Preface

Thank you for purchasing the AXIS AFP IOP Printer Interface. Our goal in developing this product is to enable you to connect your Lexmark Optra series of printers or the 4039 series of printer to your IBM IPDS environment, allowing you to take full advantage of both the IPDS functions and your printer capabilities.

About Axis

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

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

Network CD-ROM Servers CD-ROM servers provide a flexible and cost-efficient solution for sharing CD-ROMs across the network. They are available in Ethernet (AXIS 850/851) and Token Ring (AXIS 950/951) versions, with or without built in drive option.

Network Print Servers These intelligent Ethernet and Token Ring print servers support a wide range of LAN protocols. The AXIS NPS 530, 532, 550 and AXIS 150 are Ethernet print servers, and the AXIS NPS 630, 632 and 650 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 free standing box products such as the Cobra+ and the AFP IPDS-to-PostScript converter.

About this manual

This manual will guide you through a simple step-by-step installation and setup procedure. It is divided into six sections:

General Information
About the AXIS AFP IOP Printer Interface, how it works, where to use it, and its main features.

Front Panel Operation
How to operate the Lexmark printer's front panel when the AXIS AFP IOP is installed.

Utility Program
The tool for reconfiguring and upgrading the software in the AXIS AFP IOP.

Configuration Parameters
A complete listing of the parameters available for configuration of the AXIS AFP IOP.

Download/Upload
Downloading the configuration program and the fonts to the AXIS AFP IOP, as well as uploading the current configuration.

Program Setup
Setup of the Utility Program output function.

The manual applies to the AXIS AFP IOP with firmware release 1.00 and subsequent releases until otherwise notified.

This manual primarily describes operation of the AXIS AFP IOP installed in Lexmark Optra series of printers. The AXIS AFP IOP also supports Lexmark 4039 and 4039 *Plus* series of printers, with some minor differencies in the front panel operation.

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 to the product and manuals 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   This digital equipment fulfils the requirements for radiated emission according to limit B of EN55022/1987, and the requirements for immunity according to EN50082-1/1992 residential, commercial, and light industry. (Compliance is not valid for unshielded network and printer cables.)

Trademark acknowledgements

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Table of contents

Section 1

General Information

Product Overview
- This interface has full support for the IPDS features of the corresponding IBM 3812, IBM 3816 and IBM 4028 printers and is 100% plug compatible with these printer types.

- Emulation selection (3812/16 or 4028) is easily done from the front panel control.

- Hardware installation is easily done by the user. The only tool needed is a screwdriver for mounting one single screw. The interface consists only of two parts: -The AFP IOP main board and the externally attached Twinax or Coax patch cable. The interface only takes possession of the internal optional port of the printer and allows dynamic sharing with the existing input ports of the printer.

- The interface connects to the IOP input port of the Lexmark printer allowing maximum utilization of the performance of the high speed RISC processor on the AFP IOP interface.

- Best performance is obtained by using the Lexmark Optra series, which is built around a new Graphics Engine based on an object oriented design. The AXIS AFP IOP creates an HP PCL5 raster image for each page to ensure 100% compatibility with the AFP architecture, and the new Graphics enterpreter of the Lexmark Plus series can maintain full printspeed during processing of complex graphics jobs.

Contents of This Delivery The AXIS AFP IOP interface package consists of these parts:

1 x AXIS AFP IOP interface main board (Part no: 0055-3).

An interface which connects to the IBM 3270 environment by Coax cabling or the IBM 5250 environment by Twinax cabling. The interface contains by default both 3816 and 4028 emulations together with the Twinax and the Coax software. The interface is delivered with a factory setting which combines the most important default settings of the corresponding 3812/3816/4028 IBM printers.

Twinax 1 x Twinax DB9 Twinax T-bar cable AFP IOP (Part no: 14382).

Coax 1 x Coax cable AFP IOP (Part no: 14384).

The Twinax or Coax cable is for connecting to the 9 pole Dsub connector on the AXIS AFP IOP backplate. The interface automatically detects which patch cable is mounted.

1 x Mounting screw (Part no: 11998).

1 x 3,5" floppy disk (Part no: 14355).

The disk contains a PC-based utility program P11-XXXX for reconfiguring the interface through the Serial link cable.

1 x Serial link cable (Part no: 14387).

The cable is for option configuration and software upgrade of the AXIS AFP IOP through the PC utility program. The Serial link cable connects to the interface via the same 9 pole connector as the Coax and Twinax patch cables.

1 x AXIS AFP IOP User's Manual (Part no: 14363).

1 x A DC/DC converter module, if specifically ordered (Part no: 14409).

Note DC/DC converter required only for the 4039 10 and 12 page printer models.

IPDS   The Intelligent Printer Data Stream (IPDS) is the host-to-printer data stream for Advanced Function Printing (AFP) subsystems. It is part of IBM's System Application Architecture (SAA).

The IPDS architecture is functionally divided into eight towers of command sets, each representing a major printer capability. Five data towers: Text, IM Image, IO Image, Graphics and Bar Code; and three resource towers: Page Segment, Overlay and Loaded Font.

With IPDS it is possible to:

- use the all-points-addressable printing capability of the page printer to print text, graphics, images or bar codes at any point on the page.

- use images and vector graphics to print line drawings, pie charts, bar charts, graphics, logos, signatures etc.

- combine all kinds of data on the same page.

- print in all rotations either on separate pages or on the same page.

- electronically store and later print forms and letterheads.

- electronically store and later print host fonts.

The Distinction between AFP and IPDS   In general AFP is the entire SAA print concept, whereas the *AFP Data Stream* (AFPDS) represents closed *page definition files* which have information of various resources (e.g. the coordinates of a line and where to place a logo). The resources, not already resident in the printer (e.g. the logo), are picked up in the PSF libraries and incorporated in the IPDS format representing the *final formated output*, which communicates bidirectionally between the PSF and the printer. This interaction ensures for instance that the logo is loaded into the printer only when needed (first time and after an error situation), and deleted only when other resources need the space.

Fonts   The AFP IOP contains a total of 32 resident 300 dpi (dots per inch) fonts (4028 emulation) and 35 resident 240 dpi fonts (3812 emulation). The fonts are functionally equivalent to the standard IBM 4028 AS1/NS1 and the IBM 3812 Model 2 fonts. Refer to *Appendix B IPDS Font Summary* for a full listing of the resident fonts.

The Lexmark IOP Port   The Lexmark IOP port allows a network interface to send data to the Lexmark PCL and PostScript interpreter with an extensively higher speed than possible through a parallel PC cable. Additionally the IOP port provides information of various hardware and software states to the AFP IOP interface. With a unique native IOP language defined by Lexmark it is possible to program the front panel push buttons and display to allow front panel controlled user setup of the interface connected to the IOP port. The native Lexmark settings are altered by means of the PJL language invented by Hewlett Packard. The IOP port on the 4039 10 and 12 page printers does not deliver the appropriate voltage to the interface card unless a DC/DC converter is installed in the 5 pole socket above the interface.

AFP IOP Serial I/O Port   The serial I/O port on the AFP IOP allows easy software upgrade of the interface through a menu/mouse controlled PC utility program. The same utility program can be used for setting up the front panel configurable options also. The only benefit of using the utility program for setting up the options is that instead of changing them one by one, they can all be overwritten by a complete configuration file in one download operation.

The serial I/O port can also be used as a trace output port for dumping system data sent from the HOST onto a serial attached PC. Contact your local dealer/distributor for more information.

Section 2

Front Panel Operation

The AFP IOP adds a complete set of interface menus to the existing Lexmark front panel menu structure, thus allowing all interface settings to be altered by an easy self explanatory user interface. Menu settings relating to Coax and Twinax change according to the cable connected to the AFP IOP.

Note: **Changed settings will only have effect at the next Power on.**

The Optra front panel will not indicate the presence of the AFP IOP when it is Online (Ready). When printing from the AFP IOP the frontpanel will display "AXIS AFP"(Only on Optra and 4039 *Plus* printers) and "NET" as the source, instead of parallel or serial.

Note: When the AFP IOP becomes ready after power on a "beep" is made from the interface. This indicates that the communication processor is ready, which is the last check in the power on sequence.

AFP IOP menus The AFP IOP menus are entered by the following keystrokes when entering [MENUS]:

Optra and 4039 *Plus* series:	Enter [MORE] until [Network Menux] is displayed. Enter this menu by pressing the button next to this menu item.
4039 series:	Enter the submenu [SETUP] and press [MORE] until the submenu [Network Setup] is displayed. Enter this menu by pressing the button next to this menu item.

Opening Screen (Main IOP Menu)

The first display under [Network Menu] is shown in figures 1 and 2. Notice the following about the displays:

1. The detected cable type -**Coax** or **Twinax** is displayed in the upper left corner. However if no cable is connected, the display will indicate "Twinax".

2. Synchronization with the Coax or Twinax Control Unit is displayed as "**CU**". However the display does not operate in real time mode, but is only updated when entering [Network Menu]. This means unsteady lines or later disconnection will not be indicated, and the CU indication is not a guarantee for a proper connection.

3. The **emulation indication** in the lower left corner shows the power on emulation. If the emulation is changed in the [IPDS Options] menu the display will show the previous emulation until next power on.

4. The "**D**" next to the emulation indicates if a duplex unit has been detected or if duplex has been enabled in the [Duplex Support] menu. This detection only works on Optra and 4039 *Plus* models.

Note: The "**D**" indication will also be displayed in 4028 emulation, even though an original IBM 4028 does not support duplex (The AFP IOP can print IPDS duplex in all emulations).
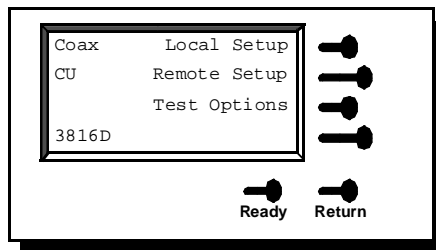
Figure 1.

5. The [2] displayed next to the emulation in figure 2 indicates the Twinax Station Address. This indication is only shown in Twinax mode. For more information on setting the Twinax address refer to page 37.
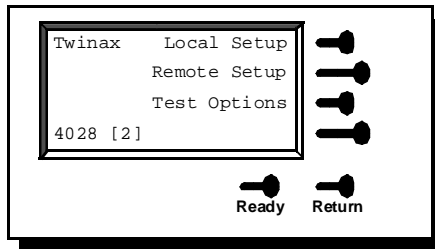
Figure 2.

Local Setup Menu

The local setup menu contains the 4 submenus shown in figure 3. Note that menu point number 3 changes according to the cable attached. "Coax Options" is shown if the Coax patch cable is connected, and "Twinax Options" is shown if the Twinax T-cable or NO cable is connected.

```
Printer Options
IPDS Options
Coax Options
Set Factory default


                    Ready   Return
```
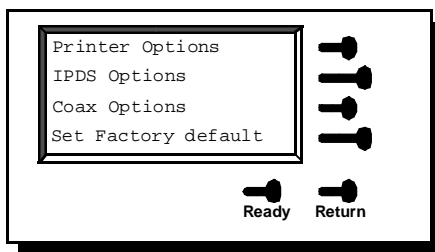
Figure 3

For more information on the [Remote Setup] refer to page 57. For more information on [Test Options] refer to page 60 and page 66.

