

Opticon Application Manual XFF3092x

(PX-35 Default Application)

This manual is intended to assist the end user in using the default embedded application firmware for the PX-35 device. Herein you will find a map of the menu system as well as a description and usage instructions for each menu item. See the PX-35 User Manual for detailed information regarding the PX-35 hardware, charging methods, accessories and other, more generic, details.

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1: Overview

1.1: Applications

It should be noted here what we mean by the term *application*. The PX-35 behavior (what is on the screen at any given time, what the buttons do, etc.) is based on the firmware that has been loaded into it. This firmware is broken down into layers, namely the OS layer and the application layer. The OS makes all things *possible* but by itself actually does nothing the user would want to do. That is where the application comes in. An application is the topmost level of firmware and is responsible for virtually everything the user experiences. If you see text and pictures on the LCD or the buttons beep when you press them then you are seeing the application at work. This is important because the PX-35 has only one OS but can be loaded with applications customized to the user's needs. In fact, Opticon provides all the resources necessary to create customized applications with our C-Library Kit (speak to your sales agent for details). This manual is specific to what we refer to as our *Default Application*. This application is sometimes preloaded onto the device from our distribution warehouse but your device could indeed be running an entirely different application for which this manual would not be relevant. Most applications have an easy way to check their version on the main menu so please take a moment to search for this and ensure you version matches or is similar to the version this manual covers. See the next section for additional information.

1.2: A note about the version number

XFF3092x is the version number given to the default application for the PX-35 where *x* can be any number or letter. Typically, the higher the value of *x* then the more recent the application version. A letter has higher value than a number. For example, version XFF30927 is older than version XFF3092C, and XFF3092C would be older than version XFF3092G (note that these are purely examples and may not exist; see section 5: *Resources* to download the latest version of this application).

1.3: Description

This default application is intended to demonstrate the features and functions of the PX-35 in an inventory-style scenario. With this scenario in mind the PX-35 (with this application installed) behaves in very specific ways as detailed in this manual. This application allows you to do things such as scan barcodes into an internal database, configure settings, transmit data back to your host computer and perform a few maintenance tasks directly on the PX-35. Note that, as described in section 1.1: *Applications* above, this application does not define the complete functionality of the PX-35. A world of

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possibilities exists for the PX-35 beyond these capabilities. Speak to your sales agent for information on how to expand the capabilities of your PX-35 device.

1.4: Bluetooth

It is important to note that while the PX-35 does support Class II Bluetooth, with the SPP and HID profiles, this *Default Application* does not currently support this functionality and the companion cradle is required to transmit data to the PC.

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2: Button Configuration

This section serves to provide brief descriptions of the buttons on the PX-35 and what they do within this application. This provides a common reference point and terminology used throughout this manual. When a specific button is referenced in the instructions section of this manual it will be listed like this:

Press the [TRIGGER] key.

2.1: Trigger

The trigger key is located immediately beneath the LCD in the center of the buttons there. It is not labeled with any specific text. It may sometimes also be referred to as the scan key or the select key. Additionally, this key is sometimes used to select *context sensitive* options you may see in the bottom middle of the display. See 2.2: *Navigation Keys* for details.

2.2: Navigation Keys

The PX-35 has two navigation keys. They are located immediately beneath the display to either side of the [TRIGGER] key. The leftmost key depicts an upward facing arrow and the rightmost key depicts a downward facing arrow. Despite the obvious effect of allowing you to navigate upwards and downwards within a menu these keys are also used to select *context sensitive* options you may see on the bottom row of the display. For example, you may see a small label listed as *back* on the lower left corner of the screen. This position indicates that the leftmost navigation key should be used to select this option. A similar effect is true of the bottom right corner of the display and the rightmost navigation key. Because of this dual functionality we will refer to these navigation keys as [Q1] (for the leftmost key) and [Q2] (for the rightmost). If the usage instructions contain commands to *scroll* to a selection then these keys are used to perform that action.

2.3: Shift, Backspace and Clear

These three keys are found immediately below the navigation keys and are labeled SHIFT, BS and CLR respectively. We will refer to them as [SHIFT], [BS] and [CLR] for obvious reasons.

