THERMAL PRINTER

ESC Commands Manual

Document Title: Thermal Printer - ESC Commands Manual.

Version: Ver 1.0

Date: 2nd NOV 2017

Author:

Technical Support E-mail: info@coineltech.com

Company Contact Information

CoiNel Technology Solutions LLP

No-32, 2nd Floor, HAPBCO Tower,

RPC Layout, Hampinagar, Bangalore-560104

Ph: 080-23154423

Revision:

Revision	Changes
Rev 1.0	Initial Revision

TABLE OF CONTENTS

1. COMMAND LIST

SUMMARY

TYPE	COMMAND (HEX)	DESCRIPTION
MISCELLANEOUS COMMANDS		
	0x1B 0x40	Initialize Printer
	0x1D 0x28 0x4B 0x02 0x00 0x31 M	Select Print Density
CHARACTER COMMANDS		
	0x1B 0x20 N	Set Right-Side Character Spacing
	0x1B 0x21 N	Select Print Modes
	0x1B 0x45 N	Emphasized mode(BOLD) on/0ff
	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
PRINT POSITION COMMANDS		
	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
	0x1B 0x44 n1..nk NULL	Set Horizontal Tab Positions
LINE SPACING COMMANDS		
	0X1B 0X33 N	Set Line Spacing
PRINT COMMANDS		
	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
IMAGE COMMANDS		
	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
BARCODE COMMANDS		
	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
STATUS COMMANDS		
	0x1D 0x72 N	Transmit Status
CUSTOMIZE COMMANDS		
	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
	0x1C 0x28 0x4C 0x02 0x00 0x30 m	Transmit the positioning information

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	LIST OF ASCII CHARACTERS
	HEXA DECIMAL	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	ESC @

	HEXA DECIMAL	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 ≤ M ≤ 0x06 and 0xFA ≤ M ≤ 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
0th	1	0	Font selection
1st	NA	NA	-
2nd	NA	NA	-
3rd	1	0	Emphasize mode(Bold)
4th	1	0	Double height
5th	1	0	Double width
6th	NA	NA	-
7th	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/0ff**
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
0x00	0	0	0	Normal
0x10	0	0	1	Normal x 2
0x20	0	1	0	Normal x 3
0x30	0	1	1	Normal x 4
0x40	1	0	0	Normal x 5
0x50	1	0	1	Normal x 6
0x60	1	1	0	Normal x 7
0x70	1	1	1	Normal x 8

N	Bit 2	Bit 1	Bit 0	Height
0x00	0	0	0	Normal
0x01	0	0	1	Normal x 2
0x02	0	1	0	Normal x 3
0x03	0	1	1	Normal x 4
0x04	1	0	0	Normal x 5
0x05	1	0	1	Normal x 6
0x06	1	1	0	Normal x 7
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 ≤ nL ≤ 255, 0 ≤ nH ≤ 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 ≤ nL ≤ 255, 0 ≤ nH ≤ 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 centere 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 ≤ nL ≤ 255, 0 ≤ nH ≤ 255		

EXAMPLE	0x1B 0x24 0x96 0x00 Sets print position to 150th 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 ≤ nL ≤ 255, 0 ≤ nH ≤ 255		
EXAMPLE		0x1B 0x5C 0x64 0x00 Sets print position to 100th 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.		

0x1B 0x44 n1…nk NULL		**Set Horizontal Tab Positions**
FORMAT	ASCII	ESC D n1…nk NULL
	HEXA DECIMAL	0x1B 0x44 n1…nk 0x00
DESCRIPTION: Set horizontal tab positions.		
EXAMPLE		0x1B 0x44 0x04 0x08 0x0C 0x10 0x00 Sets horizontal tab positions to 4, 8, 12 and 16 character's position from left edge of the print area.
NOTES: The setting of this command is effective until ESC@ is executed, the printer is reset, or the power is turned off.		

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 ≤ N ≤ 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 ≤ N ≤ 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 ≤ N ≤ 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
0x01 or 0x31	Double-width
0x02 or 0x32	Double-height
0x03 or 0x33	Quadruple

EXAMPLE

0x1C 0x70 0x01 0x02
Command will print 1st 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
0x1C 0x71	Define NV image
N	Total number of NV images to define
xL xH	Width of an NV image in bytes (xL + xH*256)
yL yH	Height of an NV image in bytes (yL + yH*256)
d1...dk	Data bytes to define an NV image
[xL xH yL yH d1...dk]N	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
M = 0x00 or 0x30	Normal
M = 0x01 or 0x31	Double-width
M = 0x02 or 0x32	Double-height
M = 0x03 or 0x33	Quadruple
xL xH	Image width in bytes(xL + xH*256)
yL yH	Image height in bytes(yL +yH*256)
d1…..dk	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
0x1B 0x2B	Save image
N	Index number for the image
xL xH	Image width in bytes(xL + xH*256)
yL yH	Image height in bytes(yL +yH*256)
d1…dk	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

