Space
Red + ESC (hold)	Soft reset (warm boot)
Red + TAB (hold)	Hard reset (cold boot)

Overview

The Dolphin 7850 terminal houses a compact image engine using Adaptus Imaging Technology™ that instantly reads all popular 1D and 2D bar codes and supports omni-directional aiming and decoding. The image engine can also capture digital images, such as signatures and pictures of damaged inventory.

Available Image Engines

Dolphin 7850 terminals may be equipped with one of the following image engines:

5100 Standard Range (5100SR)

5300 Standard Range (5300SR)

	8.3 mil Linear	10 mil PDF417	13 mil UPC	15 mil Data Matrix	15 mil QR	35 mil MaxiCode
*Working Range:	(.020cm)	(.025cm)	(.033cm)	(.038cm)	(.038cm)	(.089cm)
Near	3.5 in. (8.9cm)	3.1 in. (7.9cm)	2.1 in. (5.3cm)	2.3 in. (5.8cm)	3.1 in. (7.9cm)	2.0 in. (5.1cm)
Far	7.6 in. (19.3cm)	9 in. (22.9cm)	13.2 in. (33.5cm)	10.2 in. (25.9cm)	8.8 in. (22.4cm)	13.0 in. (33cm)

Available Laser Engines

Dolphin 7850 terminals can be equipped with one of the following laser engines:

High Performance (HP)

Code	5 mil	55 mil reflective
Working Range		
Near	2.75 in (0.07 m)	5 in (0.13 m)
Far	7 in (0.17 m)	50 in (1.27 m)

Long Range (LR)

Code	10 mil	100 mil reflective
Working Range		
Near	10 in (0.25 m)	66 in (1.67 m)
Far	24 in (0.6 m)	232 in (5.9 m)

Advanced Long Range (ALR)

Code	13 mil	100 mil reflective
Working Range		
Near	18 in (0.45 m)	102 in (2.6 m)
Far	39 in (1 m)	363 in (9.2 m)

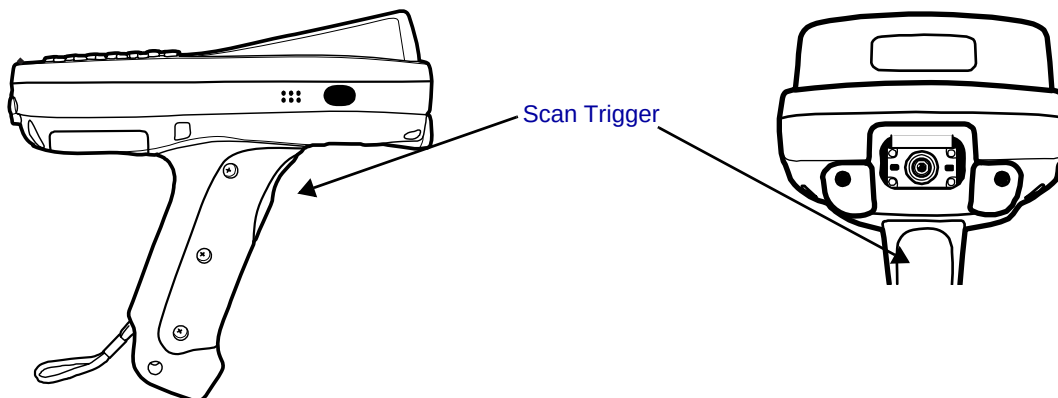
Supported Bar Code Symbolologies

The Dolphin 7850 image engines support the following bar code symbolologies:

Symbology Type	Symbology Name
1D Symbolologies	Codabar Code 3 of 9 Code 11 Code 32 Pharmaceutical (PARAF) Code 93 Code 128 EAN with Add-On EAN with Extended Coupon Code EAN-13 Interleaved 2 or 5 Matrix 2 of 5 Plessey PosiCode RSS Straight 2 of 5 IATA Straight 2 of 5 Industrial Telepen Trioptic Code UCC/EAN-128 UPC and UPC-A
2D Symbolologies	Aztec Code 16K Composite Data Matrix MaxiCode OCR PDF417 QR Code RSS
Composite Codes	Aztec Mesa Codablock F EAN-UCC RSS-14
OCR	OCR US Money Font, MICR (E 13 B) and SEMI Font OCR-A OCR-B
Postal Codes	Postnet and most international 4 state codes Australian Post British Post Canadian Post China Post Japanese Post KIX (Netherlands) Post Korea Post Planet Code

Activating the Engine

The Dolphin 7850 features a scan trigger on the front of the integrated pistol-grip handle that activates the image engine.



Using Demos

Dolphin Demos are software utilities loaded on all Dolphin terminals that demonstrate the advanced features of the terminal. There are two Demos feature the image engine: Image Demo and Scan Demo.

To access these demos, tap **Start > Demos**,

- Select **Image Demo** to verify imaging, or
- Select **Scan Demo** to verify decoding.

For more information about Demos, refer to the Dolphin Demos User's Guide, which is available for download from www.handheld.com.

LEDs

The LEDs in the center of both keyboards (for location, see [LEDs](#) on page 4-1) light when using the image engine.

Scan LED	The LED on the right lights green when you press the scan trigger in scanning applications.
Decode LED	The LED on the left lights red when a scanned bar code is successfully decoded.

Decoding

The Dolphin terminal supports two types of image decoding: full-area imaging and Advanced Linear Decoding (ALD).

Full-area Imaging

Full-area imaging means that the Dolphin terminal support omni-directional aiming, which means that a positive read can be obtained from many positions. For details, see [Omni-Directional Scanning Positions](#) on page 5-4.

ALD

ALD provides fast reading of linear (1D) and stacked linear bar codes (PDF417). For the best read, the aiming pattern should be centered horizontally across the bar code. When ALD is enabled, the reader does not read matrix or postal codes.

To Decode a Bar Code

1. Tap **Start > Demos > Scan Demo**.
2. Position the Dolphin terminal over one of the sample bar codes on page 5-4.
A range of 4-10 inches (10-25 cm) from the bar code is recommended.
3. Project the aiming pattern by pressing and holding the Scan trigger. The Scan LED lights red.

-
4. Center the aiming beam over the bar code. The aiming beam should be oriented in line with the bar code to achieve optimal decoding; [Omni-Directional Scanning Positions](#), page 5-4
 5. Release the Scan trigger.
 6. When the bar code is successfully decoded, the decode LED lights green and the terminal beeps.

Sample Bar Codes

You can use the following bar codes to verify decoding:

Sample 128



Code 128

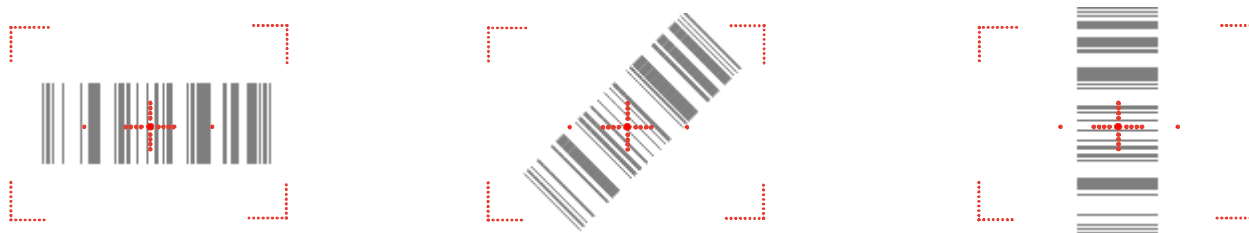
Sample PDF417



PDF417 Test Message

Omni-Directional Scanning Positions

The high-vis aiming pattern frames the bar code to provide you with the best scanning performance.



Note: To achieve the best read, the aiming beam should be centered horizontally across the bar code.

The aiming pattern is smaller when the terminal is held closer to the code and larger when the terminal is held farther from the code. Symbolologies with smaller bars or elements (mil size) should be read closer to the unit whereas larger bars or elements (mil size) should be read farther from the unit.

Laser Engines

Laser engines do **not** support omni-directional scanning. To achieve an optimal scan, center the red aiming beam across the bar code horizontally as shown.



Capturing Images

The image-capture process is an intuitive, split-second operation for experienced users. By following basic guidelines, however, new users can easily develop their own technique and, with practice, quickly learn to adapt to different application environments.

Image Preview

When the imaging process is initiated, the touch screen displays a preview of the object. This is a live video image of what the imager is currently viewing and has a slightly degraded appearance compared to the captured image. This is normal; the captured image has a higher resolution.

File Formats

The Dolphin terminal is capable of saving images in a number of industry-standard file formats such as *.bmp, *.jpg and *.png. The default file format for images is a grayscale *.jpg. To obtain the highest quality images, take grayscale images.

File Size

Digital images have a maximum image size of 640 x 480 pixels and may have up to a 256 grayscale image definition. The image quality and related file size are determined by the data compression method used by the software application used to take the image. The average size of the image file is approximately 4–8K. However, the size of the image depends on image content, the more complex the content, the larger the file size.

Taking an Image

1. Tap **Start > Demos > Image Demo**.
2. Point the Dolphin 7850 terminal at the object.
3. Press the scan trigger to activate the engine. The touch screen displays a preview of the object.
4. Adjust the terminal's position until the preview on the screen appears as you want it to appear in the image.
5. Hold the terminal still and release the Scan trigger. The touch screen flashes, and the captured image appears on the screen.
6. By default, the image is saved to the My Device folder (**Start > Programs > File Explorer > My Device**). To save the image to another location, tap **File > Save As**.

High-Vis Aiming Pattern

If your Dolphin terminal is configured with the 5300SF/SR/HD imager, you can enable the aiming pattern for imaging in the Image Demo application.

1. Tap **Start > Demos > Imaging Demo > Options menu > Aimer**.
2. The aiming pattern is now enabled for imaging.

Uploading Images

Image files can be transmitted to a host PC via

- Microsoft ActiveSync and a Dolphin communication peripheral, or
- Over your wireless radio network.

Overview

Customizable settings are available from the Start menu. Tap **Start > Settings** and the Settings screen opens displaying the Personal tab. Settings consists of three tabs: Personal, System, and Connections.

Personal Tab



System Tab



Connections Tab



Tab	Description
Personal	The Personal tab provides access to personal configuration programs. For details, see Personal Settings on page 6-2.
System	The Systems tab provides action to programs that monitor and adjust major system functions. For details, see System Settings on page 6-7.
Connections	The Connections tab provides access to most of the terminal's communication options. For details, see the Connections Tab (see page 7-6) in the Communication chapter.

Personal Settings

To access the Personal tab, go to **Start > Settings**. The screen opens displaying the Personal tab.



Icon	Description
Buttons	Programs hardware buttons to launch applications or execute commands; see Buttons on page 6-3.
Input	Customizes the SIP. For details, see Input Panel Options on page 6-4.
Lock	Password protects access to programs on the terminal.
Menus	Customizes what appears on the Start and New menus; see Menus - Modifying the Start Menu on page 6-4.
Owner Information	Stores your contact information. This information will appear on the Today screen.
Sounds & Notifications	Sets the sound volume, enables and disables sounds for specific actions, and sets sound parameters for system notifications.
Today	Customizes the look and the information that is displayed on the Today screen.

Note: Personal settings are stored in RAM memory and are replaced by system defaults after each hard reset. For more information about resets, see [Resetting the Terminal](#) on page 3-13.

Buttons

Buttons programs keyboard buttons to launch applications or execute commands. The default button assignments that appear on the Buttons window are inactive until you enable the HotKeys Power Tool.

You must enable the HotKeys Power Tool to activate the button assignments in the Buttons setting.

1. Tap **Start > Power Tools**.

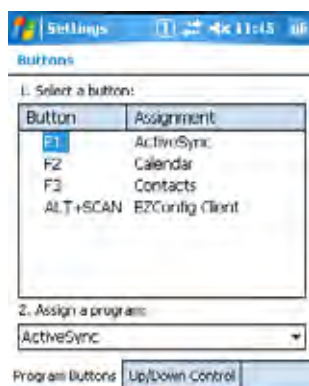


2. Tap the **HotKeys** icon **once** HotKeys. HotKeys is enabled and the button assignments in the Buttons setting are active.
3. Verify the assignment by tapping the button on the keyboard.

For more information about HotKeys, refer to the Dolphin Power Tools User's Guide, which is available for download from www.handheld.com.

Button Assignments

1. After HotKeys is enabled, tap **Start > Settings > Personal tab > Buttons**.



Note: The buttons that appear on this window are the only buttons that can be programmed via the Buttons setting. You cannot add hardware buttons to this window.

2. To change button assignment, tap on the name of the application in the **Assignment** column and select a program or command in the **Assign a program** drop down list.
3. Tap **OK** to save.

Available Applications

The **Assign a program** list contains the applications installed on the terminal. If there is a program installed that you would like to see in this list, paste a Shortcut to the program in the **\\Windows\\Start Menu\\Programs** folder.

For instructions about creating shortcuts, see [Using File Explorer](#) on page 6-5.

Additional Functions

The **Assign a program** list also contains the following commands:

Command	Description
<Input Panel>	Opens the soft input panel.
<None>	Nothing happens when the button is pressed.
<OK/Close>	Performs the same function as tapping OK on the screen.
<Scroll Down>	Scrolls down in the open application.

Command	Description
<Scroll Left>	Scrolls left in the open application.
<Scroll Right>	Scrolls right in the open application.
<Scroll Up>	Scrolls up in the open application.
<Start Menu>	Opens the Start menu.
<Today>	Opens the Today screen.

Input Panel Options

You can set input options by going to **Start > Settings > Personal tab > Input**. The following graphics are the tab windows where you can customize the SIP (soft input panel) to your preferences:

Input tab



Word Completion tab



Options tab



Menus - Modifying the Start Menu

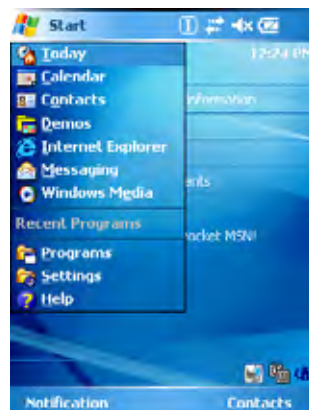
You can add existing programs you use often, such as File Explorer, to the Start menu for faster access. You are not installing the program, just enabling the user to access the program from the Start menu.

You can add a program to the Start Menu three ways: directly by using the Menus System setting, or creating and pasting shortcuts in File Explorer on the terminal or the PC (and using ActiveSync to transfer to the shortcut to the terminal).

Note: Only seven applications total are allowed on the Start menu.

Using the Menu System Setting

1. Tap **Start > Settings > Personal tab > Menus > Start Menu** tab.



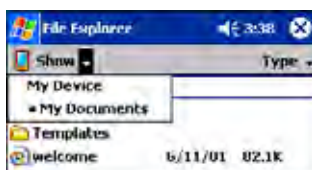
2. Tap the check box for the program you want to add and tap **OK** to save.
3. Tap the **Start** menu to verify that the program appears on it.

Using File Explorer

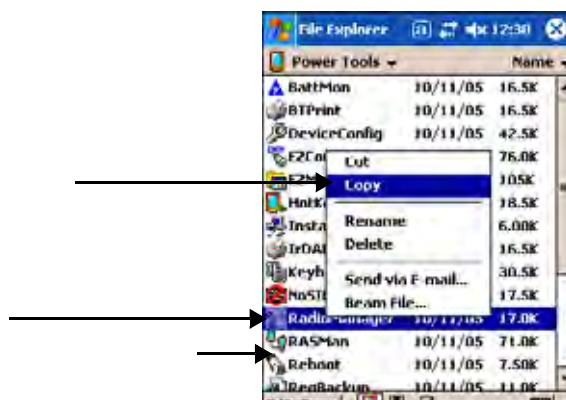
If you do not see the program listed, you can either use File Explorer to move the program or ActiveSync on the desktop computer to create a shortcut to the program and place the shortcut in the Start Menu folder.

