Preface

Thank you for purchasing the AXIS AFP Printer Controller. Our goal in developing this product is to enable you to connect any PostScript printer to your IBM IPDS environment, allowing you to take full advantage of both the IPDS functions and your PostScript printer capabilites.

About Axis

Axis Communications, founded in 1984, is one of the world's fastest growing companies in the CD-ROM server, network print server, network camera and IBM printer interface market. The head quarters are located in Lund, Sweden, with subsidiaries in Beijing, Boston, Paris, Shanghai, Singapore, Tokyo, and Hong Kong.

Axis Communications has a distributor network operating in more than 60 countries world-wide, marketing four product lines:

Network Print Servers: These intelligent Ethernet and Token Ring print servers support a wide range of LAN protocols. The Axis NPS 530, 550, and AXIS 150, 540, 560, 570, 570 MIO are Ethernet print servers, while the Axis NPS 630, 650, and AXIS 640, 660, 670, 670 MIO are Token Ring print servers.

IBM Mainframe and S/3x – AS/400 Printer Interfaces: These products include a wide range of plug-in interfaces and stand-alone products such as the AXIS Cobra+, AXIS 330/370 Cobra, AXIS HP MIO, the AXIS AFP IPDS-to-PostScript converter, and the AXIS AFP MIO/IOP IPDS-to-PCL converters.

Network CD-ROM Servers: AXIS StorPoint CD multiprotocol CD-ROM servers provide a flexible and cost-efficient solution for sharing CD-ROMs across the network. They are available in Ethernet and Token Ring versions.

Network Camera Server: The AXIS NetEye 200 Network Camera attaches directly to an Ethernet network. It supports TCP/IP and Internet-related protocols. This product replaces closed circuit video or PC with framegrabber, at a lower cost.

About this Manual

This manual applies to the Axis AFP printer controller with firmware release 2.10 and to subsequent releases until otherwise notified.

The manual consists of seven sections and additional appendices:

1. **INTRODUCTION** – The AFP general description.
2. **INSTALLATION** – Installation of the AFP.
3. **CONFIGURATION** – How to configure the AFP.
4. **ADVANCED FUNCTIONS** – Parameter programming and Hex Transparency (Coax mode only).
5. **FONTS** – How fonts are handled by the AFP.
6. **SOLVING PROBLEMS** – Checklist for identifying problems.
7. **COMPATIBILITY CONSIDERATIONS** – Differences between IBM printers and the emulation.

   APPENDICES – Additional information; Parameter List, Character Table, Front and Back Panels, Printer Cable Configuration, PC-Host Sharing, Technical Specifications and Related Documentation.

Every care has been taken in the preparation of this manual; if you detect any inaccuracies or omissions, please inform us at the address on the back cover.

Axis Communications AB cannot be held responsible for any technical or typographical errors and reserves the right to make changes in this manual and to the firmware without prior notice.

Emission Notices

USA

This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart B of Part 15 of FCC rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference. Shielded cables should be used with this unit to ensure compliance with the Class A limits.

Europe

CE

EN 55022/1987, EN50082-1/1992.

Trademark Acknowledgements

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AXIS AFP User's Manual **Revision 1.3**
Part No: 14006 Dated: January, 1997

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Table of Contents

Section 1

Introduction

The Axis AFP

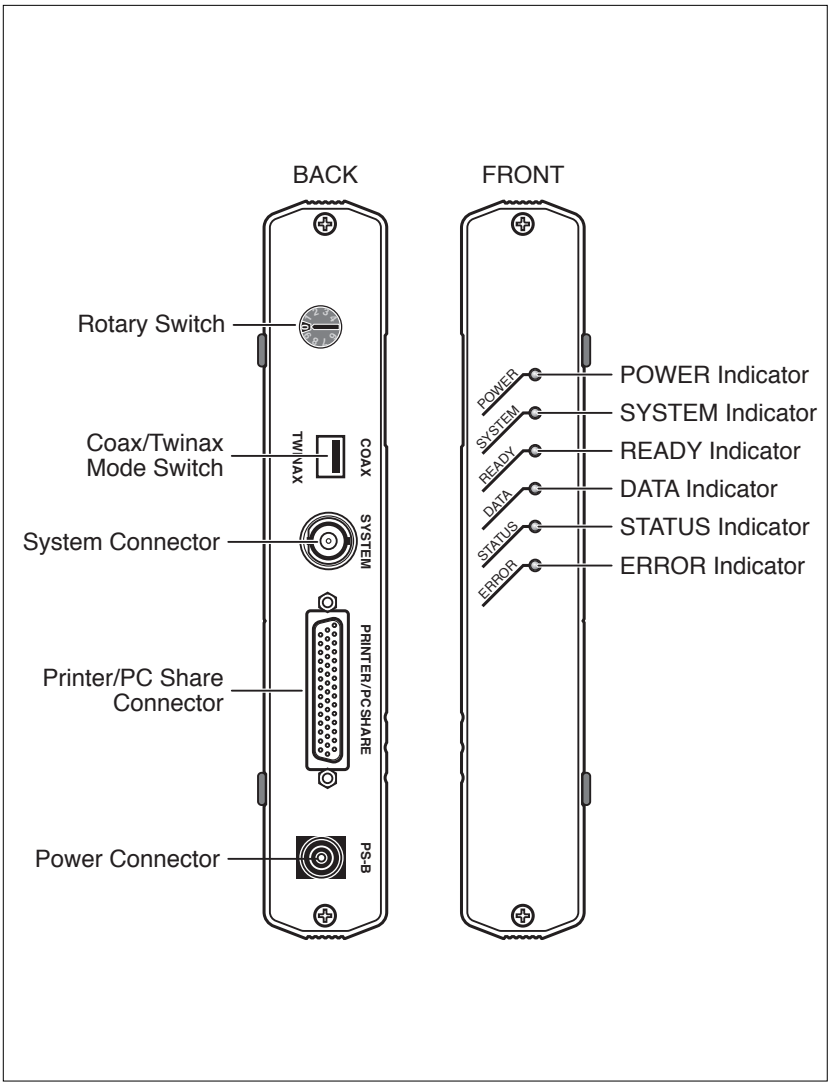
The Axis AFP is a printer controller that allows PostScript printers to function as an IBM 4028, 3916, 3912, 3112, 3116, 3812 or 3816 IPDS page printer by translating the IPDS data stream into PostScript code. It supports printing from AFP (Advanced Function Printing) applications through PSF, and any other application with IPDS, 3270 data stream or SCS output, as well as all AS/400 or S/3x applications.

Axis AFP has the following characteristics:

- **Resolution Independence:** PostScript printers of any resolution can be attached. Both 240 and 300 dpi based IBM print data is automatically converted.
- **Fonts:** Host down-loaded fonts are supported and the printer's fonts are scaled to be functionally equivalent to the resident fonts of the emulated printer. Up to 128 additional scaleable fonts can be user defined.
- **Color:** PostScript Level 1 and Level 2 color and monochrome printers are supported.
- **Page Handling:** Duplex and multiple bins are supported. Page scaling and offsetting can be used to compensate for the printer's unprintable area. All page sizes are supported.
- **Printer Memory Requirements:** Minimum recommended printer memory is 2 Mbytes. Additional memory will be used for IPDS resources and may increase the performance of the printer.
- **Printer Attachment:** It attaches to the printer's parallel port.
- **Printer Sharing:** A parallel Centronics input can be used to share the printer with the host system. Programmable job begin/end sequences can control emulation switching and job separation.

3270/Coax only

- **Hex Transparancy:** Makes it possible to transfer hex-encoded binary data directly to the printer, for example to print PostScript data directly from the host without any conversion in the Axis AFP.



The Axis AFP printer controller

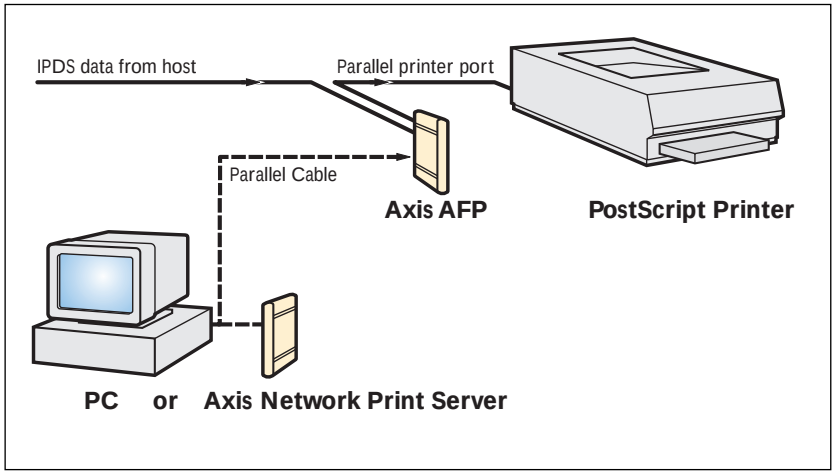
Theory of Operation

The Axis AFP converts the IPDS data stream to PostScript.

Together with the attached printer, the Axis AFP will appear to the host as an IBM IPDS page printer.

In addition, the Axis AFP can be used to share the connected printer between the IBM host and a PC. The PC-Host sharing function works without need for user intervention, using an optional cable.

The picture below shows the Axis AFP in an operating environment, illustrating the PC-Host sharing function.



The Axis AFP in its operating environment

IBM Printer Emulation

The Axis AFP supports all IPDS towers. Together with a PostScript printer, it emulates any of the following printers:

- IBM 4028
- IBM 3112/3916
- IBM 3912/3916
- IBM 3812 model 2
- IBM 3816 model 01S/01D
- IBM 3287
- IBM 3268
- IBM 3262
- IBM 4214 model 1
- IBM 4214 model 2
- IBM 5224
- IBM 5225
- IBM 5256.

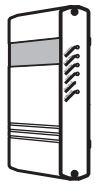
For further details, see Appendix F, Technical Specifications and Section 7, Compatibility Considerations.

Section 2

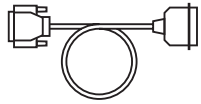
Installation

Unpacking

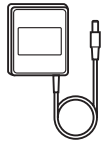
The standard delivery contains the following:



- Axis AFP (Part no: 0024-5)
- Axis AFP User's Manual (Part no: 14006)

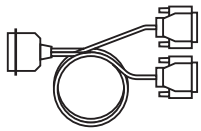


- Parallel Centronics printer cable (Part no: 12755)

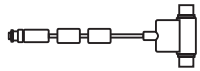


- Power supply PS–B.

Optional:



- PC-Host 2-way sharing cable, parallel PC in, parallel printer attachement (Part no: 12998)

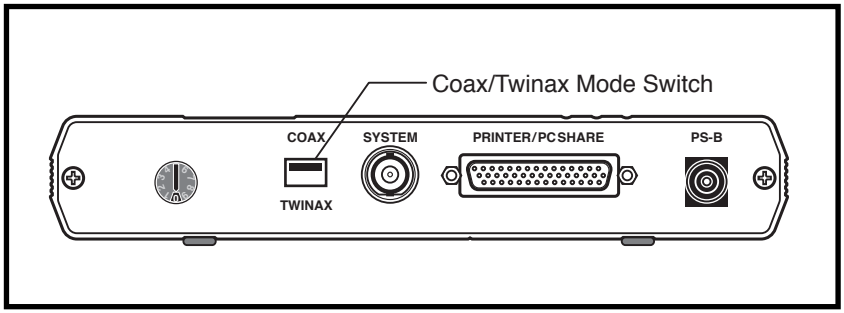


- Twinax T-bar cable (Part no: 12554)

Select Coax or Twinax Connection

The Axis AFP must be configured for the correct IBM host connection before starting the installation. The Axis AFP can be configured for IBM 3270/Coax or IBM 5250/Twinax connection using a switch on the back panel (see figure below). To select coax or twinax mode do as follows:

1. **Make sure that the Axis AFP is disconnected from the power supply and the system.**
2. **Slide the back panel switch to COAX or TWINAX**
3. **To reconnect the Axis AFP, follow instructions in "Printer and System Attachment" on page 15.**



System Configuration, coax mode

Coax: The Axis AFP emulates the IBM 4028/3916/3812/3816/3112/3116 Group 4 IPDS page printers. Configure the system as if you were installing one of these printers. When PSF is used, it must be configured according to the resolution (240 or 300 dpi) of the emulated printer.

System Configuration, twinax mode

Twinax: The AS/400 configuration is easiest done using the Auto Configuration to define an **[*IPDS]** printer. If in doubt, consult your system operator.

Before you begin:

- If you plan to print in duplex, the Axis AFP must be configured for IBM 4028/3916 or 3816 emulation, see Section 3, *Configuration*. IBM 4028/3916 is the factory default configuration
- The Axis AFP works in both **[AFP = *YES]** and **[AFP = *NO]** mode:

  [AFP = *YES] lets you make full use of OS/400 AFP Print Services, including overlays (electronic forms), page segments (bit images), downloaded fonts, etc. You can also send print jobs from a mainframe through the AS/400.
  [AFP = *NO] lets you print from Office/400 (including merged graphics), BGU, GDDM, etc. at significantly higher throughput rate, but with less functionality.

You will need a high authorization to make the configuration. Log in as Security Officer (***SECOFR** privileges).

Follow these steps to configure your AS/400:

1. **Find a free Device Address** using the **[PRTDEVADR]** command.
2. **Turn the Automatic Configuration on** using the **[CHGSYSVAL QAUTOCFG '1']** command.
3. **Connect the Axis AFP** to the twinax line.
4. **Power on the Axis AFP**, and wait for approx. 5 seconds until the SYSTEM indicator goes on.
5. **Verify that the AS/400 has detected a new device** by using the **[WRK-DEVD]** command.
6. **Disable the Automatic Configuration [CHGSYSVAL QAUTOCFG '0']**.
7. **Optionally, you may rename and describe the device.** You can also enable the OS/400 AFP Print Services by setting **[AFP = *YES]**, see previous page. This is done using the **[WRKDEVD]** command.

> Vary off the printer before using the **[WRKDEVD]** command.

8. **Verify the configuration** by making a hardcopy. If nothing is printed, use the **[WRKCFGSTS *DEV]**, **[WRKWTR]**, and **[WRKSPLF]** commands to find the cause.

Printer and System Attachment

The Axis AFP factory default setting is IBM 4028/3916 IPDS emulation set for US English character set and A4 size paper.

> To alter the settings, continue to Section 3, Configuration. The set-up only needs to be done once and may already have been done by your dealer.

To connect the Axis AFP to your system and printer, do the following:

1. **Power off** the printer and the Axis AFP.
2. **Connect the printer cable** between Axis AFP and the printer.

Coax:

3. **Set the rotary switch** at the back panel of Axis AFP to position '0' for normal print operation.
4. **Connect the coax cable** leading from the IBM system control unit to Axis AFP.
5. **Power on** the Axis AFP and the printer. All front panel indicators will be turned on and then off in order, showing that internal tests are performed.

Twinax:

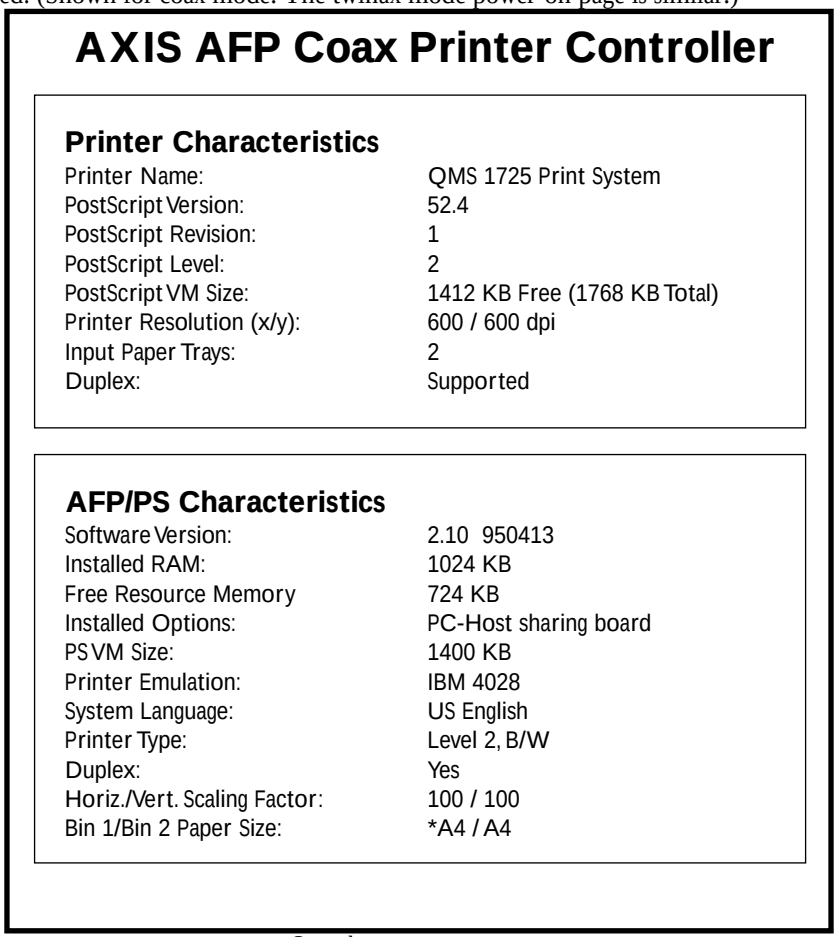
3. **Locate an available device address (twinax port).** The selected address must be configured for the IBM printer type that the Axis AFP emulates (IBM 4028/3916 by default).
4. **Set the rotary switch** at the back panel of Axis AFP to the selected device address.
5. **Connect the T-bar cable** to the twinax cable leading from the IBM system, and to the Axis AFP. The optional Axis T-bar cable is auto terminating (there is no need for a termination plug if the Axis AFP is the last unit on the twinax line).
6. **Power on** the Axis AFP and the printer. All front panel indicators will be turned on and then off in order, showing that internal tests are performed.

When all indicators have been turned off in the sequence, a power-on page is printed. If you don't want this page each time the Axis AFP is powered on, set *Power On Page* (parameter #3010) to 'No'.

The unit is now ready for operation and will show its status with the indicators:

- POWER - Indicates power connection
- SYSTEM - Indicates control unit/host connection
- READY - Indicates printer connection and ready printer
- DATA - Indicates incoming data

During power-on, Axis AFP initializes the printer and the power-on page is printed: (Shown for coax mode. The twinax mode power-on page is similar.)



AXIS AFP Coax Printer Controller

Printer Characteristics

Printer Name:	QMS 1725 Print System
PostScript Version:	52.4
PostScript Revision:	1
PostScript Level:	2
PostScript VM Size:	1412 KB Free (1768 KB Total)
Printer Resolution (x/y):	600 / 600 dpi
Input Paper Trays:	2
Duplex:	Supported

AFP/PS Characteristics

Software Version:	2.10 950413
Installed RAM:	1024 KB
Free Resource Memory	724 KB
Installed Options:	PC-Host sharing board
PS VM Size:	1400 KB
Printer Emulation:	IBM 4028
System Language:	US English
Printer Type:	Level 2, B/W
Duplex:	Yes
Horiz./Vert. Scaling Factor:	100 / 100
Bin 1/Bin 2 Paper Size:	*A4 / A4

Sample power-on page

Important: Never power off or reset the printer without also powering off the Axis AFP, as the PostScript initialization data which the Axis AFP sends at power on, is lost.

Section 3

Configuration

The Axis AFP factory default settings match that of an IBM 4028/3916 IPDS page printer set for US English character set and A4 paper size.

Configuration of settings is done from an IBM 3270 terminal connected to the Axis AFP if it is set up for coax connection, or from an IBM 5250 terminal if the Axis AFP is set up for twinax connection.

Menus appearing on the screen guide through the steps of configuration. It has only to be done once, since the settings are saved in non-volatile memory.

