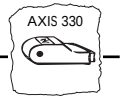

AXIS 330

Preface

Welcome to the AXIS 330 Cobra twinax 5250 protocol converter. This manual will guide you through a step-by-step installation procedure. Once installed, the AXIS 330 Cobra works without operator intervention. The AXIS 330 Cobra is set to IBM 3812/5219 emulation as factory default. You can change it to IBM 4214, 4230, 5256, 5224 or 5225 emulation.

About Axis

Axis Communications is dedicated to provide inventive solutions for network connection of computer peripherals. Since the start in 1984, it has been one of the fastest growing companies in the market. The headquarters are located in Lund, Sweden, with subsidiaries in Boston, Tokyo, and Hong Kong.

Axis Communications has a distributor network operating in more than 50 countries world-wide, marketing three product lines:

- **IBM Mainframe and S/3x**
  These products include a wide range of plug-in interfaces and stand-alone products such as the Cobra+ protocol converters and the AXIS AFP IPDS-to-PostScript converter.
- **Network Print Servers**
  These intelligent Ethernet and Token Ring print servers support a wide range of LAN protocols. The AXIS 530, AXIS 560 and AXIS 570 are Ethernet print servers, and the AXIS 630, AXIS 660 and AXIS 670 are Token Ring print servers. The AXIS 150 is an Ethernet print server dedicated to PC networks.
- **CD-ROM Servers**
  The latest addition to the Axis product range, these CD-ROM servers allow CD-ROM data to be shared over the network. The product range includes the AXIS 850 and AXIS 851 Ethernet CD-ROM servers as well as the AXIS 950 and AXIS 951 Token Ring CD-ROM servers.

About this manual

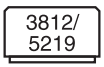
The manual applies to the AXIS 330 Cobra 3812/5219 and the AXIS 330 Cobra 4214 with software release 1.00 and to subsequent releases until otherwise notified.

Please refer to the AX-3 Cobra+ Technical Reference Manual for further information of functions and parameters.

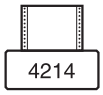
The manual consists of five sections:

1. INTRODUCTION – The AXIS 330 Cobra and the concepts used in this manual.
2. INSTALLATION – Installation of your AXIS 330 Cobra towards printer and IBM system.
3. CONFIGURATION – Configure your AXIS 330 Cobra from a terminal.
4. ADVANCED FUNCTIONS – Use your printer beyond standard IBM operation.
5. SOLVING PROBLEMS – Checklist for identifying and solving problems.

This manual describes the AXIS 330 Cobra in IBM 3812/5219 emulation. Most functions are common to 3812/5219 and 4214 emulation. However, functions that are specific to a particular emulation are identified by one of the following symbols:



Indicates information that only applies in IBM 3812/5219 emulation.



Indicates information that only applies in IBM 4214 emulation.

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

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

IBM, Epson, Fujitsu, Hewlett Packard, LaserJet, Canon, Xerox, Kyocera are registered trademarks of the respective holders.

AXIS 330 Cobra User's Manual Revision: 1.2
Part No: 14335 Dated: March, 1996

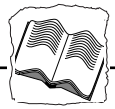
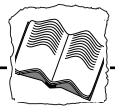


Table of Contents



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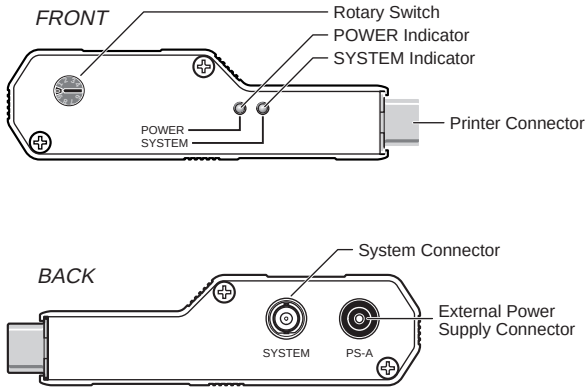
Section 1 Introduction

The AXIS 330 Cobra

The AXIS 330 Cobra is a protocol converter, which makes it possible to connect a PC type printer to an IBM 5250 (twinax) environment.

The AXIS 330 Cobra has a twinax connector for incoming system data and a printer connector for outgoing ASCII data. Power is supplied via the printer's connector or from an optional external power supply.



AXIS 330 Cobra front and back panels.

Theory of Operation

Print data from an IBM host is in a format that cannot be recognized by PC type printers.

The AXIS 330 Cobra converts IBM control and character codes to ASCII control commands and characters, which are recognizable by the PC type printer.

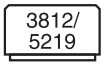
Together, the AXIS 330 Cobra and the attached printer will appear to the IBM host as an original IBM twinax printer.

ASCII Printer Driver

The AXIS 330 Cobra can utilize many of the functions resident in the attached printer, such as underlining, page formatting and paper source selections. The control commands for these functions reside in the Printer Drivers. These cover the standard printer types. See Appendix A for a list of available Printer Drivers.

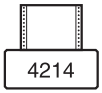
IBM Printer Emulation

The following IBM printers can be emulated by the AXIS 330 Cobra and an attached PC type laser printer:



- IBM 3812/5219 *(default)*

Additional matrix emulations (see Section 2.4):



- IBM 4214
- IBM 4230
- IBM 5256
- IBM 5224
- IBM 5225

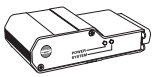
See Appendix E for technical specifications.

Section 2 Installation

Unpacking

Unpack and check all the items using the following check list. Contact your dealer if anything is missing or damaged. All packing materials are recyclable.

The AXIS 330 Cobra Hardware Pack (part no: 0052-2) contains:



- ❏ AXIS 330 Cobra

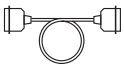
- ❏ AXIS 330 Cobra User's Manual, part no: 14335

- ❏ AXIS T-cable, part no: 12554

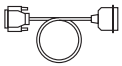
Optional:

AXIS External Power Supply PS-A:

- ❏ US, part no: 12919 **or**
- ❏ European, part no: 13599 **or**
- ❏ UK, part no: 12866 **or**
- ❏ Japanese, part no: 13249



- ❏ Printer cable extension, part no: 13522
- ❏ Self-adhesive Velcro ribbons, part no: 13539 and 13540



- ❏ Flash loading cable, part no: 14510

Printer Attachment

First you establish contact between the AXIS 330 Cobra and the PC type printer. Prepare this by checking that the printer is ready to use. You may also need an optional external power supply, if the printer is unable to supply the AXIS 330 Cobra.

1. **Switch off the printer.**
2. **Connect the AXIS 330 Cobra to the printer,** either directly to the parallel printer port, or using the optional printer cable extension and Velcro ribbons.
3. **Set the rotary switch to position '9'** (test printout function).
4. **Switch on the printer.**
5. **Connect the optional external power supply** (if needed).

The POWER indicator (green) is lit and the SYSTEM indicator (green) will flash for a few seconds.

If the POWER indicator is not lit, the printer is unable to supply power to the AXIS 330 Cobra. Connect an external power supply to the AXIS 330 Cobra.

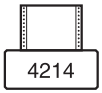
The AXIS 330 Cobra will produce a test printout on the printer which shows the firmware revision and basic configuration. The default configuration is for an HP LaserJet II/III printer.

Example:

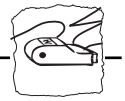
```
******** TEST PRINTOUT ********
AXIS 330 Cobra 3812/5219  Ver 1.00  960103

Printer Driver: #70 HP LaserJet II/III

IBM Printer Emulation____ IBM 3812/5219
System Language__________ 500 International Set 5
ASCII Char. Set__________ Roman-8
```



Test printout in IBM 4214 emulation, see See "Change Emulation Laser/Matrix" on page 14.



The default configuration will support HP LaserJet II/III printers. If you want to change the configuration, you can do this later using Configuration from the System when the AXIS 330 Cobra has been installed towards the host. You can also go to Section 3 before continuing with System Attachment.

The test printout will show if the AXIS 330 Cobra has been configured for your printer by the dealer/distributor.

