

IDB

Technical

Reference

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Head office Europe:

LCI Intermate A/S
Kongevejen 194A
3460 Birkerød
Denmark
E-mail: support@intermate.com
Internet: www.intermate.com

Head office U.S.A.:

LCI Intermate US Inc.
Pease International Tradeport
222 International Drive, Suite #195
Portsmouth, NH030801
E-mail: support@intermate-us.com
Internet: www.intermate.com

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1. About this Guide

This guide describes the concept and use of the *Intermate Data Base (IDB)*. It also serves as a reference to all options and events available in the IDB.

Chapter summary

TN3270E (Coax) section

2. The IDB Concept

Provides a general description of the IDB, ie its components, how it works, and its main features.

3. IDB Programming

Describes how to program the IDB options and events.

4. IDB Tables

Contains a complete list of all options and events.

TN5250E (Twinax) section

5. The IDB Concept

Serves as an introduction to how the IDB works, its components, and its main features.

6. IDB Programming

Explains how to program the IDB options and events.

7. SCS TN5250E (Twinax) Extended Options

Provides additional commands for controlling the printer.

8. IDB Tables

Describes all available options and events.

Appendices

Contains supplementary information.

1.1 Conventions

Special keys are shown in angle brackets such as <Enter> or <F1>.

Windows push-buttons are marked like this |OK|.

Option names and ranges are shown in angular brackets, eg [Network Menu].

Names and references which should be paid special attention are written in *italic*.

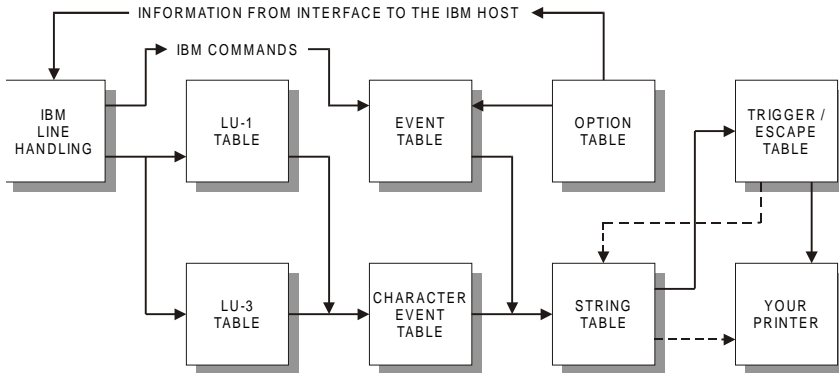
On screen text is written in Courier typeface.

TN3270E (Coax) Section

2. The IDB Concept

The IDB is a complete set of command tables, character conversion tables and parameter tables stored in non-volatile EEPROM.

Flowchart of the IDB structure



2.1 IBM Line Handling

The IBM line handling module sends and receives data from the control unit. The information sent to the control unit depends on the parameters stored in the *Option Table*. These parameters could be IBM features such as 'APL characters supported', 'Extended Attribute Buffer active', and other information about the printer. The IBM line handling module places this information in the output section of the PCIA (Printer Control Information Area) where it is read by the control unit when the printer is switched on.

2.2 LU-1 Translate Table

When the interface receives data from the system, the system informs the interface when data is sent as EBCDIC or as Device Buffer Code (DBC). If the data is EBCDIC, all printable data is sent through the *LU-1 Translate Table*. In this table data is translated from EBCDIC to ASCII. The EBCDIC to ASCII

table is a normal code conversion table where the received EBCDIC value is an index in the code table. At this index, the value for the corresponding ASCII character is stored. The ASCII code table is as default based on PCL Symbolset 850.

Example: F1 (hex) is the EBCDIC value for "1", at index F1 in the *LU-1 Translate Table* the value 31 (hex) is fetched which is the ASCII value for "1".

The translation of the LU-1 code table varies depending on the national overlay selected in Option 2.

2.3 LU-3 Translate Table

When data received from the host is Device Buffer Codes (DBC) the *LU-3 Translate Table* is used. The DBC code is a specific IBM code table which includes all national variations. In this table data is translated from DBC to ASCII. As in the *LU-1 Translate Table* the received DBC value is an index in the code table. At this index, the value for the corresponding ASCII character is stored.

Example: 21 (hex) is the DBC value for "1", at index 21 in the *LU-3 Translate Table* the value 31 (hex) is fetched which is the ASCII value for "1".

The translation of the LU-3 code table varies depending on the national overlay selected in Option 2.

2.4 The Character Event Table

A character Event is triggered by an ASCII character coming from the *LU-1* or *LU-3 Translate Table*. The *Character Event Table* has 256 entries to cover all possible character values from the *LU-1* and *LU-3 Translate Tables*.

If the entry in the *Character Event Table* contains a value between 1 and 100 the corresponding string is sent to the printer instead of the received character, if the value in the entry is '0' the received character is sent to the printer unmodified.

Example

The character “@” has the ASCII value 40 (hex). At index 40 in the *Character Event Table* the value 75 is stored. Whenever a received character is translated to “@” (40 hex), string number 75 is sent to the printer instead of the “@” character. String 75 could hold commands such as: "Change Character Set", "Print the Character X", "Return to Previous Character Set" etc.

2.5 The Event Table

The *Event Table* contains an entry for each possible command sent from the IBM system (eg "Set 10 CPI" or "Select Letter Quality"). Each event has a unique number in the *Event Table*. When a command sequence is received, the corresponding event is executed. If the contents of the event is defined as a value between 1 and 100, the string with that number from the *String Table* is sent to the printer. If no string is defined (event = 0) no action is taken.

2.6 The Option Table

The *Option Table* holds all the SCS parameters of the printer. These are used to inform the controller about the capabilities of the printer. The parameters are also known as options. A complete list of the available options is located in 4. *IDB Tables* starting on page 57.

The *Option Table* also uses the *String Table*. If the default character spacing is set to 10 CPI, then the event for 10 CPI, is triggered which in turn sends the string defined for 10 CPI to the printer.

The location of the options in the *Option Table* as well as the location of the events in the *Event Table* are fixed and cannot be changed. However, the contents of the locations and thereby the action taken by the printer can be changed according to the capabilities of the printer and the needs of the user.

2.7 String Table

A String can be any combination of characters. When data is coming from the *Event Table* the *String Table* acts as a command interface to the printer. When data is coming from the *Character Event Table* the *String Table* is used for special character processing. When the interface receives a command to set the printer to 12 CPI (characters per inch), it sends the string pointed to by the Event for 12 CPI (Event 33). When a character is received the *Character Event Table* may have converted it into a String number, which then is sent to the printer instead.

2.8 Summary

Data received from the control unit is separated in to printable data and commands. The data stream from the control unit includes the information whether the arriving data is EBCDIC using the LU-1 character set or Device Buffer Code (DBC) that uses the LU-3 character set. Depending on this information data is sent through the *LU-1* or *LU-3 Translate Table*. Commands from the IBM system are decoded and each command points to one specific entry in the *Event Table*

The *Event Table* is a table with an entry for each possible command sent from the IBM system. In the *Event Table* numbers are stored which point to strings in the *String Table*.

The *Option Table* stores all the parameters for the printer/interface. The values stored in the *Option Table* are used to:

1. inform the IBM system about the capabilities of the printer/interface.
2. set the printer to the correct default values (pointing to the *Event Table* in order to activate the necessary functions).

The *String Table* stores all the control sequences used to control the printer. These strings are triggered by either the *Event Table*, the *Character Event Table* or the *Option Table*.

The contents of the *String Table* can be changed in accordance with the codes and functions available in the attached printer. A short repetition of the

modules is provided in the following. The next section *Power On Sequence* discusses how these tables and parameters interact.

- *Data* from the IBM system is received either as LU-1 data (EBCDIC) or as LU-3 data (DBC code). Depending on the character code used, data is passed through one of two translation Tables where it is translated into ASCII code used by the printer.
- *Commands* from the IBM system are decoded. Each command points to an entry in the *Event Table*.
- *Character Events* enables the user to change any character coming from the translation tables into a string stored in the *String Table*.
- *Event Table* is a table with entries for each possible command sent from the IBM system. In the table numbers are stored which point to strings in the *String Table*.
- *Option Table* stores all the parameters for the printer/interface. The values stored in the table are used to:
 1. inform the IBM system about the capabilities of the interface.
 2. set the printer to the correct default values (pointing to the *Event Table* in order to activate the necessary functions).
- *String Table* stores all the control sequences used to control the printer. These strings are triggered either by the *Event Table* or the *Character Event Table*.

2.9 Power On Sequence

At Power On or after receiving a Coax Reset Command the following actions take place:

1. After a Controller reset Command event 82 and 85 are executed according to the contents of Option 4 (normally CR or FF).
2. Event 16 or 17 (default font) is triggered, depending on Option 12. The string associated with the selected event is sent to the printer.
3. Event 0 (initialize) is triggered and the associated string is sent to the printer.
4. Event 1 (initialize) is triggered and the associated string is sent to the printer.
5. Event 2 (initialize) is triggered and the associated string is sent to the printer.
6. Event 32, 33, 34 or 35 (pitch selection) is triggered, depending on Option 100.
7. Event 48, 49, 50 or 51 (line spacing selection) is triggered, depending on Option 105. (or alternatively, depending on Option 130 to 136) The string associated with the selected event is sent to the printer.
8. Option 107 sets the Form Length, using Option 150 to 156. The string associated with the selected event is sent to the printer.
9. Event 66, 67 or 68 (default cassette/tray) is triggered, depending on Option 113. The string associated with the selected event is sent to the printer.
10. Event 69 or 70 (default orientation) is triggered, depending on Option 120. The string associated with the selected event is sent to the printer.

- 11.** Event 144 or 145 (default print quality) is triggered, depending on Option 112. The string associated with the selected event is sent to the printer.
- 12.** Event 112, 113, 114, 115, 116, 117, 118 or 119 (default colour) is triggered, depending on Option 110. The string associated with the selected event is sent to the printer.
- 13.** Event 3, 4, 5 and 6 (initialize) is triggered and the associated string is sent to the printer.

3. IDB Programming

3.1 Changing Parameters in the Tables

The firmware in the interface has a built-in editor. In order to use this editor a character or group of two characters must be defined. This character or character group is called the CSC (Command String Characters). The CSC cannot be printed but is used to control the interface.

The character values for the CSC are set in the *Option Table*, options 8 and 9. Option 9 must be set to 0, if only one character is to be used. The default value for the CSC is the character combination “&%”, which is used in examples throughout this manual.

In order to use the editor, a command separator is needed (delimiter). The default value for the delimiter is the colon character “:”, which is set with option 7. The delimiter value can be changed, but must be a printable character. However, the character values for <Space>, / and , (comma) CANNOT be used.

Use the CSC to:

1. send special instructions to the interface.
2. enter the IDB editor.

The IDB options and events can be set in different ways:

1. If you have a LAN interface, the *system.cfg* file can be downloaded from the interface with FTP. Edited in your favourite text editor and uploaded to the interface with FTP. Refer to appendix *C.1 FTP* on page 205.
2. Another approach with LAN interfaces is to use Telnet. This is perhaps the fastest way to view and configure IDB options.
3. IDB editor commands can also be printed from the host, or from

an attached screen by hard copy. This is normally used for minor alterations. It is also possible to print the editor commands from *Display Writer* or similar.

4. It is also possible to download the IDB settings with the accompanying utility program. Refer to appendix *C.2 The Intermediate Download Utility Program* on page 207. Edit the downloaded file with the *TN3270E IDB configuration file editor* program (*POI-xxxx.exe*). Upload the edited file to the interface with the utility program.

3.2 Advanced IDB Command Language

The *Advanced IDB Command Language* (from now on: *Advanced IDB*) is used to customize the configuration of the interface. The language consists of a complete set of command tables, character conversion tables, and parameter tables – all stored in non-volatile Flash EEPROM memory.

3.2.1 The IDB Editor

The editor is the tool used to change the parameter values and tables in the IDB. In the following description there is a range of examples that show how to make these changes. It is important to use the flowchart as a reference when you change parameters. The flowchart is therefore printed at the top of every page describing the editor.

When writing IDB strings on screens or in documents, the following rules and commands are available:

<code>&%IDB_EDIT</code>	Enters the editor.
:	This is the delimiter between each command (may be changed according to option 7).
,	Comma. When several parameters are to be changed in sequence, a comma is used as a delimiter between parameters.

/	The forward slash is used to indicate that the next two characters represent a hexadecimal value. It CANNOT be changed.
OPTION X	Change option x to the following value or string number.
EVENT X	Change event x to the string number following.
CHAEVENT X	Change character event x to the <i>String Table</i> number following.
LU1 X	Change code at index x of the <i>LU-1 Table</i> to the ASCII character number following.
LU3 X	Change code at index x of the <i>LU-3 Table</i> to the following ASCII character number.
LU1APL X	Change code at index x of the LU-1 APL code table to the ASCII character number following.
LU3APL X	Change code at index x of the LU-3 APL code table to the ASCII character number following.
STRING X	Change string x to the sequence following.
TRIGGER X	Change trigger x to the trigger sequence following.
QUIT	Leave the editor.
EXIT	Leave the editor.

Important: All data is stored in non-volatile FLASH ROM and is kept even when the printer is Powered Off. Changes are only activated after the printer has been Powered Off and On. This is true for most interfaces. If you are using an external interface connected to the printer via the parallel port and the port does not support bi-directional communication, then the interface cannot detect the

power recycling. This means you will have to recycle the power for the interface instead.

3.2.2 Special Commands

These commands are used for printing different kinds of IDB reports, which are used for checking the status of the interface and to locate possible problems.

All commands can be embedded in data or sent as "hard copy" from a screen. Alternatively, the IDB and hex-dump reports may be printed from the printer's front panel if available.

`&%IDB_PRINT` With this command all active IDB options, events and strings, are printed in a readable form. This can be used to verify the settings of the IDB before and after changes.

`&%IDB_PRINT_FULLL` Use this to print the complete IDB, including options and events, which are not active.

`&%HEXDUMP` Through this command the hex-dump is activated from the Coax line. Data received from the host is printed in hexadecimal form. Each block of data is printed separately.

`&%HEXDUMP_FULLL` This prints the complete interface buffer in hexadecimal mode, ie not only the current block, but the full 4 or 8 KB buffer is printed for each block. Normally `&%HEXDUMP` should be used.

`&%NOHEXDUMP` Use this to turn off the hex-dump facility.

If you have a problem, enter `&%HEXDUMP` before the area where the problem occurs and `&%NOHEXDUMP` after the area. The printer then prints the data

between the two commands in hexadecimal form. This hex-print should be sent to your support organization for further evaluation. Please also include the test print generated with `&%IDB_PRINT`.

Please note that the list of commands is not complete. Refer to appendix *E. Special TN3270E (Coax) IDB Commands*, on page 215.

3.2.3 The CSC Characters

The CSC characters are two characters and are used when entering the IDB editor. What characters are used, are set in Option 8 and 9. By default, they are set to the decimal values 38 and 37 respectively. This corresponds to the ASCII-sequence "&%". Refer to appendix *A. ASCII Character Table* on page 201 for allowed characters.

The CSC characters can be redefined by changing the Option values above. If preferred the characters can be limited to a single character. Setting Option value 9 to 0 (decimal) does this.

Note: Values stored in Option 8 and 9 must be greater than 20h = 32d and less than FFh = 255d (h: hexadecimal; d: decimal)

Important: If the *TN3270E IDB configuration file editor* program (*P01-xxx.exe*) program is used to change the CSC characters, be sure to check that the old CSC characters are used when downloading the new settings. This is because the old settings are stored in the interface, ie are active. The new settings are activated at the next power On of the interface. If you have an external interface (box) and use a printer that supports bi-directional communication, you can recycle the printer power instead. *Power Detection* should, of course, be enabled in the interface (box).

Example 1 – redefining the "&%" -sequence

<CSC>	=	#\$ (Decimal ASCII values: 35, 36)
<Transparent Lead In>	=	C2 (Decimal ASCII values: 67, 50)
<Transparent Lead Out>	=	&% (Decimal ASCII values: 38, 37)
Host Input – test characters	=	ABC (Hexadecimal ASCII values: 41, 42, 43)

IDB programming string for changing the CSC characters and the transparent lead sequences.

```
&%IDB_EDIT:OPTION 8:35,36:  
OPTION 171:67,50:OPTION 173:38,37,0,0:EXIT
```

Host Sample Input	Printer Output
#\$C2414243&%	ABC
#\$C2 41 42 43 &%	ABC
#\$C2/414 243&%	ABC

Example 2 – limiting the CSC to a single character

<CSC>	=	& (Decimal ASCII value: 38)
<Transparent Lead In>	=	C2 (Decimal ASCII values: 67, 50)
<Transparent Lead Out>	=	&% (Decimal ASCII values: 38, 37)
Host Input – test characters	=	ABC (Hexadecimal ASCII values: 41, 42, 43)

```
&%IDB_EDIT:OPTION 8:38,0:  
OPTION 171:67,50:OPTION 173:38,37,0,0:EXIT
```

Note: Changing the CSC characters (option 8 and 9), will affect the programming Lead In syntax in general. After the above change the Lead In programming syntax is &IDB_EDIT:...

Host Sample Input	Printer Output
&C2414243&%	ABC
&C2 4 1 42 43&%	ABC
&C2/414 243 &%	ABC

Most of the examples in the following sections use the default CSC characters "&%" If you have assigned other values to the CSC characters, you should insert these instead.

3.2.4 Configuring Options

Assume the following options need to be set to the values shown below:

Option 1	=	2	Form feed after local copy.
Option 2	=	8	Danish / Norwegian character set.
Option 100	=	10	10 cpi default.
Option 102	=	132	Maximum print position 132.
Option 105	=	6	6 lines per inch.

Data to interface	Explanation
&%IDB_EDIT:	Enter the editor
OPTION 1:2:	Set option 1 to the value 2.
OPTION 2:8:	Set option 2 to the value 8.
OPTION 100:10:	Set option 100 to the value 10.
OPTION 102:132:	Set option 102 to the value 132.
OPTION 105:6:	Set option 105 to the value 6.
EXIT	Leave the editor.

The sequence could be sent as follows:

```
&%IDB_EDIT:OPTION 1:2:OPTION 2:8:OPTION 100:10:
OPTION 102:132:OPTION 105:6:QUIT
```

As soon as the editor has been entered, the interface ignores all spaces and control characters. If a control character or a space-code has to be entered, it must be sent as a hex-value (Example:<Space> = /20). This means a complete

file containing the complete setup for a specific printer can be sent to the interface from the host. Any formatting performed by the host system is ignored.

3.2.5 Configuring Events

Assume that the events below need to be set to the following values. Keep in mind that the value stored in the event list is the number of the string, which is sent to the printer every time the event is triggered.

Event 32 (Set 10 cpi)	point to string 10
Event 33 (Set 12 cpi)	point to string 11
Event 34 (Set 15 cpi)	point to string 12
Event 66 (Select paper bin 1)	point to string 25
Event 67 (Select paper bin 2)	point to string 37

Data to interface	Explanation
&%IDB_EDIT:	Enter the editor
EVENT 32:10:	Point to string 10
EVENT 33:11:	Point to string 11
EVENT 34:12:	Point to string 12
EVENT 66:25:	Point to string 25
EVENT 67:37:	Point to string 37
QUIT	Leave the editor

The sequence could be sent as:

```
&%IDB_EDIT:EVENT 32:10:EVENT33:11:EVENT34:12:  
EVENT66:25:EVENT67:37:QUIT
```

or in a compressed string as follows:

```
&%IDB_EDIT:EVENT 32:10,11,12:EVENT 66:25,37:QUIT
```

If the previous options and the events above should be changed, the combined sequence could look as follows:

```
&%IDB_EDIT:OPTION 1:2:OPTION 2:8:OPTION 100:10:
OPTION 102:132:OPTION 105:6:EVENT 32:10,11,12:
EVENT 66:25,37:QUIT
```

This sequence can be sent either as a hardcopy print or as a print file from the host.

3.2.6 Changing the LU-1 Character Set

The LU-1 Character Translation Table consists of the basic EBCDIC to ASCII conversion table plus the national variations (extensions) for each country available (see option 2 in the Option list).

Assuming that the EBCDIC code 7D (hex) is to be converted to ASCII 27 (hex) and also EBCDIC code 7B (hex) into ASCII 40 (hex). Let's also assume that the working standard country code is German (country code 2 according to option 2).

The EBCDIC character 7D is within the standard code table, but the EBCDIC character 7B is found in the national extension.

Data to interface	Explanation
&%IDB_EDIT:	Enter the editor
LU1 /7D:/27:	The code value 7D is converted to 27
LU1 /7B, 2:/40:	The code value 7B is converted to 40, but only in country group 2 (German standard)
QUIT	Leave the editor

The sequence could be sent as follows:

```
&%IDB_EDIT:LU1 /7D:/27:LU1 /7B, 2:/40:QUIT
```

3.2.7 Changing the LU-3 Character Set

The LU-3 Character Translation Table converts the Device Buffer Code (DBC) from the IBM control unit in to ASCII. The DBC code has one specific code value for each character to be printed. The same code table is used for all national variations.

Assume the DBC code 36 (hex) has to be changed to ASCII 5E (hex) and the DBC code 3C (hex) to ASCII 60 (hex).

Data to interface	Explanation
&%IDB_EDIT:	Enter the editor
LU3 /36:/5E:	The code value 36 is converted to 5E.
LU3 /3C:/60:	The code value 3C is converted to 60.
QUIT	Leave the editor

The sequence could be sent as follows:

```
&%IDB_EDIT:LU3 /36:/5E:LU3 /3C:/60:QUIT
```

3.2.8 Changing the String Table

The *String Table* holds all the control strings which can be sent to the printer in order to generate the desired function. By changing or modifying these strings and by pointing to them from the *Event Table*, virtually any function needed can be activated.

Assuming string 50 is to send the sequence “Escape A”. String 11 is to send the text “CALL OVERLAY”. Text strings can be entered directly as text. But in order to avoid errors because your application converts the text data in the code translation tables, all text strings should be entered as hex values.

Escape	=	1B(hex)
A	=	41(hex)
CALL OVERLAY	=	43 41 4C 4C 20 4F 56 45 52 4C 41 59 (HEX STRING)

Data to interface	Explanation
&%IDB_EDIT:	Enter the editor
STRING 50:/1B/41:	Load hex 1B 41 (Escape A) in string 50
String 11:/43/41/4C/4C/20/4F/56/45/52/4C/41/59:	Load CALL OVERLAY in string 11
QUIT	Leave the editor

The string could also be sent as follows:

```
&%IDB_EDIT:STRING50:/1B:STRING11:
CALL OVERLAY:QUIT
```

3.3 TN3270E (Coax) Transparency Modes

When operating in Transparency Mode, the interface allows hexadecimal ASCII codes, ie printer commands and data, to pass directly through to the printer. This is done without any character conversion.

The ASCII codes can be written anywhere in a document, an editor, or even on the system command line. Each hexadecimal code, or byte, is entered as two characters, except for the CSC, the Lead In and the Lead Out character.

In Transparency Mode, data can be passed through in two ways. These are the "Single byte" and the "Multibyte" transparency, which are used for sending ASCII codes to the printer. This could be used to print blocks of PCL commands representing graphics from a host environment.

The following rules apply to "Multibyte values" and "Single byte values".

1. The code sequences have to be in ASCII (hexadecimal values). Each number must contain two characters. For example; AF 6E 12 76 BC FF 00 3D 23 56 12.
2. Characters other than "0" - "9", "A" - "F", "a" - "f" and the repetition character are ignored and removed from the printout.

The different transparency modes are described in the following sections.

3.3.1 Default Single Byte Transparency

The Single byte transparency sequence is used to bypass one ASCII character. This sequence requires no Lead In and Lead Out characters.

Syntax

<CSC> "Single byte values"

"Single byte values" are interpreted as one hexadecimal ASCII code.

Note: If a string number is stored in the Escape Table at the index represented by the "Single byte values", this string is printed. If not, the ASCII code is printed. See 3.4.6 *User Defined Escape Conversion* on page 54.

Example

Host Sample Input	ASCII Output
&%41&%42	AB
&%4141	A41

3.3.2 User Defined Single Byte Transparency

The *User defined single byte transparency* sequence is similar to the *Default single byte transparency*, ie it is used to bypass one ASCII character. The sequence does not require any Lead In or Lead Out characters. Only the CSC characters are defined by the user.

Syntax

<CSC> "Single byte values"

The "Single byte values" are interpreted as one hexadecimal ASCII code.

Note: If a string number is stored in the Escape Table at an index represented by the "Single byte values", this string is printed. If not, the ASCII code is printed. See 3.4.6 *User Defined Escape Conversion* on page 54.

Example 1 – changing both CSC-characters

<CSC>	=	#\$ (Decimal ASCII values: 35, 36)
Host Input – test characters	=	AB (Hexadecimal ASCII values: 41, 42)

IDB programming string for setting the CSC characters in option 8 and 9 to the Lead In character "#\$".

```
&%IDB_EDIT:OPTION 8:35,36:EXIT
```

Note: Altering the CSC characters (Option 8 and 9) for operation as user defined transparency Lead In characters, will affect the programming Lead In syntax in general. After the above change the Lead In programming syntax is # \$IDB_EDIT:...

Host Sample Input	ASCII Output
# \$41# \$42	AB
# \$4141	A41

Example 2 – limiting the CSC to a single character

<CSC>	=	& (Decimal ASCII values: 38)
Host Input – test characters	=	AC (Hexadecimal ASCII values: 41, 43)

IDB programming string for setting the CSC characters in option 8 and 9 to the Lead In character "&".

```
&%IDB_EDIT:OPTION 8:38,0:EXIT
```

Note: Altering the CSC characters (Option 8 and 9) for operation as user defined transparency Lead In characters, will affect the programming Lead In syntax in general. After the above change the Lead In programming syntax is &IDB_EDIT:...

Host Sample Input	ASCII Output
&41&43	AC
&4141	A41

More information about the use of the CSC-characters can be found in the section 3.2.3 *The CSC Characters* on page 23.

3.3.3 Default Multibyte Transparency

With the *Default Multibyte Transparency*, several ASCII characters can be bypassed. The sequence is similar to the *Default Single Byte Transparency*, except that the hexadecimal sequence is encapsulated with the default Lead In and Lead Out character. This is the "/" character. Host generated linefeed and page breaks within the sequence are ignored.

Syntax

<CSC> / "Multibyte values" /

Example 1

<CSC>	=	&% (OPTION 8:38,37)
<Transparent Lead In>	=	/(OPTION 171:47,0)
<Transparent Lead Out>	=	/(OPTION 173:47,0,0,0)

Host Input	ASCII Output
&%/414243/41	ABC41
&%/ 41 42 43/41	ABC41
&%/ , 4 , 14 , 2 , 43/41	ABC41

Example 2 – using the repetition character ("")*

<CSC>	=	&% (OPTION 8:38,37)
<Transparent Lead In>	=	/(OPTION 171:47,0)
<Transparent Lead Out>	=	/(OPTION 173:47,0,0,0)
Option 170	=	* (Decimal ASCII value: 42)

Host Sample Input	ASCII Output
&%/414243/41	ABC41
&%/ 41 , 2*423*43/41	ABBCCC41
&%/ 01*4101*420 , 2*43/41	ABCC41
&%/412*423*43/41	ABBCCC41

3.3.4 User Defined Multibyte ASCII Transparency

The *User defined multibyte ASCII transparency* sequence is similar to the *Default multibyte transparency*, ie several ASCII characters can be bypassed. The CSC-characters, the Lead In and the Lead Out sequences are defined by the user. Host generated linefeed and page breaks within the sequence are ignored.

Syntax

<CSC> <Transparent Lead In> "hexadecimal string"
<Transparent Lead Out>

(<Option8> <Option9> <Option171> <Option172> "hexadecimal string" <Option173> <Option174> <Option175> <Option176>)

Command Sequence

<CSC>

The CSC-characters are described in the section 3.2.3 *The CSC Characters* on page 23.

<Transparent Lead In>

1. One or two characters defined in Option 171 and 172.
2. If no user defined transparent sequence is wanted, Option 171 must be 0.

3. If a single Lead In character is preferred, Option 171 must contain the character in ASCII (decimal value) and Option 172 must be set to 0.

<Transparent Lead Out>

1. One to four ASCII characters defined in Option 173 to 176 using decimal values. None of the resulting ASCII characters can be in the ranges: "0" - "9", "A" - "F", "a" - "f" or the repetition character (described later).
2. If no Lead In/Lead Out is defined, the transparent sequence is not entered and the two first characters after the <CSC> command are removed from the printout.
3. If a single Lead Out character is wanted, Option 173 must contain the character in ASCII (decimal value) and Option 174 must be 0.
4. If four Lead Out characters are wanted, Option 173 to 176 must all contain characters in ASCII (decimal values).

Below follow examples of how the ASCII code sequences can be customized.

Example 1 – two Lead In and two Lead Out characters

<CSC>	=	&%
<Transparent Lead In>	=	E4 (decimal ASCII values 69 and 52)
<Transparent Lead Out>	=	?? (decimal ASCII value 63)

IDB programming string for setting Option 171 and 172 to the Lead In characters "E4" and Options 173 to 176 to the Lead Out characters "??".

