Dolphin® 7600 Series
Microsoft® Windows® CE 5.0

powered by
Adaptus™
imaging technology 5.0

User's Guide

Disclaimer

Hand Held Products, Inc. ("Hand Held Products") reserves the right to make changes in specifications and other information contained in this document without prior notice, and the reader should in all cases consult Hand Held Products to determine whether any such changes have been made. The information in this publication does not represent a commitment on the part of Hand Held Products.

Hand Held Products shall not be liable for technical or editorial errors or omissions contained herein; nor for incidental or consequential damages resulting from the furnishing, performance, or use of this material.

This document contains proprietary information that is protected by copyright. All rights are reserved. No part of this document may be photocopied, reproduced, or translated into another language without the prior written consent of Hand Held Products.

Web Address: www.handheld.com

Trademarks

Dolphin, Dolphin RF, HomeBase, Mobile Base, and QuadCharger are trademarks or registered trademarks of Hand Held Products, Inc.

Microsoft, Windows, Windows Mobile, Windows CE, Windows NT, Windows 2000, Windows ME, Windows XP, ActiveSync, Outlook, and the Windows logo are trademarks or registered trademarks of Microsoft Corporation.

Other product names mentioned in this manual may be trademarks or registered trademarks of their respective companies and are the property of their respective owners.

The Bluetooth trademarks are owned by Bluetooth SIG, Inc., U.S.A. and licensed to Hand Held Products.

Chapter 7 contains copyrighted information from Meetinghouse Corporation. Meetinghouse, the Meetinghouse logo, and all other Meetinghouse trademarks/service marks contained herein are trademarks or registered trademarks of Meetinghouse.

Table of Contents

Chapter 5 - Using the Image Engine

Chapter 6 - Communication

Chapter 7 - Managing the 802.11b/g Radio

Chapter 8 - Bluetooth Manager

Chapter 9 - Dolphin HomeBase

Chapter 10 - Dolphin QuadCharger

Chapter 11 - Customer Support

1

Agency Approvals

Label Locations

Dolphin 7600 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.

Compliance Label (see page 1-1)

Molded-in Text
(see page 1-1)

Molded-in Text

This Class B Digital Device Complies with Canadian ICES-003. *Cet appareil numérique de la Classe B est conforme à la norme NMB-003 du Canada.* **See Manual**
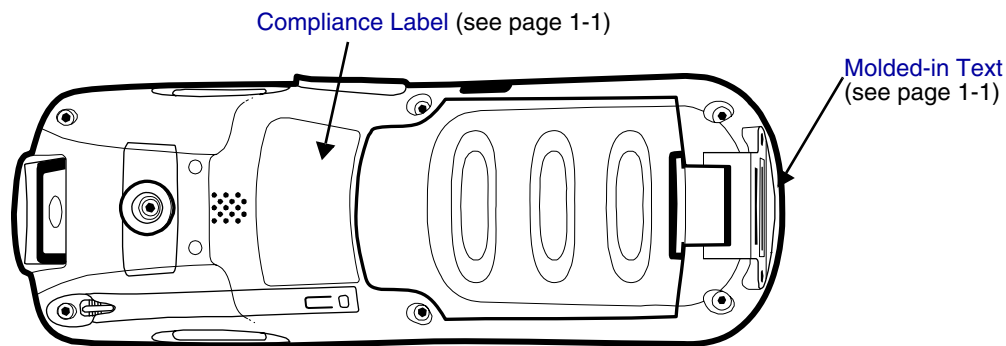
Dolphin 7600 Terminals with 802.11b/g and/or Bluetooth

Dolphin 7600 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).

Compliance Label

The required safety labels that appears on the back of Dolphin 7600 terminals equipped with the following radios are as follows:

802.11b/g and/or Bluetooth

Regulatory and Safety Approvals for all Dolphin Terminals

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

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

For further information, please contact:

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

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

Laser Safety Label

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

Laser Eye Safety Statement: This device has been tested in accordance with and complies with IEC60825-1: 1993+A1+A2 and 21 CFR 1040.10 and 1040.11, except for deviations pursuant to Laser Notice No. 50, dated July 26, 2001. LASER LIGHT, DO NOT STARE INTO BEAM, CLASS 2 LASER PRODUCT, 1.0 mW MAX OUTPUT: 650nM.

LASER LIGHT. DO NOT STARE INTO BEAM
CLASS 2 LASER PRODUCT
1.0 mW MAX OUTPUT: 650nM
IEC60825-1:1993+A1+A2
Complies with 21 CFR 1040.10 and 1040.1 1
except for deviations pursuant to Laser
Notice No. 50, dated July 26, 2001.
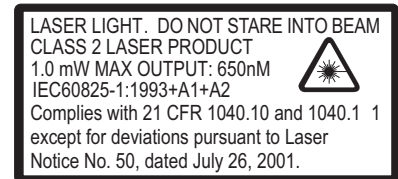
Caution - use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

LED Safety Statement

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

CB Scheme

Certified to CB Scheme IEC 60950-1.

FCC Compliance

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

Dolphin Batch Terminal

Dolphin Batch terminals comply with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Dolphin RF Terminal—802.11b/g and/or Bluetooth

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

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

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

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

⚠ **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.**

When using accessories where the terminal is worn on the body, the terminal's touch screen must face away from the body.

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

FCC RF Radiation Exposure Statement

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment.

Max.SAR Measurement (1g)

• 802.11b: 0.215w/kg
• 802.11g: 0.149w/kg

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

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

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

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

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

This product is marked with 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 2.4–2.4835 GHz
• Outdoor use - Maximum power (EIRP*) of 100 mW for the 2.400–2.454 GHz band and maximum power (EIRP*) of 10 mW for the 2.454–2.483 GHz band.

Canadian Compliance

This Class B digital apparatus complies with Canadian ICES-003. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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

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

For European Community Users

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

Waste Electrical and Electronic Equipment Information

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

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

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

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

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

Pacemakers, Hearing Aids and Other Electrically Powered Devices

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

Microwaves

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

2

Getting Started

Out of the Box

Verify that your carton contains the following items:

• Dolphin 7600 mobile computer (the terminal)
• Main battery pack (3.7v, Li-ion)
• AC power supply
• Localized plug adapters
• User CD

Note: Be sure to keep the original packaging in case you need to return the Dolphin terminal for service; see Product Service and Repair on page 11-1.

Step 1. Install the Main Battery
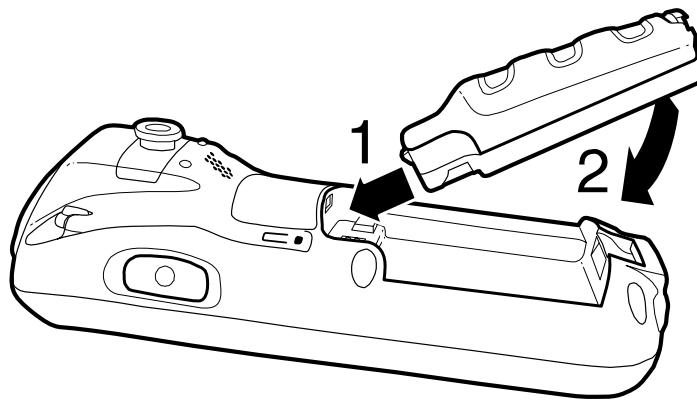
⚠ *Use only the Li-ion battery packs provided by Hand Held Products. The use of any battery pack not sold/manufactured by Hand Held Products in a Dolphin terminal will void your warranty and may result in damage to the Dolphin terminal or bat*

Step 2. Charge the Batteries

Dolphin terminals ship with both the main battery pack and internal backup battery significantly discharged of power. Charge the main battery pack with the Dolphin charging cable for **a minimum of four hours before initial use.**

1.   Attach the appropriate plug adapter to the plug of the power cable.

2.   Plug the *Dolphin power cable into the DC Power Jack (see page 3-5) on the left side.

3.   Insert the plug into the appropriate power source.

*This power cable can also be used to power the Dolphin HomeBase (see page 9-1).
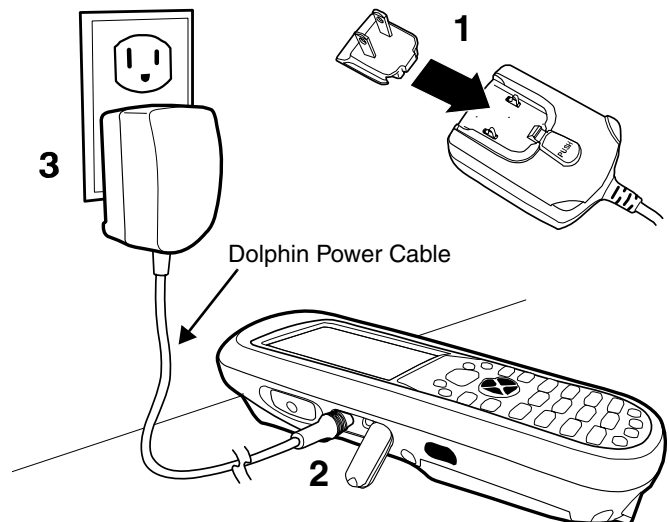
Dolphin Power Cable

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

Step 3. Boot the Terminal

Windows CE

The terminal begins booting as soon as power is applied and runs by itself. Do NOT press any keys or interrupt the boot process.

When the boot process is complete, the Desktop (see page 2-2) appears and the terminal is ready for use.
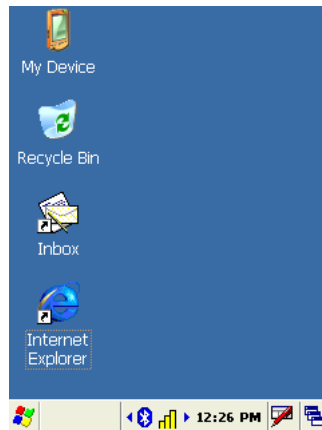
Windows Mobile

The terminal begins booting as soon as power is applied and runs by itself. Do NOT press any keys or interrupt the boot process. Only tap the screen when prompted.

When the boot process is complete, the Desktop (see page 2-2) appears and the terminal is ready for use.

Desktop

System resets (see Resetting the Terminal on page 3-14) complete on the Desktop.

Note: You can access the Desktop any time by tapping the Desktop icon in the command bar and selecting Desktop on the popup menu.
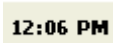
Command Bar

Located at the bottom of application screens, the command bar includes application menus, buttons, and provides access to the Input Panel.

This area displays various icons that access applications running on the device. Use the right and left arrows to navigate through these icons.

Tap to change the date and time

Tap to open the keyboard

Tap to access the Start menu.

Tap to return to the Desktop or toggle between open applications.
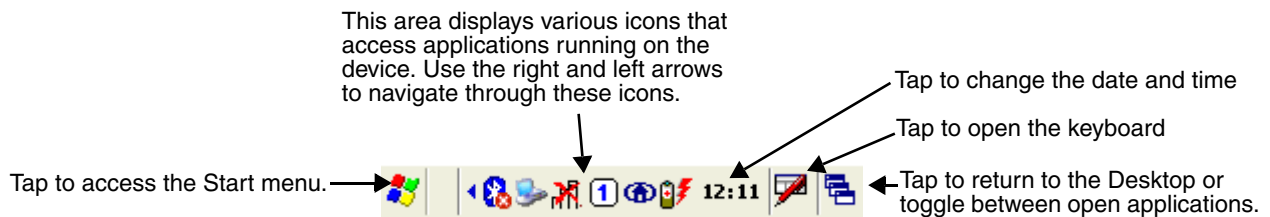
Icons in the Command Bar

The Command Bar (see page 2-2) contains a number of icons that indicate the status of various functions on the terminal.

Status Icon	Meaning
	Opens the Start menu.
Icons Between the Arrows	
Because there may be more icons than the device can display, use the left and right arrows to scroll through the icons.	
	Accesses the Bluetooth radio. Single-tap this icon to open the Bluetooth Manager (see page 8-1).
	Accesses the 802.11b/g radio. Single-tap this icon to open the WLAN Manager (802.11b/g) (see page 7-1).
	Accesses the Meetinghouse Client for the 802.11b/g radio. Single-tap this icon to open the Meetinghouse Client.
	The USB communication cable is connected.
	Indicates the status of battery power. This icon means that the battery is low. Double-tap this icon to open the Power control panel setting.
	Indicates that the device is running on external power. Double-tap this icon to open the Power control panel setting.
	Indicates that the keyboard is in numeric or alpha mode.
12:06 PM	Displays the current time. Double-tap to change the time and date.
	Tap this icon to open the soft input panel (SIP) manually.
	This icon appears when the SIP is open, whether the SIP was opened manually or automatically popped up on an application screen. Tap this icon and select **Hide Input Panel** on the menu that pops up when you want to close the SIP.

Using the Stylus

The terminal comes with a stylus inserted into the Stylus Slot (see page 3-4), Use this stylus (or your finger) to select or enter information on the touch screen. The stylus functions as a mouse; generally, a tap is the same as a click.

Tap Tap the touch screen once to open menu items and select options.

Drag Hold the stylus on the screen and drag across the screen to select text and images.

Tap & hold Tap and hold the stylus on an item and a pop-up menu appears. On the pop-up menu, tap the action of the task you want to perform.

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

For more information about the touch screen see Touch Screen Display on page 3-2.

Selecting Programs

Tap **Start > Programs**. To open a program, tap the icon on the menu.

Pop-Up Menus

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

1. Tap and hold the stylus on the item name. The pop-up menu appears.

2. Lift the stylus, and tap the action you want to perform.

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

Using Windows Explorer

Use Windows Explorer to navigate through the files on your system. On the desktop, double-tap the **My Device** icon and Windows Explorer opens to the root level,
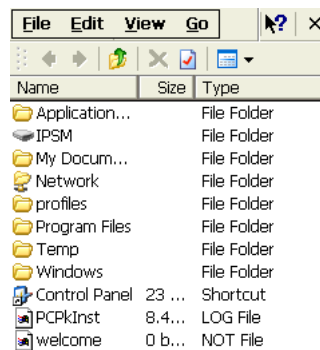
Move files by tapping and holding on the file, then tapping **Cut**, **Copy** or **Paste** on the pop-up menus that appear.

3

Terminal Hardware Overview

The Dolphin 7600 includes a number of standard terminal configurations as well as charging and communication peripherals and accessories to maximize the efficiency of your application setting.

Standard Terminal Configurations

There are two standard Dolphin 7600 configurations:

Dolphin 7600 WPAN	Dolphin 7600 WPAN/WLAN
• Microsoft Windows CE 5.0 • Samsung 2440 400 MHz • 64MB RAM X 128 MB (non-volatile) Memory • 29-key numeric keyboard • 2.8" 1/4 VGA TFT color display • Li-ion battery: 3.7V / 2200 mAh / 8.1 Wh • 5300SR image engine • Bluetooth radio • Dolphin power cable (each Dolphin 7600 device comes with this power cable in the box)	• Microsoft Windows CE 5.0 • Samsung 2440 400 MHz • 128MB RAM X 128 MB (non-volatile) Memory • 29-key numeric keyboard • 2.8" 1/4 VGA TFT color display • Li-ion battery: 3.7V / 3240 mAh / 12.0 Wh • 5300SR image engine • Bluetooth and 802.11b/g radio • Dolphin power cable (each Dolphin 7600 device comes with this power cable in the box)

Front Panel Features
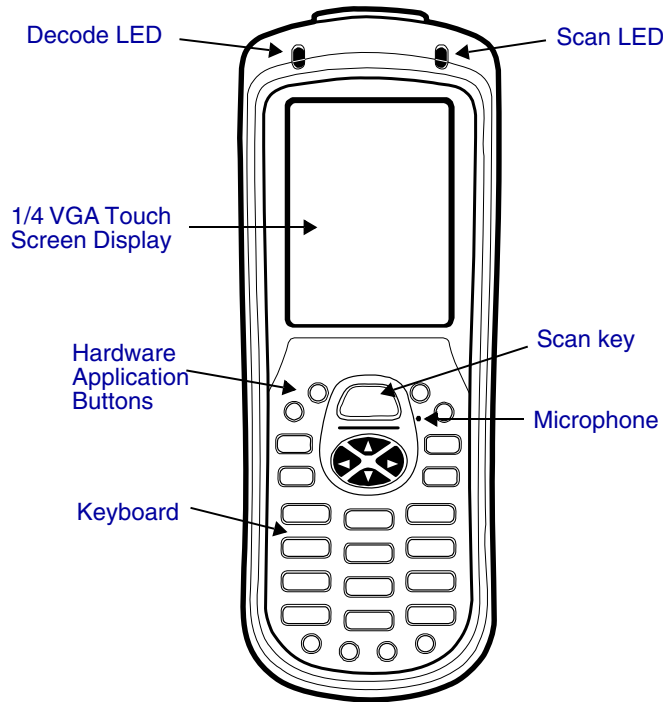
Decode and Scan LEDs

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

Note: Both LEDs are user-programmable.

Hardware Application Buttons

These hardware buttons can be programmed to perform software functions in the Buttons setting. For more information, see Hardware Application Buttons on page 4-2.

Keyboard

The 29-key keyboard is recessed within the housing to increase durability. For complete information about the keyboard (including the Scan key called out here), see Using the 29-Key Keyboard on page 4-1.

Microphone

The integrated microphone can be used for voice-recording and reply.

Touch Screen Display

The display is a 65,536-color LCD (Liquid Crystal Display) covered by a touch screen lens. The 2.8" (1/4) VGA (Video Graphic Array) is TFT (Thin Film Transistor) color, backlit, and the resolution is 240 x 320.

⚠️ Dolphin 7600 devices ship with a screen protector already installed over the touch screen lens to help prevent damage to the touch screen. Do NOT remove this screen protector before initial use. Hand Held Products recommends using screen protectors, especially for applications that require high-volume interfacing with the touch screen.

For touch screen input, use the stylus included with the terminal or your finger. The method you choose depends on which one is most appropriate for your application. While there is a great deal of variation in different applications, for buttons or icons that are close together, you generally achieve greater accuracy with the stylus; see Using the Stylus on page 2-3.

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

Display Backlight

The touch screen display has a backlight that is programmed to turn off after a specified period of time that the device is idle.

