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EZ-2200/EZ-2300 Programmer's Manual



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1. Commands

1-1. EZPL

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

1. The data fields are stored and processed until the printing instruction is received.
2. All the data can be rotated.
3. Images can be downloaded and stored.

There are three basic types of commands:

- Setup
- Control
- Label format

Setup commands

Contain the printer control instructions, configuration instructions and image downloading instructions.

Description	Command	Page
1. Printing mode	^Ax	4
2. Stop position setting	^Ex	4
3. Date offset function	^D+dddd.hh	4
4. Time offset function	^T+hhh.mm	4
5. Setting Print darkness	^Hx	4
6. Number of pages printed	^Px	4
7. Auto Print	^PAn	5
8. limitless print	^PI	5
9. Label length	^Qx,y (,z±)	6
10. Speed setting	^Sx	6
11. Number of copies per label	^Cx	6
12. Row column adjustment	^Rx	6
13. Label format begin sign	^L	6
14. Stripper sensor	^Ox	7
15. Download label format	^Fname	7
16. Recall label format	^Kname	7
17. Label width setting	^Wx	7
18. Number of labels per cut	^Dx	7
19. Select Code Page 850/852	^XSET,CODEPAGE,p1	7
20. Select different area PS2 Keyboard	^XSET,KEYBOARD,p1	7
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22. Serial Port translation setting	^Yp1.p2,p3,p4	8
23. Set the forward length	^Mx	8
24. Set the backward length	^Bx	8

Control commands

Cause the printer to take action immediately, such as cleaning memory, feeding label.

Description	Command	Page
1. Graphic download memory	~Ea, name, length	9
2. Bit-Mapped font download	~Jn	9
3. Graphic mode	~G	9
4. Print last label	~Px	9
5. Print Self-Test page	~V	9
6. Date / Time setting	~Dm,d,y,h,i,s	9
7. Reset printer	~Z	9
8. Printer head testing	~T	9
9. Clear all	~MDEL	10
10. Delete specific file from printer memory	~MDELx,name	10

11.	Display the memory state	~MDIR	10
12.	Save the TXT. file to printer	~MSETT,name<CR>nnnnnnnn<data>	10
13.	Read saved file	~MGETT,name<CR>	10
14.	Immediate response command	~S,CHECK	11
15.	Rotate printing	~Rx	11
16.	Print the available space and data name in the memory	~Xn	11
17.	Acknowledge form RS-232	~Kn	11
18.	Row Offset Adjustment	~Q±n	11
19.	Download dBase III to Printer	~L,DBASE,p1,p2	11
20.	Analogue press FEED key	~S,FEED	11
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22.	Open database	FILEDB,OPEN,p1	12
23.	Move data record	FILEDB,MOVE,p1	12
24.	Searching	FILEDB,FIND,p1,p2	12
25.	dBase data substitute Variable print	V#LINKDB,p1,p2	12

Label formatting commands

Define field data, such as Line, Rectangle, Barcode, Text and image.

Description	Command	Page	
1.	Define date layout	Daa bb cc	13
2.	Serial number setting	Cx,ys,±value,prompt	13
3.	Terminate label formatting mode and print label	E	13
4.	Graphic command	Gwxxx	13
5.	Line command	La,x, y, x1, y1	14
6.	Rectangle	Rx, y, x1,y1, lrw, ubw	14
7.	Table	Hx,y,row_count,col_count,row_width,col_width,line_width	14
8.	Define time layout formatting	Th m s	14
9.	Graphics	Yx, y, name	14
10.	Text	At, x, y, x_mul, y_mul, gap, rotation, data	15
11.	Barcode	Bt,x,y,narrow,wide,height,rotation,readable,data	16
12.	PDF 417	Px,y,w,h,r,c,ec,len	16
13.	Maxicode	Mx, y, sno, nos, mode, ccode, zip, class, rotation, message	17
14.	DataMatrix Code	Xp1, p2, p3, data	17
15.	Define variable field	Vxx, length, prompt	17
16.	Variable for left, center, right in length of appoint	Vxx,length,prompt,jnl	17
17.	Variable Addition	V#OP+,p1,p2,p3	17
18.	Variable Subtraction	V#OP-,p1,p2,p3	17
19.	Variable Multiplication	V#OP*,p1,p2,p3	17
20.	Variable Division	V#OP/,p1,p2,p3	18
21.	Variable Remainder	V#OP%,p1,p2,p3	18
22.	Disable variable prompt	V#SET,UNPROMPT,p1	18
23.	Add moduls 10 check code	V#ADDCHKSUM,Vnn	18
24.	Copy all of variable data	V#STRCPY,Vnn,Vmm	18
25.	Copy part of Variable value	V#STRSUB,Vnn,Vmm,first,length	19
26.	Pattern command	Qx, y, width, height	19
27.	Downloading character sets to memory	Vt, x, y, x_mul, y_mul, gap, rotation, data	19

