

Dolphin™ 70e Black OS Upgrade Kit

70E-OS-UPGRADE-01 KIT

Installation Guide

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Introduction

The Dolphin 70e Black OS Upgrade Kit (70E-OS-UPGRADE-01) provides businesses with the ability to convert their existing devices running Windows® Embedded Handheld 6.5 operating systems to Android 4.0™ devices.

Important Facts to Consider Before Upgrading

Permanency of the Upgrade

The OS upgrade is permanent. The terminal operating system (OS) cannot be changed back to Windows Embedded Handheld 6.5 once the conversion to Android 4.0 is complete.

Button Hardware

The 70E-OS-UPGRADE-01 kit does not include hardware to change the buttons on the terminal. Honeywell offers additional options if you require both hardware and software terminal configurations for Android 4.0.

- **Custom Model Configurations**

Contact a Honeywell representative for information on custom model configurations specifically designed to support future conversion to Android 4.0.

- **Honeywell Service Center Hardware Upgrades**

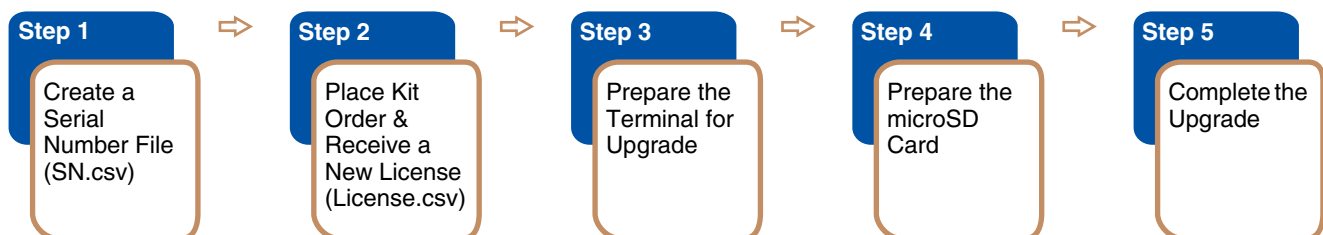
Honeywell Service Centers can replace the buttons in a previously purchased WEH terminal with buttons designed for Android devices. Contact a Honeywell representative for additional information.

Button Maps



Note: Refer to the Quick Start Guide or User's Guide relevant for your Dolphin model for additional information. Product guides are available for download at www.honeywellaidc.com.

Quick Overview of the OS Upgrade Process



What You Need to Perform the OS Upgrade

- Dolphin 70e Black OS Upgrade Kit, PN 70E-OS-UPGRADE-01 (1 per terminal)
The upgrade kit includes a single Android OS license key. You must purchase one kit for each terminal being upgraded.
- A microSD™ or microSDHC™ memory card (1 per terminal)
A memory card is required to perform the OS upgrade and for applications running on the terminal after the upgrade is complete. Terminals powered by Android include applications that utilize the memory card to store files and application data. Memory card use is required to avoid potential application errors or possible data loss.

Memory Card Specifications

Honeywell recommends the use of Single Level Cell (SLC) industrial grade microSD or microSDHC memory cards with Dolphin terminals for maximum performance and durability. Contact a Honeywell sales representative for additional information on qualified memory card options.

- Internet access for file downloads

During the upgrade process you are required to download files from the *Honeywell Scanning & Mobility* FTP Site.

To gain access to the site, contact Technical Support or request the information from your local sales representative when ordering the upgrade kit.

- Minimum Software Requirements on the Dolphin 70e Black terminal running Windows Embedded Handheld 6.5

- Latest WWAN Radio (SL9090 or SL8092) Firmware. Contact Technical Support ([page 7-15](#)) for details.
- Honeywell SDKNC version 810.1996 or greater is required to run the Serial Number Collection Tool on the terminal.

*Note: Touch **Start** > **Power Tools** > **SysInfo**. The SDKNC version is listed in the **Value** column under the \IPSM\Honeywell\AutoInstall*. * heading (e.g., SDKNC_810.1996.CAB).*

Step 1: Create a Serial Number File



Why Serial Numbers are Required to Place an OS Upgrade Order

When you purchase an OS upgrade kit, Honeywell creates a unique Android OS license key linked to the serial number of the Dolphin 70e Black terminal being upgraded. A valid license key is required to run Android on the Dolphin 70e Black.

