



WT4-AXB SERIES

Programming Reference

WT4-AXB TT203
WT4-AXB TT300

WT4-AXB-r11-01-24

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1. Introduction

This document includes the command specifications of the WT4 series.

- (1) WT4-AXB TT203: Head density 203(dpi) / Thermal transfer
- (2) WT4-AXB TT300: Head density 300(dpi) / Thermal transfer

Command language used in this document is based on the SBPL(SATO Barcode Printer Language).

2. Default Settings

Default setting of the printers are listed below.

WT4 series

Item	Range	Default
Print speed	2-8 ips (203 dpi), 2-6 ips (300 dpi)	6 ips (203 dpi), 5 ips (300 dpi)
Darkness range	A (fixed)	A (fixed)
Print darkness	1-30	2 (TT)
Pitch offset	[-99, 99]	+0
Zero slash	w/ zero slash, w/o zero slash	w/o zero slash
Chinese font codepage	GB18030 (simplified), BIG5 (traditional)	GB18030-2022
Proportional/Fixed pitch	Propotional pitch, fixed pitch	Propotional pitch

3. Font List

Built-in fonts for the WT4 series are as follows.

Built-in fonts

Font	Font type	Command	Pitch
OCR-A (8dot/mm)	Bitmap 15×22 dots	OA	Fixed
OCR-B (8dot/mm)	Bitmap 20×24 dots	OB	Fixed
OCR-A (12dot/mm)	Bitmap 22×33 dots	OA	Fixed
OCR-B (12dot/mm)	Bitmap 30×36 dots	OB	Fixed
XU	Bitmap 5× 9 dots [Helvetica]	XU	Fixed/Proportional
XS	Bitmap 17×17 dots [Univers Condensed Bold]	XS	Fixed/Proportional
XM	Bitmap 24×24 dots [Univers Condensed Bold]	XM	Fixed/Proportional
XB	Bitmap 48×48 dots [Univers Condensed Bold]	XB	Fixed/Proportional
XL	Bitmap 48×48 dots [Sans Serif]	XL	Fixed/Proportional
U	Bitmap 5× 9 dots	U	Fixed
S	Bitmap 8×15 dots	S	Fixed
M	Bitmap 13×20 dots	M	Fixed
WB	Bitmap 18×30 dots	WB	Fixed
WL	Bitmap 28×52 dots	WL	Fixed
Outline	Outline font	\$(Designation of shape) \$=(Designation of print)	Fixed/Proportional
CG Times	True Type font	RD	Fixed/Proportional
CG Triumvirate	True Type font	RD	Fixed/Proportional
SUD-SON	True Type font	RD	Fixed/Proportional
SUD-HEI	True Type font	RD	Fixed/Proportional

Followings are optional asian fonts provided for the WT4 series. These fonts can be used as built-in fonts once you download them onto the printer. Select either [GB18030/GB2312 Chinese font and Korean font] or [BIG5 Chinese font and Korean font]. You cannot use both fonts at the same time.

1) Chinese font

	Font Title	Font Type	Symbol Set	Command	Pitch
Option 1	Simplified Chinese	Bitmap 24×24 dots	GB18030	C2, c2	Fixed
		Bitmap 32×32 dots	GB2312	C4, c4	Fixed
Option 2	Traditional Chinese	Bitmap 24×24 dots	BIG5	C2, c2	Fixed
		Bitmap 32×32 dots	BIG5	C4, c4	Fixed

- Make sure to include the Chinese font codepage command <KS> in print data.

- Unicode is also available. See <KS> for detail.

2) Korean font

	Font	Font type	Symbol set	Command	Pitch
Option 1	Korean	Bitmap 16×16 dots	KSC5601(KSX1001)	K1, k1	Fixed
	Korean	Bitmap 24×24 dots	KSC5601(KSX1001)	K2, k2	Fixed

- KSC5601 or KSX1001 will be automatically selected according to the first byte of receive print data.

Expanded font

Built-in fonts can be expanded by a factor of 1 to 12.

Example: A font in a size of 5 dots in width and 9 dots in height is expanded by a factor of 3. The resulting font has a width of 15 dots and a height of 27 dots.

The following are the input methods of width and height parameters.

Width x Expansion factor = Width parameter setting value

Height x Expansion factor = Height parameter setting value

The command <L> controls the font expansion factor, and the parameter is specified by the magnification.

Example: If setting the factor to: <L>0304, the character is expanded by a factor of 3 in horizontal direction (width) and a factor of 4 in vertical direction (height).

If the command <L> is specified, the pitch between characters becomes wider as well.

Fixed pitch / Proportional pitch

As for XU~XL font, outline font and CG font, either fixed pitch or proportional pitch can be selected. Use the Proportional Pitch command <PS> and the Proportional Pitch Release command <PR> for the settings of proportional pitch.

Depending on the font, the width of the proportional pitch differs. On the other hand, the width of alphanumeric becomes narrow by specifying the proportional pitch.

As for the fixed pitch, the character width is according to the relevant font size selected.

Difference between outline font and bitmap font

The height and the width of bitmap font are predefined. The height of the bitmap font is a little bit larger than the width.

The bitmap font is the largest one in the font matrix.

For the font type and size, refer to the font list on the previous page.

As for the outline font, if setting the height and the width of the font properly, the smooth scaling algorithm of the printer allows you to create a well balanced font. It is also possible to select some style options such as gray scale and shadow settings.

4. Command List

Category	Command		Restriction
Control	Start Code	<A>	
	Stop Code	<Z>	
	Print Quantity	<Q>	
	Job ID Number	<ID>	
	Job name	<WK>	
Print position	Horizontal Print Position	<H>	
	Vertical Print Position	<V>	
Modification	Character Pitch	<P>	
	Character Expansion	<L>	
	Proportional Pitch	<PS>	
	Release Proportional Pitch	<PR>	
	Rotation (Fixed Base Reference Point)	<%>	
	Sequential Numbering	<F>	
	Rule / Grid print	<FW>	
	Inversed Color Print	<(>	
	Change Intericational Encoding	<KC>	
	Chinese Font Code	<KS>	
	Store Form Overlay	<&>	
	Recall Form Overlay	</>	
	Partial Copy	<WD>	
	Journal Print	<J>	
Font	XU Font	<XU>	
	XS Font	<XS>	
	XM Font	<XM>	
	XB Font	<XB>	
	XL Font	<XL>	
	OCR-A Font	<OA>	
	OCR-B Font	<OB>	
	Outline Font design	<\$>	
	Outline Font print	<\$=>	
	CG Font	<RD>	
	U Font	<U>	
	S Font	<S>	
	M Font	<M>	
	WB Font	<WB>	
	WL Font	<WL>	
	24x24 dots horizontally oriented Chinese	<C2>	
	24x24 dots horizontally oriented Chinese with 1 byte character	<C4>	
	24x24 dots vertically oriented Chinese	<c2>	
	24x24 dots vertically oriented Chinese with 1 byte character	<c4>	
	16x16 dots horizontally oriented Korean	<K1>	
	24x24 dots horizontally oriented Korean	<K2>	
	16x16 dots vertically oriented Korean	<k1>	
	24x24 dots vertically oriented Korean	<k2>	

Category	Command		Restriction
Barcode	Barcode (Ratio 1:3)		
	Barcode (Ratio 1:2)	<D>	
	Barcode (HRI)	<D>~<d>	
	Barcode (Ratio 2:5)	<BD>	
	Barcode Ratio	<BT>	
	Barcode Ratio by Specified Ratio	<BW>	
	GS1-128 (UCC/EAN128)	<BI>	
	CODE93	<BC>	
	CODE128	<BG>	
	UPC Add-on Barcode	<BF>	
	POSTNET	<BP>	
	GS1 DataBar Composite Symbol	<EU>	
	UPC-A Barcode (No HRI)	<BL>	
	UPC-A Barcode (with HRI)	<BL> ~<d>	
	UPC-A Barcode (with HRI)	<BM>	
2D code	PDF417	<2D10>	
	Micro PDF	<2D12>	
	MAXI code	<2D20>	
	QR Code (Model 2)	<2D30>	
	QR Code (Model 1)	<2D31>	
	Micro QR Code	<2D32>	
	DataMatrix (ECC200)	<2D50>	
	GS1 DataMatrix	<2D51>	
	Aztec Code	<2D70>	
	QR code	<BQ>	
	MAXI code	<BV>	
	PDF417	<BK>	
	DataMatrix	<BX>	
	DataMatrix (Data)	<DC>	
	DataMatrix (Sequential number)	<FX>	

Category	Command		Restriction
Graphic	Graphic print	<G>	
	BMP File print	<GM>	
	PCX File print	<GP>	
System	Print Speed	<CS>	
	Print Darkness	<#E>	
	Media Size	<A1>	
	Base Reference Point	<A3>	
	Print End Position	<EP>	
	Multi cut	<~>	
	Cut Number Unit	<CT>	
	Eject and Cut	<NC>	
	Cut Number Unit	<~A>	
	Eject and Cut	<~B>	
	Clear	<*>	
	Reprint	<C>	
	Register Printer Operation	<PG>	
	Register Printer Operation	<PC>	
	User Download	<LD>	
	Download TrueType Font	<DU>	
	TrueType Font Identifier	<CW>	
	Erase Download TrueType Font	<ER>	
	Offset	<PO>	Tear-off Offset: -60 to +99 dots
	Sensor Type	<IG>	
	Print Method	<PH>	
	Print Mode	<PM>	
	Media Feed Control	<IK>	
	Serial Interface	<I2>	
	LAN Interface	<I3>	
	IP Address	<W1>	
	Subnet Mask	<W2>	
	Default Gateway	<W3>	
	IP Address	<WI>	
	Option Waiting Time	<TW>	
	Forced Tear Off	<TK>	

Category	Command		Restriction
Memory card	Card Slot	<CC>	
	Format Memory Card	<FM>	
	Store Form Overlay	<&S>	
	Recall Form Overlay	<&R>	
	Store Format	<YS>	
	Store Field	</N>	
	Recall Format	<YR>	
	Print Field	</D>	
	Store Graphic	<GI>	
	Recall Graphic	<GR>	
	Store BMP File	<GT>	
	Recall BMP File	<GC>	
	PCX File Registration	<PI>	
	PCX File Call	<PY>	
	Clear (Memory card)	<*>	
Calendar	Calendar Configuration	<WT>	
	Calendar Increment	<WP>	
	Calendar Print	<WA>	

5. How to Read the Command Manual

2) 7.2 Modification

1) Available for

3) WT4 series

4) Font Expansion

ESC+L

5) Hex code

ESC <1B>₁₆

L <4C>₁₆

Parameter aabb

6) Initial setting

aa=01, bb=01

8) Persistence of the command

When printer is powered-off	Set parameter will not be retained
Validity in a job	Parameter set will be retained until next valid setting
Validity after a job	Parameter set will be the initial value for the next job

9) [Function]

Specifying the print expansion factor.

10) [Format]

<L>aabb

- Parameter
 - a [Horizontal expansion factor (width)] = validity range : 01 to 12
 - b [Vertical expansion factor (height)] = validity range : 01 to 12

11) [Coding example] Horizontal expansion factor (width): 4, Vertical expansion factor (height): 3

<A>

<V>100<H>200<P>3<L>0403<OA>ABCD

<Q>1

<Z>

12) [Notes]

- The pitch between the characters is equally enlarged. When setting the inter character pitch <P>, the preset horizontal expansion factor <L> will be valid for the inter character pitches <P> thereafter.
- If enlarging graphics, put in expansion factor <L> just before the graphic print command.

13) [Tips]

- When using the expansion function, be careful not to fall out of the printing range. Therefore, select a correct print format.

14) [Valid command]

WT4 series

Font	<U>	<S>	<M>	<XS>	<XM>	<OA>	<OB>	<C2>	<C4>	<c2>
Modification	<K1>	<K2>	<k1>	<k2>						
Graphic	<G>	<GM>								

- 1) Command identification.
[Control], [Print position], [Modification], [Font], [Barcode], [2D code], [Graphic], [System], [Memory card] and [Calendar].
- 2) Command availability depending on printer model.
[] indicates unavailable commands.

Example) Commands only available for the WT4 series as shown below.

Available for	WT4DT series			
	WT4TT series			

- 3) Command name
- 4) Command code
- 5) Command as HEX code
- 6) Command describing parameters. () indicates that omission is possible
- 7) Default command value
- 8) Persistence of the Command
 - When printer is powered off
 - (1) Set Parameter will be retained
 - (2) Set parameter will not be retained (Set parameter will not be retained)
 - (3) Command settings will not be retained (Command setting will not be retained)
 - Validity in a job
 - (1) Retained until next valid setting
 - (2) Set parameter will be retained
 - (3) Becomes invalid after execution
 - Valid after a job
 - (1) Set parameter will be the default value for the next job<a>.
 - (2) Set parameter will be retained until next valid setting
 - (3) Becomes invalid after execution
 - (4) Becomes invalid after execution
- 9) Command function outline
- 10) Command, necessary parameter
<L>aabb indicates the ESC+L (<1B>₁₆<4C>₁₆) command with the parameters aa and bb
- 11) Example for command input
If putting out a code via RS-232C to a printer connected, the programming will be done in BASIC language:


```

10 ESC$=CHR$ (&H1B)
20 OPEN "COM1: 9600, N, 8, 1, RS, BIN"  FOR OUTPUT AS #1
30 PRINT #1, ESC$; "A";
40 PRINT #1, ESC$; "V100"; ESC$; "H200";
50 PRINT #1, ESC$; "P3"; ESC$; "L0403";
60 PRINT #1, ESC$; "OAABCD";
70 PRINT #1, ESC$; "Q2";
80 PRINT #1, ESC$; "Z";
90 CLOSE #1
100 END
      
```
- 12) Explanation of commands and parameters
- 13) Tips when using the command
- 14) Other commands which will be influenced by using the specific command

6. Control Command

Control				
Available for				
	WT4 series			
Start Data Transfer			ESC+A	
Hex code	ESC	A	Parameter	
	<1B> ₁₆	<41> ₁₆	None	
Default setting	None			

Persistence of the command	When printer is powered off	Command setting will not be retained.
	Validity in a job	Becomes invalid after execution
	Validity after a job	Becomes invalid after the job

[Function]

Start code. Data transfer defaultized.

[Format]

<A>

[Coding example]

<A>
 <V>100<H>200<P>2<L>0202<OA>ABCD
 <Q>1
 <Z>

[Notes]

1. Defaultizes item. Command is used always at beginning of an item.
2. Always use data transfer start <A> and data transfer end <Z> as a set.

[Important]

1. Except for some system commands, all command settings will be set to default value.
2. If not starting data transfer with <A>, the print will not be executed.

Control			
Available for			
	WT4 series		
End Data Transfer			ESC+Z
Hex code	ESC	Z	Parameter
	<1B> ₁₆	<5A> ₁₆	None
Default setting	None		
Persistence of the command	When printer is powered off	Command settings will not be retained.	
	Validity in a job	Becomes invalid after execution	
	Validity after a job	Becomes invalid after the job	

[Function]

Stop code. Data transfer terminated.

[Format]

<Z>

[Coding example]

<A>
 <V>100<H>200<P>2<L>0202<OA>ABCD
 <Q>1
<Z>

[Notes]

1. Terminates item. Command is used always at the end of an item.
2. Always use data transfer start <A> and data transfer end <Z> as a set.

[Important]

1. If not ending data transfer with <Z>, the print will not be executed.

Control			
Available for			
	WT4 series		
Number of Pages			ESC+Q
Hex code	ESC	Q	Parameter
	<1B> ₁₆	<51> ₁₆	aaaaaa
Default setting	aaaaaa=1		
Persistence of the command	When printer is powered off	Set parameter will not be retained	
	Validity in a job	Becomes invalid after execution	
	Validity after a job	Becomes invalid after the job	

[Function]

Defines number of pages to be printed.

[Format]

<Q>aaaaaa

• Parameter

a [Number of pages] = Valid range : 1 - 999999

[Coding example] 2 pages to be print

<A>

<V>100<H>200<P>2<L>0202<OA>ABCD

<Q>2

<Z>

[Notes]

1. The data between start data transfer <A> and end data transfer <Z> is regarded as one page. <Q> defines how many pages of the same content shall be printed out.
2. Command is put in before the end data transfer <Z> command.

[Important]

1. Print out of the same information will be done for pages specified. If the appearance of a serial number is set <F>, then this number will be of consecutive order.
2. If specifying with a multi-cut <~>, the defined number of pages will be multiplied by cut number.

Control			
Available for			
	WT4 series		
Job ID Number			ESC+ID
Hex code	ESC	ID	Parameter
	<1B> ₁₆	<49> ₁₆ <44> ₁₆	aa
Default setting	aa=<20> ₁₆		
Persistence of the command	When printer is powered off	Set parameter will not be retained	
	Validity in a job	Set parameter will be retained until next valid setting	
	Validity after a job	Becomes invalid after the job	

[Function]

Defines job ID for status return

[Format]

<ID>aa

• Parameter

a [Job ID number] = Valid range : 00 - 99

[Coding example] Job ID number: 01

<A>

<ID>01

<V>200<H>100<P>0<\$>B,100,100,6

<\$>SATOPRINTER

<Q>1

<Z>

[Notes]

1. If using a status return in the transfer protocol, the job ID number can be set in the telegram.
2. The status can be confirmed by putting out a status request (ENQ).
3. This command is set within the item, between start data transfer <A> and end data transfer <Z>.

[Important]

1. Activates when status return transfer protocol is used and status request (ENQ) is received during printing (incl. QTY≠0, offline, error).
2. If status return transfer protocol is used, and status request is received while not printing (QTY=0, start up, no data received), space (20H) will be set and returned as status.
3. If defining a job ID number several times during one item (between start data transfer <A> and end data transfer <Z>), the last definition will be valid.
4. For more details, refer to the "Interface Specifications".

Control			
Available for			
	WT4 series		
Job Name			ESC+WK
Hex code	ESC	WK	Parameter
	<1B> ₁₆	<57> ₁₆ <4B> ₁₆	aaaaaaaaaaaaaaaa
Default setting	aaaaaaaaaaaaaaaa=<20> ₁₆		
Persistence of the command	When printer is powered off	Set parameter will not be retained	
	Validity in a job	Set parameter will be retained until next valid setting	
	Validity after a job	Becomes invalid after the job	

[Function]

Defines job name for status return

[Format]

<WK>aaaaaaaaaaaaaaaa

• Parameter

a [Job name] = ASCII-CODE 16 digits

[Coding example] Job name: SATO

<A>

<WK>SATO

<V>200<H>100<P>0<\$>B,100,100,6

<\$>SATOPRINTER

<Q>1

<Z>

[Notes]

1. If using the status 4 as transfer protocol, the job name can be set in the telegram.
2. The status can be confirmed by putting out a status request (ENQ).
3. This command is set within the item, between start data transfer <A> and end data transfer <Z>.
4. This command can be used together with Define job ID number <ID>.

[Tips]

1. Activates when status return transfer protocol is used and status request (ENQ) is received during printing (incl. QTY≠0, offline, error).
2. If status return transfer protocol is used, and status request is received while not printing (QTY=0, start up, no data received), space (20H) will be set and returned as status.
3. If defining a job ID name several times during one item (between start data transfer <A> and end data transfer <Z>), the last definition will be valid.
4. For particulars, refer to the [Interface Specification].

7. Print Position Command

Print Position			
Available for			
	WT4 series		
Horizontal Print Position			ESC+H
Hex code	ESC <1B>16	H <48>16	Parameter aaaa
Default setting	aaaa=1		
Persistence of the command	When printer is powered off	Command settings will not be retained	
	Validity in a job	Set parameter will be retained until next valid setting	
	Validity after a job	Set parameter will be the default value for the next job <A>.	

[Function]

Specifies horizontal print position in dots from the origin position

[Format]

<H>aaaa

• Parameter

a [Horizontal print position] = Valid range : refer to table below

[Coding example] Horizontal print position: 200 dots (from origin)

```
<A>
<V>100<H>200<P>2<L>0202<OA>ABCD
<Q>>1
<Z>
```

[Notes]

1. Defines starting position of print for the following: Characters, barcodes, ruled lines, graphics, etc.

[Tips]

1. Data outside of the print range (such as characters, barcodes and graphics) will be clipped.

[Parameter default setting and validity range]

Model	Default	Range (dots)
WT4-AXB TT203	1	1 ~ 832
WT4-AXB TT300	1	1 ~ 1248

[Valid commands]

WT4 series

Font	<XU>	<XS>	<XM>	<XB>	<XL>	<U>	<S>	<M>	<WB>	<WL>
	<OA>	<OB>	<RD>	<\$>						
Barcode		<BC>	<BG>	<BI>	<BF>	<BP>	<D>	<D><d>	<BD>	<BT>
	<BW>									
2D code	<BK>	<BQ>	<BV>	<BX>						
	<2D10>	<2D12>	<2D20>	<2D30>	<2D31>	<2D32>	<2D50>	<2D51>		
Modification	<WD>	<FW>	<P>							
Graphic	<G>	<GM>	<GP>							

Print Position			
Available for			
	WT4 series		
Vertical Print Position			ESC+V
Hex code	ESC	V	Parameter
	<1B> ₁₆	<56> ₁₆	aaaaa
Default setting	aaaa=1		
Persistence of the command	When printer is powered off		Command settings will not be retained
	Validity in a job		Set parameter will be retained until next valid setting
	Validity after a job		Set parameter will be the default value for the next job <A>

[Function]

Specifies vertical print position in dots from the origin position

[Format]

<V>aaaaa

• Parameter

a [Vertical print position] = Valid range : refer to table below

[Coding example] Vertical print position: 100 dots

<A>

<V>**100**<H>200<P>2<L>0202<OA>ABCD

<Q>1

<Z>

[Notes]

1. Defines starting position of print for the following: Characters, barcodes, ruled lines, graphics, etc.

[Parameter, default setting and validity range]

Model	Default	Range (dots)
		Standard printable area
WT4-AXB TT203	1	1 ~ 20000
WT4-AXB TT300	1	1 ~ 18000

[Tips]

1. Data outside of the print range (such as characters, barcodes and graphics) will be clipped.

[Valid commands]

WT4 series

Font	<XU>	<XS>	<XM>	<XB>	<XL>	<U>	<S>	<M>	<WB>	<WL>
	<OA>	<OB>	<RD>	<\$>						
Barcode		<BC>	<BG>	<BI>	<BF>	<BP>	<D>	<D><d>	<BD>	<BT>
	<BW>									
2D code	<BK>	<BQ>	<BV>	<BX>						
	<2D10>	<2D12>	<2D20>	<2D30>	<2D31>	<2D32>	<2D50>	<2D51>		
Modification	<WD>	<FW>	<P>							
Graphic	<G>	<GM>	<GP>							

8. Edit Command

Modification			
Available for			
	WT4 series		
Character Pitch			ESC+P
Hex code	ESC	P	Parameter
	<1B> ₁₆	<50> ₁₆	aa
Default setting	aa=02		
Persistence of the command	When printer is powered off	Set parameter will not be retained	
	Validity in a job	Set parameter will be retained until next valid setting	
	Validity after a job	Set parameter will be the default value for the next job <A>	

[Function]

Defines character pitch in dots

[Format]

<P>aa

• Parameter

a [Inter-character pitch] = Valid range : 00 to 99 dots

[Coding example] Inter-character pitch: 10

```
<A>
<V>100<H>200<P>10<L>0202<OA>ABCD
<Q>1
<Z>
```

[Notes]

1. The character pitch is the distance between characters, fonts when selecting barcode / font print.
2. The character pitch is enlarged according to the expansion factor <L>, if specified.
3. Even if automatic line feed is selected <E> and line feed code [CR] is set, the character pitch remains valid (saved) and the setting does not return to default. Only if Start data transfer <A> is selected, the setting returns to default.
4. When setting the character pitch <P> directly before specifying a barcode print, the pitch command for the barcode module becomes valid.
Applicable barcodes: CODABAR (NW-7), CODE39, Industrial 2of5, Matrix 2of5
For details, refer to the [9. Barcode settings outline (3) inter-character gap].
5. If incorrect values are specified, the settings will return to default.

[Valid commands]

WT4 series

Font	<XU>	<XS>	<XM>	<XB>	<XL>	<U>	<S>	<M>	<WB>	<WL>
	<OA>	<OB>	<RD>	<\$->						
Modification	<L>									
Barcode		<D>	<D><d>	<BD>	<BT>	<BW>				

Modification			
Available for			
	WT4 series		
Character Expansion			ESC+L
Hex code	ESC	L	Parameter
	<1B> ₁₆	<4C> ₁₆	aabb
Default setting	aa=01, bb=01		
Persistence of the command	When printer is powered off	Set parameter will not be retained.	
	Validity in a job	Set parameter will be retained until next valid setting.	
	Validity after a job	Set parameter will be the default value for the next job<A>.	

[Function]

Defines font expansion setting

[Format]

<L>aabb

• Parameter

a [Horizontal expansion factor] = Valid range : 01 to 12
b [Vertical expansion factor] = Valid range : 01 to 12

[Coding example] Horizontal expansion factor: 4 times, Vertical expansion factor: 3 times

```
<A>
<V>100<H>200<P>3<L>0403<OA>ABCD
<Q>1
<Z>
```

[Notes]

1. The character pitch is equally enlarged. If setting the character pitch with <P>, the horizontal expansion factor specified with <L> will affect (enlarge) the character pitch.
2. When enlarging graphics, put in the expansion factor <L> just before the graphic print command.

[Tips]

1. Select the format so that the enlarged print does not go out of the printable area.

[Valid commands]

WT4 series

Font	<XU>	<XS>	<XM>	<XB>	<XL>	<U>	<S>	<M>	<WB>	<WL>
	<OA>	<OB>								
Modification	<P>									
Graphic	<G>	<GM>	<GP>							

Modification			
Available for			
	WT4 series		
Proportional Pitch			ESC+PS
Hex code	ESC	PS	Parameter
	<1B> ₁₆	<50> ₁₆ <53> ₁₆	None
Default setting	None		
Persistence of the command	When printer is powered off		Command settings will not be retained
	Validity in a job		Will be retained until next valid setting
	Validity after a job		Will be retained after the job

[Function]

Defines proportional pitch

[Format]

<PS>

[Coding example]

<A>

<PS>

<V>100<H>200<P>2<L>0202<XU>ABCD

<Q>1

<Z>

[Notes]

1. When setting proportional pitch <PS>, alphanumeric will have narrower pitches among characters than if not specified.
2. If the setting is done outside of the possible range, the proportional print will not be performed.
3. The default setting is set to [Proportional pitch].

[Valid commands]

WT4 series

Font	<XU>	<XS>	<XM>	<XB>	<XL>	<RD>	<\$=>			
Modification										

Modification			
Available for			
	WT4 series		
Release Proportional Pitch			ESC+PR
Hex code	ESC	PR	Parameter
	<1B> ₁₆	<50> ₁₆ <52> ₁₆	None
Default setting	None		
Persistence of the command	When printer is powered off		Command settings will not be retained
	Validity in a job		Command set are valid until setting is changed
	Validity after a job		Will be retained after the job

[Function]

Releases proportional pitch

[Format]

<PR>

[Coding example]

<A>

<PR>

<V>100<H>200<P>2<L>0202<XM>ABCD

<Q>1

<Z>

[Notes]

1. The default setting is set to [Proportional pitch].

[Valid commands]

WT4 series

Font	<XU>	<XS>	<XM>	<XB>	<XL>	<RD>	<\$->			
Modification										

Modification				
Available for				
	WT4 series			
Sequential Number			ESC+F	
Hex code	ESC	F	Parameter	
	<1B> ₁₆	<46> ₁₆	aaaabcccc(,dd,ee,f)	
Default setting	None			

Persistence of the command	When printer is powered off	Set parameter will not be retained
	Validity in a job	Becomes invalid after execution
	Validity after a job	Becomes invalid after the job

[Function]

Sets before the font / barcode data is specified. Assigns the specified data a serial number (consecutive) and adds it to the print.

[Format]

<F>aaaabcccc (,dd,ee,f)

• Parameter

a	[Print copies]	=	Valid range	:	1 to 9999	
b	[Increase/Decrease]	=	+	:	Increase	
			-	:	Decrease	
c	[Starting number]	=	Valid range	:	1 to 9999	
d	[Range of numeration (digits)]	=	Valid range	:	1 to 99	when omitted: 8
e	[Minimum downward count (digits)]	=	Valid range	:	0 to 99	when omitted: 0
f	[Decimal/ hexadecimal numeration]	=	Valid range	:	0 to 99	when omitted: 0
			0	:	Decimal	when omitted: 0
			1	:	Hexadecimal	

[Coding example]

Pages of print: 1, Increase/Decrease: +, Starting number: 1,
Range of numeration: 5 digits, Minimum downward count: 0

<A>
<V>100<H>100<P>2<L>0202
<F>1+1,5,0<OA>10000
<Q>1
<Z>

[Notes]

- Up to 8 serial numbers can be specified for one format.
- The inverse color setting <(> is not available for this function.
- The automatic line feed <E> is not available.
- To use this function, you need to print font or barcode together with serial number.
- Digit number of font or barcode command should be the same with the one of [Range of numeration]. If it exceeds the digit number of font or barcode command, serial number will not be printed.

[Valid commands]

WT4 series

Font	<XU>	<XS>	<XM>	<XB>	<XL>	<U>	<S>	<M>	<WB>	<WL>
	<OA>	<OB>	<\$>	<RD>						
Barcode		<BC>	<BG>	<BI>	<BF>	<BP>	<D>	<D><d>	<BD>	<BT>
	<BW>	<BL>	<BM>							

Modification			
Available for			
	WT4 series		
Rule / Grid Print			ESC+FW
Hex code	ESC	FW	Parameter
	<1B> ₁₆	<46> ₁₆ <57> ₁₆	Rule aabcccc Grid aabbVccccHdddd
Default setting	None		
Persistence of the command	When printer is powered off		Set parameter will not be retained
	Validity in a job		Becomes invalid after execution
	Validity after a job		Becomes invalid after the job

[Function]

Prints rule / grid

[Format]

<FW>aabcccc

Rule print

• Parameter

a	[Line width]	=	Valid range	:	02 to 99 dots
b	[Horizontal / vertical setting]	=	H	:	Horizontal
			V	:	Vertical
c	[Length]	=	Valid range	:	Refer to table below

<FW>aabbVccccHdddd

Grid print

• Parameter

a	[Vertical line width]	=	Valid range	:	02 to 99 dots
b	[Horizontal line width]	=	Valid range	:	02 to 99 dots
c	[Vertical line length]	=	Valid range	:	Refer to table below
d	[Horizontal line length]	=	Valid range	:	Refer to table below

[Coding example]

Ruled line: Line width: 4, Horizontal setting, Length: 400
Grid: V. line width: 8, H. line width: 8, V. line length: 300, H. line length: 400

<A>
<V>100<H>200<FW>04H400
<V>300<H>200<FW>0808V300H400
<Q>1
<Z>

[Notes]

1. If the print start position is outside of the printable area, it will not print due to a command error.

[Valid range]

Model	Horizontal line length in dots	Vertical line length in dots
WT4-AXB TT203	1 to 832	1 to 20000
WT4-AXB TT300	1 to 1248	1 to 18000

Modification			
Available for			
	WT4 series		
Inversed Color Print			ESC+(
Hex code	ESC	(	Parameter
	<1B> ₁₆	<28> ₁₆	aaaa,bbbb
Default setting	None		
Persistence of the command	When printer is powered off	Set parameter will not be retained	
	Validity in a job	Becomes invalid after execution	
	Validity after a job	Becomes invalid after the job	

[Function]

Sets reversed color print (black/white)

[Format]

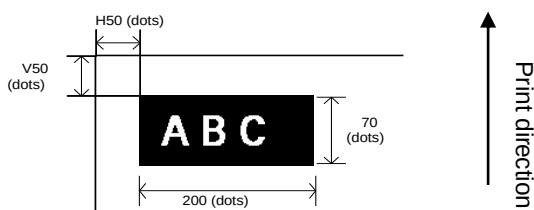
<(>aaaa,bbbb

• Parameter

a [Valid range in horizontal direction] = Valid range : Refer to table below
b [Valid range in vertical direction] = Valid range : Refer to table below

[Coding example] Valid range in horizontal direction: 200, Valid range in vertical direction: 70

<A>
<V>50<H>50<P>2<L>0202<OA>ABC
<V>50<H>50<(>200,70
<Q>1
<Z>



[Notes]

1. The horizontal and vertical print positions <H>, <V> are set before the inversed printing color setting <(>.
2. If the print start position is outside of the printable area, it will not print due to a command error.

[Tips]

1. Make sure the black print does not exceed 30% of the entire label.

[Valid range]

Model	Horizontal line length in dots	Vertical line length in dots
WT4-AXB TT203	1 to 832	1 to 20000
WT4-AXB TT300	1 to 1248	1 to 18000

Modification			
Available for			
	WT4 series		
Change International Encoding			ESC+KC
Hex code	ESC	KC	Parameter
	<1B> ₁₆	<4B> ₁₆ <43> ₁₆	a
Default setting	a=1		
Persistence of the command	When printer is powered off	Set parameter will not be retained.	
	Validity in a job	Set parameter will be retained until next valid setting.	
	Validity after a job	Set parameter will be the default value for the next job<A>.	

[Function]

To select international character set use for printing.

[Format]

<KC>a

• Parameter

a	[Font code selection]	=	1	:	UTF-8
			2	:	GB18030
			3	:	BIG5

[Coding example] Set UTF-8 as font code page.

```

<A>
<KC>1
<KS>1
<V>0050<H>0100<C2>ABCDE
<Q>1
<Z>

```

[Notes]

1. This command enables you to call up the international character set you want to use for printing.

Modification				
Available for				
	WT4 series			
Chinese Codepage			ESC+KS	
Hex code	ESC	KS	Parameter	
	<1B> ₁₆	<4B> ₁₆ <53> ₁₆	a	
Default setting	a=1			
Persistence of the command	When printer is powered off		Set parameter will not be retained.	
	Validity in a job		Set parameter will be retained until next valid setting.	
	Validity after a job		Set parameter will be the default value for the next job<A>.	

[Function]

To select Chinese codepage

[Format]

<KS>a

• Parameter

a	[Chinese font code selection]	=	0	:	UTF16
			1	:	GB18030
			2	:	GB2312
			3	:	BIG5
			4	:	UTF-8
b	[Style]	=	1	:	Mincho
			2	:	Gothic
			3	:	Kaisho

[Coding example] Set GB18030 as a Chinese font code.

<A>

<KS>21

<Z>

[Notes]

- Currently following styles are available:

Codepage	Size	Mincho	Gothic	Kaisho
GB18030	24 x 24	V		
GB2312	32 x 32	V		
BIG5	24 x 24			V
	32 x 32			V

Modification			
Available for			
	WT4 series		
Store Form Overlay			ESC+&
Hex code	ESC	&	Parameter
	<1B> ₁₆	<26> ₁₆	None
Default setting	None		
Persistence of the command	When printer is powered off		Command settings will not be retained
	Valid range		Will be retained until next valid setting
	Validity after a job		Will be retained until next valid setting

[Function]

Registers form-overlay

[Format]

<&>

[Coding example]

```

<A>
<V>100<H>50<FW>1010V800H750
<V>100<H>50<FW>0505V760H710
<V>150<H>100<OA>MODEL
<&>
<Z>

```

[Notes]

1. After having registered a specific form overlay <&>, this format can be loaded by </> and applied to any print data.
2. The form overlay register function is set at the end of a format specification. The form overlay is valid over the entire print range.
3. Only one format can be registered.
4. If willing to change the format, first clear the form overlay with <*> before setting the form overlay another time.
5. The registered format can be loaded with </>.
6. If selecting a label size according to <A1> the registered form overlay will be expanded.

[Valid commands]

WT4 series

Print position	<V>	<H>								
Modification	<WD>	<FW>	</>							
Font	<XU>	<XS>	<XM>	<XB>	<XL>	<U>	<S>	<M>	<WB>	<WL>
	<OA>	<OB>	<RD>	<\$->						
Barcode		<BC>	<BG>	<BI>	<BF>	<BP>	<D>	<D><d>	<BD>	<BT>
	<BW>									
2D code	<BK>	<BQ>	<BV>	<BX>						
	<2D10>	<2D12>	<2D20>	<2D30>	<2D31>	<2D32>	<2D50>	<2D51>		
Graphic	<G>	<GM>	<GP>							

Modification			
Available for			
	WT4 series		
Recall Form Overlay			ESC+/
Hex code	ESC	/	Parameter
	<1B> ₁₆	<2F> ₁₆	None
Default setting	None		
Persistence of the command	When printer is powered off	Command settings will not be retained	
	Validity in a job	Will be retained until next valid setting	
	Validity after a job	Will be retained until next valid setting	

[Function]

Specifies to invoke form overlay

[Format]

</>

[Coding example]

```
<A>
</>
<V>200<H>100<P>0<$>B,100,100,6
<$=>SATOPRINTER
<V>720<H>150<B>102100*95000012345*
<Q>1
<Z>
```

[Notes]

1. This command invokes the form-overlay, saved by the form-overlay registration <&> command.
2. If detecting this command in a normal print data, this data will be combined with a graphic saved in the form overlay for printing out.

Modification			
Available for			
	WT4 series		
Partial Copy			ESC+WD
Hex code	ESC	WD	Parameter
	<1B> ₁₆	<57> ₁₆ <44> ₁₆	VaaaaHbbbbYccccXdddd
Default setting	None		
Persistence of the command	When printer is powered off		Set parameter will not be retained
	Validity in a job		Becomes invalid after execution
	Validity after a job		Becomes invalid after the job

[Function]

Copies data from one place to another destination.

[Format]

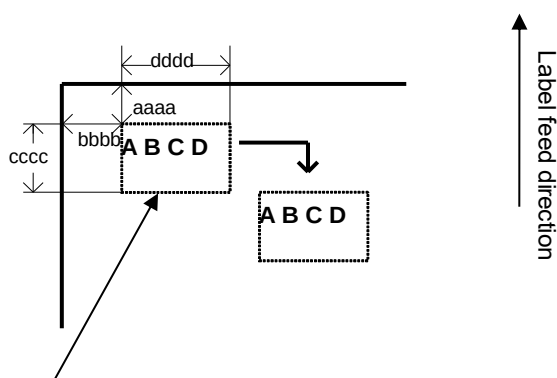
<WD>VaaaaHbbbbYccccXdddd

• Parameter

a	[Vertical position of origin]	=	Valid range	:	Refer to the below
b	[Horizontal position of origin]	=	Valid range	:	Refer to the below
c	[Vertical dot number of origin]	=	Valid range	:	Refer to the below
d	[Horizontal dot number of origin]	=	Valid range	:	Refer to the below

[Coding example] Vertical position of origin: 50, Horizontal position of origin: 50, Vertical dot number of origin: 200,
Horizontal dot number of origin: 400

```
<A>
<V>50<H>50<P>2<L>0202<XU>ABCD
<V>300<H>100<WD>V50H50Y200X400
<Q>1
<Z>
```



The dotted line indicates the copy range.
The actual print is limited to ABCD.

[Notes]

1. Specify the print position by vertical position <V> and horizontal position <H> before performing data copy <WD>.
2. Do not place the print position within the range of the origin.
3. If the print start position of copy area is outside of the printable area, it will not print due to a command error.

[Valid range]

Model	Valid range in dots	
	Horizontal position of origin Horizontal dot number	Vertical position of origin Vertical dot number
WT4-AXB TT203	1 to 832	1 to 20000
WT4-AXB TT300	1 to 1248	1 to 18000

Modification			
Available for			
	WT4 series		
Journal Print			ESC+J
Hex code	ESC	J	Parameter
	<1B> ₁₆	<4A> ₁₆	a~a+CR<0D> ₁₆
Default setting	None		
Persistence of the command	When printer is powered off	Set parameter will not be retained	
	Validity in a job	Becomes invalid after execution	
	Validity after a job	Becomes invalid after the job	

[Function]

Specifies journal print

[Format]

<J>a~a+CR

• Parameter

a [Column of journal print] = Print data
CR [Control code (0DH)]

[Coding example]

<A>
<J>
ABCD+CR
EFGH+CR
<Z>

[Notes]

1. Journal print is executed from 2 dots vertical position and 2 dots horizontal position.
2. Inter character pitch is fixed to 2 dots. The inter-line pitch is fixed to 16 dots.
3. The data will be printed in XS font, factor 2 x 2.
4. Setting the journal print command cancels all other commands, except from the re-issuing command <C> and the inversed color printing command <(>.

9. Font Command

Font			
Available for			
	WT4 series		
XU Font (Basic size 5x9 dots)			ESC+XU
Hex code	ESC	XU	Parameter
	<1B> ₁₆	<58> ₁₆ <55> ₁₆	n~n
Default setting	None		
Persistence of the command	When printer is powered off		Set parameter will not be retained
	Validity in a job		Becomes invalid after execution
	Validity after a job		Becomes invalid after the job

[Function]

Font with the basic size of: width 5 dots, height 9 dots is specified.

[Format]

<XU> n~n

- Parameter
n [Print data] = Data

[Coding example]

```
<A>
<V>100<H>200<P>2<L>0304<XU>ABCDE
<Q>1
<Z>
```

[Notes]

1. The XU font allows the setting of a fixed pitch or the setting of a proportional pitch.
2. The setting of the fixed / proportional pitch is done in the command settings.

[Valid commands]

Print position	<V>	<H>								
Modification	<P>	<L>	<%>	<PS>	<PR>	<F>	<&>	</>	<O>	<WD>
Barcode	<D><d>	<BL><d>								

XU Font Character Set

Basic size is 5 x 9 dots (width x height)

	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0		ø	ø	P	`	p	ç	é	á			ø	ó	-
1	!	1	A	Q	a	q	ü	æ	í			ð	þ	±
2	"	2	B	R	b	r	é	æ	ó			é	ò	=
3	#	3	C	S	o	s	ä	ö	ú			ë	ò	¼
4	\$	4	D	T	d	t	ä	ö	ñ			ë	ò	
5	%	5	E	U	e	u	ä	ö	ñ	á		€	ø	§
6	&	6	F	V	f	v	ä	ö	ä	ä	ä	ä	ä	÷
7	'	7	G	W	g	w	ç	ü	ü	ä	ä	ä	ä	
8	<	8	H	X	h	x	è	ý	ó	ø		í		°
9	>	9	I	Y	i	y	è	ö					ú	"
A	*	:	J	Z	j	z	è	ü	ü	ü			ú	*
B	+	;	K	I	k	{	í	ø	¼				ú	l
C	,	<	L	\	l	|	í	£	¼				ý	³
D	-	=	M	I	m	}	í	ø	í	ø			ý	²
E	.	>	N	^	n	-	ä	x	«	¥			ä	-
F	/	?	O	-	o		ä	f	»				'	

The print sample shown above is issued with a head density of 12 dots/mm and a expansion factor of 3 (vertical/horizontal).

Font			
Available for			
	WT4 series		
XS Font (Basic size 17x17 dots)			ESC+XS
Hex code	ESC	XS	Parameter
	<1B> ₁₆	<58> ₁₆ <53> ₁₆	n~n
Default setting	None		
Persistence of the command	When printer is powered off	Set parameter will not be retained	
	Validity in a job	Becomes invalid after execution	
	Validity after a job	Becomes invalid after the job	

[Function]

Font with the basic size of: width 17 dots, height 17 dots is specified.

[Format]

<XS>n~n

- Parameter
n [Print data] = Data

[Coding example]

<A>
<V>100<H>200<P>2<L>0304<XS>ABCDE
<Q>1
<Z>

[Notes]

1. The XS font allows the setting of a fixed pitch or the setting of a proportional pitch.
2. The setting of the fixed / proportional pitch is done in the command settings.

[Valid commands]

Print position	<V>	<H>								
Modification	<P>	<L>	<%>	<PS>	<PR>	<F>	<&>	</>	<0>	<WD>
Barcode	<D><d>	<BL><d>								

XS Font Character Set

Basic size is 17 x 17 dots (width x height)

	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0		ø	@	P	'	p	Ç	É	á	ø		ð	ó	-
1	!	1	A	Q	a	q	ü	æ	í			ð	þ	±
2	"	2	B	R	b	r	é	Æ	ó			É	Ö	=
3	#	3	C	S	c	s	â	ô	ú			È	Ø	%
4	\$	4	D	T	d	t	ä	ö	ñ			Ê	õ	¶
5	%	5	E	U	e	u	à	ò	Ñ	À		€	Ö	§
6	&	6	F	V	f	v	â	û	ä	Å	ã	í	µ	÷
7	'	7	G	W	g	w	ç	ù	¿	À	Ä	Í	Þ	~
8	(	8	H	X	h	x	ê	ÿ	¿	©		Ý	þ	°
9	)	9	I	Y	i	y	ë	ü	®			Ú	..	
A	*	:	J	Z	j	z	è	Ü	¬			Ó	.	
B	+	;	K	[	k	{	ï	ø	½			Ù	¹	
C	,	<	L	\	l	!	î	£	¼			Ý	²	
D	-	=	M	]	m	}	ï	ø	í	ø		!	Ý	²
E	.	>	N	^	n	~	Ä	×	«	¥		ì	~	
F	/	?	O	_	o		Å	f	»					

The print sample shown above is issued with a head density of 12 dots/mm and a expansion factor of 2 (vertical/horizontal).

Font			
Available for			
	WT4 series		
XM Font (Basic size 24x24 dots)			ESC+XM
Hex code	ESC	XM	Parameter
	<1B> ₁₆	<58> ₁₆ <4D> ₁₆	n~n
Default setting	None		
Persistence of the command	When printer is powered off		Set parameter will not be retained
	Validity in a job		Becomes invalid after execution
	Validity after a job		Becomes invalid after the job

[Function]

Font with the basic size of: width 24 dots, height 24 dots is specified.

[Format]

<XM>n~n

• Parameter

n [Print data] = Data

[Coding example]

<A>

<V>100<H>200<P>2<L>0304<XM>ABCDE

<Q>1

<Z>

[Notes]

1. The XM font allows the setting of a fixed pitch or the setting of a proportional pitch.
2. The setting of the fixed / proportional pitch is done in the command settings.

[Valid commands]

Print position	<V>	<H>								
Modification	<P>	<L>	<%>	<PS>	<PR>	<F>	<&>	</>	<0>	<WD>
Barcode	<D><d>	<BL><d>								

XM Font Character Set

Basic size is 24 x 24 dots (width x height)

	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0	@	P	`	p	Ç	É	á	0		ð	Ó	-	
1	!	1	A	Q	a	q	ü	æ	í			Ð	ß	±
2	"	2	B	R	b	r	é	Æ	ó			Ê	Ô	=
3	#	3	C	S	c	s	â	ô	ú			Ë	Ö	¾
4	\$	4	D	T	d	t	ä	ö	ñ			È	õ	¶
5	%	5	E	U	e	u	à	ò	Ñ	Á		€	Ö	§
6	&	6	F	V	f	v	ã	û	ä	Â	ã	í	µ	÷
7	'	7	G	W	g	w	ç	ù	º	À	Ã	î	þ	-
8	(	8	H	X	h	x	ê	ÿ	ÿ	©		ï	þ	°
9	)	9	I	Y	i	y	ë	Ö	®			Û	--	
A	*	:	J	Z	j	z	è	Ü	¬			Ü	-	
B	+	;	K	[	k	{	ï	ø	½			■	Ü	¹
C	,	<	L	\	l	;	î	£	¼				ý	³
D	-	=	M	]	m	}	ì	Ø	ï	¢		!	Y	²
E	.	>	N	^	n	~	Ä	x	<<	¥		ì	-	
F	/	?	O	_	o		Å	f	>>				'	

The print sample shown above is issued with a head density of 12 dots/mm and a expansion factor of 2 (vertical/horizontal).

Font			
Available for			
	WT4 series		
XB Font (Basic size 48x48 dots)			ESC+XB
Hex code	ESC	XB	Parameter
	<1B> ₁₆	<58> ₁₆ <42> ₁₆	an~n
Default setting	a=0		
Persistence of the command	When printer is powered off	Set parameter will not be retained	
	Validity in a job	Becomes invalid after execution	
	Validity after a job	Becomes invalid after the job	

[Function]

Font with the basic size of: width 48 dots, height 48 dots is specified.

[Format]

<XB>an~n

• Parameter

a [Smoothing] = 0: Smoothing OFF
n [Print data] = Data

[Coding example]

<A>
<V>100<H>200<P>2<L>0304<XB>0ABCDE
<Q>1
<Z>

[Notes]

1. The XB font allows the setting of a fixed pitch or the setting of a proportional pitch.
2. The setting of the fixed / proportional pitch is done in the command settings.
3. If setting the smoothing option, and the expansion <L> command is set to 1 or 2, the smoothing function will be ignored.

[Valid commands]

Print position	<V>	<H>							
Modification	<P>	<L>	<%>	<PS>	<PR>	<F>	<&>	</>	<0>
Barcode	<D><d>	<BL><d>							<WD>

XB Font Character Set

Basic size is 48 x 48 dots (width x height)

	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0		0	@	P	`	p	Ç	É	á	0		ø	ó	-
1	!	1	A	Q	a	q	ü	æ	í			Đ	β	±
2	"	2	B	R	b	r	é	Æ	ó			Ê	ô	=
3	#	3	C	S	c	s	â	ô	ú			Ë	ö	¾
4	\$	4	D	T	d	t	ä	ö	ñ			È	õ	¶
5	%	5	E	U	e	u	à	ò	Ñ	Á		€	õ	§
6	&	6	F	V	f	v	â	û	ä	Ä	ä	Í	µ	÷
7	'	7	G	W	g	w	ç	ù	ø	À	Å	Î	þ	·
8	(	8	H	X	h	x	ê	ÿ	¿	©		Ï	þ	°
9	)	9	I	Y	i	y	ë	ö	®			Ú	..	
A	*	:	J	Z	j	z	è	Ü	¬			Ó	.	
B	+	;	K	[	k	{	ï	ø	½			Ù	¹	
C	,	<	L	\	l	!	î	£	¼			Ý	³	
D	-	=	M	]	m	}	ì	ø	ì	¢		ÿ	²	
E	.	>	N	^	n	~	À	×	«	¥		ì	-	
F	/	?	O	_	o		À	f	»			ì	-	

The print sample shown above is issued with a head density of 12 dots/mm and a expansion factor of 1 (vertical/horizontal).

Font			
Available for			
	WT4 series		
XL Font (Basic size 48x48 dots)			ESC+XL
Hex code	ESC	XL	Parameter
	<1B> ₁₆	<58> ₁₆ <4C> ₁₆	an~n
Default setting	None		
Persistence of the command	When printer is powered off	Set parameter will not be retained	
	Validity in a job	Becomes invalid after execution	
	Validity after a job	Becomes invalid after the job	

[Function]

Font with the basic size of: width 48 dots, height 48 dots is specified.

[Format]

<XL>an~n

• Parameter

a [Smoothing] = 0: Smoothing OFF
n [Print data] = Data

[Coding example]

<A>
<V>100<H>200<P>2<L>0304<XL>0ABCDE
<Q>1
<Z>

[Notes]

1. The XL font allows the setting of a fixed pitch or the setting of a proportional pitch.
2. The setting of the fixed / proportional pitch is done in the command settings.
3. If setting the smoothing option, and the expansion <L> command is set to 1 or 2, the smoothing function will be ignored.

[Valid commands]

Print position	<V>	<H>								
Modification	<P>	<L>	<%>	<PS>	<PR>	<F>	<&>	</>	<0>	<WD>
Barcode	<D><d>	<BL><d>								

XL Font Character Set

Basic size is 48 x 48 dots (width x height)

	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0		0	@	P	'	p	Ç	É	á	0		ð	Ó	-
1	!	1	A	Q	a	q	ü	æ	í			Ð	β	±
2	"	2	B	R	b	r	é	Æ	ó			Ê	Ô	=
3	#	3	C	S	c	s	â	ô	ú			Ë	Ò	¾
4	\$	4	D	T	d	t	ä	ö	ñ			È	õ	1
5	%	5	E	U	e	u	à	ò	Ñ	Á		€	Õ	§
6	&	6	F	V	f	v	å	û	ª	Â	ã	Í	μ	÷
7	'	7	G	W	g	w	ç	ù	º	À	Ã	Î	þ	·
8	(	8	H	X	h	x	ê	ÿ	¿	©		Ï	þ	°
9	)	9	I	Y	i	y	ë	Ö	®			|||	Ú	..
A	*	:	J	Z	j	z	è	Ü	¬			|||	Û	•
B	+	;	K	[	k	{	ï	ø	½			■	Ü	¹
C	,	<	L	\	l	|	î	£	¼			▒	ý	³
D	-	=	M	]	m	}	ì	Φ	í	¢		ı	Ý	²
E	.	>	N	^	n	~	Ä	x	«	¥		İ	-	
F	/	?	O	_	o		Å	f	»			|||	'	

The print sample shown above is issued with a head density of 12 dots/mm and a expansion factor of 1 (vertical/horizontal).

Font				
Available for				
	WT4 series			
OCR-A Font			ESC+OA	
Hex code	ESC	OA	Parameter	
	<1B> ₁₆	<4F> ₁₆ <41> ₁₆	n~n	
Default setting	None			
Persistence of the command	When printer is powered off		Set parameter will not be retained	
	Validity in a job		Becomes invalid after execution	
	Validity after a job		Becomes invalid after the job	

[Function]

Specifies OCR-A font.

[Format]

<OA>n~n

• Parameter

n [Print data] = Data

[Coding example]

<A>

<V>100<H>100<P>2<L>0202<OA>ABC

<Q>1

<Z>

[Font size table]

Model	Font size in dots
WT4-AXB TT203	W15 x H22
WT4-AXB TT300	W22 x H33

[Valid commands]

Print position	<V>	<H>							
Modification	<P>	<L>	<%>	<F>	<&>	</>	<0>	<WD>	
Barcode	<D><d>	<BL><d>							

OCR-A Font Character Set

OCR-A font settings.

	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0		0		P										
1		1	A	Q										
2		2	B	R										
3		3	C	S										
4	4	4	D	T										
5		5	E	U										
6		6	F	V										
7		7	G	W										
8		8	H	X										
9		9	I	Y										
A			J	Z										
B			K											
C			L											
D			M											
E	.	>	N											
F	/		0											

The print sample shown above is issued with a head density of 12 dots/mm, a font size of 22x33, and a expansion factor of 1 (vertical/horizontal).

Font				
Available for				
	WT4 series			
OCR-B Font			ESC+OB	
Hex code	ESC	OB	Parameter	
	<1B> ₁₆	<4F> ₁₆ <42> ₁₆	n~n	
Default setting	None			
Persistence of the command	When printer is powered off		Set parameter will not be retained	
	Validity in a job		Becomes invalid after execution	
	Validity after a job		Becomes invalid after the job	

[Function]

Specifies OCR-B font.

[Format]

<OB>n~n

• Parameter

n [Print data] = Data

[Coding example]

<A>

<V>100<H>100<P>2<L>0202<OB>ABC

<Q>1

<Z>

[Font size table]

Model	Font size in dots
WT4-AXB TT203	W20 x H24
WT4-AXB TT300	W30 x H36

[Valid commands]

Print position	<V>	<H>							
Modification	<P>	<L>	<%>	<F>	<&>	</>	<0>	<WD>	
Barcode	<D><d>	<BL><d>							

OCR-B Font Character Set

OCR-B font settings.

	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0		0	@	P										
1	!	1	A	Q										
2	"	2	B	R										
3	#	3	C	S										
4	\$	4	D	T										
5	%	5	E	U										
6	&	6	F	V										
7	'	7	G	W										
8	(	8	H	X										
9	)	9	I	Y										
A	*	:	J	Z										
B	+	;	K	¥										
C	,	<	L	¥										
D	-	=	M											
E	.	>	N											
F	/	?	O											

The print sample shown above is issued with a head density of 12 dots/mm, a font size of 30x36, and a expansion factor of 1 (vertical/horizontal).

Font			
Available for			
	WT4 series		
Outline Font Design			ESC+\$
Hex code	ESC	\$	Parameter
	<1B> ₁₆	<24> ₁₆	a,bbb,ccc,d
Default setting	None		
Persistence of the command	When printer is powered off	Set parameter will not be retained.	
	Validity in a job	Set parameter will be retained until next valid setting.	
	Validity after a job	Set parameter will be the default value for the next job <A>.	

[Function]

Specifies type, design, size of outline font

[Format]

<\$>a,bbb,ccc,d

• Parameter

a	[Font type selection]	=	A	:	Helvetica Bold (Proportional)
			B	:	Helvetica Bold (Inter-character pitch fixed)
b	[Font width]	=	Valid range	:	24 to 999 dots
c	[Font height]	=	Valid range	:	24 to 999 dots
d	[Font design]	=	0	:	Normal font (Black)
			1	:	White characters on black background
			2	:	Grey font (Pattern 1)
			3	:	Grey font (Pattern 2)
			4	:	Grey font (Pattern 3)
			5	:	Font with shadow
			6	:	White characters with shadow on black background
			7	:	Mirrored font
			8	:	Normal italic font
			9	:	White italic characters with shadow on black background

[Coding example] Font type: A, font width: 100 dots, font height: 100 dots, font design: 1

```
<A>>
<V>>100<H>100<P>2
<$>A,100,100,1<$>SATO
<Q>1
<Z>
```

[Notes]

1. The outline font printing command <\$=> shall be executed after the outline font design selection <\$>.
2. Font height includes both ascender and descender area. For proportional pitch, the character width of outline font differs depending on the font to be used.
3. Use character pitch command <P> to specify font pitch.
4. Italic characters are tilt in an angle of 15-degree, within their specified width. As for the height specification, both ascender and descender area are included.
5. For the font design 1 thru 9, if the specified dot setting is irregularly small, the font can not be identified.
6. If the font width / height are very small, there can be cases that the font is squeezed.

[Valid commands]

Modification	<\$=>									
--------------	-------	--	--	--	--	--	--	--	--	--

Font			
Available for			
	WT4 series		
Outline Font Print			ESC+\$=
Hex code	ESC	\$=	Parameter
	<1B> ₁₆	<24> ₁₆ <3D> ₁₆	n~n
Default setting	None		
Persistence of the command	When printer is powered off	Set parameter will not be retained	
	Validity in a job	Becomes invalid after execution	
	Validity after a job	Becomes invalid after the job	

[Function]

Specifies printing command of outline font

[Format]

<\$=>n~n

•Parameter

n [Print data] = Data

[Coding example] Print data: SATO

<A>

<V>100<H>100<P>2

<\$>A,100,100,1<\$=>SATO

<Q>1

<Z>

[Notes]

1. The outline font printing command <\$=> shall be executed after the outline font design selection <\$>.

[Valid commands]

Print position	<V>	<H>								
Modification	<P>	<%>	<\$>	<F>						

Outline Font Character Set

Outline font settings

	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0	@	P	'	p	Ç	É	á			ø	ó	-	
1	!	1	A	Q	a	q	ü	æ	í			ð	β	±
2	"	2	B	R	b	r	é	Æ	ó			Ê	Ô	=
3	#	3	C	S	c	s	â	ô	ú			Ë	Ö	%
4	\$	4	D	T	d	t	ä	ö	ñ			È	õ	
5	%	5	E	U	e	u	à	ò	Ñ	Á		€	Õ	
6	&	6	F	V	f	v	á	ú	a	Â	ã	í	μ	÷
7	'	7	G	W	g	w	ç	ù	ø	À	Ã	î	þ	.
8	(	8	H	X	h	x	ê	ý	¿	©		ï	þ	°
9	)	9	I	Y	i	y	ë	ö	®				ú	"
A	*	:	J	Z	j	z	è	Ü	¬				û	.
B	+	;	K	[	k	{	ı	ø	½				ù	'
C	,	<	L	\	l	ı	ı	£	¼				ý	•
D	-	=	M	]	m	}	ı	ø	ı	¢			ý	•
E	.	>	N	^	n	~	À	×	«	¥			ı	-
F	/	?	O	_	o		À	f	»					

The print sample shown above is issued with a head density of 12 dots/mm, normal font, and a font size of 50x50 (vertical/horizontal).

Outline Font Character Set

Characters consists of Helvetica Bold (Inter-character pitch fixed), 40×40 dots, Normal font (Black)

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0				Ø	@	P	'	p	Ç	É	á			ð	Ó	-
1			!	1	A	Q	a	q	ü	æ	í			Ð	ß	±
2			"	2	B	R	b	r	é	Æ	ó			Ê	Ô	=
3			#	3	C	S	c	s	â	ô	ú			Ë	Õ	¾
4			\$	4	D	T	d	t	ã	ö	ñ			È	ö	
5			%	5	E	U	e	u	à	ò	Ñ	Á		€	Õ	
6			&	6	F	V	f	v	â	û	a	Â	ã	Í	μ	÷
7			'	7	G	W	g	w	ç	ù	ø	À	Ä	Î	þ	·
8			(	8	H	X	h	x	ê	ÿ	¿	©		Ï	Þ	°
9			)	9	I	Y	i	y	ë	Ö	®				Ú	"
A			*	:	J	Z	j	z	è	Ü	¬				Û	•
B			+	;	K	[	k	{	ï	ø	½				Ü	¹
C			,	<	L	\	l	|	†	£	¼				Ý	³
D			-	=	M	]	m	}	‡	Ø	í	¢			Ý	²
E			.	>	N	^	n	~	Ä	×	«	¥		ì	—	
F			/	?	O	_	o		Å	f	»				'	

The print sample shown above is issued with a head density of 8 dots/mm.

Font			
Available for			
	WT4 series		
CG Font			ESC+RD
Hex code	ESC	RD	Parameter
	<1B> ₁₆	<52> ₁₆ <44> ₁₆	abc,ddd,eee,n~n
Default setting	None		
Persistence of the command	When printer is powered off	Set parameter will not be retained	
	Validity in a job	Becomes invalid after execution	
	Validity after a job	Becomes invalid after the job	

[Function]

Specifies CG font type, font style, font size and print data

[Format]

<RD>abc,ddd,eee,n~n

• Parameter

- a [Font type] = A [SATO CG Sleek]
B [SATO CG Stream]
C ~ Z [User define]
- b [Character encoding set]

Symbol Parameter name Setting	Symbol Parameter name Setting	Symbol Parameter name Setting	Symbol Parameter name Setting
b	Character encoding selection	-	Character set specified by <CE>
		0	858 (initial value)
		1	ISO 8859/1 Latin 1
		2	ISO 8859/2 Latin 2
		3	ISO 8859/9 Latin 5
		4	CP737 DOS Greek
		5	CP855 DOS Cyrillic
		6	-
		7	-
		8	PC-850 Multilingual
		9	CP852 DOS Central European
		A	CP857 DOS Turkish
		B	CP866 DOS Cyrillic II
		C	CP1250 Windows Central European
		D	CP1251 Windows Cyrillic
		E	CP1252 Windows Western Latin 1
		F	CP1253 Windows Greek
		G	CP1254 Windows Turkish
		H	-
		I	-
		J	CP1257 Windows Baltic
		K	CP869 IBM Greek
		L	-
		M	Japanese X0201 *1
		@	Unicode UTF-8

- c [Font style] = 0 Fixed
- d [Horizontal size (width)] = Valid range : 004 to 999 dots. Refer to the table below
Valid range : P02 to P99 points
- e [Vertical size (height)] = Valid range : 004 to 999 dots. Refer to the table below
Valid range : P02 to P99 points
- n [Print data] = Data

[Coding example 1]

```
<A>
<V>100<H>100<P>2
<RD>A00,P10,P10,SATO
<Q>1
<Z>
```

[Coding example 2]

```
<A>
<CW>D:SUD-SON.TTF
<V>100<H>100<P>2
<RD>D@0,P10,P10,範例
<Q>1
<Z>
```

[Notes]

1. The font size is set by [dot number] or [point number].
2. The dot size does vary with printer type. (Refer to the table below)
3. 1 point is 0.35mm.