&%IDB_EDIT:OPTION 171:69,52,63,63,0,0:EXIT

Host Sample Input	Printer output
&%E44142??41	AB41
&%E4 41 42 ??41	AB41
&%E4 , 4/14/2??41	AB41

Example 2 – one Lead In and four Lead Out characters

<CSC>	=	&%
<Transparent Lead In>	=	# (Decimal ASCII value 35)
<Transparent Lead Out>	=	??## (Decimal ASCII values 63 and 35)

IDB programming string for setting Option 171 the Lead In character "#" and Options 173 to 176 to the Lead Out characters "??##".

```
&%IDB_EDIT:OPTION 171:35,0,63,63,35,35:EXIT
```

Host Sample Input	Printer output
&%#4143??##41	AC41
&%# 41 43 ??##41	AC41
&%# , 4/14/3??##41	AC41

Example 3 – Invalid setting (results in single byte transparency)

<CSC>	=	&%
<Transparent Lead In>	=	% (Decimal ASCII value 37)
<Transparent Lead Out>	=	none

IDB programming string for setting the Lead In character values (option 171 and 172) to "%" and clearing the Lead Out character values (options 173 to 176).

```
&%IDB_EDIT:OPTION 171:37,0,0,0,0,0:EXIT
```

Host Sample Input	Printer output
&%%41424341	A424341

Example 4 – Using one Lead In and two Lead Out characters

<CSC>	=	? (Decimal ASCII value 63)
<Transparent Lead In>	=	? (Decimal ASCII value 63)
<Transparent Lead Out>	=	## (Decimal ASCII values 35)

The below IDB programming string sets the options as summarised above. Please note, that the CSC characters (option 8 and 9) represents the first part of the combined Lead In sequence "??"
 (<CSC><Transparent Lead In>), option 8 and 9 must therefore be set to "?" and "0", respectively.

```
&%IDB_EDIT:OPTION 8:63,0:
OPTION 171:63,0,35,35,0,0:EXIT
```

Note: Altering the CSC characters (Option 8 and 9), will affect the programming Lead In syntax in general. After the above change the Lead In programming syntax is ?IDB_EDIT:...

Host Sample Input	Printer output
??414243##41	ABC41
?? 41 42 43 ##41	ABC41
?? , 4/14/243##41	ABC41
?41	A (single byte transparency)

Example 5 – Clearing User defined Lead In and Lead Out settings

<CSC>	=	&%
<Transparent Lead In>	=	none
<Transparent Lead Out>	=	none

IDB programming string for clearing settings in Option 171 to 176.

```
&%IDB_EDIT:OPTION 171:0,0,0,0,0,0:EXIT
```

Host Sample Input

&%41424341

&%/414243/

Printer output

A424341

ABC

3.3.5 The Repetition Character

To save space, it is possible to define a repetition character <X>. Every time the character <X> occurs in the host output data, the preceding value acts as the repetition factor for the hexadecimal value following the <X>. Values preceding the repetition character can be any number from 01 – FF (hexadecimal), ie from 1 to 255.

The following requirements apply:

1. The character is defined in Option 170 and must be an ASCII character (decimal value).
2. If no repetition character is wanted, Option 170 must be set to 0. This is also the default value, in order to avoid unintended repetitions.

Examples

<CSC>	=	&%
<Transparent Lead In>	=	C2 (decimal ASCII values 67, 50)
<Transparent Lead Out>	=	&% (decimal ASCII values 38, 37)
<Repetition Character>	=	* (decimal ASCII value 42)

IDB string for programming Option 170 to the character "*":

```
&%IDB_EDIT:OPTION 170:42,67,50,38,37,0,0:  
EXIT
```

Host Sample Input

```
&%C2414243&%41  
&%C241,02*4203*43&%41  
&%C201*4101*420,2*43&%41  
&%C24102*4203*43&%41  
&%C2,41,0E*43,&%
```

ASCII Output

```
ABC41  
ABBCCC41  
ABCC41  
ABBCCC41  
ACCCCCCCCCCCCC
```

3.3.6 AXIS Extended Emulation Mode

Note: This section is primarily intended for AXIS users. Basic knowledge of AXIS terminology is required.

The Intermate interfaces can operate in two transparency modes. These are the *Normal Intermate Transparent Mode* and the *AXIS Extended Emulation Mode*. The mode which is used is determined by option 167. Refer to the Transparency option description on page 81. Most standard escape sequences are still supported when enabling the *AXIS Extended Emulation Mode*, except for the *User Defined Transparency mode*.

Note: The <CSC> must be set to "&&" for the mode to have effect.

The following four sequences of the *AXIS Extended Emulation Mode* are supported:

Sequence 1 – Set Escape Characters (Enter Extended Emulation Mode)

<CSC>??<ESC><TRN><PAR>
(Alternative AXIS syntax: <EECS> <a> <c>)

The values for <ESC>, <TRN> and <PAR> are stored in the IDB *Option Table*, in order to make them have effect after Power On. <EECS> is the Extended Emulation Control Sequence. The values can be verified in the following options:

<ESC>	Option 171
<TRN>	Option 172
<PAR>	Option 175

Sequence 2 – Print Strings

<ESC><TRN> = <String no.> [= <String no.>] <ESC>
<ESC> <TRN> # <String no.> [# <String no.>] <ESC>
<ESC> <TRN> § <String no.> [§ <String no.>] <ESC>

Sequence 3 – Transparent Data

<ESC> <TRN> <Double Byte Hex Data> <ESC>

Sequence 4 – Ignore Data

<ESC> <PAR> <Data is ignored> <ESC>

Example

<CSC>	&& (Decimal ASCII values 38)
Escape char. <ESC>	% (Decimal ASCII value 37)
Transp. Lead In <ESC> <TRN>	%%
Config. Lead In <ESC> <PAR>	%P (Decimal ASCII values 37 and 80)
Transp./Config. Lead Out <ESC>	%

IDB programming sequence for setting the CSC characters in Option 8 and 9 to "&&", and enabling *AXIS Extended Emulation Mode* with option 167:

```
&%IDB_EDIT:OPTION 167:1:OPTION 8:38,38:EXIT
```

Note: Altering the CSC characters (Option 8 and 9), affects the IDB programming Lead In syntax in general. After the above change the Lead In programming syntax is &%IDB_EDIT:...

Sequence 1 sets up the escape characters used in Extended Emulation Mode

```
&&??%P
```

Note: The values 37, 37 and 80 (% , % and P respectively) can be verified in option 171, 172 and 175, where they are stored resident until changed by an IDB command, or by the Extended Emulation Mode sequence 1.

Host Sample Input

%%414243%41
%P414243%41
%4141

ASCII Output

ABC41 (sample of sequence 3)
41 (sample of sequence 4)
A41 (Single byte transparency)

IDB programming sequence for defining the contents of string 65 and 66 to "Hello" and "World":

```
&%IDB_EDIT:STRING 65:Hello:STRING 66:  
World:EXIT
```

Host Sample Input

%%=65=66% Wide

ASCII Output

Hello World Wide (sample of
sequence 2)

3.3.7 MPI Mode

The Intermate IDB also supports MPI's way of enabling and disabling the suppression of format control codes (eg New Line).

Two approaches exist in which the feature can be enabled.

First example

Option 169	=	2	(User defined transparent lead in characters are used.)
Option 177	=	4	(Standard handling of control codes.)
Option 171	=	37	(First transparent lead in character = "%")
Option 172	=	37	(Second transparent lead in character = "%")
Option 173	=	37	(First transparent lead out character = "%")
Option 174	=	37	(Second transparent lead out character = "%")
<CSC>	=	&%	

Host Sample Input

```

%%414243%%41
&%41&%42&% 43
ABC<CR><NL>DE
%%-%%ABC<CR><NL>DE%%+%%
    
```

ASCII Output

```

ABC41
AB 43
ABC<CR><NL>DE
ABCDE
    
```

Second example - should be used with caution

Option 177	=	4	(Standard handling of control codes.)
<CSC>	=	%%	

Host Sample Input

```

%%41%%42%% 43
ABC<CR><NL>DE
%%-%%ABC<CR><NL>DE%%+%%
    
```

ASCII Output

```

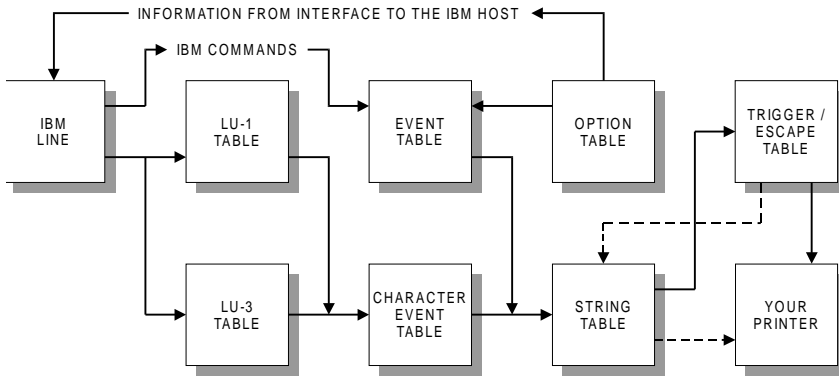
AB 43
ABC<CR><NL>DE
ABCDE
    
```

Note: Features like event triggering (<CSC>-0 to <CSC>-F) and enabling (<CSC>+M) and disabling (<CSC>-M) of Control Code Suppression do NOT work when option 167 = 2 (MPI

transparency method enabled). Refer to appendix E. *Special TN3270E (Coax) IDB Commands* on page 215 and section 3.4.3 *Predefined String Conversion* on page 49.

3.4 TN3270E (Coax) Conversion Utility

This utility enables a user-defined setup of string conversion. It is possible to set numerous strings. Below is shown how the IDB works.



In the figure, commands from the IBM system are decoded. Each command points to a specific entry in the *Event Table*.

Data from the IBM system passes through either the *LU-1* or the *LU-3 Table*, depending on them being in EBCDIC or in Device Buffer Code, respectively. The *LU-x Table* converts the data to ASCII code.

The *Character Event Table* receives the ASCII code. This triggers a string number, which points to a stored string in the *String Table*. In other words, the user can change any translated character in to a stored string in the *String Table*.

In the *Option Table* all parameters for the printer/interface are kept. The values stored are used to:

1. Inform the IBM system about the capabilities of the printer/interface.

2. Set the printer to the correct default values, ie pointing to the *Event Table* in order to activate the necessary functions.

The *Event Table* holds an entry for each possible command sent from the IBM system. In the table, values are stored, which point to strings in the *String Table*.

All control sequences used to control the printer are found in the *String Table*. They are triggered by either the *Event Table* or the *Character Event Table*. The contents of the *String Table* can be changed in accordance with the codes and functions available in the attached printer.

3.4.1 How to Determine a Free String

When creating new or replacing old strings, the procedure for finding available strings is the same. The perhaps easiest way is to make a printout of the string settings. This is done by sending the command sequence `&%IDB_PRINT_FULLL:EXIT` from the host.

Another possibility is to use the *TN3270E IDB configuration file editor* program (*P01-xxx.exe*), where strings can be viewed on screen. This program is enclosed on the utility disk and can also be downloaded from the Intermate web site www.intermate.com. Download the file *P01-xxx.zip*.

Example 1 – reviewing strings on screen with the TN3270E IDB configuration file editor program (P01-xxx.exe)

1. Upload the IDB settings from the printer. Refer to appendix C. *Upload / Download of IDB Settings* on page 205. Copy the uploaded file to the same directory as the *P01-xxx.exe* file.
2. Start the *TN3270E IDB configuration file editor* program (*P01-xxx.exe*).
3. Load the IDB configuration file by choosing "Load IDB File" on the main screen, followed by the file name (**.idb*).

4. Choose "Edit IDB", "Strings" and "Examine".

This enables you to review the currently defined strings, using <PageUp> and <PageDown> to scroll through the list. The string number is shown in the top of the screen. Any assigned events are shown in the bottom of the screen.

Example 2 – making a printout

Front panel activated

This possibility is not available on all interfaces, as the IDB has to be accessible through the printer's operator panel. Refer to the *User's Guide* included with the interface for details about whether or not this applies to your interface.

If you can access the IDB via the operator panel, locate the **SCS Options** or similar menu. Proceed to the **Test** or similar menu and choose **Print IDB Dump** or similar. This prints all options and strings, ie the complete IDB.

On-line activated

The string settings are printed by sending a special IDB command to the interface. Either of the following commands can be sent to the interface embedded in data or as hard copy from a screen.

&%IDB_PRINT this prints all activated options, events and strings or

&%IDB_PRINT_FULLL that prints the complete IDB, including not activated options and events.

Via HyperTerminal

This possibility is not available on all interfaces, as the IDB has to be accessible through the Windows HyperTerminal program. Refer to the *User's Guide* included with the interface for details about whether or not this applies to your interface.

If the interface can be accessed via the HyperTerminal, locate the SCS Options or similar menu. Proceed to the Test or similar menu and choose SCS IDB Dump or similar. This prints all options and strings, ie the complete IDB.

3.4.2 User Defined Single Character Conversion

With this option, single characters are used to trigger an event. This can be both simple character conversion and triggering of complete strings.

Note: Before setting up a character conversion, you should make a dump of the ASCII Table on your printer. Refer to that dump when creating the conversion, ie be sure that the character you wish to use as trigger does exist.

Example

The character "@" (ASCII 40 hex) is to activate a Character Event. When the character is sent through the *LU-1* or *LU-3 Translate Table*, a specific string is to be sent to the printer. In this example string number 67.

Character Event /40 (hex)	point to string 67
String 67 contents	HELLO

IDB programming sequence for setting character event 40 to point at string, and defining the contents of string 67 to "HELLO".

Host Input	Action
&%IDB_EDIT:	Enter the editor
CHAEVENT /40:67:	Set character event to point to string 67
STRING67:HELLO:	Store 'HELLO' in string 67
QUIT	Leave the editor

Host sample input	Printer output
@ WORLD	HELLO WORLD

3.4.3 Predefined String Conversion

Using the adapter's String Conversion feature could in cases of large data transmissions cause a slight speed reduction. This is because the adapter has to run all incoming data through the search routines. Therefore, it is recommended to use the special string select events when possible. These events have a predefined trigger sequence, which is handled as an IDB command <CSC>-X where:

<CSC>	=	&%
X	=	0 - F (hexadecimal upper-case)

This means, that a total of 16 strings are available, which can be printed based on the statements in events 160-175. The location in the *Event Table* is found by adding X to 160.

Examples

User defined trigger	&%-0
Defined in event	160
User defined trigger	&%-7
Defined in event	167 (160 + 7h = 167)
User defined trigger	&%-E
Defined in event	174 (160 + Eh = 174)

Host Input	Action
&%IDB_EDIT:	Open the editor
EVENT 160:23:	Set &%-0 to string # 23
EVENT 167:24:	Set &%-7 to string # 24
EVENT 174:28:	Set &%-E to string # 28
STRING 23:has received &%-0:	Set string #23
STRING 24:Special String:	Set string #24
STRING 28:/OD/OA:	Set string #28 to "<CR> <LF>"
QUIT	Exit editor

Host Sample Input

INTERMATE &%-0
This is a &%-7
Newline&%-Emade

ASCII Output

INTERMATE has received &%-0
This is a Special String
Newline<CR><LF>made

3.4.4 User Defined String Conversion

When a character combination defined as a trigger string is recognized in the ASCII output the corresponding event for the trigger, which points to a string in the *String Table*, is printed instead.

The following rules apply to *User defined triggers*:

- Up to 30 triggers (strings) can be defined.
- Each trigger string can consist of a maximum of eight characters.
- Each trigger string must be unique. This means that it must not match another trigger string. Nor may it match the start of another trigger string.
- The search for strings is done as the last function before characters are sent to the printer. This search is done on the ASCII characters and on strings from events. There is no search on hex- or IDB-dumps.
- When a trigger X is found in the output, the interface goes to the *Event Table* location 199+X and prints the assigned string. If 0 is stored in this event, no string is printed and the trigger disappears from the output.
- A trigger can contain all characters greater than 01H. However, caution is required when trying to trigger on ASCII characters between 01H and 1FH, as these are mostly control codes (CR, LF, FF etc.). An incorrect trigger or string could affect page formatting. Use Events 80 - 86 to change action on a control code.

- The triggers (strings) are listed in the IDB-dump and are active after the printer or interface has been Powered Off and On.
- The same syntax rules for programming a string apply to programming a trigger. ASCII characters and hexadecimal values must be preceded by a "/".
- The string pointed to by the event is limited to 255 characters.

Examples

Host Input	Action
&%IDB_EDIT:	Open the editor
TRIGGER 1:##31##:	Set trigger 1 to "##31##"
TRIGGER 2:/23/23/33/32/23/23:	Set trigger 2 to "##32##" (using hex. numbers)
TRIGGER 3:##/0D/0A##:	Set trigger 3 to "##<CR><LF>##"
TRIGGER 4:123456789:	Error - maximum 8 characters
TRIGGER 5:12345678:	Set trigger 5 to "12345678"
TRIGGER 6:##:	Error - is part of trigger 1 and 2
TRIGGER 7:31:	OK, Not in conflict with trigger 1
TRIGGER 8:GYG:	Set trigger 8 to "GYG"
TRIGGER 0:abc:	Error-only triggers between 1 - 30
TRIGGER 31:dfg:	Error-only triggers between 1 - 30
EVENT 200:41,42,43,0,45,0,47,0:	Set events 1, 2, 3, 5 and 7 to point to strings set below and events 4, 6 and 8 to nothing
STRING 41: {TRIG1}:	
STRING 42: {TRIG2}:	
STRING 43: {TRIG3} /0D/0A:	
STRING 45: {TRIG5}:	
STRING 47: {TRIG7}:	
EVENT 160:30:	Define &%-0 (predefined)
STRING 30: (31):	
EXIT	Leave the editor

Host Sample Input	ASCII Output
##31##<CR><LF>	{TRIG1}<CR><LF>
##31##31##<CR><LF>##	{TRIG1}{TRIG7}{TRIG3} <CR><LF>
##31<CR><LF>	##{TRIG7}<CR><LF>
##<CR><LF>	##<CR><LF>
1234567312345678<CR><LF>	1234567{TRIG7}2345678 <CR><LF>
--&%-0--<CR><LF>	--({TRIG7})--<CR><LF>
GGYGG<CR><LF>	GG<CR><LF>

Note: "GYG" in the last line calls {TRIG8}, but the event is set to "0" (do nothing).

3.4.5 Formatted String Conversion

The formatted string utility will to some extent emulate the i-data transparency method.

Important: Do NOT use characters between "0" – "9", "A" – "F" and "a" – "f". Also, do NOT use one of the characters used as lead in for one of the other CSC commands. Refer to the list in appendix E. *Special TN3270E (Coax) IDB Commands* on page 215.

Command syntax

```
<CSC> <Option 168> xxx, yyy [,yyy] <CSC>
```

Where "xxx" is the string number between 0 and 100. "yyy" is the parameters. "y" can be "0" – "9", "A" – "F", "a" – "f", "+" and "-".

String syntax, when used as formatted strings

Whenever the interface firmware finds a single "%" sign (ASCII 25 hex) in the string, it is replaced by the next parameter in the host data. If you want a "%" sign to be printed just put "%%" with no space between in your string.

Note: If the same string is triggered from an event, all the "%" signs are printed.

Example

<CSC>	=	&%
Option 168	=	89 (= 59 hex = "Y")
String 80	=	>% Formatted strings %.% %<

IDB programming sequence for setting option 168 to 89 and string 80 to ">% Formatted strings %.% %<":

```
&%IDB_EDIT:OPTION 168:89:
STRING80:>% Formatted strings %.% %<:EXIT
```

Host Sample Input

```
&%Y80 , 1 , 2&%
&%Y80 , -1A&%
&%Y80 , +1 , -2 , +3&%
&%Y80 , , 2 , 3&%
```

ASCII Output

```
>% Formatted strings 1.2 %<
>% Formatted strings -1A. %<
>% Formatted strings +1.-2 %<
>% Formatted strings .2 %<
```

Note: In the last two example lines above "+3" is ignored by the formatted string.

3.4.6 User Defined Escape Conversion

User Defined Escape Triggers are located in the Escape Table. In an IDB-dump, this table is located just after the LU3 translation tables. Each entry (0 to 255) in the table represents an Escape value and will, when triggered, print the assigned string.

An extra Editor command is used to create a user defined escape trigger.

Syntax

```
ESC xxx:yyy[ ,yyy]
```

This command puts the value "yyy" into position "xxx" of the Escape Table. "yyy" is a number between 1 and 100. "xxx" is a number between 0 and 255.

Note: If no string number is stored in the Escape Table, the characters preceding the CSC characters (&%) are interpreted as a hexadecimal ASCII code. This corresponds to the *Default Single byte transparency* (see example below).

Examples

IDB programming sequence for setting up strings.

Host Input	Action
&%IDB_EDIT:	Open the editor
ESC 49:80:	Set ESC 49(=31H) to 80
ESC 50:0:	Disable ESC 50
STRING 80:1st:	Set string # 80
EXIT	Exit the editor

Host Sample Input	ASCII Output
&%31 Example	1st Example
&%32nd Example	2nd Example (single byte transparency)

Not 1st Example (Multibyte transparency)

4. IDB Tables

The *Option* and *Event Tables* are common for the entire Intermate range of IDB based interfaces.

Some options and events in the tables below are not supported by all Intermate interfaces. Refer to your interface documentation for available options and events.

In the table below the second column (Dec./Bit no.) holds the option values. These are either decimal numbers or bit numbers. The decimal numbers can be stored directly in the option, while the bit numbers are used to compose a byte stored in the option. The byte must be converted to a decimal number before it can be stored. When constructing binary numbers, the bit positions are counted from right to left, ie (8 7 6 5 4 3 2 1).

The right-hand column shows the software release code numbers.

'ALL'	indicates all products released after 1994-03-30.
'A01-xxxx'	indicates all releases of the A01 firmware.
'K01-8091'	indicates that the feature was implemented starting with release K01-8091. (Year 98 , Week 09 , Release 1)

Refer to your Intermate *User's Guide* for specific firmware numbers used in connection with your interface. This information is often found in the firmware upgrade appendix and on the status sheet.

4.1 Option Table

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code
0		Not defined		
1		<p>Local Copy Form Feed Action</p> <p><i>Note:</i> This option does not apply when printing via the TN3270E protocol.</p>		ALL
	0	No action (No automatic Form Feed before and after Local Copy)		
	1	Form feed before		A11-5291
	2	Form feed after		K01-4381
	3	Form feed before and after		
	4	No automatic Form Feed before Local Copy. After the Local Copy operation, the interface will internally adjust Line Counters etc. as done on any Form Feed. If a Form Feed (or similar) is needed this could be put in a string triggered by Event 100.		A11-5291 K01-4381
	5	Form Feed before but NOT after Local Copy. After the Local Copy operation, the interface will internally adjust Line Counters etc. as done on any Form Feed. If a Form Feed (or similar) is needed this could be put in a string triggered by Event 100.		
		<p><i>Example</i></p> <p>&%IDB_EDIT: OPTION 1:2: EXIT</p>		

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code
2		Country Code Selection		ALL
	0	Default to 1 (English)		
	1	English (US)		
	2	German/Austrian		
	3	German/Austrian, alternate		
	4	Belgian		
	5	Brazilian		
	6	Canadian bilingual		
	7	Canadian French		
	8	Danish/Norwegian		
	9	Danish/Norwegian, alternate		
	10	English, UK		
	11	Finnish Swedish		
	12	Finnish/Swedish, alternate		
	13	French/Azerty 105		
	14	International		
	15	Italian		
	16	Portuguese		
	17	Portuguese, alternate		
	18	Spanish		
	19	Spanish, alternate		
	20	Spanish speaking		
	21	Swiss German/Swiss French		
	22	Japanese/English		
	23	Spanish data/text processing		
	Other	Default to 1 (English)		
		<i>Example</i> &%IDB_EDIT: OPTION 2:0: EXIT		
3		Non-Printable Character (hyphen)		ALL
	00	Default hyphen		
	32	Space		
	45	Hyphen ("-")		
	xx	Character value for unprintable character		
	00	Default hyphen		
	255	Default hyphen		
		<i>Example</i> &%IDB_EDIT: OPTION 3:32: EXIT		

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code
4	<p>0 1 2 3</p>	<p>Controller Reset Commands</p> <p><i>Note:</i> This option does not apply when printing via the TN3270E protocol.</p> <p>No action Execute event 82 (FF) Execute event 85 (CR) Execute events 82 and 85</p> <p><i>Example</i> &%IDB_EDIT: OPTION 4:1: EXIT</p>		ALL
5	<p>0 1 2</p>	<p>Form Feed Support</p> <p>When MPL or BM is reached a formfeed is generated. When MPL or BM is reached or a formfeed is received linefeeds are generated to reach next top of form. When MPL or BM is reached linefeeds are generated, and when a formfeed is received a formfeed is generated.</p> <p><i>Example</i> &%IDB_EDIT: OPTION 5:0: EXIT</p>		ALL
6	<p>0 1 2</p>	<p>Data Conversion</p> <p><i>Note:</i> This option does not apply when printing via the TN3270E protocol.</p> <p><i>Note:</i> Do not use this option without consulting Intermate first. Features activated by this options are first taken up on power ON.</p> <p>Normal data conversion. Transparent data, no character conversion. Disable IDB editor (Hex dump and status print is still available).</p> <p>In the transparent mode there is no check for the CSC characters (&%) and the SCS escape sequences (2B xx) are passed directly to the printer. All data is passed directly through the interface in EBCDIC or Device Buffer Code.</p> <p><i>Example</i> &%IDB_EDIT: OPTION 6:0: EXIT</p>		A01-xxxx

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code
7	0 58 xx 255	<p>IDB Edit Delimiter</p> <p>Default colon (:) Default colon (:) Character value for delimiter used in IDB_EDIT Default colon (:)</p> <p>The delimiter should be greater than 20H = 32dec = space and less than FFH = 255dec.</p> <p><i>Example</i> &%IDB_EDIT: OPTION 7:58: EXIT</p>		ALL
8	38 xx	<p>First CSC Character</p> <p>Default ampersand (&) Any other printable character</p> <p>The first CSC should be greater than 20H = 32dec = space and less than 255H. Refer to appendix A. <i>ASCII Character Table</i> on page 201 for a list of possible characters.</p> <p><i>Example</i> &%IDB_EDIT: OPTION 8:38: EXIT</p>		ALL
9	0 37 xx	<p>Second CSC Character</p> <p>Limit CSC character to first CSC only. Default percent (%) Any other printable character</p> <p>The second CSC should be greater than 20H = 32dec = space and less than FFH = 255dec. Refer to appendix A. <i>ASCII Character Table</i> on page 201 for a list of possible characters.</p> <p><i>Example</i> &%IDB_EDIT: OPTION 9:37: EXIT</p>		ALL

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code
10	0 1 4 5 7 16 20 36 84	<p>IBM Printer Emulation</p> <p><i>Note:</i> This option does not apply when printing via the TN3270E protocol.</p> <p>Old type 3287 3287 standard 3268 3230 3262 4214 3812 (Not IPDS) 4224 (Not IPDS) Advanced SCS printer. With the option set to 84 you can use all the supported SCS features with all the supported parameters. This has been made because some IBM printers do not follow their own documentation.</p> <p><i>Example</i></p> <p>PPM parameters: Forms Control = 1 triggers Event 64 Forms Control = 2 triggers Event 65 Source Cassette/Tray = 1 triggers Event 66 Source Cassette/Tray = 2 triggers Event 67 Source Cassette/Tray = 3 triggers Event 68 Print Quality = 1 triggers Event 144 Print Quality = 2 triggers Event 145 Print Quality = 3 triggers Event 146</p> <p><i>Example</i></p> <p>&%IDB_EDIT: OPTION 10:20: EXIT</p>		ALL
11	0 1	<p>Buffer Size</p> <p><i>Note:</i> This option does not apply when printing via the TN3270E protocol.</p> <p>4 Kbyte (standard) 8 Kbyte (only with no EAB)</p> <p><i>Example</i></p> <p>&%IDB_EDIT: OPTION 11:0: EXIT</p>		ALL

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code
12	0 1 2 3 4 5 6 7	<p>Printer Features</p> <p><i>Note:</i> This option does not apply when printing via the TN3270E protocol.</p> <p>None</p> <p>Programmed symbols (PS) installed</p> <p>3289 text installed</p> <p>PS + 3289 text features installed</p> <p>Extended Attribute Buffer (EAB) installed</p> <p>EAB + PS installed</p> <p>EAB + APL installed</p> <p>EAB + APL + PS installed</p> <p>The settings of option 12 controls address 000CH of the Printer Control Information Area (PCIA).</p> <p><i>Example</i> &%IDB_EDIT: OPTION 12:6: EXIT</p>		ALL
13		<p>Advanced Printer Features</p> <p><i>Note:</i> This option does not apply when printing via the TN3270E protocol.</p> <p>1 LU3 query supported</p> <p>2 Local save/restore SF and Query List SF supported</p> <p>3 FM header subset 4 supported</p> <p>4 Translate table required (Only used if PS installed)</p> <p>5 Not defined</p> <p>6 EAB highlight (Blink) supported (If option10>1)</p> <p>7 EAB highlight (Reverse) supported (If option10>1)</p> <p>8 EAB highlight (Underline) supported (If option10>1)</p> <p>The setting of option 13 controls address 000AH of the Printer Control Area (PCIA).</p> <p><i>Example</i> &%IDB_EDIT: OPTION 13:131: EXIT</p>		ALL

