



# THERMAL PRINTER

## ESC Commands Manual

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## TABLE OF CONTENTS

<b>1</b>	<b><u>COMMAND LIST</u></b>	<b>5</b>
<b>1.1</b>	<b><u>Command Description</u></b>	<b>6</b>
<b>1.1.1</b>	<b><u>Miscellaneous Commands</u></b>	<b>6</b>
<b>1.1.2</b>	<b><u>Character Commands</u></b>	<b>7</b>
<b>1.1.3</b>	<b><u>Print Position Commands</u></b>	<b>9</b>
<b>1.1.4</b>	<b><u>Line Spacing Commands</u></b>	<b>11</b>
<b>1.1.5</b>	<b><u>Print Commands</u></b>	<b>11</b>
<b>1.1.6</b>	<b><u>Image Commands</u></b>	<b>12</b>
<b>1.1.7</b>	<b><u>Barcode Commands</u></b>	<b>14</b>
<b>1.1.8</b>	<b><u>Status Commands</u></b>	<b>17</b>
<b>1.1.9</b>	<b><u>Customize Commands</u></b>	<b>17</b>
<b>2</b>	<b><u>USING TERMINAL SOFTWARE</u></b>	<b>21</b>
	<b><u>DISCLAIMER</u></b>	<b>23</b>



## 1. COMMAND LIST

### SUMMARY

TYPE	COMMAND (HEX)	DESCRIPTION
<b>MISCELLANEOUS COMMANDS</b>		
	0x1B 0x40	Initialize Printer
	0x1D 0x28 0x4B 0x02 0x00 0x31 M	Select Print Density
<b>CHARACTER COMMANDS</b>		
	0x1B 0x20 N	Set Right-Side Character Spacing
	0x1B 0x21 N	Select Print Modes
	0x1B 0x45 N	Emphasized mode(BOLD) on/off
	0x1B 0x4D N	Select Character Font
	0x1B 0x2D N	Select Underline
	0x1D 0x42 N	Turn Black/White Reverse Print Mode on/off
	0x1D 0x21 N	Select Character Size
<b>PRINT POSITION COMMANDS</b>		
	0x09	Horizontal Tab
	0x1D 0x4C nL nH	Set Left Margin
	0x1D 0x57 nL nH	Set Print Area Width
	0x1B 0x61 N	Select Justification
	0x1B 0x24 nL nH	Set Absolute Print Position
	0x1B 0x5C nL nH	Set Relative Print Position
<b>LINE SPACING COMMANDS</b>		
	0x1B 0x33 N	Set Line Spacing
<b>PRINT COMMANDS</b>		
	0x0A	Print and Line Feed
	0x0C	Print and feed label to print starting position (on label)
	0x1B 0x4A N	Print and Feed Paper
	0x1B 0x64 N	Print and Feed N Lines
<b>IMAGE COMMANDS</b>		
	0x1B 0x2A M nL nH	Select Bit-Image Mode
	0x1C 0x70 N M	Print NV Bit Image
	0x1C 0x71 N	Define NV Bit Image
	0x1D 0x76 0x30 M xL xH yL yH	Print Raster Bit Image
	0x1B 0x2B N xL xH yL yH	Save Indexed Based Image
	0x1B 0x2C N M	Print Indexed Based Image
<b>BARCODE COMMANDS</b>		
	0x1D 0x48 N	Select Print Position of HRI Characters
	0x1D 0x66 N	Select Font for HRI Characters
	0x1D 0x68 N	Set bar Code Height



	0x1D 0x6B M	Print Barcode
	0x1D 0x77 N	Set Barcode Width
<b>STATUS COMMANDS</b>		
	0x1D 0x72 N	Transmit Status
<b>CUSTOMIZE COMMANDS</b>		
	0x1D 0x28 0x45 0x04 0x00 0x05 0x74 nL nH	Auto-Off Timer Setting
	0x1D 0x28 0x45 0x02 0x00 0x06 0x74	Transmit customized settings
	0x1B 0x68	Temperature Response
	0x1B 0x79	Voltage Response
	0x1D 0x28 0x45 0x04 0x00 0x0D d1d2d3d4	Set Bluetooth pairing pin
	0x1D 0x28 0x45 0x00 0x00 0x0E data	Set Bluetooth discoverability mode
	0x1D 0x28 0x45 0x00 0x00 0x0F mode	Set Bluetooth modes(BLE/CLASSIC)
	0x1D 0x28 0x45 0x00 0x00 0x10	Set Black mark printing
	0x1D 0x28 0x46 0x04 0x00 0x61 0x00 nL nH	Set Black mark adjustment value
	0x1D 0x28 0x4D 0x02 0x00 0x01 m	Save Black mark adjustment value
	0x1D 0x28 0x4D 0x02 0x00 0x02 m	Load black mark adjustment value
	0x1D 0x28 0x4D 0x02 0x00 0x03 m	Auto-Load black mark adjustment value
	0x1D 0x28 0x45 0x02 0x00 0x1A n	Auto Line Feed Status
	0x1D 0x28 0x45 0x02 0x00 0x1B n	Save Print Modes Settings
	0x1D 0x28 0x45 0x02 0x00 0x1C n	FONT B Precedence Set

## 1.1 COMMAND DESCRIPTIONS

EXEL thermal printer control board use ESC/POS command set. The printing command is decrypted as followed format:

COMMAND (Hex Format)		FUNCTION
FORMAT	ASCII HEXA DECIMAL	LIST OF ASCII CHARACTERS LIST OF HEXADECIMAL CHARACTERS
DESCRIPTION:		
EXAMPLE		Command Use Example
NOTES:		

If user is using Terminal.exe software then to give commands in hex format, user needs to use '\$' symbol to specify the hex codes. Example:- To initialize printer the command is 0x1B 0x40. In Terminal software user should give command as \$1B\$40 without any space between character codes.

