Laser Printer Adapter for SCS

Coax/Twinax Connection to IBM Mainframe and Midrange Hosts

Installation and User's Guide

Document GI-008-10.
Complies with the following firmware versions and higher:
- Boot/Load H00_7301
- Coax (3270) Main Code H01_9072
- Twinax (5250) Main Code H02_8491

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CE

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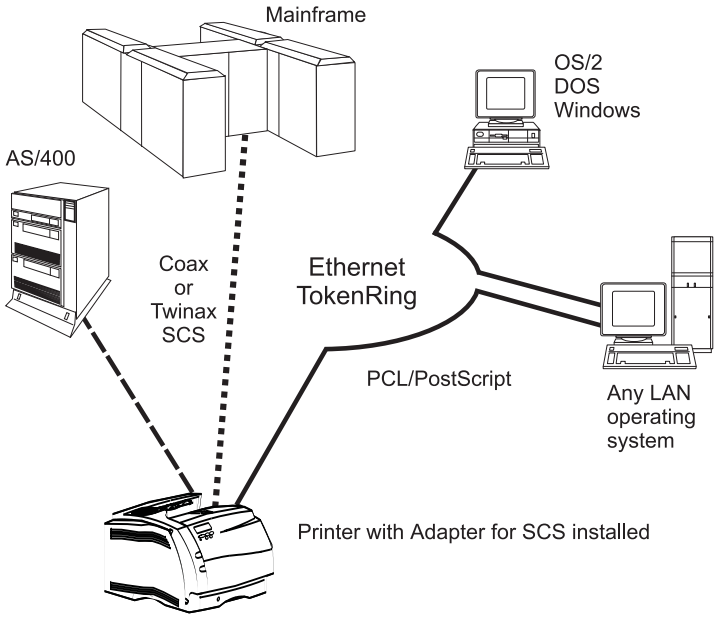
CONTENTS

1. Introduction

Thank you for purchasing the Coax/Twinax Adapter for SCS. This internal adapter board enables high quality IBM host connectivity print output for a large number of laser printers—thus providing affordable printing solutions for legacy applications and SNA distributed networks.

1.1. The Adapter for SCS in Your Printing Environment

The Adapter for SCS is a PCI based option card that gives your laser printer SCS data stream capabilities. The printer becomes a plug-compatible IBM host workstation printer. This means that the printer can be directly connected via Coax or Twinax to an IBM host computer (subsequently called “host”). The mainframe hosts supported are IBM System/370 and IBM System/390. The midrange hosts supported are the IBM AS/400 (including, but not limited to the iSeries).



The Adapter for SCS not only provides standard SCS, but also enables IPDS printing over a Coax or Twinax connection if an optional IPDS feature is installed in the printer.

1.2. Scope of This Guide

This guide contains information on how to set up and use the Coax/Twinax Adapter for SCS.

Reference sections for each type of connection contain information on the menu hierarchies which are accessed through the Operator Panel, and the values (settings) for each option are described.

In addition, each option description has information on how to set the option using commands. This is usually only done by specialists, and in most cases, these specialists will also need to use the advanced guide (*IDB Technical Reference*) provided on the CD-ROM.

For information about your printer and how to use it, including specific installation instructions, refer to the printer's documentation.

1.3. Conventions

When referred to in sentences, printer menu keys and operator panel text are written in **bold**. This will usually include the names of options. Option values embedded in sentences are written in "quotation marks".

Descriptions of individual options in the reference sections use a different convention: no quotations marks are used, and the only bolded text is the **option value**.

On screen text (usually text which the user can enter) is written in `Courier` typeface. Keyboard keys are written in angle brackets, for example <Enter> or <F1>. Clickable on-screen buttons, icons and such are marked like this |Ok|.

References to chapters, sections, books, and computer programs are written in *italic*.

2. Installing the Adapter

2.1. Equipment Requirements

The printer must have:

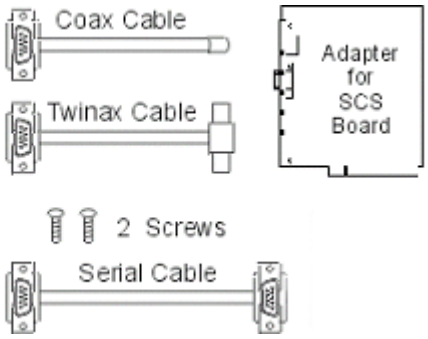
- at least one available option slot (used for Internal Network Adapter or Disk Option.) **and**
- **either** an available Coax communications port (for mainframe printing) **or** an available Twinax communications port (for midrange printing).

If you are unsure whether the Adapter for SCS installs in your printer, contact the place where you bought your printer.

2.2. Preparation

2.2.1. Check Box Contents

Make sure the box contains the following items:



as well as the Documentation and Utilities CD-ROM. Additional information on the cables is given in *Appendix B Cable Specifications* (page 126).

2.2.2. Select Items Required for Your Application

For mainframe printing :

- Adapter for SCS board
- Coax cable
- The printer's documentation for installing optional cards.
- Two screws

For midrange printing:

- Adapter for SCS board
- Twinax cable
- The printer's documentation for installing optional cards.
- Two screws

2.2.3. Store the Other Items Carefully

The following items are not needed for installation, but should be stored where your system administrator or technical support specialist can gain access to them in order to perform advanced technical configuration or upgrade of the adapter:

- Serial cable (for downloading new firmware or files – and for loading configuration files between a pc and the adapter).
- Documentation and Utilities CD.
- Unused host cable (either Coax or Twinax).
- Packing material.

2.2.4. Adapter Handling Precautions

!!! Cards are easily damaged by static electricity. Before handling the card, be sure to touch the printer's metal cabinet in order to discharge yourself or wear an anti-static wrist strap.

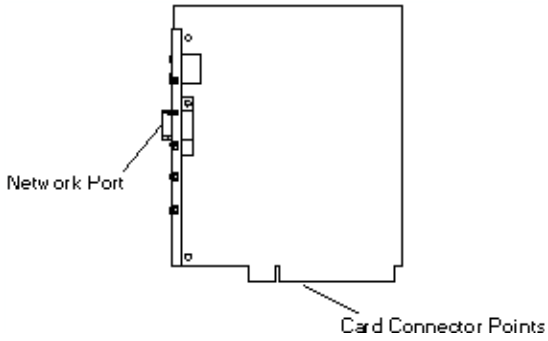
2.3. Installation

2.3.1. Locate a Slot and Insert the Board into the Printer

You can install the Adapter for SCS in any available option slot.

!!! If a connector slot is not available stop the installation procedure. Contact your network or system administrator to determine which option can be removed to make room for the Adapter for SCS.

The network port is a male DB9 connector and there is an LED right next to it. The network port works with all of the supplied cable types.



Refer to your printer documentation for detailed information on how to install and remove option cards such as the Adapter for SCS.

2.3.2. Attach the cable to the adapter

Attach the female DB9 connector on the cable to the network port on the board using the following procedure:

1. Make sure that the printer Power is Off and the power cord is unplugged.
2. At the back of the printer, locate the openings for the cable connections.
3. Connect the cable to the printer. The adapter automatically detects whether the cable connection is Coax or Twinax (or the serial upgrade cable) .
4. Close the printer covers (refer to your printer documentation for instructions on closing the printer covers).
5. Plug the printer in.
6. Turn the printer Power On (|).

The operator panel on the printer should THEN display **Performing Self Test**, and then **Ready**. This means that the printer is ready to receive data.

2.4. Verification

1. Print the menu setting pages:
   (a) Press **Menu>** several times. Stop when you see one of the following on the second line of the display (which one depends on the printer model): **UTILITIES MENU** or **Test Menus**.
   (b) Press **Select**.
   (c) Press **Menu>** until you see **Print Menus** on the second line of the display.
   (d) Press **Select**. The operator panel displays the message **Printing Menu Settings** and prints the menu settings pages.

2. Examine the menu setting pages and look for the heading *Installed Features*. If the interface is installed correctly it says "Cx Adapter for SCS" (Coax) or "Tx Adapter for SCS" (Twinax).

   If the Adapter for SCS is not listed on the menu page, you should power the printer Off and disconnect the power cord; remove the Adapter; and re-install the Adapter according to the instructions in the previous section.

2.5. Twinax Users: Check and Adjust the SCS Device Address

Before connecting to an AS/400, you must always be sure that the Twinax Address fits in to the scheme used by your network or system administrator. Otherwise you could risk using a number assigned to another device, creating a conflict which would disable one of the devices. The valid values range from 0 to 6 (inclusive), and the adapter's default is 0.

When you know what the address should be, use the Operator Panel as follows (if you are unfamiliar with finding the SCS MENU, refer to *section 3.2 The Operator Panel*, and *3.2.3 The SCS MENU* starting on page 22):

1. Select **SCS MENU 1, 2** or **3.**

2. Select **SCS OPTIONS**.

3. Select **SCS Dev. Addr.**

4. Select a value for the address by pressing **Menu>** or **<Menu** to scroll forwards and backwards through the values.

5. Press **Select** to save the address. The word "Saved" displays briefly. An asterisk (*) is displayed beside the new value.

6. Turn the printer Off.

7. Turn the printer Power back On, to activate the correct Twinax address (device address) setting.

Note: If the SCS Device Address and the IPDS Device Address are the same, the word "DUPLICATE" displays in the panel. The SCS Device Address is used and the IPDS Device Address is ignored.

2.6. Matching SCS Settings to the Host's Printing Requirements

Before using the Adapter for SCS, it is important to review the adapter's factory settings to ensure that the printer is compatible with your host system software and your usual formatting needs.

To print all the settings, use the Operator Panel: Coax users choose **SCS Status Page;** Twinax users choose **Print IDB Status.** These commands are found in the **TEST OPTIONS** group of the **SCS MENU.** Refer to *section 3.2 The Operator Panel*, starting on page 22, if you don't already know how to use the menus.

At the very least, you should check the following basic settings.

Coax Settings	**Placement within the SCS OPTIONS Hierarchy**	**Factory Value**
Default character set	MISC. SETTINGS > Country Code	USA/Canada
Paper Size Tray 1, 2 and 3	PAPER SETTINGS > Tray 1 Size, etc.	A4
Lines Per Page	MISC. SETTINGS > LPP	66
Bottom Margin	PAPER SETTINGS > Bot. Margin(LU1)	66
Note that you have the possibility of choosing among three different factory default settings for these four settings; refer to *section 8.8 Factory Defaults*, page 71.		

Twinax Setting	**Placement within the SCS OPTIONS > SCS IDB SETTINGS Hiearchy**	**Factory Value**
Default character set	DEF. SETTINGS > Def Country	Multinational
Physical Page Length	PAPER SETTINGS > Page Length	A4 (29.7 cm = 11.69 in)
Physical Page Width	PAPER SETTINGS > Page Width	Letter/Legal (21.59 cm = 8.5 in)
Lines Per Page	DEF. SETTINGS > Lines/Page	68

2.7. Connecting to the Host

When you are finished with the essential configurations, Power the printer Off.

Connect the other end of the cable to the host.

Power the printer On.

3. Configuration

There is no limit to how often you can change settings. This chapter tells you how to change settings and lists the settings which should be checked, and if necessary changed, before connecting the cable to the host.

3.1. How to Change an SCS Option Setting

Values for options can be set in several different ways:

a) The usual method is to use the printer's **Operator Panel.** Refer to your printer's *User Guide* for general instructions on how to operate the Operator Panel. Details on how to change the SCS Options provided by the adapter follow in this chapter.

b) Specialists may want to use IDB command strings directly. The IDB contains more options than you can set through the Operator Panel; and not only extra options and values, but also so-called "Events." Working directly with command strings makes it possible to tailor configurations, so (for example) the SCS emulations are better matched to existing applications. Even as a non-specialist, you might find it useful to familiarize yourself with a few IDB basics. Refer to *section 3.5 IDB commands?*, starting on page 28.

3.2. The Operator Panel

3.2.1. Overview of Steps

1. Locate the option you want to change.
2. Specify the new setting for the option.
3. Save the new setting.
4. Repeat if there are other options you want to change.
5. Some changes require the printer to be powered Off and On to activate the new settings. A message will be displayed on the Operator Panel when it is necessary to power the printer Off and On.

3.2.2. Printer Menu Keys

You give commands using the following printer menu keys:

- **Select** moves down a level within a menu hierarchy, or causes the option value to be saved if at the lowest menu level.
- **<Menu** and **Menu>** cycle through the possibilities on a given level.
- **Return** moves up/back a level within a hierarchy.
- **Go** moves all the way up/back to **Ready.**

3.2.3. The SCS MENU

1. When **Ready** or **Power Saver** displays in the Operator Panel, press **<Menu** until you see the message **NETWORK MENU.** Press **Select.** Press **<Menu** until you see NETWORK OPTION X, where X represents the number of the slot in which the Adapter for SCS is installed. Press **Select**.

2. Press **<Menu** until you see **SCS MENU X** display. Again, X represents the number of the slot in which the Adapter for SCS is installed.

   On some older printer models, there is no NETWORK option layer. Thus, you get to **SCS MENU X** when you cycle through with **<Menu** or **Menu >** directly from **Ready** or **Power Server.**

3. When you have found **SCS MENU X** press **Select.**

3.2.4. SCS Sub-menus

The SCS menu will have two or three sub-menus. The precise content of the SCS MENU sub-menus is automatically determined by the cable you have connected to the adapter.

The three possible sub-menus are as follows:

- **SCS OPTIONS (with many option-groups and options).**
  Options in this menu control the formatting of your print jobs.

- The sub-menu **IPDS OPTIONS** will only be displayed if an optional IPDS feature supported by the adapter is installed. The IPDS OPTIONS presented are different for Coax and Twinax.

- **TEST OPTIONS**
  These options have several different purposes:
  - Troubleshooting
  - Determining current versions or levels of firmware
  - Restoring “Factory Defaults”

If you have used a Coax cable, but see the Twinax version of the menu, the connection is not good enough. Repeat the steps in *section 2.4 Verification* (page 18).

3.2.5. How to Locate an Option and Its Possible Values (Settings)

Tree diagrams showing all menu levels and options accessible from the printer's operator panel are shown on page 34 (*Coax Operator Menu*) and page 77 (*Twinax Operator Menu*). The diagrams list every possible menu option in the SCS MENU. Those menu options not supported by or implemented in your printer will not be shown on the Operator Panel.

Note: The options in the reference chapters follow the hierarchy in each tree. If you have difficulty in locating the placement of an option, use the index. Here you will find information on options organized in several different ways:

There are listings for Coax Options and Twinax Options respectively, under which the individual options are listed alphabetically.

There are listings for Coax Option Numbers and Twinax Option Numbers respectively. In order to ensure a usable sorting, Option Numbers are entered with 3 digits, starting with one or two place-holding zeroes. (The letter O often appears on the Coax Menu on the Operator Panel, but is not used in specifying an Option Number.)

Finally, there are individual entries for names of functions, commands, etc.

In most cases, text on the Operator Panel consists of two lines, the first with all letters capitalized, the second in “title” format (lower case with capital letters at the start of each word).

The first time you see the name of an option on the second line of the Operator Panel, it will probably be written in lower case with initial capital letters. If the line is fully capitalized, this may indicate that a sub menu is available – i.e. that the “option” is in reality an option group.

Once a single option has been selected, it becomes the first line in the Operator Panel, with formatting always changing to all capital letters. The second line then shows a value for the option.

Example: Find the active setting for Country Code in a Twinax solution.

In Twinax, the Country Code (default character set) is controlled by the **DEF COUNTRY** option. This option is placed in the **DEF. SETTINGS** option group, which is one of the main groups under **SCS IDB SETTINGS**.

1. Find **SCS MENU X** (as described above), and press **Select**. The result will look like this (assuming that X = 1 and the SCS OPTIONS is the first group under SCS MENU X):

SCS MENU 1 SCS OPTIONS

2. Press **Select**. The result will look like this:

SCS OPTIONS SCS IDB SETTINGS

3. Press **Select**. The operator panel will now show the first option in the SCS IDB SETTINGS sub-menu.:

SCS IDB SETTINGS Printer Emul.

4. Press **Menu>** (or **<Menu**) to cycle through the option groups until you see **DEF. SETTINGS**, like this:

SCS IDB SETTINGS DEF. SETTINGS

5. Press **Select**. Now the panel will show the first option within the **DEF. SETTINGS** group, like this:

DEF. SETTINGS Def Country

4. Press **Select.** Now the panel will show the currently active setting for **DEF COUNTRY**, for example like this: (the asterisk shows that the setting is the currently active one).

DEF COUNTRY Multinational *

Note that for Coax (and only Coax), the IDB Option Number is usually displayed in the printer operator panel in parenthesis after the option name, for example:

`EMULATION (O10)`

The first character is the letter O standing for Option.

3.2.6. How to Select and Save a New Value (IDB Setting)

Having selected an option (such as **DEF COUNTRY**), scroll through the values for the option using **Menu>** and **<Menu**.

When you locate the setting you want (for example “USA/Canada”, instead of “Multinational”), press **Select** to save the new setting.

DEF COUNTRY USA/Canada

The message **SAVED** is displayed briefly.

SAVED

Then the display moves up/back a level, like this:

DEF. SETTINGS Def Country

The next time you check the settings for **DEF COUNTRY**, USA/Canada will be displayed with an asterisk, like this:

DEF COUNTRY USA/Canada *

The settings for some options, such as “Top Margin”, are numerical values. In this case, use the scrolling functions of **Menu>** and **<Menu** to increase or decrease the value. Press **Select** to save the new setting; everything that follows is as described above.

3.3. Factory Defaults

Factory Defaults is the menu item for restoring factory defaults and is found in the **TEST OPTIONS** sub-menu of the **SCS OPTIONS** menu.

- **Twinax** users choose **Restore**.

- **Coax users** have a choice among the following three collections of settings (IDB files), which are described in *section 8.8 Factory Defaults*, page 71.
  - **Restore US**
  - **Restore Non US**
  - **Rsto OptraForms**

When you have made your selection**,** the operator panel will display: **Power Off/On to Activate Changes**. Turn the printer Power Off and back On again to activate the restored factory default settings.

3.4. Adapter Setup Options vs. Printer Setup Options

This guide covers settings for the SCS options provided by the **Adapter for SCS**. Refer to your printer’s documentation for information on changing options for printer setup.

Changes to option settings under the **SCS MENU** only affect the way SCS jobs are printed. These changes do not affect PostScript or PCL print jobs controlled by the printer’s **PAPER MENU**, **POSTSCRIPT MENU**, **PCL EMUL MENU** or **SETUP MENU**.

3.5. IDB commands?

Even though you are not a specialist, you should know a little bit about IDB.

IDB is short for Intermate Data Base, which is the tool we use to create our SCS emulations. IDB also refers to the Adapter for SCS's storage of all SCS protocol conversion tables. So, we often call SCS options "IDB Options", and each IDB Option usually has an Option Number. Each option can have various values, which are called "IDB Settings". As mentioned above, IDB also includes "Events", which are also numbered.

You will see command strings many times in the reference chapters, because each option description in the reference chapters includes two basic types of information:

- a description of what the various values mean; this is intended for all users of the Operator Panel.

- one or two sample command line sequences (command strings) (see Chapter 4 Introducing the Coax Reference Chapters, page 30 and *Chapter 9 Introducing the Twinax Reference Chapters*, page 72); these are intended for technical specialists.