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code
14		<p>Extended Printer ID</p> <p><i>Note:</i> This option does not apply when printing via the TN3270E protocol.</p> <p>3 CDCP 4 Load SF 5 LU1 FM header data stream supported. 6 Colour supported.</p> <p>The settings of option 14 controls address 000EH of the Printer Control Information Area (PCIA)</p> <p><i>Example</i> &%IDB_EDIT: OPTION 14:6: EXIT</p>		ALL
15	<p>0</p> <p>1</p> <p>2</p> <p>5</p> <p>6</p>	<p>MPP + 1 (LU3 mode only)</p> <p><i>Note:</i> This option does not apply when printing via the TN3270E protocol.</p> <p><CR> moves to 1st print position of current line. <NL> moves to 1st print position of next line. Same action as "0".</p> <p><CR> moves to 1st print position of next line. <NL> moves to 1st print position of next line + 1.</p> <p><CR> moves to 1st print position of next line. <NL> moves to 1st print position of next line.</p> <p><CR> moves to 1st print position of current line. <NL> moves to 1st print position of next line + 1.</p> <p><i>Note:</i> Corresponds to 3812 switches c18/c19</p> <p><i>Example</i> &%IDB_EDIT: OPTION 15:1: EXIT</p>		ALL

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code
16	1 2	<p>Form Feed Data (LU3 mode only)</p> <p><i>Note:</i> This option does not apply when printing via the TN3270E protocol.</p> <p>Print position 2 of next form Print position 1 of next form</p> <p>This option is executed if the form-feed is not sent as the last character in a buffer but in the first print position or in the position MPP + 1. If option 19 = 1 this option is also executed.</p> <p><i>Note:</i> Corresponds to 3812 switch c20</p> <p><i>Example</i> &%IDB_EDIT: OPTION 16:1: EXIT</p>		ALL
17	1 2	<p>Form Feed Last (LU3 mode only)</p> <p><i>Note:</i> This option does not apply when printing via the TN3270E protocol.</p> <p>First print position of second line First print position of first line</p> <p>This option is executed if the form-feed is the last character in a buffer and is sent in 1st print position or MPP + 1. If option 19 = 1 this option is also executed.</p> <p><i>Note:</i> Corresponds to 3812 switch c21</p> <p><i>Example</i> &%IDB_EDIT: OPTION 17:2:EXIT</p>		ALL
18	1 2	<p>Null Suppression (formatted LU3 mode only)</p> <p><i>Note:</i> This option does not apply when printing via the TN3270E protocol.</p> <p>Suppress null lines Print character in LU3 table for null characters.</p> <p><i>Note:</i> Corresponds to 3812 switch c22</p> <p><i>Example</i> &%IDB_EDIT: OPTION 18:1: EXIT</p>		ALL

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code
19	1 2 5 6	<p>Form Feed Position (LU3 mode only)</p> <p><i>Note:</i> This option does not apply when printing via the TN3270E protocol.</p> <p>Form feed whenever it occurs. Form feed in first print position or MPP + 1. Like option 19 = 1 but if the FF follows a NL on the last line only the NL is performed. Like option 19 = 2 but if the FF follows a NL on the last line only the NL is performed.</p> <p><i>Note:</i> Corresponds to 3812 switch c23</p> <p><i>Example</i> &%IDB_EDIT: OPTION 19:2: EXIT</p>		ALL
20	0 xx	<p>Power Up Time (Extra delay at Power On)</p> <p><i>Note:</i> This option does not apply when printing via the TN3270E protocol.</p> <p>Default 30 seconds. Wait xx seconds before communicating with printer.</p> <p><i>Example</i> &%IDB_EDIT: OPTION 20:0: EXIT</p>		K01-4381 A01-xxxx A02-xxxx A05-xxxx A06-xxxx A09-6221 A11-xxxx K61-xxxx
21	0 1 xx	<p>Intervention Required Response</p> <p>Intervention Required will never be send 10 minutes stop before Intervention Required xx min. stop before intervention Required.</p> <p><i>Example</i> &%IDB_EDIT: OPTION 21:0: EXIT</p>		ALL
22	1 2 3	<p>Bold Print Control</p> <p>1 Use event 102,103 when <CR> occurs 2 Use event 102,103 when <BS> occurs 3 Bold on multiple <BS> allowed</p> <p><i>Note:</i> Bold print control should only be used if events 102 and 103 are defined.</p> <p><i>Example</i> &%IDB_EDIT: OPTION 22:3: EXIT</p>		ALL

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code
23	64 80 128 132 192	<p>PS Characteristics</p> <p><i>Note:</i> This option does not apply when printing via the TN3270E protocol.</p> <p>PS no.2 and 3 installed PS no.2 and 3 installed, PS no.3 is triple plane PS no.2 through 5 installed PS no.2 through 5 installed, PS no.5 is triple plane PS no.2 through 7 installed</p> <p>All other values are reserved when PS feature (option 12) is installed, if used this option is forced to 192.</p> <p><i>Example</i> &%IDB_EDIT: OPTION 23:64:EXIT</p>		ALL except A01
24	0 xx	<p>Prescribe Command Recognition Character</p> <p><i>Note:</i> This option does not apply when printing via the TN3270E protocol.</p> <p>R is used as Command recognition character xx is used as Command recognition character</p> <p>This option is only used when the interface prints loaded programmed symbols (eg GDDM).</p> <p><i>Example</i> &%IDB_EDIT: OPTION 24:0: EXIT</p>		A02-xxxx A05-xxxx A06-xxxx A11-xxxx A16-xxxx K61-xxxx
25	1 2 else:	<p>End Of Message (EM - DBC code 01) Control</p> <p><i>Note:</i> This option does not apply when printing via the TN3270E protocol.</p> <p>Print position is not changed by a valid EM code. 1st PP of current line(like <CR>) 1st PP of next line(like <NL>). This is the correct way to handle an EM.</p> <p><i>Example</i> &%IDB_EDIT: OPTION 25:0:EXIT</p>		ALL

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code
26	<p>1</p> <p>2</p> <p>else:</p>	<p>Output Optimization On <CR></p> <p><i>Note:</i> This option does not apply when printing via the TN3270E protocol.</p> <p>Suppress <CR>s and spaces used to obtain the same print position. In LU3 mode Null Codes and Attributes (If they do not change the current attribute) are suppressed as well as spaces. This mode can be very useful if you are using transparent sequences.</p> <p>Suppress spaces, Null codes and Attributes (if they do not change the current attribute) placed before a <CR> (and NL) in LU3 mode. BUT only if no printable characters are placed before the character to be suppressed.</p> <p>No suppression.</p> <p><i>Examples</i></p> <p>a) Option 26 = 0</p> <p>Host input ABC<CR><SP><SP><SP>DEF</p> <p>ASCII output ABC<CR><SP><SP><SP>DEF</p> <p>b) Option 26 = 1</p> <p>Host input ABC<CR><SP><SP><SP>DEF</p> <p>ASCII output ABCDEF</p> <p><i>Example</i> &%IDB_EDIT: OPTION 26:0:EXIT</p>		ALL

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code
30	<p>1</p> <p>3</p> <p>5</p> <p>7</p> <p>else:</p>	<p>Right To Left Printing (Arabic RPQs)</p> <p><i>Note:</i> This option does not apply when printing via the TN3270E protocol.</p> <p>The right to left feature is active and default text orientation is for :</p> <p>a) NON-SCS(LU-3) left to right. b) SCS(LU-1) left to right.</p> <p>The right to left feature is active and default text orientation is for :</p> <p>a) NON-SCS(LU-3) left to right. b) SCS(LU-1) right to left.</p> <p>The right to left feature is active and default text orientation is for :</p> <p>a) NON-SCS(LU-3) right to left. b) SCS(LU-1) left to right.</p> <p>The right to left feature is active and default text orientation is for :</p> <p>a) NON-SCS(LU-3) right to left. b) SCS(LU-1) right to left.</p> <p>The right to left feature is NOT active.</p> <p><i>Example</i> &%IDB_EDIT: OPTION 30:1: EXIT</p>	ALL	
31	<p>0</p> <p>else:</p>	<p>Old Command Sequence Support</p> <p><i>Note:</i> This option does not apply when printing via the TN3270E protocol.</p> <p>Old command sequences is supported. Old command sequences is NOT supported.</p> <p>The following triggers are active when option 31 = 0. Refer to appendix E. <i>Special TN3270E (Coax) IDB Commands</i> on page 215.</p> <p><CSC>L{xx} <CSC>W{xx} <CSC>O{xx} <CSC>={x}</p> <p><i>Example</i> &%IDB_EDIT: OPTION 31:1: EXIT</p>	ALL	

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code
32	0 else:	<p>Skip Blank Page</p> <p>Normal operation. Skip blank page. If a page contains only CR,NL,LF or FF it will not be printed.</p> <p><i>Example</i> &%IDB_EDIT: OPTION 32:1:EXIT</p>		A09-3321 A13-3151
33 - 36		Not defined		
37	0 1 2 3 4 5 6 7	<p>Baud Rate Selection</p> <p><i>Note:</i> This option does not apply when printing via the TN3270E protocol.</p> <p>9600 bps 300 bps 600 bps 1200 bps 2400 bps 4800 bps 9600 bps 19200 bps</p> <p><i>Example</i> &%IDB_EDIT: OPTION 37:0: EXIT</p>		A09-xxxx A13-xxxx
38	1 2	<p>Serial Port Control</p> <p><i>Note:</i> This option does not apply when printing via the TN3270E protocol.</p> <p>If bit 1 = 0 DTR active high If bit 1 = 1 DTR active low If bit 2 = 0 Robust Xon on If bit 2 = 1 Robust Xon off</p> <p><i>Example</i> &%IDB_EDIT: OPTION 38:0: EXIT</p>		A09-xxxx A13-xxxx

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code
39	0 xx	<p>Parallel / Serial Timeout</p> <p><i>Note:</i> This option does not apply when printing via the TN3270E protocol.</p> <p>15 seconds xx seconds</p> <p><i>Note:</i> Only for interfaces with an optional parallel or serial port.</p> <p><i>Example</i> &%IDB_EDIT: OPTION 39:0: EXIT</p>		A09-xxxx A13-xxxx
40 - 89		Not defined		
90 91 92 93 94 95 96 97	1 2 3 else:	<p>Cassette/tray 1 Paper Size Cassette/tray 2 Paper Size Cassette/tray 3 Paper Size (only active in 4224 emulation) Cassette/tray 4 Paper Size Cassette/tray 5 Paper Size Cassette/tray 6 Paper Size Cassette/tray 7 Paper Size Cassette/tray 8 Paper Size</p> <p><i>Note:</i> The number of available cassettes in the TN3270E may vary from interface to interface.</p> <p>B5 - 182 x 257 mm (7.20 x 10.10 in.) Letter - 216 x 279 mm (8.50 x 11.00 in.) Legal - 216 x 356 mm (8.50 x 14.00 in.) A4 - 210 x 297 mm (8.30 x 11.70 in.)</p> <p><i>Note:</i> These options are only used with the APO/COR functions activated.</p> <p><i>Example</i> &%IDB_EDIT: OPTION 90:0: EXIT</p>		ALL
98 - 99		Not defined		

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code
100	10 12 15 16	Characters Per Inch 10 CPI 12 CPI 15 CPI 16.7 CPI <i>Example</i> &%IDB_EDIT: OPTION 100:10: EXIT		ALL
101	0 1	Mono Or Dual Case <i>Note:</i> This option does not apply when printing via the TN3270E protocol. Dual case (upper and lower case) Mono case (upper case only) <i>Example</i> &%IDB_EDIT: OPTION 101:0: EXIT		ALL
102	80 132 255 xx	Maximum Print Position (MPP) 80 characters per line 132 characters per line 132 characters per line xx characters per line <i>Example</i> &%IDB_EDIT: OPTION 102:132: EXIT		ALL
103	1 xx	Left Margin (LM) Left margin in position 1 Left margin in position xx <i>Example</i> &%IDB_EDIT: OPTION 103:1: EXIT		ALL
104	132 xx	Right Margin (RM) Right margin in position 132 Right margin in position xx <i>Example</i> &%IDB_EDIT: OPTION 104:132: EXIT		ALL

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code
105	6 8 xx	<p>Lines Per Inch (LPI)</p> <p>6 lines per inch 8 lines per inch xx lines per inch</p> <p><i>Example</i> &%IDB_EDIT: OPTION 105:6: EXIT</p>		ALL
106	0 1	<p>Single / Double Line Spacing</p> <p>Single line spacing Double line spacing</p> <p><i>Example</i> &%IDB_EDIT: OPTION 106:0: EXIT</p>		ALL
107	51 66 72 255 xx	<p>Lines Per Page (LPP)</p> <p>51 lines per page 66 lines per page 72 lines per page 72 lines per page xx lines per page</p> <p><i>Example</i> &%IDB_EDIT: OPTION 107:66: EXIT</p>		ALL
108	1 xx	<p>Top Margin (TM)</p> <p>Top margin line 1 Top margin line XX</p> <p><i>Example</i> &%IDB_EDIT: OPTION 108:1: EXIT</p>		ALL
109	0 51 66 72 xx	<p>Bottom Margin (BM)</p> <p>Use value in option 107 Bottom margin line 51 Bottom margin line 66 Bottom margin line 72 Bottom margin line xx</p> <p><i>Example</i> &%IDB_EDIT: OPTION 109:66: EXIT</p>		ALL

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code
110	0 1 2 3 4 5 6 7 255	Base Colour (default colour) Black Blue Red Pink Green Turquoise Yellow Black Black <i>Example</i> &%IDB_EDIT: OPTION 110:0: EXIT		ALL
111		Not defined		
112	0 1 2 3 255	Print Quality <i>Note:</i> This option does not apply when printing via the TN3270E protocol. Not defined Data processing quality Near letter quality Near letter quality on 4224 (If option 10 = 36/84) Not defined <i>Example</i> &%IDB_EDIT: OPTION 112:2 EXIT		ALL
113	0 1 2 3 4 5 6 7 8	Default Source Cassette/Tray Not defined Cassette 1 Cassette 2 Cassette 3 Cassette 4 Cassette 5 Cassette 6 Cassette 7 Cassette 8 <i>Example</i> &%IDB_EDIT: OPTION 113:1: EXIT		ALL
114 - 119		Not defined		

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code
120	0 1	<p>Page Orientation</p> <p><i>Note:</i> This option does not apply when printing via the TN3270E protocol.</p> <p>Portrait Landscape</p> <p><i>Example</i> &%IDB_EDIT: OPTION 120:0: EXIT</p>		ALL
121	0 1 2 3 6 *) 7 *) 16 **)	<p>Programmed Symbols (PS) Page Orientation</p> <p><i>Note:</i> This option does not apply when printing via the TN3270E protocol.</p> <p>Programmed symbols in portrait orientation Programmed symbols in landscape orientation PS in portrait forces text into portrait PS lanscape forces text into landscape PS in COR mode(Landscape with reduced CPI and LPI) and text is forced into COR mode. Same action as option 121 = 6, but prints slightly different. It is only used with the Kyocera FS1500, which has a firmware bug in releases before 1992-08-01. Programmed symbols orientation is controlled by the APO system (Option 122 must be 2)</p> <p><i>Example</i> &%IDB_EDIT: OPTION 121:0: EXIT</p>		ALL except A01 *) A02-3191 A11-2371 **) A09-2441 A13-2432
122	1 2 else:	<p>Automatic Print Orientation</p> <p>No Yes Extended Page Orientation Selection system disabled (Refer to page 217 for further details on APO/COR)</p> <p><i>Note:</i> Corresponds to 3812 configuration switch c03</p> <p><i>Example</i> &%IDB_EDIT: OPTION 122:2: EXIT</p>		ALL

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code
123	0 1 2 else:	Cassette/tray 1 Print Orientation Portrait orientation Landscape Orientation COR Portrait orientation <i>Note:</i> 3812 configuration switch c01. <i>Example</i> &%IDB_EDIT: OPTION 123:2: EXIT		ALL
124	0 1 2 else:	Cassette/tray 2 Print Orientation Portrait orientation Landscape Orientation COR Portrait orientation <i>Note:</i> 3812 configuration switch c01. <i>Example</i> &%IDB_EDIT: OPTION 124:2: EXIT		ALL
125	0 1 2 else:	Cassette/tray 3 Print Orientation Portrait orientation Landscape Orientation COR Portrait orientation <i>Example</i> &%IDB_EDIT: OPTION 125:0: EXIT		ALL
126	0 1 2 else:	Cassette/tray 4 Print Orientation Portrait orientation Landscape Orientation COR Portrait orientation <i>Example</i> &%IDB_EDIT: OPTION 126:0: EXIT		ALL

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code
127	0 1 2 else:	<p>Cassette/tray 5 Print Orientation</p> <p>Portrait orientation Landscape Orientation COR Portrait orientation</p> <p><i>Example</i> &%IDB_EDIT: OPTION 127:0: EXIT</p>		ALL
128	0 1 2 else:	<p>Cassette/tray 6 Print Orientation</p> <p>Portrait orientation Landscape Orientation COR Portrait orientation</p> <p><i>Example</i> &%IDB_EDIT: OPTION 128:0: EXIT</p>		ALL
129	0 1 2 else:	<p>Cassette/tray 7 Print Orientation</p> <p>Portrait orientation Landscape Orientation COR Portrait orientation</p> <p><i>Example</i> &%IDB_EDIT: OPTION 129:0: EXIT</p>		ALL

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code
130		<p>Line Density Type</p> <p><i>Note:</i> These options do not apply when printing via the TN3270E protocol.</p> <p>0 Event 48 to 51 is used 1 Header + LD in decimal ASCII + Trailer 2 Header + LD in hexadecimal ASCII + Trailer 3 Header + LD in binary + Trailer 4 Header + LD in decimal ASCII incl 1/100th + Trailer 255 Event 48 to 51 is used</p> $LD(\text{printer}) = \frac{\text{Option}(134, 133)}{LPI(\text{host})}$		ALL
131		Line Density Header. (Point to string no. XX)		
132		Line Density Trailer. (Point to string no. XX)		
133		LSD of the host to IDB Coax interface LPI conv. factor.		
134		MSD of the host to IDB Coax interface LPI conv. factor. (Reserved)		
135		LSD of the IDB Coax interface to printer LPI conv. factor. (Reserved)		
136		MSD of the IDB Coax interface to printer LPI conv. factor. (Reserved)		
		<p>SLD (Set Line Density) command on the host is 2B C6 02 XX. "XX" is the line feed distance xx/72 inch. LPI = (Option 134,133) divided by XX.</p> <p><i>Note:</i> Values stored in option 133 - 136 are decimal values.</p> <p><i>Example</i></p> <p>The SLD command for 6 LPI is 2B C6 02 0C. The hex value 0C = decimal 12. If option 133 is set to 72 and option 134 to 0 (default values) then the LPI = 72/12 = 6.</p> <p>If options 135 and 136 are both set to 0 then the option is not used. This conversion is a special routine used to set line densities on certain non standard printers. Normally it is set to inactive.</p> <p><i>Example</i></p> <pre>&%IDB_EDIT: OPTION 130:0: EXIT</pre>		
137 - 138		Not defined		
139		Reserved		

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code
140	132 xx	<p>Printer Maximum MPP @ 10cpi</p> <p><i>Note:</i> This option does not apply when printing via the TN3270E protocol.</p> <p>Max. 132 characters at 10 cpi Max. xxx characters at 10 cpi</p> <p><i>Example</i> &%IDB_EDIT: OPTION 140:132: EXIT</p>		ALL
141	0 1 2 else:	<p>Cassette/tray 8 Print Orientation</p> <p>Portrait orientation Landscape Orientation COR Portrait orientation</p> <p><i>Example</i> &%IDB_EDIT: OPTION 141:0: EXIT</p>		ALL
142 - 149		Not defined		
150	0 1 2 3	<p>Form Length Type</p> <p><i>Note:</i> These options do not apply when printing via the TN3270E protocol.</p> <p>No form length download Header + LPP in decimal ASCII + Trailer Header + LPP in hexadecimal ASCII + Trailer Header + LPP in binary + Trailer</p> $LPP(printer) = \frac{LPP(host) * Option(156, 155)}{Option(154, 153)}$		ALL
151	xx	Form Length Header. (Point to string no. XX)		
152	xx	Form Length Trailer. (Point to string no. XX)		
153	xx	Form Length Conversion - LSD		
154	xx	Form Length Conversion - MSD		
155	xx	Form Length Some Other Byte - LSD		
156	xx	Form Length Some Other Byte - MSD		
		<p><i>Example</i> &%IDB_EDIT: OPTION 150:0: EXIT</p>		
157 - 159		Not defined		

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code
160 - 166		Reserved		ALL
167	0 1 2	<p>Transparency Method</p> <p>Normal Intermate transparent mode. Axis Transparency format. Enable special MPI features.</p> <p>Refer to section 2.3 <i>TN3270E (Coax) Transparency Modes</i> in general and to the sections 3.3.6 <i>AXIS Extended Emulation Mode</i> on page 40 and to 3.3.7 <i>MPI Mode</i> on page 43 for examples on the use of AXIS and MPI transparency modes.</p> <p><i>Example</i> &%IDB_EDIT: OPTION 167:0: EXIT</p>		ALL A09-6221 K01-8091
168	xx	<p>Formatted Strings</p> <p>Value for ASCII character</p> <p>This option defines the lead in character for the formatted string utility. Refer to the section 3.4.5 <i>Formatted String Conversion</i> on page 52.</p> <p><i>Example</i> &%IDB_EDIT: OPTION 168:89: EXIT</p>		

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code						
169		<p>Handling IBM Transparency</p> <p>1 xxxxxx1: Data within a transparent data stream (LU-1 (SCS) control code 35H) is printed as received. NO translation from EBCDIC to ASCII. All transparent data is printed, even invalid data.(data not between 40H and FEH).</p> <p>xxxxxx0: Normal transparent data handling. Transparent data is translated from EBCDIC to ASCII. If transparent data is not between 40H and FEH, it is printed as a hyphen (Refer to Option 3).</p> <p>2 xxxxxx1x: User defined transparent lead in characters are used without the pass through sequence(Option 8/9).</p> <p>xxxxxx0x: Normal user defined transparent handling.</p> <p><i>Example - MPI suppression of format control codes</i></p> <p>Option 177 = 4 Option 169 = 2 Option 171 = 37(=25h='%') Option 172 = 37(=25h='%') Option 173 = 37(=25h='%') Option 174 = 37(=25h='%') <CSC> = &%</p> <table border="0"> <tr> <td>Host</td> <td>ASCII</td> </tr> <tr> <td>%414243%41</td> <td>ABC41</td> </tr> <tr> <td>&%41&%42&% 43</td> <td>AB 43</td> </tr> </table> <p><i>Note:</i> If Option 8=Option 171 then Option 9 must be different from Option 172. If you want Option 9=0 then use normal transparent handling and define lead out characters and no lead in characters.</p> <p><i>Example</i></p> <p>&%IDB_EDIT: OPTION 169:1: EXIT</p>	Host	ASCII	%414243%41	ABC41	&%41&%42&% 43	AB 43		ALL
Host	ASCII									
%414243%41	ABC41									
&%41&%42&% 43	AB 43									

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code
170	0 42 xx	<p>Repetition Character In Transparent Mode</p> <p>No repetition character defined Use * as repetition character Use XX as repetition character</p> <p><i>Note:</i> None of the characters used in this sequence must be: "0" - "9", "A - F", "a" - "f" or the repetition character (option 170).</p> <p>Refer to section 2.3 <i>TN3270E (Coax) Transparency Modes</i> for further details.</p> <p><i>Example</i> &%IDB_EDIT: OPTION 170:42: EXIT</p>		ALL
171 172	0 xx	<p>Lead-In Characters</p> <p>1st Transparent Lead In Character 2nd Transparent Lead In Character</p> <p>Zero cannot be used as lead in character. Use XX as lead-in character (XX >= 32)</p> <p><i>Note:</i> None of the characters used in this sequence must be: "0" - "9", "A - F", "a" - "f" or the repetition character (option 170).</p> <p>Refer to section 2.3 <i>TN3270E (Coax) Transparency Modes</i> for further details.</p> <p><i>Example</i> &%IDB_EDIT: OPTION 171:33,34: EXIT</p>		ALL

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code
173 174 175 176	0 xx	<p>Lead-Out Characters</p> <p>1st Transparent Lead Out Character 2nd Transparent Lead Out Character 3rd Transparent Lead Out Character 4th Transparent Lead Out Character</p> <p>Zero cannot be used as lead out character. Use XX as lead-out character (XX >= 32)</p> <p><i>Note:</i> None of the characters used in this sequence must be: "0" - "9", "A" - "F", "a" - "f" or the repetition character (option 170).</p> <p>Refer to section 2.3 <i>TN3270E (Coax) Transparency Modes</i> for further details.</p> <p><i>Example</i> &%IDB_EDIT: OPTION 173:35,36,37,38: EXIT</p>	ALL	

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code
177	<p>0</p> <p>1</p> <p>2</p> <p>3</p> <p>4</p> <p>5</p> <p>6</p>	<p>Suppress Format Control Codes At Power Up</p> <p>Standard handling of control codes after power up (can later be disabled with the <CSC>+M command).</p> <p>The auto-NL function is disabled after power up in the Host direct and Local Copy print (Can later be enabled with the <CSC>-M command). All Host generated control codes are still send to the printer.</p> <p>The auto-NL function is disabled after power up in Host direct print (Can later be enabled with the <CSC>-M command). All Host generated control codes are still send to the printer.</p> <p>CR, LF, NL and FF control codes from the Host are suppressed and the auto-NL function is disabled after power up (can later be enabled with the <CSC>-M command).</p> <p><i>Note :</i> Because control codes are suppressed horizontal/vertical tab and other commands depending on correct page format do not work correctly.</p> <p>Standard handling of control codes after power up. If the <CSC>+M command is used later on, CR, LF, NL and FF control codes from the Host are suppressed and the auto-NL function is disabled.</p> <p>CR, LF, NL and FF control codes from the Host are suppressed after power up (can later be enabled with the <CSC>-M command). The auto-NL function is still enabled.</p> <p>Standard handling of control codes after power up. If the <CSC>+M command is used later on, CR, LF, NL and FF control codes from the Host are suppressed. The auto-NL function is still enabled.</p> <p><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 send to the printer.</p> <p>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 send to the printer by one of the transparent commands.</p> <p>If Option 177 = 5 or 6: After this command all host generated CR, LF, NL and FF control codes are suppressed. The auto-NL function is still enabled.</p> <p><CSC>-M [m]: After this all the command control codes are processed and the auto-NL function operates as normal.</p> <p><i>Example</i> %%IDB_EDIT: OPTION 177:0: EXIT</p>	ALL	
178 - 232		Not defined		

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code
233 - 235		Reserved		
236	0 1	<p>Hex Dump Mode</p> <p>Normal operation Hex dump</p> <p><i>Example</i> &%IDB_EDIT: OPTION 236:0: EXIT</p>		A13-xxxx K61-xxxx
237	1 2 3 4 5 other	<p>Buffer Size (IBM Model No.)</p> <p><i>Note:</i> This option does not apply when printing via the TN3270E protocol.</p> <p>1920 bytes 2560 bytes 3440 bytes 3564 bytes 960 bytes 3440 bytes</p> <p><i>Example</i> &%IDB_EDIT: OPTION 237:3: EXIT</p>		A13-xxxx
238 - 249		Not defined		
250	0 1	<p>Printer Power Check</p> <p><i>Note:</i> This option does not apply when printing via the TN3270E protocol.</p> <p>Disabled The interface will monitor the printer's power. If the printer is powered off the interface will send a "Power On Reset" back to the controller and re-initialize the printer when it is powered up again.</p> <p><i>Note:</i> This option applies only to some external interfaces.</p> <p><i>Example</i> &%IDB_EDIT: OPTION 250:0: EXIT</p>		K51-xxxx
251 - 255		Not defined		