[Dot size]

Printer	1 dot size (mm)
WT4-AXB TT203	0.125
WT4-AXB TT300	0.083

[Range of font size]

Printer	Valid range: Horizontal (dots)	Valid range: Vertical (dots)
WT4-AXB TT203	4 to 832	4 to 999
WT4-AXB TT300	4 to 1248	4 to 999

[Valid commands]

Print position	<V>	<H>								
Modification	<P>	<%>	<PS>	<PR>	<F>					

SATO CG Sleek Font Character Set

SATO CG Sleek font settings

SATO CG Sleek FONT 203DPI

	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0		0	@	P	`	p	Ç	É	á	⋮	⌊	ð	Ó	-
1	!	1	A	Q	a	q	ü	æ	í	■	⊥	Ð	β	±
2	"	2	B	R	b	r	é	Æ	ó	■	⊥	Ê	Ô	=
3	#	3	C	S	c	s	â	ô	ú	|	⊥	Ë	Ò	¾
4	\$	4	D	T	d	t	ä	ö	ñ	⊥	—	È	õ	¶
5	%	5	E	U	e	u	à	ò	Ñ	Á	⊥	€	Õ	§
6	&	6	F	V	f	v	å	û	ª	Â	ã	Í	μ	÷
7	'	7	G	W	g	w	ç	ù	º	À	Ã	Î	þ	¸
8	(	8	H	X	h	x	ê	ÿ	¿	©	⌋	Ï	Ɔ	°
9	)	9	I	Y	i	y	ë	Ö	®	⌋	⌋	⊥	Ú	ˆ
A	*	:	J	Z	j	z	è	Ü	¬	||	⌋	⌋	Û	·
B	+	;	K	[	k	{	ï	ø	½	⌋	⌋	■	Ü	¹
C	,	<	L	\	l	|	î	£	¼	⌋	⌋	■	Ý	³
D	-	=	M	]	m	}	ì	Ø	¡	ç	=	|	Ý	²
E	.	>	N	^	n	~	Ä	×	«	¥	⌋	Ï	—	■
F	/	?	O	_	o		Å	f	»	⌋	⌋	■	'	

Print sample in following condition: Head density: 8 dots/mm, 40x40 point, DOS 858.

SATO CG Stream Font Character Set

SATO CG Stream font settings

SATO CG Stream FONT 203DPI

	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0		0	@	P	`	p	Ç	É	á	☐	└	ð	Ó	-
1	!	1	A	Q	a	q	ü	æ	í	☐	└	Ð	β	±
2	"	2	B	R	b	r	é	Æ	ó	☐	└	Ê	Ô	=
3	#	3	C	S	c	s	â	ô	ú	|	└	Ë	Ò	¾
4	\$	4	D	T	d	t	ä	ö	ñ	└	—	È	õ	¶
5	%	5	E	U	e	u	à	ò	Ñ	Á	+	€	Õ	§
6	&	6	F	V	f	v	å	û	ª	Â	ã	Í	μ	÷
7	'	7	G	W	g	w	ç	ù	º	À	Ã	Î	þ	¸
8	(	8	H	X	h	x	ê	ÿ	¿	©	└	Ï	ƒ	°
9	)	9	I	Y	i	y	ë	Ö	®	≡	└	└	Ú	”
A	*	:	J	Z	j	z	è	Ü	¬	||	└	└	Û	·
B	+	;	K	[	k	{	ï	ø	½	└	└	■	Ù	1
C	,	<	L	\	l	|	î	£	¼	└	└	■	Ý	3
D	-	=	M	]	m	}	ì	Ø	¡	¢	—	|	Ý	2
E	.	>	N	^	n	~	Ä	×	«	¥	≡	ì	—	■
F	/	?	O	_	o		Å	f	»	└	⊗	■	'	

Print sample in following condition: Head density: 8 dots/mm, 40x40 point, DOS 858.

Font				
Available for				
	WT4 series			
U Font (Basic size 5x9 dots)			ESC+U	
Hex code	ESC	U	Parameter	
	<1B> ₁₆	<55> ₁₆	n~n	
Default setting	None			

Persistence of the command	When printer is powered off	Set parameter will not be retained
	Validity in a job	Becomes invalid after execution
	Validity after a job	Becomes invalid after the job

[Function]

Font with the basic size of: width 5 dots, height 9 dots is specified.

[Format]

<U>n~n

• Parameter

n [Print data] = data

[Coding example]

<A>

<V>100<H>200<P>2<L>0304<U>ABCDE

<Q>1

<Z>

[Notes]

1. The U font only allows the setting of a fixed pitch.
2. This font is to obtain compatibility with old printer models and shall not disclose to end users.

[Valid commands]

Print position	<V>	<H>							
Modification	<P>	<L>	<%>	<F>	<&>	</>	<Q>	<WD>	
Barcode	<D><d>	<BL><d>							

U font character set

Basic size is 5 x 9 dots (width x height)

	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	ø	ø	P	`	p	ç	é	á				ø	ó	-
1	!	1	A	Q	a	q	ü	æ	í			ø	β	±
2	"	2	B	R	b	r	é	Æ	ó			é	ó	=
3	#	3	C	S	c	s	á	ó	ú			é	ó	¼
4	\$	4	D	T	d	t	á	ó	ñ			é	ó	
5	%	5	E	U	e	u	á	ó	ñ	á		é	ó	½
6	&	6	F	V	f	v	á	ó	ñ	á	á	é	ó	÷
7	'	7	G	W	g	w	ç	ü	é	á	á	é	ó	
8	<	8	H	X	h	x	é	ý	ó	ø		í		°
9	>	9	I	Y	i	y	é	ó				ó		~
A	*	:	J	Z	j	z	é	ó	~			ó		+
B	+	;	K	[	k	{	í	ø	¼			ó		!
C	,	<	L	\	l	|	í	é	¼			ý		¾
D	-	=	M	I	m	}	í	é	í	ø		ý		²
E	.	>	N	~	n	~	ñ	x	é	ý		í		-
F	/	?	O	_	o		ñ	f	é					'

The print sample shown above is issued with a head density of 12 dots/mm and a expansion factor of 3 (vertical/horizontal).

Font				
Available for				
	WT4 series			
S Font (Basic size 8x15 dots)			ESC+S	
Hex code	ESC	S	Parameter	
	<1B> ₁₆	<53> ₁₆	n~n	
Default setting	None			

Persistence of the command	When printer is powered off	Set parameter will not be retained
	Validity in a job	Becomes invalid after execution
	Validity after a job	Becomes invalid after the job

[Function]

Font with the basic size of: width 8 dots, height 15 dots is specified.

[Format]

<S>n~n

• Parameter

n [Print data] = data

[Coding example]

<A>

<V>100<H>200<P>2<L>0304<S>ABCDE

<Q>1

<Z>

[Notes]

1. The S font only allows the setting of a fixed pitch.
2. This font is to obtain compatibility with old printer models and shall not disclose to the users.

[Valid commands]

Print position	<V>	<H>							
Modification	<P>	<L>	<%>	<F>	<&>	</>	<0>	<WD>	
Barcode	<D><d>	<BL><d>							

S Font Character Set

Basic size is 8 x 15 dots (width x height)

	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	ø	@	P	'	p	Ç	É	á				ð	ó	-
1	!	1	A	Q	a	q	ü	æ	í			Ð	þ	±
2	"	2	B	R	b	r	é	Æ	ó			ê	ô	=
3	#	3	C	S	c	s	â	ø	ú			ë	ò	%
4	\$	4	D	T	d	t	ä	ö	ñ			è	õ	
5	%	5	E	U	e	u	à	ö	Ñ	á		€	ö	§
6	&	6	F	V	f	v	á	ú	ä	â	ä	í	µ	÷
7	'	7	G	W	g	w	ç	ü	ø	À	Ä	î		
8	(	8	H	X	h	x	ë	ÿ	¿	©		ï		°
9	)	9	I	Y	i	y	ë	ö	®			ó		''
A	*	:	J	Z	j	z	è	ü	¬			ü		•
B	+	;	K	L	k	l	í	ø	½			ü		'
C	,	<	L	\	l	l	î	£	¼			ý		³
D	-	=	M	J	m	)	î	ø	i	ø		ý		²
E	.	>	N	^	n	~	Ä	x	«	¥		ì		-
F	/	?	O	_	o		Á	f	»					'

The print sample shown above is issued with a head density of 12 dots/mm and a expansion factor of 2 (vertical/horizontal).

Font				
Available for				
	WT4 series			
M Font (Basic size 13x20 dots)			ESC+M	
Hex code	ESC	M	Parameter	
	<1B> ₁₆	<4D> ₁₆	n~n	
Default setting	None			

Persistence of the command	When printer is powered off	Set parameter will not be retained
	Validity in a job	Becomes invalid after execution
	Validity after a job	Becomes invalid after the job

[Function]

Font with the basic size of: width 13 dots, height 20 dots is specified.

[Format]

<M>n~n

• Parameter

n [Print data] = Data

[Coding example]

```
<A>
<V>100<H>200<P>2<L>0304<M>ABCDE
<Q>1
<Z>
```

[Notes]

1. The M font only allows the setting of a fixed pitch.
2. This font is to obtain compatibility with old printer models and shall not disclose to the users.

[Valid commands]

Print position	<V>	<H>							
Modification	<P>	<L>	<%>	<F>	<&>	</>	<0>	<WD>	
Barcode	<D><d>	<BL><d>							

M Font Character Set

Basic size is 13 x 20 dots (width x height)

	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	ø	@	P	'	p	ç	é	á			õ	ó	-	
1	!	1	A	Q	a	q	ü	æ	í		ð	β	±	
2	"	2	B	R	b	r	é	Æ	ó		ê	ô	=	
3	#	3	C	S	c	s	â	ô	ú		ë	ò	%	
4	\$	4	D	T	d	t	ä	ö	ñ		è	ö		
5	%	5	E	U	e	u	à	ò	Ñ	Á		€	õ	§
6	&	6	F	V	f	v	å	û	ä	Â	ã	í	μ	÷
7	'	7	G	W	g	w	ç	ù	ë	À	Ã	î		
8	(	8	H	X	h	x	ê	ÿ	ç		ï		°	
9	)	9	I	Y	i	y	ë	ö	@			ú	"	
A	*	:	J	Z	j	z	è	Ü	¬			ü	·	
B	+	;	K	[	k	{	ï	ø	½			ù	¹	
C	,	<	L	\	l	|	î	£	¼			ý	³	
D	-	=	M	]	m	}	ì	Ø	í	ø		ÿ	²	
E	.	>	N	^	n	~	Ä	×	«	¥		ì	´	
F	/	?	O	_	o		Å	f	»					

The print sample shown above is issued with a head density of 12 dots/mm and a expansion factor of 2 (vertical/horizontal).

Font				
Available for				
	WT4 series			
WB Font (Basic size 18x30 dots)			ESC+WB	
Hex code	ESC	WB	Parameter	
	<1B> ₁₆	<57> ₁₆ <42> ₁₆	an~n	
Default setting	None			

Persistence of the command	When printer is powered off	Set parameter will not be retained
	Validity in a job	Becomes invalid after execution
	Validity after a job	Becomes invalid after the job

[Function]

Font with the basic size of: width 18 dots, height 30 dots is specified.

[Format]

<WB>an~n

• Parameter

a	[Smoothing]	=	0: Smoothing OFF
n	[Print data]	=	Data

[Coding example]

```

<A>
<V>100<H>200<P>2<L>0304<WB>0ABCDE
<Q>1
<Z>

```

[Notes]

1. The WB font only allows the setting of a fixed pitch.
2. If setting the smoothing option, and the expansion <L> command is set to 1 or 2, the smoothing function will be ignored.
3. This font is to obtain compatibility with old printer models and shall not disclose to the users.

[Valid commands]

Print position	<V>	<H>							
Modification	<P>	<L>	<%>	<F>	<&>	</>	<0>	<WD>	
Barcode	<D><d>	<BL><d>							

WB Font Character Set

Basic size is 18 x 30 dots (width x height)

	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0		ø	@	P	'	p	ç	é	á			ð	ó	-
1	|	1	A	Q	a	q	ü	æ	í			ð	þ	±
2	"	2	B	R	b	r	é	æ	ó			é	ó	=
3	#	3	C	S	c	s	â	ô	ú			é	ò	¼
4	\$	4	D	T	d	t	ä	ö	ñ			è	ö	
5	%	5	E	U	e	u	à	ò	ñ	Á		e	ö	§
6	&	6	F	V	f	v	à	Q	a	Â	ä	í	µ	÷
7	'	7	G	W	g	w	ç	ü	e	Ä	Å	í		
8	(	8	H	X	h	x	ê	ý	ç	@		ï		°
9	)	9	I	Y	i	y	ë	ö	@				ú	"
A	*	:	J	Z	j	z	è	ü	¬				ü	.
B	+	:	K	[	k	{	ï	ø	¼				ü	l
C	,	<	L	\	l	|	í	É	¼				ý	³
D	-	=	M	]	m	}	ï	Ø	l	ø			ý	²
E	.	>	N	^	n	~	Ä	X	«	¥		ï	-	
F	/	?	O	_	o		Å	f	»				'	

The print sample shown above is issued with a head density of 12 dots/mm and a expansion factor of 1 (vertical/horizontal).

Font				
Available for				
	WT4 series			
WL Font (Basic size 28x52 dots)			ESC+WL	
Hex code	ESC	WL	Parameter	
	<1B> ₁₆	<57> ₁₆ <4C> ₁₆	an~n	
Default setting	None			

Persistence of the command	When printer is powered off	Set parameter will not be retained
	Validity in a job	Becomes invalid after execution
	Validity after a job	Becomes invalid after the job

[Function]

Font with the basic size of: W28 x H52 dots is specified.

[format]

<WL>an~n

• Parameter

a [Smoothing] = 0: Smoothing OFF
n [Print data] = Data

[Coding example]

<A>
<V>100<H>200<P>2<L>0304<WL>0ABCDE
<Q>1
<Z>

[Notes]

1. The WL font only allows the setting of a fixed pitch.
2. If setting the smoothing option, and the expansion <L> command is set to 1 or 2, the smoothing function will be ignored.
3. This font is to obtain compatibility with old printer models and shall not disclose to the users.

[Valid commands]

Print position	<V>	<H>							
Modification	<P>	<L>	<%>	<F>	<&>	</>	<0>	<WD>	
Barcode	<D><d>	<BL><d>							

WL Font Character Set

Basic size is 28 x 52 dots (width x height)

	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0		0	@	P	'	p	Ç	É	á			ø	ó	-
1	!	1	A	Q	a	q	ü	æ	í			ð	β	±
2	"	2	B	R	b	r	é	Æ	ó			ê	ô	=
3	#	3	C	S	c	s	â	ô	ú			ë	ò	‰
4	\$	4	D	T	d	t	ä	ö	ñ			è	õ	
5	%	5	E	U	e	u	à	ò	Ñ	Á		€	ö	§
6	&	6	F	V	f	v	å	Q	a	Â	ã	í	μ	÷
7	'	7	G	W	g	w	ç	ù	ø	À	Å	î		
8	(	8	H	X	h	x	ê	ý	¿	©		ÿ		°
9	)	9	I	Y	i	y	ë	ö	®				ú	¨
A	*	:	J	Z	j	z	è	Ü	™				û	·
B	+	;	K	[	k	{	ï	ø	½				ü	¹
C	,	<	L	\	l	;	î	£	¼				ý	³
D	-	=	M	]	m	}	ì	Ø	í	ø			ÿ	²
E	.	>	N	^	n	~	Ä	x	«	¥			ï	-
F	/	?	O	_	o		Å	f	»				´	

The print sample shown above is issued with a head density of 12 dots/mm and a expansion factor of 1 (vertical/horizontal).

Font				
Available for				
	WT4 series			
Horizontally Oriented Chinese Font (Basic Size 24x24 dots)			ESC+C2	
Hex code	ESC	C2	Parameter	
	<1B> ₁₆	<43> ₁₆ <32> ₁₆	ab~b	
Default setting	None			

Persistence of the command	When printer is powered off	Set parameter will not be retained
	Validity in a job	Becomes invalid after execution
	Validity after a job	Becomes invalid after the job

[Function]

To print 24x24 dot horizontal Chinese font string.

[Format]

<C2>ab~b

• Parameter

a [Print specification] = H : HEX characters
B : Binary code

b [Registration code] <UTF16>
<GB18030>
<BIG5>

[Coding example] HEX Character Specification, horizontal direction ratio : 2 times, vertical direction ratio : 3 times

<A>
<KS>1
<V>100<H>100<P>8<L>0203
<C2>HB0A1B0A2B0A3B0A4B0A5
<Q>1
<Z>

[Notes]

- The code page needs to be specified via <KS> command: <KS>0: UTF16, <KS>1: GB18030, <KS>3: BIG5.
 - When you select UTF16 (<KS>0):
 - HEX Character = Chinese 4 byte ASCII/ 1 Character
 - Binary Code = Chinese 2 byte/ 1 Character
 - When you select GB18030 (<KS>1):
 - HEX Character = Chinese 4 byte ASCII/ 1 Character
 - Binary Code = Chinese 2 byte/ 1 Character
- NOTE: GB18030 includes 4-byte code characters (code: 8139ee39H – 82358738H, 6529 characters):
- HEX Character = Chinese 8 byte ASCII/ 1 Character
 - Binary Code = Chinese 4 byte/ 1 Character

[Tips]

- Chinese codepage needs to be selected via <KS> command.

[Valid commands]

Print position	<V>	<H>							
Modification	<P>	<L>	<%>	<&>	</>	<0>	<WD>		

Font				
Available for				
	WT4 series			
Horizontally Oriented Chinese Font (Basic Size 32x32 dots)			ESC+C4	
Hex code	ESC	C4	Parameter	
	<1B> ₁₆	<43> ₁₆ <34> ₁₆	ab~b	
Default setting	None			

Persistence of the command	When printer is powered off	Set parameter will not be retained
	Validity in a job	Becomes invalid after execution
	Validity after a job	Becomes invalid after the job

[Function]

To print 32x32 dot horizontal Chinese font string.

[Format]

<C4>ab~b

• Parameter

- a [Print specification] = H : HEX characters
B : Binary code
- b [Registration code] <UTF16>
<GB2301>
<BIG5>

[Coding example] HEX Character Specification, horizontal direction ratio : 2 times, vertical direction ratio : 3 times

<A>
<KS>2
<V>100<H>100<P>8<L>0203
<C4>HB0A1B0A2B0A3B0A4B0A5
<Q>1
<Z>

[Notes]

1. The code page needs to be specified via <KS> command: <KS>0: UTF16, <KS>2: GB2312, <KS>3: BIG5.
2. HEX Character = Chinese 4 byte ASCII/ 1 Character
3. Binary Code = Chinese 2 byte/ 1 Character

[Tips]

1. Chinese codepage needs to be selected via <KS> command.

[Valid commands]

Print position	<V>	<H>								
Modification	<P>	<L>	<%>	<&>	</>	<0>	<WD>			

Font				
Available for				
	WT4 series			
Vertically Oriented Chinese Font (Basic Size 24x24 dots)			ESC+c2	
Hex code	ESC	c2	Parameter	
	<1B> ₁₆	<63> ₁₆ <32> ₁₆	ab~b	
Default setting	None			

Persistence of the command	When printer is powered off	Set parameter will not be retained
	Validity in a job	Becomes invalid after execution
	Validity after a job	Becomes invalid after the job

[Function]

To print 24x24 dot vertical Chinese font string.

[Format]

<c2>ab~b

• Parameter

a [Print specification] = H : HEX characters
B : Binary code

b [Registration code] <UTF16>
<GB18030>
<BIG5>

[Coding example] HEX Character Specification, horizontal direction ratio : 2 times, vertical direction ratio : 3 times

<A>
<KS>1
<V>100<H>100<P>8<L>0203
<c2>HB0A1B0A2B0A3B0A4B0A5
<Q>1
<Z>

[Notes]

- The code page needs to be specified via <KS> command: <KS>0: UTF16, <KS>1: GB18030, <KS>3: BIG5.
 - When you select UTF16 (<KS>0):
 - HEX Character = Chinese 4 byte ASCII/ 1 Character
 - Binary Code = Chinese 2 byte/ 1 Character
 - When you select GB18030 (<KS>1):
 - HEX Character = Chinese 4 byte ASCII/ 1 Character
 - Binary Code = Chinese 2 byte/ 1 Character
- NOTE: GB18030 includes 4-byte code characters (code: 8139ee39H – 82358738H, 6529 characters):
- HEX Character = Chinese 8 byte ASCII/ 1 Character
 - Binary Code = Chinese

[Tips]

- Chinese codepage needs to be selected via <KS> command.

[Valid commands]

Print position	<V>	<H>							
Modification	<P>	<L>	<%>	<&>	</>	<0>	<WD>		

Font				
Available for				
	WT4 series			
Vertically Oriented Chinese Font (Basic Size 32x32 dots)			ESC+c4	
Hex code	ESC	c4	Parameter	
	<1B> ₁₆	<63> ₁₆ <34> ₁₆	ab~b	
Default setting	None			

Persistence of the command	When printer is powered off	Set parameter will not be retained
	Validity in a job	Becomes invalid after execution
	Validity after a job	Becomes invalid after the job

[Function]

To print 32x32 dot vertical Chinese font string.

[Format]

<c4>ab~b

• Parameter

a [Print specification] = H : HEX characters
B : Binary code

b [Registration code] <UTF16>
<GB2301>
<BIG5>

[Coding example] HEX Character Specification, horizontal direction ratio : 2 times, vertical direction ratio : 3 times

<A>
<KS>2
<V>100<H>100<P>8<L>0203
<c4>HB0A1B0A2B0A3B0A4B0A5
<Q>1
<Z>

[Notes]

1. The code page needs to be specified via <KS> command: <KS>0: UTF16, <KS>2: GB2312, <KS>3: BIG5.
2. HEX Character = Chinese 4 byte ASCII/ 1 Character
3. Binary Code = Chinese 2 byte/ 1 Character

[Tips]

1. Chinese codepage needs to be selected via <KS> command.

[Valid commands]

Print position	<V>	<H>							
Modification	<P>	<L>	<%>	<&>	</>	<0>	<WD>		

Chinese Font Character Set

(1) A1A1H ~ B2FEH

A1A0			、	。	・	‐	˘	¨	“	”	々	一	～	||	…	‘	’
A1B0	“	”	[	]	<	>	《	》	「	」	『	』	【	】			
A1C0	±	×	÷	:	∧	∨	Σ	Π	U	Π	€	::	√	⊥	//	∠	
A1D0	^	⊙	∫	∫	≡	≈	≈	≈	≈	≈	≈	≈	≈	≈	≈	≈	≈
A1E0	∴	♂	♀	°	′	″	℃	\$	¥	ℳ	℥	%	‰	№	☆	★	
A1F0	○	●	◎	◉	◐	◑	◒	◓	◔	◕	◖	◗	◘	◙	◚	◛	
A2A0	i	ii	iii	iv	v	vi	vii	viii	ix	x							
A2B0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15		
A2C0	16	17	18	19	20	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	
A2D0	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	
A2E0	(8)	(9)	(10)			(一)	(二)	(三)	(四)	(五)	(六)	(七)	(八)	(九)	(十)		
A2F0	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII					
A3A0	!	"	#	¥	%	&	'	(	)	*	+	,	-	.	/		
A3B0	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?	
A3C0	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	
A3D0	P	Q	R	S	T	U	V	W	X	Y	Z	[	\	]	^	_	
A3E0	`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	
A3F0	p	q	r	s	t	u	v	w	x	y	z	{	|	}	~		
A4A0	あ	い	う	え	お	か	が	き	ぎ	く							
A4B0	く	け	こ	さ	し	じ	ず	せ	ぜ	そ	ぞ	た					
A4C0	だ	ち	づ	つ	づ	て	で	と	ど	な	に	ぬ	ね	の	は		
A4D0	ば	び	ひ	び	ふ	ぶ	へ	べ	ぽ	ぼ	ま	み					
A4E0	む	め	も	や	ゆ	よ	ら	り	る	れ	ろ	わ					
A4F0	ゐ	ゑ	を	ん													
A5A0	ア	イ	ウ	エ	オ	カ	ガ	キ	グ								
A5B0	ク	ケ	コ	サ	シ	ス	セ	ソ	タ								
A5C0	チ	ツ	テ	ト	ナ	ニ	ノ	ハ									
A5D0	バ	ビ	ブ	ヘ	ベ	ホ	ボ	マ									
A5E0	ム	メ	モ	ヤ	ユ	ヨ	ラ	リ									
A5F0	ヰ	ヱ	ヲ	ヅ	ヵ	ヶ											
A6A0	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O		
A6B0	P	Q	R	S	T	U	V	W	X	Y	Z						
A6C0	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o		
A6D0	p	q	r	s	t	u	v	w	x	y	z						
A6E0																	
A6F0																	
A7A0	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O		
A7B0	P	Q	R	S	T	U	V	W	X	Y	Z						
A7C0	Ю	Я															

A7D0	a	b	c	d	e	f	g	h	i	j	k	l	m	n			
A7E0	o	p	q	r	s	t	u	v	w	x	y	z					
A7F0	ю	я															
A8A0	ā	á	ǎ	ǎ	ē	é	ě	è	í	í	ī	ī	ō	ó	ō		
A8B0	ō	ū	ú	ǔ	ǔ	ū	ū	ū	ū	ē	ā	ā	ā	ā	ā		
A8C0	g				ㄅ	ㄆ	ㄇ	ㄏ	ㄏ	ㄏ	ㄏ	ㄏ	ㄏ	ㄏ	ㄏ		
A8D0	ㄅ	ㄆ	ㄇ	ㄏ	ㄏ	ㄏ	ㄏ	ㄏ	ㄏ	ㄏ	ㄏ	ㄏ	ㄏ	ㄏ	ㄏ		
A8E0	ㄅ	ㄆ	ㄇ	ㄏ	ㄏ	ㄏ	ㄏ	ㄏ	ㄏ	ㄏ	ㄏ	ㄏ	ㄏ	ㄏ	ㄏ		
A8F0																	
A9A0																	
A9B0	ㄅ	ㄆ	ㄇ	ㄏ	ㄏ	ㄏ	ㄏ	ㄏ	ㄏ	ㄏ	ㄏ	ㄏ	ㄏ	ㄏ	ㄏ		
A9C0	ㄅ	ㄆ	ㄇ	ㄏ	ㄏ	ㄏ	ㄏ	ㄏ	ㄏ	ㄏ	ㄏ	ㄏ	ㄏ	ㄏ	ㄏ		
A9D0	ㄅ	ㄆ	ㄇ	ㄏ	ㄏ	ㄏ	ㄏ	ㄏ	ㄏ	ㄏ	ㄏ	ㄏ	ㄏ	ㄏ	ㄏ		
A9E0	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
A9F0																	
ADA0	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫	⑬	⑭	⑮		
ADB0	⑯	⑰	⑱	⑲	⑳	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	
ADC0	ㄅ	ㄆ	ㄇ	ㄏ	ㄏ	ㄏ	ㄏ	ㄏ	ㄏ	ㄏ	ㄏ	ㄏ	ㄏ	ㄏ	ㄏ		
ADD0	mm	cm	km	mg	kg	cc	m ²	cm ²	Hz								
ADE0	ㄅ	ㄆ	No	KK	Tel												
ADF0	(社)	(商)	(財)	xi	xii	i	ii	iii	iv	v	vi	vii	viii	ix	x		
B0A0	啊	阿	埃	挨	哎	唉	哀	皑	癌	蔼	矮	艾	碍	爱	隘		
B0B0	鞍	氨	安	俺	按	暗	岸	胺	肮	昂	盎	凹	敖	熬	翱		
B0C0	袄	傲	奥	懊	澳	芭	捌	扒	叭	吧	芭	八	疤	巴	拔		
B0D0	靶	把	耙	坝	霸	罢	爸	白	柏	百	摆	佰	败	拜	裨		
B0E0	班	搬	扳	般	颁	板	版	扮	拌	伴	瓣	半	办	绊	邦		
B0F0	梆	榜	膀	绑	棒	磅	蚌	镑	傍	谤	苞	胞	包	褒	剥		
B1A0	薄	雹	保	堡	饱	宝	抱	报	暴	豹	鲍	爆	杯	碑	悲		
B1B0	卑	北	辈	背	贝	钡	倍	狈	备	惫	焙	被	奔	苯	本		
B1C0	崩	绷	甯	泵	蹦	迸	邋	鼻	比	鄙	笔	彼	碧	蓖	蔽		
B1D0	毙	毙	币	庇	痹	闭	敝	弊	必	辟	壁	臂	避	陛	鞭		
B1E0	编	贬	扁	便	变	卞	辨	辩	辩	遍	标	彪	膘	表	鳖		
B1F0	别	疤	彬	斌	濒	滨	宾	宾	兵	冰	柄	丙	秉	饼	炳		
B2A0	病	并	玻	菠	播	拨	钵	波	博	勃	搏	铂	箔	伯	帛		
B2B0	舶	膊	膊	勃	泊	驳	捕	卜	哺	补	埠	不	布	步	簿		
B2C0	怖	擦	猜	裁	材	才	财	睬	睬	采	彩	菜	蔡	餐	蚕		
B2D0	残	惭	惨	灿	苍	舱	仓	沧	藏	操	糙	槽	曹	草	厕		
B2E0	侧	册	测	层	蹭	插	叉	茬	茶	查	碴	擦	察	岔	差		
B2F0	拆	柴	豺	搀	掺	蟬	饒	饒	纏	铲	产	阐	颤	昌	猖		

(2) B3A1H ~ BFFEH

B3A0	场	尝	常	长	偿	肠	厂	敞	畅	唱	倡	超	抄	钞	朝
B3B0	嘲	巢	炒	炒	车	扯	撤	掣	彻	澈	彬	臣	辰	尘	晨
B3C0	忱	沉	陈	趁	衬	称	城	橙	成	呈	乘	程	惩	澄	诚
B3D0	承	逞	骋	秤	吃	痴	匙	池	迟	弛	耻	齿	侈	尺	
B3E0	赤	翅	斥	炽	充	冲	崇	宠	抽	酬	畴	愁	筹		
B3F0	仇	绸	瞅	丑	臭	初	橱	厨	踰	锄	雏	滁	除	楚	
B4A0	础	储	矗	搐	触	处	揣	川	穿	椿	传	船	喘	串	疮
B4B0	窗	幢	床	闯	创	炊	捶	垂	春	椿	醇	唇	淳	纯	
B4C0	蠢	戳	绌	疵	茨	磁	雌	慈	瓷	词	此	刺	赐	次	聪
B4D0	葱	囱	匆	丛	凑	粗	醋	簇	促	蹙	篡	摧	崔	催	达
B4E0	脆	瘁	粹	淬	翠	村	存	寸	磋	撮	措	错	搭		
B4F0	答	瘩	打	大	呆	歹	傣	戴	殆	代	袋	待	逮		
B5A0	怠	耽	担	丹	单	郸	掸	旦	氮	但	悻	淡	诞	弹	
B5B0	蛋	当	挡	党	荡	档	刀	捣	蹈	倒	岛	祷	导	稻	悼
B5C0	道	盗	德	得	的	蹬	灯	登	等	瞪	邓	堤	低	滴	迪
B5D0	敌	笛	狄	涤	翟	嫡	抵	底	地	蒂	弟	递	缔	颠	颠
B5E0	掂	滇	碘	点	典	垫	电	佃	甸	店	惦	奠	淀	殿	碉
B5F0	叨	雕	凋	刁	掉	吊	钓	调	跌	爹	蝶	迭	谍	叠	
B6A0	丁	叮	叮	钉	顶	鼎	锭	定	订	丢	东	冬	董	懂	动
B6B0	栋	侗	冻	洞	兜	抖	斗	陡	豆	逗	痘	都	督	毒	榑
B6C0	独	读	堵	睹	杜	镀	肚	度	渡	妒	端	短	锻	段	断
B6D0	缀	堆	兑	队	对	墩	吨	敦	顿	囤	钝	盾	遁	撮	哆
B6E0	多	夺	垛	躲	朵	躲	舵	剌	惰	堕	蛾	峨	俄	额	讹
B6F0	娥	恶	厄	扼	遏	鄂	饿	恩	而	儿	耳	尔	洱	二	
B7A0	贰	发	罚	筏	伐	乏	阉	法	珐	藩	帆	番	翻	樊	矾
B7B0	钒	繁	凡	烦	反	返	贩	犯	饭	泛	坊	芳	方	肪	房
B7C0	防	妨	仿	访	纺	放	菲	啡	飞	肥	匪	俳	吠	肺	废
B7D0	沸	费	芬	酚	吩	氛	分	纷	坟	焚	汾	粉	奋	份	愤
B7E0	羹	丰	封	枫	蜂	锋	风	疯	烽	逢	冯	缝	讽	奉	凤
B7F0	佛	否	夫	敷	肤	孵	扶	拂	辐	幅	符	伏	俘	服	
B8A0	浮	涪	福	袱	弗	甫	抚	辅	俯	釜	斧	脯	腑	腐	腐
B8B0	赴	副	覆	赋	复	付	阜	父	腹	负	富	仆	附	妇	缚
B8C0	咐	噓	嘎	该	概	钙	盖	溉	干	甘	杆	柑	竿	肝	赶
B8D0	感	秆	敢	赣	冈	钢	缸	肛	纲	岗	港	杠	篙	皋	高
B8E0	膏	羔	糕	搞	搞	告	哥	歌	搁	戈	鸽	胳	疙	割	革
B8F0	葛	格	蛤	隔	隔	个	各	给	根	跟	耕	更	庚	羹	
B9A0	埂	耿	梗	工	攻	功	恭	龚	供	躬	公	宫	弓	巩	汞
B9B0	拱	贡	共	钩	勾	沟	苟	垢	购	够	辜	菇	咕	固	刮
B9C0	估	沽	孤	姑	鼓	古	骨	谷	股	顾	固	雇	刮	瓜	

B9D0	刚	寡	挂	褂	乖	拐	怪	棺	关	官	冠	观	管	馆	罐
B9E0	灌	贯	光	广	逛	瑰	规	圭	硅	归	龟	闺	轨	鬼	惯
B9F0	桂	柜	跪	贵	刽	珥	滚	棍	锅	郭	国	果	裹	过	哈
BAA0	骸	孩	海	亥	害	骸	害	憾	悍	汗	邯	韩	含	涵	函
BAB0	喊	罕	翰	撼	旱	号	浩	呵	喝	荷	汉	夯	杭	航	壕
BAC0	豪	毫	郝	好	耗	号	浩	鹤	贺	嘿	黑	痕	很	恨	何
BAD0	盒	貉	阖	河	涸	赫	褐	壶	洪	宏	弘	红	喉	候	猴
BAE0	亨	横	衡	恒	轰	哄	哄	虹	鸿	洪	胡	瑚	狐	糊	湖
BAF0	吼	厚	候	后	呼	乎	忽	壶	壶	胡	猾	滑	画	划	化
BBA0	弧	虎	唬	护	互	沪	户	花	桦	还	缓	换	患	痪	菴
BBB0	话	槐	徊	怀	淮	坏	欢	环	桓	还	缓	凰	惶	煌	幌
BBC0	焕	涣	宦	幻	荒	慌	黄	磺	蝗	簧	皇	凰	惶	煌	幌
BBD0	恍	谎	灰	挥	辉	恢	恢	徊	回	毁	悔	混	混	混	混
BBE0	秽	会	烩	汇	讳	海	绘	莘	昏	婚	魂	浑	混	混	混
BBF0	火	获	或	惑	霍	货	祸	击	圾	基	畸	稽	积	箕	
BCA0	肌	饥	迹	迹	迹	讥	鸡	姬	绩	吉	极	棘	辑	籍	集
BCB0	及	急	疾	汲	即	嫉	级	挤	几	脊	己	薏	冀	季	伎
BCC0	祭	剂	悸	济	寄	寂	计	记	既	忌	际	妓	继	纪	枷
BCD0	夹	佳	家	加	荚	颊	兼	肩	艰	奸	价	架	嫁	奸	奸
BCE0	监	坚	尖	笺	间	煎	兼	肩	艰	奸	价	架	嫁	奸	奸
BCF0	拣	捡	简	俭	剪	减	荐	槛	鉴	贱	见	健	箭	件	
BDA0	健	舰	剑	饯	渐	溅	涧	建	倦	姜	将	浆	江	疆	蒋
BDB0	浆	讲	匠	酱	降	蕉	角	皎	缴	胶	交	郊	浇	娇	较
BDC0	嚼	搅	皎	矫	侥	脚	狡	角	皎	缴	胶	交	郊	浇	娇
BDD0	叫	窖	揭	接	皆	秸	街	阶	截	劫	桔	杰	捷	睫	竭
BDE0	洁	结	解	姐	戒	藉	芥	界	借	介	疥	诫	届	巾	筋
BDF0	金	今	津	襟	紧	锦	仅	谨	进	靳	晋	禁	近	烬	浸
BEA0	尽	劲	荆	兢	茎	睛	晶	鲸	京	惊	精	经	井	警	
BEB0	景	颈	静	境	敬	镜	径	痉	靖	竟	净	炯	窘	揪	究
BEC0	纠	玖	韭	久	灸	九	酒	厥	救	旧	臼	聚	拒	据	具
BED0	拘	狙	疽	居	驹	菊	局	咀	矩	举	沮	聚	拒	据	具
BEE0	距	踞	锯	俱	句	惧	炬	剧	捐	鹃	娟	倦	眷	卷	绢
BEF0	攫	抉	掘	倔	爵	觉	决	决	绝	均	菌	钧	军	君	峻
BFA0	俊	竣	浚	郡	骏	喀	咖	卡	喀	开	揩	楷	凯	慨	刊
BFB0	堪	勘	坎	砍	看	康	慷	糠	扛	抗	亢	炕	考	拷	靠
BFC0	坷	苛	柯	棵	磕	颗	壳	咳	可	渴	克	刻	客	课	肯
BFD0	啃	垦	恩	坑	吭	空	恐	孔	控	抠	扣	寇	枯	哭	窟
BFE0	苦	酷	库	裤	夸	垮	跨	跨	跨	跨	跨	跨	跨	跨	跨
BFF0	筐	狂	框	矿	眶	况	亏	盔	窥	窥	窥	窥	窥	窥	窥

(3) C0A1H ~ CCFEH

C0A0	饕	愧	溃	坤	困	括	扩	廓	阔	垃	拉	喇	蜡
C0B0	腊	辣	啦	莱	赖	婪	栏	篮	阑	兰	澜	澜	挽
C0C0	览	懒	缆	烂	琅	狼	郎	朗	浪	捞	牢	牢	老
C0D0	佬	姥	酪	烙	勒	雷	雷	磊	累	儡	垒	擂	肋
C0E0	类	泪	棱	楞	厘	梨	犁	离	漓	理	李	里	
C0F0	鲤	礼	莉	荔	吏	栗	厉	励	历	例	例	例	
C1A0	痢	立	粒	沥	隶	力	璃	哩	俩	联	连	廉	怜
C1B0	帘	敛	脸	链	恋	炼	粮	凉	梁	良	两	辆	量
C1C0	晾	亮	凉	撩	聊	疗	燎	辽	潦	了	撩	廖	料
C1D0	列	裂	烈	劣	猎	琳	林	磷	临	邻	淋	凛	吝
C1E0	拎	玲	菱	零	龄	铃	伶	凌	灵	陵	岭	另	溜
C1F0	琉	榴	硫	榴	留	瘤	流	柳	六	麓	芦	庐	炉
C2A0	隆	垄	拢	陇	楼	娄	搂	漏	陋	禄	录	戮	驴
C2B0	虏	鲁	麓	碌	露	路	鹿	禄	录	绿	绿	戮	驴
C2C0	吕	铝	侣	旅	履	缕	虑	律	率	滤	绿	率	李
C2D0	漆	卵	乱	掠	略	抡	伦	仑	沦	论	萝	罗	罗
C2E0	锣	萝	骡	裸	落	络	妈	玛	码	蚂	骂	骂	嘛
C2F0	吗	埋	买	麦	迈	脉	瞒	蛮	蔓	曼	慢	漫	
C3A0	谩	芒	茫	盲	氓	忙	莽	茅	锚	毛	矛	卯	茂
C3B0	冒	貌	贸	么	玫	枚	霉	煤	没	眉	媒	镁	每
C3C0	美	昧	寐	妹	媚	们	萌	蒙	盟	猛	梦	孟	孟
C3D0	眯	眯	靡	迷	迷	米	秘	泌	蜜	密	幕	棉	眠
C3E0	绵	冕	免	勉	娩	面	苗	描	藐	秒	秒	庙	妙
C3F0	灭	民	抿	皿	敏	闷	明	鸣	铭	名	命	谬	摸
C4A0	摹	磨	模	膜	摩	魔	抹	末	墨	默	沫	漠	寞
C4B0	陌	谋	牟	某	拇	亩	姆	母	墓	募	慕	木	目
C4C0	睦	牧	穆	拿	哪	呐	那	娜	纳	氛	乃	耐	奈
C4D0	男	难	囊	挠	脑	恼	闹	淖	呢	馁	内	嫩	倪
C4E0	泥	尼	拟	你	匿	腻	逆	溺	拈	年	碾	捻	念
C4F0	酿	鸟	尿	捏	聂	孽	咄	镊	涅	您	柠	凝	宁
C5A0	拧	泞	牛	扭	钮	纽	欧	浓	农	弄	奴	怒	女
C5B0	虐	那	懦	糯	诺	哦	欧	殴	藕	呕	偶	沓	趴
C5C0	爬	帕	怕	琶	拍	排	牌	湃	派	攀	盘	盼	畔
C5D0	判	叛	乓	庞	旁	胖	抛	咆	刨	袍	跑	坯	胚
C5E0	培	裴	赔	陪	配	沛	喷	盆	抨	烹	澎	彭	蓬
C5F0	硼	篷	膨	朋	鹏	捧	碰	坯	砒	霹	披	毳	毗
C6A0	啤	脾	疲	皮	匹	痞	僻	屁	譬	篇	偏	片	瓢
C6B0	瓢	票	撇	瞥	拼	频	贫	聘	坪	苹	萍	平	凭
C6C0	评	屏	坡	泼	颇	婆	破	魄	迫	泊	剖	仆	葡

C6D0	菩	蒲	埔	朴	圃	普	浦	谱	曝	瀑	期	欺	栖
C6E0	凄	漆	柒	沏	其	棋	奇	歧	畦	崎	脐	齐	祈
C6F0	起	岂	乞	企	启	契	砌	器	迄	弃	汽	泣	迄
C7A0	恰	洽	牵	扞	钎	铅	干	迁	签	仟	谦	乾	黔
C7B0	前	潜	遣	浅	遣	嵌	欠	歉	枪	呛	腔	羌	墙
C7C0	抢	襁	敝	悄	桥	瞧	乔	侨	巧	鞘	撬	翘	峭
C7D0	切	茄	且	怯	窃	钦	亲	秦	琴	勤	芹	擒	禽
C7E0	青	轻	氢	倾	卿	清	擎	晴	衢	情	顷	庆	琼
C7F0	丘	邱	球	求	囚	酋	囚	趋	区	蛆	屈	驱	渠
C8A0	取	娶	龋	趣	去	圉	权	权	裙	群	然	冉	染
C8B0	劝	缺	快	瘸	却	鹊	确	雀	热	王	仁	忍	任
C8C0	壤	攘	嚷	让	饶	扰	绕	惹	荣	融	溶	容	冗
C8D0	刃	妊	纫	扔	仍	戎	茸	蓉	荣	融	溶	容	冗
C8E0	揉	柔	肉	茹	儒	濡	如	辱	乳	汝	入	褥	阮
C8F0	瑞	锐	闰	润	若	弱	洒	萨	腮	鲤	塞	赛	叁
C9A0	伞	散	桑	嗓	丧	搔	骚	扫	嫂	瑟	涩	森	僧
C9B0	砂	杀	刹	沙	纱	傻	啥	煞	筛	珊	苦	杉	删
C9C0	衫	闪	陕	擅	膳	善	汕	扇	缮	墒	伤	商	晌
C9D0	尚	裳	梢	稍	烧	芍	勺	韶	少	哨	邵	绍	蛇
C9E0	舌	舍	赦	摄	慑	涉	社	设	伸	申	伸	伸	身
C9F0	绅	神	沈	审	婶	甚	肾	慎	渗	生	甥	牲	升
CAA0	省	盛	剩	胜	圣	师	失	狮	施	湿	诗	尸	虱
CAB0	拾	时	什	食	蚀	实	识	史	矢	使	驶	始	示
CAC0	世	柿	事	拭	誓	逝	势	是	嗜	噬	适	侍	饰
CAD0	市	恃	室	视	试	收	手	守	寿	授	售	受	兽
CAE0	枢	梳	殊	抒	输	舒	淑	疏	书	赎	孰	熟	暑
CAF0	署	蜀	黍	鼠	属	术	述	束	戌	豎	豎	数	漱
CBA0	恕	刷	耍	摔	甩	帅	拴	拴	霜	双	爽	谁	睡
CBB0	税	吮	瞬	顺	舜	说	硕	朔	烁	斯	嘶	私	司
CBC0	死	肆	寺	嗣	伺	似	饲	巳	松	耸	怂	颂	宋
CBD0	诵	搜	艘	嗽	苏	酥	俗	速	粟	粟	塑	溯	诉
CBE0	肃	酸	蒜	算	虽	隋	随	绥	碎	岁	穗	遂	隧
CBF0	损	笋	蓑	梭	唆	琐	索	锁	所	塌	他	它	塔
CCA0	獭	拏	拏	踏	胎	苔	抬	台	泰	汰	汰	汰	摊
CCB0	贪	瘫	滩	坛	檀	痰	潭	谈	坦	袒	炭	炭	炭
CCC0	汤	塘	搪	棠	膛	唐	糖	倘	淌	趟	趟	掏	滔
CCD0	绦	萄	桃	逃	陶	讨	套	特	藤	腾	疼	梯	剔
CCE0	绦	提	题	蹄	体	替	嚏	惕	涕	剔	天	添	填
CCF0	甜	恬	舔	腴	挑	条	迢	眺	跳	贴	厅	听	炅

(4) CDA1H ~ D9FEH

CDA0	汀	廷	停	亭	庭	挺	艇	通	桐	酏	瞳	同	铜	彤	童
CDB0	桶	捅	筒	统	痛	偷	投	透	凸	秃	突	囤	徒	途	涂
CDC0	屮	土	吐	兔	湍	团	颓	腿	蜕	褪	退	屯	臀	拖	
CDD0	托	脱	陀	驮	驼	橐	妥	拓	唾	挖	蛙	洼	娃	瓦	
CDE0	抹	歪	外	腕	弯	湾	玩	顽	丸	炕	完	碗	挽	皖	
CDF0	宛	婉	万	腕	汪	王	亡	枉	网	往	旺	望	忘	妄	威
CEA0	巍	微	危	韦	违	桅	围	惟	为	淮	维	苇	萎	委	
CEB0	伟	伪	尾	纬	未	蔚	味	畏	胃	喂	魏	位	渭	谓	尉
CEC0	卫	瘟	温	蚊	文	闻	纹	吻	稳	紊	问	翁	瓮	挝	蜗
CED0	渴	窝	我	鞞	卧	握	沃	巫	呜	钨	乌	污	诬	屋	芜
CEE0	梧	吾	吴	毋	武	五	梧	午	舞	伍	侮	戊	戍	雾	晤
CEF0	勿	务	悟	误	昔	熙	析	西	硒	矽	晰	嘻	吸	锡	栖
CFA0	稀	息	希	悉	膝	夕	惜	熄	烯	溪	汐	犀	撒	袭	席
CFB0	习	媳	喜	铣	洗	系	隙	戏	细	瞎	匣	霞	辖	暇	峡
CFC0	侠	狭	下	厦	夏	吓	掀	掀	仙	鲜	纤	咸	贤	衍	舷
CFD0	闲	涎	弦	嫌	显	险	现	献	县	腺	羡	宪	陷	限	线
CFE0	相	厢	镶	香	箱	襄	湘	乡	翔	祥	详	响	享	项	巷
CFF0	橡	像	象	萧	硝	霄	削	哮	馨	销	消	宵	淆	晓	
D0A0	小	孝	校	肖	啸	笑	效	楔	些	歇	泻	鞋	协	挟	携
D0B0	邪	斜	胁	谐	写	械	卸	蟹	懈	泄	泻	屑	薪	芯	铤
D0C0	欣	辛	新	忻	心	信	衅	腥	猩	惺	兴	刑	型	形	邢
D0D0	行	醒	幸	杏	性	姓	兄	凶	胸	匈	汹	雄	休	修	羞
D0E0	朽	嗅	锈	秀	袖	绣	墟	戊	需	虚	嘘	须	徐	许	蓄
D0F0	叙	旭	序	畜	恤	絮	绪	续	轩	喧	宣	悬	旋	玄	
D1A0	选	癣	眩	绚	靴	薛	学	穴	雪	血	勋	薰	循	旬	询
D1B0	寻	驯	巡	殉	训	讯	逊	迅	压	押	鸦	鸭	呀	丫	芽
D1C0	牙	蚜	崖	衙	涯	雅	亚	讶	箫	咽	阍	烟	淹	盐	严
D1D0	研	蜒	岩	延	言	颜	阎	炎	沿	奄	掩	衍	演	艳	堰
D1E0	燕	厌	砚	雁	唁	彦	焰	宴	谚	验	殃	央	鸯	秧	杨
D1F0	佯	痒	羊	洋	阳	氧	仰	痒	养	漾	邀	腰	妖	瑶	
D2A0	摇	尧	遥	窑	谣	姚	咬	舀	药	要	耀	椰	噍	耶	爷
D2B0	野	冶	也	页	掖	业	叶	曳	腋	夜	液	一	壹	医	铤
D2C0	依	伊	衣	颐	夷	遗	移	仪	胰	疑	沂	宜	姨	彝	椅
D2D0	倚	己	乙	矣	以	艺	抑	易	邑	屹	亿	役	臆	逸	肄
D2E0	亦	裔	意	毅	忆	义	益	溢	诣	议	谊	译	异	翼	翌
D2F0	茵	荫	因	殷	音	阴	姻	吟	银	淫	寅	饮	尹	引	隐
D3A0	印	英	樱	婴	鹰	应	纓	莹	萤	营	荧	蝇	迎	赢	盈
D3B0	影	颖	硬	映	哟	拥	佣	臃	庸	雍	踊	咏	泳	涌	酉
D3C0	永	愿	勇	用	幽	悠	忧	尤	由	邮	铀	犹	油	游	酉

D3D0	有	友	右	佑	釉	诱	又	幼	迂	淤	于	孟	榆	虞	愚
D3E0	余	俞	逾	鱼	愉	渝	渔	隅	迂	娱	雨	孟	榆	虞	愚
D3F0	羽	玉	域	芋	郁	吁	遇	喻	峪	御	愈	欲	狱	育	誉
D4A0		浴	寓	裕	预	豫	驭	鸳	渊	冤	元	垣	袁	原	援
D4B0	园	员	圆	猿	源	缘	远	苑	愿	怨	院	允	运	蕴	跃
D4C0	岳	粤	月	悦	阅	耘	云	郇	匀	陨	允	运	蕴	酝	韵
D4D0	孕	匝	砸	杂	栽	哉	灾	宰	载	再	在	咱	攒	暂	贻
D4E0	脏	葬	遭	糟	凿	藻	枣	早	澡	蚤	躁	噪	造	皂	灶
D4F0	贲	择	则	泽	贼	怎	增	憎	赠	扎	喳	渣	札	轧	
D5A0		铡	闸	眨	栅	榨	乍	炸	诈	摘	斋	宅	窄	债	寨
D5B0	瞻	毡	詹	沾	沾	盏	斩	辗	崭	展	栈	占	战	站	湛
D5C0	绽	樟	章	彰	漳	张	掌	涨	杖	丈	帐	杖	胀	瘴	障
D5D0	招	昭	找	沼	赵	照	罩	兆	肇	召	遮	折	哲	轳	者
D5E0	赅	蔗	这	浙	珍	斟	真	甄	砧	臻	贞	针	侦	枕	疹
D5F0	震	振	镇	阵	蒸	挣	睁	征	狰	争	怔	整	拯	正	政
D6A0		帧	症	郑	证	芝	枝	支	歧	蜘蛛	知	肢	脂	汁	织
D6B0	职	直	植	殖	执	值	侄	址	指	止	趾	只	旨	纸	挚
D6C0	掷	至	致	置	帜	峙	制	智	秩	稚	质	炙	痔	滞	室
D6D0	中	忠	忠	钟	衷	终	种	肿	重	仲	众	舟	周	洲	迨
D6E0	粥	轴	肘	帚	咒	皱	宙	昼	骤	珠	株	朱	猪	诸	洩
D6F0	逐	竹	烛	煮	拄	瞩	嘱	主	著	柱	助	蛀	贮	铸	筑
D7A0		住	注	祝	驻	抓	爪	拽	专	砖	撰	赚	篆	桩	庄
D7B0	装	妆	撞	壮	状	椎	锥	追	赘	坠	缀	准	拙	卓	
D7C0	桌	琢	茁	酌	啄	着	灼	油	兹	咨	姿	滋	淄	孜	紫
D7D0	仔	籽	滓	子	自	渍	字	鬚	踪	宗	综	总	纵	邹	走
D7E0	妻	携	租	足	卒	族	祖	阻	组	钻					罪
D7F0	尊	遵	昨	左	佐	柞	做	作	坐	座					
D8A0	于	刁	兀	丐	廿	卅	丕	亘	丞	冫	冫	冫	冫	冫	冫
D8B0	匕	千	天	戈	厄	氏	凶	胤	廴	廴	廴	廴	廴	廴	廴
D8C0	乚	元	半	季	蓄	榘	仄	厶	厶	厶	厶	厶	厶	厶	厶
D8D0	乚	匚	匚	匚	匚	匚	匚	匚	匚	匚	匚	匚	匚	匚	匚
D8E0	刂	刂	刂	刂	刂	刂	刂	刂	刂	刂	刂	刂	刂	刂	刂
D8F0	刂	刂	刂	刂	刂	刂	刂	刂	刂	刂	刂	刂	刂	刂	刂
D9A0		佟	佗	佗	伽	佻	佻	侑	侑	侑	侑	侑	侑	侑	侑
D9B0	侑	侑	侑	侑	侑	侑	侑	侑	侑	侑	侑	侑	侑	侑	侑
D9C0	侑	侑	侑	侑	侑	侑	侑	侑	侑	侑	侑	侑	侑	侑	侑
D9D0	侑	侑	侑	侑	侑	侑	侑	侑	侑	侑	侑	侑	侑	侑	侑
D9E0	侑	侑	侑	侑	侑	侑	侑	侑	侑	侑	侑	侑	侑	侑	侑
D9F0	侑	侑	侑	侑	侑	侑	侑	侑	侑	侑	侑	侑	侑	侑	侑

(5) DAA1H ~ E6FEH

[illegible][illegible]

(6) E7A1H ~ F3FEH

[illegible][illegible]

(7) F4A1H ~ F7FEH

[illegible]

Chinese (GB2312) code range

A1A1H	A1A2H	A1A3H	.....	.....	A1FBH	A1FCH	A1FDH	A1FEH
A2A1H	A2A2H	A2A3H	.....	.....	A2FBH	A2FCH	A2FDH	A2FEH
A3A1H	A3A2H	A3A3H	.....	.....	A3FBH	A3FCH	A3FDH	A3FEH
:								
F5A1H	F5A2H	F5A3H	.....	.....	F5FBH	F5FCH	F5FDH	F5FEH
F6A1H	F6A2H	F6A3H	.....	.....	F6FBH	F6FCH	F6FDH	F6FEH
F7A1H	F7A2H	F7A3H	.....	.....	F7FBH	F7FCH	F7FDH	F7FEH

Font				
Available for				
	WT4 series			
Vertically Oriented Korean Font (Basic Size 24x24 dots)			ESC+k2	
HEX code	ESC	k2	Parameter	
	<1B> ₁₆	<6B> ₁₆ <32> ₁₆	an~n	
Default setting	None			

Persistence of the command	When printer is powered off	Set parameter will not be retained.
	Validity in a job	Set parameter becomes invalid.
	Validity after a job	Set parameter becomes invalid.

[Function]

Specifies vertically oriented Korean font in w24 x h24 dots.

[Format]

<k2>an~n

• Parameter

- a [Code selection mode] = H : HEX characters
 B : Binary code
 n [Data] = Refer to the table of KS X1001 code or KSC5601 code.

* If the number of data is increased/decreased, the data might not be printed correctly.

[Coding example] HEX Character Specification, horizontal direction ratio : 2 times, vertical direction ratio : 3 times

<A>
 <V>100<H>100<P>8<L>0203
<k2>HB0A1B0A2B0A3B0A4B0A5
 <Q>1
 <Z>

[Notes]

1. HEX Character = Korean 4 byte ASCII/ 1 Character
2. Binary Code = Korean 2 byte/ 1 Character
3. Korean codepage (KSC5601 or KSX1001) is automatically determined based on the first character code of data.

