

DH60

Mobile Computer



User's Manual

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Patents

This product may be covered by one or more of the following patents:

Design patents: EP2238741

Utility patents: EP1128315B1, EP1396811B1, EP1413971B1, IT1396943, US6808114, US6997385, US7387246.

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REFERENCES

CONVENTIONS

This manual uses the following conventions:

“User” refers to anyone using a DH60 mobile computer.

“mobile computer” and “DH60” refer to DH60 mobile computer.

“You” refers to the System Administrator or Technical Support person using this manual to install, configure, operate, maintain or troubleshoot a DH60 mobile computer.

“Single Dock” refers to the DH60 Single Slot Dock.

The label artworks may be only a draft. Refer to the product labels for more precise information.

REFERENCE DOCUMENTATION

For further information regarding DH60 refer to the SDK Help on-Line.

SERVICES AND SUPPORT

Datalogic provides several services as well as technical support through its website. Please check our website at www.datalogic.com under “Support & Services”, then “Automatic Data Capture”, and click on the links indicated for further information including:

- **Downloads**
 - **Manuals** for the latest versions of user manuals and product guides.
 - **Software & Utilities** for the latest firmware release for your product. You can also click on the following link for direct access to this section: www.datalogic.com/products_updates.
- **Service Program** for warranty extensions and maintenance agreements.
- **Repair Centers** for a list of authorised repair centers.
- **Technical Support Automatic Data Capture** email form to contact our technical support.

GENERAL VIEW



A) Data Capture Window



- B) Color Display
- C) ON/OFF Power Key
- D) Status Light
- E) Front Scan Key
- F) Keyboard
- G) Reset key

- H) Stylus
- I) Laser Safety Label
- J) Loudspeaker
- K) MicroSD Card Slot (under battery)
- L) Product Label (under battery)



M) Right Side Scan Key



- N) Left Side Scan Key
- O) DC Port
- P) Micro USB Port

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1 INTRODUCTION

1.1 DH60 DESCRIPTION

The DH60 mobile computer delivers industry leading bar code reading and wireless communications in a durable and ergonomic form factor. Intended for use in warehouses, retail stores, and manufacturing facilities, the DH60 mobile computer tackles a wide variety of inventory management tasks from simple receiving to the support of material traceability.

State-of-the-art bar code engines supply two options for the DH60 mobile computer:

- A 2D imager option provides a capture device enabled for a wide range of Linear, Stacked, and 2D bar codes. Camera technology in this scan engine reduces the number of failed reads due to damaged and poorly printed bar codes.
- When quickness and accuracy are preferred, the Laser option displays best in class speed reading the full range of linear symbols and GS1 DataBar™ codes.

All DH60 mobile computer models are coupled with Datalogic's patented 'Green Spot' technology for good-read feedback. The visual good-read indicator improves user feedback by projecting a green spot directly on the code just read. For the warehouse and manufacturing shop floor this Error proofing technology is intuitive regardless of how noisy the environment is. In quieter retail environments, the 'Green Spot' technology prevents unwanted intrusion on the consumer experience by enabling silent scanning.

The DH60 mobile computer utilizes a Laird Wi-Fi IEEE 802.11 bgn radio with fast roaming and PCI compliant encryption levels. This powerful combination ensures real-time inventory transactions that are secure from unwanted snooping.

The DH60 mobile computer withstands the rigors of everyday use. A full shift battery keeps operators productive throughout the day with fewer battery exchanges needed. An IP54 sealing rating and 1.5 m / 5 ft drop specification delivers the durability needed to survive accidental damage and exposure to moisture and dirt. These durability ratings contribute to reduced down time for repairs. For additional investment protection, warranty for this device can be extended through Datalogic's EASEOFCARE program that best suits the installations' requirement.

Datalogic's software tools and strategic software alliances fit the DH60 mobile computer for the business practice. Datalogic's Desktop and Configuration utilities offer full control over the device experience. Wavelink® Avalanche enables rapid deployment and central management of the DH60 installation. For facilities with

Warehouse Management Systems (WMS), Wavelink's Terminal Emulation is available with all four of the most popular emulation modes.

A full line of mobile computing accessories allow for investment flexibility. Single-slot docks are available for small stores while four-slot docks and multi-battery chargers support the largest of warehouses. A pistol grip handle easily converts the DH60 mobile computer into a gun form factor suitable for scan-intensive receiving and inventories.

1.2 AVAILABLE MODELS

The DH60 is available in different models depending on the options it is equipped with. All options are listed below:

- communication options: Laird Wi-Fi IEEE 802.11 bgn, Bluetooth®
- data capture options: laser, 2D imager
- operating system: Windows CE 6.0
- keyboard options: numeric.

For further details about the DH60 models refer to the web site:

<http://www.datalogic.com>.

For further information regarding Windows CE refer to the website:

<http://www.microsoft.com/windowseembedded>.

The currently available models are:

- 941100003 DH60 00N0IM-2N0-CCS0
DH60, Handheld, Samsung A8, 256MB/512MB, bgn, Imager, Numeric, CE6
- 941100004 DH60 0000LD-2N0-CCS0
DH60, Handheld, Samsung A8, 256MB/512MB, Batch, P.Laser, Numeric, CE6
- 941100005 DH60 00N0LD-2N0-CCS0
DH60, Handheld, Samsung A8, 256MB/512MB, bgn, P.Laser, Numeric, CE6

1.3 PACKAGE CONTENTS

The DH60 package contains:

- 1 DH60 mobile computer
- 1 Power Supply
- 1 Rechargeable Li-ion Polymer battery pack (2600 mAh at 3.7 V - 9.62 Watt-hours)
- 1 Std-A to Micro-B USB 2.0 cable (client mode only)
- 1 Quick Start Guide
- 1 End User License Agreement (EULA) Sheet

Any other packages will contain the accessories necessary for the DH60 connection to the host computer and to the network: the cradle, one or more connection cables.

Remove all the components from their packaging; check their integrity and compare them with the packing documents.



CAUTION

Keep the original packaging for use when sending products to the technical assistance center. Damage caused by improper packaging is not covered under the warranty.



NOTE

Rechargeable battery packs are shipped partially charged. Please fully charge the battery before use. See section 2.1.

1.4 INSERTING A MICROSD CARD

The DH60 supports microSD memory cards. To access the microSD card slot and insert the card, proceed as follows:

1. Turn off the DH60.
2. Pull the battery latch down and remove the battery pack:



3. Insert the microSD card into the slot with the gold contacts facing down:



4. Insert the battery's alignment lugs into the recesses, then press firmly until the battery latch clicks.



1.4.1 Removing the MicroSD Card

To remove the microSD card, follow the steps above to access the microSD card cage under the battery, and remove the microSD card from its slot.

**CAUTION**

Follow proper ESD precautions to avoid damaging the microprocessors in the DH60 or the microSD card itself.

Proper ESD precautions include, but are not limited to, working on an ESD mat and ensuring that the operator is properly grounded.

Do not force the card. If you feel resistance, remove the card, check the orientation, and reinsert it.

Do not use the microSD card slot for any other accessories.

1.5 ACCESSORIES

❑ Cradles

94ACC0086 DH60 single slot desk mount dock with Micro USB

94ACC0088 DH60 multi dock recharges four devices and four batteries (power supply included)

94ACC0089 DH60 multi battery charger recharges four spare batteries (power supply included)

❑ Batteries

94ACC0085 DH60 battery, 3600 mAh

❑ Power Supply

94ACC0087 Direct and single slot dock power supply

94ACC0090 Multi-slot dock and battery charger power supply

❑ Cables

94A051968 Cable from dock microUSB client to USB

❑ Various

94ACC0091 DH60 handle for conversion to pistol grip (sold separately)

94ACC0092 DH60 holster for belt mounting

**NOTE**

Use only a Datalogic approved power supply and cables. Use of an alternative power supply will invalidate any approval given to this device and may be dangerous.

2 BATTERIES AND MAINTENANCE



NOTE

Rechargeable backup batteries and battery packs are shipped partially charged. Please fully charge the device or battery before use.



CAUTION

Annual replacement of rechargeable battery pack avoids possible risks or abnormalities and ensures maximum performance.

2.1 CHARGING THE BATTERY PACK

The most direct way to charge a DH60 is to connect the device DC jack to a provided power supply. Alternatively, the DH60 also be charged by the single slot dock or the four slot dock.

The battery icon on the Taskbar indicates approximate charge level of the battery and will indicate a low charge when the DH60 needs to be recharged.



NOTE

The battery pack autonomy varies according to many factors, such as the frequency of barcode scanning, RF usage, battery life, storage, environmental conditions, etc.



CAUTION

Don't insert the wall charger into the DC port when the DH60 is inserted into the dock.

The status light glows red when the main battery is recharging. It will glow green when the battery reaches full charge. The status light will flash red when a charging error is detected (see par. 4.5.1).

The stand-alone battery pack may be recharged outside a DH60 using the spare battery charging slot on the back of the single slot dock, the four slot dock, or a four slot battery charger.

**NOTE**

It's recommended to charge batteries before first use.

**CAUTION**

Risk of explosion if battery is replaced by an incorrect type.

Dispose of used batteries according to the instructions.

**CAUTION**

Avoid storing batteries for long periods in a state of full charge or very low charge.

We recommend charging the battery pack every two to three months to keep its charge at a moderate level to maximize battery life.

**NOTE**

The DH60 and spare DH60 batteries should be charged at an ambient temperature between 10 to 45 °C / 50 to 113 °F to maximize battery life and run time.

**CAUTION**

Never charge the main device or spare batteries in a closed space where excessive heat can build up.

**NOTE**

The battery level may display incorrectly for several minutes after the DH60 is disconnected from its charger if the charging cycle is not completed.

**NOTE**

The DH60 may get warm during charging; this is normal and does not mean a malfunction.

2.2 REPLACING THE BATTERY PACK

To correctly replace the battery pack, proceed as follows.

1. Turn off the DH60.
2. Pull the battery latch down and remove the battery pack:



3. Insert the new battery's alignment lugs into the recesses, then press firmly until the battery latch clicks:



**WARNING**

Installing, charging and/or any other action should be done by authorized personnel and following this manual.

The battery pack may get hot, explode, ignite, and/or cause serious injury if exposed to abusive conditions.

If the battery pack is replaced with an improper type, there is risk of explosion and/or fire.

Do not place the battery pack in or near a fire or other heat source; do not place the battery pack in direct sunlight, or use or store the battery pack inside unventilated areas in hot weather; do not place the battery pack in microwave ovens, in clothes dryers, in high pressure containers, on induction cook surfaces or similar devices. Doing so may cause the battery pack to generate heat, explode or ignite. Using the battery pack in this manner may also result in a loss of performance and a shortened life expectancy.

Use only a Datalogic approved power supply. The use of an alternative power supply will void the product warranty, may cause product damage and may cause heat, an explosion, or fire.

The area in which the units are charged should be clear of debris and combustible materials or chemicals.

Do not use the battery pack of this terminal to power devices other than this mobile computer.

Immediately discontinue use of the battery pack if, while using, charging or storing the battery pack, the battery pack emits an unusual smell, feels hot, changes colour or shape, or appears abnormal in any other way.

Do not short-circuit the battery pack contacts connecting the positive terminal and negative terminal. This might happen, for example, when you carry a spare battery pack in your pocket or purse; accidental short-circuiting can occur when a metallic object such as a coin, clip, or pen causes direct connection of the contacts of the battery pack (these look like metal strips on the battery pack). Short-circuiting the terminals may damage the battery pack or the connecting object.

Do not apply voltages to the battery pack contacts.

Do not pierce the battery pack with nails, strike it with a hammer, step on it or otherwise subject it to strong impacts, pressures, or shocks.

**WARNING**

Do not disassemble or modify (i.e. bend, crush or deform) the battery pack. The battery pack contains safety and protection devices, which, if damaged, may cause the battery pack to generate heat, explode or ignite.

In case of leakage of liquid from the battery, avoid contact with liquid the skin or eyes. If the contact occurs, immediately wash the affected area with water and consult a doctor.

Do not solder directly onto the battery pack.

Do not expose the battery pack to liquids.

Avoid any knocks or excessive vibrations. If the device or the battery is dropped, especially on a hard surface, you should take it to the nearest Authorised Repair Centre for inspection before continuing to use it.

Do not replace the battery pack when the device is turned on.

Do not remove or damage the battery pack's label.

Do not use the battery pack if it is damaged in any part.

Battery pack usage by children should be supervised.

Collect and recycle waste batteries separately from the device in compliance with European Directive 2006/66/EC, 2011/65, 2002/96/EC and subsequent modifications, with US and China regulatory laws and regulations about the environment.

**NOTE**

In order to maximize operating autonomy, the DH60 checks its battery level at all times. If the battery is not sufficiently charged, the DH60 will not turn on when the ON/OFF Power button is pressed.

In this case, either substitute a sufficiently charged battery, insert the DH60 into a powered cradle, or plug it into a wall charger.

**NOTE**

To maximize battery life, turn off radios when they are not needed.

2.3 CLEANING THE MOBILE COMPUTER

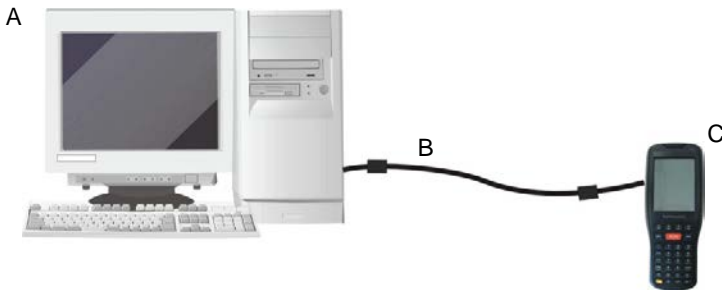
Periodically clean the DH60 with a slightly dampened cloth.

