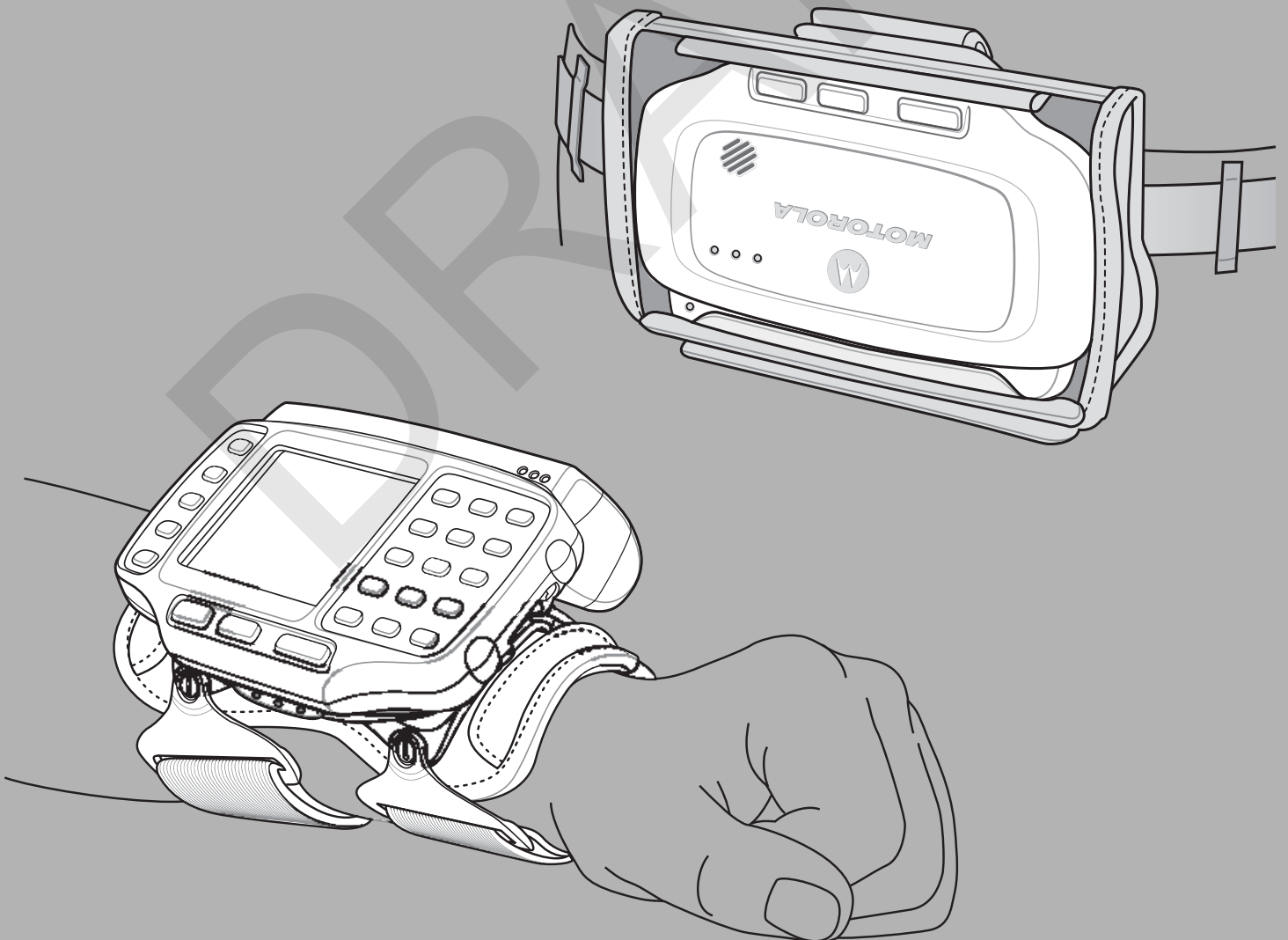


WT41N0 WEARABLE TERMINAL USER GUIDE



WT41N0 WEARABLE TERMINAL

USER GUIDE

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Rev. 1

February 2012

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Revision History

Changes to the original manual are listed below:

Change	Date	Description

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ABOUT THIS GUIDE

Introduction

This guide provides information about using the WT41N0 family of mobile terminals and accessories. The WT41N0 has two versions, one with a display and a voice only version without a display. Throughout this guide Voice Only WT41N0 refers to the version without the display and WT41N0 refers to the version with a display.

✓ **NOTE** Screens and windows pictured in this guide are samples and can differ from actual screens.

Documentation Set

The documentation set for the WT41N0 is divided into guides that provide information for specific user needs.

- **WT41N0 Quick Start Guide** -
- **Voice Only WT41N0 Quick Start Guide** -
- **WT41N0 User Guide** - describes how to use the WT41N0 wearable terminal.
- **WT41N0 Integrator Guide** - describes how to set up the WT41N0 wearable terminal and the accessories.
- **EMDK Help File** - provides API information for writing applications.

Configurations

This guide covers the following configurations:

Configuration	Radios	Display	Memory	Data Capture	Operating System	Keypads
WT41N0	WLAN: 802.11a/b/g/n WPAN: Bluetooth	2.8" QVGA Color; non-touch	2 GB Flash/ 512 MB RAM	Optional accessory	Windows CE 7.0 Professional	Two-color Alphanumeric Keypad
		2.8" QVGA Color; touch	2 GB Flash/ 512 MB RAM	Optional accessory	Windows CE 7.0 Professional	Two-color Alphanumeric Keypad
Voice Only WT41N0	WLAN: 802.11a/b/g/n WPAN: Bluetooth	None	2 GB Flash/ 512 MB RAM	Optional accessory	Windows CE 7.0 Professional	Three programmable keys

Software Versions

- ✓ **NOTE** To view the software versions on the Voice Only WT41N0, the Voice Only WT41N0 must be connected to a host computer running remote desktop software. Refer to the *WT41N0 Integrator Guide* for more information.

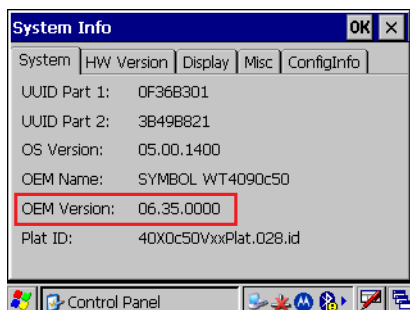
This guide covers various software configurations and references are made to operating system or software versions for:

- OEM version
- Fusion version.

OEM Software

To determine the OEM software version:

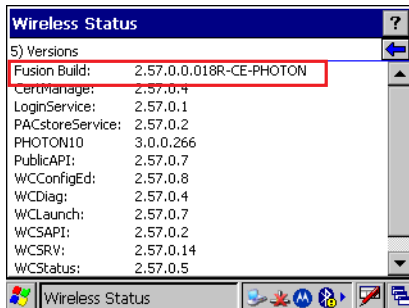
1. Press **CTRL** and then **ESC** to open the **Start** menu.
2. Using the navigation keys, select **Settings**.
3. Press the Blue key and the down arrow to open the **Control Panel** sub-menu.
4. Press **ENTER** key to launch **Control Panel**.
5. Using the navigation keys, select the **System Information** icon.
6. Press **ENTER** key to launch **System Information** applet.



Fusion Software

To determine the Fusion software version:

1. Press **ALT - w**. The **Wireless** menu appears.
2. Using the navigation keys, select **Wireless Status**.
3. Press **ENTER**. The **Wireless Status** window displays.
4. Press **5**. The **Versions** screen appears.



Chapter Descriptions

Topics covered in this guide are as follows:

- [Chapter 1, Getting Started](#), provides information on getting the wearable terminal up and running for the first time.
- [Chapter 2, Using the Wearable Terminal](#), explains how to use the wearable terminal. This includes instructions for powering on and resetting the wearable terminal, entering and capturing data.
- [Chapter 5, Accessories](#), describes the accessories available for the wearable terminal and how to use the accessories with the wearable terminal.
- [Chapter 6, Maintenance & Troubleshooting](#), includes instructions on cleaning and storing the wearable terminal, and provides troubleshooting solutions for potential problems during wearable terminal operation.
- [Appendix A, Specifications](#), includes a table listing the technical specifications for the wearable terminal.

Notational Conventions

The following conventions are used in this document:

- “Wearable terminal” refers to the WT41N0 series of wearable terminals.
- *Italics* are used to highlight the following:
 - Chapters and sections in this guide
 - Related documents

- **Bold** text is used to highlight the following:
 - Dialog box, window and screen names
 - Drop-down list and list box names
 - Check box and radio button names
 - Icons on a screen
 - Key names on a keypad
 - Button names on a screen.
- Bullets (•) indicate:
 - Action items
 - Lists of alternatives
 - Lists of required steps that are not necessarily sequential.
- Sequential lists (e.g., those that describe step-by-step procedures) appear as numbered lists.

Related Documents and Software

The following documents provide more information about the WT41N0 wearable terminals.

- *WT41N0 Quick Start Guide*, p/n 72-157178-xx
- *Voice Only WT41N0 Quick Start Guide*, p/n 72-xxxxxx-xx
- *WT41N0 Regulatory Guide*, p/n 72-159559-xx
- *WT41N0 Integrator Guide*, p/n 72E-160600-xx
- *RS309 Scanner Quick Reference Guide*, p/n 72-86011-xx
- *RS409 Scanner Quick Reference Guide*, p/n 72-86010-xx
- *RS419 Scanner Quick Reference Guide*, p/n 72-86010-xx
- *RS507 Hands-free Imager Quick Reference Guide*, p/n 72-115987-xx
- *RS507 Hands-free Imager Product Reference Guide*, p/n 72E-120802-xx
- *Wireless Fusion Enterprise Mobility Suite User Guide for Version 1.XX*, p/n 72E-xxxxxx-xx
- *Enterprise Mobility Developer Kits*, available at: <http://www.motorola.com/enterprisemobility/support>.
- Device Configuration Package (DCP for WT41N0c50) and Platform SDK (PSDK9090c70) for WT41N0 with Windows CE 7.0, available at: <http://www.motorola.com/enterprisemobility/support>.
- ActiveSync software, available at: <http://www.microsoft.com>.

For the latest version of this guide and all guides, go to: <http://www.motorola.com/enterprisemobility/manuals>.

Service Information

If you have a problem with your equipment, contact Motorola Enterprise Mobility support for your region. Contact information is available at: <http://www.motorola.com/enterprisemobility/contactsupport>.

When contacting Enterprise Mobility support, please have the following information available:

- Serial number of the unit

- Model number or product name
- Software type and version number

Motorola responds to calls by email, telephone or fax within the time limits set forth in support agreements.

If your problem cannot be solved by Motorola Enterprise Mobility Support, you may need to return your equipment for servicing and will be given specific directions. Motorola is not responsible for any damages incurred during shipment if the approved shipping container is not used. Shipping the units improperly can possibly void the warranty.

If you purchased your Enterprise Mobility business product from a Motorola business partner, contact that business partner for support.

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CHAPTER 1 GETTING STARTED

Introduction

This chapter lists the parts and accessories for the wearable terminal and explains how to install and charge the batteries and start the wearable terminal for the first time.

