New Features in Designer 5.03

This document describes the new features that are included in the Designer for Windows version 5.03 programming package. To use these features, you must have a panel that contains firmware version 4.10 or later.

Contents

1. Upload Protection 2
2. Changing Passwords from the Panel 3
3. Using Transparent Bitmaps 6
4. Remote Passthrough 7
5. Multilanguage 9
5.1 Run Time Language Change 12
5.1.1 Get Current Language 13
5.1.2 Set Current Language 13
6. Printing from the Panel 14
6.1 Reports 14
6.2 Header/Footer Definition 17
6.3 Starting a Report Printout 17
6.3.1 Start Report Printout 18
6.3.2 Stop Report Printout 18
6.4 Printer Device Driver Parameters 20
6.4.1 Hewlett Packard LaserJet Series 21
6.4.2 IBM Proprinter Compatibles 22
6.4.3 AlfaPanel Printers 24

1. Upload Protection

This feature allows the user to password protect the project file so that unauthorized uploads cannot occur. By selecting *Project – Panel Setup*, and clicking on the *Protection…* button, you are able to specify a case-sensitive password of up to eight characters.

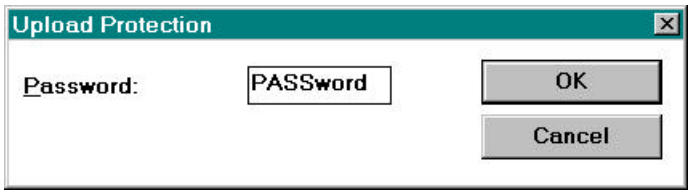

Figure 1

Once this password is specified, every time you attempt to upload the project from the panel onto your computer, Designer will ask you to enter the password. If the password that you enter matches the one that was defined in the project file, the upload operation will be performed properly. However, if you enter a password that doesn't match the one that was specified in the project file, the panel will not start the upload process.

2. Changing Passwords from the Panel

In previous versions of Designer, if you wanted to change a password, it was necessary to go into the Designer software, change the desired password, and then re-download the project file to the panel. This feature allows you to change any of the seven possible user passwords defined in the project file directly from the panel. In order to use this feature, there must be at least two passwords defined, with one of them setup to be automatically logged in (see Figure 2 below). This means that whenever the panel goes from Configuration Mode to Operation Mode, the specified password is logged in.

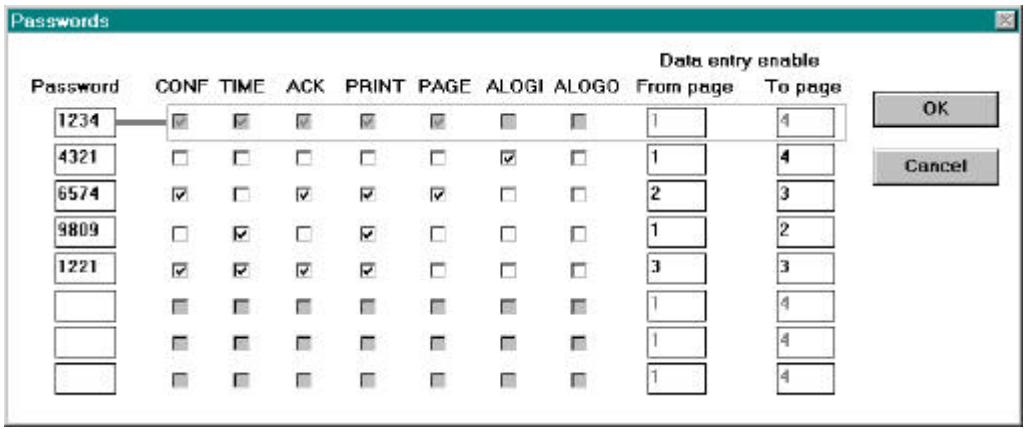

Figure 2

Once you have the passwords defined in the project file, you will need to make an ASCII control variable field for each password that you want to be able to change. To make a control variable field, you need to perform two steps:

- Select the *Control Variable* icon in the *Extra Toolbelt.* The *Control Va*riable icon is the third from the left in the *Extra Toolbelt*.

- Create a control variable field. You can do this in the same way that you create a numeric field (you can either double click the left mouse button, position the cursor where you want the field to begin and select the *Numeric Field* icon in the *Toolbelt* or select *Edit – Data Field Type – Numeric/ASCII*). Make sure that you change the display format to ASCII. Once you do this, you will be able to select which password (two through eight) you want to create the field for.

For example, suppose that you want to be able to change passwords 2, 3 and 4 (which are 4321, 6574 and 9809, respectively) from the panel. Once you have clicked on the *Control Variable* icon and created the field, you should see the following dialog box. Again, make sure that you change the display format to ASCII!