1-2. Language Description

Rules and syntax

EZPL commands have parameter strings associated with them;

The commands begin with a letter as ID for each function.

The comma (,) is the delimiter to separate each parameter.

The CR [Carriage Return: decimal (13), hex (0D)] signifies the end of every command.

Control and Setup commands use the tilde (~) and caret (^) prefix.

Label Formatting commands have no prefix.

Example: "~Ea,name,length ." "E" is an image downloads command, and (a, name, length) are three parameters.

Setup commands

1. Printing mode

Syntax	^Ax
Parameter	x = D or T
Description	x = D , Direct thermal mode x = T , Thermal transfer mode

2. Stop position setting

Syntax	^Ex
Parameter	X = 0.0~40.0 (unit : mm, can set the first decimal point)
Description	Feed paper to desired stop position.

3. Date offset function

Syntax	^D+dddd.hh
Parameter	dddd is 4 digits offset days · hh is 2 digits offset hours
Description	AC,132,230,1,1,0,0,^D+0005.12 After 5 days and 12 hours

4. Time offset function

Syntax	^T+hhh.mm
Parameter	hhh is 3 digits offset hours · mm is 2 digits offset minutes
Example	AC,410,230,1,1,0,0,^T+012.30 After 12 hours and 30 minutes

5. Setting Print darkness

Syntax	^Hx
Parameter	X = 00 ~ 19
Description	Set printing darkness.

6. Number of pages printed

Syntax	^Px
Parameter	x = 1 ~ 32767
Description	Set how many labels to print; and it will initiate the program.

7. Auto Print

Syntax	^PAn	
Parameter	n=1~30000	
Description	After recall the label, printer will read variable and serial No and then auto print for set pieces	
	^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	Printer will auto print 3 pieces.

8. limitless print

Syntax	^PI	
Parameter	None	
Description	Printer will print immediately, until press cancel or close printer.	
	^Flabel2 ^Q40,0,0 ^PI ^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 ^Klabel2 00001 Variable	

9. Label length

Syntax	$\wedge Q_{x,y,(z\pm)}$	
	Die cut label : (See fig. 1) x = Label length (unit : mm) y = Gap length (mm)	
Parameter	EX. $\wedge Q_{25,3}$ $(x=25,y=3)$ mm	
	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 (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. $\wedge Q_{25,4,3+}$ $(x=25, y=4, z=3+)$ mm $\wedge Q_{25,4,3-}$ $(x=25, y=4, z=3-)$ mm	
Description	Set label size (length, gap length, [plain paper feed length])	

10. Speed setting

Syntax	$\wedge S_x$
Parameter	$x=1$ to 6 (inch/sec)
Description	Set printing speed

11. Number of copies per label

Syntax	$\wedge C_x$
Parameter	$X = 0 \sim 32767$
Description	Number of copies of the same label.