4.2 Event Table

Event	Dec./Bit no. Description	Intermate Event Table	SW Code																		
0 1 2 3	<p>Power on, Select emulation Power on, Select country code Power on, Select paper media Power on, printer initialize</p> <p><i>Note:</i> Event no. 3 is also sent to the printer when changing from IPDS to LU1 or LU3 mode when using the A6, with this Event you are for example able to adjust the printing position. See section 1.8 <i>Power On Sequence</i> for the correct sequence of Events 0 - 3.</p>		ALL																		
4 - 15	Not defined																				
16 17	<p>Standard portrait font (triggered by the setting of option 120). Standard landscape font (triggered by the setting of option 120)</p>		ALL																		
18 19	<p>APL portrait font APL landscape font</p>		ALL																		
20 21	<p>Return from APL portrait font Return from APL landscape font</p> <p>If Event 20/21 = 0 (= no string is defined). Event 16 or 17 is used.</p> <p><i>Examples</i></p> <table> <thead> <tr> <th>Host input</th> <th>Explanation</th> </tr> </thead> <tbody> <tr> <td>&%IDB_EDIT:</td> <td>Open the editor</td> </tr> <tr> <td>EVENT 18:30,31:</td> <td>Event 18 = 30 and Event 19 = 31</td> </tr> <tr> <td>EVENT 20:32:</td> <td>Event 20=32</td> </tr> <tr> <td>EVENT 21:32:</td> <td>Event 21=32</td> </tr> <tr> <td>STRING 30:esc(10U:</td> <td>String to select APL portrait font</td> </tr> <tr> <td>STRING 31:esc(10U:</td> <td>String to select APL landscape font</td> </tr> <tr> <td>STRING 32:esc(8U:</td> <td></td> </tr> <tr> <td>EXIT</td> <td>Leave the editor</td> </tr> </tbody> </table>	Host input	Explanation	&%IDB_EDIT:	Open the editor	EVENT 18:30,31:	Event 18 = 30 and Event 19 = 31	EVENT 20:32:	Event 20=32	EVENT 21:32:	Event 21=32	STRING 30:esc(10U:	String to select APL portrait font	STRING 31:esc(10U:	String to select APL landscape font	STRING 32:esc(8U:		EXIT	Leave the editor		ALL
Host input	Explanation																				
&%IDB_EDIT:	Open the editor																				
EVENT 18:30,31:	Event 18 = 30 and Event 19 = 31																				
EVENT 20:32:	Event 20=32																				
EVENT 21:32:	Event 21=32																				
STRING 30:esc(10U:	String to select APL portrait font																				
STRING 31:esc(10U:	String to select APL landscape font																				
STRING 32:esc(8U:																					
EXIT	Leave the editor																				
22 - 31	Not defined																				

Event	Dec./Bit no. Description	Intermate Event Table	SW Code
32 33 34 35 36 37 38	10 Characters per inch (LU1) 12 Characters per inch (LU1) 15 Characters per inch (LU1) 16.7 Characters per inch (LU1) 20 Characters per inch (only used in COR mode) (LU1) 27 Characters per inch (only used in COR mode) (LU1) 13.33 Characters per inch (only used in COR mode) (LU1)		ALL
39 - 47	Not defined		
48 49 50 51	3 lines per inch (LU1) 4 lines per inch (LU1) 6 lines per inch (LU1) 8 lines per inch (LU1) <i>Note:</i> These events required option 130 = 0.		ALL
52 - 63	Not defined		
64 65	Set continuous paper mode Set cut-sheet mode		ALL
66 67 68	Select paper cassette 1 Also triggered when <CSC>=A is received (default &%=A) Select paper cassette 2 Also triggered when <CSC>=B is received (default &%=B) Select paper cassette 3 Also triggered when <CSC>=M is received (default &%=M)		ALL
69 70	Select portrait orientation Select landscape orientation		ALL
71	Select COR landscape orientation		ALL
72 - 73	Not defined		
74 75 76 77 78	Select paper cassette 4 Also triggered when <CSC>=C is received (default &%=C) Select paper cassette 5 Also triggered when <CSC>=D is received (default &%=D) Select paper cassette 6 Also triggered when <CSC>=E is received (default &%=E) Select paper cassette 7 Also triggered when <CSC>=F is received (default &%=F) Select paper cassette 8 Also triggered when <CSC>=G is received (default &%=G)		ALL

Event	Dec./Bit no. Description	Intermate Event Table	SW Code
79	Not defined		
80	Before form feed (LU1 & LU3)		ALL
81	After form feed (LU1 & LU3)		
82	Form feed (if not defined ASCII 0CH is used)		ALL
83	Line feed (if not defined ASCII 0AH is used) (LU1)		ALL
84	After EM (Triggered after a valid 'End of Message' is found in the data stream and has been executed)		ALL
85	Carriage return (if not defined ASCII 0DH is used) (LU1 & LU3)		ALL
86	Back space (if not defined ASCII 08H is used) (LU1)		ALL
87	Horizontal tab (if not defined ASCII 20Hs is used) (LU1)		ALL
88	Vertical tab (If not defined ASCII 0AHs is used) (LU1)		ALL
89	Before transparent print (LU1)		ALL
90	Transparent print (LU1)		
91	Before user defined transparent printing		K01-6441 K09-6221 K61-xxxx
92	After user defined transparent printing		K01-6441 K09-6221 K61-xxxx
93 - 95	Not defined		
96	HEX dump subtitle		ALL
97	IDB dump subtitle		ALL
98	String at TOP OF FORM		ALL
99	Before local copy		ALL
100	After local copy		
101	When change from local to host direct		ALL
102	Start Bold Print (Before <BS>/<CR> bold print)		ALL
103	End Bold Print (After <BS>/<CR> bold print)		
104	Before LU1 print		ALL
105	Before LU3 (DSC) print		ALL

Event	Dec./Bit no. Description	Intermate Event Table	SW Code
106	Before LU3 (DSE) print		ALL
107	Before NO mode		ALL
108	Before Host direct print		ALL
109	Before Host initiated local copy		ALL
110	Before operator initiated local copy		ALL
111	Not defined		
112 113 114 115 116 117 118 119	Black Blue Red Pink Green Turquoise Yellow White (multi colour)		ALL
120 - 127	Not defined		
128 129 130 131	Normal Blink Reverse Underscore		ALL
132 - 143	Not defined		
144	Data processing quality		ALL
145	Near letter quality		ALL
146	Print quality (triggered by Q=3 in a PPM command)		ALL
147 - 149	Not defined		
150	Executed when switching from Coax or serial to parallel, ie after Coax timeout . Refer to option 29.		A05-xxxx A09-xxxx A13-xxxx K61-xxxx
151	Executed when switching from parallel or serial to Coax, ie when Coax is printed after a parallel/serial timeout . Refer to option 29.		A05-xxxx A09-xxxx A13-xxxx K61-xxxx

Event	Dec./Bit no. Description	Intermate Event Table	SW Code
152	Executed when switching from Coax or parallel to serial, ie after Coax timeout . Refer to option 29.		A09-xxxx A13-xxxx
153 - 154	Reserved for IPDS purposes		
155 - 159	Not defined		
160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175	<p><CSC>-0 (default &%-0) <CSC>-1 (default &%-1) <CSC>-2 (default &%-2) <CSC>-3 (default &%-3) <CSC>-4 (default &%-4) <CSC>-5 (default &%-5) <CSC>-6 (default &%-6) <CSC>-7 (default &%-7) <CSC>-8 (default &%-8) <CSC>-9 (default &%-9) <CSC>-A (default &%-A) <CSC>-B (default &%-B) <CSC>-C (default &%-C) <CSC>-D (default &%-D) <CSC>-E (default &%-E) <CSC>-F (default &%-F)</p> <p><i>Note:</i> Refer to section 3.4.3 <i>Predefined String Conversion</i> on page 49.</p>		ALL
176 - 185	Not defined		
186	Euro support (Triggered by the character BA (hex) in the data stream. Normally the event should be set to point to string number 80, which contains a string for replacing the BA (hex) character with the Euro character.)		ALL
187 - 199	Not defined		
200 - 229	User defined Event no.1 to no.30 (trigger 01 to 30). See 3.4.4 <i>User Defined String Conversion</i> on page 50.		ALL
230 - 239	Not defined		
240 - 241	Reserved		

IDB Tables (TN3270E / Coax)

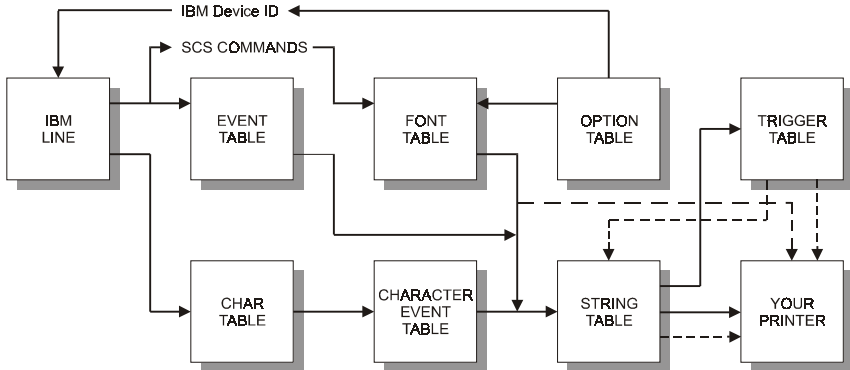
Event	Dec./Bit no. Description	Intermate Event Table	SW Code
242 - 255	Not defined		

TN5250E (Twinax) Section

5. The IDB Concept

The IDB is a complete set of command tables, character conversion tables and parameter tables stored in non-volatile EEPROM.

Flowchart of the IDB structure



5.1 IBM Line Handling

The IBM line handling module sends and receives data from the control unit. The information sent to the control unit depends on the parameters stored in the *Option Table*. These parameters hold information about the printer. Data received from the control unit is separated into data and commands. The data stream from the control unit is sent through the *Character Table* for translation into ASCII, which is the code set used by the printer. The code translation is discussed in detail in a later section.

5.2 Event Table

The *Event Table* contains an entry for each possible valid command sent from the IBM system (eg "Set 10 CPI" or "Select Letter Quality").

Each Event has a unique number in the *Event Table*. When a command sequence is received, the corresponding Event is executed. If the contents of the Event is defined as a value between 1 and 100, the string with that number from the *String Table* is sent to the printer. If no string is defined (event = 0) no action is taken.

5.3 Character Table

When the interface receives data from the system, the data is sent as EBCDIC. The data is sent through the Character Table. In this table data is translated from EBCDIC to ASCII. The table is a normal code conversion table where the received EBCDIC value is an index in the code table. At this index, the value for the corresponding ASCII character is fetched.

Example

F1 (hex) is the EBCDIC value for 1 , at index F1 in the *Character Table* the value 31(hex) is fetched which is the ASCII value for 1.

The translation in the Character Table varies depending on the country code or code page selected for the installation. This selection is made in the *Option Table* in the IDB.

5.4 Font Table

Similar to the *Event Table* an incoming font ID from the host relates to a position in the *Font Table*. The content of the font position is sent to the printer. The logic for the *Font Table* is similar to that of the *Event Table*.

5.5 Character Event Table

A Character Event is triggered by an ASCII character coming from the Character Table. The *Character Event Table* has 256 entries to cover all possible character values from the Character Table.

If the entry in the *Character Event Table* contains a value between 1 and 100 the corresponding string is sent to the printer instead of the character, if the value in the entry is '0' the character is sent to the printer unmodified.

Example

The character @ has the ASCII value 40 (hex). At index 40 in the *Character Event Table* the value 75 is stored. Whenever a received character is translated to @ (40 hex), string number 75 is sent to the printer instead of the @ character. String 75 could hold commands such as: "Change Character Set", "Print the Character X", "Return to Previous Character Set".

5.6 Option Table

The *Option Table* holds all the parameters of the printer in order to inform the controller about the capabilities of the printer. All these parameters are called Options. Their values are stored in the *Option Table*. In section 8.1 *Option Table* on page 145 is a complete list of the available Options.

It is important to know that the *Option Table* also uses the *String Table* as the printer interface. If the default character spacing used is 10 CPI, then the event for 10 CPI is triggered, which in turn sends the string defined for 10 CPI to the printer.

The location of the options in the *Option Table* as well as the location of the events in the *Event Table* are fixed and cannot be changed. However, the contents of the locations and thereby the action taken by the attached printer can be changed according to the capabilities of the printer and the needs of the user.

5.7 String Table

A String can be any combination of characters.

The *String Table* acts differently, depending on where data is received from. When data is coming from the *Event Table*, the *String Table* acts as a command interface to the printer. If a command to set the printer to 12 CPI (characters per inch) is received, the string pointed to by the Event for 12 CPI is sent.

When data is coming from the *Character Event Table*, the *String Table* is used for special character processing. If a character received from the *Character Event Table* has been converted to a String number, this is sent to the printer instead.

5.8 Summary

Data received from the control unit is separated into printable data and commands. The printable data is received in EBCDIC and is sent through the Character Table where it is translated into ASCII, which is the code set used by the printer.

Commands from the IBM system are decoded and each command points to one specific entry in the *Event Table*.

The *Event Table* is a table with an entry for each possible command sent from the IBM system. In the *Event Table* numbers are stored which point to strings in the *String Table*.

The *Option Table* stores all the parameters for the printer or interface. The values stored in the table are used to:

1. inform the IBM system about the capabilities of the printer and interface.
2. set the printer to the correct default values (pointing to the *Event Table* in order to activate the necessary functions).

The *String Table* stores all the control sequences used to control the printer. The strings are triggered by the *Event Table*, the Character Event Table or the *Option Table*.

The contents of the *String Table* can be changed in accordance with the codes and functions available in the attached printer. The *Power ON Sequence* section below discusses how these tables and parameters interact.

5.9 Power On Sequence

At Power On or after receiving a Reset Command the following actions takes place:

1. Power on , Event 0, 1 and 2 are triggered.
2. Option 102 (Max print positions) and Option 100 (Cpi) are selected Event 31 - 35 are triggered depending of Option 100.

3. Option 105 (LPI) is selected. options 130 - 138 (Set line density) are executed.
4. Option 107 (Form length) is selected. Option 150 - 152 (Set form length) are executed.
5. Option 112 (Print quality) is selected. Event 144 - 146 are triggered depending of Option 112.
6. Option 113 (Select cassette/tray) is selected. Event 66 - 68 are triggered depending of Option 113.
7. Power on Event 3 is triggered.

6. IDB Programming

When configuring TN5250E (Twinax) interfaces equipped with the IDB, two IDB Command languages are available. These are the *Advanced IDB*, and the *User IDB*. This guide does not cover the *Advanced IDB* that applies to TN5250E (twinax) users. The language is, however, similar to the one that applies to TN3270E (coax) users, which is described in the first half of the guide. See page 20 and onwards.

6.1 Changing the Parameters and Tables

In order to use the IDB editor, a group of two characters is defined. This character group is called the CSC (Command String Characters). The CSC cannot be printed and is used to enter the editor and to control the interface.

The character values for the CSC are set in the *Option Table*, options 8 and 9. Option 9 must be set to 0, if only one character is used. The default value for the CSC is the character combination “&%” which is used throughout this guide.

In order to use the editor, a command separator (delimiter) is needed. The default value for the delimiter is the character “:”. The delimiter is set with option 7. The option value can be changed, but must be a printable character. However, the character values for <Space>, / and , (comma) CANNOT be used.

The CSC can be used to:

- send some special instructions to the interface.
- enter the editor.

There are 3 different ways to use the built-in editor:

1. By printing editor commands from the host, from an attached screen, or by hard copy. This can be done very easily and is normally used for minor alterations. The editor command can also be printed from Display Writer or similar.

SYSTEM SCREEN -> HOST -> INTERFACE

2. By using a twinax attached PC and the *TN5250E IDB configuration file editor* program (*P02-xxxx.exe*). The program can be used to create a complete configuration file which can be transferred to and stored on the host computer. By simply printing the file, the complete interface can be configured. This method is excellent where several printers with the same configuration are to be installed on the same host system.

PC (*P02-xxxx.exe*) -> FILE -> HOST -> INTERFACE

3. By using the *TN5250E IDB configuration file editor* program (*P02-xxxx.exe*) on a PC and the optional Twinax Loader module. The Twinax Loader module is a small tester/loader which can be attached to the serial port of a PC. Using this module, data can be transferred from the PC (*P02-xxxx.exe*) to the loader and from the loader to the interface, using a standard connection. The loader module may also be used as a simple test-box in order to verify printer and interface operation. This method is very useful when the interface has to be configured for new printers.

PC (*P02-xxxx.exe*) -> LOADER -> INTERFACE

6.2 User IDB Command Language

The *User IDB Command Language* (from now on; *User IDB*) is a superset of the *Advanced IDB*. IDB is short for *Intermate DataBase*, which is a language for custom configuration of the interface. The language consists of a complete set of command tables, character conversion tables, and parameter tables - all stored in non-volatile Flash EEPROM memory.

The *User IDB* provides easy access to the options of the interface. It is, however, limited, as it does not have all of the features found in the *Advanced IDB*.

6.2.1 The IDB Editor

When writing IDB strings on screens or in documents, the following rules and commands are available:

&%IDB_EDIT	Enter the editor.
:	This is the delimiter between each command (may be changed according to option 7).
,	Comma. When several parameters are to be changed in sequence, a comma is used as a delimiter between parameters.
/	The forward slash is used to indicate that the next two characters are a hexadecimal value. It CANNOT be changed.
OPTION X	Change option x to the following value or string number.
EVENT X	Change event x to the string number following.
CHAEVENT X	Change character event x to the string table number following.
CHATBL X	Change code at index x of the <i>Character Table</i> to the ASCII char number following.
STRING X	Change string x to the sequence following.
TRIGGER X	Change trigger x to the trigger sequence following.
QUIT	Leave the editor.
EXIT	Leave the editor.

Important: All data is stored in non-volatile FLASH ROM and kept when the printer is Powered Off. Changes are only activated after the printer has been Powered Off and On. This is true for most interfaces. If you are using an external interface, which is

connected to the printer via the parallel port and if the port does not support bi-directional communication, then the interface cannot detect the power recycling. This means you will have to recycle the power for the interface instead.

6.2.2 IDB Special Commands

These commands are used to check the status of the interface and to locate possible problems, when the interface is attached to a controller.

All of the commands below can be embedded in data or sent to the interface as "hard copy" from a screen. Alternatively, the IDB and hex-dump reports may be printed from the printer's front panel if available.

<code>&%IDB_PRINT</code>	Prints all the options, events and strings, which are activated in the IDB, in a readable form. This command can be used to verify the settings of the IDB before and after changes.
<code>&%IDB_PRINT_FULL</code>	Prints the complete IDB, including options and events which are not activated.
<code>&%HEXDUMP</code>	Activates the hexdump from the twinax line. This command prints data received from the host in hexadecimal form.
<code>&%NOHEXDUMP</code>	Deactivates the hexdump facility.
<code>&%IDB_FONT</code>	Prints a sample printout with all the fonts currently programmed in the <i>Font Table</i> with their true outline (5219/3813 emulation only).
<code>&%+M</code>	Enables "Control Code Suppression". All SCS control codes and positioning commands coming from the host are ignored.
<code>&%-M</code>	Disables "Control Code Suppression".

These commands can be used to check the status of the interface and also to find possible problems when the interface is attached to a controller. If you have a problem, enter `&%HEXDUMP` before the area where the problem occurs and `&%NOHEXDUMP` after the area. The printer then prints the data between the two commands in hexadecimal form. This hex-print should be sent to your support organisation for further evaluation. Please also include the test print generated with the `&%IDB_PRINT` command.

Please note that the above list of commands is not complete. Refer to the list in appendix *G. Special TN5250E (Twinax) IDB Commands* on page 219.

6.2.3 The CSC Characters

The CSC characters are two characters, which among other things are used when sending command and transparent sequences to the interface. The characters are defined with Option 8 and 9. By default, they are set to the decimal values 38 and 37 respectively. This gives the ASCII-sequence "&%". Refer to appendix *A. ASCII Character Table* on page 201.

The CSC characters can be redefined by changing the Option values above. If preferred the CSC can be limited to a single character. Setting Option value 9 to 0 (decimal) does this. However, changing the CSC characters affects all command and transparent sequences which uses these characters.

Note: The values stored in Option 8 and 9 must be greater than 20h = 32d and less than FFh = 255d (h: hexadecimal; d: decimal)

Important: If the *TN5250E IDB configuration file editor* program (*P02-xxx.exe*) program is used to change the CSC characters, be sure to check that the old CSC characters are used when downloading the new settings. This is because the old settings are stored in the interface, ie are active. The new settings are activated at the next power On of the interface. If you have an external interface (box) and use a printer that supports bi-directional communication, you can recycle the printer power instead. *Power Detection* should, of course, be enabled in the interface (box).

6.2.4 Setting or Changing Options

Let's assume the following options need to be set:

Option 2	=	6	Danish / Norwegian character set.
Option 100	=	10	10 cpi default.
Option 102	=	132	Maximum print position 132.
Option 105	=	6	6 lines per inch.

Data to interface

```
&%IDB_EDIT:
DEFCNTCOD 6:
DEFCPI 10:
DEFMPP 132:
DEFLPI 6:
EXIT
```

Explanation

```
Enter the editor
Set Option 2 to the value 6
Set Option 100 to the value 10
Set Option 102 to the value 132
Set Option 105 to the value 6
Leave the editor.
```

The sequence could be sent as:

```
&%IDB_EDIT:OPTION2:6:OPTION100:10:
OPTION102:132:OPTION105:6:QUIT           Or

&%IDB_EDIT:DEFCNTCOD 6:DEFCPI 10:
DEFMPP 132:DEFLPI 6:EXIT
```

As soon as the editor has been entered, the interface ignores all spaces and control characters. If a control character or a space-code has to be entered, it must be sent as a hex-value (Example:<Space> = /20). This means a complete file containing the complete setup for a specific printer can be sent to the interface from the host. Any formatting performed by the host system is ignored.

6.2.5 Setting or Changing Events

Assume that the events below have to be set to the following values. (Remember, the value stored in the Event list is the number of the string which is sent to the printer every time the Event is triggered.)

Event 32 (Set 10 cpi)	point to string 10
Event 33 (Set 12 cpi)	point to string 11
Event 34 (Set 15 cpi)	point to string 12
Event 66 (Select paper cassette/tray 1)	point to string 25
Event 67 (Select paper cassette/tray 2)	point to string 37

Data to interface	Explanation
&%IDB_EDIT:	Enter the editor
EVENT 32:10:	Point to string 10
EVENT 33:11:	Point to string 11
EVENT 34:12:	Point to string 12
EVENT 66:25:	Point to string 25
EVENT 67:37:	Point to string 37
QUIT	Leave the editor (Quit or exit.)

The sequence could be sent as:

```
&%IDB_EDIT:EVENT32:10:EVENT33:11:EVENT34:12:
EVENT66:25:EVENT67:37:QUIT
```

or in a compressed string as:

```
&%IDB_EDIT:EVENT32:10,11,12:EVENT 66:25,37:QUIT
```

If both the options in the previous example (previous section) and the above events should be changed, the combined sequence could look as follows:

```
&%IDB_EDIT:DEFCONTOD 6: DEFCPI 10:DEFMPP 132:
DEFLPI 6:EVENT 32:10,11,12:EVENT 66:25,37:QUIT
```

This sequence can be sent either as a hard copy print or as a print file from the host.

6.2.6 Setting Character Events

Assume a Character Event is to be activated by the character @ (ASCII 40 hex). Whenever the character @ is sent through the *Character Event Table* from *Character Table*, a specific string is to be sent to the printer (in this example string no. 67).

Character Event /40(hex) point to string 67

Data to interface	Explanation
&%IDB_EDIT:	Enter the editor
CHAEVENT /40:67:	Character Event 40(hex) points to string 67
QUIT	Leave the editor

The sequence could be sent as:

```
&%IDB_EDIT:CHAEVENT /40:67:QUIT
```

6.2.7 Changing the Character Set

The *Character Table* consists of the basic EBCDIC to ASCII conversion Table plus the national variations (extensions) for each country available (see Option 2 in the Option list).

Assume EBCDIC code 7D (hex) is to be converted to ASCII 27 (hex), EBCDIC code 7B to ASCII 40 (HEX) and EBCDIC code 7C (hex) to ASCII F5. Let's also assume that the working country code is the German standard country code (Country code 2 according to Option 2).

The EBCDIC character 7D is within the standard code table but the EBCDIC character 7B is found in the national extension.

Note: When specifying the code page, which contains the character to be replaced, it is possible to use both the country code number (option 2, values 0 - 15) as well as the national code page numbers. See examples with the German code pages below.

Changing a character in one code page, changes the character with the same address in all other code pages.

Data to interface	Explanation
<code>&%IDB_EDIT:</code>	Enter the editor.
<code>CHATBL /7D, 0:/27:</code>	The code value 7D is converted to 27 In the multinational code page 500 (default).
<code>CHATBL /7B, 2:/40:</code>	The code value 7B is converted to 40 but ONLY in country group 2 (German standard).
<code>CHATBL /7C, 273:/F5:</code>	The code value 7C is converted to F5 but only in the German code page 273. (Code page changes will only have effect in 5219/3812 mode.)
<code>QUIT</code>	Leave the editor.

The sequence could be sent as:

```
&%IDB_EDIT:CHATBL/7D,0:/27:CHATBL/7B,2:/40:
CHATBL/7C,273:/F5:QUIT
```

Code values affected by the country setting are:

4A, 4C, 4F, 5A, 5B, 5F, 6A, 79, 7D, 7C, A1, C0, D0, and E0. Code page tables.

The code tables supported are:

- 37 USA/Canada
- 259 Mathematical
- 273 Germany/Austria
- 274 Belgium
- 275 Brazil
- 277 Denmark/Norway
- 278 Finland/Sweden
- 280 Italy
- 281 Japan/English
- 282 Portugal
- 284 Spanish speaking

285 United Kingdom
297 France
340 OCR-A/OCR-B
500 International
871 Iceland

All code pages are based on code page 500.

Code page vs country code table

The code page table has a higher priority than the country code table. If both default code page and default country code is defined at power up time and when a SIC (Set Initial Condition) command is received the default code page is selected.

When a document is printed the wanted code page/country code is selected by a command from the system.

Then code page depending hexadecimal codes are as follows:

Code page 500 (International)

Default Character Table

The entire table has to be programmed. If another code page is selected the hex values in this list are used as an overlay to code page 500.

Code page 37 (USA/Canada)

4A 4F 5A 5F B0 BA BB

Code page 259 (Mathematical)

40 41 42 43 44 45 46 47 48 49 4A 4B 4C 4D 4E 4F 50 51
52 53 54 55 56 57 58 59 5A 5B 5C 5D 5E 5F 60 61 62 63
64 65 66 67 68 69 6A 6B 6C 6D 6E 6F 70 71 72 73 74 75
76 77 78 79 7A 7B 7C 7D 7E 7F 80 81 82 83 84 85 86 87
88 89 8A 8B 8C 8D 8E 8F 90 91 92 93 94 95 96 97 98 99
9A 9B 9C 9D 9E 9F A0 A1 A2 A3 A4 A5 A6 A7 A8 A9 AA AB
AC AD AE AF B0 B1 B2 B3 B4 B5 B6 B7 B8 B9 BA BB BC BD
BE BF C0 C1 C2 C3 C4 C5 C6 C7 C8 C9 CA CB CC CD CE CF
D0 D1 D2 D3 D4 D5 D6 D7 D8 D9 DA DB DC DD DE DF E0 E1

E2 E3 E4 E5 E6 E7 E8 E9 EA EB EC ED EE EF F0 F1 F2 F3
F4 F5 F6 F7 F8 F9 FA FB FC FD FE FF

Code page 273 (Germany/Austria)

43 4A 59 5A 63 6A 7C A1 B5 C0 CC D0 DC E0 EC FC

Code page 274 (Belgium)

44 48 51 54 6A 7C A1 BD C0 D0 DD E0

Code page 275 (Brazil)

46 48 4A 51 5A 5B 66 68 6A 71 79 7B 7C C0 CF D0 EF

Code page 277 (Denmark/Norway)

47 4A 5A 5B 67 6A 70 7B 7C 80 9C 9E 9F A1 C0 D0 DC

Code page 278 (Finland/Sweden)

43 47 4A 51 5A 5B 63 67 6A 71 79 7B 7C 9F A1 B5 C0 CC
D0 DC E0 EC

Code page 280 (Italy)

44 48 4A 51 54 58 5A 6A 79 7B 7C 90 A1 B1 B5 C0 CD D0
DD E0

Code page 281 (Japan/English)

4A 4F 5A 5B 5F A1 B1 B2 BA BB BC E0

Code page 282 (Portugal)

46 48 66 68 6A 7B 7C A1 BE C0 CF D0 E0 EF

Code page 284 (Spanish Speaking)

49 4F 5F 69 6A 7B A1 BA BB BD

Code page 285 (United Kingdom)

4A 4F 5A 5B 5F A1 B1 BA BB BC

Code page 297 (France)

44 48 4A 51 54 5A 6A 79 7B 7C 90 A0 A1 B1 B5 BD C0 D0
DD E0

Code page 340 (OCR-A/OCR-B)

42 44 45 46 49 52 54 55 56 57 58 62 64 65 66 68 6D 71
77 78 8A 8B 8C 8D 8E 8F 9A 9B A0 AC AD AE AF B3 B4 B9
BA BB BF CB CE CF DA DB DF EB EF FB FD FE

Code page 871 (Iceland)

4A 5A 5F 79 7C 8C 8E 9C 9E A1 AC AE BE C0 CC D0 E0 EC

6.2.8 Changing the String Table

The *String Table* holds all the control strings which can be sent to the printer in order to generate the desired function. By changing or modifying these strings and by pointing to them from the *Event Table* virtually any function needed can be activated.

Assume string 50 is to send 1B (hex) A (Escape A) and string 11 is to send data such as CALL OVERLAY . Text strings can be entered directly as text. But in order to avoid errors because your installation converts the text data in the code translation tables, all textstrings should be entered as hex values.

