Timestone software

Windows NT Printer driver for Kodak Professional MultiPrinter and LF-CRT

User Manual

SOFTWARE LICENSE AGREEMENT

IMPORTANT - READ CAREFULLY

This is a legal agreement between you (either an individual or a single entity) and Timestone Software. By keeping this package and using the software, you are accepting the terms and are bound by the terms of this license. If you do not wish to enter into this agreement, please promptly return all copies of the Software, User Guides and Hardlock devices to Timestone Software for a full refund. This User Guide and the software programs it describes are protected by copyright, trade secret and trademark law. By accepting this license, you have the right to use them, subject to the terms and conditions of this license agreement.

Definitions and Interpretation

Software means the Program modules enabled and authorised for use for your installation.

- Hardlock device means the hardware device used to enable the Software to function.

- Scope of Agreement

- Timestone Software hereby grants you, the original purchaser, personal, non-exclusive license to use the User Guide and the Software subject to the terms and conditions of this Agreement.

- Grant of License. You may use the Software on a maximum of one computer that you own or operate at a single physical location . You may transfer the Software from one computer to another provided that you do not use or permit the usage of the Software on more than one computer or computer terminal at a time.

- Copies. You may not copy or duplicate the Software, except as necessary solely for archival purposes, program error verification, or to replace defective storage media, provided you keep the original and the copies. You may not alter, decompile or disassemble the Software.

- Transfers. You may not sublicense, lease or rent or lend the Software or transfer any of your rights under this Agreement. You may transfer the Software (together with any backup copies you have made), Hardlock device and the User Guide on a permanent basis so long as you retain no copies, the transferee agrees to be bound by the terms of this Agreement, and Timestone Software has authorised the transfer by written confirmation.

- Term. The License granted in this agreement is effective until terminated. You may terminate it at any time by destroying or returning to Timestone Software the Software and the User Manual, together with all copies, and returning to Timestone Software the Hardlock Device. If you fail to comply with any term or condition of this Agreement, this License will terminate and, upon such termination, you agree to destroy or return to Timestone Software the Software and the User Manual, together with all copies, and return to Timestone Software the Hardlock Device. Termination of this license shall be in addition and not in lieu of any other remedies available to Timestone Software.

Limited Warranty, Disclaimer

Timestone Software warrants that the media on which the Software is recorded and the User Guide provided with it are free from defects in material and workmanship under normal use for a period of 90 days from the date of your original purchase. Except for the limited warranty described above, the Software is sold "as is", and you are assuming the entire risk as to its quality and performance. It is your responsibility to verify the results obtained from the use of the Software.

Limitation of Remedies

If during the 90-day limited warranty period, you discover physical defects in the User Guide or in the Media on which the Software was recorded, Timestone Software will replace them as no charge to you. This is your sole remedy.

IN NO EVENT WILL TIMESTONE SOFTWARE BE LIABLE TO ANY PERSON FOR ANY DIRECT, INDIRECT, SPECIAL, INCIDENTAL, CONSEQUENTIAL OR SIMILAR DAMAGES, EVEN IF TIMESTONE SOFTWARE HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

Windows NT Printer driver for Kodak Professional MultiPrinter and LF-CRT

Table of Contents

1

Overview

The MultiPrinter Windows NT Printer driver is a standard Windows NT or Windows 2000 printer driver that lets your operators print quickly and easily to your Kodak MultiPrinter. The driver also features a number of imaging related functions that will enhance your task of imaging files to the printer.

Features

The MultiPrinter printer driver offers a number of standard and enhanced functions that are specifically designed to improve the workflow within your lab. Although the MultiPrinter driver can be used as a standard driver, the MultiPrinter itself (because of its high-speed) demands a special approach when printing jobs to it.

Standard functions

Installs as a normal Windows printer

- The printer appears in the Windows Printers folder
- Set printer and document defaults as with a normal driver
- Choose and configure the printer from any standard Windows NT application

Use the Windows printer queue

- Use the Windows print spooler to control jobs submitted to the printer
- Receive notification of the status of a job

Share the printer

- Share the printer over a Windows NT network
- Apply user permissions for the printer

Enhanced functions

Image enhancement

- Applies sharpening corrections based on an unsharp-mask algorithm
- Applies color and contrast corrections created in a LUT editor

---

Network traffic

- Choose to send rendered pages to the Print Server as JPEG or PNG compressed image data to save network traffic

Integration to Timestone Software's Distributed Print Architecture

- Specially designed to deliver pre-rendered pages at very high speed to the printer
- Specific support for Timestone Print Job files created by the Distributed Print Architecture for a streamlined and efficient production workflow

Many of these features are discussed in either the Windows NT documentation, or in the appropriate 'Neo' documentation. While enough information is provided in this manual for you to install, configure and use the printer driver, you may want to further consult the other documentation for specific information.
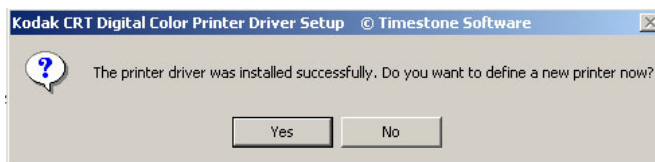
2

Installing the driver

Open the CD-Rom in Windows Explorer or My Computer, and double-click the file, Setup. The installer welcome screen is displayed.
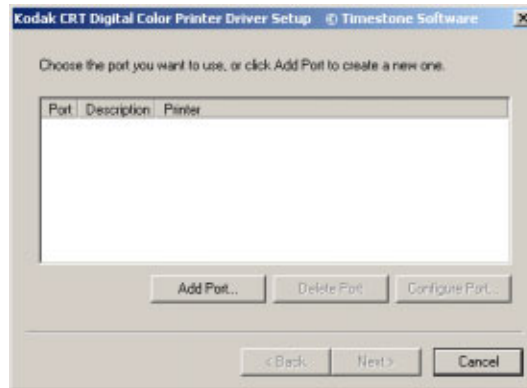

Click **Install Driver** to start the installation process.
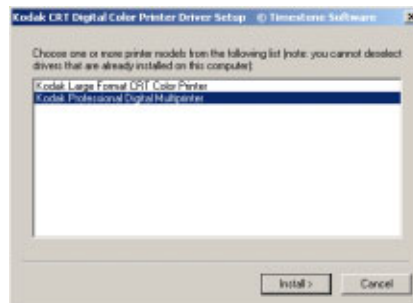
Select your printer model from the list, then choose **Install**. The Setup program now copies all the relevant files to your system.

