



Dolphin[®] 7900 Series
Mobile Computer
*Microsoft[®] Windows Mobile[™] 2003
Second Edition Software for Pocket PCs*



User's Guide-
Prelim. Rev (c)
4/11/05

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Congratulations on the purchase of the Dolphin 7900 mobile computer! You have made a wise choice in selecting the Dolphin, a device known worldwide for its ergonomic form factor, light-weight, rugged design and single-handed data collection capabilities.

Ergonomics

The patented shape of the Dolphin 7900 fits into either hand comfortably with major function keys that are easy to access. The adjustable hand strap on the back panel ensures a secure grip on the terminal for solid one-handed operation in mobile environments.

Rugged Design

Dolphin 7900 terminals are the most durable mobile computers on the market. Their rugged design can withstand repeated five-foot drops onto a concrete floor, extreme temperatures, as well as high humidity, moisture, and dust conditions. The terminals are independently tested to meet IP64 specifications.

Mobile Computing Features

- A low-power, high-resolution digital image engine for omni-directional and auto-discrimination decoding of most bar code symbologies
- An Intel® X-Scale 400MHz RISC microprocessor for fast processing
- Optional Wireless Full Area Networking™ (WFAN) configuration for real-time data and voice communications anytime, anywhere
- Microsoft Windows Mobile 2003 Second Edition Software for Pocket PCs
- 64MB RAM (optional 128MB) and 64MB synchronous Flash memory configuration for ample and secure data storage
- A mini-Secure Digital (SD) memory interface that enables memory expansion
- Adaptus Imaging Technology for advanced point-and-shoot bar code decoding and image capture

Additional Features

- Long-lasting Lithium Ion (Li-ion) batteries
- 3.8", easy-to-read 1/4 VGA (240 x 320) backlit TFT color display with industrial touch screen
- Two keyboard options: 25-key numeric and 36-key alpha
- Industrial-grade mechanical connector that supports serial and USB communications, as well as power in and out
- Full suite of compatible peripheral devices
- Decoding of stacked linear and matrix codes with Optical Character Recognition (OCR) functionality
- Buttons on both side panels that can activate the image engine for easy one-hand scanning with either hand
- Digital picture capability
- Audio jack for headset use
- Speaker and microphone on the front panel

Application Development Tools

- Dolphin SDK Add-on for Pocket PC 2003 - supports Embedded Visual C++ 4.0
- Dolphin .NET SDK for Pocket PC 2002 and 2003 - supports Visual Studio.NET 2003 (VB.NET and C#.NET)
- Dolphin GSM/GPRS SDK Add-on for Pocket PC 2003 - supports Embedded Visual C++ 4.0 and Visual Studio.NET 2003

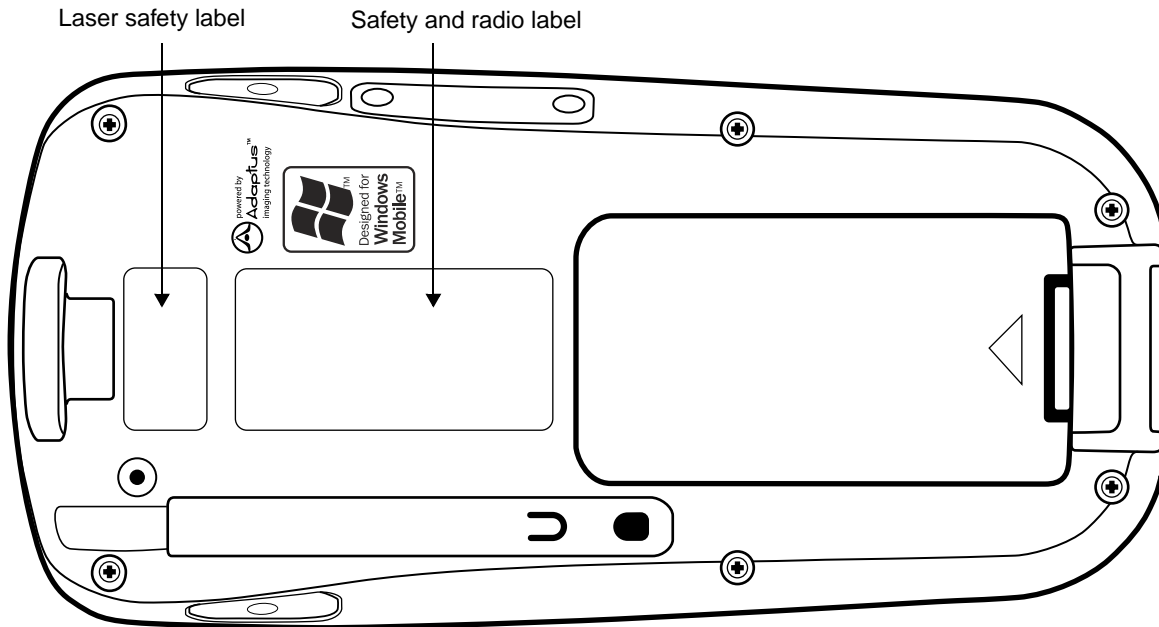
This User's Guide

The Dolphin 7900 Series Mobile Computer User's Guide provides you with the information you need to make the most of your Dolphin terminal.

Required Safety Labels

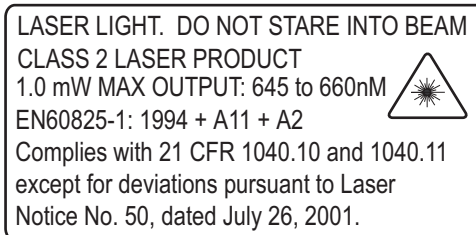
Dolphin 7900 mobile computers meet or exceed the requirements of all applicable standards organizations for safe operation. However, as with any electrical equipment, the best way to ensure safe operation is to operate them according to the agency guidelines that follow. Please read these guidelines carefully before using your Dolphin mobile computer.

Location



Laser Safety Label

Dolphin 7900 terminals with the IMAGETEAM™ 4300 (IT4300) image engine contain a laser aimer that projects from the imager. Therefore, Dolphin 7900 terminals with the IT4300 have the following label on the back panel:



Note: The actual label is much smaller than the above graphic.



Use of controls or adjustment or performance of procedures other than those specified herein may result in hazardous radiation exposure.

Regulatory and Safety Approvals for all Dolphin 7900 Series Terminals

Parameter	Specification
U.S.A	FCC Part 15, Class B
Canada	ICES-003
European Community	EN 55022 (CISPR 22) Class B EN60950 EN60825-1 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 Low Voltage Directive.

For further information, please contact:

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

Hand Held Products, Inc. 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.

Dolphin 7900 Series WLAN (802.11b) or WPAN (Bluetooth) Radio

Dolphin 7900 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).

802.11b

The required safety label that appears on the back of Dolphin 7900 terminals equipped with an 802.11b radio is as follows:



Bluetooth

The required safety label that appears on the back of Dolphin 7900 terminals equipped with a Bluetooth radio is as follows:



802.11b and Bluetooth

The required safety label that appears on the back of Dolphin 7900 terminals equipped with an 802.11b and a Bluetooth radio combination is as follows:



Dolphin 7900 Series WWAN Radio - GSM MC-45 & MC-46

Dolphin 7900 Series 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).

GSM MC-45

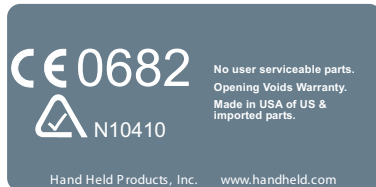
GSM



GSM and 802.11b



GSM and Bluetooth



GSM, 802.11b, and Bluetooth



GSM MC-46

GSM



GSM and 802.11b



GSM and Bluetooth



GSM, 802.11b, and Bluetooth



FCC Compliance

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

Dolphin 7900 Series Batch Terminal

Dolphin 7900 Series 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 7900 Series RF Terminal with an 802.11b, Bluetooth, and/or GSM MC-45 or MC-46 Radio

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.



This device and its antenna must not be co-located or operating in conjunction with any other antenna or transmitter. To maintain compliance with FCC RF exposure guidelines for body-worn operation, do not use accessories that contain metallic components other than specified by the manufacturer.

Canadian Compliance for Dolphin 7900 Series RF Terminals with an 802.11b, Bluetooth, and/or GSM MC-45 or MC-46 Radio

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) that is installed outdoors is subject to licensing.

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

RF, Regulatory, and Safety Agency Approvals for 802.11b and Bluetooth

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

RF, Regulatory, and Safety Agency Approvals for GSM MC-45

Parameter	Specification
RF Approvals U.S.A Canada	FCC Part 24 RSS 133

RF, Regulatory, and Safety Agency Approvals for GSM MC-46

Parameter	Specification
RF Approvals U.S.A	FCC Part 24

Dolphin 7900 Series 802.11b, Bluetooth, and/or GSM MC-45 or MC-46

R&TTE Compliance Statement

Dolphin 7900 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:

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 **CE0682** 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

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.

Care and Cleaning of the Dolphin Terminal

When needed, clean the image engine window and the LCD display with a clean, non-abrasive, lint-free cloth. The terminal can be cleaned with a damp cloth.

Overview

The Dolphin 7900 terminal comprises one element of an enterprise data collection system that includes various models, peripherals, and accessories that you can combine to suit your exact needs. The Dolphin 7900 terminal itself combines the latest in multi-functional wireless data and voice communications technology with a unique, compact form factor, which makes it an ideal solution for today's in-transit applications.

Data Input

The Dolphin 7900 mobile computer features a PDA design with a larger display and smaller recessed keyboards. The display area is 3.8 inches with a 240 X 320 VGA display in TFT color that is backlit for maximum viewability, then covered with an industrial touch screen for maximum durability. There are two keyboard options: 25-key numeric-alpha and 36-key alpha-numeric.

Imaging

The Dolphin 7900 contains an integrated imager that can take digital images of damaged packages and recipient signatures in addition to decoding standard 1D and 2D symbologies. For the greatest ease-of-use when operating the imager, **both** side panels feature a scan button that initiates a scan with the touch of a thumb or forefinger.

Memory

The Dolphin 7900 is a Windows Mobile computer with 64 MB RAM and 64 MB non-volatile synchronous Flash memory.

Communications

Communications via the industrial, mechanical connector supports 115 Kbps using serial RS-232 and 12 Mbps using USB.

Dolphin 7900 Radio Configuration Options

Standard Configurations

Dolphin 7900 WLAN and WPAN (802.11b and Bluetooth)

This terminal features co-located 802.11b and Bluetooth radios, which means that your terminal contains the capabilities of both radios. You can operate the radios simultaneously or switch between them.

Dolphin 7900 WWAN and WLAN (GSM/GPRS and 802.11b)

This terminal features the functionality of both GSM/GPRS and 802.11b radio and network technologies.

Dolphin 7900 WWAN and WPAN (GSM/GPRS and Bluetooth)

This terminal features the functionality of both GSM/GPRS and Bluetooth radio and network technologies.

Dolphin 7900 WWAN, WLAN, and WPAN (GSM/GPRS, 802.11b, and Bluetooth)

This terminal features the functionality of GSM/GPRS, 802.11b, and Bluetooth radio and network technologies.

Custom Configurations

Please refer to the Dolphin 7900 pricing configuration guide or contact your Customer Account Representative (CAR) for details.

Dolphin 7900 WLAN (802.11b)

These terminals integrate the basic functionality of the Batch terminals with an integrated, IEEE 802.11b direct sequence radio that enable communication with a host computer through a wireless local area network (WLAN).

Dolphin 7900 WPAN (Bluetooth)

This terminal allows Bluetooth communications to Bluetooth enabled devices such as printers, mobile phones, Access Points (APs), Bluetooth-enabled PCs, etc.

Dolphin 7900 WWAN (GSM/GPRS)

This terminal features all the benefits of the Dolphin 7900 with the additional capabilities of GSM/GPRS technology.

Dolphin 7900 Series Peripherals

Each of the following items is sold separately to enhance your Dolphin 7900 terminal's capabilities.

Dolphin HomeBase™

The Dolphin HomeBase charging and communication cradle supports both RS-232 and USB communications, which enable it 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. In addition, the HomeBase contains an auxiliary battery well that charges a spare Li-ion battery.

For more information, see [Dolphin 7900 HomeBase](#) on page 13-1.

Dolphin Mobile Base™

The Dolphin Mobile Base charging and communication cradle is designed specifically for in-premise and in-transit data collection applications. It features a flexible mounting bracket, a cigarette lighter adapter or power cable to adapt it to your environment.

When a terminal is seated in the Mobile Base, its main battery pack charges in less than four hours. The serial connector supports RS-232 communication and power out to peripheral devices, such as hand held scanners.

For more information, see [Dolphin 7900 Mobile Base](#) on page 14-1.

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 7900 QuadCharger](#) on page 16-1.

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 7900 ChargeBase](#) on page 15-1.

Dolphin Net Base

The Dolphin Net Base is a four-slot charging/communication cradle that holds, powers, charges, and communicates with the terminal in each slot. Ethernet communication occurs via statically and dynamically-assigned IP addresses.

For more information about the Dolphin Net Base, please consult the Dolphin 7900 Net Base Quick Start Guide.

Dolphin 7900 Accessories

Each of the following items is sold separately to enhance your Dolphin 7900 terminal's capabilities.

Dolphin Cable Kits

USB and serial cables connect the Dolphin 7900 terminal directly to both a peripheral device for communication and a power source for charging.

Dolphin Mobile Charger

This charging cable plugs the terminal directly into a vehicle cigarette lighter/power port to power the terminal and charge the battery pack. This accessory converts the 12 Volts from the vehicle outlet to the 9 Volts required by the terminal.

Protective Enclosure

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

Protective Holster

The protective holster holds the terminal for mobile use.

Dolphin Mobile Mount

The Dolphin Mobile Mount solution secures Dolphin 7900 in the cab of any vehicle. Used in conjunction with the Mobile Charger, Dolphin terminals can be adapted to almost any in-transit environment.

Li-ion Battery Pack

The 7.4v, 14.8 watt hour Li-ion rechargeable battery pack provides the main power supply for Dolphin 7900 terminals.

Using the Dolphin 7900 for the First Time

1. [Unpack the Carton and Verify its Contents](#), page 2-5.
2. [Install the Main Battery Pack](#), page 2-5.
3. [Charge the Main and Backup Batteries](#), page 2-6.
4. [Initialize the Mobile Computer](#), page 2-7.
5. [Align the Screen](#), page 2-8.
6. [Complete the Opening Screens](#), page 2-8.
7. [Set the Time Zone](#), page 2-9.
8. [Let Autoinstall Run](#), page 2-9.
9. [Verify Operations with Demos](#), page 2-10.

Step 1. Unpack the Carton and Verify its Contents

Verify that the carton contains the following items:

- Dolphin 7900 mobile computer (the terminal)
- Main battery pack (7.4v Li-ion)
- Microsoft Companion CD
- Dolphin 7900 Quick Start Guide

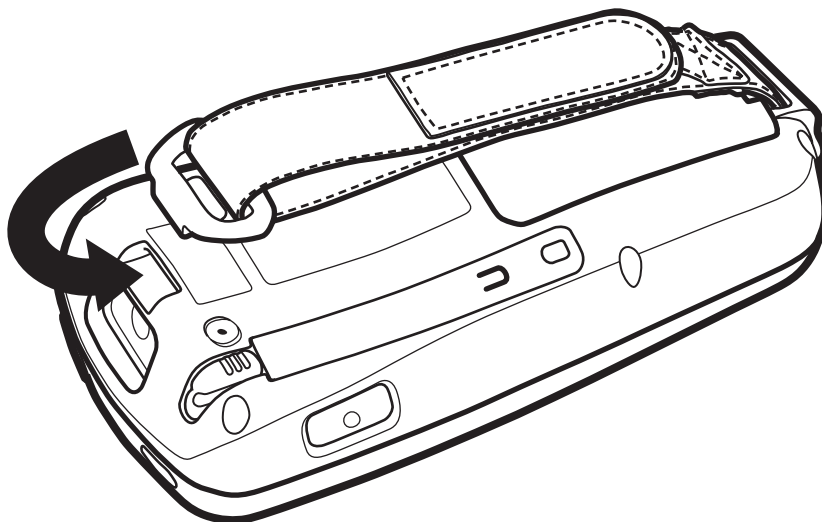
Be sure to keep the original packaging in the event that the Dolphin terminal should need to be returned for service. For details, see [Limited Warranty](#) on page 17-3.

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

Note: You may have also received the Dolphin Software Development Kit and User's Guide CD.

Step 2. Install the Main Battery Pack

The Dolphin 7900 ships with the handstrap installed and fastened with a clip on the top panel. To install the battery pack, you must detach the hand strap.



To detach the hand strap, push the clip up and away from the terminal.

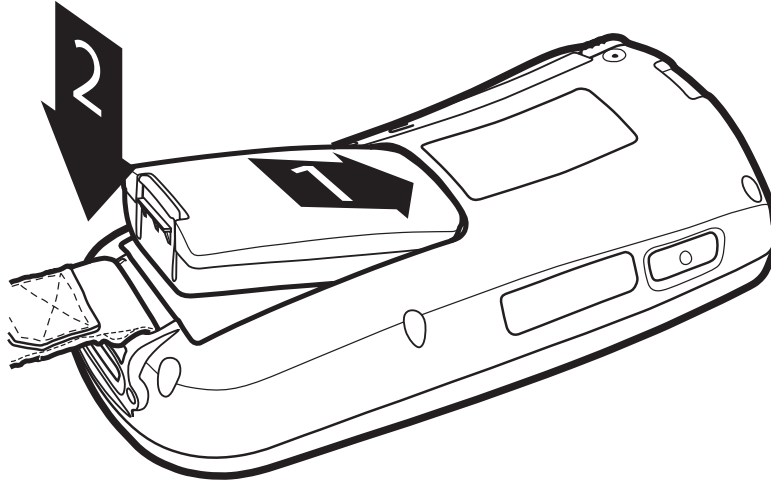
To re-attach the hand strap, slide the clip back into place.

Installing 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.

1. Unpack the Li-ion battery pack.
2. Hold the terminal with the front panel (keyboard) facing down and detach the handstrap.
3. Take the battery and insert the end without the locking tab into the top of the battery well and push down with a hinging motion until the locking tab snaps.



4. Re-attach the handstrap.

To Remove the Main Battery Pack

Put the terminal in Suspend mode **before** removing the battery; [Suspend Mode](#), page 2-11.

1. Detach the handstrap.
2. Press the locking tab on the battery pack and pull it away from the bottom panel.
3. Pull the battery pack up with a hinging motion.

Step 3. Charge the Main and Backup Batteries

The power supply consists of two types of battery power: the main battery pack and the backup battery located inside the terminal. The main battery powers the terminal and charges the internal backup battery. The internal backup battery maintains the application data stored in RAM and the system clock for up to 30 minutes when the main battery pack is completely discharged or removed.

Before initial use - Because the terminals are shipped with both batteries discharged of all power, charge the main battery pack for a **minimum of four hours** before initial use. When installed in the terminal, the battery pack can be charged in the HomeBase, Mobile Base, or with the appropriate charging cable. When not installed in the terminal, battery packs can be charged in the QuadCharger or the auxiliary well of the HomeBase.

Time to Charge - Four hours for the main battery pack, eight hours for the internal backup battery the first time. For more information, see [Battery Power](#) on page 3-10.



Use only Dolphin 7900 Series peripherals, power cables, and power adapters. Use of peripherals, cables, or power adapters not sold/manufactured by Hand Held Products will void the warranty and may damage the terminal.

Charging with Dolphin Peripherals

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:

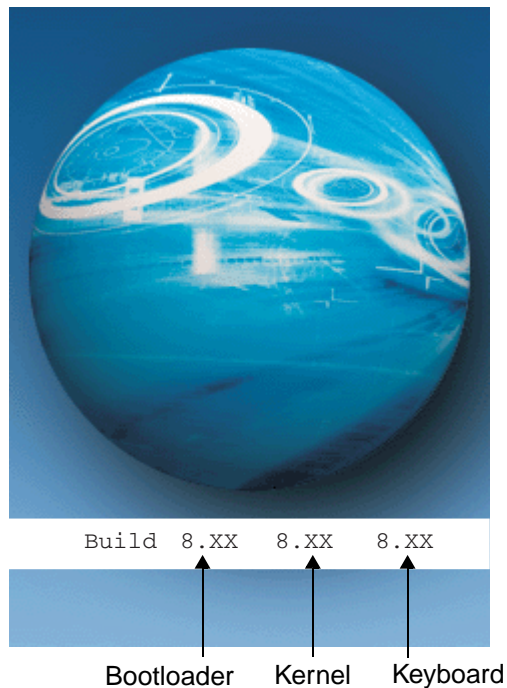
- [Dolphin 7900 HomeBase](#) (see page 13-1)
- [Dolphin 7900 Mobile Base](#) (see page 14-1)
- [Dolphin 7900 ChargeBase](#) (see page 15-1) or the Dolphin 7900 Net Base

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

- [Dolphin 7900 QuadCharger](#) (see page 16-1)
- [Auxiliary Battery Well](#) of the Dolphin HomeBase (see page 13-5)

Step 4. Initialize the Mobile Computer

1. Power on the terminal. The decode LED lights and the scan LED blinks for approximately three seconds. Do **NOT** press any keys while the terminal is booting up.
2. The terminal initializes and the splash screen appears for a few seconds. The Build numbers indicate the software versions.



3. The system performs a hard reset. When the display activates again, follow the instructions that appear.

Step 5. Align the Screen

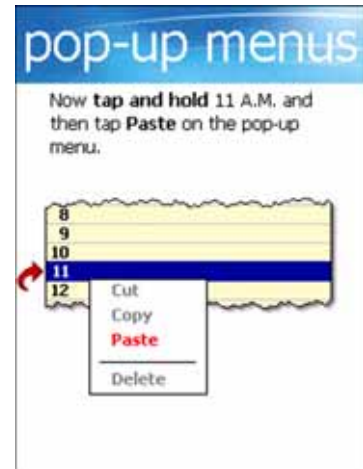
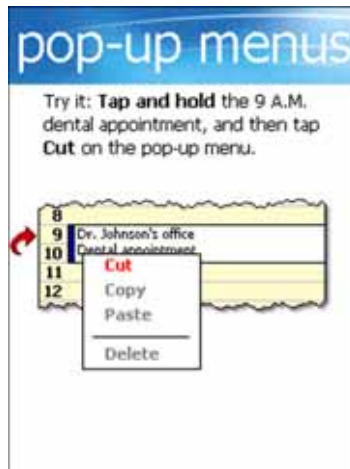
You are prompted to align the screen by tapping the target five times. Use the stylus provided by Hand Held Products.



- Alignment should always be performed with a stylus designed for touch screen applications. The small point is required for accurate calibration.
- Press the stylus firmly into the center of the cross-hair target once and release. Do not “double-tap” the target.
- You can re-align the screen at any time by going to **Start > Settings > System tab > Screen**.

Step 6. Complete the Opening Screens

After aligning the screen, follow the directions on the screen which take you through a simple exercise showing how to use the stylus and pop-up menus.



Note: Hand Held Products recommends using screen protectors for Dolphin 7900 terminals; especially for those terminals used within applications that require high-volume interaction with the touch screen. Screen protectors help prevent damage to the touch screen, are easily installed, and can be purchased at any major computer retail store or directly from Hand Held Products; contact Hand Held Products directly for part numbers and pricing.

Step 7. Set the Time Zone



Use the drop-down list to select your time zone, and tap **Next**. This does not necessarily set the correct time; only the time zone. You set the time and date manually. For details, see [Setting the Time and Date](#) on page 2-9. After setting the time zone, you are finished with the initial setup. The system begins autoinstalling.

Step 8. Let Autoinstall Run

For each program that loads, a status bar indicates that the program is loading. Autoinstall occurs after each hard reset. Do NOT touch the keyboard or the screen while programs are loading.