Escape	=	1B(hex)
A	=	41(hex)
CALL OVERLAY	=	43 41 4C 4C 20 4F 56 45 52 4C 41 59 (HEX STRING)

Data to interface	Explanation
&%IDB_EDIT:	Enter the editor
STRING 50:/1B/41:	Load hex 1B 41 (Escape A) in string 50
String 11:/43/41/4C/4C/20/4F /56/45/52/4C/41/59:	Load CALL OVERLAY in string 11
QUIT	Leave the editor

The string could also be sent as:

```
&%IDB_EDIT:STRING50:/1BA:STRING11:
CALL OVERLAY:QUIT
```

6.3 TN5250E (Twinax) Transparency Modes

When operating in Transparency Mode, the interface allows hexadecimal ASCII codes, ie printer commands and data, to pass directly through to the printer. This is done without any character conversion.

The ASCII codes can be written anywhere in a document, an editor, or even on the system command line. Each hexadecimal code, or byte, is entered as two characters, except for the CSC, the Lead In and the Lead Out character. Refer to appendix A. *ASCII Character Table* on page 201 for allowed characters.

In Transparency Mode, data can be passed through in two ways. These are the "Single byte" and the "Multibyte" transparency, which are used for sending ASCII codes to the printer. This could be used to print blocks of PCL commands representing graphics from a host environment.

The following rules apply to "Multibyte values" and "Single byte values".

1. The code sequences have to be in ASCII (hexadecimal values). Each number must contain two characters. For example; AF 6E 12 76 BC FF 00 3D 23 56 12.
2. Characters other than "0" - "9", "A" - "F", "a" - "f" and the repetition character are ignored and removed from the printout.

The different transparency modes are described in the following sections.

6.3.1 Default Single Byte Transparency

This command is used when a single ASCII character is to be bypassed in the printout. It does not require any Lead In or Lead Out characters.

Syntax

<CSC> "Single byte values"

The "Single byte values" are interpreted as one hexadecimal ASCII code.

Examples

Host Sample Input	Printer Output
&%41	A
&%41&%42&%4341	ABC41

6.3.2 User Defined Single Byte Transparency

The *User defined Single byte transparency* sequence is similar to the *Default Single byte transparency*, ie it is used to bypass one ASCII character. The sequence does not require any Lead In or Lead Out characters. Only the CSC characters are defined by the user.

Syntax

<CSC> "Single byte values"

The "Single byte values" are interpreted as one hexadecimal ASCII code.

Example 1 – redefining the CSC-characters

<CSC> = #\$(Decimal ASCII values: 35, 36)

IDB programming string for setting the CSC characters in option 8 and 9 to the Lead In characters "\$#".

&%IDB_EDIT:OPTION 8:35,36:EXIT

Note: Altering the CSC characters (Option 8 and 9) for operation as user defined transparency Lead In character, will affect the programming Lead In syntax in general. After the above change the Lead In programming syntax is #\$(IDB_EDIT:...

Host Sample Input	ASCII Output
#\$41#\$42	AB
#\$4141	A41

Example 2 – limiting the CSC to a single character

<CSC> = & (Decimal ASCII values: 38)

IDB programming string for setting the CSC characters in option 8 and 9 to the Lead In character "&".

```
&%IDB_EDIT:OPTION 8:38,0:EXIT
```

Host Sample Input	ASCII Output
&41&43	AC
&4141	A41

More information about the use of the CSC-characters can be found in the section 6.2.3 *The CSC Characters* on page 105.

6.3.3 Default Multibyte Transparency

With the *Default multibyte transparency*, several ASCII characters can be bypassed in the printout. It works similar to the *Default single byte transparency*. The hexadecimal sequence is encapsulated in the default Lead In and Lead Out character "/". Host generated linefeed and page breaks within the sequence are ignored.

Syntax

<CSC> / "Multibyte values" /

Example 1

<CSC> = &% (OPTION 8:38,37)
<Transparent Lead In> = / (OPTION 171:47,0)
<Transparent Lead Out> = / (OPTION 173:47,0,0,0)

Host Sample Input	Printer Output
&%/414243/	ABC
&%/ 41 42 43 /41	ABC41
&%/ ,4?14-2 43&%/41	ABC41

Example 2 – using the repetition character ("")*

<CSC>	=	&% (OPTION 8:38,37)
<Transparent Lead In>	=	/(OPTION 171:47,0)
<Transparent Lead Out>	=	/(OPTION 173:47,0,0,0)
<REPCHR>	=	*(OPTION 170:42)

Host Sample Input	Printer Output
&%/414243/41	ABC41
&%/41 , 2*423*43/41	ABBCCC41
&%/01*4101*420 , 2*43/41	ABCC41
&%/412*423*43/41	ABBCCC41

The repetition character is explained in the section *6.3.5 The Repetition Character* on page 122.

6.3.4 User Defined Multibyte ASCII Transparency

The *User defined multibyte transparency* sequence is similar to the *Default multibyte transparency*, ie several ASCII characters can be bypassed. The CSC-characters, the Lead In and the Lead Out sequences are defined by the user. Host generated linefeed and page breaks within the sequence are ignored.

Syntax

<CSC> <Transparent Lead In> "Multibyte values" <Transparent Lead Out>

<Option8> <Option9> <Option171> <Option172> "Multibyte values"
 <Option173> <Option174> <Option175> <Option176>

Command Sequence

<CSC>

The CSC-characters are described in the section *6.2.3 The CSC Characters* on page 105.

<Transparent Lead In>

1. One or two characters defined with the
&%IDB_EDIT:LEDINSEQ <led1> <led2>:EXIT
command.
2. If a single Lead In character is preferred, only one
character should be specified, eg
&%IDB_EDIT:LEDINSEQ <led1>:EXIT .
3. If you do not want to use the user defined transparent
mode, it can be disabled with command
&%IDB_EDIT:LEDINSEQ OFF:EXIT .

<Transparent Lead Out>

1. The Lead Out characters are defined with the command
&%IDB_EDIT:LEDOUTSEQ <out1> <out2>
<out3> <out4>:EXIT . The sequence can consist of
one to four ASCII characters. None of the characters may
be in the ranges: "0" - "9", "A" - "F", "a" - "f" or equal to
the repetition character (described later).
2. If a single Lead Out character is wanted, only one
character should be specified, eg
&%IDB_EDIT:LEDOUTSEQ <out1>:EXIT .
3. If no Lead Out sequence is defined, the first two
characters after the Lead In sequence are converted after
which the hexadecimal transparent mode is left. This is
also called Single byte transparency. The sequence is
disabled by sending the command:
&%IDB_EDIT:LEDOUTSEQ OFF:EXIT .
4. If no Lead In/Lead Out is defined, the transparent

sequence is not entered and the two first characters after the <CSC> command are removed from the printout.

Example 1 – two Lead In and two Lead Out characters

<CSC>	=	&% (standard characters)
<Transparent Lead In>	=	E4 (decimal ASCII values 69 and 52)
<Transparent Lead Out>	=	?? (decimal ASCII values 63 and 63)

IDB programming strings for setting Lead In and Lead Out strings to the above values.

Host Input	Action
&%IDB_EDIT:	Enter the IDB editor
LEDINSEQ E4:	Set Lead In character to "E4"
LEDOUTSEQ ??:	Set Lead Out character to "??"
EXIT	Leave the IDB editor

Host Sample Input	Printer output
&%E44142??41	AB41
&%E4 41 42 ??41	AB41
&%E4 , 4/14/2??41	AB41

Example 2 – one Lead In and four Lead Out characters

<CSC>	=	&% (standard characters)
<Transparent Lead In>	=	# (Decimal ASCII value 35)
<Transparent Lead Out>	=	??## (Decimal ASCII values 63 and 35)

IDB programming strings for setting Lead In and Lead Out strings to the above values.

Host Input

&%IDB_EDIT:
LEDINSEQ #:
LEDOUTSEQ ??##:
EXIT

Action

Enter the IDB editor
Set Lead In character to "#"
Set Lead Out character to "??##"
Leave the IDB editor

Host Sample Input

&%#4143??##41
&%# 41 43 ??##41
&%#,4/14/3??##41

Printer output

AC41
AC41
AC41

Example 3 – Single byte transparency

<CSC> = &% (standard characters)
<Transparent Lead In> = % (Decimal ASCII value 37)
<Transparent Lead Out> = none

IDB programming strings for setting Lead In and Lead Out strings to the above values.

Host Input

&%IDB_EDIT:
LEDINSEQ %:
LEDOUTSEQ OFF:
EXIT

Action

Enter the IDB editor
Set Lead In character to "%"
None
Leave the IDB editor

Host Sample Input

&%#41424341

Printer output

A424341

Example 4 – Using only one Lead In characters and two Lead Out characters

<CSC> = ? (Decimal ASCII value 63)
<Transparent Lead In> = ? (Decimal ASCII value 63)
<Transparent Lead Out> = ?? (Decimal ASCII values 63)

IDB programming strings for setting the CSC, Lead In and Lead Out as described above.

Host Input	Action
&%IDB_EDIT:	Enter the IDB editor
OPTION 8:63,0:	Set CSC character to "?"
LEDINSEQ ?:	Set Lead In character to "?"
LEDOUTSEQ ??:	Set Lead Out character to "??"
EXIT	Leave the IDB editor

Note: Altering the CSC characters (Option 8 and 9), will affect the programming Lead In syntax in general. After the above change the Lead In programming syntax is ?IDB_EDIT:...

Host Sample Input	Printer output
??414243??41	ABC41
?? 41 42 43 ??41	ABC41
??,4/14/243??41	ABC41
?41	A (single byte transparency)

Example 5 – Clearing User defined Lead In and Lead Out settings

<CSC>	=	&% (standard characters)
<Transparent Lead In>	=	none
<Transparent Lead Out>	=	none

IDB programming strings for setting the Lead In and Lead Out characters as described above.

Host Input	Action
&%IDB_EDIT:	Enter the IDB editor
LEDINSEQ OFF:	Disabling the Lead In character
LEDOUTSEQ OFF:	Disabling the Lead Out character
EXIT	Leave the IDB editor

Host Sample Input	Printer output
&%41424341	A424341 (Single byte transparency)
&%/414243/	ABC (Multibyte transparency)

6.3.5 The Repetition Character

To save space, it is possible to define a repetition character <X>. Every time the character <X> occurs in the host output data, the preceding value acts as the repetition factor for the hexadecimal value following the <X>. Values preceding the repetition character can be any number from 01 – FF (hexadecimal), ie from 1 to 255.

The following requirements apply:

1. It is defined by the command `REPCHR <rep>: .`
2. If no repetition character is wanted it can be disabled by the command `REPCHR OFF: .` This is the default setting, in order to avoid unintended repetitions.

Example

```

<CSC>                =    &% (OPTION 8:38,37)
<Transparent Lead In> =    C2 (OPTION 171:67,50))
<Transparent Lead Out> =    &% (OPTION 173:38,37,0,0)
<Repetition Character> =    * (OPTION 170:42)
    
```

IDB programming strings for setting the Lead In, Lead Out and Repetition characters as described above.

Host Input	Action
&%IDB_EDIT:	Enter the IDB editor
LEDINSEQ C2:	Set Lead In to "C2"
LEDOUTSEQ &%:	Set Lead Out to "&%"
REPCHR *:	Set repetition character to "*". Alternatively: REPCHR /2A:
EXIT	Leave the IDB editor

Host Sample Input	Printer Output
&%C2414243&%41	ABC41
&%C2 41,2 * 42,3 * 43 &%41	ABBCCC41
&%C2412*423*433&%41	ABBCCC41
&%C24102*4203*43&%41	ABBCCC41
&%C2 41 02*42 03 * 43 &%41	ABBCCC41

6.4 MPI Mode

The MPI mode of operation is also supported. This involves enabling and disabling of the suppression of format control codes (eg New Line).

Example - emulating MPI mode

Option 169 = 1 (Multibyte mode.)
Option 8 = 37 (First CSC character ="%").
Option 9 = 37 (Second CSC character ="%")

Setting the above options as shown, sets the CSC characters to "%".

Enter transparent mode: <CSC1> <CSC2> - <CSC1> <CSC2>

Leave transparent mode: <CSC1> <CSC2> + <CSC1> <CSC2>

Note: The old EBCDIC transparent mode &%+M and &%-M is still active and can be used. It is also possible to mix the 2 modes.

Alternatively, the Lead In and Lead Out characters (options 171 - 176) can also be set to "%". This, however, will still require the CSC characters to be placed in front and would clutter up the true MPI syntax. It is not shown below.

Host Sample Input

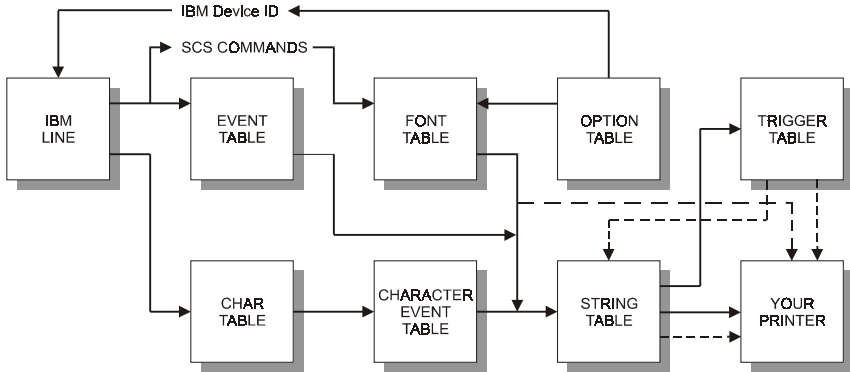
%414243%41
&%41&%42&% 43
ABC<CR><NL>DE
%%-%%ABC<CR><NL>DE%%+%%

ASCII Output

ABC41
AB 43
ABC<CR><NL>DE
ABCDE

6.5 TN5250E (Twinax) Conversion Utility

This utility enables a user-defined setup of string conversion. It is possible to set numerous strings. The figure below shows how the IDBT works.



In the figure, commands from the IBM system are decoded. Each command points to a specific entry in the *Event Table*.

Data from the IBM system passes through the *Character Table*. This table converts the data to ASCII code.

The *Character Event Table* receives the ASCII code. This triggers a string number, which points to a stored string in the *String Table*. This enables the user to use any translated character to activate a stored string in the *String Table*.

In the *Option Table* all parameters for the printer/interface are kept. The values stored are used to:

1. Inform the IBM system about the capabilities of the printer/interface.
2. Set the printer to the correct default values, ie pointing to the *Event Table* in order to activate the necessary functions.

The *Event Table* holds an entry for each possible command sent from the IBM system. In the table, numbers are stored, which point to strings in the *String Table*.

All control sequences used to control the printer are found in the *String Table*. They are triggered by either the *Event Table* or the *Character Event Table*. The contents of the *String Table* can be changed in accordance with the codes and functions available in the attached printer.

6.5.1 How to Determine a Free String

When creating new or replacing old strings, the procedure for finding available strings is the same. The perhaps easiest way is to make a printout of the string settings. This is done by sending the string `&%IDB_PRINT_FULL:EXIT` to the interface from the host. If you have access to the IDB options via an operator panel, you could also choose Print IDB Dump in the Test menu or similar.

Strings can also be found with the *TN5250E IDB configuration file editor* program (*P02-xxxx.exe*), where they can be viewed on a screen. The program is enclosed on an utility disk delivered with some interfaces. It is also available for download from the Intermate web site www.intermate.com. Download the file *P02-xxxx.ZIP*.

Example 1 – reviewing strings on screen with the TN5250E IDB configuration file editor program (P02-xxxx.exe)

1. Upload the IDB settings from the printer. Refer to appendix C. *Upload / Download of IDB Settings* on page 205. Copy the uploaded file to the same directory as the *P02-xxxx.exe* file.
2. Start the *TN5250E IDB configuration file editor* program (*P02-xxxx.exe*).
3. Load the IDB configuration file by choosing "Load IDB File" on the main screen, followed by the file name (**.idb*).
4. Choose "Edit IDB", "Strings" and "Examine".

This enables you to review the currently defined strings, using <PageUp> and <PageDown> to scroll through the list. The string number is shown in the top of the screen. Any attached events are shown in the bottom of the screen.

6.5.2 User Defined Single Character Conversion

With this option, a single character is used to trigger an event. This is also known as a character event. Both simple character conversion and triggering of complete strings can be setup.

Note: Before setting up a character conversion, you should make a dump of the ASCII Table on your printer. Refer to that dump when creating the conversion, ie be sure that the character you wish to use as trigger does exist.

Example

The character "@" (ASCII 40 hex) is to activate a Character Event. When the character is sent through the *Character Table*, a specific string is to be sent to the printer. In this example string number 67.

Character Event /40 (hex)	point to string 67
String 67 contents	HELLO

IDB programming sequence for setting character event 40 ("@") to point at string 67, and storing "HELLO" in string 67.

Data to interface	Explanation
&%IDB_EDIT :	Enter the editor
CHAEVENT /40:67 :	Set character event to point to string 67
STRING67:HELLO :	Store 'HELLO' in string 67
QUIT	Leave the editor

Host sample input	Printer output
@ WORLD	HELLO WORLD

6.5.3 Predefined String Conversion

Using the adapter's String Conversion feature could in cases of large data transmissions cause a slight speed reduction. This is because the adapter has to run all incoming data through the search routines. Therefore, it is recommended to use the special string select events when possible. These events have a predefined trigger sequence, which is handled as an IDB command <CSC>-X where:

<CSC>	=	&%
X	=	0 - F (hexadecimal upper-case)

This means, that a total of 16 strings is available, which can be printed based on the statements in events 160-175. The location in the *Event Table* is found by adding X to 160.

Examples

User defined trigger	&%-0
Defined in event	160
User defined trigger	&%-7
Defined in event	167 (160 + 7h = 167)
User defined trigger	&%-E
Defined in event	174 (160 + Eh = 174)

Host Input	Action
&%IDB_EDIT:	Open the editor
EVENT 160:23:	Set &%-0 to string # 23
EVENT 167:24:	Set &%-7 to string # 24
EVENT 174:28:	Set &%-E to string # 28
STRING 23:has received &%-0:	Set string #23
STRING 24:Special String:	Set string #24
STRING 28:/0D/0A:	Set string #28 to "<CR> <LF>"
QUIT	Exit editor

Host Sample Input

INTERMATE &%-0
This is a &%-7
Newline&%-Emade

ASCII Output

INTERMATE has received &%-0
This is a Special String
Newline<CR><LF>made

6.5.4 String Conversion

This command enables the user to convert data in the ASCII data stream from the Intermate interface to the printer.

The following rules apply to *String conversion*:

- Up to 30 strings (triggers) can be defined.
- Each trigger string can consist of a maximum of eight characters.
- A trigger string (input string) must be unique. This means that it must not match another trigger string. Nor may a complete string match the start of another trigger string.
- The search for strings is done as the last function before characters are sent to the printer. This search is done on the ASCII characters and on strings from events. There is no search on hex- or IDB-dumps.
- String conversion is not performed on output strings sent instead of input strings.
- When a trigger string (input string) is found in the data stream, the string is removed and replaced by a user defined output string of maximum 255 bytes. If no output string is defined for a given trigger string no string is printed and the trigger string disappears from the output.
- A trigger can contain all characters greater than 01H. However, caution is required when trying to trigger on ASCII characters between 01H and 1FH, as these are mostly control codes (CR, LF, FF etc.). An incorrect trigger or string could affect page formatting. Use Events 80 - 86 to change action on a control code.

- The triggers (strings) are listed in the IDB-dump and are active after the printer or interface has been Powered Off and On.
- The same syntax rules for programming a string apply to programming a trigger string. ASCII characters and hexadecimal values must be preceded by a "/".

Syntax

The command used for setting up string conversion strings is CONVSTR. This corresponds to the *Advanced IDB EVENT 200-229*. The syntaxes for setup and deletion of strings are:

```
CONVSTR <input string> = <output string>:
```

```
CONVSTR DEL <input string>:
```

<input string>	=	String to be converted.
<output string>	=	String to replace the <input string>.

Input String

The <Input string> can contain all characters and have a maximum length of eight characters. It is programmed in the same way as printer command input data. This means that it may contain text, decimal and hexadecimal numbers. The following rules apply:

Text	is put in quotation marks, eg "This is a text".
Decimals	are separated by commas, eg 12,34,51,78,90,25,37.
Hexadecimals	are entered with a forward slash followed by two hexadecimal digits, separated by commas. For example: /23,/EE,/E4,/45,/F2,/78.

It is possible to mix text, decimal and hexadecimal numbers, eg:

`/0A,/0D,"Text",12,/0D,10,"Text2",45,"Text3",/0C`

The following examples show some legal and illegal combinations:

"12345678" and "123" are illegal as the complete input string "123" is part of and equal to the start of the input string "12345678".

"printer" and "print" are illegal as the complete input string "print" is part of and equal to the start of the input string "printer".

"12345678" and "234" are legal as the input string "234" is not equal to the start of the input string "12345678".

"2345678" and "124" are legal as the input string "124" is not equal to the start of the input string "12345678".

Output Data

The <Output string> can contain all characters and have a length of maximum 255 characters. It is programmed in the same way as printer command input data. This means that it may contain text, decimal and hexadecimal numbers. See explanation and examples of how these are entered in the above section *Input Data*. Please note that the output strings are NOT unique, and therefore are allowed to match each other, if needed.

Example 1 – simple text conversion

Convert HELLO to GOODBYE:

IDB programming string for setting up a trigger which converts "HELLO" to "GOODBYE".

```
&%IDB_EDIT:CONVSTR "HELLO" = "GOODBYE":QUIT
```

Host Sample Input

HELLO WORLD

Printer Output

GOODBYE WORLD

IDB command string for deleting the definition

```
&%IDB_EDIT:CONVSTR DEL "HELLO":QUIT
```

Example 2 – setting up a macro

Call a macro when Linefeed or Formfeed is reached.

IDB programming sequence for setting up the macro.

```
&%IDB_EDIT:  
CONVSTR /0A,/0C = /1b,"&f100Y",/1b,"&f3X":  
QUIT
```

Host Sample Input

<LF><FF>

Printer Output

<ESC> &f100Y <ESC> &f3X

IDB command string for deleting the definition

```
&%IDB_EDIT:CONVSTR DEL /0A,/0C:QUIT
```


7. SCS TN5250E (Twinax) Extended Options

The commands described provide the user with additional commands for controlling the printer. They must be sent from the host in order to have effect, ie included in the SCS data stream.

