E-3202

Programmer's Manual

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Contents

Set of Commands

If you wish to use BASIC, use CHR$ to send ASCII codes to the printer.
Put the Decimal into brackets after CHR$.
For example to send ASCII code FF, send CHR$ (12).

The printer will execute the set of commands shown in the chart below:

COMMAND ASCII	Note	Name	Function type	HEX.	DEC.	Page
HT		Horizontal tab	Print position	09	9	7
LF		Print and fine feed	Print	0A	10	3
FF		Print and return to standard mode (in page mode)	Print	0C	12	3
CR		Print and carriage return	Print	0D	13	3
CAN		Cancel print data in page mode	Character	18	24	6
DLE EOT	+	Real-time status transmission	Status	10 04	16 4	12
DLE ENQ		*Real-time request to printer*	*Miscellaneous function*	*10 05*	*16 5*	--
ESC FF		Print data in page mode	Print	1B 0C	27 12	3
ESC SP		Set right-side character spacing	Character	1B 20	27 32	5
ESC !		Select print mode(s)	Character	1B 21	27 33	5
ESC $		Set absolute print position	Print position	1B 24	27 36	7
ESC %		Select/cancel user-defined character set	Character	1B 25	27 37	5
ESC &		Define user-defined characters	Character	1B 26	27 38	5
ESC *		Select bit-image mode	Bit image	1B 2A	27 42	9
ESC -		Turn underline mode on/off	Character	1B 2D	27 45	5
ESC 2		Select default line spacing	Line spacing	1B 32	27 50	3
ESC 3		Set fine spacing	Line spacing	1B 33	27 51	3
ESC =		Select peripheral device	Miscellaneous function	1B 3D	27 61	21
ESC ?		Cancel user-defined characters	Character	1B 3F	27 63	5
ESC @		Initialize printer	Miscellaneous function	1B 40	27 64	21
ESC D		Set horizontal tab positions	Print position	1B 44	27 68	7
ESC E		Turn emphasized mode on/off	Character	1B 45	27 69	6
ESC G		Turn double-strike mode on/off	Character	1B 47	27 71	6
ESC J		Print and feed paper	Print	1B 4A	27 74	3
ESC L		Select page mode	Miscellaneous function	1B 4C	27 76	21
ESC R		Select an international character set	Character	1B 52	27 82	5
ESC S		Select standard mode Miscellaneous	function	1B 53	27 83	21
ESC T		Select print direction in page mode	Print position	1B 54	27 84	8
ESC V		Turn 90° clockwise rotation mode on/off	Character	1B 56	27 86	6
ESC W		Set printing area in page mode	Print position	1B 57	27 87	8
ESC \		Set relative print position	Print position	1B 5C	27 92	7
ESC a		Select justification	Print position	1B 61	27 97	7
ESC c 3		*Select paper sensor(s) to output paper-end signals*	*Paper sensor*	*1B 63 33*	*27 99 51*	--
ESC c 4		*Select paper sensor(s) to stop printing*	*Paper sensor*	*1B 63 34*	*27 99 52*	--
ESC c 5		*Enable/disable panel buttons*	*Panel button*	*1B 63 35*	*27 99 53*	--
ESC d		Print and feed n fines	Print	1B 64	27 100	3
ESC i	*	Partial cut (one point left uncut)	Mechanism control	1B 69	27 105	19
ESC p		Generate pulse	Miscellaneous function	1B 70	27 112	21
ESC t		Select character code table	Character	1B 74	27 116	5

COMMAND ASCII	Note	Name	Function type	HEX.	DEC.	Page
ESC u		Transmit peripheral device status	Status	1B 75	27 117	14
ESC v		Transmit paper sensor status	Status	1B 76	27 118	14
ESC {		Turn upside-down printing mode on/off	Character	1B 7B	27 123	6
Fs G		Select font	Specific commands	1C 47	28 71	22
Fs B		Download with a BMP file	Specific commands	1C 42	28 66	22
Fs k		Print a 2 D barcode	Barcode	1C 6B	28 107	22
Fs H		XY scale for a 2D barcode	Barcode	1C 48	28 72	*22*
Fs A		Paper forced feed	Specific commands	1C 41	28 65	22
Fs R		Paper forced return	Specific commands	1C 52	28 82	22
Fs C		PDF 417 Aspect definition	Specific commands	1C 43	28 67	22
Fs D		PDF417 ECC level definition	Specific commands	1C 44	28 68	22
Fs E		Horizontal and vertical bars in page mode construction	Specific commands	1C 45	28 69	22
GS !		Select character size	Character	1D 21	29 33	6
GS $		Set absolute vertical print position in page mode	Print position	1D 24	29 36	8
GS *		Define downloaded bit image	Bit image	1D 2A	29 42	9
GS /		Print downloaded bit image	Bit image	1D 2F	29 47	9
GS:		Start/end macro definition	Macro function	1D 3A	29 58	19
GS B		Turn white/black reverse printing mode on/off	Character	1D 42	29 66	6
GS H		Select printing position of human readable characters	Bar code	1D 48	29 72	16
GS I		Transmit printer ID	Miscellaneous function	1D 49	29 73	21
GS L		Set left margin	Print position	1D 4C	29 76	7
GS P		Set horizontal and vertical motion units	Miscellaneous function	1D 50	29 80	21
GS V	*	Select cut mode and cut paper	Mechanism control	1D 56	29 86	19
GS W		Set printing area width	Print position	1D 57	29 87	7
GS \		Set relative vertical print position in page mode	Print position	1D 5C	29 92	8
GS ^		Execute macro	Macro function	1D 2A	29 42	19
GS a		Enable/disable Automatic Status Back (ASB)	Status	1D 61	29 97	11
GS b		*Turn smoothing mode on/off*	*Character*	*1D 62*	*29 98*	--
GS f		Select font for human readable characters	Bar code	1D 66	29 102	17
GS h		Set bar code height	Bar code	1D 68	29 104	15
GS k		Print bar code	Bar code	1D 6B	29 107	15
GS r	+	Transmit status	Status	1D 72	29 114	12
GS w		Set bar code width	Bar code	1D 77	29 119	15

Italic : Functions decoded by the printer but are not interpreted.

* : Standard ESCPOS command (The E-3202 is not available with a cutter).

Print and Line Spacing Commands

Print Commands:

LF : Print and line feed

ASCII:	LF
Hexadecimal:	0A
Decimal:	10

LF prints the data in the print buffer and feeds one line.

CR : Print and carriage return

ASCII:	CR
Hexadecimal:	0D
Decimal:	13

This command sets the print position to the beginning of the line.

ESC J n : Print and feed paper

ASCII:	ESC J n
Hexadecimal:	1B 4A n
Decimal:	27 74 n

ESC J prints the data in the print buffer and feeds n x motion defined in GS P

ESC d n : Print and feed n lines

ASCII:	ESC d n
Hexadecimal:	1B 64 n
Decimal:	27 100 n

ESC d prints the data in the print buffer and feeds n lines.

FF : Print and return to standard mode

ASCII:	FF
Hexadecimal:	0C
Decimal:	12

When in page mode FF prints all data in the print buffer in one time and return to standard mode. The buffer data is deleted after being printed.

ESC FF : Print data in mode page

ASCII:	ESC FF
Hexadecimal:	1B 0C
Decimal:	27 12

When in page mode ESC FF prints all data in the print buffer in one time. The buffer data is not deleted after being printed.

Line Spacing Commands:

ESC 2 : Select default line spacing

ASCII:	ESC 2
Hexadecimal:	1B 32
Decimal:	27 50

ESC2 sets the line spacing to 1/6 inch = 30 dots.

ESC 3 n : Set line spacing

ASCII:	ESC 3 n
Hexadecimal:	1B 33 n
Decimal:	27 51 n

ESC 3 n sets the line spacing to n x motion defined in GSP.

Warning: The E-3202 is not designed to accommodate continuous, unbuffered data streams while in PAPER mode. Application programs or data streams that prohibit the E-3202 from processing interrupts correctly may produce unexpected or unreliable results. If it is necessary to send a continuous stream of data to the E-3202, the application program must provide a pause of 250ms (duration) after every LINE of characters to allow the processor time to check for any possible error or fault conditions.

Characters Commands

ESC SP n : Set right side character spacing

ASCII: ESC SP n
Hexadecimal: 1B 20 n
Decimal: 27 32 n

ESC SP n sets the right side character spacing to n x motion defined in GSP.

ESC % n : Select / cancel user - defined character set

ASCII: ESC % n
Hexadecimal: 1B 25 n
Decimal: 27 37 n

0 ≤ n ≤ 255. When the LSB of n = 0 the internal character set is selected. When the LSB of n = 1 the user defined character set is selected. n = 0 is the default setting.-

ESC & y c1 c2 [x1 d1 ... d(y * x1)]...[xk d1 ... d(y*xk)] : Define user-defined characters.

