

Century Falcon 4/Falcon 4D Programmer's Manual

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Century Falcon 4 Programmers 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:

The data fields are stored and processed until the printing instruction is received.
All the data can be rotated.
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	3
2. Stop position setting	^Ex	3
3. Setting Print darkness	^Hx	3
4. Number of pages printed	^Px	3
5. Label length	^Qx,y,(z±)	4
6. Speed setting	^Sx	4
7. Number of copies per label	^Cx	4
8. Row column adjustment	^Rx	4
9. Label format begin sign	^L	4
10. Stripper sensor	^Ox	5
11. Download label format	^Fname	5
12. Recall label format	^Kname	5
13. Label width setting	^Wxx	5
14. Number of labels per cut	^Dx	5
15. Serial Port translation setting	^Yp1.p2,p3,p4	5
16. Set the forward length	^Mx	6
17. Set the backward length		6
18. Date Offset	^D+ddd.hh	6
19. Time Offset	^T+hhh.mm	6

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	7
2. Bit-Mapped font download	~Jn	7
3. Graphic mode	~G	7
4. Print last label	~Px	7
5. Print version message	~V	7
6. Date / Time setting / Day	~Dm,d,y,h,l,s,k	7
7. Reset printer	~Z	7
8. Printer head testing	~T	7
9. Clear all	~MDEL	7
10. Clear memory	~MDELx,name	8
11. Rotate printing	~Rx	8
12. Print the available space and data name in the memory	~Xn	8
13. Acknowledge form RS-232	~Kn	8
14. Row Offset Adjustment	~Q±n	8

LABEL FORMATTING COMMANDS

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

Description	Command	Page
1. Define date layout	Daa bb cc w1	9
2. Serial number setting	Cx,ys,±value,prompt	9
3. Terminate label formatting mode and print label	E	9
4. Graphic command	Gwxxx	9
5. Line command	La,x, y, x1, y1	9
6. Rectangle	Rx, y, x1,y1, lrw, ubw	10
7. Table	Hx,y,row_count,col_count,row_width,col_width,line_width	10
8. Define time layout formatting	Th m s	10
9. Graphics	Yx, y, name	10
10. Text	At, x, y, x_mul, y_mul, gap, rotation, data	11
11. Barcode	Bt,x,y,narrow,wide,height,rotation,readable,data	11
12. PDG 417	Px,y,w,h,r,c,ec,len	12
13. Maxicode	Mx, y, sno, nos, mode, ccode, zip, class, rotation, message	12
14. DataMatrix Code	Xp1, p2, p3, data	12
15. Define variable field	Vxx, length, prompt	12
16. Pattern command	Qx, y, width, height	13
17. Downloading character sets to memory	Vt, x, y, x_mul, y_mul, gap, rotation, data	13

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 download 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 = 0~40 (unit : mm)
 Description : Feed paper to desired stop position.

3. Setting Print darkness

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

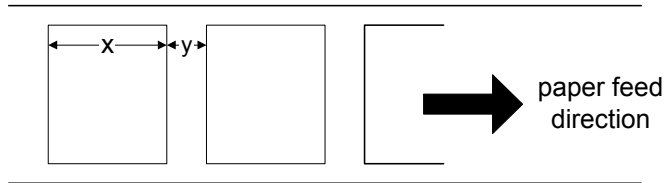
4. Number of pages printed

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

5. Label length

Syntax : $\wedge Q_{x,y,(z\pm)}$
 Die cut label: (See fig. 1)
 x = Label length (unit : mm)
 y = Gap length (mm)

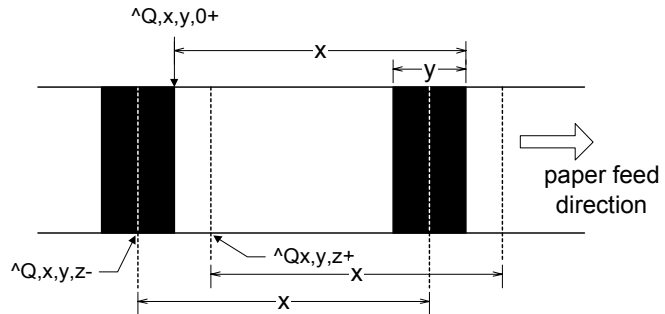
Parameter : EX.
 $\wedge Q_{25,3}$
 (x=25,y=3) mm



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])

