

Honeywell

Dolphin 75e Wearable Solution

with Windows Embedded 8.1 Handheld

User's Guide

Disclaimer

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

HII shall not be liable for technical or editorial errors or omissions contained herein; nor for incidental or consequential damages resulting from the furnishing, performance, or use of this material. HII disclaims all responsibility for the selection and use of software and/or hardware to achieve intended results.

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

Copyright © 2016 Honeywell International Inc. All rights reserved.

Web Address: www.honeywellaids.com

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

For patent information, please refer to www.hsmpats.com.

Table of Contents

Contact Customer Support

Product Service and Repair	v
Limited Warranty	v
Send Feedback	v

Chapter 1 - Getting Started

Overview	1-1
What You Need.....	1-1
Belt Mount with Voice.....	1-1
Arm Mount with Tethered Ring Scanner.....	1-1
Arm Mount with Voice and Tethered Ring Scanner.....	1-1
About this Guide	1-1
Additional Documents	1-1
Before You Begin.....	1-2
Minimum Firmware Requirements	1-2
Battery.....	1-2

Chapter 2 - Installing and Mounting

Arm Mount Applications	2-1
Install the Terminal in the Arm Mount Sled	2-1
Mount the Arm Band and Attach the Terminal.....	2-3
Belt Mount Applications	2-5
Install the Terminal in the Belt Mount Sled.....	2-5
Attach the Sled to the Belt Clip	2-7
Attach the Headset (Optional).....	2-7
Adjusting Headset / Microphone and Securing Cable.....	2-8
Connect the Ring Scanner (Optional)	2-9
Attaching the Ring to your Finger.....	2-9
Trigger Rotation	2-9

Chapter 3 - About the Hardware

About the Terminal.....	3-1
Turn Power On.....	3-1
Turn Power Off.....	3-1
Sleep Mode (Suspend Mode)	3-1
Restart the Terminal.....	3-1
Reset the Terminal.....	3-2
About the Arm Mount Sled.....	3-3
Arm Mount Features	3-3
Terminal Features Not Used	3-3
Remove the Terminal from the Arm Mount Sled.....	3-4
About the Belt Mount Sled	3-5
Belt Mount Features.....	3-5
Terminal Features Not Used	3-5
Remove the Terminal from the Belt Mount Sled	3-6

About the 8620 Ring Scanner	3-7
Ring Scanner Features.....	3-7
Eject the Ring Scanner	3-8
Remove the Ring Strap/C-Ring	3-8
Replace the Ring Strap/C-Ring	3-9
Remove the Trigger.....	3-9
Replace the Trigger	3-10
Battery Specifications	3-11
Storing Batteries	3-11
Guidelines for Battery Pack Use and Disposal.....	3-11
Replace the Battery	3-12

Chapter 4 - Using the Ring Scanner

Overview.....	4-1
Minimum Terminal Software Requirements.....	4-1
Updating the Terminal Software	4-1
Decoding Bar Codes	4-2
Aiming Beam	4-2
Using Scan Demo to Decode a Bar Code	4-2
Automatic Scanning.....	4-3
Continuous Scanning.....	4-3
Configuring the Scan Demo Application.....	4-4
Scan Settings.....	4-4
Symbology Settings.....	4-4
Profiles.....	4-5
Advanced Ring Scanner Configuration	4-5
Custom Profiles	4-5
Microsoft POS APIs.....	4-6
Upgrading Ring Scanner Firmware	4-6
Installing EZConfig-Scanning from the Web.....	4-6

Appendix A - Ring Scanner Specifications

8620 Ring Scanner Specifications.....	A-1
Supported Bar Code Symbologies	A-2
Field of View	A-2
Depth of Field	A-2
Required Safety Labels	A-3
Laser Label	A-3
Laser Aperture Location	A-3

Appendix B - Coding for POS Barcode Applications

Introduction.....	B-1
Suggested Application Structure	B-1
Suspending and Resuming the Application.....	B-1
Switching Between Applications.....	B-1

Connecting and Disconnecting External Scanners	B-1
DeviceAdded()	B-1
DeviceRemoved()	B-2
DeviceUpdated().....	B-2
DeviceEnumCompleted().....	B-2
DetectorStopped()	B-2

Contact Customer Support

To search our knowledge base for a solution or to log in to the Technical Support portal and report a problem, go to www.hsmcontactsupport.com.

For our latest contact information, see www.honeywellaiddc.com/locations.

Product Service and Repair

Honeywell International Inc. provides service for all of its products through service centers throughout the world. To find your service center, go to www.honeywellaiddc.com and select **Support**. Contact your service center to obtain a Return Material Authorization number (RMA #) before you return the product.

To obtain warranty or non-warranty service, return your product to Honeywell (postage paid) with a copy of the dated purchase record. Limited Warranty

Limited Warranty

For warranty information, go to www.honeywellaiddc.com and click **Resources > Warranty**.

Send Feedback

Your feedback is crucial to the continual improvement of our documentation. To provide feedback about this manual, contact the Honeywell Technical Communications department at ACSHSMTechicalCommunications@honeywell.com.

Getting Started

Overview

The Dolphin 75e Wearable Solution consists of a Dolphin 75e terminal, a wearable sled, a ring scanner (optional), and/or headset (optional). The wearable sled is available in one of the following configurations:

- Arm Mount Sled ([page 3-3](#))
- Belt Mount Sled ([page 3-5](#))

The terminal is available in either standard or extended battery versions. The Dolphin 75e Wearable Solution is IP 54 rated.

What You Need

There are several use cases for the Honeywell Wearable Solution. The examples below indicate the typical items used in sample use cases. The Dolphin 75e terminal and accessories may be packaged separately from the other wearable accessories.

Belt Mount with Voice

- Dolphin 75e
- Belt mount sled
- Belt mount clip
- Headset adapter cable
- Headset

Arm Mount with Tethered Ring Scanner

- Dolphin 75e
- Arm mount sled
- Armband
- Tethered Ring Scanner

Arm Mount with Voice and Tethered Ring Scanner

- Dolphin 75e
- Arm mount sled
- Armband
- Audio end cap (to replace standard end cap)
- Headset adapter cable
- Headset
- Tethered Ring Scanner

About this Guide

This guide provides assembling and mounting instructions as well as information about terminal setup and configuration as a wearable solution. Daily use instructions are included. This document describes only those features of the Dolphin 75e unique to the Wearable Solution.

Additional Documents

This guide is intended to supplement the following documents available at www.honeywellaidc.com:

- *Dolphin 75e with Windows Embedded Handheld 8.1 User's Guide*
- *8620 Ring Scanner Command Reference Manual*

Before You Begin

Here is a list of things you should check before you begin.

Minimum Firmware Requirements

The minimum software requirements for the terminal (Settings:

- Software version 57.1.2.160 or higher

To update your software see page [4-1](#).

Battery

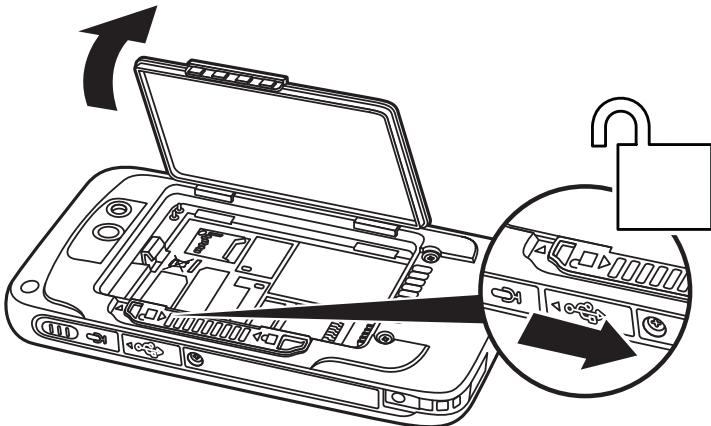
The Dolphin 75e is designed for use with battery part numbers BAT-STANDARD-02 (Li-ion 3.7 V, 6.179 watt hour) and BAT-EXTENDED-02 (Li-ion 3.7 V, 12.358 watt hour) manufactured for Honeywell International Inc.



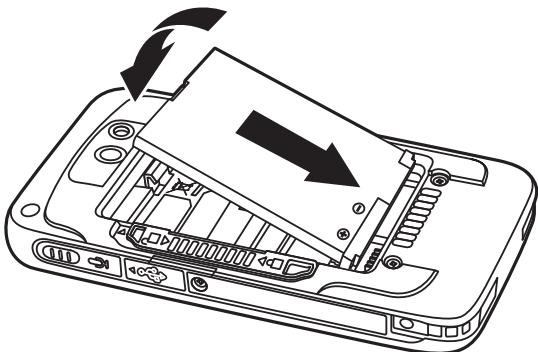
We recommend use of Honeywell Li-ion battery packs. Use of any non-Honeywell battery may result in damage not covered by the warranty.

Install the Battery

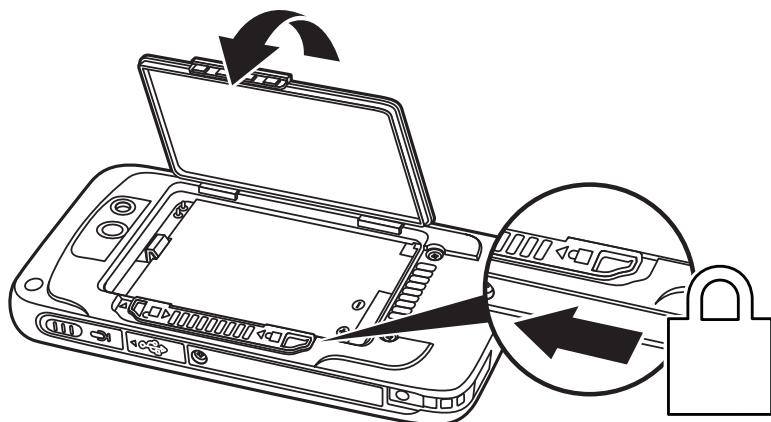
1. Unlock and remove battery door.