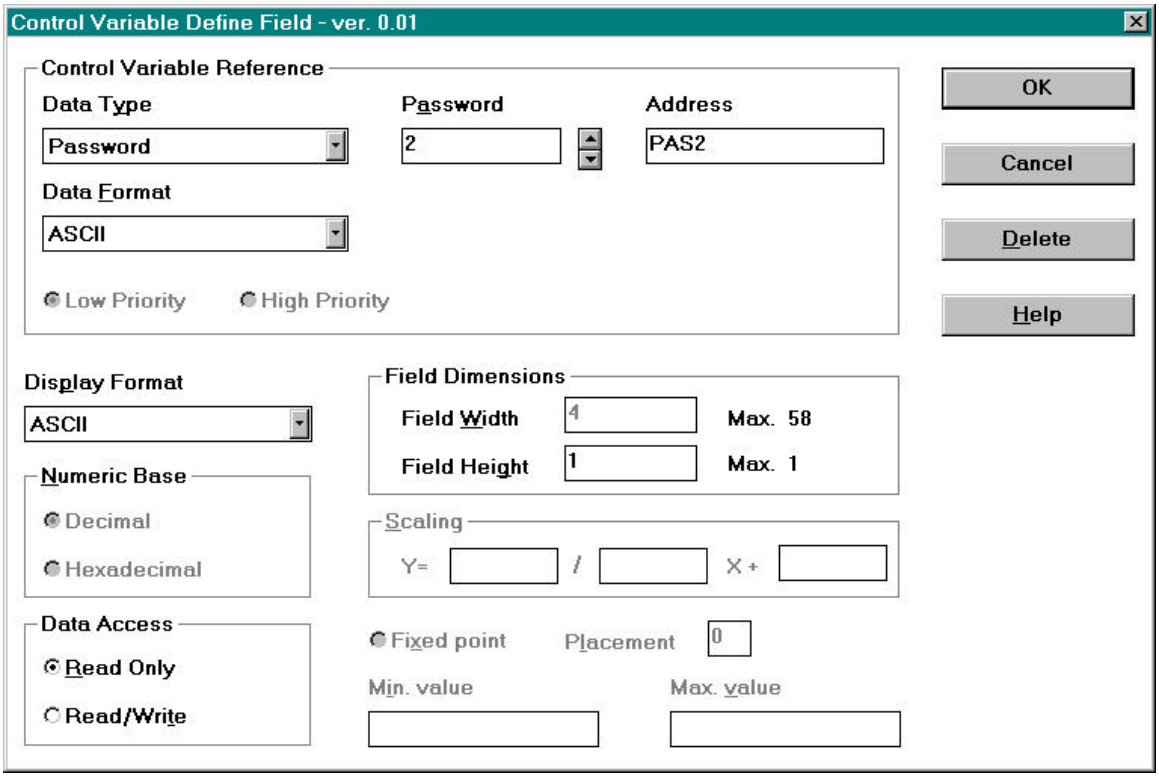

Figure 3

Since you are going to be changing the value of this field (the actual password), select *Read/Write* within the *Data Access* box. As you can see, this control variable is addressed for password 2. Whenever you click on the OK button, you will see CCCC on your panel, indicating that you have created a control variable field.

If you follow the same procedure for creating control variable fields for passwords 3 and 4, your screen may look something like Figure 4 below when you are finished. These control variable fields can be edited in the same manner as numeric fields.

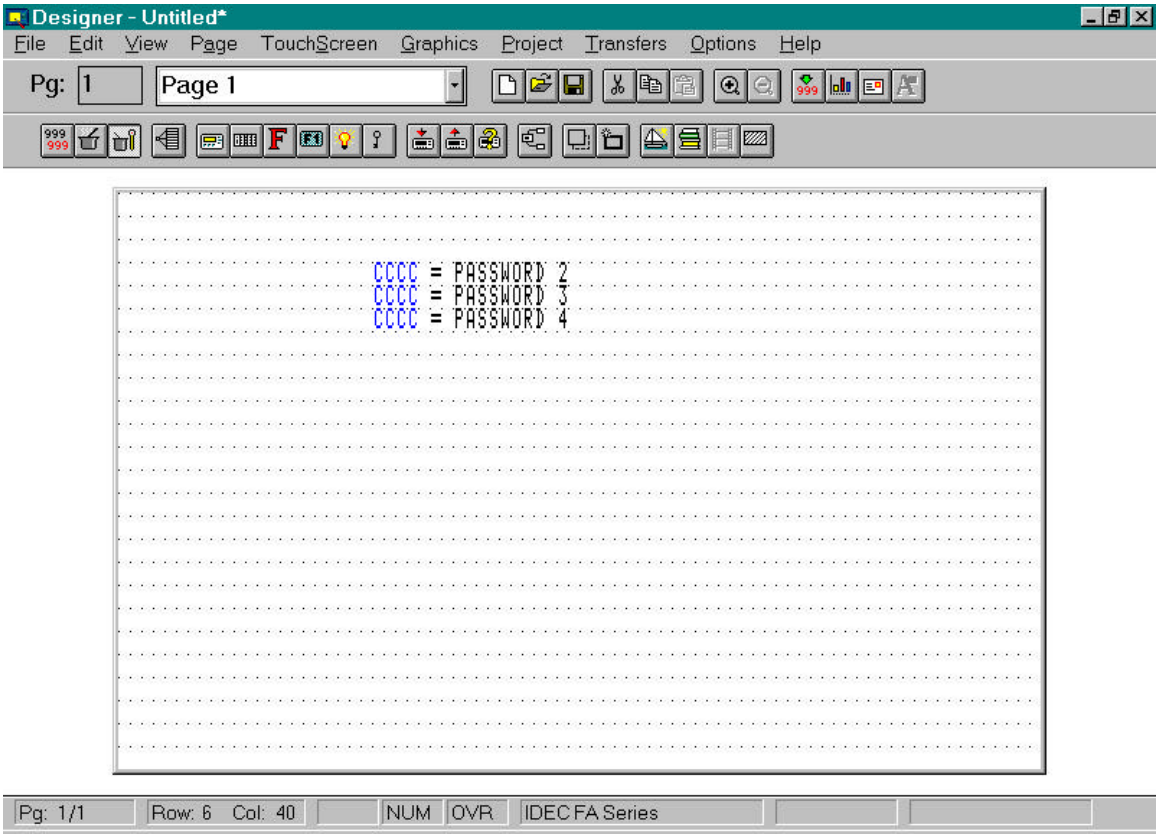

Figure 4

***Note**: the password modified run time are not transferred to the Designer when the project file is uploaded. The original value of the passwords is uploaded.*

3. Using Transparent Bitmaps

In previous versions of Designer, in order to place a touch cell or a field on a bitmap graphic, you first had to 'hide' the graphic by making it transparent. When you did this, the bitmap itself disappeared, allowing you to define a touch cell or a field on the graphic.

With the new release of Designer, this feature has been improved. Now, whenever you hide the bitmap graphic, the graphic stays visible on your computer screen, allowing you to more accurately define touch areas and fields. If you are using color bitmaps, keep in mind that you can only define one attribute for the bitmap.

To use this feature, import your graphic and press F10 on your PC keyboard to 'hide' the graphic (you can also select *Graphics – Transparent Graphics*). The graphic will still be present and visible, but you will be able to select areas within the graphic.

4. Remote Passthrough

This feature will allow you to remotely put a UniOP panel into either Configuration Mode or Operation Mode via a modem. In this manner, you will be able to remotely upload or download a project file, start the panel, or use passthrough mode to access the programming port on the PLC.

To set up Designer for Remote Passthrough, select *Project – Panel Setup* and click on the *RPT Setup…* button. This will bring up the following dialog box.