### 1.1.1 MISCELLANEOUS COMMANDS

0x1B 0x40		Initialize Printer
FORMAT	ASCII HEXA DECIMAL	ESC @ 0x1B 0x40
DESCRIPTION: Clears the data in the print buffer and resets the printer modes to the modes that were in effect when the		



power was turned ON.

EXAMPLE

Send ESC @  
or  
send 0x1B 0x40

NOTES: None

### 0x1D 0x28 0x4B 0x02 0x00 0x31 M

### Select Print Density

FORMAT

ASCII

GS ( K pL pH fn M

HEXA DECIMAL

0x1D 0x28 0x4B 0x02 0x00 0x31 M

DESCRIPTION: The print density is tuned by how much of power is supplied to the head.

EXAMPLE

Send 0x1D 0x28 0x4B 0x02 0x00 0x31 0x06

This will set print density max print density. I.e 130%

NOTES:  $0x00 \leq M \leq 0x06$  and  $0xFA \leq M \leq 0xFF$

## 1.1.2 CHARACTER COMMANDS

### 0x1B 0x20 N

### Set Right-Side Character Spacing

FORMAT

ASCII

ESC SP n

HEXA DECIMAL

0x1B 0x20 N

DESCRIPTION: Sets the right-side character spacing to n vertical unit.

EXAMPLE

0x1B 0x20 0x0A

Sets right side gap of a character to 10 dots.

NOTES: Here value of N is in dots.

The setting of this command is effective until ESC@ is executed, the printer is reset, or the power is turned off.

### 0x1B 0x21 N

### Select Print Modes

FORMAT

ASCII

ESC ! N

HEXA DECIMAL

0x1B 0x21 N

DESCRIPTION: Selects the character font and styles.

N (bit format)	ON value	OFF value	Functionality
0 <sup>th</sup>	1	0	Font selection
1 <sup>st</sup>	NA	NA	-
2 <sup>nd</sup>	NA	NA	-
3 <sup>rd</sup>	1	0	Emphasize mode(Bold)
4 <sup>th</sup>	1	0	Double height
5 <sup>th</sup>	1	0	Double width
6 <sup>th</sup>	NA	NA	-
7 <sup>th</sup>	1	0	Under line mode

NA = Not assigned.

EXAMPLE

0x1B 0x21 0x38

Sets text to double height, double width and emphasized mode.



NOTES: The setting of this command is effective until ESC@ is executed, the printer is reset, or the power is turned off.  
Here Font B is selected based on font selected by “**FONT B Precedence Set**” command. By default 9x24 is selected as Font B.

### 0x1B 0x45 N **Emphasized mode(BOLD) on/Off**

FORMAT	ASCII	ESC E N
	HEXA DECIMAL	0x1B 0x45 N

DESCRIPTION: Turns emphasized mode on or off. Here N is in hex format.

N	Functionality
0x00	When the LSB of N is 0, emphasized mode is turned off.
0x01	When the LSB of N is 1, emphasized mode is turned on.

EXAMPLE 0x1B 0x45 0x01  
Sets text sent to BOLD.

NOTES: The setting of this command is effective until ESC@ is executed, the printer is reset, or the power is turned off.

### 0x1B 0x4D N **Select Character Font**

FORMAT	ASCII	ESC M N
	HEXA DECIMAL	0x1B 0x4D N

DESCRIPTION: Sets font type depending on the value of N Here N is in hex format.

N = 0x00 or 0x30 -> Font A (FONT 12x24)

N = 0x01 or 0x31 -> Font B (FONT 9x24)

N = 0x02 or 0x32 -> Font C (FONT 8x16)

EXAMPLE 0x1B 0x4D 0x31  
Sets text font type to FONT B.

NOTES: The setting of this command is effective until ESC@ is executed, the printer is reset, or the power is turned off.  
Font B and Font C can be optionally switched between 9x24 and 8x16. (Refer “**FONT B Precedence Set**” command for more information).

### 0x1B 0x2D N **Select Underline**

FORMAT	ASCII	ESC – N
	HEXA DECIMAL	0x1B 0x2D N

DESCRIPTION: Sets the underline mode using N. Here N is in hex format.

N	Functionality
0x00 or 0x30	Underline mode off
0x01 or 0x31	1-dot line underline mode
0x02 or 0x32	2-dot line underline mode

EXAMPLE 0x1B 0x2D 0x02  
Sets the text to 2-dot underline mode

NOTES:  
Character size affects the size of underline mode of that character.  
The setting of this command is effective until ESC@ is executed, the printer is reset, or the power is turned off.



**0x1D 0x42 N****Turn Black/White Reverse Print Mode on/off**

FORMAT

ASCII

GS B N

HEXA DECIMAL

0x1D 0x42 N

DESCRIPTION: Turns white/black reverse print mode on or off. Here N is in hex format.

N	Functionality
0x00	When the LSB of N is 0, white/black reverse print mode is turned off.
0x01	When the LSB of N is 1, white/black reverse print mode is turned on.

EXAMPLE

0x1D 0x42 0x01

Sets the following characters to reverse mode.

NOTES:

The setting of this command is effective until ESC@ is executed, the printer is reset, or the power is turned off.

**0x1D 0x21 N****Select Character Size**

FORMAT

ASCII

GS ! N

HEXA DECIMAL

0x1D 0x21 N

DESCRIPTION: Selects the character height and width as below. Here N is in hex format.

N	Bit 6	Bit 5	Bit 4	Width	N	Bit 2	Bit 1	Bit 0	Height
0x00	0	0	0	Normal	0x00	0	0	0	Normal
0x10	0	0	1	Normal x 2	0x01	0	0	1	Normal x 2
0x20	0	1	0	Normal x 3	0x02	0	1	0	Normal x 3
0x30	0	1	1	Normal x 4	0x03	0	1	1	Normal x 4
0x40	1	0	0	Normal x 5	0x04	1	0	0	Normal x 5
0x50	1	0	1	Normal x 6	0x05	1	0	1	Normal x 6
0x60	1	1	0	Normal x 7	0x06	1	1	0	Normal x 7
0x70	1	1	1	Normal x 8	0x07	1	1	1	Normal x 8

EXAMPLE

0x1D 0x21 0x57

Sets the character size as below.

width = normal width x 6 and height = normal height x 8.