IDB commands go into the data stream, but will not print if they are written and executed properly. So, if you see the lead-in string (usually &%) on a print-out, you should get in touch with a technical specialist familiar with the details of IDB.

No matter what the problem, when a technical specialist is troubleshooting, he or she may ask for information about current IDB settings; instructions for printing out the necessary reports are provided in *section 14, Troubleshooting* page 119.

The factory default settings for all options are contained in "IDB configuration files", which are loaded into the adapter at the factory. Factory default files are also provided on the CD-ROM. Three files are supplied for Coax, and all of them can be selected through **Factory Defaults** on the Operator Panel (see *section 8.8 Factory Defaults*, page 71, which also describes the differences among them). For Twinax, there are two files; one of them (giving support for Latin 2 Eastern Europe) can not be selected through **Factory Defaults** on the Operator Panel. Instructions on how to load IDB files to the adapter are provided in *Appendix C, section C.4 Loading Firmware and IDB-Files to the Adapter*, page 129.

A configuration can be tailored by editing an IDB file with the help of a special editor provided on the CD-ROM. The CD also includes the *IDB Technical Reference* . New versions of both can be downloaded from the Intermate web site.

Important:

This manual contains a number of chapters requiring direct work with IDB command strings. However, only authorized specialists should issue IDB command strings from the host terminal or edit IDB files.

4. Introducing the Coax Reference Chapters

Coax options are available only to Coax users. If you have attached a Twinax cable or no cable to the adapter, the Coax options menu will not be available to you.

4.1. Tree Diagrams / Menu Hierarchies

A tree diagram showing the menu levels (hierarchies) in the Operator Panel is found in *Chapter 5 Coax Operator Menu* on page 34.

4.2. Detailed Descriptions of Setup Options

The descriptions for Coax are found in *Chapter 6 Coax SCS OPTIONS (Setup)*, starting on page 35. The options are presented in the order they appear in a given top level sub-menu or group on the printer panel display. Each specification is built up in the same way.

Here is an example, the details of which are described below:

6.2.1 Local Copy Form Feed Action (Coax Option 1)

```
FF Local Copy
FF LCOPY (O1)
```

Selects the default setting for form feeding. Local copy jobs do not end with a form feed and the last page of the job remains in the printer. Use this setting to indicate form feed action.

0	**No Action**
1	**Before**
2	**After***
3	**Before & After**

Advanced IDB Language: `&%IDB_EDIT: OPTION 1:2:EXIT`

4.2.1. The Numbered Section Title

This is the full description option name and Option Number. In our example:

6.2.1 Local Copy Form Feed Action (Coax Option 1)

The Option Number is used in the *Advanced IDB* language and the IDB.EXE program, and is also used to organize information in the *IDB Technical Reference.*

4.2.2. Operator Panel Text: First Line in This Description

This name is the option as it appears under its particular menu grouping. In other words, you will see this short option name as line two on the Operator Panel. In our example, the first short option name looks like this:

```
FF Local Copy
```

4.2.3. Operator Panel Text: Second Line in This Description

This name is what appears on line one on the Operator Panel after you have chosen the option from the level above. It includes the Option Number preceded by the letter O. In our example, the second short option name looks like this:

```
FF LCOPY (O1)
```

4.2.4. Option Description

This section describes briefly what the option does. In our example:

Selects the default setting for form feeding. Local copy jobs do not end with a form feed and the last page of the job remains in the printer. Use this setting to indicate form feed action.

4.2.5. Values

All possible values for the option are listed (in bold) in the order they appear with the factory default settings. When the Operator Panel shows the "second short option name" on line one, line two will display one of these settings.

From our example:

0	**No Action**
1	**Before**
2	**After***
3	**Before & After**

Note that one of the settings is marked in the manual with an asterisk (*). This means that this particular setting is a factory default. However, when you look at the Operator Panel, the asterisk (*) shows the currently active setting.

4.2.6. Advanced IDB Language

This section shows how to use the *Advanced IDB Language* to change option settings from a host terminal. From our example:

Advanced IDB Language: `&%IDB_EDIT: OPTION 1:2:EXIT`

The examples used show the IDB command string corresponding to the factory default setting.

With the *Advanced IDB* command language it is possible to change all SCS settings and features of the protocol conversion tables. However, this should only be done by an authorized technician.

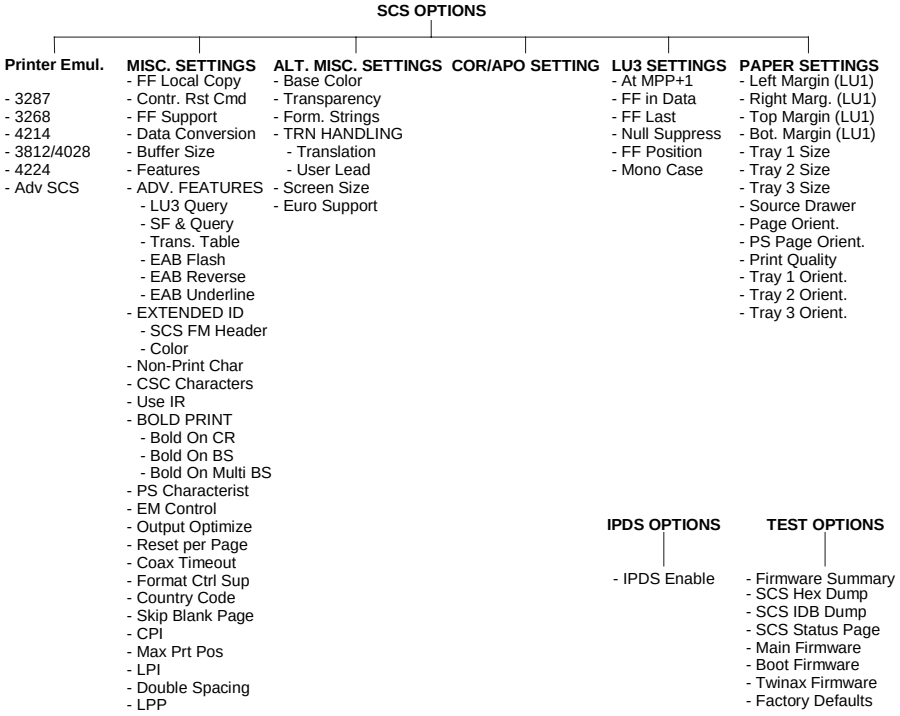
4.3. Detailed Description of IPDS Option

The Coax IPDS Option is described in *Chapter 7 Coax IPDS SETTING*, page 67.

4.4. Detailed Descriptions of Test Options

The Coax Test Options are described in *Chapter 8 Coax TEST OPTIONS*, beginning on page 68.

5. Coax Operator Menu



6. Coax SCS OPTIONS (Setup)

6.1. Printer Emulation (Coax Option 10)

```
Printer Emul.
EMULATION (O10)
```

This option defines the printer emulation to be used by the Adapter for SCS. The values in bold display on the printer operator panel.

If you cannot find an emulation that matches your host, then choose **Adv SCS**.

Note: If the Adapter for SCS detects an optional IPDS feature supported by the adapter, the printer emulation is automatically set to 20 (3812/4028).

01	**3287**
04	**3268**
16	**4214**
20	**3812/4028***
36	**4224**
84	**Adv SCS**

Advanced IDB Language: `&%IDB_EDIT: OPTION 10:20:EXIT`

6.2. Coax MISC. SETTINGS Sub-menu

6.2.1. Local Copy Form Feed Action (Coax Option 1)

```
FF Local Copy
FF LCOPY (O1)
```

Selects the default setting for form feeding. Local copy jobs do not end with a form feed and the last page of the job remains in the printer. Use this setting to indicate form feed action.

0 **No Action**
1 **Before**
2 **After***
3 **Before & After**

Advanced IDB Language: `&%IDB_EDIT: OPTION 1:2:EXIT`

6.2.2. Controller Reset Commands (Coax Option 4)

```
Contr. Rst Cmd
CONT. RST (O4)
```

This option defines if a form feed or a carriage return is issued after an End Of Message is found in the data stream.

Note: If the current setting is not set to one of the values shown in the operator panel, then no asterisk "*" appears.

1 **Form Feed**
2 **Carriage Return**

Advanced IDB Language: `&%IDB_EDIT: OPTION 4:1:EXIT`

6.2.3. Form Feed Support (Coax Option 5)

```
FF Support
FF SUPPORT (O5)
```

Defines if a form feed and/or a line feed is generated when an MPL (Maximum Page Length) or BM (Bottom Margin) is reached in the data stream.

0 **Always FF***
1 **Always LF**
2 **LF & FF**

Advanced IDB Language: `&%IDB_EDIT: OPTION 5:0:EXIT`

6.2.4. Data Conversion (Coax Option 6)

```
Data Conversion
DATA CONV.(O6)
```

Important: If this option is set to a value other than the default value 0, it can only be restored via the operator panel. For example by restoring the factory default settings.

This option defines if the normal data conversion is to be used or transparent data conversion with no character conversion.

In the transparent mode, there is no check for the CSC characters (&%) and the SCS escape sequences (Bxx) are passed directly to the parallel output. All data are passed directly through the Adapter for SCS in EBCDIC or Device Buffer Code.

Note: If the current setting is not set to one of the values shown in the operator panel, then no asterisk "*" appears.

0 **Normal**
2 **Disable IDBedit**

Advanced IDB Language: `&%IDB_EDIT: OPTION 6:0:EXIT`

6.2.5. Buffer Size (Coax Option 11)

```
Buffer Size
BUFFERSIZE (O11)
```

This option defines the default buffer size. The buffer size is reported to the host at Power On.

0	**4K Bytes***
1	**8K Bytes**

Advanced IDB Language: `&%IDB_EDIT: OPTION 11:0:EXIT`

6.2.6. Features (Coax Option 12, Text Features)

```
Features
FEATURES (O12)
```

This option defines which among the following text features has/have been installed: extended attribute buffer (EAB), a programming language (APL), programmed symbols (PS) and 3289 text characteristics.

0	**None**
1	**PS**
2	**3289 Text**
3	**PS+3289**
4	**EAB**
5	**EAB+PS**
6	**EAB+APL***
7	**EAB+APL+PS**

Advanced IDB Language: `&%IDB_EDIT: OPTION 12:6:EXIT`

6.2.7. Advanced Printer Features (Coax Option 13)

```
ADV. FEATURES
ADV. FEAT. BITs
```

This option defines which advanced printer features are supported.

Bit **1**	**LU3 Query**	LU3 query supported
	Yes*	
	No	
Bit **2**	**SF & Query**	Query List and Structured
	Yes*	Fields (SF) supported
	No	
Bit **4**	**Trans. Table**	Translate table required
	No*	
	Yes	(Only used if PS installed)
Bit **6**	**EAB Flash**	Blinking supported**
	No*	EAB (Extended Attribute Buffer)
	Yes	
Bit **7**	**EAB Reverse**	Reverse supported**
	No*	
	Yes	
Bit **8**	**EAB Underline**	Underlining supported**
	Yes*	
	No	

** Not supported if the Printer Emulation is set to 3287.

The setting of option 13 controls address 000Ah of the Printer Control Information Area (PCIA). The value set in option 13 controls all the above settings. The decimal number representing the default settings is found like this:

Bit no.	8	7	6	5	4	3	2	1
Value	1	0	0	0	0	0	1	1

"Yes" is indicated with the value 1 and "No" with a 0. The decimal number is

found by converting the bottom line, which is a binary number, to a decimal number. In this case it is 131.

Advanced IDB Language: `&%IDB_EDIT: OPTION 13:131:EXIT`

6.2.8. Extended ID (Coax Option 14)

```
EXTENDED ID
EXT. ID BITs
```

This option defines if the SCS Function Management (FM) header and/or color is supported. The data that follows the FM header is in Structured Fields.

Bit **5** **SCS FM Header**
Yes*
No

Bit **6** **Color (O14)**
No*
Yes

The setting of option 14 controls address 000Eh of the Printer Control Information Area (PCIA). The value set in option 14 controls the settings above. The decimal number representing the default settings is found like this:

Bit no.	8	7	6	5	4	3	2	1
Value	0	0	0	1	0	0	0	0

"Yes" is indicated with the value 1 and "No" with a 0. The decimal number is found by converting the bottom line, which is a binary number, to a decimal number. In this case the number is 16.

Advanced IDB Language: `&%IDB_EDIT: OPTION 14:16:EXIT`

6.2.9. Non-Printable Character (Coax Option 3)

```
Non-Print Char
NON-PRN CHAR(O3)
```

This option defines the character to be used instead when characters in the data stream are unprintable. A blank or space is the default.

00	**Default hyphen**
32	**space ***
45	**Hyphen ("-")**
xx	**Character value for unprintable character**

Appendix F. ASCII Character Table (extract) shows all possible characters.

Advanced IDB Language: `&%IDB_EDIT: OPTION 3:32:EXIT`

6.2.10. CSC Characters & IDB Edit Delimiter (Options 8, 9, 7)

```
CSC Characters
CSC (O8,09,07)
&%IDB_EDIT: *
```

CSC is short for Command String Character. The CSC is a unique two-character sequence, which opens the internal editor in the interface. It must be used every time you want to send commands to the interface. The default values are "&" (option 8, 38 decimal) and "%" (option 9, 37 decimal). The CSC is also used in front of the lead-in characters (Option 171/172) and for passing single hex values to the printer. (&%1B = <esc>). The colon ":" (option 7, 58 decimal) is the default for the IDB Edit Delimiter which is used to separate programming commands. Use this option to change any of the three values underlined with a dashed line. The current value will blink as it changes.

&%IDB_EDIT: *

Appendix F. ASCII Character Table (extract) shows all possible characters.

In the advanced IDB example below several options are set at the same time. This is done by writing the number of the first option and separating the values for the preceding options with commas.

Advanced IDB Language: `&%IDB_EDIT: OPTION 7:58,38,37:EXIT`

6.2.11. Intervention Required Response (Coax Option 21)

```
Use IR
Use IR (O21)
```

Set the time interval before an “intervention required” signal is sent to the host after a print error occurs.

0	**Not Supported*** (”intervention required” is never sent)
1	**10 minutes**
xx	**xx.** Every value from and including 2, to and including 255, indicates the number of minutes to wait before sending the “intervention required” signal to the host. The number 10 also means 10 minutes; using the code 1 to indicate 10 minutes is a short cut.

Advanced IDB Language: `&%IDB_EDIT: OPTION 21:0:EXIT`

6.2.12. Bold Print Control (Coax Option 22)

```
Bold Print
BOLD PRINT BITs
```

This option defines when to enable bold printing.

Bit 1	**Bold On CR** **Yes*** **No**	Bold on a carriage return
Bit 2	**Bold On BS** **Yes*** **No**	Bold on a backspace
Bit 3	**Bold On Multi BS** **Yes*** **No**	Bold on multiple backspaces

The value set in option 22 controls the settings above. The decimal number representing the default settings is found like this:

Bit no.	8	7	6	5	4	3	2	1
Value	0	0	0	0	0	1	1	1

"Yes" is indicated with the value 1 and "No" with a 0. The decimal number is found by converting the bottom line, which is a binary number, to a decimal number. In this case the number is 7.

Advanced IDB Language: `&%IDB_EDIT: OPTION 22:7:EXIT`

6.2.13. PS Characteristics (Coax Option 23)

```
PS Characterist
PS CHAR. (O23)
```

This option defines which Programmed Symbols (PS) have been installed. You can select various combinations of Programmed Symbols number 2 through number 7. "Triple plane" means the symbols are three-dimensional.

Note: If the current setting is not set to one of the values shown in the operator panel, then no asterisk "*" appears.

64	**PS 2-3**	
80	**PS 2-3 3t**	PS no. 3 is triple plane
128	**PS 2-5**	
132	**PS 2-5 5t**	PS no. 5 is triple plane
192	**PS 2-7**	

Advanced IDB Language: `&%IDB_EDIT: OPTION 23:64:EXIT`

6.2.14. End Of Message Control (Coax Option 25)

```
EM Control
EM CONTR.(O25)
```

This option defines how the print position will be handled at an End Of Message control code.

0	**Like NL***	Like a new line
1	**PP Unchanged**	No change in print position
2	**Like CR**	Like a carriage return

Advanced IDB Language: `&%IDB_EDIT: OPTION 25:0:EXIT`

6.2.15. Output Optimization (Coax Option 26)

```
Output Optimize
OUTP. OPT.(O26)
```

This option defines if Carriage Returns and Spaces should be suppressed during printing.

0	**No***	No suppression
1	**CR & Spaces**	Suppress carriage returns and spaces
2	**Spaces**	Suppress spaces

Advanced IDB Language: `&%IDB_EDIT: OPTION 26:0:EXIT`

6.2.16. Reset Per Page (Coax Option 27)

```
Reset Per Page
RST PR PAGE(O27)
```

This option defines when the default settings of the interface should be sent to the printer.

0	**Normal***	Normal operations
1	**All pages**	After every page
2	**After FF**	After a form feed

Advanced IDB Language: `&%IDB_EDIT: OPTION 27:0:EXIT`

6.2.17. Coax Timeout (Coax Option 29)

```
Coax Timeout
T-OUT SEC (O29)
```

This option defines the number of seconds, which need to pass without any activity before a form feed is generated if unprinted data remains in the printer buffer.

0*	**15 seconds.**
xx	**xx**. All values from and including 1, to and including 255 indicate the number of seconds. The number 15 also means 15 seconds; using the code 0 to indicate 15 seconds is a short cut.

Advanced IDB Language: `&%IDB_EDIT: OPTION 29:0:EXIT`

6.2.18. Suppress Control Codes (Coax Option 177)

```
Format Ctrl Sup
CTRL SUP (O177)
```

Defines the suppression of control codes after Power On.

Note: In the following <CSC> represents the Command String Characters. The default CSC is "&%". The CSC characters may be changed from the Adapter for SCS menus; see *section 6.2.10 CSC Characters & IDB Edit Delimiter (Options 8, 9, 7)* (page 42) for further information.

0	**Normal***	Standard handling of control codes after Power On. Can be disabled with the <CSC> + M command.
1	**No AutoNL**	Is disabled after Power On in Host direct print and Local Copy print. Can be enabled with the <CSC>-M command. All Host generated codes are still sent.
2	**No AutoNL'**	Is disabled after Power On in Host direct print. Can be enabled with the <CSC>-M command. All Host generated codes are still sent.
3	**No Codes**	CR, LF, NL and FF codes from the Host are suppressed and the auto-NL function is disabled. Can be enabled with the <CSC>-M command. *Note:* Because control codes are suppressed horizontal/vertical tab and other commands which depend on correct page format will not work correctly.
4	**Normal'**	Standard handling of control codes after Power On. If the <CSC>+M command is used later on, CR, LF, NL and FF codes from the Host are suppressed and the auto-NL function is disabled.

5	**No Codes'**	CR, LF, NL and FF codes from the Host are suppressed. Can be enabled with the <CSC>-M command. The auto-NL is still enabled.
6	**Normal''**	Standard handling of control codes after Power On. If the <CSC>+M command is used later on, CR, LF, NL and FF codes from the Host are suppressed. The auto-NL function is still enabled.

<CSC> + M [m]:

If Option 177 = 0, 1 or 2:

After this command the auto-NL function is disabled. All Host generated control codes are still sent to the printer.

If Option 177 = 3 or 4:

After this command all Host generated CR, LF, NL and FF control codes are suppressed and the auto-NL function is disabled. Hereafter control codes can only be sent to the printer by one of the transparent commands.

