

PXRVIEW

Software for Hitachi PX/ PXR Series Ink Jet Printers

User Guide

Rev-5.03.13 or Later

PXRVIEW
User Guide

Preliminary

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1 Overview

PXRView provides a single point of control for a Hitachi PX or PXR IJ Printer with microcode level 5.10 or later. In this document, any reference to a printer refers to the Hitachi PX or PXR IJ printer. The program provides total control of the setup and operation of the printer from any Microsoft Windows based PC running Windows 98 or later. A special installation package is needed for Windows 2000. When installing on Microsoft Vista, run the installation package as administrator. The screen automatically adjusts to any screen resolution and can be resized as needed.

This document provides information on the following procedures:

- Installation of PXRView
- Configuration of PXRView and PXR IJ Printer
- Operation of PXRView

2 Installation and Configuration

2.1 PXRView Installation

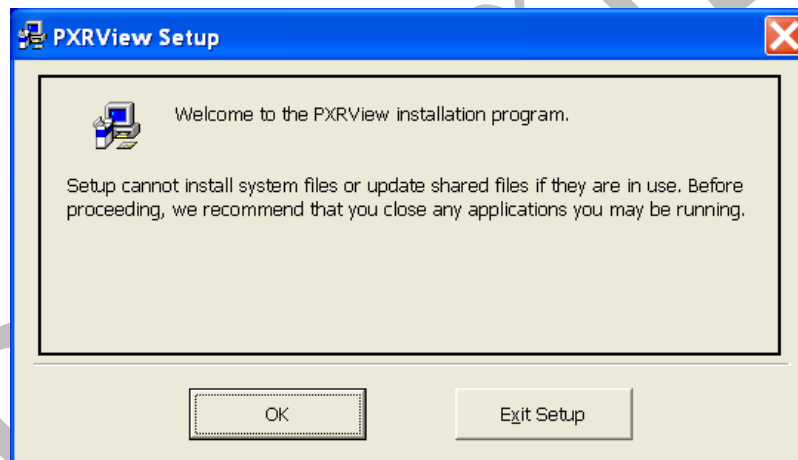
Note: If PXRView is already installed on your PC, you should uninstall it before installing a new version.

Warning: Before uninstalling it, “Export” all messages that you have created on the current version. After the new version is installed, you can “Import” the messages into the new level.

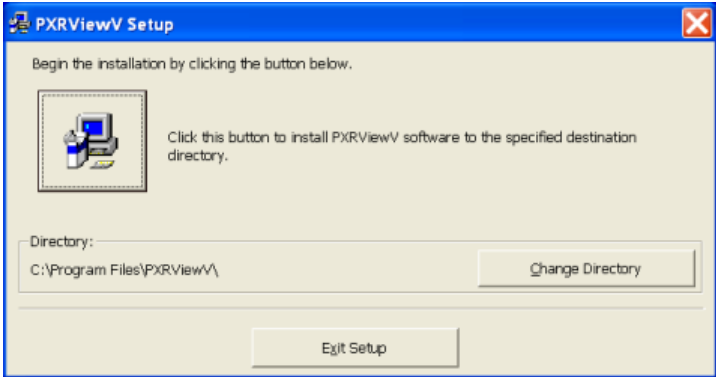
PXRView is distributed as a .ZIP file. Unzip the file into a folder to expose the contents of the .ZIP file. The file contains the following Zipped files.

Name	Size	Type
SETUP.LST	12 KB	MASM Listing
PXRView.CAB	11,253 KB	WinZip File
setup.exe	137 KB	Application

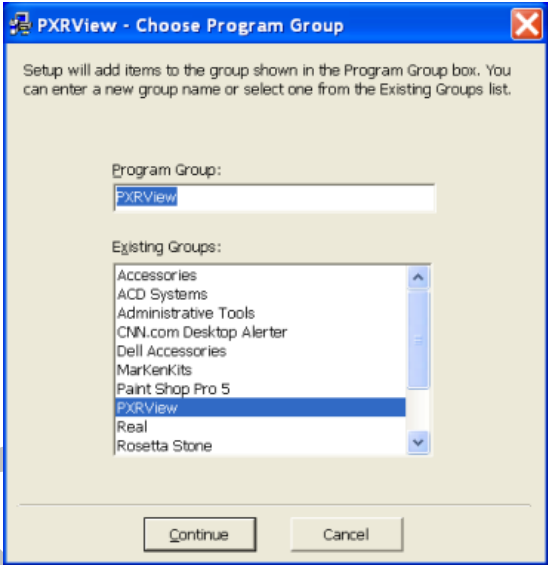
Run the setup.exe application to start the installation process. The first screen is:



Close any applications before clicking “OK”. The next screen is:



Click on “Change Directory” if you wish to install in an alternate location. Once the directory issue is resolved, click the square control in the upper left of the dialog box. The following dialog box appears:



Once installation is complete, the following dialog box appears:



PXRView is now installed and ready to use.

Preliminary

2.2 PXRView Configuration File

Program wide configuration data is kept in the “PXRView.ini” file. It resides in the same folder as “PXRView.exe”. The configuration file is accessible via the “PXRView Settings” and “Maintenance” tabs.

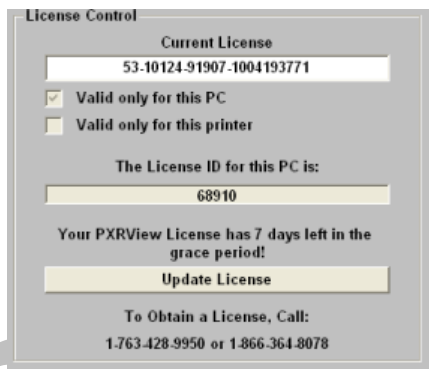


Click the “Edit PXRView.ini” button to open the configuration file in Notepad. Once the changes are made to the configuration file, the application must be restarted.

2.2.1 License Section

A license controls the running of PXRView. A license is provided to you when you get a copy of PXRView. You can either update the license when you are editing the configuration file or via the control on the “PXRView Settings” and “Maintenance” tab. The line within the configuration file looks like

License=12-12345-12345-1234567890



To obtain a license, call the number on the screen. You will need to have the “License ID” for the PC available when you call.

Clicking “Update License” rewrites the license in the configuration file.

2.2.2 Database Architecture Section

User provided information is kept in a relational database. The default database is Microsoft Access. However, this can be moved to any relational database given the appropriate drivers are available and the user of PXRView has the necessary privileges to reference the database. The lines within the configuration file for using Microsoft Access are:

```
DatabaseArchitecture = Access
AccessProvider = "MSDASQL.1"
AccessDriver = "{Microsoft Access Driver (*.mdb)}"
AccessDatabaseName = "PXRView.mdb"
```

The lines within the configuration file for using Microsoft SQL Server are:

```
; DatabaseArchitecture = SQL
SQLProvider = SQLOLEDB
SQLDatabaseName = PXRView
SQLServer =
SQLUserID =
SQLPassword =
```

The semi-colon marks the first line as a comment. The information necessary for connecting to the server must be provided by the user. All necessary SQL Stored Procedures can be obtained from HighMark (an additional fee may apply). Only one DatabaseArchitecture type can be enabled at a time.

2.2.3 Printer Mode Section

The printer mode is provided to allow live operation of the PXR IJ Printer for a production environment or simulated operation for a training/ testing environment. The lines within the configuration file for PrinterMode are:

```
PrinterMode = Live
; PrinterMode = Simulate
```

Live vs Simulate mode can also be set from the "Configure Port" button on the main screen. Live or Simulate mode applies to all printers and barcode scanners and not on a printer by printer basis.

2.2.4 External Database Section

The External Database provides the user the ability to generate a few templates to define the printer specifications and substitute data from an external Microsoft Excel Spreadsheet into the print specifications before downloading to the printer. The line within the configuration file that controls this feature is:

```
SubstituteFile = "PXRView.xls"
```

Placing a semi-colon in front of this line turns off the feature.

If no path information is specified, it assumes that the Spreadsheet is located in the same folder as the .ini file. Any filename and full path can be specified.

2.2.4.1 External Database File Format

A sample of the spreadsheet would look like:

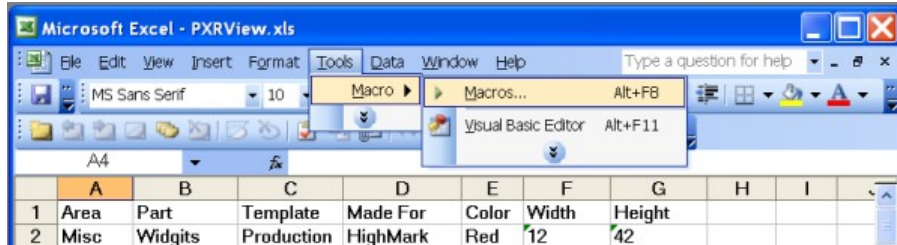
	A	B	C	D	E	F	G	H	I
1	Area	Part	Template	Made For	Color	Width	Height		
2	Misc	Widgits	Production	HighMark	Red	12	42		
3	Misc	Blivits	Production	HighMark	Green	18	36		
4									
5									
6									
7									

The following requirements:

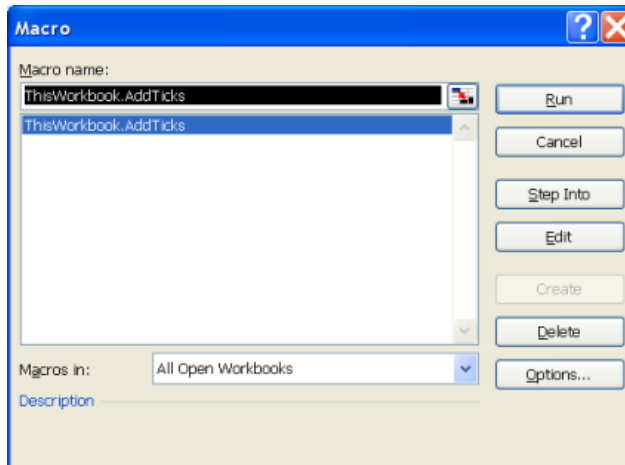
- The tab containing the data must be called "PXRView"
- The first row must contain the row headings
 - a. Row 1, Column A must contain the word "Area"
 - b. Row 1, Column B must contain the word "Part"
 - c. Row 1, Column C must contain the word "Template"
- All other data is referenced via column position and can contain any name.