Do not use alcohol, corrosive products or solvents.

3 CONNECTIONS

3.1 USB CONNECTION

You can use the standard micro USB cable included in the box to directly connect the DH60 to a host computer to transfer data through the USB interface.



Key:

A Host computer

C DH60

B Std-A to Micro-B USB 2.0 cable

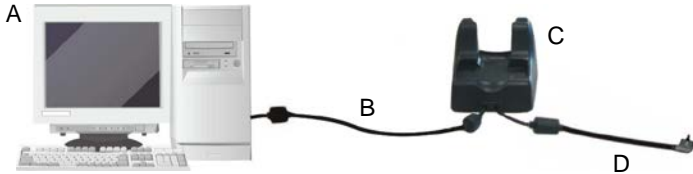


NOTE

Connection through the cable complies to the USB 2.0 standard.

The Single Dock can be connected to the host computer by means of a standard micro USB cable.

Once the host computer has been turned on, insert the DH60 mobile computer into the cradle.



Key:

- | | | | |
|---|--------------------------------|---|-----------------------|
| A | Host computer | C | DH60 Single Slot Dock |
| B | Std-A to Micro-B USB 2.0 cable | D | Power Supply |



NOTE

Connection through the cradle complies to USB 2.0 standard.



NOTE

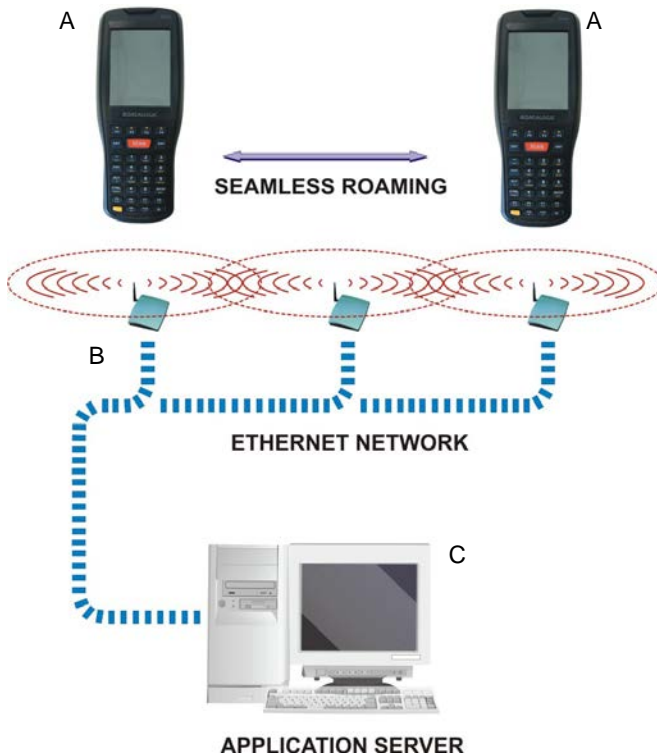
The actual data transfer speed can be appreciably lower than the maximum theoretical speed.

3.2 WLAN CONNECTION

DH60 802.11 bgn radio models can communicate with the host using the on-board Wi-Fi radio and an Access Point connected to a network.

For models using the 802.11 bgn radio, you can find information about the applet for radio configuration: <http://www.summitdata.com/SCU.htm>.

To launch this utility you can tap the specific icon if it is visible on the taskbar or you can select the menu item: Start-> Summit and tap the "SCU" icon.



Key:

- A) DH60
- B) Access point
- C) Host – Application Server

**NOTE**

802.11 bgn radio module is on by default. In order to avoid wasting energy, you can switch it off using the SCU.

**NOTE**

Suspending the terminal powers off the 802.11 bgn radio and drops the radio connection. When the terminal resumes, depending on the radio power mode and security protocol selected, it may take up to 30 seconds for the 802.11 bgn radio driver to re-associate the radio to the network.

**NOTE**

Area coverage and radio performance may vary, due to environmental conditions, access point types or interference caused by other devices (microwave ovens, radio transmitters, etc.).

**NOTE**

In case of heavy usage the DH60 may get warm; this is normal and does not mean a malfunction.

3.3 WPAN CONNECTIONS

Datalogic DH60 Bluetooth® models can communicate with a Bluetooth® device, such as a printer, within a range of 10 m, using the on-board Bluetooth® module.



Key:

- A) DH60
- B) Bluetooth® printer



NOTE

In order to extend battery life, the Bluetooth® module is off by default. If you need to have Bluetooth® working, the module must be enabled through the Bluetooth Manager (see par.4.8.2).



NOTE

Suspending the terminal powers off the Bluetooth® radio and drops the piconet (Bluetooth® connection). When the terminal resumes, it takes approximately 10 seconds for the Bluetooth® radio driver to re-initialize the radio.



NOTE

Area coverage and Bluetooth® radio performance may vary, due to environmental conditions or interference caused by other devices (microwave ovens, radio transmitters, etc.).

3.4 WIRELESS AND RADIO FREQUENCIES WARNINGS

**WARNING**

Use only the supplied or an approved replacement antenna. Unauthorized antennas, modifications or attachments could damage the product and may violate laws and regulations. The antennas inside the DH60 are not user-accessible and cannot be replaced by end users. Send any faulty equipment to Datalogic for repair.

**WARNING**

Most modern electronic equipment is shielded from RF signals. However, certain electronic equipment may not be shielded against the RF signals generated by DH60.

**WARNING**

Datalogic recommends persons with pacemakers or other medical devices to follow the same recommendations provided by Health Industry Manufacturers Associations for mobile phones.

Persons with pacemakers:

- *Should ALWAYS keep this device more than twenty five (25) cm from their pacemaker and/or any other medical device;*
- *Should not carry this device in a breast pocket;*
- *Should keep the device at the opposite side of the pacemaker and/or any other medical device;*
- *Should turn this device OFF or move it immediately AWAY if there is any reason to suspect that interference is taking place.*
- *Should ALWAYS read pacemaker or any other medical device guides or should consult the manufacturer of the medical device to determine if it is adequately shielded from external RF energy.*

In case of doubt concerning the use of wireless devices with an implanted medical device, contact your doctor.

**WARNING**

Turn this device OFF in health care facilities when any regulations posted in these areas instruct you to do so. Hospitals or health care facilities may use equipment that could be sensitive to external RF energy.

**WARNING**

RF signals may affect improperly installed or inadequately shielded electronic systems in motor vehicles. Check with the manufacturer or its representative regarding your vehicle. You should also consult the manufacturer of any equipment that has been added to your vehicle.

**WARNING**

An air bag inflates with great force. DO NOT place objects, including either installed or portable wireless equipment, in the area over the air bag or in the air bag deployment area. If a vehicle's wireless equipment is improperly installed and the air bag inflates, serious injury could result.

**WARNING**

Turn off the device when in any area with a potentially explosive atmosphere. Observe restrictions and follow closely any laws, regulations, warnings and best practices on the use of radio equipment near fuel storage areas or fuel distribution areas, chemical plants or where operation involves use of explosive materials.

Do not store or carry flammable liquids, explosive gases or materials with the device or its parts or accessories.

Areas with a potentially explosive atmosphere are often, but not always, clearly marked or shown.

Sparks in such areas could cause an explosion or fire, resulting in injury or even death.

4 USE AND FUNCTIONING

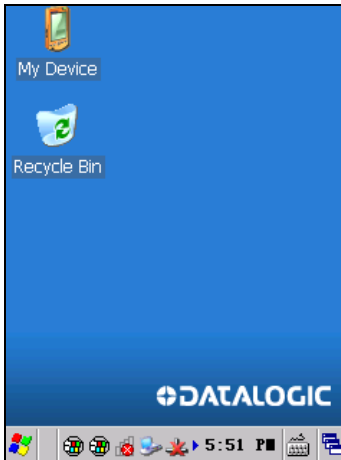
The use of the DH60 depends on the application software loaded. However there are several parameters that can be set and utilities that can be used to perform some basic functions such as data capture, communications, file management, etc

4.1 STARTUP

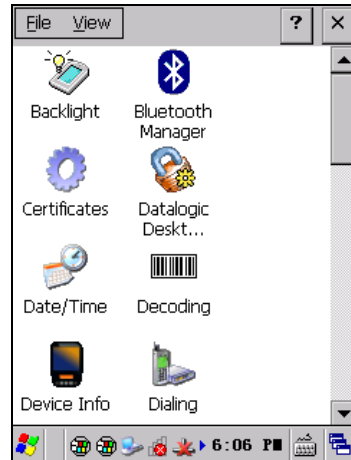
The DH60 turns on when the battery pack or the external supply is inserted and the ON/OFF Power button is pressed.

After the battery pack is installed, use the [ON/OFF] key to turn the mobile computer on and off.

As soon as the mobile computer is on, the Windows CE 6.0 desktop will appear on the screen. Wait a few seconds before starting any activity so that the mobile computer completes its startup procedure.



Desktop



Control Panel

Use the stylus (par. 4.1.1) as suggested to select icons and options.

The mobile computer goes into power-off (low power with display and keyboard backlight off), when it is not used for more than a programmable timeout, which is defined in the POWER applet of the Control Panel. In this mode it can be awakened (resuming operation) by the [ON/OFF] key.

**NOTE**

The mobile computer can also be awakened or suspended programmatically.

4.1.1 Using the Stylus

The stylus selects items and enters information. The stylus functions like a mouse.

Double Tap:	Double tap the screen with the stylus to open items and select options.
Drag:	Hold the stylus on the screen and drag across the screen to select text and images. Drag in a list to select multiple items.

To recalibrate the touch screen use the Stylus applet (see par. 4.6.7).

**CAUTION**

Use only original Datalogic styluses supplied with the product itself.

In harsh applications, use of screen protectors should be taken into consideration, in order to extend the touch screen operating life.

To prevent damage to the screen, do not use sharp devices or any device other than the Datalogic provided stylus.

Do not apply too much pressure when touching the screen.

For applications where an intensive use of the touch screen is foreseen, please consider that touch screen components are subject to progressive wear.

4.1.2 Touch Gestures

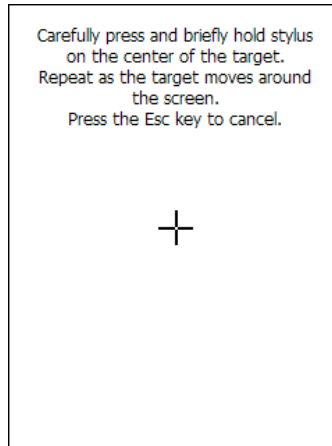
Touch gestures describe gestures in which you use a finger or stylus to make a short, directional movement over a control or object on the screen. Most gestures are a single stroke. Windows CE supports five kinds of gestures.

Tap:	A tap represents the left click of a mouse.
Double Tap:	A double tap represents the left double click of a mouse.

4.2 WINDOWS CE TOUCH SCREEN CALIBRATION

In Windows CE, at the very first DH60 startup, following a clean boot to restore the Registry to default values, the mobile computer startup (see par. 4.1) is preceded by the touch screen calibration screen.

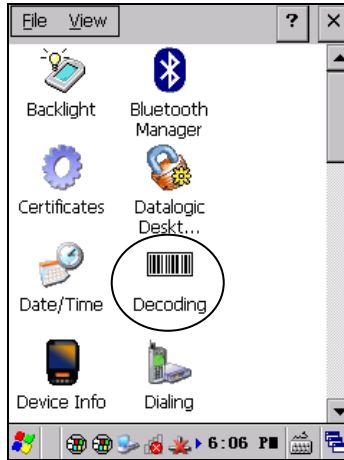
The user must calibrate the touch screen (see par. 4.7.1)



Touch Screen Calibration Screen

4.3 DATA CAPTURE

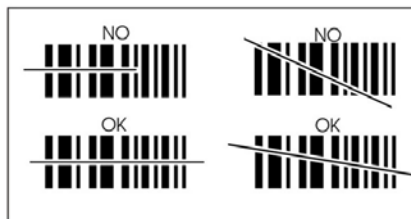
To capture data tap Start > Settings > Control Panel > double tap Decoding:



4.3.1 Laser Data Capture

To scan barcodes, point the DH60 laser model onto the code from a distance within the reading range while pressing the SCAN key or the pistol trigger.

The lighted band emitted by the laser must completely cross the barcode as shown in the figure below.



If the scan has taken place correctly:

- the Good Read LED glows steadily green for a configurable time;
- if enabled, the Good Read Beep plays;
- if enabled, the GreenSpot projects a green spot onto the bar code image.

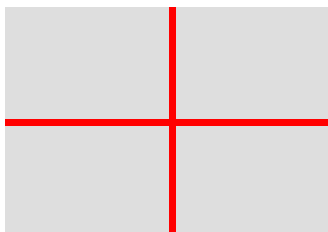
4.3.2 Imager Data Capture

The DH60 Imager captures a picture of the entire bar code. The omni-directional scanning does not require that the operator orient the bar code to align with the scan pattern.

To read a 1D or 2D code, simply point the DH60 Imager model onto the code and press the SCAN Key or the pistol trigger.



