

Quick Check[®] 890 Quick Check ImageData



Barcode Verifier

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Note: Software screens included in this document are in English only and are included for reference only. They may be different from the screen that displays on your terminal.



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Introduction

The Quick Check® 890 Verifier System (QC890) is a professional quality control system for verifying the readability and standards compliance of printed linear barcode symbols. This verification system implements an integrated approach that consists of the QC890 Verifier unit and the Quick Check® ImageData (QCID) software.

The QC890 system offers ease of use, stability and repeatability, flexibility, increased user features and control, and quality testing of the most common industry applications and symbologies.

Unpacking the QC890 Verifier

After you open the shipping carton, take the following steps:

- Check for damage during shipment. Report damage immediately to the carrier who delivered the carton.
- Make sure the items in the carton match your order.
- Save the shipping container for later storage or shipping.

The standard accessories that should be included in your kit are:

- Quick Start Guide
- CD with QCID software and user documentation
- DC power supply with cord (includes adapters for different countries)
- Interface cables (USB and RS-232)
- Plastic gauge
- Metal ruler
- Reference test symbols
- Reflectance page
- Certificate of Conformance

QC890 Verifier Features

The QC890 Verifier is a full-featured barcode verification system compatible with all major linear barcode symbologies. It is both a quick and easy-to-use pass/fail analyzer of barcode symbols and a powerful measuring tool for detailed testing of barcode symbols.

The QC890 Verifier provides all of the information you need to interpret overall symbol quality.

The verifier tests the following symbologies:

Codabar	Micro PDF417
Code 11	MSI
Code 16K	PDF417
Code 39	Reduced Space Symbology (RSS-14, RSS Limited, RSS Expanded)
Code 49	Regular 2 of 5
Code 93	Straight 2 of 5 IATA
Code 128	Telepen
Interleaved 2 of 5	UPC/EAN

Using the QC890 Verifier

The QC890 Verifier offers a choice of Automatic, 3, 5, 6, and 10 mil aperture settings. External devices (i.e., mouse wands, pen wands, and linear imagers) are available with apertures designed to match the most common X dimensions. Wands are available with apertures of 3 (Mouse Wand only), 5, 6, 10, and 20 (Mouse Wand only) mil. These aperture sizes correspond to those specified in ISO/IEC 15416 Barcode Print Quality Test Specification - Linear Symbols. The proper aperture should be selected based on the X dimension range shown in the table in the [Pen/Mouse Wand Aperture Selection](#) (page A-1) section.

Choosing an inappropriate scanning aperture results in inaccurate quality measures. Too small an aperture may detect reflectance non-uniformities (spots and voids) that would not affect scanning with a "normal" aperture size. Too large an aperture will not be able to resolve individual elements of the symbol.

Scan Button

The scan button on top of the unit wakes the unit from power down. A first press of the button turns on illumination and a second press activates reading capabilities.

Scan Button LEDs

- Red LED - error conditions
- Green LED - good symbols and configuration changes

User LED Indications

LED Indication	Cause
Green Solid	Charging
Green Flash	Good read
Red Flashing	Low battery
Orange Solid	Battery too low for unit to operate (plug in external power supply)

Audio Sound

An audio signal (default ON) provides a quick indication if a scan passes or fails the current test. After a scan, one short, high pitch beep indicates that the symbol passes an appropriate group of tests, while one long, low pitch beep indicates that it fails.

Special Features

Reflectometer Mode

In the Reflectometer mode, the QC890 operates as a free-running reflectometer. See "[Reflectometer Mode](#)" on [page 3-6](#) for additional information.

Unrecognized Symbology Mode

The QC890 analyzes bar/space patterns that are not decodable or are not among the unit's available symbologies. This technical feature is useful for making contrast measurements, for which decoding is not necessary, on damaged or partial symbols, printer test patterns, and new or developing symbologies. We recommend this feature only be enabled for these purposes.

Physical Connections

A DC power barrel on the back of the unit connects to a power supply for external power and battery charging.

