

SureMark 4610 Printer



Native Microsoft Windows Driver Version 2 User Guide

SureMark 4610 Printer



Native Microsoft Windows Driver Version 2 User Guide

Note

Before using this information and the product it supports, be sure to read the general information in "Notices," on page 77.

Second Edition (September, 2006)

This edition applies to version 2 of the native Microsoft Windows driver for the IBM SureMark 4610 printer Models TI3, TI4, TI5, TI8, TI9, TG3, TG4, TG5, TG8, TG9, TM6, TF6, TM7, and TF7.

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Preface

This guide describes how to install and configure version 2 of the native Microsoft Windows® driver for IBM® SureMark™ 4610 printers.

This driver supports the following 4610 printer models: TI3, TI4, TI5, TI8, TI9, TG3, TG4, TG5, TG8, TG9, TM6, TF6, TM7, and TF7.

This driver is supported on the following operating systems (OSs): Windows XP, Windows Server 2003, and Windows Embedded for Point of Service (WEPOS).

Who should read this guide

This guide is intended for use by persons who are connecting an IBM SureMark 4610 printer to a Microsoft Windows machine, installing the native Windows driver, and configuring the printer options.

How this guide is organized

This guide is divided into three chapters:

- Chapter 1, “Installing the native Windows driver,” explains how to install the SureMark 4610 printer native Windows driver.
- Chapter 2, “Configuring the native Windows driver,” describes how to configure basic printer options, set margins, use headers and footers, and download fonts.
- Chapter 3, “Using the printer,” explains how to use fonts and bar codes in printed documents, describes compatibility issues for specific applications, and provides command and API programming references.
- “Notices,” on page 77 contains trademarks that are referenced in the guide and other miscellaneous notices.

Related publications and diskettes

- *IBM SureMark Printers: Hardware Service Manual*, GY27-0355
- *IBM SureMark 4610 Printers: DBCS User's Guide for Models TI5, TG5, TF7, and TM7*, GA27-4256
- *IBM SureMark 4610 Printers: User's Guide for Models TI1, TI2, TI3, TI4, TI8, TI9, TG3, TG4, TG8, TG9, TF6, and TM6*, GA27-4151
- *IBM SureMark Printers: Fonts and Logos Utility Diskette*
- *IBM SureMark Printers: Firmware Update Diskettes*
- *IBM 4693 Point-of-Sale Terminals Reference Diskette*
- *IBM 4694/4695 Point-of-Sale Terminals Service Diskette*
- *IBM Safety Information – Read This First*, GA27-4004.
- *IBM SurePOS 700 Series: System Reference*, SA27-4220.
- *IBM SurePOS 500 Series: System Reference*, SA27-4255.
- *POSS Programming Reference and User's Guide*, SC30-3560

The diskettes are only available by download from the Internet. See “Resources on the Internet” on page x for more information.

For information about ordering IBM publications not shipped with the SureMark Printers, contact your IBM representative or your place of purchase.

Where to find more information

A CD-ROM is available that contains books that are part of the IBM Retail Store Solutions Library Collection, SK2T-0331.

Current versions of Retail Store Solutions documentation and downloadable diskettes are available on our Web site at <http://www.ibm.com/solutions/retail/store/>. See "Resources on the Internet" for information about accessing the site.

Resources on the Internet

The IBM Retail Store Solutions Web site at <http://www.ibm.com/solutions/retail/store/> contains publications for the SureMark printer. The Web site also provides access to diskettes, drivers, and miscellaneous documentation, such as readme files and information about original equipment manufacturer (OEM) papers that have been certified.

Select **Support** at the left on the main page of the Web site, then select **IBM SureMark Printer**. The displayed page contains links both to documentation and to diskettes and drivers that you can download for the SureMark printers.

Tell us what you think

Your feedback is important in helping to provide the most accurate and high-quality information. Please take a few moments to tell us what you think about this guide. The only way for us to know if you are satisfied with our books, or how we might improve their quality, is through feedback from customers like you. If you have any comments about this guide, there is a comment form at the back of this guide. You can also get a copy of the form from the PDF version of the guide on the Web.

To access a PDF version of this guide, visit the Retail Store Solutions Web site at <http://www.ibm.com/solutions/retail/store/>. From there, select **Support** at the left, then select **Publications**.

After you have filled out the form, return it by mail, by fax, or by giving it to an IBM representative. If applicable, include a reference to the specific location of the text on which you are commenting. For instance, include the page or table number.

Between major revisions of this guide we may make minor technical updates. The latest softcopy version of this guide is available under **Publications** on the IBM Retail Store Solutions Web site.

Summary of changes

September, 2006

This version (SC30-4105-01) contains updates based on the current installation procedures and configuration options. It also adds reference information for sending commands to the printer and for driver API programming.

Chapter 1. Installing the native Windows driver

This chapter explains how to install the IBM SureMark 4610 printer native Windows driver.

Before you install

CAUTION:

Do not connect the printer to your system until you are instructed to do so by a procedure step in this section.

This section details prerequisite steps that you must follow before you can install the native Windows driver.

Uninstalling previous driver versions

You must remove any previous version of the native Windows driver on your system before you can install version 2. Perform the following steps:

1. Download the NWD Uninstaller.zip file from The IBM Retail Store Solutions Web site at <http://www.ibm.com/solutions/retail/store/> to the C:\TEMP folder on your hard drive.

Note: You might need to create this folder on your hard drive; refer to your operating system documentation.

2. Unzip the contents of the ZIP file to the C:\TEMP folder.
3. Click **Start > Run**.
4. Type **CMD** and press Enter.

Note: If the command prompt happens to start on a drive other than the C drive, issue the **C:** command to switch to the C drive.

5. At the command prompt, issue the **CD\TEMP** command.
6. Issue the **IBM4610DriverUninstall.exe** command to start the uninstaller.
7. Wait for the uninstaller to complete and show the results in Figure 1 on page 2.

```

C:\WINDOWS\System32\cmd.exe
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\Documents and Settings>cd..

C:\>cd temp

C:\temp>IBM4610DriverUninstall.exe
8/7/2006 14:17:43 - IBM 4610 NWD uninstall starting...
8/7/2006 14:17:43 - Checking spooler service...done.
8/7/2006 14:17:43 - Spooler service already running.
8/7/2006 14:17:43 - Enumerating printer icons...done.
8/7/2006 14:17:43 - Found a 4610 printer: IBM 4610
8/7/2006 14:17:43 - Opening printer...done.
8/7/2006 14:17:43 - Deleting printer...done.
8/7/2006 14:17:48 - Removing 4610 printer driver...done.
8/7/2006 14:17:49 - Enumerating RSS ports...done.
8/7/2006 14:17:49 - Found a RSS port: IBM RSS:1_USB
8/7/2006 14:17:49 - Deleting port...done.
8/7/2006 14:17:49 - Checking spooler service...done.
8/7/2006 14:17:49 - Spooler service started, trying to stop...done.
8/7/2006 14:17:50 - Deleting Language/Port Monitor files...done.
8/7/2006 14:17:50 - Deleting Language/Port Monitor registry entry...done.
8/7/2006 14:17:50 - Checking spooler service...done.
8/7/2006 14:17:50 - Spooler service not started. Trying to start the service...done.
8/7/2006 14:17:51 - Deleting the 4610NWD folder...done.
8/7/2006 14:17:51 - IBM 4610 NWD uninstall returned with SUCCESS.
8/7/2006 14:17:51 - IBM 4610 NWD return code is 0

C:\temp>exit

```

Figure 1. Uninstaller progress screen

The uninstaller will mention if the whole uninstall operation was successful or not. SUCCESS (return code 0) means that all steps were successfully completed; otherwise, the uninstaller failed to remove all of the IBM 4610 printer driver components.

The return codes are:

- 0 The uninstaller successfully removed the IBM 4610 printer driver and all of its components.
- 1 The uninstaller failed to start the spooler service.
- 2 The uninstaller failed to remove one or more printer icons.
- 3 The uninstaller failed to remove the IBM 4610 printer driver.
- 4 The uninstaller failed to remove one or more IBM RSS ports.
- 5 The uninstaller failed to stop the spooler service and remove the Port Monitor files.

Further, the uninstaller maintains an uninstall log in a file named IBM4610DriverUninstall.log, located in the directory from which you launched the uninstaller (C:\TEMP, in this procedure). The log contains the actions taken to uninstall the IBM 4610 printer driver and all of its components, and it shows the result of each step as SUCCESS or FAILURE.

Updating the printer firmware

Ensure that you have updated the 4610 printer's firmware to the newest revision level that is appropriate for your particular environment and applications.

Installing on a system that has UPOS drivers

There might be printing problems when the native Windows driver is installed on a system that already has UPOS drivers installed.

In such a case, refer to the IBM Point of Sale Knowledgebase and search on "4610 native Windows driver."

Setting COM ports

Note: If your printer has the USB interface adapter installed and you intend to connect it to a USB port on your computer, then skip this section and proceed to "Attended installation procedure" on page 7 or "Unattended installation and configuration procedure" on page 12.

If your printer has the RS-232 interface adapter installed and you intend to connect it to the serial port on your computer, perform the following steps to configure the COM port:

1. Right-click your My Computer icon and choose **Properties**. The System Properties window opens with the General page selected.
2. Click the **Hardware** tab (see Figure 2).

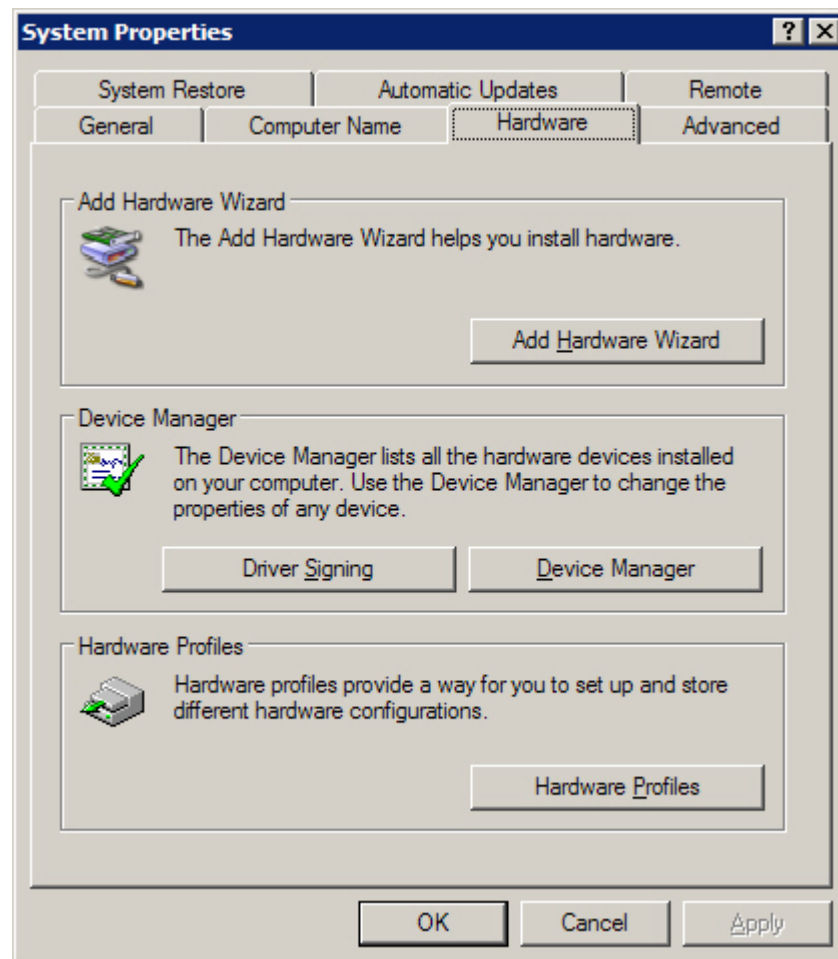


Figure 2. Hardware tab

3. Click **Device Manager**. The Device Manager window opens (see Figure 3).
4. Expand **Ports (COM & LPT)** (see Figure 3).

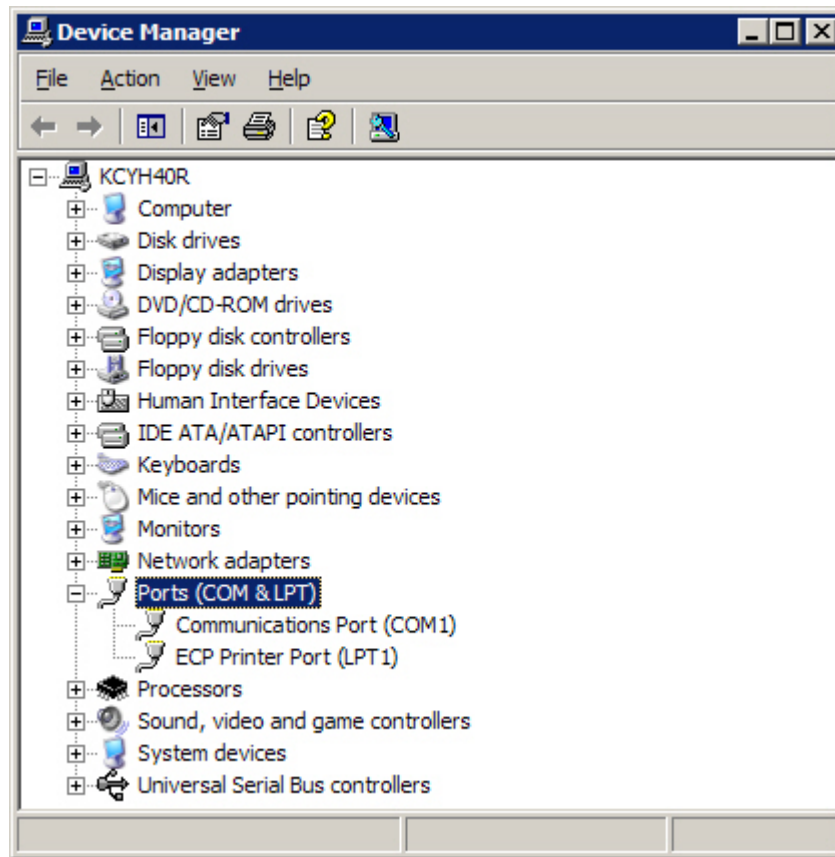


Figure 3. Device Manager window

5. Right-click **Communications Port (COM1)** and select **Properties**. The Communications Port (COM1) Properties window opens with the General page selected.

Note: If the COM1 port of your computer is already in use—perhaps for an external modem—then right-click an available COM port. If you have no available COM ports, you will have to install the USB interface adapter into your printer and connect it to an available USB port on your computer. Then proceed to “Attended installation procedure” on page 7 or “Unattended installation and configuration procedure” on page 12.

6. Click the **Port Settings** tab (see Figure 4).

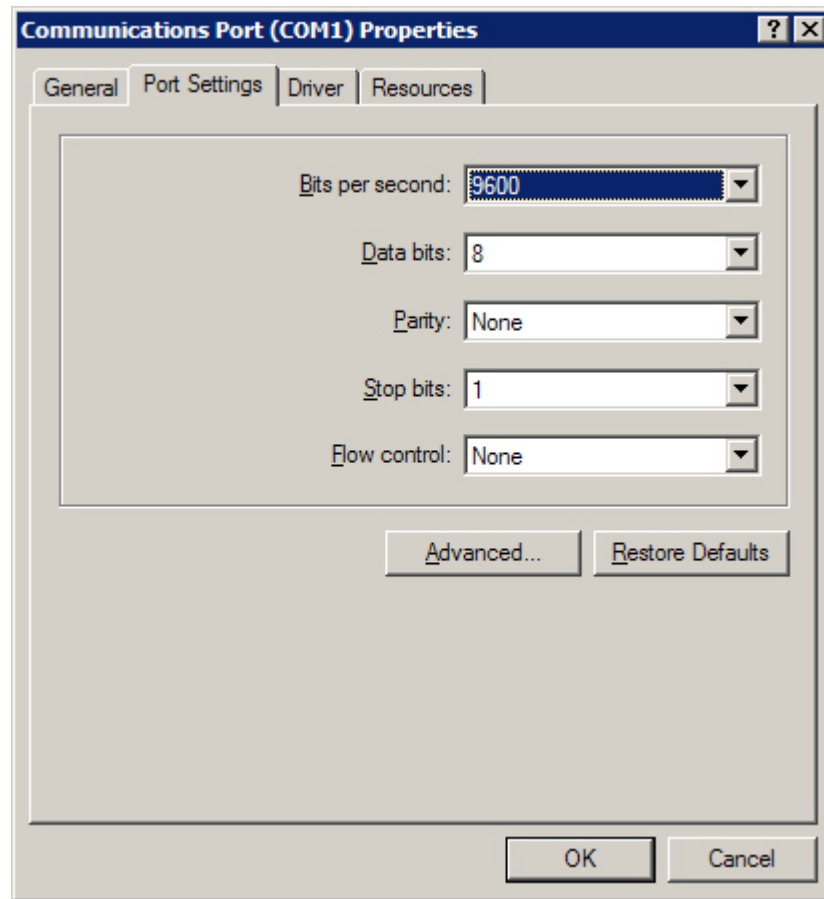


Figure 4. Port Settings tab

7. From the Bits per second list, select one of the following (see Figure 5):
- **9600** or **19200**—any model
 - **115200**—Models Tx8 and Tx9 only

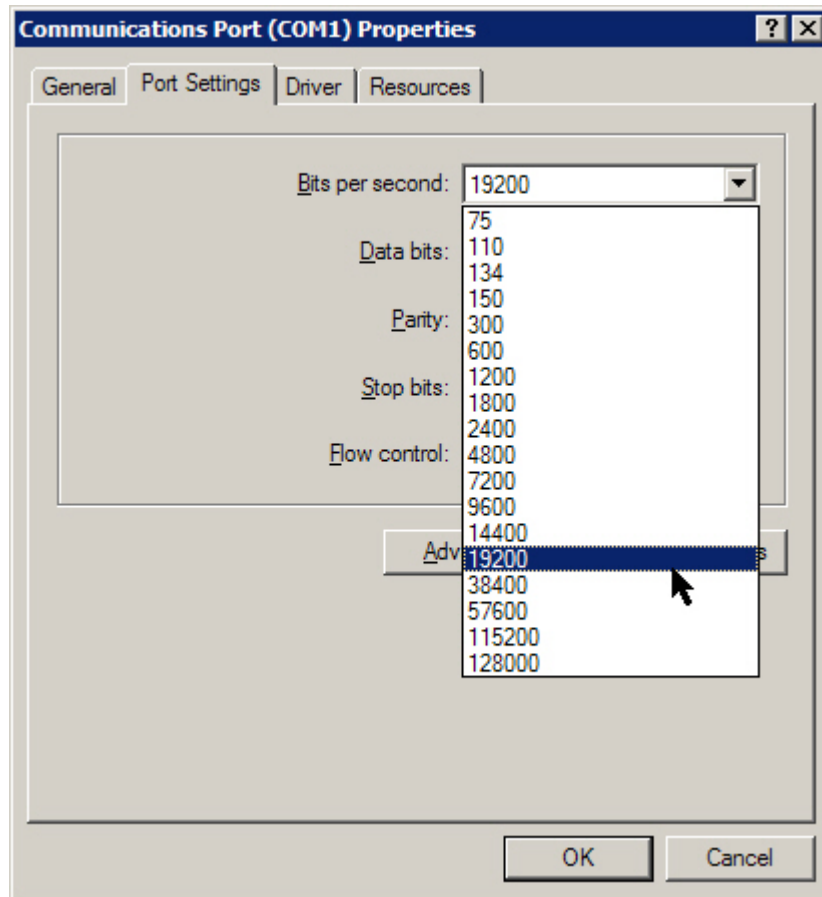


Figure 5. Setting the bits per second

8. Click **OK** to save your settings; then close the Device Manager window.

Your COM port is ready to communicate with the printer.