ASCII: ESC & y c1 c2 [x1 d1 ... d(y * x1)]...[xk d1 ... d(y*xk)]
Hexadecimal: 1B 26 n y c1 c2 [x1 d1 ... d(y * x1)]...[xk d1 ... d(y*xk)]
Decimal: 27 38 n y c1 c2 [x1 d1 ... d(y * x1)]...[xk d1 ... d(y*xk)]

y = 3
32 ≤ c1 ≤ c2 ≤ 126
0 ≤ x ≤ 12 (font A (12 x 24))
0 ≤ x ≤ 9 (font B (9 x 24))
0 ≤ d1 ... d(y x xk) ≤ 255
k = c2 - c1 + 1

ESC & y c1 c2 [x1 d1 ... d(y * x1)]...[xk d1 ... d(y*xk)]
defines user-defined characters from character code c1 to c2. Y and x are the configuration of a user-defined character.

y defines the number of bytes in the vertical direction.

x defines the number of bytes in the horizontal direction

Character codes from the alphanumeric characters can be defined by c1 and c2. Data (d) specifies a bit printed to 1 and not printed to 0. Once the user-defined characters have been defined, they are available until:

- ESC ?, ESC @, or GS * is executed
- the user-defined characters are redefined
- the power is turned off
- the printer is reset

ESC ? n : Cancel user-defined characters

ASCII: ESC ? n
Hexadecimal: 1B 3F n
Decimal: 27 63 n

32 ≤ n ≤ 126

This command cancels the user-defined characters defined for the character code n. After the user defined characters are cancelled, the internal character set is printed.

ESC R n : Select an international character set

ASCII: ESC R n
Hexadecimal: 1B 52 n
Decimal: 27 82 n

Selects an international character set n as follows :

0 USA	4 Denmark 1	8 Japan
1 France	5 Sweden	9 Norway
2 Germany	6 Italy	10 Denmark II
3 England	7 Spain 1	11 Spain II
		12 Latin America

ESC t n : Select character code table

ASCII: ESC t n
Hexadecimal: 1B 74 n
Decimal: 27 116 n

Selects a page n from the character code table as follows

0	437	4	860
1	850	5	861
2	852	6	863
3	857	7	858
		8	862

ESC ! n : Select print mode

ASCII: ESC ! n
Hexadecimal: 1B 21 n
Decimal: 27 33 n

0 ≤ n ≤ 255

The default setting is n=0. This command is effective for all characters.
When underline mode is turned on, 90° clockwise rotated characters and white/black reverse characters cannot be underlined.

Bit	Off/On	Hex	Dec	Function
0	Off	00	0	Character font 12 x 24 selected
	On	01	1	Character font 9 x 24 selected
1,2	-	-	-	Undefined
3	Off	00	0	Emphasized mode not selected
	On	08	8	Emphasized mode selected
4	Off	00	0	Double Height mode not selected
	On	10	16	Double Height mode selected
5	Off	00	0	Double Width mode not selected
	On	20	32	Double Width mode not selected
6	-	-	-	Undefined
7	Off	00	0	Underline mode not selected
	On	80	128	Underline mode selected

ESC - n : Turn underline mode on / off

ASCII: ESC - n
Hexadecimal: 1B 2D n
Decimal: 27 45 n

0 ≤ n ≤ 2
48 ≤ n ≤ 50

This command turns underline mode on or off.
When the LSB of n = 1 : on
When the LSB of n = 0 : off
The default setting is n=0

ESC E n : Turn emphasized mode on / off

ASCII: ESC E n
Hexadecimal: 1B 45 n
Decimal: 27 69 n

$0 \leq n \leq 255$

This command turns emphasized mode on or off.
On : LSB n =1
Off : LSB n = 0

The default setting is n=0

ESC G n : Turn double-strike mode on / off

ASCII: ESC G n
Hexadecimal: 1B 47 n
Decimal: 27 71 n

$0 \leq n \leq 255$

This command turns double-strike mode on or off.
On : LSB n =1
Off : LSB n = 0

The default setting is n=0
Double-strike and emphasized printing appear the same

ESC { n : Turn upside-down printing mode on / off

ASCII: ESC { n
Hexadecimal: 1B 7B n
Decimal: 27 123 n

$0 \leq n \leq 255$

This command turns upside-down printing mode on or off.
On: LSB n =1
Off: LSB n = 0

The default setting is n=0

The line printing order is not reversed, therefore be careful of the order of the data transmitted.

In standard mode this command is enabled only when processed at the beginning of a line. In page mode, an internal flag is activated and this command is enabled when the printer returns to standard mode.

ESC V n : Turn 90° clockwise mode on / off

ASCII: ESC V n
Hexadecimal: 1B 56 n
Decimal: 27 86 n

n = 0, 1, 48, 49
ESC V n turns 90° clockwise rotation mode on or off.
On : n = 1 or 49
Off : n = 0 or 48

The default setting is n = 0

In standard mode this command is enabled only when processed at the beginning of a line. In page mode, an internal flag is activated and this command is enabled when the printer returns to standard mode.

GS ! n : Select character size

ASCII: GS ! n
Hexadecimal: 1D 21 n
Decimal: 29 33 n

$0 \leq n \leq 255$

This command selects the character
height = 0 to 3 bits (vertical number of times normal font size)
width = 4 to 7 bits (horizontal number of times normal font size)

The default setting is n = 0

Hex	Dec	Width	Hex	Dec	Height
00	0	1	00	0	1
10	16	2	01	1	2
20	32	3	02	2	3
30	48	4	03	3	4
40	64	5	04	4	5
50	80	6	05	5	6
60	96	7	06	6	7
70	112	8	07	7	8

GS B n : Turn white / black reverse printing mode on/off

ASCII: GS B n
Hexadecimal: 1D 42 n
Decimal: 29 66 n

$0 \leq n \leq 255$

This command turn white/Black reverse printing mode on or off.
The characters are printed in white on a black background
On : LSB n = 1
Off : LSB n = 0

The default setting is n=0

CAN : Cancel print data in page mode

ASCII: CAN
Hexadecimal: 18
Decimal: 24

CAN deletes all the print data for the current print job in page mode. This command is enabled only in page mode.

Print Position and Bit Image Commands

Print Position commands:

ESC $ nL nH : Set Absolute print position

ASCII: ESC $ nL nH
Hexadecimal: 1B 24 nL nH
Decimal: 27 36 nL nH

$0 \le nL \le 255$
$0 \le nH \le 255$

ESC $ nL nH sets the print starting position to (nL + nH * 256) (horizontal or vertical GS P) from the beginning of the line.

When the standard mode is selected, the horizontal GS P is used. When page mode is selected, the horizontal or vertical GS P is used for the print direction set by ESC T.

ESC \ nL nH : Set Relative print position

ASCII: ESC \ nL nH
Hexadecimal: 1B 5C nL nH
Decimal: 27 92 nL nH

$0 \le nL \le 255$
$0 \le nH \le 255$

ESC \ nL nH moves the print starting position to (nL + nH * 256) (horizontal or vertical GS P) from the current print position.

When the standard mode is selected, the horizontal GS P is used. When page mode is selected, the horizontal or vertical GS P is used for the print direction set by ESC T.

ESC a n : Select justification

ASCII: ESC a n
Hexadecimal: 1B 61 n
Decimal: 27 97 n

$0 \le n \le 2$
$48 \le n \le 50$

This command aligns all the data in one line to a specified position.
Left : n = 0 or 48
center : n = 1 or 49
right : n = 2 or 50

The default setting is left : n=0

In standard mode this command is enabled only when processed at the beginning of a line.

In page mode, an internal flag is activated and this command is enabled when the printer returns to standard mode.

HT : Horizontal tab

ASCII: HT
Hexadecimal: 09
Decimal: 9

HT moves the start print position to the next horizontal tab. This command is ignored unless the next horizontal tab has been set.

ESC D n1 nk NUL : Set horizontal tab positions

ASCII: ESC D n1...nk NUL
Hexadecimal: 1B 44 n1...nk 00
Decimal: 27 68 n1...nk 0

$1 \le n \le 255$
$0 \le k \le 32$

This command sets a horizontal tab position to n columns from the beginning of a line, with k indicating the number of horizontal tab to be set. A maximum of 32 tab positions can be set. The default tab positions are ever y eight characters for the font 12 x 24.

GS L nL nH : Set left margin

ASCII: GS L nL nH
Hexadecimal: 1D 4C nL nH
Decimal: 29 76 nL nH

$0 \le nL \le 255$
$0 \le nH \le 255$

This command sets the left margin to (nL + nH * 256) (horizontal GS P) from the beginning of a line.

The default setting is nL=0 and nH=0

In standard mode this command is enabled only when processed at the beginning of a line.

In page mode, an internal flag is activated and this command is enabled when the printer returns to standard mode.

GS W nL nH : Set printing area width

ASCII: GS W nL nH
Hexadecimal: 1D 57 nL nH
Decimal: 29 87 nL nH

$0 \le nL \le 255$
$0 \le nH \le 255$

This command sets the printing area width to (nL + nH * 256) (horizontal GS P).

The default setting is nL=0 and nH=0

In standard mode this command is enabled only when processed at the beginning of a line.

In page mode, an internal flag is activated and this command is enabled when the printer returns to standard mode.

ESC W xL xH yL yH dxL dxH dyL dyH : Set printing area in page mode

ASCII: ESC W xL xH yL yH dxL dxH dyL dyH
Hexadecimal: 1B 57 xL xH yL yH dxL dxH dyL dyH
Decimal: 27 87 xL xH yL yH dxL dxH dyL dyH

0 ≤ xL xH yL yH dxL dxH dyL dyH ≤ 255

This command sets the size and position of the printing area in page mode as follows :
Horizontal starting position = (xL+xH * 256) (horizontal GS P)
Vertical starting position = (yL+yH * 256) (vertical GS P)
Printing area width = (dxL + dxH * 256) (horizontal GS P)
Printing area height = (dyL + dyH * 256) (vertical GS P)
The default setting are : xL=0, xH=0, yL=0, yH=0,
60 mm mechanism :
Dxl=80, DxH=1,
dyL=9A, DyH=2.
80 mm mechanism :
Dxl=80, DxH=2,
dyL=90, DyH=1.

