

# Enhanced Printer Driver Toolkit

## for use with PMfax Pro and PMfax LAN

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# Chapter 1 - Understanding the Printer Driver

## Overview and System Requirements

Keller Group's *PMfax* products are available in single line, multiline and LAN versions. They have been published under license by several vendors under several names, including *FaxWorks Pro for OS/2* (from Global Village Communication) and *OpenPort for OS/2* or *Corporate PMfax* (from NiteHawk/Open Port Technology). Provided that you have a current version of the products, the features of the various products are the same. For convenience, this manual will refer to Keller's fax product as *PMfax*, but you can also use the enhanced printer driver with *FaxWorks Pro for OS/2*, *OpenPort* or other licensed Keller fax products.

Other applications can use PMfax as their fax server. The complexities of creating fax documents and dealing with fax hardware are encapsulated in PMfax, and by using the services of PMfax, the applications will automatically work with all types of fax hardware supported by PMfax.

The PMfax printer driver (FxPrint) provides special commands that can be used by other applications to create and send fax documents. For example, another program could convert an email message into a fax document and spool the fax document to PMfax for transmission. Or the developer of a word processor with a mail merge feature could implement a "fax merge" feature which automatically transmits fax documents using PMfax.

You can use the printer driver commands for many purposes. For example, you might wish to use the printer driver commands that are described in this manual to do the following:

- By copying text to the printer driver's LPT device, you can convert ASCII text into a fax document using your choice of fonts, and you can optionally send the fax document.
- By copying a few commands to the LPT device, you can send a cover-page-only note or a multipage fax document to a specified fax number, or broadcast the fax to multiple people.
- Using some of the advanced commands, you can create fax documents by pasting in images, filling in forms, drawing lines/boxes/arcs, and attaching other fax documents.
- When printing from DOS or Windows, you may be able to include printer driver commands within the document itself. Provided that these commands are in a "printer font" which will pass through to our OS/2 fax printer driver as readable text, the printer driver will remove them from the document and apply the commands to the print job.
- By placing commands in a special file, you can tell the printer driver to automatically send the next print job to a specified fax number. Many applications can use their built-in macro language to write the file.

**The enhanced printer driver is upwardly compatible with the standard fax printer driver, but provides additional printer driver commands for fax document creation and spooling.** You can use this enhanced printer driver as a replacement for the printer driver that came with your PMfax product.

**The printer driver is hardware-independent and supports all configurations of the PMfax products.** Applications that you write using the printer driver will work with all fax hardware that is supported by the PMfax products, and will also work with the multiline and LAN versions of PMfax.

**On OS/2, the printer driver is a true 32-bit OS/2 printer driver for use on OS/2 WARP/3.0 or later.** (Contact us if you need the printer driver for OS/2 Version 2.0 or 2.1.) It supports printing and fax spooling from OS/2 applications, Windows applications, DOS applications, command files, drag-and-drop text files, or even text files that you simply copy to the LPT device.

**You may distribute the enhanced printer driver with your applications.** There is no royalty for runtime use of the enhanced printer driver provided that a licensed copy of PMfax is present on the delivery system. If you wish to use the printer driver without also using the PMfax products, you must obtain printer driver licenses from Keller Group.

**The printer driver can be used with the API Toolkit and REXX API.** Even if you are using the API for your application, you may still want to use the printer driver for certain tasks. For example, converting ASCII text into fax files is best done with the printer driver, and the printer driver includes a >>FILE command so that you can just use the printer driver for ASCII conversion and then directly deal with the fax document file using API calls. The API Toolkit and REXX API also include "TextToFax" calls which use the printer driver.

**Note:** The API Toolkit provides extensive features for sending, receiving, status reporting, format conversion and other internal features of the PMfax engine. It is intended for programmers using the C language or other 2 languages that can call DLL files, and programming experience is required. The API provides a powerful interface for developing client-server applications that use the fax engine, including support for stand-alone, LAN and multiline versions.

## How the Printer Driver and Fax Program Work Together

The printer driver creates TIFF Class F fax files. The input to the printer driver can be of various types from various sources: plain text, printer data for an emulated printer type, OS/2 GPI calls, etc. But regardless of the type of input, the output will be a TIFF-F file that contains one or more pages of fax image data that is suitable for transmission by the PMfax program.

If desired, the printer driver can also create a record in the PMfax program's log file to spool the fax document for transmission. The printer driver doesn't do the actual sending.... that's the job of the PMfax program. But by creating the log record, the printer driver can tell the PMfax program to send the fax document, and the PMfax program can then send the fax automatically.

Using the FxPrint printer driver will not interfere with current fax sending or receiving that is being done by the PMfax program. The end user can continue to use the PMfax program and FxPrint printer driver normally. Multiple applications can use the FxPrint printer driver without conflicting.

## Printer Driver Command Syntax

The printer driver commands have a simple syntax. A command must start at the beginning of a line, and all text until the end of the command's line is assumed to be part of the command. All command lines start with a special tag that consists of two greater-than characters (">>"), the command name in upper case, and an equal sign ("="). Everything on the command's line after the equal sign is the parameter list for the command. The parameter list is a "Comma-separated value" list where parameters are interpreted just like the elements in a fax phone book record (i.e., parameter values that contain comma characters or double quotation marks must be enclosed in double quotation marks, and double quotation marks that are part of a parameter value must be doubled). If an asterisk ("\*") is specified for a parameter, the default value for the parameter is used.

The FxPrint printer driver can only interpret the special commands if it receives them as ASCII text. It can't recognize the commands if they have been converted to a printer-specific or graphics format. For example:

1) When printing from OS/2 applications, you usually cannot include the printer commands in your document and expect the printer driver to see the commands. Because of the way that OS/2 applications generally do printing, the printer driver does not

get an opportunity to see the printer command text. If your application prints in a plain ASCII mode directly to the LPT device, or if you use your editor to create a plain ASCII file that you copy to the LPT device, then you can include the printer commands in your file.

2) When printing from DOS or Windows applications running on OS/2, you may be able to include printer commands within the document itself. Provided that these commands are in a "printer font" which will pass through to our OS/2 fax printer driver as readable text, the printer driver will remove them from the document and apply the commands to the print job. You can also use the FAX.GGS file rather than placing the printer commands in your word processor's file.

3) If you are using the OS/2 Workplace Shell's drag-and-drop feature to drop your text file on the FxPrint printer object, your file object's type must be *Printer-specific* rather than *Plain Text*. When a *Plain Text* file object is dropped on a printer object, the Workplace Shell does the text-to-image conversion, and this prevents the printer object from interpreting the special commands.

## Command Overview

### Send and Cover Sheet Commands

Commands from this group are used to specify cover sheet, header line and destination information for the fax document. If a destination fax number is specified, then the printer driver's pop-up dialog box will be suppressed and the fax document will be directly spooled for transmission, otherwise (assuming the send pop-up action is selected in the FxPrint printer object's job properties) the pop-up dialog box will be displayed with any specified >>FROM=, >>INFO= and >>AT= command information overriding the default field values. If information that will appear on the cover page is specified, then the cover page is enabled, otherwise the cover page is disabled. If header line text is specified, then header lines are enabled, otherwise header lines are disabled.

The send commands include the following commands:

- >>FROM specifies the sender information that will appear on the cover sheet (and implicitly enables the generation of a cover sheet).
- >>INFO specifies the page header, cover page size, cover page comment, cover page bitmap, and log record note text.
- >>AT specifies the time and date of transmission for delayed sending, and/or the fax priority.
- >>TO specifies the name, company and fax number for the transmission. Use of this command suppresses the pop-up dialog box for sending. Multiple >>TO commands can be used, and will cause the fax document to be spooled to each recipient (i.e., broadcast).

### Text Conversion and Page Layout Commands

Any text lines that do not start with a command tag are interpreted as normal text that is to be placed in the fax document. The text is placed on the fax page using the current font and point size. A default margin is automatically placed at the top, left and bottom sides of the page, or you can specify your own margin values using the >>MARGIN command.

Text lines will automatically wrap to successive lines, or you can insert necessary carriage return and line feed characters. A new page is automatically started when the text reaches the bottom margin, or you can force a new page using a form feed character or the >>PAGE command.

By default, the characters are placed on the fax page using 10 point Courier font with tab stops of 8 character widths. The >>FONT command can be used to change the font, point size and tab size values. Any of the fonts that you have installed in OS/2 can be selected.