2. Insert the battery.



-
3. Close battery door. Apply pressure to the edges of the battery door to ensure the door is properly closed. Engage the door lock.



Charge the Battery

For best results, use a freshly charged battery for each shift. For information on charging the terminal and the charge bases that are available, see the User's Guide for your terminal.

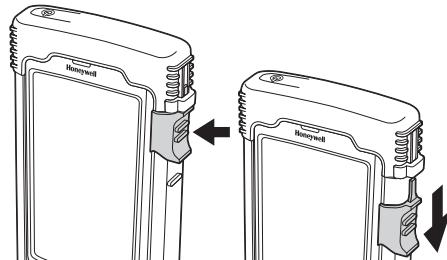
Installing and Mounting

Arm Mount Applications

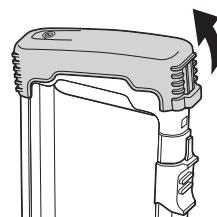
This section describes how to install and mount the arm mount configuration.

Install the Terminal in the Arm Mount Sled

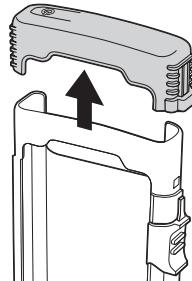
1. If the end cap is installed on the sled, slide the lock down to release the end cap.



2. Push up on the right side (the side with the lock) of end cap. Do not attempt to remove the end cap without sliding the lock first!



3. Pull the end cap off the sled.

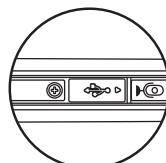


4. Make sure the USB door is closed. Rotate the door on the right side of the Dolphin 75e to close.

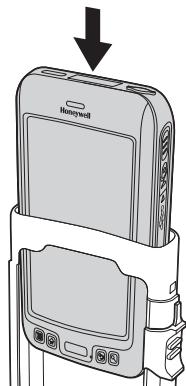


5. Press until the door is flush with the side of the terminal.

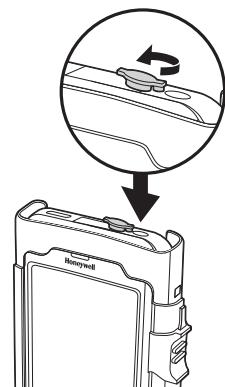
Note: If the door is not flush, it may be difficult to remove the terminal from the sled.



6. Slide the Dolphin 75e into the sled.

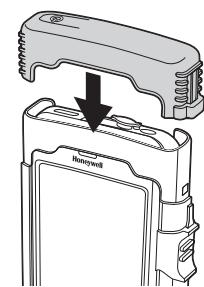
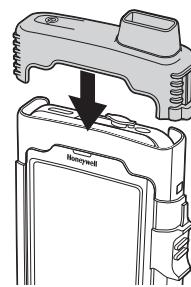


7. If using the audio end cap, make sure audio jack door is open. Pull the rubber door out and rotate the door 180° as shown to prevent damage.



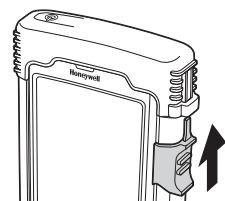
8. If using the audio end cap, make sure the audio cable is not installed in the end cap.

9. Slide the end cap straight onto the sled until it clicks in place.



Audio End Cap Standard End Cap

10. Slide the lock closed to secure the end cap.

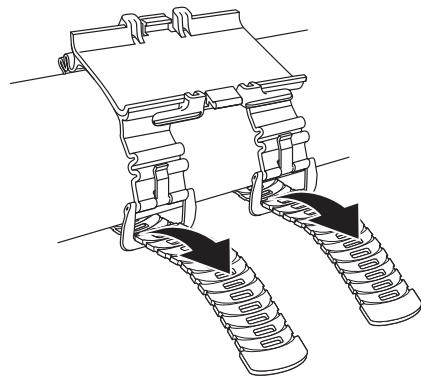


Mount the Arm Band and Attach the Terminal

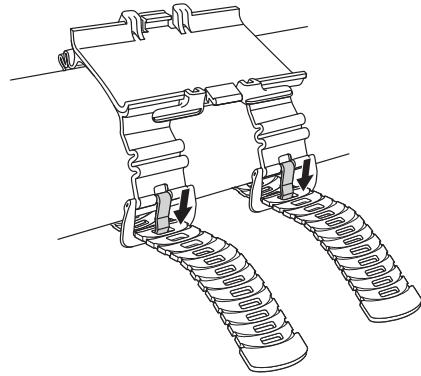
It is recommended that each user have their own arm band for hygiene reasons. The arm band can be washed between uses. Be sure to remove the sled from the arm band before washing the arm band.

Note: The illustrations in this procedure assume the sled has not yet been mounted to the arm band. However the sled can be mounted to the arm band before the user puts the arm band on.

1. If the arm band straps are not fed through the buckles, feed them through to form a loop before placing the arm band on the arm. For ease of installation, the straps should be kept looped through the buckles.
2. Place and balance the arm band assembly on the top of the desired arm with the buckles toward the outside of the arm.
3. Using the other hand, pull each strap end straight away from the arm until the arm band is comfortably secured.

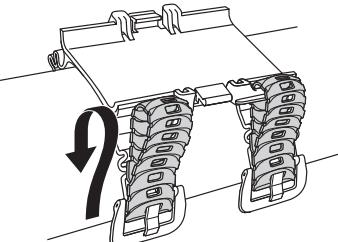
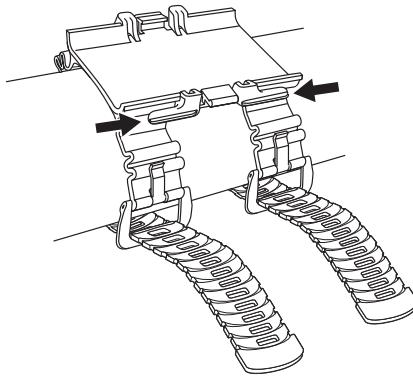


4. Ensure the latch on each buckle is through a hole in the strap.

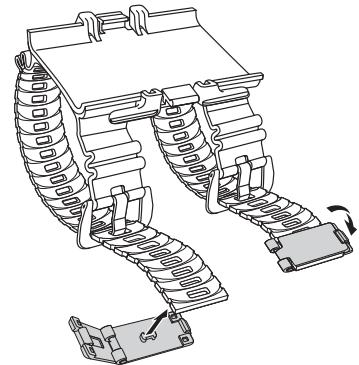


1. If there is excess strap length:

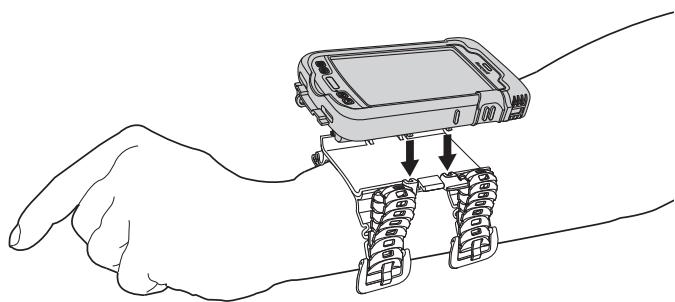
- Loop the excess strap behind the horns on the sled, as shown, or



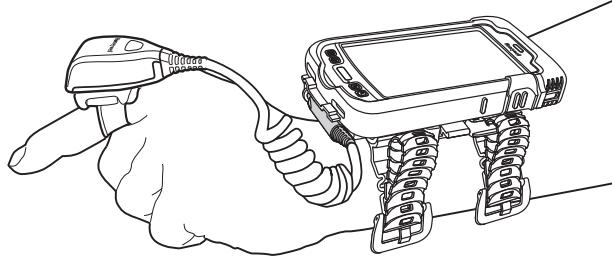
- Trim the straps to length and use the provided clips to terminate the strap end.



- Align the sled assembly with the arm band and press on the sled until it latches onto the arm band. Be sure to align tabs on the back of sled with the notches on the arm band. The end of the sled with the ring scanner connector must face toward the hand.



- If using the ring scanner (see [Connect the Ring Scanner \(Optional\)](#) on page 2-9.), slide the ring scanner over the index finger and adjust the strap (if applicable) for a comfortable fit.



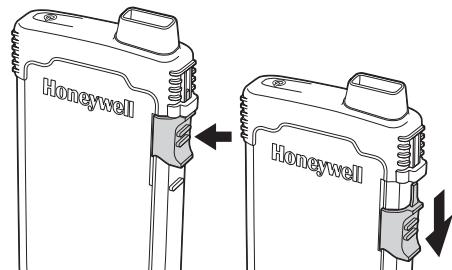
- To remove the sled assembly, unbuckle and loosen the straps. It is not necessary to remove the strap from the buckle.

Belt Mount Applications

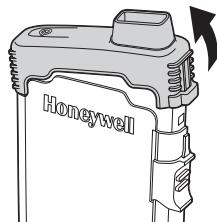
This section describes how to install and mount the belt mount configuration.

Install the Terminal in the Belt Mount Sled

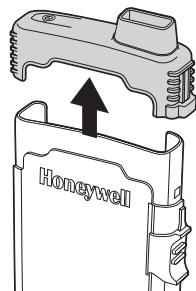
1. If the end cap is installed on the sled, slide the lock down to release the end cap.