This command is enabled in page mode only. In standard mode, an internal flag is activated and this command is enabled when the printer selects page mode.

ESC T n : Select print direction in page mode

ASCII: ESC T n
Hexadecimal: 1B 54 n
Decimal: 27 84 n

0 ≤ n ≤ 3
48 ≤ n ≤ 51

ESC T n sets the print direction and starting position in page mode specified by n as shown in the chart. The default setting is n=0. This command is enabled only in page mode. In standard mode, an internal flag is activated and this command is enabled when the printer selects page mode.

n	Print direction	Starting position	Motion units
0 48	Left to right	Upper left	horizontal: ESC SP, ESC $, ESC \ vertical: ESC 3, ESC J, GS $, GS \
1 49	Bottom to top	Lower left	horizontal: ESC 3, ESC J, GS $, GS\ vertical: ESC SP, ESC$, ESC \
2 50	Right to left	Lower right	Horizontal: ESC SP, ESC $, ESC \ vertical: ESC 3, ESC J, GS $, GS \
3 51	Top to bottom	Upper right	horizontal: ESC 3, ESC J, GS $, GS \ vertical: ESC SP, ESC $, ESC \

GS $ nL nH : Set Absolute vertical print position in page mode

ASCII: GS $ nL nH
Hexadecimal: 1D 24 nL nH
Decimal: 29 36 nL nH

0 ≤ nL ≤ 255
0 ≤ nH ≤ 255

ESC $ nL nH sets the vertical print starting position for buffer character data in page mode to (nL + nH * 256) (horizontal or vertical GS P) from the starting position by ESC T. This command is effective only in page mode.

GS \ nL nH : Set Relative print position

ASCII: GS \ nL nH
Hexadecimal: 1D 5C nL nH
Decimal: 29 92 nL nH

0 ≤ nL ≤ 255
0 ≤ nH ≤ 255

GS \ nL nH moves the print starting position in page mode to (nL + nH * 256) (horizontal or vertical GS P) from the starting point by ESC T. This command is effective only in page mode.

Bit image commands:

ESC * m nL nH d1 ... dk : Select bit-image mode

ASCII: ESC * m n1 nH d1 … dk
Hexadecimal: 1B 2A m n1 nH d1 … dk
Decimal: 27 42 m n1 nH d1 … dk

m = 0, 1, 32, 33
0 ≤ nL ≤ 255
0 ≤ nH ≤ 3
0 ≤ d ≤ 255

This command selects a bit image mode using m for the number of dots specified by (nL + nH * 256).
Set a bit to 1 to print a dot
Set a bit to 0 to not print a dot
d indicates the bit image data

The modes selectable by m are as follows:

Vertical Direction			Horizontal direction		
m	**Mode**	**Number of bits for vertical data**	**Dot density**	**Dot density**	**Amount of data**
0	8 dot single density	8	60	90	nL+nH*256
1	8 dot double density	8	60	180	nL+nH*256
32	24 dot single density	24	180	90	(nL+nH*256) * 3
33	24 dots double density	24	180	180	(nL+nH*256) * 3

GS * x y d1...d (x * y * 8) : Define downloaded bit image

ASCII: GS * x y d1...d (x * y * 8)
Hexadecimal: 1D 2A x y d1...d (x * y * 8)
Decimal: 29 42 x y d1...d (x * y * 8)

1 ≤ x ≤ 255
1 ≤ y ≤ 48
x * y ≤ 1536
0 ≤ d ≤ 255

This command defines a downloaded bit image by using x * 8 dots in the horizontal direction and y * 8 dots in the vertical direction. Once a downloaded bit image has been define, it is available until:

- another definition is made.
- ESC & or ESC @ is executed
- the power is turned off
- the printer is reset

When this command is executed, the user-defined characters are cleared.

GS / m : Print downloaded bit image

ASCII: GS / m
Hexadecimal: 1D 2F m
Decimal: 29 47 m

0 ≤ m ≤ 3
48 ≤ m ≤ 51

This command prints a downloaded bit image using the mode specified by m as specified in the chart. In standard mode, this command is effective only when there is no data in the print buffer. This command is ignored if a downloaded bit image has not been defined.

m	**Mode**	**Vertical Dot Density (DPI)**	**Horizontal Dot Density (DPI)**
0, 48	Normal	180	180
1, 49	Double width	180	90
2, 50	Double height	90	180
3, 51	Quadruple	90	90

Status Commands

GS a n : Enable / Disable automatic status Back (ASB)

ASCII : GS a n
Hexadecimal : 1 D 61 n
Decimal : 29 97 n
$0 \leq n \leq 255$

Selects a status for ASB transmission. The printer automatically transmits a 4-byte status message whenever the status changes. Multiple status items can be selected. When n=0 ASB is disabled. If ASB is enabled when the printer is disabled by ESC =, the printer transmit a byte status message whenever the status changes. The status items are selected using n as follows.

Bit	On/Off	Hex	Decimal	Function
0	Off	00	0	Drawer kick out connector pin 3 status disabled
0	On	01	1	Drawer kick out connector pin 3 status enabled
1	Off	00	0	On-line/ Off-line status disabled
1	On	02	2	On-line/ Off-line status enabled
2	Off	00	0	Error status disabled
2	On	04	4	Error status enabled
3	Off	00	0	Paper roll sensor status disabled
3	On	08	8	Paper roll sensor status enabled

First byte - printer information

Bit	On/Off	Hex	Decimal	Function
0	Off	00	0	Not used, Fixed to off
1	Off	00	0	Not used, Fixed to off
2	Off	00	0	Drawer kick out connector pin 3 is low
2	On	04	4	Drawer kick out connector pin 3 is high
3	Off	00	0	On line
3	On	08	8	Off line
4	On	10	16	Not used. Fixed to on
5	Off	00	0	Cover closed
5	On	20	32	Cover Open
6	Off	00	0	Paper is not being fed by the paper feed button
6	On	40	64	Paper is being fed by the paper feed button
7	Off	00	0	Not used. Fixed to off

Second byte - printer information

Bit	On/Off	Hex	Decimal	Function
0-2	-	-	-	Undefined
3	Off	00	0	No auto-cutter error
3	On	08	8	Auto cutter error
4	Off	00	0	Not used. Fixed to off
5	Off	00	0	Not unrecoverable error
5	On	20	32	Unrecoverable error
6	Off	00	0	Not automatically recoverable error
6	On	40	64	Automatically recoverable error
7	Off	00	0	Not used. Fixed to off

Third byte – paper sensor information

Bit	On/Off	Hex	Decimal	Function
0-1	Off	00	0	Paper roll near-end sensor : paper adequate
0-1	On	03	3	Paper roll near-end sensor : near end
2-3	Off	00	0	Paper roll end sensor : paper present
2-3	On	0C	12	Paper roll end sensor : paper not present
4	Off	00	0	Not used . Fixed to off
5-6	-	-	-	Not defined
7	Off	00	0	Not used. Fixed to off

Fourth byte – paper sensor information

Bit	On/Off	Hex	Decimal	Function
0-3	-	-	-	Undefined
4	Off	00	0	Not used – fixed to Off
5-6	-	-	-	Undefined
7	Off	00	0	Not used – Fixed to Off

GS r n : transmit status

ASCII : GS r n
Hexadecimal : 1 D 72 n
Decimal : 29 114 n

n = 1,2,49,50

Transmits 1 byte of status data specified by n as follows
n = 1 or 49 paper sensor status
n = 2 or 50 drawer kick out connector status

When the paper roll end sensor detects a paper-end, the printer goes off-line and does not execute this command. Therefore, bits 2 and 4 do not transmit paper-end status.

Paper sensor status

Bit	On/Off	Hex	Decimal	Function
0-1	Off	00	0	Paper roll near end sensor : paper adequate
0-1	On	03	3	Paper roll near end sensor : paper near end
2-3	Off	00	0	Paper roll end sensor : paper present
2-3	On	0C	12	Paper roll end sensor : paper not present
4	Off	00	0	Not used – Fixed to Off
5-6	-	-	-	Undefined
7	Off	00	0	Not used – Fixed to Off

Drawer kick out connector status

Bit	On/Off	Hex	Decimal	Function
0	Off	00	0	Drawer kick out connector pin 3 is low
0	On	01	1	Drawer kick out connector pin 3 is high
1-3	-	-	-	Undefined
4	Off	00	0	Not used. Fixed to off
5-6	-	-	-	Undefined
7	Off	00	0	Not used. Fixed to off

DLE EOT n : Real time status transmission

ASCII : DLE EOT n
Hexadecimal : 10 04 n
Decimal : 16 4 n

$1 \leq n \leq 4$
Transmits the specified status in real time.
n = 1 transmit printer status
n = 2 transmit off-line status
n = 3 transmit error status
n = 4 transmit paper roll sensor status

Printer status

Bit	On/Off	Hex	Decimal	Function
0	Off	00	0	Not used, Fixed to off
1	Off	00	0	Not used, Fixed to off
2	Off	00	0	Drawer kick out connector pin 3 is low
2	On	04	4	Drawer kick out connector pin 3 is high
3	Off	00	0	On line
3	On	08	8	Off line
4	On	10	16	Not used. Fixed to on
5-6	-	-	-	Not defined
7	Off	00	0	Not used. Fixed to off

Off line status

Bit	On/Off	Hex	Decimal	Function
0	Off	00	0	Not used, Fixed to off
1	On	02	2	Not used, fixed to on
2	Off	00	0	Cover closed
2	On	04	4	Cover Open
3	Off	00	0	Paper is not being fed by the paper feed button
3	On	08	8	Paper is being fed by the paper feed button
4	On	10	16	Not used. Fixed to on
5	Off	00	0	No paper end stop
5	On	20	32	Printing stops due to paper end
6	Off	00	0	No error
6	On	40	64	Error
7	Off	00	0	Not used, Fixed to off

Error status

Bit	On/Off	Hex	Decimal	Function
0	Off	00	0	Not used, Fixed to off
1	On	02	2	Not used, fixed to on
2	-	-	-	Undefined
3	Off	00	0	No auto-cutter error
3	On	08	8	Auto cutter error
4	On	10	16	Not used. Fixed to on
5	Off	00	0	Not unrecoverable error
5	On	20	32	Unrecoverable error
6	Off	00	0	Not automatically recoverable error
6	On	40	64	Automatically recoverable error
7	Off	00	0	Not used. Fixed to off

Note: The E-3202 is not available with an "auto-cutter".