12. Row column adjustment

Syntax	$\wedge R_x$
Parameter	$x = 0 \sim 399$ dots
Response	None
Description	Set left margin

13. Label format begin sign

Syntax	$\wedge L$
Parameter	None
Description	Set label begin sign

14. Stripper sensor

Syntax	^Ox
Parameter	x = 0 , stripper disable. x = 1 , stripper enable
Description	Enable or disable the stripper sensor. When you use this command, it should be matched with ^Ex. (refer page24)

15. Download label format

Syntax	^Fname data
Parameter	Name = name of label format (up to 20 characters) Data = the data containing the label formatting command for this stored format
Description	Download label format into memory. After the download is finished, the printer will beep once (refer page26). <div style="text-align: center;"> </div> <p>Same name inspection : If you use the same file name, the printer will print "REPEAT FILE NAME", and the download will be not be accepted.</p>

16. Recall label format

Syntax	^Kname
Parameter	Name = name of recall label format (up tp 20 characters)
Description	Recall label format from external format (refer page26) <div style="text-align: center;"> </div>

17. Label width setting

Syntax	^Wx
Parameter	x=label width (mm)
Description	Label width setting

18. Number of labels per cut

Syntax	^Dx
Parameter	X = 0 , disable cutting. X = 1 ~ 32767 , number of label per cut.
Description	Number of labels per cut (refer page24)

19. Select Code Page 850/852

Syntax	^XSET,CODEPAGE,p1
Parameter	p1: 0-code page 850. 1-code page 852
Description	Can use command or select Keyboard Mode form LCD

20. Select different area PS2 Keyboard

Syntax	^XSET,KEYBOARD,p1
Parameter	p1: 0-US, 1-UK, 2-French, 3-German, 4-Spanish, 5-Italian, 6-Finnish, 7-Dutch, 8-Belgian
Description	Can use command or select Keyboard Mode form LCD

21. Set remind beep on/off.

Syntax	^XSET,BEEP,n
Parameter	n=0 or 1 (0: Turn prompt buzzer off function)
Description	Example: download graphic or font. (Error beep still turns up.)

22. Serial Port translation setting

Syntax	^Yp1.p2,p3,p4
Parameter	p1 : Baud Rate (48 or 96 or 19 or 38) ; 48=4800bps; 96=9600bps; 19=19200bps; 38=38400bps p2 : Parity (N, O, E) ; N=none parity; O=odd parity; E=even parity p3 : Number of data bits (7 or 8) p4 : Number of stop bits (1 or 2)
Description	Serial Port translation setting

23. Set the forward length

Syntax	^Mx
Parameter	x = forward length (mm)
Description	Set the forward length of the paper

24. Set the backward length

Syntax	^Bx
Parameter	x = backward length (mm)
Description	Set the backward length of the paper

CONTROL COMMAND

1. Graphic download memory

Syntax	~Ea, name, length
Parameters	a = P or p : PCX file a = B or b : BMP file name : Name of image (up to 20 character) length : Length of image (bytes), maximum 512K byte.
Description	Download monochrome image onto memory. Printer will beep 1 time after completely downloaded. If you use the same file name, the printer will show "REPEAT FILE NAME", and the download will be not be accepted (refer page26).

2. Bit-Mapped font download

Syntax	~Jn
Parameters	n = character; From a ~ z or A ~ Z; at least up to 26 characters.
Description	The command used for font loading is usually generated by Qlabel-III 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 be not being 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

3. Graphic mode

Syntax	~G
Parameter	None
Description	Printer is in the image-receiving mode. Image data is directly sent from host to the printing buffer (refer page25)

4. Print last label

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

5. Print Self-Test page

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

6. 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.	

7. Reset printer

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

8. Printer head testing

Syntax	~T
Parameter	None
Description	Print a pattern for the user to determine if the print head is damaged (refer page27)


9. Clear all

Syntax	~MDEL
Parameter	none
Description	Clear all in the memory (not include Asia font)

10. Delete specific file from printer memory

Syntax	~MDELx,name
Parameter	x= D, database name A, Asia font E, Bit-Mapped font F, label form G, graphic T, text name: The name of the graphic, form or Bit-Mapped font. *Note: The 'name' of Asia font is font ID.
Description	Able to delete individual files or erase entire flash memory.
Example	~MDELG,Bus ; the graphic "Bus" will be deleted ~MDELD,customer ; the database "customer" will be deleted

11. Display the memory state

Syntax	~MDIR
Parameter	None
Description	Show the memory state
Example	

12. 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 of saved
Description	Save the TXT. file to printer