Note: We recommend that you Copy and Paste Shortcut so that you do not alter your program configurations by accident. Using Copy and Paste Shortcut (as opposed to Cut and Paste) ensures that the program files remain where they need to be for the system to find them to perform system functions.

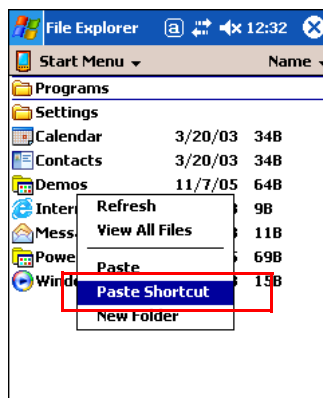
1. Tap **Start > Programs > File Explorer**, and navigate to the program.
File Explorer opens to My Documents by default; to see a list of all folders, tap the folder name and then **My Device**.



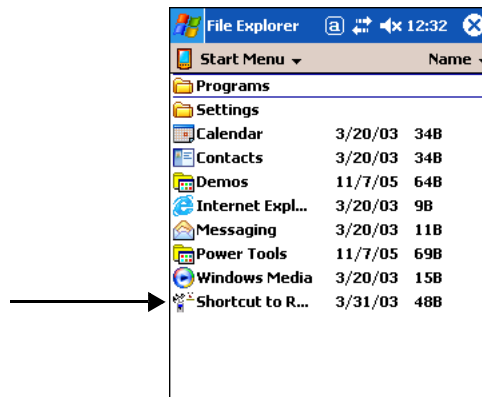
2. In File Explorer, navigate to the \Program Files folder.
3. Tap and hold on a program, then select **Copy** on the pop-up menu.



4. Navigate to the Windows folder and open the Start Menu (My Device > Windows > Start Menu), tap and hold a blank area of the window, and tap **Paste Shortcut** on the pop-up menu.



-
5. The shortcut is now in the folder.



6. Tap the **Start** menu to verify that the program now appears on it.

Using Windows Explorer

Here, you are performing the same basic process as on the terminal, except that you are using the Explore utility in ActiveSync (Windows Explorer) to copy and paste the shortcut from the PC to the terminal. For more details using Explore in ActiveSync, [Exploring the Terminal from the PC](#).

1. Using a Dolphin peripheral, connect the terminal to the PC via ActiveSync.
2. On the PC, when ActiveSync opens after connecting, tap **Explore**. Windows Explorer opens to the files on the terminal.
3. Navigate to the program.
4. Right-click on the program and select **Create Shortcut**.
5. Select the shortcut, right-click, and select **Cut**.
6. Navigate to the **Start Menu** folder (Windows > Start Menu).
7. Right-click on an empty area and select **Paste Shortcut**.
8. On the terminal, tap the **Start** menu and verify that program appears.

System Settings

The System tab enables you to verify and sometimes alter system parameters. To access the System tab, go to **Start > Settings > System** tab.



About

The About system setting displays specific information about what is loaded on the terminal on three tab windows:

Tab	Description
Version Tab	Displays the information about the software, operating system, and processor of the terminal. The processor for the Dolphin 7850 is an Intel XScale PXA 270 312MHz processor.
Device ID Tab	Displays the information the terminal uses to identify itself to other devices. It is important to know this information to identify the terminal when connecting to the network. Device name: Displays the system's default name. This is the name used by ActiveSync. Description: Displays the description of the device ID.
Copyrights Tab	Displays important copyright information.

Backlight

The backlight for the color display is user-defined.

Tap **Start > Settings > System** tab > **Backlight**.



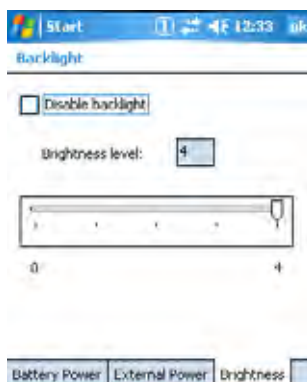
There are two tabs: **Battery** and **External**; the options on each tab are the same.

The Battery tab determines display backlight settings when the terminal is running on battery power.

The External tab determines display backlight settings when the terminal is powered by an external source, such as a Hand Held Products cable.

Brightness Tab

The Brightness tab determines the brightness of the display backlight when it's on.

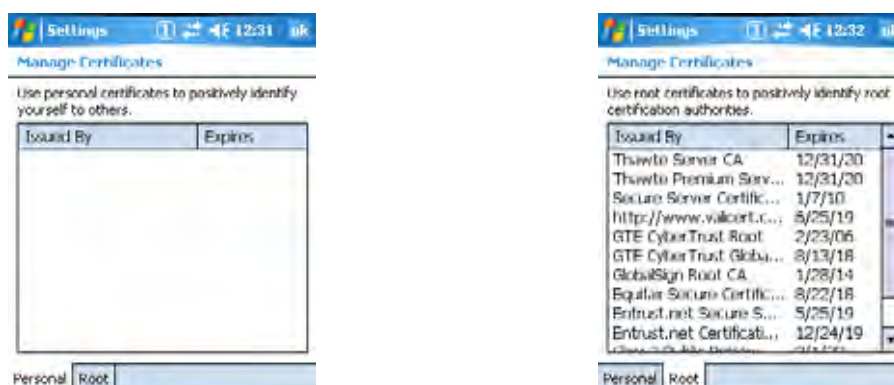


To disable the backlight, check **Disable backlight**.

Tap **OK** to save all changes.

Certificates

Certificates shows you which network certificates the operating system acknowledges.

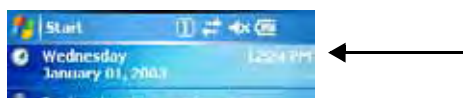


There are personal and root certificates; each has its own tab.

It is important to verify that the operating system acknowledges your certificate. If the certificate does not appear on one of these tabs, the operating system does not see it, and it will not function properly during the verification process.

Clock & Alarms

Clock & Alarms sets the system clock. Appointments, scheduled events, and any function on a schedule runs off this setting. You need to set the time and date after each hard reset. You can also access this setting by tapping the date on the Today screen.



GPS Settings

GPS Settings is a Microsoft GPS tool.

Memory

Dolphin terminals have two types of memory: volatile and non-volatile. Data stored in volatile memory does not persist through cold boots (see [Hard Reset \(Cold Boot\)](#) on page 3-13) whereas data stored in non-volatile memory does persist through cold boots. Each type of memory has its own options.

Volatile

Data stored in volatile memory does not persist through cold boots. The Dolphin 7850 terminal has 64MB of volatile memory by default. Volatile memory is used for running and storing programs as well as storing program data and is also known as RAM memory.

Non-Volatile

Data stored in non-volatile Flash memory does persist through cold boots. The Dolphin 7850 terminal can have 64MB or 128MB of non-volatile memory.

IPSM

Short for Internal Persistent Storage Manager, IPSM is the on-board Flash memory. Because this memory is non-volatile, data and programs stored in IPSM are not affected when power is removed or a cold boot launched. For this reason, default programs and files for Dolphin terminals such as Autoinstall are stored in IPSM.

Secure Digital (SD) Card Hand Held Products offers 64MB, 128MB, and 256MB SD cards that can be installed at the factory. The SD memory interface is not user-accessible or field-replaceable.

Use the Memory system setting to check memory usage after you receive warning messages about memory. There are three tabs: Main, Storage Card, and Running Programs.

Main Tab

This tab displays current capacity and usage of the 64MB or 128MB of on-board, volatile memory.



The screenshot shows the 'Memory' settings screen. At the top, there's a status bar with 'Settings', signal strength, and battery level. Below it, the title 'Memory' is displayed. The screen is divided into two columns: 'Storage' and 'Program'. Each column has three rows: 'Total', 'In use', and 'Free'. The 'Storage' column shows: Total: 20.40 MB, In use: 13.02 MB, Free: 7.38 MB. The 'Program' column shows: Total: 116.43 MB, In use: 15.13 MB, Free: 101.30 MB. At the bottom, there are three tabs: 'Main', 'Storage Card', and 'Running Programs'. The 'Main' tab is currently selected.

Storage	Program
Total: 20.40 MB	Total: 116.43 MB
In use: 13.02 MB	In use: 15.13 MB
Free: 7.38 MB	Free: 101.30 MB

Field	Description
Columns	Storage: The part of RAM memory used for storing programs and program data. Program: The part of RAM memory used to run programs.
Total	Displays the current MB of memory allocated for Storage and Program use.
In use	Displays the total MB of that allocated memory being used in Storage and Program memory functions.
Free	Displays the total MB of memory available for Storage and Programs use.

Storage Card Tab

This tab displays the current capacity and usage statistics of the selected memory type: IPSM or Storage Card. Select the memory type from the drop-down list. **IPSM** is selected by default.



Field	Description
Total storage card...	The total MB of memory capacity of the selected memory.
In use	The MB currently being used.
Free	The MB that is still available for use.
Drop-down list	IPSM—When IPSM is selected in the drop-down list, the Storage Card tab displays the IPSM memory capacity and usage statistics. Storage Card—If a storage card is installed in the terminal, a Storage Card entry appears in the drop-down list. Select it to see the current capacity and usage statistics of the installed storage card.



Running Programs Tab



This tab displays the running software programs using storage memory. Check this tab when you are receiving out of memory errors or when the mobile computer is running slowly.

Select a program in the list and tap **Stop** to stop it from running (and therefore from using memory). Tap **Stop All** to automatically stop all running programs.

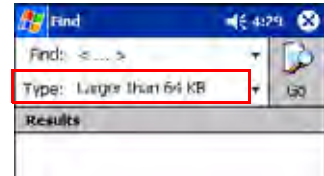


Anytime you stop a running program, it frees up volatile memory. Be advised that, when you stop a program here, any unsaved data in that program is lost. To free up memory without risking data loss, return to the running program, save your data, and close the application.

Find Link

Underneath the three Memory tabs is a link to the **Find** window that searches for large files using storage memory. Clicking this link opens the Find screen with **Larger than 64KB** already selected in the **Type** field.

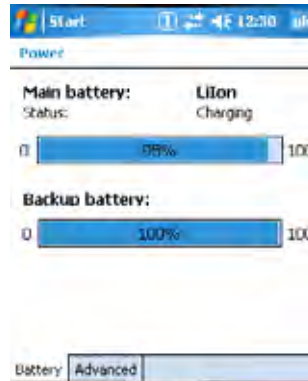
Enter the search criteria in the **Find** field and tap **Go** to perform the search.



Power

Battery Tab

Displays battery charging information.



For more information about the terminal's batteries, see [Battery Power](#) on page 3-9.

Advanced Tab

Determines the amount of time that elapses before the terminal automatically goes into suspend mode; see [Suspend Mode](#) on page 3-13.

You have the option of selecting time periods for both battery and external power.



Field	Description
On battery power	Select the number of minutes of inactivity you want to pass before the terminal goes into suspend mode when running on battery power.
On external power	Select the number of minutes of inactivity you want to pass before the terminal goes into suspend mode when running on external power.

Regional Settings

Regional Settings enables you to customize the appearance and formatting to your geographic region. Specifically, you can customize numbers (i.e., number of decimal places allowed), currency (i.e., using the \$ or € symbol), time, and date. These specifications apply to all screens, including the Today screen. The Region tab displays an overview of the region selected in the drop-down list at the top.

The terminal is loaded with a number of pre-programmed regional settings. Select one from the list. The results appear on the screen.



To see specific settings or change a specific setting, tap on one of the tabs, make the change and tap **OK** to save it. You need to show reboot the terminal for the changes take effect.

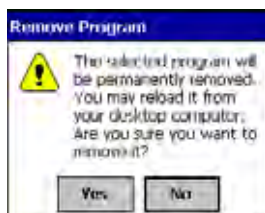
Remove Programs

The Remove Programs settings enables you to remove programs installed on the terminal. Use this setting to troubleshoot when you receive messages that the device is out of memory. The programs removed in the Remove Programs setting are removed from volatile memory.

1. Tap **Remove Programs**. In the list, select the program you want to remove.



2. Tap **Remove**. The following message appears:



3. Tap **Yes**. Wait while the program is removed.
4. Verify that the program no longer appears in the list and the total storage memory adjusts.

Total storage memory available—The available memory adjusts automatically when a program is removed; see [Memory](#) on page 6-9.

Screen

Note: By default, dynamic screen rotation (i.e., the ability to switch between landscape and portrait orientation) is disabled on Dolphin 7850 terminals.

Alignment Tab

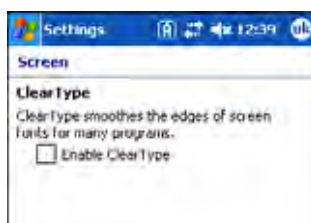


Tap **Align Screen** to re-align the screen. Remember, you first align the screen at bootup. You would need to re-align the screen again if tapping buttons or icons with the stylus no longer seems to work appropriately.

ClearType Tab

Dolphin terminals support ClearType font rendering. ClearType is a Microsoft technology that dramatically increases the readability of text on LCD displays.

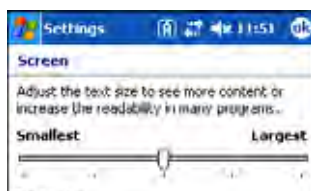
To enable ClearType font rendering, select **Enable ClearType** and tap **OK**.



For more information about ClearType font rendering, visit: www.microsoft.com/typography/cleartype/what.htm?fname=%20&size=

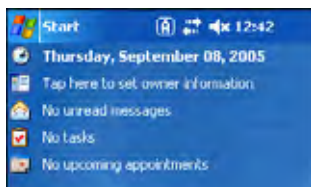
Text Size Tab

Adjusts font scaling within certain views of the Today screen, Contacts, Calendar, Messaging, and Tasks. This means that you can increase or decrease the point size of the font on application windows.

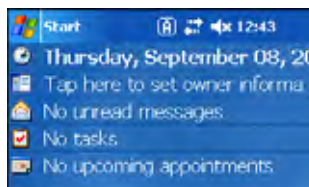


This is the default font size setting. To change the font size, move the slider toward **Smallest** or **Largest**. The Example text changes to reflect the font change. Tap **OK** to save the new font size setting.

Default Font Size



Largest Font Size



Communication Options

Dolphin terminals offer several communication options including Microsoft ActiveSync, infrared, and wireless radios.

Mechanical Connector

The mechanical connector on the bottom panel (for the exact location, see [Mechanical Connector](#) on page 3-8) connects the terminal to a series of Dolphin peripherals, which connect to a host PC via USB (1.1 or higher). When the terminal is connected to a host PC in this way, you can use ActiveSync to communicate between the host and the terminal.

For more information about communicating with ActiveSync, see [Using ActiveSync](#) on page 7-3.

IrDA Port

The IrDA port enables the Dolphin 7850 to transmit data via pulses of infrared light to and from other IrDA-compliant devices, such as printers, PCs, and even other Dolphin terminals.

For more information about communicating via the IrDA port, see [Using Infrared](#) on page 7-20.

Wireless Radios

Dolphin 7850 terminals can be equipped with an 802.11b radio. When the terminal's radios are enabled, you can connect the terminal to a wireless network for communication.

For more information about enabling the radios, see [Radio Manager](#) on page 7-7.

Software Communication Programs

Dolphin terminals are shipped with the following communication software programs installed.

Microsoft ActiveSync v4.1 or Higher

Microsoft ActiveSync is a tool that enables mobile computing devices to exchange and synchronize application data with a desktop computer. For more information, see [Using ActiveSync](#) on page 7-3.