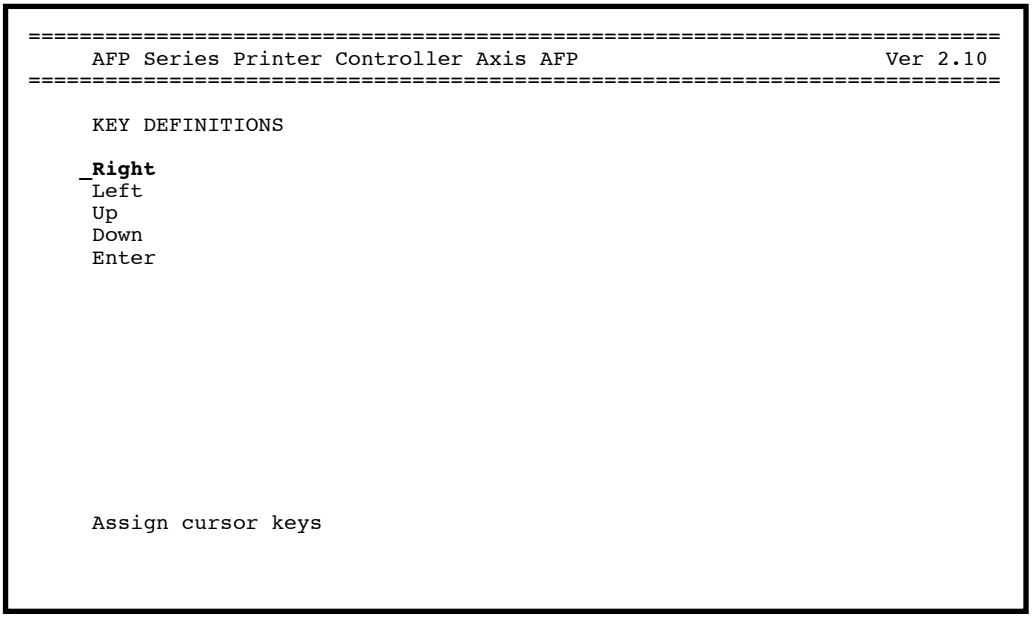
Entering the Configuration Mode

To enter the configuration mode, perform the following:

1. Connect the terminal to the Axis AFP. Use a coax cable or the twinax T-bar cable .
2. Power on the Axis AFP and the attached terminal. If you have an IBM 3270 coax terminal of DFT type, it is necessary to set it in Control Unit Customization mode in order to act like a CUT terminal. IBM 5250 twinax terminals should be terminated.
3. After power-up, select position '9' on the push-wheel. Wait for the STATUS indicator to flash.
4. Select position '7' on the push-wheel. The STATUS indicator will flash quicker and the following will be displayed on your terminal: (see next page)

Key Definitions

The first configuration screen is the Key Definitions Menu:



This screen is for assigning the specific keys to be used in the configuration. No other keys than the five assigned can be used.

Press the key you wish to assign when the corresponding value is highlighted.

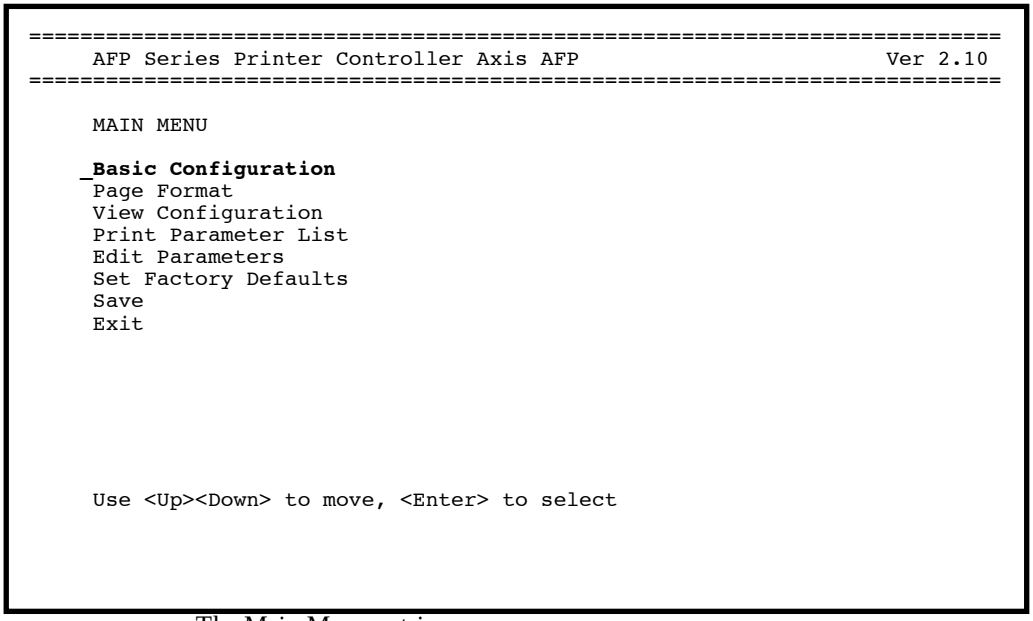
The highlight will move to the next value as soon as you have pressed a key.

Right, *Left*, *Up*, and *Down* are normally assigned to the cursor keys, and *Enter* to the 'Enter' or 'Return' key.

When you have assigned the five keys, the Main Menu will appear.

Main Menu

After pressing the assigned Enter key, the Main Menu is displayed:



The Main Menu entries are:

Basic Configuration	Select printer driver and IBM printer emulation
Page Format	Select paper size, form length, maximum print position, and margins
View Configuration	Display the basic configuration
Print Parameter List	Print the complete configuration
Edit Parameters	Advanced configuration *(see Section 4)*
Set Factory Defaults	Abandon the current configuration and reset all parameters
Save	Save the current configuration permanently
Exit	Exit configuration

Basic Configuration

The 'Basic Configuration' entry initiates a configuration procedure which will guide you through a sequence of sub menus. You will be prompted for selections in the following order:

	Default settings:
1. Printer Driver	*(PostScript Level 1)*
2. PostScript Virtual Memory Size	*(1200)*
3. Color Support	*(No)*
4. Duplex Support	*(Yes)*
5. IBM Printer Emulation	*(IBM 4028/3916)*
6. System Language	*(US English)*

Select 'Basic Configuration'.

The Printer Driver sub menu is shown.

> If an incorrect selection is made during the Basic Configuration, press *Enter* until the Main Menu appears, then re-enter the Basic Configuration.

Select Printer Driver

The Printer Driver sub menu is shown after you have selected 'Basic Configuration' in the Main Menu.

A printer driver is a device driver designed to drive a particular type of printer. There are two printer drivers available:

- PostScript Level 1 *(default)*
- PostScript Level 2

Select the printer driver matching your attached printer.

Select PostScript Virtual Memory Size

This sub menu is shown after you have selected Printer Driver.

This value defines how much memory the Axis AFP can use in the PostScript printer for storing resources. Adjust the value to match the 'Free PostScript VM Size' given on the power-on page (see Section 2).

The default value is 1200 kbytes.

Select the PostScript Virtual Memory Size.

Use the cursor keys to change the value.

Do not select a value higher than the reported Free PostScript VM Size.

Select Color Support

The Color Support setting determines how color information is to be interpreted. 'Yes' (enabled) means that color commands are sent to the printer. 'No' (disabled) means that color information is converted to black-and-white patterns.

The default setting is 'No'.

Select the desired Color Support setting.

Select Duplex Support

The Duplex Support setting determines whether duplex support for the attached printer shall be reported to the host. 'Yes' (enabled) means that duplex commands are transferred to the printer. 'No' (disabled) means that duplex printing is not supported.

The default setting is 'Yes'.

Select the desired Duplex Support setting.

Select IBM Printer Emulation

The following IBM printers can be emulated:

- IBM 4028 *(300 dpi IPDS page printer)*
- IBM 3112/3116 *(300 dpi IPDS page printer with duplex)*
- IBM 3912/3916 *(300 dpi IPDS page printer with duplex)*
- IBM 3812 mod 2 *(240 dpi IPDS page printer)*
- IBM 3816 *(240 dpi IPDS page printer with duplex)*
- IBM 4214 mod 1 and 2 *(non-IPDS matrix printer)*
- IBM 3268 *(non-IPDS matrix printer)*
- IBM 3287 *(non-IPDS matrix printer)*
- IBM 3262 *(non-IPDS matrix printer)*
- IBM 5224 *(non-IPDS matrix printer)*
- IBM 5225 *(non-IPDS matrix printer)*
- IBM 5256 *(non-IPDS matrix printer)*

Select the IBM Printer Emulation matching your system configuration.

Note: Select IBM 4028 to emulate the IBM 3112, 3116, 3912 and 3916 printers.

Select System Language

The Axis AFP must be set up for the System Language of your IBM system configuration in order to obtain correct language specific characters.

The default selection is US English (Code Page 37).

Select the System Language corresponding to your IBM system configuration.

If you are using the Axis AFP in a coax environment, you can also let the Control Unit down-load the System Language, see Appendix A, #51 *Load Translate Table*.

The Basic Configuration is now completed, and the Main Menu is displayed again.

Page Format

The 'Page Format' entry initiates a configuration procedure which will guide you through a series of sub menus.

You will be prompted for the following selections:

	Default settings:
1. Maximum Page Length	*(66)*
2. Maximum Print Position	*(132)*
3. Bin 1 Physical Paper Size	*(A4)*
4. Bin 1 Orientation	*(Reduction)*
5. Bin 2 Physical Paper Size	*(A4)*
6. Bin 2 Orientation	*(Reduction)*
7. Default Input Bin	*(Bin 1)*
8. Paper Cassette Linking	*(Off)*
9. Auto Orientation	*(Yes)*
10. High Capacity as Primary	*(0)*
11. Left Portrait Margin	*(20)*
12. Top Portrait Margin	*(10)*
13. Left Landscape Margin	*(20)*
14. Top Landscape Margin	*(10)*
15. Left COR Margin	*(0)*
16. Top COR Margin	*(0)*

These parameters exist on the IBM 4028/3916/3812/3816 IPDS printers and have the same defaults as on Axis AFP.

Select 'Page Format' in the Main Menu.

The Maximum Page Length sub menu is shown.

Select Maximum Page Length

The Maximum Page Length defines the number of lines per page. The Axis AFP will generate a Form Feed after the specified number of lines.

The default value is 66 lines.

Select the Maximum Page Length.

Use the Up/Down keys to change the value.

> This parameter has no effect in IPDS mode.
>
> The Maximum Page Length selection may be overridden by the host.

Select Maximum Print Position

The Maximum Print Position defines the number of characters printed on a line. The Axis AFP will generate a New Line after the specified number of characters.

The default value is 132.

Select the Maximum Print Position.

Use the Up/Down keys to change the value.

> This parameter has no effect in IPDS mode.
>
> The Maximum Print Position selection may be overridden by the host.

Select Bin 1 Physical Paper Size

The physical paper size selection must match the actual paper size you are using for Bin 1. The predefined sizes are *Executive*, *Letter*, *Legal*, *A4*, and *A3*.

The default size is A4.

If you are using another paper format, select *Custom*. This selection requires that you define the paper size by setting parameters #1001 and #1002 to the appropriate values, see Appendix A.

Select the paper size for Bin 1.

Select Bin 1 Orientation

This selection defines the default print orientation when printing from Bin 1.

The default selection is *Reduction*, which means that the Computer Output Reduction (COR) feature is enabled.

Select the default Bin 1 Orientation.

This parameter has no effect in IPDS mode.

Select Bin 2 Physical Paper Size

The physical paper size selection must match the actual paper size you are using for Bin 2. The predefined sizes are *Executive, Letter, Legal, A4,* and *A3*.

The default size is A4.

If you are using some other paper format, select *Custom*. This selection requires that you define the paper size by setting parameters #1051 and #1052 to the appropriate values, see Appendix A.

Select the paper size for Bin 2.

Select Bin 2 Orientation

This selection defines the default print orientation when printing from Bin 2.

The default selection is *Reduction*, which means that the Computer Output Reduction (COR) feature is enabled.

Select the default Bin 2 Orientation.

This parameter has no effect in IPDS mode.

Select Default Input Bin

This selection defines which input paper bin should be used as default at power up.

The default selection is Bin 1.

Select the default input bin.

Select Paper Cassette Linking

This selection controls the interaction between the input paper bins.

The default value is *Off*, which means no bin interaction. When the current bin goes empty, printing will stop.

The *Bin* selection causes a change to the next bin when the current bin goes empty.

The *Sheet* selection causes a bin change between each sheet.

Select a paper cassette linking value.

Select Auto Orientation

This selection defines if the print orientation should automatically switch to landscape when the current printout doesn't fit the paper in portrait mode.

The default value is *Yes*.

Select an Auto Orientation value.

This parameter has no effect in IPDS mode.

Select High Capacity as Primary

This selection defines which input paper bin should be used as primary.

The default value is *0*, which means that bin 1 is primary.

Select a High Capacity as Primary value.

Select Left Portrait Margin

This value defines the distance between the first print column and the left edge of the paper in portrait mode. The measurement is in units of $^{1}/_{100}$".

The default value is 20.

Select a Left Portrait Margin value.

This parameter has no effect in IPDS mode.

Select Top Portrait Margin

This value defines the distance between the first print line and the top edge of the paper in portrait mode. The measurement is in units of $^{1}/_{100}$".

The default value is 10.

Select a Top Portrait Margin value.

> This parameter has no effect in IPDS mode.

Select Left Landscape Margin

This value defines the distance between the first print column and the left edge of the paper in landscape mode. The measurement is in units of $^{1}/_{100}$".

The default value is 20.

Select a Left Landscape Margin value.

> This parameter has no effect in IPDS mode.

Select Top Landscape Margin

This value defines the distance between the first print line and the top edge of the paper in landscape mode. The measurement is in units of $^{1}/_{100}$".

The default value is 10.

Select a Top Landscape Margin value.

> This parameter has no effect in IPDS mode.

Select Left COR Margin

This value defines the distance between the first print column and the left edge of the paper in COR (Computer Output Reduction) mode. The measurement is in units of $^{1}/_{100}$".

The default value is 0.

Select a Left COR Margin value.

> This parameter has no effect in IPDS mode.

Select Top COR Margin

This value defines the distance between the first print line and the top edge of the paper in COR mode. The measurement is in units of $^{1}/_{100}$".

The default value is 0.

Select a Top COR Margin value.

This parameter has no effect in IPDS mode.

View Configuration

This Main Menu option displays the basic settings from the Basic Configuration, Printer Attachment, and Page Format entries. Select 'View Configuration' in the Main Menu with the cursor keys and press Enter. The following screen will be displayed (with values according to your settings):

```
================================================================================
                          CURRENT CONFIGURATION
================================================================================

     Device Address               : 2                          (Twinax mode only)
     Printer Driver               : PostScript Level 1
     PostScript Virtual Memory    : 1200
     IBM Printer Emulation        : 4028/3916
     System Language              : US English
     Maximum Page Length          : 66
     Maximum Print Position       : 132
     Bin 1 Physical Paper Size    : A4
     Bin 1 Orientation            : Reduction
     Bin 2 Physical Paper Size    : A4
     Bin 2 Orientation            : Reduction
     Automatic Orientation        : Yes
     Left Portrait Margin         : 20
     Top Portrait Margin          : 10
     Left Landscape Margin        : 20
     Top Landscape Margin         : 10
     Left COR Margin              : 0
     Top COR Margin               : 0
     Press any key to continue
```

The parameter values shown here are the factory default values.

Press any key to return to the Main Menu.

Save the Configuration

Select 'Save' in the Main Menu.

The Save sub menu is shown. You are prompted to confirm your selection:

```
Save Configuration   (Yes=<Enter>, No=<any cursor key>)?
```

Press *Enter* to confirm.

A message *(Saving....)* is shown while the saving is in progress, and then the Main Menu is displayed again.

> The previous configuration remains in the permanent memory until the current configuration is saved. If you exit without saving, the current configuration will be lost at the next power-off.

Exit the Configuration

Select 'Exit' in the Main Menu.

A message is shown while the configuration program is being closed, then the screen is blanked.

If you have selected 'Exit' without saving the current configuration, the following prompt will be shown:

```
Save Configuration   (Yes=<Enter>, No=<any cursor key>)?
```

Press *Enter* to save, or any cursor key to abandon changes.

Disconnect the cable between your terminal and the Axis AFP and connect it to your system. To ensure a correct start-up, the Axis AFP and printer should be powered off before connecting the cables.

> If the Axis AFP is set up for twinax connection, make shure that the rotary switch is set to the correct device address before connecting it to the twinax line.

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Section 4

Advanced Functions

This section deals with advanced topics beyond the normal operation:

- **Parameter Editing**

  The Axis AFP has a large number of parameters besides those already covered in the previous section. By editing those parameters, you can tailor the Axis AFP to meet a wide range of special requirements.
  See Appendix A for a complete description of the parameters.

- **Hex Transparency**

  Hex Transparancy can be used when the Axis AFP is set up for coax connection. By inserting special text commands in the data stream, it is possible to by-pass the normal emulation, making hex-encoded binary data to pass through directly to the printer. A typical application is to send PostScript data from the host without any conversion in the Axis AFP.

Parameter Editing

This function is reached from the 'Edit Parameters' entry in the Main Menu (see Section 3 on how to start the Configuration).

Select 'Edit Parameters' in the Main Menu.

The Edit Parameters sub menu is shown for an Axis AFP set up for coax connection. For twinax connection the menu lists relevant twinax parameters.

```
================================================================================
                            EDIT PARAMETERS
================================================================================

ID     DESCRIPTION                          SETTING

0050   System Language                   : US English
0051   Load Translate Table              : No
0052   IBM Printer Emulation             : 4028/3916
0100   Maximum Page Length               : 66
0101   Maximum Print Position            : 132
0102   Lines Per Inch                    : 6
0103   Characters Per Inch               : 10
0201   Line Spacing                      : Single
0202   Case                              : Dual
0300   Default Input Bin                 : Bin 1
0301   Paper Cassette Linking            : Off
0302   High Capacity as Primary          : 0
0400   Screen Size for Local Copy        : 1920
0402   Extended Attribute Buffer         : Yes
0500   Intervention Time-out             : 10
0501   Early Print Complete              : No

Use <Up> and <Down> to move, <Right> to edit, <Enter> to exit
```

To edit parameters, follow these steps:

1. **Use the *Up* and *Down* keys to move the highlighted line** to the desired parameter. The display scrolls one line when the bottom line is reached. You can also scroll a whole page by pressing the *Left* key.
2. **Press *Right* to edit.** The cursor moves from the ID column to the SETTING column, and the help message changes to '*Use the cursor keys to edit, ...*'.
3. **Use the cursor keys to change the value.** If you are editing a string parameter, new bytes will be added when *Right* is pressed. To truncate a string, place the cursor at a null byte ($00) and press *Enter.* Note that all subsequent bytes must also be null bytes.
4. **Press *Enter* to return from edit mode.** The cursor moves to the ID column, and the help message changes to '*Use <Up> and <Down> to move, ...*'.
5. **Press *Enter* once more to exit.** The Main Menu is displayed.

Hex Transparency, coax mode

This section applies only when the Axis AFP is set up for coax connection.

The hex transparency function allows you to send hex-encoded binary data (*e.g.* PostScript or HP PCL) directly to the printer without any conversion. It is controlled by inserting the following special commands in the data stream:

#3210 Transparency Lead-in String – When this string is received, the current PostScript job is terminated, and the page is ejected. All subsequent data is interpreted as hexadecimal byte values, which are sent to the printer as ASCII characters.

#3211 Transparency Trailer Sequence – This string terminates the transparency function and re-initializes the PostScript conversion.

To use the Hex Transparency function, follow these steps:

1. **Define the Transparency Lead-in and Trailer Strings** as described earlier in this section. The strings should be given as EBCDIC US English character codes. If you have selected `[%<]` as Lead-in String, and `[>%]` as Trailer String, the parameters should be programmed as follow:

   ```
   #3210 = $6C $4C
   #3211 = $6E $6C
   ```

2. **Convert your data from binary to hexadecimal format.**
3. **Insert the Transparency Lead-in String** at the beginning of the hexadecimal data.
4. **Insert the Transparency Trailer String** at the end of the hexadecimal data.
5. **Print the job.**

> Hex Transparency is available for all IBM printer emulations, but only in non-IPDS modes. Hex Transparency data appearing in IPDS print jobs will be printed as normal text (including the Lead-In and Trailer Strings).

The following PostScript code prints the text 'Transparent Data' in 30 point Helvetica.

Example:

```
100 700 moveto
/Helvetica findfont 30 scalefont setfont
(Transparent Data) show
showpage
```

Convert the code into hexadecimal ASCII format, and add the Transparency Lead-in and Trailer Strings. The converted data should look like this:

```
%<
31 30 30 20 37 30 30 20 6D 6F 76 65 74 6F 0D 0A
2F 48 65 6C 76 65 74 69 63 61 20 66 69 6E 64 66
6F 6E 74 20 33 30 20 73 63 61 6C 65 66 6F 6E 74
20 73 65 74 66 6F 6E 74 0D 0A 28 54 72 61 6E 73
70 61 72 65 6E 74 20 44 61 74 61 29 20 73 68 6F
77 0D 0A 73 68 6F 77 70 61 67 65 0D 0A
>%
```

The following rules apply to the data between the Transparency Lead-in and trailer Strings:

- Spaces and control codes are ignored.
- All other characters except '0' - '9', 'A' - 'F', and 'a' - 'f' will cause a Hex Transparency Error condition.