Paper roll sensor status

Bit	On/Off	Hex	Decimal	Function
0	Off	00	0	Not used, Fixed to off
1	On	02	2	Not used, fixed to on
2-3	Off	00	0	Paper roll near-end sensor : paper adequate
2-3	On	0C	12	Paper roll near-end sensor : near end
4	On	10	16	Not used. Fixed to on
5-6	Off	00	0	Paper roll end sensor : paper present
5-6	On	60	96	Paper roll end sensor : paper not present
7	Off	00	0	Not used. Fixed to off

Esc u n : transmit peripheral device status

ASCII : ESC u n
Hexadecimal : 1B 75 n
Decimal : 27 117 n

n = 0,48

Transmits the status of the drawer kick-out connector pin 3 as 1 byte of data when n= 0 or 48. This allows the host to determine the status of a peripheral device.

Bit	On/Off	Hex	Decimal	Function
0	Off	00	0	Drawer kick out connector pin 3 is low
0	On	01	1	Drawer kick out connector pin 3 is high
1-3	-	-	-	Undefined
4	Off	00	0	Not used. Fixed to off
5-6	-	-	-	Not defined
7	Off	00	0	Not used. Fixed to off

Esc v n : transmit paper sensor status

ASCII : ESC v n
Hexadecimal : 1B 76 n
Decimal : 27 118 n

n = 0,48

Transmits the status of the paper sensor as 1 byte of data.

Bit	On/Off	Hex	Decimal	Function
0-1	Off	00	0	Paper roll near-end sensor : paper adequate
0-1	On	03	3	Paper roll near-end sensor : near end
2-3	Off	00	0	Paper roll end sensor : paper present
2-3	On	OC	12	Paper roll end sensor : paper not present
4	Off	00	0	Not used. Fixed to off
5-6	-	-	-	Undefined
7	Off	00	0	Not used . fixed to off

Bar Code Commands

The following barcode symbologies are available with ESC POS:

- UPC-A (+2,+5), UPC-E (+2,+5), EAN 13 (+2,+5), EAN 8 (+2,+5), Code39, ITF, CODABAR, Code 93, Code 128 (A, B, C, auto), Code 2/5, EAN 128, Postnet, QR code, PDF417

GS h n : Set bar code height

ASCII : GS h n
Hexadecimal : 1 D 68 n
Decimal : 29 104 n

$1 \leq n \leq 255$

This command selects the height of a bar code. N specifies the number of dots in the vertical direction. One dot = 1/200 inch. The default setting is n = 162.

GS w n : Set bar code width

ASCII : GS w n
Hexadecimal : 1 D 77 n
Decimal : 29 119 n

$2 \leq n \leq 6$

This command selects the horizontal size of a bar code. N specifies the bar code width as specified in the chart. The default setting is n = 3
The multilevel bar codes are : UPC-A, UPC-E, EAN 13, EAN 8, CODE128
The binary level bar codes are : CODE39, ITF, CODABAR

n	Module width (mm) for multilevel Bar Code	Binary Level Bar Code	
		Thin element width (mm)	Thick element width (mm)
2	0.282	0.282	0.706
3	0.423	0.423	1.129
4	0.564	0.564	1.411
5	0.706	0.706	1.834
6	0.847	0.847	2.258

Select Barcode Symbology
1. GS k m d1 ... dk NUL
2. GS k m n d1 ... dn

1. ASCII : GS k m d1 ... dk NUL
Hexadecimal : 1 D 6B k m d1 ... dk 00
Decimal : 29 107 k m d1 ... dk 0

$0 \leq m \leq 6$

k and d depend on the bar code symbology used

2. ASCII : GS k m n d1 ... dn
Hexadecimal : 1 D 6B k m n d1 ... dn
Decimal : 29 107 k m n d1 ... dn

$65 \leq m \leq 73$

n and d depend on the bar code symbology used

These commands select a bar code symbology and print the bar code, m specifies the bar code symbology as follows:

m		Bar code system	Number of characters	Remarks
1	0	UPC-A	k = 10	48 ≤ d ≤ 57
	1	UPC-E	K = 10	48 ≤ d ≤ 57
	2	EAN13	K = 12	48 ≤ d ≤ 57
	3	EAN8	k = 7	48 ≤ d ≤ 57
	4	CODE39	1 ≤ k	48 ≤ d ≤ 57, 65 ≤ d ≤ 90 d = 32,36,37,42,43,45,46,47
	5	ITF	1 ≤ k (even numbers)	48 ≤ d ≤ 57
	6	CODABAR	1 ≤ k	48 ≤ d ≤ 57, 65 ≤ d ≤ 68 d = 36,43,45,46,47,58
2	65	UPC-A	n = 10	48 ≤ d ≤ 57
	66	UPC-E	n = 10	48 ≤ d ≤ 57
	67	EAN13	n ≤ 12	48 ≤ d ≤ 57
	68	EAN8	n = 7	48 ≤ d ≤ 57
	69	CODE39	1 ≤ n	48 ≤ d ≤ 57, 65 ≤ d ≤ 90 d = 32,36,37,42,43,45,46,47
	70	ITF	1 ≤ n (even numbers)	48 ≤ d ≤ 57
	71	CODABAR	1 ≤ n	48 ≤ d ≤ 57, 65 ≤ d ≤ 68 d = 36,43,45,46,47,58
	72	CODE 93	n<255	0 ≤ d ≤ 127
	73	CODE 128 C	n<255	0 ≤ d ≤ 127
	74	CODE 2/5	n<255	48 ≤ d ≤ 57
	75	POSTNET	n=5, 6, 8, 9, 11	48 ≤ d ≤ 57
	76	EAN 128	n<255	0 ≤ d ≤ 127
	77	CODE 39 with checksum	n<255	
	78	ITF with checksum	n<255	48 ≤ d ≤ 57
	79	UPCA +2	n=12	48 ≤ d ≤ 57
	80	UPCE +2	n=12	48 ≤ d ≤ 57
	81	EAN 13 +2	n=14	48 ≤ d ≤ 57
	82	EAN 8 +2	n=9	48 ≤ d ≤ 57
	83	UPCA +5	n=15	48 ≤ d ≤ 57
	84	UPCE +5	n=15	48 ≤ d ≤ 57
	85	EAN 13 +5	n=17	48 ≤ d ≤ 57
	86	EAN 8 +5	n=12	48 ≤ d ≤ 57
	87	CODE 128 A	n<255	0 ≤ d ≤ 127
	88	CODE 128 B	n<255	0 ≤ d ≤ 127
	89	CODE 128 automatic	n<255	0 ≤ d ≤ 127

GS H n : Select printing position of human readable characters

ASCII : GS H n
Hexadecimal : 1D 48 n
Decimal : 29 72 n

0 ≤ n ≤ 3
48 ≤ n ≤ 51

This command selects the printing position for human readable characters when printing a bar code. The default setting is n=0. Human readable characters are printed using the font specified by GS f n. Select the printing position as follows:

n	Printing position
0, 48	Not printed
1, 49	Above the bar code
2, 50	Below the bar code
3, 51	both above and below the bar code

GS f n : Select printing position of human readable characters

ASCII : GS f n
Hexadecimal : 1D 66 n
Decimal : 29 102 n
n = 0, 1 ,48, 49

This command selects a font for human readable characters used when printing a bar code.
12 x 24 : n = 0 or 48
9 x 24 : N = 1 or 49

The default setting is n=0. Human readable characters are printed at the position specified by GS H.

Macro Function and Mechanism Control Commands

Macro Function Commands:

GS ^ r t m : execute macro

ASCII : GS ^ r 00
Hexadecimal : 1 D 5E r 00
Decimal : 29 94 r 00

This command executes a macro r times.

GS : start / end macro definition

ASCII : GS :
Hexadecimal : 1 D 3A
Decimal : 29 58

This command starts or end macro definition. Macro definition starts when this command is received during normal operation and ends when it is received during macro definition. If the printer receives this command again immediately after previously receiving it, the printer remains in the macro undefined state. The macro definition can contain up to 2048 bytes. The excess data is not stored.