All data must be stored as Text. Numeric data must be preceded by a “tick mark” (Single quote mark). To aid in this, a Macro named “AddTicks” is provided. Running the macro insures that the data within the spreadsheet is properly formatted.

To run the macro, click “Tools” and select “Macro” and “Macros”.



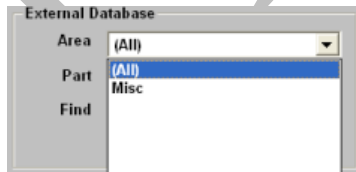
This selection brings up a list of the macros in the spreadsheet



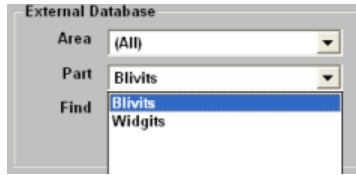
Click “Run” to run the macro and prepare the spreadsheet for use with PXRView.

2.2.4.2 External Database Row Selection

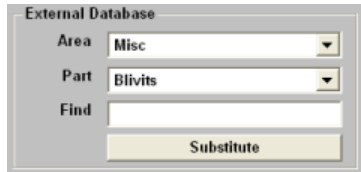
Before the data in the Spreadsheet can be used, the proper row must be selected. This is accomplished thru the following control.



The “Area” dropdown is populated from the Column A of the spreadsheet. “(All)” is added to allow all Parts in the spreadsheet to be visible at once.



The “Part” dropdown is populated from the Column B of the spreadsheet. It contains only those parts that have the proper “Area” in Column A.



The find box allows the Part to be entered via the keyboard or barcode scanner. The background color indicates the state of the search. The search is case insensitive.

- White = Empty
- Yellow = Partial Find
- Green = Exact match
- Red = No find possible

The template associated with the row is matched against the message group for the currently active printer.

2.2.4.3 Templates

A template is built the same as any message to be sent to the printer. To cause data from the Spreadsheet to be placed in the message, an entry of the form [x] or [*x] is placed in the message. “x” represents the column of the spreadsheet to use for the substitution. The “*” is used when the contents of the spreadsheet can exceed 10 characters. A template might look like:



The other (yellow) characters in the template will be explained later in the document.

In addition to substituting data from the spreadsheet, the operator may be requested to provide input. Up to ten different messages can be established. The messages are saved in the PXRView.ini file. Their format is:

```
Operator0 = "Please enter the batch number"  
Operator1 = "Please enter #1"  
.  
.  
.  
Operator9 = "Please enter #9"
```

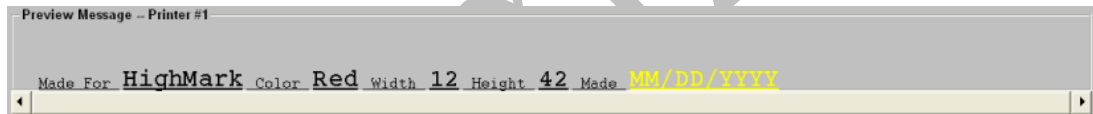
Placing [n] (n = 01 to 9) in the template causes PXRView to solicit input from the operator and replace the [n] in the template with input from the operator.

Placing [!] in the template is a special application operator used with the Barcode Scanner. Please check with HighMark for its use in your version of PXRView.

2.2.4.4 Substitution

The “Substitute” button causes the data from the selected row of the Excel Spreadsheet to replace the corresponding reference in the template. The template values do not need to be visible when the substitution is requested (the preview area might contain the results of a previous substitution).

After clicking the “Substitute” button, the message looks like:



2.2.5 B/C (Local Barcode Button)

The “B/C” button allows the operator to simulate input from the remote Barcode Scanner while at the PC. Simply select the Area and Part that would have been scanned by the Barcode Scanner and click the “B/C” button. PXRView will respond as if the part number had been scanned. If additional input is required, it will be solicited as input from the keyboard. Once input is complete, the printer will be loaded.

2.2.6 Printers

The printers section allows the user to define the number of printers that will be controlled by PXRView.

```
Printers = 1
```

One to sixteen printers can be connected via serial ports and simultaneously controlled by PXRView. However, the port numbers must be unique and can only be in the range of 1 to 16 (A Microsoft restriction).

2.2.7 Barcode Scanners

A barcode scanner can be configured with each printer and is also attached via a serial port. Configuring a barcode scanner uses up a serial port and reduces the number of printers that can be configured. The port numbers must be unique and cannot duplicate a printer serial port number

One additional barcode scanner can be attached via a keyboard wedge. Since the input from that scanner comes in as keyboard input, PXRView is unaware that it is attached.

2.2.8 Save History

A record can be saved of all prints performed by the PX/PXR printer.

```
SaveHistory = True  
;SaveHistory = False
```

However, this does slow the performance of PXRView. If the history is not desired, the feature can be disabled.

2.3 PXR IJ Configuration

For PXRView to operate properly, the following conditions must exist within the PXR IJ Printer:

- SOP4 must be installed and enabled
- Firmware 5.10 or later must be installed

To set the proper execution environment in the PXR IJ Printer:

- From the main screen, press “MENU” to toggle to the purple menu options
- Press “ENVIRONMENT SETUP MENU”
- Press “COMMUNICATION ENVIRONMENT SETUP”

State at power-up: [0] or [1] (User Preference)
Baud Rate: [9] 38400
Data Length: [2] 8 bits
Parity Bit: [0] Disable
Stop Bit: [1] 1 bit

Number of comm. Bytes: [1] 1 byte
BCC Code handling: [0] Disable
Communication mode: [2] Overwrite enabled

- Press “NEXT SETTINGS”

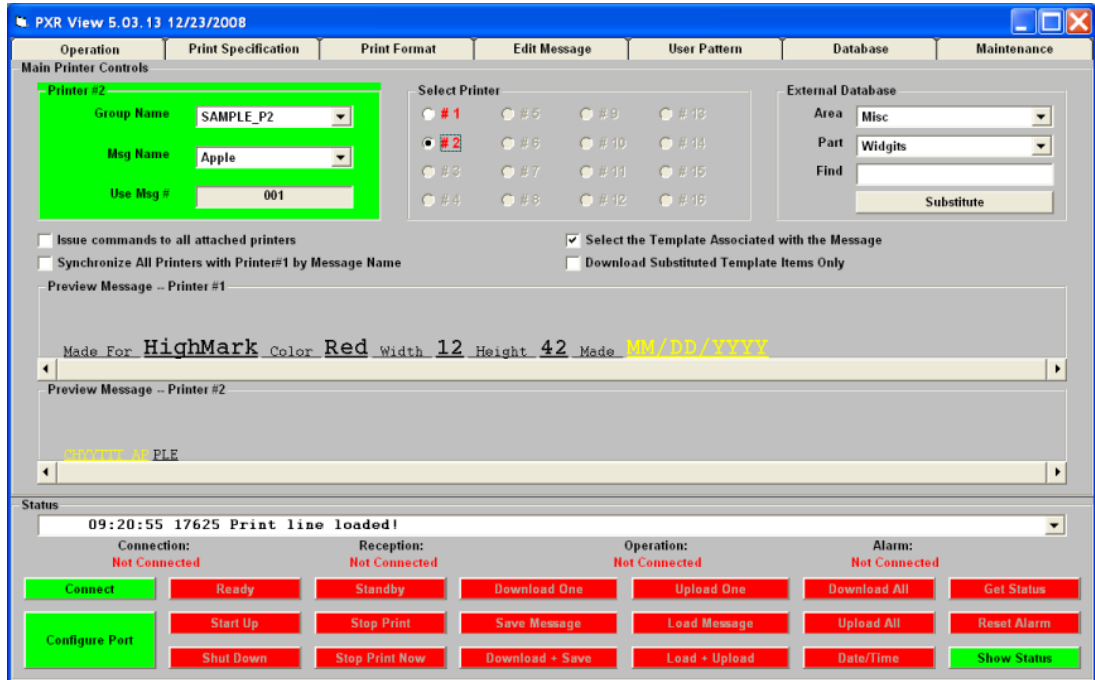
Print msg transfer ACK: [2] t=async
Print spec trans char ht: [0] 2 digits
Comm and Signal err: [0] Warning

<Special Communication>

Start Output: [1] Enable
Output kind: [2] Code
Condition: [1] Every time
Status Output: [1] Enable

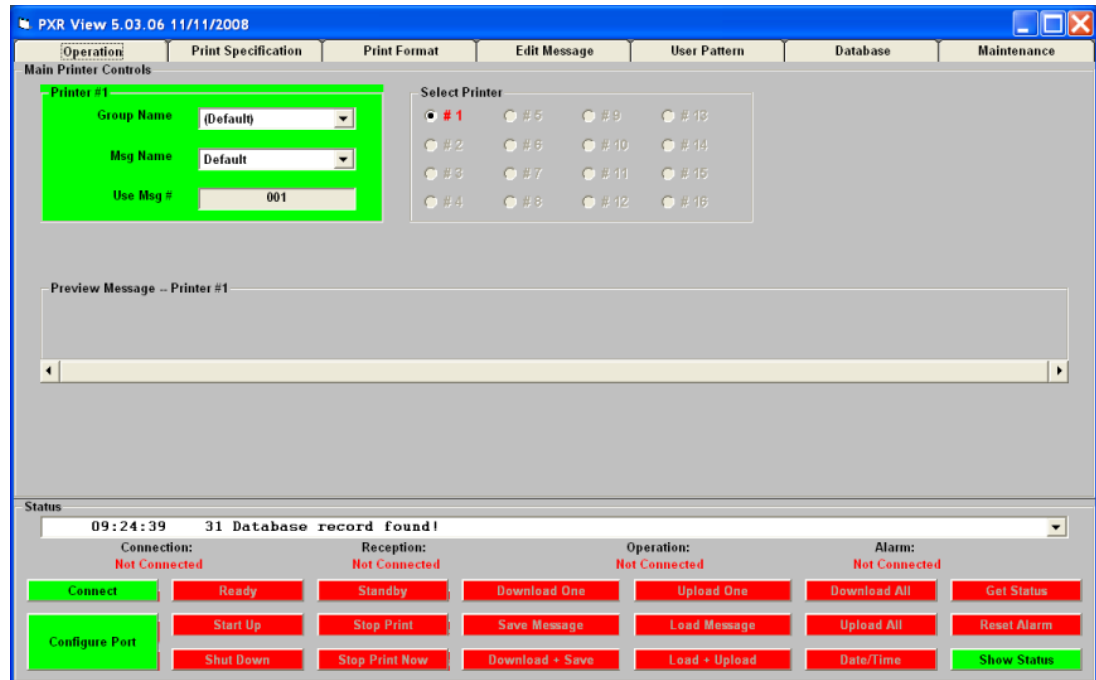
3 Operation

A typical execution display (before connecting to a printer and with all features turned on) may look something like:



In this case, two printers are configured and an external Excel spreadsheet is specified.