Note: Submitting the serial number also ensures authorized Honeywell service centers will return the device to you with the correct OS installed if service is required on the terminal.

How to Find the Terminal Serial Number

The terminal serial number (S/N) is referenced in four locations:

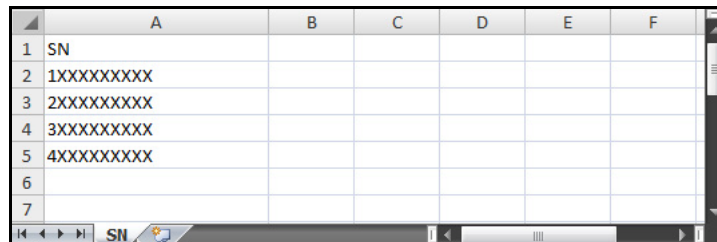
- On the serial number label located under the battery inside the battery well.
- On the serial number label attached to the original box containing the terminal.
- On the *HSM System Information* screen. Touch  > **Settings** > **System** > **HSM SystemInfo**.
- On the *Power Tools System Information* screen. Touch  > **Power Tools** > **SysInfo**.

Options for Serial Number Collection

When ordering multiple upgrade kits, you need to supply a comma separated value file (*.csv) of the terminal serial numbers included in the order to the sales representative. Honeywell provides two options to help you gather the information into the appropriate file format.

Option 1:

1. Download the Serial Number OS Upgrade File (**SN.csv**) from the Dolphin 70e Black product page at www.honeywellaidc.com.
2. Open the **SN.csv** file using Microsoft® Excel® or Microsoft Excel Mobile.
3. Add the serial numbers of the terminals included in the upgrade order to the first column of the sheet.



| | A | B | C | D | E | F |
|---|----------|---|---|---|---|---|
| 1 | SN | | | | | |
| 2 | 1XXXXXXX | | | | | |
| 3 | 2XXXXXXX | | | | | |
| 4 | 3XXXXXXX | | | | | |
| 5 | 4XXXXXXX | | | | | |
| 6 | | | | | | |
| 7 | | | | | | |

4. Save the file. *Do not change the file name or format.*
5. Provide the **SN.csv** file with your order to a Honeywell sales representative.

Option 2:

Honeywell provides a free *Serial Number Collection Tool* for download and use if you have a large number of terminals requiring upgrade kits. Once installed on a Dolphin 70e Black terminal, the tool can be used to automatically populate a **SN.csv** file by scanning the serial number bar codes of the terminals to be included in the order.

See [Using the Honeywell Serial Number Collection Tool](#) on page 4.


Using the Honeywell Serial Number Collection Tool

Minimum Software Requirements

Honeywell SDKNC version 810.1996 or greater is required to run the Serial Number Collection Tool on the terminal.

Note: Touch **Start** > **Power Tools** > **SysInfo**. The SDKNC version is listed in the **Value** column under the `\IPSM\Honeywell\AutoInstall*.*` heading (e.g., `SDKNC_810.1996.CAB`).

Downloading and Installing the Tool

1. Download the tool to a workstation PC.
 - 1.1 Go to www.honeywellaidc.com and navigate to the *Software* tab on the Dolphin 70e Black product page.
 - 1.2 Under *Tools and Utilities*, select Honeywell Serial Number Collection Tool.
 - 1.3 Fill out the online form, accept the End User License Agreement, and then select **Download**.
2. Copy the **SNSetupTool_x.xx.CAB** file from the workstation PC to the Dolphin 70e Black terminal.
3. On the terminal, touch  > **File Explorer**.
4. Navigate to the location where the **SNSetupTool_x.xx.CAB** file was saved and touch the file to start the installation.
5. Touch **Install** to accept the default location, *Device*.
6. Touch **OK**.