After installation, you can define and add a printer to your **Printers Folder**. Choose **Yes** to add a new printer.
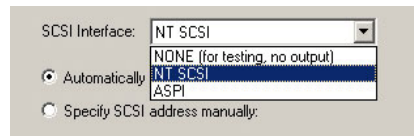

All printer drivers in Windows NT/2000 use a port to communicate to the actual printer. Choose **Add Port...** to add a new port for your printer.
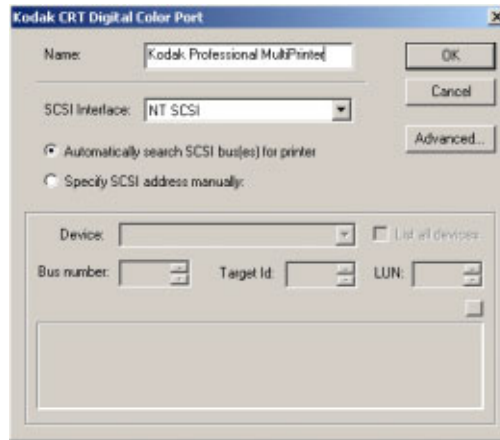
There are several settings to be made.

Port name

Give the printer port a name.

SCSI Interface

The MultiPrinter and LF-CRT connect to the host computer via a SCSI interface. You can choose between:

- None (for testing no output) – Final printed output is not actually sent to the printer. Useful for testing.
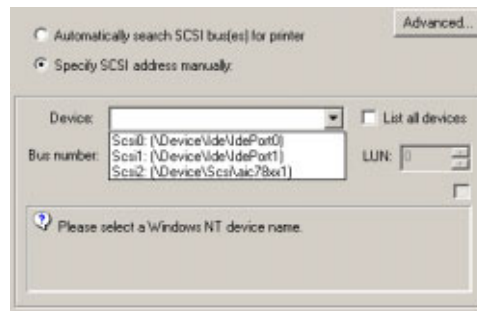- NT SCSI – Windows NT/2000 SCSI interface. Most commonly used interface

● APSI – Adaptec's SCSI interface.

Select the interface you wish to use.
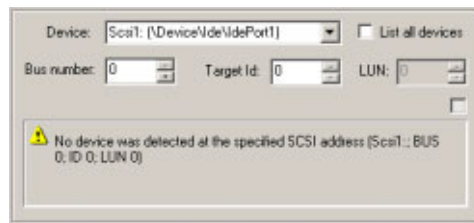
Automatic SCSI address selection

The driver will search for any printers connected to the SCSI BUS. Normally, you should leave the SCSI selection to **Automatically search SCSI bus(es) for printer**. The driver will search for and use an on-line printer.

✍   If you have more than one printer attached to the same host computer, the driver
       will give an error. You must specify which printer to use by manually choosing the
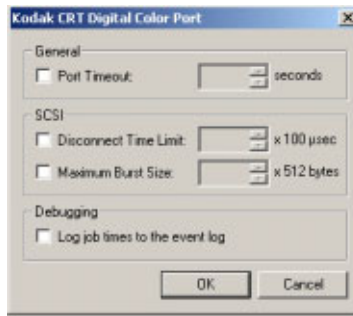   SCSI ID.

Manual SCSI address selection

To manually choose a SCSI ID, choose **Specify SCSI address manually**. The list of devices becomes available. Choose your printer from the list of devices.
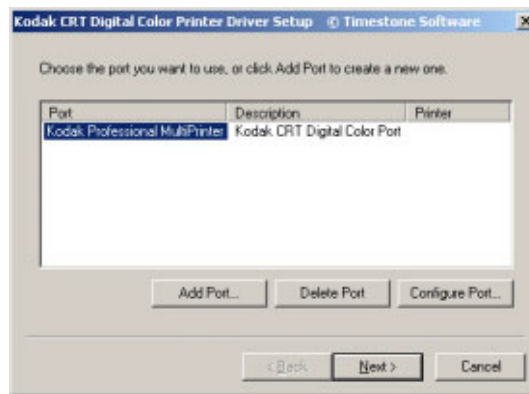

If you have more than one SCSI adapter installed in your computer, you can select the SCSI BUS to search by selecting it in the **Bus number**. Likewise, you can manually select the SCSI ID by selecting it in the **Target ID** drop-down. Make sure the **Target ID** matches the SCSI ID your printer is set to.

Information about the printer found at the specified SCSI address is displayed at in the info panel. If a printer was not found at the specified, an error is shown. In this case, re-check your printer is at the selected SCSI ID, that it is on-line and all the standard SCSI troubleshooting procedures are followed.
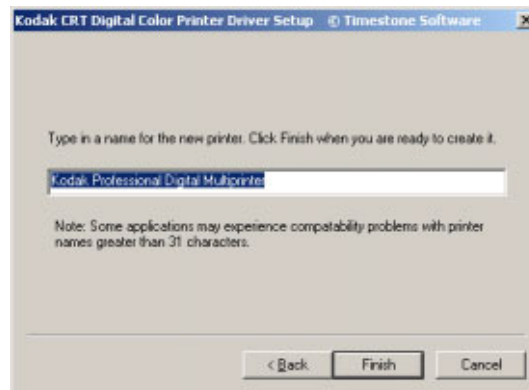
Advanced options

You can specify a number of advanced options by choosing the **Advanced…** button. You would not normally make any changes here.

Once you are happy with all the settings made, choose **OK**. The **Ports** dialog is shown. Make sure the port you just defined is selected, then click **Next**.

Enter the name for your printer. This is the name as it will appear in the Printers folder. Choose **Finish**.

The printer is added to the Printers folder, and is available for use.

Installing the hardlock driver

If you are running the licensed version of the driver, you will need to connect the hardlock to a parallel port, and install the Windows NT device driver.

The device driver is included on the distribution CD in the \Hardlock directory. Locate the file `hldrv32.exe` and double click it to start the driver installation. Follow the on-screen prompts to install the device driver.

Once the driver has been installed, *shut down* your computer, and connect the hardlock into a parallel port on your PC. Switch on the PC and allow it to boot.

Testing the installation

After the driver, printer, hardlock driver and hardlock have been installed to your PC, you can connect to the MultiPrinter printer.

Printing a test page

Make sure that the MultiPrinter is on-line. Choose **Start > Settings > Printers**.