Note: The effect of the <CSC>+M command is reset when the printer is Powered Off or On.

<CSC> - M [m]:

After this command all Host generated control codes are processed and the auto-NL function operates as normal.

Advanced IDB Language: `&%IDB_EDIT: OPTION 177:0:EXIT`

6.2.19. Country Code Selection (Coax Option 2)

```
Country Code
COUNT. CODE (O2)
```

This option defines the default character set.

0	**USA/Canada***	Default to 1 (English)
1	**USA/Canada Alt**	English
2	**Aus/Germany**	German/Austrian
3	**Aus/Germany Alt**	German/Austrian Alt.
4	**Belgium**	Belgian
5	**Brazil**	Brazilian
6	**Canada Biling.**	Canadian bilingual
7	**Canada French**	Canadian French
8	**Denmark/Norway**	Danish/Norwegian
9	**Denmark/Nor Alt**	Danish/Norwegian Alt.
10	**UK**	English, U.K.
11	**Finland/Sweden**	Finnish/Swedish
12	**Fin/Sweden Alt**	Finnish/Swedish Alt.
13	**France**	French/Azerty 105
14	**Multinational**	International
15	**Italy**	Italian
16	**Portugal**	Portuguese
17	**Portugal Alt**	Portuguese Alt.
18	**Spain**	Spanish
19	**Spain Alt**	Spanish Alt.
20	**Spanish Speak**	Spanish speaking
21	**Swiss Ger/Fr**	Swiss German/Swiss French
22	**Japan (English)**	Japanese/English
23	**Spain Dat/Txt**	Spanish data/text processing
Other		Default to 1 (English)

Advanced IDB Language: `&%IDB_EDIT: OPTION 2:0:EXIT`

6.2.20. Skip Blank Page (Coax Option 32)

```
Skip Blank Page
SKIP BLNK P(O32)
```

This option defines if the Skip Blank Page feature is to be disabled or not. A "Yes" means that if a page contains only a CR, NL, LF or FF, then it will not be printed.

0 **No***
1 **Yes**

Advanced IDB Language: `&%IDB_EDIT: OPTION 32:0:EXIT`

6.2.21. Characters Per Inch (Coax Option 100)

```
CPI
CPI (O100)
```

This option defines the default number of characters per inch.

10 **10 CPI***
12 **12 CPI**
15 **15 CPI**
16 **16.7 CPI**

Advanced IDB Language: `&%IDB_EDIT: OPTION 100:10:EXIT`

6.2.22. Maximum Print Position (Coax Option 102)

```
Max Prt Pos
MPP (O102)
```

This option defines the maximum number of characters per line.

132* [0..255]

Advanced IDB Language: `&%IDB_EDIT: OPTION 102:132:EXIT`

6.2.23. Lines Per Inch (Coax Option 105)

```
LPI
LPI (O105)
```

Selects the number of lines per inch.

6* [0..25]

Advanced IDB Language: `&%IDB_EDIT: OPTION 105:6:EXIT`

6.2.24. Double Spacing (Coax Option 106 – line spacing)

```
Double Spacing
LINE SP(O106)
```

Sets the selection for default line spacing.

0 **Single Line***
1 **Double Line**

Advanced IDB Language: `&%IDB_EDIT: OPTION 106:0:EXIT`

6.2.25. Lines Per Page (Coax Option 107)

```
LPP
LPP (O107)
```

Defines the selection for the default number of lines per page.

66* [0..255]

Advanced IDB Language: `&%IDB_EDIT: OPTION 107:66:EXIT`

6.3. Coax ALT. MISC SETT. Sub-menu

6.3.1. Base Color (Coax Option 110)

```
Base Color
BASE COLOR(O110)
```

Selects the default color to be used. The use of color is controlled by the Color setting under Extended ID (Option 14).

0 **Black***
1 **Blue**
2 **Red**
3 **Pink**
4 **Green**
5 **Turquoise**
6 **Yellow**
7 **Undefined**

Advanced IDB Language: `&%IDB_EDIT: OPTION 110:0:EXIT`

6.3.2. Transparency (Coax Option 167)

```
Transparency
TRANSPA (O167)
```

Defines if the normal Intermate transparent mode or the alternate (AXIS) transparency format is the default.

0 **Normal***
1 **Alternative**

Advanced IDB Language: `&%IDB_EDIT: OPTION 167:0:EXIT`

6.3.3. Formatted Strings (Coax Option 168)

```
Form. Strings
FORM. STR.(O168)
```

This option defines the lead-in character for the Formatted String utility.

Important: Do not use a character between 0-9 (ASCII 49-57), A-F (ASCII 65-70) and do not use one of the characters used as lead-in for one of the other SCS commands.

Appendix F. ASCII Character Table (extract) shows all possible characters.

Ascii 0* [0..255]

Advanced IDB Language: `&%IDB_EDIT: OPTION 168:0:EXIT`

6.3.4. Transparency Handling (Coax Option 169)

```
TRN HANDLING
TRN HANDL BITs
```

"Translation" determines whether data within a transparent data stream control code is to be printed as received or if translation from EBCDIC to ASCII should be performed.

User Lead determines that user defined transparent lead-in characters are used without the pass through sequence (CSC Characters Option 8 and Option 9).

Bit 1 **Translation**
Yes*
No

Bit 2 **User Lead**
No*
Yes

To use Translation, Suppress Control Codes (Option 177) should be set to “No AutoNL” (Option value = 1).

The value set in option 169 controls the settings above. The decimal number representing the default settings is found like this:

Bit no.	8	7	6	5	4	3	2	1
Value	0	0	0	0	0	0	0	1

"Yes" is indicated with the value 1 and "No" with a 0. The decimal number is found by converting the bottom line, which is a binary number, to a decimal number. In this case the number is 1.

Advanced IDB Language: `&%IDB_EDIT: OPTION 169:1:EXIT`

6.3.5. Screen Size (Coax Option 237)

```
Screen Size
ScreenSize(O237)
```

Selects the default screen buffer size in bytes.

1 **1920 Bytes**
2 **2560 Bytes**
3 **3440 Bytes***
4 **3564 Bytes**
5 **960 Bytes**

Advanced IDB Language: `&%IDB_EDIT: OPTION 237:3:EXIT`

6.3.6. Euro Support (Coax Event / Operator Panel)

```
Euro Support
Euro Char(CE186)
```

This option controls the support for the Euro character. It can ONLY be configured via the operator panel.

If **Yes** is selected, use of the character is forced. This is done via a character event, which converts the ASCII character 186 decimal (0xBA) to use the ASCII character 213 decimal (0xD5) in symbol set 13U.
Setting the option to **No**, disables the Euro Support.

No *
Yes

6.4. Automatic Print Orientation (COR/APO) (Coax Option 122)

```
COR/APO Setting
COR/APO (O122)
```

COR = Computer Output Reduction
APO = Automatic Page Orientation

When APO is selected the interface calculates the print area required for printing the document. This is based on page formatting commands received from the host. If the document does not fit on a page in portrait orientation, the orientation is changed to landscape. If the change in orientation is insufficent, the option also performs Computer Output Reduction (COR). A flow-chart showing the logic used is found in *Appendix D COR/APO Logic (Coax)* (page 131).

1 **No**
2 **Yes* (Enabled)**

Advanced IDB Language: `&%IDB_EDIT: OPTION 122:2:EXIT`

6.5. Coax LU3 SETTINGS Sub-menu

6.5.1. At MPP+1 (Coax Option 15)

```
At MPP+1
MPP+1 (O15)
```

MPP = Maximum Print Position. This option defines print and line position.
CR = carriage return position.
NL = new line position.

1 **CR=+0 NL=+1***
2 **CR=+1 NL=+2**
5 **CR=+1 NL=+1**
6 **CR=+0 NL=+2**

Advanced IDB Language: `&%IDB_EDIT: OPTION 15:1:EXIT`

6.5.2. Form Feed in Data (Coax Option 16)

```
FF in Data
FF in DATA (O16)
```

This option defines when a form feed is sent not as the last character of a buffer, but rather as the first or second print position (PP) of the next page.

1 **PP 2 Next Form***
2 **PP 1 Next Form**

Advanced IDB Language: `&%IDB_EDIT: OPTION 16:1:EXIT`

6.5.3. Form Feed Last (Coax Option 17)

```
FF Last
FF Last (O17)
```

This option defines if the form feed is to occur in the first print position (PP) of the first line or of the second line.

1 **PP 1 2nd Line**
2 **PP 1 First Line***

Advanced IDB Language: `&%IDB_EDIT: OPTION 17:2:EXIT`

6.5.4. Null Suppression (Coax Option 18)

```
Null Suppress
NULL SUPPR.(O18)
```

Defines if null lines are to be suppressed or if the character in the LU3 table should print in the place of null characters. If null lines are suppressed, then the amount of data in the buffer to be transmitted or printed is reduced.

1 **Sppr Null Lines***
2 **Print Null Char**

Advanced IDB Language: `&%IDB_EDIT: OPTION 18:1:EXIT`

6.5.5. Form Feed Position (Coax Option 19)

```
FF Position
FF POS. (O19)
```

This option defines when a form feed is valid.

1	**Always FF**	Always valid.
2	**1PP/MPP+1***	Valid at first position or first position after MPP.
5	**S Alw. FF**	Always valid at next page.
6	**S 1PP/MPP+1**	Always valid at first position of second line or first position after MPP.

Advanced IDB Language: `&%IDB_EDIT: OPTION 19:2:EXIT`

6.5.6. Mono Case (Coax Option 101)

```
Mono Case
MONO CASE(O101)
```

This option defines if dual (upper and lower case) is to be the default or if mono (upper case only) is to be the default.

0	**No***	Dual Case
1	**Yes**	Mono Case

Advanced IDB Language: `&%IDB_EDIT: OPTION 101:0:EXIT`

6.6. Coax PAPER SETTINGS Sub-menu

6.6.1. Left Margin (Coax Option 103)

```
Left Margin (LU1)
LEFTMARG(O103)
```

Selects the default left margin position in characters.

1* [0..255]

Advanced IDB Language: `&%IDB_EDIT: OPTION 103:1:EXIT`

6.6.2. Right Margin (Coax Option 104)

```
Right Marg. (LU1)
RIGHTMARG(O104)
```

Selects the default right margin position in characters.

132* [0..255]

Advanced IDB Language: `&%IDB_EDIT: OPTION 104:132:EXIT`

6.6.3. Top Margin (Coax Option 108)

```
Top Margin (LU1)
TOPMARGIN (O108)
```

Selects the line number position of the default top margin.

1* [0..255]

Advanced IDB Language: `&%IDB_EDIT: OPTION 108:1:EXIT`

6.6.4. Bottom Margin (Coax Option 109)

```
Bot. Margin (LU1)
BOT.-MARG(O109)
```

Selects the line number position of the default bottom margin.

66* [0..255]

Advanced IDB Language: `&%IDB_EDIT: OPTION 109:66:EXIT`

6.6.5. Paper Size Tray 1 (Coax Option 90)

```
Tray 1 Size
PAGE SIZE (O90)
```

Selects the default paper size for Tray 1.

0 **A4***
1 **B5**
2 **Letter**
3 **Legal**

Advanced IDB Language: `&%IDB_EDIT: OPTION 90:0:EXIT`

6.6.6. Paper Size Tray 2 (Coax Option 91)

```
Tray 2 Size
PAGE SIZE (O91)
```

Selects the default paper size for Tray 2.

0 **A4***
1 **B5**
2 **Letter**
3 **Legal**

Advanced IDB Language: `&%IDB_EDIT: OPTION 91:0:EXIT`

6.6.7. Paper Size Tray 3 (Coax Option 92)

```
Tray 3 Size
PAGE SIZE (O92)
```

Selects the default paper size for Tray 3.

0 **A4***
1 **B5**
2 **Letter**
3 **Legal**

Advanced IDB Language: `&%IDB_EDIT: OPTION 92:0:EXIT`

6.6.8. Source Drawer (Coax Option 113)

```
Source Drawer
TRAY (O113)
```

Selects the default Tray number to use.

0 **Default Tray (i.e. the current setting in the printer)**
1 **Tray 1***
2 **Tray 2**
3 **Tray 3**

Advanced IDB Language: `&%IDB_EDIT: OPTION 113:1:EXIT`

6.6.9. Page Orientation (Coax Option 120)

```
Page Orient.
ORIENT (O120)
```

Selects the default page orientation.

0	**Portrait***
1	**Landscape**

Advanced IDB Language: `&%IDB_EDIT: OPTION 120:0:EXIT`

6.6.10. Programmed Symbols Page Orientation (Coax Option 121)

```
PS Page Orient.
PS ORI (O121)
```

Defines whether programmed symbols should print in portrait or landscape orientation or whether COR (computer output reduction) or APO (automatic print orientation) will be active.

0	**Portrait***	Applies to PS only
1	**Landscape**	Applies to PS only
2	**All Portrait**	Applies to PS and Text
3	**All Landscape**	Applies to PS and Text
6	**All COR**	Applies to PS and Text
16	**APO Controlled** **	

****COR/APO Setting (Option 122) must be set to Yes for this to work correctly.

Advanced IDB Language: `&%IDB_EDIT: OPTION 121:0:EXIT`

6.6.11. Print Quality (Coax Option 112)

```
Print Quality
PRN QUAL.(O112)
```

Defines the selection for default print quality.

0 **Default* (i.e. the current setting in the printer)**
1 **Data Proc.**
2 **Near Letter**
3 **Near Letter 2**

Advanced IDB Language: `&%IDB_EDIT: OPTION 112:0:EXIT`

6.6.12. Tray 1 Orientation (Coax Option 123)

```
Tray 1 Orient.
ORI 1 (O123)
```

Selects the page orientation for Tray 1.

0 **Portrait**
1 **Landscape**
2 **COR***

Advanced IDB Language: `&%IDB_EDIT: OPTION 123:2:EXIT`

6.6.13. Tray 2 Orientation (Coax Option 124)

```
Tray 2 Orient.
ORI 2 (O124)
```

Selects the page orientation for Tray 2.

0	**Portrait**
1	**Landscape**
2	**COR***

Advanced IDB Language: `&%IDB_EDIT: OPTION 124:2:EXIT`

6.6.14. Tray 3 Orientation (Coax Option 125)

```
Tray 3 Orient.
ORI 3 (O125)
```

Selects the page orientation for Tray 3.

0	**Portrait***
1	**Landscape**
2	**COR**

Advanced IDB Language: `&%IDB_EDIT: OPTION 125:0:EXIT`

7. Coax IPDS SETTING

The IPDS OPTION sub-menu only displays if an optional IPDS feature supported by the adapter is installed. There is only one option on this sub-menu, namely IPDS SETTING, described below.

```
IPDS SETTING
IPDS Enable
```

This option determines if the Adapter for SCS should support IPDS commands.

Yes*
No

8. Coax TEST OPTIONS

8.1. Firmware Summary

```
Firmware Summary
Firmware Summary
```

This option prints out a short report listing the revision information; *section C.2 Firmware File Names and Releases* describes conventions for names and releases.

Cancel
Print*

8.2. SCS Hex Dump

```
SCS Hex Dump
SCS HEX DUMP
```

This option enables hex tracing. This can be used to diagnose print job problems. With Hex Dump selected, all data sent to the printer is printed in hexadecimal and character representation. Control codes are not executed.

When using this option, it is recommended to Power the printer Off and On, in order to get the Power On initialization data in the dump also.

Cancel*
Enable

8.3. SCS IDB Dump

```
SCS IDB Dump
PRINT IDB DUMP
```

This option prints a tabular eight-page report of your current settings using option numbers. Print this report when asked by technical support representatives.

Print
Cancel*

Advanced IDB Language: `&%IDB_PRINT_FULL:EXIT`

8.4. SCS Status Page

```
SCS Status Page
PRINT MENU DUMP
```

This option prints a one-page listing of your current settings. Print this report to review your adapter settings or when asked by technical support representatives.

Print*
Cancel

8.5. Main Firmware

```
Main Firmware
FIRMWARE
```

This option displays the Coax firmware revision information.
For example: **H01-9561**

8.6. Boot Firmware

```
Boot Firmware
BOOT FIRMWARE
```

This option displays the current boot firmware revision information. For example: **H00-7301**

8.7. Twinax Firmware

```
Twinax Firmware
TWIN FIRMWARE
```

This option displays the current Twinax firmware revision information. For example: **H02-9591**

8.8. Factory Defaults

```
Factory Defaults
FACTORY DEFAULTS
```

Select this option to restore the Factory IDB settings. You will be given a choice among three IDBs: US, Non US and OptraForms.

The OptraForms IDB is a modified US IDB, implemented in code level H01_9541. It selects PostScript mode in the printer when a Coax job is received. PostScript mode is selected by sending the contents of string 79 to the printer. When the Coax job ends, PostScript mode is deselected by sending the contents of string 78.

	Non US IDB	US IDB	OptraForms IDB
Country Code	USA/Canada	USA/Canada	USA/Canada
Paper Sizes	A4	Letter	Letter
Bottom Margin	66	64	72
Lines Per Page	66	64	72

Restore US * (This value is always marked with asterisk – regardless of the current setting.)

Restore Non US (This is the active IDB from the factory)

Rsto OptraForms

Do Not Restore

Printer power must be recycled (Off and then On) to activate the settings.

9. Introducing the Twinax Reference Chapters

Twinax options are available only to Twinax users. If you have attached a Coax cable to the adapter, the Twinax options menu will not be available to you.

9.1. Tree Diagrams / Menu Hierarchies

A tree diagram showing the menu levels (hierarchies) in the Operator Panel is found in *Chapter 10 Twinax Operator Menu*, page 77.

9.2. Detailed Descriptions of Setup Options

The descriptions for Twinax are found in *Chapter 11 Twinax SCS OPTIONS (Setup)* starting on page 78. The options are presented in the order they appear in a given top level sub-menu or group on the printer panel display. Each specification is built up in the same way.

Here is an example (see next page).

11.4.3. Intervention(Twinax Option 21)

```
Intervention
INTERVENTION
```

An intervention is when the printer requires a user action. For example, if the printer is out of paper or if a paper jam has occurred.

0	NORM	**Normal***	Interventions are reported back to the host. A paper jam is reported as a paper jam. Out of paper is reported as out of paper, etc.
1	OFF	**Offline**	Interventions are reported back to the host as off-line.

User IDB command:	`INTSTAT <parameter>:`
Parameter:	`NORM, OFF`
User IDB:	`&%IDB_EDIT: INTSTAT NORM:EXIT`
Advanced IDB Language:	`&%IDB_EDIT: OPTION 21:0:EXIT`

9.2.1. The Numbered Section Title

This is the full description option name and Option Number. In our example:

11.4.3. Intervention (Twinax Option 21)

The Option Number is used in the *Advanced IDB* language and the IDB.EXE program, and is also used to organize information in the *IDB Technical Reference.*

9.2.2. Operator Panel Text: First Line in This Description

This name is the option as it appears under its particular menu grouping. In other words, you will see this short option name as line two on the Operator Panel. In our example, the first short option name looks like this:

```
Intervention
```

9.2.3. Operator Panel Text: Second Line in This Description

This name is what appears on line one on the Operator Panel after you have chosen the option from the level above. In our example, the second short option name looks like this:

```
INTERVENTION
```

9.2.4. Option Description

This section describes briefly what the option does. In our example:

An intervention is when the printer requires a user action. For example, if the printer is out of paper or if a paper jam has occurred.