Using the Tool on the Terminal

1. Touch  > **File Explorer** > **Program Files** > **SNCollectTool**.



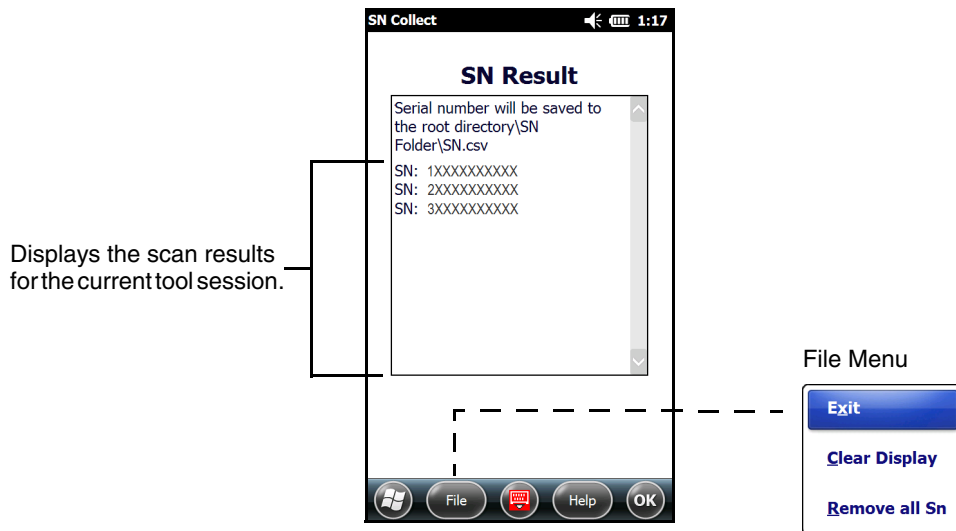
2. Touch **SNCollectTool** to open and run the tool.
 - A **SN.csv** file is automatically created and saved in the My Device/SN folder on the terminal.
 - The serial number of the terminal being used is logged into the **SN.csv** file.
 - The SN Results display appears.
 - The imager is activated (ScanWedge is enabled).
3. To add additional serial numbers to the **SN.csv** file, perform one of the following actions:
 - scan the bar code located on the serial number label inside the battery well of the terminal,
 - scan the bar code located on the original box that contained terminal, or
 - copy the **SN.csv** file to a PC, then open the file and manually add the serial numbers of the terminals.

Note: Pressing the Scan button (center button) on the front of the terminal or the left and right side buttons on the terminal to initiates a scan.

The results of the current scan session are simultaneously displayed on the screen and logged into the **SN.csv** file.

Do not scan the serial number of the terminal running the SNCollectTool or the number will appear twice in the **SN.csv** file. By default, the terminal serial number is added to the **SN.csv** file when the SNCollectTool opens.

Note: *The display does not always reflect the full content of the **SN.csv** file. If you close and then reopen the tool or select Clear Display from the File menu, the display is cleared of data but the content of the **SN.csv** is not affected. The serial numbers from previous scans remain saved the **SN.csv** file but the numbers are no longer visible on the terminal screen.*



4. Touch **File** > **Exit** to close the tool and disable ScanWedge.
5. Provide the **SN.csv** file to a Honeywell sales representative with your OS upgrade kit order.

File Menu

Touch **File** on the tile bar to access additional menu options.

Exit

Select Exit to disable ScanWedge and exit the tool.

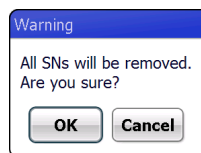
Clear Display

Select Clear Display to clear the SN Results displayed on the terminal screen.

Note: *Clearing the display does not affect the data collected in the **SN.csv** file.*

Remove all SN

Select Remove all SN and then OK to erase the serial number data collected in the **SN.csv** file.



Note: *Remove all SN does not delete the **SN.csv** file from the terminal. Only the serial number data in the **SN.csv** file is erased.*



Step 2: Place the Order and Receive New License(s)

What to Provide When Ordering

Contact a Honeywell sales representative to place your kit order and request a **License.csv** file.

The sales representative will request the following from you:

- The **SN.csv** file created in *Step 1* ([see page 3](#)).
- The quantity of **70E-OS-UPGRADE-01** kits you are ordering.

*Note: Each kit includes the software and licensing required to transfer the OS of **one** Dolphin 70e Black terminal. You must order a kit for each device being upgraded.*

- A valid email address where a **License.csv** file can be sent to you.