13. 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

14. Immediate response command

Syntax	~S,CHECK	
Parameter	None	
Description	Response message: 00 – Ready 01 – Paper out 02 – Paper jam or miss gap 03 – Ribbon out 04 – Print head is up 05 – Rewinder full 06 – Memory is full 07 –filename can not be found 08 – filename is repeat 09 – Syntax error 20 – Pause 21 – In Setting Mode 22 – In Keyboard Mode 50 – Printer is printing..	^XSET,IMMEDIATE,n (n:0 OFF , n:1 ON) (default: 1)

15. Rotate printing

Syntax	~Rx
Parameter	x = label width; from 1 to 104 (mm)
Description	Rotate the label format 180-degrees when printing (refer page26). To return to the original print direction, set the x value greater than 104 (ie. ~R105).

16. Print the available space and data name 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 card (unit: bytes)

17. Acknowledge from RS-232

Syntax	~Kn
Parameter	n = 0, disable. n = 1, enable.
Return value	Y↵
Description	Acknowledge a “Y (0D0A)” from RS-232 back to host each printing label.

18. Row Offset Adjustment

Syntax	~Q±n
Parameter	n=-36 ~ +36
Return value	none
Description	If the printing does not appear in the same place on every label, this command instructs the printer to print label formats +n increments above the position the format specifies, and -n decrements below the position the format specifies.

19. Download dBase III to Printer

Syntax	~L,DBASE,p1,p2 data...
Parameter	p1: database name p2: database size (unit: byte)
Example	~L,DBASE,customer,364 ...(Data of customer.dbf)

20. Analogue press FEED key

Syntax	~S,FEED
Parameter	None

21. Print database information in memory

Syntax	~X7
Parameter	None
Description	Print database information in memory

22. Open database

Syntax	FILEDB,OPEN,p1
Parameter	P1:database name
Description	It could open only one database per label.
Example	FILEDB,OPEN,customer

23. Move data record

Syntax	FILEDB,MOVE,p1	
Parameter	p1:Move method Number, or (FIRST, LAST, NEXT, PRIOR)	
Description	It could use variable or counter to instead of P1	
Example	FILEDB,MOVE,3 FILEDB,MOVE,FIRST FILEDB,MOVE,NEXT	Move to third record Move to first record Move to next record

24. Searching

Syntax	FILEDB,FIND,p1,p2	
Parameter	P1:Filed name P2:Compare data	
Description	It could use variable to instead p2	
Example	FILEDB,FIND,NAME,John FILEDB,FIND,NAME,V01	Find John's data Use variable instead compare data

25. dBase data substitute Variable print

Syntax	V#LINKDB,p1,p2	
Parameter	P1:Field name P2:Variable	
Example	V#LINKDB,ADDR,V00 AC,22,25,1,1,0,0,^V00	Link V00 to ADDR field and print it out.

Label formatting commands

1. 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 = 2 digits day = Separator, can be any ASCII character between decimal 32 to 63.
Description	Define the date layout for print out

2. Serial number setting

Syntax	Cx,ys,±value,prompt
Parameter	x: 0 to 9(up to 10group), maximum combination up to 3 groups. y: select the decimal y = none, Decimal (0~9) y = A, Hexadecimal (0~9,A~F) y = C, 0~9, A~Z s: start value of serial variable (up to 13-digit) ±value: inc. / dec. value of serial variable (up to 12-digit) prompt: prompt of serial variable (up to 20 characters)
Description	Set the serial number (refer page25)
Example	<p>Printing result:</p> <pre> ^Q50,0,0 ^W100 ^S6 ^H10 ^E12 ^P5 ^L C0,000,+1,AA C1,AEE,+1,BB C2,CZYY,+1,CC AC,5,5,1,1,1,0,^C0^C1^C2 E </pre> <p>000EEZYY 001EFZYZ 002F0ZZ0 003F1ZZ1 004F2ZZ2</p>

3. Terminate label formatting mode and print label

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

4. 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 page26). For example, if the image file is 50 bytes, the command is G2xxx . (2: ASCII is 50 decimal)