For more information on the [Trace Facility], contact your local dealer/distributor.

Section 3

Utility Program Operation

The AFP utility program is a tool for reconfiguring and upgrading the software in your AFP IOP interface which enables you to :

1. Upgrade main program and fonts in the interface. (Note that the standard package does not contain the software files for the main program and font upgrade. Contact your local dealer for further information).

2. Change or create complete setups related to the host and to the printer, and save/restore setup files on disk (user and application tailored configurations).

3. Change single settings related to the host and for the printer.

Note: All these settings can be changed from the Lexmark front panel or by using the IPDS Parser function as well.

The program consists of two files:

IOPUTI.EXE (Main program)
IOPUTI.HLP (Help file used by the program)

The files can be copied onto the PC harddisk in a directory made for the purpose, for instance C:\IOPUTI, or the program can be run directly from the floppy disk. The only PC-requirement is a 9 pole serial output and preferably a mouse.

The program is started from the DOS prompt and will present itself with the opening screen. (The same window is displayed when selecting the menu [Info])

Note: The online help screens can be accessed anytime during program operation by pressing the <F1> key.

Setup for PC Configuration

To configure or upgrade the AXIS AFP IOP using the AFP utility
program, the PC must be connected to the printer. Follow these steps:

Important   1. Switch off both the PC and the printer!

2. Connect the serial link cable which is supplied in the delivery. Attach
   the connector marked PC to the PC, and the connector marked IOP
   to the AXIS AFP IOP in the printer.

3. Switch on the printer and the PC.

Handling Config Files

To make changes to a config file you must either load a premade config
file from your PC or upload a configuration file from the AFP IOP
interface. Alternatively you can enter settings according to the IOP status
page taken from the frontpanel of the Lexmark printer. All configuration
files have the extension *.CFN.

Note: If no config file has been loaded prior to selecting this item, a default
config file setting is used.

Press <ALT> C, or use the mouse to select [Config file].

Open Config File (read from PC harddisk/floppy drive)

When the screen Open Config File appears press <TAB> and use the
arrow keys to move the cursor bar to the appropriate CFN file. Now press
<TAB> again and the [OPEN] field will highlight. Press <ENTER>. You
will now be in the main menu again. The config file is now read into the
memory.

Making Changes to Config File Options

In the Main Menu, press <Alt> C to select menu [Config file] and move down with the arrow keys to select between [Coax options], [Twinax options], [Printer options], [Serial options] and [IPDS options].

As an example [Printer options] is selected. To change the number of input trays press the arrow down key to [number of cassettes]. Press <TAB> and the zero in [Option values] will highlight. Change value to two, and press <TAB> again. The [Accept] field is now highlighted. Press <ENTER> and the above screen is displayed, or press <TAB> if other printer options must be changed. Follow the same procedure to change other options.

Note: If this utility program option window is closed by pressing <ESC>, Cancel or clicking on the upper left window close square, the changes made to the config data will be lost.

It is possible to change only a single option on the AFP IOP and then download the option directly from the option screen by pushing [Download Option]. The word Downloading will flash a couple of times in the lower right corner of the screen until the download is completed.

Important In order to download or upload, make sure the Lexmark printer has been set into remote setup mode by pressing the two [OK] buttons in the [Remote Setup] menu in the IOP front panel menu. Alternatively the download sequence in the utility program can be activated before the printer is powered ON. This way the interface will detect the data at its serial port as the first step in the power ON routine, and only run in upgrade mode. Note that the printer will display an error message after a while as the interface only communicates with the serial port and not with the IOP port. This does not affect the download.

Save Config File (to PC harddisk/floppy drive)

From the main menu select the [Config file] by pressing <Alt> C. Then select the menu [Save config file]. Type in a file name and press <ENTER>, or press <TAB> and arrow keys to select a file you want to overwrite, and press <TAB> to highlight [SAVE]. Press <ENTER> and you are back in the main screen and the file is saved.

Important   If an option window is closed by pressing <ESC>, [Cancel] or clicking on the upper left window close square, the changes made to the config data will be lost. Use <TAB> to select Accept and press <ENTER> or use the mouse to click on [Accept] to keep the changes.

Section 4

IPDS Parser Function

The IPDS Parser is a function for configuring the AFP IOP remotely from a Sys370 (Coax) or AS/400 (Twinax) host environment. In this way you do not need to use the front panel or the Utility Program to configure the AFP IOP. The parser is valid in both 4028 and 3816 emulation mode, no matter if it is connected by Coax or Twinax.

Using the IPDS Parser

To configure the AFP IOP, you send the configuration data (according to the syntax instructions below) as text to the AFP IOP. The following rules apply for configuration data:

- Send the data as text (PT2 tower) using an EBCDIC based codepage. Sending the programming sequence in normal SCS/DSC format will have no effect.

- All scanned data will be printed as normal, ie the AFP IOP will show no indication of the configuration options being interpreted correctly.

- All non-printable characters (eg space) and positioning commands are ignored within the programming sequence.

- All option settings with syntax or range error will be ignored.

Syntax   To activate configuration mode, send the following lead-in string:

`&%OPT_=;`

To end configuration mode, send the following trailer string:

`&%`

This causes changed options to be saved. Turn the printer Off and On to

activate the new options.

All options have the following format:

option string = number

All configuration options must be separated by a semi-colon; line feed, form feed etc. are ignored.

Example 1
```
&%OPT_=;
DEFAULT_CODEPAGE = 8;
FRONT_TOP_MARGIN = -100;
&%
```

Example 2   `&%OPT_=;COAX_C04=5;COAX_C17=1;&%`

Note   Turn the printer Off and On to activate the new options.

Option strings

All supported parameters, their option strings and valid numbers are listed in the section *Configuration Parameters.*

Section 5

Configuration Parameters

The following chapters describe the AFP IOP configuration parameters. The parameters are split into the following groups:

Coax and Twinax Options
Printer Options
IPDS Options
Set Factory default

Each chapter is introduced by a short presentation of some important features of the corresponding Lexmark menu.

Coax/Twinax Options Front Panel Menus

The detected cable type (**Coax** or **Twinax**) is displayed in the upper left corner of the AFP IOP frontpanel menu. However if no cable is connected, the display will always indicate "Twinax". Only the menu corresponding to the detected cable will be accessible. However two options share the same position in the configuration storage area. These options are:

Coax Option:	C04 Country Code
Twinax Option:	C01 Country Code

This means if Coax option "C04" is changed then the Twinax option "C01" is changed accordingly. Examples of the menus are shown in figures 4 and 5.

```
C03 APO
C04 Country Code
C05 Reserved
                More

        Ready   Return
```

Figure 4.

```
C04 Country Code
                up
[@1-USA/Canada ] Down
  2-Reserved    Save

        Ready   Return
```
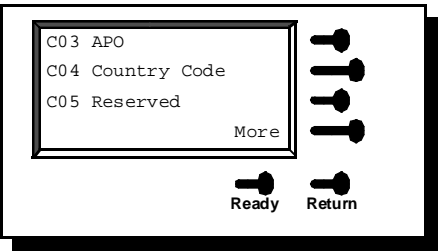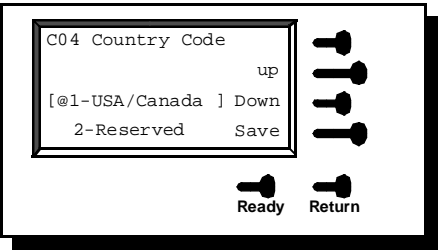
Figure 5.

Coax Options

This group of options corresponds to the C00..C27 options available on the 3812-2 Coax printer. Most of these are related to non IPDS configuration (SCS). However the default code page (C04), IR timeout (C17) and cassette linking (C27) are used in IPDS as well. Furthermore, options C28..C30 are equivalent to options (D - parameters) found on the 4028 Coax printer.

Note: **In the following an asterisk "*" will indicate the factory setting. The number in the first column indicates the value to use in the utility program or the IPDS parser, and the text in angular brackets indicates the printer front panel value for the options. The values can be text or numbers. The printer front panel menu texts are indicated in angular brackets in the option headlines.**

C01 Primary Cassette Print Orientation ....[c01 Prim. Cassette]

Controls how to print when using the primary cassette in all non IPDS Coax modes.

Primary cassette can be either the top or the bottom drawer. See *Cassette function* for details.

• 0 [COR]	Printing using landscape orientation and a reduction of the output to around 70%.
1 [Portrait]	Portrait mode. No reduction.
2 [Landscape]	Landscape mode. No reduction.

IPDS Parser syntax (with default setting):

```
COAX_C01 = 0;
```

C02   Alternate Cassette Print Orientation ....[c02 Alt. Cassette]

Controls how to print when using the alternate cassette in all non IPDS Coax modes.

Alternate cassette can either be the top or the bottom drawer. See *Cassette function* for details.

• 0 [COR]	Printing using landscape orientation and a reduction of the output to around 70%.
1 [Portrait]	Portrait mode. No reduction.
2 [Landscape]	Landscape mode. No reduction.

IPDS Parser syntax (with default setting):

```
COAX_C02 = 0;
```

C03   Automatic Print Orientation...[c03 APO]

When automatic page orientation is enabled, the printer checks the paper size, and rotates the print, if the print data does not fit the default page size. Used in all non IPDS Coax modes.

• 0 [Enable]	APO enable
1 [Disable]	APO disable

IPDS Parser syntax (with default setting):

```
COAX_C03 = 0;
```

C04   Country Character Sets and Code Pages .... [c04 Country Code]

This option controls the default code page for all Coax modes incl IPDS.

(The table is continued on next page.)

0	[0-Intern.set5]	500	International Set 5
• 1	[1-USA/Canada	37	USA/Canada - English
2	[2-Reserved]	500	Reserved
3	[3-Reserved]	500	Reserved
4	[4-Can.French]	260	Canadian French
5	[5-Aus/Germany]	273	Austria/Germany
6	[6-Belgium]	274	Belgium
7	[7-Brazil]	275	Brazil
8	[8-Denmark/Nor]	277	Denmark/Norway
9	[9-Finland/Swe]	278	Finland/Sweden

10	[10-Italy]	280	Italy
11	[11-Japan/Engl]	281	Japan-English
12	[12-Portugal]	282	Portugal
13	[13-Span.speak]	284	Spanish-Speaking
14	[14-UK]	285	United Kingdom
15	[15-Aus/Ger .2]	286	Alternate Austria/Germany
16	[16-Den/Nor .2]	287	Alternate Denmark/Norway
17	[17-Fin/Swe .2]	288	Alternate Finland/Sweden
18	[18-Spain .2]	289	Alternate Spain
19	[19-Japan/Kata]	290	Japan-Katakana
20	[20-APL (293)]	293	APL
21	[21-France]	297	France
22	[22-Reserved]	500	Reserved
23	[23-Int.Typogr]	361	International Typographic
24	[24-PC (437)]	437	Personal Computer
25	[25-Portugal.2]	37	Alternate Portugal
26	[26-Iceland]	871	Iceland
27	[27-OCRA (892)]	892	OCR-A
28	[28-OCRB (893)]	893	OCR-B
29	[29-Arabic (420)]	420	Arabic
30	[30-Reserved]	500	Reserved
31	[31-Canada.bil]	37	Canadian Bilingual
32	[32-Swiss.bil]	500	Swiss Bilingual
33	[33-Spanish]	284	Spanish
34	[34-Reserved]	500	Reserved
35	[35-Reserved]	500	Reserved
36	[36-Reserved]	500	Reserved
37	[37-Turk(1026)]	1026	Turkish
38	[38-Reserved]	500	Reserved
39	[39-Turk (905)]	905	Turkish
40	[40-Latin 2]		Latin 2
41	[41-Greek (423)]	423	Greek
42	[42-Greek (875)]	875	Greek

(The table is continued from previous page.)