The [SHIFT] key is used when you need to enter the alternate values of the numeric keys. For example the [1] key, when shifted, allows you to scroll through a set of symbols (. , ? ! @ ` - _ () : ; & / % * #). To use the [SHIFT] key you must hold it down while repeatedly pressing the appropriate number key until the desired character is displayed. A delay of

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approximately two seconds or releasing the [SHIFT] key will return the number keys to their usual state. When letters are desired note that lower case letters are offered first with capital letters offered second. For convenience, the [.] key is alternatively the period and comma alone.

The Backspace ([BS]) key will delete the character immediately to the left of the cursor and move the cursor back to that position when pressed.

The Clear ([CLR]) key, when pressed, will clear any content currently on the screen and return the cursor back to the start of the text area. Note that in some cases the display may not appear cleared but the blinking cursor will have disappeared. Data is properly cleared in this case and as soon as you begin typing or scanning the correct data will appear.

2.4: Number Keys

The PX-35 keypad contains a numeric keypad containing the digits 1-9, 0 and a decimal key. Their usage is obvious and we will refer to them as [1]...[9], [0] and [.]

2.5: Enter

The Enter key is labeled as ENT and thus we will refer to it as [ENT]. This key is used as a selector key for whatever menu option happens to be on the display at the time. Typically the [TRIGGER] key holds the same purpose for the sake of convenience but in situations where the [TRIGGER] key must be distinct this key is important to know about.

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3: Menu Map

- Scan Labels
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 - IATA Code
 - MSI
 - Telepen
 - UK/Plessey
 - Code 128
 - Code 93
 - Code 11
 - Korean Post
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4: Usage Instructions

This section will follow the structure of the menu of the application. If you have not already done so please read section 2 of this manual to fully understand the naming conventions and terms used in this section.

4.1: The Menu

When the application first starts you will see the first item of the main menu labeled as Scan Labels. To the far right of the screen you will notice a scroll bar that changes as you scroll up and down, indicating your relative position within the current menu loop. In addition to this you will see a small number in the upper right corner of the screen. This is your exact position in the menu and will expand as you move within the layers of the menu. For example, if you are viewing the Display sub menu (see section 3: *Menu Map*) this number will be 5-4 to let you know you are at position 5 of the main menu loop and position 4 of your current menu loop. If the menu item is a sub menu then position 1 is always an exit option, allowing you to move back up one level in the menu tree. The [CLR] key will also move you back upwards one step in the tree. To select a menu item, sub menu item or option use either the keys [TRIGGER] or [ENT]. On the main menu loop the [CLR] key will return you to position 1 in the menu. The term menu loop is used because if you scroll to the last position and keep going you will be returned to the top of the menu. This works in both directions on all menus and sub menus.

4.2: Scan Labels

When selected this menu option takes you to a screen that allows you to scan or key in a barcode into the PX-35. Hold the [TRIGGER] key to activate the scanner and point it in the direction of your barcode to scan that barcode's data into the PX-35. Once a barcode is detected and properly scanned the barcode data will appear on screen and you will be given the options to select a quantity. If your barcode is damaged or must otherwise be keyed in then the quantity fields are made available as soon as you press [ENT] or [TRIGGER].

The quantity fields are listed as follows:

Total:
Add:

The Total field is the total quantity in the database that matches the exact barcode entered. This means that if you scan the same barcode multiple times you will be adding to this quantity rather than replacing it.

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The Add field is where you enter the current quantity you wish to add. This field can be anything from 0 to 9999 but is 1 by default. Note that 9999 is not the maximum quantity that the database will store, merely the maximum that can be entered at one time. The maximum quantity that can be stored has no practical limits but if you are working with massive quantities please do perform some testing to ensure it will behave as you expect before you put the unit into production. This is to protect the integrity and accuracy of your data.

Note that you may subtract a quantity in the same way one is added. To do this you must press [SHIFT][1] until the '-' symbol appears (typically eight clicks) and then you may enter your quantity. Be advised that returning the quantity of a barcode to zero will not remove the entry from the database but the quantity will properly be reported as zero when the data is transferred to a host computer. Negative numbers will be properly handled and reported in the situation where a quantity entry results in a negative entry in the database.