Explicit text positioning is supported by the >>POSITION command. This can be used filling in forms or placing text at any desired location on the page.

**Note:** The >>FONT, >>PAGE and >>MARGIN commands are only recognized when the printer object is configured with *Emulation* set to >>FONT. If a different printer emulation mode is used, you must use the printer control codes of the emulated printer to control fonts and page layout, and the commands themselves are treated as normal text.

The commands that are related to text operations include the following:

- >>FONT specifies the font name, point size and tab size value for text that will follow.
- >>PAGE specifies the length and orientation of the page.
- >>DOC splits mail merge output into separate fax jobs
- >>MARGIN specifies the page margins for text.
- >>POSITION specifies the "cursor position" at which the next text will be placed.

## Graphics and Drawing Commands

Commands from this group can be used to paste images on the page, draw lines, draw borders or boxes, or draw arcs. When pasting a bitmap image, you can either paste it at its actual size or specify the size, in which case the image will automatically be reduced or enlarged to the size that you specify. The drawing commands allow you to automatically draw rounded box corners and support a selection of line types.

The graphics and drawing commands include the following:

- >>PASTE pastes a bitmap image at a specified location in either its actual size or a specified size.
- >>LINE draws lines, including support for an optional intermediate point (curves) and various lines types.
- >>BOX draws boxes, including support for curved corners and various lines types.
- >>ARC draws a circle or ellipse, or a portion of it, with specified radius, start angle, sweep angle and line type.

## File Commands

You can attach other existing fax documents to your document or specify a file name for your fax document. The >>APPEND command is typically used for adding attachments. The >>FILE command is usually used when you are using the printer driver for document creation but then wish to use the fax document in some special way, such as using the API for sending rather than using the >>TO commands.

The file commands include the following:

- >>APPEND appends a specified TIFF Class F fax document file to your fax document.
- >>FILE causes the fax file to be stored in the specified file name rather than placed in the fax log. If this command is used, any send commands (>>FROM, >>INFO, >>AT, >>TO, etc.) are ignored and no entry will be added to the fax log.

## Index and Tag Values

The FxPrint printer driver and PMfax program use an *index* number to identify internal fax documents. A unique index value is automatically assigned when a new internal fax document file is created, and the index value is used for creating the file name. For example, the fax document for index "123" is stored in the file "fx000123.fax". The index is displayed in the "Id" field in PMfax's fax log display (which is displayed by the **Fax Open log** command in PMfax).

It is easy and efficient to send the same document to many recipients (i.e., to "broadcast" the document). PMfax can keep a single copy of the fax document on disk even though you are sending the document to many different recipients. PMfax can dynamically add cover sheet and header line information to a fax document, so a single copy of the fax document can be shared even when each recipient is getting customized cover page and/or header line information. Since the index value identifies the fax document, there can be many records in the fax log with the same index value.

But what if you are using the API along with the printer driver, and you want to spool a fax document through the printer driver and later use the API to check on whether or not it was successfully transmitted? If the index value can be used by many different send requests, how do you track the success or failure of *your* send request?

The answer is to use a *tag* value for your send request. Tags are described in more detail in the API Developer's Manual. By using the API calls to obtain a unique job tag and supplying this tag to the >>TO command, you can use the tag value to monitor the status of the job using other API calls. If you aren't using the Fax API together with the printer driver, then you can ignore the tag value.

# Chapter 2 - Installing and Getting Started

## Installing the Enhanced Printer Driver

With PMfax version 3.2 and later, the enhanced printer driver commands are included in the standard FxPrint printer driver. The commands are automatically enabled if you are running PMfax Pro or PMfax LAN on your system. (The Lite/evaluation versions will not enable the enhanced printer driver commands, but once you purchase a Pro or LAN version and install the serial number, the commands will be enabled.)

With earlier PMfax versions, please contact Keller Group to request a serial number if you are a licensed user of a PMfax retail product and wish to enable the enhanced printer driver commands. Other than installing the serial number on your system, no special installation is required for using the Enhanced Printer Driver commands.

See the Download area at the Keller Group web site for the Printer Toolkit File. This download file contains the example files that are discussed in the this manual (example text files, code examples, and data files that are used by the examples). These files can be placed in any desired directory. Note that some of the example files and programs reference other files. The path for these files is "C:\PMFAX". If your toolkit is installed in a different directory, the .C and .TXT sample files will need to be changed accordingly.

Remember that the printer driver creates the fax document file, but it is your main fax program which does the actual fax sending. A licensed copy of PMfax must be used to provide the fax sending services.

Also note that you can create multiple printer objects for the same printer driver some platforms (including OS/2). You might want one printer object on the LPT3 device for your applications which use the enhanced printer driver commands (with *Emulation of >>FONT in its Job properties*) and another printer object on the LPT2 device for use by your DOS or Windows applications which need Proprinter or PCL emulation for their fax printing. Both of these printer objects can specify FxPrint as their printer driver. See the LPT49 utility which come with PMfax if you need to create additional OS/2 LPT ports for use by multiple printer objects.

## Getting Started with the Enhanced Printer Driver

First be sure that you are comfortable with the normal "end user" printer driver usage. See the PMfax User's Manual for information on printing to the printer driver from DOS, Windows and OS/2 applications.

To get started with the advanced features, look at the example programs in the next chapter. Also consult the Command Reference chapter for details about the individual commands that are of interest.

The example files are included in your Printer Driver Toolkit files. We strongly encourage you to experiment with the examples and to modify them to create your own examples. Several different types of examples are provided, and there is probably an example that can serve as a good starting point for your application.

## Getting Technical Support

To receive support for questions about the enhanced printer driver or product licensing, please contact us by e-mail at [support@cds-inc.com](mailto:support@cds-inc.com). Try to include sufficient information to allow us to recreate a problem or research the question. We will contact you by e-mail with a response.

Note that fax sending and receiving is NOT handled by the enhanced printer driver. The printer driver creates the fax document file and optionally spools it for transmission, but it is the PMfax program that does the actual transmission.

For fax sending or receiving problems with your fax hardware, please use the -V parameter when starting the PMfax program to capture debugging information. This is described in the **Startup Parameters** section of the Reference Manual. If you start the program with the -V parameter, recreate the sending or receiving problem and then exit the program, the VOUT file will contain several pages of detailed information about the program, your fax hardware, and the commands and responses between the program and your fax hardware. Please include the VOUT file with your e-mail message for analysis.

# Chapter 3 - Example Files and Programs

## Converting and Sending Text

Printer driver commands can be included in text that is written to the FxPrint printer object's logical printer device (such as LPT3). While there are many ways to write text data to a logical printer device, it can be as simple as using a COPY command. For example, by placing appropriate command text and document text in a file, a fax document can be created and transmitted by simply copying the file to the printer device with the command:

```
COPY filename LPT3
```

You can also use the OS/2 Workplace Shell's drag-and-drop feature to drop a text file on the FxPrint printer object, but be sure that your file object's type is *Printer-specific* rather than *Plain Text*.

**Important:** When a *Plain Text* file object is dropped on a printer object, the OS/2 Workplace Shell does the text-to-image conversion, and this prevents the printer driver from seeing the special commands. *Printer-specific* files are sent directly to the printer driver, thereby allowing the file to contain the special printer driver commands.

If every line in the text file is a printer driver command line (i.e., every line starts with a valid >> command name), then a cover-page-only fax is created. Including any lines of "normal" text (i.e., lines that don't start with valid >> commands) causes a fax document to be created. A cover page is automatically enabled if certain cover page information is specified, but you can explicitly disable the cover page if you desire (see the >>INFO command in the Command Reference chapter).

The TESTTEXT.TXT example file (shown below) demonstrates how to use printer driver commands for selecting fonts, converting text into a fax image, and automatically sending the resulting fax document. By copying this file to the logical printer device (e.g., LPT3), a fax document that contains text in several different fonts and point sizes will be created and sent to three recipients.

```
>>FROM=Joe Sender, Joe's Company Inc., 555-7788, 555-7766
>>INFO=Comment text for cover page, Joe's Co. Inc., Test,*
>>AT=5p, 3may97
>>TO=Bill Smith, Smith Corp.,555-5555
>>TO="Jim "JB" Brown", Brown & Sons, 555-9999
>>TO=Mark Jones, "Universal Fax, Inc.", 1 (213) 555-1122
```

This text will appear in the default font (Courier 10 point).

```
>>FONT=,16
```

Or you can make the current font bigger (this is Courier 16 point).

```
>>FONT=Courier Bold Italic,18
```

This text will be even bigger, bolder and italic.