5. Line command

Syntax	La,x, y, x1, y1	
Parameter	a = o, overwrite line a = e, exclusive or line x : left-up; per horizontal(Hori.) pos. (dot; 1mm=8dots) y : left-upper vertical (Vert.) pos. (dots) x1: right-bottom Hori. Pos. (dots) y1: right-bottom Vert. Pos. (dots)	
Description	Define a line to render in the label (refer page23) ** The diagonal line draw is not available **	

6. Rectangle

Syntax	Rx, y, x1,y1, lrw, ubw	
Parameter	x : left-upper Hori .pos. (dots) y : left-upper Vert. Pos. (dots) x1 : right-bottom Hori. Pos. (dots) y1 : right-bottom Vert. Pos. (dots) lrw : thickness of left, right border (dots) ubw : thickness of upper bottom border (dots)	
Description	Draw a rectangle in the label (refer page23)	

7. Table

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

8. 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) = Separator (It can be any separator between dec. 32 to 63 of ASCII).
Descripton	Define the time layout for internal real-time clock (refer page22)

9. Graphics

Syntax	Yx, y, name	
Parameter	x : Hori. Pos. of left-upper of graphics (dots) y : Vert. Pos. of left-upper of graphics (dots) name : Name of graphics download	
Description	This command is print a graphic that has been previously stored in printer memory (refer page 26)	
	Example: A graphic in printer named "Graphic1", command Y20, 40; Graphic1 ↵ will put this graphic into label at position (20, 40).	

10. Text

Syntax	At, x, y, x_mul, y_mul, gap, rotation, data		
Parameter	t :Font(A~H for Code page 850; I for ASCII)		
	Font	Points	Font style
	A	6	CG Triumvirate
	B	8	CG Triumvirate
	C	10	CG Triumvirate
	D	12	CG Triumvirate
	E	14	CG Triumvirate
	F	18	CG Triumvirate
	G	24	CG Triumvirate
	H	30	CG Triumvirate
	I	16x26 dots for US ASCII 8 bit	
	K	OCR-B font	
	L	OCR-A font	
	t = Zn	Asia font from 1 to 4	
	x : Hori of left-bottom position of text (unit : dot, 1 mm = 8 dots) y : Vert of left-bottom position of text (unit : dot, 1 mm = 8 dots) x_mul : 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, 1 mm = 8 dots) rotation : 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° data : Data string		
	1.Constant 2.Date information (^D) 3.Time information (^T)		4.Serial variable (^Cx) 5.Variable data (^Vxx)
Description	Prints an ASCII or ASIA text string (refer page22). The ASCII text oriented form left to right, the Asian text from left to right or top to bottom.		

11. Barcode

Syntax	Bt,x,y,narrow,wide,height,rotation,readable,data			
Parameter	t : bar-code type			
	A	Code 39	L	UPC E - Add ON 2
	A2	Code 39 with check digit	M	UPC E - Add ON 5
	B	EAN 8	N	I 2 of 5
	C	EAN 8 - Add ON 2	N2	I 2 of 5 with check digit
	D	EAN 8 - Add ON 5	O	Codabar
	E	EAN 13	P	Code 93
	F	EAN 13 – Add ON 2	Q	Code 128 (auto subset A/B/C)
	G	EAN 13 – Add ON 5	Q2	Code 128 (subset A/B/C)
	H	UPC A	R	UCC 128
	I	UPC A - Add ON 2	S	Post NET
	J	UPC A - Add ON 5	T	DUN 14 ONLY 90
	K	UPC E	U	EAN 128
			V	RPS 128
	<p>x : Hori. of left-bottom pos. of barcode (unit: dot, 1 mm = 8 dots) y : Vert. Of left-bottom pos. of barcode (unit: dot, 1 mm = 8 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 : height of barcode from 24 ~ 1200 dots. rotation : rotation of barcode (0 ~ 3) 0) 0° 1) 90° 2) 180° 3) 270° readable : 0 – label off 1 – below barcode, left. 2 – above barcode, left. 3 – below barcode, centered. 4 – above barcode, centered. data : bar-code data.</p>			
	1.Constant 2.Date information (^D) 3.Time information (^T)		4.Serial variable (^Cx) 5.Variable data (^Vxx)	