Open the printer spooler window

The printer spooler window allows you to monitor the status of both the printer and jobs being printed by the MultiPrinter. Open the window by double-clicking the MultiPrinter printer icon in the **Printers** folder. Leave the spooler window visible during the following tests to monitor the printer status.
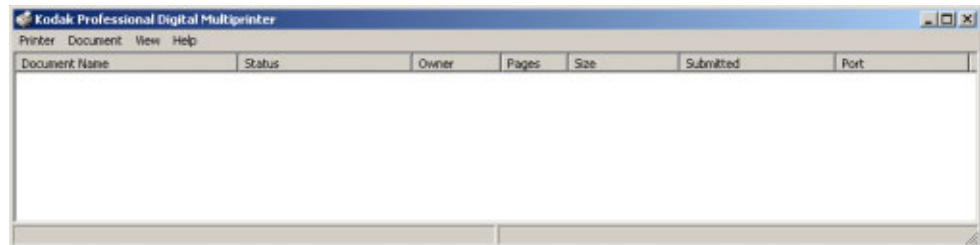
Print the test page

Choose **Printer > Properties** from the MultiPrinter spooler window. The printer properties panel opens. Choose the **General** tab and click the **Print Test Page** button. Windows NT prints a test page to the MultiPrinter. Unless an error is shown when printing the test page, choose **Yes** when Windows asks if the test page printed OK.
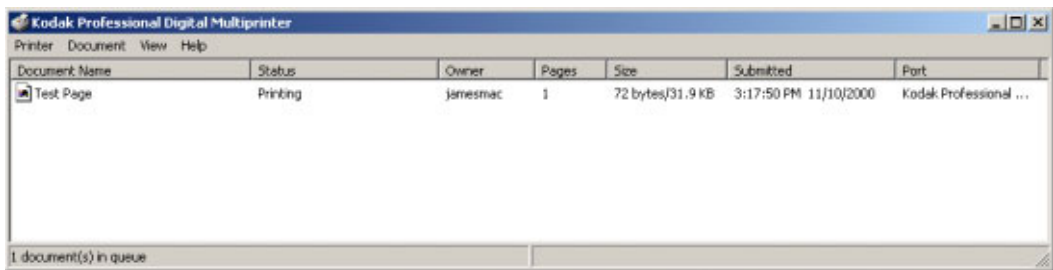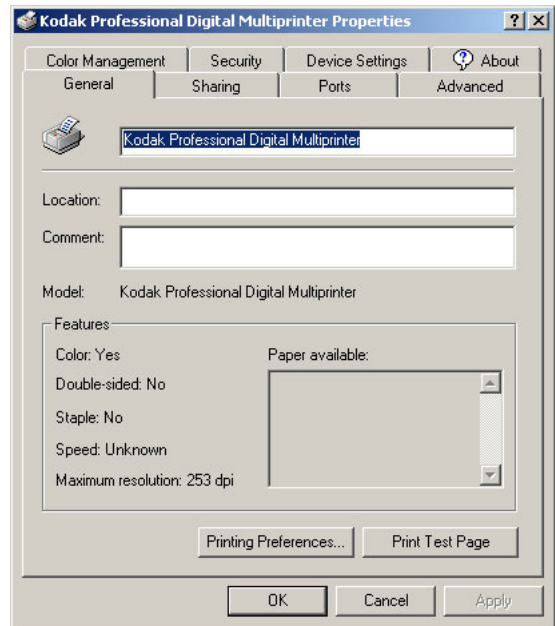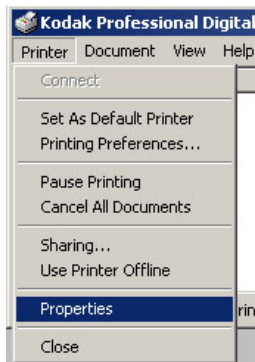
Note the activity in the spooler window and on the MultiPrinter. If all the previous connections and settings have been made correctly and the printer is on-line, the test page will be printed.

Troubleshooting the installation

There are various reasons why printing a test page might fail. If the test page does fail, pay particular attention to the following:

- The error message reported along with the test page failure notification
- Open the **Event Viewer** and locate the **MultiPrinter Spooler** entry. Note the error reported there.

User authentication errors

Hardlock related

The hardlock protects the driver against unauthorised use and must be connected to the PC's parallel port in order for the printer driver to function.

If the hardlock is missing, or there is a problem with the parallel port (hardware failure, missing driver etc.) the following error is given when a test page is printed:

The operation being requested was not performed because the user has not been authenticated.

Test page failed to print. Would you like to view the print trouble shooter for assistance? The operation being requested was not performed because the user has not been authenticated.
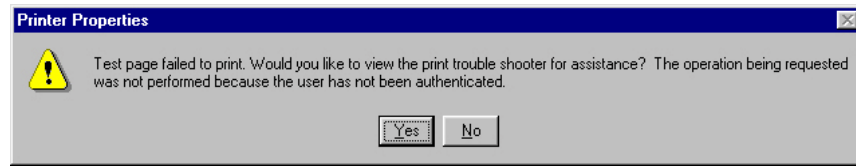
The Event Viewer will report the error as:

The Hardlock dongle was not found. Printing will be disabled until the problem is fixed.

Resolution:

- Connect the hardlock
- If not done, install the hardlock driver. Normally the driver is installed with the printer driver (it is provided on the distribution CD)
- Check the parallel port hardware is functioning correctly

Output related problems

If the printer driver prints successfully, but has transparent colored lines over the output, it is possible that the Demo version of the driver is installed. To check the version installed:

- Open the Printers folder
- Right-click on the MultiPrinter printer
- Choose **Properties**. The MultiPrinter printer properties dialog opens.
- Choose the **Help** tab
- A Demo version of the driver will have **Demo** noted.

3

Configuring the driver

Configuring the MultiPrinter Windows NT printer driver is done in two places:

- Setting the Printer defaults
- Setting the document defaults and properties

Certain settings that are specific to the physical printer are set as a document default. These include things such as the currently installed paper, default paper sizes that are not normally changed by the operator when printing a job.

Settings such as the chosen page size, number of prints and the like are set either as a document default, or on a per document basis.

