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Holodyne Corporation acknowledges and thanks LEAD Technologies Inc. for their assistance in the preparation of the Image technical specifications in this guide.

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Contents

Print Imager: RasterMan(™) is a print-to-image system.

Installed as a Windows printer driver, you can turn the output of any Windows program (Word, Lotus, etc.) into a single "fax-ready" (DCX,PCX,TIFF) image. Using the built-in viewer, SFVIEWER, you can also save images as various file formats including: PCX, TIFF, GIF, BMP, TGA, JPEG, and CMP.

RasterMan creates a faxable image from any source document on your PC. No lost resolution, no wasted time, and no wasted paper. By selecting "**RasterMan Image Print on SQLFAX**" as your printer, you can easily create a rasterized image of your output.

RasterMan creates faxable PCX (single page) or DCX (multiple page) output files and automatically stores them in a directory of your choice. It will also create Group 3 TIFF or normal TIFF files.

SQLFax^(TM)

You may also launch other applications from within **RasterMan**, such as Holodyne's client-server fax solution - **SQLFax**. After creating an image file, you may want to file it or fax it to someone. Can you select a target contact or distribution list from your corporate database? If not, **SQLFax** is the answer for you. It's an elegant way to select contacts and images using relational databases including: SQLBase, Oracle, Sybase, Informix, Ingres, Supra, EDA/SQL, SQLServer, DB2 and AS/400.

RasterMan Features and benefits

PCX file

DCX file

TIFF file

PCX file

A single page fax-ready image is created from within any Windows program by simply printing to the Rasterman on SQLFax printer driver.

DCX file

A multi page fax-ready image is created from within any Windows program by simply printing to the RasterMan on SQLFax printer driver.

TIFF file

A tag based file format designed to promote the more universal interchanges of digital image data. Tiff is capable of storing 1, 4, 8, 16, 24 and 32 bits per pixel images. Because TIFF files do not have a single way to store image data, there are many versions of TIFF. RasterMan supports the most common color TIFF format. For compression, support is provided for all 24 bit RLE compressed, LZW compressed, MacPaint, 8 bit color mapped and gray scale, 1 bit uncompressed, and CCITT Group 3 & 4 TIFF.

SFVIEWER(™)

Using the SQLFax viewer, SFVIEWER, which is included in RasterMan, you can see and manipulate your images. RasterMan will pass to SQLFax's Image Viewer all images that were created as a result of the print to "**RasterMan Image Print on SQLFAX**". Using SFVIEWER you can save your images in the following file formats: TIF, GIF, PCX, DCX, TGA, JPEG, EPS, WMF, & CMP for compressed images. SFVIEWER will also allow printing of images to a designated printer.

SFVIEWER - File Pull-down Menu

Open

The file menu provides a mechanism to open, save and print files. When the Open menu item is selected a standard Windows directory screen will be presented allowing you to browse your disk drives to locate image files. The types of formats that can be opened are:

All	- All supported image formats
TARGA (*.tga)	- True color TGA files
TIFF (*.tiff)	- 1,4,8,15,24 and 32 bit tag-based file format
Bitmaps (*.bmp)	- Windows 1,4,8,24 bit Windows format
PCX (*.pcx)	- Zsoft 1,4,8,24 bit format
DCX (*.pcx)	- Intel 1,4,8,24 bit format
GIF (*.gif)	- 1,4,8 bit CompuServe graphics interchange format
CMP (*.cmp)	- Lead Technologies Compresses 1,8,24 bit files
JPEG (*.jpg,*.jff,*.jtf)	- JPEG File Interchange Format 8 bit and 24bit
CALS (*.cals)	
MacPaint (*.mac)	
GEM (*.gem)	
Microsoft Paint (*.msp)	
PhotoCD (*.pcd)	
WordPerfect (*.wpg)	
SunRaster (*.ras)	
MacPicture (*.pct)	

Once a file has been selected a window will be opened and the file displayed within that window. You may open as many windows as you have system resources.

Close

Closes the active image. If the image is displayed in more than one window, this command closes all of the windows that contain the active image. If you have not previously saved changes to the image, SQLViewer asks if you want to save the image before you close it. If you close a image without saving, you lose all changes you did not save previously.

Save As

The save menu can be used to save the file after altering its format, or used to convert an existing file into another format. For example, to convert a file from the Windows BMP format into a JPEG format simply open the file normally, then select Save from the file menu. Ensure that the file type is set to JPEG and save the file. This will have created a JPEG file on your disk drive.