Attended installation procedure

Note: Should you encounter problems during this procedure, refer to the IBM Point of Sale Information Knowledgebase and search on "4610 native Windows driver."

If you intend to manually install and configure the native Windows driver then perform the following steps to install the native Windows driver:

1. Download the native Windows driver from the IBM Retail Store Solutions Web site at: <http://www.ibm.com/solutions/retail/store/>.
2. Double-click the installer. The license agreement appears (see Figure 6).

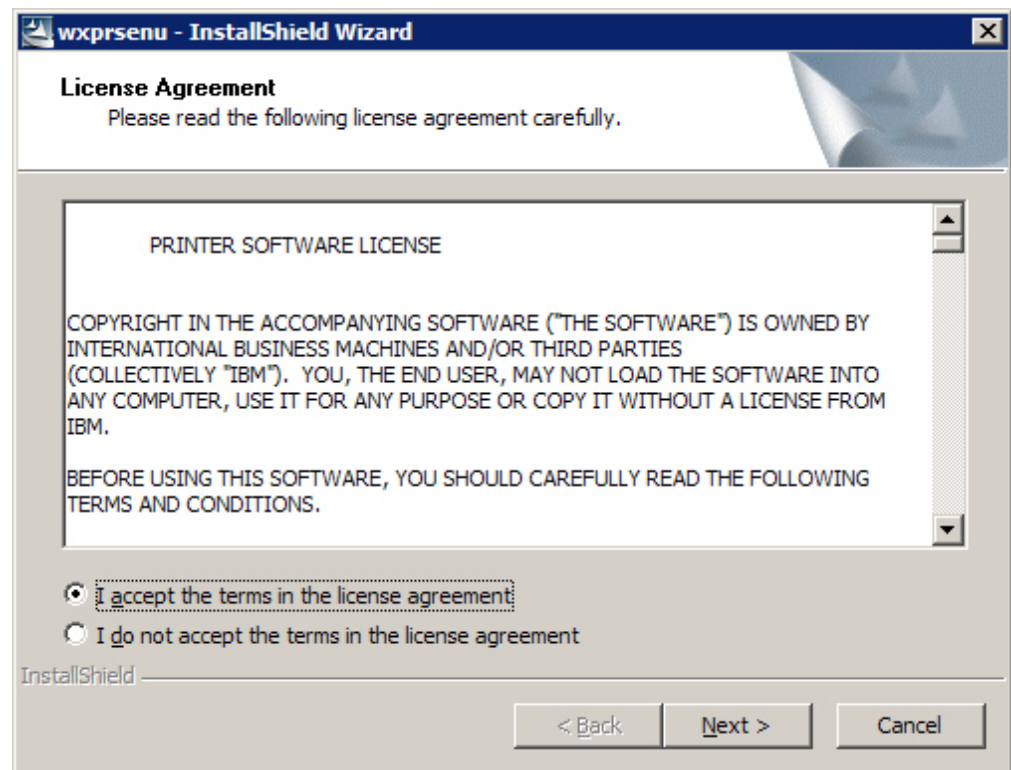


Figure 6. License agreement

3. Select **I accept the terms in the license agreement** and click **Next**.

4. The installation wizard asks which task you want to perform (see Figure 7). Select **Install a new printer** and click **Next**.



Figure 7. Selecting a task

5. Specify the printer name that you want to use (see Figure 8).

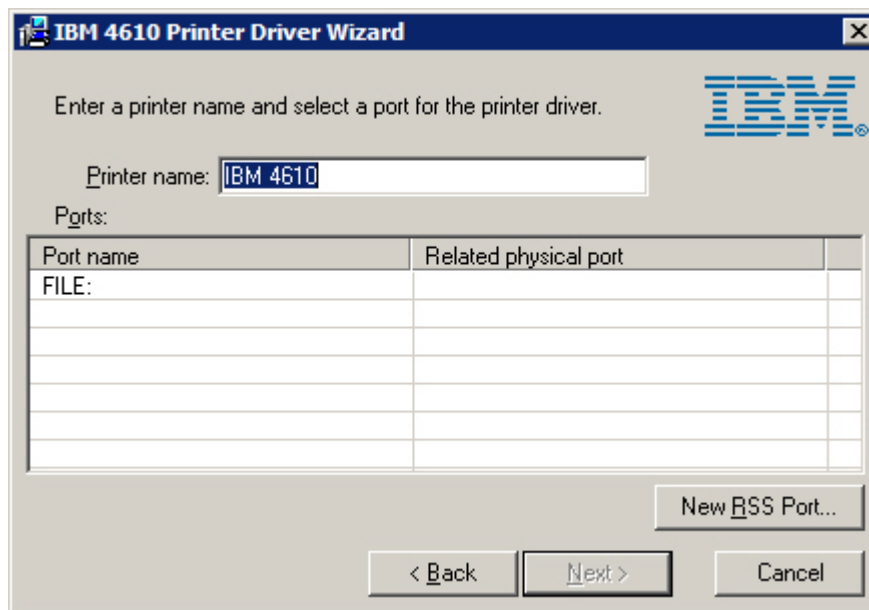


Figure 8. Setting the printer name

6. Click **New RSS Port**. The Add IBM RSS Port window opens (see Figure 9 on page 9).

7. From the Related physical port list, select **USB** (see Figure 9).

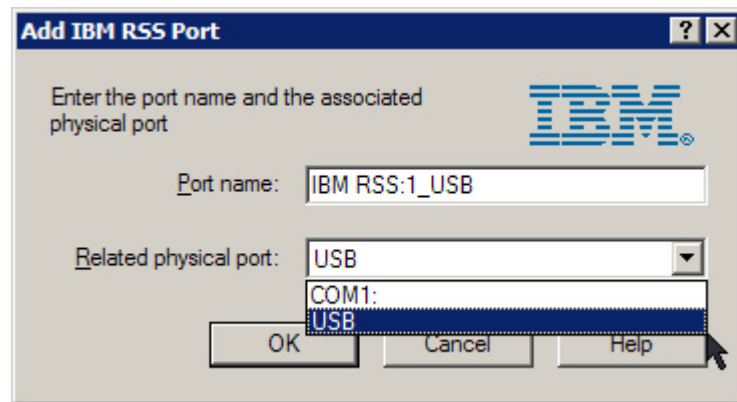


Figure 9. Adding a new port

Note: If your printer has the RS-232 interface adapter installed and you intend to connect it to the serial port on your computer then you must choose the **COM** port that you configured in “Setting COM ports” on page 3.

8. Specify the port name that you want to use; then click **OK** (see Figure 9).
9. Select the new port that you added; then click **Next** (see Figure 10).

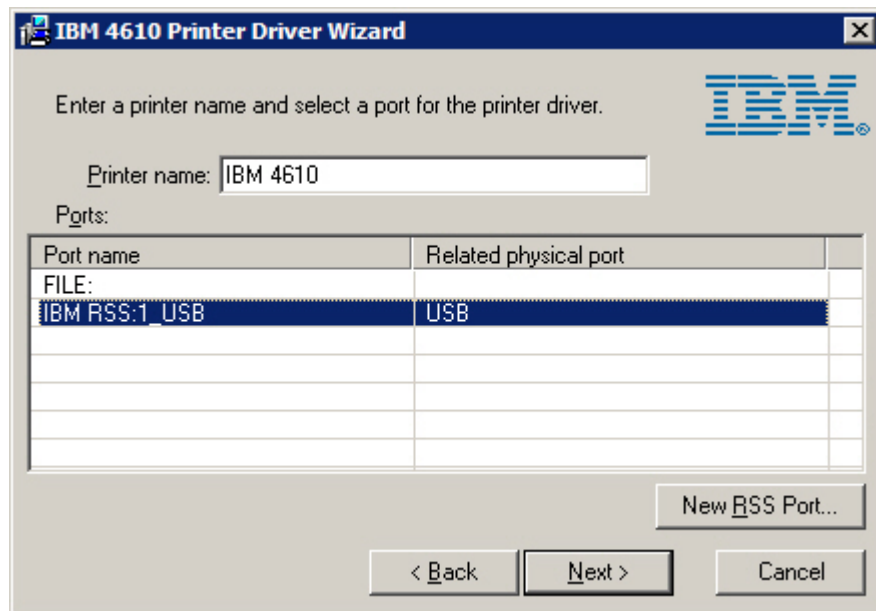


Figure 10. Selecting the new port

10. Verify that the printer name and port are correct (see Figure 11).
 - If they are correct, click **Finish**.
 - If they are not correct, click **Back** and modify the settings.

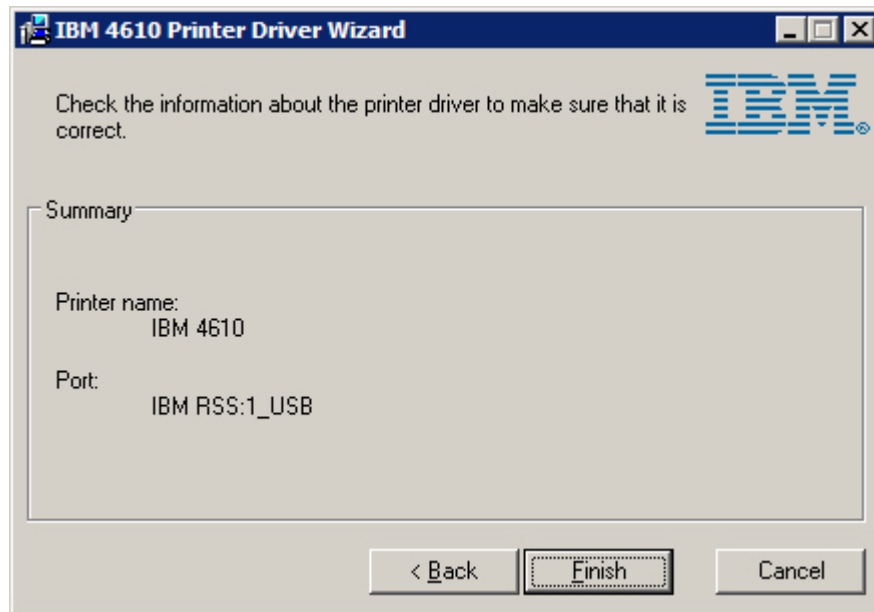


Figure 11. Printer name and port verification

A new printer is added to your Printers and Faxes folder (see Figure 12).

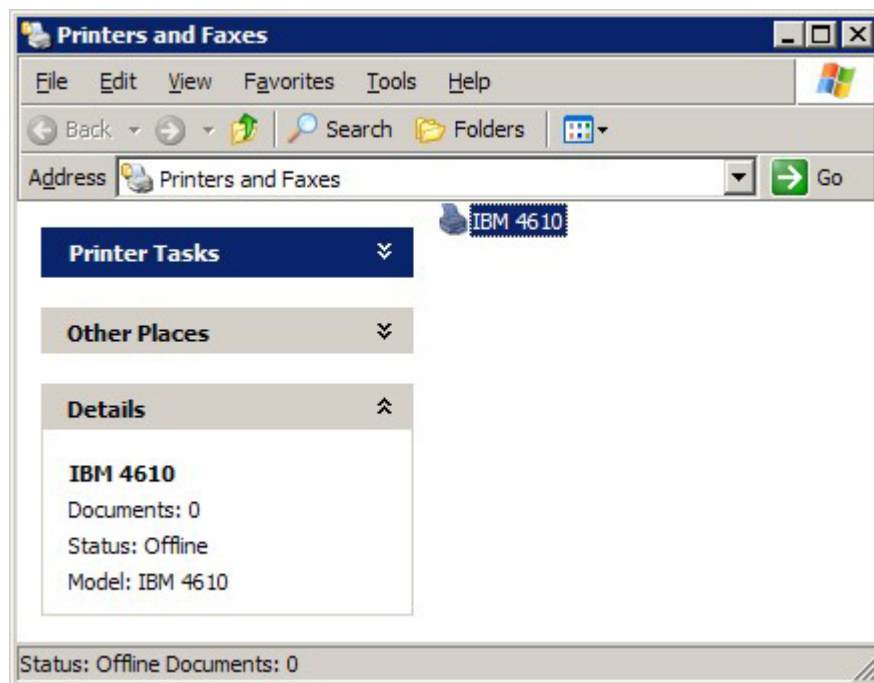


Figure 12. Printers and Faxes folder

The installation is complete. You may now connect the printer to the USB or serial port of your computer (as appropriate). Once Windows detects that the printer is connected, its Status field will change to "Ready" (see Figure 13).

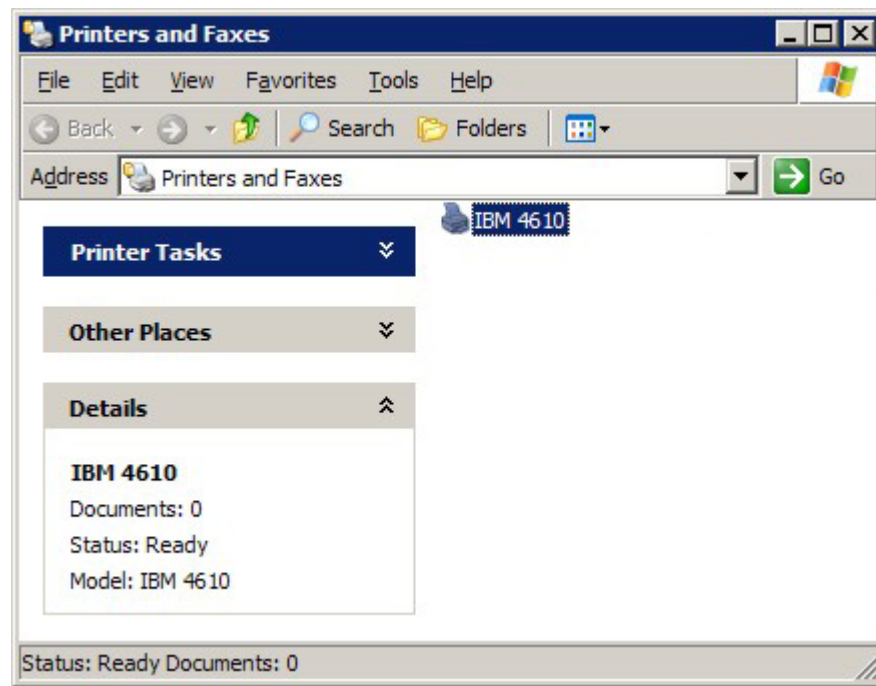


Figure 13. IBM 4610 installed and connected

Proceed to Chapter 2, "Configuring the native Windows driver," on page 19.

Unattended installation and configuration procedure

Note: Should you encounter problems during this procedure, refer to the IBM Point of Sale Knowledgebase and search on "4610 native Windows driver."

The 4610 native Windows driver supports an unattended installation mode. The process is accomplished through the use of the installation (INI) file 4610config.ini, which is provided below for reference.

Default 4610config.ini file contents

```
[Printer name and physical port]

; Printer name
; Not-allowed characters: = , ; \ * ? / < > | ":
; Maximum length is 220 characters
; Default printer name: IBM 4610
PrinterName=IBM 4610

; Related physical port
; Options:
; COM1 (default)
; COM2
; COMn
; USB
PhysicalPort=COM1

[Setup]

; Print station selection
; Options:
; 1 - Customer receipt (default)
; 2 - Document insert
; Uncomment the line below to set a different option
;PrintStation=1

; Paper size selection
; Options:
; 1 - Receipt 58 x 297 mm
; 2 - Receipt 58 x 3276 mm
; 3 - Receipt 80 x 297 mm (default)
; 4 - Receipt 80 x 3276 mm
; 5 - Document 48 x 274 mm
; 6 - Document 85.7 x 274 mm
; Uncomment the line below to set a different option
;PaperSize=3

; Paper orientation
; Options:
; 1 - Portrait (default)
; 2 - Landscape
; Uncomment the line below to set a different option
;PaperOrientation=1

; Bar code type selection
; Options:
; 0 - Use application settings (default)
; 1 - UPC-A
; 2 - UPC-E
; 3 - JAN13 (EAN-13)
; 4 - JAN8 (EAN-8)
; 5 - CODE 39
; 6 - ITF
; 7 - CODABAR
```

```

;      8 - CODE 128C
;      9 - CODE 93
;     10 - CODE 128ABC
;     11 - PDF417
; Uncomment the line below to set a different option
;BarCodeType=0

; Non-PDF417 bar code settings

; Options:
;      2
;      3 (default)
;      4
; Uncomment the line below to set a different option
;WidthNPDF=3

; Options:
;      1 to 255
;     162 (default)
; Uncomment the line below to set a different option
;HeightNPDF=162

; Options:
;      0 - Not printed (default)
;      1 - Above the bar code
;      2 - Below the bar code
;      3 - Both above and below the bar code
; Uncomment the line below to set a different option
;HRIPosition=0

; PDF417 bar code settings

; Options:
;      1 to 9
;      2 (default)
; Uncomment the line below to set a different option
;WidthPDF=2

; Options:
;      1 to 9
;      1 (default)
; Uncomment the line below to set a different option
;HeightPDF=1

; Options:
;      0 - disabled (default)
;      1 - enabled
; Uncomment the line below to set a different option
;EnableTruncation=0

[Options]

; Colors selection
; Options:
;      0 - 2 colors printing
;      1 - monochrome printing (default)
; Uncomment the line below to set a different option
;Monochrome=1

; 2 colors printing parameter set
; Options:
;      0 to 3
;      0 (default for monochrome)
;      1 (default for 2 colors)
; Uncomment the line below to set a different option
;PrintParameterSet=0

```

```

; Cut the paper / eject document at the end of the job
; Options:
;   0 - do not cut the paper / eject document
;   1 - cut the paper / eject document (default)
; Uncomment the line below to set a different option
;CutPaper=1

; Open the cash drawer at the end of the job
; Options:
;   0 - do not open the cash drawer (default)
;   1 - open the cash drawer
; Uncomment the line below to set a different option
;OpenCashDrawer=0

; Print in burst mode
; Options:
;   0 - do not print in burst mode (default)
;   1 - print in burst mode
; Uncomment the line below to set a different option
;PrintBurstMode=0

; Print with high quality
; Options:
;   0 - do not print with high quality
;   1 - print with high quality (default)
; Uncomment the line below to set a different option
;PrintHighQuality=1

; Print upside down
; Options:
;   0 - do not print upside down (default)
;   1 - print upside down
; Uncomment the line below to set a different option
;PrintUpsideDown=0

; Beeper
; Options:
;   0 - OFF (default)
;   1 - ON
; Uncomment the line below to set a different option
;Beeper=0

; Code page output
; Options:
;   1 - Generic - resident
;   2 - 437 (OEM - United States) - resident
;   3 - 858 (OEM - Multilingual Latin I + Euro) - resident (default)
;   4 - 860 (OEM - Portuguese) - resident
;   5 - 863 (OEM - Canadian French) - resident
;   6 - 865 (OEM - Nordic) - resident
;   7 - 852 (OEM - Latin II) - non-resident
;   8 - 866 (OEM - Russian) - non-resident
;   9 - 1250 (ANSI - Central Europe) - non-resident
;  10 - 1251 (ANSI - Cyrillic) - non-resident
;  11 - 1252 (ANSI - Latin I) - non-resident
; Uncomment the line below to set a different option
;CodePageOutput=3

; Override font from application
; Options:
;   1 - Do not override
;   2 - Override using command font
;   3 - Override using control font
;   4 - Override using Font A
;   5 - Override using Font B
;   6 - Override using Font C