NOTES: The setting of this command is effective until ESC@ is executed, the printer is reset, or the power is turned off.

**1.1.3 PRINT POSITION COMMANDS****0x09****Horizontal Tab**

FORMAT

ASCII

HT

HEXA DECIMAL

0x09

DESCRIPTION: Moves the print position to the next horizontal tab position.

EXAMPLE

0x09

Sets print position to next horizontal tab position.

NOTES: None.

**0x1D 0x4C nL nH****Set Left Margin**

FORMAT

ASCII

GS L nL nH

HEXA DECIMAL

0x1D 0x4c nL nH

DESCRIPTION: The command sets the left side margin specified by nL and nH.

 $0 \leq nL \leq 255, 0 \leq nH \leq 255$ 

EXAMPLE

0x1D 0x4c 0x64 0x00

Sets the left margin to 100 dots.

NOTES: The setting of this command is effective until ESC@ is executed, the printer is reset, or the power is turned off. If the setting exceeds the printable area, the left margin is automatically set to the maximum value of the printable area.

**0x1D 0x57 nL nH****Set Print Area Width**

FORMAT

ASCII

GS W nL nH

HEXA DECIMAL

0x1D 0x57 nL nH

DESCRIPTION: The command sets width of the print area specified by nL and nH.

 $0 \leq nL \leq 255, 0 \leq nH \leq 255$ 

EXAMPLE

0x1D 0x57 0x64 0x00

Sets print area to 100 dots.

NOTES: The setting of this command is effective until ESC@ is executed, the printer is reset, or the power is turned off.

**0x1B 0x61 N****Select Justification**

FORMAT

ASCII

ESC a N

HEXA DECIMAL

0x1B 0x61 N

DESCRIPTION: The command aligns all the data in one line of the selected layout. Here N is in hex format. N is in hex format.

N	Justification
0x00 or 0x30	Left justification
0x01 or 0x31	Centered
0x02 or 0x32	Right justification

EXAMPLE

0x1B 0x61 0x01

Sets data alignment to center position.

NOTES: The setting of this command is effective until ESC@ is executed, the printer is reset, or the power is turned off.

**0x1B 0x24 nL nH****Set Absolute Print Position**

FORMAT

ASCII

ESC \$ nL nH

HEXA DECIMAL

0x1B 0x24 nL nH

DESCRIPTION: Moves the print position from the left edge of the print area to the specified value.

 $0 \leq nL \leq 255, 0 \leq nH \leq 255$ 

EXAMPLE

0x1B 0x24 0x96 0x00

Sets print position to 150<sup>th</sup> dot from left edge.



NOTES: The setting of this command is effective until ESC@ is executed, the printer is reset, or the power is turned off.

#### 0x1B 0x5C nL nH

#### Set Relative Print Position

FORMAT	ASCII	ESC \ nL nH
	HEXA DECIMAL	0x1B 0x5C nL nH

DESCRIPTION: Moves the print position from the current position to the specified value.

$0 \leq nL \leq 255$ ,  $0 \leq nH \leq 255$

#### EXAMPLE

0x1B 0x5C 0x64 0x00

Sets print position to 100<sup>th</sup> dot from current position.

NOTES: The setting of this command is effective until ESC@ is executed, the printer is reset, or the power is turned off. A positive number specifies movement to the right, and a negative number specifies movement to the left.

### 1.1.4 LINE SPACING COMMAND

#### 0x1B 0x33 N

#### Set Line Spacing

FORMAT	ASCII	ESC 3 N
	HEXA DECIMAL	0x1B 0x33 N

DESCRIPTION: Sets the line spacing to N lines. N is in hex format and  $0 \leq N \leq 255$

#### EXAMPLE

0x1B 0x33 0x30

Sets 48 line spacing.

NOTES: The setting of this command is effective until ESC@ is executed, the printer is reset, or the power is turned off.

### 1.1.5 PRINT COMMANDS

#### 0x0A

#### Print and Line Feed

FORMAT	ASCII	LF
	HEXA DECIMAL	0x0A

DESCRIPTION: Prints the data in the print buffer and feeds one line, based on the current line spacing.

#### EXAMPLE

0x0A

Feeds one line after printing.

NOTES: None.

#### 0x0C

#### Print and feed label to print starting position (on label)

FORMAT	ASCII	FF
	HEXA DECIMAL	0x0C

DESCRIPTION: Prints the data in the print buffer and feeds paper to the print starting position on the next label.

#### EXAMPLE

0x0C

Prints data in print buffer and feeds paper for certain length to detect the mark.

NOTES: None.

**0x1B 0x4A N****Print and Feed Paper**

FORMAT	ASCII	ESC J N
	HEXA DECIMAL	0x1B 0x4A N

DESCRIPTION: Prints the data in the print buffer and feeds the paper to N dots. N is in hex format and  $0 \leq N \leq 255$ .

EXAMPLE 0x1B 0x4A 0x0A  
Prints data in print buffer and feeds 10 dots.

NOTES: None.

**0x1B 0x64 N****Print and Feed N Lines**

FORMAT	ASCII	ESC d N
	HEXA DECIMAL	0x1B 0x64 N

DESCRIPTION: Prints the data in the print buffer and feeds the paper to N specified lines. N is in hex format and  $0 \leq N \leq 255$ .

EXAMPLE 0x1B 0x64 0x0A  
Prints data in print buffer and feeds 10 lines.

NOTES: None.

**1.1.6 IMAGE COMMANDS****0x1B 0x2A M nL nH****Select Bit-Image Mode**

FORMAT	ASCII	ESC * M nL nH
	HEXA DECIMAL	0x1B 0x2A M nL nH

DESCRIPTION: Stores the bit image data in the print buffer using the mode specified by M as follows. Here M is in hex format.

