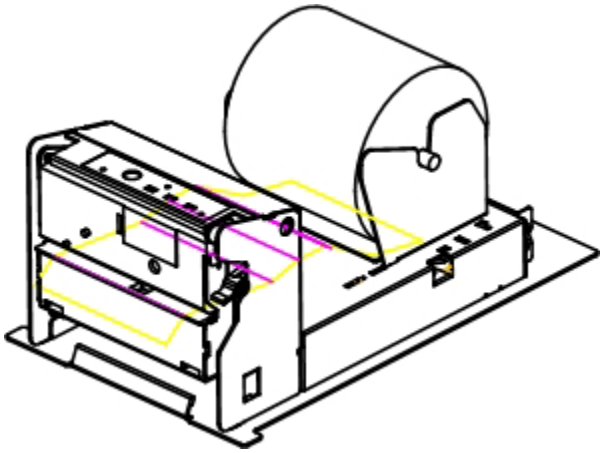
User's Manual

1 Station Thermal Kiosk Printer

MODEL : **WP-K833**

VERSION : 1.00



CONTENTS

1. GENERAL DESCRIPTION

1.1 Overview

The WP-K833 Thermal Kiosk Printer is designed for use with Kiosk, panel printer, computer peripheral equipment, and so on.

1.2 Features

1). Compact kiosk Thermal printer.

2). Auto loading designed for installing paper easily

3.). Interface conformity to RS-232C, centronics ,USB port depends on the Interface card which is removeable and other option of Interface for different application.

4). Command protocol is compatible with ESC/POS.

5). The resident data buffer has storage capacity of about 128K-bytes, enable data to be received even while printing.

6). Support download bit image, directly bit image and bar-code printing.

7). The sensors include paper end, paper near end and cover sensor.

8). Provide a paper out sensor for detecting the front age of lable paper

1.3 Accessories

The following parts are included in this set of printer. Please confirm.

Paper roll	(1 roll)
Power adapter	(1 unit)
Power core	(1 unit)

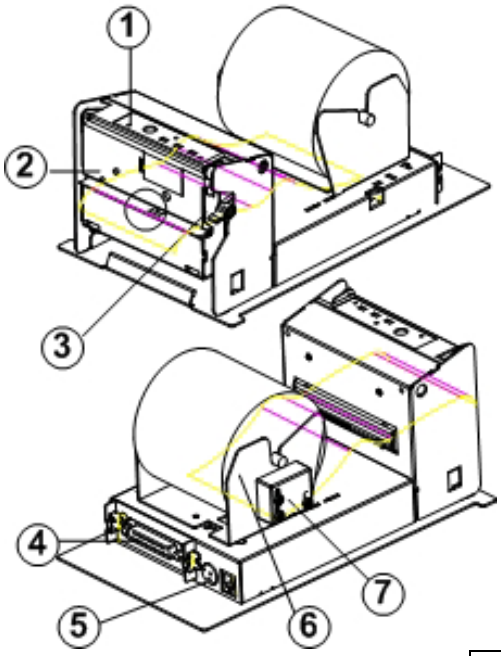
Option(one of items below will be included)

Cable for RS-232C (depend on RS-232C interface card)	(1 unit)
Cable for Centronics (depend on Centronics interface card)	(1 unit)
Cable for USB (depend on USB interface card)	(1 unit)

2. MAIN SPECIFICATIONS

Item		Description
1	Printing method	Thermal line
2	Printing speed	Approx. 120~220mm / second
3	Number of columns	40 columns
4	Character structure	12x24 (alphanumeric)
5	Line pitch	1/6 inch (4.23mm)
6	Detector	Paper end,Paper near end, cover
7	Paper	Single-ply thermal paper roll Paper roll 82.5 ± 0.5 (W) x 80 (max) mm
8	Reliability	100KM
9	Power supply	24VDC / 2.1A .
10	Interface	RS-232C, Centronics and USB (option)
11	Weight	Approx.1.33Kg
12	External dimensions	119.6(W) x 208.9(D) x 107.7(H)mm
13	Operating temp.	0 to 40℃
14	Storage temp.	-20 to 60℃
15	SRAM	128 KB
16	FLASH	512 KB

3. EXTERNAL APPEARANCE AND PART DESCRIPTIONS

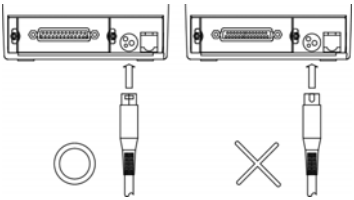


1	Control panel
2	Cutter
3	Knob
4	Interface Card
5	Power Connect
6	Paper Holder
7	Near-End Sansor

4. INSTALLATIONS

4.1 How to Connect Power Adapter

(1) Ensure that the power switch is OFF.
(2) Plug the power connector into the printer's power connector at the arrow mark facing upward.
(3) Plug the power cord into the outlet, and turn on the power.
(4) Connector Specifications shows as below:

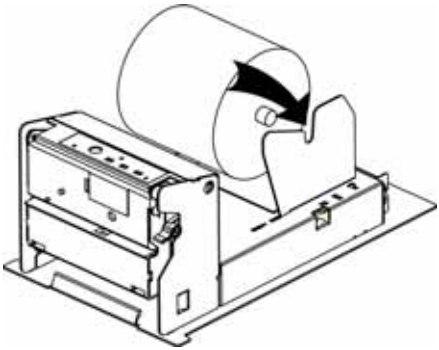


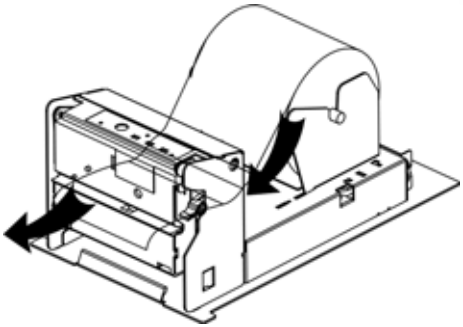
Pin Number	Signal Name
1	+24VDC
2	GND
3	NC
Shell	Frame GND

4.2 Setting of the Printer Cover and Setting Paper

(1) Pull the printer

(2) insert the paper roll as picture bellows shown:



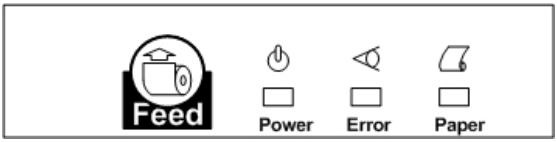


(3) The printer will detect paper feed automatically

1.paper thickness are 0.06-0.12mm
2.paper width are range from 79-80mm
3.Roll diameter max. 80mm

5. CONTROL PANEL

5-1. Basic Operation



(1) **Feed** Line feed button
When this push-button switch is pressed once briefly (for 0.5 seconds or less), the paper is fed forward by one line. When it is held down continuously, the paper is fed forward continuously until the switch is released.

(2) **Power** lamp (green LED)

Lights indicate power well.

(3) **Paper** lamp (Yellow LED)
- Lamp indicator will remain lighting when paper near end.
- Lamp indicator will keep sparkling when paper end, and need to replace a new one.

The flash timing chart shows as below:

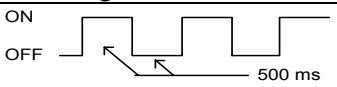
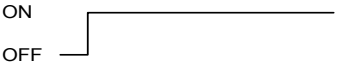
Printer status	Blinking Pattern
Paper end	
Paper near end	

Table 5-1. SEL Lamp Display

(5) **Error** lamp (red LED)

When printer cover is not properly closed or paper jam happen on cutter part or paper is not put properly , the erroe indicator lamp(red LED) will light.

5-2. Switch Operation (Combined Switch operation)

(1) SELF PRINT TEST

LF + POWER ON (Turn the power on while holding the **LF** button depressed, the buzzer gives one short beep.)
Self-testing will be performed according to the VER. NO., printer settings and characters etc (Ref. sheet1). When the **LF** button is held again after self-printing stopped, the printer will print out again. To turn off this mode, it is necessary to turn off the printer power completely.

```
*** WP-T800B ***

Version: 1.00
Printing Speed: 220mm/s
Interface: RS-232C & Printer
Baud Rate: 9600 bps
Mode: DTR    Data: N,8,1
Font: 繁體中文

 !"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHI
JKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrs
tuvwxyz{|}~

-----------------------------------------
| ***  DIP Switches Status  ***          |
|                                        |
|        DSW1         DSW2               |
|      12345678     12345678             |
| ON                 *                   |
| OFF  ********     * ******             |
|----------------------------------------|
| ***  DIP Switches Description  ***     |
|                                        |
| 1. Select Baud Rate                    |
|    SW1-7 SW1-8                         |
|    OFF   OFF : 9600 bps                |
|    ON    OFF : 19200 bps               |
|    OFF   ON  : 38400 bps               |
|    ON    ON  : 115200 bps              |
|----------------------------------------|
| 2. Select Handshaking Busy Condition   |
|    SW2-1                               |
|    OFF   : Off line & buffer full      |
|    ON    : Buffer full                 |
|----------------------------------------|
| 3. Select Printing Speed               |
|    SW2-2                               |
|    OFF   : 150mm/s                     |
|    ON    : 220mm/s                     |
|----------------------------------------|
| 4. Select Print Density                |
|    SW2-3 SW2-4                         |
|    OFF   OFF : Light                   |
|    ON    OFF :   |                     |
|    OFF   ON  :   |                     |
|    ON    ON  : Dark                    |
-----------------------------------------

***   Test Completely   ***
Press LF key for test again !!!
```

5-3. Setting

Settings as below

(1). Baud rate

SW1-7	SW1-8	Baud rate
OFF	OFF	9600 bps
ON	OFF	19200 bps
OFF	ON	38400 bps
ON	ON	115200 bps

(2). Select handshaking busy condition

SW2-1	Handshaking busy condition
OFF	Off line and buffer full
ON	Buffer full only