IPDS Parser syntax (with default setting):

```
COAX_C04 = 1;
```

C06   Line Spacing ....[c06 Line Spacing]

Controls line spacing for non-IPDS Coax modes. In LU-1 mode the line spacing can be changed by commands from the host.

• 0 [Single Space]	Single-line spacing
1 [Double Space]	Double-line spacing

IPDS Parser syntax (with default setting):

```
COAX_C06 = 0;
```

C08   Monocase/Dualcase...[c08 Mono/Dual-case]

Use this option to force upper case printing.
Used in DSC/DSE modes only.

• 0 [Dualcase]	Normal dualcase printing.
1 [Uppercase]	Always use upper case.

IPDS Parser syntax (with default setting):

```
COAX_C08 = 0;
```

C09   Lines Per Inch (LPI)...[c09 Lines per Inch]

Selects how many lines to print per inch. In LU1-1 mode this sets the default power on value. In DSC/DSE modes this setting cannot be overwritten.

• 0 [6 LPI]	6 LPI(8.57 LPI when COR active)
1 [8 LPI]	8 LPI(11.43 LPI when COR active)
2 [6.5 LPI]	6.5 LPI

IPDS Parser syntax (with default setting):

```
COAX_C09 = 0;
```

C10 Screen Copy Screen Size...[c10 LC Screen Size]

Select screen size for local copy operation. For some controllers this value must be correct for the communication to start.
Used in DSC/DSE modes only.

0 [960]	960 bytes
1 [1920]	1920 bytes
2 [2560]	2560 bytes
• 3 [3440]	3440 bytes
4 [3564]	3564 bytes

IPDS Parser syntax (with default setting):

```
COAX_C10 = 3;
```

C11 Extended Attribute Buffer (EAB) .... [c11 EAB Control]

Extended attribute buffer is used for character attributes, APL printing etc.
Used in DSC/DSE modes only.

• 0 [Enable]	Yes. Enable extended attribute buffer.
1 [Disable]	No. Do not use extended attribute buffer.

IPDS Parser syntax (with default setting):

```
COAX_C11 = 0;
```

C12 Characters Per Inch (CPI).......................................[c12 Char.per Inch]

Selects how many characters to print per inch and the default font. In LU1-1 mode this sets the default power on value. In DSC/DSE modes this setting cannot be overwritten.

• 0 =[10 CPI]	10-pitch Courier (13-pitch, Gothic-text when COR active).
1 =[12 CPI]	12-pitch Prestige (15-pitch, Gothic-text when COR active).
2 =[15 CPI]	15-pitch Gothic-text (20-pitch, Gothic-text when COR active).
3 =[17 CPI]	17-pitch Courier (27-pitch, Gothic-text when COR active).

IPDS Parser syntax (with default setting):

```
COAX_C12 = 0;
```

C13   Maximum Page Length (MPL) ....[c13 Max Page Length]

In DSC/DSE and LU-1 modes the Maximum Page Length value defines the length of the page in lines. In DSC/DSE modes this value cannot be overwritten. In LU-1 mode this defines the power on value. If set to 0 or to a value larger than the physical page length, the maximum becomes the default. Paper size, C01, C02 and C03 are used to determine the maximum page length. The range is 0..999. The normal value for this field is 66.

• 66 [0..999]	MPL

IPDS Parser syntax (with default setting):

```
COAX_C13 = 66;
```

C14   Maximum Print Position (MPP).............................[c14 Max Print Pos.]

In DSC/DSE and LU-1 modes the Maximum Print Position value defines the width of the page in characters. In DSC/DSE modes this value cannot be overwritten. In LU-1 mode this defines the power on value. If set to 0 or to a value larger than the physical page width, the maximum will be used. Paper size, C01, C02 and C03 are used to determine the maximum page width. The range is 0..999. The normal value for this field is 132.

• 132 [0..999]	MPP

IPDS Parser syntax (with default setting):

```
COAX_C14 = 132;
```

C15 Early Print Complete Response Timing .... [c15 Print Release]

This is used to control when the printer will acknowledge a Form Feed (both an automatic FF and a valid FF control code). This option is only valid for non-IPDS mode.

Note: This option is inverted compared to the 3812/3816 printers. On the 3812/3816 C15 = 0 means that the FF will not acknowledge until printing is physically completed.

• 0 [Processing]	The FF will be acknowledged when the page has been transferred to the page buffer in the printer. With this setting you can achieve the maximum throughput, but you may lose data on an IR or if the printer loses power.
1 [Printing]	For DSC/DSE print the FF will not be acknowledged until the print is physically completed. For LU-1 (SCS) print the printer will function as if this option was set to zero provided that the chaining techniques are not used (Please refer to PCIA address X'0017' Bit number 1 & 2). However, if the FF (automatic or as control code) is found in a *Last* or *Only* segment, the FF will not be acknowledged until the print is physically completed.

IPDS Parser syntax (with default setting):

```
COAX_C15 = 0;
```

C16 Automatic Function at End of OILC Job .... [c16 At end of OILC]

Used in DSC/DSE modes only.

• 0 [No Auto Func.]	The setting of C24 controls how the printer handles the end of a print-order.
1 [Auto Function]	Form feed is executed after the print buffer has completed a local copy job.

IPDS Parser syntax (with default setting):

```
COAX_C16 = 0;
```

C17   Suppress Timeout on No-Data-Loss IR ....[c17 IR Control]

This option controls how to report special conditions such as paper-out, toner-low etc. in DSC/DSE, LU-1 and IPDS modes.

Note: Enabling this option will force reporting of Stacked Page Counter after pages have been printed, i.e. operation will proceed as if *IPDS Stacked Page Counter* was enabled.

• 0 [Disable]	No IR is sent on No-Data-Loss conditions.
1 [Enable]	Send Intervention Required to the host after some time if the condition continues.

IPDS Parser syntax (with default setting):

```
COAX_C17 = 0;
or
INTERVENTION_REPLY = 0
```

C18   Automatic New Line at MPP+1 ....[c18 Auto NL at MPP+1]

Used in DSC/DSE modes only.

0 [No]	No. When carriage return is executed at MPP+1, no automatic New Line is executed. New print position is at the beginning of the current line.
• 1 [Yes]	Yes. A carriage return on MPP+1 position causes a New Line to be executed. New print position is at the beginning of the next line.

IPDS Parser syntax (with default setting):

```
COAX_C18 = 1;
```

C19   Additional New Line at MPP+1 ....[c19 Add. NL at MPP+1]

0 [No]	No. When New Line is executed at MPP+1, then no automatic New Line is executed. New print position is at the beginning of the next line.
• 1 [Yes]	Yes. When New Line is executed at MPP+1, then an extra New Line is executed. New print position is at the beginning of the line which follows the next line. Used in DSC/DSE modes only.

IPDS Parser syntax (with default setting):

```
COAX_C19 = 1;
```

C20   Form Feed within the Print Buffer........................[c20 FF within Buffer]

Used in DSC/DSE modes only.

• 0 [Pos2 after FF]	No. Next print position will be next form, line 1, position 2.
1 [Pos1 after FF]	Yes. Next print position will be next form, line 1, position 1.

IPDS Parser syntax (with default setting):

```
COAX_C20 = 0;
```

C21   Form Feed at end of Print Buffer ....[c21 FF at EO Buffer]

Used in DSC/DSE modes only and when C16 is set to 0.

0 [No]	No. Automatic New Line at print-order completion will be sup-pressed.
• 1 [Yes]	Yes. Automatic New Line at print-order completion will be exe-cuted.

IPDS Parser syntax (with default setting):

```
COAX_C21 = 1;
```

C22   Null Suppression.. [c22 Null Suppression]

Used in DSC/DSE modes only.

• 0 [Yes]	Yes. Suppress lines with only non printable characters.
1 [No]	No. Do not suppress printing of lines with only non printable char-acters.

IPDS Parser syntax (with default setting):

```
COAX_C22 = 0;
```

C23   Form Feed Command Position ....[c23 FF Position]

Used in DSC/DSE modes only.

• 0 [Pos1 & MPP+1]	No. Execute FF only if it occurs first on the line or at the MPP+1 position.
1 [Whenever]	Yes. Execute FF always.

IPDS Parser syntax (with default setting):

```
COAX_C23 = 0;
```

C24   Automatic Function after EOB ....[c24 EOB Function]

Used in DSC/DSE modes only and when C16 is set to 0.

• 0 [No Function]	No. If form feed is the last character in the print order execute according to switch C21. Otherwise execute NL at end of print order if not at column 1.
1 [Execute a FF]	Yes. Automatic Form-Feed after End of print order will be executed if position is not currently at top of form.

IPDS Parser syntax (with default setting):

```
COAX_C24 = 0;
```

C25   Left Binding Margin ....[c25 Left Bind Margin]

Use this option to increase the left margin in all non-IPDS Coax modes. The value must be specified in 1/100 inches. The range is 0..999.

• 0 [0..999]	

IPDS Parser syntax (with default setting):

```
COAX_C25 = 0;
```

C26   Top Binding Margin.. [c26 Top Bind Margin]

Use this option to increase the top margin in all non-IPDS Coax modes. The value must be specified in 1/100 inches. The range is 0..999.

• 0 [0..999]	

IPDS Parser syntax (with default setting):

```
COAX_C26 = 0;
```

C27   Cassette Link Control .... [c27 Tray Linking]

This option can not be controlled by the AFP IOP interface, but has to be activated in the Lexmark [PAPER SETUP] Menu under [Tray Linking]. The paper in the two trays must be the same size in order for the linking to function.

Note: On Optra and 4039 *Plus* series printers a new feature called [Tray Protect] has been introduced. If this feature is enabled for a particular tray then the tray linking will skip this tray, even though the paper type installed is the same as for the other tray.

Refer to the Lexmark User manuals for more information.

C28   Coax Time Out... [c28 Coax TimeOut]

This option controls when a non-IPDS job without End of Job or Form Feed information are forced to be printed. The value stated in the *Interface Release Time Out* will always have higher priority if C28 has a value equal to or higher than the Release Time Out. The range is from 15-255 seconds.