M	Mode	Density	Data length
0x00	8 dot single-density	Single-density	$nL + nH * 256$
0x01	8 dot double density	Double density	$nL + nH * 256$
0x20	24 dot single-density	Single-density	$(nL + nH * 256) * 3$
0x21	24 dot double density	Double density	$(nL + nH * 256) * 3$

EXAMPLE Command: 0x1B 0x2A 0x00 0x08 0x00  
Data: 0x7f 0xff 0xc4 0xc4 0xc4 0xc4 0xff 0x7f  
This will store image into print buffer with mode 0.

NOTES: None.

**0x1C 0x70 N M****Print NV Bit Image**

FORMAT	ASCII	FS p N M
	HEXA DECIMAL	0x1C 0x70 N M

DESCRIPTION: Prints NV bit image N with mode specified by M. Here M is in hex format.

M	Mode
0x00 or 0x30	Normal



<b>0x01 or 0x31</b>	Double-width
<b>0x02 or 0x32</b>	Double-height
<b>0x03 or 0x33</b>	Quadruple

## EXAMPLE

0x1C 0x70 0x01 0x02

Command will print 1<sup>st</sup> NV image stored in flash in mode2 format.

NOTES: Command is ignored if no NV image for the specified N value.

**0x1C 0x71 N****Define NV Bit Image**

FORMAT	ASCII	FS q N
	HEXA DECIMAL	0x1C 0x71 N

DESCRIPTION: Defines the N number of NV bit images in the NV graphics area.

The complete command for defining NV image is 0x1C 0x71 N [xL xH yL yH d1...dk]1...[xL xH yL yH d1...dk]N

Command code	Description
<b>0x1C 0x71</b>	Define NV image
<b>N</b>	Total number of NV images to define
<b>xL xH</b>	Width of an NV image in bytes (xL + xH*256)
<b>yL yH</b>	Height of an NV image in bytes (yL + yH*256)
<b>d1...dk</b>	Data bytes to define an NV image
<b>[xL xH yL yH d1...dk]N</b>	Set of parameters for Nth NV image

## EXAMPLE

0x1c 0x71 0x01 0x01 0x00 0x01 0x00 0xef 0x88 0x88 0x88 0x88 0xef 0x00 0x00

Command will define one NV image into flash memory.

NOTES: The NV bit image defined is effective until the next NV bit image is defined.

**0x1D 0x76 0x30 M xL xH yL yH****Print Raster Bit Image**

FORMAT	ASCII	GS v 0 M xL xH yL yH d1.....dk
	HEXA DECIMAL	0x1D 0x76 0x30 M xL xH yL yH d1.....dk

DESCRIPTION: Prints a raster bit image using the mode specified by M. Here M is in hex format.

Command code	Description
<b>M = 0x00 or 0x30</b>	Normal
<b>M = 0x01 or 0x31</b>	Double-width
<b>M = 0x02 or 0x32</b>	Double-height
<b>M = 0x03 or 0x33</b>	Quadruple
<b>xL xH</b>	Image width in bytes(xL + xH*256)
<b>yL yH</b>	Image height in bytes(yL + yH*256)
<b>d1.....dk</b>	Data bytes

## EXAMPLE

0x1D 0x76 0x30 0x03 0x01 0x00 0x08 0x00 0x7E 0x81 0x81



0x81 0xFF 0x81 0x81 0x81

Command will print image in quadruple mode.

NOTES: The NV bit image defined is effective until the next NV bit image is defined.

**0x1B 0x2B N xL xH yL yH****Save Indexed Based Image**

FORMAT

ASCII

ESC + N xL xH yL yH

HEXA DECIMAL

0x1B 0x2B N xL xH yL yH d1.....dk

DESCRIPTION: Save an image into flash memory with referenced index number.

Command code	Description
<b>0x1B 0x2B</b>	Save image
<b>N</b>	Index number for the image
<b>xL xH</b>	Image width in bytes(xL + xH*256)
<b>yL yH</b>	Image height in bytes(yL + yH*256)
<b>d1...dk</b>	Data bytes

EXAMPLE

0x1B 0x2B 0x05 0x01 0x00 0x08 0x00 0x7E 0x81 0x81 0x81  
0xFF 0x81 0x81 0x81

Command will save image defined by data bytes into flash memory with the index value 5.

NOTES: Maximum 10 images can be saved by this command.

Maximum size of each image should not exceed 64KB.

This command will overwrite previously saved image with new image for the same indexed image.

**0x1B 0x2C N M****Print Indexed Based Image**

FORMAT

ASCII

ESC , N M

HEXA DECIMAL

0x1B 0x2C N M

DESCRIPTION: Prints saved image of index value N with mode specified by M. Here M is in hex format.

M	Mode
<b>0x00 or 0x30</b>	Normal
<b>0x01 or 0x31</b>	Double-width
<b>0x02 or 0x32</b>	Double-height
<b>0x03 or 0x33</b>	Quadruple

EXAMPLE

0x1B 0x2C 0x01 0x02

Command will print an image with index value 1 in mode2 format.

NOTES: Command is ignored if no image is saved for the specified N value.

**1.1.7 BARCODE COMMANDS****0x1D 0x48 N****Select Print Position of HRI Characters**

FORMAT

ASCII

GS H N

HEXA DECIMAL 0x1D 0x48 N

DESCRIPTION: Select print position of HRI characters. Here N is in hex format.

N	Mode
<b>0x00 or 0x30</b>	No HRI print
<b>0x01 or 0x31</b>	Top of the barcode
<b>0x02 or 0x32</b>	Bottom of the barcode
<b>0x03 or 0x33</b>	Both top and bottom of the barcode

## EXAMPLE

0x1D 0x48 0x01

Prints the HRI characters on top of barcode



NOTES: The setting of this command is effective until ESC@ is executed, the printer is reset, or the power is turned off.