(3). Select printing speed

SW2-2	Printing speed
OFF	150 mm/s
ON	220 mm/s

(4). Select print density

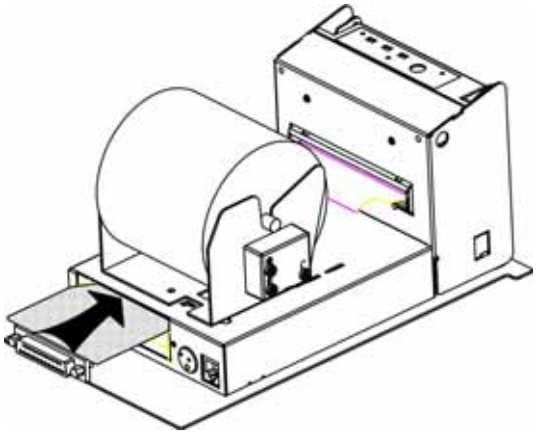
SW2-3	SW2-4	Printing density
OFF	OFF	Light
ON	OFF	|
OFF	ON	|
ON	ON	Dark

6. INTERFACE SPECIFICATIONS

WP-K833 provides RS232c, IEEE 1284, USB and other interface cards, which is replaceable for more convenient adjustment according to requirement.

6.1 Changing the interface card

Turn off the printer and all components connected to it, remove the 2 screws and remove the interface card unit. Replace the new interface card unit and secure it with the screws.



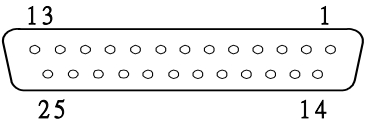
6.2 Serial interface specifications

6.2.1 Specifications (Conform to RS-232C)

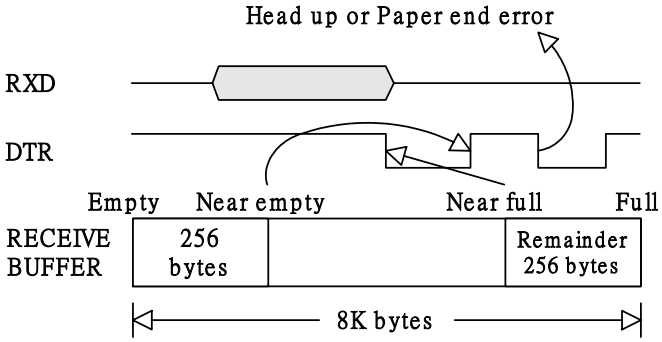
Synchronizing system	: Asynchronous system
Handshaking	: DTR/DSR control
Baud rates	: 4800,9600,19200,38400 (Refer chapter 5-3)
Data length	: Fixed 8 bit length
Parity	: None

6.2.2 Pin assignment

No.	Signal Name	I/O	Signal Name
2	TXD	Output	Transmit data
3	RXD	Input	Receive data
6	DSR	Input	Data set ready
20	DTR	Output	Data terminal ready
7	GND	-	Signal ground



6.2.3 Timing Chart



6.3 Parallel interface specifications

6.3.1 Specifications (Conform to Centronics)

Data transmission format : 8-bit parallel

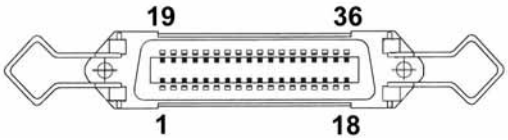
Synchronizing system : According to the strobe pulses

Handshaking : According to the BUSY signal

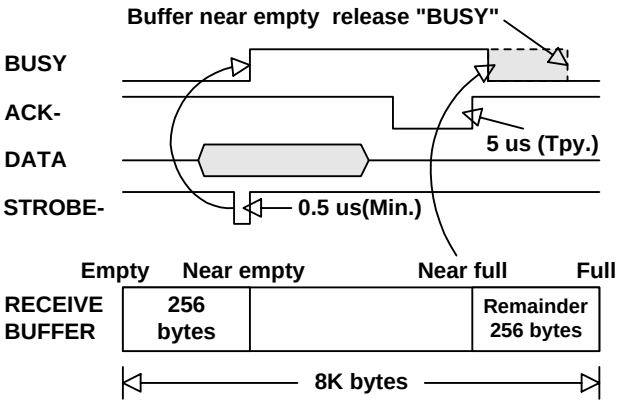
Signal level : TTL level

6.3.2 Pin assignment

No.	Signal Name	No.	Signal Name
1	STB-	19-30	TWISTED PAIR GND
2-9	DATA 1 – DATA 8	31	RESET-
10	ACK-	32	FAULT-
11	BUSY	33	GND
12	PE	34-36	NC
13-15	NC		
16	GND		
17	F.G.		
18	NC		



6.3.3 Timing Chart



7. CONTROL CODE

7.1 Attached Command Description

The viewpoint of each page

COMMAND

[Name]	Command name.
[Format]	<>H indicates hexadecimal, <> indicates decimal, [] k indicates k times repeat to control code and frequency.
[Range]	Gives the allowable range for set argument and data.
[Description]	Explain command function.
[Complement]	Complement particular.
[Note]	Gives important information on the setting and used of printer command, if necessary.