• 30 [15..255]	Coax Time Out

IPDS Parser syntax (with default setting):

```
COAX_C28 = 30;
```

C29   Horizontal Output Reduction...............................[c29 Horizontal Red.]

With this COAX option it is possible to activate Horizontal Output Reduction for SCS and DSC/DSE (non-IPDS) printing. All movements in the horizontal level of the physical paper are reduced with the percentage stored in this option. The physical horizontal level runs along the short side of the paper regardless of print orientation. Reduction only affects movements, not image (like font images), i.e. it only affects non-IPDS printing. The range is from 0 - 5 reduction, which equals 0% to 5% reduction.

- 0 [0% .. 5%]

IPDS Parser syntax (with default setting):

```
COAX_C29 = 0;
```

C30   SCS Page Format ....[c30 SCS Page Format]

This option controls the page format in SCS and DSC/DSE (non-IPDS) mode.

Note: On the 3812/3816 emulation options 0 and 1 are identical.

• 0 [Print Page]	Print page. Logical page is equal to the printable area of the emulated printer.
1 [Whole Page]	Whole page. Logical page is equal to the paper size.
2 [Compress]	Compressed line spacing. Line spacing is reduced so lines close to the paper edge can be printed without clipping.

IPDS Parser syntax (with default setting):

```
COAX_C30 = 0;
```

Twinax Options

According to the SAA standard, it is not possible to run SCS and DSC/ DSE (non-IPDS) on IBM 3812/3816/4028 printers when operating in the Twinax environment (AS/400,S/36,S/38). Therefore only two IPDS related options are available in Twinax.

Note: **In the following an asterisk "*" will indicate the factory setting. The number in the first column indicates the value to use in the utility program or the IPDS parser, and the text in angular brackets indicates the printer front panel value for the options. The values can be text or numbers. The printer front panel menu texts are indicated in angular brackets in the option headlines.**

C01 Country Character Sets and Code Pages .... [c01 Country Code]

This option controls the default code page for IPDS.

(This table is continued on next page.)

0	[0-Intern.set5]	500	International Set 5
• I	[1-USA/Canada	37	USA/Canada - English
2	[2-Reserved]	500	Reserved
3	[3-Reserved]	500	Reserved
4	[4-Can.French]	260	Canadian French
5	[5-Aus/Germany]	273	Austria/Germany
6	[6-Belgium]	274	Belgium
7	[7-Brazil]	275	Brazil
8	[8-Denmark/Nor]	277	Denmark/Norway
9	[9-Finland/Swe]	278	Finland/Sweden
10	[10-Italy]	280	Italy
11	[11-Japan/Engl]	281	Japan-English
12	[12-Portugal]	282	Portugal
13	[13-Span.speak]	284	Spanish-Speaking
14	[14-UK]	285	United Kingdom
15	[15-Aus/Ger .2]	286	Alternate Austria/Germany
16	[16-Den/Nor .2]	287	Alternate Denmark/Norway
17	[17-Fin/Swe .2]	288	Alternate Finland/Sweden
18	[18-Spain .2]	289	Alternate Spain
19	[19-Japan/Kata]	290	Japan-Katakana
20	[20-APL (293)]	293	APL

21	[21-France]	297	France
22	[22-Reserved]	500	Reserved
23	[23-Int.Typogr]	361	International Typographic
24	[24-PC (437)]	437	Personal Computer
25	[25-Portugal.2]	37	Alternate Portugal
26	[26-Iceland]	871	Iceland
27	[27-OCRA (892)]	892	OCR-A
28	[28-OCRB (893)]	893	OCR-B
29	[29-Arabic (420)]	420	Arabic
30	[30-Reserved]	500	Reserved
31	[31-Canada.bil]	37	Canadian Bilingual
32	[32-Swiss.bil]	500	Swiss Bilingual
33	[33-Spanish]	284	Spanish
34	[34-Reserved]	500	Reserved
35	[35-Reserved]	500	Reserved
36	[36-Reserved]	500	Reserved
37	[37-Turk(1026)]	1026	Turkish
38	[38-Reserved]	500	Reserved
39	[39-Turk (905)]	905	Turkish
40	[40-Latin 2]		Latin 2
41	[41-Greek (423)]	423	Greek
42	[42-Greek (875)]	875	Greek

(This table is continued from previous page.)

IPDS Parser syntax (with default setting):

```
TWINAX_C01 = 1;
```

C02   Cassette Link Control .... [c02 Tray Linking]

This option can not be controlled by the AFP IOP interface, but has to be activated in the Lexmark [PAPER SETUP] Menu under [Tray Linking]. The paper in the two trays must be the same size in order for the linking to function.

Note: On Optra and 4039 *Plus* series printers a new feature called [Tray Protect] has been introduced. If this feature is enabled for a particular tray then the tray linking will skip this tray, even though the paper type installed is the same as for the other tray.

Refer to the Lexmark User manuals for more information.

Twinax Address   Twinax Address.. [Device Address]

> *Note:*   **This option is not found in the utility program but only in the Lexmark frontpanel menu !**
>
> This option selects the device address. This address should be determined by the system administrator before the AFP IOP is connected to the system. The address can be in the range from 0-6.

> • 0 [0..6]

> IPDS Parser syntax (with default setting):

```
TWINAX_ADDRESS = 0;
```

Printer Option Front Panel Menu

The Printer Options are common for both Coax and Twinax mode and relates to Printer Specific features such as physical printable area and paper tray actions. Certain features of the printer can automatically be detected on the Optra and 4039 *Plus* models, and be reported back to the system in an IPDS reply. The options can however be set to override this feature. The **automatic detection** in "Printer Options" applies to the following features:

> Number of Trays
> Envelope Feed support
> Paper Size, for Tray 1, 2 and Envelope feed
> Duplex support

Margins   The margin settings are used for adjusting the position of the printable area. All data are affected by this set of margins, which could be compared to movements of the tractor feeder and paper knob of a matrix printer. An example of the menu operation for changing margins is shown in figure 6.


```
Top Margin
                        -
adjusting 1/300"        +
= -10              Save
```
Ready   Return
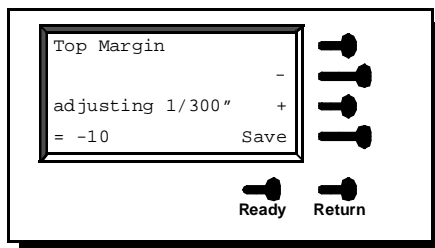
Figure 6.

The interface has been preset with all margins at zero. This adjustment corresponds to the center position of a page printed on an IBM 3816 printer. However, the AFP IOP is limited by the Lexmark Optra and 4039 logical page area in PCL mode, which means the printable area is truncated by 50 pels for all four sides of the paper. The example in figure 6 shows a negative adjustment of 1/30", i.e. all print data coming from the AFP IOP will be printed with this displacement. However the negative adjustment might cause the top area of the printout to be truncated.

It is recommended to base future applications upon the 4028 emulation, as this emulation is developed on basis of a Lexmark engine, and therefore has a similar reduced printable area, for which most applications have compensation. For more information on logical page areas, refer to the Lexmark "Technical Reference" under "PCL5 Emulation Printable and Unprintable Areas".

Printer Options

Use these options to change printer related items in the loaded config data. Printer related items are margins, number of trays etc.

Note: **In the following an asterisk "*" will indicate the factory setting. The number in the first column indicates the value to use in the utility program or the IPDS parser, and the text in angular brackets indicates the printer front panel value for the options. The values can be text or numbers. The printer front panel menu texts are indicated in angular brackets in the option headlines.**

Top Margin Top Margin .... [Top Margin]

Top margin must be in the range -128 to 127. Unit is 1/300 of an inch. Negative values indicates less top margin.

• 0 [-128..+127]

IPDS Parser syntax (with default setting):

```
FRONT_TOP_MARGIN = 0;
```

Left Margin Left Margin... [Left Margin]

Left margin can be adjusted in 1/300 of an inch, and a range of -128 to 127 units is allowed. Left margin is always located at the edge of the paper to the left of the leading edge.

• 0 [-128..+127]

IPDS Parser syntax (with default setting):

```
FRONT_LEFT_MARGIN = 0;
```

Top Margin Back Side   Top Margin Back Side .... [Top Margin Back]

Top margin must be in the range -128 to 127. Unit is 1/300 of an inch. Negative values indicate less top margin. This setting only affects duplex printing.

• 0 [-128..+127]

IPDS Parser syntax (with default setting):

```
BACK_TOP_MARGIN = 0;
```

Left Margin Back Side   Left Margin Back Side.. [Left Margin Back]

Left margin can be adjusted in 1/300 of an inch, and a range of -128 to 127 units is allowed. Left margin is always located at the edge of the paper to the left of the leading edge. This setting only affects duplex printing.

• 0 [-128..+127]

IPDS Parser syntax (with default setting):

```
BACK_LEFT_MARGIN = 0;
```

Top Margin Envelope   Top Margin Envelope .... [Top Margin Envelope]

Top margin must be in the range -128 to 127. Unit is 1/300 of an inch. Negative values indicate less top margin.

• 0 [-128..+127]

IPDS Parser syntax (with default setting):

```
ENVELOPE_TOP_MARGIN = 0;
```

Left Margin
Envelope

Left Margin Envelope ....[Left Margin Envelope]

Left margin can be adjusted in 1/300 of an inch, and a range of -128 to 127 units is allowed. Left margin is always located at the edge of the paper to the left of the leading edge.

• 0 [-128..+127]

IPDS Parser syntax (with default setting):

```
ENVELOPE_LEFT_MARGIN = 0;
```

Number of trays

Number of trays ....[Number of Trays]

Number of trays is used to control how many trays can be selected on the printer. If a value of 1 is chosen and the printer is equipped with 2 trays, all HOST prints addressing tray 2 will be printed from the physical tray 1. If a value of 2 is selected and the printer only has one tray, all HOST prints addressing tray 2 will be printed from the available physical tray. Manual feed does not count as an input tray. With a value of zero, automatic cassette detection will take place.

• 0 [Autodetect]	Auto detect (Optra and 4039 *Plus* series only).
1 [One]	One cassette
2 [Two]	Two trays

IPDS Parser syntax (with default setting):

```
NUMBER_OF_CASSETTES = 0;
```

Cassette Function   Cassette Function..[Tray function]

If the printer has two input trays the Cassette Operation field can be used to control the operation of these trays.

Note: If the Trays have been reversed in the Lexmark native setup menu under [PAPER SETUP] then the following selections will have the opposite meaning.

Note: On Optra and 4039 *Plus* series printers a new feature called [Tray Protect] has been introduced. This feature has to be enabled for the [Tray function] to work properly. Refer to the Lexmark User manuals for more information.

• 0	[1.Prim/2.Alt.]	Normal mode. Top cassette is primary, bottom is alternate.
1	[1.Alt/2.Prim.]	Inverted mode. Top cassette is alternate, bottom is primary.
2	[1.Prim & Alt.]	The top cassette will always be used.
3	[2.Prim & Alt.]	The bottom cassette will always be used.