Example:
The printout shows that this AXIS 330 Cobra has already been configured for a Canon LBP-8III printer:

```
******** TEST PRINTOUT ********
AXIS 330 Cobra 3812/5219  Ver 1.00  960103

 Printer Driver: #72 Canon LBP-8III

 IBM Printer Emulation____ IBM 3812/5219
 System Language__________ 500 International Set 5
 ASCII Char. Set__________ PC-850
```

Change Emulation Laser/Matrix

The factory default emulation of the AXIS 330 Cobra is IBM 3812/5219 laser printer. You can easily change the emulation to IBM 4214 matrix printer using the rotary switch:

1. **Set the rotary switch to position '9'.** Wait until the SYSTEM indicator flashes.
2. **Set the rotary switch to position '6'.** Wait until the SYSTEM indicator flashes rapidly.
3. **Set the rotary switch to '4' to select 4214 emulation, or to '5' to select 3812/5219 emulation.** Wait a few seconds until the SYSTEM indicator flashes slower.
4. **Switch off the AXIS 330 Cobra.** (switch off the printer or unplug the external power supply)
5. **Set the rotary switch to position '9' (test printout)**
6. **Switch on the AXIS 330 Cobra.** (switch on the printer or plug in the external power supply)

   A test printout will be made:

   Printout:

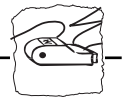
```
******** TEST PRINTOUT ********
AXIS 330 Cobra  4214 Ver 1.00  960103

Printer Driver: #30 Generic Printer

IBM Printer Emulation____ IBM 4214 model 2
System Language_________ International Set 5
ASCII Char. Set_________ US ASCII
```

Notes:

- ❑ Error Message E2 will be printed and should be ignored.
- ❑ The AXIS 330 Cobra is automatically set to factory default state (your configuration is lost) when changing between 3812/5219 and 4214 emulation.



System Attachment

When your AXIS 330 Cobra is configured, and the configuration is verified by a test printout, it is time to connect it to the IBM host.

1. **Find a free device address on the twinax port.** The selected address must be configured to hold an IBM printer of the type the AXIS 330 Cobra will emulate. If in doubt, ask your system manager.
2. **Switch off the AXIS 330 Cobra** by switching off the printer, or, if an external power supply is used, by unplugging the power cord.
3. **Set the device address (0-6) on the rotary switch.**
4. **Connect the Axis T-cable bar to the twinax cables.** Please do not disconnect the Twinax line without permission from your system manager.
5. **Connect the third end of the Axis T-cable to the AXIS 330 Cobra.**

Caution Twinax cables are heavy. Please make sure that they are sufficiently mechanically supported in order to avoid damage to your AXIS 330 Cobra or your printer.

6. **Switch on the AXIS 330 Cobra** (switch on the printer or plug in the external power supply).
7. **If the device address has been changed from another valid value (0-6), you must confirm by stepping the rotary switch one step forward, and then back.** The new device address will be confirmed by a printed message.

The POWER indicator is lit. The SYSTEM indicator flashes for a few seconds and is then constantly lit.

To verify the attachment, make a printout.

You have completed the installation procedure, and your AXIS 330 Cobra is ready for use. It will not need any attendance or service during normal operation.

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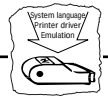


Section 3 Configuration

Although the AXIS 330 Cobra is prepared for operation at delivery, you may want to change the configuration. A test printout will verify the current configuration, see Section 2.

The configuration can be done in two ways:

- **Configuration from a Terminal**
  This is the method described in this section. The configuration method requires a dedicated IBM 5250 terminal such as a 3180, 3179, 3197, 347x or 348x.

  Alternatively a PC equipped with a 5250 terminal emulation board or an Axis EMMA board (part no: 0041-1) can be used.
- **Configuration from the System**
  The AXIS 330 Cobra can also be configured using down-loaded programming sequences from the system, see Section 4.

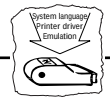
Configuration from a Terminal

The AXIS 330 Cobra is equipped with a menu-driven Configuration Utility. This provides a step-by-step method to adapt the AXIS 330 Cobra to your IBM host and printer. Follow these steps to start the configuration:

1. **Switch off the AXIS 330 Cobra.** If the power is taken from an attached printer, then switch the printer off. If you are using an external power supply, unplug the power cord.
2. **Connect a terminal to the AXIS 330 Cobra** using the Axis T-cable, and switch the terminal on. The terminal should be terminated.
3. **Set the rotary switch in position '7' and switch the AXIS 330 Cobra on.** Wait a few seconds after the SYSTEM indicator has stopped flashing.
4. **Select position '9'.** Wait until the SYSTEM indicator starts to flash.
5. **Select position '7'.**

Within a few seconds, the Key Definitions Menu should appear on your terminal.

The rest of Section 3 is a guide to the Configuration Utility. If you want to restart the configuration, just switch the AXIS 330 Cobra off and repeat from step 3.



Key Definitions

```
================================================================================
     AXIS 330 Cobra 3812/5219      Ver 1.00                    960103
================================================================================

     KEY DEFINITIONS

    _Right
     Left
     Up
     Down
     Enter









     Assign cursor keys                (c) AXIS COMMUNICATIONS AB 1996
```

The first menu 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 after the key has been assigned.

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

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

Basic Configuration

```
================================================================================
     AXIS 330 Cobra 3812/5219      Ver 1.00                    960103
================================================================================

     MAIN MENU

     _Basic Configuration
      View Configuration
      Print Parameter List
      Print EBCDIC to ASCII table
      Edit Parameters
      Set Factory Defaults
      Save
      Exit




      Use <Up><Down> to move, <Enter> to select
```

All entries are described in Section 4

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

1. Printer Driver
2. IBM Printer Emulation
3. System Language

Additional selection in IBM 3812/5219 emulation:

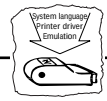
4. ASCII Character Set

↑ ↓, Enter **Select 'Basic Configuration'**

The Printer Driver submenu is shown.

Note:

- If you make an error during the Basic Configuration, press *Enter* until the Main Menu appears, and enter the Basic Configuration.



Select Printer Driver

This submenu is shown after you have selected 'Basic Configuration' in the Main Menu.

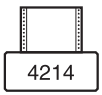
```
================================================================================
                              BASIC CONFIGURATION
================================================================================

     PRINTER DRIVER

    _HP LaserJet II/III
     Kyocera
     Canon LBP-8III
     IBM Laser (PPDS)
     HP LaserJet 4




     Use <Up><Down> to move, <Enter> to select
```

A printer driver is a device driver containing all the variables, including command sequences and character sets, required to drive a particular range of printers.

The default printer driver is HP LaserJet II/III

If your printer is not listed, consult your printer manual. Most laser printers can emulate an HP LaserJet.

↑ ↓, Enter **Select the Printer Driver matching your printer.**



In matrix emulation other printers are available. See Appendix A for a list of Printer Drivers. If the printer is not listed, consult your printer manual. Most printers can emulate at least one of the common matrix printers like Epson FX/LQ, IBM Proprinter or HP LaserJet. See also Section 2 on how to change between laser and matrix emulations.

Select IBM Printer Emulation

This submenu is shown after you have selected Printer Driver.

```
================================================================================
                              BASIC CONFIGURATION
================================================================================

     IBM PRINTER EMULATION

    _IBM 3812/5219









     Use <Up><Down> to move, <Enter> to select
```

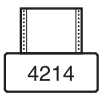
The AXIS 330 Cobra together with the PC type printer will appear to the IBM system as an original IBM twinax printer. You have to select which IBM printer emulation that should be used.

The default printer emulation is IBM 3812/5219.

↑ ↓, Enter **Select the IBM Printer Emulation matching your system configuration.**

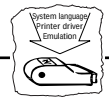
Note:

- ❑ Make sure the device address on the twinax port is configured according to the IBM Printer Emulation.



You can select one of the following matrix emulations: IBM 4214 *(default)*, IBM 4230, IBM 5256, IBM 5224, IBM 5225. See Section 2.

It is also possible to select IBM Printer Emulation by using the rotary switch. See Appendix C.



Select System Language

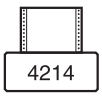
This submenu is shown after you have selected IBM Printer Emulation.

```
================================================================================
                                BASIC CONFIGURATION
================================================================================

   SYSTEM LANGUAGE

  _037 US English/Canadian
   273 Austrian/German
   274 Belgian
   275 Brazilian
   276 Canadian French
   277 Danish/Norwegian
   278 Finnish/Swedish
   280 Italian
   281 Japanese English
   282 Portuguese
   284 Spanish Speaking
   285 UK English
   297 French
  _500 International Set 5
   871 Icelandic

    Use <Up><Down> to move, <Enter> to select
```

You have to set up the AXIS 330 Cobra for the System Language matching your IBM system configuration in order to obtain correct language specific characters.