The DB9 port on the unit connects to the pen wand, mouse wand, or linear imager. Refer to "[Scanning Properly Using the QC3800VE Linear Imager:](#)" on [page 3-5](#). If you are using any of these devices, refer to "[Scanning Properly Using a Pen/Mouse Wand](#)" on [page 3-3](#) for additional information.

The RJ45 ten pin connector provides the USB or RS-232 serial interface to the host. Refer to "[USB Communication Interface](#)" on [page 2-2](#) and "[RS-232 Serial Communication Interface](#)" on [page 2-3](#) for details on connecting your unit.

Specifications

Item	Specification
Dimensions	7" (18cm)W x 6"(15.cm)H x 5.4" (14cm)D
Weight	1 lb 8 oz (680 grams)
Temperature	Storage: -20° to 70°C Operational: 0° to 50°C
Humidity	20% to 95% RH non condensing
Battery	Built-in factory - Lithium Ion rechargeable

Internal Battery

The battery is factory replaceable only. You must return your unit to Hand Held Products for replacement (see [Technical Assistance](#) on page 5-1).

Charging the Battery

The battery may be in an unknown charge state at delivery. We recommend that you charge the battery for at least 2 hours prior to use. You may use the unit while charging the battery.

To charge the battery:

1. Plug the power supply into the port on the back of the unit.
2. Plug in the power supply to the AC main source.

The QC890 Verifier uses a rechargeable battery. The QC890 Verifier can be operated from the battery or power supply. With a properly charged battery, the unit operates for a minimum of 8 hours. When not in use, you can leave the unit connected to the charger.

Powering On the QC890 Verifier

- If the power supply is attached and plugged into an AC source, the QC890 Verifier is on.
- If the QC890 Verifier is attached to the USB host with power on, the verifier is on.
- If the QC890 Verifier is operating using the battery, it shuts itself off after 15 minutes of inactivity to conserve battery power. Pressing the scan button on top of the unit one time powers up the unit from the power down mode.

Quick Check ImageData

The Quick Check ImageData (QCID) program was designed for use in conjunction with the QC890 Verifier. Use of any other hardware devices with this program is not supported. Installation of the QCID software for your appropriate operating system is included on the CD-ROM that accompanied your verifier.

The QCID is the graphical interface to the Quick Check 890 Verifier. The verification results can be saved for later reference.

System Requirements

Windows:

- Microsoft Windows 98 Second Edition, 2000, Windows NT 4.0 or XP operating system
- Pentium 100Mhz (recommend 500Mhz and up)
- 64 MB RAM (recommended 128 MB and above)
- Application: 5 MB available hard disk space
- .NET framework: 110 MB of hard disk space required, 40 MB additional hard disk space required for installation (150 MB total)
- Any available COM or USB port or Bluetooth (supports SPP profiles)
- Microsoft compatible mouse

Windows Mobile 2003:

- Windows CE .NET 4.2 or Pocket PC 2003/2003 SE
- ARM4 processor
- 64 MB RAM (2MB RAM for the application)
- Any available COM port, Bluetooth (supports SPP profiles)
- Win 5.0 minimum 10mb

Installation of Quick Check ImageData

To install the Quick Check ImageData, insert the CD and follow the instructions that appear.

Communication Interfaces

The QC890 Verifier system supports the following interfaces: USB, RS-232, and Bluetooth®.

USB Communication Interface

For the USB interface, the Hand Held Products CDC-ACM driver must be installed prior to using the QC890 Verifier. This driver is copied to the following directory during install:

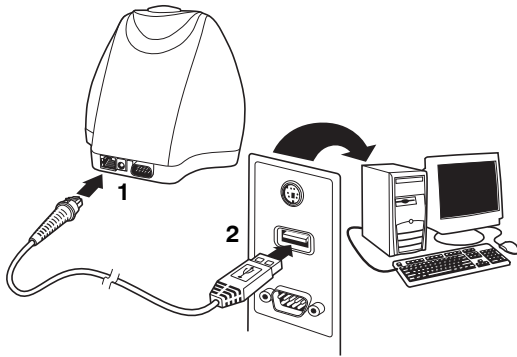
<install location>\Drivers\USBComPortEmulation\hnpcdc.inf

The default <install location> is C:\Program Files\Hand Held Products\Quick Check ImageData\drivers\USBComPortEmulation.