**0x1D 0x66 N****Select Font for HRI Characters**

FORMAT	ASCII	GS f N
	HEXA DECIMAL	0x1D 0x66 N

DESCRIPTION: Selects a font for HRI characters when printing a barcode. Here N is in hex format.

N	Mode
<b>0 or 0x30</b>	Font A(12x24)
<b>1 or 0x31</b>	Font B(8x16)

## EXAMPLE

0x1D 0x66 0x01

Sets the HRI character font to FONT B characters.

NOTES: The setting of this command is effective until ESC@ is executed, the printer is reset, or the power is turned off.

**0x1D 0x68 N****Set bar Code Height**

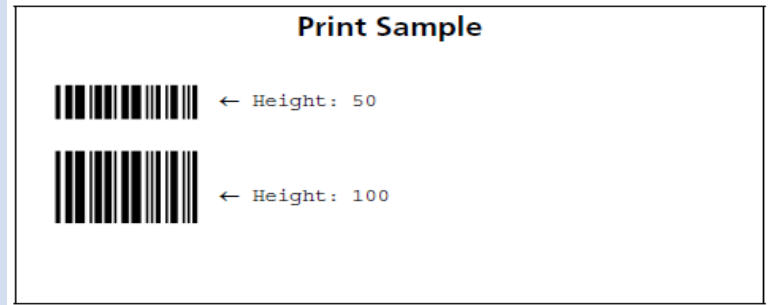
FORMAT	ASCII	GS h N
	HEXA DECIMAL	0x1D 0x68 N

DESCRIPTION: Sets the height of the bar code to N dots.

## EXAMPLE

0x1D 0x68 0x64

Sets barcode height to 100 dots.



NOTES: This command setting is effective until performing ESC@, reset or Power-off.  
If 0 is given as N, the default value is used.

**0x1D 0x6B M****Print Barcode**

FORMAT

ASCII

GS k M

HEXA DECIMAL

0x1D 0x6B M

DESCRIPTION: Prints the barcode using the barcode system specified by M.

M	Print Barcode command	
<b>0 to 6</b>	GS k M d1.....dk NULL	0x1D 0x6B M d1.....dk 0x00
<b>65 to 73</b>	GS k M N d1.....dN	0x1D 0x6B M N d1.....dN

M → Barcode system. Here M is in decimal format.

N → Length of Barcode.

d1.....dk → Barcode data.

d1.....dN → Barcode data of length N.

M	Barcode type	Barcode level
<b>0</b>	UPC-A	Multi-level
<b>1</b>	UPC-E	Multi-level
<b>2</b>	JAN13	Multi-level
<b>3</b>	JAN8	Multi-level
<b>4</b>	CODE39	Binary-level
<b>5</b>	ITF	Binary-level
<b>6</b>	CODABAR	Binary-level
<b>65</b>	UPC-A	Multi-level
<b>66</b>	UPC-E	Multi-level
<b>67</b>	JAN13	Multi-level
<b>68</b>	JAN8	Multi-level
<b>69</b>	CODE39	Binary-level
<b>70</b>	ITF	Binary-level
<b>71</b>	CODABAR	Binary-level
<b>72</b>	CODE93	Multi-level
<b>73</b>	CODE128	Multi-level

**EXAMPLE**

```
0x1D 0x6B 0x00 0x31 0x32 0x33 0x34 0x35 0x36 0x37 0x38
0x39 0x31 0x32 0x00
0x1D 0x6B 0x41 0x0B 0x31 0x32 0x33 0x34 0x35 0x36 0x37
0x38 0x39 0x31 0x32
```





Both of these commands will print same UPC-A barcode

NOTES:

### 0x1D 0x77 N

### Set Bar Code Width

FORMAT	ASCII	GS w N
	HEXA DECIMAL	0x1D 0x77 N

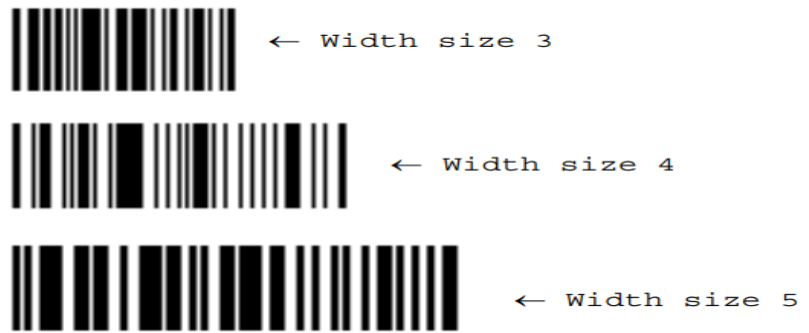
DESCRIPTION: Sets the width of the barcode depending on value of N. Here N is in decimal format.

N	Multi-level Barcode	Binary-level Barcode	
	Module width	Narrow element	Wide element
2	2 dots	2 dots	5 dots
3	3 dots	3 dots	8 dots
4	4 dots	4 dots	10 dots
5	5 dots	5 dots	13 dots
6	6 dots	6 dots	15 dots

EXAMPLE

0x1D 0x77 0x04

This command will set barcode width to 4 dots.



NOTES: The setting of this command is effective until ESC@ is executed, the printer is reset, or the power is turned off.

## 1.1.8 STATUS COMMAND

### 0x1D 0x72 N

### Transmit Status

FORMAT	ASCII	GS r N
	HEXA DECIMAL	0x1D 0x72 N

DESCRIPTION: Printer will respond with paper status for this command for N = 1 or 0x31

Response	Paper status
0x00	Paper present
0x0c	Paper is not present

EXAMPLE

0x1D 0x72 0x01

Printer will transmit the paper status.

NOTES: The platen should be closed while processing this command.