The variation in the look is caused by External Database being turned off or only one printer being configured. The minimum display would be:



The program layout contains two major areas:

- The area for managing the data to be transmitted to/from the printer
- The Status Area that contains the buttons necessary for controlling the selected printer

The Management area is subdivided by functionality by seven tabs. These tabs are:

- Operations Tab – Printer Selection, configuration, and message preview
- Print Specification Tab – Message selection and printer wide setup configuration
- Print Format Tab – Item specific configuration
- Edit Message Tab – Text Entry
- User Pattern Tab – User Pattern management
- Database Tab – Text passing and external user interface
- Maintenance Tab – Execution related messages, events, configuration and history.

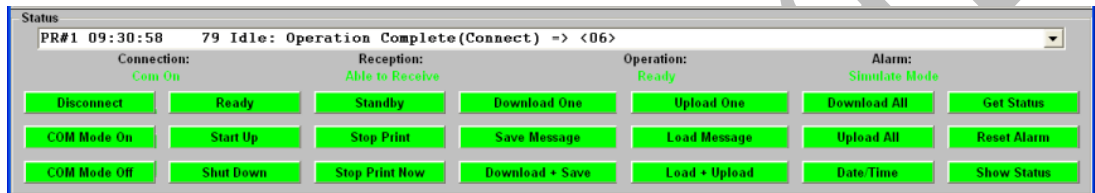
The Status Area is only visible when on the Operation Tab. It is discussed first.


3.1 Status Area

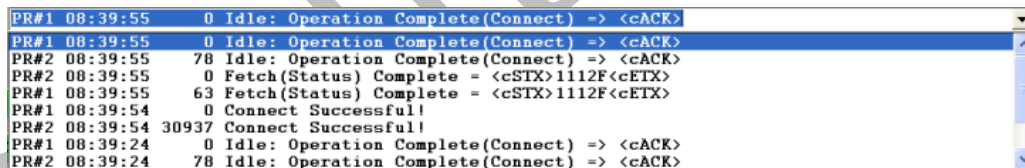
The status area is visible at all times. When not connected to a printer, it contains the following information:



Once connected to one or more printers, it appears as follows:



The message line displays messages that are generated during the executing of PXRView. The last message is always displayed. Clicking the  at the right end of the message results in the last 10 messages being available for viewing.



The next area is the printer status area. It displays the information returned by the printer on a Get Status request, or returned by the printer as an unsolicited interrupt.

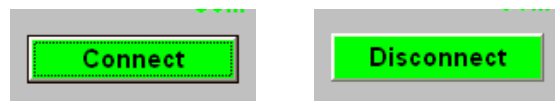


A description of these settings can be found in the SOP-4 manual.

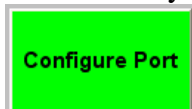
The final area contains the buttons that initiate transmission of data to/ from the currently active printer. The currently active printer is highlighted in green and can be selected by clicking the radio button in the Select Printer area.

The buttons for controlling the operation of the printer are green when the connection is established to the printer. They are red if no connection exists. The buttons occur in pairs.

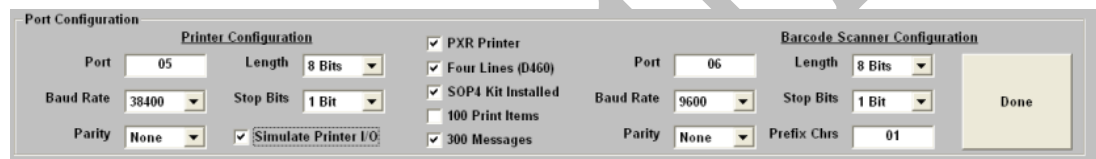
Click the green Connect button to attach to the printer. The connection is made using the current settings in the Port Information section on the Operator Tab.



The information used to connect to the printer is contained in the Port Configuration section. It is available by first selecting the printer that you wish to configure and then



clicking the button.

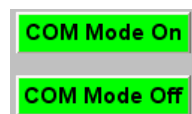


This screen allows the user to configure the Serial Port settings for the printer and Barcode Scanner. If a Barcode Scanner is not present at the printer, it is indicated by a barcode port number 0.

The “Simulate Printer I/O” applies to all printers. All other data is specific to the printer/scanner being configured.

The “Prefix Chrs” is used to indicate the number of prefix characters generated by the scanner and will be removed from the scanner input. PXRView only supports CR and or LF as the suffix characters.

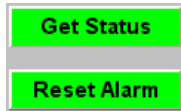
The configure button is only visible when not connected to the printer. Click the green Disconnect button to disconnect from the printer, change the configuration, and Connect for changes to take effect. The remaining buttons change color to reflect the state of the connection. Only the green state of the remaining buttons is discussed.



Turns COM Mode On/ Off (known as Line Mode on older printers). The status portion of the screen is not updated if Com Mode is Off. Other buttons on the screen are enabled even when COM Mode is Off. However, clicking the buttons will receive a Negative Acknowledge (NAK) from the printer.



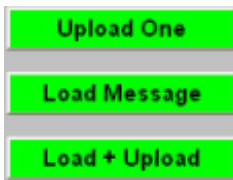
Clicking one of these buttons switches the printer between Ready and Standby Modes.



Get Status retrieves the latest status from the printer if COM Mode is On. Reset Alarm resets any “Soft” alarm in the printer. However, it will not answer the entire message that is on the printer touch screen.



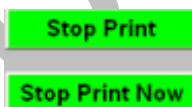
Download One takes the PC’s current message (along with all other settings) and sends it to the printer. The message is selected using the currently active printer. Save Message moves configuration in the printer’s memory to the Hard Drive and assigns the number to it. Download + Save combine the two PC-to-printer buttons into a single operation.



Upload brings the currently loaded message (along with all other printer settings) in the printer’s memory to the PC and saves it as the PC’s current message. Load Message moves the message number selected in the Configuration Control area from the printer’s Hard Drive to the printer’s memory. Load + Upload combine the two printer-to-PC buttons into a single operation.



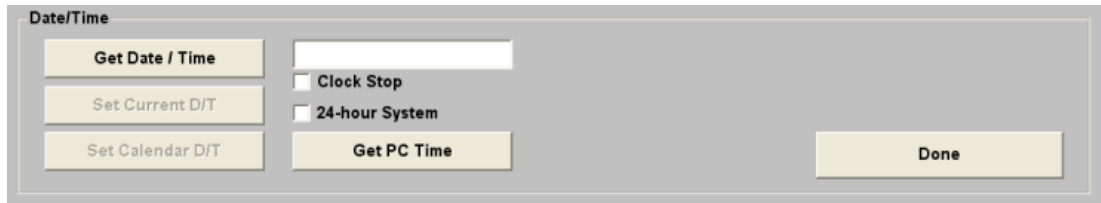
The Start Up/Shut Down buttons turn the hydraulic pump on and off.



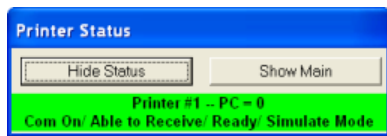
The Stop Printing signals the printer to stop at the end of the current print message. Stop Printing Now aborts printing of the current message.



Brings up the control necessary to allow the user to change the date and time in the printer.



Show Status This button allows the main screen to be minimized. The following status window appears in the lower right portion of the screen. The screen shows the printer name, print count and status of each printer currently connected.



Clicking "Hide Status" will minimize this screen also. Clicking "Show Main" restores the application to the full display. The screen expands to accommodate the number of configured printers.

3.2 Operation Tab

Much of the controls tab has already been described. However, four parts need more explanation:

- Message selection
- Printer selection
- Execution options
- Message preview

The screenshot shows the 'Main Printer Controls' window. On the left, a green box highlights the 'Printer #2' section, which includes a 'Group Name' dropdown set to 'SAMPLE_P2', a 'Mag Name' dropdown set to 'Apple', and a 'Use Mag #' text field containing '001'. To the right is the 'Select Printer' section with a grid of radio buttons for printers #1 through #16; radio button #2 is selected. Further right is the 'External Database' section with 'Area' set to 'Misc', 'Part' set to 'Widgets', and a 'Find' field with a 'Substitute' button. Below these are two 'Preview Message' sections. The first, for 'Printer #1', shows a message: 'Made For HighMark Color Red Width 12 Height 42 Made MM/DD/YYYY'. The second, for 'Printer #2', shows the message 'SAMPLE_P2'.

3.2.1 Message Selection

To select the message to be sent to the printer, select from the Group Name and the Message Number or Message Name dropdowns. The message you select is then loaded into the Preview Message area for that printer. Printer # 1 will always display in the upper preview area. All other printers will be displayed in the second preview area.

3.2.2 Printer Selection

Clicking on the radio button in the “Select Printer” block marks that printer as active. The printer control will be loaded in the area to the left of the printer selection area. All commands are issued to that printer.