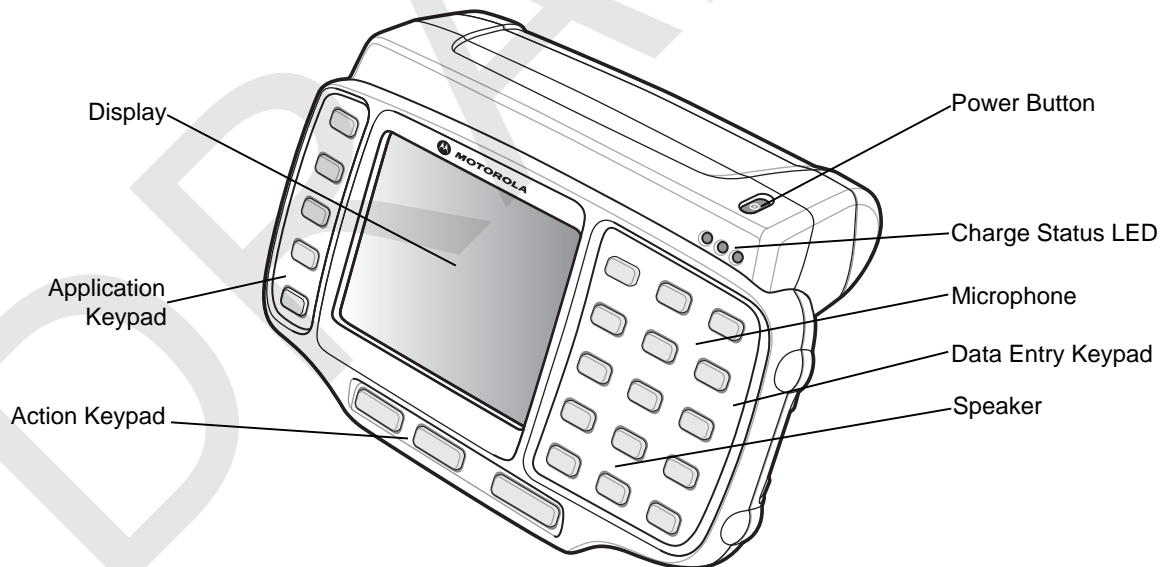


Figure 1-1 WT41N0 Wearable Terminal Front View

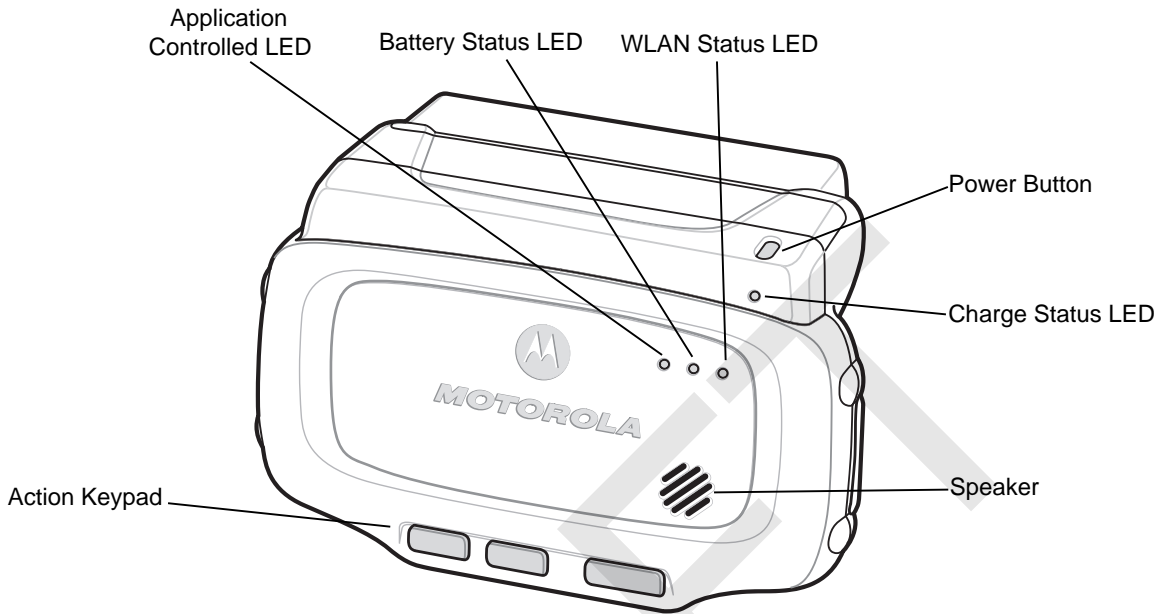


Figure 1-2 Voice Only WT41N0 Wearable Terminal Front View

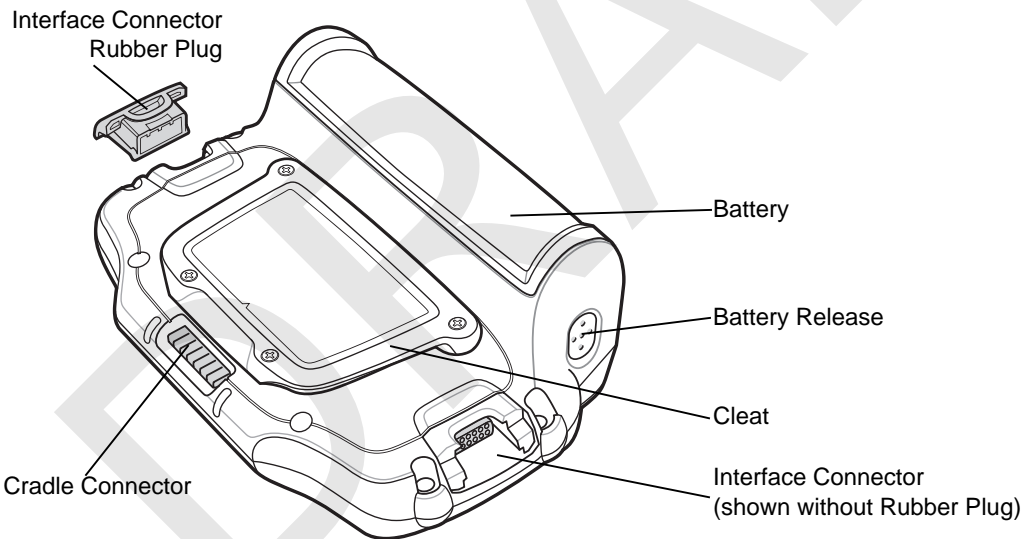


Figure 1-3 Wearable Terminal Back View

Table 1-1 Parts of the Wearable Terminal

Item	Description
Display	Displays the application and data stored on the device. (WT41N0 only)
Power Button	Places the wearable terminal in to the suspend mode or resumes normal operation. Performs a warm boot when held down for five seconds. See <i>Resetting the Wearable Terminal on page 2-17</i> for information about performing a warm boot.
Charge Status LED	Indicates the charging status of the battery.

Table 1-1 *Parts of the Wearable Terminal (Continued)*

Item	Description
WLAN Status LED	Indicates the status of the wireless connection. (Voice Only WT41N0 only)
Battery Status LED	Indicates when the battery charge level falls below 30%. (Voice Only WT41N0 only)
Application Controlled LED	Application programmable. (Voice Only WT41N0 only)
Microphone	
Speaker	Provides audio playback.
Keypads	Enable user input.
Battery	Provides power to the wearable terminal.
Interface Connector	Provides electrical connection to an accessory, such as a scanner.
Cradle Connector	Provides electrical connection to a cradle.
Battery Release	Releases the battery for removal.
Cleat	Provides mounting for the wrist mount and cradles.

Unpacking the Wearable Terminal

Carefully remove all protective material from around the wearable terminal and save the shipping container for later storage and shipping.

Verify that you received all equipment listed below:

- Wearable terminal
- Lithium-ion battery
- Regulatory Guide
- Quick Start Guide.

Inspect the equipment for damage. If you are missing any equipment or if you find any damaged equipment, contact the Motorola Solutions Global Customer Support Center immediately. See [page xii](#) for contact information.

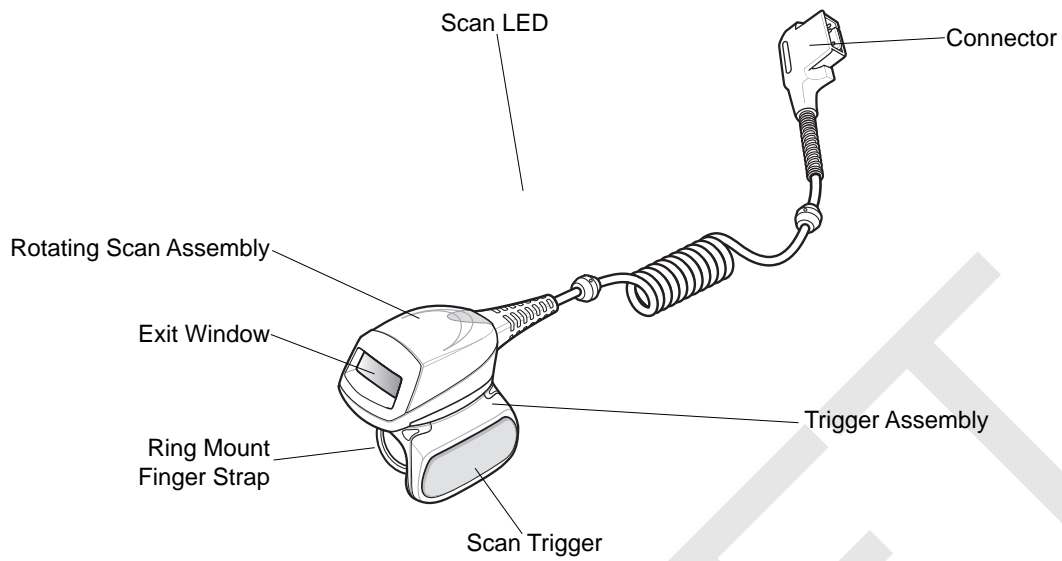


Figure 1-4 RS419 Scanner

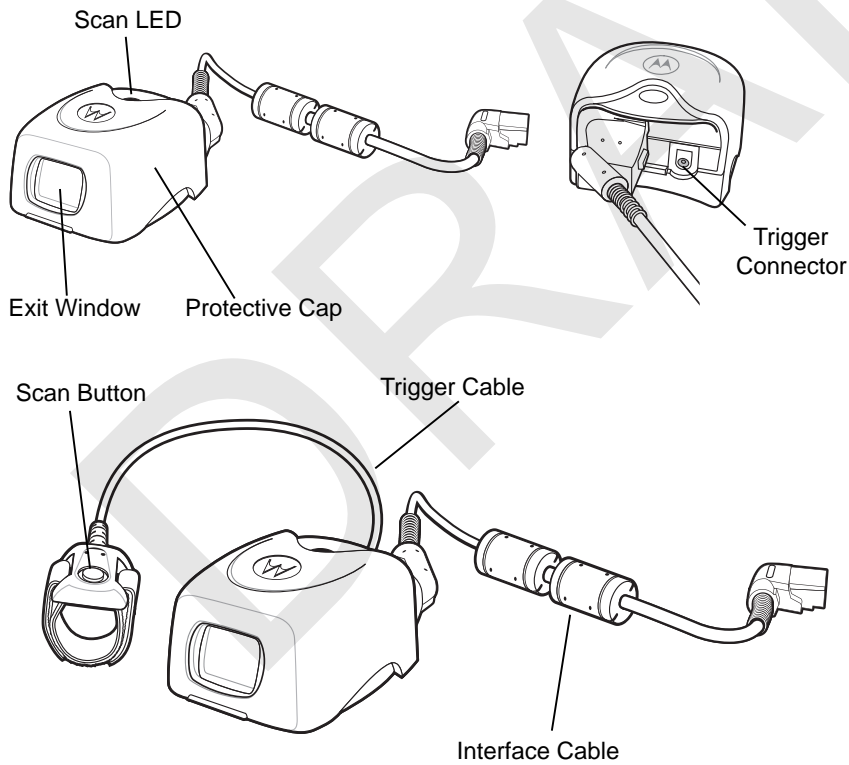


Figure 1-5 RS309 Scanner

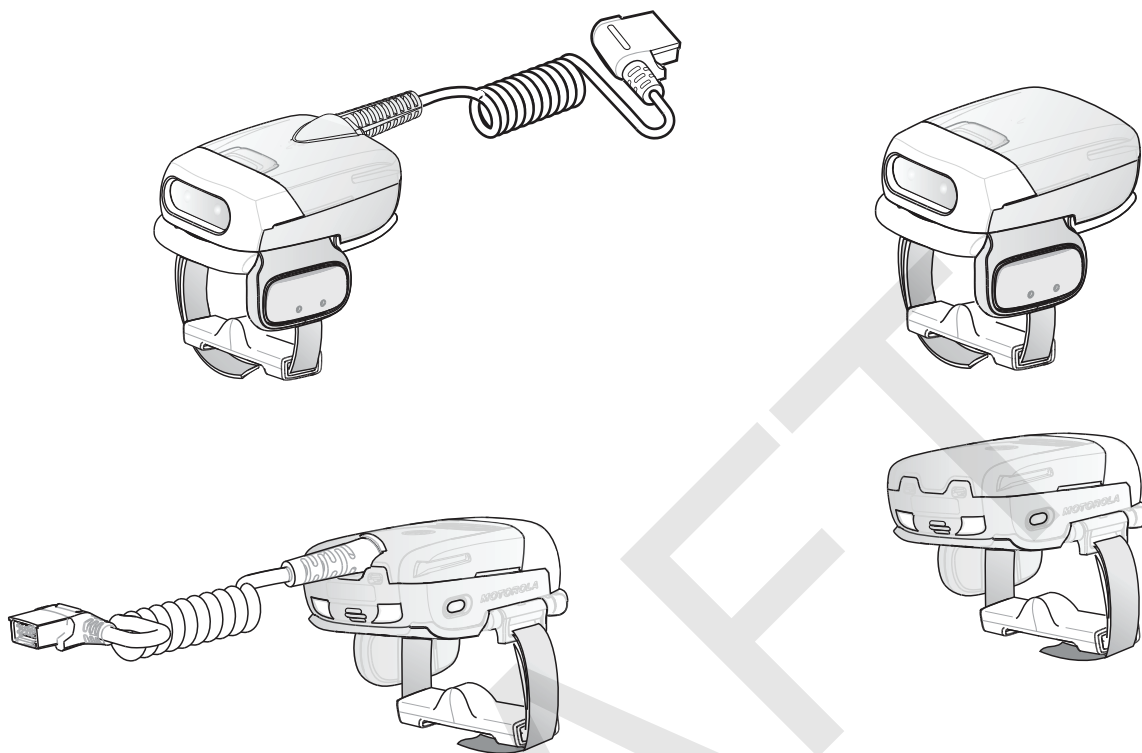


Figure 1-6 *RS507 Scanner*

Getting Started

In order to start using the wearable terminal for the first time:

- Install the main battery
- Charge the main battery and backup battery
- Install the wearable terminal onto the wrist mount
- Install an optional scanner
- Start the wearable terminal.