To change the default timeout parameters, tap **Start** > **Settings** > **Control Panel** > **Display** > **Backlight** tab.
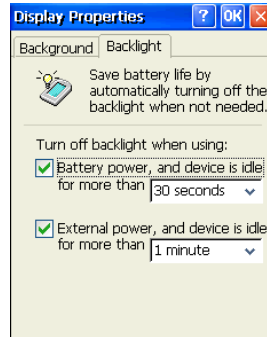
To adjust the intensity of the backlight, tap **Start** > **Settings** > **Control Panel** > double-tap **Backlight** BackLight.
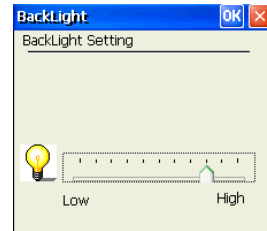
Move the slider to adjust the backlight.

Back Panel Features

Image Engine Window

Stylus Slot

Speaker

Accessory Attachment

Finger Saddle

Installed Battery

I/O Connector
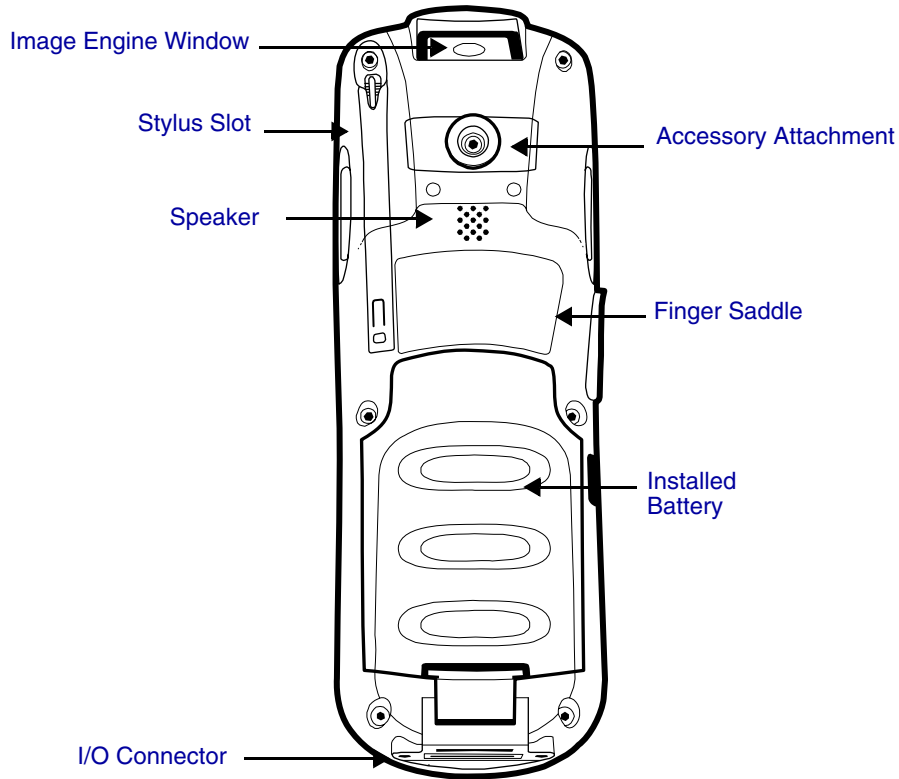
Accessory Attachment

This button can be used with various accessories; see Using the Accessory Attachment on page 3-9.

Finger Saddle

This is a slightly depressed and angled area of the back panel that is designed to cradle or "saddle" your pointer finger while holding the terminal. This unique ergonomic design makes the terminal comfortable to hold and helps prevent you from accidentally dropping the terminal.

Installed Battery

The back of the battery pack conforms to the back panel.
For information about installing the battery, see Changing the Main Battery Pack on page 3-11.
For information about battery power, see Battery Power on page 3-11.

Speaker

The integrated speaker sounds audio signals as you scan bar code labels and enter data but emits no ambient noise on system activity (i.e. processor, memory access, radio traffic, etc.). The speaker can also be used for playing sounds (e.g., WAV or MP3 files).

The speaker meets the following SPL levels at 40cm:

- 500Hz–67db
- 1KHz–72db
- 4KHz–72db

Stylus Slot

Dolphin 7600 terminals ship with a stylus inserted. Store the stylus in this slot when you're not using it; see Using the Stylus on page 2-3.

Side Panel Features
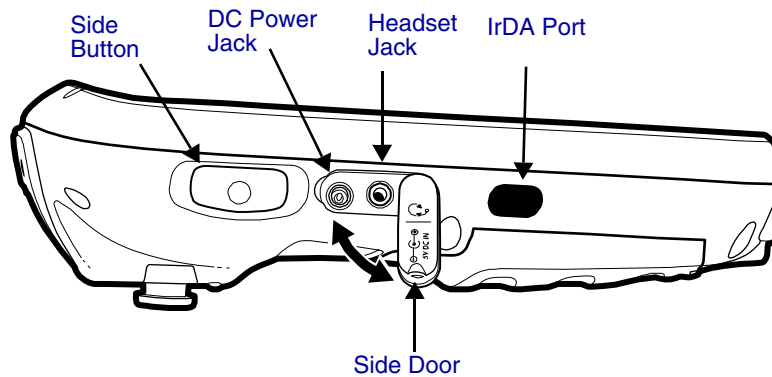
Note: This graphic shows the left side of the Dolphin 7600 terminal.

DC Power Jack

The DC power jack receives external power from the Dolphin power cable that comes in the box with the terminal. When connected to the Dolphin Power Cable, the terminal is powered and the main battery pack is charging.

For more information, about the Dolphin Power Cable, see Charge the Batteries on page 2-1.

Headset Jack

This is a 2.5mm audio jack that supports a headset with a mono speaker and microphone.

IrDA Port

The IrDA (Infrared Data Association) port communicates with IrDA-enabled devices such as PCs, printers, modems, or other Dolphin 7600 terminals. Maximum data transfer speed is 115 Kbps. You access IrDA communication functionality in the Bluetooth Manager. For more information, see Infrared Communication on page 6-7.

Side Button

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 launch applications from the Desktop. For more information about programming these buttons, see Hardware Application Buttons on page 4-2.

Side Door

The rubber door on the left side panel provides access to the Headset and DC power jacks.

When closed, the side door seals the terminal from moisture and particle intrusion thus preserving the terminal's environmental rating.

Top Panel Features

Access Door

Image Engine Window
(with engine)
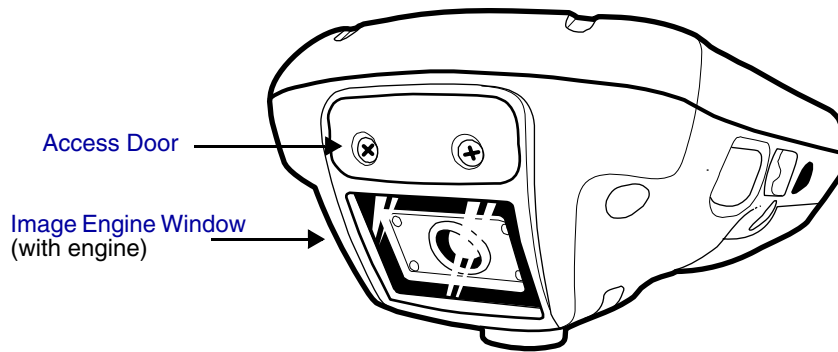
*Pull the plastic tab to remove the plastic film cover over the image engine window before activating the image engine.

Access Door

> For more memory, you can install optional memory cards by removing this door. For details, see Installing Memory Cards on page 3-6.

> When closed, the access door seals the memory interface from moisture and particle intrusion thus preserving the terminal's environmental rating.

Image Engine Window

> The angled image engine reads and decodes most popular bar code symbologies and takes images like a digital camera. For more information, see Using the Image Engine on page 5-1.

Installing Memory Cards

The Dolphin 7600 supports Secure Digital (SD) memory cards of the following capacities:

- 256 MB
- 512 MB
- 1 GB
- 2 GB

To install an SD card, you must open the access door on the top panel (Top Panel Features, page 3-6).

*Note: Access door removal **requires** a Phillips head screwdriver.*

1. Press Blue + Backlight key to put the terminal in suspend mode; see Suspend Mode on page 3-14.

2. Place the terminal on a flat, secure surface with the keyboard face-up.

3. Unscrew both screws on the access door.
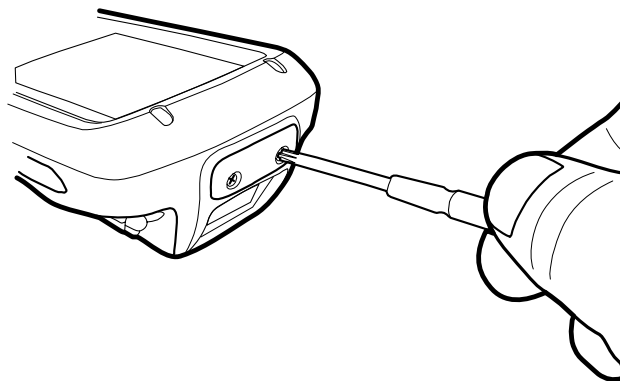
4. When the access door is open, slide the SD card into the appropriate slot until it clicks into place. SD cards must be inserted with the label side facing forward (toward the touch screen).
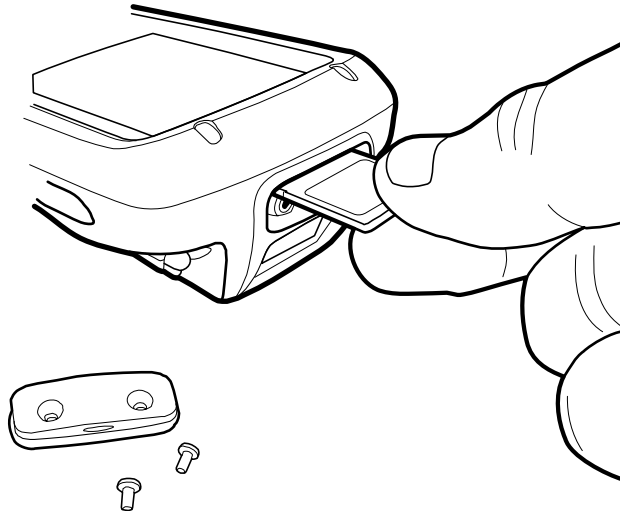
> *Note: To remove an installed SD card while the access door is open, tap on the edge lightly to unlock the card; the card will pop out just enough for you to grab its edge and pull it out.*

5. Replace the access door and tighten the screws.
    The rubber gasket and surrounding O-ring inside the access door are required for 1) proper functioning of the SD card and 2) preserving the environmental rating for water sealing. Do not remove the gasket or the O-ring.

⚠ *Do NOT resume terminal operation while the access door is open! Operating the terminal while the access door is open will void the warranty. The access door must be properly sealed before resuming terminal operation. Failure to seal the access door will void the warranty.*

6. Tap the Blue + Backlight keys to resume operation.

7. To verify that the operating system recognizes the new memory card, open Windows Explorer and navigate to My Device\IPSM\Storage Card.

Bottom Panel Features

I/O Connector   Hand Strap Slot
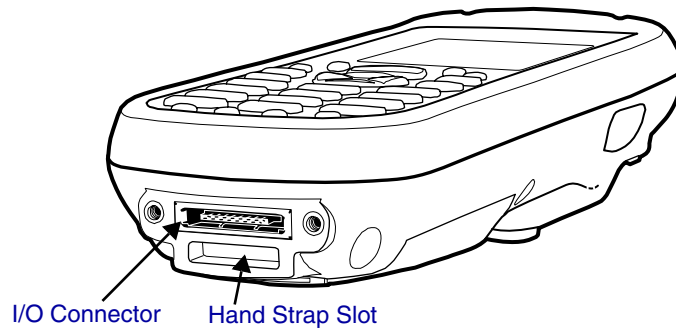
Hand Strap Slot

There is an adjustable, elastic hand strap available for purchase with the Dolphin 7600 terminal. When installing the hand strap, you loop the elastic strip through this slot. For instructions, see Attaching the Hand Strap on page 3-9.

I/O Connector

The I/O mechanical connector is designed to work exclusively with Dolphin 7600 peripherals and cables. This connector powers the terminal, charges the main battery, and facilitates communication. This connector supports full speed USB 1.1 communication (up to 12 Mbps) and RS-232 communications with a maximum speed of 115Kbps and seven baud rate settings.

Through this connector, you can communicate with a host workstation via Microsoft ActiveSync; see ActiveSync Communication on page 6-3.

The I/O connector supports the following signals:

- Data Carrier Detect
- Received Data
- Transmitted Data
- Data Terminal Ready
- Signal GND
- Data Set Ready
- Request To Send
- Clear To Send
- Ring Indicator
- USB GND
- USB +5V
- USB D+
- USB D-

Note: Signals referenced are for a DTE device.

Using the Accessory Attachment

The accessory attachment is a standard tab designed to fit universal accessories available for most cell phones.

Attaching a Belt Clip

The accessory attachment on the back panel fits universal swivel clips designed for belts or even pedestal mounts (not available from Hand Held Products).

Simply insert the tab into the slot until you hear a click or follow the instructions that came with the clip or accessory.
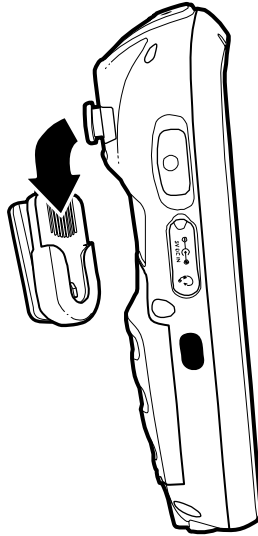
Attaching the Hand Strap

The accessory attachment can also be used to attach the Dolphin 7600 hand strap available from Hand Held Products.

Remove the accessory attachment and thread the hand strap hook underneath. Then, fasten the accessory attachment to the back panel.

Keep in mind that the hand strap covers the battery. When you want to replace the battery, you will need to adjust the hand strap accordingly.
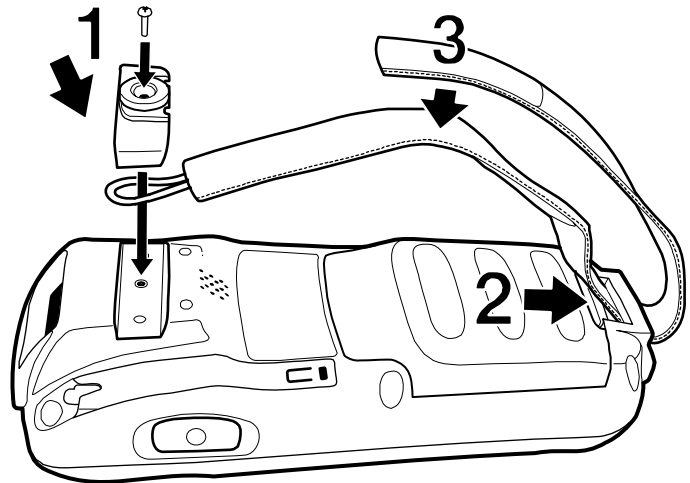
Dolphin 7600 Peripherals

The following items are sold separately and enhance your Dolphin 7600 terminal's capabilities.

Dolphin HomeBase™

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

For more information, see Dolphin HomeBase on page 9-1.

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.

For more information, see Dolphin QuadCharger on page 10-1.

Dolphin 7600 Accessories

Each of the following items is sold separately to enhance your Dolphin 7600 terminal's capabilities.

Protective Enclosure

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

Li-ion Battery Packs

The available Li-ion battery packs provide the main power supply for the terminal. For more information, see Battery Power on page 3-11.

For information on how to purchase these items, contact a Hand Held Products sales representative.

Battery Power

The Dolphin 7600 features intelligent battery technology with two types of battery power:

- The main battery pack on the back panel (see Main Battery Pack on page 3-11)
- The backup battery located inside the terminal (see Internal Backup Battery on page 3-13)

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

Both batteries must be charged to full capacity before using the Dolphin 7600 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 bat*

There are two Li-ion battery packs available for the Dolphin 7600:

Standard   Li-ion 3.7V/2200mAh/8.1Wh

Optional   Li-ion 3.7V/3240mAh/12.0Wh

The Li-ion battery packs are the primary power source for the Dolphin terminal as well as the internal backup battery.

Changing the Main Battery Pack

Before installing a battery pack, press the Blue + Backlight keys to put the terminal in Suspend Mode (see page 3-14) so that operations are suspended before removing the main power source. Always put the terminal in suspend mode prior to changing the battery.
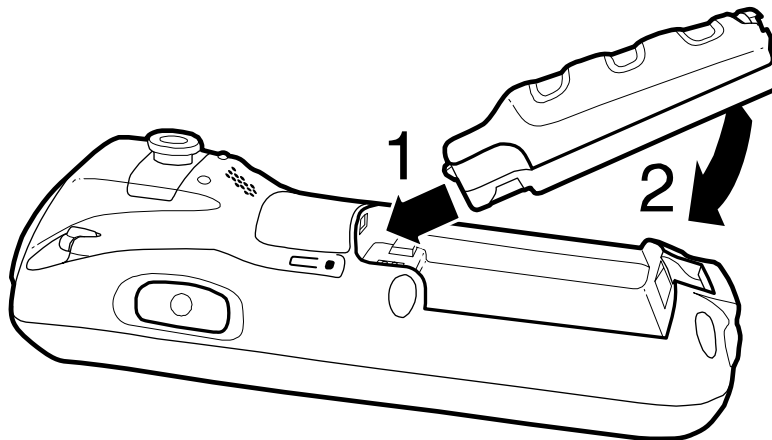
Charging Options

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

- Dolphin HomeBase (see page 9-1)
- Dolphin Charge/Comm Cable; Connecting the USB Cable (see page 6-2)
- Dolphin Power Cable (see page 2-1)

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

- Dolphin QuadCharger (see page 10-1)

Charging Time

Both Li-ion battery packs require four hours to charge to full capacity.

Managing Main Battery Power

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

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

Checking Battery Power

Power icons appear in the command bar at the bottom of the window. For example, indicates a low battery. Double-tap on this icon at any time to open the Power system setting. The Battery tab opens displaying the charge status of both the main and backup batteries.
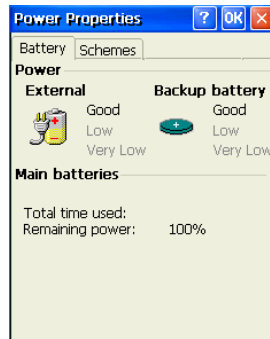
Note: To manually check battery power, also tap Start > Settings > Control Panel > double-tap Power Power .