The default System Language is International Set 5.

↑ ↓, Enter **Select the System Language corresponding to your IBM system configuration.**



End of configuration in matrix emulation. The Basic Configuration is completed, and the Main Menu is displayed again.

Select ASCII Character Set

This submenu is shown after you have selected System Language. It is only applicable in IBM 3812/5219 emulation

3812/
5219

```
==========================================================================
                              BASIC CONFIGURATION
==========================================================================

     ASCII CHARACTER SET

     US ASCII
     PC-8
    _Roman8
     PC-850
     Editable Set









     Use cursor keys to edit, <Enter> to select
```

This is the ASCII Character Set to be used in the printer.

↑ ↓, Enter **Select ASCII Character Set**

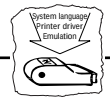
Make sure the character set is available in the printer.

The best selection is PC-850 (if available).

The Editable Set selects the PC-850 set with a possibility to edit the translation table to meet your requirements. See section 4.

End of configuration.

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



Save the Configuration

↑↓, Enter **Select 'Save' in the Main Menu.**

The following submenu is shown:

```
================================================================================
                                    SAVE
================================================================================

     SAVE SETTINGS PERMANENTLY

    _Yes
     No









     Use <Up><Down> to move, <Enter> to select
```

↑↓, Enter **Select 'Yes' to save the current configuration permanently.**

The system indicator stops flashing while save is in progress. The Main Menu is displayed after a few seconds.

Note:

- The previous configuration remains in the permanent memory until you select 'Save'. If you exit without saving, the changes you have made to the configuration will be lost at the next power-off.

Exit the Configuration

↑↓, Enter **Select 'Exit' in the Main Menu.**

The following submenu is shown:

```
================================================================================
                                    SAVE
================================================================================

     EXIT CONFIGURATION

    _Yes
     No



     Please remember to set the Device Address on the Rotary Switch!
     Power off before connecting to the system.









     Use <Up><Down> to move, <Enter> to select
```

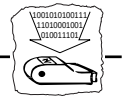
↑↓, Enter **Select 'Yes' to exit the configuration.**

The Configuration Utility is terminated and the screen is left blank. Disconnect the terminal and connect the AXIS 330 Cobra to your IBM system.

If you select 'No' in this submenu the Main Menu will be displayed again.

Note:

- If you exit without saving, the changes you have made to the configuration will be lost at the next power-off.



Section 4 Advanced Functions

The AXIS 330 Cobra supports a number of functions beyond standard IBM printer operation.

During normal mode of operation, AXIS 330 Cobra, together with your printer, emulates the IBM twinax printer selected in your configuration. In addition, the Extended Emulation Mode gives you access to functions not available in standard IBM printers.

The examples in this section are intended to give you an overview of how to use the advanced functions in the Extended Emulation Mode and the PC-Host Sharing function.

Extended Emulation Mode

The advanced functions that you can access in the Extended Emulation Mode are:

- Transparency
- Configuration from the System
- Character Translation
- User Definable Strings
- String Substitutions
- Bar Code printing

Additional IBM 3812/5219 emulation functions:

3812/
5219

- Editable Font Selection Strings
- Customized Printout

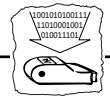
The functions are programmed, and called, by text sequences inserted into your documents. The sequences are inserted between enter and exit commands that control the Extended Emulation Mode (see page 29).

Main Menu

A number of the advanced functions can be programmed or edited using Configuration from a Terminal. The Main Menu is displayed when the configuration is started (See “Configuration from a Terminal” on page 18).

```
================================================================================
    AXIS 330 Cobra 3812/5219       Ver 1.00                    960103
================================================================================

    MAIN MENU

   _Basic Configuration
    View Configuration
    Print Parameter List
    Print EBCDIC to ASCII table
    Edit Parameters
    Set Factory Defaults
    Save
    Exit




    Use <Up><Down> to move, <Enter> to select
```

Basic Configuration	–see Section 3.
View Configuration	–display the basic configuration.
Print Parameter List	–print the parameter list (Appendix A).
Print EBCDIC to ASCII table	–print the translation table (Appendix B)
Edit Parameters	–tailor the settings to meet specific needs.
Set Factory Defaults	–reset the configuration to defaults.
Save	–store current configuration permanently.
Exit	–exit configuration.



Configuration from the System

This function allows you to configure the AXIS 330 Cobra without using the Configuration from a Terminal as described in Section 3.

By inserting configuration commands in your document, you can tailor the AXIS 330 Cobra to meet special requirements your print jobs.

Document example:

```
%P          (Configuration lead-in sequence)
=207,72     (Printer Driver = Canon LBP-8III)
=10,1       (System Language = US English/Canadian)
=54,4       (ASCII Character Set = PC-850)
=206        (Initialize settings)
%           (Configuration trailer sequence)
&&??000     (Resume normal emulation mode and save settings )
```

The example shows how to select a Printer Driver and program the Basic Configuration parameters.

The first line is to enter the Extended Emulation Mode.

'%P' tells the AXIS 330 Cobra that configuration commands are to follow. '=' indicates a command line. Each command line has a function or parameter number.

'207' is a function number, followed by a comma and a value. '206' is also a function number. Please refer to the Technical Reference for a description of functions and their values.

'10' is a parameter number, followed by a comma and a value. '54' is also a parameter. See Appendix A for a description of the parameters.

'%' indicates the end of the configuration commands.

The last line is to exit the Extended Emulation Mode and to save the settings permanently.

Note:

- ❑ The comments (within brackets) should not be included in your document.

Transparency

IBM PC Support Virtual Printer is one way of sending data transparent to the printer. This method is always active and is not described in this manual.

This section describes the AXIS 330 Cobra specific transparency methods.

The Transparency function allows you to send data directly to your printer without any conversion (pass-through). The data could be ASCII printer commands unsupported by the interface (*e.g.* underlined text), or even down-loaded fonts.

Be careful when using the Transparency function for generating printable characters, selecting fonts or making text positioning. The AXIS 330 Cobra supports these functions in normal emulation mode, and your settings may be overridden by the system.

There are two types of Transparency, Single-byte and Multi-byte. The function is accessed in Extended Emulation Mode.

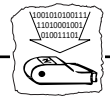
The Single-byte Transparency function is called by a percent sign in your document ('%') and it will pass through one subsequent ASCII byte (hexadecimal).

The Multi-byte function is started by two successive percent signs. When the start sequence ('%%') is found, the AXIS 330 Cobra assumes hexadecimal data until a terminating percent sign occurs.

Document Example (Multi-byte Transparency):

You want the text to have an underlined part in the middle. Assuming that you have an HP LaserJet, 'start underline' and 'stop underline' are defined by the ASCII codes $1B,$26,$64, $44 and $1B,$26,$64, $40 respectively:

```
This is %%1B266444%underlined%%1B266440% text
```



Printout:

```
This is underlined text
```

Please refer to the manual for your PC type printer for information on ASCII printer commands.

Note:

- ❑ To access the Transparency function, Extended Emulation Mode must be entered.

Configuration and Transparency Sequences

The Start and Stop Transparency and Configuration are controlled by three string parameters:

- *Transparency Lead-In Sequence (#041)*, empty by default.
- *Configuration Lead-In Sequence (#042)*, empty by default.
- *Transparency/Configuration Trailer Sequence (#043)*, empty by default.

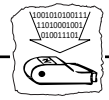
See Appendix A for a description of the parameters. The parameters can be redefined using Configuration from the System.

Define the Sequences

The parameters are defined when Extended Emulation Mode is entered.

Example:
Enter Extended Emulation Mode and set the Transparency Lead-In Sequence to '%%', the Configuration Lead-In Sequence to '%P' and the Trailer Sequence to '%':

&&??%%P	*(Enter Extended Emulation Mode and set parameters)*



Redefine the Sequences

The parameters can be redefined using text sequences in the document.

Example:
Change the Transparency Lead-In Sequence from '%%' to '!?<' (EBCDIC codes $4F,$6F,$4C).Also, change the Trailer Sequence from '%' to '>&' (EBCDIC codes $6E,$50):

```
%P                  (Configuration lead-in sequence)
=41,$4F,$6F,$4C     (Change the transparency lead-in sequence to '!?<')
=43,$6E,$50         (Change the configuration trailer sequence to '>&')
=205                (Save settings permanently)
>&                  (Configuration trailer sequence (new))
```

Notes:

- ❑ To redefine the sequences, Extended Emulation Mode must be entered. The sequences are reset if you exit and re-enter Extended Emulation Mode. See above.
- ❑ The sequences are redefined immediately. Therefore, the new sequence '>&' must be used as Configuration Trailer Sequence in the document.