2. Push up on the right side (the side with the lock) of end cap. Do not attempt to remove the end cap without sliding the lock first!



3. Pull the end cap off the sled.

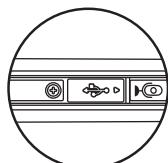


4. Make sure the USB door is closed. Rotate the door on the right side of the Dolphin 75e to close.

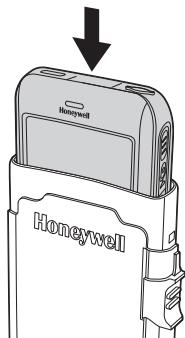


5. Press until the door is flush with the side of the terminal.

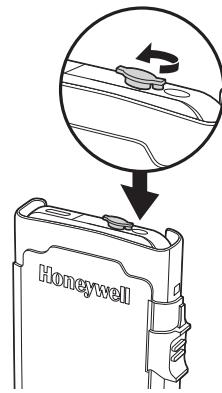
Note: If the door is not flush, it may be difficult to remove the terminal from the sled.



6. Slide the Dolphin 75e into the sled.

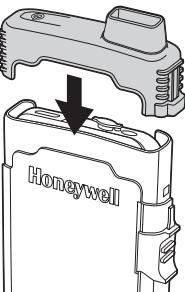


7. Make sure audio jack door is open. Pull the rubber door out and rotate the door 180° as shown to prevent damage.

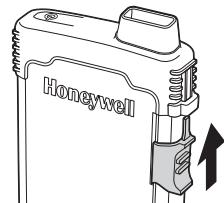


8. Make sure the audio cable is not installed in the end cap.

9. Slide the end cap straight onto the sled until it clicks in place.

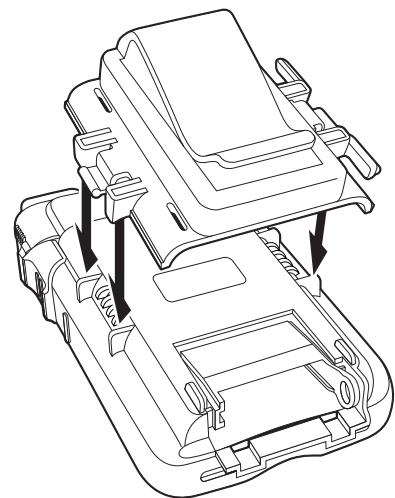


10. Slide the lock closed to secure the end cap.



Attach the Sled to the Belt Clip

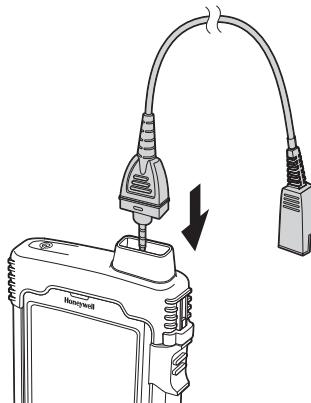
1. Align the sled assembly with the belt clip and press on the sled until it latches onto the belt clip. Be sure to align tabs on the back of sled with the notches on the belt clip.



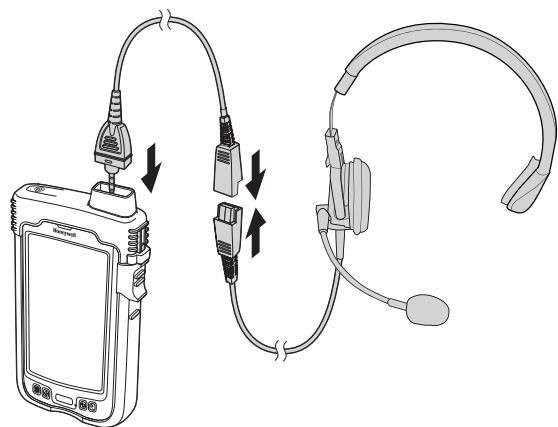
2. Slide the clip over a belt to wear the assembly.

Attach the Headset (Optional)

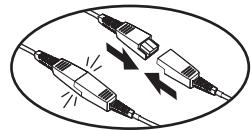
1. Make sure the audio jack door is open as shown in the previous section.
2. Slide the 3.5mm audio connector into the end cap.



3. Attach the quick disconnect end of the headset adapter cable to the headset's cable.

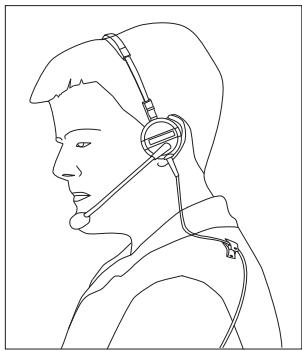


-
4. Slide the cable ends together until they click. Do not twist or bend the connectors.



Adjusting Headset / Microphone and Securing Cable

The headset consists of an earpiece, a microphone, a clothing clip and a cable. The headset attaches to the audio cable end of the voice cable which attaches to the audio end cap.



Do not twist the microphone boom when adjusting the microphone. The microphone should be adjusted to be about one or two finger widths from your mouth.

Make sure the microphone is pointed at your mouth. Note the small "Talk" label near the mouthpiece. Make sure the Talk label is in front of your mouth. The microphone cable can be routed over or under clothing.

Under Clothing

Leave the cable exposed only at the top of the collar. Be sure to leave a small loop of cable to allow movement of your head.

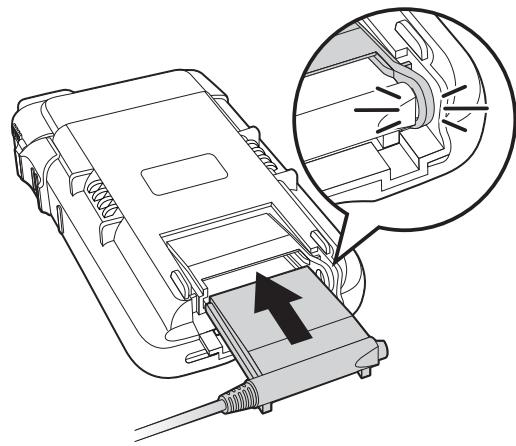
Over Clothing

Use clothing clips to hold the cable close to your body. Tuck the cable under the belt, but leave a small loop where it goes under the belt. Do not wear the cable on the front of your body. It may get in your way or get caught on protruding objects.

Connect the Ring Scanner (Optional)

1. Slide the ring scanner cable connector into the bottom of the sled until the connector ring clicks shut.
It is not necessary to remove the ring scanner from the sled before removing the Dolphin 75e from the sled.
2. When connected to the Dolphin 75e that is powered up, the terminal emits 3 beeps and the ring scanner LED blinks green one time.

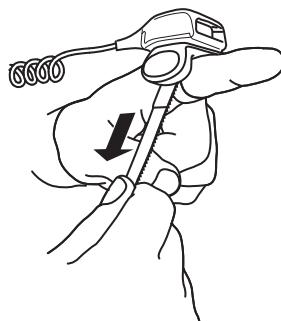
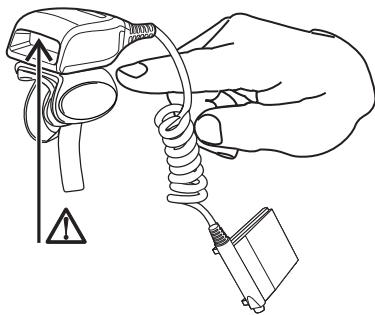
Note: You must have a scanning application open on your terminal to be able to scan a bar code. See [Using Scan Demo to Decode a Bar Code](#) on page 4-2.



Attaching the Ring to your Finger

1. Remove shipping film off the scanner window.
2. Slide finger into loosened ring strap.
3. Pull ring strap to secure ring to finger.

Note: If using the C-ring simply slide on to finger.

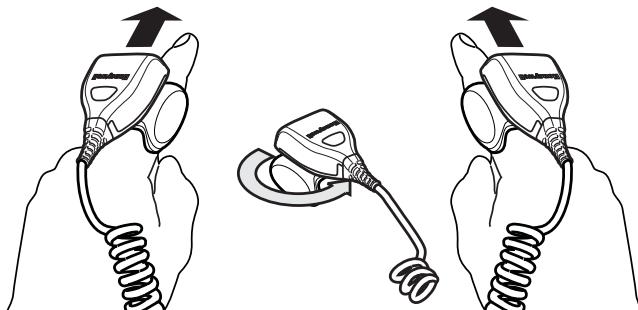


The ring scanner has a built-in quick disconnect designed for occasional safety hazards. It is not intended for frequent, normal removal of the ring scanner from the hand.

Do not touch, push against or brace your finger on the scan aperture at any time.

Trigger Rotation

The scanner head can be rotated 180° to be work on the right or left hand.



About the Hardware

About the Terminal

For more information on the Dolphin 75e, see the User's Guide for your product.

Turn Power On

To turn the terminal **On**, press and release the **Power** button .

Turn Power Off

1. Press and hold the **Power** button .
2. When the message, "slide down to power off" appears, release the button and swipe down toward the bottom of the screen.

Sleep Mode (Suspend Mode)

Sleep mode automatically turns the touch panel display off and locks the terminal to save battery power when the terminal is inactive for a programmed period of time. The automatic timeout limits are adjustable.

To wake up from sleep mode and unlock the screen:

1. Press and release the **Power** button .
2. Swipe up from the bottom of the screen to unlock the terminal.

To manually place the terminal in **Sleep** Mode press and release the **Power** button .

To adjust the time out limits:

1. Touch **Settings**  on the Apps list screen.
2. Select **lock screen** to adjust the display time out limit or select **sensor settings > features** to adjust the sleep time out limit.