IPDS Parser syntax (with default setting):

```
CASSETTE_FUNCTIONS = 0;
```

Paper Size, Top Cassette

Paper Size, Top Cassette .... [Paper Size Tray 1]

Use this option to select size of paper in the top tray.

Note: If actual paper size is smaller than the one selected, empty or misaligned pages will be printed.

• 0 [Autodetect]	AUTO Detect	(Optra and 4039 *Plus* series only!)
1 [A4]	A4	297 x 210 mm.
2 [B5]	B5	257 x 182 mm
3 [Letter]	Letter	11 x 8.5 inch
4 [Legal]	Legal	14 x 8.5 inch
5 [Executive 1]	Executive 1	10.5 x 7.00 inch
6 [Executive 2]	Executive 2	10.5 x 7.25 inch
7 [Executive 3]	Executive 3	10.5 x 7.50 inch
8 [Monarch]	Monarch	3.875 x 7.5 inch
9 [Com-10]	COM10	4.125 x 9.5 inch
10 [DL]	DL	4.33 x 8.66 inch
11 [C5]	C5	6.38 x 9.01 inch
12 [A5]	A5	5.83 x 8.27 inch

IPDS Parser syntax (with default setting):

```
PAPER_SIZE_1ST_CASSETTE = 0;
```

Paper Size, Bottom Tray

Paper Size, Bottom Tray .... [Paper Size Tray 2]

Use this option to select size of the paper in the bottom.

Note: If actual paper size is smaller than the one selected, empty or misaligned pages will be printed.

• 0 [Autodetect]	AUTO Detect	(Optra and 4039 *Plus* series only!)
1 [A4]	A4	297 x 210 mm.
2 [B5]	B5	257 x 182 mm
3 [Letter]	Letter	11 x 8.5 inch
4 [Legal]	Legal	14 x 8.5 inch
5 [Executive 1]	Executive 1	10.5 x 7.00 inch
6 [Executive 2]	Executive 2	10.5 x 7.25 inch
7 [Executive 3]	Executive 3	10.5 x 7.50 inch
8 [Monarch]	Monarch	3.875 x 7.5 inch
9 [Com-10]	COM10	4.125 x 9.5 inch
10 [DL]	DL	4.33 x 8.66 inch
11 [C5]	C5	6.38 x 9.01 inch
12 [A5]	A5	5.83 x 8.27 inch
13 [Com-9]	COM9	3.875 x 8.875 inch

IPDS Parser syntax (with default setting):

```
PAPER_SIZE_2ND_CASSETTE = 0;
```

Paper Size,
Manual Feed

Paper Size, Manual Feed ....[Paper Size Manual]

This option is to be used to select size of the paper in the manual feed.

Note: If actual paper size is smaller than the one selected, empty or misaligned pages will be printed. The standard logical page number for manual feed (63H) can be used in the IPDS to select the manual feed.

• 1 [A4]	A4	297 x 210 mm.
2 [B5]	B5	257 x 182 mm
3 [Letter]	Letter	11 x 8.5 inch
4 [Legal]	Legal	14 x 8.5 inch
5 [Executive 1]	Executive 1	10.5 x 7.00 inch
6 [Executive 2]	Executive 2	10.5 x 7.25 inch
7 [Executive 3]	Executive 3	10.5 x 7.50 inch
8 [Monarch]	Monarch	3.875 x 7.5 inch
9 [Com-10]	COM10	4.125 x 9.5 inch
10 [DL]	DL	4.33 x 8.66 inch
11 [C5]	C5	6.38 x 9.01 inch
12 [A5]	A5	5.83 x 8.27 inch
13 [Com-9]	COM9	3.875 x 8.875 inch

IPDS Parser syntax (with default setting):

```
PAPER_SIZE_2ND_CASSETTE = 1;
```

Paper Size, Envelope Feed

Paper Size, Envelope Feed .... [Paper Size Envelope]

This option is used to select size of the paper in the envelope feed.

Note: If actual paper size is smaller than the one selected, empty or misaligned pages will be printed.

• 0 [Autodetect]	AUTO Detect	(Optra and 4039 *Plus* series only!)
1 [A4]	A4	297 x 210 mm.
2 [B5]	B5	257 x 182 mm
3 [Letter]	Letter	11 x 8.5 inch
4 [Legal]	Legal	14 x 8.5 inch
5 [Executive 1]	Executive 1	10.5 x 7.00 inch
6 [Executive 2]	Executive 2	10.5 x 7.25 inch
7 [Executive 3]	Executive 3	10.5 x 7.50 inch
8 [Monarch]	Monarch	3.875 x 7.5 inch
9 [Com-10]	COM10	4.125 x 9.5 inch
10 [DL]	DL	4.33 x 8.66 inch
11 [C5]	C5	6.38 x 9.01 inch
12 [A5]	A5	5.83 x 8.27 inch
13 [Com-9]	COM9	3.875 x 8.875 inch

IPDS Parser syntax (with default setting):

```
PAPER_SIZE_ENVELOPE = 0;
```

Manual Feed Support

Manual Feed Support..[Manual Feed Support]

This option is used to enable manual feed support. The standard logical page number for manual feed (63H) can be used in the IPDS to select the manual feed.

• 0 [No]	No
1 [Yes]	Yes

IPDS Parser syntax (with default setting):

```
MANUAL_CASSETTE_ENABLE = 0;
```

Envelope Feed Support

Envelope Feed Support ....[Envelope Support]

Set this option to one if the printer supports envelope feed.

• 0 [Autodetect]	AUTO Detect	(Optra and 4039 *Plus* series only)
1 [Yes]	Yes	
2 [No]	No	

IPDS Parser syntax (with default setting):

```
ENVELOPE_SUPPORT = 0;
```

Skip Blank Pages

Skip Blank Pages...[Skip Blank Pages]

When setting the Skip blank page option to 1, all completely blank pages are not printed.

• 0 [No]	Print blank pages
1 [Yes]	Skip blank pages

IPDS Parser syntax (with default setting):

```
BLANK_PAGE_SKIP = 0;
```

Interface Release Time Out

Interface Release Time Out.............................. [IOP Release Time-Out]

Note: **This option is only used on the Optra and 4039 *Plus* series of printers. On non-*Plus* 4039 printers use the printer option [Print Timeout]. Refer to the Lexmark User manuals for more information.**

The Release Timeout options control how long time must pass after the interface has used the IOP port until the other input ports (serial or parallel) can be used on the printer.

This time must be set large enough to ensure that for example an IPDS job can be printed without pages from the parallel or serial ports being inserted between the IPDS pages.

If a partial non-IPDS Coax page exists in the printer buffer, this page will be printed and the timer will be restarted before exit from IOP mode. This option has higher priority than option *C28 Coax Time Out.*

The normal printer FF-timeout controls the time for switching to IOP mode. The range is from 15-255 seconds.

• 30 [15..255]	Interface Time Out in seconds

IPDS Parser syntax (with default setting):

```
PORT_TIMEOUT = 0;
```

Error Beep Control

Error Beep Control .... [Error Beep Control]

This option can be enabled to detect different kinds of errors. The beep pattern is always 6 beeps consisting of short and long beeps.

Please note, disabling only affects beeping on software errors. Hardware error signaling can not be disabled. In case of hardware error signals refer to *Appendix F - Customer Support.*

• 0 [No]	No beep.
1 [On]	Burst of 6 beeps on user errors.
2 [Continous]	Beep while error persists.

IPDS Parser syntax (with default setting):

```
ERROR_BEEP = 0;
```

Full Page Printing   Full Page Printing .... [Full Page Printing]

This option makes it possible to use the so called "Edge to edge" printing facility.

• 0 [No]	This setting gives the same printout as with older versions. If you have an Optra printer and if your printer has RIP code level 31.01 or higher (also known as Base Code), and engine code 43.42, you may find this option useful.
1 [Yes]	The AFP IOP interface will use the so called "Edge to edge" facility, which means that you will get a printout with 1/10 of an inch unprintable margin around the page and that the contents of the page will be compressed about 2% in all directions..

IPDS Parser syntax (with default setting):

```
FULL_PAGE_PRINTING = 0;
```

Test Page   Test Page...[Testpage at Power ON]

Note: **This option is only located under "Printer Options" in the utility program. In the Lexmark front panel menu the same option is found under [TEST PAGE] in the [TEST OPTIONS] menu.**

Setting the Start Testpage option to one will enable printing of a test page each time the interface is turned on.

• 0 [Disable]	No test pages.
1 [Enable]	Print test page at start.

IPDS Parser syntax (with default setting):

```
TEST_PAGE = 0;
```

Note: The frontpanel menu [Test Page] has as an additional item:

[Continuous Test Page].

This value can only be selected from the front panel as it is disabled at power OFF.

IPDS Options Front Panel Menu

The IPDS Option menu consists mainly of settings which relate to the IPDS to host replies from the interface. Two options are to be considered at first time installation: The [IPDS Emulation] and the [Duplex Support]. Changing the IPDS emulation will not only affect the reply to the host, but it will also cause a completely different program to be loaded from the Flash memory into the DRAM area of the AFP IOP interface. The IPDS graphics features and the fonts are not only running in a different resolution (4028 = 300dpi, 3812/16 = 240dpi),- the font sets are completely different from each other.

The duplex feature is automatically detected on Optra and 4039 *Plus* models (only) and reported to the host. The "D" indication in the AFP IOP main menu will be displayed if the duplex is automatically detected or if duplex has been enabled be stating "yes" in the "Duplex Support" option.

IPDS Options

This group of options changes the way IPDS operates. These options are not available on the original IBM 3812-2 printer.

Note: **In the following an asterisk "*" will indicate the factory setting. The number in the first column indicates the value to use in the utility program or the IPDS parser, and the text in angular brackets indicates the printer front panel value for the options. The values can be text or numbers. The printer front panel menu texts are indicated in angular brackets in the option headlines.**

IPDS Emulation   IPDS Emulation .... [IPDS Emulation]

Note that the 3812 and 3816 replies are identical. If for instance duplex is enabled this will be reported to the host independently of the emulation.

0 [3812/3816]	IBM 3812/16.
• 1 [4028]	IBM 4028.
2 [3916]	IBM 3912/16 (3112/16)

IPDS Parser syntax (with default setting):

```
IPDS_EMULATION = 1;
```

Codepage Version   Codepage Version .... [Codepage Version]

Note: The codepages differ on some special characters. Refer to IBM font reference manual for details.

• 0 [Version 1]	Use standard codepage version 1 for codepages close to 37 or 500 (non typographic standard codepages).
1 [Version 0]	Special. Use old codepage version 0.

IPDS Parser syntax (with default setting):

```
CODEPAGE_VERSION = 0;
```

IPDS Exception Reporting Control

IPDS Exception Reporting Control ....[Exception Control]

It is often practical to suppress exception reporting on undefined characters and position errors (printing outside valid printable area).

This option overrides the EHC control in the IPDS data stream.