### 1.1.9 CUSTOMIZE COMMANDS

#### 0x1D 0x28 0x45 0x04 0x00 0x05 0x74 nL nH

#### Auto-Off Timer Setting

FORMAT	ASCII	GS ( E 0x04 0x00 0x05 0x74 nL nH
	HEXA DECIMAL	0x1D 0x28 0x45 0x04 0x00 0x05 0x74 nL nH

DESCRIPTION: The command will set the auto power-off time for the printer.  
 $0 \leq (nL + nH * 256) \leq 60$

EXAMPLE 0x1D 0x28 0x45 0x04 0x00 0x05 0x74 0x05 0x00  
 Command will sets the auto power-off time to 5min.

NOTES: 0x1D 0x28 0x45 0x04 0x00 0x05 0x74 0x00 0x00 will turn-off the auto power-off setting.

#### 0x1D 0x28 0x45 0x02 0x00 0x06 0x74

#### Transmit Customized Settings

FORMAT	ASCII	GS ( E 0x02 0x00 0x06 0x74
	HEXA DECIMAL	0x1D 0x28 0x45 0x02 0x00 0x06 0x74

DESCRIPTION: This command will transmit the customized setting values.

EXAMPLE 0x1D 0x28 0x45 0x02 0x00 0x06 0x74  
 Printer will transmit the current printing density, auto-off time value and thermal head run.

NOTES: None.

#### 0x1B 0x68

#### Temperature Response

FORMAT	ASCII	ESC h
	HEXA DECIMAL	0x1B 0x68

DESCRIPTION: This command will respond the printer temperature.

EXAMPLE 0x1B 0x68  
 Printer will reply the its temperature.

NOTES: None.

#### 0x1B 0x79

#### Voltage Response

FORMAT	ASCII	ESC y
	HEXA DECIMAL	0x1B 0x79

DESCRIPTION: This command will respond the printer voltage and battery life.

EXAMPLE 0x1B 0x79  
 Printer will reply the its current voltage and battery life.

NOTES: None.

**0x1D 0x28 0x45 0x04 0x00 0x0D d1d2d3d4****Set Bluetooth pairing pin**

FORMAT	ASCII	GS ( E 0x04 0x00 0x0D d1d2d3d4
	HEXA DECIMAL	0x1D 0x28 0x45 0x04 0x00 0x0D d1d2d3d4

DESCRIPTION: This command will set the custom Bluetooth pairing pin of 4 digits.

EXAMPLE	0x1D 0x28 0x45 0x04 0x00 0x0D 9876 This will set the Bluetooth pairing code to 9876.
---------	---

NOTES: The pin must be of 4 digits.

**0x1D 0x28 0x45 0x00 0x00 0x0E data****Set Bluetooth discoverability mode**

FORMAT	ASCII	GS ( E 0x00 0x00 0x0E data
	HEXA DECIMAL	0x1D 0x28 0x45 0x00 0x00 0x0E data

DESCRIPTION: This command will set the Bluetooth discoverability mode.

EXAMPLE	0x1D 0x28 0x45 0x00 0x00 0x0E 0x01 This will set the Bluetooth to undiscoverable mode. Only devices which are already paired to the printer can access and print.
---------	--

NOTES: If the device is not paired with the printer, then it is unable to print.

**0x1D 0x28 0x45 0x00 0x00 0x0F mode****Set Bluetooth modes(BLE/CLASSIC)**

FORMAT	ASCII	GS ( E 0x00 0x00 0x0F mode
	HEXA DECIMAL	0x1D 0x28 0x45 0x00 0x00 0x0F mode

DESCRIPTION: This command will set the Bluetooth modes for connection.

**Command****Mode****0x1D 0x28 0x45 0x00 0x00 0x0F 0x01**

BLE mode

**0x1D 0x28 0x45 0x00 0x00 0x0F 0x00**

CLASSIC mode

EXAMPLE	0x1D 0x28 0x45 0x00 0x00 0x0F 0x01 This will set the Bluetooth to BLE mode. For any other values other than 0x01 of mode value will set to classic mode.
---------	---

**0x1D 0x28 0x45 0x00 0x00 0x0F****Set Black mark printing**

FORMAT	ASCII	GS ( E 0x00 0x00 0x10
	HEXA DECIMAL	0x1D 0x28 0x45 0x00 0x00 0x10

DESCRIPTION: This command will print the data in print buffer and feeds the motor up to 200mm to detect the black mark.

EXAMPLE	0x1D 0x28 0x45 0x00 0x00 0x10 This command will print data in print buffer and feeds the motor up to 200mm length to detect the black mark
---------	---

NOTES: If black mark is not detected, paper feeding will stop after 200mm



<b>0x1D 0x28 0x46 0x04 0x00 0x61 0x00 nL nH</b>		<b>Set Black mark adjustment value</b>
FORMAT	ASCII	GS ( F 0x04 0x00 0x61 0x00 nL nH
	HEXA DECIMAL	0x1D 0x28 0x46 0x04 0x00 0x61 0x00 nL nH
DESCRIPTION: This command will set the adjustment value of the black mark detection position.		
$0 \leq (nL + nH * 256) \leq 50$		
The maximum length that the device can feed is 50mm.		
EXAMPLE		0x1D 0x28 0x46 0x04 0x00 0x61 0x00 0x0a 0x00 This command set the adjustment value of black mark detection position to 10mm length in forward direction.
NOTES: This value is set until device is powered-on. After restarting the device, this value will not be available.		

<b>0x1D 0x28 0x4D 0x02 0x00 0x01 m</b>		<b>Save black mark adjustment value</b>
FORMAT	ASCII	GS ( M 0x02 0x00 0x1 m
	HEXA DECIMAL	0x1D 0x28 0x4D 0x02 0x00 0x01 m
DESCRIPTION: This command will save the black mark adjustment value set by the GS ( F command to the $m^{th}$ region in the flash memory.		
$1 \leq m \leq 3$		
EXAMPLE		0x1D 0x28 0x4D 0x02 0x00 0x01 0x02 This command saves the adjustment value of black mark detection position set by GS ( F command to 2 <sup>nd</sup> position in the memory.
NOTES: User can save maximum 3 values in the memory.		