```

```

; 7 - Override using SBCS #1 font
; 8 - Override using SBCS #2 font
; 9 - Override using DBCS (Customer receipt station)
; 10 - Override using DBCS (Document insert station)
; Uncomment the line below to set a different option
;OverrideFont=1

```

[Document Header and Footer]

```

; Document header settings

```

```

; Logo header
; Options:
; 0 - no logo (default)
; 1 to 40
; Uncomment the line below to set a different option
;LogoHeader=0

```

```

; Message header
; Options:
; 0 - no message (default)
; 1 to 25
; Uncomment the line below to set a different option
;MsgHeader=0

```

```

; Logo header alignment
; Options:
; 1 - to the left (default)
; 2 - centered
; 3 - to the right
; Uncomment the line below to set a different option
;AlignLogoHeader=1

```

```

; Logo header color
; Options:
; 1 - 2 colors (half-character)
; 2 - 2 colors (full-character)
; 3 - Cancel 2 colors
; Uncomment the line below to set a different option
;LogoHeaderColor=3

```

```

; Message header alignment
; Options:
; 1 - to the left (default)
; 2 - centered
; 3 - to the right
; Uncomment the line below to set a different option
;AlignMsgHeader=1

```

```

; Message header color
; Options:
; 1 - 2 colors (half-character)
; 2 - 2 colors (full-character)
; 3 - Cancel 2 colors
; Uncomment the line below to set a different option
;MsgHeaderColor=3

```

```

; Header layout
; Options:
; 0 - message after logo (default)
; 1 - logo after message
; Uncomment the line below to set a different option
;HeaderLayout=0

```

```

; Document footer settings

; Logo footer
; Options:
;   0 - no logo (default)
;   1 to 40
; Uncomment the line below to set a different option
;LogoFooter=0

; Message footer
; Options:
;   0 - no message (default)
;   1 to 25
; Uncomment the line below to set a different option
;MsgFooter=0

; Logo footer alignment
; Options:
;   1 - to the left (default)
;   2 - centered
;   3 - to the right
; Uncomment the line below to set a different option
;AlignLogoFooter=1

; Logo footer color
; Options:
;   1 - 2 colors (half-character)
;   2 - 2 colors (full-character)
;   3 - Cancel 2 colors
; Uncomment the line below to set a different option
;LogoFooterColor=3

; Message footer alignment
; Options:
;   1 - to the left (default)
;   2 - centered
;   3 - to the right
; Uncomment the line below to set a different option
;AlignMsgFooter=1

; Message footer color
; Options:
;   1 - 2 colors (half-character)
;   2 - 2 colors (full-character)
;   3 - Cancel 2 colors
; Uncomment the line below to set a different option
;MsgFooterColor=3

; Footer layout
; Options:
;   0 - message after logo (default)
;   1 - logo after message
; Uncomment the line below to set a different option
;FooterLayout=0

[Logos]

; Replace the 'n' in 'Logo#nm' with a number from 1 to 40 -
; the logo slot destination in the printer - and the 'm' with
; R or D (R = Customer receipt station and D = Document insert station)
; Specify the full path to the image file (can be bitmap, jpeg or gif file)
; Uncomment the line below to download a logo to the printer
; or duplicate the line below to download more logos
; to different slots to the printer
;Logo#nm=<full_path_to_image_file>

```

[Messages]

```
; Replace the 'n' in 'Message#n' with a number from 1 to 25 -
; the message slot destination in the printer
; Specify the message you want to download after = sign.
; For new line use '\n'
; Uncomment the line below to download a message to the printer
; or duplicate the line below to download more messages
; to different slots to the printer
;Message#n=<message_text>
```

[Fonts]

```
; Specify the SBCS font you want to download like this:
; SBCSFont#n=<font_name> <font_type> <font_script> m
; where n is the printer's font slot - can be 1 or 2
;     <font_name> is the font name as it appears in applications.
;           Ex.: Arial
;     <font_type> can be one of the following strings:
;           "Regular", "Bold", "Italic" or "BoldItalic"
;     <font_script> is the language script (character set)
;                   desired for downloading and can be:
;           Western
;           Japanese
;           Hangul
;           Hangul(Johab)
;           CHINESE_GB2312
;           CHINESE_BIG5
;           Hebrew
;           Arabic
;           Greek
;           Turkish
;           Baltic
;           Central European
;           Cyrillic
;           Thai
;           Vietnamese
;     m is the font size in points - can be 8, 9 or 10
; Ex. Arial BoldItalic Western 9 will download the
;     Arial font using BoldItalic type with size 9 pts
; Uncomment the line below to download a SBCS font to the printer
; or duplicate the line below to download two fonts
; to different slots to the printer
;SBCSFont#n=<font_name> <font_type> <font_script> m

; Specify the DBCS font you want to download like this:
; DBCSFont#n=<path_to_the_DBCS_font_file>
;     where n is the printer's station -
;           can be 1 (Customer receipt) or 2 (Document insert)
;     < path_to_the_DBCS_font_file > is the DBCS font file path
; Uncomment the line below to download a DBCS font to the printer
;DBCSFont#n=<path_to_the_DBCS_font_file>
```

[Firmware]

```
; For updating the printer firmware:
; Uncomment the line below and specify the full path
; to the printer firmware update file
;PrinterFirmware=<update_firmware_file_path>
```

Using the 4610config.ini file

Download the native Windows driver from the IBM Retail Store Solutions Web site at: <http://www.ibm.com/solutions/retail/store/>.

Use the INI file to configure the installation attributes during an unattended installation. You should modify the INI as appropriate for your installation, and then apply it by running the driver install executable, using this command line syntax:

driver-installation-file-name -s -a -file-location

driver-installation-file-name

The full file name of the driver install executable that is in the download ZIP file.

file-location

The path to the 4610config.ini file, which contains all of the installation and configuration parameters.

Note: You might need to use the fully qualified path for the INI *file-location*. If the unattended installation does not seem to run when you issue the above command, try moving the INI file to a folder whose name does not contain spaces, punctuation, or special characters (for example, C:\TEMP).

During the unattended installation and configuration, the Install Wizard will generate a log file named UnattendedInstCfg.log stored in the 4610NWD directory in the root of the system drive.

Chapter 2. Configuring the native Windows driver

This chapter explains how to configure the IBM SureMark 4610 printer native Windows driver. The following topics are included:

- Configuring the basic printer options
- Setting margins
- Downloading logos and messages to the printer
- Creating headers and footers
- Downloading fonts to the printer

Note: Not all SureMark printers support all features of the native Windows driver. In such cases, the option to configure the feature or features is not available (grayed out).

Basic configuration

To perform the basic configuration:

1. From the Windows Start Menu, select **Printer and Faxes**. A window containing icons for all of your installed printers and fax machines opens.
2. Right-click the IBM 4610 icon and select **Properties**. The IBM 4610 Properties window opens with the General page selected (see Figure 14).

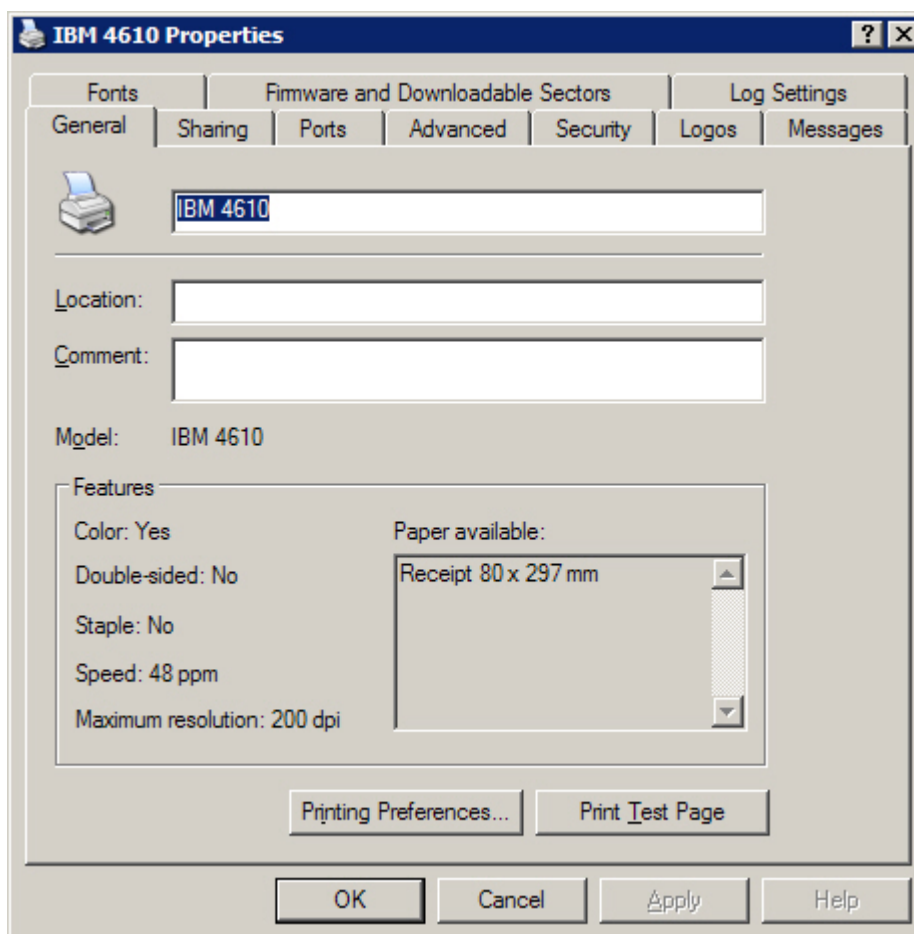


Figure 14. IBM 4610 Properties

3. Click **Printing Preferences**. The IBM 4610 Printing Preferences window opens with the Setup page selected (see Figure 15).

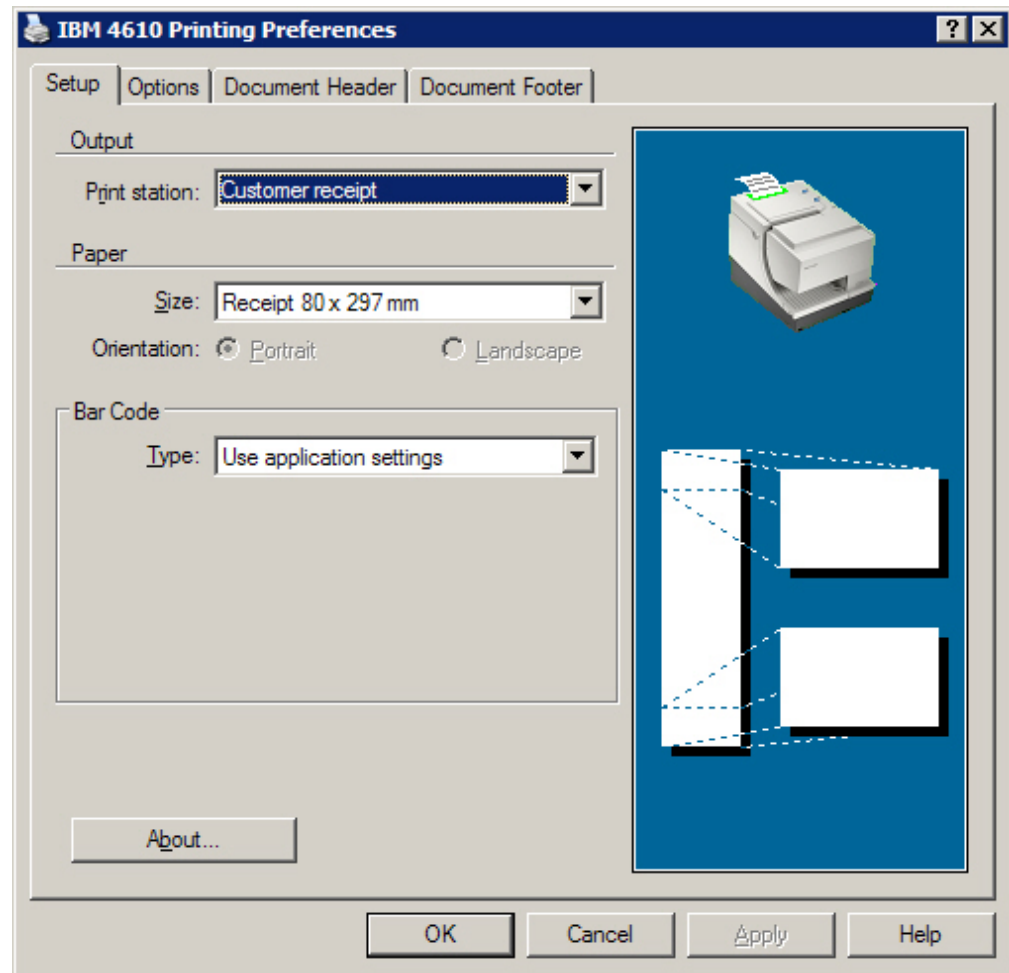


Figure 15. IBM 4610 Printing Preferences

- a. Under Output, select a print station:
 - Customer receipt**
Send output to the thermal print station.
 - Document insert**
Send output to the impact print station.
- b. Under Paper, select the paper size that you are using.
- c. Under Bar Code, select the bar code type that is appropriate for your environment.

4. Click the **Options** tab, and set the options that you require (see Figure 16).

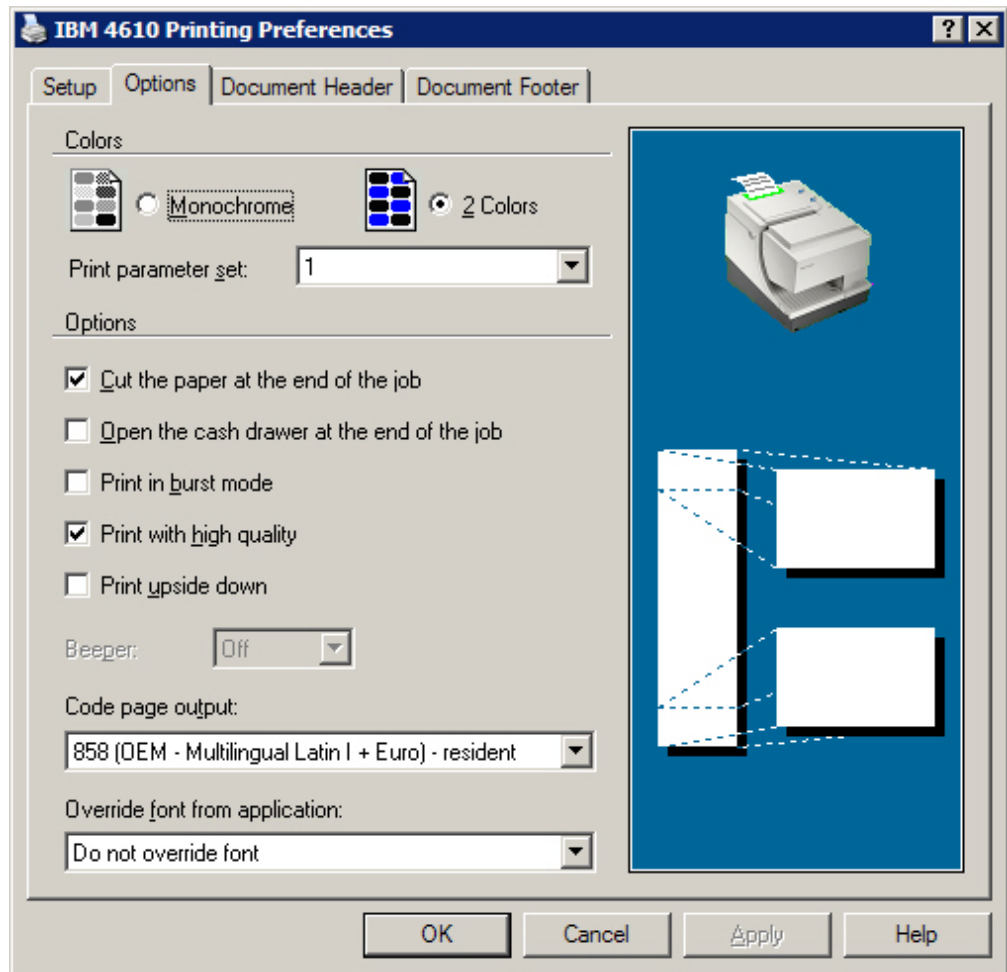


Figure 16. Options tab

Monochrome

Sets the printer to print using one color.

2 Color

Sets the printer to print using two colors. If you select **2 Color** then select a **Print parameter set**.

These parameter sets vary the energy level applied to the paper by the print head. As such, they will affect print speed.

Experiment with this setting to find the best option for your color thermal paper.

Cut the paper at the end of the job

After printing is completed, the printer cuts the paper.

Open the cash drawer at the end of the job

After printing is completed, the cash drawer opens.

Print in burst mode

Causes the printer to wait until it receives the entire document before printing. Otherwise, the printer begins to print when it receives the first line.

Print with high quality

Prints at 38 lines per second instead of 52. Selecting this option produces printouts that are clearer and sharper, but slows down the printing process.

Print upside down

Prints the receipt upside down. This option is useful if your printer is mounted on a wall.

Beeper

Turns the printer beeper on or off.

Code page output





Defines the character set which is printed when the printer is sent ASCII code values.

Override font from application

Do not override

The printer prints using the font chosen in the source application, whether that font is printer resident or not. If the font *is not* printer resident, it will print as an image at *very slow* print speeds.

Note: Choose this setting if:

- You care about the output font.
- The application is sending text in the desired printer resident size and font (usually indicated in the application by the  icon or by no icon).
- The application is *not* sending text in the  OpenFace,  TrueType,  PostScript, or any other version of that font.

Override using...

The printer always uses the printer resident font that you indicate with this choice.

Note: Choose one of these settings if:

- You *do not* care about the output font.
- The font is already a printer resident font or you can download it to make it one, *and* you can not change the font in the application that is sending the text (usually because the source not editable).

5. Click **OK** to save your printing preferences, then **OK** again to close the IBM 4610 Properties window.

Setting margins

For best printing results, you might have to adjust the margin settings used by your point-of-sale (POS) application. Table 1 lists the minimum margin values for the paper sizes supported by the 4610 printers.

Table 1. Minimum margin values

Paper size	Left and right	Top and bottom
Customer Receipt		
58 x 297 mm	4 mm (0.16 inches)	3 mm (0.12 inches)
58 x 3276 mm	4 mm (0.16 inches)	3 mm (0.12 inches)
80 x 297 mm	4 mm (0.16 inches)	4 mm (0.16 inches)
80 x 3276 mm	4 mm (0.16 inches)	4 mm (0.16 inches)
Document Insert		
48 x 274 mm	2 mm (0.08 inches)	2 mm (0.08 inches)
85.7 x 274 mm	2 mm (0.08 inches)	2 mm (0.08 inches)

Logos and messages

If there are logos (graphic images) or messages (text strings) that you want to print on every document, you can download them to the internal memory of the printer. You can then use these logos and messages to create a *header* and a *footer* (see “Header and footer” on page 29).