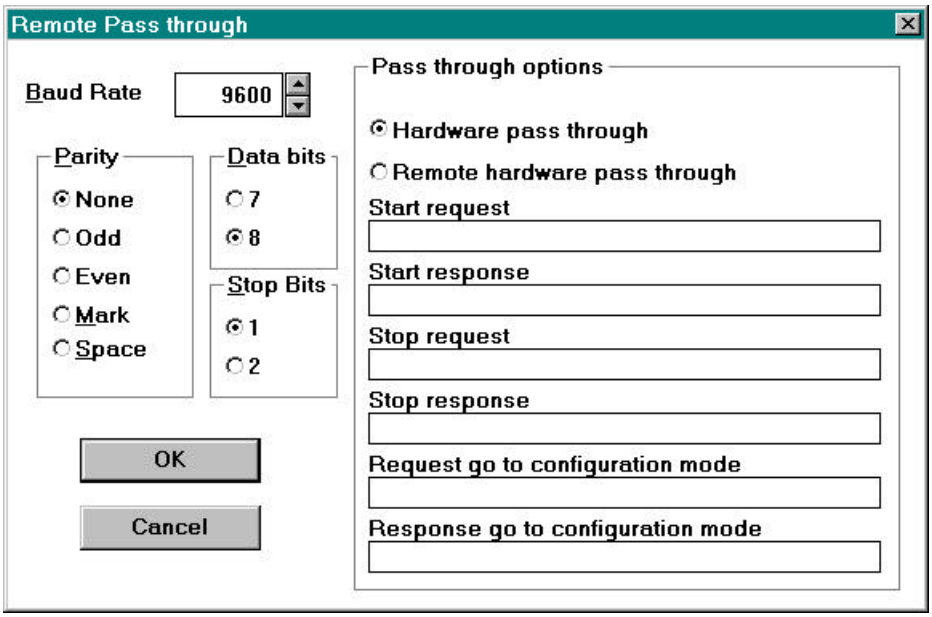

Figure 5

To configure Designer for remote pass through via a modem, you need to select *Remote hardware pass through*. If you select *Hardware pass through*, it will not work correctly. *Hardware pass through* needs to be selected *only* if you want to use pass through mode locally and not via a modem.

***Note**: if you select Remote hardware pass through will not be possible to use the panel printout functions.*

You can enter the commands that you wish to enter in order to put the panel into Configuration Mode, to start pass through mode and to stop pass through mode in the 'request' boxes. Likewise, you can enter the response that you will receive back from the panel in the 'response' boxes.

The communication parameters that you set up here need to match the communication parameters of your modem. Once you have everything configured, you can use a terminal program to dial up the panel.

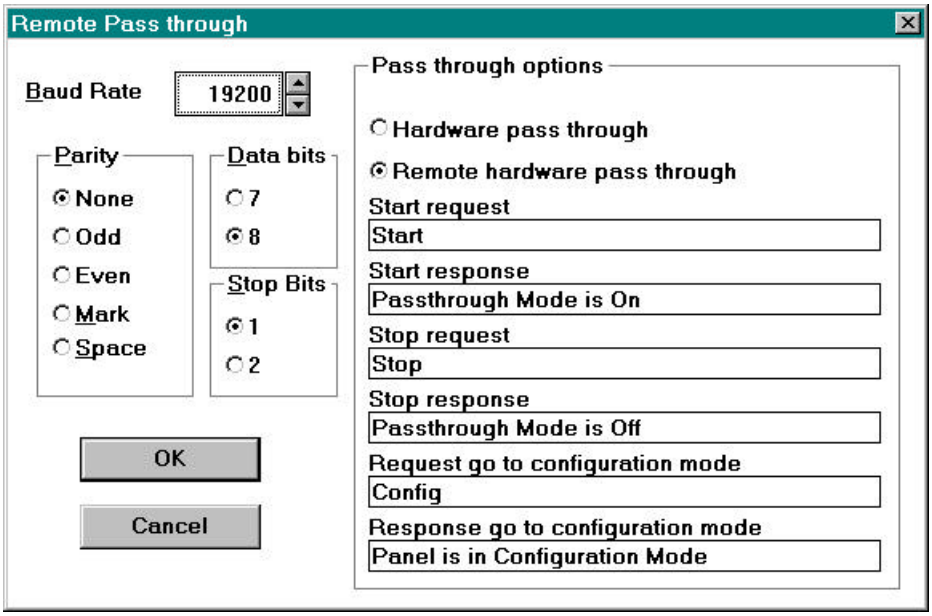

Figure 6

The configured dialog box for *Remote hardware pass through* may look something like what is shown in Figure 6.

5. Multilanguage

This feature allows you to create a single project file that contains multiple languages. The language that the project file uses can be selected at run-time. To set up your languages, go to the *Project* menu and select *Languages*. Doing so will bring up the dialog box shown in Figure 7 in which you can define the languages that you are going to be using.

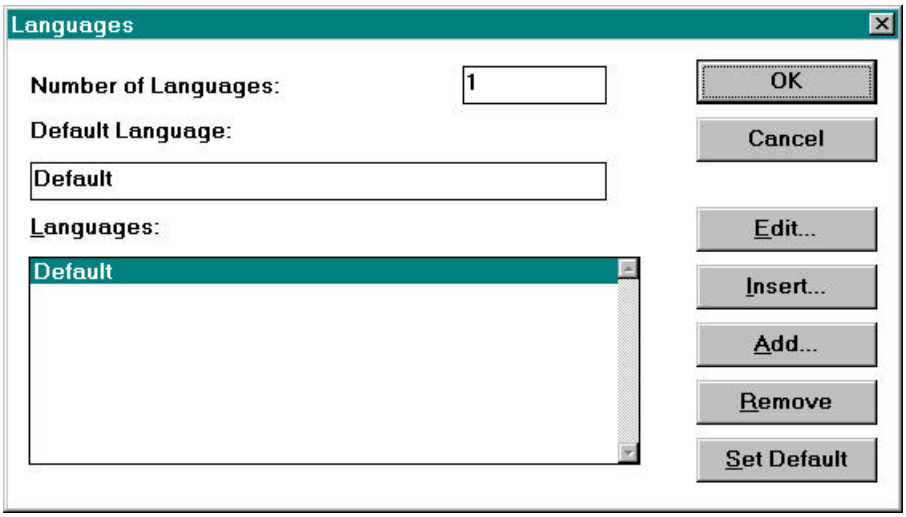

Figure 7

You can use the *Add…* or *Insert…* buttons to add a new language. When you do this, it will give you the opportunity to name the language and the option to copy the default language's character set. The *Edit…* button can be used to change the name of a language. The *Remove* button can be used to remove a language from the list and the *Set Default* button can be used to make the selected language the default language for programming.