6. Speed setting

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

7. Number of copies per label

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

8. Row column adjustment

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

9. Label format begin sign

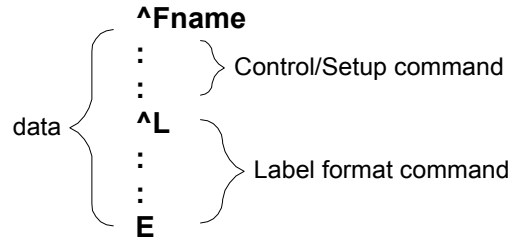
Syntax : $\wedge L$
 Parameter : None
 Description : Set label begin sign

10. 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 page 18)

11. Download label format

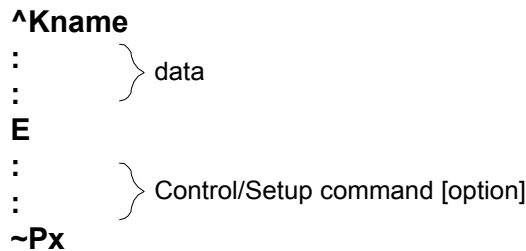
Syntax : ^Fname
 data
 Parameter : Name = name of label format (up to 20 characters)
 Data = the data containing the label formatting command for this stored format
 Description : Download label format into memory. After the download is finished, the printer will beep once (refer page 21).



Same name inspection : If you use the same file name, the printer will print "REPEAT FILE NAME", and the download will not be accepted.

12. Recall label format

Syntax : ^Kname
 Parameter : Name = name of recall label format (up to 20 characters)
 Description : Recall label format from external format (refer page 21)



13. Label width setting

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

14. 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 page 18)

15. 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

16. Set the forward length

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

17. Set the backward length

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

18. Date offset

Syntax : ^D+ddd.hh
Parameter : ddd : day shift value
 hh : Hour offset value 00 to 23
Description : Allows expiration date to be printed based on real time clock value

19. Time offset

Syntax : ^T+hhh.mm
Parameter : hhh : Hour shift value
 mm : minute offset value 00 to 59
Description : Allows expiration time to be printed based on real time clock value

Description : Clear all in the memory (not include Asia font)

10. Clear memory

Syntax : ~MDELx,name

Parameter : x = type
G, graphic
F, label form
E, Bit-Mapped font (not included Asia font)
name: The name of the graphic, form and Bit-Mapped font

Description : Able to delete individual files or erase entire flash memory.

Example : ~MDELG,Bus ; the graphic "Bus" will be deleted

11. Rotate printing

Syntax : ~Rx

Parameter : x = label width; from 1 to 104 (mm)

Description : Rotate the label format 180-degrees when printing (refer page 20). To return to the original print direction, set the x value greater than 104 (ie. ~R105).

.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
n = 6, display the total printed length on the LCD

Description : Print the available space in the memory card (unit: bytes)

12. 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.

13. 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.

LABEL FORMATTING COMMANDS

1. Define date layout

Syntax : Daa|bb|cc w1
 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
 w : Day of Week
 | = Separator, can be any ASCII character between decimal 32 to 63.
 Description : Define the date layout for print out (refer page 16)

2. 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 = 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 page 19)

Example	:	^Q50,0,0	Printing result:
		^W100	
		^S6	000EEZY
		^H10	001EFZY
		^E12	002F0ZZ
		^P5	003F1ZZ1
		^L	004F2ZZ2
		C0,000,+1,AA	
		C1,AEE,+1,BB	
		C2,CZYY,+1,CC	
		AC,5,5,1,1,1,0,^C0^C1^C2	
		E	

3. Terminate label formatting mode and print label

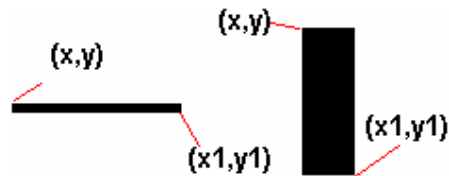
Syntax : E
 Parameter : None
 Description : End of formatting command; printer will print label after receiving this command.

4. Graphic command

Syntax : Gwxxx
 Parameter : wxxx...
 w : byte number of image data (xxx...)
 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 page 19). For example, if the image file is 50 bytes, the command is G2xxx . (2: ASCII is 50 decimal)

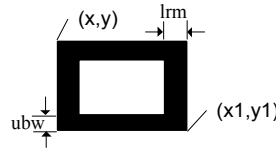
5. Line command

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 page 17)
 ** The diagonal line draw is not available **



6. Rectangle

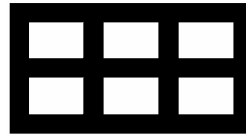
Syntax : Rx, y, x1,y1, lrw, ubw
Parameter : x : left-upper Hori .pos. (dots)
y : left-upper Vert. Pos. (dots)
x1 : right-bottom Hori. Pos. (dots)
y1 : right-bottom Vert. Pos. (dots)
lrw : thickness of left, right border (dots)
ubw : thickness of upper bottom border (dots)



Description : Draw a rectangle in the label (refer page 17)

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 : number 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).