To compress a file, open the file in its natural format, then move to the Preference menu and select Compression Options. Here you can input the compression factor that you wish to use. The default factor is 50 but can be as high as 200. The higher the compression factor, the more compression occurs and the more quality is lost. This compression factor is only used when saving to the CMP (Compressed) format. Once you have selected your compression factor you can then save the file by using the save option from the 'File menu. You must select the CMP file format to save the file in a compressed format. When the file is opened again it will automatically be decompressed. If Holodyne's SQLFax is utilized when faxing a CMP image file it will be decompressed automatically prior to faxing.

Create Multipage

A multi page image is created by combining multiple files into a single file. You may create DCX or TIFF

multi page documents. Once 'Create Multipage' is invoked a dialog box will appear. All of the images that are currently open will be displayed in the 'Source' column. You can move pages from 'Source' to 'Destination' by double clicking the page or by highlighting the page and pressing the '>' button. Once you have built a list of 'Destination' pages you may save your file by providing a file name in the File Name field. You may convert images to 1 bit (Black and White) by clicking the 'Convert to 1 Bit' check box. This will cause the output file to be a 1 bit file regardless of the source image

Acquire

If your workstation has a TWAIN 2 compliant scanner attached to it you may use the 'Acquire' menu option to invoke the scanner and allow you to bring documents into the viewer directly from a scanner. Once an image has been scanned it may be manipulated and saved in the normal fashion. This option is only available if you have correctly installed your scanner and scanner software. You must first use 'Select Source' to identify your scanner before you may acquire images. If you receive a 'Failure to Connect' message after selecting a valid source this means that the scanner software may not be configured correctly or that the scanner card is conflicting with another hardware device. Be sure to test your scanner using the software supplied by the manufacturer before attempting a scan.

Select Source

This option allows you to select a scanner source from a list of installed TWAIN devices. A list will appear showing all of the installed TWAIN devices installed on your workstation. If you have a scanner but find the list to be empty, use the manufacturers software to install the scanner software on your workstation. To select a scanner device from the list you may highlight the device with a single click, and press 'Select' or double click the item in the list that you wish to scan from.

Tip: You must select a valid TWAIN source before attempting to scan an image.

Print

If you have installed and connected to a printer you can then print your images.

Print Preview

Shows how a image will look when you print it. You can use the Print Preview toolbar to display two pages or to zoom in on a particular page.

Print Setup

Use this selection to change the active printer, and/or to set up the way the active printer is configured.

Related Topic - The Printer Setup Dialog Box

Exit

Selecting the Exit option will cause the viewer program to terminate.

SFVIEWER - Edit Pull-down Menu

Copy

The 'Copy' option will cause the current selected image window to be copied into the Windows clipboard so that it may be pasted into other applications.

Paste

The 'Paste' option is available if the viewer program detects a recognizable image inside of the Windows clipboard. If the option is available, selecting 'Paste' will cause a new image window to be created with the image contained within the Windows clipboard.

SFVIEWER - Image Pull-down Menu

The 'Image' menu contains options that will allow for the manipulation of the image displayed inside an image window.

Flip

Selecting 'Flip' will cause the image in the window currently in focus to be flipped upside down. This allows you to reverse the presentation of the image.

Reverse

Selecting 'Reverse' will cause the colors of the current image window to be altered to their reverse color. This can be useful when attempting to view an image that is very dark.

Invert

Selecting 'Invert' will cause the image to be reversed.

Rotate

Selecting one of the rotation options allows the user to rotate the image 90 degrees, 180 degrees or 270 degrees to the right or to the left. This option is useful when images appear sideways on the screen (scanned images, received faxes) and must be rotated to be read. Each click on the rotate option will cause another rotation of 90 degrees to occur.

Resize

This selection allows you to resize an image using pixel replication or deletion.

To resize an image:

1. From the SQLViewer Menu Bar, select "Image".
2. Then select "Resize" from the pulled-down menu. This opens the "Resize" dialog box. The dialog box allows you to select the way you want the resize operation to be applied.
3. Use the Horizontal scroll bars to select the Width and Height of the Image.
4. Click the "OK" command button.

'Aspect Ratio' is the ratio between width and height of an image. In order to resize an image with the least amount of distortion you should use the 'Keep Aspect Ratio' check box on. When you change the width or height of an image, the ratio will be maintained for you by calculating the appropriate change to the corresponding value. To change the width or height independently turn off the 'Keep Aspect Ratio'.

