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## Client Configuration Area

Each user account needs to define the protocol and the credentials used to authenticate a user. Because Windows Mobile devices are usually small devices with a single NIC and, usually, a single user, the initial configuration is usually the only time the software needs to be set up. The Client will need to be reconfigured if the device is used on multiple networks, or if different users share the computer.

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

### Accessing the Client Configuration Area

On the main screen, tap **Client > Configure** (see [Client Menu](#) on page 9-17). The Client Configuration screen opens displaying the User tab.

The screenshot shows the AEGIS Client configuration interface. At the top, the title bar reads 'AEGIS Client' with a status bar showing signal strength, volume, and time (5:20). Below the title bar, there is a 'Profile:' dropdown menu set to 'default', with 'Add' and 'Delete' buttons. The main configuration area is divided into sections: 'Identity' with 'myname' in the 'Identity' field and '\*\*\*\*' in the 'Password' field; 'Authentication type:' set to 'MD5-Challenge'; a 'Use certificate' checkbox which is unchecked, with a 'Change...' button below it. A 'Tunneled authentication' section contains 'Identity' and 'Password' fields, and a 'Protocol:' dropdown menu. At the bottom, there are three tabs: 'User' (selected), 'System', and 'Server'. The bottom-most bar contains 'OK' and 'Cancel' buttons, along with a keyboard icon and an arrow.

**On this tab,**  
**User Settings Tab**  
**System Settings Tab**  
**Server Identity Tab**

**You...**  
Configure authentication credentials and profiles.  
Set the level of detail that the Client will provide in the system log and zero-config options.  
Control 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.

## User Tab

The User settings tab defines the protocol and the credentials used to authenticate a user.

Field	Description
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<b>Profile</b>	Multiple user credential profiles can be created for use when the user roams from one network to another. The drop-down list contains existing authentication credential profiles. Select a profile from the list to edit it in the fields that follow.
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Tapping **Add** permits new profiles to be added to the list. A screen 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.

<b>Identity</b>	This is the 802.1X identity supplied to the authenticator. The identity value can be up to 63 ASCII characters and is case-sensitive.
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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, it is recommended that this field not contain a true identity, but instead the identity "anonymous" and any desired realm (e.g. anonymous@myrealm.com). For TTLS and PEAP, true user credentials (Phase 2 identity) are entered in the Tunneled authentication section.

*Note: 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.*

<b>Password</b>	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.
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<b>Authentication type</b>	This is the authentication method to be used - MD5-Challenge, LEAP, PEAP, TLS, or TTLS. 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.
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**Field**                      **Description**

**Use certificate**            This is the certificate to be used during authentication. 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.

If **Use certificate** is enabled, the client certificate displayed in the field is the one that is passed to the server for verification.



To select a client certificate, tap **Change** and select the certificate from the list that appears.

To appear in this list, certificates must be installed in the system, for a description of this process see [Installing Certificates with CertAdd](#) on page 9-32.

The **Issued to** field should match the **Identity** field and the user ID on the authentication server (i.e., RADIUS 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.

*Note: 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. The fields in this section are active only if the TLS, TTLS, or PEAP is selected as the Authentication type.

**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.

*Note: 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.*

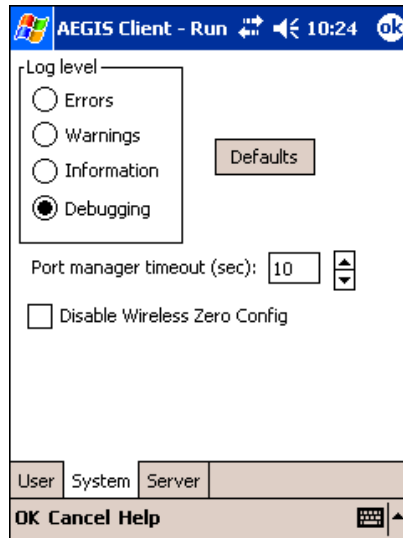
**Password**                    The password used for the tunneled authentication protocol specified. It may contain up to 63 ASCII characters and is case-sensitive. Asterisks appear instead of characters for enhanced security.

**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 and MS-CHAP-V2.  
The following protocols are currently supported for PEAP: EAP-MS-CHAP-V2, TLS/SmartCard, and Generic Token Card (EAP-GTC).

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## System Tab

The System Settings tab controls logging and the port manager timeout period.

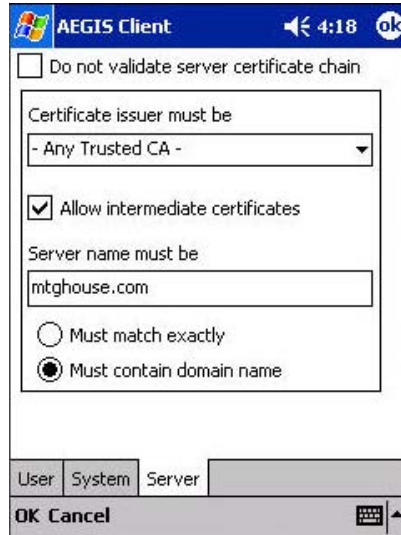


Field	Description
<b>Log Level</b>	<p>These settings control the detail of the log messages generated by the Client. Each level is cumulative. By default, all errors, warnings, and information events are logged. Each entry records a severity code (of one [debug message] to four [error] asterisks), a time stamp, and a message.</p> <p><b>Errors</b> - only the most severe conditions are logged.</p> <p><b>Warnings</b> - less severe conditions are logged.</p> <p><b>Information</b> - all errors, warnings, and information events are logged. This is the default setting.</p> <p><b>Debugging</b> - 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.</p>
<b>Defaults</b>	Tap this button to return log settings to the default settings.
<b>Disable Wireless Zero Config</b>	Use this option only as directed by technical support. Selecting this option disables other wireless utilities whether the Client is running or not. If not selected, other wireless utilities cannot apply their settings to the wireless card while the Client is running (although their status displays are usually unaffected). You will need to perform a soft reset whenever this setting is changed.
<b>Port Manager Timeout</b>	The interval at which the client polls the ports. This is used under different circumstances, for instance after physical changes such as card removal or insertion have been detected. This value should not be changed from the 10-second default unless so advised by technical support.

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## Server Tab

The Server identity tab defines the credentials the client uses to authenticate the server during TLS/TTLS/PEAP authentication message exchange. The Client uses this information to verify that the Client is communicating with a trusted server.



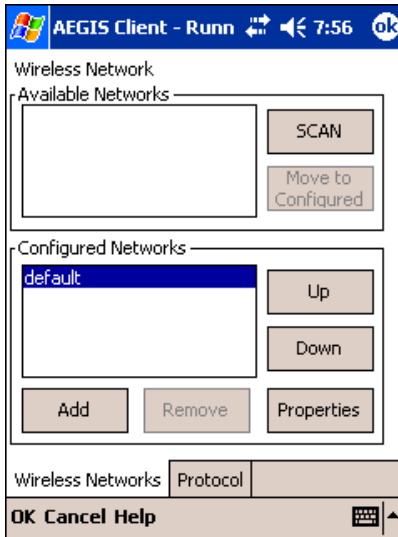
Field	Description
<b>Do not validate server certificate chain</b>	If this option is selected, the server certificate received during the TLS/TTLS/PEAP message exchange is not validated.
<b>Certificate issuer must be</b>	This is the certificate authority used during TLS/TTLS/PEAP message exchange. <b>Any Trusted CA</b> is the default selection and means that any certificate authority can be used during authentication.
<b>Allow intermediate certificates</b>	Both trusted intermediate certificate authorities and root authorities whose certificates exist in the system store are available for selection in the drop-down list. This option is selected by default and enables unspecified certificates to be in the server certificate chain between the server certificate and the certificate authority selected in the <b>Certificate issuer must be</b> field.
<b>Server name must be</b>	When selected, this option allows the server certificate received during negotiation to be issued directly by the certificate authority or by one of its intermediate certificate authorities. If disabled, then the selected Certificate issuer must have directly issued the server certificate.
<b>Must match exactly</b>	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 <b>Subject: CN</b> field.
<b>Must contain domain name</b>	When selected, the server name entered must match the server name found on the certificate exactly. 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).

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## Port Settings Area

In the Port Settings area, you configure network parameters for each port listed on the main screen; see [Main Screen](#) on page 9-17.

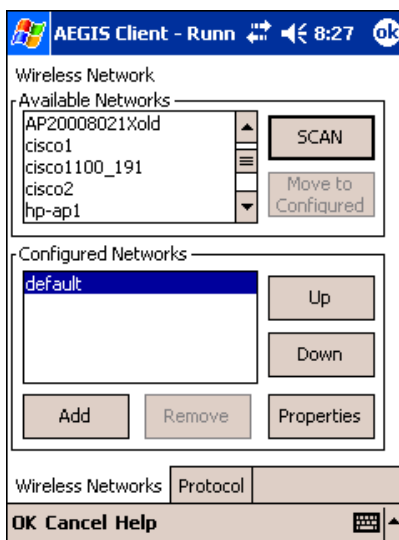
1. On the main screen, tap and hold on a port. The Port popup menu appears; see [Port Menu](#) on page 9-20.
2. Tap **Configure**. The Port Settings Configuration screen opens displaying the Wireless Networks tab.



**On this tab,**  
**Wireless Networks Tab**  
**Protocol Tab**

**You...**  
Set the parameters for Network APs and underlying protocol.  
Configure common protocols that apply to any network the port connects to.

## Wireless Networks Tab



Field	Description
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### Available Networks Section

This section displays the networks the terminal recognizes as available to connect to. When the Client is first installed, there are no entries in the Available Networks list.

**Scan** Tap this button to see a list of networks broadcasting their availability.

*Note: You can also attach to networks who are not broadcasting.*

**Move to Configured** This button activates only after **Scan** has been tapped and available networks have been retrieved.

In the list of networks retrieved, select the network you wish to connect to, and tap **Move to Configured**. This selects the network, which now appears in the Configured Networks section.

### Configured Networks section

This section displays the networks your terminal is connected to. This section enables you to add or remove networks as well as review and edit the properties of existing configured networks.

**Default** When the Client is first installed, there is a Configured Network named "default" in the list. This profile has **Associate with any network** selected in its Properties selection screen.

If you are going to be in a location with only one AP (or more than one AP that attaches to the same network), the default profile may be sufficient for your needs, without necessitating the selection of a specific network or networks.

If **default** is last in the list, it can act as a wildcard should you be out of the range of your primary networks (which are listed first). Do not place **default** at the top or middle of the list because, if it is, connection to the other list entries will never be attempted.

**Up** Tapping this button moves a selected network up one place in the list.

**Down** Tapping this button moves a selected network down one place in the list.

*Note: 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** Tap this button to manually add 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 more information, see [Adding a Wireless Network Configuration](#) on page 9-29.

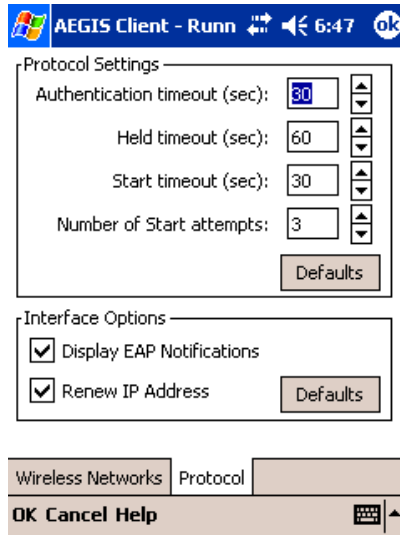
**Remove** Tap this button to remove a selected network in the list.

**Field**                      **Description**

**Properties**                      Tap this button to review the properties of a network selected in the list. This button opens the same network configuration screen as the **Add** button does; use it to edit network configuration properties.

**Protocol Tab**

The Protocol tab enables you to configure parameters that will 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**                      This option 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**                      Select this option to initiate 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.



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## Adding a Wireless Network Configuration

To add a wireless network configuration, on the main screen, tap and hold on the port, tap **Configure** on the Port popup menu, then tap **Add** in the Network Configurations section of the Wireless Networks tab. The Network Profile screen opens displaying the Profile Info tab.

The screenshot shows the 'AEGIS Client - Runn' application window. The title bar includes a Windows logo, signal strength, battery, and time (9:20). The main content area is titled 'Profile Info' and contains the following fields and controls:

- Network Profile:** A text box containing the word 'default'.
- Network Name:** An empty text box.
- Peer-to-Peer Group (ad hoc mode):** An unchecked checkbox.
- Associate with any available network:** A checked checkbox.
- Do active scan:** An unchecked checkbox.
- Authentication profile:** A dropdown menu showing 'default' and a 'View' button to its right.

At the bottom of the screen, there is a tabbed interface with three tabs: 'Profile Info' (selected), 'WEP Mgmt', and 'WPA Settings'. Below the tabs are three buttons: 'OK', 'Cancel', and 'Help'. A small keyboard icon is visible in the bottom right corner.

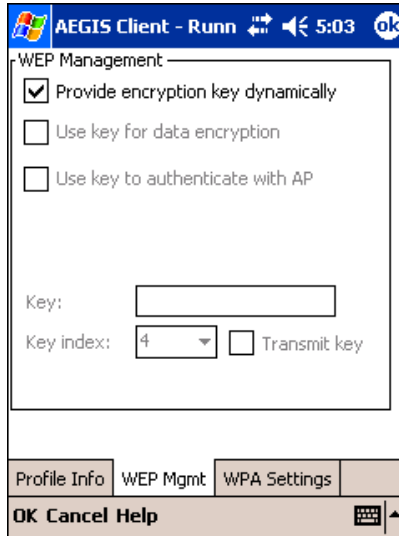
### Profile Info Tab

Field	Description
<b>Network Profile</b>	Enter the name of this record. This is the name that appears in the Configured Networks list and, by default, is the same as the broadcast SSID. Note that there is nothing special about the name "default". You could configure any other record similarly and it would behave the same way.
<b>Network Name</b>	This is the SSID of the AP. If the AP broadcasts its SSID, then this value may be derived from the Available Networks list. If the SSID does not broadcast, then you must manually enter the value here.
<b>Peer-to-Peer Group (ad hoc mode):</b>	Select this option to have two or more client workstations communicate with each other without the benefit of an AP. You should also select <b>Do Active Scan</b> and, in the WEP Management page, enable <b>Use key for data encryption</b> while entering a common key for both sides. WPA is not supported in this mode.
<b>Do active scan</b>	Select this option whenever the AP (or client, for ad hoc mode) is not broadcasting its SSID.
<b>Authentication Profile</b>	Select the Client Configuration (user) profile associated with this network. The drop-down list contains client profile names created in the User tab of the Client Configuration Area; see <a href="#">User Tab</a> on page 9-22.

To open the selected profile, select it in the drop-down list and tap **View**. The User tab opens displaying the profile details. If you tap **OK** (to save changes) or **Cancel**, you are returned to the Profile Info tab.

## WEP Mgmt Tab

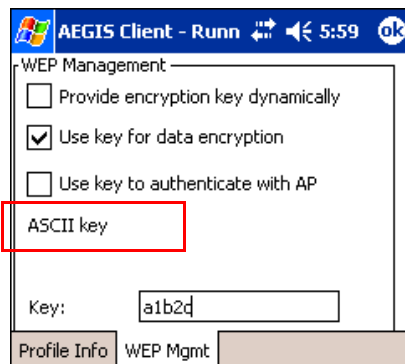
The WEP Mgmt tab enables you to set WEP parameters for each port.



*Note: The settings on this tab window are interrelated. This means that selecting one may disable access to others.*

Field	Description
<b>Provide encryption key dynamically</b>	This option is selected by default. If this option is selected, the other WEP settings on this page are disabled. To enter a custom WEP, de-select this option. The other fields become active.
<b>Use key for data encryption</b>	Select this option to manually enter a WEP key to encrypt your data to the AP. You enter that key in the Key field below.
<b>Use key to authenticate with AP</b>	Select this option if your network does not support 802.1x authentication and you need to connect to the AP without username and password authentication. The key entered below is used to authenticate instead.

### Key



In this field, enter the WEP key:

ASCII - 5 or 13 characters

Hexadecimal - 10 or 26 characters.

When the key entered is in the correct format, the screen changes to display the type - ASCII or Hexadecimal.

### Key Index/Transmit Key

The Key Index drop-down list contains the available keys. You may enter up to four keys for reception; the Client will try all four to find one that works with the AP.

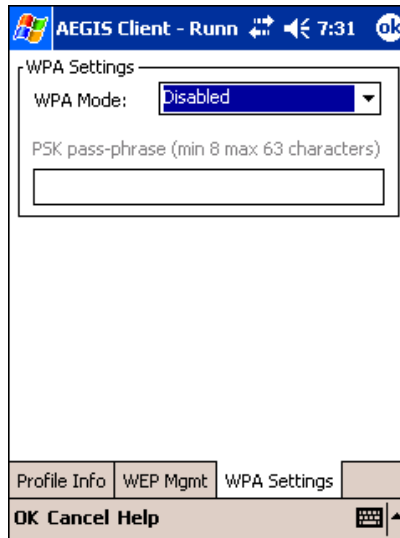
From the drop-down list, select the key to be used for transmission as well. If the key selected is the transmit key, the **Transmit key** box is checked.

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.

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## WPA Settings Tab

The WPA Settings tab enables you to configure WPA settings.



Field	Description
<b>WPA Mode</b>	This drop-down list contains the following options: <ul style="list-style-type: none"><li>• <b>Disabled</b> - Do not enable WPA mode. This is the default selection.</li><li>• <b>WPA 802.1x</b> - Enable WPA and obtain key information through the 802.1x protocol.</li><li>• <b>WPA PSK</b> - 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.</li></ul>
<b>PSK pass-phrase</b>	This field activates if you select WPA PSK in the WPA Mode drop-down list. Enter between 8 and 63 characters for your pass phrase. Asterisks appear as you type for increased security.

## Logging

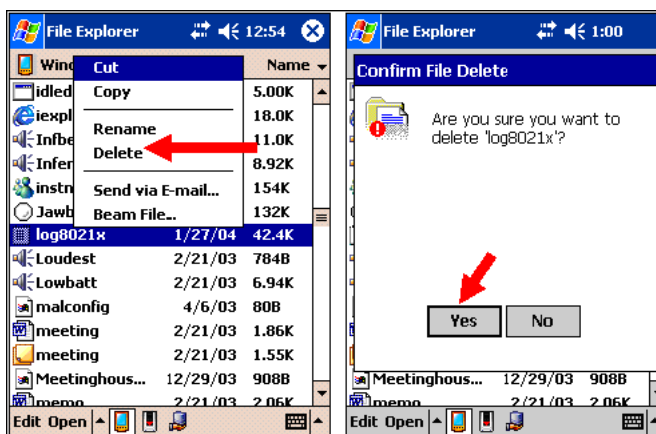
The event log is an ASCII text file named "LOG8021X.TXT" located in the directory defined by the WINDIR environment variable (usually the Windows directory). The information the log records is determined by the log settings on the System tab of the Client Configuration Area; see [System Tab](#) on page 9-24.

The format of the entries is

Time Stamp                      Message Text

The **Refresh** button at the bottom of the screen is used to update the log file while you are reading it. If the file gets too large, old entries are automatically deleted.

If you wish to start with a blank file, exit from the Client (so the icon no longer appears at the lower right of the screen) and delete the log file (log8021x) in File Explorer; see [Finding and Organizing Information](#) on page 4-12.



When you restart the Client, a new log file is created.

## *Installing Certificates with CertAdd*

### Certificate Requirements

During configuration, you may have specified one or two certificates to use during the authentication process. The specified identity should match the **Issued to** field in the certificate and should be registered on the authentication server (i.e., RADIUS server) that is used by the authenticator. 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.

If the selected certificate does require a password or pass phrase to decode the private key, enter this value in the "Certificate Pass Phrase" field. This value will be encrypted when the configuration is saved. However, on some systems, there may not be a certificate. If that is the case, you can use the section below as a primer on OS X certificate management.

### About CertAdd

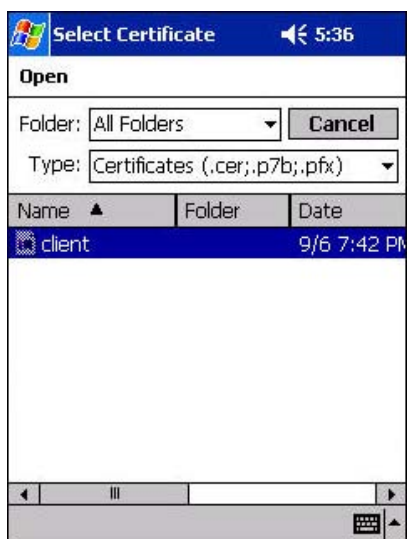
CertAdd is a stand-alone utility included with the Client that allows certificates to be selected and installed on a Windows Mobile device.

## Installing Certificates with CertAdd

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

1. Download the certificate file to the My Documents folder. The location isn't critical, although you may want to create a standard folder for consistency.

- Go to **Start > Programs > Meetinghouse Certificate Installer**. The opening screen is displayed. All valid certificate file types located in the My Documents folder appear in the list.



- Tap and hold on a certificate in the list. A pop-up appears asking if you want to install the certificate.
- Tap **OK**. The certificate is loaded into the correct certificate store.

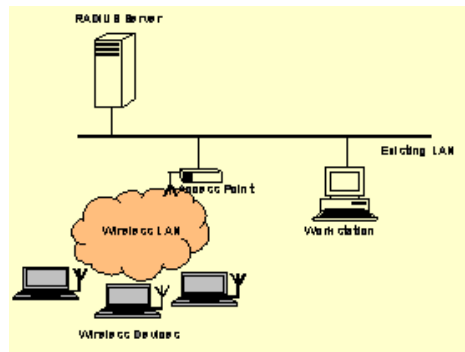
### Advice and Workarounds

Issue	Possible Causes and Solutions
The Client will not start on the device with an error message about missing files.	Perform a soft reset.
The wireless network interface (port) does not appear in the main AEGIS screen.	<ul style="list-style-type: none"> <li>The license is not valid (If you have entered a time-limited license, is your clock on the device correct?).</li> <li>Restart the client - on the main screen tap Client &gt; Restart.</li> <li>Perform a soft reset.</li> <li>If the radio is turned off or the radio card is not present, this will sometimes cause the port name to not appear.</li> <li>If the radio driver is very old and does not support NDIS 5.1 commands, the Client may not be able to detect it.</li> </ul>
The wireless network interface appears, but when I select it and go to the "configure" menu, the Scan button is disabled.	Power up the radio; see <a href="#">Enabling Radios and Radio Combinations</a> on page 4-7.
The client is not attaching to the correct AP.	<p>The <b>default</b> network profile instructs the client to attach to the first available AP. You must select a network, move it to the Configured Networks list, and then move it above <b>default</b> in the list using the up arrow buttons.</p> <p>For more information, see <a href="#">Wireless Networks Tab</a> on page 9-27.</p>

## Advice and Workarounds

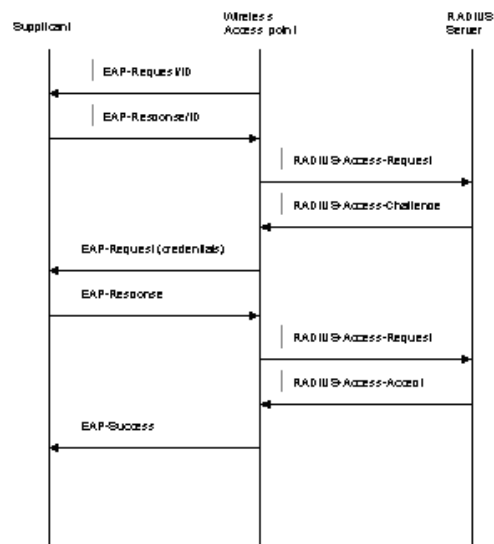
Issue	Possible Causes and Solutions
The Client is failing authentication even though all my information was entered correctly.	<ol style="list-style-type: none"> <li>Verify that the network profile for the AP corresponds to the authentication profile you created for it. <ul style="list-style-type: none"> <li>Select the network profile in the Configured Networks list.</li> <li>Tap <b>Properties</b>. The Profile Info tab opens - see page 9-29.</li> <li>In the Authentication profiles drop-down list, select the profile you want to review.</li> <li>Tap <b>View</b>. The User tab appears displaying the profile's information.</li> </ul> </li> <li>Verify that you have configured the identity and password into the correct fields on the User tab (page 9-29) in the authentication profile. If you are using PEAP or TTLS, the username and password are entered in the Tunneled authentication section.</li> </ol>
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.	<ul style="list-style-type: none"> <li>Make sure that the desired SSID is listed as the Network Name, not the Network Profile (which is a screen label)</li> <li>Verify that Do Active Scan is selected on the Profile Info tab; see <a href="#">Do active scan</a> on page 9-29. Otherwise, the Client will not attempt to find the AP.</li> </ul>
I am authenticated, but I don't get an IP address through DHCP.	On the main screen, tap and hold on your AP, tap Configure on the popup menu, and select the Protocol tab. Verify that <b>Renew IP Address</b> is selected; see <a href="#">Renew IP address</a> on page 9-28.
I cannot attach to my old network that does not support 802.1x authentication, but is using WEP encryption.	<ul style="list-style-type: none"> <li>Verify that you can see your SSID in the Available Networks list on the Wireless Networks tab. Move the SSID to the top of the Configured Networks list so that it is accessed first. If the SSID is not there, you can add it manually and enter the SSID as the network name - page 9-27</li> <li>Select the SSID and tap <b>Properties</b>.</li> <li>On the Profile Info tab, select <b>Do active scan</b> if your AP does not broadcast its SSID.</li> <li>On the WEP Mgmt tab, select <b>Use key for data encryption</b> and <b>Use key to authenticate with AP</b>.</li> <li>Enter the WEP Key - see <a href="#">Key</a> on page 9-30.</li> <li>On the Protocol tab, select <b>Renew IP Address</b> (unless you have entered one manually separate from the Client)</li> <li>Note that the port status indicator in the main screen reads "Associated," not "Authenticated" when the connection is complete; although the log file will indicate "Entered AUTHENTICATED state."</li> </ul>
I made changes, but they do not appear to have taken effect.	Always tap <b>OK</b> before exiting a screen you have changed. Then restart the Client from the Client menu on the main screen.
How do I enable peer-to-peer (ad-hoc) mode to have two clients communicate without an AP?	<ul style="list-style-type: none"> <li>On the Wireless Networks tab, add a new profile to the Configured Network list.</li> <li>On the Profile Info tab, give each side the same network name (SSID).</li> <li>Select <b>Peer-to-Peer Group (ad hoc mode)</b> and <b>Do active scan</b>.</li> <li>On the WEP management section, select Use key for data encryption and enter an identical key for both clients.</li> <li>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.</li> </ul>

## How 802.1X Works



The network elements in the above graphics are those involved in a typical wireless LAN. When 802.1X is running, a wireless device must authenticate itself with the AP in order to get access to the Existing LAN. With respect to the terms used in the 802.1X standard, APs (APs) function as authenticators and wireless devices function as supplicants. The authenticator keeps a control port status for each Client it is serving. If a Client has been authenticated, its control port status is said to be Authorized, and the Client can send application data to the LAN through the AP. Otherwise, the control port status is said to be Unauthorized, and application data cannot traverse the AP.

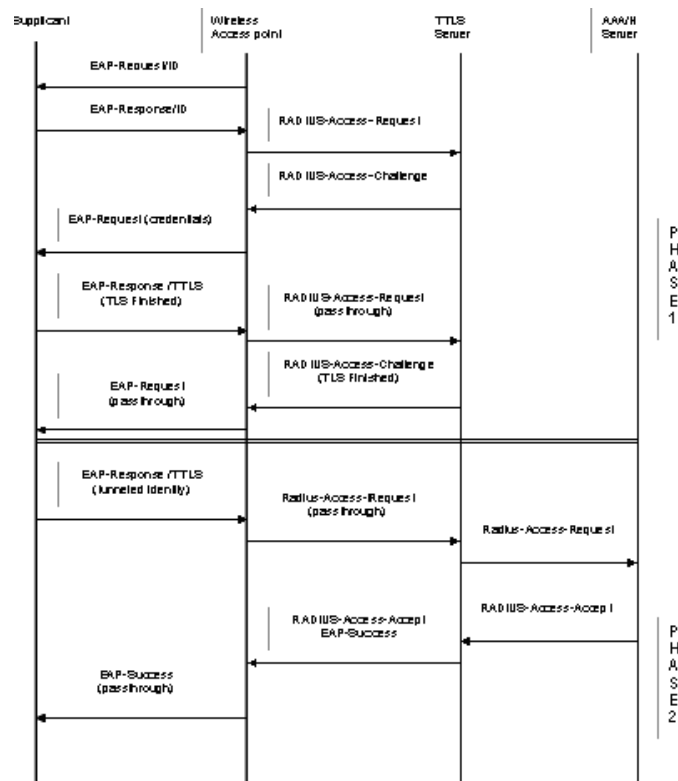
### Typical Message Exchange Using MD5 or TLS



The above graphic displays the typical message exchange when the device and the AP support 802.1X. When an AP acting as an authenticator detects a wireless station on the LAN, it sends an EAP-Request for the user's identity to the terminal. In turn, the terminal responds with its identity, and the AP relays this identity to an authentication server, which is typically an external RADIUS server.

The RADIUS server can then act as a central repository of user profile information. Such use of a centralized authentication server allows the user to access wireless LANs at many different points, but still be authenticated against the same server. In response to the Access-Request, the RADIUS server sends an Access-Challenge to the AP, which is then relayed in the form of an EAP-Request to the device. The device sends its credentials to the AP, which in turn relays them to the RADIUS server. The RADIUS server determines whether access to the network is accepted or denied based on the Client's credentials.

## Typical Message Exchange Using TTLS and PEAP



The above graphic shows a typical message flow for a TTLS transaction. TTLS authentication comprises two phases. In Phase 1, TLS is used to authenticate the TTLS server to the client. The TTLS server may optionally request authentication of the client's certificate, but by default the client verifies only the server's certificate. The TLS handshake is negotiated between the client and the TTLS server. Following the TLS handshake, Phase 2 may proceed using a secure channel (tunnel) provided by the TLS record layer. The secure tunnel is then used to exchange information for the negotiation of the following legacy protocols: EAP-MD5, PAP, CHAP, MS-CHAP, or MS-CHAPV2 (subject to support by the AAA server). A TTLS server may perform the authentication, or the information may be de-tunneled and passed on to an AAA server. The AAA server is the server in the user's home domain where authentication and authorization are administered.