When a Hex Transparency Error occurs, an error message will be printed (see "Messages" on page 58), and the transparency function will be terminated.

Section 5

Fonts

This section describes how fonts are handled by the Axis AFP. There are two different approaches to font handling – down-loading fonts from the host, and using fonts already resident in the printer. Both methods are supported by the Axis AFP.

Section 5.1 below deals with host down-loaded fonts, the rest of this section is entirely devoted to printer resident fonts.

Host Down-loaded Fonts

IPDS provides functions for down-loading fonts from the host computer. The font resolutions of 240 and 300 dpi are automatically converted by Axis AFP to the resolution of the attached PostScript printer.

Note: (Twinax only) AS/400 down-loaded fonts requires **`[AFP = *YES]`** in the AS/400 device description.

Font Smoothing A down-loaded 240 dpi font may appear jagged when printed on a 300 dpi printer. The Axis AFP uses a font smoothing feature to enhance the appearance of these fonts. The font smoothing may be disabled if you want to speed up the font loading or if your printer has insufficient PostScript virtual memory. For details, see *#3011 Load Font Smoothing*, Appendix A.

Note: The font smoothing is optimized for printers with 300 dpi resolution. If your printer has a resolution of 600 dpi or higher, the smoothing effect will be less significant. In these cases we recommend you to disable the font smoothing to avoid the reduction in performance.

Printer Resident Fonts

The rest of this section deals with printer resident fonts. The table in Section 5.3 lists all IBM fonts that are recognized by the Axis AFP, and the corresponding PostScript printer fonts. The non-standard PostScript fonts are resident in the Axis AFP (OCR-B is one example), so you don't need font cards etc. to use the listed fonts.

In IPDS mode, printer resident fonts can be selected by the system referring to the FGID (Font Global IDentifier) and FW (Font Width). Axis AFP supports a large set of resident fonts.

Coax only: For PSF systems, resident fonts need to be mapped to the host font name and code page. In PSF/MVS, this is done using the APSRMARK utility and in PSF/VM using the APRFTBLV (RSCS) or APRFTIDB files. For more information, refer to the PSF/MVS and PSF/VM manuals.

The FGIDs are grouped according to the following table:

FGID (hex)	FGID (dec)	TYPE
0001 - 0041	1 - 65	10 CPI
0042 - 0099	66 - 153	12 CPI
009A - 00C8	154 - 200	Proportional PSM
00C9 - 00D2	201 - 210	13 CPI
00D3 - 00EF	208 - 239	15 CPI
00F0 - 00F7	240 - 247	5 CPI
00F8 - 0103	248 - 259	17 CPI
0104 - 0111	260 - 273	8 CPI
0112 - 0117	274 - 279	17 CPI
0118 - 011B	280 - 283	20 CPI
011C - 0120	284 - 288	25 CPI
0121 - 012B	289 - 299	27 CPI
012C - 01FF	300 - 511	10 CPI
0200 - 0EFF	512 - 3839	Typographic
0F00 - 0FFF	3840 - 4095	User Defined Fonts
1000 - FFFE	4096 - 65534	Typographic

Supported Resident Fonts

The following table shows the IBM fonts that are recognized by the Axis AFP as valid resident font selections. The actual PostScript printer font is also listed.

All fonts marked with an '@' are close in appearance to the original, and are reported to the host as supported resident fonts.

All fonts marked with a '%' are dynamically scalable to any point size by specifying a font width, see Section 5.6.2.

	FGID		FW		IBM Font Name	Post Script Font
	hex	dec	hex	dec		
@	0003	3	0090	144	OCR-B.10	OCRB
	0005	5	0090	144	Orator.10	Courier
@	000B	11	0090	144	Courier.10	Courier
	000D	13	0090	144	Artisan.10	Courier
@	0012	18	0090	144	Courier.italic.10	Courier-Oblique
	0014	20	0090	144	Pica.10	Courier
	001A	26	0090	144	Matrix.gothic 10	Courier
	001E	30	0090	144	Math-symbol.10	Courier
@	0024	36	0090	144	Letter-Gothic.10	LetterGothic
	0026	38	0090	144	Orator.bold.10	Courier-Bold
@	0027	39	0090	144	Gothic-text.bold.10	OCRB-Bold
@	0028	40	0090	144	Gothic-text.10	OCRB
	0029	41	0090	144	Roman-text.10	OCRB
	002A	42	0090	144	Serif-text.10	OCRB
	002B	43	0090	144	Serif-text.italic.10	OCRB-Italic
	002C	44	0090	144	Katakana-gothic.10	Courier
	002D	45	0090	144	APL.10	Courier
@	002E	46	0090	144	Courier.bold.10	Courier-Bold
	0032	50	0090	144	Shalom.bold.10	Courier-Bold
@	0039	57	0090	144	Courier.italic.bold.10	Courier-Bold-Oblique
	003C	60	0090	144	Prestige.bold.10	Courier-Bold
	0042	66	0078	120	Gothic-text.12	OCRB
	0044	68	0078	120	Gothic-text.italic.12	OCRB-Italic
	0045	69	0078	120	Gothic-text.bold.12	OCRB-Bold
	0046	70	0078	120	Serif-text.12	OCRB
	0047	71	0078	120	Serif-text.italic.12	OCRB-Italic
	0048	72	0078	120	Serif-text.bold.12	OCRB-Bold
	0050	80	0078	120	Math-symbol.12	Courier
	0054	84	0078	120	Script.12	Courier-Oblique
@	0055	85	0078	120	Courier.12	Courier
	0056	86	0078	120	Prestige.12	Courier

	FGID		FW		IBM Font Name	Post Script Font
	hex	dec	hex	dec		
@	0057	87	0078	120	Letter-Gothic.12	LetterGothic
	005B	91	0078	120	Light-italic.12	Courier-Oblique
@	006C	108	0078	120	Courier.bold.12	Courier-Bold
@	006D	109	0078	120	Letter-Gothic.italic.12	LetterGothic-Italic
@	006E	110	0078	120	Letter-Gothic.bold.12	LetterGothic-Bold
	006F	111	0078	120	Prestige.bold.12	Courier-Bold
	0070	112	0078	120	Prestige.italic.12	Courier-Oblique
	009B	155	0078	120	Boldface.italic.PSM	Times-BoldItalic
	009E	158	0078	120	Modern.PSM	Times-Roman
	009F	159	0078	120	Boldface.PSM	Times-Bold
	00A0	160	0078	120	Essay.PSM	Helvetica
	00A2	162	0078	120	Essay.italic.PSM	Helvetica-Oblique
	00A3	163	0078	120	Essay.bold.PSM	Helvetica-Bold
	00A8	168	0078	120	Barak.bold.PSM	Times-Bold
	00AD	173	0078	120	Essay.light.PSM	Helvetica
	00AF	175	0078	120	Document.PSM	Times-Roman
	00B1	177	0078	120	Bold.italic.PSM	Times-BoldItalic
	00CC	204	006C	108	Gothic-text.13	OCRB
@	00D6	214	0060	96	Courier.bold.15	Courier-Bold
	00DD	221	0060	96	Prestige.15	Courier
	00DE	222	0060	96	Gothic.15	OCRB
@	00DF	223	0060	96	Courier.15	Courier
	00E1	225	0060	96	Math-symbol.15	Courier
@	00E3	227	0060	96	Letter-Gothic.15	LetterGothic
	00E5	229	0060	96	Serif-text.15	OCRB
	00E6	230	0060	96	Gothic-text.15	OCRB
@	00F4	244	0120	288	Courier.5	Courier
@	00F5	245	0120	288	Courier.bold.5	Courier-Bold
@	00FC	252	0056	86	Courier.17	Courier
@	00FD	253	0056	86	Courier.bold.17	Courier-Bold
@	00FE	254	0056	86	Courier.17 sub/superscript	Courier
@	00FF	255	0056	86	Matrix-Gothic.17	LetterGothic
@	0106	262	00B4	180	Courier.8	Courier
@	0112	274	0056	86	Letter-Gothic.17	LetterGothic
	0118	280	0048	72	APL.20	Courier
@	0119	281	0048	72	Gothic-text.20	LetterGothic
@	011D	285	003C	60	Letter-Gothic.25	LetterGothic
@	0122	290	0036	54	Gothic-text.27	LetterGothic
@	02EF	751	0036	54	Sonoran-serif.8pt	Times-Roman
@	041B	1051	0042	66	Sonoran-serif.10pt	Times-Roman
@	041D	1053	0042	66	Sonoran-serif.bold.10pt	Times-Bold
@	0420	1056	0042	66	Sonoran-serif.italic.10pt	Times-Italic
@	0547	1351	004E	78	Sonoran-serif.12pt	Times-Roman
@	0675	1653	006C	108	Sonoran-serif.bold.16pt	Times-Bold
@	0837	2103	00A2	162	Sonoran-serif.bold.24pt	Times-Bold

	FGID		FW		IBM Font Name	Post Script Font
	hex	dec	hex	dec		
	0F00 to 0F7F	3840 to 3967	any	any	User Definable Fonts	any
@	1137	4407	002A	42	Sonoran-serif.6pt	Times-Roman
@	1137	4407	0036	54	Sonoran-serif.8pt	Times-Roman
@	1137	4407	003C	60	Sonoran-serif.9pt	Times-Roman
@	1137	4407	0042	66	Sonoran-serif.10pt	Times-Roman
@	1137	4407	0048	72	Sonoran-serif.11pt	Times-Roman
@	1137	4407	004E	78	Sonoran-serif.12pt	Times-Roman
@	114B	4427	003C	60	Sonoran-serif.bold.9pt	Times-Bold
@	114B	4427	0042	66	Sonoran-serif.bold.10pt	Times-Bold
@	114B	4427	0060	96	Sonoran-serif.bold.14pt	Times-Bold
@	114B	4427	006C	108	Sonoran-serif.bold.16pt	Times-Bold
@	114B	4427	0084	132	Sonoran-serif.bold.20pt	Times-Bold
@	114B	4427	00A2	162	Sonoran-serif.bold.24pt	Times-Bold
@	11B7	4535	003C	60	Sonoran-serif.italic.9pt	Times-Italic
@	11B7	4535	0042	66	Sonoran-serif.italic.10pt	Times-Italic
@	11B7	4535	0048	72	Sonoran-serif.italic.11pt	Times-Italic
@	11CB	4555	003C	60	Sonoran-serif.bold.italic.9pt	Times-BoldItalic
@	11CB	4555	0042	66	Sonoran-serif.bold.italic.10pt	Times-BoldItalic
@	11CB	4555	004E	78	Sonoran-serif.bold.italic.12pt	Times-BoldItalic
@	11CB	4555	0078	120	Sonoran-serif.bold.italic.18pt	Times-BoldItalic
@	11CB	4555	0084	132	Sonoran-serif.bold.italic.20pt	Times-BoldItalic
%@	4237	16951	0066	102	Century Schoolbook.12pt	NewCenturySchlbk
%@	4237	16951	0078	120	Century Schoolbook.14pt	NewCenturySchlbk
%@	424B	16971	0066	102	Century Schoolbook.bold.12pt	NewCenturySchlbk-Bold
%@	424B	16971	0078	120	Century Schoolbook.bold.14pt	NewCenturySchlbk-Bold
%@	42B7	17079	0066	102	Century Schoolbook.italic.12pt	NewCenturySchlbk-Italic
%@	42B7	17079	0078	120	Century Schoolbook.italic.14pt	NewCenturySchlbk-Italic
%@	42CB	17099	0066	102	Century Schoolbook.bold.italic.12pt	NewCenturySchlbk-Bo-It
%@	42CB	17099	0078	120	Century Schoolbook.bold.italic.14pt	NewCenturySchlbk-Bo-It
%@	1637	5687	0028	40	Times.Roman.6pt	Times-Roman
%@	1637	5687	0035	53	Times.Roman.8pt	Times-Roman
%@	1637	5687	0043	67	Times.Roman.10pt	Times-Roman
%@	1637	5687	0050	80	Times.Roman.12pt	Times-Roman
%@	1637	5687	005D	93	Times.Roman.14pt	Times-Roman
%@	1637	5687	0078	120	Times.Roman.18pt	Times-Roman
%@	1637	5687	00A0	160	Times.Roman.24pt	Times-Roman
%@	164B	5707	0028	40	Times.bold.6pt	Times-Bold
%@	164B	5707	0035	53	Times.bold.8pt	Times-Bold
%@	164B	5707	0043	67	Times.bold.10pt	Times-Bold
%@	164B	5707	0050	80	Times.bold.12pt	Times-Bold
%@	164B	5707	005D	93	Times.bold.14pt	Times-Bold
%@	164B	5707	0078	120	Times.bold.18pt	Times-Bold
%@	164B	5707	00A0	160	Times.bold.24pt	Times-Bold

	FGID		FW		IBM Font Name	Post Script Font
	hex	dec	hex	dec		
%@	16B7	5815	0028	40	Times.italic.6pt	Times-Italic
%@	16B7	5815	0035	53	Times.italic.8pt	Times-Italic
%@	16B7	5815	0043	67	Times.italic.10pt	Times-Italic
%@	16B7	5815	0050	80	Times.italic.12pt	Times-Italic
%@	16B7	5815	005D	93	Times.italic.14pt	Times-Italic
%@	16B7	5815	0078	120	Times.italic.18pt	Times-Italic
%@	16B7	5815	00A0	160	Times.italic.24pt	Times-Italic
%@	16CB	5835	0028	40	Times.bold.italic.6pt	Times-BoldItalic
%@	16CB	5835	0035	53	Times.bold.italic.8pt	Times-BoldItalic
%@	16CB	5835	0043	67	Times.bold.italic.10pt	Times-BoldItalic
%@	16CB	5835	0050	80	Times.bold.italic.12pt	Times-BoldItalic
%@	16CB	5835	005D	93	Times.bold.italic.14pt	Times-BoldItalic
%@	16CB	5835	0078	120	Times.bold.italic.18pt	Times-BoldItalic
%@	16CB	5835	00A0	160	Times.bold.italic.24pt	Times-BoldItalic
%@	8537	34103	0028	40	Helvetica.6pt	Helvetica
%@	8537	34103	0035	53	Helvetica.8pt	Helvetica
%@	8537	34103	0043	67	Helvetica.10pt	Helvetica
%@	8537	34103	0050	80	Helvetica.12pt	Helvetica
%@	8537	34103	005D	93	Helvetica.14pt	Helvetica
%@	8537	34103	0078	120	Helvetica.18pt	Helvetica
%@	8537	34103	00A0	160	Helvetica.24pt	Helvetica
%@	854B	34123	0028	40	Helvetica.bold.6pt	Helvetica-Bold
%@	854B	34123	0035	53	Helvetica.bold.8pt	Helvetica-Bold
%@	854B	34123	0043	67	Helvetica.bold.10pt	Helvetica-Bold
%@	854B	34123	0050	80	Helvetica.bold.12pt	Helvetica-Bold
%@	854B	34123	005D	93	Helvetica.bold.14pt	Helvetica-Bold
%@	854B	34123	0078	120	Helvetica.bold.18pt	Helvetica-Bold
%@	854B	34123	00A0	160	Helvetica.bold.24pt	Helvetica-Bold
%@	85B7	34231	0028	40	Helvetica.italic.6pt	Helvetica-Oblique
%@	85B7	34231	0035	53	Helvetica.italic.8pt	Helvetica-Oblique
%@	85B7	34231	0043	67	Helvetica.italic.10pt	Helvetica-Oblique
%@	85B7	34231	0050	80	Helvetica.italic.12pt	Helvetica-Oblique
%@	85B7	34231	005D	93	Helvetica.italic.14pt	Helvetica-Oblique
%@	85B7	34231	0078	120	Helvetica.italic.18pt	Helvetica-Oblique
%@	85B7	34231	00A0	160	Helvetica.italic.24pt	Helvetica-Oblique
%@	85CB	34251	0028	40	Helvetica.bold.italic.6pt	Helvetica-BoldOblique
%@	85CB	34251	0035	53	Helvetica.bold.italic.8pt	Helvetica-BoldOblique
%@	85CB	34251	0043	67	Helvetica.bold.italic.10pt	Helvetica-BoldOblique
%@	85CB	34251	0050	80	Helvetica.bold.italic.12pt	Helvetica-BoldOblique
%@	85CB	34251	005D	93	Helvetica.bold.italic.14pt	Helvetica-BoldOblique
%@	85CB	34251	0078	120	Helvetica.bold.italic.18pt	Helvetica-BoldOblique
%@	85CB	34251	00A0	160	Helvetica.bold.italic.24pt	Helvetica-BoldOblique

Notes:

1. FW (Font Width) is in $^{1}/_{1440}$", and denotes the width of a word space for the specific font.
2. Certain FGIDs are substituted to another FGID, see Immediate Font Substitutions below.
3. (Coax mode only) For PSF/MVS, sample APSRMARK jobs can be found in SYS1.SAMPLIB. The fonts can be marked with the APSWMSTD and APSWMGML sample jobs for 3812 and 3816 printers. The APSW4028 is used with the 4028 printer.
4. (Coax mode only) To mark a resident font in APSRMARK, the font character width tables must exist on the system.
5. Fonts marked with a '%' are dynamically scalable, see Section 5.6.2.
6. Fonts marked with an '@' are close in appearance to the original, and are reported to the host as supported resident fonts.

The Axis AFP supports extended font mapping at PostScript level, making it possible to redefine any of the FGIDs in the table above. See User Definable Fonts and Extended Font Mapping later in this section for details.

Immediate Font Substitutions

Certain FGIDs will be immediately substituted by the Axis AFP. The substitution table depends on the selected IBM printer emulation.

The following fonts are substituted for the IBM 4028/3916 emulation:

FGID		Selected IBM font	FGID		Substituted IBM font
hex	dec		hex	dec	
000D	13	Artisan.10	0024	36	Letter-Gothic.10
0014	20	Pica.10	000B	11	Courier.10
001A	26	Matrix.gothic 10	0024	36	Letter-Gothic.10
001E	30	Math-symbol.10	000B	11	Courier.10
0028	40	Gothic-text.10	0024	36	Letter-Gothic.10
0029	41	Roman-text.10	000C	12	Prestige.10
002A	42	Serif-text.10	000B	11	Courier.10
002B	43	Serif-text.italic.10	0012	18	Courier.italic.10
002C	44	Katakana-gothic.10	0015	21	Katakana.10
0042	66	Gothic-text.12	0057	87	Letter-Gothic.12
0044	68	Gothic-text.italic.12	006D	109	Letter-Gothic.italic.12
0045	69	Gothic-text.bold.12	006E	110	Letter-Gothic.bold.12
0046	70	Serif-text.12	0055	85	Courier.12
0047	71	Serif-text.italic.12	005C	92	Courier.italic.12
0050	80	Math-symbol.12	0056	86	Prestige.12
006B	107	Elite.12	0055	85	Courier.12
00AD	173	Essay.light.PSM	00A0	160	Essay.PSM
00AF	175	Document.PSM	009E	158	Modern.PSM
00B0	176	Bold.PSM	009F	159	Boldface.PSM
00B1	177	Bold.italic.PSM	009B	155	Boldface.italic.PSM
00E5	229	Serif-text.15	00DF	223	Courier.15
00E6	230	Gothic-text.15	00DE	222	Gothic.15
02EF	751	Sonoran-serif.8pt	1637	5687	Times.Roman.8pt
02F8	760	Times.Roman.6pt	1637	5687	Times.Roman.6pt
02F9	761	Times.bold.12pt	164B	5707	Times.bold.12pt
02FA	762	Times.bold.14pt	164B	5707	Times.bold.14.pt
02FB	763	Times.italic.12pt	16B7	5815	Times.italic.12pt
02FC	764	Times.bold.italic.10pt	16CB	5835	Times.bold.italic.10.pt
02FD	765	Times.bold.italic.12pt	16CB	5835	Times.bold.italic.12pt
041B	1051	Sonoran-serif.10pt	1637	5687	Times.Roman.10pt
041D	1053	Sonoran-serif.bold.10pt	164B	5707	Times.bold.10pt
0420	1056	Sonoran-serif.italic.10pt	16B7	5815	Times.italic.10pt
0547	1351	Sonoran-serif.12pt	1637	5687	Times.Roman.12pt
0675	1653	Sonoran-serif.bold.16pt	164B	5707	Times.bold.16pt
070B	1803	Sonoran-serif.bold.18pt	164B	5707	Times.bold.18pt
0837	2103	Sonoran-serif.bold.24pt	164B	5707	Times.bold.24pt

The following fonts are substituted for the IBM 3812/3816 emulation:

FGID		Selected IBM font	FGID		Substituted IBM font
hex	dec		hex	dec	
000D	13	Artisan.10	000B	11	Courier.10
0014	20	Pica.10	0056	86	Prestige.12
001A	26	Matrix.gothic 10	0028	40	Gothic-text.10
001E	30	Math-symbol.10	000B	11	Courier.10
0029	41	Roman-text.10	0028	40	Gothic-text.10
002A	42	Serif-text.10	0028	40	Gothic-text.10
0046	70	Serif-text.12	0042	66	Gothic-text.12
0047	71	Serif-text.italic.12	0044	68	Gothic-text.italic.12
0048	72	Serif-text.bold.12	0045	69	Gothic-text.bold.12
0050	80	Math-symbol.12	0056	86	Prestige.12
005B	91	Light-italic.12	0070	112	Prestige.italic.12
006B	107	Elite.12	0055	85	Courier.12
009E	158	Modern.PSM	00AF	175	Document.PSM
00B0	176	Bold.PSM	009F	159	Boldface.PSM
00B1	177	Bold.italic.PSM	009B	155	Boldface.italic.PSM
00DD	221	Prestige.15	00E6	230	Gothic-text.15
00DE	222	Gothic.15	00E6	230	Gothic-text.15
00E1	225	Math-symbol.15	00DF	223	Courier.15
00E5	229	Serif-text.15	00E6	230	Gothic-text.15

Unsupported Fonts

All FGIDs that don't appear in the Supported Fonts table (Section 5.3) or the Immediate Font Substitutions table (Section 5.4) are considered unsupported.