You can have as many lines of text as you want.

When the end of the page is reached, a new page is started.

The default page length is a job property of the printer object, or can be changed on a page-by-page basis with the >>PAGE command.

```
>>FONT=Helvetica
```

This will be in Helvetica font, still in the 18 point size.

```
>>FONT=Times New Roman, 90
```

This is HUGE!

```
>>FONT=*,*
```

And back to the default font (Courier,10 point).

Go ahead and try it! If you like, you can remove the >>AT line and edit the >>TO lines to actually send the fax document.

The *Emulation* setting in the FxPrint printer object's *Job Properties* must be set to >>FONT to use some of the printer driver commands (those that deal with fonts, graphics, etc.). If you have the printer object's *Emulation* job property set to a different printer emulation setting, then the >>FONT commands are ignored. When the printer driver is emulating a different printer

type, it assumes you will use that printer's control codes to select fonts and other attributes, so some of the printer driver commands (like >>FONT) will be ignored.

## Using Drawing and Pasting Commands

The TESTDRAW.TXT file demonstrates some of the fun commands in the enhanced printer driver. Try copy it to your FxPrint printer and then use your fax program to view the fax document.

```
>>REM= Draw two curved lines one thick (.1"), one dash-double-dot
>>LINE= 150,900, 650,400, 650,900, 10
>>LINE= 150,150, 300,500, 650,150, -6

>>REM= Draw 3/4 of a circle, pie-wedge lines, and other circles
>>ARC= 400,200, 50,50, 270,270
>>LINE= 350,200,,, 400,200
>>LINE= 400,200,,, 400,150
>>ARC= 350,150, 12,12
>>ARC= 300,100, 12,12

>>REM= Draw one diagonal straight thin line
>>LINE= 150,400,,, 650,700

>>REM= Draw a box with rounded corners (1.25" radius) and thick (.2") lines
>>BOX= 50, 50, 750,1000, 125,20

>>REM= Shrink a bitmap, place on page, and put a box around it
>>REM= NOTE: the paste command needs ABSOLUTE paths only! The printer
>>REM= driver runs in a different directory than your application.
>>PASTE=c:\PMfax\Support.bmp, 300,650, 500,900
>>BOX= 300,650, 500,900

>>REM= Draw an ellipse (3" by 1" radius) with long-dash line type
>>ARC= 400,525, 300,100,,, -5

>>REM= And put some text in the ellipse
>>FONT= Helvetica Bold Italic, 25
>>POSITION= 285,540
This is a test
```

As described above, be sure that the printer's *Emulation* job property is set to >>FONT so that the drawing commands will work. If the printer's *Action* job property is set to *Send pop-up*, you will get a pop-up dialog box from the printer driver (because the file doesn't include a >>TO command), but you can press the *Cancel* button to cancel sending, and this will leave the fax document in the fax log with a *Print* status.

Also, you might need to change the >>PASTE pathname to match your system in order to paste the bitmap file.

You can use the PMfax or FaxWorks program to create OS/2 bitmap files.

## Filling in Forms and Attaching Fax Documents

The TESTFORM.TXT example file demonstrates a way to fill out a form by pasting the form image and positioning text on the form. You can also use other techniques for creating the form (for example, the drawing commands, or as we'll see later, GPI commands in OS/2 programs).

This example also shows how to append an existing fax document (stored as a TIFF Class F file, like the files that fax program uses and exports with the Fax/Save file command).

Remember to change the pathnames for the >>PASTE and >>APPEND commands to match your system.



```

>>REM=
>>REM=  Specify queuing info
>>REM=
>>FROM=Joe Developer,Joe's Development Inc,555-555-6666,555-555-7777
>>TO=Technical Support,Keller Group Inc.,1 651 653-1987
>>INFO=Please read this fax,Joe's Dev. Inc.,*
>>AT=11p,1jan99
>>REM=
>>REM=  Paste in form to fill in
>>REM=
>>REM=  NOTE: the paste command needs ABSOLUTE paths only! The printer
>>REM=  driver runs in a different directory than your application.
>>POSITION=30,1010
>>PASTE=c:\PMfax\Support.bmp
>>REM=
>>REM=  Specify text type and size
>>REM=
>>FONT=Courier Bold Italic,14
>>REM=
>>REM=  And position each text item
>>REM=
>>POSITION=310,594
Joe Developer
>>POSITION=310,571
Joe's Development Inc.
>>POSITION=310,548
Tech Town, Minnesota, 55555
>>POSITION=310,502
555-555-6666
>>POSITION=310,479
555-555-7777
>>POSITION=310,433
Keller Group Inc.
>>POSITION=310,410
Jan 1, 1999
>>POSITION=310,387
1.41c
>>POSITION=310,340
Zoom
>>POSITION=310,317
V.32bis 14.4
>>POSITION=310,294
OS/2 2.1
>>POSITION=150,221
>>REM=
>>REM=  Set margin to 1.5" for comment paragraph
>>REM=
>>MARGIN=150
Thank you for providing such a wonderful product.
The API is working great with our application. I
have some suggestions for furture features,
should I fax them to you now or later?
>>REM=
>>REM=  Append a tiff-F page
>>REM=

```

```
>>APPEND=c:\PMfax\Ccitt.tif
>>REM=
>>REM=   And append a text page with default margin and font
>>REM=
>>MARGIN=*
>>FONT=*,*
```

If you have purchased a multi-line version of the program, you can install multiple fax hardware devices and fax telephone lines, and then do simultaneous fax sending and/or receiving on these lines. Different versions of the fax software are available to support a maximum of 2, 4, 8, 16, 32, or 48 lines, but the practical limit may be determined by your type of fax hardware.

On a given CPU, the multiple fax hardware devices must be of the same type. A single Options/Configure screen controls the configuration for all the fax hardware devices. The Options/Ports screen is used to configure the individual fax lines for sending, receiving or both. The selected lines are automatically used for simultaneous sending/receiving.

----

The result of copying this file to the FxPrint printer is a three-page fax document.

## Writing to the LPT Device from Programs

Programs can also open the logical device and then directly write ASCII characters to the device. The printer driver commands can be used by all programs and command files that can access the logical device, including OS/2 programs and command files, DOS programs and command files, Windows programs, and even workstations that are using the logical printer device across a LAN as a shared LAN printer device.

The PRTLPT.C sample program shows how a program can write text to the FxPrint printer's LPT device (LPT3 in this example) using either explicit strings or data that is read from another text file.

```
/* PrtLpt.c program for Enhanced Printer Driver
 * FxPrint Copyright (c) 1993-1999 Keller Group Inc. All rights reserved.
 */
```

```
#include
```

```
int
main(
    void )
{
    FILE *fp, *fp2;
    char buf[ 256 ];

    fp = fopen( "LPT3", "w" );
    if ( fp == NULL ) {
        printf( "can't open printer\n" );
        return( 1 );
    }

    fprintf( fp, ">>PASTE=c:\\PMfax\\Support.bmp\n" );
    fprintf( fp, ">>FONT=Courier Bold Italic,14\n" );
```

```

fprintf( fp, ">>POSITION=310,594\n%s\n", "Joe Developer" );
fprintf( fp, ">>POSITION=310,571\n%s\n", "Joe's Development Inc." );
fprintf( fp, ">>POSITION=310,548\n%s\n", "Tech Town, Minnesota, 55555" );
fprintf( fp, ">>POSITION=310,502\n%s\n", "555-555-6666" );
fprintf( fp, ">>POSITION=310,479\n%s\n", "555-555-7777" );
fprintf( fp, ">>POSITION=310,433\n%s\n", "Keller Group Inc." );
fprintf( fp, ">>POSITION=310,410\n%s\n", "Jan 1, 1999" );
fprintf( fp, ">>POSITION=310,387\n%s\n", "1.41c" );
fprintf( fp, ">>POSITION=310,340\n%s\n", "Zoom" );
fprintf( fp, ">>POSITION=310,317\n%s\n", "V.32bis 14.4" );
fprintf( fp, ">>POSITION=310,294\n%s\n", "OS/2 2.1" );
/*
 * Add a comment from a text file
 */
fprintf( fp, ">>POSITION=150,221\n" );
fprintf( fp, ">>MARGIN=150\n" );
fp2 = fopen( "C:\\PMfax\\test.txt", "r" );
if ( fp2 != NULL ) {
    for (;;) {
        if ( fgets( buf, sizeof( buf ), fp2 ) == NULL )
            break;
        fputs( buf, fp );
    }
}
fclose( fp2 );

fclose( fp );
return( 0 );
}

```

## Using Commands in Advanced OS/2 Applications

Developers of applications that support printing to OS/2 printer drivers can extend their applications to directly spool fax documents by adding a few additional calls to their normal printing code. This is true even for applications that use GPI calls for printing (i.e., applications that support fonts and graphics).