0x00 or 0x30	Normal
0x01 or 0x31	Double-width
0x02 or 0x32	Double-height
0x03 or 0x33	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
0x00 or 0x30	No HRI print
0x01 or 0x31	Top of the barcode
0x02 or 0x32	Bottom of the barcode
0x03 or 0x33	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

0 or 0x30	Font A(12x24)
1 or 0x31	Font B(8x16)

EXAMPLE	0x1D 0x66 0x01 Sets the HRI character font to FONT B characters.

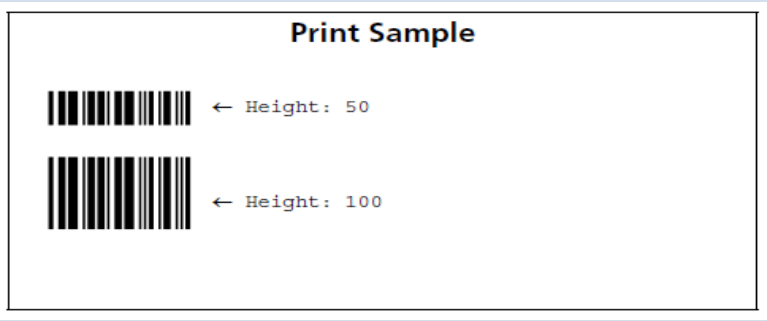
NOTES: The setting of this command is effective until ESC@ is executed, the printer is reset, or the power is turned off.

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**	
0 to 6	GS k M d1……dk NULL	0x1D 0x6B M d1……dk 0x00
65 to 73	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**
0	UPC-A	Multi-level
1	UPC-E	Multi-level
2	JAN13	Multi-level
3	JAN8	Multi-level
4	CODE39	Binary-level
5	ITF	Binary-level

6	CODABAR	Binary-level
65	UPC-A	Multi-level
66	UPC-E	Multi-level
67	JAN13	Multi-level
68	JAN8	Multi-level
69	CODE39	Binary-level
70	ITF	Binary-level
71	CODABAR	Binary-level
72	CODE93	Multi-level
73	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:	

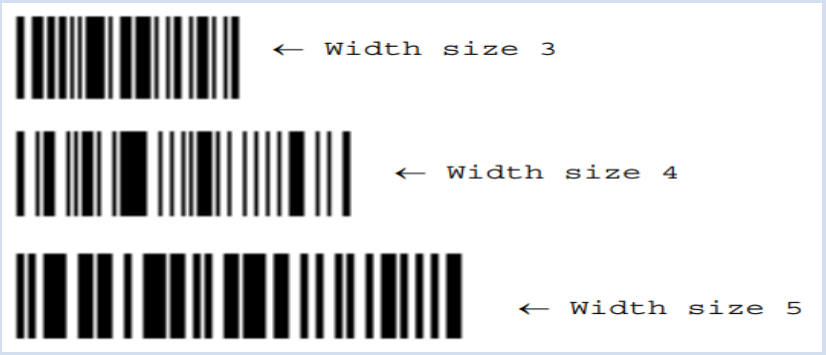
0x1D 0x77 N — **Set Bar Code Width**

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 ≤ (nL + nH*256) ≤ 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 HEXA DECIMAL	ESC h 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 HEXA DECIMAL	ESC y 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 HEXA DECIMAL	GS (E 0x04 0x00 0x0D d1d2d3d4 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 HEXA DECIMAL	GS (E 0x00 0x00 0x0E data 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		

0x1D 0x28 0x46 0x04 0x00 0x61 0x00 nL nH		**Set Black mark adjustment value**
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. $0 \le (nL + nH*256) \le 50$ 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.		

0x1D 0x28 0x4D 0x02 0x00 0x01 m		**Save black mark adjustment value**
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 ≤ m ≤ 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 2nd position in the memory.
NOTES: User can save maximum 3 values in the memory.	

0x1D 0x28 0x4D 0x02 0x00 0x02 m		**Load black mark adjustment value**
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 mth region of the flash memory as an adjustment value to detect the black mark position. 1 ≤ m ≤ 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 2nd 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.		