For example, assume you want to have a project file that contains text in English, Italian, German, Spanish and French. Your *Languages* dialog box may resemble the one shown in Figure 8.

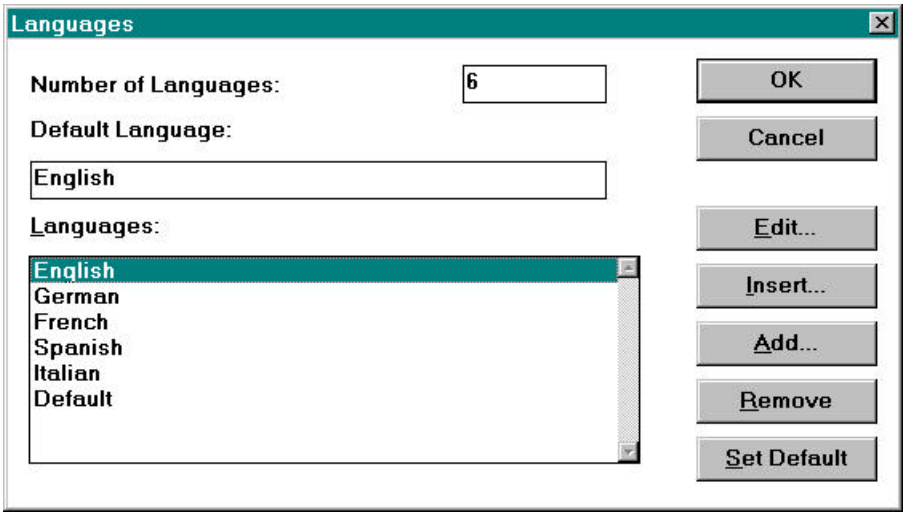

Figure 8

You will now be able to enter text in any of the languages listed in Figure 8. To choose a language to work in, select *Project-Select Language*. This will bring up the dialog box that is shown in Figure 9.

Figure 9

To select a language to work in, simply click on the language and then click on the *Select* button.

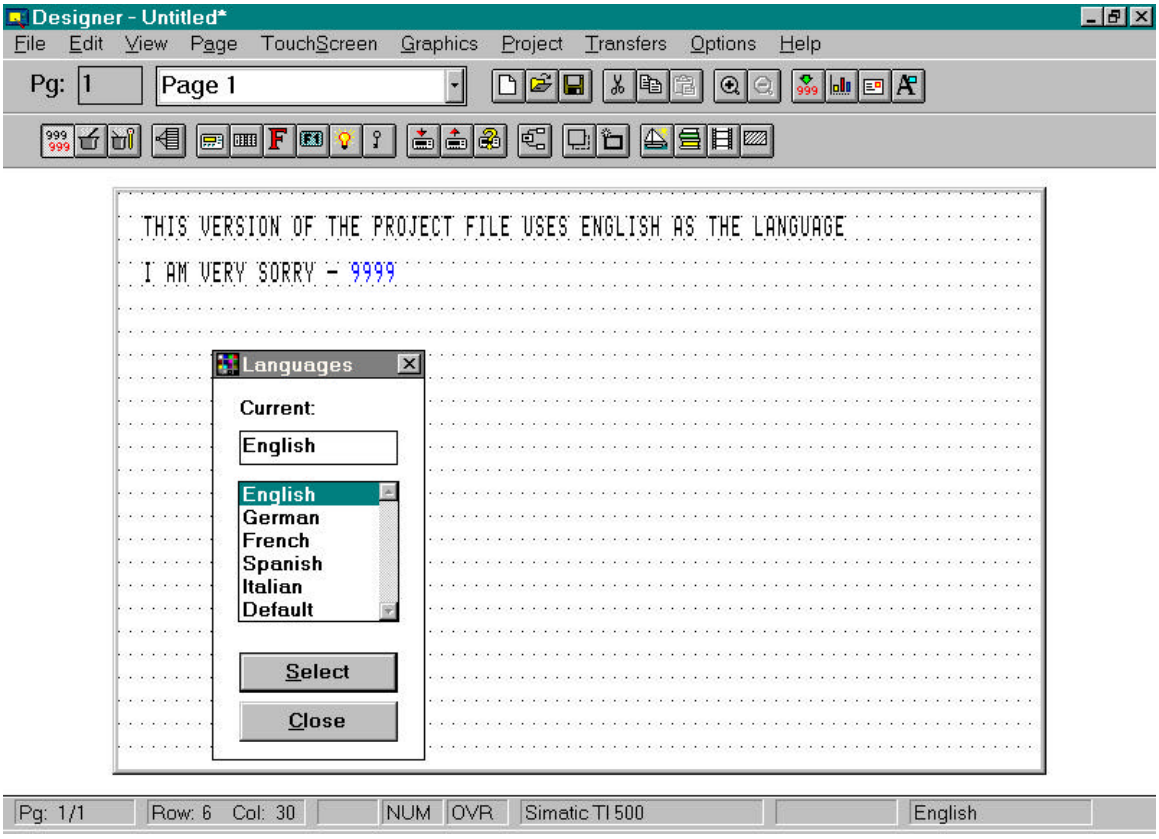

Figure 10

The advantage of this feature is that it allows you to create a single project file with multiple languages used. For one application, you may need to use the English language. For another application, you may want to use the same project file with the Spanish language. This allows you to put the same text in the same position on the display.

For example, Figure 10 shows the project file used with the English language, while Figure 11 shows the *same* project file used with the Spanish language.