A selection of an unsupported FGID value will result in a substitution to a default font. The Axis AFP uses the same default fonts as the emulated IBM printers. The default fonts for different FGID ranges are shown in the table below:

FGID (hex)	FGID (dec)	Type	Default font
0001 - 0041	1 - 65	10 CPI	11 Courier.10
0042 - 0099	66 - 153	12 CPI	85 Courier.12
009A - 00C8	154 - 200	Proportional PSM	175 Document.PSM
00C9 - 00D2	201 - 210	13 CPI	204 Gothic-text.13
00D3 - 00EF	208 - 239	15 CPI	223 Courier.15
00F0 - 00F7	240 - 247	5 CPI	244 Courier.5
00F8 - 0103	248 - 259	17 CPI	274 Letter-Gothic.17
0104 - 0111	260 - 273	8 CPI	262 Courier.8
0112 - 0117	274 - 279	17 CPI	274 Letter-Gothic.17
0118 - 011B	280 - 283	20 CPI	281 Letter-Gothic.20
011C - 0120	284 - 288	25 CPI	285 Letter-Gothic.25
0121 - 012B	289 - 299	27 CPI	290 Letter-Gothic.27
012C - 01FF	300 - 511	10 CPI	11 Courier.10
0200 - 0EFF	512 - 3839	Typographic	85 Courier.12
0F00 - 0F7F	3840 - 3967	User Defined Fonts	*Printer dependent*
0F80 - 0FFF	3968 - 4095	User Defined Fonts	85 Courier.12
1000 - FFFF	4096 - 65535	Typographic	85 Courier.12

Typographical Fonts

This section deals with font width selections for typographical (proportional pitch) fonts.

Note that when an unsupported typographical font (FGID range 512 - 65534) is selected, the resulting font will be a fixed pitch (see the table on the previous page), and the selected font width value will be ignored.

Default Font Width

When the default font width is selected, the Axis AFP will set a font width in one of the following ways depending on the selected IBM printer emulation:

IBM 4028/3916

The font width is set to 67 (corresponding to a 10 point font).

IBM 3812/3816

The font width is set to the smallest available value for the selected FGID according to the font list in Section 5.3. For FGID 16951 (Century Schoolbook), the resulting font width is 102 (12 points), and for FGID 5687 (Times Roman), the resulting font width is 40 (6 points).

Scalable Fonts

If the selected font width (point size) is not available for the selected FGID, the Axis AFP will set a point size in one of the following ways depending on the font:

Times Roman, Helvetica and Century Schoolbook

The font width value is converted to a point size used to dynamically scale the selected font. This means that you have a completely free choice of point sizes (only limited by the host application) when printing with these fonts.

Any other typographical font

The nearest smaller available font width for the selected FGID will be used. If a smaller font width isn't available, the nearest larger font width will be used.

User Definable Fonts

This section describes how to select a printer specific, soft loaded, or cartridge resident font by a FGID number. Up to 128 additional fonts can be linked to FGID numbers by the user. The FGID numbers 3840 to 3967 (0F00-0F7F in hexadecimal) are reserved by IBM for user defined fonts.

When an FGID between 3840 and 3967 is used, Axis AFP translates it to a call for a user font UF0 to UF127 in the printer (i.e. FGID 3840 to UF0, FGID 3841 to UF1, etc.).

The user fonts UF0 to UF127 are mapped to printer fonts by sending a PostScript sequence to the printer. This can be done with the sequence programmed into the Power On String parameter or sending it to the printer from a PC using the PC-Host Sharing.

Example: Two fonts, Palatino-Bold and Bookman-Demi are defined to be addressed from the system as FGIDs 3840 and 3843:

```
serverdict begin 0 exitserver          % exit the server loop
/UF0 /Palatino-Roman findfont def      % Define FGID 3840
/UF3 /Bookman-Demi findfont def        % Define FGID 3843
<Ctrl-D>                               % End-of-File (code 04)
```

The font size will be scaled according to the Font Width specified by the application. If DEFAULT or no Font Width is specified by the application, a scaling for 10 CPI is performed.

You may also define a scaling in the definition by inserting a "`<scalevalue> scalefont`" operator between the "`findfont`" and "`def`" operators in the previous example. The resulting font size will then be the product of <scalevalue> and the Font Width.

> Fonts defined according to this example will contain a limited character set. Use the method described in Extended Font Mapping below to obtain a full character set.

Extended Font Mapping

This section describes an alternative method for selecting printer specific, soft-loaded or cartridge resident font by FGID number. Extended font mapping avoids the limitation of a restricted character set (see the previous User Definable Fonts section), but is more complex to manage.

> You should have a working knowledge of PostScript command language programming and PostScript font handling before implementing the procedures described below.

The extended font mapping feature consists of two parts; the *encoding* section and the *mapping* section. Both sections require you to define specific dictionaries outside the PostScript server loop.

The Encoding Dictionary

The encoding dictionary (EDICT) contains the original font names as keys, and the encoded font names as values. The encoding procedure will be the same as the one used by the standard font encoding in the postScript prologue.

The example below shows how to use Palatino-Roman as the user definable font UF0 with the full Axis AFP character set:

```
<Ctrl-D>
serverdict begin 0 exitserver       % exit the server loop
/EDICT                              % name of the encoding dictionary
  1 dict dup                        % just one EDICT entry
  /Palatino-Roman /UF0 put          % store the key/value pair
def                                 % define EDICT
<Ctrl-D>                            % return to server loop
```

The Font Map Dictionary

The font map dictionary (FMAP) contains the IBM FGIDs or AFP/PS encoded typefaces, and the typefaces you want to map them to.You can map a specific FGID to a new typeface, or modify a whole typeface class.

Example: The example below shows how to map FGID 000B hex (Courier) to Courier Bold, and all other Courier fonts to Courier Oblique:

```
<Ctrl-D>
serverdict begin 0 exitserver       % exit the server loop
/FMAP                               % name of the font map dictionary
  2 dict dup begin                  % two FMAP entries
  /B /CouBo def                     % map FGID 000B to Courier Bold
  /Cou /CouOb def                   % map all Courier to Courier Oblique
  end                               % end of dictionary
def                                 % define FMAP
<Ctrl-D>                            % return to server loop
```

FGID mapping has priority over typeface mapping. In this example, this means that all Courier fonts are mapped to Courier Oblique, except FGID 000B which will be mapped to Courier Bold.

FGID numbers must be in hex format, and only with the significant digits (DO NOT enter /000B instead of /B).

'Cou', 'CouBo' and 'CouOb' are the internal Axis AFP names of the encoded typfaces Courier, Courier Bold and Courier Oblique. A complete list of these names can be obtained from us upon request, see the address on the back cover.

Limitations:

The font mapping feature does not support font attributes. Attributes such as bold and italic used for the original font will not be effective for the mapped font.

EDICT and FMAP dictionaries may be combined in order to map any printer typeface to a specific FGID.

The example below shows how to map FGID 00A0 (Essay PSM) to the Zapf Dingbats:

```
<Ctrl-D>
serverdict begin 0 exitserver

/EDICT
  1 dict dup
  /ZapfDingbats /ZapfD put
def

/FMAP
  1 dict dup
  /A0 /ZapfD def
  /Cou /CouOb def
def

<Ctrl-D>
```

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Section 6

Solving Problems

This section deals with some common failure situations and gives guidelines for trouble-shooting.

No Printouts

In case of missing printouts, check the following:

1. **Is the Axis AFP POWER indicator on?**
   Check the power supply.
2. **Is the Axis AFP READY indicator on?**
   Check that the printer is on-line, according to the printer's manual.
   Check the printer cable connection.
3. **Is the Axis AFP power up page printed?**
   Power off the printer and Axis AFP. Power on the printer, wait for it to go on-line and then power on Axis AFP.
   Check that the printer is a PostScript compatible printer.
4. **Does the printer receive but not print data from the Axis AFP?**
   The printer may have been reset causing Axis AFP down-loaded data to be lost. Power off and on the Axis AFP, and re-send the print job. If you are using multiple inputs to your printer, you may need to modify the #3290 Job Time-out parameter value.
5. **Is the printer in PostScript mode?**
   Some printers have multiple emulations and automatic switching capabilities, which may have set the printer in another mode.
6. **Is the Axis AFP SYSTEM indicator on?**
   Turn the Axis AFP and printer off and on once again.
   Check that the coax cable is connected at the rear of the Axis AFP, and to the IBM system.
7. **Is the IBM Printer Emulation correct?**
   The emulation setting must match the IBM host configuration.

Incorrect Printouts

The following list describes some types of printout faults:

1. **Print data is lost at paper edges:**
   You are printing outside the printable area. Adjust the documents in your application to take this limitation in account, or compress the page contents by using the Horizontal and Vertical Scaling Factor parameters in Axis AFP. The page contents can be moved by using the Bind Origin parameters. See Section 7.5, Printable Area.

   Check that the paper size setting of Axis AFP is correct. The default paper size is A4 size.

2. **The printer hangs up or indicates memory overflow:**
   Check the PostScript VM Size setting. Power off and on the Axis AFP and wait for the Axis AFP power on page to be printed. Check that the PS VM Size setting is correct, not exceeding the printer's free VM Size printed. Check that the free PostScript VM Size is at least 200 kbytes.

3. **PostScript code is printed:**
   The printer is not in PostScript mode. Some printers have multiple emulations, and the printer may have been reset to another emulation, such as HP PCL. The Power On Sequence parameter in Axis AFP may be programmed to set the printer in PostScript mode. Consult the printer manual.

   If you are using multiple inputs on your printer, the #3290 Job Time-out parameter in Axis AFP may need to be adjusted.

Low Printing Speed If loaded fonts are used, check that the free VM Size is at least 700 kbytes, and that parameter #3001 is set accordingly.

Coax: You can also consider to use printer resident fonts instead. This is defined in PSF/MVS using the APSRMARK utility and in PSF/VM using the APRFTBLV (RSCS) or APRFTIDB files.

If large overlays, page segments, or fonts are used, they can be kept in the printer between jobs, avoiding to down-load them for each job. This can be done using the APSUX07 PSF exit.

Twinax: If you only run applications that do not require AFP functionality, consider setting **[AFP = *NO]** in the AS/400 device description to speed up word processing printouts. Note the limitations described in Section 2.3.

If you are using AFP functions (with **[AFP = *YES]**), try the following:

- Assign more memory to **[QSPL]**. Run **[WRKACTJOB]** to see which pool **[QSPL]** uses, then run **[WRKSYSSTS]** to set the new memory size. The recommended size is 2 Mbytes (80 kbytes is the default size).
- Lower the number of simultaneously active print jobs in the QSPL memory pool. The recommended number is 3, but on larger systems a higher number might be necessary. Run **[WRKSYSSTS]** to change this number.
- Disable Computer Output Reduction **[*COR]** if possible. This is selected in the application printer file.
- Use **[*IPDS]** or **[*AFPDS]** as application data stream, rather than **[*SCS]**. This is also selected in the application printer file.

The document "IBM AS/400 Printing II" (GG24-3704) gives more examples on how to increase the AFP performance.

Note that the printing speed also depends on the performance of your PostScript printer.

Error Report

If you run into problems that you can't solve on your own, it is important that you make an error report for your System Manager or local distributor. See also appendix G, How to contact Axis, on page 141. The error report should include:

- A printout with a description of the inaccuracies that occur
- The PostScript printer presentation page or Power-on page (see Section 2.5)
- A Parameter List (see Section 6.3.1)
- A hex dump (see Section 6.3.2).

Printing the Parameter List

The Parameter List shows the complete Axis AFP configuration. To print the Parameter List, do as follows:

1. Make sure that your printer is on-line.
2. **Set the rotary switch to '9', and wait for approx. 3 seconds** until the STATUS indicator starts to flash. You are now in the Function Mode.
3. Select position '8' to start the printout.
4. **Set the rotary switch to '9' when the printout is completed.** The STATUS indicator will stop flashing.
5. For coax connections, select position '0' to resume normal print operation. For twinax connections select the current device address to resume normal print operation.

Printing a Hex Dump

A special hex dump mode is provided for diagnostic purposes. A hex dump is a printout where the incoming data stream is printed as hexadecimal byte values rather than being interpreted as characters and control codes. To print a hex dump, do as follows:

1. **Make sure that your printer is on-line.**
2. **Set the rotary switch to '9', and wait for approx. 3 seconds** until the STATUS indicator starts to flash. You are now in the Function Mode.
3. **Select position '4' to start the hex dump mode.** The following message will be printed:

```
IBM HEX DUMP MODE SET
TO EXIT, SELECT POSITION 9 OR POWER OFF
```

4. **Send your print job.** The data will be printed in hexadecimal format.
5. **Set the rotary switch to '9' when the printout is completed.** The STATUS indicator will stop flashing.
6. **For coax connections, select position '0'** to resume normal print operation**. For twinax connections select the current device address** to resume normal print operation.

Some commands generate answers back to the host. Since the hex dump mode bypasses command interpretation, an application containing answer back commands may halt the printing process. The hex dump mode cannot be used with such applications.

Hex dump printing is not recommended in IPDS mode, since the amount of received data can be quite large. In these cases it is recommended to use a recording device rather than printing the hex dump on paper.

Messages

Apart from showing messages with the indicators, as described in Appendix C, the Axis AFP can also print the following messages:

```
FACTORY DEFAULT SET
```

Rotary switch position ‘1’ has been selected in Function Mode and parameters have been set to factory defaults.

```
IBM HEX DUMP MODE SET
TO EXIT, SELECT POSITION 9 OR POWER OFF
```

Rotary switch position ‘4’ has been selected in Function Mode and Hex Dump Mode is started.

```
Printer Memory Overflow.
Unable to load font to PostScript printer.
Using printer default font instead.
Following pages may be corrupted.

Service info:
InlSeq:
UniqueID:
HostID:
VMSize:
```

A too large font or too many fonts were down-loaded from the host. Add more memory to the printer and adjust the PS VM Size parameter in Axis AFP accordingly.

```
HEX TRANSPARENCY ERROR.
Following pages may be corrupted.
```

Invalid transparency data has been received (Coax mode only). See Section 4.2.

```
WARNING!! AFP/PS Prologue is lost.
Check printer time-outs & restart AFP/PS.
```

The printer has terminated the PostScript job in an uncontrolled manner. This can be caused by an incorrect printer time-out setting, or a manual printer restart. Make sure that the printer doesn‘t terminate the print job, or set an AFP/PS job time-out, see Appendix A, parameter #3290.

Section 7

Compatibility Considerations

The differences between IPDS and PostScript, and between the PostScript printer and the emulated IBM IPDS printer, may lead to differences in the appearance of the printouts. The five major areas of differences are:

- Printer Resolution
- Resource Memory Management
- Characters and Code Pages
- Resident Fonts
- Printable Area.

The following sections will explain and discuss these issues.

Printer Resolution

The IBM IPDS page printer models IBM 3812 and 3816, as well as channel attached page printers in the 38xx and 39xx series, have 240 dpi print resolution, while IBM 4028 and 3916 are 300 dpi printers. Axis AFP accepts both 240 and 300 dpi data streams and automatically converts them to the resolution of the printer, such as 300, 600 or 1200 dpi. For host down-loaded fonts, resident fonts can be selected instead by host configuration, see section 5, Fonts.

Resource Memory Management

Axis AFP is equipped with 700 kbytes of resource memory in which fonts, overlays and page segments are stored to be transmitted to the printer when requested. The PS VM Size parameter defines how much printer memory is available for Axis AFP to use. When the printer memory limit is reached, unused resources are deleted from the printer.

The minimum value of the PS VM size parameter is 200 kbytes. If down-loaded fonts are used, this parameter has to be increased. The default value is 1200 kbytes, corresponding roughly to the 700 kbytes available RAM in the Axis AFP.

The PS VM size parameter is printed on the lower half of the power-on page. It is important that this value is lower than or equal to the actual PostScript VM Size of the printer which is printed on the upper half of the power-on page.

Characters and Code Pages

The resident font characters offered are those in the PostScript character set (ISO 8859-1 and Symbol) with added cursor line-draw characters. To evaluate the characters offered, use Function Mode option '2', EBCDIC Character Table, to print the character table.

See also Appendix B, EBCDIC Character Table, for the US English Code Page 37 EBCDIC character table characters.

The code pages supported are those in the US Language Group. A list of code pages can be found in Appendix A, #50 System Language.

For host down-loaded fonts, all characters and code pages are supported.

Resident Fonts

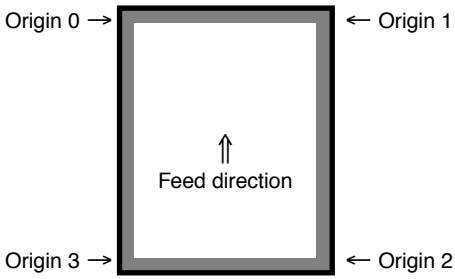
The Axis AFP uses the resident fonts in the attached PostScript printer, supplemented with the OCR-B and Letter Gothic outline fonts (down-loaded from the Axis AFP when needed). The PostScript font is scaled to be functionally equivalent to the corresponding selected IBM font.

In addition, up to 128 user fonts can be defined to map to any PostScript font in the printer.

See section 5, Fonts, for a listing of to which PostScript font a certain IBM printer resident font is matched.

Printable Area

The IBM 4028/3916, 3812 and 3816 printers allow printing on the complete page. Many PostScript printers, however, have an unprintable area of approximately 1/4 inch around the edges of the paper (the shaded area in the figure below).



Axis AFP has a set of parameters that can be used to offset the origin of printed data and to compress the page contents horizontally and vertically. These parameters are:

#720 Left Portrait Orientation	#732 Bind Left Origin 1
#721 Top Portrait Margin	#733 Bind Top Origin 1
#722 Left Landscape Margin	#734 Bind Left Origin 2
#723 Top Landscape Margin	#735 Bind Top Origin 2
#724 Left COR Margin	#736 Bind Left Origin 3
#725 Top COR Margin	#737 Bind Top Origin 3
#730 Bind Left Origin 0	#3002 Horizontal Scale Factor
#731 Bind Top Origin 0	#3003 Vertical Scale Factor

- The Left and Top Portrait/Landscape/COR Margin parameters only affect non-IPDS printing.
- The Bind Left and Top Origin parameters only affect IPDS printing. They allow adjustment of margins in four print directions, 0, 90, 180 and 270 degrees. Both positive and negative values (in units of $^{1}/_{100}$") can be used.
- The Horizontal and Vertical Scale Factors allow scaling of the printed data from 1% to 999%, where 100% is the 1:1 size (no scaling).

There are also a set of parameters that allow local scaling and positioning for each input bin individually. These parameters are:

#1005 Bin 1 Horizontal Scale Factor	#1107 Bin 3 Horizontal Offset
#1006 Bin 1 Vertical Scale Factor	#1108 Bin 3 Vertical Offset
#1007 Bin 1 Horizontal Offset	#1155 Bin 4 Horizontal Scale Factor
#1008 Bin 1 Vertical Offset	#1156 Bin 4 Vertical Scale Factor
#1055 Bin 2 Horizontal Scale Factor	#1157 Bin 4 Horizontal Offset
#1056 Bin 2 Vertical Scale Factor	#1158 Bin 4 Vertical Offset
#1057 Bin 2 Horizontal Offset	#1205 Bin 5 Horizontal Scale Factor
#1058 Bin 2 Vertical Offset	#1206 Bin 5 Vertical Scale Factor
#1105 Bin 3 Horizontal Scale Factor	#1207 Bin 5 Horizontal Offset
#1106 Bin 3 Vertical Scale Factor	#1208 Bin 5 Vertical Offset

Important: You need only use these parameters if different scaling and positioning for different input bins are required. As long as these parameters are set to their default values, the global scaling and positioning can be fully controlled by the parameters listed on the previous page.