Restart the Terminal

You may need to restart the terminal to correct conditions where an application stops responding to the system or the terminal seems to be locked up.

- Press and hold the **Power** button  . When the message, "slide down to power off" appears, release the button and swipe down toward the bottom of the screen. Press the Power button and to turn the terminal back on.

To perform a restart if the touch panel display is unresponsive:

- Press and hold the **Volume Down**  and **Power**  buttons simultaneously for 10-15 seconds. The terminal automatically restarts.

Reset the Terminal

If the terminal completely stops responding, you may need to perform a **Factory Reset (Clean Boot)**. Because a **Factory Reset** can result in data loss, use this method only if all other recovery methods have failed. All personal content is erased (e.g., emails, pictures, contacts) and factory default settings are restored when a factory reset is performed.



Caution: A **Factory Reset (Clean Boot)** erases the memory in the terminal, including all applications and data files, with the exception of those found in the Flash File Store or any removable storage.

1. Touch **Settings**  on the **Apps list** screen.
2. Touch **about**, and then select **reset your phone**.
3. Touch **Yes**, and then **Yes** again to confirm restoring the factory settings.
4. Once the terminal resets, the set up Welcome screen appears.

To perform a **Factory Reset** if your touchscreen is unresponsive and all other recovery methods have failed:

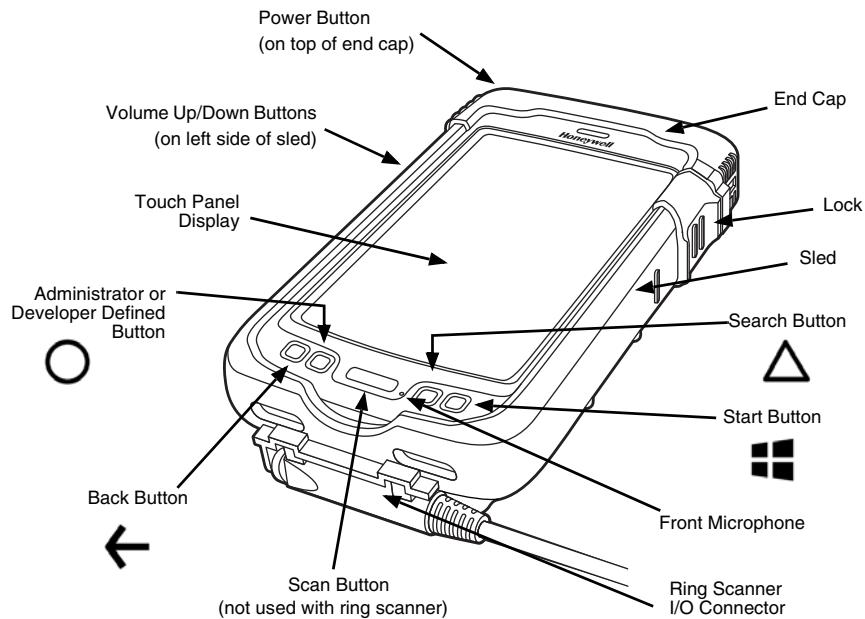
1. Press and hold the **Volume Down**  and **Power**  buttons simultaneously until a large exclamation mark appears on the screen.
2. Press the following buttons in this order: **Volume Up**  > **Volume Down**  > **Power**  > **Volume Down** .
3. Once the terminal resets, the set up Welcome screen appears.

About the Arm Mount Sled

Arm Mount Features

The arm-mounted sled:

- Mounts the terminal on the user's left or right arm
- Helps protect the terminal from impact
- Allows for use of the terminal display
- Includes an option to support voice applications via an audio cable and headset
- Supports a tethered ring scanner.



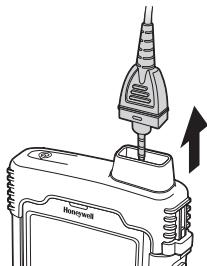
Terminal Features Not Used

When the terminal is installed in the arm mounted sled, the following features are not available:

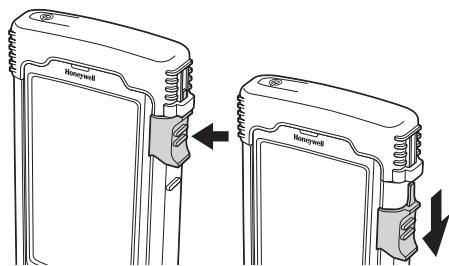
- Internal scanner
- Micro-USB port

Remove the Terminal from the Arm Mount Sled

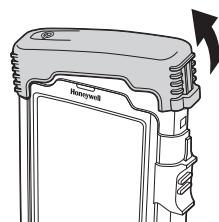
1. If the audio end cap is used, remove the audio cable. To prevent damage to the terminal always unplug the audio cable (if used) before removing the end cap.



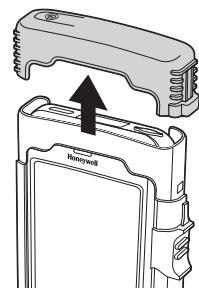
2. Slide the lock down to release the end cap.



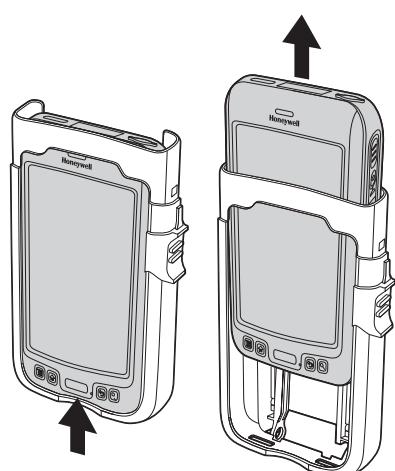
3. Push up on the right side of the end cap. Do not attempt to remove the end cap without opening the lock first!



4. Pull the end cap off of the sled.



5. Slide the terminal out of the sled. Use the notch in the bottom of the sled to push the terminal.

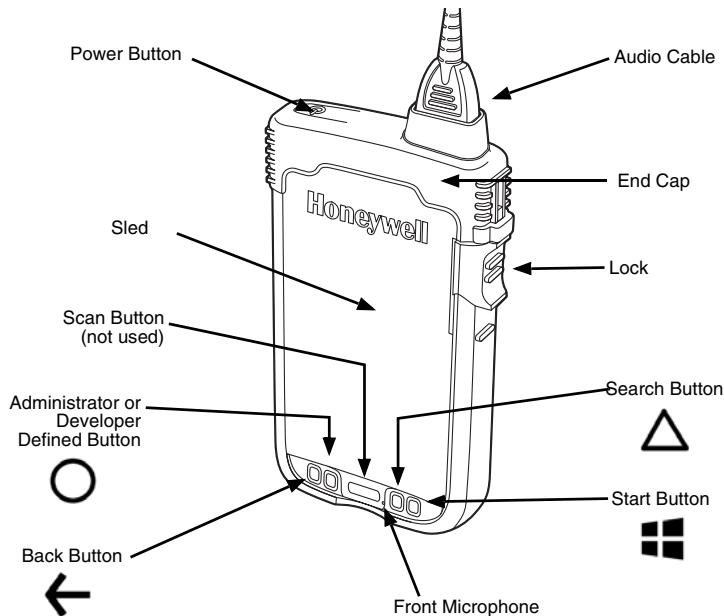


About the Belt Mount Sled

Belt Mount Features

The belt-mounted sled:

- Mounts the terminal on the user's belt
- Helps protect the terminal from impact
- Conceals the terminal display
- Designed for voice applications via an audio cable and headset



The sled encases the terminal including the touch panel and helps protect the terminal from impacts.

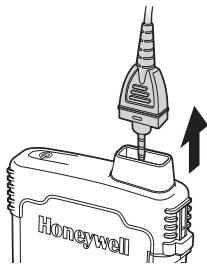
Terminal Features Not Used

When the terminal is installed in the belt mounted sled, the following features are not available:

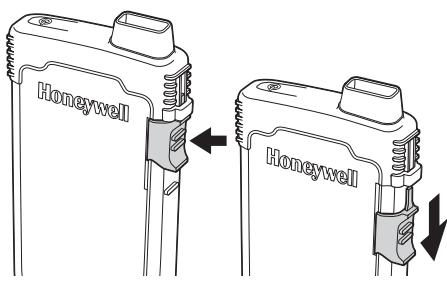
- Touch screen display
- Micro-USB port
- Internal scanner.

Remove the Terminal from the Belt Mount Sled

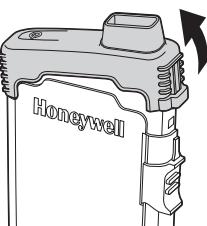
1. If the audio end cap is used, remove the audio cable. To prevent damage to the terminal always unplug the audio cable before removing the end cap.



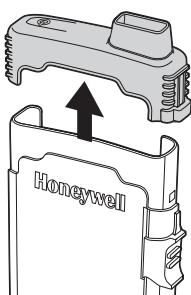
2. Slide the lock down to release the end cap.



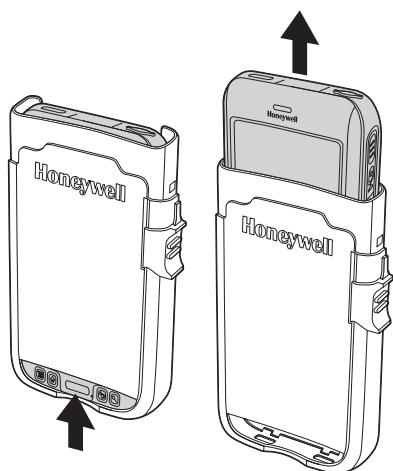
3. Push up on the right side of the end cap. Do not attempt to remove the end cap without opening the lock first!