Storage Guidelines

To maintain optimal battery performance, follow these storage guidelines:
- Avoid storing batteries outside the specified range of -4 to 122° F (-20 to 50°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.

Internal Backup Battery

Located inside the terminal, the backup battery is a 2.4V nickel metal hydride (NiMH) battery.

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

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

Charging

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

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

Guidelines

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

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

Resetting the Terminal

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

Soft Reset (Warm Boot)

A soft reset re-boots the device without losing RAM data.

You would perform a soft reset 1) when the terminal fails to respond, 2) after installing software applications that require a reboot, or 3) after making changes to certain system settings.

1. Press and hold Red 🔴 + ESC ⌈ESC⌉ for approximately 5 seconds. The screen turns white and the decode and scan LEDs flash for approximately three seconds.

2. When the reset is complete, the Desktop appears.

Hard Reset (Cold Boot)

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

Hard resets automatically launch a soft reset as part of the boot process.

1. Press and hold Red 🔴 + TAB ⌈TAB⌉ for approximately 5 seconds. The screen turns white and the decode and scan LEDs light for approximately three seconds.

2. The terminal re-initializes, which re-installs all programs stored in the \IPSM\Autoinstall folder.

Note: Set the time and date after each hard reset to ensure that the system clock is accurate. Tap the date on the command bar to open the Clock setting and set the time and date.

Suspend Mode

Suspend mode suspends terminal operation. The terminal appears to be "off" when in suspend mode. The terminal is programmed to go into suspend mode automatically when inactive for a specified period of time. You can set this time period in the Power setting.

To Put the Terminal in Suspend Mode

Press the **Blue** 🔵 + **Backlight** ❈ keys.

Note: You should always put the terminal in suspend mode when you change the battery pack; see Changing the Main Battery Pack on page 3-11.

To Resume Terminal Operation

To resume terminal operation (or "wake" the terminal from suspend mode),

• Press the **Blue** 🔵 + **Backlight** ❈ keys.

OR

• Press the **Scan** key ⟨SCAN⟩.

Troubleshooting Suspend/Resume

If the terminal does not wake when you press the Scan key, the main battery might be too low to resume operation. To check, remove the battery and install a fully charged battery or connect the terminal to a Dolphin charging peripheral.

Changing the Memory Allocation

You can adjust file storage vs. program memory in System Properties.

1.   Tap **Start** > **Settings** > **Control Panel** > **Memory** tab.
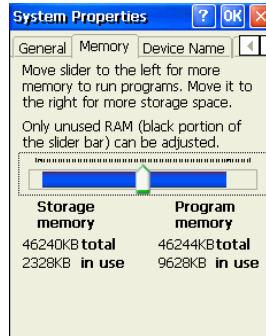
2.   Move the slider to adjust the memory allocation and tap **OK**. The changes take effect immediately.

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.

Dolphin 7600 Terminal Technical Specifications

Operating System	Microsoft Windows CE 5.0
Development Environment	SDK for C/C++, C# and Visual Basic developers for Windows CE 5.0 (Requires Visual Studio 2005 Professional Editions or higher)
Supported Software	PowerNet™ Terminal Emulation (TNVT, 3270, 5250), Hand Held Products MSM (remote device management), and ITScriptNet
Installed Applications	Hand Held Products Power Tools and Demos and ITScriptNet Ready-To-Go applications
CPU	Samsung 2440 400 MHz
Memory	64MB RAM X 128 MB (non-volatile) Memory (standard) 128MB RAM X 128 MB (non-volatile) Memory (optional)
Mass Storage	User-accessible memory expansion slot for SD or MMC flash memory
Display	2.8 in. 1/4 VGA, 240X320, TFT color display
Image Engine	5300SR VGA Area Imager with High-Vis bracket aimer
Keypad	29-key numeric–shifted alpha Backlit Six programmable function keys
Sound/ Voice	On-board speaker and microphone, and compatible with standard headsets
Communications	RS-232/USB connector, IrDA port
Power	Li-ion battery 3.7V / 2200 mAh / 8.1 Wh (standard) Li-ion battery 3.7V / 3240 mAh / 12.0 Wh (optional) Full Shift operation
Charging	5.0V DC input through side access or USB/Serial connector
Charging Peripherals	AC wall adapter and Charge/Communication Cable HomeBase–single-bay terminal charge/communicate Quad Charger–four-slot battery pack charger
WPAN (standard)	Bluetooth Class 2, version 1.2
WLAN (optional)	802.11b/g
WLAN Security	WEP, 802.1x, LEAP, TKIP, MD5, EAP-TLS, EAP-TTLS, WPA-PSK, and PEAP
Co-Located/Operational	Two radios: WLAN/WPAN
Operating Temperature	14° to122°F (-10° to 50°C)
Charging Temperature	32° to 104°F (0° to 40°C)

Dolphin 7600 Terminal Technical Specifications

Construction	High impact resistant PC/ABS housings Magnesium alloy internal chassis with component shock mounts
Structural	4 ft. (1.2m) multiple drops to concrete, all axis, across operating temperature range
ESD	**Air:** +/- 12k Vdc **Direct:** +/- 8k Vdc
Environmental	IP54 rating
Dimensions	7 in. long X 2.7 in. wide X 1.8 in. deep (17.8 cm. long X 6.9 cm. wide X 4.6 cm. deep)
Weight	Approximately 11.7 oz. / 332 g
Regulatory and Compliance	**Safety:**cUL 60950, NOM, EN60950, BSMI CN14336, CCC GB4943, PSB, SIRIM **EMC:**FCC Part 15 Class B, ICES-003, EN 301 489-1, EN 301 489-17, EN55022, EN55024, BSMI CNS13438, CCC GB9254, MIC, VCCI, AS/NZS 3548 **Radio:**FCC 15.247, RSS-210, COFETEL, EN 300 328-1, EN 300 328-2, SRRC ETS 300 328, IDA, SIRIM, MIC, ARIB STD-T33 & T66, AS/NZS 4771

4

Using the 29-Key Keyboard

Overview

The 29-key numeric-shifted-alpha keyboard buttons are recessed under the overlay for maximum durability. The keyboard panel is backlit for maximum viewability in various lighting conditions.

Hardware Application Buttons

Escape
Navigation Keys
Shift
Backspace
Power
Backlight
Modifier Keys

Scan
Enter
Tab
Alpha Indicators
Space

Color-Coding

Keyboard overlays are color-coded to indicate the functions performed or characters typed when the color-coded key is pressed with the red or blue modifier key; see Modifier Keys on page 4-4.

Key Types

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

1. Hardware Application Buttons (see page 4-2)

2. Function Keys (see page 4-3)

3. Navigation Keys (see page 4-3)

4. Modifier Keys (see page 4-4)

Hardware Application Buttons

These four buttons are programmed to launch software applications from the Desktop.

Hardware Application Buttons

You can customize these settings in the Buttons setting.

Tap **Start** > **Settings** > **Control Panel** > double-tap **Buttons** .
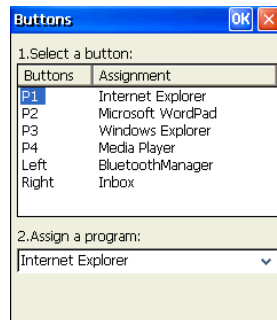
Buttons Column	Matching Hardware Button
P1—P4	Buttons P1—P4 marked on the overlay.
Left	Left side button; see Side Button on page 3-5.
Right	Right side button; see Side Button on page 3-5.

Select the button you want to modify. Then, select a program from the program list. The change is applied immediately. Tap **OK** to save all changes.

To verify the change, navigate to the Desktop, press the hardware button and verify that the selected application launches.

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	⌖	Toggles the keyboard backlight on and off.
Backspace (BKSP)	BKSP	Backspace moves the cursor back one space and deletes each time the key combination is pressed. If you are typing text, a character is deleted each time you backspace.
Backtab (BKTAB)	● TAB	To backtab, press the Red + TAB. Backtab moves the cursor back to the previous tab stop or field (on a form or application window).
Escape	ESC	Cancels an action.
Enter (ENT)	ENT	Functions as an Enter key.
Power	● ⌖	Suspends or resumes terminal operation.
Scan	SCAN	Activates the image engine to scan a bar code or take an image.
Shift (SFT)	SFT	Provides shift functionality for application windows and functions as a Caps Lock key in alpha mode.
Space (SP)	SP	Moves the cursor one space forward. If you are typing text, it moves the text one space forward as well.
Tab	TAB	Moves the cursor to the next tab stop or field (on a form or application window).

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.

Key	Description	●	●
PG▲◄) PG▼◄)	Move the cursor up one row or line. Move the cursor down one row or line.	Volume up or down.	Scroll page up or down.
►	Move the cursor one character to the right.	N/A	Space
◄	Move the cursor one character to the left.	N/A	Backspace

Note: Other functionality varies according to the application in use.

Modifier Keys

Modifier keys modify the next key pressed to perform functions or type special characters. The Dolphin 7600 has blue and red modifier keys with a color-coded overlay so you can see what the key combination does.

Name	Key	Function
Blue and Red		Modifies the next key pressed. The overlay of each keyboard is color-coded to indicate the character typed or function performed with both keys. See Blue Key Combinations on page 4-6. See Red Key Combinations on page 4-7.

Toggling Between Alpha and Numeric Modes

The 29 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. The keyboard switches between alpha and numeric modes easily.

Alpha Mode

Switching to Alpha Mode

To switch modes, tap the Blue modifier key 🔵 as follows:

• Single-tap to switch only the next character pressed to alpha mode.
• Double-tap to switch to alpha mode permanently. Double-tap again to switch back to numeric mode permanently.

Alpha Indicators

Each number key has a blue section with white characters inside that indicate which letter or symbol is 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 types the next letter in the sequence as displayed by the alpha indicator.

Note: You can still use the Blue modifier key for regular Blue key combinations in alpha mode; just press and hold Blue modifier key with the next key in the combination. For combinations, see Blue Key Combinations on page 4-6.

Shift Functionality in Alpha Mode

When you switch the keyboard to alpha mode, letters type in lowercase by default.

To capitalize letters, tap the SFT key ⎡SFT⎤ as follows:

• Single-tap to capitalize only to the next letter pressed.
• Double-tap to turn CAPS LOCK on and off.

Blue Key Combinations

Alpha Mode

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

Key	Character Lowercase	Character Uppercase: Double-tap SFT
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
0	Start menu	Start menu

Functions

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

Key Combination	Function
Blue + Backlight ☀	Suspend/Resume
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
Red + 6	F6
Red + 7	F7
Red + 8	F8
Red + 9	F9
Red + BKSP	*
Red + 0	F10
Red + SP	#
Red + .	,

5

Using the Image Engine

Overview

The Dolphin 7600 terminal houses a compact image engine using Adaptus™ Imaging Technology that instantly reads all popular 1D and 2D bar codes and supports omni-directional aiming and decoding. The image engine can also capture digital images, such as signatures and pictures of damaged inventory.
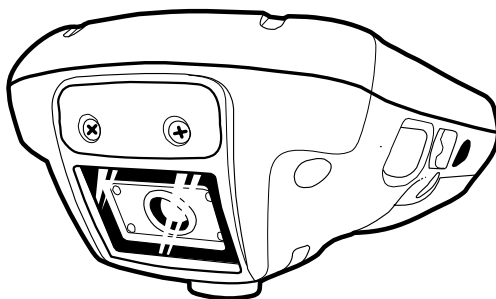
The image engine is angled downward.

Available Image Engines

Dolphin 7600 terminals are equipped with 5300 Standard Range (5300SR) image engines.

Depth of Field

5300 Standard Range (5300SR)

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

*Data characterized at 23°C and 0 lux ambient light.

Supported Bar Code Symbologies

The Dolphin 7600 image engines support the following bar code symbologies:

Symbology Type	Symbology Name	
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	OCR-A OCR-B OCR-US Money Font	
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

When a scanning application is open, press the Scan key **SCAN** to activate the image engine. You can also press one of the side buttons (see Side Button on page 3-5), which are programmed to activate the image engine in a scanning application by default.

Using Demos

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

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

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

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

LEDs

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

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

Decoding

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

Full-area Imaging

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

ALD

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

To Decode a Bar Code

1. Tap **Start** > **Programs** > **Demos** > **Scan Demo**.

2. Position the Dolphin terminal over one of the sample bar codes on page 5-4.
   A range of 4–10 inches (10–25 cm) from the bar code is recommended.

3. Project the aiming brackets by pressing and holding the Scan key. The Scan LED lights red.

4. Center the aimer crosshair over the bar code. The aiming beam should be oriented in line with the bar code to achieve optimal decoding; Omni-Directional Scanning Positions, page 5-4

5. When the bar code is successfully decoded, the decode LED lights green and the terminal beeps.

Sample Bar Codes

You can use the following bar codes to verify decoding:

Sample 128   Sample PDF417

Code 128   PDF417 Test Message

Omni-Directional Scanning Positions

The high-vis aiming pattern frames the bar code to provide you with the best scanning performance.
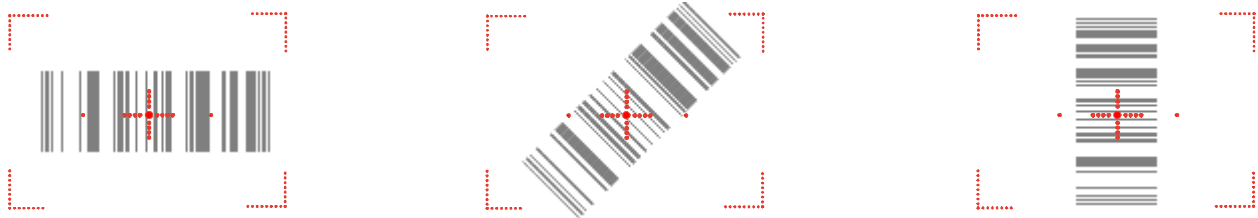
Note: To achieve the best read, the aiming beam should be centered horizontally across the bar code.

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

Capturing Images

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

Image Preview

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

File Formats

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

File Size

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

Taking an Image

1. Tap **Start** > **Programs** > **Demos** > **Image Demo**.

2. Point the Dolphin terminal at the object.

3. Press the Scan key to activate the engine. The touch screen displays a preview of the object.

4. Adjust the terminal's position until the preview on the screen appears as you want it to appear in the image.

5. Hold the terminal still and release the Scan key.
    The touch screen flashes, and the captured image appears on the screen.

6. By default, the image is saved to the My Device folder (from the Desktop, tap **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 5300SR 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 workstation via

*   Microsoft ActiveSync and a Dolphin communication peripheral
*   Wireless radio: 802.11b/g and/or Bluetooth

6

Communication

Communication Options

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

I/O Connector (Wired Communication)

> The mechanical connector on the bottom panel (see I/O Connector on page 3-8) connects the terminal to various Dolphin communication peripherals that connect to a host workstation via USB (1.1 or higher), thus enabling ActiveSync communication.
>
> For more information, see ActiveSync Communication on page 6-3.

Wireless Radios (Wireless Communication)

> Dolphin 7600 terminals can be equipped with an 802.11b/g or Bluetooth radio or a combination of these radios.
>
> For more information, see Connecting the Terminal to a Wireless Network on page 6-6.

IrDA Port (Wireless Communication)

> The IrDA port enables the Dolphin to transmit data via pulses of infrared light to and from other IrDA-compliant devices, such as printers, workstations, and even other Dolphin terminals.
>
> For more information, see Infrared Communication on page 6-7.

Installing Additional Software

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

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

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

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

• Adding Programs via ActiveSync, page 6-5.
• Adding Programs From the Internet, page 6-6.

Connecting the USB Cable

Connect the USB cable to the I/O connector to facilitate USB communication between the Dolphin device and host workstation.

I/O Connector

USB Cable

*Power Port

USB Connector

Host Workstation
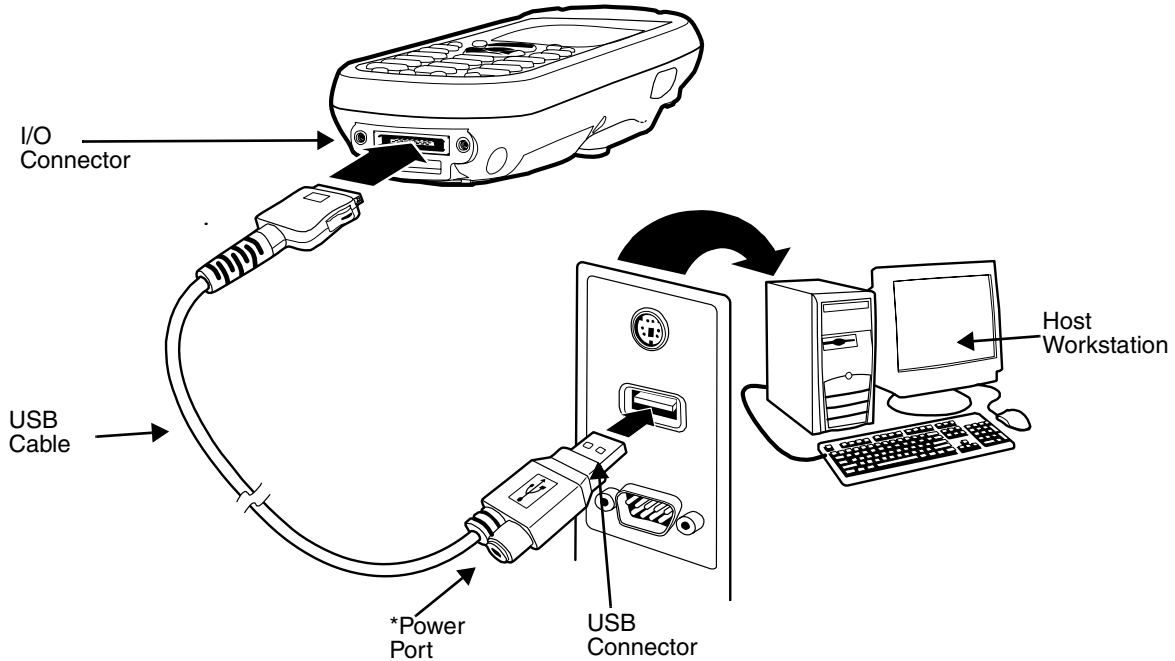
*This is a communication-only cable until you plug the power cable into the power port.