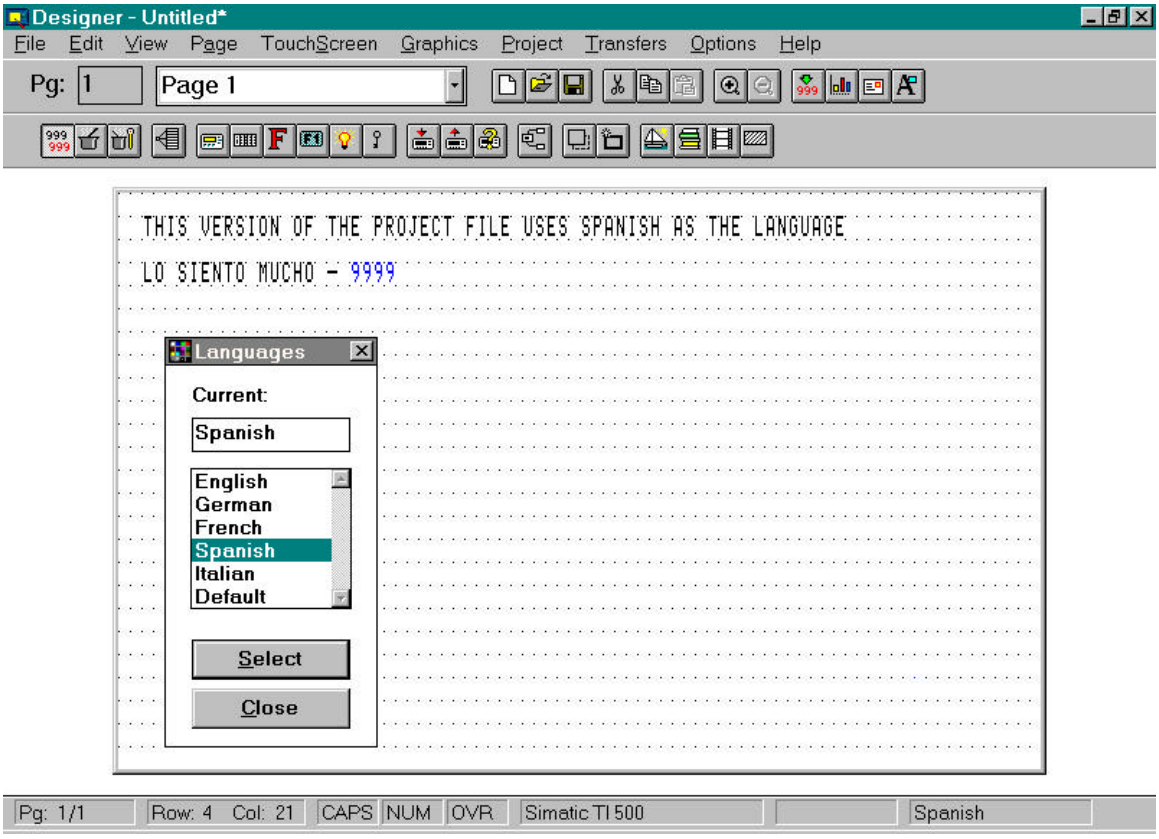

Figure 11

It is important to mention that multilanguage can also be used with the alarms and message fields. The only limit to using multilanguage lies within the creation of touch cells. Once a touch cell has been created using a specific language for the text on the face of the touch cell, the language *cannot* be changed.

5.1 Run Time Language Change

In order to change the language that the project file uses once it has been downloaded to the UniOP, the user can create a control variable with a data type of *Language*. To change the language that is being used, the user will need to increment or decrement this field. This can be done in one of two ways.
One way is to simply edit the field and enter the number of the language that you want to use (in our example above, English would have a value of 1, German would have a value of 2, etc.).
The other way is to program a key or a touch cell using the macro command *Control Variable Step*. The user could program one key (or touch cell) to step up the value of the language control variable field, and another key (or touch cell) to step down the value of the language control variable field.

A third method is based on the Interlock Mailbox. Two mailbox commands have been defined to let you control the multilanguage operation of the panel from the controller. The two commands are described in the following chapters.

5.1.1 Get Current Language

The controller can use this command to get the number of the currently active language from the panel.

Command code: 129

This command requires no parameters.

After performing the operation the panel will respond back to the Command/Response Word with one of the codes listed in the table below.

Code	Description
0	OK
1	Error, the project is not multilanguage.

Table 1

If Code 0 is returned, the Parameter Word 0 will contain the number of the active language.

5.1.2 Set Current Language

The controller can use this command to change the language in the operator panel.

Command code: 130

Parameter 0: Language number

After performing the operation the panel will respond back to the Command/Response Word with one of the codes listed in the table below.

Code	Description
0	OK
1	Error, the project is not multilanguage.
2	Error, illegal language number requested

Table 2

6. Printing from the Panel

The printing functions from the panel have been greatly enhanced. With the new features, it is now possible to define the printer device driver and the communication parameters, the report format and the timetable on which a report is printed. It is even possible to print a report by configuring a key or touch cell to print a report, or to request a printout by using the Interlock Mailbox.

To setup a serial printer, select *Project – Report on Panel Printer - Printer Setup*. This will display the dialog box that is shown in Figure 12. From this dialog box, you can choose the printer you will be using and set the communication parameters. If you will be using a printer that is not listed, you can use the *Add…* button to add a new printer to the list of available printers. Doing so will bring up another dialog box in which you can define the parameters for the newly added printer. Similarly, you can use the *Edit…* button to redefine the parameters for an existing printer. It is also possible to define the page size that you will be using.

Note: *if the user will be printing reports, the paper height should be defined here* ***before*** *the report is defined. If you change the paper height with some reports already defined, the report layouts that have already been defined will not automatically be rearranged.*