4. Pull the end cap off of the sled.



5. Slide the terminal out of the sled. Use the notch in the bottom of the sled to push the terminal.



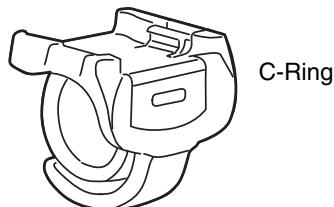
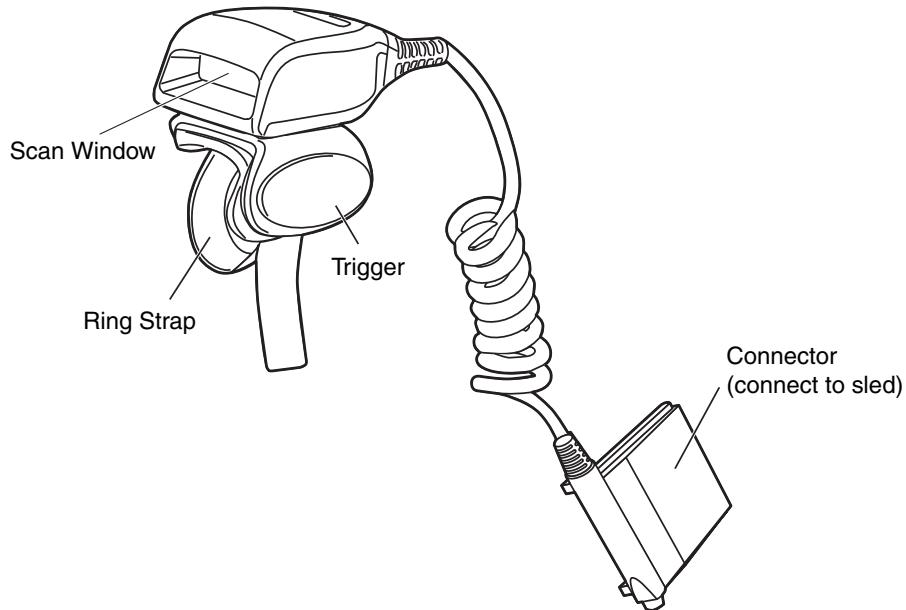
About the 8620 Ring Scanner

Ring Scanner Features

The ring scanner is shipped with 3 different finger attachments:

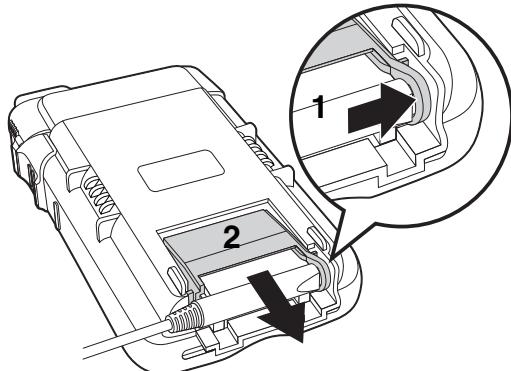
- Ring strap which is adjustable to your finger size
- Gray C-ring for small to medium sized fingers (self adjustable)
- Black C-ring for medium to large sized finger (self adjustable)

The trigger and ring strap/C-ring are user replaceable as described in this section.



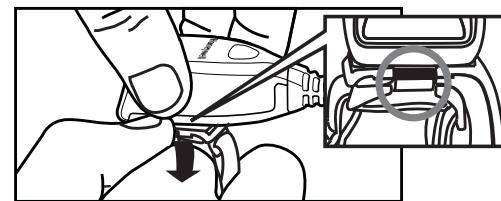
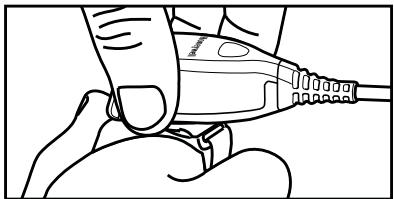
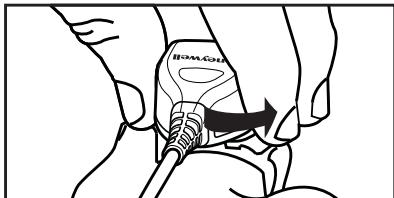
Eject the Ring Scanner

1. To eject the ring scanner, open the connector ring with one hand, pulling toward the outside of the sled.
2. Push the ring scanner connector out of the sled.

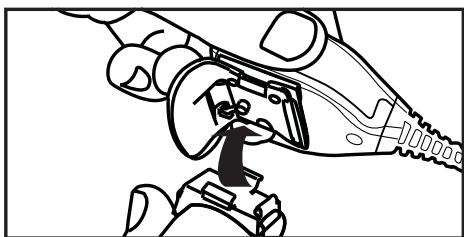


Remove the Ring Strap/C-Ring

1. Turn the scanner 90°.
2. Press latch down.

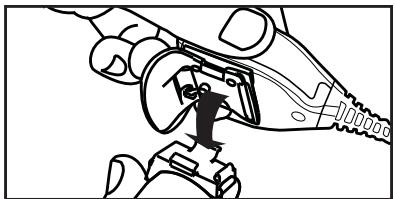


3. Remove the ring strap or c-ring.

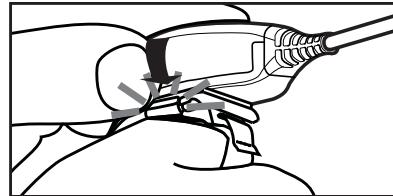


Replace the Ring Strap/C-Ring

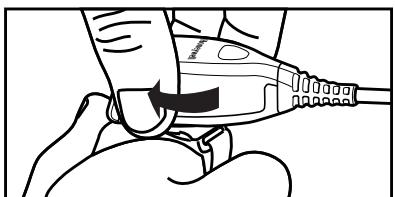
1. Connect ring latch with trigger catch.



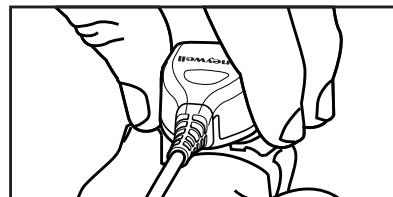
2. Press together until a click occurs.



3. Turn 90°.

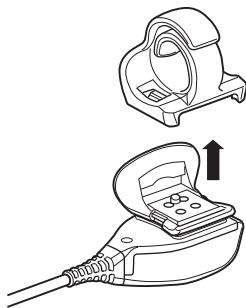


4. Ready to scan.

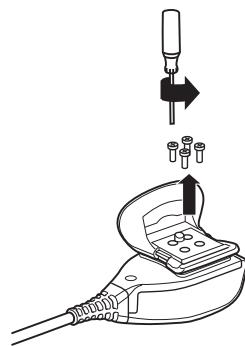


Remove the Trigger

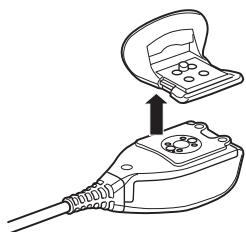
1. Remove ring strap or c-ring.



2. Unscrew the 4 screws.



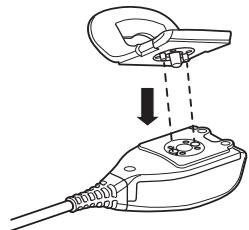
3. Remove trigger.



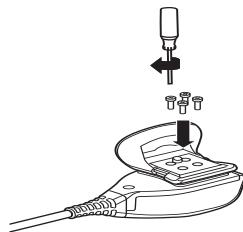
Note: When removing the trigger be careful that the metal spring is not dislodged.

Replace the Trigger

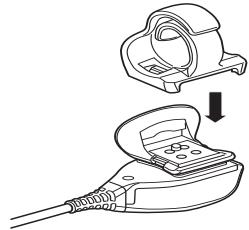
1. Place trigger on the scanner.



2. Screw in the 4 screws to secure the trigger.



3. Snap on ring strap or c-ring.



Battery Specifications

Storing Batteries

To maintain top performance from batteries, avoid storing batteries outside of the following temperature ranges:

- 14°F to 113°F (-10°C to +45°C) for short term storage of less than one month
- 32°F to 86°F (-0°C to +30°C) for long term storage

Do not store batteries in extremely high humidity. For prolonged storage, do not keep batteries stored in a charger that is connected to a power source.