7.2 Control Codes

Command	Codes	Name and description
HT	<09>H	Execute the horizontal tab.
LF	<0A>H	Print and line feed.
CR	<0D>H	Carriage return
ESC @	<1B>H<40>H	Initialization of printer
ESC SP	<1B>H<20>H	Set right spacing of character.
ESC d	<1B>H< 64>H	Print and feed n lines
ESC !	<1B>H<21>H	Set print mode collectively
ESC E	<1B>H<44>H	Specifying/releasing of the highlighting
ESC G	<1B>H<47>H	Specifying/releasing of the double printing
ESC 2	<1B>H<32>H	Setting of the 1/6 inch line feed spacing
ESC 3	<1B>H<33>H	Setting of the line feeding amount in
ESC J	<1B>H<4A>H	Printing and paper feeding in minimum
ESC v	<1B>H<76>H	Send of paper status
ESC n 0	<1B>H<75>H<30>H	Send of the drawer status
ESC R	<1B>H<52>H	Select of international characters
ESC t	<1B>H<74>H	Select the character code table
ESC a	<1B>H<61>H	Select of printing position justification
ESC p	<1B>H<70>H	Drawer kick-out
ESC *	<1B>H<2A>H	Specifying of bit image mode
GS *	<1D>H<2A>H	Defined of the downloading/ bit image
GS /	<1D>H<2F>H	Printing of the downloading/ bit image
GS k	<1D>H<6B>H	Bar code printing
GS w	<1D>H<77>H	Selection of Bar code width
GS h	<1D>H<68>H	Selection of Bar code height

HT

[Name]	Horizontal tab
[Format]	< 09 >H
[Range]	Move starting position to next horizontal tab position.
[Note]	This command is ignored when next horizontal tab position isn't set.

LF

[Name]	Print and line feed
[Format]	< 0A >H
[Description]	Prints the data of in the buffer and feed one line of paper. Only line feed is executed when ahead of print data is absent.

CR

[Name]	Carriage return
[Format]	<0D>H
[Description]	Set the print starting position to the beginning of line.

ESC @

[Name]	Initialize printer
[Format]	<1B>H<40>H
[Description]	Clears the data in the printer buffer and resets the print mode (Default state).

ESC SP *n*

[Name]	Setting of character right spacing.
[Format]	<1B>H<20>H<*n*>
[Range]	$0 \leqq n \leqq 31$
[Description]	Set character right spacing with half dot unit. *n* indicates number of dots, add up spacing amount of *n* dots share to right of character. Therefore the character width become to following table.
[Default]	*n* = 0

ESC d *n*

[Name]	Print and feed paper n line
[Format]	< 1B>H<64>H<*n*>
[Range]	$0 \leqq n \leqq 255$
[Description]	Print and feed paper n lines

ESC ! *n*

[Name] Set print mode collectively
[Format] < 1B>H<21>H<*n*>
[Range] 0≦*n*≦255
[Description] Set print mode.
Each bit of *n* is used as follows.

Bit	Function	Value	
		0	1
0	Not defined		
1	Not defined		
2	Not defined		
3	Highlighting	Cancellation	Set
4	Not defined		
5	Double-width	Cancellation	Set
6	Not defined		
7	Not defined		

[Default] *n* = 1

ESC 2

[Name] Setting of the 1/6 inch line feed spacing.
[Format] < 1B>H<32>H
[Description] Sets the line-feeding amount to 1/6 inch for each line.

ESC 3 *n*

[Name] Setting of line feeding amount in minimum paper feeding pitch units.
[Format] < 1B>H<33>H<*n*>
[Range] 0≦*n*≦255
[Description] Sets the line-feeding amount to n/203 inch for each line.
[Default] *n* = 34

ESC J *n*

[Name] Printing and paper feeding in minimum pitch units.
[Format] < 1B>H<4A>H<*n*>
[Range] 0≦*n*≦255
[Description] Printing the data in the printer buffer and feeding paper of n/203 inch.

ESC E

[Name] Specifying/releasing of the highlighting
[Format] < 1B>H<44>H<*n*>
[Range] $0 \leqq n \leqq 1$
[Description] *n*=0, releasing of the highlight printing.
n=1, specifying of the highlight printing.
[Reference] **ESC !**
[Default] *n* = 0

ESC G

[Name] Specifying/releasing of the double printing
[Format] < 1B>H<47>H<*n*>
[Range] $0 \leqq n \leqq 1$
[Description] *n*=0, releasing of the double printing.
n=1, specifying of the double printing.
[Reference] **ESC E**
[Default] *n* = 0

ESC v

[Name] Sending of the printer status
[Format] < 1B>H<76>H
[Description] The status that is sent will be 1 byte of data, and the contents will be as show in the table below.

Bit	Function	Value	
		0	1
0	Paper near-end	Paper present	No paper
1	Not defined		
2	Paper end	Paper present	No paper
3	Not defined		
4	Not defined	Fixed at 0	
5	Not defined		
6	Not defined		
7	Not defined		

ESC u 0

[Name] Sending of the printer status
[Format] < 1B>H<75>H<30>H
[Description] Send the status for connector pin 3 of the drawer.