Example:
Use the new sequences in the same example as in Section 4 (Multi-byte Transparency on HP LaserJet):

```
This is !?<1B266444>&underlined!?<1B266440>& text
```

Printout:

```
This is underlined text
```

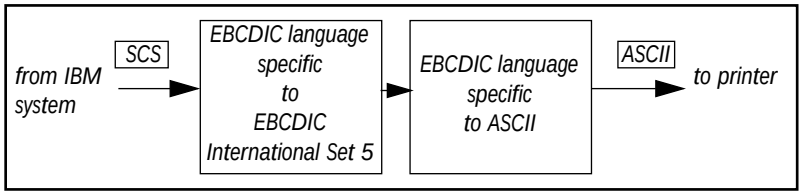
This results in the same printout as in the previous section.

Edit Translation Tables

Normally, there is no need to edit the translation tables. The character translation tables activated by the Printer Driver and System Language selections are designed to produce the same printouts as the emulated IBM printer.

If you should need to make further adjustments, this section explains the character translation process and how to modify the translation tables to meet specific needs.

Character Translation

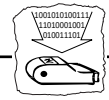


SCS data stream EBCDIC language specific characters are first translated into EBCDIC International Set 5 characters. This is the internal character representation in the AXIS 330 Cobra. The EBCDIC International Set 5 characters are then translated into ASCII codes, which are sent to the printer.

The EBCDIC language specific-to-EBCDIC International Set 5 translation table is determined by the selected System Language.

The EBCDIC International Set 5-to-ASCII table is determined by the selected Printer Driver.

You have access to the table that translates the EBCDIC International Set 5 codes to ASCII codes. Appendix B shows a printout of the characters for each EBCDIC International Set 5 code.



To be able to edit the translation table you have to select the Editable Set. This is done in the Basic Configuration (see Section 3) or as shown in the example below. Before editing, the Editable Set equals the PC-850 character set.

Example:
To change a left bracket '[' *(EBCDIC International Set 5 code $4A)* to a left bracket '{' which has ASCII value $7B. Insert the following programming sequences in your document:

```
%P              (Configuration lead-in sequence)
=54,5           (Select Editable Set)
=203,$4A,$7B    (Translate EBCDIC Int. 5 $4A to ASCII $7B)
=206            (Initialize settings)
=205            (Save settings permanently)
%
```

'54' is the Parameter number. '5' selects the Editable Set (see Appendix A).

'203' is the function number, '$4A' is the EBCDIC International Set 5 code and '$7B' is the new ASCII value (old ASCII value is deleted).

'206' and '205' are also function numbers.

From now on, a left bracket '[' is replaced by '{' in printouts.

You can modify any number of cells in the table by adding lines with function 203 calls.

Note: ❑ To edit, Extended Emulation Mode must be entered.

User Definable Strings

There are ten parameters in the Parameter List that can be programmed as User Definable String *(Parameters #120 - #129)*.

A common application is to program and store various printer control commands, and send them to the printer using string references rather than the commands themselves. Please refer to the manual for your PC type printer for information on ASCII printer commands.

Programming the Strings

Example: (HP LaserJet):
You want to store commands for underlining text. Assuming that you have an HP LaserJet, 'start underline' and 'stop underline' are defined by the ASCII codes $1B,$26,$64,$44 and $1B,$26,$64,$40 respectively:

```
%P                          (Configuration lead-in sequence)
=120,$1B,$26,$64,$44        (Program parameter # 120 to 'start underline')
=121,$1B,$26,$64,$40        (Program parameter # 121 to 'stop underline')
%                           (Configuration trailer sequence)
```

The maximum String length is determined by the Free String Area.

'120' and '121' are the Parameter numbers. These are referred to as User Definable Strings '0' and '1' respectively.

Note: Strings are programmed in Extended Emulation Mode.

Using the Strings

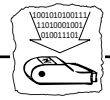
Document Example (HP LaserJet):
To underline text in a document using strings number '0' and '1':

```
This is %Z0underlined%Z1 text
```

Printout:

```
This is underlined text
```

Note: ❑ To use the Strings, Extended Emulation Mode must be entered.



Editable Font Selection Strings (5219)

3812/ 5219

The AXIS 330 Cobra fully supports the system command for selecting fonts, and this section gives an introduction to fonts and font selections.

This feature is applicable only in 3812/5219 emulation mode.

Font Identification Number

The system specifies which font the IBM 3812/5219 printer should use by the Font Global Identifier (FGID).

The FGID specifies:

3812/ 5219

- Fixed pitch value (CPI value) / Proportionally Spaced Characters
- Typeface (character style)

A PC type printer cannot recognize the FGID. It has to be translated into a Font Selection String, which is an ASCII string.

The Font Selection String

The translation to recognizable font information is controlled by 50 string parameters (Parameters #150 - #199).

Each string parameter contains:

3812/ 5219

- FGID (two hexadecimal bytes)
- Character Spacing (one hexadecimal byte)
- ASCII Character Set (one hexadecimal byte)
- Font Selection Sequence (any number of hexadecimal bytes)

Example (HP LaserJet):

```
#170 _______________ $00 $55 $3C $00 $1B $28 $73 $33 $54
```

Bytes 1 - 2 are the FGID number.
'$0055' is the FGID for the IBM 3812/5219 font Courier 12.

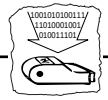
Byte 3 is the Character Spacing in units of 1/720 inch.
'$3C' gives 720/60 which equals 12 CPI. For proportionally spaced fonts, byte 3 sets the width of the space character.

Byte 4 is the ASCII Character Set.
The value '$00' activates the Character Set selected in the Basic Configuration.

Byte 5 and following.
All bytes after the fourth byte is the Font Selection Sequence that is sent to the printer to select a font. In the above example it contains a sequence to select the typeface Courier in the printer (see HP LaserJet manual).

The Font Selection Sequence does not need to contain a pitch selection sequence.

Since the AXIS 330 Cobra uses the printer's own fonts, some of the predefined FGIDs will result in the same font being printed (see Appendix A for a list of predefined FGIDs). To get access to more fonts you can use external font cartridges for your printer. It may also be necessary to change some Font Selection Strings to make the AXIS 330 Cobra select the fonts you need.



Edit a Font Selection String

All 50 predefined Font Selection Strings are fully editable. You can, for example, define new FGIDs, change Character Spacing and modify Font Selection Sequences.

3812/
5219

Example (HP LaserJet):
To change the translation of FGID $0055 from Courier 12 CPI to Elite 12.2 CPI.

```
%P                          (Configuration lead-in sequence)
=170,$00,$55,$3B,$00,$1B    (Program parameter #170)
$28,$73,$32,$54             (continued)
%                           (Configuration trailer sequence)
```

'170' is the parameter number, followed by the new Font Selection String (on two lines).

Parameter #170 now looks like this:

```
#170 _____________ $00 $55 $3B $00 $1B $28 $73 $32 $54
```

Byte 3 has changed. New Character Spacing is 12.2 CPI.

Byte 9 has changed. The new Font Selection Sequence selects typeface Elite in the HP LaserJet printer.

Note: ❑ To edit, Extended Emulation Mode must be entered.

Customized Printout (5219)

You can control printer parameters like text orientation, left and top margins, page length, and COR left and top margins. These functions apply to IBM 3812/5219 emulation only.

3812/
5219

Text Orientation

Depending on the system and the configuration of the AXIS 330 Cobra, documents may be printed in one of the following ways:

3812/
5219

- Portrait Orientation
- Landscape Orientation
- COR (Computer Output Reduction, Landscape and reduced font size)

By default, the orientation is automatically selected.

You can control the orientation using Configuration from the System.

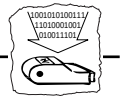
Example:

%P	*(Configuration lead-in sequence)*
=53,3	*(Program parameter #53 to 3)*
%	*(Configuration trailer sequence)*

'53' is the Parameter number. '3' indicates always Portrait Orientation (see Appendix A).

Notes:

- ❑ To change, Extended Emulation Mode must be entered.
- ❑ The setting may be overridden by the System.