Setting the printer default settings

Before any prints can be made using the printer driver, the printer default settings must be set. Open the Printers folder by choosing **Start > Settings > Printers**. The Printers folder opens. Locate and right click the MultiPrinter printer icon. Choose **Properties** from the contextual menu list – the Printer Properties dialog is displayed.
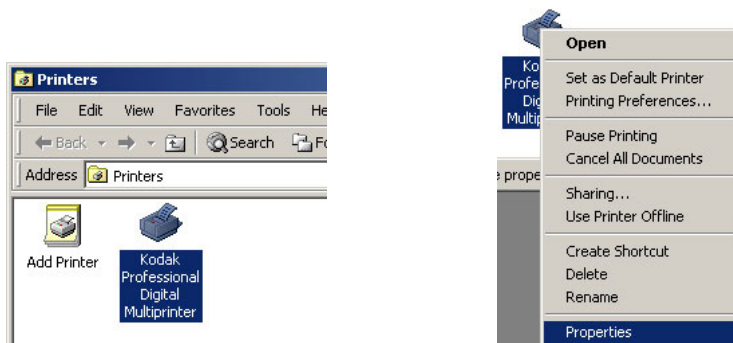
Setting the General properties (Windows 2000)

When the **Properties** dialog first opens, you will see the **General Properties** tab.
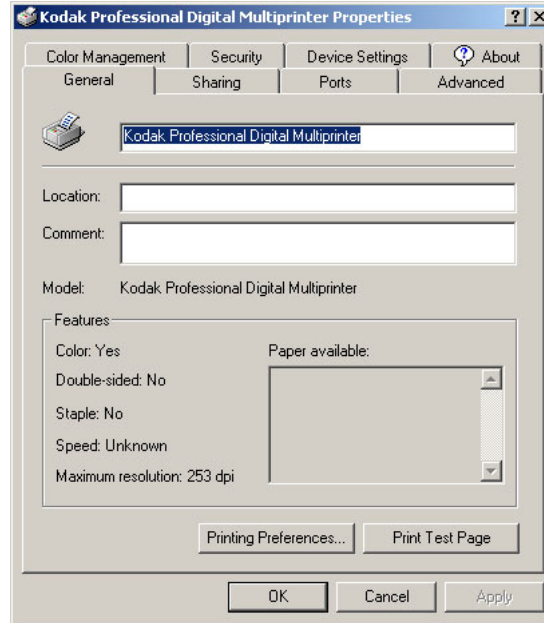
Comment

If you want to add any comments regarding the printer, add them, here.

Location

If the printer is connected as a network device, enter the location of the printer here. There may be a location automatically added here if you are adding a network printer.

Print Test Page

Prints the Windows NT printer test page.

Printing Preferences… (Windows 2000)

You can inspect the default Print preference settings by choosing either **Printing Preferences…** in the **Print** dialog, or by clicking the printer icon in the **Printers** folder, then choosing **File > Printing Preferences…**

Details about the various options can be found in Chapter 4, **Document configuration**.

Sharing the printer

Windows NT allows sharing of printers across a network. This means that a user can access a printer quickly and efficiently. It is also great for administrators to help manage

the printer device, as they can make printer default settings, forcing users to choose from the available settings.
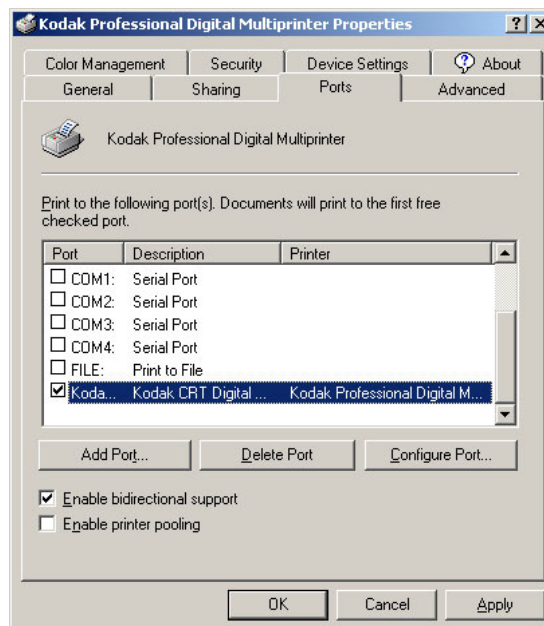
To share the printer, choose the **Sharing** tab.
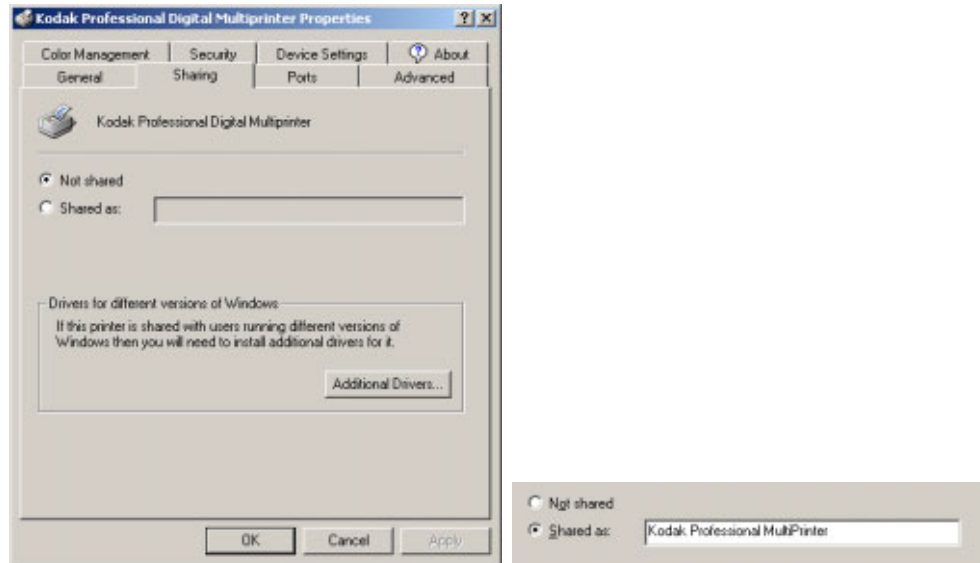
To share the printer, Choose **Shared as**, then enter the shared printer name.

Choose the Ports

Most of the important settings for the MultiPrinter driver are included in the **Ports** tab. Click the **Ports** tab, and this dialog is displayed.

You should not normally change the port in use by the printer.

Configuring the port

The printer port controls the various interface settings used by the driver. You can change the port settings by choosing **Configure Port…**
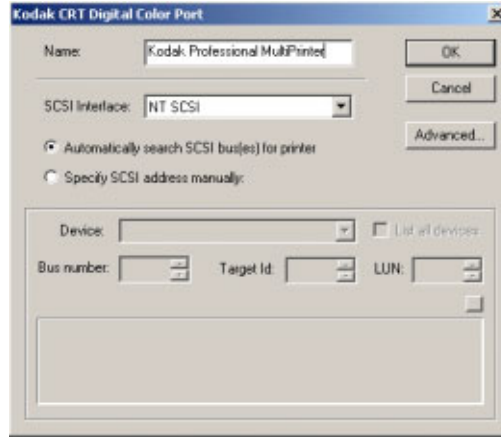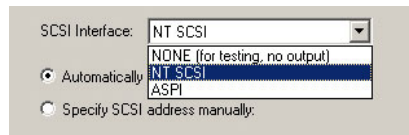

There are several settings to be made.