The PRTGPI.C example program is a working example of doing true OS/2 printing. The code also shows how the >>TO command and other printer driver commands can be passed to the FxPrint printer driver before issuing the application's standard printing commands.

The fax document created by the PRTGPI.C program will look like the following, and the code is included below:

**Note:** You must be the developer (not just a user) of the OS/2 application to use this method. Developers can use this method to provide a Fax command within their application, to add a fax merge option as part of their mail merge feature, or to build other fax transmission features directly into their program.

If you are a user of the application (but not the developer of the application), then you will generally need to use either the printer driver's pop-up dialog box or the method described in the next section (FAX.GGS file) for sending fax documents from the OS/2 application.

```

/* PrtGpi.c program for Enhanced Printer Driver
 * FxPrint Copyright (c) 1993-1999 Keller Group Inc. All rights reserved.
 */

```

```

/* If set, writes output to 'File.tif' instead of queuing to log */
#define DIRECT_TO_FILE 0

```

```

#define INCL_DOS
#define INCL_DOSERRORS
#define INCL_PM
#define INCL_GPI
#define INCL_SPL
#define INCL_SPLDOSPRINT
#include
#include
#include
#include

VOID
disp_error(
    const char *format,
    ... )
{
    va_list args;
    CHAR msg[ 256 ];

    va_start( args, format );
    vsprintf( msg, format, args );
    va_end( args );

    WinMessageBox( HWND_DESKTOP, HWND_DESKTOP, msg, "PrtGpi", 0,
        MB_OK | MB_INFORMATION | MB_SYSTEMMODAL );
}

int
main(
    VOID )
{
    HAB prn_hab;
    HMQ prn_hmq;
    HDC prn_hdc = DEV_ERROR;
    HPS prn_hps = GPI_ERROR;
    ULONG rc, ul, index;
    LONG n;
    BYTE buf1[ 1024 ], buf2[ 1024 ];
    PCHAR cp;
    PPRQINFO3 prq3;
    PPRDINFO3 prd3;
    SIZEL sizl, page;
    SIZEF sizfx;
    POINTL ptl;
    FATTRS fat;
    DEVOPENSTRUC dop;
    PCHAR queue = "FxPrint";
    PCHAR title =
        "JoeFax";
#if !DIRECT_TO_FILE
    PCHAR from =
        ">>FROM=Joe Developer,Joe's Development Inc, "
        "555-555-6666,555-555-7777\r";
    PCHAR to =
        ">>TO=Technical Support,Keller Group Inc.,1 651 653-1987\r";

```

```

PCHAR info =
    ">>INFO=Please read this fax,Joe's Dev. Inc.,*\r";
PCHAR at =
    ">>AT=11p,1jan99\r";
#endif
PCHAR text =
    "This is a test print, ok?";

prn_hab = WinInitialize( 0 );
prn_hmq = WinCreateMsgQueue( prn_hab, 0 );
/* Not a full PM thread with msg loop, so ignore shutdown msgs */
WinCancelShutdown( prn_hmq, TRUE );

rc = SplQueryQueue( NULL, queue, 3,
    buf1, sizeof( buf1 ), &ul );
if ( rc != NO_ERROR ) {
    disp_error( "Can't find '%s' printer queue. (%u)", queue, rc );
    goto out;
}
prq3 = (PVOID)buf1;

if ( SplQueryDevice( NULL, prq3->pszPrinters, 3,
    buf2, sizeof( buf2 ), &ul ) != NO_ERROR ) {
    disp_error( "Can't find '%s' printer. (%u)", prq3->pszPrinters, rc );
    goto out;
}
prd3 = (PVOID)buf2;

memset( &dop, 0, sizeof( DEVOPENSTRUC ) );
dop.pszDriverName = prq3->pszDriverName;
cp = strchr( dop.pszDriverName, '.' );
if ( cp != NULL )
    *cp = '\0';
dop.pdriv = prq3->pDriverData;
dop.pszDataType = "PM_Q_RAW";
dop.pszComment = title;
#if DIRECT_TO_FILE
dop.pszLogAddress = "File.tif";
prn_hdc = DevOpenDC( prn_hab, OD_DIRECT, "",
    sizeof( dop ) / sizeof( PVOID ), (PVOID)&dop, 0 );
#else
dop.pszLogAddress = prd3->pszLogAddr;
prn_hdc = DevOpenDC( prn_hab, OD_QUEUED, "",
    sizeof( dop ) / sizeof( PVOID ), (PVOID)&dop, 0 );
#endif
if ( prn_hdc == DEV_ERROR ) {
    disp_error( "Open DC failed. (%04X)",
        ERRORIDERROR( WinGetLastError( prn_hab ) ) );
    goto out;
}

sizl.cx = sizl.cy = 0;
prn_hps = GpiCreatePS( prn_hab, prn_hdc, &sizl,
    GPIF_DEFAULT | GPIT_NORMAL | GPIA_ASSOC | PU_LOENGLISH );
if ( prn_hps == GPI_ERROR ) {

```

```

        disp_error( "Create PS failed. (%04X)",
            ERRORIDERROR( WinGetLastError( prn_hab ) ) );
        goto out;
    }

    DevQueryCaps( prn_hdc, CAPS_WIDTH, 2, (PVOID)&page );
    GpiConvert( prn_hps, CVTC_DEVICE, CVTC_WORLD, 1, (PVOID)&page );

    if ( DevEscape( prn_hdc, DEVEESC_STARTDOC, (LONG)strlen( title ), title,
        NULL, NULL ) != DEV_OK ) {
        disp_error( "StartDoc failed. (%04X)",
            ERRORIDERROR( WinGetLastError( prn_hab ) ) );
        goto out;
    }

    memset( &fat, 0, sizeof( FATTRS ) );
    fat.usRecordLength = sizeof( FATTRS );
    fat.usCodePage = (USHORT)GpiQueryCp( prn_hps );
    fat.fsFontUse = FATTR_FONTUSE_TRANSFORMABLE;
    strcpy( fat.szFacename, "Helvetica Bold Italic" );
    GpiCreateLogFont( prn_hps, NULL, 1, &fat );
    GpiSetCharSet( prn_hps, 1 );
    sizfx.cx = MAKEFIXED( 40, 0 );
    sizfx.cy = sizfx.cx;
    GpiSetCharBox( prn_hps, &sizfx );

```

```

#ifdef !DIRECT_TO_FILE
    /* Send spooling info to driver */
    DevEscape( prn_hdc, DEVEESC_RAWDATA, (LONG)strlen( from ), from, NULL, NULL);
    DevEscape( prn_hdc, DEVEESC_RAWDATA, (LONG)strlen( to ), to, NULL, NULL);
    DevEscape( prn_hdc, DEVEESC_RAWDATA, (LONG)strlen( info ), info, NULL, NULL);
    DevEscape( prn_hdc, DEVEESC_RAWDATA, (LONG)strlen( at ), at, NULL, NULL);
#endif

```

```

    ptl.x = (page.cx * 1) / 10;
    ptl.y = (page.cy * 1) / 10;
    GpiMove( prn_hps, &ptl );
    ptl.x = (page.cx * 9) / 10;
    ptl.y = (page.cy * 9) / 10;
    GpiBox( prn_hps, DRO_OUTLINE, &ptl, 50, 50 );

    ptl.x = (page.cx * 2) / 10;
    ptl.y = (page.cy * 8) / 10;
    GpiCharStringAt( prn_hps, &ptl, (LONG)strlen( text ), text );
    ptl.y = (page.cy * 7) / 10;
    GpiCharStringAt( prn_hps, &ptl, (LONG)strlen( text ), text );
    ptl.y = (page.cy * 6) / 10;
    GpiCharStringAt( prn_hps, &ptl, (LONG)strlen( text ), text );

    GpiSetLineWidth( prn_hps, MAKEFIXED( 25, 0 ) );
    ptl.x = (page.cx * 2) / 10;
    ptl.y = (page.cy * 2) / 10;
    GpiMove( prn_hps, &ptl );
    ptl.x = (page.cx * 8) / 10;
    ptl.y = (page.cy * 5) / 10;