Connecting the Power Cable

The power port on the back end of the USB connector fits the power cable that comes with each Dolphin 7600 device. To charge the device while communicating, connect the power cable to the power port.

Power Cable

Power Port
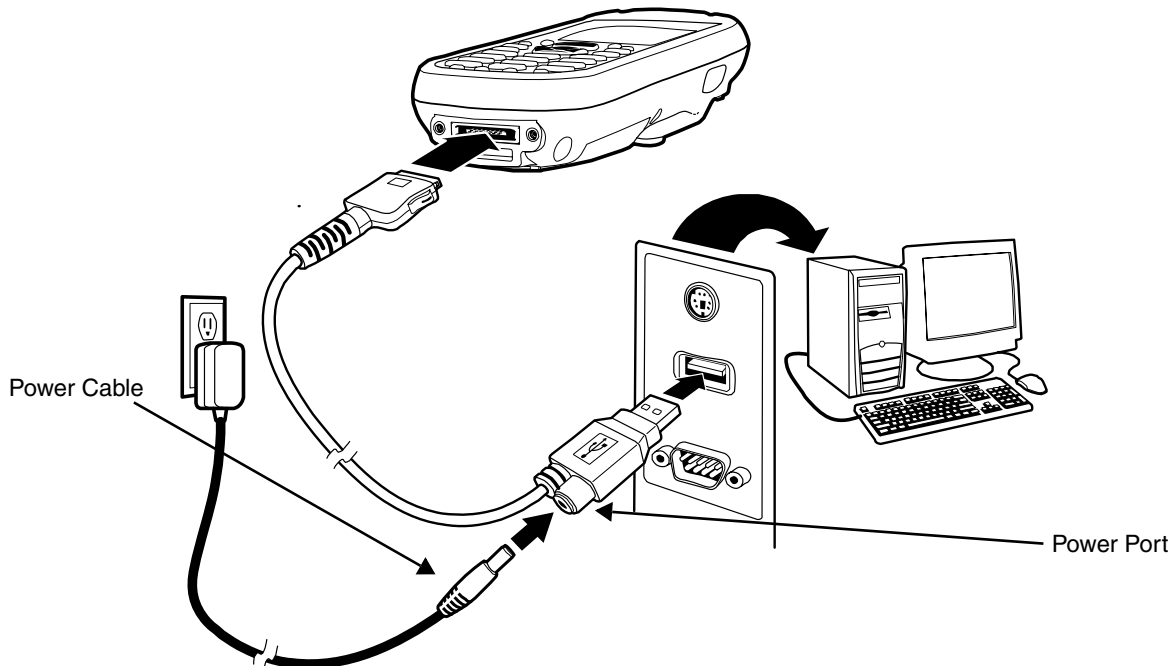
ActiveSync Communication

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

If ActiveSync 4.1 or higher is not installed on the host workstation, install it from the Microsoft Companion CD that came with the Dolphin terminal. Insert the CD into the CD-ROM drive of the host workstation and click the **yellow arrow**, then **Start Here**, and follow the directions on your screen.

Note: You can also download the most current version of ActiveSync from www.microsoft.com and install.

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

Communication Types

The Dolphin 7600 supports the following types of communication via ActiveSync through its I/O Connector (see page 3-8) on the bottom panel:

USB	The USB cable and hardware peripherals allow the Dolphin terminal to communicate with a workstation or to networked through a USB hub. The Dolphin terminal supports full-speed USB communication (USB 1.1); maximum data transfer rate is 12 Mbps. The Dolphin terminal defaults to USB communication out of the box.
RS-232	The RS-232 cable allows the Dolphin terminal to communicate with a workstation, modem, or any RS-232 device. Maximum data transfer rate is 115 Kbps.

Hardware Requirements for Setup

- Dolphin HomeBase or Dolphin communication cable
- Dolphin power cable from Hand Held Products
- USB Cable (for USB communication)
- Serial Cable (for RS-232 communication)
- ActiveSync v4.1 or higher installed on the host workstation
- Windows 98 Second Edition, Windows Me, Windows 2000, Windows NT (4.0 SP6 or higher) or Windows XP computer.

Software Requirements for Communication

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

Setting Up the Host Workstation

Verify that ActiveSync is configured to use the appropriate communication type by clicking **File** > **Connection Settings**.

For USB communication, check **Allow USB connections**.
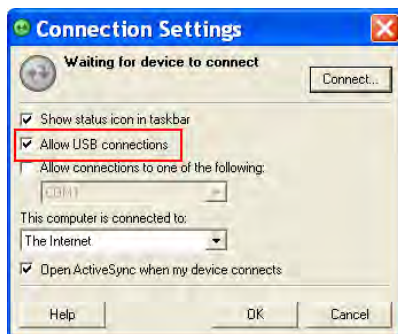
For RS-232 communication, connect to **COM1**.

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

Setting Up the Dolphin Terminal

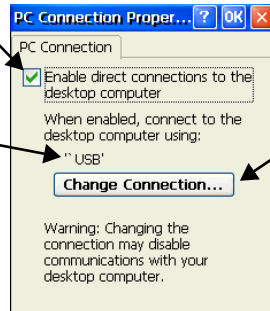The Dolphin terminal defaults to USB communication out of the box. To verify and/or change the default setting, tap **Start** > **Settings** > **Control Panel** > **PC Connections**.)
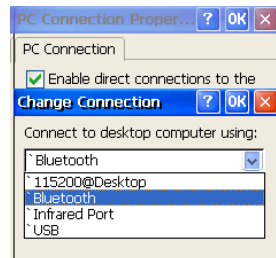
Must be checked to connect with a workstation.

Displays the current connection setting.

Tap to change the connections settings.

Tap **Change Connection** to change the current settings.

Connection Options	Select this option to …
'115200@Desktop	Establish an RS-232 connection.
Bluetooth	Establish an ActiveSync connection via Bluetooth; see Bluetooth ActiveSync on page 8-10. This menu item is present only when Bluetooth has been activated.
'Infrared Port	Establish an ActiveSync connection via the IrDA Port (see page 3-5).
'USB	Establish a USB connection.

Communicating with the Dolphin Terminal

After setting up both the workstation and the terminal, ActiveSync connection should be automatic.

1. Connect the Dolphin terminal to the a communication peripheral, such as the Dolphin HomeBase.

2. The Dolphin terminal automatically opens ActiveSync to establish a connection.

Synchronizing with the Host Workstation

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

Exploring the Terminal from the Workstation

When the terminal and desktop computer are connected, open the main ActiveSync window (on the desktop), and click **Explore**.
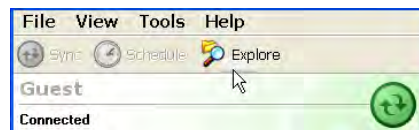
The Mobile Device folder opens in Windows Explorer.

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

Adding Programs via ActiveSync

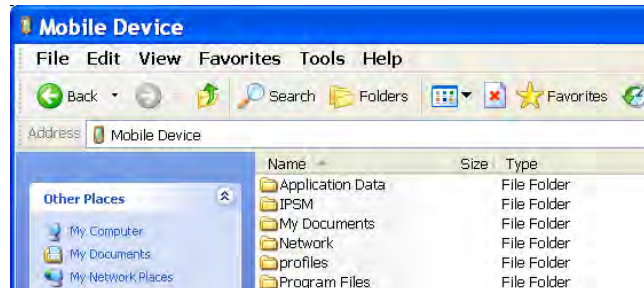⚠️ *When selecting programs, verify that the program and version of the program are designed for the Windows CE 5.0 and the terminal's processor. You can verify your processor by tapping Start > Settings > Control Panel > System > General tab. Make a note of the information in the Processor field.*

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

1. Download the program to the workstation from either the Internet or the install CD. You may see a single *.exe or setup.exe file, a *.cab file, or *.dll. (There may also be several versions of files for different device types and processors.)

2. Read any installation instructions, Read Me files, or documentation that comes with the program. Many programs provide special installation instructions.

3. Connect the terminal to the workstation via Hand Held Products communication peripheral.

If the File is an Installer

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

1. On the workstation, double-click the *.exe or *.setup.exe file. The installation wizard begins.

2. Follow the directions on the workstation screen.
   The installation process includes transferring the software to the terminal via ActiveSync.

If the File is Not an Installer

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

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

1. If you cannot find any installation instructions for the program in the Read Me file or documentation, open **ActiveSync** on the workstation and click **Explore**.

2. On the workstation, navigate to the workstation folder containing the program file(s) and copy them to the **Program Files** folder on the terminal.
   If you want the program to persist through hard resets, past the program to the **Autoinstall** folder
   (`\IPSM\AutoInstall`).

3. On the terminal Desktop, tap **My Device** and, in Windows Explorer, navigate to the folder where the program is located.

4. Double-tap on the program file to install it.
   If you copied the file to the **Autoinstall** folder, you can choose to install the program by performing a hard reset. The program installs as part of initialization.

5. After installation is complete, access the program by tapping **Start** > **Programs** and the program appears on the Programs screen. Tap the icon to open the program.

Connecting the Terminal to a Wireless Network

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

Whatever your network specifics, some general steps apply:

1. The on-board radio drivers must be enabled for the terminal to transmit a signal.

2. Enter the appropriate configuration settings for each radio installed. Each radio has its own configuration program.

   - For details about 802.11b/g configuration, see WLAN Manager (802.11b/g) on page 7-1.
   - For details about Bluetooth configuration, see Bluetooth Manager on page 8-1.

Adding Programs From the Internet

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

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

1. Open Internet Explorer and navigate to the program's location. You may see a single *.exe or setup.exe file, or several versions of files for different device types and processors.

2. Select the program version that matches your Dolphin terminal and processor.

3. Read any installation instructions, Read Me files, or documentation that comes with the program. Many programs provide special installation instructions.

4. Download the program to the terminal straight from the Internet.
   You would normally store the program in the **\Program Files** folder unless another location is required by the program.

5. On the terminal, double-tap the installer file; e.g., the *.exe file.

6. The installation wizard for the program begins.

7. Follow the directions on the screen to complete installation.

Infrared Communication

The BT Service tab beams files and data between the terminal and other devices equipped via the IrDA port. The maximum data transfer speed is 115 Kbps.

IrDA Port Location
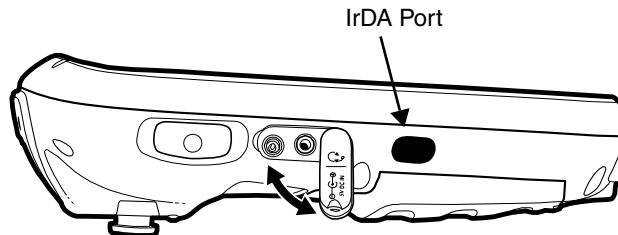
IrDA Port

Transferring Files and Information

Note: We recommend disabling the Bluetooth radio before transferring data via infrared. If the Bluetooth radio remains enabled, the Beam File function will pick up MAC addresses as well as IrDA ports.

1. Arrange the hardware so that the infrared port of the Dolphin terminal is aligned with and in range of the infrared port of the other device.

2. Tap the Bluetooth icon to open the Bluetooth Manager and tap on the BT Service Tab (see page 8-2). Tap **Beam File**.
   OR
   Tap **Start** > **Programs** > **Beam File**.

3. The device begins scanning for IrDA enabled devices and displays them on the screen with the device ID and "[IrDA]."

4. Tap to browse for a file to transfer. Navigate to the file location, select it, and tap **OK**. The name of the file path appears in the **File** field.
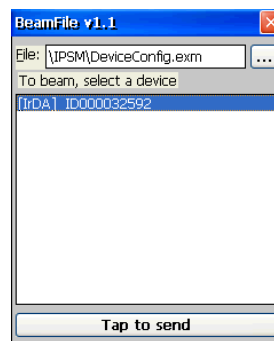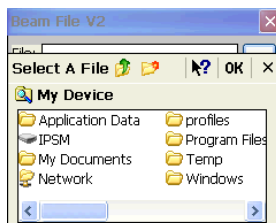
5. Select a device in the list and tap **Tap to Send**.

6. As the file gets ready to send, the button at the bottom reads "Pending…"

7. While the file is transmitting, the button at the bottom reads "Sending…" and the command bar displays the percentage sent.
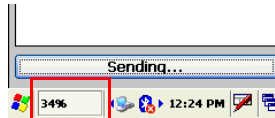
8. When the file is sent, a Success message displays. Tapping **OK** brings you back to the BT Service tab.

Using ActiveSync for IrDA Communication

1. Align the IrDA ports of the Dolphin terminal and a host workstation.

2. Tap **Start** > **Control Panel** > **ActiveSync** ActiveSync.

3. Tap **IrDA Sync**. The IrDA sync process begins immediately.

7

Managing the 802.11b/g Radio

Overview

The Dolphin 7600 has an optional 2.4 GHz 802.11b/g WLAN (Wireless Local Area Network) radio that uses Direct Sequence Spread Spectrum (DSSS) technology. The radio is interoperable with other 802.11b/g Wi-Fi-compliant products including access points (APs), PCs via PC card adapters and other wireless portable devices.

Server-Assigned IP Addresses

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

Activating the 802.11b/g Radio

To activate the 802.11b/g radio, single-tap the **WLAN Manager** icon   . (The "X" appears over the icon when the radio is deactivated.) Select **Activate** on the popup menu.
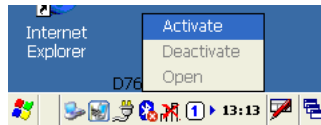
The WLAN Manager loads. When the WLAN Manager is finished loading, the X is removed from the WLAN Manager icon and the yellow bars indicate that the radio is transmitting   .

⚠ *Activating the radio automatically disables the wireless zero-config (WZC) feature of Windows CE!*

Deactivating the 802.11b/g Radio

When you deactivate the 802.11b/g radio, it no longer transmits an RF signal. To deactivate the radio, tap **Deactivate** on the WLAN Manager menu.

Note:	The WLAN Manager also displays operating statistics for the 802.11b/g radio; see Checking Radio Status on page 7-20.

Configuring the 802.11b/g Radio

The Dolphin 7600 contains the Cisco AEGIS Client® (the Client), a comprehensive IEEE 802.1X tool to set up the on-board 802.11b/g radio. 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 uses 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 (802.11b/g) and ethernet interfaces.

Supported Protocols

Authentication

The Client supports the following authentication methods according to the 802.1X protocols:

- MD5
- EAP TLS
- EAP TTLS
- Cisco LEAP and PEAP
- Microsoft PEAP

Encryption

The Client supports the following encryptions methods:

- WEP (64-bit and 128-bit)
- TKIP

The Client can also configure 802.11b/g with no authentication and no encryption; see Associating With Open APs on page 7-16.

Required Network Configuration Information

Because the Client accesses 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. Therefore, make sure you have the correct network server parameters on hand when you configure the client.

Opening the Client

Single-tap the icon in the command bar.
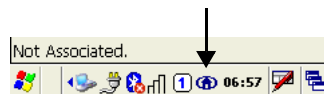
The Client opens in Start Mode, which means that the 802.1X radio starts transmitting a signal. For more information about the main window, see Main Window on page 7-3.

Icon Color Indicators

The color of the icon in the command bar and on the main window indicates the connection and authentication status of the radio.

Command Bar Icon	Port Icon	Color	Status
		Yellow	Authentication is in process.
		Green	Authentication succeeded.
		Red	Authentication failed.
If the icon is not yellow, red or green, 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.			
		Blue	There is no radio activity. The port may not be connected to an 802.1X-aware entity. _Note: If you are setting up the 802.11b/g radio to run without authentication and without encryption, this icon does not change from the standard blue; see Associating With Open APs on page 7-16._
		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/g 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.

Main Window

Double-tap the icon in the command bar to open the Client . The main window opens displaying the installed radio. (The radio is listed as a port.)
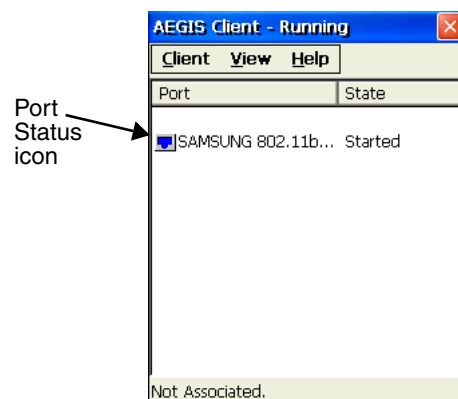
Port Status Icon

As the network interface starts or stops, the color of the port icon and the status field updates to reflect the current state of the interface. The colors of the port status icon are the same as the color of the icon in the command bar. For details about what each color means, see Icon Color Indicators on page 7-3.

Client Menu
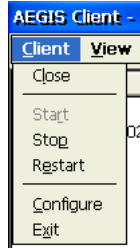
Menu Item	Description
Close	Closes the Client's interface, while leaving the client running.
Start/Stop	Starts or stops 802.1X authentication. After you finish the initial configuration, tap the network interface and tap **Start.** If the port is already active, tap **Stop** first, then **Start** to force the program to read the new configuration file.
Restart	Same as a Stop followed by Start. Select this menu item when you receive a message that a restart is necessary.
Configure	Opens the client authentication windows; see Configuring Client Authentication on page 7-12.
Exit	Terminates the client, which stops the 802.1X protocol.

View Menu
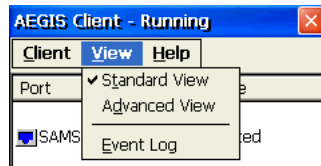
Menu Item	Description
The Standard and Advanced Views control the number of columns displayed in the main menu.	
Standard View	Displays the Port (adapter name) and State columns. This is the default view.
Advanced View	Displays the Port (adapter name), State, Primary Wireless Network, Wireless Network, and MAC Address of AP columns. Scroll right to see all columns.