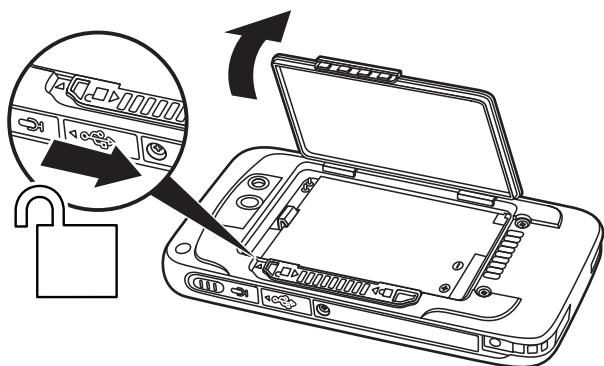
Guidelines for Battery Pack Use and Disposal

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

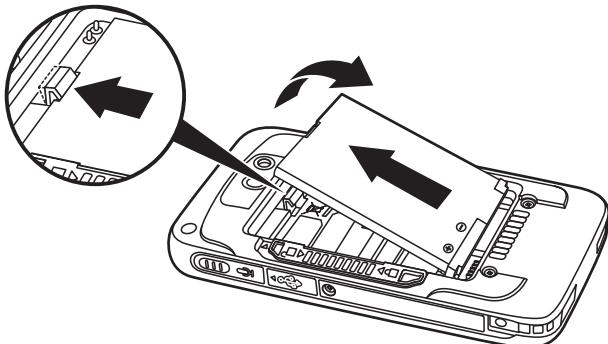
- Do not disassemble or open crush, bend or deform, puncture or shred.
- Do not modify or re-manufacture, attempt to insert foreign objects into the battery, immerse or expose to water or other liquids, expose to fire, explosion or other hazard.
- Improper battery use may result in a fire, explosion or other hazard.
- We recommend use of Honeywell Li-ion battery packs. Use of any non-Honeywell battery may pose a personal hazard to the user.
- Only use the battery for the system for which it is specified. Do not use a battery in any other manner outside its intended use in Dolphin terminals and peripherals.
- Only use the battery with a charging system that has been qualified with the system per CTIA Certification Requirements for Battery System Compliance to IEEE 1725. Use of an unqualified battery or charger may present a risk of fire, explosion, leakage, or other hazard.
- Replace the battery only with another battery that has been qualified with the system per this standard, IEEE-Std-1725. Use of an unqualified battery may present a risk of fire, explosion, leakage or other hazard.
- Replace defective batteries immediately; using a defective battery could damage the Dolphin terminal.
- Never throw a used battery in the trash. Promptly dispose of used batteries in accordance with local regulations.
- Do not short-circuit a battery or throw it into a fire; it can explode and cause severe personal injury. Do not allow metallic conductive objects to contact battery terminals.
- If you observe that the Honeywell battery supplied is physically damaged, please send it to Honeywell International Inc. or an authorized service center for inspection, see [Product Service and Repair](#) on page [TOC-v](#).
- Battery usage by children should be supervised.
- Avoid dropping the terminal or battery. If the terminal or battery is dropped, especially on a hard surface, and the user suspects damage, send it to a Honeywell International Inc. or an authorized service center for inspection.
- If you are not sure the battery or charger is working properly, send it to Honeywell International Inc. or an authorized service center for inspection, See [Product Service and Repair](#) on page [TOC-v](#).
- Excessive discharge can degrade battery performance. Recharge the battery when your terminal indicates low battery power.
- Although your battery can be recharged many times, the battery life is limited. Replace it after the battery is unable to hold an adequate charge.

Replace the Battery

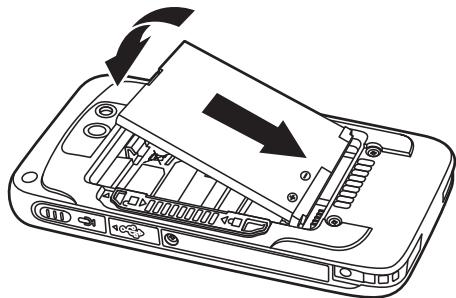
1. Remove the terminal from the arm mount sled (or belt mount sled).
2. Power off the terminal (see page [3-11](#)).
3. Unlock and remove the battery door.



4. Pull the battery latch back and remove the battery.



5. Insert the new battery and install the battery door.



Note: For information on charging the terminal and the charge bases that are available, see the User's Guide for your terminal.

Using the Ring Scanner

Overview

The 8620 ring scanner is a wearable external image engine that connects to the Dolphin 75e Wearable Solution. It reads popular 1D and 2D bar codes and supports omni-directional aiming and decoding for greater flexibility in real-world settings.

Minimum Terminal Software Requirements

The terminal must have the following minimum software requirements to work with the 8620 ring scanner:

- Software version 57.1.2.160 or higher

To check the current software version:

1. In the **Apps list**, touch **Settings**, then **about**.
2. Touch **more info** and you will see the list under OS version.

Updating the Terminal Software

Software updates are available from [Customer Support](#) or www.honeywellaidc.com.

To install a software upgrade:

1. Copy the provisional FFU image onto the root directory of the SD card. The file name must be Flash.ffu and be signed by the OEM for the manual flash feature to recognize the image.
2. Install the SD card in the terminal.
3. Plug the terminal in an external power source. The terminal must have power for the entire flash process or it could become unstable.
4. In the **Apps list**, touch **Settings**  > **manual flash**.
5. If a valid Windows Embedded 8 Handheld Flash.ffu image is found on the SD card, a “Configuration received” message appears under the SD Card heading.



6. Select SD Card to start flashing the terminal.
7. If you want to continue, select **OK** to confirm. All data on the terminal will be erased.
8. Select **OK** to verify the terminal is connected to a reliable power source.

A “Goodbye” message appears, and then the terminal reboots into flash mode. A lightning bolt appears on the screen as the image is flashed onto the terminal. The flash process takes several minutes without a progress indicator. When the process is finished, the terminal boots into out-of-box experience (OOBE) mode. A language selection screen appears. For information on how to set up the unit from the OOBE mode, see the *Dolphin 75e User’s Guide for Windows Embedded 8.1 Handheld*.

Decoding Bar Codes

Once the ring scanner is connected, you must run a scanning application, such as Scan Demo (see below), before your scanner will be able to scan. The lighting and aimer will not turn on when you press the trigger until a scanning application is running on the terminal.

Aiming Beam

When scanning bar codes, place the aimer over the bar code to be read.

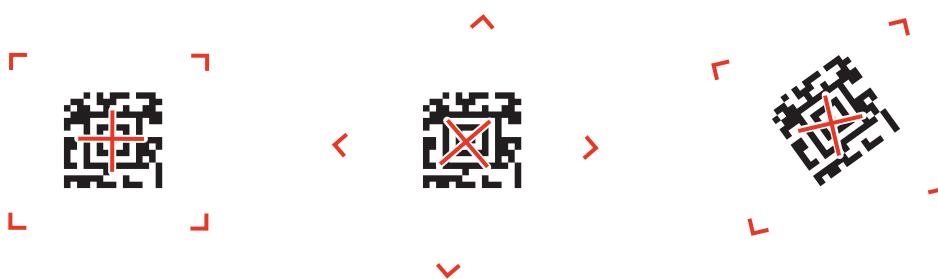


Warning: Do not stare directly in to the laser beam

Linear Bar Code.



2D Matrix Symbol



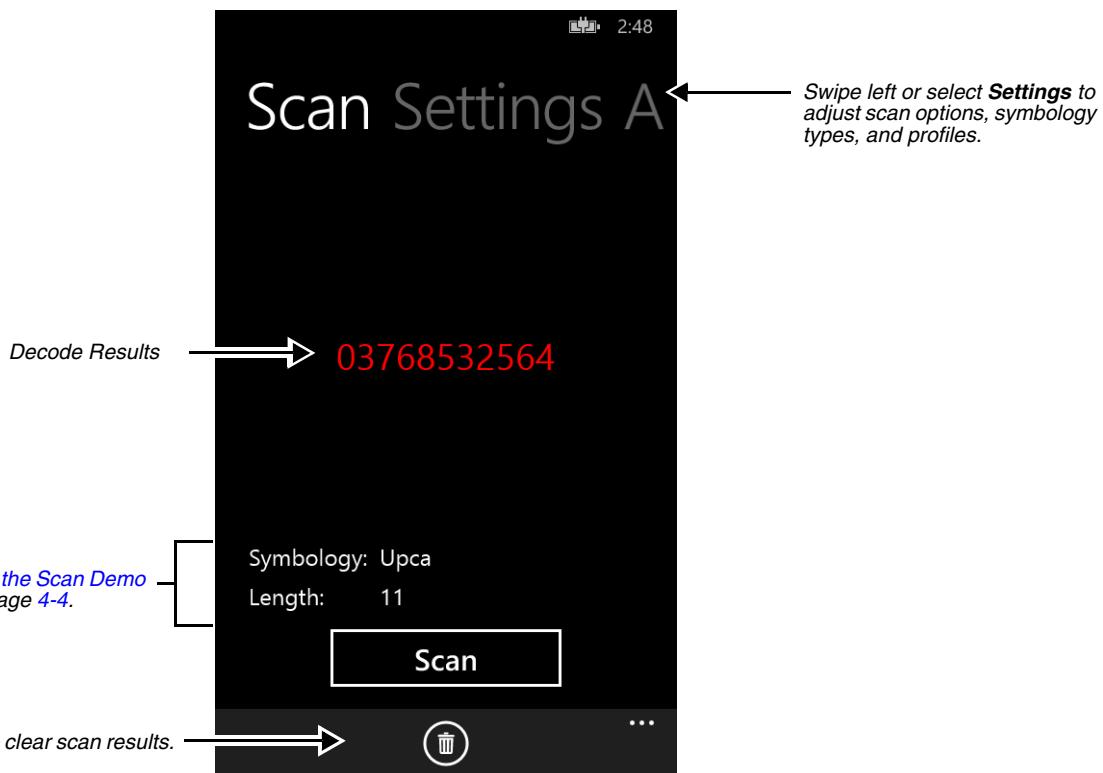
Using Scan Demo to Decode a Bar Code

Note: The ring scanner will not scan (no lighting or aimer on when trigger is pressed) until a scanning application is running on the terminal, such as Scan Demo, described below.

Scan Demo is a scanning application available on the Dolphin 75e Windows model to decode bar codes with the ring scanner. When you start the Scan Demo app, it automatically detects and connects to the ring scanner.

Note: Scan Demo demonstrates the functionality of the ring scanner and is not intended as a functional business solution.