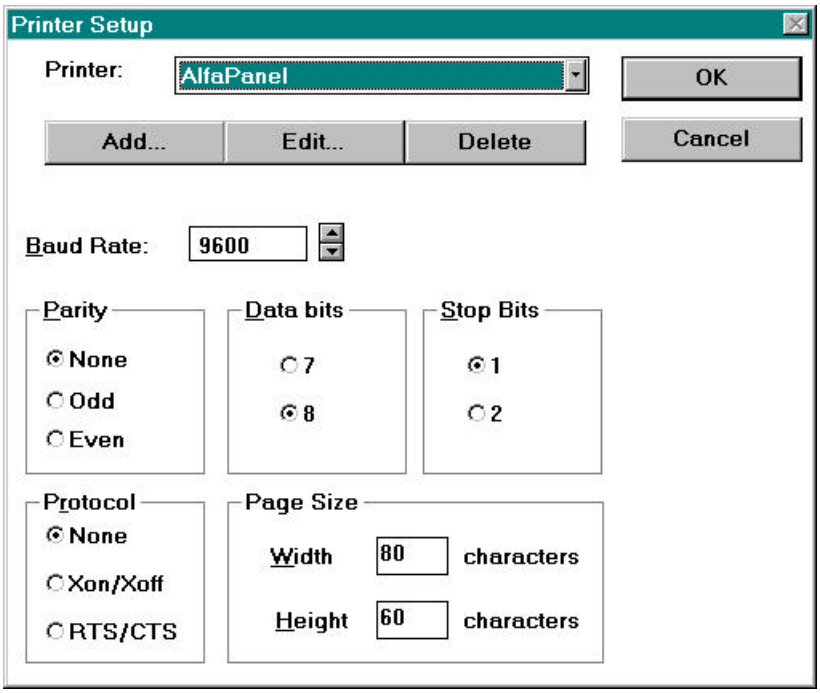

Figure 12

6.1 Reports

A report is a collection of project file pages (or parts of project file pages). Each report is divided into two parts. One is a common part, such as the header and footer. These will be common to each and every page of the report. The second is the display page that is the body of the report.

To define a report, select *Project – Report on Panel Printer – Reports*. The user can use the dialog box in Figure 13 to configure a basic report. For those users who will be creating more advanced reports, an *Advanced* button and a *Properties…* button are present.

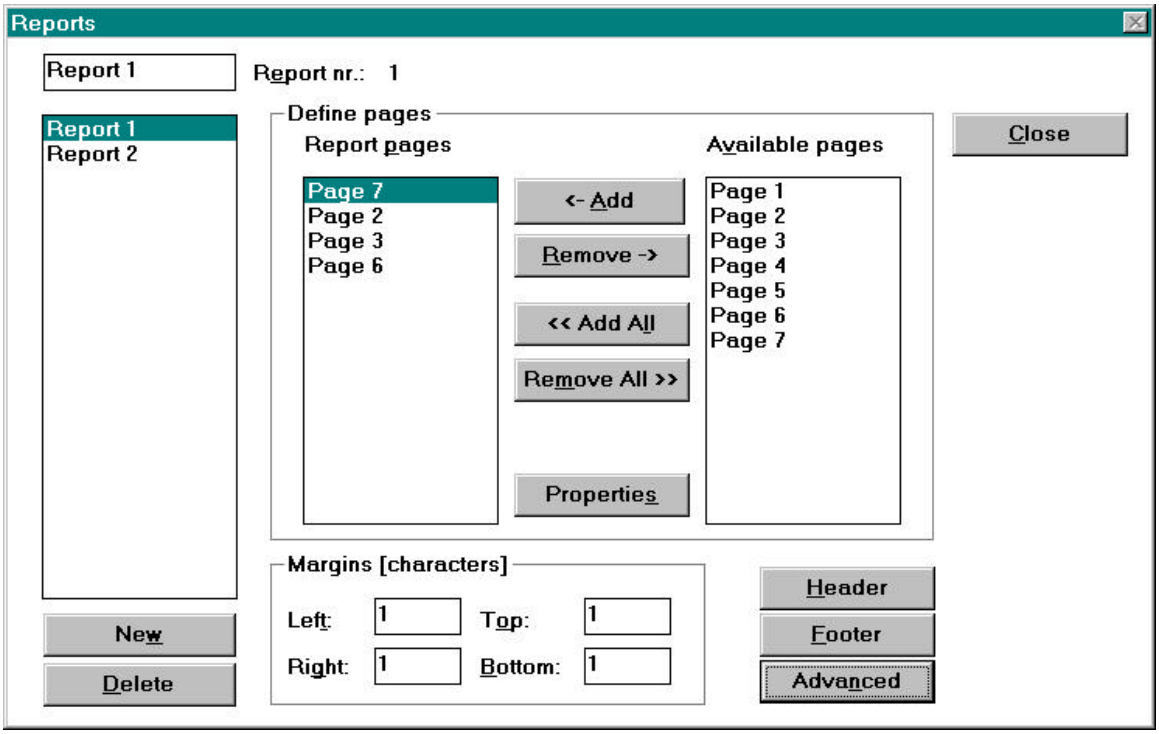

Figure 13

You can add a report by selecting the *New* button and giving the report a name. All of the pages of your project file will be shown within the *Available pages* box. To add a page to the current report, select the page from within *Available pages* and click on the <- *Add* button. Doing so will place the page name into the *Report pages* box. To add all of the pages of your project file to a report, select the << *Add All* button.

Similarly, to remove a page from the current report, select the page name from within the *Report pages* box and click on the *Remove* -> button. To remove all of the pages from the report, click on the *Remove All* >> button. By selecting the page that you are interested in and pressing the *Properties* button, the user is able to specify what part of the project file page to print and where to start printing on the page. The dialog box is shown in Figure 14.

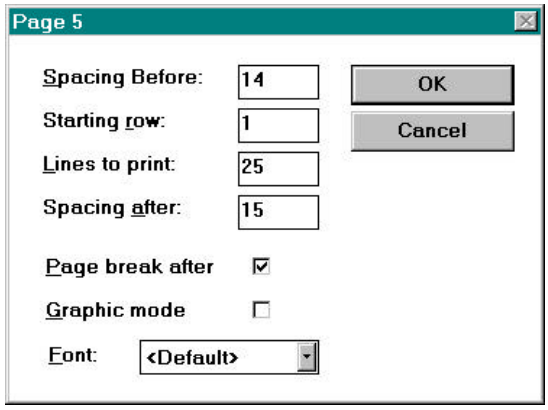

Figure14

By selecting the *Advanced* button, the user is able to select the following parameters, which are common for every page in the report. The dialog box is shown in Figure 15.

- Condensed or Enlarged Mode Printing
- Wrapping – If wrapping is selected, if a line is longer than the width of the page, it will be printed on the next line. Otherwise, it will be truncated.
- Packing – If the page width is longer than the display width, it is possible to print two or more rows on a single line.
- Non-printable characters can be printed as blanks, asterisks, or with downloadable fonts. The downloadable options are grayed out if the printer does not support them.
- Display attributes can be transformed into another printer attribute, such as normal, underlined, bold or italicized.
- The Page separator is a character that can be used to put a separation line between two different project file pages that are printed on the same page.
- The field font specifies the default font to use when the user has not selected a particular font to use in the page definition dialog box (see Figure 14).