Downloading a logo

You can use any bitmap (BMP), Graphics Interchange Format (GIF), or Joint Photographic Experts Group (JPG, JPEG) graphic as a logo.

To download a logo to the internal memory of the printer:

1. From the Windows Start Menu, select **Printer and Faxes**. A window containing icons for all of your installed printers and fax machines opens.
2. Right-click the IBM 4610 icon and select **Properties**. The IBM 4610 Properties window opens with the General page selected (see Figure 14 on page 20).
3. Click the **Logos** tab (see Figure 17).

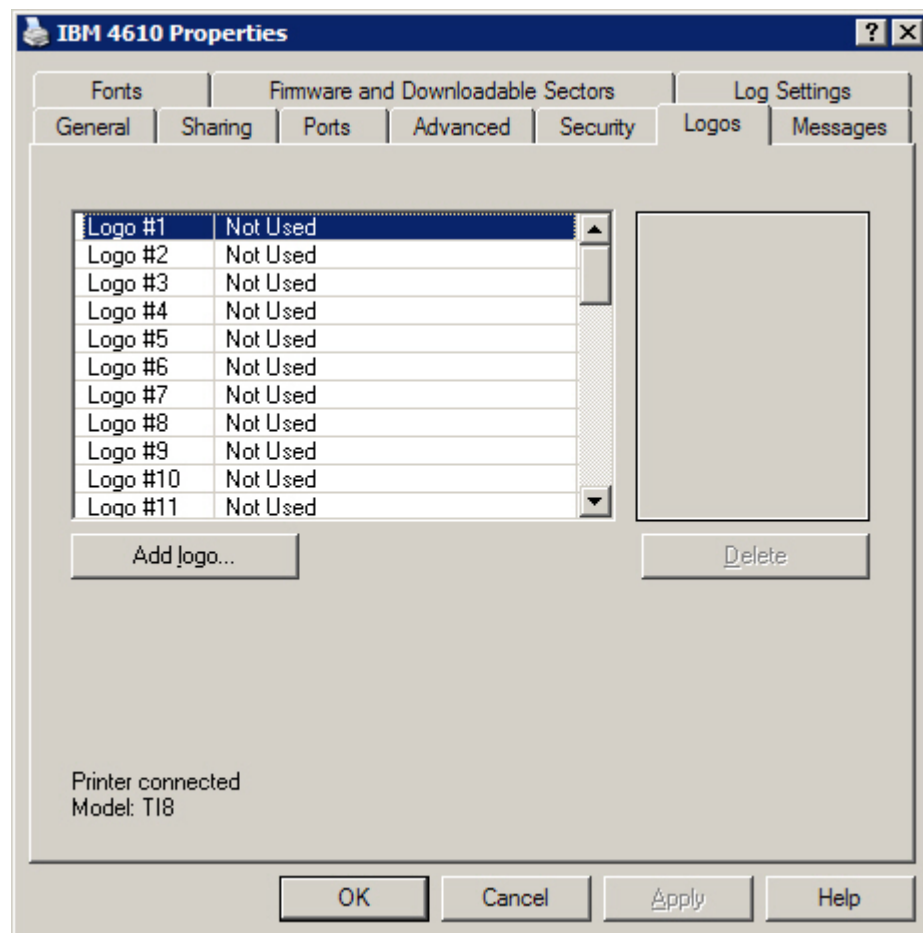


Figure 17. Logos tab

4. Select an empty Logo slot (indicated by the words Not Used).
5. Click **Add logo**.

6. Select the logo file (see Figure 18).

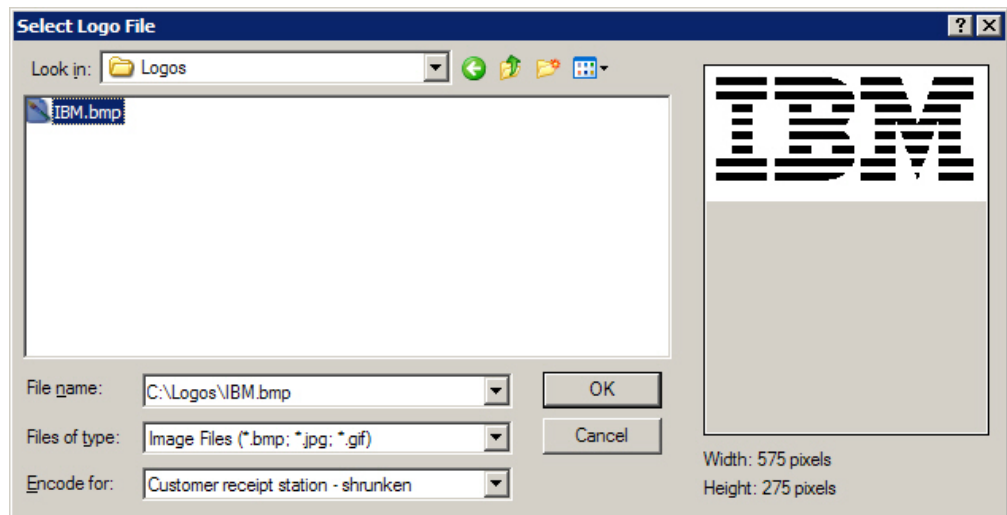


Figure 18. Selecting the logo file

7. From the Encode for list, select the print station that will use the logo and the way that you would like the logo to be handled, if it is over the image size limit:

shrunken

Scales the logo down so that it fits within the image size limit of 576 pixels wide × 2040 pixels high, while preserving its aspect ratio.

truncated

Cuts off any part of the logo that is outside of the image size limit of 576 pixels wide × 2040 pixels high, while preserving its aspect ratio.

Note: If your logo fits within the image size limit of 576 pixels wide × 2040 pixels high then this choice is not relevant: the logo will not be shrunken or truncated.

8. Click **OK**. The logo is stored in the internal memory of the printer.
9. Click **OK** to save your settings and to close the IBM 4610 Properties window.

Creating a message

To create a message:

1. From the Windows Start Menu, select **Printer and Faxes**. A window containing icons for all of your installed printers and fax machines opens.
2. Right-click the IBM 4610 icon and select **Properties**. The IBM 4610 Properties window opens with the General page selected (see Figure 14 on page 20).
3. Click the **Messages** tab (see Figure 19).

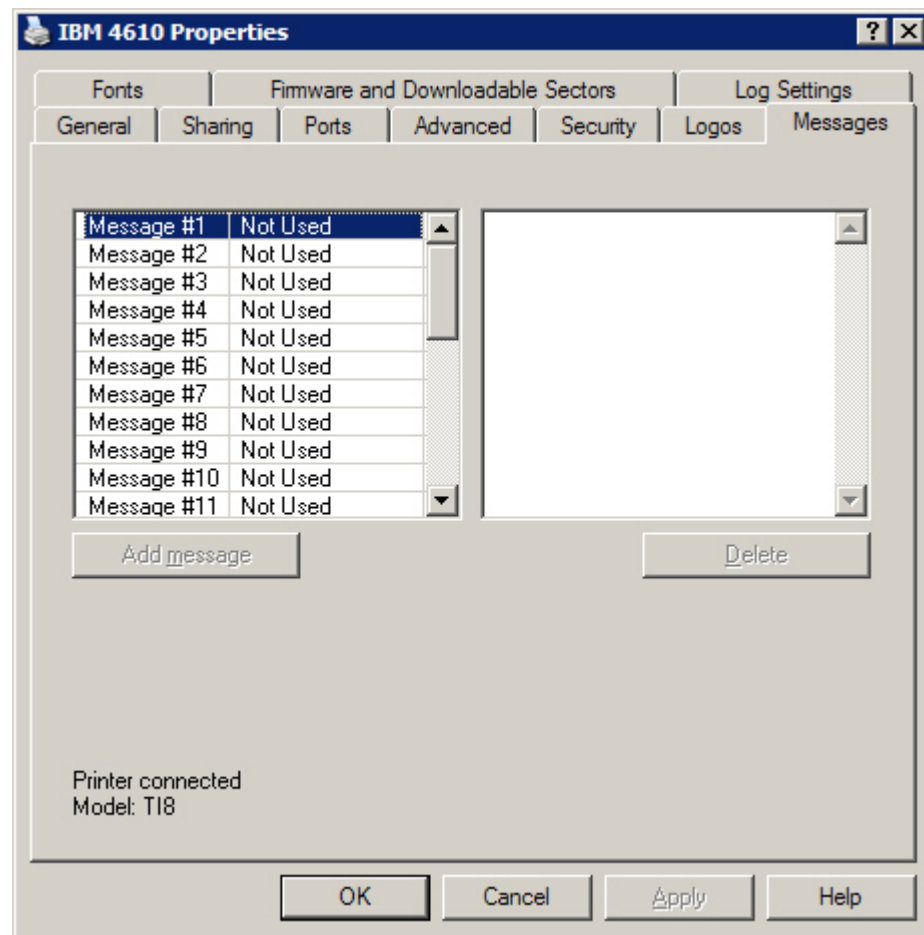


Figure 19. Creating a message

4. Select an empty Message slot (indicated by the words Not Used).

5. Type your message in the box to the right of the Message slots list (see Figure 20). The maximum number of characters in a message is 255.

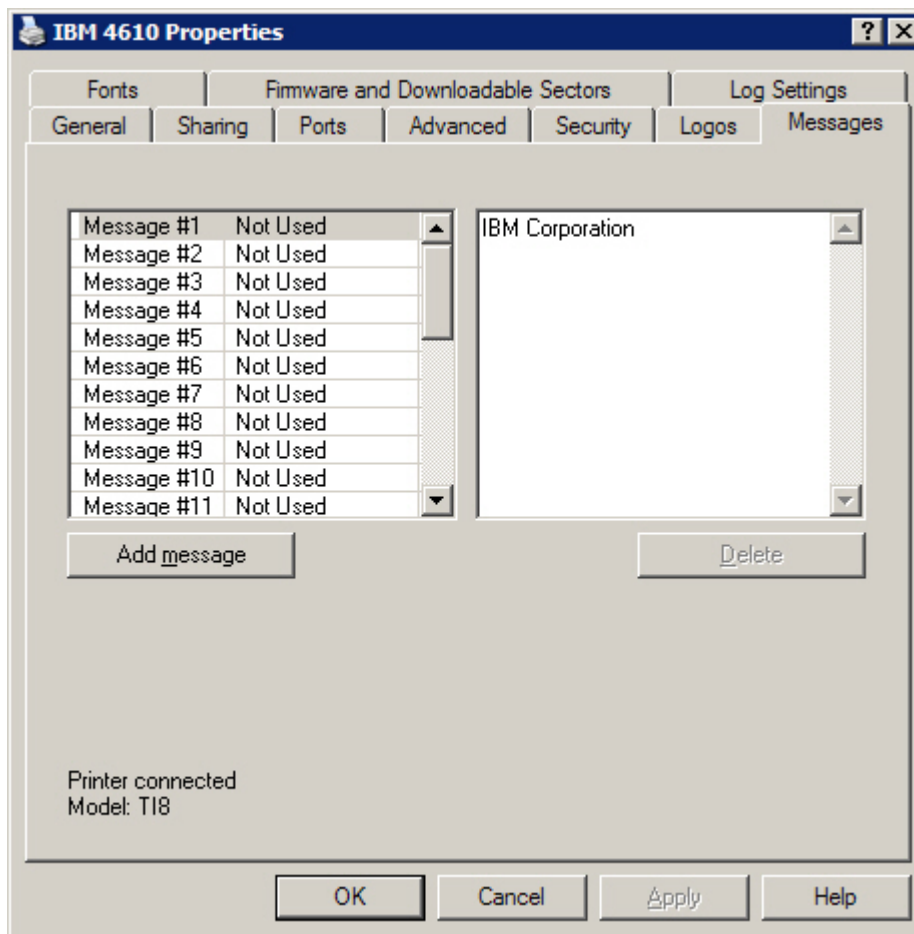


Figure 20. Creating a message

6. Click **Add message**. The message is stored in the internal memory of the printer.
7. Click **OK** to save your settings and to close the IBM 4610 Properties window.

Header and footer

If you have stored logos or messages in the internal memory of the printer (see “Logos and messages” on page 25), you can use them to define a header or footer that is automatically added to every document that you send to the printer.

Configuring the header

The header is automatically printed at the top of every document. It can contain a logo, a message, or both.

To configure the header for all documents:

1. From the Windows Start Menu, select **Printer and Faxes**. A window containing icons for all of your installed printers and fax machines opens.
2. Right-click the IBM 4610 icon and select **Properties**. The IBM 4610 Properties window opens with the General page selected (see Figure 14 on page 20).
3. Click **Printing Preferences**. The IBM 4610 Printing Preferences window opens with the Setup page selected (see Figure 15 on page 21).

4. Click the **Document Header** tab (see Figure 21).
5. Select **Use Document Header**. The header is empty until you specify a logo, a message, or both.

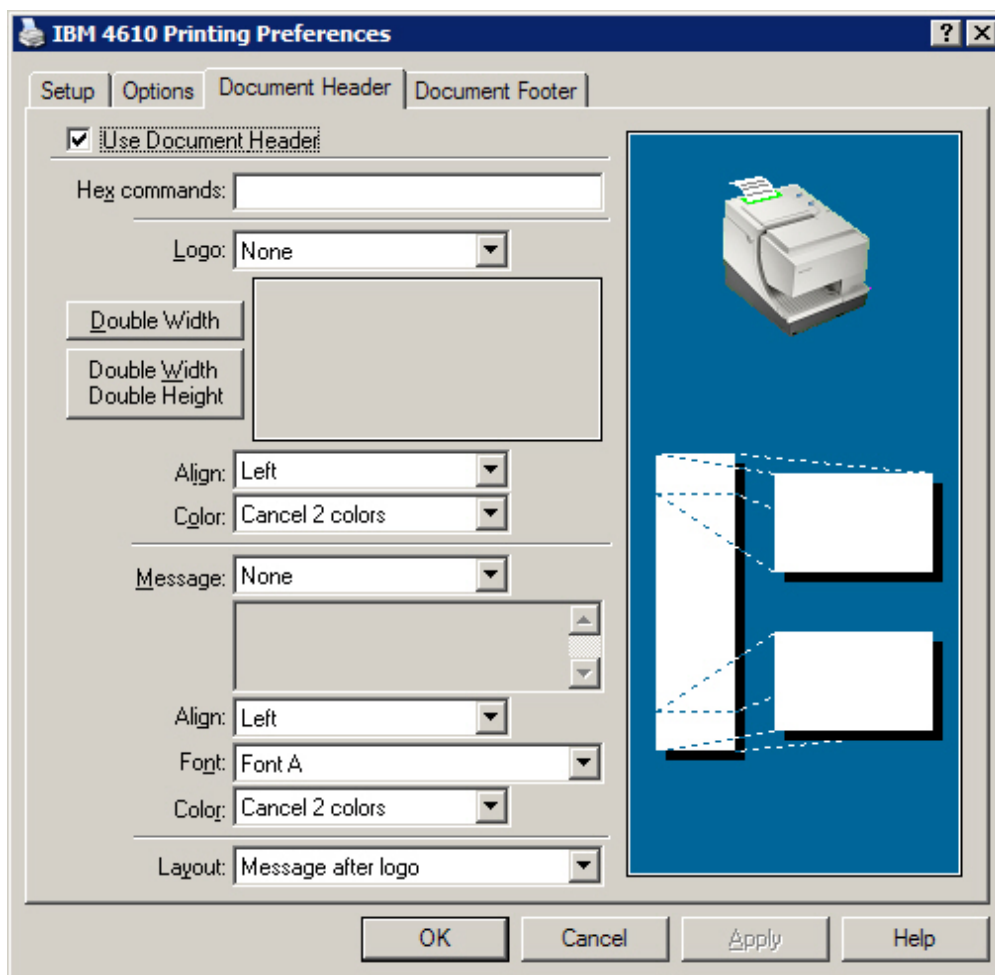


Figure 21. Document Header tab

6. To specify a logo (see Figure 22):
 - a. From the **Logo** list, select one of the logos stored in the printer's memory.
 - b. If necessary, click one of the following buttons:
 - Double Width**
Doubles the pixel width of the logo, but leaves the height the same.
 - Double Width Double Height**
Doubles the pixel width and height of the logo.
 - c. From the **Align** list, select whether the logo should be aligned to the left, centered, or to the right.
 - d. From the **Color** list, select one of the following:
 - 2 colors (half-character)**
Prints the top half of the header logo in color and the bottom half of the header logo in black.
 - 2 colors (full-character)**
Prints the header logo entirely in color.
 - Cancel 2 colors**
Prints the header logo in black only.

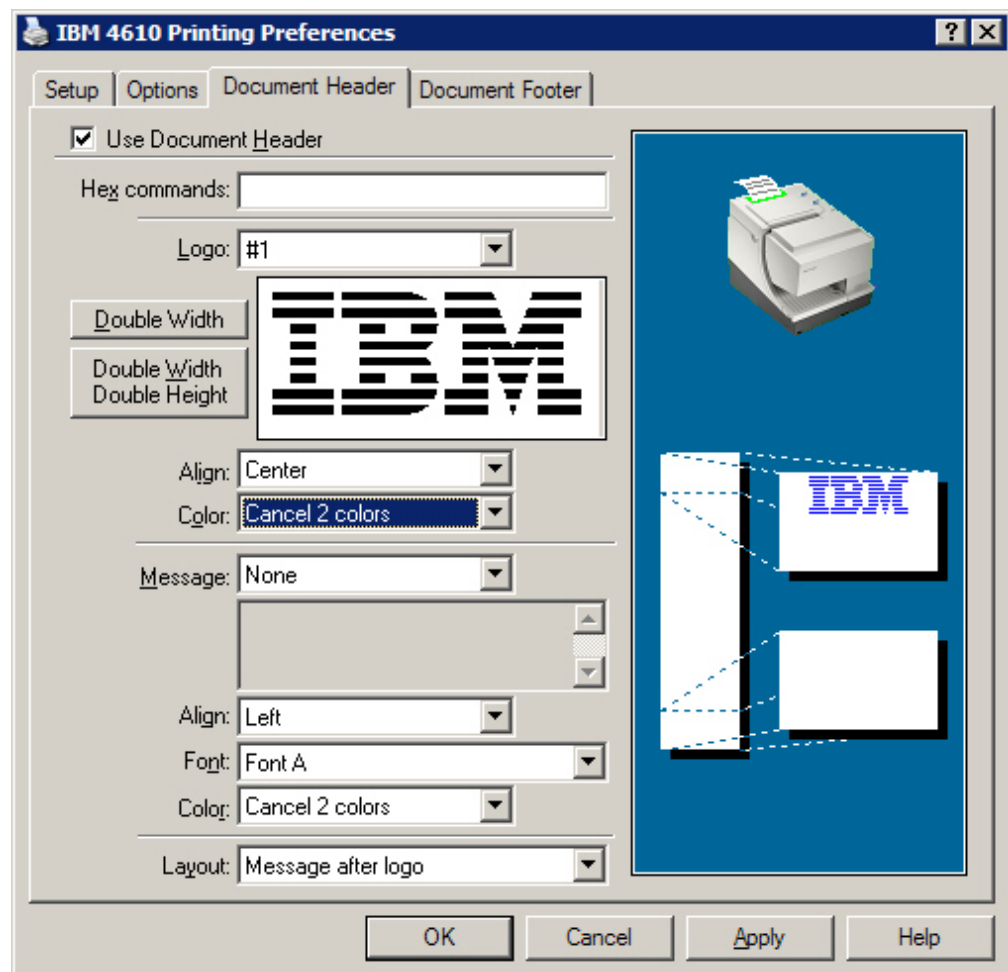


Figure 22. Selecting a header logo

7. To specify a message (see Figure 23):
 - a. From the **Message** list, select one of the list of messages stored in the printer's memory.
 - b. From the **Align** list, select whether the message should be aligned to the left, centered, or to the right.
 - c. From the **Font** list, select one of the fonts stored in the printer's memory. Refer to the appropriate SureMark User's Guide for a description of these fonts and defaults.
 - d. From the **Color** list, select one of the following:
 - 2 colors (half-character)**
Prints the top half of the header message characters in color and the bottom half of the header message characters in black.
 - 2 colors (full-character)**
Prints the header message characters entirely in color.
 - Cancel 2 colors**
Prints the header message characters in black only.