1. On the **All Apps** list select **Scan Demo**
2. Scan Demo notifies the user that multiple scanners have been detected and tells you which scanner is the current scanner. Touch **OK**. If the ring scanner (8620XXX) is not the current scanner, select it in **Settings, Scanners**.
3. Point the ring scanner at the bar code. For optimum performance, avoid reflections by scanning the bar code at a slight angle. Press the ring scanner trigger and place the aimer over the bar code (see [Aiming Beam](#) on page [4-2](#)).
4. The bar code is decoded (ring scanner beeps and green LED flashes one time) and the results appear on the screen.



Automatic Scanning

Enable **Automatic** scan mode to activate the ring scanner for automatic scanning that does not require the operator to press the trigger for each bar code presented in the field of view of the ring scanner. The scanner automatically starts scanner after a specified timeout (Automatic Interval).

1. Open the **Scan Demo** .
2. Scan Demo notifies the user that multiple scanners have been detected and tells you which scanner is the current scanner. Touch **OK**. If the ring scanner (8620XXX) is not the current scanner, select it in **Settings, Scanners**.
3. Swipe left or touch **Settings**, and then select **Scan**.
4. Change the Scan Mode to **Automatic**.
5. Use the slider adjustment under **Automatic Interval** to set the number of seconds (0 to 30) between scan attempts.
6. Press the **Back** button  to return to the Scan screen.
7. Press the trigger on the ring scanner to activate the scanner. Once activated, the ring scanner automatically scans and decodes bar codes presented in the field of view based on the Automatic Interval set.

To disable the feature set the Scan mode back to **Normal**.

Continuous Scanning

Enable **Continuous** scan mode to activate the ring scanner for continuous scanning when you press and hold the trigger.

1. Open the **Scan Demo** .
2. Scan Demo notifies the user that multiple scanners have been detected. It automatically selects the ring scanner (ARSxx). Touch **OK**.

3. Swipe left or touch **Settings**, and then select **Scan**.
4. Change the Scan Mode to **Continuous**.
5. Press the **Back** button  to return to the Scan screen.
6. Press and hold the trigger to activate the ring scanner. The scanner scans and decodes bar codes presented in the terminal's field of view as long as the trigger is pressed.
7. Release the trigger to deactivate the ring scanner.

To disable the feature set the Scan mode back to **Normal**.

Configuring the Scan Demo Application

1. Open the **Scan Demo** .
2. Scan Demo notifies the user that multiple scanners have been detected. It automatically selects the ring scanner (ARSxx). Touch **OK**.
3. Swipe left or touch **Settings**.
4. Select **Scan**, **Symbology**, or **Profiles**.
5. Modify the settings to meet your application needs, and then press the **Back** button  to return to the Scan Demo screen.

Scan Settings

Setting	Description	Default Value
Vibrate	When On   , the terminal vibrates to indicate a good read.	Off  
Sound	When On   , the terminal beeps to indicate a good read.	On  
Scan Mode	Three scan mode options are available: <ul style="list-style-type: none"> • Normal (see Using Scan Demo to Decode a Bar Code on page 4-2) • Automatic (see Automatic Scanning on page 4-3) • Continuous (see Continuous Scanning on page 4-3) 	Normal
Automatic Interval	Sets the number of seconds between scan attempts. A slider adjustment allows you to choose between 0 and 30 seconds.	5 seconds

Symbology Settings

The Symbology Settings defines the bar code symbology types the ring scanner will decode when using the Scan Demo app. Touch the toggle box next to a symbology to enable  or disable  the symbology for scanning. Swipe up or down to scroll through the list of available symbologies.

Profiles

Profiles are one or more settings grouped under one name and are applied to the ring scanner by the application using the Microsoft POS API (application program interface) `ClaimedBarcodeScanner.SetActiveProfileAsync`. The ring scanner has the following built-in profiles:

Profile	Description
HON:Reset	Resets all symbology settings to disabled.
HON:GoodReadBeep Enable	Enables the scanner driver issued good read beep. When using Scan Demo you will hear 2 good read beeps: One from the terminal and one issued from the ring scanner driver. Available in ScanDemo.
HON:GoodReadBeepDisable	Disables the scanner driver issued good read beep. When using Scan Demo this profile disables the scanner issued good read beep so you will only hear one good read beep from the terminal. Available in ScanDemo.
HON:ScanButtonEnable	Enables the scanner driver to handle ring scanner trigger press and release events. When the trigger is pressed, ring scanner scanning is started and the <code>ClaimedBarcodeScanner::TriggerPressed</code> event is called. When the trigger is released, the ring scanner stops scanning and the <code>ClaimedBarcodeScanner::TriggerReleased</code> event is called. Not available in ScanDemo.
HON:ScanButtonDisable	Disables the scanner driver in handling ring scanner trigger press and release events. When the trigger is pressed, only the <code>ClaimedBarcodeScanner::TriggerPressed</code> event is called. When released, only the <code>ClaimedBarcodeScanner::TriggerReleased</code> event is called. This allows the application to handle the trigger events and implement complex trigger modes as needed. Not available in ScanDemo.

Advanced Ring Scanner Configuration

You may need to create customized profiles to configure the ring scanner for your application. Some settings are only possible when using customized profiles (for example setting minimum and maximum bar code length).

Custom Profiles

Customized profiles are defined by the `HoneywellDecoderSettingsV2.exm` file (available on our website at www.honeywellaidc.com). This is an XML file and must be placed on the terminal in either:

- **\Documents\Profile**
The user must create the Profile folder (accessible by connecting the terminal to a PC with a USB cable).
- **\SharedData\Enterprise\Persistent\Profile**
This folder is only accessible by an Enterprise signed application.

The file contains several profiles. You can add/delete profiles or change existing profiles by modifying the file using a text editor such as Notepad. The file can also be created programmatically (using a WE8H application) and saved directly to the correct location on the terminal.

Note: the `HoneywellDecoderSettingsV2.exm` file is used for the terminal's internal scanner and the ring scanner (called USB scanner in the file). Follow the instructions/examples in the file for the USB scanner to apply settings to the ring scanner.

Example Custom Profile

The <section> tag identifies the profile name and all <cmd> tags identify settings, when the settings are applied (cmd="APPLY") and if the settings cause a reset to defaults before being applied (cmd="TYPE" Full) or are incremental to the existing settings (cmd="TYPE" incremental). Also, the target device is identified (cmd="DEVICE' USB or Internal). The example profile below is named "Ars Code 128" which enables Code 128, sets the minimum length to 0 and maximum length to 80. It also resets all other settings so that only Code 128 is enabled:

```
<Section flags="000" name="Ars Code 128" id="ArsCode128">
  <Key cmd="DEVICE" desc="Specifies the scanner type" list="Internal,USB" name="Device Type">USB</Key>
  <Key cmd="TYPE" list="Incremental,Full" name="ProfileType">full</Key>
  <Key cmd="APPLY" list="true,false" min="" name="ApplyProfileOnLoad">false</Key>
  <Key cmd="128ENA" name="Code128 Enable Symbology" id="Enable" gr="flag">1</Key>
  <Key cmd="128MIN" name="Code128 Minimum Character Length" id="MinLength" min="0" max="80">0</Key>
  <Key cmd="128MAX" name="Code128 Maximum Character Length" id="MaxLength" min="0" max="80">80</Key>
</Section>
```

Note: For the full list of supported settings for the ring scanner, see the 8620 Ring Scanner Command Reference Manual available on our website at www.honeywellaidc.com.

Microsoft POS APIs

Use the Microsoft POS APIs below to get the profiles in the HoneywellDecoderSettingsV2.exm file and apply settings to the ring scanner for custom applications.

- BarcodeScanner.GetSupportedProfiles = gets the list of profiles supported.
- Claimed.BarcodeScanner.SetActiveProfileAsync = sets or reset any setting in the specified profile in the ring scanner
- BarcodeScanner.IsProfileSupported = determines whether the profile is supported.

Refer to the Microsoft API documentation for more information at <https://msdn.microsoft.com/en-us/library/windows/apps/windows.devices.pointofservice.aspx>.

Upgrading Ring Scanner Firmware

It may be necessary to upgrade the ring scanner firmware. To upgrade the firmware you will need:

- EZConfig-Scanning Software
- Interface Adapter (P/N: 8600502ADAPTER) to connect the ring scanner to a PC
- Standard USB-A to USB-B cable
- Firmware upgrade file

To upgrade the ring scanner firmware:

1. Disconnect the ring scanner from the sled.
2. Insert the ring scanner in to the interface adapter.
3. Connect the interface adapter to the PC using the USB cable.
4. Download the EZConfig-Scanning software from the web and follow the **Update Firmware** instructions in EZConfig.

Installing EZConfig-Scanning from the Web

Note: EZConfig-Scanning requires .NET software. If .NET is not installed on your PC, you will be prompted to install it during the EZConfig-Scanning installation.

1. Access the Honeywell web site at www.honeywellaidc.com from your PC.
2. Click on the **Products** tab. Under **Software**, select **Device Management**.
3. Click on **EZConfig-Device Configuration Software**.
4. Click on the **Software** tab. Select **EZConfig Cloud For Scanning** (online version, must register for access) or **EZConfig for Scanning** (to install on your PC, follow the next steps).
5. To install on your PC, when prompted, select **Save File**, and save the files to the **c:\windows\temp** directory.

-
6. Once you have finished downloading the file, exit the web site.
 7. Using Explorer, go to the **c:\windows\temp** file.
 8. Double click on the **Setup.exe** file. Follow the screen prompts to install the EZConfig-Scanning program.
 9. If you've selected the defaults during installation, you can click on **Start Menu-All Programs-Honeywell-EZConfig-Scanning** and select EZConfig for your browser.