3.2.3 Execution Options

The execution options provide greater control over the execution of PXRView. They include:

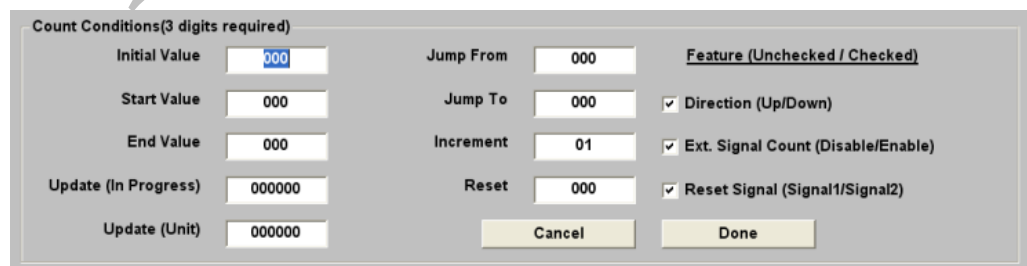
- “Synchronize All Printers with Printer # 1 by Message Name” – This is useful when printers are working in tandem. The selection of a print message on printer # 1 results in an automatic selection of a message of the same name (but possibly different group) on all the other printers.
- “Issue Commands to All Attached Printers” – This is again useful for printers acting in tandem. Connect to printer connects to all printers, etc.
- “Select the Template Associated with the Message” – This allows each message in the external database to be associated with a different template. Selecting the message results in the correct template being loaded in the associated print group.
- “Download Substituted Template Items Only” – The option covers two cases. It is faster than loading the entire message and it allows things like Shift Code to be loaded in the printer and not overwritten by PXRView.

3.2.4 Message Preview

This area provides an approximation of what the message looks like after the printer renders it. The underlining is not part of the printed text, but allows the user to see the break between items as well as see a space character. The accuracy of the text in the text preview area is not guaranteed.



If the message being previewed contains a calendar item, count item, or user pattern, it is indicated by yellow text. Clicking on the yellow text causes the appropriate calendar or count condition box to appear. Count and calendar cannot be in the same item.



The screenshot shows the "Count Conditions(3 digits required)" dialog box. It contains the following fields and options:

Initial Value	<input type="text" value="000"/>	Jump From	<input type="text" value="000"/>	Feature (Unchecked / Checked)
Start Value	<input type="text" value="000"/>	Jump To	<input type="text" value="000"/>	<input checked="" type="checkbox"/> Direction (Up/Down)
End Value	<input type="text" value="000"/>	Increment	<input type="text" value="01"/>	<input checked="" type="checkbox"/> Ext. Signal Count (Disable/Enable)
Update (In Progress)	<input type="text" value="000000"/>	Reset	<input type="text" value="000"/>	<input checked="" type="checkbox"/> Reset Signal (Signal1/Signal2)
Update (Unit)	<input type="text" value="000000"/>	<input type="button" value="Cancel"/> <input type="button" value="Done"/>		

Calendar Conditions		Offset	Z/S
Year	0000		<input type="checkbox"/>
Month	0000		<input type="checkbox"/>
Day	0000		<input type="checkbox"/>
Hour	0000		<input type="checkbox"/>
Minute	0000		<input type="checkbox"/>

3.3 Print Specification Tab

The following screen contains printer-wide data (i.e., not item specific). The data applies to the printer selected in the Configuration Control area. The meaning of the data is described in the printer operations manual.


Printer Setup			
Configuration Control			
Group Name	(Default)	<input type="button" value="New"/>	<input type="button" value="Delete"/>
Message #	001	<input type="button" value="New"/>	<input type="button" value="Delete"/>
Msg Name	Default	<input type="button" value="Import"/>	<input type="button" value="Export"/>
Find			
Character Orientation		Character Dimensions	
<input type="checkbox"/> Inverse <input type="checkbox"/> Reverse		Height <input type="text" value="75"/> Width <input type="text" value="010"/>	
Encoder Related Settings		Continuous Printing	
<input checked="" type="checkbox"/> Product Speed Matching Pulses per Inch <input type="text" value="0001"/> Divisor <input type="text" value="004"/> H/S Printing <input type="text" value="0"/>		Prints/Trigger <input type="text" value="0000"/> Repeat Interval <input type="text" value="0000"/>	
Ink Drop Use		Print Start Delay	
Ink Drop Use <input type="text" value="03"/>		Foreward <input type="text" value="0001"/> Reverse <input type="text" value="0002"/>	
Target Sensor		Miscellaneous Controls	
Target Sensor Timer (0.1 sec) <input type="text" value="000"/> Filter(1 - Time, 2 - End of Print) <input type="text" value="2"/> Setup Value (0.001 sec) <input type="text" value="0001"/>		<input type="button" value="Copy Configuration"/> <input type="button" value="Save All Settings"/>	

All data is retrieved from dropdown lists so invalid values cannot be entered. Any change made to the data is saved to the database.

The “Pulses per Inch” is not a printer loadable value, but is needed for future length calculations.

3.3.1 Configuration Control

The Configuration Control Group allows the user to select the group and the configuration within the group that is to be used. There is no limit to the number of groups that can be defined. There is a printer-defined limit of 150 configurations per group. Printer names and configuration numbers within a group must be unique.



The screenshot shows a dialog box titled "Configuration Control". It contains two rows of controls. The first row has a "Group Name" dropdown menu with "(Default)" selected, a "New" button, and a "Delete" button. The second row has a "Message #" dropdown menu with "001" selected, a "New" button, and a "Delete" button. To the right, there is a "Msg Name" text field with "Default" entered, a "Find" text field, and "Import" and "Export" buttons.

When adding groups or configurations, the user is solicited for the group name, message number, and message name. All other information is taken from the currently selected group.

When deleting a group, all related configurations are also deleted. The last configuration associated with a group cannot be deleted. The default group cannot be deleted.

Clicking the New button for groups or messages brings up the following dialog boxes. The Cancel button allows the New operation to be canceled. Once the required data is added, the Save button is enabled.



The screenshot shows a dialog box titled "Configuration Control" for a "New" operation. It contains two rows of controls. The first row has a "New Name" text field, a "Save?" button, and a "Cancel?" button. The second row has a "Msg #" text field, a "New" button, and a "Delete" button. To the right, there is a "Msg Name" text field with "Default" entered, a "Find" text field, and "Import" and "Export" buttons.

3.4 Print Format Tab

The following screen sets the configuration of each line and the format of each item within the line.

The screenshot shows a software interface for configuring a print line. It is divided into two main sections: "Line Layout" and "Item Format".

Line Layout: This section contains an "Edit Line Layout" button and a "Current Line Layout" area. The "Current Line Layout" area features a grid of 26 columns, numbered 1 through 26. The first 10 columns (1-10) are highlighted in yellow, indicating they are currently selected.

Item Format: This section is further divided into three sub-sections:

- Font:** Includes a "Font" dropdown menu set to "5X7", and input fields for "Inter-char Spacing" (value: 1), "Increased Width" (value: 1), and "Inter-Line Space" (value: 0).
- Barcodes:** Includes three checkboxes: "Use Barcode" (unchecked), "Data Matrix" (unchecked), and "Alpha Code Set" (unchecked). It also has a "Type" dropdown menu set to "Code39" and an "EAN Prefix" input field with the value "00".
- Move Items:** Includes four buttons: "Add Item", "Delete Item", "Stack", and "Unstack".

At the bottom of the "Item Format" section, there is a "Cut and Paste" area with a text input field and a "Paste" button.

The Lines/Items Setup screen is further broken into two sections:

- The Line Layout section
- Item Format section.

3.4.1 Line Layout

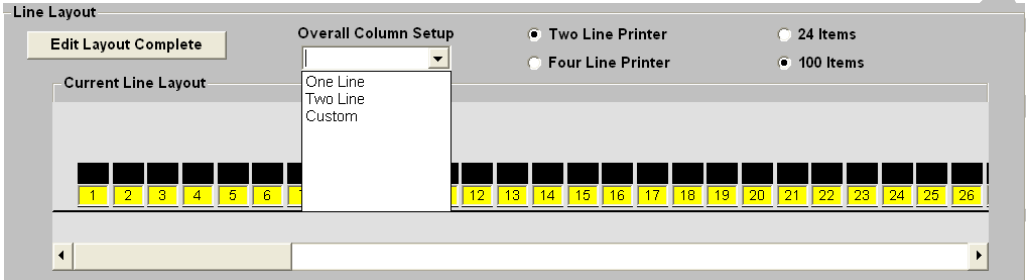
The Line Layout area provides two functions:

- Positioning of the items on the print line
- Selection of the print items into groups for editing the item format and contents

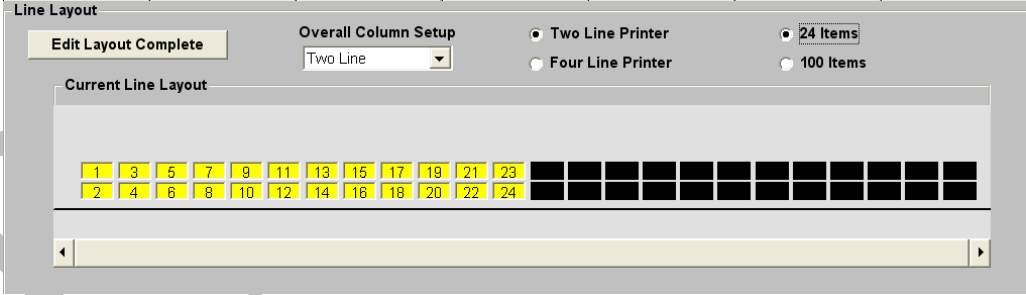
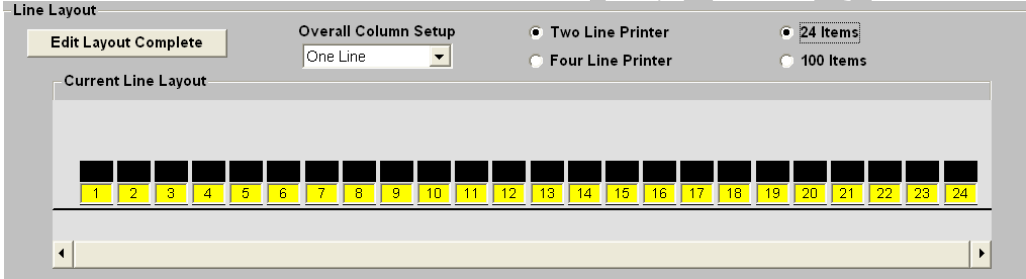
The layouts are selected by clicking the "Edit Line Layout" button. The items are aligned by a rigid set of rules.