9.2.5. Values

All possible values for the option are listed (in bold) in the order they appear with the factory default settings. When the Operator Panel shows the "second short option name" on line one, line two will display one of these settings.

From our example:

0	NORM	**Normal***	Interventions are reported back to the host. A paper jam is reported as a paper jam. Out of paper is reported as out of paper, etc.
1	OFF	**Offline**	Interventions are reported back to the host as off-line.

Note that one of the settings is marked in the manual with an asterisk (*). This means that this particular setting is a factory default. However, when you look at the Operator Panel, the asterisk (*) shows the currently active setting.

9.2.6. User IDB Language

This section shows how to use the *User IDB Language* to change option settings from a host terminal. This should only be done by an authorized technician.

User IDB is one of the two IDB Languages. It has a syntax rather like native AS/400 commands, but only covers a sub-set of the IDB. Information in the option descriptions is divided into “User IDB command” (syntax); “Parameter”; and “User IDB” (the full command line(s) needed). From our example:

User IDB command:	`INTSTAT <parameter>:`
Parameter:	`NORM, OFF`
User IDB:	`&%IDB_EDIT: INTSTAT NORM:EXIT`

9.2.7. Advanced IDB Language

This section shows how to use the *Advanced IDB Language* to change option settings from a host terminal. From our example:

Advanced IDB Language: `&%IDB_EDIT: OPTION 21:0:EXIT`

The examples used show the IDB command string corresponding to the factory default setting.

With the *Advanced IDB* command language it is possible to change all SCS settings and features of the protocol conversion tables. However, this should only be done by an authorized technician.

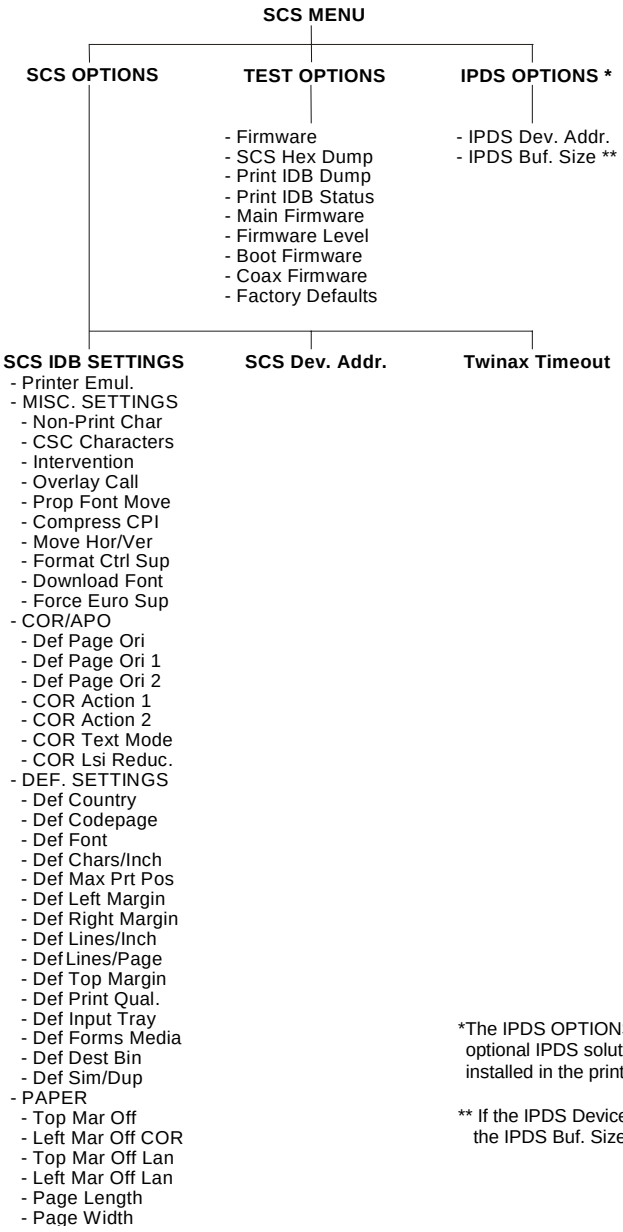
9.3. Detailed Descriptions of IPDS Options

The Twinax IPDS Options are described in *Chapter 12 Twinax IPDS OPTIONS,* page 115.

9.4. Detailed Descriptions of Test Options

The Twinax Test Options are described in *Chapter 13 Twinax TEST OPTIONS* beginning on page 116.

10. Twinax Operator Menu



*The IPDS OPTIONS sub-menu displays only if an optional IPDS solution supported by the adapter is installed in the printer.

** If the IPDS Device Address is set to Disable the IPDS Buf. Size setting will not display.

11. Twinax SCS OPTIONS (Setup)

11.1. Device Address (Twinax)

```
SCS Dev. Addr.
SCS DEV. ADDR.
```

This option is found directly under **SCS MENU > SCS OPTIONS.** It defines the device address, which must match the Twinax address used by your system. The address can not be the same as the IPDS Device Address.

1* 0 to 6, Disable

Note: If the SCS Device Address and the IPDS Device Address are the same, the word **DUPLICATE** is displayed in the panel. The SCS Device Address is used and the IPDS Device Address is ignored.

11.2. Twinax Timeout (Twinax Option 29)

```
Twinax Timeout
TWINAX TIMEOUT
```

This option is found directly under **SCS MENU > SCS OPTIONS.**

The interface stores the page setup of each job it receives. When this option is set to values other than 0 the interface will, when receiving a job after timeout, send the page setup of the previous job. This is done to prevent print jobs coming in between from other environments from affecting the formatting of the host jobs.

0	timeout 30 seconds, without restoring of page setup.
10 *	timeout 30 seconds, with restoring of page setup after 30 seconds. This applies to all values below 30.
31-255	timeout 31-255 seconds, with restoring of page setup after 31 - 255 seconds.

Note: The option should only be set to 0, if the printer is not shared.

User IDB command:	`TIMOUT <parameter>:`
Parameter:	`0 - 255`
User IDB:	`&%IDB_EDIT: TIMOUT 10:EXIT`
Advanced IDB Language:	`&%IDB_EDIT: OPTION 29:10:EXIT`

11.3. Printer Emulation (Twinax Option 10)

The following option is listed under **SCS MENU > SCS OPTIONS > SCS IDB SETTINGS.**

```
Printer Emul.
EMULATION
```

This option defines the printer emulation to be used by the Adapter for SCS. The printer emulation determines which printout functions can be used from AS/400. Maximum functionality is obtained by specifying 3812 emulation.

0	4214	**4214 Mod. 2**
1	5225	**5225 Mod. 1**
2	5224	**5224 Mod. 1**
3	5256	**5256 Mod. 3**
4	5219	**5219 D01/D02**
5	3812	**3812 Mod. 1***

User IDB command:	`PRTEMUL <parameter>:`
Parameter:	`3812, 5256, 5224, 5225, 4214, 5219`
User IDB:	`&%IDB_EDIT: PRTEMUL 3812:EXIT`
Advanced IDB Language:	`&%IDB_EDIT: OPTION 10:5:EXIT`

11.4. Twinax MISC. Sub-menu

The following options are listed under **SCS MENU > SCS OPTIONS > SCS IDB SETTINGS > MISC. SETTINGS**.

11.4.1. Non-Printable Character (Twinax Option 3)

```
Non-Print Char
NON-PRINT CHAR
```

This option defines the character to be used for unprintable characters in the data stream. The character is printed when the AS/400 sends an unprintable character or a character not supported by the printer.

hyphen* This is the default.

Appendix F. ASCII Character Table (extract) shows all possible characters.

User IDB command:	`UNPCHR <parameter>:`
Parameter:	all EBCDIC characters or a printable ASCII hex value
User IDB:	`&%IDB_EDIT: UNPCHR -:EXIT` `&%IDB_EDIT: UNPCHR /2D:EXIT`
Advanced IDB Language:	`&%IDB_EDIT: OPTION 3:45:EXIT`

11.4.2. CSC Characters (Twinax Options 8 and 9)

```
CSC Characters
&%IDB_EDIT:*
```

CSC is short for Command String Character. The CSC is a unique two-character sequence, which opens the internal editor in the interface. It must be used every time you want to send commands to the interface. The default values are "&" (option 8, 38 decimal) and "%" (option 9, 37 decimal).

The CSC is also used in front of the lead-in characters (OPTION 171/172) and for passing single hex values to the printer. (&%1B = <esc>). The colon ":" (option 7, 58 decimal) is the default for the IDB Edit Delimiter, which is used to separate programming commands. Use this option to change any of the three values underlined with a dashed line. The current value will blink as it changes.

&%IDB_EDIT:*

Appendix F. ASCII Character Table (extract) shows all possible characters.

In the advanced IDB example below several options are set at the same time. This is done by writing the number of the first option and separating the values for the preceding options with commas.

User IDB command:	not supported
Parameter:	all EBCDIC characters or a printable ASCII hex value
User IDB:	not supported
Advanced IDB Language:	`&%IDB_EDIT: OPTION 7:58,38,37: EXIT`

11.4.3. Intervention (Twinax Option 21)

```
Intervention
INTERVENTION
```

An intervention is when the printer requires a user action. For example, if the printer is out of paper or if a paper jam has occurred.

0	NORM	**Normal***	Interventions are reported back to the host. A paper jam is reported as a paper jam. Out of paper is reported as out of paper, etc.
1	OFF	**Offline**	Interventions are reported back to the host as off-line.

User IDB command:	`INTSTAT <parameter>:`
Parameter:	`NORM, OFF`
User IDB:	`&%IDB_EDIT: INTSTAT NORM:EXIT`
Advanced IDB Language:	`&%IDB_EDIT: OPTION 21:0:EXIT`

11.4.4. Overlay Call (Twinax Option 28)

```
Overlay Call
OVERLAY CALLS
```

Defines if an overlay call (predefined string) will be printed on the top of each page. The “overlay” may contain a call to an electronic form, a macro, or the string stated by the OVLDRW command itself. It has a maximum of 255 characters. A string for paper tray 1 and paper tray 2 can be defined.

When the overlay call is enabled, either OVLDRW command 1 or 2 will be executed at the top of each page. OVLDRW command 1 will be executed if paper tray 1 has been selected and OVLDRW command 2 will be executed if paper tray 2 has been selected.

0	OFF	**Disable***
1	ON	**Enable**

User IDB command:	`OVLCAL <parameter>:`
Parameter:	`ON, OFF`
User IDB:	`&%IDB_EDIT: OVLCAL OFF:EXIT`
Advanced IDB Language:	`&%IDB_EDIT: OPTION 28:0:EXIT`

11.4.5. Proportional Font Move (Twinax Option 118)

```
Prop Font Move
PROP FONT MOVE
```

Defines if the proportional font handling of the interface is to be disabled or enabled.

To use the AS/400 proportional fonts 155 - 175 from DisplayWrite/Office or a similar program, it is necessary that the interface has full control of the fonts in the printer.

The individual character width values of the printer's native fonts must correspond to the width value which the AS/400 expects the characters to have. The Adapter for SCS adjusts each character to obtain the correct width value. This is necessary to use bold text, underscored text, and to align the right margin.

Setting this option to **On** enables Proportional Font Move on all fonts. If you need to enable the function for only a single font, it is recommended to use the "P" value for the <spacing> parameter in the `PRGFNT` command (see *Appendix K.2 Twinax "Font" Programming Command*, page 155).

0	OFF	**Off***
1	ON	**On**

User IDB command:	`PRPFNTMOV <parameter>:`
Parameter:	`OFF, ON`
User IDB:	`&%IDB_EDIT: PRPFNTMOV OFF:EXIT`
Advanced IDB Language:	`&%IDB_EDIT: OPTION 118:0:EXIT`

11.4.6. Compress CPI (Twinax Option 128)

```
Compress CPI
COMPRESS CPI
```

Defines the compression of the horizontal character spacing. This command is made to compensate for the reduced printable area of the HP PCL emulation, and makes it possible to print 80 characters on a line using 10 CPI, 96 characters on a line using 12 CPI and 120 characters on a line using 15 CPI.

If compress CPI is enabled, the CPI is compressed as follows:

10 CPI => 10.2 CPI
12 CPI => 12.2 CPI
15 CPI => 15.3 CPI

Other values can be calculated like this:

Compressed CPI = (CPI * 50) / 49

0	OFF	**Off***
1	ON	**On**

User IDB command:	`COMCPI <parameter>:`
Parameter:	`OFF, ON`
User IDB:	`&%IDB_EDIT: COMCPI OFF:EXIT`
Advanced IDB Language:	`&%IDB_EDIT: OPTION 128:0:EXIT`

11.4.7. Movement Horizontal/Vertical (Twinax Option 158)

```
Move Hor/Ver
MOVE HOR/VER
```

0	HORMOV SP: VERMOV LF	**Space/Linefeed**	HOR uses space ; VER uses line feed
1	HORMOV ESC: VERMOV ESC	**Escape***	Both use escape sequence
2	HORMOV SP: VERMOV ESC	**Space/Escape**	HOR uses space; VER uses escape
3	HORMOV ESC: VERMOV LF	**Escape/Linefeed**	HOR uses escape; VER uses line feed

User IDB command:	`HORMOV / VERMOV <parameter>:`
Parameter:	For HORMOV `ESC` uses escape sequences; `SP` uses spaces For VERMOV `ESC` uses escape sequences; `LF` uses line feeds
User IDB:	`&%IDB_EDIT: HORMOV ESC: VERMOV ESC:EXIT`
Advanced IDB Language:	`&%IDB_EDIT: OPTION 158:1:EXIT`

11.4.8. Format Control Suppression (Twinax Option 177)

```
Format Ctrl Sup
FORMAT CTRL SUP
```

The “Auto newline” feature (formerly the “AutoNew” feature) encompasses CR (0x0D) and NL (0x0A). The “Auto newline” feature is enabled as default. If the printout is incorrectly spaced, disabling it will in most cases solve the problem.

0	ON	**AutoEna/HostEna ***
1	OFF	**AutoDis/HostEna**
2	-	**AutoEna/HostDis**
3	-	**AutoDis/HostDis**

User IDB command:	`CTLCODSUP <parameter>:`
Parameter:	`OFF, ON`
User IDB:	`&%IDB_EDIT: CTLCODSUP ON:EXIT`
Advanced IDB Language:	`&%IDB_EDIT: OPTION 177:0:EXIT`

Firmware versions before H02_9591 (released July 2001) allow only IDB Values 0 and 1. The suppression of NL after ATRN in both values existed without being explicitly documented.

The new values 2 and 3 pass CR/NL through the interface without suppression. Value 2 enables “AutoNew” while Value 3 disables it.

Values 2 and 3 are only available through *Advanced IDB.*

All 4 options enable Auto Form Feed (0x0C).

11.4.9. Download Font (Twinax Option 244)

```
Download Font
DOWNLOAD FONT
```

The interface includes six HP PCL soft fonts emulating various IBM fonts, as shown on the table below.

Font	IBM font no.	PCL font no.
OCR-B	003 +	10003
Boldface	155	10155
Boldface Italic	159 +	10159
Essay	160 +	10160
Essay Bold	163 +	10163
Document	175 +	10175

Note that the fonts marked with a "+" in the support the Euro character.

Enable means that these fonts will be downloaded to the printer at Power On. To get the desired result, the printer must be PCL-capable. Additional information is found in *Appendix K Managing the SCS Twinax Font Table*, page 154.

0 **Enable***
1 **Disable**

User IDB command: not supported
Parameter: not supported
User IDB: not supported
Advanced IDB Language: &%IDB_EDIT: OPTION 244:0:EXIT

11.4.10. Force Euro Support (Twinax Option 139)

```
Force Euro Sup
FORCE EURO SUP
```

This option controls whether Euro Support should be forced or not. If set to **Force**, the normal code pages are re-mapped to code pages containing the Euro character. This means that the international currency symbol is replaced with the Euro character in the EBCDIC code pages. Refer to the table below.

In order to be able to print the Euro character a font supporting the character also has to be selected and downloaded **(SCS MENU > SCS OPTIONS > SCS IDB SETTINGS > MISC.SETTINGS > Download Font)** to the printer. Refer to *section 11.4.9 Download Font* (page 89) and *section 11.6.3 Default Font* (page 99).

Country	Normal code pages	Re-mapped code pages
USA/Canada	037	1140
Austria/Germany	273	1141
Denmark/Norway	277	1142
Finland/Sweden	278	1143
Italy	280	1144
Spain	284	1145
UK	285	1146
France	297	1147
Multinational	500	1148
Iceland	871	1149

0 OFF **Normal ***
1 ON **Force**

User IDB command: `EURSUP <parameter>`
Parameter: `OFF, ON`
User IDB: `&%IDB_EDIT: EURSUP OFF:EXIT`
Advanced IDB Language: `&%IDB_EDIT: OPTION 139:0:EXIT`

11.5. Twinax COR/APO Sub-menu

The following options are listed under **SCS MENU > SCS OPTIONS > SCS IDB SETTINGS > COR/APO SETTINGS.**

COR = Computer Output Reduction
APO = Automatic Page Orientation

11.5.1. Default Page Orientation (Twinax Option 120)

```
Def Page Ori
DEF PAGE ORIENT
```

Selects the default page orientation. It is only used at Power On and in most cases it will be replaced by a value selected from the system.

0	DEF	**Default* (DEF = the current setting in the printer)**
1	POR	**Portrait**
2	LAN	**Landscape**

User IDB command:	`DEFORT <parameter>:`
Parameter:	`DEF, POR, LAN`
User IDB:	`&%IDB_EDIT: DEFORT DEF:EXIT`
Advanced IDB Language:	`&%IDB_EDIT: OPTION 120:0:EXIT`

11.5.2. Default Page Orientation 1 (Twinax Option 121)

```
Def Page Ori 1
DEF PAGE ORI 1
```

Selects the default page orientation for paper tray 1. This option is only used when the APO/COR (Automatic Page Orientation / Computer Output Reduction) function is disabled with the COR Action 1 command.

0	DEF	**Default (DEF = the current setting in the printer)**
1	POR	**Portrait***
2	LAN	**Landscape**

User IDB command:	`ORTDRW 1 <parameter>:`
Parameter:	`DEF, POR, LAN`
User IDB:	`&%IDB_EDIT: ORTDRW 1 POR:EXIT`
Advanced IDB Language:	`&%IDB_EDIT: OPTION 121:1:EXIT`

11.5.3. Default Page Orientation 2 (Twinax Option 122)

```
Def Page Ori 2
DEF PAGE ORI 2
```

Selects the default page orientation for paper tray 2. This option is only used when the APO/COR (Automatic Page Orientation/ Computer Output Reduction) function is disabled with the COR Action 2 command.

0	DEF	**Default (DEF = the current setting in the printer)**
1	POR	**Portrait***
2	LAN	**Landscape**

User IDB command:	`ORTDRW 2 <parameter>:`
Parameter:	`DEF, POR, LAN`
User IDB:	`&%IDB_EDIT: ORTDRW 2 POR:EXIT`
Advanced IDB Language:	`&%IDB_EDIT: OPTION 122:1:EXIT`

11.5.4. Computer Output Reduction Action 1 (Twinax Option 123)

```
COR Action 1
COR ACTION 1
```

Defines how the APO/COR function (Automatic Page Orientation/Computer Output Reduction) should function for paper tray 1.

With this command it is possible to disable the APO/COR function so that the page orientation change only can be made manually. It is also possible to select between Landscape and Portrait (APO) only, or it can be stated that automatic reduction (COR) should be performed as well. Refer to *Appendix E.COR/APO Logic (Twinax)* for further information.