0x1D 0x28 0x4D 0x02 0x00 0x03 m		**Auto-Load black mark adjustment value**
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 mth region of the flash memory, every time the device is turned -on. 1 ≤ m ≤ 3		
EXAMPLE		0x1D 0x28 0x4D 0x02 0x00 0x0 0x03 This command will set the 3rd value of the adjustment value of black mark detection position saved by GS (M command in the 3nd 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
0th	1 (Font 8x16)	0 (Font 12x24)	Font selection
1st	NA	NA	-
2nd	NA	NA	-
3rd	NA	NA	-
4th	1	0	Double height
5th	1	0	Double width
6th	NA	NA	-
7th	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.

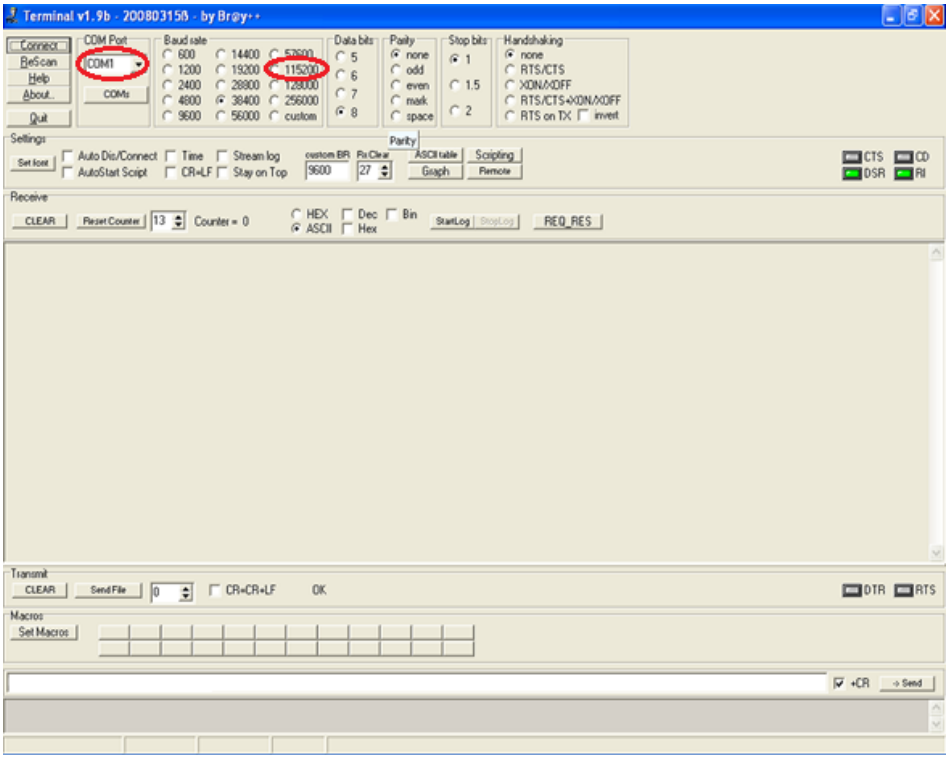
0x1C 0x28 0x4C 0x02 0x00 0x30 m		Transmit the positioning information
FORMAT	ASCII	FS (L pL pH fn m
	HEXA DECIMAL	0x1C 0x28 0x4C 0x02 0x00 0x30 m

DESCRIPTION: Transmits the positioning information for the black mark paper. where m=48(0x30).
Responses:
37 38 40 40 00 Relation to the print start position: Not at print start position
37 38 44 40 00 Relation to the print start position: Standby at the print start position.

EXAMPLE	0x1C 0x28 0x4C 0x02 0x00 0x30 0x30 The command transmits the positioning information of Label or Black mark paper.