12. PDF 417

Syntax	Px,y,w,h,r,c,ec,len Data
Parameters	<p>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. Data : data to be encoded(the length of the data is equal to len; up to 1024 characters)</p>
Description	Print a 2 dimensional PDF417 code (refer page23)

13. 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 : 0°). message : 1 ~ 84 characters.
Description	Print a 2 dimensional Maxicode (refer page23)

14. DataMatrix Code

Syntax	Xp1, p2, p3, data
Parameters	p1 : Hori. of left-bottom pos. of barcode (unit : dots). p2 : Vert. of left-bottom pos. of barcode (unit: dots). p3 : Engrge the DataMatrix Code 8 times (horiqontally and vertically). data : bar-code data (up to 500 characters).
Description	User defined variable field setting (refer page 24)

15. Define variable field

Syntax	Vxx, length, prompt
Parameters	xx = from 00 ~ 29 length = number of characters (up to 98characters). prompt = prompt of variable (maximum up to 20 characters)
Description	User defined variable field setting (refer page27)

16. Variable for left, center, right in length of appoint

Syntax	Vxx,length,prompt,jnl
Parameter	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

17. Variable Addition

Syntax	V#OP+,p1,p2,p3
Parameters	None
Description	Please refer to P28
Example	V#OP+,V00,V01,V02

18. Variable Subtraction

Syntax	V#OP-,p1,p2,p3
Parameters	None
Description	Please refer to P28
Example	V#OP-,V00,V01,V02 V00=V01-V02

19. Variable Multiplication

Syntax	V#OP*,p1,p2,p3
Parameters	None
Description	Please refer to P28
Example	V#OP*,V00,V01,V02 V00=V01*V02

20. Variable Division

Syntax	V#OP/,p1,p2,p3	
Parameters	None	
Description	Please refer to P28	
Example	V#OP/,V00,V01,V02	V00=V01/V02

21. Variable Remainder

Syntax	V#OP%,p1,p2,p3	
Parameters	None	
Description	Please refer to P28	
Example	V#OP/,V00,V01,V02	V00=V01%V02

22. Disable variable prompt

Syntax	V#SET,UNPROMPT,p1	
Parameters	None	
Description	Please refer to P28	
Example	V#OP+,V00,V01,V02 V#SET,UNPROMPT,V00	V00 does not need input from user

23. Add moduls 10 check code

Syntax	V#ADDCHKSUM,Vnn	
Parameters	None	
Description	Add modulus 10 check code to variable	
Example	Add ,pfi;id 10 check code to V00 ~MDELf,test ^Ftest ^Q60,0,0 ^L V00,16,PromptV00 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

24. Copy all of variable data

Syntax	V#STRCPY,Vnn,Vmm	
Parameters	None	
Description	Copy all of Vmm data to Vnn	
Example	V#STRCPY,V00,V01	Copy all of V00 data to V01

25. Copy part of Variable value

Syntax	V#STRSUB,Vnn,Vmm,first,length	
Parameters	None	
Description	Copy part of Vmm value to Vnn	
Example	<pre>Copy year, month and day data form 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</pre>	<pre>Print result: Date:2005/01/31 Month:01 Day:31 Year:2005</pre>
















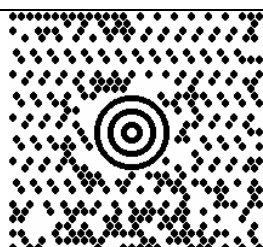





26. Pattern command

Syntax	Qx, y, width, height Data...	
Parameters	<p>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)</p>	
Description		<pre>Data send out 1 2 3 477 78 79 80 width = 4 ; height = 20 (data length : 4x20 = 80) (refer page26)</pre>

27. Downloading character sets to memory

Syntax	Vt, x, y, x_mul, y_mul, gap, rotation, data	
Parameter	t: arbitrary name of font; from a ~ z (or A ~ Z)	
Description	Download Bit-Mapped font to memory. All the parameters are the same as the text command	
Example	VA,5,10,1,1,1,0,data	;The arbitrary name of font "A"