Name

Give the printer port a name.

SCSI Interface

The MultiPrinter and LF-CRT connect to the host computer via a SCSI interface. You can choose between:

- None (for testing no output) – Final printed output is not actually sent to the printer. Useful for testing.
- NT SCSI – Windows NT/2000 SCSI interface. Most commonly used interface
- APSI – Adaptec's SCSI interface.

Select the interface you wish to use.

Automatic SCSI address selection

The driver will search for any printers connected to the SCSI BUS. Normally, you should leave the SCSI selection to **Automatically search SCSI bus(es) for printer**. The driver will search for and use an on-line printer.
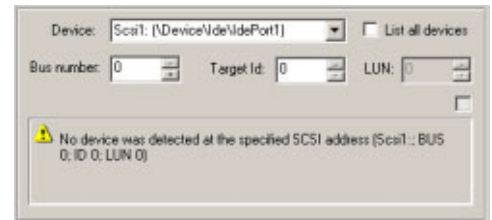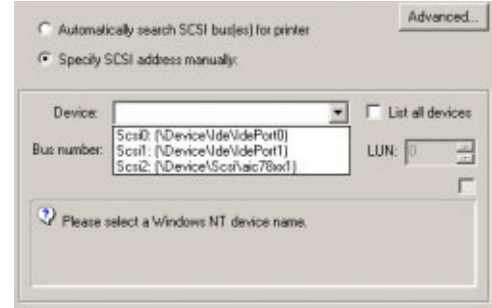
✎ If you have more than one printer attached to the same host computer, the driver will give an error. You must specify which printer to use by manually choosing the SCSI ID.

Manual SCSI address selection

To manually choose a SCSI ID, choose **Specify SCSI address manually**. The list of devices becomes available. Choose your printer from the list of devices.

If you have more than one SCSI adapter installed in your computer, you can select the SCSI BUS to search by selecting it in the **Bus number**. Likewise, you can manually select the SCSI ID by selecting it in the **Target ID** drop-down. Make sure the **Target ID** matches the SCSI ID your printer is set to.

Information about the printer found at the specified SCSI address is displayed at in the info panel. If a printer was not found at the specified, an error is shown. In this case, re-check your printer is at the selected SCSI ID, that it is on-line and all the standard SCSI troubleshooting procedures are followed.

Advanced options

You can specify a number of advanced options by choosing the **Advanced...** button. You would not normally make any changes here.

Device Settings

There are a number of printer specific settings that need to be made. These settings are the kind of thing that don't usually change from document to document. Settings made here change those available as a document setting.

These settings are made from the **Device Settings** tab.

Set the paper width

Click the **Installed Paper Roll Width**. A list of the available widths is displayed at the bottom of the dialog. Choose the paper width currently installed in the MultiPrinter.

If you don't see the paper width in the list that you want to use, click **Other...** Enter the desired width.
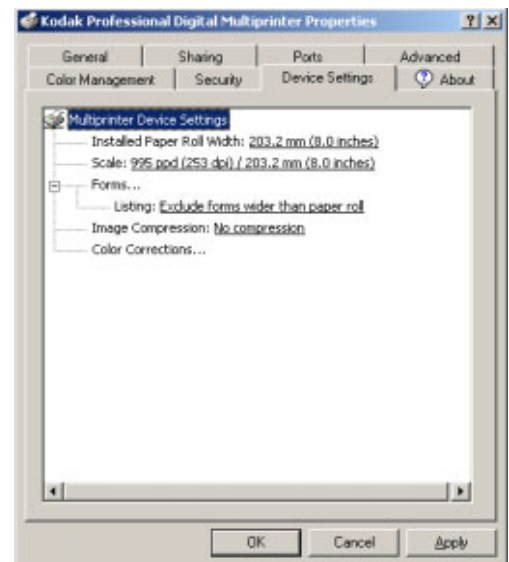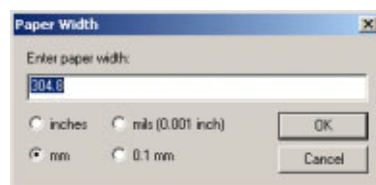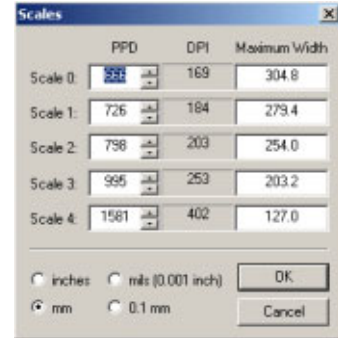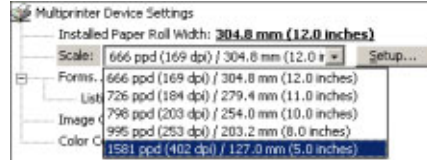
Set the Scale

The MultiPrinter operates in several different scales. Set the scale by clicking **Scale**, then choosing the range from those available.

✎ You must enter the Scale values determined by the installing technician.
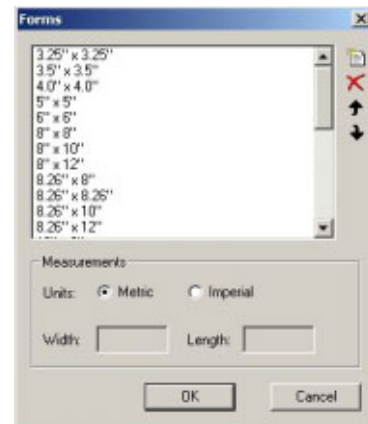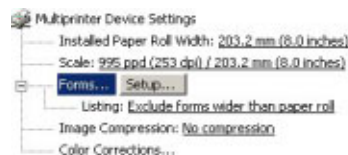
Set the available forms

You may use a number of standard paper sizes to print your jobs on the MultiPrinter. The paper sizes defined here are those that the operator can select as the paper size when printing. Ensure **Forms…** is selected in the dialog, and choose **Forms Setup…** The Forms Setup dialog is displayed.

Create a new form

- Click the New Form button. A new entry appears in the list. Enter the name for the new form.
- Choose the measurement units (English or Metric)
- Enter the paper dimensions.

If you want to add another new form, click the **New** button again and repeat the operation.

Remove a form

Click the name of the form you wish to remove, and click the Delete button. The form is removed from the list.

Set which forms are available for selection.

It is possible to set which forms are available to the operator when printing. Choose **Listing** from the list. The available settings are shown at the bottom of the dialog.

