EZPL Programmer's Manual

Table of contents

Introduction

About EZPL

The EZPL (EZ Programming Language) is a high-level label definition and printer control language.
Features of EZPL are as follows:

1. The data are stored to be processed and will not be printed out until the last printing instruction is received.
2. All the printing contents can be rotated.
3. Images can be downloaded and stored.

There are two ways to send printing commands to the printer. One is sending through the command window of QLabel IV, the other is sending through Windows™ HyperTerminal™ via RS-232 port.

The EZPL language consists of three types of commands:

♦ **Setup commands** – It includes printer control instructions, configuration instructions and image downloading instructions.
♦ **Control commands** – It includes commands that can control the printer to take action immediately, such as cleaning memory, feeding label.
♦ **Label Format commands** - Define the format of data that will be presented on the label, such as Line, Rectangle, Barcode, Text and image.

Rules and syntax

EZPL commands include parameter strings associated with them:

1. The syntax of commands contains capital letters as the ID for each function.
2. The lower case letters in command represent parameters.
3. Control and Setup commands use the tilde (~) and caret (^) as prefix.
4. Label Format commands have no prefix.
5. The comma (,) is the delimiter to separate each parameter, and the CR (Carriage Return) signifies the end of every command.

Example: In "~En,name,size " command, "E" is an identity letter of this image downloading command; "n", "name" and "size" are three parameters.

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Setup Commands

^An - Printing mode

Syntax	**^An**
Parameter	n = D, Direct thermal mode, the ribbon out sensor is disabled. n = T, Thermal transfer mode, the ribbon out sensor is enabled.
Description	Set the print mode * Note: this command will not be applied on Direct Thermal only models (BP-DT-2 / BP-DT-4).

^Bx - Set the backward length

Syntax	**^Bx**
Parameter	x = 0~1000 (unit: mm)
Description	Set the backward length to move the position of paper.

^Cx - Number of copies per label

Syntax	**^Cx**
Parameter	x = 1 ~ 32767
Description	Set the number of copies to print for a label.

^D+dddd.hh - Date calculation function

Syntax	**^D+dddd.hh**	
Parameter	dddd = days in 4 digits. Set how many days to be added to the current date. hh = hours in 2 digits. Set how many hours to be added to the current time.	
Description	This command will set the specified days and hours forward based on the printer's current date then print it.	
Example	In this sample, the printer will print current time and count the date that is 5 days and 12 hours after current time. ^Q40,0,0 ^W100 ^AT ^L Dy2-me-dd Th:m:s ~D01,01,05,12,00,00 AD,72,96,1,1,0,0,Manufactured Date: ^D ^T AD,72,190,1,1,0,0,Expiration Date: ^D+0005.12 E	(current time of the printer) Manufactured Date: 06-JAN-01 12:00 (5 days and 12 hours after current time) Expire Date: 06-JAN-07

^Dx - Number of labels per cut

Syntax	**^Dx**
Parameter	x = 0, disable the cutting. x = 1 ~ 32767, number of label per cut.
Description	Number of labels per cut (refer to page47)

^Ex - Stop position setting

Syntax	**^Ex**
Parameter	x = 0~40 (unit: mm)
Description	Feed the paper to specific stop position.

^Fname - Download label format to printer

Syntax	**^Fname** data
Parameter	name = the name of label format (up to 20 characters) data = the data containing the label formatting command for this stored format
Description	Download label format to the memory of printer. After the download is completed, the printer will beep once (refer to page50).
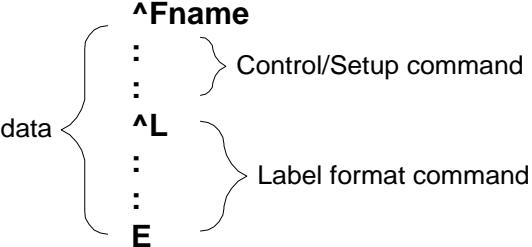
	Duplicate name inspection: If you use the same file name, the printer will print "REPEAT FILE NAME", and the format will not be stored to the memory.

^Gn - Enable/disable See-Through sensor

Syntax	**^Gn**
Parameter	n = 0, disable see-through sensor n = 1, enable see-through sensor n = 2, Auto-mode
Description	The reflective sensor may not be able to detect the label gap on special label materials. For example, when printing on labels with thick liner, colored liner, or back graphics, the see-through sensor would need to be enabled, since the reflective sensor may not work correctly. *When the see-through sensor is enabled, the moveable sensor must be placed in the center of the printer.

^Hx - Print darkness setting

Syntax	**^Hx**
Parameter	x = 00 ~ 19
Description	Set the darkness of printing.

^Kname - Recall label format

Syntax	**^Kname**
Parameter	name = the name of recalled label format (up to 20 characters)
Description	Recall a label format stored in printer's memory (refer to page50)
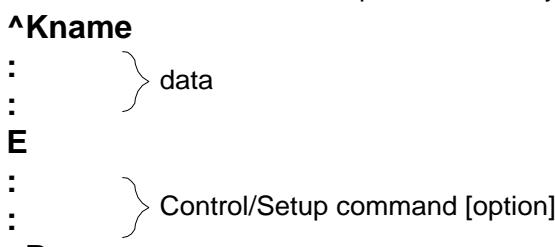
^L - The start sign of label format

Syntax	**^L**
Parameter	Use ^L to do normal printing; ^LI to do inverse printing; ^LM to do Mirror printing.
Description	Define the start sign of Label format. Commands to set up the label format should be listed after this command.
Sample	
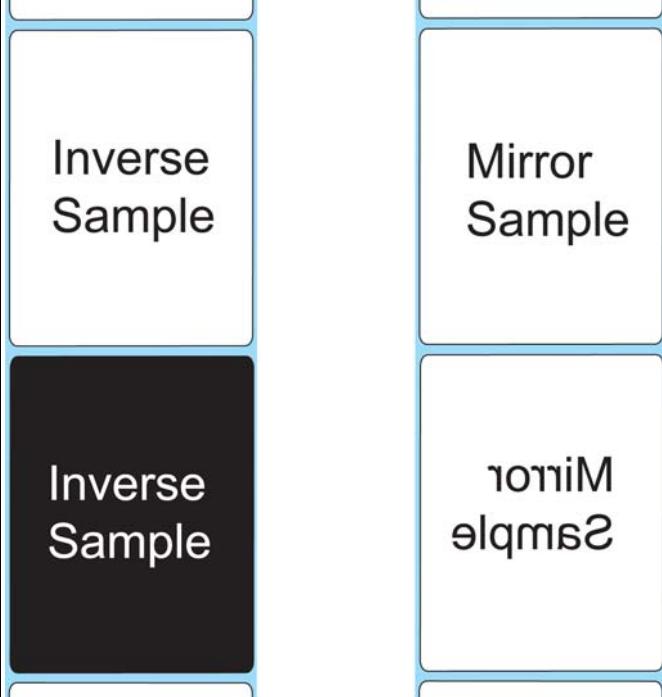
^Mx - Set the forward length

Syntax	**^Mx**
Parameter	x = 0~1000 (unit: mm)
Description	Set the forward length to move the position of paper.

^On - Stripper/Applicator

Syntax	**^On**
Parameter	n = 0 , disable the stripper and applicator n = 1 , enable the stripper, disable the applicator n = 2 , enable the applicator, disable the stripper (applied on BP-2000Plus / BP-6000Plus only)
Description	Enable or disable the Stripper/Applicator. When you use this command, it should be matched with ^Ex for setting the stop position. (For the stripper setting, please refer to page47)

^PAx - Auto Print

Syntax	**^PAx**
Parameter	x = 1~30000
Description	After the recall of label, printer will read variables and Serial Number and then print automatically for the number of copies that has been set.

^Flabel1 ^Q40,0,0 ^PA3 ^L C0,0000001,+1,Counter V00,15,Variable AF,108,140,1,1,0,0,^C0 AE,122,278,1,1,0,0,^V00 E ^Klabel1 00001 Variable E	Printer will auto print 3 pieces.

^Px - Number of pages printed

Syntax	^Px
Parameter	x = 1 ~ 32767
Description	Set the amount of copies for a printing. The Serial Number will be reset for each time the command is implemented.

^PI - Continuous printing

Syntax	^PI
Parameter	None
Description	Printer will print immediately, until the "Cancel" key is pressed or the printer is turned off.
Example	^Flabel2 ^Q40,0,0 ^PI ^L C0,000001,+1,Counter V00,15,Product AF,108,140,1,1,0,0,^C0 AE,122,278,1,1,0,0,^V00 E ^Klabel2 00001 Apple E	

^Qx,y(,z±) - Label length

Syntax	^Qx,y(,z±)
Parameter	Gap label: (See fig. 1) x = Label length (unit: mm) y = Gap length (unit: mm)
	EX. ^Q25,3 (x=25,y=3) mm Figure 1
	Plain paper: x = Label length (unit: mm) y = 0 (constant) z = Feed paper length (unit: mm)
	Black mark label: x = Label length (unit: mm) y = Black mark width (unit: mm) z = Black line to top of form position. Z+: When the position is outside the black mark. z-: When the position is within the black mark.
	EX. ^Q25,4,3+ (x=25, y=4, z=3+) mm ^Q25,4,3- (x=25, y=4, z=3-) mm Figure 2
Description	Set label size (length, gap length, [plain paper feed length])
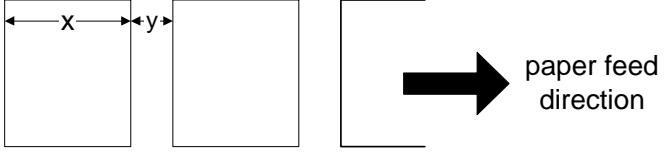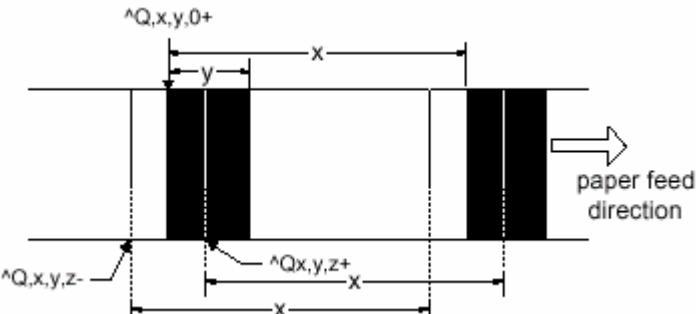
^Rx - Row column adjustment

Syntax	**^Rx**
Parameter	x = 0 ~ 399 dots
Description	Set left margin

^Sx - Speed setting

Syntax	**^Sx**
Parameter	x = 2 to 7 inch/sec (BP-2200P) ; 2 to 6 inch/sec (BP-1200P, BP-2100P, BP-2300P, BP-6200P, BPPi-1200) ; 2 to 4 inch/sec (BP-1100P, BP-1300P, BP-6300P, BP-DT-2, BP-DT-4, BP-1105, BPPi-1300) ; 2 to 3 inch/sec (BP-1305)
Description	Set printing speed

^T+hhh.mm - Time calculation function

Syntax	**^T+hhh.mm**	
Parameter	hhh = hours in 3 digits (from 0 to 23 hours). Set how many hours to be added to the current time. mm = minutes in 2 digits. Set how many minutes to be added to the current time.	
Description	This command will set the specified time forward based on the printer's current time then print it.	
Example	This sample printer will print current time and counting after 10 hours and 30 minutes time and print: ^Q40,0,0 ^W100 ^H10 ^AT ^L ~D04,15,05,12,0,0 AF,600,102,1,1,0,0,^T AF,600,280,1,1,0,0,^T+010.30 AF,58,52,1,1,0,0,Manufactured Time : AF,54,228,1,1,0,0,Expire Time : E	(Printer's current time) Manufactured Time: 12:00:00 (10 hours and 30 minutes after current time) Expire Time: 22:30:00

^Wx - Label width setting

Syntax	**^Wx**
Parameter	x = label width (unit: mm), the input range is defined by the specification of printer models.
Description	Label width setting

^XGET,CONFIG - Return the configure status

Syntax	**^XGET,CONFIG**
Parameter	None
Description	The printer will return configure status (the content is same as Self Test page) from RS232 or USB and display it on Hyper Terminal.