Left and Top Margin Reduction

It is possible to move text to the left or upwards on the paper if you want to reduce the margins.

3812/
5219

Example:
To move the text 1/3 inch to the left and 1/2 inch upwards:

```
%P          (Configuration lead-in sequence)
=55,24      (Move text to the left 24/72 inch)
=56,36      (Move text upwards 36/72 inch)
%           (Configuration trailer sequence)
```

‘55’ and ‘56’ are the Parameter numbers, followed by the respective movement values in units of 1/72 inch. If any value is set too large the text will not be printed properly on the paper area.

Note: To change, Extended Emulation Mode must be entered.

Vertical Compression

It is possible to compress the distance between lines. This is useful if the lines are lost at the bottom of each page.

3812/
5219

Example:
To compress the page length by 5%:

```
%P          (Configuration lead-in sequence)
=57,5       (Compress page length by 5%)
%           (Configuration trailer sequence)
```

‘57’ is the Parameter number. The value ‘5’ will reduce the distance between lines by 5%.

The setting does not affect the printing of the Parameter List or the EBCDIC to ASCII table.

Note: To change, Extended Emulation Mode must be entered.

Left and Top Margin - COR

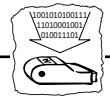
3812/
5219

It is possible to adjust the top and left margins when COR is used.

Example:
To set the top margin and the left margin to 1 inch:

```
%P          (Configuration lead-in sequence)
=58,72      (Set left margin to 72/72 inch)
=59,72      (Set top margin to 72/72 inch)
%           (Configuration trailer sequence)
```

‘58’ and ‘59’ are the Parameter numbers. The value ‘72’ sets the margins to 1 inch.



String Substitutions

This function is useful when you want to print a document that is prepared for a different PC type printer than yours.

The document contains control commands for a specific printer, and you have to convert these commands in order to print this document with your printer. Instead of changing the document, you can let the AXIS 330 Cobra do the conversion for you by using String Substitution.

The String Substitution function will search the data stream for a specified sequence of ASCII characters and substitute them with another sequence. Note that this function operates after the character and control code conversion.

Example:
Assume that you have an HP LaserJet. The document is prepared for an IBM Proprinter and contains ‘start underline’ and ‘stop underline’ pass-through commands at several locations. To print the document with an HP LaserJet, the sequences must be converted.

To ‘start underline’, the IBM Proprinter uses ASCII value string $1B, $2D, $31 and the HP LaserJet uses $1B, $26, $64, $44.

‘Stop underline’ commands are $1B, $2D, $30 and $1B, $26, $64, $40 respectively.

The following pages show how to program these substitutions, both from a Terminal and the System.

Programming String Substitutions from a Terminal

Start the Configuration from Terminal as described in Section 3.

1. **Select the Edit Parameters entry in the Main Menu.** Match and Substitute Strings start from parameter #070.
2. **Edit the first two string substitution pairs.** Use the cursor keys to edit.

   The Edit Parameters Menu now looks like this:

```
================================================================================
                              EDIT PARAMETERS
================================================================================
                                                      Free String Area: $1AA0


    #070 Match String  1_____ $1B,$2D,$31.
    #071 Subst. String 1_____ $1B,$26,$64,$44.
    #072 Match String  2_____ $1B,$2D,$30.
   _#073 Subst. String 2_____ $1B,$26,$64,$40.
    #074 Match String  3_____ .
    #075 Subst. String 3_____ .
    #076 Match String  4_____ .
    #077 Subst. String 4_____ .
    #078 Match String  5_____ .
    #079 Subst. String 5_____ .









    Use cursor keys to edit, <Enter> to exit
```

When a Match String is encountered in the ASCII data stream, it will be replaced by the subsequent Substitute String.

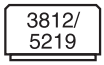
The maximum Match String length is 50 bytes. The maximum Substitute String length is determined by the Free String Area.

Notes:

- ❑ Extensive use of Substitutions may slow down the printing speed.
- ❑ Changing Printer Driver will delete all String Substitutions.

Programming String Substitutions from the System

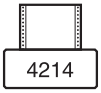
The same programming example as above can also be obtained by inserting the following lines into your document:




```
%P                          (Configuration lead-in sequence)
=70,$1B,$2D,$31             (Start underline - Proprinter)
=71,$1B,$26,$64,$44         (Start underline - HP LaserJet)
=72,$1B,$2D,$30             (Stop underline - Proprinter)
=73,$1B,$26,$64,$40         (Stop underline -HP LaserJet)
=205                        (Initialize settings)
=206                        (Save settings permanently)
%                           (Configuration trailer sequence)
```

Note:

- ❑ String Substitutions are programmed in Extended Emulation Mode.



In 4214 mode strings 150-189 are used for string substitution.

Bar Codes

This function gives you easy access to a range of standard bar code types. You can design every single bar code printout to meet your specific requirements, such as width and height.

There are two functions and two parameters that are used for printing bar codes:

- Function '211' defines the bar code.
- Function '212' prints the bar code.
- *Bar Code Driver (#050, 3812/5219/#053, 4214).*
- *Bar Code Attributes (#051, 3812/5219/#054, 4214).*

The definition has to be done before a bar code can be printed. See Appendix A for a description of parameters.

Define Bar Codes

The function '211', which is to be inserted into a document, has the following syntax:

```
211,value 1,value 2,value 3,value 4,value 5
```

The function number is followed by five bar code specification values. All five values must be specified:

`value 1`: Bar Code Type. Selectable values (in decimal):

1 = Code 39
3 = UPC-A
8 = EAN8
9 = EAN13
12 = 2 of 5 Interleaved
13 = Codabar Matrix
17 = Code 128

`value 2`: Module Width as a multiple of 1/120 inch.
The value may range from 1 to 32 (in decimal).

`value 3`: Bar Code Height in number of lines (1/6 inch).
The value may range from 1 to 32 (in decimal).

`value 4`: Human Readable Text. Selectable values:

0 = No textline below the bar code
1 = Human readable textline below the bar code.
2 = Human readable textline below the bar code with empty line in between.

`value 5`: Horizontal Bar Code Start Position in 1/12 inch steps. The value may range from 1 to 255 (in decimal).

Note: ❑ When you set the horizontal width and start position, make sure that the printout will fit on the paper area.

Print Bar Code

The function '212' prints a bar code according to the settings in the bar code definition. The syntax is as follows:

```
212,"bar code data"
```

Document Example:

```
%P                      (Configuration lead-in sequence)
=211,9,2,2,1,10         (Define Bar Code)
=212,"123456789012"     (Print Bar Code)
%                       (Configuration trailer sequence)
```

Printout

Note: ❑ To Define and Print bar code, Extended Emulation Mode must be entered.

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Section 5 Solving Problems

This section helps you to solve any problems that might arise when installing or using your AXIS 330 Cobra interface. There are three major areas of difficulty:

- Missing printouts
- Incorrect printouts
- Host communication problems

Use the following checklists to pinpoint the possible cause. If your problems should continue, please contact your dealer/distributor.

Missing Printouts

In case of missing printout, check the following:

1. **Is the POWER indicator on?**
   No: Your printer cannot supply the AXIS 330 Cobra. You must use an external power supply (see Section 2).
2. **Is the attached printer on-line (*Ready*)?**
   No: Set the printer on-line (see the printer manual).
3. **Is the printer correctly attached?**
   Make sure that the AXIS 330 Cobra is connected to the proper port. If your printer has both parallel and serial input ports, the printer must be set up for the parallel connection.
4. **System printouts: Is the SYSTEM indicator on?**
   No: The AXIS 330 Cobra is not correctly connected to the system, or the power-up routine has been disturbed. Restart the interface (power-off/power-on). If this doesn't help, see "Host Communication Problem" on page 51.
   Flashing: The AXIS 330 Cobra is in Test Mode. To exit set the rotary switch to position '9', or switch the AXIS 330 Cobra off and on.

Incorrect Host Printouts

There are three major types of incorrect printouts:

Some Characters are Printed Incorrectly

- **Characters like ä ü Ä Ü are printed as { } [ ]**
  Most likely an incorrect System Language has been selected. Select the System Language matching your system configuration. see “Select System Language” on page 23.
- **Characters like é ì ô ü are printed as e i o u**
  Your printer has not been set up for the character set matching the ASCII Character Set selection. Make sure that you have selected the correct Printer Driver and the correct ASCII Character Set in the Basic Configuration.