```

```

GpiBox( prn_hps, DRO_OUTLINE, &ptl, 100, 100 );

index = 0;
n = sizeof( index );
if ( DevEscape( prn_hdc, DEVESC_ENDDOC, 0, NULL, &n, (PBYTE)&index )
    == DEVESC_ERROR ) {
    disp_error( "EndDoc failed. (%04X)",
        ERRORIDERROR( WinGetLastError( prn_hab ) ) );
    goto out;
}
if ( n == sizeof( index ) )
    disp_error( "Job spooled. Index=%u\n", index );

out:
if ( prn_hps != GPI_ERROR )
    GpiDestroyPS( prn_hps );
if ( prn_hdc != DEV_ERROR )
    DevCloseDC( prn_hdc );
WinDestroyMsgQueue( prn_hmq );
WinTerminate( prn_hab );
return( 0 );
}

```

## Using the FAX.GGS File for Automatic Faxing

The printer driver looks for a file called FAX.GGS in the fax data directory when starting a print job. If it finds this file, it assumes that the file contains printer driver commands and it applies these commands to the print job. For example, if the FAX.GGS file contains the line ">>TO=,555-5555", the printer driver will spool the fax for transmission to 555-5555. The printer driver deletes the FAX.GGS file, so the contents of the FAX.GGS file apply only to one print job.

This works regardless of the type of printing - from an OS/2 application, from a DOS application, from a Windows application, or from a text file that is copied to the FxPrint LPT device. It works for plain text printing and for emulation printing (Proprinter, or the optional PCL feature). If your word processor, spreadsheet program, database program or report generator can write the FAX.GGS file using its macro language, it can now send a fax!

Functionally, this approach is similar to the way that some Windows fax products support DDE for specifying a fax number, but it's more general since you only need to write a file and the file can contain as many lines of >> commands as you desire.

**CAUTION:** The FAX.GGS contents will be used for the "next" print job. To ensure that the correct print job is transmitted, make sure that no other program prints to the printer driver between the time that you write the FAX.GGS file and the start of your print job. This is only a concern when using the FAX.GGS file method for passing the commands to the printer driver. The other methods include the printer commands within the printer data stream itself, thereby ensuring that the commands apply to the intended fax document.

As an example, you can use DeScribe's mail merge feature for automatically building and sending fax documents by using a DeScribe macro that places commands in the FAX.GGS file.

[Note that DeScribe 5.0 directly supports fax merging with PMfax/FaxWorks for OS/2, so this macro is not needed when using DeScribe 5.0, but still serves as a useful example of using the FAX.GGS file.]

```

! This DeScribe macro allows the DeScribe "Mail Merge" feature to
! automatically fax each merged letter using FaxWorks OS/2 or PMfax.
! This is written for DeScribe version 4.0 and FaxWorks version 1.30
! or later. It was tested on DeScribe 4.0 Revision C (32-bit).
!
! This macro works by taking advantage of the following features:
!

```

A) In DeScribe version 4.0, the Utilities/Merge/Insert field command allows you to specify a macro file that is played when DeScribe finds the data for the merge field.

B) In FaxWorks/PMfax version 1.30 or later, the fax printer driver automatically looks for a file called FAX.GGS in the fax log directory (the directory where the FAX.LOG file is located) when starting a print job. If found, it assumes that FAX.GGS contains printer driver commands (see Appendix F of the FaxWorks manual). For example, if the FAX.GGS file contains ">>TO=,,555-5555", the printer driver will automatically spool the fax for transmission. This works regardless of the type of printing... it can be GPI printing from an OS/2 application, printing from DOS or Windows applications, or ASCII text that is copied to the fax LPT device. The printer driver deletes the FAX.GGS file.

To do fax merge from DeScribe 4.0 with this macro:

- 1) Load and compile this macro into DeScribe on your system.
- 2) Follow the procedure for doing "Merge Letters" in your DeScribe 4.0 Reference Manual (NOT the procedure for Merge Fax Forms), and note the following:
  - a) Include a faxnumber field in the data file for your merge. The data for this field should be the complete fax telephone number (including FaxWorks dial macros, if desired) that will be dialed to reach the recipient's fax machine.
  - b) Use DeScribe's Utilities/Merge/Insert field command to insert the faxnumber field in your form letter. When doing so, select this macro in the "Macro file" field on DeScribe's "Insert Field" dialog box. This will cause this macro to play for each merge.
  - c) Use DeScribe's File/Printer setup command to select FxPrint as the printer.
  - d) Use DeScribe's Utilities/Merge/Merge command to see the Merge dialog box, select Printer as the "Merge Results to" choice, and press the "Merge" button to execute the merge operation.
- 3) Each resulting merge letters will be automatically spooled for for transmission. The spooling is done by the fax printer driver. If the fax program is running, it will start sending the fax documents.

You may need to edit the macro for various situations:

- If your fax log directory is not C:\FAXWORKS\, then change the pathname in the macro to refer to your directory.
- If you wish to delay transmission until later rather than having the transmissions start immediately, or use additional commands as described in Appendix F of the FaxWorks manual, edit the macro to also write these command lines to the FAX.GGS file.
- As written, the macro will send each fax document without any additional cover sheet. As documented in Appendix F, a cover sheet is automatically enabled if you specify certain cover sheet information with commands such as >>INFO="Comment text".

CAUTION: The FAX.GGS contents will be used for the "next" print job.



```

!   To ensure that the correct print job is transmitted, make sure that
!   no other programs print to the fax printer driver while your fax
!   merge is in progress.  FOR ANY FAX BROADCAST SITUATION, TEST YOUR
!   PROCEDURES BY FAXING TO YOURSELF FIRST!
!
!   This macro and information is provided without warranty of any kind.
!
!   With previous macro versions, I've seen cases where DeScribe
!   apparently fails to finish the macro before starting the print.
!   This causes this particular print job to miss the FAX.GGS data,
!   thereby failing to automatically send this job (if you get the
!   Send Fax pop-up screen for this job, just press Cancel to leave
!   the document in the fax log as a "Print" status, and you can later
!   view and manually send this document).
!
!   But DeScribe staff tested the macro and added a repeat loop and
!   pauses to ensure that a new FAX.GGS file is not written until
!   the previous one is used (included in the macro below).
!   DeScribe might also provide built-in support for FaxWorks/PMfax
!   fax merging in a future release.
VAR faxNumber          ! the merge data
MACRO FaxSend
  SET faxNumber TO MergeField      !Get fax number from data record
  NewDocument                     !Create a temporary document
  PUT ">>TO=," + faxNumber        !Insert the >>TO=,faxnumber line
  NewLine                         !Put in cr/lf
  Set FileName TO "C:\FAXWORKS\FAX.GGS"
  REPEAT                          !Wait until old file is used/gone
  EXIT WHEN NOT FileNameExists
  PAUSE 3
  END REPEAT
  SaveAsAsciiFile "C:\FAXWORKS\FAX.GGS" !Write it to FAX.GGS file
  SystemTileClose                !Close document and macro
  PAUSE 3
END
MACRO

```

## Chapter 4 - Command Reference

---

### APPEND

#### Description:

The >>APPEND command appends a specified fax document file to your fax document.

>>APPEND=*filename*

*filename* is the full pathname of a TIFF Class F fax document file.

This command reads existing TIFF-F pages into the fax document. The TIFF-F pages can be your entire fax document, or you can use >>APPEND to mix existing document pages with new fax pages created "on the fly".

If the >>APPEND command appears before any data is printed on the current page, then the pages from the file replace the current page. If data has been printed on the current page, the >>APPEND command completes the current fax page and attaches the pages from the file to the end of the current document.

If more text or command lines follow the >>APPEND command line, they will apply to a new fax page that follows the appended fax document.

The >>APPEND command can be used multiple times to append multiple documents.

If necessary, the document that you are appending will automatically be converted to match the resolution of the document that you are constructing (automatic fine/normal conversion). However, note that the quality of your documents can be degraded by converting from fine resolution to normal resolution, so you will get best results if all documents are created at the same resolution.