^XGET,TPHRESISTANCE - Dot detect

Syntax	**^XGET,TPHRESISTANCE**
Parameter	None
Description	Detect the resistance of each heat dot to check if there is any bad dot on thermal print head.
Example	

Within the example image:
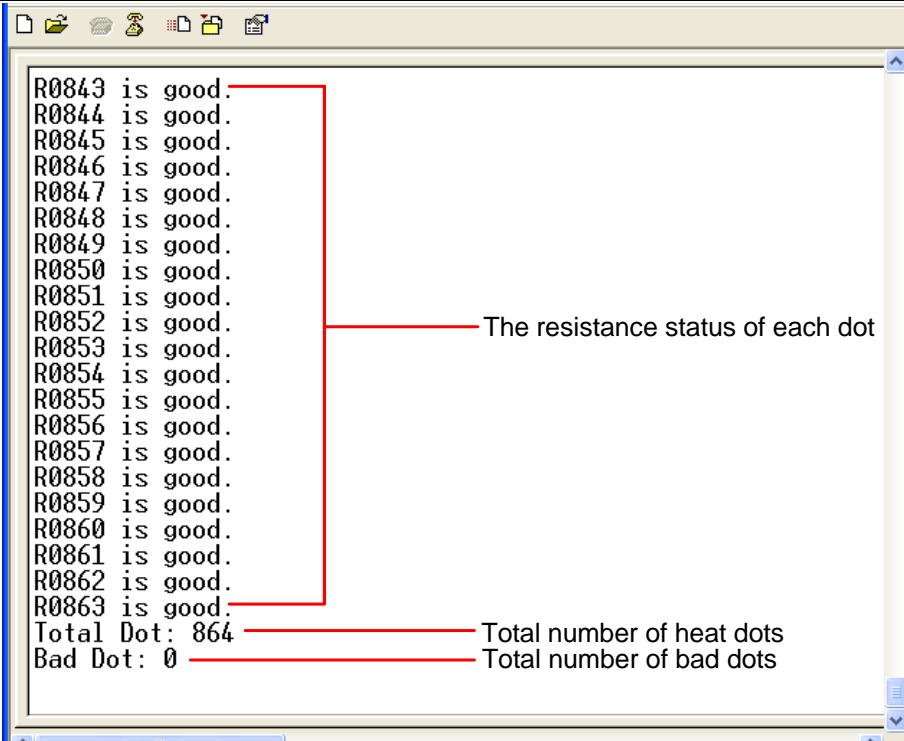
```
R0843 is good.
R0844 is good.
R0845 is good.
R0846 is good.
R0847 is good.
R0848 is good.
R0849 is good.
R0850 is good.
R0851 is good.
R0852 is good.
R0853 is good.
R0854 is good.
R0855 is good.
R0856 is good.
R0857 is good.
R0858 is good.
R0859 is good.
R0860 is good.
R0861 is good.
R0862 is good.
R0863 is good.
Total Dot: 864
Bad Dot: 0
```

The resistance status of each dot

Total number of heat dots

Total number of bad dots

^XSET,ACTIVERESPONSE,n - Active response

Syntax	**^XSET,ACTIVERESPONSE,n**
Parameter	n = 0, do not return the "ERRORxx" message to PC n = 1, return the error message (default). When door open, ribbon out… or other error occur, the printer will return the "ERRORxx" message to PC
Description	Set the Active Response function on/off. The error code includes: 01 – Paper out 02 – Paper jam or missing gap 03 – Ribbon out 04 – Print head is up 05 – Rewinder full 06 – Memory is full 07 – Filename can not be found 08 – Filename duplicate 09 – Syntax error 10 – Cutter JAM 11 – CF Card not found

^XSET,BUZZER,n - Set remind beep on/off

Syntax	**^XSET,BUZZER,n**
Parameter	n = 0, remind beep function off n = 1, remind beep function on
Description	This command can set printer remind beep on/off. When download graphic or font, printer will beep once. And use this command can turn off the remind beep function. But it can't set error beep on/off.

^XSET,CODEPAGE,n - Select Code Page

Syntax	^XSET,CODEPAGE,n		
Parameter	n=0, CODEPAGE 850	n=1, CODEPAGE 852	n=2, CODEPAGE 437
	n=3, CODEPAGE 860	n=4, CODEPAGE 863	n=5, CODEPAGE 865
	n=6, CODEPAGE 857	n=7, CODEPAGE 861	n=8, CODEPAGE 862
	n=9, CODEPAGE 855	n=10, CODEPAGE 866	n=11, CODEPAGE 737
	n=12, CODEPAGE 851	n=13, CODEPAGE 869	n=14, WINDOWS 1252
	n=15, WINDOWS 1250	n=16, WINDOWS 1251	n=17, WINDOWS 1253
	n=18, WINDOWS 1254	n=19, WINDOWS 1255	
Description	Set the code page.		

^XSET,CF_FORMAT,1 - Format the CF memory card

Syntax	^XSET,CF_FORMAT,1
Parameter	None
Description	The CF Card cannot be used for printer's external memory until it is formatted in FAT16. This command is used for formatting the CF card in proper file system. A new file folder would be created automatically after formatting is completed. This folder is for storing all the data from the printer, please don't do any change on it.

^XSET,IMMEDIATE,n - Set immediate response on/off

Syntax	^XSET,IMMEDIATE,n
Parameter	n = 0, set immediate response function off n = 1, set immediate response function on (default)
Description	This command can set printer's immediate response function on/off. To implement commands that related to immediate response, the function should be turned on.

^XSET,KEYBOARD,n - Select different area PS2 Keyboard

Syntax	^XSET,KEYBOARD,n

Parameter	n = 0-US
	    1-UK 5-Italian
	    2-French 6-Finnish
	    3-German 7-Dutch
	    4-Spanish 8-Belgian

Description	Change the area setting of keyboard mode. * Note: this command is only applied on printer models that support keyboard mode.

^XSET,LANGUAGE,n - LCD language setting

Syntax	^XSET,LANGUAGE,n

Parameter	n = 0-English 5-Simplified Chinese
	    1-German 6-Traditonal Chinese
	    2-French 7-Turkish
	    3-Spanish
	    4-Italian

Description	This command can set the language of LCD. * Note: this command is only applied on printer models that support LCD display.

^XSET,MEMORY,n - CF Card/Flash switch

Syntax	^XSET,MEMORY,n
Parameter	n = Memory being used n = 0, use flash n = 1, use CF card *Note: The CF card must be formatted in FAT16. FAT32 and NTFS are not acceptable.
Description	Set flash or CF card as default memory.

^XSET,PASSWORD,n,x - Password for protecting the front panel setting

Syntax	**^XSET,PASSWORD,n,x**	
Parameter	n = 0, disable n = 1, enable x = 4 digits password	
Description	LCD shows password message before entering Setting Mode when password protect ion is set. * Note: this command is only applied on printer models that support LCD display.	
Example	Enable: ^XSET,PASSWORD,1,1234 Disable ^XSET,PASSWORD,0	Set password as 1234

^XSET,REWINDER,n- Rewinder

Syntax	**^XSET,REWINDER,n**
Parameter	n = 0, disable the rewinder n = 1, enable the rewinder
Description	Set BP-6000P Rewinder enable/disable. * Note: this command is only applied on BP-6000P.

^XSET,SLASHZERO,n - Slashed zero

Syntax	**^XSET,SLASHZERO,n**	
Parameter	n = 0, without slash, n = 1, with slash	
Description	Set all zero to be printed as slashed zero.	
Example	^XSET,SLASHZERO,1 ^Q60,0,0 ^L AA,81,15,1,1,0,0,A0123 AB,81,41,1,1,0,0,B0123 AC,81,71,1,1,0,0,C0123 AD,81,111,1,1,0,0,D0123 AE,81,160,1,1,0,0,E0123 AF,81,230,1,1,0,0,F0123 AG,81,298,1,1,0,0,G0123 AH,81,396,1,1,0,0,H0123 E	B0123 C0123 D0123 E0123 F0123 G0123 H0123

^XSET,SMARTBACK,n - Smart backfeed

Syntax	**^XSET,SMARTBACK,n**	
Parameter	n = 0, OFF n = 1, ON	
Description	This function can reduce the process time when the stripper or the cutter been used. Use this command, when the prior label is waiting for cut or strip, the partial contents of the next label will be printed. After the label has been cut or stripped, the printer will continue print the rest contents of the next label.	
Example	(For stripper) ^XSET,SMARTBACK,1 ^Q100,3 ^E30 ^O1 ^P3 ^L R18,18,750,774,10,10 E	1. Printer will print out first label and part of second label 2. After taking label away, printer continues printing second label and part of third label. 3. After taking label away, printer print out third label.
	(For Cutter) ^XSET,SMARTBACK,1 ^Q100,3 ^E30 ^D1 ^P3 ^L R18,18,750,774,10,10 E	

^XSET,TOPOFFORM,n - Top of Form

Syntax	**^XSET,TOPOFFORM,n**
Parameter	n = 0, disable Top of Form function n = 1, enable Top of Form function
Description	Enable/Disable Top of Form function.

## ^XSET,UNICODE,n - Unicode Setting

Syntax	**^XSET,UNICODE,n**
Parameter	n = 0, default setting, doesn't support Unicode n = 2, UTF-8 n = 3, UTF16 Little-Endian n = 4, UTF16 Big-Endian
Description	Set to enable or disable the Unicode support. It needs corresponding built-in / downloaded True Type Font to display and print correctly. The Unicode setting will be restored to default once the printer is restarted.

^XSET,USBETHERNET,n - USB / Ethernet Port Switch

Syntax	**^XSET,USBETHERNET,n**
Parameter	n = 0, set the USB port as active port n = 1, set the Ethernet port as active port
Description	The Ethernet module (includes WLAN module) share the same connection route with the USB port. Therefore, both connection ports are alternative. If USB port is set to active then the Ethernet port will be deactivated, and vice versa.

^XSETCUT,DOUBLECUT,x - Double cut

Syntax	**^XSETCUT,DOUBLECUT,x**	
Parameter	x = 0, disable the doublecut x = offset length (offset length ＜Label length, unit: mm)	
Description	Set the printer to cut twice per label.	
Example	^XSETCUT,DOUBLECUT,45 ^Q90,3 ^E20 ^P3 ^D1 ^L C0,001,+1,A1 AC,350,144,1,1,1,0,a^C0 AC,350,544,1,1,1,0,a^C0 E	
Note	This function may decrease the service life of cutter since the adhesive of label will stain the cutter. Hence it is not recommended to use this function.	

^XSETCUT,MODE,n - Set cutter mode

Syntax	**^XSETCUT,MODE,n**
Parameter	n = 0, Full-cut mode (default) n = 1, Partial-cut mode * Note: do not set the cutter mode to Partial-cut mode when cutting with cutter module that doesn't support Partial-cut function.
Description	Set the cutter mode to Full-cut mode or Partial-cut mode

^XSETRTC,ISOWEEKNUM,n - ISO Week

Syntax	**^XSETRTC,ISOWEEKNUM,n**
Parameter	n = 0, disable the ISO Week (default) n = 1, enable the ISO Week
Description	This command can set ISO week of the year to print.
Example	The following figure shows the ISO Week for 1 January 2000 It is week 52 of year 1999, day 6 of the week, and day 1 of year 2000.

Program: with the ISO Week Date function	Remark
~D1,1,0, 0,0,0 ^XSETRTC,ISOWEEKNUM,1 ^Q50,0,0 ^L	Set the date and time
Dy4-mn-dd AC,58,32,1,1,0,0,Today is ^D	Define the clock type Print the date
Dwy1 AC,58,132,1,1,0,0,Week of year in one digit: ^D	Print the Week of year in one digit (Week of year in one digit: 52)
Dwy2 AC,58,194,1,1,0,0,Week of year in two digits: ^D E	Print the Week of year in two digits (Week of year in two digits: 52)

Program: without the ISO Week Date function	Remark
~D1,1,0, 0,0,0 ^XSETRTC,ISOWEEKNUM,0 ^Q50,0,0 ^L	Set the date and time
Dy4-mn-dd AC,58,32,1,1,0,0,NOT ISO week of year (^D)	Define the clock type Print the date
Dwy1 AC,58,132,1,1,0,0,Week of year in one digit: ^D	Print the Week of year in one digit (Week of year in one digit: 1)
Dwy2 AC,58,194,1,1,0,0,Week of year in two digits: ^D E	Print the Week of year in two digits (Week of year in two digits: 01)

^XSETRTC,LANGUAGE,n - Different language layout

Syntax	**^XSETRTC,LANGUAGE,n**	
Parameter	n = 0-English 　　1-German　3-Spanish 　　2-French　　4-Italian	
Description	This command can set the language of RTC.	
Example	^XSETRTC,LANGUAGE,0 ^Q50,0,0 ^L AC,58,06,1,1,0,0,English Dw1 AC,58,046,1,1,0,0,Day-of-week 3 letter: ^D Dw2 AC,58,098,1,1,0,0,Day-of-week complete: ^D Dwn AC,58,144,1,1,0,0,Day-of-week number: ^D Dm1 AC,58,188,1,1,0,0,Month of year 3 letter: ^D Dm2 AC,58,240,1,1,0,0,Month of year complete: ^D Dmn AC,58,286,1,1,0,0,Month of year number: ^D E ^XSETRTC,LANGUAGE,1 ^Q50,0,0 ^L AC,58,06,1,1,0,0,German Dw1 AC,58,046,1,1,0,0,Day-of-week 3 letter: ^D Dw2 AC,58,098,1,1,0,0,Day-of-week complete: ^D Dwn AC,58,144,1,1,0,0,Day-of-week number: ^D Dm1 AC,58,188,1,1,0,0,Month of year 3 letter: ^D Dm2 AC,58,240,1,1,0,0,Month of year complete: ^D Dmn AC,58,286,1,1,0,0,Month of year number: ^D E	English Day-of-week 3 letter: Thu Day-of-week complete: Thursday Day-of-week number: 4 Month of year 3 letter: Mar Month of year complete: March Month of year number: 03 German Day-of-week 3 letter: Sam Day-of-week complete: Samstag Day-of-week number: 6 Month of year 3 letter: Nov Month of year complete: November Month of year number: 11

^Yb,p,d,s - Serial Port communication setting

Syntax	**^Yb,p,d,s**
Parameter	b = Baud Rate (48 or 96 or 19 or 38 or 57 or 11); 48=4800bps; 96=9600bps; 19=19200bps; 38=38400bps; 57=57600bps; 11=115200bps p = Parity (N, O, E); N=none parity; O=odd parity; E=even parity d = Number of data bits (7 or 8) s = Number of stop bits (1 or 2)
Description	Serial Port communication setting

Control Commands

~B - Display the version message from RS-232

Syntax	~B
Parameters	None
Description	Show the version number of firmware on Hyper Terminal.