The DH60 Imager uses an intelligent aiming system pattern, similar to those on cameras, indicating the field of view, which should be positioned over the code:

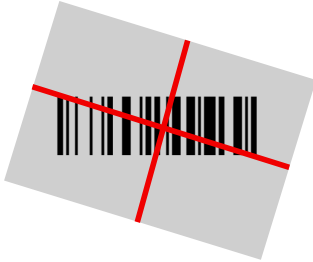


Aiming System

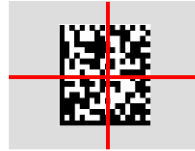
If the aiming system pattern is centered over the entire symbology as shown in the following figure, either wait for the timeout or release the Scan key or the trigger to capture the image.

A red beam illuminates the code, which is captured and decoded. You will get a good read.

Linear barcode



2D Matrix symbol



Relative Size and Location of Aiming System Pattern

The field of view changes its size as you move the reader closer or farther away from the code. The field of view indicated by the aiming system pattern will be smaller when the DH60 Imager is closer to the code and larger when it is farther from the code.

Symbologies with smaller bars or elements (mil size) should be read closer to the unit. Symbologies with larger bars or elements (mil size) should be read farther from the unit. (See par. 5.1 for further details).

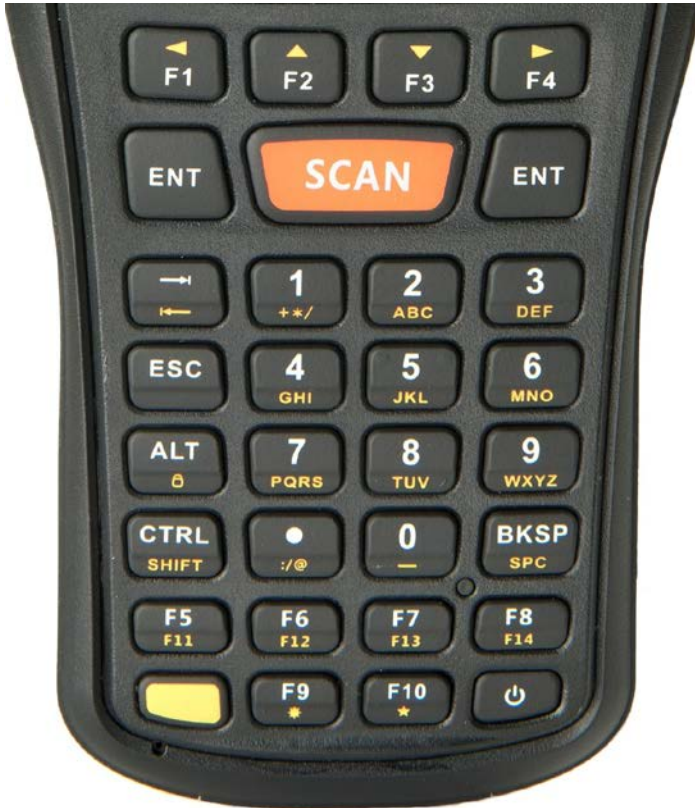
If the scan has taken place correctly:

- the Good Read LED glows steadily green for a configurable time;
- if enabled, the Good Read Beep plays.

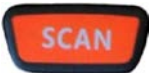



4.4 DESCRIPTION OF THE KEYBOARDS

The DH60 comes with a 31 key numeric keyboard defined with two levels of functionality. Secondary functions are accessed by pressing the yellow button first and then any key designated as having an alternate symbol.

All the keys can be reprogrammed for unique actions defined by the application, with the exception of the main Scan key, the power key, and the yellow modifier key.



Main Keys Function

KEY	FUNCTION
	<p>The SCAN key starts data capture.</p>
	<p>After a yellow modifier key press, navigation keys let you move forwards, backwards, upwards or downwards within text fields, scroll through a Menu list or browse among folder files.</p>
	<p>Yellow modifier (toggle key):</p> <ul style="list-style-type: none"> • When pressed once before a standard key, it enables the character or function printed in yellow above the key. • When pressed twice, it holds the keyboard in the yellow mode for text entry. A third press will return the keyboard to the normal mode.
	<p>The ON/OFF Power button powers the DH60 ON or OFF. It is placed on the lower right side of the terminal.</p>

4.4.1 Resetting the DH60

There are several reset methods for the DH60:

- a warm boot terminates an unresponsive application and clears the working RAM, but preserves the file system. The Registry is restored from persistent memory if available or returned to factory default;
- a cold boot forces all applications to close, completely reinitializing the system. It clears the working RAM, but the file system is preserved. The Registry is restored from persistent memory;
- a clean boot restores the DH60 to a clean configuration: both the Registry and the file system returns to a clean status that conforms to factory default.

Warm Boot

To perform a warm boot, press the reset key on the device front (see GENERAL VIEW).

Cold Boot

To perform a cold boot, press the yellow modifier key and the reset key

Clean Boot

To perform a clean boot, do the following steps:

1. Start menu > Settings > Control Panel
2. Double-tap the RestoreFactorySettings icon.
3. Tap in the field to set the insertion point, and then type "1234".
4. Tap the "Restore" button.
5. Follow on-screen prompts to complete the clean boot.

	Warm Boot	Cold Boot	Clean Boot
Registry	Restored from flash	Restored from flash	Clean configuration (no user config)
File System	Preserved	Preserved	Clean Installation (no user files)

4.5 STATUS INDICATORS

4.5.1 Status Light

The DH60 status light communicates read success and charging status.






STATUS	COLOR	INDICATES
When scanning	Red	Light is red from the time the user presses the Scan key (or trigger) until the bar code is decoded, , until the scanner times out, or until the user releases the Scan key (or trigger).
	Green	Light changes to green when a good decode is completed and then remains lit until the user releases the Scan key (or trigger).
When charging	Green	Light is solid green once the charging process has completed (full charge).
	Red	Light is solid red while charging.
	Blinking Red	Blinking red indicates a charge fault.

4.5.2 Taskbar

The Taskbar provides quick view and links to the Wi-Fi and Clock settings. It also makes available the keyboard SIP and window selection.

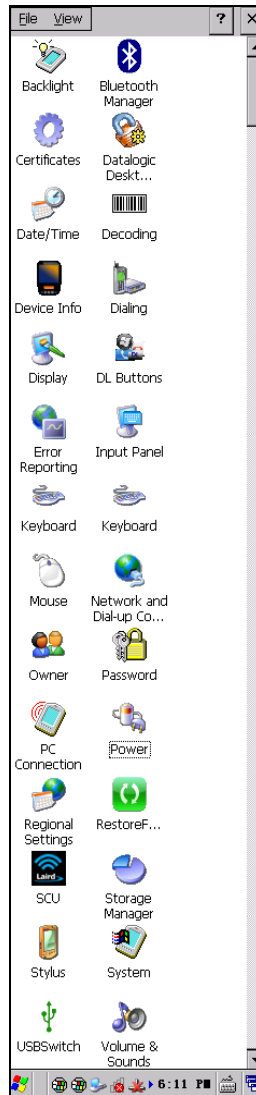


Windows CE Taskbar

ICONS	DESCRIPTION
	ActiveSync connection icon is displayed when connected to ActiveSync or Windows Mobile Device Center either by USB or Bluetooth. Double-tap it to open a status dialog that will let you disconnect the ActiveSync session without physically disconnecting the device from the PC. It is the only way to disconnect a Bluetooth ActiveSync connection.
	Battery icon displays the system battery status.
	It indicates that the battery is charging.
	Bluetooth Manager icon displays whether Bluetooth is enabled, paired, or turned off. Double-tap this icon to open the Bluetooth Manager control panel applet.
	Network connectoid icon displays whether you are connected or not to Ethernet, Wi-Fi, or Bluetooth Personal Area Network.

4.6 CONTROL PANEL

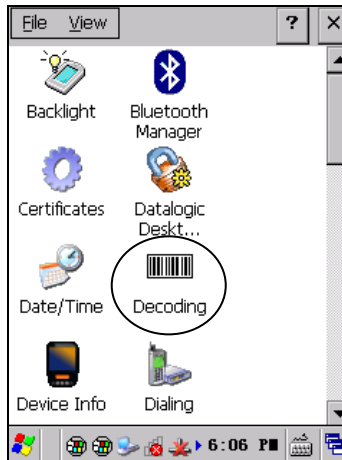
From the Start menu, tap Settings then Control Panel. Below is an expanded view of the Control Panel showing all of the applets.



Windows CE Control Panel

4.6.1 Data Capture Configuration

From the Windows CE control panel main window, double tap the Decoding icon:



There are two sections in the Decoding control panel, each containing additional pages. There are seven General Configuration pages and multiple Barcode symbology pages.

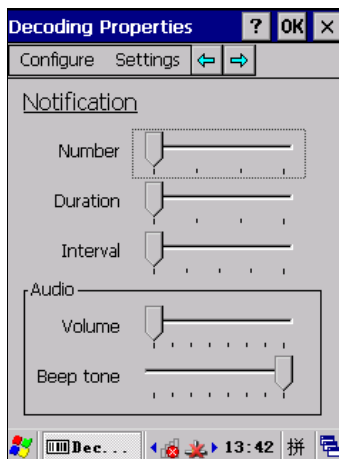
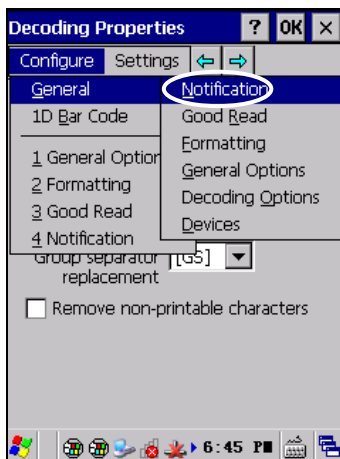
DECODING CONFIGURATION PAGES

Select the desired configuration from the options shown in the figure below, and the other Decoding Properties figures on the following pages.

Select General, 1D Bar Code or 2D Bar Code, then use the menu or tap the left and right arrow keys to navigate the different pages of the Decoding utility. The menu options will change to reflect the items most recently selected.

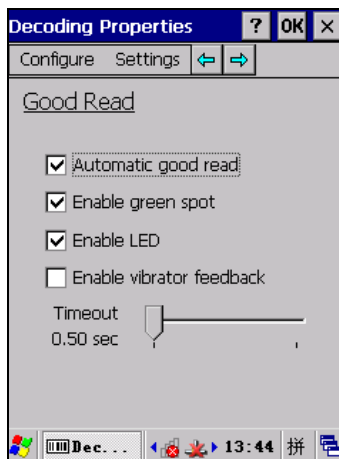
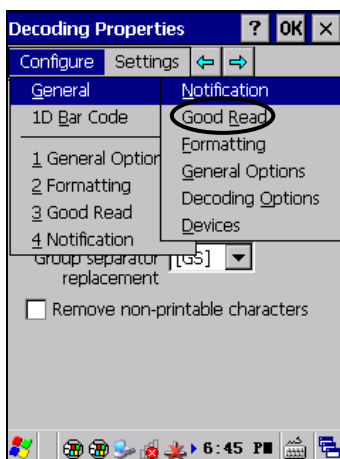
Notification

From the Decoding Properties page, tap Configure > General > Notification. Use it to set volume, tone, duration, interval and number of various types of beeps.



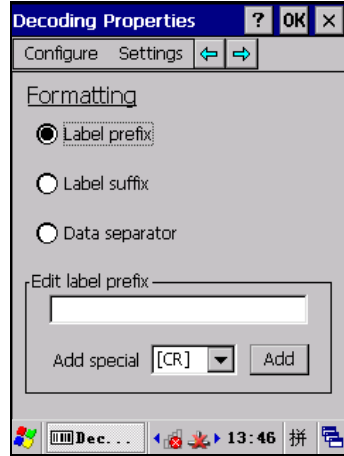
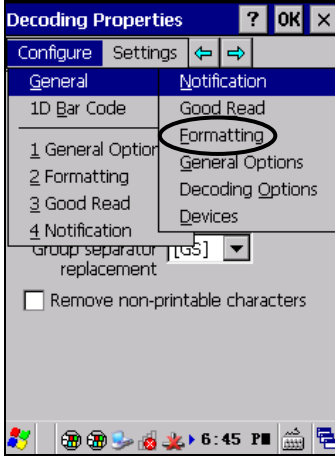
Good Read

From the Decoding Properties page, tap Configure > General > Good Read. Use it to enable Good Read indications, the use of Green Spot, the LED or to set the decoding timeout for decoding labels.



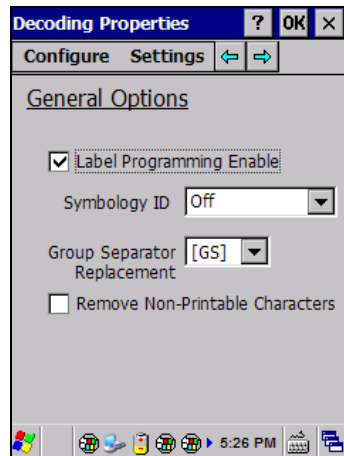
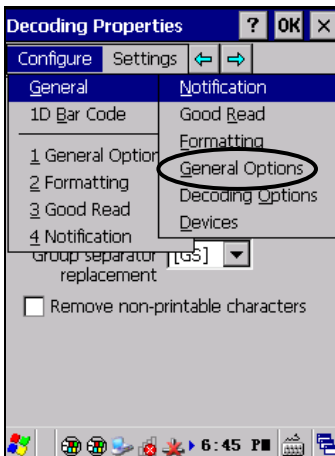
Formatting

From the Decoding Properties page, tap Configure > General > Formatting. Use it to configure prefix, suffix and data separator character strings.