[Valid commands]

Print position	<V>	<H>								
Modification	<P>	<L>	<%>	<&>	</>	<O>	<WD>			

Korean Font Character Set

1) 16 × 16 dots

(1) A0A0H ~ AFFFFH

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
A8A0																
A8B0																
A8C0																
A8D0																
A8E0																
A8F0																
A9A0																
A9B0																
A9C0																
A9D0																
A9E0																
A9F0																
A9A0																
A9B0																
A9C0																
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(2) B0A0H ~ BFFFFH

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(3) C0A0H ~ CFFFFH

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
C8A0		웁	웜	월	웓	웒	웑	원	웏	웎	웍	워	웋	웊	웉	웈
C8B0	웇	웆	웅	웄	웃	웂	웁	원	웏	웎	웍	워	웋	웊	웉	웈
C8C0	웇	웆	웅	웄	웃	웂	웁	원	웏	웎	웍	워	웋	웊	웉	웈
C8D0	웇	웆	웅	웄	웃	웂	웁	원	웏	웎	웍	워	웋	웊	웉	웈
C8E0	웇	웆	웅	웄	웃	웂	웁	원	웏	웎	웍	워	웋	웊	웉	웈
C8F0	웇	웆	웅	웄	웃	웂	웁	원	웏	웎	웍	워	웋	웊	웉	웈
C1A0		점	점	젇	정	젇	제	젝	제	젤	제	젝	젞	젟	저	전
C1B0	점	점	점	젇	정	제	조	족	존	출	출	춤	춤	춇	춤	춇
C1C0	춇	춇	춇	춇	춇	춇	춇	춇	춇	춇	춇	춇	춇	춇	춇	춇
C1D0	춇	춇	춇	춇	춇	춇	춇	춇	춇	춇	춇	춇	춇	춇	춇	춇
C1E0	춇	춇	춇	춇	춇	춇	춇	춇	춇	춇	춇	춇	춇	춇	춇	춇
C1F0	춇	춇	춇	춇	춇	춇	춇	춇	춇	춇	춇	춇	춇	춇	춇	춇
C2A0		짱	짱	짱	짱	짜	착	짱	짱	짱	짱	짱	짱	짜	짱	짱
C2B0	짜	짜	짜	짱	짱	짱	짱	짱	짱	짜	짜	짱	짱	짜	짜	짱
C2C0	짱	짱	짱	짱	짱	짜	짱	짱	짜	짜	짜	짜	짜	짜	짜	짜
C2D0	짱	짱	짱	짱	짱	짜	짱	짱	짜	짜	짜	짜	짜	짜	짜	짜

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	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
C2E8	쑤	쑼	쑹	쑺	쑽	쑾	쑿	쐀	쐁	쐂	쐃	쐄	쐅	쐆	쐇	쐈
C2F8	쑼	쑾	쑺	쑽	쑿	쐀	쐁	쐂	쐃	쐄	쐅	쐆	쐇	쐈	쐉	쐊
C3A8		촛	촞	촠	촡	촣	촤	촥	촦	촧	촨	촩	촪	촫	촬	촭
C3B8	찰	참	창	차	척	찬	철	침	첩	쳐	첸	첸	첸	체	척	첸
C3C8	참	첸	첸	첸	처	천	첸	체	첸	첸	초	촉	촌	출	춤	춤
C3D8	춌	춎	춏	춐	춑	춒	춓	추	축	춖	춗	춘	춙	춚	춛	출
C3E8	축	춘	출	춤	춤	춌	춤	축	춖	춗	춘	춙	춚	춛	출	춝
C3F8	춝	춞	춟	춠	춡	춢	춣	춤	춥	춦	춧	춨	충	춪	춫	춬
C4A8		치	척	친	친	칠	칠	침	칩	치	칭	카	각	칸	칼	킴
C4B8	캅	캇	캉	개	객	캐	캘	캠	캡	캣	캤	캥	카	각	강	커
C4C8	컻	컨	켄	켈	کم	کم	컷	컷	컹	케	객	켄	켈	کم	کم	кет
C4D8	킹	커	켄	켈	کم	کم	컷	컷	컹	케	객	코	목	콘	몰	콰
C4E8	콧	몽	과	확	관	팔	팜	팡	괘	행	괴	필	교	쿠	국	쿤
C4F8	쿨	쿰	쿱	쿳	쿵	퀴	퀸	퀼	퀼	퀘	퀼	퀴	퀼	퀸	퀼	
C5A8		퀸	퀸	퀼	퀼	큐	퀸	퀼	퀼	크	크	크	클	کم	کم	کم
C5B8	키	킵	킨	킬	킴	킵	킷	킹	타	탁	탄	탈	탈	탐	탐	탓

[illegible]

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
C5C0	삐	삑	삒	삓	삔	삕	삖	삗	삘	삙	삚	삛	삜	삝	삞	삟
C5D0	뵁	뵂	뵃	뵄	뵅	뵆	뵇	뵈	뵉	뵊	뵋	뵌	뵍	뵑	뵒	뵓
C5E0	뵔	뵕	뵖	뵗	뵘	뵙	뵚	뵛	뵜	뵝	뵞	뵟	뵠	뵡	뵢	뵣
C5F0	뵤	뵦	뵧	뵨	뵩	뵪	뵫	뵬	뵭	뵮	뵯	뵰	뵱	뵲	뵳	뵴
C6A0		뵶	뵷	뵸	뵹	뵺	뵻	뵼	뵽	뵾	뵿	부	북	붂	붃	분
C6B0		붅	붆	붇	불	붉	붊	붋	붌	붍	붎	붏	붐	붑	붒	붓
C6C0		붕	붔	붕	붖	붗	붘	붙	붚	붛	붜	붝	붞	붟	붠	붡
C6D0		붢	붣	붤	붥	붦	붧	붨	붩	붪	붫	붬	붭	붮	붯	붰
C6E0		붱	붲	붳	붴	붵	붶	붷	붸	붹	붺	붻	붼	붽	붾	붿
C6F0		뷀	뷁	뷂	뷃	뷄	뷅	뷆	뷇	뷈	뷉	뷊	뷋	뷌	뷍	뷎
C7A0		뷐	뷑	뷒	뷓	뷔	뷕	뷖	뷗	뷘	뷙	뷚	뷛	뷜	뷝	뷞
C7B0		뷠	뷡	뷢	뷣	뷤	뷥	뷦	뷧	뷨	뷩	뷪	뷫	뷬	뷭	뷮
C7C0		뷯	뷰	뷱	뷲	뷳	뷴	뷵	뷶	뷷	뷸	뷹	뷺	뷻	뷼	뷽
C7D0		뷿	므	믁	믂	믃	믄	믅	믆	믇	믈	믉	믊	믋	믌	믍
C7E0		믎	믏	믑	믒	믓	믔	믕	믖	믗	믘	믙	믚	믛	믜	믝
C7F0		믞	믟	믠	믡	믢	믣	믤	믥	믦	믧	믨	믩	믪	믫	믬

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2)24×24 dots

(1) A0A0H ~ AFFFFH

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
A8A0																
A8B0																
A8C0																
A8D0																
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A9A0		,	.	°	′	″	″	″	″	″	″	″	″	″	″	″
A9B0		“	”	[	]	<	>	《	》	「	」	『	』	【	】	±
A9C0		÷	≈	≤	≥	∞	∴	°	′	″	℃	Å	∅	∞	∞	∞
A9D0		∠	⊥	∧	∩	≡	≡	≡	≡	≡	≡	≡	≡	≡	≡	≡
A9E0		□	■	△	▲	▽	▼	→	←	↑	↓	↔	=	<	>	∞
A9F0		∞	∴	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞
A2A0		⇒	⇔	∇	∇	∇	∇	∇	∇	∇	∇	∇	∇	∇	∇	∇
A2B0		∴	∴	∴	∴	∴	∴	∴	∴	∴	∴	∴	∴	∴	∴	∴
A2C0		♣	♦	♠	♥	♣	♦	♠	♥	♣	♦	♠	♥	♣	♦	♠
A2D0		♣	♦	♠	♥	♣	♦	♠	♥	♣	♦	♠	♥	♣	♦	♠

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
A2E0	No	Ca	TM	am	pm	tel										
A2F0																
A3A0		!	"	#	\$	%	&	'	(	)	*	+	,	-	.	/
A3B0		0	1	2	3	4	5	6	7	8	9	:	:	<	=	>
A3C0		@	A	B	C	D	E	F	G	H	I	J	K	L	M	N
A3D0		P	Q	R	S	T	U	V	W	X	Y	Z	[	W	]	^
A3E0		a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
A3F0		p	q	r	s	t	u	v	w	x	y	z	{	|	}	—
A4A0		т	т	т	т	т	т	т	т	т	т	т	т	т	т	т
A4B0		т	т	т	т	т	т	т	т	т	т	т	т	т	т	т
A4C0		т	т	т	т	т	т	т	т	т	т	т	т	т	т	т
A4D0		т	т	т	т	т	т	т	т	т	т	т	т	т	т	т
A4E0		т	т	т	т	т	т	т	т	т	т	т	т	т	т	т
A4F0		т	т	т	т	т	т	т	т	т	т	т	т	т	т	т
A5A0		I	II	III	IV	V	VI	VII	VIII	IX	X					
A5B0		I	II	III	IV	V	VI	VII	VIII	IX	X					

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
A5C0		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
A5D0		P	Q	R	S	T	U	V	W	X	Y	Z				
A5E0		a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
A5F0		p	q	r	s	t	u	v	w	x	y	z				
A6A0		—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
A6B0		—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
A6C0		—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
A6D0		—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
A6E0		—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
A6F0		—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
A7A0		μl	ml	dl	l	kl	cc	mm	cm	m	km	fm	nm	μm	mm	cm
A7B0		km	mm	cm	m	km	ha	μg	mg	kg	kt	cal	kcal	dB	m/s	ps
A7C0		ns	μs	ms	ps	nV	μV	mV	kV	MV	pA	nA	μA	mA	kA	nW
A7D0		μW	mW	kW	MW	Hz	kHz	MHz	GHz	THz	Q	kQ	MQ	pF	nF	μF
A7E0		cd	rad	rad	rad	sr	Pa	kPa	MPa	GPa	Wb	lm	lx	Bq	Gy	Sv
A7F0																

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
A8A0		Æ	D	a	H		IJ		L	L	ø	œ	ø	ø	ø	ø
A8B0		⌈	⌋	⌈	⌋	⌈	⌋	⌈	⌋	⌈	⌋	⌈	⌋	⌈	⌋	⌈
A8C0		⌈	⌋	⌈	⌋	⌈	⌋	⌈	⌋	⌈	⌋	⌈	⌋	⌈	⌋	⌈
A8D0		⌈	⌋	⌈	⌋	⌈	⌋	⌈	⌋	⌈	⌋	⌈	⌋	⌈	⌋	⌈
A8E0		⌈	⌋	⌈	⌋	⌈	⌋	⌈	⌋	⌈	⌋	⌈	⌋	⌈	⌋	⌈
A8F0		⌈	⌋	⌈	⌋	⌈	⌋	⌈	⌋	⌈	⌋	⌈	⌋	⌈	⌋	⌈
A9A0		æ	d	ø	h	i	ij	k	l	ø	œ	ø	ø	ø	ø	ø
A9B0		n	(	(	(	(	(	(	(	(	(	(	(	(	(	(
A9C0		(	(	(	(	(	(	(	(	(	(	(	(	(	(	(
A9D0		(	(	(	(	(	(	(	(	(	(	(	(	(	(	(
A9E0		(	(	(	(	(	(	(	(	(	(	(	(	(	(	(
A9F0		(	(	(	(	(	(	(	(	(	(	(	(	(	(	(
AAA0		あ	い	う	え	お	か	が	き	ぎ	く					
AAB0		く	け	こ	ご	さ	し	す	せ	そ	ぞ	た				
AAC0		だ	ち	つ	つ	て	と	ど	な	に	ぬ	ね	の	は		
AAD0		ば	び	び	ふ	ぶ	へ	べ	べ	ほ	ぼ	ま	み			

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
AAE0		む	め	も	や	や	ゆ	ゆ	よ	よ	ら	り	る	れ	ろ	わ
AAF0		ゐ	ゑ	を	ん											
ABA0		ア	イ	イ	ウ	ウ	エ	エ	オ	オ	カ	ガ	キ	ギ	ク	
ABB0		グ	ケ	ゲ	コ	ゴ	サ	ザ	シ	ジ	ス	ズ	セ	ゼ	ソ	タ
ABC0		ダ	チ	ヂ	ッ	ツ	テ	デ	ト	ド	ナ	ニ	ネ	ノ	ハ	
ABD0		バ	ビ	ビ	フ	ブ	ヘ	ベ	ベ	ホ	ボ	ボ	マ	ミ		
ABE0		ム	メ	モ	ヤ	ユ	ヨ	ヨ	ラ	リ	ル	レ	ロ	ワ		
ABF0		キ	エ	ラ	ン	ヅ	カ	ケ								
ACA0		A	B	B	Γ	Δ	E	E	Ж	З	И	И	К	Л	М	Н
ACB0		О	П	Р	С	Т	У	Ф	Х	Ц	Ч	Ш	Ш	Ъ	Ы	Ъ
ACC0		Ю	Я													
ACD0		a	b	b	г	д	e	e	ж	з	и	и	к	л	м	н
ACE0		о	п	р	с	т	у	ф	х	ц	ч	ш	ш	ъ	ы	ъ
ACF0		ю	я													
ADA0																
ADB0																

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
ADC0																
ADD0																
ADE0																
ADF0																
AEA0																
AEB0																
AEC0																
AED0																
AEE0																
AEF0																
AFB0																
AFC0																
AFD0																
AFF0																

(2) B0A0H ~ BFFFFH

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
B9A0		가	각	간	갈	감	갑	값	갑	갸	갹	갺	갻	갼	갽	갾
B9B0	갈	강	개	객	건	겉	깎	검	갯	갬	갮	갱	갲	갳	갴	갵
B9C0	갷	강	개	견	겉	거	적	컨	견	결	곶	검	겉	것	겼	경
B9D0	겉	길	걸	경	계	진	질	짐	집	깃	졌	징	겨	격	겪	건
B9E0	겉	결	검	겉	것	겼	경	결	게	젠	젤	젍	젇	고	곡	곤
B9F0	근	굴	굶	꿌	굿	곰	금	굳	궁	긔	과	곽	관	광	굽	
B1A0	팜	팜	팟	팡	패	판	팔	팜	팠	팽	피	픽	핀	필	핍	
B1B0	핍	핏	핑	포	폰	폴	폼	풋	꾸	국	군	글	굴	굶	굿	
B1C0	굶	굶	굿	궁	긔	귀	극	권	귓	꼰	케	켓	귀	귀	컨	
B1D0	귓	림	림	릿	류	균	글	그	쿠	근	글	글	급	급	긔	작
B1E0	급	긔	기	기	긴	길	김	김	김	깃	깁	깃	깊	까	까	
B1F0	깁	칸	칼	قام	قام	قام	차	차	창	찰	채	책	첸	첸	첸	
B2A0		첸	챗	챗	청	까	각	갈	커	꼭	쥘	첸	첸	점	점	챗
B2B0	챗	정	계	적	전	첩	텃	정	져	천	절	챗	쳤	첸	چه	꼬
B2C0	꼭	꾼	굶	굴	곰	금	굳	궁	긔	긔	파	팍	팍	꿌	꿌	꽤
B2D0	꽤	평	피	핀	필	핍	핍	평	표	꾸	푼	푼	푼	푼	끔	끔

[illegible][illegible]

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
BAE	ㅁ	ㅂ	ㅅ	ㅇ	ㅈ	ㅊ	ㅋ	ㆁ	ㅁ	ㅂ	ㅅ	ㅇ	ㅈ	ㅊ	ㅋ	ㆁ
BAF	ㅂ	ㅅ	ㅇ	ㅈ	ㅊ	ㅋ	ㆁ	ㅁ	ㅂ	ㅅ	ㅇ	ㅈ	ㅊ	ㅋ	ㆁ	ㅁ
BBA	ㅅ	ㅇ	ㅈ	ㅊ	ㅋ	ㆁ	ㅁ	ㅂ	ㅅ	ㅇ	ㅈ	ㅊ	ㅋ	ㆁ	ㅁ	ㅂ
BBB	ㅇ	ㅈ	ㅊ	ㅋ	ㆁ	ㅁ	ㅂ	ㅅ	ㅇ	ㅈ	ㅊ	ㅋ	ㆁ	ㅁ	ㅂ	ㅅ
BBC	ㅈ	ㅊ	ㅋ	ㆁ	ㅁ	ㅂ	ㅅ	ㅇ	ㅈ	ㅊ	ㅋ	ㆁ	ㅁ	ㅂ	ㅅ	ㅇ
BBD	ㅊ	ㅋ	ㆁ	ㅁ	ㅂ	ㅅ	ㅇ	ㅈ	ㅊ	ㅋ	ㆁ	ㅁ	ㅂ	ㅅ	ㅇ	ㅈ
BBE	ㅋ	ㆁ	ㅁ	ㅂ	ㅅ	ㅇ	ㅈ	ㅊ	ㅋ	ㆁ	ㅁ	ㅂ	ㅅ	ㅇ	ㅈ	ㅊ
BBF	ㆁ	ㅁ	ㅂ	ㅅ	ㅇ	ㅈ	ㅊ	ㅋ	ㆁ	ㅁ	ㅂ	ㅅ	ㅇ	ㅈ	ㅊ	ㅋ
BCAA	ㅁ	ㅂ	ㅅ	ㅇ	ㅈ	ㅊ	ㅋ	ㆁ	ㅁ	ㅂ	ㅅ	ㅇ	ㅈ	ㅊ	ㅋ	ㆁ
BCBB	ㅂ	ㅅ	ㅇ	ㅈ	ㅊ	ㅋ	ㆁ	ㅁ	ㅂ	ㅅ	ㅇ	ㅈ	ㅊ	ㅋ	ㆁ	ㅁ
BCCB	ㅅ	ㅇ	ㅈ	ㅊ	ㅋ	ㆁ	ㅁ	ㅂ	ㅅ	ㅇ	ㅈ	ㅊ	ㅋ	ㆁ	ㅁ	ㅂ
BCDB	ㅇ	ㅈ	ㅊ	ㅋ	ㆁ	ㅁ	ㅂ	ㅅ	ㅇ	ㅈ	ㅊ	ㅋ	ㆁ	ㅁ	ㅂ	ㅅ
BCEB	ㅈ	ㅊ	ㅋ	ㆁ	ㅁ	ㅂ	ㅅ	ㅇ	ㅈ	ㅊ	ㅋ	ㆁ	ㅁ	ㅂ	ㅅ	ㅇ
BCFB	ㅊ	ㅋ	ㆁ	ㅁ	ㅂ	ㅅ	ㅇ	ㅈ	ㅊ	ㅋ	ㆁ	ㅁ	ㅂ	ㅅ	ㅇ	ㅈ
BDA	ㅂ	ㅅ	ㅇ	ㅈ	ㅊ	ㅋ	ㆁ	ㅁ	ㅂ	ㅅ	ㅇ	ㅈ	ㅊ	ㅋ	ㆁ	ㅁ
DBBB	ㅅ	ㅇ	ㅈ	ㅊ	ㅋ	ㆁ	ㅁ	ㅂ	ㅅ	ㅇ	ㅈ	ㅊ	ㅋ	ㆁ	ㅁ	ㅂ

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
B5C0	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111
B5D0	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111
B5E0	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111
B5F0	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111
B6A0	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111
B6B0	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111
B6C0	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111
B6D0	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111
B6E0	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111
B6F0	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111
B7A0	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111
B7B0	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111
B7C0	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111
B7D0	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111
B7E0	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111
B7F0	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111

[illegible]

(3) C0A0H ~ CFFFH

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
C8A0		의	의	의	의	의	의	의	의	의	의	의	의	의	의	의
C8B0	우	우	우	우	우	우	우	우	우	우	우	우	우	우	우	우
C8C0	을	을	을	을	을	을	을	을	을	을	을	을	을	을	을	을
C8D0	이	이	이	이	이	이	이	이	이	이	이	이	이	이	이	이
C8E0	자	자	자	자	자	자	자	자	자	자	자	자	자	자	자	자
C8F0	가	가	가	가	가	가	가	가	가	가	가	가	가	가	가	가
C9A0		점	점	점	점	점	점	점	점	점	점	점	점	점	점	점
C9B0	질	질	질	질	질	질	질	질	질	질	질	질	질	질	질	질
C9C0	죽	죽	죽	죽	죽	죽	죽	죽	죽	죽	죽	죽	죽	죽	죽	죽
C9D0	것	것	것	것	것	것	것	것	것	것	것	것	것	것	것	것
C9E0	죄	죄	죄	죄	죄	죄	죄	죄	죄	죄	죄	죄	죄	죄	죄	죄
C9F0	근	근	근	근	근	근	근	근	근	근	근	근	근	근	근	근
C2A0		장	장	장	장	장	장	장	장	장	장	장	장	장	장	장
C2B0	재	재	재	재	재	재	재	재	재	재	재	재	재	재	재	재
C2C0	조	조	조	조	조	조	조	조	조	조	조	조	조	조	조	조
C2D0	공	공	공	공	공	공	공	공	공	공	공	공	공	공	공	공

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
C8A0		의	의	의	의	의	의	의	의	의	의	의	의	의	의	의
C8B0	우	우	우	우	우	우	우	우	우	우	우	우	우	우	우	우
C8C0	을	을	을	을	을	을	을	을	을	을	을	을	을	을	을	을
C8D0	이	이	이	이	이	이	이	이	이	이	이	이	이	이	이	이
C8E0	자	자	자	자	자	자	자	자	자	자	자	자	자	자	자	자
C8F0	가	가	가	가	가	가	가	가	가	가	가	가	가	가	가	가
C9A0		점	점	점	점	점	점	점	점	점	점	점	점	점	점	점
C9B0	질	질	질	질	질	질	질	질	질	질	질	질	질	질	질	질
C9C0	죽	죽	죽	죽	죽	죽	죽	죽	죽	죽	죽	죽	죽	죽	죽	죽
C9D0	것	것	것	것	것	것	것	것	것	것	것	것	것	것	것	것
C9E0	죄	죄	죄	죄	죄	죄	죄	죄	죄	죄	죄	죄	죄	죄	죄	죄
C9F0	근	근	근	근	근	근	근	근	근	근	근	근	근	근	근	근
CAA0																
CAB0																
CAC0																
CAD0																

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
C2E0	근	근	근	근	근	근	근	근	근	근	근	근	근	근	근	근
C2F0	진	진	진	진	진	진	진	진	진	진	진	진	진	진	진	진
C3A0		창	창	창	창	창	창	창	창	창	창	창	창	창	창	창
C3B0	찰	찰	찰	찰	찰	찰	찰	찰	찰	찰	찰	찰	찰	찰	찰	찰
C3C0	첸	첸	첸	첸	첸	첸	첸	첸	첸	첸	첸	첸	첸	첸	첸	첸
C3D0	춌	춌	춌	춌	춌	춌	춌	춌	춌	춌	춌	춌	춌	춌	춌	춌
C3E0	쭈	쭈	쭈	쭈	쭈	쭈	쭈	쭈	쭈	쭈	쭈	쭈	쭈	쭈	쭈	쭈
C3F0	췌	췌	췌	췌	췌	췌	췌	췌	췌	췌	췌	췌	췌	췌	췌	췌
C4A0		치	치	치	치	치	치	치	치	치	치	치	치	치	치	치
C4B0	캅	캅	캅	캅	캅	캅	캅	캅	캅	캅	캅	캅	캅	캅	캅	캅
C4C0	킅	킅	킅	킅	킅	킅	킅	킅	킅	킅	킅	킅	킅	킅	킅	킅
C4D0	킹	킹	킹	킹	킹	킹	킹	킹	킹	킹	킹	킹	킹	킹	킹	킹
C4E0	콧	콧	콧	콧	콧	콧	콧	콧	콧	콧	콧	콧	콧	콧	콧	콧
C4F0	푼	푼	푼	푼	푼	푼	푼	푼	푼	푼	푼	푼	푼	푼	푼	푼
C5A0		핍	핍	핍	핍	핍	핍	핍	핍	핍	핍	핍	핍	핍	핍	핍
C5B0	키	키	키	키	키	키	키	키	키	키	키	키	키	키	키	키

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
CAE0																
CAF0																
CBA0																
CBB0																
CBC0																
CBD0																
CBE0																
CBF0																
CCA0																
CCB0																
CCC0																
CCD0																
CCE0																
CCF0																
CDA0																
CDB0																

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
C5C0	팻	팻	팻	팻	팻	팻	팻	팻	팻	팻	팻	팻	팻	팻	팻	팻
C5D0	핼	핼	핼	핼	핼	핼	핼	핼	핼	핼	핼	핼	핼	핼	핼	핼
C5E0	만	만	만	만	만	만	만	만	만	만	만	만	만	만	만	만
C5F0	피	피	피	피	피	피	피	피	피	피	피	피	피	피	피	피
C6A0		페	페	페	페	페	페	페	페	페	페	페	페	페	페	페
C6B0	핀	핀	핀	핀	핀	핀	핀	핀	핀	핀	핀	핀	핀	핀	핀	핀
C6C0	핼	핼	핼	핼	핼	핼	핼	핼	핼	핼	핼	핼	핼	핼	핼	핼
C6D0	파	파	파	파	파	파	파	파	파	파	파	파	파	파	파	파
C6E0	판	판	판	판	판	판	판	판	판	판	판	판	판	판	판	판
C6F0	펄	펄	펄	펄	펄	펄	펄	펄	펄	펄	펄	펄	펄	펄	펄	펄
C7A0		과	과	과	과	과	과	과	과	과	과	과	과	과	과	과
C7B0	움	움	움	움	움	움	움	움	움	움	움	움	움	움	움	움
C7C0	용	용	용	용	용	용	용	용	용	용	용	용	용	용	용	용
C7D0	학	학	학	학	학	학	학	학	학	학	학	학	학	학	학	학
C7E0	행	행	행	행	행	행	행	행	행	행	행	행	행	행	행	행
C7F0	헐	헐	헐	헐	헐	헐	헐	헐	헐	헐	헐	헐	헐	헐	헐	헐

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
CDC0																
CDD0																
CDE0																
CDF0																
CEA0																
CEB0																
CEC0																
CED0																
CEE0																
CEF0																
CFA0																
CFB0																
CFC0																
CFD0																
CFF0																

Korean (KS X1001) code range

AOA0H	AOA1H	AOA2H	.....	.....	AOACH	AOADH	AOAEH	A1FFH
AOB0H	AOB1H	AOB2H	.....	.....	AOBCH	AOBDH	AOBEH	A0BFH
AOC0H	AOC1H	AOC2H	.....	.....	AOCCH	A OCDH	A OCEH	A OCFH
:								
:								
:								
:								
:								
CFD0H	CFD1H	CFD2H	.....	.....	CFDCH	CFDDH	CFDEH	CFDFH
CFE0H	CFE1H	CFE2H	.....	.....	CFECH	CFCFH	CFDFH	CFEFH
CFF0H	CFF1H	CFF2H	.....	.....	CFFCH	CFFDH	CFFEH	CFFFH

10. Barcode Command

The barcode setting is done by inputting the relevant parameter for B, D, BD after ESC. This enables the selection of the barcode type, the barcode ratio and the print out of guard bars or Human-readable characters, and etc.

Please carefully study the following pages for barcode setting specifications.

Please find the description of parameters B, D, BD below.

[Barcode ratio]

Parameter	Barcode		<D>	<BD>
0	CODABAR (NW-7)	1 : 3	1 : 2	2 : 5
1	CODE39	1 : 3	1 : 2	2 : 5
2	ITF	1 : 3	1 : 2	2 : 5
5	Industrial 2of5	1 : 3	1 : 2	2 : 5
6	Matrix 2of5	1 : 3	1 : 2	2 : 5

(1) Barcode ratio

Barcodes consist of narrow bars, wide bars, narrow spaces and wide spaces. The barcode ratio is specified as the ratio between one wide bar and one narrow bar.

Barcode ratio: Parameter , Ratio: 1:3

Narrow bar width [1] stands against wide bar width [3]

Barcode ratio: Parameter <D>, Ratio: 1:2

Narrow bar width [1] stands against wide bar width [2]

Barcode ratio: Parameter <BD>, Ratio: 2:5

Narrow bar width [2] stands against wide bar width [5]

If an other barcode ratio shall be chosen, this can be done by specifying an user-defined ratio, using command <BT> and printing that registered ratio by command <BW>.

(2) Narrow bar width and barcode height

The width of the narrow bar is set through the thickness of the bar. The barcode height is set by the height of the bar.

For example, if printing a narrow bar with a width of 1 dot with a print head of 12 dots/mm (300dpi) the width of the narrow bar will be 0.083 mm, which could cause problems when reading the barcode with a scanner. Setting the narrow bar width to 2 dots (0.166 mm) will enable a trouble free reading by the barcode scanner.

When specifying the narrow bar it is necessary to consider the print head density and the ability of the barcode scanner.

The barcode ratio and the width of the narrow bar specify the actual thickness of the bar.

For example: Barcode ratio 1:3. Narrow bar width: 3 dots. The actual barcode ratio (in dots) will be 3:9.

The Barcode height shall be adjusted to the specifications of the barcode scanner.

(3) Inter-character gap

The inter-character gap is the space between each barcode characters.

The inter-character gap shall be put in directly in front of the barcode ratio parameters , <D>, <BD> or in front of the printing command for user specified ratios <BW>. The inter-character gap is set by command <P>. If no gap is specified, the default value of 2 dots is chosen.

Barcodes which allow the specification of an inter-character gap are as follows:

- 1) CODABAR (NW-7)
- 2) CODE39
- 3) Industrial 2of5
- 4) Matrix 2of5

The actual inter-character gap is specified by the multiplication of the character pitch <P> and the width of the narrow bar.

For example: Inter-character pitch <P>: 3, Narrow bar width: 2 dots

Inter-character gap = 3 x 2 = 6 dots

(4) Human Readable Interpretation and Guard bars

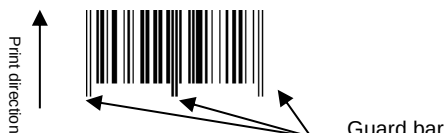
For UPC-A, JAN/EAN-8/13 column barcodes it is possible to specify the print of guard bars or human-readable interpretation.

Parameter	Barcode		<D>	<BD>	<BM>	<BL>
3	JAN/EAN-13	HRI OFF Guard bar OFF	HRI OFF Guard bar ON	HRI ON Guard bar ON		
4	JAN/EAN-8	HRI OFF Guard bar OFF	HRI OFF Guard bar ON	HRI ON Guard bar ON		
H	UPC-A	HRI OFF Guard bar OFF	HRI OFF Guard bar ON	HRI ON Guard bar ON	HRI ON The 1 st and last guard bars are long	HRI OFF The 1 st and last guard bars are long

1) When selecting (Human-readable interpretation: OFF, Guard bars: OFF)



2) When selecting <D> (Human-readable interpretation: OFF, Guard bars: ON)

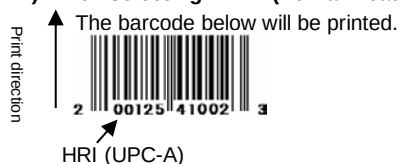


[Notes] By specifying font data after having set the guard bars <D>, it is possible to print human readable interpretation. Refer to barcode specifications (Selecting Human-readable interpretation) <D>~<d>.

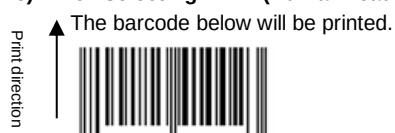
3) When selecting <BD> (Human-readable interpretation: ON, Guard bars: ON)



4) When selecting <BM> (Human-readable interpretation: ON, The first and the last guard bars are long.)



5) When selecting <BL> (Human-readable interpretation: OFF, The first and the last guard bars are long.)



[Specifying barcode only]

Parameter	Barcode	Parameter
C	CODE93	Barcode only
E	UPC-E	Barcode only
G	CODE128 (128A, 128B, 128C)	Barcode only
I	GS1-128 (UCC/EAN128) for standard carton ID	Barcode only
Z	Customer barcode	Barcode only

[Important]

- Above are barcodes with no specified barcode ratio or human-readable interpretation.

(5) Check digits

Check digits available for each type of barcode are listed below.

[C/D]

Parameter	Barcode	Input digits	Digits printed, information included
3	JAN/EAN13	12	13 digits (barcode input+C/D) Calculation of C/D is done in modulus 10 (automatic)
		13	13 digits (Complying to barcode input. C/D is not executed/printed)
4	JAN/EAN8	7	8 digits (barcode input+C/D) Calculation of C/D is done in modulus 10 (automatic)
		8	8 digits (Complying to barcode input. C/D is not executed/printed)
C	CODE93	Max. 99	Calculation of C/D is done in modulus 47 (automatic)
E	UPC-E	6 (fixed)	Calculation of C/D is done in modulus 10 (automatic)
G	CODE128 (128A,128B, 128C)	-	Calculation of C/D is done in modulus 103 (automatic)
H	UPC-A	11 (fixed)	12 digits (barcode data + C/D) Calculation of C/D is done in modulus 10 (automatic)
I	GS1-128 (UCC/EAN128) for standard carton ID	17 (fixed)	Calculation of C/D is done in modulus 103 (automatic)

* C/D stands for check digits

Barcode rotation

Print direction of barcodes can be changed. However, if having selected serial 1 or serial 2, depending on the expansion factor, the barcode print might be blurred.

Parallel 1 : Forward printing

Parallel 2 : Rotating 180° in respect to parallel 1

Serial 1 : Rotating 90° in respect to parallel 1

Serial 2 : Rotating 270° in respect to parallel 1

*** Forward printing: picket fence barcode**

- 1) If printing in parallel 1 or parallel 2 mode, specify the bar width expansion factor so that when using a 8 dots/mm or 12 dots/mm head the width of the narrow bar is at least 2 dots.

(L shows the applicable expansion factor in relevance to the bar ratio)

	Head density	
	8 dots/mm	12 dots/mm
Bar ratio 1:2	More than 2L	More than 2L
Bar ratio 1:3	More than 2L	More than 2L
Bar ratio 2:5	More than 1L	More than 1L
UPC-A/JAN/EAN	More than 2L	More than 2L

- 2) If printing in serial 1 or serial 2 mode, specify the bar width expansion factor so that when using a 8 dots/mm or 12 dots/mm head the width of the narrow bar is at least 3 dots.

- 3) If printing in serial 1 or serial 2 mode, reduce the print speed

	Head density	
	8 dots/mm	12 dots/mm
Bar ratio 1:2	More than 3L	More than 3L
Bar ratio 1:3	More than 3L	More than 3L
Bar ratio 2:5	More than 2L	More than 2L
UPC-A/JAN/EAN	More than 3L	More than 3L

Barcode			
Available for	WT4 series		
Barcode (Ratio 1:3)		ESC+B	
Hex code	ESC	B	Parameter
	<1B> ₁₆	<42> ₁₆	abbcccn~n
Default setting	None		

Persistence of the command	When printer is powered off	Set parameter will not be retained
	Validity in a job	Becomes invalid after execution
	Validity after a job	Becomes invalid after the job

[Function]

Specifies a barcode with a ratio of 1:3 between narrow bar and wide bar.

[Format]

abbcccn~n

• Parameter

a	[Barcode type]	=	Refer to table below
b	[Narrow bar width]	=	Valid range : 01 to 36 dots
c	[Barcode height]	=	Valid range : 001 to 999 dots
n	[Print data]	=	Data

Barcode type (Depending on the barcode type, there might be the case that there is no ratio specified for the module draw up)

a	Barcode type	Information	Ratio
0	CODABAR (NW-7)	Always include start and stop characters in print data. Start/stop characters are [A, B, C, D, E, N, T, a, b, c, d, e, n, t] Example) In case of barcode data [123]: [A123A] Inter-character pitch of barcode is valid. For print data specifications, refer to table of CODABAR (NW-7) code	1:3
1	CODE39	Always include start and stop characters in print data. Start/stop characters are [*] Example) In case of barcode data [12345]: [*12345*] Inter-character pitch of barcode is valid. For print data specifications, refer to table of CODE39 code	1:3
2	ITF	Put the print data in even digit numbers If putting the print data in odd digit numbers "0" will be added on the head of the print data. For print data specifications, refer to table of ITF code	1:3
3	JAN/EAN-13	This barcode does not include guard bars or human-readable characters For print data specifications, refer to table of JAN/EAN13 code	Fixed
4	JAN/EAN-8	This barcode does not include guard bars or human-readable characters For print data specifications, refer to table of JAN/EAN8 code	Fixed
5	Industrial 2of5	Inter-character pitch of the barcode is valid For print data specifications, refer to table of Industrial 2of5 code	1:3
6	Matrix 2of5	Print data can be specified up to 13 digits For print data specifications refer to table of Matrix 2of5 code	1:3
A	MSI	Print data input is possible for up to 13 characters For print data specifications, refer to table of MSI code	Fixed
C	CODE93	Refer to CODE93 <BC>	Fixed
E	UPC-E	Specify 6-digit numbers for print data For print data specifications, refer to table of UPC-E code	Fixed
F	BOOKLAND	Refer to BOOKLAND specifications <BF>	Fixed
G	CODE128 (128A, 128B, 128C)	Refer to CODE128 (128A, 128B, 128C) <BG>	Fixed
H	UPC-A	This barcode does not include guard bars or translation For print data specifications, refer to table of Interleaved UPC-A code	Fixed
I	GS1-128 (UCC/EAN128)	Refer to GS1-128 (UCC/EAN128) <BI>	Fixed
P	POSTNET	Refer to POSTNET <BP>	Fixed

[Coding example 1] Barcode type: CODE39, Narrow bar width: 03, Barcode height: 120, Print data: *1234AB*

```
<A>
<V>100<H>100<B>103120*1234AB*
<Q>1
<Z>
```

[Coding example 2] Barcode type: JAN8, Narrow bar width: 02, Barcode height: 080, Print data: 4912345

```
<A>
<V>100<H>100<B>4020804912345
<Q>1
<Z>
```

[Notes]

1. The inter-character pitch of the barcode is valid at CODABAR (NW-7), CODE39, Industrial 2of5 and Matrix 2of5.

The barcode inter-character pitch is set by specifying the character pitch <P> immediately before.

If not set, the inter-character pitch will be of the same size as a space command.

Example) Inter-letter pitch (Not specified / 0 / 1)	x	Narrow bar width (2 dots) =	Inter-character pitch (2 dots)
Inter-letter pitch (2)	x	Narrow bar width (3 dots) =	Inter-character pitch (6 dots)

[Tips]

1. If a value outside of the valid range is set, a command error occurs and the print out is not executed.
2. Widening the narrow bar width, can result in falling out of the printing range.
3. When using a barcode that allows the inter-character pitch, and specifying a large character pitch <P>, it might happen that the barcode scanner is unable to read the information properly. Enlarging the narrow bar width can result in reduced readability of the barcode. Please refer to Specifications of scanner for more information.
4. Adjust the narrow bar so that the barcode is easily readable by the barcode scanner.
5. If the barcode is still not readable, lower the print speed <CS> or adjust the print darkness <#E>.
6. When using codes like the CODABAR (NW-7), CODE39, include a start / stop character otherwise, the print can be executed, but the scanner will not be able to read the data.
7. When using JAN/EAN13, JAN/EAN8 codes with C/D in the print data, be sure to calculate the right value. If the C/D value is not right, the print can be executed, but the scanner will not be able to read the data.

Barcode			
Available for	WT4 series		
Barcode (Ratio 1:2)			ESC+D
Hex code	ESC	D	Parameter
	<1B> ₁₆	<44> ₁₆	abbcccn~n
Default setting	None		

Persistence of the command	When printer is powered off	Set parameter will not be retained
	Validity in a job	Becomes invalid after execution
	Validity after a job	Becomes invalid after the job

[Function]

Specifies a barcode with a ratio of 1:2 between narrow bar and wide bar.

[Format]

<D>abbcccn~n

• Parameter

a	[Barcode type]	=	Refer to table below
b	[Narrow bar width]	=	01 to 36 dots
c	[Barcode height]	=	001 to 999 dots
n	[Print data]	=	Data

Barcode type (Depending on the barcode type, there might be the case that there is no ratio specified for the module draw up)

a	Barcode type	Information	Ratio
0	CODABAR (NW-7)	Always include start and stop characters in print data. Start/stop characters are [A, B, C, D, E, N, T, a, b, c, d, e, n, t] Example) In case of barcode data [123]: [A123A] Inter-character pitch of barcode becomes valid. For print data specifications, refer to table of CODABAR (NW-7) code	1:2
1	CODE39	Always include start and stop characters in print data. Start/stop character is [*] Example) In case of barcode data [12345]: [*12345*] Inter-character pitch of barcode is valid. For print data specifications, refer to table of CODE39 code	1:2
2	ITF	Put the print data in even-number digits If putting the print data in odd-number digits "0" will be added on the head of the print data. For print data specifications, refer to table of ITF code	1:2
3	JAN/EAN-13	Guard bars: On, Human-readable interpretation: Off For print data specifications, refer to table of JAN/EAN13 code	Fixed
4	JAN/EAN-8	Guard bars: On, Human-readable interpretation: Off For print data specifications, refer to table of JAN/EAN-8 code	Fixed
5	Industrial 2of5	Inter-character pitch of the barcode is valid For print data specifications, refer to table of Industrial 2of5 code	1:2
6	Matrix 2of5	Inter-character pitch of the barcode is valid For print data specifications, refer to table of Matrix 2of5 code	1:2
H	UPC-A	Guard bars: On, Human-readable interpretation: Off For print data specifications, refer to table of UPC-A code	Fixed

[Coding example 1] Barcode type: CODABAR (NW-7), Narrow bar width: 03, Barcode height: 120, Print data: A1234A

```
<A>
<V>100<H>100<D>003120A1234A
<Q>1
<Z>
```

[Coding example 2] Barcode type: ITF, Narrow bar width: 04, Barcode height: 240, Print data: 98002345678163

```
<A>  
<V>100<H>100<D>20424098002345678163  
<Q>1  
<Z>
```

[Coding example 3] Barcode type: UPC-A, Narrow bar width: 02, Barcode height: 120, Print data: 20123948573

```
<A>  
<V>240<H>100<D>H0212020123948573  
<Q>1  
<Z>
```

[Notes]

1. The inter-character pitch of the barcode is valid at CODABAR (NW-7), CODE39, Industrial 2of5 and Matrix 2of5.

The barcode inter-character pitch is set by specifying the character pitch <P> immediately before.

If not set, the inter-character pitch will be of the same size as a space command.

Example) Inter-letter pitch (Not specified / 0 / 1)	x	Narrow bar width (2 dots) =	Inter-character pitch (2 dots)
Inter-letter pitch (2)	x	Narrow bar width (3 dots) =	Inter-character pitch (6 dots)

[Tips]

1. If a value outside of the valid range is set, a command error occurs and the print out is not executed.
2. Widening the narrow bar width, can result in falling out of the printing range.
3. When using a barcode that allows the specification of the inter-character pitch, and specifying a large character pitch <P>, it might happen that the barcode scanner is unable to read the information properly. Enlarging the narrow bar width can result in reduced readability of the barcode. Refer to the specifications of scanner for more information.
4. Adjust the narrow bar so that the barcode is easily readable by the barcode scanner (refer to the specifications of the scanner).
5. If the barcode is still not readable, lower the print speed <CS> or adjust the print darkness <#E>.
6. When using codes like the CODABAR (NW-7) or CODE39, include a start / stop character otherwise the print is executed, but the scanner will not be able to read the data.
7. When using JAN/EAN13, JAN/EAN8 codes, and including a C/D in the print data, be sure to calculate the right value. If the C/D value is not right, the print is executed, but the scanner will not be able to read the data.

Barcode			
Available for			
	WT4 series		
Barcode (HRI Font)			ESC+D ~ ESC+d
Hex code	ESC	D~+ ESC+d	Parameter
	<1B> ₁₆	<44> ₁₆ ~<1B> ₁₆ char. type	abbcccn~n+<d>n~n
Default setting	None		

Persistence of the command	When printer is powered off	Set parameter will not be retained
	Validity in a job	Becomes invalid after execution
	Validity after a job	Becomes invalid after the job

[Function]

Specifies character type of human readable interpretation (HRI) for barcode.

[Format]

<D>abbcccn~n + <d>n~n

• Parameter

a	[Barcode type]	=	3	:	JAN/EAN13
			4	:	JAN/EAN8
			H	:	UPC-A
b	[Narrow bar width]	=	Valid range : 01 to 36 dots		
c	[Barcode height]	=	Valid range : 001 to 999 dots		
n	[Print data]	=	Barcode data		
d	[Character type]	=	XU		
			XS		
			XM		
			XB		
			XL		
			OA		
			OB		
			U		
			S		
			M		
			WB		
			WL		
n	[Print data]	=	HRI data		

[Coding example] Barcode type: JAN/EAN-13, Narrow bar width: 02, Barcode height: 120,
Barcode data: 4902471006795, Character type: XS, HRI data: 4902471006795

```

<A>
<V>100<H>200<D>3021204902471006795
<XS>4902471006795
<Q>1
<Z>

```

[Notes]

1. Adds HRI characters in specified font.
2. When the data other than specified value is set, printing will not be performed. When barcode enlargement ratio is small and character type is large, HRI text may be overlapped with each other.
3. Printer will lay out HRI properly.
4. The barcode translation of following codes will be restricted to conditions below: JAN/EAN8, JAN/EAN13, UPC-A
 - In case of 8 dots/mm (203dpi) : Appropriate Narrow bar width is [02], [03]
 - In case of 12 dots/mm (300dpi) : Appropriate Narrow bar width is [03], [04]

Barcode			
Available for	WT4 series		
Barcode (Ratio 2:5)			ESC+BD
Hex code	ESC	BD	Parameter
	<1B> ₁₆	<42> ₁₆ <44> ₁₆	abbcccn~n
Default setting	None		

Persistence of the command	When printer is powered off	Set parameter will not be retained
	Validity in a job	Becomes invalid after execution
	Validity after a job	Becomes invalid after the job

[Function]

Specifies a barcode with a ratio of 2:5 between narrow bar and wide bar.

[Format]

<BD>abbcccn~n

• Parameter

a	[Barcode type]	=	Refer to table below
b	[Narrow bar width]	=	01 to 36 dots
c	[Barcode height]	=	001 to 999 dots
n	[Print data]	=	Data

Barcode type (Depending on the barcode type, there might be the case that there is no ratio specified for the module draw up)

a	Barcode type	Information	Ratio
0	CODABAR (NW-7)	Always include start and stop characters in print data. Start/stop characters are [A, B, C, D, E, N, T, a, b, c, d, e, n, t] Example) In case of barcode data [123]: [A123A] Inter-character pitch of barcode becomes valid. For print data specifications, refer to table of CODABAR (NW-7) code	2:5
1	CODE39	Always include start and stop characters in print data. Start/stop character is [*] Example) In case of barcode data [12345]: [*12345*] Inter-character pitch of barcode is valid. For print data specifications, refer to table of CODE39 code	2:5
2	ITF	Put the print data in even-number digits If putting the print data in odd-number digits "0" will be added on the head of the print data. For print data specifications, refer to table of ITF code	2:5
3	JAN/EAN-13	Guard bars: On, Human-readable interpretation: On For print data specifications, refer to table of JAN/EAN13 code	Fixed
4	JAN/EAN-8	Guard bars: On, Human-readable interpretation: On For print data specifications, refer to table of JAN/EAN8 code	Fixed
5	Industrial 2of5	Inter-character pitch of the barcode is valid For print data specifications, refer to table of Industrial 2of5 code	2:5
6	Matrix 2of5	Inter-character pitch of the barcode is valid For print data specifications, refer to table of Matrix 2of5 code	2:5
H	UPC-A	Guard bars: On, Human-readable interpretation: On For print data specifications, refer to table of UPC-A code	Fixed

[Coding example1] Barcode type: CODABAR (NW-7), Narrow bar width: 03, Barcode height: 120, Print data: A1234A

<A>

<V>100<H>100<BD>003120A1234A

<Q>1

<Z>

[Coding example 2] Barcode type: ITF, Narrow bar width: 04, Barcode height: 240, Print data: 98002345678163

```
<A>  
<V>100<H>100<BD>20424098002345678163  
<Q>1  
<Z>
```

[Coding example 3] Barcode type: UPC-A, Narrow bar width: 02, Barcode height: 120, Print data: 20123948573

```
<A>  
<V>240<H>100<BD>H0212020123948573  
<Q>1  
<Z>
```

[Notes]

1. For CODABAR (NW-7), CODE39, Industrial 2of5 and Matrix 2of5, the inter-character pitch of the barcode can be specified.

The barcode inter-character pitch is set by specifying the character pitch <P> immediately before.

If not set, the inter-character pitch will be of the same size as a space command.

Example) Inter-letter pitch (Not specified / 0 / 2)	x	Narrow bar width (2 dots) =	Inter-character pitch (4 dots)
Inter-letter pitch (1)	x	Narrow bar width (3 dots) =	Inter-character pitch (3 dots)
Inter-letter pitch (3)	x	Narrow bar width (3 dots) =	Inter-character pitch (9 dots)

2. HRI text of JAN/EAN8, JAN/EAN13, UPC-A will be printed properly in following conditions.

8 dots/mm (203dpi) - Narrow bar width: [02], [03]

12 dots/mm (300dpi) - Narrow bar width: [03], [04]

[Tips]

1. When the value other than valid range is set, command error will occur and barcode will not be printed.
2. Increasing narrow bar width may exceed the print area.
3. Scanner may not read the barcode with valid character pitch when the Character Pitch <P> command is increased.
Also, increasing the narrow bar width may cause the same type of problem. For more information, refer to the documentation of your scanner.
4. For specifying the narrow bar width, consider the reading compatibility of scanner beforehand.
5. Adjust the Print Speed <CS> or Print Darkness <#E> commands in case of scanner reading problem.
6. If Start/Stop characters are not included in print data in the specification of CODABAR(NW-7) or CODE39, barcode will be printed; however, scanner can not read it.
7. If sending the print data including check digit in the specification of JAN/EAN-13 or JAN/EAN-8, set the correct calculated value.
Barcode will be printed even when the data includes improper check digit; however, scanner can not read it.

Barcode			
Available for			
	WT4 series		
Barcode Ratio			ESC+BT
Hex code	ESC	BT	Parameter
	<1B> ₁₆	<42> ₁₆ <54> ₁₆	abbccddee
Default setting	None		

Persistence of the command	When printer is powered off	Set parameter will not be retained
	Validity in a job	Becomes invalid after execution
	Validity after a job	Becomes invalid after the job

[Function]

Specifies the ratio of the narrow gap in regard to the wide gap.

[Format]

<BT>abbccddee

• Parameter

a	[Barcode type]	=	0	:	CODABAR (NW-7)
			1	:	CODE39
			2	:	ITF
			5	:	Industrial 2of5
			6	:	Matrix 2of5
				:	
b	[Narrow space]	=	Valid range	:	01 to 99 dots
c	[Wide space]	=	Valid range	:	01 to 99 dots
d	[Narrow bar]	=	Valid range	:	01 to 99 dots
e	[Wide bar]	=	Valid range	:	01 to 99 dots

[Coding example 1] Barcode type: CODE39, Narrow space: 03, Wide space: 06, Narrow bar: 03, Wide bar: 06

<A>

<BT>103060306

<V>100<H>200<BW>01233*ABCD*

<Q>1

<Z>



[Notes]

1. To print barcode with specified ratio, insert "Barcode print by specified ratio" command <BW> after this command.
2. When <BW> and the Print Quantity <Q> command are not specified, only the registration of bar width ratio of narrow and wide bars will be performed.
3. Only one ratio can be registered.
4. If the data other than specified is set, this will not be registered due to command error.

Barcode			
Available for	WT4 series		
Barcode Print by Specified			ESC+BW
Hex code	ESC	BW	Parameter
	<1B> ₁₆	<42> ₁₆ <57> ₁₆	aabbbn~n
Default setting	None		

Persistence of the command	When printer is powered off	Set parameter will not be retained
	Validity in a job	Becomes invalid after execution
	Validity after a job	Becomes invalid after the job

[Function]

Specifies barcode ratio, saved by <BT>

[Format]

<BW>aabbbn~n

• Parameter

a	[Narrow bar width]	=	Valid range	: 01 to 36 dots
b	[Barcode height]	=	Valid range	: 001 to 999 dots
n	[Print data]	=	Barcode data	

[Coding example] Narrow bar width: 02, Barcode height: 120

```
<A>
<BT>103060306
<V>100<H>200<BW>02120*ABCD*
<Q>1
<Z>
```



[Notes]

- Barcode character pitch is available for CODABAR(NW-7), CODE39, Industrial 2of5 and Matrix 2of5. To specify barcode character pitch, insert the Character Pitch <P> command right before barcode symbology.
When <P> is omitted, character pitch will be equal to narrow space width.

e.g.1) When the narrow space value that was specified at <BT> is [3]:
Character pitch specification (None or 0, 3) x Narrow bar width (2dots) = Character pitch (6dots)
e.g.2) When the character pitch is specified:
Character pitch specification (2) x Narrow bar width (3dots) = Character pitch (6dots)
- If there is no registration of Bar width ratio <BT> command, barcode based on pre-registered bar width ratio of narrow and wide bars will be printed. Note that specification of <BT> is required beforehand to print.
- For print data of barcode symbology, refer to the code table of each barcode.

[Tips]

- If the value other than valid range is set, command error will occur and barcode will not to be printed.
- Increasing narrow bar width may exceed the print area.
- Scanner may not read the barcode with valid character pitch when the Character Pitch <P> command is increased.
Also, increasing the narrow bar width may cause the same type of problem. For more information, refer to the documentation of your scanner.
- For specifying the narrow bar width, consider the reading compatibility of scanner beforehand.
- Adjust the Print Speed <CS> or Print Darkness <#E> commands in case of scanner reading problem.
- If Start/Stop characters are not included in print data in the specification of CODABAR(NW-7) or CODE39, the print of barcode will be performed; however, scanner cannot read it.

CODABAR (NW-7) Code Table

					S				I				S				O			
				b8	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
				b7	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1
				b6	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1
				b5	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1
b4	b3	b2	b1		0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0	0	0	0				0												
0	0	0	1	1				1	A		a									
0	0	1	0	2				2	B		b									
0	0	1	1	3				3	C		c									
0	1	0	0	4			\$	4	D	T	d	t								
0	1	0	1	5				5	E		e									
0	1	1	0	6				6												
0	1	1	1	7				7												
1	0	0	0	8				8												
1	0	0	1	9				9												
1	0	1	0	A			*	:												
1	0	1	1	B			+													
1	1	0	0	C																
1	1	0	1	D			-													
1	1	1	0	E			.		N		n									
1	1	1	1	F			/													

CODE39 Code Table

					S								I								S								O							
					b8								b7								b6								b5							
					0		0		0		0		0		0		0		1		1		1		1		1		1		1		1			
					0		0		0		1		0		0		1		1		0		0		1		1		0		0		1			
					0		1		0		1		0		1		0		1		0		1		0		1		0		1		0			
b4	b3	b2	b1		0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F																
0	0	0	0	0			SP	0		P																										
0	0	0	1	1				1	A	Q																										
0	0	1	0	2				2	B	R																										
0	0	1	1	3				3	C	S																										
0	1	0	0	4			\$	4	D	T																										
0	1	0	1	5			%	5	E	U																										
0	1	1	0	6				6	F	V																										
0	1	1	1	7				7	G	W																										
1	0	0	0	8				8	H	X																										
1	0	0	1	9				9	I	Y																										
1	0	1	0	A			*		J	Z																										
1	0	1	1	B			+		K																											
1	1	0	0	C					L																											
1	1	0	1	D			−		M																											
1	1	1	0	E			.		N																											
1	1	1	1	F			/		O																											

Barcode			
Available for	WT4 series		
GS1-128 (UCC/EAN128) <For Standard Carton ID>			ESC+BI
Hex code	ESC	BI	Parameter
	<1B> ₁₆	<42> ₁₆ <49> ₁₆	aabbbcn~n
Default setting	None		

Persistence of the command	When printer is powered off	Set parameter will not be retained
	Validity in a job	Becomes invalid after execution
	Validity after a job	Becomes invalid after the job

[Function]

Specifies GS1-128 (UCC/EAN128) for standard carton ID.

[Format]

<BI>aabbbcn~n

•Parameter

a	Narrow bar width	=	Valid range : 01 to 36 dots
b	Barcode height	=	Valid range : 001 to 999 dots
c	Font of barcode interpretation	=	0 : No interpretation 1 : Above barcode 2 : Below barcode
n	Print data	=	Barcode data (17 digits fixed)

See code table GS-1128 (UCC/EAN128).

EAN128 (for standard carton ID)18 digits fixed

- Identifier of a continuous code for freight packaging
- Type of packaging
- Country, manufacturer code
- Serial number for shipping container
- C/D

* Check digit is automatically added, therefore, specify data in 17 digits excluding check digit.

[Coding Example] Narrow bar width: 03, Barcode height: 150, HRI characters: Below barcode,
Print data: 12345678901234567

```
<A>
<V>100<H>200<BI>03150012345678901234567
<Q>1
<Z>
```

[Notes]

1. This command is used only for UCC128 standard carton ID. If EAN128 used for other applications, such as pharmaceutical, horticultural application, use the command <BG> with appropriate application identifier and delimiters.
2. Start character code /Function character/ End character code, and identifier "00" will be automatically added.
3. Check digit Modulus 10 and Modulus 103 will be automatically generated.
4. Sequential numbering by barcode data is possible.
5. Both character pitch of Barcode and HR interpretation is fixed at 10 dots.
6. In case HR interpretation is longer than the barcode's width, the translation will be left-aligned to the start of barcode.
7. In case HR interpretation is shorter than the barcode's width, the translation will be center-aligned.
8. HR interpretation will be printed in OCR-B font.
9. If HR interpretation is out of the printable area, it will not be printed. Consider the output image when determining the vertical<V> and horizontal<H> print position.

ITF
 Matrix2of5
 Industrial2of5
 UPC-A,JAN/EAN-8
 JAN/EAN-13,UPC-E
 GS1-128 (UCC/EAN128)
 MSI Code Table

					S				I				S				O			
				b8	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
				b7	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1
				b6	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1
				b5	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1
b4	b3	b2	b1		0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0	0	0	0				0												
0	0	0	1	1				1												
0	0	1	0	2				2												
0	0	1	1	3				3												
0	1	0	0	4				4												
0	1	0	1	5				5												
0	1	1	0	6				6												
0	1	1	1	7				7												
1	0	0	0	8				8												
1	0	0	1	9				9												
1	0	1	0	A																
1	0	1	1	B																
1	1	0	0	C																
1	1	0	1	D																
1	1	1	0	E																
1	1	1	1	F																

Barcode			
Available for			
	WT4 series		
CODE93			ESC+BC
Hex code	ESC	BC	Parameter
	<1B> ₁₆	<42> ₁₆ <43> ₁₆	aabbbccn~n
Default setting	None		
Persistence of the command	When printer is powered off		Set parameter will not be retained
	Validity in a job		Becomes invalid after execution
	Validity after a job		Becomes invalid after the job

[Function]

Specifies CODE93 Barcode.

[Format]

<BC>aabbbccn~n

●Parameter

a	Narrow bar width	=	Valid range : 01 to 36 dots
b	Barcode height	=	Valid range : 001 to 999 dots
c	Data length (digits)	=	Valid range : 01 to 99
n	Print data	=	Barcode data (See CODE93 code table)

[Coding Example] Narrow bar width: 02, Barcode height: 120, Data length: 12, Print data: ABCD123456xy

<A>

<V>100<H>200<BC>0212012ABCD123456xy

<Q>1

<Z>

[Notes]

1. Check digit is automatically generated and added.
2. The maximum data length is 99 digits.
3. Data length (number of digits) and quantity of actual input data shall be the same.
4. If the input data is not consistent with the specified data length, a command error will occur.

CODE93 Code Table

					S				I				S				O			
				b8	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
				b7	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1
				b6	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1
				b5	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1
b4	b3	b2	b1		0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0	0	0	0			SP	0	@	P	`	p								
0	0	0	1	1			!	1	A	Q	a	q								
0	0	1	0	2			”	2	B	R	b	r								
0	0	1	1	3			#	3	C	S	c	s								
0	1	0	0	4			\$	4	D	T	d	t								
0	1	0	1	5			%	5	E	U	e	u								
0	1	1	0	6			&	6	F	V	f	v								
0	1	1	1	7			'	7	G	W	g	w								
1	0	0	0	8			(	8	H	X	h	x								
1	0	0	1	9			)	9	I	Y	i	y								
1	0	1	0	A			*	:	J	Z	j	z								
1	0	1	1	B			+	;	K	[	k	{								
1	1	0	0	C			,	<	L	\	l	!								
1	1	0	1	D			-	=	M	]	m	}								
1	1	1	0	E			.	>	N	^	n	~								
1	1	1	1	F			/	?	O	_	o	DEL								

Selectable range is 00H thru 7FH for CODE93.

Barcode			
Available for			
	WT4 series		
CODE128 (128A, 128B, 128C)			ESC+BG
Hex code	ESC	BG	Parameter
	<1B> ₁₆	<42> ₁₆ <47> ₁₆	aabbbn~n
Default setting	None		

Persistence of the command	When printer is powered off	Set parameter will not be retained
	Validity in a job	Becomes invalid after execution
	Validity after a job	Becomes invalid after the job

[Function]

Specifies CODE128 (128A, 128B, 128C) barcode.

[Format]

<BG>aabbbn~n

•Parameter

a	Narrow bar width	=	Valid range : 01 to 36 dots
b	Barcode height	=	Valid range : 001 to 999 dots
n	Print data	=	Barcode data (see code table on the next page)

[Coding Example] Narrow bar width: 02, Barcode height: 120, Print data: ABCD123456 (START CODE A)

```

<A>
<V>100<H>200<BG>02120<G>ABCD123456
<Q>1
<Z>

```

[Notes]

- Add valid start code respectively for Type(A,B,C).
 - (1)START CODE A = [>G]
 - (2)START CODE B = [>H]
 - (3)START CODE C = [>I]
- C/D will be automatically added.
- To use CODE128 (128A, 128B, 128C) START CODE C, length of the print data (number of digits) shall be even.
- In case data length(number of digits) is only an odd number for START CODE C, you may first select START CODE A or B, and add one digit, then switch to code set character C to make the total data length even. (Example below)

e.g.1)	15 digits [123456789012345]	:	1<C>23456789012345
e.g.2)	9 numeric/6 alphanumeric 123456789ABC123	:	<C>123456789ABC123
- If data length is an odd number for START CODE C, "0" will be automatically added to the end of the data.
- If START CODE is omitted, the data will be printed with START CODE B.

GS1-128 (128A, 128B, 128C) Code Table

Value	Code A	Code B	Code C
0	SP	SP	00
1	!	!	01
2	"	"	02
3	#	#	03
4	\$	\$	04
5	%	%	05
6	&	&	06
7	'	'	07
8	(	(	08
9	)	)	09
10	*	*	10
11	+	+	11
12	,	,	12
13	-	-	13
14	.	.	14
15	/	/	15
16	0	0	16
17	1	1	17
18	2	2	18
19	3	3	19
20	4	4	20
21	5	5	21
22	6	6	22
23	7	7	23
24	8	8	24
25	9	9	25
26	:	:	26
27	;	;	27
28	<	<	28
29	=	=	29
30	> (See Note 4)	> (See Note 4)	30
31	?	?	31
32	@	@	32
33	A	A	33
34	B	B	34
35	C	C	35
36	D	D	36
37	E	E	37
38	F	F	38
39	G	G	39
40	H	H	40
41	I	I	41
42	J	J	42
43	K	K	43
44	L	L	44
45	M	M	45
46	N	N	46
47	O	O	47
48	P	P	48

Value	Code A	Code B	Code C
49	Q	Q	49
50	R	R	50
51	S	S	51
52	T	T	52
53	U	U	53
54	V	V	54
55	W	W	55
56	X	X	56
57	Y	Y	57
58	Z	Z	58
59	[	[	59
60	\	\	60
61	]	]	61
62	^	^	62
63	—	—	63
64	NUL >SP	‘ >SP	64
65	SOH >!	a >!	65
66	STX >”	b >”	66
67	ETX >#	c >#	67
68	EOT >\$	d >\$	68
69	ENQ >%	e >%	69
70	ACK >&	f >&	70
71	BEL >’	g >’	71
72	BS > (	h > (	72
73	HT >)	i >)	73
74	LF >*	j >*	74
75	VT >+	k >+	75
76	FF > ,	l > ,	76
77	CR >—	m >—	77
78	SO > .	n > .	78
79	SI > /	o > /	79
80	DLE >0	p >0	80
81	DC1 >1	q >1	81
82	DC2 >2	r >2	82
83	DC3 >3	s >3	83
84	DC4 >4	t >4	84
85	NAK >5	u >5	85
86	SYN >6	v >6	86
87	ETB >7	w >7	87
88	CAN >8	x >8	88
89	EM >9	y >9	89
90	SUB > :	z > :	90
91	ESC > ;	{ > ;	91
92	FS ><	| ><	92
93	GS >=	} >=	93
94	RS >>	~ >>	94
95	US >?	DEL >?	95
96	FNC3 >@	FNC3 >@	96
97	FNC2 >A	FNC2 >A	97

Value	Code A	Code B	Code C
98	SHIFT >B	SHIFT >B	98
99	Code-C >C	Code-C >C	99
100	Code-B >D	FNC4 >D	Code-B >D
101	FNC4 >E	Code-A >E	Code-A >E
102	FNC1 >F	FNC1 >F	FNC1 >F
103	START CODE A >G		
104	B >H		
105	C >I		

(Notes)

1. If START CODE is not specified, the data will be printed by START CODE B.
2. STOP CODE is automatically added inside the printer.
3. In Code A and B, specify the codes more than Value64 as a two-digit code with ">".
4. The code ">" is described as ">J".

Barcode			
Available for			
	WT4 series		
BOOKLAND			ESC+BF
Hex code	ESC	BF	Parameter
	<1B> ₁₆	<42> ₁₆ <46> ₁₆	aabbbn~n
Default setting	None		

Persistence of the command	When printer is powered off	Set parameter will not be retained
	Validity in a job	Becomes invalid after execution
	Validity after a job	Becomes invalid after the job

[Function]

Specifies BOOKLAND barcode.

[Format]

<BF>aabbbn~n

●Parameter

a	Narrow bar width	= Valid range : 01 to 36 dots
b	Barcode height	= Valid range : 001 to 999 dots
n	Print data	= Barcode data (See BOOKLAND code table)

[Coding Example] Narrow bar width: 03, Barcode height: 130, Print data: 21826

```

<A>
<V>725<H>325<BD>3031504902471000739
<V>760<H>640<BF>0313021826
<Q>1
<Z>

```

[Notes]

1. Only numeric can be specified for print data.
2. Valid data length is 2 and 5 digits.

BOOKLAND Code Table

					S				I				S				O			
				b8	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
				b7	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1
				b6	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1
				b5	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1
b4	b3	b2	b1		0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0	0	0	0				0												
0	0	0	1	1				1												
0	0	1	0	2				2												
0	0	1	1	3				3												
0	1	0	0	4				4												
0	1	0	1	5				5												
0	1	1	0	6				6												
0	1	1	1	7				7												
1	0	0	0	8				8												
1	0	0	1	9				9												
1	0	1	0	A																
1	0	1	1	B																
1	1	0	0	C																
1	1	0	1	D																
1	1	1	0	E																
1	1	1	1	F																

Barcode			
Available for			
	WT4 series		
POSTNET			ESC+BP
Hex code	ESC	BP	Parameter
	<1B> ₁₆	<42> ₁₆ <50> ₁₆	n~n
Default setting	None		
Persistence of the command	When printer is powered off	Set parameter will not be retained	
	Validity in a job	Becomes invalid after execution	
	Validity after a job	Becomes invalid after the job	

[Function]

Specifies POSTNET barcode.

[Format]

<BP>n~n

●Parameter

n

= Print data (See POSTNET Code table in next page)

* Follow the rule of the data length for each format.

- 5 digits (for Postnet-32 format)
- 6 digits (for Postnet-37 format)
- 9 digits (for Postnet-52 format)
- 11 digits (for Postnet-62 Delivery Point format)

[Coding Example] Postal code 11 digits : 01234567890

<A>

<V>100<H>200<BP>01234567890

<Q>1

<Z>

[Notes]

1. Data length other than 5, 6, 9, and 11 digits will be invalid.
2. Only numeric can be specified for print data.

POSTNET Code Table

					S				I				S				O			
b8					0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
b7					0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1
b6					0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1
b5					0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1
b4	b3	b2	b1		0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0	0	0	0				0												
0	0	0	1	1				1												
0	0	1	0	2				2												
0	0	1	1	3				3												
0	1	0	0	4				4												
0	1	0	1	5				5												
0	1	1	0	6				6												
0	1	1	1	7				7												
1	0	0	0	8				8												
1	0	0	1	9				9												
1	0	1	0	A																
1	0	1	1	B																
1	1	0	0	C																
1	1	0	1	D																
1	1	1	0	E																
1	1	1	1	F																

Barcode			
Available for	WT4 series		
Composite Symbol		ESC+EU	
Hex code	ESC <1B> ₁₆	EU <45> ₁₆ <55> ₁₆	Parameter aabb(ccc)n~n
Default setting	None		

Persistence of the command	When printer is powered off	Set parameter will not be retained
	Validity in a job	Becomes invalid after execution
	Validity after a job	Becomes invalid after the job

[Function]

Specifies composite symbol.