Remote Access Services (RAS)

RAS is a feature built into Windows NT that enables users to log into an NT-based LAN using a modem, X.25 connection or WAN link. RAS is fully supported and allows the use of Point-to-Point Protocol (PPP) or Serial Line IP (SLIP) connections for network connectivity.

To establish a RAS connection, enable the terminal's radio(s) in the [Radio Manager](#) (see page 7-7), set the terminal up on a wireless network, then activate the RASMan Power Tool by tapping **Start > Power Tools > RASMan**.

For more information about Power Tools, refer to the Dolphin Power Tools User's Guide, which is available for download from www.handheld.com.

Default Com Port Assignments

The Dolphin terminal ships with the com ports assigned as follows:

Com Port	Assignment
1	Serial port; this is the 17-pin mechanical connector on the bottom panel. See Mechanical Connector on page 3-8.
2	Bluetooth Module If there is no Bluetooth hardware installed on the terminal, this com port is unassigned.
3	Raw Infrared
4	Unassigned
5	USB virtual serial port
6	IrDA, if IrDA is enabled. If IrDA is disabled, this com port becomes available. See Verify That the IrDA Port is Enabled on page 7-20.
7, 8, & 9	Unassigned These are virtual com ports that are available for selection only when connecting to devices that use virtual com ports, such as Bluetooth.

Installing Additional Software

Dolphin terminals ship with the operating system, radio drivers, and custom Hand Held Products software loaded onto the device. These are the default programs that install when your terminal first boots up. You can install additional software programs to the terminal provided that the following parameters are met:

- the software program was created for a Windows Mobile device.
- The terminal has enough memory to store and run the program.
- The program has an *.exe, *.cab, or *.dll extension.

The most popular place to find software on the Windows Mobile website: www.microsoft.com/windowsmobile/products/pocketpc/



When selecting programs, verify that the program and version of the program are designed for the Windows Mobile 5.0 and the terminal's processor. You can verify your processor by tapping Start > Settings > System tab > About > Version tab. Make a note of the information in the Processor field.

To install additional software, you can use the communication options described in this chapter.

See,

- [Adding Programs via ActiveSync](#), page 7-4.
- [Adding Programs via the Internet](#), page 7-9.
- [Adding Programs via Infrared](#), page 7-21

Using ActiveSync

ActiveSync communication happens through the mechanical connector on the bottom panel (see [Mechanical Connector](#) on page 3-8) when the terminal is connected to a Dolphin communication peripheral such as the Dolphin HomeBase or a Dolphin Charge/Communication cable.

Hardware Requirements

- Dolphin HomeBase or Dolphin communication cable: USB or RS-232
- Power Adapter Cable from Hand Held Products

Software Requirements

To synchronize, ActiveSync 4.1 or higher must be installed and configured for the appropriate communication type on the host PC and the Dolphin terminal. Dolphin terminals ship with ActiveSync already installed. Therefore, if ActiveSync is already installed on the host PC, you just need to connect the Dolphin terminal to the host PC (via Dolphin peripheral) to initiate communication.

If ActiveSync 4.1 or higher is not installed on the host PC, install it from the Microsoft Companion CD that came with the Dolphin terminal. Insert the CD into the CD-ROM drive of the host PC and click the **yellow arrow**, then **Start Here**, and follow the directions on your screen. You can also download the most current version of ActiveSync from www.microsoft.com and install.

The host workstation must have Windows® 98 Second Edition*, Windows® Me, Windows® 2000, or Windows® XP installed.

*Note: The HomeBase does not support Windows NT® when using a USB connection because Windows NT does not support USB. *Windows® 98 Second Edition provides full USB support.*

Setting Up the Host PC

To sync successfully, ActiveSync must be configured for same communication type on the host PC and the Dolphin terminal. ActiveSync must be setup on your desktop computer *before* you initiate synchronization from the terminal for the first time.

Verify that ActiveSync on the host PC has selected the appropriate communication type by opening ActiveSync and clicking **File > Connection Settings**.

For USB communication, check **Allow USB connections**.



For RS-232 communication, connect to **COM1**.



Note: You can have both USB and RS-232 selected in the software without affecting processing. However, your hardware setup should use only RS-232 or USB, not both.

Setting Up the Terminal



When communicating via ActiveSync, your terminal must be connected to the host PC with a communication peripheral sold/manufactured by Hand Held Products, such as the Dolphin HomeBase or Dolphin Charge/Communication cable. Use of any peripheral not sold/manufactured by Hand Held Products may damage your terminal and will void the warranty.

You need to connect the Dolphin peripheral to the host PC, then connect the Dolphin terminal to the peripheral. ActiveSync should attempt to connect automatically and self-configure to RS-232 or USB.

Verify the connection setting on the Dolphin terminal by tapping **Start > Programs > ActiveSync > Menu > Connections**.

USB The default PC synchronization value for USB communication is **'USB Connection.**

RS-232 The default PC synchronization value for RS-232 communication **'115200 Default.**

Dolphin terminals default to USB communication.

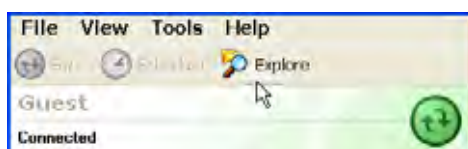
Synchronizing with the Host PC

After setup, synchronization begins automatically whenever the terminal's mechanical connector connects to a Dolphin peripheral that is connected to a host PC with ActiveSync installed.

Note: If you have a wireless LAN card, you can also synchronize remotely.

Exploring the Terminal from the PC

When the terminal and desktop computer are connected, open the main ActiveSync window (on the desktop), and click **Explore**.



The Mobile Device folder opens in Windows Explorer.



The Dolphin terminal is now treated as a mass storage device, and transferring files is as simple as dragging and dropping or copying and pasting as you would for moving files between folders on your hard drive.

Adding Programs via ActiveSync



When selecting programs, verify that the program and version of the program are designed for Windows Mobile 5.0 and your processor. You can verify your processor by tapping Start > Settings > System tab > About > Version tab. Make a note of the information in the Processor field.

Generally, software for Windows Mobile devices must be installed to the host PC first, then transferred to the Dolphin terminal.

1. Download the program to the PC from either the Internet or the install CD. You may see a single *.exe or setup.exe file, a *.cab file, or *.dll. (There may also be several versions of files for different device types and processors.)
2. Read any installation instructions, Read Me files, or documentation that comes with the program. Many programs provide special installation instructions.
3. Connect the terminal to the PC via Hand Held Products communication peripheral.

If the File is an Installer

An installer program is one that installs to the PC and the terminal simultaneously; one process installs to both devices.

1. On the PC, double-click the *.exe or *.setup.exe file. The installation wizard begins.
2. Follow the directions on the PC screen. The installation process includes transferring the software to the terminal via ActiveSync.

If the File is Not an Installer

Some programs cannot be installed on PCs because they are designed exclusively for Windows Mobile devices. In these cases, the appropriate files must be stored on the host PC and transferred to the terminal via ActiveSync Explore.

Note: You know that the program is not an installer because an error message stating that the program is valid but designed for a different type of computer appears when you try to install the program on the PC.

1. If you cannot find any installation instructions for the program in the Read Me file or documentation, open **ActiveSync** and click **Explore**.
2. Navigate to the **My Pocket PC** folder and copy the program file or files to the **Program Files** folder on the terminal. If you want the program to be part of the Autoinstall that occurs after every hard reset, place the program file in the **Autoinstall** folder (**\\IPSM\\AutoInstall**).
3. On the terminal, tap **Start > Programs > File Explorer** and navigate to the folder where the program is located.
4. Tap on the program file to install it.
If you copied the file to the **Autoinstall** folder, you can choose to install the program by performing a hard reset. The program installs as part of initialization.
5. After installation is complete, access the program by tapping **Start > Programs** and the program appears on the Programs screen. Tap the icon to open the program.

For Additional Help

You can find more information on the host PC by clicking **Help > Microsoft ActiveSync Help**.

You can find more information on the terminal by tapping **Start > Programs > Help > ActiveSync**.

For more information, go to the Windows Mobile software website at: www.microsoft.com/windowsmobile/products/pocketpc/

Connections Tab

The Connections Tab of Windows Mobile Settings provides access to the configuration settings for many of the terminal's communication options.

Tap **Start > Settings > Connections** tab.



Note: The programs that appear on the Connections tab depend on the terminal's radio configuration.

Program	Icon	Description
Beam	 Beam	Controls infrared communication. See Using Infrared on page 7-20.
Connections	 Connections	Accesses Microsoft's connection manager to connect the terminal to an ISP via modem. See Connections Manager on page 7-10.
Network Cards	 Network Cards	Opens Microsoft's Network Adapters tool. See Network Cards on page 7-19.
Radio Manager	 Radio Manager	Enables and disables installed radio drivers. See Radio Manager on page 7-7.
USB to PC	 USB to PC	Enables advanced USB connection features. Do NOT disable!

Connecting the Terminal to a Wireless Network

Establishing the terminal on a wireless network depends heavily on your network infrastructure. You will need specific information from your network administrator.

Whatever your network specifics, some general steps apply:

1. The on-board radio drivers must be enabled for the terminal to transmit a signal. Verify the radio's status in the [Radio Manager](#) (see page 7-7).
2. Enter the appropriate configuration settings for each radio installed. Each radio has its own configuration program.
 - For details about 802.11b configuration, see [Wireless LAN Communication with 802.11b](#) on page 8-1.

Connecting the Terminal to an ISP

This method uses an external modem rather than a wireless radio. For instructions, see [Establishing a Network Connection to an ISP via Modem](#) on page 7-11.

Radio Manager

The Radio Manager enables and disables the radio drivers installed in the terminal. When a radio is enabled, the radio is transmitting a signal. When disabled, the radio is not transmitting a signal.

At least one radio **must** be enabled before you can set the terminal up on a wireless network. After the radio is enabled, you can enter the appropriate network parameters for your network.

Dolphin 7850 terminals can be configured with and 802.11b radio; see [Wireless LAN Communication with 802.11b](#) on page 8-1.

Radio Driver Installation

For a radio to show up in the Radio Manager, both the hardware module and the software driver for each radio must be installed in the terminal. The radio will appear in the Radio Manager if the module is present but cannot be enabled if the associated driver is not installed as well.

Radio drivers (.cab files) are stored in the Autoinstall folder and install during the Autoinstall process after each hard reset (see page 3-13). Only the appropriate drivers for the terminal's radio configuration install. For more information about Autoinstall, refer to the Dolphin Power Tools User's Guide, which is available for download at www.handheld.com.

All radios and radio drivers are co-located inside the terminal.

Enabling Radios

The terminal enables the 802.11b radio after each hard reset by default.

Even though certain radios are enabled by default after each hard reset, you should verify the status of the radio before attempting to establish or change network connection settings. You may have entered all the appropriate network information, but, if the radio is disabled, the terminal doesn't connect.

1. Tap **Start > Settings > Connections tab > Radio Manager**.
The Radio Manager appears identifying that radios and radio combinations that can be enabled.



-
2. Select the radio or radio combination in the list and tap **Apply**. The Radio Manager attempts to enable the radio.
 3. When the radio is enabled, the **Status** field reads "Success."

Note: If an error occurs during a radio mode change, an error message appears in the Status field and the change is abandoned; see [Radio Manager Window](#) on page 7-8.

Radio Manager Window

Field	Description
Radio Modes	Displays the radio hardware modules currently installed on the terminal.
Status Field	Provides feedback on the state of the radio. The Status field reads "Ready" when the selected radio is enabled and the Radio Manager is ready to receive a command. Otherwise, the Status field displays the following messages when enabling a radio: • Success=The radio or radio combination has been successfully enabled. • 802.11b Driver Timeout • 802.11b Driver Refused Mode Change Request • 802.11b Driver Not Installed

To Disable a Radio

To power down all radios, select **None** and tap **Apply**. All radios are disabled.

Adding Programs via the Internet

When you have established a network connection (whether via modem or wireless radio), you can access the Internet and download additional software programs.



When selecting programs, verify that the program and version of the program are designed for the Windows Mobile 5.0 and the terminal's processor.

1. Verify the terminal's processor by tapping **Start > Settings > System** tab > **About > Version** tab. Make a note of the information in the **Processor** field.
2. Open Pocket Internet Explorer and navigate to the program's location. You may see a single *.exe or setup.exe file, or several versions of files for different device types and processors.
3. Select the program version that matches your Dolphin terminal and processor.
4. Read any installation instructions, Read Me files, or documentation that comes with the program. Many programs provide special installation instructions.
5. Download the program to the terminal straight from the Internet.
You would normally store the program in the **\Program Files** folder unless another location is required by the program.
6. On the terminal, tap the installer file, such as an *.exe file.
7. The installation wizard for the program begins.
8. Follow the directions on the screen to complete installation.

Connections Manager

Microsoft's connection manager sets up various network connections to Internet Service Providers (ISPs) via external modem.

Note: If you are using one of the on-board wireless radios to connect to a network, you do not need to enter network parameters in the connections manager. The Dolphin terminal uses the radio's settings to connect to the network.

To open the connections manager, tap **Start > Settings > Connections tab > Connections** icon . The connection manager opens displaying the Tasks tab.



The connections manager consists of two tabs: Tasks and Advanced.

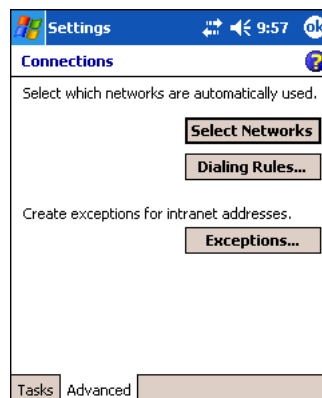
Task Tab

The Task tab enables you to initially configure, then manage network settings when using a modem. To establish a connection, tap one of the connection types in the **My Work Network** section.

To modify an existing connection, tap **Manage Existing Connections** (which appears after at least one network connection has been established), and select a connection in the list.

Advanced Tab

The Advanced tab enables you to select the default network, dialing rules, and IP address exceptions for modem connections. See [Establishing Dialing Rules](#) on page 7-13.



Server-Assigned IP Addresses

Please note that all server-assigned IP addresses use Dynamic Host Configuration Protocol (DHCP).

Zero-Config Wi-Fi

Zero-config Wi-Fi feature of Windows Mobile is **disabled** on Dolphin terminals.

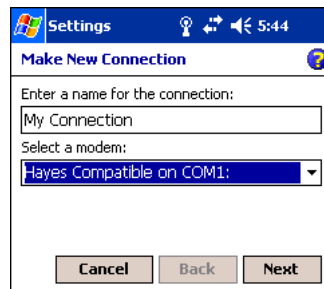
Establishing a Network Connection to an ISP via Modem

1. Obtain the following information from your ISP:

- ISP dial-up access telephone number
- Username
- Password
- TCP/IP settings

2. Tap **Start > Settings > Connections** tab > **Connections** icon  **Connections**.

3. Tap **Add a new modem connection**. The Make New Connection screen appears.

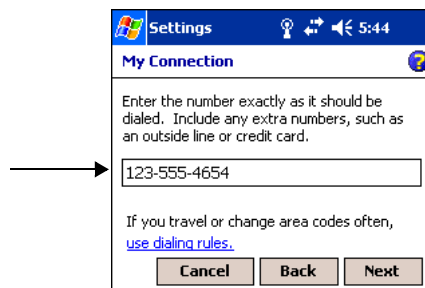


4. **Enter a name for the connection**; "My Connection" is the default.

5. In the **Select a modem** list, select the external modem by selecting **Hayes Compatible on COM1**.

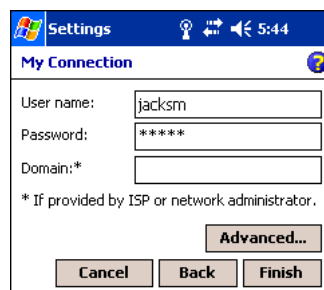
6. Tap **Next**. The My Connection screen appears.