When you have keyed in the quantity you wish to add (including negative numbers) simply press a select key ([ENT] or [TRIGGER]) to continue. The quantity will be stored and you will be returned to the data entry screen and the PX-35 is ready to scan or key another barcode. Note that it makes no difference if the barcode data is scanned or keyed with regard to the database finding the correct entry. If you scan barcode 12345 or key barcode 12345 the correct database field will be found and updated.

4.3: Scroll Database

This menu item, when selected, allows you to scroll through all data stored on the PX-35 as entered via the Scan Labels menu item discussed previously. The top row (in reverse colors) displays your current line item out of the total in the database. The second line is the barcode you are currently viewing. The third line is the quantity currently in the database for that barcode. The final lines are the date and time of the last update to this entry. Note that only the most recent time and date are stored. Use the key [Q1] and [Q2] to scroll through the database. To return to the menu use the key [CLR] or [TRIGGER].

If there is no database present you will see a message indicating this. A database is automatically created when you scan or key your first barcode and input a quantity as described in section 4.2: Scan Labels.

4.4: Transmit Data

Use this menu item to transmit your database to your host computer over the USB or RS232 cables supplied with the companion cradle. Note that the companion cradle always requires the AC power adapter, even when the USB data cable is used. These instructions assume the use of the NetO protocol, which is the default selection. NetO is a

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protocol devised by Opticon for this specific purpose. It requires the use of Net032, a PC application, running on your host computer.

If *No Protocol* is selected from the PX-35 menu then a terminal application must be running on the computer and pointed to the correct serial port to capture the incoming data. Data transmitted this way is in raw ASCII format.

Step 1: Connect power to your cradle.

Step 2.1: Connect the cradle to the host computer using either USB or RS232 cables. The USB cable will require drivers, which can be downloaded from Opticon's websites (See section 5: *Resources* for additional information). Note that in both cases you must know the COM Port number assigned by Windows. If using the RS232 cable (the 9-pin connector on the computer side) this is typically COM 1 while the USB connector could be assigned virtually any COM Port number.

Step 2.2: To verify, open Windows *Device Manager* by selecting *Start > Run >* and type *devmgmt.msc* and press enter. *Device manager* can also be found in the *Control Panel*, sometimes directly under the *Control Panel* and sometimes under the *System* application found within the *Control Panel*.

Step 2.3: Expand the category labeled *Ports* and find the line item with Opticon's name in it. This COM port number listed at the end of the line should be noted for future steps. Note that, in the case of USB, if you use the same physical USB socket on the computer then Windows *should* assign the same port number each time but this is not guaranteed.

Step 3: Start the Net032 application on your PC. The Net032 application can be downloaded for free from Opticon's websites (See section 5: *Resources* for additional information). Net032 comes with its own instruction manual (in the install folder on the computer) but the basics are included here.

Step 4: Within Net032 select the menu option *Tools > Options*. Take note of the menu tree on the left. The RS232 menu item is selected by default.

Step 4.1: On the RS232 menu choose the COM port from the drop down provided and select the port number discovered in step 2.3. You may also need to change the baudrate setting to match the selection on the PX-35 in the Baudrate menu. The default for the PX-35 application is *115200*. All other options should remain as the default.

Step 4.2: Select the Download menu from the tree at left. Use the folder icon at the right to choose your receiving directory. This is the location your database file will be stored after transmission is complete. Select a location that is easy for you to find. Additionally choose your option from the list further down.

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- *Append* indicates that if a database file is already present on the computer then your new database will be appended to the end of this existing file. This could result in a file containing multiple entries for the same barcode (normally impossible).

- *Overwrite* indicates that if a database file is already present on the computer at that location then the already existing file will be permanently deleted and replaced with the new one.

- *Unique* will add a unique number to the end of the file name to ensure that no data is ever lost as a result of NetO transmissions.

Step 4.3: Select OK when you are done.

Step 4.4: Within NetO32 select *Protocol > Start*. You will notice a colored light on the program window begin to cycle colors. You will also notice the yellow LED on the right front of the cradle begin to blink. This indicates the cradle is receiving communications from the computer.