3.4.1.1 Rigid Line Layout - Two Line Printer

The dark squares are used to show item positions on a standard 2 line printer. The numbered yellow squares reflect the items to be placed in the layout.



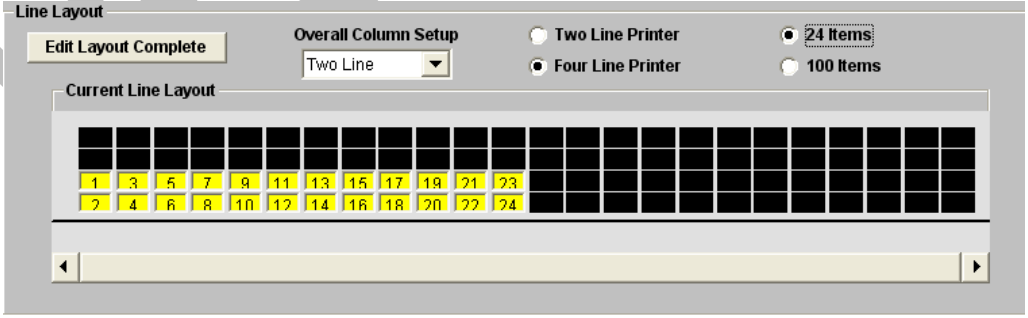
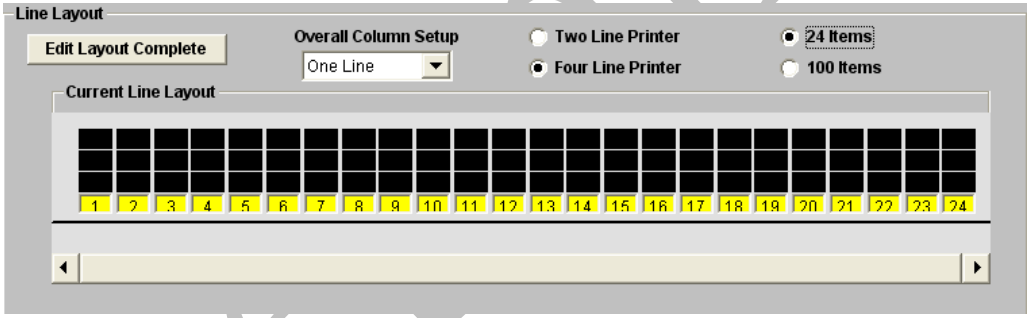
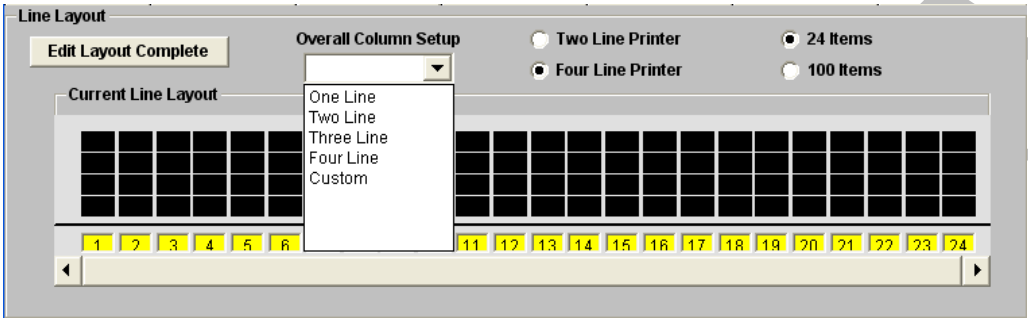
The one and two line layouts are as follows:



3.4.1.2 Rigid Line Layout - Four Line Printer

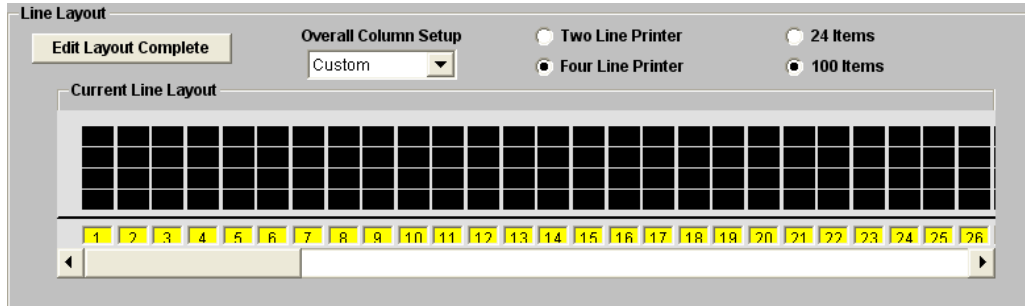
The layouts are selected by clicking the Edit Line Layout button. The items are aligned by a rigid set of rules.

The dark squares are used to show item positions on a standard 4 line printer. The numbered yellow squares reflect the items to be placed in the layout.

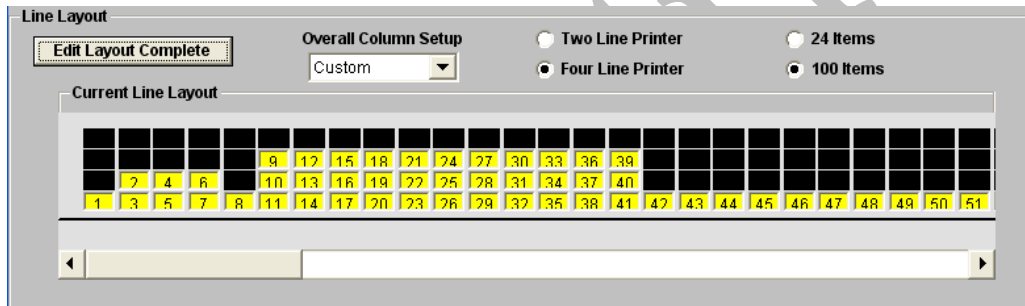


3.4.1.3 Custom Line Layout

Custom layout starts out as an empty layout area with the print items below the line. Items can be moved to the print area by clicking the square in the layout area where the item should be placed.



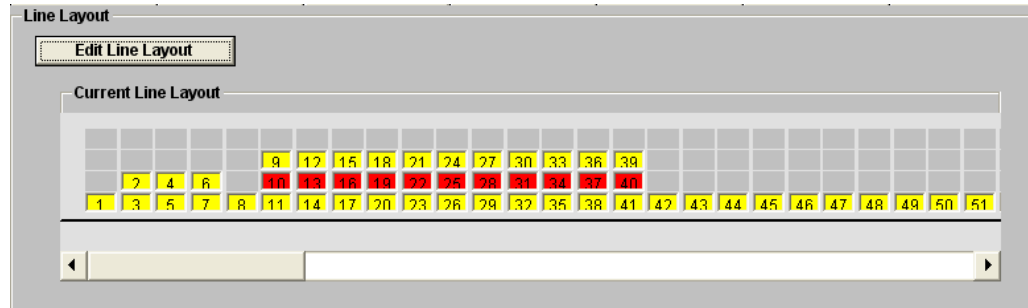
The custom layout can yield any valid patterns such as:



All items must be placed in the print area from left to right and bottom up. The program fills in the obvious. To remove a selection, click it again. Once you have completed the layout of the print area, click on the “Edit Layout Complete” and save the layout.

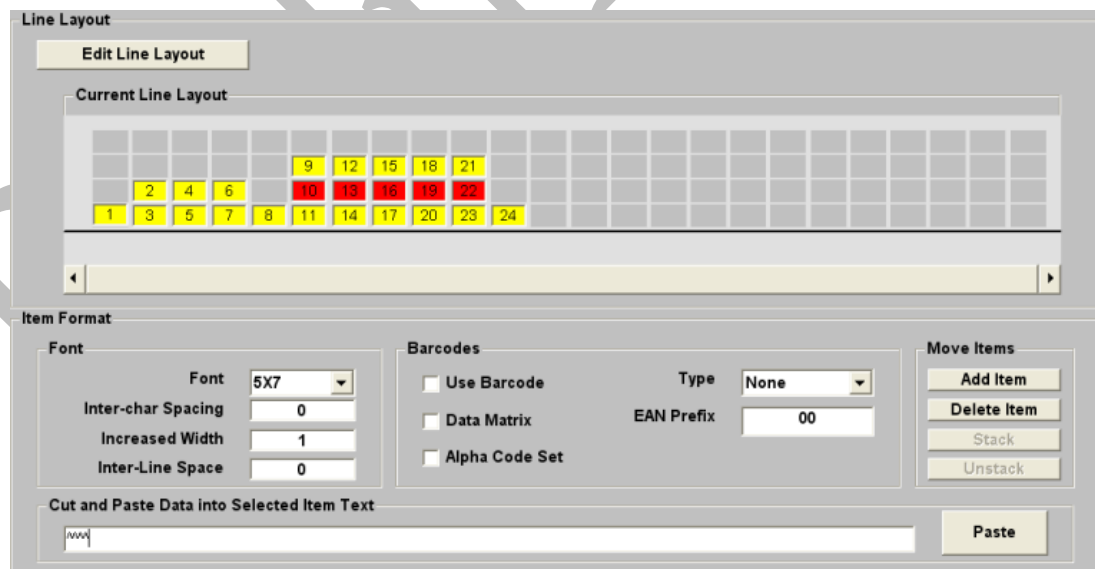
3.4.2 Item Selection

Once the layout is complete, items can be selected, either individually or in groups, to specify item specific format information. Use the Control key for an individual selection or the Shift key to select a group.



3.4.2.1 Item Format

The format displayed when a single item is selected is the format for that item. If multiple items are selected and the items have the same Font, Inter-character Space, Increased Width or Inter-line Space, the corresponding format is displayed. If the entries have different Font, Inter-character Space, Increased Width or Inter-line Space, the corresponding format entries are left blank. Changing a blank format entry causes all selected items to change to the common value.