The following rules apply to the local scaling and positioning parameters:

- Local scaling and positioning affects *both* IPDS and non-IPDS printing.
- A local Horizontal Scale Factor overrides the global scaling set by the Horizontal Scale Factor (#3002). Horizontal scaling is always perpendicular to the paper feed direction regardless of the print orientation.
- A local Vertical Scale Factor overrides the global scaling set by the Vertical Scale Factor (#3003). Vertical scaling is always parallel to the paper feed direction regardless of the print orientation.
- A local Horizontal Offset is added to the margin set by the Margin (non-IPDS) and Bind Origin (IPDS) parameters. Horizontal positioning is always perpendicular to the paper feed direction regardless of the print orientation.
- A local Vertical Offset is added to the margin set by the Margin (non-IPDS) and Bind Origin (IPDS) parameters. Vertical positioning is always parallel to the paper feed direction regardless of the print orientation.

Appendix A

The Parameter List

The Parameter List is a list of user settings controlling the operation of Axis AFP. Many of them are equivalent to IBM printer front panel switches. This appendix contains a list of all parameters with description, use and notes.

Each parameter is assigned a number, #n, name and the assigned value. Factory default is denoted with '*' preceding the value.

The Parameter List can be printed by selecting position '8' on the rotary switch in Function Mode or selecting the Print Parameter List option in the Main Menu.

All parameter settings can be edited from the 'Edit Parameters' entry in the Main Menu (see Section 4). The most essential parameters can be edited from the 'Basic Configuration', 'Printer Attachment', and 'Page Format' entries.

Printout Sample of the Parameter List

On the following six pages you find printout samples of the parameter listing for the Axis AFP in both coax and twinax mode, showing the factory default configuration. To print the parameter list, select rotary switch position '8' in Function Mode, or 'Print Parameter List' in the Configuration Main Menu.

Parameter list, coax mode

```
PARAMETER LIST                                          Page 1 of 3

Axis AFP Coax Printer Controller

SOFTWARE    : Ver 2.10  950413
HARDWARE    : Ver 2.00
EPROM       : 1024k
RAM         : 1024k
NVRAM       : 32768
OPTIONS     : PC-host sharing board

ID   DESCRIPTION                                 SETTING

 50  System Language                          : US English
 51  Load Translate Table                     : No
 52  IBM Printer Emulation                    : IBM 4028

100  Maximum Page Length                      : 66
101  Maximum Print Position                   : 132
102  Lines per Inch                           : 6
103  Characters per Inch                      : 10

201  Line Spacing                             : Single
202  Case                                     : Dual

300  Default Input Bin                        : Bin 1
301  Paper Cassette Linking                   : Off
302  High Capacity as Primary                 : 0

400  Screen Size for Local Copy               : 1920
402  Extended Attribute Buffer                : 0

500  Intervention Time-out                    : 10
501  Early Print Complete                     : No

600  Auto Func after end of OILC Job          : 1
601  Automatic NL at MPP+1                    : 1
602  Additional NL at MPP+1                   : 1
603  FF within Print Buffer                   : 0
604  FF at end of Print Buffer                : 1
605  Null Suppression                         : 0
606  FF Command Position                      : 0
607  Auto Func after End of Print Buffer      : 0

700  Auto Orientation                         : Yes
701  Default Portrait Font                    : 0
702  Default Landscape Font                   : 0
720  Left Portrait Margin                     : 20
721  Top Portrait Margin                      : 10
722  Left Landscape Margin                    : 20
723  Top Landscape Margin                     : 10
724  Left COR Margin                          : 0
725  Top COR Margin                           : 0
730  Bind Left Origin 0                       : 0
731  Bind Top Origin 0                        : 0
```

Sample Parameter List showing the default coax configuration (page 1)

```
PARAMETER LIST                                          Page 2 of 3

Axis AFP Coax Printer Controller

ID   DESCRIPTION                                  SETTING

 732  Bind Left Origin 1                       : 0
 733  Bind Top Origin 1                        : 0
 734  Bind Left Origin 2                       : 0
 735  Bind Top Origin 2                        : 0
 736  Bind Left Origin 3                       : 0
 737  Bind Top Origin 3                        : 0

1000  Bin 1 Physical Paper Size                : A4
1001  Bin 1 Physical Paper Length              : 0
1002  Bin 1 Physical Paper Width               : 0
1003  Bin 1 Orientation                        : Reduction
1004  Bin 1 Printer Bin Number                 : Default
1005  Bin 1 Horizontal Scale Factor            : 0
1006  Bin 1 Vertical Scale Factor              : 0
1007  Bin 1 Horizontal Offset                  : 0
1008  Bin 1 Vertical Offset                    : 0

1050  Bin 2 Physical Paper Size                : A4
1051  Bin 2 Physical Paper Length              : 0
1052  Bin 2 Physical Paper Width               : 0
1053  Bin 2 Orientation                        : Reduction
1054  Bin 2 Printer Bin Number                 : Default
1055  Bin 2 Horizontal Scale Factor            : 0
1056  Bin 2 Vertical Scale Factor              : 0
1057  Bin 2 Horizontal Offset                  : 0
1058  Bin 2 Vertical Offset                    : 0

1100  Bin 3 Physical Paper Size                : A4
1101  Bin 3 Physical Paper Length              : 0
1102  Bin 3 Physical Paper Width               : 0
1103  Bin 3 Orientation                        : Reduction
1104  Bin 3 Printer Bin Number                 : Default
1105  Bin 3 Horizontal Scale Factor            : 0
1106  Bin 3 Vertical Scale Factor              : 0
1107  Bin 3 Horizontal Offset                  : 0
1108  Bin 3 Vertical Offset                    : 0

1150  Bin 4 Physical Paper Size                : A4
1151  Bin 4 Physical Paper Length              : 0
1152  Bin 4 Physical Paper Width               : 0
1153  Bin 4 Orientation                        : Reduction
1154  Bin 4 Printer Bin Number                 : Default
1155  Bin 4 Horizontal Scale Factor            : 0
1156  Bin 4 Vertical Scale Factor              : 0
1157  Bin 4 Horizontal Offset                  : 0
1158  Bin 4 Vertical Offset                    : 0

1200  Bin 5 Physical Paper Size                : A4
1201  Bin 5 Physical Paper Length              : 0
```

Sample Parameter List showing the default coax configuration (page 2)

```
PARAMETER LIST                                          Page 3 of 3

Axis AFP Coax Printer Controller

ID   DESCRIPTION                              SETTING

1202  Bin 5 Physical Paper Width            : 0
1203  Bin 5 Orientation                     : Reduction
1204  Bin 5 Printer Bin Number              : Default
1205  Bin 5 Horizontal Scale Factor         : 0
1206  Bin 5 Vertical Scale Factor           : 0
1207  Bin 5 Horizontal Offset               : 0
1208  Bin 5 Vertical Offset                 : 0

3000  Printer Driver                        : PostScript Level 1
3001  PostScript Virtual Memory             : 1200
3002  Horizontal Scale Factor               : 100
3003  Vertical Scale Factor                 : 100
3004  Color Support                         : No
3005  Duplex Support                        : Yes
3010  Power On Page                         : Yes
3011  Load Font Smoothing                   : Yes
3012  PS Error Handler                      : No
3013  PS Restart at Duplex                  : No
3014  Optimize Duplex                       : Yes
3015  Job Separation                        : Yes

3150  Parallel-2 Time-out                   : 10
3151  Parallel-2 Begin String               :
3152  Parallel-2 End String                 : $04

3200  Power On String                       :
3210  Transparency Lead-in String           :
3211  Transparency Trailer String           :

3280  Host Time-out                         : 10
3290  Job Time-out                          : 10
3291  Job Begin String                      :
3292  Job End String                        :
```

Sample Parameter List showing the default coax configuration (page 3)

Parameter list, twinax mode

```
PARAMETER LIST                                          Page 1 of 3

   Axis AFP Twinax Printer Controller

   SOFTWARE    : Ver 2.10  950413
   HARDWARE    : Ver 2.00
   EPROM       : 1024k
   RAM         : 1024k
   NVRAM       : 32768
   OPTIONS     : PC-host sharing board

   ID   DESCRIPTION                          SETTING

    10  Device Address                     : 7
    50  System Language                    : US English
    52  IBM Printer Emulation              : IBM 4028

   100  Maximum Page Length                : 66
   101  Maximum Print Position             : 132
   102  Lines per Inch                     : 6
   103  Characters per Inch                : 10

   300  Default Input Bin                  : Bin 1
   301  Paper Cassette Linking             : Off
   302  High Capacity as Primary           : 0

   700  Auto Orientation                   : Yes
   701  Default Portrait Font              : 0
   702  Default Landscape Font             : 0
   720  Left Portrait Margin               : 20
   721  Top Portrait Margin                : 10
   722  Left Landscape Margin              : 20
   723  Top Landscape Margin               : 10
   724  Left COR Margin                    : 0
   725  Top COR Margin                     : 0
   730  Bind Left Origin 0                 : 0
   731  Bind Top Origin 0                  : 0
   732  Bind Left Origin 1                 : 0
   733  Bind Top Origin 1                  : 0
   734  Bind Left Origin 2                 : 0
   735  Bind Top Origin 2                  : 0
   736  Bind Left Origin 3                 : 0
   737  Bind Top Origin 3                  : 0

  1000  Bin 1 Physical Paper Size          : A4
  1001  Bin 1 Physical Paper Length        : 0
  1002  Bin 1 Physical Paper Width         : 0
  1003  Bin 1 Orientation                  : Reduction
  1004  Bin 1 Printer Bin Number           : Default
  1005  Bin 1 Horizontal Scale Factor      : 0
  1006  Bin 1 Vertical Scale Factor        : 0
  1007  Bin 1 Horizontal Offset            : 0
  1008  Bin 1 Vertical Offset              : 0

  1050  Bin 2 Physical Paper Size          : A4
```

Sample Parameter List showing the default twinax configuration (page 1)

```
PARAMETER LIST                                          Page 2 of 3

Axis AFP Twinax Printer Controller

ID   DESCRIPTION                                  SETTING

1051  Bin 2 Physical Paper Length           : 0
1052  Bin 2 Physical Paper Width            : 0
1053  Bin 2 Orientation                     : Reduction
1054  Bin 2 Printer Bin Number              : Default
1055  Bin 2 Horizontal Scale Factor         : 0
1056  Bin 2 Vertical Scale Factor           : 0
1057  Bin 2 Horizontal Offset               : 0
1058  Bin 2 Vertical Offset                 : 0

1100  Bin 3 Physical Paper Size             : A4
1101  Bin 3 Physical Paper Length           : 0
1102  Bin 3 Physical Paper Width            : 0
1103  Bin 3 Orientation                     : Reduction
1104  Bin 3 Printer Bin Number              : Default
1105  Bin 3 Horizontal Scale Factor         : 0
1106  Bin 3 Vertical Scale Factor           : 0
1107  Bin 3 Horizontal Offset               : 0
1108  Bin 3 Vertical Offset                 : 0

1150  Bin 4 Physical Paper Size             : A4
1151  Bin 4 Physical Paper Length           : 0
1152  Bin 4 Physical Paper Width            : 0
1153  Bin 4 Orientation                     : Reduction
1154  Bin 4 Printer Bin Number              : Default
1155  Bin 4 Horizontal Scale Factor         : 0
1156  Bin 4 Vertical Scale Factor           : 0
1157  Bin 4 Horizontal Offset               : 0
1158  Bin 4 Vertical Offset                 : 0

1200  Bin 5 Physical Paper Size             : A4
1201  Bin 5 Physical Paper Length           : 0
1202  Bin 5 Physical Paper Width            : 0
1203  Bin 5 Orientation                     : Reduction
1204  Bin 5 Printer Bin Number              : Default
1205  Bin 5 Horizontal Scale Factor         : 0
1206  Bin 5 Vertical Scale Factor           : 0
1207  Bin 5 Horizontal Offset               : 0
1208  Bin 5 Vertical Offset                 : 0

3000  Printer Driver                        : PostScript Level 1
3001  PostScript Virtual Memory             : 1200
3002  Horizontal Scale Factor               : 100
3003  Vertical Scale Factor                 : 100
3004  Color Support                         : No
3005  Duplex Support                        : Yes
3010  Power On Page                         : Yes
3011  Load Font Smoothing                   : Yes
3012  PS Error Handler                      : No
3013  PS Restart at Duplex                  : No
```

Sample Parameter List showing the default twinax configuration (page 2)

```
PARAMETER LIST                                          Page 3 of 3

Axis AFP Twinax Printer Controller

ID   DESCRIPTION                              SETTING

3014  Optimize Duplex                       : Yes
3015  Job Separation                        : Yes

3150  Parallel-2 Time-out                   : 10
3150  Parallel-2 Begin String               :
3150  Parallel-2 End String                 : $04

3200  Power On String                       :

3280  Host Time-out                         : 10
3290  Job Time-out                          : 10
3291  Job Begin String                      :
3292  Job End String                        :
```

Sample Parameter List showing the default twinax configuration (page 3)

#10 Device Address

5250/Twinax only Shows the last Twinax Device Address set by the push-wheel.

Value	Description
0 - 6	Last Twinax Device Address.
*7	Device Address not yet assigned. (default)

Notes:

1. Do not change this value – the Device Address is always set by the push-wheel.
2. A message is printed when the Device Address has been changed:

```
ATTENTION!
DEVICE ADDRESS HAS BEEN CHANGED TO 3.

PREVIOUS DEVICE ADDRESS WAS 6.
```

Message printed when the Device Address is changed from 6 to 3.

#50 System Language

Defines the default code page and language character set.

Value	Code Page	Value	Code Page
International Set 5	500	Danish/Norwegian Alt	287
* US English (default)	37	Finnish/Swedish Alt	288
International Set 1	256	Spanish Alt	289
Symbols Set 7	259	Japanese Katakana	290
Canadian French	260	APL	293
Austrian/German	273	French	297
Belgian	274	International Typographic	361
Brazilian	275	Personal Computer	437
Danish/Norwegian	277	Portuguese Alt	37
Finnish/Swedish	278	Icelandic	871
Italian	280	OCR-A	892
Japanese/English	281	OCR-B	893
Portuguese	282	Canadian Bilingual	37
Spanish Speaking	284	Swiss Bilingual	500
UK English	285	Spanish	284
Austrian/German Alt	286		

Notes:

1. In IPDS mode, the code page may be selected by the data stream, overriding the setting of this parameter.
2. This parameter emulates an IBM 3812/3816 front panel switch: c04 Character Sets and Code Pages (US Language Group diskette).
3. The EBCDIC character table for the selected language can be printed using Function Mode selection '2'. See also Appendix B.

Related parameter: #51 Load Translate Table

#51 Load Translate Table

3270/Coax only Defines if the DSC/DSE mode character table shall be loaded from the Control Unit at Axis AFP power on.

Value	Description
* No	Use the Code Page set by System Language (#50).
Yes	Load translate table from Control Unit.

Notes:

1. This parameter has only effect in DSC/DSE mode.
2. 'Yes' is the default setting of IBM 3812/3816, but requires that the Control Unit is configured to support Load Translate Table.

Related parameter: #50 System Language

#52 IBM Printer Emulation

Defines the IBM printer emulation. The communication responses and printout will be according to the selected printer emulation.

Value	Description
* IBM 4028/3916	IPDS page printer emulation with duplex printing. (default)
IBM 3812 mod 2	IPDS page printer emulation.
IBM 3816	IPDS page printer emulation with duplex printing.
IBM 3287	Non-IPDS matrix printer emulation.
IBM 3268	Non-IPDS matrix printer emulation.
IBM 3262	Non-IPDS matrix printer emulation.
IBM 4214 mod 1	Non-IPDS matrix printer emulation.
IBM 4214 mod 2	Non-IPDS matrix printer emulation.
IBM 5224	Non-IPDS matrix printer emulation.
IBM 5225	Non-IPDS matrix printer emulation.
IBM 5256	Non-IPDS matrix printer emulation.

Note:

1. The IBM 3287 and IBM 3268 emulations do not include support for Programmable Symbols.

#100 Maximum Page Length

Defines the Maximum Page Length (MPL) in number of lines.

Value	Description
0 - 999	MPL setting in number of lines.
*66	Factory default value.

Notes:

1. This parameter has only effect in non-IPDS modes.
2. In SCS mode, this setting may be overridden by a data stream Set Vertical Format command.
3. If set to 0, or greater than the physical paper length, the MPL will default to the maximum value possible.
4. This parameter emulates an IBM 3812/3816 front panel switch: Maximum Page Length (MPL).

#101 Maximum Print Position

Defines the Maximum Print Position (MPP) which sets the width of the page in number of characters.

Value	Description
0 - 999	MPP value in number of characters.
*132	Factory default value.

Notes:

1. This parameter has only effect in non-IPDS modes.
2. If set to 0, or greater than the physical page width, the MPP will default to the maximum value possible.
3. This parameter emulates an IBM 3812/3816 front panel switch: Maximum Print Position (MPP).

#102 Lines Per Inch

Defines the Lines Per Inch (LPI) line spacing.

Value	Description
*6	6 LPI in portrait or landscape mode (8.57 LPI in COR mode).
8	8 LPI in portrait or landscape mode (11.43 LPI in COR mode).

Notes

1. This parameter has only effect in non-IPDS modes.
2. The LPI setting is overridden by the SCS Set Line Density command.
3. This parameter emulates an IBM 3812/3816 front panel switch: Lines Per Inch (LPI).

Related parameters: #100 Maximum Page Length

#201 Line Spacing

#103 Characters Per Inch

Defines the Characters Per Inch (CPI) and a default font.

Value	Description
*10	10 CPI in portrait or landscape mode (13.3 CPI in COR mode).
12	12 CPI in portrait or landscape mode (15 CPI in COR mode).
15	15 CPI in portrait or landscape mode (20 CPI in COR mode).
16.7	16.7 CPI in portrait or landscape mode (27 CPI in COR mode).

Notes:

1. This parameter has only effect in non-IPDS modes.
2. The CPI setting is overridden by the SCS Set Print Density command.
3. This parameter emulates an IBM 3812/3816 front panel switch: Characters Per Inch (CPI).

Related parameters: #701 Default Portrait Font

#702 Default Landscape Font

#201 Line Spacing

3270/Coax only Defines single or double line spacing.

Value	Description
* Single	Line spacing as specified by the LPI setting. (default)
Double	Line spacing as half the LPI setting.

Notes:

1. This parameter has only effect in non-IPDS modes.
2. The Line Spacing setting is overridden by the LU-1 (SCS) Set Line Density command.
3. This parameter emulates an IBM 3812/3816 front panel switch: Line Spacing.

Related parameter: #102 Lines per Inch

#202 Case

3270/Coax only Defines mono or dual case character printing.

Value	Description
* Dual	Upper case and lower case characters are printed as is. (default)
Mono	Lower case characters are printed in upper case.

Notes:

1. This parameter has only effect in non-IPDS modes.
2. This parameter emulates an IBM 3812/3816 front panel switch: Mono Case/Dual Case Characters.

#300 Default Input Bin

Defines which input paper bin is the power up default bin.

Value	Description
* Bin 1	Paper is fed from the upper input paper bin. (default)
Bin 2	Paper is fed from the lower input paper bin.

Note: 1. This setting may be overridden by a SCS or IPDS data stream command.

Related parameters: #301 Paper Cassette Linking

#302 High Capacity as Primary

#1000 Bin 1 Physical Paper Size

#1050 Bin 2 Physical Paper Size

#301 Paper Cassette Linking

Defines the action at input paper bin empty.

Value	Description
* Off	Use only one cassette at a time. Stop at empty bin. (default)
Bin	Change to next cassette when current bin goes empty.
Sheet	Change cassettes between each sheet.

Note: 1. This parameter emulates an IBM 3812/3816 front panel switch: Paper Cassette Linking.

Related parameters: #300 Default Input Bin

#302 High Capacity as Primary

#302 High Capacity as Primary

Defines which input bin is regarded as the primary bin.

Value	Description
*0	Use bin 1 as primary and bin 2 as secondary. (default)
1	Use bin 2 as primary and bin 1 as secondary.