PEAP works in the same manner as TTLS. However, supports different legacy protocols within the encrypted Phase 2 tunnel. Currently the tunneled protocols are EAP-MSChapV2 and EAP-TLS/SmartCard. Like TTLS, the use of a client certificate is optional, if one is used, the same certificate is used for Phase 1 and Phase 2. The client certificate is optional for both phases.

## Benefits of 802.1X

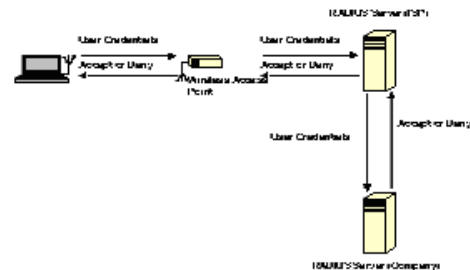
### Central User Administration

The Client allows network administrators to continue to use RADIUS or another AAA server as their centralized authentication server. In 802.11b, where authentication took place between the AP and the station, there was no concept of passing credentials from the AP to an authentication server. For LANs this was fine. However, as users began to use their devices in remote locations, the security provided became inadequate. 802.1X solves this problem by allowing APs to pass client credentials to the appropriate authentication server.



For example, the following graphic displays the authentication flow for a mobile user who wishes to create a virtual private network with his home office.

By using the Client, the user can associate with a wireless network provided by a third party, in this case the ISP. We assume that the company and the ISP have established a service relationship beforehand. When the ISP receives the user's credentials, the ISP proxies the credentials to the company's AAA server, which returns a message telling the ISP to either accept or deny the user access. This response is then propagated to the remote user.



## ***Dynamic Session Specific Wireless Encryption Keys***

There have been many published reports recently about the lack of security provided by the Wired Equivalent Privacy (WEP) protocol. One of the problems with WEP is that the shared key used by the station and the AP is inherently static. That is, this shared key will only change if it is manually reconfigured on both devices. The Client remedies this by supporting the Transport Layer Security (TLS) protocol. TLS ensures that a new shared key is generated each time a station associates itself with an AP. TLS has proven itself an excellent authentication and encryption protocol in commercial environments. The Client also supports the MD5 and TTLS security protocols.

## ***Additional Advantages of TTLS and PEAP***

The Client provides the advantage of Tunneled TLS (TTLS) and PEAP support. These protocols provide the security of TLS with greatly reduced administrative load. Security is enhanced by never passing user ID and password in the clear. No "real" user ID or password is required in Phase 1. After the secure tunnel is established, Phase 2, user credentials are passed in safe, encrypted form. To further enhance security, the WEP keys, which encrypt the data between the wireless card and the AP, may be automatically changed on a per-session basis, limiting the time available to an unauthorized sniffer to crack the keys. By limiting the session time (the reauthentication period), the keys can essentially be made uncrackable.

Administration is eased by greatly reduced certificate requirements in comparison to TLS. In TLS, each client must have a client certificate to pass to the server, and a CA certificate with which to verify a server certificate, while the server must have a client certificate from each user and CA certificates for each possible CA chain and its own server certificate. TTLS and PEAP require only that a single server certificate be created for the server to present to the client, and that the client have a CA certificate to verify the server. Because these are the same for each client on the network, they are easily managed, unlike TLS, where every client certificate is unique. TTLS and PEAP thus provide the security of a TLS channel without the need for managers to distribute and manage client certificates. Lastly, TTLS allows for the use of existing legacy authentication protocols. Administrators may continue to use established authentication databases.

## ***Cisco LEAP***

The message exchange used by Cisco LEAP is proprietary. This protocol is not a standard EAP type, but is supported by the Client through a licensing arrangement with Cisco.

## ***Relative Merits of Authentication Protocols***

MD5 is the least secure of the EAP protocols as it only does a one-way authentication, and does not support automatic distribution and rotation of WEP keys, increasing the administrative burden of manual WEP key maintenance.

TLS, while the most secure EAP protocol, requires client certificates to be installed on each wireless client. Establishing and maintaining this PKI infrastructure is normally a burden most administrators do not feel is worth the extra level of security gained.

TTLS and PEAP bypassed the certificate issue by tunneling TLS, and thus eliminating the need for a certificate on the client side. PEAP supports only EAP-compliant authentication protocols within the tunnel structure, and is rapidly becoming the most widely supported of the EAP methods. TTLS supports pre-EAP authentication protocols within the tunnel structure, and should be used in those circumstances when pre-EAP interior protocols are desirable.

LEAP is a pre-EAP, Cisco-proprietary protocol, with many of the features of EAP protocols. Cisco controls the ability of other vendors to implement this protocol, so it should be selected for use only when limited vendor choice for client, access-point, and server products is not a concern.

---

## *Differences Between Protocols*

<b>Security Feature</b>	<b>MD5 Challenge</b>	<b>TLS</b>	<b>TTLS</b>	<b>PEAP</b>	<b>LEAP</b>
Client -side certificate required?	No	Yes	No	No	No
Server-side certificate required?	No	Yes	No	Yes	No
Dynamic WEP Re-keying	No	Yes	Yes	Yes	Yes
Mutual or One-way Authentication?	One-way	Mutual	Mutual	Mutual	Mutual
Support of non-EAP protocols within a secure tunnel?	N/A	N/A	Yes	No	N/A
Relative Deployment Complexity	Simple	Difficult	Moderate	Moderate	Moderate
Relative Security	Poorest	Highest	High	High	High

## Overview

Dolphin 7900 terminals are available with a Bluetooth radio for WPAN (Wireless Personal Area Network) usage. When the mobile computer is first initialized, the \*.cab file and module for Bluetooth are installed.

### Enabling the Bluetooth Radio Driver

Before using the radio, make sure that the Bluetooth radio is enabled. When the radio driver is enabled, the Bluetooth icon appears in the task tray on the Today screen.



Radios are enabled in the Radio Manager utility; see [Enabling Radios and Radio Combinations](#) on page 4-7.

### Setting Up Your Bluetooth Card

*Note:* If you use the Get Connected! Wizard, which is recommended for normal usage, then this step is not necessary. This step would be used to change the friendly name of your mobile computer.

1. Tap the Bluetooth icon that appears in the task tray on the Today screen.
2. In the pop-up menu, select **Advanced Features**, then **My Bluetooth Device**. (If you installed OBEX, the menu also lists Transfer via Bluetooth.)



3. In the **My Bluetooth Device** screen, you can modify the **Friendly Name** and make any desired configuration changes. When done, tap **OK**.



- In normal phone connect operation, **Discoverable** mode is not needed and should be disabled.
- If you do enable **Discoverable** mode (e.g., for ActiveSync), note that it does not shut off by itself. To save power, remember to disable it when not needed.
- **Connectable**, **Use Authentication**, and **Use Encryption** are also not required for printing or dial-up networking applications.
- Check Use **Authentication** to enable the **Use Encryption** option.

---

## Assign COM Ports

Follow these steps to view and/or modify the Bluetooth COM ports. If you are not going to use the IrDA port, you can disable it to free up a port for Bluetooth devices; see [Using Infrared](#) on page 8-5.

1. Tap on the Bluetooth icon on the Today screen. Select **Advanced Features** then **My Bluetooth Device**.



*Note: If you installed OBEX, the menu also lists Transfer via Bluetooth.*

2. The **My Bluetooth Device** screen appears. Tap on the **COM Ports** tab.



3. As needed, view and/or enable/disable the Bluetooth COM port assignments. Tap **OK**.



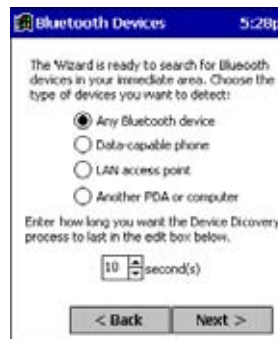
*Note: The Bluetooth Phone port cannot be disabled. For more information about COM ports, see [Com Port Assignment Table](#) on page 7-20.*

## Discover Bluetooth Device(s)

Follow these steps to discover other Bluetooth devices nearby, including non-phone devices. The Device Discovery Wizard is a more detailed alternative to using the Bluetooth "Get Connected!" Wizard or Bluetooth ActiveSync or Bluetooth LAN Access options. The Device Discovery Wizard allows you to discover any type of Bluetooth device.

1. If not open, launch the **Bluetooth Devices** folder. Tap on the Bluetooth icon on the **Today** screen. Select **Advanced Features** then **Bluetooth Devices**.
2. In the **Bluetooth Devices Folder**, tap on the **Device Discovery** icon. Or you can tap on **Tools**. In the pop-up menu, select Device Discovery.

3. Follow the Bluetooth Device Discovery Wizard to search for Bluetooth devices nearby. When prompted, select the device type you seek.



4. When the search is complete, a screen reports the discovered Bluetooth devices. Check the box next to any device you wish to save information about, (i.e., any devices you wish to connect to). Tap **Next**.



5. A service discovery phase begins, 5-10 seconds per chosen device.
6. In the next screen, tap **Finish**.

### ***Bond With Discovered Device(s)***

Follow these steps to bond with an already discovered Bluetooth device. In most cases, bonding is for establishing secure communications with a Bluetooth-enabled phone. This is a more detailed alternative to using the Bluetooth "Get Connected! Wizard."

#### **Important!**

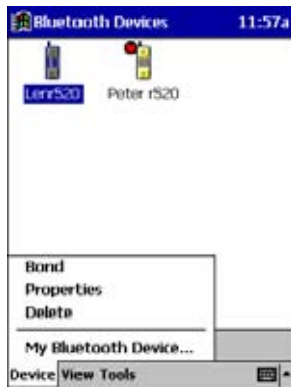
- Do not try to bond with a Motorola Timeport 270C or Nokia 6310!
  - Do not use this method to bond with a printer! The third-party printing software included on the installation CD also handles bonding.
1. If not open, launch the **Bluetooth Devices** folder. Tap on the Bluetooth icon in the Today screen. Select **Advanced Features**, then **Bluetooth Devices**.

---

2. Tap and hold your stylus on the Bluetooth device you want to bond with. In the pop-up menu, select **Bond**.



3. Alternatively, after selecting a device, tap on the **Bond** icon. Or tap on **Device**, then select **Bond**.



4. The **Bluetooth Device Bonding Wizard** launches. Follow the wizard to bond with your selected device.



5. As prompted, make sure the Bluetooth device that you want to bond with is in *Bondable* mode.



6. If the remote device is set up to accept bonding, a **Bluetooth Passkey** screen appears. To continue bonding, enter the correct passkey and tap **Reply**.

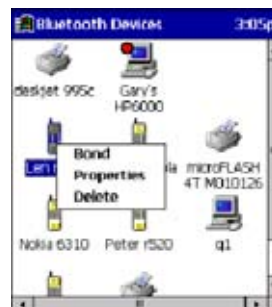


7. When you have successfully bonded with the other device, tap **Finish**.

### ***View Device Properties***

Follow these steps to view the properties of an already discovered device.

1. If not open, launch the **Bluetooth Devices** folder. Tap on the Bluetooth icon on the Today screen. Select **Advanced Features** then **Bluetooth Devices**.
2. Select a device. Tap on the **Properties** icon, or tap on **Device** then select **Properties**. Alternatively, you can tap and hold your stylus on the Bluetooth device you want to view information about. In the pop-up menu, select **Properties**.



- Use the **General** and **Services** screens to research device properties. If needed, assign a new device type icon by tapping on the arrow buttons in the **General** screen. You can also use the **Device name** field to rename the device. When done, tap **OK** for the setting to take effect.



## Set Up Your Favorite Device

Follow these steps to set up default devices in the **Bluetooth Devices** folder. Please note that the Get Connected! Wizard automatically assigns the favorite phone.

Complete these steps:

- Tap on **Tools** and select **My Favorites**.
- Tap on the tab for the type of device you would like to set a favorite for. If needed, use the arrow buttons to scroll and find the tab you need.



*Note: Tabs appears only for COM ports you have enabled. To enable a port, refer to the "Assign COM Ports" section earlier in this chapter.*

- To select a favorite device, select **Use the favorite selected above**. In the drop-down list, select your device. Tap **OK**.
- After setting a device as your favorite, its icon appears in the Bluetooth Devices folder with a heart next to it.

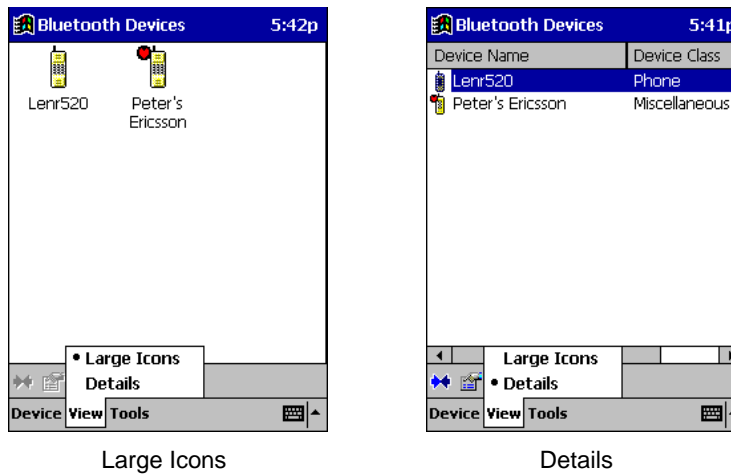
## Change Views

You can switch between the **Large Icons** or **Details** views for the **Bluetooth Devices** folder.

- In Bluetooth Devices, tap on **View**.



2. In the pop-up menu, choose between **Large Icons** or **Details**.



*Note: In Details view, you can see the Device Class and scroll right to see the current Bonded status.*

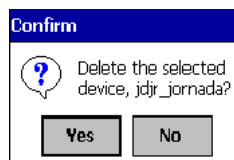
### **Delete a Device From the Folder**

If you no longer plan to connect with it, you can delete a device from the **Bluetooth Devices** folder.

1. If not open, launch the **Bluetooth Devices** folder.
2. Tap and hold your stylus on the device you wish to delete. In the pop-up menu, select **Delete**.



3. Alternatively, after selecting a device, tap on the **Delete** icon. Or tap on **Device** then select **Delete**.
4. A Confirm screen appears. Tap **Yes**.



### **Turn Radio Transmitter ON/OFF**

You may want to turn off the radio transmitter to save power or if you are entering an area with radio restrictions (e.g., an airplane).

1. The Bluetooth icon should appear in the task tray on the **Today** screen. Tap on the icon.

- 
2. In the pop-up menu, select **Turn Transmitter OFF**.

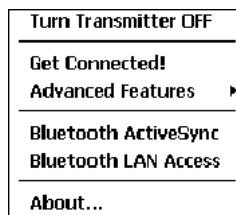


3. The Bluetooth Card radio transmitter shuts off. The Bluetooth icon in the task tray becomes gray, as well as relevant menu options (e.g., Get Connected!).
4. To turn the radio transmitter back on, tap on the gray **Bluetooth** icon. In the pop-up-menu, select **Turn Transmitter ON**.

## ***Bluetooth ActiveSync***

This section explains how to use the Bluetooth ActiveSync feature. It helps you quickly and easily ActiveSync to a notebook or desktop computer with ActiveSync v3.x installed.

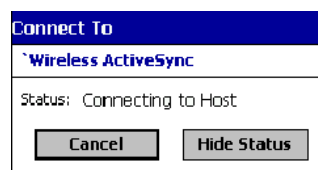
1. Tap on the **Bluetooth** icon. In the pop-up menu, select **Bluetooth ActiveSync**.



2. The next screens varies depending on if your Bluetooth Devices folder contains any computers, and if one is chosen as your favorite. Please refer to the appropriate scenario:

**SCENARIO #1:** Your Bluetooth Devices folder contains a favorite desktop computer.

- (a) When you tap **Bluetooth ActiveSync**, your mobile computer automatically tries to connect to your favorite computer.
- (b) The Connect To screen appears, reporting that it is trying to connect to Wireless ActiveSync.



- (c) After a successful connection is made, the status screen reports Connected. Now you are ready to synchronize files, if desired.

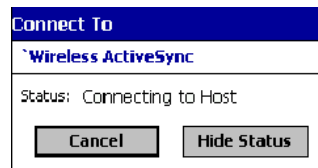
**SCENARIO #2:** Your Bluetooth Devices folder contains no favorite desktop computer.

- (a) When you tap on **Bluetooth ActiveSync**, a screen appears that allows you to choose which computer to connect to in your Bluetooth Devices folder. Choose a computer from the list and tap **Select**, or tap **Find** to search for another computer.



*Note: If the computer you want to connect to is not listed, tap **Find** to begin a search. Proceed as described in Scenario #3 on page 10-9.*

- (b) Your mobile computer attempts to connect to your selected computer.

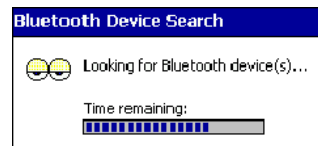


- (c) After a successful connection is made, the status screen reports Connected. Now you are ready to synchronize files, if desired.



**SCENARIO #3:** Your Bluetooth Devices folder contains no computers.

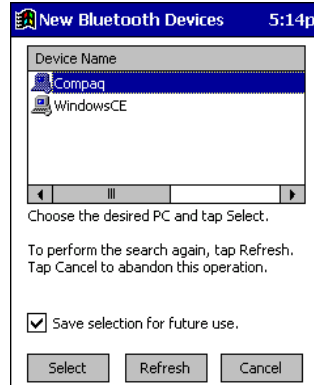
- (a) When you tap on **Bluetooth ActiveSync**, a Bluetooth Device Search automatically begins.



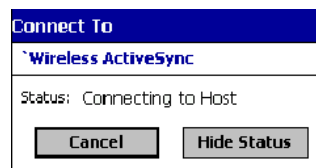
---

*Note: You can also start the device search by tapping Find in the Bluetooth Devices screen.*

- (b) After the search is complete, select the computer you wish to ActiveSync with and tap **Select**. If the computer is not listed, make sure the computer is discoverable and tap **Refresh** to search again.



- (c) After you tap **Select**, a service discovery phase begins.
- (d) The Connect To screen appears, reporting that it is trying to connect to Wireless ActiveSync.

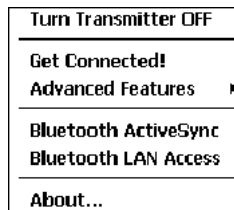


- (e) After a successful connection is made, the status screen reports Connected. Now you are ready to synchronize, if desired.

## ***Bluetooth LAN Access***

This section explains how to use the Bluetooth LAN Access feature to quickly and easily connect to a Bluetooth-enabled LAN AP.

1. Tap on the **Bluetooth** icon. In the pop-up menu, select **Bluetooth LAN Access**.



2. The next screens varies depending on if your Bluetooth Devices folder contains any APs, and if one is chosen as your favorite. Please refer to the appropriate scenario:

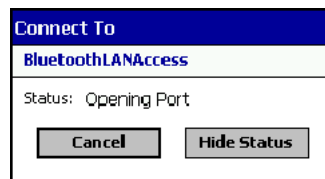
**SCENARIO #1:** Your Bluetooth Devices folder contains no favorite AP.

- (a) When you tap Bluetooth LAN Access, a screen appears that allows you to choose which AP to connect to in your Bluetooth Devices folder. Choose an AP from the list and tap **Select**.



*Note: If your AP is not listed, tap Find and proceed as described in Scenario #3.*

- (b) Your mobile computer tries to connect to the selected AP.



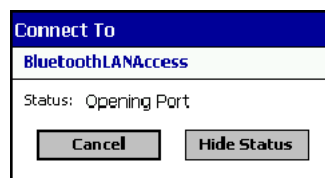
- (c) If your LAN requires a passkey, a screen appears asking for the passkey. Enter the passkey, then tap **OK**.  
(d) After a successful connection is made, the status screen reports Connected.



- (e) Now you are ready to access your LAN for Internet access, files, etc.

**SCENARIO #2:** Your Bluetooth Devices folder contains a favorite AP.

- (a) When you tap **Bluetooth LAN Access**, your mobile computer automatically tries to connect with your favorite AP.



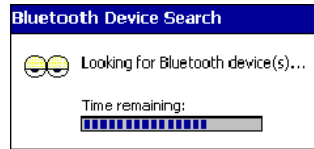
- (b) If your LAN requires a passkey, a screen appears, asking for the passkey. Enter the passkey, then tap **OK**.  
(c) After a successful connection is made, the status screen reports Connected.



(d) Now you are ready to access your LAN for Internet access, files, etc.

**SCENARIO #3:** Your Bluetooth Devices folder has no APs.

(a) When you tap **Bluetooth LAN Access**, the mobile computer automatically begins to search for new Bluetooth devices.



*Note: You can also start the device search by tapping Find in the Bluetooth Devices screen. See Scenario #2 on page 10-8.*

(b) After the search is complete, select the AP you wish to connect to. Tap **Select**. If the AP is not listed, tap **Refresh** to search again.



(c) After you tap **Select**, a service discovery phase begins.



(d) If the LAN requires a Passkey, a screen appears, asking for the Passkey. Enter the passkey, then tap **OK**.

(e) After a successful connection is made, the screen reports Connected.



(f) Now you are ready to access your LAN for Internet access, files, etc.

## **OBEX**

This section explains how to use the OBEX (object exchange) application to trade business cards, contacts or files with another Bluetooth device that supports OBEX.

Bluetooth OBEX application supports five operations:

- Exchange Business Cards
- Send a Contact
- Send a File

- Browse Remote Device
- Receive Contact or File
- Enable File Sharing

The first four operations - exchange business cards, send a contact, send a file, and browse remote device - are client-oriented. They involve initiating an object exchange.

The last two operations - receive contact or file and enable file sharing - are server-oriented. They involve accepting objects in an exchange initiated by another Bluetooth device.

## ***Exchange Business Cards***

1. Make sure both Bluetooth devices have a business card assigned to them.

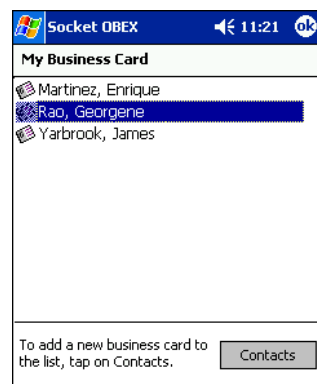
*Note: If each device does not have a business card assigned to it, you cannot exchange business cards.*

To assign a business card to your mobile computer, do the following:

- Tap on the **Bluetooth** icon. In the pop-up menu, tap **Advanced Features > My Bluetooth Device**.
- Tap on the **Object Sharing** tab. Under My business card, tap **Assign**



- In the next screen, select your business card and tap **OK**. If your business card is not listed, tap **Contacts** to create one.



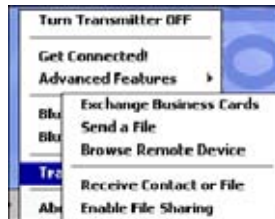
When you return to the Object Sharing screen, tap **OK**.

2. Make sure the other Bluetooth device is set up to receive a contact. The device must support the OBEX Object Push profile.

---

*Note: If the other device is also using the Bluetooth Connection Kit, you can set it up to receive a contact by tapping the **Bluetooth** icon. In the pop-up menu, tap **Transfer via Bluetooth > Receive Contact or File**.*

3. Now you are ready to exchange business cards. Tap on the **Bluetooth** icon. In the pop-up menu, tap **Transfer via Bluetooth > Exchange Business Cards**.



4. If your mobile computer has no devices in the Bluetooth Devices Folder, then it begins to search for Bluetooth devices nearby.
5. Select the Bluetooth device you wish to exchange business cards with. If the device is not listed, tap **Find**.



6. Your mobile computer begins to exchange business cards. After the exchange, the new business card should appear in your Contacts list.



## ***Send a Contact***

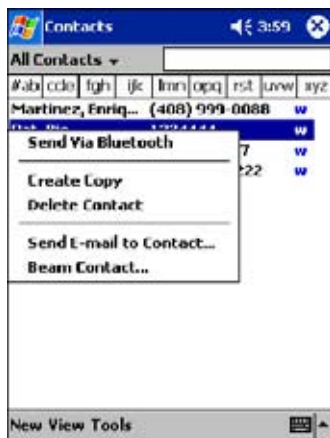
1. Make sure the other Bluetooth device is set up to receive a contact. It must support the OBEX Object Push server profile. Refer to the documentation that came with the device for instructions.

*Note: If the other device is also using the Bluetooth Connection Kit, you can set it up to receive a contact by tapping the **Bluetooth** icon. In the pop-up menu, tap **Transfer via Bluetooth > Receive Contact or File**.*

2. Now you are ready to send a contact. Go to your Contacts folder.



3. Tap and hold your stylus on the contact(s) you would like to send. In the pop-up menu, select **Send Via Bluetooth**.



4. If your mobile computer has no devices in the Bluetooth Devices Folder, then it begins to search for Bluetooth devices nearby.



5. Select the Bluetooth device you wish to send the contact(s) to. If the desired device is not listed, tap **Find**.



6. Your mobile computer processes and send the contact(s).



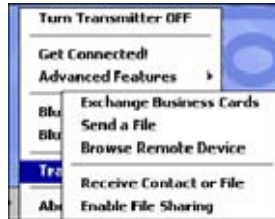
## ***Send a File***

1. Make sure the other Bluetooth device is set up to receive a file. It must support the OBEX Object Push server profile. Refer to the documentation that came with the device for instructions.

---

*Note: If the other device is also using the Bluetooth Connection Kit, you can set it up to receive a file by tapping the **Bluetooth** icon. In the pop-up menu, tap **Transfer via Bluetooth > Receive Contact or File**.*

2. Now you are ready to send a file. Tap on the **Bluetooth** icon. In the pop-up menu, tap **Transfer via Bluetooth > Send a File**.



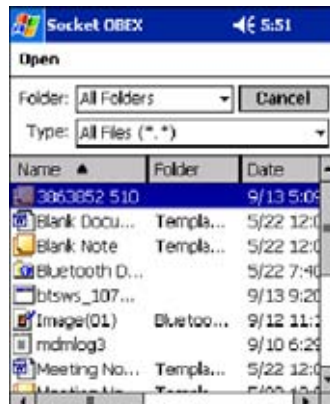
3. If your mobile computer has no devices in the Bluetooth Devices Folder, then it begins to search for Bluetooth devices nearby.



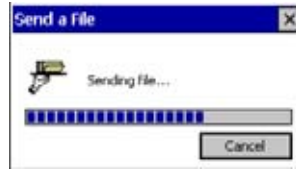
4. Select the Bluetooth device you wish to send a file. If the desired device is not listed, tap **Find**.



5. In the next screen, tap on the file you wish to send. You can use the **Folder** and **Type** drop-down menus to search for your file. Also, you can scroll horizontally to view the folder, date, size, type, and location of each file.



6. Your mobile computer sends the file.



## ***Browse Remote Device***

The Bluetooth File Explorer lets your mobile computer share files with another Bluetooth device. The other device must support the OBEX File Transfer server profile.

This section covers the following file transfer operations:

- Prepare for file transfer
- Send/receive file(s) or folder(s)
- Create a folder
- Delete file(s) or folder(s)
- Refresh remote view
- Connect/disconnect
- Exit the program

*Note: "Local device" refers to the mobile computer you are running the OBEX from. "Remote device" refers to the Bluetooth device you are trying to transfer files with.*

## ***Prepare for File Transfer***

1. Make sure the remote device has file sharing enabled. It must support the OBEX File Transfer server profile.

*Note: If the other device is also using the Bluetooth Connection Kit, you can enable file sharing by tapping the **Bluetooth** icon. In the pop-up menu, tap **Transfer via Bluetooth > Enable File Sharing**.*

2. Now you are ready to browse the remote device. Tap on the **Bluetooth** icon. In the pop-up menu, tap **Transfer via Bluetooth > Browse Remote Device**.



3. If your mobile computer has no devices in the Bluetooth Devices Folder that supports OBEX File Transfer, then it begins to search for Bluetooth devices nearby.



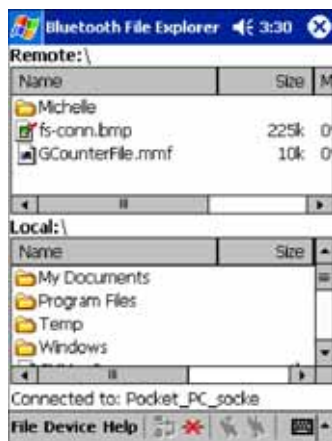
4. Select the Bluetooth device you wish to browse. If the desired device is not listed, tap **Find**.



5. Your mobile computer begins to establish a file sharing connection.



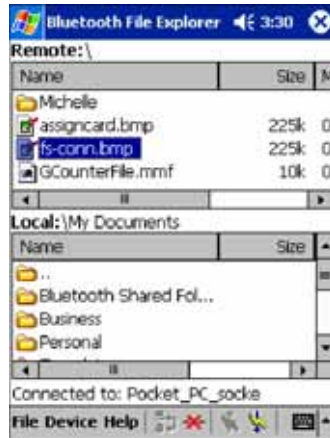
6. After the devices successfully connect, the Bluetooth File Explorer appears. Half of the screen shows contents of the remote device, while the other half shows contents of your device (the local device). The very bottom of the screen reports the connection status.



### Send/Receive File(s) or Folder(s)

- Single-tap items to select them for transfer.
- Double-tap on a folders to open it and see its contents.

1. Select the file(s) or folder(s) that you wish to transfer. You can select items from only one device per transfer session.



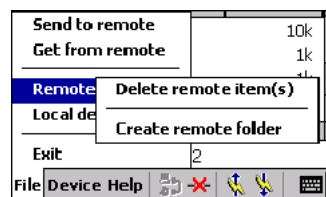
2. There are two different ways to initiate the transfer:
  - Tap on the **File** menu. Select **Send to remote** or **Get from remote**, as applicable. The inappropriate option should be gray.
  - Tap on the **Send to remote** icon or **Get from remote** icon, as applicable. The inappropriate icon should be gray.
3. A screen reports the status of the transfer.



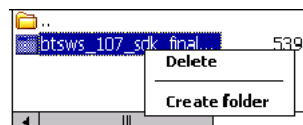
4. After the transfer, a copy of each selected item should appear in the other device.

### Create a Folder

1. Tap on the **File** menu. Select **Remote device** or **Local device**, wherever you want to create a folder, then tap **Create remote folder** or **Create local folder**, as applicable.