1-3. Barcode

CODE	SAMPLE	CODE	SAMPLE
Code 39		UPC E Add on 2	
EAN 8		UPC E Add on 5	
EAN 8 Add on 2		I 2 of 5	
EAN 8 Add on 5		CODABAR	
EAN 13		Code 93	
EAN 13 Add on 2		Code 128	
EAN 13 Add on 5		EAN 128	
UPC A		MAXICODE	
UPC A Add on 2		PDF 417	
UPC A Add on 5		UPC E	
DataMatrix Code			

2. Examples

How to construct a label using EZ-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	

** Control or setup commands to be used in the label command area will be ineffective.

Example:

The following program example is printing a label with EAN8. 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 what the EZ-Series prints. 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(See Charapter 2 section 2)
E	Label content of stop symbol

The label can be created by the following MS-DOS command:

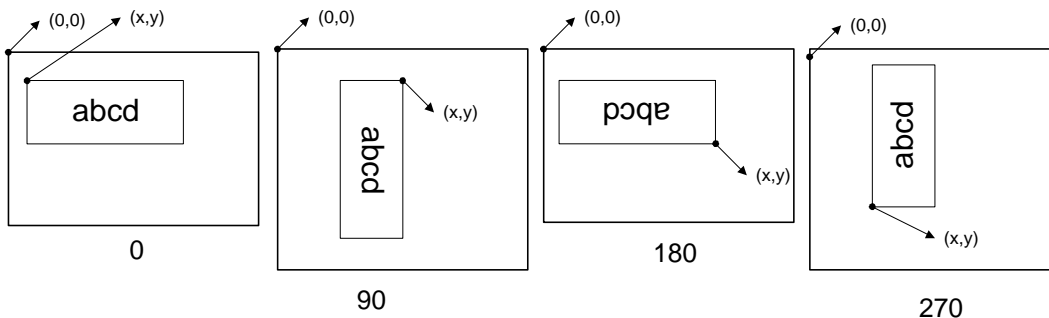
```
C:\>COPY EX1.TXT PRN.
```

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:


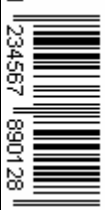


1. Text

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,40,20,1,1,1,1,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 P R I N T E R	^L AZ,100,12,1,1,0,4,中文 AZ,220,50,1,1,0,5,中文 AZ,75,83,1,1,0,6,中文 AZ,121,144,1,1,0,7,中文 E	中文 中文 中文 中文

- The data output is a default setting and user can change it with ~D command (refer page13).
- 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		^H10 ^S6 ^W25 ^Q30,0,2 ^L BE,100,20,2,4,80,1,1,123456789 012 E	

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= 6 ; Speed = 2 inch/second ; Label height = 50mm, gap = 2 mm ; Label width = 60mm ; (x,y)=(10,10), (x1,y1)=(60,200) ; (x,y)=(100,10), (x1,y1)=(400,200)	

5. Rectangle printing

Example	Description	Result
^H10 ^S6 ^Q50,2 ^W70 ^L R20,20,120,120,8,8 E	; Darkness = 4 ; Speed = 2 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 P30,20,3,3,3,3,1,100 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	

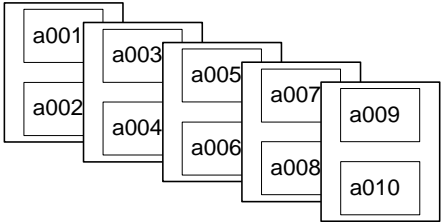
8. DataMatrix Code

Example	Result
^Q50,0,3 ^W90 ^S6 ^H10 ^L X30,20,5,123456789012345678901234567890 E	

9. Stripper setting

Example	Result
^Q50,2 ^W50 ^S6 ^O1 ^E10 ^P1 ^H10 ^L AD,20,20,1,1,3,0,Stripper Function E	; Label height= 50mm, gap= 2mm ; Label width= 50mm ; Speed =2 inch/second ; Stripper enable ; Set stop position to 10 mm ; Printing one label ; Darkness = 5 ; Label format begin sign ; 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	