7.1 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
```

7.2 Initializing

7.2.1 Power On Initialize

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. DEFMPPI (Max print positions) and option DEFDCPI (CPI) are selected. Event 31 - 35 are triggered depending of option 100.
3. DEFLLPI (LPI) is selected.
4. DEFLLPP (Form length) is selected.
5. DEFPRQLT (Print quality) is selected.
6. DEFSCRDRW (Source cassette/tray) is selected depending on the SCRDRW (source cassette/tray definition).
7. Power On event 3 is triggered

This command corresponds to event 0-3.

Command: POWON <parameter> <data>:
POWON DEL <no.>: : Delete command.

Parameter: 1 - 4 : Definition number

Example: POWON 3 "Power initialize 3":
POWON DEL 3:

7.3 Paper Handling Commands

7.3.1 Source Cassette/Tray

This is executed by the AS400/System3X command PPM (Page Presentation Media) when you select a specific input cassette/tray and by the DEF SRCDRW command at Power On. Refer to option 113 on page 164.

The command corresponds to event 66-68 (cassette 1 - 3) and event 74 - 78 (cassette 4 - 8).

Command: SRCDRW <parameter> <data>:
SRCDRW DEL <cassette>: : Delete command

Parameter: 1 - 8 : Cassette number

Example: SRCDRW 1 /1B, "&11H" : Set PCL command string for
cassette 1

SRCDRW DEL 3 : Delete command string for
cassette 3

7.3.2 Destination Bin

This is executed by the AS400/System3X command PPM (Page Presentation Media) when you select a certain output bin and by DEFDSTDRW command at Power On. Refer to option 115 on page 165.

The command corresponds to event 59 - 61 (Bin 1 - 3) and for example event 22 - 29 (Bin 4 - 11).

Command: DSTDRW <parameter> <data>:

DSTDRW DEL <bin>: : Delete command

Parameter: 1 - 11 : Bin number 1 - 3 are available in all IDBs. Bins 4 - 11 are only available through programming of events, eg event 22 - 29.

Example: DSTDRW 2 /1B, "&12G": : PCL command string for setting dest. bin 2 to bin 1

DSTDRW DEL 1: : Delete command string for dest. bin 1

7.3.3 Select Paper/Envelope Media

This is executed by the AS400/System3X command PPM (Page Presentation Media) when you select printing on paper or envelopes and by the DEFPRMSEL command at Power On. Refer to option 114 on page 165.

The command corresponds to event 62-63.

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:

7.3.4 Select Paper Feed

This is triggered by the AS400/System3X command SPSU (Set Print Setup) when you select a certain kind of paper feed.

This command corresponds to event 64-65.

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, "&12H":
 SLTPAPFED DEL CUT:

7.3.5 Select Simplex/Duplex Printing

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

It is executed by the AS400/System3X command PPM (Page Presentation Media) when you select simplex or duplex printing and by the DEFSIMDUP command at Power On. Refer to option 116 on page 165.

This command corresponds to event 57-58.

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, "&11S":
SLTSIMDUP DEL SIM:

7.4 Code Page Handling Command

7.4.1 Before/After Code Page 259

Code page 259 is a character set which only contains 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 AS400/System3X.

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 could for example 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, eg 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.

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 :

7.5 Miscellaneous Commands

7.5.1 Overlay Command

When overlay call is enabled with the OVLCAL command (refer to option 28 on page 151), 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 cassette/tray 1 is selected and OVLDRW command 2 is executed when paper cassette/tray 2 is selected.

This command corresponds to event 55-56.

Command: OVLDRW <parameter> <data>:
OVLDRW DEL <parameter>: : Delete command

Parameter: 1 - 2 : Cassette number

Example: OVLDRW 1 /1B, "&f3Y", /1B, "&f2X":
: PCL string for calling
macro no. 3

OVLDRW DEL 1:

7.5.2 Before/After Formfeed

Command: BEFAFTFED <parameter> <data>:
BEFAFTFED DEL <parameter>: : Delete command

Parameter: BEF : Before formfeed
AFT : After formfeed

Example: BEFAFTFED BEF "Command":
BEDAFTFED DEF AFT:

7.5.3 Before Portrait/Landscape Selection

This command corresponds to event 147-148.

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:

7.5.4 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.

Command: SUBTIT <parameter> <data>:
 SUBTIT DEL <parameter>: : Delete command

Parameter: IDB : Status printout subtitle
 HEX : Hexdump printout subtitle

Example: SUBTIT IDB /0A,/0D,"Intermate A/S":
 SUBTIT HEX "Setup for TEST 4-03-98":
 SUBTIT DEL HEX:

7.5.5 Move to Uppermost Line

This is used if a movement upwards is needed in order to reduce the top margin. 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.

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:

8. IDB Tables

The *Option* and *Event Tables* are common for the entire Intermate range of IDB based interfaces. What options and events are valid varies across the range of interfaces.

SW code = 'ALL' indicates all products released after 1992-01-01.
SW code = 'T11-xxxx' indicates all releases of the T1+ firmware.
SW code = 'K01-6291' indicates that the feature was implemented starting with release K01-6291. (Year 96, Week 29, Release 1 in that week).

Refer to your Intermate *User's Guide* for specific firmware numbers used in connection with your interface. This information is often found in the firmware upgrade appendix and on the status sheet.

8.1 Option Table

In the bottom of each option description the IDB command syntax together with an example is written. All options can be configured with the *Advanced IDB*. Most of the options can also be configured with the *User IDB*. The command syntax for the *User IDB* language is written instead of the *Advanced IDB* where applicable.

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code
0		<p>Device address (5250 Kit/HP11si only)</p> <p><i>Note:</i> This option does not apply when printing via the TN5250E protocol.</p> <p>Twinax host address (value from 0-6)</p> <p><i>Command syntax</i> OPTION 0:<parameter></p> <p><i>Parameter</i> 0 - 6</p> <p><i>Example</i> &%IDB_EDIT: OPTION 0:1: EXIT</p>		T12-xxxx
1		Not defined		
2	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	<p>Select country code</p> <p>International(500) USA / Canadian(37) German/Austrian(273) Belgian(274) Brazilian(275) Canadian French(297) Danish/Norwegian(277) Finnish/Swedish(278) French(297) Italian(280) Japanese (Latin)(281) USA / Canadian bilingual(281) Portuguese(282) Spanish(284) Latin America(284) English, UK(285)</p> <p>The numbers in parentheses are the code pages replacing the country codes in 3812 emulation.</p> <p><i>Command syntax</i> DEFNCNTCOD <parameter></p> <p><i>Parameter</i> 0 - 15</p> <p><i>Example</i> &%IDB_EDIT: DEFNCNTCOD 0: EXIT</p>		ALL

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code
3	0 45 255 xxx	<p>Unprintable Character</p> <p>Default hyphen (-) Default hyphen (-) Default hyphen (-) Character (decimal ASCII value)</p> <p><i>Command syntax</i> UNPCHR <parameter>:</p> <p><i>Parameter</i> All EBCDIC characters or a printable ASCII hex value</p> <p><i>Example</i> &%IDB_EDIT: UNPCHR /2D: EXIT</p>		ALL
4		Not defined		
5	0 1 2 255	<p>Form Feed support</p> <p><i>Note:</i> This option does not apply when printing via the TN5250E protocol.</p> <p>0 Form feed not supported. Formfeeds send from the system are converted into linefeeds.</p> <p>1 Form feed supported. React normally on formfeed. (Recommended)</p> <p>2 Linewriter dataproduct VFU support Form length is downloaded by means of VFU. All LF and PPAV commands are converted into 7-bit line counter Paper motion commands Bit 8 is used as Ver. Format data signal (This is made to obtain full speed at the Genicom4285 linewriter)</p> <p>255 Form feed not supported.</p> <p><i>Command syntax</i> OPTION 5:<parameter>:</p> <p><i>Parameter</i> 0 - 255</p> <p><i>Example</i> &%IDB_EDIT: OPTION 5:1: EXIT</p>		T01-xxxx

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code
6	0 2 xxx	IDB editor disable Enable IDB editor Disable IDB editor Enable IDB editor <i>Command syntax</i> OPTION 6:<parameter>: <i>Parameter</i> 0 - 255 <i>Example</i> &%IDB_EDIT: OPTION 6:2: EXIT		ALL
7	0 58 255 xxx	IDB delimiter Default colon (:) Default colon (:) Default colon (:) Character xxx <i>Command syntax</i> OPTION 7:<parameter>: <i>Parameter</i> 0 - 255 <i>Example</i> &%IDB_EDIT: OPTION 7:58: EXIT		ALL
8	0 38 255 xxx	IDB first <CSC> char Default ampersand (&) Default ampersand (&) Default ampersand (&) Character xxx <i>Command syntax</i> OPTION 8:<parameter>: <i>Parameter</i> 0 - 255 <i>Example</i> &%IDB_EDIT: OPTION 8:38: EXIT		ALL

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code
9	0 37 255 xxx	<p>IDB second <CSC> char</p> <p>None Default percent (%) None Character xxx</p> <p><i>Command syntax</i> OPTION 9:<parameter>:</p> <p><i>Parameter</i> 0 - 255</p> <p><i>Example</i> &%IDB_EDIT: OPTION 9:37: EXIT</p>		ALL
10	0 1 2 3 4 5 6 255	<p>Printer emulation</p> <p>4214 model 2 5225 model 1 5224 model 1 5256 model 3 5219 model D01/D02 3812 model 2 4245 (6262) LW 4214 model 2</p> <p><i>Command syntax</i> PRTEMUL <parameter>:</p> <p><i>Parameter</i> 3812, 5256, 5224, 5225, 4214, 5219</p> <p><i>Example</i> &%IDB_EDIT: PRTEMUL 3812: EXIT</p>		ALL
11 - 19		Not defined		

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code
20	0 255 xxx	<p>Power up delay time</p> <p><i>Note:</i> This option does not apply when printing via the TN5250E protocol.</p> <p>Default = 10 seconds Default = 10 seconds xxx seconds</p> <p>This option is normally required to be 0.</p> <p><i>Command syntax</i> OPTION 20:<parameter>:</p> <p><i>Parameter</i> 0 - 255</p> <p><i>Example</i> &%IDB_EDIT: OPTION 20:0: EXIT</p>		ALL
21	0 1	<p>Use exception status (Intervention Status)</p> <p><i>Note:</i> This option does not apply when printing via the TN5250E protocol.</p> <p>The printer's status (offline, paper out, paper jam and cover open) is sent to the host. The printer status sent to the host is reduced to offline. If any errors occur on the printer the interface will only send the offline status.</p> <p><i>Command syntax</i> INTSTAT <parameter>:</p> <p><i>Parameter</i> NORM, OFF</p> <p><i>Example</i> &%IDB_EDIT: INTSTAT NORM: EXIT</p>		K01-5011 K42-6491 K62-xxxx
22 - 25		Not defined		

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code
26	1 xxx	<p>Host control off (LPI, CPI and Quality)</p> <p><i>Note:</i> This option does not apply when printing via the TN5250E protocol.</p> <p>Special mode Normal mode</p> <p><i>Command syntax</i> OPTION 26:<parameter>:</p> <p><i>Parameter</i> 0 - 255</p> <p><i>Example</i> &%IDB_EDIT: OPTION 26:0: EXIT</p>		T01-xxxx
27		Not defined		
28	0 1 xxx	<p>Overlay calls</p> <p>Disable overlay call Enable overlay call (Event 55 & 56) Disable overlay call</p> <p>When enabled the overlay string is printed at the top of every page.</p> <p><i>Command syntax</i> OVLCAL <parameter>:</p> <p><i>Parameter</i> ON, OFF</p> <p><i>Example</i> &%IDB_EDIT: OVLCAL OFF: EXIT</p>		ALL

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code
29	0	Timeout initialize Timeout init after 10 seconds. The timeout parameters are sent when the first TN5250E (Twinax) job is received. Hereafter they are sent only if a PC job has been printed on the parallel port since the previous TN5250E (Twinax) job.		T11-2521 T12-2511 T13-2511 K01-6291 K62-xxxx
	xxx	Timeout init after xxx seconds. The timeout parameters are sent when the first TN5250E (Twinax) job is received. Hereafter they are sent every time a timeout has occurred on the twinax port and a new TN5250E (Twinax) job is received. Timeout parameters: IDB Event 151 Font Page orientation CSI LSI Formlength Forms select Source cassette/tray / destination bin Print Quality Simplex/Duplex <i>Command syntax</i> TIMOUT <parameter>: <i>Parameter</i> 0 - 255 <i>Example</i> &%IDB_EDIT: TIMOUT 10: EXIT		

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code
30	0 1	<p>Printing mode</p> <p><i>Note:</i> This option does not apply when printing via the TN5250E protocol.</p> <p>Normal printing mode (ACK used) Busy printing mode (ACK ignored)</p> <p>The busy printing mode has to be used when the ACK pulse from the printer is less than 1μs.</p> <p><i>Command syntax</i> OPTION 30:<parameter>:</p> <p><i>Parameter</i> 0 - 1</p> <p><i>Example</i> &%IDB_EDIT: OPTION 30:0: EXIT</p>		T01-xxxx
31 - 36		Not defined		
37	0 1 2 3 4 5 6 7	<p>Baud Rate selection (5250 kit)</p> <p><i>Note:</i> This option does not apply when printing via the TN5250E protocol.</p> <p>9600 bps 300 bps 600 bps 1200 bps 2400 bps 4800 bps 9600 bps 19200 bps</p> <p><i>Command syntax</i> OPTION 37:<parameter>:</p> <p><i>Parameter</i> 0 - 7</p> <p><i>Example</i> &%IDB_EDIT: OPTION 37:0: EXIT</p>		T11-xxxx T13-xxxx

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code
38	0 1 2 3	<p>DTR pol./Robust XON (5250 kit)</p> <p><i>Note:</i> This option does not apply when printing via the TN5250E protocol.</p> <p>DTR active high and Robust XON = ON DTR active low and Robust XON = ON DTR active high and Robust XON = OFF DTR active low and Robust XON = OFF</p> <p><i>Command syntax</i> OPTION 38:<parameter>:</p> <p><i>Parameter</i> 0 - 3</p> <p><i>Example</i> &%IDB_EDIT: OPTION 38:0: EXIT</p>		T11-xxxx T13-xxxx
39	0 xxx	<p>Parallel/serial timeout (5250 kit)</p> <p><i>Note:</i> This option does not apply when printing via the TN5250E protocol.</p> <p>15 seconds xxx seconds</p> <p>This option specifies how long the interface waits for more data from the parallel or serial port before it changes printer access.</p> <p><i>Note:</i> Only for interfaces with an optional parallel port.</p> <p><i>Command syntax</i> OPTION 39:<parameter>:</p> <p><i>Parameter</i> 0 - 255</p> <p><i>Example</i> &%IDB_EDIT: OPTION 39:0: EXIT</p>		T11-xxxx T12-xxxx T13-xxxx
40 - 77		Not defined		

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code
78 79		<p>LSB of Left Margin offset in COR MSB of Left Margin offset in COR</p> $\text{Offset (inches)} = \frac{(256 * \text{Option}(79)) + \text{Option}(78)}{1440}$ <p>This value is only used in Computer Output Reduction mode. Normal landscape offsets according to option 86 and 87. Refer to appendix B. <i>Calculating LSB and MSB for Advanced IDB (TN3270E/Coax + TN5250E/Twinax)</i> on page 203.</p> <p><i>Command syntax</i> LFTOFFCOR <parameter1> <parameter2>:</p> <p><i>Parameter 1</i> "1" for Inches "C" for Centimeter</p> <p><i>Parameter 2</i> Value in inches or centimeters with 2 decimals (0.00 .. 2.00)</p> <p><i>Example</i> &%IDB_EDIT: LFTOFFCOR I 0.44: EXIT</p> <p><i>Example, Advanced IDB</i> &%IDB_EDIT: OPTION 78:122: OPTION 79:2: EXIT</p>		ALL

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code
80 81		<p>LSB of Top Margin offset in COR MSB of Top Margin offset in COR</p> $\text{Offset (inches)} = \frac{(256 * \text{Option}(81)) + \text{Option}(80)}{1440}$ <p>This value is used in Computer Output Reduction mode. Normal Landscape offsets according to option 88 and 89. Refer to appendix B. <i>Calculating LSB and MSB for Advanced IDB (TN3270E/Coax + TN5250E/Twinax)</i> on page 203.</p> <p><i>Command syntax</i> TOPOFFCOR <parameter1> <parameter2>:</p> <p><i>Parameter 1</i> "I" for Inches "C" for Centimeter</p> <p><i>Parameter 2</i> Value in inches or centimeters with 2 decimals (0.00 .. 2.00)</p> <p><i>Example</i> &%IDB_EDIT: TOPOFFCOR I 0.00: EXIT</p> <p><i>Example, Advanced IDB</i> &%IDB_EDIT: OPTION 80:0: OPTION 81:0: EXIT</p>		ALL

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code												
82 83		<p>LSB of physical page length MSB of physical page length</p> <table border="0"> <tr> <td>A4</td> <td>297 mm</td> <td>(11.7 inches)</td> </tr> <tr> <td>Letter</td> <td>279.4 mm</td> <td>(11 inches)</td> </tr> <tr> <td>Legal</td> <td>355.6 mm</td> <td>(14 inches)</td> </tr> <tr> <td>Executive</td> <td>266.7 mm</td> <td>(10.5 inches)</td> </tr> </table> <p><i>Page length (inches) = $\frac{(256 * Option(83)) + Option(82)}{1440}$</i></p> <p>This value is used in Computer Output Reduction mode. It is compared with the system page length to determine when COR mode has to be entered. Refer to appendix B. <i>Calculating LSB and MSB for Advanced IDB (TN3270E/Coax + TN5250E/Twinax)</i> on page 203.</p> <p><i>Command syntax</i> PAGLNG <parameter1> <parameter2>:</p> <p><i>Parameter 1</i> "l" for Inches "C" for Centimeter</p> <p><i>Parameter 2</i> Value in inches or centimeters with 2 decimals (0.00 .. 99.99)</p> <p><i>Example</i> &%IDB_EDIT: PAGLNG C 29.70: EXIT</p> <p><i>Example, Advanced IDB</i> &%IDB_EDIT: OPTION 82:208: OPTION 83:65: EXIT</p>	A4	297 mm	(11.7 inches)	Letter	279.4 mm	(11 inches)	Legal	355.6 mm	(14 inches)	Executive	266.7 mm	(10.5 inches)		ALL
A4	297 mm	(11.7 inches)														
Letter	279.4 mm	(11 inches)														
Legal	355.6 mm	(14 inches)														
Executive	266.7 mm	(10.5 inches)														

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code
84 85		<p>LSB of physical page width MSB of physical page width</p> <p>A4 210 mm (8.27 inches) Letter/Legal 215.9 mm (8.5 inches) Executive 184.2 mm (7.25 inches)</p> <p><i>Page width (inches) = $\frac{(256 * Option(85)) + Option(84)}{1440}$</i></p> <p>This value is used in Computer Output Reduction mode. It is compared with the system page width to determine when COR mode has to be entered. Refer to appendix B. <i>Calculating LSB and MSB for Advanced IDB (TN3270E/Coax + TN5250E/Twinax)</i> on page 203.</p> <p><i>Command syntax</i> PAGWDT <parameter1> <parameter2>:</p> <p><i>Parameter 1</i> "I" for Inches "C" for Centimeter</p> <p><i>Parameter 2</i> Value in inches or centimeters with 2 decimals (0.00 .. 99.99)</p> <p><i>Example</i> &%IDB_EDIT: PAGWDT C 22.10: EXIT</p> <p><i>Example, Advanced IDB</i> &%IDB_EDIT: OPTION 84:132: OPTION 85:46: EXIT</p>		ALL

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code
86 87		<p>LSB of Left margin offset in landscape MSB of Left margin offset in landscape</p> $\text{Offset (inches)} = \frac{(256 * \text{Option}(87)) + \text{Option}(86)}{1440}$ <p>This value is added to the left margin when landscape print mode is used. Refer to appendix B. <i>Calculating LSB and MSB for Advanced IDB (TN3270E/Coax + TN5250E/Twinax)</i> on page 203.</p> <p><i>Command syntax</i> LFTOFFLAN <parameter1> <parameter2>:</p> <p><i>Parameter 1</i> "l" for Inches "C" for Centimeter</p> <p><i>Parameter 2</i> Value in inches or centimeters with 2 decimals (0.00 .. 2.00)</p> <p><i>Example</i> &%IDB_EDIT: LFTOFFLAN l 0.00: EXIT</p> <p><i>Example, Advanced IDB</i> &%IDB_EDIT: OPTION 86:0: OPTION 87:0: EXIT</p>		ALL

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code
88 89		<p>LSB of Top margin offset in landscape MSB of Top margin offset in landscape</p> $\text{Offset (inches)} = \frac{(256 * \text{Option}(89)) + \text{Option}(88)}{1440}$ <p>This value is added to the top margin when landscape print mode is used. Refer to appendix B. <i>Calculating LSB and MSB for Advanced IDB (TN3270E/Coax + TN5250E/Twinax)</i> on page 203.</p> <p><i>Command syntax</i> TOPOFFLAN <parameter1> <parameter2>:</p> <p><i>Parameter 1</i> "I" for Inches "C" for Centimeter</p> <p><i>Parameter 2</i> Value in inches or centimeters with 2 decimals (0.00 .. 2.00)</p> <p><i>Example</i> &%IDB_EDIT: TOPOFFLAN I 0.10: EXIT</p> <p><i>Example, Advanced IDB</i> &%IDB_EDIT: OPTION 88:147: OPTION 89:0: EXIT</p>		ALL
90 - 99		Not defined		

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code
100	5 10 12 15 16 255	<p>Characters per inch (CPI)</p> <p>5 CPI 10 CPI 12 CPI 15 CPI 16.7 CPI Default = 10 CPI</p> <p><i>Command syntax</i> DEFDCPI <parameter>:</p> <p><i>Parameter</i> 0 - 255</p> <p><i>Example</i> &%IDB_EDIT: DEFDCPI 10: EXIT</p>		ALL
101		Not defined		
102	0 255 xxx	<p>Maximum print position (MPP)</p> <p>Default = 132 characters Default = 132 characters xxx characters</p> <p><i>Command syntax</i> DEFMPP <parameter>:</p> <p><i>Parameter</i> 0 - 255</p> <p><i>Example</i> &%IDB_EDIT: DEFMPP 80: EXIT</p>		ALL

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code
103	xxx	Left margin (LM) in characters xxx characters This is the default left margin. <i>Command syntax</i> DEFLFTMRG <parameter>: <i>Parameter</i> 0 - 255 <i>Example</i> &%IDB_EDIT: DEFLFTMRG 0: EXIT		ALL
104	xxx	Right margin (RM) in characters xxx characters This is the default right margin. <i>Command syntax</i> DEFRTMRG <parameter>: <i>Parameter</i> 0 - 255 <i>Example</i> &%IDB_EDIT: DEFRTMRG 132: EXIT		ALL
105	3 4 6 8 9 xxx	Lines per inch (LPI) 3 LPI 4 LPI 6 LPI 8 LPI 9 LPI xxx LPI <i>Command syntax</i> DEFLPI <parameter>: <i>Parameter</i> 0 - 255 <i>Example</i> &%IDB_EDIT: DEFLPI 6: EXIT		ALL

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code
106		Not defined		
107	0 255 xxx	<p>Lines per page (LPP)</p> <p>Default = 1 line Default = 1 line xxx lines per page</p> <p><i>Command syntax</i> DEFLPP <parameter>:</p> <p><i>Parameter</i> 0 - 255</p> <p><i>Example</i> &%IDB_EDIT: DEFLPP 68: EXIT</p>		ALL
108	xxx	<p>Top margin (TM) in characters</p> <p>xxx characters</p> <p>This is the default top margin.</p> <p><i>Command syntax</i> DEFTOPMRG <parameter>:</p> <p><i>Parameter</i> 0 - 255</p> <p><i>Example</i> &%IDB_EDIT: DEFTOPMRG 0: EXIT</p>		ALL
109 - 111		Not defined		

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code
112	1 2 3 xxx	Default print quality <i>Note:</i> This option does not apply when printing via the TN5250E protocol. Data processing quality (DP) Near letter quality (LQ) High speed quality (DRF) Not defined quality (DEF) <i>Command syntax</i> DEFPRQLT <parameter>: <i>Parameter</i> DEF, DRF, DP, LQ <i>Example</i> &%IDB_EDIT: DEFPRQLT DEF: EXIT		ALL
113	1 2 3 4 5 6 7 8 xxx	Default source cassette/tray Cassette/tray 1 Cassette/tray 2 Cassette/tray 3 Cassette/tray 4 Cassette/tray 5 Cassette/tray 6 Cassette/tray 7 Cassette/tray 8 Not defined <i>Command syntax</i> DEFSRCDRW <parameter>: <i>Parameter</i> DEF, 1, 2, 3, 4, 5, 6, 7, 8 <i>Example</i> &%IDB_EDIT: DEFSRCDRW DEF: EXIT		ALL

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code
114	0 1 2	<p>Default forms media</p> <p>No change (DEF) Paper media (PAP) Envelope media (ENV)</p> <p><i>Command syntax</i> DEFFRMSEL <parameter>:</p> <p><i>Parameter</i> DEF, PAP, ENV</p> <p><i>Example</i> &%IDB_EDIT: DEFFRMSEL DEF: EXIT</p>		ALL
115	0 1 2 3	<p>Default destination bin</p> <p>No change (DEF) Destination bin 1 Destination bin 2 Destination bin 3</p> <p><i>Command syntax</i> DEFDSTDRW <parameter>:</p> <p><i>Parameter</i> DEF, 1, 2, 3</p> <p><i>Example</i> &%IDB_EDIT: DEFDSTDRW DEF: EXIT</p>		ALL
116	0 1 2 3	<p>Default Simplex/Duplex</p> <p>No change (DEF) Simplex (SIM) Duplex(long edge) (DUP) Duplex tumble(short edge) (TUM)</p> <p><i>Command syntax</i> DEFSIMDUP <parameter>:</p> <p><i>Parameter</i> DEF, SIM, DUP, TUM</p> <p><i>Example</i> &%IDB_EDIT: DEFSIMDUP DEF: EXIT</p>		ALL
117		Not defined		

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code
118	0 1	<p>Proportional font handling On/Off</p> <p>Use proportinal font handling Do not use proportinal font handling</p> <p><i>Command syntax</i> DEFFNTMOV <parameter>:</p> <p><i>Parameter</i> OFF, ON</p> <p><i>Example</i> &%IDB_EDIT: DEFFNTMOV OFF: EXIT</p>		ALL
119	0 1 2 3 xxx	<p>Set initial condition</p> <p><i>Note:</i> This option does not apply when printing via the TN5250E protocol.</p> <p>Use standard SIC values Use IDB values as default in wordprocessing Use IDB values as default in dataprocessing Use IDB values as default in both modes Use standard SIC values.</p> <p>With this command it is possible to use the default IDB values when either wordprocessing mode or dataprocessing mode is selected instead of the standard SIC values.</p> <p><i>Command syntax</i> OPTION 119:<parameter>:</p> <p><i>Parameter</i> 0 - 255</p> <p><i>Example</i> &%IDB_EDIT: OPTION 119:0: EXIT</p>		ALL

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code
120	0 1 2 xxx	<p>Page orientation</p> <p><i>Note:</i> This option does not apply when printing via the TN5250E protocol.</p> <p>No change (DEF) Portrait orientation (POR) Landscape orientation (LAN) Not defined</p> <p>Default power up page orientation.</p> <p><i>Command syntax</i> DEFORT <parameter>:</p> <p><i>Parameter</i> DEF, POR, LAN</p> <p><i>Example</i> &%IDB_EDIT: DEFORT DEF: EXIT</p>		ALL
121	0 1 2	<p>Default page orientation cassette/tray 1</p> <p>No change (DEF) Portrait orientation (POR) Landscape orientation (LAN)</p> <p>APO/COR default orientation.</p> <p><i>Command syntax</i> ORTDRW 1 <parameter>:</p> <p><i>Parameter</i> DEF, POR, LAN</p> <p><i>Example</i> &%IDB_EDIT: ORTDRW 1 POR: EXIT</p>		ALL

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code
122	0 1 2	Default page orientation cassette/tray 2 No change (DEF) Portrait orientation (POR) Landscape orientation (LAN) APO/COR default orientation. <i>Command syntax</i> ORTDRW 2 <parameter>: <i>Parameter</i> DEF, POR, LAN <i>Example</i> &%IDB_EDIT: ORTDRW 2 POR: EXIT		ALL
123	0 1 2 3	Computer output reduction cassette/tray 1 Disable automatic selection (OFF) Enable Automatic Page Orientation (APO) Enable automatic Computer Output Reduction after APO (COR) Disable STO command (NO rotation at all) (STODIS) This controls Automatic Page Orientation with or without reduction. <i>Command syntax</i> CORDRW 1 <parameter>: <i>Parameter</i> OFF, COR, APO, STODIS <i>Example</i> &%IDB_EDIT: CORDRW 1 COR: EXIT		ALL

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code
124	0 1 2 3	<p>Computer output reduction cassette/tray 2</p> <p>Disable automatic selection (OFF) Enable automatic page orientation (APO) Enable automatic computer output reduction after APO (COR) Disable STO command (NO rotation at all) (STODIS)</p> <p>This controls Automatic Page Orientation with or without reduction.</p> <p><i>Command syntax</i> CORDRW 2 <parameter>:</p> <p><i>Parameter</i> OFF, COR, APO, STODIS</p> <p><i>Example</i> &%IDB_EDIT: CORDRW 2 COR: EXIT</p>		ALL
125		Not defined		

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code
126	0 1 2	<p>COR text mode (PPM Quality disable)</p> <p>Enable COR text mode (OFF) [Normal IBM interpretation]</p> <p>Disable COR text mode (ON) [Ignore the system TEXT parameter]</p> <p>Turns off the COR text mode Page Presentation Media quality (PPM). When 0 and PPM quality parameter = 02 no COR is performed. When 1 and PPM quality parameter = 02 COR is performed.</p> <p>Enable APO text mode (APO) [Observe TEXT parameter in APO as well]</p> <p>PPM quality = 02 causes forced portrait in APO text mode also. Only active when OPTION 123/124 = 1 (APO).</p> <p><i>Command syntax</i> TXTMOD <parameter>:</p> <p><i>Parameter</i> OFF, ON, APO</p> <p><i>Example</i> &%IDB_EDIT: TXTMOD OFF: EXIT</p>		ALL
127	70 xxx	<p>COR linespacing reduction</p> <p>Linespacing reduced to 70% Linespacing reduced to XXX %</p> <p>This is the linespacing reduction in COR mode. The linespacing is reduced to XXX % of normal linespacing (100%).</p> <p><i>Command syntax</i> LINSPPRED <parameter>:</p> <p><i>Parameter</i> 0 - 255</p> <p><i>Example</i> &%IDB_EDIT: LINSPPRED 70: EXIT</p>		ALL

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code
128	0 1	<p>Compress CPI</p> <p>No compression (OFF) CPI is compressed as follows: (ON)</p> <p>10cpi=>10.2cpi 12cpi=>12.2cpi 15cpi=>15.3cpi</p> <p>This Option is used with HP printers to obtain 80cpl at 10cpi, 96cpl at 12cpi and 120cpl at 15cpi. Other values calculates</p> $\text{Compressed CPI} = \frac{\text{CPI} * 50}{49}$ <p><i>Command syntax</i> COMCPI <parameter>:</p> <p><i>Parameter</i> OFF, ON</p> <p><i>Example</i> &%IDB_EDIT: COMCPI OFF: EXIT</p>		<p>H02-8101 K01-xxxx K52-8111 T01-2351 T02-2391 T11-2391 T12-2481 T13-2441</p>
129		Not defined		

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code																														
130		<p>Line density download format</p> <p><i>Note:</i> This option does not apply when printing via the TN5250E protocol.</p> <p>1 LD = Decimal ascii 2 LD = Hexadecimal ascii 3 LD = Binary 4 LD = Decimal ascii with 2 decimal places 5 LD value not send. Only the strings. 6 LD = 2 byte binary (LSB first) xxx Not defined</p>		ALL																														
131	xxx	Line density header string																																
132	xxx	Line density trailer string																																
133		Not defined																																
134		Not defined																																
135	xxx	LSB of interface to printer division factor																																
136	xxx	MSB of interface to printer division factor																																
137	xxx	LSB of interface to printer multiply factor																																
138	xxx	MSB of interface to printer multiply factor																																
		<p>Number of digits in LD value</p> <p><i>Note:</i> Newer interfaces do not use option 139. Interfaces with Euro Support use the option to force euro support.</p> $LD = \frac{1440 * ((Option(138) * 256) + Option(137))}{(Option(136) * 256) + Option(135)} * LPI$ <p>Format 4 can be used if higher resolution is wanted but it is slower than format 1. Format 5 can be used if a fixed line spacing is wanted.</p> <p><i>The most commonly used linespace values (inches)</i></p> <table border="1"> <thead> <tr> <th>Fraction used by printer:</th> <th>Opt135</th> <th>Opt136</th> <th>Opt137</th> <th>Opt138</th> </tr> </thead> <tbody> <tr> <td>1/72</td> <td>20</td> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>1/120</td> <td>12</td> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>1/180</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>1/216</td> <td>20</td> <td>0</td> <td>3</td> <td>0</td> </tr> <tr> <td>1/720</td> <td>2</td> <td>0</td> <td>0</td> <td>0</td> </tr> </tbody> </table> <p><i>Command syntax</i> OPTION 130: <parameter>:</p> <p><i>Parameter</i> 0 - 255</p> <p><i>Example</i> &%IDB_EDIT: OPTION 130:1: EXIT</p>	Fraction used by printer:	Opt135	Opt136	Opt137	Opt138	1/72	20	0	0	0	1/120	12	0	0	0	1/180	0	0	0	0	1/216	20	0	3	0	1/720	2	0	0	0		
Fraction used by printer:	Opt135	Opt136	Opt137	Opt138																														
1/72	20	0	0	0																														
1/120	12	0	0	0																														
1/180	0	0	0	0																														
1/216	20	0	3	0																														
1/720	2	0	0	0																														

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code
139	0 1	Force Euro Support Normal non-euro support Force euro support <i>Command syntax</i> EURSUP <parameter> <i>Parameter</i> OFF, ON <i>Example</i> &%IDB_EDIT: EURSUP OFF: EXIT		H02-8471 K62-9091
140 - 149		Not defined		

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code
150		Form Length download format <i>Note:</i> This option does not apply when printing via the TN5250E protocol. 1 - 3 Value in lines LPP = Decimal ascii 2 LPP = Hexadecimal ascii 3 LPP = Binary 4 - 8 Value in x/1440 inches 4 LPP = Decimal ascii 5 LPP = Hexadecimal ascii 6 LPP = 1 byte binary 7 LPP = Decimal ascii with 2 decimal places 8 LPP value not send. Only the strings. xxx Not defined		ALL
151	xxx	Form length header string		
152	xxx	Form length trailer string		
153	xxx	Interface to printer division factor		
154		Not defined		
155	xxx	Interface to printer multiply factor		
156		Not defined		
157		Number of digits in LPP value $LPP = \frac{1440 * Option(155)}{Option(153)}$ <i>Command syntax</i> OPTION 150: <parameter>: <i>Parameter</i> 0 - 255 <i>Example</i> &%IDB_EDIT: OPTION 150:1: EXIT		

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code