- Always list all forms
- Exclude forms wider than paper roll
- Only list forms with the same width as paper roll
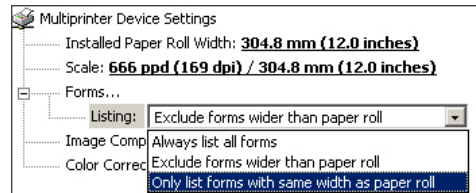
Using image compression when printing

When pages are printed directly from an application to a MultiPrinter somewhere else on your local network, you can choose to compress the printed image data. This helps optimise your network traffic, and keep it useable.

For example, a page when printed to a TGA file is 60Mb. The same file may be 15Mb when JPEG compressed.

You can choose either PNG or JPEG compression. PNG is designed to be a 'lossless' compressed image format, while JPEG is better known, but is 'lossy'. A higher compression factor with JPEG will result in poorer image quality, but smaller files. PNG is slightly slower, and creates larger (but potentially better quality) compressed files than JPEG.
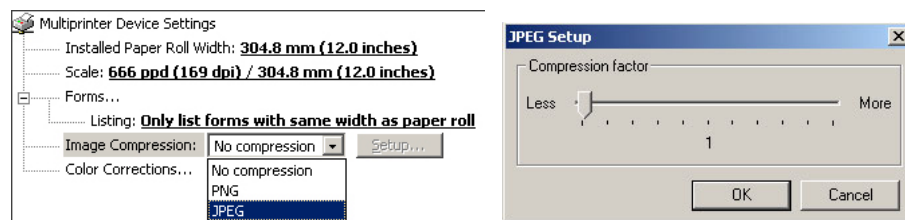

Setting the Printer Security

The Windows NT printer driver model allows for printer security when users use the print driver. This is very useful in a large lab environment to ensure that only authorised personnel can print files to the MultiPrinter. Choose the **Security** tab and apply the security settings desired. Consult Windows NT help for more information regarding printer security.
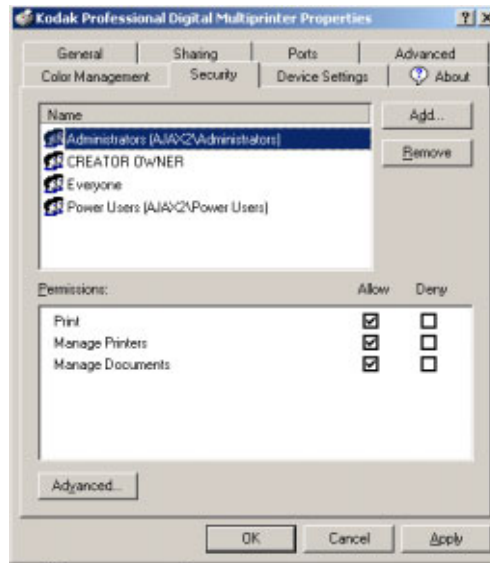
Printer Information

Important information such as version numbers are displayed in the **Help** tab.
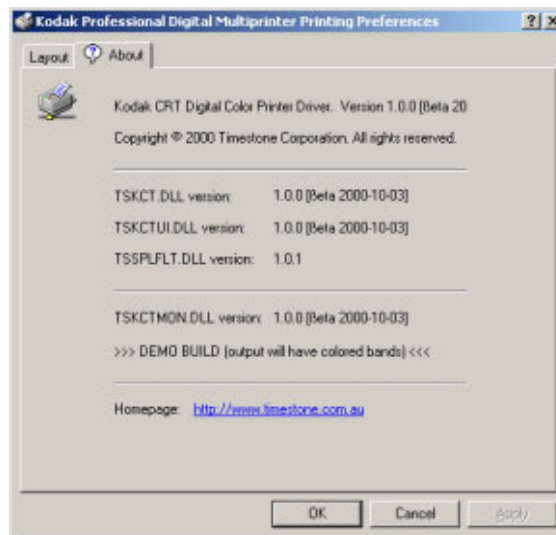

Printer calibration

Each image that is printed can be corrected for brightness, color balance or contrast, as it is printed.

✍ You should ensure that the printer is calibrated correctly using the calibration software. The color corrections here should be used only if necessary.

You can apply a color correction to all pages printed on the MultiPrinter by creating a color correction. Corrections are applied by defining a LUT with the LUT editor. Basic and advanced LUTS are available. See the later chapter on the use of the LUT editor.

LUT mode switches

LUT preview graph

LUT construction tools
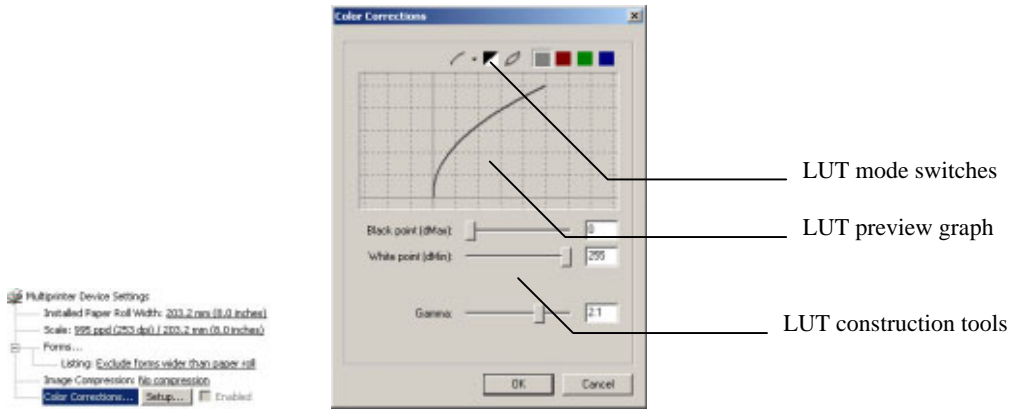
There are two main areas of interest:

- LUT construction tools
- LUT mode switches

LUT modes

There are several types of LUT that can be constructed. The most important are:

- Basic
- Advanced

There are other modes available by using the mode switch buttons, . These should only be used by experienced persons.

Switch a LUT mode by choosing the Basic / Advanced switch and choosing the desired mode.

Create a basic LUT

Basic LUTs allow:

- An overall gamma
- A specific Red, Green or Blue gamma
- A custom black and white point

Choose a gamma

Enter the required gamma value either by sliding the gamma slider, or entering a value. The graph will preview the new LUT.

Choose a specific color's gamma by choosing the color from the toolbar, and applying the required gamma.

Choosing a black and white point

Black and white points can chosen by sliding the slider, or entering a value. As the value is changed, the graph previews the change.