~Dm,d,y,h,i,s - Date/Time setting

Syntax	~Dm,d,y,h,i,s	
Parameter	m = Month (01 to 12) d = Date (01 to 31) y = Year (last two digits of year)	h = Hour (00 to 23) i = Minutes (00 to 59) s = Seconds (00 to 59)
Description	Set real time clock of the printer. For format setting of the date, use the Daa|bb|cc command.	
Example	~D12,22,04,11,11,11 ^L Dwn AD,182,145,1,1,0,0,^D Dw2 AD,135,186,1,1,0,0,^D Dw1 AD,168,226,1,1,0,0,^D Dmn/dd/y2 AD,126,110,1,1,0,0,^D E	The following form shows the date for December 2004. Table below The print result as below. 12/22/04 3 Wednesday Wed

The following form shows the date for December 2004.

Sun.	Mon.	Tue	Wed.	Thu.	Fri.	Sat.
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

~En,name,size - Download graphic to memory

Syntax	~En,name,size
Parameters	n = P or p: PCX file n = B or b: BMP file name = Name of image (up to 20 character) size = Size of image (bytes), maximum 512K byte.
Description	Download monochrome image onto memory. Printer will beep once after downloaded completed. If the file name of graph is duplicated, the printer will show "REPEAT FILE NAME", and the download will not be accepted (refer to page49).

~G - Graphic mode

Syntax	~G
Parameter	None
Description	Set the printer to image-receiving mode. The image data is sent directly from host to the printing buffer (refer to page48)

~H,TTF,Xname,size<CR>data - Download true type font

Syntax	~H,TTF,Xname,size<CR>data
Parameter	X = from A to Z name = font name, accepted values: English alphabet and numbers size = size of font file in bytes data = binary data of TTF font file
Description	Download True Type Font to printer via command set. *Note: This command is designed for advance programmer. For general user, it is recommended to download TTF through QLabel IV.

~H,TTF_TABLE,Xname,size<CR>data - Download Unicode Table

Syntax	~H,TTF_TABLE,Xname,size<CR>data
Parameter	X = from A to Z name = table name, accepted values: English alphabet and numbers size = size of font in bytes data = binary data of Unicode Table file
Description	Download the Unicode Table for printing True Type Font. *Note: This command is designed for advance programmer. For general user, it is not recommended to use this command.

~Jx - Bit-Mapped font download

Syntax	~Jx	
Parameters	x = character; From a ~ z or A ~ Z; the amount is up to 26 characters.	
Description	The command used for font loading is usually generated by QLabel label creation software. The printer will beep once after downloaded. If you use the same file name, the printer will show "REPEAT FILE NAME", and the download will not be accepted. The downloaded font is compatible with the HP Laser Jet II Plus (PCL-4).	
Example	Download the "HVR0OE1A.SFP" text file to external memory card. Use "A" to do the character code name.	
	~JA	; Define A as HVR0OE1A.SFP
	COPY HVR0OE1A.SFP PRN/B	; Send the order with the DOS mode

~Kn - Response from RS-232

Syntax	~Kn
Parameter	n = 0, disable. n = 1, enable.
Description	Respond a "Y" signal from RS-232 back to host after each printing is done.

~L,DBASE,x,y - Download dBase III to Printer

Syntax	~L,DBASE,x,y data…
Parameter	x = database name y = database size (unit: byte)
Description	This command can download dBase III file to printer.
Example	~L,DBASE,customer,364 …(Data of customer.dbf)

~L,SERIAL,name,data - Download serial file to printer

Syntax	~L,SERIAL,name,data…
Parameter	name = serial file name data = serial file data
Description	Download serial file to printer.

~MDEL - Clear all memory of printer

Syntax	~MDEL
Parameter	None
Description	Clear all memory of printer (Asia font is not included)

~MDELn,name - Delete specific file from memory

Syntax	~MDELn,name	

Parameter	n = D, database
	    A, Asia font
	    C, TTF font
	    E, Bit-Mapped font
	    F, label form
	    G, graphic
	    S, serial file
	    T, text
	    B, Unicode Table
	name = The name of the graphic, form, Bit-Mapped font or others.
	*Note: The 'name' of Asia font, TTF font and Unicode Table is ID tag.	

Description	Delete specific file from printer's memory	
Example	~MDELD,customer	Delete "customer" database.
	~MDELG,Bus	The graphic "Bus" will be deleted

~MDIR - Get memory state from printer

Syntax	~MDIR
Parameter	None
Description	Show the information of memory from printer
Example	
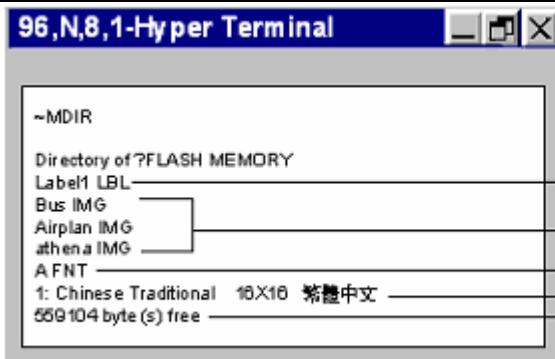
~MGETS,name - Get Serial File information

Syntax	~MGETS,name	
Parameter	name = serial file name	
Description	Show the serial file information on Hyper Terminal	
Example	(Get the information of serial file "new" from printer) ~MGETS,new	
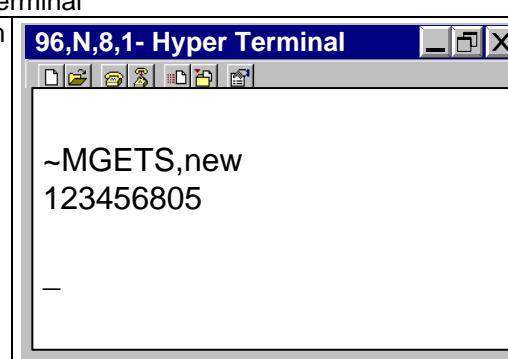
~MSETT,name<CR>nnnnnnnn<data> - Save the .TXT file to printer

Syntax	~MSETT,name<CR>nnnnnnnn<data>
Parameter	name = the name of saved nnnnnnnn = data size (8 digits) data = data to be saved
Description	Save the .TXT file to printer.

~MGETT,name<CR> - Read saved file

Syntax	**~MGETT,name<CR>**
Parameter	name = the name of saved
Description	Read the saved file from printer.
Example	Use "~MSETT, text1<CR>00000015Text file test2" to save data to printer. Then use "~MGETT,name<CR>" command to read saved data Example: ~MGETT,text1 Hyper Terminal will show: Text file test2

~Px - Print last label

Syntax	**~Px**
Parameter	x = 1 ~ 32767
Description	This command will repeatedly print the specific copies of the last label format.

~Q±x - Row Offset Adjustment

Syntax	**~Q±x**
Parameter	X =-100 ~ +100
Description	If the printing does not appear in the same place on every label, this command instructs the printer to print label formats. The "+n" move the position that the format specifies upward, and the "–n" move the position downward.

~Rx - Rotate printing

Syntax	**~Rx**
Parameter	x = label width (unit: mm), the input range is defined by the specification of printer models.
Description	Rotate the label format 180-degrees when printing (refer to page49). To return to the original print direction, set the x value greater than the max width of model's specification.

~S,CHECK - Status immediate response command

Syntax	**~S,CHECK**
Parameter	None

Description	The HyperTerminal will show the status of printer in "**aa,nnnnn<CR><LF>**" format.
	aa = printer status information:
	    00 – Ready
	    01 – Paper out
	    02 – Paper jam or missing gap
	    03 – Ribbon out
	    04 – Print head is up
	    05 – Rewinder full
	    06 – Memory is full
	    07 – Filename can not be found
	    08 – Filename duplicate
	    09 – Syntax error
	    10 – Cutter JAM
	    11 – CF Card not found
	    20 – Pause
	    21 – In Setting Mode
	    22 – In Keyboard Mode
	    50 – Printer is printing
	    60 – Data in process
	nnnnn = number of remaining labels, the value is from 00000 to 99999
	*Note: Before using this command, the "^XSET,IMMEDIATE" (Set immediate response on/off) command should be turned on.

~S,DUMP - Enter into DUMP Mode

Syntax	~S,DUMP
Parameter	None
Description	When the printout result doesn't match to the label format setting, it is recommended to go into the Dump Mode to check whether any mistake in data transmission between the printer and the PC. For example, when printer receives 8 commands, yet without processing these commands, only printing out the contents of commands, this will confirm whether the commands were received correctly. To get out from the Dump Mode, please press the FEED key, and then the printer will automatically print out "OUT OF DUMP MODE". This indicates that the printer is back to standby mode. You can also power off the printer to exit from the Dump Mode.

~S,n - Analogue press control keys

Syntax	~S,n
Parameter	n = FEED n = PAUSE n = UNPAUSE
Description	This command can analogously press function keys on the printer. Key in "~S,FEED" via COM port can generate the same action as pressing the "FEED" key. Key in "~S,PAUSE" via COM port and the printing will be paused. Key in "~S,UNPAUSE" via COM port and the printing will continue.

~T - Print head testing

Syntax	~T
Parameter	None
Description	Print a pattern for the user to determine if the print head is damaged (refer to page51).

~V - Print Self-Test page

Syntax	~V
Parameter	None
Description	Print out the Self-Test page.

~Xn - Print the available space and file information in the memory

Syntax	~Xn
Parameter	n = 1, print label format names and available space in memory. n = 2, print graphic names and available space in memory. n = 3, print Bit-Mapped font names and available space in memory. n = 4, print the name of the label formats, graphics, fonts, and available space in memory. n = 5, print Asia font names and available space in memory
Description	Print the available space in the memory (unit: bytes)

~X7 - Print database information in memory

Syntax	~X7
Parameter	None
Description	Print database information in memory

~X8 - Print serial file name

Syntax	~X8
Parameter	None
Description	Print serial file name from printer.

~Z - Reset printer

Syntax	~Z
Parameter	None
Description	Reset the printer and the LED will flash once.

Label formatting commands

AUTOFR - Automatic form printing

Syntax	**AUTOFR**
Parameters	None
Description	When use "^Fname" command to store a label form, set the form name as "AUTOFR" and save into printer's memory. The printer then can print the label in standalone mode when power on next time.

At,x,y,x_mul,y_mul,gap,rotationInverse,data - Text

Syntax	**At,x,y,x_mul,y_mul,gap,rotationInverse,data**
Parameter	t = Font type, see table below.

Font	Points	Font style
A	6	CG Triumvirate, Code page 850
B	8	CG Triumvirate, Code page 850
C	10	CG Triumvirate, Code page 850
D	12	CG Triumvirate, Code page 850
E	14	CG Triumvirate, Code page 850
F	18	CG Triumvirate, Code page 850
G	24	CG Triumvirate, Code page 850
H	30	CG Triumvirate, Code page 850
I		16x26 dots for US ASCII 8 bit
K		OCR-B font
L		OCR-A font
Zn, n = 1 ~ 9		Asia font from 1 to 4

x = Hori of top-left position of text (unit: dot, 1mm = 8 dots in 203dpi printer; 1mm=12 dots in 300dpi printer)

y = Vert of top-left position of text (unit: dot, 1mm = 8 dots in 203dpi printer; 1mm=12 dots in 300dpi printer)

x_mu = Horizontally magnified up to 8 times as large

y_mul = Vertically magnified up to 8 times as large

gap = Distance of the character (unit: dot, 1mm = 8 dots in 203dpi printer; 1mm=12 dots in 300dpi printer)

rotationInverse = The rotation of ASCII text from 0 to 3, the Asian text rotation form 0 to 7

    0→ 0°   1→ 90°   2→ 180°   3→ 270°

    4→ 0°   5→ 90°   6→ 180°   7→ 270°

(0~3→rotated for all characters; 4~7→rotated individually for each character) In addition, if the rotation parameter is followed with "I", the text will be printed in inverse font.

data = data string, it includes Constant, Date information (^D), Time information (^T), Serial variable (^Cx) and Variable data (^Vxx).

Description	Prints an ASCII or ASIA text string (refer to page45). The ASCII text oriented form left to right, the Asian text from left to right or top to bottom.

Sample		
	Text Rotation	**Rotation with Inverse**

AT,x,y,w,h,g,s,d,m,data - Print built-in true type font

Syntax	**AT,x,y,w,h,g,s,d,m,data**

Parameter	x = Hori of left-top position of text (unit: dot, 1 mm = 8 dots or 12 dots)
	y = Vert of left-top position of text (unit: dot, 1 mm = 8 dots or 12 dots)
	w = The width of font (8~2000 dot)
	h = The height of font (8~2000 dot)
	g = Space between characters (0~200 dot)
	s = Font setting. It consists of 2 parts, one is rotation setting and the other is font style setting.
	   The rotation setting is from 0 to 3:
	     0 → 0° 1 → 90° 2 → 180° 3 → 270°
	   The font style setting is optional setting. It includes 3 types, can be set with none, one, two or three together:
	     B → Bold T → Italic U → Underline
	d = DType, 0 → ASCII
	m = m = 0 → width/height AspectRatio mode
	    m = 1 → Average width mode (refer to Further Information)
	data = Data to be printed
	*Portions of this software are copyright 2000-Feb-08 The FreeType Project (www.freetype.org).