Menu Item	Description
Event Log	Displays the event log in a custom viewer. The Event Log is a text file that contains system information; each entry is listed sequentially with a time/date stamp and text message. Tap **Refresh** to query the system again and update the log file while you are reading it. If the file gets too large, old entries are automatically deleted. Logging parameters are set on the System Tab (see page 7-14).
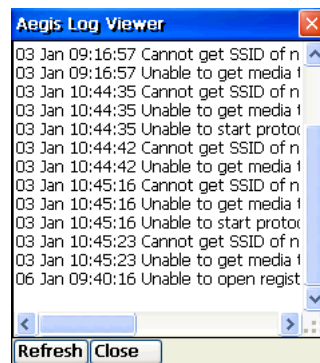
Port Menu

Tap once on a port to open the Port menu.
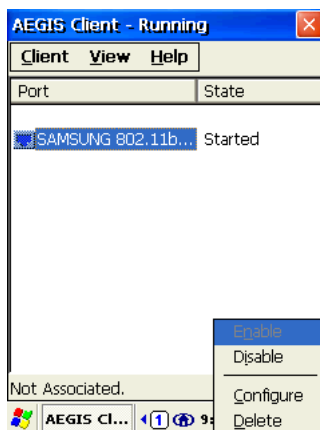
Menu Item	Description
Enable **Disable**	The port should be enabled before the protocol is started. Enabling a port is not the same as starting it (see Start/Stop on page 7-4); however, both actions are required for the Client to work.
Configure	Opens the port configuration window; see Configuring Client Authentication on page 7-12.
Delete	Selecting Delete has no effect; you cannot remove the radio driver from the device.

Status Bar

The status bar at the bottom of the main window indicates the connection status between the network card and the AP.
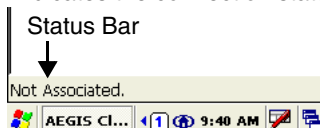
Status Bar

Depending on the status of connectivity, the status bar displays one of the following:

• Not Associated
• AP: [AP's SSID] MAC: [AP's BSSID].

Setup Windows

Use the following navigation aid to examine the configuration options for each set of configuration windows:

Configuring a Port (see page 7-7)

Configuring Client Authentication (see page 7-12)

Configuring a Network Profile (see page 7-9)

Configuring a Port

On the main window, tap on a port and select **Configure** on the Port Menu. Complete both the Wireless Networks Tab (see page 7-7) and the Protocol Tab (see page 7-8).

Wireless Networks Tab

Field	Description
Available Networks Displays the networks the device recognizes as available to connect to.	
Move to Configured	Activates after the available networks have been retrieved. Select the network you wish to connect to, and tap this button. The network moves to the Configured Networks list.
Refresh	Displays a list of networks broadcasting their availability. You can also attach to networks that are not broadcasting.
Configured Networks Displays the configured network profiles saved in the device. The order of the network profiles in this list is the same order (from the top down) that the device uses to connect to a network.	
default	This is the default network configuration that installs when the Client installs. Modify this setting with your connection parameters. Do NOT place **default** at the top or middle of the list if you are connecting to other networks! If default is any place other than last, connection to the other list entries is never attempted. If default is last in the list, it can act as a wildcard if the device is out of range of the primary networks (listed first). *Note: Note that there is nothing special about the name "default". You could configure any other record similarly and it would behave the same way.*
Up & Down	Moves a selected network up or down one place in the list.The order of the networks in this list is the exact order that connections will be attempted. The network listed first will be attempted first and so on. Place your primary networks first.
Add	Manually adds a network to the Configured Networks list if the AP does not broadcast its SSID or you are pre-configuring the client for an AP that is not currently in range. For details, see Configuring a Network Profile on page 7-9.
Remove	Removes a selected network from the list.
Properties	Opens the Profile Info Tab (see page 7-9) where you determine authentication parameters for new and existing networks.

Protocol Tab

The Protocol tab configures parameters that apply to all the networks the selected port connects to.

Field	Description
Protocol Settings	These are the timer intervals and retry settings defined in the 802.1X standard. They determine how long the supplicant state machine will wait in a given state. These parameters shouldn't be modified without an understanding of the supplicant state machine. For more information about the supplicant state machine, obtain its 802.1X protocol specification. The parameters are: • **Authentication Timeout**—The period of time the Client remains in the authenticating or acquired state without receiving a response from the AP or switch. • **Held Timeout**—The period of time the Client remains in the held state after failing authentication. • **Start Timeout**—The period of time the Client remains in the connecting state before restarting when there is no response. • **Number of Start Attempts**—The number of times the Client restarts before giving up. At that point, the Client then defaults to the authenticated state, but there will be no network connectivity because the protocol exchange was never completed.
Display EAP notifications	Specifies that the EAPOL notification message will be displayed to the user. An authenticator may use such notification to inform you, for example, about a near password expiration. However, some authenticators send chatty and annoying notifications that may, for the convenience of the user, be suppressed. Note that all notifications are written to the event log even if they are not displayed.
Renew IP address	Initiates a DHCP request to obtain a dynamic IP address after a successful authentication, but only if the client detects that the connected network (the SSID) has changed. The result is that renewal should not occur upon re-authentication, but does occur at boot or when connecting to a different network. If you have a slow authenticator, you may wish to enable this option when configuring the service because a slow authenticator may prevent you from getting a DHCP-assigned IP address upon boot-up. This option is ignored if the given adapter has a static IP address.

Configuring a Network Profile

You can configure a network based on an AP in range, create a new network, or modify the default (see page 7-7) network. Both methods start on the Wireless Networks Tab (see page 7-7) and open the following tabs:

- Profile Info Tab on page 7-9
- WEP Mgmt Tab on page 7-10
- WPA Settings Tab on page 7-11

Note: The settings on these tab windows are interrelated. This means that selecting one may disable access to others.

To configure a network to an AP in range, double-tap one of the networks in the Configured Networks list (to make sure the AP you want is in the Configured Networks list, select it in the Available Networks list and tap **Move to Configured**.)
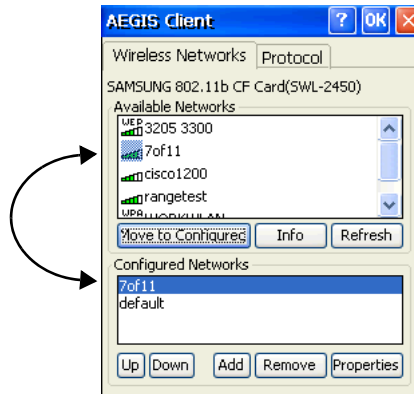
Double-tab the network or leave it selected and tap **Properties**. The Profile Info Tab (see page 7-9) opens.

Profile Info Tab

You create a network profile on the Profile Info tab.

Field	Description
Network Profile	If you are configuring a network from the list, the name that appears in this field is the same as the name in the Configured Networks list and, by default, is the same as the broadcast SSID. This name cannot be changed. If you are adding a new network, this field is configurable.
Network Name	This is the SSID of the AP. If the AP broadcasts its SSID, then this value is retrieved from the Available Networks list and this field is completed automatically. If the SSID does not broadcast, then the field will be active and you must manually enter the value here.
Peer-to-Peer Group	Select this option to have two or more client workstations communicate with each other without the benefit of an AP, otherwise known as ad hoc mode. You should also select **Do Active Scan** and, on the WEP Mgmt tab, select **Use key for data encryption** while entering a common key for both sides. WPA is not supported in this mode.

Field	Description
Do active scan	Select this option whenever the AP (or client, for ad hoc mode) is not broadcasting its SSID. *Note: This option is not available when Associate with any available network is selected.*
Authentication Profile	Select the authentication profile associated with this network and tap **View**. The drop-down list contains client profile names created in the User tab of the client configuration area; see User Tab on page 7-12. **default** is the default authentication profile.

WEP Mgmt Tab

Enter the appropriate WEP parameters for the network.

Field	Description
Provide encryption key dynamically	This option is selected by default. The other WEP settings on this page are disabled to enable dynamic encryption. Selecting this option also enables WPA; the WPA Settings tab appears. To enter a custom WEP, de-select this option. The other fields become active and the WPA Settings tab no longer appears.
Use key for data encryption	Select this option to manually enter a WEP key (in the Key field) to encrypt your data to the AP.
Use key to authenticate with AP	Selecting this option toggles the WEP authentication mode between Open and Shared (Not checked=Open, checked=Shared). • **Open**—Authentication verifies only that a client's SSID setting matches the SSID of the AP. • **Shared**— Authenticates with the AP via a challenge/response mechanism.
Key	In this field, enter the WEP key in ASCII or Hexadecimal format to use for data encryption or authentication to the AP. • **ASCII** must be 5 or 13 characters • **Hexadecimal** must be10 or 26 characters. When the key entered is in the correct format, the window displays the correct type–ASCII or Hexadecimal.
Key Index	You may select 1–4 keys for reception; the Client will try all four to find one that works with the AP.
Transmit Key	If the key selected in the Key Index list is the transmit key, select the **Transmit key** box. To change the transmit key, select another key and check the **Transmit key** box. The check box of the original transmit key will be automatically de-selected.

WPA Settings Tab

This tab controls the WPA settings. This tab window is available only if **Provide encryption key dynamically** is selected on the WEP Mgmt tab is selected.

Field	Description
WPA Mode	This drop-down list contains the following options: • **Disabled**—Do not enable WPA mode. This is the default selection. • **WPA 802.1x**—Enable WPA and obtain key information through the 802.1x protocol. • **WPA PSK**—Enable WPA with Pre-Shared Key (PSK) information entered in the field below. This mode is used if the 802.1x protocol is not being used for authentication.
Encryption	Select the desired encryption. • **WEP**—The least secure of the encryption methods. WEP uses a single encryption key of either 40 or 104 bits. WPA uses a 256 bit Pre-shared key. • **TKIP**—Uses the standard WEP format, but changes the key with every frame for improved security and includes a message integrity capability for determining unauthorized packet insertion.
PSK pass-phrase	This field activates if you select WPA PSK as the mode. This field accepts only • Hexadecimal keys that are 64 characters long • ASCII: 8–63

Configuring Client Authentication

Each user account needs to define the protocol and the credentials used to authenticate a user. When you start and stop on a port, you are enabling and disabling the authentication established here.

Note: Fields will be grayed out if not relevant to the selected protocol.

On the main window, tap **Client** > **Configure** and the User tab opens.

You can also access the User tab from Wireless Networks Tab (see page 7-7). On that tab window, double-tap a network in the Configured Networks section, and tap **View** on the Profile Info Tab (see page 7-9).

Complete the:

• User Tab (see page 7-12)
• System Tab (see page 7-14)
• Server Tab (see page 7-15)

User Tab

Enter the credentials used to authenticate a user.

Field	Description
Profile	Multiple user credential profiles can be created for use when the user roams from one network to another. Select a profile from the list and configure the profile in the fields that follow. • Tapping **Add** permits new profiles to be added to the list. A window appears where you can enter a name for the new profile. • Enter a **Profile name** and tap **OK**. The name entered appears in the Profile drop-down list. • Tapping **Delete** deletes authentication profiles. To be deleted, a profile **cannot** be assigned to a configured network.
Identity	This is the 802.1X identity supplied to the authenticator. The identity value can be up to 63 ASCII characters and is case-sensitive. For tunneled authentication protocols such as TTLS and PEAP, this identity (called the Phase 1 identity) is sent outside the protection of the encrypted tunnel. Therefore, this field should not contain a true identity, but the identity "anonymous" and any desired realm (e.g. anonymous@myrealm.com) instead. For TTLS and PEAP, true user credentials (Phase 2 identity) are entered in the Tunneled authentication section. When used with PEAP and the .NET Enterprise Server Version 5.2, this field must contain the identity used in both Phase I and Phase II. The Phase II identity field is ignored.
Password	This is the password used for MD5-Challenge or LEAP authentication. It may contain up to 63 ASCII characters and is case-sensitive. Asterisks appear instead of characters for enhanced security.

Field	Description
Authentication type	This is the authentication method to be used: • MD5-Challenge • TLS • LEAP • TTLS • PEAP Your network administrator should let you know the protocols supported by the RADIUS server. The RADIUS server sits on the network and acts as a central credential repository for Access Servers that receive the radio signals and ultimately block or allow users to attach to the network.
Use certificate	Specifies the certificate passed to the server for verification during authentication. To appear in this list, certificates must be installed and recognized by both the operating system and the Client; see Certificates on page 7-17. A certificate is required for TLS, optional for TTLS and PEAP, and unused by MD5 and LEAP. Therefore, this option becomes active only when TLS, TTLS, or PEAP is selected as the Authentication type. To select a client certificate, tap **Change** and select the certificate from the list that appears. The **Issued to** column should match the **Identity** field and the user ID on the authentication server used by the authenticator. Your certificate must be valid with respect to the authentication server. This generally means that the authentication server must accept the issuer of your certificate as a Certificate Authority. When obtaining a client certificate, do not enable strong private key protection. If you enable strong private key protection for a certificate, you will need to enter an access password for the certificate each time this certificate is used.

Tunneled authentication area
Tunneled authentication parameters are used by only by TLS, TTLS and PEAP protocols, in Phase 2 of authentication, and after the secure tunnel has been established.
Note: TLS uses a certificate instead of a username and password for tunneled authentication. Therefore, if you select TLS, the Use certificate box selects automatically (tap Change to select the certificate) and the Tunneled authentication area remains inactive.

Field	Description
Identity	The user identity used in Phase 2 authentication. The identity specified may contain up to 63 ASCII characters, is case-sensitive and takes the form of a Network Access Identifier, consisting of <name of the user>@<user's home realm>. The user's home realm is optional and indicates the domain to which the tunneled transaction is to be routed. Because Microsoft .NET Enterprise Server Version 5.2 does not use this parameter for PEAP, This field will have no effect for PEAP at this time. Phase 1 identity is used instead.
Password	The password used for the tunneled authentication protocol specified. It may contain up to 63 ASCII characters and is case-sensitive. Asterisks appear instead of characters for enhanced security.
Protocol	This parameter specifies the authentication protocol operating within the secure tunnel. The following protocols are currently supported for TTLS: • EAP-MD5 • CHAP • PAP • MS-CHAP • MS-CHAP-V2 The following protocols are currently supported for PEAP: • EAP-MSCHAP-V2 • EAP-TLS • Generic Token Card

System Tab

Define logging settings and the port manager timeout period.

Field	Description
Log Level	These settings control the detail of the log messages generated by the Client. Each level is cumulative. By default, all errors, warnings, and information events are logged. Each entry records a severity code (of 1 [debug message] to 4 [error] asterisks), a time stamp, and a message. • **Errors**—Only the most severe conditions are logged. • **Warnings**—Less severe conditions are logged. • **Information**—All errors, warnings, and information events are logged. This is the default setting. • **Debugging**—Creates a log message each time the Client detects or reacts to an event. Be advised that log entries fill memory quickly if the Debugging level is chosen. Do not use the Debugging option for a significant length of time because most internal operations generate messages. To see what the log looks like, see Event Log on page 7-5.
Defaults button	Tap this button to return log settings to the default settings.
Scan List Timeout	The time interval at which the Client polls the ports. This value should not be changed from the 200-second default unless technical support advises you to do so.
Save Credentials for (min)	The amount of time the Client saves credentials.
Disable Wireless Zero Config	Use this option only as directed by technical support. Selecting this option disables other wireless utilities.

Logging

The event log is an ASCII text file named "LOG8021X.TXT" located in the directory defined by the WINDIR environment variable (usually the Windows directory).

In the text file, the format of the entries is: **Time Stamp   Message Text**

To see the event log on the window, tap **View** > **Event Log**.

If you wish to start with a blank file or clear the event log, close the Client (so that the icon no longer appears in the command bar) and delete the log file in WIndows Explorer. When you restart the Client, a new log file is created.
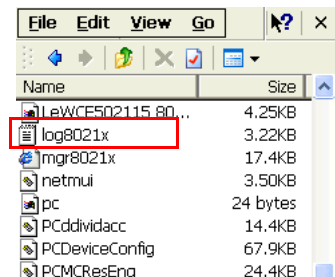
Server Tab

The Server tab controls how the Client authenticates the server that handles the 802.1X protocol on the network side. This applies only to the TLS, TTLS, and PEAP authentication methods and is used to tell the Client what server credentials to accept from the authentication server to verify the server. The Client uses this information to verify that the Client is communicating with a trusted server.

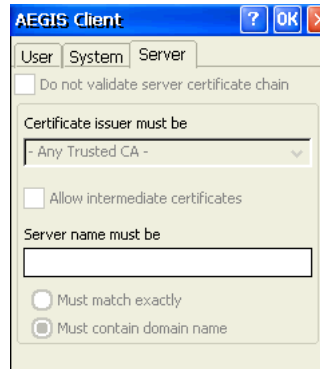| Field	Description
Do not validate server certificate chain	If this option is selected, the server certificate received during the TLS/TTLS/PEAP message exchange is not validated.
Certificate issuer must be	This is the certificate authority used during TLS/TTLS/PEAP message exchange. Any Trusted CA is the default selection and means that any certificate authority can be used during authentication. Both trusted intermediate certificate authorities and root authorities whose certificates exist in the system store are available for selection in the drop-down list.
Allow intermediate certificates	This option enables unspecified certificates to be in the server certificate chain between the server certificate and the certificate authority selected in the **Certificate issuer must be** drop-down list. This option also allows the server certificate received during negotiation to be issued directly by the certificate authority or by one of its intermediate certificate authorities. If not selected, the selected Certificate issuer must have directly issued the server certificate.
Server name must be	This is either the server name or the domain the server belongs to, depending on which option is selected below the text field. During authentication, this name will be compared to the server certificate's **Subject: CN** field.
Must match exactly	When selected, the server name entered must match the server name found on the certificate exactly.
Must contain domain name	When selected, the server name field identifies a domain and the certificate must have a server name belonging to this domain or to one of its sub-domains (e.g., zeelans.com, where the server is blueberry.zeelans.com).

WEP Encryption Without 802.1X Authentication

1. Double-tap the Client icon on the command bar ⊕.

2. On the Main Window (see page 7-3), tap the port and select **Configure** on the popup menu.

3. On the Wireless Networks Tab (see page 7-7), select the SSID in the list of Configured Networks and tap **Properties**.
   (You may have to move the SSID from the list of Available Networks to the list of Configured Networks or add the SSID.)

4. On the Profile Info Tab (see page 7-9), select **Do active scan**.
   (This is necessary only if the SSID is not broadcasting its SSID.)

5. On the WEP Mgmt Tab (see page 7-10), select **Use key for data encryption**.
   If the AP uses Shared authentication, also select **Use key to authenticate**.
   If the AP uses Open authentication, leave it unselected.