Bit	Function	Value	
		0	1
0	Level of pin No. 3	'L'	'H'
1	Not defined		
2	Not defined		
3	Not defined		
4	Not defined	Fixed at 0	
5	Not defined		
6	Not defined		
7	Not defined		

ESC R *n*

[Name] Selection of international character
[Format] < 1B>H<52>H<*n*>
[Range] $0 \leqq n \leqq 10$

n	Character set	*n*	Character set
0	U.S.A	7	Spain
1	France	8	Japan
2	Germany	9	Norway
3	U.K.	10	Denmark II
4	Denmark I	11	Spain II
5	Sweden	12	Latin America
6	Italy	13	Korea

ESC t *n*

[Name] Select the character code table
[Format] < 1B>H<74>H<*n*>
[Range] 0≦*n*≦9

n	Character Code Table	*n*	Character Code Table
0	PC437	5	PC865
1	Katakana	6	PC852
2	PC858	7	PC866
3	PC860	8	PC857
4	PC863	9	Windows Codepage

ESC a *n*

[Name] Selection of printing position justification
[Format] < 1B>H<61>H<*n*>
[Range] 0≦*n*≦2
[Description] Aligns all the printing data on one line to the specified position.
This command will only be valid when is has been input at the beginning of line.

n	Position
0	Left end aligning
1	Centering
2	Right end aligning

ESC p *m n1 n2*

[Name] Specified pulse generation for drawer kick-out
[Format] < 1B>H<70>H<*m*><*n1*><*n2*>
[Range] 0≦*m*≦1, 0≦*n1*≦*n2*≦255
[Description] The ON time will be *n1* x 2 ms, and the off time will be *n2* x 2 ms.

m	Connector Pin
0	Drawer kick No.2 pin (drawer 1)
1	Drawer kick No.5 pin (drawer 2)

ESC * *m n1 n2 [<d>]k*

[Name] Specifying of the bit image mode

[Format] < 1B>H<2A>H<*m*><*n1*><*n2*>[<*d*>]*k*

[Range] *m=0,1,32,33, 0≦n1≦255, 0≦n2≦3, 0≦d≦255*

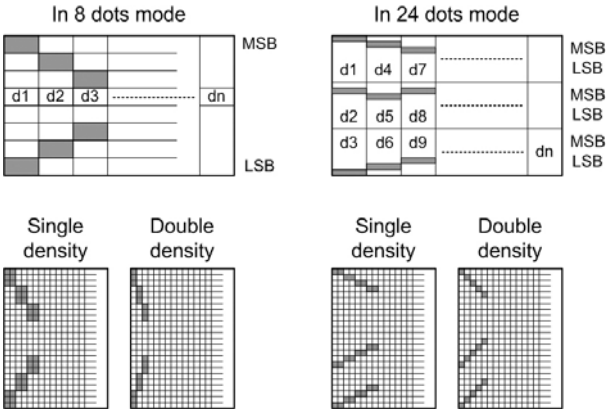
k= n1 + 256 x n2 (m= 0,1)

k= (n1 + 256 x n2) x 3 (m= 32,33)

[Description] This command specifies the bit image of mode *m* with regard to the number of dots specified *n1* and*n2.*

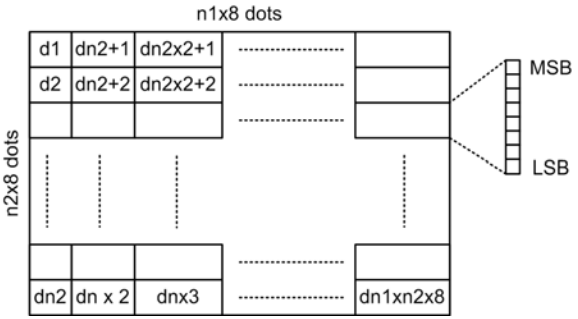
- The number of dots for printing will be divided by 256, and the quotient will become *n2* with the remainder becoming *n1.* Accordingly, the number of dots in the horizontal direction will be *n1_256 x n2*.
- In a situation where the bit image data input exceeds the dot position that are capable of being printed on one line, the portion of data in excess will be rejected for reading.
- d is the bit image data. When the data to be printed, the corresponding bit should be set to 1, and data which not to be printed should have the corresponding bit set to 0.

m	Mode	Vertical direction		Horizontal direction	
		Number of dots	Dot density	Dot density	Max. number of dots
0	8-dots single density	8	60dpi	100dpi	224
1	8-dots double density	8	60dpi	203dpiI	448
32	24-dots single density	24	203dpi	100dpi	224
33	24-dots double density	24	203dpi	203dpiI	448



GS * n1 n2 <d> n1 x n2 x 8

[Name] Define of the downloading / bit image
[Format] < 1D>H<2A>H<*n1*><*n2*>[<*d*>] *n1 x n2 x 8*
[Range] *0≦n1≦255*
0≦n2≦48
n1 x n2≦1300
[Description] Specifies the downloading/bit image using the number of dots specified by *n1* and *n2*.
The number of dots in the horizontal direction will be n1x8, and the number dots in the vertical direction will be n2x8, d is the bit image data.
After the downloading/bit image has been defined, the definition will be effective until redefinition, or until the ESC @ or until the power is switched off.