✓ **NOTE** The main battery can be charged before or after installation into the wearable terminal. Use the Single Slot USB cradle or Four Slot Spare Battery Charger to charge the main battery before installation, or the Single Slot USB cradle or Four Slot Ethernet cradle to charge the main battery after installation.

Installing and Removing the Main Battery

Installing the Main Battery

Before using the wearable terminal, install a lithium-ion (Li-ion) battery by placing the battery into the wearable terminal as shown in [Figure 1-7](#).

✓ **NOTE** Ensure the battery is fully inserted. An audible click can be heard as the battery is fully inserted. A partially inserted battery may result in unintentional data loss.

When a battery is installed in a wearable terminal for the first time the wearable terminal boots and powers on automatically.

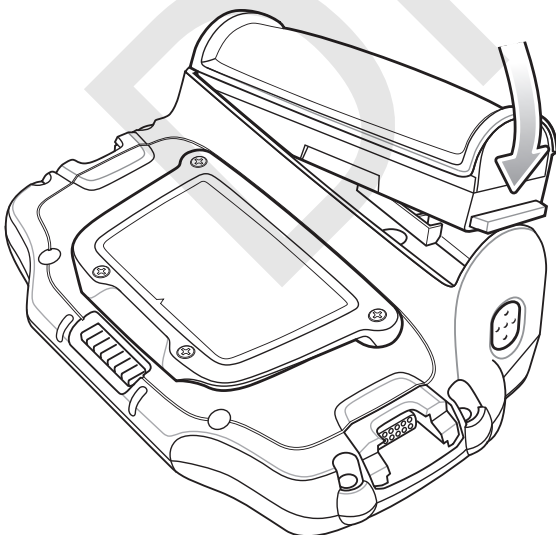


Figure 1-7 *Installing the Main Battery*

Charging the Battery



CAUTION Ensure that you follow the guidelines for battery safety described in *Battery Safety Guidelines* on page 6-3.

Charging the Main Battery and Memory Backup Battery

Before using the wearable terminal for the first time, charge the main battery until the amber Charge Status LED remains lit (see [Table 1-2 on page 1-7](#) for charge status indications).

The wearable terminal is equipped with a memory backup battery which automatically charges from the main battery whether or not the wearable terminal is operating or is in suspend mode. The memory backup battery retains data in memory for at least 30 minutes when the wearable terminal's main battery is removed or fully discharged. When the wearable terminal is used for the first time or after the memory backup battery has fully discharged, the memory backup battery requires approximately 15 hours to fully charge. Do not remove the main battery from the wearable terminal for 15 hours to ensure that the memory backup battery fully charges. If the main battery is removed from the wearable terminal or the main battery is fully discharged, the memory backup battery completely discharges in several hours.

When the wearable terminal reaches a very low battery state, the combination of main battery and backup battery retains data in memory for at least 24 hours.

✓ **NOTE** Do not remove the main battery within the first 15 hours of use. If the main battery is removed before the backup battery is fully charged, data may be lost.

Charge the wearable terminal with an installed main battery using either the Single Slot USB cradle or the Four Slot Ethernet cradle.

To charge the main battery:

1. Ensure the cradle used to charge the main battery is connected to the appropriate power source.
2. Insert the wearable terminal into a cradle.
3. The wearable terminal starts to charge automatically. The amber Charge Status LED lights to indicate the charge status. See [Table 1-2](#) for charging indications. The standard capacity battery fully charges in less than four hours and the extended battery fully charges in less than eight hours.

Table 1-2 *Wearable Terminal LED Charge Indicators*

LED	Indication
Off	Wearable terminal is not in cradle. Wearable terminal not placed correctly. Charger is not powered.
Fast Blinking Amber	Charging error: <ul style="list-style-type: none"> • Temperature is too low or too high. • Charging has gone on too long without completing (typically eight hours).
Slow Blinking Amber	Wearable terminal is charging.
Solid Amber	Charging complete. Note: When the battery is initially inserted in the wearable terminal, the amber LED flashes once if the battery power is low or the battery is not fully inserted.

Charging Spare Batteries

Use the following accessories to charge spare batteries:

- Single Slot USB Cradle
- Four Slot Spare Battery Charger.

To charge a spare battery:

1. Ensure the accessory used to charge the spare battery is connected to the appropriate power source.
2. Insert the spare battery into the accessory's spare battery charging slot with the charging contacts facing down (over the charging pins) and gently press down on the battery to ensure proper contact.
3. The battery starts to charge automatically. The amber charge LED on the accessory lights to show the charge status. See [Chapter 5, Accessories](#) for accessory charge LED indicator definitions.

The standard capacity battery fully charges in less than four hours and the extended capacity battery fully charges in less than eight hours.

Removing the Main Battery

To remove the main battery:

1. Prior to removing the battery, ensure that the wearable terminal is in suspend mode. If the wearable terminal is not in suspend mode, press the Power button to place the wearable terminal in suspend mode.
2. Press the battery release button. The battery partially ejects from the wearable terminal.
3. Remove the battery from the wearable terminal.

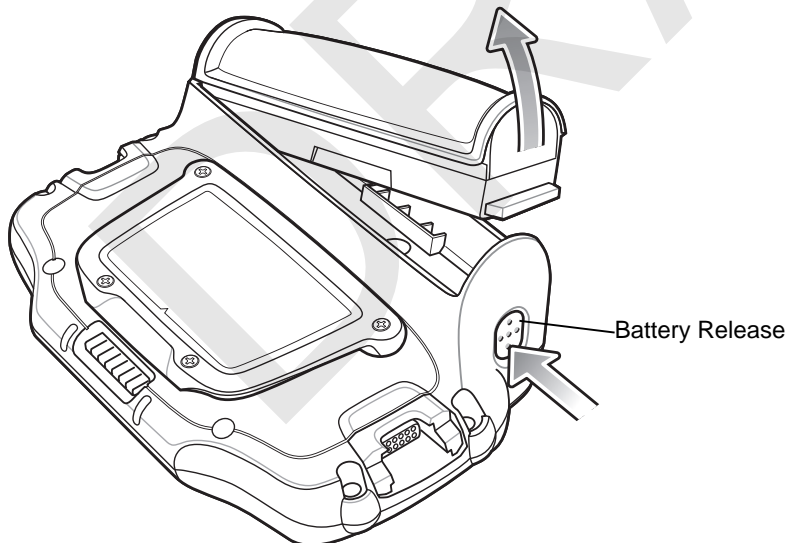


Figure 1-8 *Removing the Main Battery*

Installing the Wrist Mount

The wrist mount provides the mounting of the wearable terminal on the forearm for hands-free applications. Refer to the Wrist Mount Installation Guide for information on the wrist mount.

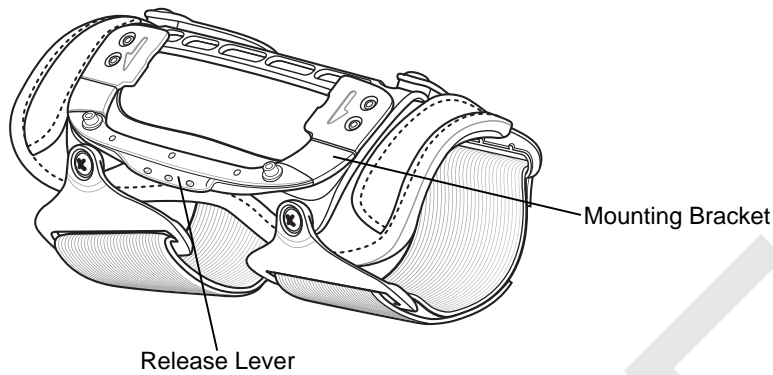


Figure 1-9 *Wrist Mount*

To install the wrist mount:

1. Determine which arm the wrist mount will be used on.
2. Install the short strap on the end closest to the wrist.
3. Install the long strap on the other end.
4. Slide the hand into the wrist mount.
5. Tighten the straps.
6. Align the cleat on the back of the wearable terminal with the mounting bracket on the wrist mount.

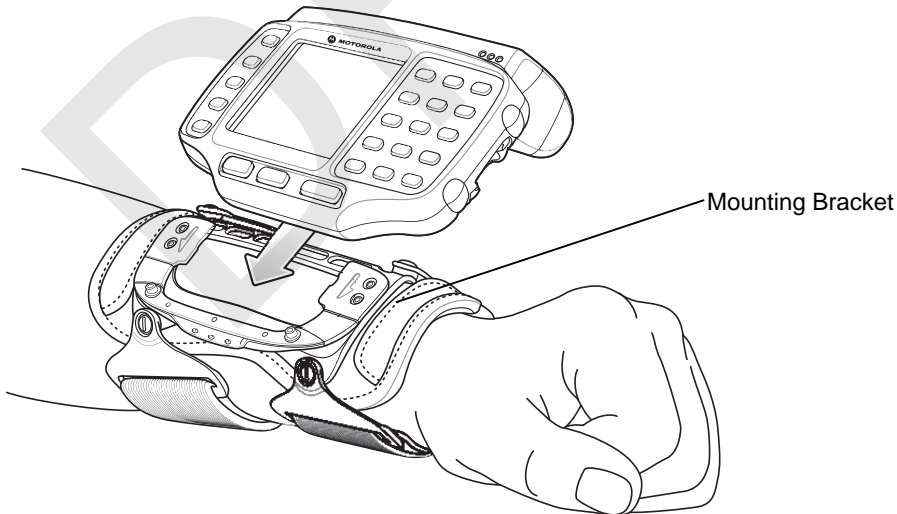


Figure 1-10 *Aligning the Cleat*

7. Slide the wearable terminal onto the wrist mount until it clicks into place.
8. If necessary, loosen and re-tighten the straps.

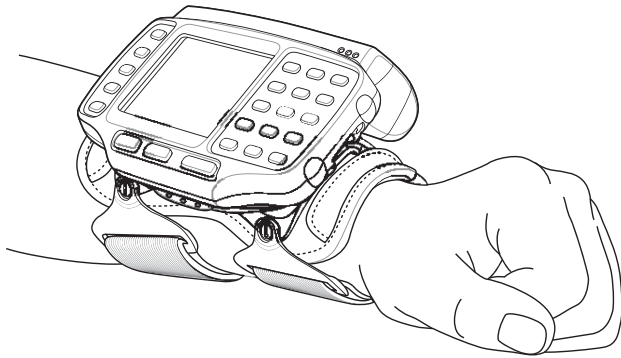


Figure 1-11 *Wearable Terminal and Wrist Mount*

To remove the wearable terminal from the wrist mount, press down on the release lever and slide the wearable terminal out.