2. You can also tap and hold your stylus on an item in either the remote or local device that you wish to put in a new folder. In the pop-up menu, select **Create folder**.



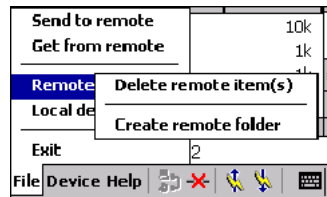
3. In the next screen, enter a name for your new folder. Tap **OK**.



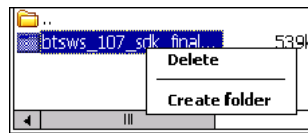
4. The new folder should be listed under the appropriate device.

### Delete File(s) or Folder(s)

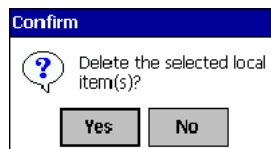
1. Select item(s) that you wish to delete. You can only delete item(s) from one device at a time.
2. Tap on the **File** menu. Select **Remote device** or **Local device**, wherever the item(s) are located, then tap **Delete remote item(s)** or **Delete local item(s)**, as applicable.



3. Tap and hold your stylus on an item in either the remote or local device that you wish to put in a new folder. In the pop-up menu, select **Delete folder**.



4. In the Confirm screen, tap **Yes**.



### Refresh Remote View

1. Tap on the **Device** menu. Select **Refresh remote view**.



2. Your local device begins to read the contents of the remote device.
3. After a few seconds, the contents view of the remote device is refreshed.

### Connect/Disconnect

To connect to the remote device, do the following:

1. Make sure the remote device has file sharing enabled.

---

2. Start the connection process by either of two methods:

- Tap on the Device menu. Select Connect.
- Tap on the Connect icon.

3. In the next screen, select the device you wish to connect to. Tap **Select**. Your mobile computer attempts to connect to the device selected.

To disconnect from the remote device, do the following:

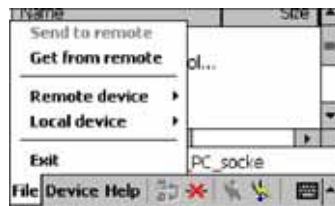
1. Start the disconnection process by either of two methods:

- Tap on the **Device** menu. Select **Disconnect**.
- Tap on the **Connect** icon.

2. Your mobile computer disconnects from the remote device. Afterwards, no contents are listed for the remote device.

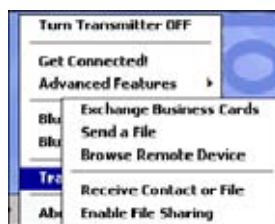
### Exit Bluetooth File Explorer

To exit the Bluetooth File Explorer, tap **File > Exit**.



### *Receive Contact or File*

1. Tap on the **Bluetooth** icon. In the pop-up menu, tap **Transfer via Bluetooth > Receive Contact or File**.



2. The Receive Contact or File status screen appears. Your mobile computer waits two minutes for the contact or file.



3. After successfully connecting to the remote device, the screen reports Connected then disappear. The new contact or file should now be on your device.

4. If two minutes passes before you receive the item, tap **Wait Again**.

5. After you receive the file or contact, the "Receive Contact or File" feature is automatically disabled.

---

## Enable File Sharing

1. Tap on the **Bluetooth** icon. In the pop-up menu, tap Transfer via **Bluetooth** > **Enable File Sharing**.
2. The Enable File Sharing status screen appears. Your mobile computer waits two minutes for the remote device to connect.



3. After successfully connecting to the remote device, the screen reports Connected.
4. If two minutes pass before you connect, tap **Wait Again**.
5. File sharing is enabled until you end it by tapping **Cancel**.

## Using the Dialer

This section explains how to assign a dialing prefix and use the Dialer to dial a number directly from your Contacts list. The Dialer makes it quick and easy to perform dial-up networking.

Note: The Dialer has been verified to work with Nokia and Ericsson phones and is known not to work with the Motorola 270c, NTT Docomo Paldio 633S or Sony au C413S phone. Results may vary with other phones that are not listed as being supported by the Bluetooth system.

### Assign a Dialing Prefix

If you have not already assigned a dialing prefix during the install process, you can do so by following these steps:

1. Go to **Start** > **Settings** > **System** tab. Tap on **Dialer**.
2. Select the appropriate Dialing Prefix, then tap **OK**.



### Using the Dialer

1. To use the dialer, the mobile computer must already be connected to the Bluetooth phone. You can use the Get Connected! Wizard to do this. Also, the Bluetooth phone must be selected as your favorite.
2. Go to **Start** > **Contacts**.



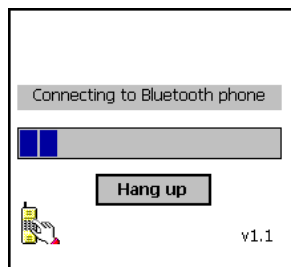
3. Tap and hold your stylus on the contact you wish to dial to. In the pop-up menu, select **Dial Contact**. Alternatively, you can tap on **Tools** and select **Dial Contact**.



4. If you have multiple phone numbers for a contact, a screen appears listing them, including any dialing prefix you may have assigned. Select the phone number you wish to dial.



5. Your mobile computer connects to your phone and begins dialing.



The Dialer can dial a phone number containing any of the following non-numeric characters:

\* # + . / ! @ - \ space A B C D T P W

The following string can also be included in a phone number: (,)

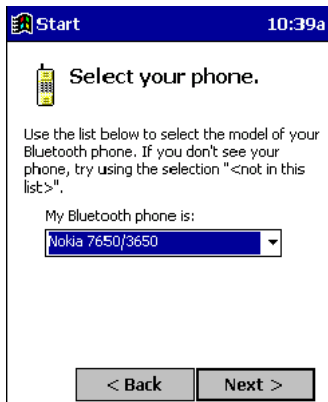
The Dialer cannot dial a phone number containing non-numeric characters other than those listed above. Hand Held Products recommends that you follow the standard Microsoft Outlook format for phone numbers.

## ***Get Connected Wizard***

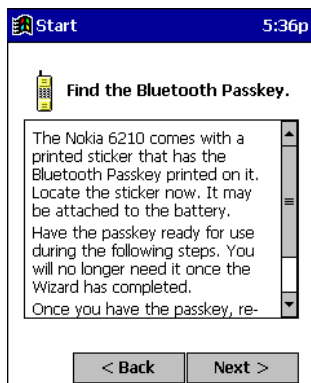
The Get Connected! Wizard guides you through a one-time setup process that prepares the mobile computer and phone for Bluetooth connections. The wizard varies depending on what phone you want to connect to.

**Ericcson, Nokia 6210, NTT DoCoMo, Sony Phones**

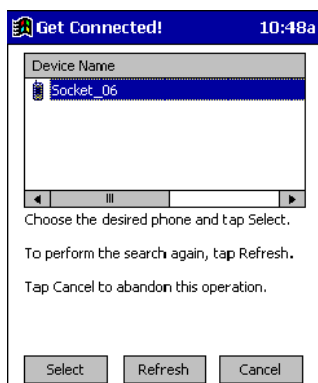
1. Tap on the **Bluetooth** task tray icon. In the pop-up menu, select **Get Connected!**
2. Follow the Bluetooth “Get Connected!” Wizard. In the second screen, use the drop-down list to select your Bluetooth phone. The wizard provides tailored instructions based on your selection.



3. Follow the next screen(s) to prepare your specific phone for Bluetooth connections. You may need to do 1, 2 or all of the following steps:
  - (a) Naming your Bluetooth phone
  - (b) Setting your Bluetooth phone in Discoverable mode
  - (c) Preparing your Bluetooth passkey.

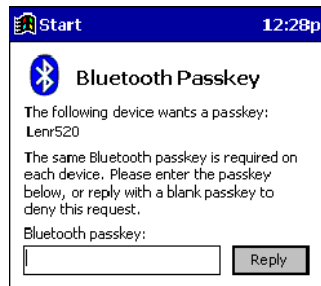


1. When the search is complete, a list of the discovered Bluetooth phones appears. Choose the phone you wish to connect to, and tap **Select**. A service discovery phase begins, about 5-10 seconds.



2. As prompted in the next screen, prepare your phone for bonding. For instructions on setting your phone to “Bondable” or “Pairable” mode, refer to your phone manual. Have your passkey ready, then tap **Next>**.

3. In the next screen, enter the passkey. Tap **Reply**.



4. The mobile phone may then either automatically accept the passkey or ask you to enter one. If prompted for a passkey, use the same one you entered on the mobile computer.

Ericsson T68/T68i only: When the phone asks you if you want to bond, select 2: Add to paired devices. Do not tap ACCEPT.

5. Tap **Finish**. After successfully connecting, the phone appears in the Bluetooth Devices folder. On the Today screen, the Bluetooth icon blinks. You do not need to run the Get Connected! Wizard again unless you plan to switch between different phones.

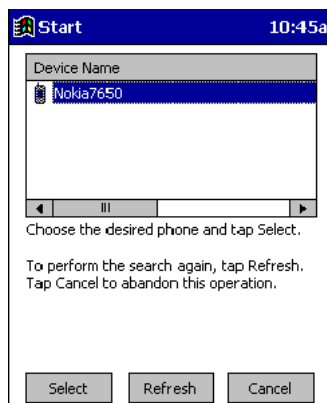
*Note: You may also switch between different phones by assigning a new "favorite phone" in the Bluetooth Devices folder.*

#### **Motorola Timeport 270C, Nokia 3650/6310/7650/8910/8910i**

1. Tap on the **Bluetooth** task tray icon. In the pop-up menu, select **Get Connected!**
2. Follow the Bluetooth "Get Connected!" Wizard. In the second screen, use the drop-down list to select your Bluetooth phone. The wizard provides tailored instructions for your phone.

*Note: The screens below are for the Nokia 7650.*

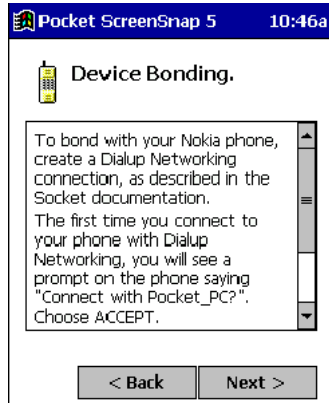
3. As directed on the next two screens, assign the phone a unique name, set the phone to Discoverable mode, and tap **Next**.
4. The mobile computer searches for the phone. When the search is over, a list of the discovered Bluetooth phones appears.



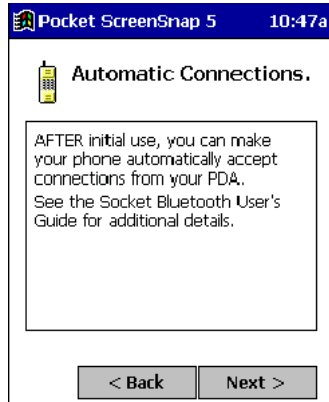
5. Choose the phone you want to connect to, and tap **Select**. A service discovery phase begins, about 5-10 seconds.
6. The next two screens describe procedures you complete outside of the wizard. Read through each screen but do not complete the described procedures until you exit the wizard.

---

**Bonding with your phone** - This must be completed to establish the Bluetooth connection and involves dial-up networking.



**Automatic Connections** - This procedure is optional but makes future Bluetooth connections more convenient.



7. Continue to the last screen of the wizard and tap **Finish**. Now proceed to STEP 6 to complete the bonding process and, if desired, set up automatic connections.

## *Dial Up to Your Network*

Complete the following steps to create a new Bluetooth internet connection. Before setting up dial-up networking, prepare yourself with dial-up information and other necessary settings from your office network or ISP.

*Note:* For more information about modem connections, see [Creating an External Modem Connection to an ISP on page 7-21](#).

1. Go to **Start > Settings > Connections** tab > **Connections**.
2. In the top field, select **Internet Settings** and tap **Modify**. Then, tap **New**.



3. **Enter a name for the connection.** Remember what you name the connection. In the future, you will need to select it to start the connection.  
For the modem, select **Bluetooth Phone**.  
For the Baud Rate, select **115200**.  
If you want to configure Port Settings, TCP/IP, or Name Server settings, navigate to the setting and tap **Advanced**.
4. Tap **Next**.
5. In the Phone number field, enter the dial-up number. Tap **Next**.
6. Uncheck **Wait for dial tone before dialing**. Tap **Finish**.

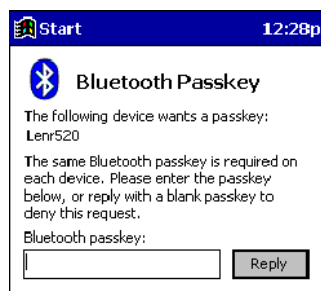


7. Now you are ready to start the connection. In the Connections screen, under Internet Settings, tap **Connect**. In Network Log On, verify the dialing settings. Tap **OK**.



**ONLY FOR MOTOROLA TIMEPORT 270C OR NOKIA 3650/6310/7650/8910/8910i:**

- h) After you tap **Connect** for the first time, the phone displays a message asking if you want to bond. On Motorola, enter GRANT; on Nokia, enter ACCEPT.
- i) Make up a 4-16 digit passkey, enter it on the phone, then enter it on the terminal.



*Note: The Bluetooth icon on the Today screen blinks to indicate a connection.*

- j) After successfully bonding, you can set up the phone to automatically connect to your Dolphin 7900 without a passkey.

**Automatic Connections for Motorola Timeport 270C:**

- On the phone, press MENU.
- Scroll to Settings, then press SELECT.
- Scroll to Connection, then press ON.

- 
- On Bluetooth Link, press SELECT.
  - Scroll to Devices, then press SELECT.
  - Choose your mobile computer, then press EDIT.
  - Scroll to Access:Ask, then press CHANGE.
  - Scroll to Automatic, then press SELECT. Press DONE.

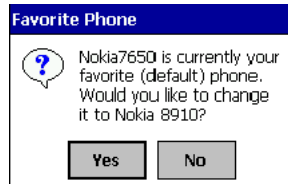
#### **Automatic Connections for Nokia 3650/7650:**

- On the phone, press MENU.
- Scroll to Connectivity, then press OPTIONS.
- The Open option should be highlighted. Press SELECT.
- The Bluetooth option should be highlighted. Press OPTIONS.
- The Open option should be highlighted. Press SELECT.
- Scroll to the right tab to access the Paired devices list. Highlight your mobile computer, then press OPTIONS.
- Scroll to Set as authorized, then press SELECT.
- In the confirmation screen, press YES.

#### **Automatic Connections for Nokia 6310/8910/8910i:**

- On the phone, press MENU.
- Scroll to 10 Bluetooth, then press SELECT.
- Scroll to 4 View Paired Devices, then press SELECT.
- Highlight the Dolphin 7900, then press OPTIONS.
- Scroll to 3 Request Connection Authorization, then press NO.

To use a different Bluetooth phone for dial-up networking, you can use the same connection setup, but you must make the new phone your favorite. Just run the Get Connected! Wizard again, select the new phone, and make it your new Favorite when prompted.



## Overview

Dolphin 7900 terminals can be configured with a Wireless Wide Area Network (WWAN) via an integrated Siemens® GSM/GPRS tri-band radio module.

<b>GSM</b>	GSM stands for Global System for Mobile communications. It is an open, non-proprietary wireless wide area networking system that is constantly evolving and growing. One of its great strengths is international roaming capability, which provides standardized dialing in more than 170 countries.
<b>GPRS</b>	GPRS stands for General Packet Radio Service. It is a non-voice value added service that allows packet switched data and information to be instantly sent and received across a network.

## Enabling the GSM/GPRS Radio Driver

When the mobile computer is first initialized, the radio driver for the GSM module is installed. Before using the radio, make sure that the GSM radio is enabled. For more information, see [Radio Manager](#) on page 4-6.

## Frequencies

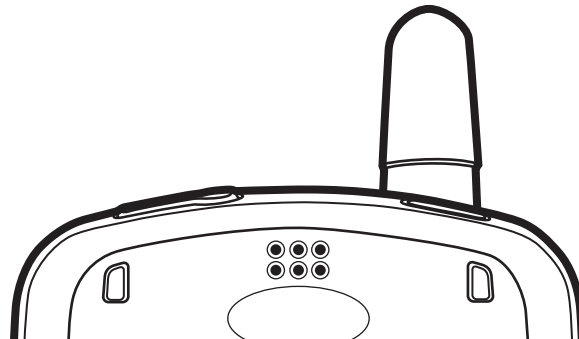
A Dolphin 7900 terminal can support the MC-45 or MC-46 frequency.

<b>MC-45</b>	Supports 900/1800/1900 MHz frequencies in Europe, Middle East, and Asia. Dolphin terminals with an MC-45 radio have two-way voice and data communication.
<b>MC-46</b>	Supports 850/1800/ 1900 MHz frequencies in US, Latin America, and Canada. Dolphin terminals with an MC-46 radio have two-way data communication only.

With the exception of two-way voice communication, which applies only to the MC-45 radio, the features described in this chapter apply to both the MC-45 and MC-46.

## Tri-Band Antenna

Dolphin 7900 terminals configured with an MC-45 or MC-46 radio feature a tri-band antenna..



## Requirements

Using GSM/GPRS on a Dolphin 7900 terminal requires:

- a network subscription to a GSM/GPRS network (you need to know what service providers are in your geographic area), and
- a SIM card installed on the terminal ((see [SIM Card](#) on page 11-2).

## Capabilities

Dolphin 7900 computers with integrated GSM/GPRS radios are optimized for the following two-way voice and data communications:

- GSM voice data ("dial-up")
- Short Message Service (SMS) text messages
- GPRS Class 10 - data transmissions average. 40-60 Kbps (the speed is dependent on the wireless network carrier)

---

## ***SIM Card***

SIM stands for Subscriber Information Module. A SIM card stores the subscriber's personal information, GSM/GPRS radio settings, security key, contacts, etc. SIM cards can be installed and removed from compatible mobile devices, enabling you to switch devices without losing your personal information. SIM cards are obtained and activated by the network provider that supports your GSM/GPRS network.

### ***SIM Card Requirements***

Before installing the SIM card:

- The SIM card **must** be activated by the service provider.
- The terminal **must** be powered down.

### ***To Install a SIM Card***

For detailed instructions, see [Opening the Access Door](#) on page 3-6.

If the SIM card is not installed properly, the [Dialler screen](#) (page 11-5) will indicate that no SIM card is installed.

*Note: If no SIM card is installed, you can still make emergency phone calls such as 9-1-1, for example.*



## Using uPhone

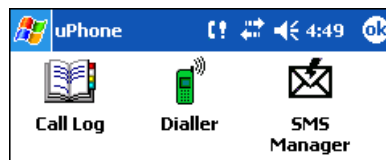
The uPhone Application Suite contains three programs that function together to provide a complete voice, data, and text messaging solution for a mobile device fitted with a radio modem:

- **Dialler** emulates a mobile phone and is used to make and receive telephone calls - [Using the Dialler](#), page 11-5.
- **Call Log** enables you to view and manipulate a list of the most recent calls - [Call Log](#), page 11-14.
- **SMS Manager** provides a text message handler similar to many email programs - [SMS Manager](#), page 11-16.

*Note: Because the uPhone application operates two-way voice communication for the GSM radio, you cannot use uPhone for anything but emergency phone calls with the MC-46 radio.*

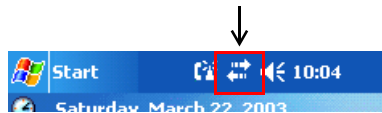
## Accessing uPhone

Go to **Start > Programs > uPhone**. Tap one of the icons to launch the program.


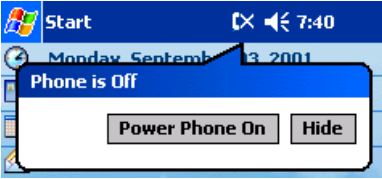

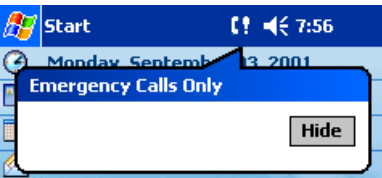

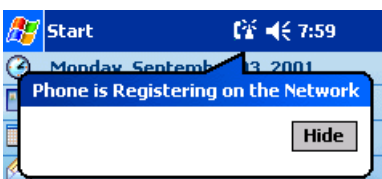


## Navigation Bar


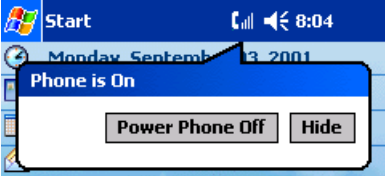




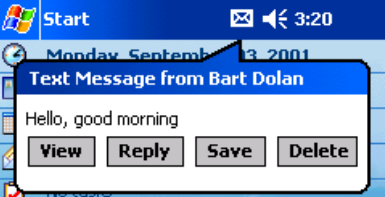

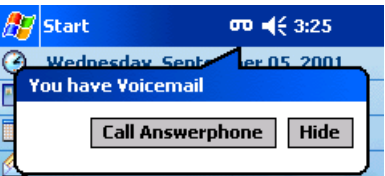

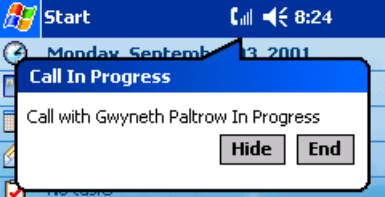
When the Dialler or SMS Manager applications are not open, the icons in the Navigation bar at the top of the screen indicates the status of the phone and messaging system. Each icon indicates a specific action and, when tapped, displays a bubble window that lets you know what is happening.




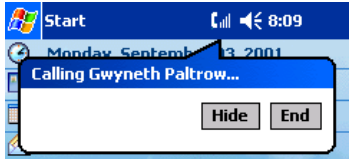
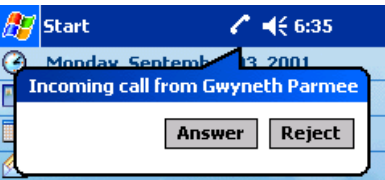
## Status Icons and Bubble Options

Icon	This icon means...	Tapping this icon displays this bubble:	Bubble Options
	The phone is off.		Tap <b>Power Phone On</b> to turn the phone on and close the bubble.  Tap <b>Hide</b> to leave the phone off and close the bubble.
	The phone can only make emergency calls. This usually means there is no SIM card installed or PIN number established.		Tap <b>Hide</b> to dismiss the bubble.  This icon will appear in the Navigation bar until a SIM card is installed or a PIN is entered.
	The phone is registering on the network.		Tap <b>Hide</b> to dismiss the bubble.  This is a temporary state. This icon appears only until the phone is registered on the network.

## Status Icons and Bubble Options

Icon	This icon means...	Tapping this icon displays this bubble:	Bubble Options
	The phone is on and registered. To the right of the phone is a bar that indicates signal strength.		Tap <b>Hide</b> to dismiss the bubble.  Tap <b>Power Phone Off</b> to turn off the phone. The icon in the Navigation bar changes to indicate the phone is now off.
	Indicates medium signal strength.		
	Indicates good signal strength.		
	Indicates full signal strength.		
	Incoming SMS message available.	This bubble appears automatically when a new SMS message is received. It contains the sender's information and the first line of the text message. 	Tap <b>View</b> to display the full message in SMS Manager. Tap <b>Reply</b> to switch to the SMS Manager Compose screen. The 'To:' field is auto-filled with the sender's address. Tap <b>Save</b> to put the message in the SMS Manager Inbox. Tap <b>Delete</b> to delete the message. Tapping each button closes the bubble.
	A new voicemail message is available.	This bubble appears automatically when a voicemail notification is received. 	Tap <b>Call Answerphone</b> to dial the Answerphone service and retrieve voicemail messages. To set up Answerphone, see, <a href="#">uPhone Configuration, General Tab</a> , page 11-21. Tap <b>Hide</b> to close the bubble.
	There is a call in progress to the name or number shown in the bubble.  (This icon is showing full signal strength; the icon will change according to the current signal strength.)		Tap <b>Hide</b> to close the bubble. Tap <b>End</b> to end the call.

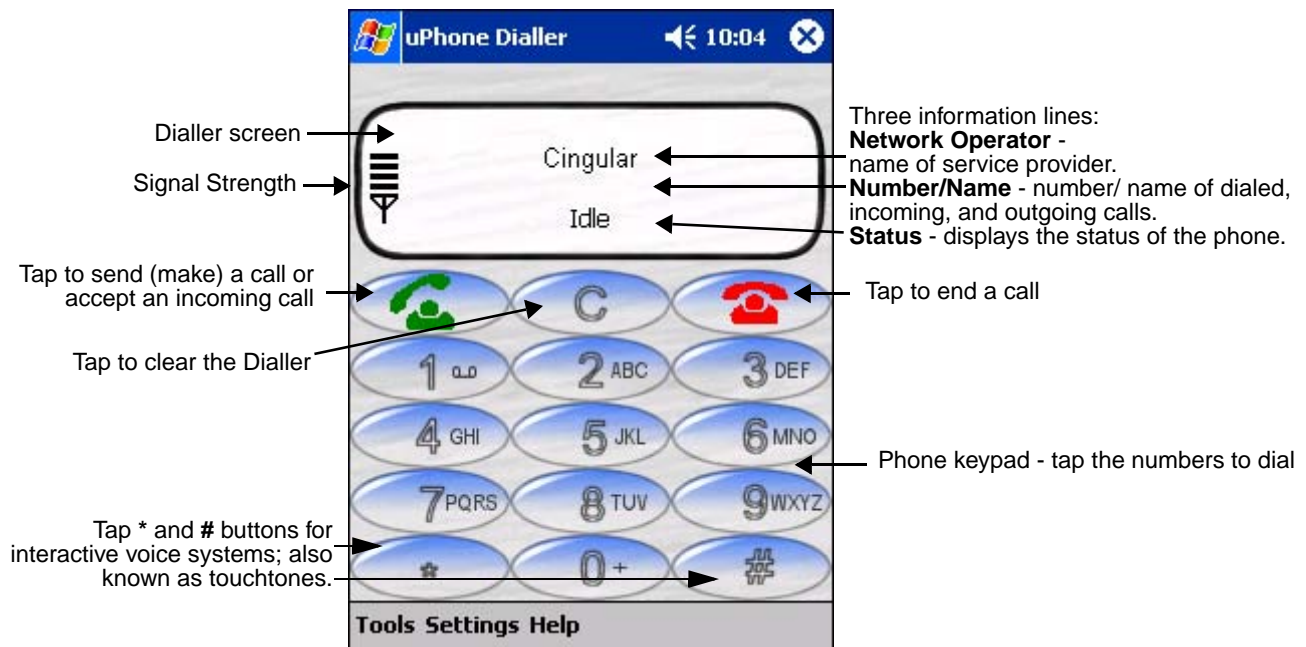
## Status Icons and Bubble Options

Icon	This icon means...	Tapping this icon displays this bubble:	Bubble Options
	<p>This icon appears when there is a call coming in or going out.</p> <p>A different bubble displays for each circumstance.</p> <p>If the incoming call is a conference call, a different bubble displays.</p>	<p>For a call going out</p> 	<p>Tap <b>Hide</b> to close the bubble.</p> <p>Tap <b>End</b> to end the call.</p>
		<p>When a call is coming in, this bubble displays while the ringtone sounds.</p> 	<p>If the caller is in the Phonebook, the name displays. If not in the Phonebook, the caller's number displays; if the number can't be read, "no number" displays.</p> <p>Tap <b>Answer</b> to answer the call; this places any current call on hold.</p> <p>Tap <b>Reject</b> to reject the call.</p>

## Using the Dialler

The Dialler is the program that manages your GSM/GPRS cell phone calls.

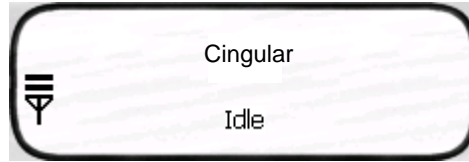
To launch the Dialler, tap **Start > Programs > uPhone > Dialler**. The program launches and the uPhone Dialler screen opens:




---

## Making a Call

### To Enter a Number




You can:

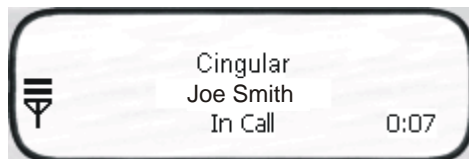
- Enter the numbers manually using the phone keypad on the Dialler screen, the SIP, or the Dolphin keyboard.  
As you enter each number, the digits appears on the Dialler screen in the Name/Number line. If a contact matching the entered number is found in the Phonebook, the name of the contact appears in the Name/Number line as you type; tapping on the name enters the rest of the number automatically.
- Use the Phonebook - [Phonebook](#), page 11-9 - to
  - Select an existing contact.  
Tap **Tools > Phonebook**, select a name or number in the list, and tap **OK** (you can also tap and hold on the entry). The number is automatically entered in the Dialler and appears on the screen.
  - Use speed dial.  
Tap and hold on the list to see a popup menu of speed dial numbers.
- Use the Call Log - [Call Log](#), page 11-14.  
When the phone is in Idle status, you can tap the **Send** button on the screen , press the OK key, or tap **Tools > Call Log** to see a list of the last 20 calls made or received. Tap and hold on an entry in the list and select **Dial**.  
Pressing the **Send** button or OK key performs this function only when the phone is in an Idle Status.

### To Send a Call To a Dialed Number

You can:

- Tap the **Send** button .
- Press the OK key on the keyboard.
- Press the appropriate key combination on the keyboard - [Keyboard Combinations for Calls](#), page 11-8.

When the call is connected, the three information lines display the following:



#### **Network Operator**

Displays the name of the service provider you are using.

#### **Name/Number**

Displays the name and/or number you called. If the number is from your Phonebook, that entry displays in the Number/Name (2nd) line.

#### **Status**

The status of the call.

**Idle** - means no calls are incoming or outgoing.

**In Call** - means a phone call is in progress.

**Incoming Call** - means that a call is coming in.

#### **0:00**

The numbers in the lower, right corner display the minutes:seconds that have elapsed.

---

## Receiving a Call

When the Dialler screen is open and an incoming call is detected, text is displayed on the Dialler screen. If the Dialler is not visible at the time of the incoming call, a Navigation Bar notification appears; see [Status Icons and Bubble Options](#) on page 11-3.