Note:
1. This parameter emulates an IBM 3812/3816 front panel switch: Select High Capacity Cassette as Primary.

#400 Screen Size for Local Copy

3270/Coax only Defines the screen size for Local Copy operation.

Value	Description
960	960 bytes.
*1920	1920 bytes. (default)
2560	2560 bytes.
3440	3440 bytes.
3564	3564 bytes.

Notes:
1. This parameter has only effect in DSC/DSE mode.
2. In DSC mode, the RSCS buffer size must not exceed the parameter value set.
3. This parameter emulates an IBM 3812/3816 front panel switch: Screen Size for Local Copy and DSC Mode Buffer Size.

#402 Extended Attribute Buffer

3270/Coax only Enables the Extended Attribute Buffer (EAB) handling for character attributes.

Value	Description
*0	Print with EAB. (default)
1	Print without EAB.

Notes:
1. This parameter has only effect in DSC/DSE mode.
2. This parameter emulates an IBM 3812/3816 front panel switch: Extended Attribute Buffer (EAB).

#500 Intervention Time-out

3270/Coax only Defines the time in minutes after which intervention required is sent to the host after conditions such as paper out.

Value	Description
0	Intervention Required (IR) is never sent to the host.
1 - 999	IR status is sent after the time specified in minutes.
∗10	Factory default value. (10 minutes)

Note:
1. This parameter emulates an IBM 3812/3816 front panel switch: Suppress Timeout on No-Data-Loss Intervention Required (IR).

#501 Early Print Complete

3270/Coax only Early Print Complete (EPC) enables the printer to give the host advance notice of job completion before the page reaches the tray. This may increase the throughput.

Value	Description
∗No	Early Print Complete is inactive. (default)
Yes	Early Print Complete is active.

Notes:
1. This parameter has only effect in non-IPDS modes.
2. When using EPC, print data may be lost in abnormal situations.
3. This parameter emulates an IBM 3812/3816 front panel switch: Early Print Complete (EPC) Response Timing.

#600 Auto Func after End of OILC Job

3270/Coax only Defines if there shall be an automatic Form Feed after an Operator-Initiated Local Screen Copy (OILC).

Value	Description
0	Automatic FF is determined by #607.
*1	Always FF after OILC. (default)

Note: 1. This parameter emulates an IBM 3812/3816 front panel switch: c16 Automatic Function at End of Operator-Initiated Local Screen Copy.

Related parameters: #604 FF at End of Print Buffer

#607 Auto Func after End of Print Buffer

#601 Automatic NL at MPP+1

3270/Coax only Defines if there shall be an automatic New Line when a Carriage Return is executed at MPP+1.

Value	Description
0	No automatic NL when CR at MPP+1.
*1	Automatic NL when CR at MPP+1. (default)

Notes: 1. This parameter has only effect in DSC/DSE mode.

2. This parameter emulates an IBM 3812/3816 front panel switch: c18 Automatic New Line at MPP+1.

#602 Additional NL at MPP+1

3270/Coax only Defines if there shall be an additional New Line when the New Line command is executed at MPP+1.

Value	Description
0	No additional NL when NL at MPP+1.
*1	Additional NL when NL at MPP+1. (default)

Notes:

1. This parameter has only effect in DSC/DSE mode.
2. This parameter emulates an IBM 3812/3816 front panel switch: c19 Additional New Line at MPP+1.

#603 FF within Print Buffer

3270/Coax only Defines if there shall be an extra space after executing a Form Feed command.

Value	Description
*0	When a FF is executed, the next form will start at print position 2. (default)
1	When a FF is executed, the next form will start at print position 1.

Notes:

1. This parameter has only effect in DSC/DSE mode.
2. This parameter emulates an IBM 3812/3816 front panel switch: Form Feed Options within the Print Buffer.

#604 FF at End of Print Buffer

3270/Coax only Defines if there shall be an extra New Line after a Form Feed command.

Value	Description
0	No additional NL after a FF.
*1	Additional NL after a FF. (default)

Notes:

1. This parameter has only effect in DSC/DSE mode.
2. This parameter emulates an IBM 3812/3816 front panel switch: Form Feed Options at End of Print Buffer.

Related parameters: #600 Auto Func at End of OILC Job

#607 Auto Func after End of Print Buffer

#605 Null Suppression

3270/Coax only Defines the handling of the Null character.

Value	Description
*0	Suppress printing of an entire formatted Null line. (default)
1	Do not suppress printing of Null lines.

Notes:

1. This parameter has only effect in DSC/DSE mode.
2. This parameter emulates an IBM 3812/3816 front panel switch: c22 Null Suppression.

#606 FF Command Position

3270/Coax only Defines at which print positions a Form Feed command shall be valid.

Value	Description
*0	Execute FF only if it occurs at first print position or MPP+1. (default)
1	Execute FF everywhere it occurs.

Notes:

1. This parameter has only effect in DSC/DSE mode.
2. This parameter emulates an IBM 3812/3816 front panel switch: Form Feed Command Position Options.

#607 Auto Func after End of Print Buffer

3270/Coax only Defines if there shall be an automatic New Line or Form Feed at end of the buffer.

Value	Description
*0	Action after FF at end of print buffer is determined by #604. (default)
1	Add an automatic FF unless already in top of form position.

Notes:

1. This parameter has only effect in DSC/DSE mode.
2. This parameter emulates an IBM 3812/3816 front panel switch: Automatic Form Feed at End of Print Order.

Related parameters: #600 Auto Func at End of OILC Job

#604 FF at End of Print Buffer

#700 Auto Orientation

Defines if automatic page orientation is enabled.

Value	Description
* Yes	Automatic page orientation enabled. (default)
No	Automatic page orientation disabled.

Notes:

1. This parameter has only effect in non-IPDS modes.
2. In coax mode, this parameter emulates an IBM 3812/3816 front panel switch: Automatic Print Orientation.

Related parameters: #1003 Bin 1 Orientation

#1053 Bin 2 Orientation

#701 Default Portrait Font

Defines a default font used in portrait mode.

Value	Description
* 0	Function inactive. The CPI setting determines the default font. (default)
1 - 32767	FGID number of default portrait font.

Notes:

1. This parameter has only effect in non-IPDS modes.
2. This parameter overrides the CPI setting when not equal to zero.

Related parameter: #103 Characters Per Inch

#702 Default Landscape Font

Defines a default font used in landscape mode.

Value	Description
*0	Function inactive. The CPI setting determines the default font. (default)
1 - 32767	FGID number of default landscape font.

Notes:

1. This parameter has only effect in non-IPDS modes.
2. In COR mode, a denser pitched font will be selected.
3. This parameter overrides the CPI setting when not equal to zero.

Related parameter: #103 Characters Per Inch

#720 Left Portrait Margin

This parameter moves the position of column 1 away from the left edge of the paper when printing in portrait orientation.

Value	Description
0 - 999	Left Portrait Margin (measured in $^{1}/_{100}$").
*20	Factory default value.

Notes:

1. This parameter has only effect in non-IPDS modes. The IPDS mode left margin is controlled by the Bind Left Origin parameters.
2. This parameter has no effect in COR mode.
3. This parameter emulates an IBM 3812/3816 front panel switch: c25 Left Binding Margin.

Related parameters:

#700 Automatic Orientation
#722 Left Landscape Margin
#724 Left COR Margin
#730 Bind Left Origin 0
#732 Bind Left Origin 1
#734 Bind Left Origin 2
#736 Bind Left Origin 3
#1003 Bin 1 Orientation
#1053 Bin 2 Orientation

#721 Top Portrait Margin

Moves the position of the first print line away from the top edge of the paper when printing in portrait orientation.

Value	Description
0 - 999	Top Portrait Margin (measured in 1/100").
*20	Factory default value.

Notes:

1. This parameter has only effect in non-IPDS modes. The IPDS mode top margin is controlled by the Bind Top Origin parameters.
2. This parameter has no effect in COR mode.
3. This parameter emulates an IBM 3812/3816 front panel switch: c26 Top Binding Margin.

Related parameters:

#700 Automatic Orientation
#723 Top Landscape Margin
#725 Top COR Margin
#731 Bind Top Origin 0
#733 Bind Top Origin 1
#735 Bind Top Origin 2
#737 Bind Top Origin 3
#1003 Bin 1 Orientation
#1053 Bin 2 Orientation

#722 Left Landscape Margin

This parameter moves the position of column 1 away from the left edge of the paper when printing in landscape orientation.

Value	Description
0 - 999	Left Landscape Margin (measured in $^{1}/_{100}$").
*20	Factory default value.

Notes:

1. This parameter has only effect in non-IPDS modes. The IPDS mode left margin is controlled by the Bind Left Origin parameters.
2. This parameter has no effect in COR mode.
3. This parameter emulates an IBM 3812/3816 front panel switch: c25 Left Binding Margin.

Related parameters:

#700 Automatic Orientation
#720 Left Portrait Margin
#724 Left COR Margin
#730 Bind Left Origin 0
#732 Bind Left Origin 1
#734 Bind Left Origin 2
#736 Bind Left Origin 3
#1003 Bin 1 Orientation
#1053 Bin 2 Orientation

#723 Top Landscape Margin

Moves the position of the first print line away from the top edge of the paper when printing in landscape orientation.

Value	Description
0 - 999	Top Landscape Margin (measured in 1/100").
*20	Factory default value.

Notes:

1. This parameter has only effect in non-IPDS modes. The IPDS mode top margin is controlled by the Bind Top Origin parameters.
2. This parameter has no effect in COR mode.
3. This parameter emulates an IBM 3812/3816 front panel switch: c26 Top Binding Margin.

Related parameters:

#700 Automatic Orientation
#721 Top Portrait Margin
#725 Top COR Margin
#731 Bind Top Origin 0
#733 Bind Top Origin 1
#735 Bind Top Origin 2
#737 Bind Top Origin 3
#1003 Bin 1 Orientation
#1053 Bin 2 Orientation

#724 Left COR Margin

This parameter moves the position of column 1 away from the left edge of the paper when printing in COR (*Computer Output Reduction*) orientation.

Value	Description
0 - 999	Left COR Margin (measured in $^{1}/_{100}$").
* 20	Factory default value.

Notes:

1. This parameter has only effect in non-IPDS modes. The IPDS mode left margin is controlled by the Bind Left Origin parameters.
2. This parameter has no effect in portrait and landscape modes.
3. This parameter emulates an IBM 3812/3816 front panel switch: Left Binding Margin.

Related parameters:

#700 Automatic Orientation
#720 Left Portrait Margin
#722 Left Landscape Margin
#730 Bind Left Origin 0
#732 Bind Left Origin 1
#734 Bind Left Origin 2
#736 Bind Left Origin 3
#1003 Bin 1 Orientation
#1053 Bin 2 Orientation

#725 Top COR Margin

Moves the position of the first print line away from the top edge of the paper when printing in COR (*Computer Output Reduction*) orientation.

Value	Description
0 - 999	Top COR Margin (measured in 1/100").
* 20	Factory default value.

Notes:

1. This parameter has only effect in non-IPDS modes. The IPDS mode top margin is controlled by the Bind Top Origin parameters.
2. This parameter has no effect in portrait and landscape modes.
3. This parameter emulates an IBM 3812/3816 front panel switch: Top Binding Margin.

Related parameters:

#700 Automatic Orientation
#721 Top Portrait Margin
#723 Top Landscape Margin
#731 Bind Top Origin 0
#733 Bind Top Origin 1
#735 Bind Top Origin 2
#737 Bind Top Origin 3
#1003 Bin 1 Orientation
#1053 Bin 2 Orientation

#730 Bind Left Origin 0

Used to offset the left margin when printing in 0 degrees rotation (portrait).

Value	Description
-999 - 999	Horizontal physical margin (measured in 1/100").
* 0	Factory default value.

Note:

1. This parameter has only effect in IPDS mode. Non-IPDS mode left margin is set by the Left Portrait/Landscape/COR Margin parameters.

Related parameters:

#720 Left Portrait Margin
#722 Left Landscape Margin
#724 Left COR Margin

#731 Bind Top Origin 0

Used to offset the top margin when printing in 0 degrees rotation (portrait).

Value	Description
-999 - 999	Vertical physical margin (measured in 1/100").
*0	Factory default value.

Note: 1. This parameter has only effect in IPDS mode. Non-IPDS mode top margin is set by the Top Portrait/Landscape/COR Margin parameters.

Related parameters:
#721 Top Portrait Margin
#723 Top Landscape Margin
#725 Top COR Margin

#732 Bind Left Origin 1

Used to offset the left margin when printing in 90 degrees rotation (landscape).

Value	Description
-999 - 999	Horizontal physical margin (measured in 1/100").
*0	Factory default value.

Note: 1. This parameter has only effect in IPDS mode. Non-IPDS mode left margin is set by the Left Portrait/Landscape/COR Margin parameters.

Related parameters:
#720 Left Portrait Margin
#722 Left Landscape Margin
#724 Left COR Margin

#733 Bind Top Origin 1

Used to offset the top margin when printing in 90 degrees rotation (landscape).

Value	Description
-999 - 999	Vertical physical margin (measured in 1/100").
*0	Factory default value.

Note: 1. This parameter has only effect in IPDS mode. Non-IPDS mode top margin is set by the Top Portrait/Landscape/COR Margin parameters.

Related parameters:
#721 Top Portrait Margin
#723 Top Landscape Margin
#725 Top COR Margin

#734 Bind Left Origin 2

Used to offset the left margin when printing in 180 degrees rotation (reversed portrait).

Value	Description
-999 - 999	Horizontal physical margin (measured in 1/100").
*0	Factory default value.

Note: 1. This parameter has only effect in IPDS mode. Non-IPDS mode left margin is set by the Left Portrait/Landscape/COR Margin parameters.

Related parameters:
#720 Left Portrait Margin
#722 Left Landscape Margin
#724 Left COR Margin

#735 Bind Top Origin 2

Used to offset the top margin when printing in 180 degrees rotation (reversed portrait).

Value	Description
-999 - 999	Vertical physical margin (measured in 1/100").
*0	Factory default value.

Note: 1. This parameter has only effect in IPDS mode. Non-IPDS mode top margin is set by the Top Portrait/Landscape/COR Margin parameters.

Related parameters: #721 Top Portrait Margin

#723 Top Landscape Margin

#725 Top COR Margin

#736 Bind Left Origin 3

Used to offset the left margin when printing in 270 degrees rotation (reversed landscape).

Value	Description
-999 - 999	Horizontal physical margin (measured in 1/100").
*0	Factory default value.

Note: 1. This parameter has only effect in IPDS mode. Non-IPDS mode left margin is set by the Left Portrait/Landscape/COR Margin parameters.

Related parameters: #720 Left Portrait Margin

#722 Left Landscape Margin

#724 Left COR Margin

#737 Bind Top Origin 3

Used to offset the top margin when printing in 270 degrees rotation (reversed landscape).

Value	Description
-999 - 999	Vertical physical margin (measured in 1/100").
*0	Factory default value.

Note:

1. This parameter has only effect in IPDS mode. Non-IPDS mode top margin is set by the Top Portrait/Landscape/COR Margin parameters.

Related parameters:

#721 Top Portrait Margin

#723 Top Landscape Margin

#725 Top COR Margin

#1000 Bin 1 Physical Paper Size

Defines the physical paper size for Bin 1.

Value	Description
Executive	7.25 x 10.5 inches.
Letter	8.5 x 11 inches.
Legal	8.5 x 14 inches.
*A4	210 x 297 millimeters. (default)
A3	297 x 420 millimeters.
Custom	Size according to parameters #1001- #1002.

Notes:

1. The 'Custom' choice activates parameters #1001 Bin 1 Physical Paper Length and #1002 Bin 1 Physical Paper Width. This choice is used when none of the listed page sizes fits.
2. A choice of incorrect paper size may result in loss of print data at the paper edges.

Related parameters:

#1001 Bin 1 Physical Paper Length

#1002 Bin 1 Physical Paper Width

#3002 Horizontal Scale Factor

#3003 Vertical Scale Factor

#1001 Bin 1 Physical Paper Length

Defines explicit selection of the paper length for Bin 1.

Value	Description
0 - 1999	Physical paper length (measured in 1/100").
*0	Factory default value.

Notes:

1. This parameter is active if value 'Custom' is selected in parameter #1000 Bin 1 Physical Paper Size.
2. A choice of incorrect paper length may result in loss of print data at the paper edges.

Related parameters: #1000 Bin 1 Physical Paper Size

#1002 Bin 1 Physical Paper Width

Defines explicit selection of the paper width for Bin 1.

Value	Description
0 - 1999	Physical paper width (measured in 1/100").
*0	Factory default value.

Notes:

1. This parameter is active if value 'Custom' is selected in parameter #1000 Bin 1 Physical Paper Size.
2. A choice of incorrect paper length may result in loss of print data at the paper edges.

Related parameters: #1000 Bin 1 Physical Paper Size

#1003 Bin 1 Orientation

Defines the default print orientation for Bin 1.

Value	Description
* Reduction	Computer Output Reduction (COR) is enabled. (default)
Portrait	Print in portrait.
Landscape	Print in landscape.

Notes:

1. This parameter has only effect in non-IPDS modes.
2. In coax mode, this parameter emulates an IBM 3812/3816 front panel switch: c01 Primary Cassette Print Orientation.

Related parameters: #700 Auto Orientation

#1004 Bin 1 Printer Bin Number

Assigns a Select Bin 1 command to the specified PostScript bin.

Value	Description
* Default	Assign the Select Bin 1 command to the default printer bin.
0 - 9	Assign the Select Bin 1 command to the specified printer bin.

Notes:

1. If all five Printer Bin Number parameters are set to *Default*, the Axis AFP will automatically assign the Select Bin commands according to the printer's bin configuration.
2. If any of the other Bin Number parameters is set to a specified printer bin, the *Default* selection will assign Bin 1 to the default printer bin.

Related parameters: #1054 Bin 2 Printer Bin Number, #1104 Bin 3 Printer Bin Number, #1154 Bin 4 Printer Bin Number, #1204 Bin 5 Printer Bin Number

#1005 Bin 1 Horizontal Scale Factor

Any non-zero value will override the horizontal scaling of the complete page when printing from bin 1. Use this parameter only when you need different horizontal scaling for different input bins. The scaling is made relative the origin of the paper in the upper left corner.

Value	Description
1 - 999	Horizontal scale factor for bin 1 (in percent).
*0	Use the global scaling set by #3002 (default)

Notes:

1. This parameter is valid in all modes, including local function listings, such as the parameter list and IBM hex dump.
2. The horizontal scaling is always perpendicular to the paper feed direction, regardless of the print orientation.
3. Using this parameter to enlarge or compress the size of the printout may result in interference patterns in images, due to the scaling.
4. A scale factor below 90% disables Load Font Smoothing.

Related parameters:

#1006 Bin 1 Vertical Scale Factor
#1007 Bin 1 Horizontal Offset
#1008 Bin 1 Vertical Offset
#3002 Horizontal Scale Factor *(global)*
#3003 Vertical Scale Factor *(global)*
#3011 Load Font Smooting

#1006 Bin 1 Vertical Scale Factor

Any non-zero value will override the vertical scaling of the complete page when printing from bin 1. Use this parameter only when you need different vertical scaling for different input bins. The scaling is made relative the origin of the paper in the upper left corner.

Value	Description
1 - 999	Vertical scale factor for bin 1 (in percent).
*0	Use the global scaling set by #3003 (default)

Notes:

1. This parameter is valid in all modes, including local function listings, such as the parameter list and IBM hex dump.
2. The vertical scaling is always parallel to the paper feed direction, regardless of the print orientation.
3. Using this parameter to enlarge or compress the size of the printout may result in interference patterns in images, due to the scaling.
4. A scale factor below 90% disables Load Font Smoothing.

Related parameters:

#1005 Bin 1 Horizontal Scale Factor
#1007 Bin 1 Horizontal Offset
#1008 Bin 1 Vertical Offset
#3002 Horizontal Scale Factor *(global)*
#3003 Vertical Scale Factor *(global)*
#3011 Load Font Smooting

#1007 Bin 1 Horizontal Offset

This parameter adds a horizontal offset regardless of mode and orientation when printing from bin 1. Use this parameter only when you need different horizontal offsets for different input bins.

Value	Description
0 - 999	Horizontal offset for bin 1 (measured in $^{1}/_{100}$").
*0	Factory default value.

Notes:

1. This parameter is valid in all modes, including local function listings, such as the parameter list and IBM hex dump.
2. The horizontal offset is always perpendicular to the paper feed direction, regardless of the print orientation.
3. The horizontal offset is added to the Left Portrait Margin, Top Landscape Margin, Top COR Margin, Bind Left Origin 0 or Bind Top Origin 1, depending on print orientation and mode.
4. The offset is always independent of any scaling, global or bin specific.