7. Enter the number that should be dialed when connecting to your ISP. Include any special digits such as "*" or "#" (see [Establishing Dialing Rules](#) on page 7-13.).



8. Tap **Next**.

9. Enter your **User name** and **Password**.



10. Tap **Finish** to complete establishing the connection.

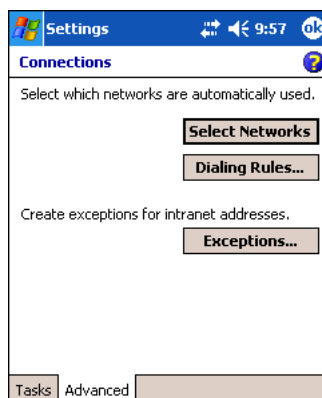
Advanced Settings

The Advanced tab can be accessed by

Tapping **Start > Settings > Connections** tab > **Connections** icon > **Advanced** tab.

OR

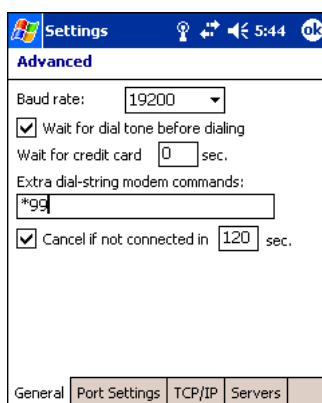
Opening an existing connection and tapping the **Advanced** button on the My Connection screen of an existing connection.



Note: You should not need to change Advanced settings because most ISPs now use DHCP addresses.

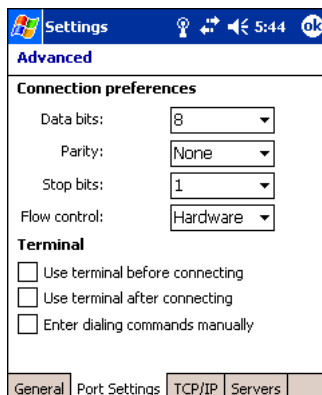
General Tab

Changes the connection speed. Wait for dial tone, dial, then wait for credit card, add dial-string modem commands, or cancel call after a set number of seconds.



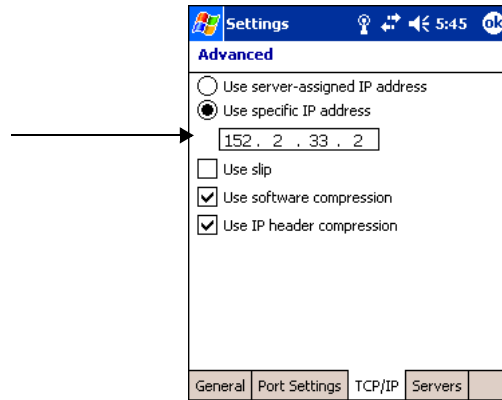
Port Settings Tab

The options on this tab should be left alone unless indicated otherwise by your ISP.



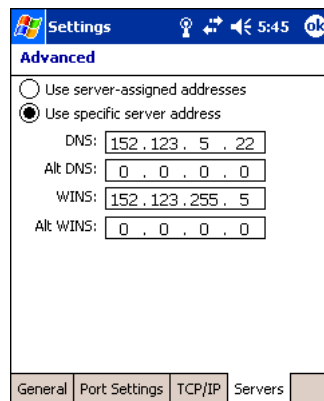
TCP/IP Tab

If your ISP does not use a dynamically-assigned address, enter specific IP information into the TCP/IP tab.



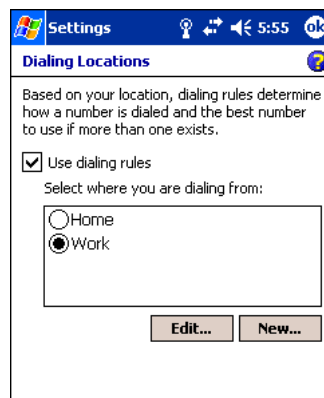
Servers Tab

Finally, if your ISP requires special DNS or WINS information, enter it into the Servers tab.



Establishing Dialing Rules

1. Tap **Start** > **System** > **Connections** tab > **Connections** icon > **Advanced** tab (see page 7-10).
2. Tap **Select Location**.

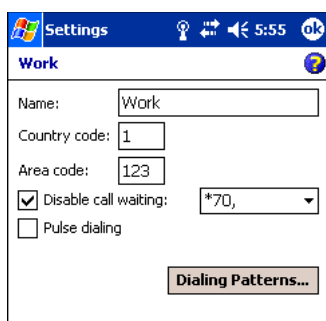


3. Select **Use dialing rules**. By default two dialing rules profiles exist: Home and Work. (You can define your own dialing profile by tapping **New**.)

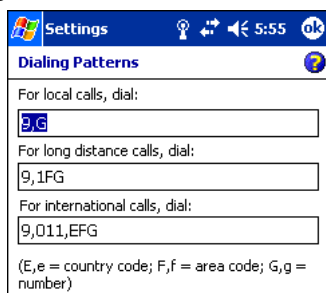
4. Tap **Edit** to configure either profile. A warning appears that your existing modem connections must include the correct country and region area code settings.



5. Tap **OK** to confirm. Enter the appropriate information on the next screen.



6. Tap **Dialing Patterns** to change how dialing occurs.



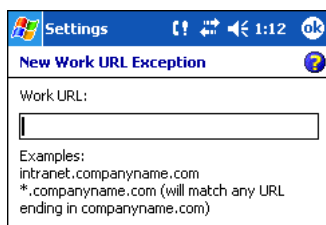
7. Following the format of "e" represents country code, "f" represents area code, and "g" represents the number, enter how local, long distance, and international calls should be dialed. Tap **OK** to save your changes.

Establishing Exceptions for Work URLs

Some companies use periods in their intranet URLs (for example, intranet.companyname.com). If you attempt to connect to one of these URLs, Pocket Internet Explorer will search for the website on the Internet rather than the company's intranet.

To connect to such intranet URLs, they need to be entered as Work URL exceptions in the connections manager.

1. Go to **Start > Settings > Connections** tab > **Connections** icon > **Advanced** tab (see page 7-10).
2. Tap **Select Networks > Exceptions**.



3. Enter the **Work URL** and tap **OK**.

Connecting

1. On the Connections tab, tap **Manage existing connections**.



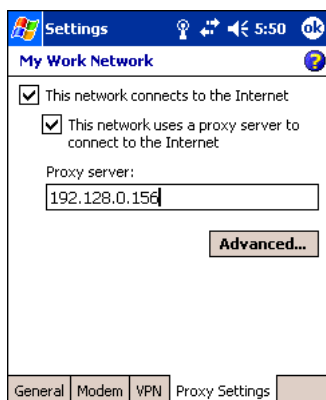
2. Tap and hold on the applicable dial-up settings and select **Connect**. (You can also delete the connection by selecting Delete.)
3. Your modem attempts to connect.

Note: You would use this method more to test your connection than to use it. The Dolphin terminal attempts to connect using the connection selected in the list when you access Pocket Internet Explorer or your Inbox.

Proxy Server Connections

If you are connected to your ISP or private network during synchronization, the terminal should download the proper proxy settings during synchronization with the PC. If these settings are not on your PC or need to be changed, ask your ISP or network administrator for the proxy server name, server type, port, type of Socks protocol used, and your user name and password.

1. Go to **Start > Settings > Connections** tab > **Connections** icon.
2. Under the My Work Network heading, tap **Set up my proxy server**.



3. Select **This network connects to the Internet** and **This network uses a proxy server...**
4. In the **Proxy server** field, enter the proxy server name.

- Tap **Advanced** for advanced settings. This information can be provided only by your network administrator.

Settings

My Work Network

Server Port

HTTP 192.7.125.9 80

WAP 9201

Secure WAP 9203

Socks 192.7.125.9 1080

Type: ☒ Socks 4 ☐ Socks 5

Socks 5 ID...

5. Tap **OK** to confirm.

*Note: To change existing settings, under My Work Network, tap **Manage existing connections** and tap the **Proxy** tab.*

VPN Work Connections

A VPN connection helps you securely connect to servers, such as a corporate network, via the Internet. Ask your network administrator for your user name, password, domain name, TCP/IP settings, and host name or IP address of the VPN server.

1. Tap **Start > Settings > Connections** tab > **Connections**.
2. Under the My Work Network heading, tap **Add a new VPN server connection**.

Settings

Make New Connection

Name: My VPN

Host name/ IP: corp.software.corp

VPN type: ☒ IPSec/L2TP ☐ PPTP

Cancel Back Next

3. Enter the requested information including VPN type and tap **Next**.

Settings

My VPN

Authenticate IPSec/L2TP connections using:

☒ A certificate on this device

☐ A pre-shared key

Cancel Back Next

4. Indicate whether a pre-installed certificate should be used or rather a pre-shared key and tap **Next**.

Settings

My VPN

User name: jacksm

Password: *****

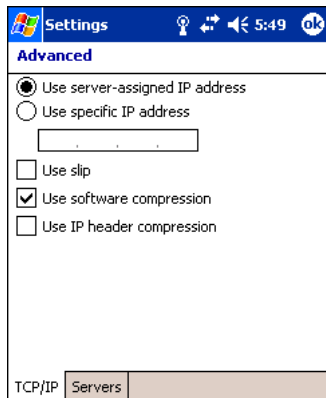
Domain: *

* If provided by ISP or network administrator.

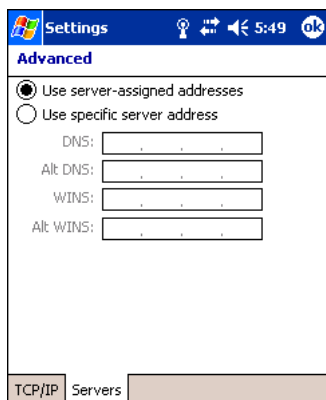
Advanced...

Cancel Back Finish

5. Enter your login details. If finished, tap **Finish** to complete VPN setup.
6. Otherwise, tap **Advanced** to access more options.
 - Enter **TCP/IP** settings in the TCP/IP tab; server-assigned IP addresses use DHCP.



- Enter Server DNS/WINS information in the **Servers** tab.



7. Tap **OK** to confirm.

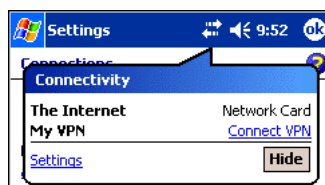
Connecting to a VPN Server

1. Tap **Start** > **Settings** > **Connections** tab > **Connections** icon > **Edit my VPN servers**.



2. Tap and hold on the server, then select **Connect** on the popup menu.

3. Your VPN Server is accessed. When connected, tapping on the  icon displays the following bubble:



Managing Existing Connections

1. Tap **Start** > **Settings** > **Connections** tab > **Connections** icon > **Manage existing connections**.
(This option appears only after you have established at least one connection in the connections manager.)



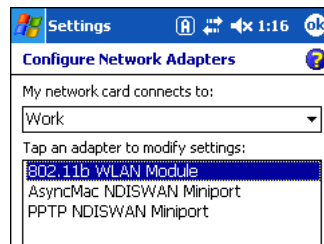
2. Select the connection in the list and tap the **Edit** button.
3. You will be taken through that same series of screens you used to set up the connection.
See [Establishing a Network Connection to an ISP via Modem](#) on page 7-11.
4. Make the necessary changes and keep tapping **Next** to move through the screens until you are finished making changes.
5. Tap **Finish** on the final screen to save the changes.

Network Cards

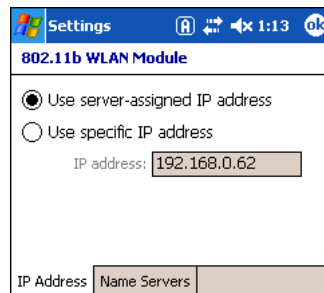


The Connections tab (see [Connections Tab](#) on page 7-6) contains a Network Cards icon that displays the network cards installed in the terminal.

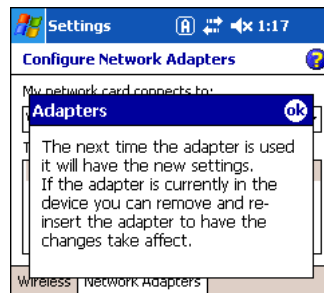
1. Tap **Start > Settings > Connections > Network Cards**



2. Tap on an adapter in the list to review its settings. (Server-assigned IP addresses use DHCP.)



3. If you make a change on one of these tabs, tap **OK** to confirm the changes. The following message appears:



4. You must perform a soft reset to update the registry; see [Soft Reset \(Warm Boot\)](#) on page 3-13.. During the soft reset, the new registry entries are created and can be read by the applications that need them.

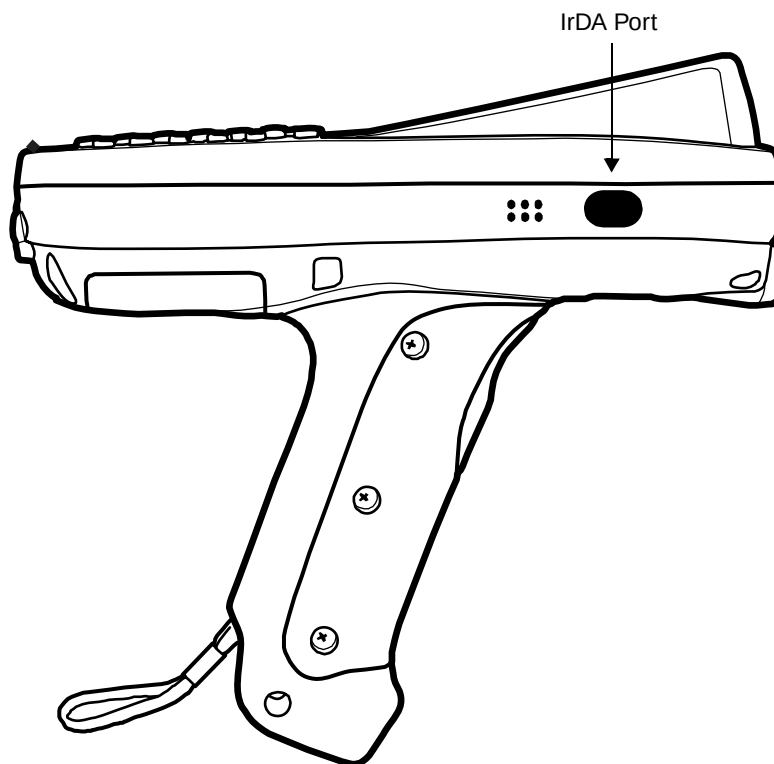


Do NOT perform a [Hard Reset \(Cold Boot\)](#) (see page 3-13) after modifying an adapter here. Hard resets return the terminal to factory defaults, which erases network adapter modifications made here.

Using Infrared

The IrDA port sends and receives data between the terminal and other devices equipped with infrared. The maximum data transfer speed is 115 Kbps.

IrDA Port Location-



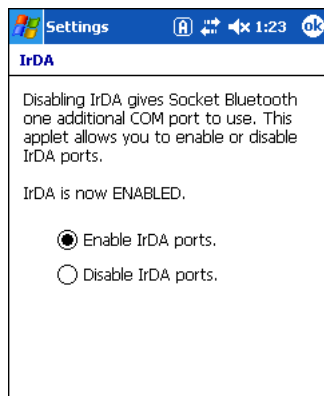
~~Verify That the IrDA Port is Enabled~~

~~The IrDA port must be enabled to transmit data. By default, the IrDA port is assigned to COM port 6 and is enabled.~~

~~When a Bluetooth radio is installed, however, you have the option of disabling the IrDA port via an IrDA icon that appears on the [Connections Tab](#) (see page 7-6). Disabling the IrDA port frees up com port 6 for a Bluetooth device; see [Default Com Port Assignments](#) on page 7-2.~~

~~**Note:** If you do not have a Bluetooth radio installed, your IrDA port is always enabled.~~

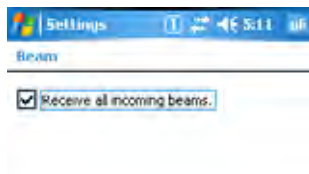
~~Tap **Start** > **Settings** > **Connections** tab > **IrDA**.~~



If **Enable IrDA ports** is selected, then the IrDA port is active.
Select **Disable IrDA ports** to disable the IrDA port (com port 6).