All configurations of the Dolphin 7900 terminal install Demos and Utilities. If the terminal is configured with a wireless radio, the appropriate radio drivers and utilities for each radio install.

After Autoinstall is complete, the terminal performs a soft reset automatically. When it finishes booting up after the soft reset, the Today screen appears; see [Today Screen](#) on page 4-2.

Step 9. Setting the Time and Date

You need to re-set the time and date after every hard reset of the terminal. It is a good idea to set the time and date now before you begin using the device.

On the Today screen, tap the line that displays the time and date,



The Clock Settings screen appears.



Step 10. Verify Operations with Demos

For details, see [Using the Image Engine](#) on page 5-1.

Resetting the Terminal

There are two ways to reset the Dolphin terminal: a soft 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 when

- The terminal fails to respond
- After installing some software applications
- After making changes to certain system settings, such as network cards

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

Hard Reset (Cold Boot)

A hard reset resets the operating system, restores the terminal back to factory defaults, and resets the terminal after a bootloader, keyboard, and kernel upgrade.



A hard reset erases all of the data stored in RAM memory and all RAM installed applications.

1. Press and hold the Red + TAB keys for approximately five seconds.
2. The decode and scan LEDs light for approximately three seconds.
3. The terminal re-initializes; see [Initialize the Mobile Computer](#) on page 2-7.

Suspend Mode

To put the Dolphin terminal into suspend mode manually, press and hold Blue + Backlight keys. The terminal also goes into suspend mode automatically when the terminal is inactive for a programmed period of time. For more information, see [Power](#) on page 7-13. To wake the Dolphin terminal from suspend mode, press the SCAN key.



System Features

Processor

The Dolphin 7900 terminal is equipped with an Intel X-Scale 400MHz RISC microprocessor that runs on a 100 MHz RAM BUS, making it one of the most powerful mobile computers on the market.

Operating System

Windows Mobile 2003 Second Edition software provides a compact, highly efficient, scalable operating system. Its open architecture facilitates the development of applications for energy-efficient data collection devices such as the Dolphin 7900 terminal.

Memory

Main Board/IPSM

The standard memory configuration is 64 MB RAM (optional 128 MB) and 64 MB non-volatile synchronous Flash. For more information about each kind of memory, see [Memory](#) on page 7-10.

Mini SD Card

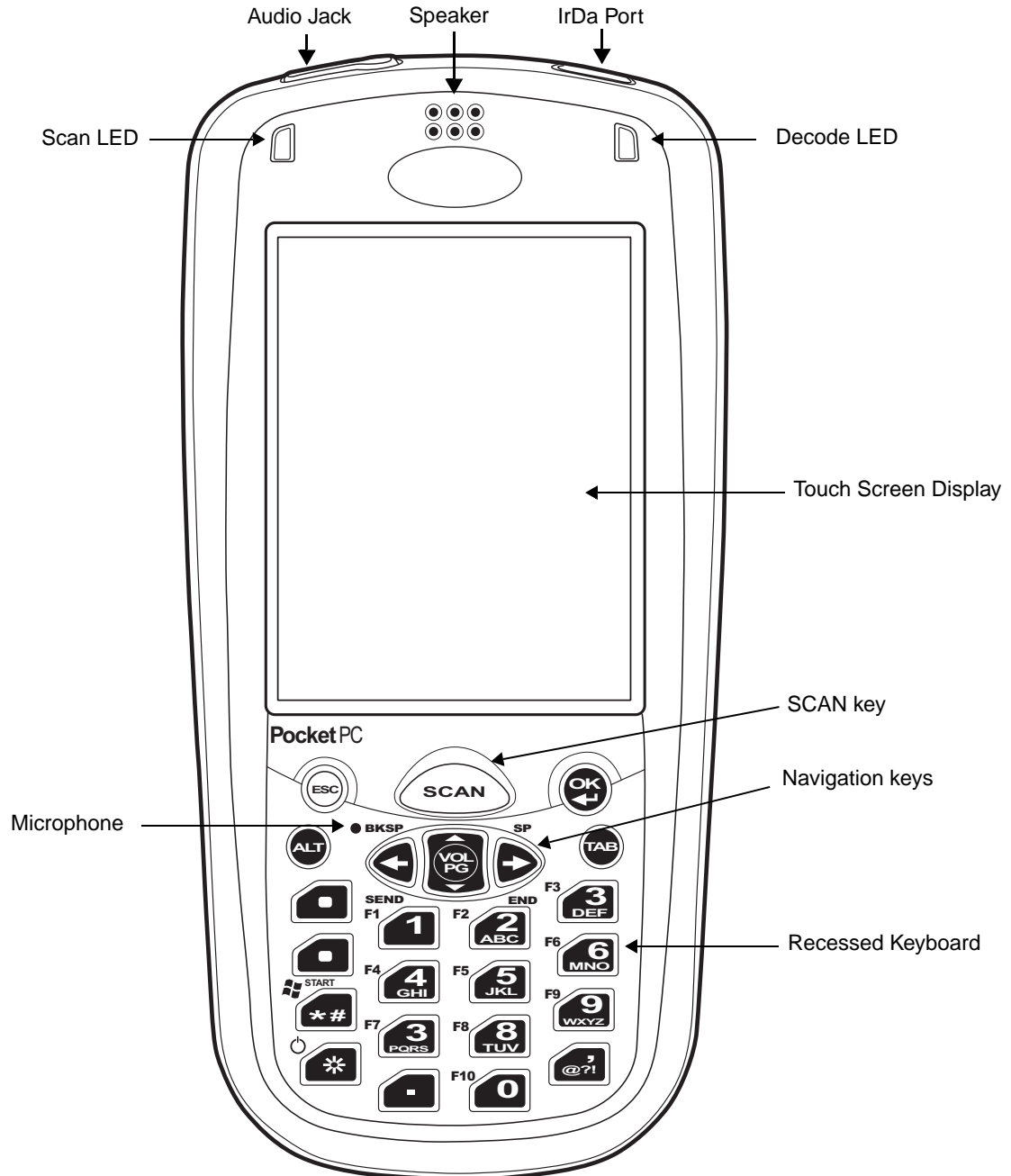
Dolphin 7900 terminals contain a mini SD memory interface on the left side panel to support memory expansion. The memory interface is covered by an access door that can be opened to insert a memory card. For more information about the access door, see [Access Door](#) on page 3-6.

Wireless Radio Options

For more information, see [Radio Options](#) on page 4-6.

Front Panel Features

This section describes features on the front panel of the Dolphin 7900 terminal. The following graphic shows a Dolphin 7900 with a 25-key keyboard.



Audio Jack

Dolphin 7900 terminals contain a 2.5mm audio jack that supports both speaker (stereo) and microphone (mono) headsets. Both microphone and speaker are located on the front panel for voice communication that is fully integrated with terminal operation.

Speaker

The Dolphin 7900 terminal has an integrated speaker that sounds audio signals as you scan bar code labels and enter data. The operating frequency range is 500Hz at 71 dB up to 80 dB. The speaker can also be used for playing sounds (e.g., WAV or MP3 files).

When used in conjunction with the microphone on the keyboard, the speaker can also be used for two-way voice communications. Both speaker and microphone are located on the front panel for voice communication that is fully integrated with terminal operation.

IrDA Port

The Infrared Data Association or IrDA port communicates with IrDA-enabled devices such as PC's, printers, modems, or other Dolphin 7900 terminals. The maximum speed is 115kbps.

Scan LED

The scan LED lights red when you press the SCAN key in scanning applications.

Decode LED

The decode LED lights green when a scanned bar code is successfully decoded.

Note: Both LEDs can be programmed by various software applications.

Touch Screen Display

Dolphin 7900 terminals feature a 3.8" liquid crystal display (LCD) that is covered with an industrial, protective touch screen lens. The video graphic array (VGA) resolution is 1/4 (240 X 320 pixel). The touch screen is activated with the stylus (included with the terminal) or a finger.

The color LCD is 16 bits/pixel and uses active display or thin film transistor (TFT) technology. The backlight for the display illuminates when the screen is touched. For more information about the Backlight, see [Adjusting the Backlight](#) on page 4-4.

SCAN Key

The SCAN key is centrally located for easy access with the right or left hand. When pressed, the SCAN key activates the scanner/imager. The SCAN key also functions as an on or system wakeup control for the terminal.

Navigation Keys

The centrally-located navigation keys enable you to move and position the cursor through software programs. The up and down arrows are programmed to perform specific functions when pressed in combination with the Blue and Red modifier keys.

Recessed Keyboard

The Dolphin 7900 Series features two keyboard options: 25-key numeric and 36-key alpha keyboard. Both keyboards are recessed under the overlay for maximum durability and backlit for easy viewing in various lighting conditions. Keyboard overlays are color-coded to indicate the functions performed or characters typed when the color-coded key is pressed immediately after the Red or Blue Modifier key.

For a complete overview of each keyboard, see [Using the Keyboards](#) on page 6-1.

Microphone

Dolphin 7900 terminals feature an integrated microphone that provides audio input to the terminal when a headset is not plugged into the audio jack. When a headset is plugged in, the terminal defaults to the microphone on the headset. For more information, see [Headset Control](#) on page 7-5.

Back Panel Features

The following graphic describes features on the back panel of the Dolphin 7900 terminal.

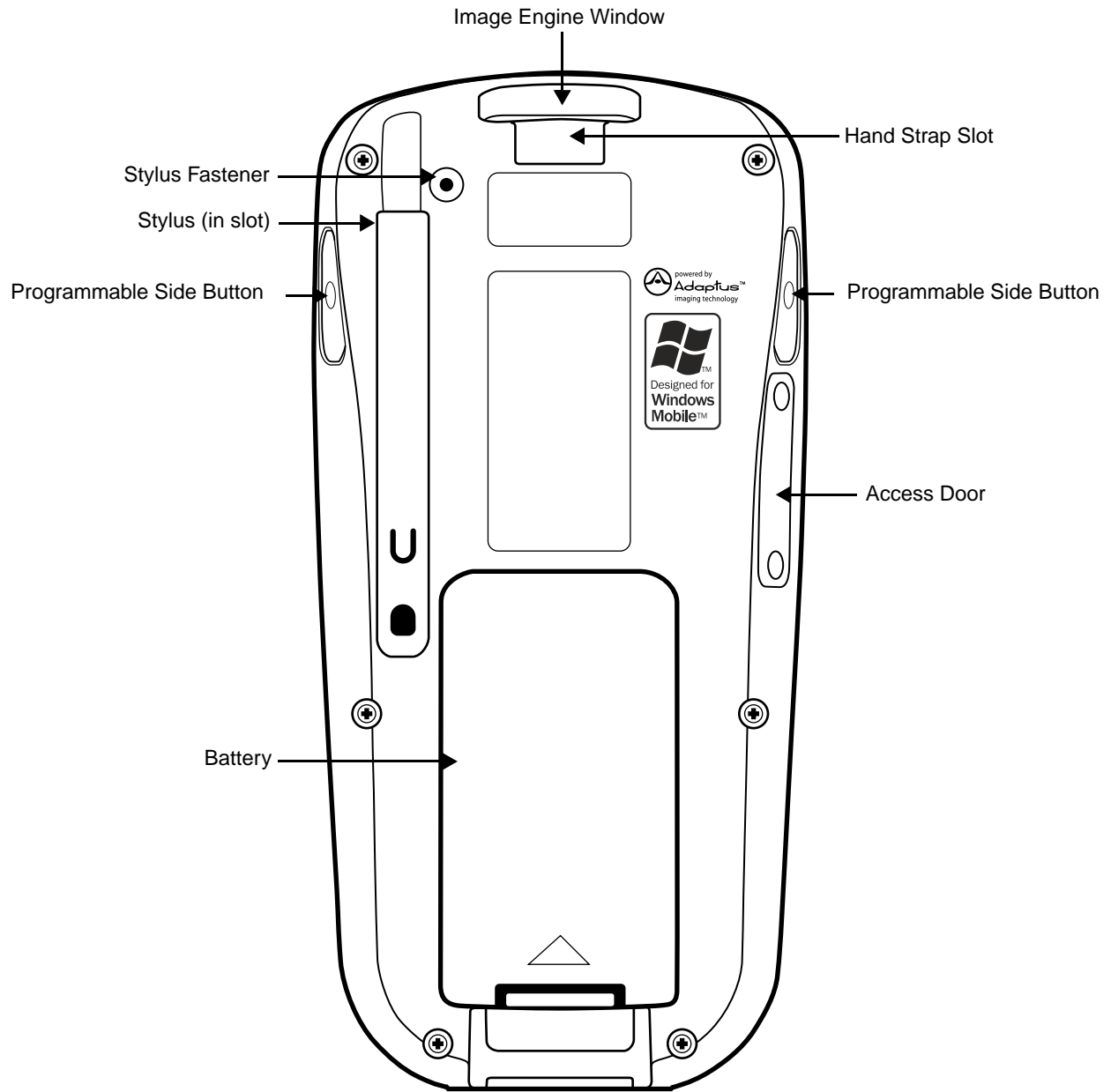


Image Engine Window

Dolphin 7900 terminals have an optional image engine that reads and decodes linear, stacked linear (PDF417), and 2D matrix bar code symbologies. With the latest CMOS-based technology, the engine works like a digital camera and enables digital image capture, signature capture, and reading of OCR characters.

The engine points out the top panel at a slight downward angle so that the terminal needs to be positioned slightly above the image or bar code when using the engine.

For more information about imaging, see [Using the Image Engine](#) on page 5-1.

Hand Strap Slot

The Dolphin 7900 has an adjustable, elastic hand strap attached to the terminal with a slot on the top of the back panel. You can detach the handstrap from this clip when you need access to the battery or other item on the back panel.

Programmable Side Buttons

See [Programmable Side Button](#) on page 3-6.

Access Door

See [Access Door](#) on page 3-6.

Battery

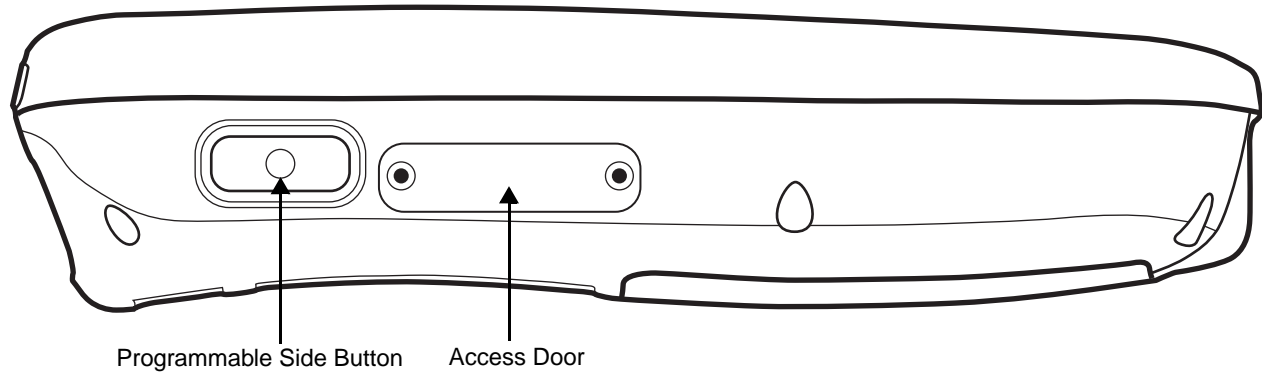
The Battery well is a recessed area on the back of the Dolphin terminal that holds the Li-Ion battery pack. For more information, see [Battery Power](#) on page 3-10.

Stylus and Fastener

The stylus is used to operate the touch screen. The back panel features this storage slot to hold the stylus when not in use. There is also a fastener on the back panel to which you can attach stylus tethers. A stylus tether is a coiled elastic cord with one end to attach to the stylus and another to attach fasten to the back panel.

Side Panel Features

The following graphic shows the left, side panel.



Programmable Side Button

Programmable buttons are located on both side panels. By default, these buttons activate the image/scan engine as a more ergonomic alternative to pressing the Scan key on the keyboard. These buttons can be programmed to perform specific functions in the Buttons setting. For details, see [Buttons](#) on page 7-3.

Access Door

When the access door is open, the mini-SD memory interface and SIM card slot are available. The following graphic displays both slots as they appear when the Dolphin terminal is placed flat with the keyboard facing down.



Mini-SD Interface You can install a mini-SD card to expand the capacity of the terminal's storage memory. After memory expansion is complete, this door should be closed and sealed. 256 MB cards are currently available from Hand Held Products. (The mini-SD memory interface does not support SDIO.)

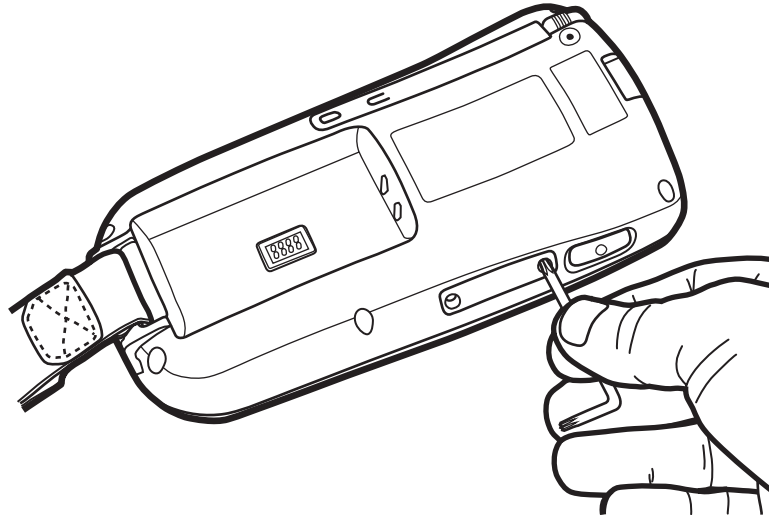
SIM Card SIM cards are used with a GSM/GPRS radio.

Opening the Access Door

Note: Access door removal **requires** a special tool from Hand Held Products, part number 100001024.

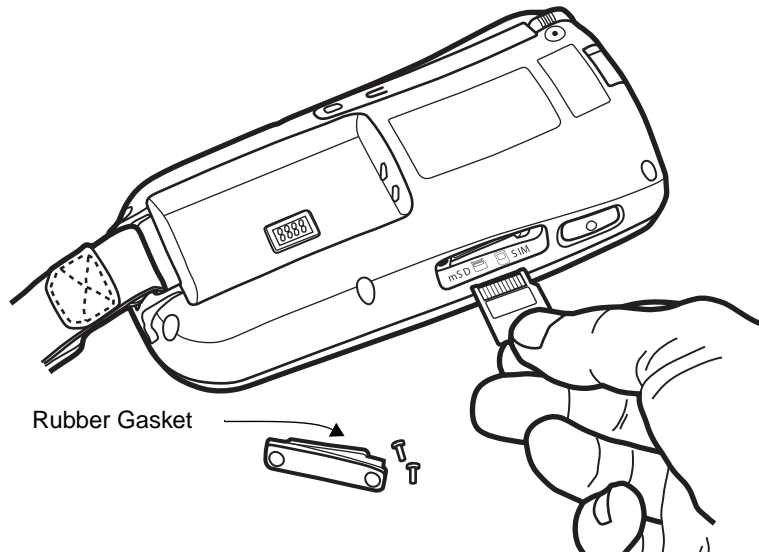
1. Press Blue + Backlight key to put the terminal in Suspend Mode; see [Suspend Mode](#) on page 2-11.
2. Remove the battery; see page 2-5.
3. Place the terminal on a flat, secure surface with the keyboard face-down.

-
- Using the special tool from Hand Held Products, unscrew both screws.

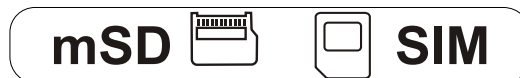


Installing a Mini-SD Card

- When the access door is open, slide the mini-SD card into the appropriate slot until it clicks into place.



- The bottom panel inside the opening displays the following guide to help you insert the mini-SD card correctly:



To remove an installed mini-SD card, tap on the edge lightly to unlock the card; the card will pop out just enough for you to grab its edge and pull it out.

- Replace the access door and tighten the screws.
There is a rubber gasket on the inside of access door that **must** be in place when you seal the door. This gasket performs the sealing action for the door.

Installing a SIM Card

Note: The SIM card **must** be activated by the service provider prior to installation.

1. When the access door is open, slide the SIM card into the appropriate slot. The guide on the bottom panel inside the opening illustrates the correct position; see page [3-7](#).
2. Replace the access door and tighten the screws.
There is a rubber gasket on the inside of access door that **must** be in place when you seal the door. This gasket performs the sealing action for the door.
3. Power on the terminal to determine if the SIM card is working. If the SIM card is not installed properly, the [Dialler screen](#) (page 11-5) will indicate that no SIM card is installed.



Do NOT power on the device with the SIM card installed and the access door still open. You **must** secure the access door before you power on the device.

For more information about SIM cards and the GSM/GPRS radio, see [SIM Card](#) on page [11-2](#).

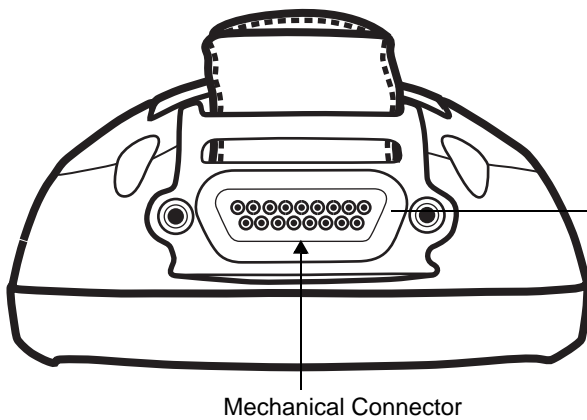
Replacing the Access Door

The access door must be replaced before resuming terminal operation. Replace the door and use the special tool from Hand Held Products (part number 100001024) to tighten the screws.

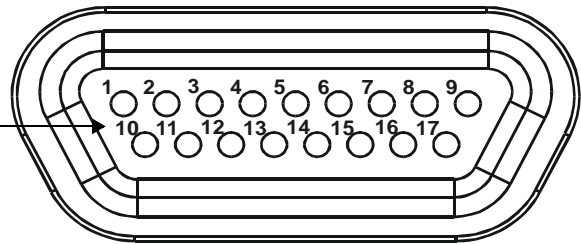


When closed, the access door seals the memory interface from moisture and particle intrusion thus preserving the terminal's environmental rating. The access door must be properly sealed before resuming terminal operation. Failure to seal the access door will void the warranty.

Bottom Panel Features



Note: Signals referenced are for a DTE device.



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

Mechanical Connector

The bottom panel of the Dolphin 7900 features a custom, industrial-grade connector with 17 pins. When seated in a Dolphin 7900 series peripheral, the terminal is powered, the main battery charged, and communication occurs via this connector. All Dolphin 7900 Series peripherals are designed to work exclusively with this connector.

The 17-pin connector communicates with Dolphin 7900 Series peripherals via RS-232 or USB. For RS-232, the maximum communication speed is 115 Kbps with seven baud rate settings. For USB, the communication speed is up to 12 Mbps. If the peripheral unit is connected to a PC, this connector also transmits data.

The mechanical connector also provides power out (to peripheral devices) 5V at 500mA. This means that, with the proper Hand Held Products cable, the terminal can power another device.

Battery Power

The Dolphin 7900 features intelligent battery technology with two types of battery power:

- The main battery pack installed in 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 also be charged to full capacity before using the Dolphin 7900 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. The Li-Ion battery is designed to operate in a temperature range of -10 to 50° C (14 to 122° F). For the location of the Li-Ion battery on the terminal, see [Battery](#) on page 3-5.

Charging Options

When the Li-ion battery is installed in the terminal:

- Place the terminal in a HomeBase (page 13-5), Mobile Base (page 14-7), ChargeBase (page 15-3), or Net Base that is connected to an appropriate power supply.
- Connect a charging/communication cable to the mechanical connector, plug the cable into the AC adapter, and plug the adapter cable into a power outlet.
- Connect the terminal to the Mobile Charger and vehicle power port.