158	0 1 2 3	<p>Horizontal/vertical movement</p> <p>Use Line feed and space to move Use escape sequences to move Use Space (Hor) and escape sequences (Ver) Use Linefeed (Ver) and escape seq. (Hor)</p> <p>This option determines if the horizontal and the vertical move have to be done by space and line feeds or by escape sequences.</p> <p>Refer to options 211-213 if esc sequences are used to move horizontal. And option 238 if spaces are used to move horizontal.</p> <p><i>Command syntax</i> HORMOV <parameters>: VERMOV <parameter>:</p> <p><i>Parameter</i> For HORMOV: ESC, SP For VERMOV: ESC, LF</p> <p><i>Example</i> &%IDB_EDIT: HORMOV ESC: VERMOV ESC: EXIT</p>	ALL	
159	0 1	<p>Prescribe transparent mode</p> <p>Disabled Enabled</p> <p>When enabled all SCS control codes and positioning commands between <!R!> and <EXIT;> are ignored.</p> <p><i>Command syntax</i> OPTION 159: <parameter>:</p> <p><i>Parameter</i> 0 - 1</p> <p><i>Example</i> &%IDB_EDIT: OPTION 159:0: EXIT</p>	K01-xxxx T02-4031 T11-4131 T13-4031	
160 - 168		Not defined		

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code												
169	0 1	<p>CSC transparent mode handling</p> <p>Single byte mode Multibyte mode</p> <p><i>Example - using single byte mode</i> Option 8 = 38 (<CSC1>=&) Option 9 = 37 (<CSC2> = %) Option 169 = 0</p> <table><tr><td>Host Input</td><td>Printer Output</td></tr><tr><td>&%41&%42&%43&%44</td><td>ABCDE</td></tr><tr><td>&%41424344&%</td><td>A424344&%</td></tr></table> <p><i>Example - using multibyte mode</i> Option 8 = 38 Option 9 = 37 Option 169 = 1</p> <table><tr><td>Host Input</td><td>Printer Output</td></tr><tr><td>&%41&%42&%43&%44</td><td>A42C44</td></tr><tr><td>&%41424344&%</td><td>ABCD</td></tr></table>	Host Input	Printer Output	&%41&%42&%43&%44	ABCDE	&%41424344&%	A424344&%	Host Input	Printer Output	&%41&%42&%43&%44	A42C44	&%41424344&%	ABCD		K01-5071
Host Input	Printer Output															
&%41&%42&%43&%44	ABCDE															
&%41424344&%	A424344&%															
Host Input	Printer Output															
&%41&%42&%43&%44	A42C44															
&%41424344&%	ABCD															
170	0 42 255 xxx	<p>Repetition character in transparent mode</p> <p>Not defined Use "*" as repetition character Not defined Use xxx as repetition character.</p> <p>Refer to the section 6.3.5 <i>The Repetition Character</i> on page 122 and to appendix A. <i>ASCII Character Table</i> on page 201.</p> <p><i>Command syntax</i> REPCHR <parameter>:</p> <p><i>Parameter</i> Any ASCII character</p> <p><i>Example</i> &%IDB_EDIT: REPCHR *: EXIT</p>		ALL												

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code
171	0 47 xxx	<p>1st transparent lead in character</p> <p>No user defined transparent sequence Use "/" as <led1> Use xxx as 1st lead in character</p> <p>Refer to the section <i>6.3.4 User Defined Multibyte ASCII Transparency</i> on page 117. See also option 172 below.</p> <p><i>Command syntax</i> LEDINSEQ <led1> <led2>:</p> <p><i>Parameter</i> Any ASCII character, OFF</p> <p><i>Example</i> &%IDB_EDIT: LEDINSEQ &%: EXIT</p>	ALL	
172	0 xxx	<p>2nd transparent lead in character</p> <p>Use only 1 lead in character, ie the character defined in option 171 Use xxx as 2nd lead in character</p> <p>Cannot be '/'. Refer to the section <i>6.3.4 User Defined Multibyte ASCII Transparency</i> on page 117. See also option 171 above.</p> <p><i>Command syntax</i> LEDINSEQ <led1> <led2>:</p> <p><i>Parameter</i> Any ASCII character, OFF</p> <p><i>Example</i> &%IDB_EDIT: LEDINSEQ &%: EXIT</p>	ALL	

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code
173 174 175 176	0 47 xxx	<p>1st transparent lead out character 2nd character 3rd character 4th character</p> <p>Disable specific lead out character. Use this if the lead out sequence should be limited to fewer than four characters. Use "/" as <out1>. Use xxx as lead out character.</p> <p>Refer to the section 6.3.4 <i>User Defined Multibyte ASCII Transparency</i> on page 117.</p> <p><i>Important:</i> None of the 4 lead out character can be '0'-'9', 'A'-'F', 'a'-'f' or the repetition character (option 170).</p> <p><i>Command syntax</i> LEDOUTSEQ <out1> <out2> <out3> <out4>:</p> <p><i>Parameter</i> Any ASCII character, OFF</p> <p><i>Example</i> &%IDB_EDIT: LEDOUTSEQ ??: EXIT</p>		ALL
177	0 1	<p>Format control code suppression</p> <p>Auto-newline and auto form feed enabled Auto-newline and auto form feed disabled</p> <p>Enable/disable format control codes sent from the host or generated internally by the interface. Currently it is only possible to disable the auto-newline function.</p> <p><i>Command syntax</i> CTLCODSUP <parameter>:</p> <p><i>Parameter</i> OFF, ON</p> <p><i>Example</i> &%IDB_EDIT: CTLCODSUP OFF: EXIT</p>		K01-xxxx T01-2461 T02-2431 T11-3431 T12-3231 T13-2441 K62-xxxx

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code
178		<p>Relative horizontal move forward</p> <p><i>Note:</i> This option does not apply when printing via the TN5250E protocol.</p> <p>1 Move = Decimal ascii 2 Move = Hexadecimal ascii 3 Move = Binary 4 Move = Decimal ascii with 2 decimal places 5 Move = Value not send. Only strings 6 Move = 2 byte binary (LSB first)</p>		ALL
179	xxx	Rel. hor. move forward header string		
180	xxx	Rel. hor. move forward trailer string		
181	xxx	Interface to printer division factor		
182	xxx	<p>Interface to printer multiply factor</p> $\frac{1}{\text{ASCII resolution}} = \frac{1440 * \text{Option}(182)}{\text{Option}(181)}$ <p>This command is used in justify mode and when proportional spaced fonts are used. It is also used when absolute and relative position commands are used, and when option 206 is disabled to set left margins.</p> <p><i>Command syntax</i> OPTION 178: <parameter></p> <p><i>Parameter</i> 1 - 6</p> <p><i>Example</i> &%IDB_EDIT: OPTION 178:1: EXIT</p>		

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code
183		Relative horizontal move backward <i>Note:</i> This option does not apply when printing via the TN5250E protocol. 1 Move = Decimal ascii 2 Move = Hexadecimal ascii 3 Move = Binary 4 Move = Decimal ascii with 2 decimal places 5 Move = Value not send. Only strings 6 Move = 2 byte binary (LSB first)		ALL
184	xxx	Rel. hor. move backward header string		
185	xxx	Rel. hor. move backward trailer string		
186	xxx	Interface to printer division factor		
187	xxx	Interface to printer multiply factor $\frac{1}{ASCII\ resolution} = \frac{1440 * Option(187)}{Option(186)}$ This command is used when proportional spaced fonts are used. <i>Command syntax</i> OPTION 183: <parameter> <i>Parameter</i> 1 - 6 <i>Example</i> &%IDB_EDIT: OPTION 183:1: EXIT		

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code
188		<p>Relative vertical move downwards</p> <p><i>Note:</i> This option does not apply when printing via the TN5250E protocol.</p> <p>1 Move = Decimal ascii 2 Move = Hexadecimal ascii 3 Move = Binary 4 Move = Decimal ascii with 2 decimal places 5 Move = Value not send. Only strings 6 Move = 2 byte binary (LSB first)</p>		ALL
189	xxx	<p>Rel. ver. move downwards header string</p> <p>Rel. ver. move downwards trailer string</p> <p>Interface to printer division factor</p> <p>Interface to printer multiply factor</p> $\frac{1}{ASCII \text{ resolution}} = \frac{1440 * Option(192)}{Option(191)}$ <p>This command is used when making superscript and subscript and when absolute and relative position commands are used.</p> <p><i>Command syntax</i> OPTION 188: <parameter>:</p> <p><i>Parameter</i> 1 - 6</p> <p><i>Example</i> &%IDB_EDIT: OPTION 188:1: EXIT</p>		
190	xxx			
191	xxx			
192	xxx			

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code
193		Relative vertical move upwards <i>Note:</i> This option does not apply when printing via the TN5250E protocol. 1 Move = Decimal ascii 2 Move = Hexadecimal ascii 3 Move = Binary 4 Move = Decimal ascii with 2 decimal places 5 Move = Value not send. Only strings 6 Move = 2 byte binary (LSB first)		ALL
194	xxx	Rel. ver. move upwards header string		
195	xxx	Rel. ver. move upwards trailer string		
196	xxx	Interface to printer division factor		
197	xxx	Interface to printer multiply factor $\frac{1}{ASCII \text{ resolution}} = \frac{1440 * Option(197)}{Option(196)}$ This command is used when making superscript and subscript. <i>Command syntax</i> OPTION 193: <parameter> <i>Parameter</i> 1 - 6 <i>Example</i> &%IDB_EDIT: OPTION 193:1: EXIT		

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code
198		<p>Character spacing download format</p> <p><i>Note:</i> This option does not apply when printing via the TN5250E protocol.</p> <p>1 CSI = Decimal ascii 2 CSI = Hexadecimal ascii 3 CSI = Binary 4 CSI = Decimal ascii with 2 decimal places 5 CSI = Value not send. Only strings 6 CSI = 2 byte binary (LSB first)</p>		ALL
199	xxx	<p>Character spacing download header string Character spacing download trailer string Interface to printer division factor Interface to printer multiply factor</p> $\frac{1}{ASCII \text{ resolution}} = \frac{1440 * Option(202)}{Option(201)}$ <p>This command is used to program the character spacing.</p> <p><i>Command syntax</i> OPTION 198: <parameter></p> <p><i>Parameter</i> 1 - 6</p> <p><i>Example</i> &%IDB_EDIT: OPTION 198:1: EXIT</p>		
200	xxx			
201	xxx			
202	xxx			

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code
203		Font selection download format <i>Note:</i> This option does not apply when printing via the TN5250E protocol. 0 No font selection is made 1 ID = Decimal ascii 2 ID = Hexadecimal ascii 3 ID = Binary 4 ID = Value not send. Only strings		ALL
204	xxx	Font selection download header string		
205	xxx	Font selection download trailer string This command is used to select a standard font type. <i>Command syntax</i> OPTION 203: <parameter> <i>Parameter</i> 0 - 4 <i>Example</i> &%IDB_EDIT: OPTION 203:0: EXIT		

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code	
206		<p>Left Margin value (LMV)</p> <p><i>Note:</i> This option does not apply when printing via the TN5250E protocol.</p> <p>0 No left margin download</p> <p><i>Left Margin in characters</i></p> <p>1 LMV Decimal ascii with HP margins 11 LMV Decimal ascii without HP margins 2 LMV = Hexadecimal ascii with HP margins 12 LMV = Hexadecimal ascii without HP margins 3 LMV = 1 byte binary with HP margins 13 LMV = 1 byte binary without HP margins</p> <p>When using left margin in characters Option 209/210 must be zero</p> <p><i>Left margin in x/1440 inches</i></p> <p>4 LMV = Decimal ascii with HP margins 14 LMV = Decimal ascii without HP margins 5 LMV = hexadecimal ascii with HP margins 15 LMV = hexadecimal ascii without HP margins 6 LMV = 1 byte binary with HP margins 16 LMV = 1 byte binary without HP margins 7 LMV = decimal ascii(2 dec.) with HP margins 17 LMV = decimal ascii(2 dec.) without HP margins</p> <p><i>Constant left margin</i></p> <p>8 LMV value not sent, only the strings</p>		ALL	
207	xxx	<p>Left margin download header string</p> <p>Left margin download trailer string</p> <p>Interface to printer division factor</p> <p>Interface to printer multiply factor</p> $\frac{1}{\text{ASCII resolution}} = \frac{1440 * \text{Option}(210)}{\text{Option}(209)}$ <p>This set of options control margin handling sent from the system and Option 78-81, 86-87 and 103. When these options are disabled margin setting is done by Option 178-182.</p> <p><i>Command syntax</i> OPTION 206: <parameter>:</p> <p><i>Parameter</i> 0 - 17</p> <p><i>Example</i> &%IDB_EDIT: OPTION 206:0: EXIT</p>			
208	xxx				
209	xxx				
210	xxx				

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code
211		Relative Horizontal move by columns <i>Note:</i> This option does not apply when printing via the TN5250E protocol. 1 HM = Decimal ascii 2 HM = Hexadecimal ascii 3 HM = 1 byte binary 4 HM = 2 byte binary		ALL
212 213	xxx xxx	Relative hor. move forward header string Relative hor. move forward trailer string This function is used by the SCS commands PPAH (Absolute horizontal) and PPRH (Relative horizontal) to move in columns. The option is only active if option 158 = 1 or 3. If option 211 = 0 positioning is done in the selected resolution with option 178-182. <i>Command syntax</i> OPTION 211: <parameter> <i>Parameter</i> 1 - 4 <i>Example</i> &%IDB_EDIT: OPTION 211:1: EXIT		
214 - 235		Not defined		
236	0 1 2	Hexdump Normal operation Hex-dump mode Hex-dump mode This Option can be used to enable hexdump at power on. <i>Command syntax</i> OPTION 236: <parameter> <i>Parameter</i> 0 - 2 <i>Example</i> &%IDB_EDIT: OPTION 236:0: EXIT		ALL

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code
237	0 1	<p>PJL Commands</p> <p><i>Note:</i> This option does not apply when printing via the TN5250E protocol.</p> <p>Enable Disable</p> <p>This command enables and disables the use of PJL commands for forcing the printer into PCL mode at timeout. The option is intended for use only when sharing a HP III Si with a PC environment using the printers PostScript option. HP printers, such as the HP4, automatically switches mode according to the data format.</p> <p><i>Note:</i> This option is not described in the <i>TN5250E IDB configuration file editor</i> program (P02-xxxx).</p> <p><i>Command syntax</i> OPTION 237: <parameter>:</p> <p><i>Parameter</i> 0 - 1</p> <p><i>Example</i> &%IDB_EDIT: OPTION 237:0: EXIT</p>		ALL except T1+

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code
238		<p>Handling of bolding with PPAH commands in relation to absolute move by spaces (Option 158)</p> <p><i>Note:</i> This option does not apply when printing via the TN5250E protocol.</p>		ALL
	0	<p>Bolding is only done when the two latest received PPAH commands move to the same position (column). If option 158 = 0 or 2, all PPAH movements are made absolute to the physical left margin. This means that PPAH movements are passed on to the printer as a carriage return followed by the needed number of spaces.</p>		
	1	<p>Bolding is done when the two latest received PPAH commands move to the same position (column) or when a PPAH command moves to a position to the right of the current position. If option 158 = 0 or 2, PPAH movements are made as default (value 0).</p>		
	2	<p>Bolding is done as default (value 0). If option 158 = 0 or 2, PPAH movements are made relative to the current position (column). This means that PPAH movements are passed on to the printer as spaces or backspaces.</p>		
	3	<p>Bolding is done as default (value 0). If option 158 = 0 or 2, PPAH movements to the left are made as default (value 0) with carriage return and spaces (absolute to the physical left margin). PPAH movements to the right are made with spaces only (relative to the current position).</p> <p><i>Command syntax</i> OPTION 238: <parameter>:</p> <p><i>Parameter</i> 0 - 2</p> <p><i>Example</i> &%IDB_EDIT: OPTION 238:0: EXIT</p>		

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code
239	0 1	<p>Old KyoT compatibility</p> <p><i>Note:</i> This option does not apply when printing via the TN5250E protocol.</p> <p>Default (IBM 5219/3812 compatibility) Old KyoT compatibility</p> <p>Differences between Old KyoT and newer interfaces are updated with this Option.</p> <p><i>Command syntax</i> OPTION 239: <parameter>:</p> <p><i>Parameter</i> 0 - 1</p> <p><i>Example</i> &%IDB_EDIT: OPTION 239:0: EXIT</p>		ALL

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code																																																																												
242 243		<p>LSB of default font ID MSB of default font ID</p> <p>The currently valid font values are listed below. Refer to appendix <i>B. Calculating LSB and MSB for Advanced IDB (TN3270E/Coax + TN5250E/Twinax)</i> on page 203.</p> <table border="0"> <tr><td>3</td><td>OCR-B</td><td>204</td><td>Gothic-text 13</td></tr> <tr><td>11</td><td>Courier 10</td><td>221</td><td>Prestige 15</td></tr> <tr><td>18</td><td>Courier Italic 10</td><td>222</td><td>Gothic 15</td></tr> <tr><td>39</td><td>Gothic-text bold</td><td>223</td><td>Courier 15</td></tr> <tr><td>40</td><td>Gothic-text 10</td><td>230</td><td>Gothic-text 15</td></tr> <tr><td>46</td><td>Courier bold 10</td><td>244</td><td>Courier 5</td></tr> <tr><td>66</td><td>Gothic-text 12</td><td>245</td><td>Courier bold 5</td></tr> <tr><td>68</td><td>Gothic-text Italic</td><td>252</td><td>Courier 17</td></tr> <tr><td>69</td><td>Gothic-text bold 12</td><td>253</td><td>Courier bold 17</td></tr> <tr><td>85</td><td>Courier 12</td><td>281</td><td>Gothic-text 20</td></tr> <tr><td>87</td><td>Letter-gothic 12</td><td>290</td><td>Gothic-text 27</td></tr> <tr><td>110</td><td>Letter-gothic bold 12</td><td>751</td><td>Sonoran Serif 8</td></tr> <tr><td>111</td><td>Prestige bold 12</td><td>1051</td><td>Sonoran Serif 10</td></tr> <tr><td>112</td><td>Prestige Italic 12</td><td>1053</td><td>Sonoran Serif Bold 10</td></tr> <tr><td>155</td><td>Boldface Italic</td><td>1056</td><td>Sonoran Serif Italic 10</td></tr> <tr><td>159</td><td>Boldface</td><td>1351</td><td>Sonoran Serif 12</td></tr> <tr><td>160</td><td>Essay</td><td>1653</td><td>Sonoran Serif Bold 16</td></tr> <tr><td>163</td><td>Essay bold</td><td>2103</td><td>Sonoran Serif Bold 24</td></tr> <tr><td>175</td><td>Document</td><td></td><td></td></tr> </table> <p><i>Command syntax</i> DEFFNT <parameter>:</p> <p><i>Parameter</i> 3 - 2103</p> <p><i>Example</i> &%IDB_EDIT: DEFFNT 11: EXIT</p> <p><i>Example, Advanced IDB</i> &%IDB_EDIT: OPTION 242:11 OPTION 243:0: EXIT</p>	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	281	Gothic-text 20	87	Letter-gothic 12	290	Gothic-text 27	110	Letter-gothic bold 12	751	Sonoran Serif 8	111	Prestige bold 12	1051	Sonoran Serif 10	112	Prestige Italic 12	1053	Sonoran Serif Bold 10	155	Boldface Italic	1056	Sonoran Serif Italic 10	159	Boldface	1351	Sonoran Serif 12	160	Essay	1653	Sonoran Serif Bold 16	163	Essay bold	2103	Sonoran Serif Bold 24	175	Document				ALL
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	281	Gothic-text 20																																																																													
87	Letter-gothic 12	290	Gothic-text 27																																																																													
110	Letter-gothic bold 12	751	Sonoran Serif 8																																																																													
111	Prestige bold 12	1051	Sonoran Serif 10																																																																													
112	Prestige Italic 12	1053	Sonoran Serif Bold 10																																																																													
155	Boldface Italic	1056	Sonoran Serif Italic 10																																																																													
159	Boldface	1351	Sonoran Serif 12																																																																													
160	Essay	1653	Sonoran Serif Bold 16																																																																													
163	Essay bold	2103	Sonoran Serif Bold 24																																																																													
175	Document																																																																															
244	0 1	<p>Download softfonts</p> <p>Enable download Disable download</p> <p><i>Command syntax</i> OPTION 244: <parameter>:</p> <p><i>Parameter</i> 0 - 1</p> <p><i>Example</i> &%IDB_EDIT: OPTION 244:0: EXIT</p>																																																																														

Option	Dec./Bit no.	Description	Intermate Option Table	SW Code
245 - 249		Not defined		
250	0 1	Check on printer power off <i>Note:</i> This option does not apply when printing via the TN5250E protocol. Disabled Enabled If the option is set to 1, a printer power off will result in a soft reset of the interface. <i>Note:</i> This option is of course only applicable for external interfaces. As the parallel printer port behaviour during power off may differ from one printer to another, this feature is not guaranteed to work on all printers.		K53-6041
251 - 255		Not defined		

8.2 Event Table

Event	Dec./Bit no. Description	Intermate Event Table	SW Code
0 1 2 3	Power on Power on Power on Power on		ALL
4 - 21	Not defined		
22 23 24 25 26 27 28 29	Paper handling : Select destination bin 4 Paper handling : Select destination bin 5 Paper handling : Select destination bin 6 Paper handling : Select destination bin 7 Paper handling : Select destination bin 8 Paper handling : Select destination bin 9 Paper handling : Select destination bin 10 Paper handling : Select destination bin 11 Triggered by Option 115 or by the PPM command.		ALL
30	Not defined		
31 32 33 34 35	Print density : 5 Character per inch Print density : 10 Character per inch Print density : 12 Character per inch Print density : 15 Character per inch Print density : 16.7 Character per inch		T01-xxxx
36 - 39	Not defined		
40 41	Select data processing (SIC command) Select word processing (SIC command) Triggered when dataprocessing or wordprocessing is selected by the SIC command.		ALL
42 - 49	Not defined		
50 51	Line density : 6 lines per inch Line density : 8 lines per inch		T01-xxxx
52	Not defined		
53	Bell command received		ALL

Event	Dec./Bit no. Description	Intermate Event Table	SW Code
54	Not defined		
55 56	Overlay string cassette/tray 1 Overlay string cassette/tray 2 Triggered at the top of every page when the overlay call Option 28 is enabled.		ALL
57 58	Paper handling : Select simplex Paper handling : Select duplex (see also Event 71) Triggered by Option 116 or by the PPM command.		ALL
59 60 61	Paper handling : Select destination bin 1 Paper handling : Select destination bin 2 Paper handling : Select destination bin 3 Triggered by Option 115 or by the PPM command.		ALL
62 63	Paper handling : Select paper media Paper handling : Select envelope media Triggered by Option 114 or by the PPM command.		ALL
64 65	Paper handling : Select continuous paper feed Paper handling : Select automatic cut sheet paper feed Triggered by SPSU command.		ALL
66 67 68	Paper handling : Select source cassette/tray 1 Paper handling : Select source cassette/tray 2 Paper handling : Select source cassette/tray 3 Triggered by Option 113 or by the PPM command.		ALL
69 70	Select portrait orientation (see also Event 147) Select landscape orientation (see also Event 148) Triggered by Option 120, 121 and 122. These events are also triggered every time a new font is selected (before) and when APO mode or COR mode is entered.		ALL
71	Paper handling : Select duplex tumble Triggered by PPM command.		K01-xxxx T02-4051 T11-4131 T12-4401 T13-4031

Event	Dec./Bit no. Description	Intermate Event Table	SW Code
72	Not defined		
73	Paper handling : Manual paper feed Triggered by SPSU command.		ALL
74 75 76 77 78	User Defined Event no. 74 User Defined Event no. 75 User Defined Event no. 76 User Defined Event no. 77 User Defined Event no. 78 These events can be set to point to any string. They are triggered by SCS/DCA PPM commands. <i>Example</i> For printers with more than 3 input cassettes/trays, the events can be programmed to select the input trays 4 - 8.		H02-8471 K62-8431
79	Move to uppermost line on the page This Event is triggered after a formfeed and before a PPRV and PPAV command if the current printline position is line 1. The string should contain: <ul style="list-style-type: none"> - Set top margin to uppermost line. - Disable perforation skip. - Absolute vertical move to uppermost line. HP-laserjet compatible printers sets a default top margin and enables perforation skip at power up and change of orientation. This Event is used to reset these settings.		K01-xxxx T01-2461 T02-4021 T11-2441 T12-2481 T13-2441
80 81	String before formfeed String after formfeed These Events are triggered immediately before/after FF is send to the printer.		K01-xxxx T01-2461 T02-2431 T11-2421 T12-2481 T13-2441
82 - 89	Not defined		
89 90	Before transparent print After transparent print Triggered before and after entering transparent mode SCS command "35 NN XX ..".		ALL

Event	Dec./Bit no. Description	Intermate Event Table	SW Code
91	Half line feed string Triggered when a half line feed is printed.		ALL
92	Unit backspace string Triggered when a unit backspace command is received. This Event has to move the print position backward by 1/60 of an inch. Not send when Option 118 = 1.		ALL
93 - 95	Not defined		
96	Hexdump subtitle		ALL
97	IDB dump subtitle		ALL
98 - 101	Not defined		
102 103	Bold offset forward string Bold offset backward string Triggered every time bold print is wanted. These events have to move the print position the same distance backward and forward. It is recommended that the movement is 1/120 of an inch.		ALL
104 - 111	Not defined		
112 - 119	Reserved		
120 - 127	Not defined		
128 129 130 131	Underscore on string Not defined Not defined Underscore off string Triggered every time underscore is turned on or off.		ALL
132 - 139	Not defined		

Event	Dec./Bit no. Description	Intermate Event Table	SW Code
140 141	<p>String before code page 259 is selected String after code page 259 is deselected</p> <p>These strings can be used to select another Symbol Set in the printer when code page 259 is selected in the interface.</p>		ALL
142 143	<p>String before code page 340 is selected String after code page 340 is deselected</p> <p>These strings can be used to select an OCRB/OCRA font in the printer when code page 340 is selected in the interface.</p>		ALL
144 145 146	<p>Print quality : Select data processing Print quality : Select NLQ Print quality : Select high speed</p> <p>Triggered by Option 112 or by the PPM command.</p>		ALL
147 148	<p>String before portrait String before landscape</p> <p>When using HP Font selection this Event should be used instead of Event 69 and 70 for programming of additional commands, ie margin settings.</p>		ALL
149	Not defined		
150	<p>Switch to parallel from twinax or serial (5250 kit / T5)</p> <p>This Event is executed when shifting from twinax or serial to parallel.</p>		T11-xxxx T12-xxxx T13-xxxx
151	<p>Switch to twinax from parallel or serial (5250 kit / T5)</p> <p>This Event is executed when shifting from parallel or serial to twinax.</p>		T11-xxxx T12-xxxx T13-xxxx
152	<p>Switch to serial from parallel or twinax (5250 kit)</p> <p>This Event is executed when shifting from parallel or twinax to serial.</p>		T11-xxxx T12-xxxx
153 - 159	Not defined		

Event	Dec./Bit no. Description	Intermate Event Table	SW Code
160	<CSC>-0 (default &%-0)		ALL
161	<CSC>-1 (default &%-1)		
162	<CSC>-2 (default &%-2)		
163	<CSC>-3 (default &%-3)		
164	<CSC>-4 (default &%-4)		
165	<CSC>-5 (default &%-5)		
166	<CSC>-6 (default &%-6)		
167	<CSC>-7 (default &%-7)		
168	<CSC>-8 (default &%-8)		
169	<CSC>-9 (default &%-9)		
170	<CSC>-A (default &%-A)		
171	<CSC>-B (default &%-B)		
172	<CSC>-C (default &%-C)		
173	<CSC>-D (default &%-D)		
174	<CSC>-E (default &%-E)		
175	<CSC>-F (default &%-F)		
	Refer to the section 6.5.3 <i>Predefined String Conversion</i> on page 129 for more information on predefined triggers.		
176 - 199	Not defined		

Event	Dec./Bit no. Description	Intermate Event Table	SW Code
200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229	<p> User Defined Event no. 1 (trigger 01) User Defined Event no. 2 (trigger 02) User Defined Event no. 3 (trigger 03) User Defined Event no. 4 (trigger 04) User Defined Event no. 5 (trigger 05) User Defined Event no. 6 (trigger 06) User Defined Event no. 7 (trigger 07) User Defined Event no. 8 (trigger 08) User Defined Event no. 9 (trigger 09) User Defined Event no.10 (trigger 10) User Defined Event no.11 (trigger 11) User Defined Event no.12 (trigger 12) User Defined Event no.13 (trigger 13) User Defined Event no.14 (trigger 14) User Defined Event no.15 (trigger 15) User Defined Event no.16 (trigger 16) User Defined Event no.17 (trigger 17) User Defined Event no.18 (trigger 18) User Defined Event no.19 (trigger 19) User Defined Event no.20 (trigger 20) User Defined Event no.21 (trigger 21) User Defined Event no.22 (trigger 22) User Defined Event no.23 (trigger 23) User Defined Event no.24 (trigger 24) User Defined Event no.25 (trigger 25) User Defined Event no.26 (trigger 26) User Defined Event no.27 (trigger 27) User Defined Event no.28 (trigger 28) User Defined Event no.29 (trigger 29) User Defined Event no.30 (trigger 30) </p> <p> The triggers can be stated in the <i>TN5250E IDB configuration file editor</i> program (<i>P02-xxxx.exe</i>) by pressing home with the cursor placed on Event 200-229. Or they can be programmed from the host as described in the section <i>6.5.4 String Conversion</i> on page 130. </p>		ALL
230 - 255	Not defined		

Appendices

A. ASCII Character Table

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			

Note: The above table is an extract of the 7 bit character set only.

B. Calculating LSB and MSB for Advanced IDB (TN3270E/Coax + TN5250E/Twinax)

Some option settings consist of a LSB (Least Significant Byte) and a MSB (Most Significant Byte). These values are stored in separate memory locations in the interface. An example is the TN5250E/Twinax option *Physical Page Width*. This option is composed of the option numbers 84 and 85. The LSB is set with option 84 and the MSB with option 85.

The MSB is found by dividing the value to be set with 256. If the division does not result in a whole number, the remainder is the LSB.

Example - Calculating Physical Page Width values (Twinax/TN5250E options 84 & 85)

The value for *Physical Page Width* is always in inches and thereby also the resulting value which is stored in option 84 and 85. Centimetres can be converted to inches by multiplying with 0.3937 inch/cm.

If a page width of 210 mm is to be set, the option values calculate to:

85: $[\text{Width inch} \times 1440] / 256$ *Reduce this to the nearest whole number in both equations.*

84: $[\text{Width inch} \times 1440] - (256 * ([\text{Width inch} \times 1440] / 256))$

$$21 \text{ cm} \times 0.3937 \text{ inch/cm} = 8.27 \text{ inch}$$

$$1 \text{ inch} = 1440$$

85: $(8.27 \times 1440) / 256$ \approx 46

84: $(8.27 \times 1440) - (256 \times 46)$ $=$ 132

Example - Calculating Font ID values (Twinax/TN5250E options 242 & 243)

The value for the default *Font ID* is stored in options 242 and option 243. The LSB or remainder is stored in option 242 and the MSB or whole number is stored in option 243.

If the font *Sonoran Serif 10* with the font number *1051* is to be selected, the option values are calculated like this:

243: Font number / 256 *Reduce* this to the nearest whole number in both equations.

242: Font number - ([Font number / 256] * 256)

243:	1051 / 256	≈	4
242:	1051 - (4 * 256)	=	27

C. Upload / Download of IDB Settings

Common to all Intermate interfaces is that the IDB settings, can be retrieved as an editable file. Depending on the type of interface, one or two approaches can be used to transfer the IDB settings. IDB files should always have the extension **.idb*.

If you have a LAN interface, which uses the TCP/IP protocol, you can use FTP to retrieve and download the IDB settings. See the next section.

The second approach is to use the *Intermate Download Utility* program. This method involves a PC, which is connected to the interface via a serial link cable. The method is common to most interfaces.

Generally you should refer to the *User's Guide*, which came with the interface. This contains specific procedures and details that should be paid special attention.

C.1 FTP

The below procedures are generalised. It should be noted that some interfaces require the IDB file to be retrieved and stored using a fixed name. Refer to your *User's Guide* for specific paths and file names.

FTP upload procedure

1. Start a FTP session on the interface.