Review the file, readme.rtf, in the install location prior to running the QCID.

Connect the QC890 Verifier to the host as shown in the illustration below.



USB COM Port Emulation

Scan the following barcode to program the QC890 Verifier to emulate an RS-232-based COM Port. After connecting the QC890 Verifier and upon successful installation of the USB driver, the driver will use the next available COM Port. USB COM Port Emulation is the default interface for the QC890 Verifier.

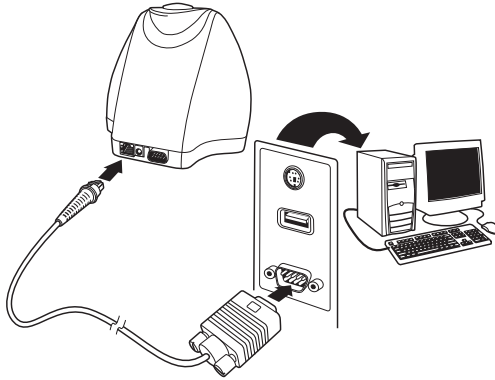


* USB COM Port Emulation

Note: No additional configuration (e.g., baud rate) is necessary.

RS-232 Serial Communication Interface

An RS-232 interface requires no additional drivers. Connect the QC890 Verifier to the host as shown in the illustration below.



RS-232 Selections

Scan the following barcode to select RS-232 communications.



RS-232 Communication

The RS-232 settings supported are:

Baud Rate:	115,200
Parity:	None
Data Bits:	8
Stop Bits:	1
Flow Control:	None

Bluetooth

Bluetooth implementation uses SPP (Serial Port Profile) to connect the QC890 Verifier to the host system. The QC890 SPP is a standard Bluetooth profile implementation. This allows the QC890 system to be compatible with most Bluetooth devices. The QC890 unit can be used with existing Bluetooth radios built into laptops, PCs, or PDAs.

Using the QC890 Verifier with Bluetooth Devices

Note: When using USB or RS-232 interfaces, the Bluetooth communication interface automatically turns off.

Scan the Bluetooth barcode below to enable the Bluetooth option. *Default = Off.*



Bluetooth On

Once the Bluetooth option is enabled, scan the appropriate barcode that follows to connect to a PC or laptop, or a PDA/Mobility Systems device.

To establish a Bluetooth connection to a PC or a laptop, scan the barcode below, follow the instructions supplied with your Bluetooth device to locate the QC890 Verifier, and connect to it. If you go out of range with your QC890 Verifier, the QC890 Verifier automatically reconnects to the Bluetooth device once you come back in range. *When Bluetooth communication is enabled, the default is PC/Laptop.*



* Bluetooth Connection - PC/Laptop

To establish a Bluetooth connection to a PDA or a Hand Held Products Mobility Systems device, scan the barcode below, follow the instructions supplied with your Bluetooth device to locate the QC890 Verifier, and connect to it. If you go out of range with your QC890 Verifier, the QC890 Verifier will not reconnect. It will be up to the host device to reconnect to the QC890 Verifier.



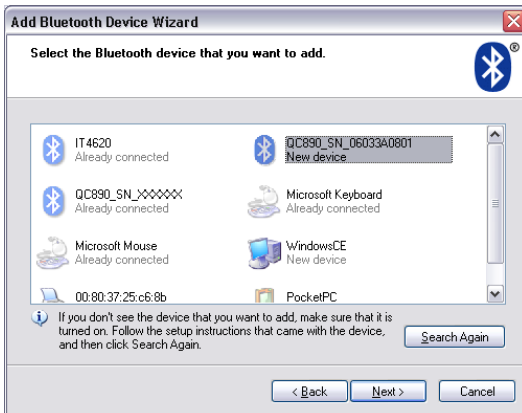
Bluetooth Connection - PDA/Mobility Systems Device