GS / *m*

[Name] Printing of the downloading / bit image
[Format] < 1D>H<2F>H<*m*>
[Range] *0≦m≦255*
[Description] Printing the downloading/bit image using the mode specified by m.

m	Mode name	Dot density in the vertical direction	Dot density in the horizontal direction
0,48	Normal mode	203dpi	203dpi
1,49	Double wide mode	203dpi	100dpi
2,50	Double height mode	100dpi	203dpi
3,51	Double wide and double height mode	100dpi	100dpi

GS w *n*

[Name] Selection of bar code width (enlargement rate)
[Format] < 1D>H<77>H<*n*>
[Range] *2≦n≦4*
[Description] n indicates the number of the fine element width.

GS h *n*

[Name] Selection of bar code height
[Format] < 1D>H<68>H<*n*>
[Range] *1≦n≦255*
[Description] n indicates the number of dots in the vertical direction.

GS k *n [d]k NUL*

[Name] Selection of bar code height
[Format] < 1D>H<6B>H<*n*> *[d] k <00>H*
[Range] *0≦n≦7*
[Description] d indicates the characters for printing, and k shows the number of characters for printing.

n	Barcode type	Bytes k
0	UPC-A	*k*=12
1	UPC-E	*k*=7
2	EAN-13	*k*=12 or *k*=13
3	EAN-8	*k*=7 or *k*=8
4	CODE 39	*2≦K≦14*

9. CHARACTER CODE TABLES

9.1 International Character sets

	Country	ASCII (Hexadecimal notation)											
		23	24	40	5B	5C	5D	5E	60	7B	7C	7D	7E
0	USA	#	$	@	[	\	]	^	`	{	|	}	~
1	France	#	$	à	°	ç	§	^	`	é	ù	è	¨
2	Germany	#	$	§	Ä	Ö	Ü	^	`	ä	ö	ü	β
3	U.K.	£	$	@	[	\	]	^	`	{	|	}	~
4	Denmark I	#	$	@	Æ	Ø	Å	^	`	æ	ø	å	~
5	Sweden	#	¤	É	Ä	Ö	Å	Ü	é	ä	ö	å	ü
6	Italy	#	$	@	°	\	é	^	ù	à	ò	è	ì
7	Spain I	Pt	$	@	¡	Ñ	¿	^	`	¨	ñ	}	~
8	Japan	#	$	@	[	¥	]	^	`	{	|	}	~
9	Norway	#	¤	É	Æ	Ø	Å	Ü	é	æ	ø	å	ü
10	Denmark II	#	$	É	Æ	Ø	Å	Ü	é	æ	ø	å	ü
11	Spain II	#	$	á	¡	Ñ	¿	é	´	í	ñ	ó	ú
12	Latin America	#	$	á	¡	Ñ	¿	é	ü	í	ñ	ó	ú
13	Korea	#	$	@	[	₩	]	^	´	{	|	}	~

9.2 Code Page: 00H to 7FH

	00	10	20	30	40	50	60	70
0	NUL	DLE	(SP)	0	@	P	`	p
1		XON	!	1	A	Q	a	q
2			“	2	B	R	b	r
3		XOF	#	3	C	S	c	s
4	EOT	DC4	$	4	D	T	d	t
5	ENQ		%	5	E	U	e	u
6			&	6	F	V	f	v
7			‘	7	G	W	g	w
8		CAN	(	8	H	X	h	x
9	HT		)	9	I	Y	i	y
A	LF		*	:	J	Z	j	z
B		ESC	+	;	K	[	k	{
C	FF	FS	,	<	L	\	l	|
D	CR	GS	-	=	M	]	m	}
E			.	>	N	^	n	~
F			/	?	O	_	o	(SP)

9.3 Code Page: PC437 (USA, European Standard)

	80	90	A0	B0	C0	D0	E0	F0
0	ç	É	á	░	└	╨	α	≡
1	ü	æ	í	▒	┴	╤	β	±
2	é	Æ	ó	▓	┬	╥	Γ	≥
3	â	ô	ú	│	├	╙	π	≤
4	ä	ö	ñ	┤	─	╘	Σ	⌠
5	à	ò	Ñ	╡	┼	╒	σ	⌡
6	å	û	ª	╢	╞	╓	µ	÷
7	ç	ù	º	╖	╟	╫	τ	≈
8	ê	ÿ	¿	╕	╚	╪	Φ	○
9	ë	Ö	⌐	╣	╔	┘	θ	●
A	è	Ü	¬	║	╩	┌	Ω	•
B	ï	¢	½	╗	╦	█	δ	√
C	î	£	¼	╝	╠	▄	∞	ⁿ
D	ì	¥	¡	╜	═	▌	Ø	²
E	Ä	Pt	«	╛	╬	▐	∈	■
F	Å	ƒ	»	┐	╧	▀	∩	(SP)