6. Enter the WEP **Key**; see Key on page 7-19. Tap **OK**.

7. On the main window, tap **Client** > **Restart** to restart the Client.

8. Wait as the Client connects.

9. When the connection is complete, the Port Status Icon (see page 7-3) on the main window reads **Associated** instead of **Authenticated**. However, the log file (see Logging on page 7-14) will read "Entered AUTHENTICATED state" when recording this event.

Associating With Open APs

To associate with open APs means to set up the 802.11b/g radio without authentication or encryption.

1. Double-tap the Client icon on the command bar ⊕.

2. On the Main Window (see page 7-3), tap on the port and select **Configure** on the popup menu.

3. On the Wireless Networks Tab (see page 7-7), select the SSID in the list of Configured Networks and tap **Properties**.
   (You may have to move the SSID from the list of Available Networks to the list of Configured Networks or add the SSID.)

4. On the Profile Info Tab (see page 7-9), enter your AP's SSID in the **Network Profile** field.

5. Select **default** in the Authentication profile drop-down list.

6. On the WEP Mgmt Tab (see page 7-10), make sure none of the options are selected. Tap **OK**,

7. Tap **OK** on the Wireless Networks tab.

8. On the Main Window (see page 7-3), tap **Client** > **Restart** to restart the client.

9. Wait as the Client connects.

10. When connection is complete, the Port Status Icon (see page 7-3) turns yellow and the Status Bar (see page 7-5) reads "Associated".

Note: If DHCP service is not enabled on the network, then a static IP address and subnet mask would need to be entered manually.

Certificates

During configuration, you may have specified one or two certificates to use during the authentication process.

Certificate Requirements

The specified identity should match the **Issued to** field in the certificate and should be registered on the authentication server that is used by the authenticator (i.e., a RADIUS server). In addition, your certificate must be valid on the authentication server. This requirement depends on the authentication server and generally means that the authentication server must know the issuer of your certificate as a trusted Certificate Authority (CA).

If the selected certificate does require a password or pass phrase to decode the private key, enter the password or pass phrase in the **Certificate Pass Phrase** field in the Meetinghouse Certificate Installer. This value will be encrypted when the configuration is saved. However, on some systems, there may not be a certificate.

Note: Client or CA certificates can be imported from *.cer (same as *.der), *.p7b, or *.pfx files.

Installing Certificates with the Meetinghouse Certificate Installer

CertAdd is a separate utility that allows certificates to be selected and installed on the device for the Client. This method ensures that the certificate is recognized by the Client.

1. Download the certificate file to the device; see Installing a Root Certificate on page 7-17.

2. Tap to **Start** > **Programs** > **Meetinghouse Certificate Installer**.

3. Navigate to the certificate location. Tap and hold on a certificate in the list.

4. Tap **OK** on the popup message and the certificate is loaded into the correct certificate store.

5. Tap the Server Tab (see page 7-15) and verify that the certificate appears in the **Certificate issuer must be** drop-down list.

6. To verify that the operating system recognizes this certificate, see Installing a Root Certificate on page 7-17.

Installing a Root Certificate

This method ensures that the certificate is recognized by the operating system. Sometimes, if a certificate is not functioning properly, it can mean that the operating system doesn't recognize it even if the Client does. Follow these steps to verify that the operating system recognizes the certificate.

1. Save the certificate to the device. If no error appears when you save the certificate, it was most likely saved to the device.

Note: To make sure that the certificate persists through cold boots, install the certificate to the \IPSM folder.

2. To verify that the certificate is recognized by the operating system, tap **Start** > **Settings** > **Control Panel** > **Certificates** Certificates.
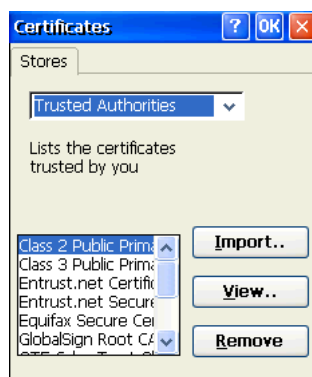
3. This list displays all the certificates recognized by the operating system. If your certificate appears in this list, the operating system recognizes it.

4. Scroll through the list until you see the certificate you installed. After you have identified your certificate in the list, tap **OK** to close.

5. To use the certificate in a network profile, tap the Client icon in the command bar.

6. On the Main Window (see page 7-3) tap **Client** > **Configure**.

7. Tap the **Server** tab and verify that the certificate appears the **Certificate issuer must be** drop-down list.

8. Tap **OK** to save the setting and close the port configuration.

Advice and Workarounds

Issue	Possible Causes and Solutions
The Client will not start on the device with an error message about missing files.	Perform a hard reset.
The wireless network interface (port) does not appear on the Main Window (see page 7-3).	• Ensure that the radio is activated; Activating the 802.11b/g Radio (see page 7-1). • The license may not be valid. • Restart the client: on the main window tap **Client** > **Restart**. • Perform a hard reset. • If problem continues to persist through all of the above, there may be a hardware failure.
The Client is not attaching to the correct AP.	The **default** network profile instructs the client to attach to the first available AP. Select a network, move it to the Configured Networks list, and then move it above **default** in the list using the up arrow buttons. For more information, see Wireless Networks Tab on page 7-16.

The Client is failing authentication even though all my information was entered correctly.	1. Verify that the network profile for the AP corresponds to the authentication profile you created for it:
	
	   • Select the network profile in the Configured Networks list.
	   • Tap **Properties**. The Profile Info tab opens - see page 7-9.
	   • In the Authentication profiles drop-down list, select the profile you want to review.
	   • Tap **View**. The User tab appears displaying the profile's information.
	2. Verify that you have configured the identity and password into the correct fields on the User tab (page 7-9) in the authentication profile. If you are using PEAP or TTLS, the username and password are entered in the Tunneled authentication section.

My AP does not broadcast its SSID. Even though I have manually configured an AP with that name, the Client won't associate with it.	• Make sure that the Network Name field contains the AP's SSID. • Verify that Do Active Scan is selected on the Profile Info tab; see Do active scan on page 7-18. Otherwise, the Client will not attempt to find the AP.
I am authenticated, but I don't get an IP address through DHCP.	• On the main window, tap on the port, tap **Configure** on the popup menu, and select the **Protocol** tab. Verify that **Renew IP Address** is selected; see page 7-8. • Make sure that radio is configured for DHCP and not assigned a static IP address.
I cannot attach to my old network that does not support 802.1x authentication, but is using WEP encryption.	• On the Wireless Networks Tab (see page 7-7), verify that the desired SSID is at the top of the Configured Networks list so that it's accessed first. • See WEP Encryption Without 802.1X Authentication on page 7-16.
I made changes, but they do not appear to have taken effect.	Always tap **OK** before exiting a window you have changed. Then, on the main window, tap **Client** > **Restart** to restart the Client.
How do I enable peer-to-peer (ad-hoc) mode to have two clients communicate without an AP?	• On the Wireless Networks window, move a network to the Configured Network list. • On the Profile Info tab, give each side the same network name (SSID). • Select **Peer-to-Peer Group (ad hoc mode)** and **Do active scan**. • On the WEP management section, select **Use key for data encryption** and enter an identical key for both clients. • Verify that this network profile is the first (or only) one in the Configured Network list and try to restart both clients at roughly the same time.

Checking Radio Status

The WLAN Manager displays radio operating statistics for the 802.11b/g radio.

Single-tap on the WLAN Manager icon in the command bar ▫ and select **Open** on the WLAN Manager menu.
OR
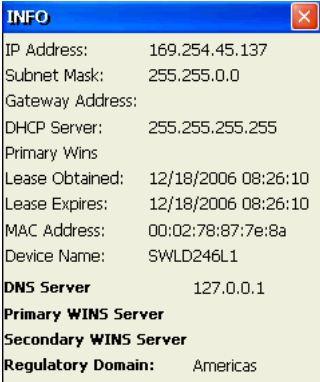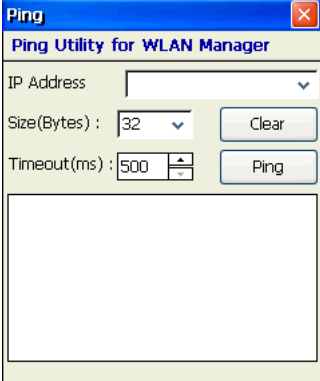
Tap **Start** > **Settings** > **Control Panel** > double-tap **WLAN Manager** ▫ Manager. The Status Tab (see page 7-20) opens.

Status Tab

The Status tab displays the current operating parameters of the 802.111b/g radio.
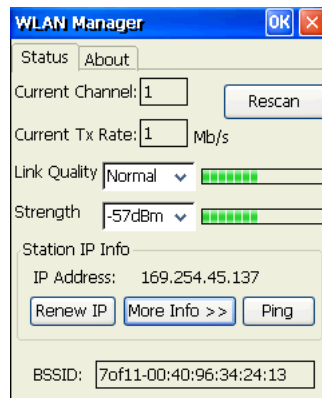
Field	Description
Current Channel	Shows the channel currently used by the radio.
Current TX Rate	Shows the current transmit rate. This can be 1 Mbps, 2 Mbps, 5.5 Mbps, or 11 Mbps.
Rescan	Rescans the area to search for an AP with a stronger signal in the network.
Link Quality	Displays the link quality.
Strength	Displays the relative signal strength at the receiver; you can select dBm or %.
Station IP Info–This section offers IP address options.	
IP Address	Displays the IP address of the radio. Verify configuration information with your network administrator.
Renew IP	When automatic DHCP is enabled, tap this button to reapply the IP address from the DHCP server.

Field	Description
More Info	Displays detailed radio information: INFO IP Address: 169.254.45.137 Subnet Mask: 255.255.0.0 Gateway Address: DHCP Server: 255.255.255.255 Primary Wins Lease Obtained: 12/18/2006 08:26:10 Lease Expires: 12/18/2006 08:26:10 MAC Address: 00:02:78:87:7e:8a Device Name: SWLD246L1 **DNS Server** 127.0.0.1 **Primary WINS Server** **Secondary WINS Server** **Regulatory Domain:** Americas
Ping	Enables you to ping an IP address: Ping **Ping Utility for WLAN Manager** IP Address Size(Bytes) : 32 Clear Timeout(ms) : 500 Ping Type in an IP address and tap **Ping**. The results display below the Ping button.
BSS ID	Displays the status of the Basic Service Set (BSS): • The AP the radio is associated with in AP mode, OR • Creator of the IBSS the radio is connected to in peer-to-peer (Ad-Hoc) mode.

8

Bluetooth Manager

Overview

Each Dolphin 7600 contains a Bluetooth radio whose driver installs each time the device boots up.

Enabling the Bluetooth Radio

Single-tap the Bluetooth icon in the command bar 📶 or

Tap **Start** > **Programs** > **Bluetooth Manager** and tap the **ON** button to activate the Bluetooth radio.
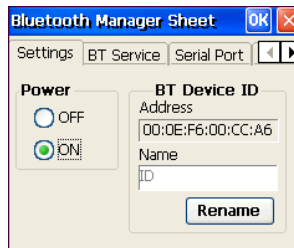
Use the left and right arrows in the upper right corner to scroll through the tab windows.

Tab Window	Description	See Page
Setting Tab	Enables and disables the Bluetooth radio.	8-2
BT Service Tab	• Scans for Bluetooth services on other devices (see page 8-8). • Transfers files via infrared (see page 6-7).	8-2
Serial Port Tab	Manages the registration of serial ports, both client and server ports.	8-3
About	Displays information about the Bluetooth Manager software.	N/A

Setting Tab
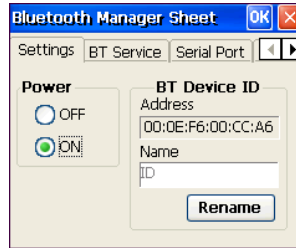
Field	Description
Power	This setting enables and disables the radio.
BT Device ID	
Address	The MAC address from the radio driver.
Name	The first time you open the Bluetooth manager, the default name of the Dolphin device appears.
Rename	Click this button to type in a unique name for the Dolphin terminal. The name change here is not specific to Bluetooth. When you change the name here, it has the same effect as changing the name in the control panel for the whole device (Start > Settings > Control Panel > System > Device Name tab).

BT Service Tab

You scan for other Bluetooth devices on the BT Service tab.
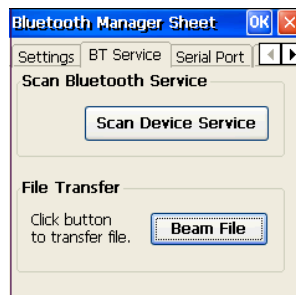
Serial Port Tab

On the Serial Port tab, you can register virtual COM server ports used by the Dolphin terminal to host its Bluetooth services. You can also register client ports used by the Dolphin terminal to access the Bluetooth services of other devices.
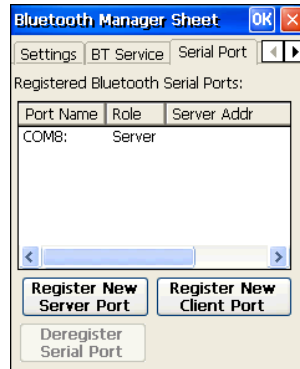
Field	Description
Registered Bluetooth Serial Ports: This list contains the current COM ports in use.	
Port Name	Displays the name of the port (e.g., COM1–COM9).
Role	Identifies the COM port as a server or client COM port.
Server Address	For client ports, this field displays the server address.
Register New Server Port	Tap this button to register a virtual COM port used by the Dolphin terminal to host its Bluetooth services.
Register New Client Port	Tap this button to register a client port used by the Dolphin terminal to access a Bluetooth service on another device.
Deregister Serial Port	Select a port in the list and tap this button to deregister the port.

Connecting to Bluetooth Printers

To connect to a Bluetooth printer, you need to register that printer as a new client port on the Serial Port tab.

1. In the Bluetooth Manager, tap the **Serial Port** tab and tap **Register New Client Port**.

2. The terminal automatically scans for devices in range and displays them.

3. Tap the printer you want to connect to.

4. Authenticate only if the printer has a PIN or if a PIN is known. (Most printers don't have a PIN.)

5. Select **Serial Printer** and tap **OK**.

6. Select **COM** from the **COM Prefix** drop-down list.

7. Select the appropriate COM port number from the **COM Index** drop-down list.

8. Tap **OK**. When you have successfully connected, a Registered O.K. dialog box appears.

9. On the Serial Port tab, verify that the COM port is connected to the printer. (The MAC address of the printer will appear in the **Server Addr** column.)

Connecting to Bluetooth Devices Other Than Printers

1. Power on the Bluetooth radio and tap the **BT Service Tab**.
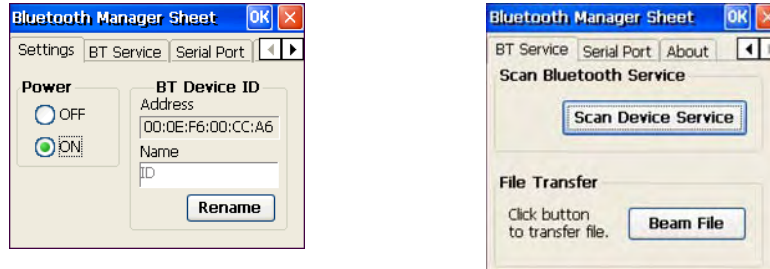
2. Tap **Scan Device Services**, then **Scan Device** on the Scan Device window. The Bluetooth Manager scans for Bluetooth devices and services in range and displays them on the Scan Device Window.

   Note: To see a list of what the icons on this window mean, see Scan Device Window on page 8-8.

3. Double-tap on one of the services and select **Trusted**.

4. Authenticate if required by the device.

5. If you tap **Yes**, enter the same PIN on both the Dolphin terminal and on the device you're connecting to.
   If you don't need to authenticate, tap **No** and you return to the list of retrieved devices and services on the Scan Device window.

6. The key icon changes to indicate that the device is now Trusted.
   (All the device's services will be Trusted the next time they are retrieved in a scan.)

7. On the Scan Device window, double-tap on the same service and select **Active** on the popup menu. The service must be active to use as a wireless connection.
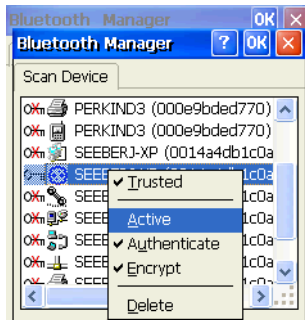
8. The service will now appear with a checkmark to indicate that it's an active connection ⌐⚡ .

*Note: For more information about the popup menu, see *

Scan Device Window

Found devices appear with a key icon that indicates whether it's a trusted or untrusted device.

⚷   Indicates Untrusted

⚷   Indicates Trusted

Found devices also appear with icons to indicate what kind of service is on that device.

Service Icon	The found device contains the following service:
🔄	ActiveSync For details, see Bluetooth ActiveSync on page 8-10.
🖨	Printer For details, see Connecting to Bluetooth Printers on page 8-4.
For details about connecting to the following services, see Connecting to Bluetooth Devices Other Than Printers on page 8-7.	
📁	File transfer
⚓	LAN (Local Area Network) access
💾	Modem (DUN: Dial-up Network Profile)
📇	Object transfer
📲	PAN (Personal Area Network)
?	Unknown

Popup Menu

Double-tap on a found device and a popup menu appears that enables you to connect to that device and use the service.

Menu Item	Description
Trusted &/or Untrusted	Changes the found device to a trusted or untrusted device. **Untrusted devices** Appear with a ✕ icon. **Trusted devices** Appear with a ✓ icon. Depending on the device and service selected, you may need to authenticate when changing an untrusted device to a trusted device.
Active	Select **Active** to activate a connection to the device and service. Active appears inactive is the device is not Trusted. A checkmark appears next to this item if the connection is active.
Authenticate	Select **Authenticate** to require the Dolphin terminal to authenticate on connecting. Authenticate appears inactive is the device is not Trusted. Authenticate appears with a checkmark to the left if authentication has already occurred.
Encrypt	Encrypt appears inactive if the device is not Trusted. Encrypt with a checkmark to the left if encryption has already occurred.
Delete	Deletes the found service. (Other services available on the same device remain in the list.)