• 0 [No Exceptions]	No suppression of exceptions.
1 [Outside VPA]	Exception reporting for position errors (Outside VPA) is suppressed.
2 [Undef Char]	Exception reporting, when an undefined character is found, is suppressed.
3 [UVPA & UDEFC]	Both position errors and undefined character exceptions are suppressed.

IPDS Parser syntax (with default setting):

```
EXCEPTION_OVERRIDE = 0;
```

IPDS Stacked Page Counter

IPDS Stacked Page Counter...................................[Page Counter update]

If the interface updates the page counter after the page has been processed, the printer could in some cases lose pages if it is turned off while printing. However, the printer recovers correctly from jam and cover open errors.

Note: If Coax option C17 Intervention Required is enabled, reporting of Stacked Page Counter after pages have been printed will be forced regardless of the setting of this option.

• 0 [Processing]	Report stacked counter after pages have been processed.
1 [Printing]	Report stacked counter after pages have been printed (see Note below!).
2 [Transfer]	Report stacked counter after pages have been transferred from the AFP IOP to the Lexmark printer.

Note: The value "1=Printing" only works on Optra and 4039 *Plus* series printers. A value of 1 on printers other than the 4039 *Plus* series will result in operation as described under value "2=Transfer".

IPDS Parser syntax (with default setting):

```
INCREMENT_PAGE_COUNTER = 0;
```

Resource memory   Resource memory...[IPDS Resources]

With this option it is possible to control the allocation of memory between the IPDS resource memory and the output buffer used for pages ready for print.

Increasing output memory can sometimes improve speed because transmission and printing time are better used. Increasing memory for resource is sometimes a good idea, if printing large IPDS jobs with many downloaded fonts, page segments or overlays.

• 0	[Normal]	Normal split of memory.
2	[Less]	Allocate less resource memory but more to output buffer.
3	[More]	Allocate more resource memory but less to output buffer.

IPDS Parser syntax (with default setting):

```
RESOURCE_MEMORY = 0;
```

Duplex Support   Duplex Support ....[Duplex Control]

This option determines if the AFP IOP should report to the host that this option is installed.

• 0	[Autodetect]	AUTO Detect	(Optra and 4039 *Plus* series only)
1	[Disable]	Duplex not installed.	
2	[Enable]	Duplex installed.	

IPDS Parser syntax (with default setting):

```
DUPLEX_PRINT = 0;
```

4028 Printable Area   4028 Printable Area .... [Printable Area]

This option controls what printable area is reported in the 0b Printer Characteristics reply on the 4028 emulation.

Note: This option is only used in 4028 emulation and is recommended to be enabled.

• 0 [3812/3816]	Normal. Printable area and paper size is the same
1 [4028]	4028 compatible. Printable area is smaller than the paper size. Thereby allowing Host compensation of the reduced printable area found on most laser printers.
2 [Print Page]	Supports 4028 Print Page option. This option causes the upper left corner (0,0) of the Logical page to be forced inside the 4028 Print-able area.

IPDS Parser syntax (with default setting):

```
4028_PRINTABLE_AREA = 0;
```

Set Factory Default

This menu selection makes it possible to reset the AFP IOP to the factory defaults setting.
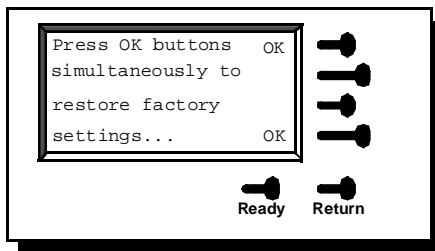

Figure 7.

When you enter this menu, you will be asked if you really want to restore factory default settings.

Note: The current configuration will be overwritten.

Section 6

Download/Upload

Both the configuration, program and fonts can be downloaded to the AXIS AFP IOP interface via the serial cable delivered with the interface. Furthermore the configuration can be uploaded from the AFP IOP. However all configuration settings can be altered from the Lexmark frontpanel as well. The serial COM output used must be set in the program [Setup] menu.

Note: The interface automatically detects the baud rate selected in the utility program. The baud rate is controlled by direct hardware access, i.e. running the utility program under Windows could cause problems, as Windows controls the serial ports in protected mode.

Download/Upload Procedure Download/Upload Procedure..[Remote Setup]

Important In order to download or upload, the PC must be connected to the printer using the supplied serial cable (see Section *Utility Program*). Also make sure the Lexmark printer has been set into remote setup mode by enabling [Remote Setup] from the IOP front panel menu.This is accomplished by pressing the [OK] buttons simultaneously.

```
Remote Setup.      OK
Warning: The Host
session will be
terminated.        OK
```
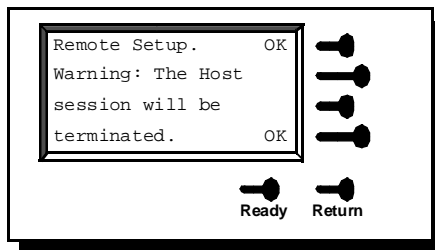
Ready   Return

Figure 8.

When the Interface has been set into upgrade mode in the [Remote Setup] menu (fig. 8), it will start searching for a serial signal (fig 9). Note that the host session is determined when setup mode is activated. The host session will not be established again until the next Power ON.
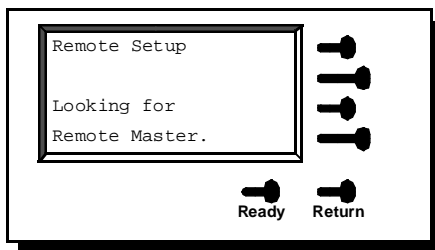

Figure 9.

The desired download or upload should now be selected by the utility program menus [Download] or [Upload]. The COM port and baudrate should have been set prior to this operation in the utility program [Setup] menu under [Ouput]. The baud rate is by default set to 19200 which most PC's should be able to run. However, most modern PC's can handle baud rates up to 57600. This value of course gives the fastest download.
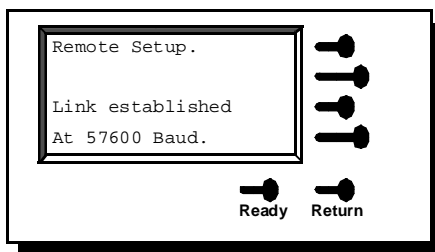

Figure 10.

When the Download or the Upload operation is activated the interface will establish the link and display the detected baudrate (fig. 10). If communications problems occur during download and upload then check that the PC and the Printer use a common ground (not through the serial cable). If not, then connect the devices to a common ground or select a baudrate of 19200 or lower.

Note   Alternatively, the download sequence in the utility program can be activated before the printer is powered ON. This way the interface will detect the data at its serial port as the first step in the power ON routine, and only run in upgrade mode.

Note   **The printer will display an error message after a while as the interface only communicates with the serial port and not with the IOP port. This does NOT affect the download.**

Download All   Download All..[Remote Setup]

When selecting [Download All] the program will ask for the appropriate files by showing a disk directory with the possible choices of files. The user is prompted as explained under [Download Configuration], [Download Program] and [Download Fonts].

Download/Upload Configuration (*.CFN files)   Download/Upload Configuration (*.CFN files)..............[Remote Setup]

Any given configuration file with the file extension *.CFN can be downloaded by using the [Download Configuration] option (or by selecting Download All). A configuration can be uploaded from the interface by selecting [Upload Configuration] in the [Upload] menu. If changes have been made to the configuration file currently loaded into memory, the program will automaticallly display a disk structure in order to have the configuration saved before downloading. The file must have the extension ".CFN". If no changes are made to a CFN file previously loaded with [Open config file] the program will download this file. If no CFN file has been loaded or no options have been changed prior to selection of [Download Configuration], then the program will prompt for a *.CFN file by showing a disk structure from where the file can be selected. It is recommended to use the file DEFAULT.CFN. This file will be created by the program if it does not exist in the same directory as the AFPUTI.EXE program. If changes are made and saved into DEFAULT.CFN, the factory setting can always be restored by deleting or renaming this file and letting the utility program create a new file.

Download Program (Main AFP IOP Firmware)   Download Program (Main AFP IOP Firmware) ....[Remote Setup]

It is possible to download main program code to the interface using the [Download Program] menu selection (or by selecting [Download All]).

The program code file for the AFP IOP has the name:

K10-XXXX.BIN

The utility program will show a disk directory structure from where the desired mainfile can be selected. Note that upgrading a mainfile may in some cases require upgrade of the fontfiles as well.

Download Font (Resident Font Resources)

Download Font (Resident Font Resources) ....[Remote Setup]

A fontfile can be downloaded to the interface by selecting [Download Font] (or by selecting [Download All]). The font file is named:

F07-XXXX.BIN

This file contains both the 4028 and the 3812/16 emulated fonts. The utility program will show a disk directory structure from where the desired fontfile can be selected. Note that upgrading a fontfile may in some cases require upgrade of the mainfile as well.

In the Lexmark AFP IOP front panel menu [TEST OPTIONS] is a menupoint called [FIRMWARE INFORMATION]. Selection of this feature will show a list of active firmware revisions (fig. 10). This feature corresponds to the menupoint [Upload Versions] under [Upload] in the utility program, though the versions are displayed on the PC screen instead.

```
Version Information.
Overall : 1.00-4281
IPDS    : 1.1-50
Fonts   : F05-3351

                    Ready    Return
```
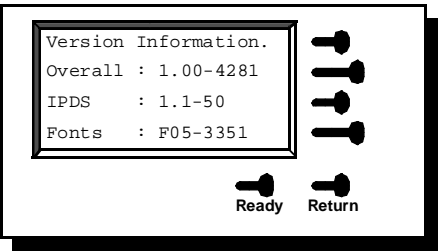
Figure 11.

Note that the "fonts" indicated are specific for the emulation currently active. In the example (fig. 11) the font F05-3351 is shown. This is a 4028 font set. The corresponding 3812/16 fontset is called F03-XXXX. The file F07-XXXX indicates the combined file containing both fontfiles.

Note   The last 4 digits can be different in the three file numbers, e.g. the fontfile for 4028 may be newer than the 3812 fontfile and vice versa.

Section 7

Program Setup

The menupoints under menu [SETUP] relate mainly to the setup of the program in combination with the PC. Only option under [SETUP] affecting the AFP IOP interface is found under [Output].

Output Output..

Download is only supported on a serial COM port. In the [Output] selection in the [Setup] menu a COM port from 1-4 can be selected. If a port is selected which is not available on the PC used, an error message window will appear on the screen. Also the baud rate for communicating with the AFP IOP is selected under [Output]. The AFP IOP automatically detects the selected baud rate. The default baud rate is 19200 and the highest baud rate is 57600 which should work on most modern PC's. If communications problems occur during download and upload then check that the PC and the Printer uses a common ground (not through the serial cable). If not, then connect the devices to a common ground or select a baud rate of 19200 or lower. If baud rate is changed after linking with the AFP IOP has been established, the printer has to be restarted and the [Remote Setup] activated before a new download/upload is performed.