If this doesn’t help, your printer may not be able to print all the characters that the system produces. Print out the EBCDIC-to-ASCII translation table (see Appendix C), and compare this to the table in Appendix B. In some cases it is possible to edit the translation table, or to select another character set in your printer. Consult your distributor for further details.

Corrupted Printouts

This is generally caused by selecting a Printer Driver not matching your printer. The control commands will then be misinterpreted by the printer, causing corrupted printouts. If changing Printer Driver does not help, you can use the ASCII hexdump function (see “Producing Hexdumps” on page 53) to locate the control commands causing the problem.

Incorrect Page Breaks

This may be caused by an incorrect Printer Driver selection. There may also be a printer problem, causing it not to print all lines on a page.

In IBM 3812/5219 emulation, the AXIS 330 Cobra can be set to compress pages vertically, see “Vertical Compression” on page 41.

Host Communication Problem

In case of missing system printouts, please follow this checklist.

1. **Is the SYSTEM indicator lit?**
   Yes: The printer may not be properly connected. Please refer to Section 2.

2. **Is the device address correct?**
   Make sure the rotary switch is set to the desired device address. Switch the AXIS 330 Cobra off and on. Permissible values for the device address are within the range 0 to 6.

3. **Does the host configuration match the AXIS 330 Cobra configuration?**
   The AXIS 330 Cobra must be configured according to the IBM printer that has been defined for the device address on the twinax port.

4. **Has the print job been released from the host?**
   Check that Vary On has been made and that the print job has been released from the print queue. Ask your System Manager.

5. **Is the twinax line terminated?**
   The last unit on the twinax line must be terminated. Check that all units along the twinax line are installed correctly and that the termination is correct.

6. **Are any cables broken?**
   Check that the cables are properly connected and fully functional.

Reporting Problems

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 distributor. The error report should include:

- A printout with a description of the errors
- If possible, a correct printout
- A Parameter List
- A System and ASCII hexdump

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

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, or enter **ftp://ftp.axis.se/pub/axis** in your WWW browser.

Printing the Parameter List

The Parameter List shows the complete configuration. A selection of parameters are described in Appendix A. 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 SYSTEM indicator starts to flash. You are now in the Test Mode.
3. **Set the rotary switch to '8'** to start the printout.
4. **Set the rotary switch to '9' when the printout is completed.** The SYSTEM indicator will stop flashing.
5. **Select the device address** to resume normal print operation.

Producing Hexdumps

A hexdump is a printout where the input data stream is printed as hexadecimal byte values rather than being interpreted as characters and control codes. The AXIS 330 Cobra features two different types of hexdump modes:

- **System hexdump**
  This mode will trap the input SCS data *before* the character and control code conversion. The data is printed as EBCDIC hexadecimal values.
- **ASCII hexdump**
  The input data is converted to ASCII hexadecimal values before printing. This mode is useful if you want to see what printer control command a certain IBM control code corresponds to.

To produce a hexdump, do as follows:

1. **Switch the printer and AXIS 330 Cobra off and on.**
2. **Set the rotary switch to '9', and wait for approx. 3 seconds** until the SYSTEM indicator starts to flash. You are now in the Test Mode.
3. **Select position '4' for system hexdump, or position '3' for ASCII hexdump.**
4. **Repeat your print job.** The data will now be printed in hexadecimal form.
5. **Set the rotary switch to '9' when the printout is completed.** The SYSTEM indicator will stop flashing.
6. **Select the device address** to resume normal print operation.

Example of ASCII hexdump:

```
AXIS 330 3812/5219  Ver 1.00  960103
Printer Driver #70 HP LaserJet II/III

0001 1B 26 61 33 36 30 48 1B 26 61 35 32 38 56 1B 26 "-&a360H-&a528V-&"
0002 61 33 36 30 48 1B 26 61 35 32 38 56 54 45 53 54 "a360H-&a528VTEST"
```

Error messages

There are six different error conditions that will cause the AXIS 330 Cobra to print an error message on your printer:

```
61-UNPRINTABLE CHARACTER
```

This message is caused by invalid character codes or LAC buffer overflow.

```
64-RESET COMMAND RECEIVED FROM HOST
```

This message is caused by bad communication lines or colliding device addresses. The AXIS 330 Cobra will try to re-establish host communication after 10 seconds.

```
BD-SOFTWARE/HARDWARE ERROR
```

The software cannot run in the current hardware. Contact your dealer.

```
BE-BAR CODE ERROR
```

Incorrect or insufficient bar code definition. The bar code must be specified with five values. See Section 4.

```
E2-PERMANENT MEMORY CHECKSUM ERROR, FACTORY DEFAULTS SET
```

This message indicates that the non-volatile memory has been corrupted. The AXIS 330 Cobra is automatically set to factory default state (your configuration is lost). If the message does not re-appear after power-off/power-on, configure the AXIS 330 Cobra (Section 3).

This message will also appear as a normal consequence of a change between laser and matrix emulation.

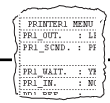
```
E6-MEMORY OVERFLOW: FREE STRING AREA EXHAUSTED
```

The available string area is exhausted. You must remove some strings from your configuration. The size of the available string area is printed in the Parameter List header, and is also displayed in all string programming menus.

```
F1-TWINAX TRANSCEIVER ERROR
```

Hardware error. Contact you dealer/distributor.

This page is intentionally left blank



Appendix A The Parameter List

The Parameter List shows the complete configuration of the AXIS 330 Cobra. Each parameter contains a value or string that is used to determine how the AXIS 330 Cobra should behave towards the host and towards the printer.

In this appendix you will find a selection of parameters, i.e. the Basic Configuration, Please refer to the AX-3 Cobra+Technical Reference Manual for parameters not covered by this manual.

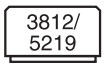
Printout Example

This printout shows the beginning of a Parameter List (the header and the first 10 parameters) for the HP LaserJet III printer driver. Your own printout may differ depending on printer driver selection, firmware revision and customized configuration.

```
AXIS 330 Cobra  Ver 1.00  960103

Printer Driver #70 HP LaserJet II/III
Device Address: 0
Free String Area: $1AAE

#010 System Language_____________ 66

#040 Escape Character____________ 0
#041 Trn. Lead-In Seq._____________
#042 Conf. Lead-In Seq._____________
#043 Trn./Conf. Trailer Seq.__
#045 Job Time-out________________ 0
#046 Start of Job Seq._____________
#050 Bar Code Driver_____________ 0
#053 Page Orientation Mode_____ 2
#054 ASCII Character Set_______ 5
```

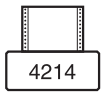
Printer Drivers

A printer driver is a device driver containing all the parameters required to drive a particular range of printers. The following printer drivers are available in IBM 3812/5219 emulation:



No	Title	No	Title
*70	HP LaserJet II/III *(default)*	73	IBM Laser (PPDS)
71	Kyocera	74	HP LaserJet 4
72	Canon LBP-8III		

The following printer drivers are available in IBM 4214 emulation:



No	Title	No	Title
*30	Generic Printer *(default)*	34	Epson LQ
31	IBM Graphics	35	Fujitsu DL (DPL24C)
32	IBM Proprinter	44	IBM Matrix (PPDS)
33	Epson FX/EX/DFX	48	HP LaserJet

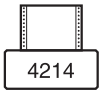
Parameter Descriptions

#10 System Language

This parameter makes the EBCDIC language specific -to-International 5 translation table match the System Language configuration of your IBM System.

Value	Description	Value	Description
1	037 US English/Canadian	*9	500 International Set 5 *(default)*
2	273 German/Austrian	10	280 Italian
3	274 Belgian	11	281 Japanese English
4	275 Brazilian	12	282 Portuguese
5	276 Canadian French	13	284 Spanish Speaking
6	277 Danish/Norwegian	14	285 UK English
7	278 Finnish/Swedish	15	871 Icelandic
8	297 French		

#15 ASCII Character Set

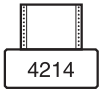


Selects the ASCII Character Set to be used in the printer. This parameter is only valid in IBM 4214 emulation.

Value	Description	Value	Description
0	US ASCII	7	Spanish
1	Swedish/Finnish	8	Japanese
2	Danish/Norwegian	9	PC-8
3	German/Austrian	10	Roman-8
4	UK English	11	PC-850
5	Italian	12	Xerox 3700
6	French/Belgian		

#26 IBM Printer Emulation

Selects the IBM Printer Emulation. This parameter is valid only in IBM 4214 emulation.