Related parameters:

#720 Left Portrait Margin
#723 Top Landscape Margin
#725 Top COR Margin
#730 Bind Left Origin 0
#733 Bind Top Origin 1
#1008 Bin 1 Vertical Offset

#1008 Bin 1 Vertical Offset

This parameter adds a vertical offset regardless of mode and orientation when printing from bin 1. Use this parameter only when you need different vertical offsets for different input bins.

Value	Description
0 - 999	Vertical offset for bin 1 (measured in 1/100").
*0	Factory default value.

Notes:

1. This parameter is valid in all modes, including local function listings, such as the parameter list and IBM hex dump.
2. The vertical offset is always parallel to the paper feed direction, regardless of the print orientation.
3. The horizontal offset is added to the Top Portrait Margin, Left Landscape Margin, Left COR Margin, Bind Top Origin 0 or Bind Left Origin 1, depending on print orientation and mode.
4. The offset is always independent of any scaling, global or bin specific.

Related parameters:

#721 Top Portrait Margin
#722 Left Landscape Margin
#724 Left COR Margin
#731 Bind Top Origin 0
#733 Bind Left Origin 1
#1007 Bin 1 Horizontal Offset

#1050 Bin 2 Physical Paper Size

Defines the paper size for Bin 2.

See #1000 Bin 1 Physical Paper Size.

#1051 Bin 2 Physical Paper Length

Defines explicit selection of the paper length for Bin 2.

See #1001 Bin 1 Physical Paper Length.

#1052 Bin 2 Physical Paper Width

Defines explicit selection of the paper width for Bin 2.

See #1002 Bin 1 Physical Paper Width.

#1053 Bin 2 Orientation

Defines the default print orientation for Bin 2.

See #1003 Bin 1 Orientation.

#1054 Bin 2 Printer Bin Number

Assigns a Select Bin 2 command to the specified printer bin.

See #1004 Bin 1 Printer Bin Number.

#1055 Bin 2 Horizontal Scale Factor

Overrides the global horizontal scaling for bin 2.

See #1005 Bin 1 Horizontal Scale Factor.

#1056 Bin 2 Vertical Scale Factor

Overrides the global vertical scaling for bin 2.

See #1006 Bin 1 Vertical Scale Factor.

#1057 Bin 2 Horizontal Offset

Adds a horizontal offset for bin 2.

See #1007 Bin 1 Horizontal Offset.

#1058 Bin 2 Vertical Offset

Adds a vertical offset for bin 2.

See #1007 Bin 1 Vertical Offset.

#1100 Bin 3 Physical Paper Size

Defines the paper size for Bin 3.

See #1000 Bin 1 Physical Paper Size.

#1101 Bin 3 Physical Paper Length

Defines explicit selection of the paper length for Bin 3.

See #1001 Bin 1 Physical Paper Length.

#1102 Bin 3 Physical Paper Width

Defines explicit selection of the paper width for Bin 3.

See #1002 Bin 1 Physical Paper Width.

#1103 Bin 3 Orientation

Defines the default print orientation for Bin 3.

See #1003 Bin 1 Orientation.

#1104 Bin 3 Printer Bin Number

Assigns a Select Bin 3 command to the specified printer bin.

See #1004 Bin 1 Printer Bin Number.

#1105 Bin 3 Horizontal Scale Factor

Overrides the global horizontal scaling for bin 3.

See #1005 Bin 1 Horizontal Scale Factor.

#1106 Bin 3 Vertical Scale Factor

Overrides the global vertical scaling for bin 3.

See #1006 Bin 1 Vertical Scale Factor.

#1107 Bin 3 Horizontal Offset

Adds a horizontal offset for bin 3.

See #1007 Bin 1 Horizontal Offset.

#1108 Bin 3 Vertical Offset

Adds a vertical offset for bin 3.

See #1007 Bin 1 Vertical Offset.

#1150 Bin 4 Physical Paper Size

Defines the paper size for Bin 4.

See #1000 Bin 1 Physical Paper Size.

#1151 Bin 4 Physical Paper Length

Defines explicit selection of the paper length for Bin 4.

See #1001 Bin 1 Physical Paper Length.

#1152 Bin 4 Physical Paper Width

Defines explicit selection of the paper width for Bin 4.

See #1002 Bin 1 Physical Paper Width.

#1153 Bin 4 Orientation

Defines the default print orientation for Bin 4.

See #1003 Bin 1 Orientation.

#1154 Bin 4 Printer Bin Number

Assigns a Select Bin 4 command to the specified printer bin.

See #1004 Bin 1 Printer Bin Number.

#1155 Bin 4 Horizontal Scale Factor

Overrides the global horizontal scaling for bin 4.

See #1005 Bin 1 Horizontal Scale Factor.

#1156 Bin 4 Vertical Scale Factor

Overrides the global vertical scaling for bin 4.

See #1006 Bin 1 Vertical Scale Factor.

#1157 Bin 4 Horizontal Offset

Adds a horizontal offset for bin 4.

See #1007 Bin 1 Horizontal Offset.

#1158 Bin 4 Vertical Offset

Adds a vertical offset for bin 4.

See #1007 Bin 1 Vertical Offset.

#1200 Bin 5 Physical Paper Size

Defines the paper size for Bin 5.

See #1000 Bin 1 Physical Paper Size.

#1201 Bin 5 Physical Paper Length

Defines explicit selection of the paper length for Bin 5.

See #1001 Bin 1 Physical Paper Length.

#1202 Bin 5 Physical Paper Width

Defines explicit selection of the paper width for Bin 5.

See #1002 Bin 1 Physical Paper Width.

#1203 Bin 5 Orientation

Defines the default print orientation for Bin 5.

See #1003 Bin 1 Orientation.

#1204 Bin 5 Printer Bin Number

Assigns a Select Bin 5 command to the specified printer bin.

See #1004 Bin 1 Printer Bin Number.

#1205 Bin 5 Horizontal Scale Factor

Overrides the global horizontal scaling for bin 5.

See #1005 Bin 1 Horizontal Scale Factor.

#1206 Bin 5 Vertical Scale Factor

Overrides the global vertical scaling for bin 5.

See #1006 Bin 1 Vertical Scale Factor.

#1207 Bin 5 Horizontal Offset

Adds a horizontal offset for bin 5.

See #1007 Bin 1 Horizontal Offset.

#1208 Bin 5 Vertical Offset

Adds a vertical offset for bin 5.

See #1007 Bin 1 Vertical Offset.

#3000 Printer Driver

Defines the attached printer type.

Value	Description
∗Level 1 PS	PostScript Level 1. (default)
Level 2 PS	PostScript Level 2.

Note: 1. This parameter value becomes effective at power up.

#3001 PostScript Virtual Memory

This parameter defines the amount of free virtual memory in the PostScript printer for Axis AFP use. This will be used for storing PostScript routines and system downloaded fonts. Adding more memory in the printer generally means that this parameter can be adjusted upwards to let Axis AFP take advantage of more memory and thus increase throughput. The Axis AFP power up page informs on the free VM Size and the setting of this parameter.

Value	Description
100 - 9990	PostScript VM size in kbytes.
∗1200	Factory default value.

Notes:

1. The VM Size does not equal the total amount of memory in the printer, but what PostScript reports is free for usage. This value is printed on the Axis AFP power-up page.
2. The minimum required VM Size memory is 200 kbytes. If host down-loaded fonts are used, a minimum of 700 kbytes is recommended.
3. Some printers allow partitioning of their memory to set the virtual memory size from the front panel.

> Setting a higher VM Size value on this parameter than what the printer has available, may cause printer memory overflow and loss of data.

#3002 Horizontal Scale Factor

Enables horizontal scaling of the complete page for all input bins. Use this parameter to reduce or enlarge the size of the printed data on the paper. The scaling is made relative the origin of the paper in the upper left corner.

Value	Description
1 - 999	Horizontal scale factor (in percent).
*100	Factory default value. (No scaling)

Notes:

1. This parameter is valid in all modes, including local function listings, such as the parameter list and IBM hex dump.
2. The horizontal scaling is always perpendicular to the paper feed direction, regardless of the print orientation.
3. Using this parameter to enlarge or compress the size of the printout may result in interference patterns in images, due to the scaling.
4. A scale factor below 90% disables Load Font Smoothing.
5. The global horizontal scaling may be overridden for individual input bins by specifying a local horizontal scale factor for one or more bins.

Related parameters:

#1005 Bin 1 Horizontal Scale Factor

#3003 Vertical Scale Factor

#3011 Load Font Smooting

Hints:

1. Use a small compression, 98% for example, to get print data out of any unprintable area at the right or left paper edges. Compensate for any needed margin increase with the Bind Left Origin parameter.
2. If there is a requirement for 240 dpi direct printing for proof reading, 80% scaling on a 300 dpi printer will provide a 1:1 dot-by-dot image.

#3003 Vertical Scale Factor

Enables vertical scaling of the complete page for all input bins. The parameter can be set to compress or enlarge the size of the printed data on the paper. The scaling is made relative the origin of the paper in the upper left corner.

Value	Description
1 - 999	Vertical scale factor (in percent).
* 100	Factory default value. (No scaling)

Notes:

1. This parameter is valid in all modes, including local function listings, such as the parameter list and IBM hex dump.
2. The vertical scaling is always parallel to the paper feed direction, regardless of the print orientation.
3. Using this parameter to enlarge or compress the size of the printout may result in interference patterns in images, due to the scaling.
4. A scale factor below 90% disables Load Font Smoothing.
5. The global vertical scaling may be overridden for individual input bins by specifying a local vertical scale factor for one or more bins.

Related parameters:

#1006 Bin 1 Vertical Scale Factor

#3002 Horizontal Scale Factor

#3011 Load Font Smooting

Hints:

1. Use a small compression, 98% for example, to get print data out of any unprintable area at the top or bottom paper edges. Compensate for any needed margin increase with the Bind Top Origin parameter.
2. If there is a requirement for 240 dpi direct printing for proof reading, 80% scaling on a 300 dpi printer will provide a 1:1 dot-by-dot image.

#3004 Color Support

Determines whether color emulation or true colors shall be used.

Value	Description
* No	Colors are emulated as black and white patterns. (default)
Yes	True color commands are used.

Notes:

1. When color support is disabled, color interpretation results in black and white patterns as on IBM 3812/3816/4028/3916.
2. When a color support is enabled, PostScript colors are selected.
3. If color support is enabled and a monochrome PostScript printer is used, the printer will perform color simulation.

#3005 Duplex Support

Determines whether duplex support for the attached printer shall be reported to the host.

Value	Description
No	Duplex is not supported.
* Yes	Duplex commands from the host are transferred to the printer. (default)

Notes:

1. When duplex support is disabled, the Axis AFP reports 'No duplex support to the host'.
2. If duplex support is enabled when using a non-duplex printer, the effects of duplex commands depend on the attached printer. Some printers will ignore duplex commands and print in simplex, while others will generate a PostScript error.

#3010 Power On Page

Determines whether the power on page shall be printed by Axis AFP or not.

Value	Description
No	Do not print the power-on page.
* Yes	Print the power-on page. (default)

#3011 Load Font Smoothing

This parameter activates a smoothing algorithm for host down-loaded fonts.

Value	Description
No	No smoothing.
* Yes	Smooth down-loaded fonts. (default)

Notes:

1. The smoothing is designed to work with printers that have 300 dpi resolution. It works on printers with higher resolution, but the improvement will be less.
2. The smoothing effect is improved when combined with resolution enhancement printing (RET, PQET, etc.).
3. The time to load a font to the printer may increase when the smoothing is activated.
4. Smoothing requires more free PostScript VM memory in the printer.
5. This parameter has no effect if the Horizontal or Vertical Scale Factor is set below 90%.
6. This parameter has no effect when emulating IBM 4028/3916, since the smoothing operates on 240 dpi fonts only.

#3012 PS Error Handler

Use this parameter to down-load a PostScript Error Handler to the printer at power on. Once down-loaded, the Error Handler will print an error message if a PostScript error occurs.

Value	Description
* No	Do not down-load the PS Error Handler. (default)
Yes	Down-load the PS Error Handler at power on.

#3013 PS Restart at Duplex

Use this parameter to terminate the current print job and start a new each time a simplex-to-duplex transition occurs. This function may be required for older versions of certain printers.

Value	Description
* No	Do not restart the print job at simplex-to-duplex transition. (default)
Yes	Restart the print job at simplex-to-duplex transition.

#3014 Optimize Duplex

Use this parameter to optimize duplex print jobs. Optimization means that sheets are printed in simplex if the back side is empty resulting in higher throughput. However, some printers will internally turn the sheet upside down when duplex is used. This may cause undesired effects when using preprinted forms. Seting this parameter to No will force the entire job to be printed in duplex mode.

Value	Description
No	Use duplex mode for all sheets.
* Yes	Use simplex mode for single-sided sheets. (default)

#3015 Job Separation

IBM host systems configured to separate IPDS print jobs do this by sending a separator command (XOH:DGB) between jobs. This parameter controls whether the Axis AFP should terminate the current print job when a XOH:DGB command is received.

Value	Description
No	Ignore all XOH:DGB commands.
* Yes	Terminate current print job at XOH:DGB command. (default)

Related parameters: #3290 Job Time-out

#3292 Job End String

#3150 Parallel-2 Time-out

Defines the time-out value for which input port Parallel-2 will wait for the next character before any other input port can have access to the printer.

Value	Description
∗0	Function disabled. Parallel-2 cannot receive data. (default)
1 - 1000	Time-out value in seconds.

Note:

1. This parameter is only active if the optional PC-Host sharing board is installed.

#3151 Parallel-2 Begin String

Contains a hexadecimal string which is sent to the printer when the input switches to Parallel-2 from another input port.

Value	Description
<any string>	Printer control commands.
∗ <empty>	Nothing is sent. (default)

Notes:

1. This parameter is only active if the optional PC-Host sharing board is installed.
2. The maximum number of bytes programmed into this string is 16 kbytes.

Related parameters: #3150 Parallel-2 Time-out

#3152 Parallel-2 End String

#3152 Parallel-2 End String

Contains a hexadecimal string which is sent to the printer when the input switches from Parallel-2 to another input port.

Value	Description
* $04	(default)
<any string>	Printer control commands.
<empty>	Nothing is sent

Note:

1. This parameter is only active if the optional PC-Host sharing board is installed.
2. The maximum number of bytes programmed into this string is 16 kbytes.

Related parameters: #3150 Parallel-2 Time-out

#3151 Parallel-2 Begin String

#3200 Power On String

Contains a hexadecimal string which is the first data sent to the printer at Axis AFP power up.

Value	Description
<any string>	Printer control commands.
* <empty>	Nothing is sent. (default)

Note:

1. The maximum number of bytes programmed into this string is 16 kbytes.

Hints:

1. For printers that have more emulations than PostScript, this string can be programmed to select PostScript mode, ensuring a correct start-up in PostScript mode.
2. Can be used to define User Defined Fonts.

#3210 Transparency Lead-in String

3270/Coax only

When this string is encountered in the data stream, all subsequent data will be be sent to the printer without any conversion.

Value	Description
<any string>	Transparency Lead-in String (1 - 8 EBCDIC character codes).
* <empty>	Transparency function disabled. (default)

Notes:

1. When this string is received, the current PostScript job will be terminated and the page ejected.
2. All subsequent data is interpreted as hex transparency data until the Transparency Trailer String is received.
3. The Transparency Trailer String must also be defined before using the transparency function.
4. This string must be given as EBCDIC character codes.
5. The maximum string length is 8 bytes.

Related parameter: #3211 Transparency Trailer String

> The transparency function can only be used in non-IPDS mode.

#3211 Transparency Trailer String

3270/Coax only

When this string is encountered in the hex transparency data stream, the transparency function will terminate, and the PostScript conversion is re-initialized.

Value	Description
<any string>	Transparency Trailer String (1 - 8 EBCDIC character codes).
* <empty>	Transparency function disabled. (default)

Notes:

1. When this string is received, a new PostScript job will be initialized.
2. If anything else but hex transparency data is received between the Transparency Lead-in and Trailer Strings, an error message will be printed.
3. This string must be given as EBCDIC character codes.
4. The maximum string length is 8 bytes.

Related parameters: #3210 Transparency Lead-in String

> The transparency function can only be used in non-IPDS mode.

#3280 Host Time-out

Defines the time-out value for which the coax or twinax input port will wait for the next data before any other input port can have access to the printer.

Value	Description
0	Disabled. The coax input cannot receive data.
1 - 1000	Time-out value in seconds.
*10	Factory default value.

#3290 Job Time-out

Defines the time-out value after which the host input PostScript job will be ended. The timer starts from when there is no host data and the printer is ready. Used in printing applications that demand the PostScript job to be ended, such as when sharing a multi-port printer with other devices or when printing to a print server.

Value	Description
0	Disabled. No PostScript End-of-Job is sent to the printer.
1 - 1000	Time-out value in seconds.
*10	Factory default value.

Notes:

1. A PostScript End-of-Job code (Ctrl-D) is sent to the printer after the time-out has expired. When next host job is started, the prologue and previously down-loaded resources are sent to the printer prior to the job.
2. Other hosts sharing the printer will get access to the printer according to the printer's PostScript default time-outs.
3. Setting a short Job Time-out value, may slow down overall print performance as the prologue and previous resources, such as loaded fonts, need to be re-loaded between printouts when the time-out has expired.

Related parameters: #3015 Job Separation

#3291 Job Begin String

#3292 Job End String

#3291 Job Begin String

Contains a hexadecimal string which is sent to the printer when a PostScript print job is started.

Value	Description
<any string>	Printer control commands.
* <empty>	Nothing is sent. (default)

Note:

1. The maximum number of bytes programmed into this string is 16 kbytes.

Related parameters: #3292 Job End Time-out

#3292 Job End String

Contains a hexadecimal string which is sent to the printer when a PostScript print job is terminated.

Value	Description
<any string>	Printer control commands.
* <empty>	Nothing is sent. (default)

Note: 1. The maximum number of bytes programmed into this string is 16 kbytes.

Related parameters: #3290 Job Time-Out

#3291 Job Begin Time-out

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Appendix B

EBCDIC Character Table

The character table shows how EBCDIC character codes are interpreted. Depending on the System Language parameter, a different character table is used. To print the current character table, set push-wheel to position '2' in Function Mode.

This table is used when System Language is set to US English (Code Page 37):

	4-	5-	6-	7-	8-	9-	A-	B-	C-	D-	E-	F-
-0	SP	&	-	ø	Ø	°	µ	^	{	}	\	0
-1	SP	é	/	É	a	j	~	£	A	J	÷	1
-2	â	ê	Â	Ê	b	k	s	¥	B	K	S	2
-3	ä	ë	Ä	Ë	c	l	t	·	C	L	T	3
-4	à	è	À	È	d	m	u	©	D	M	U	4
-5	á	í	Á	Í	e	n	v	§	E	N	V	5
-6	a	î	Ã	Î	f	o	w	¶	F	O	W	6
-7	å	ï	Å	Ï	g	p	x	¼	G	P	X	7
-8	ç	ì	Ç	Ì	h	q	y	½	H	Q	Y	8
-9	ñ	ß	Ñ	`	i	r	z	¾	I	R	Z	9
-A	¢	!	¦	:	«	ª	¡	[	-	¹	²	³
-B	.	$	,	#	»	º	¿	]	ô	û	Ô	Û
-C	<	*	%	@	ð	æ	Ð	¯	ö	ü	Ö	Ü
-D	(	)	_	'	ý	¸	Ý	¨	ò	ù	Ò	Ù
-E	+	;	>	=	þ	Æ	Þ	´	ó	ú	Ó	Ú
-F	l	¬	?	"	±	¤	®	×	õ	ÿ	Õ	-

Example: The EBCDIC character code $C1 is printed as 'A'.

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Appendix C

The Front and Back Panels

The Front Panel

The front panel has six indicators: POWER, SYSTEM, READY, DATA, STATUS, and ERROR, showing the unit status. See illustration in Section 1.

This is how the indicators look during normal operation:

- POWER
- SYSTEM
- READY (only when the printer is ready)
- DATA (only while data is being received)
- STATUS
- ERROR

The POWER Indicator

The green POWER indicator shows the power on status:

- (off): The power source is not connected.
- (on): Power is on.

The SYSTEM Indicator

The green SYSTEM indicator shows the connection status to the IBM system:

❍ (off): Axis AFP is not communicating with the IBM system.

● (on): Axis AFP is communicating with the IBM system.

❊ (flashing): ERROR or STATUS message.

The READY Indicator

The green READY indicator shows the status of the attached printer.

❍ (off): The attached printer is busy or disconnected.