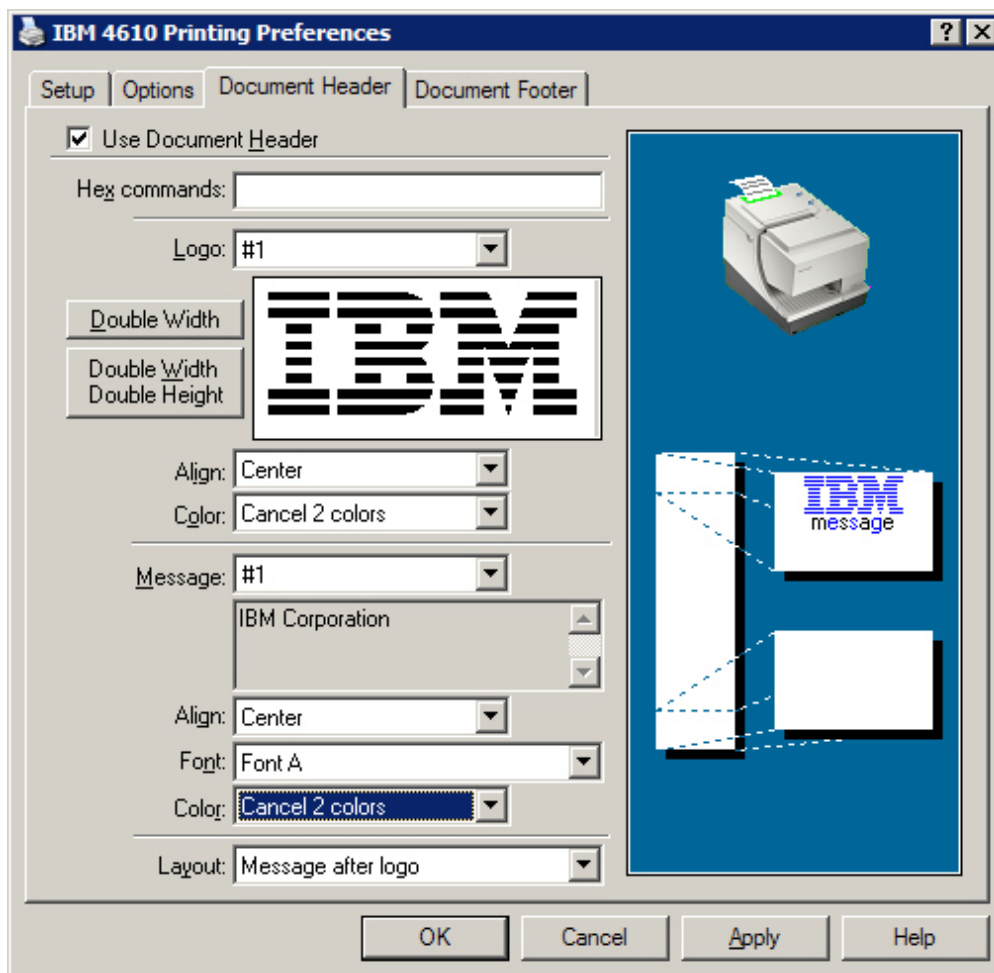


Figure 23. Selecting a header message

8. If you specify both a logo *and* a message, the logo is printed above the message by default. To reverse the order and print the message above the logo, select **Logo after message** from the **Layout** list.
9. Click **OK** to save your settings and to close the IBM 4610 Properties window.

Configuring the footer

The footer is automatically printed at the bottom of every document. It can contain a logo, a message, or both.

To configure the footer for all documents:

1. From the Windows Start Menu, select **Printer and Faxes**. A window containing icons for all of your installed printers and fax machines opens.
2. Right-click the IBM 4610 icon and select **Properties**. The IBM 4610 Properties window opens with the General page selected (see Figure 14 on page 20).
3. Click **Printing Preferences**. The IBM 4610 Printing Preferences window opens with the Setup page selected (see Figure 15 on page 21).
4. Click the **Document Footer** tab (see Figure 24).
5. Select **Use Document Footer**. The footer is empty until you specify a logo, a message, or both.

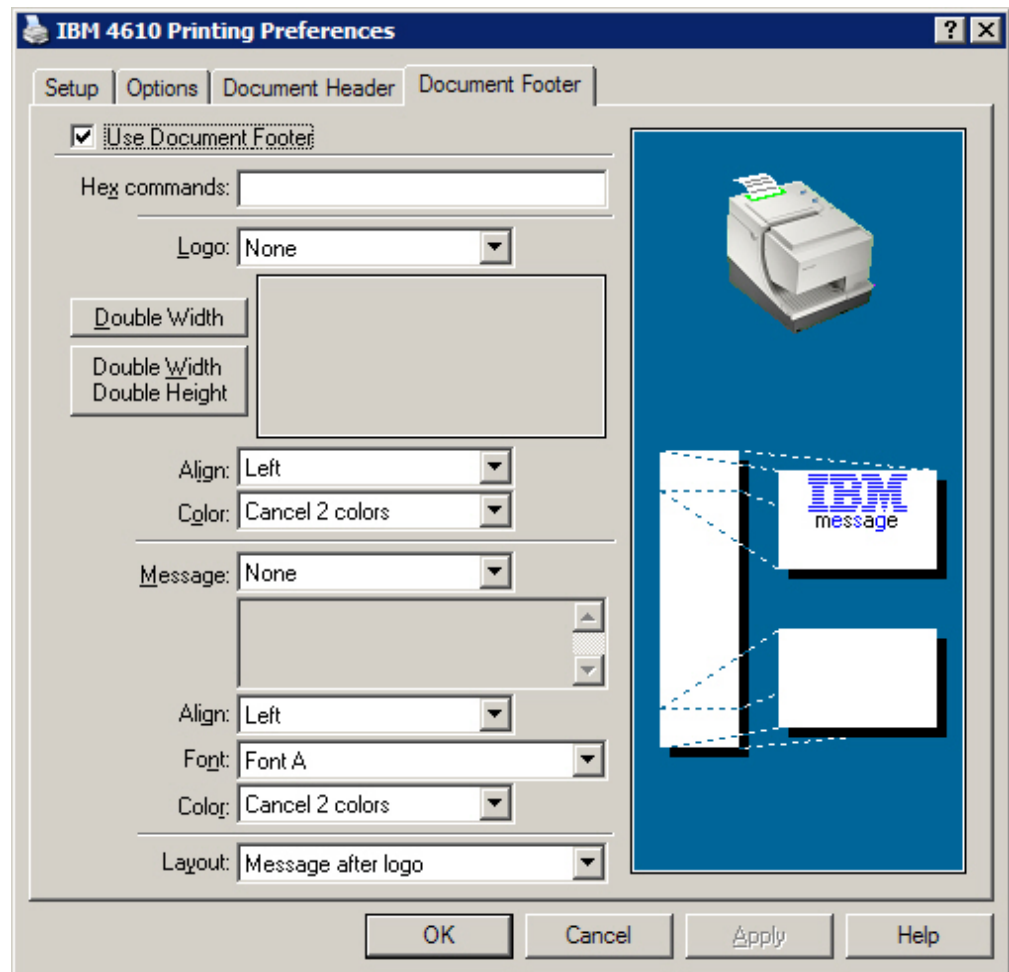


Figure 24. Document Footer tab

6. To specify a logo (see Figure 25):
 - a. From the **Logo** list, select one of the logos stored in the printer's memory.
 - b. If necessary, click one of the following buttons:
 - Double Width**
Doubles the pixel width of the logo, but leaves the height the same.
 - Double Width Double Height**
Doubles the pixel width and height of the logo.
 - c. From the **Align** list, select whether the logo should be aligned to the left, centered, or to the right.
 - d. From the **Color** list, select one of the following:
 - 2 colors (half-character)**
Prints the top half of the footer logo in color and the bottom half of the footer logo in black.
 - 2 colors (full-character)**
Prints the footer logo entirely in color.
 - Cancel 2 colors**
Prints the footer logo in black only.

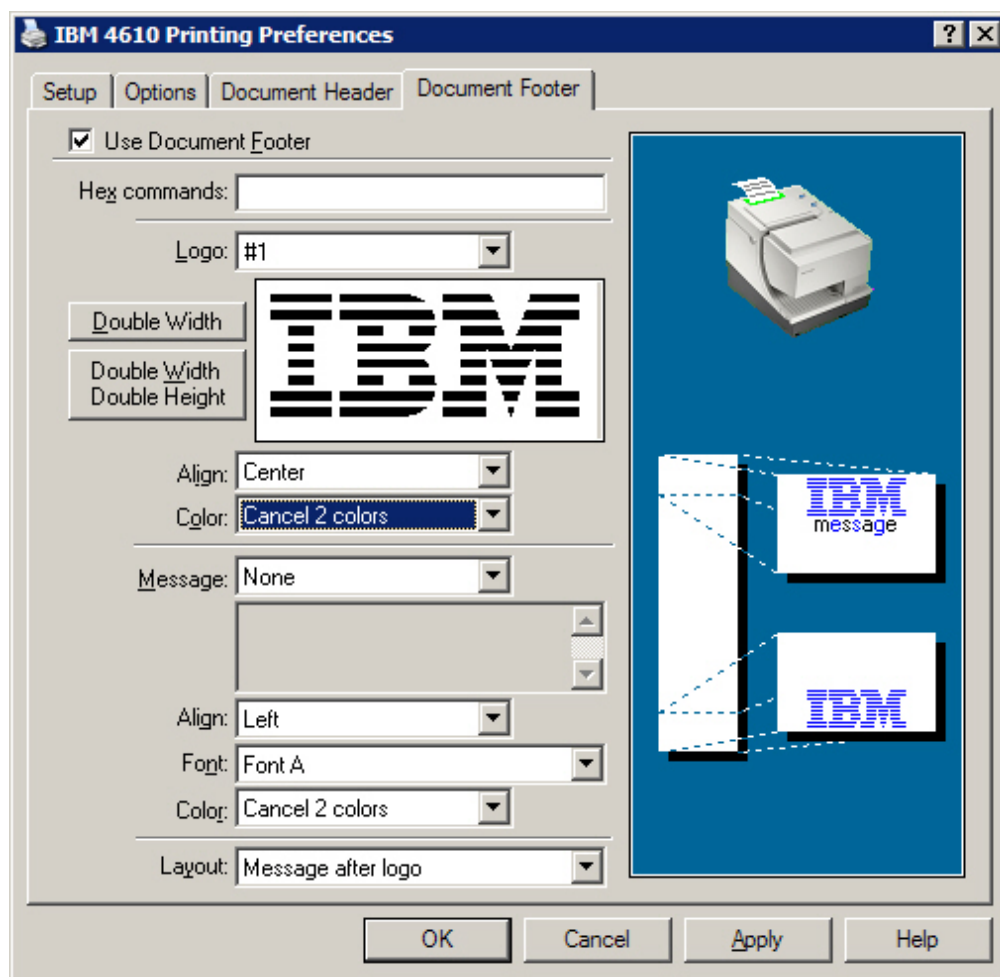


Figure 25. Selecting a footer logo

7. To specify a message (see Figure 26):
 - a. From the **Message** list, select one of the list of messages stored in the printer's memory.
 - b. From the **Align** list, select whether the message should be aligned to the left, centered, or to the right.
 - c. From the **Font** list, select one of the fonts stored in the printer's memory. Refer to the appropriate SureMark User's Guide for a description of these fonts and defaults.
 - d. From the **Color** list, select one of the following:
 - 2 colors (half-character)**
Prints the top half of the footer message characters in color and the bottom half of the footer message characters in black.
 - 2 colors (full-character)**
Prints of the footer message characters entirely in color.
 - Cancel 2 colors**
Prints of the footer message characters in black only.

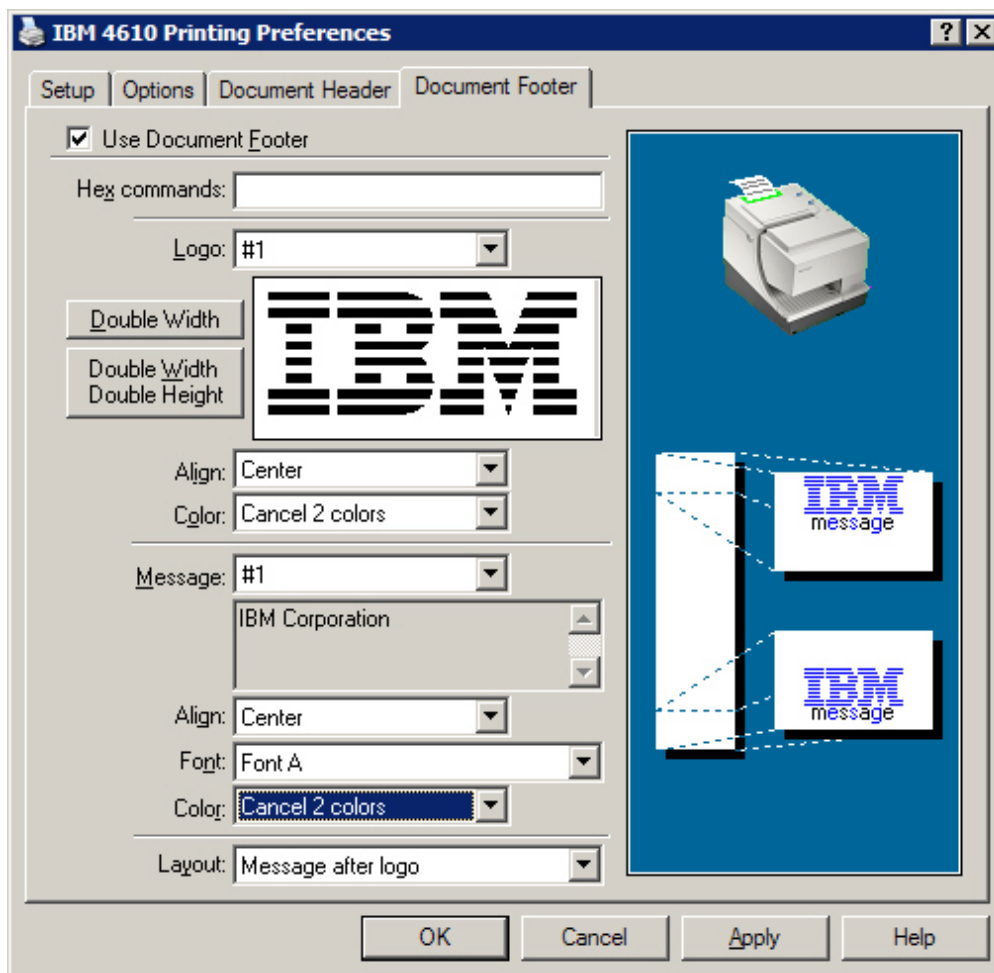


Figure 26. Selecting a footer message

8. If you specify both a logo *and* a message, the logo is printed above the message by default. To reverse the order and print the message above the logo, select **Logo after message** from the **Layout** list.
9. Click **OK** to save your settings and close the IBM 4610 Properties window.

Downloading fonts

To improve printer performance, you can copy fonts to the internal memory of the printer. These fonts are used whenever a document that requires them is printed. Fonts that you can copy to the printer come from two sources:

- Royalty-free POS fonts provided by IBM (see “POS fonts from IBM”)
- Other TrueType fonts that exist on your computer (see “Other TrueType fonts” on page 41)

POS fonts from IBM

A collection of royalty-free TrueType fonts for use with SureMark printers is available from the IBM Retail Store Solutions Support Web site.

Obtaining the POS fonts

To obtain the POS fonts from IBM:

1. Go to <http://www.ibm.com/solutions/retail/store/>.
2. Select **Support**.
3. Select **IBM SureMark Printer**.
4. Select your model of printer.
5. Select the link which refers to **Fonts** or to **Fonts and Logos Utilities**. The installer is downloaded to a folder on your computer that you specify.

To install the fonts, double-click the installer icon in the folder that you specified, and follow the installation wizard instructions.

Downloading the POS fonts to the printer

To download the POS fonts to the printer:

1. From the Windows Start Menu, select **Printer and Faxes**. A window containing icons for all of your installed printers and fax machines opens.
2. Right-click the IBM 4610 icon and select **Properties**. The IBM 4610 Properties window opens with the General tab selected (see Figure 14 on page 20).

3. Click the **Fonts** tab (see Figure 27).

Note: If you intend to use double-byte character set (DBCS) fonts, select **DBCS user-defined fonts**. (This option is not available in this example.)

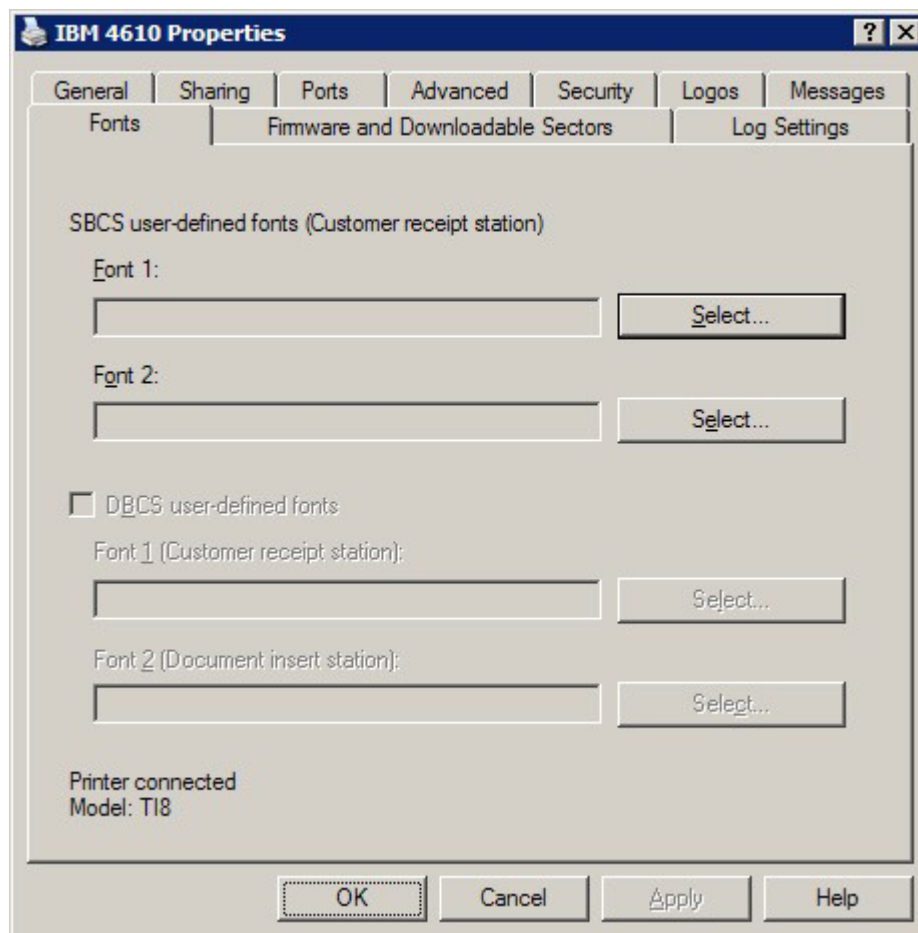


Figure 27. Fonts tab

4. Click **Select** for Font 1 or Font 2. The Select Font window opens (see Figure 28).

Note: If you are downloading DBCS fonts to the printer, Font 1 may only be used for the customer receipt station and Font 2 may only be used for the document insert station.