Mechanism Control Command:

GS V m , GS V m n, ESC i : Select cut mode and cut paper total or partial *

ASCII : GS V m
Hexadecimal : 1D 56 m
Decimal : 29 86 m
m = 0,1, 48,49

ASCII : GS V m n
Hexadecimal : 1D 56 m n
Decimal : 29 86 m n
m = 65,66
n = number of vertical motions unit before cutting

ASCII : ESC i
Hexadecimal : 1B 69
Decimal : 27 105

GS V m ,GS V m n and ESC i select a paper cutting mode and then cut the paper.
The vertical motion unit is specified by GS P

*A partial cut is available with the same command after changing manually the configuration on the cutter.

Note: The E-3202 is not available with a cutter.

Miscellaneous Function and Specific Commands

Miscellaneous Function Commands:

GS P x y : Set horizontal and vertical motion unit

ASCII : GS P x y
Hexadecimal : 1D 50 x y
Decimal : 29 80 x y

$0 \leq x \leq 255$
$0 \leq y \leq 255$

This command sets the horizontal and vertical motion unit to 1 / x and 1 / y inches, respectively. The default value are x = 200 and y = 400. When x and y are set to 0, the default setting of each value is used.

ESC @ : initialize the printer

ASCII : ESC @
Hexadecimal : 1B 40
Decimal : 27 64

Initializes the printer. The print buffer is cleared and the printer mode is reset to the mode that was in effect when the power was turned on.

GS I n : Transmit printer ID

ASCII : GS I n
Hexadecimal : 1D 49 n
Decimal : 29 73 n
$1 \leq n \leq 3$

n = 1 Name of the company + Printer model
n = 2 if bit =1 Auto cutter equipped
n = 3 software version

ESC p m t1 t2 : Generate pulse

ASCII : ESC p m
Hexadecimal : 1B 70 n
Decimal : 27 112 n

m = 0,1,48,49
$0 \leq t1 \leq 255$
$0 \leq t2 \leq 255$

Sends a pulse to the specified connector pin.
On time = t1 x 2 millisecond
Off time = t2 x 2 millisecond
m = 0 or 48 the pulse is sent to drawer kick out connector pin 2
m = 1 or 49 the pulse is sent to drawer kick out connector pin 5

ESC = n : Select peripheral device

ASCII : ESC = n
Hexadecimal : 1B 3D n
Decimal : 27 61 n
$0 \leq n \leq 255$

This command selects the device to which the host computer sends data, based on the value of n as follows :

Bit	Off/On	Hex	Dec	Function
0	Off	00	0	Printer disabled
	On	01	1	Printer enabled
1 -7	-	-	-	Undefined

n = 1 : printer enabled
n = 0 : printer disabled

When the printer is disabled, it ignores all received data. The default setting is n = 1.

ESC L : Select page mode

ASCII : ESC L
Hexadecimal : 1B 4C
Decimal : 27 76

This command switches from standard mode to page mode. This command is enabled only when processed at the beginning of a line in standard mode ; it has no effect in page mode. Standard mode is selected as the default.

ESC S : Select standard mode

ASCII : ESC S
Hexadecimal : 1B 53
Decimal : 27 83

This command switches from page mode to standard mode. This command is effective only in page mode. Data buffered in page mode is cleared. Standard mode is selected as the default.

Specific commands:

Fs G n

ASCII : Fs G n
Hexadecimal : 1C 47 n
Decimal : 28 71 n

n = 0 font 12*24
n = 1 font 9 * 24
n = 2 font 16 * 24

This command selects the font. 16 * 24 cannot be used with ESC POS

Fs B

ASCII : Fs B
Hexadecimal : 42
Decimal : 66

BMP Monochrome file download. Only "Microsoft paint generated" files can be used. Fs B is followed by the BMP file. FsB must be followed by the sending of the BMP file.

Fs A n : Paper forced feed

ASCII : Fs A n
Hexadecimal : 1C 41 n
Decimal : 28 65 n

Used for paper feed during parameter settings.

Fs k m nL nH d0 … dn : print 2D bar code

ASCII : Fs k m nL nh d0 … dn
Hexadecimal : 1C 6B m nL nh d0 … dn
Decimal : 28 107 m nL nh d0 … dn

m = 65, QRCODE , $0 \leq d \leq 255$
m = 68, PDF 417, $0 \leq d \leq 255$

nl: Rest in elementary unit after calculation of number of codes / 256.

For example for a number of codes of 200 : 200/256 =0 Rest 200, nl = 200. For a number of codes of 300 : 300/256 = 1 rest 44 , nl = 44, for a number of codes of 600, 600/256 = 2 rest 88, nl =88

nh: Result in elementary unit of number of codes / 256.

*For example f*or a number of codes pf 200 : 200/256 = 0 nh = 0, For a number of codes of 300 : 300/256 = 1, nh = 1, For a number pof codes of 600, 600/256 = 2, nh = 2

d0 … dn = data

Fs H n : scale of 2D barcode

ASCII : Fs H n
Hexadecimal : 1C 48 n
Decimal : 28 7^E n

n = multiplying factor

Fs R n : Paper forced Return

ASCII : Fs R n
Hexadecimal : 1C 52 n
Decimal : 28 82 n

Used for paper return during parameter settings.

Fs C n : Column / lines ratio definition for PDF 417

ASCII : Fs C n
Hexadecimal : 1C 43 n
Decimal : 28 67 n

PDF 417 Column line ratio definition. n>1 , n is the ratio. This function is used to define the aspect of the barcode.

Fs D n : PDF 417 ECC level

ASCII : Fs D n
Hexadecimal : 1C 44 n
Decimal : 28 68 n

Set the ECC (error correction indicium) level in percentage for the PDF 417
0<n<200 (as n = 2%, percentage variation = 0 to 400%)

Fs E o ll lh e : Vertical and horizontal bars construction

ASCII : Fs E o ll lh e
Hexadecimal : 1C 45 o ll lh e
Decimal : 28 69 o ll lh e

Vertical and horizontal bars construction in page mode

o = 0 left to right bar
o = 1 bottom to top bar
o = 2 right to left bar
o = 3 top to bottom bar.
(from the current orientation selected with Esc T)

ll: Rest in elementary unit after calculation of bar length / 256.

For example for a bar length of 200 : 200/256 =0 Rest 200, ll = 200. For a bar length of 300 : 300/256 = 1 rest 44 , ll = 44, for a bar length of 600, 600/256 = 2 rest 88, ll =88

lh: Result in elementary unit of bar length / 256.

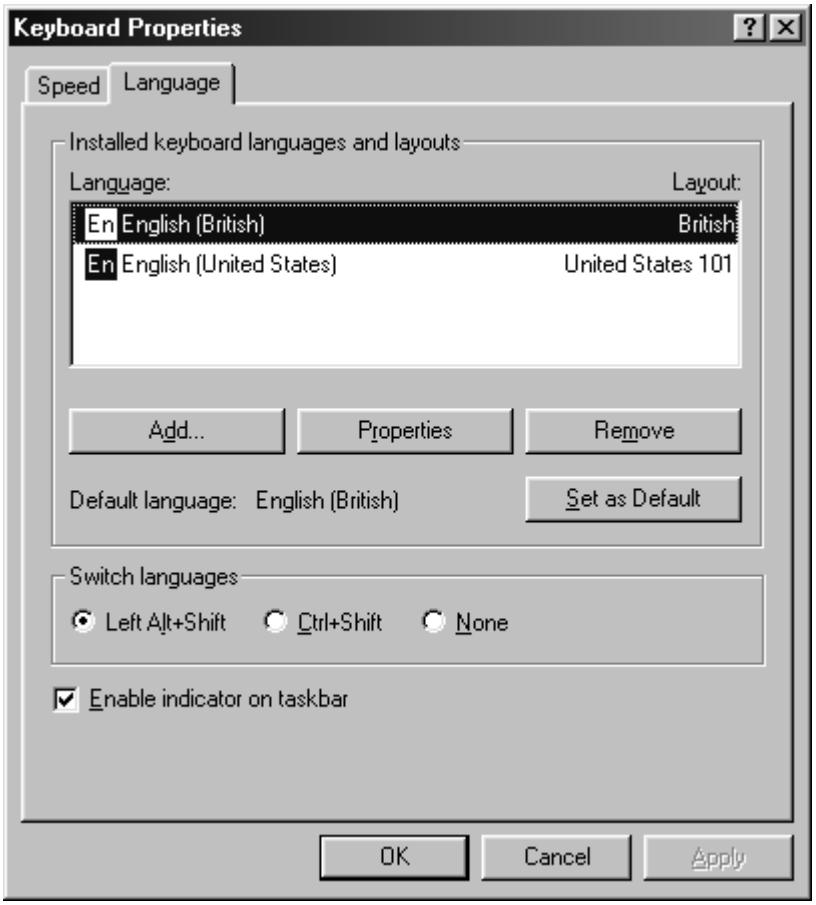
*For example f*or a bar length pf 200 : 200/256 = 0 lh = 0, For a bar length of 300 : 300/256 = 1, lh = 1, For a bar length of 600, 600/256 = 2, lh = 2

e = bar thickness in elementary unit

Sample Programming

Programming the E-3202

When programming the E-3203 using EDIT in DOS you need to first make sure that your keyboard is set to United States style. This can be done by using the Keyboard Properties window located in the Windows Control Panel. Add a keyboard by selecting the Add key on the panel, then add the English (United States) keyboard.