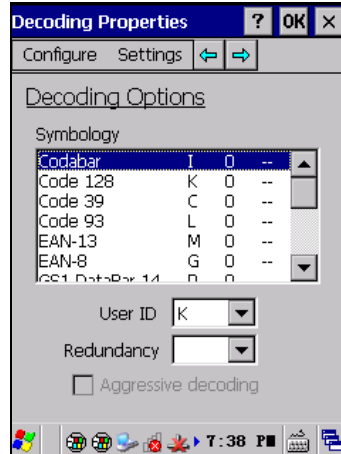
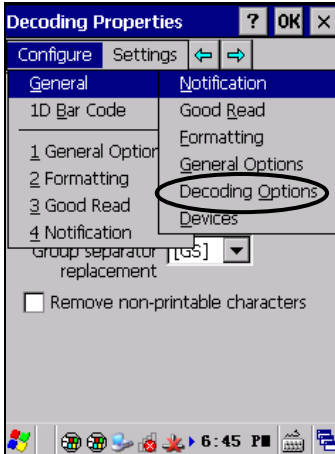
General Options

From the Decoding Properties page, tap Configure > General > General Options. Select from Label Programming Enable, Symbology IDs and Group Separator Replacement.



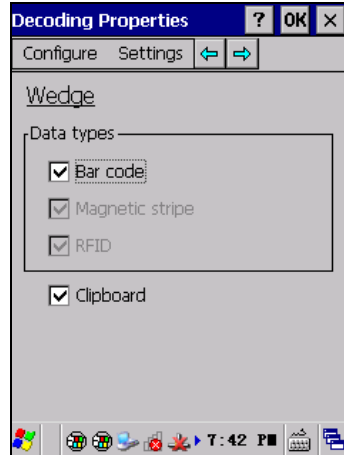
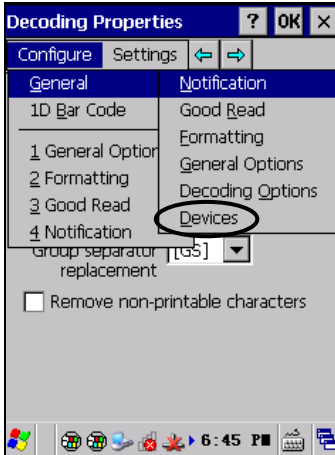
Decoding Options

From the Decoding Properties page, tap Configure > General > Decoding Options. Use it to configure the User ID for symbologies, Redundancy and Aggressive Decoding (if supported by the decoding module). Select a symbology to view or change the available properties settings.



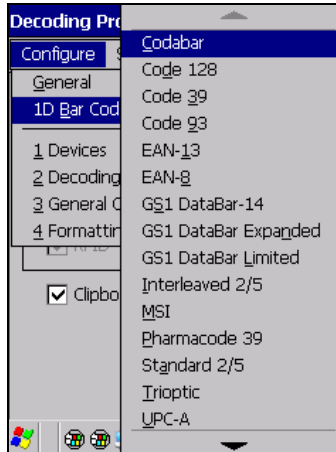
Devices

From the Decoding Properties page, tap Configure > General > Devices. Use it to enable or disable the keyboard wedge for Barcode scanner and to enable or disable Clipboard mode.



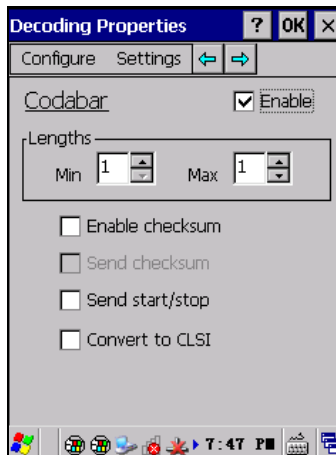
1D Barcode Symbology Pages

Use the drop-down menus from Configure > 1D Barcode, or tap the left and right arrow keys to navigate the different pages of the barcode symbology pages.



Select Configure > 1D Bar Code from the menu to view other configuration options.

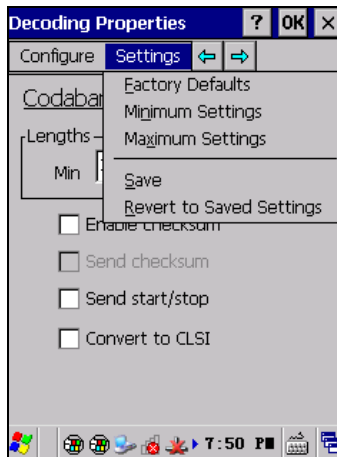
Each barcode symbology opens to its own page, as shown in the figure below. Refer to the sample symbology control panels for examples of the types of fields and options you can modify.



Decoding Settings

Select from the Decoding Properties Settings menu to restore previous configurations and/or other available default settings. Choose from:

- Factory Defaults
- Minimum Settings
- Maximum Settings
- Save (New Settings)
- Revert to Saved Settings



The settings are saved when you tap 'Yes'. To permanently save these settings you need to save the Registry using the Persistent Registry applet in the Control Panel.

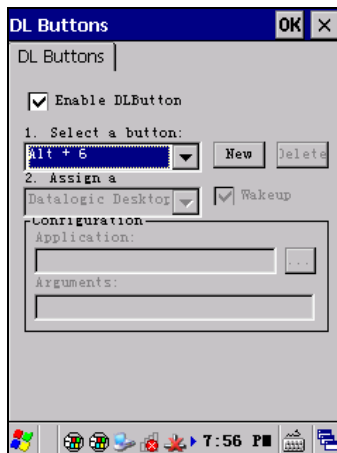
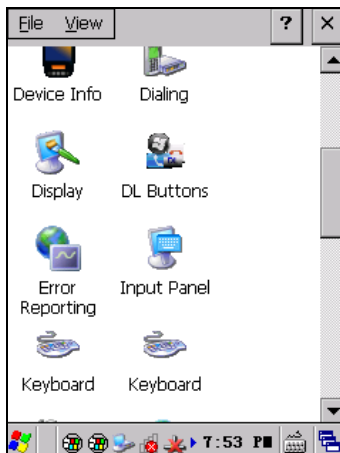
When open, Decoding Properties acts as a simple barcode test tool that provides the Data decoded and the Data Type of the barcode scanned.


4.6.2 DL Buttons

You can use DL Buttons to associate specific keys, such as <F1>-<F10>, with specific applications.

From the control panel main window, double tap the DL Buttons icon.

On the DL Buttons tab, customize the program hardware buttons to launch your most used applications. Under 'Select a button', select the button you want to assign a function to, and then select a program from 'Assign a function'.



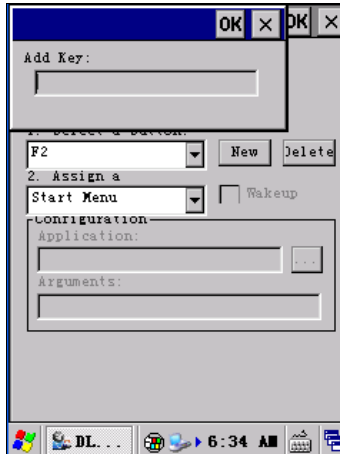
COMMAND	DESCRIPTION
Select a Button	This pull-down list displays the available function keys to define. Select the desired one from the list.
New	Select/tap to specify a new Button, not on the “Select a Button” list.
Delete	Tap to delete the selected Button. You can only delete the Buttons you have added. You cannot delete the following buttons: “Alt + 6”, “Left Button”, “Pistol Trigger”, “Right Button”, “Scan”
Assign a function	This pull-down list displays the available functions.
Application	Displays path to the selected application.
Browse	Select/tap  to browse for application files. You can associate an executable program with the specified Button
Arguments	Type the command-line arguments that are needed for the specified application. This option is only available when “Launch Application” is selected in the “Assign a function” pull-down list.

Adding a new Button

When you select “New” on the “DL Buttons” tab, this opens the “Add Key” dialog box.

To define a new Button, complete the following steps:

1. Enter the key combination in the “Add Key” textbox.



COMMAND	DESCRIPTION
Enter Key	Enter the desired key combination in this text box to define a Button.
OK	Select/tap OK to add the specified Button.
X	Select/tap X to cancel adding the specified Button.



NOTE

Make sure you do not attempt to add a Button that is already defined.

2. Select/tap OK to save the new Button. If you select/tap “X”, the key will not be saved.

**CAUTION**

It is possible for the keyboard wedge to activate assigned Buttons using alphanumeric characters. Barcodes containing characters associated with assigned Buttons will trigger the action or application assigned to that Button.

**CAUTION**

Assigning an action to a character used in a password can render the DH60 unusable. Please be careful when choosing keys.

4.6.3 Application Switcher

The application switcher provides the same functionality as the standard Windows® Alt+Tab function. This allows the user to switch between the various open applications.

The application switcher is activated via an assigned shortcut key specified in the DL Buttons tab (see par. 4.6.2.) When the assigned button is pressed, the dialog shown below will be displayed:



Press the assigned **button** to cycle through the running applications when the dialog is open. Press **<Enter>** to switch to the selected application or **<Esc>** to close the application switcher.

4.7 WIRELESS COMMUNICATIONS

Wireless networking has a customized control, Summit Client Utility (SCU), specific to the radio. There are two methods to access the SCU.

Start > Programs > Summit > SCU:

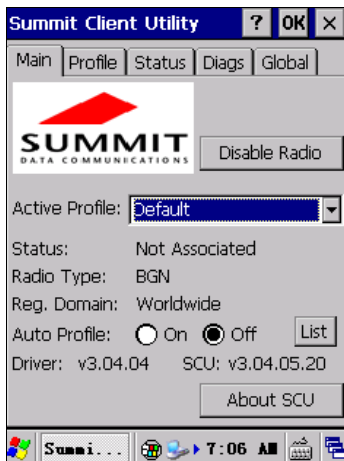


Or

From the Control Panel main window, double tap Wi-Fi to open the Summit Client Utility:

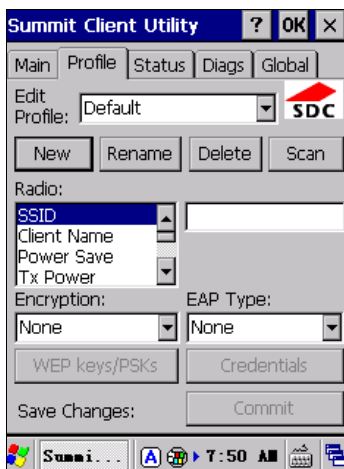


The SCU will open to the “Main” tab:



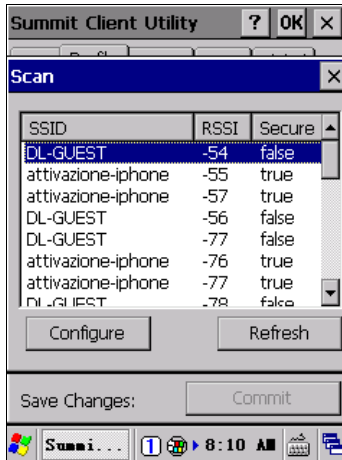
Summit Client Utility

1. To create a new profile, tap the "Profile" tab:



Information about the wireless network can be entered directly in the profile tab or by pressing “Scan” when the desired network ESSID is in range.

- At the "Scan" screen, select the desired SSID:



- Click the "Configure" button



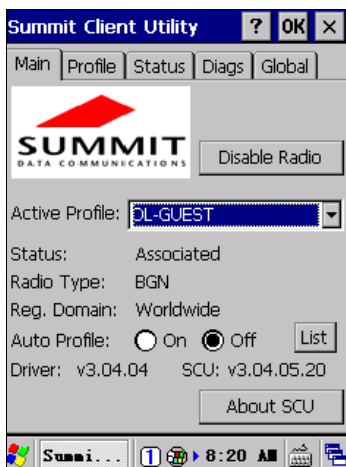
- Follow the on-screen instructions to setup security parameters for your network. For more detailed settings specific to your installation please contact your wireless network administrator.

5. When finished, click “Commit” to save your settings.

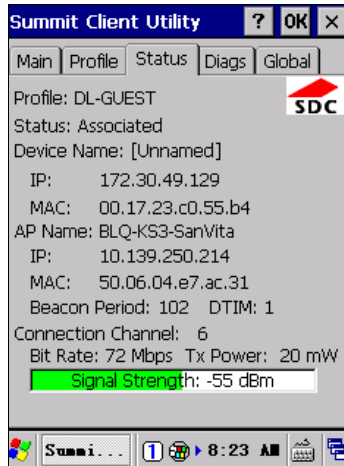


Return to the “Main” tab, if you have not previously selected “Commit” you will be prompted to save your changes.

At the “Main” tab select the profile you just created. If you used the “scan” button the desired profile will have the same name as the ESSID.



Use the “Status” tab to check connectivity to the network.



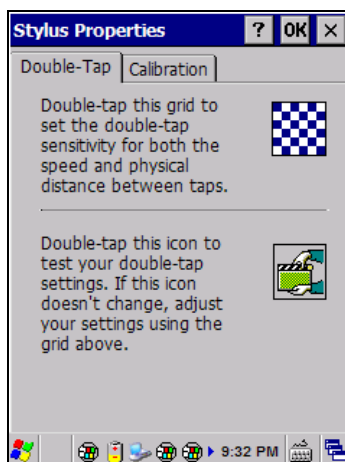
More detailed information about the applet for radio configuration can be found at <http://www.summitdata.com/SCU.htm>.