9.4 Code Page: Katakana (Japanese)

	80	90	A0	B0	C0	D0	E0	F0
0	＿	┴		ｰ	ﾀ	ﾐ	=	×
1	＿	┬	｡	ｱ	ﾁ	ﾑ	╞	円
2	▂	┤	｢	ｲ	ﾂ	ﾒ	‡	年
3	▃	├	｣	ｳ	ﾃ	ﾓ	╡	月
4	▄	─	､	ｴ	ﾄ	ﾔ	◢	日
5	▅	┼	･	ｵ	ﾅ	ﾕ	◣	時
6	▆	╟	ｦ	ｶ	ﾆ	ﾖ	◥	分
7	▇	╎	ｧ	ｷ	ﾇ	ﾗ	◤	秒
8	▏	┌	ｨ	ｸ	ﾈ	ﾘ	♠	〒
9	▌	┐	ｩ	ｹ	ﾉ	ﾙ	♥	市
A	▋	└	ｪ	ｺ	ﾊ	ﾚ	♦	区
B	▊	┘	ｫ	ｻ	ﾋ	ﾛ	♣	町
C	▉	┌	ｬ	ｼ	ﾌ	ﾜ	●	村
D	▉	╮	ｭ	ｽ	ﾍ	ﾝ	○	人
E	▉	╯	ｮ	ｾ	ﾎ	ﾞ	／	▒
F	┼	╰	ｯ	ｿ	ﾏ	ﾟ	＼	(SP)

9.5 Code Page: PC850 (Multilingual)

	80	90	A0	B0	C0	D0	E0	F0
0	ç	É	á	░	└	ð	Ó	–
1	ü	æ	í	▒	┴	Ð	ß	±
2	é	Æ	ó	▓	┬	Ê	Ô	=
3	â	ô	ú	│	├	Ë	Ò	¾
4	ä	ö	ñ	┤	─	È	õ	¶
5	à	ò	Ñ	Á	┼	€	Õ	§
6	å	û	a	Â	ã	Í	µ	÷
7	ç	ù	o	À	Ã	Î	þ	¸
8	ê	ÿ	¿	©	╚	Ï	Þ	°
9	ë	Ö	®	╣	╔	┘	Ú	¨
A	è	Ü	¬	║	╩	┌	Û	•
B	ï	ø	½	╗	╦	█	Ù	1
C	î	£	¼	╝	╠	▄	ý	3
D	ì	Ø	¡	¢	═	¦	Ý	2
E	Ä	×	«	¥	╬	Ì	¯	■
F	Å	ƒ	»	┐	¤	▀	´	(SP)

9.6 Code Page: PC860 (Portuguese)

	80	90	A0	B0	C0	D0	E0	F0
0	ç	É	á	░	└	╨	α	≡
1	ü	À	í	▒	┴	╤	β	±
2	é	È	ó	▓	┬	╥	Γ	≥
3	â	ô	ú	│	├	╙	π	≤
4	ã	õ	ñ	┤	─	╘	Σ	⌠
5	à	ò	Ñ	╡	┼	╒	σ	⌡
6	Á	Ú	a	╢	╞	╓	µ	÷
7	ç	ù	o	╖	╟	╫	τ	≈
8	ê	Ì	¿	╕	╚	╪	Φ	°
9	Ê	Õ	Ò	╣	╔	┘	θ	●
A	è	Ü	¬	║	╩	┌	Ω	·
B	Í	¢	½	╗	╦	█	δ	√
C	Ô	£	¼	╝	╠	▄	∞	ⁿ
D	ì	Ù	¡	╜	═	▌	Ø	²
E	Ã	Pt	«	╛	╬	▐	∈	■
F	Â	Ó	»	┐	╧	▀	∩	(SP)

9.7 Code Page: PC863 (Canadian-French)

	80	90	A0	B0	C0	D0	E0	F0
0	ç	É	¦	░	└	╨	α	≡
1	ü	È	´	▒	┴	╤	β	±
2	é	Ê	ó	▓	┬	╥	Γ	≥
3	â	ô	ú	│	├	╙	π	≤
4	Â	Ë	¨	┤	─	╘	Σ	⌠
5	à	Ï	›	╡	┼	╒	σ	⌡
6	¶	û	³	╢	╞	╓	µ	÷
7	ç	ù	¯	╖	╟	╫	τ	≈
8	ê	¤	Î	╕	╚	╪	Φ	○
9	ë	Ô	⌐	╣	╔	┘	θ	●
A	è	Ü	¬	║	╩	┌	Ω	•
B	ï	¢	½	╗	╦	█	δ	√
C	î	£	¼	╝	╠	▄	∞	ⁿ
D	=	Ù	¾	╜	═	▌	Ø	²
E	À	Û	«	╛	╬	▐	∈	■
F	§	ƒ	»	┐	╧	▀	∩	(SP)