Value	Description	Value	Description
*0	IBM 4214 model 2 *(default)*	3	IBM 5225 model 1
1	IBM 5256 model 1	5	IBM 4230 model 101
2	IBM 5224 model 1		

#40 Escape Character

Select the EBCDIC character code used for Single-byte Transparency and User Definable Strings.

Value	Description	Value	Description
$40-$FF	(one character code)	*$00	(undefined by default)

#41 Transparency Lead-In Sequence

Starts Multi-byte Transparency Mode.

Value	Description	Value	Description
<any seq>	(max 8 character codes)	*<empty>	(default)

#42 Configuration Lead-In Sequence

Starts Configuration Mode.

Value	Description	Value	Description
<any seq.>	(max 8 character codes)	*<empty>	(default)

#43 Transparency/Configuration Trailer Sequence

Terminates the Multi-byte and Configuration Modes.

Value	Description	Value	Description
<any seq.>	(max 8 character codes)	*<empty>	(default)

#45 Job Time-out

Timer value starting after a host job has ended. If the time-out value is reached before any new data arrives at the Cobra+, the Start of Job Sequence (#046), the Power-up Sequence (#090) and current emulator settings will be sent before next host job.

Value	Description	Value	Description
*0	off *(default)*	1-255	Value in seconds.

#46 Start of Job Sequence

Sent before next host printout if timer Job Time-out has elapsed.

Value	Description	Value	Description
<any seq.>	(length and contents free of choice)	*<empty>	(default)

#48 Disconnect if Power off

Controls if the AXIS 330 Cobra should disconnect if the printer is turned off. Only valid if an external power supply is used.This function may not work with some printers

Value	Description	Value	Description
*No	Keep host connected (default)	Yes	Disconnect if printer is off

#49 Bar Code Driver

3812/ 5219

Selects the graphics driver used for bar code printing. The default value depends on the selected Printer Driver. This parameter is only valid in IBM 3812/5219 emulation.

Value	Description	Value	Description
0	Off	2	Epson LQ/Fujitsu DPC24C
1	IBM Proprinter/Epson FX	8	HP-PCL

#50 Bar Code Attributes

3812/ 5219

Adjust bar code printout quality to paper and printer conditions. This parameter is only valid in IBM 3812/5219 emulation.

Value	Description	Value	Description
*0	Normal *(default)*	2	Bold
1	Thin	3	Thin and Bold

#53 Page Orientation Mode

3812/ 5219

Controls the text orientation. This parameter is only valid in IBM 3812/5219 emulation, and is fully compatible with the switch settings on such a printer.

Value	Description	Value	Description
0	Automatic Orientation, Portrait if invalid page size.	4	Always Landscape
1	Automatic Orientation, Landscape if invalid page size.	5	Always COR
*2	Automatic Orientation, COR if invalid page size. *(default)*	6	Same as 2, but inhibit COR from the system is ignored.
3	Always Portrait	-	-

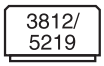
#53 Bar Code Driver

4214

Selects the graphics driver used for bar code printing. The default value depends on the selected Printer Driver. This parameter is only valid in IBM 4214 emulation.

Value	Description	Value	Description
0	Off	2	Epson LQ/Fujitsu DPC24C
1	IBM Proprinter/Epson FX	8	HP-PCL

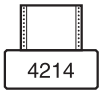
#54 ASCII Character Set



Selects the ASCII Character Set to be used in the printer. This parameter is only valid in IBM 3812/5219 emulation.

Value	Description	Value	Description
1	US ASCII	4	PC-850
2	PC-8	5	Editable Set
3	Roman-8	-	-

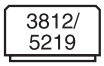
#54 Bar Code Attributes



Adjust bar code printout quality to paper and printer conditions. This parameter is only valid in IBM 4214 emulation.

Value	Description	Value	Description
*0	Normal *(default)*	2	Bold
1	Thin	3	Thin and Bold

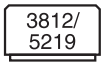
#55 Offset Text Left n/72 inch



Move text leftwards in units of 1/72 inch. Text moved outside paper area will be printed in first position. This parameter is only valid in IBM 3812/5219 emulation.

Value	Description	Value	Description
1-255	Valid range	*0	(default)

#56 Offset Text Up n/72 inch



Move text upwards in units of 1/72 inch. Text moved outside paper area will be printed in first position. This parameter is only valid in IBM 3812/5219 emulation.

Value	Description	Value	Description
1-255	Valid range	*0	(default)

#57 Vertical Compression

3812/ 5219

Set the percentual compression of the distance between lines. This parameter is only valid in IBM 3812/5219 emulation.

Value	Description	Value	Description
1-99	Valid range	*0	(default)

#58 Left Margin - COR n/72 inch

3812/ 5219

This string sets the left margin for COR printouts. This parameter is only valid in IBM 3812/5219 emulation.

Value	Description	Value	Description
0-255	Valid range	*36	1/2" *(default)*

#59 Top Margin - COR n/72 inch

3812/ 5219

This string sets the top margin for COR printouts. This parameter is only valid in IBM 3812/5219 emulation.

Value	Description	Value	Description
0-255	Valid range	*36	1/2" *(default)*

#70-#89 String Substitutions

3812/ 5219

Programming and use are described in section 4.

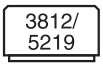
Value	Description	Value	Description
<any seq.>	(any length and content)	*<empty>	(default)

#120-#129 User Definable Strings

Programming and use are described in section 4.

Value	Description	Value	Description
<any seq.>	(any length and content)	*<empty>	(default)

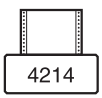
#150-#199 Font Selection Strings



Define the FGIDs and ASCII printer font data. Programming and use are described in section 4. Applies only in IBM 3812/5219 emulation.

Dec	Hex	IBM Font Name	Dec	Hex	IBM Font Name
0003	0003	OCR-B 10	0111	006F	Elite Bold
0005	0005	Orator 10	0112	0070	Prestige Italic 12
0011	000B	Courier 10	0155	009B	Bold Italic 12
0012	000C	Prestige Pica 10	0159	009F	Boldface PSM
0018	0012	Courier Italic 10	0160	00A0	Essay PSM
0019	0013	OCR-A 10	0162	00A2	Essay Italic PSM
0038	0026	Orator Bold 10	0163	00A3	Essay Bold PSM
0039	0027	Gothic Bold 10	0173	00AD	Essay Light PSM
0040	0028	Gothic Text 10	0175	00AF	Document PSM
0041	0029	Roman Text 10	0204	00CC	Gothic Text 13
0042	002A	Serif Text 10	0230	00E6	Gothic Text 15
0043	002B	Serif Text Italic 10	0244	00F4	Courier 5
0046	002E	Courier Bold 10	0245	00F5	Courier Bold 5
0060	003C	Prestige Bold 10	0252	00FC	Courier 17
0066	0042	Gothic Text 12	0253	00FD	Courier Bold 17
0068	0044	Gothic Italic 12	0254	00FE	Courier 17ss
0069	0045	Gothic Bold 12	0281	0119	Gothic Text 20
0070	0046	Serif Text 12	0290	0122	Gothic Text 27
0071	0047	Serif Text Italic 12	0751	02EF	Sonoran Serif 8
0072	0048	Serif Bold 12	1051	041B	Sonoran Serif 10
0085	0055	Courier 12	1053	041D	Sonoran Serif Bold 10
0086	0056	Elite 12	1056	0420	Sonoran Serif Italic 10
0087	0057	Letter Gothic 12	1351	0547	Sonoran Serif 12
0108	006C	Courier Bold 12	1653	0675	Sonoran Serif Bold 16
0110	006E	Letter Gothic Bold	2103	0837	Sonoran Serif Bold 24

#150-#189 String Substitutions



Programming and use are described in section 4.

Value	Description	Value	Description
<any seq.>	(any length and content)	*<empty>	(default)

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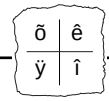


Appendix B EBCDIC Character Table

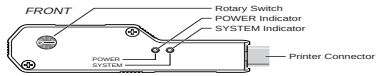
This table (EBCDIC International Set 5) shows the internal character representation in the AXIS 330 Cobra.