When APO is selected, the APO interface calculates the print area required for printing the document. If the document will not fit on the page in portrait orientation, it will change the orientation to landscape. COR will perform the same function, but when the document will not fit in either orientation, COR will compress the page to make it fit. If the page cannot be made to fit, the setting of the *Default Page Orientation 1* option is used.

0	OFF	**Off**	Disable APO/COR
1	COR	**COR/APO On***	Enable APO/COR
2	APO	**APO On**	Enable only APO commands
3	STODIS	**STO Disable**	Ignore all text orientation commands

User IDB command:	`CORDRW 1 <parameter>:`
Parameter:	`OFF, COR, APO, STODIS`
User IDB:	`&%IDB_EDIT: CORDRW 1 COR:EXIT`
Advanced IDB Language:	`&%IDB_EDIT: OPTION 123:1:EXIT`

11.5.5. Computer Output Reduction Action 2 (Twinax Option 124)

```
COR Action 2
COR ACTION 2
```

Defines how the APO/COR function (Automatic Page Orientation/Computer Output Reduction) should function for paper tray 2.

With this command it is possible to disable the APO/COR function so that the page orientation change only can be made manually. It is also possible to select between Landscape and Portrait (APO) only, or it can be stated that automatic reduction (COR) should be performed as well. Refer to *Appendix E.COR/APO Logic (Twinax)* for further information.

When APO is selected, the APO interface calculates the print area required for printing the document. If the document will not fit on the page in portrait orientation, it will change the orientation to landscape. COR will perform the same function, but when the document will not fit in either orientation, COR will compress the page to make it fit. If the page cannot be made to fit, the setting of the *Default Page Orientation 2* option is used.

0	OFF	**Off**	Disable APO/COR
1	APO	**APO On**	Enable only APO commands
2	COR	**COR/APO On***	Enable APO (COR) (output reduction after APO)
3	STODIS	**STO Disable**	Ignore all text orientation commands

User IDB command:	`CORDRW 2 <parameter>:`
Parameter:	`OFF, COR, APO, STODIS`
User IDB:	`&%IDB_EDIT: CORDRW 2 COR:EXIT`
Advanced IDB Language:	`&%IDB_EDIT: OPTION 124:2:EXIT`

11.5.6. Computer Output Reduction Text Mode (Twinax Option 126)

```
Cor Text Mode
COR TEXT MODE
```

This option gives you the ability to disable text mode in the APO/COR function. At the APO/COR function the print quality parameter is used (text mode on/off) to disable/enable computer output reduction mode. To print in computer output reduction mode, the print quality must be set to “Data Processing” (Text mode off.) If you select “Letter Quality” or “Draft” (Text mode on) the computer output reduction mode will be disabled and the print job will be printed in Portrait orientation (Text mode.) As it will not always be possible to control the print quality of the print jobs, which are being printed from the AS/400, this option is used to disable text mode. When text mode is disabled the APO/COR function will ignore the print quality parameter and print out all print jobs fulfilling the requirements in computer output reduction mode. Refer to *Appendix E.COR/APO Logic (Twinax)* for further information.

0	OFF	**Off***	Normal IBM interpretation
1	ON	**On**	Ignore the system TEXT parameter
2	APO	**APO On**	Observe TEXT parameter in APO as well

User IDB command:	`TXTMOD <parameter>:`
Parameter:	`OFF, ON, APO`
User IDB:	`&%IDB_EDIT: TXTMOD OFF:EXIT`
Advanced IDB Language:	`&%IDB_EDIT: OPTION 126:0:EXIT`

11.5.7. Computer Output LSI Reduction (Twinax Option 127)

```
COR Lsi Reduc.
COR LSI REDUC.
```

Defines the reduction percent of the line spacing in Computer Output Reduction mode.

When you print in COR mode, the line spacing is normally reduced to 70% of the normal line spacing.

This option enables you to select another reduction percent. The option value indicates the percent to which you are going to reduce in relation to the normal line spacing. If 62 is selected, the line spacing is reduced to 62% of the original value (100%.)

70 * [1..100]

User IDB command:	`LINSPRED <parameter>:`
Parameter:	1 - `100` percent of normal line spacing
User IDB:	`&%IDB_EDIT: LINSPRED 70:EXIT`
Advanced IDB Language:	`&%IDB_EDIT: OPTION 127:70:EXIT`

11.6. Twinax DEF. SETTINGS Sub-menu

The following options are listed under **SCS MENU > SCS OPTIONS > SCS IDB SETTINGS > DEF. SETTINGS.**

Note: These settings will in most cases be replaced by values selected from the system. The Code Page (*section 11.6.2*, page 98) always has higher priority than the Country Code .

11.6.1. Country Code (Twinax Option 2)

```
Def Country
DEF COUNTRY
```

This option defines the default character set used. Country definition by “Country code” is used on certain systems and applications migrated from these systems.

0	Multinational *
1	USA/Canada
2	Aus/Germany
3	Belgium
4	Brazil
5	Canadian French
6	Denmark/Norway
7	Finland/Sweden
8	France
9	Italy
10	Japan (English)
11	USA/Canada Alt
12	Portugal
13	Spain
14	Spanish Speak
15	UK

User IDB command: `DEFCNTCOD <parameter>:`
Parameter: `0 - 15`
User IDB: `&%IDB_EDIT: DEFCNTCOD 0:EXIT`
Advanced IDB Language: `&%IDB_EDIT: OPTION 2:0:EXIT`

11.6.2. Code Page (Twinax Options 240 and 241)

```
Def Codepage
DEF CODEPAGE
```

If Euro Support has been forced with the **Force Euro Support** option, the code pages 37, 273, 277, 278, 280, 284, 285, 297, 500 and 871 are remapped to the code pages 1140 – 1149. Refer to the option description on page 89.

Note: The Code Page always has higher priority than the Country Code. It defines the code page/character set used. AS/400 computers commonly use country definition by Code Page.

500	**500-Multi ***	340	**340-OCR**
037	**037-USA/Canda**	871	**871-Iceland**
259	**259-Math**	1023	**1023-Turkey**
273	**273-AUS/GER**	1140	**1140-USA/Can**
274	**274-Belgium**	1141	**1141-AUS/GER**
275	**275-Brazil**	1142	**1142-DEN/NOR**
277	**277-DEN/NOR**	1143	**1143-FIN/SWE**
278	**278-FIN/SWE**	1144	**1144-Italy**
280	**280-Italy**	1145	**1145-Spain**
281	**281-JAP ENG**	1146	**1146-UK**
282	**282-Portugal**	1147	**1147-France**
284	**284-Spain**	1148	**1148-Multi.**
285	**285-UK**	1149	**1140-Iceland**
297	**297-France**		

User IDB command: `DEFCODPAG <parameter>:`
Parameter: code representing country
User IDB:
```
&%IDB_EDIT: DEFCODPAG 500:EXIT
```
Advanced IDB Language:
```
&%IDB_EDIT: OPTION 240:244:
OPTION 241:1:EXIT
```

The values stored in option 240 and 241 are found like this:

240: [Code Page] – (256 * ([Code page] / 256))
241: [Code Page] / 256 *Reduce* result to nearest whole number.

The option values for setting the code page to "500" are calculated like this:

240: 500 – (256 * 1) = 244
241: 500 / 256 ≈ 1

11.6.3. Default Font (Twinax Options 242 and 243)

```
Def Font
DEFAULT FONT
```

Selects which font is the current default using the Font ID. In 5219/3812 mode this setting is overwritten by the first control buffer from the system. Only the Font ID displays in the operator panel. The names will not display. This menu is dynamic. It reflects the fonts on the IDB font table. The range of numbers visible on the operator panel is from 3 to 253. There is another list of fonts not visible on the panel, but still accessible with the IDB Commands. They are listed after font number 253 in the second column.

Fonts marked with a "+" in the table below support the Euro character.

Font ID	IBM Font	Font ID	IBM Font
3	OCR-B +	204	Gothic-text 13
11*	Courier 10	221	Prestige 15
18	Courier Italic 10	222	Gothic 15
39	Gothic-text bold	223	Courier 15
40	Gothic-text 10	230	Gothic-text 15
46	Courier bold 10	244	Courier 5
66	Gothic-text 12	245	Courier bold 5
68	Gothic-text Italic	252	Courier 17
69	Gothic-text bold 12	253	Courier bold 17
85	Courier 12		
87	Letter-gothic 12	281	Gothic Text 20
110	Letter-gothic bold 12	290	Gothic Text 27
111	Prestige bold 12	751	Sonoran Serif 8
112	Prestige Italic 12	1051	Sonoran Serif 10
155	Boldface Italic	1053	Sonoran Serif Bold 10
159	Boldface +	1056	Sonoran Serif Italic 10
160	Essay +	1351	Sonoran Serif 12
163	Essay bold +	1653	Sonoran Serif Bold 16
175	Document +	2103	Sonoran Serif Bold 24

User IDB command: `DEFFNT <parameter>:`
Parameter: `3 – 2103` as listed above
User IDB:
```
&%IDB_EDIT: DEFFNT 11:EXIT
```
Advanced IDB Language:
```
&%IDB_EDIT: OPTION 242:11:
OPTION 243:0:EXIT
```

The values stored in option 242 and 243 are found like this:

242: [Font ID] – (256 * ([Font ID] / 256))
243: [Font ID] / 256 *Reduce* result to nearest whole number.

Setting the default font to "Courier 10" gives:

242: 11 – (256 * 0) = 11
243: 11 / 256 ≈ 0

11.6.4. Default Characters Per Inch (Twinax Option 100)

```
Def Chars/Inch
DEF CHARS/INCH
```

Selects the default CPI (characters per inch). Default CPI is used when the default CPI is selected from the AS/400 and when the printer is Powered On.

10 **10 CPI***
12 **12 CPI**
15 **15 CPI**
16 **16.7 CPI**

User IDB command: `DEFCPI <parameter>:`
Parameter: `10, 12, 15, 16`
User IDB: `&%IDB_EDIT: DEFCPI 10:EXIT`
Advanced IDB Language: `&%IDB_EDIT: OPTION 100:10:EXIT`

11.6.5. Default Maximum Printing Position (Twinax Option 102)

```
Def Max Prt Pos
DEF MAX PRT POS
```

Defines the maximum horizontal print position on the paper. Default maximum print position is used when the printer is Powered On and the default value is selected from the AS/400.

80* [0..255]

User IDB command:	`DEFMPP <parameter>:`
Parameter:	`0 - 255`
User IDB:	`&%IDB_EDIT: DEFMPP 80:EXIT`
Advanced IDB Language:	`&%IDB_EDIT: OPTION 102:80:EXIT`

11.6.6. Default Left Margin (Twinax Option 103)

```
Def Left Margin
DEF LEFT MARGIN
```

Defines the left default margin in characters. The default left margin is only used at start up of the printer.

0* [0..255]

User IDB command:	`DEFLFTMRG <parameter>:`
Parameter:	`0 - 255`
User IDB:	`&%IDB_EDIT: DEFLFTMRG 0:EXIT`
Advanced IDB Language:	`&%IDB_EDIT: OPTION 103:0:EXIT`

11.6.7. Default Right Margin (Twinax Option 104)

```
Def Right Margin
DEF RIGHT MARGIN
```

Defines the right default margin in characters. The default right margin is only used at start up of the printer.

0* [0..255]

User IDB command:	`DEFRGTMRG <parameter>:`
Parameter:	`0 - 255`
User IDB:	`&%IDB_EDIT: DEFRGTMRG 0:EXIT`
Advanced IDB Language:	`&%IDB_EDIT: OPTION 104:0:EXIT`

11.6.8. Default Lines Per Inch (Twinax Option 105)

```
Def Lines/Inch
DEF LINES/INCH
```

Selects the default number of lines per inch (LPI.) Default LPI is only used at start up of the printer.

6 **6 LPI***
8 **8 LPI**
9 **9 LPI**

User IDB command:	`DEFLPI <parameter>:`
Parameter:	`6, 8, 9`
User IDB:	`&%IDB_EDIT: DEFLPI 6:EXIT`
Advanced IDB Language:	`&%IDB_EDIT: OPTION 105:6:EXIT`

11.6.9. Default Lines Per Page (Twinax Option 107)

```
Def Lines/Page
DEF LINES/PAGE
```

This option determines the default number of lines per page.

68* [0..255]

User IDB command:	`DEFLPP <parameter>:`
Parameter:	`0 - 255`
User IDB:	`&%IDB_EDIT: DEFLPP 68:EXIT`
Advanced IDB Language:	`&%IDB_EDIT: OPTION 107:68:EXIT`

11.6.10. Default Top Margin (Twinax Option 108)

```
Def Top Margin
DEF TOP MARGIN
```

Defines the default top margin in lines. The default top margin is only used at start up of the printer.

0* [0..255]

User IDB command:	`DEFTOPMRG <parameter>:`
Parameter:	`0 - 255`
User IDB:	`&%IDB_EDIT: DEFTOPMRG 0:EXIT`
Advanced IDB Language:	`&%IDB_EDIT: OPTION 108:0:EXIT`

11.6.11. Default Print Quality (Twinax Option 112)

```
Def Print Qual.
DEF PRINT QUAL.
```

Selects the default print quality. The default print quality is only used at start up of the printer.

In the 5219/3812 emulation the Print Quality parameter in combination with COR Text Mode is used to enable and disable the APO/COR function (the Automatic Page Orientation/Computer Output Reduction.)

0	DEF	**Default* (DEF = the current setting in the printer)**
1	DRF	**Draft**
2	DP	**Data Proc.**
3	LQ	**Letter Qual.**

User IDB command:	`DEFPRTQLT <parameter>:`
Parameter:	`DEF, DRF, DP, LQ`
User IDB:	`&%IDB_EDIT: DEFPRTQLT DEF:EXIT`
Advanced IDB Language:	`&%IDB_EDIT: OPTION 112:0:EXIT`

11.6.12. Default Input Tray (Twinax Option 113)

```
Def Input Tray
DEF INPUT TRAY
```

Selects the default paper input tray. This is only used at start up of the printer. This setting will trigger definitions made by the Source Drawer (SRCDRW) command.

The parameter values 4 – 8 cannot be selected via the operator panel. They can only be chosen via the IDB commands below. The IDB commands trigger IDB Events 74 – 78, which corresponds to the parameter values 4 – 8. The events can be set to point to any string. The string pointed to should of course contain a string, which selects a specific tray in the printer. IDB Events are explained in the *IDB Technical Reference*.

0	DEF	**Default Tray***
	(DEF = the current setting in the printer)	
1	1	**Tray 1**
2	2	**Tray 2**
3	3	**Tray 3**

User IDB command:	`DEFSRCDRW <parameter>:`
Parameter:	`DEF, 1, 2, 3, 4, 5, 6, 7, 8`
User IDB:	`&%IDB_EDIT: DEFSRCDRW DEF:EXIT`
Advanced IDB Language:	`&%IDB_EDIT: OPTION 113:0:EXIT`

11.6.13. Default Forms Media (Twinax Option 114)

```
Def Forms Media
DEF FORMS MEDIA
```

Selects the default paper tray. This is only used at start up of the printer. This setting will trigger definitions made by the Select Media (SLTMED) command.

0	DEF	**Default* (DEF = the current setting in the printer)**
1	PAP	**Paper**
2	ENV	**Envelope**

User IDB command:	`DEFFRMSEL <parameter>:`
Parameter:	`DEF, PAP, ENV`
User IDB:	`&%IDB_EDIT: DEFFRMSEL DEF:EXIT`
Advanced IDB Language:	`&%IDB_EDIT: OPTION 114:0:EXIT`

11.6.14. Default Destination Bin (Twinax Option 115)

```
Def Dest Bin
DEF DEST BIN
```

Selects default paper output bin. This is only used at start up of the printer. This setting will trigger definitions made by the Destination Drawer (DSTDRW) command.

DEF	**Default Bin* (DEF = the current setting in the printer)**
1	**Bin 1**
2	**Bin 2**
3	**Bin 3**

User IDB command:	`DEFDSTDRW <parameter>:`
Parameter:	`DEF, 1, 2, 3`
User IDB:	`&%IDB_EDIT: DEFDSTDRW DEF:EXIT`
Advanced IDB Language:	`&%IDB_EDIT: OPTION 115:0:EXIT`

11.6.15. Default Simplex/Duplex (Twinax Option 116)

```
Def Sim/Dup
DEF SIM/DUP
```

Selects default simplex or duplex print. It is only used at start up of the printer. This setting will trigger definitions made by the Select Simplex/Duplex Printing (SLTSIMDUP) command. The tumble setting is used for pages connected or bound at the top.

0	DEF	**Default* (DEF = the current setting in the printer)**
1	SIM	**Simplex**
2	DUP	**Duplex**
3	TUM	**Tumble**

User IDB command:	`DEFSIMDUP <parameter>:`
Parameter:	`DEF, SIM, DUP, TUM`
User IDB:	`&%IDB_EDIT: DEFSIMDUP DEF:EXIT`
Advanced IDB Language:	`&%IDB_EDIT: OPTION 116:0:EXIT`

11.7. Twinax PAPER SETTINGS Sub-menu

The following options are listed under **SCS MENU** > **SCS OPTIONS** > **SCS IDB SETTINGS** > **PAPER SETTINGS**.

11.7.1. Top Margin Offset in COR (Twinax Options 80 and 81)

```
Top Mar Off COR
TOP MAR OFF COR
```

Defines which offset must be added to the top margin when printing in Computer Output Reduction mode. COR is a feature that allows data processing reports to fit on A4 size paper. 1 inch = 1440.

0* [0..2880] 2880: 2880 / 1440 = 2 inches

User IDB command: `TOPOFFCOR <parameter1> <parameter2>:`

Parameter 1: "`I`" for inches "`C`" for centimeters
Parameter 2: Value in inches or centimeters with 2 decimals (`0.00 .. 2.00`).
User IDB: `&%IDB_EDIT: TOPOFFCOR I 0.00:EXIT`
Advanced IDB Language: `&%IDB_EDIT: OPTION 80:0: OPTION 81:0:EXIT`

If you require a Top Margin Offset in COR of one inch, the option values are calculated like this:

80: [Marg. inch * 1440] – (256 * ([Marg. inch * 1440] / 256))
81: [Marg. inch * 1440] / 256 *Reduce* this result in both equations to nearest whole number.

80: (1 * 1440) – (256 * ([1 * 1440] / 256)) = 160
81: (1 * 1440) / 256 ≈ 5

Note: Inches can be converted to centimeters by dividing with 0.3937 (1 cm = 0.3937 inch).

Refer to *Appendix E.COR/APO Logic (Twinax)* for further information.

11.7.2. Left Margin Offset in COR (Twinax Options 78 and 79)

```
Left Mar Off COR
LEFT MAR OFF COR
```

Defines which offset must be added to the left margin when printing in Computer Output Reduction mode. COR is a feature that allows data processing reports to fit on A4 size paper. 1 inch = 1440.

634* [0..2880] 634: 634 / 1440 = 0.440 inches

User IDB command:	`LFTOFFCOR <parameter1> <parameter2>:`
Parameter 1:	"`I`" for inches "`C`" for centimeters
Parameter 2:	Value in inches or centimeters with 2 decimals (`0.00 .. 2.00`).
User IDB:	`&%IDB_EDIT: LFTOFFCOR I 0.44:EXIT`
Advanced IDB Language:	`&%IDB_EDIT: OPTION 78:122: OPTION 79:2:EXIT`

The option values are calculated like this:

78: [Marg. inch * 1440] – (256 * ([Marg. inch * 1440] / 256))
79: [Marg. inch * 1440] / 256 *Reduce* this result in both equations to nearest whole number.