4.7.1 Stylus Calibration

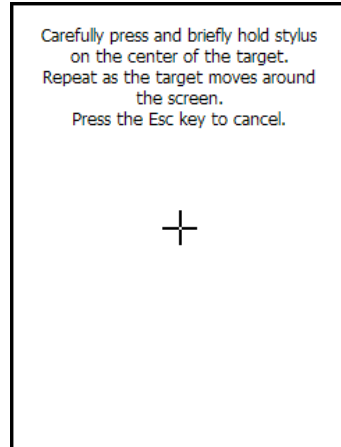
You might need to recalibrate the touch screen (i.e. when you attempt to select one item with the stylus, another item is erroneously selected).

To recalibrate the touch screen, complete the following steps:

1. From the Control Panel main window, double tap Stylus to open the “Stylus Properties” applet window:



2. Tap 'Calibration' to open the Calibration screen. Tap 'Recalibrate':



3. Carefully press and briefly hold stylus on the center of the target. Repeat as the target moves around the screen.
4. By completing the calibration procedure you implicitly accept the new calibration settings.
5. New calibration settings are persistently saved in the Registry.

Startup Stylus Calibration

When starting the terminal, a welcome wizard (with stylus calibration) comes up if valid calibration settings are not available. This happens in the following circumstances:

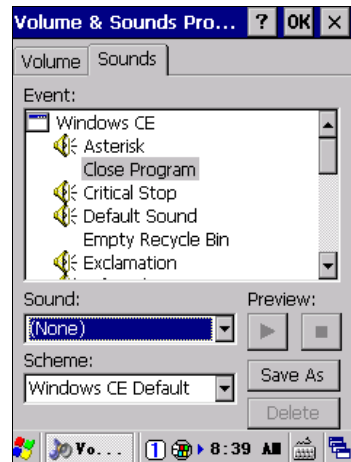
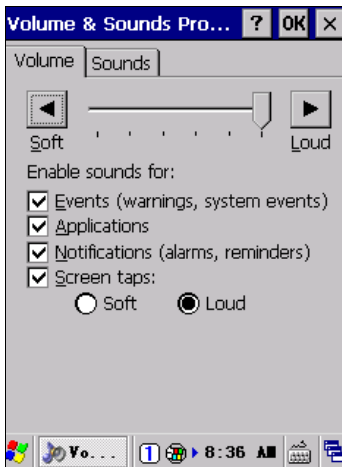
1. At the first startup of the terminal.
2. After any cold boot if the user skipped stylus calibration earlier.
3. After a Clean Boot.

4.7.2 Volume & Sounds

From the control panel main window, select the Volume & Sounds applet by double tapping the Volume & Sounds icon:



The Volume & Sounds applet configures audio features of the loudspeaker and appears as follows:



4.8 CONNECTING TO OTHER COMPUTERS

There is more than one way to connect the DH60 to a host PC running Windows. Each requires specific connections in order to function properly.

4.8.1 Windows Mobile® Device Center

The desktop application Windows Mobile® Device Center gives you the ability to synchronize information between a desktop computer and your DH60. Synchronization compares the data on the DH60 with that on the desktop computer and updates both with the most recent information.

Windows Mobile Device Center is only compatible with Windows Vista and Windows 7; if you run Windows XP or earlier, you have to download Microsoft ActiveSync.

You can establish a connection to your DH60 through the following interfaces:

- USB either directly or through the Single Dock
- Bluetooth® (see par. 4.7.2)

To establish a partnership between the DH60 and a host PC, start Windows Mobile® Device Center and follow the steps below:

1. Connect the DH60 to the host PC. Windows Mobile® Device Center configures itself and then opens.
2. On the license agreement screen, click Accept.
3. On the Windows Mobile Device Center's Home screen, click Set up your device.
4. Select the information types that you want to synchronize, then click Next.
5. Enter a device name and click Set Up.

When you finish the setup wizard, Windows Mobile Device Center synchronizes the mobile computer automatically.

**NOTE**

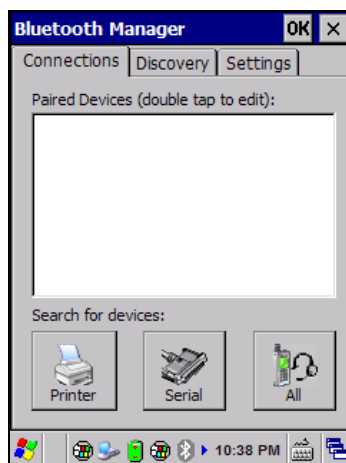
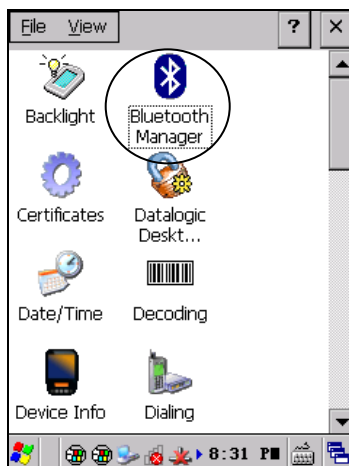
The DH60 running Windows CE does not come equipped with Microsoft Office Outlook or any other application that allows users to view contact, calendar, e-mail, or task data. Users can view files copied to the DH60 by WMDC's file synchronization feature.

4.8.2 Bluetooth® Manager Device Setup

Using the DH60 to connect to another device

To create a Bluetooth® pairing between your device and another device that has Bluetooth® capabilities, ensure that the two devices are turned on, discoverable, and within close range.

1. From the control panel main window, double tap the Bluetooth Manager icon to open the Bluetooth Manager control panel. Tap 'Connections':



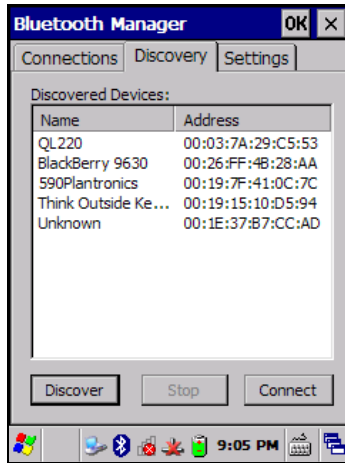
2. Search for available Bluetooth® devices by tapping the button for the type of device you want (Printer, Serial or All) or tap Discovery > Discover to skip this step. The DH60 will search for Bluetooth® devices within range.



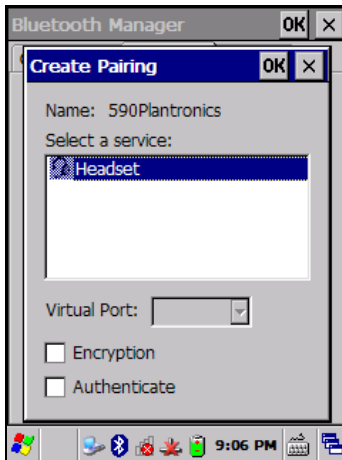
NOTE

If you attempt to set up a connection when the Bluetooth® radio is disabled, you will receive a message reminding you that the radio is turned off, and asking if you want to turn it on. Tap Yes if you need to enable the Bluetooth® radio.











- Once searching is complete, Bluetooth® device Profiles will be displayed in the Discovery tab. You can set up a connection to a device in the list by selecting the device and then tapping the 'Connect' button:



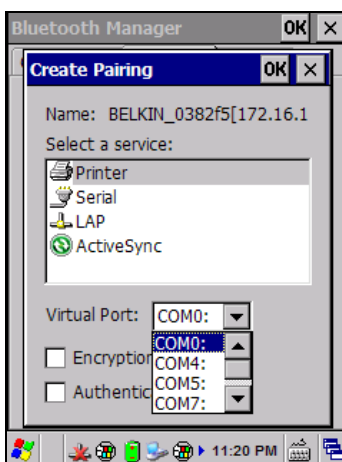
- To create a pairing, select a service:



- Configure any encryption, authentication, or virtual port options required by the service selected.

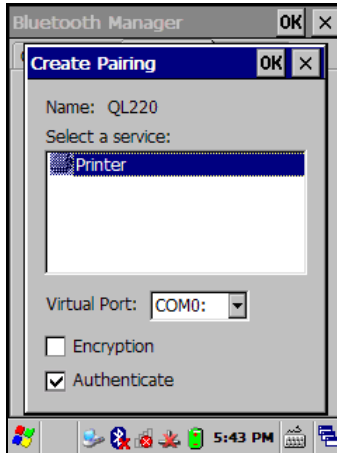
Icon	Service
	Dialup Networking
	Printer
	Object Push (OPP) Object Exchange (OBEX)
	ActiveSync
	Human Interface Device (HID) - Keyboard
	Serial
	Personal Area Network (PAN)
	Modem
	Headset
	Handsfree

Virtual Port allows you to specify the incoming port, which is used to communicate serially with an incoming device just as if it were a physical COM port. This option is available only if you have selected a Printer or Serial service.

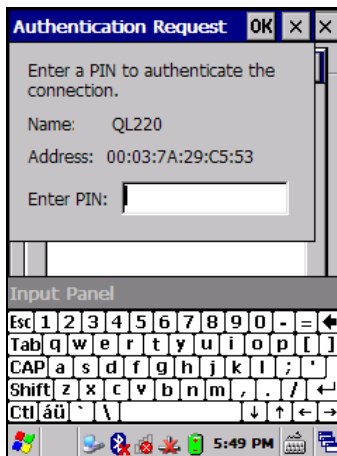


You can also select Encrypt or Authenticate from the Bluetooth® control panel to apply or modify those settings.

1. To require Authentication, check the checkbox, then tap OK.



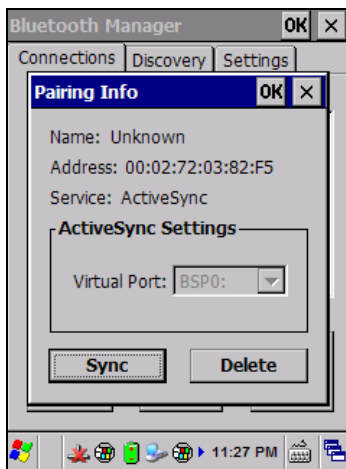
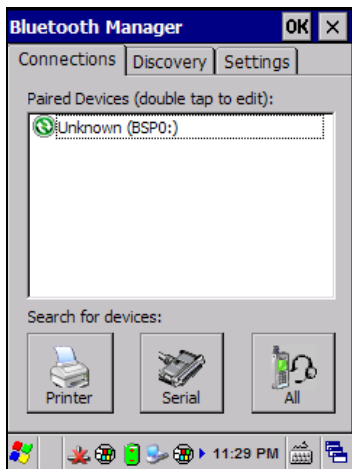
2. If required, the Authentication Request dialog will then open, requesting that you enter a PIN. Use the Input Panel or the keyboard to type the PIN.



3. Tap OK to complete.

The dialog will also appear when an Authentication request is received from another device.

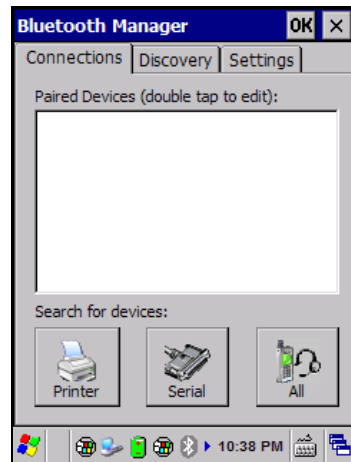
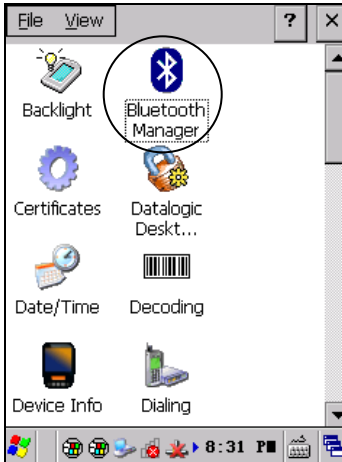
Once you have set up a pairing, you can view the settings by double-tapping its name from the Connections tab. Tap the arrow to change the Virtual Port, or Delete to remove the device pairing. Tap Sync to initiate a Sync (available only if the service is an ActiveSync connection).



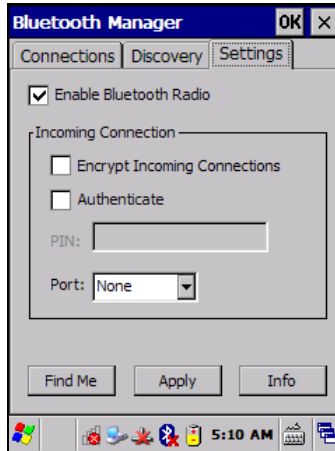
Using your device to connect to the DH60

Before turning on Bluetooth®, ensure that the two devices are within close range and that both Bluetooth-enabled devices are discoverable.

1. From the Bluetooth Manager control panel, Tap Settings. The Settings tab allows you to enable or disable the Bluetooth® radio and specify settings for Incoming Connections.



- Select or clear the “Enable Bluetooth Radio” check box.
If you’re going to be attaching a serial device (i.e. a scanner) to the DH60, use the Port control to select a virtual COM port to use for the connection.



- Tap ‘Find Me’ if you want to make the DH60 discoverable to other Bluetooth® devices for 60 seconds, allowing them to set up a connection.

**NOTE**

By default, Bluetooth® is turned off. If you turn it on, and then turn off your device, Bluetooth® also turns off. When you turn on your device again, Bluetooth® turns on automatically.

4.9 DATALOGIC FIRMWARE UTILITY

The Datalogic devices are equipped with a field upgradeable firmware mechanism. Firmware updates are available on the Datalogic website:

<http://www.datalogic.com/eng/support-services/automatic-data-capture/downloads/software-utilities-sw-2.html>.