Halftone

The 'Halftone' option allows a user to convert the current image window into a black and white image. This conversion process depends largely on the type of image that is being converted and works better on some image formats than others. As a general, the more colors in an object, the worse the conversion is. If an image has more than 8 or more bits (256 colors) then it is best to use the 'Gray scale' option first to reduce the colors down to 8 shades of gray before further reducing it to black and white (1 bit). If Holodyne's SQLFax is being used then prior to faxing, color images are automatically converted.

Gray Scale

The 'Gray Scale' option allows you to convert a color image to a 8 shades of gray. This is often the first step to reducing an image into black and white.

Color Resolution

The 'Color Resolution' option allows you to change the number of colors in an Image.

The following is the number of bits per Pixel :

2 Colors (1 Bit) Selection - This selection decreases the image's colors to black and white.

16 Colors (4 Bit) Selection - This selection decreases the number of colors to 16 or less.

256 Colors (8 bit) Selection - This selection decreases the number of colors to 256 or less.

32K Colors (16 Bit) Selection - This selection decreases the number of colors to 32,000 or less.

65 K Colors (24 Bit) Selection - This selection decreases the number of colors to 65,000 colors or less.

16.7 Colors (32 Bit) Selection - This selection decreases the number of colors to 16.7 million colors or less.

The dithering radio buttons will find the nearest color in the new

palette. A difference between the nearest color and the original color is considered an error. This error is diffused to the neighboring pixels (this is known as Error Diffusion Dithering). The error diffusion method that can be used is up to you .

Image Info

The 'Image Information' option will display a dialog box that shows information about the current selected image window. The Width and Height of the image , Bits per Pixel, Size of the image file residing on disk, Size in memory and the Compression Used.

SFVIEWER - View Pull-down Menu

Normal

This 'Normal' option will return the image to its original size. This is useful after a Zoom in or Zoom out operation.

Fit Image to Window

This option will cause the image currently in focus to be re-sized to the boundaries of its window. The re-sizing of an image may cause some distortion as the image is stretched or squeezed to fit the window.

Fit Image to Width

Fit to width means the aspect ratio is preserved and the image has been resized so that it is the same width as the window. The height has been adjusted to keep the same aspect ratio as the original image.

Zoom

The 'Zoom In' option changes the view of the image so that it now occupies 2X the viewing pixels than it would at normal size.

Snap Window To Image

This option will reduce the size of the current window to the exact size of the active image.

ToolBar

This 'ToolBar' option will either remove the Toolbar from the SQLFax Image Viewer if it is already on, otherwise it will place the toolbar on the SQLFax Image Viewer Window if it does not exist.

Status Bar

This 'StatusBar' option will either remove the Status Bar from the SQLFax Image Viewer if it is already on, otherwise it will place the tStatus Bar on the SQLFax Image Viewer Window if it does not exist.

SFVIEWER - MultiPage Pull-down Menu

This option is not available unless the image is a multi-page file format.

If the Image is a multipage image then this Menu option will be turned on with the following options.

Previous Page

This option allows the user to go back to a previous page of a multi-page DCX or TIFFfile. This option is not available unless the image is a multi-page file format.

Next Page

This option allows the user to go forward to the next page of a multi-page DCX or TIFF file. This option is not available unless the image is a multi-page file format.

Goto Page

This option allows the user to go to a specific e page of a multi-page DCX or TIFF file. This option is not available unless the image is a multi-page file format.

SFVIEWER - Window Pull-down Menu

This option is provided to allow organization of multiple image windows. When more than one image is being displayed you can choose to display them one on top of another or side by each. This option also maintains a list at the bottom showing the title of all current images open in the viewer.

New Window

Displays different parts of a image or shows the same image in different views by opening a new window with the same contents as the active window. If you change the contents of a image in one window, all of the other windows that contain the same image reflect those changes. When you open a new window, it becomes the active window and is displayed on top of all other open windows.

Cascade

This option causes all of the child windows to be 'Cascaded' one on top of each other.

Tile

This option will cause all of the child windows to be displayed side by each so that all of the open windows can be viewed simultaneously.

Arrange Icons

This option will cause any child windows that have been reduced in size to icons to be organized on the screen next to each other. The function has no effect on windows that are not minimized.