Verify Beam Settings

The Beam Settings **must** be set to receive for the terminal to receive data from other infrared devices. To verify, tap **Start > Settings > Connections** tab > **Beam**.



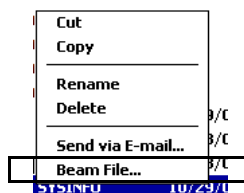
Receive all incoming beams... must be checked for the terminal to receive infrared data from another device.

Sending Data

You can send and receive information via infrared, including software programs (.exe files).

To send or receive, the IrDA ports of both devices must be aligned with each other and within a close range. The maximum data-transfer speed is 115 Kbps.

1. Align the IrDA ports of both devices.
When sending data from one Dolphin terminal to another, position both terminals so that the IrDA ports are facing each other directly.
2. Open the program where you created the item you want to send and locate the item in the list.
You can beam files, but not folders, from File Explorer.
3. Tap and hold the item. A pop-up menu appears.



4. Select **Beam File**. The information begins transmitting to the other infrared device.

Receiving Data

1. Verify that the terminal is set to receive all incoming beams; see [Verify Beam Settings](#) on page 7-21.
2. Align the IrDA ports.
3. Have the owner of the other device send the information to you via infrared.
4. Your terminal automatically begins receiving it.

Adding Programs via Infrared

Use send and receive to load additional software programs to Dolphin terminals.

Troubleshooting

If the Beam Settings are not set to receive or you've aligned two IrDA ports and the terminal is still not receiving, go to **Start > Programs > Infrared Receive**. The terminal searches for the sending device.



If the terminal cannot find the sending device, the following message appears:



Overview

As the hub of your Dolphin 7850 system, the Dolphin HomeBase charging and communication cradle supports both RS-232 and USB communication, enabling your terminal to interface with the majority of PC-based enterprise systems.

Communication

RS-232 transmits data at speeds of up to 115 Kbps. With USB port, the data transmission rate goes up to 12 Mbps.

Dolphin HomeBases cannot be physically connected to each other—sometimes referred to as “daisy-chaining”—but can be networked together via serial or USB hubs.

Convenient Storage

Intelligent battery charging makes the Dolphin HomeBase a safe and convenient storage receptacle for your Dolphin terminal.

Capacity

The Dolphin HomeBase can charge two battery packs: one that's installed in the terminal and another in the auxiliary battery well. While charging the battery pack in the terminal, the HomeBase also powers the Dolphin terminal. The auxiliary battery well charges a battery pack independently of the terminal well.

Intelligent Battery Charging

The Dolphin HomeBase completes a full charge of the main battery pack in less than four hours.

In addition to charging, the Dolphin HomeBase powers the intelligent battery charging system in the terminal that protects the battery from being damaged by overcharging. The terminal senses when a battery pack is fully charged and automatically switches to a trickle charge that maintains the battery at full capacity.

As a result, Dolphin terminals may be stored in the HomeBase without damage to the terminals, battery packs, or peripherals.

Power Supply

The Dolphin HomeBase is available with US, UK, and European power supplies. Each version is designed to convert the voltage from the power sources in each geography to the 7.4 volts DC required by the Dolphin terminal.

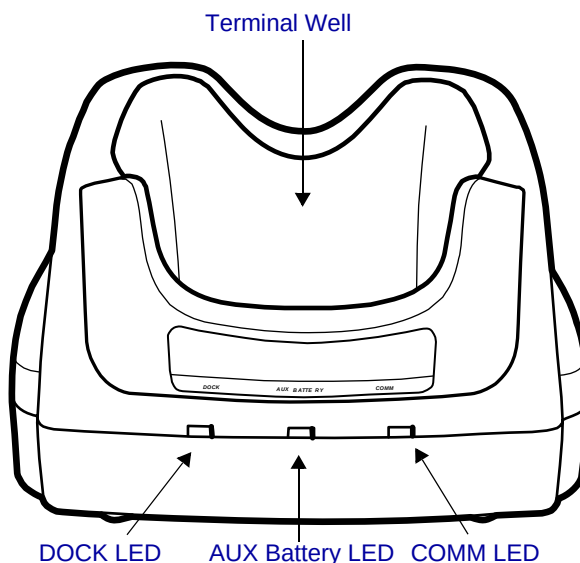


Use only the peripherals, power cables, and power adapters from Hand Held Products. Use of peripherals, cables, or power adapters not sold/manufactured by Hand Held Products will void the warranty and may damage the terminal.



Use only the Li-ion battery packs provided by Hand Held Products. The use of any battery pack not sold/manufactured by Hand Held Products in a Dolphin terminal will void your warranty and may result in damage to the Dolphin terminal or battery.

Front Panel



Terminal Well

Place the Dolphin terminal in this well to communicate with a host device, power the terminal, and charge its battery pack. The back of the terminal well features a saddle to accommodate the integrated pistol-grip handle.

DOCK LED

Turns solid green when the Dolphin terminal is properly seated in the Dolphin HomeBase. When this light is on, the terminal is connected to the Dolphin HomeBase.

AUX Battery LED

Indicates status of the battery charging in the auxiliary battery well; see page 8-3.

This color...	means...
Orange	The auxiliary battery is charging.
Green	The auxiliary battery has completed charging and is ready for use.

COMM LED

The COMM LED indicates the status of data transfer between the Dolphin terminal and the host PC. The color of this LED differs if the HomeBase is using the serial or USB port connection.

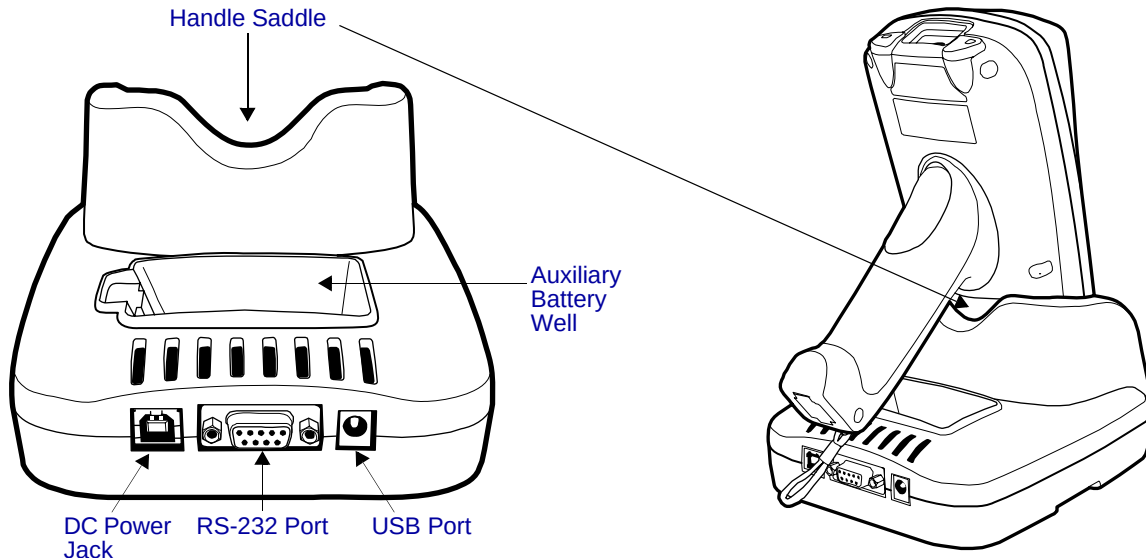
If using the serial port

This color...	means...
Red	Serial data is being sent from the host device to the Dolphin HomeBase.
Green	Serial data is being sent from the Dolphin HomeBase to the host device.
Orange	Serial data is being sent at high data rates.

If using the USB port

This color...	means...
Green LED	A USB connection is established with the host computer.

Back Panel



Auxiliary Battery Well

The auxiliary battery well charges an additional Li-ion battery pack independently of the terminal well. This feature ensures that you can always have a fully-charged battery for your Dolphin terminal; see [Charging a Spare Battery Pack](#) on page 8-3.

DC Power Jack

Connect the power cable to this power jack; see [Powering the Dolphin HomeBase](#) on page 8-5.

Handle Saddle

The depressed area on the back of the terminal well secures the pistol-grip handle when the terminal is seated in the well.

RS-232 Port

For RS-232 data communication, use the 9-pin, RS-232 cable from Hand Held Products to connect this port to a peripheral device. For more information, see [RS-232 Serial Connector](#) on page 8-5.

USB Port

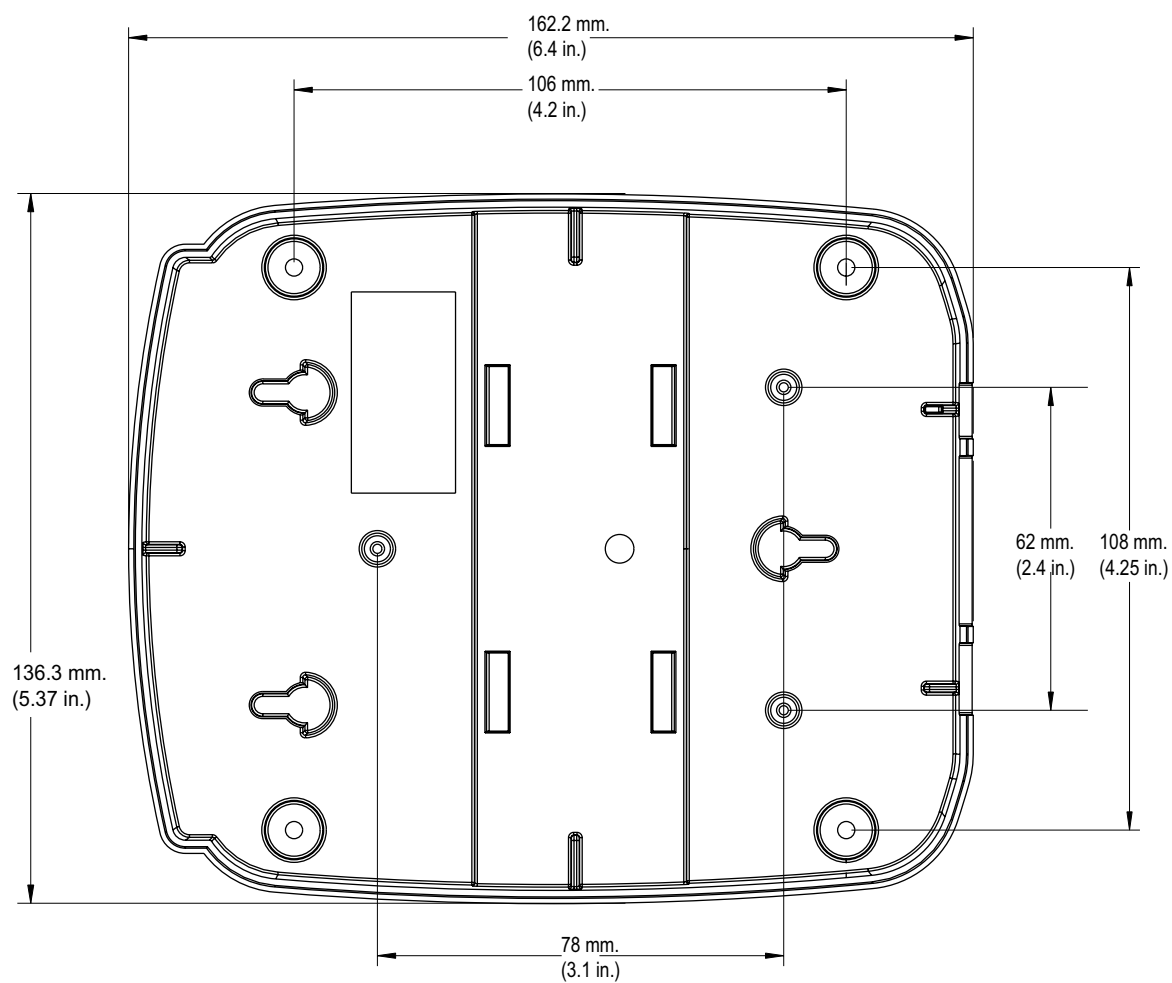
This USB Port is full-speed and 2.0 compliant and requires ActiveSync 4.1 or higher. Using a USB cable, you can connect the HomeBase to a USB-compliant device. When the HomeBase is connected to the device, the terminal is connected to the device when seated in the terminal well. The Dolphin HomeBase acts as a USB device by interfacing the USB signals of the Dolphin to the USB signals of the host computer; see [ActiveSync Communication](#) on page 8-7.

Charging a Spare Battery Pack

The auxiliary battery well located on the back panel ([Auxiliary Battery Well](#), page 8-3) charges a spare battery. The [AUX Battery LED](#) (page 8-2) on the front panel indicates the charge status of the battery in this well. Charge time is less than four hours and the charge process is independent of the terminal well.

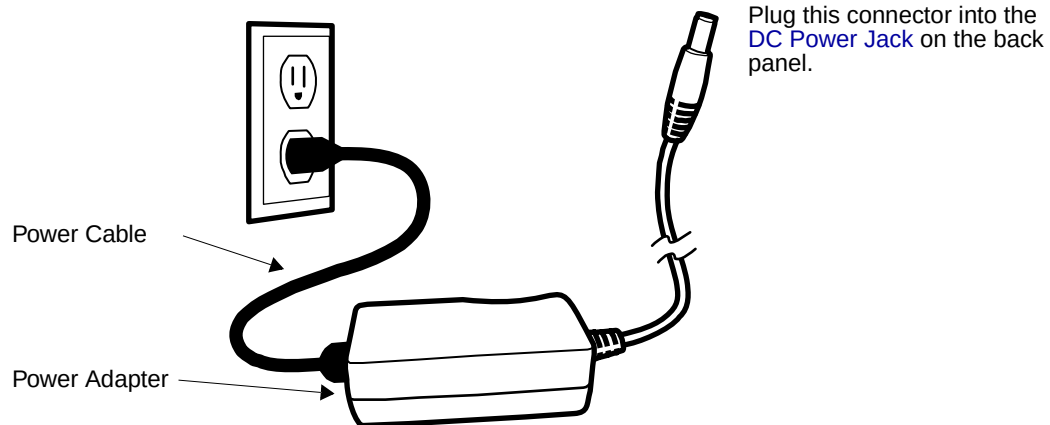
1. Insert the end of the battery without the locking tab into the bottom of the auxiliary well opening.
2. Snap the battery into place with a hinging motion. The Aux Battery LED lights orange.
3. The AUX Battery LED monitors the charge progress.

Bottom Panel Dimensions



Powering the Dolphin HomeBase

The terminal requires 9.5 volts DC input for communication and battery charging; the power adapter on the power cable converts the voltage from the power source to 9.5 volts DC. Only power adapter cables from Hand Held Products convert the voltage appropriately.



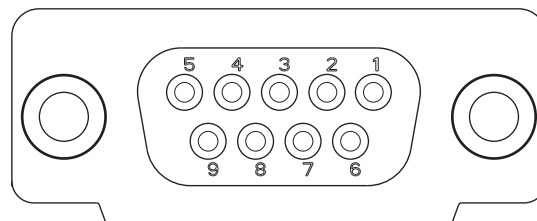
1. Plug the power cable into the power adapter.
2. Plug the power cable into the power source.
3. Plug the connector cable into the DC power jack on the back panel. The Dolphin HomeBase is now powered.