3.4.2.2 Cut and Paste

The “Cut and Paste Data Into Selected Item Text” area allows the user to enter data into a number of items at once.



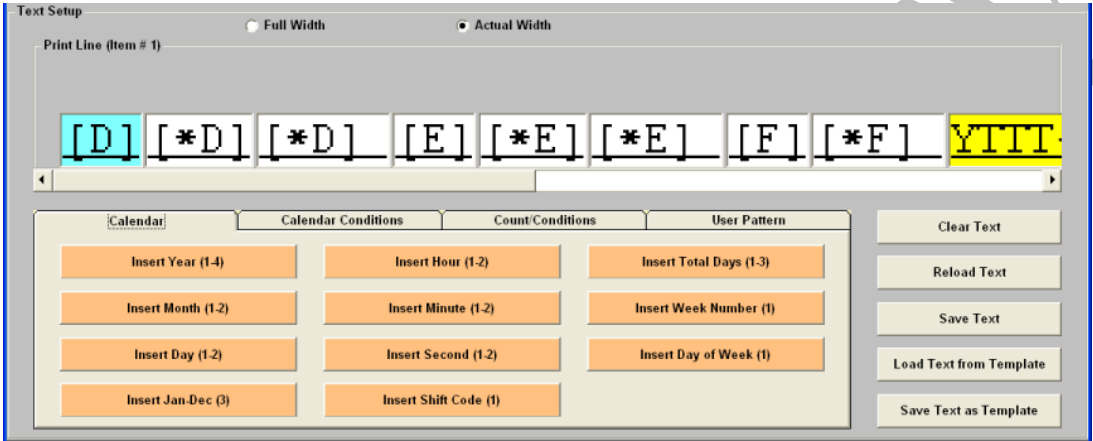
If the data is a single string, the data is placed in the area 10 characters per item. Should the user wish to place the characters into the items in less than 10 character parts, the cursor can be advanced to the next item. The “^” character is used to signal that intent. If the strings are shorter than required, all remaining items are left blank. Excess data is discarded. The Paste button causes the data to be inserted.

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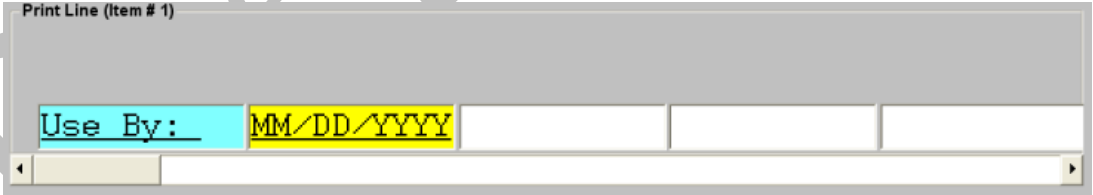
3.5 Edit Message Tab

The text setup screen is divided into three sections: One section showing an approximation of what the line will look like, another section allowing attributed data to be inserted into the line, and a third section containing the controls for manipulating the text and templates..

3.5.1 Text Entry



The line approximation section shows the text to be written to the printer. The height of the box is proportional to the font height. The width is proportional to the font width times the number of characters. If no text is entered into the item, room for a single character to be displayed is shown so that text can be entered and deleted from the box. Selecting Full Width displays all items at their maximum of 10 characters. The text is underlined so that a space character can be distinguished from an empty character position.



For all information except print text, the information is saved as it is entered. For print text, the information is saved after the user has finished entering all text and signals that intention by clicking the “Save Text” button. Should the user wish to retrieve the print text at the last save, clicking the “Reload Text” reloads the text from the database. “Clear Text” removes the text from all items. More information about these buttons will be provided later.

The color of the item indicates the following:

- Light Blue – The item is the selected item
- Dark Blue – The text is selected so typing a character or hitting any edit key causes the selected text to be deleted
- Yellow – The item is not selected, but contains attributed data
- Red – The item contains invalid data that will cause an error if sent to the printer

3.5.2 Data Attributes

It is necessary to augment the print text being sent to the printer with Calendar, Count, User Pattern, Database Reference ([X]), and Operator Solicitation ([n]) information. This is referred to as attributed data.

3.5.2.1 Calendar/Calendar Conditions

Calendar	Calendar Conditions	Count/Conditions	Pattern
Insert Year (1-4)	Insert Hour (1-2)	Insert Total Days (1-3)	
Insert Month (1-2)	Insert Minute (1-2)	Insert Week Number (1)	
Insert Day (1-2)	Insert Second (1-2)	Insert Day of Week (1)	
Insert Jan-Dec (3)	Insert Shift Code (1)		

Click the Calendar buttons to cause the attributed character to be placed in the currently selected item at the current insert point. A place-holder character is placed in the item and the item background turns yellow when a different item is selected. Note: There is currently no way for PXRView to transmit “Shift Code” data to the printer.

Calendar	Calendar Conditions	Count/Conditions	Pattern
	<u>Offset</u> <u>Z/S</u> Year 0000 <input type="checkbox"/>	<u>Offset</u> <u>Z/S</u> Hour 0000 <input type="checkbox"/>	
	Month 0000 <input type="checkbox"/>	Minute 0000 <input type="checkbox"/>	
	Day 0000 <input type="checkbox"/>		

If any calendar-attributed data is placed in an item, all offset values must be given a value. However, Zero Suppression (Z/S) can only be specified if the corresponding item uses that calendar attribute.

3.5.2.2 Count Conditions

Calendar	Calendar Conditions	Count/Conditions	Pattern
	Initial Value 0000	Jump From 0000	Feature (Unchecked / Checked)
	Start Value 0000	Jump To 0000	<input type="checkbox"/> Direction (Up/Down)
	End Value 0000	Increment 01	<input type="checkbox"/> Ext. Sig.(Disable/Enable)
	Update (I/P) 0000	Reset 0000	<input type="checkbox"/> Reset Signal (Sig1/Sig2)
	Update (Unit) 0000		Insert Count (1-4)

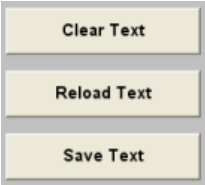
Click the Count Button to cause the count attribute character to be placed at the current insert point in the current item. All values must be set.

3.5.2.3 User Pattern

Calendar	Calendar Conditions	Count/Conditions	Pattern
		Registry #	
		01	
			Insert Pattern(1-10)

Click the Pattern button to place the user pattern character associated with the registry number into the item. The registry number is then incremented.

3.5.3 Text Tab Buttons



Three buttons are provided for manipulating the text input.

“Clear Text” sets all items in the print specification to the empty string. “Reload Text” retrieves the data from the database and places it in the display. “Save Text” writes the text to the underlying database.



Two buttons are provided for manipulating templates.

“Load Text from Template” takes the previously saved template text and loads it into the display for editing. “Save Text to Template” takes the text in the display and saves it away as a template. These buttons are visible only when the External Database is enabled.

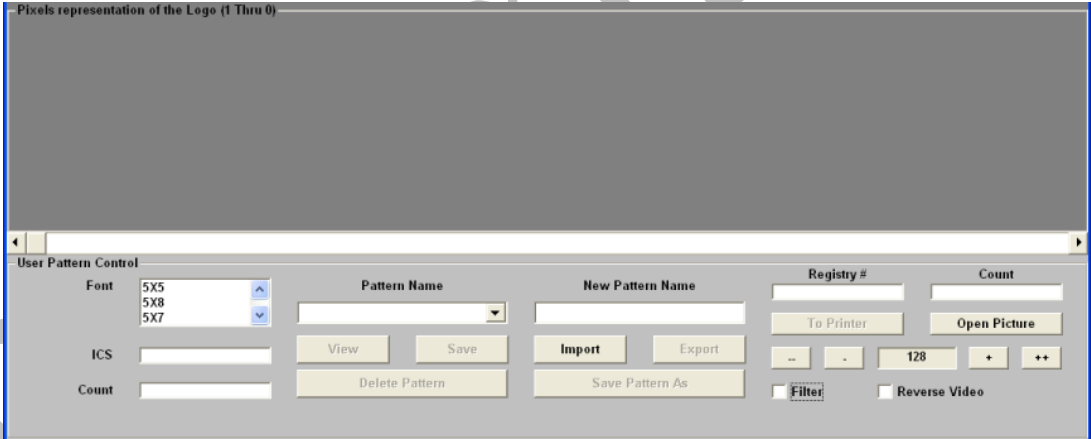
3.6 User Pattern Tab

The user pattern area is broken into two parts: A display area that shows the pixels for the current pattern being manipulated and a set of controls for:

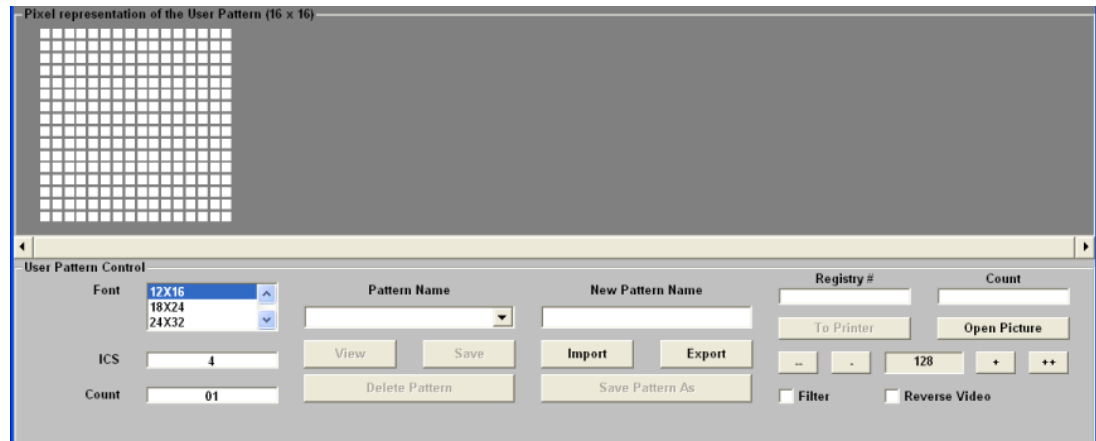
- Allocating
- Loading
- Converting
- Editing
- Saving a user pattern.