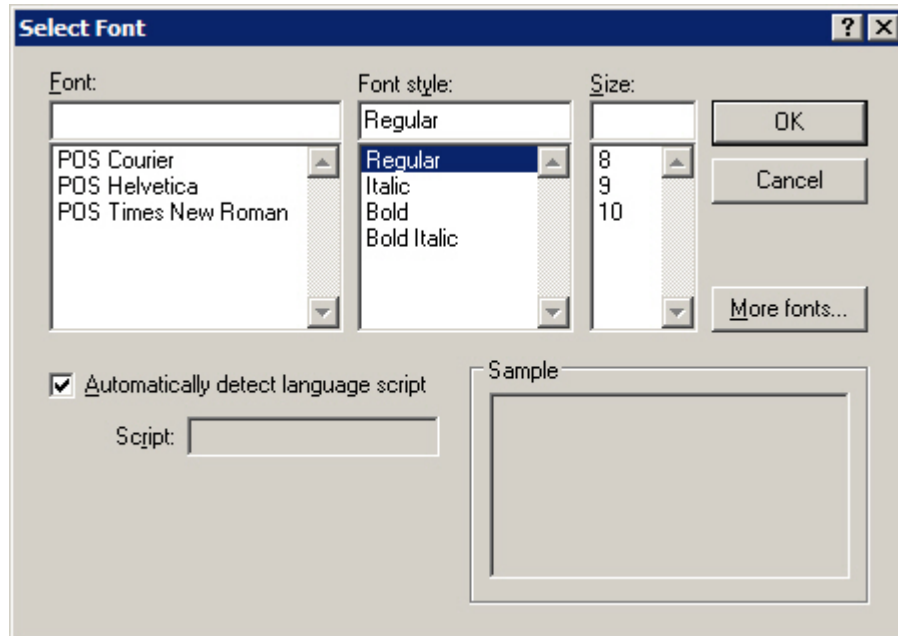


Figure 28. Select Font window

5. Select a POS font, style, and size.
6. Click **OK**. The font is copied to the internal memory of the printer.
7. Click **OK** to save your settings and to close the IBM 4610 Properties window.

Other TrueType fonts

Other TrueType fonts (in addition to the POS fonts provided by IBM) might exist on your computer. If so, you can download them to the printer. However, your license for the fonts must authorize you to do so. You are responsible for confirming that you are authorized to download TrueType fonts to the printer.

To download non-IBM fonts:

1. From the Windows Start Menu, select **Printer and Faxes**. A window containing icons for all of your installed printers and fax machines opens.
2. Right-click the IBM 4610 icon and select **Properties**. The IBM 4610 Properties window opens with the General tab selected (see Figure 14 on page 20).
3. Click the **Fonts** tab (see Figure 27 on page 39).

Note: If you intend to use DBCS fonts, select **DBCS user-defined fonts**.

4. Click **Select** for Font 1 or Font 2. The Select Font window opens (see Figure 28 on page 40).

Note: If you are downloading DBCS fonts to the printer, Font 1 may only be used for the customer receipt station and Font 2 may only be used for the document insert station.

5. Click **More fonts**. A message appears, reminding you that you must confirm that you are authorized to download TrueType fonts before doing so.
6. If you have received authorization, click **Yes**. The Select Font window is updated to list all of the TrueType fonts installed on your computer (see Figure 29).

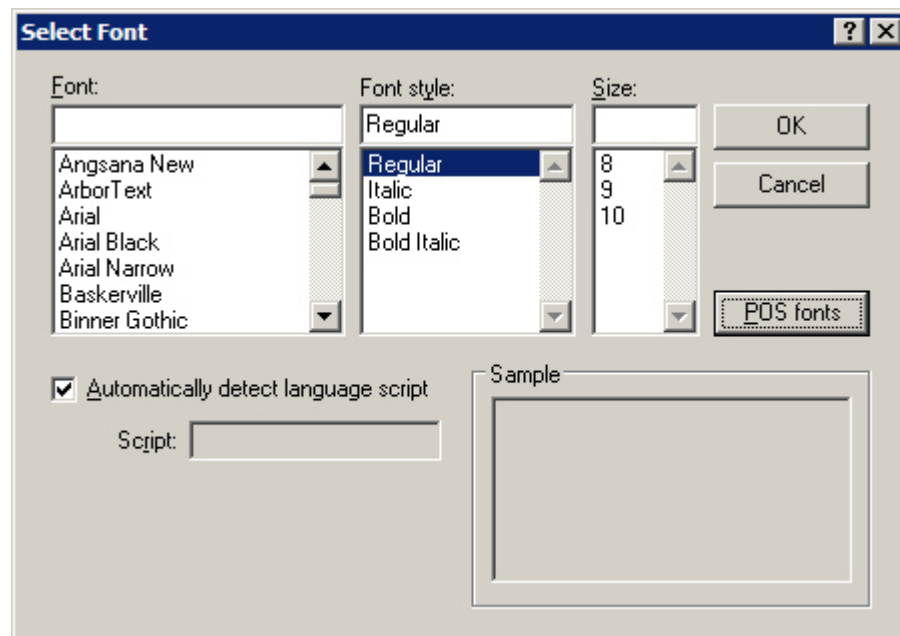


Figure 29. Example Select Font window including non-IBM TrueType fonts

7. Select a TrueType font, style, and size.
8. Click **OK**. The font is copied to the internal memory of the printer.
9. Click **OK** to save your settings and to close the IBM 4610 Properties window.

Chapter 3. Using the printer

This chapter explains how to perform key tasks after the IBM SureMark 4610 printer native Windows driver is installed. The following topics are covered:

- Monitoring printer and job status
- Printing with resident or downloaded fonts
- Printing bar codes
- Compatibility issues for specific applications
- Sending commands to the printer

Monitoring printer and job status

The Language/Port Monitor monitors printer and job status for IBM 4610 printers directly through COM ports and the USB driver. Job and printer status is displayed in the status column on the Windows printer queue view, but that is not the only place where you can find information about printer and job status. There are many possible places, as any application can simply make standard Win32 API calls to get printer or job status information then display that information to the user. Because it is the 4610's port monitor that sets the information being shown by the application, that application is displaying information that essentially comes straight from the port monitor.

The first place to check status is the standard Printers and Faxes folder (**Start > Control Panel > Printers and Faxes**). Select **View > Details** to show the status of each printer icon in the Status column of that folder view.

The best place to get status information is the standard Windows print queue view for a printer (double-click the relevant printer in the Printers folder). You should check this location first, for these reasons:

- This is the only standard way on any Windows operating system to get job status information for a specific job.
- This is the accepted standard way on any Windows operating system to get status for a printer.
- All status information in the queue view, including the printer status information, is kept up-to-date by the system. This is not true for Details view of the Printers and Faxes folder. For example, if the port monitor sets the port status for some port to Out of paper, the queue view for any printers using that port will immediately show the printer as out of paper, whereas the Status column in the Printers and Faxes folder might not update for minutes.

Note: The Language/Port Monitor reports end-of-job status at the time the job completes printing, not at the time it completes sending. This is known as true end-of-job, and is one of the major benefits of using the port monitor.

These values may be returned for the status of the *printer*:

- Door open/Out of paper on Receipt Station
- Paper absent on Document insert station
- Door open on Document insert station
- Offline
- Print buffer full
- Out of memory
- Print Head in Open Throat Position

Further, the Language/Port Monitor can set the status of a job to any string it chooses. Thus, any one (or more) of these values may be returned for the status of particular *print job*:

- Printing
- Printed
- Canceling
- Canceled

Note: More than one string can be displayed at a time for a job. For example:

- Printing - Out of paper

This would indicate that the job was a normal job; but the printer is currently out of paper.

- Error - Printing - Canceling - Out of paper

In this example, the spooler adds the first two words (though Printing might instead be Printed, if the spooler considered the job fully sent).

Printing with fonts

To print a document using the resident or downloaded fonts in the printer:

1. Select **IBM 4610** as the default printer.
2. In the application that will send the document to the printer (such as Microsoft Word or WordPad), perform the following steps:
 - Select the text to be printed.
 - Specify the resident or downloaded font you want to use.
 - Specify a point size for the selected text.
 - Print the document.

Note: The screen appearance of text that is edited using the resident or downloaded fonts of the printer might not always match the paper printout. For more information, refer to the IBM Point of Sale Knowledgebase and search on "4610 native Windows driver."

Printing bar codes

To create a bar code for printing:

1. Select **IBM 4610** as the default printer.
2. Open a document in an editing application (such as Microsoft Word or WordPad).
3. Type the text to be printed as a bar code.
4. Select the text and change the font to one of the following bar code fonts:
 - Codabar
 - Code 128ABC
 - Code 128C
 - Code 39
 - Code 93
 - ITF
 - JAN13 (EAN-13)
 - JAN8 (EAN-8)
 - PDF417 (Receipt Station only)
 - UPC-A
 - UPC-E
5. Specify a point size for the selected text.
6. Print the document.

Note: IBM Lotus® Word Pro® does not display point sizes correctly for bar codes (see “Bar codes” on page 46).

Compatibility notes

Some applications are not entirely compatible with the IBM SureMark 4610 printer native Windows driver.

Paper sizes

The following applications do not use the paper sizes specified by the SureMark 4610 printer native Windows driver:

- Microsoft PowerPoint
- Corel Draw

Resident fonts

The following applications do not use the resident fonts specified by the SureMark 4610 printer native Windows driver:

- Microsoft PowerPoint
- Corel Draw
- Notepad

Bar codes


Lotus Word Pro does not display bar code font sizes correctly.

To edit and print bar codes in Word Pro:

1. Select a bar code font. Lotus Word Pro displays an incorrect font size range (for example, from 4 to 72 logical points).
2. Select the last font size (72). The incorrect font size range changes to the correct one.
3. Edit the text using any font size in the list except the last one.
4. Print the document.

Sending commands to the printer

Using the command font

The “command” font is usually indicated in an application by the  icon or no icon. Use it to pass native printer escape sequence commands directly to the printer as ASCII characters in the following ranges:

- 0–9
- a–f
- A–F

Any other character outside of this range is ignored.

To generate commands, the characters are grouped in pairs and the result is sent unaltered to the printer. If there is an odd number of characters, a trailing 0 is added.

Note: When using only the set left margin command (**1B 24 n1 n2**)—or in conjunction with the set print station parameters (**1b 63 31 n 1B 24 n1 n2**)—these command sequences must be posted at the beginning of a new line. This will avoid conflicts between these commands and the similar commands that could be sent from the printer driver.

For more information, refer to the *IBM SureMark 4610 Printers: User's Guide for Models T11, T12, T13, T14, T18, T19, TG3, TG4, TG8, TG9, TF6, and TM6* (GA27-4151) or the *IBM SureMark 4610 Printers: DBCS User's Guide for Models T15, TG5, TF7, and TM7* (GA27-4256).

Using the control font


The “control” font is usually indicated in an application by the  icon or no icon. Use it to send commands directly to the printer as ASCII characters; each character sent to the printer in the control font represents a specific command (see Table 2).

Table 2. Control font mapping

ASCII character	Command
2	Print to the customer receipt station
4	Print to the document insert station (portrait mode)
8	Print to the document insert station (landscape mode)
a	Open drawer 2 (50 ms drive pulse width)

Table 2. Control font mapping (continued)

ASCII character	Command
b	Open drawer 2 (100 ms drive pulse width)
c	Open drawer 2 (150 ms drive pulse width)
d	Open drawer 2 (200 ms drive pulse width)
e	Open drawer 2 (250 ms drive pulse width)
f	Cut receipt
g	Cut receipt
h	Flip check
i	Cancel color printing
j	Enable full-character color printing
k	Enable half-character color printing
l	Enable upside down printing
m	Cancel upside down printing
p	Do not add HRI characters to bar code
q	Add HRI characters (in Font B) to top of bar code
r	Add HRI characters (in Font B) to bottom of bar code
s	Add HRI characters (in Font A) to top of bar code
t	Add HRI characters (in Font A) to bottom of bar code
w	Left-align text
x	Center-align text
y	Right-align text
A	Open drawer 1 (50 ms drive pulse width)
B	Open drawer 1 (100 ms drive pulse width)
C	Open drawer 1 (150 ms drive pulse width)
D	Open drawer 1 (200 ms drive pulse width)
E	Open drawer 1 (250 ms drive pulse width)
F	Cut receipt
G	Print predefined graphics (logo) #1 (normal mode)
H	Print predefined graphics (logo) #2 (normal mode)
I	Print predefined graphics (logo) #3 (normal mode)
J	Print predefined graphics (logo) #4 (normal mode)
K	Print predefined graphics (logo) #5 (normal mode)
P	Cut receipt
R	Right-align column
[Print predefined graphics (logo) #1 (double-height double-width mode)
]	Print predefined graphics (logo) #2 (double-height double-width mode)
^	Print predefined graphics (logo) #3 (double-height double-width mode)
_	Print predefined graphics (logo) #4 (double-height double-width mode)
'	Print predefined graphics (logo) #5 (double-height double-width mode)

API programming

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The IBM 4610 API module (ibm4610api.dll) that is provided in the IBM 4610 Windows Printer Driver Installation Kit is useful for developers that build 4610 printer-related applications. This module offers the possibility to do check processing using 4610 printers and to monitoring the 4610 printer status, in conjunction with the IBM 4610 Windows Printer Driver.

In order to properly use this API you should do as follows:

- Install 4610 Windows Printer Driver (if is not already installed)
- Install 4610 Language/Port Monitor (if is not already installed)
- Create an RSS port using the 4610 Language/Port Monitor
- Associate the RSS port to the physical port where the 4610 printer is connected (if is not already created)

This section describes the functions that are exported by the 4610 API module. It also provides the definitions for all possible return values, with specific possible values listed within each function. Finally, it lists legacy functions which are not exported by the module.

API overview

Table 3 shows the functions grouped by operational categories.

Table 3. API functions by category

Function	Description	Page
Starting and ending communications		
BiOpenMonPrinter	Opens a new session and, if is successfully opened, returns a handle to the specified printer.	67
BiCloseMonPrinter	Closes the opened session and frees all allocated resources.	52
Basic operations		
BiGetType	Acquires the printer's type ID (capabilities).	58
BiGetStatus	Acquires the current status of a printer.	57
BiGetOfflineCode	Acquires a code that indicates why the 4610 printer is offline.	54
BiCancelError	Restores recoverable printer errors by sending a release print buffer command.	52
BiOpenDrawer	Opens the specified cash drawer (1 or 2) after the specified delay (in milliseconds).	66
UpdatePrinterFirmware	Updates the firmware of the connected printer on the specified RSS port.	75
Monitoring operations		
BiSetMonInterval	Specifies the interval of the status monitoring of 4610 printers by the API (in milliseconds).	72
BiSetStatusBackFunction	Enables Automatic Status Back mode and registers the address of the callback function where results are notified.	73
BiCancelStatusBack	Disables Automatic Status Back mode.	52
Check reading operations		
BiMICRSetReadBackFunction	Enables check reading by BiMICRReadCheck and registers the address of the callback function when the results are notified.	64
BiMICRSelectDataHandling	Retransmits the check reading results.	63
BiMICRReadCheck	Selects the check reading data handling mode.	62
BiMICRRetransmissionCheckData	Executes check reading.	62
BiMICRLoadCheck	Loads the check to the check printing start position.	62
BiMICRGetStatus	Acquires the MICR status.	61
BiMICREjectCheck	Ejects the check.	60
BiMICRCancelWaitCheckInsertion	Cancels the current check insertion wait period.	60
BiMICRCancelReadBack	Cancels a reading information notification request registered using BiMICRSetReadBackFunction function.	60

Table 3. API functions by category (continued)

Function	Description	Page
Scanning operations		
BiSCNSetImageFormat	Sets the format of the scanning image data.	70
BiSCNGetImageFormat	Acquires the format of the image set in the printer.	68
BiSCNSetReadBackFunction	Enables image scanning by the function BiSCNReadImage , registers the callback function's address called when sending notification of the results, and registers the memory addresses for setting each type of scanned information.	71
BiSCNCancelReadBack	Cancels the scanning information notice request registered using BiSCNSetReadBackFunction function.	67
BiSCNReadImage	Executes image scanning.	68
BiSCNRetransmissionImage	Retransmits the image scanning results.	69
BiESCNDefineCropArea	Registers a Crop Area or deletes all the registered Crop Areas.	52
BiESCNSStoreImage	Registers a Crop image.	54
BiESCNRetrievImage	Acquires a Crop image.	53
Output appearance operations		
DownloadLogo	Downloads one or more logos to the connected printer on the specified RSS port.	74
DownloadMessage	Downloads one or more messages to the connected printer on the specified RSS port.	74
DownloadFont	Downloads one or two TrueType fonts to the connected printer on the specified RSS port.	73

Note: Some BYTE parameter type values are defined with string descriptors, which must be equated to their ordinal integer values to work in code (e.g. the first defined parameter value must be equated to **1**; the second, to **2**; the third, to **3**; and so forth).

Return value definitions

SUCCESS

Execution successfully completed.

ERR_ACCESS

Reading or writing with the printer is not possible (printing in progress).

ERR_CROPAREAID

Crop area selected is not present.

ERR_HANDLE

The handle value that specifies the printer is incorrect.

ERR_NO_MEMORY

Memory is insufficient.

ERR_NO_PRINTER

The specified printer driver does not exist.

ERR_NO_TARGET

An unsupported printer was specified (the printer's power is not ON, the cable connections are faulty, and so forth).

ERR_NOT_SUPPORT

Not supported by this printer.

ERR_NOT_OEM

Not supported by this printer.

ERR_OFFLINE

The printer was opened in the offline state, so it can not be used until the online state is recovered.

ERR_OPENED

The specified printer has already been opened.

ERR_PARAM

Parameter error.

ERR_PRINTER_OPERATION

The command sent to the printer was not correctly processed.

ERR_TIMEOUT

A time out error occurred.

ERR_TYPE

nType parameter error.

ERR_WITHOUT_CB

Can not execute because **BiMICRSetReadBackFunction** has not been called.

BiCancelError function

This function restores recoverable printer errors by sending a release print buffer command.

```
int WINAPI BiCancelError(
    int nHandle);
```

Parameters

nHandle

Specifies the handle value of the printer being accessed. The **BiOpenMonPrinter** return value is used in the handle value.