Description	Print built-in True Type Font (TTF).
Further Information	In width/height AspectRatio mode (m = 0): When the width (w) and the height (h) of TTF are equal, the printing result of TTF will be exactly the same with Windows font. There is a formula to calculate the Windows font size from TTF size: $$TTFheightsize = WindowsFontsize*dpi/72$$ For example, if user want to print Windows font 72pt on 203dpi printer, then the TTFheightsize = 72*203/72 = 203. And the TTFwidthsize should be equal to TTFheightsize, which is 203. As a result, when the width and height of TTF both are 203, the printout will be the same with Windows font 72pt.
	In Average width mode (m = 1): The height in dot is calculated the same as width/height AspectRatio mode, but the width is the average width in dots. If width=0, a 1:1 aspect ratio font is rendered.
Sample	AT,48,92,90,90,0,0,0,0,01234ABCDE → **01234ABCDE**
	AT,50,324,90,90,0,0BTU,0,0,01234ABCDE → *01234ABCDE*

【*Note*】
For conversion: 1mm = 8 dots when printing with 203dpi printer; 1mm = 12 dots when printing with 300dpi printer.

ATt,x,y,w,h,g,s,d,m,data - Print downloaded true type font

Syntax	**ATt,x,y,w,h,g,s,d,m,data**
Parameter	t = TTF type, accepted values: from A to Z
	x = Hori of left-top position of text (unit: dot, 1 mm = 8 dots or 12 dots)
	y = Vert of left-top position of text (unit: dot, 1 mm = 8 dots or 12 dots)
	w = The width of font (8~2000 dot)
	h = The height of font (8~2000 dot)
	g = Space between characters (0~200 dot)
	s = Font setting. It consists of 2 parts, one is rotation setting and the other is font style setting.
	The rotation setting is from 0 to 3:
	0 → 0° 1 → 90° 2 → 180° 3 → 270°
	The font style setting is optional setting. It includes 3 types, can be set with none, one, two
	or three together:
	B → Bold T → Italic U → Underline
	d = DType → 0: ASCII A~Z: Unicode table
	m = m = 0 → width/height AspectRatio mode
	m = 1 → Average width mode (refer to Further Information)
	data = Data to be printed
Description	Print downloaded True Type Font.
Further Information	In width/height AspectRatio mode (m = 0):
	When the width (w) and the height (h) of TTF are equal, the printing result of TTF will be exactly the same with Windows font. There is a formula to calculate the Windows font size from TTF size:
	$$TTFheightsize = WindowsFontsize*dpi/72$$
	For example, if user want to print Windows font 72pt on 203dpi printer, then the TTFheightsize = 72*203/72 = 203. And the TTFwidthsize should be equal to TTFheightsize, which is 203. As a result, when the width and height of TTF both are 203, the printout will be the same with Windows font 72pt.
	In Average width mode (m = 1):
	The height in dot is calculated the same as width/height AspectRatio mode, but the width is the average width in dots. If width=0, a 1:1 aspect ratio font is rendered.

Bt,x,y,narrow,wide,height,rotation,readable,data - Barcode

Syntax	**Bt,x,y,narrow,wide,height,rotation,readable,data**
Parameter	t = Barcode type, see table below.

type	Barcode	type	Barcode
A	Code 39	P	Code 93
A2	Code 39 with check digit	Q	Code 128 (auto subset A/B/C)
B	EAN 8	Q2	Code 128 (subset A/B/C)
C	EAN 8 - Add ON 2	R	UCC 128
D	EAN 8 - Add ON 5	S	Post NET
E	EAN 13	T	DUN 14 ONLY 90
F	EAN 13 – Add ON 2	U	EAN 128
G	EAN 13 – Add ON 5	V	RPS 128
H	UPC A	W	China Postal Code
I	UPC A - Add ON 2	X	HIBC
J	UPC A - Add ON 5	Y	Plessey
K	UPC E	Z	I 2 of 5 with Shipping Bearer Bars
L	UPC E - Add ON 2	1	UCC/EAN-128 K-MART
M	UPC E - Add ON 5	2	UCC/EAN-128 RANDAN
N	I 2 of 5	3	Telepen
N2	I 2 of 5 with check digit	4	FIM
O	Codabar		

x = Hori. of top-left position of barcode   (unit: dot, 1 mm = 8 dots or 12 dots)
y = Vert. of top-left position of barcode   (unit: dot, 1 mm = 8 dots or 12 dots)
narrow (x dimension) = narrow bar from 1 ~ 10 dots(0.125 ~ 1.25 mm)
　　　　　　　　　**DUN 14 narrow setting from 5 ~ 8 dots; UPC/EAN narrow setting
　　　　　　　　　from 2 ~ 4 dots **
wide = wide bar from 2 ~ 30 dots(0.25 ~ 0.5 mm); **CODE 39, 93, CODABAR & I 2 of 5**
height = Barcode height in dots (24 ~ 1200 dots)
rotation = rotation of barcode   (0 ~ 3)
　　　　　0) 0°　　　1) 90°　　　2) 180°　　　3) 270°
readable =
　0 – human readable off　　　3 – below barcode, centered　　6 – above right
　1 – below barcode, left　　　4 – above barcode, centered
　2 – above barcode, left　　　5 – below right
data = barcode data, it includes Constant, Date information (^D), Time information (^T),
　　　Serial variable (^Cx) and Variable data (^Vxx).

Example	Please refer to Appendix to see all 1D and 2D barcodes sample and commands.

B5n,x,y,narrow,segment,height,rotation,readable,data - GS1 Databar

Syntax	**Bt,x,y,narrow,wide,height,rotation,readable,data**
Parameter	n = The type of GS1 Databar, see table below.

"n"	GS1 Databar type	"n"	GS1 Databar type
0	GS1 Databar Omnidirectional	4	GS1 Databar Limited
1	GS1 Databar Truncated	5	GS1 Databar Expanded
2	GS1 Databar Stacked	6	GS1 Databar Expanded Stacked
3	GS1 Databar Stacked Omnidir.		

x = Hori. of top-left position of barcode   (unit: dot, 1 mm = 8 dots or 12 dots)
y = Vert. of top-left position of barcode   (unit: dot, 1 mm = 8 dots or 12 dots)
narrow (x dimension) = narrow bar from 1 ~ 10 dots(0.125 ~ 1.25 mm)
segment = the width setting of data segment from 2 ~ 22, only applied on "GS1 Databar
　　　　　Expanded Stacked". When the data length exceeds the segment setting, the
　　　　　barcode will add more line automatically to contain all data. The maximum
　　　　　number of barcode lines is 11.
height = not available yet, please always enter "0".
rotation = rotation of barcode   (0 ~ 3)
　　　　　0) 0°　　　1) 90°　　　2) 180°　　　3) 270°
readable = set to show human readable text
　　　　　0 – human readable off;　1 – below barcode, left
data = barcode data, it includes Constant, Date information (^D), Time information (^T),
　　　　Serial variable (^Cx) and Variable data (^Vxx).

C#x,y,±value,z - Print count with serial file

Syntax	**C#x,y,±value,z**	
Parameter	x = counter index y = serial file name ±value = ±value of serial variable (up to 12-digit) z ='0'~'9' or 'B' for decimal, 'A' for hexadecimal, 'C' for 0~9,A~Z	
Description	Set print count with serial file by this command.	
Example	~L,SERIAL,new,123456795	Download the new file to printer first
	Turn printer off Turn printer on. Print again. ^Q60,0,0 ^P5 ^L C#0,new,+1,0 AG,50,137,1,1,0,0,^C0 E	Print Result: 123456800 123456801 123456802 123456803 123456804
	Key in ~MGETS,new in HyperTerminal	**96,N,8,1- Hyper Termianl** 　□× ~MGETS,new 123456805 _

Cx,ys,±value,prompt - Serial number setting

Syntax	**Cx,ys,±value,prompt**	
Parameter	x = 0 to 9(up to10group), maximum combination up to 3 groups. y = select the decimal 　　y → 0~9, set serial number as Decimal numbers, the value of "y" is included in "s" (start 　　　　value of serial variable) as first digit. 　　y → A, set serial number as Hexadecimal numbers, the value of "y" (e,g, A) is not 　　　　included in "s" (start value of serial variable). 　　y → C, set serial number as Base 36 numbers, the value of "y" (e,g, C) is not 　　　　included in "s" (start value of serial variable). s = start value of serial variable (up to 13-digit). You can use the leading spaces to replace 　　the leading zeros. ±value = ±value of serial variable (up to 12-digit) prompt = prompt of serial variable (up to 20 characters), only applied on models with LCD	
Description	Set the serial number (refer to page48)	
Example	^Q50,0,0 ^W100 ^H10 ^P3 ^L Dy2-me-dd Th:m:s C0,000,+1,Prompt C1,　1,+1,Prompt C2,AEE,+1,Prompt1 C3,CZYY,+1,Prompt2 AC,80,10,1,1,0,0,decimal with leading zeros: ^C0 AC,80, 80,1,1,0,0,decimal with leading spaces: ^C1 AC,80,160,1,1,0,0,hexadecimal: ^C2 AC,80,240,1,1,0,0, 0~9　A~Z: ^C3 E	decimal with leading zeros: 002 decimal with leading spaces: 3 hexadecimal: F0 0~9 A~Z: ZZ0 decimal with leading zeros: 001 decimal with leading spaces: 2 hexadecimal: EF 0~9 A~Z: ZYZ decimal with leading zeros: 000 decimal with leading spaces: 1 hexadecimal: EE 0~9 A~Z: ZYY

Daa|bb|cc - Define date layout

Syntax	**Daa|bb|cc**		

Parameter	aa = Year
	    y2: Year with two digits (such as 97)
	    y4: Year with four digits (such as 1997)
	bb = Month
	   me: Month in letters (JAN, FEB, ...)
	   mn: Month in numeric (01, 02, ...)
	cc = day of 2 digits
	| = Partition, can be any ASCII character from decimal 32 to 63.
	
	Djj1: Julian calendar format(YYDD)
	Djj2: Julian calendar format(YDDD)
	Dwy1: week of year format(W)
	Dwy2: week of year format(WW)
	Dwn: day-of-week as number value
	Dw1: day-of-week as 3 letter abbreviation
	Dw2: day-of-week as complete
	Dm1: month of the year as 3 letter abbreviation
	Dm2: month of the year as a complete name		

Description	Define the date layout for print out		
Example	^Q100,0,0 ^W100 ^L Dy2-me-dd AD,36,40,1,1,0,0,^D Djj1 AD,36,80,1,1,0,0,^D Dwy1 AD,36,120,1,1,0,0,^D Dw1 AD,36,160,1,1,0,0,^D Dm1 AD,36,200,1,1,0,0,^D Dy4/mn/dd AD,36,280,1,1,0,0,^D Djj2 AD,36,320,1,1,0,0,^D Dwy2 AD,36,360,1,1,0,0,^D Dw2 AD,36,400,1,1,0,0,^D Dm2 AD,36,440,1,1,0,0,^D Dwn AD,36,530,1,1,0,0,^D AC,228,82,1,1,0,0,julian date format AC,228,124,1,1,0,0,week of year format AC,228,166,1,1,0,0,day-of-week as 3 letter abbreviation AC,228,210,1,1,0,0,month of the year as 3 letter abbreviation AC,228,318,1,1,0,0,julian date format AC,228,360,1,1,0,0,week of year format AC,228,402,1,1,0,0,day-of-week as complete AC,228,446,1,1,0,0,month of the year as a complete name AC,228,532,1,1,0,0,day-of-week as number value AC,228,40,1,1,0,0,Date layout AC,228,274,1,1,0,0,Date layout E	05-APR-15 5105 15 Fri Apr 2005/04/15 05105 15 Friday April 5	Date layout Julian date format Week of year format Day of week as 3 letter abbreviation Month of the year as 3 letter abbreviation Date layout Julian date format Week of year format Day-of-week as complete Month of the year as a complete name Day of week as number value

E - Terminate label formatting mode and print label

Syntax	**E**
Parameter	None
Description	End of formatting command; printer will print label after receiving this command.

FILEDB,OPEN,name - Open database

Syntax	**FILEDB,OPEN,name**
Parameter	name = the name of the database
Description	Open a database for printing.
Example	FILEDB,OPEN,customer

FILEDB,MOVE,n - Move data record

Syntax	**FILEDB,MOVE,n**	
Parameter	n: Move the point of record in demand. 　n = number 　n = FIRST, the first record 　n = LAST, the last record 　n = NEXT, the next record 　n = PRIOR, the prior record	
Description	Use variable or counter to select a specific record from the database.	
Example	FILEDB,MOVE,3 FILEDB,MOVE,FIRST FILEDB,MOVE,NEXT	Move to third record Move to first record Move to next record

FILEDB,FIND,x,y - Searching from database

Syntax	**FILEDB,FIND,x,y**	
Parameter	x =Column name in database file y =Keyword for searching	
Description	Select a specific record form database and print it.	
Example	Download database "customer" : ^Q60,0,0 ^P1 ^L FILEDB,OPEN,customer V00,10,Prompt0 V#LINKDB,PHONE,V00 FILEDB,FIND,NAME,Mary AC,79,120,1,1,0,0, Marry's phone: ^V00 E	Find Mary's data and print it.