When the Li-ion battery is not installed in the terminal:

- Place the battery pack in the Dolphin QuadCharger - see [Charging Batteries in the QuadCharger](#) on page 16-3.
- Place the battery pack in the auxiliary battery well of the HomeBase - see page 13-5.

Charging 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 3.6 Volt nickel metal hydride (NiMH) battery.

Purpose

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

Note: Data and programs stored in *Flash* memory are not lost even if the internal backup battery fails. However, you must reset the real-time clock; see [Setting the Time and Date](#) on page 2-9.

Charging

The internal backup battery is powered by the main battery pack. Therefore, charging the internal backup battery requires that the main battery pack be installed in the terminal and the terminal be connected to a charging device.

The internal backup battery must be fully charged before using the terminal for the first time. The initial charge cycle takes approximately eight hours. After that, if the internal backup battery becomes fully discharged of power, it requires a minimum of 10 hours of charging time to function normally.

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. The internal battery prematurely discharges if there is not at least a partially charged battery in the terminal.
- Keep the Dolphin terminal connected to power when the terminal is not in use.

Managing Battery Power

Data and files saved on the Dolphin terminal may be stored in RAM; therefore, maintain a continuous power supply to the terminal to help prevent data loss. Letting the backup battery become fully discharged causes the terminal to lose all data in RAM. The internal battery discharges prematurely if there is not at least a partially charged battery in the terminal. When you remove a battery pack, insert another charged battery pack in the Dolphin.

If the main battery is low and the terminal is in suspend mode, pressing the SCAN key will not wake the Dolphin terminal; you must replace the discharged battery with a fully charged battery.

Default Low and Critical Battery Points

The navigation bar at the top of the screen displays battery warning icons when the main battery reaches a low and critical battery points. For details about these warning icons, see [Status Icons](#) on page 4-11. If the navigation bar does not contain a warning icon, then the battery is adequately charged.

The Dolphin terminal ships with default low and critical battery points already programmed in the registry. The registry contains two DWORD settings in the [HKEY_LOCAL_MACHINE\System\CurrentControlSet\Control\Power] entry:

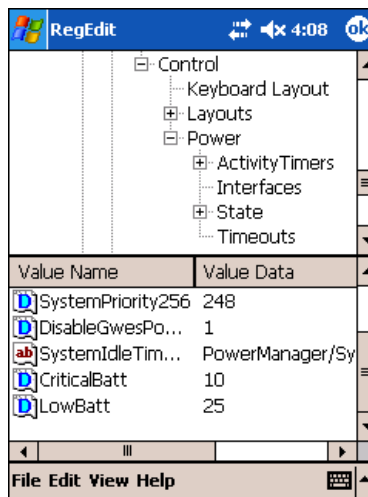
- “**LowBatt**”=19 (25%) This sets the Low battery point to 25 percent (19 hex = 25 decimal). The low battery setting is the point at which the user is notified that the battery is low. The user is notified only once for a low battery.
- “**CriticalBatt**”=a (10%) This sets the Critical Battery point to 10 percent (a hex = 10 decimal). The critical battery setting is the point at which the customer is warned that the battery charge is very low. This warning is posted every 3 minutes until the situation is corrected.

Note: Warnings do not appear when the terminal is on external power.

Setting Critical and Low Battery Points

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

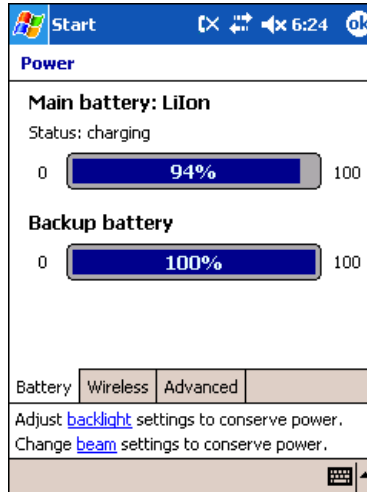
1. Tap **Start > Utils > RegEdit**. In the RegEdit utility, drill-down to **HKEY_LOCAL_MACHINE > System > CurrentControlSet > Control > Power**. The Battery Points appear in the list.



2. Tap the **Value Name** to change the Value Data. You can reset the Value Data from 0 (no warning) to 99 (would nearly always warn).
3. Tap **OK** to save changes.

Checking Battery Power

Tap **Start > Settings > System tab > Power**. The Battery tab opens displaying the charge status of both the installed Li-ion battery pack and the NiMH backup battery inside the terminal.



For more information, see [Power](#) on page 7-13.

Storing Batteries

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.

Dolphin 7900 Technical Specifications

System Architecture	
Processor:	Intel X-Scale PXA255 400MHz
Software Development Kits:	Dolphin SDK Add-on for Windows Mobile 2003 Second Edition supports Embedded Visual C++ 4.0 Dolphin .NET SDK for Windows Mobile 2003 Second Edition supports Visual Studio.NET 2003 (VB.NET and C#.NET) Dolphin GSM/GPRS SDK Add-on for Pocket PC 2003 - supports Embedded Visual C++ 4.0 and Visual Studio.NET 2003
Operating Platform:	Windows Mobile 2003 Second Edition Software for Pocket PCs
Third-Party Software:	Support for Connect Terminal Emulation software (TNVT, 3270, 5250) and Java Virtual Machine (JVM) runtime, ITScriptNet Batch and Omni, MCL, and App Forge
Memory:	64MB RAM x 64MB non-volatile synchronous Flash standard; 128MB RAM high memory optional
Data Inputs	
Imager/Scanner:	See Image Engine Options 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 Fonts:	See OCR Codes on page 5-2.
Three Keyboard Options:	Two backlit keyboard options: 25-key numeric alpha, 36-key alpha numeric See Using the Keyboards on page 6-1.
Data Outputs	
Display:	See Touch Screen Display on page 3-3.
I/O Ports:	Industrial-grade mechanical connector supports communications - USB 1.1, serial RS-232 up to 115Kbps - and charging via cradles or AC adapter cables, IrDA port-Integrated, Speaker-Integrated, Microphone-Integrated, Headset jack
Mass Storage:	User-accessible Mini Secure Digital (Mini-SD) memory interface
Wireless Radio Options	
WWAN:	GSM/GPRS Tri-band <ul style="list-style-type: none"> • 850/1800/ 1900 MHz in US, Latin America, and Canada or • 900/1800/1900 MHz in Europe, Asia, and Australia
WLAN:	IEEE 802.11b DSSS Authentication Methodologies: LEAP, MD5, TLS, TTLS, PEAP, and WEP
WPAN:	Bluetooth radio (Class 2)
Physical	
Dimensions:	7.3"L x 3. 5"W x 1.7"D max (185 x 89 x 43 mm), 3.2"W x 1.5"D at grip (81 x 38 mm)
Weight:	Batch: 17 oz. (482 gm), WLAN: 17.3 oz. (490 gm), WPAN: 17.1 oz. (484 gm), WLAN/WPAN: 18.9 oz. (536 gm)
Operating Temperature:	14 to 122°F (-10°C to 55°C) – The terminal can operate in temperatures lower than -20°C with potential degradation in performance depending on the application.

Dolphin 7900 Technical Specifications

Storage Temperature:	-22 to 176°F (-30°C to 80°C)
Humidity:	95% humidity, non-condensing
ESD:	15 KVA on all surfaces
Impact Resistance:	Withstands multiple 5ft (1.5m) drops onto concrete
Environmental Resistance:	Independently certified to meet IP64 standards for moisture and particle resistance
Power:	Lithium-Ion battery technology, 7.4V, 14.8 watt-hour main battery with hot-swappable design for fast replacement in the field
Other:	Integrated stylus with optional tether and adjustable, removable hand strap
Peripherals/Accessories	
Dolphin HomeBase	Charging/communications cradle with auxiliary battery well. Data transfer via RS-232 serial or USB ports.
Dolphin Mobile Base	Mobile charging/communication cradle. Data transfer via RS-232 serial. Power out 5 volts for peripheral devices.
Dolphin QuadCharger	Four-slot battery charger that charges four batteries in under four hours. One slot doubles as a battery analyzer.
Dolphin Mobile Charger	Charges a Dolphin terminal by plugging into a vehicle cigarette lighter/power port.
Dolphin Net Base	Four-slot charging/communication cradle designed for Ethernet-based communications.
Dolphin ChargeBase	Four-slot charging cradle that holds, powers, and charges a terminal in each slot.
Dolphin Cable Kits	USB or serial cables that charge and communicate with the terminal directly, without a cradle.
Li-Ion Battery Pack	7.4V, 14.8 watt hour Li-ion rechargeable main battery for the Dolphin.
Regulatory Approvals	
FCC-CE-Radio Country:	US/Canada, R&TTE

Overview

This chapter provides the basic instructions you need to operate the Dolphin 7900 terminal.

Using the Touch Screen

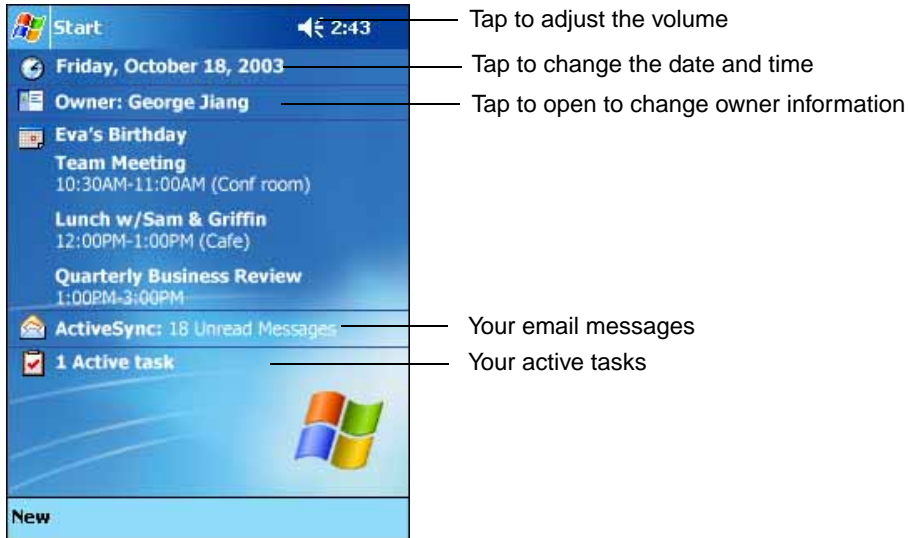
Hand Held Products recommends using screen protectors to protect the touch screen; especially when used with applications that require high-volume interfacing with the touch screen. Screen protectors help prevent damage to the touch screen display and are easily installed. Screen protectors can be purchased at any major computer retail store or directly from Hand Held Products.



For touch screen input, use the included stylus or your finger. The method you choose depends on which one is 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. Use of other objects, such as paper clips, pencils, or ink pens can damage the input panel and will void the warranty.

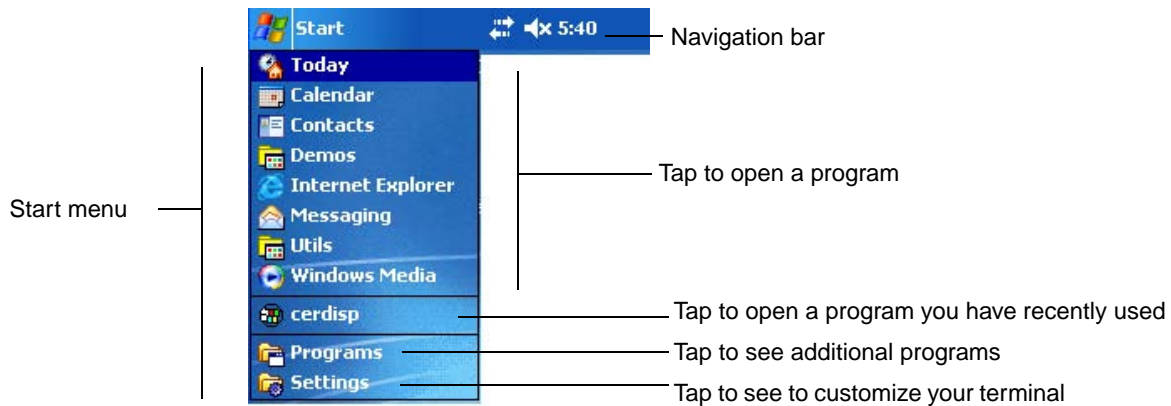
Today Screen

When the terminal powers on for the first time, you see the Today screen. You can also display it by tapping **Start** and then **Today**. On the Today screen, you can see at a glance important information for the day.



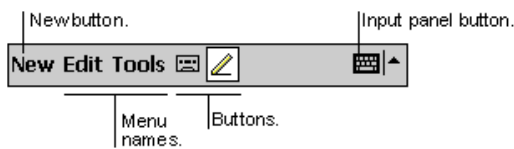
Navigation Bar

The navigation bar is located at the top of the screen and displays the active program and current time, and allows you to switch to programs and close screens.



Command Bar

Use the command bar at the bottom of the screen to perform tasks in programs. The command bar includes menu names, buttons, and the Input Panel button.



Selecting Programs

To see additional programs loaded on your terminal, tap **Start > Programs**. The Programs screen displays the programs that are not listed on the Start menu. To open a program, tap once on the icon.

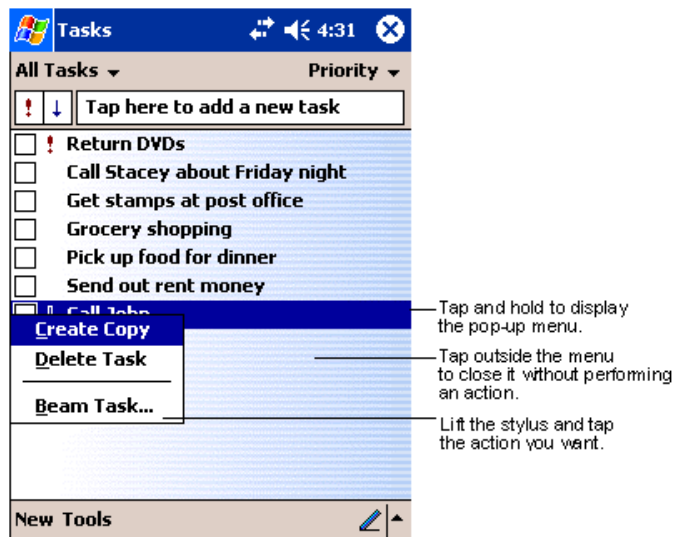


Some programs have abbreviated labels underneath the icon. To see the full spelling of an abbreviated label, tap and hold the stylus on the label. Drag the stylus off the label so that the command is not carried out.

Pop-Up Menus

With pop-up menus, you can quickly choose an action for an item. For example, you can use the pop-up menu in the contact list to quickly delete a contact, make a copy of a contact, or send an e-mail message to a contact. The actions in the pop-up menu vary from program to program.

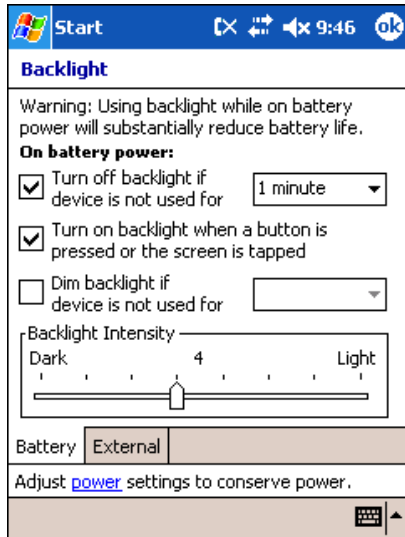
1. Tap and hold the stylus on the item name. The pop-up menu appears.
2. Lift the stylus, and tap the action you want to perform.



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

Adjusting the Backlight

The backlight for the color display is user-defined. There are two tabs - one for Battery and the other for External power. The options on each tab are the same. Go to **Start > Settings > System tab > Backlight**. Backlight settings open displaying the Battery tab.



From the **Turn off backlight...** drop-down list, select how many minutes you want to elapse before the backlight automatically turns off.

Select the **Turn on backlight...** option if you want the display backlight to turn on when the a button is pressed or the touch screen is tapped.

From the **Dim backlight if...** drop-down list, select how many minutes you want to elapse before the backlight dims.

Move the **Backlight Intensity** slider to set the intensity of the backlight.

Tap **OK** to save settings. The display backlight functions according to the settings saved here.

The External tab contains the same options for external power.

Communication Options

Mechanical Connector

The 17-pin, industrial-grade, mechanical connector on the bottom panel is designed to work only with communication and charging peripherals sold/manufactured by Hand Held Products. For more information about the connector, see [Mechanical Connector](#) on page 3-9.

IrDA Port

The IrDA port enables the Dolphin 7900 to transmit data via pulses of light to and from other IrDA-compliant devices, such as printers and PCs or to other Dolphin terminals. For more information, see [Using Infrared](#) on page 8-5.

Wireless Radios

Dolphin 7900 terminals can be equipped with wireless radios and radio combinations. For more information, see [Radio Options](#) on page 4-6.

Software Communication Programs

Microsoft ActiveSync v3.7 or Higher

Microsoft ActiveSync is a tool that enables mobile computing devices, such as the Dolphin 7900, to exchange and synchronize application data with a desktop computer. For more information, see [Using ActiveSync](#) on page 8-2.

RAS

Short for Remote Access Services, 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 PPP or SLIP connections for network connectivity.

Radio Options

Dolphin 7900 terminals can be configured with a combination of the following radios:

- 802.11b - [Wireless LAN Communications with 802.11b](#) (see page 9-1)
- Bluetooth - [Wireless PAN Communications with Bluetooth](#) (see page 10-1)
- GSM/GPRS - [Wireless WAN Communications with GSM/GPRS](#) (see page 11-1)

Radio Combinations

Note: Configuration of simultaneous radio operation is done during the manufacturing process according to FCC regulations. All radios and radio drivers are co-located inside the terminal.

802.11b and GSM radios cannot be enabled at the same time. Bluetooth radios can be enabled and operating with either the 802.11b or GSM radio or both.

Radio Driver Installation

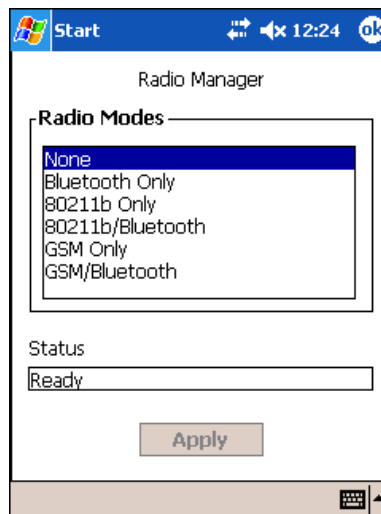
Radio drivers install during the autoinstall process after a hard reset (see [Let Autoinstall Run](#) on page -9). Only the appropriate drivers for the terminal's radio configuration install.

Radio Manager

The Radio Manager allows you to enable and disable radios installed in the terminal after initial bootup. If the Dolphin terminal is configured with an 802.11b radio, the Radio Manager defaults to the 802.11b radio after initial bootup. However, if the Dolphin terminal is configured with a GSM radio, the Radio Manager defaults to the GSM radio after the initial bootup.

Accessing the Radio Manager

Tap **Start > Settings > Connections** tab > **Radio Manager**. The Radio Manager appears identifying which radio drivers are installed. The highlighted entry is the radio mode that is currently enabled; its Status should be Ready.



Radio Modes

The Radio Modes section lists the radio drivers currently installed on the terminal.

Status field

The Status field displays the status of the radio driver selected in the Radio Modes box.

Ready - The selected radio is enabled.

Success - The selected radio has been successfully enabled.

Error message - The radio cannot be enabled. You cannot successfully enable the radio if the radio's driver is not installed. An error will appear telling you that the radio driver is not installed.

Enabling Radios and Radio Combinations

Note: To successfully enable a radio, both the hardware module and the software driver must be installed on the terminal.

If multiple radios are installed in your terminal, you must enable the radio combination and not each individual radio. To enable a radio or radio combination, select the radio in the Radio Modes list and tap **Apply**.

The radio drivers are enabled and disabled (if necessary) in the proper sequence. For example, if the radio enabled is Bluetooth Only and you try to switch to 802.11b Only, after **Apply** is tapped, the Radio Manager disables the Bluetooth radio first, then enables the 802.11b radio.

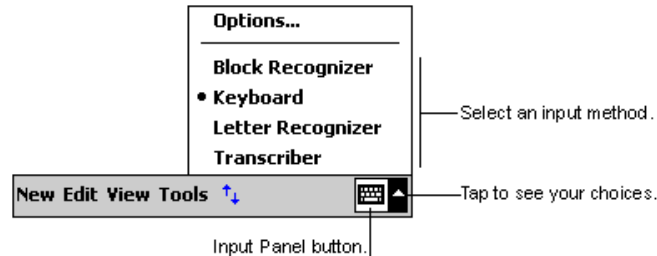
Disabling Radios

To disable all radios, select **None** and tap **Apply**.

Using the Soft Input Panel (SIP)

Use the SIP to enter information in any program on the Dolphin terminal. You can either type on the soft keyboard or write on the touch screen using Letter Recognizer or Block Recognizer. In either case, the characters appear as typed text on the screen.

To show or hide the SIP, tap the **Input Panel** button. Tap the arrow next to the Input Panel button to see your choices.

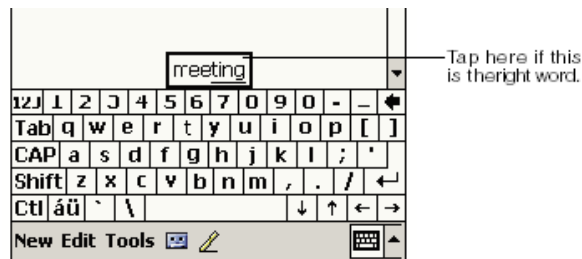


When you use the SIP, your terminal anticipates the word you are typing or writing and displays it above the input panel. When you tap the displayed word, it is inserted into your text at the insertion point. The more you use your Dolphin terminal, the more words it learns to anticipate.

To change word suggestion options, such as the number of words suggested at one time, tap **Start > Settings > Personal tab > Input > Word Completion tab**.

Using the SIP Keyboard

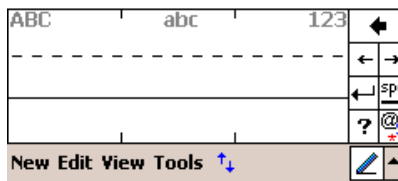
Tap the arrow next to the Input Panel button and select **Keyboard**. On the soft keyboard that displays, tap the keys with your stylus.



Using the Letter Recognizer

With Letter Recognizer you can write letters using the stylus just as you would on paper.

Tap the arrow next to the Input Panel button and then **Letter Recognizer** and write a letter in the box.

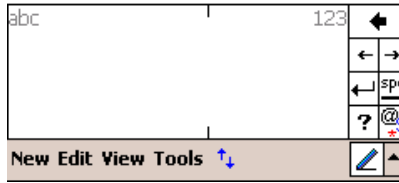


When you write a letter, it is converted to typed text that appears on the screen.

Using the Block Recognizer

With Block Recognizer you can input character strokes using the stylus.

Tap the arrow next to the Input Panel button and then **Block Recognizer** and write a letter in the box.



When you write a letter, it is converted to typed text that appears on the screen.

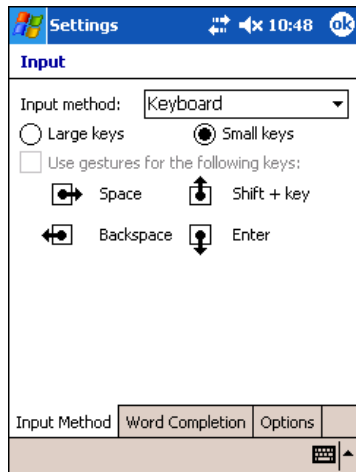
Selecting Text

To edit or format typed text, select it by dragging the stylus across the text. Then, use the commands on the pop-up menu to cut, copy, and paste the selected text.