Return values

- SUCCESS
- ERR_TIMEOUT
- ERR_ACCESS

BiCancelStatusBack function

This function disables Automatic Status Back mode.

```
int WINAPI BiCancelStatusBack(
    int nHandle);
```

Parameters

nHandle

Specifies the handle value of the printer being accessed. The **BiOpenMonPrinter** return value is used in the handle value.

Return values

- SUCCESS
- ERR_HANDLE

BiCloseMonPrinter function

This function closes the opened session and frees all allocated resources.

```
int WINAPI BiCloseMonPrinter(
    int nHandle);
```

Parameters

nHandle

Specifies the handle value of the printer being accessed. The **BiOpenMonPrinter** return value is used in the handle value.

Return values

- SUCCESS
- ERR_HANDLE

BiESCNDefineCropArea function

This function registers a Crop Area or deletes all the registered Crop Areas.

```
int WINAPI BiESCNDefineCropArea(
    int nHandle,
    BYTE bCropAreaID,
    WORD wStartX,
    WORD wStartY,
    WORD wEndX,
    WORD wEndY);
```

Parameters

nHandle

Specifies the handle value of the printer being accessed. The **BiOpenMonPrinter** return value is used in the handle value.

bCropAreaID

Specifies the cropping area template used for storing images (0 – 255):

- 0** Clears the cropping area list.
- 1** Entire image.

wStartX

Specifies the starting X coordinate of the cropping area.

wStartY

Specifies the starting Y coordinate of the cropping area.

wEndX

Specifies the ending X coordinate of the cropping area.

wEndY

Specifies the ending Y coordinate of the cropping area.

Return values

- SUCCESS
- ERR_HANDLE
- ERR_NOT_SUPPORT
- ERR_PARAM

BiESCNRetrieveImage function

This function acquires a Crop image.

```
int WINAPI BiESCNRetrieveImage(
    int      nHandle,
    DWORD    dwFileIndex,
    LPSTR     pFileID,
    LPSTR     pImageTagData,
    LPDWORD   pImageSize,
    LPBYTE*   pImageData);
```

Parameters

nHandle

Specifies the handle value of the printer being accessed. The **BiOpenMonPrinter** return value is used in the handle value.

dwFileIndex

Specifies the image location to retrieve.

pFileID

(Ignored.)

pImageTagData

Specifies the identification data of the image to retrieve.

pImageSize

Contains the image size of the *pImageData* buffer.

pImageData

Contains the image data.

Return values

- SUCCESS
- ERR_NOT_FOUND
- ERR_NOT_SUPPORT
- ERR_PARAM

BiESCNSStoreImage function

This function registers a Crop image.

```
int WINAPI BiESCNSStoreImage(
    int      nHandle,
    LPDWORD  lpdwFileIndex,
    LPSTR    pFileID,
    LPSTR    pImageTagData,
    BYTE     bCropAreaID);
```

Parameters

nHandle

Specifies the handle value of the printer being accessed. The **BiOpenMonPrinter** return value is used in the handle value.

lpdwFileIndex

Returns the image location where the desired image was stored.

pFileID

(Ignored.)

pImageTagData

Specifies the identification data of the crop image to be saved. Selectable length of a character string is up to 40 characters. NULL can be used.

bCropAreaID

Specifies the crop area ID defined by the **BiESCNSDefineCropArea** function. Selectable values are 1 – 255.

Return values

- SUCCESS
- ERR_CROPAREAID
- ERR_NO_IMAGE
- ERR_NO_MEMORY
- ERR_NOT_SUPPORT
- ERR_PARAM

BiGetOfflineCode function

This function acquires a code that indicates why the 4610 printer is offline. (5 bytes)

```
int WINAPI BiGetOfflineCode(
    int      nHandle,
    LPBYTE  offlinecode);
```

Parameters

nHandle

Specifies the handle value of the printer being accessed. The **BiOpenMonPrinter** return value is used in the handle value.

offlinecode

Sets the bit that indicates the reason for being offline:

Table 4. *offlinecode* Byte 1 = variable

Bit	Function	Value 0	Value 1	Comments
0	CPU execution error.	Did not occur.	Occurred.	Always 0.
1	Read/write (R/W) error in memory.	Did not occur.	Occurred.	Status byte 3 – bit 3
2	R/W error in gate array.	Did not occur.	Occurred.	Always 0.
3	Not defined.	Fixed at 0.		0
4	Not defined.	Fixed at 0.		0
5	Not defined.	Fixed at 0.		0
6	Fixed.	Fixed at 1.		1
7	Fixed.	Fixed at 0.		0

Table 5. *offlinecode* Byte 2 = 0x40

Bit	Function	Value 0	Value 1	Comments
0	High voltage error.	Did not occur.	Occurred.	Always 0.
1	Low voltage error.	Did not occur.	Occurred.	Always 0.
2	Overcurrent error.	Did not occur.	Occurred.	Always 0.
3	Not defined.	Fixed at 0.		0
4	Not defined.	Fixed at 0.		0
5	Not defined.	Fixed at 0.		0
6	Fixed.	Fixed at 1.		1
7	Fixed.	Fixed at 0.		0

Table 6. *offlinecode* Byte 3 = 0x40

Bit	Function	Value 0	Value 1	Comments
0	Thermistor error.	Did not occur.	Occurred.	Always 0.
1	Print head high voltage error.	Did not occur.	Occurred.	Always 0.
2	Print head low voltage error.	Did not occur.	Occurred.	Always 0.
3	RTC error.	Did not occur.	Occurred.	Always 0.
4	Number of carriage operations error.	Did not occur.	Occurred.	Always 0.
5	Number of pump operations error.	Did not occur.	Occurred.	Always 0.
6	Fixed.	Fixed at 1.		1
7	Fixed.	Fixed at 0.		0

Table 7. offlinecode Byte 4 = variable

Bit	Function	Value 0	Value 1	Comments
0	Auto cutter error.	Did not occur.	Occurred.	TM6 and TM7 only: Status byte 1 – bit 6 (customer receipt print error) All others: 0
1	Paper roll cover open error (recover automatically).	Did not occur.	Occurred.	Status byte 1 – bit 6 (customer receipt print error)
2	Not defined.	Fixed at 0.		0
3	Not defined.	Fixed at 0.		0
4	Home position detection error.	Did not occur.	Occurred.	Status byte 3 – bit 1 (home error)
5	Carriage detection error.	Did not occur.	Occurred.	Always 0.
6	Fixed.	Fixed at 1.		1
7	Fixed.	Fixed at 0.		0

Table 8. offlinecode Byte 5 = variable

Bit	Function	Value 0	Value 1	Comments
0	Paper roll cover open error (recover by the command).	Did not occur.	Occurred.	Status byte 1 – bit 6 (customer receipt print error)
1	Print head high temperature error.	Did not occur.	Occurred.	Always 0.
2	Print head low temperature error.	Did not occur.	Occurred.	Always 0.
3	Not defined.	Fixed at 0.		0
4	Not defined.	Fixed at 0.		0
5	Not defined.	Fixed at 0.		0
6	Fixed.	Fixed at 1.		1
7	Fixed.	Fixed at 0.		0

Return values

- SUCCESS
- ERR_ACCESS
- ERR_HANDLE
- ERR_NO_MEMORY
- ERR_OFFLINE
- ERR_PARAM
- ERR_TIMEOUT

BiGetStatus function

This function acquires the current status of a printer. (4-bytes status)

```
int WINAPI BiGetStatus(
    int      nHandle,
    LPDWORD lpStatus);
```

Parameters

nHandle

Specifies the handle value of the printer being accessed. The **BiOpenMonPrinter** return value is used in the handle value.

lpStatus

Represents the current status of the specified printer:

Table 9. *lpStatus* status definitions

EPSON status	Value	OFF	ON	Comments
ASB_NO_RESPONSE	0x00000001	Printer responds	Printer does not respond	If 4610 printer responds this bit will be set to 0 (OFF).
ASB_PRINT_SUCCESS	0x00000002	—	Printing finished	This will be internally handled.
ASB_UNRECOVER_ERR	0x00002000	No non-recoverable error.	A non-recoverable error has occurred.	Status byte 1 – bit 7 (command reject)
ASB_AUTORECOVER_ERR	0x00004000	No auto-recoverable error.	An auto-recoverable error has occurred.	Always OFF
ASB_OFF_LINE	0x00000008	Online	Offline	If 4610 printer responds then this bit will be set to 0 (OFF).
ASB_PRINTER_FEED	0x00000040	Not feeding paper by the paper feed switch.	Feeding paper by the paper feed switch.	Status byte 7 – bit 4 (printer key pressed)
ASB_PANEL_SWITCH	0x00000200	Panel switch OFF.	Panel switch ON.	Always OFF 0
ASB_MECHANICAL_ERR	0x00000400	No mechanical error.	A mechanical error has occurred.	Always OFF 0
ASB_AUTOCUTTER_ERR	0x00000800	No cutter error.	A cutter error has occurred.	Status byte 1 – bit 6 (customer receipt print error)
ASB_DRAWER_KICK	0x00000004	Drawer kick-out; connector pin 3 is LOW.	Drawer kick-out; connector pin 3 is HIGH.	Status byte 7 – bit 3 (cash drawer status)
ASB_RECEIPT_END	0x00080000	Paper at the receipt end detector.	No paper at the receipt end detector.	Status byte 1 – bit 6 (customer receipt print error)
ASB_COVER_OPEN	0x00000020	Cover is closed.	Cover is open.	Status byte 1 – bit 6 (customer receipt print error)

Table 9. *lpStatus* status definitions (continued)

EPSON status	Value	OFF	ON	Comments
ASB_RECEIPT_NEAR_END	0x00020000	Paper at the receipt near end detector.	No paper at the receipt near end detector.	Status byte 1 – bit 6 (customer receipt print error)
ASB_SLIP_TOF	0x00200000	Paper at the Slip TOF detector.	No Paper at the Slip TOF detector.	Status byte 2 – bit 1 (document present under the front sensor)
ASB_SLIP_BOF	0x00400000	Paper at the Slip BOF detector.	No Paper at the Slip BOF detector.	Status byte 2 – bit 2 (document present under the top sensor)
ASB_SLIP_SELECTED	0x01000000	Slip is selected.	Slip is not selected.	Status byte 7 – bit 4 (station select)
ASB_PRINT_SLIP	0x02000000	Can print on slip.	Can not print on slip.	Status byte 2 – bit 0 (document ready)
ASB_VALIDATION_SELECTED	0x04000000	Validation is selected.	Validation is not selected.	Always ON 1
ASB_PRINT_VALIDATION	0x08000000	Can print on validation.	Can not print on validation.	Always ON 1
ASB_VALIDATION_TOF	0x20000000	Paper at the validation TOF detector.	No Paper at the validation TOF detector.	Always ON 1
ASB_VALIDATION_BOF	0x40000000	Paper at the validation BOF detector.	No Paper at the validation BOF detector.	Always ON 1

Return values

- SUCCESS
- ERR_HANDLE
- ERR_PARAM

BiGetType function

This function acquires the printer's type ID (capabilities). (1-byte)

```
int WINAPI BiGetType(
    int nHandle,
    LPBYTE typeID,
    LPBYTE font,
    LPBYTE exrom
    LPBYTE typeID(B));
```

Parameters

nHandle

Specifies the handle value of the printer being accessed. The **BiOpenMonPrinter** return value is used in the handle value.

typeID Sets the printer's type ID:

Table 10. *typeID* bit value definitions

Bit	Function	Value 0	Value 1	Comments
0	2-byte code	Not supported	Supported	Not supported for 4610 0
1	A/C	Without	With	With 1
2	Customer display direct connection	Without	With	Without 0
3	Equipped with MICR	Without	With	With for TI3/TI4/TI8/TI9 Without for TM6/TM7
4	not used	Fixed at 0		0
5	not defined	—		0
6	Equipped with endorse printer	Without	With	With for TI3/TI4/TI8/TI9 Without for TM6/TM7
7	not used	Fixed at 0		0

- Example (TI3): *typeID = 0x46
- Example (TI4, TI8, TI9): *typeID = 0x4E
- Example (TM6, TM7): *typeID = 0x06

font Sets the font mounted on the printer. Refer to the list of installed fonts (ignored for 4610 printers). Example: *font = 0x00

exrom Sets the capacity of the printer's expanded flash ROM. Example: *exrom = 0x00

typeID(B)
Sets another type ID for the printer.

Table 11. *typeID(B)* bit value definitions

Bit	Function	Value 0	Value 1	Comments
0	2-byte code	Not supported	Supported	Not supported 0
1	A/C	Without	With	With 1
2	DM-D connection	OFF	ON	Without 0
3	Equipped with MICR	Without	With	With 1
4	Equipped with scanner	Without	With	With 1
5	Equipped with endorse printer	Without	With	With 1
6	not used	Fixed at 1		1
7	not used	Fixed at 0		0

Example: *typeID(B) = 0x7A

Return values

- SUCCESS
- ERR_ACCESS
- ERR_HANDLE
- ERR_OFFLINE
- ERR_PARAM
- ERR_TIMEOUT

BiMICRCancelReadBack function

This function cancels a reading information notification request registered using **BiMICRSetReadBackFunction** function.

```
int WINAPI BiMICRCancelReadBack(
    int nHandle);
```

Parameters

nHandle

Specifies the handle value of the printer being accessed. The **BiOpenMonPrinter** return value is used in the handle value.

Return values

- SUCCESS
- ERR_HANDLE
- ERR_NOT_SUPPORT
- ERR_OFFLINE

BiMICRCancelWaitCheckInsertion function

This function cancels the current check insertion wait period.

```
int WINAPI BiMICRCancelWaitCheckInsertion(
    int nHandle);
```

Parameters

nHandle

Specifies the handle value of the printer being accessed. The **BiOpenMonPrinter** return value is used in the handle value.

Return values

- SUCCESS
- ERR_HANDLE
- ERR_NOT_SUPPORT
- ERR_OFFLINE

BiMICREjectCheck function

This function ejects the check.

```
int WINAPI BiMICREjectCheck(
    int nHandle);
```

Parameters

nHandle

Specifies the handle value of the printer being accessed. The **BiOpenMonPrinter** return value is used in the handle value.

Return values

- SUCCESS
- ERR_HANDLE
- ERR_NOT_SUPPORT
- ERR_OFFLINE

BiMICRGetStatus function

This function acquires the MICR status.

```
int WINAPI BiMICRGetStatus(
    int    nHandle,
    LPBYTE pStatus);
```

Parameters

nHandle

Specifies the handle value of the printer being accessed. The **BiOpenMonPrinter** return value is used in the handle value.

pStatus

Specifies the memory address where the MICR status is set:

Table 12. *pStatus* bit value definitions for *BiMICRGetStatus*

Bit	Function	Value 0	Value 1	Comments
0	Fixed	Fixed at 0.		0
1	Fixed	Fixed at 1.		1
2	Selects the MICR Function.	Selected.	Not selected.	This bit is 0 after a BiMICRSetReadBackFunction function call, until the MICR status is actually returned or until the command is cancelled by a BiMICRCancelReadBack function call.
3	Waits for insertion of a check or cleaning sheet.	Do not wait for insertion.	Wait for insertion.	API internal handling.
4	Fixed	Fixed at 1.		1
5	TOF Detector	With form.	Without form.	Status byte 2 – bit 1 (document present under the front sensor)
6	BOF Detector	With form.	Without form.	Status byte 2 – bit 2 (document present under the top sensor)
7	Fixed	Fixed at 0.		0

Return values

- SUCCESS
- ERR_HANDLE
- ERR_NOT_SUPPORT
- ERR_OFFLINE
- ERR_PARAM

BiMICRLoadCheck function

This function loads the check to the check printing start position.

```
int WINAPI BiMICRLoadCheck(
    int nHandle);
```

Parameters

nHandle

Specifies the handle value of the printer being accessed. The **BiOpenMonPrinter** return value is used in the handle value.

Return values

- SUCCESS
- ERR_HANDLE
- ERR_NOT_SUPPORT
- ERR_OFFLINE

BiMICRReadCheck function

This function selects the check reading data handling mode.

```
int WINAPI BiMICRReadCheck(
    int nHandle,
    BYTE readFont,
    BYTE waitInsertionTime);
```

Parameters

nHandle

Specifies the handle value of the printer being accessed. The **BiOpenMonPrinter** return value is used in the handle value.

readFont

Specifies the reading font (ignored because 4610 printers can not be set to read checks only with one of these fonts; they always try to read both fonts):

- | | |
|----------|------|
| 0 | E13B |
| 1 | CMC7 |

waitInsertionTime

Specifies the check insertion wait time, from 0 – 15 minutes (*waitInsertionTime* × 60 seconds). The printer's default is 0 minutes.

Return values

- SUCCESS
- ERR_HANDLE
- ERR_NOT_SUPPORT
- ERR_OFFLINE
- ERR_PARAM
- ERR_WITHOUT_CB

BiMICRRetransmissionCheckData function

This function executes check reading.

```
int WINAPI BiMICRRetransmissionCheckData(
    int nHandle,
    LPBYTE pReadBuffSize,
```

```

LPBYTE readCharBuff,
LPBYTE pStatus,
LPBYTE pDetail,
DWORD timeout);

```

Parameters

nHandle

Specifies the handle value of the printer being accessed. The **BiOpenMonPrinter** return value is used in the handle value.

pReadBuffSize

Specifies the size of the memory where the reading data is set. After a successfully execution of this function, the size of the data which was actually read is set.

readCharBuff

Specifies the memory address where the check reading data is set.

pStatus

Specifies the memory address where the check reading status is set (see Table 13 on page 65).

pDetail

Specifies the memory address in which reading of a check ends in an error, which is returned in cases where detailed information is added in accordance with the **BiMICRSelectDataHandling** function (see Table 14 on page 65).

Return values

- SUCCESS
- ERR_HANDLE
- ERR_NOT_SUPPORT
- ERR_OFFLINE
- ERR_PARAM

BiMICRSelectDataHandling function

This function retransmits the check reading results.

```

int WINAPI BiMICRSelectDataHandling(
    int nHandle,
    BYTE charSelect,
    BYTE detailSelect,
    BYTE errorSelect);

```

Parameters

nHandle

Specifies the handle value of the printer being accessed. The **BiOpenMonPrinter** return value is used in the handle value.

charSelect

Specifies handling of characters that can not be analyzed:

- | | |
|----------|--|
| 0 | Interrupts analysis processing at the point when characters that can not be analyzed are detected; and does not add the reading data. |
| 1 | Replaces characters which can not be analyzed with a ? and continues analysis processing. Then, if the reading data size is at or less than the reading data size specified in BiMICRSetReadBackFunction , the reading data is added (ignored). |

detailSelect

Specifies whether or not to add detailed information after a reading error:

- 0** Detailed information is not added.
- 1** Detailed information is added.

errorSelect

Specifies whether to end the MICR function or continue after an error. This setting has no effect if the function ends normally with no error or if an error in adding the reading results is encountered:

- 0** The MICR function is ended after there is an error.
- 1** The MICR function continues even after notification of the reading results, if reading ends due to one of these errors:
 - A check with a nonstandard length is inserted.
 - The magnetic waveform can not be detected.
 - Characters which can not be analyzed are detected in analysis processing.
 - Errors were detected in the noise measurements.