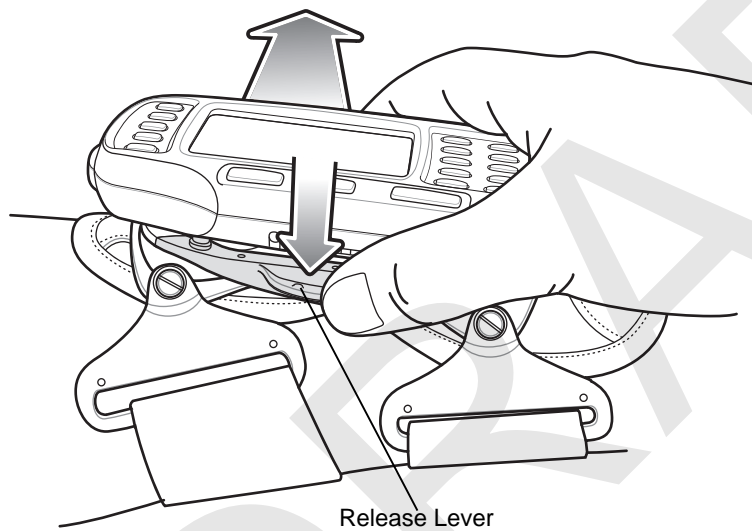


Figure 1-12 *Wearable Terminal Removal*

Install a Hip Mount

The hip mount allows the user to mount the wearable terminal on the hip for use in voice picking applications. An RS309, RS409 or RS419 scanner with an extended cable is required when using the hip mount.

Slide the wearable terminal into the hip mount.

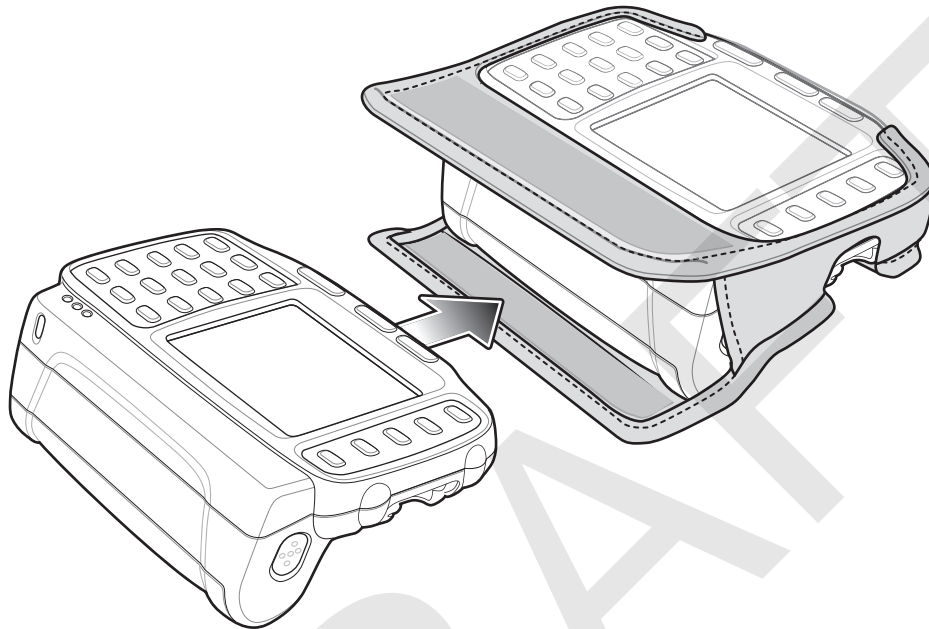


Figure 1-13 *Insert Wearable Terminal into Hip Mount*

Close the front flap followed by the back flap.

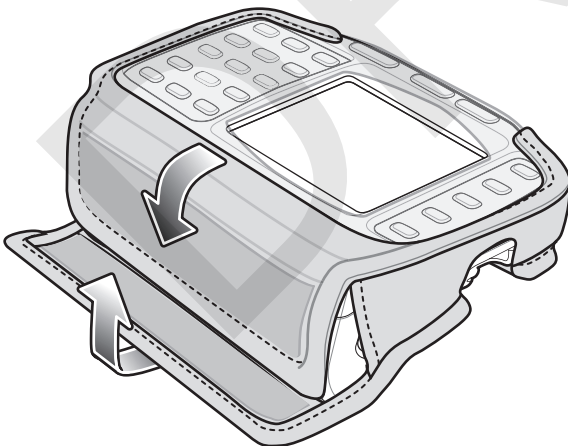


Figure 1-14 *Close Hip Mount Flaps*

Slide a belt through the belt loop on the back of the hip mount. The wearable terminal can be mounted right-side up or up-side down depending upon user preference or application.

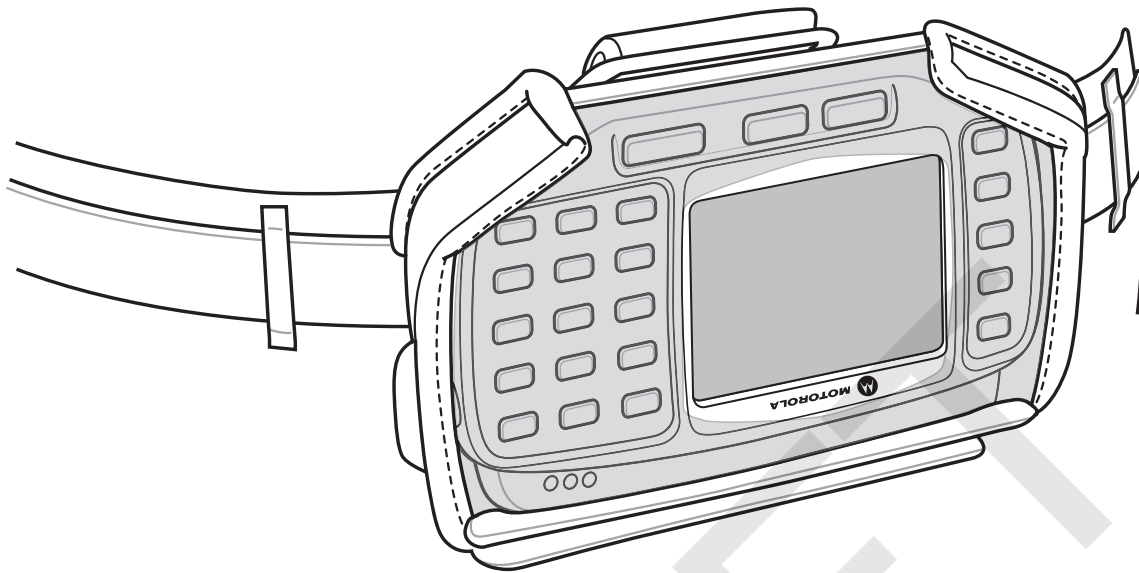


Figure 1-15 *Hip Mount on Belt*

Connect accessories as required.

Routing an Extended Cable Scanner

When using an RS309, RS409 or RS419 scanner with the wearable terminal mounted on the hip, the extended cable version is required.

Motorola offers for sale cable clips, which attach to clothing and hold the scanner cable so that the cable does not interfere with the user. The cable clips are similar to badge clips and can be purchased at any office supply store as well.

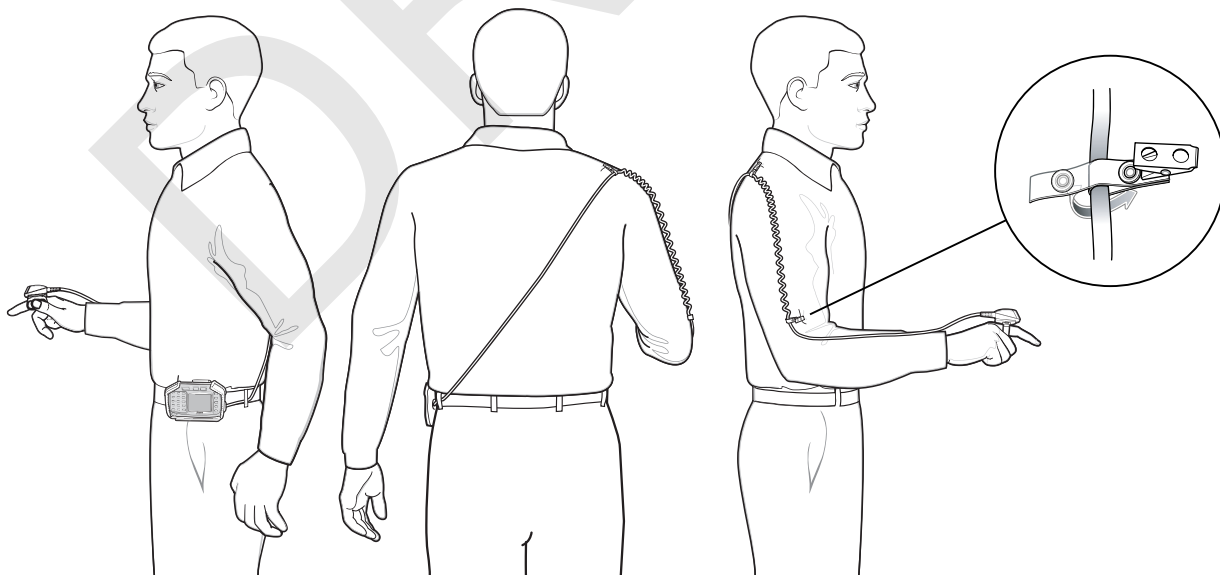


Figure 1-16 *Routing RS409/419 Scanner Cable from Hip to Hand*

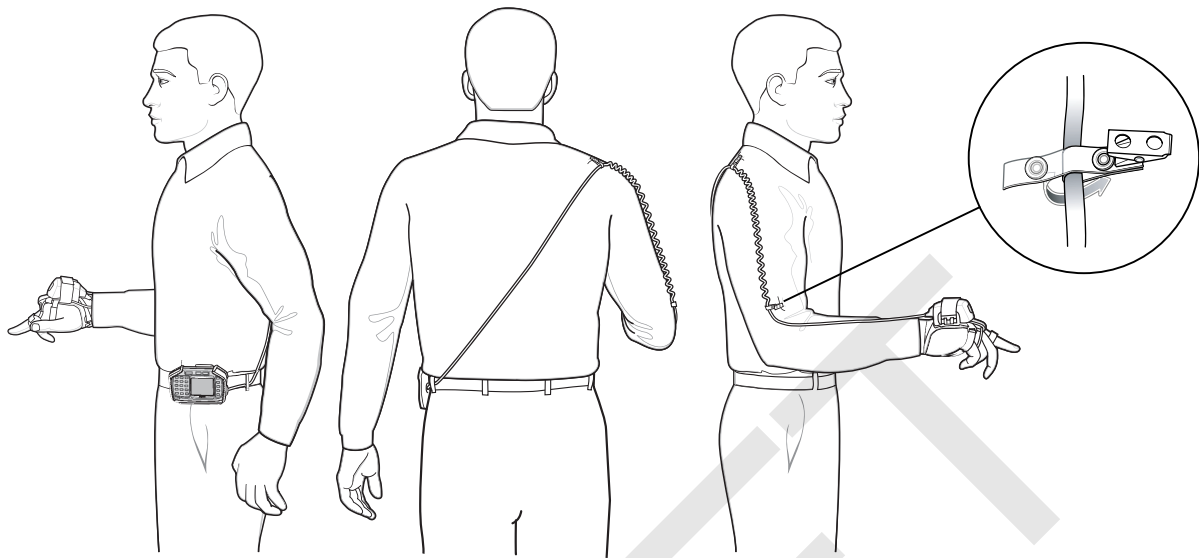


Figure 1-17 Routing RS309 Scanner Cable from Hip to Hand

Connecting a Scanner

The RS309, RS409 and RS419 scanners and the RS507 imager can be used with the wearable terminal. See *RS309 Scanner* on page 5-10 and *RS409/RS419 Scanner* on page 5-8 for procedures for connecting the scanner to the wearable terminal. Refer to the RS507 Product Reference Guide for procedures for connecting the imager to the wearable terminal.

Starting the Wearable Terminal

Press the **Power** button to turn on the wearable terminal. If the wearable terminal does not power on, perform a cold boot. See [Resetting the Wearable Terminal](#) on page 2-17.

- ✓ **NOTE** When a battery is fully inserted in a wearable terminal for the first time, upon the wearable terminal's first power up, the device cold boots and powers on automatically.

WT41N0 Boot Up

When the WT41N0 is powered on for the first time the splash screen ([Figure 1-18](#)) appears for a short period of time followed by the Start Up window on non-touch configurations and the calibration screen on touch enabled configurations.