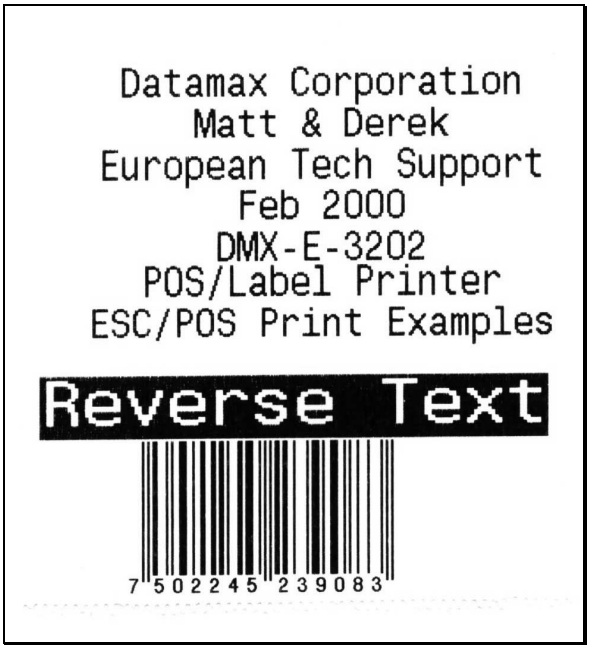
Before starting to program make sure that the Baud rate in the printer is set the same as the COM port on the PC. Next we need to set the Emulation on the printer to ESC/POS.

In the Configuration Label there's a division called Character sets. In this set we see that the character size is 12 * 24 for this label. Therefore the default value of **n=0 (NUL)**. Make note of this for later reference. Command **GS ! n**

You are now ready to start with programming a label for this printer.

Below is a sample program and the printout it will create:

←@↔!◄←a☺Datamax Corporation
Matt & Derek
European Tech Support
Feb 2000
DMX-E-3202
POS/Label Printer
ESC/POS Print Examples↔!2↔B☺←a
Reverse Text
↔B□↔LD ↔H2↔kCE750224523908



*Commands in this sample with a □ character in it, is actually a **NUL** value.

Please note that there is no carriage return after each command. The reason being that when we program this printer, every time you press the **ENTER** key the program will remember this as a carriage return. It will follow on to the next line.

Initializing the printer.

The command **ESC @** is used for this. To be able to access this command in EDIT we use the following procedure. **Ctrl P** (at the bottom of the EDIT screen the following command will appear "Enter the control Key to insert"
Next we press **Esc** key, on the screen the character ← will appear. Follow this character with the @ (can be done by key pad and ***Alt 64***). The printer is now initialized.

****Ctrl P*** to be able to insert control key

Selecting character size.

GS ! n

The command is accessed by Ctrl] (*Alt029*). This will give us the attention getter GS character is shown as ↔. Follow up with the function character ! (on key pad *Alt 033*)

Explanation of the changeable character n for the width and height

DecW	Width	DecH	Height
0	1	0	1
16	2	1	2
32	3	2	3
48	4	3	4
64	5	4	5
80	6	5	6
96	7	6	7
112	8	7	8

In the Configuration Label there's a division called Character sets. In this set we see that the character size is 12 * 24 for this label. Therefore the default value of **n=0 (NUL)**

If we would like the size of the character to be default, the size will be 1*1. If you would like the width to be 2 by a height of 1 the value will be 16+0 which will give you 16. We add the Dec value of the width, with the Dec value of the height to get the value for **n**. This value is a Dec value which is entered into the program by ***Ctrl+P+Alt+Dec value.***

i.e. **↔!(DecW+DecH)**
↔!(16+1)
↔!(*Ctrl+P+Alt+17)*
↔!◀

Examples:

Width	Height	DecW+DecH	n value
3	4	32+3	35
2	2	16+1	17
8	8	112+7	119
1	1	0+0	0(NUL)

☞ When you need to insert a **0 (NUL)** value into your program we use the combination ***Ctrl-Shift-2.*** For this reason we set the keyboard to United States style. The @ symbol on the United States Keyboard is found with the 2 button. Please see the ASCII Chart for values on characters.

☞ Please note that a **NUL** value will not be shown on the EDIT program but the cursor would have moved one character. If you were to do a Hex Dump the Hex value will be 00.

Selecting justification

ESC a n

Left: n=0 or 48
Center: n=1 or 49
Right: n=2 or 50

This command will justify the orientation of the printing. Accessing the command is the same as *initializing the printer* command. ***Ctrl+P*** to enter the control key command, follow by ESC key.
This will give you the **ESC** character . In this command we will set the justification to center. For center justification we use 1 or 49, in this program we will be using 1. Therefore n=1, insert this into the command by ***Ctrl+P*** and ***Ctrl A***. The character that should appear is ☺. For reference see the ASCII Chart.

i.e. **←a n**
←a (*Ctrl P+Ctrl A)*
←a☺

Up to this point we should have a program without any carriage returns as follows.

←@↔!◄←a☺

The command is turned off by inserting a Nul value into the command. This will justify the printer to left.

☞ Please note that if we were to press RETURN (ENTER) after this command, the printer will feed one line and then start printing. As the program is now it will start printing without feeding one line. When pressing ENTER in a program the printer will see it as a **CR** (carriage return) and a **LF** (Line Feed). This tip will apply to the next few lines of commands.

Inserting Text into the program

Following the previous command insert the Text we would like to print. At this point we use the RETURN (ENTER) key to insert carriage returns into our program. This Text will all be printed center justified.

←@↔!◄←a☺Datamax Corporation *<CR>*
Matt & Derek *<CR>*
European Tech Support *<CR>*
Feb 2000 *<CR>*
DMX-E-3202 *<CR>*
POS/Label Printer *<CR>*
ESC/POS Print Examples *<CR>*

In the next command we will select a new font size using the **GS !**
For more information on this command refer back to Selecting character size. We set the size to a width of 4 and a height 3. That will give us a Dec W of 48 and a Dec H of 2.

↔!(Dec W+Dec H)
↔!(48+2)
↔!(n=Dec value of 50)
↔!(*Alt 50*)

The command should come out as: **↔!2**
2 is the ASCII Character for the Decimal value 50. Refer to ASCII Table for information on characters.

***NOTE:** This command follows up on previous command is entered without any carriage returns. See below for sample:

←@↔!◀←a☺Datamax Corporation
Matt & Derek
European Tech Support
Feb 2000
DMX-E-3202
POS/Label Printer
ESC/POS Print Examples↔!2

White/black reverse Printing

GS B n

On: n=1
Off: n=0

The default setting is 0. This mode is **turned on** before the text you would like to be reversed and the **turned off** after the text.

↔B☺ The command is turned on
↔B The command is turned off

∗ This is only to show that there should be a NUL value in the command. In order to create the NUL value we use ***Ctrl+Shift+2***, (using the '2' from the top of the keyboard and not the number pad). The cursor on the screen should move one character to the right without anything displayed on the screen. If you were to do a Hex Dump you will see a 00 Value.

Selecting the left margin

GS L nL nH

If we would like to move the barcode to a position on the label we will use this command. Please note that **nH** will always be a **NUL** value. Where **nL** is the value that moves the barcode to the right when increased.

Selecting position for HRI

GS H n

This command selects the printing position of the Human Readable characters for the barcode. The values are from 0 to 3 or 48 to 51.The selection for pint position is as follows:

n	Print position
0,48	Not printed
1,49	Above the barcode
2,50	Below the barcode
3,51	Both above and below the barcode

Printing the barcode.

GS k m n *data…*

m	Barcode	Number of character
65	UPC-A	10
66	UPC-E	10
67	EAN 13	<12
68	EAN 8	7
69	Code 39	Variable Length
70	ITF	Variable even Length
71	Codabar	Variable Length
73	Code128	Variable Length

In this sample we will create an EAN 13 Barcode.

GS k (67) (12) (*data..*)

↔k (*Alt 67*) (*Ctrl+P Alt 12*) (750224523908)

↔kCE750224523908

Character Sets

Character Sets:

The following character sets are available
IBM and WINDOWS EMULATION

Table 437

2A→ ↓B	0-	1-	2-	3-	4-	5-	6-	7-	8-	9-	A-	B-	C-	D-	E-	F-
-0		►		0	@	P	`	p	Ç	É	á	▒	└	╨	α	≡
-1	☺	◄	!	1	A	Q	a	q	ü	æ	í	▒	┴	╤	β	±
-2	☻	↕	″	2	B	R	b	r	é	Æ	ó	▓	┬	╥	Γ	≥
-3	♥	!!	#	3	C	S	c	s	â	ô	ú	│	├	╙	π	≤
-4	♦	¶	$	4	D	T	d	t	ä	õ	ñ	┤	─	╘	Σ	⌠
-5	♣	§	%	5	E	U	e	u	à	ò	Ñ	╡	┼	╒	σ	⌡
-6	♠	‾	&	6	F	V	f	v	å	û	ª	╢	╞	╓	µ	÷
-7	•	↨	'	7	G	W	g	w	ç	ù	º	╖	╟	╫	τ	≈
-8	◘	↑	(	8	H	X	h	x	ê	ÿ	¿	╕	╚	╪	Φ	°
-9	○	↓	)	9	I	Y	i	y	ë	Ö	⌐	╣	╔	┘	Θ	•
-A	◙	→	*	:	J	Z	j	z	è	Ü	¬	║	╩	┌	Ω	·
-B	♂	←	+	;	K	[	k	{	ï	¢	½	╗	╦	█	δ	√
-C	♀	∟	,	<	L	\	l	|	î	£	¼	╝	╠	▬	∞	ⁿ
-D	♪	↔	-	=	M	]	m	}	ì	¥	¡	╜	═	▌	ϕ	²
-E	♫	▲	.	>	N	^	n	~	Ä	Pt	«	╛	╬	▐	ε	■
-F	☼	▼	/	?	O	_	o	⌂	Å	ƒ	»	┐	╧	▬	∩	