When a call is coming in, the ringtone sounds and the three information lines on the Dialler screen display the following:



<b>Network Operator</b>	Displays the name of the service provider you are using.
<b>Name/Number</b>	Displays the name and/or number calling in. If the number is in your Phonebook, that entry displays.
<b>Status</b>	Incoming Call.

## To Answer a Call

To answer a call, you can:

- Tap the **Send** button .
- Press the OK key on the keyboard.
- Press the appropriate key combination on the keyboard - [Keyboard Combinations for Calls](#), page 11-8.

## To Reject a Call

You can:

- Tap the **End** button .
- Press the appropriate key combination on the keyboard - [Keyboard Combinations for Calls](#), page 11-8.

## Call Waiting


If call waiting is enabled, a second incoming call can be received while a first call is in progress. The second incoming call uses a different ringtone but displays the same incoming call notification.

If a second call is coming in, answering it (see [To Answer a Call](#) on page 11-7) automatically places the first call on hold. You can also reject the second call; see [To Reject a Call](#) on page 11-7.

## Ending a Call

To end or reject a call, you can:

- Tap the **End** button .
- Press the appropriate key combination on the keyboard.

<b>Call Waiting</b>	If two calls are in progress, the above options end the active call and place the other on hold. To activate the call on hold, tap <b>Send</b>  or press OK or the key combination to send calls. To end the call on hold, tap <b>End</b>  or press the key combination to end calls on the keyboard.
---------------------	---

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**Conference Call** If a conference call is in progress, tap **End**  or the key combination to end calls.

### ***Keyboard Combinations for Calls***

Each keyboard option contains a Blue modifier key combination to send and end a call.

Keyboard	To Send, Press...	To End (reject), Press...
25-key keyboard	Blue + Left Arrow	Blue + Right Arrow
36-key keyboard	Blue + Left Arrow	Blue + Right Arrow

For more information about Dolphin 7900 keyboards, see [Using the Keyboards](#) on page 6-1.

### ***Call Waiting***

The uPhone Dialler supports call waiting functionality. This means that you can receive a second call while on a first call.

### ***Placing a Current Call on Hold***


When a second call is coming in, to place the current call on hold

- Tap the **Send** button .
- Press the OK key on the keyboard.
- Press the key combination for sending calls on the keyboard.

The Status line of the first call changes to **Call on Hold**.

Tapping **Send**  again restores the call on hold.

**Making a Second Call** To make a second call, place the current call on hold, then dial the second number. When there are two calls (one active and one held) the status line displays **In Call, Call on Hold**.


**Switching Between Calls** To switch between the active and held call, tap **Send** , press OK, or the appropriate key combination to send calls. The display is updated to show the active call details, and that the other call is on hold.

### ***Making Conference Calls***

In addition to supporting call waiting functionality, the uPhone Dialler enables you to join two calls into a conference call.

When two calls are in progress, tap the phone icon on the Navigation bar. This opens a bubble dialog that enables you to conference both calls into one.



Button	Tapping this button...
<b>Hold Active and Accept Held</b>	Swaps between the currently held and active calls. Tapping Send  , or pressing OK performs the same function without opening this bubble dialog.
<b>End Active and Accept Held</b>	Drops the current active call and connects the held call.
<b>Join Held in Conference Call</b>	Connects the held call and the currently active call in a three-way conference call. More than three parties can join a conference call via networking; each of the other parties can add another call to the conference, and so on.
<b>End Held</b>	Drops the held call, and continues with the currently active call.
<b>Hide</b>	Closes the bubble.

### *Touchtones*

To transmit touchtones for interactive voice systems while in a call, you can

- Tap the **0-9**, **\***, and **#** buttons on the uPhone Dialler screen.
- Press 0-9 keys on the Dolphin keyboard; use the uPhone Dialler screen buttons for **\*** and **#**.

### *Volume Control*

Use the Dolphin keyboard to manually adjust the speaker volume.



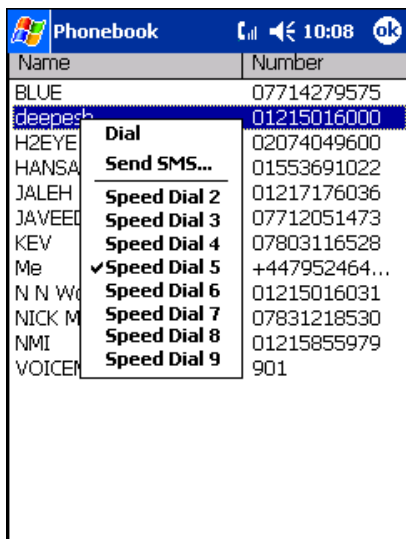
To raise the volume, press the Blue modifier key + Up arrow.

To lower the volume, press the Blue modifier key + Down arrow.

### *Phonebook*

The Phonebook contains the contacts from the SIM card and Pocket Contacts. If fixed dialing is set in the SIM, then only those numbers in the fixed dialing list are shown in the Phonebook, and only these numbers can be called from the Dialler.

You can access the Phonebook manually by opening the Dialler and going to **Tools > Phonebook**. When you tap and hold on an entry, a popup menu displays.



**Dial**

Opens the Dialler with the number entered ready for dialing.

**Send SMS**

Opens the SMS Manager in the Compose screen with the 'To:' field populated with the number.

**Speed Dial 2-9**

These eight slots are used to assign the Dialler Speed Dial keys. To assign a number to a Speed Dial slot, tap on an entry to assign the number.

Tapping and holding the associated button when in Dialler will automatically dial the assigned contact.

**Tools Menu**

The Tools menu provides the following options:



**Select this item**

**Phonebook**

**To...**

Display the Phonebook.

**Call Log**

Switch to the Call Log.

**SMS Manager**

Switch to the SMS Manager Inbox.

**Select Skin**

Allow selection of a new skin for the uPhone Dialler application.

**Configuration**

Open the uPhone Configuration control panel

**Ringtones**

Switch to the ring tone selection control panel.

**Exit**

Exit the uPhone Dialler.



---

## *Settings Menu*

The Settings menu provides the following options:



**Speakerphone** Toggles speakerphone mode on and off. When an audio plug (for a headset) is inserted into the audio jack (2.5mm), Speakerphone is inactive on this menu.

**Mic mute** Toggles microphone mute on and off (the other party cannot hear a private conversation when the microphone is muted). This mode is active only during a call and automatically cancelled at the end of a call.

A checkmark to the left of the entry indicates that the mode is active. When the entry is grayed-out, it is unavailable and cannot be selected.

---

## *Audio Modes*

The back panel of the Dolphin 7900 contains both a speaker and a microphone that you can use to send and receive audio signals over the GSM network. For details about the microphone and speaker on the back panel of the Dolphin 7900, see [Back Panel Features](#) on page 3-4.

There are three audio modes:

1. Handset
2. Headset
3. Speakerphone

### *Handset*

Handset mode is when you use the back panel of the terminal just as you would a cell phone, holding the speaker to your ear to receive audio information and the your mouth over the microphone to send audio information.

This is the default audio mode.

### *Headset*

Headset mode is when you plug a headset into the audio jack and speak into the microphone. You must use a 2.5mm plug; no other audio plug will fit.

### *Speakerphone*

Use the microphone on the front panel ([Microphone](#), page 3-3) as a speakerphone.

To switch the front panel to speakerphone, in the Dialler, tap **Settings > Speakerphone**. The audio levels adjust appropriately for speakerphone use. For more information, see [Settings Menu](#) on page 11-11.

---

## Ringtone Configuration

Different ringtones, with individual volume settings, can be set for the following:

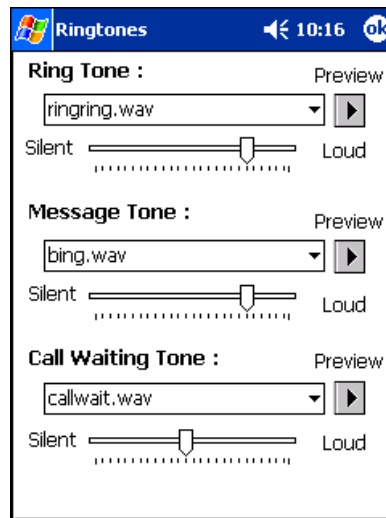
<b>Ring Tone</b>	Sounds on an incoming call.
<b>Message Tone</b>	Sounds on an incoming SMS or Voicemail notification.
<b>Call Waiting Tone</b>	Sounds to indicate an incoming call while you are already on a voice call.

## Accessing Ringtone Configuration

You can access Ringtones two ways:

1. Go to **Start > Settings > Personal tab > Ringtones** icon OR
2. Open the Dialler (tap **Start > Programs > uPhone > Dialler**) and go to **Tools > Ringtones**.

The Ringtones screen opens displaying the current settings.



Select the desired ringtone for each type of tone in the drop-down lists. Tapping **OK** saves any changes. Opening another screen without tapping **OK** discards any changes.

## WAV Files

You can customize your ringtones with \*.wav files installed on your terminal. To appear here, \*.wav files must be stored in the **Programs Files > uPhone > Ring Tones** folder.

## Previewing Tones

You can preview each tone by selecting the \*.wav file in the drop-down list and tapping the **Preview** button. Use the slider to set the volume for each tone.

While the tone is playing, the Preview button changes to a **Stop** button; tap it to stop the preview.

---

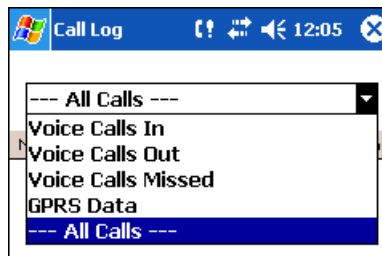
## Call Log

The Call Log maintains a list of the last 20 calls made or received in each of the following categories:

- Voice Calls In
- Voice Calls Out
- Voice Calls Missed
- GPRS Data

Voice Call In is the default display whenever the Call Log is opened.

### Call Log Options



Select the option you want to view. To see everything, select **All Calls**.

### Opening the Call Log

You can access the Call Log two ways:

1. Go to **Start > Programs > uPhone > Call Log** OR
2. Open the Dialler (go to **Tools > Call Log**).

The Call Log opens displaying the last few Voice Calls In; the most recent call always appears at the top.

A screenshot of the Call Log application showing a list of 'Voice Calls In'. The title bar shows 'Call Log' and the time '2:35'. The dropdown menu is set to 'Voice Calls In'. Below the menu is a table with columns for Name, Time, and Duration. The table contains four rows of call data. At the bottom, there is a 'Tools' button.

Name	Time	Duration
07736958075	02:32:25 03/09/2001	00:00:30
07736958075	02:22:44 03/09/2001	00:00:12
07736958075	02:06:26 03/09/2001	00:00:30
07736958075	02:00:49 03/09/2001	00:00:06

#### This column

##### Name

#### Displays the ...

The phone number or the name if the call was from or to a matching entry in the Phonebook.

##### Time

Time and date the call started. This is the local time and date.

##### Duration

Duration of the call (hours:minutes:seconds). The clock starts when the call connects, not when dialed.

---

## *Tools Menu*



The Tools menu in the Call Log provides the following options:

**Select this menu option To...**

**Clear** Delete the entire Call Log.

**Exit** Close the Call Log.

---

## SMS Manager

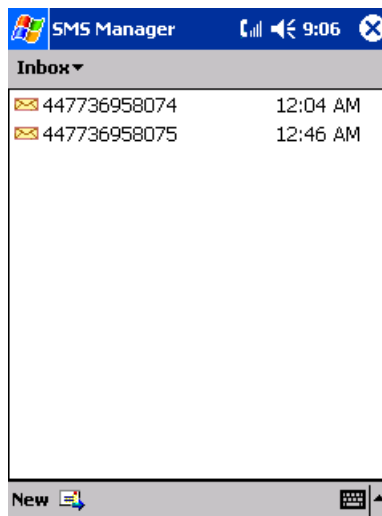
Abbreviated for Short Message Service, SMS enables the transmission of short messages (140-160 characters) to and from a cell phone. SMS messages travel over the system's control channel, which is separate from the voice channel.

The SMS Manager on the Dolphin 7900 supports creation, sending, receiving, and storing of SMS text messages. Text messages sent or received can be up to 160 characters long.

### Opening the SMS Manager

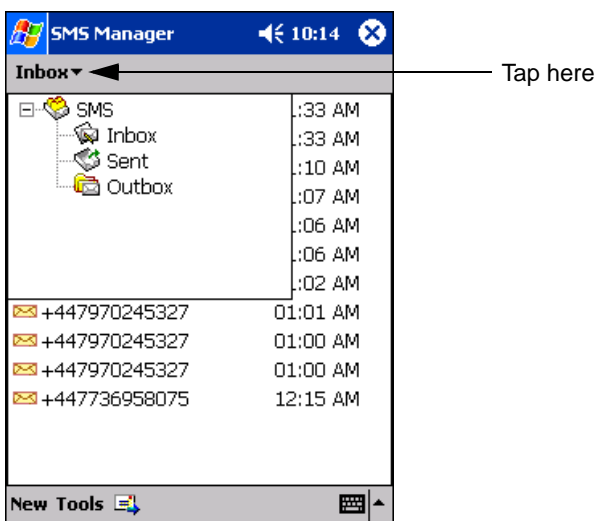
You can access the SMS Manager two ways:

1. Go to **Start > Programs > uPhone > SMS Manager**, OR
2. Open the Dialler (**Start > Programs > uPhone > Dialler**) and go to **Tools > SMS Manager**. The SMS Manager opens to the Inbox, which displays a list of your most recent text messages.



### Folders

There are three folders: Inbox, Sent, and Outbox. Tap the **Inbox** folder to see all three folders. The name of the folder appears in the gray bar just under the title bar.



*Note: Click the SMS box to expand and collapse the folders.*

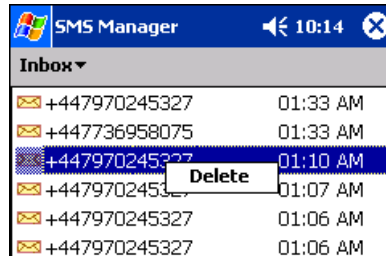
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## Inbox

The Inbox folder displays received text messages. Received messages have an envelope icon to the left. The Inbox folder also receives error messages from text messages that could not transmit successfully.

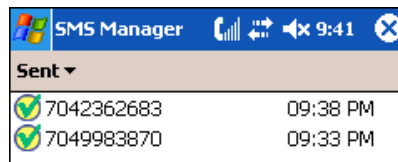
When the Inbox folder is selected, received messages appear in the list.

To	Do this...
Open a message	Tap on the message and the content of the message appears.
Delete a message	Tap and hold on the message. A popup menu appears that enables you to delete the message. Tap <b>Delete</b> .



## Sent Folder

The Sent folder displays sent messages.



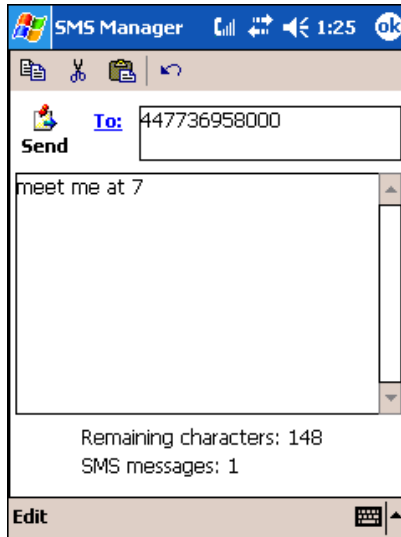
## Outbox Folder

The Outbox folder displays text messages waiting to be sent.

### ***Sending an SMS Message***

1. In the task tray at the bottom of the screen, tap **New**. The new message screen opens with the cursor active in the text area.
2. Tap inside the **To:** field. To add the number, you can type it in or tap **To:** to select an entry from your Phonebook.
  - You must type a number that is in the appropriate international ISDN format for the country you are dialing. However, you can dial a local number without the country code.
  - Destination numbers *can* start with a "+" sign.

3. Tap inside the text area. To write a message, you can use the SIP or the terminal keyboard.



The **Remaining characters** field displays how many characters you can type in a message. Because 160 is the maximum number of characters per message, the number portion of the field counts backwards from 160 as you type.

4. When finished typing, tap the **Send** icon to transmit the message **Send**.  
*If you tap **OK** before tapping **Send**, the program requests confirmation before discarding the message.*
5. The **Sending message** box appears over the message.



6. When the message has been sent, the **Message sent** box appears.





### Icons at the Top of the Message Screen

Tap this icon	To...
At the top of the window:	
	Copy selected text.
	Cut selected text.
	Paste text.
	Undo the previous action.



---

## Icons at the Top of the Message Screen

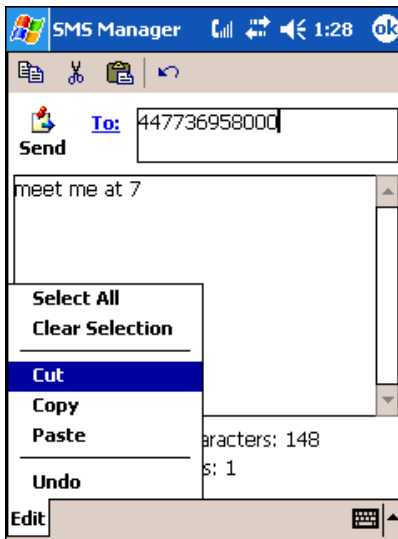
	This icon appears only in a message that has been sent. Tapping this button will re-send the message.
In the task tray at the bottom of the window:	
	Send all messages in the Outbox.

## Edit Menu

The Edit menu in the command bar provides the same options as the icons at the top of the screen, with the following additional options:

**Select All**                      Selects all text in the active message section.

**Clear Selection**                De-selects all text in the active message section.



## Online Help

Tapping **Help** > **About** provides information about the uPhone applications.

---

## ***uPhone Configuration***

uPhone Settings enable you to establish the normal operating parameters for uPhone applications.

### ***Accessing***

You can access uPhone Settings two ways:

1. Go to **Start > Settings > System tab > uPhone** icon.
2. In the Dialler application, selecting **Tools > Configuration**.
3. The configuration utility opens displaying the **General Tab** (page 11-21).

### ***Requirements***

Because you will be adjusting network settings, the GSM radio **must** be enabled, and a SIM must be installed for it to open correctly. If not, you will receive a notification message when you try to open the control panel.

If the radio is enabled and a SIM installed, the following message displays while the system accesses the network:

“Settings on the Network are being accessed. Please wait...”

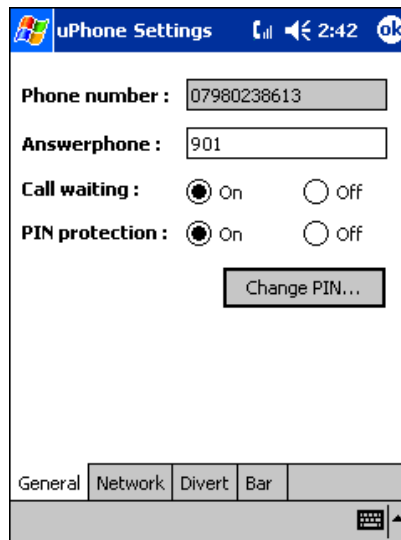
If there is no response from the network within 60 seconds, this message times-out and the control panel closes. Otherwise, the uPhone Settings screen displays; the General tab appears first by default.

### ***Tab Windows***

uPhone Settings consists of five tabs: General, Network, Divert, Bar, Messaging, and Other.

Tapping **OK** accepts any changes and exits the uPhone Settings.

## General Tab



Field	Description
<b>Phone Number</b>	This is the phone number stored on the SIM. It is displayed here for information only.
<b>Answerphone</b>	This is the number to dial to retrieve voicemail messages. To enter a new number, tap on this field and enter the digits.
<b>Call waiting</b>	Select <b>On</b> or <b>Off</b> to enable or disable call waiting functionality. Call waiting must be set to On for conference calls.
<b>PIN protection</b>	Select <b>On</b> or <b>Off</b> to enable or disable PIN protection. If enabled, a PIN number is requested when the phone is switched on.
<b>Change PIN</b>	This button is active only if PIN protection is set to On. Otherwise, the button is grayed-out. If you tap <b>Change PIN</b> , a dialog box appears enabling you to change the PIN.



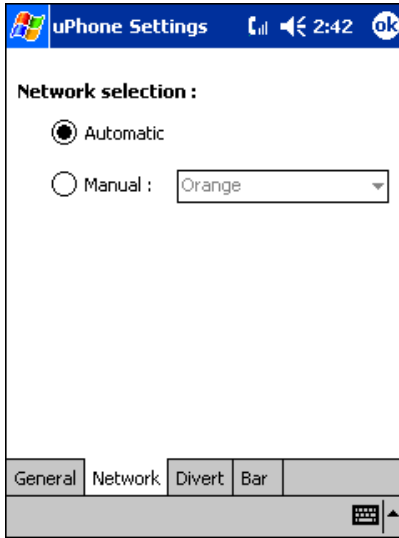
In the **Old PIN** field, enter the current PIN, then enter the new PIN in the **New PIN** and **Confirm PIN** fields. Tap **OK** to save the change. If you do not tap **OK**, the old PIN remains in effect.

While typing, the numbers appear as asterisks to protect the number from observation by third parties.

---

## Network Tab

The Network tab provides the ability to choose between **Automatic** and **Manual** network selection.

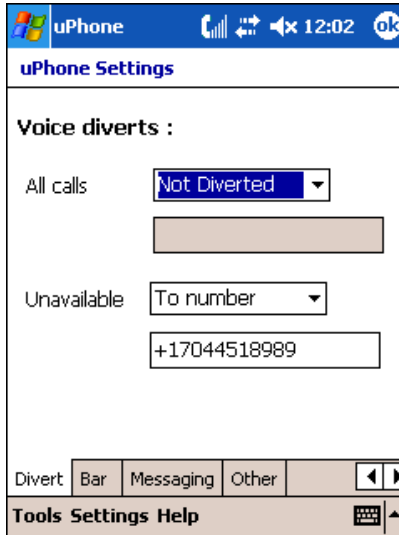


If you choose **Manual** network selection, the drop-down list of available networks activates. Choose a network from this list and tap **OK**. A wait icon appears while the system accesses the selected network.

---

## Divert Tab

The divert tab enables you to select divert options for incoming calls when you are unavailable to answer; e.g., when the phone is off, you are out of network coverage, busy, or not able to answer.



Select an option from the **All Calls** drop-down list to divert all incoming calls automatically.

Select an option from the **Unavailable** drop-down list to divert incoming calls when you are unavailable.

The options in both lists are as follows:

**Not Diverted**

Select this option to not divert calls. This is the default setting.

**Answerphone**

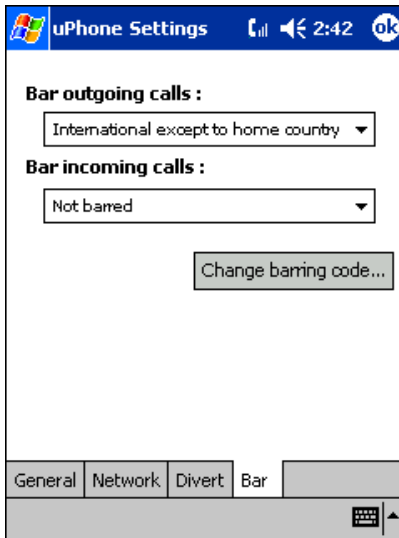
Select this option to divert calls to voicemail.

**To number**

Select this option to forward incoming calls to another number. Enter that number in the field below the drop-down list.

## Bar Tab

The Bar tab sets enables you to block both incoming and outgoing calls.



### Bar outgoing calls

Select one of the following options from the drop-down list:

- |   |  |
|---|--|
| <b>Not barred</b>                           | No restrictions on outgoing calls.   |
| <b>International calls</b>                  | Bar international calls.   |
| <b>International except to home country</b> | Only international calls to the home country designated on the SIM card can be made. |
| <b>All outgoing calls</b>                   | Bar all outgoing calls.  |

### Bar incoming calls

Select one of the following options from the drop-down list:

- |                                    |  |
|------------------------------------|--|
| <b>Not barred</b>                  | No restrictions on incoming calls.                                 |
| <b>Incoming calls when roaming</b> | Bar incoming calls when the network coverage is in roaming status. |
| <b>All incoming calls</b>          | Bar all incoming calls.  |

### Change barring code

Tap this button to change the barring code. A dialog box appears that enables you to change the barring code.

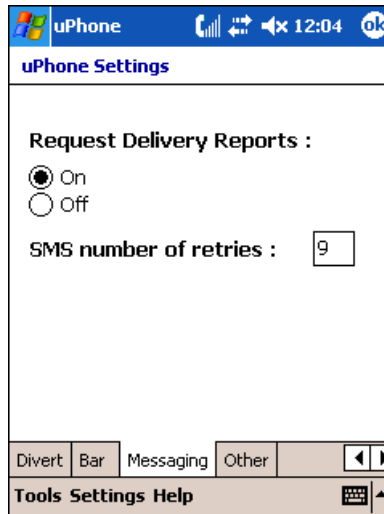


In the **Old code** field, enter the current code, and enter the new code in the **New code** and the **Confirm code** fields. Tap **OK** to save the change. While typing, the numbers appear as asterisks to protect the number from observation by third parties. To save the barring options, tap **OK**. The system displays a dialog requesting the barring password before sending the updated settings to the network. Type in the password and tap **OK**.

---

## Messaging Tab

The Messaging tab enables you to adjust the default SMS settings.



**Request Delivery Reports** By default, the SMS manager receives a confirmation report that each SMS message has been sent. For details, see [Sent Folder](#) on page 11-17.

These confirmation reports can take up valuable space and memory. Therefore, you can cancel these reports on this tab by selecting **Off** and tapping **OK**.

**SMS number of retries** This setting enables you to control the number of times the system will try to send an SMS message until the message is sent. Nine is the default number. To change the default, enter the number in the field and tap **OK**.

## Other Tab

The Other tab contains settings that apply only to an MC-46 GSM radio.

---

## GPRS Settings

After subscribing to a GPRS network and installing your SIM card, you can load the parameters of your GPRS subscription into the terminal. However, some subscriptions load automatically when you install your SIM card. If the GPRS settings do not load automatically, you must enter them manually.

Because GSM/GPRS technology uses a network connection, you need to configure those settings in the Connection Manager (see [Connections Tab](#) on page 7-19). uPhone does include a pre-configured GPRS connection for Internet settings, but you can also configure GPRS settings for browsing the web via a VPN or Proxy Server.

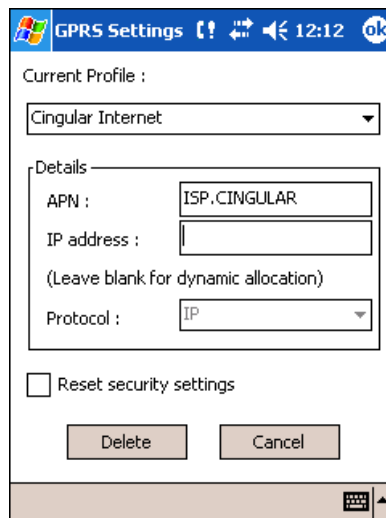
### Requirements

You **must** select or create GPRS settings prior to making a GPRS call for the first time. Make sure that you are not using ActiveSync when configuring the connection settings.

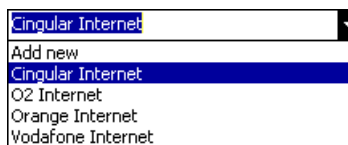
To establish a GPRS connection, you need to use the information from your network service provider. Given that there can be so many different configurations, such as VPN or Proxy Server connections, see [Connections Tab](#) on page 7-19 for instruction about how to set up each kind of connection.

### To Select the Pre-Configured GPRS Settings

1. Go to **Start > System > Connections tab > uPhone GPRS**. The GPRS Settings screen appears displaying the default GPRS settings.



The **Current Profile** drop-down list contains a number of pre-configured connection profiles.



2. If the profile associated with your account appears in the Current Profile list, select it. If your account profile does not appear in the list, you need to create one. For details, see [To Add a GPRS Setting](#) on page 11-27.
3. In the Details section,
  - Type in the **APN** number and the **IP address**
  - Select the **Protocol**
4. Tap **OK** to save.

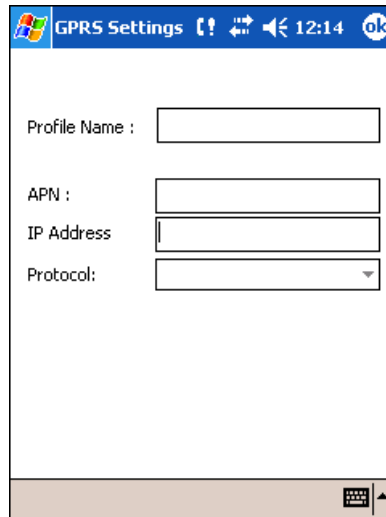
*Note:* Select **Reset security settings** to reset the username and password for your profile; see [To Add a GPRS Setting](#) on page 11-27.



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## To Add a GPRS Setting

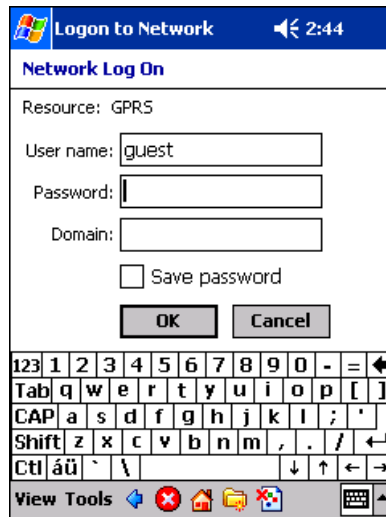
1. On the GPRS Settings screen, in the Current Profile drop-down list, select **Add new**.



2. Type in the **Profile Name, APN, IP Address**, and select the **Protocol**.
3. Tap **OK**. You return to the settings screen. The Profile Name you selected now appears in the Current Profiles list.

## GPRS Connection

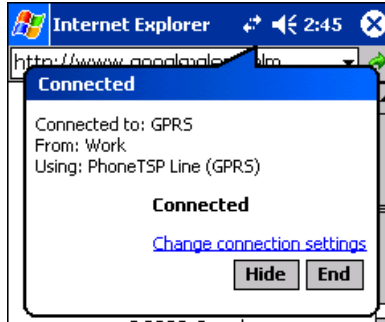
When a GPRS connection is required - e.g., by navigating to a web site - a Network Log On screen is automatically displayed.