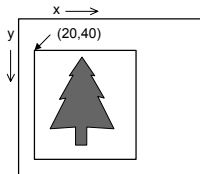
Description : Define the time layout for internal real-time clock (refer page 16)

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 20)

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	
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 (up to 239 characters).
 Constant Serial variable (^Cx)
 Date information (^D) Variable data (^Vxx)
 Time information (^T)

Description : Prints an ASCII or ASIA text string (refer page16). 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

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- label on
 data : bar-code data.
 Constant Serial variable (^Cx)
 Date information (^D) Variable data (^Vxx)
 Time information (^T)

Description : Used to print standard barcodes (refer page 16)

12. PDF 417

Syntax : Px,y,w,h,r,c,ec,len
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.
Data : data to be encoded(the length of the data is equal to len; up to 1024 characters)

Description : Print a 2 dimensional PDF417 code (refer page 17)

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 page 17)

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 18)

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)

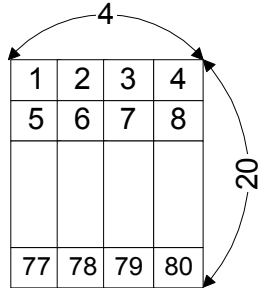
Description : User defined variable field setting (refer page 21)

16. 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 3 477 78 79 80

width = 4 ; height = 20
(data length : 4x20 = 80)

(refer page20)

17. Downloading character sets to memory
















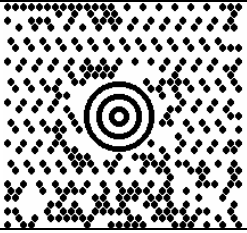





Syntax : Vt, x, y, x_mul, y_mul, gap, rotation, data

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 must be included between the ^L and E command
Label format 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 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:

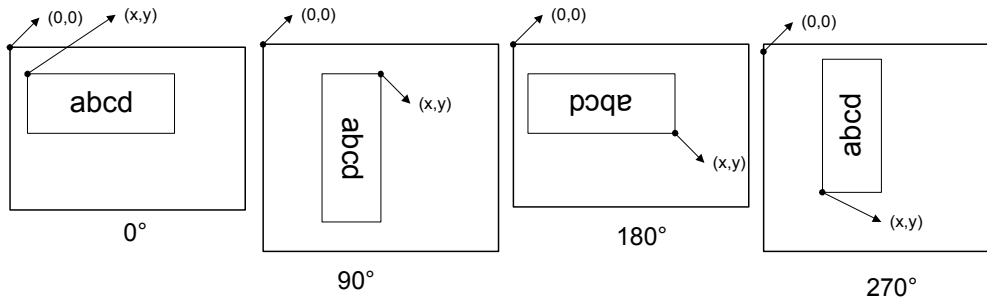
C:\>COPY EX1.TXT PRN.␣

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 PRINTER	^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 page9).
- 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	

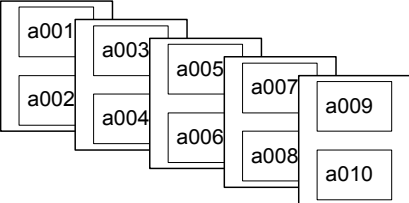
8. DataMatrix Code

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	


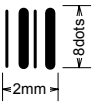
11. Serial number

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> <p>.....</p>

13. Pattern command setting

Example	Result
<pre>^Q,20,0,0 ^W40 ^S6 ^D5 ^L Q40,10,2,8 GGGGGGGGGGGGGGGGGG E</pre>	 Length: 2x8=16
Description	
<pre>0100011101000111 0100011101000111 0100011101000111 0100011101000111 0100011101000111 0100011101000111 0100011101000111 0100011101000111</pre> <p style="text-align: center;">HEIGHT = 8 DOTS</p> <p style="text-align: center;">← 1 BYTE ← 1 BYTE</p> <p style="text-align: center;">← WIDTH = 2 BYTES</p> <p style="text-align: center;">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>	; Label size is 40 mm(h) x 50 mm(w); 2 mm gap ; Rotate the label format 180° for printing	
<pre>~R105 ^L AC,20,10,1,1,1,0,ROTATE BB,20,45,2,5,50,0,1,1234567 E</pre>	; Disable the rotate function	ROTATE 

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	### Falcon4# ## ### VER. X.XX ###

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