[Format 1]

<EU>aabbccn~n

●Parameter

a	Barcode type	= 01: GS1 DataBar Composite(CC-A/CC-B) 02: GS1 DataBar Truncated Composite(CC-A/CC-B) 03: GS1 DataBar Stacked Composite(CC-A/CC-B) 04: GS1 DataBar Stacked Omni-Directional Composite(CC-A/CC-B) 05: GS1 DataBar Limited Composite (CC-A/CC-B) 06: GS1 DataBar Expanded & Expanded Stacked (CC-A/CC-B) 07: UPC-A Composite (CC-A/CC-B) 08: UPC-E Composite (CC-A/CC-B) 09: EAN-13 Composite (CC-A/CC-B) 10: EAN-8 Composite (CC-A/CC-B)
b	Narrow bar width	= 01 to 12 (dots)
c	Segment width	= 02 to 22 (even number only) * Supporting GS1 DataBar Expanded Composite (CC-A/CC-B) only
n	Print data	= Barcode data

Max. number of digit for linear barcode

GS1 DataBar Composite(CC-A/CC-B)	13 digits
GS1 DataBar Truncated Composite(CC-A/CC-B)	13 digits
GS1 DataBar Stacked Composite(CC-A/CC-B)	13 digits
GS1 DataBar Stacked Omni-Directional Composite(CC-A/CC-B)	13 digits
GS1 DataBar Limited Composite (CC-A/CC-B)	13 digits
GS1 DataBar Expanded Composite(CC-A/CC-B)	74 digits
UPC-A Composite(CC-A/CC-B)	11 digits
UPC-E Composite(CC-A/CC-B)	10 digits
Specify linear data in the form of "XX00000XXX"(X is variable)	(fixed)
EAN-13 Composite(CC-A/CC-B)	12 digits
EAN-8 Composite(CC-A/CC-B)	7 digits

* Check digit will be automatically calculated and added.

* To specify the print of composite symbol, delimit 1D data and 2D data with ' ' (7CH).

Data = 1D data | 2D data

* Specify GS1 DataBar Composite(CC-A/CC-B) data between 1st - 16th digit of GS1 DataBar Expanded Composite(CC-A/CC-B).

* For GS1 DataBar Expanded Composite(CC-A/CC-B), up to 74-digit of numeric / 41-digit of alphabet can be entered, including GS1 DataBar Composite(CC-A/CC-B) data. (Up to 41-digit of alphanumeric can be entered including GS1 DataBar Composite(CC-A/CC-B) data)

* If a specified digit number is smaller than the maximum one of 1D data, this value will be zero filled at the front end.

* In 2D data, up to 338-digit can be entered. Maximum digit number may vary depending on barcode symbologies.

[Format 2]

<EU>aabbcccn~n

• Parameter

a	[1D code type]	=	11:GS1-128 (UCC/EAN128) with CC-A/B 12:GS1-128 (UCC/EAN128) with CC-C
b	[Narrow bar width]	=	01 to 12 (dots)
c	[Barcode height]	=	001 to 500 (dots)
* Specify barcode height supposing narrow bar width is 01. When narrow bar width is 03, and bar height is 100, the barcode height becomes 300 dots.			
n	[Print data]	=	Barcode data

Maximum number of digits for 1 and 2D data (Restriction on the max. number of digits for 1D data)

GS1-128 (UCC/EAN128) with CC-A/B	338 digits
GS1-128 (UCC/EAN128) with CC-C	2361 digits

Maximum number of digits for 1D data

GS1-128 (UCC/EAN128) with CC-A/B	48 digits
GS1-128 (UCC/EAN128) with CC-C	48 digits

* To specify the print of composite symbol, delimit 1D data and 2D data with ' | ' (7CH).

Data = 1D data | 2D data

* To specify FNC1(GS) of CC-A/B(Micro PDF) and CC-C(PDF41) as data, make sure to use '#'(23H).

* In 2D data of GS1-128(UCC/EAN128) with CC-A/B, up to 338-digit can be entered.

[Coding example 1] GS1 DataBar Composite(CC-A/CC-B)

<A>
<V>100<H>100
<EU>01040361234567890 | 11990102
<Q>1
<Z>



[Coding example 2] GS1 DataBar Truncated Composite(CC-A/CC-B)

<A>
<V>100<H>100
<EU>02040361234567890 | 11990102
<Q>1
<Z>



[Coding example 3] DataBar Stacked Composite(CC-A/CC-B)

<A>
<V>100<H>100
<EU>03040341234567890 | 17010200
<Q>1
<Z>



[Coding example 4] DataBar Stacked Omni-Directional Composite(CC-A/CC-B)

<A>
<V>100<H>100
<EU>04040341234567890 | 17010200
<Q>1
<Z>



[Coding example 5] DataBar Limited Composite (CC-A/CC-B)

<A>
<V>100<H>100
<EU>05040351234567890 | 21abcdefghijklmnopqrstuv
<Q>1
<Z>



[Coding example 6] UPC-A Composite(CC-A/CC-B)

<A>
<V>100<H>100
<EU>0704331234567890 | 991234-abcd
<Q>1
<Z>



[Coding example 7] UPC-E Composite(CC-A/CC-B)

<A>
<V>100<H>100
<EU>08041200000123|15021231
<Q>1
<Z>



[Coding example 8] EAN-13 Composite(CC-A/CC-B)

<A>
<V>100<H>100
<EU>0904331234567890|991234-abcd
<Q>1
<Z>



[Coding example 9] EAN-8 Composite(CC-A/CC-B)

<A>
<V>100<H>100
<EU>10041234567|21A12345678
<Q>1
<Z>



[Coding example 10] GS1-128 (UCC/EAN128) with CC-A/B

<A>
<V>100<H>100
<EU>11040260103212345678906|21A1B2C3D4E5F6G7H8
<Q>1
<Z>



[Coding example 11] GS1-128 (UCC/EAN128) with CC-C

<A>
<V>100<H>100
<EU>120402600030123456789012340|02130123456789
093724#101234567ABCDEFG
<Q>1
<Z>



[Note]

1. Parameter feature varies depending on 1D barcode symbologies.
Only GS1 DataBar Expanded Composite(CC-A/CC-B)(EU06) is designable for segment width.
Parameter for height of barcode can be specified for GS1-128 (UCC/EAN128)(EU11,EU12) only.
2. If the invalid value for 1D barcode symbology is set in the data portion, composite symbol will not be printed.
3. The sum of 1D and 2D data up to 2361-digit can be set for the print data parameter. As for 2D data, when 1D barcode symbology and alphanumeric are mixed, the number of designable data may vary.
If specifying the data exceeding the maximum digit number, barcodes may not be printed properly.
4. Entire size of composite symbol changes depending on the specification of narrow bar width.
5. If composite symbol exceeds the printable area, only the portion within the area will be printed; however, a scanner might read the value of such composite symbol occasionally.
6. In the specification of composite symbol, 1D barcode data affects the width and height of 2D barcode. When the 1D barcode width is very small, specifying the data with the valid digit number will not print anything.
7. Print of HRI cannot be designated with this command.
8. The Rotate <%> command is available, but not the Character Expansion <L> command.
9. When specifying 11 (production date), 12 (due date for payment), 13 (packaging date), 15 (sell by date), or 17 (expiration date) for Application Identifier (AI), specify the valid values to the date (YYMMDD). There is no guarantee for print result if invalid values are specified.
10. When barcode type is GS1 DataBar, the 2D code data of it should be based on the format of Application Identifier.

Barcode			
Available for	WT4 series		
UPC-A Barcode (No HRI)		ESC+BL	
Hex code	ESC <1B> ₁₆	BL <42> ₁₆ <4C> ₁₆	Parameter abbcccn~n
Default setting	None		

Persistence of the command	When printer is powered off	Set parameter will not be retained
	Validity in a job	Becomes invalid after execution
	Validity after a job	Becomes invalid after the job

[Function]

Specifies UPC-A Barcode with start/end bar in the same length with guard bar.

[Format]

<BL>abbcccn~n

●Parameter

a	Barcode type	= H	: UPC-A("H"Fixed)
b	Narrow bar width	= Valid range	: 01 to 36 dots
c	Barcode height	= Valid range	: 001 to 999 dots
n	Print data	= Data	: 11 digits fixed

[Coding Example] Barcode type: UPC-A, Narrow bar width: 03, Barcode height: 120, Print data: 01234567890

<A>

<V>100<H>100<BL>H0312001234567890

<Q>1

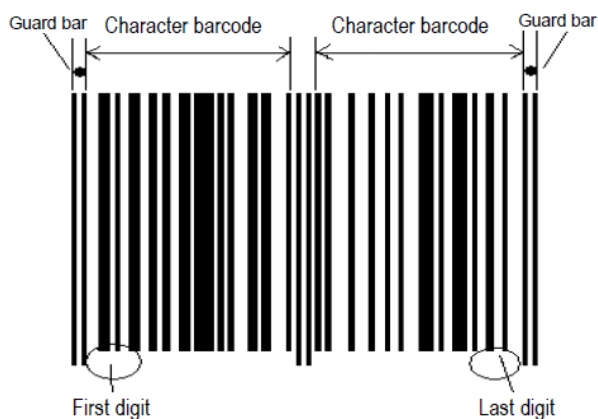
<Z>

[Notes]

1. This command supports UPC-A. Selecting barcode type other than "H" will result in a command error.
2. Refer to the following settings.

Barcode setting		
Guard bar	HRI	Ratio
Yes	No	Fixed

3. If a parameter is specified out of the range, its behavior will not be supported.
4. When using command <D> to print UPC-A, the character bars will be all in the same length. The command <BL> will print the start bar and end bar in the same length as that of guard bars



Print result of UPC-A by command <D>



Print result of UPC-A by command <BL>

Barcode			
Available for			
	WT4 series		
UPC-A Barcode (HRI Font Designation)			ESC+BL ~ ESC+d
Hex code	ESC	BL~d	Parameter
	<1B> ₁₆	<42> ₁₆ <4C> ₁₆ -Font type	abbcccn~n~< d >n~n
Default setting	None		
Persistence of the command	When printer is powered off		Set parameter will not be retained
	Validity in a job		Becomes invalid after execution
	Validity after a job		Becomes invalid after the job

[Function]

Specifies font type of UPC-A (with HRI characters)

[Format]

<BL>abbcccn~n ~ <d>n~n

●Parameter

a	Barcode type	=	H	:	UPC-A ("H" fixed)
b	Narrow bar width	=	Valid range	:	01 to 36 dots
c	Barcode height	=	Valid range	:	001 to 999 dots
n	Print data	=	Barcode data	:	11 digits fixed
d	Font	=	XU		
			XS		
			XM		
			XB		
			XL		
			OA		
			OB		
			U		
			S		
			M		
			WB		
			WL		

n	Print data	=	HRI data	:	12 digits fixed
---	------------	---	----------	---	-----------------

[Coding Example]

Barcode type : UPC-A, Narrow bar width : 02, Barcode height : 120
Barcode data : 01234567890, Font type : XS, Translation data : 012345678905

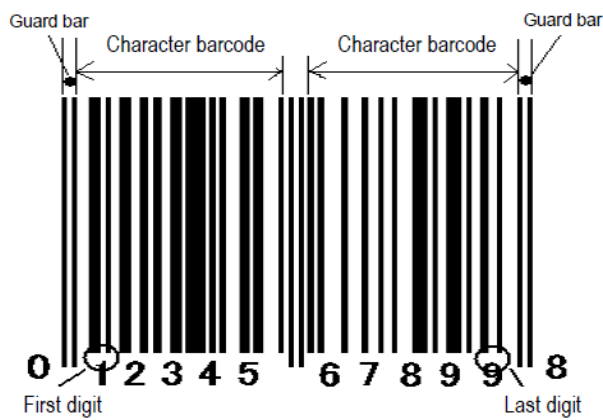
<A>
<V>100<H>200<BL>**H0212001234567890**
<XS>012345678905
<Q>1
<Z>

[Notes]

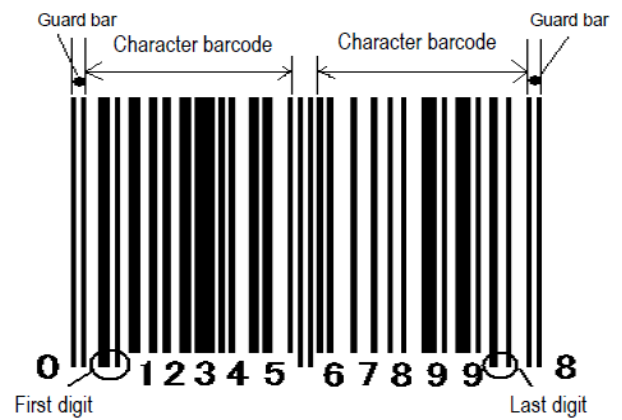
1. This command supports UPC-A only. Selecting barcode type other than "H" will be a command error.
2. Recommended narrow bar width for UPC-A with HRI:
 - 8 dot/mm resolution [02], [03]
 - 12 dot/mm resolution [03], [04]
3. Calculate the 12th check digit of HRI data by using Modulus 10.
4. Refer to the following settings.

Barcode setting		
Guard bar	HRI	Ratio
Yes	Yes	Fixed

5. If a parameter is specified out of the range, its behavior will not be supported.
6. The command <D> with specifying font type to print UPC-A will print the character bars all in the same length. On the other hand, the command <BL> with font type selection will print the start bar and end bar in the same length as that of guard bars. When printing UPC-A with command<D> followed by data, its HRI can be printed from under the start/end bar, because the length of them is short. When printing UPC-A with command <BL> followed by data, character spacing of the HRI will be smaller than command <BL> because the length of start and end bars is longer.



UPC-A specifying <D> +



UPC-A specifying <BL> +

Barcode			
Available for	WT4 series		
UPC-A Barcode (with HRI)		ESC+BM	
Hex code	ESC <1B> ₁₆	BM <42> ₁₆ <4D> ₁₆	Parameter abbcccn~n
Default setting	None		
Persistence of the command	When printer is powered off	Set parameter will not be retained	
	Validity in a job	Becomes invalid after execution	
	Validity after a job	Becomes invalid after the job	

[Function]

Specifies UPC-A barcode with HRI characters. The start and end bar height will be the same length as that of guard bars.

[Format]

<BM>abbcccn~n

•Parameter

a	Barcode type	= H	: UPC-A ("H" fixed)
b	Narrow bar width	= Valid range	: 01 to 36 dots
c	Barcode height	= Valid range	: 001 to 999 dots
n	Print data	= Data	: 11 digits fixed

[Coding Example] Barcode type : UPC-A, Narrow bar width : 02, Barcode height : 120, Print data : 20123948573

```

<A>
<V>240<H>100<BM>H0212020123948573
<Q>1
<Z>

```

[Notes]

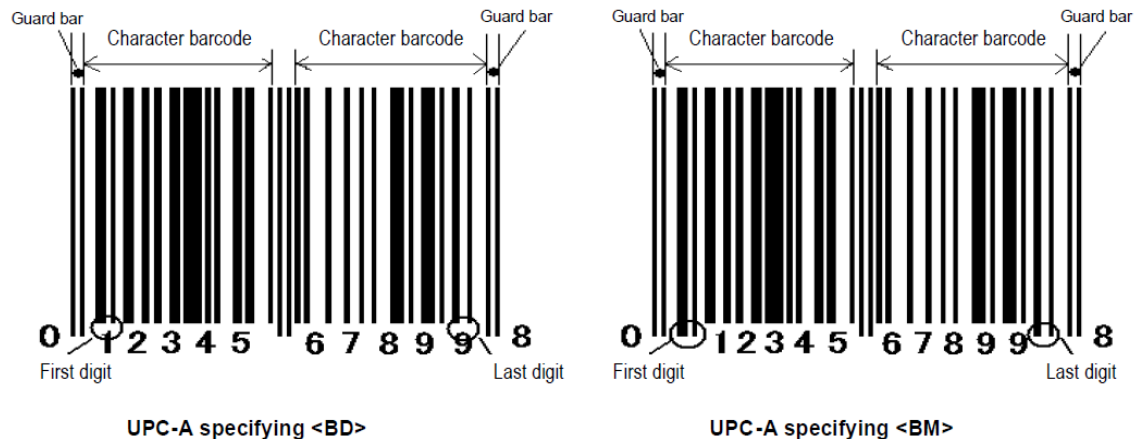
1. This command supports UPC-A only. Selecting barcode type other than "H" will be a command error.
2. Recommended narrow bar width for UPC-A with HRI characters:

8 dots/mm resolution	[02], [03]
12 dots/mm resolution	[03], [04]

3. Refer to the following settings.

Barcode setting		
Guard bar	HRI	Ratio
Yes	Yes	Fixed

4. If a parameter is specified out of the range, its behavior will not be supported.
5. The command <BD> with specifying font type to print UPC-A will print the character bars all in the same length. On the other hand, the command <BM> will print the start bar and end bar in the same length as that of guard bars. When printing UPC-A with command<BD>, its HRI can be printed from under the start/end bar, because the length of them is short. When printing UPC-A with command <BM>, character spacing of the HRI will be smaller than command <BD> because the length of start and end bars is longer.



11. 2D Code Command

2D Code				
Available for				
	WT4 series			
PDF417			ESC+2D10	
Hex code	ESC	2D10	Parameter	
	<1B> ₁₆	<32> ₁₆ <44> ₁₆ <31> ₁₆ <30> ₁₆	,aa,bb,c,dd,ee(.f)	
Default setting	None			
Persistence of the command	When printer is powered off		Set parameter will not be retained	
	Validity in a job		Becomes invalid after execution	
	Validity after a job		Becomes invalid after the job	

[Function]

Specifies 2D Code PDF417.

[Format]

<2D10>,aa,bb,c,dd,ee(.f)

●Parameter

a	Minimum module width	= Valid range	: 01 to 27 dots
b	Minimum module height	= Valid range	: 01 to 72 dots
c	Security level	= Valid range	: 0 to 8
d	Code words per line	= Valid range	: 01 to 30
		00	: Auto (Module width auto-justified according to data quantity)
e	Rows per symbol	= Valid range	: 03 to 90
		00	: Auto (Module height auto-justified according to data quantity)
f	Code type (Omissible)	=	0 : Normal (when omitted)
		1	: Truncated

[Format](Data part)

<DN>mmmm,n~n

●Parameter

m	Quantity of data	= Valid range	: 1 to 2681 bytes
n	Print data	= Data	

[Coding Example1]

Min.module width : 03 dots, Min. module height : 09 dots
Security level : 3, Data code words per line : 03
Rows per symbol : 18

<A>
<V>100<H>200<2D10>,03,09,3,03,18
<DN>0010,0123456789
<Q>1
<Z>



[Coding Example2]

Min.module width : 03 dots, Min. module height : 09 dots
Security Level : 3, Data code words per line : 03
Rows per symbol : 18, Code type : Truncated

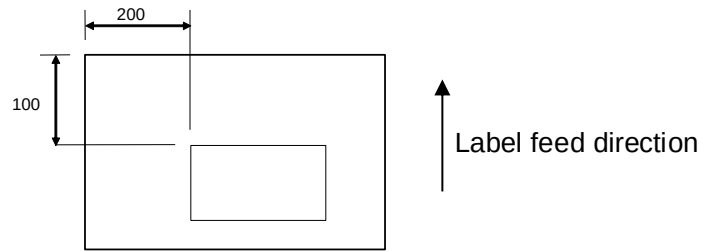
<A>
<V>100<H>200<2D10>,03,09,3,03,18,1
<DN>0010,0123456789
<Q>1
<Z>



[Notes]

1. By command <V>(Vertical print position) and <H>(Horizontal print position) print start position can be specified.

<V>100<H>200<2D10>*** **



2. In case the both parameter d=e=00, aspect ration will be 1:2.
3. Parameters and data size being inconsistent may not be printed properly.
4. Higher Security Level will require larger numbers for parameter "d" or "e".
5. Min. module width 01,02dot are not recommendable with a risk of lower scanner-readability.
6. Min. module height 01,02,03 dots are not recommendable with a risk of lower scanner-readability.

[Tips]

1. No sequential numbering is possible for PDF417.
2. No print position setting is possible by auto-CR.
3. 00H - FFH can be specified as print data.
4. Increase minimum module dimensions for better quality, as necessary.
5. Increase Security Level for better scanner-readability, as necessary.
6. Height of print image will differ for alphabet, numeric, and alpha-numeric data.

PDF417 Code Table

					S								I								S								O							
				b8	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1							
				b7	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1								
				b6	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1	1	1	1	1								
				b5	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1								
b4	b3	b2	b1		0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F																
0	0	0	0	0			SP	0	@	P	`	p																								
0	0	0	1	1			!	1	A	Q	a	q																								
0	0	1	0	2			"	2	B	R	b	r																								
0	0	1	1	3			#	3	C	S	c	s																								
0	1	0	0	4			\$	4	D	T	d	t																								
0	1	0	1	5			%	5	E	U	e	u																								
0	1	1	0	6			&	6	F	V	f	v																								
0	1	1	1	7			'	7	G	W	g	w																								
1	0	0	0	8			(	8	H	X	h	x																								
1	0	0	1	9			)	9	I	Y	i	y																								
1	0	1	0	A			*	:	J	Z	j	z																								
1	0	1	1	B			+	;	K	[	k	{																								
1	1	0	0	C			,	<	L	¥	l	|																								
1	1	0	1	D			-	=	M	]	m	}																								
1	1	1	0	E			.	>	N	^	n	~																								
1	1	1	1	F			/	?	O	_	o	DEL																								

Selectable range is 00H thru FFH for PDF417

2D Code				
Available for				
	WT4 series			
Micro PDF			ESC+2D12	
Hex code	ESC	2D12	Parameter	
	<1B> ₁₆	<32> ₁₆ <44> ₁₆ <31> ₁₆ <32> ₁₆	,aa,bb,c,dd,(e)	
Default setting	None			

Persistence of the command	When printer is powered off	Set parameter will not be retained
	Validity in a job	Becomes invalid after execution
	Validity after a job	Becomes invalid after the job

[Function]

Specifies Micro PDF.

[Format] (Setting portion)

<2D12>,aa,bb,c,dd,(e)

●Parameter

a	Minimum module width	= Valid range : 01 to 27 (dots)
b	Minimum module height	= Valid range : 01 to 72 (dots)
c	Code words per line (Cols)	= Valid range : 1 to 4
d	Rows per symbol (Rows)	= Valid range : 2 digits
e	Binary mode (Omissible)	= 0 : Normal (when omitted) 1 : Binary mode

[Format] (Data portion)

<DN>mmmm,n~n : When Binary mode is set to [1]

<DS>n~n : When Binary mode is set to [0]

●Parameter

m	Quantity of data	= Valid range : 0001 to 0366 (bytes)
n	Print data	= Data

[Coding Example] Module width: 02 dots, Module height: 04 dots
Code words per line: 1, Rows per symbol: 14

<A>
<V>100<H>200<2D12>,02,04,1,14
<DN>0010,0123456789
<Q>1
<Z>



[Note]

1. Rows per symbol is subject to the number of data code word per line. See table in next page for symbol size and data quantity.

* Symbol size and Max. data quantity (Byte) of Micro PDF (Only the following 34 types are available)

Micro PDF Symbol size and data quantity

Symbol size		Max. Data quantity (Byte)		
Cols(c)	Rows(d)	Numeric (A to Z)only	Numeric	Binary
1	11	6	8	3
	14	12	17	7
	17	18	26	10
	20	22	32	13
	24	30	44	18
	28	38	55	22
2	8	14	20	8
	11	24	35	14
	14	36	52	21
	17	46	67	27
	20	56	82	33
	23	64	93	38
	26	72	105	43
3	6	10	14	6
	8	18	26	10
	10	26	38	15
	12	34	49	20
	15	46	67	27
	20	66	96	39
	26	90	132	54
	32	114	167	68
	38	138	202	82
	44	162	237	97
4	4	14	20	8
	6	22	32	13
	8	34	49	20
	10	46	67	27
	12	58	85	34
	15	76	111	45
	20	106	155	63
	26	142	208	85
	32	178	261	106
	38	214	313	128
	44	250	366	150

* Combination of alphabet (Upper/Lower case), numeric and control code varies depending on the number of characters.

Micro PDF Code Table

					S								I								S								O							
					b8								b7								b6								b5							
					0								0								1								1							
					0								0								0								0							
					0								1								1								1							
b4	b3	b2	b1		0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F																
0	0	0	0	0			SP	0	@	P	`	p																								
0	0	0	1	1			!	1	A	Q	a	q																								
0	0	1	0	2			"	2	B	R	b	r																								
0	0	1	1	3			#	3	C	S	c	s																								
0	1	0	0	4			\$	4	D	T	d	t																								
0	1	0	1	5			%	5	E	U	e	u																								
0	1	1	0	6			&	6	F	V	f	v																								
0	1	1	1	7			'	7	G	W	g	w																								
1	0	0	0	8			(	8	H	X	h	x																								
1	0	0	1	9			)	9	I	Y	i	y																								
1	0	1	0	A			*	:	J	Z	j	z																								
1	0	1	1	B			+	;	K	[	k	{																								
1	1	0	0	C			,	<	L	¥	l	|																								
1	1	0	1	D			-	=	M	]	m	}																								
1	1	1	0	E			.	>	N	^	n	~																								
1	1	1	1	F			/	?	O	_	o	DEL																								

Selectable range is 00H thru FFH for Micro PDF Code.

2D Code				
Available for				
	WT4 series			
MAXI Code			ESC+2D20	
Hex code	ESC	2D20	Parameter	
	<1B> ₁₆	<32> ₁₆ <44> ₁₆ <32> ₁₆ <30> ₁₆	,a(,bbb,ccc,d~d)	
Default setting	None			

Persistence of the command	When printer is powered off	Set parameter will not be retained
	Validity in a job	Becomes invalid after execution
	Validity after a job	Becomes invalid after the job

[Function]

Specifies MAXI Code.

[Format] (Setting portion)

<2D20>,a(,bbb,ccc,d~d)

•Parameter

a	Mode	=	2	:	Delivery (Numeric only)
			3	:	Delivery (Alphanumeric)
			4	:	Standard symbol
			6	:	for Reader device only

The following parameters shall be specified when mode [2] or [3] is selected. Omit the following if selection is [4] or [6].

b	Service class	=	Valid range	:	001 to 999 (Numeric)
c	Country code	=	Valid range	:	001 to 999 (Numeric)
d	Postal code	=	Valid range	:	0 to 999999999 (Mode2) 000000 to 999999 (Mode3)

Mode 2 accepts max. 9digits numeric only
Mode 3 accepts 6digits only (Upper case only for alphabet)

[Format] (Data portion)

<DN>mmmm,n~n

•Parameter

m	Quantity of data	=	Valid range	:	1 to 138
n	Print data	=	Data		

* 00H cannot be specified

Mode	Service class	Country code	Postal code	Max. data quantity		
				Numeric	Alphanumeric.	
2	3digits Fixed (Numeric only)	3digits Fixed (Numeric only)	Max. 9 digits	123	84	
3			6 digits fixed (Alphanumeric)			
4	Omitted			138	93	
6						

[Coding Example] Mode: Delivery (Numeric only), Service Class: 003, Country code: 081
Postal code: 123456789

```

<A>
<V>100<H>200<2D20>2.012.840.122290196
<DN>0057,f>[RS]01[GS]961Z00000333[GS]UPSN[GS]1W74V3[GS]318[GS][GS]1/1[GS]2[GS]N
[GS][GS]ALBANY[GS]NY[RS][EOT]
<Q>1
<Z>

```



[Notes]

1. The size of the symbol printed is not subject to data volume. (Quantity of data)
2. Any other parameters specified or settings being inconsistent with each other will result in no printing.
3. In case mode [4] or [6] is selected, be sure to have data size (in byte) larger than 12 (bytes), smaller data volume will result in failure of scanner-reading.
4. In mode2 and 3, data has following definition. See "MAXI Code data format (Mode2 and 3)".

MAXI code Code Table

					S I								S O							
					b8	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
					b7	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1
					b6	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1
					b5	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0
b4	b3	b2	b1		0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0	0	0	0			SP	0	@	P	`	p								
0	0	0	1	1			!	1	A	Q	a	q								
0	0	1	0	2			"	2	B	R	b	r								
0	0	1	1	3			#	3	C	S	c	s								
0	1	0	0	4			\$	4	D	T	d	t								
0	1	0	1	5			%	5	E	U	e	u								
0	1	1	0	6			&	6	F	V	f	v								
0	1	1	1	7			'	7	G	W	g	w								
1	0	0	0	8			(	8	H	X	h	x								
1	0	0	1	9			)	9	I	Y	i	y								
1	0	1	0	A			*	:	J	Z	j	z								
1	0	1	1	B			+	;	K	[	k	{								
1	1	0	0	C			,	<	L	¥	l	|								
1	1	0	1	D			-	=	M	]	m	}								
1	1	1	0	E			.	>	N	^	n	~								
1	1	1	1	F			/	?	O	_	o	DEL								

Selectable range is 01H thru FFH for MAXI Code.

MAXI Code data format (Mode2 and 3)

No.	Title	Example
1	Message Header	[]>[RS]
2	Transportation Data Format Header	01[GS]96
3	Tracking Number	1Z00000333[GS]
4	SCAC	UPSN[GS]
5	UPS Account Number	1W74V3[GS]
6	Julian Day of Pickup	318[GS]
7	Place Holder for Shipment ID Number	[GS]
8	Package n/x	1/1[GS]
9	Package Weight	2[GS]
10	Address Validation	N[GS]
11	Place Holder for Ship to Street Address	[GS]
12	Ship to City	ALBANY[GS]
13	Ship to State	NY[RS]
14	End of Transmission	[EOT]

NOTE: [GS] is 1DH, and [RS] is 1EH in binary expression.

2D Code				
Available for				
	WT4 series			
QR Code (Model 2)			ESC+2D30	
Hex code	ESC	2D30	Parameter	
	<1B> ₁₆	<32> ₁₆ <44> ₁₆ <33> ₁₆ <30> ₁₆	,a,bb,c,d(,ee,ff,gg)	
Default setting	None			

Persistence of the command	When printer is powered off	Set parameter will not be retained
	Validity in a job	Becomes invalid after execution
	Validity after a job	Becomes invalid after the job

[Function]

Specifies QR code (Model2).

[Format] (Setting portion)

<2D30>,a,bb,c,d(,ee,ff,gg)

●Parameter

a	Error correction level	=	L	:	7%
			M	:	15%
			Q	:	25%
			H	:	30%
b	Size of one side of cell	=	Valid range	:	01 to 99 dots
c	Data setting mode	=	0	:	Manual
			1	:	Auto
* Note that the way of print data setting is different in each setting mode.					
d	Concatenation mode	=	0	:	Normal mode
			1	:	Concatenation mode

In case [concatenation mode] is selected, the following settings are mandatory. If normal mode is selected, omit the settings below.

e	Quantity of partitions by concatenation mode (How many partitioned QR codes are concatenated.)	= Valid range	:	01 to 16
f	Sequential number partitioned by concatenation (Sequential numbering to each partitioned symbol)	= Valid range	:	01 to 16
g	Concatenation parity data (Parity data is a result of XOR calculation of entire data of QR Code expressed in Hexadecimal character)	= Valid range	:	00 to FF

[Format] (Data portion)

<DS>k,n~n

<DN>mmmm,n~n

●Parameter

k	Input character mode	=	1	:	Numeric mode
			2	:	Alphanumeric mode
			3	:	Kanji (Shift JIS Kanji code)

This setting is only required when manual data setting is selected.
Use command <DN> for binary data input.

m	Quantity of data When auto data setting is selected, or binary data input is selected, Quantity of data shall be specified.	= Valid range	:	1 to 2953
n	Print data	=	:	Data

[Coding Example] Error correction level: 7%, Size of one side of cell: 05
Data setting mode: manual, Concatenation mode: Normal



```
<A>  
<V>100<H>200<2D30>.L.05.0.0  
<DS>1,012345  
<Q>1  
<Z>
```

[Notes]

1. In case any other parameters than above are specified, or parameters and quantity of data are not consistent with each other, the symbol will not be printed correctly.
2. Note that data part use two different commands <DS> and <DN> according to input mode.

Auto setting (Data setting mode)

<DN>mmmm,n~n

[Tips 1]

1. When Kanji is to be specified, quantity of data shall be twice as many as number of total Kanji characters.
2. The address 80H~9FH, E0H~FFH cannot be used for binary data input, since these characters are only handled in Kanji mode.

Binary input in manual data setting mode

<DN>mmmm,n~n

Other input mode

<DS>1,n~n (Numeric)
<DS>2,n~n (Alphanumeric)
<DS>3,n~n (Kanji)

Mixture of different data input mode

Different data input mode can be used in the same command string. See example below.

```
<A>  
<V>100<H>100  
<2D30>.a.bb.c.d  
<DS>3,n~n  
<DN>mmmm,n~n  
<DS>1,n~n  
<Q>1  
<Z>
```

[Tips 2]

1. Data part shall follow directly symbol format part , or a data part and other data part shall follow successively without interval. Otherwise printed result may be incorrect.
2. Quantity of data shall no exceed the maximum 7000 bytes. Also the maximum number of data block, which can be used in one symbol is 200.

QR data size table (Model 2)

Version	Error correction	Numeric	Alphanum	Kanji	Binary
1 21x21	L	41	25	10	17
	M	34	20	8	14
	Q	27	16	7	11
	H	17	10	4	7
2 25x25	L	77	47	20	32
	M	63	38	16	26
	Q	48	29	12	20
	H	34	20	8	14
3 29x29	L	127	77	32	53
	M	101	61	26	42
	Q	77	47	20	32
	H	58	35	15	24
4 33x33	L	187	114	48	78
	M	149	90	38	62
	Q	111	67	28	46
	H	82	50	21	34
5 37x37	L	255	154	65	106
	M	202	122	52	84
	Q	144	87	37	60
	H	106	64	27	44
6 41x41	L	322	195	82	134
	M	255	154	65	106
	Q	178	108	45	74
	H	139	84	36	58
7 45x45	L	370	224	95	154
	M	293	178	75	122
	Q	207	125	53	86
	H	154	93	39	64
8 49x49	L	461	279	118	192
	M	365	221	93	152
	Q	259	157	66	108
	H	202	122	52	84
9 53x53	L	552	335	141	230
	M	432	262	111	180
	Q	312	189	80	130
	H	235	143	60	98
10 57x57	L	652	395	167	271
	M	513	311	131	213
	Q	364	221	93	151
	H	288	174	74	119

Version	Error correction	Numeric	Alphanum	Kanji	Binary
11 61x61	L	772	468	198	321
	M	604	366	155	251
	Q	427	259	109	177
	H	331	200	85	137
12 65x65	L	883	535	226	367
	M	691	419	177	287
	Q	489	296	125	203
	H	374	227	96	155
13 69x69	L	1022	619	262	425
	M	796	483	204	331
	Q	580	352	149	241
	H	427	259	109	177
14 73x73	L	1101	667	282	458
	M	871	528	223	362
	Q	621	376	159	258
	H	468	283	120	194
15 77x77	L	1250	758	320	520
	M	991	600	254	412
	Q	703	426	180	292
	H	530	321	136	220
16 81x81	L	1408	854	361	586
	M	1082	656	277	450
	Q	775	470	198	322
	H	602	365	154	250
17 85x85	L	1548	938	397	644
	M	1212	734	310	504
	Q	876	531	224	364
	H	674	408	173	280
18 89x89	L	1725	1046	442	718
	M	1346	816	345	560
	Q	948	574	243	394
	H	746	452	191	310
19 93x93	L	1903	1153	488	792
	M	1500	909	384	624
	Q	1063	644	272	442
	H	813	493	208	338
20 97x97	L	2061	1249	528	858
	M	1600	970	410	666
	Q	1159	702	297	482
	H	919	557	235	382

Version	Error correction	Numeric	Alphanum	Kanji	Binary
21 101x101	L	2232	1352	572	929
	M	1708	1035	438	711
	Q	1224	742	314	509
	H	969	587	248	403
22 105x105	L	2409	1460	618	1003
	M	1872	1134	480	779
	Q	1358	823	348	565
	H	1056	640	270	439
23 109x109	L	2620	1588	672	1091
	M	2059	1248	528	857
	Q	1468	890	376	611
	H	1108	672	284	461
24 113x113	L	2812	1704	721	1171
	M	2188	1326	561	911
	Q	1588	963	407	661
	H	1228	744	315	511
25 117x117	L	3057	1853	784	1273
	M	2395	1451	614	997
	Q	1718	1041	440	715
	H	1286	779	330	535
26 121x121	L	3283	1990	842	1367
	M	2544	1542	652	1059
	Q	1804	1094	462	751
	H	1425	864	365	593
27 125x125	L	3517	2132	902	1465
	M	2701	1637	692	1125
	Q	1933	1172	496	805
	H	1501	910	385	625
28 129x129	L	3669	2223	940	1528
	M	2857	1732	732	1190
	Q	2085	1263	534	868
	H	1581	958	405	658
29 133x133	L	3909	2369	1002	1628
	M	3035	1839	778	1264
	Q	2181	1322	559	908
	H	1677	1016	430	698
30 137x137	L	4158	2520	1066	1732
	M	3289	1994	843	1370
	Q	2358	1429	604	982
	H	1782	1080	457	742

Version	Error correction	Numeric	Alphanum	Kanji	Binary
31 141x141	L	4417	2677	1132	1840
	M	3486	2113	894	1452
	Q	2473	1499	634	1030
	H	1897	1150	486	790
32 145x145	L	4686	2840	1201	1952
	M	3693	2238	947	1538
	Q	2670	1618	684	1112
	H	2022	1226	518	842
33 149x149	L	4965	3009	1273	2068
	M	3909	2369	1002	1628
	Q	2805	1700	719	1168
	H	2157	1307	553	898
34 153x153	L	5253	3183	1347	2188
	M	4134	2506	1060	1722
	Q	2949	1787	756	1228
	H	2301	1394	590	958
35 157x157	L	5529	3351	1417	2303
	M	4343	2632	1113	1809
	Q	3081	1867	790	1283
	H	2361	1431	605	983
36 161x161	L	5836	3537	1496	2431
	M	4588	2780	1176	1911
	Q	3244	1966	832	1351
	H	2524	1530	647	1051
37 165x165	L	6153	3729	1577	2563
	M	4775	2894	1224	1989
	Q	3417	2071	876	1423
	H	2625	1591	673	1093
38 169x169	L	6479	3927	1661	2699
	M	5039	3054	1292	2099
	Q	3599	2181	923	1499
	H	2735	1658	701	1139
39 173x173	L	6743	4087	1729	2809
	M	5313	3220	1362	2213
	Q	3791	2298	972	1579
	H	2927	1774	750	1219
40 177x177	L	7089	4296	1817	2953
	M	5596	3391	1435	2331
	Q	3993	2420	1024	1663
	H	3057	1852	784	1273

2D Code			
Available for			
	WT4 series		
QR Code (Model 1)			ESC+2D31
Hex code	ESC	2D31	Parameter
	<1B> ₁₆	<32> ₁₆ <44> ₁₆ <33> ₁₆ <31> ₁₆	,a,bb,c,d(,ee,ff,gg)
Default setting	None		
Persistence of the command	When printer is powered off		Set parameter will not be retained
	Validity in a job		Becomes invalid after execution
	Validity after a job		Becomes invalid after the job

[Function]

Specifies QR code (Model1)

[Format]

<2D31>,a,bb,c,d(,ee,ff,gg)

●Parameter

a	Error correction level	=	L	:	7%
			M	:	15%
			Q	:	25%
			H	:	30%
b	Size of one side of cell	=	Valid range : 01 to 99 dots		
c	Data setting mode	=	0	:	Manual
			1	:	Auto
Note that two different data setting modes above are available.					
d	Concatenation mode	=	0	:	Normal mode
			1	:	Concatenation mode

In case concatenation mode is selected, the following settings are mandatory. If normal mode is selected, omit the settings below.

e	Quantity of partitions by concatenation mode (How many partitioned QR codes are concatenated.)	=	Valid range	:	01 to 16
f	Sequential number partitioned by concatenation (Sequential numbering to each partitioned symbol)	=	Valid range	:	01 to 16
g	Concatenation parity data (Parity data is a result of XOR calculation of entire data of QR Code expressed in Hexadecimal character.)	=	Valid range	:	00 to FF

[Format] (Data portion)

<DS>k,n~n
<DN>mmmm,n~n

●Parameter

k	Input character mode	=	1	:	Numeric mode
			2	:	Alphanumeric mode
			3	:	Kanji mode (ShiftJIS Kanji code)

This setting is only required when manual data setting is selected.
Use command <DN> for binary data input.

m	Quantity of data When auto data setting is selected, or binary data input is selected, Quantity of data shall be specified.	=	Valid range	:	1 to 486
n	Print data	=	Data		

[Coding Example]

Error correction level: 7%,
Data setting mode: manual,

Size of one side of cell: 05
Concatenation mode: Normal

<A>
<V>100<H>200
<2D31>,L,05,0,0
<DS>1,012345
<Q>1
<Z>



[Notes]

1. In case any other parameters than above are specified, or parameters and quantity of data are not consistent with each other, the symbol will not be printed correctly.
2. Note that data part use two different commands <DS> and <DN> according to input mode.

Auto setting (Data setting mode)

<DN>mmmm,n~n

[Tips 1]

1. When Kanji is to be specified, quantity of data shall be twice as many number as total Kanji characters.
2. The address 80H~9FH and E0H~FFH cannot be used for binary data input, since these characters are only handled in Kanji mode.

Binary input in manual data setting mode

<DN>mmmm,n~n

Other input mode

<DS>1,n~n (Numeric)
<DS>2,n~n (Alphanumeric)
<DS>3,n~n (Kanji)

Mixture of different data input mode

Different data input mode can be used in the same command string. See example below.

<A>
<V>100<H>100
<2D31>,a,bb,c,d
<DS>3,n~n
<DN>mmmm,n~n
<DS>1,n~n
<Q>1
<Z>

[Tips 2]

1. Data part shall follow directly symbol format part , or a data part and other data part shall follow successively without interval. Otherwise printed result may be incorrect.

QR data size table (Model 1)

Version	Error correction	Numeric	Alphanum	Kanji	Binary
1	L	40	24	10	17
	M	33	20	8	14
	Q	25	15	6	11
	H	16	10	4	7
2	L	81	49	20	34
	M	66	40	17	28
	Q	52	31	13	22
	H	33	20	8	14
3	L	131	79	33	55
	M	100	60	25	42
	Q	81	49	20	34
	H	52	31	13	22
4	L	186	113	48	78
	M	138	84	35	58
	Q	114	69	29	48
	H	76	46	19	32
5	L	253	154	65	106
	M	191	116	49	80
	Q	157	95	40	66
	H	105	63	27	44
6	L	321	194	82	134
	M	249	151	64	104
	Q	201	122	51	84
	H	133	81	34	56
7	L	402	244	103	168
	M	311	188	80	130
	Q	253	154	65	106
	H	167	101	43	70
8	L	493	299	126	206
	M	378	229	97	158
	Q	301	183	77	126
	H	203	123	52	85
9	L	585	354	150	244
	M	441	267	113	184
	Q	369	223	94	154
	H	239	145	61	100
10	L	690	418	177	287
	M	526	319	135	219
	Q	433	262	111	180
	H	291	176	74	121

Version	Error correction	Numeric	Alphanum.	Kanji	Binary
11	L	800	485	205	333
	M	608	368	156	253
	Q	493	299	126	205
	H	342	207	87	142
12	L	915	555	234	381
	M	694	421	178	289
	Q	579	351	148	241
	H	390	236	100	162
13	L	1030	624	264	429
	M	790	479	202	329
	Q	656	398	168	273
	H	454	275	116	189
14	L	1167	707	299	486
	M	877	531	225	365
	Q	738	447	189	307
	H	498	302	127	207

2D Code			
Available for	WT4 series		
Micro QR Code			ESC+2D32
Hex code	ESC	2D32	Parameter
	<1B> ₁₆	<32> ₁₆ <44> ₁₆ <33> ₁₆ <32> ₁₆	,a,bb,c
Default setting	None		

Persistence of the command	When printer is powered off	Set parameter will not be retained
	Validity in a job	Becomes invalid after execution
	Validity after a job	Becomes invalid after the job

[Function]

Specifying QR Code (Micro QR Code)

[Format] (Setup part)

<2D32>,a,bb,c

●Parameter

a [Error Correction Level] = L : 7%
M : 15%
Q : 25%

b [Size of one side of cell] = Valid Range : 01 to 99 dots
*Specify more than 02 dots when head density is 12dot/mm, otherwise scanner may have reading problem

c [Data setup mode] = 0 : Manual setup
1 : Automatic setup

[Format] (Dat part)

Manual setup (Data setup mode)

<DS>k,n~n * Use when input mode specification is Numeric mode, Alphanumeric mode and Kanji mode.

<DN>mmmm, n~n * Use when specifying by binary.

Automatic setup (Data setup mode)

<DN>mmmm, n~n * Change input mode automatically according to input data.

●Parameter

k [Input mode] = 1 : Numeric mode
2 : Alphanumeric mode
3 : Kanji mode (Shift JIS Kanji)

* There is binary specification other than above, but data specification command is different.

m [Number of data] = Valid Range:1 to 15

* Specify when specifying Automatic setup in Data setting mode.

n [Print data] = Data

pp [Version] = 00 to 04(MicroQR M1 to M4)

[Format] (version)

<QV>pp * Specify when specifying the version.

●Parameter

pp [Version] = 00 to 04 (MicroQR M1 to M4)

*This setting is used when fixing the size of QR symbol with the version command. When not specified, it becomes Auto. Specifying 00 also becomes Auto. It doesn't become a parameter error from 00 to 40.

*See [QR code version command] for details.

[Supplementary Explanation1]

1. When specifying Kanji in <DN>, specify size that is 2 X number of Kanji characters.
2. For <DN> in Automatic setup, when 80H to 9FH and E0H to FFH are specified as data, it is handed as Kanji mode, and cannot specify them as binary.

[Coding Example1] Error correction level :7%, Size of one side of cell:04

```
<A>
<V>100<H>200<2D32>,L,04
<DS>1,012345
<Q>2
<Z>
```

[Supplementary Explanation2]

1. If the parameter other than the description is specified or number of print data is not match, print is not executed.
2. Data specification command in data part varies according to parameter setup or specified data.

[Coding Example2]Error correction level: 7%, Size of one side of cell: 04

Mixed specification of Manual setup (Data setup mode)

In Manual setup, you can proceed specifying data in specified input mode (Numeric, Alphanumeric, Kanji, Binary) in a row.

```
<A>
<V>100<H>200
<2D32>,L,04,0
<DS>3,サ トー
<DN>0010,0123456789
<DS>1,123
<Q>1
<Z>
```

[Supplementary Explanation3]

1. Parameter part to be followed by Data part. Data part and data part should be specified in a row. When don't specify in a row, print result may not be secured.

Micro QR Code Data size list

Version	Error correction	Numeric	Alphanumeric	Kanji	Binary
M1 (11x11)	L (Error detection only)	5	-	-	-
M2 (13x13)	L M	10 8	6 5	- -	- -
M3 (15x15)	L M	23 18	14 11	6 4	9 7
M4 (17x17)	L M Q	35 30 21	21 18 13	9 8 5	15 13 9

[Coding Example 3] Error correction level: 7%, Size of one side of cell: 05, Data setup mode: Manual setup,

Concatenation mode: Normal, Version M4, Data setting mode: manual setting,

Combine mode: normal, Printed in version M4

```
<A>
<V>100<H>200<2D32>,L,05,0,0
<QV>4
<DS>1,012345
<DN>0004,6789
<Q>1
<Z>
```

[Notes]

1. Specify <QV> command between <2Dxx> and <DN>/<DS>.
2. When resulted in a parameter error, it will be handled in the same manner of no specification.
3. It doesn't become a parameter error from 3.00 to 40. (Set the value within the range corresponding to each model)
For MicroQR, the setting range is from 00 to 04.
4. Sending the data exceeding the data size of specified version will result in error and QR code is not printed.

QR Code (Numeric mode) Table

						S				I				S				O				
					b8	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
					b7	0	0	0	0	1	1	1	1	1	0	0	0	0	1	1	1	1
					b6	0	0	1	1	0	0	1	1	1	0	0	1	1	0	0	1	1
					b5	0	1	0	1	0	1	0	1	1	0	1	0	1	0	1	0	1
b4	b3	b2	b1		0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F		
0	0	0	0	0				0														
0	0	0	1	1				1														
0	0	1	0	2				2														
0	0	1	1	3				3														
0	1	0	0	4				4														
0	1	0	1	5				5														
0	1	1	0	6				6														
0	1	1	1	7				7														
1	0	0	0	8				8														
1	0	0	1	9				9														
1	0	1	0	A																		
1	0	1	1	B																		
1	1	0	0	C																		
1	1	0	1	D																		
1	1	1	0	E																		
1	1	1	1	F																		

QR Code (Alphanumeric mode) Table

					S						I				S				O			
				b8	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	
				b7	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	1	
				b6	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1	1	
				b5	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1
b4	b3	b2	b1		0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F		
0	0	0	0	0			SP	0		P												
0	0	0	1	1				1	A	Q												
0	0	1	0	2				2	B	R												
0	0	1	1	3				3	C	S												
0	1	0	0	4			\$	4	D	T												
0	1	0	1	5			%	5	E	U												
0	1	1	0	6				6	F	V												
0	1	1	1	7				7	G	W												
1	0	0	0	8				8	H	X												
1	0	0	1	9				9	I	Y												
1	0	1	0	A			*	:	J	Z												
1	0	1	1	B			+		K													
1	1	0	0	C					L													
1	1	0	1	D			-		M													
1	1	1	0	E			.		N													
1	1	1	1	F			/		O													

QR Code (Binary mode) Table

					S								I								S								O							
				b8	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1									
				b7	0	0	0	0	1	1	1	1	1	0	0	0	0	1	1	1	1	1	1	1	1	1	1									
				b6	0	0	1	1	0	0	1	1	1	0	0	1	1	0	0	1	1	0	0	1	1	1	1									
				b5	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	1									
b4	b3	b2	b1		0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F																
0	0	0	0	0			SP	0	@	P	`	p																								
0	0	0	1	1			!	1	A	Q	a	q																								
0	0	1	0	2			"	2	B	R	b	r																								
0	0	1	1	3			#	3	C	S	c	s																								
0	1	0	0	4			\$	4	D	T	d	t																								
0	1	0	1	5			%	5	E	U	e	u																								
0	1	1	0	6			&	6	F	V	f	v																								
0	1	1	1	7			'	7	G	W	g	w																								
1	0	0	0	8			(	8	H	X	h	x																								
1	0	0	1	9			)	9	I	Y	i	y																								
1	0	1	0	A			*	:	J	Z	j	z																								
1	0	1	1	B			+	;	K	[	k	{																								
1	1	0	0	C			,	<	L	¥	l	|																								
1	1	0	1	D			-	=	M	]	m	}																								
1	1	1	0	E			.	>	N	^	n	-																								
1	1	1	1	F			/	?	O	_	o	DEL																								

The address can be specified in the range [00H~7FH] and [A0H~DFH] for QR Code (Binary mode).

QR Code (Kanji mode) Table

	ShiftJIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
Symbol	813F		SP	、	。	,	.	・	:	;	?	!	”	°	′	、	”
	814F	^	—	—	、	、	、	、	”	全	々	、	〇	—	—	-	/
	815F	／	～	||	|	...	..	‘	’	“	”	(	)	[	]	[	]
	816F	{	}	<	>	《	》	「	」	『	』	【	】	+	-	±	×
	8180	÷	=	≠	<	>	≤	≥	∞	∴	♂	♀	°	′	”	℃	¥
	8190	\$	¢	£	%	#	&	*	@	§	☆	★	○	●	◎	◇	
	819E		◆	□	■	△	▲	▽	▼	※	〒	→	←	↑	↓	=	
Alphanumeric	824F	0	1	2	3	4	5	6	7	8	9						
	825F		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
	826F	P	Q	R	S	T	U	V	W	X	Y	Z					
	8280		a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	8290	p	q	r	s	t	u	v	w	x	y	z					
Hiragana	829E		あ	い	う	え	お	か	き	く				が	き	ぎ	く
	82AE	ぐ	け	こ	さ	し	す	せ	そ	た				げ	そ	ぞ	た
	82BE	だ	ち	っ	づ	て	ど	な	ぬ	は				だ	ぬ	ね	は
	82CE	ば	ぱ	び	ふ	ぶ	べ	り	ぼ	ま				ば	ぼ	ま	み
	82DE	む	め	ゃ	ゅ	ょ	ら	る	ろ	わ				む	ろ	わ	わ
	82EE	ゐ	ゑ	を	ん												
Katakana	833F		ア	イ	ウ	エ	オ	カ	キ	ク				ガ	キ	ギ	ク
	834F	グ	ケ	コ	サ	シ	ス	セ	ソ	タ				ゲ	ソ	ゾ	タ
	835F	ダ	チ	ッ	ツ	テ	ト	ネ	ナ	ハ				ダ	ネ	ノ	ハ
	836F	バ	パ	ビ	フ	ブ	ヘ	ベ	ペ	ミ				バ	ポ	マ	ミ
	8380	ム	メ	ャ	ユ	ヨ	ヨ	ラ	リ	ワ				ム	ロ	ワ	ワ
	8390	ヰ	ヱ	ヲ	ヴ	カ											
Greek	839E		A	B	Γ	Δ	E	Z	H	Θ	I	K	Λ	M	N	Ξ	O
	83AE	Π	P	Σ	T	Υ	Φ	X	Ψ	Ω							
	83BE		α	β	γ	δ	ε	ζ	η	θ	ι	κ	λ	μ	ν	ξ	ο
	83CE	π	ρ	σ	τ	υ	φ	χ	ψ	ω							
Russian	843F		A	Б	В	Г	Д	Е	Ё	Ж	З	И	Й	К	Л	М	Н
	844F	О	П	Р	С	Т	У	Ф	Х	Ц	Ч	Ш	Щ	Ъ	Ы	Ь	Э
	845F	Ю	Я														
	846F		а	б	в	г	д	е	ё	ж	з	и	й	к	л	м	н
	8480	о	п	р	с	т	у	ф	х	ц	ч	ш	щ	ъ	ы	ь	э
	8490	ю	я														

	ShiftJIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
ア	889E		亜	啞	娃	阿	哀	愛	挨	始	逢	葵	茜	穉	惡	握	渥
	88AE	旭	葦	芦	鯪	梓	庄	幹	扱	宛	姐	虻	飴	絢	綾	鮎	或
	88BE	粟	裕	安	庵	按	暗	案	闇	鞍	杏						
イ	88BE											以	伊	位	依	偉	困
	88CE	夷	委	威	尉	惟	意	慰	易	椅	為	畏	異	移	維	緯	胃
	88DE	萎	衣	謂	達	遣	医	井	亥	域	育	郁	磯	一	壺	溢	逸
	88EE	稻	茨	芋	鰯	允	印	咽	員	因	姻	引	飲	淫	胤	蔭	
	893F		院	陰	隱	韻	吋										
ウ	893F							右	宇	烏	羽	迂	雨	卯	鶯	窺	丑
	894F	碓	臼	渦	噓	唄	鬱	蔚	鰻	姥	廐	浦	瓜	閏	嚙	云	運
	895F	雲															
エ	895F		荏	餌	叡	營	嬰	影	映	曳	栄	永	泳	洩	瑛	盈	穎
	896F	穎	英	衛	詠	銳	液	疫	益	馱	悦	謁	越	閎	榎	厭	円
	8980	園	堰	奄	宴	延	怨	掩	援	沿	演	炎	焰	煙	燕	猿	縁
	8990	艶	苑	菌	遠	鉛	鴛	塩									
オ	8990								於	汚	甥	凹	央	奥	往	応	
	899E		押	旺	横	欧	殴	王	翁	襖	鶯	鷗	黄	岡	沖	荻	億
	89AE	屋	憶	臆	桶	牡	乙	俺	卸	恩	温	穩	音				
カ	89AE													下	化	仮	何
	89BE	伽	伽	佳	加	可	嘉	夏	嫁	家	寡	科	暇	果	架	歌	河
	89CE	火	珂	禍	禾	稼	箇	花	苛	茄	荷	華	菓	蝦	課	嘩	貨
	89DE	迦	過	霞	蚊	俄	峨	我	牙	画	臥	恢	蛾	賀	雅	餓	駕
	89EE	介	会	解	回	塊	壞	廻	快	怪	悔	蟹	懷	戒	拐	改	
	8A3F		魁	晦	械	海	灰	界	皆	絵	芥	該	開	階	貝	凱	効
	8A4F	外	咳	害	崖	慨	概	涯	碍	蓋	街	該	鎧	骸	涅	馨	蛙
	8A5F	垣	柿	蛎	鉤	劃	嚇	各	廓	拈	攪	格	核	骸	獲	確	穫
	8A6F	覚	角	赫	較	郭	閣	隔	革	学	岳	樂	額	骸	掛	笠	梛
	8A80	檀	梶	鰍	渴	割	喝	恰	括	活	渴	滑	葛	骸	轄	且	鯉
	8A90	叶	柁	樺	靴	株	兜	竈	蒲	釜	鎌	嚙	鴨	栢	茅	萱	
	8A9E		粥	刈	苺	瓦	乾	侃	冠	寒	刊	勘	勸	栢	喚	堪	姦
	8AAE	完	官	寬	干	幹	患	感	慣	憾	換	敢	柑	桓	棺	款	飲
	8ABE	汗	漢	澗	灌	環	甘	監	看	竿	管	簡	緩	缶	翰	肝	艦
	8ACE	莞	觀	諫	貫	還	鑑	間	閑	悶	顏	願		舘	丸	含	岸
	8ADE	巖	玩	癌	眼	岩	翫	贗	雁	頑	顏	願					

	ShiftJIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
キ	8ADE												企	伎	危	喜	器
	8AEE	基	奇	嬉	寄	岐	希	幾	忌	揮	机	旗	既	期	棋	棄	起
	8B3F		機	婦	毅	氣	汽	幾	祈	季	稀	紀	微	規	記	貴	疑
	8B4F	軌	輝	飢	騎	鬼	龜	偽	儀	妓	宜	戲	技	擬	欺	儀	杵
	8B5F	祇	義	蟻	誼	議	掬	菊	鞠	吉	吃	喫	桔	橘	詰	砧	救
	8B6F	忝	却	客	脚	虐	逆	丘	久	仇	休	及	吸	宮	弓	急	居
	8B80	朽	求	汲	泣	灸	球	究	窮	笈	級	糾	給	旧	牛	去	居
	8B90	巨	拒	拋	拳	渠	虛	許	距	鋸	漁	卿	魚	亨	享	京	強
	8B9E		供	俠	僑	兇	競	共	凶	協	匡	狹	叫	喬	境	峽	鄉
	8BAE	疆	怯	恐	恭	挾	教	橋	況	狂	狹	矯	胸	脅	興	蕎	僅
	8BBE	鏡	響	饗	驚	仰	凝	堯	曉	業	局	曲	極	玉	桐	秆	襟
	8BCE	勤	均	巾	錦	斤	欣		琴	禁	禽	筋	緊	芹	菌	衿	
	8BDE	謹	近	金	吟	銀											
ク	8BDE						九	俱	句	区	狗	玖	矩	苦	軀	驅	駙
	8BEE	駒	具	愚	虞	喰	空	偶	寓	遇	隅	串	櫛	釧	屑	屈	君
	8C3F		掘	窟	沓	靴	轡	窪	熊	隈	彖	栗	繰	桑	鋤	勲	
	8C4F	薰	訓	群	軍	郡											
ケ	8C4F						卦	袈	祁	係	傾	刑	兄	啓	圭	珪	型
	8C5F	契	形	徑	恵	慶	慧	憩	揭	携	敬	景	桂	啓	畦	稽	系
	8C6F	経	繼	繫	罍	荃	荊	蚩	計	詣	警	輕	頸	溪	芸	迎	鯨
	8C80	劇	戟	擊	激	隙	析	傑	欠	詣	潔	穴	結	鷄	訣	月	件
	8C90	儉	倦	健	兼	券	劍	喧	圈	決	嫌	建	憲	血	拳	捲	
	8C9E		檢	權	牽	犬	獻	喧	硯	堅	嫌	肩	見	懸	拳	軒	遣
	8CAE	鍵	險	權	駢	齧	元	研	嚴	絹	鼎	減	源	謙	賢	絃	舷
	8CBE	言	諺	限						幻	弦			玄	現	絃	
コ	8CBE				乎	個	古	呼	固	姑	孤	己	庫	弧	戸	故	枯
	8CCE	湖	狐	糊	袴	股	胡	菰	虎	誇	跨	鈷	雇	顧	鼓	五	互
	8CDE	伍	午	吳	吾	娛	後	御	悟	梧	檣	瑚	基	語	誤	護	醐
	8DEE	乞	鯉	交	佼	侯	候	倖	光	梧	功	効	基	厚	口	向	
	8D3F		后	喉	坑	垢	好	孔	孝	公	工	巧	勾	幸	広	庚	康
	8D4F	弘	恒	慌	抗	拘	控	攻	昂	晃	更	杭	巷	梗	構	江	洪
	8D5F	浩	港	溝	甲	皇	硬	稿	糠	晃	紘	絞	校	耕	考	肯	肱
	8D6F	腔	膏	航	荒	行	衡	講	貢	紅	紘	絞	綱	硃	鋼	閤	降
	8D80	項	香	高	鴻	剛	劫	号	合	壕	拷	濤	豪	轟	趨	克	刻

	ShiftJIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
コ	8D90 8D9E 8DAE	告 紺	国 此 良	穀 頃 魂	酷 今	鵠 困	黒 坤	獄 壘	漉 婚	腰 恨	飢 懇	忽 昏	惚 昆	骨 根	狛 梱	込 混	痕
サ	8DAE 8DBE 8DCE 8DDE 8DEE 8E3F 8E4F 8E5F	娑 歳 材 咋 三 酸	坐 濟 罪 搾 察 傘 餐	座 災 財 昨 拶 参 斬	些 挫 采 冴 朔 撮 山 暫	佐 債 犀 坂 柵 擦 慘 殘	又 催 碎 阪 窄 札 撒	唆 再 砦 堺 策 殺 散	嵯 最 祭 榊 索 薩 棧	左 哉 斎 肴 錯 雜 燦	差 塞 細 咲 桜 皐 珊	查 妻 菜 崎 鮭 鯖 産	沙 宰 裁 埼 笹 捌 算	磋 彩 載 碕 匙 鯖 纂	砂 才 際 鷺 冊 鮫 蚕	詐 採 劑 作 刷 皿 讃	鎖 裁 在 削 晒 賛
シ	8E5F 8E6F 8E80 8E90 8E9E 8EAE 8EBE 8ECE 8EDE 8EEE 8F3F 8F4F 8F5F 8F6F 8F80 8F90 8F9E 8FAE 8FBE 8FCE 8FDE 8FEE 903F	姉 死 諮 式 疾 斜 酌 腫 衆 柔 出 準 署 尚 樟 笑 鉦 情	姿 氏 資 次 識 質 煮 釈 趣 宗 襲 汁 術 潤 書 勝 庄 樵 粧 鍾 擾 拭	子 獅 賜 滋 鳴 実 杜 錫 酒 就 讐 洩 述 盾 薯 匠 床 沼 紹 鐘 条 植	屍 祉 雌 治 竺 蔀 紗 若 首 州 蹴 獸 俊 純 諸 升 廠 消 肖 障 杖 殖	市 私 飼 爾 軸 篠 者 寂 儒 修 輯 縱 峻 巡 諸 召 彰 涉 菖 鞘 淨 燭	仕 師 糸 鹵 璽 穴 偲 謝 弱 受 愁 週 重 春 遵 助 哨 承 湘 蔣 上 狀 織	仔 志 紙 事 痔 零 柴 車 惹 呪 拾 酋 銃 瞬 醇 叙 商 抄 燒 蕉 丈 量 職	伺 思 紫 似 磁 七 芝 遮 主 寿 洲 酬 叔 竣 順 女 唱 招 焦 衝 丞 穰 色	使 指 肢 侍 示 叱 屢 蛇 取 授 秀 集 夙 舜 処 序 嘗 掌 照 裳 乘 蒸 舐	刺 支 脂 児 而 執 蕊 邪 守 樹 秋 醜 宿 駿 初 徐 獎 捷 症 訟 冗 讓 食	司 孜 至 字 耳 失 縞 借 手 綬 終 什 淑 准 所 恕 妾 昇 省 証 剩 釀 蝕	史 斯 視 寺 自 嫉 舍 勺 朱 需 繡 住 祝 循 暑 鋤 娼 昌 硝 詔 城 錠 辱	嗣 施 詞 慈 蒔 室 写 尺 殊 囚 習 充 縮 旬 曙 除 宵 昭 礁 詳 場 囑 尻	四 旨 詩 持 辞 悉 射 杓 狩 収 臭 十 肅 楯 渚 傷 将 晶 祥 象 壤 埴 伸	士 枝 試 時 汐 湿 捨 灼 珠 周 舟 從 塾 殉 庶 償 小 松 称 賞 嬢 飾 信	始 止 誌 鹿 漆 赦 爵 種 蒐 戎 熟 淳 緒 少 梢 章 醬 常 侵

	ShiftJIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
シ	904F 905F 906F	唇 神 塵	娠 秦 壬	寢 紳 尋	審 臣 甚	心 芯 尽	慎 薪 腎	振 親 訊	新 診 迅	晋 身 陣	森 辛 靱	榛 進	浸 針	深 震	申 人	疹 仁	真 刃
ス	906F 9080 9090 909E	逗 瑞	吹 髓 澄	垂 崇 摺	帥 嵩 寸	推 数	水 枢	炊 趨	睡 雞	粹 据	翠 杉	筈 哀 相	諏 遂 菅	須 醉 頗	酢 錐 雀	囟 錘 裾	厨 随
セ	909E 90AE 90BE 90CE 90DE 90EE 913F 914F	整 誓 石 窃 扇 前	星 請 積 節 撰 織 善	晴 逝 籍 説 栓 羨 漸	棲 醒 績 雪 梅 腺 然	世 栖 青 脊 絶 泉 舛 全	瀬 正 静 責 舌 浅 船 禅	畝 清 齐 赤 蟬 洗 薦 繕	是 性 税 跡 仙 染 詮 膳	凄 生 脆 蹟 先 潜 賤 糰	制 盛 隻 碩 千 煎 踐	勢 精 席 切 占 煽 選	姓 聖 惜 拙 拙 宣 旋 遷	征 声 戚 接 專 穿 錢	性 製 斥 撰 尖 箭 銑	成 西 昔 折 川 線 閃	政 誠 析 設 戰 鮮
ソ	914F 915F 916F 9180 9190 919E 91AE	狙 双 操 草 属	疏 叢 早 莊 臆 賊	疎 倉 曹 葬 蔵 族	礎 喪 巢 蒼 贈 続	祖 壯 槍 藻 造 卒	租 奏 槽 装 促 袖	粗 爽 漕 走 側 其	素 宋 燥 送 則 揃	組 層 争 遭 即 存	噌 蘇 匠 瘦 鎗 息 孫	塑 訴 忽 相 霜 捉 尊	岨 阻 想 窓 騷 束 損	措 遡 搜 糟 像 測 村	曾 鼠 掃 総 増 足 遜	曾 僧 挿 綜 憎 速	楚 創 搔 聡 俗
タ	91AE 91BE 91CE 91DE 91EE 923F 924F 925F	太 対 退 宅 丹 胆	汰 耐 速 托 叩 单 蛋	詫 岱 隊 択 但 嘆 誕	唾 帶 黛 拓 達 坦 鍛	墮 待 鯛 沢 辰 担 団	妥 怠 代 濯 奪 探 壇	惰 態 台 琢 脱 旦 彈	打 戴 大 託 異 歎 断	柁 替 第 鐸 豎 淡 暖	舵 泰 醍 濁 辿 湛 檀	梢 滯 題 諾 棚 炭 段	陀 胎 鷹 茸 谷 短 男	駄 腿 滝 夙 狸 端 談	驛 苔 瀧 蛸 鱈 筆	他 体 袋 卓 只 樽 綻	多 堆 貸 啄 誰 耽
チ	925F 926F 9280 9290	弛 逐 註	恥 秩 酎	智 窒 鑄	池 茶 駐	痴 嫡 檣	稚 着 瀕	置 中 猪	致 仲 苧	蚰 宙 著	遲 忠 貯	馳 抽 丁	築 昼 兆	畜 竹 注 涸	值 竹 注 喋	知 筑 虫 寵	地 蓄 表

	ShiftJIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
チ	929E		帖	帳	庁	弔	張	彫	徴	懲	挑	暢	朝	潮	牒	町	眺
	92AE	聴	脹	腸	蝶	調	謀	超	跳	鈔	長	頂	鳥	勅	抄	直	朕
	92BE	沈	珍	賃	鎮	陳											
ツ	92BE						津	墜	椎	槌	追	鎚	痛	通	塚	柸	掴
	92CE	槻	佃	漬	柘	辻	蔦	綴	鐸	椿	潰	坪	壺	孀	紬	爪	吊
	92DE	釣	鶴														
テ	92DE			亭	低	停	偵	剃	貞	呈	堤	定	帝	底	庭	廷	弟
	92EE	悌	抵	挺	提	梯	汀	碇	禎	程	締	艇	訂	諦	蹄	遞	哲
	933F		邸	鄭	釘	鼎	泥	摘	擢	敵	滴	的	笛	適	鎬	溺	顛
	934F	徹	撤	轍	迭	鉄	典	填	天	展	店	添	纏	甜	貼	転	
	935F	点	伝	殿	澱	田	電										
ト	935F							兎	吐	堵	塗	妬	屠	徒	斗	杜	渡
	936F	登	菟	賭	途	都	鍍	砥	砺	努	度	土	奴	怒	倒	党	冬
	9380	凍	刀	唐	塔	塘	套	宕	島	嶋	悼	投	搭	東	桃	棖	棟
	9390	盜	淘	湯	濤	灯	燈	当	痘	禱	等	答	筒	糖	統	到	
	939E		董	蕩	藤	討	騰	豆	踏	逃	透	鎧	陶	頭	騰	闘	働
	93AE	動	同	堂	導	懂	撞	洞	瞳	童	胴	苟	道	銅	峠	錫	匿
	93BE	得	德	澆	特	督	禿	篤	毒	独	読	朽	橡	凸	突	椀	届
	93CE	鳶	苦	寅	酉	漣	噸	屯	惇	敦	沌	豚	遁	頓	吞	曇	鈍
ナ	93DE	奈	那	内	乍	凧	薙	謎	灘	捺	鍋	檜	馴	縄	啜	南	楠
	93EE	軟	難	汝													
ニ	93EE				二	尼	弍	迓	匂	賑	肉	虹	廿	日	乳	入	
	943F		如	尿	韭	任	妊	忍	認								
ヌ	943F									濡							
ネ	943F										禰	衤	寧	葱	猫	熱	年
	944F	念	捻	撚	燃	粘											
ノ	944F						乃	迺	之	埜	囊	惱	濃	納	能	腦	膿
	945F	農	硯	蚤													
ハ	945F				巴	把	播	霸	杷	波	派	琶	破	婆	罵	芭	馬
	946F	俳	廢	拝	排	敗	杯	盃	牌	背	肺	輩	配	倍	培	媒	梅
	9480	榊	煤	狽	買	売	賠	陪	這	蠅	秤	矧	萩	伯	剥	博	拍
	9490	柏	泊	白	箔	粕	舶	薄	迫	曝	漠	爆	縛	莫	駁	麦	
	949E		函	箱	碯	箸	肇	筈	櫨	幡	肌	畑	畠	八	鉢	澆	発
	94AE	醜	髮	伐	罰	拔	筏	閥	鳩	嘶	塙	蛤	隼	伴	判	半	反

	ShiftJIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
ハ	94BE 94CE	叛 采	帆 煩	搬 頒	斑 飯	板 挽	汜 晚	汎 番	版 盤	犯 磐	班 蕃	畔 蠻	繁	般	藩	販	範
ヒ	94CE 94DE 94EE 953F 954F 955F 956F	彼 誹 桧 廟 竇	悲 費 鼻 姫 描 頻	扉 避 柎 媛 病 敏	批 非 稗 紐 秒 瓶	披 飛 匹 百 苗	斐 樋 疋 謬 錨	比 簸 髭 俵 鉾	泌 備 彦 彪 蒜	疲 尾 膝 標 蛭	皮 微 菱 氷 鰭	碑 枇 肘 漂 品	匪 秘 毘 弼 瓢 彬	卑 緋 琵琶 必 票 斌	否 罷 眉 畢 表 浜	妃 肥 美 筆 評 瀕	庇 被 逼 豹 貧
フ	956F 9580 9590 959E 95AE	斧 武 憤	普 舞 福 扮	浮 葡 腹 焚	父 蕪 複 奮	不 符 部 覆 粉	付 腐 封 淵 糞	埠 膚 楓 弗 紛	夫 芙 風 弘 雰	婦 譜 葦 沸 文	富 負 落 仏 聞	富 賦 伏 物	布 赴 副 鮒	府 阜 復 分	怖 附 幅 吻	扶 侮 服 噴	敷 撫 墳
ヘ	95AE 95BE 95CE	弊 偏	柄 変	並 片	蔽 篇	閉 編	陛 辺	米 返	頁 遍	僻 便	壁 勉	丙 癖 婉	併 碧 弁	兵 別 鞭	塀 瞥	幣 蔑	平 篋
ホ	95CE 95DE 95EE 963F 964F 965F 966F	圃 俸 飽 棒 撲	捕 包 法 鳳 冒 朴	步 呆 泡 鵬 紡 牧	甫 報 烹 乏 肪 睦	補 奉 砲 亡 膨 穆	輔 宝 縫 傍 謀 釦	穂 峰 胞 剖 貌 勃	募 峯 芳 坊 貿 沒	墓 崩 萌 妨 鉾 殆	慕 庖 蓬 帽 防 堀	戊 抱 蜂 忘 吠 幌	暮 捧 褒 忙 頰 奔	母 放 訪 房 北 本	保 簿 方 豐 暴 僕 翻	舖 菩 朋 邦 望 卜 凡	鋪 倣 鋒 某 墨 盆
マ	9680 9690 969E	摩 鰯	磨 枳 漫	魔 亦 蔓	麻 俣	埋 又	妹 抹	昧 末	枚 沫	每 迄	哩 俚	禎 繭	幕 磨	膜 万	枕 慢	鮪 滿	枉
ミ	969E 96AE	耗	民	眠	味	未	魅	巳	箕	岬	密	蜜	湊	蓑	稔	脈	妙
ム	96AE				務	夢	無	牟	矛	霧	鷓	棕	婿	娘			
メ	96AE 96BE	明	盟	迷	銘	鳴	姪	牝	滅	免	棉	綿	緬	面	冥 麵	名	命
モ	96BE 96CE	茂	妄	孟	毛	猛	盲	網	耗	蒙	儲	木	默	目	奎	摸 勿	模 餅

	ShiftJIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
モ	96DE	尤	戾	粿	貰	問	悶	紋	門	匆							
ヤ	96DE 96EE										也	冶	夜	爺	耶	野	弥
		矢	厄	役	約	藥	訳	躍	靖	柳	薺	鍵					
ユ	96EE 973F 974F		諭	輸	唯	佑	優	勇	友	宥	幽	悠	愉	愈	油	癒	湧
		涌	猶	猷	由	祐	裕	誘	遊	邑	郵	雄	融	揖	有	柚	
ヨ	974F 975F 976F 9780	誉	輿	預	傭	幼	妖	容	庸	揚	揺	擁	曜	楊	予	余	与
		熔	用	窯	羊	耀	葉	蓉	要	謡	踊	遙	陽	養	樣	洋	溶
		沃	浴	翌	翼	淀									慾	抑	欲
ラ	9780 9790	乱	卵	嵐	欄	濫	羅	螺	裸	来	莱	賴	雷	洛	絡	落	酪
							藍	蘭	覽								
リ	9790 979E 97AE 97BE 97CE		痢	裏	裡	里	離	陸	律	利	吏	履	李	梨	理	璃	
		琉	留	硫	粒	隆	竜	龍	侶	率	立	葎	掠	略	劉	流	溜
		寮	料	梁	涼	獵	療	瞭	稜	慮	旅	虜	了	亮	僚	兩	凌
		緑	倫	厘	林	淋	熾	琳	臨	輪	隣	鱗	麟	量	陵	領	力
ル	97CE 97DE	類												瑠	壘	淚	累
レ	97DE 97EE 983F	齡	令	伶	例	冷	励	嶺	怜	玲	礼	苓	鈴	隸	零	靈	麗
			曆	歷	列	劣	烈	裂	廉	恋	憐	漣	煉	簾	練	聯	
			蓮	連	鍊												
ロ	983F 984F 985F	樓	榔	浪	漏	呂	魯	櫓	炉	賂	路	露	労	婁	廊	弄	朗
		論				牢	狼	箠	老	聾	蠟	郎	六	麓	祿	肋	録
ワ	985F 986F	倭	和	話		歪	賄	脇	惑	梓	驚	互	亘	鰐	詫	藁	蕨
		椀	湾	碗	腕												

	ShiftJIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
一	989E	弌	𠂇	丕													
丨	989E				个	𠂇											
丶	989E					丶	井										
丿	989E									丿	乂	乖	乘				
乙	989E													亂			
丿	989E 98AE	舒												丿	豫	事	
二	98AE	弌	于	亞	亟												
亅	98AE				亅	亢	京			毫	亅						
人	98AE 98BE 98CE 98DE 98EE 993F 994F	仞 佩 俚 偃 僉 儼	仞 佰 倚 假 僉 儼	仞 侑 倨 會 僂 儼	价 伴 偃 僂 僂 儼	伉 來 倪 僂 僂 儼	佚 侖 倜 倜 倜 儼	估 儘 倜 倜 倜 儼	佛 俚 倜 倜 倜 儼	佝 佝 俚 倜 倜 儼	佝 佝 倜 倜 倜 儼	仍 佝 倜 倜 倜 儼	从 佝 倜 倜 倜 儼	仄 侈 倜 倜 倜 儼	仆 倜 倜 倜 倜 儼	仞 倜 倜 倜 倜 儼	仗 佝 倜 倜 倜 儼
儿	994F									儿	兀	兒		兌	免	競	競
入	995F	兩	兪														
八	995F		兮	冀													
冂	995F				冂	回	册	冉		冂	冂	冂	冕				
冂	995F 996F	寫	冂											冂	冤	冠	冂
丿	996F		丿	决	冂	冲	冰	况		冽	涸	凉	凜				
几	996F 9980	凰												几	處	夙	凭
凵	9980	凵	函														
刀	9980 9990 999E	剗	剔	剪	剗	刊	刂	刂	刂	刪	刮	刂	剗	剗	剗	剗	剗
力	999E 99AE	勸	勸	勸	勸	勸	勸	勸	勸	勸	勸	勸	勸	勸	勸	勸	勸
勹	99AE	勹	勹	勹	勹	勹	勹	勹	勹								
匕	99AE									匕							
匚	99AE									匚	匚	匚	匚	匚	匚	匚	匚

	ShiftJIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
匚	99AE																匚 區
十	99BE	卅	卅	卅	卅	卅	卅										
卜	99BE							卞									
卩	99BE								卩	卩	卩	卩	卩				
厂	99BE 99CE													厂	厰	厠	厦
厶	99CE				厶	參	纂										
又	99CE							雙	叟	曼	變						
口	99CE											叮	叨	叭	叭	吁	咄
	99DE	呀	听	吭	吼	吮	呐	吩	吝	呖	咏	呵	咄	叭	呱	呶	咄
	99EE	咒	呻	咀	呶	咄	咐	咆	吝	呖	咸	咄	咬	哄	呱	咨	咄
	9A3F		咫	晒	咄		咄	哂	哥	哦	唏	唔	哽	哄	哈	哭	咄
	9A4F	嗽	唯	啣	咄	售	哂	哂	啖	咄	唏	唛	哽	哄	哈	哭	咄
	9A5F	啍	啞	啾	喘	啾	單	啼	喃	喻	唛	唛	鳴	嗅	喀	咯	咄
	9A6F	嗤	噤	嘖	嗽	噴	噤	嗽	嘛	噠	噠	噠	噠	噠	噠	噠	咄
	9A80	噫	噤	嘖	噬	噪		噤	噤	噠	噠	噠	噠	噠	噠	噠	咄
	9A90	嚼	囁	嚙	嚙	嚙	嚙	嚙	嚙	嚙	嚙	嚙	嚙	嚙	嚙	嚙	嚙
囗	9A90									口	囍	囍	囍	囍	囍	囍	
	9A9E		圈	國	圍	圓	團	圖	晉	圓				囍	囍	囍	
土	9A9E										圪	圪	圪	圪	圪	圪	圪
	9AAE	坩	垂	垚	坡	坩	垚	垚	垚	圪	圪	圪	圪	圪	圪	圪	圪
	9ABE	坩	壘	垚	垚	坩	垚	垚	垚	圪	圪	圪	圪	圪	圪	圪	圪
	9ACE	墅	壘	墟	壘	坩	垚	垚	垚	圪	圪	圪	圪	圪	圪	圪	圪
	9ADE	壘	壘	壘	壘	坩	垚	垚	垚	圪	圪	圪	圪	圪	圪	圪	圪
士	9ADE				壯	壺	壹	壻	壺	壽							
久	9ADE									久							
夕	9ADE										夕	夂					
大	9ADE													夂	夢	夥	
	9AEE	夭	夂	夸	夾	奇	奕	奂	奎	奚	奘	奢	奠	奧	獎	奩	夂
女	9B3F		奸	妁	妝	佞	佞	妘	姐	姆	姨	姜	妍	奧	獎	奩	娟
	9B4F	娑	娜	娉	娉	佞	佞	妘	姐	姆	姨	姜	妍	奧	獎	奩	娟
	9B5F	媽	媽	媽	媽	佞	佞	妘	姐	姆	姨	姜	妍	奧	獎	奩	娟
	9B6F	孃	孃	孃	孃	佞	佞	妘	姐	姆	姨	姜	妍	奧	獎	奩	娟

	ShiftJIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
子	9B6F				子	孕	孚	孛	孖	孩	孰	孳	孳	學	孛	孺	
宀	9B6F 9B80 9B90	它 寶	宦	宸	寃	寇	崔	寔	寐	寤	實	寢	寔	寥	寫	寰	寶
寸	9B90		尅	將	專	對											
小	9B90					尔	尠										
尢	9B90							尢		尫							
尸	9B90 9B9E		屮	屏	屮	屬				尸	尹	屮		屆	屎	屮	
山	9B9E 9BAE 9BBE 9BCE	岬	岷	岷	岷	岷	峙	岷	岷	屹	岷	岑	岔	岷	岷	岷	岷
巛	9BCE																巛
工	9BDE	巫															
巳	9BDE		巳	巳													
巾	9BDE 9BEE	幟	幟	幣	幣	帛	帛	帛	帛	帶	帷	幄	幃	幃	幃	幃	幃
干	9BEE					干	井										
幺	9BEE						幺	麼									
广	9BEE 9C3F		廖	廣	廝	廚	廛	廢	廛	广	庠	廁	廂	厦	廐	廐	
廴	9C3F															廴	廴
廾	9C4F	廾	弃	弃	弃	廾											
弋	9C4F					弋	弋										
弓	9C4F							弓		弩	弭	弭	弭	彈	彌	彎	弯
彳	9C5F	彳	彳	彳	彳												
彳	9C5F					彳	彭										
彳	9C5F 9C6F	徙	徙	徙	徙	徕	徕	徕	徕	徕	徕	徕	徕	徕	徕	徕	徕
心	9C6F 9C80 9C90	怙	恂	恂	恂	怙	怙	怙	怙	忤	忤	忤	忤	惠	恂	恂	恂

	ShiftJIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
心	9C9E		悄	悛	悖	悖	悖	悖	悖	惡	悖	惠	倦	悴	悴	悽	惆
	9CAE	悵	悵	悵	悵	悵	悵	悵	悵	悵	悵	悵	悵	悵	悵	悵	悵
	9CBE	悵	悵	悵	悵	悵	悵	悵	悵	悵	悵	悵	悵	悵	悵	悵	悵
	9CCE	悵	悵	悵	悵	悵	悵	悵	悵	悵	悵	悵	悵	悵	悵	悵	悵
	9CDE	悵	悵	悵	悵	悵	悵	悵	悵	悵	悵	悵	悵	悵	悵	悵	悵
	9CEE	悵	悵	悵	悵	悵	悵	悵	悵	悵	悵	悵	悵	悵	悵	悵	悵
戈	9CEE									戈	戈	戈		戈	戈	戈	
	9D3F																
戸	9D3F									扁							
手	9D3F									扎	扌	扌	扌	扌	扌	扌	扌
	9D4F	扌	扌	扌	扌	扌	扌	扌	扌	扌	扌	扌	扌	扌	扌	扌	扌
	9D5F	扌	扌	扌	扌	扌	扌	扌	扌	扌	扌	扌	扌	扌	扌	扌	扌
	9D6F	扌	扌	扌	扌	扌	扌	扌	扌	扌	扌	扌	扌	扌	扌	扌	扌
	9D80	扌	扌	扌	扌	扌	扌	扌	扌	扌	扌	扌	扌	扌	扌	扌	扌
	9D90	扌	扌	扌	扌	扌	扌	扌	扌	扌	扌	扌	扌	扌	扌	扌	扌
	9D9E	扌	扌	扌	扌	扌	扌	扌	扌	扌	扌	扌	扌	扌	扌	扌	扌
	9DAE	扌	扌	扌	扌	扌	扌	扌	扌	扌	扌	扌	扌	扌	扌	扌	扌
支	9DAE									敝	敝	敝	敝	敝	敝	敝	敝
	9DBE	收	攸	攸	攸	攸	攸	攸	攸	敝	敝	敝	敝	敝	敝	敝	敝
斗	9DBE																斛
	9DCE	斛															
斤	9DCE		斫	斫													
方	9DCE				旃	旃	旃	旃	旃	旃	旃	旃	旃				
无	9DCE												无	无			
日	9DCE									晄	晉	晄	晄	晄	晄	晄	晄
	9DDE	晄	晄	晄	晄	晄	晄	晄	晄	晄	晉	晄	晄	晄	晄	晄	晄
	9DEE	晄	晄	晄	晄	晄	晄	晄	晄	晄	晉	晄	晄	晄	晄	晄	晄
	9E3F	晄	晄	晄	晄	晄	晄	晄	晄	晄	晉	晄	晄	晄	晄	晄	晄
日	9E3F									日	曳	曷					
月	9E3F													肫	肫	肫	肫
	9E4F	肫	肫	肫	肫	肫	肫	肫	肫					肫	肫	肫	肫
木	9E4F			朮	朮	朮	朮	朮	朮	杆	杞	杠	杙	杙	杙	杙	杰
	9E5F	杙	杙	杙	杙	杙	杙	杙	杙	杆	杞	杠	杙	杙	杙	杙	杰
	9E6F	杙	杙	杙	杙	杙	杙	杙	杙	杆	杞	杠	杙	杙	杙	杙	杰

	ShiftJIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
木	9E80	梳	柁	杵	档	桷	梈	梟	梏	梭	梔	條	桡	梃	櫓	枳	桴
	9E90	梵	柁	桢	桢	桢	梈	梈	梏	桷	棘	桷	桡	櫓	控	棍	
	9E9E		柁	桢	桢	桢	桢	桢	桢	桷	桷	桷	桷	桷	桷	桷	桷
	9EAE	桷	桷	桷	桷	桷	桷	桷	桷	桷	桷	桷	桷	桷	桷	桷	桷
	9EBE	桷	桷	桷	桷	桷	桷	桷	桷	桷	桷	桷	桷	桷	桷	桷	桷
	9ECE	桷	桷	桷	桷	桷	桷	桷	桷	桷	桷	桷	桷	桷	桷	桷	桷
	9EDE	桷	桷	桷	桷	桷	桷	桷	桷	桷	桷	桷	桷	桷	桷	桷	桷
	9EEE	桷	桷	桷	桷	桷	桷	桷	桷	桷	桷	桷	桷	桷	桷	桷	桷
	9F3F																
	9F4F																
欠	9F4F								欸	欸	盜	欸	飲	飲	飲	歎	歐
	9F5F	歎	歎	歎	歎	歎											
止	9F5F					歸											
歹	9F5F					歹	歹	歹	歹	歹	殄	殄	殄	殄	殄	殄	殄
	9F6F	殄	殄	殄	殄	殄											
殳	9F6F					殳	殳	殳	殳	殳							
母	9F6F										母	毓					
毛	9F6F											毳		毳	毫	毳	毳
	9F80	毳	毳														
氏	9F80			氓													
气	9F80			气	气	氦	氦	氣									
水	9F80					汞	汞	汞	汞	汕	汜	汪	沂	洳	沚	沁	沛
	9F90	汾	汨	汨	沒	沐	泄	決	泓	沽	泗	汨	沂	洳	沚	沁	沛
	9F9E		汨	汨	沒	沐	泄	決	泓	沽	泗	汨	沂	洳	沚	沁	沛
	9FAE	洌	洌	洌	沒	沐	泄	決	泓	沽	泗	汨	沂	洳	沚	沁	沛
	9FBE	洌	洌	洌	沒	沐	泄	決	泓	沽	泗	汨	沂	洳	沚	沁	沛
	9FCE	洌	洌	洌	沒	沐	泄	決	泓	沽	泗	汨	沂	洳	沚	沁	沛
	9FDE	滿	渝	游	洌	溪	湍	湍	湍	湍	湍	湍	湍	湍	湍	湍	湍
	9FEE	溥	溥	溥	溥	溥	溥	溥	溥	溥	溥	溥	溥	溥	溥	溥	溥
	E03F		漾	漓	漓	澆	澆	澆	澆	澆	澆	澆	澆	澆	澆	澆	澆
	E04F	澎	溥	濂	濂	澳	濂	濂	濂	澆	澆	澆	澆	澆	澆	澆	澆
	E05F	濱	溥	濂	濂	澳	濂	濂	濂	澆	澆	澆	澆	澆	澆	澆	澆
	E06F	瀾	瀾	瀾	瀾	灣				瀾	瀾	瀾	瀾	瀾	瀾	瀾	瀾
火	E06F					炙	炒	炯	炯	烜	烜	炸	炳	炮	烟	焦	焦

	ShiftJIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	
火	E080 E090 E09E	烙 煩	焉 熨 燹	烽 熬 燿	焜 爛 爍	焙 熹 爐	煥 熾 爛	熙 燒 爨	熙 燉	煦 燂 燄	煢 燎 燠	煢 燠 燠	煢 燠 燠	煢 燠 燠	煢 燠 燠	煢 燠 燠	煢 燠 燠	
爪	E09E				爭				爬 爰 爲									
爻	E09E											爻	俎					
爿	E09E E0AE	牋 牘										𠂇 牀 牆						
牛	E0AE	牴 牯			犁	犁	犇	犒	犖 犖 犖									
犬	E0AE E0BE E0CE	狎 猥	狒 猓	猓 獒	猓 獒	狢 默	狢 獒	狢 獒	狢 獒	猓 猓	猓 猓	猓 猓	猓 猓	猓 猓	猓 猓	猓 猓	猓 猓	
王	E0CE E0DE E0EE	玻 瑁	珀 瑜	珥 瑩	珥 瑩	珞 瑣	璫 瑪	琅 瑤	瑯 瑾	琥 璋	珥 璞	琲 璧	珽 瓊	瑕 瓏	珈 瓊	玳 瑟	玼 璫	
瓜	E13F	瓠 瓣																
瓦	E13F E14F	甕 甕 甕			𡗗	瓮	甌	甌	甌 甌 瓷 甄			甕 甌 甌 甌						
甘	E14F	嘗																
生	E14F				甦													
用	E14F				甬													
田	E14F E15F	畧	畫	畧	畸	當	疆	𡗗	𡗗	畧	畧	畧	畧	畧	畧	畧	畧	
疒	E15F E16F E180 E190 E19E	痂 痂 痂 痂 痂	疔 疔 疔 疔 疔	疔 疔 疔 疔 疔	疔 疔 疔 疔 疔	疽 痂	疽 痂	疼 瘋	疱 瘍	痂 癰	痂 癰	痂 癰	痂 癰	痂 癰	痂 癰	痂 癰	痂 癰	痂 癰
𠂇	E19E	𠂇 癸			發													
白	E19E				皀 兒 𡗗				皀 皎 皀 皓			皙 皀						
皮	E19E E1AE	皀 輝 皀										皀 皀						
皿	E1AE	盂			盂	盂	盒	盂	盂 盂 盂 盂			盂						
目	E1AE E1BE	眇	眩	眇	眞	眇	眇	眇	眇	眇	眇	眇	眇	眇	眇	眇	眇	

	ShiftJIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
目	E1CE E1DE	睏 瞶	瞶 瞶	瞶 瞶	瞶 瞶	瞶 瞶	瞶 瞶	瞶 瞶	瞶 瞶	瞶 瞶	瞶 瞶	瞶 瞶	瞶 瞶	瞶 瞶	瞶 瞶	瞶 瞶	瞶 瞶
矛	E1DE																
矢	E1DE																
石	E1DE E1EE E23F	硃 硃 硃	硃 硃 硃	硃 硃 硃	硃 硃 硃	硃 硃 硃	硃 硃 硃	硃 硃 硃	硃 硃 硃	硃 硃 硃	硃 硃 硃	硃 硃 硃	硃 硃 硃	硃 硃 硃	硃 硃 硃	硃 硃 硃	硃 硃 硃
示	E23F E24F	祕 祕	祕 祕	祕 祕	祕 祕	祕 祕	祕 祕	祕 祕	祕 祕	祕 祕	祕 祕	祕 祕	祕 祕	祕 祕	祕 祕	祕 祕	祕 祕
禺	E24F																
禾	E24F E25F E26F	秬 秬 秬	秬 秬 秬	秬 秬 秬	秬 秬 秬	秬 秬 秬	秬 秬 秬	秬 秬 秬	秬 秬 秬	秬 秬 秬	秬 秬 秬	秬 秬 秬	秬 秬 秬	秬 秬 秬	秬 秬 秬	秬 秬 秬	秬 秬 秬
穴	E26F E280	窶 窶	窶 窶	窶 窶	窶 窶	窶 窶	窶 窶	窶 窶	窶 窶	窶 窶	窶 窶	窶 窶	窶 窶	窶 窶	窶 窶	窶 窶	窶 窶
立	E280 E290	竝 竝	竝 竝	竝 竝	竝 竝	竝 竝	竝 竝	竝 竝	竝 竝	竝 竝	竝 竝	竝 竝	竝 竝	竝 竝	竝 竝	竝 竝	竝 竝
竹	E290 E29E E2AE E2BE E2CE E2DE	筴 筴 筴 筴 筴 筴	筴 筴 筴 筴 筴 筴	筴 筴 筴 筴 筴 筴	筴 筴 筴 筴 筴 筴	筴 筴 筴 筴 筴 筴	筴 筴 筴 筴 筴 筴	筴 筴 筴 筴 筴 筴	筴 筴 筴 筴 筴 筴	筴 筴 筴 筴 筴 筴	筴 筴 筴 筴 筴 筴	筴 筴 筴 筴 筴 筴	筴 筴 筴 筴 筴 筴	筴 筴 筴 筴 筴 筴	筴 筴 筴 筴 筴 筴	筴 筴 筴 筴 筴 筴	筴 筴 筴 筴 筴 筴
米	E2DE E2EE	糲 糲	糲 糲	糲 糲	糲 糲	糲 糲	糲 糲	糲 糲	糲 糲	糲 糲	糲 糲	糲 糲	糲 糲	糲 糲	糲 糲	糲 糲	糲 糲
糸	E2EE E33F E34F E35F E36F E380 E390	紉 紉 紉 紉 紉 紉 紉	紉 紉 紉 紉 紉 紉 紉	紉 紉 紉 紉 紉 紉 紉	紉 紉 紉 紉 紉 紉 紉	紉 紉 紉 紉 紉 紉 紉	紉 紉 紉 紉 紉 紉 紉	紉 紉 紉 紉 紉 紉 紉	紉 紉 紉 紉 紉 紉 紉	紉 紉 紉 紉 紉 紉 紉	紉 紉 紉 紉 紉 紉 紉	紉 紉 紉 紉 紉 紉 紉	紉 紉 紉 紉 紉 紉 紉	紉 紉 紉 紉 紉 紉 紉	紉 紉 紉 紉 紉 紉 紉	紉 紉 紉 紉 紉 紉 紉	紉 紉 紉 紉 紉 紉 紉
缶	E390 E39E	罇 罇	罇 罇	罇 罇	罇 罇	罇 罇	罇 罇	罇 罇	罇 罇	罇 罇	罇 罇	罇 罇	罇 罇	罇 罇	罇 罇	罇 罇	罇 罇

	ShiftJIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
艸	E55F	蘋	蘋	蘭	蘆	龍	薜	蘿	蘿								
虍	E55F									虍	帀	虔	號	虧			
虫	E55F														虱	蚋	蚣
	E56F	蚩	蚪	蚋	蚌	蚶	蚯	蛄	蛆	蚰	蛉	蟪	蛸	蛔	蛞	蛭	蚣
	E580	蛟	蛛	蛭	蛭	蛭	蜈	蜀	蛭	蛭	蛭	蛭	蛭	蛭	蛭	蛭	蛭
	E590	蜃	蜻	蜥	蜥	蜥	蜥	蜥	蜥	蜥	蜥	蜥	蜥	蜥	蜥	蜥	蜥
	E59E	蜃	蜃	蜃	蜃	蜃	蜃	蜃	蜃	蜃	蜃	蜃	蜃	蜃	蜃	蜃	蜃
	E5AE	蜃	蜃	蜃	蜃	蜃	蜃	蜃	蜃	蜃	蜃	蜃	蜃	蜃	蜃	蜃	蜃
	E5BE	蜃	蜃	蜃	蜃	蜃	蜃	蜃	蜃	蜃	蜃	蜃	蜃	蜃	蜃	蜃	蜃
血	E5BE									衄	衄						
行	E5BE											衞	衞	衞	衞		
衣	E5BE															衫	袁
	E5CE	衾	衾	衾	衾	衾	衾	衾	衾	袒	衾	衾	衾	袍	衾	衾	衾
	E5DE	衾	衾	衾	衾	衾	衾	衾	衾	袒	衾	衾	衾	袍	衾	衾	衾
	E5EE	衾	衾	衾	衾	衾	衾	衾	衾	袒	衾	衾	衾	袍	衾	衾	衾
	E63F	衾	衾	衾	衾	衾	衾	衾	衾	袒	衾	衾	衾	袍	衾	衾	衾
而	E63F									而	覃	覈	羈				
見	E63F													覓	覓	覓	覓
	E64F	覓	覓	覓	覓	覓	覓	覓	覓								
角	E64F									觚	觚	觚	觚	觚	觚		
言	E64F															訃	訃
	E65F	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃
	E66F	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃
	E680	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃
	E690	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃
	E69E	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃
谷	E69E															谷	谷
	E6AE	谷															
豆	E6AE		豈	豈	豈	豈											
豕	E6AE						豕	豕	豕								
豸	E6AE									豸	豸	豸	豸	豸	豸	豸	豸
	E6BE	豸	豸	豸													
貝	E6BE				賤	賤	賤	賤	賤	貳	貳	貳	賈	賈	賈	賈	賈
	E6CE	賽	賺	賄	賈	賈	賈	賈	賈	貳	貳	貳	賈	賈	賈	賈	賈

	ShiftJIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
赤	E6CE E6DE	赭												赧			
走	E6DE	走 赳 赳 赳				趙											
足	E6DE	跟 跣 蹯	跣 蹯 蹯	跣 蹯 蹯	跣 蹯 蹯	跟 跣 蹯	跣 蹯 蹯	跣 蹯 蹯	跣 蹯 蹯	跣 蹯 蹯	跣 蹯 蹯	跣 蹯 蹯	跣 蹯 蹯	跣 蹯 蹯	跣 蹯 蹯	跣 蹯 蹯	跣 蹯 蹯
	E6EE																
	E73F																
	E74F																
身	E74F E75F	軀 軀								躬				軀	軀	軀	軀
車	E75F	輟 輟 輟	輟 輟 輟	輟 輟 輟	輟 輟 輟	輟 輟 輟	輟 輟 輟	輟 輟 輟	輟 輟 輟	輟 輟 輟	輟 輟 輟	輟 輟 輟	輟 輟 輟	輟 輟 輟	輟 輟 輟	輟 輟 輟	輟 輟 輟
	E76F																
	E780																
辛	E780	幸				辟	辣	辭	辯								
亾	E780	迨 迹 迨 選	迹 迨 迨 選	迨 迨 迨 選	迨 迨 迨 選	迨 迨 迨 選	迨 迨 迨 選	迨 迨 迨 選	迨 迨 迨 選	迨 迨 迨 選	迨 迨 迨 選	迨 迨 迨 選	迨 迨 迨 選	迨 迨 迨 選	迨 迨 迨 選	迨 迨 迨 選	迨 迨 迨 選
	E790																
	E79E																
	E7AE																
邑	E7AE E7BE	鄒	鄙	鄆	鄰	邨				邯	邱	邵	郢	郤	扈	郢	鄂
酉	E7BE	醫	醢	醢	醢	酩	酩	酩	酩	酩	酩	酩	酩	酩	酩	酩	酩
	E7CE																
采	E7CE									糗	釋						
里	E7CE									釐							
金	E7CE	釵 鉈 鉈 鎢 鎢 鎢 鎢	鉈 鉈 鉈 鎢 鎢 鎢 鎢	鉈 鉈 鉈 鎢 鎢 鎢 鎢	鉈 鉈 鉈 鎢 鎢 鎢 鎢	鈔 鈔 鈔 鎢 鎢 鎢 鎢	鈔 鈔 鈔 鎢 鎢 鎢 鎢	鈔 鈔 鈔 鎢 鎢 鎢 鎢	鈔 鈔 鈔 鎢 鎢 鎢 鎢	鈔 鈔 鈔 鎢 鎢 鎢 鎢	鈔 鈔 鈔 鎢 鎢 鎢 鎢	鈔 鈔 鈔 鎢 鎢 鎢 鎢	鈔 鈔 鈔 鎢 鎢 鎢 鎢	鈔 鈔 鈔 鎢 鎢 鎢 鎢	鈔 鈔 鈔 鎢 鎢 鎢 鎢	鈔 鈔 鈔 鎢 鎢 鎢 鎢	鈔 鈔 鈔 鎢 鎢 鎢 鎢
	E7DE																
	E7EE																
	E83F																
	E84F																
	E85F																
	E86F																
門	E86F	閨	閨	閨	閨	閨	閨	閨	閨	閨	閨	閨	閨	閨	閨	閨	閨
	E880																
	E890																
阜	E890					阡	阡	阡	阡	陂	陌	陌	陌	陷	陝	陞	

	ShiftJIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
阜	E89E	陝	陟	陟		陞	陞	陞	陞	隕	隕	險	隧	隱	隲	隲	隲
隶	E8AE	隶	隸														
隹	E8AE		隹	隹		雋	雋	雍	襍	雜	霍	雕					
雨	E8AE E8BE	霏	霏	霏	霖	霏	雷	霏	霰	霏	霽	霏	霏	霄	霏	霏	霏
青	E8CE	靜															
非	E8CE	靠															
面	E8CE		面	面		面											
革	E8CE E8DE	鞅	鞅	鞅	鞅	鞅	鞅	鞅	鞅	鞅	鞅	鞅	鞅	鞅	鞅	鞅	鞅
韋	E8DE											韋	韋				
韭	E8DE													韭	齋	齋	
音	E8DE E8EE	韶	韻														竟
頁	E8EE E93F		頤	頤	頤	頤	頤	頤	頤	頤	頤	頤	頤	頤	顯	顯	輦
風	E93F					風	風	風	風	飄	颶	颶					
食	E93F E94F E95F	餚	餘	餚	飭	餞	餞	餅	餚	饗	饗	饗	饗	飮	餃	餚	餚
首	E95F					馘	馘										
香	E95F					馥											
馬	E95F E96F E980	駁	駁	駁	駁	駁	駁	駁	駁	馮	馮	馮	馮	駝	駝	駝	駝
骨	E980 E990	體	體	體	體									骸	骸	骸	骸
高	E990					高											
髟	E990 E99E		髟	髟	髟	髟	髟	髟	髟	髟	髟	髟	髟	髟	髟	髟	髟
鬥	E99E									鬥	鬥	鬥	鬥	鬥	鬥		
鬯	E99E																鬯
鬼	E9AE	魄	魑	魏	魑	魑	魑	魑	魑								

	ShiftJIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
魚	E9AE									魴	魩	魷	鮑	鮎	鮫	鮠	鮪
	E9BE	鮓	鮚	鮛	鮞	鮟	鮠	鮡	鮢	鮣	鮤	鮥	鮦	鮧	鮨	鮪	鮫
	E9CE	鮫	鮥	鮦	鮧	鮨	鮪	鮫	鮬	鮭	鮭	鮭	鮭	鮭	鮭	鮭	鮭
	E9DE	鮭	鮭	鮭	鮭	鮭	鮭	鮭	鮭	鮭	鮭	鮭	鮭	鮭	鮭	鮭	鮭
鳥	E9DE											鳧	鳧	鴉	鴉	鴈	
	E9EE	鴈	鴈	鴈	鴈	鴈	鴈	鴈	鴈	鴈	鴈	鴈	鴈	鴈	鴈	鴈	鴈
	EA3F		鵠	鵠	鵠	鵠	鵠	鵠	鵠	鵠	鵠	鵠	鵠	鵠	鵠	鵠	鵠
	EA4F	鵠	鵠	鵠	鵠	鵠	鵠	鵠	鵠	鵠	鵠	鵠	鵠	鵠	鵠	鵠	鵠
	EA5F	鵠	鵠	鵠	鵠	鵠	鵠	鵠	鵠	鵠	鵠	鵠	鵠	鵠	鵠	鵠	鵠
鹵	EA5F				鹵	鹹	鹽										
鹿	EA5F						鹿	麋		麋	麋	麋	麋	麋	麋	麋	麋
麥	EA5F															麥	麴
	EA6F	麴	麴	麴													
麻	EA6F				摩												
黃	EA6F					覺											
黍	EA6F					黎	黏	藹									
黑	EA6F									黔	黜	黜	黜	黜	黜	黜	黜
	EA80	黜	黜	黜													
黼	EA80				黼	黼	黼										
黽	EA80					黽	黽			黽							
鼓	EA80									鼓	瑟						
鼠	EA80											鼠		鼯			
鼻	EA80														鼯		
齊	EA80															齊	
齒	EA80																齒
	EA90	齒	齒	齒	齒	齒	齒	齒	齒	齒	齒	齒	齒				
龍	EA90													龕			
龜	EA90														龜		
龕	EA90															龕	

2D Code			
Available for			
	WT4 series		
Datamatrix (ECC200)		ESC+2D50	
Hex code	ESC	2D50	Parameter
	<1B> ₁₆	<32> ₁₆ <44> ₁₆ <35> ₁₆ <30> ₁₆	,aa,bb,ccc,ddd
Default setting	None		
Persistence of the command	When printer is powered off		Set parameter will not be retained
	Validity in a job		Becomes invalid after execution
	Validity after a job		Becomes invalid after the job

[Function]

Prints DataMatrix code (ECC200).

[Format] (Setting portion)

<2D50>,aa,bb,ccc,ddd

•Parameter

a	[Cell width]	=	Valid range	: 01 to 16 dots
b	[Cell height]	=	Valid range	: 01 to 16 dots
c	[Number of cell per line]	=	Valid range	: 000 (fixed)
d	[Number of line per symbol]	=	Valid range	: 000 (fixed)

[Format] (Data portion)

<DN>m m m m,n~n

•Parameter

m	Quantity of data	=	Valid range :	1 to 3116
n	Print data	=	Data	

[Coding Example] Cell width : 3 dots Cell height : 3 dots

<A>

<V>100<H>200<2D50>,03,03,000,000

<DN>0010,0123456789

<Z>



[Notes]

1. In case any other parameters than above are specified, or parameters and quantity of data are not consistent with each other, the symbol will not be printed correctly.
2. Make sure to leave 2mm margin of each side of the symbol for good scanner-readability.
3. To specify the code address [7EH], write [7EH, 7EH]. Quantity of data is [0002].

	Data format	Quantity of data
Data format	Numeric	3116
	Alphanumeric	2335
	Binary (01H to FFH)	1556

DataMatrix (ECC200) Code Table

					S				I				S				O			
				b8	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
				b7	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1
				b6	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1
				b5	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1
b4	b3	b2	b1		0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0	0	0	0			SP	0	@	P	`	p								
0	0	0	1	1			!	1	A	Q	a	q								
0	0	1	0	2			"	2	B	R	b	r								
0	0	1	1	3			#	3	C	S	c	s								
0	1	0	0	4			\$	4	D	T	d	t								
0	1	0	1	5			%	5	E	U	e	u								
0	1	1	0	6			&	6	F	V	f	v								
0	1	1	1	7			'	7	G	W	g	w								
1	0	0	0	8			(	8	H	X	h	x								
1	0	0	1	9			)	9	I	Y	i	y								
1	0	1	0	A			*	:	J	Z	j	z								
1	0	1	1	B			+	;	K	[	k	{								
1	1	0	0	C			,	<	L	¥	l	|								
1	1	0	1	D			-	=	M	]	m	}								
1	1	1	0	E			.	>	N	^	n	~								
1	1	1	1	F			/	?	O		o	DEL								

Address can be selected in the range 01H thru FFH for Data Matrix (ECC200).

To specify 7EH, write [7EH, 7EH].

2D Code			
Available for			
	WT4 Series		
GS1 DataMatrix			ESC+2D51
Hexadecimal code	ESC <1B> ₁₆	2D51 <32> ₁₆ <44> ₁₆ <35> ₁₆ <31> ₁₆	Parameter ,aa,bb,ccc,ddd
Initial value	Nil		
Valid range and term of command	When the power switch is OFF		The set parameter is not maintained.
	Valid range within items		The set parameter becomes invalid.
	Valid range between items		The set parameter becomes invalid.

[Function]

Specifying GS1 DataMatrix Code.

[Format] (Setup part)

<2D51>,aa,bb,ccc,ddd

●Parameter

- | | | |
|--------------------------------|---------------|------------------|
| a [Horizontal cell size] | = Valid Range | : 01 to 99 dots |
| b [Vertical cell size] | = Valid Range | : 01 to 99 dots |
| c [Number of cell in one line] | = Valid Range | : 010 to 144 |
| | 000 | : (Auto-setting) |
| d [Number of cell lines] | = Valid Range | : 008 to 144 |
| | 000 | : (Auto-setting) |

[Format] (Data part)

<DN>mmmm,n~n

●Parameter

- | | | |
|--|----------------|-----------|
| m [Number of data] | = Valid Range: | 1 to 3116 |
| n [Print data] | = Data | |
| *When print 7EH, specify [7EH, 7EH] | | |
| *When print 1BH, specify [1BH, 1BH]. | | |
| *When print FNC1, specify ["1BH, 31H]. | | |
| *If Parameter other than above is specified or print data don't match, print is not secured. | | |

[Coding Example] Horizontal cell size: 3 dots, Vertical cell size: 3 dots

<A>
 <V>100<H>200<2D51>03.03.000.000
 <DN>0014, <1B>₁₆1100123456789
 <Z>

*<1B>₁₆ specify character code "1BH".

[Supplementary Explanation]

- If Parameter other than above is specified or print data don't match, print is not executed.
- When specifying print format, secure more than 2 mm blank space in for sides of the DataMatrix for read margin for the scanner.
- When print data is 7EH, specify [7EH, 7EH]. Number of data will be "0002".
- When [7EH] is specified solely, the command error occurs and the code will not be printed.
- When print data is 1BH, specify [1BH, 1BH]. Number of data will be "0002".
- When print data is FNC1, specify [1BH, 31H]. Number of data will be "0002".
- When [7EH] is specified solely, the command error occurs and the code will not be printed.
- When Auto setup (000) is applied for [Number of cell in one row] and [Number of cell lines], square DataMatrix is printed
- When the same value other than 000 is specified (manual setting) in the "number of cell per 1 line" and "cell lines", square DataMatrix will be printed.
- When different value other than 000 is specified (manual setting) in the "number of cell per 1 line" and "cell lines", rectangle DataMatrix will be printed.
- The number of data can be specified in the data part depends on the data format. Available data number is as follows.
 (Number of cell is auto setting or the maximum cell number is specified):

	Data format	Number of data
Data format	Numeric	3116
	Alphanumeric	2335
	Binary (00H to FFH)	1556

12. The symbol may not be read by a scanner when the cell size is smaller. In the above case, specify enough cell size for the scanner.

13. The symbol size available in the GS1 DataMatrix is limited to the 30 types in the below table. Also, the maximum number of data is

- limited depending on the symbol size. Refer to the "The maximum digit of the number of data" table.
14. Make sure to specify 1BH and 31H at the beginning of the data.

Symbol size and number of data of GS1 DataMatrix.

	Symbol size			Maximum data digits		
	Number of cell in one line(c)	Number of cell line(d)	Number of block	Numeric	Alphanumeric	Briary
S q u a r e	10	10	1	6	3	1
	12	12	1	10	6	3
	14	14	1	16	10	6
	16	16	1	24	16	10
	18	18	1	36	25	16
	20	20	1	44	31	20
	22	22	1	60	43	28
	24	24	1	72	52	34
	26	26	1	88	64	42
	32	32	4	124	91	60
	36	36	4	172	127	84
	40	40	4	228	169	112
	44	44	4	288	214	142
	48	48	4	348	259	172
	52	52	4	408	304	202
	64	64	16	560	418	278
	72	72	16	736	550	366
	80	80	16	912	682	454
	88	88	16	1152	862	574
	96	96	16	1392	1042	694
Re ct an gl e	104	104	16	1632	1222	814
	120	120	36	2100	1573	1048
	132	132	36	2608	1954	1302
	144	144	36	3116	2335	1556
	18	8	1	10	6	3
	32	8	2	20	13	8
	26	12	1	32	22	14
	36	12	2	44	31	20
	36	16	2	64	46	30
	48	16	2	98	72	47

*Mixture of Numeric, Alphanumeric and Control code varies according to number of characters.

GS1 DataMatrix Code table

						S I								S O							
					B8	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
					B7	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1
					B6	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1
					B5	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1
B4	B3	B2	B1		0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	
0	0	0	0	0			SP	0	@	P	`	p									
0	0	0	1	1			!	1	A	Q	a	q									
0	0	1	0	2			"	2	B	R	b	r									
0	0	1	1	3			#	3	C	S	c	s									
0	1	0	0	4			\$	4	D	T	d	t									
0	1	0	1	5			%	5	E	U	e	u									
0	1	1	0	6			&	6	F	V	f	v									
0	1	1	1	7			'	7	G	W	g	w									
1	0	0	0	8			(	8	H	X	h	x									
1	0	0	1	9			)	9	I	Y	i	y									
1	0	1	0	A			*	:	J	Z	j	z									
1	0	1	1	B			+	;	K	[	k	{									
1	1	0	0	C			,	<	L	¥	l	|									
1	1	0	1	D			-	=	M	]	m	}									
1	1	1	0	E			.	>	N	^	n	~									
1	1	1	1	F			/	?	O	—	o	DEL									

	Data n	Data n+1
FNC1	1BH	31H

GS1 DataMatrix can specify from 00H to FFH.

When print data is 7EH, specify [7EH, 7EH].

When print data is 1BH, specify [1BH, 1BH].

When specifying FNC1, specify [1BH, 31H].

2D Code			
Available for			
	WT4 Series		
Aztec Code		ESC+2D70	
Hexadecimal code	ESC	2D70	Parameter
	<1B>16	<32>16<44>16<37>16<30>16	,a,bb,cc,dd,e,f-f
Initial value	Nil		
Valid range and term of command	When the power switch is OFF		The set parameter is not maintained.
	Valid range within items		The set parameter becomes invalid.
	Valid range between items		The set parameter becomes invalid.

[Function]

Specifies Aztec Code.

[Format] (Setting Portion)

<2D70>,a,bb,cc,dd,e,f-f

•Parameter

- a [Symbol Type] = 0 : Full Range Symbol
1 : Compact Symbol
- b [ECC Percentage] = 0 : Default error correction level
01 to 99 : Error correction percentage
- c [Symbol Size] = 0 : Automatic minimization
1 to 4 : 1 to 4 – layer (Compact Symbol) *1
4 to 32 : 4 to 32 – layer (Full Range Symbol) *1
*1 : Following symbol size table reference.
- d [Number of symbols for structured append] = 0 : Encodes without append
1 : Automatic Setting
2~26 : Append structured blocks
- e [Message ID] = Y : Specify Message ID for structured bound symbol
N : No Message ID
- f [Message ID for structured bound symbol] = Printable ASCII string (0x21~0x7E) with maximum 24 bytes.

[Format] (Data part)

<DS>n~n // for ASCII data
<DN>m~m, n~n // for Binary data

•Parameter

- m [Number of Data] = 0001 to 1914
-Set this parameter when Print data are in Binary.
- n [Print data] = Data
- When selecting [1BH], make sure to specify [1BH,1BH].
- When selecting [FNC1], make sure to specify [1BH,30H]
- When selecting [ECI], make sure to specify [1BH,*]. (* refers from 31H to 36H.)

[Coding Example]

Symbol Type: Compact, ECC Percentage: Default, Symbol Size: 2 layer, Structured Append: Without append, Message ID: No, Message ID for structured bound symbol: None, Barcode Data: THIS IS TEST.

<A> •Generated Label
<V>0100<H>0100<L>0404
<2D70>,1,0,2,0,N,<DS>THIS IS TEST
<Q>1
<Z>



[Notes]

- When parameters other than the description are specified, symbol may not print.
- When the size of the Aztec code is small, the symbol might not be able to read according to the performance of the scanner. In that case, please magnify the size of the symbol to make it large enough by using <ESC>L command maintaining the same ratio of magnification for both length and width.

3. The smallest symbol size is 15x15 modules and largest is 151x151 modules. Available Aztec code formats and its maximum capacity are as follows:

Symbol size table

Parameter c	Format	Digit	Text	Binary data
1	15x15 Compact	13	12	6
2	19x19 Compact	40	33	19
3	23x23 Compact	70	57	33
4	27x27 Compact	110	89	53
4	31x31	128	104	62
5	37x37	178	144	87
6	41x41	232	187	114
7	45x45	294	236	145
8	49x49	362	291	179
9	53x53	433	348	214
10	57x57	516	414	256
11	61x61	601	482	298
12	67x67	691	554	343
13	71x71	793	636	394
14	75x75	896	718	446
15	79x79	1008	808	502
16	83x83	1123	900	559
17	87x87	1246	998	621
18	91x91	1378	1104	687
19	95x95	1511	1210	753
20	101x101	1653	1324	824
21	105x105	1801	1442	898
22	109x109	1956	1566	976
23	113x113	2116	1694	1056
24	117x117	2281	1826	1138
25	121x121	2452	1963	1224
26	125x125	2632	2107	1314
27	131x131	2818	2256	1407
28	135x135	3007	2407	1501
29	139x139	3205	2565	1600
30	143x143	3409	2728	1702
31	147x147	3616	2894	1806
32	151x151	3832	3067	1914

4. Aztec code is settable within the range (00H – FFH).

For Binary data, user needs to set the data number properly by using the <ESC>DN command. If Data number and Print data doesn't match, symbol will not print properly.

5. When print data is [1BH], specify [1BH,1BH]. Data number becomes [0002].

6. Use [1BH,*] in pairs within input data when presenting ECI. "*" must be a value between 31H and 36H. The number in the following FLG(1) - FLG(6)

are the number of digits of the data to be used for ECI.

- <ESC>1→FLG(1) The number of digits specified for ECI data is 1 digit.
- <ESC>2→FLG(2) The number of digits specified for ECI data is 2 digits.
- <ESC>3→FLG(3) The number of digits specified for ECI data is 3 digits.
- <ESC>4→FLG(4) The number of digits specified for ECI data is 4 digits.
- <ESC>5→FLG(5) The number of digits specified for ECI data is 5 digits.
- <ESC>6→FLG(6) The number of digits specified for ECI data is 6 digits.

e.g.)A sample data with <ESC>4 : <ESC>41111ABCDE

The scanned data when <ESC>4 will be "¥001111ABCDE" (¥ may differ depending on scanner settings).

1) <ESC>4 means FLG(4). The succeeding "1111"(4 digits) will be treated as ECI data.

2) Since it is short by 2 digits, 0 is padded in the beginning to make it "¥001111".

7. The message ID is enabled only when it is separated to print after automatic setting with "Number of symbols for structured append" with specifying "Append structured blocks".

Aztec Code Table

					S I								S O							
				b8	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
				b7	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1
				b6	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1
				b5	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1
B4	b3	b2	b1		0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0	0	0	0			SP	0	@	P	`	p								
0	0	0	1	1			!	1	A	Q	a	q								
0	0	1	0	2			”	2	B	R	b	r								
0	0	1	1	3			#	3	C	S	c	s								
0	1	0	0	4			\$	4	D	T	d	t								
0	1	0	1	5			%	5	E	U	e	u								
0	1	1	0	6			&	6	F	V	f	v								
0	1	1	1	7			'	7	G	W	g	w								
1	0	0	0	8			(	8	H	X	h	x								
1	0	0	1	9			)	9	I	Y	i	y								
1	0	1	0	A			*	:	J	Z	j	z								
1	0	1	1	B			+	;	K	[	k	{								
1	1	0	0	C			,	<	L	\	l	|								
1	1	0	1	D			-	=	M	]	m	}								
1	1	1	0	E			.	>	N	^	n	~								
1	1	1	1	F			/	?	O		o	DEL								

	Data n	Data n+1
FNC1	1BH	30H
ECI	1BH	31H ~ 36H

Aztec code is settable within the range (00H – FFH).
 To set 1BH, specify [1BH, 1BH]
 To set FNC1, specify [1BH, 30H].
 To set ECI, specify [1BH, *]. (* refer from 31H to 36H.)

2D Code			
Available for			
	WT4 series		
QR Code			ESC+BQ
Hex code	ESC	BQ	Parameter
	<1B> ₁₆	<42> ₁₆ <51> ₁₆	Manual setup abcc,(ddeeff,)g(hhhh)n Auto-setup abcc,(ddeeff,)n
Default setting	None		
Persistence of the command	When printer is powered off		Set parameter will not be retained
	Validity in a job		Becomes invalid after execution
	Validity after a job		Becomes invalid after the job

[Function]

Specifies QR code

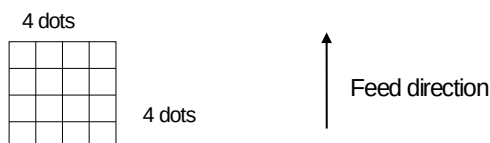
[Format]

Manual setup <BQ>abcc,(ddeeff,)g(hhhh)n

Auto-setup <BQ>abcc,(ddeeff,)n

•Parameter

a	Error correction level	=	1	:	7%	High density (L)
			2	:	15%	Standard (M)
			3	:	30%	Ultrahigh reliability (H)
			4	:	25%	High reliability (Q)
b	Concatenation mode	=	0	:	Normal mode	
			1	:	Concatenation mode	
c	Size of one side of cell	=	Valid range	:	01 to 32 dots	
				:	Example) cc=04	



d	Quantity of partitions by concatenation mode	=	Valid range	:	01 to 16
e	Sequential number partitioned by concatenation	=	Valid range	:	01 to 16
f	Concatenation mode parity data	=	Valid range	:	00 to FF
g	Input character mode	=	1	:	Numeric
			2	:	Alphanumeric
			3	:	Binary
			4	:	Kanji
h	Quantity of data	=	Valid range	:	0001 to 7366
n	Print data	=	Data		

[Coding Example] Error correction level: 30%, concatenation mode: standard, size of one side of cell: 10

<A>

<V>100<H>200<BQ>3010,112345

<Q>1

<Z>

[Notes]

1. Parity data is a result of XOR calculation of entire data of QR Code expressed in Hexadecimal character.
2. Quantity of data is not required to specify unless character mode is set to binary.

QR code data size table (Model1)

Version	Error correction	Numeric	Alpha-Num	Kanji	Binary
1 21x21	L	40	24	10	17
	M	33	20	8	14
	Q	25	15	6	11
	H	16	10	4	7
2 25x25	L	81	49	20	34
	M	66	40	17	28
	Q	52	31	13	22
	H	33	20	8	14
3 29x29	L	131	79	33	55
	M	100	60	25	42
	Q	81	49	20	34
	H	52	31	13	22
4 33x33	L	186	113	48	78
	M	138	84	35	58
	Q	114	69	29	48
	H	76	46	19	32
5 37x37	L	253	154	65	106
	M	191	116	49	80
	Q	157	95	40	66
	H	105	63	27	44
6 41x41	L	321	194	82	134
	M	249	151	64	104
	Q	201	122	51	84
	H	133	81	34	56
7 45x45	L	402	244	103	168
	M	311	188	80	130
	Q	253	154	65	106
	H	167	101	43	70
8 49x49	L	493	299	126	206
	M	378	229	97	158
	Q	301	183	77	126
	H	203	123	52	85
9 53x53	L	585	354	150	244
	M	441	267	113	184
	Q	369	223	94	154
	H	239	145	61	100
10 57x57	L	690	418	177	287
	M	526	319	135	219
	Q	433	262	111	180
	H	291	176	74	121

Version	Error correction	Numeric	Alpha-Num	Kanji	Binary
11 61x61	L	800	485	205	333
	M	608	368	156	253
	Q	493	299	126	205
	H	342	207	87	142
12 65x65	L	915	555	234	381
	M	694	421	178	289
	Q	579	351	148	241
	H	390	236	100	162
13 69x69	L	1030	624	264	429
	M	790	479	202	329
	Q	656	398	168	273
	H	454	275	116	189
14 73x73	L	1167	707	299	486
	M	877	531	225	365
	Q	738	447	189	307
	H	498	302	127	207

QR Code (Numeric mode) Table

					S				I				S				O			
				b8	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
				b7	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1
				b6	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1
				b5	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1
b4	b3	b2	b1		0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0	0	0	0				0												
0	0	0	1	1				1												
0	0	1	0	2				2												
0	0	1	1	3				3												
0	1	0	0	4				4												
0	1	0	1	5				5												
0	1	1	0	6				6												
0	1	1	1	7				7												
1	0	0	0	8				8												
1	0	0	1	9				9												
1	0	1	0	A																
1	0	1	1	B																
1	1	0	0	C																
1	1	0	1	D																
1	1	1	0	E																
1	1	1	1	F																

QR Code (alphanumeric) Table

					S I								S O							
				b8	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
				b7	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1
				b6	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1
				b5	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1
b4	b3	b2	b1		0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0	0	0	0			SP	0		P										
0	0	0	1	1				1	A	Q										
0	0	1	0	2				2	B	R										
0	0	1	1	3				3	C	S										
0	1	0	0	4			\$	4	D	T										
0	1	0	1	5			%	5	E	U										
0	1	1	0	6				6	F	V										
0	1	1	1	7				7	G	W										
1	0	0	0	8				8	H	X										
1	0	0	1	9				9	I	Y										
1	0	1	0	A			*	:	J	Z										
1	0	1	1	B			+		K											
1	1	0	0	C					L											
1	1	0	1	D			-		M											
1	1	1	0	E			.		N											
1	1	1	1	F			/		O											

QR Code (Binary mode) Table

					S I								S O							
				b8	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
				b7	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1
				b6	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1
				b5	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1
b4	b3	b2	b1		0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0	0	0	0			SP	0	@	P	`	p								
0	0	0	1	1			!	1	A	Q	a	q								
0	0	1	0	2			"	2	B	R	b	r								
0	0	1	1	3			#	3	C	S	c	s								
0	1	0	0	4			\$	4	D	T	d	t								
0	1	0	1	5			%	5	E	U	e	u								
0	1	1	0	6			&	6	F	V	f	v								
0	1	1	1	7			'	7	G	W	g	w								
1	0	0	0	8			(	8	H	X	h	x								
1	0	0	1	9			)	9	I	Y	i	y								
1	0	1	0	A			*	:	J	Z	j	z								
1	0	1	1	B			+	;	K	[	k	{								
1	1	0	0	C			,	<	L	\	l	!								
1	1	0	1	D			-	=	M	]	m	}								
1	1	1	0	E			.	>	N	^	n	-								
1	1	1	1	F			/	?	O	_	o	DEL								

The address can be selectable in the range 00H thru 7FH, A0H thru DFH for QR Code (Binary mode).