Enabling Your Device for Bluetooth

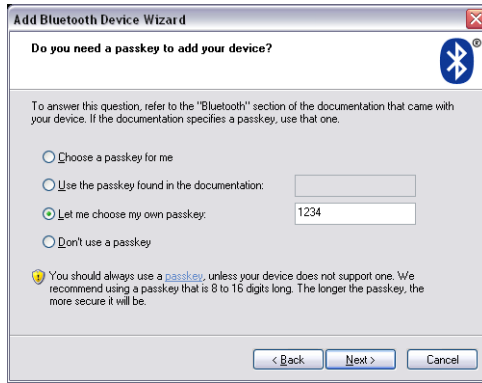
After scanning the appropriate Bluetooth connection barcode, you need to run the Quick Check ImageData application to enable the Bluetooth radio in your device (PC, PDA, or Mobility Systems device) in order to look for the QC890 Verifier.



Once the QC890 Verifier is recognized, it appears in the list of available devices. Select the QC890 Verifier to which you want to bond and select **Next**.



You will be asked if you need a passkey to add your device. The default passkey for all Hand Held Products QC890 verifiers is "1234."

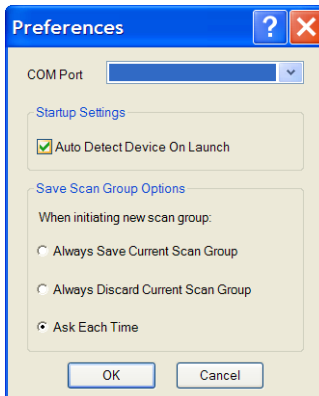


The Wizard loads the QC890 Verifier information into your device. You may click a checkbox to indicate the QC890 Verifier is the default device to which Quick Check ImageData connects.

Once you select **Finish**, your device is ready to communicate with the QC890 Verifier via the assigned ports. Make a note of the assigned port number. You will need to know this port number in the following installation steps.

Enabling QCID for Bluetooth

1. Once you open the QCID application, click on **File -> Preferences**.
2. Choose the assigned incoming port number reported in the Add Bluetooth Device wizard and click **OK**.



3. Your QC890 Verifier connects to the QCID application.

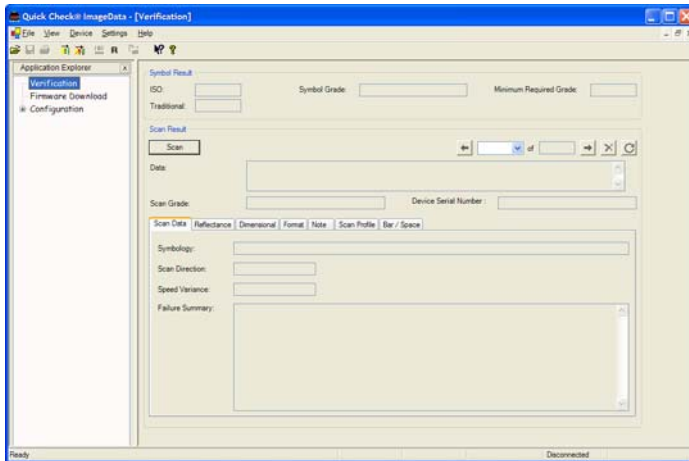
Using Quick Check ImageData

For the PC version of Quick Check ImageData, start Quick Check ImageData by clicking on **Start->Programs->Hand Held Products->Quick Check ImageData** or double click the Quick Check ImageData icon on your desktop (set up during installation).

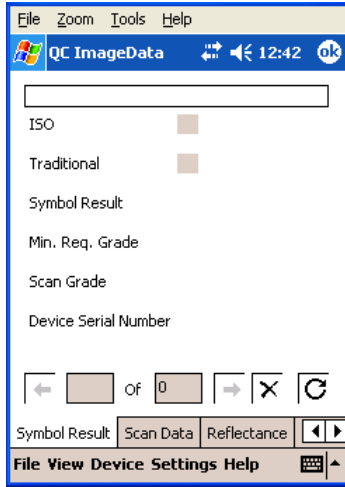
For the PDA version, start Quick Check ImageData by clicking on **Start ->Programs**. Select the Quick Check ImageData icon.

The first time you use QCID, the application asks you to select the COM Port to which the QCID is attached. After you make the selection, QCID attempts to connect to the attached QC890 Verifier. When a connection is established, the main screen of the application, as shown below, displays.