78:	(0.440 * 1440) – (256 * ([0.440 * 1440] / 256))	=	122
79:	(0.440 * 1440) / 256	≈	2

Note: Inches can be converted to centimeters by dividing with 0.3937 (1 cm = 0.3937 inch).

Refer to *Appendix E.COR/APO Logic (Twinax)* for further information.

11.7.3. Top Margin Offset In Landscape (Twinax Options 88 and 89)

```
Top Mar Off Lan
TOP MAR OFF LAN
```

Defines which offset must be added to top margin when printing in Landscape mode. 1 inch = 1440.

147* [0..2880] 147: 147 / 1440 = 0.102 inches

User IDB command:	`TOPOFFLAN <parameter1> <parameter2>:`
Parameter 1:	"`I`" for inches "`C`" for centimeters
Parameter 2:	Value in inches or centimeters with 2 decimals (`0.00 .. 2.00`).
User IDB:	`&%IDB_EDIT: TOPOFFLAN I 0.10:EXIT`
Advanced IDB Language:	`&%IDB_EDIT: OPTION 88:147: OPTION 89:0:EXIT`

The option values are calculated like this:

88: [Marg. inch * 1440] – (256 * ([Marg. inch * 1440] / 256))
89: [Marg. inch * 1440] / 256 *Reduce* this result in both equations to nearest whole number.

88: (0.102 * 1440) – (256 * ([0.102 * 1440] / 256)) ≈ 147
89: (0.102 * 1440) / 256 ≈ 0

Note: Inches can be converted to centimeters by dividing with 0.3937 (1 cm = 0.3937 inch).

Refer to *Appendix E.COR/APO Logic (Twinax)* for further information.

11.7.4. Left Margin Offset in Landscape (Twinax Options 86 and 87)

```
Left Mar Off Lan
LEFT MAR OFF LAN
```

Defines which offset must be added to the left margin when printing in Landscape mode. 1 inch = 1440.

0* [0..2880] 2880: 2880 / 1440 = 2 inches

User IDB command: `LFTOFFLAN <parameter1> <parameter2>:`

Parameter 1: "`I`" for inches "`C`" for centimeters
Parameter 2: Value in inches or centimeters with 2 decimals (`0.00 .. 2.00`).
User IDB: `&%IDB_EDIT: LFTOFFLAN I 0.00:EXIT`
Advanced IDB Language: `&%IDB_EDIT: OPTION 86:0: OPTION 87:0:EXIT`

If you require a Left Margin Offset in Landscape of one inch, the option values are calculated like this:

86: [Marg. inch * 1440] – (256 * ([Marg. inch * 1440] / 256))
87: [Marg. inch * 1440] / 256 *Reduce* this result in both equations to nearest whole number.

86:	(1 * 1440) – (256 * ([1 * 1440] / 256))	=	160
87:	(1 * 1440) / 256	≈	5

Note: Inches can be converted to centimeters by dividing with 0.3937 (1 cm = 0.3937 inch).

Refer to *Appendix E.COR/APO Logic (Twinax)*for further information.

11.7.5. Physical Page Length (Twinax Options 82 and 83)

```
Page Length
PAGE LENGTH
```

Defines the physical page length of the paper placed in the printer.

The page length is used, together with the page width, by APO/COR (Automatic Page Orientation function/Computer Output Reduction) to calculate the page orientation.

A4*	297 mm	(11.7 inches)
Letter	279.4mm	(11 inches)
Legal	355.6mm	(14 inches)
Executive	266.7mm	(10.5 inches)

User IDB command:	`PAGLNG <parameter1> <parameter2>:`
Parameter 1:	"`I`" for inches "`C`" for centimeters
Parameter 2:	Value in inches or centimeters with 2 decimals (`0.00 .. 99.99`).
User IDB:	`&%IDB_EDIT: PAGLNG C 29.70:EXIT`
Advanced IDB Language:	`&%IDB_EDIT: OPTION 82:208: OPTION 83:65:EXIT`

The option values are calculated like this: (1 inch = 1440)

82:	[Length inch * 1440] – (256 * ([Length inch * 1440] / 256))	
83:	[Length inch * 1440] / 256	*Reduce* this result in both equations to nearest whole number.

82:	(11.7 * 1440) – (256 * ([11.7 * 1440] / 256))	=	208
83:	(11.7 * 1440) / 256	≈	65

Note: Inches can be converted to centimeters by dividing with 0.3937 (1 cm = 0.3937 inch).

Refer to *Appendix E.COR/APO Logic (Twinax)* for further information.

11.7.6. Physical Page Width (Twinax Options 84 and 85)

```
Page Width
PAGE WIDTH
```

Defines the physical page width of the paper placed in the printer.

The page width is used, together with the page length, by APO/COR (Automatic Page Orientation function/Computer Output Reduction) to calculate the page orientation.

A4*	210 mm	(8.27 inches)
Letter/Legal	215.9 mm	(8.5 inches)
Executive	184.2 mm	(7.25 inches)

User IDB command: `PAGWDT <parameter1> <parameter2>:`

Parameter 1: "`I`" for inches "`C`" for centimeters
Parameter 2: Value in inches or centimeters with 2 decimals (`0.00 .. 99.99`).
User IDB: `&%IDB_EDIT: PAGWDT C 21.00:EXIT`
Advanced IDB Language:

```
&%IDB_EDIT: OPTION 84:132:
OPTION 85:46:EXIT
```

The option values are calculated like this: (1 inch = 1440)

84: [Width inch * 1440] – (256 * ([Width inch * 1440] / 256))
85: [Width inch * 1440] / 256 *Reduce* this result in both equations to nearest whole number.

84:	(8.27 * 1440) – (256 * ([8.27 * 1440] / 256))	=	132
85:	(8.27 * 1440) / 256	≈	46

Note: Inches can be converted to centimeters by dividing with 0.3937 (1 cm = 0.3937 inch).

Refer to *Appendix E.COR/APO Logic (Twinax)* for further information

12. Twinax IPDS OPTIONS

The following two settings are listed under **SCS MENU > IPDS OPTIONS**. This menu only displays when an optional IPDS feature supported by the adapter is installed.

12.1. IPDS Device Address

```
IPDS Dev. Addr.
IPDS DEV. ADDR.
```

This option defines the device address, which must match the Twinax address used by your system. It cannot be the same as the SCS device address.

0* 0 to 6, Disable

Note: If the SCS Device Address and the IPDS Device Address are the same, the word **DUPLICATE** will display in the panel. The SCS Device Address is used and the IPDS Device Address is ignored.

12.2. IPDS Buffer Size

```
IPDS Buf. Size
IPDS BUF. SIZE
```

This option defines the size of the IPDS input buffer. The setting only displays when an optional IPDS feature supported by the adapter is installed and when the IPDS Device Address (**IPDS Dev. Addr.**) has been set to a number between 0 and 6. If the IPDS Device Address has been set to **Disable**, the option does not display.

256 Bytes
1024 Bytes*

13. Twinax TEST OPTIONS

The following settings are listed under **SCS MENU > TEST OPTIONS**.

13.1. Firmware Summary

```
Firmware Summary
PRT ALL REVISION
```

This option prints out a short report listing the revision information; *section C.2 Firmware File Names and Releases* describes conventions for names and releases.

Cancel
Print

13.2. SCS Hex Dump

```
SCS Hex Dump
SCS HEX DUMP
```

This option enables hex tracing. It can be used to diagnose print job problems. With Hex Dump selected, all data sent to the printer is printed in hexadecimal and character representation. Control codes are not executed.

When using this option, it is recommended to Power the printer Off and On, in order to get the Power On initialization data in the dump also.

Cancel*
Enable

13.3. Print IDB Dump

```
Print IDB Dump
PRINT IDB DUMP
```

This option prints a long report in tabular form relating option numbers to your current. Print this report when asked by technical support representatives

Cancel*
Print

User IDB: `&%IDB_PRINT_FULL:EXIT`

13.4. Print IDB Status

```
Print IDB Status
PRINT IDB STATUS
```

This option prints a report listing your current settings. Print this report to check your settings or when asked by technical support representatives.

Print Short Stat (2 pages)
Print Long Stat (All pages. Approx. 10 pages incl. font list)
Cancel *

User IDB: `&%IDB_PRINT:EXIT` (short)
User IDB: `&%IDB_PRINT_FULL:EXIT` (long)

13.5. Main Firmware

```
Main Firmware
MAIN FIRMWARE
```

This option displays the current Twinax firmware revision information. For example: **H02-8491**

13.6. Firmware Level

```
Firmware Level
FIRMWARE LEVEL
```

This option displays the current firmware level. For example: **Level 31.0**.

13.7. Boot Firmware Revision

```
Boot Firmware
BOOT FIRM. REV.
```

This option displays the current boot firmware revision information. For example: **H00-7301**

13.8. Coax Firmware

```
Coax Firmware
COAX FIRM. REV.
```

This option displays the current Coax firmware revision information. For example: **H01-9561**

13.9. Factory Defaults

```
Factory Defaults
FACTORY DEFAULTS
```

Select this option to restore the Factory SCS IDB settings. Select **Restore**. You will need to Power the printer Off and On for the defaults to become active.

Do Not Restore*
Restore

14. Troubleshooting

14.1. Printer

If your printer is not working properly:

Turn off the printer for 10 seconds and then turn it back on.

Print a menu settings page for the printer itself. If it prints, the problem is probably in the network or the cabling leading to the printer. If the menu settings page does not print, the problem may be in the printer. Consult the manual for your printer.

14.2. Adapter

If the printer is working properly, but the Adapter for SCS is not, you may need to contact Technical Support.

Technical Support may ask you to print out a status page showing current settings, a detailed IDB report or both. An IDB report contains information in tabular form relating option numbers to current settings; it fills about 8 –12 pages.

Printing a report is an action under the **TEST OPTIONS** sub-menu of the **SCS MENU**.

Coax: To print a status page select **SCS Status Page**. This is a single page report consisting of a listing of options (organized according to the menu hierarchy) with current settings for each option. To print the detailed IDB report, select **SCS IDB Dump**. If the technician wants an **SCS Hex Dump** you will also find that within the **TEST OPTIONS** sub-menu.

Twinax: To print the status pages select **Print IDB Status**. Two types of reports are available: The short report has 2 pages. The long report includes all pages (about 10), including font list. To print the detailed IDB report, select **Print IDB Dump**. If the technician wants an **SCS Hex Dump** you will also find that within the **TEST OPTIONS** sub-menu.

GENERAL APPENDICES

A. Technical Specifications

A.1. General Hardware Features

- Intel i960 Processor at 16 MHz
- 4 MIPS Performance
- 128 Kbytes RAM
- 512 Kbyte Flash Memory for Microcode

A.2. Product Description

The Coax/Twinax Adapter for SCS is a PCI based option card that provides several different kinds of laser printers with SCS data stream capabilities using either a Coax or Twinax printer connection.

With the Adapter for SCS installed, the printer becomes an IBM host workstation printer capable of printing IBM legacy application output from an AS/400, System/370, or System/390 computer.

Emulations: The Coax/Twinax Adapter for SCS supports common IBM printer emulations dependent on attachment:

- Twinax attachment
  - IBM 3812-01 in 5219 mode
  - IBM 5219 model D01/D02
  - IBM 4214-02
  - IBM 5225-01
  - IBM 5224-01
  - IBM 5256-03

- Coax attachment
  - IBM 3812-01 (non-IPDS)
  - IBM 4224-01 (non-IPDS)
  - IBM 3287
  - IBM 3268
  - IBM 4214
  - IBM 3262
  - IBM 3230

For the Coax attachment, the DSC/DSE data streams are supported in addition to the SCS (SNA Character String) data stream.

The adapter automatically detects the type of cable (Coax or Twinax) that is used to connect the printer to the IBM host.

With SmartSwitch auto emulation sensing, the printer automatically switches to the right language for the document to be printed whether it's with IPDS, PostScript or PCL® 6, when the printer is connected to a network as well as an IBM host.

The adapter firmware can be upgraded to meet the customer's needs.

A.3. Compatibility

- When the Adapter for SCS is emulating an IBM printer, the function supported depends on the IBM host software.

- The Adapter for SCS uses PCL fonts from the printer for IBM host fonts. The default resolution of the printer determines the resolution of the SCS data and its PCL fonts.

A.3.1. IBM Features Supported

- Coax attachment
  - GDDM
  - Computer Output Reduction (COR)
  - Automatic Page Orientation (APO)
  - SCS (LU1) and 3270 (LU3) datastream
  - EAB (Extended Attribute Buffer)
  - APL-2
  - RPQs for 3287, 3268 and 4214
  - Structured field and query
  - Draft, NLQ and LQ modes
  - 3 bin paper input

- Twinax attachment
  - Computer Output Reduction (COR)
  - Automatic Page Orientation (APO)
  - IBM 3812 font selection

- IBM code pages incl. "box drawing"
- IBM virtual printer transparency
- SCS/DCA L2 data stream incl. Page Presentation Media commands and duplex
- 3 bin paper input
- 3812 softfonts: 003 (OCR-B), 155 (Boldface), 159 (Boldface Italic), 160 (Essay) 163 (Essay Bold), 175 (Document)

A.3.2. Hardware Compatibility For Direct Twinax Attachment

With the Adapter for SCS installed and with a Twinax cable attached, the printer connects to the following IBM hardware:

- IBM AS/400 Twinax Workstation Controllers
- IBM AS/400 Advanced System Twinax Workstation Controller
- IBM 5251 model 12 Control Unit
- IBM 5494 Remote Control Unit
- IBM 5394 Remote Control Unit
- AS/Entry Workstation Control Unit
- IBM 5294 Remote Control Unit
- IBM 5259 Migration Datalink

A.3.3. Software Compatibility For Direct Twinax Attachment

The IBM host software requirements for SCS printing when the Adapter for SCS is emulating an IBM 3812 Model 1, 5219 D01/D02, 4214-02, 5225-01, 5224-01 or 5256-03 printer are as follows:

- AS/400 OS/400 (All releases)
- AS/400 OS/400 V3R6 with System Support Program (SSP) Rel. 7.5 or later
- AS/400 Rel 7.1 or AS/Entry SSP Rel. 6.0 or later

A.3.4. Hardware Compatibility For Direct Coax Attachment

With the Adapter for SCS installed and with a Coax cable attached, the printer connects to the following IBM hardware:

- IBM 3174 Control Unit
- IBM 3274 Control Unit, type "A" adapter
- IBM 3276 Control Unit display station
- IBM 8775 Control Unit
- IBM 4700 Device Cluster Adapter with type "A" adapter
- 9221 ES/9000 Work Station Subsystem Controller
- ES/9370 Work Station Subsystem Controller
- 9371 using the 3270 Adapter
- 3174 or 3274 compatible control units

A.3.5. Software Compatibility For Direct Coax Attachment

The IBM host software requirements for DSC/DSE or SCS printing when the Adapter for SCS is emulating an IBM 3812-01, 4224-01, 3287, 3268 or 4214 printer are as follows:

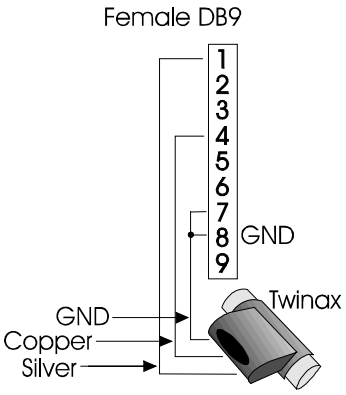
- VTAM Printer Support (VPS - Levi, Ray & Shoup (LRS) software)
- JES/328X Print Facility V2R2
- Graphical Data Display Manager (GDDM) V2.3
- RSCS V2.3 or later
- VTAM
- DisplayWrite/370 V1R2.1 or V2R1 or later (MVS/CICS or VSE/CICS)

IBM MVS/CICS and VSE/CICS support the SCS data stream

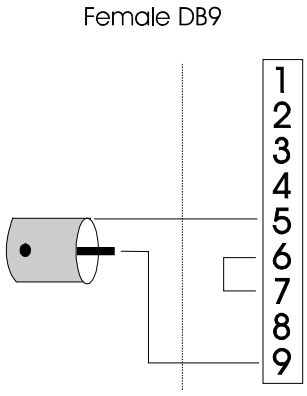
B. Cable Specifications

When using the Adapter for SCS interface in an IBM cabling system the Twinax lines are terminated at the cross-field. This means that one of the terminating resistances in the Twinax plug has to be cancelled. This is done in the female DB9 connector.

The interface is equipped with a T-cable with a built-in auto termination. The termination can be eliminated by a dummy Twinax plug.



Twinax Cable



Coax Cable

C. Downloading Firmware and IDB Files

C.1. Utilities for Downloading

Through regular firmware releases, we add new features and correct errors in the Adapter for SCS. New releases are available for download from the Intermate web site.

And, as mentioned in *section 3.5 IDB commands?* (page *28)*, you may want to load a different IDB configuration file into the adapter.

Therefore, we have made two utilities available on product CD-ROMs and the Intermate web site. The *Intermate Download Utility* (*P16*) program is a native 32 bit Windows 95/98/NT/2000 application, while *SCSUTIL.EXE* works under DOS.. Each utility can handle both firmware and IDB files.

The rest of this appendix focuses on the Windows-based program.

The *Intermate Download Utility* distinguishes between three file types. These are **.bin*, **.ffs* and **.idb*.

Firmware files (Boot, Coax and Twinax) have the extension *bin*.

IDB configuration files have the extension *idb*.

(The *ffs* extension is not used in connection with the Adapter for SCS).

C.2. Firmware File Names and Releases

The current firmware versions loaded in the interface can be viewed in the *Firmware Summary*. This is printed via the operator panel by entering the **Test Options** and selecting **Firmware Summary** followed by **Print**.

The file names of the Adapter for SCS firmware are as follows:

H00-nnnn.bin	Boot firmware
H01-nnnn.bin	Coax firmware
H02-nnnn.bin	Twinax firmware

nnnn = a sequential number.

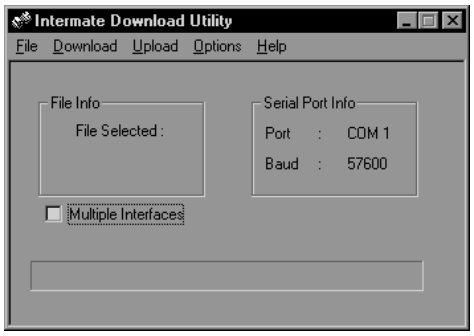
When you find the files for downloading they are usually highly compresssed (zipped), so the extension is *zip*. After extraction, you will have your **.bin* file.

C.3. Installing the Intermate Download Utility ("P16")

The *Intermate Download Utility* is installed by executing the file *P16-xxxx.exe*. This extracts the files needed to run the program. The default directory is *C:\Program Files\LCI Intermate\Intermate Download Utility*. If you prefer another location, the path can be edited.

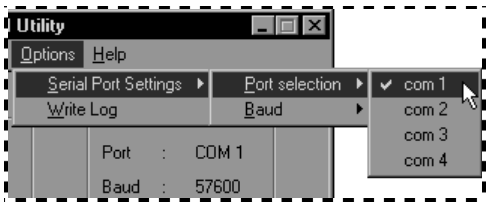
If you will be using the utility program often, for example in connection with changing configurations, you may want to create a short-cut on the desktop. This is done by right-clicking on the file *IMA_DWNL.exe* and then dragging the copy to the desktop, releasing the mouse button and confirming the creation of the short-cut.