The fax program stores its faxes in TIFF-F format, and the **Fax Save file** command can be used to save fax documents into named TIFF-F files. The printer driver can also save faxes into named TIFF-F files by using the >>FILE command. A TIFF-F file can contain multiple fax pages.

### Required Printer Settings:

*Emulation* must be >>FONT. If a different printer emulation mode is used, the command line is treated as normal text.

### Examples:

```
>>APPEND=C:\FAX\PRICELST.TIF      adds a copy of the specified document to
                                   the end of the new fax document
```

---

## ARC

### Description:

The >>ARC command draws a circle or ellipse, or a portion of it, with specified radius, start angle, sweep angle and line type.

>>ARC= *x, y, rx, ry, st, sw, lt*

*x, y* are the coordinates for the center of the ellipse. Coordinates are measured in hundredths of an inch. The bottom left corner of the page is 0, 0. For an 8.5" x 11" page, the top right corner of the page is 812, 1028. (A small border around the edge of the page is unused for compatibility with other printers and fax devices.)

*rx, ry* are the radius dimensions in the x and y directions, respectively, in hundredths of an inch. If *rx* and *ry* are the same, the result will be a circle (or a portion of a circle). If *rx* and *ry* are different, the result will be an ellipse (or a portion of an ellipse). The ellipse's radii are always aligned with the x and y axes.

*st* is the start angle, in degrees. The default is to start drawing at 0 degrees. This value is needed only if you wish to draw a portion of the circle/ellipse starting at a particular point on the circle/ellipse.

*sw* is the sweep angle, in degrees. The default is 360, meaning that the entire circle/ellipse will be drawn. This value is needed only if you wish to draw a portion of the circle/ellipse.

*lt* is the line type. Line type is expressed as a number, where a positive number is the width of the line (in hundredths of an inch) or the number is one of the following:

- 0 normal
- 1 dot
- 2 short dash
- 3 dash dot
- 4 double dot
- 5 long dash
- 6 dash double dot
- 7 alternate pixels

### Required Printer Settings:

*Emulation* must be >>FONT. If a different printer emulation mode is used, the command line is treated as normal text.

**Examples:**

```
>>ARC= 350,150, 50,50           draws a 0.5" diameter circle at the (3.5", 1.5")
position
>>ARC= 400,650, 300,100, , , -5   draws an ellipse (3" x 1" radius) with long dash
line type
>>ARC= 400,600, 200,200, 0,180,10  draws the top half of a circle (2" radius) with
a 0.10" line
```

---

## AT

**Description:**

The >>AT command specifies the time and date of transmission for delayed sending, and/or the fax priority.

>>AT= *time, date, priority*

*time, date* The time and date values are used just like the *Time* and *Date* fields on the send pop-up dialog box to specify the time and date for transmission of the fax document. If no date is specified, the date for the next occurrence of the time is assumed. If the >>AT= command is not used, then the >>TO= commands will spool for immediate transmission.

*priority* Set to 1 for a *high priority* fax. This is like checking the "Priority" checkbox on the Fax Send dialog in the fax program. A high priority fax will be sent next even if other normal priority fax jobs were previously spooled and are still waiting to send. [Priority was added in build 226 and later.]

**How the "send" commands interact:** If a destination fax number is specified (using a >>TO command), then the printer driver's pop-up dialog box will be suppressed and the fax document will be directly spooled for transmission, otherwise (assuming the *Send pop-up* action is selected in the FxPrint printer object's job properties) the pop-up dialog box will be displayed with any specified >>FROM=, >>INFO= and >>AT= command information overriding the default field values. If information that will appear on the cover page is specified, then the cover page is enabled, otherwise the cover page is disabled. If header line text is specified, then header lines are enabled, otherwise header lines are disabled.

**Note:** The fax application program must be running to actually transmit fax documents, but if it isn't, you can still spool fax jobs and transmission will take place (if the scheduled transmission time has been reached or passed) when you start the fax program.

**Required Printer Settings:**

The >>AT command works for all printer settings.

**Examples:**

```
>>AT= 930am           specifies sending at 9:30 AM
>>AT= 2               specifies sending at 2:00 AM
>>AT= 2230, 23may94   specifies sending at 10:30 PM on May 23, 1994
>>AT= 10:30P, 5/23/94 specifies sending at 10:30 PM on May 23, 1994
>>AT= 1030PM, 23-MAY-94 specifies sending at 10:30 PM on May 23, 1994
>>AT= , , 1           specifies high priority, send as soon as possible
```

---

## BOX

**Description:**

The >>BOX command draws boxes, including support for curved corners and various lines types.

>>BOX= *xs, ys, xe, ye, r, lt*

*xs, ys* are the coordinates for a corner of the box. Coordinates are measured in hundredths of an inch. The bottom left corner of the page is 0, 0. For an 8.5" x 11" page, the top right corner of the page is 812, 1028. (A small border around the edge of the page is unused for compatibility with other printers and fax devices.)

*xe, ye* are the coordinates for the other corner of the box. You can use any two diagonal box corners as (*xs, ys*) and (*xe, ye*), and second point can be above, below, left or right of the first point.

*r* is the box corner radius in hundredths of an inch (i.e., the radius of the circular arc for rounding the corners). The default is 0 (no rounding). Larger radius values will cause more rounding of the corners.

*lt* is the line type. Line type is expressed as a number, where a positive number is the width of the line (in hundredths of an inch) or the number is one of the following:

- 0 normal
- 1 dot
- 2 short dash
- 3 dash dot
- 4 double dot
- 5 long dash
- 6 dash double dot
- 7 alternate pixels

### Required Printer Settings:

*Emulation* must be >>*FONT*. If a different printer emulation mode is used, the command line is treated as normal text.

### Examples:

>>BOX= 300,400, 400,500	draws a square with corners at (3", 4") and (4", 5")
>>BOX= 50,50, 750,1000, 125, 20	draws a large rectangle with rounded corners (1.25" radius) and thick (0.2") lines
>>BOX= 100,100, 700,950, , -7	draws a large box with sharp corners using "alternate pixel" lines

## DOC

### Description:

The >>DOC command splits mail merge output into separate fax jobs.

>>DOC

There are no parameters.

This command separates fax jobs from a mail merge even when the printing application prints all merged documents as a single print job. Start your mail merge template with >>DOC followed by the >>TO command and other commands, if any. When FxPrint sees the >>DOC, it ends any current document and starts a new one, thereby separating each repeating document and sending it as a distinct fax job.

### Required Printer Settings:

The >>FILE command works for all printer settings.

### Examples:

>>DOC	force a new print job (separate one print job into multiple fax jobs)
-------	---

# FILE

## Description:

The >>FILE command puts the fax file in a specified filename rather than in the fax log. An alternative form of the command can be used to specify the document index value for the document in the fax log.

>>FILE= *filename*

*filename* is the full pathname for the TIFF Class F fax document file. The fax document is stored directly into the specified filename. No send pop-up will appear, and no entry is made in the fax log. If this form of the command is used, any send commands (>>FROM, >>INFO, >>AT, >>TO, etc.) are ignored.

An alternative form of the command is as follows:

>>FILE= *index*

*index* is the document index value. The fax document is placed in the fax log with the specified index value. The behavior of other printer driver commands is not changed. This is intended for users of the API Toolkit who wish to spool a fax document using the enhanced printer driver and then manipulate the fax document using API calls. API users should use the FxNextIndex API call to obtain the index value. If you are not using the API Toolkit, you should not use this form of the command.

The >>FILE command is most commonly used when you are using the printer driver to create the fax document but will be sending or manipulating the fax document using API calls. Various API entry points can accept TIFF-F files and document index values.

**The >>FILE command must precede any >>APPEND commands or other commands which cause new fax pages to be created.** When using the >>FILE command, it should be the first thing that you do.

Note that the fax program can read the TIFF-F format using the **Fax Open file** command.

A TIFF-F file can contain multiple fax pages.

## Required Printer Settings:

The >>FILE command works for all printer settings.

## Examples:

>>FILE= C:\FAX\MYDOC.TIF	saves the fax document to the specified file
>>FILE=123	uses index value "123" for the document in the fax log

# FONT

## Description:

The >>FONT command specifies the font name, point size and tab size value for text that will follow.