PC Main Screen



PDA Main Screen



Help System

The Quick Check ImageData program has an extensive help system to aid in the verification of your barcodes. Please refer to the help files for questions regarding the verification process and for specific questions regarding the QCID program.

Using the Quick Check 890 Verifier System

Scanning a Barcode Symbol Using the QC890 Verifier



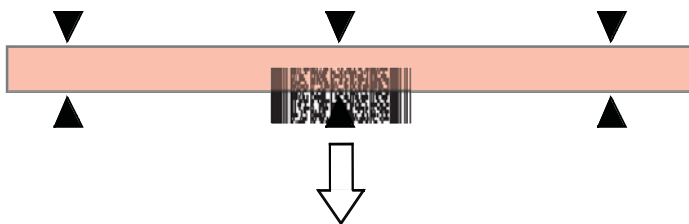
Calibration is a requirement of the ISO/IEC standards. Without proper initial calibration, the values displayed may not be accurate. Please be sure to calibrate the QC890 Verifier prior to scanning barcodes and when you change apertures and/or external scanning devices.

1. Place the QC890 Verifier on top of the symbol.
2. Press the scan button on top of the unit to turn on illumination. Look through the unit's window to align the unit with the barcode.

Note: The best verification data is gathered by aligning the center of the symbol to the center arrows.



3. Press the scan button on top of the unit again while the illumination is on to scan and verify the barcode.
4. To scan PDF417 barcodes, hold the scan button down and move the verifier up and down so the aiming line sweeps from the top of the bar code to the bottom, and back up. This ensures that the entire code is scanned.



Scanning a Barcode Symbol Using Quick Check ImageData

1. Place the QC890 Verifier on top of the symbol.
2. If necessary, press the scan button on top of the unit to turn on illumination to aid in alignment of the symbol.
3. For the PC version, click the **Scan** button on the Main Display window.

4. For the PDA version, select **Device** and then **Scan** from the Scan Data tab.



Calibrating the QC890 Verifier

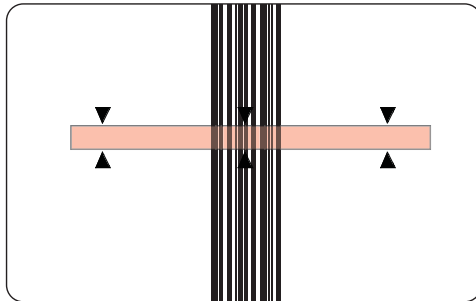


Calibration is a requirement of the ISO/IEC standards and must be performed with each aperture change.

When calibrating the QC890 Verifier system, the QC890 Verifier must be connected to the Quick Check ImageData software. During calibration, it is important to align the center of the barcode symbol to the center arrows, and keep the QC890 Verifier flat and level to the surface of the reflectance page.

The reflectance page is a precision standard that is made of photographic materials. To ensure proper calibration, you must replace the reflectance page if it becomes dirty or physically damaged. Make sure to use only the original calibration tools that were supplied with your QC890 Verifier kit or certified replacements obtained from Hand Held Products.

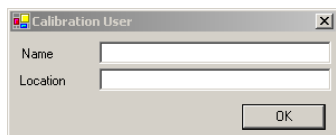
1. Place the verifier on top of the reflectance page. Use the symbol alignment window to center the reflectance page.
2. Press the scan button on top of the unit to turn on illumination to aid in alignment.



Note: The best calibration is performed by aligning the center of the symbol to the center arrows.

3. Press the scan button on top of the unit a second time while the illumination is on to scan the calibration barcode. You will hear a series of beeps and the

illumination will turn off. If the calibration process is successful, the following screen displays:



4. Enter your name and the location where the calibration was performed and click on **OK**. The following screen displays:



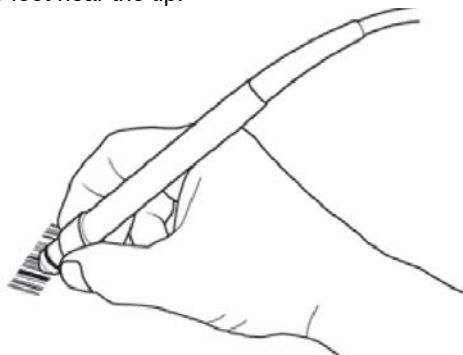
5. If the unit does not calibrate, contact Hand Held Products Technical Support (see [Technical Assistance](#) on page 5-1).