Enter the **Password** and **Domain**, then tap **OK** to connect.

---

You have the option of disconnecting by tapping on the GPRS connection icon in the navigation bar and tapping **End**.



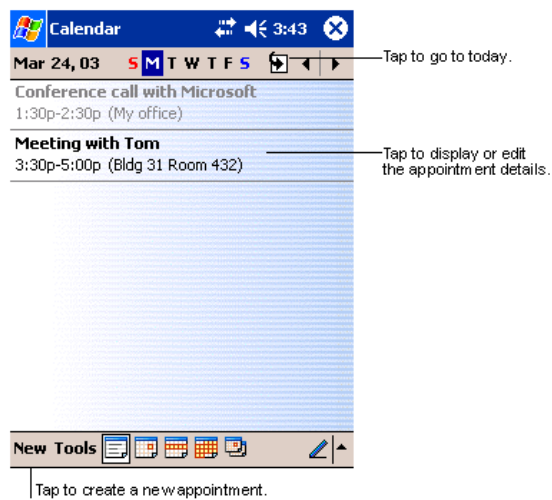
Dolphin 7900 terminals ship with the following Microsoft applications installed:

- [Calendar](#) (page 12-1)
- [Contacts](#) (page 12-3)
- [Tasks](#) (page 12-6)
- [Notes](#) (page 12-7)
- [Messaging](#) (page 12-8)
- [Pocket Internet Explorer](#) (page 12-11)
- [Pocket Word](#) (page 12-14)
- [Pocket Excel](#) (page 12-16)
- [Windows Media Player for Pocket PC](#) (page 12-18)
- [MSN Messenger](#) (page 12-19)
- [Pictures](#) (page 12-20)

*Note: Microsoft® Money, Microsoft® Reader are NOT installed on the Dolphin 7900 when shipped but may be installed from the Microsoft Companion CD.*

## Calendar

Use Calendar to schedule appointments, including meetings and other events. You can check your appointments in one of several views (Agenda, Day, Week, Month, and Year) and easily switch views by using the **View** menu.

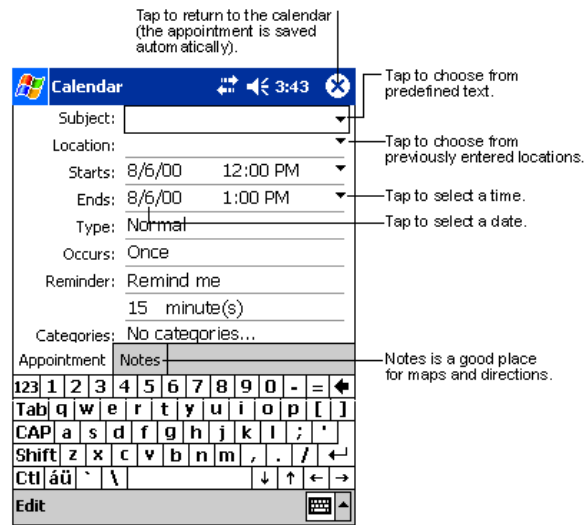


*Note: You can customize the Calendar display, such as changing the first day of the week, by tapping the **Tools** menu.*

### Creating an Appointment

1. If you are in Day or Week view, tap the desired date and time for the appointment.
2. Tap **New**.

3. Using the input panel, enter a description and a location. Tap first to select the field.

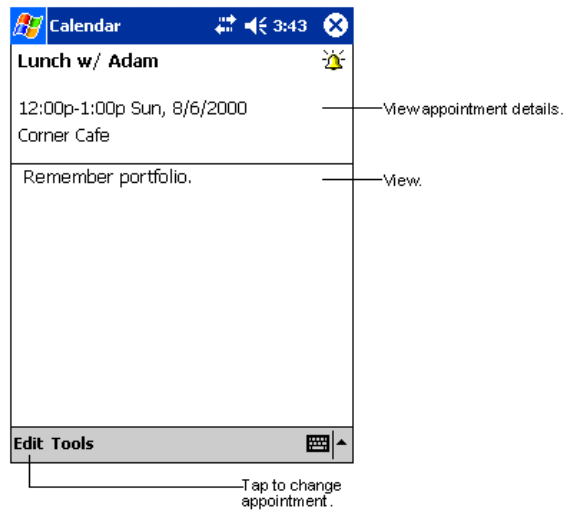


4. If needed, tap the date and time to change them.
5. Enter other desired information. To see all available fields, hide the input panel.
6. To add notes, tap the **Notes** tab. You can enter text, draw, or create a recording. For more information on creating notes, refer to [Notes](#) on page 12-7.
7. When finished, tap **OK** to return to the calendar.

*Note: If you select **Remind me** in an appointment, you will be reminded according to the options set in **Start > Settings > Personal tab > Sounds & Reminders**.*

### Using the Summary Screen

When you tap an appointment in Calendar, a summary screen displays the details of the appointment.



---

## Creating Meeting Requests

You can use Calendar to set up meetings with users of Outlook or Pocket Outlook. The meeting request is created automatically and sent either when you synchronize Inbox or when you connect to your e-mail server. Indicate how you want meeting requests sent by tapping **Tools** and then **Options**. If you send and receive e-mail messages through ActiveSync, select **ActiveSync**.

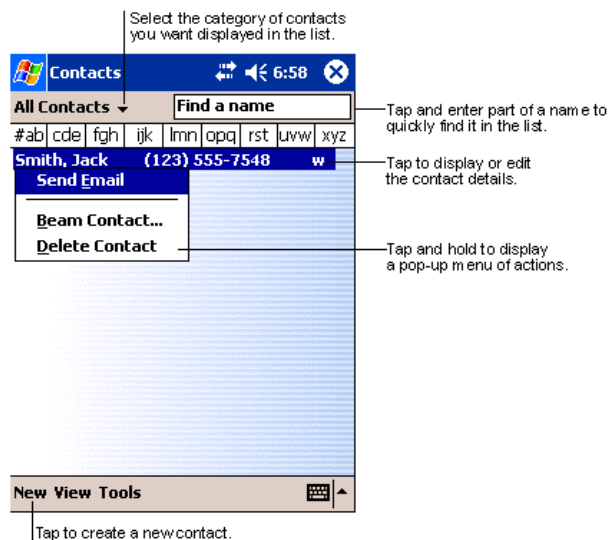
## Scheduling a Meeting

1. Create an appointment.
2. In the appointment details, hide the input panel, and then tap **Attendees**.
3. From the list of e-mail addresses you've entered in Contacts, select the meeting attendees. The meeting notice is created automatically and placed in the Outbox folder.

For more information on sending and receiving meeting requests, see Calendar Help and Inbox Help.

## Contacts

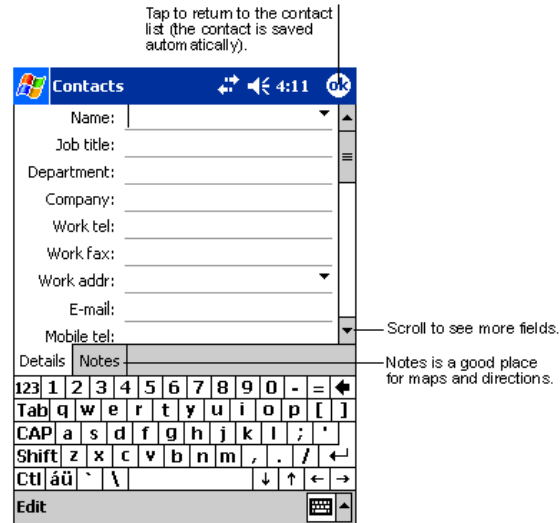
Contacts maintains the contact information - phone numbers, e-mails, addresses, etc. - you need on your terminal.



Note: To change the way information is displayed in the list, tap **Tools > Options**.

## Creating a Contact

1. On the Contacts screen, tap **New**.



2. Using the SIP or Dolphin keyboard, enter the contact's information. Scroll down to see all available fields.
3. To assign the contact to a category, scroll to and tap **Categories**, then select a category from the list. (In the contact list, you can display contacts by category.)
4. To add notes about this contact, tap the **Notes** tab. For more information on creating notes, refer to [Notes](#) on page 12-7.
5. When finished, tap **OK** to return to the contact list.

## Searching for Contacts

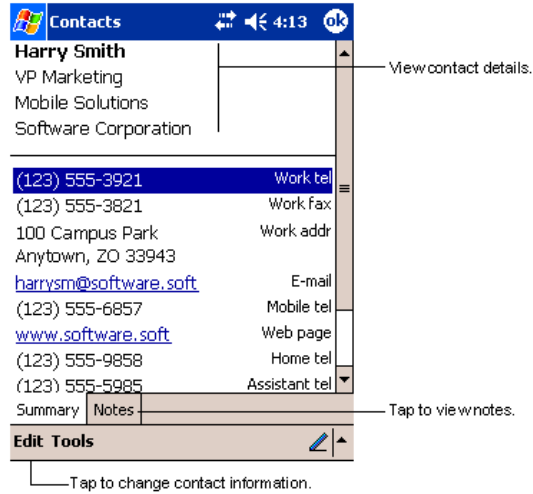
There are four ways to find a contact:

- In the contact list, enter a contact name in the box under the navigation bar. To show all contacts again, clear text from the box or tap the button to the right of the box.
- In the contact list, tap the category list (labeled **All Contacts** by default) and select the type of contact that you want displayed. To show all contacts again, select **All Contacts**. To view a contact not assigned to a category, select **None**.
- To view the names of companies your contacts work for, in the contact list, tap **View > By Company**. The number of contacts that work for that company are displayed to the right of the company name.
- Tap **Start > Find**, enter the contact name, select **Contacts** for the type, and then tap **Go**.

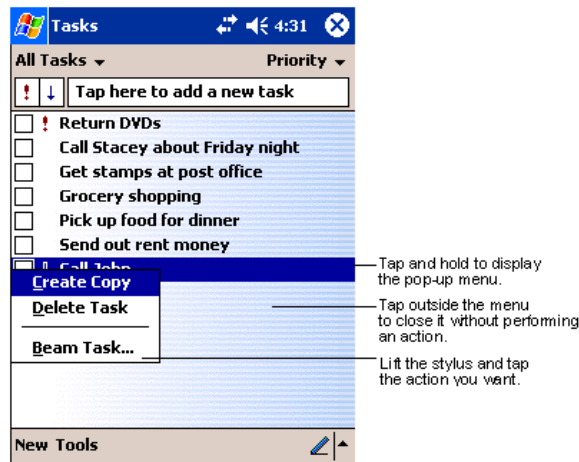
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## Using the Summary Screen

When you tap a contact in the contact list, a summary screen displays their information.



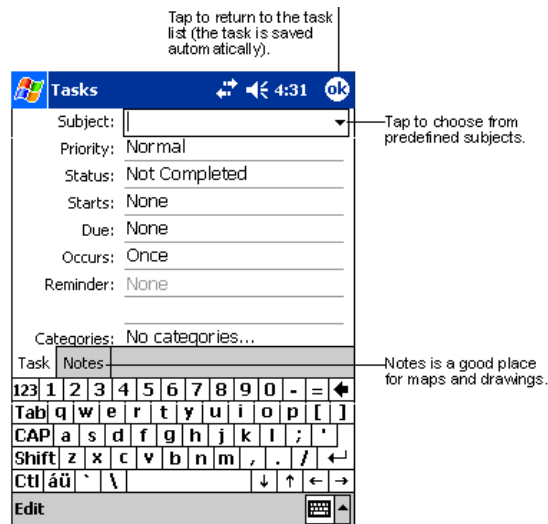
## Tasks



Note: To change the way information is displayed in the list, tap **Tools** > **Options**.

### Creating a Task

1. Tap **New**.



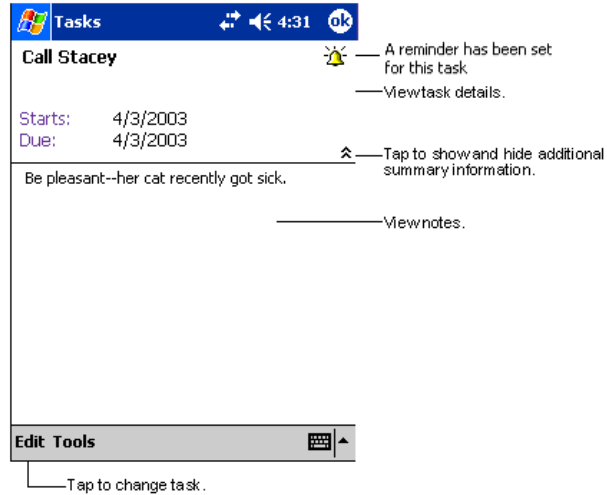
2. Using the SIP or Dolphin keyboard, enter the task information.  
If the input panel is open, you need to hide it to see all available fields.
3. Tap **Starts** to enter a start date and/or **Due** to enter a due date for the task.
4. To assign the task to a category, tap **Categories** and select a category from the list.  
In the task list, you can display tasks by category.
5. To add notes, tap the **Notes** tab.  
For more information on creating notes, refer to [Notes](#) on page 12-7.
6. When finished, tap **OK** to return to the task list.



Note: To quickly create a task with only a subject, tap **Entry Bar** on the **Tools** menu. Then, tap **Tap here** to add a new task and enter your task information.

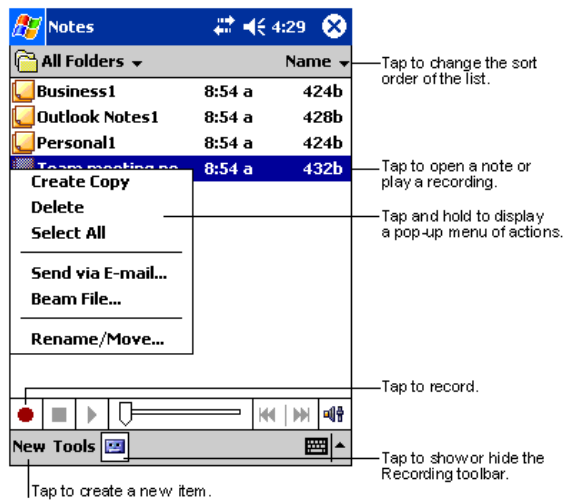
## Using the Summary Screen

When you tap a task in the task list, a summary screen displays the task information.



## Notes

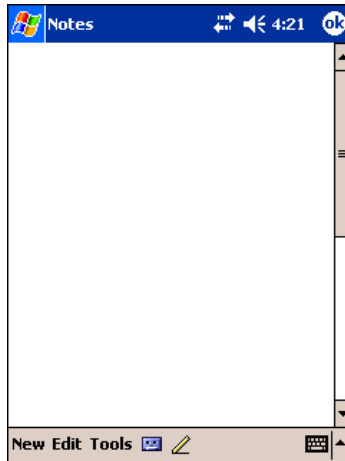
Quickly capture thoughts, reminders, ideas, drawings, and phone numbers with Notes. If a note is open when you create the recording, it will be included in the note as an icon.



---

## Creating a Note

1. Tap **New**.



2. Type your note using the SIP or the Dolphin keyboard.

## Messaging

Use Messaging to send and receive e-mail messages; this is your email Inbox. To use e-mail, you can:

- Synchronize e-mail messages with Microsoft Exchange or Microsoft Outlook on your desktop computer.
- Send and receive e-mail messages by connecting directly to an e-mail server through an ISP or a network.

### Synchronizing E-mail Messages

E-mail messages can be synchronized as part of the general synchronization process. You need to enable Inbox synchronization in ActiveSync. For information on enabling Inbox synchronization, see ActiveSync Help on the desktop computer.

During synchronization:

- Messages are copied from the mail folders of Exchange or Outlook on your desktop computer to the ActiveSync folder in Inbox on the terminal. By default, you will receive messages from the past three days only, the first 100 lines of each message, and file attachments of less than 100 KB in size.
- E-mail messages in subfolders must be selected in ActiveSync on your desktop computer to be transferred.
- E-mail messages in the Outbox folder on the terminal are transferred to Exchange or Outlook, and then sent from those programs.

*Note: You can also synchronize e-mail messages with your desktop computer from a remote location. For more information, see Chapter 7.*

### Connecting Directly to an E-mail Server

In addition to synchronizing e-mail messages with your desktop computer, you can send and receive e-mail messages by connecting to an e-mail server. When you connect the terminal to the e-mail server, new messages are downloaded to the Inbox folder, messages in the Outbox folder are sent, and messages that have been deleted on the e-mail server are removed from the Inbox folder.

Messages received directly from an e-mail server are linked to your e-mail server rather than your desktop computer. When you delete a message on the terminal, it is also deleted from the e-mail server the next time you connect the terminal to the e-mail server according to the settings selected in ActiveSync.

You can work online or offline. When working online, you read and respond to messages while connected to the e-mail server. Messages are sent as soon as you tap **Send**, which saves space on the terminal. When working offline, after you've downloaded new message headers or partial messages, you can disconnect from the e-mail server and then decide which messages to download completely. The next time you connect, Inbox downloads the complete messages you've marked for retrieval and sends the messages you've composed.

## Receiving Messages

When you connect to your e-mail server or synchronize with your desktop computer, by default, you'll receive messages from the last five days only, the first 100 lines of each new message, and file attachments of less than 100 KB in size. The original messages remain on the e-mail server or your desktop computer.

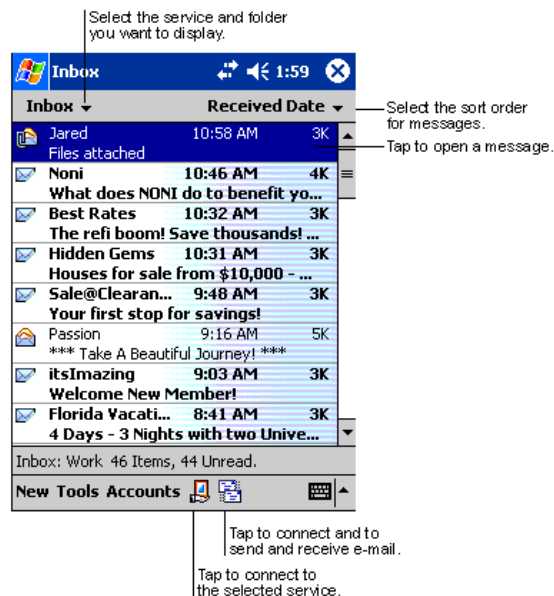
You can mark the messages that you want to retrieve in full during your next synchronization or e-mail server connection. In the message list, tap and hold the message you want to retrieve. On the pop-up menu, tap **Mark for Download**. The icons in the Inbox message list give you visual indications of message status.

You specify your downloading preferences when you set up the service or select your synchronization options. You can change them at any time:

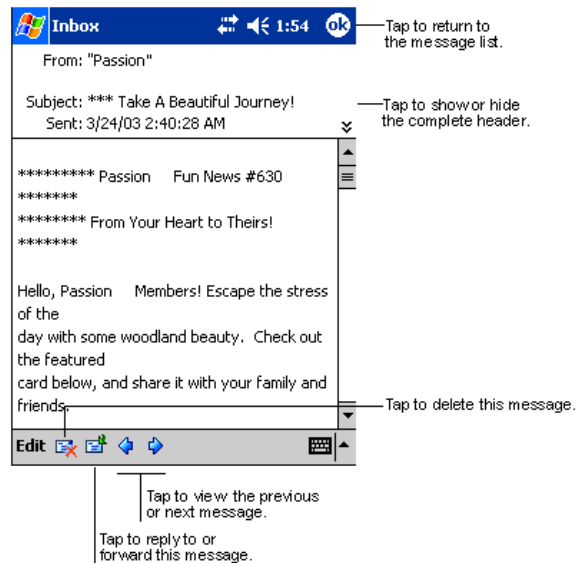
- Change options for Inbox synchronization using ActiveSync options. For more information, see ActiveSync Help.
- Change options for direct e-mail server connections in Inbox on the terminal. Tap **Tools** and then tap **Options**. On the **Service** tab, tap the service you want to change. Tap and hold the service and select **Delete** to remove a service.

## Using the Message List

Messages you receive are displayed in the message list. By default, the most recently received messages are displayed first in the list and unread messages are displayed in bold type.



When you tap on a message to open it, the following screen appears:



## Composing Messages

1. Tap **New**.
2. In the **To** field, enter the e-mail or SMS address of one or more recipients, separating them with a semicolon (;), or select a name from the contact list by tapping the **Address Book** button. All e-mail addresses entered in the e-mail fields in Contacts appear in the Address Book.
3. Compose your message. To enter preset or frequently used messages, tap **My Text** and select a message.
4. Tap **Send** when you've finished the message. If you are working offline, the message is moved to the Outbox folder and will be sent the next time you connect.
5. If you are sending an SMS message and want to know if it was received, tap **Edit, Options**, and select **Request SMS text message delivery notification** before sending the message.

## Managing E-mail Messages and Folders

Messages are displayed in one of five folders for each service you have created: Inbox, Deleted Items, Drafts, Outbox, and Sent Items.

The Deleted Items folder contains messages that have been deleted on the device. The behavior of the Deleted and Sent Items folders depends on the selected options. To select these options, tap **Tools > Options > Message** tab.

To move a message to another folder, in the message list, tap and hold the message, tap **Move to** on the pop-up menu, and select the desired folder.

To create additional folders, tap **Tools > Manage Folders**.

---

## *Folder Behavior with a Direct Connection to an E-mail Server*

The behavior of the folders you create depends on whether you are using ActiveSync, SMS, POP3, or IMAP4.

### **ActiveSync**

If you use ActiveSync, e-mail messages in the Inbox folder in Outlook on your desktop computer are automatically synchronized with the terminal. You can select to synchronize additional folders by designating them for ActiveSync. The folders you create and the messages you move will then be mirrored on the server.

For example, if you move two messages from the Inbox folder to a folder named Family, and you have designated Family for synchronization, the server creates a copy of the Family folder and copies the messages into that folder. You can then read the messages while away from your desktop computer.

### **SMS**

If you use SMS, messages are stored in the Inbox folder.

### **POP3**

If you use POP3 and you move e-mail messages to a folder you created, the link is broken between the messages on the terminal and their copies on the mail server. The next time you connect, the mail server will see that the messages are missing from the terminal Inbox and delete them from the server. This prevents you from having duplicate copies of a message, but it also means that you will no longer have access to messages that you move to folders created from anywhere except the terminal.

### **IMAP4**

If you use IMAP4, the folders you create and the e-mail messages you move are mirrored on the server. Therefore, messages are available to you anytime you connect to your mail server, whether it is from the terminal or desktop computer. This synchronization of folders occurs whenever you connect to your mail server, create new folders, or rename/delete folders when connected.

## *Pocket Internet Explorer*

Use Microsoft Pocket Internet Explorer to view Web or WAP pages. You can use the following methods:

- During synchronization with your desktop computer, download your favorite links and mobile favorites that are stored in the Mobile Favorites subfolder in Internet Explorer on the desktop computer.
- Connect to an ISP or network and browse the Web. When connected to an ISP or network, you can also download files and programs from the Internet or intranet.

## *Accessing Pocket Internet Explorer*

To open Pocket Internet Explorer, tap **Start** and then Internet Explorer.



---

You can use Pocket Internet Explorer to browse Mobile Favorites and channels that have been downloaded without connecting to the Internet. You can also connect to the Internet through an ISP or a network connection and browse the Web.

## ***Browse the Internet on Your Terminal***

*Note: You must set up a connection to your ISP or corporate network using Connections before browsing; see [Using an ISP](#) on page 8-8. If you select Pocket Internet Explorer before setting up the network connections, a screen may appear allowing you to proceed to the connection settings screen.*

1. Open Internet Explorer (**Start > Internet Explorer**).
2. To connect and start browsing, tap **View** and then **Address Bar**.
3. In the address bar that appears at the top of the screen, enter the Web address you want to visit and then tap **Go**.
4. Tap the arrow to choose from previously entered addresses. If Mobile Favorites have been set up, you can tap one of them to start browsing. See [Mobile Favorites Folder](#) on page 12-12.

## ***View Options***

You can switch to a One Column view, which condenses web content into a single column so that you do not have to scroll right to see the entire page. Tap **View > Layout > One Column**.

### **Default View**



### **One Column View**



## ***Mobile Favorites Folder***

### **Purpose**

The Mobile Favorites folder was created on your desktop computer when you installed ActiveSync. It enables you to create Favorite Links on your desktop computer that you can transfer to your Dolphin terminal. Those Favorite Links are then available when browsing the internet on your terminal.

### **Process**

First, you create your Favorite Links in the Mobile Favorites folder on your desktop computer. Then, the next time you sync your desktop computer with your terminal, those Mobile Favorites are transferred to the Mobile Favorites folder on to your terminal.

Only items stored in the Mobile Favorites subfolder in the Favorites folder in Internet Explorer on your desktop computer are synchronized with the Mobile Favorites folder on your terminal.

---

*Note: Unless you mark a Favorite Link as a mobile favorite, only the link downloads to your terminal, and you will need to connect to your ISP or network to view the content. For more information on synchronization, see ActiveSync Help on the desktop computer.*

## ***Creating and Synchronizing Mobile Favorites***

If you are using Microsoft Internet Explorer 5.0 or later on your desktop computer, you can download Mobile Favorites to the terminal. Synchronizing mobile favorites downloads Web content to your device so that you can view pages while you are disconnected from your ISP and desktop computer.

Use the Internet Explorer plug-in installed with ActiveSync to create mobile favorites

1. On your desktop computer, open Internet Explorer, click **Tools > Create Mobile Favorite**.




2. To change the link name, enter a new name in the **Name** box.
3. Optionally, in **Update**, select a desired update schedule.
4. Tap **OK**. Internet Explorer downloads the latest version of the page to your desktop computer.
5. If you want to download the pages that are linked to this mobile favorite, in Internet Explorer on the desktop computer, right-click the mobile favorite and then click **Properties**. On the **Download** tab, specify the number of links down that you want to download. To conserve memory, go only one level down.
6. Synchronize the terminal and desktop computer. Mobile favorites that are stored in the Mobile Favorites folder in Internet Explorer are downloaded to the terminal.

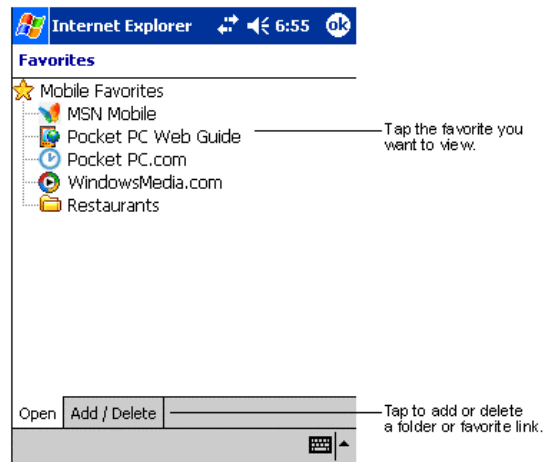
If you did not specify an update schedule in Step 3, you will need to manually download content to keep the information updated on your desktop computer and terminal. Before synchronizing, in Internet Explorer on your desktop computer, click **Tools** and then **Synchronize**. You will see the last time content was downloaded to the desktop computer, and you can manually download content if needed.

You can add a button to the Internet Explorer toolbar for creating mobile favorites. In Internet Explorer on your desktop computer, click **View, Toolbars**, and then **Customize**.

## ***Using Mobile Favorites and Channels***

1. Open Pocket Internet Explorer.

2. Tap the Favorites button to display your list of favorites .



3. Tap the page you want to view.


You'll see the page that was downloaded the last time you synchronized with your desktop computer. If the page is not on the terminal, the favorite will be dimmed. You will need to synchronize with your desktop computer again to download the page to the terminal, or connect to the Internet to view the page.

Mobile favorites take up storage memory on the terminal. To minimize the amount of memory used:

- In the settings for the Favorites information type in ActiveSync options, turn off pictures and sounds, or stop specific mobile favorites from being downloaded to the terminal. For more information, see **ActiveSync Help**.
- Limit the number of downloaded linked pages. In Internet Explorer on the desktop computer, right-click the mobile favorite you want to change and then Properties. On the Download tab, specify 0 or 1 for the number of linked pages you want to download.

## Using AvantGo® Channels

AvantGo is a free interactive service that provides access to personalized content and thousands of popular web sites. Subscribe to AvantGo channels directly from the terminal. For more information, visit: <http://avantgo.com/frontdoor/index.html>.

1. In ActiveSync options on the desktop computer, turn on synchronization for the AvantGo information type.
2. In Pocket Internet Explorer, tap the **Favorites** button to display your list of favorites .
3. Tap the **AvantGo Channels** link.
4. Tap **Activate** and follow the directions on the screen. Synchronize the terminal with your desktop computer and then tap the **My Channels** button to complete the AvantGo setup.
5. When synchronization is complete, tap the **AvantGo Channels** link in your list of favorites to see a few of the most popular channels. To add or remove channels, tap the **Add** or **Remove** link.

## Pocket Word

Pocket Word works with Microsoft Word on your desktop computer to give you easy access to copies of your documents. You can create new documents on the terminal, or you can copy and paste documents from your desktop computer. Synchronize documents between your desktop computer and your device so that you have the most up-to-date content in both locations.

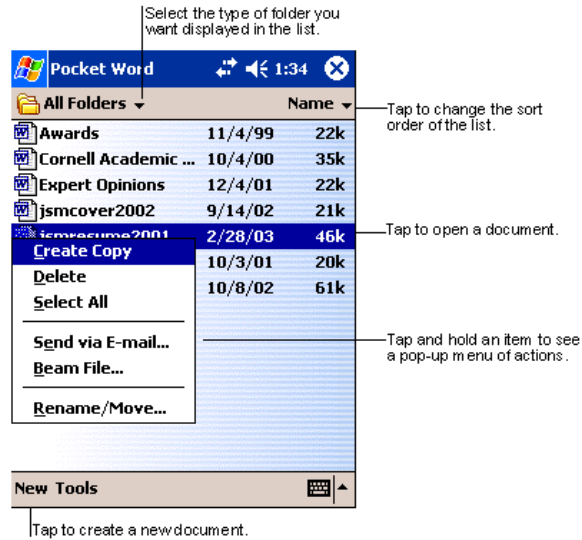
You can open only one document at a time; when you open a second document, you'll be asked to save the first. You can save a document you create or edit in a variety of formats, including Word (.doc), Pocket Word (.psw), Rich Text Format (.rtf), and Plain Text (.txt).