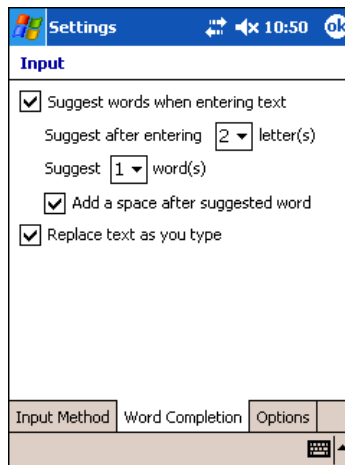
Input Panel Options

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 input panel to your preferences:

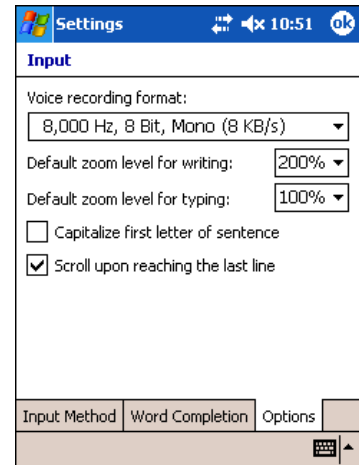
Input tab



Word Completion tab



Options tab



Writing on the Screen

You can use your stylus to write directly on the screen as you would on paper. To write on the screen, tap the **Pen** button to switch to writing mode. This action displays lines on the screen to help you write.



Note: Some programs that accept writing may not have the Pen button. See the documentation for that program to find out how to switch to writing mode.

To Select Writing

If you want to edit or format writing, you must select it first.

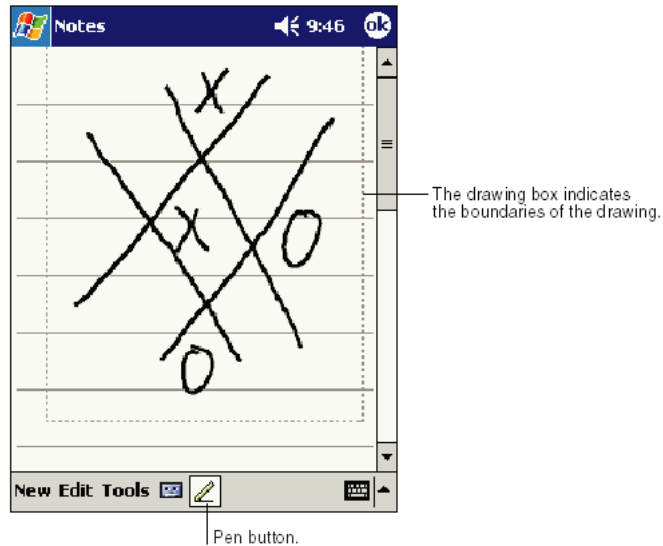
1. Tap and hold the stylus next to the text you want to select until the insertion point appears.
2. Without lifting, drag the stylus across the text you want to select.

If you accidentally write on the screen, tap **Tools**, then **Undo** and try again. You can also select text by tapping the **Pen** button to deselect it and then dragging the stylus across the screen. You can cut, copy, and paste written text in the same way you work with typed text: tap and hold the selected words and then tap an editing command on the pop-up menu, or tap the command on the **Edit** menu.

Drawing on the Screen

Drawing on the screen is similar to writing on the screen. The difference between writing and drawing on the screen is how you select items and how they can be edited. To create a drawing, cross three ruled lines on your first stroke. A drawing box appears. Subsequent strokes in or touching the drawing box become part of the drawing. Drawings that do not cross three ruled lines will be treated as writing.

For example, selected drawings can be resized, while writing cannot.



Status Icons

Status Icon	Meaning
	Opens the sound and volume drop-down that turn the sound on and off and adjust the volume
	Backup battery is low
	Main batteries are charging
	Main batteries are low
	Main batteries are very low
	Main batteries are full
	Synchronization is beginning or ending
	Notification that one or more e-mail messages were received

Note: The Notification icon displays if more notification icons need to be displayed than there is room to display them. Tap the icon to view all notification icons that cannot be displayed.

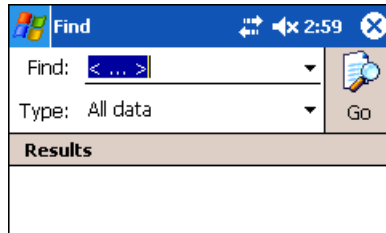
Notifications

Notifications remind you when you have something to do. For example, if you've set up an appointment in Calendar, a task with a due date in Tasks, or an alarm in Clock, you'll be notified by a message box appearing on the screen or a sound is played. To choose reminder types and sounds, tap **Start > Settings > Personal tab > Sounds & Notifications; Personal Tab**, page 7-2.

Finding and Organizing Information

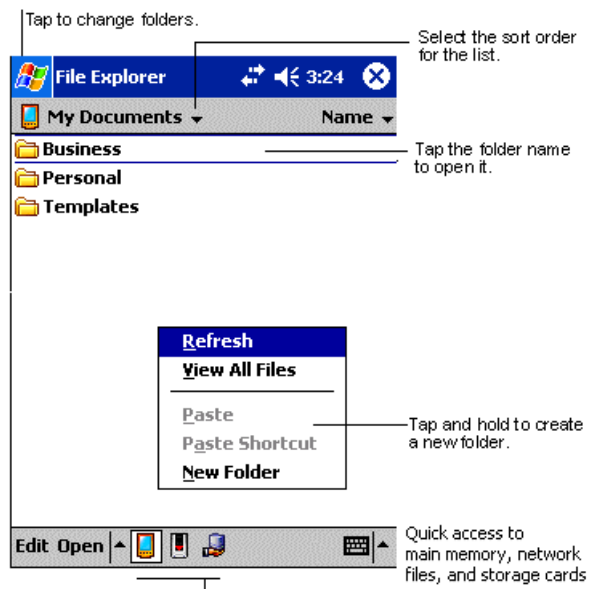
Using Find

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



Using File Explorer

You can also use the File Explorer to find files and organize these files into folders. On the **Start** menu, tap **Programs**, and then **File Explorer**.



You can move files in File Explorer by tapping and holding the item you want to move, and then tapping **Cut** or **Copy** and **Paste** on the pop-up menu.

Overview

The Dolphin 7900 terminal houses a compact image engine that instantly reads all popular 1D and 2D bar codes and supports omni-directional aiming and decoding for greater flexibility in real-world settings. The image engine can also capture digital images, such as signatures and pictures of damaged inventory. Images are saved in industry-standard file formats.

Image Engine Options

Dolphin 7900 terminals may be equipped with one of the following image engines.

IMAGETEAM™ 4300 Standard Range (IT4300SR)

Code	8 mil Linear	10 mil PDF417	13 mil UPC	15 mil PDF417	15 mil Data Matrix	35 mil MaxiCode
Working Range	(.020cm)	(.025cm)	(.033cm)	(.038cm)	(.038cm)	(.089cm)
Near	3.4 in. (8.6cm)	3 in. (7.6cm)	2.4 in. (6.1cm)	3.4 in. (8.6cm)	3.6 in. (9.1cm)	1.9 in. (4.8cm)
Far	7.5 in. (19cm)	8.9 in. (22.6cm)	12.4 in. (31.5cm)	11.1 in. (28.2cm)	6.4 in. (16.2cm)	12.9 in. (32.7cm)

IMAGETEAM™ 4300 Smart Focus (IT4300SF)

Code	6.6 mil PDF417	7.5 mil Linear	10 mil Linear	13 mil UPC	10 mil PDF417	15 mil Data Matrix
Working Range	(.017cm)	(.019cm)	(.025cm)	(.033cm)	(.025cm)	(.038cm)
Near	2.7 in. (6.8cm)	2.4 in. (6cm)	2.1 in. (5.3cm)	2.2 in. (5.6cm)	2.1 in. (5.3cm)	2.2 in. (5.6cm)
Far	5.9 in. (14.9cm)	6.4 in. (16cm)	7.5 in. (19cm)	8.8 in. (22.3cm)	7.5 in. (19cm)	5.9 in. (14.9cm)

The IT4300SR image engine contains a high-visibility aimer that projects aiming brackets around the bar code or image preview for maximum viewability. For details, see [IT4300SF/SR High-Vis Aiming Pattern](#) on page 5-4 and page 5-5.

Bar Code Symbologies Supported

The Dolphin 7900 supports the following bar code symbologies:

Symbology type	Symbologies supported
1D Symbologies	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 Symbologies	Aztec Code 16K Composite Data Matrix MaxiCode OCR PDF417 QR Code RSS
Composite Codes	Aztec Mesa Codablock F EAN-UCC RSS-14
OCR Codes	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 7900 offers the following options to activate the engine:

- The Scan key located in the center the keyboards for easy access from either hand - see [SCAN key](#) on page 6-4.
- The buttons located on both side panels - see [Side Panel Features](#) on page 3-6.

Programmable Side Buttons

The buttons on the side panel - [Side Panel Features](#) on page 3-6 - activate the imager by default. These buttons can be programmed to perform specific functions as well as open software applications. To program these buttons, see [Buttons](#) on page 7-3. If the buttons on the side panel have not been programmed, pressing either one will activate the image engine.

Demos

All Dolphin 7900 terminals contain demos that enable you to test and verify the image engine. To access these demos, go to **Start > Demos**,

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

For more information, see [Verify Operations with Demos](#) on page 2-10.

Decoding

The Dolphin 7900 terminal supports two types of image decoding for use in various bar code reading and imaging applications: full-area imaging and Advanced Linear Decoding (ALD).

Full-area Imaging

Full-area imaging provides omni-directional reading of linear and non-linear 1D and 2D bar codes, OCR, signature capture, and picture taking. When reading all bar code types using full-area imaging, a positive read can be obtained from many positions; see [Omni-Directional Scanning Position Options](#) on page 5-4. To achieve the best read, the aiming beam should be centered horizontally across the bar code.

ALD

ALD provides fast reading of linear and stacked linear bar codes. To achieve a positive read when reading linear 1D and PDF417 bar codes, the green aiming beam 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 7900 terminal over the bar code. 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 key or side button; [Programmable Side Buttons](#), page 5-3.
4. The Scan LED lights; [Scan LED](#), page 3-2.
5. 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 Position Options](#), page 5-4
6. Release the SCAN key or side button.
7. When the bar code is successfully decoded, the decode LED lights and the terminal beeps; [Decode LED](#), page 3-2.

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 Position Options

The Dolphin 7900 supports omni-directional scanning.

The aiming pattern or beam is smaller when the terminal is held closer to the code and larger when it is farther from the code. Symbologies 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.

IT4300SF/SR High-Vis Aiming Pattern

If your configuration of the Dolphin 7900 contains the IT4300SF or IT4300SR imager, the high-vis aiming pattern frames the bar code to provide you with the best scanning performance.



Capturing Images

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

Image Preview

When the imaging process is initiated, the Dolphin 7900 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.

File Formats

The 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 images. The average size of the image file is approximately 4-8K. However, the size of the image depends on the content of the image - the more complex the content, the larger the file size.

Taking an Image

1. Tap **Start > Demos > Image Demo**.
2. Point the Dolphin 7900 terminal at the object.
3. Activate the engine. The touch screen displays a preview of the object.
4. Adjust the terminal's position until the object appears on the screen the way you want it to appear in the image.
5. Hold the terminal still and release the SCAN key or side button. 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 IT4300SF or IT4300SR 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

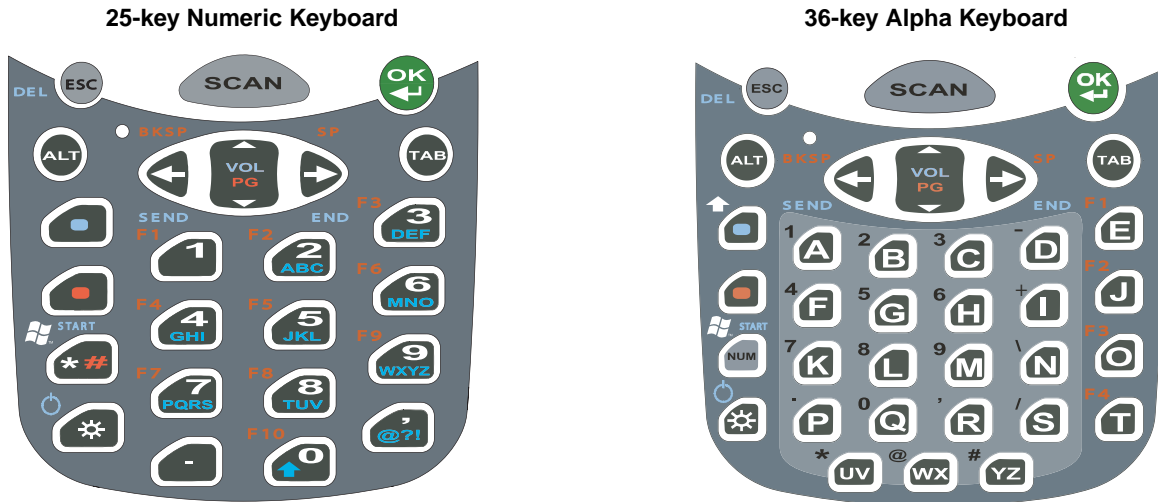
Image files can be transmitted to a host PC via

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



Overview

The Dolphin 7900 Series features two keyboard options:



Both keyboards are recessed under the overlay for maximum durability and backlit for maximum viewability in various lighting conditions. Keyboard overlays are color-coded to indicate the functions performed or characters typed when the color-coded key is pressed immediately after the Red or Blue Modifier key.






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

1. Function Keys
2. Navigation Keys
3. Modifier Keys

Using the Function Keys

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





Name	Key	Function
Backlight		The Backlight key turns the keyboard backlight on and off.
Backspace (BKSP)		The Backspace function is performed by pressing the Red modifier key + the 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.
Delete (DEL)		The delete function is performed by tapping the Blue + ESC keys. This function deletes the next character forward each time the key combination is pressed.
Escape		The Escape key performs a cancel action.

Name	Key	Function
OK		The OK key functions as an Enter key.
Power		The suspend/resume function is performed by pressing the Blue + Backlight keys. Pressing this key combination puts the terminal in suspend mode and wakes it from suspend mode.
SCAN		The SCAN key activates the scan and wakes the terminals from suspend mode. Its position allows convenient one-handed image-taking and/or bar code decoding.
Space (SP)		The Space function is performed by pressing the Red modifier key + right arrow. The Space key moves the cursor one space forward. If you are typing text, it moves the text one space forward as well.
Tab		The Tab key moves the cursor to the next tab stop or the next field (on a form). Blue + Tab acts as a backtab that allows you to move back one field.

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 up and down arrows can be used for

- Volume up and down commands when pressed in combination with the blue modifier key, or
- Page up and page down commands when pressed in combination with the red modifier key.

Other functionality varies according to the application in use.

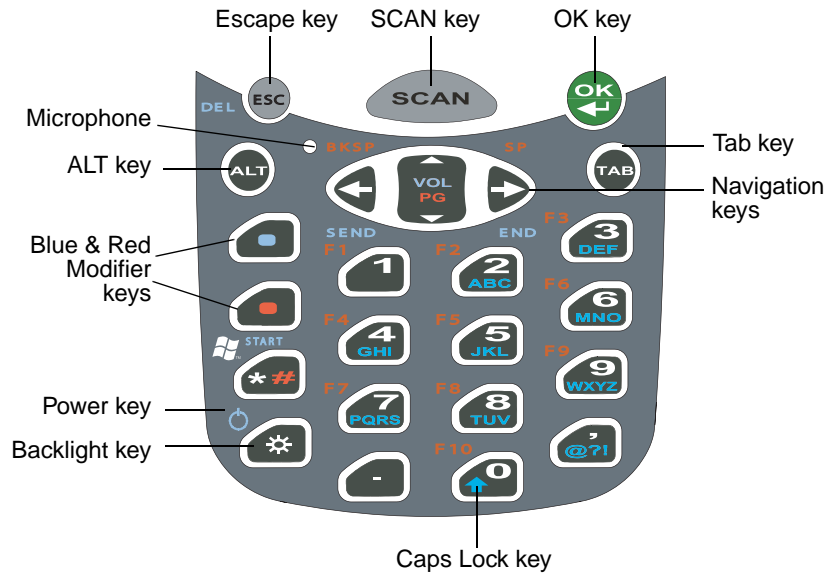
Using the Modifier Keys

Modifier keys are those keys that modify the next key pressed. They are used on combination with the keys that follow to perform functions or type special characters. In addition to the standard ALT key, the Dolphin 7900 terminal has Blue and Red modifier keys and a color-coded overlay.

Name	Key	Function
ALT		The functions performed by the ALT key depends on the software application in use and the key combination pressed.
Blue Red		The blue and red keys are used in combination with other keys to type special characters and perform system functions. Each key modifies only the next key pressed.
		The overlay of each keyboard is color-coded to indicate the character typed or function performed when specific keys are pressed immediately after the blue or red modifier key.

25-Key Numeric Keyboard

The following graphic displays the 25-key numeric keyboard.



Alpha Mode

The 25-key keyboard defaults to numeric mode. Numeric mode is when you type numbers with the number keys. Alpha mode is when you type letters or characters with the number keys.

To toggle between numeric and alpha modes, double-tap the Blue modifier key. There are alpha indicators on the number buttons that specify the letters or characters that will be typed when you press that key in 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 will type 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; just press and hold Blue modifier key with the next key in the combination. For details, see [Blue Key Combinations](#) on page 6-8.

Caps Lock Key in Alpha Mode

After you double-tap the Blue modifier key to switch the alpha mode and begin typing, letters appear in upper case by default. To toggle between upper and lower cases in alpha mode, tap the Caps Lock key once.

Blue Key Combinations

Alpha Mode - Double-tap the Blue modifier key

Key	Character (lower case)	Character (upper case)	
1	_ = / \	_ = / \	
2	abc	ABC	
3	def	DEF	
4	ghi	GHI	
5	jkl	JKL	
6	mno	MNO	
7	pqrs	PQRS	
8	tuv	TUV	
9	wxyz	WXYZ	
*	*	*	
.	: ; - +	: ; - +	
,	@ ? !	@ ? !	

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

Key Combination	Function
Blue + Backlight	Suspend/Resume
Blue + *	Start menu
Blue + Left Arrow	Send
Blue + Tab	Backtab
Blue + Right Arrow	End
Blue + Up Arrow	Volume up
Blue + Down Arrow	Volume down

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)
Red + TAB (hold)	Hard reset (cold boot)
Red + 1	F1
Red + 2	F2
Red + 3	F3
Red + 4	F4
Red + 5	F5

Key Combination	Function/Special Character
Red + 6	F6
Red + 7	F7
Red + 8	F8
Red + 9	F9
Red + 0	F10
Red + *	#

36-Key Alpha Keyboard

The following graphic displays the 36-key alpha keyboard.



NUM Lock Key

The 36-key keyboard defaults to alpha mode. Alpha mode is when you type letters with the letter keys. Numeric mode is when you type numbers or characters with the letter keys.

To toggle between alpha and numeric modes, tap the NUM key once. There are numeric indicators above and to the left of the alpha keys that specify the number or character that will be typed when that key is pressed in numeric mode.



Caps Lock Functionality

In alpha mode, the 36-key keyboard defaults to upper case. To toggle between upper and lower case, tap the Blue modifier key twice. You can still use the Blue modifier key for regular blue key combinations; just press and hold the Blue modifier key with the next key in the combination.

Blue Key Combinations

Key Combination	Function
Blue + Backlight	Power
Blue + Left Arrow	Send
Blue + Right Arrow	End
Blue + Up Arrow	Volume up
Blue + Down Arrow	Volume down

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)
Red + E	F1
Red + J	F2
Red + O	F3
Red + T	F4

NUM Key Combinations

Pressing the Num key **once** switches the keyboard to numeric mode.

Key	Character
A	1
B	2
C	3
D	-
F	4
G	5
H	6
I	+
K	7
L	8
M	9
N	\
P	.
Q	0
R	,
S	/
UV	*

Key	Character
WX	@
YZ	#

Note: You do NOT need to press and hold the NUM key when pressing the next key.

Numeric Shift in Numeric Mode

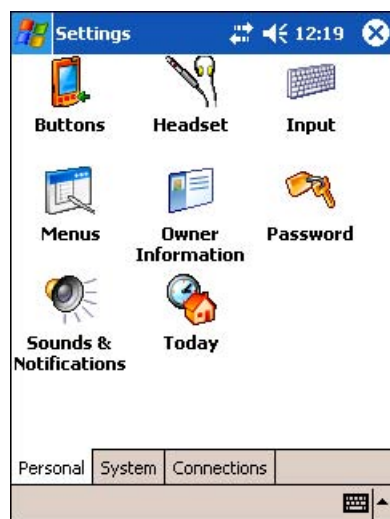
When typing in numeric mode, tapping the Blue modifier key acts like a Shift key that enables you to type special characters in addition to those indicated on the overlay.

Key	Character
A	!
B	@
C	#
F	\$
G	%
H	^
K	&
L	*
M	(
P	>
Q)
R	<

Overview

Customized settings are available on the Start menu. Go to **Start > Settings** and settings screen opens displaying the Personal tab. Settings consists of three tabs: Personal, System, and Connections.

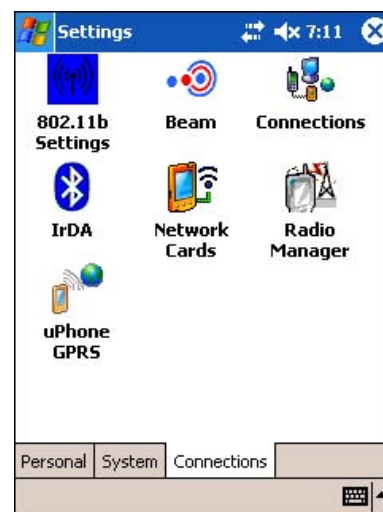
Personal Tab



System Tab



Connections Tab



Tab

This tab enables you to ...

Personal

Customize buttons, set SIP options, and adjust headset settings; see [Personal Tab](#) on page 7-2.

System

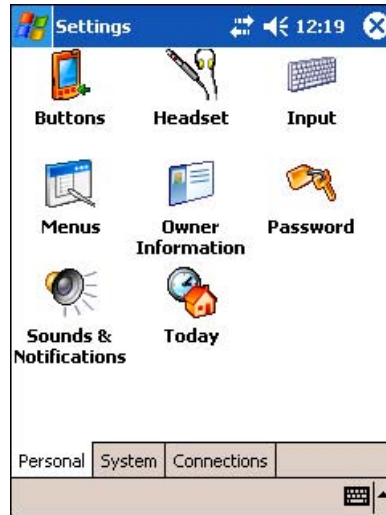
Adjust system settings; see [System Tab](#) on page 7-8.

Connections

Establish network connections settings; see [Connections Tab](#) on page 7-19.

Personal Tab

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



Icon

Tapping this icon enables you to ...

Buttons

Program the side buttons to perform specific tasks. For more information, see [Buttons](#) on page 7-3. To use the Buttons setting, the HotKeys Utility **must** be initialized. Tap **Start > Utils > HotKeys** (the icon is the same). The HotKeys utility initializes. Then, you can return to the Personal tab and tap **Buttons**.

Headset

Adjust audio settings for headset use; see [Headset Control](#) on page 7-5.

Input

Customize the SIP. For details, see [Input Panel Options](#) on page 4-9.

Menus

Customize what appears on the Start and New menus; see [Adding a Program to the Start Menu](#) on page 7-6.

Owner Information

Enter your contact information. This information will appear on the Today screen.

Password

Password protect the terminal to limit access to your device.