Bluetooth ActiveSync

1. On the BT Service tab, tap **Scan Device Service** and retrieve a device with ActiveSync services ⊕ .

2. You need to activate the service. Double-tap on the service and select **Trusted**, then **Active** on the popup menu.
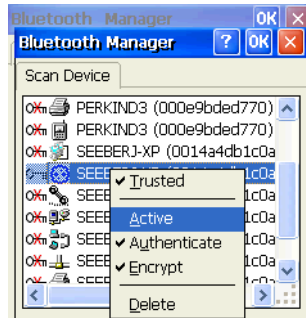
Note: You may need to authenticate the connection by entering a PIN. If not, tap No on the authentication popup window. For more details, see Connecting to Bluetooth Devices Other Than Printers on page 8-7.

3. The Bluetooth ActiveSync service is now active. Tap **OK** to close the Scan Device window.

4. Tap **Start** > **Settings** > **Control Panel** > double-tap **ActiveSync** ActiveSync.
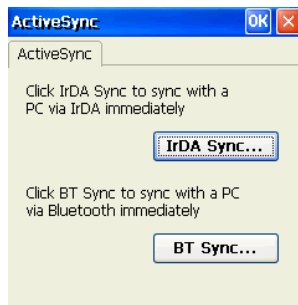
5. Select **BT Sync**. The PC Connection is changed to Bluetooth and the sync process begins just like a normal ActiveSync connection.

9

Dolphin HomeBase

Overview

As the hub of your Dolphin 7600 system, the Dolphin HomeBase charging and communication cradle supports full-speed USB 1.1 communication with a workstation.

Battery Charging

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

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

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

Communication

With USB port, the data transmission rate goes up to 12 Mbps.

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

Convenient Storage

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

Capacity

The HomeBase holds one Dolphin 7600 terminal and charges its battery pack.

Power Supply

The power cable that ships with each unit (see Charge the Batteries on page 2-1) also powers the Dolphin HomeBase.

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

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

Front Panel

Terminal Well
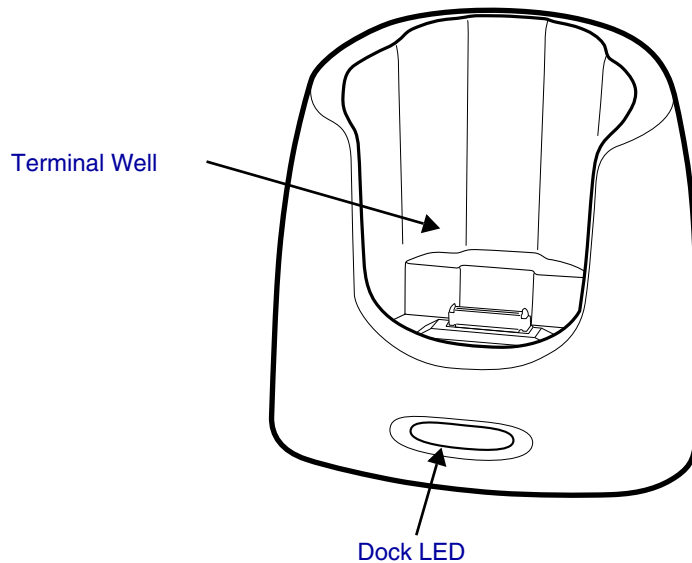
Dock LED

Terminal Well

Place the Dolphin terminal in this well to communicate with a host device, power the terminal, and charge its battery.

Dock LED

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

Rubber Feet

The bottom panel has four rubber feet–one at each corner–to stabilize the unit on a flat surface. You can set the HomeBase on a dry, stable surface, such as a desktop or workbench near an electrical outlet.

Back Panel
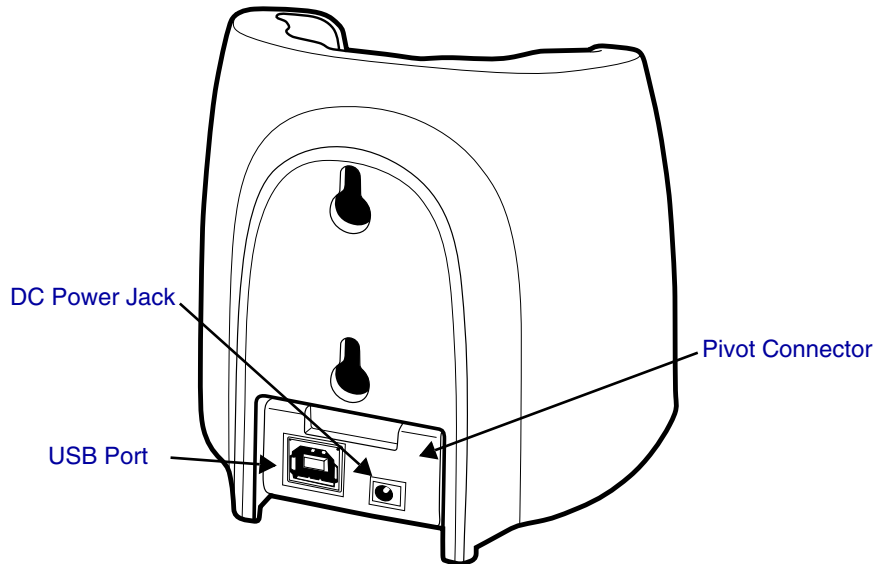
Pivot Connector

> This pivoting connector swivels 90 degrees. The default position is horizontal, with the connectors facing straight out the back panel. The pivot connector stops in both the horizontal and vertical positions, with the connectors facing out the bottom panel.

DC Power Jack

> Connect the power cable to this power jack; see Powering the Dolphin HomeBase on page 9-3.

USB Port

> This USB port is full-speed (v1.1). Using the USB cable, you can connect the HomeBase to a USB-compliant device to facilitate USB communication to and from the terminal. USB communication occurs through Microsoft ActiveSync (v.4.1 or higher). For more information about ActiveSync setup, see ActiveSync Communication on page 6-3.

Powering the Dolphin HomeBase

The terminal requires 5 volts DC input for communication and battery charging; the power adapter on the power cable converts the voltage from the power source to 5 volts DC. Only power adapter cables from Hand Held Products convert the voltage appropriately.

The same power cable that ships with each terminal can be used to power the HomeBase. This cable contains a plug adapter for each geography (US, UK, EU, etc.).

1. Attach the appropriate plug adapter to the power adapter.

2. Plug the power cable into the power source.

3. Plug the connector into the DC power jack on the back panel. The HomeBase is now powered.

When a terminal is properly seated in the terminal well, the HomeBase powers the terminal, charges the terminal's main battery pack, and launches ActiveSync (see ActiveSync Communication on page 6-3).

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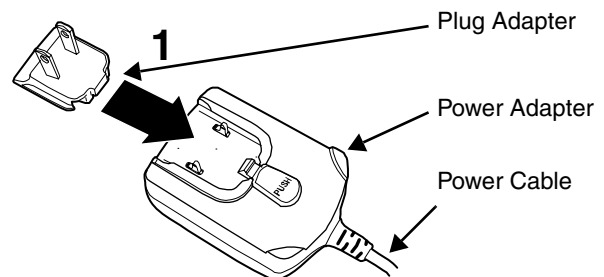
Charging the Main Battery

The HomeBase powers the terminal and fully charges its main battery pack in less than four hours.

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

Inserting a Terminal

1. Install the battery pack in the terminal; see Install the Main Battery on page 2-1.

2. Power the Dolphin HomeBase; see Powering the Dolphin HomeBase on page 9-3.

3. Slide the terminal into the terminal well until the Dock LED lights green to indicate that the terminal is properly seated.

4. The battery pack begins charging.

Checking Battery Power

To check battery power while the terminal is operating, tap Start > Settings

> Control Panel > double-tap Power Power .

Power Properties   ? OK X

Battery | Schemes

Power
External   Backup battery
      Good   Good
      Low   Low
      Very Low   Very Low

Main batteries

Total time used:
Remaining power: 100%
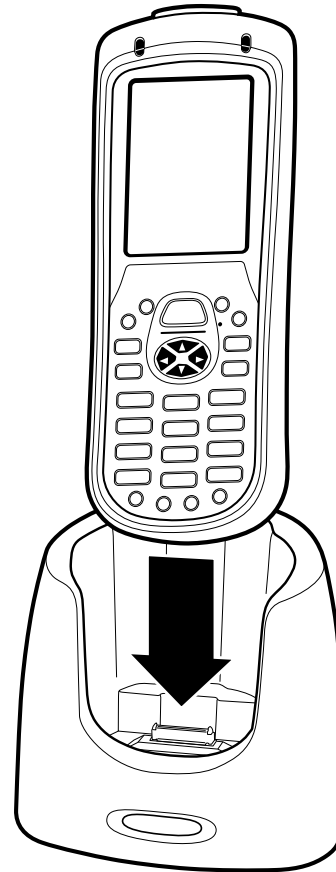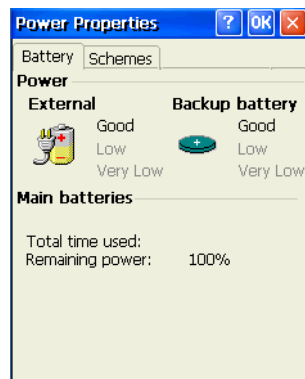
Mounting the Dolphin HomeBase

If you want to mount the HomeBase to a vertical surface, be sure to provide enough workspace with good lighting for the user to view and operate the Dolphin terminal while it is seated in the HomeBase.

Back Panel Dimensions

.15 in.
(3.85 mm.)

.32 in.
8.06mm Diameter,
2 places

.53 in.
13.65mm,
2 places

1.44 in.
(36.7 mm.)

3.99 in.
(101.42 mm.)

1.85 in.
(46.87 mm.)

4.35 in.
(110.47 mm.)
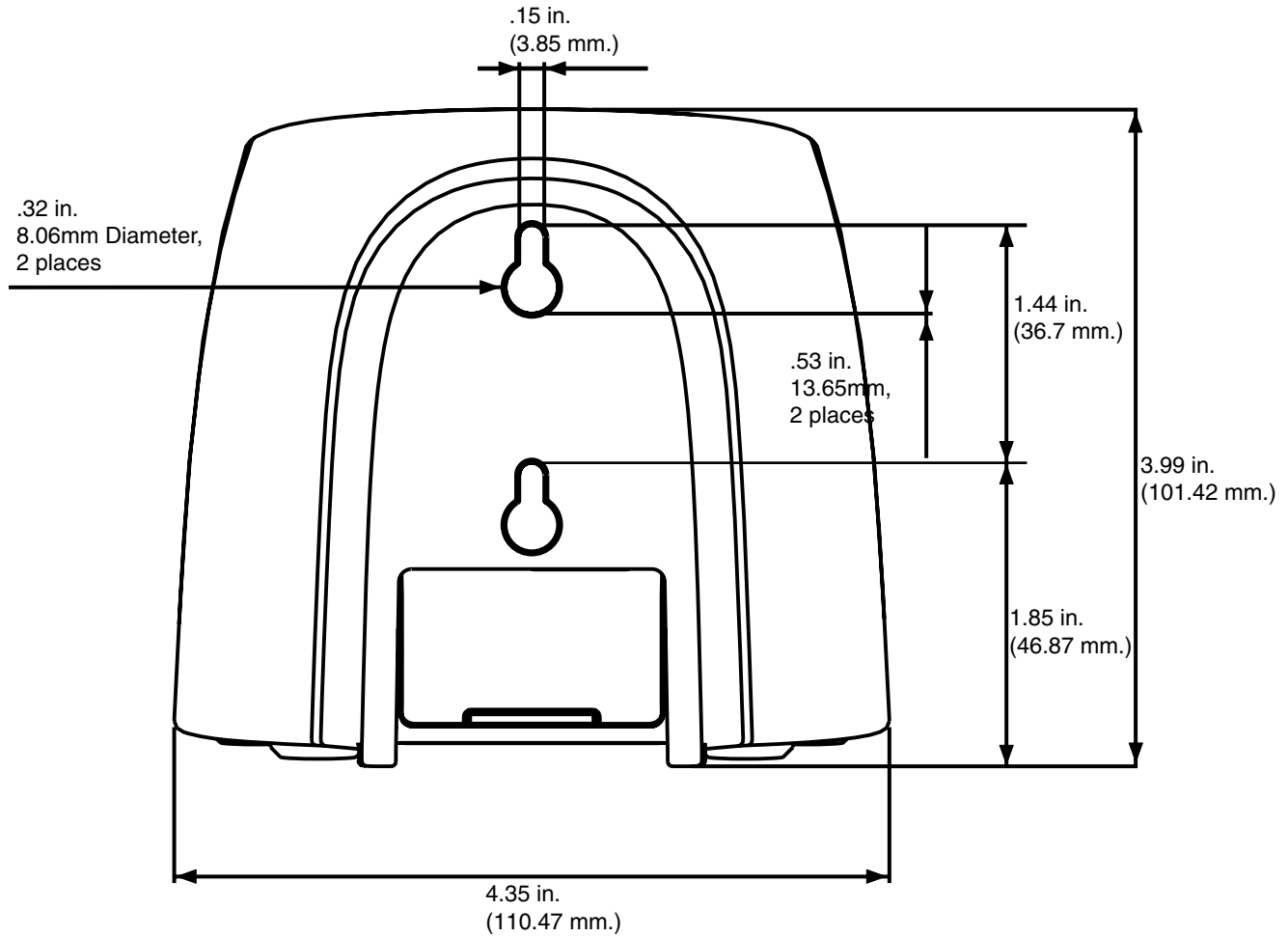
Mounting Guidelines

1.   Before you begin, make sure you have two screws that are size #4–diameter measurement of 0.112 in. (2.845 mm).

2.   Drill two holes into the wall. The holes should be located approximately 1.44 in. (36.7 mm) apart.

3.   Insert a screw into each hole, leaving 0.2 in. (5 mm) of its head exposed.

Bottom Panel Dimensions
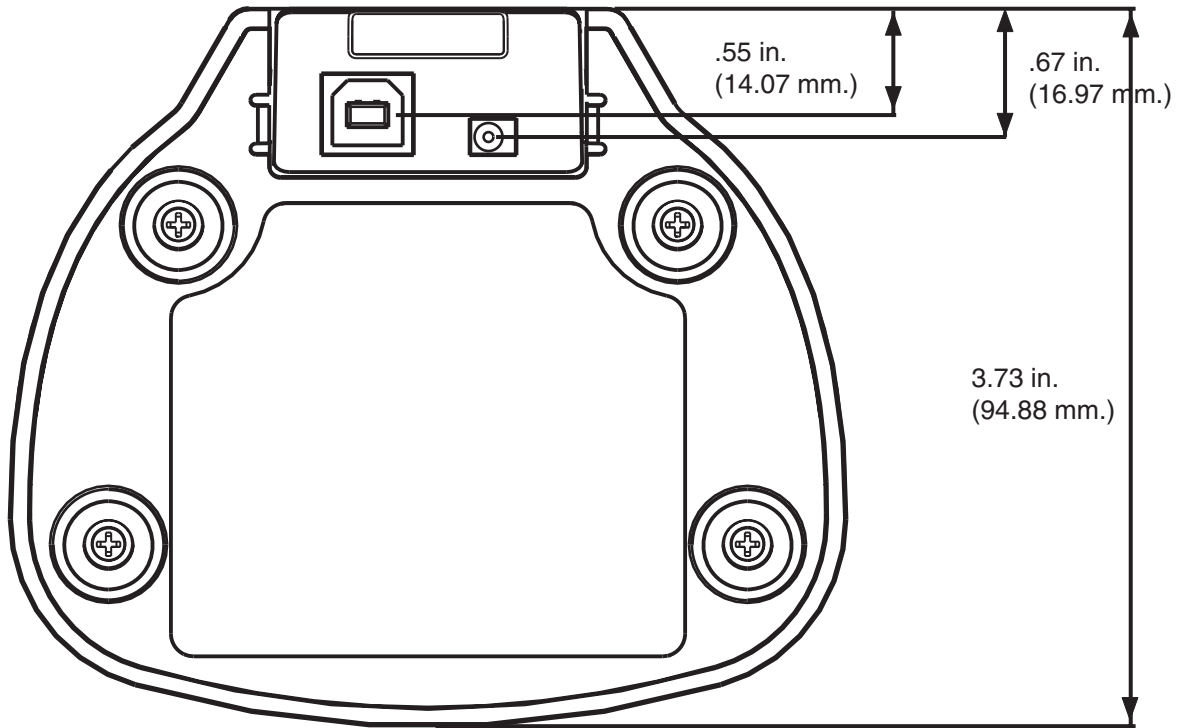
Note: The pivot connector should be facing straight out the bottom panel (as shown) when mounting the HomeBase to a vertical surface.