The program is launched by either double-clicking on the program icon on the desktop or by pressing the Start button and choosing *Programs > Intermate Download Utility* and *IMA_DWNL.exe*. This displays the main screen.



The user interface of the program is self-explanatory. On-line help is provided via the help menu (<Alt+h>).

In order to use and optimize the usage of the program, you should check to see if the default serial port settings are acceptable. This applies to the choice of *communication port* and *baud rate*. Both settings are set via the "Options" menu.



After the program has been installed and set up you are ready to use the serial cable to connect the PC to the printer equipped with the Adapter for SCS.

C.4. Loading Firmware and IDB-Files to the Adapter

C.4.1. Prerequisites

1. *P16-xxxx* must be successfully installed.

2. You must download a copy of the files you need to a drive accessible to your PC.

   Firmware upgrades: Choose one or more of the three components mentioned in *Appendix C.2 Firmware File Names and Releases*, page 127. Download one or more of them from the Intermate web site (right click plus “save target as”).

   IDB files from Intermate: Copy the file to your PC either from the CD included with this product or from the Intermate web site. This would apply, for example, to updated versions and to the Twinax IDB supporting Latin 2 Eastern Europe which is not available through the front panel’s **Factory Defaults** menu item.

   IDB files edited by specialists for your organization: Make sure that the file is copied to the PC from which the *Intermate Download Utility* will be run.

C.4.2. Steps

1) Power the printer Off and disconnect it from the cable leading to host system.

2) Make sure the Windows operating system is running on your PC.

3) Connect the printer to the PC via the serial configuration and upgrade cable included with the Adapter for SCS. Do NOT power On the printer, yet.

4) Launch the *Intermate Download Utility*.

5) Select the “Download” menu by pressing <Alt>+D. In this program, “download” indicates loading to the interface from your PC.

6) The program opens a file selection dialog box. Locate and choose the **.bin* or **.idb* fileyou want—or the first of several files you want.

7) Follow the on-screen instructions. Among other things, they will tell you when to power the printer On.

   Caution: If you accidentally choose a wrong file you should let the program complete the download. Start a new loading with the correct files afterwards. Don’t use the |Cancel| button unless you are thoroughly familiar with the workings of the program and the Adapter for SCS.

   Note: You can load additional firmware components (or IDB settings) without having to restart the utility program or turn off the printer.

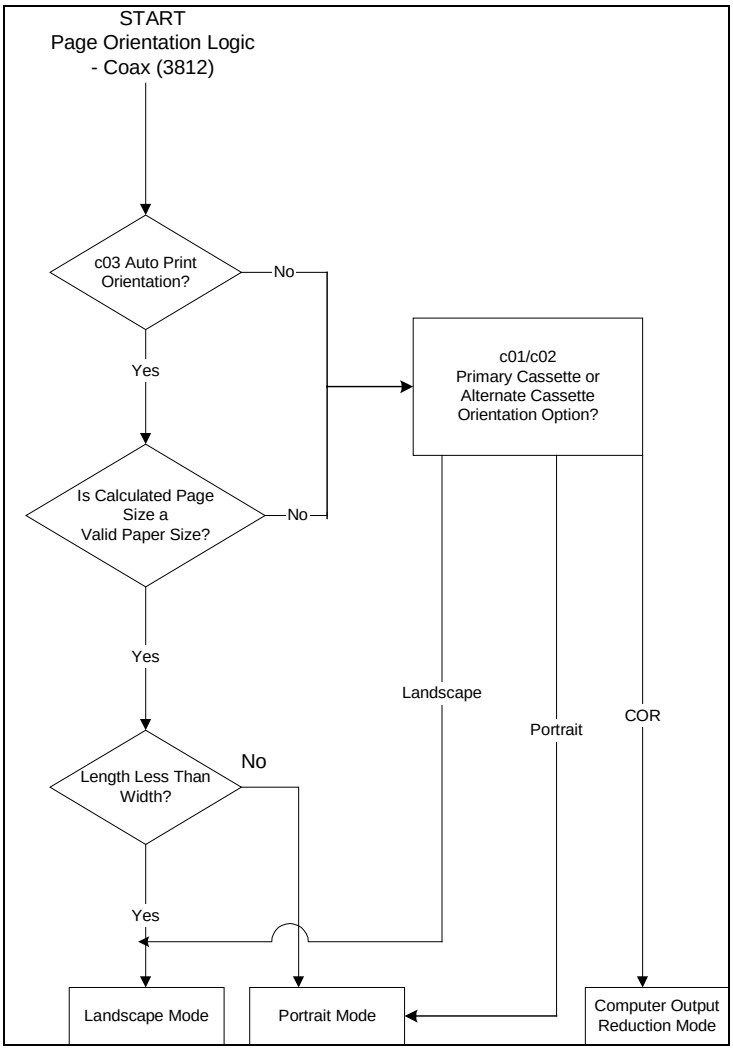
8) Close the *Intermate Download Utility* after loading the file(s).

9) Power Off the printer and disconnect it from the PC.

10) Reconnect the printer to the host system. The next power On will activate the new firmware or IDB file.

D. COR/APO Logic (Coax)

The user does not always have the possibility of defining if a printout is to be rotated and compressed in the system. The following flowchart shows the logic used in the automatic controls.



E. COR/APO Logic (Twinax)

The Adapter for SCS has, when being used as 3812 in 5219 mode, the possibility to "rotate" the printout (portrait/landscape) from various criteria.

The distinction is between control of text, orientated according to a set text orientation command (STO) in the data stream (the FCB - format control buffer) and control of the text orientation from the text orientation automatic of the Twinax interface. The interface is reacting to the page format stated in the FCB, for instance, from fanfold lists, which are normally printed on matrix printers with wide platens. You can test the automatic controls easily by using the "Print Screen" key from the system. This screen dump is usually printed in "landscape" and "compressed" if the automatic page orientation (APO) and computer output reduction (COR) of the interface is switched on by the CORDRW command.

As the user does not always have the possibility of defining if a printout is to be rotated and compressed in the system we will concentrate on how the printer automatic controls operate. It is provided there are no STO commands in the data stream from the system. The STO command always has higher priority than the automatic controls of the printer itself.

The following points refer to the flowchart at the end of this appendix.

1. Calculation of the page format is based on the following information in the FCB.

$$\text{page width(inches)} = \frac{\text{characters per line}}{\text{characters per inch (pitch)}}$$

$$\text{page length(inches)} = \frac{\text{lines per page}}{\text{lines per inch (LPI)}}$$

These two measures are compared with values stated by the PAGLNG and the PAGWDT settings. Refer to *section 11.7.5 Physical Page Length (Twinax Options 82 and 83)*, page 113, and *section 11.7.6 Physical Page Width (Twinax Options 84 and 85)*, page 114; taken together, these two options specify the maximum valid page size.

Example: Use an A4 page format as valid page size:

PAGLNG = A4 and PAGWDT = A4

2. If the page format stated in the FCB is within (or equal to) the page size settings of PAGLNG and PAGWDT, the page size is “valid". In that case the printout will be in landscape if the page length is smaller than the width, otherwise portrait. In both cases with the font selected by the system.

3. If either the page width or the page length from the system exceed the page size stated in the interface the page size is "invalid". The result is a compressed landscape printout by means of the COR algorithm in the interface:

- "Vertical spacing" is reduced from normal line spacing to a percentage value according to the LINSPRED setting.
- Margins (offset) are set according to the LFTOFFCOR and TOPOFFCOR settings.
- 10 pitch fonts are reduced to 13 pitch (font type stated in font table pos no. 51)
  12 pitch fonts are reduced to 15 pitch (font type stated in font table pos no. 52)
  15 pitch fonts are reduced to 20 pitch (font type stated in font table pos no. 53)
- Other pitch sizes are compressed to the nearest smaller font.

4. Most program applications normally have a set of standard values for page length, characters per line etc. The user might have few or no possibilities of changing (for example) the number of characters per line, which is normally set to 132 characters. Therefore a final control exists, which allows the user to prevent a compressed landscape printout and force it into portrait with a font selected by them.

Portrait can be forced on the AS/400 by setting: PRTQLTY(*STD) or (*NLQ) or PAGRTT(0)

Note: The statements TEXT/PRTQLTY will not as the ROTATE/PAGRTT command force printout in portrait if only APO is enabled in the CORDRW 1 and CORDRW 2 options.

The previously mentioned "screen dump" will for instance use the default printer profile on the AS/400 for the device. On the AS/400 is it possible to affect the

system print parameters in the FCB by changing the printer file containing default settings for the device. This is done by either changing the existing system printer file QSYSPRT (CHGPRTF FILE(QSYSPRT)) or creating your own printer file (CRTPRTF). Please consult your AS/400 manuals for information on this subject. Defining the printer file to make the COR is normally done in connection with IPDS page printers as these printers do not support the APO/COR function.

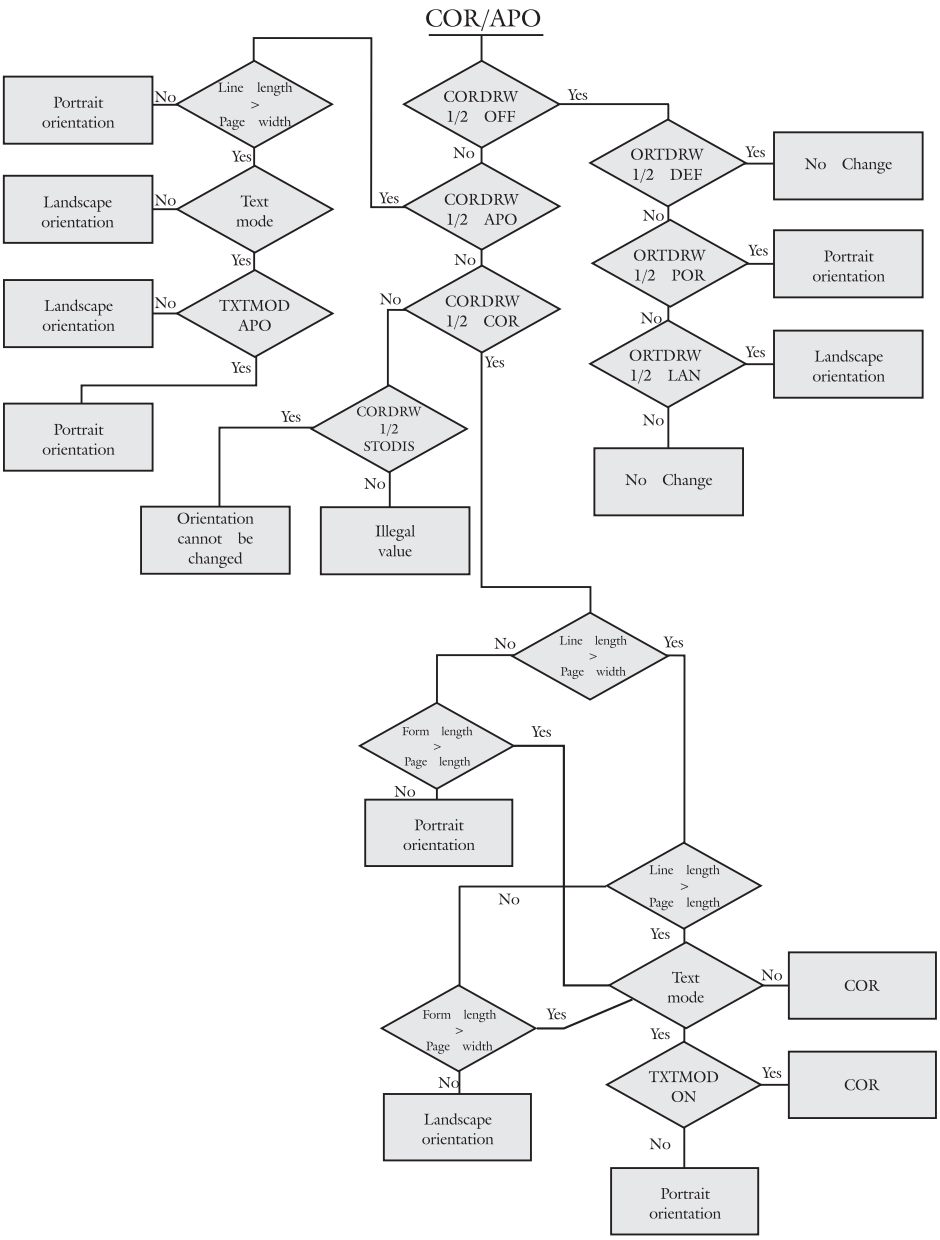
If the APO/COR is disabled (CORDRW 1/2 = OFF) the STO command will thus control the rotation of the printout. This means that if you send a landscape print controlled by the STO command, and then send a print without the STO command, this printout is affected by the previously sent STO command and therefore result in landscape printout. This is the only way an original IBM 3812 can operate. However, a default page orientation can be set with the ORTDRW # option.

Example

Disable COR and set Portrait as default orientation for drawer 2 only:

CORDRW 2 = OFF and ORTDRW 2 = POR

Page Orientation Logic Flowchart (Twinax COR/APO)



F. ASCII Character Table (extract)

Hex	ASCII	Decimal	Hex	ASCII	Decimal	Hex	ASCII	Decimal
20	space	32	40	@	64	60	"	96
21	!	33	41	A	65	61	a	97
22	"	34	42	B	66	62	b	98
23	#	35	43	C	67	63	c	99
24	$	36	44	D	68	64	d	100
25	%	37	45	E	69	65	e	101
26	&	38	46	F	70	66	f	102
27	'	39	47	G	71	67	g	103
28	(	40	48	H	72	68	h	104
29	)	41	49	I	73	69	i	105
2A	*	42	4A	J	74	6A	j	106
2B	+	43	4B	K	75	6B	k	107
2C	,	44	4C	L	76	6C	l	108
2D	-	45	4D	M	77	6D	m	109
2E	.	46	4E	N	78	6E	n	110
2F	/	47	4F	O	79	6F	o	111
30	0	48	50	P	80	70	p	112
31	1	49	51	Q	81	71	q	113
32	2	50	52	R	82	72	r	114
33	3	51	53	S	83	73	s	115
34	4	52	54	T	84	74	t	116
35	5	53	55	U	85	75	u	117
36	6	54	56	V	86	76	v	118
37	7	55	57	W	87	77	w	119
38	8	56	58	X	88	78	x	120
39	9	57	59	Y	89	79	y	121
3A	:	58	5A	Z	90	7A	z	122
3B	;	59	5B	[	91	7B	{	123
3C	<	60	5C	\	92	7C	|	124
3D	=	61	5D	]	93	7D	}	125
3E	>	62	5E	^	94	7E	~	126
3F	?	63	5F	_	95			

APPENDICES FOR QUALIFIED SPECIALISTS

G. Introduction to the IDB Languages

Please consult the IDB Technical Reference if you will be doing serious work with IDB command strings and configuration files.

G.1. Two IDB Languages

There are two IDB Languages.

The Advanced IDB Command Language (also called "Advanced IDB Language" or just "Advanced IDB") is the only available language for Coax. With it, you can set any and all IDB Options and Events .

Twinax users have an additional programming tool in the form of the User IDB Command Language ("User IDB"). Its syntax is similar to that used in native AS/400 commands. The User IDB is a shell to a selected set of Advanced IDB commands. This means that not all options can be set this way; you will have to use the advanced IDB command language in some situations.

In order for a setting to take effect on a given printer the command(s) must first be included in an SCS data stream (see *Working directly with IDB commands and IDB files*, below.).

G.2. Working directly with IDB commands and IDB files

Most users do not need to work directly with IDB command strings or with configuration files. They use the menus on the Operator Panel, which cover the most commonly needed subset of all IDB options.

In the following is a brief description of the various methods available for working directly with IDB command strings, but for further details you must consult the *IDB Technical Reference*.

G.2.1. Run Commands From the Host

For minor alterations, type the IDB command(s) on the host terminal at the command prompt. Submit a "Print Screen" to the printer you want to adjust.

If you want to send several commands, but don't need to overhaul the whole configuration, you might want to use the following method to embed IDB commands into a data stream:

- Create a file with a text editor. If you don't have a job you want printed, but do want to affect settings for later jobs, or if you want to test your commands before running an actual job, just include some kind of printable text after the commands.

- Send the file as a print job. If you look at the Operator Panel as the job is processed, you may see a brief **Saved** message on it.

- The job that comes out will have run the IDB commands. Inspect the print-out. If the IDB commands print, check the commands for spelling and syntax errors, make corrections and run the job again.

G.2.2. Modify an IDB Configuration File with an IDB Editor

1) Create or find a configuration file. There are two possibilities:

- Upload the settings from the adapter using the procedure described in *Appendix C.4 Loading Firmware and IDB-Files to the Adapter* (page 129) with the following modification:
  - Instead of selecting "Download", select "Upload" (<Alt>+U).
  - Press T (Twinax) or C (Coax).

- Make a copy of an existing file from a CD-ROM, from the Intermate web-site or from an earlier version of one of your organization's own IDB files. See next step concerning naming.

2) Save the file to a drive accessible to your PC. Use the file extension *idb*. Restrict the name itself to 8 characters if you will be editing it with one of our DOS editors.

3) Edit the file using an Intermate IDB Editor. For Coax use P01 (IDB.exe); for Twinax use P02 (IDBT.exe). These are DOS-based editors. All of our utilities are upgraded from time to time, so be sure to check the Intermate web site.

4) Load the modified file to the Adapter. This requires connecting the product to a PC using a serial cable and using the Intermate Download Utility (P16) as described in *Appendix C.4 Loading Firmware and IDB-Files to the Adapter* (page 129).

G.3. Types of Command Strings

There are two basic types of command strings in the Advanced IDB Language.

- Commands in Edit Mode with which you can change parameters in the tables.
- Special Commands.

G.3.1. Commands in Edit Mode

Commands in Edit Mode (sometimes called Configuration Mode) are used to change parameters in all kinds of IDB Tables. The commands used for entering (&%IDB_EDIT:) and leaving Edit Mode (EXIT or QUIT) are common to the two languages. EXIT or QUIT causes options to be saved, but for some commands, activation requires recycling the printer power.

Editing commands have three parts:

Example: Set Option 1 to the value 2.
&%IDB_EDIT: OPTION 1:2: EXIT

1) The lead-in string and the command to start Edit Mode is &%IDB_EDIT:

   We call the &% lead-in string the CSC, where CSC stands for "Command String Characters". The string can be changed using Options 8 and 9 in *Advanced IDB* (see *sections 6.2.10 CSC Characters & IDB Edit Delimiter (Options 8, 9, 7) and 11.4.2 CSC Characters (Twinax Options 8 and 9)).*

2) Information on the option or event for which a value is to be set. This information is composed with two elements:

   OPTION n: (or EVENT n:) where n is the Option Number or Event Number. This element must end with an IDB Edit Delimiter, which is usually a colon (this can be changed using Option 7, but we recommend not doing so).

   x: where x is the Value or Settings Number. This element must also end with an IDB Edit Delimiter.

3) The lead-out string, which is EXIT or QUIT.

You may insert as many settings as you like between a lead-in string and a lead-out string, as long as each setting ends with an IDB Edit Delimiter.