QR code (Kanji mode) Table

	Shift JIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
Symbol	813F		SP	、	。	,	.	・	:	;	?	!	＊	°	´	、	¨
	814F	^	—	、	、	、	、	、	、	全	々	々	〇	—	—	-	/
	815F	／	～	＝	＝	…	…	、	、	“	”	(	)	[	]	[	]
	816F	{	}	<	>	《	》	「	」	『	』	【	】	+	-	±	×
	8180	÷	=	≠	<	>	≦	≧	∞	∴	♂	♀	°	'	"	℃	¥
	8190	\$	¢	£	%	#	&	*	@	§	☆	★	○	●	◎	◇	
	819E	◆	□	■	△	▲	▽	▼	※	〒	→	←		↑	↓	=	
Alphanumeric	824F	0	1	2	3	4	5	6	7	8	9						
	825F		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
	826F	P	Q	R	S	T	U	V	W	X	Y	Z					
	8280		a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	8290	p	q	r	s	t	u	v	w	x	y	z					
Hiragana	829E		あ	い	う	え	お	か	き	く							
	82AE	ぐ	け	こ	さ	し	す	せ	そ	た							
	82BE	だ	ち	っ	づ	て	ど	な	ぬ	は							
	82CE	ば	ぱ	ひ	び	ふ	べ	に	ね	み							
	82DE	む	め	も	ゃ	ゆ	べ	り	ぼ	わ							
	82EE	ゐ	ゑ	を	ん												
Katakana	833F		ア	イ	ウ	エ	オ	カ	キ	ク							
	834F	グ	ケ	コ	サ	シ	ス	セ	ソ	タ							
	835F	ダ	チ	ツ	ツ	テ	ト	ナ	ネ	ハ							
	836F	バ	パ	ヒ	ピ	フ	ヘ	ペ	ポ	ミ							
	8380	ム	メ	モ	ヤ	ユ	ヨ	リ	ロ	ワ							
	8390	ヰ	ヱ	ヲ	ヴ	カ											
Greek	839E		A	B	Γ	Δ	E	Z	H	Θ	I	K	Λ	M	N	Ξ	O
	83AE	Π	P	Σ	T	Υ	Φ	X	Ψ	Ω							
	83BE		α	β	γ	δ	ε	ζ	η	θ	ι	κ	λ	μ	ν	ξ	ο
	83CE	π	ρ	σ	τ	υ	φ	χ	ψ	ω							
Russian	843F		A	Б	В	Г	Д	Е	Ё	Ж	З	И	Й	К	Л	М	Н
	844F	О	П	Р	С	Т	У	Ф	Х	Ц	Ч	Ш	Щ	Ъ	Ы	Ь	Э
	845F	Ю	Я														
	846F		а	б	в	г	д	е	ё	ж	з	и	й	к	л	м	н
	8480	о	п	р	с	т	у	ф	х	ц	ч	ш	щ	ъ	ы	ь	э
	8490	ю	я														

	Shift JIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
ア	889E		亜	啞	娃	阿	哀	愛	挨	始	逢	葵	茜	穉	惡	握	渥
	88AE	旭	葦	芦	鯪	梓	庄	幹	扱	宛	姐	虻	飴	絢	綾	鮎	或
	88BE	粟	裕	安	庵	按	暗	案	間	鞍	杏						
イ	88BE											以	伊	位	依	偉	困
	88CE	夷	委	威	尉	惟	意	慰	易	椅	為	畏	異	移	維	緯	胃
	88DE	菱	衣	謂	達	遺	医	井	亥	域	育	郁	磯	一	壹	溢	逸
	88EE	稻	茨	芋	鱒	允	印	咽	員	因	姻	引	飲	淫	胤	蔭	
	893F		院	陰	隱	韻	吋										
ウ	893F							右	宇	烏	羽	迂	雨	卯	鵜	窺	丑
	894F	碓	臼	渦	噓	唄	鬱	蔚	鰻	姥	厩	浦	瓜	閏	噂	云	運
	895F	雲															
エ	895F		荏	餌	叡	營	嬰	影	映	曳	榮	永	泳	洩	瑛	盈	穎
	896F	穎	英	衛	詠	銳	液	疫	益	馭	悅	謁	越	閱	榎	厭	円
	8980	園	堰	奄	宴	延	怨	掩	援	沿	演	炎	焰	煙	燕	猿	縁
	8990	艷	苑	園	遠	鉛	鴛	塩									
オ	8990								於	汚	甥	凹	央	奧	往	忝	
	899E		押	旺	横	欧	殴	王	翁	襖	鶯	鷗	黄	岡	沖	荻	億
	89AE	屋	憶	臆	桶	牡	乙	俺	卸	恩	温	穩	音				
カ	89AE													下	化	仮	何
	89BE	伽	伽	佳	加	可	嘉	夏	嫁	家	寡	科	暇	果	架	歌	河
	89CE	火	珂	禍	禾	稼	箇	花	苛	茄	臥	華	菓	蝦	課	嘩	貨
	89DE	迦	過	霞	蚊	俄	峨	我	牙	画	悔	恢	蛾	賀	雅	餓	駕
	89EE	介	会	解	回	塊	壞	廻	快	怪	芥	蟹	懷	戒	拐	改	
	8A3F		魁	晦	械	海	灰	界	皆	絵	街	該	開	階	貝	凱	効
	8A4F	外	咳	害	崖	慨	概	涯	碍	蓋	街	該	鎧	骸	涅	磬	蛙
	8A5F	垣	柿	蛭	鉤	劃	嚇	各	廓	拈	攪	格	核	骸	獲	確	穫
	8A6F	覚	角	赫	較	郭	閣	隔	革	学	岳	樂	額	骸	掛	笠	慳
	8A80	檀	梶	鯽	渴	割	喝	恰	括	活	渴	滑	葛	謁	轄	且	鯉
	8A90	叶	杷	樺	鞆	株	兜	竈	蒲	釜	鎌	嚙	鴨	栢	茅	萱	
	8A9E		粥	刈	苜	瓦	乾	侃	冠	寒	刊	勘	勸	卷	喚	堪	姦
	8AAE	完	官	寬	干	幹	患	感	慣	憾	換	敢	柑	桓	棺	款	歛
	8ABE	汗	漢	澗	灌	環	甘	監	看	竿	管	簡	柑	缶	翰	肝	艦
	8ACE	莞	觀	諫	貫	還	鑑	間	閑	閔	陷	韓	館	舘	丸	含	岸
	8ADE	巖	玩	癌	眼	岩	翫	贗	雁	頑	顏	願					

	ShiftJIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
キ	8ADE												企	伎	危	喜	器
	8AEE	基	奇	嬉	寄	岐	希	幾	忌	揮	机	旗	既	期	棋	棄	起疑杵救居強鄉僅襟
	8B3F		機	婦	毅	氣	汽	畿	祈	季	稀	紀	微	規	記	貴	
	8B4F	軌	輝	飢	騎	鬼	龜	偽	儀	妓	宜	戲	技	擬	欺	犧	
	8B5F	祇	義	蟻	誼	議	掬	菊	鞠	吉	吃	喫	桔	橘	詰	砧	
	8B6F	黍	却	客	脚	虐	逆	丘	久	仇	休	及	吸	宮	弓	急	
	8B80	朽	求	汲	泣	灸	球	究	窮	笈	級	糾	給	旧	牛	去	
	8B90	巨	拒	扱	拳	渠	虛	許	距	鋸	漁	禦	魚	亨	享	京	
	8B9E		供	俠	僑	兇	競	共	凶	協	匡	卿	叫	喬	境	峽	
	8BAE	彊	怯	恐	恭	挾	教	橋	況	狂	狹	矯	胸	脅	興	蕎	
	8BBE	鏡	響	饗	驚	仰	凝	堯	曉	業	局	曲	極	玉	桐	秆	
	8BCE	勤	均	巾	錦	斤	欣	欽	琴	禁	禽	筋	緊	芹	菌	衿	
	8BDE	謹	近	金	吟	銀											
ク	8BDE						九	俱	句	区	狗	玖	矩	苦	軀	驅	駢
	8BEE	駒	具	愚	虞	喰	空	偶	寓	遇	隅	串	櫛	釧	屑	屈	君
	8C3F		掘	窟	沓	靴	轡	窪	熊	隈	彙	栗	縹	桑	歛	勲	
	8C4F	薰	訓	群	軍	郡											
ケ	8C4F						卦	袈	祁	係	傾	刑	兄	啓	圭	珪	型
	8C5F	契	形	徑	惠	慶	慧	憩	揭	携	敬	景	桂	溪	畦	稽	系鯨件遣舷
	8C6F	經	繼	繫	罍	荃	荊	蚩	計	詣	警	輕	頸	鷄	芸	迎	
	8C80	劇	戟	擊	激	隙	析	傑	欠	詣	潔	穴	結	血	訣	月	
	8C90	儉	倦	健	兼	券	劍	喧	圈	決	嫌	建	憲	懸	拳	捲	
	8C9E		檢	榷	牽	犬	獻	研	硯	堅	凜	肩	見	謙	賢	軒	
	8CAE	鍵	陰	顛	駢	齟	元	原	嚴	絹	弦	減	源	玄	現	絃	
	8CBE	言	諺	限						幻							
コ	8CBE				乎	個	古	呼	固	姑	孤	己	庫	弧	戸	故	枯
	8CCE	湖	狐	糊	袴	股	胡	菰	虎	誇	跨	鈷	雇	顧	鼓	五	互醐康洪肱降刻
	8CDE	伍	午	吳	吾	娛	後	御	悟	梧	檣	瑚	碁	語	誤	護	
	8DEE	乞	鯉	交	佼	侯	候	倖	光	公	功	効	碁	厚	口	向	
	8D3F		后	喉	坑	垢	好	孔	孝	宏	工	巧	勾	幸	広	庚	
	8D4F	弘	恒	慌	抗	拘	控	攻	昂	晃	更	杭	巷	梗	構	江	
	8D5F	浩	港	溝	甲	皇	硬	稿	糠	晃	紘	絞	校	耕	考	肯	
	8D6F	腔	膏	航	荒	行	衡	講	貢	紅	紘	絞	綱	硃	鋼	閤	
	8D80	項	香	高	鴻	剛	劫	号	合	壕	拷	濤	豪	轟	趨	克	

	ShiftJIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
コ	8D90 8D9E 8DAE	告 紺	国 此 良	穀 頃 魂	酷 今	鵠 困	黒 坤	獄 壘	漉 婚	腰 恨	飢 懇	忽 昏	惚 昆	骨 根	狛 梱	込 混	痕
サ	8DAE 8DBE 8DCE 8DDE 8DEE 8E3F 8E4F 8E5F	娑 歳 材 咋 三 酸	坐 濟 罪 搾 察 傘 餐	座 災 財 昨 拶 参 斬	些 挫 采 冚 朔 撮 山 暫	佐 債 犀 坂 柵 擦 慘 殘	叉 催 碎 阪 窄 札 撒	唆 再 砦 堺 策 殺 散	嵯 最 祭 神 索 薩 棧	左 哉 斎 肴 錯 雜 燦	差 塞 細 咲 桜 阜 珊	查 妻 菜 崎 鮭 鯖 産	沙 宰 裁 埼 笹 捌 算	磋 彩 載 碕 匙 鯖 纂	砂 才 際 鷺 冊 絞 蚕	詐 採 劑 作 刷 皿 讚	鎖 裁 在 削 晒 贊
シ	8E5F 8E6F 8E80 8E90 8E9E 8EAE 8EBE 8ECE 8EDE 8EEE 8F3F 8F4F 8F5F 8F6F 8F80 8F90 8F9E 8FAE 8FBE 8FCE 8FDE 8FEE 903F	姉 死 諮 式 疾 斜 酌 腫 衆 柔 出 準 署 尚 樟 笑 鉦 情	姿 氏 資 次 識 質 煮 釈 趣 宗 襲 汁 術 潤 書 勝 庄 樵 粧 鍾 擾 拭	子 獅 賜 滋 鳴 実 社 錫 酒 就 讐 洪 述 盾 薯 匠 床 沼 紹 鐘 条 植	屍 祉 雌 治 竺 蔀 紗 若 首 州 蹴 獸 俊 純 諸 升 廠 消 肖 障 杖 殖	市 私 飼 爾 軸 篠 者 寂 儒 修 輯 縦 峻 巡 諸 召 彰 涉 菖 鞘 淨 燭	仕 師 糸 齒 事 痔 零 柴 車 惹 呪 拾 曾 銃 瞬 醇 叙 商 抄 燒 蕉 丈 量 織	仔 志 紙 事 痔 零 柴 車 惹 呪 拾 曾 銃 瞬 醇 叙 商 抄 燒 蕉 丈 量 職	伺 思 紫 似 磁 七 芝 遮 主 寿 洲 酬 叔 竣 順 女 唱 招 焦 衝 丞 穰 色	使 指 肢 侍 示 叱 屢 蛇 取 授 秀 集 夙 舜 処 序 嘗 掌 照 裳 乘 蒸 触	刺 支 脂 児 而 執 蕊 邪 守 樹 秋 醜 宿 駿 初 徐 奨 捷 症 訟 冗 讓 食	司 孜 至 字 耳 失 縞 借 手 綬 終 什 淑 准 所 恕 妾 昇 省 証 剩 釀 蝕	史 斯 視 寺 自 嫉 舍 勺 朱 需 繡 住 祝 循 暑 鋤 娼 昌 硝 詔 城 錠 辱	嗣 施 詞 慈 蒔 室 写 尺 殊 囚 習 充 縮 旬 曙 除 宵 昭 礁 詳 場 囑 尻	四 旨 詩 持 辞 悉 射 杓 狩 收 臭 十 肅 楯 渚 傷 将 晶 祥 象 壤 埴 伸	士 枝 試 時 汐 湿 捨 灼 珠 周 舟 從 塾 殉 庶 償 小 松 称 賞 嬢 飾 信	始 止 誌 鹿 漆 赦 爵 種 蒐 戎 熟 淳 緒 少 梢 章 醬 常 侵

	ShiftJIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
シ	904F	唇	娠	寢	審	心	慎	振	新	晋	森	榛	浸	深	申	疹	真
	905F	神	秦	紳	臣	芯	薪	親	診	身	辛	進	針	震	人	仁	刃
	906F	塵	壬	尋	甚	尽	腎	訊	迅	陣	韌						
ス	906F											筭	諏	須	酢	囟	厨
	9080	逗	吹	垂	帥	推	水	炊	睡	粹	翠	袁	遂	須	錘	厨	随
	9090	瑞	髓	崇	嵩	数	枢	趨	雛	据	杉	相	菅	醉	錘	厨	随
	909E		澄	摺	寸									頗	雀	据	
セ	909E					世	瀬	畝	是	凄	制	勢	姓	征	性	成	政
	90AE	整	星	晴	棲	栖	正	清	牲	生	盛	精	聖	声	製	西	誠
	90BE	誓	請	逝	醒	青	静	齐	税	脆	隻	席	惜	戚	斥	昔	析
	90CE	石	積	籍	績	脊	責	赤	跡	蹟	碩	切	拙	接	撰	折	設
	90DE	窃	節	說	雪	絶	舌	蟬	仙	蹟	千	占	拙	專	尖	川	戰
	90EE	扇	撰	栓	梅	泉	浅	洗	染	先	煎	煽	宣	穿	箭	線	鮮
	913F	織	羨	腺		舛	船	薦	詮	潜	踐	選	旋	穿	銑	閃	
	914F	前	善	漸	然	全	禪	繕	膳	糲				錢			
ソ	914F										噌	塑	岨	措	曾	曾	楚
	915F	狙	疏	疎	礎	祖	租	粗	素	組	蘇	訴	阻	邇	鼠	僧	創
	916F	双	叢	倉	喪	壯	奏	爽	宋	層	匝	惣	想	搜	掃	挿	搔
	9180	操	早	曹	巢	槍	槽	漕	燥	争	瘦	相	窓	糴	総	綜	聰
	9190	草	莊	葬	蒼	藻	装	走	送	遭	鎗	霜	騷	像	増	憎	俗
	919E		臧	藏	贈	造	促	側	則	即	息	捉	束	測	足	速	
	91AE	属	賊	族	続	卒	袖	其	揃	存	孫	尊	損	村	遜		
タ	91AE															他	多
	91BE	太	汰	詫	唾	墮	妥	惰	打	柁	舵	椅	陀	馱	驛	体	堆
	91CE	対	耐	岱	帶	待	怠	態	戴	替	泰	滯	胎	腿	苔	袋	貸
	91DE	退	逮	隊	黛	鯛	代	台	大	第	醒	題	鷹	淹	瀧	卓	啄
	91EE	宅	托	挾	拓	沢	濯	琢	託	鐸	濁	諾	茸	胤	蛸	只	誰
	923F		叩	但	達	辰	奪	脱	異	豎	辿	棚	苐	狸	鱒	樽	耽
	924F	丹	单	嘆	坦	担	探	旦	歎	淡	湛	炭	谷	端	鱒	綻	
	925F	胆	蛋	誕	鍛	団	壇	彈	断	暖	檀	段	短	談	筆		
チ	925F																
	926F	弛	恥	智	池	痴	稚	置	致	蚰	遲	馳	築	畜	竹	知	地
	9280	逐	秩	窒	茶	嫡	着	中	仲	宙	忠	抽	昼	柱	注	筑	蓄
	9290	註	酎	鑄	駐	禱	豬	猪	苧	著	貯	丁	兆	涸	喋	寵	表

	ShiftJIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
チ	929E		帖	帳	庁	弔	張	彫	徴	懲	挑	暢	朝	潮	牒	町	眺
	92AE	聴	脹	腸	蝶	調	謀	超	跳	銚	長	頂	鳥	勅	抄	直	朕
	92BE	沈	珍	賃	鎮	陳											
ツ	92BE						津	墜	椎	槌	追	鎚	痛	通	塚	柸	掴
	92CE	槻	佃	漬	柘	辻	薦	綴	鍔	椿	潰	坪	壺	孀	紬	爪	吊
	92DE	釣	鶴														
テ	92DE			亭	低	停	偵	剃	貞	呈	堤	定	帝	底	庭	廷	弟
	92EE	悌	抵	挺	提	梯	汀	碇	禎	程	締	艇	訂	諦	蹄	通	
	933F		邸	鄭	釘	鼎	泥	摘	擢	敵	滴	的	笛	適	鎬	溺	哲
	934F	徹	撤	輟	迭	鉄	典	填	天	展	店	添	纏	甜	貼	転	顛
	935F	点	伝	殿	澱	田	電										
ト	935F							兎	吐	堵	塗	妬	屠	徒	斗	杜	渡
	936F	登	菟	賭	途	都	鍍	砥	砺	努	度	土	奴	怒	倒	党	冬
	9380	凍	刀	唐	塔	塘	套	宕	島	嶋	悼	投	搭	東	桃	禱	棟
	9390	盜	淘	湯	濤	灯	燈	当	痘	禱	等	答	筒	糖	統	到	
	939E		董	蕩	藤	討	騰	豆	踏	逃	透	鎧	陶	頭	騰	闘	働
	93AE	動	同	堂	導	懂	撞	洞	瞳	童	胴	苟	道	銅	峠	鴿	匿
	93BE	得	德	澆	特	督	禿	篤	毒	独	読	析	橡	凸	突	毬	届
	93CE	鳶	苦	寅	酉	瀨	嶮	屯	惇	敦	沌	豚	遁	頓	吞	曇	鈍
ナ	93DE	奈	那	内	乍	凧	薙	謎	灘	捺	鍋	櫓	馴	縄	啜	南	楠
	93EE	軟	難	汝													
ニ	93EE				二	尼	弑	迹	匂	賑	肉	虹	廿	日	乳	入	
	943F		如	尿	韭	任	妊	忍	認								
ヌ	943F									濡							
ネ	943F										禰	祢	寧	葱	猫	熱	年
	944F	念	捻	撚	燃	粘											
ノ	944F						乃	迺	之	埜	囊	惱	濃	納	能	腦	膿
	945F	農	覗	蚤													
ハ	945F				巴	把	播	霸	杷	波	派	琶	破	婆	罵	芭	馬
	946F	俳	廢	拝	排	敗	杯	盃	牌	背	肺	輩	配	倍	培	媒	梅
	9480	楳	煤	狽	買	売	賠	陪	這	蠅	秤	矧	荻	伯	剥	博	拍
	9490	柏	泊	白	箔	粕	舶	薄	迫	曝	漠	爆	縛	莫	駁	麦	
	949E		函	箱	裕	箸	肇	筭	櫨	幡	肌	畑	梟	八	鉢	澆	発
	94AE	醜	髮	伐	罰	拔	筏	閥	鳩	嘶	塙	蛤	隼	伴	判	半	反

	ShiftJIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
ハ	94BE 94CE	叛 采	帆 煩	搬 煩	斑 飯	板 挽	汜 晚	汎 番	版 盤	犯 磐	班 蕃	畔 蠻	繁	般	藩	販	範
ヒ	94CE 94DE 94EE 953F 954F 955F 956F	彼 誹 桧 廟 賓	悲 費 鼻 姫 描 頻	扉 避 柵 媛 病 敏	批 非 稗 紐 秒 瓶	披 飛 匹 百 苗	斐 樋 疋 謬 錨	比 簸 髭 俵 鉾	泌 備 彦 彪 蒜	疲 尾 膝 標 蛭	皮 微 菱 氷 鰭	碑 枇 肘 漂 品	匪 秘 毘 弼 瓢 彬	卑 緋 琵琶 必 票 斌	否 罷 眉 畢 表 浜	妃 肥 美 筆 評 瀕	庇 被 逼 豹 貧
フ	956F 9580 9590 959E 95AE	斧 武 憤	普 舞 福 扮	浮 葡 腹 焚	父 蕪 複 奮	不 符 部 覆 粉	付 腐 封 淵 糞	埠 膚 楓 弗 紛	夫 芙 風 弘 雰	婦 譜 葺 沸 文	富 負 蒨 仏 聞	富 賦 伏 物	布 赴 副 鮎	府 阜 復 分	怖 附 幅 吻	扶 侮 服 噴	敷 撫 墳
ヘ	95AE 95BE 95CE	弊 偏	柄 變	並 片	蔽 篇	閉 編	陛 辺	米 返	頁 遍	僻 便	壁 勉	丙 癖 婉	併 碧 弁	兵 別 鞭	塀 瞥	幣 蔑	平 篋
ホ	95CE 95DE 95EE 963F 964F 965F 966F	圃 俸 飽 棒 撲	捕 包 法 鳳 冒 朴	步 呆 泡 鵬 紡 牧	甫 報 烹 乏 肪 睦	補 奉 砲 亡 膨 穆	輔 宝 縫 傍 謀 釦	穗 峰 胞 剖 貌 勃	募 峯 芳 坊 貿 沒	墓 崩 萌 妨 鉾 殆	慕 庖 蓬 帽 防 堀	戊 抱 蜂 忘 吠 幌	暮 捧 褒 忙 賴 奔	母 放 訪 房 北 本	保 簿 方 豐 暴 僕 翻	舖 菩 朋 邦 望 卜 凡	鋪 倣 鋒 某 墨 盆
マ	9680 9690 969E	摩 鱒	磨 榘 漫	魔 亦 蔓	麻 俣	埋 又	妹 抹	昧 末	枚 沫	每 迄	哩 俚	楨 繭	幕 磨	膜 万	枕 慢	鮪 滿	枉
ミ	969E 96AE	耗 民	眠	味	未	魅	巳	箕	岬	密	蜜	湊	蓑	稔	脈	妙	
ム	96AE			務	夢	無	牟	矛	霧	鷓	棕	婿	娘				
メ	96AE 96BE	明	盟	迷	銘	鳴	姪	牝	滅	免	棉	綿	緬	面	冥 麵	名	命
モ	96BE 96CE	茂	妄	孟	毛	猛	盲	網	耗	蒙	儲	木	默	目	奎	摸 勿	模 餅

	ShiftJIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
モ	96DE	尤	戾	粿	貰	問	悶	紋	門	匆							
ヤ	96DE 96EE										也	冶	夜	爺	耶	野	弥
		矢	厄	役	約	藥	訳	躍	靖	柳	藪	鍵					
ユ	96EE 973F 974F		諭	輸	唯	佑	優	勇	友			愉		愈	油	癒	湧
		涌	猶	猷	由	祐	裕	誘	遊	宥	幽	悠	憂	揖	有	柚	
ヨ	974F 975F 976F 9780	誉	輿	預	傭	幼	妖	容	庸	揚	揺	擁	曜		予	余	与
		熔	用	窯	羊	耀	葉	蓉	要	謡	踊	遥	陽	楊	樣	洋	溶
		沃	浴	翌	翼	淀								養	慾	抑	欲
ラ	9780 9790	乱	卵	嵐	欄	濫	羅	螺	裸	来	莱	頼	雷	洛	絡	落	酪
リ	9790 979E 97AE 97BE 97CE		痢	裏	裡	里	離	陸	律	利	吏	履	李	梨	理	璃	
		琉	留	硫	粒	隆	竜	龍	侶	率	立	蓆	掠	略	劉	流	溜
		寮	料	梁	涼	淋	療	瞭	稜	慮	旅	虜	了	亮	僚	兩	凌
		緑	倫	厘	林	淋	隣	琳	臨	輪	隣	隣	隣	量	陵	領	力
ル	97CE 97DE	類												瑠	罌	涙	累
レ	97DE 97EE 983F	齡	令	伶	例	冷	勵	嶺	怜	玲	礼	苓	鈴	隸	零	靈	麗
			曆	歷	列	劣	烈	裂	廉	恋	憐	漣	煉	簾	練	聯	
			蓮	連	鍊												
ロ	983F 984F 985F	樓	榔	浪	漏	呂	魯	櫓	炉	賂	路	露	勞	婁	廊	弄	朗
		論				牢	狼	籠	老	輦	蠟	郎	六	麓	祿	肋	録
ワ	985F 986F	椀	倭	和	話	歪	賄	脇	惑	杵	鷺	互	亘	鰐	詫	藁	蕨

	ShiftJIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
一	989E	弌	𠂇	丕													
丨	989E				个	𠂇											
丶	989E					丶	井										
丿	989E									丿	乂	乖	乘				
乙	989E													亂			
丿	989E 98AE	舒												丿	豫	事	
二	98AE	弌	于	亞	亟												
亅	98AE				亅	亢	京			毫	亅						
人	98AE 98BE 98CE 98DE 98EE 993F 994F	仞 佩 俸 偃 監	仞 佰 倚 假 僉 儕	仞 侑 倨 會 僂 儔	价 佯 倔 偕 傳 儔	伉 來 倪 修 儂 儻	佚 侖 倥 倥 倥 儻	估 儘 倅 倅 倅 儻	佛 倪 倅 倅 倅 儻	佝 俟 俶 倜 僭 儻		从 仃 俘 倩 傀 僮	仍 估 倅 倅 倅 儻	仄 侈 倅 倅 倅 儻	仆 侏 俚 倂 倂 儻	仉 侗 們 倂 倂 儻	仗 佻 倂 倂 倂 儻
儿	994F									儿	兀	兒		兌	兔	兢	競
入	995F	兩	兪														
八	995F			兮	冀												
冂	995F					冂	回	册	冉	冂	冂	冂	冕				
冂	995F 996F	寫	冂											冂	冕	冂	冂
丷	996F			丷	决	冂	冲	冰	况	冽	涸	凉	凜				
几	996F 9980	凰												几	處	凜	凭
凵	9980	凵	函														
刀	9980 9990 999E	劊	剔	剪	剗	刊	刂	刂	刂	刪	刮	刳	剗	剗	剗	剗	剗
力	999E 99AE	勸		勸	劦	劦	劦	劦	劦	勗	勞	勗	勗	勗	勗	勗	勗
勹	99AE	勹	勿	匈		匈	匍	匍	匍								
乚	99AE									乚							
匚	99AE									匚	匚	匚	匚	匚	匚	匚	匚

	ShiftJIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
匸	99AE																匸 區
十	99BE	𠂇	卅	卅	卉	𠂇	準										
卜	99BE							𠂇									
𠂇	99BE								𠂇	𠂇	𠂇	𠂇	卷				
𠂇	99BE													𠂇 𠂇 𠂇 𠂇			
	99CE	𠂇	𠂇	𠂇	𠂇												
厶	99CE				厶	參	纂										
又	99CE						雙	叟		曼	變						
口	99CE											叮	叨	叭	叭	吁	𠂇
	99DE	呀	听	吭	吼	吮	𠂇	吩	𠂇	𠂇	咏	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇
	99EE	咒	呻	咀	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	咸	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇
	9A3F		𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇
	9A4F	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇
	9A5F	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇
	9A6F	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇
	9A80	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇
	9A90	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇
𠂇	9A90									𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	
	9A9E		𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	
土	9A9E										𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇
	9AAE	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇
	9ABE	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇
	9ACE	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇
	9ADE	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇
士	9ADE				壯	壺	壹	壻	壺	壽							
久	9ADE									久							
𠂇	9ADE										𠂇	𠂇					
夕	9ADE													𠂇	𠂇	𠂇	
大	9ADE																𠂇
	9AEE	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇
女	9B3F		𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇
	9B4F	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇
	9B5F	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇
	9B6F	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇	𠂇

[illegible]

	ShiftJIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
木	9E80	梳	栴	栳	档	桷	梶	梟	梏	梭	梔	條	桪	梃	櫛	桤	桴
	9E90	梵	栢	栳	桤	桤	梶	梟	梏	桷	棘	栢	桪	櫛	栢	梔	
	9E9E		栢	栳	栳	桤	桤	栳	梶	桷	栢	栢	桪	櫛	栢	梔	栳
	9EAE	桷	栢	栳	栳	桤	桤	栳	梶	桷	栢	栢	桪	櫛	栢	梔	栳
	9EBE	桷	栢	栳	栳	桤	桤	栳	梶	桷	栢	栢	桪	櫛	栢	梔	栳
	9ECE	桷	栢	栳	栳	桤	桤	栳	梶	桷	栢	栢	桪	櫛	栢	梔	栳
	9EDE	桷	栢	栳	栳	桤	桤	栳	梶	桷	栢	栢	桪	櫛	栢	梔	栳
	9EEE	桷	栢	栳	栳	桤	桤	栳	梶	桷	栢	栢	桪	櫛	栢	梔	栳
	9F3F		栢	栳	栳	桤	桤	栳	梶	桷	栢	栢	桪	櫛	栢	梔	栳
	9F4F	桷	栢	栳	栳	桤	桤	栳	梶	桷	栢	栢	桪	櫛	栢	梔	栳
欠	9F4F								欸	欸	盜	欸	飲	欸	欸	欸	歐
	9F5F	欸	欸	欸	欸	歡											
止	9F5F					歸											
歹	9F5F					歹	歹	歹	歹	歹	殄	殄	殄	殄	殄	殄	殄
	9F6F	殄	殄	殄	殄	殄											
殳	9F6F					殳	殳	殳	殳	殳							
母	9F6F									母	毓						
毛	9F6F											毳	毳	毳	毳	毳	毳
	9F80	毳	毳														
氏	9F80			氏													
气	9F80			气	氛	氤	氣										
水	9F80							汞	汞	汕	汩	汪	沂	沔	沔	沔	沛
	9F90	汾	汩	汩	沒	沐	泄	決	泓	沽	泗	汪	沂	沔	沔	沔	沛
	9F9E		汩	汩	沒	沐	泄	決	泓	沽	泗	汪	沂	沔	沔	沔	沛
	9FAE	洌	洌	洌	沒	沐	泄	決	泓	沽	泗	汪	沂	沔	沔	沔	沛
	9FBE	洌	洌	洌	沒	沐	泄	決	泓	沽	泗	汪	沂	沔	沔	沔	沛
	9FCE	洌	洌	洌	沒	沐	泄	決	泓	沽	泗	汪	沂	沔	沔	沔	沛
	9FDE	洌	洌	洌	沒	沐	泄	決	泓	沽	泗	汪	沂	沔	沔	沔	沛
	9FEE	洌	洌	洌	沒	沐	泄	決	泓	沽	泗	汪	沂	沔	沔	沔	沛
	E03F	澎	溇	溇	溇	溇	溇	溇	溇	溇	溇	溇	溇	溇	溇	溇	溇
	E04F	溇	溇	溇	溇	溇	溇	溇	溇	溇	溇	溇	溇	溇	溇	溇	溇
	E05F	溇	溇	溇	溇	溇	溇	溇	溇	溇	溇	溇	溇	溇	溇	溇	溇
	E06F	溇	溇	溇	溇	溇	溇	溇	溇	溇	溇	溇	溇	溇	溇	溇	溇
火	E06F					炙	炒	炯	炯	炯	炬	炸	炳	炮	烟	杰	杰

	ShiftJIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
火	E080 E090 E09E	烙 煩	焉 熨 燹	烽 熬 燿	焜 爛 爍	焙 熹 爐	煥 熾 爛	熙 燒 爨	熙 燉	煦 燂 燄	煢 燎 燠	煌 燠 燂	煖 燬	煬 燧 燧	熏 燧 燧	燾 燧 燧	燹
爪	E09E							爭		爬	爰	爲					
爻	E09E											爻		俎			
爿	E09E E0AE	牋	牘												爿	牀	牆
牛	E0AE			牴	牯	犁	犁	犇	犒	犖	犖	犧					
犬	E0AE E0BE E0CE	狎 猥	狒 猓	貉 獒	狼 獾	狡 默	狹 獬	狷 獮	倏 獨	猗 猗	猊 猊	猜 獵	獬 獻	豺 獾	狃 猓	狃 猓	狄 猓
王	E0CE E0DE E0EE	玻 瑁	珀 瑜	珥 瑩	珮 瑰	珞 瑣	璫 瑪	琅 瑤	瑯 瑾	琥 璋	珥 璞	琲 璧	珞 瓊	瑕 瓏	珈 璫	玳 瑁	玳 瑁
瓜	E13F		瓠	瓣													
瓦	E13F E14F	甕	甕	甕	甕	甕	甕	甕	甕	甕	甕	甕	甕	甕	甕	甕	甕
甘	E14F				嘗												
生	E14F					甞											
用	E14F					甞											
田	E14F E15F	畧	畫	畎	畸	當	疆	旱	畎	畎	畎	畎	畎	畎	畎	畎	畎
疒	E15F E16F E180 E190 E19E	痂 痂	疔 疔	疥 疥	疔 疔	疽 痂	疽 痂	疼 痂	疱 癰	痂 癰	疥 癰	疥 癰	疥 癰	疥 癰	疥 癰	疥 癰	疥 癰
𠂇	E19E			𠂇	癸	發											
白	E19E					皀	皀	皀	皀	皀	皀	皀	皀	皀	皀	皀	皀
皮	E19E E1AE	鞞	鞞	鞞											皀	皀	皀
皿	E1AE				孟	盞	盞	盞	盞	盞	盞	盞	盞	盞	盞	盞	盞
目	E1AE E1BE	眇	眇	眇	真	眇	眇	眇	眇	眇	眇	眇	眇	眇	眇	眇	眇

	Shift JIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
目	E1CE E1DE	睷 瞋	瞞 瞞	瞞 瞞	瞞 瞞	瞞 瞞	瞞 瞞	瞞 瞞	瞞 瞞	瞞 瞞	瞞 瞞	瞞 瞞	瞞 瞞	瞞 瞞	瞞 瞞	瞞 瞞	瞞 瞞
矛	E1DE																
矢	E1DE																
石	E1DE E1EE E23F	硃 硃 硃	硃 硃 硃	硃 硃 硃	硃 硃 硃	硃 硃 硃	硃 硃 硃	硃 硃 硃	硃 硃 硃	硃 硃 硃	硃 硃 硃	硃 硃 硃	硃 硃 硃	硃 硃 硃	硃 硃 硃	硃 硃 硃	硃 硃 硃
示	E23F E24F	祕 祕	祕 祕	祕 祕	祕 祕	祕 祕	祕 祕	祕 祕	祕 祕	祕 祕	祕 祕	祕 祕	祕 祕	祕 祕	祕 祕	祕 祕	祕 祕
禺	E24F																
禾	E24F E25F E26F	秬 秬 秬	秬 秬 秬	秬 秬 秬	秬 秬 秬	秬 秬 秬	秬 秬 秬	秬 秬 秬	秬 秬 秬	秬 秬 秬	秬 秬 秬	秬 秬 秬	秬 秬 秬	秬 秬 秬	秬 秬 秬	秬 秬 秬	秬 秬 秬
穴	E26F E280	窶 窶	窶 窶	窶 窶	窶 窶	窶 窶	窶 窶	窶 窶	窶 窶	窶 窶	窶 窶	窶 窶	窶 窶	窶 窶	窶 窶	窶 窶	窶 窶
立	E280 E290	竝 竝	竝 竝	竝 竝	竝 竝	竝 竝	竝 竝	竝 竝	竝 竝	竝 竝	竝 竝	竝 竝	竝 竝	竝 竝	竝 竝	竝 竝	竝 竝
竹	E290 E29E E2AE E2BE E2CE E2DE	筵 筵 筵 筵 筵 筵	筵 筵 筵 筵 筵 筵	筵 筵 筵 筵 筵 筵	筵 筵 筵 筵 筵 筵	筵 筵 筵 筵 筵 筵	筵 筵 筵 筵 筵 筵	筵 筵 筵 筵 筵 筵	筵 筵 筵 筵 筵 筵	筵 筵 筵 筵 筵 筵	筵 筵 筵 筵 筵 筵	筵 筵 筵 筵 筵 筵	筵 筵 筵 筵 筵 筵	筵 筵 筵 筵 筵 筵	筵 筵 筵 筵 筵 筵	筵 筵 筵 筵 筵 筵	筵 筵 筵 筵 筵 筵
米	E2DE E2EE	糗 糗	糗 糗	糗 糗	糗 糗	糗 糗	糗 糗	糗 糗	糗 糗	糗 糗	糗 糗	糗 糗	糗 糗	糗 糗	糗 糗	糗 糗	糗 糗
糸	E2EE E33F E34F E35F E36F E380 E390	紉 紉 紉 紉 紉 紉 紉	紉 紉 紉 紉 紉 紉 紉	紉 紉 紉 紉 紉 紉 紉	紉 紉 紉 紉 紉 紉 紉	紉 紉 紉 紉 紉 紉 紉	紉 紉 紉 紉 紉 紉 紉	紉 紉 紉 紉 紉 紉 紉	紉 紉 紉 紉 紉 紉 紉	紉 紉 紉 紉 紉 紉 紉	紉 紉 紉 紉 紉 紉 紉	紉 紉 紉 紉 紉 紉 紉	紉 紉 紉 紉 紉 紉 紉	紉 紉 紉 紉 紉 紉 紉	紉 紉 紉 紉 紉 紉 紉	紉 紉 紉 紉 紉 紉 紉	紉 紉 紉 紉 紉 紉 紉
缶	E390 E39E	罇 罇	罇 罇	罇 罇	罇 罇	罇 罇	罇 罇	罇 罇	罇 罇	罇 罇	罇 罇	罇 罇	罇 罇	罇 罇	罇 罇	罇 罇	罇 罇

	ShiftJIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
网	E39E							网	罕	罔	罟	罟	罟	罟	罟	罟	罟
	E3AE	羈	羈	羈	羈	羈											
羊	E3AE						羴	羴	羴	羴	羴	羴	羴	羴	羴	羴	羴
	E3BE	羴	羴														
羽	E3BE			翊	翠	翊	翕	翔	翕	翦	翮	翮	翮	翮	翮	翮	翮
老	E3BE														耄	耄	耄
耒	E3CE	耒	耒	耒	耒	耒	耒										
耳	E3CE							耿	耻	聊	聆	聆	聆	聚	聒	聒	聒
	E3DE	聒	聒	聒	聒	聒	聒										
聿	E3DE						聿	聿		聿	聿						
肉	E3DE											肱	肱	肱	肱	肱	肱
	E3EE	肱	肱	肱	肱	肱	肱	肱	肱	肱	肱	肱	肱	肱	肱	肱	肱
	E43F																
	E44F	肱	肱	肱	肱	肱	肱	肱	肱	肱	肱	肱	肱	肱	肱	肱	肱
	E45F	肱	肱	肱	肱	肱	肱	肱	肱	肱	肱	肱	肱	肱	肱	肱	肱
臣	E45F											臧					
至	E45F											臺	臻				
臼	E45F													臽	臽	春	舅
	E46F	臽	臽														
舌	E46F			舍	舐	舖											
舟	E46F						舩	舩	舩	舩	舩	舩	舩	舩	舩	舩	舩
	E480	舩	舩	舩	舩	舩											
艮	E480						艮										
色	E480						艷										
艸	E480							艸	范	艾	芍	芒	芫	芫	芫	芫	芫
	E490	芫	芫	芫	芫	芫	芫	芫	芫	芫	芫	芫	芫	芫	芫	芫	芫
	E49E																
	E4AE	莪	莪	莪	莪	莪	莪	莪	莪	莪	莪	莪	莪	莪	莪	莪	莪
	E4BE	莪	莪	莪	莪	莪	莪	莪	莪	莪	莪	莪	莪	莪	莪	莪	莪
	E4CE	莪	莪	莪	莪	莪	莪	莪	莪	莪	莪	莪	莪	莪	莪	莪	莪
	E4DE	莪	莪	莪	莪	莪	莪	莪	莪	莪	莪	莪	莪	莪	莪	莪	莪
	E4EE	莪	莪	莪	莪	莪	莪	莪	莪	莪	莪	莪	莪	莪	莪	莪	莪
	E53F	莪	莪	莪	莪	莪	莪	莪	莪	莪	莪	莪	莪	莪	莪	莪	莪
	E54F	莪	莪	莪	莪	莪	莪	莪	莪	莪	莪	莪	莪	莪	莪	莪	莪

	Shift JIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
艸	E55F	蘋	蘋	藺	蘆	蘆	蘆	蘆	蘆								
虍	E55F									虍	虍	虍	虍	虧			
虫	E55F													虱	虱	虱	虱
	E56F	蚩	蚪	蚋	蚌	蚶	蚯	蛄	蛆	蚰	蛉	蟪	蛸	蛔	蛞	蛞	蛞
	E580	蛟	蛛	蛭	蛭	蛭	蜈	蜀	蛭	蛭	蛭	蛭	蛭	蛭	蛭	蛭	蛭
	E590	蜃	蜻	蜥	蜥	蜥	蜥	蜥	蜥	蜥	蜥	蜥	蜥	蜥	蜥	蜥	蜥
	E59E		蜥	蜥	蜥	蜥	蜥	蜥	蜥	蜥	蜥	蜥	蜥	蜥	蜥	蜥	蜥
	E5AE	螳	蟻	蟻	蟻	蟻	蟻	蟻	蟻	蟻	蟻	蟻	蟻	蟻	蟻	蟻	蟻
	E5BE	蠕	蠹	蠹	蠹	蠹	蠹	蠹	蠹	蠹	蠹	蠹	蠹	蠹	蠹	蠹	蠹
血	E5BE									衄	衄						
行	E5BE											衞	衞	衞	衞		
衣	E5BE															衫	袁
	E5CE	衾	衾	衾	衾	衾	衾	衾	衾	袒	衾	衾	衾	袍	衾	衾	衾
	E5DE	袂	袂	袂	袂	袂	袂	袂	袂	袒	袂	袂	袂	袍	袂	袂	袂
	E5EE	袂	袂	袂	袂	袂	袂	袂	袂	袒	袂	袂	袂	袍	袂	袂	袂
	E63F	襦	襦	襦	襦	襦	襦	襦	襦	袒	襦	襦	襦	袍	襦	襦	襦
而	E63F									而	而	而	而				
見	E63F													覓	覓	覓	覓
	E64F	覓	覓	覓	覓	覓	覓	覓	覓								
角	E64F									觚	觚	觚	觚	觚	觚		
言	E64F															訃	訃
	E65F	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃
	E66F	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃
	E680	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃
	E690	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃
	E69E	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃	訃
谷	E69E															谷	谷
	E6AE	穀															
豆	E6AE		豈	豈	豈	豈	豈	豈	豈								
豕	E6AE																
豸	E6AE									豸	豸	豸	豸	豸	豸	豸	豸
	E6BE	豸	豸	豸										豸	豸	豸	豸
貝	E6BE				賤	賤	賤	賤	賤	貳	貳	貳	賈	賈	賈	賈	賈
	E6CE	賽	賺	賄	賈	賈	賈	賈	賈	貳	貳	貳	賈	賈	賈	賈	賈

	ShiftJIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F		
赤	E6CE E6DE	赭												赧					
走	E6DE	𢇛 𢇜 𢇝				趙													
足	E6DE E6EE E73F E74F	跟	跣	跣	跣	跟	跣	跣	跣	跣	跣	跣	跣	跣	跣	跣	跣		
身	E74F E75F	軀 軀								躬				軀	軀	軀	軀		
車	E75F E76F E780	輟	輟	輟	輟	輟	輟	輟	輟	軾	輕	輅	輕	輓	輓	輓	輓		
辛	E780	辜				辟	辣	辭	辯										
亼	E780 E790 E79E E7AE	迨	迹	迺	迷	逕	逡	逍	逞	亼	逖	迥	迢	迪	逖	邇	迥		
邑	E7AE E7BE	鄒	鄙	鄆	鄰	邨				邨	邱	邵	郢	郤	扈	郛	鄂		
酉	E7BE E7CE	醫	醴	醪	醕	酏	酏	醠	酣	酥	酩	醑	醒	醋	醉	醺	醴		
采	E7CE									糗	釋								
里	E7CE									釐									
金	E7CE E7DE E7EE E83F E84F E85F E86F	釵	鉞	鈞	鉞	鈔	鉞	鈕	鉞	鉞	鉞	鉞	鉞	釵	鈞	鈞	鉞		
門	E86F E880 E890	閨	閨	閨	閨	閨	閨	閨	閨	閨	閨	閨	閨	閨	閨	閨	閨		
阜	E890					阡	阡	阮	阡	陂	陌	陌	陌	陷	陝	陞			

	Shift JIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
阜	E89E	陝	陟	陟		陟	陟	陟	陟	隕	隕	險	隧	隱	隕	隕	隕
隶	E8AE	隶	隸														
隹	E8AE		隹	隹		雋	雋	雍	襍	雜	霍	雕					
雨	E8AE E8BE	霰	霰	霏	霖	霰	雷	霏	霰	霹	霽	霽	霽	霄	霽	霽	霽
青	E8CE	靜															
非	E8CE	靠															
面	E8CE	飽	甌			甌											
革	E8CE E8DE	鞅	鞅	鞅	鞅	鞅	鞅	鞅	鞅	鞅	鞅	鞅	鞅	鞅	鞅	鞅	鞅
韋	E8DE											韋	韋				
韭	E8DE													韭	齋	壺	
音	E8DE E8EE	韶	韻														竟
頁	E8EE E93F		頤	頤		頤	頤	頤	頤	頤	頤	頤	頤	頤	顯	顯	輦
風	E93F					風	颯	颯	颯	飄	颯	颯					
食	E93F E94F E95F	餚	餘	餚	餚	餚	餚	餚	餚	餚	餚	餚	餚	餚	餚	餚	餚
首	E95F					馮	馮										
香	E95F					馮	馮										
馬	E95F E96F E980	馮	馮	馮	馮	馮	馮	馮	馮	馮	馮	馮	馮	馮	馮	馮	馮
骨	E980 E990	馮	馮	馮	馮	馮	馮	馮	馮	馮	馮	馮	馮	馮	馮	馮	馮
高	E990					馮	馮										
髟	E990 E99E	髟	髟	髟	髟	髟	髟	髟	髟	髟	髟	髟	髟	髟	髟	髟	髟
鬥	E99E									鬥	鬥	鬥	鬥	鬥	鬥		
鬯	E99E																鬯
鬼	E9AE	魄	魑	魏	魑	魑	魑	魑	魑								

	Shift JIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
魚	E9AE									魴	魴	鮑	鮑	鮫	鮫	鮫	鮫
	E9BE	鮓	鮓	鮓	鮓	鮓	鮓	鮓	鮓	鮓	鮓	鮓	鮓	鮓	鮓	鮓	鮓
	E9CE	鮓	鮓	鮓	鮓	鮓	鮓	鮓	鮓	鮓	鮓	鮓	鮓	鮓	鮓	鮓	鮓
	E9DE	鮓	鮓	鮓	鮓	鮓	鮓	鮓	鮓	鮓	鮓	鮓	鮓	鮓	鮓	鮓	鮓
鳥	E9DE											鳧	鳧	鳧	鳧	鳧	鳧
	E9EE	鴈	鴈	鴈	鴈	鴈	鴈	鴈	鴈	鴈	鴈	鴈	鴈	鴈	鴈	鴈	鴈
	EA3F		鴈	鴈	鴈	鴈	鴈	鴈	鴈	鴈	鴈	鴈	鴈	鴈	鴈	鴈	鴈
	EA4F	鴈	鴈	鴈	鴈	鴈	鴈	鴈	鴈	鴈	鴈	鴈	鴈	鴈	鴈	鴈	鴈
	EA5F	鴈	鴈	鴈	鴈	鴈	鴈	鴈	鴈	鴈	鴈	鴈	鴈	鴈	鴈	鴈	鴈
鹵	EA5F				鹵	鹵	鹽										
鹿	EA5F						鹿	麋		麋	麋	麋	麋	麋	麋		
麥	EA5F															麥	麴
	EA6F	麴	麴	麴													
麻	EA6F				摩												
黃	EA6F					覺											
黍	EA6F					黎	黏	黏									
黑	EA6F									黔	黜	黜	黜	黜	黜	黨	黜
	EA80	黜	黜	黜													
黼	EA80				黼	黼	黼										
黽	EA80					黽	黽			黽							
鼓	EA80									鼓	瑟						
鼠	EA80											鼠		鼠			
鼻	EA80														鼻		
齊	EA80														齊		
齒	EA80																齒
	EA90	齒	齒	齒	齒	齒	齒	齒	齒	齒	齒	齒	齒				
龍	EA90													龍			
龜	EA90														龜		
龠	EA90															龠	

2D Code			
Available for			
	WT4 series		
MAXI Code			ESC+BV
Hex code	ESC	BV	Parameter
	<1B> ₁₆	<42> ₁₆ <56> ₁₆	a,b,c,ddddddddd,eee,fff,n~n
Default setting	None		
Persistence of the command	When printer is powered off		Set Parameter will not be retained
	Validity in a job		Becomes invalid after execution
	Validity after a job		Becomes invalid after the job

[Function]

Specifies to print MAXI code.

[Format]

<BV>a,b,c,ddddddddd,eee,fff,n~n

●Parameter

a	[Symbol number]	=	Valid range	:	1 to 8
b	[Digit of symbol]	=	Valid range	:	1 to 8
c	[Mode]	=	2	:	Delivery
			3	:	Delivery
			4	:	Standard symbol
			6	:	for reader device only
d	Postal code	=	Valid range	:	0 to 999999999 (Mode 2)
					000000 to 999999 (Mode 3)
					* Mode 2 accepts max. 9 digits (numeric only)
					* Mode 3 accepts 6digits fixed (only upper case for alphabet)
e	Country code	=	Valid range	:	001 to 999
f	Service class	=	Valid range	:	001 to 999
n	Low priority message	=	Alphanumeric + symbols		

Mode	Service class	Country code	Postal code	Max. data size		
				Numeric	Alphanum.	
2	3 digits Fixed (Numeric only)	3 digits Fixed (Numeric only)	Max.9digits	123	84	
3			6 digits fixed(Alpha-num.)			
4			Omitted		138	93
6						

[Coding Example]

```
<A>
<V>100<H>200<BV>1,1,2,123456789,001,002,SAHTHA
<Q>1
<Z>
```

[Notes]

1. The size of the symbol printed is not subject to data volume. (Quantity of data)
2. Any other parameters specified or settings being inconsistent with each other will result in no printing.
3. In case mode [4] or [6] is selected, the data size shall be larger than 12 (bytes), otherwise the symbol can not be read by scanners.
4. Data will be received until next command header, 1BH, or maximum data size.
5. In mode2 and 3, data has following definition. See "MAXI Code data format (Mode2 and 3)" written on the page about <2D20>.

MAXI Code table

					S				I				S				O			
					b8	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
					b7	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1
					b6	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1
					b5	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0
B4	b3	b2	b1		0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0	0	0	0			SP	0	@	P	`	p								
0	0	0	1	1			!	1	A	Q	a	q								
0	0	1	0	2			"	2	B	R	b	r								
0	0	1	1	3			#	3	C	S	c	s								
0	1	0	0	4			\$	4	D	T	d	t								
0	1	0	1	5			%	5	E	U	e	u								
0	1	1	0	6			&	6	F	V	f	v								
0	1	1	1	7			'	7	G	W	g	w								
1	0	0	0	8			(	8	H	X	h	x								
1	0	0	1	9			)	9	I	Y	i	y								
1	0	1	0	A			*	:	J	Z	j	z								
1	0	1	1	B			+	;	K	[	k	{								
1	1	0	0	C			,	<	L	\	l	|								
1	1	0	1	D			-	=	M	]	m	}								
1	1	1	0	E			.	>	N	^	n	~								
1	1	1	1	F			/	?	O	_	o	DEL								

Selectable range is 01H thru FFH for MAXI code.

2D Code			
Available for			
	WT4 series		
PDF417			ESC+BK
Hex code	ESC	BK	Parameter
	<1B> ₁₆	<42> ₁₆ <4B> ₁₆	aabbcddeefffg~g(h)
Default setting	None		
Persistence of the command	When printer is powered off		Set parameter will not be retained
	Validity in a job		Becomes invalid after execution
	Validity after a job		Becomes invalid after the job

[Function]

Specifies to print PDF417.

[Format]

<BK>aabbcddeefffg~g(h)

•Parameter

a	[Minimum module width]	=	Valid range :	01 to 27 dots
b	[Minimum module height]	=	Valid range :	01 to 72 dots
c	[Security level]	=	Valid range :	0 to 8
d	[Code words per line] (cols)	=	Valid range :	01 to 30
			00	: Auto (Width auto-justified according to data quantity)
e	[Rows per symbol](rows)	=	Valid range :	03 to 90
			00	: Auto (Height auto-justified according to data quantity)
f	[Number of data digits to encode]	=	Valid range :	0001 to 2681
g	[Data to be printed]	=	Data	
h	[PDF code type]	=	Not specified :	PDF417
			T	: Truncated PDF417
			M	: Micro PDF417

[Coding Example] Min. Module width: 03(dot), Min.Module height: 09(dot), Security level: 3,
Code words per line: 03, Rows per symbol : 18

```
<A>
<V>100<H>200<BK>0309303180010PDF1234567
<Q>1
<Z>
```

[Notes]

1. Min. module width 01, 02 dot are not recommendable with a risk of lower scanner-readability.
2. Min. module height 01, 02, 03dot are not recommendable with a risk of lower scanner-readability.
3. When both "data codeword per line" and "number of data digit" are set to 00, aspect ratio (V x H) will be set automatically to 1:2.
4. Higher Security Level will require larger numbers for "rows per symbol" or "data codeword per line".
5. Maximum number of data digit is 2681. However, the number of data digit is also restricted by and subject to minimum module size, security code level and type of print data.
6. Parameters and data size being inconsistent will not print.
7. When Micro PDF is specified, "line per symbol" is subject to "data codeword per line", and thus, maximum number of data digit will be automatically defined. Consult the table in next page for details.
8. Security level setup is disabled for Micro PDF.

[Tips]

1. No sequential numbering is possible for PDF417.
2. No print position setting is possible by auto-CR.
3. 00H~FFH can be specified as print data.
4. Increase minimum module dimensions for better quality, as necessary.
5. Increase Security Level for better scanner-readability, as necessary.
6. Height of print image will differ for alphabet, numeric, and alpha-numeric data.

Symbol size and Max. data digits of Micro PDF (Only the following 34 types are available)

Symbol size		Max. Data digits	
cols(d)	rows(e)	Alphabet (A to Z) only	Numeric only
1	11	6	8
	14	12	17
	17	18	26
	20	22	32
	24	30	44
	28	38	55
2	8	14	20
	11	24	35
	14	36	52
	17	46	67
	20	56	82
	23	64	93
3	26	72	105
	6	10	14
	8	18	26
	10	26	38
	12	34	49
	15	46	67
	20	66	96
	26	90	132
	32	114	167
4	38	138	202
	44	162	237
	4	14	20
	6	22	32
	8	34	49
	10	46	67
	12	58	85
	15	76	111
	20	106	155
	26	142	208
	32	178	261
	38	214	313
	44	250	366

* Alphabet (Upper/Lower case), Numeric, Control code may be mixed for valid combination.

PDF417 Code Table (including Micro PDF)

					S I								S O							
				b8	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
				b7	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1
				b6	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1
				b5	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1
b4	b3	b2	b1		0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0	0	0	0			SP	0	@	P	`	p								
0	0	0	1	1			!	1	A	Q	a	q								
0	0	1	0	2			"	2	B	R	b	r								
0	0	1	1	3			#	3	C	S	c	s								
0	1	0	0	4			\$	4	D	T	d	t								
0	1	0	1	5			%	5	E	U	e	u								
0	1	1	0	6			&	6	F	V	f	v								
0	1	1	1	7			'	7	G	W	g	w								
1	0	0	0	8			(	8	H	X	h	x								
1	0	0	1	9			)	9	I	Y	i	y								
1	0	1	0	A			*	:	J	Z	j	z								
1	0	1	1	B			+	;	K	[	k	{								
1	1	0	0	C			,	<	L	\	l	!								
1	1	0	1	D			-	=	M	]	m	}								
1	1	1	0	E			.	>	N	^	n	~								
1	1	1	1	F			/	?	O		o	DEL								

Selectable range is 00H thru FFH for PDF417 (including Micro PDF).

2D Code			
Available for			
	WT4 series		
DataMatrix			ESC+BX
Hex code	ESC	BX	Parameter
	<1B> ₁₆	<42> ₁₆ <58> ₁₆	aabbccddeeffghh
Default setting	None		
Persistence of the command	When printer is powered off		Set parameter will not be retained
	Validity in a job		Becomes invalid after execution
	Validity after a job		Becomes invalid after the job

[Function]

Specifies to print DataMatrix

[Format]

<BX>aabbccddeeffghh

•Parameter

a	[Format ID]	= Valid range	: 01 to 06
b	[Error correction level]	= 00	: (ECC000)
		05	: (ECC050)
		08	: (ECC080)
		10	: (ECC100)
		14	: (ECC140)
		20	: (ECC200)
c	[Cell width]	= Valid range	: 01 to 16 (dot/Cell)
d	[Cell height]	= Valid range	: 01 to 16 (dot/Cell)
e	[Number of cells per line]	= Valid range	: 008 to 148
		000	: (auto-setup)
f	[Number of cell lines]	= Valid range	: 008 to 148
		000	: (auto-setting)
g	[Mirror image]	= 0	: Normal image (Normal print)
		1	: Mirror image
h	[Guide cell thickness]	= Valid range	: 01 to 15

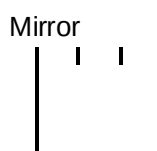
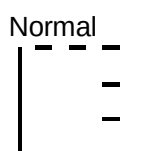


Table of Format ID

Error correction	Format ID					
	01	02	03	04	05	06
00 (ECC000)	500	452	394	413	310	271
05 (ECC050)	457	333	291	305	228	200
08 (ECC080)	402	293	256	268	201	176
10 (ECC100)	300	218	190	200	150	131
14 (ECC140)	144	105	91	96	72	63
20 (ECC200)	Numeric				3116	
	Alphanumeric				2335	
	Binary (01H-FFH)				1556	

* The above values are the maximum data volume which the 2D code can handle for a valid coding.

[Notes]

- When error correction level is set to 20, other three settings : Format ID, Mirror image, Guide cell thickness will be ignored.
- Cell width, Cell height can be set to 01, 02, however may result in low scanner-read rate. 00 will cause an error.
- When 000 is specified for “the number of cells per line”, or “number of cell lines”, the size of the code is auto-justified according to the data to accommodate.
- Guide cell thickness for normal type code is 01.