3.6.1 Allocating

To create a user pattern, the first task is to allocate the pattern area by specifying the Font, Inter-character Space and Character Count to be used.



Once the Font, Inter-character Space and Character Count are selected, the pixels for the current pattern are displayed. A slide bar at the bottom can be used to shift the display.



See the Editing Section for inserting the pixels.

3.6.2 Loading

Previously saved user patterns can be retrieved from the text files.



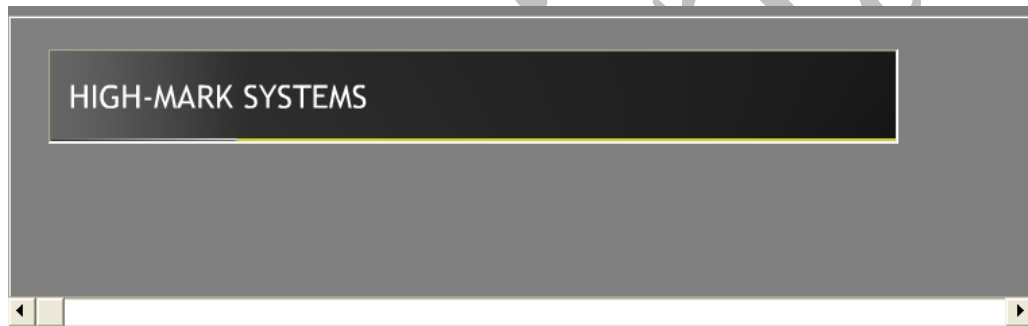
Retrieve user patterns saved in the database by selecting the Pattern Name button from the dropdown list and clicking the View button. The pattern is then displayed.

3.6.3 Converting a Picture to a User Pattern

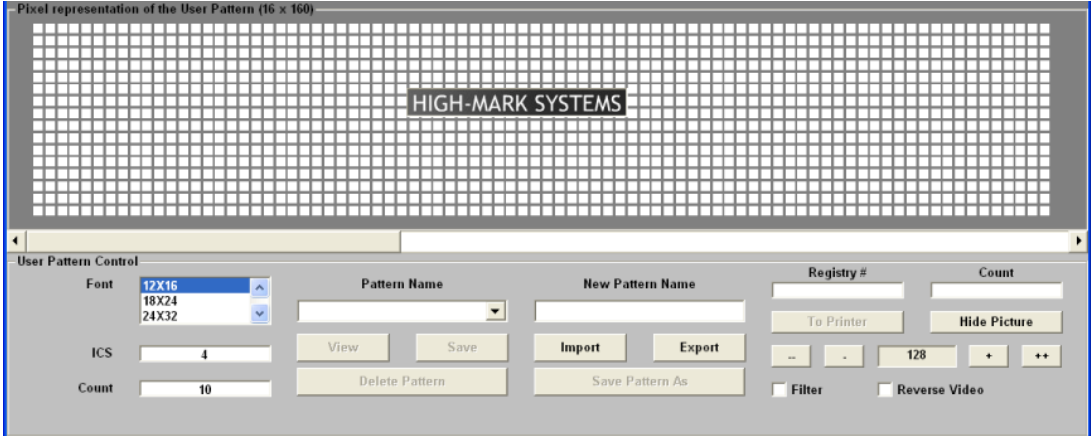
The Open Picture button allows the user to browse to any valid picture (.gif, .jpg, etc..) to be loaded into the pixel area.



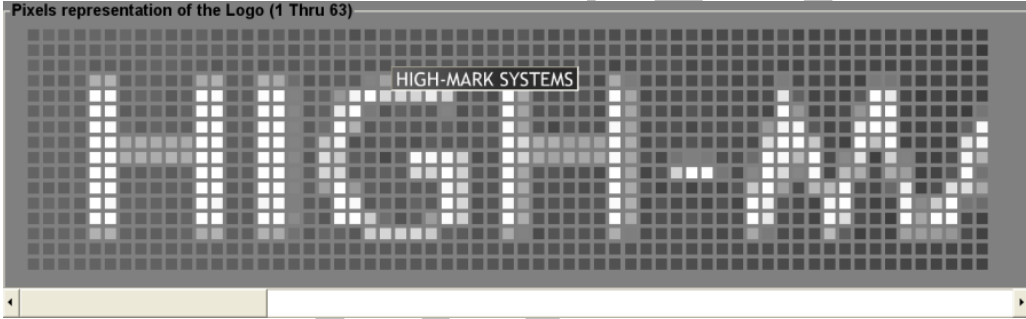
Should a picture extend off the edge of the screen, use drag and drop to reposition the picture so all of the picture can be viewed in the following screen. If the picture is too large, it must be resized before it can be loaded.



Next allocate the pixels by selecting the Font, ICS and number of characters it will occupy.



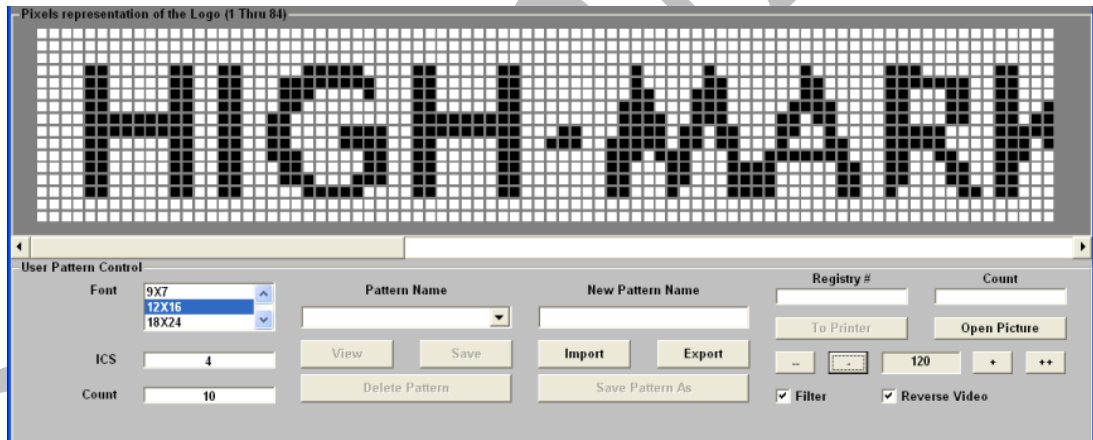
Double click on the picture to copy it to the pixel area.



3.6.4 Editing

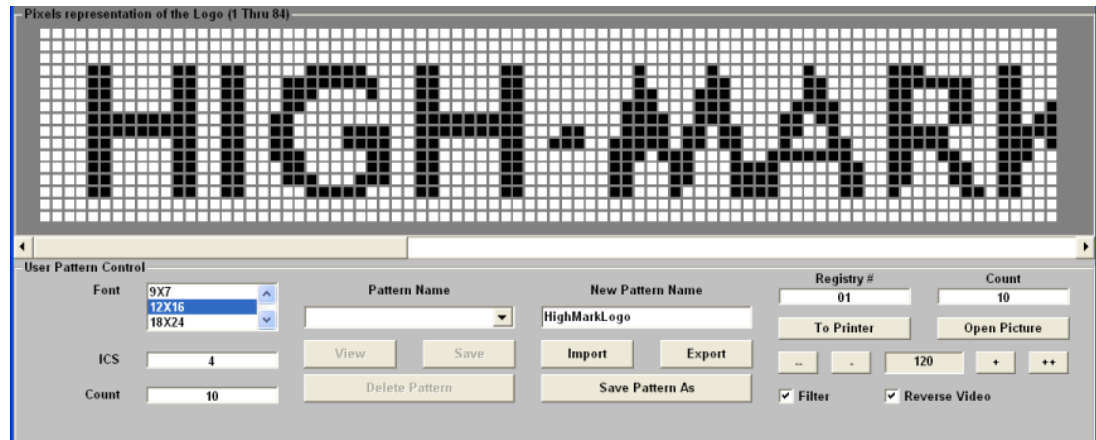


There are several methods available for editing the user pattern. The first one is using a grayscale filter to select the breaking point between ink and no ink. Click the Filter checkbox and use the minus and plus buttons to slide the scale.



Click the reverse video button to invert the ink/no-ink rendering. Click a pixel to cause the ink/no-ink setting to be inverted. Hold down the Shift key and move the mouse over the pixels to cause the ink setting for the pixel(s). Hold the Control key and move over the pixels to cause the no-ink setting for the pixel(s)

3.6.5 Saving

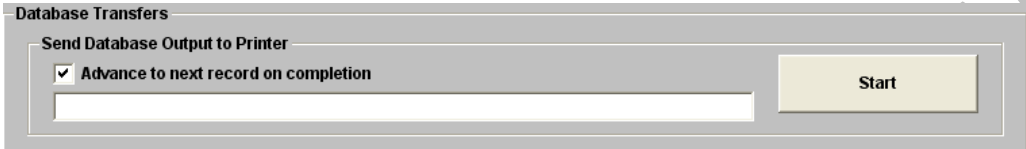


Once the User Pattern matches the desired look, it can be saved in a manner of ways.

- Export– Save the pattern in the host PC's file system
- Delete Pattern – Delete a previously saved pattern
- Save– Overwrite a previous pattern in the database
- Save Pattern As – Save as a new entry in the database
- To Printer – Send the pattern to the printer

3.7 Database Tab

The database provides the capability of testing the rates that data can be sent to the printer. The database can be loaded with data (currently contains a number of song titles for demo purposes). After pressing start, PXRView sends a new message from the database to the printer each time it receives a notification that the previous message has started printing. This demo requires the SOP4 Kit be installed and overwrite protection feature be turned off.



Adapting this concept to a user's needs can be provided by HighMark for an additional fee.