Example: Set "Power Up Time - Extra Delay at Power On" to wait 120 seconds and the number of minutes to wait before sending the "Intervention Required" signal to the host to 5.

&%IDB_EDIT: OPTION 20:120: OPTION 21:5: EXIT

All configuration options must be separated by a colon. Line feed, form feed etc. should be avoided, but are in some cases accepted.

G.3.2. Special Commands

"Special commands" have only two parts:

1) The &% lead-in string (can be changed in the same way as it can be changed in Edit Mode commands)

2) The command itself

The next two appendices list all command strings for *Advanced IDB.*
There is also an appendix with extra printer commands for Twinax Users; the commands are written in *User IDB.*

H. IDB Command Strings: Coax

This appendix is provided for the convenience of authorized technical specialists. For further information refer to the *IDB Technical Reference.* Larger numbers in the first column (marked "Pr.") indicate higher precedence.

Pr.	IDB Command String	Description
5	<CSC>HEXDUMP	Enter hex-dump mode (small format).
5	<CSC>HEXDUMP_FULL	Enter hex-dump mode (large format).
5	<CSC>IDB_EDIT	Enter IDB edit mode.
5	<CSC>IDB_PRINT	Dump IDB (small format).
5	<CSC>IDB_PRINT_FULL	Dump IDB (large format).
5	<CSC>L{xx}	Reserved, active if Option 31 = 0.
5	<CSC>W{xx}	Reserved, active if Option 31 = 0.
5	<CSC>NOHEXDUMP	Exit hex dump mode.
5	<CSC>O{xx}	Reserved, active if Option 31 = 0.
5	<CSC>REG	Dump House Keep information.
5	<CSC>/...	Enter Intermate transparent mode.
5	<CSC>=	Reserved, active if Option 31 = 0.
5	<CSC>+M	Suppress format control codes.
5	<CSC>-M	Standard handling of format control.
5	<CSC>STATUS_IPDS	IPDS status.
5	<CSC>{XY}....	Enter special transparent mode (X = Option 171, Y = Option 172).
3	<CSC>{X}YYY[,ZZZ] <CSC>	Formatted string (X = Option 168, YYY = String #, ZZZ = Parameters).
2	<CSC><CSC>	Double CSC (prints <CSC>).
1	<CSC>{XY}	Single transparent character.

Note: <CSC> represents the Command String Characters. The default CSC is "&%". The CSC characters may be changed from the Adapter for SCS menus. See *section 6.2.10 CSC Characters & IDB Edit Delimiter (Options 8, 9, 7)* (page 42) for further information.

I. IDB Command Strings: Twinax

This appendix is provided for the convenience of authorized technical specialists. For further information refer to the *IDB Technical Reference.* Larger numbers in the first column (marked “Pr.”) indicate higher precedence.

Pr.	IDB Command String	Description
5	<CSC>IDB_EDIT	Enter IDB edit mode.
5	<CSC>IDB_PRINT	Dump IDB (small format).
5	<CSC>IDB_PRINT_FULL	Dump IDB (large format).
5	<CSC>/...	Enter Intermate transparent mode.
5	<CSC>+<CSC>	Suppress format control codes.
5	<CSC>-<CSC>	Standard handling of format control.
5	<CSC>{XY}....	Enter special transparent mode (X = Option 171, Y = Option 172).
2	<CSC><CSC>	Double CSC (prints <CSC>).
1	<CSC>{XY}	Single or Multibyte transparent character.
5	<CSC>IDB_STATUS	Prints status dump.
5	<CSC>IDB_FONT	Prints font list.
5	<CSC>-X	Trig event X.

Note: <CSC> represents the Command String Characters. The default CSC is “&%”. The CSC characters may be changed from the Adapter for SCS menus; see *section 11.4.2. CSC Characters* (page 82) for further information.

IDB Events are explained in the *IDB Technical Reference*.

J. Additional Commands in “User IDB” for Controlling the Printer

This appendix is provided for the convenience of authorized technical specialists, who can work directly with IDB command strings. The commands described provide the user with additional commands for controlling the printer, which are not available through the Operator Panel. The methods for sending these commands are described in *Appendix G, section G.2 Working directly with IDB commands and IDB files*, page 138.

J.1. Input Data String Syntax

The following printer commands need an input data string <data>. The input data string can contain the following three parts: *Text, decimal numbers and hexadecimal numbers.*

Text: Text has to be put in quotation marks.

```
"This is a text"
```

Decimal: Decimal numbers are entered normally. Use commas to separate.

```
12,34,24,67,12,3,45,6,7,90,255
```

Hexadecimal: Hexadecimal numbers have to be entered with a slash in front followed by two hex digits. Use commas to separate.

```
/23,/EE,/E4,/45,/F2,/78,/34,/1F
```

It is possible to mix text, decimal numbers and hexadecimal number by separating them with commas:

Example

```
/0A,/0D,"Text",12,/0D,10,"More text",45,"Last
text",/0C
```

J.2. Initializing – Power On

This is used to set up the printer each time it is Powered On. By means of the Power On events it is possible to send 4 strings of 1024 bytes to the printer at each Power On.

The Power On events can be used to download a small logo, or set the printer to a specific emulation.

The sequence for the entire power up procedure is:

1. Power On, Events 0, 1 and 2 are triggered.
2. DEFMPP (Max print positions) and option DEFCPI (Cpi) are selected EVENT 31 - 35 are triggered depending of option 100.
3. `DEFLPI` (LPI) is selected.
4. `DEFLPP` (Form length) is selected.
5. `DEFPRTQLT` (Print quality) is selected.
6. `DEFSRCDRW` (Source drawer) is selected depending on the `SCRDRW` (source drawer definition).
7. Power On Event 3 is triggered

This command corresponds to EVENT 0-3. IDB Events are explained in the *IDB Technical Reference*.

Command:	`POWON <parameter> <data>:`	
	`POWON DEL <no.>:`	Delete command.
Parameter:	`1 - 4`	: Definition number
Example:	`POWON 3 "Power initialize 3":`	
	`POWON DEL 3:`	

J.3. Paper Handling

J.3.1. Paper Handling: Source Drawer

This is executed by the AS/400 command PPM (Page Presentation Media) when you select a specific input tray and by the `DEFSRCDRW` command at Power On. Refer to *section 11.6.12 Default Input Tray (Twinax Option 113)* on page 105.

The command corresponds to EVENT 66-68 for parameters 1-3 and to EVENT 74-78 for parameters 4-8. EVENTS 74-78 require programming before they can be used to select a specific input tray. IDB Events are explained in the *IDB Technical Reference*.

Command:	`SRCDRW <parameter> <data>:`	
	`SRCDRW DEL <drawer>:`	: Delete command
Parameter:	`1 – 3 , 4 - 8`	Drawer number
Example:	`SRCDRW 1 /1B,"&l1H":`	: Set PCL command string for drawer 1
	`SRCDRW DEL 3:`	: Delete command string for drawer 3

J.3.2. Paper Handling: Destination Drawer

This is executed by the AS/400 command PPM (Page Presentation Media) when you select a certain output drawer and by `DEFDSTDRW` command at Power On. Refer to *section 11.6.14 Default Destination Bin (Twinax Option 115)* (page 106).

The command corresponds to EVENT 59-61. IDB Events are explained in the *IDB Technical Reference*.

Command:	`DSTDRW <parameter> <data>:`	
	`DSTDRW DEL <drawer>:`	: Delete command
Parameter:	`1 – 11`	: Drawer number
Example:	`DSTDRW 2 /1B,"&l2G":`	: PCL command string for setting dest.drawer 2 to bin 1
	`DSTDRW DEL 1:`	: Delete command string for dest.drawer 1

In code level H02_9411 and above, the DSTDRW command was extended to support programming and deleting the strings handling Destination Drawer parameters 4-11.

J.3.3. Paper Handling: Select Paper/Envelope Media

This is executed by the AS/400 command PPM (Page Presentation Media) when you select printing on paper or envelopes and by `DEFFRMSEL` command at Power On. Refer to *section 11.6.13 Default Forms Media (Twinax Option 114)* (page 106).

The command corresponds to EVENT 62-63. IDB Events are explained in the *IDB Technical Reference*.

Command:	`SLTMED <parameter> <data>:`	
	`SLTMED DEL <media>:`	Delete command
Parameter:	`PAP`	: Select paper media
	`ENV`	: Select envelope media
Example:	`SLTMED PAP "Paper media":`	
	`SLTMED DEL ENV:`	

J.3.4. Paper Handling: Select Paper Feed

This is triggered by the AS/400 command `SPSU` (Set Print Setup) when you select a certain kind of paper feed.

This command corresponds to EVENT 64-65. IDB Events are explained in the *IDB Technical Reference*.

Command: `SLTPAPFED <parameter> <data>:`
`SLTPAPFED DEL <feed>:` Delete command

Parameter:
`CON` : Select continuous paper feed
`CUT` : Select cutsheet feed
`MAN` : Select manual feed

Example:
```
SLTPAPFED MAN /1B,"&l2H":
SLTPAPFED DEL CUT:
```

J.3.5. Paper Handling: Select Simplex/Duplex Printing

This is used when simplex and duplex printing are selected. The command can only be used if the printer supports simplex/duplex printing.

It is executed by the AS/400 command `PPM` (Page Presentation Media) when you select simplex or duplex printing and by `DEFSIMDUP` command at Power On. Refer to *section 11.6.15 Default Simplex/Duplex (Twinax Option 116)* (page 107).

This command corresponds to EVENT 57-58. IDB Events are explained in the *IDB Technical Reference*.

Command:	`SLTSIMDUP <parameter> <data>:`	
	`SLTSIMDUP DEL <mode>:`	Delete command
Parameter:	`SIM`	: Select simplex
	`DUP`	: Select duplex long edge binding
	`TUM`	: Select duplex short edge binding (tumble)
Example:	`SLTSIMDUP DUP /1B,"&l1S":`	
	`SLTSIMDUP DEL SIM:`	

J.4. Code Page Handling: Before/After Code Page 259

Code page 259 is a character set which only contain symbols and signs. Most of the symbols and signs are not contained in the normal character set of the printer, which means that they cannot be used from AS/400.

By means of this command it is possible to switch to another character set in the printer each time code page 259 is used. You may for instance switch to a symbol character set or a special "symbol font" if one has been downloaded to the printer.

It is also possible to select another font in the printer, such as a special mathematical font.

`COD259 BEF` command is executed each time you switch to code page 259 from another code page. It is not executed if code page 259 is selected repeatedly.

`COD259 AFT` command is executed each time you switch from code page 259 to another code page. It is not executed if the previous code page was not code page 259.

This command corresponds to EVENT 140-141. IDB Events are explained in the *IDB Technical Reference*.

Command:	`COD259 <parameter> <data>:`	
	`COD259 DEL <parm>:`	Delete command
Parameter:	`BEF`	: Before code page 259 selection
	`AFT`	: After code page 259 selection
Example:	`COD259 BEF "Command":`	
	`COD259 DEL AFT:`	

J.5. Miscellaneous Commands

J.5.1. Miscellaneous Comands: Overlay

When overlay call is enabled with the OVLCAL command (refer to *section 11.4.4 Overlay Call (Twinax Option 28)*, page 84), command 1 or 2 is executed at the top of each page immediately before the first printable character. OVLDRW command 1 is executed when paper tray 1 is selected and OVLDRW command 2 is executed when paper tray 2 is selected.

This command corresponds to EVENT 55-56. IDB Events are explained in the *IDB Technical Reference*.

Command: `OVLDRW <parameter> <data>:`
`OVLDRW DEL <parameter>:` Delete command
Parameter: `1 - 2` : Drawer number
Example: `OVLDRW 1 /1B,"&f3Y",/1B,"&f2X":` : PCL string for calling macro no. 3
`OVLDRW DEL 1:`

J.5.2. Miscellaneous Comands: Before/After Form Feed

Command: `BEFAFTFED <parameter> <data>:`
`BEFAFTFED DEL <parameter>:` Delete command
Parameter: `BEF` : Before form feed
`AFT` : After form feed
Example: `BEFAFTFED BEF "Command":`
`BEDAFTFED DEF AFT:`

J.5.3. Miscellaneous Comands: Before Portrait/Landscape Selection

This command corresponds to EVENT 147-148. IDB Events are explained in the *IDB Technical Reference*.

Command: `BEFPORLAN <parameter> <data>:`
`BEFPORLAN DEL <parameter>:` : Delete command
Parameter: `POR` : Before portrait selection
`LAN` : Before landscape selection
Example:
```
BEFPORLAN POR /1B,"&l0E",/1B,"&a0V":
                    : PCL command for setting
                      top margin to 0 and moving
                      print position to line 0
BEFPORLAN DEL LAN:
```

J.5.4. Miscellaneous Comands: IDBdump/Hexdump Subtitle

This is used as an extra headline when you print IDB dumps and hex dumps

The command is executed on top of the first page when printing IDB dumps and hex dumps. It may be used for stating specific information at the IDB dump front page and hexdump pages. For instance you may print information of which IDB profile is used, printer type or company name.

This command corresponds to EVENT 96-97. IDB Events are explained in the *IDB Technical Reference*.

Command: `SUBTIT <parameter> <data>:`
`SUBTIT DEL <parameter>:` Delete command
Parameter: `IDB` : Status printout subtitle
`HEX` : Hexdump printout subtitle
Example:
```
SUBTIT IDB /0A,/0D,"Out Company Inc. ":
SUBTIT HEX "Setup for test 05-18-99":
SUBTIT DEL HEX:
```

J.5.5. Miscellaneous Comands: Move to Uppermost Line

This is used if a movement upwards is needed in order to reduce the top margin. The command is intended for use when the printer runs true HP mode. The string <data> is only sent if the print position is placed at line 1 and no characters have been printed. The contents of the string could be HP PCL codes like:

- Top margin setting to uppermost line.
- Disable perforation skip.
- Absolute vertical move to uppermost line

The command corresponds to EVENT 79. IDB Events are explained in the *IDB Technical Reference*.

Command: `MOVUPRLIN <parameter>:`

`MOVUPRLIN DEL:` Delete command

Example:
```
MOVUPRLIN /1B,"&l0E",/1B,"&a0V":
                        : PCL command for setting
                        top margin to 0 and moving
                        print position to line 0
MOVUPRLIN DEL:
```

K. Managing the SCS Twinax Font Table

K.1. Introduction

The interface has a programmable font table, which contains the conversion between the IBM font IDs (sent from the system) to the internal fonts used in the printer. The font table has a limit of 50 fonts + 3 fonts used for COR (Computer Output Reduction). The interface will detect free font table positions, but will, when attempts to program more than 50 IBM fonts are made, print out a message and a font table status sheet. This status sheet has the IBM ID's indicated in the second column. To free font positions you will have to use the DEL parameter in the PRGFNT command, or overwrite an existing IBM font definition with the PRGFNT command.

The PRGFNT DEL command deletes an IBM font defined in the font table. This is necessary if more than 50 different IBM font IDs are programmed in the font table. It is not necessary to use the PRGFNT DEL command if an existing IBM font ID is used. In that case the PRGFNT command overwrites all information attached to the previous font definition.

The interface contains six HP PCL soft fonts emulating IBM fonts: 3 (OCR-B), 155 (Boldface Italic), 159 (Boldface), 163 (Essay Bold), 160 (Essay) and 175 (Document). These fonts are downloaded to the printer at Power On when **Enable** is active for the **Download Font** option (described on page 89). The font table is prepared for using these fonts. The fonts are downloaded to the printer with code page PC-850 (12U) and with font ID D10003, D10155, D10159, D10160, D10163 and D10175.

K.2. Twinax “Font” Programming Command

This command corresponds to the advanced IDB language FONT command.

Command: `PRGFNT <Ibmfont> <Spacing> <String>:`

`PRGFNT DEL <IBMfont>:`

Note: Try to avoid deleting the first 7 fonts listed in the status printout (`&%IDB_STATUS`), as these fonts represent the substitution font ID's set by the `SETSUBFNT`.

Parameters:

<Ibmfont> 0-65535

This value indicates the IBM font sent from the system. Note that the IBM font numbers are divided into the following areas:

pitch area	**IBM fonts**
10 pitch:	1-65
12 pitch:	66-153
proportional:	154-200
13 pitch:	201-210
15 pitch:	211-239
5 pitch:	240-249
17 pitch:	250-257
20 pitch:	281-284
27 pitch:	290
typographic:	751-..

<String> This can contain all characters and has a length of maximum 255 characters. It has to be programmed in the same way as the special printer command for input data (see page 144). The <String> parameter is optional, however no string definition will delete the definition of an existing font.

Note: Please notice that the interface always sends out a character spacing command *after* the entire font command. That means a spacing command entered in

the <String> has no effect, as it is overwritten by a character spacing command corresponding to the font areas described under <Ibmfont>.

<Spacing> The spacing determine whether the interface or the printer has to control the spacing when using proportional fonts (Fonts with IBM no. 154 - 200). The spacing command should only be used when using downloaded proportional fonts with the correct character spacing.

N This value is used whenever the font is not proportional.

P Selection of “P” causes the printer to handle the character spacing. If "P" is selected in connection with programming of a font in the IBM proportional spaced area (154-200) the interface prepares itself for support for downloaded IBM PS fonts. This ensures correct spacing of downloaded proportional spaced fonts; see *section 11.4.5 Proportional Font Move (Twinax Option 118)*, page 85.
If a HP PCL proportional spaced font is placed in the IBM proportional spaced area (154-200), this parameter should be used if the HP PCL fonts own character spacing is expected. Please notice that this gives no support for justification, bolding and underlining.

When selecting a font, a predefined string (String no. 100) is printed before <String>. The predefined string contains the symbol set and is normally `/1B,”(12U”`.

Examples:

1. HP font Letter Gothic is to be selected when IBM font ID 87 (Letter Gothic 12 pitch) is sent from the system.

```
PRGFNT 87 N /1B,"(s0p12h0b4102T”:
```

2. The downloaded HP font 10175 is to be sent when IBM font ID 160 (Essay) is sent from the system. Font ID 160 is within the "proportional spaced" font area, and the HP font 10175 is expected to be 100% IBM compatible as to the character spacing:

```
PRGFNT 160 P /1B,"(s1p12.72v0s0b202T”:
```

3. Delete all the previous font definitions in order to make room for new font definitions:

```
PRGFNT DEL 71
PRGFNT DEL 244
PRGFNT DEL 160
PRGFNT DEL 1803
```

K.3. Set Substituted Font ID for Twinax

If a font ID sent from the system is not found in the font table, the font is substituted with a similar font defined in a special area of the font table. The first 7 font positions listed in the status printout (`&%IDB_STATUS`) represent the substitution fonts for the following areas:

Pitch area	IBM font area	Font table position
10 pitch:	1-65	1
12 pitch:	66-153	3
prop SP :	154-200	7
13 pitch:	201-210	4
15 pitch:	211-239	5
17 pitch:	250-257	6
5 pitch:	240-249	2

Command: `SETSUBFNT <IBM font number>:`

Note: The font number must be a font number already present in the font table.

Parameter: 1-249

Example: `SETSUBFNT 86`

Note: Font 86 needs to be present in the font table prior to this command. The entire font definition (incl. string before/after etc.) is transferred to font table position 3. If for instance IBM font 67 was the font previously stated in position 3 this is moved to another position in the font table. It is, however, still available with font ID 67, but all font IDs sent from the system in the range 66-153, which are not present in the interface with a specific font ID, are printed with the definition of font 86.

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