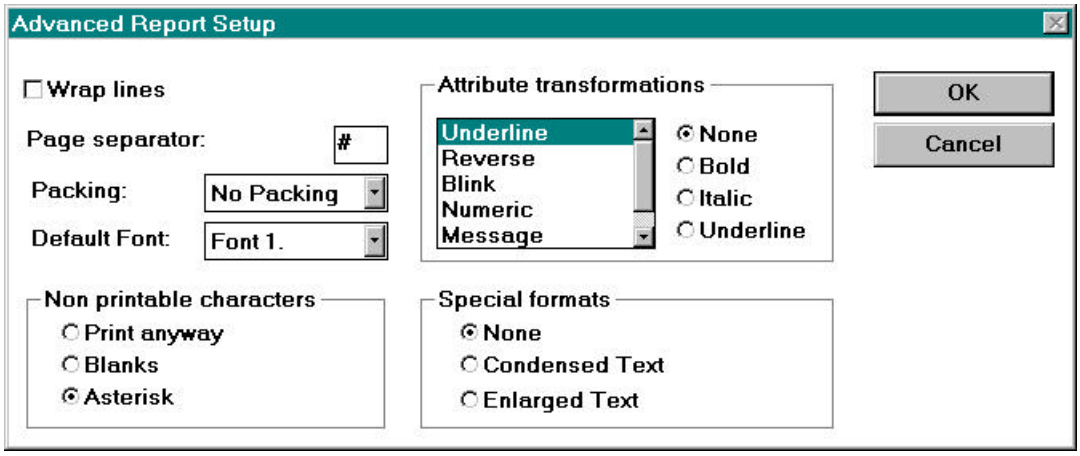

Figure 15

6.2 Header/Footer Definition

The last two buttons used for configuring a report are the *Header* and *Footer* buttons. The structure of the header and the footer are the same. It is possible to define the height of the header and the footer, and several predefined fields that can be inserted into the header or footer.

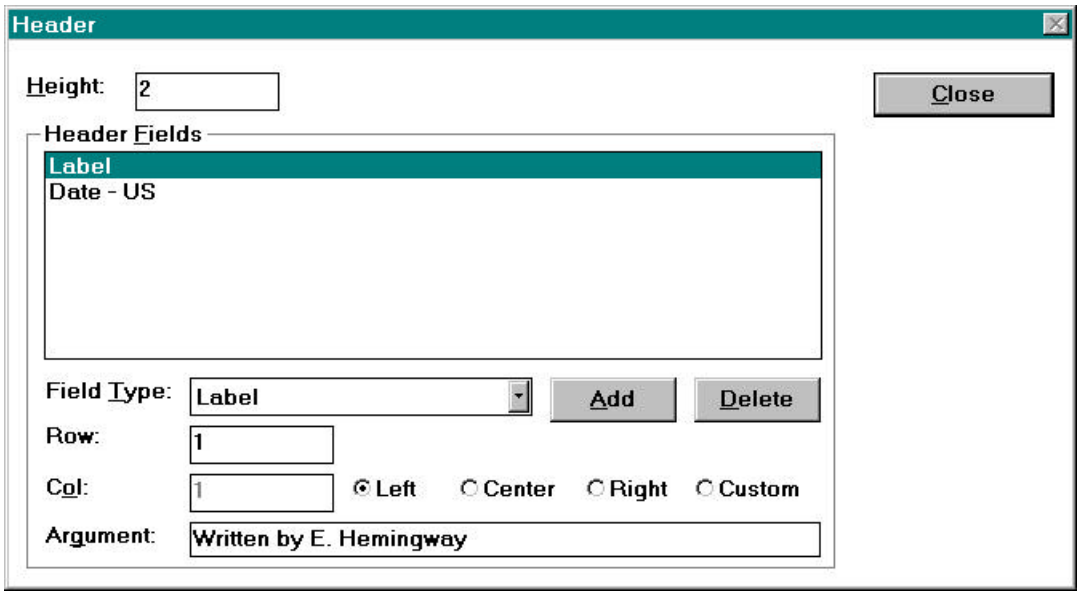

Figure 16

Within this dialog box, the user can specify the height of the header/footer, the fields that are inserted into the header/footer, where they are inserted at and how the are positioned. The fields that can be used are the time and date, the page number, the report name and a label (which allows the user to enter static text).

6.3 Starting a Report Printout

A report printout can be triggered in three different ways:

- With a macro associated to a function key or a touch cell.
- Cyclically at a specified time.
- From a Controller request issued through the Interlock Mailbox.

In the Keyboard Macro Editor, there is a new macro entitled *Print Report*. When this icon is selected, the user will be presented with a dialog box that will allow them to select which report is to be printed when this key (or touch cell) is pressed.

Any report can be printed cyclically in two different modes: any day at a specific time or cyclically after an interval of time. The dialog box shown in Figure 17 allows the user to define these characteristics. This dialog box can be chosen be selecting *Project – Report on Panel Printer – Triggers*.

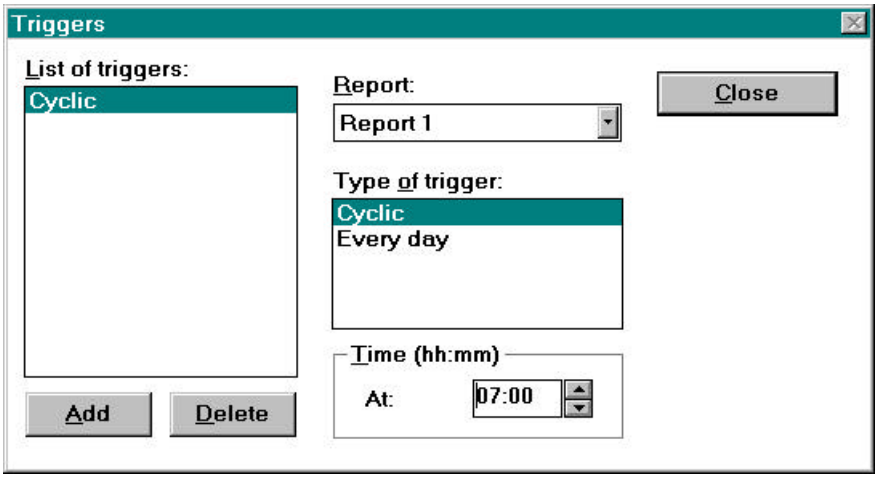

Figure 17

The third way to start a report printout is to use the Interlock Mailbox. There are two new Mailbox commands that are introduced for this procedure.