Table 850

2A→ ↓B	0-	1-	2-	3-	4-	5-	6-	7-	8-	9-	A-	B-	C-	D-	E-	F-
-0		►		0	@	P	`	p	Ç	É	á	▒	└	ð	Ó	-
-1	☺	◄	!	1	A	Q	a	q	ü	æ	í	▒	┴	Ð	β	±
-2	☻	↕	″	2	B	R	b	r	é	Æ	ó	▓	┬	Ê	Ô	=
-3	♥	!!	#	3	C	S	c	s	â	ô	ú	│	├	Ë	Ò	¾
-4	♦	¶	$	4	D	T	d	t	ä	ö	ñ	┤	─	È	õ	¶
-5	♣	§	%	5	E	U	e	u	à	ò	Ñ	Á	┼	ı	Õ	§
-6	♠	▬	&	6	F	V	f	v	å	û	ª	Â	ã	Í	µ	÷
-7	•	↨	′	7	G	W	g	w	ç	ù	º	À	Ã	Î	þ	¸
-8	◘	↑	(	8	H	X	h	x	ê	ÿ	¿	©	╚	Ï	Þ	°
-9	○	↓	)	9	I	Y	i	y	ë	Ö	®	╣	╔	┘	Ú	¨
-A	◙	→	*	:	J	Z	j	z	è	Ü	¬	║	╩	┌	Û	•
-B	♂	←	+	;	K	[	k	{	ï	ø	½	╗	╦	▉	Ù	¹
-C	♀	∟	,	<	L	\	l	|	î	£	¼	╝	╠	▬	ý	³
-D	♪	↔	-	=	M	]	m	}	ì	Ø	¡	¢	═	¦	Ý	²
-E	♫	▲	.	>	N	^	n	~	Ä	×	«	¥	╬	Ì	¯	■
-F	☼	▼	/	?	O	_	o	⌂	Å	ƒ	»	┐	¤	▬	´	

Table 852

2A→ ↓B	0-	1-	2-	3-	4-	5-	6-	7-	8-	9-	A-	B-	C-	D-	E-	F-
-0		►		0	@	P	`	p	Ç	É	á	▒	└	đ	Ó	–
-1	☺	◄	!	1	A	Q	a	q	ü	Ĺ	í	▒	┴	Đ	β	˝
-2	☻	↕	″	2	B	R	b	r	é	ĺ	ó	▓	┬	Ď	Ô	˛
-3	♥	!!	#	3	C	S	c	s	â	ô	ú	│	├	Ë	Ń	ˇ
-4	♦	¶	$	4	D	T	d	t	ä	ö	Ą	┤	─	ď	ń	˘
-5	♣	§	%	5	E	U	e	u	ů	Ľ	ą	Á	┼	Ň	ň	§
-6	♠	▬	&	6	F	V	f	v	ć	Ì	Ž	Â	Ă	Í	Š	÷
-7	•	↨	′	7	G	W	g	w	ç	Ś	ž	Ě	ă	Î	š	¸
-8	◘	↑	(	8	H	X	h	x	ł	ś	Ę	Ş	╚	ě	Ř	°
-9	○	↓	)	9	I	Y	i	y	ë	Ö	ę	╣	╔	┘	Ú	¨
-A	◙	→	*	:	J	Z	j	z	Ő	Ü	¬	║	╩	┌	ŕ	•
-B	♂	←	+	;	K	[	k	{	ő	Ť	ź	╗	╦	▉	Ű	ű
-C	♀	∟	,	<	L	\	l	|	î	ť	Č	╝	╠	▬	ý	Ř
-D	♪	↔	-	=	M	]	m	}	Ź	Ł	ş	Ż	═	Ţ	Ý	ř
-E	♫	▲	.	>	N	^	n	~	Ä	×	«	ż	╬	Ů	ţ	■
-F	☼	▼	/	?	O	_	o	⌂	Ć	č	»	┐	¤	▬	´	

Table 857

2A→ ↓B	0-	1-	2-	3-	4-	5-	6-	7-	8-	9-	A-	B-	C-	D-	E-	F-
-0		►		0	@	P	`	p	Ç	É	á	▒	└	º	Ó	–
-1	☺	◄	!	1	A	Q	a	q	ü	æ	í	▒	┴	ª	β	±
-2	☻	↕	″	2	B	R	b	r	é	Æ	ó	▓	┬	Ê	Ô	
-3	♥	!!	#	3	C	S	c	s	â	ô	ú	│	├	Ë	Ò	¾
-4	♦	¶	$	4	D	T	d	t	ä	ö	ñ	┤	─	È	õ	¶
-5	♣	§	%	5	E	U	e	u	à	ò	Ñ	Á	┼		Õ	§
-6	♠	‾	&	6	F	V	f	v	å	û	Ğ	Â	ã	Í	µ	÷
-7	•	↨	′	7	G	W	g	w	ç	ù	ğ	À	Ã	Î		¸
-8	◘	↑	(	8	H	X	h	x	ê	İ	¿	©	╚	Ï	x	°
-9	○	↓	)	9	I	Y	i	y	ë	Ö	®	╣	╔	┘	Ú	··
-A	◙	→	*	:	J	Z	j	z	è	Ü	¬	╠	╩	┌	Û	•
-B	♂	←	+	;	K	[	k	{	ï	ø	½	╗	╦	▉	Ù	1
-C	♀	∟	,	<	L	\	l	|	î	£	¼	╝	╠	▬	ì	3
-D	♪	↔	-	=	M	]	m	}	ı	Ø	¡	¢	═	¦	ÿ	2
-E	♫	▲	.	>	N	^	n	~	Ä	Ş	«	¥	╬	Ì	¯	■
-F	☼	▼	/	?	O	_	o	⌂	Å	ş	»	¬	¤	▬	´	

Table 860

2A→ ↓B	0-	1-	2-	3-	4-	5-	6-	7-	8-	9-	A-	B-	C-	D-	E-	F-
-0		►		0	@	P	`	p	Ç	É	á	▒	└	╨	α	≡
-1	☺	◄	!	1	A	Q	a	q	ü	À	í	▒	┴	╤	β	±
-2	☻	↕	″	2	B	R	b	r	é	È	ó	▓	┬	╥	Γ	≥
-3	♥	!!	#	3	C	S	c	s	â	ô	ú	│	├	╙	π	≤
-4	♦	¶	$	4	D	T	d	t	ã	õ	ñ	┤	─	╘	Σ	⌠
-5	♣	§	%	5	E	U	e	u	à	ò	Ñ	╡	┼	╒	σ	⌡
-6	♠	‾	&	6	F	V	f	v	Á	Ú	ª	╢	╞	╓	µ	÷
-7	•	↨	′	7	G	W	g	w	ç	ù	º	╖	╟	╫	τ	≈
-8	◘	↑	(	8	H	X	h	x	ê	Ì	¿	╕	╚	╪	Φ	°
-9	○	↓	)	9	I	Y	i	y	Ê	Õ	Ò	╣	╔	┘	Θ	•
-A	◙	→	*	:	J	Z	j	z	è	Ù	¬	╠	╩	┌	Ω	·
-B	♂	←	+	;	K	[	k	{	Í	¢	½	╗	╦	▉	δ	√
-C	♀	∟	,	<	L	\	l	|	Ô	£	¼	╝	╠	▬	∞	n
-D	♪	↔	-	=	M	]	m	}	ì	Ù	¡	╜	═	▌	φ	2
-E	♫	▲	.	>	N	^	n	~	Ã	Pt	«	╛	╬	▐	ε	■
-F	☼	▼	/	?	O	_	o	⌂	Â	Ó	»	¬	╧	▀	∩	

Table 861

2 A→ ↓B	0-	1-	2-	3-	4-	5-	6-	7-	8-	9-	A-	B-	C-	D-	E-	F-
-0		►		0	@	P	`	p	Ç	É	á	▒	└	╨	α	≡
-1	☺	◄	!	1	A	Q	a	q	ü	æ	í	▒	┴	╤	β	±
-2	☻	↕	″	2	B	R	b	r	é	Æ	ó	▓	┬	╥	Γ	≥
-3	♥	!!	#	3	C	S	c	s	â	ô	ú	│	├	╙	π	≤
-4	♦	¶	$	4	D	T	d	t	ä	ö	Á	┤	─	╘	Σ	⌠
-5	♣	§	%	5	E	U	e	u	à	þ	Í	╡	┼	╒	σ	⌡
-6	♠	▬	&	6	F	V	f	v	å	û	Ó	╢	╞	╓	μ	÷
-7	•	↨	′	7	G	W	g	w	ç	Ý	Ú	╖	╟	╫	τ	≈
-8	◘	↑	(	8	H	X	h	x	ê	ý	¿	╕	╚	╪	Φ	°
-9	○	↓	)	9	I	Y	i	y	ë	Ö	⌐	╣	╔	┘	Θ	•
-A	◙	→	*	:	J	Z	j	z	è	Ü	¬	║	╩	┌	Ω	•
-B	♂	←	+	;	K	[	k	{	Ð	ø	½	╗	╦	█	δ	√
-C	♀	∟	,	<	L	\	l	|	ð	£	¼	╝	╠	▬	∞	n
-D	♪	↔	-	=	M	]	m	}	þ	Ø	¡	╜	═	▌	φ	2
-E	♫	▲	.	>	N	^	n	~	Ä	Pts	«	╛	╬	▐	ε	■
-F	☼	▼	/	?	O	_	o	⌂	Å	ƒ	»	┐	╧	▬	∩	