After you have downloaded the desired update, there are several ways you can update the firmware on your device.

- Use Wavelink Avalanche™ if you have multiple Datalogic devices to update. For more information refer to the dedicated section of the Wavelink website: <http://www.wavelink.com/Datalogic-device-downloads>.
- If Wavelink Avalanche™ is not available or you have only a few Datalogic devices to update, use the Datalogic Firmware Utility (DFU), described below, to install or update the firmware using an ActiveSync connection.

The following sections provide procedures for the retrieval and installation of the most current firmware image onto a Datalogic device.

4.9.1 Retrieving a Firmware Image Update

The following instructions use Internet Explorer to retrieve the most current firmware image.

1. Launch Internet Explorer on your PC and navigate to the Datalogic website.
2. Navigate to the Downloads section of the website.
3. Using the device selection fields, select the file you want to download, then click Save to begin copying the files to your local machine (or local network location).

4.9.2 Installing DFU on the Host PC

Datalogic Firmware Utility (DFU) provides administrators with a field upgrade mechanism. You must have Microsoft® ActiveSync (for Windows XP devices) or Windows Mobile® Device Center (for Windows 7 and Vista devices) already loaded and running on the host PC to use DFU. Refer to par. 4.7.1 for more information about Windows Mobile® Device Center.

**NOTE**

Prior to installing, you must remove any previous versions of DFU installed on the host PC.

To install the Datalogic Firmware Utility, complete the following steps on the PC:

1. Go to the Datalogic website and download the most current version of the Datalogic Firmware Utility. Unzip the file, then double-click to run `DFU_Setup.exe`.
2. Click OK to continue once you have removed previous versions of DFU.
3. The Welcome to DFU Setup Program screen opens.
 - Please exit all Windows applications before running this installer.
 - Click Next to continue the Setup.
4. Follow the onscreen instructions to complete the installation.

4.9.3 Updating the Firmware

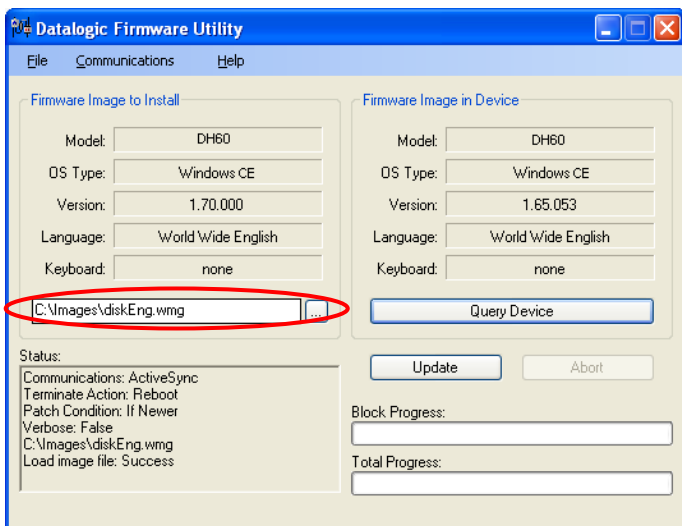
After copying the firmware image to the host PC (see par. 4.10.1) and installing DFU (see par. 4.8.2), you can upgrade the firmware on your Datalogic device.



NOTE

The following steps require that you have already established an ActiveSync or Windows Mobile Device Center connection between the host computer and the Datalogic device.

1. Go to Start > Programs > Datalogic > DFU > Datalogic Firmware Utility.
2. Verify that ActiveSync is selected by clicking Communications > WMDC/ ActiveSync.
3. Click browse (...) and navigate to the location where you saved the firmware file for your terminal.



4. Select the current *.out file and click Open.
5. Click Update.
6. DFU will compare the selected firmware image with the firmware already loaded on the device; if the image is compatible with the connected device, DFU will proceed to update the firmware image on your device.

After the firmware of your device has been updated, DFU will automatically perform a warm reset of the device.

4.10 DATALOGIC CONFIGURATION UTILITY

Datalogic Configuration Utility (DCU) is a Datalogic Windows-based utility tool allowing the uploading, modifying and downloading of the configuration of a Datalogic device. Configuration settings include Scanner, Control Panel, and Datalogic Desktop Utility (DDU). The DCU installer is downloadable from the Datalogic website (<http://www.datalogic.com/eng/support-services/automatic-data-capture/downloads/software-utilities-sw-2.html>).

DCU functions in both direct (with an ActiveSync connection) and indirect (with Wavelink Avalanche™) modes.

In direct mode, connect a device through ActiveSync and then click on the Get from Device icon to receive the device's current configuration.

Once loaded, the Configuration Tree (on the left side of the window) is used to navigate the device's configuration. The right side of the window is a work area where the values of different parameters may be set for each branch of the configuration tree. Click on the parameter group branch to open it and inspect the parameters you wish to modify.

After altering the device's configuration, the new configuration can be sent to the terminal by clicking on the Send to Device icon.

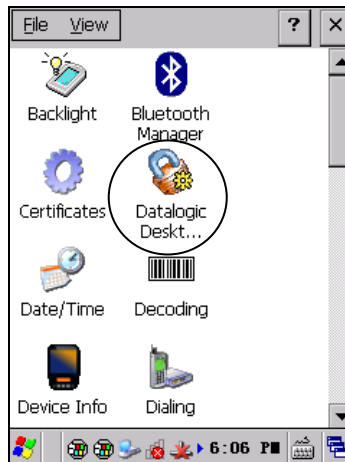
Reference the Wavelink Avalanche™ documentation on the Wavelink website (www.wavelink.com/Datalogic-device-downloads) for a description of indirect mode for DCU, which will allow you to update the configuration of multiple devices simultaneously over Wi-Fi.

4.11 DATALOGIC DESKTOP UTILITY

Datalogic Desktop Utility (DDU) allows administrators to configure Windows® CE and Embedded Handheld devices to control individual user access. This includes the ability to:

- Prevent users from changing your device OS settings.
- Use Application Selector to replace the desktop with a selection of authorized applications.
- Restrict user access in Internet Explorer.
- Set up configuration and customized error recovery mechanisms.
- Create quick access hot keys and configure trigger actions.

To open DDU for the first time, tap Start > Settings > Control Panel > or Start > Programs > Device tools > and then double tap the icon for “Datalogic Desktop Utility”.



You can also open DDU by pressing the appropriate key shortcut. The default is “Alt + 6”.

**NOTE**

The key combination can be changed by using DL Buttons to redefine the association for specific keys (such as <F1>-<F10>). See par. 4.6.2 for more information.

4.11.1 Administrative Options (Admin tab)

When you open the DDU control panel, the “Admin” tab appears.



COMMAND	DESCRIPTION
Enable Datalogic Desktop	Select/tap this checkbox to activate the DDU functions such as Windows Access Restrictions and Application Selector.
Enter Password	Enter a password in the text box. This allows the user to specify a password when this utility is launched. By default the password is “1234”. A password can consist of all standard keyboard characters.
Re-Enter Password	Carefully re-enter the password in the second text box.
Set Password	Select/tap “Set Password” to enable the password. To change or remove the password, enter a new value, re-enter the new value, and select/tap “Set Password”.
Set Defaults	Select/tap “Set Defaults” to reset the default values of all the functions on all the tabs. After you select this option, you will receive a prompt to verify this selection.

Setting a Password

To set a password:

1. Enter a password in the field. This allows the user to specify a password when this utility is launched. By default the password is "1234".



NOTE

Be sure to record the Password for future reference.

2. Re-enter the password in the second field.
3. Select/tap "Set Password" to enable the password.
4. Select/tap "OK" to close the "Set Password Confirmation" dialog.



NOTE

You must select/tap "Set Password" prior to exiting DDU in order to store and activate your new password. It is not necessary to select "Enable Datalogic Desktop".



CAUTION

If you select/tap "Set Defaults" it will remove all custom settings and restore all the factory default settings, except a previously set password.

Changing a Password

To change to a new password:

1. Enter a new value in the "Enter Password field".
2. Re-enter the new value in the "Re-enter Password" field.
3. Select/tap "Set Password".

Removing a Password

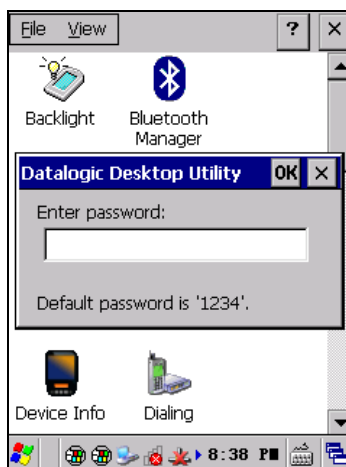
To remove a password:

1. Delete all characters from both “Password” fields.
2. Select/tap “Set Password”.

Password Request Dialog Box

Once the password is set, the next time you open the “Datalogic Desktop Utility”, the DDU Password dialog box opens.

This dialog box will only open if a password was defined.

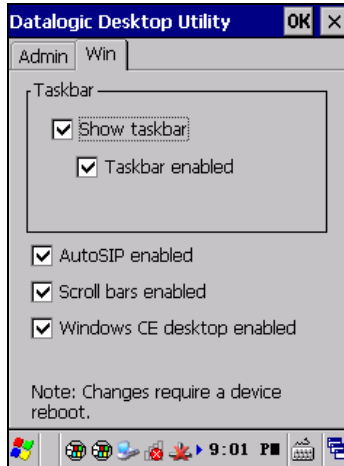


1. Type in your password using either the keypad on the unit, or using the stylus on the soft input panel (SIP).
If you enter an incorrect password, the system will prompt you to input the correct one.
2. Select/tap “OK” to verify the password. Or tap “X” to cancel.

4.11.2 Windows Controls

Select/tap the “Win” (Windows Controls) tab to access the Windows Controls option. Use Windows controls to allow or restrict access to Windows system functions.

You can disable normal Windows functions such as the taskbar, leaving nothing but a blank workspace. This allows applications to be run in full screen mode and prevents users from accidental or unauthorized use of the taskbar, Internet Explorer, and any other resident applications.



WINDOWS CONTROLS	
Show Taskbar	Select/tap "Show Taskbar" to specify whether the Taskbar is displayed or not
Taskbar Enabled	Select/tap "Taskbar Enabled" to specify whether the taskbar is accessible. This option is only available when the "Show Taskbar" is checked.
AutoSIP Enabled	Enables the AutoSIP Windows feature.
Scroll Bars Enabled	This control only takes effect in Locked Web Browser. When checked, displays horizontal and vertical scroll bars to help view large web pages which do not fit the screen. When unchecked, scroll bars will not be present.
Windows CE Desktop Enabled	Windows CE Desktop Enabled specifies whether the desktop icons are accessible or not

**NOTE**

Changes require a device reboot.

4.12 AUTOSTART

The AutoStart program provides three functions:

- Allows you to create a list of applications (with optional command line arguments) to run automatically prior to loading CAB files.
- Automatically reinstalls specified CAB files when the DH60 is cold booted.
- Allows you to create a list of applications (with optional command line arguments) to run automatically after loading CAB files.

AutoStart launches each time the DH60 is rebooted executing each line with the specified command line arguments. It will take into account any AutoStart options at the beginning of the line.

Upon a Cold Boot, AutoStart installs all the CAB files located in the \CAB folder. If the CAB folder does not exist, no CAB files will be installed.

AutoStart will then run the **Autostart.ini** from the \ root directory, executing each line with the specified command line arguments. It will take into account any AutoStart options at the beginning of the line.

4.12.1 Installing CAB Files

Copy any CAB files you want to install into the \CAB folder. These CAB files will then be automatically installed in alphabetical order the next time you start the device.

4.12.2 How AutoStart Uses Wceload



NOTE

If you intend to create highly interactive installers, you should either install the CABs manually or review the section on “Interactive CAB Install” in this chapter..



CAUTION

In certain environments, CAB files will be deleted after execution. To prevent the CAB file from being deleted, write protect the file before copying the file onto the device.

CAB files are installed by AutoStart using the **Wceload.exe** application. The following table shows available command line option:

Option	Description
/noui	Specifies that you will not be prompted for any input during the installation. If the CAB file is signed, any responses will automatically be answered ‘Yes.’ If the CAB is unsigned, then any responses will be answered ‘No.’
/silent	Suppresses dialog boxes during the installation.

Please refer to the Microsoft documentation on your device for further details on **Wceload.exe**.

Sample:

```
\Windows\Wceload.exe /delete 1 /noui /silent  
“\CAB\<cab file>”
```

4.12.3 Interactive CAB Install

- If the CAB installer requires user interaction that must be performed during the AutoStart CAB installation process, you can specify a special file name to disable the silent mode installation. If this mode is specified, the CAB file will be installed with **Wceload** without any command line arguments specified.

An example of what AutoStart would execute is:

```
\Windows\Wceload.exe <cab file>
```

To force this mode of installation via AutoStart, rename the CAB file to include a '_' character before the ".cab" extension of the file.

Example:

"**File.cab**" should be renamed "**File_.cab**" to force AutoStart to not install the CAB in silent mode. This specially-named CAB file should be placed in the AutoStart folder with other CAB files intended for installation on the next reboot.

4.12.4 Autostart.ini



NOTE

A file named 'PreAuto.ini' can also be created in addition to or instead of Autostart.ini. PreAuto.ini is executed before CAB files in the \Cab folder are installed. Autostart.ini is executed after CAB files in the \Cab folder are installed. The format for the PreAuto.ini is identical to that of Autostart.ini.."