You might want to change the black or white points if the images being printed have bad black points. You can see this by inspecting the images in a bitmap editing program such as Adobe Photoshop. If the darkest pixel is greater than 0, and the whitest lower than 255, you might want to adjust these values.
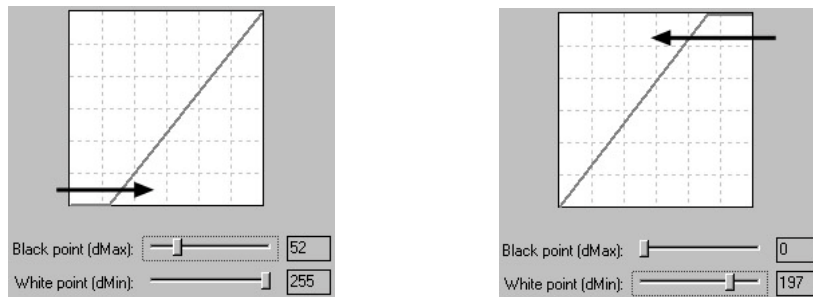
A LUT is constructed by choosing the required gamma value, either with the slider, or by entering a value.

Create an advanced LUT

Advanced LUTs allow:

- Overall gamma correction
- Black point setting
- White point setting
- Shadow correction
- Highlight correction

If you want to specifically brighten the shadow areas, or darken the highlights, or even bias the color of the shadow or highlight areas, the advanced LUT tools will be very useful.

The adjustments available for gamma, black and white point correction are similar to the basic LUT. The added tools are Gamma High and Gamma low corrections. As you adjust these sliders, the shadow or highlight areas only are changed.
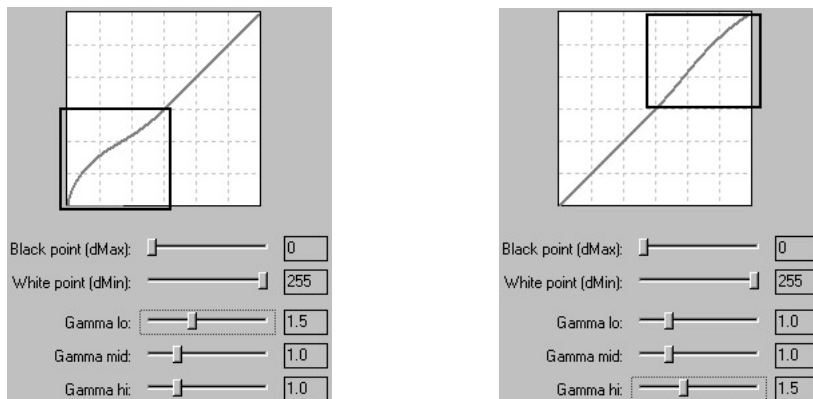
If you want to bias a particular color, choose the color from the LUT mode toolbar, and make the corrections.

Using the test image

The image supplied provides a standard image that allows you to compare printers and monitors. If after calibrating your printer, the test image still prints with a color cast, apply a correction as specified below:

Test image is…	Then…
Too dark	Increase the printer LUT gamma, e.g. change the gamma from 1.0 to 1.3
Too light	Decrease the printer LUT gamma
Too red	Decrease the printer LUT red gamma
Too cyan	Increase the printer LUT red gamma
Too green	Decrease the printer LUT green gamma
Too magenta	Increase the printer LUT green gamma
Too blue	Decrease the printer LUT blue gamma
Too yellow	Increase the printer LUT yellow gamma

If you are calibrating multiple printers, pick one of the printers as the master, and balance this one first. After the system is calibrated with one printer, construct a LUT that corrects any differences between the printers.

The test image is called **Calibration.tif** and is in the **Program Files\Timestone Software** directory of the hard drive.

4

Document configuration

Once the driver has been installed, and the printer defaults set, it is available for use within Windows NT. When you print using the driver, you can specify various settings for the particular job you are printing. Certain settings (such as resolution range, paper width) are printer defaults and cannot be changed, but there are several settings you can change.

General document options

Choose **Printer Properties** from the print dialog. The current Page Setup is shown. Choose the desired paper from the **Paper Size** drop-down, the number of prints required and paper orientation.

Most of these settings mirror those entered in the application's normal **Print…** dialog.

Printing Preferences… (Windows 2000)

Printing preferences are set by choosing either **Printing Preferences…** in the **Print** dialog, or by clicking the printer icon in the **Printers** folder, then choosing **File > Printing Preferences…**
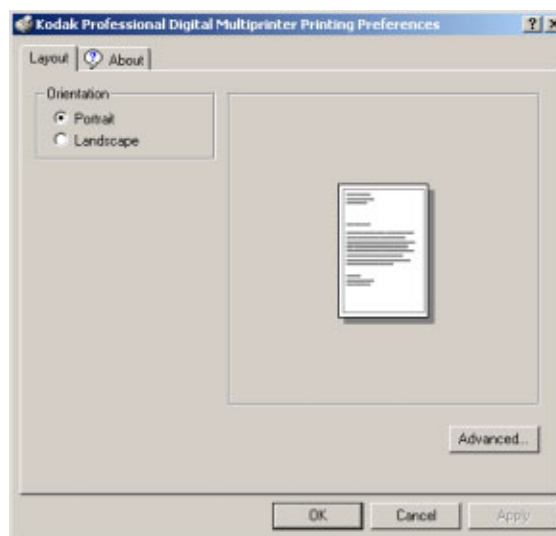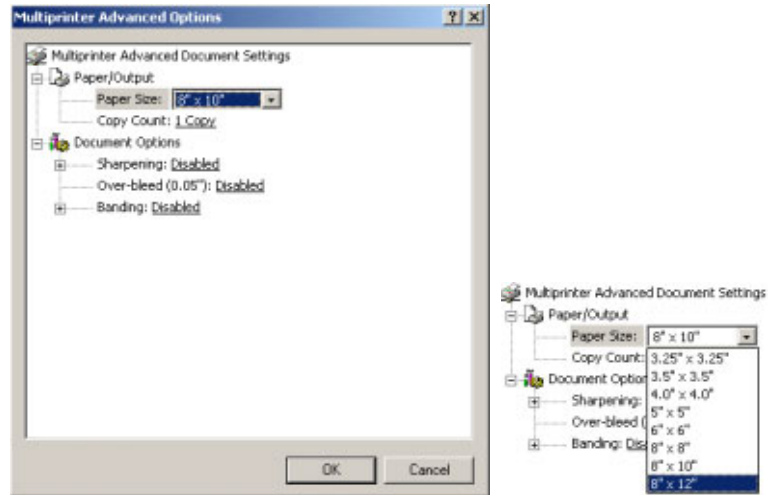

Set the Orientation

Choose which orientation to print the pages.