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

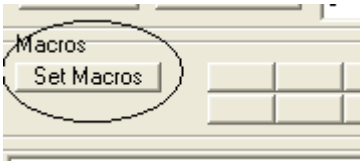
Click on Connect

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**



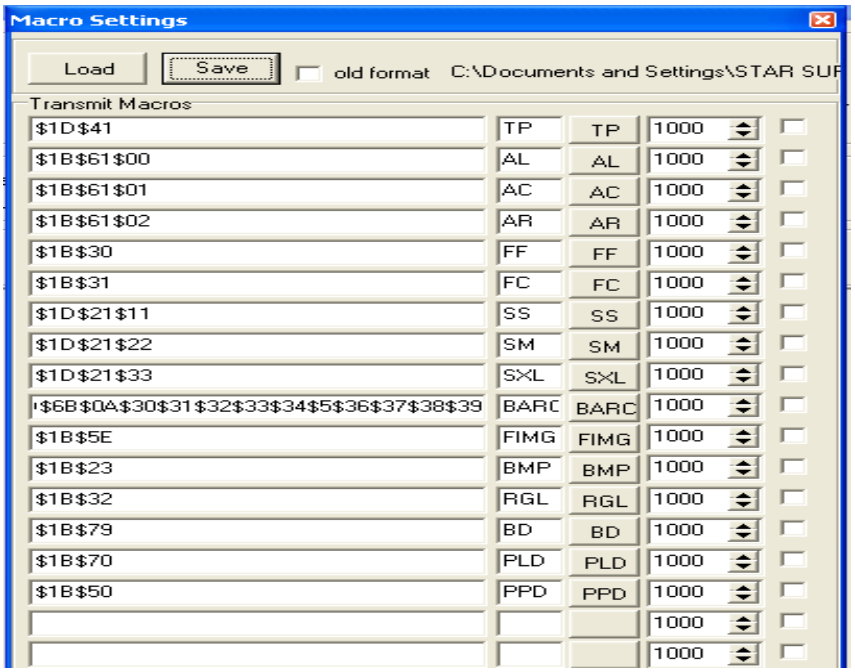
Transmit macros are the commands.

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

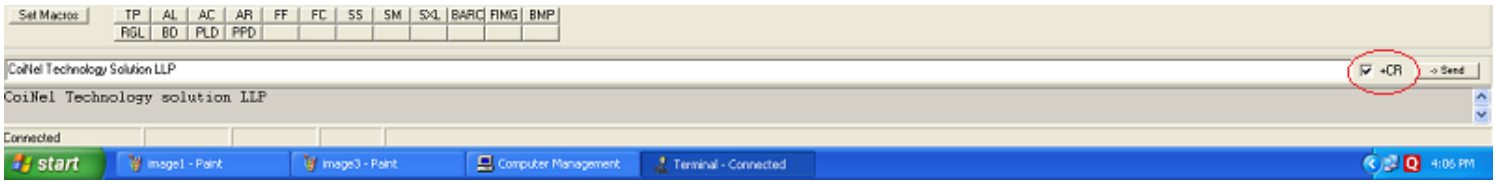
You can give the name for the buttons as required.

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.

DISCLAIMER

CoiNel Technology Solutions LLP, provides the enclosed document under the following conditions:

This document is intended for use for ENGINEERING DEVELOPMENT, DEMONSTRATION and EDUCATION OR EVALUATION PURPOSES ONLY. As such, the document being provided are not intended to be complete in terms of required design, marketing-, and/or related protective considerations,

The user assumes all responsibility and liability for proper usage of the document. Further, the user indemnifies CoiNel Technology Solutions LLP from all claims arising from the handling or use of the documents. EXCEPT TO THE EXTENT OF THE INDEMNITY SET FORTH ABOVE, NEITHER PARTY SHALL BE LIABLE TO THE OTHER FOR ANY INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES.

No license is granted under any patent right or other intellectual property right of CoiNel Technology Solutions LLP covering or relating to any machine, process, or combination in which such CoiNel Technology Solutions LLP products or services might be or are used.

Information in this document is believed to be reliable and accurate. However, CoiNel Technology Solutions LLP does not give any representations or warranties, expressed or implied, as to the completeness or accuracy of such information and shall have no liability for the consequences of use of such information.

CoiNel Technology Solutions LLP reserves the right to make changes to information published in this document, at any time and without notice, including without limitation specifications and product descriptions. This document replaces and supersedes all information supplied prior to the publication hereof.

Trademark

All referenced trademarks, product names, brands and service names are the property of their respective owners.

READER RESPONSE

It is our intention to provide you with the best documentation possible to ensure successful use of the product. If you wish to provide your comments on organization, clarity, subject matter, and ways in which our documentation can better serve you, please mail your comments to support@coineltech.com or call our Technical Publications Officer at (+91) 80-23154423.

Please list the following information, and use this outline to provide us with your comments about this document.

1. How does this document meet your hardware and software development needs?
2. Do you find the organization of this data sheet easy to follow? If not, why?
3. What additions to the data sheet do you think would enhance the structure and subject?
4. What deletions from the data sheet could be made without affecting the overall usefulness?
5. Is there any incorrect or misleading information (what and where)?
6. How would you improve this document?
7. How would you improve our software, systems, and products?

AFTER SALE SERVICE

We have special Technical Support Engineers to provide support and consultation in forms of telephone, E-mail and so on.
TEL: +91-80-23154423
Technical Support E-mail: support@coineltech.com