Bottom Panel Label
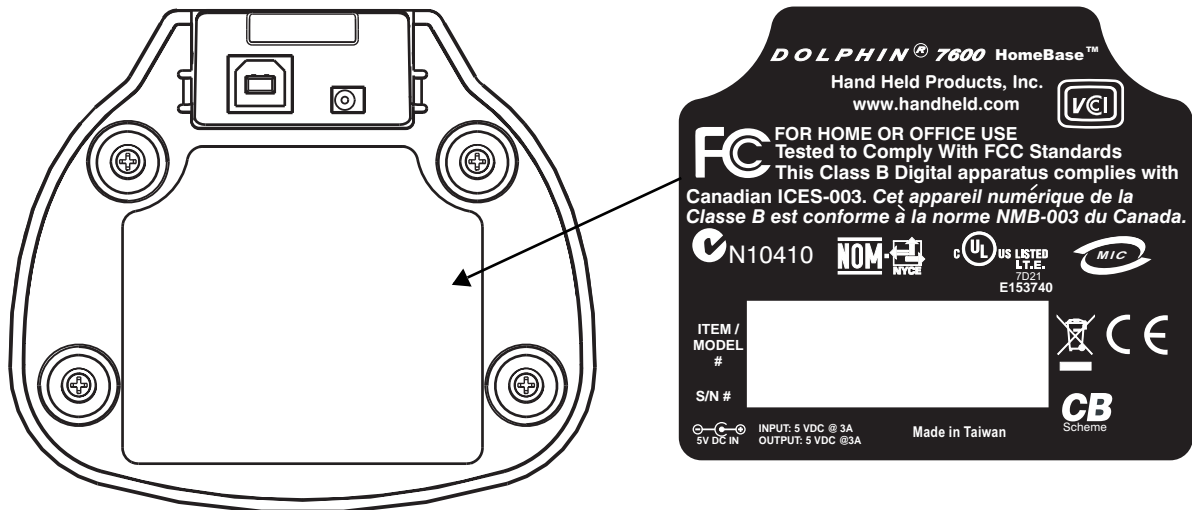
Dolphin HomeBase Technical Specifications

Structural	
Dimensions	4 in. high X 4.4 in. wide X 3.7 in. deep (10.2 cm. X 11.2 cm. X 9.4 cm.)
Weight	11.2 oz. (318g)
Material	Polycarbonate ABS blend
Color	Gray
Mounting	Two keyholes on the back panel for wall-mounting
Capacity	One Dolphin terminal
Environmental	
Operating Temperature	32° to 104°F (0° to 40°C)
Storage Temperature	-4° to 140°F (-20° to +60°C)
Charging Temperature	32° to 104°F (0° to 40°C)
Electrical Static Discharge	8 KVA immunity on all surfaces
Humidity	90% relative humidity (non-condensing)
Power Supply	
Input (Universal) (from the power source)	100–240 Volts, 0.5 A 50–60Hz Included with Dolphin terminal
Output (to the HomeBase)	5 Volts DC, 3.0 A
Charging	
Standard Charge	Four hours or less
Max Charging Current	2A Max
Standby Current	<100mA
Status LED	**Green:**Dolphin terminal is properly seated in the HomeBase.
Communication	
Interface	USB B Male connector supports 12 Mbps communication
Agency Approvals	
Power Supply:	UL listed TUV licensed Power Supply compliant to FCC part 15, Class B
Charging:	CE Marking (EMC)
Fire Retardant:	UL 94-VO

10

Dolphin QuadCharger

Overview

The Dolphin QuadCharger is a four-slot charging station that charges up to four Li-ion battery packs—both 2200mAh and 3240mAh—in four hours. For more details about charging, see Battery Charging on page 10-3.

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

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

Front Panel

Power LED   Charging Slots
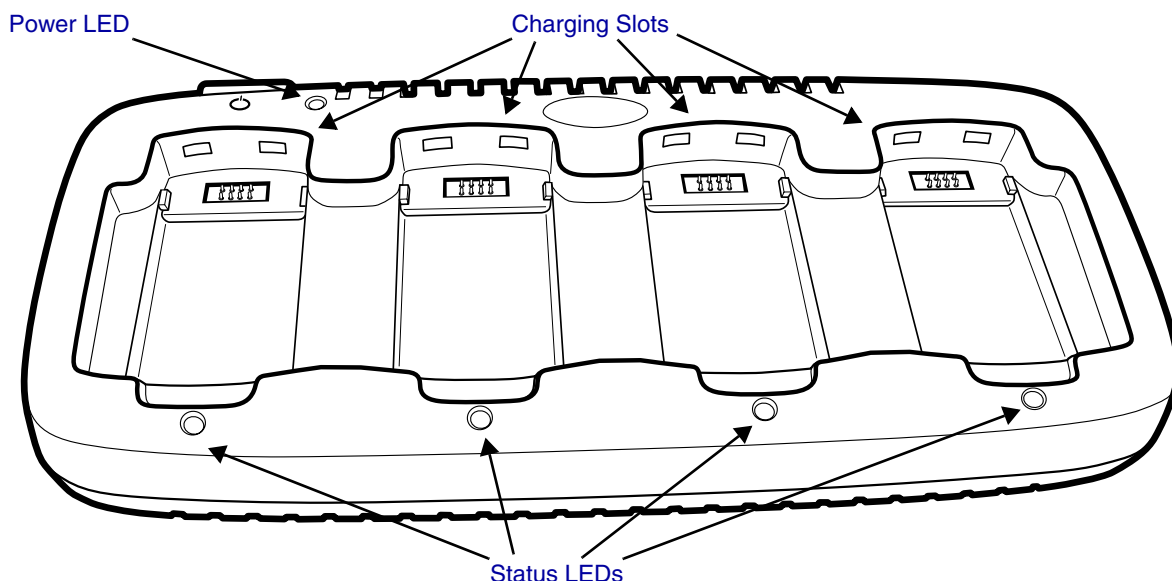
Status LEDs

Charging Slots

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

Power LED

    This LED lights green after power has been applied and the QuadCharger completed initialization.

Status LEDs

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

    Green (solid)   The battery has completed its charge cycle and is ready for use.
    Orange (solid)   The battery is properly seated and charging.
    Red (flashing)   The QuadCharger encountered an error during the most recent charge cycle.

Back Panel

Power Supply Connector   Power Switch
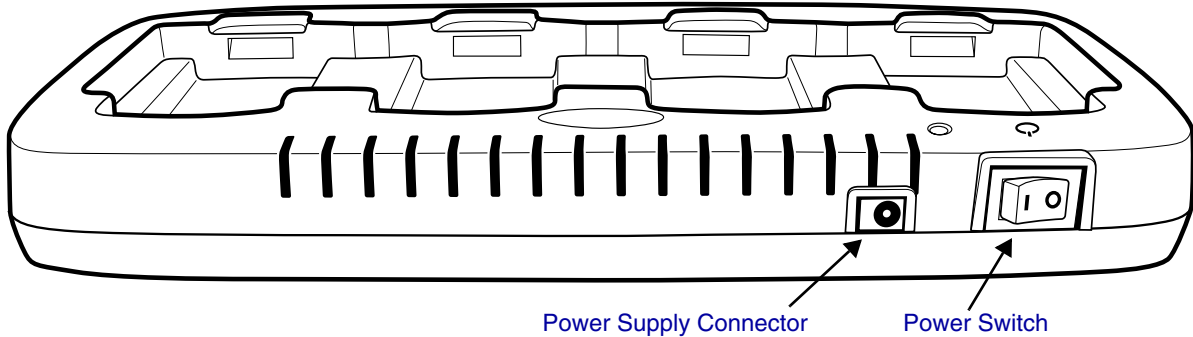
Power Supply Connector

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

Power Switch

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

Supplying Power to the QuadCharger

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

1. Locate the AC power adapter cable and plug it into the power source.

2. Connect the power cable to the power adapter.

3. Connect the power cable to the power supply connector on the back of the QuadCharger.

4. Press the power switch to the ON position.

5. The device performs the following power-up diagnostic routine for each slot indicated by the Status LEDs.:

   • All ON Orange
   • delay (500ms)
   • All ON Red
   • delay (500ms)
   • All ON Green
   • delay (500ms)
   • All OFF

Battery Charging

Inserting and Removing Battery Packs

To insert a battery pack, place the end of the battery without the locking tab into the bottom of the charging pocket and snap the battery into place with a hinging motion.

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

Charging Process

The QuadCharger charges Dolphin 7600 Li-ion battery packs in four hours. Each charging slot works independently of the other three. As battery packs charge, the charging circuitry follows the two-step charging process (CC-CV) that is recommended for Li-Ion batteries. The process monitors changes in temperature, current, and voltage.

Temperature

The QuadCharger charges Dolphin 7600 Li-ion battery packs in four hours when charged within the recommended temperature range of 50° to 95° F (10° to 35°C). Temperature has a significant effect on charging. For best results, battery packs should be at room temperature before inserting in the QuadCharger.

⚠ When the battery temperature exceeds 40°C, the QuadCharger may exceed the stated four-hour charge time. The QuadCharger stops charging if the battery temperature is greater than 40°C but will begin charging again when the battery temperature is less than 40°C.

To Charge Batteries in the QuadCharger

1. Supply the QuadCharger with power and turn the power switch on.

2. Insert batteries into the appropriate slots.
    The Status LED for each slot turns orange to indicate that the battery is properly seated and has begun a charge cycle.

3. When the Status LED turns green, the battery in the slot has completed charging.

Recommendations for Storing Batteries

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

*   Avoid storing batteries outside of the specified temperature range of -4 to 122° F (-20 to 50°C) or in extremely high humidity.
*   For prolonged storage, do not keep batteries stored in a charger that is connected to a power source.

Mounting the QuadCharger

The QuadCharger should be mounted on a dry, stable surface such as a desktop or workbench, or a flat, vertical surface such as a wall.

Mounting Location

When choosing a location for the QuadCharger:

• Keep in mind that the mounting location must allow users easy access to power switch and power connector.
• Do NOT place the QuadCharger in an enclosed space because restricted air flow can cause the temperature to elevate, which can effect charging. For more information, see Battery Charging on page 10-3.

Mounting Process

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

Bottom Panel Mounting Dimensions
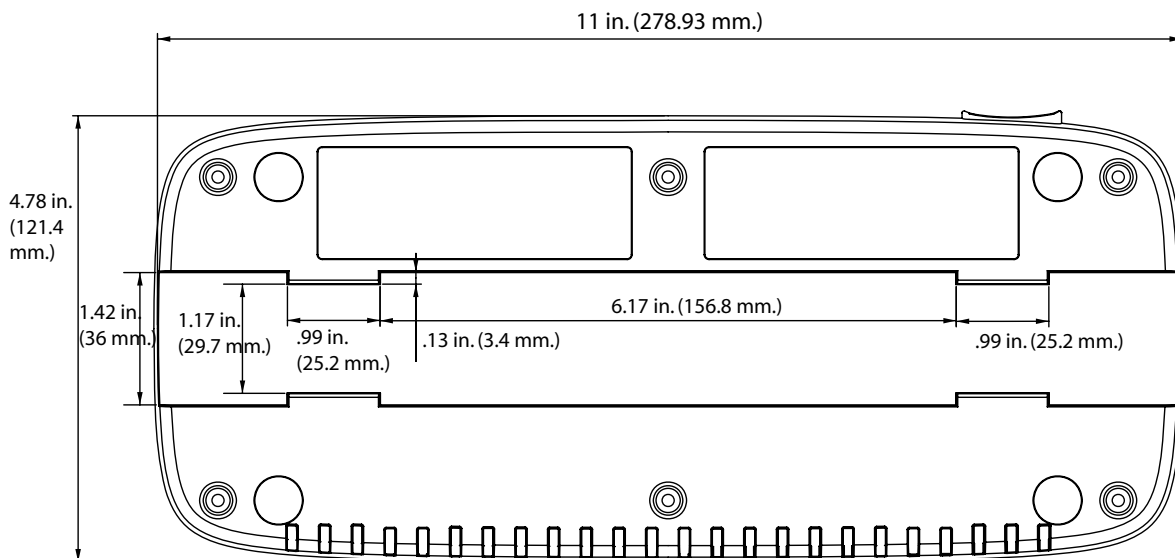
DIN Rail Dimensions
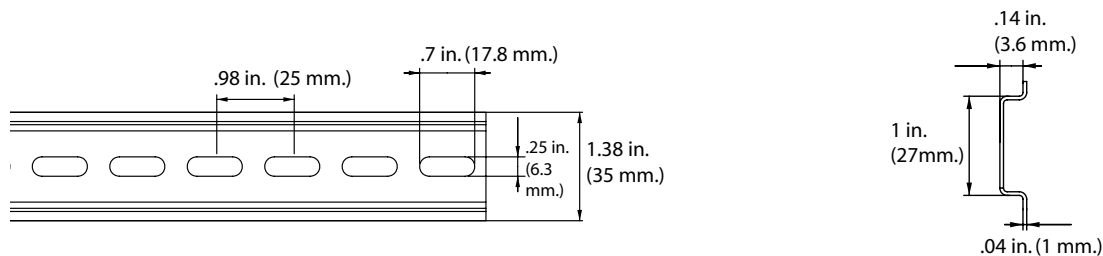
Mounting Guidelines

1. Before you begin, make sure you have two screws that are size #5–diameter measurement of 0.125 in. (3.18 mm).

2. Drill two holes into the wall, using the slots of the DIN Rail to locate. To ensure stability, holes should be located at least 4 inches (101.6mm) apart.

3. Insert a screw into each hole. The screw heads should be flush with the surface of the DIN rail,

Troubleshooting

If you encounter problems with the QuadCharger, refer to chart below for possible solutions. If problems persist, please contact Technical Assistance (see page 11-2).

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

Bottom Panel Label
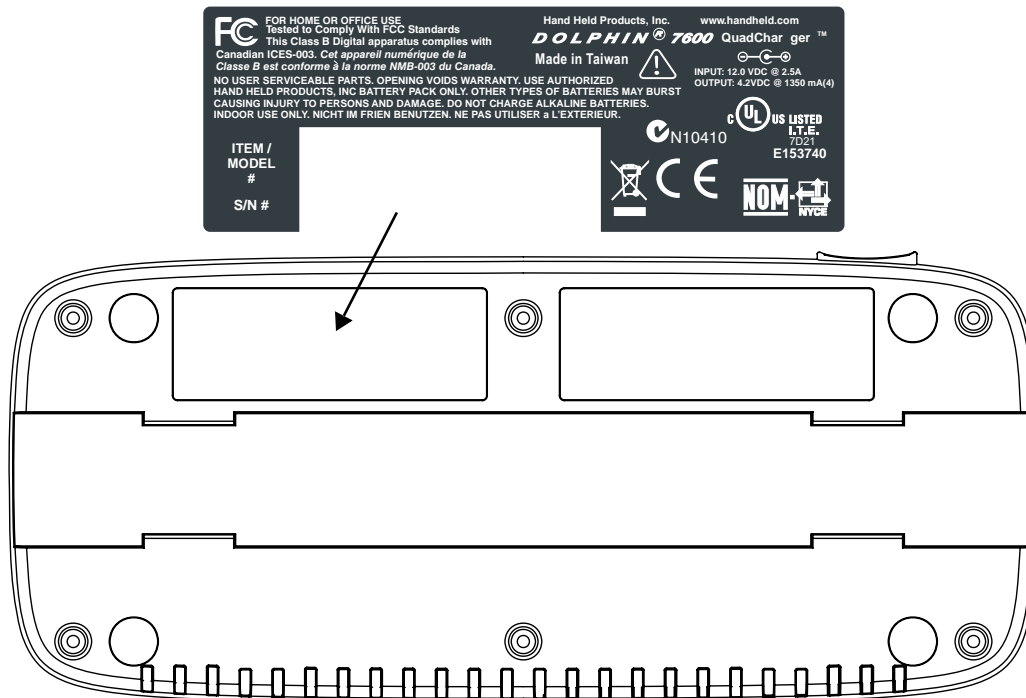
Dolphin QuadCharger Technical Specifications

Structural	
Dimensions	11 in. long X 4.8 in. wide X 1.5 in. high (27.9 cm. X 12.2 cm. X 3.8 cm.)
Weight	15.1 oz. (428g)
Material	Case: Polycarbonate ABS blend Color: Gray
Mounting	Use DIN rail slide to mount to a desktop or wall; see DIN Rail Dimensions on page 10-4.
Capacity	Supports up to four Li-ion battery packs
Environmental	
Operating Temperature	32° to 104°F (0° to 40°C)
Storage Temperature	-4° to +140°F (-20° to +60°C)
Charging Temperature	32° to 104°F (0° to 40°C)
Electrical Static Discharge	8 KVA immunity on all surfaces
Humidity	90% relative humidity (non-condensing)
Power Supply	
Input (Universal)	100V-240V, 0.8 A 50-60Hz Included with the QuadCharger
Output	12Volts DC, 2.5 A
Charging	
Standard Charge	Four hours or less
Status LEDs	See Status LEDs on page 10-1.
Agency Approvals	
Power Supply	UL listed TUV licensed Power Supply compliant to FCC part 15, Class B
Charging	CE Marking CISPR Pub 22
Fire Retardant	UL94 V-0

Product Service and Repair

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

North America

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

Latin America

Telephone: (704) 998-3998, option 8, option 4
Telephone: (800) 782-4263, option 8, option 3
Fax: (239) 263-9689
E-mail: laservice@handheld.com

Brazil

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

Mexico

Telephone: +52 (55) 5203-2100
Fax: +52 (55) 5531-3672
E-mail: mxservice@handheld.com

Europe, Middle East, and Africa

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

Asia Pacific

Telephone: +852-2511-3050
Fax: +852-2511-3557
E-mail: apservice@handheld.com

Japan

Telephone: +813-5770-6312
Fax: +813-5770-6313
E-mail: apservice@handheld.com

Online Product Service and Repair Assistance

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

Technical Assistance

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

North America/Canada

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

Latin America

Telephone: (704) 998-3998, option 8, option 3
Telephone: (800) 782-4263, option 8, option 3
E-mail: *latechsupport@handheld.com*

Brazil

Telephone: +55 (21) 2178-0500
Fax: +55 (21) 2178-0505
E-mail: *brsuporte@handheld.com*

Mexico

Telephone: (704) 998-3998, option 8, option 3
E-mail: *latechsupport@handheld.com*

Europe, Middle East, and Africa

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

Asia Pacific

Telephone - Hong Kong +852-3188-3485 or 2511-3050
Telephone - China: +86 21 6361 3818
E-mail: *aptechsupport@handheld.com*

Japan

Telephone: +813 5770-6312
E-mail: *aptechsupport@handheld.com*

Malaysia

Telephone: +603-6201-7020
E-mail: *aptechsupport@handheld.com*

Online Technical Assistance

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

Limited Warranty

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

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

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

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

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

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

The limited duration of the warranty for the Dolphin 7600 is as follows:

- Terminals with an integrated imager are covered by a two-year limited warranty.
- Terminals with an integrated laser engine are covered by a one-year limited warranty.
- Touch screens are covered by a one-year limited warranty.
- Dolphin HomeBase, Dolphin Mobile Mount, Dolphin ChargeBase, Dolphin Mobile Charger, and Dolphin QuadCharger are covered by a one-year limited warranty.
- Use of any peripheral not manufactured/sold by Hand Held Products will void the warranty. This includes but is not limited to: cables, power supplies, cradles, and docking stations.
- Use only power adapters approved for use by Hand Held Products. Failure to do so may result in improper operation or damage to the unit and will void the warranty.
- Batteries are covered by a one-year limited warranty. Use of any battery not sold/manufactured by Hand Held Products may damage the terminal and/or the battery and will void the warranty. Batteries returned to Hand Held Products in a reduced state may or may not be replaced under this warranty. Battery life will be greatly increased when following the battery instructions in the Dolphin 7600 User's Guide.

How to Extend Your Warranty

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