```
ftp 222.5.1.250
```

usually the user name is *supervisor*, and the password is *Intermate* (case-sensitive).

2. Enter the miscellaneous directory.

```
cd misc
```

3. As data is transferred in binary mode, you may need to change mode.

```
binary
```

4. Upload the current IDB settings.

```
get intrface.idb c:\intrface.idb
```

This stores the IDB settings on your PC in the file *intrface.idb* in the root directory `c:.`

5. End the FTP session.

```
bye
```

The IDB file can now be viewed and edited with the *TN3270E IDB configuration file editor* program (*P01-xxxx.exe*) [TN3270E/Coax] or *TN5250E IDB configuration file editor* program (*P02-xxxx.exe*) [TN5250E/Twinax] utility program. These are available for download at the Intermate web site www.intermate.com. Look for the utility program files *P01-xxxx.zip* and *P02-xxxx.zip*. Refer to appendix *D. The IDB Utility Programs* on page 213.

FTP download procedure

1. Start a FTP session on the interface.

```
ftp 222.5.1.250
```

usually the user name is *supervisor*, and the password is *Intermate* (case-sensitive).

2. Enter the miscellaneous directory.

```
cd misc
```

3. Data is transferred in binary mode only. This means that you may have to change to binary mode.

```
binary
```

4. Download the modified IDB settings file.

```
put c:\interface.idb interface.idb
```

Note: The current IDB settings in the interface are overwritten by the settings in the file.

5. Activate the new settings by re-booting the interface.

```
cd \reboot    Change to the "reboot" directory
get reboot    Reboot the interface
```

This automatically ends your FTP session.

C.2 The Intermate Download Utility Program


The *Intermate Download Utility* program is among other things used to retrieve and store the IDB settings file. Another usage, which is not discussed here, is the download of firmware.

The download utility program is available from the Intermate web site (www.intermate.com). The utility program file to look for is *PI6-xxxx.zip*, which is a self-extracting file.

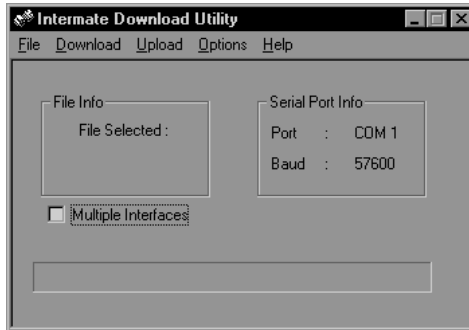
C.2.1 Installation

The *Intermate Download Utility* program is a native Windows 95/98/NT program. The installation is done by executing the *PI6-xxxx.exe* file. 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 for the files, the path can be edited. The program uses this path as default directory.

If you will be using the utility program often, it is useful to create a short-cut on the desktop. This is done by right-clicking on the file *IMA_DWNL.exe*, dragging the copy to the desktop, releasing the right mouse button and confirming the creation of the short-cut.

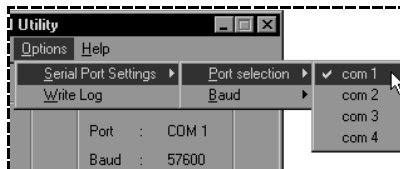
The program is launched by clicking the  Start button and choosing *Programs, Intermate Download Utility* and *IMA_DWNL.exe*. If you have created a short-cut on the desktop, you can double-click the program icon instead.

The main screen is displayed when the program is launched.



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

In order to use and optimise the usage of the program, it is recommended to check whether 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 connect the PC to the interface.

C.2.2 Uploading IDB Settings

The below procedure describes how to retrieve the IDB settings. After the retrieval, the file can be edited with the PC utility DOS-program *TN3270E IDB configuration file editor* program (*P01-xxxx.exe*) [*TN3270E/Coax*] or *TN5250E*

IDB configuration file editor program (*P02-xxxx.exe*) [TN5250E/Twinax]. Refer to section *D. The IDB Utility Programs* on page 213.

Note: In the below procedures the wording “the interface” refers to both internal and external interfaces. Internal interfaces are powered Off by powering the printer Off. External interfaces are powered Off via the power supply.

Serial upload procedure

1. Power Off the interface and disconnect it from the system.
2. Make sure the PC is turned On and that the operating system is running.
3. Connect the interface to the PC via a serial config/upgrade cable. Refer to the *User's Guide* for cable specifications.
4. Launch the *Intermate Download Utility* (IMA_DWNL) program. DO NOT turn the interface On, yet.
5. Select the “Upload” menu (<Alt>+U) and the IDB menu option point that matches the interface type, ie either “Coax IDB” (TN3270E) or “Twinax IDB” (TN5250E).
6. Follow the on-screen instructions.

Caution: During the upload it is recommended NOT to push the [Cancel] button unless you are familiar with the workings of the program and the interface.

Important: If the interface you are uploading from is an internal printer interface, the printer may beep and display an error message. This can, however, be ignored, as the interface is communicating via the serial port with the computer and not through the internal printer option port. The error message does not affect the uploading.

7. When the uploading is complete the message “Upload complete!” is displayed. You are also asked for a name and location of the file. It is

recommended to use the file extension **.idb*. Some interfaces have a fixed name for the IDB file. Refer to the *User's Guide*. It is important that this name is used whenever IDB files are transferred to and from the interface.

8. Close and exit the *Intermate Download Utility* program (<Alt>+F4).

C.2.3 Downloading IDB Settings

The *Intermate Download Utility* distinguishes between different file types. Refer to the *User's Guide* for the name syntax of the files. IDB files always have the extension **.idb*.

Serial download procedure

1. Power Off the interface and disconnect it from the system.
2. Make sure the PC is turned On and that the operating system is running.
3. Connect the interface to the PC via a serial config/upgrade cable. Refer to the *User's Guide* for cable specifications.
4. Launch the *Intermate Download Utility* (IMA_DWNL) program.
5. Select the Download menu (<Alt>+D).
6. Set the file type to **.idb* in the file dialogue box.
7. Locate and choose an IDB file and press the |Open| button to initiate the download.
8. Follow the on-screen instructions.

Caution: During the download it is recommended NOT to push the |Cancel| button unless you are familiar with the workings of the program and the interface. If you by accident choose a wrong file, you should let the program complete

downloading of the file. You can download the correct file afterwards.

Important: If the interface you are downloading to is an internal printer interface, the printer may beep and display an error message. This can, however, be ignored, as the interface is communicating via the serial port with the computer and not through the internal printer option port. The error message does not affect the download.

9. When the downloading is complete, the utility program displays the message "Download complete!". Close and exit the program.
10. Power Off the interface and reconnect it to the system. The downloaded IDB settings are activated at the next power On (<Alt>+F4).

D. The IDB Utility Programs

Editing and downloading of the IDB configuration file provide easy and fast configuration when several interfaces should have the same or similar IDB configurations.

The IDB option settings are retrieved and uploaded via FTP or with the *Intermate Download Utility* program. Refer to appendix C. *Upload / Download of IDB Settings* on page 205.

The configuration of the IDB options and events with the IDB utility program is done on screen with a PC. For this purpose two DOS programs exist. These are the *TN3270E IDB configuration file editor* program (*P01-xxxx.exe*) [TN3270E/Coax] and the *TN5250E IDB configuration file editor* program (*P02-xxxx.exe*) [TN5250E/Twinax]. Both programs can be downloaded from the Intermate web site (www.intermate.com).

Procedure for editing IDB options and events

1. Retrieve the IDB configuration file from the interface.
2. Start the *TN3270E IDB configuration file editor* program (*P01-xxxx.exe*) [TN3270E/Coax] or *TN5250E IDB configuration file editor* program (*P02-xxxx.exe*) [TN5250E/Twinax] in a DOS session on a PC. Select [Load IDB File] and choose the IDB file from the list. It is convenient to place all *.*idb* files in the same directory as the utility program.
3. Make the necessary changes to the options and events.
4. Save the IDB file and exit the program.
5. Download the new IDB file to the interface.

E. Special TN3270E (Coax) IDB Commands

The supported special Interimate commands descend mainly from old EPROM type interfaces (without software setup). They have to be included in the SCS data stream to have effect.

Larger numbers indicate higher precedence.

Precedence	Description	
5	<CSC>HEXDUMP	Enter hex-dump mode (small format).
5	<CSC>HEXDUMP_FULLL	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_FULLL	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 Interimate 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 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.
5	<CSC>-X	Trig event X. Range for X is 0 - F.

The extended Page Orientation Selection System is controlled by option 122 (Automatic Print Orientation controller). If option 122 is 1 or 2, option 123 - 125 and option 90 - 92 are used to select orientation. If option 122 is 0, Page Orientation is controlled by option 120. Option 120 Print Orientation is used on all cassettes/trays.

The Page Orientation Selection is done exactly like a 3812 printer would. Refer to the IBM 3812 manual for further information about COR, APO and the Page Orientation Selection system in general.

G. Special TN5250E (Twinax) IDB Commands

The supported special Intermate commands descend mainly from old EPROM type interfaces (without software setup). They have to be included in the SCS data stream to have effect.

Larger numbers indicate higher precedence.

Precedence	Description	
5	<CSC>IDB_EDIT	Enter IDB edit mode.
5	<CSC>IDB_PRINT	Dump IDB (small format).
5	<CSC>IDB_PRINT_FULLL	Dump IDB (large format).
5	&%HEXDUMP	Enter hex-dump mode.
5	&%NOHEXDUMP	Exit hex-dump mode.
5	&%IDB_FONT	Print sample printout of all fonts currently programmed in the Font Table.
5	&%+M	Enable Control Code Suppression.
5	&%-M	Disable Control Code Suppression.
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 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. Range for X is 0 - F.

H. COR/APO Logic (Twinax)

The Intermate SCS interfaces have, 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 TN5250E/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) in the interface is switched on by the CORDRW command.

Example: Activate COR on both Cassette/tray 1 and 2.

```
&%IDB_EDIT:CORDRW 1 COR:CORDRW 2 COR:QUIT
```

As the user does not always have the possibility of defining if a printout is to be rotated and compressed in the system the focus is 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 page 157 and 158, which together specify the maximum valid page size.

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

```
&%IDB_EDIT:PAGLNG C 29.7:PAGWDT C  
21:EXIT
```

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 which case the printout is 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 LINSPPRED setting. Refer to the option *COR linespacing reduction* on page 170.
 - Margins (offset) are set according to the LFTOFFCOR and TOPOFFCOR settings. Refer to the option *Left Margin Offset In COR* on page 155 and *Top Margin Offset In COR* on page 156.
 - 10 pitch fonts are reduced to 13 pitch (font type stated in font table position no. 51)
 - 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 off changing these. 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 him.

Portrait can be forced by setting one of the following statements:

- TEXT=YES or ROTATE=0 for System/36 OCL.

- PRTQLTY (*STD) or (*NLQ) or PAGRTT (0) for System/38 CL and AS400.

Note: The statements TEXT/PRTQLTY do 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 a AS400 for the device. On a AS400 it is 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 AS400 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.

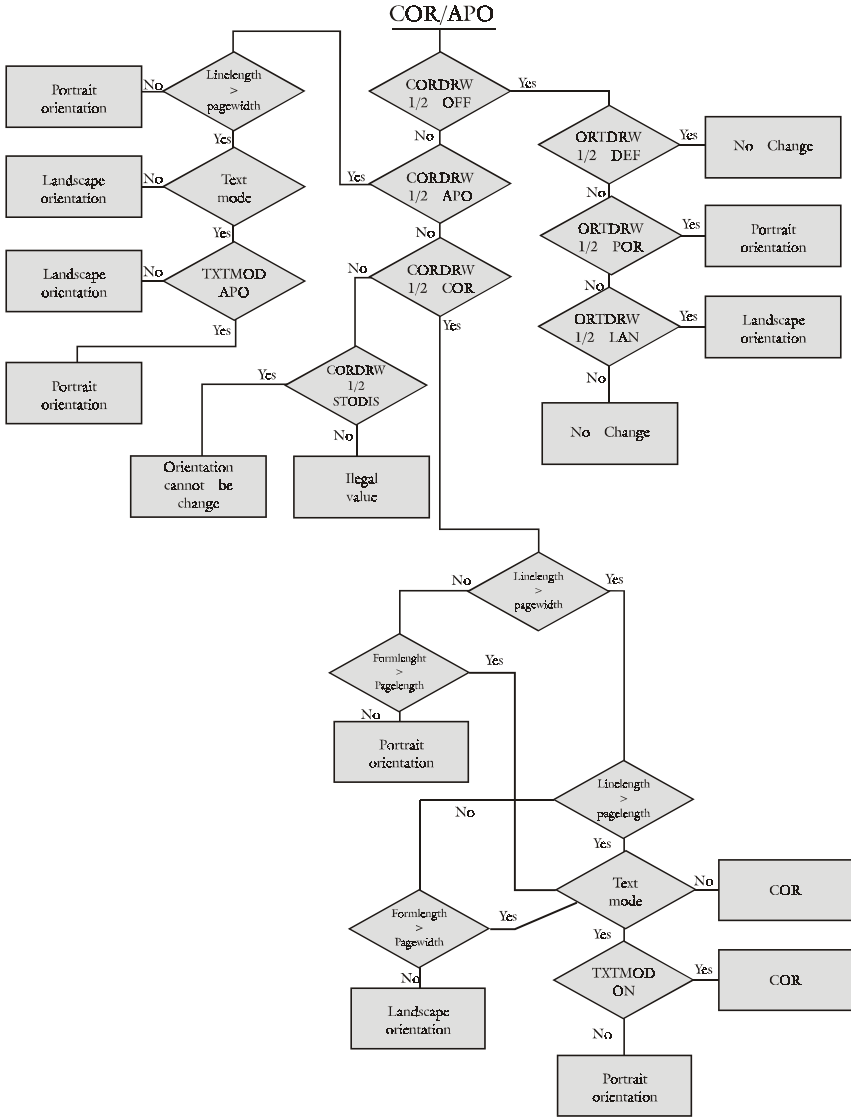
If the APO/COR is disabled (CORDRW 1/2 = OFF) the STO command will thus control the rotation of the printout. This means that if a landscape print controlled by the STO command is sent, followed by a print without the STO command, this printout is affected by the previously sent STO command and therefore 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. Refer to *Default Page Orientation Cassette/Tray 1* on page 167 and *Default Page Orientation Cassette/Tray 2* on page 168 for paper cassette/tray 1 and 2, respectively.

Example

Disable COR and set Portrait as default orientation for cassette/tray 2 only:

```
CORDRW 2 = OFF and ORTDRW 2 = POR
```

Page Orientation Logic Flowchart



I. SCS TN5250E (Twinax) Font Utility

In the TN5250E/Twinax interfaces a programmable font table is included. This 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 detects 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. On the status sheet the IBM font IDs are 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.

Also included on the interface is a number of soft fonts, which are downloaded to printer at Power ON. The font table is prepared for using these fonts.

The download of soft fonts is controlled by option 244. If this is set to "1", the download is disabled. Setting the option to "0" enables download of soft fonts. This is also the default setting.

If the printer has a front panel, it is possible to disable downloading of soft fonts via the front panel. Refer to your Intermate *User's Guide*.

The fonts are downloaded to the printer with code page PC-850 (12U) and with font ID D10003 and D10175.

I.1 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 IDs 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> <String> can contain all characters and has a maximum length of 255 characters. It has to be programmed in the same way as printer command input data. The <String> parameter is optional, however no string definition will delete the definition of an existing font.

Note: Be aware that the interface always sends out a character spacing command *after* the entire font command. That means a spacing command entered in the <String> will have no effect as it is overwritten by a characterspacing 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. 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. Be aware 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".

First example

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":
```

Second example

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 regarding the character spacing:

```
PRGFNT 160 P /1B, "(s1p12.72v0s0b202T":
```

Third example

Delete font definitions in order to make room for new ones.

```
PRGFNT DEL 71  
PRGFNT DEL 244  
PRGFNT DEL 160  
PRGFNT DEL 1803
```

I.2 Set Substituted Font ID

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

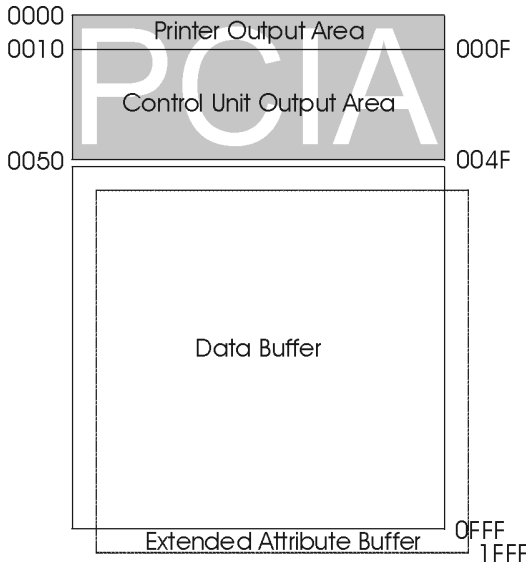
Example

```
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 (ie it is 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).

J. PCIA Area

The first 80 (hex 50) bytes of the communications buffer make up the Printer Control Information Area (PCIA). The PCIA is printed at the beginning of each buffer in HEXDUMP mode.



Address	Description - PCIA printer output area
0000	<p>Status Register</p> <p>Bit 0 Reserved Bit 1 Data check Bit 2 Order complete Bit 3 Equipment check (hardware or PCIA error) Bit 4 Operator intervention required Bit 5 Sense data available (see byte 3) Bit 6 Input code (see byte 2) available(PA1/PA2 pressed or Query Reply) Bit 7 Valid key transition (see following byte)</p>
0001	<p>Key Status</p> <p>Bit 0-2 Reserved Bit 3 0 = Disable Base Colour 1 = Enable Base Colour Bit 4 0 = Monochrome cartridge loaded 1 = Colour cartridge loaded (or no cartridge) Bit 5 Always dual case (1) Bit 6 Double space (3 or 4 LPI) (1) Single space (6 or 8 LPI) (0) Bit 7 6 LPI selection (0) 8 LPI selection (1)</p>
0002	<p>Key Input Code</p> <p>Code X'50' = Attention Code X'5F' = PA 1 key pressed Code X'5E' = PA 2 key pressed Code X'5D' = No PA key pressed Code X'6B' = Inbound data available complete (SCS query reply) Code X'6C' = inbound data available incomplete (Non-SCS query reply) Code X'6D' = Inbound data available complete (Non-SCS query reply)</p>
0003	<p>Sense Data</p> <p>Code X'01' = Cancel print key pressed (SCS mode) Code X'02' = Invalid control code parameter Code X'03' = Function not supported Code X'04' = Order reject Code X'05' = Invalid PS selection Code X'06' = Invalid LCID selection Code X'07' = Invalid FM header</p>
0004-0005	<p>Inbound data length (bytes)</p>

Address	Description - PCIA printer output area
0006-0009	Reserved
000A	Printer Features Bit 0 Highlighting supported (1) Bit 1-2 Reserved Bit 3 0 = No translation table required Bit 3 1 = Translation table required (requires PS) Bit 4-5 Reserved Bit 6 SCS Save/Restore and Query List supported (1) Bit 6 'Full Print Line For Condensed' feature installed (1)(3268) Bit 7 Non-SCS Query supported (1)
000B	Printer Type and Character Set Bit 0-3 Printer Type (0000) Bit 4-7 Reserved (0000)
000C	Features Bit 0 EAB installed (1) Bit 1 APL/TEXT feature supported (1) Bit 2 PS feature installed (1) (requires attribute buffer) Bit 3 SCS feature installed (1) Bit 4-6 Display screen size: * 001...960 bytes * 010...1920 * 011...2560 * 110...3564 * 111...3440 *All other codes reserved. Bit 7 Printer/unit I.D. (1)
000D	Character Buffer Size Code X'10' = 4K bytes (80 bytes PCIA + 4016 data)
000E	Extended I.D. Bit 0-1 Reserved Bit 2 Colour supported (1) Bit 3 SCS FM Header data stream supported (1) Bit 4-7 Reserved

Address	Description - PCIA printer output area
000F	<p>PS characteristics</p> <p>Bit 0-1 Single/triple plane config. 00 = No PS installed 01 = PS 2 through 5 installed 11 = PS 2 through 7 installed</p> <p>Bit 2-7 Triple plane addresses 000000 = No triple plane programmed symbol set 1xxxx = Reserved x1xxxx = Reserved xx1xxx = Reserved 000100 = PS 5 is triple plane programmed symbol set xxx1x = Reserved xxxx1 = Reserved</p>

Address	Description - PCIA control unit output area
0010	<p>Mode Bytes</p> <p>Bit 0-4 Reserved</p> <p>Bit 5 0 = Set Attribute control (X'28') is not valid 1 = Set Attribute control is valid</p> <p>Bit 6-7 Base colour control (non-SCS mode only) 00 = Use the default base colour setting 01 = Disable base colour (overrides default setting) 10 = Enable base colour (overrides default setting)</p>
0011	<p>Bit 0-2 Reserved</p> <p>Bit 3-4 00 = Host direct 01 = Host initiated local copy 10 = Operator initiated local copy 11 = Reserved</p> <p>Bit 5-7 mode Select 000 = No mode selected 001 = Non-SCS (DSC) mode-initial code set 101 = Non-SCS (DSE) mode-initial code set 110 = SCS mode-EBCDIC code set</p>
0012-0013	<p>Message Starting Address</p> <p>These two bytes define the point in the character buffer where the current message begins.</p>
0014-0015	<p>Message length</p> <p>These bytes define the length of the current message.</p> <p>In SCS mode, data will wrap from the end of the character buffer to address X'0050'.</p> <p>In non-SCS mode, printing ends after the number of bytes processed as equal to the message length. If a valid End of Message (EM) code is detected prior to this, the printing stops with the EM code. Also if address X'0FFF' is reached first, printing stops.</p>
0016	<p>Order</p> <p>Code X'01' = Abort Order</p> <p>Code X'02' = System Status Available</p> <p>Code X'03' = Print Order</p> <p>Code X'04' = Load Programmed Symbols(Non-SCS only)</p> <p>Code X'05' = Load Translate Table(s)</p> <p>Code X'06' = Non-SCS (DSC/DSE) Query</p> <p>Code X'07' = DSC load structured field</p>

Address	Description - PCIA control unit output area
0017	Parameter for Order The bits in this byte has different meaning for different Orders.
Abort	Bit 0-7 Reserved
System Status Available	Code X'00' = Mode change Code X'02' = Enter send state (LU1 mode only) Code X'03' = Enter receive state (LU1 mode only)
Print LU1 mode/FM Header Processing	Bit 0 0 = Extended order parameter not used 1 = Extended order parameter valid (byte 0022) Bit 1 0 = Not first segment of first-in-chain 1 = First segment of first-in-chain Bit 2 0 = Not last segment of last-in-chain 1 = Last segment of last-in-chain Bit 3 0 = SCS EBCDIC data code 1 = Reserved Bit 4-6 Reserved Bit 7 0 = SCS data stream 1 = FM Header data stream (set only if bit 3 byte X'000E' = 1)
Print Non-LU1 mode	Bit 0-2 Reserved Bit 3 0 = Character buffer control codes X'01' through X'07' are used regardless of the attribute buffer byte value. 1 = Character buffer control codes X'01' through X'07' are valid only if the attribute buffer byte equals X'01'(APL). Bit 4 0 = Print without the attribute buffer. 1 = Print with the attribute buffer. Bit 5-6 00 = Use printer default for Mono/Dual case. 01 = Mono case 10 = Dual case When CP 420/424 is selected: Bit 5-6 00 = Use printer default for text orientation. 01 = Left-to-Right character placement 10 = Right-to-Left character placement Bit 7 0 = Unformatted mode (honour NL,EM and CR) 1 = Formatted mode (ignore NI,EM, and CR; print as space instead)

Address	Description - PCIA control unit output area
0017 Load PS Load translate table DSC/DSE Query Load Structured field	Parameter for Order (cont.) Bit 0 Reserved Bit 1 0 = Continuation of previous Load PS order 1 = Beginning of first Load PS Bit 2-7 Reserved Bit 0-7 Reserved Bit 0 Reserved Bit 1 0 = Continuation of query 1 = Beginning of query Bit 2-7 Reserved Bit 0-7 Reserved
0018	This byte specifies the Maximum Print Position for non-SCS mode. If zero default value is used.
0019-0021	Reserved
0022	Extended Order Bit 0 Reserved Bit 1 0 = Continue on error. Any SCS code not supported causes a hyphen to be printed, but does not return an error response. 1 = Stop on error. Any SCS code not supported causes a 'function not supported' response to the host, and printing stops. Bit 2-7 Reserved.
0023-002F	Reserved

Address	Description - PCIA control unit output area
0030-3F	LCID TABLE
0030 0031	X'00' = Non loadable character set (always X'00') X'00'
0032 0033	X'F1' = APL character set (if installed) X'00'
0034 0035	XX = LCID for PS 2 YY = APA value for PS 2
0036 0037	XX = LCID for PS 3 YY = APA value for PS 3
0038 0039	XX = LCID for PS 4 YY = APA value for PS 4
003A 003B	XX = LCID for PS 5 YY = APA value for PS 5
003C 003D	XX = LCID for PS 6 YY = APA value for PS 6
003E 003F	XX = LCID for PS 7 YY = APA value for PS 7
0040- 0049	Reserved
004A 004D	Test message from controller
004E- 004F	Reserved

K. Customer Support

LCI Intermate A/S provides full technical support for all its interfaces.

If you encounter any problems, or have questions on how to use the IDB in your Intermate interface, please contact our local representative. You should also have the *IDB Status sheet* and the printer's status sheet available for reference. Refer to the relevant appendix in the Intermate interface *User's Guide* for information on how to print the *IDB Status sheet*.

If the problem concerns SCS printing, you should have an IDB dump [`&%IDB_PRINT_FULLL`] ready for reference. It might also be necessary to make a HEX dump of the problem using the [`&%HEXDUMP + &%NOHEXDUMP`] IDB commands.

Europe: LCI Intermate A/S
Kongevejen 194A
3460 Birkerød
Denmark

Phone: +45 72 26 04 00
Fax: +45 72 26 04 01

North America: LCI Intermate US Inc.
Pease International Tradeport
222 International Drive, Suite #195
Portsmouth, NH 03801

Phone: +1 603 431 0606
Fax: +1 603 436 6432
Toll free: 800 431 0606

Worldwide: For more information and support services you can visit the Intermate web site at:

<http://www.intermate.com>

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