<b>0x1D 0x28 0x4D 0x02 0x00 0x02 m</b>		<b>Load black mark adjustment value</b>
FORMAT	ASCII	GS ( M 0x02 0x00 0x2 m
	HEXA DECIMAL	0x1D 0x28 0x4D 0x02 0x00 0x02 m
DESCRIPTION: This command will load the black mark adjustment value saved by the GS ( M in the $m^{th}$ region of the flash memory as an adjustment value to detect the black mark position.		
$1 \leq m \leq 3$		
EXAMPLE		0x1D 0x28 0x4D 0x02 0x00 0x02 0x02 This command loads the adjustment value of black mark detection position saved by GS ( M command in the 2 <sup>nd</sup> position of the memory as an adjustment value to detect the black mark position.
NOTES: This value is loaded until device is powered-on. After restarting the device, default value set by the auto-load command will be loaded.		

<b>0x1D 0x28 0x4D 0x02 0x00 0x03 m</b>		<b>Auto-Load black mark adjustment value</b>
FORMAT	ASCII	GS ( M 0x02 0x00 0x3 m
	HEXA DECIMAL	0x1D 0x28 0x4D 0x02 0x00 0x03 m
DESCRIPTION: This command will enable the auto-load value of black mark adjustment value in the $m^{th}$ region of the flash memory, every time the device is turned -on.		
$1 \leq m \leq 3$		
EXAMPLE		0x1D 0x28 0x4D 0x02 0x00 0x0 0x03



This command will set the 3<sup>rd</sup> value of the adjustment value of black mark detection position saved by GS ( M command in the 3<sup>rd</sup> position of the memory as an adjustment value to detect the black mark position.

## NOTES:

**0x1D 0x28 0x45 0x02 0x00 0x1A N****Auto Line Feed Status**

FORMAT

ASCII

GS ( E 0x02 0x00 0x1A n

HEXA DECIMAL

0x1D 0x28 0x45 0x02 0x00 0x1A n

DESCRIPTION: The command will Enable/Disable the auto line feed for the printer.

n=0x00, for Disable Auto line feed for Printer

n=0x01, for Enable Auto line Feed for Printer

## EXAMPLE

0x1D 0x28 0x45 0x02 0x00 0x1A 0x00

Command will Disable the Auto line feed for printer.

Note: Auto line feed is disabled by default.

**0x1D 0x28 0x45 0x02 0x00 0x1B N****Save Print Modes Settings**

FORMAT

ASCII

GS ( E 0x02 0x00 0x1B n

HEXA DECIMAL

0x1D 0x28 0x45 0x02 0x00 0x1B n

DESCRIPTION: The command will select default font modes.

N (bit format)	ON value	OFF value	Functionality
0 <sup>th</sup>	1 (Font 8x16)	0 (Font 12x24)	Font selection
1 <sup>st</sup>	NA	NA	-
2 <sup>nd</sup>	NA	NA	-
3 <sup>rd</sup>	NA	NA	-
4 <sup>th</sup>	1	0	Double height
5 <sup>th</sup>	1	0	Double width
6 <sup>th</sup>	NA	NA	-
7 <sup>th</sup>	NA	NA	-

## EXAMPLE

0x1D 0x28 0x45 0x02 0x00 0x1B 0x31

Command will select FontB as default printing font with double width and height format.

NOTES: This command setting is stored into memory. Restarting the device doesn't affect this command.

Default: FontA will be default font with default font size.

**0x1D 0x28 0x45 0x02 0x00 0x1C N****Font B Precedence Set**

FORMAT

ASCII

GS ( E 0x02 0x00 0x1C n

HEXA DECIMAL

0x1D 0x28 0x45 0x02 0x00 0x1C n

DESCRIPTION: This command can be used to select the default Font B characters set between 9x24 and 8x16.

N = 0x00, 9x24 will be selected as Font B type.



---

N = 0x01, 8x16 will be selected as Font B type.

EXAMPLE

0x1D 0x28 0x45 0x02 0x00 0x1C 0x01

Command will select 8x16 characters set as Font B.

NOTES: This command setting is stored into memory. Restarting the device doesn't affect this command.

Default: 9x24 will be the default font for Font B.

---

## 2. USING TERMINAL SOFTWARE

You will need terminal software to communicate to the printer. This software is provided when you purchase the printer. Just double click on the terminal software and the window will open as below.