Sounds & Notifications

Set the sound volume, enable and disable sounds for specific actions, and set sound parameters for system notifications.

Today

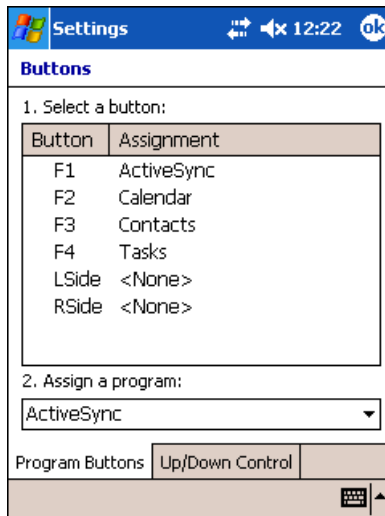
Customize the look and the information that is displayed on the Today screen.

Note: Personal settings are stored in RAM memory. They are replaced by system defaults after each hard reset. For more information about resets, see [Soft Reset \(Warm Boot\)](#) on page 2-11.

Buttons

The Buttons setting enables you to program both keyboard buttons and the side buttons to perform specific tasks or open installed applications. By default, the side buttons (for locations, see page 3-6) activate the image engine; however, the Buttons setting enables you to program these buttons.

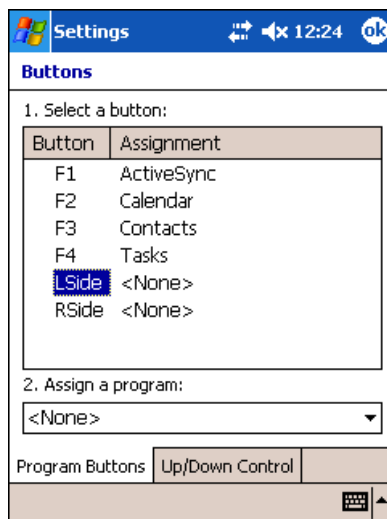
1. Tap the **Buttons** icon. The Buttons setting opens displaying the default button assignments.



Button column Displays the button to program.

Assignment column Displays either the application the button opens or the function the button performs when pressed.

2. In the **1. Select a button:** section, to program the left side button, tap **LSide** and to program the right side button, tap **RSide**.



To select the button for programming, you must tap the Button text, not just the row. The Assignment of the selected item appears in the list under **2. Assign a program**.

3. In the Assign a program list, select the function you want the selected button to perform:
 - Select a < > command to have the button perform that function.
 - Select an application to have the button open that application.
4. Tap **OK** to save the change.
5. Tap the button you just programmed to verify that it performs the specified function.

Available Applications

The **Assign a program** list contains programs installed on the Dolphin terminal. If there is a program installed on the Dolphin terminal 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 7-6.

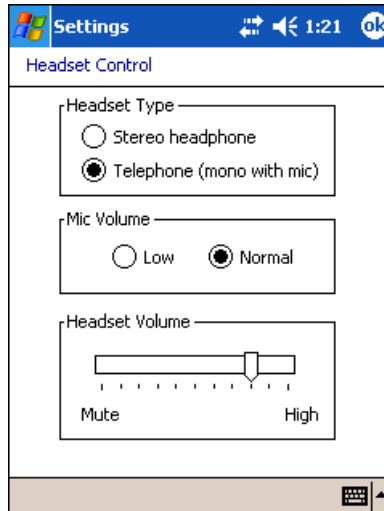
Additional Functions

The list also contains the following functions:

List Entry	When This Entry is Selected, the Button ... When Pressed
<Input Panel>	Opens the soft input panel.
<None>	Activates the image engine. This is the default setting.
<OK/Close>	Performs the same function as tapping OK on the screen.
<Scroll Down>	Scrolls down in the open application.
<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.

Headset Control

The Headset Control setting enables you to adjust audio settings while using a headset.



Headset Type

Stereo headphone

Select this option if you are using a headset for audio output only. In this case, you need to use the microphone on the terminal ([Microphone](#), page 3-2) for audio input; i.e., listen via the headset and speak into the microphone. These types of headsets usually contain two earpieces for stereo sound.

Tap **OK** to save your selection.

Telephone (mono with mic)

Select this option if you are using a headset that also contains a microphone. When this option is selected, you speak into the microphone on the headset and not the microphone on the terminal. These types of headsets usually have one earpiece for mono audio.

Tap **OK** to save your selection.

Mic Volume

These options enable you to adjust the audio level of the microphone. Normal is the default setting. If this is too loud for the listener, you can change the setting to Low.

These settings apply to the selected Headset Type. When you select Stereo headphone, the volume on the terminal's microphone ([Microphone](#), page 3-2) adjusts. When you select Telephone (mono with mic), the volume on the headset's microphone adjusts.

Tap **OK** to save your selection.

Headset Volume

This slider enables you to adjust the speaker volume (audio output) of the headset. Move the slider from Mute to High depending on your preference. The volume adjusts automatically as you move the slider. These headset volume settings apply to both Headset Types.

Adding a Program to 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 re-routing access to it.

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

Using System Settings

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



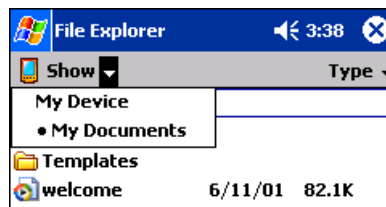
2. Tap the check box for the program you want to add and tap **OK** to save.
3. Tap the **Start** menu to verify that the program appears on it.

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.

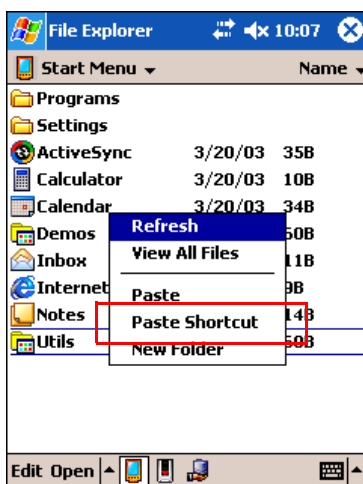
Note: We recommend that you Copy and Paste Shortcut so that you do not alter your program configurations by accident. Using Copy and Paste Shortcut (as opposed to Cut and Paste) ensures that the program files remain where they need to be for the system to find them to perform system functions.

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. Tap and hold on the program, then tap **Copy** on the pop-up menu.

-
3. 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.



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

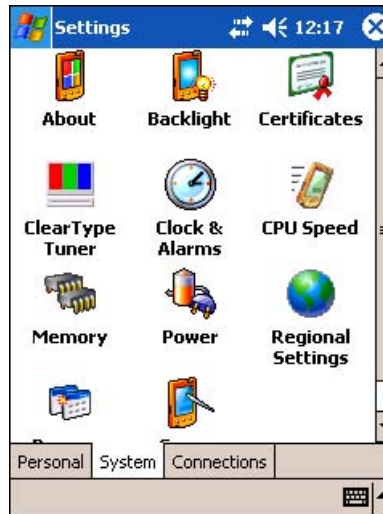
Using ActiveSync on the Desktop Computer

Here, you are performing the same basic process as on the terminal, except that you are using the Explore utility (Windows Explorer) to copy and paste the shortcut.

1. Open **ActiveSync > Explore** and navigate to the program.
2. Right-click on the program and select **Create Shortcut**.
3. Select the shortcut, right-click, and select **Cut**.
4. Navigate to the **Start Menu** folder (Windows > Start Menu).
5. Right-click on an empty area and select **Paste Shortcut**.
6. On the terminal, tap the **Start** menu.
7. Verify that program appears.

System Tab

The System tab enables you to verify and sometimes alter system parameters. To access the System tab, go to **Start > Settings > System** tab. Tap the appropriate icon to open that system setting.



About

The About system setting displays specific information about what is loaded on the terminal. It contains three tabs:

Version tab Displays the information about the software, operating system, and processor of the terminal.



Device ID tab Displays the information the terminal uses to identify itself to other devices. It can be important to know this information if the Dolphin terminal is going to be part of a networked system of devices.

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 system setting enables you to customize backlight functionality for the display. For more information, see [Adjusting the Backlight](#) on page 4-4.

Certificates

This system setting is designed to manage certificates for 802.11b networks. However, on Dolphin terminals, you manage certificates through Meetinghouse; see [Installing Certificates with CertAdd](#) on page 9-32.

ClearType Tuner

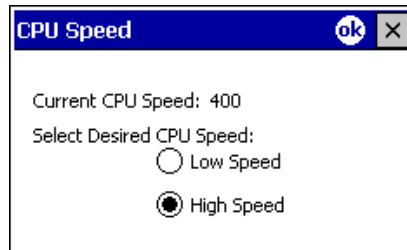
This system setting enables you to adjust the level ClearType font rendering by moving a slider. The sample text displays the setting results immediately. Of course, you must first enable ClearType font rendering to change the appearance of fonts on the screen; see [ClearType Tab](#) on page 7-17.

Clock & Alarms

This setting sets the system clock. Appointments, scheduled events, and any function on a schedule runs off this setting. You need to set the time zone and time after each hard reset; see [Setting the Time and Date](#) on page 2-9.

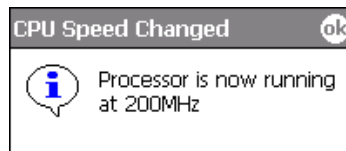
CPU Speed

This system setting enables you to see and change the current speed of the Central Processing Unit (CPU).



The default is **High Speed** at 400MHz. **Low Speed** is 200MHz.

To change the default, select Low Speed and tap **OK**. A message appears confirming the new CPU speed.



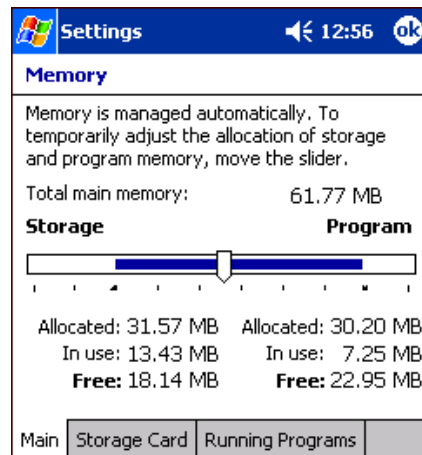
Tap **OK** to save the change.

Memory

The Memory system setting enables you to review and manage both RAM (volatile) and IPSM/Storage Card (non-volatile) memory. Access this system setting whenever you receive system 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 of on-board, volatile RAM memory. This is the memory used for running and storing programs as well as storing program data.



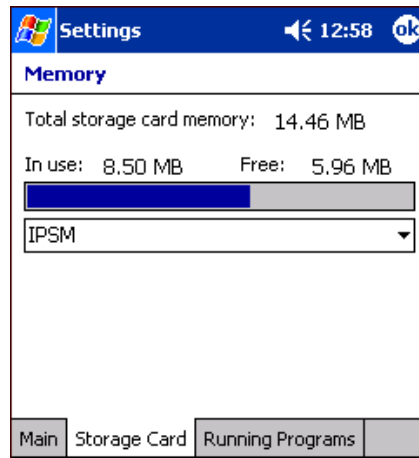
Field	Description
Total main memory	The total memory capacity of current RAM memory.
Storage	The part of RAM memory used for storing programs and program data.
Program	The part of RAM memory used to run programs.
Fields Under Storage and Program	
Allocated	Displays the current MB of memory allocated 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.

To Increase/Decrease RAM Memory

To increase Program or Storage memory, tap, hold, and drag the slider away the kind of memory you want to increase. The three fields adjust automatically; Program memory decrease when you increase Storage memory and vice versa.

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.



Total storage card memory 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.

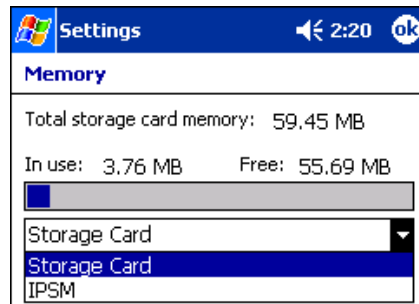
IPSM

Short for Intel Persistent Storage Manager, this is 14MB of on-board Flash memory that is non-volatile. Because this memory is non-volatile, data or programs stored in IPSM are not affected when power is removed. Autoinstall programs, for example, are stored in IPSM so that they are always installed at cold-boot startup.

When IPSM is selected in the drop-down list, the Storage Card tab displays the IPSM memory capacity and usage statistics.

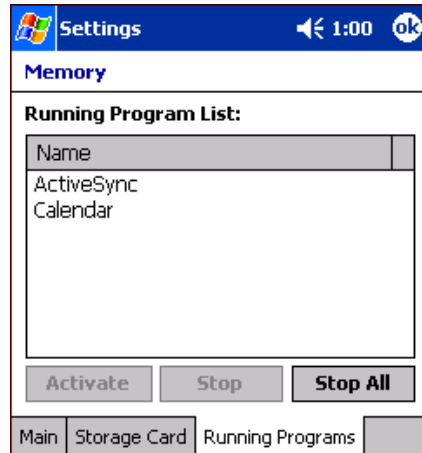
Storage Card

You can install additional memory in Dolphin terminals - see [Access Door](#) on page 3-5. If a storage card is installed in the terminal, a Storage Card entry appears in the drop-down list.



Select **Storage Card** and the Storage Card tab displays the current capacity and usage statistics of the installed storage card.

Running Programs tab Displays the software programs currently using Storage memory.



Check this tab when you are receiving out of memory errors or when the mobile computer is running slowly. You can

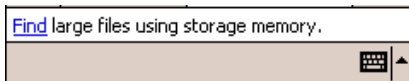
- Select a program in the list and tap **Stop** to stop it from running (and therefore from using memory), or
- Tap **Stop All** to automatically stop all running programs.



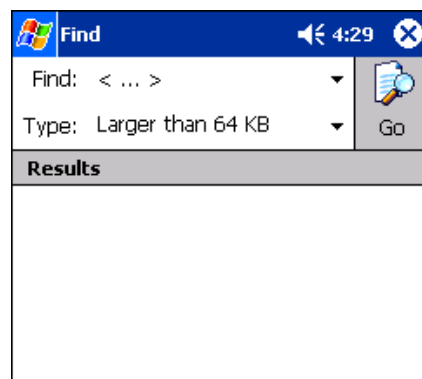
Anytime you stop a running program, it frees up RAM memory. Be advised that, when you stop a program here, any unsaved data in that program is lost. To free up memory without risking data loss, return to the running program, save your data, and close the application.

Find Link

Underneath the three Memory tabs is a link to the Find window that enables you to search for large files using storage memory.



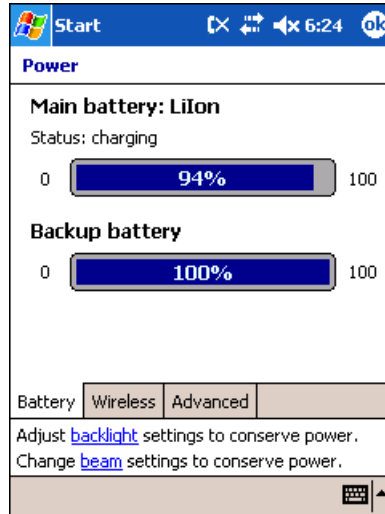
Clicking this link opens the Find screen with **Larger than 64KB** already selected in the **Type** field.



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

Power

Power system settings contains three tabs: Battery, Wireless, and Advanced.



Tab

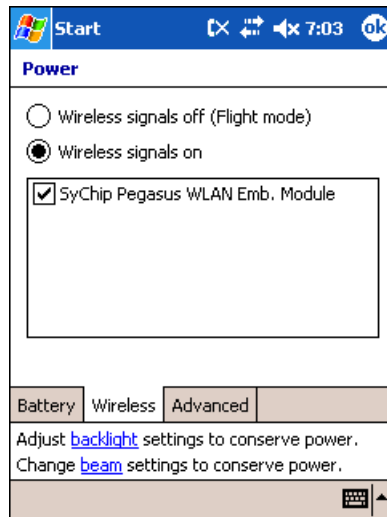
This tab enables you to ...

Battery Tab

Check the remaining charge of both the main and backup batteries. For more information about the terminal's batteries, see [Battery Power](#) on page 3-10.

Wireless Tab

Determine the power settings for your wireless connection.



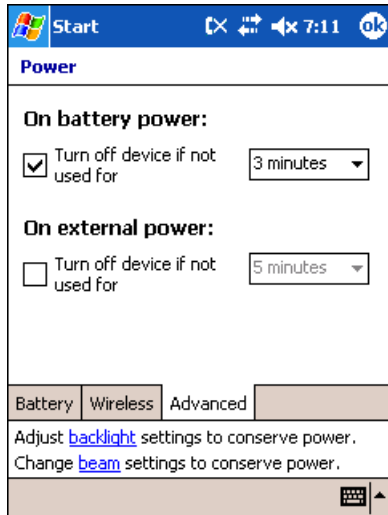
Select **Wireless signals off...** when you don't want to use system power to power up the radio(s).

Select **Wireless signals on** when you want the radio to use system power to transmit. This is the default settings.

The list contains the radio firmware installed in the terminal. The items in the list with a check in the checkbox are the items using system power.

Tab This tab enables you to ...

Advanced Tab Determine power time-outs.



For **On battery power**, select from the drop-down list, the number of minutes of inactivity you want to pass before the terminal powers off when running on battery power.

For **On external power**, select from the drop-down list, the number of minutes of inactivity you want to pass before the terminal powers off when running on external power.

Options below the tabs

Adjust backlight... opens the Backlight settings so that you can make adjustments to conserve power usage; see [Backlight](#) on page 7-8.

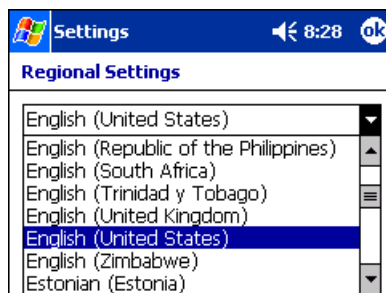
Change beam... opens beam settings so that you can make adjustments to conserve power usage; see [Using Infrared](#) on page 8-5. (You would turn off receiving capabilities to conserve power.)

Note: You can also set automatic turn-off times for the terminal to conserve power. When the device is "turned off," that means that it goes into suspend mode. For more information on suspend mode, see [Suspend Mode](#) on page 2-11.

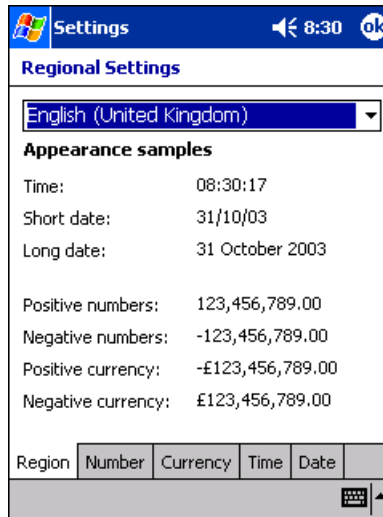
Regional Settings

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.

Remove Programs

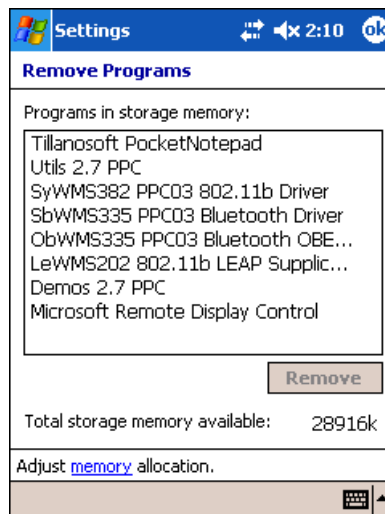
The Remove Programs settings enables you to remove programs installed on the terminal. Use this setting to troubleshoot when you receive messages that the device is out of memory. The programs removed are removed from RAM memory. Any program (usually *.cab or *.dll files) stored in the Autoinstall folder (My Device > IPSM > Autoinstall) will re-install after the next hard reset.

For information about the Autoinstall process, see [Let Autoinstall Run](#) on page 2-9.

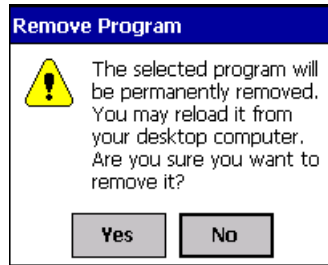
For information about the hard reset process, see [Hard Reset \(Cold Boot\)](#) on page 2-11.

To Remove Programs

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.

Memory

The Remove Programs screen displays the total storage memory available. It adjusts automatically when a program is removed for quick reference. For more detailed memory information, tap **memory** of "Adjust memory allocation" along the bottom margin. It opens the Memory system setting. For information about memory settings, see [Memory](#) on page 7-10.

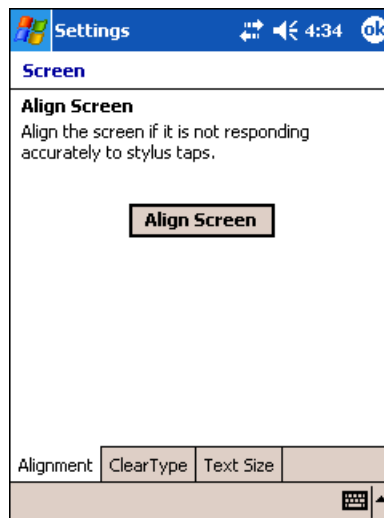
Screen

Note: By default, dynamic screen rotation (i.e., the ability to switch between landscape and portrait orientation) is disabled on Dolphin 7900 terminals.

The Screen system setting contains three tabs: Alignment, Clear Type, and Text Size.

Alignment tab

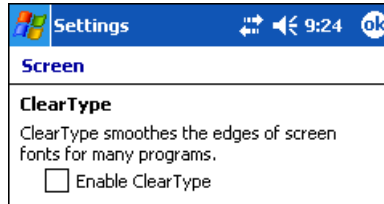
The Screen system setting opens to the Alignment tab.



On this tab, you can 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. For more information, see [Align the Screen](#) on page 2-8.

ClearType Tab

The Dolphin 7900 displays support ClearType font rendering. ClearType is a Microsoft technology that dramatically increases the readability of text on LCD displays.



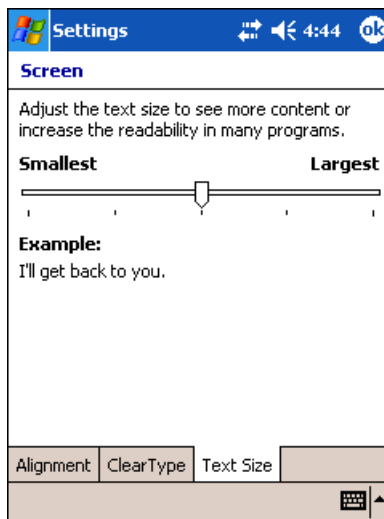
To enable ClearType font rendering, select **Enable ClearType** and tap **OK**.

To adjust the level of ClearType font rendering, use the ClearType Tuner; see [ClearType Tuner](#) on page 7-9.

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

Text Size Tab

The Text Size tab enables you to perform 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.

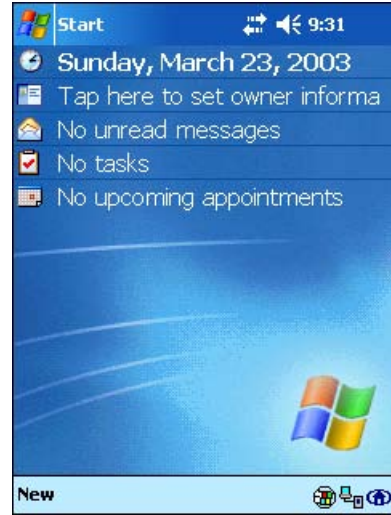


This is the default font size setting. To change the font size, move the slider toward Smallest or Largest. The Example text changes to reflect the font change. Tap **OK** to save the new font size setting.

Default Font Size



Largest Font Size



Connections Tab

The Connections tab enables you to manage your network connections.