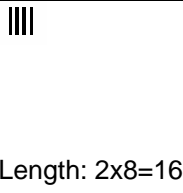
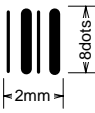
11. Serial number

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	0000 0002 0004 0006 0008 0010 0012 0014 0016 0018	~P10 If you want to continue printing 10 more serial numbers starting from 0018, enter the command “~P10”. With this command you do not have to re-enter all the prior specifications.	0018 0020 0022 0024 0026 0028 0030 0032 0034 0036
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	0000 0000 0002 0002 0004 0004 0006 0006	^Q10,0,0 ^W30 ^S6 ^H10 ^P8 ^L C0,0000,+2,A1 AB,10,10,1,1,2,0,abc^C0def E	abc0000def abc0002def abc0004def abc0006def abc0008def abc0010def abc0012def abc0014def
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(AA G(AA G(AA G(AA G(AA G(AA G(AA G(AA G(AA G(AA G(AA G(AA G(AA G(AA G(AA G(AA G(AA G(AA E	<p>; Left margin = 20 dots</p> <p>For this example, ASCII “(“ character is 40 decimal (=40 bytes). Total 14 lines, so the graphics height is 1.75mm (14 dots)</p> <hr/> <p>Result</p> <pre> </pre>

13. Pattern command setting

Example	Result
<pre> ^Q,20,0,0 ^W40 ^S6 ^D5 ^L Q40,10,2,8 GGGGGGGGGGGGGGGGGG E </pre>	 <p>Length: 2x8=16</p>
Description	
<pre> 0100011101000111 0100011101000111 0100011101000111 0100011101000111 0100011101000111 0100011101000111 0100011101000111 0100011101000111 </pre> <p>HEIGHT = 8 DOTS</p> <p>← 1 BYTE → ← 1 BYTE →</p> <p>← WIDTH = 2 BYTES →</p> <p>G : 01000111 (binary)</p>	


14. Rotate label format for printing

Example	Description	Result
<pre> ^Q40,2 ^W50 ^S6 ^H10 ~R50 ^L AC,35,11,1,1,1,0,ROTATE BB,20,45,2,5,50,0,1,1234567 E </pre>	<p>; Label size is 40 mm(h) x 50 mm(w); 2 mm gap</p> <p>; Rotate the label format 180° for printing</p>	
<pre> ~R105 ^L AC,20,10,1,1,1,0,ROTATE BB,20,45,2,5,50,0,1,1234567 E </pre>	<p>; Disable the rotate function</p>	

15. Download graphic to printer's memory

Following the below steps to download graphic to printer.

1. Be prepared a graphic file (file name: TREE.PCX, file size: 922 bytes).
2. Be prepared two text files (TEST1.TXT and TEST2.TXT, see the following contents).

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

1. 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

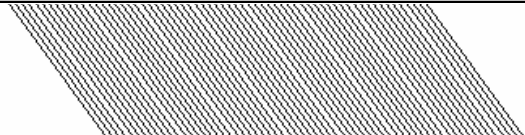
Example	Description
^Ftest ^Q50,0,15 ^W70 ^H10 ^S6 ^E12 ^L C0,0000,+1,serial no. V00,10,name V01,8,barcode V02,6,price AE,108,306,1,1,1,0,\$^V02 AC,39,27,1,1,1,0,S/N.^C0 AD,126,78,1,1,1,0,^V00 BA,108,135,2,5,100,0,1,^V01 E	; Download label to memory card and the label name is "test". ; Setting serial 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	### EZ-4206 ### ### VER. X.XX ###

Use variable settings

	Example	Result
1. User input unit price and amount. Printer calculates total price.	~MDELFL, 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	~MDELFL, 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,47,57,1,1,0,0,V00=^V00 AA,47,77,1,1,0,0,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

dBase 3 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, Marry's phone: ^V00 E	Print out Mary phone number	Marry'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	4.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	Tom Phone is 11111111 Mary Phone is 22222222 John Phone is 33333333
---	--	---

Appendix.

A. Barcode Details

1. 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	
Sbuset 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