Figure 1-18 *Splash Screen*

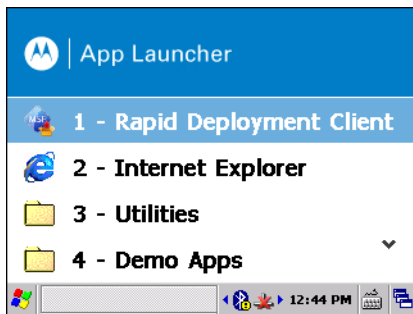


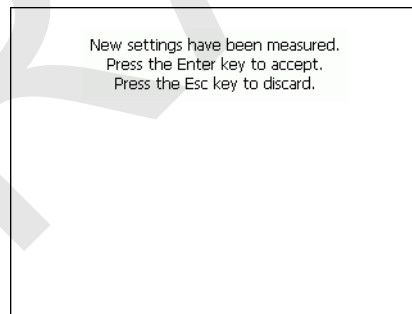
Figure 1-19 *Start Up Window*

Use the **Calibration** screen to align the touch screen:

1. Carefully press and briefly hold on the center of the **Calibration** screen target. Repeat the procedure as the target moves and stops at different locations on the screen. This enters the new calibration settings.



Calibration Screen



Confirm Calibration
Screen

Figure 1-20 *Calibration Screen*

2. Once all of the new calibration settings are input, tap the screen or press the **ENTER** button to save the new calibration settings. Press **ESC** to discard the new calibration settings.

Voice Only WT41N0 Boot Up

When the Voice Only WT41N0 is powered on for the first time the three LEDs on the front housing blink as follows:

1. Application Controlled LED and Battery Status LED on.
2. All LEDs Off.
3. Application Controlled LED on, Battery Status LED on, WLAN Status LED on.

4. WLAN Status LED off, Battery Status LED off, Application Controlled LED off.

The WLAN Status LED blinks indicating that the wireless connection is not connected or is solid indicating that the wireless connection is connected.

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CHAPTER 2 USING THE WEARABLE TERMINAL

Introduction

This chapter explains the physical buttons and controls on the wearable terminal, and provides basic instructions for using the wearable terminal, including powering on and resetting the wearable terminal, using a headset, entering information and scanning.

This chapter also details the operation of the Windows CE 7.0 operating system including the desktop, applications and settings. Depending upon the programs installed on the wearable terminal, some of these items may not be available.

Power Button

Press the Power button to turn the wearable terminal screen on and off (suspend mode). The wearable terminal is on when the screen is on and the wearable terminal is in suspend mode when the screen is off. For more information, see *Starting the Wearable Terminal on page 1-13*.

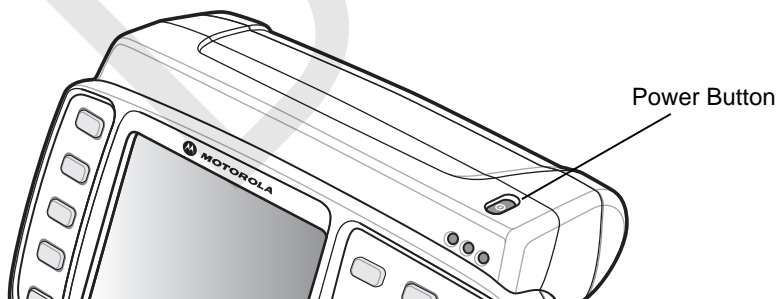


Figure 2-1 Power Button

The Power button is also used to reset the wearable terminal by performing a warm or cold boot.

- Warm Boot (Soft Reset) - Resets the wearable terminal.
- Cold Boot (Hard Reset) - Resets the wearable terminal, removes all added applications and restores all factory default settings.

LED Indicators

The Charge Status LED indicates the wearable terminal charging status when the WT41N0 is in a cradle. [Table 2-1](#) describes the Charge Status LED indications.

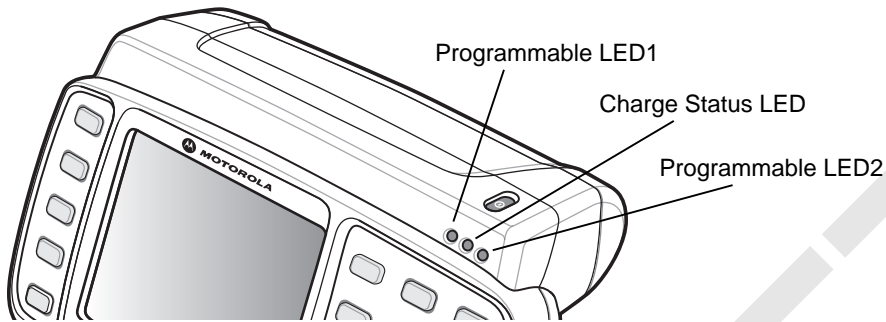


Figure 2-2 Wearable Terminal LED Indicators

Table 2-1 Charge Status LED Indications

LED	State	Indication
Charge Status LED (Amber)	Off	Wearable terminal is not in cradle. Wearable terminal not placed correctly. Charger is not powered.
	Slow Blinking Amber	Main battery in wearable terminal is charging.
	Fast Blinking Amber	Charging error: <ul style="list-style-type: none"> • Temperature is too low or too high. • Charging has gone on too long without completing (typically eight hours).
	Solid Amber	Charging complete. Note: When the battery is initially inserted in the wearable terminal, the amber LED flashes once if the battery power is low or the battery is not fully inserted.
Programmable LED1 (Light Green)	-	Application dependent
Programmable LED2 (Green)	-	Application dependent

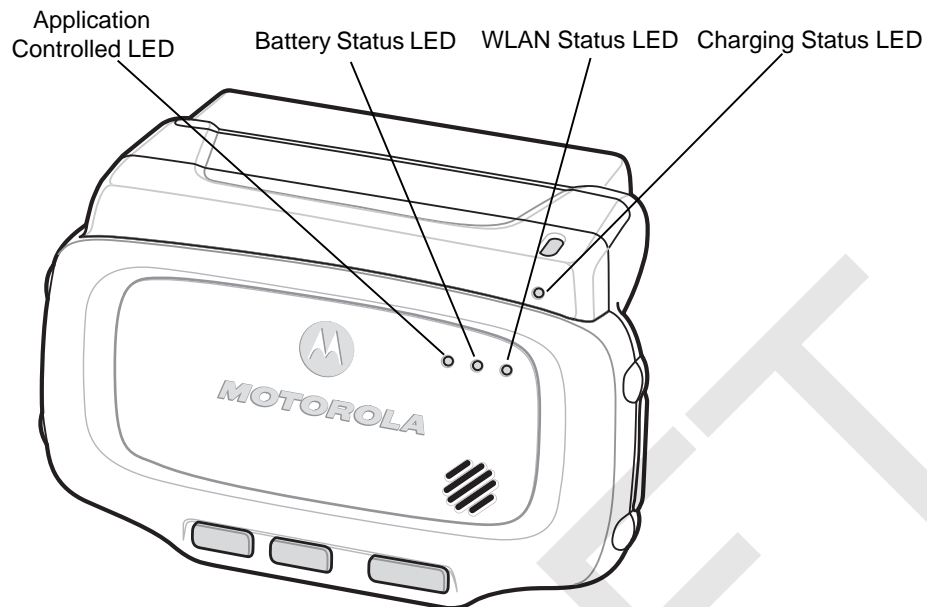


Figure 2-3 Voice Only WT41N0 LED Indicators

The Voice Only WT41N0 has three status LEDs. [Table 2-2](#) lists the default LED indications. LED functionality can be changed by an application.

Table 2-2 Voice Only WT41N0 LED Indications

LED	State	Indication
WLAN Status LED (Green)	Off	Battery completely discharged or device error. Contact system administrator.
	Blinking	Voice Only WT41N0 is not connected to a wireless network.
	Solid	Voice Only WT41N0 is connected to a wireless network.
Battery Status LED (Light Green)	Off	Battery charge level is greater than 30%
	Blinking	Battery charge level is less than 30%.
Application Controlled LED (Yellow)	-	Application dependent.

Keypads

The wearable terminal has the following keypads:

- Two-color alphanumeric keypad
- Voice Only keypad.

Two-color Alphanumeric Keypad

The two-color alphanumeric keypad contains application keys, scroll keys and function keys. The keypad is color-coded to indicate the alternate function keys (blue, orange and gray). Note that keypad functions can be changed by an application so the wearable terminal's keypad may not function exactly as described. See [Table 2-3 on page 2-4](#) for key and button descriptions and [Table 2-4 on page 2-5](#) for the keypad's special functions.

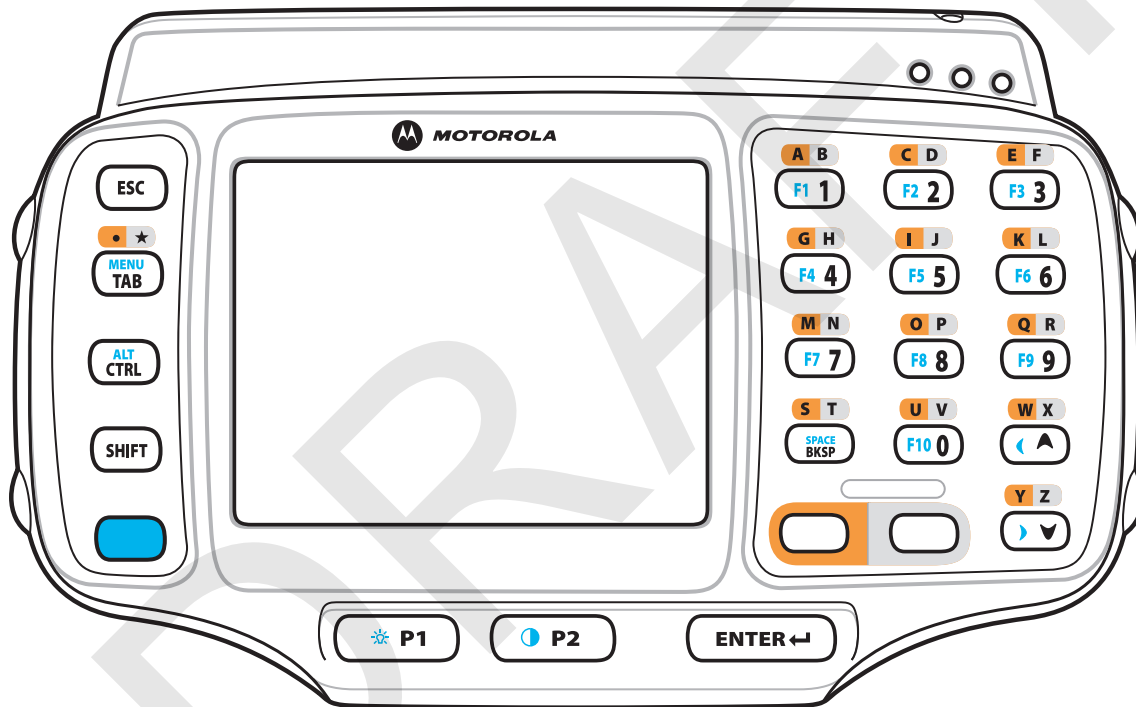


Figure 2-4 Two-color Alphanumeric Keypad

Table 2-3 Two-color Alphanumeric Keypad Descriptions







Key	Description
Orange	Press and release the Orange key to activate alphabetic characters (shown on the keypad in orange). The  icon appears on the Windows CE desktop taskbar.
Gray	Press and release the Gray key to activate alphabetic characters (shown on the keypad in gray). The  icon appears on the Windows CE desktop taskbar.
Blue	Press and release the Blue key to activate the keypad alternate functions (shown on the keypad in blue). The  icon appears on the Windows CE desktop taskbar.

Table 2-3 Two-color Alphanumeric Keypad Descriptions (Continued)

Key	Description
Scroll Keys	Moves up or down from one item to another or increases/decreases specified values. Moves left or right from one item to another when used with the Blue key. For each left or right scroll, the Blue key must be pressed first.
ESC	Exits the current operation.
Alphanumeric	In default state, produces the numeric value on the key. In Left Alpha state, produces the lower case alphabetic characters in the orange area. In Right Alpha state, produces the lower case alphabetic characters in the gray area. When the SHIFT key is pressed in the Alpha state, the upper case alphabetic characters on the key are produced. For example, press and release the Orange key, press and release the SHIFT key and then press the 4 key once to produce the letter 'G'.
BKSP	Backspace function. Space function when used with the Blue key.
CTRL (Control)	Press and release the CTRL key to activate the keypad alternate CTRL functions. The  icon appears on the Windows CE desktop taskbar. Press the Blue key followed by the CTRL key to activate the keypad alternate ALT functions. The  icon appears on the Windows CE desktop taskbar.
SHIFT	Press and release the SHIFT key to activate the keypad alternate SHIFT functions. The  icon appears on the Windows CE desktop taskbar.
ENTER	Executes a selected item or function.
TAB	Move the focus to the next field in a window.
P1	Programmable key. When used with the Blue key, toggles the keypad backlight on and off.
P2	Programmable key. When used with the Blue key, toggles the display backlight on and off.