Icon

Tapping this icon...

Beam

Enables you to verify and adjust the infrared settings of the IrDA port; see [Using Infrared](#) on page 8-5.

Connections

Enables you to configure network connections.
This is the connections manager; see [Connections Tab](#) on page 7-19.

Network Cards

Enables you to access the Wireless and Network Adapters tabs; see [Network Cards](#) on page 7-32.

Radio Manager

Enables you to power up and power down the radios installed on the terminal;
see [Radio Manager](#) on page 4-6.

Other Icons on the Connections Tab

Other icons appear on this window if your terminal is configured with specific network software, protocols, and/or radios.

802.11b Settings

This icon appears **only** if an 802.11b radio and driver is installed on the terminal.
Tapping this icon enables you to configure your 802.11b radio; see [Wireless LAN Communications with 802.11b](#) on page 9-1.

IrDA

This icon appears **only** if a Bluetooth radio and driver is installed on the terminal.
Tapping this icon enables you to disable or enable the IrDA port; see [Verify That the IrDA Port is Enabled](#) on page 8-5.

uPhone GPRS

This icon appears **only** if a GSM/GPRS radio and driver are installed on the terminal.
Tapping this icon opens the GPRS settings; see [GPRS Settings](#) on page 11-26.

Server-Assigned IP Addresses

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

Zero-Config Wi-Fi

Please note that the zero-config Wi-Fi feature of Windows Mobile is **disabled** on Dolphin 7900 terminals.

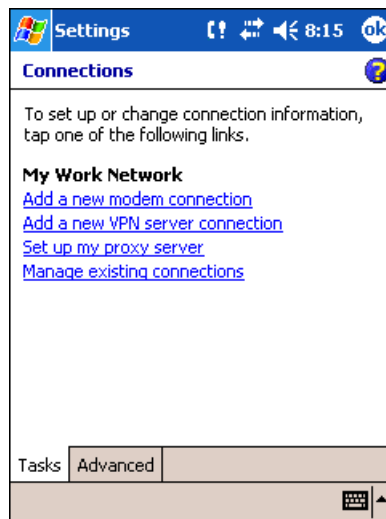
Com Port Assignment Table

The Dolphin 7900 terminal ships with the Com ports assigned as follows:

Com Port	Assignment
1	Serial port; this is the 17-pin connector on the bottom panel. See Mechanical Connector on page 3-9.
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 8-5.
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.

Opening the Connections Manager

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



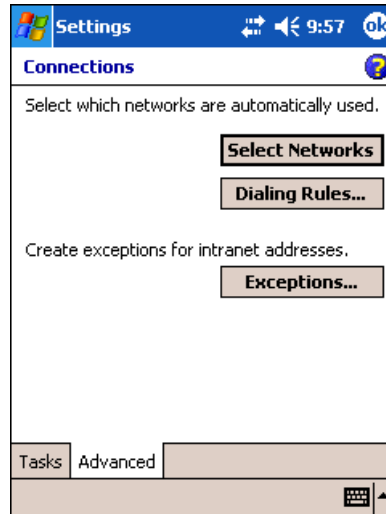
The connections manager consists of two tabs: Tasks and Advanced.

Task tab

The Task tab enables you to configure and manage your My Work Network settings. Click on the link to setup or manage existing network accounts.

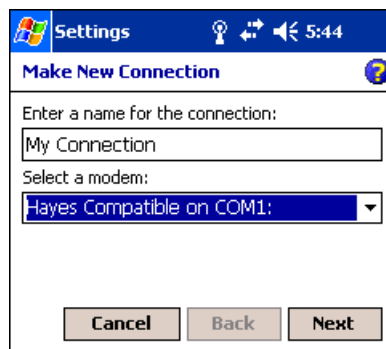
Advanced tab

The Advanced tab enables you to configure and manage network parameters and network cards.



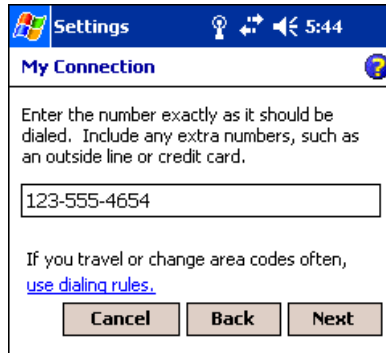
Creating an External Modem Connection to an ISP

1. Obtain the following information from your ISP:
 - ISP dial-up access telephone number,
 - user name,
 - password, and
 - TCP/IP settings.
2. Use a NULL modem cable to connect to an external modem.
3. Tap **Start > Settings > Connections** tab > **Connections > Task** tab.
4. Tap **Add a new modem connection**. The Make New Connection screen appears.



5. **Enter a name for the connection**, such as "My Connection."
6. In the **Select a modem** list, select the external modem by selecting **Hayes Compatible on COM1**.

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



Settings 5:44

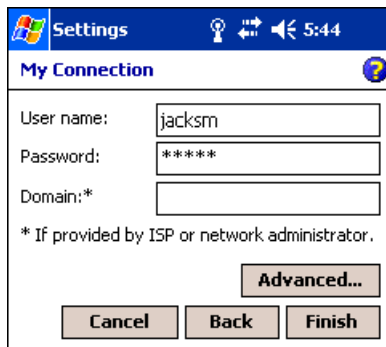
My Connection

Enter the number exactly as it should be dialed. Include any extra numbers, such as an outside line or credit card.

If you travel or change area codes often, [use dialing rules.](#)

Cancel Back Next

8. 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 7-30). Tap **Next**.



Settings 5:44

My Connection

User name:

Password:

Domain:*

* If provided by ISP or network administrator.

Advanced...

Cancel Back Finish

9. Now enter any authentication information your ISP requests.

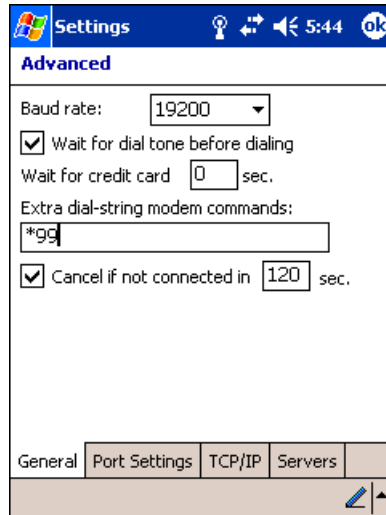
10. You should not need to change any settings in **Advanced** because most ISPs now use a dynamically-assigned addresses.

11. Tap **Finish**.

Advanced Settings

Tap the Advanced button to open the Advanced settings.

General Tab Use the General tab to change 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.

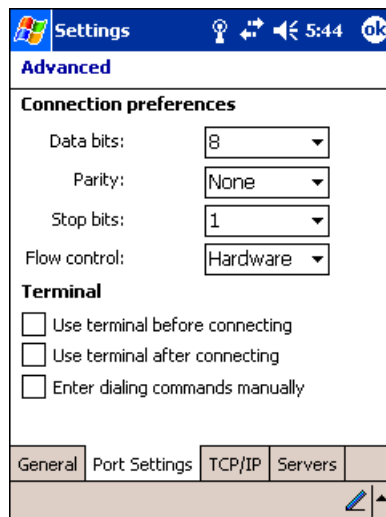


The screenshot shows the 'Advanced' settings screen with the 'General' tab selected. The settings are as follows:

- Baud rate: 19200
- Wait for dial tone before dialing
- Wait for credit card: 0 sec.
- Extra dial-string modem commands: *99
- Cancel if not connected in: 120 sec.

At the bottom, there are tabs for 'General', 'Port Settings', 'TCP/IP', and 'Servers'. The 'General' tab is currently active.

Port Settings Tab The Port Settings tab has options that should be left alone unless indicated otherwise by your ISP.



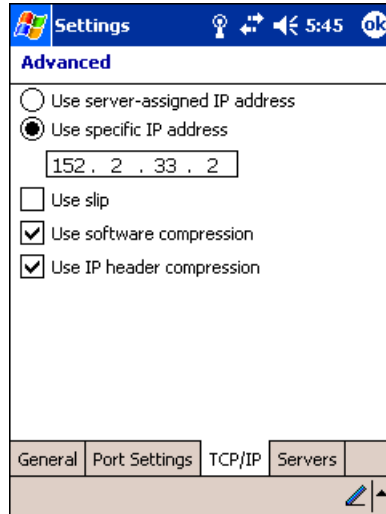
The screenshot shows the 'Advanced' settings screen with the 'Port Settings' tab selected. The settings are as follows:

- Connection preferences**
 - Data bits: 8
 - Parity: None
 - Stop bits: 1
 - Flow control: Hardware
- Terminal**
 - Use terminal before connecting
 - Use terminal after connecting
 - Enter dialing commands manually

At the bottom, there are tabs for 'General', 'Port Settings', 'TCP/IP', and 'Servers'. The 'Port Settings' tab is currently active.

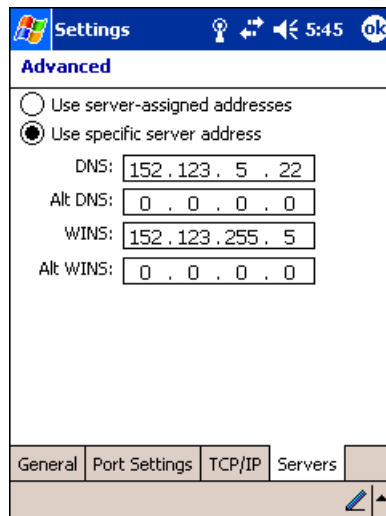
TCP/IP Tab

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



Servers Tab

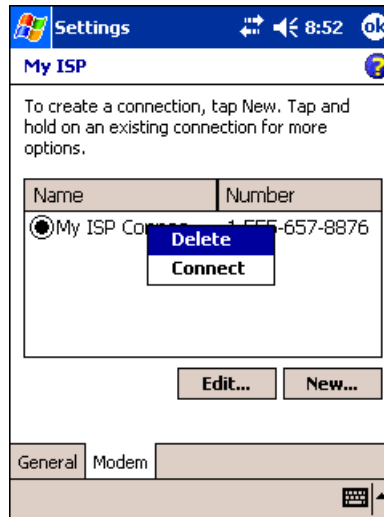
Finally, if your ISP requires special DNS or WINS information, enter it into the Servers tab.



Connecting to Your ISP

1. Tap **Start > Settings > Connections** tab > **Connections** to open the connections manager.

2. Tap **Manage existing connections**.



3. Tap and hold on the applicable dial-up settings and select **Connect**.
(You can delete the connection by selecting Delete.)
4. Your modem will dial-out and attempt to create the connection.

Creating an External Modem Connection to Your Work

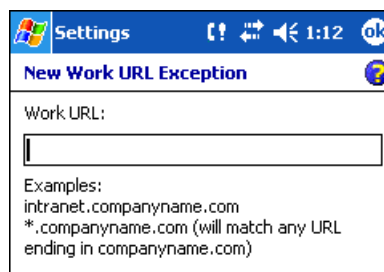
Follow the instructions for [Connecting to Your ISP](#), but select **Add a new modem connection** under **My Work Network**.

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 > Advanced** tab (see page 7-21).
2. Tap **Select Networks**.
3. Tap **Exceptions**. The Work URL Exceptions screen opens.



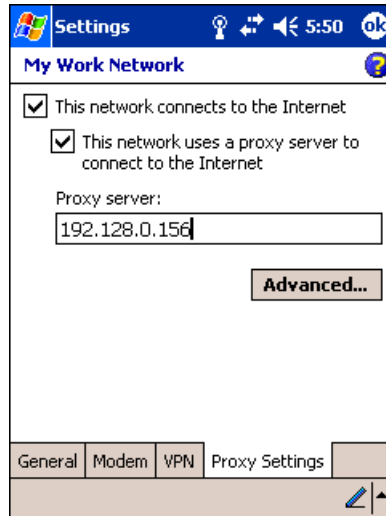
4. Enter the **Work URL** and tap **OK**.

Setting up a Proxy Server Connection for Work Connections

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

1. Go to **Start > Settings > Connections** tab > **Connections**.

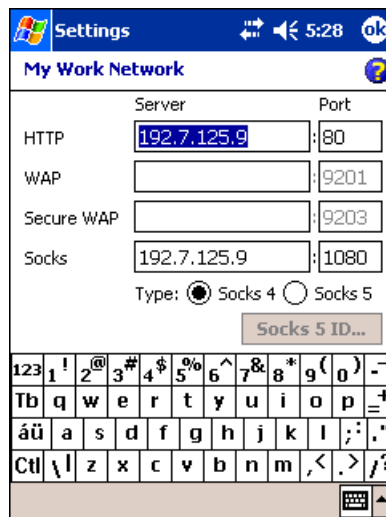
2. Under the My Work Network heading, tap **Set up my proxy server**.



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.



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

Setting Up a VPN Connection for 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. Go to **Start > Settings > Connections** tab > **Connections**.

2. Under the My Work Network heading, tap **Add a new VPN server connection**.

Settings 5:48

Make New Connection

Name: My VPN

Host name/ IP: corp.software.corp complete

VPN type: IPSec/L2TP PPTP

Cancel Back Next

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

Settings 5:48

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 5:48

My VPN

User name: jacksm

Password: *****

Domain:*

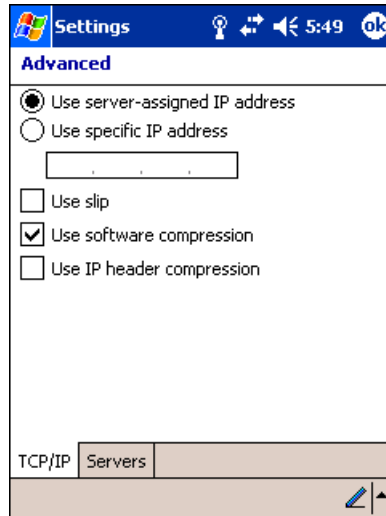
* If provided by ISP or network administrator.

Advanced...

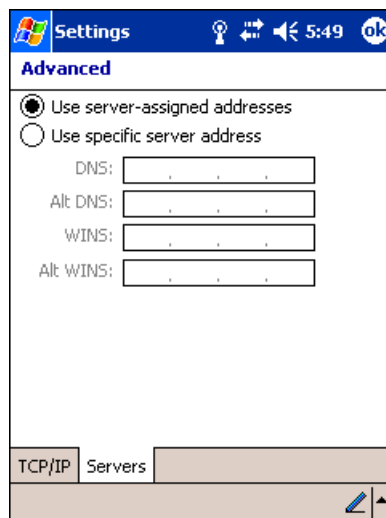
Cancel Back Finish

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.



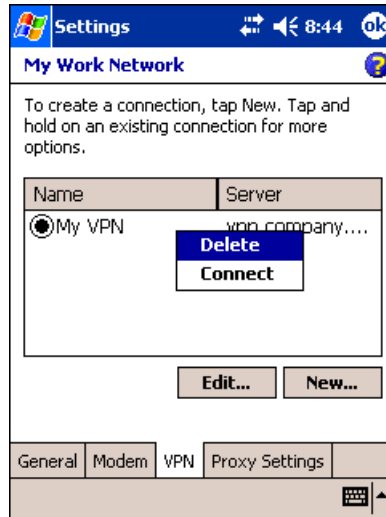
- Enter Server DNS/WINS information in the **Servers** tab.



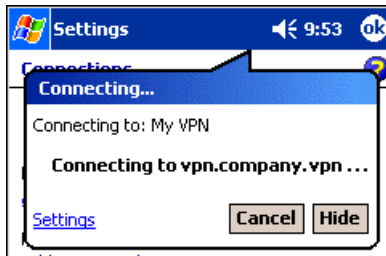
Connecting to a VPN Server


1. Go to **Start > Settings > Connections** tab > **Connections**.

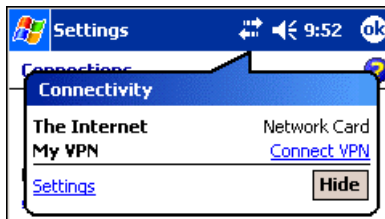
2. Select **Edit my VPN servers**.



3. Tap and hold on the server, then select **Connect** on the popup menu.
(Note that through this screen you can delete your VPN server connection.)

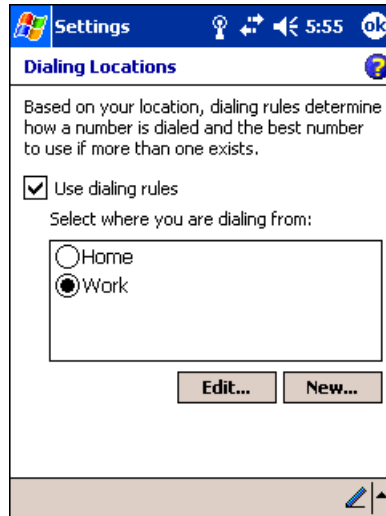


4. Your VPN Server is accessed. When connected, tapping on the  icon displays the following bubble:



Establishing Dialing Rules

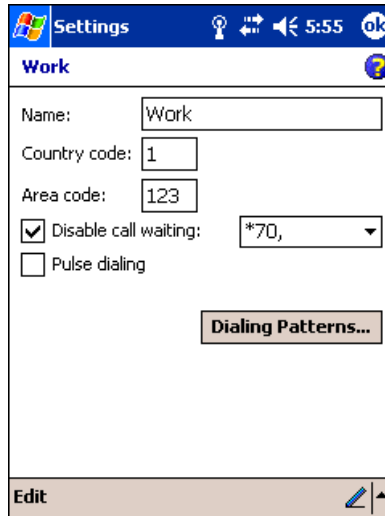
1. Tap **Start** > **System** > **Connections** tab > **Connections** > **Advanced** tab (see page 7-21).
2. Tap **Select Location**.



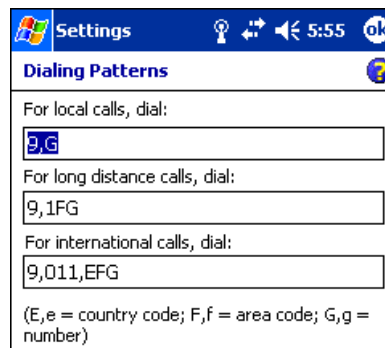
3. Select **Use dialing rules**. By default two dialing rules profiles exist: Home and Work.
4. Tap **Edit** to configure either profile.
(You can define your own dialing profile by tapping **New**. A warning appears that your existing modem connections must include the correct country and region area 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.

Creating a Wireless Network Connection

In the Connections Manager, you can access the Wireless tab from **Start > Settings > Connections tab > Network Cards > Wireless** tab. However, on the Dolphin 7900 terminal, wireless networks need to be configured according to the radio installed in the terminal.

For more information about 802.11b radios, see [Wireless LAN Communications with 802.11b](#) on page 9-1.

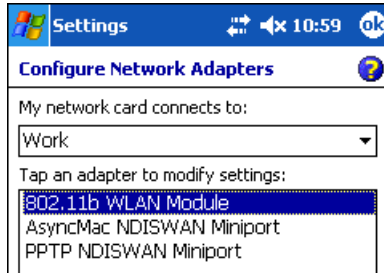
For more information about Bluetooth radios, see [Wireless PAN Communications with Bluetooth](#) on page 10-1.

For more information about GSM/GPRS radios, see [Wireless WAN Communications with GSM/GPRS](#) on page 11-1.

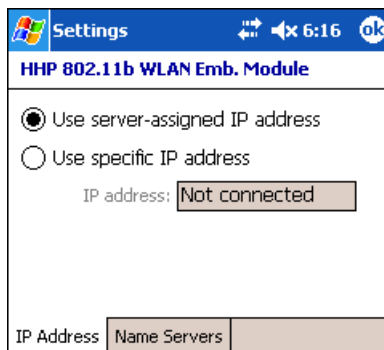
Network Cards

To see the network cards installed on the terminal,

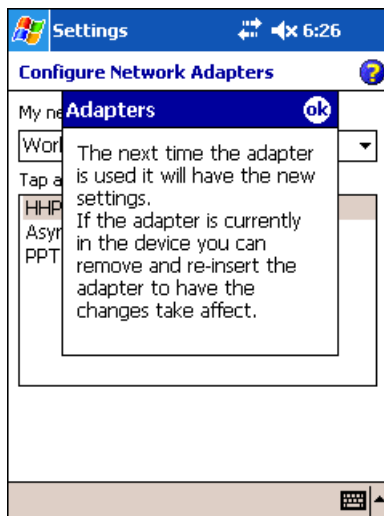
1. Tap **Start > Settings > Connections > Network Cards > Network Adapters** tab.



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



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



4. You must perform a soft reset to update the registry; see [Soft Reset \(Warm Boot\)](#) on page 2-11. During the soft reset, the new registry entries created by the changes can be read by the applications that need them.



Do **NOT** perform a hard reset (see [Hard Reset \(Cold Boot\)](#) on page 2-11) after modifying an adapter here. Hard resets return the terminal to factory defaults, which means that any network adapter modifications are lost.

Overview

You can exchange information between your Dolphin terminal and other mobile devices, a desktop computer, a network, or the Internet. You have the following connection options:

- Connect to your desktop computer and synchronize via Microsoft ActiveSync v3.7 or higher.
- Use the infrared (IrDA) port to send and receive files between two devices.
- Connect to your ISP.

Help on Connecting

More information on the procedures described here, as well as information on additional procedures, can be found in the following locations:

- ActiveSync Help on the desktop computer. In ActiveSync, click **Help > Microsoft ActiveSync Help**.
- See [Messaging](#) on page 12-8.
- Online Help. Tap **Start > Help > View menu > All Installed Help > Inbox or Connections**.

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

Installing Additional Software

In addition to the default programs installed on your terminal when it is first booted up, you can install any program (created for a Windows Mobile device), as long as the terminal has enough memory to store the program and 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 2003 Second Edition 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.

You can install additional software via:

- ActiveSync - see page 8-4.
- Infrared - see page 8-5.
- The Internet (via wireless radio) - see page 8-8.

Using ActiveSync

Using Microsoft ActiveSync, you can synchronize information in Microsoft Outlook or Microsoft® Exchange Server on your desktop computer with your Dolphin terminal. You can also synchronize this information directly with a Microsoft Exchange server. Synchronization compares the data on the desktop computer and the terminal and updates both with the most recent data so that the information on both is identical.

You can:

- Update the information in Microsoft Pocket Outlook® on your device by synchronizing it with Microsoft Outlook on your desktop computer.
- Synchronize Microsoft Word and Microsoft Excel files between your device and desktop computer. Your files are automatically converted to the correct format.

The most current version of ActiveSync can be downloaded from www.microsoft.com.

Additional Capabilities

With ActiveSync, you can also:

- Back up and restore your device data.
- Copy (rather than synchronize) files between your device and desktop computer.
- Control when synchronization occurs by selecting a synchronization mode. For example, you can synchronize continually while connected to your desktop computer or only when you choose the synchronize command.
- Select which information types are synchronized and control how much data is synchronized. For example, you can choose how many weeks of past appointments you want synchronized.

Requirements

To synchronize, ActiveSync version 3.7 or higher *must* be installed on both your desktop computer and the Dolphin terminal. Dolphin 7900 terminals ship with ActiveSync 3.7 already installed. Therefore, you must install ActiveSync 3.7 on your desktop computer from the Microsoft Companion CD that came with your terminal.

To install ActiveSync on your desktop computer, insert the Microsoft Companion CD into the CD-ROM drive of your desktop computer. Click the **yellow arrow**, then **Start Here**, and follow the directions on your screen.



When communicating via ActiveSync, your terminal must be connected to the host PC with a peripheral device sold/ manufactured by Hand Held Products, such as the Dolphin HomeBase, Dolphin Mobile Base, Dolphin Net Base, Dolphin Mobile Charger or other Dolphin 7900 Series charging/communication cable. Use of any peripheral not sold/ manufactured by Hand Held Products may damage your terminal and will void the warranty.