When a terminal is properly seated in the terminal well, the Dolphin HomeBase powers the terminal, charges the terminal's main battery pack, and launches ActiveSync communication (see [ActiveSync Communication](#) on page 8-7).

Hand Held Products recommends that you leave the Dolphin HomeBase connected to its power source at all times, so that it is always ready to use.

RS-232 Serial Connector

The following diagram displays the pins of the RS-232 serial connector of the [Back Panel](#) (see page 8-3).



Pin #	Description
1	Internal Jumper to Pin 6
2	TXD
3	RXD
4	DSR
5	GND
6	DTR
7	CTS
8	RTS
9	RI

Note: Signals referenced are for a DTE device. The HomeBase is at a right-angle to the printed circuit board (PCB). The ninth pin has a ring indicator (RI).

Charging the Main Battery

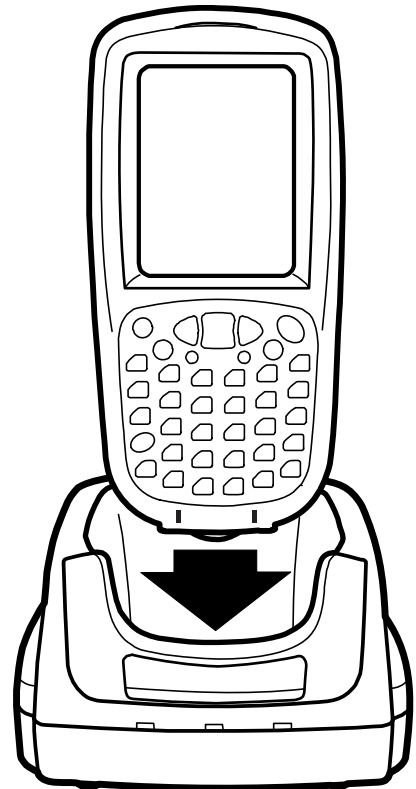
The Dolphin HomeBase powers the terminal and fully charges its main battery pack in less than four hours. To check battery power, see [Power](#) on page 6-11.

As battery packs charge, the charging circuitry follows the two-step charging process (CC-CV) that is recommended for Li-Ion batteries. The process monitors changes in temperature, current, and voltage.

Inserting a Terminal

1. Install the battery pack in the terminal; see [Install the Main Battery Pack](#) on page 2-1.
2. Power the Dolphin HomeBase; see [Powering the Dolphin HomeBase](#) on page 8-5.
3. Slide the terminal into the terminal well until the Dock LED lights green to indicate that the terminal is properly seated.
4. The battery pack begins charging.

The intelligent battery charging system in the terminal monitors battery power and senses when a full charge has been obtained. When charging is complete, the terminal switches to a trickle charge that keeps the battery at full charge while resting in the Dolphin HomeBase.



ActiveSync Communication

The Dolphin terminal ships with ActiveSync already installed and defaulted to USB communication. If ActiveSync is not installed on the PC, you must install it.

For details, see [Using ActiveSync](#) on page 7-3.

Communication Types

The Dolphin HomeBase can communicate via USB or RS-232 using ActiveSync 4.1 or higher. However, the Dolphin HomeBase should have only one type of interface cable connected at a time, either USB or RS-232.

USB The [USB Port](#) (see page 8-3) on the back panel allows the Dolphin terminal to communicate with a PC or to networked through a USB hub. The Dolphin HomeBase acts as a USB device by interfacing the USB signals of the Dolphin to the USB signals of the host computer.

Maximum data transfer rate is 12 Mbps.

RS-232 The [RS-232 Port](#) (see page 8-3) on the back panel allows the Dolphin terminal to communicate with a PC, modem, or any RS-232 device using a standard serial cable and communication software.

Maximum data transfer rate is 115 Kbps.

Communicating with the Dolphin Terminal

1. Insert the Dolphin terminal into the terminal well of the Dolphin HomeBase.
 - The DOCK LED lights green. If not, make sure that the terminal is properly seated. You may need to remove and re-insert the terminal.
 - The Dolphin terminal activates. If not, verify that the Hand Held Products power supply is properly connected to the [DC Power Jack](#) (see page 8-3) on the back panel and plugged into a functioning outlet.
2. The Dolphin terminal and the workstation automatically open ActiveSync to establish a connection.
3. The Dolphin HomeBase can now transfer data between the terminal and the host PC. If communication does not occur, check the port connections to ensure that the cradle is correctly configured.

Verify Communication

You can verify that the USB driver is functioning by watching the COMM LED on the USB HomeBase. When the COMM LED lights solid green, the Dolphin HomeBase is communicating with the PC.

Verify Data Transfer

The COMM LED flashes when data is being transferred via the Dolphin HomeBase. For an RS-232 connection, the COMM LED flashes red and green. For a USB connection, the COMM LED flashes green.

RS-232 Cables

Connect the Dolphin HomeBase to the host computer or other device by plugging an RS-232 serial cable into the [RS-232 Port](#) (see page 8-3) on the back panel. The wiring of your cable depends on whether the other device is set up as a Data Communication Equipment (DCE) or Data Terminal Equipment (DTE) device.

The Dolphin HomeBase is configured as a DCE device. To communicate with another DCE device, use either a null modem adapter in line with a standard RS-232 cable, or a null-modem serial cable. To communicate with a DTE device such as a computer, use a standard (or straight-through) RS-232 cable.

You can make your own cables by following the pin configuration in the chart below. To do so, you must determine if your host RS-232 device is 9-pin or 25-pin, and whether it is configured as a DCE or DTE device.

RS-232 Pin Configuration

HomeBase /Host Port (DCE)	IBM AT DB9 (DTE)	IBM XT DB25 (DTE)	Modem DB25 (DCE)
Pin / Input Signal			
2 / (RD)	2	3	2
3 / (TD)	3	2	3
5 / (SG)	5	7	7
4 / (DTR)	4	20	6
6 / (DSR)	6	6	20
7 / (RTS)	7	4	5
8 / (CTS)	8	5	4

*Note: The Dolphin HomeBase **cannot** be daisy-chained.*

Mounting the Dolphin HomeBase

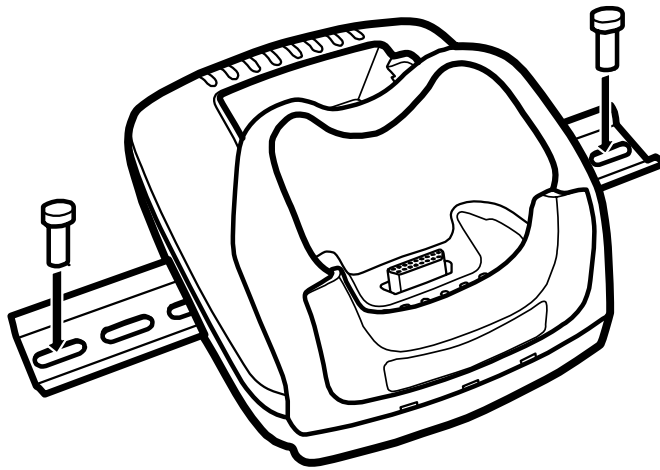
Set the Dolphin HomeBase on a dry, stable surface, such as a desktop or workbench near an electrical outlet. Be sure to provide enough workspace with good lighting for the user to view and operate the Dolphin terminal while it is in the Dolphin HomeBase.

When choosing a location, bear in mind that:

- the mounting location must allow users easy access to the auxiliary battery well, and
- the serial and USB ports as well as the power jack face straight out of the rear panel, and you will most likely want easy access to them in the future.

Desk Mounting

Dolphin charging/communication cradles have a DIN rail (7.5 mm high X 35 mm wide) slot on the bottom to allow for secure desk attachment of the unit if desired.



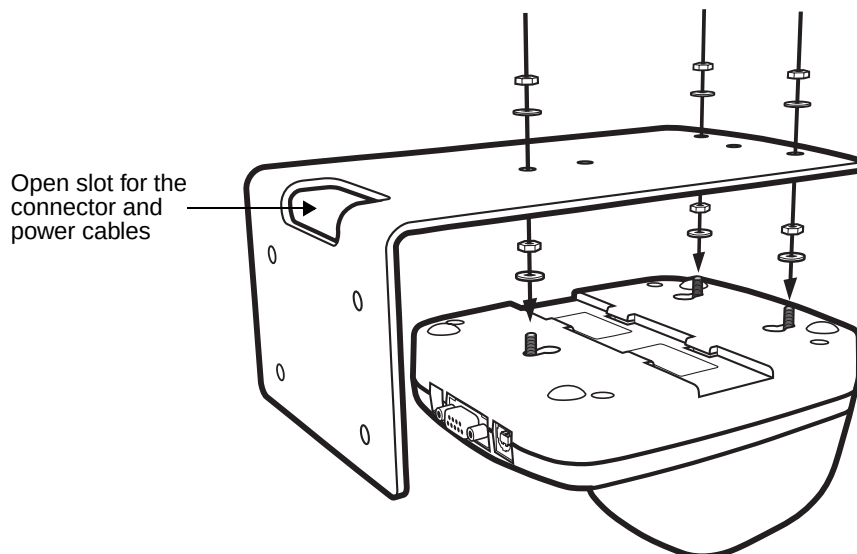
1. Slide the DIN rail slot along the bottom panel.
2. Using the appropriate nuts and bolts, secure the DIN rail to the desk or flat surface.

Note: Use screws that are appropriate for the type of surface (wood or metal, for instance) you are mounting to.

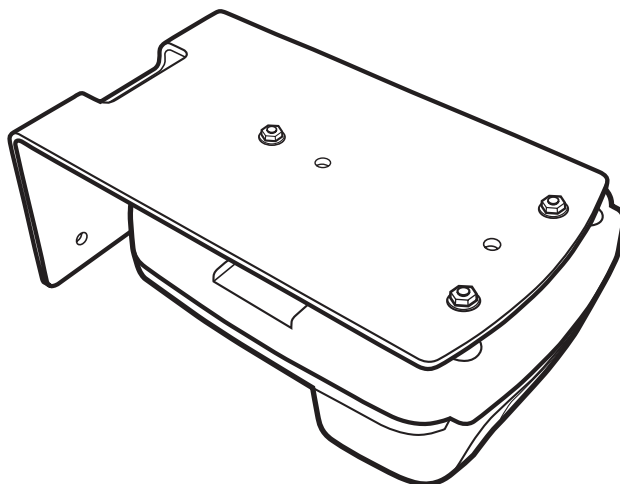
Wall Mounting

A wall mount kit that contains a screws and a mounting bracket can be purchased separately. The bottom panel of the Dolphin HomeBase contains four rubber feet—one at each corner—that help keep it stable and secure when resting on a flat surface. Those rubber feet should be removed with pliers before wall mounting the Dolphin HomeBase.

1. Secure screws to the bottom panel by sliding them into the available slots.
2. Attach the bottom panel to the mounting bracket - match the holes to the secured screws.

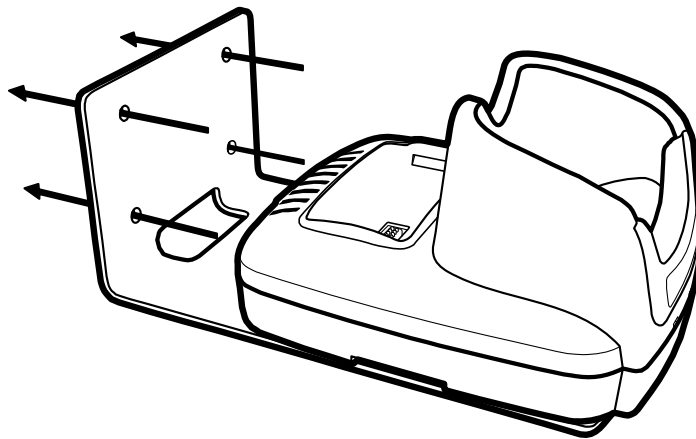


3. Fasten the screws to secure the Dolphin HomeBase to the mounting bracket.



4. Turn the secured Dolphin HomeBase right side up.

-
5. Using the appropriate screws, secure the mounting bracket to the wall or vertical surface as shown.



Dolphin HomeBase Technical Specifications

Structural	
Dimensions	? " high X ? " wide X ? " deep (? X ? X ? cm)
Weight	???
Material	Case: Polycarbonate ABS blend
Color	Blue/gray
Desktop Mounting	Use DIN rail slide for desktop or rail mount; see Desk Mounting on page 8-9.
Wall Mount Kit	Available separately; see Desk Mounting on page 8-9.
Environmental	
Operating Temperature	32° to 122°F (0° to 50°C)
Storage Temperature	-4° to 158°F (-20° to 70°C)
Electrical Static Discharge	8 KVA immunity on all surfaces
Humidity	Up to 95% non-condensing humidity
Power Supply	
Input (Universal) (from the power source)	100–250 Volts, 1.0 A, 50–60Hz Power adapter converts the input voltage to the appropriate voltage for the HomeBase. (p/n 41206341-01)
Output (to the HomeBase)	9.5 Volts DC, 4.0 A
Input Connection	3 Position IEC-320-C14
Charging	
Standard Charge	Completes 100% charge of Li-ion battery packs in four hours or less
Max Charging Current	2A Max
Standby Current	<100mA
DOCK LED	See DOCK LED on page 8-2.
AUX BATTERY LED	See AUX Battery LED on page 8-2.
Communication	
Interface	• USB B Male connector supports 12 Mbps communication • RS-232 DB-9 Female connector supports up to 115 Kbps communication
COMM LED	See COMM LED on page 8-2.
Agency Approvals	
Power Supply:	UL listed, TUV licensed Power Supply compliant to FCC part 15 Class B
Charging:	CE Marking (EMC)
Fire Retardant:	UL 94-VO

Overview

The Dolphin QuadCharger is a four-slot charging station that can charge a Li-ion battery in less than four hours. The fourth slot features a battery analyzer that completely resets and re-calibrates a battery and displays its resulting capacity.

The Dolphin QuadCharger is compatible with the Li-ion batteries that power Dolphin 7850 terminals.

Intelligent Battery Charging

Each charging slot works independently of the other three.

As battery packs charge, the charging circuitry follows the two-step charging process (CC-CV) that is recommended for Li-Ion batteries. The process monitors changes in temperature, current, and voltage. The charger also resets and calibrates battery pack data to accurately show battery status on the Dolphin display.

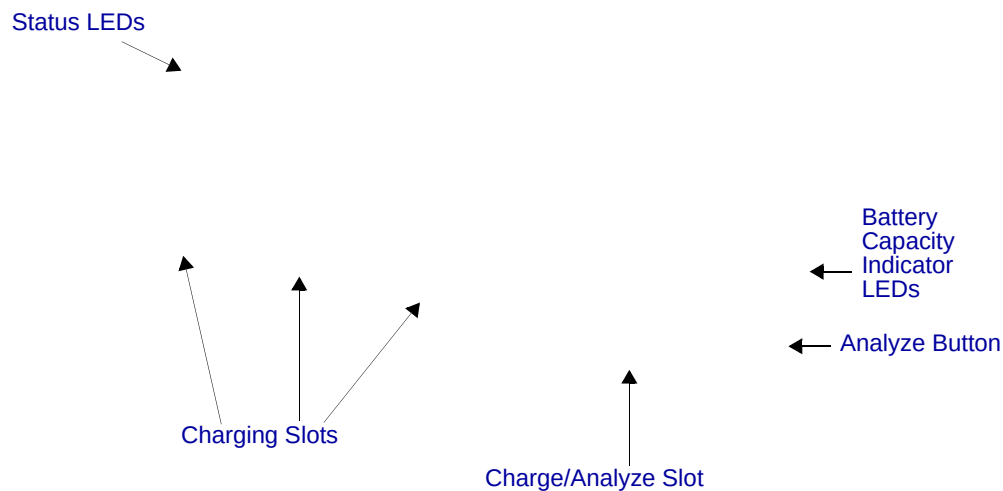


Use only the peripherals, power cables, and power adapters from Hand Held Products. Use of peripherals, cables, or power adapters not sold/manufactured by Hand Held Products will void the warranty and may damage the terminal.