Appendix A

Printing a Status Sheet

Two different status sheets can be printed on the printer from the front panel menu:

AFP IOP Testpage

1. Enter [MENUS].

   a) Optra and 4039 *Plus* series:
   Enter [MORE] until [Network Menu] is displayed. Select this menu by pressing the button next to this menu text.

   b) 4039 series:
   Enter [MORE] until [Setup] is displayed. Enter [MORE] until [Network Menu X] is displayed. Select this menu by pressing the button next to this menu text.

2. Select [Test Options] and select [Test Page].

3. Select [Single Testpage].

4. Press [Ready] to print.

Lexmark Printer Settings Printout

1. Enter [MENUS]

2. Enter [MORE] (only on Optra and 4039 *Plus* models)

3. Enter [TEST MENU]

4. Enter [MORE]

5. Enter [PRINT MENUS].

Appendix B

IPDS Font Summary

IBM 3812 Emulation Fonts (240 dpi)

no.	IBM font ID	subs/bold ID	Equivalent IBM font
1	3		OCR-B
2	5		Orator 10
3	11		Courier 10
	12	s 11	Prestige 10
	13	s 11	Artisan 10
4	18		Courier Italic 10
5	19		OCR-A
	20	s 12	Pica 10
	26	s 40	Matrix Gothic 10
	30	s 11	Math-symbol 10
	38	b 5	Orator bold 10
	39	b 40	Gothic-text bold 10
6	40		Gothic-text 10
	41	s 40	Roman-text 10
	42	s 40	Serif-text 10
	43	s 68	Serif-text Italic 10
7	44		Katakana-gothic 10
8	45		APL 10
	46	b 11	Courier bold 10
	60	b 12	Prestige bold 10
9	66		Gothic-text 12
10	68		Gothic-text Italic 12
	69	b 66	Gothic-text bold 12
	70	s 66	Serif-text 12
	71	s 68	Serif-text Italic 12
	72	s 69	Serif-text bold 12
	80	s 86	Math-symbol 12
11	84		Script 12
12	85		Courier 12
13	86		Prestige 12
14	87		Letter-gothic 12
	91	s 112	Light-Italic 12

no.	IBM font ID	subs/bold ID	Equivalent IBM font
	107	s 85	12 Pitch
	108	b 85	Courier bold 12
	110	b 87	Letter-gothic bold 12
	111	b 86	Prestige bold 12
15	112		Prestige Italic 12
16	155		Boldface Italic
	158	s 175	Modern
	159	b 175	Boldface
17	160		Essay
18	162		Essay Italic
	163	b 160	Essay bold
19	173		Essay light
20	175		Document
	176	s 159	Boldface
	177	s 155	Boldface Italic
21	204		Gothic-text 13
	221	s 230	Prestige 15
	222	s 230	Gothic 15
	223	s 230	Courier 15
	225	s 86	Math-symbol 15
	229	s 230	Serif 15
22	230		Gothic-text 15
23	244		Courier 5
	245	b 244	Courier bold 5
24	252		Courier 17
	253	b 252	Courier bold 17
25	254		Courier 17ss
26	280		APL 20
27	281		Gothic-text 20
28	290		Gothic-text 27
29	751(4407/54)		Sonoran serif 8pt
30	1051(4407/66)		Sonoran serif 10pt
31	1053(4427/66)		Sonoran serif bold 10pt
32	1056(4535/66)		Sonoran serif Italic10pt
33	1351(4407/78)		Sonoran serif 12pt
34	1653(4427/108)		Sonoran serif bold 16pt
35	2103(4427/162)		Sonoran serif bold 24pt

b - created by bolding algorithm, s - simulated by substitution

IBM 4028 Emulation Fonts (300 dpi)

Axis font	IBM font ID	CPI	Point Size	Equivalent IBM font
OCR-B	3	10	12	OCR-B
Courier	11	10	12	Courier
Prestige Pica	12	10	12	Prestige Pica
Courier Italic	18	10	12	Courier Italic
OCR-A	19	10	12	OCR-A
Courier Bold	46	10	12	Courier Bold
APL	76	12	10	APL
Courier	85	12	10	Courier
Prestige Elite	86	12	10	Prestige Elite
Courier Italic	92	12	10	Courier Italic
Prestige Elite Bold	111	12	10	Prestige Elite Bold
Prestige Elite Italic	112	12	10	Prestige Elite Italic
Boldface	159	PS	12	Boldface
Prestige	164	PS	12	Prestige
Prestige	221	15	9	Prestige
Courier	223	15	9	Courier
Courier	254	17.1	8.5	Courier
Prestige	256	17.1	8.5	Prestige
Letter Gothic	281	20	7.5	LetterGothic
Nimbus Roman	5687	Typo	6	Times Roman
Nimbus Roman	5687	Typo	8	Times Roman
Nimbus Roman	5687	Typo	10	Times Roman
Nimbus Roman	5687	Typo	12	Times Roman
Nimbus Roman Bold	5707	Typo	10	Times Roman Bold
Nimbus Roman Bold	5707	Typo	12	Times Roman Bold
Nimbus Roman Bold	5707	Typo	14	Times Roman Bold
Nimbus Roman Bold	5707	Typo	18	Times Roman Bold
Nimbus Roman Bold	5707	Typo	24	Times Roman Bold
Nimbus Roman Italic	5815	Typo	10	Times Roman Italic
Nimbus Roman Italic	5815	Typo	12	Times Roman Italic
Nimbus Roman Bold Italic	5835	Typo	10	Times Roman Bold Ital.
Nimbus Roman Bold Italic	5835	Typo	12	Times Roman Bold Ital.

PS - Proportional Spaced Typeface, Typo - Typographical Typeface

Times Roman is a registered trademark of Linotype AG and/or its subsidiaries. Nimbus Roman is a functional equivalent of Times Roman.

Appendix C

Technical Specifications

Printers supported
- Lexmark Optra (all models)
- IBM/Lexmark 4039 (all models)

Physical attachments
- IBM 3270 Coax. (Twisted pair is possible by connecting a balun)
- IBM 5250 Twinax cable

Attachments
- 3174 Control Unit, Configuration Support A, Release 3.0 or Later.
- 3274 Control Unit, Configuration Support D, Release 65.1 or Later.
- 9370 WSA Control Unit.
- IBM AS/400
- IBM S/36
- IBM S/38
- IBM 5294 Remote Controller
- IBM 5394 Remote Controller
- IBM 5494 Remote Controller

Emulations
- IBM 3812-2
- IBM 3816-1S
- IBM 3816-1D
- IBM 4028-NS1 (IBM 3912/16, 3112/16)
- IBM 4028-AS1 (IBM 3912/16, 3112/16)

IPDS Features Supported

- All IBM DATA Towers

    Text
    IM Image
    IO Image
    Graphics
    Bar Codes

- IBM Resource Towers

    Page Segments
    Overlay
    Loaded Fonts

- IPDS Exception Reporting

IPDS Fonts

- 35 resident fonts functional equivalent to the IBM 3812/3816 standard fonts

- 32 resident fonts functional equivalent to the IBM 4028 standard fonts

General Hardware Features

- AM29200 RISC Processor

- 8 MIPS performance

- 4 MBytes RAM

- 1 Mbyte FLASH Eproms for software and font storage

Examples of supported software

- IBM 3270

    GDDM Release 1, Modification 1
    DW/370, Release 2 (when used with GDDM)
    PSF/MVS, Release 2.1
    PSF/VM, Release 1.1

- IBM 5250

    System/36 Release 5.1 or later
    System/38 release 8 or later
    OS/400 Release 2 or later

Product Certificates • CE EN55022/1987, EN50082-1/1992.
FCC Class A.

Safety • All safety regulations according to Lexmark Printer Specification.

Environment • Temperature: 5 – 40°C / 40 – 105°F

• Humidity: 10 - 90% RGH non-condensing.

Technical specification information is subject to change without notice.

Appendix D

IBM Cabling System

When using the AXIS AFP IOP on an IBM cabling system, the twinax lines are terminated in the cross field. In this case you will need a dummy twinax plug so that the auto-termination T-cable will not terminate.

This plug is available from your local dealer/distributor.

Appendix E

Installation

First, check the contents of your AFP IOP delivery, according to the checklist in Section *General*.

Installation on Lexmark Optra and 4039

IMPORTANT   1. Try to take antistatic precautions. If a wriststrap is not available, then touch something grounded (a radiator or a PC cabinet) before handling the PCB board.

2. Switch OFF the Lexmark Printer, and remove the Power Cord.

3. Open the top cover and open the right side cover.

Note   4. **For 4039 printers only:**
Press the two blue metal pips on the lower part of the metal cover, and pull out to loosen the cover. Push up the metal cover, push the cover to the left and pull down gently. The Lexmark main board is now visible.

Note   5. **For all 4039 printers EXCEPT model 16L and 16L Plus:**
Attach the DC/DC converter to the system board by plugging it into the 5 pole connector at the top right corner of the Lexmark main board. It is recommended to do this before installing the AFP IOP

board. See figure 12.

Power Supply
Card Connector
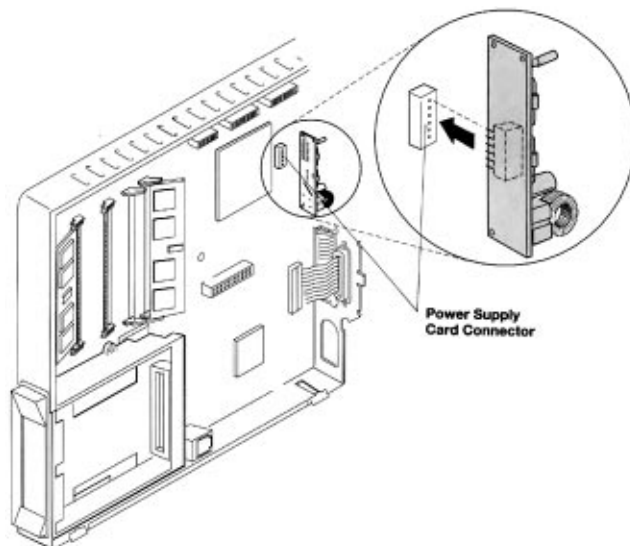
Figure 12.

6. Mount the AFP IOP card to the IOP connector on the Lexmark printer. Fit the holes on the interface to the two white plastic pins on the main board. See figures 13 (4039) and 14 (Optra).