● (on): The attached printer is ready to receive print data.

❊ (flashing): ERROR or STATUS message.

The DATA Indicator

The green DATA indicator shows if data is being received from the IBM system:

❍ (off): No data is currently received from the IBM system.

● (on): Data is received from the IBM system.

❊ (flashing): ERROR or STATUS message.

The STATUS Indicator

The yellow STATUS indicator shows if in Function Mode or if a message is present:

❍ (off): Normal printing mode

● (on): A status message is currently displayed.

❊ (flashing): The Function Mode is active.

The ERROR Indicator

The yellow ERROR indicator is lit when an error message is present:

❍ (off): Normal printing mode.

● (on): An error message is currently displayed.

Status Messages

3270/Coax only There is only one status message:

1.Intervention required

Indicators	Status description/action to be taken
❊ SYSTEM	The current print job is not finished within the Intervention time-out.
❍ READY	This is generally caused by an out of paper or paper jam condition.
❊ DATA	The message is automatically cleared when the condition causing
● STATUS	the intervention time-out is corrected.
❍ ERROR	

Notes: ❍ means 'off', ● means 'on', and ❊ means 'flashing'.

Error Messages

The following error messages can be displayed by the Axis AFP front panel indicators:

1.Communication hardware error

Indicators	Case of error/action to be taken
❊ SYSTEM	The Axis AFP cannot communicate with the Control Unit.
❍ READY	Contact your dealer for repair.
❍ DATA	
❍ STATUS	
● ERROR	

2.NVRAM checksum error

Indicators	Case of error/action to be taken
❊ SYSTEM	The non-volatile memory contents have been corrupted. All
❍ READY	parameters are reset to factory default settings. Power off, and
❊ DATA	power on again to clear this message.
❍ STATUS	*Note:* This message always occurs at the first power on after a
● ERROR	firmware upgrade.

3.RAM error

Indicators	Case of error/action to be taken
❊ SYSTEM	Contact your dealer for repair.
❊ READY	
❍ DATA	
❍ STATUS	
● ERROR	

4.EPROM error

Indicators	Case of error/action to be taken
❊ SYSTEM	Contact your dealer for repair.
❊ READY	*(If you have replaced the EPROMS, make sure that they are*
❊ DATA	*correctly placed into their respective sockets)*
❍ STATUS	
● ERROR	

Notes: ❍ means 'off', ● means 'on', and ❊ means 'flashing'.

The Back Panel

The back panel comprises all connectors, a rotary switch, and the coax/twinax mode switch. See illustration in Section 1.

The Parallel printer port connector is described in Appendix D (pin configuration) and Appendix E (PC-Host sharing).

The Rotary Switch

The ten-position rotary switch is used to select the functions available in the *Function Mode*. See “Function Mode” on page 128.

When not in Function Mode, the different positions have the following meaning:

3270/Coax mode:

Position	Description
0	Normal print mode
1 – 8	Reserved
9	Enter Function Mode

5250/Twinax mode:

Position	Description
0 – 6	Normal print mode (Device address)
7 – 8	Reserved
9	Enter Function Mode

If the rotary switch is set to ‘9’ at power up, you must select position ‘0’ and then switch back to ‘9’ to enter the Function Mode.

Function Mode

The Function Mode is used to access internal functions such as configuration and diagnostic aids.

Set the push-wheel to position '9'. When the STATUS indicator starts to flash, you can select one of the following functions:

Position	Function
0	*Reserved*
1	**Set Factory Defaults** - All parameters are reset to factory default values. The current configuration is lost.
2	**Print EBCDIC Character Table** - The current EBCDIC to ASCII translation table is printed.
3	*Reserved*
4	**Hex Dump Mode** - Trap the incoming data stream and print characters and control codes as hexadecimal values.
5	**Self Test** - Perform internal tests and print a test report.
6	*Reserved*
7	**Configuration Mode** - Run the configuration program using a directly attached 3270/5250 terminal.
8	**Print Parameter List** - Print out the complete configuration.
9	**Exit Function Mode** - Resume normal print operation.

Select position '0' again when the STATUS indicator has stopped flashing. In twinax mode, do not forget to set the device address.

Self Test

The Self Test performs internal hardware tests and prints a test report on the attached printer. The test report shows the test results, the software revision, and a character ripple printout.

The Self Test is performed by selecting rotary switch position '5' in Function Mode.

```
SELF TEST

Axis AFP Coax Printer Controller

SOFTWARE    : Ver 2.10  950413
HARDWARE    : Ver 2.00
EPROM       : 1024k OK
RAM         : 1024k OK
NVRAM       : 32768 OK
OPTIONS     : PC-host sharing board


TEST PRINT

ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyzâäàáãåçñ¢.<(
BCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyzâäàáãåçñ¢.<(+
CDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyzâäàáãåçñ¢.<(+|
DEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyzâäàáãåçñ¢.<(+|&
EFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyzâäàáãåçñ¢.<(+|&é
FGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyzâäàáãåçñ¢.<(+|&éê
GHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyzâäàáãåçñ¢.<(+|&éêë
HIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyzâäàáãåçñ¢.<(+|&éêëè
```

Sample Self Test printout

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Appendix D

Printer Cable Configuration

This section provides you with technical information on the printer and PC-Host sharing cables. All cables can be obtained from your dealer/distributor. See Appendix E for cable part numbers.

Printer/PC-sharing Port Pin-Out

Port 1 is the 44-pin female D-sub connector on the Axis AFP back panel. The table below shows the pin configuration:

Pin	Signal	Pin	Signal
1	Strobe *(Centronics)*	27	Strobe *(PC)*
2	D0 *(Centronics)*	28	D0 *(PC)*
3	D1 *(Centronics)*	29	D1 *(PC)*
4	D2 *(Centronics)*	30	D2 *(PC)*
5	D3 *(Centronics)*	31	D3 *(PC)*
6	D4 *(Centronics)*	32	D4 *(PC)*
7	D5 *(Centronics)*	33	D5 *(PC)*
8	D6 *(Centronics)*	34	D6 *(PC)*
9	D7 *(Centronics)*	35	D7 *(PC)*
10	Acknowledge *(Centronics)*	36	Acknowledge *(PC)*
11	Busy *(Centronics)*	37	Busy *(PC)*
12	Paper End *(Centronics)*	38	Paper End *(PC)*
13	Select *(Centronics)*	39	Select *(PC)*
18	*+5V*	40	Init *(PC)*
19	*+5V*	41	Error
20	GND	42	Init *(Centronics)*
21	GND		

Parallel Printer Cable

The parallel printer cable (included in the standard delivery) has the following pin configuration (44-pin female D-sub ⇒ 36-pin Centronics):

1 ⇒ 1	2 ⇒ 2	3 ⇒ 3	4 ⇒ 4	5 ⇒ 5	6 ⇒ 6	7 ⇒ 7
8 ⇒ 8	9 ⇒ 9	10 ⇒ 10	11 ⇒ 11	12 ⇒ 12	13 ⇒ 13	18 ⇒ 18
19 ⇒ 18	20 ⇒ 19	21 ⇒ 20	41 ⇒ 32	42 ⇒ 31		

Appendix E

PC-host Sharing

When equipped with an optional PC-Host sharing cable (part no: 12998), the Axis AFP is capable of receiving input data from both the IBM host and a PC or an Axis Network Print Server. Using the PC-Host sharing option rather than an external printer sharing device gives you the following advantages:

- Switching between host and PC is done without operator intervention.
- Host settings and the current print position are restored after a PC printout.
- PC printouts may automatically switch between different printer emulations, *e.g.* HP PCL and PostScript.

Configuration

The parameters #3150-#3280 control the PC-Host sharing. The Parallel-2 and Job Time-out define how many seconds the PC and the host inputs have to be idle before the other input is serviced. The Parallel-2 and Job Begin Strings are sent to the printer when the PC or host input becomes active. The Parallel-2 or Job End Strings are sent when the time-out has elapsed and the next print-out is from the other input.

These strings can be used to control the printer for host or PC print-outs, such as setting the PC input for HP PCL by programming the Begin and End strings to let the printer switch between PostScript and HP PCL.

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Appendix F

Technical Specifications

Host Environments

3270/Coax mode:

- IBM S/370, S/390
- IBM 30xx
- IBM 937x
- IBM 43xx
- IBM AS/400 or S/3x via 3x74 Control Unit.

5250/Twinax mode:

- IBM AS/400 Twinaxial Workstation Controller (9402, 9404, and 9406)
- IBM AS/Entry Twinaxial Workstation Controller (9402)
- IBM AS/Entry Workstation Control Unit (5363)
- IBM S/36 Workstation Control Unit (5360, 5362, 5363, and 5364)
- IBM S/38
- IBM 5259 Migration Data Link
- IBM 5251 Model 12 Controller
- IBM 5294 Remote Control Unit attached to S/36
- IBM 5394 Remote Control Unit attached to AS/400 or S/36
- IBM 5494 Remote Control Unit attached to AS/400
- IBM 5299 Terminal Multiconnector.

Attachments

3270/Coax mode:

- IBM 3174 Control Unit with Configuration Support-A Release 5.1 or higher or Configuration Support-B Release 1.0 or higher
- IBM 3274 Control Unit Models 41x or 61x via Category A with Terminal Port Configuration Support-D Release 65.1 or higher or Configuration Support-C Release 49.0 or higher
- IBM ES/9370 Work Station Subsystem Controller (Features #6120 and #6020/6021) at Release 4.0 or higher
- IBM ES/9370 3270 Adapter (Features #6120 and #6020/6021) at Release 4.0 or higher
- IBM 4361 Work Station Adapter
- IBM 4321, 4331 or 4361 Display/Printer Adapter
- IBM 3299 Multiplexor.

Software Requirements for IPDS Printing

3270/Coax mode:

- PSF/MVS Version 1.2.1 or higher
- PSF/VM Version 1.1 or higher
- ACF/VTAM Version 3.1.1 or higher
- VM/SP Release 4 or higher
- RSCS/VM Version 2.2 or higher
- GDDM Version 2.1.1 with PTF APAR PL18771 or higher
- DCF Version 1.3.2 or higher.

5250/Twinax mode:

- IBM AS/400 Operating System/400 (OS/400) 1.3.0 or higher
- IBM AS/Entry System Support Program (SSP) Release 6.0 or higher, with IPDS Advanced Function PRPQ
- IBM S/38 CPF Release 8
- IBM S/36 SSP Release 5.1 or higher, with IPDS Advanced Function PRPQ and PTF 52-850
- IBM 5294 Remote Control Unit IPDS feature (#3601)
- IBM 5394 Remote Control Unit microcode Release 2.2 or higher.

Cable Attachments

3270/Coax mode:

- RG-62/AU coaxial cable @ max. 5000 ft (1500 meters)
- IBM Cabling System. DPC connector for connection to IBM Cabling System without balun.

5250/Twinax mode:

- Twinaxial cable @ max. 5000 ft (1500 meters)
- IBM Cabling System with baluns
- Type-3 telephone twisted pair cabling through twisted-pair-to-twinaxial adapters.

Printer Emulations

- IBM 4028/3112/3116/3912/3916
- IBM 3812 model 2
- IBM 3816 model 01S and 01D
- IBM 3287 models 1 and 2C
- IBM 3268 models 1 and 2C
- IBM 4214 model 1 and 2
- IBM 3262 models 3 and 13.
- IBM 5224 models 1, 2, and 3
- IBM 5225 models 1 and 2
- IBM 5256 models 1, 2, 3, and 4.

Data Streams

- Intelligent Printer Data Stream (IPDS), SNA and non-SNA
- SNA Character Stream (LU-1/SCS)
- SNA 3270 Data Stream Emulation (LU-3/DSE) (3270/Coax mode only)
- BSC 3270 non-SNA Data Stream Compatible (LU-0/DSC) (3270/Coax mode only)
- Transparent data through PC-Host sharing option for use of the attached printer's emulations, such as PostScript and HP PCL.

IBM Features

- All IPDS towers *(functional subsets within brackets)*:
  - Device Control *(DC/1)*
  - Text *(TX/1: PTOCA, PT/1 and PT/2)*
  - IM Image *(IM/1: IMD/1)*
  - IO Image *(IO/1: IOCA FS 10)*
  - Graphics *(GR/1: GOCA, DR1 and DR2/V0)*
  - Bar Codes *(BC/1: BCOCA and BCD/1)*
  - Page Segments *(PS/1)*
  - Overlays *(OL/1)*
  - Loaded Fonts *(LF/1)*
- IO Image compression algorithms: Uncompressed, IBM Group 3 MMR, CCITT Group 4 MMR and RL4
- Bar Codes: MSI, UPC A, UPC E, UPC 2 suppl., UPC 5 suppl., EAN-8, EAN-13, EAN 2-digit add-on, EAN 5-digit add-on, 2 of 5 Industrial, 2 of 5 Matrix, 2 of 5 Interleaved, Code 39, Codabar, Code 128 and Postnet
- 20 Character Sets and Code Pages
- All IBM 3270/DSE/DSC mode RPQs for IBM 3812/3816 (3270/Coax mode only)
- Extended Attribute Buffer (EAB), APL2/Text, excluding PS (3270/Coax mode only)
- Five input bins
- Duplex
- Color.

Additional Features

- Menu driven configuration procedure using a standard CUT type 3270 coax, 5250 twinax terminal or a PC with coax terminal emulator board
- More resource memory than IBM 3812 and IBM 4028 enables more and larger fonts, overlays and page segments to be host down-loaded
- Resource memory can be expanded up to 4 Mbytes
- Scaling to compress or expand the page contents
- Offsetting to move the page contents
- Up to 128 user definable scaleable fonts
- Optional PC-Host sharing for dynamic and intelligent printer sharing of one parallel (Centronics) input
- Supports any printer resolution
- Supports all page sizes up to 100" ∞ 100"
- Hex Transparency allows sending data directly to the printer without conversion. (3270/Coax mode only)

Font Support

- Supports host down-loaded 300 and 240 dpi fonts
- Supports IBM 4028/3916 and 3812/3816 resident fonts using the printer's PostScript outline fonts (Courier, Times, Helvetica, New Century Schoolbook and Symbol), including:
  - Courier 5, 10, 13.3, 15, 17, 20 and 27 CPI
  - Essay, Modern, Document and Boldface PSM
  - Sonoran Serif 6, 8, 9, 10, 11, 12 point
  - Sonoran Serif Italic 9, 10, 11 point
  - Sonoran Serif Bold 9, 10, 14, 16, 20, 24 point
  - Sonoran Serif Bold Italic 9, 10, 12, 18 point
  - Century Schoolbook 12 and 14 point
  - Century Schoolbook Bold 12 and 14 point
  - Century Schoolbook Italic 12 and 14 point
  - Century Schoolbook Bold Italic 12 and 14 point
- Supports OCR-B and Letter Gothic fonts by down-loading the fonts to the printer when needed.
- Up to 128 user definable scaleable fonts.

Character Support

- All characters supported for host down-loaded fonts
- Resident fonts supported in US Language Group code pages using character set 697 through PostScript character set ISO 8859-1 and Symbol with added line-draw characters.

Printer Support

- Adobe PostScript compatible printers of any print resolution
- Adobe PostScript compatible color printers of any print resolution.

Printer Memory Requirements

- Minimum recommended printer memory size 2 Mbytes, providing at least 200 kbytes of free VM Size memory.
- For host down-loaded fonts additional memory may be required. At least 3 Mbytes printer memory or 700 kbytes of free VM Size memory is recommended for extensive use.

Printer Attachment

- Parallel Centronics

Printing Speed (printer dependent)

- Centronics: Up to 200 kbytes/second transfer rate

Hardware specifications

- CPU: NS32CG16 and Axis 8x487 Communication Processor
- Memory: 1 Mbyte RAM, expandable to 4 Mbytes
  1 Mbyte EPROM, expandable to 2 Mbytes
  32 kbytes NVRAM.

Physical Dimensions

- Size: H=1.3, W=7.7, D=5.2 (inches)
  H=32,W=195, D=133 (mm)
- Weight: 1,8 lbs. (0.8 kg).

Electrical specifications

- Power: 12–15 V AC or DC, min 500 mA, provided by external power supply.

Approvals

- EMI: FCC Class A
  CE: EN 55022/1987, EN 50082-1/1992
- Safety: EN 60950

Operating Environment

- Temp.: 5-40 degrees Celsius (40-105 degrees Farenheit)
- Humidity: 10%-95% non-condensing.

All specifications are subject to change without prior notice

Appendix G

How To Contact Axis

Technical Support

Should you require any technical assistance, please contact your Axis dealer. If your questions can not be answered immediately, your Axis dealer will forward your queries through the appropriate channels to ensure that you get an expedient response.

Internet and World Wide Web

If you are connected to Internet, please take the time to visit the Axis WWW Home Page where you can find information about the company and our products. Please refer to the details overleaf for details of the appropriate WWW address in your region. You can also down-load on-line manuals, tools such as the Acrobat Reader, and the latest versions of the software utilities. You can also get files and information through anonymous ftp: log in to **ftp.axis.com** and go to the /pub/axis directory, or enter **ftp://ftp.axis.com/pub/axis** in your WWW browser.

The Axis Bulletin Board System

Another way to access the Axis archive is the Axis BBS. You will need a high-speed modem, a VT100 or VT220 terminal emulator, and a Kermit or ZModem compatible software. Dial **+46 46 12 06 32** or **+46 46 211 94 53** and log in as **guest** (no password required).

The Axis Offices

Choose the nearest office to your region:

Europe, Middle East, South America, Africa

Axis Communications AB
Scheelevägen 16
S-223 70 Lund, Sweden
Phone: +46 46 270 18 00
Fax: +46 46 13 61 30
Email: info@axis.com
URL: http://www.axis.com/

North & Central America

Axis Communications Inc.
4 Constitution Way
Suite G, Woburn
MA 01801-1030, USA
Phone: 1-800-444-AXIS, (617) 938-1188
Fax: (617) 938-6161
Email: info@axisinc.com
URL: http://www.axisinc.com/

Japan

Axis Communications K.K.
8th Center Plaza 5F
1-10-16 Nihombashi Horidome-cho
Chuo-ku, Tokyo 103, Japan
Phone: +81 3 3663 8801
Fax: +81 3 3663 8802
Email: info@axiscom.co.jp

Hong Kong, Northeast Asia, India

Axis Communications Ltd.
Room 602, Asian House
1 Hennessy Road
Wanchai, Hong Kong
Phone: +852 2836 0813
Fax: +852 2573 5935
Email: info@axis.com.hk

Singapore, Southeast Asia, The Pacific, Australia

Axis Communications Pte Ltd.
51 Thompson Road
187B Goldhill Centre
Singapore 307630
Phone: +65 250 8077
Fax: +65 352 1655
Email: axis@axis.com.sg

China

Axis Communications Ltd. Beijing Office
Rm 2203, 22/F Everbright Building
6 Fu Xing Men Wai Street
Beijing 100045, China
Phone: +86 - 10 68561350
Fax: +86 - 10 68561359

Axis Communications Ltd. Shanghai Office
Room J, 6/F World Trade Building
NO 1590 Yan An West Road
Shanghai 200052, China
Phone: +86 - 21 62808527
Fax: +86 - 21 62806892

France

Axis Communications S.A.
191 avenue Aristide Briand
F-942 30 Cachan, France
Phone: +33 1 49 69 15 54
Fax: +33 1 49 69 15 50

Appendix H

Related Documentation

Title	Part No.
PSF/MVS System Programming Guide	SH35-0091
PSF/VM System Programming Guide	S544-3467
PSF/VSE System Programming Guide	S544-3665
A Guide to IBM's Advanced Function Printing	S544-3095
3270 Programmers Guide and Reference Manual for the IBM LaserPrinter 4028 Model NS1	S544-4262
IBM 3812 and 3816 Page Printers Programming Reference for 3270 Information Display System Attachment	GA34-2081
IBM 3812 and 3816 Page Printers Font Reference	GA34-2111
IBM 4028 IPDS Handbook	S544-4260
IBM 3812 and 3816 Page Printers IPDS Handbook	GA34-2082
IBM Intelligent Printer Data Stream Reference	S544-3417
3274 Control Unit Description and Programmer's Guide	GA23-0061
3174 Establishment Controller Functional Description	GA23-0128
AS/400 Device Configuration Guide	SC41-8116
AS/400 Guide to Programming for Printing	SC41-8194
AS/400 Printing II	GG24-3704
AS/400 Printing III	GG24-4028
AFP Utilities/400 Guide and Reference	SH18-2416
Using the IBM LaserPrinter 4028 Model AS1 with the AS/400 and S/38	S544-4261
IBM 3816 Page Printer Programming Reference for Application System/400, System/36, and System/38	GA34-2084

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