Gwxxx - Graphic command

Syntax	**Gwxxx**
Parameter	wxxx... w = byte number of image data xxx...: image data
Description	This command is a sub-command of ~G It is sent by binary data. W is the digits number byte of image data (refer to page48). For example, if the image file is 50 bytes, the command is G2xxx . (2: ASCII is 50 decimal)

Hx,y,col_count,row_count,col_width,row_width,line_width - Table

Syntax	**Hx,y,col_count,row_count,col_width,row_width,line_width**	
Parameter	x = left-upper Hori .pos. (unit: dots) y = left-upper Vert. Pos. (unit: dots) col_count = numbe of columns row_count = number of rows col_width = column width row_width = row width line_width = line width	
Description	Draw a table in the label.	
Example	H20,20,2,3,20,30,10	
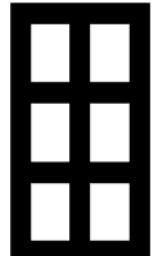
La,x,y,x1,y1 - Line command

Syntax	**La,x,y,x1,y1**	
Parameter	a = o, overwrite the line on the bottom a = e, exclusive the line on the bottom x = left-up; per horizontal(Hori.) pos. (unit: dots; 1mm= 8 dots or 12 dots) y = left-upper vertical (Vert.) pos. (unit: dots; 1mm= 8 dots or 12 dots) x1 = right-bottom Hori. Pos. (unit: dots) y1 = right-bottom Vert. Pos. (unit: dots)	
Description	Define a line to render in the label (refer to page46) *Note: The diagonal line draw is not available.	
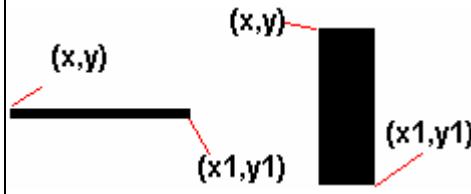
Mx,y,sno,nos,mode,ccode,zip,class,rotation,message - Print Maxicode

Syntax	**Mx,y,sno,nos,mode,ccode,zip,class,rotation,message**

Parameter	x = Hori. of left-bottom pos. of barcode (unit: dots).
	y = Vert. of left-bottom pos. of barcode (unit: dots).
	sno = symbol number, in set of symbols: 1 ~ 8.
	nos = number of symbols in set of symbols: 1 ~ 8 sets.
	mode = mode of maxicode 2, 3, 4 or 6.
	ccode = 3 digits country code.
	zip = postal code
	    9 digits for US style postal code. If there is a 5 digits zip code, 4 zeros must be padded
	    6 digits alphanumeric zip code for non-US style postal code.
	class = service class, 3 digits numeric.
	rotation = rotation of barcode (0 ~ 3)
	      0) 0° 1) 90° 2) 180° 3) 270°
	message = 1 ~ 84 characters.

Description	Print a 2 dimensional Maxicode (refer to page46)

Px,y,w,h,r,c,ec,len,rotation - Print PDF 417

Syntax	**Px,y,w,h,r,c,ec,len,rotation** Data
Parameters	x = Hori. of left-bottom pos. of barcode (unit: dots) y = Vert. of left-bottom pos. of barcode (unit: dots) w = Width (x dimension) of the narrowest element (bar or space) in the barcode. h = Height (y dimension) of each barcode row in the symbol. r = number of barcode rows, from 3 to 90. If you key in 0, printer will count all the rows. c = number of barcode columns, from 1 ~ 30. If you key in 0, printer will count the all columns. ec = error correction level: 0 ~ 8. len = number of encoded data bytes, including carriage returns ↵ and line feed. rotation = rotation of barcode (0 ~ 3) 0) 0° 1) 90° 2) 180° 3) 270° Data = data to be encoded (the length of the data must be equal to the set value of "len"; up to 1024 characters)
Description	Print a 2 dimensional PDF417 code (refer to page46)

## PCx,y,w,h,r,c,ec,max_len,rotation - PDF 417 with variable length data

Syntax	**PCx,y,w,h,r,c,ec,max_len,rotation** Data	
Parameter	x = Hori. of left-bottom pos. of barcode (unit: dots) y = Vert. of left-bottom pos. of barcode (unit: dots) w = Width (x dimension) of the narrowest element (bar or space) in the barcode. h = Height (y dimension) of each barcode row in the symbol. r = number of barcode rows, from 3 to 90. If you key in 0, printer will count all the rows. c = number of barcode columns, from 1 ~ 30. If you key in 0, printer will count the all columns. ec = error correction level: 0 ~ 8. max_len = max of number encoded data bytes, including carriage returns ↵ and line feed. rotation = rotation of barcode (0 ~ 3) 0) 0° 1) 90° 2) 180° 3) 270° Data = data to be encoded. The content of data must be enclosed with "&*" sign on the beginning and the end.	
Description	To adjust the PDF 417 data length by this command	
Example	^Q50,0,0 ^L PC141,104,3,5,3,3,3,50 &*0123456789 Line2 Line3 9876543210&* E	(Data read from CCD: 0123456789[CR][LF]Line2[CR][LF]Line3[CR][LF]9876543210)

Qx,y,width,height - Pattern command

Syntax	**Qx,y,width,height** Data...	
Parameters	x = Hori. of left-bottom pos. (unit: dots). y = Vert. of left-bottom pos. (unit: dots). width = width of graphic (unit: byte) height = height of graphic (unit: dots) (data length = width x height)	
Description		Data send out 1 2 3 4 ......77 78 79 80 width = 4 ; height = 20 (data length: 4x20 = 80) (refer to page49)
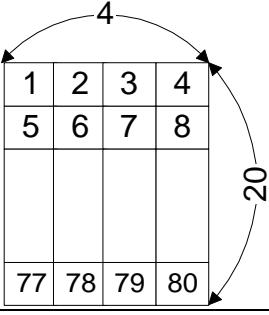
Rx,y,x1,y1,lrw,ubw - Rectangle

Syntax	**Rx,y,x1,y1,lrw,ubw**	
Parameter	x = left-upper Hori .pos. (unit: dots) y = left-upper Vert. Pos. (unit: dots) x1 = right-bottom Hori. Pos. (unit: dots) y1 = right-bottom Vert. Pos. (unit: dots) lrw = thickness of left, right border (unit: dots) ubw = thickness of upper bottom border (unit: dots)	
Description	Draw a rectangle in the label (refer to page46)	
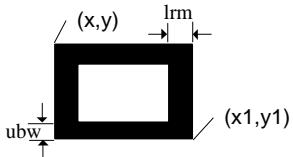
Th|m|s - Define time layout formatting

Syntax	**Th|m|s**
Parameter	h = Hour format (2 digits, 00 ~ 23) m = Minute format (2 digits, 00 ~ 59) s = Second format (2 digits, 00 ~ 59) | = Partition (It can be any separator between dec. 32 to 63 of ASCII).
Description	Define the time layout for internal real-time clock (refer to page45)

V#ADD,name,size,prompt - Store variable with a name

Syntax	**V#ADD,name,size,prompt**	
Parameters	name = descriptive name size = number of character prompt = prompt of variable	
Description	The name of the variable can be defined by user.	
Example	~MDELF,aaa ^Faaa ^Q50,0,3 ^AD ^L V#ADD,weight,10,Weight V#ADD,date,15,Date AE,7,46,1,1,0,0,Weight is ^(weight) AE,7,86,1,1,0,0,Date is ^(date) E ^Kaaa 16 kg 11/26/2004 E ~P1	Weight is 16 kg Date is 11/26/2004

V#ADDCHKSUM,x - Add modulus 10 check code

Syntax	**V#ADDCHKSUM,x**	
Parameters	x = variable	
Description	Add the modulus 10 check code to x	
Example	Add modulus 10 check code to V00 ~MDELF,test ^Ftest ^Q60,0,0 ^L V00,16,Prompt V#ADDCHKSUM,V00 AE,47,57,1,1,0,0,Date:^V00 E ^Ktest 111222333 E ~P1	Print result Enter Variable value 111222333 Print result 1112223332

V#LINKDB,x,y - Set a Variable name for dBase data

Syntax	**V#LINKDB,x,y**
Parameter	x = Column name of database y = Variable
Description	Before using this command, a dBase data should opened first, and then can link dBase data to print designate data out.
Example	Please refer to page53

V#OPx,p1,p2,p3 - Variable calculation

Syntax	**V#OPx,p1,p2,p3**	
Parameters	x = +, -, *, /, % ; p1,p2,p3= variable x = +, p1=p2+p3 x = -, p1=p2-p3 x = *, p1=p2*p3 x = /, p1=p2/p3 x = %, p1=p2%p3	
Description	This command can calculate variables. (refer to page52) *Note: the calculation result will be rounded off to integer value.	
Example	V#OP+,V00,V01,V02 V#OP-,V00,V01,V02 V#OP*,V00,V01,V02 V#OP/,V00,V01,V02 V#OP%,V00,V01,V02	V00=V01+V02 V00=V01-V02 V00=V01*V02 V00=V01/V02 V00=V01%V02

V#RENAME,name,x - Variable rename

Syntax	**V#RENAME,name,x**	
Parameters	name = new name of the variable (max 8 characters) x = variable	
Description	Rename the variable.	
Example	~MDELF,aaa ^Faaa ^Q50,0,3 ^AD ^L V00,10,Prompt V01,10,Prompt V#RENAME,weight,V00 V#RENAME,date,V01 AE,7,46,1,1,0,0,Weight is ^(weight) AE,7,86,1,1,0,0,Date is ^(date) E ^Kaaa 16 kg 11/20/2004 E ~P1	Weight is 16 kg Date is 11/20/2004

V#SET,UNPROMPT,x - Disable variable prompt

Syntax	**V#SET,UNPROMPT,x**	
Parameters	x = variable	
Description	This command can set the variable without prompt.	
Example	V#OP+,V00,V01,V02 V#SET,UNPROMPT,V00	Use doesn't need to input the value of V00

V#STRCPY,x,y - Copy all of variable data

Syntax	**V#STRCPY,x,y**	
Parameters	x = target variable y = source variable	
Description	Copy all data of y to x	
Example	V#STRCPY,V00,V01	Copy all of V01 data to V00

V#STRSUB,x,y,first,length - Copy part of Variable value

Syntax	**V#STRSUB,x,y,first,length**
Parameters	x = target variable y = source variable first = the position of first character length = the number of characters
Description	Copy part of y value to x
Example	Copy year, month and day values respectively from a whole date variable. ~MDELF,test ^Ftest ^Q60,0,0 ^L V00,16,PromptV0 V01,16,PromptV1 V02,16,PromptV2 V03,16,PromptV2 V#STRSUB,V01,V00,5,2 V#STRSUB,V02,V00,8,2 V#STRSUB,V03,V00,0,4 V#SET,UNPROMPT,V01 V#SET,UNPROMPT,V02 V#SET,UNPROMPT,V03 AE,47,57,1,1,0,0,Date:^V00 AE,38,115,1,1,0,0,Month:^V01 AE,38,155,1,1,0,0,Day:^V02 AE,38,205,1,1,0,0,Year:^V03 E ^Ktest 2005/01/31 E ~P1	Print result: Date:2005/01/31 Month:01 Day:31 Year:2005

Vt,x,y,x_mul,y_mul,gap,rotationInverse,data - Print with downloaded character sets

Syntax	**Vt,x,y,x_mul,y_mul,gap,rotationInverse,data**

Parameter	t = the font name; from A ~ Z
	x = Hori of top-left position of text (unit: dot, 1mm = 8 dots in 203dpi printer; 1mm=12 dots in 300dpi printer)
	y = Vert of top-left position of text (unit: dot, 1mm = 8 dots in 203dpi printer; 1mm=12 dots in 300dpi printer)
	x_mul = Horizontally magnified up to 8 times as large
	y_mul = Vertically magnified up to 8 times as large
	gap = Ditance of the character (unit: dot, 1mm = 8 dots in 203dpi printer; 1mm=12 dots in 300dpi printer)
	rotationInverse = The rotation of ASCII text from 0 to 3, the Asian text rotation form 0 to 7
	      0→ 0° 1→ 90° 2→ 180° 3→ 270°
	      4→ 0° 5→ 90° 6→ 180° 7→ 270°
	      (0~3→rotated for all characters; 4~7→rotated individually for each character)
	      In addition, if the rotation parameter is followed with "I", the text will be printed in inverse font.
	data = Data string (up to 239 characters).