The keypad is color-coded to indicate the alternate function key (blue) values and the alternate ALPHA key (orange) values. See [Table 2-4](#) for the special character generation.

Table 2-4 Special Character Generation Map

Special Character	Two-color Keypad	Triple-tap Keypad
/ (forward slash)	Blue - Orange - 0	Blue - Orange - 0
[(open square bracket)	Blue - Orange - 2	Blue - Orange - 2
] (close square bracket)	Blue - Orange - 3	Blue - Orange - 3
\ (Backslash)	Blue - Orange - 4	Blue - Orange - 4
` (apostrophe)	Blue - Orange - 5	Blue - Orange - 5
, (comma)	Blue - Orange - 6	Blue - Orange - 6

Table 2-4 *Special Character Generation Map (Continued)*

Special Character	Two-color Keypad	Triple-tap Keypad
. (period)	Blue - Orange - 7 or Orange - TAB	Blue - Orange - 7
; (semi-colon)	Blue - Orange - 8	Blue - Orange - 8
= (equal sign)	Blue - Orange - 9	Blue - Orange - 9
- (dash)	Blue - Orange - Tab	Blue - Orange - Tab
! (exclamation point)	Shift - 1	Shift - 1
@ (at sign)	Shift - 2	Shift - 2
# (Pound sign)	Shift - 3	Shift - 3
\$ (dollar sign)	Shift - 4	Shift - 4
% (percent sign)	Shift - 5	Shift - 5
^ (carat)	Shift - 6	Shift - 6
& (ampersand)	Shift - 7	Shift - 7
* (asterisk)	Shift - 8	Shift - 8
((open parenthesis)	Shift - 9	Shift - 9
) (close parenthesis)	Shift - 0	Shift - 0
' (single quote)	Blue - Orange - 1	Blue - Orange - 1
“ (double quote)	Shift - Blue - Orange - 1	Shift - Blue - Orange - 1
? (question mark)	Shift - Blue - Orange - 0	Shift - Blue - Orange - 0
{ (open curly bracket)	Shift - Blue - Orange - 2	Shift - Blue - Orange - 2
} (close curly bracket)	Shift - Blue - Orange - 3	Shift - Blue - Orange - 3

Table 2-4 Special Character Generation Map (Continued)

Special Character	Two-color Keypad	Triple-tap Keypad
 (pipe)	Shift - Blue - Orange - 4	Shift - Blue - Orange - 4
~ (tilde)	Shift - Blue - Orange - 5	Shift - Blue - Orange - 5
< (less than sign)	Shift - Blue - Orange - 6	Shift - Blue - Orange - 6
> (greater than sign)	Shift - Blue - Orange - 7	Shift - Blue - Orange - 7
: (colon)	Shift - Blue - Orange - 8	Shift - Blue - Orange - 8
+ (plus sign)	Shift - Blue - Orange - 9	Shift - Blue - Orange - 9
_ (underscore)	Shift - Blue - Orange - Tab	Shift - Blue - Orange - Tab

Voice Only Keypad

The voice only keypad contains three programmable function keys.

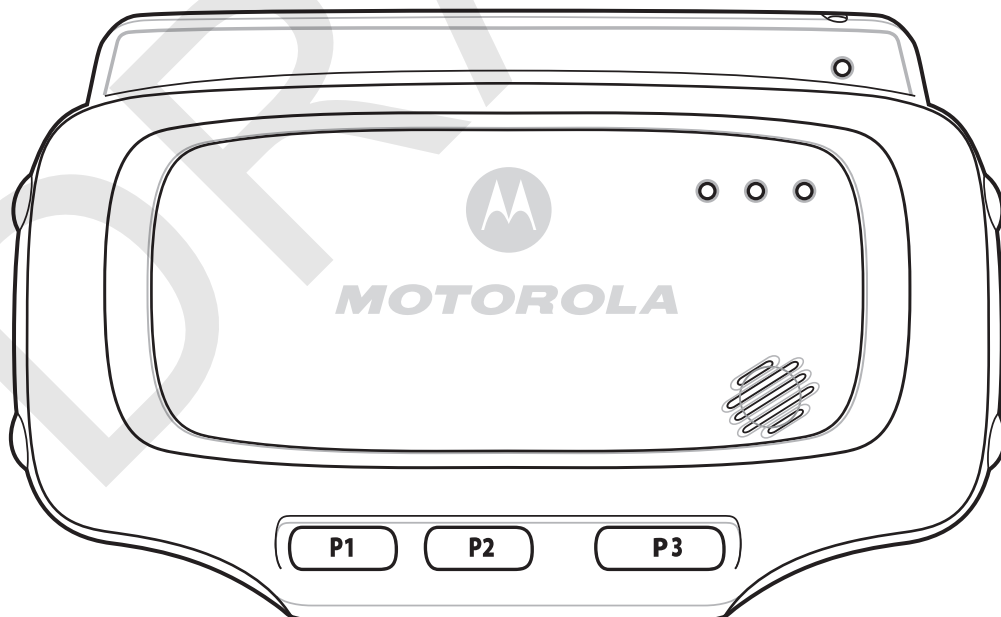


Figure 2-5 Voice Only Keypad

Display

- ✓ **NOTE** To view the software versions on the Voice Only WT41N0, the Voice Only WT41N0 must be connected to a host computer running remote desktop software. See the *WT41N0 Integrator Guide* for more information.

The wearable terminal is factory installed with the Windows CE 7.0 operating system. When the wearable terminal starts, it automatically launches the Start Up application.

- ✓ **NOTE** A customer specific application can be configured to automatically start-up and the Windows CE 7.0 desktop and Start Up application might not be visible or accessible.

App Launcher Window

- ✓ **NOTE** App Launcher window does not automatically launch on the Voice Only WT41N0.

The **App Launcher** window allows the user to launch specific applications by using the keypad. Either scroll up and down using the arrow keys and select **Enter** to select an item or press the numeric key associated with the item. If the **App Launcher** window is closed, launch the **App Launcher** window by selecting **Start > Programs > AppLauncher**.

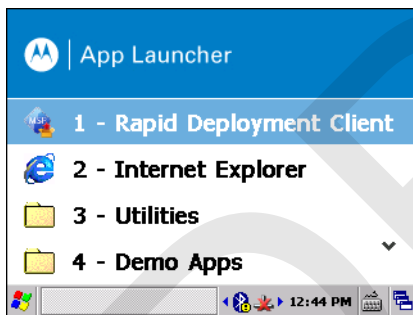


Figure 2-6 Start-up Window

Table 2-5 Start Up Item Descriptions

Item	Launch Number	Description
Rapid Deployment Client	1	Launches the Rapid Deployment application. Refer to the <i>WT41N0 Integrator Guide</i> for more information.
Internet Explorer	2	Launches the Microsoft Pocket Internet Explorer application.
Utilities folder	3	Opens a sub-window that contains utilities, such as: Control Panel, File Explorer, BT Connect and test applications. For more information on the Control Panel and File Explorer.
Demo Apps	4	Opens a sub-window that contains sample demonstration applications.
Exit	5	Closes the Start Up window.

Windows CE 7.0 Desktop

The following paragraphs describe the Windows CE 7.0 desktop. Depending upon the customer's configuration of the wearable terminal, the desktop may not be available.

Status Icons

The Taskbar at the bottom of the window displays the active programs, current time, battery status and communication status.

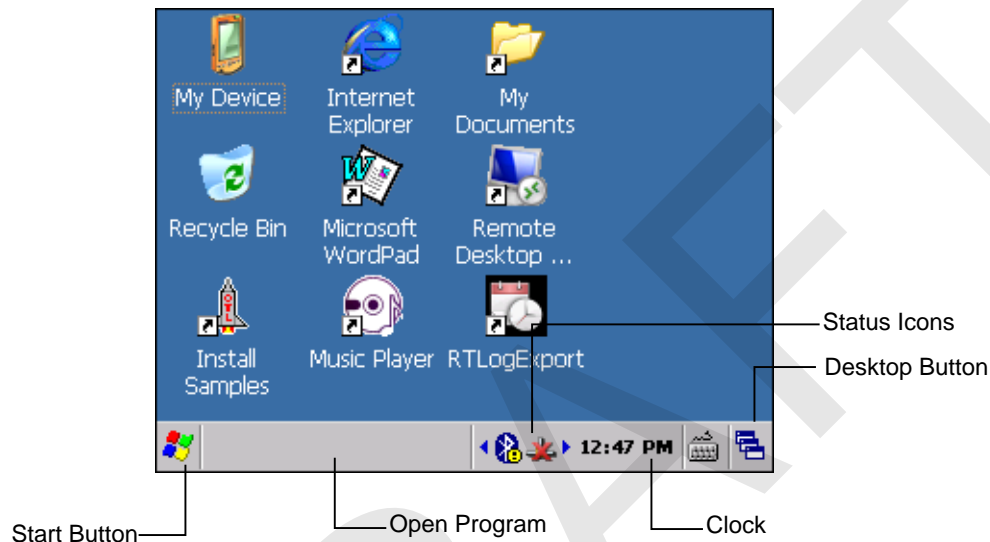


Figure 2-7 Taskbar

Status icons are shown in the taskbar to indicate present status of the wearable terminal.

Table 2-6 Status Icons

















Status Icon	Description
10:30 AM	Indicates the current time. The clock can be toggled on and off. Select Start > Settings > Control Panel > Task and Start Menu .
	This icon indicates that the main battery is charging or that the wearable terminal is operating on external power.
	Indicates that the battery is fully charged and the wearable terminal is running on external power.
	This icon is displayed when the memory backup battery level is low. Charge the battery.
	This icon indicates that the battery is fully charged (100% charged). The battery status icons provide the battery status in 10% increments from 10% to 100%.
	This displays when the terminal is connected to a host computer with ActiveSync.

Table 2-6 Status Icons (Continued)









Status Icon	Description
	Wireless connection status icon. Indicates WLAN signal strength.
	Bluetooth radio is on.
	Bluetooth radio is off.
	Bluetooth radio is connected to another Bluetooth device.
	Indicates that the SHIFT key is selected.
	Indicates that the Blue key is selected.
	Indicates that the CTRL key is selected.
	Indicates that the ALT key is selected.
	Indicates that the Orange key is selected.
	Indicates that the Gray key is selected.
	Indicates that the Motorola Remote Control software is connected to the wearable terminal.

Programs Menu

✓ **NOTE** For the non-touch configurations, see ?????? for instruction on navigating using the navigation pad.

From the **Start** menu, tap **Programs** to open the **Programs** menu. The programs installed on the wearable terminal with Windows CE display in the **Programs** menu.























Table 2-7 Applications in the Programs Menu

Icon	Description	Icon	Description
	AppLauncher: BTScannerCtlPanel: Internet Explorer Microsoft WordPad MotoBTUI		Fusion Folder: Open the Wireless Companion folder. See Chapter 5, Wireless Applications for more information.
	Command Prompt: Opens a DOS command prompt window.		CtlPanel: View and change wearable terminal settings such as: Scanner Parameters, Display Settings, Audio Settings, Printer Settings, Date and Time Settings, Touch Screen Settings, etc.
	MSP Agent: Interacts with MSP agents to collect monitoring and asset information to enable the configuration, provisioning, monitoring and troubleshooting of the wearable terminal. Refer to the <i>WT41N0 Integrator Guide</i> for more information.		Rapid Deployment Client: Facilitates software downloads from a Mobility Services Platform Console FTP server to the wearable terminal. Refer to the <i>WT41N0 Integrator Guide</i> for more information.
	Samples: Opens the Sample Applications window, when installed.		Music Player Remote Desktop Connection
	WarmBoot: Warm boots the wearable terminal.		Windows Explorer: Organize and manage files on your device.

Control Panel

Table 2-8 lists the applications in the **Control Panel**.