Step 4.5: On the PX-35 scroll to *Transmit Data* on the main menu and select it. You will see *Transmit data* on the top row and the selected protocol on the second. The default protocol is *NetO Protocol*.

Step 4.6: Place the PX-35 in the cradle. Place the PX-35 so that the scan engine is facing downwards and the display is facing you. You will notice the green LED on the front left of the cradle blink and the NetO32 application should indicate activity in the white box on its program window.

Step 4.7: Note that the database is unmodified on the PX-35 and if you wish to delete it you must do so manually. See section 4.5: *Delete Database* for instructions. This is done to allow you to verify your data for accuracy and completeness before it is removed permanently from the PX-35 database.

Step 4.8: In the NetO32 Program window select *Protocol > Stop* to release the program's control of the COM port. This is also accomplished by simply closing the NetO32 application.

Step 4.9: Done!

4.5: Delete Database

When selected you will see a screen allowing you to either delete the entire database or cancel. The [CLR] key returns you to the menu with no action taken. The [ENT] key will delete the database. This action *cannot* be reversed!

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4.6: System Menu

The System Menu is a sub menu tree that contains options you may need to change for your specific operating environment. Many options here also affect the usage of the Transmit Data section.

4.6.1: Com Port

This is a menu tree containing menu options pertaining to serial communications. For users experienced with serial ports and their use.

4.6.1.1: Baudrate

The baudrate is the speed with which data is transmitted to the host when the companion cradle is used to transmit data. The default is 115200. To change the baudrate select this menu item and scroll through the list until you see your desired baudrate and select it. The change takes effect immediately. Scroll to and select Exit or press [CLR] to return to the previous menu.

4.6.2: Protocol

Protocol is the specific data transfer protocol used when data is transmitted from the PX-35 to the host. The default is NetO Protocol. Select this option then scroll to your choice and use either [ENT] or [TRIGGER] to select it. The selection takes effect immediately. Scroll to and select Exit or press [CLR] to return to the previous menu. For additional details on these options see section 4.4: Transmit Data.

4.6.3: Display

The Display menu item, when selected, allows you to change the screen contrast to allow for differing environments. Use [Q1] to darken the screen (one step per click) or use [Q2] to lighten the screen (also one step per click). Changes take effect immediately. The keys [ENT], [TRIGGER] and [CLR] will return you to the previous menu.

4.6.4: Barcodes

This menu item, when selected, allows you to scroll through the barcode symbologies (types of barcode symbols) this PX-35 application supports. Any entry with a check in the box is enabled and any entry with an empty box is disabled. To toggle this check mark, use a select key. The change takes effect immediately. Scroll to and select Exit or press [CLR] to return to the previous menu. Disabling unneeded barcode symbologies may improve scanning speed and save power on the PX-35.

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4.6.5: Memory

The Memory option allows you to see the amount of storage space remaining on the PX-35 for your additional data, given in bytes. Press any key (except [SHIFT]) to return to the previous menu. If memory is close to being exceeded you will be notified as you add quantities to the database. You will be prohibited from entering additional data when the memory is full.

4.7: Version

This menu item, when selected, displays the version number of the application you are running. Press any key (except [SHIFT]) to return to the main menu.

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5: Resources

This section includes information on where to download online resources such as USB drivers, firmware updates and additional information. Please note that USB drivers for Opticon's cradles are installed automatically via Windows Update on Windows 7 operating systems where Automatic Updates are enabled. Alternatively these drivers can always be downloaded and installed manually from the links below.

5.1: USA, Canada, Mexico

Contact Information

- <http://www.opticonusa.com/contact-us.html>

General Information

- <http://www.opticonusa.com/products/handheld-solutions/px35.html>

Technical Resources and Downloads

- <https://wiki.opticonusa.com/techsupport/en/PX35>

5.2: Worldwide

Contact Information

- <http://www.opticon.com/Contact.aspx>

General Information

- <http://www.opticon.com/PX35.aspx>

Technical Resources and Downloads

- http://wiki.opticon.com/index.php/PX_35

- <http://old.opticon.com/opticon-software-download--01000000000018.aspx>