To access calibration logs, go to **Settings->Calibration->Calibration Log**. Enter the password **visions07**.

Scanning Properly Using a Pen/Mouse Wand

Note: It is important to perform reflectance calibration prior to using any pen or mouse wand. See "[Calibrating an External Pen/Mouse Wand](#)" on page 3-4.

1. Turn on the verifier and confirm that the pen/mouse wand is securely connected.
2. Hold the pen wand as you would a pen or pencil, placing your fingers on each side of the foot near the tip:



or

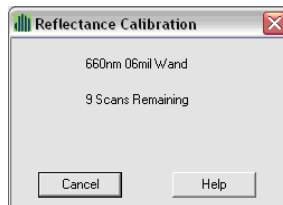
Hold the mouse wand horizontally so it moves across the barcode in the direction of the arrows:



3. Lightly touch the wand against either quiet zone (clear area) on either side of the barcode. For the pen wand, you will have the proper scanning angle when the tip and the reflectance guide (black plastic clamp) are flat on the scanning surface.
4. At about the same speed with which you would quickly underline a sentence in this manual, and without interruption, gently move the wand across the center of the barcode. You do not need to press hard on the wand while scanning the barcode. Gentle pressure on the wand will not scratch the contacted surface, but pressing down hard may damage the code and yield poor results.
5. Listen for audible tones.
 - If you hear a single beep tone followed by another single beep of the same tone, it signifies a good read.
 - If you hear a single beep and then a beep of a different tone, the unit detected an error in the scanned symbol.

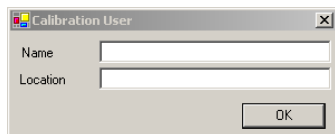
Calibrating an External Pen/Mouse Wand

1. Using the proper scan technique described in step 4 above, scan the reflectance page. You will hear a single beep after the first good scan and the following display appears:



2. Continue to scan the reflectance page for a total of 10 good scans. After each good scan, a single beep sounds and the display indicates the number

of good scans you need to obtain. After the tenth good scan, the following window displays:



3. After you type in your name and location, click **OK**. The following message appears:



Note: When using the external QC3800VE linear imager, it does not report ISO/IEC reflectance parameters; therefore no calibration is necessary or possible.

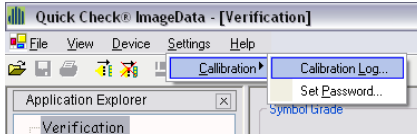
Scanning Properly Using the QC3800VE Linear Imager:

1. The best reading position for the QC3800VE linear imager is 6 inches (150mm) from the surface of the barcode to the face of the scanner, with an angle of incidence of 15 degrees from perpendicular. At this orientation, the system performance approximates an average circular aperture size of .006 to .008 inches (.152 to .203 mm). Extreme variations from this orientation may negatively affect the accuracy of some parameter results.
2. Scanning is initiated by squeezing the trigger on the linear imager. Hold the trigger down until the beam shuts off.
3. Listen for an audible tone. When the unit scans and decodes a barcode, it emits a single beep.
 - If the unit cannot decode a barcode after a trigger pull, it will not beep and no results are displayed.
 - After a successful decode, with a result that passes the minimum acceptable grade, the unit emits another beep of the same tone.
 - A decode that fails to receive a grade above the minimum requirement causes the unit to emit a beep of a different tone.

Note: The QC3800VE reading width (includes quiet zones) is 6 inches. The QC3800VE is the only device that can be used as a non-contact input device with a QC890 Verifier unit. The QC3800VE should not be used with any decoders, terminals, or other brand of verifiers.