Table 2-8 Programs on the Control Panel

Icon	Description	Icon	Description
	Backlight: Adjust the backlight brightness and power settings.		Bluetooth Device Properties: Launch the Bluetooth application.
	Certificates: See information about certificates installed on the wearable terminal.		DataWedge: Sample scanning application. See Chapter 3, Data Capture for more information.
	Date/Time: Change date, time and time zone information.		Dialing: Set dialing properties for modem communication and change telephony settings.
	Display: Change desktop background, appearance, backlight and brightness.		Input Panel: Switch input methods and set input options.
	Internet Options:		IST Settings:
	Keyboard: Change keyboard repeat delay and rate.		Keylight:
	Mouse: Adjust double-click sensitivity for both the speed and timing.		Network and Dial-up Connections: Connect to other computers, networks and the Internet using a modem.
	Owner: Change owner's personal profiles.		Password: Set a password for the wearable terminal.
	PC Connection: Change settings for connectivity of a host computer.		Power: View and control wearable terminal power settings.
	Regional Settings: Change how numbers, currencies, dates and times appear.		Remove Programs: Remove programs installed on the wearable terminal.
	Stylus: Calibrate the touch screen and adjust double-tap timing.		System: View system information and change memory settings.
	System Info: View information on the wearable terminal's system components.		USBConfig: Configure the wearable terminal USB port.
	Volume & Sounds: Select the type of actions for which to hear sounds and customize notifications for different events.		

Using the Keypad to Navigate Applications

✓ **NOTE** Not available on the Voice Only configuration.

On wearable computers without touch-enabled screens navigation and control of an application is performed using the keypad.

Key Combinations

The wearable terminal uses special key combinations to easily navigate applications. [Table 2-9](#) lists the key combinations required to perform various application navigation and control functions.

Table 2-9 *Key Combinations*

Action Key	Combination
Access the Start menu on the taskbar	CTRL - ESC
Switch fields within an application	TAB
Close windows or cancel operations on some applications	ESC or ALT - F4
Access the Task Manager	ALT - TAB
Switches to the next window or desktop	ALT - ESC
Access a menu bar in an application	ALT - ALT
Press a button or select a check box in an application	TAB until the item is highlighted then SPACE .
Display a pop-up context menu	ALT - ENTER

Throughout this guide you will be instructed to select an item. You must use a key combination to select that item. For example:

To perform:

“Select **Start > Programs > Windows Explorer**”

1. Press **CTRL** and then **ESC** to open the **Start** menu.
2. Press the up arrow until the **Programs** item is highlighted.
3. Press the Blue key and the down arrow to open the **Programs** sub-menu.
4. Press the down arrow until **Windows Explorer** is highlighted.
5. Press **ENTER** key to launch **Windows Explorer**.

Selecting Items

When using the navigation keys to perform tasks in an application, the active item is highlighted using either a color background and/or a dashed box.

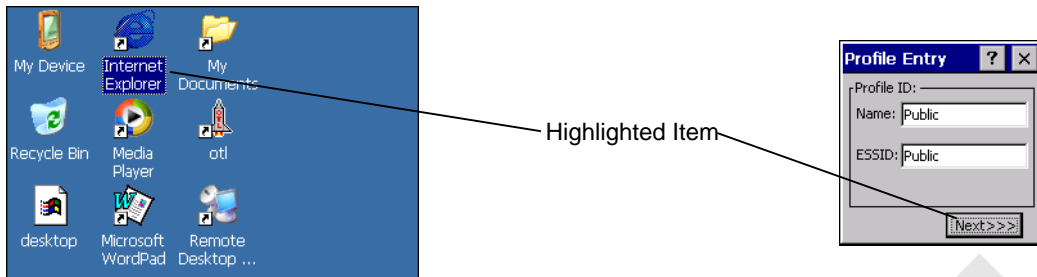


Figure 2-8 Highlighted Items

Navigating Menus

Most applications have drop-down menus to perform specific functions. Use the key combination **ALT - ALT** to open a menu. Once the menu is open, use the up and down navigation keys to move up and down the menu and use the left and right navigation keys to move to the next menu item or open a sub-menu. When moving through a menu, items are highlighted. Once an item is highlighted, press the **ENTER** key to select that item.

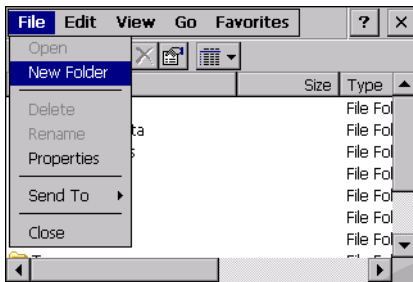


Figure 2-9 Navigating Menus

Navigating Tabs

Some applications contain multiple pages with tabs indicating each page. Use the **TAB** key to highlight the tab. A dashed box appears around the tab name. Use the left and right navigation keys to move to the next or previous tab.

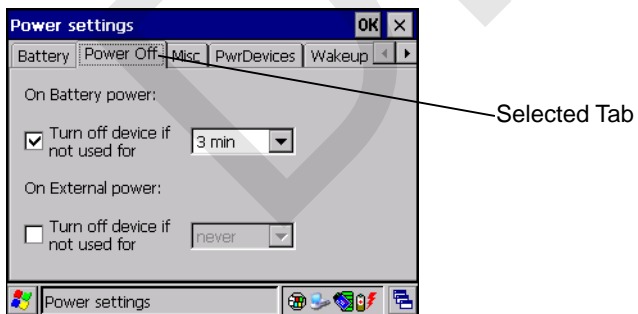


Figure 2-10 Navigating Tabs

Navigating Fields

To navigate from one field to another, press the **TAB** key. Repeated pressing of the **TAB** key cycles the highlighted cursor through the fields in the window.

Selecting Checkboxes and Radio Buttons

To select or deselect checkboxes and radio buttons press the TAB key until the field is highlighted. Press **ALT - BKSP** (SPACE) to select or deselect the checkbox or radio button.

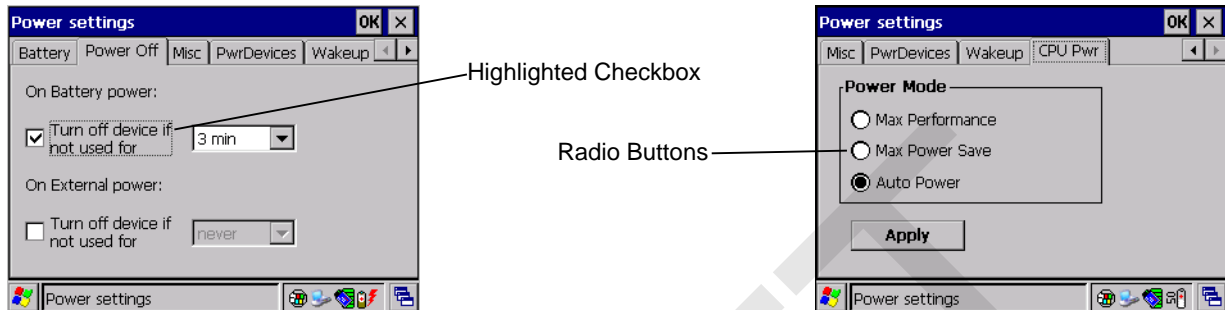


Figure 2-11 Selecting a Checkbox or Radio Button

Selecting Items in a List

Use a combination of key sequences to select items in a folder or list.

To select continuous items in a folder or list:

1. Open the folder or list.
2. Use the scroll keys to move to the first item to select.
3. Press **SHIFT** - scroll key (either up or down) to select the next item.
4. Repeat the **SHIFT** - scroll key combination to select remaining items.
5. Perform the desired function.

To select multiple items in a folder or list:

1. Open the folder or list.
2. Use the scroll keys to move to the first item.
3. Press **CTRL** - scroll key to move within the list. The item name is outlined.
4. Repeat step 3 to move to the desired item.
5. Press **SPACE** to highlight the item.
6. Repeat steps 3 through 5 until all items are selected.
7. Perform the desired function.

Screen Calibration

✓ **NOTE** Not available on the Voice Only and non-touch configurations.

To calibrate the touch screen so the cursor on the touch screen aligns with screen taps:

1. Press **Start > Settings > Control Panel > Stylus icon > Calibration tab > Recalibrate** button.
2. Carefully press and briefly hold on the center of the **Calibration** screen target. Repeat the procedure as the target moves and stops at different locations on the screen. This enters the new calibration settings.

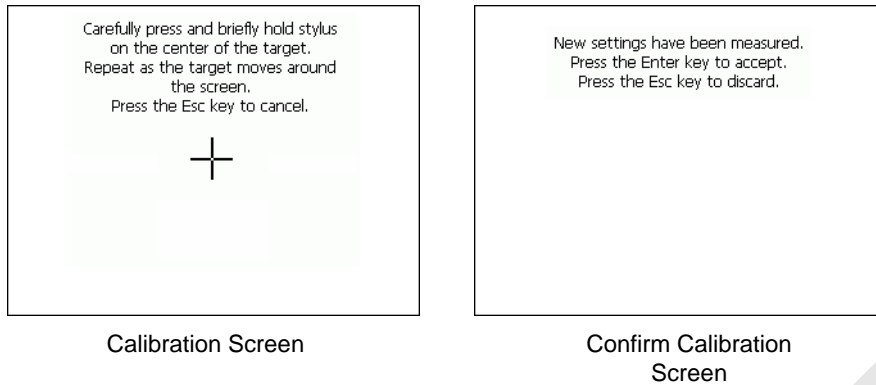


Figure 2-12 Calibration Screen

- Once all of the new calibration settings are input, tap the screen or press the **ENTER** button to save the new calibration settings. Press **ESC** to discard the new calibration settings.

Special Character Keypad

✓ **NOTE** The Special Character Keypad is only available on non-touch screen configurations with a display.

The wearable terminal contains an on-screen Special Character keypad that allows users to enter alphanumeric and special characters. The keypad looks and functions like a standard keyboard.

To display the Special Character keypad, press the ★ key on the keyboard.



Figure 2-13 Special Character Keypad - Alphanumeric Layer

Use the arrow keys on the keyboard to move the yellow box to highlight a key on the Special Character keypad. The arrow keys wrap to the next row or column as you navigate with the keys.

To select a character, press the **Enter** key on the wearable terminal.

If the **Enter** or arrow keys need to be used by the application instead of the Special Character keypad, press **Esc** followed by the arrow or **Enter** key. This sends the key to the application instead of the Special Character keypad.

Press the **ABC** key on the Special Character keypad to switch between the alphanumeric layer and the character layer.

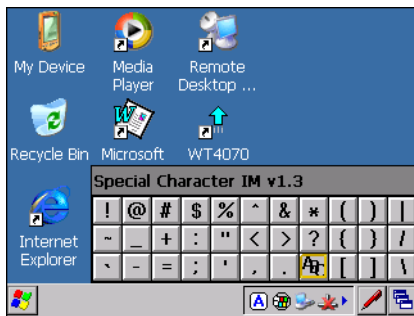


Figure 2-14 *Special Character Keyboard - Character Layer*

Navigate the keypad in the same manner as described above. To return to the alphanumeric layer, press the **CH** key on the keypad.

Pressing **CAP** or **SH** switches the keypad to the upper case alphanumeric keypad.

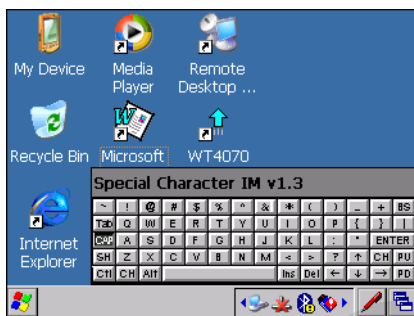


Figure 2-15 *Special Character Keyboard in upper case Alphanumeric Mode*

Press the ★ key to close the Special Character keypad.

Resetting the Wearable Terminal

There are two types of resets, warm boot and cold boot. A warm boot restarts the wearable terminal by closing all running programs.

A cold boot also restarts the wearable terminal, but erases all stored records and entries in RAM. Data saved in flash memory or a memory card is not lost. In addition it returns formats, preferences and other settings to the factory default settings.

Perform a warm boot first. This restarts the wearable terminal and saves all *stored* records and entries. If the wearable terminal still does not respond, perform a cold boot.

Performing a Warm Boot

Hold down the Power button for approximately five seconds. As soon as the wearable terminal starts to perform a warm boot release the Power button.

Performing a Cold Boot

A cold boot restarts the wearable terminal and erases all user stored records and entries that are not saved in flash memory (Application and Platform folders). *Never perform a cold boot unless a warm boot does not solve the problem.*

✓ **NOTE** Any data previously synchronized with a computer can be restored during the next ActiveSync operation.

To perform a cold boot on a WT41N0 press and simultaneously hold the **1**, **9** and Power button. Do not hold down any other keys or buttons. The wearable terminal initializes.

To perform a cold boot on a Voice Only WT41N0 press and simultaneously hold the **P1** and **P2** keys and the Power button. The wearable terminal initializes.