In addition to the upgrade kit, you may want to order memory cards for the terminal(s) being upgraded. A microSD or microSDH card is required to perform the OS upgrade and is needed for some applications to run properly on the terminal after the upgrade is complete. Honeywell offers several qualified memory card options, which can be added to the kit order.

Memory Card Specifications

Honeywell recommends the use of Single Level Cell (SLC) industrial grade microSD or microSDHC memory cards with Dolphin terminals for maximum performance and durability.

Receiving a New License File

Once the initial sales order process is completed, OS licenses are created for the terminal serial numbers listed in the **SN.csv** file. The new licenses are provided to you in the form of a single **License.csv** file.

Important: Save the License.csv file in a safe location. Do not change the name or format of the file. The upgrade process cannot be completed without a valid License.csv file from Honeywell.

Step 3: Prepare the Terminal for Upgrade

Install the microSD Card in the Terminal

Refer to the *Quick Start Guide* or *User's Guide* relevant for your Dolphin model for information on installing a microSD card in the terminal. Product guides are available for download at www.honeywellaidc.com.

Remove the Microsoft® Certificate of Authenticity (COA) Label on the Terminal

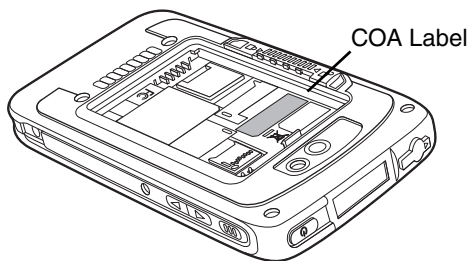
The Microsoft COA label must be removed from the terminal since the upgrade removes the Microsoft Windows Embedded Handheld operating system and associated license. In addition, removing the COA label also ensures authorized Honeywell service centers will return the device to you with the correct OS installed if service is required on the terminal.

1. Press and hold the **Power** button until the *Phone Options* menu displays.
2. Touch **POWER OFF**.
3. Remove the battery door and battery. Refer to the *Quick Start Guide* or *User's Guide* relevant for your Dolphin model for additional information.

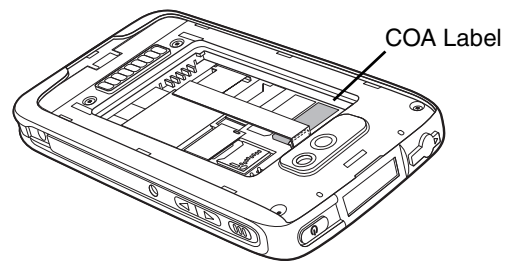
Note: Product guides are available for download at www.honeywellaidc.com.

4. Locate and remove the COA label in the battery well.

Model Type: IP67, Locking Battery Door



Model Type: IP54, Non-Locking Battery Door



5. Insert the battery and install the battery door. The terminal begins booting as soon as power is applied.

Upgrade the Terminal to the Latest WWAN Radio (SL9090 or SL8092) Firmware

Verify the terminal is running the latest WWAN radio firmware version **before** attempting to upgrade the terminal to an Android OS. Contact technical support for information on the latest radio firmware release.

To find out what radio firmware version is running on the terminal:


Touch  > **Settings** > **System** > **RIL** or touch  > **DolphinCM**. Select the **Profile** tab and then **Refresh**.

To upgrade the WWAN radio (SL9090 or SL8092) firmware on the terminal:

1. Contact Honeywell Technical Support to request access to the *Honeywell Scanning & Mobility* FTP site.
2. Download the latest WWAN radio (SL9090 or SL8092) firmware update to a workstation PC.
 - 2.1 Access the *Honeywell Scanning & Mobility* FTP site.
 - 2.2 Click **Mobility** > **WEH6.5**.
 - 2.3 Select the terminal configuration (e.g., **CHS**, **CHT**, **FRA**, or **WWE**).
 - 2.4 Click **70e Black**.
 - 2.5 Select either **BT_WLAN**, **GSM Only (SL8092)** or **GSM_CDMA (SL9090)** depending on the terminal model.
 - 2.6 Download the latest radio firmware update file (e.g., **SL9090_Firmware_x.xx.CAB** or **SL8092_Firmware_x.xx.CAB**) file.