Autostart.ini is a text file that AutoStart will run upon startup of the DH60, and after any CAB files are installed. This file should be placed in the \root folder. AutoStart will run the Autostart.ini file on each reboot of the device.

Line Formatting

Each line of the **Autostart.ini** can consist of Autostart options, an executable, and any command line arguments.

```
< Autostart option(s)> <full path to executable>  
<command line arguments>
```

Sample:

```
- \windows\pword.exe \file.doc
```

The following table breaks down the sample Autostart.ini line:

Autostart option(s)	Full path to executable	Command line arguments
-	\windows\pword.exe	\file.doc

Spaces must be placed between each component of the line in the Autostart.ini.

If the executable path is in a folder that contains spaces in the name, quotes are required to distinguish what the actual executable name is. The following is an example of this:

```
"\Program Files\ScannerApp.exe" /run  
(valid)  
\Program Files\ScannerApp.exe /run  
(invalid)
```

The second line is an invalid line because there is no way to distinguish the executable from the argument.

AutoStart Options

The table below shows options you can use when writing a line in the Autostart.ini file.

Description	Character	Comments
Comment: This line will not be executed.	'#' OR ' ' (space)	This may only be used as the first character of the line. If the comment option is specified in the options elsewhere, it is ignored.
Do not wait on line completion: This will cause the line to execute and immediately move onto the next line.	','	
Query: Request user confirmation when running the executable.	'?'	This will halt parsing the Autostart.ini until the confirmation is answered. This is intended for debugging the Autostart.ini file.
Execute only on Cold Reset	'!'	
Execute only after a warm boot	'%'	

Cold Reset Only: This will cause the line to execute only after a Cold Reset.



NOTE

An empty line will be treated as a comment line.

Combining Options

Autostart options can be combined together as shown in the following sample:

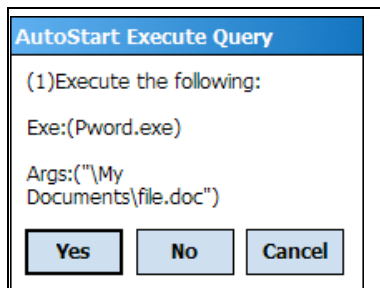
```
?- \Windows\Pword.exe
```

This line would:

- Request confirmation before executing the line. The next line would not be processed before the confirmation is answered.
- Run the next line without waiting on the current line to complete execution.

Query Option

The query option is intended for use when debugging the autostart.ini. When a line with this option is executed, the following dialog will appear with the specified executable and command line arguments. The populated fields shown in the AutoStart Execute Query are described the next table:



Field	Description
Line Number	This is the line number in the script being executed.
Exe	The executable as parsed by AutoStart.
Args	The argument as parsed by AutoStart.

**NOTE**

The fields may be broken up into multiple lines (as shown in the example) due to limited space in the dialog.

AutoStart Query Options

Parentheses are used to surround the given field and make it very clear what the value of the field is.

The following table describes the results of each choice:

Button	Action
Yes	The current line will execute.
No	The current line will not execute. AutoStart will continue parsing the Autostart.ini.
Cancel	The current line will not execute and AutoStart will discontinue parsing the Autostart.ini.

Autostart.ini Samples

The next table is a collection of sample Autostart.ini lines:

Line	Description
? \windows\wceload.exe "My Documents\Sample.cab"	This will confirm the execution of \Windows\wceload.exe with specified argument "My Documents\Sample.cab"
\Program Files\App.exe	(invalid) This will execute \Program with the argument Files\App.exe.
\Program Files\App.exe /run	(invalid) This will execute \Program with the argument Files\App.exe /run.
"\Program Files\App.exe" /run	This will execute the program \Program Files\App.exe with the argument /run.
?- \Windows\Pword.exe	This will confirm the execution of \Windows\Pword.exe. If the execution is confirmed, AutoStart will immediately process the next line.
!"\Program Files\App.exe" /run	This will execute the program \Program Files\App.exe with the argument /run ONLY after a Cold Reset.

5 TECHNICAL FEATURES

5.1 TECHNICAL DATA

PHYSICAL CHARACTERISTICS	
DIMENSIONS (LxWxH)	Hand held: 185x 73 x 38 mm, 58 x 30 mm at keyboard With handle: 185 x 73 x 190 mm
WEIGHT	Hand held: 340 g (12 oz) With handle: 438 g (15.5 oz)
AUDIO	Beeper
STATUS LIGHT	Green or Red lamp to indicate Decoding or Charging status
DISPLAY	Transflective TFT daylight readable color display, 240 x 320 pixels, 3.2 inch diagonal, 64 K colors, 200 nit backlight, touch screen
KEYBOARD	31 key numeric with ten functional keys and two side scan keys
OPERATING TEMPERATURE*	-10 to 50 °C / 14 to 122 °F
CHARGING TEMPERATURE**	10 to 45 °C / 50 to 113 °F
STORAGE TEMPERATURE	-20 to 70 °C / -4 to 158 °F
HUMIDITY***	5 - 95% non condensing
DROP RESISTANCE****	Withstands 18 drops from 1.5 m / 5.0 ft onto a concrete surface
PARTICULATE AND WATER SEALING	IP54
ELECTROSTATIC DISCHARGE (ESD)	Air: ±8kV Direct: ±4kV contact Indirect: ±8kV coupling

- * Close to the limits of the working temperature, some display and/or battery performance degradation may occur.
- ** Never charge the main device or spare batteries in a closed space where excessive heat can build up.
- *** Multiple rapid humidity and/or temperature variations may cause condensing.
- **** Multiple drops can permanently damage the device.

SYSTEM	
OPERATING SYSTEM	Microsoft Windows CE 6.0 Core
MICROPROCESSOR	Samsung A8 S5PV210 clocked at 800MHZ
SYSTEM RAM MEMORY	256 MB
SYSTEM FLASH MEMORY	512 MB
EXPANSION	MicroSD card slot up to 32 GB capacity
POWER*	Single piece rechargeable Li-ion Polymer battery pack 2600 mAh at 3.7V (9.6 Watt-hours)
CLOCK	Real-time clock
COMMUNICATIONS	
WIRED INTERFACES	Micro USB
WIRELESS LOCAL AREA NETWORKING (WLAN)	Laird IEEE 802.11 b/g/n
WIRELESS PERSONAL AREA NETWORKING (WPAN)	Bluetooth® Wireless Technology with EDR, IEEE 802.15 v2.1

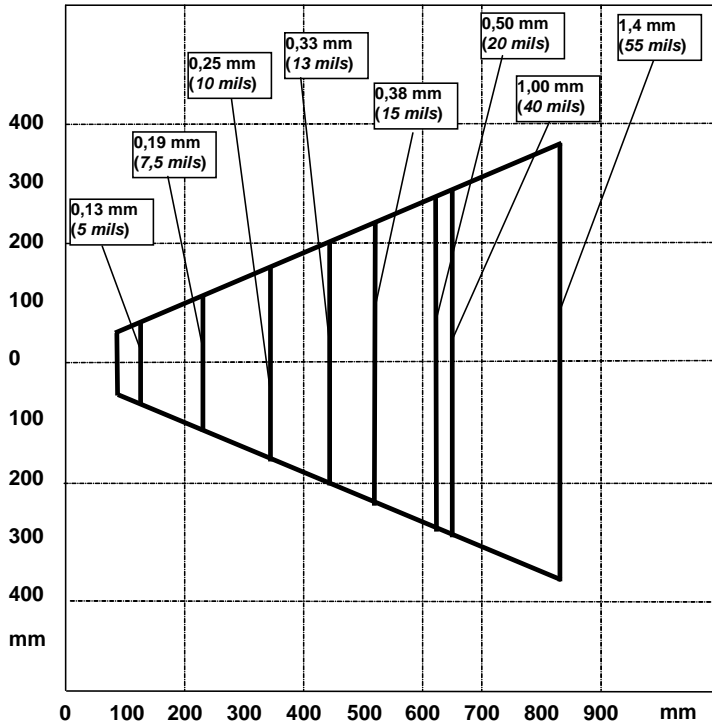
* Use only DL approved battery packs, power adapters, and charging accessories.

READING OPTIONS	
LASER CHARACTERISTICS	
SCANNING RATE	100 ± 10 scans/sec
MINIMUM RESOLUTION	0.10 mm / 4.0 mils
DEPTH OF FIELD	5.0 to 64.0 cm (2.0 to 25.0 in), depending on bar code size and density
BAR CODES	China Post, Code 32, Code 39, Code 93, Code 128, Codabar, EAN/UPC, GS1 DataBar, Interleaved 2/5, MSI, Standard 2/5, Trioptic
LASER CLASSIFICATION	EN60825-1 Class 2, CDHR Class II
IMAGER CHARACTERISTICS	
SCANNING RATE	60 frames/sec maximum
MINIMUM RESOLUTION	Linear codes at 4 mils; 2D codes at 5 mils
DEPTH OF FIELD	4 to 40 cm (1.6 to 15.5 in), depending on bar code size and density
BAR CODES	<p>1 D Codes: China Post, Code 32, Code 39, Code 93, Code 128, Codabar, EAN/UPC, GS1 DataBar, Interleaved 2/5, Matrix 2/5, MSI, Standard /25, Trioptic</p> <p>2D Codes: Aztec Code, Data Matrix, Maxicode, Micro QR Code, MicroPDF417, PDF417, QR Code, GS1 DataBar™ Composites, UPC/EAN Composites</p> <p>Postal Codes: Australian Post, China Post, USPS Intelligent Mail, Japanese Post, KIX Post, USPS PLANET, USPS POSTNET, UK Royal Mail</p> <p>Stacked Codes: GS1 DataBar Stacked, GS1 DataBar Stacked Omnidirectional, GS1 DataBar Expanded Stacked</p>
LASER CLASSIFICATION	EN60825-1 Class 2, CDHR Class II
LED CLASSIFICATION	IEC/EN60825-1 Class 1 LED; IEC/EN62471 Class 1 LED

5.2 READING DIAGRAMS

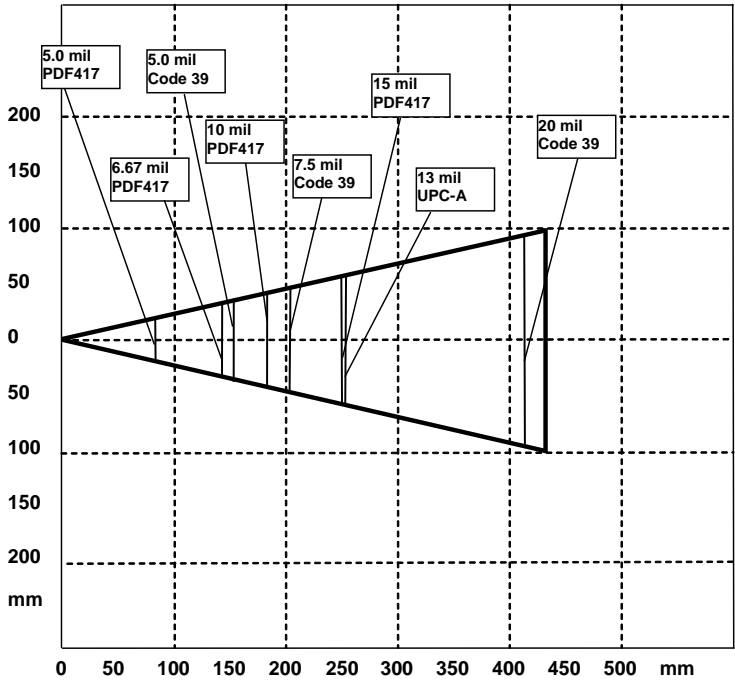
DH60 Performance Laser (SE955)

Guaranteed Reading Diagram – measured from the device nose (10° skew angle)



DH60 Area Imager (SE4500)

Guaranteed Reading Diagram – Measured from the device nose (10° skew angle)



6 TEST CODES

High Density Codes

0.25 mm (10 mils)

Code 39



17162

2/5 Interleaved



0123456784

Code 128



test

80%

EAN 13



8 012345 000012

80%

EAN 8



6450 9723

Medium Density Codes

0.38 mm (15 mils)

Code 39



17162

Interleaved 2/5



0123456784

Code 128



test

EAN 13

100%



8 012345 000012

EAN 8

100%



6450 9723

Low Density Codes

0.50 mm (20 mils)

Code 39



17162

Interleaved 2/5



0123456784

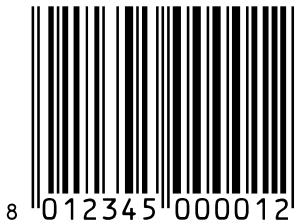
Code 128



test

120%

EAN 13



8 012345000012

120%

EAN 8



64509723

2D Codes

Datamatrix ECC200



Example

Inverse
Datamatrix ECC200



Example

REGULATORY INFORMATION



NOTE

Read this manual carefully before performing any type of connection to the DH60 mobile computer.

The user is responsible for any damage caused by incorrect use of the equipment or by inobservance of the indication supplied in this manual.

GENERAL SAFETY RULES

- Use only the components supplied by the manufacturer for the specific DH60 being used.
- Do not attempt to disassemble the DH60 mobile computer, as it does not contain parts that can be repaired by the user. Any tampering will invalidate the warranty.
- When replacing the battery pack or at the end of the operative life of the DH60 mobile computer, disposal must be performed in compliance with the laws in force in your jurisdiction.
- Before using the devices and the battery packs, read chap. 2.
- Do not submerge the DH60 in liquid products.
- For further information, refer to this manual and to the Datalogic web site: www.datalogic.com.