>>FONT= *font, points, tabchars*

*font* is the name of a vector (outline) font that is installed in OS/2. Use the **Edit Font** command in the fax program to see the names of the available fonts. Example font names are Courier Bold, Helvetica Italic, Times New Roman, etc. If the font value is omitted, the font is not changed. If an asterisk ("\*") is specified, the default font (Courier) is selected.

*points* is the point size of the font. If the points value is omitted, the point size is not changed. If an asterisk ("\*") is specified, the default point size (10 point) is selected.

*tabchars* is the number of average characters widths that will be used for tab stops. If the tabchars value is omitted, the value is not changed. If an asterisk ("\*") is specified, the default value (8) is selected.

By default, the printer driver uses 10 point Courier font with tab stops of 8 character widths. The >>FONT command can be used to change the font, point size and tab size values. The leading (line spacing) is about 120% of the point size, so the default font and margin settings will provide 66 lines per page.

### Required Printer Settings:

*Emulation* must be >>FONT. If a different printer emulation mode is used, you must use the printer control codes of the emulated printer to control fonts, and >>FONT lines are treated as normal text.

### Examples:

>>FONT= , 18	changes the point size, font is unchanged
>>FONT=Times New Roman	changes the font, point size is unchanged
>>FONT=Helvetica,14	changes to 14 point Helvetica font
>>FONT=Courier, 10, 4	changes to 10 point Courier with 4 character tabs
>>FONT=*,*,*	changes to the default (10 point Courier font with 8 character tabs)

---

## FROM

### Description:

The >>FROM command specifies the sender information that will appear on the cover sheet.

>>FROM= *name, company, phonenumber, faxnumber, userid*

*name* is the "from name" string for the cover page. If nothing is specified, then no "from name" will appear on the cover page. If an asterisk ("\*") is specified, the default value is used (set on the **Cover** settings page in the fax program).

*company* is the "from company" string for the cover page. If nothing is specified, then no "from company" will appear. If an asterisk ("\*") is specified, the default value is used (set on the **Cover** settings page in the fax program).

*phonenumber* is the "from phone" string for the cover page. If nothing is specified, then no "from phone" will appear. If an asterisk ("\*") is specified, the default value is used (set on the **Cover** settings page in the fax program).

*faxnumber* is the "from fax" string for the cover page. If nothing is specified, then no "from fax" will appear. If an asterisk ("\*") is specified, the default value is used (set on the **Cover** settings page in the fax program).

*userid* is a LAN user ID. When using the fax LAN system in its "private" mode, this can be used to indicate that you are submitting this fax document on behalf of the specified LAN user, and the fax log entry and job status will therefore be placed in the LAN user's fax log.

A cover pages is automatically enabled when the >>FROM command is used, but you can disable the cover page using a subsequent >>INFO command if you desire.

**How the "send" commands interact:** If a destination fax number is specified (using a >>TO command), then the printer driver's pop-up dialog box will be suppressed and the fax document will be directly spooled for transmission, otherwise (assuming the *Send pop-up* action is selected in the FxPrint printer object's job properties) the pop-up dialog box will be displayed with any specified >>FROM=, >>INFO= and >>AT= command information overriding the default field values. If information that will appear on the cover page is specified, then the cover page is enabled, otherwise the cover page is disabled. If header line text is specified, then header lines are enabled, otherwise header lines are disabled.

### Required Printer Settings:

The >>FROM command works for all printer settings.

### Examples:

>>FROM= Jim Smith, "Company, Inc.", (612) 555-5555, \* uses default fax number from

PMfax

>>FROM= John Jones, *, *, *, JJWS	uses defaults, specifies
John's LAN ID	

---

## INFO

### Description:

The >>INFO command specifies the page header, cover page size, cover page comment, cover page bitmap, and log record note text.

>>INFO= *comment, heading, notes, bitmap, size, headctrl*

*comment* is the comment text for the cover page. If nothing is specified, then no comment area will appear on the cover page. If an asterisk ("\*") is specified, the default value is used (set on the **Comment** settings page in the fax program). You may include ASCII code 1 (01 hex) characters in the text where you want CR/LF to appear in the resulting text.

*heading* is the text for the page header line. If nothing is specified, then page headers are disabled and no page header will appear. If an asterisk ("\*") is specified, the default value is used (set on the **Headers** settings page in the fax program).

*notes* is the text that will appear in the fax log's "Notes" field. This text does not appear on the fax document or cover page. It can be used to provide additional information in the fax log.

*bitmap* is the name of the bitmap file that will be used on the cover sheet. If nothing is specified, then no cover bitmap will appear on the cover page. If an asterisk ("\*") is specified, the default value is used (set on the **Cover** settings page in the fax program). The bitmap file is assumed to be in the fax data directory (or the Public directory on a LAN private mode system), or you can specify a full pathname of up to 40 characters.

*size* is 0 for a short cover sheet, 1 for a full-length cover sheet or 2 for no cover sheet. If no cover sheet is desired, the >>INFO command should be the last command since other commands may implicitly re-enable the cover sheet.

*headctrl* is for advanced page header control. This is usually just omitted, but you can specify 0 to disable all page headers, 1 for single-line headers, 2 for two-line headers (with the "To:" line), or \* (or nothing specified) to use the fax program's default setting.

**How the "send" commands interact:** If a destination fax number is specified (using a >>TO command), then the printer driver's pop-up dialog box will be suppressed and the fax document will be directly spooled for transmission, otherwise (assuming the *Send pop-up* action is selected in the FxPrint printer object's job properties) the pop-up dialog box will be displayed with any specified >>FROM=, >>INFO= and >>AT= command information overriding the default field values. If information that will appear on the cover page is specified, then the cover page is enabled, otherwise the cover page is disabled. If header line text is specified, then header lines are enabled, otherwise header lines are disabled.

### Required Printer Settings:

The >>INFO command works for all printer settings.

### Examples:

>>INFO= This is the comment., Joe Smith, , *, 1	full-sized cover page, "Joe Smith" in headers
>>INFO= , Heading Text, , cover2.bmp, 0	short cover page with the COVER2 bitmap
>>INFO= , , , , 2	no cover page, no page headers

---

# LINE

## Description:

The >>LINE command draws lines, including support for an optional intermediate point (curves) and various lines types.

>>LINE= *xs, ys, xi, yi, xe, ye, lt*

*xs, ys* are the starting coordinates for the line. Coordinates are measured in hundredths of an inch. The bottom left corner of the page is 0, 0. For an 8.5" x 11" page, the top right corner of the page is 812, 1028. (A small border around the edge of the page is unused for compatibility with other printers and fax devices.)

*xi, yi* are the coordinates of an intermediate point for "pulling" the line. If this point is not specified, then the command will draw a straight line from (*xs, ys*) to (*xe, ye*). If this intermediate point is specified, then the command will draw a curve from (*xs, ys*) to (*xe, ye*). The tangents of the curve at (*xs, ys*) and (*xe, ye*) will pass through (*xi, yi*), so the curve can be distorted in various ways by changing the position of (*xi, yi*) but the curve will not actually pass through (*xi, yi*).

*xe, ye* are the ending coordinates for the line.

*lt* is the line type. Line type is expressed as a number, where a positive number is the width of the line (in hundredths of an inch) or the number is one of the following:

- 0 normal
- 1 dot
- 2 short dash
- 3 dash dot
- 4 double dot
- 5 long dash
- 6 dash double dot
- 7 alternate pixels

## Required Printer Settings:

*Emulation* must be >>FONT. If a different printer emulation mode is used, the command line is treated as normal text.

## Examples:

```
>>LINE= 300,400, , , 500,600      draws a straight line from (3", 4") and (5", 6")
>>LINE= 50,50, , , 750,1000, 20   draws a straight line diagonally across the page,
thick (0.2") line
>>LINE= 100,100, 100,500, 700,950  draws a curved line from (1", 1") to (7", 9.5"),
"pulling" the line toward the (1", 5") point
```

# MARGIN

## Description:

The >>MARGIN command specifies the page margins for text.

>>MARGIN= *left, right, top, bottom*

*left* is the margin for the left side of the page, measured in hundredths of an inch. After a newline (CR/LF) is encountered in normal text, the next line of text will start at the "*left*" distance from the left edge of the printable page area. If an asterisk ("\*") is specified, the margin is reset to its default value (0.25 inch).

*right* is currently ignored.