SFVIEWER - Export Pull-down Menu

This option will only be available when Holodyne's SQLFax is currently running with the 'Results Table' visible. Selecting export will pass the names of all child windows across to SQLFax where it will then be inserted as a record for each image.

Related Topics:

[SQLFaxä](#)

SQLFax™

RasterMan will interface with Holodyne's Image Transporter: SQLFax, a contact, image and fax log management system for client/server relational databases.

SFVIEWER - Help Pull-down Menu

SFViewer Help

This option will invoke the Windows help engine for Rasterman.

SFViewer About

This option will cause a dialog box to appear describing the current version and the company address.

Hardware and Software Requirements

To use RasterMan, you need the following hardware and software:

Related Topics:

[Hardware](#)

[Software](#)

Hardware

- IBM (or plug compatible) PC capable of running the software listed below
- 4 MB RAM minimum
- VGA monitor; Super VGA recommended

Software

- Microsoft Windows 3.1® or Microsoft Win95®
- DOS 5.0® or higher recommended

Installing RasterMan

SETUP.EXE

To install RasterMan, run **SETUP.EXE** from the Command Line, or from File Manager from the floppy disk drive into which you have inserted the RasterMan Install disk. During the install process, you will be asked where to install RasterMan. The default location is "C:\RASTER". If you are installing RasterMan 4.0 in conjunction with SQLFax, we recommend that you use "C:\SQLFAX" as the directory for installation.

RasterMan uses one target directory for creating and storing the images. All images are first created in the TARGET directory using generic file names, ie. temp1.pcx . During the installation, the default target directory is **C:\RASTER\IMAGES**.

***Tip:** ". To change the target directory, you may edit the MFXFAX.INI yourself.*

Changes made by SETUP.EXE automatically

- The printer driver entry - "**RasterMan Image Print on SQLFAX**" is also automatically installed as an available printer. You may use Windows' Control Panel, Printers to examine the printer setup. Under Win95 select 'Setup' , 'Printers' and select 'Properties' of RasterMan to examine and alter the properties of the print driver.
- MFXFAX.INI is copied to your Windows directory
- MFXFAX.DRV is copied to the Windows system directory
- WIN.INI has several modifications made to its printer sections

RasterMan's configuration files

RasterMan accesses the configuration information located in its MFXFAX.INI file and also modifies the Microsoft Windows WIN.INI file.

Related Topics:

[MFXFAX.INI](#)

MFXFAX.INI

The following is a sample MFXFAX.INI file which is located in your Windows directory:

[OWNER]

;ControlDialogEXE=C:\RASTER\raster.exe

DefaultFileName=C:\RASTER\IMAGES\test1.pcx

```
;      -1      // no file output (use with shadow output)
;      0      // Group 3 (MH) reverse bits (GAMA default)
;      1      // Group 3 (MH) normal bits
;      2      // INTEL DCX format
;      3      // INTEL PCX format
;      4      // Group 3 2D Modified Read (reverse)
;      5      // Group 3 2D Modified Read (normal)
;      6      // Group 4 Modified Modified Read (reverse)
;      7      // Group 4 Modified Modified Read (normal)
;      8      // Normal Tif Packbits
```

FileType=7

; [-1,0,1,2,3,4,5,6,7,8]

FileOverwrite=0

;

;

Set page height to a multiple of padlines

padLines=0

;

;

[0/1/2] Output text contents in a shadow file

1 - contains coordinates, 2 - ASCII output

ShadowFile=0

BreakPages=0

;

[0/1] if Set, don't prompt if file already exists

OverwriteIfFileExist=1

;

[0/1] if Set, Put up File Save as Dialog

DialogFlag=1

[SECONDARY]

; Released Application.

; Printed image file path will be passed to this Application as a message startup argument.

ReleasedApplication=c:\raster\sviewer.exe

ReleasedAppEXE1=c:\raster\sviewer.exe

ReleasedAppEXE2=C:\windows\pbrush.exe

;ReleasedAppEXE3=

;ReleasedAppEXE4=

Explanation of the MFXFAX.INI

ControlDialogEXE=C:\raster\raster.exe

This section specifies where RASTERMN.EXE currently exists

DefaultFileName=C:\raster\Images\TEST1.pcx

This section specifies the default location and file name (last two digits significant) to be created when the image file is created by printing to 'Rasterman Image Print on SQLFax'.