Description	Download Bit-Mapped font to memory. All parameters are all the same with text command
Example	VA,5,10,1,1,1,0,data	The name of font "A"

Vxx,length,prompt - Store variable

Syntax	**Vxx,length,prompt**
Parameters	xx = a code name of the variable, from 00 ~ 99 length = number of characters (up to 98characters). prompt = prompt of variable (maximum up to 60 characters)
Description	Define variables for further use. (refer to page50)

Vxx,length,prompt,jnl - Variable alignment

Syntax	**Vxx,length,prompt,jnl**
Parameter	xx = a code of the variable length = length of variable value prompt = prompt of variable j = Justification option n = l(for left), c(for center), r(for right) l = the length of entire string in millimeters
Description	Variable arrangement by appoint setting

Wx,y,mode,type,ec,mask,mul,len,roatae - Print QR code and Micro QR Code

|		
Syntax	**Wx,y,mode,type,ec,mask,mul,len,roatae**	

Parameters	x = Hori. of left-bottom pos. of barcode (unit: dots)
	y = Vert. of left-bottom pos. of barcode (unit: dots)
	mode = input mode (1 ~ 5)
	      1 → Numerical data mode
	      2 → Alpha numerical data mode
	      3 → 8-bit data mode
	      4 → Kanji data mode
	      5 → Mixing mode
	type = barcode type (1 ~ 2)
	     1 → Model1 (original)
	     2 → Model2 (enhanced)
	     3 → Micro QR code
	ec = error correction level (L、M、Q、H)
	    L → Low
	    M → Medium
	    Q → Medium high
	    H → High
	mask = masking factor (0 ~ 7 or 8 for auto). When printing with Micro QR code, it must be set to "0".
	mul = multiple (1 ~ 8)
	len = number of encoded data bytes, including carriage returns ↵ and line feed.
	roatae =rotation of barcode (0 ~ 3)
	      0) 0° 1) 90° 2) 180° 3) 270°	

Description	Print QR-code by setting.	
Example	Q50,0,0 ^L W10,10,2,1,L,8,10,36,0 0123456789ABCDEFGHIJKLMNOPQRSTUV WXYZ E	Data mode: 2 Model type: 1 Error level: L Masking factor: 8 Multiple:10 Data length: 36

XRBx,y,enlarge,rotation,length<CR>data - Print DataMatrix Code

Syntax	**XRBx,y,enlarge,rotation,length<CR>** **data**
Parameters	x = Horizontal start position of barcode (unit: dots). y = Vertical start position of barcode (unit: dots). enlarge = Enlarge the DataMatrix Code 1~8 times (horizontally and vertically). rotationR = rotation of barcode (0 ~ 3) 0) 0° 1) 90° 2) 180° 3) 270° length = data length (unit: bytes). data = bar code data.
Description	Print DataMatrix code. (refer to page47)

### XRBx,y,enlarge,rotationR,length<CR>data - Print Rectangular DataMatrix Code

| Syntax	**XRBx,y,enlarge,rotationR,length<CR>** **data**
Parameters	x = Horizontal start position of barcode (unit: dots). y = Vertical start position of barcode (unit: dots). enlarge = Enlarge the DataMatrix Code 1~8 times (horizontally and vertically). rotationR = rotation of barcode (0R ~ 3R) 　　　　　0R) 0°　　1R) 90°　　2R) 180°　　3R) 270° length = data length (unit: bytes). data = bar code data.
Description	Print rectangular DataMatrix code. (refer to page47)

Yx,y,name - Graphics

| Syntax	**Yx,y,name**	
Parameter	x = Hori. Pos. of left-upper of graphics (unit: dots) y = Vert. Pos. of left-upper of graphics (unit: dots) name = Name of graphics download	
Description	This command is for printing a graphic that has been previously stored in printer memory (refer to page49)	
	Example: A graphic in printer named "Graphic1", command Y20, 40; Graphic1 ↵ will put this graphic into label at position (20, 40).	
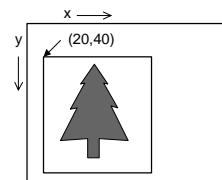
Appendix

I. Barcode Samples

Barcode Type	Barcode Sample	Sample Commands
Code 39		^L Dy2-me-dd Th:m:s R8,13,631,384,8,8 BA,30,57,2,6,80,0,1,22-.$ /+%40 BA,30,200,2,5,80,0,0,22-.$ /+%40 AB,400,25,1,1,0,0,Human Readable AB,400,170,1,1,0,0,No Human Readable AD,36,300,1,1,0,0I,Code39 E
Code 39 with check digit		^L Dy2-me-dd Th:m:s R8,13,631,384,8,8 BA2,30,57,2,6,80,0,1,22-.$ /+%40 BA2,30,200,2,5,80,0,0,22-.$ /+%40 AB,400,25,1,1,0,0,Human Readable AB,400,170,1,1,0,0,No Human Readable AD,36,300,1,1,0,0I,Code39 with check E
EAN 8		^L Dy2-me-dd Th:m:s R8,13,631,384,8,8 BB,30,57,2,5,80,0,1,22408785 BB,30,200,2,5,80,0,0,22408785 AB,400,25,1,1,0,0,Human Readable AB,400,170,1,1,0,0,No Human Readable AD,36,300,1,1,0,0I,EAN8 E
EAN 8 - Add ON 2		^L Dy2-me-dd Th:m:s R8,13,631,384,8,8 BC,30,57,2,5,80,0,1,2240878412 BC,30,200,2,5,80,0,0,2240878412 AB,400,25,1,1,0,0,Human Readable AB,400,170,1,1,0,0,No Human Readable AD,36,300,1,1,0,0I,EAN8 Add ON 2 E
EAN 8 - Add ON 5		^L Dy2-me-dd Th:m:s R8,13,631,384,8,8 BD,30,57,2,5,80,0,1,2240878512345 BD,30,200,2,5,80,0,0,2240878512345 AB,400,25,1,1,0,0,Human Readable AB,400,170,1,1,0,0,No Human Readable AD,36,300,1,1,0,0I,EAN8 Add ON 5 E
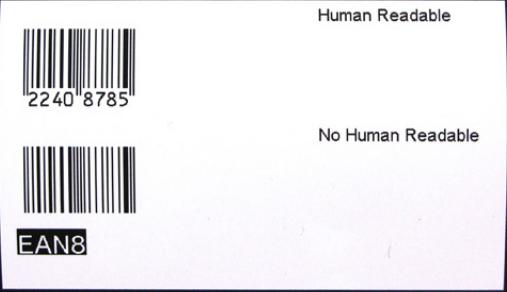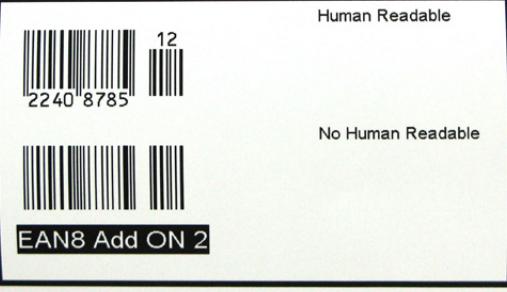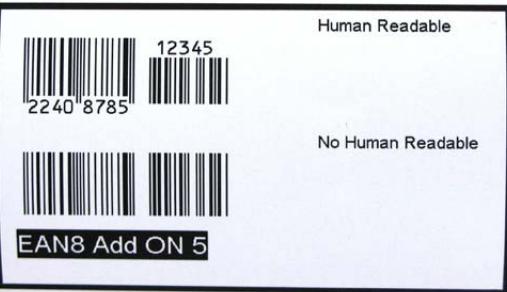
EAN 13		^L Dy2-me-dd Th:m:s R8,13,631,384,8,8 BE,30,57,2,5,80,0,1,2240878500518 BE,30,200,2,5,80,0,0,2240878500518 AB,400,25,1,1,0,0,Human Readable AB,400,170,1,1,0,0,No Human Readable AD,36,300,1,1,0,0I,EAN13 E
EAN 13 - Add ON 2		^L Dy2-me-dd Th:m:s R8,13,631,384,8,8 BF,30,57,2,5,80,0,1,224087850051812 BF,30,200,2,5,80,0,0,224087850051812 AB,400,25,1,1,0,0,Human Readable AB,400,170,1,1,0,0,No Human Readable AD,36,300,1,1,0,0I,EAN13 Add ON 2 E
EAN 13 - Add ON 5		^L Dy2-me-dd Th:m:s R8,13,631,384,8,8 BG,30,57,2,5,80,0,1,224087850051812345 BG,30,200,2,5,80,0,0,224087850051812345 AB,400,25,1,1,0,0,Human Readable AB,400,170,1,1,0,0,No Human Readable AD,36,300,1,1,0,0I,EAN13 Add ON 5 E
UPC A		^L Dy2-me-dd Th:m:s R8,13,631,384,8,8 BH,30,57,2,5,80,0,1,224087855173 BH,30,200,2,5,80,0,0,224087855173 AB,400,25,1,1,0,0,Human Readable AB,400,170,1,1,0,0,No Human Readable AD,36,300,1,1,0,0I,UPC A E
UPC A - Add ON 2		^L Dy2-me-dd Th:m:s R8,13,631,384,8,8 BI,30,57,2,5,80,0,1,22408785517312 BI,30,200,2,5,80,0,0,22408785517312 AB,400,25,1,1,0,0,Human Readable AB,400,170,1,1,0,0,No Human Readable AD,36,300,1,1,0,0I,UPC A Add ON 2 E
UPC A - Add ON 5		^L Dy2-me-dd Th:m:s R8,13,631,384,8,8 BJ,30,57,2,5,80,0,1,22408785517312345 BJ,30,200,2,5,80,0,0,22408785517312345 AB,400,25,1,1,0,0,Human Readable AB,400,170,1,1,0,0,No Human Readable AD,36,300,1,1,0,0I,UPC A Add ON 5 E
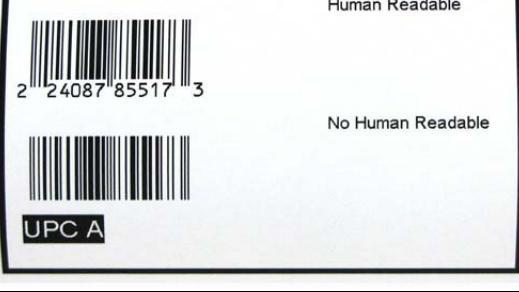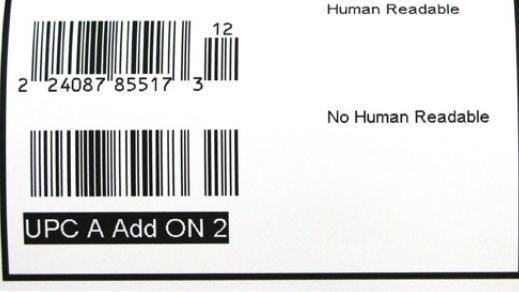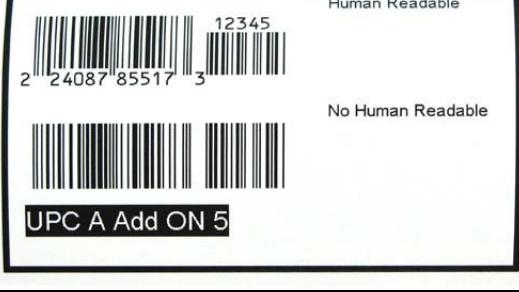
UPC E		^L Dy2-me-dd Th:m:s R8,13,631,384,8,8 BK,30,57,2,5,80,0,1,2240879 BK,30,200,2,5,80,0,0,2240879 AB,400,25,1,1,0,0,Human Readable AB,400,170,1,1,0,0,No Human Readable AD,36,300,1,1,0,0I,UPC E E
UPC E - Add ON 2		^L Dy2-me-dd Th:m:s R8,13,631,384,8,8 BL,30,57,2,5,80,0,1,224087912 BL,30,200,2,5,80,0,0,224087912 AB,400,25,1,1,0,0,Human Readable AB,400,170,1,1,0,0,No Human Readable AD,36,300,1,1,0,0I,UPC E Add ON 2 E
UPC E - Add ON 5		^L Dy2-me-dd Th:m:s R8,13,631,384,8,8 BM,30,57,2,5,80,0,1,224087912345 BM,30,200,2,5,80,0,0,224087912345 AB,400,25,1,1,0,0,Human Readable AB,400,170,1,1,0,0,No Human Readable AD,36,300,1,1,0,0I,UPC E Add ON 5 E
I 2 of 5		^L Dy2-me-dd Th:m:s R8,13,631,384,8,8 BN,30,57,2,5,80,0,1,22408785 BN,30,200,2,5,80,0,0,22408785 AB,400,25,1,1,0,0,Human Readable AB,400,170,1,1,0,0,No Human Readable AD,36,300,1,1,0,0I,I 2 of 5 E
Codabar		^L Dy2-me-dd Th:m:s R8,13,631,384,8,8 BO,30,57,2,5,80,0,1,A22408785D BO,30,200,2,5,80,0,0,A22408785D AB,400,25,1,1,0,0,Human Readable AB,400,170,1,1,0,0,No Human Readable AD,36,300,1,1,0,0I,Codabar E
UCC 128		^L Dy2-me-dd Th:m:s R8,13,631,384,8,8 BR,30,57,2,5,80,0,1,0022408785123456789 BR,30,210,2,5,80,0,0,0022408785123456789 AB,400,25,1,1,0,0,Human Readable AB,400,180,1,1,0,0,No Human Readable AD,36,300,1,1,0,0I,UCC128 E
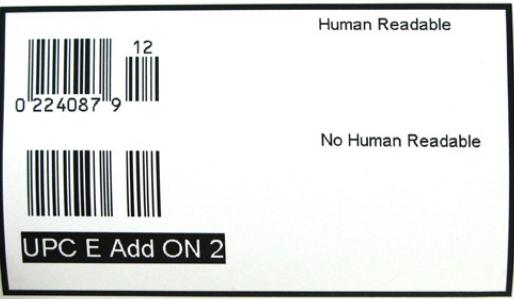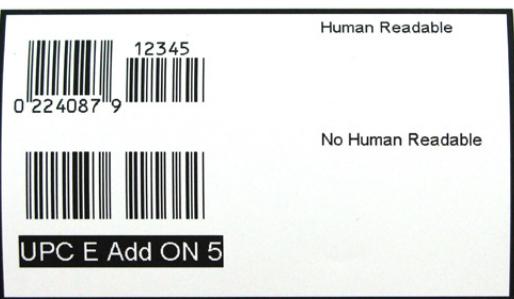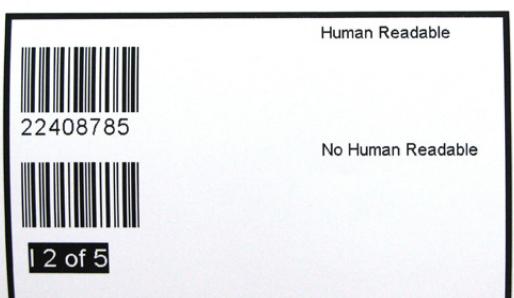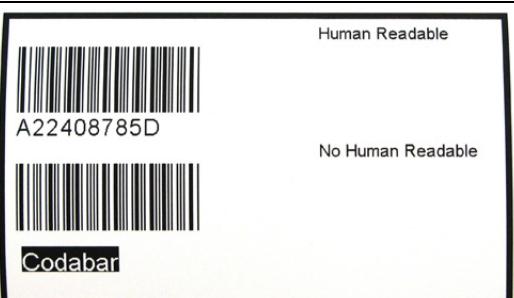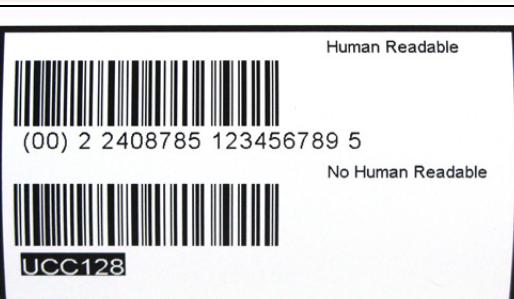
Post NET		^L Dy2-me-dd Th:m:s R8,13,631,384,8,8 BS,30,100,2,5,80,0,1,22408 BS,30,230,2,5,80,0,0,22408 AB,400,25,1,1,0,0,Human Readable AB,400,170,1,1,0,0,No Human Readable AD,36,300,1,1,0,0I,Post NET 5 E
DUN 14 ONLY 90		^L Dy2-me-dd Th:m:s R8,13,631,384,8,8 BT,30,57,2,5,80,0,1,012345-011238 BT,30,200,2,5,80,0,0,012345-011238 AB,400,25,1,1,0,0,Human Readable AB,400,170,1,1,0,0,No Human Readable AD,36,300,1,1,0,0I,DUN14 E
EAN 128		^L Dy2-me-dd Th:m:s R8,13,631,384,8,8 BU,30,57,2,5,80,0,2,00100844237449200941 BU,30,200,2,5,80,0,0,00100844237449200941 AB,400,25,1,1,0,0,Human Readable AB,400,170,1,1,0,0,No Human Readable AD,36,300,1,1,0,0I,EAN128 E
RPS 128		^L Dy2-me-dd Th:m:s R8,13,631,384,8,8 BV,30,57,2,5,80,0,1,2240878522408785123452 BV,30,200,2,5,80,0,0,2240878522408785123452 AB,400,25,1,1,0,0,Human Readable AB,400,170,1,1,0,0,No Human Readable AD,36,300,1,1,0,0I,RPS128 E
China Postal Code		^L Dy2-me-dd Th:m:s R8,13,631,384,8,8 BW,30,57,2,5,80,0,1,22408785 BW,30,200,2,5,80,0,0,22408785 AB,400,25,1,1,0,0,Human Readable AB,400,170,1,1,0,0,No Human Readable AD,36,300,1,1,0,0I,China Postal Code E
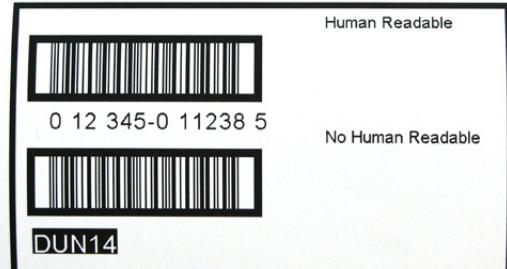
HIBC		^L Dy2-me-dd Th:m:s R8,13,631,384,8,8 BX,30,57,2,6,80,0,1,22-.$ /+%40 BX,30,200,2,6,80,0,0,22-.$ /+%40 AB,400,25,1,1,0,0,Human Readable AB,400,170,1,1,0,0,No Human Readable AD,36,300,1,1,0,0I,HIBC E
Plessey		^L Dy2-me-dd Th:m:s R8,13,631,384,8,8 BY,30,57,2,5,80,0,1,22408785 BY,30,200,2,5,80,0,0,22408785 AB,400,25,1,1,0,0,Human Readable AB,400,170,1,1,0,0,No Human Readable AD,36,300,1,1,0,0I,Plessey MSI2 1 mod10 E
I 2 of 5 with Shipping Bearer Bars		^L Dy2-me-dd Th:m:s R8,13,631,384,8,8 BZ,30,57,2,5,80,0,1,2240878512345 BZ,30,200,2,5,80,0,0,2240878512345 AB,400,25,1,1,0,0,Human Readable AB,400,170,1,1,0,0,No Human Readable AC,36,300,1,1,0,0I,I 2 of 5 with Shipping Bearer Bars E
UCC/EAN-128 K-MART		^L Dy2-me-dd Th:m:s R8,13,631,384,8,8 B1,30,57,2,5,80,0,1,224087858901234567 B1,30,200,2,5,80,0,0,224087858901234567 AB,400,25,1,1,0,0,Human Readable AB,400,170,1,1,0,0,No Human Readable AD,36,300,1,1,0,0I,UCC/EAN 128 K-MART E
UCC/EAN-128 RANDAN		
	^L	