---

## Using Pocket Word

Pocket Word contains a list of the files stored on the terminal. Tap a file in the list to open it. To delete, make copies of, and send files, tap and hold a file in the list. Then, select the appropriate action on the pop-up menu.



You can change the zoom magnification by tapping **View > Zoom**, and then selecting the percentage you want. Select a higher percentage to enter text and a lower one to see more of your document. If you're opening a Word document created on a desktop computer, select **Wrap to Window** on the **View** menu so that you can see the entire document.

## Creating a Word File

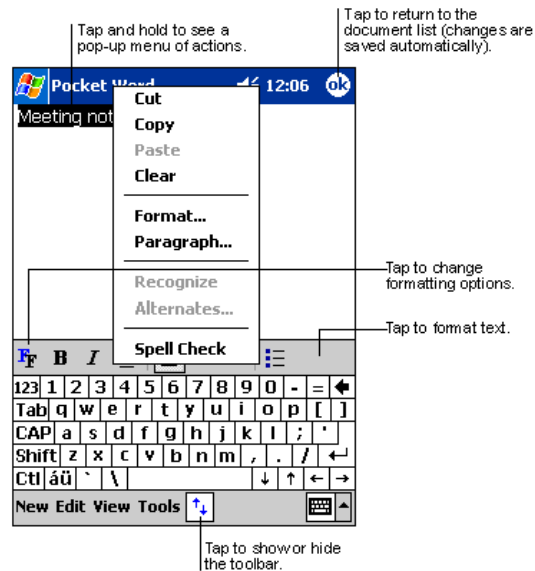
To create a new file, tap **Start > Programs > Pocket Word > New**. A blank document appears. If you've selected a template for new documents in the Options dialog box, that template appears with appropriate text and formatting already provided.

You can enter information in Pocket Word in one of two modes (typing on the SIP or keyboard and drawing), which are displayed on the **View** menu.

---

## Typing Mode

Using the SIP or Dolphin keypad, enter typed text into the document.



To format existing text and to edit text, first select the text. You can select text as you do in a Word document, using your stylus instead of the mouse to drag through the text you want to select. You can search a document to find text by tapping **Edit** and then **Find/Replace**.

## Drawing Mode

In drawing mode, use your stylus to draw on the screen. Gridlines appear as a guide. When you lift your stylus off the screen after the first stroke, you'll see a drawing box indicating the boundaries of the drawing. Every subsequent stroke within or touching the drawing box becomes part of the drawing.

For more information on using Pocket Word, tap **Start** and then **Help**.

## Pocket Excel

Pocket Excel works with Microsoft Excel on your desktop computer to give you easy access to copies of your workbooks. You can create new workbooks on the terminal, or you can copy and paste workbooks from your desktop computer. Synchronize workbooks between your desktop computer and the terminal so that you have the most up-to-date content in both locations.

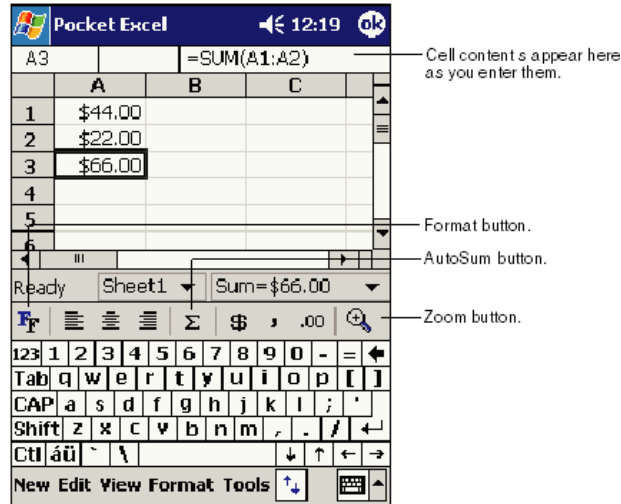
You can open only one workbook at a time; when you open a second workbook, you'll be asked to save the first. You can save a workbook you create or edit in a variety of formats, including Pocket Excel (.pxl) and Excel (.xls).

Pocket Excel contains a list of the files stored on your device. Tap a file in the list to open it. To delete, make copies of, and send files, tap and hold a file in the list. Then select the appropriate action from the pop-up menu. Pocket Excel provides fundamental spreadsheet tools, such as formulas, functions, sorting, and filtering. To display the toolbar, tap **View > Toolbar**.

---

## Creating an Excel File

To create a new file, tap **Start > Programs > Pocket Excel > New**. A blank workbook appears. If you've selected a template for new workbooks in the Options dialog box, that template appears with appropriate text and formatting already provided.



If your workbook contains sensitive information, you can protect it with a password. To do so, open the workbook, tap **Edit**, and then **Password**. Every time you open the workbook, you will need to enter the password, so choose one that is easy for you to remember but hard for others to guess.

## Tips for Working in Pocket Excel

- View in full-screen mode to see as much of your worksheet as possible. Tap **View** and then **Full Screen**. To exit full-screen mode, tap **Restore**.
- Show and hide window elements. Tap **View** and then tap the elements you want to show or hide.
- Freeze panes on a worksheet. First select the cell where you want to freeze panes. Tap **View > Freeze Panes**. You might want to freeze the top and left-most panes in a worksheet to keep row and column labels visible as you scroll through a sheet.
- Split panes to view different areas of a large worksheet. Tap **View > Split**. Then drag the split bar to where you want it. To remove the split, tap **View > Remove Split**.
- Show and hide rows and columns. To hide a hidden row or column, select a cell in the row or column you want to hide. Then tap **Format > Row or Column > Hide**. To show a hidden row or column, tap **Tools > Go To**, and then type a reference that is in the hidden row or column. Then tap **Format > Row or Column > Unhide**.

For more information on using Pocket Excel, tap **Start > Help**.

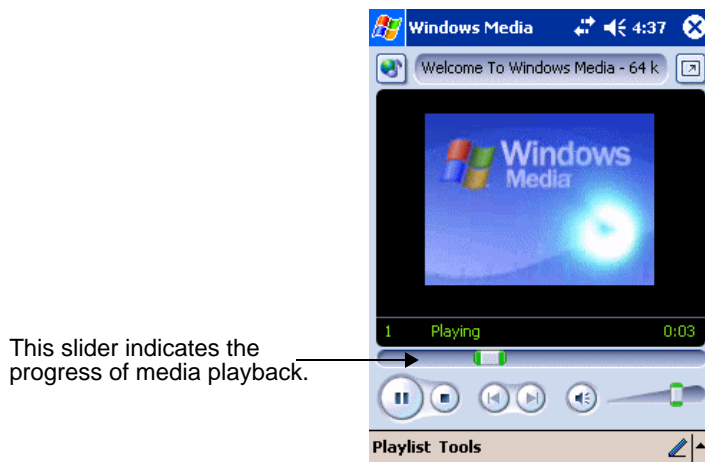
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## Windows Media Player for Pocket PC

Use Microsoft Windows Media Player (WMP) for Pocket PC to play digital audio and video files stored on the terminal. To switch to Windows Media Player for Pocket PC, tap **Start > Windows Media**.

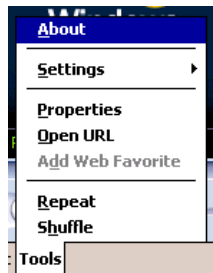


After a media file has been loaded, you can play, pause, stop, song advance/reverse, mute sound, or adjust volume.



## Tools Menu

The tools menu allows you to perform several important functions.



**About** gives you information about the codecs used in your version of WMP.

---

**Settings** allows you to configure several important aspects of WMP.

**Properties** gives a detailed listing of a media file's attributes.

**Open URL** allows you to open WMP-compliant media from a network or Internet resource.

**Add Web Favorite** adds a streaming media file that is currently playing to web favorites.

**Repeat** plays a playlist repeatedly.

**Shuffle** plays items in a playlist in a random order.

## ***MSN Messenger***

MSN Messenger is an instant messaging program that lets you:

- See who is online.
- Send and receive instant messages.
- Have instant message conversations with groups of contacts.

*Note: To use MSN Messenger, you must have a Microsoft Passport™ account or a Microsoft Exchange e-mail account. You must have a Passport to use MSN Messenger Service. If you have a Hotmail or MSN account, you already have a Passport account. Sign up for a Microsoft Passport account at [www.passport.com](http://www.passport.com).*

## ***Setting Up***

Before you can connect for the first time, you must enter the information from your Passport or Exchange account. After you set up your account information on the terminal for the first time, you will go directly to login when you access MSN Messenger.

*Note: Ensure that you are connected to the Internet (see [Connections Tab](#) on page 7-19).*

1. Tap **Start > Programs > MSN Messenger**



2. Tap **Tools** > **Options** > **Account** tab.

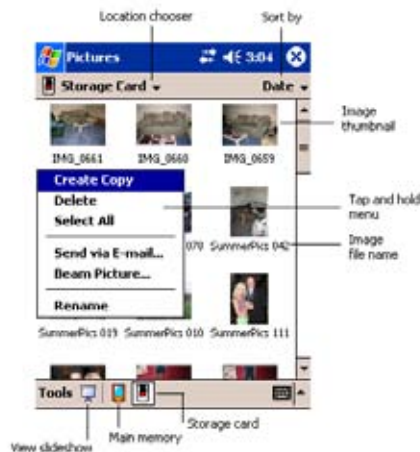


3. In the Accounts tab, enter your Passport or Exchange account information.  
Be sure to indicate the service you're using to connect - Messenger or Exchange.
4. When complete, tap **OK**. You are returned to the sign-in screen.
5. To sign in, tap the sign-in screen and enter your e-mail address and password.

*Note: If you already use MSN Messenger, your contacts will show up on your device without being added again.*

## **Pictures**

Use Pictures to view JPEG pictures stored on the terminal or storage card.  
To begin, tap **Start** > **Programs** > **Pictures**.



Choose to view main memory or storage card contents. By tapping and holding on an image, you can create a clone of that file, delete that file, select all files, send file via e-mail, beam picture, or rename the image.

## Overview

As the hub of your Dolphin 7900 system, the Dolphin HomeBase charging and communication cradle supports both RS-232 and USB communications, which make it able to interface with the majority of PC-based enterprise systems. When a terminal is seated in the HomeBase, its main battery pack charges in less than four hours.

### Power

The HomeBase completes a full charge of the main battery pack in less than four hours. The HomeBase also provides power to the intelligent battery charging system in all Dolphin terminals that senses when a full charge has been achieved and switches to a trickle charge to maintain the full charge.

### Communications

Reliable data communications at speeds of up to 115k baud can be transmitted by the HomeBase through the RS-232 serial port. Using the full-speed USB port, the data transmission rate goes up to 12 Mbps. HomeBases cannot be physically connected to each other - sometimes referred to as "daisy-chained" - but can be networked together via serial or USB hub.

### Convenient Storage

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

### Capacity

The Dolphin HomeBase holds one terminal and features an auxiliary battery well behind the terminal well that can charge a battery pack independently of the terminal well. This means that one HomeBase can charge two battery packs: the one installed in the terminal and a spare.



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

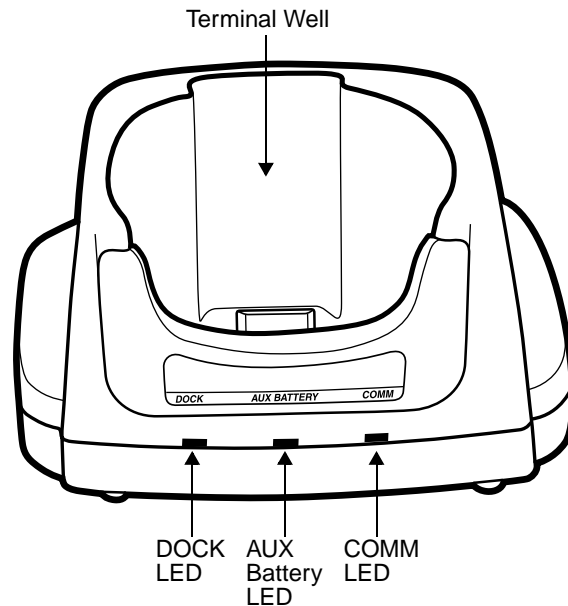


*Use only the Li-ion battery packs provided by Hand Held Products. The use of any battery pack not sold/manufactured by Hand Held Products in a Dolphin terminal will void your warranty and may result in damage to the Dolphin terminal or battery.*

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## Dolphin 7900 HomeBase Parts and Functions

### Front Panel



#### Terminal Well

Place the Dolphin terminal in this well to communicate with a host device, power the terminal, and charge its battery pack. If the host device is a desktop computer that uses ActiveSync, synchronization begins immediately. While seated in the terminal well, the main battery installed in the terminal charges. The HomeBase completely charges a battery pack in less than four hours.

#### DOCK LED

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

#### AUX Battery LED

Indicates status of the battery charging in the auxiliary battery well.

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

For information about charging a battery in the auxiliary battery well, see page [13-5](#)

#### COMM LED

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

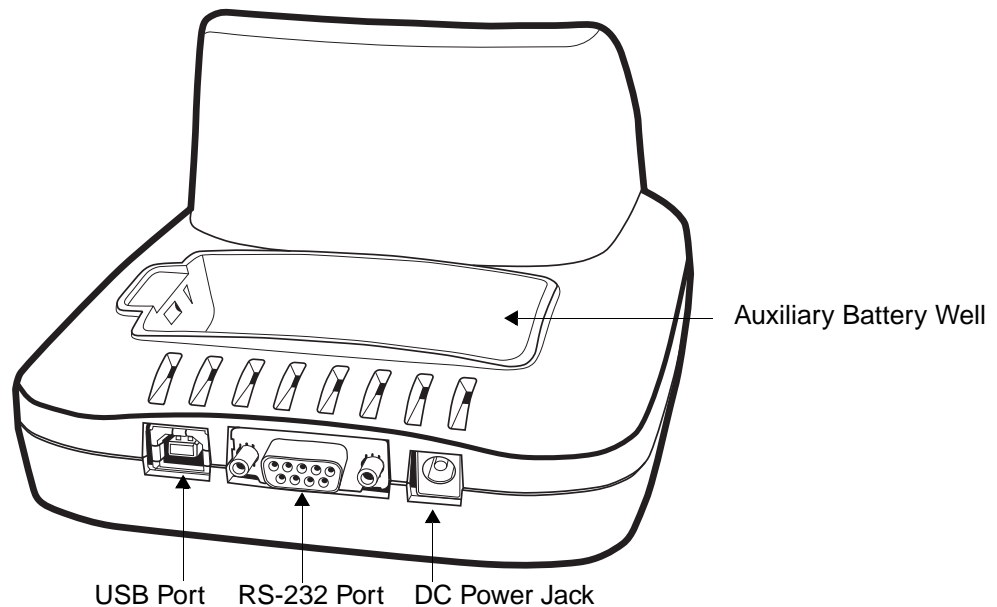
If using the serial port

<b>This color...</b>	<b>means...</b>
<b>Red</b>	Serial data is being sent from the host device to the Dolphin HomeBase.
<b>Green</b>	Serial data is being sent from the Dolphin HomeBase to the host device.



<b>Orange</b>	Serial data is being sent at high data rates.
If using the USB port	
<b>This color...</b>	<b>means...</b>
<b>Green LED</b>	A USB connection is established with the host computer.

## Back Panel



### Auxiliary Battery Well

The HomeBase enables you to charge an additional Li-ion battery pack independently of the terminal well. This feature ensures that you can always have a fully-charged battery for your Dolphin terminal; see [Charging a Spare Battery in the Auxiliary Battery Well](#) on page 13-5.

### USB Port

This USB Port is full-speed and 2.0 compliant. Using a USB cable, you can connect the HomeBase to a peripheral device, such as a desktop computer or printer. When the Dolphin terminal is seated in the terminal well, it is connected to the peripheral device via the HomeBase. The USB port requires that you use ActiveSync 3.7 or higher.

### RS-232 Port

Use a 9-pin, RS-232 cable from Hand Held Products to connect this port to a peripheral device for RS-232 data communication. For more information, see [HomeBase Serial Connector](#) on page 13-4.

### DC Power Jack

Use a power cable from Hand Held Products to supply power to this power jack. For more information, see [Powering the HomeBase](#) on page 13-4.

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## ***Powering the HomeBase***

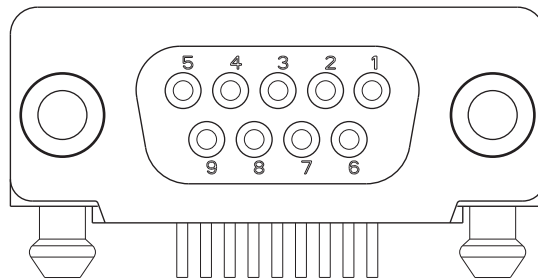
The terminal requires 9.5 Volts DC input for communications and battery charging; the Hand Held Products power cable contains a power adapter that converts the power source voltage accordingly. Only the power adapter cable from Hand Held Products converts the voltage appropriately.

We recommend that you leave the Dolphin HomeBase connected to its power source at all times, so that it is always ready to use.

1. Connect the power cable to the DC jack on the rear panel of the HomeBase.
2. Connect the power cable to the power adapter.
3. Plug the power adapter cable into the power source.
4. The Dolphin HomeBase is now powered.

## ***HomeBase Serial Connector***

The following diagram displays the pin diagram of the serial connector of the HomeBase.



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

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

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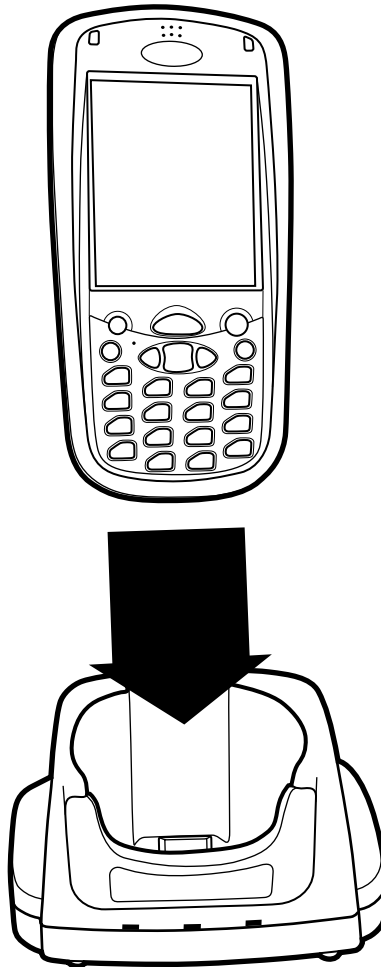
## ***Charging the Main Battery***

The Dolphin HomeBase powers the terminal and fully charges its main battery pack in less than four hours. The HomeBase contains an intelligent battery charging system that protects the battery from being damaged by overcharging; the unit senses when a battery pack is fully charged and automatically switches to a trickle charge that maintains the battery at full capacity. Therefore, Dolphin terminals may be stored in the HomeBase without damage to the terminals, battery packs, or peripherals.

To check battery power, use the Power system setting; see [Power](#) on page 7-13. For more information about Hand Held Products Li-ion batteries, see [Battery Power](#) on page 3-10.

### ***To Power a Terminal and Charge its Main Battery***

1. Install the battery pack in the terminal; see [Install the Main Battery Pack](#) on page 2-5.
1. Connect the HomeBase to the power supply provided by Hand Held Products.
2. Slide the terminal into the terminal well until the Dock LED lights green to indicate that the terminal is properly seated.



3. The battery pack begins charging.

### ***Charging a Spare Battery in the Auxiliary Battery Well***

The auxiliary battery well ([Auxiliary Battery Well](#), page 13-3) located on the back of the HomeBase charges a spare battery independently of the terminal well. The Aux Battery LED on the front panel indicates the status of the battery in this well. Charge time is less than four hours.

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

## ***Communications***

There are two types of communication: USB and RS-232.

**USB** The HomeBase also supports USB communications via the USB port located on the back. The HomeBase acts as a USB device by interfacing the USB signals of the Dolphin to the USB of the host computer. Using a standard USB cable, the HomeBase's USB interface allows the Dolphin terminal to communicate with a personal computer or to be networked through a USB hub.

**RS-232** The HomeBase supports RS-232 communications via the RS-232 Communications Port located on the back of the device. This port enables the Dolphin terminal to communicate to a personal computer, modem, or any RS-232 device using a standard serial cable and communications software.

*Note: The HomeBase should have only one type of interface cable connected at a time, either USB or RS-232. You must be using ActiveSync, version 3.7 or higher.*

### **Required Equipment**

- HomeBase powered by a power cable and power adapter cable from Hand Held Products
- USB Cable
- Serial Cable
- ActiveSync v3.7 or higher
- Windows® 98 Second Edition\*, Windows® Me, Windows® 2000, or Windows® XP computer.

*Note: The HomeBase does not support Windows NT® when using a USB connection. This is because Windows NT does not support USB. \*Windows® 98 second edition provides full USB support.*

### ***Setting Up the HomeBase for USB Communication***

The Dolphin terminal is defaulted to support USB communications out of the box.

#### **To Install the HomeBase Using USB**

1. Plug in the power supply and connect it to the back of the HomeBase.
2. Plug the USB cable into the back of the HomeBase.
3. At this point, the hardware is installed and operating. You may need to reboot your PC to complete the installation process.

#### **Setting up the Terminal for ActiveSync Communications**

1. On the terminal, tap **Start > ActiveSync > Tools > Options**. Activesync opens displaying the PC tab.
2. In the **Use this PC** drop-down list, select the name of the host PC.

3. Select **Sync with this PC during manual sync** to indicate that the terminal syncs with the selected host PC when synchronization is run from the terminal.



4. Tap **Options**.

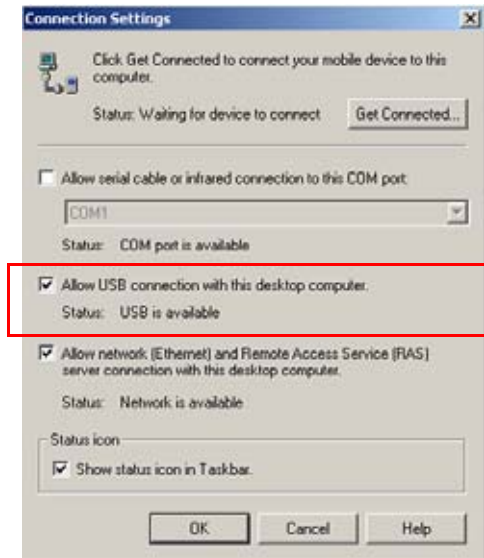


5. Under **When cradled**, select **Enable PC sync using this connection**, and select **'USB Connection'**.
6. Tap **OK**.
7. Place the Dolphin in the HomeBase. The Dolphin terminal attempts to start an ActiveSync connection with the desktop computer automatically.

---

## Setting up the Desktop Computer for ActiveSync Communications

After the USB HomeBase is installed, you can use ActiveSync to connect to a Dolphin terminal that is properly seated in the HomeBase. These instructions assume that ActiveSync v3.7 or higher is installed on your PC. The ActiveSync Connection Settings must be set as the following graphic indicates.



The **Allow USB connection with this desktop computer** box must be checked. Do **not** check the serial cable box.

## Setting up the HomeBase for RS-232 Communications

### Connecting the Cables

Connect the HomeBase to the host computer or other device by plugging an RS-232 serial cable into the RS-232 Communications Port on the rear of the HomeBase. The wiring of your cable depends on whether the other device is set up as a Data Communications Equipment (DCE) or Data Terminal Equipment (DTE) device.

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

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

### **RS-232 Pin Configuration**

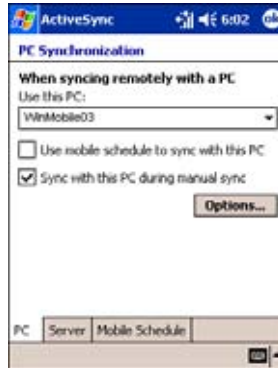
HomeBase /Host Port (DCE)	IBM AT DB9 (DTE)	IBM XT DB25 (DTE)	Modem DB25 (DCE)
Pin / Input Signal			
2 / (RD)	2	3	2
3 / (TD)	3	2	3
5 / (SG)	5	7	7
4 / (DTR)	4	20	6
6 / (DSR)	6	6	20
7 / (RTS)	7	4	5
8 / (CTS)	8	5	4

---

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

### Setting up the Terminal for ActiveSync Communications

1. On the terminal, tap **Start > ActiveSync > Tools > Options**. Activesync opens displaying the PC tab.
2. In the **Use this PC** drop-down list, select the name of the host PC.
3. Select **Sync with this PC during manual sync** to indicate that the terminal syncs with the selected host PC when synchronization is run from the terminal.



4. Tap **OK**.

### *Communicating with the Dolphin 7900 Terminal*

1. Insert the Dolphin terminal into the terminal well of the HomeBase.
  - The DOCK LED lights green. If the DOCK LED does not illuminate, make sure that the terminal is properly seated. You may need to remove and re-insert the terminal.
  - The Dolphin terminal activates; if the power is off, the terminal automatically powers on. If the terminal does not power on, verify that the Hand Held Products power supply is properly connected to the cradle and plugged into a functioning outlet.
  - The Dolphin terminal automatically opens ActiveSync to establish a connection.
2. The HomeBase can now transfer data between the terminal and the host device. If communication does not occur, check the port connections to ensure that the cradle is correctly configured.
3. Tap **Options**.

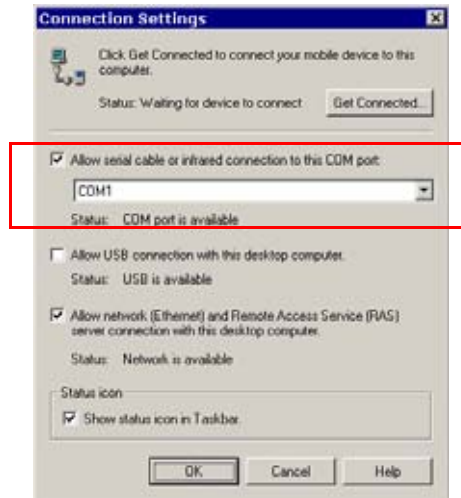


4. Under **When cradled**, select **Enable PC sync using this connection**, and select **115200 Default** from the drop-down list. 115200 baud is recommended for RS-232 communication.
5. Tap **OK**.
6. Place the Dolphin in the HomeBase. The Dolphin terminal attempts to start an ActiveSync connection with the desktop computer automatically.

---

## *Setting up the Desktop Computer for ActiveSync Communications*

ActiveSync must be installed and configured for RS-232 on the desktop computer to sync successfully with a Dolphin terminal that is configured for RS-232 communication. The following graphic displays the correct ActiveSync Connection Settings on the desktop computer for an RS-232 connection.



*Note: You can have the USB connection box checked in addition to the serial cable box without affecting processing. However, you would most likely use one or the other.*

## *Verifying Communication*

You can verify that the USB driver is functioning by watching the COMM LED on the USB HomeBase. When the COMM LED illuminates solid green, the HomeBase is communicating with the host device.

## *Verifying Data Transfer*

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

## *Mounting the HomeBase*

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

When choosing a location, bear in mind that:

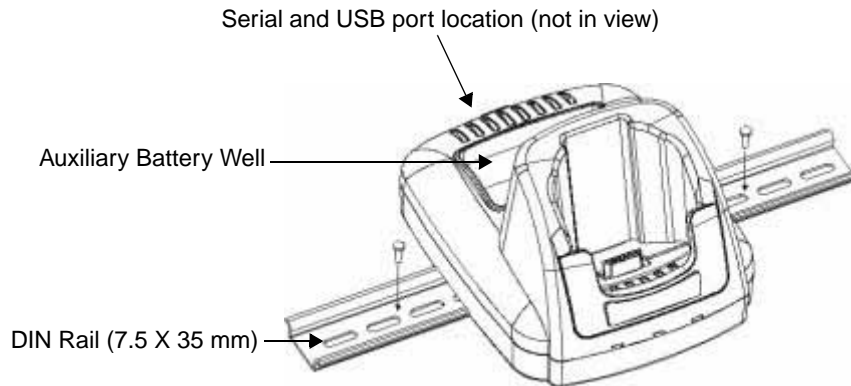
- the mounting location must allow users easy access to the Auxiliary Battery Well, and
- the serial and USB ports as well as the power jack face straight out of the rear panel, and you will most likely want easy access to them in the future.



---

## Desk Mounting

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



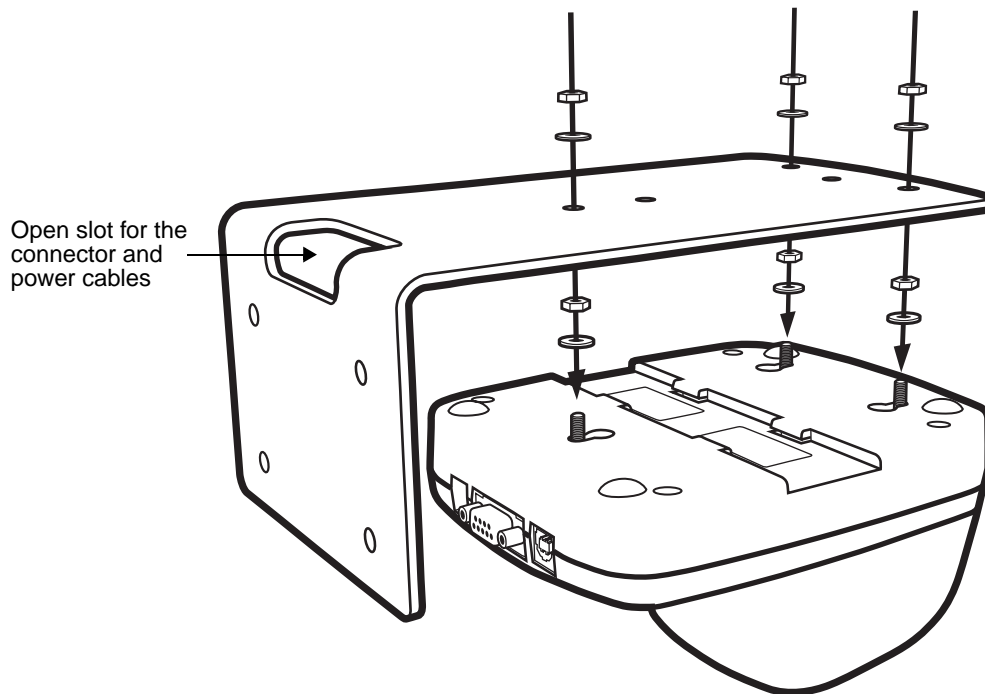
1. Slide the DIN rail slot along the bottom panel.
2. Using the appropriate nuts and bolts, secure the DIN rail to the desk or flat surface.