Set the Advanced Options

To set the advanced options, click **Advanced…** The Advanced Printing Preferences is displayed.

Paper Size and print count

Choose the paper size from the drop down and enter the print quantity.

Sharpening

Images printed can be sharpened by enabling sharpening. Choose the sharpness strength by entering it to the **Strength** entry box. Click the **Advanced…** button to access advanced options. Note that you should not normally change the Kernel size. Sharpness is applied using an unsharp mask algorithm, and the kernel size will increase the effect, but possibly introduce image artefacts.

✎ Sharpening an image while printing can take some time. You should attempt to apply any sharpening required at the scanner to ensure maximum productivity from your printer.


Over-Bleed

It is possible for the paper to mis-track slightly as it is transported through the printer. To allow for this fine tracking, you can enable over-bleeding. This enlarges the image by 0.05" on both sides of the paper.
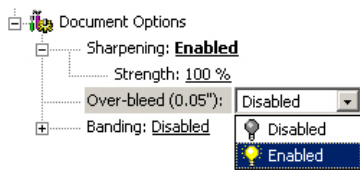
Banding

If your PC struggles with rendering due to insufficient memory, you can segment the rendering tasks into bands. This can help ensure the images are correctly rendered, even in low memory situations. However, we strongly recommend that you install more memory if you are in this situation, as banding will slow print times.
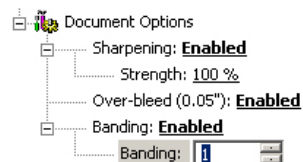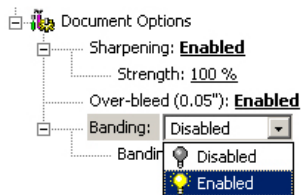
5

Using the driver

Once the driver has been installed, and the printer defaults set, it is available for use within Windows NT. When the user prints from the driver, they can specify various settings for the particular job they are printing. There are a number of things that cannot be changed (such as resolution range, paper width), as they are a printer default.

Using the print driver is gathered into three main areas:

- Printing from an application
- Using the Windows NT print spooler
- Printing across a network

Calibrating and configuring the printer

Your MultiPrinter and LF-CRT come with a calibration application that you should use to calibrate and select the paper type in use. The printer driver has no similar functionality integrated, so you must use the Kodak software for these functions.

Paper calibration

When using a new paper type, or starting the machine up in the morning, you should run a calibration strip to ensures the best possible quality. Follow the Kodak calibration manual for information.

Selecting the paper type

When you load a new paper type into the printer, the printer must have the calibration data for that paper loaded. This must be done with the Kodak calibration software. Follow the Kodak calibration manual for information.

Printing from an application

Using the printer driver will be a familiar operation to the user. The user can choose to set the printer document settings from the **Properties** dialog within the application they are using.

Please consult the Windows NT documentation and application user manual for information on printing.

Supported applications

You can print from any standard Windows NT application with the MultiPrinter driver. Each application you use will offer different ways and features when printing to a printer.

The MultiPrinter driver is not a PostScript compatible driver. If you try to print from an application that contains embedded PostScript the PostScript content will be the low-resolution preview only.

Setting the document options

As mentioned, you can set various document defaults for a printer. When the operator first uses the printer, these options will be the ones that will appear. The user can make their own settings as desired. For a detailed description of the settings, please consult the previous chapter.

Using the Windows NT print spooler

Windows NT printing uses the Print Spooler to allow you to control the jobs submitted to the printer. When a document is submitted to the spooler, a printer icon will appear in the System tray at the right of the Task Bar.

Printer icon in the System Tray
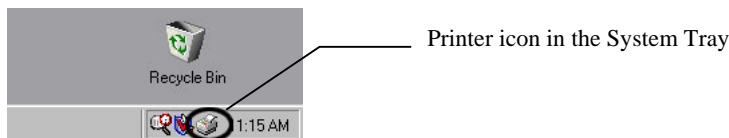
Double-clicking the icon opens the Spooler window. You can also open the spooler window by opening the Printers folder, then double-clicking the printer's icon.

When a job is submitted to the Windows spooler, it can be controlled by the operators on the network or on the print server. The spooler allows functions such as pausing the printer, cancelling jobs, promoting a job's priority and so on.

Please consult the Windows NT help system or your System Administrator for information regarding using the spooler.

Printer condition reporting

There are various messages regarding the printer's status that can be reported by the spooler window. These messages are displayed in the spooler's title bar.

Please consult the following chapter for information regarding these messages.
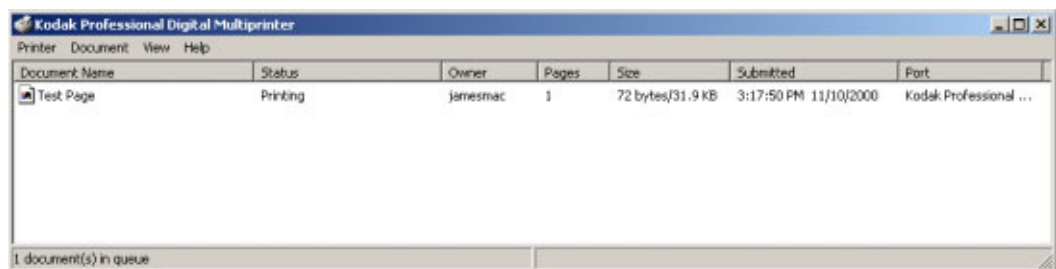
Printing across a network

Windows NT printer drivers allow printer sharing across a computer network. You should consult your Windows NT help system, user documentation or System Administrator for detailed information regarding printer sharing.

Network Traffic

Because the files you print to the MultiPrinter are high-resolution, printing across a computer network involves sending large amounts of data. If you have several operators printing to the MultiPrinter across a network, you may find that the network will slow. If you experience this issue, you should enable image compression as described in a previous chapter.

Special Features with Timestone Software's *PrintTime*

Timestone Software has created an imaging tool that simplifies the task of printing images to the printer. It also offers special support when printing image files that are pre-sized ready to print. These files might come from a third-party application that creates bitmap files for its jobs.

Normally, when *PrintTime* prints a job, it process the image data through the normal Windows NT print layers. This process takes some time. When the image files you are printing have been correctly sized, this extra processing time is un-necessary. PrintTime works with the printer driver to by-pass these layers, and send the image data directly to the printer.

Please consult accompanying the *PrintTime* documentation for information on this function.

Index