Note   The plastic pins can be a little tight at first time installation

Network Option
Connector

Network Card
Connector

4039 printer

Plastic
Posts

Holes
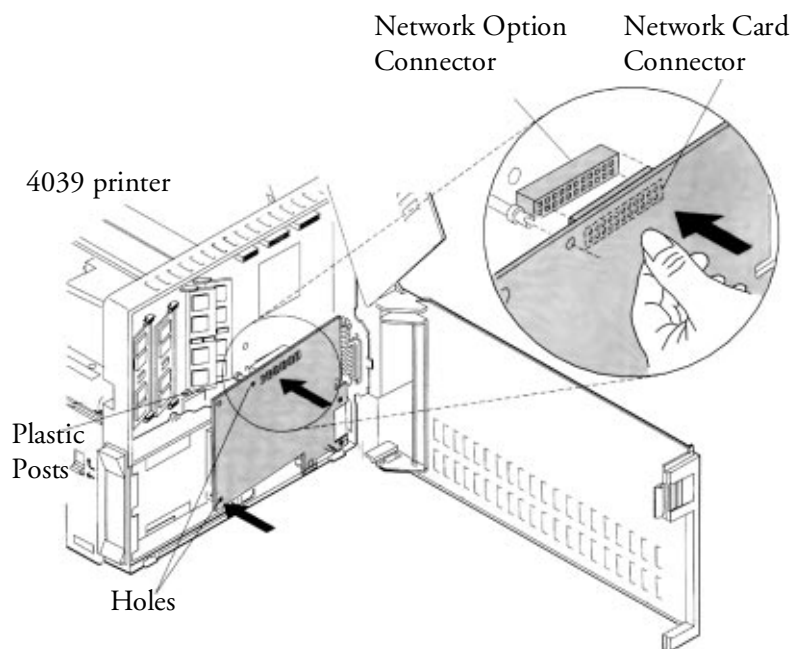
Figure 13. 4039 printer.
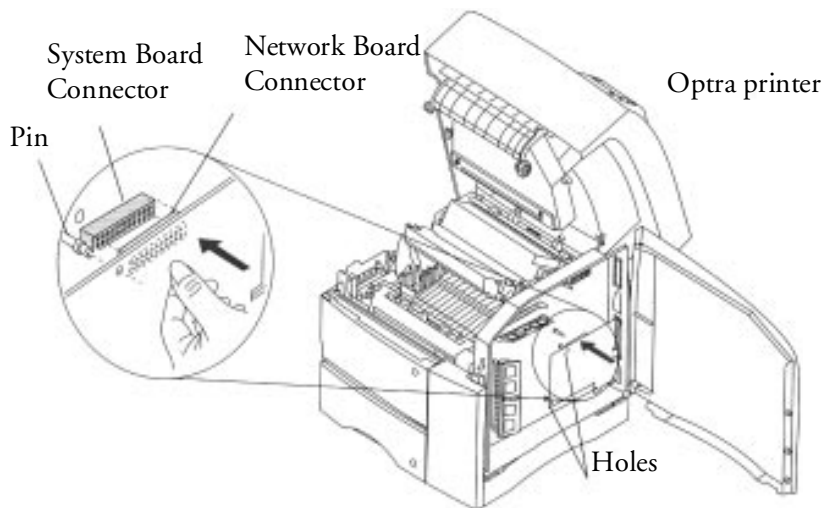
Figure 14. Optra printer.

7. Mount the Screw from the AFP IOP delivery into the the hole on the lower part of the AFP IOP board. See figures 15 (4039) and 16 (Optra).
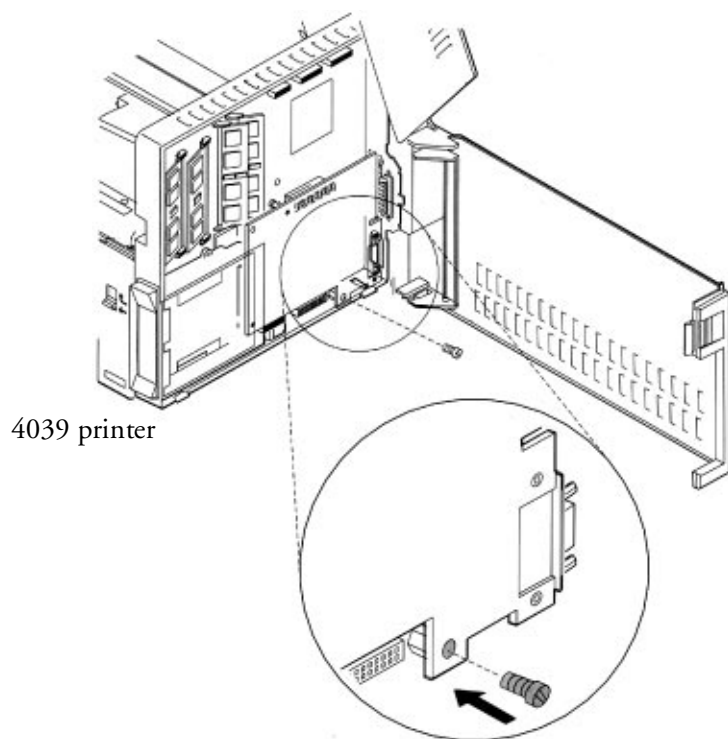
4039 printer

Figure 15. 4039 printer.
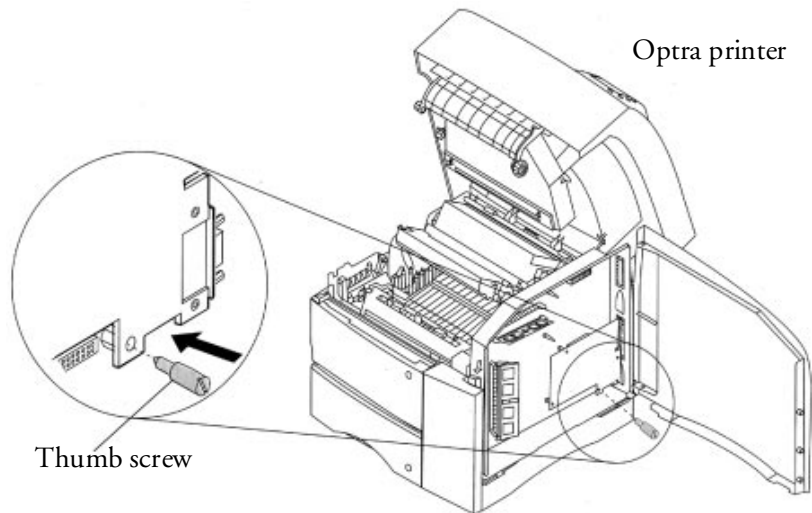
Figure 16. Optra printer.

Note   8. **4039 printers only:**
Mount the metal cover for the Lexmark mainboard. First lift the cover to fit the two pips up into the holes on the main board metal frame. Slide the metal cover to the right and press on the lower part of the cover to click it in above the two metal pips.

9. Close the right side cover and close the top cover. Connect the power cord and power ON the printer.

10. Select [MENUS] on the frontpanel. Step true the menus until the sub-menu [NETWORK MENU] appears and press the button next to this menu text.

Note   On non-Optra and non-4039 *Plus* models this menu is found under the submenu [SETUP].

11. Enter the [LOCAL SETUP] menu and select [IPDS OPTIONS]. Select the desired IPDS emulation and press [SAVE]. Press <RETURN> twice and select [TWINAX OPTIONS]. Enter the [C01 Country Code] option and select your national country code. Press [SAVE] and press <RETURN> once.

Altering the country code under Twinax options will change the C04 country code option in Coax as well.

12. Twinax:
Press [MORE] and select [Device Address]. Set this address to a device address given by the AS/400 system administrator.

Note   Do NOT connect the printer to the system until this address has been determined.

13. Twinax:
Press <READY>, power the printer OFF and mount the Twinax T-cable to the 9 pole connector on the back of the printer.

Coax:
Press <READY>, power the printer OFF and mount the Coax cable to the 9 pole connector on the back of the printer.

14. Connect the printer to the host system and power the printer ON. When the printer displays [READY] and the AFP IOP gives a beep signal indicating that the communication processor is ready, the printer is now ready for host data.

Appendix F

How to contact Axis

If you need technical support, please contact your dealer. If they can't help you, they will forward your request through the appropriate channels.

Internet and World Wide Web

If you are connected to Internet, have a look at the Axis WWW Home Page at **http://www.axis.se/**. Here you can find information about the company and our products. You can also down-load on-line manuals, tools such as the Acrobat Reader for different platforms, and the latest versions of the software utilities.

You can also get files and information through anonymous ftp: log in to **ftp.axis.se** and go to the /pub/axis directory.

The Axis offices

If you want to contact an Axis office, choose the one nearest to your region:

Europe, Middle East, South America, Africa, Australia   **Axis Communications AB**
Scheelevägen 16
S-223 70 Lund, Sweden
Phone: +46 46 19 18 00
Fax: +46 46 13 61 30
Email: info@axis.se

North & Central
America

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

Japan

Axis Communications KK
8th Center Plaza 5F, 1-10-16 Nihombashi Horidome-cho,
Chuo-ku, Tokyo 103, Japan
Phone: +8 13 3663 8801
Fax: +8 13 3663 8802
Email: info@axiscom.co.jp

Hong Kong, Asia
(except Japan &
Middle East)

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

Appendix G

Related Publications

For additional information please refer to the following publications:

Title	Part no.
IBM Intelligent Printer Data Stream Reference	S544-3417
Using the IBM LaserPrinter 4028 Model AS/1 with the Application AS/400 and System/36	S544-4262
IBM LaserPrinter 4028 Model AS/1 IPDS Handbook	S544-4260
Using the IBM Pageprinter 3812 with an IBM System/36 or S/38	S544-3343
IBM Pageprinter 3812 IPDS Handbook	S544-3102
IBM 3812 and 3816 Page Printers Font Reference	GA34-2111
The Lexmark 4039 series manuals	
The Lexmark Optra series manuals	

Appendix H

Cable Specifications
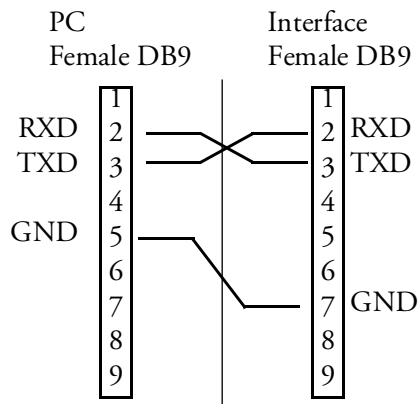
Figure 17. AFP IOP Serial Cable

.
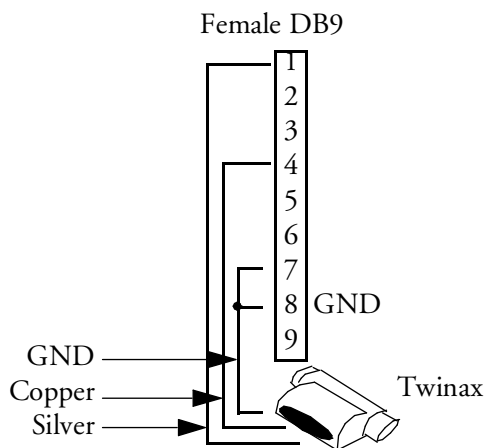
Figure 18. AFP IOP Twinax Cable.

Coax - Female DB9
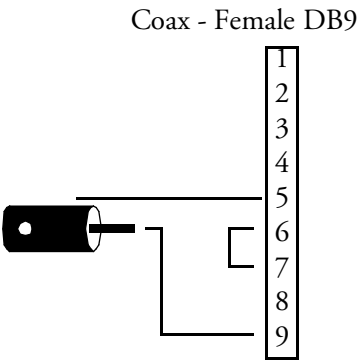
Figure 19. AFP IOP Coax Cable.

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