Select COM Port as detected in the CDC

Set Baud Rate: 115200

Data Bits: 8

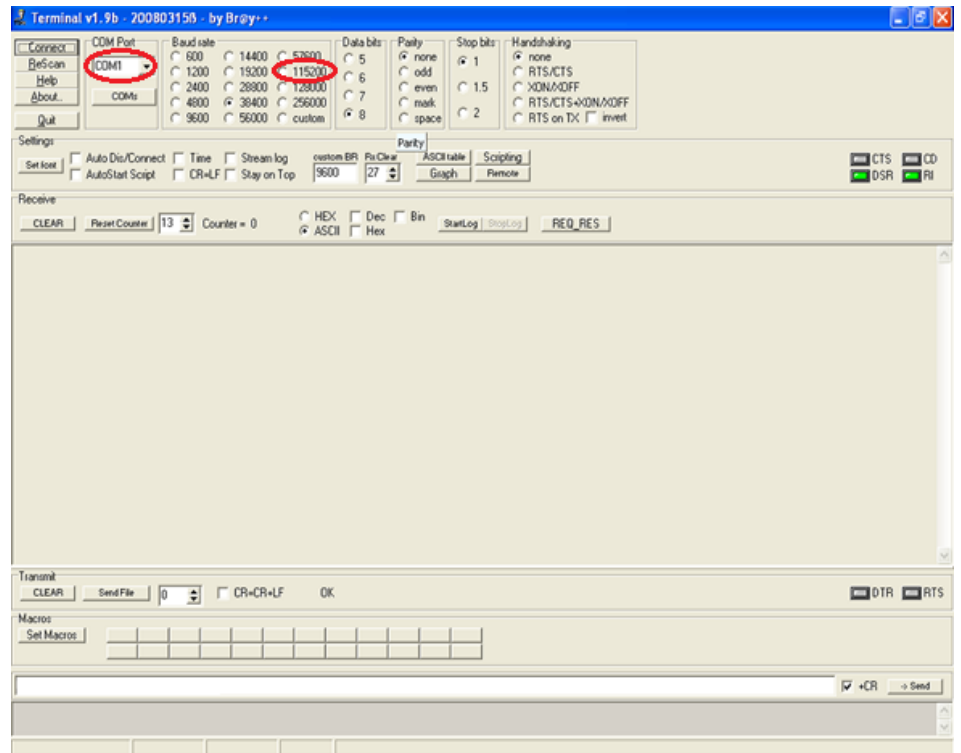
Parity: none

Atop Bits: 1

Handshaking: None

Click on Connect

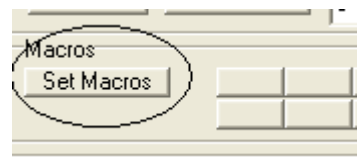
Note: Make sure that the printer is turned ON when you click connect



### LOADING .tmf FILE

The tmf file consists of various macros in it. Macros are pre-defined commands (as given in command list) for various printing options. Each macro will appear in the form of button, which is easier to use. Clicking on it will send the command entered.

- Click on Macro
- Click on load
- Locate .tmf file provided along with terminal software and click open



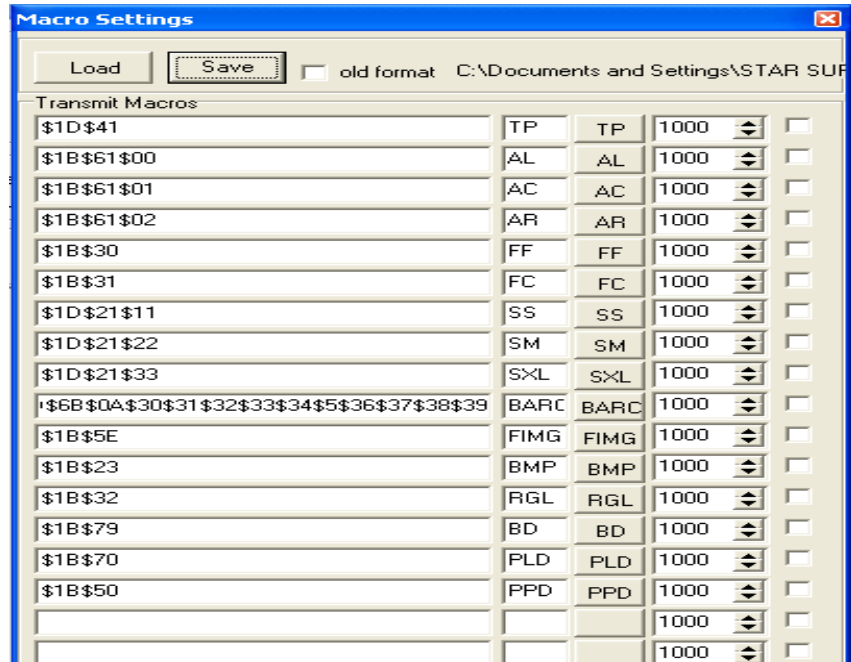
Transmit macros are the commands.

Note: In this software \$ is equivalent to 0x (hexadecimal)

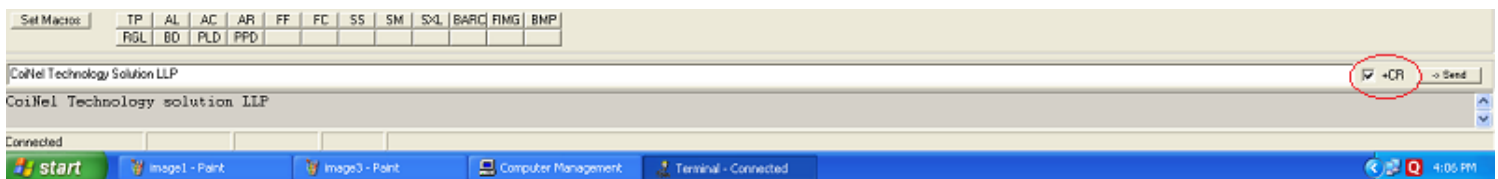
You can give the name for the buttons as required.

### Button Details

TP	Test Print
AL	Align Left
AC	Align Center
AR	Align Right
FF	Select Fixedsys Font
FC	Select courier font
SS	Select Font Size as small
SM	Select Font Size as medium
SXL	Select Font Size as XL
BARC	Barcode
FIMG	Print Image from Flash (internally stored)
BMP	Print BMP image
RGL	Print Regional language
BD	Battery Charge detect (Returns battery charge value and the same is displayed on terminal)
PLD	Detect (Returns Platten status and the same is displayed on terminal)
PPD	Paper Detect (Returns paper status and same is displayed on terminal)



Close Macro Settings window, macro buttons will appear as below. By clicking the buttons, the particular macro will execute/transmit.



### Clicking both +CR will transmit \n after every macro is sent

Click appropriate button for printer to execute commands.

Note:

1. To print desired text, simple enter the text and click send
2. For BMP image, click BMP button and click "Send File" and select desired BMP file to be printed.
  - a. Make sure the width and height match printer used
    - i. 3 inch : Max width: 576 pixel (image should be multiple of 8 pixels)
    - ii. 2 inch : Max width: 384 pixel (image should be multiple of 8 pixels)
  - b. Use only black and white image (1 bits/pixel)

Same process is followed for Bin file print also.



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