## Wall Mounting

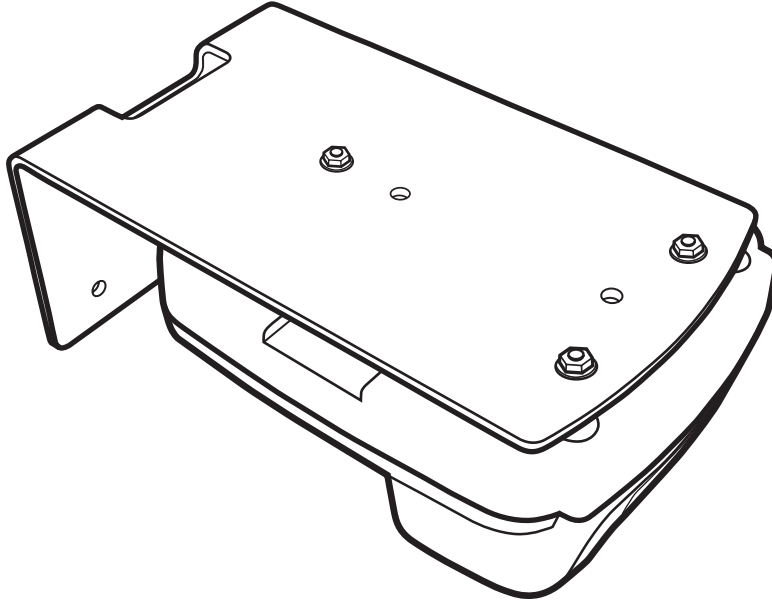
A wall mount kit that contains a screws and a mounting bracket can be purchased separately.

The bottom panel of the HomeBase contains four rubber feet - one at each corner - that help keep it stable and secure when resting on a flat surface. Those rubber feet should be removed with pliers before wall mounting the HomeBase.

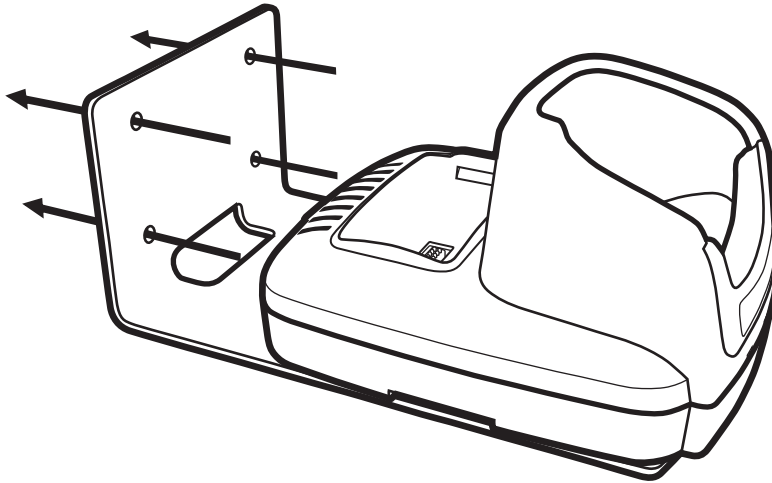
1. Secure screws to the bottom panel by sliding them into the available slots.
2. Attach the bottom panel to the mounting bracket - match the holes to the secured screws.



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



4. Turn the secured HomeBase right side up.
5. Using the appropriate screws, secure the mounting bracket to the wall or vertical surface as shown.



### Overview

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

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

As the hub of your Dolphin 7900 mobile data collection system, the Mobile Base performs three important functions: charging, communications, and storage.

### Charging

The Mobile Base completes a full charge of the main battery pack in less than four hours. The Mobile Base also provides power to the intelligent battery charging system in all Dolphin terminals that senses when a full charge has been achieved and switches to a trickle charge to prevent over- and undercharging.

### Communications

The Mobile Base transmits data at speeds of up to 115K baud via its RS-232 serial port.

### Convenient Storage

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

### Capacity

The Mobile Base holds one terminal.



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

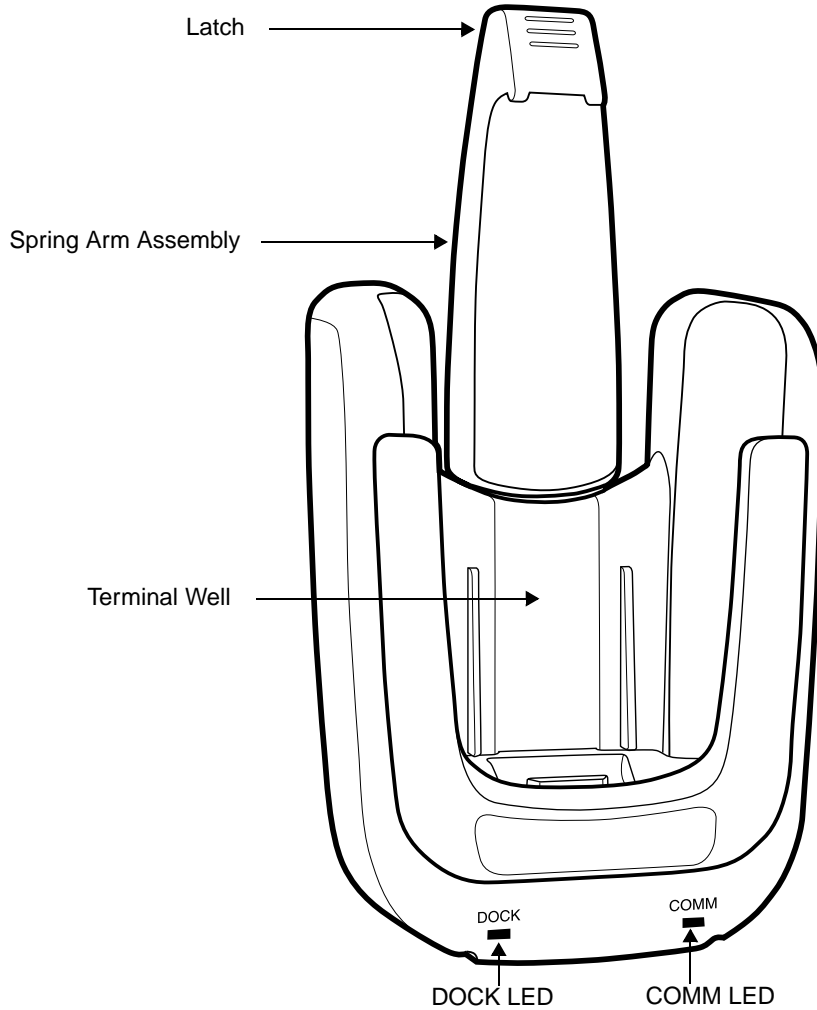


*Use only the Li-ion battery packs provided by Hand Held Products. The use of any battery pack not sold/manufactured by Hand Held Products in a Dolphin terminal will void your warranty and may result in damage to the Dolphin terminal or battery.*

---

## *Dolphin Mobile Base Hardware Overview*

### *Front Panel*



#### **Latch**

You can use the latch at the top of the spring arm assembly to snap a seated terminal into place. The latch can rest on top of the hand strap slot on the back panel of the terminal; see page 14-6.

#### **Spring Arm Assembly**

For more information, see [Spring Arm Assembly](#) on page 14-5.

#### **Terminal Well**

Place the terminal in this well to communicate with a host device and charge the main battery pack.

#### **DOCK LED**

Lights solid green when the Dolphin terminal is properly seated in the terminal well.

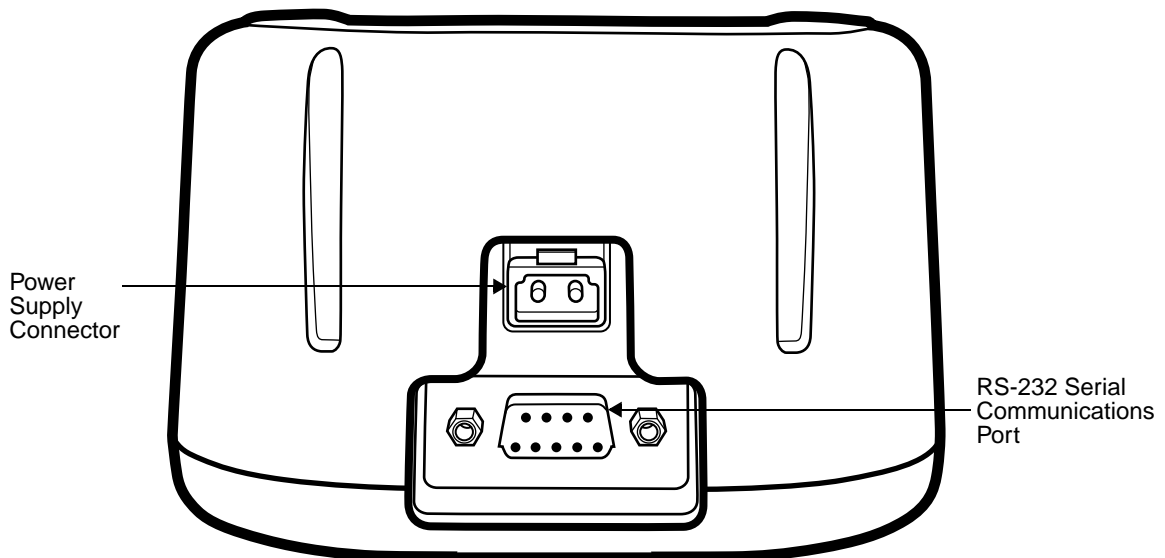
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## COMM LED

Indicates the status of data transfer between the host device and the Dolphin terminal

COMM LED Color	Indicates that...
Red	Data is being sent from the host device to the Dolphin Mobile Base.
Green	Data is being sent from the Dolphin Mobile Base to the host device.
Orange	Data is being sent at high data rates.

## Bottom Panel



### Power Supply Connector

Attach a power cable from Hand Held Products to this connector. The Mobile Base can be powered by an external DC power source between 11 VDC to 48 VDC. To run on vehicle power, you can use the 12 VDC cable or 24 VDC cable option. The appropriate cable comes with the kit you ordered. The 12 VDC cable can be used with a cigarette lighter outlet. The 24 VDC, pigtail cable can be used to "hard-wire" into the vehicle power bus.

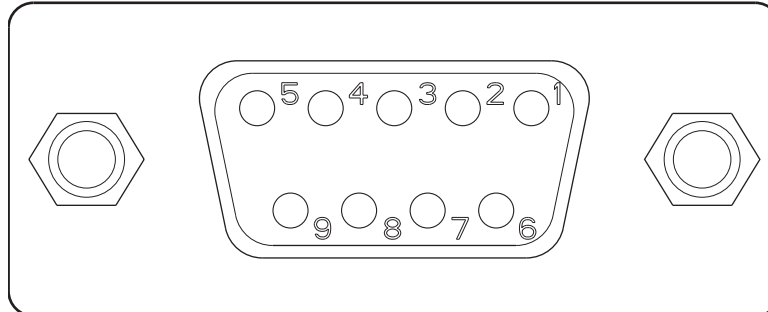


*Verify that the power source is always within the specified range and observe correct input voltage polarity. An improper input voltage range (above the 48 VDC maximum) or reverse polarity could damage the power conversion circuitry.*

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## RS-232 Serial Communications Port

Use a standard serial cable to connect to the host device via RS-232. The following diagram displays the pin diagram of the serial connector of the bottom panel of the Mobile Base.



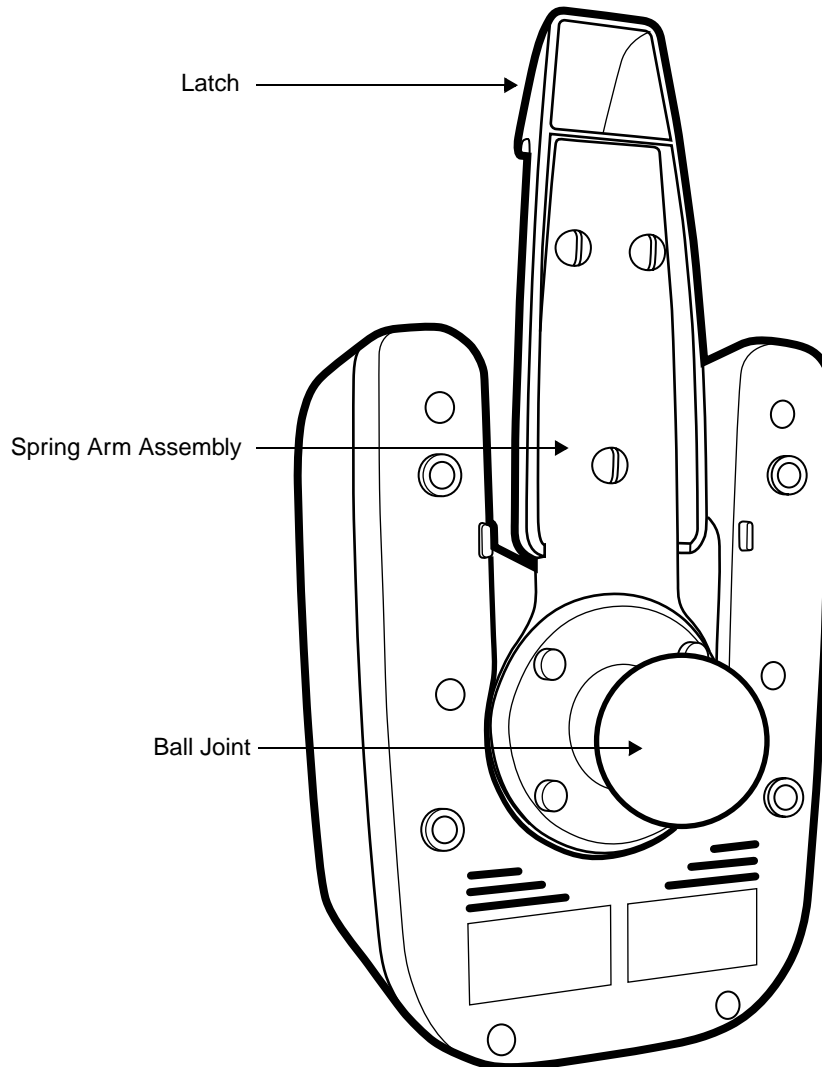
<u>Pin #</u>	<u>Description</u>
1	Internal Jumper to Pin 6
2	TXD
3	RXD
4	DSR
5	GND
6	DTR
7	CTS
8	RTS
9	5 VOLT OUT

Signals referenced are for a DTE device.

The Mobile Base connector is straight to the printed circuit board (PCB). The ninth pin sends 500mA at 5 Volts power out. This can power a peripheral device, such as a mobile printer, as long as that peripheral device can accept 500mA at 5 Volts.

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## ***Back Panel***



### **Spring Arm Assembly**

The spring arm assembly holds the terminal securely in place and connects the Mobile Base to the ball joint.

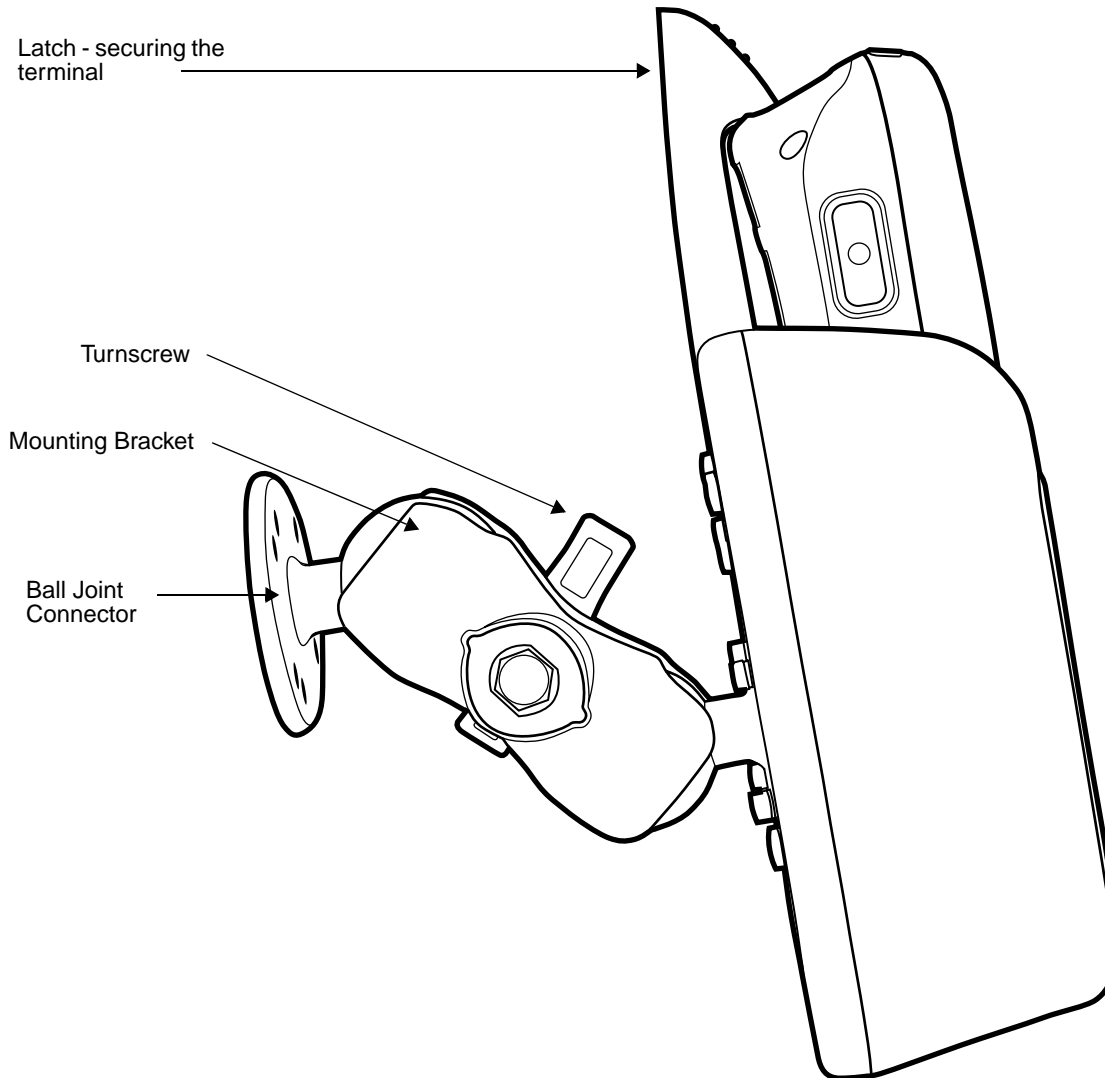
### **Ball Joint**

There are two ball joints: one on the back of the Mobile Base and one on the mounting bracket. Both ball joints are inserted into the mounting bracket and secured by the turn screw.

---

## ***Mounting the Dolphin Mobile Base***

There are three items you use to mount the Dolphin Mobile Base: the ball joints on the both the back panel and the ball joint connector, the mounting bracket, and the turnscrew.



### **Turnscrew**

The turnscrew is located on the top of the bracket. Rotate the turnscrew to secure or loosen the ball joint slots.

### **Mounting Bracket**

The bracket contains the turnscrew and two slots - one for the ball joint on the back panel and one for the ball joint connector. Both ball joints are inserted into a slot and secured with the turnscrew.

### **Ball Joint Connector**

The ball joint is what you attach to the mounting surface. It is comprised of a ball joint and flat disk. The disk contains drill holes you use to secure the Mobile Base to the mounting surface.



---

## *To Mount the Dolphin Mobile Base*

1. Secure the ball joint connector to a stable, mounting surface.  
When selecting a surface, keep in mind that the power supply and serial connectors point straight out the bottom panel.
2. On the mounting bracket, loosen the turnscrew.
3. Insert both ball joints into the mounting bracket.
4. Tighten the turnscrew to secure both ball joints.

## *Powering the Dolphin Terminal*

When seated in a Mobile Base that is connected to the appropriate power source, the Dolphin terminal receives the power to charge its main battery and run its internal circuitry. Keep the Mobile Base plugged into the power source so that the Dolphin terminal battery pack stays fully charged.

## *Charging the Dolphin Terminal*

Dolphin terminals contain an intelligent battery charging system that monitors the charging of the battery pack to protect the battery from damage by overcharging. Therefore, the Dolphin terminal may be stored indefinitely in the Mobile Base without damage to the terminal, the battery pack, or the Mobile Base.

1. Insert a battery pack into the Dolphin terminal.
2. Slide the terminal, imager window up and the LCD visible, into the terminal well of the Mobile Base until it stops.
3. When the Dolphin terminal is properly seated, the DOCK LED lights solid green. The terminal begins charging automatically.

## *Setting Up the Mobile Base for Communications*

The Mobile Base RS-232 interface allows the Dolphin terminal to communicate to a personal computer, modem, or any standard RS-232 device using a standard serial cable and communications software.

### **Connecting the Cables**

Plug an RS-232 serial cable into the RS-232 Communications Port on the bottom panel. Plug the other end of the RS-232 serial cable into the correct port on the host RS-232 device.

The wiring of your cable depends on whether the other device is set up as a Data Communications Equipment (DCE) or Data Terminal Equipment (DTE) device. The Mobile Base communication port is configured as a DCE device. To communicate with a DCE device, use either a null modem adapter in line with a standard RS-232 cable, or a null-modem serial cable. To communicate with a DTE device such as a computer, use a standard (or straight-through) RS-232 cable.

### **RS-232 Pin Configuration**

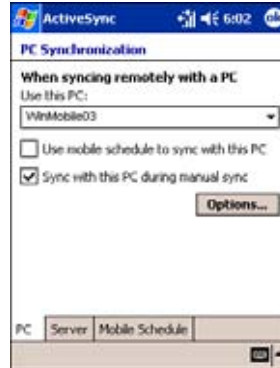
Refer to this table if you want to make your own cables. To do so, you must determine if your host RS-232 device is 9-pin or 25-pin and configured as a DCE or DTE device.

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

---

## Configuring the Terminal for ActiveSync Communications

1. On the terminal, tap **Start > ActiveSync > Tools > Options**. ActiveSync opens displaying the PC tab.



2. In the **Use this PC** drop-down list, select the name of the host PC.
3. Select **Sync with this PC during manual sync** to indicate that the terminal syncs with the selected host PC when synchronization is run from the terminal.
4. Tap **Options**.



5. Under **When cradled**, select **Enable PC sync using this connection**, and select **115200 Default** from the drop-down list. '115200 baud is recommended for RS-232 communication.
6. Tap **OK**.
7. Place the Dolphin in the Mobile Base. The Dolphin attempts to start an ActiveSync connection with the desktop computer automatically.

## Overview

The Dolphin ChargeBase is a four-slot charging cradle that can power four Dolphin terminals, and charge their main batteries in less than four hours. Each charging slot charges terminals independently of the other slots.

## Charging

The Dolphin ChargeBase completes a full charge of the main battery pack in less than four hours. The ChargeBase also provides power to the intelligent battery charging system in all Dolphin terminals that senses when a full charge has been achieved and switches to a trickle charge to maintain the full charge.

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.

## Convenient Storage

Intelligent battery charging makes the Dolphin ChargeBase a safe and convenient storage receptacle for Dolphin terminals.

## Capacity

The ChargeBase can hold up to four Dolphin 7900 terminals.



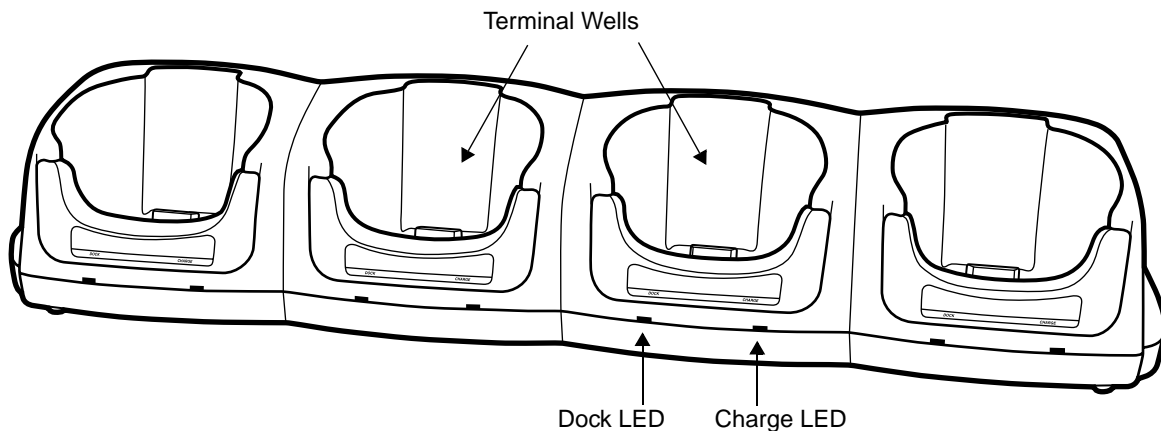
*Use only the peripherals, power cables, and power adapters from Hand Held Products. Use of peripherals, cables, or power adapters not sold/manufactured by Hand Held Products will void the warranty and may damage the terminal.*



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

## Dolphin ChargeBase Parts and Functions

### Front Panel



### Terminal Wells

The ChargeBase contains four terminals wells. Each terminal well

- Holds and charges the main battery pack of one Dolphin terminal.
- Contains the companion to the industrial-grade, 17-pin connector on the bottom panel of Dolphin terminals.
- Has two LEDs on the front: the Dock LED and the Charge LED.

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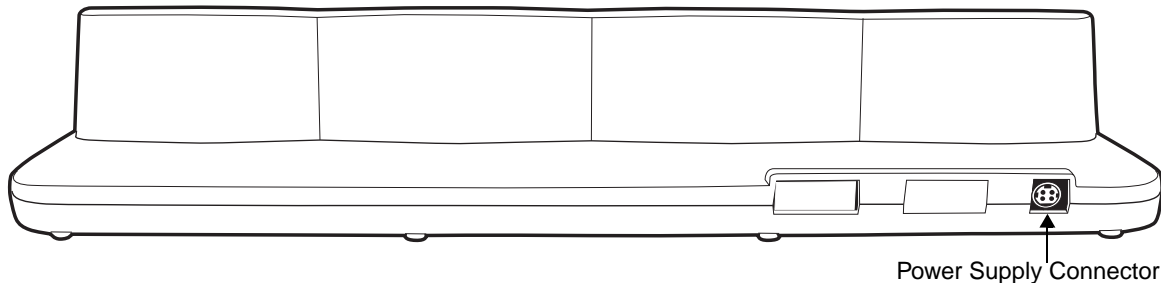
## Dock LED

Each terminal well displays a Dock LED on the front that lights solid green when a terminal is properly seated, which means that the terminal and the base are connected.

## Charge LEDs

Each terminal well displays a Charge LED on the front that lights green to indicate charging. For details, see [Charging Terminals in the ChargeBase](#) on page 15-3.

## Back Panel

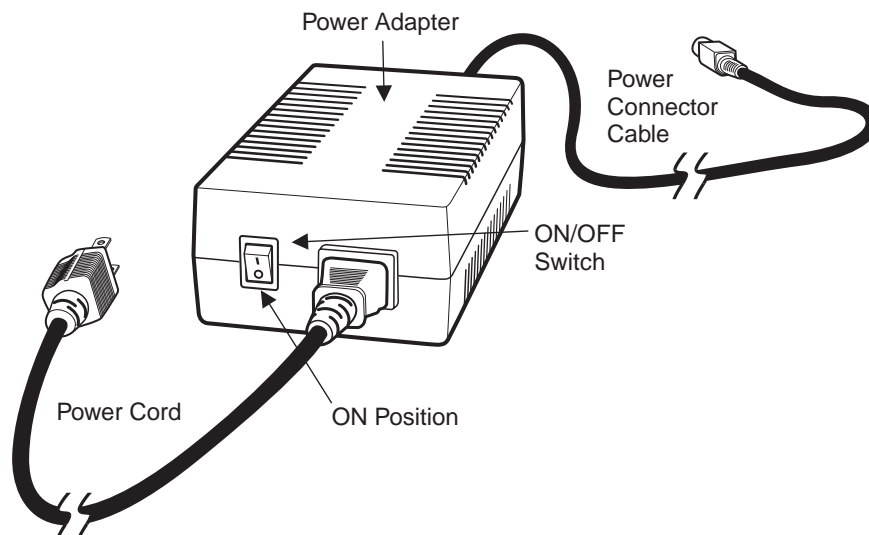


## Power Supply Connector

This connector receives input from the power adapter. Plug the power connector cable from the power adapter into this connector. There is no ON/OFF switch on the back panel of the ChargeBase. The ON/OFF switch is on the power adapter.

## Power Supply

The Dolphin ChargeBase includes a power supply that contains a power adapter to ensure the proper voltage. The power adapter plugs into standard AC/DC outlets.



## Supplying Power to the ChargeBase



*Using a non-Hand Held Products power adapter voids your warranty and could result in serious damage to the circuitry of the Dolphin ChargeBase.*

1. Be sure the power switch on the power adapter is in the OFF position.

- 
2. Plug the power cord into the power adapter.
  3. Plug the power connector cable into the power connector on the back panel of the ChargeBase.
  4. Plug the power cord into a standard wall outlet.
  5. On the power adapter, turn the power switch to the ON position. The LEDs light as the ChargeBase powers up.
  6. The Dolphin ChargeBase is ready to begin charging terminals.

### ***Inserting and Removing Terminals***

To insert a terminal, hold the terminal with the bottom panel perpendicular to the base. Slide the terminal into the well until the Dock LED lights solid green. Charging begins immediately.

To remove a terminal, grasp it firmly in your hand and lift it up and out of the terminal well. The LEDs for the terminal well turns off.

### ***Charging Terminals in the ChargeBase***

The Dolphin ChargeBase charges the main battery of each terminal in less than four hours. The Dolphin ChargeBase works with the intelligent battery charging system incorporated in the Dolphin terminal to prevents overcharging. This means that Dolphin terminals may be stored in the ChargeBase indefinitely without damage to the terminals, battery packs, or the ChargeBase.