2D Code			
Available for			
	WT4 series		
Datamatrix (Data)			ESC+DC
Hex code	ESC	DC	Parameter
	<1B> ₁₆	<44> ₁₆ <43> ₁₆	n~n
Default setting	None		
Persistence of the command	When printer is powered off		Set parameter will not be retained
	Validity in a job		Becomes invalid after execution
	Validity after a job		Becomes invalid after the job

[Function]

Specifies data for DataMatrix

[Format] (Data portion)

<DC>n~n

•Parameter

n [Print data] = Data

[Coding Example]

Format ID: 01, Error correction level: 10 (ECC100), Cell width: 02, Cell height: 02,
Number of the cell in one line: 000, Number of lines: 000, Mirror image: 0 (Normal),
Thickness of the guide-cell: 01, Print data: 1234567890

<A>

<V>100<H>200

<BX>01100202000000001

<DC>1234567890

<Q>1

<Z>

2D Code			
Available for			
	WT4 series		
Sequential Number for Datamatrix			ESC+FX
Hex code	ESC	FX	Parameter
	<1B> ₁₆	<46> ₁₆ <58> ₁₆	aaabccdddeee
Default setting	None		
Persistence of the command	When printer is powered off	Set parameter will not be retained	
	Validity in a job	Becomes invalid after execution	
	Validity after a job	Becomes invalid after the job	

[Function]

Specifies sequential numbering for DataMatrix

[Format] (sequential numbering)

<FX>aaabccdddeee

•Parameter

a	[Number of duplicate labels]	= Valid range : 001 to 999
b	[Increment / decrement]	= + : Increment
		- : Decrement
c	[Increment/decrement steps]	= Valid range : 001 to 999
d	[Sequential numbering start position (digit)]	= Valid range : 001 to 999 from left side.
e	[Incremented data length (digit number)]	= Valid range : 001 - 999

[Coding Example] Number of duplicate labels: 001, Increment/decrement: + , Increment/decrement steps: 001,
Sequential number start position: 005, Digit number: 003

<A>

<V>100<H>200

<FX>001+001005003

<BX>01100202000000001

<DC>00006000

<Q>1

<Z>

Datamatrix Code Table

					S I								S O							
				b8	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
				b7	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1
				b6	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1
				b5	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1
B4	b3	b2	b1		0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0	0	0	0			SP	0	@	P	`	p								
0	0	0	1	1			!	1	A	Q	a	q								
0	0	1	0	2			"	2	B	R	b	r								
0	0	1	1	3			#	3	C	S	c	s								
0	1	0	0	4			\$	4	D	T	d	t								
0	1	0	1	5			%	5	E	U	e	u								
0	1	1	0	6			&	6	F	V	f	v								
0	1	1	1	7			'	7	G	W	g	w								
1	0	0	0	8			(	8	H	X	h	x								
1	0	0	1	9			)	9	I	Y	i	y								
1	0	1	0	A			*	:	J	Z	j	z								
1	0	1	1	B			+	;	K	[	k	{								
1	1	0	0	C			,	<	L	\	l	!								
1	1	0	1	D			-	=	M	]	m	}								
1	1	1	0	E			.	>	N	^	n	~								
1	1	1	1	F			/	?	O	_	o	DEL								

DataMatrix can be specified in the range 20H thru FFH.
To specify 7EH, write [7EH,7EH].

12. Graphic Command

Graphic			
Available for			
	WT4 series		
Graphic Print			ESC+G
Hex code	ESC <1B> ₁₆	G <47> ₁₆	Parameter abbbcccn~n
Default setting	None		
Persistence of the command	When printer is powered off		Set parameter will not be retained
	Validity in a job		Becomes invalid after execution
	Validity after a job		Becomes invalid after the job

[Function]

Specifies graphic printing.

[Format]

<G>abbbcccn~n

•Parameter

- a [Specifies data in hexadecimal/binary]
 - H: Hexadecimal 8bit data divided into 2 blocks of 4bit and output in a ASCII-based Hexadecimal code.
 - B: *Binary 8bit data is handled as 1font data and output in a chunk.
- b [Width of the graphic area] = see table below for valid range
- c [Height of the graphic area] = see table below for valid range
- n [Graphic data]

[Coding Example 1] [H: HEX data] is specified for [Data specification by HEX and BIN]

```
<A>
<V>50<H>50
<G>H001001<4646383138313831383138314646>16
<Q>1
<Z>
```

[Coding Example 2] [B: Binary data] is specified as Data specification by HEX and BIN]

```
<A>
<V>50<H>50
<G>B001001<FF818181818181FF>16
<Q>1
<Z>
```

[Notes]

- "B" Binary format is advantageous to "H" in terms of total data length being 1/2, though it needs prolix programming.
- The rotation command<%>, expansion command<L> can be used in combination with this command.

[Valid range]

Model	Max. width (byte)	Max. height (byte)
WT4-AXB TT203	104	400
WT4-AXB TT300	156	600

Graphic			
Available for			
	WT4 series		
BMP File Print			ESC+GM
Hex code	ESC	GM	Parameter
	<1B> ₁₆	<47> ₁₆ <4D> ₁₆	aaaaa,n~n
Default setting	None		
Persistence of the command	When printer is powered off		Set parameter will not be retained
	Validity in a job		Becomes invalid after execution
	Validity after a job		Becomes invalid after the job

[Function]

Specifies to print BMP File (Created on Windows Paint, for example).

[Format]

<GM>aaaaa,n~n

•Parameter

a [Total number of bytes of BMP file]
n [Data]

[Coding Example]

```
<A>
<V>50<H>50<GM>04500, <424D00~00>16
<Q>1
<Z>
```

[Notes]

1. The data is transmitted in binary (8bit/1font data). Actual size of BMP file is the value to parameter "a".
2. BMP file consists of the header part (the first 62 byte) and compressed graphic data.
3. If the total number of bytes of a BMP file is not consistent with actual send data, it may result in an operation failure.
4. The total number of bytes is displayed in the property of the file.
5. BMP file can be used only in black/white mode. A BMP file in color mode will result in a command error and no printing.
The command does not support compressed type of the BMP file. Make sure that file extension is BMP before printing.
6. Rotation<%>, Expansion<L> can be used in combination with this command.
7. Expansion command <L> shall be specified just before command<GM>.

Graphic			
Available for			
	WT4 series		
PCX File Print			ESC+GP
Hex code	ESC	GP	Parameter
	<1B> ₁₆	<47> ₁₆ <50> ₁₆	aaaaa,n~n
Default setting	None		
Persistence of the command	When printer is powered off		Set parameter will not be retained
	Validity in a job		Becomes invalid after execution
	Validity after a job		Becomes invalid after the job

[Function]

Specifies to print PCX file (Created on Windows Paint, for example).

[Format]

<GP>aaaaa,n~n

•Parameter

a [Total number of bytes of PCX file]

n [Data]

[Coding Example]

<A>

<V>50<H>50<GP>04500,XXXXXXXXXXXXX...XXXX

<Q>1

<Z>

[Notes]

1. The data is transmitted in binary (8bit/1font data). Actual size of PCX file is the value to parameter "a".
2. PCX file consists of the header part (the first 128 byte) and compressed graphic data.
3. If the total number of bytes of a PCX file is not consistent with actual send data, it may result in an operation failure.
4. The total number of bytes is displayed in the property of the file.
5. PCX file can be used only in black/white mode. A PCX file in color mode will result in a command error and no printing.
The command does not support compressed type of the PCX file. Make sure that file extension is PCX before printing.
6. Rotation<%>, Expansion<L> can be used in combination with this command.

13. System Command

System			
Available for			
	WT4 series		
Print Speed			ESC+CS
Hex code	ESC	CS	Parameter
	<1B> ₁₆	<43> ₁₆ <53> ₁₆	a
Default setting	See table below		
Persistence of the command	When printer is powered off		Set parameter will not be retained
	Validity in a job		Retained until next valid setting
	Validity after a job		Retained until next valid setting

[Function]

Specifies print speed.

[Format]

<CS>a

•Parameter

a [Print speed] = see table below.

[Coding Example]

<A>

<CS>3

<Z>

[Note]

1. The setting by this command will not persist after powering off the printer. When the printer restarted, either the printer' default value, or original values set by the command <PG> will be valid.

[Tips]

1. Invalid range being selected will result in a command error and the setting will not be changed.
2. The default values are available by the operation of the printer side.

[Parameter default value and valid range]

Model	Default value	Parameter range	Parameter: Printer speed
WT4-AXB TT203	5	2, 3, 4, 5, 6, 7, 8	2 : 2 inch/sec (50mm/sec)
WT4-AXB TT300	4	2, 3, 4, 5, 6	3 : 3 inch/sec (75mm/sec)
			4 : 4 inch/sec (100mm/sec)
			5 : 5 inch/sec (125mm/sec)
			6 : 6 inch/sec (150mm/sec)
			7 : 7 inch/sec (175mm/sec)
			8 : 8 inch/sec (200mm/sec)

System			
Available for			
	WT4 series		
Print Darkness			ESC+#E
Hex code	ESC	#E	Parameter
	<1B> ₁₆	<23> ₁₆ <45> ₁₆	a(b)
Default setting	See table below		
Persistence of the command	When printer is powered off		Set parameter will not be retained
	Validity in a job		Retained until next valid setting
	Validity after a job		Retained until next valid setting

[Function]

Specifies print darkness.

[Format]

<#E>a(b)

•Parameter

- | | | | |
|---|------------------|---|------------------|
| a | [Darkness level] | = | See table below. |
| b | [Darkness range] | = | A (Omissible) |
- Use [A] for darkness range under normal conditions

[Coding Example]

```
<A>
<#E>16
<Z>
```

[Note]

1. The setting by this command will not persist after powering off the printer. When the printer restarted, either the printer' default value, or original values set by the command <PG> will be valid.

[Tips]

1. Invalid range being selected will result in a command error and the setting will not be changed.
2. The default values are available by the operation of the printer side.

[Default value and valid range]

Model	Parameter	Default	Range
WT4-AXB TT203 WT4-AXB TT300	a	16 : Normal	1 darkness ~ 30 darkness
	b	A	A

System			
Available for			
	WT4 series		
Media Size			ESC+A1
Hex code	ESC	A1	Parameter
	<1B> ₁₆	<41> ₁₆ <31> ₁₆	aaaabbbb
Default setting	None		
Persistence of the command	When printer is powered off		Set parameter will not be retained
	Validity in a job		Retained until next valid setting
	Validity after a job		Retained until next valid setting

[Function]

Specifies media size.

[Format]

<A1>aaaabbbb (a, b: Fixed number of digits)

<A1>VaaaaaHbbbb (a, b: Variable number of digits)

•Parameter

a [Label height] = see table in next page

b [Label width] = see table in next page

[Coding Example 1]

<A>

<A1>08000240

<Z>

[Coding Example 2]

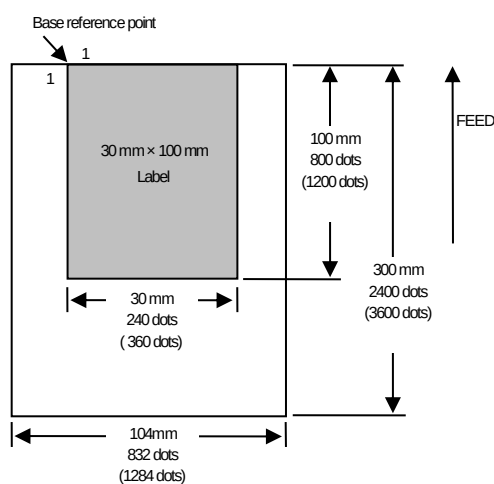
<A>

<A1>V800H240

<Z>

[Notes]

1. This command is useful when you use a label in a smaller size than the print head width, and need to optimize the base reference point accordingly.
2. Backing paper should be included in the label size.



The values in () are for 12 dots/mm

[Valid range]

Model	Label width (dot)	Label height (dot)
WT4-AXB TT203	1 to 832	1 to 20000
WT4-AXB TT300	1 to 1248	1 to 18000

System			
Available for			
	WT4 series		
Base Reference Point			ESC+A3
Hex code	ESC	A3	Parameter
	<1B> ₁₆	<41> ₁₆ <33> ₁₆	VabbbbHcdddd
Default setting	None		
Persistence of the command	When printer is powered off		Set parameter will not be retained
	Validity in a job		Retained until next valid setting
	Validity after a job		Retained until next valid setting

[Function]

Specifies a new base reference point

[Format]

<A3>VabbbbHcdddd

•Parameter

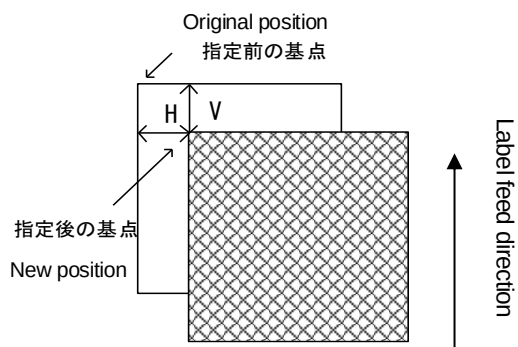
a	Plus / Minus sign for vertical position correction	= +, - (Omissible)
b	Vertical position shift (dots)	= 0 to 792 (dots)
c	Plus / Minus sign for horizontal position correction (omissible)	= +, - (Omissible)
d	Horizontal position shift (dots)	= 0 to 792 (dots)

[Coding Example]

<A>

<A3>V10H10

<Z>



[Notes]

1. The new position set outside printable area, will result in no printing.
2. The new position will be applied to all the label formats. Pay attention to it when you run multiple formats.

[Tips]

1. The values set by this command <A3> is not persistent after powering off the printer.

[Valid range]

Model	Horizontal offset (dots)	Vertical offset (dots)
WT4-AXB TT203	-831 to 831	-19999 to 19999
WT4-AXB TT300	-1247 to 1247	-17999 to 17999

System				
Available for				
	WT4 series			
Multi Cut			ESC+~(NULL)	
Hex code	ESC	~ (NULL)	Parameter	
	<1B>16	<7E> ₁₆ (<00> ₁₆)	aaaa	
Default setting	aaaa=1			
Persistence of the command	When printer is powered off		Set Parameter will not be retained	
	Validity in a job		Set Parameter will be retained until next valid setting	
	Validity after a job		Set parameter will be the default value for the next job<A>.	

[Function]

Specifies the number of labels to print between each cut.

[Format]

<~(NULL)>aaaa

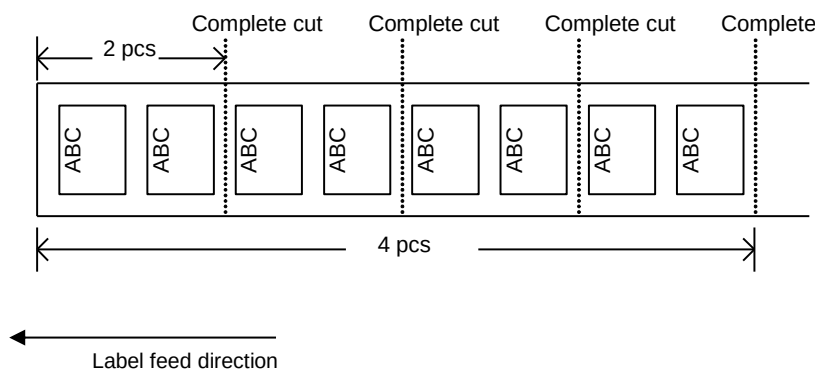
●Parameter

a [Number of prints before cutting] = Valid range : 0 to 9999

[Coding Example]

<A>
 <V>100<H>200<P>2<L>0202<OA>ABC
 <Q>4
<~>2
 <Z>

(1) Normal cut mode



1. Valid only for Cutter models.
2. If this command is not specified in Cutter mode, each label will be cut off after printed.
3. In case the parameter "a" is set to 0, no label will be cut.
4. The product of Qty and value of "aaaa" shall not exceed the maximum number "999999".
5. This command <~> shall be put after Qty<Q>. <Q>, in this case, is to specify number of sheets to be cut.
6. This command may not be used in combination with other cut commands, <CT> or <~A>.

System			
Available for			
	WT4 series		
Cut Number Unit			ESC+CT
Hex code	ESC	CT	Parameter
	<1B> ₁₆	<43> ₁₆ <54> ₁₆	aaaa
Default setting	aaaa=1		
Persistence of the command	When printer is powered off	Set Parameter will not be retained.	
	Validity in a job	Retained until next valid setting.	
	Validity after a job	Set Parameter will be an default value for the next job<A>.	

[Function]

Cuts label at a specified interval in a print job.

[Format]

<CT>aaaa

●Parameter

a [Number of labels between each cut] = Qty range : 0 to 9999

[Coding Example]

<A>

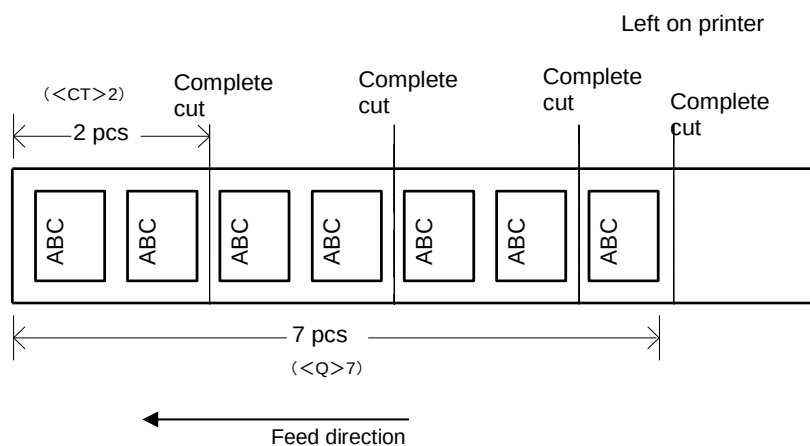
<V>100<H>200<P>2<L>0202<X22>,ABC

<CT>2

<Q>7

<Z>

(1) Normal (complete) cut mode



[Notes]

1. Valid only for cutter-mounted models.
2. If the parameter is not specified by this command <CT>, each label will be cut after printed.
3. In case the parameter "a" is set to 0, no label will be cut.
4. Set this command before <Q> command.
5. This command can not be used in combination with other cut commands <-> or <-A>.

System			
Available for			
	WT4 series		
Eject and Cut			ESC+NC
Hex code	ESC	NC (EJ)	Parameter
	<1B> ₁₆	<4E> ₁₆ <43> ₁₆	None
Default setting	None		
Persistence of the command	When printer is powered off		Set Parameter will not be retained
	Validity in a job		Becomes invalid after execution
	Validity after a job		Becomes invalid after the job

[Function]

Cuts any printed labels that remain in the printer.

[Format]

<NC>

[Coding example]

<A>

<NC>

<Z>

(1) Label stop position

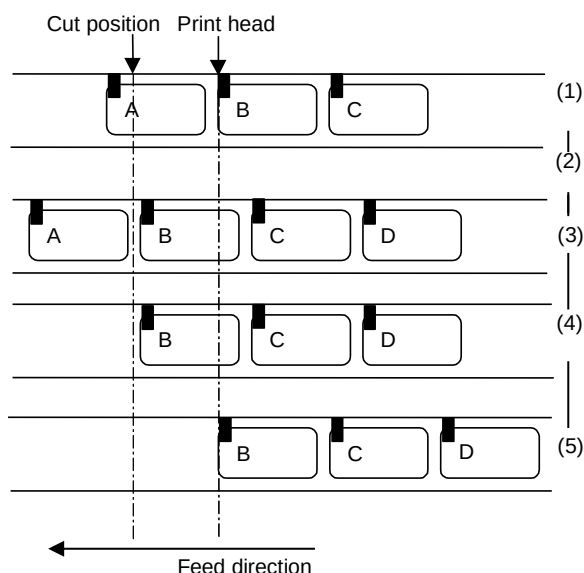
- A: Printed
- B: Not printed
- C: Not printed
- D: Not printed

(2) Command received

(3) Label is fed to the cut position.

(4) Label is cut off.

(5) Label is back fed to the head position.



[Notes]

1. Valid only for cutter models.
2. This command is used to cut the last label remaining in the printer.
3. This command should be used by differentiating between Start code<A> and Stop code<Z>.
4. This command <NC> may not be used in combination with other commands.
5. This command <NC> is valid while the printer is not working after printed and finished cutting operation.

[Tips]

1. This command is used to cut remaining label in printer after the commands <CT>0 or <->0 is executed.

System			
Available for			
	WT4 series		
Cut Number Unit			ESC+~A
Hex code	ESC	~A	Parameter
	<1B>16	<7E>16<41>16	aaaa
Default setting	aaaa=1		
Persistence of the command	When printer is powered off	Set parameter will not be retained	
	Validity in a job	Retained until next valid setting	
	Validity after a job	Set Parameter will be an default value for the next job<A>.	

[Function]

Cuts labels at a specified interval in a print job.

[Format]

<~A>aaaa

•Parameter

a [Number of labels between each cut] = Qty range : 0 to 9999

[Coding Example]

<A>

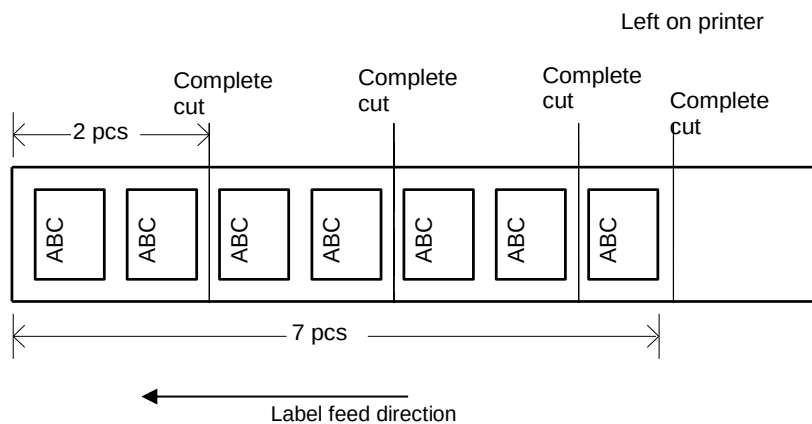
<V>100<H>200<P>2<L>0202<XM>ABC

<~A>2

<Q>7

<Z>

(1) Normal (complete) cut mode



[Notes]

1. Valid only for cutter models.
2. If the parameter is not specified by this command <~A>, each label will be cut after being printed.
3. In case the parameter "a" is set to 0, no label will be cut.
4. Set this command before <Q>.
5. This command may not be used in combination with other cut commands<~>.

System			
Available for			
	WT4 series		
Eject and Cut			ESC+~B
Hex code	ESC	~B	Parameter
	<1B> ₁₆	<7E> ₁₆ <42> ₁₆	None
Default setting	None		
Persistence of the command	When printer is powered off	Set command will not be retained.	
	Validity in a job	Becomes invalid after execution	
	Validity after a job	Becomes invalid after the job	

[Function]

Specifies eject and cut operation

[Format]

<~B>

[Coding Example]

<A>

<~B>

<Z>

(1) Label stop position

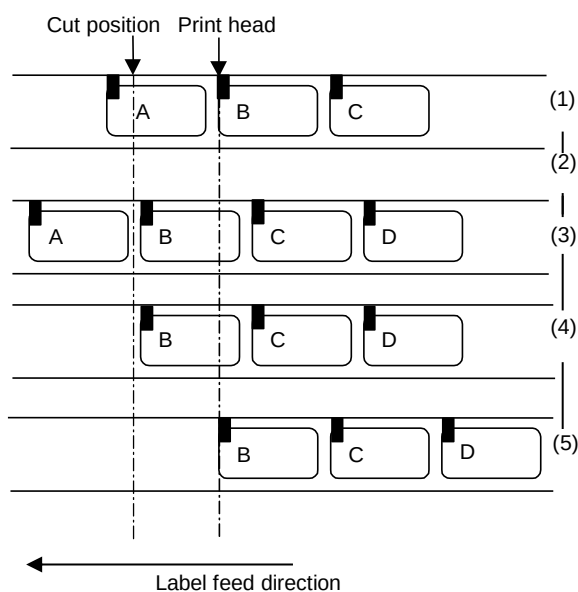
- A: Printed
- B: Not printed
- C: Not printed
- D: Not printed

(2) Command received

(3) Label is fed to the cut position.

(4) Label is cut off.

(5) Label is back fed to the print position.



[Notes]

1. Valid only for cutter models.
2. This command is used to cut the last label remaining in the printer.
3. This command <~B> should be used by differentiating between Start code<A> and Stop code<Z>.
4. This command <~B> may not be used in combination with other commands.
5. This command <~B> is valid when the printer still holds the label which has not been cut after being printed.

[Tips]

1. This command is used to cut remaining label in the printer after the commands <~A>0 or <~>0 is executed.

System			
Available for			
	WT4 series		
Clear Memory			ESC+*
Hex code	ESC	*	Parameter
	<1B> ₁₆	<2A> ₁₆	a
Default setting	None		
Persistence of the command	When printer is powered off		Set Parameter will not be retained
	Validity in a job		Becomes invalid after execution
	Validity after a job		Becomes invalid after the job

[Function]

Clears print jobs and specific item in memory.

[Format]

<*>a

•Parameter

a	[Item to be cleared] =	Not specified	: Single item buffer, Edit buffer (reprint is not possible)
			: Multi item buffer, Edit buffer (Clears job which is in parsing)
		T	: User defined characters
		&	: Form overlay
		X	: All clear

(Receive buffer, Edit buffer, User defined characters, form overlay)
 * The job ,which is currently in progress, will not be cleared

[Coding Example1] Clear receive and edit buffer

<A>

<*>

<Z>

[Coding Example2] All clear

<A>

<*>X

<Z>

[Coding Example3] Clear user-defined characters

<A>

<*>T

<Z>

[Notes]

1. Set this command between Start code<A> and Stop code<Z>.
2. This command<*>(a=X) will clear all the data sent before the command. However, the data which is completely parsed before the command will not be cleared. X will also clear user-defined characters and form overlay.

[Tips]

1. After the command <*> is executed, have an interval of more than 100ms before sending next print data.
2. The job in printing will not be terminated by the command <*>.

System			
Available for			
	WT4 series		
Reprint		ESC+C	
Hex code	ESC	C	Parameter
	<1B> ₁₆	<43> ₁₆	None
Default setting	None		
Persistence of the command	When printer is powered off		Set Parameter will not be retained
	Validity in a job		Becomes invalid after execution
	Validity after a job		Becomes invalid after the job

[Function]

Specifies to reprint the last label.

[Format]

<C>

[Coding Example]

<A>

<C>

<Z>

[Note]

1. Since the last print data will be cleared by powering off, reprint operation will not be available after the printer rebooted.

[Tips]

1. In case the print data contains sequential numbering by command <F>, the same number will be printed.

System			
Available for			
	WT4 series		
Register Printer Operation			ESC+PG
Hex code	ESC	PG	Parameter
	<1B> ₁₆	<50> ₁₆ <47> ₁₆	abcdefghijklmnopppqrstuvwxyz
Default setting	See table in next page		
Persistence of the command	When printer is powered off	Set parameter will be retained	
	Validity in a job	Retained until next valid setting	
	Validity after a job	Retained until next valid setting	

[Function]

Registers printer settings in EEPROM.

[Format]

<PG>abcdefghijklmnopppqrstuvwxyz

●Parameter

See table in next page for parameter details.

[Coding Example]

<A>

<PG><00 00 02 00 00 00 00 41 01 00 00 00 00 00 0C 80 03 40 00 00 00 00 00 00 00 00 00 00>₁₆

<Z>

Parameter shall be given in HEX <00H>₁₆<00H>₁₆<02H>₁₆ · · · · · <00H>₁₆

[Notes]

1. This command is not necessary to be specified in normal use.
2. The settings by this command will persist after turning off the printer .

No	Item	Valid selection	
a	Print method WT4-AXB TT203 / TT300 Default value: 01H	00H Direct thermal 01H Thermal transfer	
b	Reserved	00H Fixed	
c	Print speed 203dpi Default value: 03H 300dpi Default value: 02H	WT4-AXB TT203	00H 2ips 01H 3ips 02H 4ips 03H 5ips 04H 6ips 05H 7ips 06H 8ips
		WT4-AXB TT300	00H 2ips 01H 3ips 02H 4ips 03H 5ips 04H 6ips
d	Print mode (Default value: 01H)	00H Continuous 01H Tear off 02H Cutter 03H Dispenser 05H Cut while printing	
e	Cutter mode (Default value: 00H)	00H Motion 1 (Head position) 01H Motion 2 (Cut position) 02H Motion 3 (No backfeed)	
f	Dispenser mode (Default value: 00H)	00H Motion 1 (Head position) 01H Motion 2 (Dispense position) 02H Motion 3 (No backfeed)	
g	Reserved	00H Fixed	
h	Print darkness: (Default value: 41H)	41H A	
h	Print darkness level (Default value: 16H)	01H Level 1 02H Level 2 ... 29H Level 29 30H Level 30	
i	Sensor type (Default value: 01H)	00H Reflective 01H Transmissive 02H Sensor off 03H Transmissive sensor (CX compatible)	
j	0 Slash (Default value: 01H)	00H Disabled 01H Enabled	
k	Kanji code (Default value: 00H)	00H JIS Code	
l	Reserved	00H Fixed	
m	Initial feed (Default value: 00H)	00H Disabled	
n	Character pitch (Default value: 01H)	00H Fixed 01H Proportional	
o	Label height (dot) 203dpi Default value: 4E20H 300dpi Default value: 4650H	WT4-AXB TT203	[0001H ~ 4E20H] (1 to 2000)
		WT4-AXB TT300	[0001H ~ 4650H] (1 to 1800)
p	Label width (dot) 203dpi Default value: 0340H 300dpi Default value: 04E0H	WT4-AXB TT203	[0001H ~ 0340H] (1 to 832)
		WT4-AXB TT300	[0001H ~ 04E0H] (1 to 1248)
q	Vertical base point correction (dot) (specifying in 2 bytes) (Default value: 000H)	[0000H - 012CH] (0 to 300) [FFFFH - FED4H] (-1 to -300)	
r	Horizontal base point correction (dot) (specifying in 2 bytes) (Default value: 000H)	[0000H - 012CH] (0 to 300) [FFFFH - FED4H] (-1 to -300)	
s	Vertical pitch offset (dot) (Default value: 00H)	[00H - 63H] (0 to 99) [FFH - 9DH] (-1 to -99)	
t	TearOff position offset(dot) (Default value: 00H)	[00H - 63H] (0 to 99) [FFH - 9DH] (-1 to -99)	
u	Cut position offset (dot)	[00H - 63H] (0 to 99)	

	(Default value: 00H)	[FFH - 9DH] (-1 to -99)
v	Dispensing position offset (dot) (Default value: 00H)	[00H - 63H] (0 to 99) [FFH - 9DH] (-1 to -99)
w	Control code (Default value: 00H)	00H Standard code 01H Non-standard code
x	Buzzer	00H ON 01H OFF

(continued from previous page)

No.	Item	Valid selection
y	Reserved	00H Fixed
z	Reserved	00H Fixed

System			
Available for			
	WT4 series		
Register Printer Operation			ESC+PC
Hex code	ESC	PC	Parameter
	<1B> ₁₆	<50> ₁₆ <43> ₁₆	1) [a, b, c, d, ...y, z, a1], 2) [aa, b]
Default setting	See the next page		
Persistence of the command	When printer is powered off	Set Parameter will be retained	
	Validity in a job	Retained until next valid setting	
	Validity after a job	Retained until next valid setting	

[Function]

Registers printer settings in EEPROM

[Format1] When all settings are newly registered

<PC>a,b,c,d,e,f,g,h,i1,i2,j,k,l,m,n,o,pppp,qqqq,rrr,ssss,t,u,v,w,x,y,z,a1

•Parameter

a [Item No.] = F : All items
b · · · a1 [Setting details] = See table in next page for individual parameters

[Format2] When specific item are needed to be registered

<PC>aa,b

•Parameter

a [Item No.] = 1 to 27
b [Setting details] = See table in next page for individual Parameters

[Coding Example1] all items

<A>

<PC>F,2,A,4,10,11,3000,2400,1

<Z>

[Coding Example2] specific item

<A>

<PC>26,1

<Z>

[Notes]

1. The settings done by the command <PC> will persist after turning off the printer.
2. The entire or partial parameter entities is omissible by using commas. However, commas are not omissible.
Current valid setting will be applied to comma "," position.

No	Item No.	Item	Valid selection	
b	1	Print method (WT4-AXB TT203 / TT300)	0 Thermal Transfer 1 Direct Thermal	
c	2	Reserved	0 Fixed	
d	3	Print speed 203dpi Default value: 3 300dpi Default value: 2	WT4-AXB TT203	0 2ips 1 3ips 2 4ips 3 5ips 4 6ips 5 7ips 6 8ips
			WT4-AXB TT300	0 2ips 1 3ips 2 4ips 3 5ips 4 6ips
e	4	Print mode (Default value: 1)	0 Continuous 1 Tear Off 2 Cutter 3 Dispenser 5 Cut while printing	
f	5	Cutter mode	00 Motion 1 (Head position) 01 Motion 2 (Cut position) 02 Motion 3 (No backfeed)	
g	6	Dispenser mode	00 Motion 1 (Head position) 01 Motion 2 (Dispense position) 02 Motion 3 (No backfeed)	
h	7	Reserved	0 Fixed	
i1	8	Print darkness (Default value: A)	A	
i2	9	Print darkness level (Default value: 16)	1 Level 1 2 Level 2 29 Level 29 30 Level 30	
j	10	Sensor type (Default value: 1)	0 Reflective 1 Transmissive 2 Sensor off 3 Transmissive sensor (CX compatible)	
k	11	0 Slash (Default value: 1)	0 Disabled 1 Enabled	
l	12	Kanji code (Default value: 0)	0 JIS Code	
m	13	Reserved	0 Fixed	
n	14	Initial feed (Default value: 0)	0 Disabled	
o	15	Character pitch (Default value: 1)	0 Fixed pitch 1 Proportional pitch	
p	16	Label height (dot) 203dpi Default value: 20000(Decimal number) 300dpi Default value: 18000(Decimal number)	WT4-AXB TT203	1 to 20000
			WT4-AXB TT300	1 to 18000
q	17	Label width (dot) 203dpi Default value: 832(Decimal number) 300dpi Default value: 1248(Decimal number)	WT4-AXB TT203	1 to 832
			WT4-AXB TT300	1 to 1248
r	18	Vertical base point correction (dot) (Default: 0)	-300 to 300	
s	19	Horizontal base point correction (dot) (Default: 0)	-300 to 300	
t	20	Vertical pitch offset (dot) (Default: 0)	-99 to 99	
u	21	Tear Off position offset(dot) (Default: 0)	-99 to 99	
v	22	Cut position offset (dot) (Default: 0)	-99 to 99	
w	23	Dispense position offset (dot) (Default: 0)	-99 to 99	
x	24	Control code (Default value: 0)	0 Standard code 1 Non-standard code	
y	25	Gap between labels (dot) 203dpi Default value: 24 300dpi Default value: 36	8 to 64	203dpi 12 to 96 300dpi
z	26	Buzzer (Default value: 0)	0 On	

			1 Off
a1	27	Reserved	0 Fixed

System				
Available for				
	WT4 series			
Control Code			ESC+LD	
Hex code	ESC	LD	Parameter	
	<1B> ₁₆	<4C> ₁₆ <44> ₁₆	, a, b, c, d, e, f, g, h, i, j	
Default setting	See table below			
Persistence of the command	When printer is powered off		Set Parameter will be retained	
	Validity in a job		Retained until next valid setting	
	Validity after a job		Retained until next valid setting	

[Function]

Settings of : Auto-online, zero slash(Enable/Disable), protocol code, Euro code

[Format]

<LD>,a,b,c,d,e,f,g,h,i,j

• Parameter

See the table below.

Function	Parameter	Description	Default	
			Standard	Non-standard
Protocol code	a(HEX)	STX	02H	{(7BH)
	b(HEX)	ETX	03H	}(7DH)
	c(HEX)	ESC	1BH	^(5EH)
	d(HEX)	ENQ	05H	@(40H)
	e(HEX)	CAN	18H	!(21H)
	f(HEX)	NULL	00H	~(7EH)
	g(HEX)	Offline	@(40H)	](5DH)
Auto-online	h(ASCII)	0: YES 1: NO	0(30H)	0(30H)
Zero slash	i(ASCII)	0: YES 1: NO	0(30H)	0(30H)
Euro code	j(HEX)	D5H	D5H	D5H

[Coding Example]

<A>

<LD>,{,},%#,&=, - ,0,0,<FF>₁₆

<Z>

[Notes]

1. Place this command between Start code<A> and Stop code<Z>.
2. The command <LD> may be received while printer is in online mode.
3. Certain parameters may be omitted by giving “,” as place holder. Current valid setting will be applied to “,” position.
4. If more or less than 10 commas “,” is used, or specified code is used in other commands or in print data, the result may not be guaranteed.
5. After the setting by this command <LD> is successfully completed, setting information will be printed.
After the printing is completed, press the FEED/LINE key once and repower the printer to make the new settings valid. If the printer is powered off without FEED/LINE key pressed, the setting information will not be saved.
6. Non-standard code set by this command <LD> will be enabled by the command <PG> or <PC>.

System			
Available for			
	WT4 series		
TrueType Font Identifier			ESC+CW
Hex code	ESC	CW	Parameter
	<1B> ₁₆	<43> ₁₆ <57> ₁₆	a, b
Default setting	See table below		
Persistence of the command	When printer is powered off	Set Parameter will be retained	
	Validity in a job	Retained until next valid setting	
	Validity after a job	Retained until next valid setting	

[Function]

The <CW> command assigns a single alphanumeric character to a font stored in DRAM, memory card, or Flash.

[Format]

<CW>a:bbbbbbb.TTF

• Parameter

- a [alphanumeric] = 0 ~ 9, A ~ Z. A one-character entry is required.
- b [Font name] = 1 ~ 8 characters.

[Coding Example 1]

<A>
<CW>Z:UNKNOWN.TTF
 <Z>

[Coding Example 2]

<A>
 <CW>K:SUD-HEI.TTF
 <V>100<H>100<P>2
<RD>K@0,P10,P10,範例
 <Q>1
 <Z>

[Notes]

1. Place this command between Start code<A> and Stop code<Z>.
2. The font type must be TTF and it is required.
3. Do not use "." or "*" for font name.

System			
Available for			
	WT4 series		
Erase Download TrueType Font			ESC+ER
Hex code	ESC	ER	Parameter
	<1B> ₁₆	<45> ₁₆ <52> ₁₆	a, b
Default setting	See table below		
Persistence of the command	When printer is powered off		Set Parameter will be retained
	Validity in a job		Retained until next valid setting
	Validity after a job		Retained until next valid setting

[Function]

The <ER> command erase TrueType font stored in DRAM, memory card, or Flash.

[Format]

<ER>a:bbbbbbb.TTF

• Parameter

a [Slot number] = R: RAM
 E: Flash ROM
 B: USB Storage

b [Font name] = 1 ~ 8 characters.

[Coding Example]

<A>
<ER>R:UNKNOWN.TTF
<Z>

[Notes]

1. Place this command between Start code<A> and Stop code<Z>.
2. The font type must be TTF and it is required.

System			
Available for			
	WT4 series		
Offset		ESC+PO	
Hex code	ESC	PO	Parameter
	<1B> ₁₆	<50> ₁₆ <4F> ₁₆	abcc
Default setting	a=0,b=+,cc=00		
Persistence of the command	When printer is powered off		Set parameter will not be retained
	Validity in a job		Retained until next valid setting
	Validity after a job		Retained until next valid setting

[Function]

Gives offset to media's stop position on the fly.

[Format]

<PO>abcc

●Parameter

a	[Offset]	=	0	:	Cutter
			1	:	Dispenser
			2	:	Tear-off
			3	:	Continuous
b	[Offset direction]	=	+	:	Feed forward
			-	:	Backward
c	[Amount of offset]	=	Valid range	:	00 to 99 (dots)

[Coding Example]

<A>

<PO>3+08

<Z>

[Notes]

1. This command does not need to be specified in normal use.
2. The command is to fine-tune media position when it is required by specific application.

System			
Available for			
	WT4 series		
Sensor Type			ESC+IG
Hex code	ESC	IG	Parameter
	<1B> ₁₆	<49> ₁₆ <47> ₁₆	a
Default setting	a=0		
Persistence of the command	When printer is powered off		Set parameter will not be retained
	Validity in a job		Retained until next valid setting
	Validity after a job		Retained until next valid setting

[Function]

Changes sensor type temporarily

[Format]

<IG>a

•Parameter

a	Sensor type	=	0	:	Reflective (I-Mark)
			1	:	Transmissive (Gap)
			2	:	Sensor off
			3	:	Transmissive sensor (CX compatible)

[Coding Example]

<A>

<IG>0

<Z>

[Notes]

1. The setting by this command is normally not needed.
2. The setting is valid until the printer is powered off and printer's internal setting becomes valid after rebooting.

System			
Available for			
	WT4 series		
Print Method			ESC+PH
Hex code	ESC	PH	Parameter
	<1B> ₁₆	<50> ₁₆ <48> ₁₆	a
Default setting	a=0		
Persistence of the command	When printer is powered off		Set parameter will not be retained
	Validity in a job		Retained until next valid setting
	Validity after a job		Retained until next valid setting

[Function]

Changes print method temporarily.

[Format]

<PH>a

●Parameter

a	[Print method]	=	0	:	Thermal transfer
			1	:	Direct Thermal

[Coding Example]

<A>

<PH>0

<Z>

[Notes]

1. The setting by this command is normally not needed.
2. The setting is valid until the printer is powered off and printer's internal setting becomes valid after rebooting.

System			
Available for			
	WT4 series		
Print Mode			ESC+PM
Hex code	ESC	PM	Parameter
	<1B> ₁₆	<50> ₁₆ <4D> ₁₆	a
Default setting	a=0		
Persistence of the command	When printer is powered off		Set parameter will be retained
	Validity in a job		Retained until next valid setting
	Validity after a job		Retained until next valid setting

[Function]

Specifies print mode temporarily.

[Format]

<PM>a

●Parameter

a	Print mode	=	0	:	Continuous
			1	:	Tear-off
			2	:	Cutter (Motion 1: Head position)
			3	:	Cutter (Motion 2: Cutter position)
			4	:	Cutter (Motion 3: No backfeed)
			5	:	Nonesepa (Motion 2: Tear off position)
			6	:	Nonesepa (Motion 3: No backfeed)
			7	:	Dispenser (Motion 1: Head position)
			8	:	Dispenser (Motion 2: Dispense position)

[Coding Example]

<A>

<PM>0

<Z>

[Notes]

1. The selection by this command is valid until printer is powered off. Printer's internal setting becomes valid after rebooting.
2. The selection shall be consistent with the print mode specified by command<PM>.
e.g.) In case of cutter mode: print mode (2), (3) and (4) are valid, while other modes are invalid.

General description of each mode :

(1) Tear-off

The media will be fed up to the tear-off edge after printed. Then the printer, after receiving next print data, will back feed the next label to the print head position.

(2) Cutter (Motion 1: Head position)

The printer back feed the label up to the print head position immediately after the last label is cut.

(3) Cutter (Motion 2: Cutter position)

The printer, after receiving the next print data, will back feed the media to the print head position. The label is cut after printing.

(4) Cutter (Motion 3: No back feed)

No backfeed.

(5) Nonesepa (Motion 2: Tear off position)

The printer back feeds the label to the print head position immediately after receiving next print data. Then the printer feeds the label to the tear off position after print job is completed.

(6) Nonesepa (Motion 3: No backfeed)

No backfeed.

(7) Dispenser (Motion 1: Head position)

The printer back feeds the label up to the print head position immediately after the last label is dispensed.

(8) Dispenser (Motion 2: Dispense position)

The printer, after receiving the next print data, will back feed the media to the print head position.

System			
Available for			
	WT4 series		
Media Feed Control			ESC+IK
HEX code	ESC	IK	parameter
	<1B> ₁₆	<49> ₁₆ <4B> ₁₆	a,(bbbb)
Default setting	None		
Persistence of the command	When printer is powered off	Set parameter will not be retained.	
	Validity in a job	Set parameter becomes invalid.	
	Validity after a job	Set parameter becomes invalid.	

[Function]

Feeds the label forward or backward according to the specified feed length.

[Format]

<IK>a,bbbb

• Parameter

a [Feed motion] = 0 : Feeds the label forward
1 : Feeds the label backward

b [Feed length] = Valid range : Refer to [Notes]

<IK>a

• Parameter

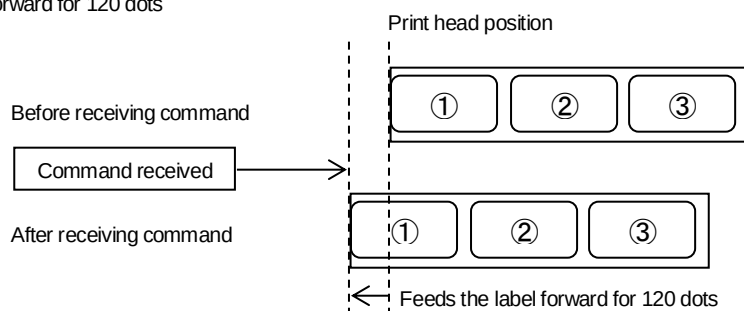
a [Feed motion] = 0 : Feeds the single label forward
2 : Feeds the label forward from print head position to tear off position
3 : Feeds the label backward from tear off position to print head position
4 : Feeds the label backward from print head position to cutter position
5 : Feeds the label backward from cutter position to print head position

[Coding example 1] Feeds the label forward for 120 dots

<A>

<IK>0,120

<Z>



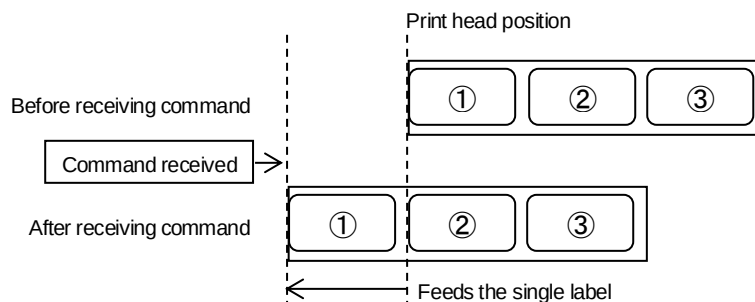
If receiving the print data without returning the label to the original position by <IK>1,120, the print job will start from the current stop position.

[Coding example 2] Feeds the single label

<A>

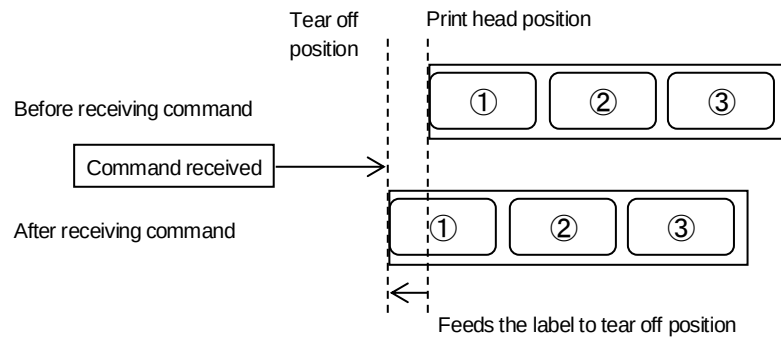
<IK>0

<Z>



[Coding example 3] Feeds the label forward to tear off position

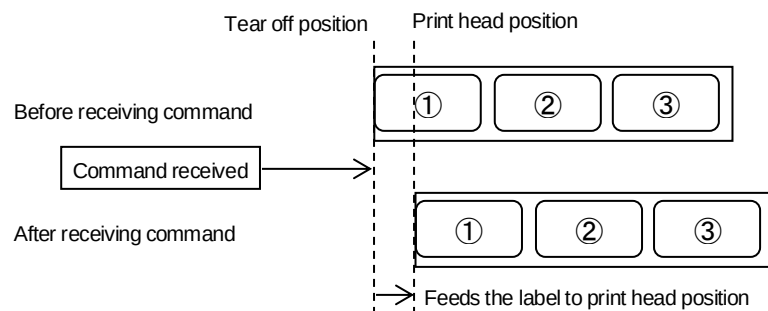
<A>
<IK>2
 <Z>



If receiving the print data without returning the label to the original position by <IK>3, the print job will start from the current stop position.

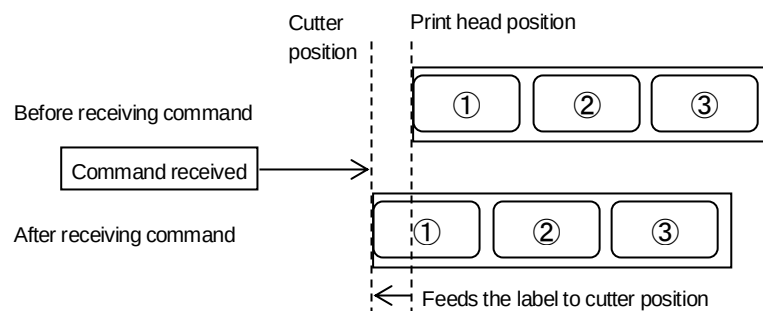
[Coding example 4] Feeds the label backward from tear off position to print head position

<A>
<IK>3
 <Z>



[Coding example 5] Feeds the label forward to cutter position

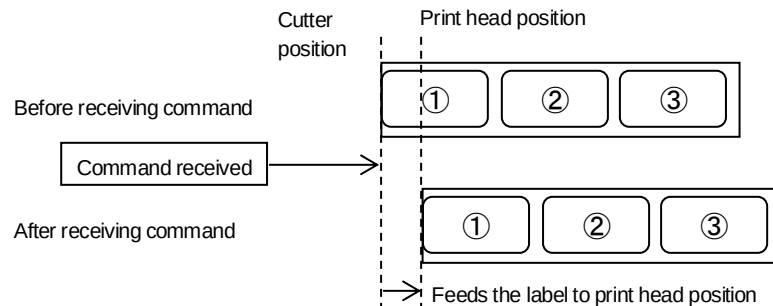
<A>
<IK>4
 <Z>



If receiving the print data without returning the label to the original position by <IK>5, the print job will start from the current stop position.

[Coding example 6] Feeds the label backward from cutter position to print head position

<A>
<IK>5
 <Z>



[Notes]

1. Place this command between start code <A> and stop code <Z>. If specifying this command in the item with print data, this command will be ignored.
2. When setting the label feed direction in the reverse direction, make sure the label feed length does not become too long. The print data may appear overlapped with each other or the printer may wrongly detect a paper end error because of the label coming off the platen. Also, there is a possibility that the label would come off the platen in the same way if feeding the label to the tear off position or to the cutter position in the reverse direction.
3. Do not feed the label backward right after cutting the label in cutter mode or dispensing the label in dispenser mode.
4. When omitting the feed distance in the forward direction, label feeding motion will be exactly the same as when pressing the key in offline state.
5. Label feeding motion specified with this command will be performed in online state.
6. Omitting the feed distance in the reverse direction may result in command error and the label will not be fed.
7. When the sensor is disabled in continuous mode, the label cannot be fed by <IK>0 (feed distance omitted).
8. Specifying the feed length outside the valid range may result in command error and the label will not be fed.

[Valid range]

Head density	Valid range (dot)
8 dot/mm	48 to 1600
12 dot/mm	72 to 2400

System			
Available for			
	WT4 series		
Serial Interface		ESC+I2	
Hex code	ESC	I2	Parameter
	<1B> ₁₆	<49> ₁₆ <32> ₁₆	abcde
Default setting	a=1,b=0,c=0,d=0,e=1		
Persistence of the command	When printer is powered off		Set parameter will be retained
	Validity in a job		Becomes invalid after execution
	Validity after a job		Becomes invalid after the job

[Function]

Specifies the setting of serial Interface.

[Format]

<I2>abcde

•Parameter

a	[Baud rate]	:	0	=	9600bps
			1	=	19200bps
			2	=	38400bps
			3	=	115200bps
b	[Data bit]	:	0	=	8bit
			1	=	7bit
c	[Parity]	:	0	=	No parity
			1	=	Odd
			2	=	Even
d	[Stop bit]	:	0	=	1bit
			1	=	2bit
e	[Control]	:	0	=	READY/BUSY control (Single item buffer)
			1	=	READY/BUSY control (Multi item buffer)
			2	=	XON/XOFF
			3	=	Driver protocol (STATUS4)
			4	=	STATUS3

[Coding Example]

<A>

<I2>10003

<Z>

[Notes]

1. The set parameter by this command will become valid after rebooting.

System			
Available for			
	WT4 series		
LAN Interface		ESC+I3	
Hex code	ESC	I3	Parameter
	<1B> ₁₆	<49> ₁₆ <33> ₁₆	a
Default setting	a=0		
Persistence of the command	When printer is powered off		Set parameter will be retained.
	Validity in a job		Becomes invalid after execution
	Validity after a job		Becomes invalid after the job

[Function]

Specifies the setting of LAN Interface.

[Format]

<I3>a

•Parameter

a [LAN mode] = 0 : 2 port connection/unsolicited (for driver protocol (STATUS4))
1 : 2 port connection /solicited by ENQ (for driver protocol (STATUS4))
2 : 1 port connection /solicited by ENQ (STATUS3)

[Coding Example]

<A>

<I3>0

<Z>

[Notes]

1. The set parameter by this command will become valid after rebooting.

System			
Available for			
	WT4 series		
IP Address			ESC+W1
Hex code	ESC	W1	Parameter
	<1B> ₁₆	<57> ₁₆ <31> ₁₆	a~a
Default setting	a~a=000000000000		
Persistence of the command	When printer is powered off		Set Parameter will be retained
	Validity in a job		Becomes invalid after execution
	Validity after a job		Becomes invalid after the job

[Function]

Sets IP address.

[Format]

<W1>a~a

•Parameter

a~a [IP address] = 12 digit fixed

[Coding Example]

<A>

<W1>123220000040

<Z>

[Notes]

1. Place this command between start code<A> and stop code<Z>.
2. This command may not be used in combination with other commands.
3. Setting can be printed on the factory test print.
4. The set parameter will become valid after rebooting.
5. Default setting of IP address is as follows:

IP address	000000000000
------------	--------------

System			
Available for			
	WT4 series		
Subnet Mask			ESC+W2
Hex code	ESC	W2	Parameter
	<1B> ₁₆	<57> ₁₆ <32> ₁₆	a~a
Default setting	a~a=000000000000		
Persistence of the command	When printer is powered off		Set Parameter will be retained
	Validity in a job		Becomes invalid after execution
	Validity after a job		Becomes invalid after the job

[Function]

Sets Subnet mask

[Format]

<W2>a~a

•Parameter

a~a [Subnet mask] = 12 digits fixed

[Coding Example]

<A>

<W2>255255255000

<Z>

[Notes]

1. Place this command between <A>start code and <Z> stop code.
2. This command may not be used in combination with other commands.
3. Setting can be printed on the factory test print.
4. The set parameter will become valid after rebooting.
5. Default setting of Subnet mask is as follows:

Subnet mask	000000000000
-------------	--------------

System			
Available for			
	WT4 series		
Default Gateway			ESC+W3
Hex code	ESC	W3	Parameter
	<1B> ₁₆	<57> ₁₆ <33> ₁₆	a~a
Default setting	a~a=000000000000		
Persistence of the command	When printer is powered off		Set Parameter will be retained
	Validity in a job		Becomes invalid after execution
	Validity after a job		Becomes invalid after the job

[Function]

Sets Default gateway.

[Format]

<W3>a~a

•Parameter

a~a [Default gateway] = 12 digits fixed

[Coding Example]

<A>

<W3>128220001001

<Z>

[Notes]

1. Place this command between <A>start code and <Z> stop code.
2. This command may not be used in combination with other commands.
3. Setting can be printed on the factory test print.
4. The set parameter will become valid after rebooting.
5. Default setting of Default gateway is as follows:

Default gateway	000000000000
-----------------	--------------

[Important]

Use the valid subnet address (=consistent to the IP address currently used) for the default gateway.

System			
Available for			
	WT4 series		
IP Address Setup			ESC+WI
Hex code	ESC	WI	Parameter
	<1B> ₁₆	<57> ₁₆ <49> ₁₆	a
Default setting	a=1		
Persistence of the command	When printer is powered off		Set Parameter will be retained
	Validity in a job		Becomes invalid after execution
	Validity after a job		Becomes invalid after the job

[Function]

Specifies IP address setup method.

[Format]

<WI>a

•Parameter

a [IP address setup] = 0 : Manual setup
1 : DHCP

[Coding Example]

<A>
<WI>1
<Z>

[Notes]

1. Place this command between start code<A> and stop code<Z>.
2. This command may not be used in combination with other commands.
3. Setting can be printed on the factory test print.
4. The set parameter will become valid after rebooting.
5. Default setting of IP address is as follows:

IP address setup	1 (DHCP)
------------------	----------

System			
Available for			
	WT4 series		
Option Waiting Time			ESC+TW
Hex code	ESC	TW	Parameter
	<1B> ₁₆	<54> ₁₆ <57> ₁₆	aaa
Default setting	aaa = 010(1000ms)		
Persistence of the command	When printer is powered off		Set parameter will be retained
	Validity in a job		Retained until next valid setting
	Validity after a job		Retained until next valid setting

[Function]

Specifies waiting time for options.

[Format]

<TW>aaa

●Parameter

aaa [Waiting time] = Valid range: 0, 005 to 200 (unit: 100ms)

[Coding example] (waiting time = 1.5 seconds)

<A>

<TW>015

<Z>

[Notes]

1. This command specifies, in Tear-off mode, the waiting time between print completion and Tear-off motion.
2. The set parameter becomes valid soon after receiving the command and will be in effect after power off.

System			
Available for			
	WT4 series		
Forced Tear Off			ESC+TK
Hex code	ESC	TK	Parameter
	<1B> ₁₆	<54> ₁₆ <4B> ₁₆	None
Default setting	None		
Persistence of the command	When printer is powered off		Set parameter will be retained
	Validity in a job		Retained until next valid setting
	Validity after a job		Retained until next valid setting

[Function]

Executes Tear off compulsory.

[Format]

<TK>

[Coding example]

<A>

<TK>

<Z>

[Notes]

1. This command can be specified only in Tear off mode.
2. With this command, the printer executes Tear off motion without waiting the time set by command <TW>. If the next data is received before Tear off motion, Tear off is executed compulsory.
3. This command can not be used in combination with other commands.

[Tips]

1. This command can be used to save the time set by command <TW>, if it is sure that there is no following item.

14. Memory Card Commands

Memory Card				
Available for				
	WT4 series			
Card Slot			ESC+CC	
HEX code	ESC	CC	Parameter	
	<1B> ₁₆	<43> ₁₆ <43> ₁₆	a	
Default setting	a=0			
Persistence of the command	When printer is powered off		Set parameter will not be retained	
	Validity in a job		Retained until next valid setting	
	Validity after a job		Retained until next valid setting	

[Function]

Specifies the card slot number to be used.

[Format]

<CC>a

●Parameter

a [Slot number] = 0: RAM
1: Flash ROM
2: USB host

[Example]

<A>

<CC>1

<G>H003003001FF000000~000000FF

<Z>

[Note]

1. This command must be used when command specification is need for a memory card.

Memory Card				
Available for				
	WT4 series			
Format Memory Card			ESC+FM	
HEX code	ESC	FM	Parameter	
	<1B> ₁₆	<46> ₁₆ <4D> ₁₆	aaaaaaaa	
Default setting	None			
Persistence of the command	When printer is powered off		Set parameter will not be retained	
	Validity in a job		Becomes invalid after execution	
	Validity after a job		Becomes invalid after the job	

[Function]

Specifies the format (initialization) of memory card.

[Format]

<FM>aaaaaaaa

• Parameter

a [User ID] = Up to 8 bytes in alphanumeric and symbols

[Coding example]

<A>

<CC>1

<FM>SATO

<Z>

[Note]

1. Make sure to specify the card slot number to be used for the <CC> command before the <FM> command.
2. The <FM> command is used for initializing a memory card and this command cannot be used in combination with other commands.
3. Care should be exercised when using this command as it destroys any data previously written to the card. SATO is not liable for any data loss.

Memory Card				
Available for				
	WT4 series			
Store Form Overlay			ESC+&S	
HEX code	ESC	&S	Parameter	
	<1B> ₁₆	<26> ₁₆ <53> ₁₆	,aa(,bbbb,cccc)	
Default setting	None			
Persistence of the command	When printer is powered off		Set parameter will be retained	
	Validity in a job		Retained until next valid setting	
	Validity after a job		Retained until next valid setting	

[Function]

Stores fixed print contents to memory card.

[Format]

<&S>,aa(,bbbb,cccc)

- Parameter
a [Registration number] = Valid range: 1 to 99

[Coding example]

```
<A>
<V>100<H>100<XM>OMODEL
<CC>1
<&S>1
<Z>
```

[Note]

1. The Card Slot <CC> command must be sent prior to this command.
2. Place the format to be stored between the Start Code <A> and the Stop Code <Z> commands.
3. Registration of identical store number is invalid.
4. The data of Graphics<G> and BMP File <GM> can be also stored.
5. This command allows up to 99 registries. Note that the capacity of registry may vary depending on the memory card to be used.
6. The data stored by this command are cleared by the Clear <*>R command.

[Valid Commands]

WT4 series

Font	<XU>	<XS>	<XM>	<XB>	<XL>	<U>	<S>	<M>	<WB>	<WL>
	<OA>	<OB>	<RD>	<\$>						
Barcode		<BC>	<BG>	<BI>	<BF>	<BP>	<D>	<D><d>	<BD>	<BT>
	<BW>									
2D code	<BK>	<BQ>	<BV>	<BX>						
	<2D10>	<2D12>	<2D20>	<2D30>	<2D31>	<2D32>	<2D50>	<2D51>		
Modification	<WD>	<FW>	<P>	<RF>						
Graphic	<G>	<GM>	<GP>							

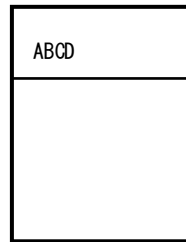
In general, this command is used for registration number only. By specifying the horizontal and vertical window sizes, the label image can be moved by using the <V> and <H> position commands when recalling the label image. If the repositioned label image exceeds the printable area, the image will be truncated.

See the following examples.

(1) Normal operation

```
<A>
<V>100<H>100<P>2<L>0202
<XM>0ABCD
<V>60<H>60
<FW>0808V800H400
<V>320<H>60
<FW>04H400
<CC>1
<&S>.1
<Z>
```

Stored label image



(2) When print is specified after the <&S> command.

```
<A>
<V>100<H>100<P>2<L>0202
<XM>0ABCD
<V>60<H>60
<FW>0808V800H400
<V>320<H>60
<FW>04H400
<CC>1

<&S>.1
<V>200<H>100<OB>12345
<Z>
```

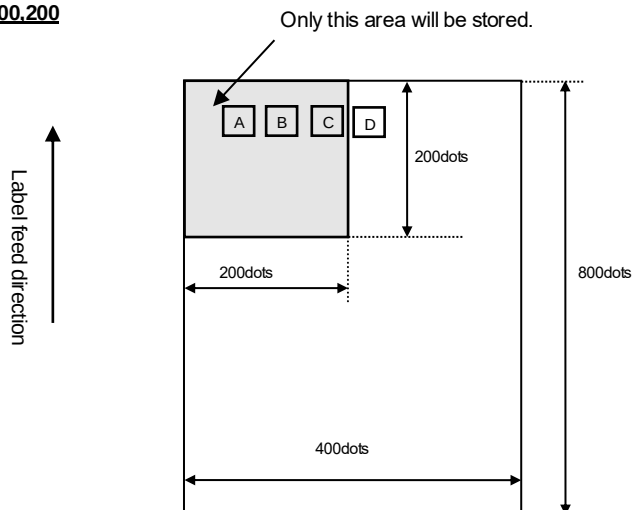
} Anything specified prior to the <&S> command will be stored as form overlay

← Will be printed.

(3) When window size is specified.

Media size specification <A1>08000400, Horizontal size of window: 200, Vertical size of window: 200

```
<A>
<A1>08000400
<V>100<H>00<P>2<L>0202
<XM>0ABCD
<CC>1
<&S>.1 200.200
<Z>
```



[Range for horizontal size of window]

Resolution	Valid range (dots)
8 dots/mm	1 to 832
12 dots/mm	1 to 1248

[Range for vertical size of window]

Resolution	Valid range (dots)
8 dots/mm	1 to 2400
12 dots/mm	1 to 3600

Memory Card				
Available for				
	WT4 series			
Recall Form Overlay			ESC+&R	
HEX code	ESC	&R	Parameter	
	<1B> ₁₆	<26> ₁₆ <52> ₁₆	,aa	
Default setting	None			

Persistence of the command	When printer is powered off		Set parameter will not be retained
	Validity in a job		Becomes invalid after execution
	Validity after a job		Becomes invalid after the job

[Function]

Recalls the tag or label image from memory card saved by command <&S>.