FileType=7

This section identifies the default file type to be created. The file type can be [0/1/2/3/4/5/6/7/8] Gama Tif/Normal Tif/DCX/PCX etc..

BreakPages=1

This section forces multiple pages 01,02,03...99 if set. The values are [0/1].

OverwriteIfFileExist=1

This section will over-write the existing file (PCX,DCX...) if it exists without confirmation from the user. The default is 1 which is no conformation.

padLines=0

padLines allows a user to add lines to the end of an image in order to pad it up to a certain size. Use this to increase the length of an image. You may enter the number of lines to add.

ShadowFile= 0

Selecting ShadowFile =1 will cause the print driver to produce a textual version of the document in a separate file. This file will be created with the same name as the image file but with the extension TXT. This can be useful as a searchable description of the document.

BreakPages=0

Selecting BreakPages = 1 will cause each page of the image to be contained in a separate image file. RasterMan will automatically increment the last three digits of the file name starting at 001 or the last number used.

OverwriteIfFileExist=1

If OverwriteIfFileExist is set to 1 then the user will not be prompted before overwriting an image file with a new one. If set to 0 the user will be prompted with a dialog to ask if the file should be replaced.

DialogFlag=1

This section will display the RasterMan Dialog Box if set, Otherwise it will not display the Dialog Box. Turn this feature off if you

;
[SECONDARY]

ReleasedAppEXE=c:\raster\sviewer.exe

This section specifies which application will be launched after the process is complete. The Printed image file(s) will be passed to this Application as a command line argument

ReleasedAppEXE1=c:\raster\sviewer.exe

ReleasedAppEXE2=C:\windows\pbrush.exe

These entries are used by the RasterMan dialog to list all of the applications that will appear in the applications list. RasterMan builds a list entry for each of the applications entered.

Contents of Microsoft Windows' WIN.INI file

When RasterMan is first installed, the SETUP.EXE, adds the following entry to the WIN.INI file.

Under the [Windows] section, RasterMan adds device=RasterMan Image Print,MFXFAX,SQLFAX.

[Ports]

LPT1:=

LPT2:=

LPT3:=

COM1:=9600,n,8,1,x

SQLFAX=

[PrinterPorts]

RasterMan Image Print=MFXFAX,SQLFAX,15,45

**Note that there are two spaces between RasterMan and Image*

[devices]

RasterMan Image Print=MFXFAX,SQLFAX

**Note that there are two spaces between RasterMan and Image*

Tip: You should never need to modify these sections of the WIN.INI file yourself.

Starting the System

The RasterMan process is automatically started once you have selected "RasterMan Image Print on SQLFax" as a designated printer when printing from any Windows product. You may also bring up the dialog box by double clicking the 'RasterMan' icon from Program Manager.

Mouse/Keyboard Functions

You can work in RasterMan using a mouse or a keyboard. To move between fields, click the left mouse button on the field you want to be in. The white boxed fields are areas where you can input data. Using the **TAB** key on your keyboard moves you to the next field, while **Shift + Tab** moves you to the previous field.

You can also use the keyboard for Shortcut Keys instead of using a mouse. From any pull-down menu you can access any function by holding down the **ALT** key and pressing the underlined letter in the feature you want to invoke. Shortcut keys can be used with any underlined letter from a menu bar, push-button, data field, etc.

Scroll Bars

The Table Window provides you with scroll bars. A Scroll Bar is a bar that appears at the bottom and/or right edge of a window whose contents are not entirely visible. Each scroll bar contains a scroll box and two scroll arrows. In a scroll bar, the small box indicates the position of information currently in the window or list box relative to the contents of the entire window. To move through text or graphics (up, down, left or right) click on the scroll arrow, move the scroll box or click on the scroll bar.

Tip: For more information on Windows and how to use scroll bars, review the section on Windows Basics in your Microsoft Windows manual.

Quick Tutorial

1. When you print to the **RasterMan Image Print on SQLFax** printer driver, a PCX, DCX or TIFF image is created ie. (TEMP1.DCX) in the Save to File directory. If TEMP1.DCX already exists, the new file will be named TEMP02.DCX, etc. This default can be over-ridden by the user (Refer to MFXFAX.INI).
2. Once you have determined the type of image, then simply depress the 'OK' push-button and the Rasterization process is started. The following pop-up dialog box will appear displaying the number of page(s) and the percentage of pages completed.
3. The SFVIEWER.EXE is then activated using the Image file(s) created as startup arguments. These image file(s) can then be viewed, converted to other file formats etc. The viewer will only be invoked if the ReleasedAppEXE inside MFXFAX.INI is pointing to c:\raster\sviewer.exe. This option may be overridden by the user (Refer to MFXFAX.INI).