For more information about communication peripherals, see [Dolphin 7900 HomeBase](#), page 13-1, [Dolphin 7900 Mobile Base](#), page 14-1, or [Dolphin 7900 ChargeBase](#), page 15-1.

Setting Up Your Desktop Computer

When installation of ActiveSync is complete on your desktop computer, the ActiveSync Setup Wizard helps you

- connect your terminal to your desktop computer,
- set up a partnership so you can synchronize information, and
- customize your synchronization settings.

Synchronizing from Your Desktop Computer

Because ActiveSync is already installed on the Dolphin terminal, your first synchronization process begins automatically when you finish setting up your desktop computer in the wizard and your terminal is connected to the host PC.

After your first synchronization, look at Calendar, Contacts, and Tasks on the terminal. Notice that the same information from Microsoft Outlook on your desktop computer is now on the terminal. Simply remove the Dolphin from the communication peripheral and you're ready to use it.

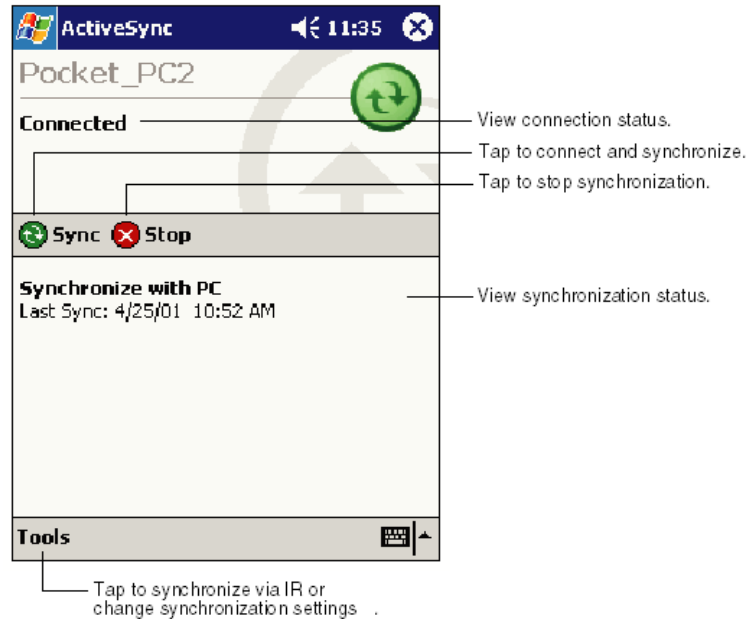
By default, ActiveSync does **not** automatically synchronize all types of information. Use **ActiveSync Options** to specify the types of information you want to synchronize. The synchronization process makes the data (in the information types you select) identical on both your desktop computer and your device.

For more information about using ActiveSync on your desktop computer, open **ActiveSync**, then open **ActiveSync Help**.

Synchronizing from the Terminal

ActiveSync **must** be setup on your desktop computer and the first synchronization process completed *before* you initiate synchronization from the terminal for the first time.

To initiate synchronization the first time, tap **Start > Programs > ActiveSync**. The synchronization process begins.

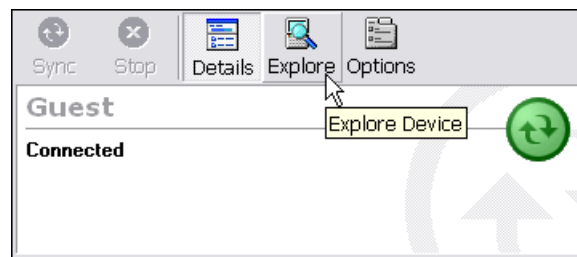


Note: If you have a wireless LAN card, you can synchronize remotely.

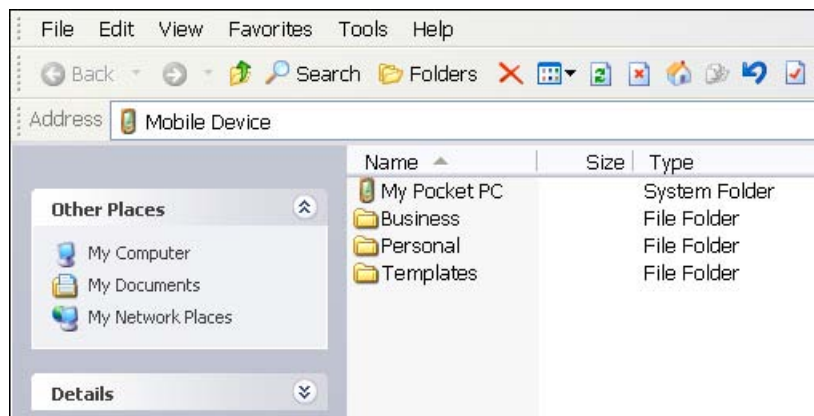
After the first synchronization, when using Dolphin peripherals such as the HomeBase or Mobile Base, synchronization begins automatically whenever a terminal is properly seated in the terminal well. For more information, see [Dolphin 7900 HomeBase](#) on page 13-1 or [Dolphin 7900 Mobile Base](#) on page 14-1.

Exploring the Terminal from the Desktop Computer

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 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 to the Terminal Using ActiveSync



When selecting programs, verify that the program and version of the program are designed for Windows Mobile 2003 Second Edition 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.

Depending on the application, the software must be stored or installed on the host PC.

1. Download the program to your desktop computer from either the Internet or the CD or disk that contains the program. 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 desktop computer via a Hand Held Products communication peripheral.

If the File is an Installer:

An installer program is one that installs on 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.

If the File is Not an Installer:

Some programs cannot be installed on PCs because they are designed for terminals. In these cases, the appropriate files must be stored on the host PC, transferred via ActiveSync, and installed on the terminal. You will know the program cannot be installed on the PC if an error message appears when you try to install it stating that the program is valid but designed for a different type of computer.

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. Depending on the program, you may need to open **File Explorer** on the terminal, navigate to the folder where the program is located, and tap on the program file to install it.

If you copied the file to the **Autoinstall** folder, you can either tap on the program inside the Autoinstall folder or perform a hard reset and the program will install as part of the Autoinstall process (page 2-9). Remember! A hard reset erases RAM data (page 2-11).

4. After installation on the terminal is complete, tap **Start > Programs** and the program and its icon appears on the Programs screen. Tap it to open the program.

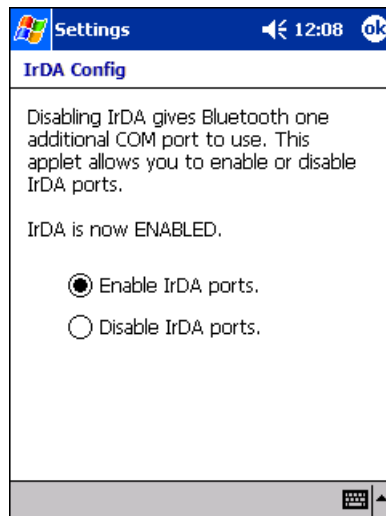
Using Infrared

Dolphin 7900 terminals contain an IrDA port on the top panel (see [IrDa Port](#) on page 3-2). Using the IrDA port, you can send and receive data between the terminal and other devices equipped with infrared. This can include, but is not limited to, Windows Mobile information such as Contacts and Tasks, as well as software upgrades.

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, the IrDA port can be disabled to free up a Com port for Bluetooth devices.

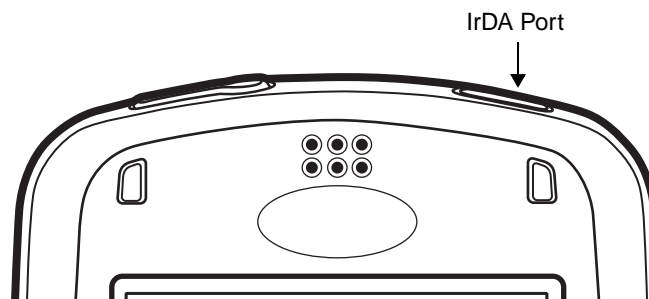
To verify that the IrDA port is enabled, tap **Start > Settings > Connections tab > IrDA**  **IrDA**.



If **Enable IrDA ports** is selected, then the IrDA port is active.

*Note: The IrDA icon appears on the Connections tab **only** if there is a Bluetooth radio installed on the terminal.*

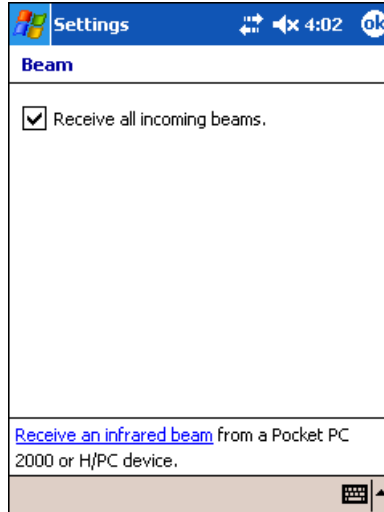
IrDA Port Location on the Terminal



For more information, see [IrDA Port](#) on page 3-3.

Verify That Beam Settings Are Set to Receive

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**. The Beam Settings window should appear as follows:

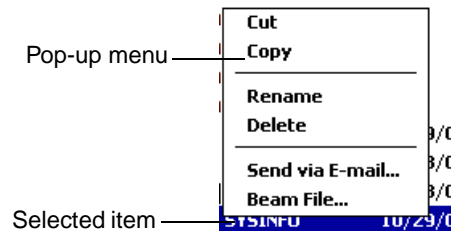


Sending and Receiving

To send or receive, the IrDA ports of both devices - whether it's two terminals, or a terminal and a host device - must be aligned with each other and within a close range. The maximum data-transfer speed is 115 Kbps.

Sending

1. Align the IrDA ports.
2. Open the program where you created the item you want to send and locate the item in the list. You can also 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 device.

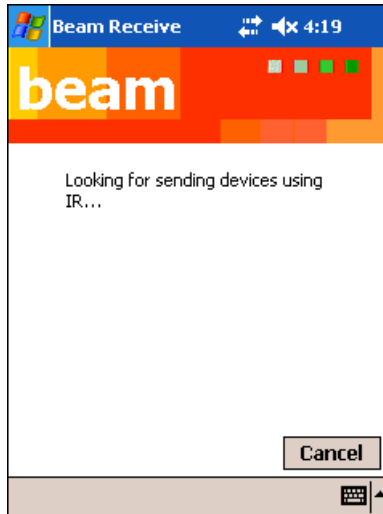
Receiving

1. Align the IrDA ports.
2. Have the owner of the other device send the information to you.
3. Your terminal automatically begins receiving it.

To initiate a receive manually, tap the **Receive an incoming beam** link.

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:



Using an ISP

The communication software for creating an ISP connection is already installed on your device. Your service provider should provide the software needed to install other services, such as paging and fax services.

After you are connected, you can send and receive e-mail messages by using Inbox and view web pages using Pocket Internet Explorer. For more information, see [Messaging](#) on page 12-8. You can also download software applications from the web.

Adding Programs Directly from the Internet



When selecting programs, verify that the program and version of the program are designed for the Windows Mobile 2003 Second Edition 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.

1. Determine your device and processor type so that you know which version of the software to install. Go to **Start > Settings > System** tab > **About**. On the **Version** tab, make a note of the information in the **Processor** field.
2. Download the program to your device straight from the Internet using Pocket Internet Explorer. You may see a single *.exe or setup.exe file, or several versions of files for different device types and processors.
3. Read any installation instructions, Read Me files, or documentation that comes with the program. Many programs provide special installation instructions.
4. Tap the file, such as an *.exe file. The installation wizard begins. Follow the directions on the screen.

For more information about working with Pocket Internet Explorer, see [Pocket Internet Explorer](#) on page 12-11.

Overview

Dolphin 7900 terminals are available with an on-board 2.4 GHz 802.11b WLAN (Wireless Local Area Network) radio that uses Direct Sequence Spread Spectrum (DSSS) technology to spread the signal continuously over a wide frequency band at a data rate of up to 11 Mbps. In addition, the open software architecture makes the Dolphin 7900 a complete solution for a variety of wireless mobile data collection applications.

The Dolphin 7900 is interoperable with other 802.11b Wi-Fi-compliant products including Access Points (APs), printers, PCs via PC card adapters and other wireless portable terminals.

Enabling the 802.11b Radio Driver

When the Dolphin terminal is first initialized, the radio driver for 802.11b is installed. Before using the radio, make sure that the 802.11b radio is enabled. The 802.11b radio must be enabled before you can configure it. For more information, see [Radio Manager](#) on page 4-6.

Configuration Utilities

There are two configuration utilities for the 802.11b radio: 802.11b Settings and 802.11b Wireless Security Supplement.


802.11b Settings Use this configuration utility when you are not using Wired Equivalent Privacy (WEP) or standard WEP (64/128 bit) with no authentication. For more details, see [802.11b Settings](#) on page 9-2.

802.11b Wireless Security Supplement

Use this configuration utility when you are using WEP (beyond the standard), Wi-Fi Protected Access (WPA), and authentication. For details, see [802.11b Wireless Security Supplement](#) on page 9-12.

802.11b Settings










You can access the configuration utility two ways:

1. Tap **Start > Settings > System tab > 802.11b Settings**.
This icon appears on the System tab only if there is an 802.11b radio installed on the terminal.
2. Tap the **Status** icon  in the system tray - see [Using the Status Icon](#) on page 9-11.

The 802.11b Settings utility consists of four tabs: Status, Config, Advanced, and About. Each tab is described in its own section in this chapter.

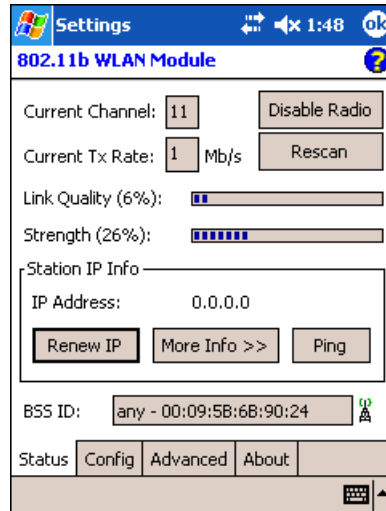
Icons

This configuration utility contains icons that indicate the status of the network.

Icon	This icon means...
	Excellent signal strength. Excellent connection.
	Poor signal strength. Poor connection.
	Radio disabled. No radio connection.
	(Access Point) AP Mode.
	Peer Station, Peer-to-Peer Mode.
	WEP enabled. Network needs a WEP Key to connect.
	WEP disabled. Network does not need a WEP Key to connect.
	Mismatched WEP Key configuration with your network.
	Online help button.

Status Tab

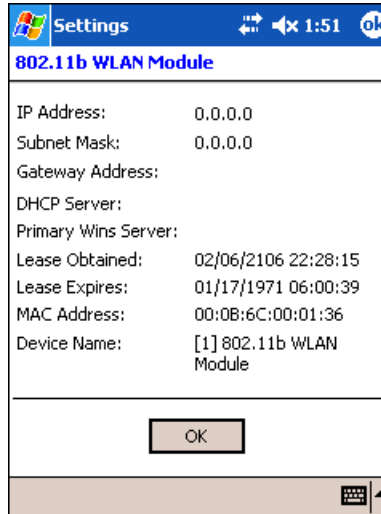
802.11b Settings always opens to the Status tab, which displays the current WLAN settings for 802.11b.



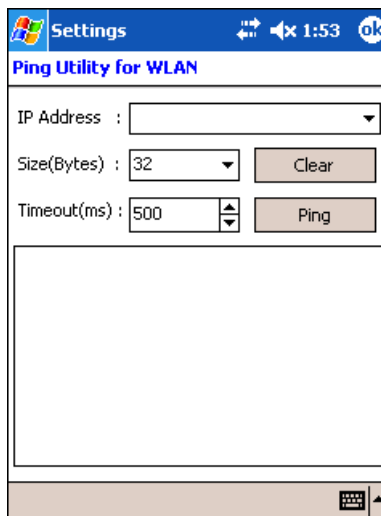
Field	Description
Current Channel	Shows the RF channel currently used by the radio.
Current TX Rate	Shows the current transmit rate. This can be 1 Mbps, 2 Mbps, 5.5 Mbps, or 11 Mbps.
Disable/Enable Radio	Tap this button to disable/enable the radio.
Rescan	Tap this button to start a rescan process to search for an AP with a stronger signal in the network.
Link Quality	Displays the signal to noise ratio.
Strength	Displays the signal strength at the receiver.
IP Address	Displays the IP address of the radio. Verify configuration information with your network administrator.
Renew IP	Tap this button to reapply the IP address from the DHCP server when automatic DHCP is enabled.
State	Displays the Network Name and the MAC address of the: <ul style="list-style-type: none">• AP the radio is associated with in AP mode, or• Creator of IBSS into which the radio is joined in peer-to-peer (Ad-Hoc) mode. After an SSID is chosen, this field name changes to "IBSS ID."

Field**Description****More Info**

Tap this button to display detailed TCP/IP information as shown in the following screen:

**Ping**

Tap the Ping button to open the Ping Utility for WLAN.

**Field****Description****IP Address**

Displays the current IP address. Enter another IP address to ping.

Size (Bytes)

Displays the current data packet size in bytes; 32 is the default. You can select up to 8192 from the drop-down list.

Timeout (ms)

Displays the current timeout; 500 is the default. Increase or decrease it by tapping the up and down arrow buttons.

Clear

Tap this button to clear IP Address input and the ping statistics field.

Ping

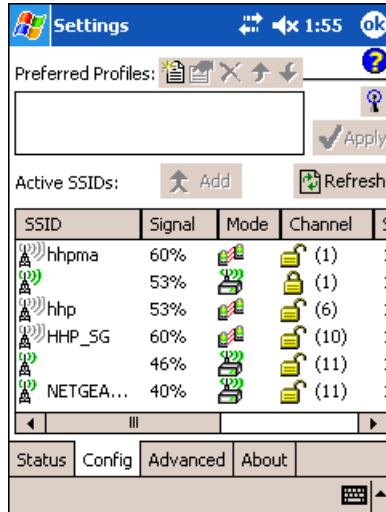
Tap this button to ping the IP address entered in the input field.

Ping Statistics

This section lists the pinging IP address and the pinging results.

Config Tab

The Config tab provides a list of all APs and peer stations in range. Its configuration tool enables you to create and edit SSID profiles for APs that you want your station to associate with.



Preferred Profiles

This Preferred Profiles section displays a list of preferred profiles for AP in the network created by the user, or added from the Active SSIDs table. When turned on, the radio searches for the APs in the exact order shown in the list of profiles. This section is blank after the initial installation and each hard reset thereafter. This section remains blank if there are no automatic association preferences selected.

This section contains several icons that enable you to add and configure APs.

Icon	Name	Description
	New	This button is always active. Tap it to create a new profile on a series of screens; for instructions, see To Create a New Profile on page 9-7.
	Edit	Tap this button to open the configuration screens for the selected SSID.
	Delete	Tap this button to delete the selected SSID from the Preferred Profile list.
	Up	Tap this button to move the selected SSID up one place in the Preferred Profile list.
	Down	Tap this button to move the selected SSID down one place in the Preferred Profile list.

The following buttons activate only when an Active SSID in the Preferred Profile list is selected.





Remember that the terminal accesses the SSIDs in this list in the exact order that they appear; moving an SSID up or down in the list determines the order of contact.

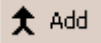
Active SSIDs

The Active SSIDs table lists all APs or peer stations (creator of IBSS) in the vicinity of the host. It displays only those SSIDs that accept broadcast associations.

Each record displays information in the following six columns (The screen may not display all the fields in the following table. Use horizontal scroll bar to view all):


Column	This column displays...
SSID	The Network Name of the AP or peer station and shows the signal strength icon
Signal	Strength in percentage for the selected SSID.

Column	This column displays...
Mode	The mode of operation AP  A peer station 
Channel	The channel and applied WEP method, if any. WEP Key-On  WEP Key-Off 
SupRate	Supported data rate of the AP or the peer station.
BSSID (MAC Addr)	BSSID or MAC Address of the AP or the peer station.


- Add**  Tap this button to add an Active SSID to the Preferred Profiles list. Select and active SSID in the list, tap **Add**, and the profile moves to the Preferred Profiles list.
- Apply** Tap **Apply** to associate your station with a selected SSID. The SSID selected can be in the Preferred Profile or Active SSIDs lists. When applied, the Status tab opens displaying the status of the wireless connection. If the association fails, a search for another AP in the Preferred Profile list automatically takes place, and the radio attempts to associate with the station, in order of preference.
- Refresh** Tap **Refresh** to start a new search for all available APs or peer stations in the vicinity.

To Add an Active SSID to the Preferred Profile Table

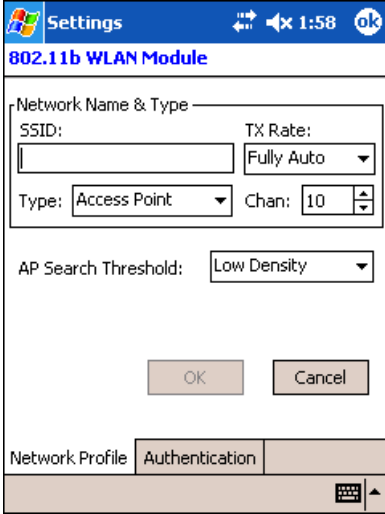
An SSID needs to be in the Preferred Profile list to be edited.

1. Select an SSID in the Active SSID list and tap **Add**. If the SSID has the WEP Key turned on, the Settings window displays and prompts you to enter the WEP Method, Encryption Key, and Key ID.
2. Now, you need to configure its profile.
3. In the Preferred Profile list, select the SSID and tap **Edit** ; see [To Create a New Profile](#) on page 9-7.
4. When configuration is complete, tap **OK**. The SSID and its profile are added into the Preferred Profiles list. If you're adding an SSID with the WEP Key turned off, the Settings window does not display and the SSID is added directly to the Preferred Profile table.

To Create a New Profile

In the Preferred Profiles section, tap the **New** button . A screen opens with two tabs windows: Network Profile and Authentication.

Network Profile Tab



The screenshot shows a settings window titled "802.11b WLAN Module". It has a status bar at the top with "Settings", signal strength, battery, and time "1:58". Below the title is a section "Network Name & Type" containing:

- SSID: [text input field]
- TX Rate: [Fully Auto dropdown]
- Type: [Access Point dropdown]
- Chan: [10 spinner]

Below this is "AP Search Threshold: [Low Density dropdown]". At the bottom are "OK" and "Cancel" buttons. A tab bar at the very bottom shows "Network Profile" (selected) and "Authentication".

Field	Description
-------	-------------

Network Name & Type	
--------------------------------	--

SSID	Enter an SSID, which is the Network Name. Check with your network administrator for Network Name (SSID).
-------------	--

TX Rate	Choose the transmit rate from the drop-down list - 1MB, 2 MB, Auto 1/2 MB, 5.5 MB, 11 MB, or Fully Auto. The transmit rate is set to Fully Auto by default.
----------------	---

Type	From the drop-down list, select Peer-to-Peer – This mode used for communication between two (or more) radio stations (cards) without an AP. Access Point (AP) – This mode is also called “Infrastructure” mode.
-------------	---

Chan	Scroll to select a channel for communication.
-------------	---

AP Search Threshold	Select Low Density (default), Medium Density , or High Density from the drop-down list and tap OK . AP search thresholds are used for wireless client roaming between APs. In general, the higher the density selected here, the easier your WLAN card roams between APs with the same SSID in the same network. Roaming also depends on the relative signal strength of the AP.
----------------------------	--

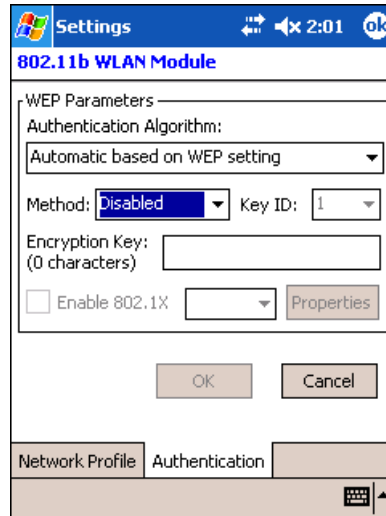
OK	Tap this button to save the profile or changes to the profile.
-----------	--

Cancel	Tap this button to close the window without saving or modifying the profile.
---------------	--

Note: The SSID, Type, TX Rate, and Channel fields are unchangeable in AP mode, whereas TX Rate and Channel fields can be changed in Peer-to-Peer mode.