-
3. Copy the radio firmware .CAB file to the **IPSM** folder on the terminal.

*Note: **Do not** copy the file into the AutoInstall folder or the upgrade fails.*

4. On the terminal, touch  > **File Explorer** > **IPSM**.
5. Touch the radio firmware .CAB file start the update.
6. Touch **Install** to accept the default location, *Device*.
7. Touch **OK**.
8. Once the installation is complete, delete the radio update file (e.g., **SL9090_Firmware_xxx.CAB** or **SL8092_Firmware_xxx.CAB**).

Step 4: Prepare the microSD Card

Download the Latest Android OS Files

1. Access the *Honeywell Scanning & Mobility* FTP Site.
2. Click **Mobility > Android 4.0.x (Black) > 70e Black**.
3. Select the terminal configuration (e.g., **WWE** or **CHS**).
4. Download the latest Android OS kernel (e.g., **DBLACKAD_x.xx.zip**) and the md5 checksum file (e.g., **x.xx-md5sum.txt**) to a workstation PC.
5. Click **SD Image > Honeywell > AutoInstall**.
6. Download the latest CommonES_Android files and service pack (if available) to a workstation PC.
 - **Honeywell_CommonES_Android_Demos_x.xx.zip**
 - **Honeywell_CommonES_Android_PowerTools_x.xx.zip**
 - **Honeywell_CommonES_Android_SDK_Runtime_x.xx.zip**
 - **Service Pack** (if required)

Copy the Android OS Files to the microSD Card

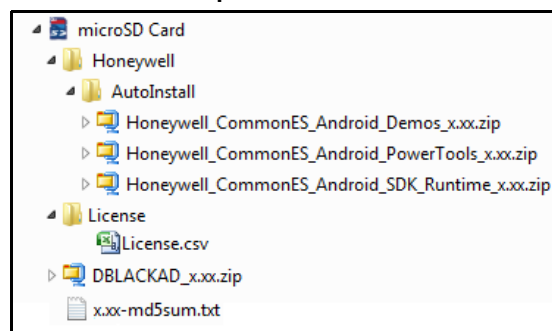
Memory Card Specifications

Honeywell recommends the use of Single Level Cell (SLC) industrial grade microSD or microSDHC™ memory cards with Dolphin terminals for maximum performance and durability. Contact a Honeywell sales representative for additional information on qualified memory card options.

1. Format the microSD/SDHC card to FAT or FAT32.
2. Save the **DBLACKAD_x.xx.zip** and **x.xx-md5sum.txt** files under the root directory of the microSD/SDHC card.
3. Create a folder named **License** under the root directory of the microSD/SDHC card.
4. Save the **License.csv** file (provided by Honeywell) in the **License** folder.
5. Create a folder named **Honeywell** under the root directory of the microSD/SDHC card.
6. Create a folder named **Autoinstall** in the **Honeywell** folder.
7. Save the CommonES_Android and service pack (if available) files in the **Honeywell/Autoinstall** folder on the microSD/SDHC card.
 - **Honeywell_CommonES_Android_Demos_x.xx.zip**
 - **Honeywell_CommonES_Android_PowerTools_x.xx.zip**
 - **Honeywell_CommonES_Android_SDK_Runtime_x.xx.zip**
 - **Service Pack** (if required)

Note: You may also save custom application files (*.zip) in the **Honeywell/Autoinstall** folder to have the applications install automatically during the upgrade.

Sample microSD Card



Step 5: Complete the Upgrade

Download and Copy the Upgrade File to the Terminal

1. Download the **DBLACKAD_OS_Swap_x.xx.CAB** upgrade file to a workstation PC.
 - 1.1 Access the *Honeywell Scanning & Mobility* FTP Site.
 - 1.2 Click **Mobility > Android 4.0.3 (Black) > 70e Black > Windows to Android**.
2. Copy the **DBLACKAD_OS_Swap_x.xx.CAB** to the root **/Honeywell/Autoinstall** folder on the terminal.