Use only the Li-ion battery packs provided by Hand Held Products. The use of any battery pack not sold/manufactured by Hand Held Products in a Dolphin terminal will void your warranty and may result in damage to the Dolphin terminal or battery.

Front Panel



Charging Slots

The QuadCharger contains four charging slots. Each slot holds one battery. When a battery is placed in a slot, it immediately begins charging.

Charge/Analyze Slot

This is the fourth slot and the only one that can be used to analyze a battery. When a battery is placed in this slot, it begins charging just as it does in the other three slots. However, if you press the ANALYZE button, it runs the battery in this slot through the complete Analyze cycle. For more information, see [Using the Battery Analyzer](#) on page 9-4.

Battery Capacity Indicator LEDs

These LEDs give a readout of the remaining battery capacity after it has run through a complete analyze cycle. For more information, see [Battery Capacity Indicator LEDs](#) on page 9-1.

Analyze Button

Press this button to start a battery analyze cycle; see [Using the Battery Analyzer](#) on page 9-4.

Status LEDs

A status LED is located above each of the four battery slots. The color of the LED indicates the charge status of the batteries in its slot.

Status LED color	This color indicates that the battery in the slot...
Green	Has completed its charge cycle and is ready for use.
Orange	Is being charged at a maximum charge rate.
Red	Encountered an error during the most recent charge cycle.

Inserting and Removing Battery Packs

To insert a battery pack, place the end of the battery without the locking tab into the bottom of the charging pocket and snap the battery into place with a hinging motion. The Status LED for that particular slot illuminates orange when the battery has been properly inserted.

To remove a battery pack, push the locking tab down and pull the battery out from the charging slot with a hinging motion.

Charging Batteries in the QuadCharger

For best results, battery packs should be at room temperature before recharging them; temperature has a marked effect on charging. The recommended temperature range is 50° to 95° F (10° to 35° C).

1. Supply the QuadCharger with power and turn the power switch on.
2. Insert batteries into the appropriate slots. The Status LED for each slot turns orange to indicate that the battery has begun a charge cycle.
3. When the Status LED turns green, the battery in the slot has completed charging.

Back Panel



Power Switch

Toggle the power switch to turn the QuadCharger on and off.

Power Supply Connector

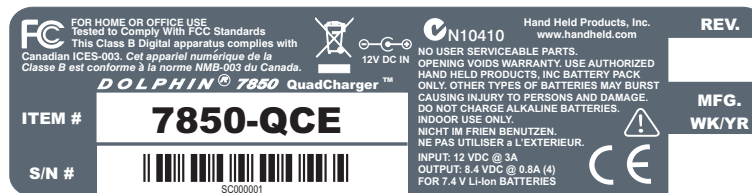
Use this connector to attach the power supply to the QuadCharger. The universal power supply accepts input voltages between 90-265 volts.

Supplying Power to the QuadCharger

Use the power adapter cable that comes with the Dolphin QuadCharger so that the input voltage is adjusted appropriately.

1. Locate the AC power adapter cable and plug it into the power source.
2. Connect the power cable to the power adapter.
3. Connect the power cable to the supply connector on the back of the QuadCharger.
4. Press the power switch to the ON position.
The power LED illuminates green, and the charger performs a self-diagnostic test that lasts approximately five seconds.

Bottom Panel



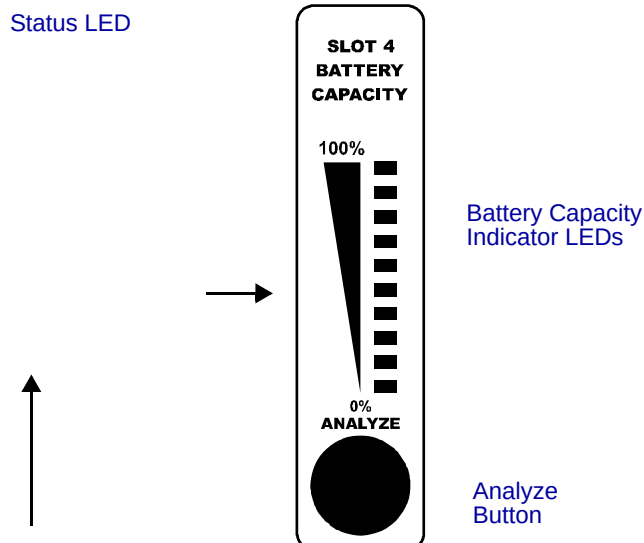
Recommendations for Storing Batteries

To maintain top performance from batteries, follow these storage guidelines:

- Avoid storing batteries outside of the specified temperature range of -4 to 104° F (-20 to 40°C) or in extremely high humidity.
- For prolonged storage, do not keep batteries stored in a charger that is connected to a power source.

Using the Battery Analyzer

The battery analyzer helps you monitor the charge capacity of Li-ion batteries over time. The battery analyzer is the fourth slot of the ChargeBase, labeled the CHARGE/ANALYZE.



Analyze Button

The Analyze cycle is initiated when a battery is placed in the Charge/Analyze slot and the **ANALYZE** button is pressed. In an Analyze cycle, batteries are completely discharged, then recharged to capacity. The battery is completely reset and re-calibrated. The amount of time required for a battery to complete the Analyze cycle depends on initial state of the battery's charge. Minimum time is **8 hours**, maximum time is **12 hours**.

Battery Capacity Indicator LEDs

These LEDs display the charge capacity of the battery at the end of the Analyze cycle. Battery capacity is displayed as a percentage of measured capacity/rated capacity where each LED equates to 10% battery capacity. The readout tells you the maximum charge level the battery can hold.

Status LED

The Charge/Analyze slot also contains a standard status LED in the upper, left corner of the slot. When this slot is used for regular charging, this LED operates in the usual manner; see [Status LEDs](#) on page 9-2.

When this slot is being used to analyze a battery, the status LED functions as follows:

Color	Description
Solid Green	The battery has completed the Analyze cycle.
Flashing Orange	The battery is currently being analyzed.
Solid Red	The QuadCharger encountered an error during the Analyze cycle.

To Analyze a Battery

1. Insert the battery into the Charge/Analyze slot (the fourth).
2. Press the ANALYZE button. The Status LED flashes orange to indicate that the analyzing cycle has begun.
3. Upon completion of the Analyze cycle, the Status LED lights solid green, and the Battery Capacity Indicator LEDs display the battery's capacity.



The Dolphin QuadCharger is accumulating battery pack information during the entire Analyze cycle. Do NOT remove the battery until the cycle has been completed.

Mounting the QuadCharger

The Dolphin QuadCharger should be on a dry, stable surface. To easily adapt the QuadCharger to your environment, it can be mounted on a flat, horizontal surface such as a desktop or workbench, or a flat, vertical surface such as a wall.

When choosing a location, always bear in mind that

- the mounting location must allow users easy access to power switch and power connector.
- the QuadCharger should be oriented so that users can easily insert and remove battery packs and read the labels, especially for the Battery Analyzer.

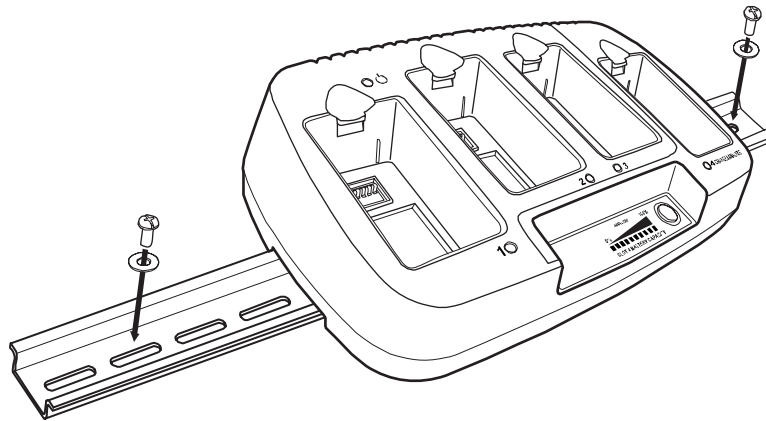
Using the DIN Rail

Most Dolphin peripherals have a DIN Rail (7.5 high X 35 wide mm) slot on the bottom panel to enable secure mounting.

To mount the Dolphin QuadCharger, you slide the DIN Rail into the slot on the bottom panel. Then, using the appropriate nuts and bolts, secure the DIN rail to the desk or wall.

Desk Mounting

The following graphic displays how to mount the Dolphin QuadCharger to a desk:



Wall Mounting

The following graphic displays how mount the Dolphin QuadCharger to a wall:

Troubleshooting

If you encounter problems with your Dolphin QuadCharger, refer to chart below for possible solutions. If problems persist, please contact [Technical Assistance](#) (see page 11-1).

Problem	Issue
The Status LED does not come on when I insert a battery pack into the Dolphin QuadCharger	Check the power connections on the Dolphin QuadCharger; make sure the POWER switch is ON and the battery pack is properly seated.
The Status LED lights red during charging.	Try to charge the battery in one of the other charging slots. If the red Status LED comes on again, then the problem is associated with the battery pack. If the red status stays with the charging slot, the problem is associated with the charging circuitry.
The Status LED lights red and stays on without a battery in the charging slot.	An error occurred during the self-diagnostic test for that particular charging pocket. Call Hand Held Products Product Service and request an RMA. For additional warranty and return information, see Customer Support on page 11-1.

Dolphin QuadCharger Technical Specifications

Structural	
Dimensions	11.7 in. long X 5.2 in. wide X 1.5 in. high (29.7 X 13.2 X 3.8 cm.)
Weight	18 oz. (510g)
Material	Case: Polycarbonate ABS blend
Color	Blue/Gray
Mounting	Use DIN rail slide to mount to a desktop or wall
Capacity	Supports 1 to 4 batteries
Environmental	
Operating Temperature	14° to 122°F (-10° to 50°C)
Storage Temperature	-4° to 158°F (-20° to 70°C)
Charge	32° to 113°F (0° to 45°C)
Electrical Static Discharge	8 KVA immunity on all surfaces
Humidity	90% relative humidity (non-condensing)
Power Supply	
Input (Universal)	90-265V, 47-63Hz
Output	12 Volts DC, 3 A
Input Connection	2 Position IEC 320-C8
Charging	
Standard Charge	Completes 100% charge in four hours
Status LED	See Status LEDs on page 9-2.
Battery Analyzer	See Using the Battery Analyzer on page 9-4.
Agency Approvals	
Power Supply	UL listed (UL 1950), TUV licensed (EN60 950STD) Power Supply compliant to FCC part 15 Class B
Charging	CE Marking (EMC); CISPR Pub 22, FCC Part 15 Class B
Fire Retardant	UL 94-VO

Cable Features

In addition to the hardware peripherals, the Dolphin 7850 Series offers several cables you can use with the terminal depending on what the needs of your work environment.

Intelligent Battery Charging

Dolphin terminals, peripherals, and cables are designed with an intelligent battery charging system that protects the battery from being damaged by overcharging. When a battery pack is fully charged, the charge process automatically switches to a trickle charge that maintains the battery at full capacity. As a result, Dolphin terminals may be connected to Dolphin cables indefinitely.

Voltage

All Dolphin power cables contain a power adapter that converts the voltage from the power source to 9.5 volts DC, which is the maximum voltage the terminal can receive.

Cables

There are several cables in the Dolphin 7850 Series.

Cable	Description	For more information, see...
Dolphin Power Cable	Charge-only cable that plugs into the DC Power Jack (see page 3-4) on the bottom of the pistol-grip handle.	Using the Dolphin Power Cable on page 10-2
Dolphin Mobile Charger	Charge-only cable that connects the terminal to a vehicle power outlet.	Using the Dolphin Mobile Charger on page 10-3
Dolphin Charge/Comm Cable	Charge/Communication cable that connects the terminal to an external power source and a host PC, enabling you to power the terminal, charge the batteries, and transfer data at the same time.	Using the Dolphin Charge/Comm Cable on page 10-4
Dolphin USB On-The-Go Cable	Communication-only cable that uses USB On-The-Go technology to connect the terminal to any USB device.	Using the Dolphin USB On-The-Go Cable on page 10-6



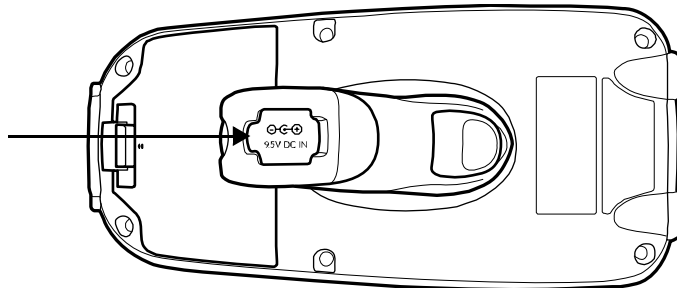
Use only the peripherals, power cables, and power adapters from Hand Held Products. Use of peripherals, cables, or power adapters not sold/manufactured by Hand Held Products will void the warranty and may damage the terminal.

Using the Dolphin Power Cable

The Dolphin Power Cable connects the terminal to an external power source via the DC jack on the bottom panel of the pistol-grip handle.

DC Power Jack

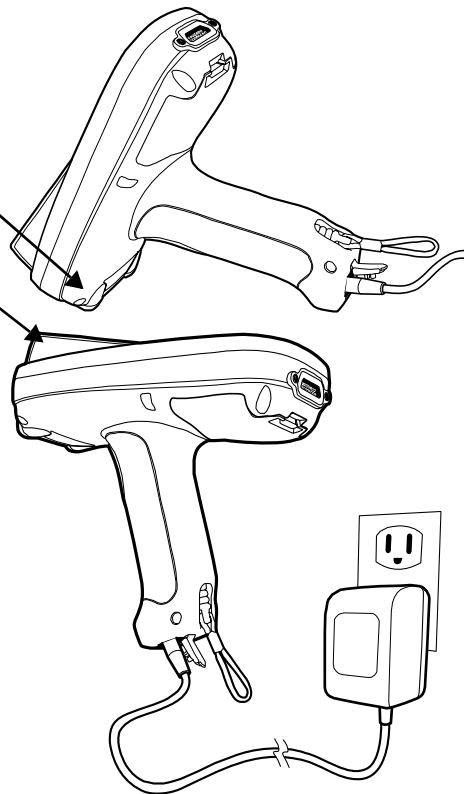
(Pull back the rubber flap to gain access to the power jack.)



The Dolphin Power Cable contains a power adapter that converts the voltage from the power source to 9.5 volts DC, which is the maximum voltage the terminal can receive.