Return values

- SUCCESS
- ERR_HANDLE
- ERR_NOT_SUPPORT
- ERR_OFFLINE
- ERR_PARAM

BiMICRSetReadBackFunction function

This function enables check reading by **BiMICRReadCheck** and registers the address of the callback function to which results are sent.

```
int WINAPI BiMICRSetReadBackFunction(
    int    nHandle,
    int    (CALLBACK *pMicrCB)(void),
    LPBYTE pReadBuffSize,
    LPBYTE readCharBuff,
    LPBYTE pStatus,
    LPBYTE pDetail);
```

Parameters*nHandle*

Specifies the handle value of the printer being accessed. The **BiOpenMonPrinter** return value is used in the handle value.

pMicrCB

Specifies the address of the callback function for notifying the results from reading of a check.

pReadBuffSize

Specifies the size of the memory where the reading data is set. After a successfully execution of this function, the size of the data which was actually read is set.

readCharBuff

Specifies the memory address where the check reading data is set.

pStatus

Specifies the memory address where the check reading status is set:

Table 13. *pStatus* bit value definitions for *BiMICRSetReadBackFunction* and *BiMICRRetransmissionCheckData*

Bit	Function	Value 0	Value 1	Comments
0	Reading font	E13B	CMC7	The 4610 printers can read both these fonts. The API can determine which font was read according to the characters returned. <ul style="list-style-type: none"> E13B supports characters 0x24 0x2D 0x41 0x54; and CMC7 does not. CMC7 supports characters 0x61 0x62 0x63 0x64 0x65; and E13B does not.
1	Reserved	Fixed at 0.		0
2	Reserved	Fixed at 0.		0
3	Detailed information	Not added.	Added.	The value of parameter <i>detailSelect</i> of the BiMICRSelectDataHandling function. Default is 1, if the BiMICRSelectDataHandling function was not called.
4	Reread	Enabled.	Disabled.	Always 0.
5	Reading results	Normal end.	Abnormal end.	Status byte 7 – bit 7 (document feed error) If the printer returns only 0x3F (question mark), this bit will also be 1.
6	Reading data overflow	No	Yes	Always 0.
7	Fixed	Fixed at 0		0

pDetail

Specifies the memory address in which reading of a check ends in an error, which is returned in cases where detailed information is added in accordance with the **BiMICRSelectDataHandling** function:

Table 14. *pDetail* byte value definitions for *BiMICRSetReadBackFunction* and *BiMICRRetransmissionCheckData*

Value	Information	Comments
0x40	No abnormality.	API internal handling.
0x41	Check reading was not executed even once. (The BiMICRREADCheck function has not been called.)	API internal handling.
0x42	Check insertion wait was canceled. (The BiMICRCancelWaitCheckInsertion function was called.)	API internal handling.
0x43	Check insertion wait was canceled because the set time was exceeded. (The timeout set time passed while the BiMICRReadCheck function was being called.)	API internal handling.
0x44	A check with a non-standard length was inserted.	Never sent.
0x45	The magnetic waveform was not detected.	Never sent.
0x46	Characters which could not be analyzed were detected in analysis processing.	Never sent.
0x47	An error occurred during check reading processing.	Status byte 7 – bit 7 (document feed error)
0x48	An error was detected in the noise measurement.	Never sent.
0x49	Check reading processing was interrupted by the cover being opened.	Never sent.

Return values

- SUCCESS
- ERR_HANDLE
- ERR_NOT_SUPPORT
- ERR_OFFLINE
- ERR_PARAM

BiOpenDrawer function

This function opens the specified cash drawer (1 or 2) after the specified delay (in milliseconds).

```
int WINAPI BiOpenDrawer(
    int nHandle,
    BYTE drawer,
    BYTE pulse);
```

Parameters

nHandle

Specifies the handle value of the printer being accessed. The **BiOpenMonPrinter** return value is used in the handle value.

drawer

Specifies the drawer to be opened.

EPS_BI_DRAWER_1

Operates drawer 1.

EPS_BI_DRAWER_2

Operates drawer 2.

pulse Specifies the interval until drawer operation.

EPS_BI_PULSE_100

Operates the drawer after 100 milliseconds.

EPS_BI_PULSE_200

Operates the drawer after 200 milliseconds.

EPS_BI_PULSE_300

Operates the drawer after 300 milliseconds.

EPS_BI_PULSE_400

Operates the drawer after 400 milliseconds.

EPS_BI_PULSE_500

Operates the drawer after 500 milliseconds.

EPS_BI_PULSE_600

Operates the drawer after 600 milliseconds.

EPS_BI_PULSE_700

Operates the drawer after 700 milliseconds.

EPS_BI_PULSE_800

Operates the drawer after 800 milliseconds.

Return values

- SUCCESS
- ERR_HANDLE

- ERR_OFFLINE

BiOpenMonPrinter function

This function opens a new session and, if is successfully opened, returns a handle to the specified printer.

Note: You *must* execute this function before you can perform any other API function.

```
int WINAPI BiOpenMonPrinter(  
    int nType,  
    LPSTR pName);
```

Parameters

nType One of the following two types is specified:

TYPE_PORT

The port name is specified in *pName*.

TYPE_PRINTER

The printer name is specified in *pName*.

pName

Specifies the printer that is opened.

Return values

- Handle to the specified printer (*nHandle* in other functions), if successful.
- ERR_NO_MEMORY
- ERR_NO_PRINTER
- ERR_NO_TARGET
- ERR_OPENED
- ERR_PARAM
- ERR_TYPE

Notes

Calling this function using *nType* = TYPE_PORT will cause the API to check whether there is a IBM RSS Port created and associated with the specified physical port *pName*. If there is more than one IBM RSS Port associated to the physical port *pName*, the API will open the first printer found.

BiSCNCancelReadBack function

This function cancels the scanning information notice request registered using **BiSCNSetReadBackFunction** function.

```
int WINAPI BiSCNCancelReadBack(  
    int nHandle);
```

Parameters

nHandle

Specifies the handle value of the printer being accessed. The **BiOpenMonPrinter** return value is used in the handle value.

Return values

- SUCCESS
- ERR_HANDLE
- ERR_NOT_SUPPORT

- ERR_OFFLINE

BiSCNGetImageFormat function

This function acquires the format of the image set in the printer.

```
int WINAPI BiSCNGetImageFormat(
    int    nHandle,
    LPBYTE pFormat);
```

Parameters

nHandle

Specifies the handle value of the printer being accessed. The **BiOpenMonPrinter** return value is used in the handle value.

bFormat

Receives the selected image format in the printer. After a successfully execution, *bFormat* will be:

EPS_BI_SCN_TIFF

TIFF format compressed data (TIFF with CCIT compression)

EPS_BI_SCN_RASTER

Raster format uncompressed data (grayscale with no compression)

EPS_BI_SCN_BITMAP

Bitmap format uncompressed data (BMP with no compression)

EPS_BI_SCN_TIFF256

TIFF format uncompressed data (TIFF with no compression)

EPS_BI_SCN_JPEGNORMAL

JPEG format normal compression data (JPEG with compression)

Return values

- SUCCESS
- ERR_ACCESS
- ERR_HANDLE
- ERR_NOT_SUPPORT
- ERR_OFFLINE
- ERR_PARAM
- ERR_TIMEOUT

BiSCNReadImage function

This function executes image scanning.

Note: If set the paper insertion wait time to zero (0), the printer wait time is canceled.

```
int WINAPI BiSCNReadImage(
    int    nHandle,
    WORD   wId,
    BYTE   bSelectSheet,
    BYTE   bWaitInsertionTime,
    BYTE   bAddInforDataSize,
    LPBYTE pAddInforData,
    BYTE   bMemory);
```

Parameters

nHandle

Specifies the handle value of the printer being accessed. The **BiOpenMonPrinter** return value is used in the handle value.

wId (Ignored.)

bWaitInsertionTime

Specifies the paper insertion wait time, from 0 – 15 minutes (*bWaitInsertionTime* × 60 seconds). The printer's default is 0 minutes.

bAddInforDataSize

(Ignored.)

pAddInforData

(Ignored.)

bMemory

(Ignored.)

Return values

- SUCCESS
- ERR_ACCESS
- ERR_HANDLE
- ERR_NOT_SUPPORT
- ERR_OFFLINE
- ERR_PARAM
- ERR_WITHOUT_CB

BiSCNRetransmissionImage function

This function retransmits the image scanning results.

```
int WINAPI BiSCNRetransmissionImage(
    int      nHandle,
    WORD     wId,
    LPDWORD  pBuffSize,
    LPBYTE*  pBuff,
    LPBYTE   pImageXsize,
    LPBYTE   pStatus,
    LPBYTE   pDetail,
    DWORD    dwTimeout);
```

Parameters

nHandle

Specifies the handle value of the printer being accessed. The **BiOpenMonPrinter** return value is used in the handle value.

wId (Ignored.)

pBuffSize

Specifies the size of memory where image data is to be set. After execution of this function, the actual size of the scanned data is set.

pBuff Specifies the memory address where image data is set.

pImageXsize

(Ignored.)

pStatus

Specifies the memory address where the read status is set (see Table 15 on page 71).

pDetail

Specifies the memory address where detailed information is set after scanning ends with an error (see Table 16 on page 72).

dwTimeout

Specifies the data reading timeout time, in milliseconds. This timeout is a value that is measured from the point when there is no response from the printer after a rereading request.

Return values

- SUCCESS
- ERR_ACCESS
- ERR_HANDLE
- ERR_NOT_SUPPORT
- ERR_OFFLINE
- ERR_PARAM
- ERR_TIMEOUT
- ERR_WITHOUT_CB

BiSCNSetImageFormat function

This function sets the format of the scanning image data.

```
int WINAPI BiSCNSetImageFormat(
    int nHandle,
    BYTE bFormat);
```

Parameters*nHandle*

Specifies the handle value of the printer being accessed. The **BiOpenMonPrinter** return value is used in the handle value.

bFormat

Specifies image format:

EPS_BI_SCN_TIFF

TIFF format compressed data (TIFF with CCIT compression)

EPS_BI_SCN_RASTER

Raster format uncompressed data (grayscale with no compression)

EPS_BI_SCN_BITMAP

Bitmap format uncompressed data (BMP with no compression)

EPS_BI_SCN_TIFF256

TIFF format uncompressed data (TIFF with no compression)

EPS_BI_SCN_JPEGNORMAL

JPEG format normal compression data (JPEG with compression)

Return values

- SUCCESS
- ERR_ACCESS
- ERR_HANDLE
- ERR_NOT_SUPPORT

- ERR_OFFLINE
- ERR_PARAM

BiSCNSetReadBackFunction function

This function enables image scanning by the function **BiSCNReadImage**, registers the callback function's address called when sending notification of the results, and registers the memory addresses for setting each type of scanned information.

```
int WINAPI BiSCNSetReadBackFunction(
    int      nHandle,
    int      (CALLBACK *pScnCB)(void),
    LPDWORD  pBuffSize,
    LPBYTE*  pBuff,
    LPBYTE  pImageXsize,
    LPBYTE  pStatus,
    LPBYTE  pDetail);
```

Parameters

nHandle

Specifies the handle value of the printer being accessed. The **BiOpenMonPrinter** return value is used in the handle value.

pScnCB

Specifies the callback function address for sending notification of the results of image scanning.

pBuffSize

Specifies the size of memory where image data is to be set. After execution of this function, the actual size of the scanned data is set.

pBuff Specifies the memory address where image data is set.

pImageXsize

Specifies the memory address where the number of data (bytes) of image data in the X direction is set.

pStatus

Specifies the memory address where the read status is set:

Table 15. *pStatus* bit value definitions for **BiSCNSetReadBackFunction** and **BiSCNRetransmissionImage**

Bit	Function	Value 0	Value 1	4610 status mapping
0	Reserved	Fixed at 0.		0
1	Reserved	Fixed at 0.		0
2	Reserved	Fixed at 0.		0
3	Reserved	Fixed at 0.		0
4	Rescanned	Possible.	Not (fixed).	0
5	Scanning results	Ends normally.	Ends with an error.	Status byte 5 – bit 6 Status byte 7 – bit 7
6	Scanning data overflow	No overflow.	Overflow.	0
7	Scanning data translation error	No error.	Error.	0

pDetail

Specifies the memory address where detailed information is set after scanning ends with an error:

Table 16. *pDetail* byte value definitions for *BiSCNSetReadBackFunction* and *BiSCNRetransmissionImage*

Value	Information	4610 status mapping
0x40	No error.	Status byte 5 – bit 6
0x41	The image scanning result does not exist.	Status byte 5 – bit 7
0x44	The cover was opened, so image scanning was interrupted.	Status byte 1 – bit 5
0x45	A recoverable error/automatic reset error occurred during image scanning.	Status byte 1 – bit 5
0x46	Paper with nonstandard length was inserted (longer than approximately 333 mm).	Status byte 7 – bit 7
0x47	Compressed data error—the amount of data increased in data compression processing, and there was insufficient memory.	Status byte 3 – bit 0
0x48	Paper insertion status or paper feed error.	Status byte 7 – bit 7
0x60	Lack of remaining capacity in nonvolatile (NV) memory for saving reading result of images.	Status byte 3 – bit 0
0x61	Failure of writing process of reading result of images to the NV memory.	Status byte 3 – bit 0
0x62	Failure of deletion process of the NV memory for reading result of images.	Status byte 3 – bit 0

Return values

- SUCCESS
- ERR_HANDLE
- ERR_NO_MEMORY
- ERR_NOT_SUPPORT
- ERR_OFFLINE
- ERR_PARAM

BiSetMonInterval function

This function specifies the interval of the status monitoring of 4610 printers by the API (in milliseconds).

```
int WINAPI BiSetMonInterval(
    int nHandle,
    WORD wNoPrnInterval,
    WORD wPrnInterval);
```

Parameters

nHandle

Specifies the handle value of the printer being accessed. The **BiOpenMonPrinter** return value is used in the handle value.

wNoPrnInterval

Specifies the interval to get information from the printer, expressed in milliseconds during non-printing.

wPrnInterval

Specifies the interval to get information from the printer, expressed in milliseconds during printing (ignored).

Return values

- SUCCESS
- ERR_HANDLE

- ERR_PARAM

BiSetStatusBackFunction function

This function enables Automatic Status Back mode and registers the address of the callback function to which results are sent. When a printer status change occurs, the API will call the registered callback function with the new 4-bytes status as a parameter.

```
int WINAPI BiSetStatusBackFunction(
    int nHandle,
    int (CALLBACK *pStatusCB)(DWORD dwStatus));
```

Parameters

nHandle

Specifies the handle value of the printer being accessed. The **BiOpenMonPrinter** return value is used in the handle value.

pStatusCB

Specifies the address of the callback function to which the 4610 printer status is sent.

Return values

- SUCCESS
- ERR_HANDLE
- ERR_PARAM

DownloadFont function

This function downloads one or two TrueType fonts to the connected printer on the specified RSS port. The user passes the name of an installed TrueType font on the system, the font type (Regular, Bold, Italic, or BoldItalic), and the font size in logical points (8, 9, or 10). Each call of this function erases the proportional fonts sector of the connected printer before writing all of the new fonts.

```
int WINAPI DownloadFont(
    char* sPrinterName,
    LPVOID lpFonts);
```

Parameters

sPrinterName

Specifies the printer name.

lpFonts

A list of two FONT_API structures. The FONT_API structure is defined as follows:

```
typedef struct _tagFONT_API
{
    char sName[MAX_PATH];
    int nType;
    char sScript[25];
    int nSize;
} FONT_API, FAR * LPFONT_API;
```

Return values

- SUCCESS
- ERR_OFFLINE
- ERR_PARAM
- ERR_PRINTER_OPERATION

DownloadLogo function

This function downloads one or more logos to the connected printer on the specified RSS port. The user passes an array containing the slot number where the logo should be downloaded, the encoding mode (customer receipt or document insert station), and the full path to the desired bitmap. Each call of this function erases the logos sector of the connected printer before writing all of the new logos.

```
int WINAPI DownloadLogo(
    char* sPrinterName,
    LPVOID lpLogos);
```

Parameters

sPrinterName

Specifies the printer name.

lpLogos

A list of 40 LOGO_API structures. The LOGO_API structure is defined as follows:

```
typedef struct _tagLOGO_API
{
    char sImgFilePath[MAX_PATH];
    BOOL bReceiptStation;
} LOGO_API, FAR * LPLOGO_API;
```

Return values

- SUCCESS
- ERR_ACCESS
- ERR_NO_MEMORY
- ERR_OFFLINE
- ERR_PARAM
- ERR_PRINTER_OPERATION

DownloadMessage function

This function downloads one or more messages to the connected printer on the specified RSS port. The user passes an array containing the slot number where the message should be downloaded and the message text. New lines should be specified by **\n**. Each call of this function erases the messages sector of the connected printer before writing all of the new messages.

```
int WINAPI DownloadMessage(
    char* sPrinterName,
    LPVOID lpMessages);
```

Parameters

sPrinterName

Specifies the printer name.

lpMessages

A list of MSG_API structures. The MSG_API structure is defined as follows:

```
typedef struct _tagMSG_API
{
    char sMessage[MAX_MESSAGE_LEN];
} MSG_API, FAR * LPMSG_API;
```

Return values

- SUCCESS
- ERR_OFFLINE

- ERR_PARAM
- ERR_PRINTER_OPERATION

UpdatePrinterFirmware function

This function updates the firmware of the connected printer on the specified RSS port.

```
int WINAPI UpdatePrinterFirmware(  
    char* sPrinterName,  
    char* sFirmwareFilePath);
```

Parameters

sPrinterName

Specifies the printer name.

sFirmwareFilePath

Designates the full path to the update firmware file.

Return values

- SUCCESS
- ERR_OFFLINE
- ERR_PARAM
- ERR_PRINTER_OPERATION

Functions not exported by the API

The following legacy functions always return SUCCESS:

- BiSetDefaultEchoTime
- BiSetEtherEchoTime

The following legacy functions always return ERR_NOT_OEM:

- BiDirectIO
- BiDirectIOEx

The following legacy functions always return ERR_NOT_SUPPORT:

- | | | |
|------------------------------|---------------------------|----------------------------|
| • BiResetPrinter | • BiSCNGetScanArea | • BiESCNSetAutoSize |
| • BiGetCounter | • BiSCNSetReadBackWnd | • BiESCNSetCutSize |
| • BiResetCounter | • BiSCNGetClumpStatus | • BiESCNSetCutSize |
| • BiGetInkStatus | • BiSCNClumpPaper | • BiESCNSetRotate |
| • BiSetInkStatusBackFunction | • BiSCNSetCroppingArea | • BiESCNSetRotate |
| • BiSetInkStatusBackWnd | • BiSCNGetCroppingArea | • BiESCNSetDocumentSize |
| • BiCancelInkStatusBack | • BiSCNDeleteCroppingArea | • BiESCNSetDocumentSize |
| • BiMICRSetReadBackWnd | • BiSCNDeleteImage | • BiESCNSetMaxCropAreas |
| • BiMICRCleaning | • BiSCNGetImageList | • BiESCNClearImage |
| • BiSCNPreScan | • BiSCNSetImageQuality | • BiESCNSetRemainingImages |
| • BiSCNGetImageQuality | • BiESCNSetEnable | • BiGetPrnCapability |
| • BiSCNSetScanArea | • BiESCNSetAutoSize | • BiSetMonEtherInterval |

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Native Microsoft Windows Driver Version 2 User Guide

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