	Dy2-me-dd Th:m:s R8,13,631,790,8,8 B2,500,60,2,5,80,1,1,2240878522408785678224087852240878 B2,250,60,2,5,80,1,0,2240878522408785678224087852240878 AB,550,400,1,1,0,1,Human Readable AB,300,400,1,1,0,1,No Human Readable AD,36,720,1,1,0,0I,UCC/EAN 128 RANDAN E	
Telepen		^L Dy2-me-dd Th:m:s R8,13,631,384,8,8 B3,30,57,2,5,80,0,1,22408785 B3,30,200,2,5,80,0,0,22408785 AB,400,25,1,1,0,0,Human Readable AB,400,170,1,1,0,0,No Human Readable AD,36,300,1,1,0,0I,Telepen E
FIM		^L Dy2-me-dd Th:m:s R8,13,631,384,8,8 B4,110,80,1,1,50,0,1,A B4,350,80,1,1,50,0,1,B AB,130,220,1,1,0,0,char A AB,370,220,1,1,0,0,char B AD,36,300,1,1,0,0I,FIM E
GS1 Databar		^L Dy2-me-dd Th:m:s R8,13,631,384,8,8 B55,30,57,2,5,80,0,1,1234567890000 B55,30,200,2,5,80,0,0,1234567890000 AB,400,25,1,1,0,0,Human Readable AB,400,170,1,1,0,0,No Human Readable AD,36,300,1,1,0,0I,GS1 Databar E
Maxicode		^L Dy2-me-dd Th:m:s R8,13,631,384,8,8 M200,50,1,1,2,840,068107317,666,0,123456 AD,36,300,1,1,0,0I,MaxiCode E
PDF417		^L Dy2-me-dd Th:m:s R8,13,631,384,8,8 PC50,100,3,10,3,3,3,19 &*01234567 012&* AD,36,300,1,1,0,0I,PDF 417 E

QR Code		^L Dy2-me-dd Th:m:s R8,13,631,384,8,8 W100,60,1,1,M,8,7,10,0 0123456789 W400,60,1,2,M,8,7,10,0 0123456789 AB,130,230,1,1,0,0,mode 1 AB,430,230,1,1,0,0,mode 2 AD,36,300,1,1,0,0I,QR Code E
Micro QR Code		^L Dy2-me-dd Th:m:s R8,13,631,384,8,8 W100,80,1,3,M,0,7,10,0 0123456789 AD,36,300,1,1,0,0I,Micro QR Code E
DataMatrix (Square)		
	^L Dy2-me-dd Th:m:s R8,13,631,384,8,8 XRB250,100,7,0,50 012345678901234567890123456789012345678901234567 89 AD,36,300,1,1,0,0I,DataMatrix Code Square E	
DataMatrix (Rectangular)		
	^L Dy2-me-dd Th:m:s R8,13,631,384,8,8 XRB180,100,7,0R,50 012345678901234567890123456789012345678901234567 89 AD,36,300,1,1,0,0I,DataMatrix Code Rectangle E	
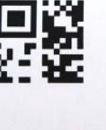
43

II. Command Examples

How to construct a label using BP-Series command:

To create a label, it must be an order command combination.

Control command And Setup up command	
^L	^L is precedent for the beginning of label format
Label format command	Label format command must be included between the ^L and E command
E	E is ending of label format
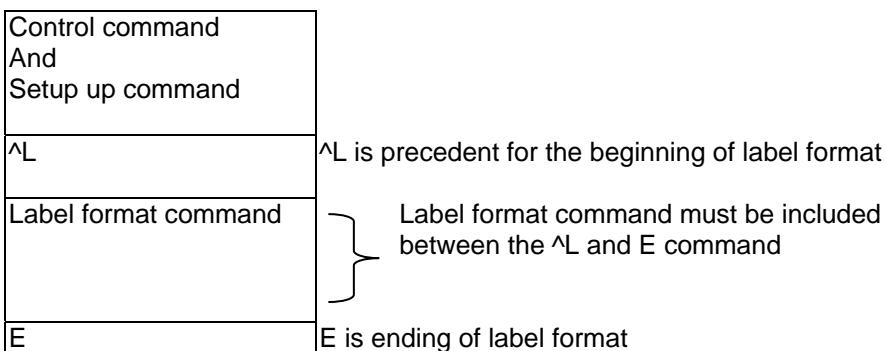
** Control or setup commands to be used in the label command area will be ineffective.

Example:
The following example is printing a label with EAN8. The program is a text file. No matter what language you use in programming, simply send out the text file of the contents and you can control the printing with BP-Series printers.
Save the following contents (command file named: EX1.TXT).

Program command	Description
^Q25,3	Setting up the height 25mm, gap 3mm
^W32	Setting up the width 32mm
^H10	Setting up the darkness 10
^S6	Setting up the speed 6 inches per second
^P1	Setting up the number of printing 1
^E10	Setting up the paper advance length to 10 mm from the print head after printing. The label will move back 10 mm when the next label is printed.
^C1	Setting up the number of copies (start value is 1)
^O0	Setting up the auto stripper function to be turned OFF
^R0	Setting up the left margin 0 dot
^D0	Turning the cutting function off
^L	The label content of start symbol
BB,42,39,2,5,100,0,1,1234567	Select EAN8 label, data content is 1234567
E	Label content of stop symbol

The label can be created by the following MS-DOS command:
C:\>COPY EX1.TXT PRN↵
To send the label to serial port by the following MS-DOS command:
C:\>MODE COM1 96,N,8,1
C:\>TYPE EX1.TXT >> COM1

Setting the x and y values:
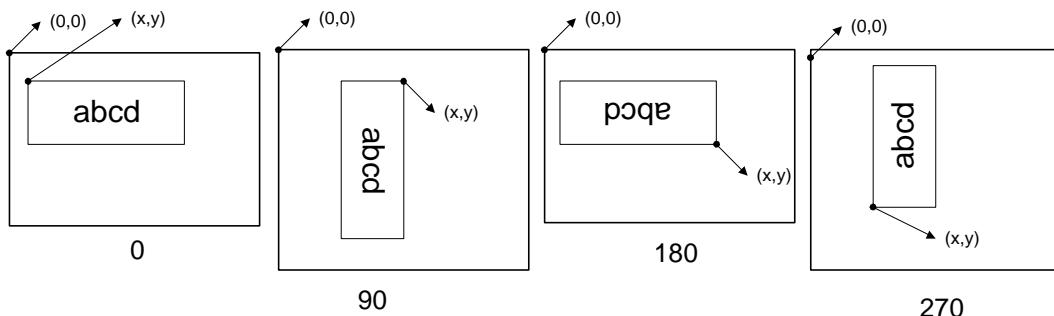
1. Text

Example	Result	Rotate printing	Result
^Q50,0,2 ^W50 ^S6 ^H10 ^R10 ~D8,27,00,8,39,36 ^L AC,10,10,1,1,1,0,PRINTER AC,10,50,1,1,1,0,^D AC,10,100,1,1,1,0,^T E	PRINTER AUG/27/00 08:39:36	^Q50,0,0 ^W50 ^S6 ^H10 ^L AC,100,30,1,1,1,0,ROTATION 0 AC,38,0,1,1,1,1,ROTATION 90 AC,260,150,1,1,1,2,ROTATION 180 AC,290,200,1,1,1,3,ROTATION 270 E	ROTATION 0 ROTATION 90 ROTATION 180 ROTATION 270

Adjusting the character spacing	Result	Asia Font	Result
^Q30,0,0 ^W50 ^S6 ^H10 ^L AC,10,10,1,1,10,0,PRINTER AC,10,100,1,1,1,0,PRINTER E	P R I N T E R PRINTER	^L AZ,100,12,1,1,0,4,中文 AZ,223,65,1,1,0,5,中文 AZ,60,100,1,1,0,6,中文 AZ,90,144,1,1,0,7,中文 E	中文 文中 中文 文中

The data output is a default setting and user can change it with ~D command (refer to page28).
The time output format is a default setting and user can change it with T command.