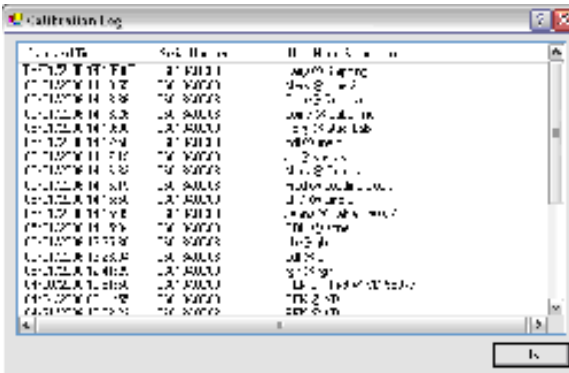
Calibration Log

The Calibration Log records the instances when reflectance calibration was performed. It records the Date/Time set on your PC, serial number of the QC890 Verifier being calibrated, and the name and location of the operator. To access the Calibration Log, click on **Settings -> Calibration -> Calibration Log**.



You will be prompted to enter a password. The password can be either the Master Password (visions07) or a password you previously set.


The Calibration Log looks like this:

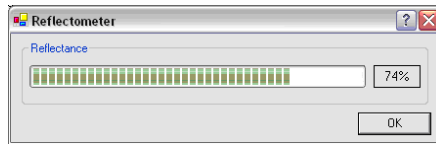


Reflectometer Mode

Note: The Reflectometer Mode is only available for use with the mouse/pen wands. It is important to perform reflectance calibration prior to using any pen or mouse wand.

Reflectometer Mode measures the spot reflectance of the area at which the imager is "looking."

-
1. To activate the Reflectometer, click on the Reflectometer icon () on the tool bar below the menu options. The Reflectometer window opens.



2. Place the scanning device on any surface to see the spot reflectance of that surface. The green status bars shows the reflectance signal strength. The field to the right of the status bar shows the percentage of reflectance.
3. Select **OK** to exit the Reflectometer mode.



Cleaning the External Devices

Occasionally the scanner tip or window may become partially obstructed by ink, paper fibers, or other particulate deposits (such as wax or varnish). To ensure reliable scanning, you should periodically check and, if necessary, clean the tip with a soft cloth.

Damaged tips for the pen wand should be replaced. Consult your dealer or Hand Held Products Product Service and Repair Department for details (see [Technical Assistance](#) on page 5-1).

QC890 Verifier

Occasionally the view window or alignment window may become dusty or dirty. Use a soft cloth to clean both windows. Since the open slot of the alignment window is where the code is "seen," dirt on the window does not affect the readability of the QC890 Verifier.

It is not necessary or advisable to insert anything into the open slot on the bottom of the QC890 Verifier.

Recertification

Sending the QC890 Verifier back to Hand Held Products periodically for a factory calibration and re-certification is recommended, however the frequency is based on your company's ISO procedures regarding test and measurement equipment.

When you are ready to re-certify your QC890 Verifier, please contact Product Service and Repair for pricing and a Return Material Authorization (RMA) number (see [Technical Assistance](#) on page 5-1).



Technical Assistance

If you need assistance installing or troubleshooting, please call your Distributor or the nearest Hand Held Products technical support office:

North America/Canada

Telephone: (800) 782-4263
Fax number: (315) 554-6705
E-mail: natechsupport@handheld.com

Latin America

Telephone: (803) 835-8000
Telephone: (800) 782-4263
E-mail: latechsupport@handheld.com

Brazil

Telephone: +55 (21) 3535-9100
Fax: +55 (21) 3535-9105
E-mail: brsuporte@handheld.com

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Telephone: (803) 835-8000
E-mail: latechsupport@handheld.com

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Telephone - China: +86 21 6361 3818
E-mail: aptechsupport@handheld.com

Japan

Telephone: +813 5770-6312
E-mail: aptechsupport@handheld.com

Malaysia

Telephone: +603-6201-7020
E-mail: aptechsupport@handheld.com

Online Technical Assistance

You can also access technical assistance online at www.handheld.com.

For Further Information

To download the full User's Guide for these products, visit our website at www.handheld.com.

Product Service and Repair

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

North America

Telephone: (800) 782-4263
Fax: (803) 835-8012
E-mail: naservice@handheld.com

Latin America

Telephone: (803) 835-8000
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Online Product Service and Repair Assistance

You can also access product service and repair assistance online at www.handheld.com.