Common Questions

1. I installed RasterMan but when I print to the print driver 'RasterMan Image Print on SQLFAX' I receive the following error message 'File Error Cannot find MFXFAX.DRV'.

Most likely what has occurred is that you did not reboot your PC after the installation in which case the RasterMan directory would not be included in your path (.ie. C:\Raster) .Therefore, exit from Windows and reboot your machine. The problem should disappear, and if the problem still persists then call Technical Support.

2. I would like to change the default resolution (200) for the Image. How can this be accomplished ?

Simply go into the Control Panel from the Windows Main Icon, proceed to the Printers Icon. Once in the printers Dialog box choose the 'RasterMan Image Print on SQLFAX' as your designated printer and then push the 'Setup ' push-button. You should see the default resolution of 200 and from here it can be modified.

3. I am using Word 7 and Win95. Each time I print to RasterMan from Word 7 nothing seems to happen.

Under the 'Tools' menu of Word 7 select 'Options. Under the 'Print' tab you will find a check box titled 'Background Printing'. Make sure that this option is turned off.

How to create your own User Interface

Interfacing RasterMan with your application is a simple process. Each time the RasterMan print drive is invoked, it reads the information contained in the MFXFAX.INI file to determine the file name, location, type, and which application should be launched on completion of the process. To interface your own application you may:

1. Alter the MFXFAX.INI file prior to printing to the RasterMan print driver in order to specify the output filename, type, location, and whether the file should be deleted if it exists.
2. The Application executable defined in the MFXFAX.INI file under **ReleasedAppEXE** will be launched. RasterMan will pass the full output file specification as the command line to your application. This will allow your application to manipulate the output file.

Tip: If your application is already running and is launched a second time, add a section that checks for the existence of your application Window at startup, if it exists pass the command line over to the existing application window and terminate the second instance.

Supported Image File Formats

RasterMan will support the viewing and conversion of the following image file formats:

Related Topics:

[TGA](#)

[TIFF](#)

[BMP](#)

[PCX](#)

[GIF](#)

[WMF](#)

[EPS](#)

[LEAD CMP](#)

[JFIF \(JPEG\)](#)

[JTIF \(JPEG\)](#)

[JPEG](#)

TGA

TGA is a file format created by Truevision Inc. and is also referred to as TARGA files. Most TARGA files are true color and contain up to 16 million colors. The file format also supports 16-bit color.

TIFF

TIFF is a tag-based file format designed to promote the more universal interchanges of digital image data. TIFF is capable of storing 1, 4, 8, 16, 24, and 32-bits per pixel images. Because TIFF files do not have a single way to store image data, there are many versions of TIFF. RasterMan supports the most common color TIFF format. For compression, support is provided for all 24-bit RLE compressed, LZW compressed, MacPaint, 8-bit color mapped and gray scale, 1-bit uncompressed, and CCITT Group 3 & 4 TIFF.

BMP

Bitmap, or BMP, is a file format created by Microsoft for Windows and Presentation Manager. The BMP file format can store 1-bit 2 color, 4-bit 16 color, 8-bit color mapped 256 color images, and 24-bit 16 million color images. Some 8-bit BMP images are compressed with an RLE type compression. RasterMan supports all 4-bit 16 color, 8-bit color mapped 256 color, and 24-bit true color Windows and Presentation Manager file formats.

PCX

PCX is a file format created by the ZSoft Corporation and came from the popular PC Paintbrush paint program. PCX files can store 1-bit 2 color, 4 bit 16 color, 8-bit color mapped 256 color images, and 24-bit 16 million color images. This format compresses its image data with RLE type compression.

RasterMan supports compression for 1-bit 2 color, 8-bit 256 color mapped, and 24-bit true color PCX files. For conversion and loading to a bitmap, RasterMan also supports 4-bit 16 color and 1-bit 2 color files, in addition to 8-bit gray scale, 8-bit color mapped, and 24-bit 16 million colors.

GIF

GIF is the Graphics Interchange Format created by CompuServe for storing and exchanging color raster images. GIF files can store 1-bit 2 color, 4-bit 16 color, 8-bit color mapped 256 color images, and 8-bit gray scale. This format compresses its image with the LZW compression technique. RasterMan supports 4-bit 16 color files, 8-bit gray scale, and 8-bit color mapped.