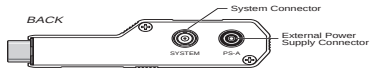
	4	5	6	7	8	9	A	B	C	D	E	F
0		&	-	ø	Ø	°	µ	¢	{	}	\	0
1		é	/	É	a	j	~	£	A	J		1
2	â	ê	Â	Ê	b	k	s	¥	B	K	S	2
3	ä	ë	Ä	Ë	c	l	t	Pt	C	L	T	3
4	à	è	À	È	d	m	u	ƒ	D	M	U	4
5	á	í	Á	Í	e	n	v	§	E	N	V	5
6	ã	î	Ã	Î	f	o	w	¶	F	O	W	6
7	å	ï	Å	Ï	g	p	x	½	G	P	X	7
8	ç	ì	Ç	Ì	h	q	y	¼	H	Q	Y	8
9	ñ	ß	Ñ	`	i	r	z	¾	I	R	Z	9
A	[	]	¦	:	«	ª	¡	¬	–	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	!	ˆ	?	"	±	¤	®	=	õ	ÿ	Õ	

Read each EBCDIC code as a column and row position. For example EBCDIC International Set 5 code $81 represents the character ‘a’.

Appendix C The Front Panel

The front panel has two indicators (POWER and SYSTEM) and a rotary switch. The switch is used for accessing certain functions. In normal print operation it should be set to '0'.





The POWER indicator

This indicator (green) is lit when the AXIS 330 Cobra is switched on.

The SYSTEM indicator

This indicator (green) is lit when the AXIS 330 Cobra is connected to your IBM system. It can also flash under the following conditions:

Flash during a few seconds at power up.

Flash in Test Mode (see below).

Rapid flash during test function execution and during flash loading of new software

Note: ❑ If the power up flashing continues, a hardware error has occurred. Contact your dealer/ distributor.

The Rotary Switch

The ten-position rotary switch is used to set the device address for the AXIS 330 Cobra. It is also used to set start conditions and to select and execute test functions during operation.

Start Conditions

The action when the AXIS 330 Cobra is switched on will be determined by the setting of the rotary switch, as follows:

Pos.	Description
0-6	Device address in normal print operation.
7	Reserved.
8	Select IBM Printer emulation (4214)
9	Perform a test printout.

Device address

1. **Follow these steps to change the device address:**
2. **Switch the AXIS 330 Cobra off**
3. **Select a new device address (positions 0-6).**
4. **Switch the AXIS 330 Cobra on.**
   A warning for change of device address will be printed.
5. **Step the rotary switch one position forward, and then back.**
   The new device address will be confirmed by a printed message

Test Mode

Test Mode is reached from normal print operation. It is used to access a number of internal functions. Normal print operation is inhibited.

1. **Make a note of the current Rotary Switch position** (device address).
2. **Set the rotary switch to position '9'.** When the SYSTEM indicator starts to flash, you can select one of the following Test Mode functions:

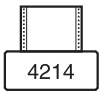
Pos.	Test Mode Function
0	**Restart** - same as power off/power on.
1	**Set Factory Defaults** - abandon the current configuration. **See note.**
2	**Print Character Translation Table** - see Appendix B.
3	**ASCII Hex Dump Mode** - trap the outgoing data stream and print characters and control commands as hexadecimal values.
4	**System Hex Dump Mode** - trap the incoming data stream and print characters and control codes as hexadecimal values.
5	Reserved
6	**Change between 3812/5219 and 4214 emulation.** See section 2
7	**Terminal Set-Up Mode** - run the Configuration Utility using a directly attached 5250 terminal, see Section 3.
8	**Print Parameter List** - print the complete configuration, see Appendix A.
9	**Exit Test Mode** - resume normal print operation.

Do not forget to set the rotary switch to the current device address again for normal print operation. Switch the AXIS 330 Cobra off and on.

Note:

- To set factory default configuration requires a two-step operation to avoid accidental activation and loss of configuration settings:
  1. **Set the rotary switch to position '1'**
  2. **Within 2 seconds, set the rotary switch to position '2'**

Select IBM Printer Emulation



You can select IBM Printer Emulation by using the rotary switch. This section applies to the IBM 4214 emulation only. Proceed as follows:

1. **Switch the AXIS 330 Cobra off.** Note the current device address.
2. **Select the position '8' on the rotary switch.**
3. **Switch the AXIS 330 Cobra on.** A printed message indicates the current IBM Printer Emulation.
4. **Press the printer's ONLINE/OFFLINE key twice to change emulation.** The new emulation is confirmed by a printed message. Repeat until the required emulation mode is achieved. Refer to the list in Section 1.
5. **Switch the AXIS 330 Cobra off to save the current emulation.**
6. **Set the device address and switch the AXIS 330 Cobra on for normal print operation.**

Appendix D Updating the Software

Software that can be Updated

- The AXIS 330 Cobra software held in *Flash ROM*

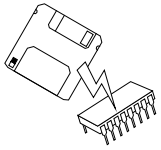
All software updates are free of charge.

Checking if an update is available

Contact your dealer to check if there has been any new issues of the software. You should have your present version numbers ready to compare against the latest software issues from Axis.

Alternatively you may wish to check the Axis WWW Home Page at **http://www.axis.se/**, where you can down-load 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.

Updating the AXIS 330 Cobra Flash ROM



You can carry out an update to your Flash ROM:

- through the parallel printer port of the AXIS 330 Cobra.

Full instructions on how to carry out the update will be supplied with the software update.

Flash ROM This is a special type of memory chip in the AXIS 330 Cobra that controls the printing operations. Just like a normal ROM its contents are unaffected when the power is turned off. What makes it special is that its memory contents can be replaced during an update sequence; this will upgrade your AXIS 330 Cobra's performance without having to replace any physical components.

Appendix E Technical Specification

Attachments

- IBM System/34
- IBM System/36
- IBM System/38
- IBM System AS/400
- IBM 5259 Migration Data Link
- IBM 5294 Control Unit
- IBM 5394 Control Unit
- IBM 5251 Model 12 Control Unit
- IBM 5299 Terminal Multiconnector

IBM Printer Emulations

Depending on the setting of the interface according to Section 2

- IBM 3812/5219
  or
- IBM 4214 model 2
- IBM 5256 model 1,2 and 3
- IBM 5224 model 1 and 2
- IBM 5225 model 1,2,3 and 4
- IBM 4230 model 101

IBM System Features

- SCS and FFT Data stream
- Page Presentation Media
- Cut Sheet Feeder Command
- PC/Support Virtual Printer
- Multiple Bin Support
- 15 National Languages

Additional IBM 3812/5219 features:

- Computer Output Reduction
- FGID Font Selection Support
- Page Rotation
- Duplex
- Fixed-Pitch, Proportional and Typographic Font Support

Additional IBM 4214 feature:

- Graphics Support Through LAC

Axis 330 Cobra Additional Features

- Configuration from a Terminal or from the System
- Editable Character Translation Table
- 10 User Definable Strings
- Programmable Transparency Function (data pass-through)
- Predefined Printer Drivers for all major ASCII printers, fully editable
- Bar Codes
- String Substitutions

Hardware Specifications

Size: 29x55x100 mm / 1.2"x2.2"x4.0"

Weight: 0.15 kg/ 0.3 lb

Power: 5 VDC, min 170 mA from printer parallel port or AXIS Power Supply PS-A, 9 VAC, min 300mA.

Approvals

EMC: CE: EN 55022/1987, EN 50082-1/1992. FCC Class A,

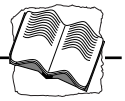
Safety: EN 60950, UL, CSA

Environments

Temp.: 5-40°C/ 40-105°F

Humidity: 20-80% non-condensing

All specifications are subject to change without prior notice.



Appendix F Related Documentation

Title	Part Number
AX-3 Cobra+ Technical Reference	12938
IBM System/36 Functions Reference Guide	SA-21-9436-05
IBM AS/400 Guide to Programming for Printing:	SC21-8194-0
IBM AS/400 Printing	GG24-3452-00
IBM AS/400 Programming: Advanced Printer Function Guide	SC21-9668-0
IBM AS/400 Utilities: BGU User's Guide and Reference	SC09-1167-02
IBM 3816 Page Printer Programming Ref. for AS/400, S/36 or S/38	GA34-2084-2
IBM 3812 and 3816 Page Printers Font Reference	GA34-2111-1
IBM 5219 Printer Model D01/D02 Programmer's Reference Guide	GA23-1025-0
Document Content Architecture Final-Form-Text Reference	SC23-0757-1
IBM 4214 Printer Model 2 Product Description	GC31-2582-1

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