Table 863

2 A→ ↓B	0-	1-	2-	3-	4-	5-	6-	7-	8-	9-	A-	B-	C-	D-	E-	F-
-0		►		0	@	P	`	p	Ç	É	¦	▒	└	╨	α	≡
-1	☺	◄	!	1	A	Q	a	q	ü	È	′	▒	┴	╤	β	±
-2	☻	↕	″	2	B	R	b	r	é	Ê	ó	▓	┬	╥	Γ	≥
-3	♥	!!	#	3	C	S	c	s	â	ô	ú	│	├	╙	π	≤
-4	♦	¶	$	4	D	T	d	t	Â	Ë	¨	┤	─	╘	Σ	⌠
-5	♣	§	%	5	E	U	e	u	à	Ï	¸	╡	┼	╒	σ	⌡
-6	♠	▬	&	6	F	V	f	v	¶	û	³	╢	╞	╓	μ	÷
-7	•	↨	′	7	G	W	g	w	ç	ù	¯	╖	╟	╫	τ	≈
-8	◘	↑	(	8	H	X	h	x	ê	¤	Î	╕	╚	╪	Φ	°
-9	○	↓	)	9	I	Y	i	y	ë	Ô	⌐	╣	╔	┘	Θ	•
-A	◙	→	*	:	J	Z	j	z	è	Ü	¬	║	╩	┌	Ω	•
-B	♂	←	+	;	K	[	k	{	ï	¢	½	╗	╦	█	δ	√
-C	♀	∟	,	<	L	\	l	|	î	£	¼	╝	╠	▬	∞	n
-D	♪	↔	-	=	M	]	m	}	=	Ù	¾	╜	═	▌	φ	2
-E	♫	▲	.	>	N	^	n	~	À	Û	«	╛	╬	▐	ε	■
-F	☼	▼	/	?	O	_	o	⌂	§	ƒ	»	┐	╧	▬	∩	

Table 869

2 A→ ↓B	0-	1-	2-	3-	4-	5-	6-	7-	8-	9-	A-	B-	C-	D-	E-	F-
-0		►		0	@	P	`	p		Ί	ι	⁞⁞	└	Τ	ζ	-
-1	☺	◄	!	1	A	Q	a	q		Ϊ	ι	▒	┴	Υ	η	±
-2	☻	↕	″	2	B	R	b	r		Ό	ό	‖	┬	Φ	ϑ	υ
-3	♥	!!	#	3	C	S	c	s			ύ	│	├	Χ	ι	φ
-4	♦	¶	$	4	D	T	d	t			Α	┤	─	Ψ	κ	χ
-5	♣	§	%	5	E	U	e	u		Ύ	Β	Κ	┼	Ω	λ	§
-6	♠	‾	&	6	F	V	f	v	Ά	Ϋ	Γ	Λ	Π	α	μ	ψ
-7	•	↨	′	7	G	W	g	w		Ω	Δ	Μ	Ρ	β	ν	′
-8	◘	↑	(	8	H	X	h	x	.	Ω	Ε	Ν	╚	γ	ξ	°
-9	○	↓	)	9	I	Y	i	y	¬	²	Ζ	╡	╔	┘	ο	··
-A	◙	→	*	:	J	Z	j	z	¦	³	Η	‖	╩	┌	π	ω
-B	♂	←	+	;	K	[	k	{	‘	ά	½	╗	╦	■	ρ	ϋ
-C	♀	∟	,	<	L	\	l	|	’	£	Θ	╝	╠	▬	σ	ύ
-D	♪	↔	-	=	M	]	m	}	Έ	έ	Ι	Ξ	═	δ	ς	ώ
-E	♫	▲	.	>	N	^	n	~	—	ή	«	Ο	╬	ε	τ	■
-F	☼	▼	/	?	O	_	o	⌂	Ή	ί	»	┐	Σ	▬	’	

ASCII Control Code Chart

	Char	Dec	Hex	Char	Dec	Hex	Char	Dec	Hex	Char	Dec	Hex
Ctrl @	NUL	0	00		32	20	@	64	40	`	96	60
Ctrl A	SOH	1	01	!	33	21	A	65	41	a	97	61
Ctrl B	STX	2	02	“	34	22	B	66	42	b	98	62
Ctrl C	EXT	3	03	#	35	23	C	67	43	c	99	63
Ctrl D	EOT	4	04	$	36	24	D	68	44	d	100	64
Ctrl E	ENQ	5	05	%	37	25	E	69	45	e	101	65
Ctrl F	ACK	6	06	&	38	26	F	70	46	f	102	66
Ctrl G	BEL	7	07	‘	39	27	G	71	47	g	103	67
Ctrl H	BS	8	08	(	40	28	H	72	48	h	104	68
Ctrl I	HT	9	09	)	41	29	I	73	49	i	105	69
Ctrl J	LF	10	0A	*	42	2A	J	74	4A	j	106	6A
Ctrl K	VT	11	0B	+	43	2B	K	75	4B	k	107	6B
Ctrl L	FF	12	0C	,	44	2C	L	76	4C	l	108	6C
Ctrl M	CR	13	0D	-	45	2D	M	77	4D	m	109	6D
Ctrl N	SO	14	0E	.	46	2E	N	78	4E	n	110	6E
Ctrl O	SI	15	0F	/	47	2F	O	79	4F	o	111	6F
Ctrl P	DLE	16	10	0	48	30	P	80	50	p	112	70
Ctrl Q	DC1	17	11	1	49	31	Q	81	51	q	113	71
Ctrl R	DC2	18	12	2	50	32	R	82	52	r	114	72
Ctrl S	DC3	19	13	3	51	33	S	83	53	s	115	73
Ctrl T	DC4	20	14	4	52	34	T	84	54	t	116	74
Ctrl U	NAK	21	15	5	53	35	U	85	55	u	117	75
Ctrl V	SYN	22	16	6	54	36	V	86	56	v	118	76
Ctrl W	ETB	23	17	7	55	37	W	87	57	w	119	77
Ctrl X	CAN	24	18	8	56	38	X	88	58	x	120	78
Ctrl Y	EM	25	19	9	57	39	Y	89	59	y	121	79
Ctrl Z	SUB	26	1A	:	58	3A	Z	90	5A	z	122	7A
Ctrl [	Esc	27	1B	;	59	3B	[	91	5B	{	123	7B
Ctrl \	FS	28	1C	<	60	3C	\	92	5C	|	124	7C
Ctrl]	GS	29	1D	=	61	3D	]	93	5D	}	125	7D
Ctrl ^	RS	30	1E	>	62	3E	^	94	5E	~	126	7E
Ctrl _	US	31	1F	?	63	3F	_	95	5F		127	7F

Char	Dec	Hex	Char	Dec	Hex	Char	Dec	Hex	Char	Dec	Hex
Ç	128	80	á	160	A0		192	C0	Ó	224	E0
ü	129	81	í	161	A1		193	C1	ß	225	E1
é	130	82	ó	162	A2		194	C2	Ô	226	E2
â	131	83	ú	163	A3		195	C3	Ò	227	E3
ä	132	84	ñ	164	A4		196	C4	õ	228	E4
à	133	85	Ñ	165	A5		197	C5	Õ	229	E5
å	134	86	a	166	A6	ã	198	C6	µ	230	E6
ç	135	87	°	167	A7	Ã	199	C7	þ	231	E7
ê	136	88	¿	168	A8		200	C8	Þ	232	E8
è	137	89	®	169	A9		201	C9	Ú	233	E9
è	138	8A		170	AA		202	CA	Û	234	EA
ï	139	8B	1/2	171	AB		203	CB	Ù	235	EB
î	140	8C	1/4	172	AC		204	CC	´y	236	EC
ì	141	8D	¡	173	AD		205	CD	´Y	237	ED
Ä	142	8E		174	AE		206	CE		238	EE
Å	143	8F	–	175	AF		207	CF		239	EF
É	144	90		176	B0	Ò	208	D0		240	F0
Æ	145	91		177	B1	D	209	D1	±	241	F1
Æ	146	92	2	178	B2	Ê	210	D2		242	F2
ô	147	93	3	179	B3	Ë	211	D3	3/4	243	F3
ö	148	94	´	180	B4	È	212	D4		244	F4
ò	149	95	Á	181	B5		213	D5		245	F5
û	150	96	Â	182	B6	Í	214	D6	÷	246	F6
ù	151	97	À	183	B7	Î	215	D7	¸	247	F7
ÿ	152	98	©	184	B8	Ï	216	D8	°	248	F8
Ö	153	99	1	185	B9		217	D9	¨	249	F9
Ü	154	9A		186	BA		218	DA	·	250	FA
Ø	155	9B	»	187	BB		219	DB		251	FB
£	156	9C		188	BC		220	DC		252	FC
Ø	157	9D	¢	189	BD		221	DD		253	FD
x	158	9E	¥	190	BE	Ì	222	DE		254	FE
f	159	9F		191	BF		223	DF	€	255	FF