WMF

Windows Metafiles are not bitmap based images. A Windows metafile consists of a collection of device independent functions that represent an image. When a program loads a metafile, these functions are executed to obtain the image. As a result, RasterMan can only write to this file format.

EPS

Encapsulated Postscript files are used primarily on Postscript printers. These printers offer a greater variety of fonts and higher resolution than standard laser printers. EPS files will work on any Postscript compatible printer. RasterMan can only write an image to the EPS format.

LEAD CMP

LEAD's CMP compression file format was created by LEAD Technologies, Inc., and delivers a much smaller file size and better image quality than other compression techniques, including JPEG. This format supports the compression of 8-bit gray scale, 8-bit 256 color mapped, 24-bit true color, 32-bit Targa images, and 1-bit black and white images.

JFIF (JPEG)

JFIF, also known as JIFF and JPG, is the JPEG File Interchange Format. It is an industry standard compression format.

JTIF (JPEG)

JTIF also known as JTF is a new extension to the TIFF format. It is becoming an industry standard compression format. This format supports the compression of 8-bit gray scale and 24-bit true color images.

JPEG

JPEG stands for the Joint Photographers Experts Group and grew out of two standardized groups, the CCITT and the ISO. The idea behind JPEG is to provide a unified standard under which hardware and software developers can operate. Images compressed with JPEG can be exchanged between a wide variety of platforms and applications. The JPEG specification consists of two parts: lossless encoding and lossy encoding. The lossless compression uses the predictive/adaptive technique and Huffman coding. The lossy compression operates in three steps:

1. Discrete Cosine Transformation
2. Coefficient Quantization
3. Lossless Compression.

RasterMan supports two forms of JPEG: JPEG Interchange File Format (JFIF/JPG) and JPEG TIFF (JTIF). JPEG Interchange File Format (JFIF/JPG) was developed by C-Cube Microsystems and has the following features:

- JPEG compression, JPEG-8R8
- Uses JPEG interchange format compressed image representation
- PC, MAC or Unix compatible
- Standard color space: one or three components. For three components: YCbCr (CCIR 601-256 levels)
- APP0 marker used to specify Units, X pixel density, Y pixel density, thumbnail. APP0 markers are also used to specify application specific information.

JPEG File Interchange Format is entirely compatible with the standard JPEG interchange format; the only additional requirement is the mandatory presence of APP0 marker right after the SOI marker. The APP0 marker is identified by a zero terminated string "JFIF". It provides information that is missing from the JPEG stream: version number, X and Y pixel density, and pixel aspect ratio derived from X and Y pixel density. For more information on the JPEG File Interchange Format, contact C-Cube Microsystems.

Image Conversion

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File Formats Supported

The following table lists the file formats supported.

File Format	Bits Per Pixel	Read	Write
BMP	1	X	
BMP	4, 8, 24 (RLE)	X	
EPS	1, 8, 24	X	
GIF	4	X	
GIF	8	X	
PCX	1	X	
PCX	4	X	
PCX	8, 24	X	
TIF	1 (uncompressed)	X	X
TIF	CCITT	X	
TIF	Group 3 - 1D & 2D	X	X
TIF	Group 4 - fax	X	
TIF	8, 16, 24 (RLE & LZW)	X	X
TGA	8, 16, 24 (RLE)	X	X
TGA	32 with alpha channel	X	X
WMF	8, 24	X	

Conversion Limitation

The conversion process serves two functions. While it allows you to convert from one file format to another, it also provides "on the fly" resizing of an image. The conversion process will take longer if the image has to be resized.

Converting 8-bit Images

When converting a file from 16, 24, and 32-bit image to an 8-bit format, RasterMan must go through an optimization process to best represent the image using the 256 color limitation for 8-bit images. Once a file is converted to 8-bit, some of the original colors are lost. Also, the newly created 8-bit image cannot be converted back to the original image format and retain its original colors.

Converting to 24-bits or higher

When converting 24-bit format to another 24-bit format, the image retains all the original color information. Note that it would not be practical to convert a 24-bit file to a 32-bit TGA file unless there is a specific use for the new file. Also, when converting to a 32-bit TGA file, the alpha channel will be filled with zeroes unless the ALF file is in the same directory.