Note: The upgrade will not automatically initiate after a Hard Reset (Reboot) if the CAB file is saved in the IPSM/Honeywell/Autoinstall folder instead of the root /Honeywell/Autoinstall folder on the terminal. Either move the file to the correct location and reboot or use File Explorer on the terminal to locate and touch the DBLACKAD_OS_Swap_x.xx.CAB file to initiate the upgrade manually.

Perform a Hard Reset (Reboot) to Complete the Upgrade

1. Ensure the terminal is running on external power.
2. Press and hold the **Power** button on the terminal until the *Phone Options* menu displays.
3. Touch **HARD RESET**.

Troubleshooting the Upgrade

Try the following options if the terminal displays one of the errors listed below, cancels the upgrade, and leaves the Windows Embedded Handheld OS intact.

“Invalid SN Error”

1. Verify the following items are correct.
 - The **License.csv** file is saved in the correct location (see page 11).
 - The **License.csv** file name and file type (*.csv) are correct.
 - The **License.csv** file contains the correct serial number of the terminal you are upgrading.
2. Replace the file with a new copy of the *original* **License.csv** file provided by Honeywell.
3. If you still receive the error after replacing the **License.csv** file, contact technical support.

*Note: If you do not have a **License.csv** file, contact a Honeywell sales representative for information on how to purchase a Dolphin 70e Black upgrade kit and acquire a valid **License.csv** for your terminal.*

“Invalid License Error”

1. The license key in the **License.csv** file may be invalid or missing. Replace the file with a new copy of the *original* **License.csv** file provided by the Honeywell.
2. If you still receive the error after replacing the file, contact technical support.

*Note: If you do not have a **License.csv** file, contact a Honeywell sales representative for information on how to purchase a Dolphin 70e Black upgrade kit and acquire a valid **License.csv** for your terminal.*

“Error md5 checksum for DBLACKAD_x.xx.zip”

1. Verify the following items are correct.
 - The xxx-md5sum.txt file is saved in the correct location (see page 11).
 - The xxx-md5sum.txt version number matches the **DBLACKAD_x.xx.zip** kernel version number (e.g., DBLACKAD_41.13.zip matches 41.13-md5sum.txt).
2. Replace the file with a new copy of the *original* file downloaded from the *Honeywell Scanning & Mobility* FTP Site.
3. If you still receive the error after replacing the file, contact technical support.

Error “Multi Valid UPG Files are available”

1. Verify only one instance of the **DBLACKAD_x.xx.zip** OS kernel file is saved on the microSD/SDHC.

Error “Failed to find Valid UPG File”

1. Verify the **DBLACKAD_x.xx.zip** file is saved in the correct location on the microSD/SDHC card (see page [11](#)).
2. Replace the file with a new copy of the original file downloaded from the *Honeywell Scanning & Mobility* FTP Site.
3. If you still receive the error after replacing the file, contact technical support.



Customer Support

Product Service and Repair

Honeywell International Inc. provides service for all of its products through service centers throughout the world. To obtain warranty or non-warranty service, please visit www.honeywellaidc.com and select **Support > Contact Service and Repair** to see your region's instructions on how to obtain a Return Material Authorization number (RMA #). You should do this prior to returning the product.

Technical Assistance

If you need assistance installing or troubleshooting your device, please contact us by using one of the methods below:

Knowledge Base: www.hsmknowledgebase.com

Our Knowledge Base provides thousands of immediate solutions. If the Knowledge Base cannot help, our Technical Support Portal (see below) provides an easy way to report your problem or ask your question.

Technical Support Portal: www.hsmsupportportal.com

The Technical Support Portal not only allows you to report your problem, but it also provides immediate solutions to your technical issues by searching our Knowledge Base. With the Portal, you can submit and track your questions online and send and receive attachments.

Web form: www.hsmcontactsupport.com

You can contact our technical support team directly by filling out our online support form. Enter your contact details and the description of the question/problem.

Telephone: www.honeywellaidc.com/locations

For our latest contact information, please check our website at the link above.



Software

End User License Agreement

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- (c) use the Software, by itself or in conjunction with harmful software, to:
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 - (iii) negatively impact the operation or performance of the networks with which the Software may interact ("Networks"),
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