1. Power the ChargeBase; see [Supplying Power to the ChargeBase](#) on page 15-2.
2. Insert a terminal into a terminal well; see [Inserting and Removing Terminals](#) on page 15-3.
3. The Charge LED lights green to indicate that the terminal is powered and charging.

### ***Mounting the Dolphin ChargeBase***

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

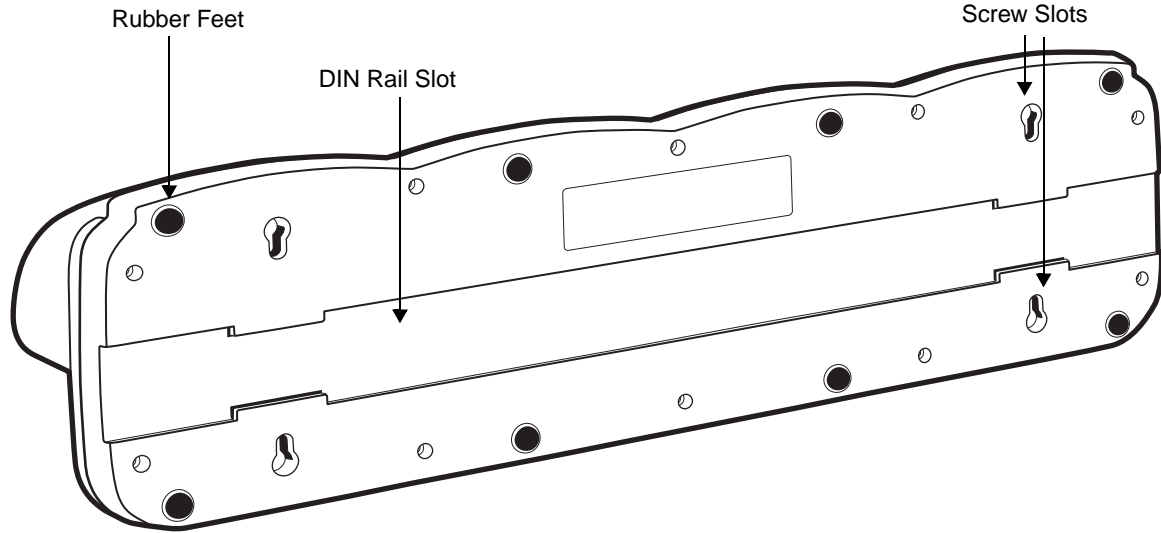
When choosing a location, always bear in mind that

- The mounting location must allow users easy access to the power connector.
- The ChargeBase should be oriented so that users can easily read the labels.

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## ***Bottom Panel***

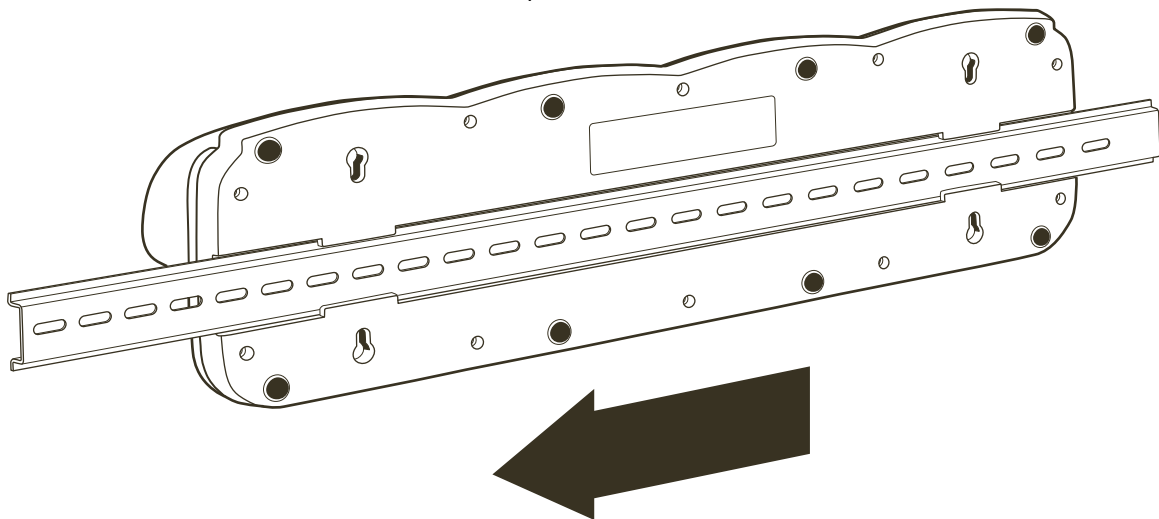
The bottom panel of the Dolphin ChargeBase offers two mounting options: insert a DIN Rail in the available slot for desk mounting or secure two mounting brackets with the available screw slots.



## ***Using the DIN Rail***

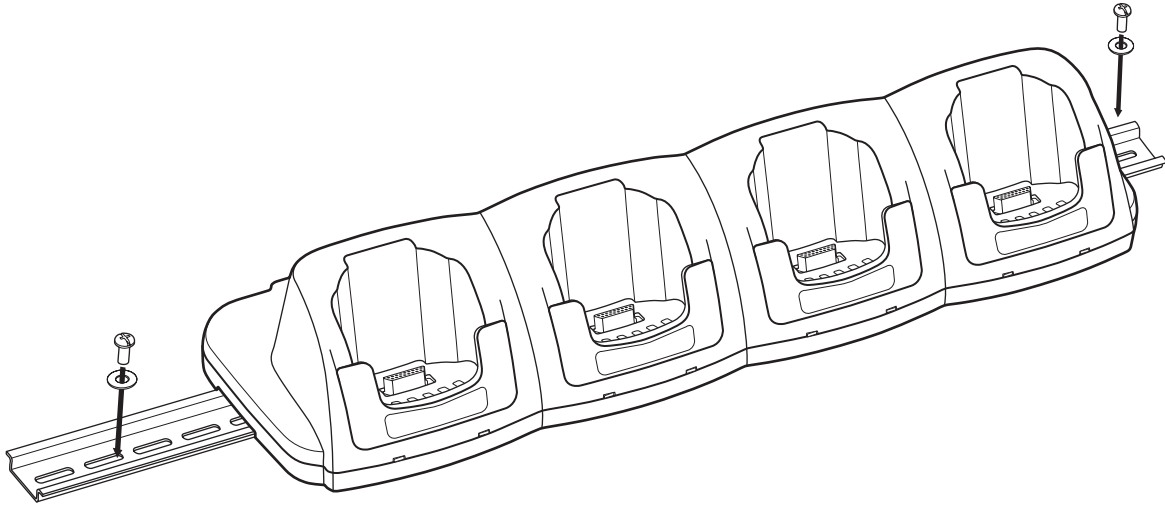
All Dolphin charging/communication cradles have a slot for a 7.5mm (high) X 35mm (wide) DIN rail on the bottom panel that enables you to mount to a desk or secure, flat surface.

1. Slide the DIN Rail into the DIN Rail slot on the bottom panel.



2. Turn the ChargeBase and DIN Rail right side up.

- 
- Secure the DIN Rail to a stable, flat horizontal surface.

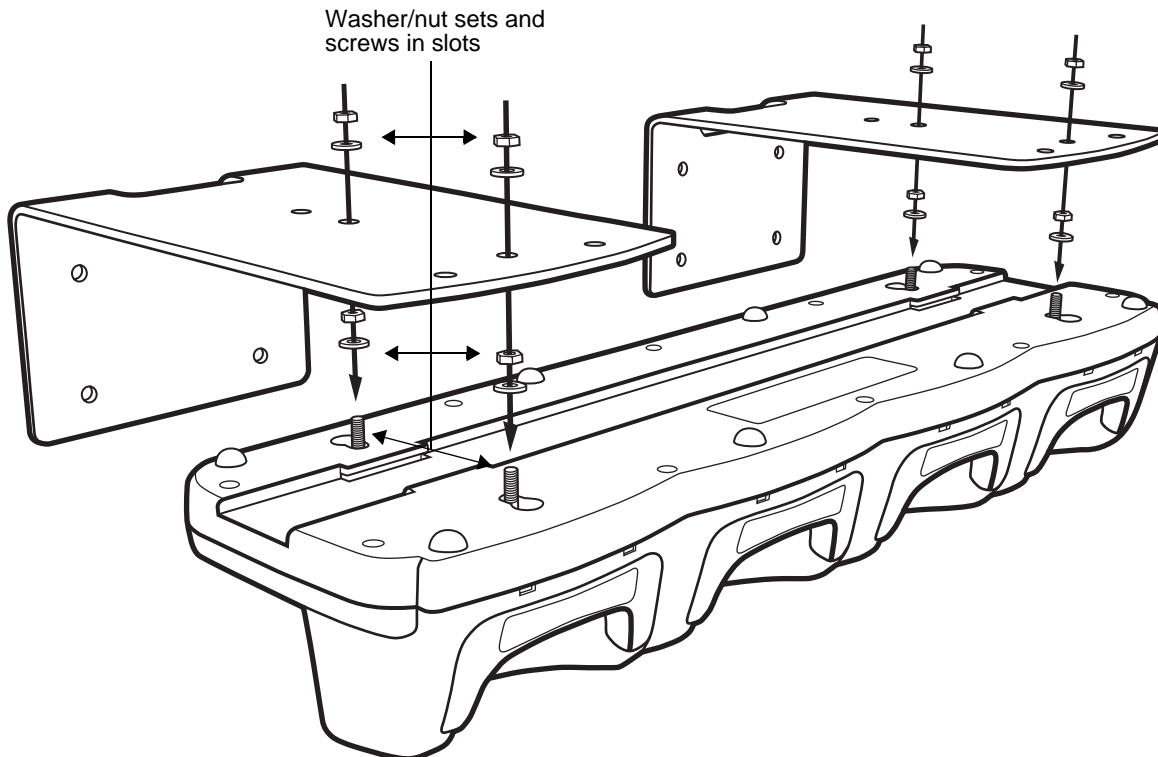


### ***Using the Mounting Brackets***

A wall mount kit can be purchased separately. It contains two mounting brackets to secure both ends of the ChargeBase. Use the screws and the mounting brackets to mount the ChargeBase to a wall or other vertical surface. Each mounting bracket contains an open slot in the back to accommodate the connector cables.

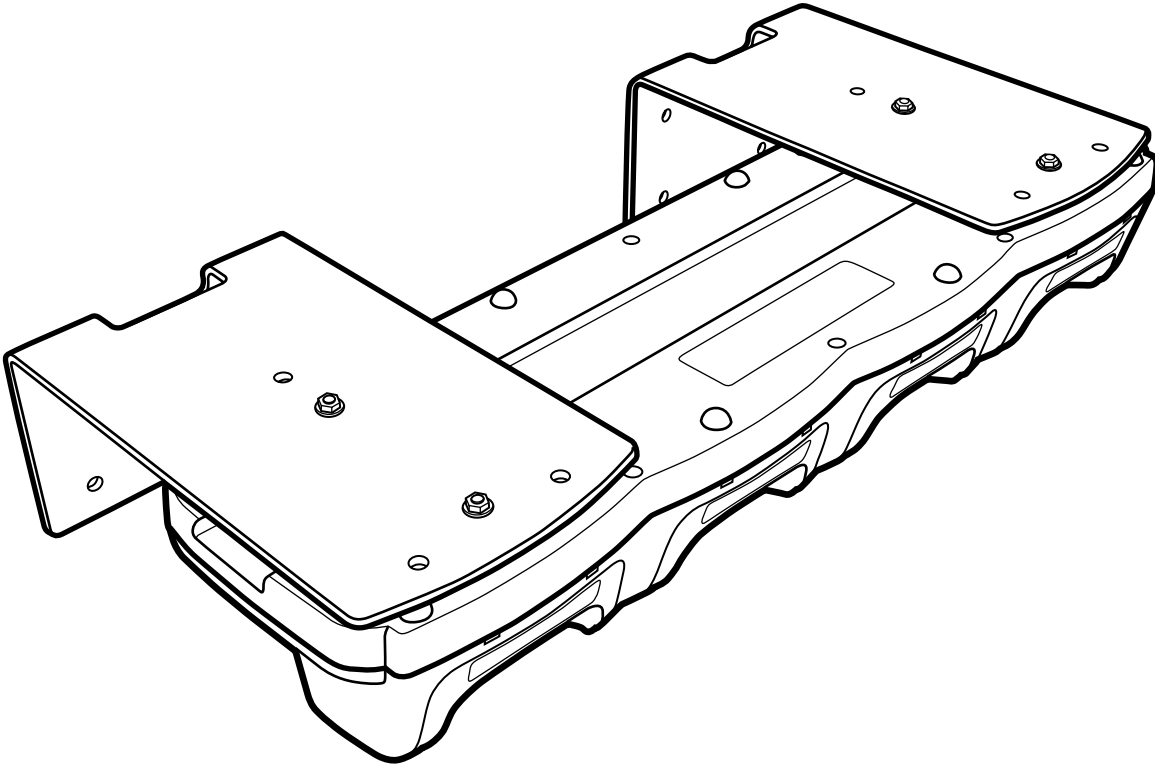
The bottom panel of the ChargeBase contains rubber feet that hold it steady on a flat surface. We recommend that those rubber feet be removed with pliers prior to applying the mounting brackets to the bottom panel.

- Secure the screws into the four screw slots on the bottom panel. Insert the heads into the round end and slide towards the narrow end until the screw is secure.
- Attach the bottom panel to the two mounting brackets.

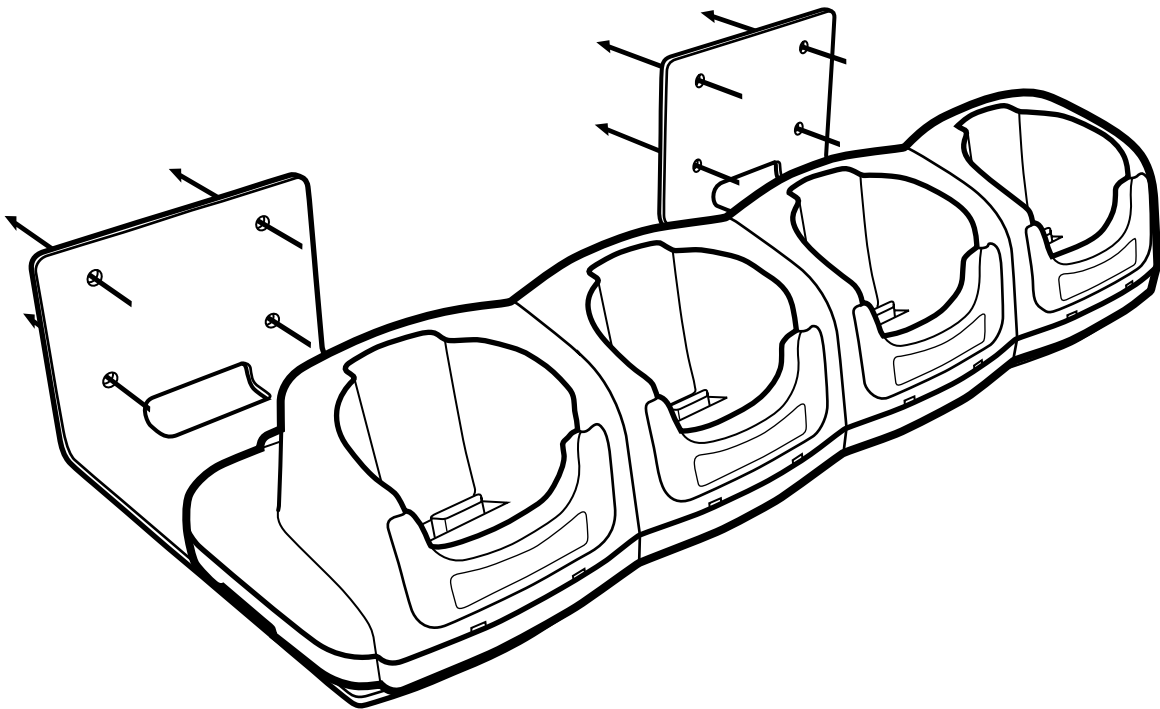


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3. Using the nuts and bolts, secure the mounting brackets to the bottom panel.



4. Secure the mounting brackets to an appropriate horizontal surface.





## Overview

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

## Compatibility

The QuadCharger is compatible with the Li-ion batteries that power Dolphin 7900 Series terminals.

## Charging Process

Each charging slot works independently of the other three.

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



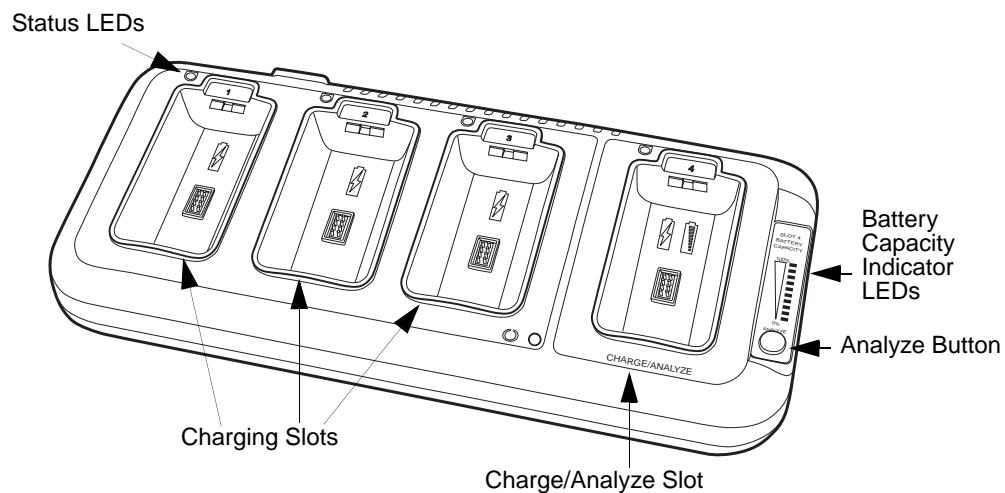
*Use only the peripherals, power cables, and power adapters from Hand Held Products. Use of peripherals, cables, or power adapters not sold/manufactured by Hand Held Products will void the warranty and may damage the terminal.*



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

## Dolphin QuadCharger Parts and Functions

### Front Panel



### Charging Slots

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

---

## Charge/Analyze Slot

This is the fourth slot and the only one that can be used to analyze a battery. When a battery is placed in this slot, it begins charging just as it does in the other three slots. However, if you press the ANALYZE button, it runs the battery in this slot through the complete Analyze cycle. For more information, see [Using the Battery Analyzer](#) on page 16-4.

## Battery Capacity Indicator LEDs

These LEDs give a readout of the remaining battery capacity after it has run through a complete analyze cycle. For more information, see [Battery Capacity Indicator LEDs](#) on page 16-2.

## Analyze Button

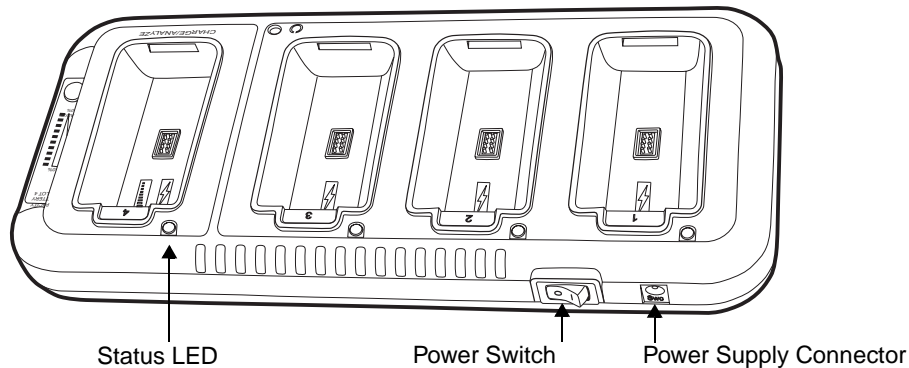
Press this button to start a battery analyze cycle; see [Using the Battery Analyzer](#) on page 16-4.

## Status LEDs

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

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

## Rear Panel



## Power Switch

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

## Power Supply Connector

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

---

## ***Supplying Power to the QuadCharger***

You must use the power adapter cable from Hand Held Products so that voltage is adjusted appropriately.

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

## ***Inserting and Removing Battery Packs***

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

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

## ***Recommendations for Storing Batteries***

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

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

## ***Charging Batteries in the QuadCharger***

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

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

---

## Using the Battery Analyzer



### Location

The battery analyzer is located in the fourth slot of the ChargeBase. Only batteries in this slot can be analyzed.

### Analyze Cycle

The Analyze cycle is initiated when a battery is placed in the Charge/Analyze slot and the ANALYZE button is pressed. In an Analyze cycle, batteries are completely discharged, then recharged to capacity, as well as completely reset and re-calibrated.

The length of time it takes for a battery to complete the Analyze cycle varies depends on initial state of the battery's charge. Minimum time is 8 hours, maximum time is 12 hours.

### Battery Capacity Indicator LEDs

The Battery Capacity Indicator LEDs are located along the right side of the Charge/Analyze slot. These LEDs display the capacity of the battery at the end of the Analyze cycle. Battery capacity is displayed as a percentage of measured capacity/rated capacity. Each LED equates to 10% battery capacity.

### Purpose

Using the Charge/Analyze slot helps you monitor the charge capacity of Li-ion batteries over time. The LEDs in this slot provides a readout of the battery's capacity after a complete discharge and full charge. They tell you the maximum charge level the battery can hold.

### Status LED

The Charge/Analyze slot also contains a standard status LED in the upper, left corner of the slot. When this slot is used for regular charging, this LED operates in the usual manner; see [Status LEDs](#) on page 16-2.

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

Status LED color	Indicates that the battery in the slot...
Solid Green	Has completed the Analyze cycle.
Flashing Orange	Is being analyzed.
Solid Red	Encountered an error during the Analyze cycle.

## To Analyze a Battery

Complete these steps:

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



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

---

## ***Mounting the QuadCharger***

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

When choosing a location, always bear in mind that

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

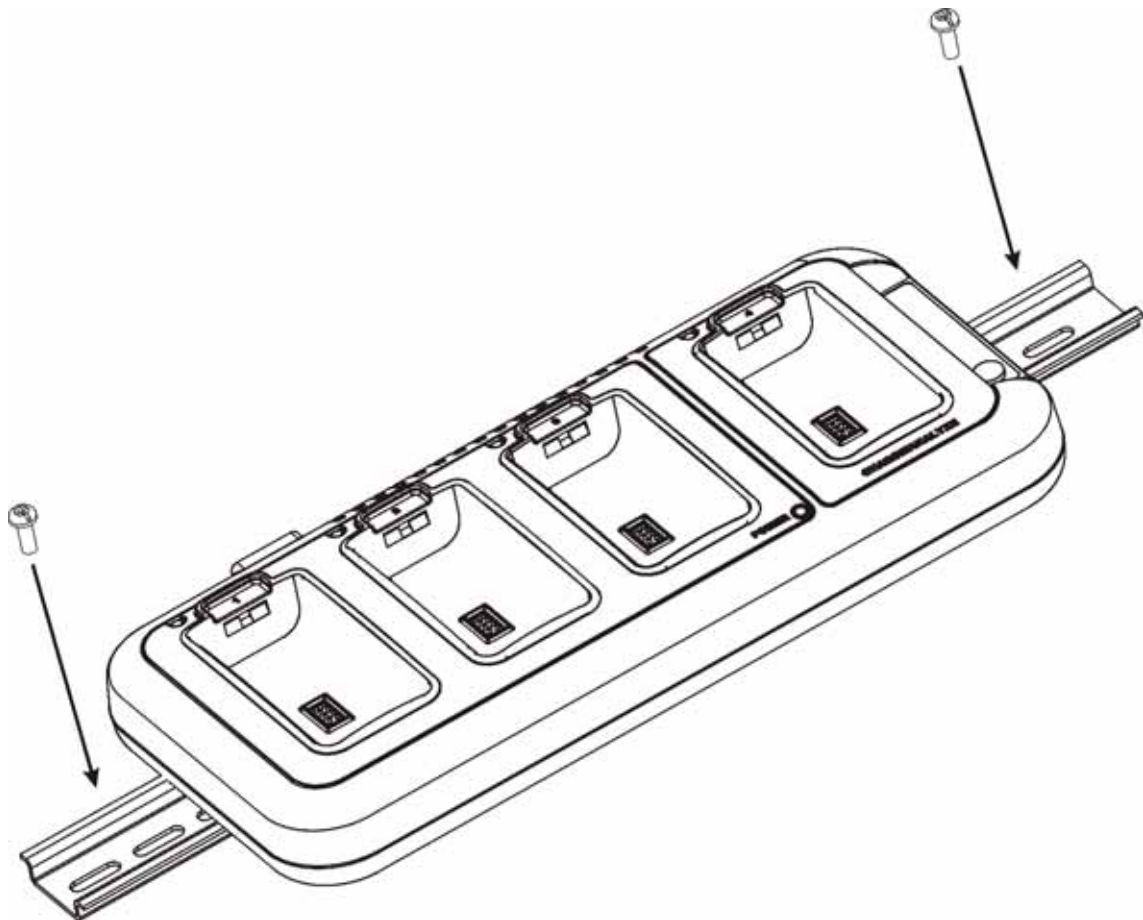
### ***Using the DIN Rail***

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

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

### ***Desk Mounting***

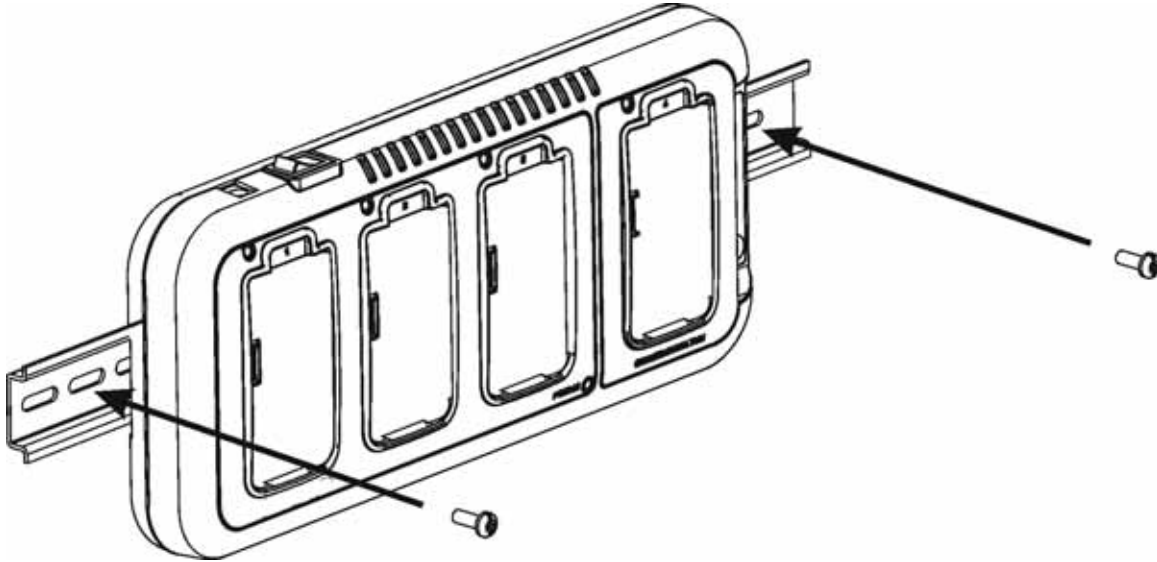
The following graphic displays how to mount the QuadCharger to a desk:



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## Wall Mounting

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



## Troubleshooting

If you encounter problems with your Dolphin QuadCharger, refer to chart below for possible solutions. If problems persist, please contact Technical Support.

Problem	Issue
The Status LED does not come on when I insert a battery pack into the Dolphin QuadCharger	Check the power connections on the Dolphin QuadCharger; make sure the POWER switch is ON and the battery pack is properly seated.
The Status LED lights red during charging.	Try to charge the battery in one of the other charging slots. If the red Status LED comes on again, then the problem is associated with the battery pack. If the red status stays with the charging slot, the problem is associated with the charging circuitry.
The Status LED lights red and stays on without a battery in the charging slot.	An error occurred during the self-diagnostic test for that particular charging pocket. Call Hand Held Products Product Service and request an RMA. For additional warranty and return information, see <a href="#">Customer Support</a> on page 17-1.

### ***Product Service and Repair***

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

#### **North America**

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

#### **America Latina**

Hand Held Products America Latina  
Teléfono: (239) 263-7600  
Fax: (239) 263-9689  
*E-mail: laservice@handheld.com*

#### **Brazil**

Hand Held Products Brazil  
Telephone: +55 (21) 2176-0250  
Fax: +55 (21) 2176-0249  
*E-mail: suporte@handheld.com*

#### **Europe, Middle East, and Africa**

Hand Held Products Europe  
Telephone: + 31 (0) 40 29 01 633  
Fax: + 31 (0) 40 2901631  
*E-mail: euservice@handheld.com*

#### **Asia Pacific**

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

#### **Japan**

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

### ***Online Product Service and Repair Assistance***

You can also access product service and repair assistance online at [www.handheld.com](http://www.handheld.com).

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## ***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](mailto:natechsupport@handheld.com)

### **Europe, Middle East, and Africa:**

Telephone-

European Ofc: Int+31 (0) 40 29 01 600

U.K. Ofc: Int+44 1925 240055

E-mail: [eutechsupport@handheld.com](mailto:eutechsupport@handheld.com)

### **Asia Pacific:**

Telephone: Int+852-3188-3485 or 2511-3050

E-mail: [aptechsupport@handheld.com](mailto:aptechsupport@handheld.com)

### **America Latina:**

Teléfono: (704) 998-3998, opción 8

E-mail: [latechsupport@handheld.com](mailto:latechsupport@handheld.com)

## ***Online Technical Assistance***

You can also access technical assistance online at [www.handheld.com](http://www.handheld.com).



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## ***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.

The limited duration of the warranty for the Dolphin 7900 Series is as follows:

- Terminals with an integrated imager are covered by a two-year limited warranty.
- Terminals with an integrated laser engine are covered by a one-year limited warranty.
- Touch screens are covered by a one-year limited warranty.
- HomeBase, Mobile Base, Mobile Charger, Net Base, ChargeBase, and QuadCharger are covered by a one-year limited 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 7900 Series User's Guide.
- 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.

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

## ***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.





**Hand Held Products, Inc.**  
700 Visions Drive  
P.O. Box 208  
Skaneateles Falls, NY 13153-0208