Ring Scanner Specifications

8620 Ring Scanner Specifications

Parameter	Specification
Dimensions (Typical):	50 mm x 30 mm x 30 mm (2.0 in. x 1.2 in. x 1.2 in.)
Weight:	71 g (2.5 oz.)
Illumination LED: White LED	Cool white (5700K) IEC62471: "Exempt Risk Group"
Aiming: Peak Wavelength Laser Optical Power Laser (CW)	650nm IEC 60825-1: "Class 2" <1mW with a beam divergence of <1.5mRAD (worst case)
Image Size	838 x 640 pixels
Skew Angle	±60° typical, 200 lux, EAN/UPC
Pitch Angle	±45°typical, 200 lux, EAN/UPC
Motion Tolerance:	580cm (228 in) per second typical on 13 mil UPC/EAN at optimal focus
Minimum X dimension	1D codes: 5 mil PDF417: 6.7 mil 2D codes: 10 mil
Symbol Contrast	100% UPC: 20% contrast
Temperature Ranges: Operating Storage	-4°F to +122°F (-20°C to 50°C) -13°F to +158°F (-25°C to 70°C)
Humidity	5% to 95% non-condensing @ 50°C
Tumble	Exceeds 1000 (0.5 m) tumbles per IEC 60068-2-32 specification
Vibration	Vibration Type: Standard Type Frequency Range: 2-10 Hz 14mm Pk-Pk, 13-55HZ 1.5mm Pk-Pk, 70-200Hz 2G Frequency Deviation: 1 octave/minute Cycle Time for 3 Axis: 2 hours total
ESD Tolerance	± 20kV Air ± 15kV Contact
Sealant Rating	IP54

Supported Bar Code Symbologies

Symbology Type	Symbology Name
1D Symbologies	Codabar
	Code 11
	Code 32 Pharmaceutical (PARAF)
	Code 39
	Code 93
	Code 128
	EAN with Add On
	EAN with Extended Coupon Code
	EAN-8
	EAN-13
	GS1-128
	GS1 Databar
	Interleaved 2 of 5
2D Symbologies	Aztec
	Codablock A
	Codablock F
	DataMatrix
	HanXin
Postal Codes	Australian Post
	British Post
	Canadian Post
	China Post
	IntelligentMail
	Japanese Post

Field of View

Horizontal Field of View $42.9^\circ \pm 1.2^\circ$ (Field Angle $\pm 21.4^\circ$)

Vertical Field of View $33.0^\circ \pm 0.8^\circ$ (Field Angle $\pm 16.5^\circ$)

Depth of Field

The depth of field measurements used the following parameters:

- Distances are measured from the front of the scanner.
- $+23^\circ\text{C}$ ($+73^\circ\text{F}$), 0 lux
- Photographic quality codes

Typical Performance

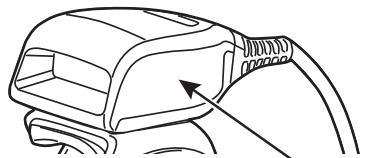
Symbology	Distance
5 mil C39	54 - 153 mm (2.1 - 6.0 in)
10 mil C39	18 - 328 mm (0.7 - 12.9 in)
100% 13 mil UPC	36 - 409 mm (1.4 - 16.1 in)
6.7 mil PDF417	36 - 175 mm (1.4 - 6.9 in)
10 mil DataMatrix	43 - 193 mm (1.7 - 7.6 in)

Guaranteed Performance

Symbology	Distance
5 mil C39	81 - 132 mm (3.2 - 5.2 in)
10 mil C39	38 - 295 mm (1.5 - 11.6 in)
100% 13 mil UPC	43 - 371 mm (1.7 - 14.6 in)
6.7 mil PDF417	54 - 158 mm (2.1 - 6.2 in)
10 mil DataMatrix	64 - 175 mm (2.5 - 6.9 in)

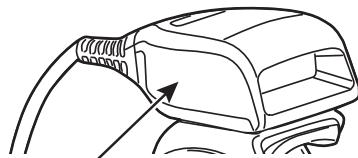
Required Safety Labels

Left Side of Scanner

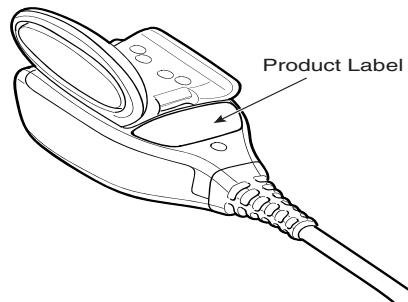


Laser Safety Label

Right Side of Scanner

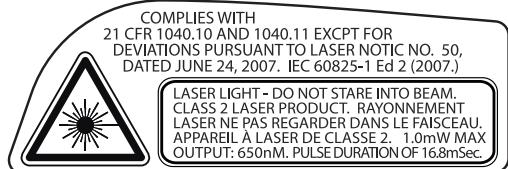


Compliance Label



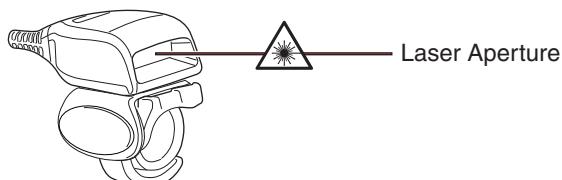
Product Label

Laser Label



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

Laser Aperture Location



Laser Aperture

Coding for POS Barcode Applications

Introduction

Using the Microsoft Point of Service API and the various application templates that are available (Pivot App, Hub App, etc), it is fairly simple to develop a straightforward scanning application for a Windows 8.1 phone-based device. The online documentation at <https://msdn.microsoft.com/en-us/library/windows/apps/windows.devices.pointofservice.aspx> is clear and easy to use.

However details are very important. For a truly practical, production-quality user experience, you must code for the following application life cycle transitions:

- Suspending and resuming the application
- Switching back and forth between the scanning application and another application
- Connecting and disconnecting an external scanner

The scanner stack, that is, the structures created by creating, claiming, enabling, and providing enabled symbologies and settings profiles, gets destroyed or corrupted on any of these transitions. It must be rebuilt when the application resumes. Therefore the application life cycle state must be internally tracked to allow this rebuilding.

The following discussion assumes *non-Silverlight* application development in the .NET framework (C#, managed C++, or Visual Basic). Any coding below will be in C# syntax. Visual Basic and C++ will look similar.

Suggested Application Structure

You should add all scanner support as static objects in the singleton derived **App** object (for instance **App : Application**), which all application templates provide for you when first creating the application. That way the scanning support is available to all pages of your app. The **App** object also provides the callbacks supporting application lifecycle transitions.

Suspending and Resuming the Application

On creation of a Windows Phone project, the application template you choose will generate an **App** object that already has an **OnSuspending()** callback method. You will probably need to generate your own **OnResuming()** callback method by chaining to the application's **Resume** event, which should be pre-generated by the application template. In Visual Studio C#, there is good support for creating such a method using the “+=” operator and the TAB key on the **Resume** event.

Be sure and track the acts of suspending and resuming in persistent state variables in the **App** object.

To restore scanning when resuming, call

- `BarcodeScanner bcs = BarcodeScanner.CreateByld();`
- `ClaimedBarcodeScanner cbcs = bcs.ClaimScannerAsync();`
- `cbcs.EnableScanner();`
- `cbcs.SetActiveSymbolologiesAsync(List<uint>symsToEnable);`
- `cbcs.SetActiveProfileAsync(List<string>profilesToEnable);`

Switching Between Applications

This is similar to suspending and resuming. Your code doesn't need to know any difference.

Connecting and Disconnecting External Scanners

You will need to add a static instance of **Windows.Devices.Enumeration.DeviceWatcher** in order to receive callbacks when the connection state of an external scanner changes. There are a number of callbacks that must be present in your code for full support of connection changes:

DeviceAdded()

Called by the OS when a device connects. You should track this event in persistent state variables. When this event occurs, you should recreate the scanning stack as follows:

- `BarcodeScanner bcs = BarcodeScanner.CreateByld();`
- `ClaimedBarcodeScanner cbcs = bcs.ClaimScannerAsync();`
- `cbcs.EnableScanner();`
- `cbcs.SetActiveSymbolologiesAsync(List<uint>symsToEnable);`
- `cbcs.SetActiveProfileAsync(List<string>profilesToEnable);`

DeviceRemoved()

Called by the OS when a device disconnects. You should track this event in persistent state variables.

DeviceUpdated()

Can be called by the OS when a device connects, so as with DeviceAdded(), you should have state transition code in place to catch this. When this event occurs, you should recreate the scanning stack as follows:

- `BarcodeScanner` bcs = `BarcodeScanner.CreateById()`;
- `ClaimedBarcodeScanner` cbcs = `bcs.ClaimScannerAsync()`;
- `cbcs.EnableScanner()`;
- `cbcs.SetActiveSymbolologiesAsync(List<uint>symsToEnable)`;
- `cbcs.SetActiveProfileAsync(List<string>profilesToEnable)`;

DeviceEnumCompleted()

Optional to track, but callback must be provided.

DetectorStopped()

Optional to track, but callback must be provided.

To register these callbacks, chain your support code to the events in the DeviceWatcher object.

To restore scanning when resuming, call

- `BarcodeScanner` bcs = `BarcodeScanner.CreateById()`;
- `ClaimedBarcodeScanner` cbcs = `bcs.ClaimScannerAsync()`;
- `cbcs.EnableScanner()`;
- `cbcs.SetActiveSymbolologiesAsync(List<uint>symsToEnable)`;
- `cbcs.SetActiveProfileAsync(List<string>profilesToEnable)`;



Honeywell
9680 Old Bailes Road
Fort Mill, SC 29707