POWER SUPPLY

This device is intended to be supplied by a self-contained rechargeable lithium-ion battery pack (SELV, LPS) and/or by UL Listed/CSA Certified Power Unit marked “Class 2” or LPS power source which supplies power directly to the unit via the power connector of the cable.

LASER SAFETY

The laser light is visible to the human eye and is emitted from the window indicated in the figure.

This information applies to both the DH60 models with laser and Imager Aiming System.

Laser output window



LASER LIGHT IS EMITTED FROM THIS APERTURE
激光从此孔射出



CAUTION
CLASS 1 LASER PRODUCT
WITHOUT ANY DANGER
TO HUMAN BODY
1类激光产品
对人体无害

便携式数据终端

型号: DH60
PN: 941100001

SN: U13H00001
输入: 5.5Vdc ---2.6A
制造日期: 2013.8

CMIIT ID: 2013DJ1439
Datalogic mobile S.R.L. Lippo di Calderara di Reno (BO)-Italy
Made in China (中国制造)




This product may be covered by one or more of the following patents:
Design patents: EP2238741
Utility patents: EP1128315B1, EP1396811B1, EP1413971B1, IT1396943, US6808114, US6997385, US7387246

ENGLISH

The following information is provided to comply with the rules imposed by international authorities and refers to the correct use of your mobile computer.

STANDARD LASER SAFETY REGULATIONS

This product conforms to the applicable requirements of both CDRH 21 CFR 1040 Subchapter J and EN 60825-1:2007 at the date of manufacture.

For installation, use and maintenance, it is not necessary to open the device.



CAUTION

Do not attempt to open or otherwise service any components in the optics cavity. Opening or servicing any part of the optics cavity by unauthorized personnel may violate laser safety regulations. The optics system is a factory only repair item.



CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in exposure to hazardous visible laser light.

The product utilizes a low-power laser diode. Although staring directly at the laser beam momentarily causes no known biological damage, avoid staring at the beam as one would with any very strong light source, such as the sun. Avoid shining laser light into any person's eye, even through reflective surfaces such as mirrors, etc.



CAUTION

Use of optical systems with the scanner will increase eye hazard. Optical instruments include binoculars, microscopes, eye glasses and magnifying glasses.

LED CLASS

LED illuminator integrated in the DH60 models with SE-4500 imager engine are compliant with exempt risk group requirements according to EN62471:2008 and IEC62471:2006.

RADIO COMPLIANCE

In radio systems configured with mobile computers and access points, the frequencies to be used must be allowed by the spectrum authorities of the specific country in which the installation takes place. Be absolutely sure that the system frequencies are correctly set to be compliant with the spectrum requirements of the country.

The Radio modules used in this product automatically adapt to the frequencies set by the system and do not require any parameter settings.

SRRC COMPLIANCE

This device complies with State Radio Regulatory Commission of the People's Republic of China.

This device has been tested and found to comply with the limits for a 2.4 GHz Wi-Fi / Bluetooth device, pursuant to GB 15629.1102-2003, GB 15629.1104-2006 and the No [2002]353 document of MII.

For Wi-Fi: The EIRP $\leq 20\text{dBm}$
 Power Spectrum Density $\leq 10\text{dBm/MHz}$
 OBW $\leq 22\text{MHz}$
 Carrier frequency tolerance $\leq 20 \times 10^{-6}$
 Spurious emission $\leq -36\text{dBm}/100\text{kHz}(30\text{-}1000\text{MHz})$;
 $\leq -33\text{dBm}/100\text{kHz}(2.4\text{-}2.4835\text{GHz})$;
 $\leq -40\text{dBm}/1\text{MHz}(3.4\text{-}3.53\text{GHz})$;
 $\leq -40\text{dBm}/1\text{MHz}(5.725\text{-}5.85\text{GHz})$;
 $\leq -30\text{dBm}/1\text{MHz}$ (other $1\text{-}12.75\text{GHz}$)

For Bluetooth: The EIRP $\leq 20\text{dBm}$
 Power Spectrum Density $\leq 20\text{dBm}/100\text{kHz}$
 Carrier frequency tolerance $\leq 20 \times 10^{-6}$
 Spurious emission $\leq -36\text{dBm}/100\text{kHz}(30\text{-}1000\text{MHz})$;
 $\leq -33\text{dBm}/100\text{kHz}(2.4\text{-}2.4835\text{GHz})$;
 $\leq -40\text{dBm}/1\text{MHz}(3.4\text{-}3.53\text{GHz})$;
 $\leq -40\text{dBm}/1\text{MHz}(5.725\text{-}5.85\text{GHz})$;
 $\leq -30\text{dBm}/1\text{MHz}$ (other $1\text{-}12.75\text{GHz}$)

Existence of an electromagnetic field in the environment may impact device performance and may cause harmful interference to radio communications. To reduce that possibility, please follow the instructions in the user manual.

The Ministry of Industry and Information Technology has granted an Equipment Authorization for this model device with all index evaluated as in compliance with the State Radio Regulatory Commission of the People's Republic of China. The information on this model device is on file with the SRRC and can be found at http://www.srrc.org.cn/WP_Search.aspx after searching on the CMIIT ID: 2013DJ1439 or the approval certificate number: 2013-1439.

CCC COMPLIANCE

This device meets the China Compulsory Certification(CCC) Rules, and the implementation rule is same with CNCA-01C-020:2010.

This device is designed and manufactured to comply with the limits for class B information technology equipment. The safety test standard is GB4943.1-2011 and all appropriate EMC test items comply with the standards GB9254-2008 and GB17625.1-2012. This device uses power adapters which have CCC certification to supply power. Rated power of the device is less than 75W, so harmonic testing is not required. After confirmation, just two EMC test items, conducted disturbance and radiated emission, are suitable for this device.

This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

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

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

The antenna(s) used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

The China Quality certification Centre has granted an equipment authorization for this model device with all index evaluated as in compliance with electrical and electronics products classes compulsory certification implementation rules. The information on this model device is on file and can be found at http://www.cqc.com.cn/chinese/zscx/A0107/index_1.htm after searching on the Certificate No: 2014010902667473.

CHINA ROHS COMPLIANCE

To control and reduce pollution to the environment caused after disposal of electronic information products and to safeguard the environment and human health, the device is designed and manufactured to follow China Electronic Information Products Pollution Control Regulations No. 39 Information.

The device uses nontoxic, nonhazardous, or low toxic, low hazard, degradable, environmentally friendly and recyclable materials, meets requirements of State standards or Industry standards for the control of toxic and hazardous substances or elements in electronic information products.

Judging from the results of laboratory tests, toxic or hazardous substance contained in all of the homogeneous materials that the device uses, is below the limit requirement in SJ/T11363-2006. The table 1 shows the content of toxic or hazardous substance in different part.

Part Name	Toxic or hazardous Substances and Elements					
	Pb	Hg	Cd	Cr(VI)	PBB	PBDE
PCB	○	○	○	○	○	○
Cable	○	○	○	○	○	○
Plastic shell	○	○	○	○	○	○
Battery Pack	○	○	○	○	○	○
Adaptor	○	○	○	○	○	○
Single_slot	○	○	○	○	○	○
Multi_slot	○	○	○	○	○	○
Multi_battery	○	○	○	○	○	○
Packing material	○	○	○	○	○	○

O: Indicates that this toxic or hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement in SJ/T11363-2006.

X: Indicates that this toxic or hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement in SJ/T11363-2006.

Table 1 content of toxic or hazardous substance in different part.

The device environmental protection use period is ten years and its marking is the picture below.



Environmental protection use periods marking

At the end of its useful life, the product must be disposed of separately from urban waste to avoid potentially negative consequences to the environment and human health and to enable the recovery of materials to obtain a significant savings of energy and resources.

For more detailed information about disposal, contact the supplier that provided you with the product in question or consult the dedicated section at the website <http://www.datalogic.com>.

GLOSSARY

Access Point

A device that provides transparent access between Ethernet wired networks and IEEE 802.11 interoperable radio-equipped mobile units. Hand-held mobile computers, PDAs or other devices equipped with radio cards, communicate with wired networks using Access Points (AP). The mobile unit (mobile computer) may roam among the APs in the same subnet while maintaining a continuous, seamless connection to the wired network.

Applet

Diminutive form of app (application), it refers to simple, single-function programs that often ship with a larger product. Programs such as Windows' Calculator, File Manager, Control Panel and Notepad are examples of applets.

Bar Code

A pattern of variable-width bars and spaces which represents numeric or alphanumeric data in binary form. The general format of a barcode symbol consists of a leading margin, start character, data or message character, check character (if any), stop character, and trailing margin. Within this framework, each recognizable symbology uses its own unique format.

Baud Rate

A measure for data transmission speed.

Bit

Binary digit. One bit is the basic unit of binary information. Generally, eight consecutive bits compose one byte of data. The pattern of 0 and 1 values within the byte determines its meaning.

Bluetooth®

A standard radio technology using a proprietary protocol. The onboard Bluetooth® module in the device is compatible with the 2.1 protocol with Enhanced Data Rate (EDR).

Byte

On an addressable boundary, eight adjacent binary digits (0 and 1) combined in a pattern to represent a specific character or numeric value. Bits are numbered from the right, 0 through 7, with bit 0 the low-order bit. One byte in memory can be used to store one ASCII character.

Decode

To recognize a bar code symbology (e.g., Codabar, Code 128, Code 3 of 9, UPC/EAN, etc.) and convert the content of the bar code scanned from a visual pattern into electronic data.

Depth of Field (DOF)

The portion of a scene that appears acceptably sharp in the image. Although a lens can precisely focus at only one distance, the decrease in sharpness is gradual on each side of the focused distance, so that within the DOF, the unsharpness is imperceptible under normal viewing conditions.

EEPROM

Electrically Erasable Programmable Read-Only memory. An on-board non-volatile memory chip.

Ethernet

The standard local area network (LAN) access method. A reference to "LAN," "LAN connection" or "network card" automatically implies Ethernet. Defined by the IEEE as the 802.3 standard, Ethernet is used to connect computers in a company or home network as well as to connect a single computer to a cable modem or DSL modem for Internet access.

Firmware

Firmware is a software program or set of instructions programmed on a hardware device. It provides the necessary instructions for how the device communicates with the other computer hardware. Firmware is typically stored in the flash ROM of a hardware device. While ROM is "read-only memory," flash ROM can be erased and rewritten because it is actually a type of flash memory.

Flash Disk

Non-volatile memory for storing application and configuration files.

Host

A computer that serves other mobile computers in a network, providing services such as network control, database access, special programs, supervisory programs, or programming languages.

IEEE 802.11

A set of standards carrying out wireless local area network (WLAN) computer communication in the 2.4, 3.6 and 5 GHz frequency bands. They are created and maintained by the IEEE LAN/MAN Standards Committee.

Light Emitting Diode (LED)

A low power electronic light source commonly used as an indicator light. It uses less power than an incandescent light bulb but more than a Liquid Crystal Display (LCD).

Liquid Crystal Display (LCD)

A display that uses liquid crystal sealed between two glass plates. The crystals are excited by precise electrical charges, causing them to reflect light outside according to their bias. They use little electricity and react relatively quickly. They require external light to reflect their information to the user.

Null modem cable

RS-232 serial cable where the transmit and receive lines are crosslinked. In some cables there are also handshake lines crosslinked. In many situations a straight through serial cable is used, together with a null modem adapter. The adapter contains the necessary crosslinks between the signals.

One shot key

Pressing a one shot key activates the state. The state remains active until any other key is pressed. If you hold down a one shot state key and you press another key the state will remain active until you release the one-shot key.

Pairing

A Bluetooth® pairing occurs when two Bluetooth® devices agree to communicate with each other and establish a connection.

Piconet

A piconet is a Bluetooth® PAN that links up to eight devices. Each piconet is controlled by one master device, and up to seven slave devices at any one time. Any device may be a member of more than one piconet, changing its membership as a user moves from one area to another.

RAM

Random Access Memory. Data in RAM can be accessed in random order, and quickly written and read.

RF

Radio Frequency.

RTC

Real Time Clock.

TDMA

Time division multiple access (TDMA) is digital transmission technology that allows a number of users to access a single radio-frequency (RF) channel without interference by allocating unique time slots to each user within each channel. The TDMA digital transmission scheme multiplexes three signals over a single channel. The current TDMA standard for cellular divides a single channel into six time slots, with each signal using two slots, providing a 3 to 1 gain in capacity over advanced mobile-phone service (AMPS). Each caller is assigned a specific time slot for transmission.

Toggle key

Pressing a toggle key activates the state. The state remains active until the toggle key is pressed again.

USB

Universal Serial Bus. Type of serial bus that allows peripheral devices (disks, modems, printers, digitizers, data gloves, etc.) to be easily connected to a computer. A "plug-and-play" interface, it allows a device to be added without an adapter card and without rebooting the computer (the latter is known as hot-plugging). The USB standard, developed by several major computer and telecommunications companies, supports data-transfer speeds up to 12 megabits per second, multiple data streams, and up to 127 peripherals.

WLAN

A Wireless Local Area Network links devices via a wireless distribution method (typically spread-spectrum or OFDM radio), and usually provides a connection through an access point to the wider internet. This gives users the mobility to move around within a local coverage area and still be connected to the network.

WPAN

A Wireless Personal Area Network is a personal area network - a network for interconnecting devices centered around an individual person's workspace - in which the connections are wireless. Typically, a wireless personal area network uses some technology that permits communication within about 10 meters - in other words, a very short range.

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