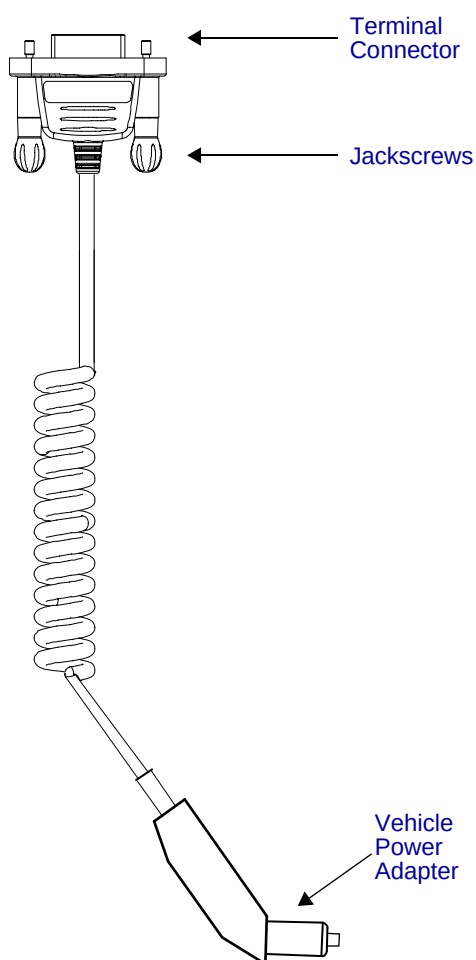
Using the Dolphin Power Cable

1. Set the terminal down on its rubber bumpers; see [Rubber Bumpers](#) on page 3-7.
2. Pull back the flap of the DC power jack and plug the power cable into the jack.
3. Plug the power adapter into a standard power outlet.
4. The terminal switches to external power and the main battery begins charging. The terminal is ready for use.



Using the Dolphin Mobile Charger

The Dolphin Mobile Charger connects the terminal to a vehicle power source. This cable powers the terminal and charges the main battery pack.



Terminal Connector

The terminal connector connects the communication cable to the mechanical connector (see [Mechanical Connector](#) on page 3-8) on the bottom panel of the terminal. The pins in this connector work only with the mechanical connector on the terminal.

Jackscrews

The jackscrews secure the terminal connector to the mechanical connector on the terminal. Once the terminal connector is plugged into the mechanical connector on the bottom panel of the terminal, turn both jackscrews to the right to secure the connection.

Vehicle Power Adapter

The vehicle power adapter plugs into a standard vehicle power source and converts voltage to the 9.5 volts DC required by the terminal.

Using the Dolphin Mobile Charger Inside a Vehicle

Using the Dolphin Mobile Charger in combination with the Dolphin Mobile Mount powers and secures the terminal inside a vehicle.

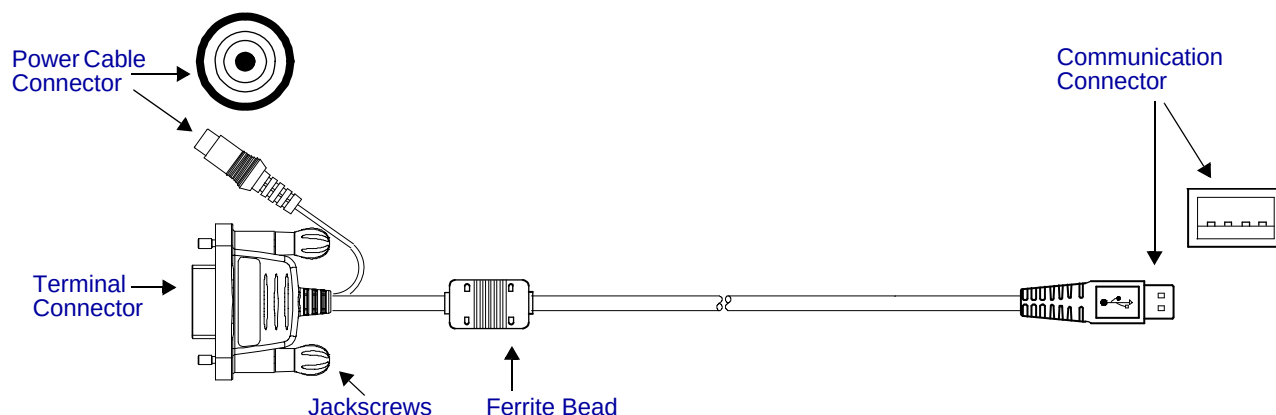
1. Insert the terminal into the Mobile Mount.
2. Install the Mobile Mount inside the vehicle.
3. Plug the [Terminal Connector](#) (see page 10-3) of the Dolphin Mobile Charger into the mechanical connector on the bottom panel of the terminal.
4. Tighten the [Jackscrews](#) (see page 10-3).
5. Plug the [Vehicle Power Adapter](#) (see page 10-3) into the vehicle power outlet.

Note: Dolphin terminals contain an intelligent battery charging system that monitors the charging of the battery pack to protect the battery from damage by overcharging if left connected to a charging peripheral indefinitely.

Using the Dolphin Charge/Comm Cable

The Dolphin Charge/Comm cable charges the Dolphin terminal and communicates with a host PC. There are three connectors: one connects the terminal to an external power source, another to the host PC, and another to the terminal itself.

The charge/comm cable is actually two cables: a power cable and a communication cable. The communication cable is shown below.



Communication Connector

The communication connector connects the terminal to a host device via USB (v1.1 or higher) or RS-232; USB is shown above. Plug this connector directly into a host PC, then establish [ActiveSync Communication](#) (see page 10-5).

The USB plug has four pins and fits into standard desktop computers.

Ferrite Bead

This is a Urite ferrite bead.

Jackscrews

The jackscrews secure the terminal connector to the mechanical connector on the terminal. Once the terminal connector is plugged into the mechanical connector on the bottom panel of the terminal, turn both jackscrews to the right to secure the connection.

Power Cable Connector

The power cable connector connects the charge cable to the power cable. The power cable powers the terminal and charges the main battery pack.

The power adapter on the power cable is available in US, UK, and EMEA versions. All version convert the voltage from the power source to 9.5 volts DC, which is the maximum voltage the terminal can receive.

Terminal Connector

The terminal connector connects the communication cable to the [Mechanical Connector](#) (see page 3-8) on the bottom panel of the terminal. The pins in the terminal connector work only with the mechanical connector on the terminal.

After connecting the pins, secure the cable to the terminal by turning both jackscrews to the right.

Using the Dolphin Charge/Comm Cable

1. Plug the cable's terminal connector into the mechanical connector on the bottom panel of the terminal.
2. Tighten the jackscrews.
3. Plug the power cable connector into the power cable.
4. Plug the power adapter on the power cable into a standard power outlet.
5. Plug the communication connector into the host PC.
6. Establish the [ActiveSync Communication](#) (see page 10-5).

ActiveSync Communication

After the terminal is connected to a power source and the host PC, you need to set up both the terminal and the host PC for ActiveSync communication.

Setting up ActiveSync for the charge/comm cable is the same as for the Dolphin HomeBase, which also has a USB and an RS-232 version. For details, see [Using ActiveSync](#) on page 7-3.

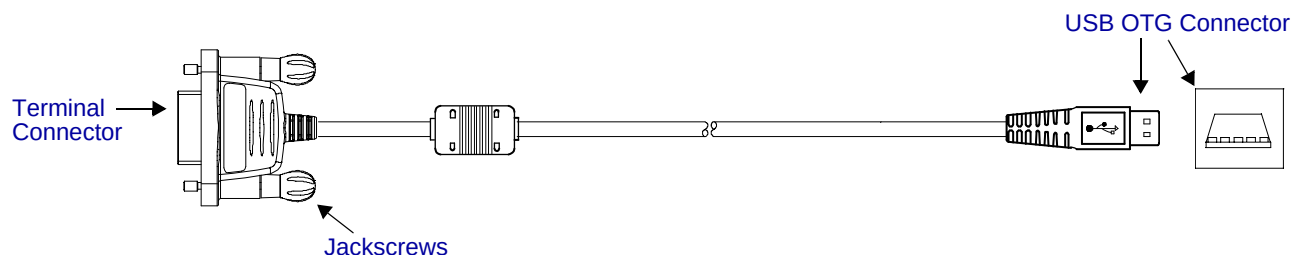
Default ActiveSync Communication Values

The default PC synchronization value for USB communication is '**USB Connection**'.

The default PC synchronization value for RS-232 communication is '**115200 Default**'.

Using the Dolphin USB On-The-Go Cable

The Dolphin USB On-The-Go (OTG) cable takes advantage of USB OTG technology, which allows you to connect USB devices together without needing a host PC. This means that you can connect a Dolphin terminal directly to a compatible printer and print. USB OTG requires USB 2.0 or higher. For more information about USB OTG, visit the following web site: www.usb.org/developers/otg.



Terminal Connector

The terminal connector connects the communication cable to the mechanical connector (see [Mechanical Connector](#) on page 3-8) on the bottom panel of the terminal. The pins in this connector work only with the mechanical connector on the terminal.

After connecting the pins, secure the cable to the terminal by turning the jackscrews.

Jackscrews

The jackscrews secure the terminal connector to the mechanical connector on the terminal. Once the terminal connector is plugged into the mechanical connector on the bottom panel of the terminal, turn both jackscrews to the right to secure the connection.

USB OTG Connector

This USB connector uses USB 2.0 (or higher) OTG technology. The connector has five pins instead of the four pins on the usual USB connectors to be compatible with USB OTG devices.

Using the Dolphin USB OTG Cable

1. Plug the cable's terminal connector into the mechanical connector on the bottom panel of the terminal.
2. Tighten the jackscrews.
3. Plug the USB OTG connector into the USB device.

Product Service and Repair

Hand Held Products provides service for all its products through service centers throughout the world. To obtain warranty or non-warranty service, return the unit to Hand Held Products (postage paid) with a copy of the dated purchase record attached. Contact the appropriate location below to obtain a Return Material Authorization number (RMA #) before returning the product.

North America

Hand Held Products Corporate Offices
Telephone: (800) 782-4263, option 3
Fax: (704) 566-6015
E-mail: naservice@handheld.com

América Latina

Hand Held Products América Latina
Teléfono: (704) 998-3998, opción 8, opción 4
Fax: (239) 263-9689
E-mail: laservice@handheld.com

Brasil

Hand Held Products Rio de Janeiro
Teléfono: +55 (21) 2178-0500
Fax: +55 (21) 2178-0505
E-mail: brservice@handheld.com

México

Hand Held Products México
Teléfono: +52 (55) 5203-2100
Fax: +52 (55) 5531-3672
E-mail: mxservice@handheld.com

Europe, Middle East, and Africa

Hand Held Products Europe
Telephone: +31 (0) 40 2901 633
Fax: +31 (0) 40 2901 631
E-mail: euservice@handheld.com

Asia Pacific

Hand Held Products Asia/Pacific
Telephone: +852-2511-3050
Fax: +852-2511-3557
E-mail: apservice@handheld.com

Japan

Hand Held Products Japan
Telephone: +81-3-5770-6312
Fax: +81-3-5770-6313
E-mail: apservice@handheld.com

Online Product Service and Repair Assistance

You can also access product service and repair assistance online at www.handheld.com.

Technical Assistance

If you need assistance installing or troubleshooting, please call your Distributor or the nearest Hand Held Products technical support office:

North America/Canada:

Telephone: (800) 782-4263, option 4 (8 a.m. to 6 p.m. EST)
Fax number: (315) 685-4960
E-mail: natechsupport@handheld.com

América Latina:

Teléfono: (704) 998-3998, opción 8, opción 3
E-mail: latechsupport@handheld.com

Brasil

Teléfono: +55 (21) 2178-0500
Fax: +55 (21) 2178-0505
E-mail: brtechsupport@handheld.com

México

Teléfono: (704) 998-3998, opción 8, opción 3
E-mail: latechsupport@handheld.com

Europe, Middle East, and Africa:

Telephone: +31 (0) 40 7999 393
Fax: +31 (0) 40 2425 672
E-mail: eurosupport@handheld.com

Asia Pacific:

Telephone: +852-3188-3485 or 2511-3050
E-mail: aptechsupport@handheld.com

Online Technical Assistance

You can also access technical assistance online at www.handheld.com.

Limited Warranty

Hand Held Products, Inc. ("Hand Held Products") warrants its products to be free from defects in materials and workmanship and to conform to Hand Held Products' published specifications applicable to the products purchased at the time of shipment. This warranty does not cover any Hand Held Products product which is (i) improperly installed or used; (ii) damaged by accident or negligence, including failure to follow the proper maintenance, service, and cleaning schedule; or (iii) damaged as a result of (A) modification or alteration by the purchaser or other party, (B) excessive voltage or current supplied to or drawn from the interface connections, (C) static electricity or electro-static discharge, (D) operation under conditions beyond the specified operating parameters, or (E) repair or service of the product by anyone other than Hand Held Products or its authorized representatives.

This warranty shall extend from the time of shipment for the duration published by Hand Held Products for the product at the time of purchase ("Warranty Period"). Any defective product must be returned (at purchaser's expense) during the Warranty Period to Hand Held Products' factory or authorized service center for inspection. No product will be accepted by Hand Held Products without a Return Materials Authorization, which may be obtained by contacting Hand Held Products. In the event that the product is returned to Hand Held Products or its authorized service center within the Warranty Period and Hand Held Products determines to its satisfaction that the product is defective due to defects in materials or workmanship, Hand Held Products, at its sole option, will either repair or replace the product without charge, except for return shipping to Hand Held Products.

EXCEPT AS MAY BE OTHERWISE PROVIDED BY APPLICABLE LAW, THE FOREGOING WARRANTY IS IN LIEU OF ALL OTHER COVENANTS OR WARRANTIES, EITHER EXPRESSED OR IMPLIED, ORAL OR WRITTEN, INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

HAND HELD PRODUCTS' RESPONSIBILITY AND PURCHASER'S EXCLUSIVE REMEDY UNDER THIS WARRANTY IS LIMITED TO THE REPAIR OR REPLACEMENT OF THE DEFECTIVE PRODUCT. IN NO EVENT SHALL HAND HELD PRODUCTS BE LIABLE FOR INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, AND, IN NO EVENT, SHALL ANY LIABILITY OF HAND HELD PRODUCTS ARISING IN CONNECTION WITH ANY PRODUCT SOLD HEREUNDER (WHETHER SUCH LIABILITY ARISES FROM A CLAIM BASED ON CONTRACT, WARRANTY, TORT, OR OTHERWISE) EXCEED THE ACTUAL AMOUNT PAID TO HAND HELD PRODUCTS FOR THE PRODUCT. THESE LIMITATIONS ON LIABILITY SHALL REMAIN IN FULL FORCE AND EFFECT EVEN WHEN HAND HELD PRODUCTS MAY HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH INJURIES, LOSSES, OR DAMAGES. SOME STATES, PROVINCES, OR COUNTRIES DO NOT ALLOW THE EXCLUSION OR LIMITATIONS OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.

All provisions of this Limited Warranty are separate and severable, which means that if any provision is held invalid and unenforceable, such determination shall not affect the validity of enforceability of the other provisions hereof.

Hand Held Products extends these warranties only to the first end-users of the products. These warranties are non-transferable.

The limited duration of the warranty for the Dolphin 7850 Series is as follows:

- Terminals with an integrated imager are covered by a two-year limited warranty.
- Terminals with an integrated laser engine are covered by a one-year limited warranty.
- Touch screens are covered by a one-year limited warranty.
- Dolphin HomeBase, Dolphin Mobile Mount, Dolphin ChargeBase, Dolphin Mobile Charger, and Dolphin QuadCharger are covered by a one-year limited warranty.
- Use of any peripheral not manufactured/sold by Hand Held Products will void the warranty. This includes but is not limited to: cables, power supplies, cradles, and docking stations.
- Use only power adapters approved for use by Hand Held Products. Failure to do so may result in improper operation or damage to the unit and will void the warranty.
- Batteries are covered by a one-year limited warranty. Use of any battery not sold/manufactured by Hand Held Products may damage the terminal and/or the battery and will void the warranty. Batteries returned to Hand Held Products in a reduced state may or may not be replaced under this warranty. Battery life will be greatly increased when following the battery instructions in the Dolphin 7850 Series User's Guide.

How to Extend Your Warranty

Hand Held Products offers a variety of service plans on our hardware products. These agreements offer continued coverage for your equipment after the initial warranty expires. For more information, contact your Sales Representative, Customer Account Representative, or Product Service Marketing Manager from Hand Held Products, or your Authorized Reseller.

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