DRAFT

Waking the Wearable Terminal

The wake up conditions define what actions wake up the wearable terminal after it has gone into suspend mode. The wearable terminal can go into suspend mode by either pressing the Power button or automatically by control panel time-out settings. These settings are configurable and the factory default settings are shown in [Table 2-10](#).

Table 2-10 Wakeup Default Settings

Condition for Wakeup	Power Button	Automatic Time-out
AC power is applied.	No	Yes
Wearable terminal is inserted into a cradle.	No	Yes
Wearable terminal is removed from a cradle.	No	Yes
Wearable terminal is connected to a USB device.	No	Yes
Wearable terminal is disconnected from a USB device.	No	Yes
A key is pressed.	No	Yes
An attached scanner is triggered.	No	Yes
Wireless LAN activity is detected.	No	No
A headset is connected to the wearable terminal.	No	Yes
Screen Touch (only on touch screen configurations)	No	No

✓ **NOTE** If the battery is removed and replaced, the only way to wake up the terminal is by pressing the Power button.

Battery Health

The health of the battery can be viewed on the wearable terminal Power applet. Select **Start > Settings > Control Panel > Power icon > BatteryMgmt** tab.

Table 2-11 BatteryMgmt Window

Item	Description
State of Health	Indicates the current state of the battery (Healthy or Unhealthy).
Battery Usage Indicator	Indicates the usage of the battery.
Battery Usage Threshold	Indicates the usage indicator threshold.
Battery Serial #	Displays the serial number of the battery.

For information on changing the Battery Usage Threshold, refer to the *WT41N0 Integrator Guide*.

DRAFT

CHAPTER 3 DATA CAPTURE

Introduction

The wearable terminal can be used with the following optional data capture accessories:

- RS309 laser scanner
- RS409 laser scanner
- RS419 laser scanner
- RS507 Hands-free imager.

Laser Scanning

Wearable terminals with an optional RS309, RS409 or RS419 laser scanner have the following features:

- Reading of a variety of bar code symbologies, including the most popular linear, postal, and 1D code types.
- Advanced intuitive laser aiming for easy point-and-shoot operation.

Scanning Considerations

Typically, scanning is a simple matter of aim, scan/decode and a few quick trial efforts master it. However, two important considerations can be used to optimize any scanning performance:

- Range

Any scanning device decodes well over a particular working range — minimum and maximum distances from the bar code. This range varies according to bar code density and scanning device optics.

Scanning within range brings quick and constant decodes; scanning too close or too far away prevents decodes. Move the scanner closer and further away to find the right working range for the bar codes being scanned. However, the situation is complicated by the availability of various integrated scanning modules. The best way to specify the appropriate working range per bar code density is through a chart called a decode zone for each scan module. A decode zone simply plots working range as a function of minimum element widths of bar code symbols.

- Angle

Scanning angle is important for promoting quick decodes. When laser beams reflect directly back into the scanner from the bar code, this specular reflection can “blind” the scanner.

To avoid this, scan the bar code so that the beam does not bounce directly back. But don't scan at too sharp an angle; the scanner needs to collect scattered reflections from the scan to make a successful decode. Practice quickly shows what tolerances to work within.

- ✓ **NOTE** Contact the Symbol Support Center if chronic scanning difficulties develop. Decoding of properly printed bar codes should be quick and effortless.

Scanning Bar Codes

1. Ensure that a scan enabled application is loaded on the wearable terminal.
2. Aim the scan exit window at the bar code.
3. Press the trigger.
 - Ensure the red scan beam covers the entire bar code. The red scan LED lights to indicate that the laser is on. The green scan LED lights. An audible beep might sound, if the application determines, to indicate the bar code was decoded successfully.

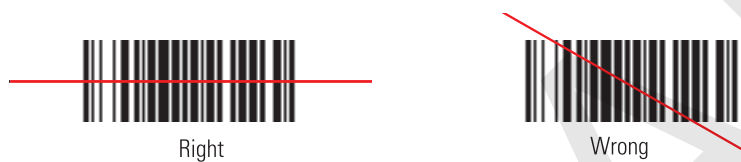


Figure 3-1 Laser Scanner Aiming Pattern

4. Release the trigger.

- ✓ **NOTE** Imager decoding usually occurs instantaneously. The wearable terminal repeats the steps required to take a digital picture (image) of a poor or difficult bar code, as long as the trigger remains pulled.

Scanning Tips

Optimal scanning distance varies with bar code density and scanner optics.

- Hold the scanner farther away for larger symbols.
- Move the scanner closer for symbols with bars that are close together.

- ✓ **NOTE** Scanning procedures depend on the application and wearable terminal configuration. An application may use different scanning procedures from the one listed above.

Scan LED Indicator

The LED on the scanner provides a visual indication of the scan status.

Table 3-1 Scan LED Indicators

LED Status	Indication
Off	Not scanning.
Solid Red	Laser enabled, scanning in process.
Solid Green	Successful decode.

Imaging

The wearable terminal with an optional RS507 imager has the following features:

- Omnidirectional (360°) reading of a variety of bar code symbologies, including the most popular linear, postal, PDF417, and 2D matrix code types.
- The ability to capture and download images to a host for a variety of imaging applications.
- Advanced intuitive laser aiming for easy point-and-shoot operation.

The imager uses digital camera technology to take a digital picture of a bar code, stores the resulting image in its memory, and executes state-of-the-art software decoding algorithms to extract the data from the image.

Operational Modes

The wearable terminal with optional RS507 imager supports three modes of operation, listed below. Activate each mode pressing the **Scan** button.

- **Decode Mode:** In this mode, the RS507 attempts to locate and decode enabled bar codes within its field of view. The imager remains in this mode as long as you hold the scan button, or until it decodes a bar code.

✓ **NOTE** To enable Pick List Mode, download the Control Panel applet from the Support Central web site at <http://www.motorola.com/enterprisemobility/support>. Pick List can also be set in an application using a API command.

- **Pick List Mode:** This mode allows you to selectively decode a bar code when more than one bar code is in the RS507's field of view. To accomplish this, move the aiming crosshair center dot over the required bar code to decode only that bar code. This feature is ideal for pick lists containing multiple bar codes and manufacturing or transport labels containing more than one bar code type (either 1D or 2D).
- **Image Capture Mode:** Use this mode to capture an image within the RS507's field of view. This is useful for capturing signatures or images of items like damaged boxes.

Imager Scanning

1. Ensure that a scan-enabled application is loaded on the wearable terminal.
2. Press and hold the scan button.

The red laser aiming pattern turns on to assist in aiming. Ensure the cross-hair is on top of the bar code.

The Decode LED lights red to indicate that scanning is in process, then lights green and a beep sounds, by default, to indicate the bar code was decoded successfully. Note that when the RS507 is in Pick List Mode, the imager does not decode the bar code until the crosshair center dot touches the bar code.

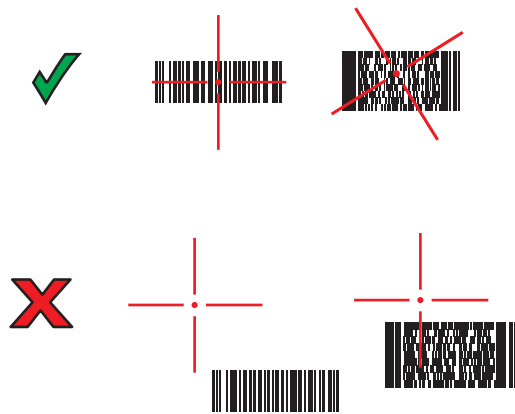


Figure 3-2 *Imager Aiming Pattern*



Figure 3-3 *Pick List Mode with Multiple Bar Codes*

3. Release the scan button.

- ✓ **NOTE** Imager decoding usually occurs instantaneously. The RS507 repeats the steps required to take a digital picture (image) of a poor or difficult bar code as long as the scan button remains pressed.

CHAPTER 4 WIRELESS APPLICATIONS

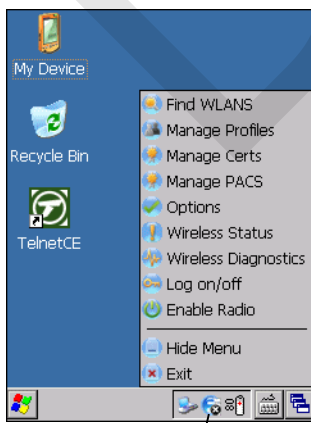
Introduction

Wireless Local Area Networks (LANs) allow mobile computers to communicate wirelessly and send captured data to a host device in real time. Before using the wearable terminal on a WLAN, the facility must be set up with the required hardware to run the wireless LAN and the wearable terminal must be configured. Refer to the documentation provided with the access points (APs) for instructions on setting up the hardware.

- ✓ **NOTE** 802.11d is enabled by default. When enabled, the AP must be configured the same in order to connect.

To configure the wearable terminal, a set of wireless applications provide the tools to configure and test the wireless radio in the wearable terminal. Refer to the *Wireless Fusion Enterprise Mobility Suite User Guide for Version X1.01* for information on configuring wireless profiles. Go to <http://supportcentral.motorola.com> for the latest version of this guide. See *Software Versions on page x* to determine the Fusion version on the wearable terminal.

Tap the **Signal Strength** icon to display the **Wireless Launcher** menu.



Signal Strength Icon

Figure 4-1 *Wireless Launcher Menu*

Many of the items in the menu invoke one of the Fusion applications. These menu items and their corresponding applications are summarized in [Table 4-1](#).

Table 4-1 *Supported Applications*

Application	Description
Find WLANs	Invokes the Find WLANs application which displays a list of the WLANs available in your area.
Manage Profiles	Invokes the Manage Profiles application (which includes the Profile Editor Wizard) to manage and edit your list of WLAN profiles.
Manage Certs	Invokes the Certificate Manager application which allows you to manage certificates used for authentication.
Manage PACs	Invokes the PAC Manager application which helps you manage the list of Protected Access Credentials used with EAP-FAST authentication.
Options	Invokes the Options application which allows you to configure the Fusion option settings.
Wireless Status	Invokes the Wireless Status application which allows you to view the status of the current wireless connection.
Wireless Diagnostics	Invokes the Wireless Diagnostics application which provides tools with which to diagnose problems with the wireless connection.
Log On/Off	Invokes the Network Login dialog which allows you to log on to a particular profile or to log off from the currently active profile.
Fusion Help	Invokes Fusion Help application which provides on-device Fusion Help

Additional **Wireless Launcher** menu entries include:

- Enable/Disable Radio
- Hide Menu
- Exit.

Signal Strength Icon

The **Signal Strength** icon in the task tray indicates the mobile computer's wireless signal strength as follows:

Table 4-2 *Signal Strength Icons Descriptions*









Icon	Status	Action
	Excellent signal strength	WLAN network is ready to use.
	Very good signal strength	WLAN network is ready to use.
	Good signal strength	WLAN network is ready to use.

Table 4-2 Signal Strength Icons Descriptions (Continued)

Icon	Status	Action
	Fair signal strength	WLAN network is ready to use. Notify the network administrator that the signal strength is only "Fair".
	Poor signal strength	WLAN network is ready to use. Performance may not be optimum. Notify the network administrator that the signal strength is "Poor".
	Out-of-network range (not associated)	No WLAN network connection. Notify the network administrator.
	The WLAN radio is disabled.	The WLAN radio is disabled. To enable, choose Enable Radio from the Wireless Applications menu.
None	The Wireless Launcher application was exited.	The Wireless Launcher application has been closed. See the Fusion Functions paragraphs below for how to restart the Wireless Launcher .

Turning Off the Radio

To turn off the WLAN radio tap the **Signal Strength** icon on the task tray and select **Disable Radio**.  appears indicating that the radio is disabled (off).

**Figure 4-2** Signal Strength Icon

To turn the radio back on, tap the **Signal Strength** icon on the task tray and select **Enable Radio**.

Minimum Setup

Below is a list of the minimum effort to achieve a wireless connection. Note that there are many discrete nuances that may affect the performance of your wireless connection that might be missed if you do not consider them carefully.

You will need to create a profile. It is recommended that you read the profile editor chapter.

1. Find out from your IT administrator what the connection settings should be (Extended Service Set Identifier (ESSID), Enterprise or Personal, authentication type, tunnel type, certificate requirements, Protected Access Credentials (PAC) requirements). Note that not all of the items listed may be relevant.
2. Create the profile using the information provided by the IT administrator.
3. Enter the **Manage Profile** screen, select the profile (press and hold), and select the **Connect** option in the context menu that appears.

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