Preliminary

3.8 Maintenance Tab

The Diagnostics area has four tabs:

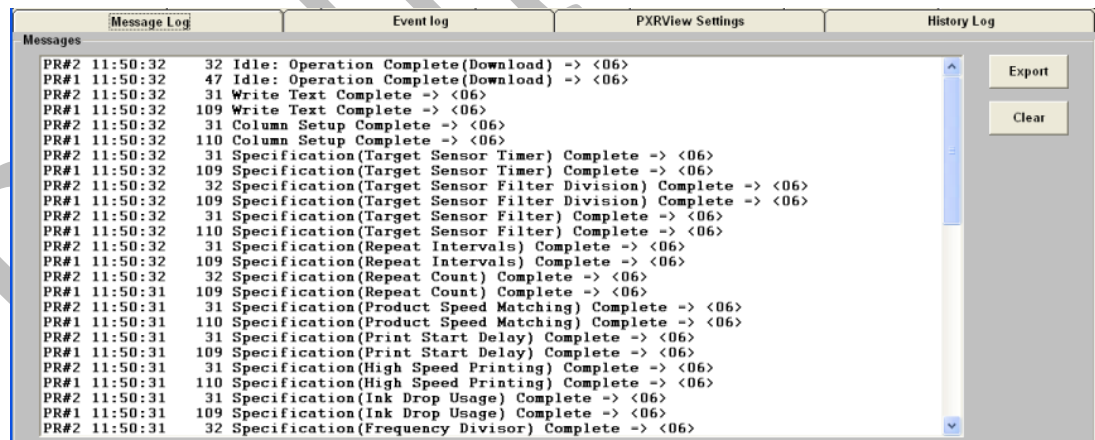
- One for the Message Log about the progress of the execution
- Another for the Event Log that contains traffic to/from the printer
- Another for the PXRView Settings tab for password and license control
- Another for the History Log tab of messages printed

The displays always have the most recent entry at the top and give the time the event occurred and the interval in milliseconds between this entry and the previous entry.

The Export and Clear buttons are always visible and apply to the currently visible tab. When exporting the Message Log, Event Log or History Log, the user is solicited for the location to save the export file. The Message Log and Event Log files are saved with the .txt extension. The History file is saved with the .xls extension. The order of the entries is inverted when the file is exported so that the oldest entry is on top.

3.8.1 Message Log

The Message Log contains the printer number, a timestamp, time interval in milliseconds, and messages generated during the execution of the program.

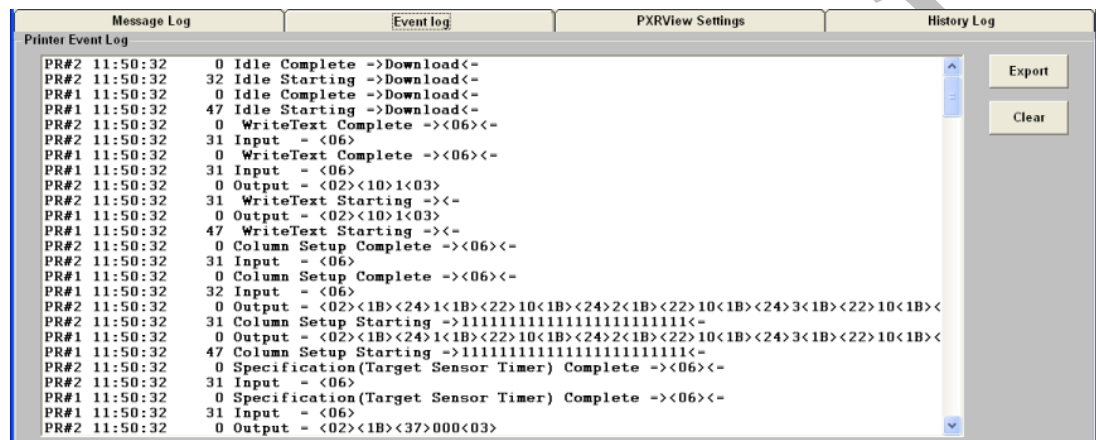


3.8.2 Event Log

The Event Log has the same printer number, timestamp and time interval as the messages tab.

“Input =” and “Output =” indicate PC initiated traffic. “Input* =” and “Output* =” indicate printer initiated traffic. Within the Event Log, unprintable characters are converted to <xx> (hex) for known control characters, and printed as plain text for printable ASCII characters.

A “Starting” and “Complete” log entry provides an envelope around each operation for ease of reading.



3.8.3 PXRView Settings

The maintenance tab provides three functions:

- Allows a password to be entered so that access to different program functions can be controlled. The Passwords are:
 - Master – Allows complete access -- Contact HighMark for password
 - Administrator – Allows complete printer control – “secret”
 - Supervisor (Default) – Allows limited printer control – “super”
 - Operator – Very limited control – No Password
- Allows the current PXRView License to be updated. For licenses that are for operation on a single PC, the License ID for the PC is an identifier for the PC. You will be asked for this ID when you request the license.
- Allows the PXRView.ini file to be edited.

The screenshot displays the 'PXRView Settings' window with four tabs: Message Log, Event log, PXRView Settings (selected), and History Log. The main content area is titled 'Miscellaneous Controls' and is divided into three sections:

- Password Control:** Includes an 'Enter Password' text field, a 'Current security level: Master' label, and 'Enter' and 'Clear' buttons.
- License Control:** Shows 'Current License' as 53-49748-91907-73685614. It has two checkboxes: 'Valid only for this PC' (checked) and 'Valid only for this printer' (unchecked). Below, 'The License ID for this PC is:' is followed by the value 68910. A note states 'Your license is valid until 12/31/2008'. There is an 'Update License' button and contact information: 'To Obtain a License, Call: 1.763.428.9959 or 1.866.364.8078'.
- Configuration Control:** Features an 'Edit PXRView.ini' button and a red warning message: 'If PXRView.ini is changed, you must Restart PXRView.exe'.

3.8.4 History Log

The history tab provides a history of all messages loaded in the printer and the number of times each message was printed. A new entry is added to the history file when:

1. The “Download One” button is pressed.
2. The “Load Message” button is pressed
3. A print complete interrupt is received by PXRView after it has started execution but before items 1 or 2 have been pressed. In this case, it is assumed that the information associated with that printer was the last message loaded.

Operation	Print Specification	Print Format	Edit Message	User Pattern	Database	Maintenance
Message Log		Event log		PXRView Settings		History Log
Print History						
Printer	Group	Msg #	Name	Count	Start Time	Last Print
Printer01	(Default)	001	Default	0	12/20/08 8:09	
Printer01	(Default)	001	Default	0	12/20/08 8:05	
Printer02	SAMPLE_P2	001	Apple	0	12/20/08 8:02	
Printer01	(Default)	001	Default	0	12/17/08 17:54	
Printer01	UploadAll	003	CH06095	1	8/12/08 13:40	8/12/08 13:40
Printer01	UploadAll	003	CH06095	1	8/12/08 13:39	8/12/08 13:39
Printer01	UploadAll	003	CH06095	2	8/12/08 13:38	8/12/08 13:38
Printer01	UploadAll	003	CH06095	2	8/12/08 13:37	8/12/08 13:38
Printer01	UploadAll	003	CH06095	0	8/12/08 13:36	
Printer01	UploadAll	005	MID WEST	0	8/12/08 13:35	
Printer01	UploadAll	003	CH06095	0	8/12/08 13:35	
Printer01	UploadAll	003	CH06095	0	8/12/08 13:33	
Printer01	UploadAll	003	CH06095	0	8/12/08 13:33	
Printer01	UploadAll	003	CH06095	1	8/12/08 13:32	8/12/08 13:33
Printer01	UploadAll	007	Production	1	8/12/08 13:30	8/12/08 13:30

Display

Current

Archive

All

Export

Clear

Archive

The order of the data can be modified by clicking on the column headings. Clicking twice inverts the order of the sort. Clicking two different columns, say “Count” then “Msg #”, will result in order by “Count” within “Msg #”.

Messages can be hidden from the current view by clicking the Archive button. For instance, if at the start of each shift, the Archive button is clicked, only messages printed within that shift will be displayed. However, the messages can still be displayed by selecting the “Archive” or “All” radio buttons.

The message history can be moved to an Excel Spreadsheet for saving or reporting. Microsoft Excel must be installed on the machine for this feature to work.

The contents of the currently visible portion of the history file can be deleted (generally after an Export). If the Display radio “Current” (or “Archive”) button is selected, only the current (or archived) entries are cleared. Select the Display All to clear all entries. Supervisor privilege is required to delete the contents.

4 Create / Download New Message

Below is the standard procedure to create and download a new message:

1. Create a new group and message

- a. Click on Print Specification Tab
- b. Click on NEW button next to Group Name
- c. Type a new unique group name
- d. Click on the down arrow and select a message number for the new message
- e. Enter a new unique message name
- f. Press SAVE? Button

2. Define Line Layout

- a. Click on Print Format Tab
- b. Click on EDIT LINE LAYOUT button
- c. Click on down arrow under Overall Column Setup to define number of lines to be printed
- d. Select CUSTOM if the number of printed lines will vary in a single message
- e. Press EDIT LAYOUT COMPLETE when finished

3. Define Item Format

- a. Click on item number to define the font, character spacing, width, etc.
- b. Multiple items can be selected by pressing the CTRL or SHIFT key while clicking on the item number. When selected, the item will be RED
- c. Define Font, Spacing, Width, Etc.

4. Create Message Content

- a. Click on Edit Message Tab
- b. Click on item box and enter text
- c. Insert variable Calendar and/or Count items by clicking appropriate buttons within corresponding tabs
- d. Inset Patterns or Logos by clicking on INSERT PATTERN button located on Patten Tab
- e. The item box background will change to yellow to indicate that the data is attributed

5. Download Single Message to Printer

- a. Click on Operation Tab
- b. Connect to printer by clicking on CONNECT button
- c. Select Message Name / Group Name to be downloaded
- d. Define storage location for message on printer by selecting Use Message #.
- e. Press DOWNLOAD ONE button

Alternately to step 5, all messages in a group can be downloaded with a single step.

6. Download All Messages to Printer

- a. Click on Operation Tab
- b. Connect to printer by clicking on CONNECT button
- c. Select Group Name to be downloaded
- d. Press DOWNLOAD ALL button