9.8 Code Page: PC865 (Nordic)

	80	90	A0	B0	C0	D0	E0	F0
0	ç	É	á	▒	└	⊥	α	≡
1	ü	æ	í	▒	┴	╤	β	±
2	é	Æ	ó	▓	┬	╥	Γ	≥
3	â	ô	ú	│	├	╙	π	≤
4	ä	ö	ñ	┤	─	╘	Σ	⌠
5	à	ò	Ñ	╡	┼	╒	σ	⌡
6	å	û	a	╢	╞	╓	µ	÷
7	ç	ù	o	╖	╟	╫	τ	≈
8	ê	ÿ	¿	╕	╚	╪	Φ	°
9	ë	Ö	⌐	╣	╔	┘	θ	●
A	è	Ü	¬	║	╩	┌	Ω	·
B	ï	ø	½	╗	╦	█	δ	√
C	î	£	¼	╝	╠	▄	∞	ⁿ
D	ì	Ø	¡	╜	═	▌	Ø	²
E	Ä	Pt	«	╛	╬	▐	∈	■
F	Å	ƒ	¤	┐	╧	▀	∩	(SP)

9.9 Code Page: PC852 (Eastern Europe)

	80	90	A0	B0	C0	D0	E0	F0
0	ç	É	á	░	└	đ	Ó	
1	ü	Ĺ	Í	▒	┴	Đ	ß	˝
2	é	Í	ó	▓	┬	Ď	Ô	˛
3	â	ô	ú	│	├	Ë	Ń	ˇ
4	ä	ö	Ą	┤	─	ď	ń	˘
5	ů	Ľ	ą	Á	┼	Ň	ň	§
6	ć	Ě	Ž	Â	Ă	Í	Š	÷
7	ç	Ś	ž	Ě	ă	Î	š	¸
8	ł	ś	Ę	Ş	╚	ě	Ŕ	°
9	ë	Ö	ę	╣	╔	┘	Ú	¨
A	Ő	Ü		║	╩	┌	ŕ	•
B	ő	Ť	ź	╗	╦	█	Ű	ű
C	î	ť	Č	╝	╠	▄	ý	Ř
D	Ź	Ł	ş	Ż	═	Ţ	Ý	ř
E	Ä	×	«	ż	╬	Ů	ţ	■
F	Ć	č	»	ı	¤	▀	´	(SP)

9.10 Code Page: PC866 (Russian)

	80	90	A0	B0	C0	D0	E0	F0
0	А	Р	а	▒	└	╨	р	Ё
1	Б	С	б	▒	┴	╤	с	ё
2	В	Т	в	▓	┬	╥	т	Е
3	Г	У	г	│	├	╙	у	є
4	Д	Ф	д	┤	─	╘	ф	Ї
5	Е	Х	е	╡	┼	╒	х	ї
6	Ж	Ц	ж	╢	╞	╓	ц	Ў
7	З	Ч	з	╖	╟	╫	ч	ў
8	И	Ш	и	╕	╚	╪	ш	○
9	Й	Щ	й	╣	╔	┘	щ	•
A	К	Ъ	к	║	╩	┌	ъ	·
B	Л	Ы	л	╗	╦	█	ы	√
C	М	Ь	м	╝	╠	▄	ь	Na
D	Н	Э	н	╜	═	▌	э	¤
E	О	Ю	о	╛	╬	▐	ю	■
F	П	Я	п	┐	╧	▀	я	(SP)

9.11 Code Page: PC857 (Turkish)

	80	90	A0	B0	C0	D0	E0	F0
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1	ü	æ	Í	▒	┴	ª	β	±
2	é	Æ	ó	▓	┬	Ê	Ô	
3	â	ô	Ú	│	├	Ë	Ò	¾
4	ä	ö	ñ	┤	─		õ	¶
5	à	ò	Ñ	Á	┼		Õ	§
6	å	û	Ğ	Â	ã	Í	µ	+
7	ç	ù	ğ	À	Ã	Î		¸
8	ê	±	¿	©	╚	Ï	×	○
9	ë	Ö	®	╣	╔	┘	Ú	¨
A	è	Ü	¬	║	╩	┌	Û	•
B	ï	ø	½	╗	╦	█	Ù	¹
C	î	£	¼	╝	╠	▄	ì	³
D	│	Ø	¡	¢	═	Ţ	Ÿ	²
E	Ä	□	“	¥	╬	Ì	¯	■
F	Å	□	”	ı	¤	▀	´	(SP)

9.12 Windows Code Page

	80	90	A0	B0	C0	D0	E0	F0
0	€			°	À	Đ	à	ð
1		‘	Í	±	Á	Ñ	á	ñ
2	,	’	¢	²	Â	Ò	â	ò
3	*f*	“	£	³	Ã	Ó	ã	ó
4	„	”	¤	´	Ä	Ô	ä	ô
5	…	•	¥	µ	Å	Õ	å	õ
6	†	–	¦	¶	Æ	Ö	æ	ö
7	‡	—	§	·	Ç	×	ç	÷
8	ˆ	~	¨	¸	È	Ø	è	ø
9	‰	™	©	¹	É	Ù	é	ù
A	Š	š	ª	º	Ê	Ú	ê	ú
B	‹	›	«	»	Ë	Û	ë	û
C	Œ	œ	¬	¼	Ì	Ü	ì	ü
D			-	½	Í	Ý	í	ý
E			®	¾	Î	Þ	î	þ
F		Ÿ	—	¿	Ï	ß	ï	ÿ

10. EXTERNAL DIMENSIONS