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The limited duration of the warranty for the Quick Check 890 Verifier is for two (2) years.

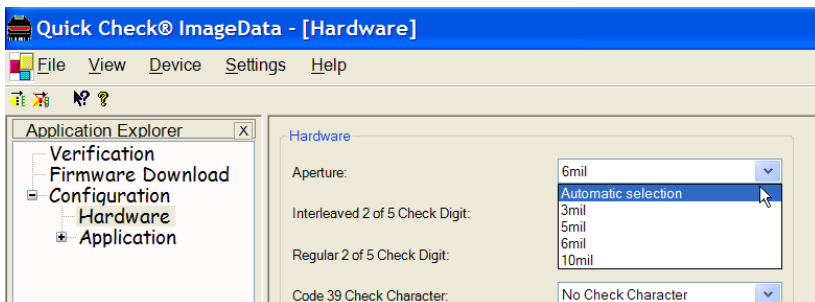
Pen/Mouse Wand Aperture Selection

The table below is a handy reference to help you choose the proper aperture size required for the size/type barcode you wish to verify. This data is based on the standard *ISO/IEC 15416 Barcode Print Quality Test Specification - Linear Symbols*.

Aperture Diameter (in .001")/Aperture Ref. No.	Aperture Diameter (in mm)	"X" Dimension Range (in inches)	"X" Dimension Range (in mm)
03	0,075	0.004 to 0.007	0,102 to 0,178
05	0,125	0.0071 to .013	,0180 to 0,330
10	0,250	0.0131 to 0.025	0,333 to 0,635
20	0,500	0.0251 and larger	0,637 and larger

*Note: 6 mil aperture specified for UPC/EAN and RSS.
3 mil and 20 mil aperture available in mouse wand style only.*

Check your application standard's requirements for specified aperture requirements. If no aperture is specified, use the aperture that is close to, but not larger than, 80% of the narrow element width.



The QC890 Verifier has an Automatic selection feature available ONLY for the internal optics. When using the Automatic selection feature, the verifier automatically selects from a 3, 5, 6, or 10 mil aperture. This selection is determined by the symbology (e.g., EAN/UPC selects 6 mil aperture) or as determine by the internal optics' ability to calculate the width of the narrow element and select the aperture as determined by the table above.



Menu Setting Barcodes

The QC890 barcode verifiers are programmed in the factory for the most common settings. If you need to change these settings, programming is accomplished by scanning the barcodes included in this chapter.

An asterisk (*) next to an option indicates the default setting.

Resetting the Standard Product Defaults

If you aren't sure what programming options are in your device, or you've changed some options and want the factory settings restored, scan the **Standard Product Default Settings** barcode below.



Standard Product Default Settings

Illumination Timer

Scan the appropriate barcode to set the duration (in seconds) of the illumination.
Default = 5 seconds.



3 seconds



*5 seconds



15 seconds

Power Down Timer

Note: This option applies to battery operation only.

When there is no activity within a specified time period, the QC890 Verifier powers down. Scan the appropriate Power Time-Out barcode to change the time-out duration (in seconds).

If there are no scans during the “scanner power time-out timer” interval, the QC890 Verifier goes into power down mode. Whenever a scan occurs, the “scanner power down timer” is reset. *Default = 15 minutes*



No Power Down Timeout



5 minutes



*15 minutes



60 minutes



120 minutes



Symbology Defaults - Operation

The default QC890 symbologies and operation are listed below:

- Codabar*
- Code 11**
- Code 16K***
- Code 39*
- Code 49***
- Code 93*
- Code 128*
- RSS (RSS-14, RSS Limited, RSS Expanded)***
- Interleaved 2 of 5*
- Micro PDF417***
- MSI***
- PDF417***
- IATA 2 of 5***
- Regular 2 of 5***
- Telepen**
- UPC/EAN*
- Unrecognized***
- Reverse Video***

* Enabled by default. Can be scanned when disabled.

** Disabled by default. Can be scanned when disabled.

*** Disabled by default. Cannot be scanned when disabled.







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