*top, bottom* are the top and bottom margin sizes, measured in hundredths of an inch. If asterisk ("\*") is specified, the margin is reset to its default value (0.25 inch). When text is sent to the printer driver, the current page is ended and a new page started when (a) a form feed character is encountered, (b) a >>PAGE command is encountered, or (c) the text has advanced down the



page and the new text line will be within "*bottom*" distance from the bottom edge of the printable page area. On the new page, the first line of text will start after a top margin of "*top*" distance from the top edge of the printable page area.

**Important:** The fax page has an "unprintable area" of about 0.25 inch around the edge of the page for compatibility with other printer and fax devices. Margin values are measured from the edge of the printable area (the unprintable area is not included in the margin value), so the default (0.25") margin values actually result in measured margins of about 0.5" on the page. If exact margins are important to you, be sure to take the unprintable area into account.

**Note:** The >>POSITION command can be used to temporarily force the text cursor position to any desired location on the page, and the first text line which follows the >>POSITION command will begin at the indicated position. However, the margin settings will apply to subsequent lines of text, so it may be useful to use both the >>POSITION and >>MARGIN commands when you wish to indent a group of text lines. See the TESTFORM.TXT sample file for an example.

### Required Printer Settings:

*Emulation* must be >>FONT. If a different printer emulation mode is used, the command line is treated as normal text.

### Examples:

```
>>MARGIN= 150           sets the left margin to 1.5"
>>MARGIN= *             returns to the default left margin
>>MARGIN= 300, , 200, 200 sets the left margin to 3", the top/bottom margins to
2"
```

---

## PAGE

### Description:

The >>PAGE command specifies the length and orientation of the page.

>>PAGE= *length, orientation*

*length* is the page length. If the OS/2 system's country code is U.S.A, the *length* is in inches, otherwise the *length* is in centimeters (cm). If an asterisk ("\*") is specified, the value is not changed, and the page length value from the printer object (for the first page) or from the previous page (for subsequent pages) is used. The *length* can be from 1 to 25 inches or from 2 to 66 centimeters.

*orientation* is the value 0 (zero) for portrait orientation or 1 (one) for landscape orientation. If an asterisk ("\*") is specified, the value is not changed, and the page orientation from the printer object (for the first page) or from the previous page (for subsequent pages) is used.

If the >>PAGE command appears before any data is "printed" on the current page, then the new values will apply to the current page of the fax document, otherwise this command will cause a form feed with the new values taking effect on the new page in the fax document. If an asterisk ("\*") is specified for either value, that value is not changed, in which case the value from the printer object (if the first page) or from the previous page (for subsequent pages) is used. This means that the line ">>PAGE=\*,\*" will cause the same behavior as a form feed character in ASCII text.

### Required Printer Settings:

*Emulation* must be >>FONT or a *Proprinter* emulation mode. If a different printer emulation mode is used, the command line is treated as normal text.

### Examples:

```
>>PAGE= *, *           starts a new page with unchanged length and orientation
>>PAGE= 10             starts a new page with length of 10" (or 10cm if non-USA
system)
>>PAGE= , 1           starts a new page in landscape orientation
>>PAGE= 14, 0         starts a new page with length of 14 and portrait orientation
```

# PASTE

## Description:

The >>PASTE command pastes a bitmap image at a specified location in its actual size or a specified size.

>>PASTE= *bmpfile*, *xs*, *ys*, *xe*, *ye*, *contrast*

*bmpfile* is the full pathname of an OS/2 bitmap file.

*xs*, *ys* are the coordinates for a corner of the paste box. Coordinates are measured in hundredths of an inch. The bottom left corner of the page is 0, 0. For an 8.5" x 11" page, the top right corner of the page is 812, 1028. (A small border around the edge of the page is unused for compatibility with other printers and fax devices.)

*xe*, *ye* are the coordinates for the other corner of the paste box. You can use any two diagonal box corners as (*xs*, *ys*) and (*xe*, *ye*), and second point can be above, below, left or right of the first point.

*contrast* is the "color conversion contrast threshold" (value 1 - 99). If a color bitmap is being pasted, this threshold is used to determine which color intensities will map to black and which will map to white. If the image turns out darker or lighter than you would like, you can adjust this value and try again. Larger values produce darker results.

If both corner points are specified, the bitmap image is automatically enlarged or reduced to fit the specified paste box.

If the (*xe*, *ye*) corner is not specified, then the bitmap image is pasted in its natural size with the upper left corner of the bitmap image at (*xs*, *ys*).

If no corner points are specified, then the bitmap image is pasted in its natural size with the upper left corner of the bitmap image at the current cursor position.

"Natural size" means that the bitmap file is placed pixel-for-pixel into the 200 dpi fax page image (with automatic conversion to normal fax resolution if required).

## Required Printer Settings:

*Emulation* must be >>FONT. If a different printer emulation mode is used, the command line is treated as normal text.

## Examples:

```
>>PASTE= C:\FAX\IMAGE.BMP           pastes the image at the current cursor position
>>PASTE=C:\TEST.BMP, 100,1000       pastes the image at (1", 10")... near the top of
the page
>>PASTE= C:\TEST2.BMP, 300,650, 500,900  resizes the image into the specified box
```

# POSITION

## Description:

The >>POSITION command specifies the "cursor position" at which the next text will be placed.

>>POSITION= *x*, *y*

*x*, *y* are the coordinates on the page. Coordinates are measured in hundredths of an inch. The bottom left corner of the page is 0, 0. For an 8.5" x 11" page, the top right corner of the page is 812, 1028. (A small border around the edge of the page is unused for compatibility with other printers and fax devices.)

The >>POSITION command can be used to temporarily force the text cursor position to any desired location on the page, and the first text line which follows the >>POSITION command will begin at the indicated position. However, the margin settings will apply to subsequent lines of text, so it may be useful to use both the >>POSITION and >>MARGIN commands when you wish to indent a group of text lines. See the TESTFORM.TXT sample file for an example.

**Required Printer Settings:**

*Emulation* must be >>*FONT*. If a different printer emulation mode is used, the command line is treated as normal text.

**Examples:**

```
>>POSITION= 500, 600           sets cursor at (5", 6")
```

---

## REM

**Description:**

The >>REM command is used for remark lines.

```
>>REM= comment
```

*comment* is a comment string. The entire line is discarded and the comment will not appear in the fax document.

**Required Printer Settings:**

The >>REM command works for all printer settings.

**Examples:**

```
>>REM= This is a comment.  It is ignored.
```

---

## TO

**Description:**

The >>TO command specifies the name, company and fax number for automatically sending the fax.

```
>>TO= name, company, faxnumber, tag, retries
```

*name* is the "to name" string for the cover page. If nothing is specified, then no "to name" will appear on the cover page.

*company* is the "to company" string for the cover page. If nothing is specified, then no "to company" will appear on the cover page.

*faxnumber* is the recipient's fax telephone number. This is the telephone number (including fax dial macros, if desired) that will be dialed to reach the recipient's fax machine. The faxnumber is required.

*tag* is the job tag value. This is designed for users of the API Toolkit who wish to spool a fax document using the enhanced printer driver and then check on the job's status using API calls. API users should use the FxNextTag API call to obtain the tag value. If you are not using the API Toolkit, you should not specify any tag value.

*retries* is the number of "busy retry" attempts that will be made when attempting to send the fax to the faxnumber. A value of 0 (zero) means that no retries will be made (i.e., try once and then give up). The maximum value is 99, but a reasonable value is usually 2 or 3. If no value is specified, the *Busy retries* value from the **Fax** settings page in the fax program is used.

Use of the >>TO command suppresses the printer driver's pop-up "Send fax" dialog box. The fax document is automatically spooled for transmission without user intervention.

Multiple >>TO commands can be used, and will cause the fax document to be spooled to each recipient. This can be used to broadcast the fax document to many recipients.

The cover page is automatically enabled if *name* or *company* values are provided, but you can disable the cover page using a subsequent >>INFO command if you desire.

**Required Printer Settings:**

The >>TO command works for all printer settings.

### Examples:

>>TO= , , 1 612 555-5555	sends to the specified fax number
>>TO= Jim Smith, "Company, Inc.", 1 612 555-5555	sends with Jim's name & company
on cover page	
>>TO= Jim Smith, , 1 612 555-5555, ,12	sends, with up to 12 retries if
busy or error	
>>TO= Jim Smith, Company Ltd., 1 612 555-5555, ,0	send, but try once and give up if
busy or error	

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