2. Barcode

Example	Result	Rotation of barcode	Result
^H10 ^S6 ^Q30,0,2 ^W60 ^L BB,20,100,3,3,100,0,1,1234567 E	1234 5670	^H10 ^S6 ^W25 ^Q30,0,2 ^L BE,100,20,2,4,80,1,1,123456789012 E	1234567 8901 28

3. RTC Setting

Change the date formatting	Result
Dy4-me-dd	2000-MAY-29
Dy4/mn/dd	2000/05/29
Dmn|dd|y4	05|29|2000
Dy4	2000
Dme	MAY
Ddd	09
Dy4-me	2000-MAY
Dme-dd	MAY-29

4. Line printing

| Example	Description	Result
^Q50,3 ^W100 ^E32 ^H7 ^P1 ^S6 ^L Lo,212,45,311,53 Lo,244,11,252,128 Le,34,43,149,51 Le,72,8,80,121 E	; Darkness= 7 ; Speed = 6 inch/second ; Label height = 50mm, gap = 3 mm ; Label width = 100mm	

5. Rectangle printing

Example	Description	Result
^H10 ^S6 ^Q50,2 ^W70 ^L R20,20,120,120,8,8 E	; Darkness = 10 ; Speed = 6 inch/second ; Label height = 50mm, gap = 2 mm ; Label width= 70mm ; (x,y) = (20,20), (x1,y1) = (120,120) lrw = 8 dots, ubw = 8 dots	

6. PDF417

Example	Result
^Q50,0,3 ^W70 ^S6 ^H10 ^L P30,20,3,3,3,1,100 12345678 12345678 12345678 12345678 12345678 12345678 12345678 12345678 12345678 12345678 E	

7. Maxicode

Example	Result
^Q50,0,0 ^W70 ^S6 ^H10 ^L M30,20,1,1,2,840,068107317,8,0,123456 E	

46

8. DataMatrix Code

Example	Result
^Q60,3 ^W80 ^H19 ^P1 ^S2 ^L XRB314,134,8,0,10 0123456789 XRB312,438,8,0R,10 0123456789 E	

9. Stripper setting

Example	Result
^Q50,2	; Label height= 50mm, gap= 2mm
^W50	; Label width= 50mm
^S6	; Speed =6 inch/second
^O1	; Stripper enable
^E10	; Set stop position to 10 mm
^P1	; Printing one label
^H10	; Darkness = 10
^L	; Label format begin sign
AD,20,20,1,1,3,0,Stripper Function	
E	; Label format end and begin print

10. Cutter setting

Example	Description	Result
^Q20,0,0 ^H5 ^S2 ^P10 ^D2 ^C1 ^L R10,10,120,90,2,2 C0,001,+1,A1 AC,20,30,1,1,1,0,a^C0 E	;plain paper length:20mm ;feed label length :0mm ;print 10 labels ;2 labels per cut	

11. Serial number

| TEXT			
Example 1	**Result**	**Example 2**	**Result**
^Q10,0,0 ^W30 ^S6 ^H10 ^P10 ^L C0,0000,+2,A1 AB,10,10,1,1,2,0,^C0 E	0018 0016 0014 0012 0010 0008 0006 0004 0002 0000	~P10 If you want to continue printing 10 more serial numbers that is starting from 0018, enter the command "~P10". With this command you do not have to re-enter all the command in example.	0038 0036 0034 0032 0030 0028 0026 0024 0022 0020
Example 3	**Result**	**Example 4**	**Result**
^Q10,0,0 ^W30 ^S6 ^H10 ^P4 ^C2 ^L C0,0000,+2,A1 AB,10,10,1,1,2,0,^C0 E	0006 0006 0004 0004 0002 0002 0000 0000	^Q10,0,0 ^W30 ^S6 ^H10 ^P8 ^L C0,0000,+2,A1 AB,10,10,1,1,2,0,abc^C0def E	abc0014def abc0012def abc0010def abc0008def abc0006def abc0004def abc0002def abc0000def
Barcode			
Barcode with serial number		**Result**	
^H10 ^S6 ^Q20,0,2 ^W50 ^P10 ^L C0,000,-1,A3 BE,20,100,3,3,100,0,1,111111^C0111 E			

12. Graphic driver format

Example	Description
^Q20,2 ^W50 ^R20 ~G G(AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA G(AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA G(AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA G(AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA G(AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA G(AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA G(AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA G(AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA G(AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA G(AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA G(AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA G(AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA G(AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA G(AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA E	; Left margin = 20 dots For this example, ASCII "("character is 40 decimal (=40 bytes). Total 14 lines, so the graphics height is 1.75mm (14 dots)
	Result

13. Pattern command setting

Example	Result
^Q,20,0,0 ^W40 ^S6 ^D5 ^L Q40,10,2,8 GGGGGGGGGGGGGGGG E	‖‖‖ Length: 2x8=16
Description	

0100011101000111 ↑ 0100011101000111 0100011101000111 0100011101000111 HEIGHT = 8 DOTS 0100011101000111 0100011101000111 0100011101000111 0100011101000111 ↓ ←—1 BYTE—→←—1 BYTE—→ ←———WIDTH = 2 BYTES———→ G : 01000111 (binary)	‖‖‖ ↕8dots ←2mm→

14. Rotate label format for printing

Example	Description	Result
^Q40,2 ^W50 ^S6 ^H10 ~R50 ^L AC,153,42,1,1,1,2,ROTATE BB,156,112,2,5,50,2,1,1234567 E	; Label size is 40 mm(h) x 50 mm(w); 2 mm gap ; Rotate the label format 180° for printing	‖‖ 1234 ‖ 5670 ‖ ‖‖‖‖‖‖‖‖‖ ƎTATOЯ
^Q50,0,0 ~R200 ^L AC,20,10,1,1,1,0,ROTATE BB,20,45,2,5,50,0,1,1234567 E	; Disable the rotate function	ROTATE ‖‖‖‖‖‖‖‖‖‖‖ 1234 ‖ 5670

15. Download graphic to printer's memory

Following the below steps to download graphic to printer.
1. Prepare a graphic file (file name: TREE.PCX, file size: 922 bytes).
2. Prepare two text files (TEST1.TXTand TEST2.TXT, see the following contents).

TEST1.TXT	TEST2.TXT	Print Result
~EP,TREE,922	^Q30,0,0 ^W50 ^S2 ^H5 ^L Y30,50,TREE E	

3. In DOS mode, running the following commands.
COPY TEST1.TXT PRN↵
COPY TREE.PCX PRN/B↵
COPY TEST2.TXT PRN↵

16. Download label and variable settings

| Example	Description
^Ftest ^Q50,0,15 ^W70 ^H10 ^S6 ^E12 ^L C0,0000,+1,serial no. V00,10,name V01,8,barcode V02,6,price AE,108,306,1,1,1,0,$^V02 AC,39,27,1,1,1,0,S/N.^C0 AD,126,78,1,1,1,0,^V00 BA,108,135,2,5,100,0,1,^V01 E	; Download label to memory card and the label name is "test". ; Setting serial number is C0 ; Setting three variables V00, V01, V02

17. Recall label format from memory

Example 1	Description	Result
^Ktest 0000 Book 12345678 200.00 E ~P1	Recall label format without changing the label format C0 = 0000 V00 = book V01 = 12345678 V02 = 200.00	S/N.0000 book ‖‖‖‖‖‖‖‖‖‖‖‖‖ * 12345678 * $200.00

Example 2	Description	Result
^Ktest 1111 Pencil 12345678 100.00 E ^Q35,0,0 ^S6 ^H10 ~P2	Recall label format and change label format C0 = 1111 V00 = pencil V01 = 12345678 V02 = 100.00 Changing the size Changing speed to 6"/sec Changing darkness to 10 Printing the last label twice	S/N.1111 Pencil ‖‖‖‖‖‖‖‖‖‖‖‖‖ * 12345678 * $100.00 S/N.1112 Pencil ‖‖‖‖‖‖‖‖‖‖‖‖‖ * 12345678 * $100.00

Each time you change variable data or label format, repeat to send command from ^Kname to ~Px.

18. Print head test & Version list

Example	Result
~T	
~V	BPXXXX : VX.XXX Serial port :96,N,8,1 1 DRAM installed Image buffer size : 1475K 000 FORM(S) IN MEMORY 000 GRAPHIC (S) IN MEMORY 000 FONT(S) IN MEMORY 000 ASIAN FONT(S) IN MEMORY 150K BYTES FREE MEMORY ^S6 ^H8 ^R000 ~R200 ^W100 ^Q100,3 Option : ^D0 ^O0 ^AD Gap Sensor AD : 129 162 195 (3)
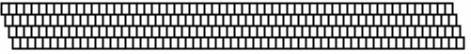
19. Use variable settings

	Example	Result
1. User input unit price and amount. Printer calculates total price.	~MDELF,test1 ^Ftest1 ^Q60,0,0 ^P1 ^L V00,10,Price V01,10,Amount V02,10,Total Price V#OP*,V02,V00,V01 V#SET,UNPROMPT,V02 AC,30,110,1,1,0,0,Price: ^V00 AC,30,189,1,1,0,0,Amount: ^V01 AE,30,273,1,1,0,0,Total Price: ^V02 E ^Ktest1 100 3 E ~P1	Price: 100 Amount: 3 Total Price: 300
2. Calculation sample	~MDELF,test2 ^Ftest2 ^Q60,0,0 ^L V00,10,Input V00 V01,10,Input V01 V02,10,Input V02 V03,20,Input V03 V04,20,Input V05,20,Input V06,20,Input V#OP+,V02,V01,V00 V#OP-,V03,V01,V00 V#OP*,V04,V01,V00 V#OP/,V05,V01,V00 V#OP%,V06,V01,V00 V#SET,UNPROMPT,V02 V#SET,UNPROMPT,V03 V#SET,UNPROMPT,V04 V#SET,UNPROMPT,V05 V#SET,UNPROMPT,V06 AA,38,37,1,1,0,0,V00=^V00 AA,38,77,1,1,0,0,V01=^V01 AE,38,115,1,1,0,0,V1+V0=^V02 AE,38,165,1,1,0,0,V1-V0=^V03 AE,38,215,1,1,0,0,V1*V0=^V04 AE,38,265,1,1,0,0,V1/V0=^V05 AE,38,315,1,1,0,0,V1 MOD V0=^V06 E ^Ktest2 10 20 E ~P1	V00=10 V01=20 V1+V0=30 V1-V0=10 V1*V0=200 V1/V0=2 V1 MOD V0 = 0

20. dBase III data setting

Example:

customer.dbf has following data

NAME	ADDRESS	PHONE
Tom	Address of Tom	11111111
Mary	Address of Mary	22222222
John	Address of John	33333333
Joe	Address of Joe	44444444
Bob	Address of Bob	55555555
Gilbert	Address of Gilbert	66666666

Example	Description	Result
^Q60,0,0 ^P1 ^L FILEDB,OPEN,customer V00,10,Prompt0 V#LINKDB,PHONE,V00 FILEDB,FIND,NAME,Mary AC,79,120,1,1,0,0, Mary's phone: ^V00 E	Print out Mary's phone number	Mary's phone: 22222222
^Q60,0,0 ^P1 ^L FILEDB,OPEN,customer V00,10,Prompt0 V#LINKDB,ADDRESS,V00 FILEDB,FIND,NAME,John AC,79,120,1,1,0,0, ^V00 E	Print out John Address	Address of John
^Q60,0,0 ^P1 ^L FILEDB,OPEN,customer V00,10,Prompt V#LINKDB,NAME,V00 FILEDB,MOVE,LAST AC,79,120,1,1,0,0,Last Name is ^V00 E	Print out last person name	Last Name is Gilbert
^Q60,0,0 ^P1 ^L FILEDB,OPEN,customer V00,10,Prompt V#LINKDB,NAME,V00 FILEDB,MOVE,2 AC,79,120,1,1,0,0,Second Name is ^V00 E	Print second person name	Second Name is Mary

^Q60,0,0 ^P3 ^L FILEDB,OPEN,customer C0,1,+1,DB Move C V00,10,name V01,10,phone V#LINKDB,NAME,V00 V#LINKDB,PHONE,V01 FILEDB,MOVE,C0 AC,79,120,1,1,0,0,^V00 Phone is ^V01 E	Print first, second and third person phone number 54	Tom Phone is 11111111 Mary Phone is 22222222 John Phone is 33333333

About Code 128

BQ2, X, Y, NARROW, WIDE, HEIGHT, RTATION, READABLE, DATA

Code 128 Subset A: Included the standard uppercase alphanumeric keyboard characters, control and special characters.

Code 128 Subset B: Includes the standard uppercase, lowercase alphanumeric keyboard characters and special characters.

Code 128 Subset C: Used for double density encoding of numeric data (the set of 100 digit pairs from 00 through 99).

Example	
Subset A: BQ2,8,8,2,5,40,0,0,AAPPLE	To select Code 128 Subset A, place a ASCII A before the data to be encoded.
Subset B: BQ2,8,8,2,5,40,0,0,BAPPLE	To select Code 128 Subset B, place a ASCII B before the data to be encoded.
Subset C: BQ2,8,8,2,5,40,0,0,C1234	To select Code 128 Subset C, place a ASCII C before the data to be encoded.
Special character handling: BQ2,8,8,2,5,40,0,0, ATEST&G	To encode FNC1 into a Code 128 Subset A, send the ASCII &G.

ASCII	2 Character	Code A	Code B	Code C
96	&A	FNC3	FNC3	-NA-
97	&B	FNC3	FNC2	-NA-
98	&C	SHIFT	SHIFT	-NA-
99	&D	Code C	Code C	-NA-
100	&E	Code B	FNC	Code B
101	&F	FNC4	Code A	Code A
102	&G	FNC1	FNC1	FNC1