6.3.1 Start Report Printout

The Controller can use this command to start the printout of a given report.

Command code: 113

Parameter 0: Report Number

After performing the operation the panel will respond back to the Command/Response Word with one of the codes listed in the table below.

Code	Description
0	OK
1	Error, the requested report is already being printed.
2	Error, illegal report number
3	Error, activation queue is full

Table 3

Note: *it is possible to start the printing of more than one report. Up to 10 printer requests can be stored in a FIFO (first in first out) buffer*

6.3.2 Stop Report Printout

This command stops the printout of a report.

Command code: 114

This command requires no parameters.

After performing the operation the panel will respond back to the Command/Response Word with one of the codes listed in the table below.

Code	Description
0	OK
1	Error, printer process already inactive

Table 4

6.4 Printer Device Driver Parameters

Inside the printer Device Driver dialog box you can configure the escape sequence required by your printer. On the appendix of this document you can find the description of the escape sequence used on for the most common printer. For the printers listed below you can find the required device driver already configured in the standard Designer release.

Printer Driver File	Description
ALFAPANEL.PRN	AlfaPanel from EDUE Italia
IBMPRO.PRN	IBM Proprinter (dot matrix)
HPL140.PRN HPL180.PRN	HP LaserJet; the first driver must be used when printing from panels with 40 chars per row, the second when printing from panels with 80 characters per row.

Table 5

6.4.1 Hewlett Packard LaserJet Series

The escape sequences described in this chapter have been tested with the following models of the LaserJet series:

- HP LaserJet III;
- HP LaserJet IV;

The list of escape sequences for text and graphic control is given in the table below.
Printer control code is 0.

Command	Sequence (decimal codes)
Initial Settings • reset printer • set draft mode • set letter quality mode	See note [1] 27 69 27 40 115 49 81 27 40 115 50 81
BOLD set	27 40 115 51 66
BOLD clear	27 40 115 48 66
ITALIC set	27 40 115 49 83
ITALIC clear	27 40 115 48 83
UNDERLINE set	27 38 100 49 68
UNDERLINE clear	27 38 100 64
CONDENSED set	27 40 115 50 48 72
CONDENSED clear	27 40 115 49 48 72
ENLARGED set	27 40 115 53 72
ENLARGED clear	27 40 115 49 48 72
Graphic mode	
75 dpi 150 dpi 300 dpi 600 dpi[4]	27 42 48 65 27 42 116 [**resolution**][2] 82 27 42 114 49 85 27 42 98 [**line length**][3] 87 [resolution]=55 53 [resolution]=49 53 48 [resolution]=51 48 48 [resolution]=54 48 48
Graphic LF	See note [5]

Table 6

Ratio of the character width in the text and graphic mode depends on the resolution of graphical printout in the following way:

[1] It is possible to use any combination of these escape sequences.
[2] These bytes specify resolution. It is specified with two or three bytes that represents resolution value in the ASCII format. Allowed values are given bellow.
[3] Line length depends on the width of the printed slide and the quality. See the explanation bellow for more information. Line length is specified with the value represented in the ASCII numeric format.
[4] Allowed on the HP LaserJet V and higher versions.
[5] In case of HP PCL it is not necessary to insert graphical new line separately, since the sequence that starts new graphical line force starting at new line.

Resolution (dots per inch)	Ratio
75	1
150	2
300	4
600	8

Table 7

Line length depends on the following facts:

- Width of the page that is being printed. When printing pages with a maximum of 40 columns, one line contains the fixed number of 60 bytes. In the case of 80 column pages, one line contains the fixed number of 100 bytes.

- Line length varies with rasterisation quality. When rasterisation quality is normal, line lengths has values mentioned above. As rasterisation level is raised, line length is doubled for each level, as it is shown in the table bellow.

		Page width	
		40	80
Rasterisation Level	LOW (1)	60	100
	NORMAL (2)	120	200
	HIGH (3)	240	400

Table 8

6.4.2 IBM Proprinter Compatibles

The escape sequences described in this chapter have been tested with the following models:

- Epson LQ-400;

The list of escape sequences for text and graphic control is given in the table below.

Command	Sequence (decimal codes)
Initial Settings	27 64 27 77 27 120 0 27 107 2
BOLD set	27 69
BOLD clear	27 70
ITALIC set	27 52
ITALIC clear	27 53
UNDERLINE set	27 71
UNDERLINE clear	27 72
CONDENSED set	27 103
CONDENSED clear	27 77
ENLARGED set	27 80
ENLARGED clear	27 77
Graphic mode	See note [6]
60 dpi	27 42 0 8 0
90 dpi	27 42 6 8 0
120 dpi	27 42 1 8 0
240 dpi	27 42 3 8 0
Graphic LF	13 27 74 24
Font n	See note [7]

Table 9

Ratio of the character width in the text and graphic mode depends on the resolution of graphical printout in the following way:

Resolution (dots per inch)	Ratio
60	1
90	3:2
120	4
240	8

Table 10

Length of the graphical data block is always set to the value 8, with no respect to the display width. In this case data block width is specified with last two bytes in the sequence that starts graphic mode. Length is specified with the equation ***a + 256 * b***, where ***a*** is 4th byte in the sequence and the ***b*** is 5th number in the sequence. Both numbers are integers in range 0 to 255. Structure of the sequence can be different in case of different Proprinter compatible printers.

[6] Available printing modes depends on the printer type. Escape sequence given here should work on all 9-pin dot matrix IBM Proprinter compatible devices.
[7] Available fonts depend on the printer type. A number of older Proprinter compatible devices support only one default font. In this case these escape sequences are obsolete and should be set to zero.

6.4.3 AlfaPanel Printers

The escape sequences described in this chapter have been tested on the following AlfaPanel printers:

- AlfaPanel 2;

List of escape sequences for text and graphic control is given in the table below.
Printer control code is 2.
Ratio of the character width in the text and graphic mode should be set to the 1.

Command	Sequence (decimal codes)
Initial Settings	
• normal writing • upside down writing	27 78 27 82
ENLARGED set	03
ENLARGED clear	00
Graphic Mode	17
Graphic LF	13

Table 11