Authentication Tab

On the Authentication tab, you configure the WEP encryption key for secure wireless communication.



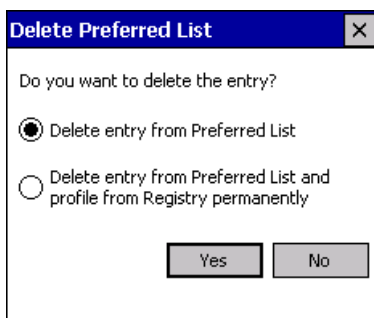
To use WEP, the encryption key **must** be configured as part of the profile before connecting. For more information about configuring a profile, see [To Create a New Profile](#) on page 9-7.

Field	Description
*Authentication Algorithm	This drop-down list is active and configurable only when the WEP Key is enabled for the selected SSID profile. If this drop-down list is active, select one of the following options: Automatic based on WEP setting – The algorithm automatically matches the AP's setting. This is the default selection. WECA Compliant (always use Open) – The algorithm should match the AP's setting for "Open." Must use Shared with WEP – The algorithm should match the AP's setting for "Shared."
Method	The options in this drop-down list determine what characters can be used to create the WEP encryption key in the Encryption Key field. Select one of the following five: <ul style="list-style-type: none">• Disabled – WEP Key is off• 64 bit (HEX) uses 10 characters in Hexadecimal• 64 bit (ASCII) uses 5 characters in ASCII• 128 bit (HEX) uses 26 characters in Hexadecimal• 128 bit (ASCII) uses 13 characters in ASCII HEX – Hexadecimal is a set of 16 characters from 0-9 and from A(a)-F(f). ASCII – ASCII means any printable ASCII character can be typed.
Key ID	Choose from the available Key IDs: 1 (Default), 2 , 3 , or 4 . Check with your network administrator for the WEP Key and Key ID you need to use for your network.
Encryption Key	Type in the encryption key for your wireless connection. The format allowed in this field depends on the character set and format selected in the Method field.
*Enable 802.1X	This option and drop-down list is active only when the WEP Key is enabled. Select this option if access to the network needs group authentication, then select the 802.1X security standard - PEAP or TLS - from the drop-down list.
*Properties	Tap the Properties button to choose the certificate that applies. Accessing 802.1x networks require personal certificates for authentication.
*Please note that 802.11b Settings does not support authentication; therefore, these fields are not active.	If you are using authentication in your wireless 802.11b connection, you must configure that connection in the 802.11b Wireless Security Supplement. For more information, see 802.11b Wireless Security Supplement on page 9-12 .

Field	Description
OK	Tap this button to save the profile or changes to the profile.
Cancel	Tap this button to close the window without saving or modifying the profile.

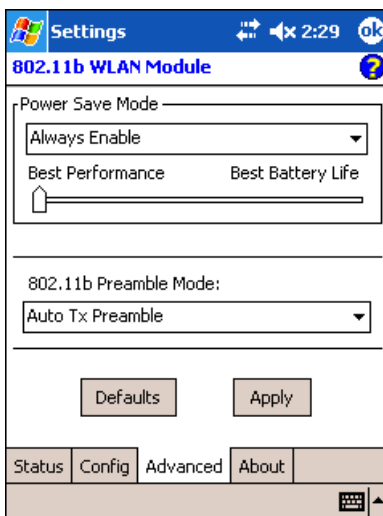
To Delete a Profile

Profiles may be deleted either from the Preferred List or from the Preferred List and Registry. To delete a profile, select (highlight) a profile and tap the **Delete** button and the following screen displays:



From the pop-up window select the option of your choice and tap **Yes** to confirm or **No** to cancel.

Advanced Tab

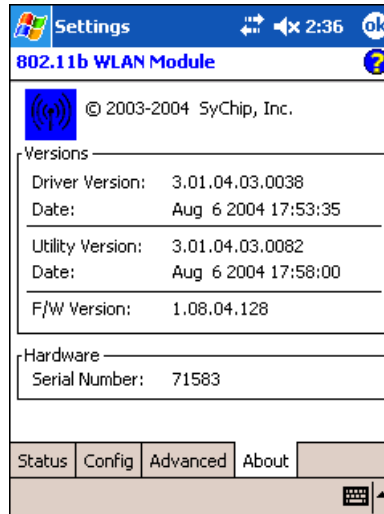


Field	Description
Power Save Mode	This drop-down list determines the settings for Power Save Mode. Disable – Disables the Power Save mode. Always Enable – Enables Power Save mode. This is the default setting. Auto Enable – Automatically enables the Power Save mode when the terminal is running on battery power and automatically disables Power Save mode when the terminal is running on external power.
Slider	The slider is active only if Power Save Mode is enabled. Move the slider between Best Performance and Best Battery Life. The setting here modulates Power Save Mode to achieve maximum performance and maximum battery life.


Field	Description
Preamble Mode	<p>A preamble consists of a Synchronization (Sync) field and a 16-bit Start Frame Delimiter (SFD) field.</p> <p>Long TX Preamble – Where Sync field consists of 128 bits.</p> <p>Short TX Preamble – Where Sync field consists of 56 bits.</p> <p>Auto TX Preamble – Automatically changes between long and short preamble mode transmission based on AP configurations. This is the default Preamble Mode.</p>
Defaults	<p>Resets all the settings to default values</p> <ul style="list-style-type: none"> • Always Enable for Power Save Mode, • Automatic based on WEP setting for Authentication Algorithm, and • Auto TX Preamble (for Preamble Mode).
Apply	Applies changes. This button is active only when a change has been made on the tab.

About Tab


This window provides Version Number and time of build for Network Driver, Configuration Utility, and NIC Firmware.




Using the Status Icon

You access the 801.11b Settings by tapping the **Status** icon once on the Today screen . The following menu pops up:



Menu Option	Selecting This Option...
Wireless Radio On	Turns on the radio. LED is on and the Link Icon displays with signal strength.
Wireless Radio Off	Turns off the radio. A pop-up window will ask for your confirmation. If confirmed, the LED will be off and the Status icon will change color from green to red on the top without signal strength displayed. The WLAN card/module will stop functioning.
Remove Status Icon	<div style="display: flex; align-items: flex-start;"> <div style="border: 1px solid black; padding: 5px; margin-right: 10px;"> <p>Settings</p> <p> If you remove the WLAN status icon, you must then use the Program/or Control panel to configure your WLAN.</p> <p>Do you want to remove the WLAN status icon from the Windows System Tray?</p> <p style="text-align: center;"> <input type="button" value="Yes"/> <input type="button" value="No"/> </p> </div> <div> <p>Removes the Status Icon from the bottom tray. A pop-up window asks you to confirm. Click Yes to confirm, or No to cancel.</p> <p>If confirmed, the Status icon does not display in the task tray, and you will need to go to Start > Programs > 802.11b Settings in the future.</p> </div> </div>
Wireless Network Status	Opens the Status tab; Status Tab , page 9-3.
Configuration	Opens the Config tab; Config Tab , page 9-5.
Advanced Configuration	Opens the Advanced tab; Advanced Tab , page 9-9.
Version Information	Opens the About tab; About Tab , page 9-10.

Note: The Status Icon changes to a crossed lock  as a warning that you may have entered a wrong key (WEP Key mismatch) for the WEP-On AP or a station.

802.11b Wireless Security Supplement

AEGIS Client® offers the most comprehensive IEEE 802.1X supplicant for securing wired and wireless networks. The Client is a standards-based implementation of IEEE 802.1X and can be configured to work with almost any network equipment - wired or wireless - that supports the 802.1X authentication standard. The Client is interoperable with 802.1X-capable wireless APs and authentication servers including Microsoft's IAS and Cisco's ACS.

The Client solves the problem of key distribution in wireless LANs by using public key authentication and encryption between Wireless APs (WAP) and roaming stations to exchange dynamic Wired Equivalent Privacy (WEP) keys. In addition, network managers can control 802.1X user profiles from a centralized RADIUS server or, in the case of TTLS, from a RADIUS Diameter or other AAA servers. The Client supports both wireless (802.11a/b/g) and Ethernet interfaces.

Platforms Supported

There are several versions of AEGIS Client software for computers using a wide variety of operating systems. Specific capabilities of a particular version of AEGIS Client may vary according to the operating system. This is due to varying levels of support for different EAP types by manufacturers. Drivers for some types of network hardware and operating system combinations don't support as many EAP types as others combinations.

The following platforms are supported:

- Microsoft Windows Mobile Software 2003 [OS version "Pocket PC Version 4.20.1081 (Build 13100)" or later]
- Microsoft Windows Mobile Second Edition Software
- Pocket PC 2002 [OS version "Pocket PC Version 3.0.11171 (Build 11178)" or later]
- CE.NET 4.1 [OS version "CE .NET Version 4.10 (Build 908)" or later]
- CE.NET 4.2 [OS version "CE .NET Version 4.20 (Build 1088)" or later]

*Note: Verify the operating system version by tapping **Start > Settings > System tab > About**.*

802.1X Supplicant Protocol Support

Support for the Extensible Authentication Protocol (EAP) - RFC 2284

Supported authentication methods are as follows:

- CHAP/MD5 - RFC 1994
- EAP TLS Authentication Protocol - RFC 2716
- EAP Tunneled TLS (TTLS) - Internet Draft February 2002
- Cisco LEAP and PEAP
- Microsoft PEAP

Tested against the following servers:

- Funk Odyssey 3.2 using TLS, LEAP and TTLS
- AEGIS Server 1.1.4 using MD5, TLS, TTLS, LEAP and PEAP
- Cisco ACS 3.2 using MD5, TLS, LEAP and PEAP



If you are using one of these authentication methodologies, you need to configure your 802.11b connection here, NOT through 802.11b Settings. However, if you want to set the AP Search Threshold above the default setting of Low Density, you do need to change that setting in 802.11b Settings; for details, see [Network Profile Tab](#) on page 9-7.

Required Network Configuration Information Worksheets

Because AEGIS Client enables your terminal to access a network that is protected by the IEEE 802.1X protocol, you must configure EAP data communication to match your network server parameters. If the EAP configuration doesn't match your network configuration, you can't access the network.

Installing and configuring the Client usually takes less than 15 minutes, provided you have the required equipment, software, and configuration information. You need clear information from the network administrator about how the network's authentication works.

The worksheets on the following pages provide space to record the required Client configuration information to set up the Client to match specific Extensible Authentication Protocols (EAP). The forms are designed so that hard copies can be filled out, copied, and distributed.

The client software supports the following EAP authentication methods:

- MD5
- LEAP
- TLS/SmartCard
- TTLS
- PEAP

There is a worksheet for each method. Complete the worksheet for the method you choose.

MD5 Worksheet

To configure AEGIS Client to use MD5 authentication, you need to know:

1. Will you use your Windows user name and password for network authentication? (Applies only to Windows clients.)
2. If not, what is your unique user name/password combination?

If a second set of credentials is required, you need to know the exact user name and password. These are typically case-sensitive.

User name: _____

Password: _____

LEAP Worksheet

To configure AEGIS Client to use LEAP authentication, you need to know:

1. Will you use your Windows user name and password for network authentication? (Applies only to Windows clients.)
2. If not, what is your unique user name/password combination?

If a second set of credentials is required, you need to know the exact user name and password. These are typically case-sensitive.

User name: _____

Password: _____

TLS/SmartCard Worksheet

To configure AEGIS Client to use TLS/SmartCard authentication, you need to know:

1. Is a client certificate required?

___ No.

___ Yes. This file needs to be installed on your machine by your network administrator.

2. Should the AEGIS Client validate the server certificate chain?

___ No. Skip Questions 3-4.

___ Yes.

3. Will the server accept any trusted Certificate Authority (CA), or is a particular CA required?

-
- Any trusted CA is acceptable.
 A particular CA is required: _____

4. Are intermediate certificates allowed?

- No.
 Yes.

5. What is the name of the server? _____
This usually includes the server's domain, for example: server.big_school.edu.

TTLS Worksheet

To configure with TTLS authentication, you need to know:

1. Use Windows user name and password for authentication? (Applies only to Windows clients.)
2. If not, what is your unique user name? If a second set of credentials is required, you need to know the exact user name. This is usually case-sensitive.

User name: _____

3. Is a client certificate required?

- No.
 Yes. This file needs to be installed on your machine by your network administrator.

4. What is the user name (identity) and password for the tunnel authentication?

User name: _____

Password: _____

5. What is the tunnel authentication protocol?

- CHAP (Challenge Handshake Authentication Protocol)
 MS-CHAP (Microsoft CHAP Extensions)
 MS-CHAP v2 (Microsoft CHAP Extensions v. 2)
 PAP
 EAP-MD5

6. Is a server certificate is required?

- No.
 Yes.

7. Should the Aegis Client validate the server certificate chain?

- No. Skip Questions 8-9.
 Yes.

8. Will the server accept any trusted Certificate Authority (CA), or is a particular CA required?

- Any trusted CA is acceptable.

___ A particular CA is required: _____

9. Are intermediate certificates allowed?

___ No.

___ Yes.

10. What is the name of the server?

This usually includes the server's domain, for example: server.big_school.edu. _____

PEAP Worksheet

To configure AEGIS Client with PEAP Authentication, you need to know:

1. Use Windows user name and password for authentication? (Applies only to Windows clients.)

2. If not, what is your unique user name? If a second set of credentials is required, you need to know the exact user name. This is usually case-sensitive.

User name: _____

3. Is a client certificate required?

___ No.

___ Yes. If it is, this file needs to be installed on your machine by your network administrator.

4. What is the user name (identity) and password for the tunnel authentication?

User name: _____

Password: _____

5. What is the tunnel authentication protocol?

___ MS-CHAP v2 (Microsoft CHAP Extensions v. 2)

___ EAP TLS/SmartCard

___ Generic Token Card

6. Is a server certificate is required?

___ No.

___ Yes.

7. Should the Aegis Client validate the server certificate chain?

___ No. Skip Questions 8-9.

___ Yes.

8. Will the server accept any trusted Certificate Authority (CA), or is a particular CA required?

___ Any trusted CA is acceptable.

___ A particular CA is required: _____

9. Are intermediate certificates allowed?

___ No.

___ Yes.

10. What is the name of the server?

This usually includes the server's domain, for example: server.big_school.edu. _____

Opening the Client







To access the client the first time, tap **Start > Programs > Meetinghouse AEGIS Client**.

After the Client has been activated, you can tap the icon in the lower left corner of the command bar.



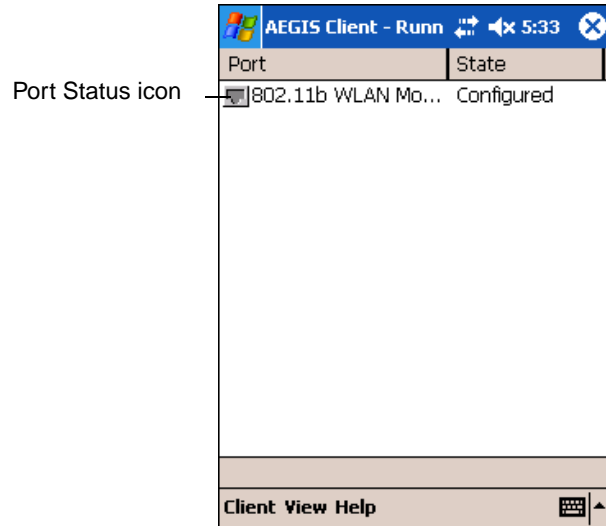
Icon Indicators

The color of the icon indicates the status of the controlled ports.

Icon	Color	This color icon indicates that ...
	Green	Authentication succeeded.
	Yellow	Authentication is in process.
	Red	Authentication failed.
If there is no yellow, red or green in the icon then either the ports are not being controlled by 802.1X, or there is no authentication activity on the controlled ports. The absence of yellow, red or green may also indicate that the network access server is not an 802.1X aware device.		
	Gray	The port is not in use or is disabled. Either the Client isn't running, or the port is not bound to the 802.1X protocol.
	Orange	The port is associated, but there is no response to 802.11b packets. If using WEP without 802.1x authentication, this will be the final state when the connection is complete. If using 802.1x authentication, it is either a transient condition or can indicate that attempts to authenticate have timed out as there was no response to 802.1X packets.
	Blue	There is no 802.11b activity. The port may not be connected to an 802.1X-aware entity.

Main Screen

On the terminal, open the Client. The main screen opens displaying a list of ports on the system's network interface cards. You manage ports on this screen.

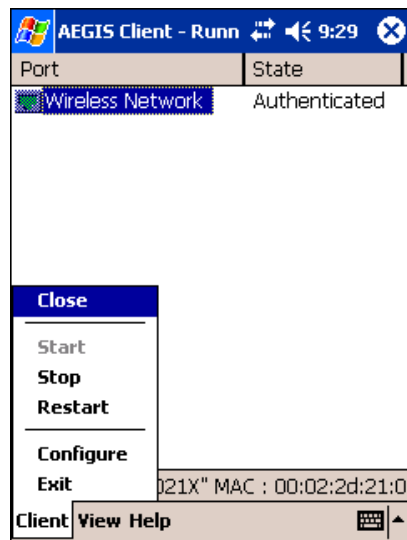


Port Status Icon

The main screen contains a port status icon to the left of each port listed. The color of this icon indicates the status of the port. The color of the icon changes as the port starts authentication, negotiates with the AP and/or authentication server, and then joins the network. As the network interface starts or stops, the color of the port icon and the status field in the Interface List updates to reflect the current state of the interface. For details about what each color means, see [Icon Indicators](#) on page 9-16.

Client Menu

To open the client menu, tap **Client** in the command bar along the bottom of the window.

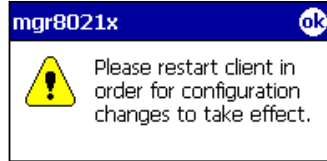


Menu Item
Close

Tapping this item...
Closes the Client's interface, while leaving the client running.

Start/Stop Starts or stops 802.1X authentication. After you finish the initial configuration, tap the network interface and tap **Start**. If the port is already active, tap **Stop** first, then **Start** to force the program to read the new configuration file.

Restart Same as a Stop followed by Start. Tap this when you receive a notice such as the following:



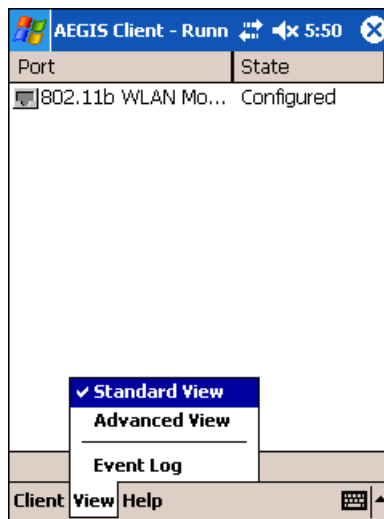
Configure Opens the Configuration screen displaying the User tab.

Install Protocol Selecting this option binds the 802.1X protocol to the WLAN adapter currently installed on the device. The WLAN adapter then appears in the port list. For more information about network adapters, see [Network Cards](#) on page 7-32.

Exit Terminates the client, which stops the 802.1X protocol.

View Menu

To access the View menu, tap **View**.



The Standard and Advanced Views control the number of columns displayed in the main menu.

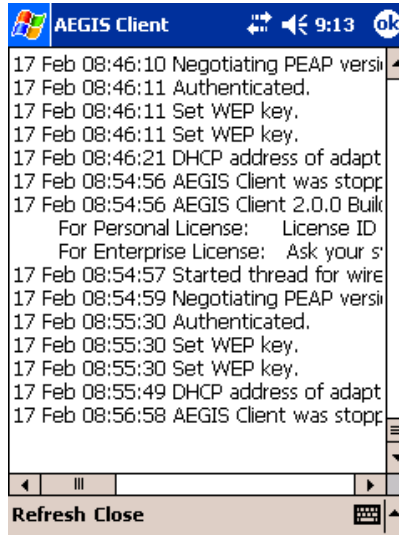
Menu Item **Tapping this item...**

Standard View Displays the **Port** (adapter name) and **State** columns. This is the default view.

Advanced View **Displays the Port** (adapter name), **State**, **Primary Wireless Network**, **Wireless Network**, and **MAC Address of AP** columns. Scroll right to see all columns.

Event Log

The Event Log is a text file that contains status information from the logging function. Each entry is listed sequentially with a time stamp and a text message.



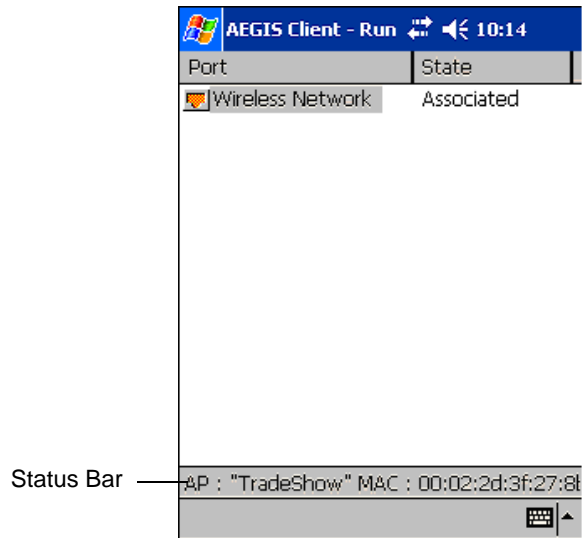
Tap **Refresh** to retrieve the most current information and display it in the log immediately.
Tap **Close** to return to the main screen.

Help Menu

Tapping Help opens the help menu. Select **Online Help** to access online help. Select **About** to review software version information.

Status Bar

The status bar is displayed at the bottom of the main screen and indicates the connection status between the network card and the AP.

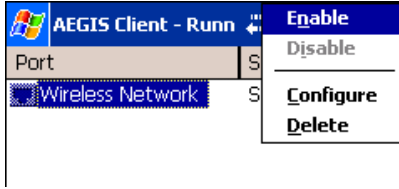


The status bar displays one of the following depending on the status of connectivity:

- "Not Associated"
- "AP : [Name of the SSID] MAC : [MAC address]."

Port Menu

On the main screen, tapping on a port opens a popup menu that allows the port to be enabled or disabled, configured, or deleted.



The port menu enables you to use 802.1X authentication, change the port configuration, or remove it from the port list. If there are no entries in the Port list, follow the advice in the troubleshooting section to resolve the problem.

Port Menu Options

Enable and Disable These commands enable or disable 802.1X authentication on the port. The port should be enabled before the protocol is started. Enabling a port is not the same as starting it (see [Client Menu](#) on page 9-17); however, both actions are required for the Client to work.

Configure Opens the port configuration screen; see [Accessing the Client Configuration Area](#) on page 9-21.

Delete Removes an adapter from the port list. An unused port may be deleted from the port list. The radio card must not be in the device or the radio must be turned off.

Ports appear in the list only when the 802.1X protocol binds to the adapter. The protocol binds to the adapter when the adapter is in the device and the Client software is installed, or Install Protocol is selected from the Client menu (see [Client Menu](#) on page 9-17).

Configuring the Client

The Client is configured in two separate areas:

1. **Client Configuration** area - enables you to configure user settings and is accessed from the Client menu.
2. **Port Settings** area - enables you to configure Network Properties settings for individual wireless networks and is accessed from the Port menu.

Configuration Screens

Both Client Configuration and Port Settings areas lead you through a series of setup screens. The following diagram displays the different screens and how they are related:

