PM**23c** | PM**43** | PM**43c**

Mid-Range Printer

User Manual

Document Change Record

This page records changes to this document. The document was originally released as Revision 001.

Version Number	Date	Description of Change
003	3/2014	Added updated information on installing InterDriver.
002	9/2013	Updated to support the release of the PM23c printer.

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Contents

Before You Begin

This section provides you with safety information, technical support information, and sources for additional product information.

Safety Information

Your safety is extremely important. Read and follow all warnings and cautions in this document before handling and operating Intermec equipment. You can be seriously injured, and equipment and data can be damaged if you do not follow the safety warnings and cautions.

This section explains how to identify and understand warnings, cautions, and notes that are in this document.

Warning: A warning alerts you of an operating procedure, practice, condition, or statement that must be strictly observed to avoid death or serious injury to the persons working on the equipment.

Caution: A caution alerts you to an operating procedure, practice, condition, or statement that must be strictly observed to prevent equipment damage or destruction, or corruption or loss of data.

Note: Notes either provide extra information about a topic or contain special instructions for handling a particular condition or set of circumstances.

Safety Precautions

Note: You may use this printer on an IT power system.

Warning: Moving parts are exposed when the cover is open. Make sure the cover is closed before you operate the printer.

Warning: Do not open the electronics cover. Dangerous voltage!

Warning: Do not remove the bottom plate. Dangerous voltage!

Warning: Do not put your fingers inside the print mechanism when the power is on.

Caution: Double pole/neutral fusing.

Caution: Do not spray the printer with water. If you are using a hose to clean the premises in an industrial environment, remove the printer or protect it carefully from spray and moisture.

Caution: Make sure you place the printer on an even surface that can safely support its weight and supplies.

Caution: You must implement both hardware and software safety precautions to prevent the possibility of undefined system states.

Caution: You must ensure that dangerous conditions cannot occur under any circumstances, even for a brief period of time.

Caution: Observe all safety and accident prevention regulations applicable to your specific region and application.

Caution: Before you use a cleaning card, carefully read the warning text on the envelope.

Product Identification

The machine labels are attached to the underside of the printer and contain information on type, model, serial number, and AC voltage. This document provides warnings regarding personal safety during operation of the printer.

Global Services and Support

Warranty Information

To understand the warranty for your Intermec product, visit the Intermec web site at **www.intermec.com** and click **Support** > **Returns and Repairs** > **Warranty**.

Web Support

Visit the Intermec web site at **www.intermec.com** to download our current manuals (in PDF).

Visit the Intermec technical knowledge base (Knowledge Central) at **www.intermec.com** and click **Support** > **Knowledge Central** to review technical information or to request technical support for your Intermec product.

Send Feedback

Your feedback is crucial to the continual improvement of our documentation. To provide feedback about this manual, please contact the Intermec Technical Communications department directly at **TechnicalCommunications@intermec.com**.

Telephone Support

In the U.S.A. and Canada, call **1-800-755-5505**.

Outside the U.S.A. and Canada, contact your local Intermec representative. To search for your local representative, from the Intermec web site, click **About Us** > **Contact Us**.

Who Should Read This Manual

This user manual provides you with information about the features of the PM23c, PM43, and PM43c printers, and how to install, configure, operate, maintain, and troubleshoot them.

Related Documents

The Intermec web site at **www.intermec.com** contains our documents (as .pdf files) that you can download for free.

To download documents

1 Visit the Intermec web site at **www.intermec.com**.

2 Click the **Products** tab.

3 Using the **Products** menu, navigate to your product page. For example, to find the PM43 printer product page, click **Printers and Media** > **Industrial Printers** > **PM43 Mid-Range Printer**.

4 Click the **Manuals** tab.

If your product does not have its own product page, click **Support** > **Manuals**. Use the **Product Category**, the **Product Family**, and **Product** to find your documentation.

1

About the Printer

This chapter introduces the PM23c, PM43, and PM43c printers, and includes descriptions of printer features and basic operation.

About the PM23c, PM43, and PM43c Printer

The PM23c, PM43, and PM43c printers are rugged label printers that include integrated USB, RS-232, and Ethernet interfaces. You can connect the printers to a single desktop PC, to a wired network, or to a wireless network.

Features of both printers include:

• Print speeds of up to 10 ips (406 dpi printhead) and 12 ips (203 and 300 dpi printhead).

• USB host port for connecting storage devices, scanners, or keyboards.

• USB device port for connecting to a desktop PC.

• Support for printer programming languages including Intermec Fingerprint, Intermec Printer Language (IPL), Direct Protocol, DSim, and ZSim.

• A wide range of printer accessories.

• CCXv4 certified.

The PM23c, PM43, and PM43c printers with an IEEE 802.11b/g/n radio installed are Wi-Fi® certified for interoperability with other 802.11b/g/n wireless LAN devices.

Printer Features

Use these illustrations to familiarize yourself with the PM23c, PM43, and PM43c printers. Most of the illustrations in this manual show the PM43 printer. The internal parts and back connectors are the same for all printer models.

Media cover

User interface

Print button
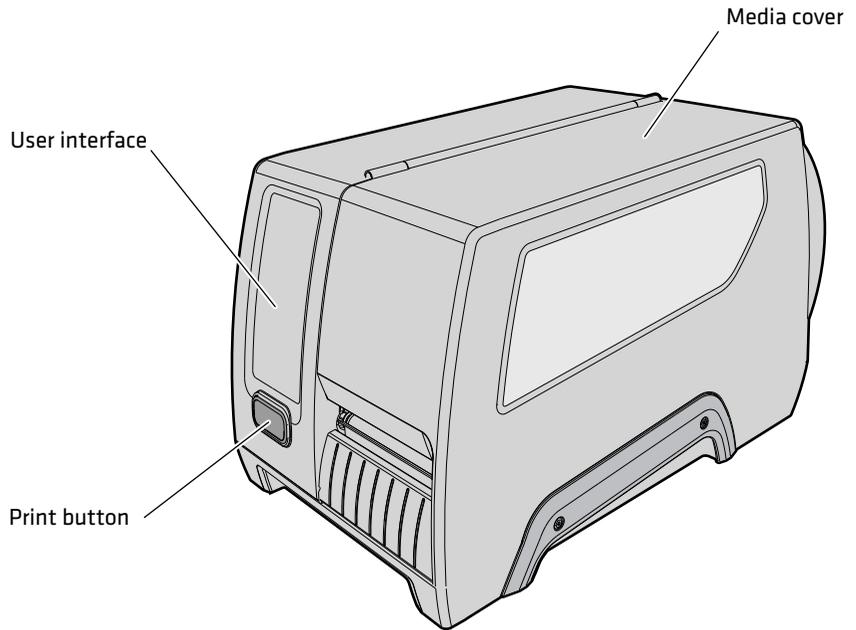
Front View of PM43 Printer

Media hanger

Ribbon supply

Ribbon takeup

Printhead lever

Gap sensor adjustment wheel
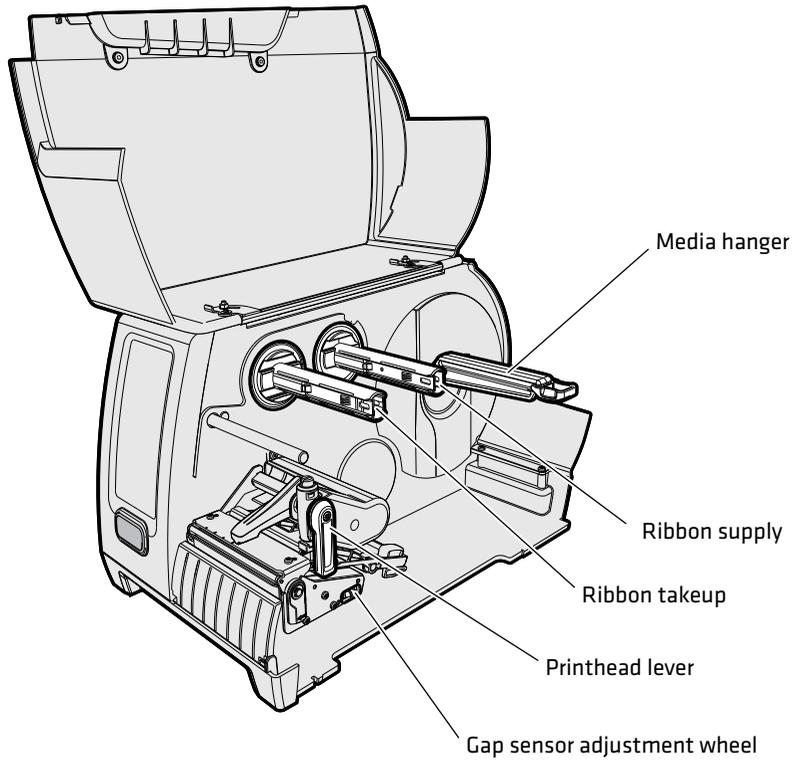
Internal View of the PM43 Printer

On/off switch

Ethernet port

RS-232 serial port

USB device port

USB host port

AC Power
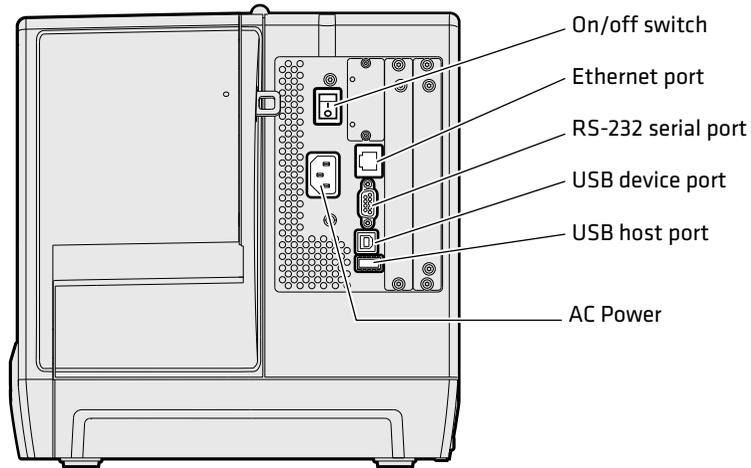
Back View of the PM43 Printer

About the Front Panel

There are two front panels available for the PM23c, PM43, and PM43c printers:

- Icon (no display)
- Full touch display

Both versions of the front panel contain the Print button and the Ready-to-Work indicator. The PM43 with the full touch display also has a USB port on the front panel.

About the Ready-to-Work Indicator

The Ready-to-Work indicator on the front of the printer turns on when the printer is ready to print.

Ready-to-Work Indicator Location

Ready-to-Work Indicator Status	Description
On	Printer is ready for a print job.
Blinking	Printer is not ready for a print job.
Off	Printer is turned off, not communicating, or not ready to print. For example, the printer may be starting up or performing a firmware upgrade.

About the Print Button

The blue button on the front panel is the Print button. All models of printer have a blue Print button. Use the Print button to feed media, pause print jobs, and print. Use this table to understand the functions of the Print button.

Print Button Behavior

State of the Printer	Printer Behavior
Starting	Press the **Print** button during startup to enter Calibration mode or to restore defaults if the printhead is lifted.

Print Button Behavior (Continued)

State of the Printer	Printer Behavior
Ready	Press the **Print** button to advance media.
	Press and hold the **Print** button for more than two seconds to perform a test feed.
	If the print key feature is enabled (on), the printer reprints the last print job.
Printing	Press the **Print** button to stop or pause printing. The printer will stop after it completely prints one label.
Paused	Press the **Print** button to resume printing.
Error	Press the **Print** button to advance media if possible.

About the Icon Front Panel

The icon front panel contains icons that light up to indicate printer communications, printer errors, and maintenance issues.
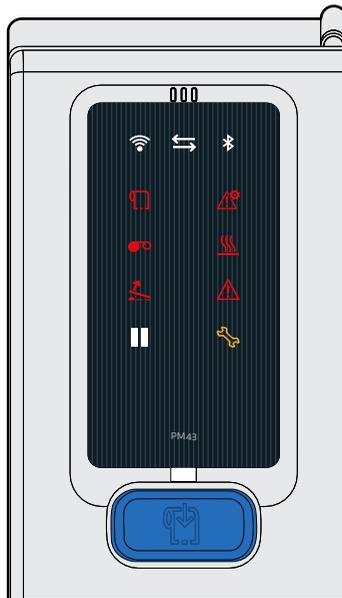
Icon Front Panel on a PM23c, PM43, and PM43c Printer

Use this table to understand what it means when an icon lights up.

Names and Descriptions of Front Panel Icons

Icon	Name	Color	Description
	Wi-Fi Communications	White	Wireless signal.
		Off	Wireless radio disabled or not installed.
	Connectivity	Flashing white	Sending or receiving data.
		Off	No data is being sent or received.
	Bluetooth	White	Bluetooth is enabled.
		Off	Bluetooth is disabled or not installed.
	Media	Red	Out of media or there is a problem with the media (jammed, not loaded correctly). If the printer has a label taken sensor installed and enabled, this icon indicates that a label has been printed but not yet removed.
		Off	Media is available and loaded correctly.
	Configuration Error	Red	There is a printer configuration problem.
		Off	There are no configuration problems.
	Ribbon	Red	Ribbon is out or there is a problem with the ribbon.
		Off	Ribbon is not having any problems or the printer is not configured to use ribbon.
	Printhead Hot	Red	The printhead is too hot.
		Off	The printhead temperature is normal and the printer is ready for printing.
	Printhead Lifted	Red	Printhead is lifted.
		Off	Printhead is lowered.
	General Error	Red	There is a printer problem not associated with one of the other icons.
		Off	There are no general errors.
	Pause	White	The printer is paused.
		Off	The printer is not paused.

Names and Descriptions of Front Panel Icons (Continued)

Icon	Name	Color	Description
	Maintenance	Amber	Maintenance is required and a lifetime odometer setting has been reached.
		Flashing amber	The firmware is being upgraded, the printer is recovering or restoring the firmware, or the printer is calibrating. Once the process is complete, the printer will turn off.
		Off	No maintenance is required.

About the Full Touch Display Front Panel

The full touch display front panel contains a 3.5-inch touch panel and a keypad for entering information or navigating through the user interface.

The Full Touch Display Front Panel on a PM43 and PM23c Printer

The full touch screen is a resistive touch panel that supports touch input with fingers, gloved hands, or a stylus. You only need to touch the screen once to make a selection.

Use the keys on the front panel to enter information into the screen or to navigate the Main Menu if the touch screen is not working properly. All of the full touch display printers contain these keys on the front panel: 0 to 9, Enter, . (period), - (minus), Clear, F1 to F5, and an Orange (Shift) key.

Shortcut Keys on the Full Touch Display Keypad

Navigation	Shortcut Keys
Enter the Main Menu	**. (period)/- (minus)**
Arrow Up	**8**
Arrow Down	**2**
Arrow Left	**4**
Arrow Right	**6**
Enter in Menu	**Enter** button
Break in Fingerprint Application	**Orange** + **C**

About the Ready Screen

After you turn the printer on, the Ready screen appears when the printer finishes starting up.
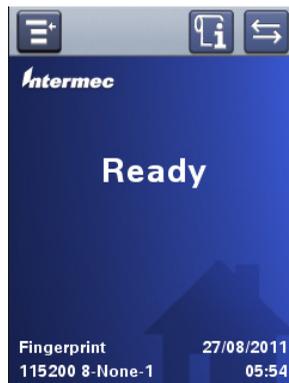
PM23c, PM43, and PM43c Ready Screen

Note: Icons for Wi-Fi and Bluetooth status appear only when the optional Wi-Fi/Bluetooth module is installed. The IP address appears when the printer is connected to an Ethernet or wireless network. If there is not Ethernet or wireless connection, serial port information appears on the screen.

By default, the information bar at the bottom of the screen shows the printer command language and the printer IP address. You will see the time and current date only if the real time clock (RTC) is installed. You can customize the screen as necessary to show different kinds of information.

The status bar at the top of the screen includes these icons:

Information and Status Icon Descriptions

Icon	Description of Icon
	Printer Information icon. Press the icon to view printing related settings and system information.
	Wireless Connection icon. This icon appears when the Wi-Fi/Bluetooth module is installed in the printer and indicates the strength of the wireless network connection:
	- Strong.
	- Good.
	- Weak.
	- No signal.
	- 802.11 is turned off.
	Press the icon to view status and signal strength.
	Data transfer icon. Blinks when data is moving through an interface connection to the printer. Press the icon to view detailed information on the connection.
	Bluetooth icon. This icon appears when the Wi-Fi/Bluetooth module is installed in the printer and indicates whether the Bluetooth module is enabled or disabled:
	- Bluetooth is turned on.
	- Bluetooth is turned off.
	Press the icon to view detailed Bluetooth information or to use the Bluetooth wizard.

About the Main Menu

In the printer Ready screen, press ▤ to view the Main Menu.

Press one of the buttons to select the Programs, Settings, Tools, or Wizards menu:

- Select **Programs** to see a list of programs installed on the printer. This list includes utility programs provided by Intermec as part of the printer firmware, and programs you have installed on the printer.

  The **Programs** item appears in the Main Menu only if the printer is using Fingerprint or Direct Protocol as the command language.

- Select **Settings** to view and change printer settings.

- Select **Tools** to print test labels, manage a connected USB storage device, restore printer default settings, or save and load printer profiles.

- Select **Wizards** to see a list of wizards that help you configure printing or communication settings, or calibrate the media sensors.

Note: The printer cannot print while the Main Menu is onscreen. You need to exit the Main Menu and return to the Ready screen to begin printing.

How to Navigate in the Main Menu

Use the status bar buttons to navigate between menus in the Main menu and save changes.

Main Menu Buttons and Descriptions

Button	Description
	Returns to the Main menu.
	Goes back up one level in the menu.
	Returns to the Ready screen.
	Saves the configuration changes.
	Moves between options in a setting menu.
	Moves to additional options not viewable in the menu.

Use the horizontal scroll bar for settings with options you can select. Use the onscreen keypads to enter data for the settings.

About the Onscreen Keypads

You can use the onscreen alphanumeric or numeric keypads to make changes to your settings.

Alphanumeric Keypad

Numeric Keypad

Extended Numeric Keypad

For all keypads:

- Press ⌫ to delete the last character you entered.
- Press the available keys to enter your information.

For the alphanumeric and extended numeric keypad:

- Press **123** or **ABC** to toggle between the alphabetic and numeric keys.
- In the alphabetic keypad, press ⇧ to toggle between uppercase and lowercase letters.

- In the numeric keypad, press 🔼 to toggle between shifted and unshifted key characters. For example, press the up arrow to toggle between $ and # in the numeric keypad.

When you are finished typing, press ↵ to return to the menu and then save your information.

About the Printer Wizards

The full touch printer firmware includes several wizards you can use to quickly set up your printer. The available wizards depend on the hardware you have installed in the printer. You can start all of the wizards from the Main menu except for the startup wizard. The startup wizard appears the first time you turn on the printer and after the printer has been reset to the factory default state.
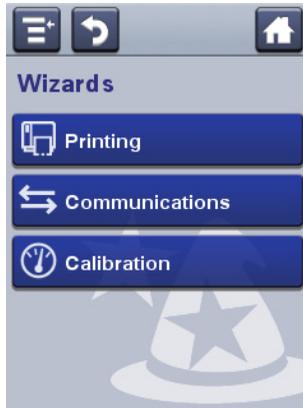
Printing Wizards

Wizard	Description
Media Setup	Select media and printing type (DT or TTR), media width, length, and X-margin, Start and Stop Adjust values, and print speed.
Print Quality	Prints a series of labels to determine the best print quality setting.
Loading Media	Shows how to load media.
Loading Ribbon	(TTR printers only) Shows how to load ribbon.

Communications Wizards

Wizard	Description
Line Analyzer	Logs all incoming data on all communications channels and saves the data to a log file. For experienced users.
Wireless 802.11	Looks for wireless networks and sets up Wi-Fi communications. Available when Wi-Fi/Bluetooth module is installed.
Bluetooth	Looks for discoverable Bluetooth devices and sets up Bluetooth communications. Available when Wi-Fi/Bluetooth module is installed.

Calibration Wizards

Wizard	Description
Media	Calibrates the label gap sensor and shows current print settings.
Screen	Calibrates the touch screen.
RFID	Calibrates the optimal label adjustment and output power setting for the RFID media loaded in the printer. Available when the RFID module is installed.
Label Taken Sensor	Calibrates the label taken sensor used with the label dispenser. Available when the label taken sensor is installed.

About Printer Command Languages

A printer command language is a set of instructions that controls printer functions:

- Configure the printer.
- Return the status of the printer.
- Control peripheral devices.
- Format a label or receipt for printing.

The printer supports these command languages and language simulator support options:

- Fingerprint
- Direct Protocol (DP)
- IPL (Intermec Printer Language)
- ZSim (ZPL command language simulator)
- DSim (DPL command language simulator)
- Smart Printing

About Fingerprint

Fingerprint is a BASIC-inspired general purpose printer language. Use Fingerprint to design custom label formats and write printer application software. If you plan to run Smart Printing applications directly on the printer, without connecting to a PC, select Fingerprint as your printer command language. For more information, see the **Intermec Fingerprint Command Reference Manual**.

The printer uses the Fingerprint printer command language by default.

About Direct Protocol

Direct Protocol (DP) is a subset of Fingerprint that uses a more intuitive English-like syntax. This flexible host-based printer command language can also be used with Smart Printing applications. Direct Protocol lets you combine predefined layouts and variable data to create labels, tickets, and tags. If you are using bar code software, like BarTender, select Direct Protocol as your printer command language.

About IPL

IPL (Intermec Printer Language) is a host-based printer command language. Use IPL to design, modify, and download label formats; write printer application software; and configure the printer. If you are sending IPL label files to the printer, select IPL as your printer command language. For more information, see the **IPL Command Reference Manual**.

About ZSim

ZSim (ZPL command language simulator) interprets Zebra™ programs (ZPL II or later) without requiring any host programming changes. If you are sending ZPL label files to the printer, select ZSim as your printer command language. For more information, see the **ZSim Command Reference Manual**.

About DSim

DSim (DPL command language simulator) interprets Datamax™ data streams without requiring any host programming changes. If you are sending DPL label files to the printer, select DSim as your printer command language. For more information, see the **DSim Command Reference Manual**.

About Smart Printing

Smart Printing refers to the ability of the printer to independently run printing operations without being connected to a host computer. If you are running printer-based applications written in C#, select Smart Printing as your printer command language.

For help creating Smart Print applications, go to the Intermec Developer Center at **www.intermec.com/developer**.

How to Set the Printer Command Language

You can use one of these methods to change the printer command language:

- Printer web page
- Main Menu
- PrintSet 5. For more information, see the PrintSet 5 online help.

Set the Command Language from the Printer Web Page

To set the command language from the printer web page, you need to turn on the printer and connect to your Ethernet or Wi-Fi network.

1 Make sure that the printer has media and ribbon (if necessary) installed.

2 On your PC, open a browser.

3 In the **Location** or **Address** bar, type the printer IP address and press **Enter**. The printer web page appears.

4 Click **Login**. The Login page appears.

5 Type your **Username** and **Password** and click **Login**. The default username is itadmin and the default password is pass.

6 Click the **Configure** tab.

7 Click **System Settings > General**.

8 Select a different printer command language from the **Command Language** list, and then click **Save**.

9 Click the **Services** tab.

10 Click **Reboot Printer**, and then click **Reboot**. The printer restarts in the command language you selected.

Set the Command Language from the Main Menu

If you have a full touch printer, you can use this procedure to change the printer command language from the Main Menu.

1 From the Ready screen, press the **Main Menu** button.

2 From the Main Menu, press**Settings > System Settings > General**.

3 Scroll down until you reach **Command Language**.

4 Use the horizontal scroll bar to select the command language you want to use and then save your change.

5 Turn the printer off and then on. The printer starts up in the command language you selected.

Printer Options and Accessories

You can use these printer options and accessories (sold and ordered separately) with the PM23c, PM43, and PM43c printers. Most options are either installed at the factory or can be installed by factory service technicians in the field. Accessories are designed to be installed by the customer.

PM23c, PM43, and PM43c Options and Accessories

Option or Accessory	Supported Printer	Description
1-inch Hanger	PM23c	Use the 1-inch hanger when you are using very narrow media.
Airline Boarding Pass	PM43c	Use the airline boarding pass option to print boarding passes from fanfold media. The airline boarding pass options include a ticket shelf, media guides, and an extended tray.
Airline Baggage Tag	PM23c, PM43c	Use the airline media guides and filler to easily load baggage tags in your printer.
Door with Bubble Top	PM23c	Use the bubble door when printing baggage tags on a roll and you need to have media fully covered.
Collapsible Core	PM43, PM43c	Use the collapsible core accessory to easily remove ribbon from the takeup hub.
Cutter	PM43, PM43c	Use the cutter option to cut media into individual labels.
Cutter Tray	PM43, PM43c	Use the optional cutter tray accessory to collect the cut-off labels.
Door with the Dome Cover	PM23c, PM43c	Use the dome cover to accommodate rolls of media up to 212.725 mm (8.375 inch) outside diameter and protect the inside of the printer from dust and debris.
Dual USB Host Port Board	PM23c, PM43, PM43c	Use the dual USB host port board to add the ability to connect multiple USB devices to the printer.
DUART Board	PM23c, PM43, PM43c	Use the DUART board to add two UART ports on the back of the printer.
Extended Base with Full Label Roll Rewinder	PM43	Use the extended base option with the PM43 printer to be able to rewind a full roll of labels.
Industrial Interface+UART board	PM23c, PM43, PM43c	Use the Industrial interface + UART board to make a UART port on the back of the printer.

PM23c, PM43, and PM43c Options and Accessories (Continued)

Option or Accessory	Supported Printer	Description
Label Dispenser with Rewinder and Label Taken Sensor	PM23c, PM43, PM43c	Use the label dispenser to peel labels from the backing and present the labels one at a time for application.
Label Taken Sensor	PM23c, PM43, PM43c	Use the label taken sensor with the label dispenser option to detect when labels are removed from the printer and another can be printed.
Large Edge Guide	PM43	Use the large edge guide to make sure that large rolls of media stay on the hanger.
Media Cover Lock	PM43	Use the media cover lock on the PM43 to make sure the media cover remains closed with an external lock.
Parallel IEEE 1284 Interface board	PM23c, PM43, PM43c	Use the parallel interface board to make a parallel port on the back of the printer.
Real Time Clock	PM23c, PM43, PM43c	Use the real time clock to keep track of the current time on the printer.
RFID Module	PM23c, PM43, PM43c	Use the RFID module to be able to print on RFID media. The PM23c can print RFID baggage tags.
Rotating Media Supply Hub	PM23c, PM43, PM43c	Use the rotating media supply hub with media that has a 76 mm (3 in) core. The PM43 hub supports up to 212.725 mm (8.375 in) outside diameter roll size. the PM23c and PM43c hub supports up to 152.4 mm (6 in) outside diameter roll size. The hub option also includes a paper low sensor.
Short Door	PM23c, PM43c	Use the short door to accommodate large rolls of media.
Touchless Configuration	PM23c, PM43, PM43c	Use the touchless configuration option to be able to configure the printer from an RFID reader.

PM23c, PM43, and PM43c Options and Accessories (Continued)

Option or Accessory	Supported Printer	Description
Wi-Fi+Bluetooth Module	PM23c, PM43, PM43c	Use the Wi-Fi+Bluetooth module to be able to communicate with your printer wirelessly.

2

Set Up the Printer

Use this section of the manual to learn what you need to do to set up the printer. You will find information about loading media and ribbon, printing a test label, calibrating the full touch screen, and adjusting the printer.

About Media

The printers can print on labels, tickets, tags, and continuous stock. The procedure you use to load media depends on how you are operating the printer and the options you have installed.

About Linerless Media

If you are printing on linerless media, follow these guidelines for best results:

- You must install the linerless roller accessory before printing. For more information on this accessory, contact your local Intermec representative.
- When removing printed labels on linerless media, tear the label up towards the top of the printer to prevent media jams.
- Do not use linerless media with the cutter accessory.

About Tear-Off Printing

For tear-off printing, you manually tear printed labels, tickets, and other printed media from the front of the printer. You can use these types of media for tear-off printing:

- Non-adhesive continuous stock
- Self-adhesive continuous stock with liner
- Self-adhesive labels with liner
- Tickets with gaps, with or without perforations
- Tickets with black marks, with or without perforations

Load Media for Tear-Off Printing

You can install an optional label taken sensor that detects when the current label is removed and prints the next label.

1 Open the media cover.

2 Turn the printhead lift lever counterclockwise to raise the printhead.
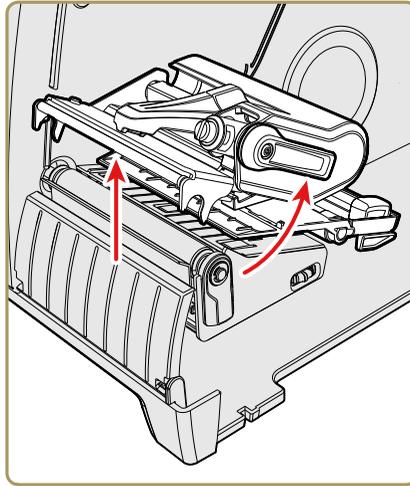
3 Load a media roll onto the media supply hub. Make sure you push the roll all the way against the inner wall of the printer and adjust the edge guide and the dancer guide to hold the media in place.
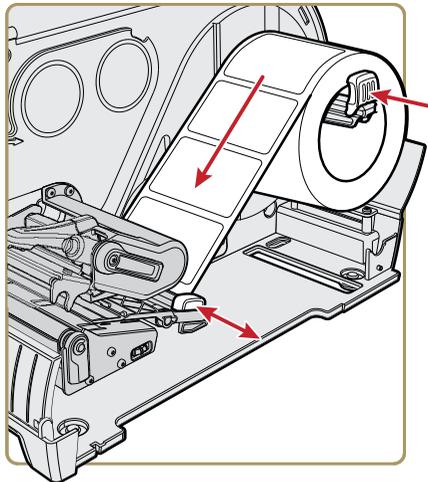
4 Route the media through the print mechanism.

5 Adjust the printhead balance. For help, see Chapter 6.

6 Turn the printhead lift lever clockwise to close the printhead.

7 Adjust the label gap and black mark sensor. The sensor LED should line up with the center of the media. For help, see Chapter 6.

8 Close the media cover.

9 Press the **Print** button to advance the media.

10 Configure the printer for the correct media type (media with gaps, black mark, continuous fixed length, or continuous variable length).

11 Calibrate the sensors on the printer. You can calibrate the media from the Main Menu (**Wizards > Calibration > Media**) on a full touch printer or from the web page (**Services > Media Calibration**) for all models of the printer.

12 Configure the start and stop adjust settings.

About the Label Dispenser

The label dispenser accessory, which includes the Label Taken Sensor, removes the liner from self-adhesive label stock as each label is printed. You manually remove the label at the front of the printer.

After you load media, you need to configure the feed adjust settings. You may need to adjust the recommended values slightly depending on your media type, supply method, and roll sizes, or because of individual differences between printers.

Load Media for the Label Dispenser

If you have the optional label dispenser installed in your printer, the printer will separate self-adhesive labels from the liner. The label taken sensor causes the printer to wait for you to remove a label before printing the next one. You can also install the internal media rewinder if you want to rewind the liner.

1 Open the media cover.

2 Turn the printhead lift lever counterclockwise to raise the printhead.
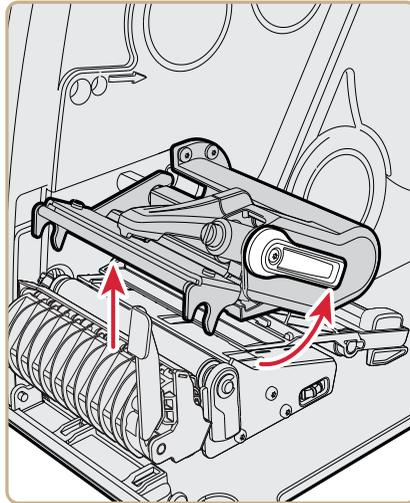
3 Pull down on the label dispenser lever to open the media path.
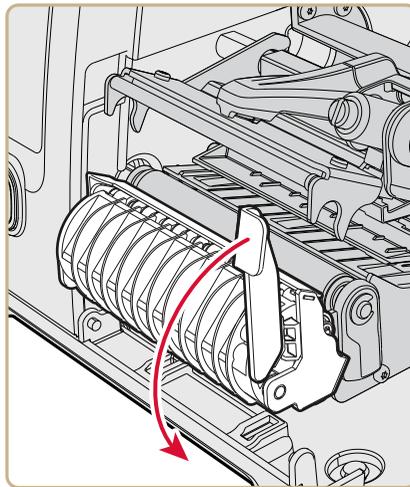
4 Load a media roll onto the media supply hub. Make sure you push the roll all the way against the inner wall of the printer and adjust the edge guide and the dancer guide to hold the media in place.
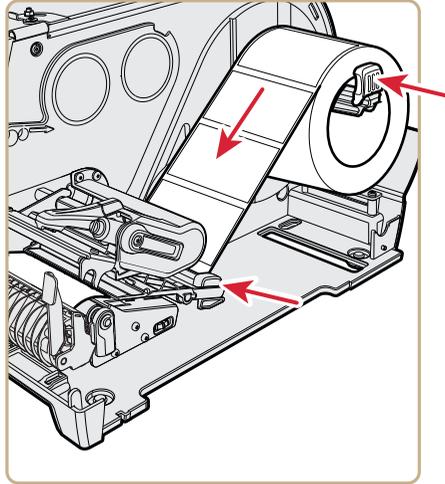
5 Route the media through the print mechanism and out the front of the printer.

6 Insert the media in the opening between the label dispenser and the platen roller.

You can pull the liner through the dispenser and out the bottom of the mechanism or you can route the liner around the internal media rewinder (if installed).
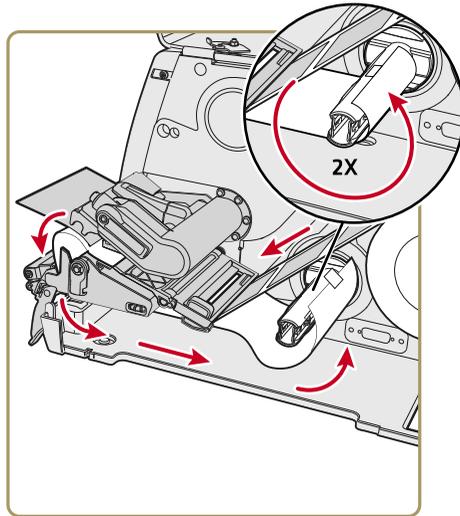
Route the Liner Around the Internal Media Rewinder
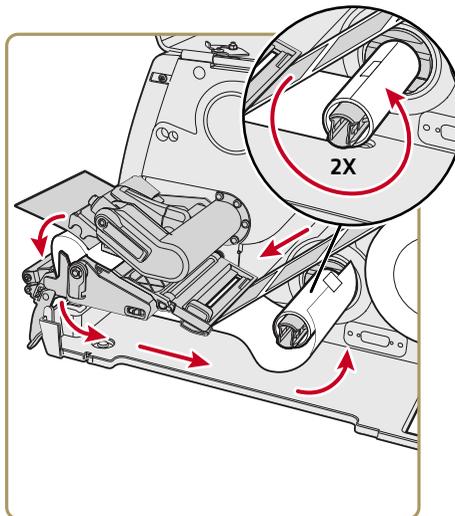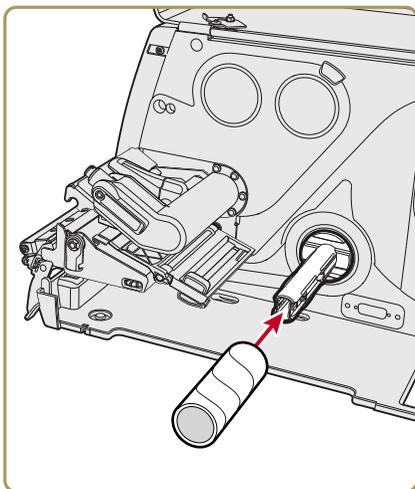
Route the Liner Around a Cardboard Core
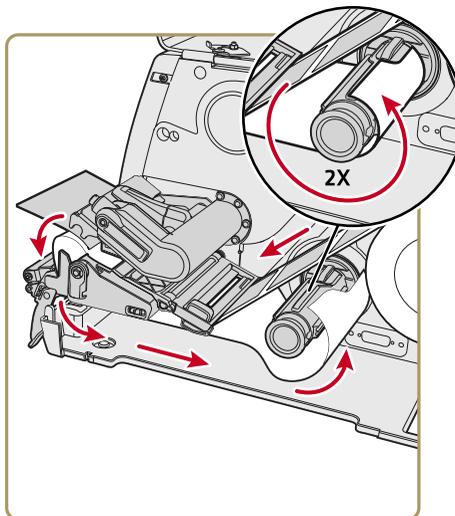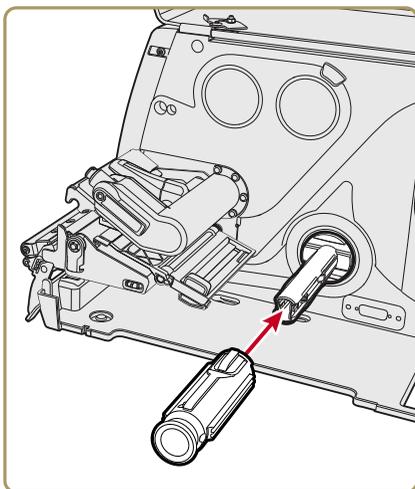
Route the Liner Around a Collapsible Core (PM43, PM43c)

7 Pull the liner tight and push the label dispenser lever back into the closed position.

8 Turn the printhead liftlever clockwise to close the printhead.

9 Close the media cover.

10 Press the **Print** button to advance the media.

11 Configure the printer for the correct media type (media with gaps, black mark, continuous fixed length, or continuous variable length).

12 Calibrate the sensors on the printer. You can calibrate the media from the Main Menu (**Wizards > Calibration > Media**) on a full touch printer or from the web page (**Services > Media Calibration**) for all models of the printer.

Load Media from an External Supply

You can place the media supply, such as fanfold tickets or tags, behind the printer or underneath it.

1 Open the media cover.

2 Turn the printhead lift lever counterclockwise to raise the printhead.
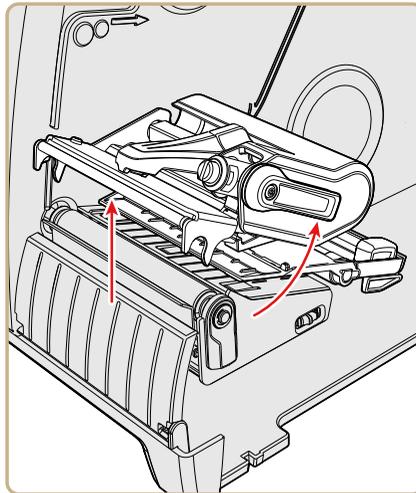
3 Feed media through the slot in the back of the printer (or from the slot in the bottom of the printer) and route it through the print mechanism.
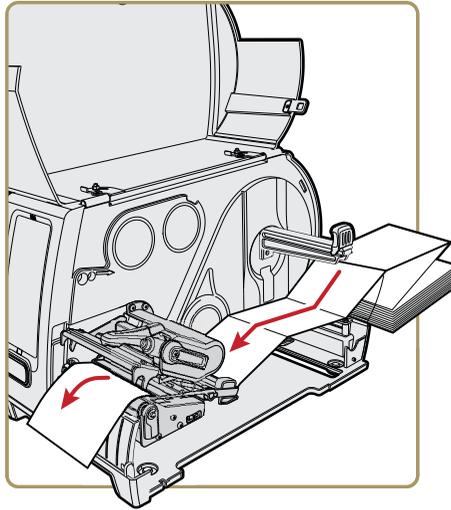
4 Turn the printhead lift lever clockwise to close the printhead.

5 Close the media cover.

6 Press the **Print** button to advance the media.

7 Configure the printer for the correct media type (media with gaps, black mark, continuous fixed length, or continuous variable length).

8 Calibrate the sensors on the printer. You can calibrate the media from the Main Menu (**Wizards > Calibration > Media**) on a full touch printer or from the web page (**Services > Media Calibration**) for all models of the printer.

About Cut-Off Printing

In cut-off printing, each label is automatically cut from the media roll immediately after the label is printed. You can print on non-adhesive, continuous label stock. You can also use self-adhesive labels with a liner, but you must cut only the liner.

! **Caution: You must not use the cutter to cut through any kind of adhesive, or other soft material, that may stick to the cutting parts and render the cutter inoperable or even damage the electric motor.**

The cutter module includes the Label Taken Sensor. You can also install the optional cutter tray accessory, which holds up to 20 labels or tickets.

After you load media, you need to configure the cutter and the feed adjust settings. You may need to adjust the recommended values slightly depending on your media type, supply method, and roll sizes, or because of individual differences between printers.

Load Media for Cut-Off Printing

Cut-off printing is supported by the PM43 and PM43c printers with the cutter installed.

1 Open the media cover.

2 Turn the printhead lift lever counterclockwise to raise the printhead.
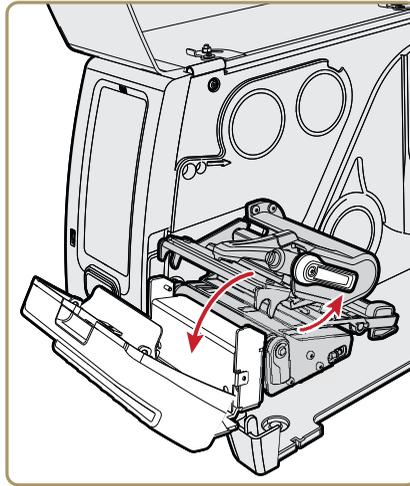
3 Open the cutter door.

4 Load a media roll onto the media supply hub. Make sure you push the roll all the way against the inner wall of the printer and adjust the edge guide and the dancer guide to hold the media in place.

5 Route the media through the print mechanism and out through the slot in the cutter.
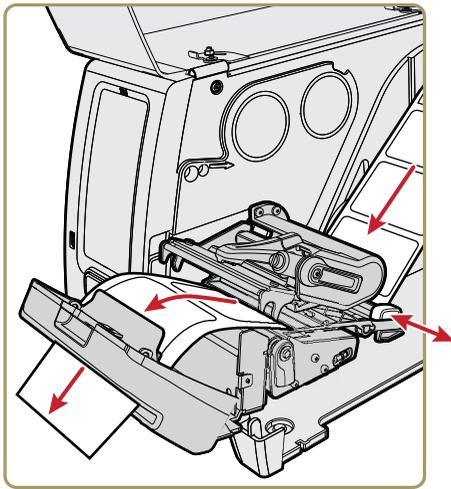
6 Close the cutter.

7 Turn the printer on and close the media cover.

8 Configure the cutter:

- If you have an icon printer, use PrintSet 5 or a printer command language to configure the cutter.

- If you have a full touch printer, continue with the next step.

9 After the printer finishes starting up, press ▣.

10 Select **Settings > Printing > Cutter**.

11 In the Cutter Control options, select **Automatic**.

You can also enable Partial Cut from the Cutter menu.

12 Press ▣ to save your settings.

13 Configure the start and stop adjust settings.

About Ribbon

Thermal transfer printing provides a durable printout that is less vulnerable to chemicals, heat, and sunlight than direct thermal printing. Make sure you select a ribbon type that matches the media you are using and that you configure the printer for thermal transfer media.

The printer supports thermal transfer ribbon rolls with the ink-coated side facing either inward or outward. To determine which type of ribbon you have, use a pen or other sharp object to scratch through the ribbon against a piece of paper. If you see a mark on the paper, your ribbon is wound ink out.
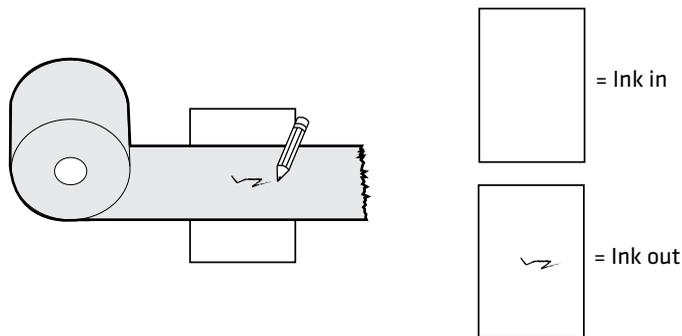
Determining Whether Your Ribbon is Wound Ink In or Ink Out

Load Ribbon

1 Open the media cover.

2 Turn the printhead lift lever counterclockwise to raise the printhead.

3 Slide the ribbon roll onto the ribbon supply hub and slide the empty ribbon core onto the ribbon takeup hub.
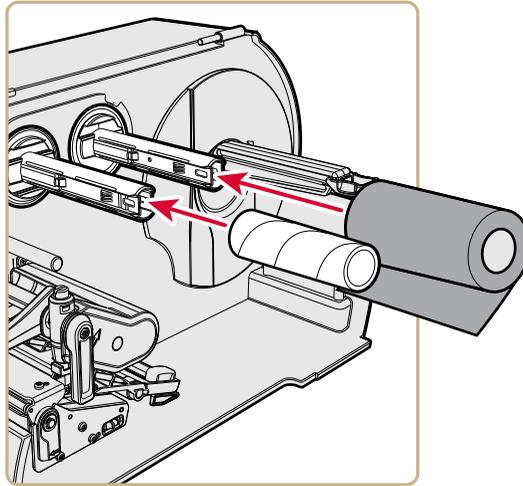
4 For ribbon that has the ink wound out, place the ribbon on the supply hub with the ribbon wound clockwise. For ribbon that has the ink wound in, place the ribbon on the supply hub with the ribbon wound counterclockwise.

5 Route the ribbon through the print mechanism and pull out approximately 20 cm (8 inches) of ribbon leader.

The dotted line in this illustration shows how to load ribbon with the ink wound in.
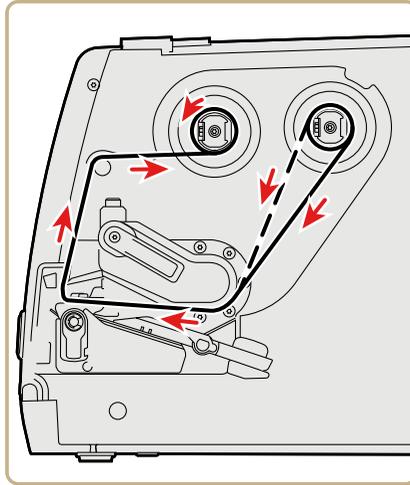
6 Turn the ribbon takeup hub counterclockwise until the ribbon becomes tight and runs wrinkle-free through the print mechanism.

7 Load media.

8 Turn the printhead lift lever clockwise to lower the printhead.

9 Close the media cover.

10 Press the **Print** button to advance the media.

11 Configure the printer for the correct media type: media with gaps, black mark, continuous fixed length, or continuous variable length.

12 Set the print method to ribbon (TTR).

13 Calibrate the sensors on the printer. You can calibrate the media from the Main Menu (**Wizards > Calibration > Media**) on a full touch printer or from the web page (**Services > Media Calibration**) for all models of the printer.

Connect the Printer to Power

The full touch printer goes through a startup wizard the first time you turn on the power. The icon printer goes through an LED startup sequence the first time you turn on the power.

1 Connect one end of the power cord to the back of the printer and connect the other end to AC power.
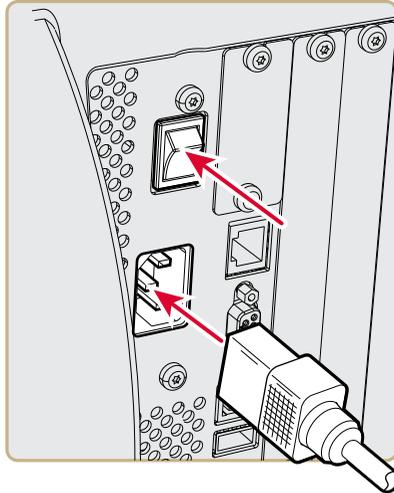
2 Press the power switch to turn on the printer. As the printer starts up:

- a progress bar appears on the full touch interface. When the printer has finished starting up, the startup wizard appears. After you complete the startup wizard, you can choose to complete more wizards or you can go to the Ready screen.

- the icons turn on and then turn off one at a time on the icon printer. When the printer has finished starting up, the blue Ready-to-Work indicator turns on and stays on.

If a condition occurs that will prevent printing, the Ready-to-Work indicator blinks.

About Test Labels

Print a test label after you have loaded media and ribbon to verify that you have installed everything correctly and also to get some important information about your printer. The way you print a test label is slightly different between the full touch and the icon printer. Please use the procedure for your printer.

Print a Test Label with the Icon Printer

When you turn on the icon printer, all of the LEDs on the display light up including the Ready-to-Work indicator. One by one, the LEDs turn off as the printer starts up. The first LED to turn off is the Ready-to-Work indicator. The LEDs then turn off following a sequence from the top left LED to the bottom right LED.

1 Connect the printer to power and turn on the printer.

2 The printer goes through its startup sequence and all of the LEDs light up. When the last two LEDs are lit (Printhead Hot and Maintenance), press and hold the **Print** button until the test label starts to print.

3 Release the **Print** button.

The series of three test labels prints out.

Print a Test Label with the Full Touch Printer

The first time you turn on the full touch printer or reset to factory defaults, the printer runs a startup wizard to let you enter basic setup information. After the startup wizard finishes, the printer enters Ready mode where you can choose to access the Main Menu and print a test label.

1 Connect the printer to power and turn on the printer.

2 After the startup sequence finishes, the startup wizard begins. After you enter all of the information on the wizard screens, click **No** when prompted to run other wizards.

3 From the Ready screen, tap the **Main Menu** button on the status bar.

4 From the Main Menu, tap **Tools > Test Labels**.

5 Select the test label you want to print and tap it.

Your test label prints. If print quality is low, go to **Wizards > Printing > Print Quality**.

Calibrate the Screen

If you are having problems with the full touch screen responding when you tap it, you may need to calibrate the screen.

1 On the keypad, press **./-** to enter the Main Menu.

2 Press **2** until the **Wizard** button is selected and then press **Enter**.

3 Press **2** until **Calibration** is selected and then press **Enter**.

4 Press **2** until **Screen** is selected and then press **Enter**.

5 Tap the calibration points on the screen until the screen goes blank.

The touch screen then finishes the calibration process and returns you to the Ready screen.

Create and Print Labels

You can use Intermec printer software to design and print labels with the PM23c, PM43, and PM43c printers. You can download label design software and printer drivers from **http://www.intermec.com/products/printers_media/software/index.aspx**.

You can also use Fingerprint and IPL to create and print labels. For more information, see either the **Intermec Fingerprint Command Reference Manual** or the **IPL Command Reference Manual**.

How to Print on RFID Media

If you have an LCD printer with the optional RFID module installed, you can print on RFID media. Media containing RFID tags is slightly thicker where the RFID tag is located. The slight thickness of this part of the label may affect print quality. For thermal transfer labels, Intermec recommends using high-quality ink ribbon.

To achieve the best possible print quality, follow these guidelines:

• Run the RFID calibration wizard to determine the best Tag Position and Output Power for RFID media.

• If necessary, modify the Tag Position (TAGADJUST variable) to make sure the RFID labels are properly aligned with the antenna.

• Avoid printing on the thickest part of the label when possible.

For help configuring RFID parameters, see the **Intermec Fingerprint Command Reference Manual** or the **IPL Command Reference Manual**.

About RFID Tag Position

Tag Position, also referred to as TAGADJUST, specifies the distance (in dots/mm/in) to move the label to align the tag with the RFID antenna. Positive values move the label forward, and negative values move the label back.

Use one of these methods to calculate Tag Position:

• Run the RFID wizard.

• Manually calculate the Tag Position.

Run the RFID Calibration Wizard

Run the RFID calibration wizard to determine the best Tag Position and Output Power (UHF inlays, only) for RFID media.

Note: After you determine the correct RFID media settings, you can save these settings to a printer profile and load the profile when you need to print on the specific RFID media.

   1 Make sure the media type and media length are properly configured.

2 From the Main Menu, select **Wizard > Calibration > RFID Calibration**.

3 To enable the RFID module, select **Enable**.

4 Load the RFID media.

5 Select **OK**.

When the calibration is complete, the printer displays the RFID Tag Position and Output Power (UHF inlays, only).

Calculate RFID Tag Position

You can perform a manual calculation to come up with an estimate of the RFID Tag Position. Because this value is an estimate, you may need to slightly adjust the calculated value to achieve the best results.

Note: You do not need to calculate the Tag Position value for the PM23c printer. By default, the Tag Position is set to -13.5 mm and the yAntDist is 135 mm (pivoted antenna) or 136 mm (flat antenna).

1 Make sure Start Adjust and Stop Adjust are set to 0.

2 Measure the yChip value, which is the distance between the RFID chip and the media edge aligned with the tear bar.
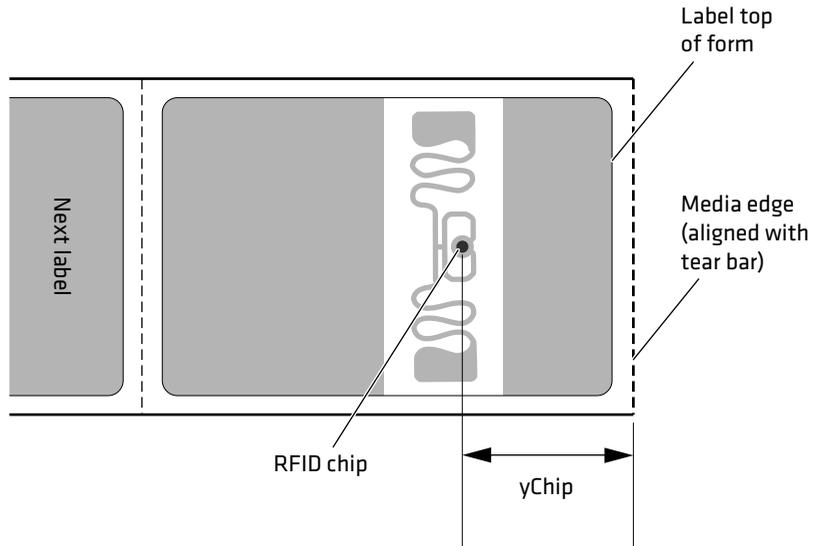
3 Note the yAntDist for the PM43/PM43c: 280 dots, 35 mm, 1.378 in.

4 Use this formula to calculate the estimated Tag Position:

TagPosition=yChip - yAntDist

3

Connect the Printer

Use this chapter to connect the printer to a PC or to a network. You can use the printer web page or the Main Menu on a full touch printer to configure the settings.

About Printer Drivers

Before you can use the printer with Microsoft Windows printing applications, you need to install printer driver software on the PC. Drivers enable the printer to communicate with your PC and with software applications such as Intermec PrintSet 5.

Note: Although Windows may auto-detect the printer when you connect it to a PC through a USB port, you must still install printer drivers on the PC for correct printer operation.

Install Printer Drivers

Use InterDriver to install printer driver software on your PC. InterDriver is included on the PrinterCompanion CD that shipped with your printer. If you have not yet installed drivers on your PC, run the PrinterCompanion CD and follow the instructions to connect your printer and install the drivers.

If you do not have access to the PrinterCompanion CD but you still need to install driver software, follow this procedure to download InterDriver from the Intermec website and install the drivers.

1 Open a web browser and go to **www.intermec.com**.

2 Select **Support > Downloads**.

3 Select these items:

   a In the Product Category list, select **Printers**.

   b In the Product Family list, select **Fixed Printer**.

   c In the Product list, select **PM23c, PM43, PM43C Mid-Range Printer** and then click **Submit**.

4 In the downloads page, click **Intermec InterDriver X.X.X M-X ver. X.XX**. If a Security Warning dialog box appears, click **Run**.

5 When asked if you want the program to make changes to your computer, click **Yes**.

6 Follow the onscreen instructions in the InterDriver InstallShield wizard.

7 When you reach the InstallShield Wizard Complete page, click **Next**. The Seagull Driver Wizard appears.

8 From the Welcome to Seagull Driver Wizard page, make sure **Install printer drivers** is selected and then click **Next**.

9 Follow the onscreen instructions in the Seagull Driver Wizard.

10 When you reach the Completing the Seagull Driver Wizard page, click **Finish**.

11 When the InterDriver Wizard Completed Successfully page appears, click **Next**.?

12 Follow the onscreen instructions to complete the Post-Setup Tasks.

13 When the Installation Complete! page appears, click **Finish**.

The installer unpacks and installs the InterDriver files in the Intermec\InterDriver folder in your program files directory and creates two shortcuts in the Windows Start menu:

• Intermec > InterDriver > InterDriver Wizard

• Intermec > InterDriver > Check for Updates

How to Connect the Printer to Your PC

You can connect the printer to your PC using one of these cables:

• Serial cable
• USB cable
• IEEE 1284 parallel printer adapter cable (optional)

Connect the Printer Using a Serial Cable

You can use a serial connection to communicate with your PC and to run PrintSet or InterDriver. You can also use the serial port to send commands directly to the printer through a terminal connection.

1 Connect one end of the DB9 to DB9 RS-232 cable to the back of your printer and connect the other end of the cable to a serial COM port on the PC.

2 If necessary, change the PC serial port configuration to match your printer.

Connect the Printer Using a USB Cable

Intermec recommends that you only connect one printer to your PC, either directly or through a hub. You do not need to set up any parameters for USB communications.

1 Download and install the InterDriver software on your PC.

2 Connect one end of the USB Type A cable to the back of the printer and connect the other end to your PC.

About the Parallel Port

If you want to use a parallel port on the printer, you can choose to have the IEEE 1284 parallel port installed either at the factory or by an authorized Intermec service technician. You can use the parallel port with InterDriver. The parallel port supports Universal Plug and Play (UPnP), compatibility, nibble, byte, ECP, and additional status reporting through IEEE 1284 nibble ID mode.

If you are using a parallel port to communicate with the printer, you need:

• an IEEE 1284 interface adapter installed in the printer.
• a parallel cable to run between the printer and the PC.

Connect the Printer Using an IEEE 1284 Cable

You can connect the printer to your PC using an IEEE 1284 cable if you have the parallel port option installed in your printer.

Note: You must configure all printer settings through the printer Main Menu, the printer web page, or with PrintSet 5 and a USB connection before you use the parallel connection to the printer.

1 Connect one end of the IEEE 1284 cable to the interface adapter port on the back of the printer.

2 Connect the other end of the cable to to parallel port on the PC.

How to Connect the Printer to Your Network

You can connect the printer to your network using the:

• Ethernet interface.

• Wi-Fi + Bluetooth wireless interface.

These network interfaces provide features such as security, FTP server, web page, and Alert handling.

Connect the Printer to an Ethernet Network

Use the Ethernet port to set up the PM43 or PM43c as a network printer. The printer is set to automatically retrieve an IP number from the network (DHCP) when you turn on the printer. You can use the network connection with InterDriver. You can also use it to directly send commands to the printer through a terminal connection (Telnet), or you can send instructions through FTP.

1 Turn the printer off.

2 Connect the Ethernet cable to the Ethernet port in the rear of the printer and connect the other end of the cable to your network.

3 Turn the printer on.

If your printer uses a DHCP server to assign IP addresses, the IP address appears in the lower left corner of the screen.

• For an icon printer, use Intermec PrintSet to retrieve the printer IP address.

If you are not using a DHCP server to automatically assign IP addresses to devices in your network, you must set a static IP address and other network information manually. Continue with the next step.

4 For a non-DHCP network:

- For a full touch printer, from the Main Menu select **Settings > Communications > Ethernet > IPv4 or IPv6** and change the settings as needed.

- For an icon printer, configure the Ethernet settings through PrintSet.

IPv4 and IPv6 Ethernet Settings

Setting	Default
(IPv4) IP Assignment Method	DHCP
(IPv4) IP Address	0.0.0.0
Subnet Mask	0.0.0.0
Default Router	0.0.0.0
DHCP Response	Broadcast
(IPv6) IP Assignment Method	Automatic
(IPv6) IP Address	Automatic

About Wireless Communications

The printer supports wireless communications when the optional Wi-Fi/Bluetooth module is installed.

You can configure wireless communications:

- from the printer web page.
- from the printer Main menu if your printer has full touch display front panel.

By default, the printer supports DHCP networks.

Note: If you are not using a DHCP network, you need to configure Wi-Fi settings by using Intermec PrintSet through a USB connection to the printer, by sending commands through a serial connection, or by using the wizards and settings menus on a full touch printer.

Configure Wireless Communications from the Web Page

Use this procedure to configure wireless communications from the printer web page.

Note: To configure the printer from the web page, the printer must be turned on and connected to your Wi-Fi or Ethernet network.

1 Open a web browser on your PC.

2 In the address bar, type the IP address of your printer and press **Enter**. The printer web page appears.

3 Click **Login**. The Login page appears.

4 Type your **Username** and **Password** and then click **Login**. The default value for Username is admin and the default value for Password is pass.

5 Click the **Configure** tab. The Configuration Summary page appears.

6 Click **Communications > Wireless 802.11**. The Wireless 802.11 settings page appears.

7 Change wireless settings as needed. You can also click **Default Settings** to restore all default Wireless 802.11 settings.

8 Click **Save** when you are finished.

Configure Wireless Communications from the Main Menu

If you have a touch panel printer, you can configure wireless communications using the Wireless 802.11 wizard. You can also configure wireless communications from the Main Menu.

1 From the Ready screen, press the **Main Menu** button. The Main Menu appears.

2 Select **Settings > Communications > Wireless 802.11**.

3 Change settings as needed for your wireless connection.

4 When you are finished, save your changes.

Install Authentication Certificates

If you are using Wireless 802.11 security, you may need to install authentication certificates in the printer for the highest level of security.

1 Make sure you have the printer configured for the correct date and time.

2 On your PC, open an FTP connection to the IP address of the printer.

3 Transfer your certificate to /home/user/certificates/public.

4 On your PC, open a Telnet session to the printer.

5 Change the directory to: /home/user/certificates/public.

6 Type this command:ls -la.

You should see the certificate that you transferred in Step 3.

7 Use the certinstall script to install the certificate using this format:

    <prompt> certinstall.sh <certificate name>

    Example:

    itadmin@PM23-00000000073 /home/user/certificates/public$
    certinstall.sh entrust.cer

8 When you receive confirmation that the certificate was installed, type this command to make sure you see a .pem file and another soft link to the same file: `ls -la`.

9 Use the printer web page, the Main Menu on a full touch printer, or PrintSet 5 to specify the certificate .pem file to use for security.

About Bluetooth Communications

The printer supports Bluetooth communications when the optional Wi-Fi+Bluetooth module is installed. When Bluetooth is enabled, you can use a Bluetooth bar code scanner to send scanned data directly to a Fingerprint application. You can also make the printer discoverable by other Bluetooth devices, and enable security if required.

You can set up Bluetooth communications:

- from the printer web page.
- from the printer Main Menu.
- using Intermec PrintSet through a USB connection to a PC.

Connect to a Bluetooth Device

If your printer has the full touch display, you can use the Bluetooth wizard to discover and connect to an HID Bluetooth device such as a keyboard or a Bluetooth scanner configured as an HID slave.

1 Make sure your Bluetooth device is turned on and discoverable, and that the device is in range of the printer.

2 From the printer Ready screen, select the Main Menu.

3 Select **Wizards > Communications > Bluetooth**.

  4 Follow the instructions to discover and connect to your Bluetooth device.

  If you are unable to connect to the Bluetooth device, you may need to change the printer Bluetooth settings.

Configure Bluetooth Communications from the Web Page

Use this procedure to configure Bluetooth from the printer web page. The printer must be connected to an Ethernet or wireless network and you must know the printer IP address.

  1 Open a web browser on your PC.

  2 In the address bar, type the IP address of your printer and press **Enter**. The printer web page appears.

  3 Click **Login**. The Login page appears.

  4 Type your **Username** and **Password** and then click **Login**. The default value for Username is admin and the default value for Password is pass.

  5 Click the **Configure** tab. The Configuration Summary page appears.

6 Click **Communications > Bluetooth**. The Bluetooth settings page appears.

7 Change Bluetooth settings as needed. You can also click **Default Settings** to restore all default Bluetooth settings.

8 Click **Save** when you are finished.

Configure Bluetooth Communications from the Main Menu

Use this procedure to configure Bluetooth settings from the printer Main Menu. You may need to configure these settings if you want to connect to a mobile computer through Bluetooth.

1 From the Ready screen, press the **Main Menu** button. The Main Menu appears.

2 Select **Settings > Communications > Bluetooth**.

3 Change settings as needed for your Bluetooth device.

4 When you are finished, save your changes.

About the USB Host Port

You can use the USB host interface port on the printer to connect these peripheral devices:

USB Peripheral Devices

Device	Description
Keyboard	Use a standard USB keyboard to send Fingerprint printer language commands directly to the printer or to enter information if you are running a Smart Printing application.
Bar code scanner	Use Intermec USB bar code scanners for data input with a Smart Printing application. The printer also supports other USB scanners that use a generic keyboard driver.
USB storage device	Use a USB storage device to load applications, configuration files, fonts, and images into the printer memory, or to perform firmware upgrades. You can also save configuration files to a USB storage device for upload to a printer. The USB storage device must have a single partition and be formatted as FAT16 or FAT32.

Connect a USB Device

You can insert a USB storage device into the USB host port on the front of PM43 or into the USB host port on the back of the PM23c, PM43c, or PM43 printer.

1 If you are connecting a USB storage device, make sure the device has a single partition and is formatted as FAT16 or FAT32.

2 Connect the device to one of the USB host ports.

3 If you connected a USB storage device to an LCD printer, select
Tools > USB Menu for more options.

4

Configure the Printer

Use this chapter to understand the organization of the configuration menu and the different ways you can configure the printer.

How to Configure the Printer

Use one of these methods to view and change printer settings:

- Printer web page
- Main Menu (LCD printers)
- PrintSet 5
- Programming commands
- SmartSystems

About the Printer Configuration Menus

The structure of the printer configuration menus is consistent among the different interfaces. You should see the same organization whether you are accessing the menus through the web page or the printer Main Menu. There are five main printer configuration menus for each interface:

- Communications
- Printing
- System Settings
- Network Services
- Alerts

Use the following illustrations to understand where information is located in the printer configuration menus. Not all configuration items appear in each type of interface.

```
┌──────────────┐     ┌──────────────┐     ┌──────────────┐     ┌──────────────┐
│    Serial    │─────│   Ethernet   │─────│ Wireless 802.11│────│  Bluetooth   │
└──────────────┘     └──────────────┘     └──────────────┘     └──────────────┘
        │                    │                    │                    │
   ┌─────────┐          ┌─────────┐          ┌─────────┐          ┌─────────────┐
   │  COM1   │          │  IPv4   │          │ General │          │  Security   │
   └─────────┘          └─────────┘          └─────────┘          └─────────────┘
   ┌─────────┐               │               ┌─────────┐          ┌─────────────┐
   │  COM2   │          ┌─────────────────┐  │ Security│          │ Device Name │
   └─────────┘          │IP Assignment Method│ └─────────┘          └─────────────┘
   ┌─────────┐          └─────────────────┘  ┌─────────┐          ┌─────────────┐
   │  COMn   │          ┌─────────────────┐  │ Network │          │  Discover   │
   └─────────┘          │   IP Address    │  └─────────┘          └─────────────┘
                        └─────────────────┘                       ┌─────────────┐
                        ┌─────────────────┐                       │   Passkey   │
                        │  Subnet Mask    │                       └─────────────┘
                        └─────────────────┘                       ┌─────────────┐
                        ┌─────────────────┐                       │   Reserve   │
                        │ Default Router  │                       └─────────────┘
                        └─────────────────┘
                        ┌─────────────────┐
                        │  DHCP Response  │
                        └─────────────────┘
                        ┌─────────┐
                        │  IPv6   │
                        └─────────┘
                             │
                        ┌─────────────────┐
                        │IP Assignment Method│
                        └─────────────────┘
                        ┌─────────────────┐
                        │   IP Address    │
                        └─────────────────┘
```

The Communications Menu

```
┌──────────────┐      ┌──────────────┐      ┌──────────────┐
│     COM1     │──────│     COM2     │──────│     COMn     │
└──────────────┘      └──────────────┘      └──────────────┘
        │                     │                     │
   ┌─────────┐           ┌─────────┐           ┌─────────┐
   │ Baud Rate │         │ Baud Rate │         │ Baud Rate │
   └─────────┘           └─────────┘           └─────────┘
   ┌─────────┐           ┌─────────┐           ┌─────────┐
   │ Data Bits │         │ Data Bits │         │ Data Bits │
   └─────────┘           └─────────┘           └─────────┘
   ┌─────────┐           ┌─────────┐           ┌─────────┐
   │  Parity  │          │  Parity  │          │  Parity  │
   └─────────┘           └─────────┘           └─────────┘
   ┌─────────┐           ┌─────────┐           ┌─────────┐
   │ Stop Bits │         │ Stop Bits │         │ Stop Bits │
   └─────────┘           └─────────┘           └─────────┘
   ┌─────────┐           ┌─────────┐           ┌─────────┐
   │ Hardware │          │ Hardware │          │ Hardware │
   └─────────┘           └─────────┘           └─────────┘
   ┌─────────┐           ┌─────────┐           ┌─────────┐
   │ ENQ/ACK  │          │ ENQ/ACK  │          │ ENQ/ACK  │
   └─────────┘           └─────────┘           └─────────┘
   ┌────────────┐        ┌────────────┐        ┌────────────┐
   │ XON/XOFF To │       │ XON/XOFF To │       │ XON/XOFF To │
   └────────────┘        └────────────┘        └────────────┘
   ┌──────────────┐      ┌──────────────┐      ┌──────────────┐
   │ XON/XOFF From │     │ XON/XOFF From │     │ XON/XOFF From │
   └──────────────┘      └──────────────┘      └──────────────┘
   ┌──────────────────┐  ┌──────────────────┐  ┌──────────────────┐
   │ New Line Character │ │ New Line Character │ │ New Line Character │
   └──────────────────┘  └──────────────────┘  └──────────────────┘
```

The Serial Communications Menu

```
┌──────────┐        ┌──────────┐                              ┌──────────┐
│ General  │        │ Security │──────────────────────────────│ Network  │
└────┬─────┘        └────┬─────┘                              └────┬─────┘
     │                   │                                          │
 Network Name (SSID)  Security Type      Inner Authentication      IPv4
 Network Type         Association        CA Certificate            IP Assignment Method
 Roaming              Pre-Shared Key     Client Certificate        IP Address
 Power Mode           Network Key Index  Client Key                Subnet Mask
 Channel              Network Key 1      Server Common Name 1       Default Router
 Hidden SSID          Network Key 2      Server Common Name 2       DHCP Response
                      Network Key 3      Validate Certificate      IPv6
                      Network Key 4      PAC                       IP Assignment Method
                      User Name          Aquire PAC                IP Address
                      Password           Fast Roaming (CCKM)
                      Anonymous Name     Mixed Mode (Group=TKIP)
```

The Wireless 802.11 (Wi-Fi) Communications Menu

```
┌─────────────────┐   ┌─────────────────┐   ┌─────────────────┐   ┌─────────────────┐
│      Media      │───│  Print Quality  │───│      RFID       │───│     Cutter      │
└────────┬────────┘   └────────┬────────┘   └────────┬────────┘   └────────┬────────┘
         │                     │                     │                     │
   ┌─────┴────────┐      ┌─────┴────────┐      ┌─────┴────────┐      ┌──────┴────────┐
   │  Media Type  │      │ Print Speed  │      │   Retries    │      │ Cutter Control│
   └──────────────┘      └──────────────┘      └──────────────┘      └───────────────┘
   ┌──────────────┐      ┌──────────────┐      ┌──────────────┐      ┌───────────────┐
   │ Print Method │      │Media Sensitvy│      │  Void Text   │      │  Partial Cut  │
   └──────────────┘      └──────────────┘      └──────────────┘      └───────────────┘
   ┌──────────────┐      ┌──────────────┐      ┌──────────────────┐
   │ Media Width  │      │   Darkness   │      │ RFID Tag Position│
   └──────────────┘      └──────────────┘      └──────────────────┘
   ┌──────────────┐      ┌──────────────┐      ┌──────────────┐
   │ Media Length │      │   Contrast   │      │ Output Power │
   └──────────────┘      └──────────────┘      └──────────────┘
   ┌────────────────┐
   │ Media Margin (X)│
   └────────────────┘
   ┌──────────────┐
   │ Clip Default │
   └──────────────┘
   ┌──────────────┐
   │ Start Adjust │
   └──────────────┘
   ┌──────────────┐
   │ Stop Adjust  │
   └──────────────┘
   ┌────────────────────┐
   │Media Calibration Mode│
   └────────────────────┘
   ┌────────────────────┐
   │ Length (Slow Mode) │
   └────────────────────┘
   ┌────────────────────┐
   │ LTS Sensitivity Level│
   └────────────────────┘
```

The Printing Menu

General
- System Name
- System Location
- System Contact
- XML Response Mode
- Display Language
- Keyboard Input
- Time
- AM/PM
- Date
- Command Language
- Alert Notification Method
- Unit of Measure

Display
- Brightness
- Idle Information
- Time Format
- Date Format
- Menu Access
- PIN
- Screen Timeout
- Feed Key Access

Audio
- Volume

Manage I/O
- Wireless 802.11
- Bluetooth
- Virtual COM
- RFID

Manage Services
- Web Server
- FTP
- Avalanche
- Net1
- SmartSystems
- SNMP
- Cutter
- LPR
- IKEv2
- SSH
- Telnet

Maintenance Alerts
- Odometer (User Resettable)
- Odometer (Printer)
- Odometer (Printhead)
- Replace Printhead
- Clean Printhead
- Faulty Dot
- Media Low Diameter
- Ribbon Low Diameter
- Low Battery

The System Settings Menu

Avalanche	DNS	Net1	SmartSystems

Avalanche
- Mode
- Server Address
- Port Number
- User Name
- Password

DNS
- Primary DNS Server
- Secondary DNS Server

Net1
- Status
- Queue
- Port Number
- New Line Character
- Remote Port
- Remote Host

SmartSystems
- Port Number
- Server Address

Email Server (SMTP)	SNMP	WINS	Web Server

Email Server (SMTP)
- Mode
- Port Number
- Server Address
- From Address
- To Address

SNMP
- Authentication Failure Trap
- Read Community
- Write Community
- SNMPv1 Status
- SNMPv2 Status
- Traps Status N
- Trap Name N
- Trap Address N
- Trap Port Number N
  - Trap Community N
  - SNMPv3 Username
  - SNMPv3 Authentication Key
  - SNMPv3 Encryption Key
  - SNMPv3 Authentication Protocol
  - SNMPv3 Encryption Protocol

WINS
- Primary WINS Server
- Secondary WINS Server

Web Server
- Image Buffer

The Network Services Menu

Error	Warning	Information
Out of Media	Ribbon Installed	Print Job Complete
Out of Ribbon	Media Low	Started
Label Not Taken	Ribbon Low	Printer is Rebooting
Printer in Pause Mode	Upgrading Firmware	
Printer in Menu Mode	Odometer (User Resettable)	
Application Break	Odometer (Current Printhead)	
RFID Not Installed	Odometer (Printer)	
Printhead Lifted	Replace Printhead	
Printhead Not Detected	Clean Printhead	
Printhead Too Hot	Faulty Dot	
Motor Too Hot		
Power Supply Too Hot		

The Alert Menu

Configure the Printer from the Main Menu

If you have a full touch printer, you can view or change the configuration settings by pressing the **Settings** button from the Main Menu.

1 From the Ready screen, press the **Main Menu** button.

2 From the Main Menu, press the **Settings** button. The Settings menu appears.

3 Select the settings you want to configure and make your changes.

4 Save your changes when prompted.

Restrict Access to the Main Menu

By default, all menus are available from the Main Menu the first time you turn on the printer. If necessary, you can require a PIN to restrict access to menus or you can disable access to all menus.

Menu Access Setting	Description
Enable (default)	All users can access the menus from the Main Menu and from the USB flash drive menu.
Enable with PIN	Users need to enter a PIN to access the Main Menu or USB flash drive menu.
Disable	Users cannot access the menus from the Main Menu or from the USB flash drive menu.

1 Go to the Display menu for the printer:

- From the web page, select **Configure > System Settings > Display**.

- From the Main Menu on a full touch screen, select **Settings > System Settings > Display**.

2 Select a Menu Access setting and save your changes.

3 If you select **Enable with PIN**, you also need to type in a PIN and save your changes.

Configure the Printer from the Web Page

If you are using Ethernet or Wi-Fi communications, you can change configuration settings from the web page of the printer. You should have already connected your printer to your network and obtained an IP address.

1 Open a web browser on your PC.

2 In the address bar, type the IP address of your printer and press **Enter**. The printer web page appears.

3 Click **Login**. The Login page appears.

4 Type your **Username** and **Password** and then click **Login**. The default value for Username is itadmin and the default value for Password is pass.

5 Click **Configure**. The Configuration Summary page appears.

6 To see a complete list of printer settings, click **Configuration Summary**.

To configure printer settings, click an item in the navigation pane:

- For serial, Ethernet, Wireless 802.11, or Bluetooth settings, click **Communications**.

- For media or print quality settings, click **Printing**.

- For display, audio, service, and general settings, maintenance alert message triggers, or to enable and disable 802.11 and Bluetooth, click **System Settings**.

- To set conditions that trigger error, warning, and information alert messages, click **Alerts**.

- For network-related settings (such as DNS, WINS, Net1), for web and email server information, or if you are using a network management application such as Intermec SmartSystems, click **Network Services**.

7 Make any changes to the settings you want to configure.

8 To save your changes, click **Save**.

To reset all parameters on the page to the default settings, click **Default Settings**.

Configure the Printer with PrintSet 5

PrintSet 5 is a printer configuration tool that enables you to easily change your configuration settings. You can also use the setup wizards in PrintSet 5 to guide you through common configuration tasks.

1 Make sure that you have Windows XP or later running on your PC.

2 Download PrintSet 5 from the Downloads page of the Intermec website at **www.intermec.com/products/printers_media/software/index.aspx**.

3 Connect your printer to your PC using a serial, USB, or network (Ethernet or Wi-Fi) connection.

How to Configure the Printer with Programming Commands

You can change configuration settings by sending programming commands directly from your PC to the printer through a terminal program (such as HyperTerminal), a serial connection, or a network connection.

If your printer uses the Fingerprint programming language, use the SETUP GET command followed by the node, subnode, and parameter setting. For example, here is a Fingerprint example that changes your media setting to labels with gaps:

```
SETUP GET "MEDIA,MEDIA TYPE,LABEL (W GAPS)"
```

You must log in as an itadmin to perform a SET operation, but you do not need to log in to perform a GET operation.

If your printer uses the IPL programming language, this example changes your media setting to labels with gaps:

```
<STX><SI>T1<ETX>
```

For more information on how to change configuration settings with a programming language, see either the **Intermec Fingerprint Command Reference Manual** or the **IPL Command Reference Manual**.

How to Configure the Printer with SmartSystems

You can use SmartSystems to change configuration settings on your printer. The printer ships with the SmartSystems client loaded on it. The console is part of SmartSystems and is available from the Intermec website. To download SmartSystems, go to **www.intermec.com/products/smrtsysfoundation/index.aspx**.

Configure the Printer with Touchless Configuration

You can use touchless configuration to configure a printer without turning it on or while it is in the box. If you have the touchless configuration option installed in your printer, an RFID tag receives and stores data from an external IP30 RFID reader and configures the settings when the printer is turned on. The air protocol supported is EPCGlobal Class 1 Gen 2. The available programmable memory is 384 bytes of USER memory bank.

Touchless configuration supports the configuration of these settings:

- Command language
- IPv4 Settings
- Localized language
- RS-232
- Paper type or label/media
- SSID

1 Hold the IP30 in a horizontal orientation.

2 Stand in front of the touchless configuration label and hold the IP30 within 10 cm of the packaging surface.

3 Execute the write or read command.

About Uploading Fonts, Images, Applications, Formats, and Web Pages

You can use the printer web page, a USB storage device, or PrintSet to upload fonts, images, applications, formats, and web forms to the printer. You can only delete fonts, images, applications, and web forms that you upload to the printer. You cannot delete the files that are installed as part of the printer firmware.

Upload Fonts, Images, Applications, Formats, and Web Forms from the Web Page

You can use the printer web page to install fonts, images, applications, formats, and web forms to the printer.

1 Open a web browser on your PC.

2 In the address bar, type the IP address of your printer and press **Enter**. The printer web page appears.

3 Click **Login**. The Login page appears.

4 Type your **Username** and **Password** and then click **Login**. The default value for Username is `itadmin` and the default value for Password is `pass`.

5 Click the **Manage** tab. The Overview page appears.
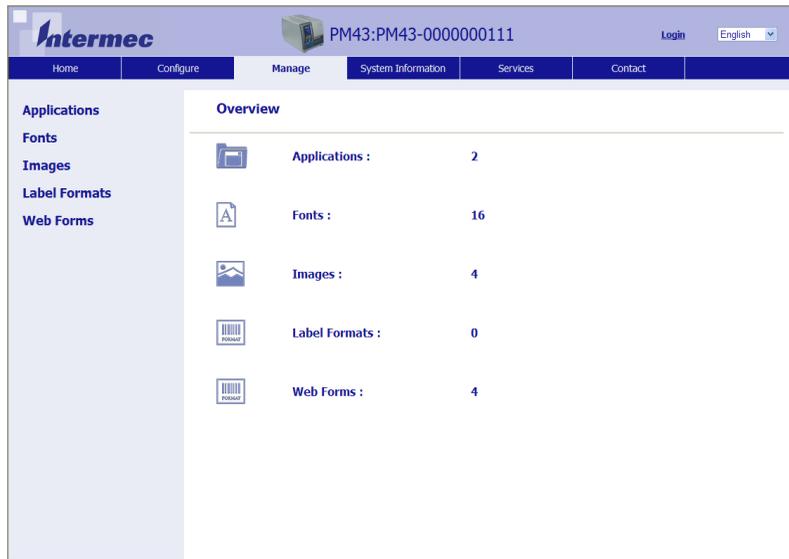
6 Click **Applications**, **Fonts**, **Images**, **Label Formats**, or **Web Forms.** The upload page appears for the option you selected. Here is an example of the page you see if you select to upload fonts.
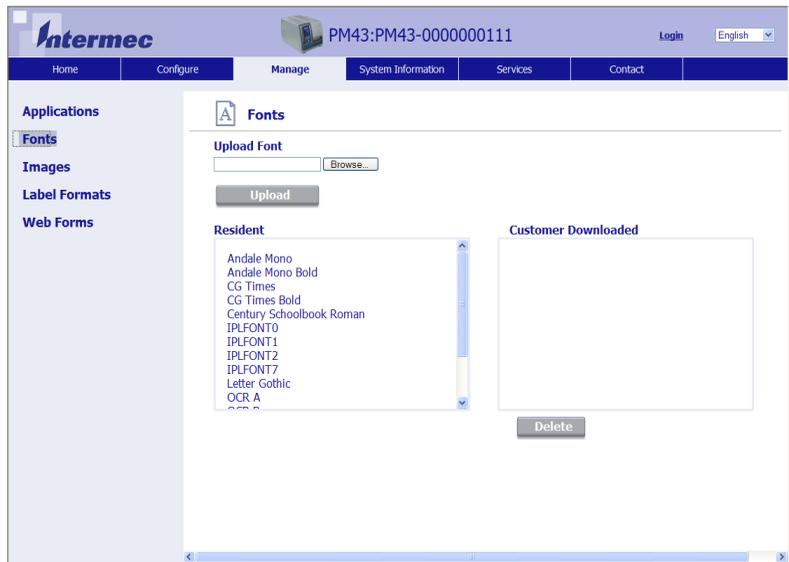
7 To upload a file to the printer:

    a Click **Browse** to locate your file.

    b Double-click the file to select it.

    c Click **Upload**. The file uploads to the printer.

8 Click **Save** when you are finished.

Upload Fonts, Images, Applications, Formats, and Web Forms from a USB Storage Device

You can use a USB storage device to install fonts, images, applications, formats, and web forms to the printer. Use this table to understand where your files need to be located on the USB storage device for the printer to install them.

File Type Directories for the USB Storage Device

File Type	Directory to Place the File	Installed in this Printer Directory
Application	/apps	/home/user/apps
Configuration	/config	
Configuration profile	/profiles	/home/user/profiles
Display images	/display	/home/user/display
Fingerprint script	/scripts	/home/user/scripts
Firmware	/firmware	
Font	/fonts	/home/user/fonts
Form/layout	/forms	/home/user/forms
Image	/images	/home/user/images
Installation package (UFF file)	Root of USB storage device	
Start file	Root of USB storage device	
Web Form	/webforms	/home/user/webforms

1 Copy your files to a USB storage device using the directories in the table.

2 Insert the USB storage device into one of the USB host ports on the printer.

3 If you have an icon printer, the files are automatically uploaded to the printer.

If you have a full touch printer, the USB Device menu automatically appears:

a Select **Install Resources**.

b Select the type of file you want to install. For example, select **Fonts** to install a font.

c Select the file you want to install and wait until the item turns gray and a checkmark appears next to it. The file is now successfully installed in the printer.

d Continue to another file if you have more files to install.

Change Background Image for the Ready Screen

Use this procedure to customize the Ready screen that appears on the printer when it finishes starting up or is waiting for data. The background image you create must be:

- 320 x 240 pixels.
- named background_idle.png.

1 Create a /display directory on your USB storage device.

2 Copy your background_idle.png file to the /display directory on the USB storage device.

3 Insert the USB storage device into one of the USB host ports on the printer.

4 If you have an icon printer the file is automatically uploaded to the /home/user/display directory on the printer.

If you have a full touch printer, use the USB Device menu to upload the file to the printer.

5 Restart the printer.

The new background_idle.png file you uploaded should now appear in place of the original Ready screen.

About Printer Profiles

After you change printer default settings to meet your needs, you can save those settings as a printer profile. The printer supports multiple profiles that you can save and load at any time. For example, you can create one profile to use when you are printing on continuous label stock, and a different profile to use when you are printing on label stock with gaps. Printer profiles are only supported from the Main Menu on the full touch printer.

The following printer settings are not saved in a profile:

• IP address for either IPv4 or IPv6 networks

• Media calibration settings for the label stop sensor

• Remote port or remote host values for a remote computer accessing the printer through raw TCP

Save a Printer Profile from the Main Menu

Use this procedure to save the current settings as a printer profile.

1 From the Ready screen, press the **Main Menu** button. The Main Menu appears.

**2** Select **Tools > Profiles**. The Profiles menu appears.
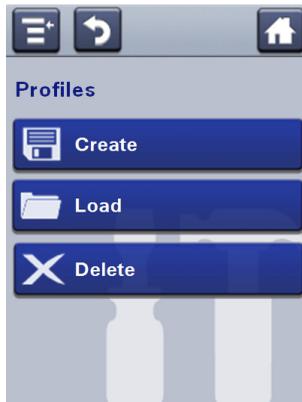
3 Select **Save**. The Save Profile menu appears.

4 Select the **Filename** text box and type a name for the profile. The profiles can have up to sixteen characters.

5 Press ⏎ on the SIP to save your profile name and go back to the Save Profile menu.

6 Press ⟩ and wait until **Complete** appears on the screen.

7 Press ✓ to return to the Main Menu.

Load a Printer Profile from the Main Menu

Use this procedure to load a saved printer profile on the full touch printer.

1 From the Ready screen, press the **Main Menu** button. The Main Menu appears.

2 Select **Tools > Profiles**. The Profiles menu appears.
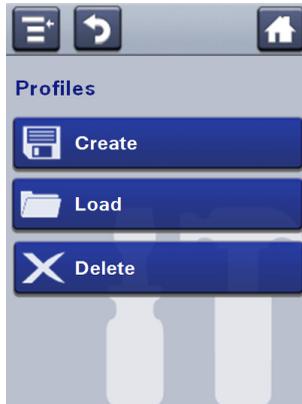
3 Select **Load**. The Load Profile menu appears.

4 Select the profile you want to load on the printer and press ⟩.

5 When **Complete** appears on the screen, press ✓ to return to the Main Menu.

How to Load a Printer Profile with Programming Commands

You can load a saved LCD printer profile to another printer by sending programming commands directly from your PC to the printer through a terminal program (such as HyperTerminal), a serial connection, or a network connection. All commands are case-sensitive.

Note: To load printer profiles that modify communication settings that require itadmin rights, you must log in as an itadmin: RUN "su -p pass itadmin".

Programming Commands to Load a Printer Profile

Connection	Programming Commands
Printer running Fingerprint	RUN "/system/usr/bin/cfg -o xmlimportset -k /home/user/profiles/myprofile"
Printer running IPL	<STX><ESC>.x,/system/usr/bin/cfg -o xmlimportset -k /home/user/profiles/myprofile<ETX>
Telnet connection over Port 23	/system/usr/bin/cfg -o xmlimportset -k /home/user/profiles/myprofile

Install or Export a Configuration File

You can save the current configuration of the printer and export it to a USB storage device for use in other printers. You can also install a configuration file from another printer using a USB storage device.

1 From the Ready screen, press the **Main Menu** button. The Main Menu appears.

2 Select **Tools > USB Menu**.

3 Select **Configuration**.

4 To export a configuration file from the printer memory to the USB storage device, select **Export Configuration**. A list of the available files appears.

   To import a configuration file from the USB storage device to the printer memory, select **Install Configuration**. A list of the available files appears.

5 Select the file you want to export or install.

6 Press **OK** when the export or install confirmation box appears.

Customize the Printer Web Page

The printer web page visual presentation is specified using a CSS (Cascading Style Sheet). You can customize the look of the web page by modifying the CSS. The printer web page internally loads the default style.css prior to loading the user customized style.css. The customized style.css does not need to contain the complete set of CSS directives, it may only specify the subset of CSS styles that the user wishes to customize.

1 Retreive the default CSS file from the printer:
http://<printerip>/format/style.css.

2 Modify the style sheet to make the web page look the way you want it and save your changes.

3 Upload the style sheet to the printer using this FTP to printer path:
/home/user/webpage/style.css.

5

Troubleshoot the Printer

Use this chapter to troubleshoot the printer.

Call Product Support

If you cannot find the answer to your problem in the "Troubleshooting" section, go to the Intermec technical knowledge base (Knowledge Central) at **intermec.custhelp.com** to review technical information or to request customer support. If you still need help after visiting Knowledge Central, call Product Support.

To talk to an Intermec Product Support representative in the U.S.A. or Canada, call:

1-800-755-5505

Outside the U.S.A. and Canada, go to **www.intermec.com** and click **Contact Us** to find your local Intermec representative.

Before you call Intermec Product Support, make sure you have this information ready:

- Printer serial number
- Printer configuration number
- Firmware type and version
- Printer command language
- Wireless or serial port settings
- Installed options
- Media settings
- Ethernet settings
- Bluetooth settings

You can find all of this information on the printer web pages or on a test label.

About Printer System Information

Look in the System Information tab in the printer web pages for useful information and statistics on the printer hardware and firmware. You may need this information if you want to contact Intermec Product Support for assistance or troubleshooting.

System Information Tab in Printer Web Pages

View Printer Statistics

Use the printer web page to view important statistics on the printer. You can view everything from printer uptime to the images installed in the printer.

Printer Statistics Available on the Web Page

Statistic Type	Information Available
SystemInformation	Printer uptime and CPU usage, firmware and kernel versions, printer config and serial numbers, flash and RAM memory information
Print Statistics	Total labels printed, RFID tag success rate, odometer values, total distance printed (printer and current printhead)
Supply	Printhead and ribbon information
Hardware Options	Input/output devices, serial port information
Network Interfaces	MAC address, TCP/IP, Bluetooth, and 802.11 network information
Font Information	Name, type, location, and size of installed fonts
Bar Code Information	Name and type of installed bar code fonts
Image Information	Name, type, location, and size of installed images

1 Open a web browser on your PC.

2 In the address bar, type the IP address of your printer and press **Enter**. The printer web page appears.

3 Click the **System Information** tab.

4 Click **Statistics > System Information**. The System Information page appears.

5 For more detailed statistics, click another choice in the **Statisics** list.

Check the Printer Odometer

You can check the odometer from the printer web page to see the printhead usage and how the current values compare to the alert values.

**Note:** To check the printer odometer from the web page, the printer must be turned on and connected to your Wi-Fi or Ethernet network.

1 Open a web browser on your PC.

2 In the address bar, type the IP address of your printer and press **Enter**. The printer home page appears.

3 Click the **System Information** tab.

4 Click **Odometer**. The list of current odometer statistics appears.

Set Maintenance Alerts

You can set maintenance alerts to determine the threshold or value at which an alert is sent to you. For example, you can set a value in millimeters printed at which the printer triggers an alert telling you that it is time to clean the printhead.

1 Open a web browser on your PC.

2 In the address bar, type the IP address of your printer and press **Enter**. The printer web page appears.

3 Click **Login**. The Login page appears.

4 Type your **Username** and **Password** and then click **Login**. The default value for Username is admin and the default value for Password is pass.

5 Click the **Configure** tab. The Configuration Summary page appears.

6 Click **System Settings > Maintenance Alerts**. The Maintenance Alerts settings page appears.

7 Type the values you want to set for each maintenance alert.

8 Click **Save** when you are finished.

About Alerts

To help maintain the printer, you can configure the printer to send alert messages when certain conditions occur. For example, the printer can send a message when the odometer reaches a certain value, or if the printhead is lifted during printing.

There are three types of alerts:

- Error alerts
- Information alerts
- Warning alerts

You configure alert settings in the printer web page. Alert messages can be sent to an email address, an SNMP trap, or both. You can enable or disable each type of alert, set the number of times the alert is repeated, set the unit of measure that determines how often the alert is sent, and change the default text message for the alert.

Configure Error Alert Notification

The way you receive error alerts is determined by the notification method you configure. You can choose between receiving notifications by SNMP trap, email, or SNMP trap + email. To configure the way you are notified about error alerts:

- From the printer Main Menu, select **Settings > System Settings > General > Alert Notification Method**.
- From the printer web page, login and then click the **Configure** tab **> System Settings > General > Alert Notification Method**.

Maintenance and Error Alerts

Use these tables to understand and troubleshoot some common error alerts you may receive and how to fix them.

Maintenance and Error Alerts

Error Alert	Solution
Label Not Taken	Printing has been stopped because a label is obstructing the label taken sensor. Remove the label to resume printing.

Maintenance and Error Alerts (Continued)

Error Alert	Solution
Printhead Lifted	Lower the printhead.
Out of Ribbon	Load ribbon in the printer.
Out of Media	Load media in the printer.
Ribbon Low	The diameter of the remaining roll of media is lower than the specified value in the Ribbon Low Diameter setting. Replace the ribbon.
Media Low	The diameter of the remaining roll of media is lower than the specified value in the Media Low Diameter setting. Replace the media.
Ribbon Installed	The printer is configured as a direct thermal printer and thermal transfer ribbon is installed. Remove the ribbon or configure the printer for thermal transfer media.
Printer in Pause Mode	A print job is paused from the front panel. Press the **Print** button to resume printing.
Printer in Menu Mode	A user entered a menu from the front panel. Press the **Home** button to return to the Ready screen.
Application Break	Fingerprint only. An application breaks uncontrolled.
Print Job Complete	A print job has been successfully completed.
Odometer (Printer)	The printer has reached a limit set in the Odometer (Printer) setting in Maintenance Alerts for the amount of media to print before being alerted.
Odometer (Printhead)	The printhead has reached a limit set in the Odometer (Printhead) setting in Maintenance Alerts for the amount of media to print before being alerted.
Odometer (User Resettable)	The printer has reached a limit set in the Odometer (User Resettable) setting in Maintenance Alerts for the amount of media printed since the last reset.
Printhead Too Hot	The printhead is overheated and needs to cool down. Wait for printing to resume automatically.
Printhead Not Detected	The printer is not detecting the printhead. Check to make sure the printhead is installed and that the printhead cable is firmly connected to the printhead.

Maintenance and Error Alerts (Continued)

Error Alert	Solution
Faulty Dot	The printhead has reached the number of faulty dots set in the Faulty Dots setting in Maintenance Alerts. You may need to replace the printhead.
Replace Printhead	The printer has reached a limit set in the Replace Printhead setting in Maintenance Alerts for the amount of media to print before replacing the printhead. Replace the printhead.
Clean Printhead	The printer has reached a limit set in the Clean Printhead setting in Maintenance Alerts for the amount of media to print before cleaning the printhead. Clean the printhead.
No RFID Tag Found	The printer can not find an RFID tag.
RFID Not Installed	You are attempting to write to a tag, but the printer does not support RFID. You must install the RFID module in the printer to be able to write to RFID tags.
Upgrading Firmware	The printer is going to start upgrading the firmware. Do not try to send anything to the printer.
Printer is Rebooting	The printer is going to restart. Wait until the printer is ready before attempting to communicate with it.
Started	The printer is in the process of starting up.
Motor Too Hot	The printer motor has reached its maximum operating temperature limit. Let the motor cool down before you resume printing.

Troubleshoot Printer Problems and Find Solutions

Use this section to find possible solutions to printer problems.

Print Quality Problems and Possible Solutions

Problem	Possible Solution
The printout is weak.	Try these possible solutions in order: • Make sure that your media setting is appropriate for hte type of media you are using. • The contrast may be too low. Increase the contrast. • The printhead pressure may be too low. Increase the printhead pressure. • Replace the printhead.
The printout is weaker on one side.	Adjust the printhead balance.
There are weak spots on the printout.	Try these possible solutions in order: • There may be foreign particles on the media. Clean or replace the media. • Make sure that your media and ribbon are compatible. • Make sure that you are using high quality media and ribbon. • The contrast may be too low. Increase the contrast.
The printout is dark or there is excessive bleeding on the media.	Try these possible solutions in order: • Make sure your media setting is appropriate for the type of media you are using. • The contrast may be too high. Decrease the contrast. • The printhead pressure may be too high. Decrease the printhead pressure. • The printhead voltage may be incorrect or the energy control may be faulty. For help, contact your Intermec representative.

Print Quality Problems and Possible Solutions (Continued)

Problem	Possible Solution
There are dark lines along the media path.	The printhead may be dirty. Clean the printhead.
There are white vertical lines on the printout.	Try these possible solutions in order: • The printhead may be dirty. Clean the printhead. • There may be missing dots on the printhead. Replace the printhead.
Part of a dotted line is missing.	Try these possible solutions in order: • The printhead may be failing. Replace the printhead. • The strobe signal may be failing. For help, contact your Intermec service representative.
The inner edge of the printout is missing.	Try these possible solutions in order: • The media may not be properly installed or aligned. Reload the media. • The media margin or X-start parameter may be set too low. Increase the setting.
The content on my printout is compressed.	The print speed may be too high. Lower the print speed.
Nothing shows up on my thermal transfer printout.	The ink-coated side of the ribbon may not be facing the media. Reload the ribbon.
When I feed or print a label, the ribbon is not taken up. Instead, it spills out the front of the printer.	Make sure the Print Method is set to Ribbon (TTR) .
The ribbon breaks.	Try these possible solutions in order: • Make sure your media setting is appropriate for the type of media you are using. • Make sure that the ribbon is fitted correctly. Reload the ribbon. • The energy control may be faulty. For help, contact your Intermec Service representative.

Print Quality Problems and Possible Solutions (Continued)

Problem	Possible Solution
The ribbon wrinkles.	Try these possible solutions in order:
	• The ribbon tension bar may not be adjusted correctly. Use a large straight-slot screwdriver to adjust the ribbon tension bar.
	• You may need to adjust the media edge guide.
	• The printhead pressure may be too high. Decrease the printhead pressure.
The printer is connected to my PC, using a virtual COM port, and printing stops. But, there are no errors to indicate that something is wrong.	Make sure that bidirectional support is disabled. From the printer properties dialog box, click the **Ports** tab, and then clear the **Enable bidirectional support** check box.
The printer is connected to a serial port on my PC, but the printer is not working.	Try these possible solutions:
	• Make sure the serial port settings are configured correctly.
	• Make sure the serial cable pinouts are correct and that the cable is not damaged.
	• If you have the Intermec Windows driver for an RS-232 printer installed on your PC, uninstall the driver.

Networking Problems and Possible Solutions

Problem	Possible Solution
The Ethernet or wireless network connection is not working correctly.	Try these possible solutions:
	• Make sure your network cable is securely connected to your printer and a straight "pin-to-pin" cable, not a "crossover" cable.
	• Make sure your PC is correctly configured for and connected to your network.
	• Make sure your printer is correctly configured for your network.

Networking Problems and Possible Solutions (Continued)

Problem	Possible Solution
I cannot connect to the printer web page.	If you are connecting your printer with a crossover network cable, you may need to disable the web browser's proxy settings on your computer to access the printer web page.

RFID Problems and Possible Solutions

Problem	Possible Solution
The printer has RFID media loaded, but it is not writing to the tags.	After you load RFID media, restart the printer to let the printer identify the RFID media type or run the RFID calibration wizard.
The RFID module is installed in the printer, but "RFID" does not appear in the menu.	The printer is not communicating properly with the RFID hardware. For help, contact your local Intermec representative.
None of the RFID commands work.	RFID is disabled. Enable RFID from the web page or the Main Menu. Go to **Settings (Main Menu) or Configure tab (web page) > System Settings > Manage I/O**.
Printing on regular media (not RFID) is slow and halted in between labels.	RFID is enabled. Disable RFID from the web page or the Main Menu.
I am using an application to write to RFID tags and the printer is printing "VOID" labels.	• The printer may not recognize the RFID media type. Restart the printer or run the media or RFID calibration wizard. • You may need to modify the TAGADJUST parameter. • You may need to adjust the output power (field strength) to the antenna.
I receive this message "No RFID tag found."	• Make sure you are using RFID media. • You may need to modify the TAGADJUST parameter. • The tag may be broken. Try printing on a different label.

RFID Problems and Possible Solutions (Continued)

Problem	Possible Solution
When I send a TAGREAD or TAGWRITE command, I get this error message: "Tag format error."	The TAGFORMAT defined for the operation determines the number of required parameters. You may need to modify the TAGFORMAT. For help, see the **Intermec Fingerprint Command Reference Manual** or the **IPL Command Reference Manual**. For more information, see the EPC Tag Data Standard (v1.1, revision 1.27) available from the EPCglobal web site at **www.epcglobalinc.org**.

How to Restore Printer Defaults

If you need to restore factory defaults on the printer, you can use the printer web page, a hardware-based reset on the icon printer, or the Main menu on a full touch printer. From the printer web page and the Main Menu on a full touch printer, you can choose to restore default network settings, keep or delete user-installed files, and to restore all system settings.

Restore Defaults from the Printer Web Page

You can restore the defaults of your printer from the printer web page if you are connected to a Wi-Fi or Ethernet network.

1 Start a web browser on your desktop PC.

2 In the address field, type the printer IP address and press **Enter**. The printer web page appears.

3 Click **Login** in the upper right corner of the screen. The Login page appears.

4 Type your **Username** and **Password** in the text fields and click **Login**.

5 Select **Services > Restore Defaults**. The Restore Defaults menu appears with none of the check boxes selected.

6 To restore all default settings, select all of the check boxes and then click **Restore**. You can also restore only the defaults for specific settings:

- To restore the current network settings, select the **Network settings** check box.

- To restore all applications, fonts, and other files you have installed on the printer, select the **User files** check box.

- To restore all current system settings, select the **System Settings** check box.

7 When you receive a message to reboot the printer on your desktop PC, click **OK** and restart the printer.

Restore Defaults from the Main Menu

If you have a printer with a full touch display, you can restore the printer to default settings from the **Tools** menu.

1 From the Ready screen, open the Main Menu.

2 Select **Tools > Restore Defaults**. The Restore Defaults menu appears with all items in the list selected by default.

3 To restore all default settings, continue with the next step. You can also change the settings that are restored as follows:

- To keep the current network settings, clear the **Network settings** check box.

- To keep all applications, fonts, and other files you have installed on the printer, clear the **User files** check box.

- To keep all current system settings, clear the **System Settings** check box.

4 Tap the right arrow and when prompted tap **Yes** to restore default settings and reboot. A confirming message appears.

To return to the Main Menu without restoring the default settings, select **No**. To return to the Restore Defaults list without restoring any defaults, select **Cancel**.

Restore Defaults with a Hardware-Based Reset

You can restore the printer defaults on a full touch or icon printer by performing a hardware-based reset.

Note: Although this procedure restores all defaults on the full touch printer, it only restores settings on the icon printer. You need to use PrintSet or another method to restore all defaults on an icon printer.

1 Turn the printer off and open the media cover.

2 Turn the printhead lift lever counterclockwise to raise the printhead.

3 Turn the printer on while pressing and holding the **Feed** button.

4 Release the **Feed** button when the status bar is nearly full (on the full touch printer) or when the last two LEDs remain lit (on the icon printer).

All of the settings are restored on the printer.

5 Turn the printhead lift lever clockwise to lower the printhead and close the media cover.

How to Upgrade the Printer Firmware

You should check for periodic updates to the printer firmware. Updated firmware can include bug fixes or additional features that you might find useful. The latest version of the firmware is available from the PM23c, PM43, or PM43c printer Downloads page on **www.intermec.com**.

You can upgrade the printer firmware using:

• the printer web page.

• a USB storage device.

• PrintSet 5. For more information, see the PrintSet 5 online help.

Note: After you upgrade the printer firmware, Intermec recommends that you restore the default settings and calibrate the media sensors.

Download the Printer Firmware Update

Before you can upgrade the printer firmware, you need to download the upgrade file from the Intermec website.

1 Go to the Intermec website at **www.intermec.com**.

2 Click **Support > Downloads**.

3 Use **Product Category**, **Product Family**, and **Product** to select the PM23c, PM43, or PM43c.

4 Click **Submit**. The latest software appears on the page.

5 Download the latest firmware version to your PC.

Upgrade Firmware from the Printer Web Page

You can upgrade the printer firmware from the printer web page. To configure the printer from the web page, the printer must be turned on and connected to your Wi-Fi or Ethernet network.

1 Start a web browser on your desktop PC.

2 In the address field, type the printer IP address and press **Enter**. The printer web page appears.

3 Click **Login** in the upper right corner of the screen. The Login page appears.

4 Type your **Username** and **Password** in the text fields and click **Login**.

5 Click the **Services** tab and then select **Firmware Upgrade**. The Firmware Upgrade screen appears, showing the current firmware version.

6 Click **Browse** to locate the upgrade file, select it, and then click **Open**.

7 Click **Upgrade**. The printer web page shows that it is upgrading firmware on your printer.

Upgrade Firmware from a USB Storage Device

You can upgrade the printer firmware from a USB storage device. You must place the upgrade file in the root directory on the USB storage device.

Note: For best results, Intermec recommends using a USB storage device that contains no other files besides the upgrade file.

1 Copy the firmware upgrade file to the root directory of the USB storage device.

2 Turn the printer off.

3 Insert the USB storage device into a USB host port.

4 Restart your printer. An upgrading firmware message appears as the upgrade file is loaded into the printer memory. This process may take a few minutes.

5 Remove the USB storage device.

6
Maintain the Printer

Use the information in this section to understand how to clean, adjust, and replace parts of the printer.

How to Clean the Printer

To properly maintain the printer, you should clean it regularly. You can clean these parts of the printer:

- The printhead
- The media guides
- The exterior of the printer
- The cutter (if installed)

⚠️ **Caution: To avoid possible personal injury or damage to the printer, never insert any pointed or sharp objects into the printer.**

⚠️ **Caution: Use only the cleaning agents specified in this section. Intermec is not responsible for damage caused by any other cleaning materials used on this printer.**

⚠️ **Caution: Isopropyl alcohol is a highly flammable, moderately toxic, and mildly irritating substance.**

Follow these guidelines for cleaning the printer:

- Always remove the power cord before cleaning.
- Never spray the printer with water. Protect it from water when cleaning the premises.
- Never use any sharp tools for removing stuck labels. The printhead and rollers are delicate.

Clean the Printhead

Cleaning the printhead on a regular basis is important for the life of the printhead and for the print quality. You should clean the printhead each time you replace the media. Follow this procedure to clean the printhead using the cleaning card. If you need to clean additional residue from the platen roller or tear bar, use a cotton swab moistened with isopropyl alcohol.

⚠️ **Caution: Never use hard or sharp tools to peel away stuck labels or other material. The printhead is delicate and can easily be damaged.**

1 Turn the printer off and disconnect the printer from power.

2 Open the media cover.

3 Remove the media and ribbon (if installed).

4 Insert most of the cleaning card under the printhead, and then lower the printhead.

5 Pull out the cleaning card and raise the printhead.

6 Wait for approximately 30 seconds to allow the cleaning fluid to dissolve the residue.

7 Repeat Steps 4 through 6 if necessary.

8 If necessary, clean residue from the platen roller or tear bar with a cotton swab moistened with isopropyl alcohol.

9 Once the parts are dry, replace the media (and ribbon) in the printer.

10 Close the media cover, reconnect power, and turn on the printer.

Clean the Media Guides

Both the upper and lower media guides are transparent to allow light to pass between the two parts of the label gap and label mark sensors. It is important to keep these surfaces free of dust, stuck labels, and adhesive residue.

1 Turn the printer off and disconnect the printer from power.

2 Open the media cover.

3 Remove the media and ribbon (if installed).

4 Insert a cleaning card or a soft cloth soaked in isopropyl alcohol between the two media guides to clean them.

5 Wait for approximately 30 seconds to allow the cleaning fluid to dissolve the residue.

6 Once the parts are dry, replace the media (and ribbon) in the printer.

7 Close the media cover, reconnect power, and turn on the printer.

Clean the Exterior of the Printer

Make sure to keep the exterior of the printer clean. Maintaining a clean exterior will reduce the risk of dust or foreign particles reaching the inside of the printer and affecting printer functionality.

• Use a soft cloth, possibly moistened with water or a mild detergent, when cleaning the printer exterior.

Make sure to keep the surface surrounding the printer clean as well.

Clean the Cutter

You should clean the cutter every time you clean the printhead. It is important to keep the cutter clean to prolong the life of the cutter.

1 Turn the printer off and disconnect the printer from power.

2 Open the cutter door.

3 Use a swab soaked in isopropyl alcohol to clean the cutter opening.

4 Once the cutter is dry, close the cutter door, reconnect power, and turn on the printer.

Replace the Printhead

You need to replace the printhead periodically when it wears out due to the rapid heating and cooling process used during printing. How often you need to replace the printhead depends on factors such as what type of images you print, the type of media or ribbon you use, the amount of energy to the printhead, the print speed, and the ambient temperature of the room you print in. The firmware detects the new printhead when you restart the printer.

1 Turn the printer off and disconnect the printer from power.

2 Open the media cover.

3 Remove the media and ribbon (if installed).

4 Turn the printhead lift lever counterclockwise to raise the printhead.

5 Detach the magnetic pressure arm from the printhead bracket and disconnect the two cables from the printhead as you remove it from the printer.
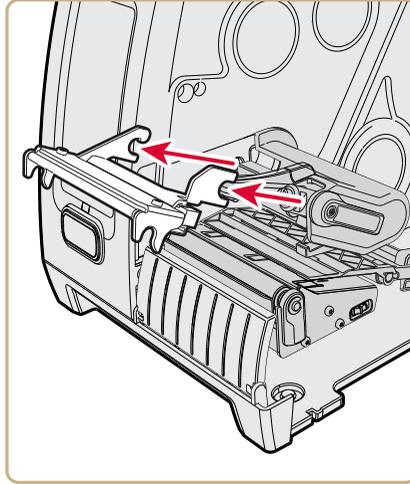
6 Connect the two printhead cables to the new printhead.
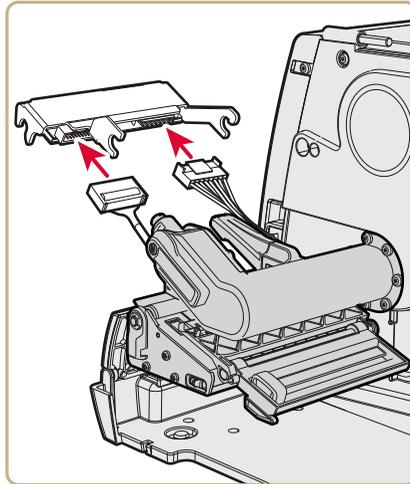
7 As you insert the new printhead bracket into the printer, make sure the metal arms on the printhead go around the magnetic pressure arm bar. Attach the magnetic pressure arm to the printhead.

8 Replace the media (and ribbon) in the printer.

9 Turn the printhead lift lever clockwise to lower it.

10 Close the media cover, reconnect power, and turn on the printer.

Replace the Platen Roller

If the printer platen roller gets damaged or wears out, it is easy to replace.

On the PM43 printer, you can store a spare platen roller in the holder located under the media holder. Just insert the platen roller as you would into the printer and then turn the latch counterclockwise to secure it to the printer base.

1 Turn the printer off and disconnect the printer from power.

2 Open the media cover.

3 Remove the media.

4 Turn the printhead lift lever counterclockwise to raise the printhead.

5 Rotate the platen roller latch clockwise to detach it from the printer and pull the platen roller away from the printer.
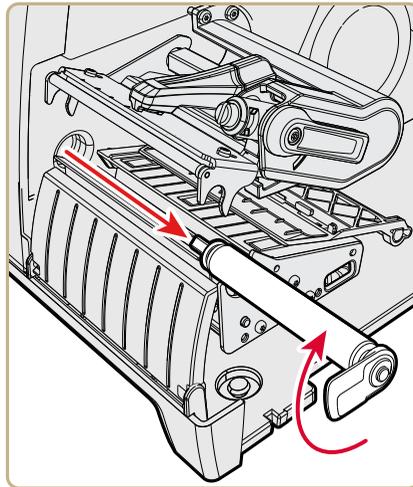
6 Insert the new platen roller into the printer and secure it by turning the latch counterclockwise.

7 Reload media and turn the printhead lift lever clockwise to lower it.

8 Close the media cover, reconnect power, and turn on the printer.

How to Adjust the Printer

You may need to adjust your printer to accommodate how you are printing or to improve printer performance. You can make these adjustments on the printer:

- Ribbon wrinkling
- Printhead balance
- Printhead pressure
- Label taken sensor
- Label gap sensor and label mark sensor

Prevent Ribbon Wrinkling

If you have problems with the thermal transfer ribbon getting wrinkled, try adjusting the ribbon tension bar.

1 Open the media cover.

2 Use a large straight-slot screwdriver to adjust the ribbon tension bar:

- Turn the tension bar screw clockwise to move the bar backward and decrease the tension.

- Turn the tension bar screw counterclockwise to move the bar forward and increase the tension.
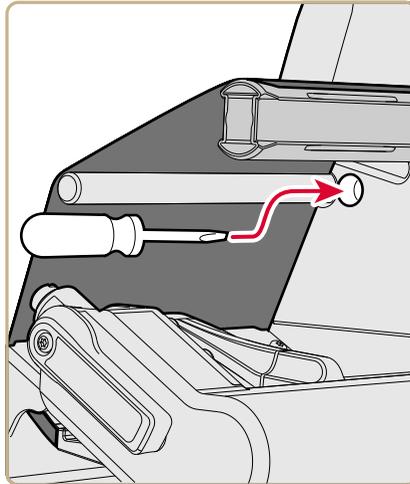
Adjust the Printhead Balance

If your labels are printing lighter on one side than the other, you probably have an unbalanced printhead. The printer is adjusted at the factory for full-width media. If you are using media that is less than full-width (4 inches or 102 mm), Intermec recommends that you adjust the position of the printhead balance arm so that the printhead is correctly pressured against the media.

1 Open the media cover.

2 If you have thermal transfer ribbon installed, remove it.

3 Turn the printhead lift lever counterclockwise to raise the printhead.
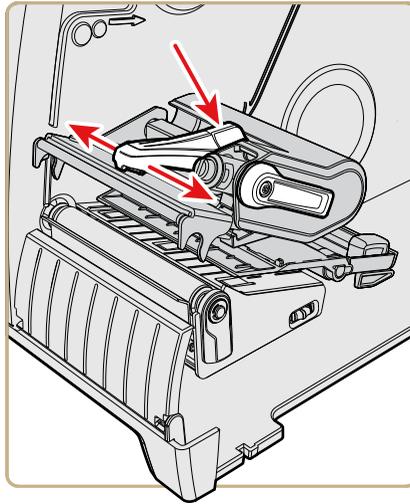
4 Press down on the blue part of the printhead balance bar and move it:

- outward for wider media.
- inward for narrower media.

5 Close the printhead and load the ribbon.

6 Test and readjust the printhead balance if necessary.

7 Close the media cover.

Adjust the Printhead Pressure

You may need to adjust the printhead pressure on the printer if:

- you are using thicker or thinner media than previously.
- your labels are printing ligher on one side than the other.
- your thermal transfer ribbon starts to crease.

Do not use a higher printhead pressure than necessary. It may increase the wear on the printhead and shorten its life.

1 Open the media cover.

2 Use a straight-slot screwdriver to adjust the pressure screw.
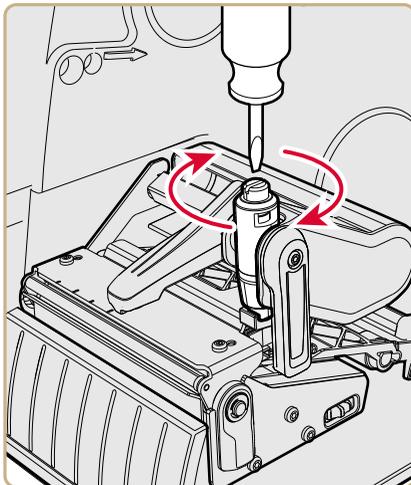
- Turn the screw clockwise to increase the pressure resulting in darker print.
- Turn the screw counterclockwise to decrease the pressure resulting in lighter print.

3 Test and readjust the printhead pressure if necessary.

Adjust the Label Gap and Black Mark Sensor

The label gap sensor is a transmissive sensor that controls how the printer feeds media by detecting gaps between the labels. The black mark sensor is a reflective sensor that detects black marks on continuous media.

The sensor contains a blue LED which is strong enough to see through media. You can use the blue LED to help determine the proper location for the sensor.

1 Open the media cover.

2 Adjust the label gap and black mark sensor:

- Turn the sensor adjustment knob counterclockwise to move the sensor toward the outside of the printer.

- Turn the sensor adjustment knob clockwise to move the sensor toward the inside of the printer.
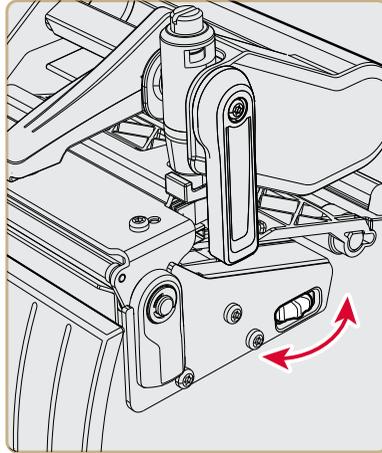
3 Close the media cover.

A

Specifications

This appendix contains specifications for the PM23c, PM43, and PM43c printers.

Printer Specifications

Physical Specifications

PM43 Dimensions:	294.6 x 284.2 x 483.5 mm (11.6 x 11.2 x 19 in)
PM43c Dimensions: (Standard Media Cover)	181 x 252.5 x 431.8 mm (7.13 x 9.9 x 16.9 in)
PM43c Dimensions: (Dome Media Cover)	244.9 x 252.5 x 500.2 mm (9.6 x 9.9 x 19.7 in)
PM23c Dimensions: (Standard Media Cover)	181 x 205.5 x 431.8 mm (7.13 x 8.1 x 16.9 in)
PM23c Dimensions: (Bubble Top)	207 x 205.5 x 431.8 mm (8.15 x 8.1 x 16.9 in)
PM23c Dimensions: (Dome Media Cover)	244.9 x 205.5 x 500.2 mm (9.64 x 8.1 x 19.7 in)
PM43 Weight:	15.8 kg (35 lbs)
PM43c Weight:	12.7 kg (28 lbs)
PM23c Weight:	9.5 kg (21 lbs)

PM43 Printer Width Dimensions

284 mm
(11.19 in)

PM43 Printer Length and Height Dimensions

294 mm
(11.58 in)

484 mm
(19.07 in)

525 mm
(20.66 in)
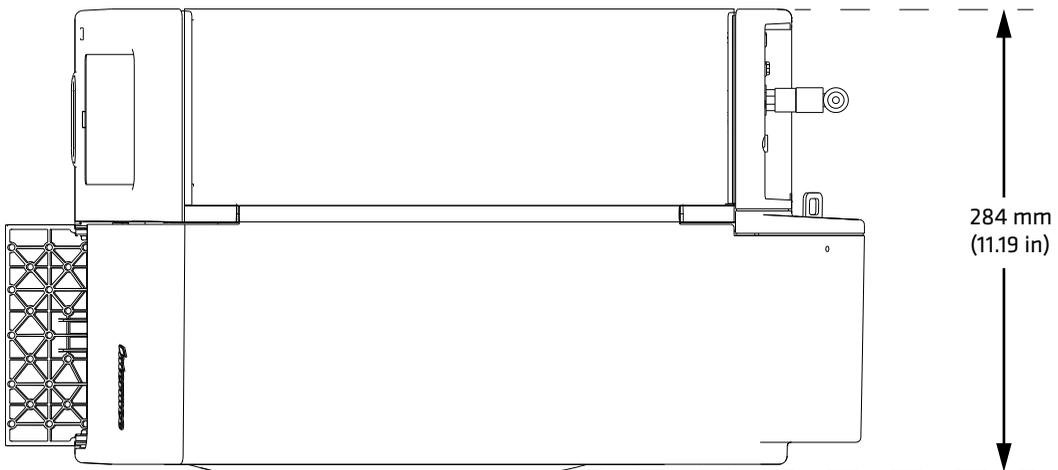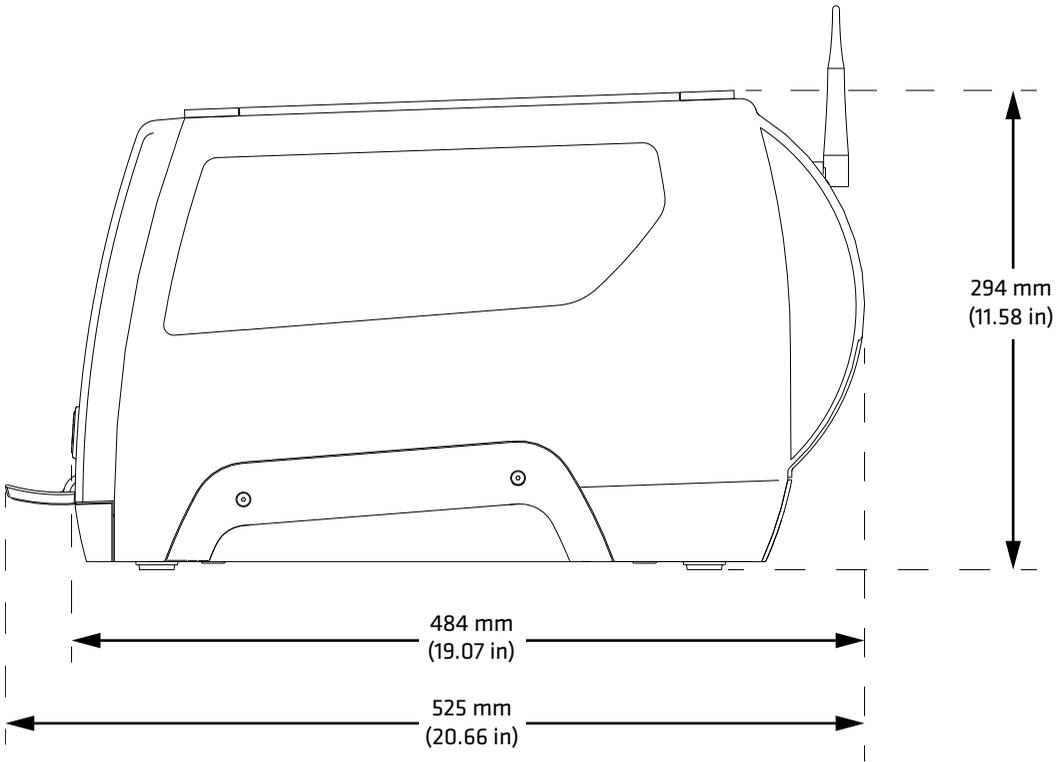
PM43c Printer Width Dimensions

249 mm
(9.81 in)

PM43c Printer Length and Height Dimensions

181 mm
(7.13 in)

434 mm
(17.09 in)

473 mm
(18.61 in)
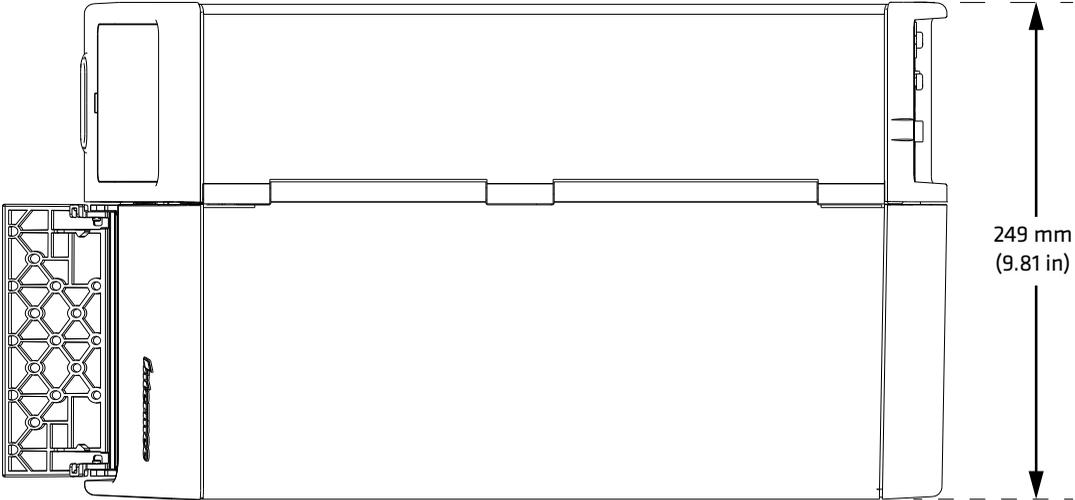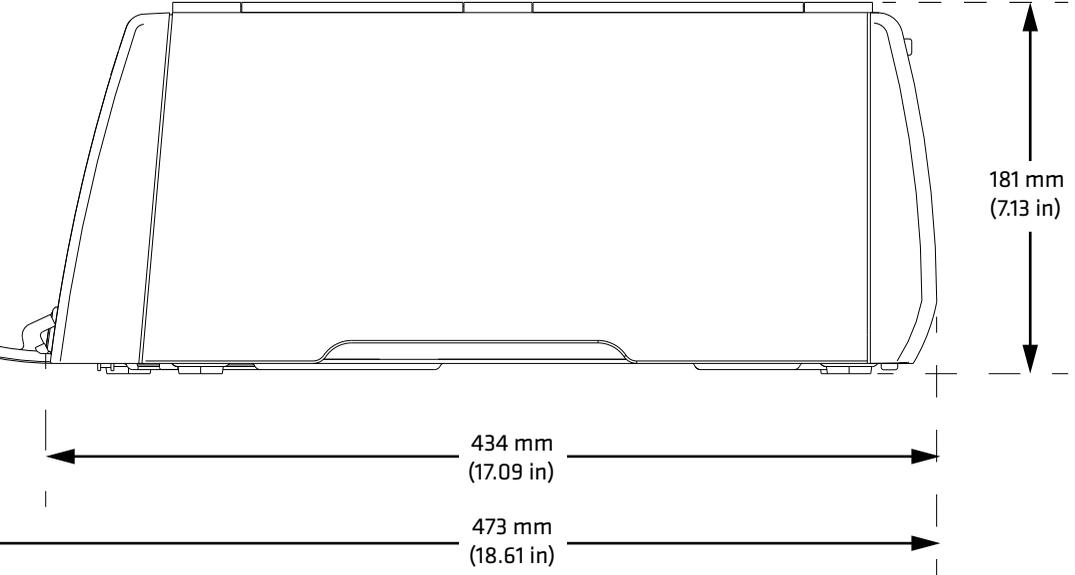
PM23c Printer Width Dimensions

205mm
(8.08 in)

PM23c Printer Length and Height Dimensions

181 mm
(7.13 in)

432 mm
(17.01 in)

471 mm
(18.53 in)
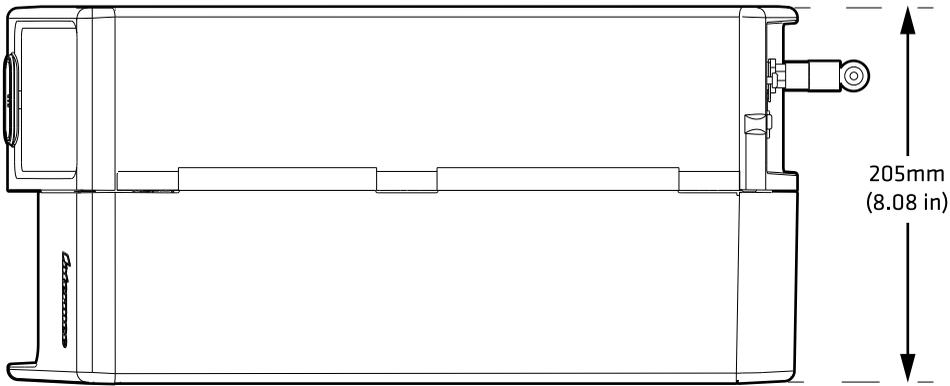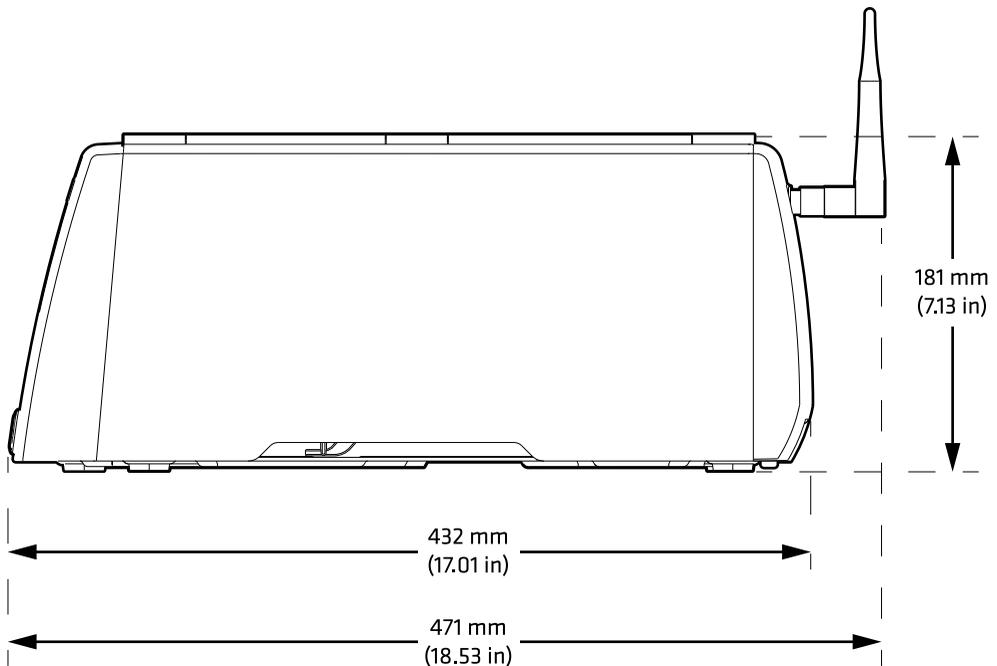
Power Specifications

Power Supply Requirements:	100–240 V, 4 A, 50/60 Hz

Temperature and Humidity Specifications

Operating Temperature:	5 °C to 40 °C (41 °F to 104 °F)
Storage Temperature:	-20 °C to 70 °C (-4 °F to 158 °F)
Relative Humidity:	20 to 80% non-condensing

PM43 Print Speed, Resolution, and General Media Specifications

Print Mode:	Thermal Transfer or Direct thermal
Print Speed (variable):	203 dpi: 100 to 300 mm/sec (4 to 12 ips)
	300 dpi: 100 to 300 mm/sec (4 to 12 ips)
	406 dpi: 100 to 250 mm/sec (4 to 10 ips)
Print Resolution:	203 dpi: 8 dots/mm
	300 dpi: 11.8 dots/mm
	406 dpi: 16 dots/mm
Print Width:	203 dpi: 108 mm (4.25 in) max
	300 dpi: 106 mm (4.17 in) max
	406 dpi: 104 mm (4.09 in) max
Media Width:	19.05 to 114.3 mm (0.75 to 4.50 in)
Label Roll Diameter (maximum):	212.70 mm (8.38 in)
Label Roll Core (ID):	76.20 mm (3 in) or 38.1 mm (1.50 in)
Label Length (minimum):	6.35 mm (.25 in)
Gap Length Between Labels:	1.2 to 26 mm (0.05 to 1.02 in)
Black Mark Length:	3 to 25 mm (0.12 to 0.98 in) centered between tickets, 15% maximum reflectance
Media Thickness:	61 to 264 µm (2.40 to 10.40 mil)
Media Density:	57.60 to 250 g/m2
Liner Opacity (maximum):	76% (TAPPI T425)
Ribbon Width:	21.59 to 110 mm (0.85 to 4.33 in)

PM43 Print Speed, Resolution, and General Media Specifications (Continued)

Ribbon Roll Diameter: (maximum)	80 mm (3.15 in)
Ribbon Core (I.D.):	25.40 mm (1.00 in)
Ribbon Core Length:	21.59 to 110 mm (0.85 to 4.33 in)
Gap and Black Mark Sensor:	Adjustable from left edge to101.6 mm (4.00 in)

PM43c Print Speed, Resolution, and General Media Specifications

Print Mode:	Thermal Transfer or Direct Thermal
Print Speed (variable):	203 dpi:100 to 300 mm/sec (4 to 12 ips)
	300 dpi: 100 to 300 mm/sec (4 to 12 ips)
	406 dpi: 100 to 250 mm/s (4 to 10 ips)
Print Resolution:	203 dpi: 8 dots/mm
	300 dpi: 11.8 dots/mm
	406 dpi: 16 dots/mm
Print Width:	203 dpi: 108 mm (4.25 in) max
	300 dpi: 106 mm (4.17 in) max
	406 dpi: 104 mm (4.09 in) max
Media Width:	19.05 to 114.3 mm (0.75 to 4.5 in)
Label Roll Diameter (maximum):	152.4 mm (6 in) with standard cover
	212.9 mm (8.38 in) with dome cover
Label Roll Core (I.D.):	76.20 mm (3 in) or 38.1 mm (1.50 in)
Label Length (minimum):	6.35 mm (.25 in)
Gap Length Between Labels:	1.20 to 26 mm (0.05 to 1.02 in)
Black Mark Length:	3 to 25 mm (0.12 to 0.98 in) centered between tickets, 15% maximum reflectance
Media Thickness:	61 to 264 µm (2.40 to 10.40 mil)
Media Density:	57.60 to 250 g/m2
Liner Opacity (maximum):	76% (TAPPI T425)
Ribbon Width:	21.59 to 110 mm (0.85 to 4.33 in)
Ribbon Roll Diameter: (maximum)	62 mm (2.44 in)

PM43c Print Speed, Resolution, and General Media Specifications (Continued)

Ribbon Core (I.D.):	25.4 (1.00 in)
Ribbon Core Length:	21.59 to 110 mm (0.85 to 4.33 in)
Gap and Black Mark Sensor:	Adjustable from left edge to 101.6 mm (4.00 in)

PM23c Print Speed, Resolution, and General Media Specifications

Print Mode:	Thermal Transfer or Direct thermal
Print Speed (variable):	203 dpi:100 to 300 mm/sec (4 to 12 ips)
	300 dpi: 100 to 300 mm/sec (4 to 12 ips)
	406 dpi: 100 to 250 mm/s (4 to 10 ips)
Print Resolution:	203 dpi: 8 dots/mm
	300 dpi: 11.8 dots/mm
	406 dpi: 16 dots/mm
Print Width:	203 dpi: 56 mm (2.20 in) max
	300 dpi: 56 mm (2.20 in) max
	406 dpi: 64 mm (2.52 in) max
Media Width:	19.05 to 68.6 mm (0.75 to 2.70 in)
Media Width:(RFID Baggage Tag)	29 to 54 mm (1.14 x 2.13 in)
Label Roll Diameter (maximum):	152.4 mm (6 in) with standard cover
	184.2 mm (7.25 in) with bubble top
	212.9 mm (8.38 in) with dome cover
Label Roll Core (I.D.):	76.20 mm (3 in) or 38.1 mm (1.50 in)
Label Length (minimum):	6.35 mm (.25 in)
Gap Length Between Labels:	1.20 to 26 mm (0.05 to 1.02 in)
Black Mark Length:	3 to 25 mm (0.12 to 0.98 in) centered between tickets, 15% maximum reflectance
Media Thickness:	61 to 264 µm (2.40 to 10.40 mil)
Media Density:	57.60 to 250 g/m2
Liner Opacity (maximum):	76% (TAPPI T425)
Ribbon Width:	21.59 to 68.6 mm (0.85 to 2.70 in)

PM23c Print Speed, Resolution, and General Media Specifications (Continued)

Ribbon Roll Diameter: (maximum)	62 mm (2.44 in)
Ribbon Core (I.D.):	25.4 (1 in)
Ribbon Core Length:	21.59 to 68.6 mm (0.85 to 2.70 in)
Gap and Black Mark Sensor:	Adjustable from left edge to50.8 mm (2.00 in)

Memory

- 128 MB Flash
- 128 MB SDRAM
- USB memory device (optional)

Touch Screen Specifications

- 3.5 inch, portait orientation
- 262,000 colors
- Resistive display that supports touch input with fingers, gloved hands, or a stylus
- 72 pixels per inch

Supported Command Languages

- Fingerprint
- Direct Protocol
- Intermec Printer Language (IPL)
- ZSim
- DSim
- Smart Printing

Media Sensors

- Label gap/tag notch
- Black mark
- Printhead lift
- Media low (with rotational hanger option)
- Ribbon present/end (thermal transfer models only)
- Ribbon low

Network Services

- FTP
- HTTP Server
- SNMP v1/2c/3
- SNMP client support for IPv4 and IPv6
- WINS for IPv4
- BOOTP for IPv4
- DNS client support for IPv4 and IPv6
- Line Printer Protocol
- Raw TCP (Telnet in/out)
- DHCP client for IPv4 and IPv6 network (dual stack)
- IPv4 and IPv6
- Ping
- IPSEC/IKEv2 over IPv6
- SSH

Resident Fonts

- Andale Mono
- Andale Mono Bold
- Century Schoolbook Roman
- CG Times
- CG Times Bold
- Letter Gothic
- OCR-A
- OCR-B
- Univers
- Univers Bold
- Univers Condensed Bold
- Univers Extra Condensed

Downloadable Fonts

For broader language and character support, Intermec printers allow download and printing with any Unicode TrueType or TrueType-based OpenType font. Intermec recommends fonts from Monotype Imaging to address global languages. The fonts below have been tested and are available for purchase and download at **www.fonts.com**.

WorldType Collection fonts support all global languages whereas the other fonts listed support specific languages.

- Angsana New Regular
- Helvetica World
- MSung PRC Medium
- MSung HK Medium
- HYGothic-Medium
- TBMinPro-Light
- NarkisClassicMF
- WorldType Collection J
- WorldType Collection K
- WorldType Collection S
- WorldType Collection T

Supported Font Types

- TrueType
- OpenType
- Bitmap

Supported Bar Code Symbologies

1D bar code symbologies:

- Codabar
- Code 11
- Code 39
- Code 93
- Code 128
- DUN-14/16
- EAN
- HIBC 39
- HIBC 128
- Industrial 2 of 5
- Interleaved 2 of 5
- ISBT-128
- Matrix 2 of 5
- Straight 2 of 5
- UPC

2D bar code symbologies:

- Aztec
- Code 16K
- Code 49
- Data Matrix
- Dot Code
- Grid Matrix
- MaxiCode
- MicroPDF417
- MSI (modified Plessey)
- PDF417
- Planet
- Plessey
- Postnet
- QR Code
- RSS-14
- USPS 4-State Customer Bar Code

Supported Graphic File Types

- PCX, PNG, GIF, and BMP

Windows Drivers

- Support for Windows XP, Vista, Windows 7, Server 2003, Server 2008
- Supports 32-bit and 64-bit editions

Interface Specifications

Use this section to understand the standard interfaces available on the PM23c, PM43, and PM43c printers.

RS-232 Serial Interface

Use this table to understand the default settings of the serial port.

Default Settings of the Serial Port

Parameter	Default Setting
Baud rate	115200
Data bits	8
Parity	None
Stop bits	1
Hardware	Disable

The printer end of the serial cable is a DB9 pin and the PC end is dependent on the model of the desktop computer.
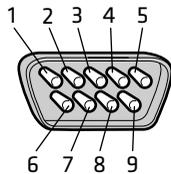
### RS-232 Serial Cable DB9 Pins

Pin	Signal	Description
1		External +5 VDC, Max 500 mA
2	TXD	Transmit data
3	RXD	Receive data
4		
5	GND	Ground
6		
7	CTS	Clear to send

| Pin	Signal	Description
8	RTS	Request to send
9		

USB Device Interface

You connect a cable with a Type A connector and a Type B connector from your PC to the printer. The Type A connector plugs into the PC and the Type B connector plugs into the printer.
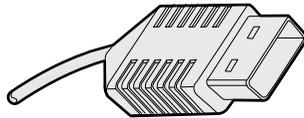
USB Type A Connector
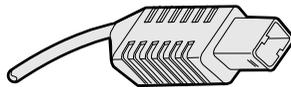
USB Type B Connector

To use the USB interface to print from a PC, you need to have the Intermec InterDriver printer driver installed on your PC. Intermec recommends that you only connect one printer to each USB port on the PC, either directly or through a hub. You cannot connect other devices, such as a keyboard or a mouse, to the same hub.

USB Host Interface

Use the USB host device to connect USB devices to the printer such as HID bar code scanners, keyboards, USB storage devices, and USB hubs.
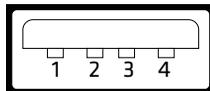
USB Host Interface

USB Host Interface Pins and Descriptions

Pin	Description
1	VBUS
2	D-
3	D+
4	Gnd

Ethernet Interface

The Ethernet interface has an RJ-45 socket for use with a standard RJ-45 cable. The interface supports 10/100 Mbps Fast Ethernet (10BASE-T, 100BASE-T) and is fully compliant with the IEEE 802.3u standard. You can find the network card MAC address on the back of the printer for a PM43 printer, and on inside the media cover on the base for the PM23c and PM43c printers.
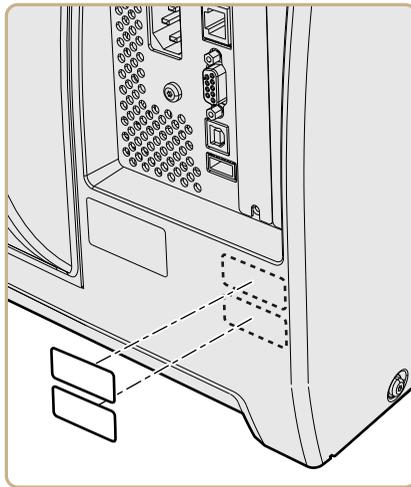
MAC Address Label Location on the PM43
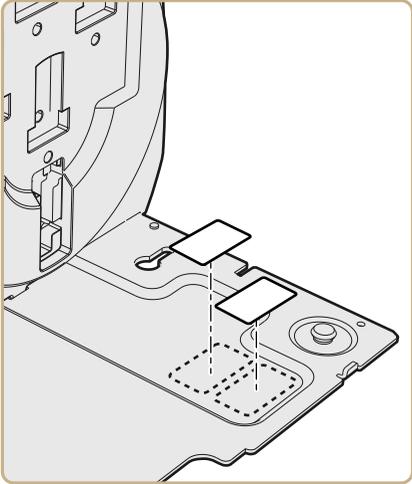
MAC Address Label Location on the PM43c
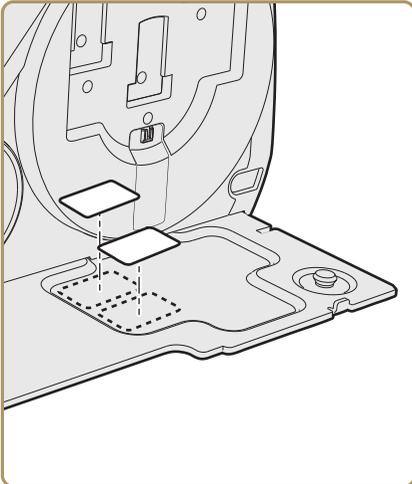
MAC Address Location on the PM23c

B

Default Settings

This appendix contains all of the default settings for the printer.

Default Configuration

Use this appendix to view the default settings on the printer. The following tables list the default settings for the PM23c, PM43, and PM43c printers. If you restore the printer to factory default settings, it will use the values listed here. The order of the settings reflects the organization of the printer web page and Main Menu.

## Serial Port Settings

This section describes the serial port settings. To view these settings:

- From the printer Main Menu, select **Settings > Communications > Serial > COM1**.
- From the printer web page, click the **Configure** tab, **Communications > Serial**.

Note: These settings are not accessible unless the printer has a serial connection to a PC.

Serial Port Settings

Setting	Description	Default
Baud Rate	Transmission speed in bits per second (bps) for the serial port.	115200
Data Bits	Number of bits that define a character or byte.	8
Parity	Specifies how the printer checks the integrity of the transmitted data.	None
Stop Bits	Number of bits sent at the end of every character to allow the receiving signal hardware to detect the end of a character and to resynchronize with the character stream.	1
Hardware	Specifies if hardware flow control (RTS/CTS) is used to manage the rate of data transmission between the device and the host.	Disable

Serial Port Settings (Continued)

Setting	Description	Default
ENQ/ACK	Specifies if software flow control (ENQ/ACK) is used to manage the rate of data transmission between the device and the host.	Disable
XON/XOFF To	Specifies if software flow control (XON/XOFF) is used to manage the rate of data transmission to the host.	Disable
XON/XOFF From	Specifies if software flow control (XON/XOFF) is used to manage the rate of data transmission from the host.	Disable
New Line Character	Defines the characters that the printer echoes to the host to indicate that it has moved to a new line.	CR/LF

Ethernet Settings

This section describes the Ethernet IPv4 and IPv6 settings. To view these settings:

- From the printer Main Menu, select **Settings > Communications > Ethernet**.
- From the printer web page, click the **Configure** tab, **Communications > Ethernet**.

Ethernet Settings

Setting	Description	Default
(IPv4) IP Assignment Method	Specifies how the printer obtains an IP address.	DHCP
(IPv4) IP Address	Specifies the unique network-level address that is assigned to each device in a TCP/IP network (IPv4).	0.0.0.0
Subnet Mask	Specifies a number that defines the range of IP addresses that can be used in a TCP/IP network.	0.0.0.0

Ethernet Settings (Continued)

Setting	Description	Default
Default Router	Specifies the IP address of a router that is used when a device sends a packet to another subnet or to an unknown destination.	0.0.0.0
DHCP Response	Specifies if the printer receives DHCP responses by broadcast or unicast.	Broadcast
(IPv6) IP Assignment Method	Specifies how the printer obtains an IP address (for IPv6 networks).	Automatic
(IPv6) IP Address	Specifies the unique network-level address that is assigned to each device in a TCP/IP network (IPv6).	Automatic

Wireless 802.11 General Settings

This section describes the 802.11 general settings. To view these settings:

- From the printer Main Menu, select **Settings > Communications > Wireless 802.11 > General**.
- From the printer web page, click the **Configure** tab, **Communications > Wireless 802.11**.

Wireless 802.11 General Settings

Setting	Description	Default
Network Name (SSID)	Defines the wireless network. To communicate, all access points and wireless devices must have the same network name, which is case-sensitive.	INTERMEC
Network Type	Selects the radio behavior of the printer. **Ad Hoc** mode allows the printer to communicate directly with another printer. **Infrastructure** mode allows the printer to communicate through an access point.	Infrastructure
Roaming	Controls the roaming inclination of the printer. The higher the level, the less inclined the printer is to switch access points based on the printer received signal strength (RSSI).	Off

Wireless 802.11 General Settings (Continued)

Setting	Description	Default
Power Mode	Select the power management setting for the radio. **Constant Awake** provides the highest throughput but draws the most power. **Power Saving**conserves the most power but provides the lowest throughput. **Fast Power Saving** turns off components when they are not being used to draw less current.	Constant Awake
Channel	Sets the common channel that radios in Ad Hoc mode use to transfer data. Range is 1 to 14.	1
Hidden SSID	Determines if the radio is allowed to look for SSIDs that have been hidden to prevent unauthorized devices from connecting to the wireless network.	Disable

Wireless 802.11 Network Settings

This section describes the 802.11 IPv4 and IPv6 settings. To view these settings:

- From the printer Main Menu, select **Settings > Communications > Wireless 802.11 > Network > IPv4** or **IPv6**.

- From the printer web page, click the **Configure** tab, **Communications > Wireless 802.11**.

Wireless 802.11 Network Settings

Setting	Description	Default
(IPv4) IP Assignment Method	Sets how the printer obtains an IP address (for IPv4 networks).	DHCP
(IPv4) IP Address	Sets the unique network-level address that is assigned to each device in an IPv4 network.	0.0.0.0
Subnet Mask	Sets a number that defines the range of IP addresses that can be used in an IPv4 network.	0.0.0.0

Wireless 802.11 Network Settings (Continued)

Setting	Description	Default
Default Router	Sets the IP address of a router that is used when a device sends a packet to another subnet or to an unknown destination.	0.0.0.0
DHCP Response	Sets if the printer receives DHCP responses by broadcast or unicast.	Broadcast
(IPv6) IP Assignment Method	Sets how the printer obtains an IP address (for IPv6 networks).	Automatic
(IPv6) IP Address	Sets the unique network-level address that is assigned to each device in an IPv6 network.	Automatic

Wireless 802.11 Security Settings

This section describes the 802.11 security settings. To view these settings:

- From the printer Main Menu, select **Settings > Communications > Wireless 802.11 > Security**.
- From the printer web page, click the **Configure** tab **> Communications > Wireless 802.11**.

Wireless 802.11 Security Settings

Setting	Description	Default
Security Type	Selects the protocol the radio uses to verify its identity and makes sure that it is authorized to communicate on the wireless network.	None
Association	Selects the security method that the radio uses to get access to the wireless network.	Open/WEP
Pre-Shared Key	Defines the passphrase that allows the radio to authenticate over the wireless network (for both WPA and WPA2 security). Range is 8 to 64 characters.	None

Wireless 802.11 Security Settings (Continued)

Setting	Description	Default
Network Key Index	Selects the active network key to use for WEP security. Range is 1 to 4.	1
Network Key 1, Network Key 2, Network Key 3, Network Key 4	Defines a network key that is used for WEP security. Keys are entered in ASCII or hexadecimal (preceded by 0x) format.	Empty string
User Name	Sets the name that the printer uses when logging in to the network. Range is 1 to 96 characters.	None
Password	Sets the password that the printer uses when logging in to the network. Range is 1 to 96 characters.	None
Anonymous Name	Sets the outer EAP user name that the printer uses for logging in to the network. Maximum length is 96 characters.	Empty string
Inner Authentication	Selects the authentication method that is used when the EAP type is EAP-FAST, PEAP, or TTLS.	MSCHAPv2
CA Certificate	Sets the name of the Certificate Authority (CA) that verifies the server certificate. This CA should be the same one that was used to sign the server certificate.	intermec.pem
Client Certificate	Sets the name of the client certificate the printer uses to authenticate to the network using EAP-TLS. Maximum length is 128 characters.	None
Client Key	Sets the private key the printer uses for EAP-TLS. Maximum length is 128 characters. Use the certinstall.sh script to install the certificate correctly.	None
Server Common Name 1	Sets the certificate name that is on the primary authentication server. If this value is none, then the value for Server Common Name 2 is used. Range is 1 to 96 characters.	None

Wireless 802.11 Security Settings (Continued)

Setting	Description	Default
Server Common Name 2	Sets the certificate name that is on the secondary authentication server. If this value is none, then the value for Server Common Name 1 is used. Range is 1 to 96 characters.	None
Validate Certificate	Determines if the identity of the authentication server is verified using its certificate when using EAP-TTLS, PEAP, or EAP-TLS. Intermec recommends that you set Validate Certificate to **Yes**.	No
PAC	Sets the name of the Protected Access Credential (PAC) that is used for EAP-FAST authentication. The printer uses this file if Acquire PAC is on and the current installed PAC fails to authenticate the printer to the network.	eap-fast.pac
Acquire PAC	Determines if automatic PAC file provisioning is on for EAP-FAST authentication.	On
Fast Roaming (CCKM)	Determines if the printer can roam from one access point to another without reauthenticating with the server. CCKM only works in wireless networks using LEAP.	Disable
Mixed Mode (Group=TKIP)	Determines if the printer can use either TKIP or AES for data encryption, depending on the configuration of the access point.	Disable

Bluetooth Settings

This section describes Bluetooth settings for the printer. To view these settings:

- From the printer Main Menu, select **Settings > Communications > Bluetooth**.
- From the printer web page, click the **Configure** tab, **Communications > Bluetooth**.

Bluetooth Settings

Setting	Description	Default
Security	Selects the level of security that is used when pairing devices to the printer. If you select **Authentication**, you must enter a passkey. If you select **Auth + Encrypt**, you must enter a passkey and traffic is encrypted.	Disable
Device Name	Sets the name that identifies the printer in the Bluetooth network. Maximum length is 16 characters.	Printer model number and serial number. For example, PM43-0000000001.
Discover	Determines if other Bluetooth devices can detect the printer.	Enable
Passkey	Sets the passkey that is used when pairing Bluetooth devices to the printer. Range is 1 to 16 characters (case-sensitive).	1234
Reserve	Determines if the printer is exclusively reserved for one Bluetooth device. The first Bluetooth device that connects with the printer locks out any other connection attempts.	Disable

Media Settings

This section describes media settings for the printer. To view these settings:

- From the printer Main Menu, select **Settings > Printing > Media**.
- From the printer web page, click the **Configure** tab, **Printing > Media**.

Note: If you are using an icon printer that is not on a network, you need to use PrintSet 5 through a USB connection to configure media settings.

Media Settings

Setting	Description	Default
Media Type	Selects the type of media that is loaded in the printer.	Media With Gaps
Print Method	Selects the method of printing that the printer is using.	Ribbon (TTR) for thermal transfer printers, or No Ribbon (DT) for direct thermal printers
Media Margin (X)	Sets the width of the margin from the left edge of the label along the printhead to the edge of the printable area. Unit of measurement is defined in the Unit of Measurement parameter.	Variable
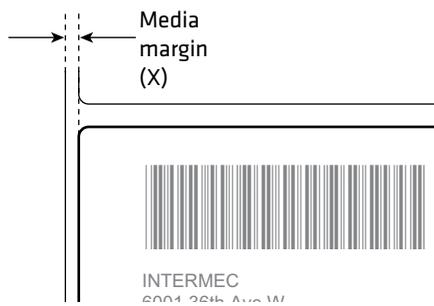
Media Settings (Continued)

Setting	Description	Default
Media Width	Sets the width of the printable area measured from the media margin (X) across the printhead. Unit of measurement is defined in the Unit of Measure parameter.	Variable
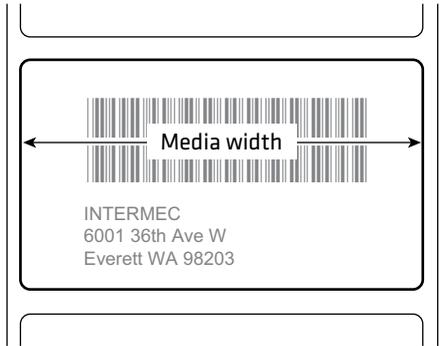
Setting	Description	Default
Media Length	Sets the length of the printable area measured from one edge of the label to the edge that is closest to the printhead. Unit of measurement is defined in the Unit of Measurement parameter.	Variable

Media Settings (Continued)

Setting	Description	Default
Clip Default	Determines if the printer prints items outside the printable area of the label.	Off
	When this is set to Off, the printer returns an error if any part of a bar code label cannot be printed because that part extends beyond the printable area. When this is set to On, the printer prints all bar code labels, but may also print unreadable, incomplete labels.	
Start Adjust	Sets the length of media the printer feeds (positive value) or retracts (negative value) before printing a label. Unit of measurement is defined in the Unit of Measure parameter. Range is -9999 to +9999.	0
Stop Adjust	Sets the length of media the printer feeds (positive value) or retracts (negative value) after printing a label. Unit of measurement is defined in the Unit of Measure parameter. Range is -9999 to +9999.	0
Media Calibration Mode	Selects the mode the printer uses to calibrate media. Use Slow if the printer has trouble identifying gaps or marks in media.	Fast
Length (Slow Mode)	If Media Calibration Mode is set to Slow, the printer prints the media length plus 10 mm. This value sets an additional amount of media to be printed. Unit of measurement is defined in the Unit of Measurement parameter. Range is 0 to 3200.	0
LTS Sensitivity Level	Sets the sensitivity of the label taken sensor. Range is 0 to 14. Supported when the Cutter or Label Dispenser accessories are installed.	0

Print Quality Settings

This section describes print quality settings. To view these settings:

- From the printer Main Menu, select **Settings > Printing > Print Quality**.
- From the printer web page, click the **Configure** tab, **Printing > Print Quality**.

Print Quality Settings

Setting	Description	Default
Print Speed	Sets how fast the printer prints labels. The unit of measure is defined in the Unit of Measure parameter.	100
Media Sensitivity	Sets the level of sensitivity of the media to the printhead heat for media and ribbon.	Variable
Darkness	Sets the image darkness for media and ribbon. Adjust this parameter with the Media Sensitivity parameter. Range is 1 to 100.	Variable
Contrast	Adjusts the blackness of the printing on the label in 2% increments from -10% to +10%.	+0%

General System Settings

This section describes general system settings. To view these settings:

- From the printer Main Menu, select **Settings > System Settings > General**.
- From the printer web page, click the **Configure** tab, **System Settings > General**.

General System Settings

Setting	Description	Default
System Name	Sets the network identification name (WINS name) of the printer.	Printer model number and serial number. For example, PM43-0000000 11
System Location	Sets the location of the printer.	Empty string

General System Settings (Continued)

Setting	Description	Default
System Contact	Sets the name of the printer administrator.	Empty string
XML Response Mode	Determines if the printer provides XML responses to printing requests (over Telnet and HTTP).	False
Display Language	(LCD printers only) Selects the language the printer uses to display text on the screen.	English
Display Language (Web Page)	Selects the language the printer uses to display text on the web page.	English
Keyboard Input	Selects the language of the external keyboard that is connected to the printer.	U.S./U.K.
Time	Sets the current time.	System time
AM/PM	Sets AM or PM.	AM
Date	Sets the current date.	System date
Command Language	Sets the printer command language. If changed, requires restart.	Fingerprint
Alert Notification Method	Selects how you want the printer to notify you of printer alerts.	SNMP Trap + Email
Unit of Measure	Selects the unit of measure that is used to define several printing parameters.	Dots

Display and Audio Settings

This section describes display and audio settings for the printer. To view these settings:

- From the printer Main Menu, select **Settings > System Settings > Display**.

- From the printer web page, click the **Configure** tab, **System Settings > Display** or **Audio**.

Display and Audio Settings

Setting	Description	Default
Brightness	Selects the brightness of the printer screen.	Medium

Display and Audio Settings (Continued)

Setting	Description	Default
Idle Information	Selects the information that appears on the printer screen when it is in Idle mode.	IPv4 address
Time Format	Selects the format used to display time on the printer.	24 Hour
Date Format	Selects the format used to display date on the printer.	dd/mm/yyyy
Menu Access	Determines if the Menu button on the printer web page is accessible.	Enable
PIN	Sets the password that allows access to the Menu button on the printer web page, if the Menu Access parameter is set to Enable With PIN. Range is 4 to 16 characters.	1234
Screen Timeout	Selects how long the printer screen stays on before the screen saver starts.	Disable
Feed Key Access	Determines if the Feed button on the printer keypad is enabled or disabled.	Enable
Volume	Sets the printer volume.	Off

System I/O Settings

This section describes system I/O settings for the printer. To view these settings:

- From the printer Main Menu, select **Settings > System Settings > Manage I/O**.
- From the printer web page, click the **Configure** tab, **System Settings > Manage I/O**.

System I/O Settings

Setting	Description	Default
Wireless 802.11	Determines if the printer is allowed to communicate using its 802.11 radio. Supported only if the optional Wi-Fi+Bluetooth module is installed.	Enable

System I/O Settings (Continued)

Setting	Description	Default
Bluetooth	Determines if the printer is allowed to communicate using its Bluetooth radio. Supported only if the optional Wi-Fi+Bluetooth module is installed.	Enable
RFID	Determines if the printer is allowed to communicate using its RFID radio. Supported only if the RFID module is installed.	Enable
Virtual COM	Determines if you can enable the USB port to be used as a virtual serial port.	Disable

System Network Services

This section lists the network services you can manage from the printer. You will only see **Manage Services** from the menus if you have an Ethernet or Wireless module installed in the printer. To view these services:

- From the printer Main Menu, select **Settings > System Settings > Manage Services**.
- From the printer web page, click the **Configure** tab, **System Settings > Manage Services**.

System Network Services

Service	Description	Default
Web Server	Determines if the web server is enabled in the printer.	Enable
FTP	Determines if the printer can use File Transfer Protocol (FTP).	Enable
Avalanche	Determines if the printer can be managed by Wavelink Avalanche.	Enable
Net1	Determines if the printer can use Telnet to communicate with Fingerprint.	Enable
SmartSystems	Determines if the printer can be managed by Intermec SmartSystems Foundation.	Enable
SNMP	Determines if the printer can use SNMP.	Enable
LPR	Determines if the printer can use the line printer server (LPR) daemon.	Enable

System Network Services (Continued)

Service	Description	Default
IKEv2	Determines if the printer can use IKEv2.	Disable
SSH	Determines if the printer can use Secure Socket Handling (SSH).	Enable
Telnet	Determines if the printer can use Telnet.	Enable
XML	Determines if the printer can use XML printing.	Enable

System Maintenance Alert Settings

This section describes the system maintenance alert settings, such as the odometer distance. To view these settings:

- From the printer Main Menu, select **Settings > System Settings > Maintenance Alerts**.

- From the printer web page, click the **Configure** tab, **System Settings > Maintenance Alerts**.

System Maintenance Alert Settings

Setting	Description	Default
Odometer (User Resettable)	Sets the length of media (in meters) that the printer prints before the Odometer (User Resettable) alert is sent, if this alert is configured. Unit of measurement is defined in the Unit of Measure parameter. Range is 0 to 4294967295.	0
Odometer (Printer)	Sets the length of media (in meters) that the printer prints before the Odometer (Printer) alert is sent. Unit of measurement is defined in the Unit of Measure parameter. Range is 0 to 4294967295.	0
Odometer (Current Printhead)	Sets the length of media (in meters) that the printer prints before the Odometer (Current Printhead) alert is sent, if this alert is configured. Unit of measurement is defined in the Unit of Measure parameter. Range is 0 to 4294967295.	0

System Maintenance Alert Settings (Continued)

Setting	Description	Default
Replace Printhead	Sets the length of media (in meters) that the printer prints before the Replace Printhead alert is sent, if this alert is configured. Unit of measurement is defined in the Unit of Measure parameter. Range is 0 to 4294967295.	0
Clean Printhead	Sets the length of media (in meters) that the printer prints before the Clean Printhead alert is sent, if this alert is configured. Unit of measurement is defined in the Unit of Measure parameter. Range is 0 to 4294967295.	0
Faulty Dot	Sets the number of faulty dots on the printhead before the Faulty Dot alert is sent, if this alert is configured. Range is 0 to 4294967295.	0
Ribbon Low Diameter	Sets the minimum diameter of the ribbon roll before the Ribbon Low alert is sent, if this alert is configured. Range is 0 to 200 mm.	0

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Print Labels with INPrint

This section explains how to use the INPrint feature to print labels.

About the INPrint Page

The INPrint page features sample web forms you can use to quickly and easily print single labels if you are using the Fingerprint or Direct Protocol language on your printer. You select a web form from the lists and enter information in the fields for that label. You can then preview and print the label.

The printer firmware includes several predefined label formats. You can also copy your own label formats to the printer and print them from this page.
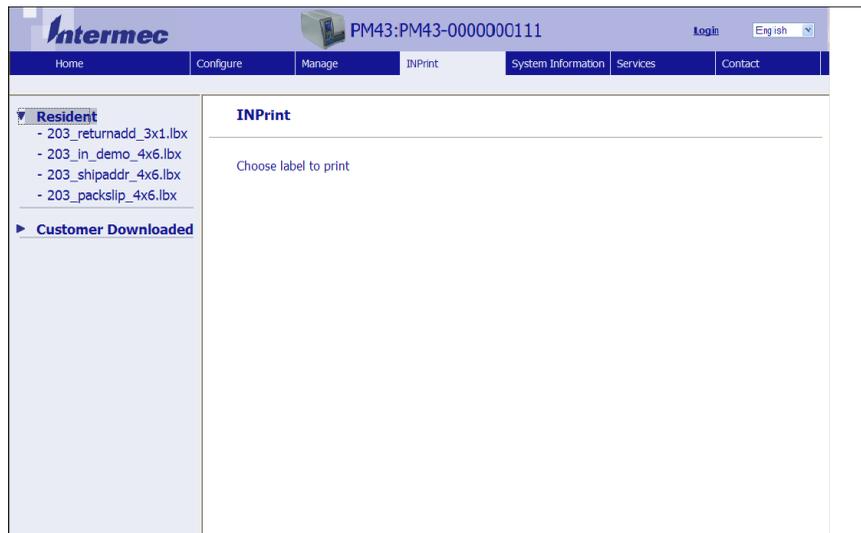
Print INPrint Labels

If the printer is connected to an Ethernet or Wi-Fi network, you can print labels by entering information in a web form. You access web forms through the printer web page.

1 On your desktop PC, start a browser.

2 In the address bar, type the IP address of your printer and press **Enter**. The printer web page appears.

3 Click **Login**. The Login page appears.

4 Type your **Username** and **Password** and then click **Login**. The default value for Username is admin and the default value for Password is pass.

5 Click the **INPrint** tab.

6 Select the web form you want to print:

- If you created the web form yourself, click **Customer Downloaded** and then select the web form in the list.

- To use one of the Resident (Intermec-supplied) web forms, click **Resident** and then select the web form in the list.

7 Type information in the web form as needed.

8 (Optional) To preview the label on screen, click **Preview**.

9 To print the label, click **Print**.

Predefined INPrint Label Formats

Predefined INPrint Label Formats and Sample Illustrations

Format Name	Sample
203_returnadd_3x1.lbx	
minimal.lbx	
shipping.lbx	
203_in_demo_4x6.lbx	
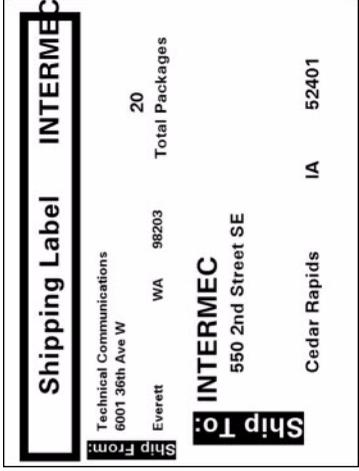
Predefined INPrint Label Formats and Sample Illustrations

Format Name	Sample
203_shipaddr_4x6.lbx	
lifetest.lbx	
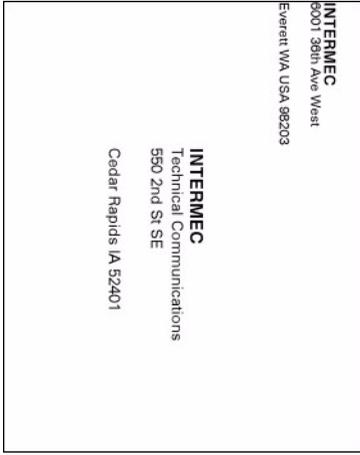
Predefined INPrint Label Formats and Sample Illustrations

Format Name	Sample
203_packslip_4x6.lbx	

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Intermec
by Honeywell

PM23c, PM43, and PM43c Mid-Range Printer User Manual

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