[Format]

<&R>,aa

• Parameter

a [Registration number] = 1 to 99

[Example]

<A>
<CC>1
<&R>1
<Z>

[Note]

1. The Card Slot <CC> command must be sent prior to this command.
2. Several images stored under different registration numbers can be printed with this command.
3. If no registration number is specified, this command will be ignored.
4. A read/write error will occur if an unused registration number is specified.
5. If a tag or label image is stored without specifying a window size, the <V> and <H> position commands will be ignored, and the image will be expanded from V1 and H1 (start position of drawing area).
6. The tag or label image can be moved by using the <V> and <H> position commands when it is stored along with a window size.
If it exceeds the printable area by being moved, the tag or label image will be truncated.

[Valid commands]

Print position	<V>	<H>								
----------------	-----	-----	--	--	--	--	--	--	--	--

Memory Card				
Available for				
	WT4 series			
Store Format			ESC+YS	
HEX code	ESC	YS	Parameter	
	<1B> ₁₆	<59> ₁₆ <53> ₁₆	,aaa	
Default setting	None			
Persistence of the command	When printer is powered off		Set parameter will be retained	
	Validity in a job		Retained until next valid setting	
	Validity after a job		Retained until next valid setting	

[Function]

Stores a format field description.

[Format]

<YS>,aaa

• Parameter

a [Format number to be stored] = Valid range: 1 to 999

[Coding example]

<A>

<CC>1

<YS>1

</N>,3,3

<%>0<V>100<H>200<P>2<L>0101<XM>ABC

<Z>

[Notes]

1. When storing multiple formats, each format shall be placed between enter the Start Code <A> and the Stop Code <Z> commands.
2. The Card Slot <CC> command must be sent prior to this command.
3. Use this command in conjunction with the Store Field command </N>.
4. Attempts to store using a predefined field number will result in an error and the target content will be printed.

[Valid commands]

WT4 series

Print position	<V>	<H>								
Font	<XU>	<XS>	<XM>	<XB>	<XL>	<U>	<S>	<M>	<WB>	<WL>
	<OA>	<OB>	<K1>	<K2>	<k1>	<k2>	<C2>	<C4>	<c2>	<c4>
Barcode		<BC>	<BG>	<BI>	<BZ>	<D>	<D><d>	<BD>	<BT>	<BW>
Modification	<P>	<L>	<PS>	<PR>	<%>	<FW>	<Z>	<WD>		
System	<A1>	<A3>								
Memory card	<&R>	</N>	<GR>	<GC>						

[Tip]

1. Details on the registration of format

A group of commands can be registered to a memory card (option). Once registered, it saves time to specify the identical command group. The registration also allows a change of print data when recalling the format. Such function is called "Registration of Format".

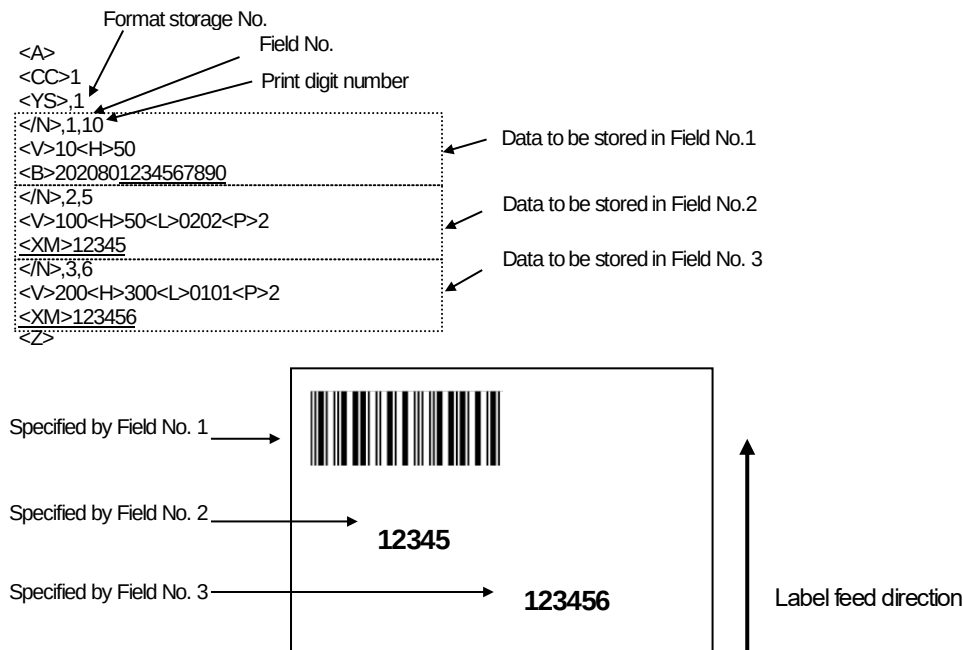
One item consists of different command groups necessary for printing, and such groups are called "Field". Note that multiple fields make a format.

Commands for the registration of format:

One format consists of a set of commands from the Start Code <A> command to the Stop Code command <Z>, and specify the Store Format <YS> command right after the <A> command. For the <YS> command, specify [Format number to be stored] between 1 and 999. And then, insert the Store Field <N> command after the <YS> command to specify [Field number] and [Print digit number].

After [Field number] and [Print digit number] are entered, specify print position, character type, barcode, and so on.

[Registration Example]



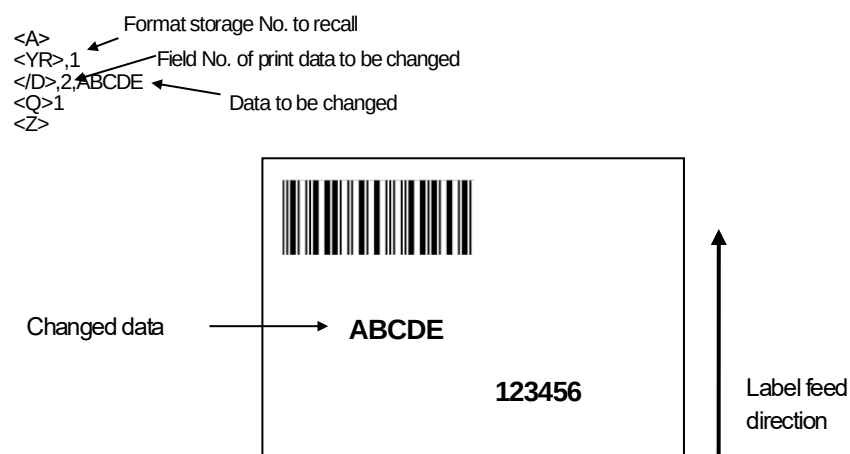
Recalling the stored print contents:

Up to 999 stored formats can be specified by the Recall Format <YR> command.

To change print data, use the Print Field </D> command to specify [Field No.] to be changed, and continuously specify the changed print data.

Note that the underlined parts in the [Registration Example] are changeable.

[Example of recalling]



The followings are the invalid commands for storing formats.

Category	Command	Command name
Control	<Q>	Print Quantity
	<ID>	Job Store ID
	<WK>	Job Name
Modification	<&>	Store Form Overlay
	<F>	Sequential Numbering
Barcode	<BT>	Variable Ratio Barcodes
2D code	<BK>, <2D10>	PDF417
	<2D12>	MicroPDF
	<BV>, <2D20>	MAXI code
	<2D30>	QR code (model 2)
	<BQ>, <2D31>	QR code (model 1)
	<2D32>	MicroQR
Graphic	<BX>, <2D50>	GS1 DataMatrix (ECC200)
	<G>	Custom Graphics
	<GM>	BMP File
System	<CS>	Print Speed
	<#E>	Print Darkness
	<`>	Multiple Cuts
	<C>	Repeat Label
	<*>	Clear
Memory card	<FM>	Format Memory Card
	<GI>	Store Graphic
	<GT>	Store BMP File
	</D>	Print Field

Memory Card				
Available for				
	WT4 series			
Store Field			ESC+/N	
HEX code	ESC	/N	Parameter	
	<1B> ₁₆	<2F> ₁₆ <4E> ₁₆	,aa,bb	
Default setting	None			
Persistence of the command	When printer is powered off		Set parameter will be retained	
	Validity in a job		Retained until next valid setting	
	Validity after a job		Retained until next valid setting	

[Function]

Stores a format field description in the Store Format <YS> command.

[Format]

</N>,aa,bb

•Parameter

a [Field number] = 1 to 99
b [Print digit number] = 1 to 99

[Coding example]

```
<A>
<CC>1
<YS>,1
</N>.1,3
<%>0<V>100<H>200<P>2<L>0101<XM>,ABC
</N>.2,5
<%>0<V>200<H>200<P>2<L>0101<OA>12345
</N>.3,8
<%>0<V>300<H>40<B>40208049123456
<Z>
```

[Notes]

- Specify the field number in ascending order.
- Specify the <V> and <H> position commands for each field. If not, default value will be set.
- Specification of digit number when printing external characters.
For an external character code "H", 1 external character has 4 digits; thus, the print of 3 characters will be 12 digits.
For an external character code "B", 1 external character has 2 digits; thus, the print of 3 characters will be 6 digits.
- Use this command in conjunction with the Store Format <YS> command.
- Due to the memory capacity limit, it may not save up to 99 registries.

[Valid Commands for the Change of Print]

WT4 series

Font	<XU>	<XS>	<XM>	<XB>	<XL>	<U>	<S>	<M>	<WB>	<WL>
	<OA>	<OB>	<K1>	<K2>	<k1>	<k2>	<C2>	<C4>	<c2>	<c4>
Barcode		<BC>	<BG>	<BI>	<BZ>	<D>	<D><d>	<BD>	<BT>	<BW>

Memory Card				
Available for				
	WT4 series			
Recall Format			ESC+YR	
HEX code	ESC	YR	Parameter	
	<1B> ₁₆	<59> ₁₆ <52> ₁₆	,aaa	
Default setting	None			
Persistence of the command	When printer is powered off		Set parameter will not be retained	
	Validity in a job		Retained until next valid setting	
	Validity after a job		Retained until next valid setting	

[Function]

Recalls and prints the format stored by the Store Format <YS> command.

[Format]

<YR>,aaa

●Parameter

a [Format registration number] = 1 to 999

[Coding example]

```

<A>
<CC>1
<YR>.01
</D>,1,DEF
</D>,2,78901
</D>,3,49000238
<Q>1
<Z>

```

[Notes]

1. The Recall Format <YR> command cannot recall multiple formats between the Start Code <A> and the Stop Code <Z> commands.
2. Use this command in conjunction with the Print Field </D> command.

Memory Card				
Available for				
	WT4 series			
Print Field			ESC+/D	
HEX code	ESC	/D	Parameter	
	<1B> ₁₆	<2F> ₁₆ <44> ₁₆	,aa,n~n	
Default setting	None			
Persistence of the command	When printer is powered off		Set parameter will not be retained	
	Validity in a job		Retained until next valid setting	
	Validity after a job		Retained until next valid setting	

[Function]

Recalls the field specified by the Store Field </N> command and selects the data.

[Format]

</D>,aa,n~n

•Parameter

a [Field No.] = Valid range: 1 to 99
n [Data] = Data to be changed

[Coding example]

```
<A>
<CC>1
<YR>,1
</D>,1,DEF
</D>,2,78901
</D>,3,49000238
<Q>1
<Z>
```

[Note]

1. Print digit number is valid within the Store Field </N> command.
2. When digit number of this command is longer than the one specified with the Store Field </N> command, only the defined digit number will be available for printing.
3. Use this command in conjunction with the Recall Format <YR> command.

Memory Card				
Available for				
	WT4 series			
Store Graphic			ESC+GI	
HEX code	ESC	GI	Parameter	
	<1B> ₁₆	<47> ₁₆ <49> ₁₆	abbbccdddn~n	
Default setting	None			
Persistence of the command	When printer is powered off		Stored data will be retained	
	Validity in a job		Becomes invalid after execution	
	Validity after a job		Becomes invalid after the job	

[Function]

Stores the graphic pattern data.

[Format]

<GI>abbbccdddn~n

• Parameter

a	[Selects and sends Hexadecimal or Binary data]	= H : HEX data B : BIN data
	HEX data (8 bits data is divided into 4 bits, and outputs as a HEX code corresponding to ASCII.)	
	Binary data (Outputs 8 bits as 1 character data is all at once)	
b	[Specifies the horizontal graphic area in byte]	= See the table below
c	[Specifies the vertical graphic area in byte]	= See the table below
d	[Registration number] (identification number to recall)	= Valid range: 1 to 999
n	[Data]	= Graphic data

[Coding example]

```
<A>
<CC>1
<GI>H003003001n~n
<Z>
```

[Note]

1. Specify the storage data only.
2. To change the stored content, clear it with the Clear <C> command and store it again.
3. The data stored with this command can be printed with the Recall Graphic <GR> command.
4. If the graphic data is not stored properly, a print error may occur. Refer to the Custom Graphics <G> command for the data form.
5. Attempts to store using a predefined storage number will result in an error and the targeted content will be printed.
6. The Card Slot <CC> command must be sent prior to this command.

[Validity]

Model	Max. bytes in horizontal direction	Max. bytes in vertical direction
WT4-AXB TT203	104	400
WT4-AXB TT300	156	600

Memory Card			
Available for			
	WT4 series		
Recall Graphic			ESC+GR
HEX code	ESC	GR	Parameter
	<1B> ₁₆	<47> ₁₆ <52> ₁₆	aaa
Default setting	None		
Persistence of the command	When printer is powered off		Set parameter will not be retained
	Validity in a job		Becomes invalid after execution
	Validity after a job		Becomes invalid after the job

[Function]

Recalls and prints the graphic image stored by the Store Graphic <GI> command.

[Format]

<GR>aaa

• Parameter

a [Registration number] = 1 to 999

[Example]

<A>

<V>100<H>100

<CC>1

<GR>1

<Q>1

<Z>

[Note]

1. The Start Point Correction <A3> command will be ignored.
2. The Rotate <%> and the Character Expansion <L> commands can be used for the recalled graphic image.
3. The Card Slot <CC> command must be sent prior to this command.

Memory Card				
Available for				
	WT4 series			
Store BMP file			ESC+GT	
HEX code	ESC	GT	Parameter	
	<1B> ₁₆	<47> ₁₆ <54> ₁₆	aaa,bbbb,n~n	
Default setting	None			
Persistence of the command	When printer is powered off		Set parameter will not be retained	
	Validity in a job		Becomes invalid after execution	
	Validity after a job		Becomes invalid after the job	

[Function]

Stores a graphic file of BMP format.

[Format]

<GT>aaa,bbbb,n~n

• Parameter

- a [Registration number] = 1 to 999
- b [Size of BMP file in bytes] = 1 to 99999
Specify the BMP file size for total number of bytes.
- n [Data] = BMP file data
Send Binary data (outputs 8 bits as 1 font data).

[Coding example]

```
<A>
<CC>1
<GT>1,12345,n~n
<Z>
```

[Note]

1. Data must be sent in binary format (outputs 8 bits as 1 font data). (BMP file size is “total bytes”, BMP file data is “data”)
2. The first 62 bytes of the BMP file is used for the header and the remainder is the BMP image data.
3. If the total bytes of BMP file does not match the transfer data, an error may occur.
4. Total bytes is the file size indicated in the properties.
5. Only black and white non-compressed BMP files can be stored. Color BMP files will cause an error. Make sure to check the file extension is [BMP] before printing.
6. The Card Slot <CC> command must be sent prior to this command.

Memory Card				
Available for				
	WT4 series			
Recall BMP File			ESC+GC	
HEX code	ESC	GC	Parameter	
	<1B> ₁₆	<47> ₁₆ <43> ₁₆	aaa	
Default setting	None			
Persistence of the command	When printer is powered off		Set parameter will not be retained	
	Validity in a job		Becomes invalid after execution	
	Validity after a job		Becomes invalid after the job	

[Function]

Recalls and prints a graphic file previously stored by the Store BMP File <GT> command.

[Format]

<GC>aaa

• Parameter

a [Registration number] = 1 to 999

[Coding example]

<A>

<V>100<H>100

<CC>1

<GC>1

<Q>1

<Z>

[Note]

1. The Rotate <%> and the Character Expansion <L> commands can be used for the recalled graphic file.
2. The Card Slot <CC> command must be sent prior to this command.

Memory Card				
Available for				
	WT4 series			
PCX File Registration			ESC+PI	
HEX code	ESC	PI	Parameter	
	<1B> ₁₆	<50> ₁₆ <49> ₁₆	aaa	
Default setting	None			
Persistence of the command	When printer is powered off		Set parameter will not be retained	
	Validity in a job		Becomes invalid after execution	
	Validity after a job		Becomes invalid after the job	

[Function]

Specifying the registration of PCX file created by such as Paint Brush of Windows.

[Format]

<PI>aaa,bbbb,n~n

•Parameter

a [Registration number] = Valid Range : 1 to 999
b [Total bytes of PCX file] = Valid Range : 1 to 99999

*Specify the file size of PCX file for total bytes.

n [Data] = PCX file data

* Data is sent as binary data (Outputs 8 bits as one character data all at once)

[Coding Example]

<A>

<CC>1

<PI>001,12345,n~n

<Z>

[Supplementary Explanation]

1. Data is sent as binary data (Outputs 8 bits as one font data all at once) (Total bytes are PCX file size and Data are PCX file data)
2. In PCX file, 128 bytes of data is for the header part and the rest of data is for the image data.
3. When [Total bytes of PCX file] is not matching the transfer data, this may become the cause of malfunction.
4. Total bytes are the file size displayed at [Property] and such.
5. PCX file is available in Black/White mode only. In color mode, printing will not be performed due to command error. Also, this command is not valid for PCX compressed file. Make sure that the file extension is set to [PCX] before printing.
6. Specify Card Slot for Use <CC> prior to this command<PI> when using.
7. The error occurs when specifying unused or specifying the slot which the printer is allocated.

[Note]

Do not turn off the printer while accessing the memory. When the printer power is off while memory accessing, the data in the accessed media may be corrupted.

Memory Card			
Available for			
	WT4 series		
PCX File Call			ESC+PY
HEX code	ESC	PY	Parameter
	<1B> ₁₆	<50> ₁₆ <59> ₁₆	aaa
Default setting	None		
Persistence of the command	When printer is powered off		Set parameter will not be retained
	Validity in a job		Becomes invalid after execution
	Validity after a job		Becomes invalid after the job

[Function]

Invoking and printing out the data registered with Registration of PCX File <PI>.

[Format]

<PY>aaa

•Parameter

a [Registration number] = Valid Range : 1 to 999

[Coding Example]

<A>
 <V>100<H>100
 <CC>1
<PY>001
 <Q>1
 <Z>

[Supplementary Explanation]

1. Rotation <%> and Enlargement <L> are available for the invoked data.
2. Specify Card Slot for Use <CC> prior to this command <PY> when using.
3. The error occurs when specifying unused or specifying the slot which the printer is allocated.

[Note]

Do not turn off the printer while accessing the memory. When the printer power is off while memory accessing, the data in the accessed media may be corrupted.

Memory Card				
Available for				
	WT4 series			
Clear (Memory Card)			ESC+*	
HEX code	ESC	*	Parameter	
	<1B> ₁₆	<2A> ₁₆	a(,bbb)	
Default setting	None			
Persistence of the command	When printer is powered off		Set parameter will not be retained	
	Validity in a job		Becomes invalid after execution	
	Validity after a job		Becomes invalid after the job	

[Function]

Clears the entire contents in a memory card (option).

[Format]

<*>a,bbb

• Parameter

- a [Item to be cleared] = G : SATO Graphic
(Clears graphic registered with Store Graphic <GI>)
P : PCX file
(Clearing PCX file registered with Registration of PCX File <PI>)
M : BMP file
(Clears BMP file registered with Store BMP File <GT>)
F : Format
(Clears format registered with Store Format <YS>)
R : Form Overlay
(Clears form overlay registered with Store Form Overlay <&S>)
- b [Registration number] = Valid range : 000 to 999 (Omissible)
(When omitting Registration number, all the registered data will be cleared.)

[Coding example 1] Clearing SATO graphic 001

<A>
<CC>1
<*>G,001
<Z>

[Coding example 2] Clearing 002 of PCX file

<A>
<CC>1
<*>P,002
<Z>

[Coding example 3] Clearing all BMP files

<A>
<CC>1
<*>M
<Z>

[Coding example 4] Clearing format 001

<A>
<CC>1
<*>F,001
<Z>

[Coding example 5] Clearing all form overlay

<A>
<CC>1
<*>R
<Z>

[Note]

1. Place this command between the Start Code <A> and the Stop Code <Z> commands.
2. Make sure to specify the slot number with the command <CC> prior to this command.

[Tip]

1. To clear all data of memory card, use the Format Memory Card <FM> command.

15 Calendar Commands

Calendar			
Available for			
	WT4 series		
Calendar Setting			ESC+WT
HEX code	ESC	WT	Parameter
	<1B> ₁₆	<57> ₁₆ <54> ₁₆	aabbccdde
Default setting	None		

Persistence of the command	When printer is powered off	Set parameter will be retained.
	Validity in a job	Retained until next valid setting
	Validity after a job	Retained until next valid setting

[Function]

Sets the printer's internal calendar.

[Format]

<WT>aabbccdde

• Parameter

a	[Year]	= 00 to 99
b	[Month]	= 01 to 12
c	[Day]	= 01 to 31
d	[Hour]	= 00 to 23
e	[Minute]	= 00 to 59

[Coding example] 2020, January 1, 13:13

```
<A>
<WT>2001011313
<Z>
```

[Notes]

1. This command requires optional calendar IC. Note that the command can not be used without the calendar IC.

Calendar			
Available for			
	WT4 series		
Calendar Increment			ESC+WP
HEX code	ESC	WP	Parameter
	<1B> ₁₆	<57> ₁₆ <50> ₁₆	abbb
Default setting	None		
Persistence of the command	When printer is powered off		Set parameter will not be retained.。
	Validity in a job		Retained until next valid setting
	Validity after a job		Retained until next valid setting

[Function]

Adds a value to the printer's current date and/or time, which may be printed on the label.

[Format]

<WP>abbb

• Parameter

- | | | |
|---|-------------------------|---|
| a | [Date and time] | = Y (Year)
M (Month)
D (Day)
h (Hour)
W (week number) |
| b | [Increment calculation] | = Validity for Y : 0 to 9
Validity for M : 00 to 99
Validity for D : 000 to 999
Validity for h : 000 to 999
Validity for W : 00 to 99 |

[Coding example] Prints the date three months from today

```

<A>
<WP>M03
<V>100<H>200
<XM><WA>DD/MM/YY
<Q>1
<Z>

```

[Notes]

1. This command requires optional calendar IC. Note that the command can not be used without the calendar IC.
2. This command adds certain period of time to the specified year/month/date/time. As shown in the above example, three months from today can be set.
3. When there are several <WP> in a single item, the one specified last will be valid.

Calendar			
Available for			
	WT4 series		
Calendar Print			ESC+WA
HEX code	ESC	WA	Parameter
	<1B> ₁₆	<57> ₁₆ <41> ₁₆	a
Default setting	None		
Persistence of the command	When printer is powered off		Set parameter will not be retained.
	Validity in a job		Set parameter becomes invalid.
	Validity after a job		Set parameter becomes invalid.

[Function]

Specifies the printing of a date and/or time field from the printer's internal clock.

[Format]

<WA>Parameter

• Parameter

a	[Calendar configuration]	=	YYYY (Year)	:	1981 to 2080
			YY (Year)	:	00 to 91
			MM (Month)	:	01 to 12
			DD (Day)	:	01 to 31
			HH (Hour)	:	00 to 11
			hh (Hour)	:	00 to 23
			mm (Minute)	:	00 to 59
			ss (seconds)	:	00 to 59
			TT (AM or PM)	:	AM/PM
			JJJ (Julian date)	:	001 to 366
			WW (Week)	:	00 to 53
			ww (Week)	:	01 to 54

[Coding example] Specifies the print of date three months from today

```
<A>
<WP>M03
<V>100<H>200
<XM><WA>DD/MM/YYhh:mm
<Q>1
<Z>
```

[Notes]

1. This command requires optional calendar IC. Note that the command can not be used without the calendar IC.
2. When setting QTY to 2 or more, real time print will be performed on each tag/label.
3. Up to six commands can be used within one form.
4. Up to 16 characters can be used for printing the time and date data.
5. When counting the beginning of WW(Week) as "0" week, the beginning of ww(Week) will be "1".

Indication of week using [WW/ww]

e.g. 1) January 2008, and the year starts from Monday, Tuesday and Thursday.

Mon	Tue	Wed	Thu	Fri	Sat	Sun	WW	ww
31	1	2	3	4	5	6	0 week	1 st week
7	8	9	10	11	12	13	1 st week	2 nd week
14	15	16	17	18	19	20	2 nd week	3 rd week
21	22	23	24	25	26	27	3 rd week	4 th week
28	29	30	31	1	2	3	4 th week	5 th week

- For [2007/12/31], WW(Week) prints out [0 week]. (ww(Week) prints out [1st week])
- For [2008/01/25], WW(Week) prints out [3rd week]. (ww(Week) prints out [4th week])
- For [2008/01/28], WW(Week) prints out [4th week]. (ww(Week) prints out [5th week])
- For [2008/02/03], WW(Week) prints out [4th week]. (ww(Week) prints out [5th week])

e.g. 2) January 2010, and the year starts from Friday, Saturday and Sunday.

Mon	Tue	Wed	Thu	Fri	Sat	Sun	WW	ww
28	29	30	31	1	2	3	52 nd week	53 rd week
4	5	6	7	8	9	10	0 week	1 st week
11	12	13	14	15	16	17	1 st week	2 nd week
18	19	20	21	22	23	24	2 nd week	3 rd week
25	26	27	28	29	30	31	3 rd week	4 th week

- For [2010/1/1], WW(Week) prints out [52nd week]. (ww(Week) prints out [53rd week])
- For [2010/1/4], WW(Week) prints out [0 week]. (ww(Week) prints out [1st week])

* As for the year starts from Friday, Saturday and Sunday, the 2nd week of January is counted as 0 week (ww(Week) becomes 1st week).

16 Common Commands for All Language

16.1 [DC2+PA] Printer Setting Command

Command	DC2	PA	Parameter
Hexadecimal code	<12> ₁₆	<50> ₁₆ <41> ₁₆	a...a,bb,c...c,d...d,(ee,f...f,g...g,h...h,i...i)...
Initial value	None		

Valid range and term of command	When the power is OFF	Parameter
	Valid range	The set parameter is valid until the next specification is made.
	Printer operation in progress	The command cannot be received during the printer operation. ([NAK] return)
	Error	Commands cannot be received even if an error is occurring. ([NAK] return)

[Function]

Registering the printer settings.

[Format]

[DC2]PA, a...a,bb,c...c,d...d,(ee,f...f,g...g,h...h,i...i)...

Data Example)

[DC2]PA,87,CA,35,SPEED:2
 LABELV:12345
 LABELH:456
 ,SB,39,ZEROSLASH:0
 SHOTAI:0
 PROPORTIONAL:0

[Parameters]

Symbol	Parameter name	Valid range	Acquisition method
a	Total number of data in bytes *Total number of data in bytes after parameter "b". Does not include the comma in between parameter "a" and "b".	0 to 524277	Acquire until ","
b(e...)	Identifier	CA: Common settings CB: Notification system IR: RS-232C settings IL: LAN settings IU: USB settings IW: WLAN settings IB: Bluetooth settings SB: SBPL setting SZ: SZPL settings SI: SIPL settings	Acquire fixed two-character
c(f...)	Data size of settings in bytes * The size of setting information is equivalent to the bytes by section from parameter d. The comma in between the sections is not included.	0 to 524277	Acquire until ","
d(g...)	Setting data *Text format *Items that need to be encrypted to perform encryption	Refer to the following the format.	Data sized of setting information

[Setting data format]

"Name of setting item"+";"+"Setting data" + "Line feed(ODH, OAH)"
 h...h : i...i[CR][LF](j...j : k...k[CR][LF])...

[Setting data]

Symbol	Parameter name	Valid range	Acquisition method
h(j ...)	Name of setting item	See tables in [A list of setting items]	Acquire up to ":"
i(k ...)	Setting data	See tables in [A list of setting items]	Acquire up to "[CR][LF]"

Data Example)

SPEED:4
 LEVEL:5

[Return data format (normal)]

[ACK]<06>₁₆

[Return data format (When a command error occurs)]

[NAK]<15>₁₆

[Exception processing]

Parameter name	Exception condition	
	A value outside the range is specified	The specified size and received size are different
Total number of data byte	Command error	Command Error *1*2
Identifier	Invalid identifier (skip)	Command Error
Data size of settings in bytes	Command error	Command Error *3
Name of setting item	Invalid setting item (skip)	
Setting data	Invalid setting data (skip)	

*1 If the data size from the first identifier (bb) to the last data item does not match the data size of setting information, and the data size calculated from the format, a command error will occur.

*2 However, nothing will be returned until receiving the number of data equals to the total number of data bytes.

*3 If the data during the receipt of the setting information data size from the beginning of the setting information data is not “,”, a command error occurs.

Terminology	Description
Command error	All items are not set. The data received after a command error is determined is not considered as a parameter of this command.
Invalid identifier	The corresponding setting information data (data equivalent to the succeeding setting information data size) is ignored.
Invalid item	The data of one item (data up to [CR] [LF]) is ignored.

[Supplementary information]

- If the sum of the total data size and configuration information data size does not match, an error will occur and the will not be set.
- If the data size of settings and data size of actual settings do not match, and error will occur and the value will not be set.
- Setting for each identifier and setting item can be omitted.
- Setting for each identifier and setting item can be in random order.
- When re-setting a setting with same identifier, the last value that was set will be enabled.
- If the value in setting was out of range, then the setting item will have an error and will be skipped.
- No malfunction will occur when a character string with the same name as the setting item was set.
e.g.) When you set “DeviceName” as setting value for the setting item named “DeviceName.”
- Do not send this command when this product is printing. Using this command in the standby status.

[Setting saving function]

This command proceeds the setting when the item name and the setting value were specified basically. However, the problem may occur when the setting data are set in order of receiving the data because the setting item can be omitted and set in random order. These items will be saved firstly and set after all the received data were analyzed

The target items and their setting process are described as follows.

Target item	Setting process																	
[PRINTER] Time zone [PRINTER] Date [PRINTER] Time	The time zone must be set firstly because the time difference calculated from the local time is necessary for setting the date and time.																	
[PRINTER] Main port [PRINTER] Sub port	Settings of the main port and sub-port cannot be duplicated, and the duplicated code will be ignored.																	
[BLUETOOTH]ISI [BLUETOOTH]ISW [BLUETOOTH]PSI [BLUETOOTH]PSW	When "ISI" is smaller than "ISW," it is not set. There is a function that when "O" is set to both "ISI" and "ISW," Bluetooth module does not respond to the search. Regarding this function, to avoid conflicting settings, setting it under following condition. <table><tr><th>ISI</th><th>ISW</th><th>Process</th></tr><tr><td>= "O"</td><td>= "O"</td><td>Set</td></tr><tr><td></td><td>≠ "O"</td><td>Do not set</td></tr><tr><td>≠ "O"</td><td>= "O"</td><td>Do not set</td></tr><tr><td></td><td>≠ "O"</td><td>Set</td></tr></table> When "PSI" is smaller than "PSW," it is not set.			ISI	ISW	Process	= "O"	= "O"	Set		≠ "O"	Do not set	≠ "O"	= "O"	Do not set		≠ "O"	Set
ISI	ISW	Process																
= "O"	= "O"	Set																
	≠ "O"	Do not set																
≠ "O"	= "O"	Do not set																
	≠ "O"	Set																
[BLUETOOTH] Delete pairing information	There are 10 paring information and they are arrayed. You cannot delete them one by one because the deleted area is filled with next data and the number will be inconsistent. You can delete the data when you know all the paring information to be deleted.																	
[SBPL]STX [SBPL]ETX [SBPL]ESC [SBPL]ENQ [SBPL]CAN [SBPL]NULL [SBPL]OFFLINE	Each control code cannot be duplicated, and the duplicated code will be ignored.																	
[SZPL] Command Head [SZPL] Control head [SZPL] Delimiter	Each control code cannot be duplicated, and the duplicated code will be ignored.																	
[SDPL]SOH [SDPL]STX [SDPL]CR [SDPL]CNT	Each control code cannot be duplicated, and the duplicated code will be ignored.																	

The method for encryption shall be bit inversion plus conversion of binary to ASCII. Therefore there will be twice as much data after encryption.

Table) Table of encryption code

Original		Encrypted		Original		Encrypted		Original		Encrypted	
Character	code [HEX]	Character (SJIS)	code [HEX]	Character	code [HEX]	Character (SJIS)	code [HEX]	Character	code [HEX]	Character (SJIS)	code [HEX]
Space	20	df	64 66	@	40	bf	62 66	`	60	9f	39 66
!	21	de	64 65	A	41	be	62 65	a	61	9e	39 65
"	22	dd	64 64	B	42	bd	62 64	b	62	9d	39 64
#	23	dc	64 63	C	43	bc	62 63	c	63	9c	39 63
\$	24	db	64 62	D	44	bb	62 62	d	64	9b	39 62
%	25	da	64 61	E	45	ba	62 61	e	65	9a	39 61
&	26	d9	64 39	F	46	b9	62 39	f	66	99	39 39
'	27	d8	64 38	G	47	b8	62 38	g	67	98	39 38
(	28	d7	64 37	H	48	b7	62 37	h	68	97	39 37
)	29	d6	64 36	I	49	b6	62 36	i	69	96	39 36
*	2A	d5	64 35	J	4A	b5	62 35	j	6A	95	39 35
+	2B	d4	64 34	K	4B	b4	62 34	k	6B	94	39 34
,	2C	d3	64 33	L	4C	b3	62 33	l	6C	93	39 33
-	2D	d2	64 32	M	4D	b2	62 32	m	6D	92	39 32
.	2E	d1	64 31	N	4E	b1	62 31	n	6E	91	39 31
/	2F	d0	64 30	O	4F	b0	62 30	o	6F	90	39 30
0	30	cf	63 66	P	50	af	61 66	p	70	8f	38 66
1	31	ce	63 65	Q	51	ae	61 65	q	71	8e	38 65
2	32	cd	63 64	R	52	ad	61 64	r	72	8d	38 64
3	33	cc	63 63	S	53	ac	61 63	s	73	8c	38 63
4	34	cb	63 62	T	54	ab	61 62	t	74	8b	38 62
5	35	ca	63 61	U	55	aa	61 61	u	75	8a	38 61
6	36	c9	63 39	V	56	a9	61 39	v	76	89	38 39
7	37	c8	63 38	W	57	a8	61 38	w	77	88	38 38
8	38	c7	63 37	X	58	a7	61 37	x	78	87	38 37
9	39	c6	63 36	Y	59	a6	61 36	y	79	86	38 36
:	3A	c5	63 35	Z	5A	a5	61 35	z	7A	85	38 35
;	3B	c4	63 34	[	5B	a4	61 34	{	7B	84	38 34
<	3C	c3	63 33	¥	5C	a3	61 33	|	7C	83	38 33
=	3D	c2	63 32	]	5D	a2	61 32	}	7D	82	38 32
>	3E	c1	63 31	^	5E	a1	61 31	~	7E	81	38 31
?	3F	c0	63 30	_	5F	a0	61 30				

[A list of setting items]

[PRINTER] section					
Name of setting item	Setting value	Initial value	R/W	Initial	Contents of Setting item
				CA	
SPEED	"2": 2 inches/sec "3": 3 inches/sec "4": 4 inches/sec "5": 5 inches/sec "6": 6 inches/sec "7": 7 inches/sec "8": 8 inches/sec 203 dpi: 2-8 (Dispenser: 2-5) 300 dpi: 2-6 (Dispenser: 2-5)	203 dpi: 6 300 dpi: 5	R/W	○	Print speed <CS>
LEVEL	"1": Darkness 1 "2": Darkness 2 "3": Darkness 3 ... "29": Darkness 29 "30": Darkness 30	16	R/W	○	Print darkness level <#E>
CONCENTRATION	"A"	A	R	-	Print darkness
LABELV	203 dpi: "1" to "20000" 300 dpi: "1" to "18000"	203 dpi: 20000 300 dpi: 18000	R/W	○	Vertical size of label
LABELH	203 dpi: "1" to "832" 300 dpi: "1" to "1248"	203 dpi: 832 300 dpi: 1248	R/W	○	Horizontal size of label
PITCHOFFSET	"-99" to "99" (dots)	0	R/W	○	Continuous Offset adjust <PO>
BASEV	203 dpi: "-19999" to "+19999" 300 dpi: "-17999" to "+17999"	0	R/W	○	Offset of vertical base reference point <A3>
BASEH	203 dpi: "-831" to "+831" 300 dpi: "-1247" to "+1247"	0	R/W	○	Offset of horizontal base reference point <A3>
PRINT_AUTO	"0": Disable "1": Enable	1	R/W	○	Automatic selection of behavior mode
PRINT	"0": Continuous "1": Tear-off "2": Dispenser "3": Cutter "5": Cut while printing	1 No option: 1 Cutter: 3 Dispenser: 2	R/W	○	Print motion
PEEL	"0": Motion 3 (No backfeed) "1": Motion 1 (Thermal head position) "2": Motion 2 (Dispenser position)	0	R/W	○	Dispenser motion (backfeed motion) <PM>
CUTTER	"0": Motion 3 (No backfeed) "1": Motion 1 (Thermal head position) "2": Motion 2 (Cutter position)	1	R/W	○	Cutter motion <PM>
TEAR_OFFSET	"-99" to "99" (dots)	0	R/W	○	Tear-off Offset adjust <PO>
CUT_DISP_OFFSET	"-99" to "99" (dots)	0	R/W	○	Cutter / Dispenser Offset adjust <PO>
TYPE	"0": Thermal transfer "1": Direct thermal	0	R/W	○	Print method <PH>
SENSOR	"0": Disable sensor "1": GAP "2": Reflective	1	R/W	○	Sensor type <IG> Sensor value of the active

	(Tear-off or Dispenser or Cut while printing: 1, 2) Continuous or cutter: 0, 1, 2)				print mode.
LANGUAGE	"0": English "1": French "2": German "3": Italian "4": Spanish "5": Portuguese (Europe) "6": Chinese (Simplified) "7": Chinese (Traditional) "8": Indonesian "9": Vietnamese "10": Russian "11": Thai "12": Dutch "13": Polish "14": Korean "15": Japanese	0	R/W	○	Language settings
DATE_SET	"YYYY/MM/DD" Y: year M: Month D: Date Min: 2000/01/01 00:00:00 Max: 2035/12/31 23:59:00	2000/01/01	R/W	○	Set RTC (date)
TIME_SET	"HH:NN:SS" H: Hour N: Minute S: Second	00:00:00	R/W	○	Set RTC (time)
LANGUAGE_ICON	"0": Disable "1": Enable	0	R/W	○	Display Language Icon
BUZZER	"0": Buzzer off "1": Buzzer on	1	R/W	○	Buzzer
ADJUSTPITCH	Unit: dots 300 dpi: "-45" to "45" 203 dpi: "-30" to "30"	0	R/W	○	Adjust print position
ADJUSTOFFSET	Unit: dots 300 dpi: "-45" to "45" 203 dpi: "-30" to "30"	0	R/W	○	Offset adjust
ADJ_PITCHOFFSET	Unit: dots 300 dpi: "-588" to "588" 203 dpi: "-392" to "392"	0	R/W	○	Pitch and Offset adjust
OPTIONTIME	"0", "5" to "200" (x100ms)	0	R/W	○	Waiting time in tear-off mode for next data <TW>
AUTO_MEASURE	"0": Manual Print "1": Auto-Measure "2": Command Print	0	R/W	○	Automatic measurement of label length
AUTO_ONLINE	"0": Disable "1": Enable	1	R/W	○	Auto online <AO>, <LD>
FEED	"0": Disable "1": Enable	0	R/W	○	Initial feed
LVL_LE	"0" to "7": sensor level	3	R/W	○	Adjust sensor level
PRIORITY	"0": Prioritize command "1": Prioritize LCD setting	0	R/W	○	Priority setting * Target command <#F>, <IG>, <CS>, <A3>, <PM>
ADJUSTDARK	"0" to "99"	50	R/W	○	Adjust darkness
OP_FEED	Unit: dots 300 dpi: "0" to "3060" 203 dpi: "0" to "2040"	0	R/W	○	Optional feed volume

PASS_SET	"0": Disable "1": Enable	0	R/W	○	Input password
APP_MODE	"00": AUTO "SB": SBPL "SZ": SZPL "SI": SIPL	00	R/W	○	Application mode
APP_MODE_AUTO	"SB": SBPL "SZ": SZPL "SI": SIPL	SB	R/W	○	Application mode of AUTO mode
CALENDAR_CHECK	"0": Disable "1": Enable	1	R/W	○	RTC check
REPRINT	"0": Disable "1": Enable	0	R/W	○	Reprint (Reprint After Error)
PRINTEND_POSITION	Unit: dots 300 dpi: "1" to "18000" 203 dpi: "1" to "20000"	0	R/W	○	Print End Position
SENSOR_CONTINUOUS	"0": Disable sensor "1": GAP "2": Reflective	1	R/W	○	Sensor type (Continuous)
UNIT	"0": dot "1": inch "2": mm	0	R/W	○	Unit (Only for Web)

[Count] section					
Name of setting item	Setting value	Initial value	R/W	Initial	Contents of Setting item
				CB	
PRTCLN	"0": Disable "1": Enable	0	R/W	○	Notification for printer cleanup
PRTCLN_ITV_COUNT	"10" to "1000" (m)	400	R/W	○	Distance to display notification for printer cleanup
PRTCLN_COUNT	"XXXX" * Unit: 1/24 mm	-	R	-	Cleaning distance
HDCHG	"0": Disable "1": Enable	0	R/W	○	Notification for replacing thermal head
HDCHG_ITV_COUNT	"10" to "100" (km)	100	R/W	○	Distance to display notification for replacing thermal head
HDCHG_COUNT	"XXX" * Unit: 1/24 mm	-	R	-	Print distance of a thermal head
CUTUNT	"0": Disable "1": Enable	0	R/W	○	Notification for replacing cutter unit
CUTUNT_ITV_COUNT	"10" to "1000" (k cuts)	1000	R/W	○	Distance to display notification for replacing cutter unit
CUTUNT_COUNT	"XX"	-	R	-	Cut count
ROLLER	"0": Disable "1": Enable	0	R/W	○	Notification for replacing platen roller
ROLLER_ITV_COUNT	"10" to "100" (km)	100	R/W	○	Distance to display notification for replacing platen roller
ROLLER_COUNT	"XXX" * Unit: 1/24 mm	-	R	-	Distance of the platen roller

[RS232C] section					
Name of setting item	Setting value	Initial value	R/W	Initial	Contents of Setting item
				IR	
BOURATE	"0": 2400 bps "1": 4800 bps "2": 9600 bps "3": 19200 bps "4": 38400 bps "5": 57600 bps "6": 115200 bps	6	R/W	○	Baud rate
DATABIT	"0": 8 bit "1": 7 bit	0	R/W	○	Data bit
PARITYBIT	"0": None "1": Odd number "2": Even number	0	R/W	○	Parity bit
STOPBIT	"0": 1 bit "1": 2 bit	0	R/W	○	Stop bit
CONTROL	"1": READY/BUSY Multi "3": XON/XOFF Multi "4": STATUS4 "5": STATUS3 "6": STATUS5	4	R/W	○	Communication protocol (for SBPL)

[LAN] section					
Name of setting item	Setting value	Initial value	R/W	Initial	Contents of Setting item
				IL	
DHCPv4_LAN	"0": Disable "1": Enable	1	R/W	○	DHCPv4 setting
IPv4_ADDRESS_LAN	AAA.BBB.CCC.DDD Allow "0" to "255" for A-D	0.0.0.0	R/W	○	IPv4 address
IPv4_SUBNETMASK_LAN	AAA.BBB.CCC.DDD Allow "0" to "255" for A-D	0.0.0.0	R/W	○	IPv4 subnet mask
IPv4_DEFGATEWAY_LAN	AAA.BBB.CCC.DDD Allow "0" to "255" for A-D	0.0.0.0	R/W	○	IPv4 default gateway
IPv6_ADDSET_LAN	"0": AUTO "1": DHCP "2": Manual Setting	2	R/W	○	IPv6 address setting
IPv6_ADDRESS_LAN	AAAA:BBBB:CCCC:DDDD: EEEE:FFFF:GGGG:HHHH Specified in the ASCII of 128bit A to H is "0" to "FFFF" A to H is omissible.	0000:0000:0000:0000:0000:0000:0000:0000	R/W	○	Ipv6 address
PROTOCOL	"0": Status 4 (Periodic) "1": Status 4 (ENQ) "2": Status 3 "3": Status 5	1	R/W	○	Communication protocol (for SBPL)
PORT1	"Fixed"	1024	R		Port 1
PORT2	"Fixed"	1025	R		Port 2
PORT3	1 ~ 65535	9100	R/W	○	Port 3
MACADDRESS	"AA:BB:CC:DD:EE:FF"	-	R		MAC address
SNMP	"0": Disable "1": Enable	1	R/W	○	SNMP settings
SNMP_TRAP	"0": Disable "1": Enable	0	R/W	○	Trap

[USB] section					
Name of setting item	Setting value	Initial value	R/W	Initial	Contents of Setting item
				IU	
PROTOCOL	"0": Status4 "1": Status5	0	R/W	○	Communication protocol (for SBPL)

[WLAN] section					
Name of setting item	Setting value	Initial value	R/W	Initial	Contents of Setting item
				IW	
DHCPv4_WLAN	"0": Static "1": DHCP	1	R/W	○	DHCPv4 setting
IPv4_ADDRESS_WLAN	AAA.BBB.CCC.DDD Allow "0" to "255" for A-D	0.0.0.0	R/W	○	IPv4 address
IPv4_SUBNETMASK_WLAN	AAA.BBB.CCC.DDD Allow "0" to "255" for A-D	0.0.0.0	R/W	○	IPv4 subnet mask
IPv4_DEFGATEWAY_WLAN	AAA.BBB.CCC.DDD Allow "0" to "255" for A-D	0.0.0.0	R/W	○	IPv4 default gateway
WLANMODE	"0": Infrastructure mode	0	R/W	○	Select WLAN Mode
ESSID	1 to 31 digit long characters	SATO_PRINTER	R/W	○	SSID
WLANNETWORKSECINF	"0": None "1": WEP "2": WPA2/WPA	2	R/W	○	Infrastructure mode Network security
WEPKEY1	String of 13 digits 26 digit hexadecimal * Encrypted data	(String of empty)	W	○	WEP key 1
WEPKEY2	String of 13 digits 26 digit hexadecimal * Encrypted data	(String of empty)	W	○	WEP key 2
WEPKEY3	String of 13 digits 26 digit hexadecimal * Encrypted data	(String of empty)	W	○	WEP key 3
WEPKEY4	String of 13 digits 26 digit hexadecimal * Encrypted data	(String of empty)	W	○	WEP key 4
WEPKEYINDEX	"1" to "4"	(String of empty)	W	-	WEP key index
WPAAUTH	"0": Personal (PSK) "1": Enterprise (802.1x)	0	R/W	○	WPA authentication
PSK	8-31 ASCII * Encrypted data	(String of empty)	W	-	PSK * WPA Auth is PSK
EAPMODE	"0": FAST "2": PEAP "3": TLS "4": TTLS	2	R/W	○	EAP Mode * WPA Auth is not PSK
EAP_USERNAME	0 to 63 digit long characters	anonymous	R/W	○	EAP authentication user name
EAP_PASSWORD	0 to 32 digit long characters * Encrypted data	(String of empty)	W		EAP authentication password
EAP_PRIVATEKEY	0 to 31 digit long characters * Encrypted data	(String of empty)	W		Private Key Password
FWversion	Vx.x.x.	-	R	-	Firmware version for WLAN module
MACADDRESS	"AABBCCDDEEFF"	-	R	-	MAC address
WLANPORT	1 ~ 65535	9100	R/W	○	WLAN Port

[BLUETOOTH] section					
Name of setting item	Setting value	Initial value	R/W	Initial	Contents of Setting item
				IB	
DEVICENAME	1 to 16 digit long characters	BT PRINTER	R/W	○	
BLUEADDRESS	"aabbccddeeff"	-	R	-	BD address
BLUEVERSION	"VX.X.X"	-	R	-	Bluetooth firmware version

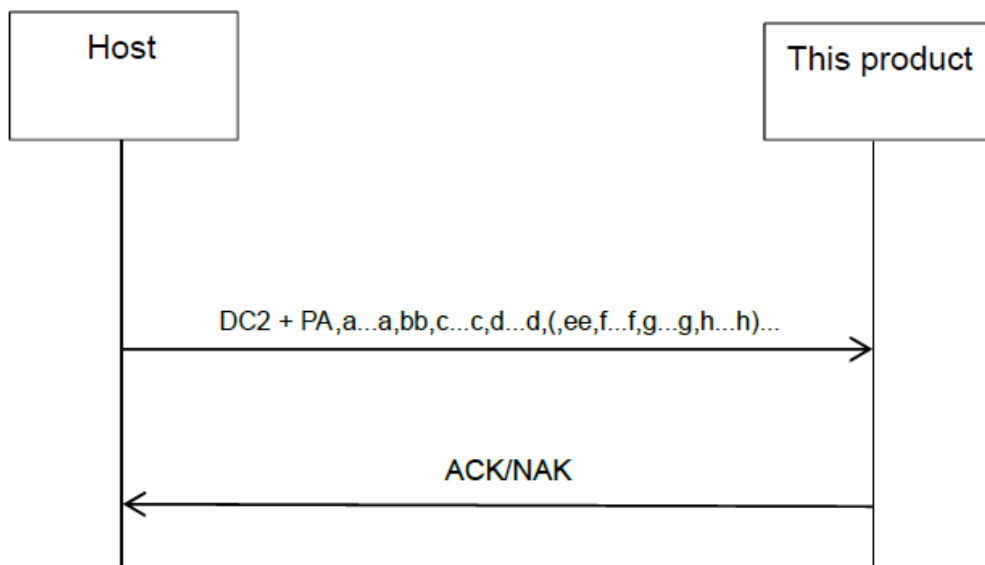
[SBPL] section						
Name of setting item	Setting value	Initial value		R/W	Initial	Contents of Setting item
					SB	
ZEROSLASH	"0": Disable "1": Enable	1		R/W	○	Zero slash <LD>
PROPORTIONAL	"0": Fixed pitch "1": Proportional pitch	1		R/W	○	Proportional pitch <PG>, <PC>
STDCODE	"0": Standard code "1": Non-standard code	0		R/W	○	Protocol code
CMDERR	"0": Disable "1": Enable	0		R/W	○	Command error
STXCODE	"0" to "255"	Standard 2 (0x02)	Non-standard 123 (0x7B)	R/W	○	STX <LD>
ETXCODE	"0" to "255"	3 (0x03)	125 (0x7D)	R/W	○	ETX <LD>
ESCCODE	"0" to "255"	27 (0x1B)	94 (0x5E)	R/W	○	ESC <LD>
ENQCODE	"0" to "255"	5 (0x05)	64 (0x40)	R/W	○	ENQ <LD>
CANCODE	"0" to "255"	24 (0x18)	33 (0x21)	R/W	○	CAN <LD>
NULLCODE	"0" to "255"	0 (0x00)	126 (0x7E)	R/W	○	NULL <LD>
OFFLINECODE	"0" to "255"	64 (0x40)	93 (0x5D)	R/W	○	OFFLINE <LD>
EUROCODE	"0" to "255"	213 (0xD5)	213 (0xD5)	R/W	○	EURO <LD>
KANJI	"0": UTF16 "1": GB18030 "3": Big5 "4": UTF8	0		R/W	○	<KS>
CODE_PAGE	"0": UTF8 "1": CP858 "2": ISO8859-1 "3": ISO8859-2 "4": ISO8859-9 "5": CP737 "6": CP855 "7": CP850 "8": CP852 "9": CP857 "10": CP866 "11": CP1250 "12": CP1251 "13": CP1252 "14": CP1253 "15": CP1254 "16": CP1257 "17": CP869	1		R/W	○	Code page

Orientation	"0": Portrait "1": Landscape "2": Inv. Portrait "3": Inv. Landscape	0	R/W	○	Orientation
SAVE_A3	"0": Disable "1": Enable	0	R/W	○	<A3> Save/Do not save Setting

[SZPL] section					
Name of setting item	Setting value	Initial value	R/W	Initial	Contents of Setting item
				SZ	
PITCH_OFFSET	"-120" to "120" (dots)	0	R/W		Pitch offset at top of label
SHIFT_OFFSET	Unit: dots 300 dpi: "-1248" to "1248" 203 dpi: "-832" to "832"	0	R/W		Label shift offset
CMD_HEAD	"0" to "255"	94 (^)	R/W	○	Command head
CTR_HEAD	"0" to "255"	126 (~)	R/W	○	Control head
DELIMITER	"0" to "255"	44 (,)	R/W	○	Delimiter
DATE_FORM	"0": Normal "1": MM/DD/YY(24 hours) "2": MM/DD/YY(12 hours) "3": DD/MM/YY(24 hours) "4": DD/MM/YY(12 hours)	0	R/W	○	Date and time format
LABEL_ROTATION	"0": 0 degree "1": 180 degree	0	R/W	○	Label Rotation ^PO

[SIPL] section					
Name of setting item	Setting value	Initial value	R/W	Initial	Contents of Setting item
				SI	
ZEROSLASH	"0": Disable "1": Enable	1	R/W	○	Zero slash (Same table with SB)
EUROCODE	"0" to "255"	213 (0xD5)	R/W	○	EURO
CODE_PAGE	"1": 850 "11": 1250 "12": 1251 "13": 1252 "14": 1253 "15": 1254 "16": 1255 "17": 1256 "18": 1257 "22": UTF8	13 (1252)	R/W	○	Code page
PROPORTIONAL	"0": Disable "1": Enable	0	R/W	○	c20 proportional pitch

[Sequence]



16.2 [DC2+PB] Printer Setting Information Acquisition

Command	DC2	PB	Parameter
Hexadecimal code	<12> ₁₆	<50> ₁₆ <42> ₁₆	(,aa(b...b))+EOT(04h)
Initial value	None		

Valid range and term of command	When the power is OFF	-
	Valid range	-
	Printer operation in progress	The command can be received even during the printer operation.
	When acquiring label sensor information	Commands are not accepted while acquiring sensor information. ([NAK] return)
	Error	Commands cannot be received even if an error is occurring.

[Function]

This command is used to acquire the printer information.

[Format]

[DC2]PB(aa(b...b))[EOT]

[Parameters]

Symbol	Parameter name	Valid range	Acquisition method
a	Identifier	Refer to [Identifier] below.	When omitted, all items will be returned.
b	Name of setting item	Refer to [DC2 + PA] command.	Acquire up to [EOT]

[Return data format (normal)]

[STX]a...a,bb,c...c,d...d(,ee,f...f,g...g)...[ETX]

[Return data]

Symbol	Parameter name	Valid range
a	Total number of data byte. * This is the total number of bytes after parameter b. The delimiting comma between parameters a and b, and the ETX are not included.	Data size from the first identifier until before [ETX]
b(c)	Identifier	Refer to [Identifier] below.
c(f)	Data size of settings in bytes * The size of setting information is equivalent to the bytes by section from parameter d. The delimiting comma between the sections are not included.	Size of the corresponding setting information data
c(f)	Setting information data * Text format	Refer to the table of [Setting information data] below.

[Identifier]

Valid range

CA: Common settings
CB: Notification system
IR: RS-232C settings
IL: LAN settings
IU: USB settings
IW: WLAN settings
IB: Bluetooth settings
SB: SBPL settings
SZ: SZPL Settings
SI: SIPL Settings

[Setting information data format]

"Name of setting item" + "," + "Setting data" + "Line feed (ODH, OAH)"

h...h:i...i[CR][LF](j...j:k...k[CR][LF])...

[Setting information data]

Symbol	Parameter name	Valid range
h(j...)	Name of setting item	Refer to the list of setting items of [DC2+PA].
i(k...)	Setting data	Refer to the list of setting items of [DC2+PA].

Data Example)

CA,12345,SPEED:4

LEVEL:5

CONCENTRATION:A

:

[Return data format (When a command error occurs)]

[NAK]<15>₁₆

[Exception processing]

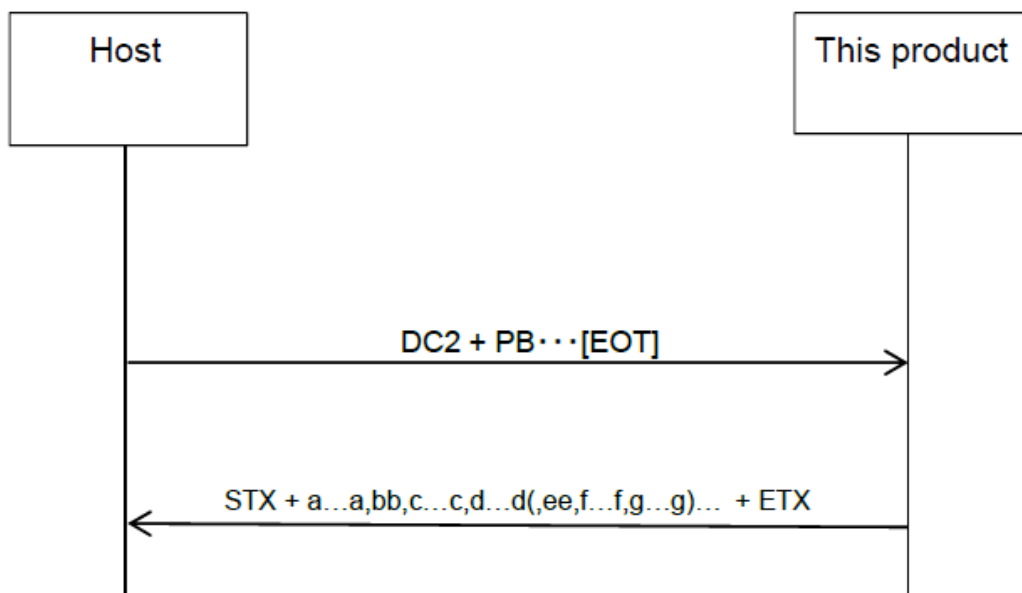
Parameter name	Exception condition	
	A value outside the range is specified	The specified size and received size are different
Identifier	Command error	Invalid receive data

Terminology	Description
Command error	The data received after a command error is determined is not considered as a parameter of this command.

[Supplementary information]

- When identifiers are omitted, all data will be returned.
- When setting item names are specified, setting information of the item which was set will be returned.

[Sequence]



16.3 [DC2+PC] Printer Device Information Acquisition

Command	DC2	PC	Parameter
Hexadecimal code	<12> ₁₆	<50> ₁₆ <43> ₁₆	None
Initial value	None		

Valid range and term of command	When the power is OFF	-
	Valid range	-
	Printer operation in progress	The command can be received even during the printer operation.
	When acquiring label sensor information	Commands are not accepted while acquiring sensor information. ([NAK] return)
	Error	Commands can be received even if an error is occurring.

[Function]

Returning the printer device information.

[Format]

[DC2]PC

[Return data format (normal)]

[STX]a...a,b...b:c...c[CR][LF](d...d:e...e[CR][LF]) ... [ETX]

[Return data]

Symbol	Parameter name	Valid range
a	Total number of data byte * This is the total number of bytes after parameter b. The delimiting comma between parameters a and b, and the ETX are not included.	Data size from the first device information name up to before [ETX]
b(d)	Device information name * Text format	Refer to the printer device information list.
c(e)	Device information data * Text format	Refer to the printer device information list.

Data Example)

[STX]12345,MODEL: Model name[CR][LF]FW Ver:1.0.0[CR][LF]...[CR][LF] [ETX]

[Printer device information list]

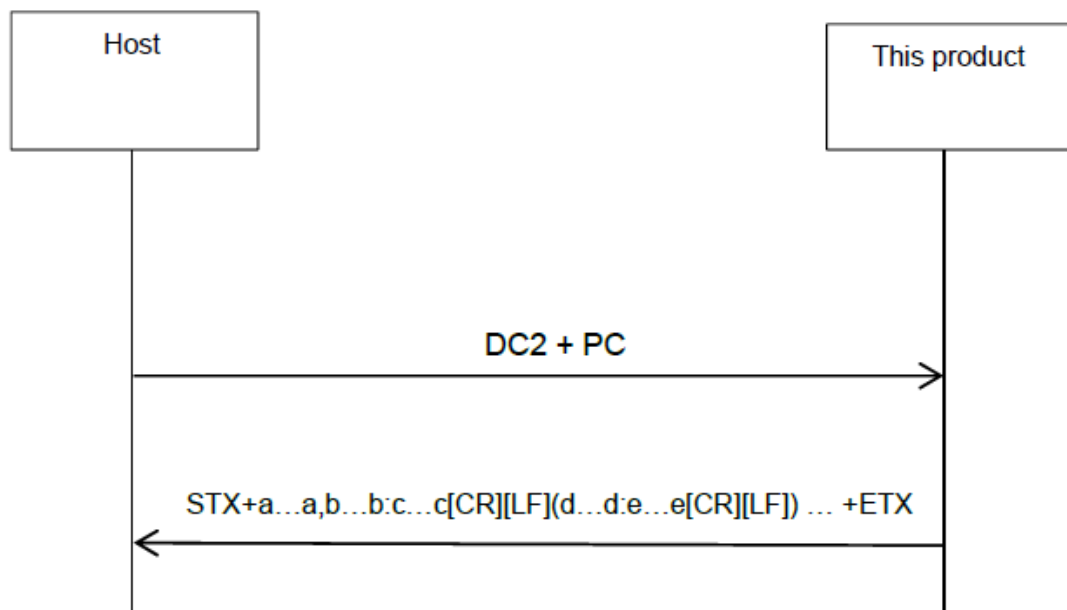
No.	Description	Device information name	Device information data
	Model name	MODEL	M...M M: Model name
	Main firmware version	MAIN FW Ver	V...V V: Version
	Main firmware Creation date	MAIN FW Date	YYYYMMDD
	LAN MAC Address	LAN MAC	XX:XX:XX:XX:XX:XX X: Alphanumeric
	WLAN MAC Address	WLAN MAC	XX:XX:XX:XX:XX:XX X: Alphanumeric
	BD address	BD	xxxxxxxxxxxx X: Alphanumeric
Y / N	Head counter 1	Head Count1	Numeric value (unit: mm)
Y / N	Head counter 2	Head Count2	Numeric value (unit: mm)
Y / N	Head counter 3	Head Count3	Numeric value (unit: mm)
Y / N	Life counter	Life Count	Numeric value (unit: mm)
Y / N	Cutter counter	Cut Count	Numeric value (unit: count)
	Free space size in user area	MEM_FROM	Numeric value (unit: byte)
	USB memory available size (Printer front port connection)	MEM_USB1	Numeric value (unit: byte)
	Number of registered counts, number	SBPL_FOL_SLOT1	XXXX,YYYYYYYYYY

	of registered bytes of SBPL form overlay SLOT1		X: Registration count Y: Number of registered bytes
	Registration number of SBPL form overlay SLOT1	SBPL_FOL_SLOT1_No	XXX (,XXX,XXX...) X: Registration No., * Repeated as many times as the registration numbers * If the registration count is zero, the value is ignored.
	Number of registered counts, number of registered bytes of SBPL format SLOT1	SBPL_FMT_SLOT1	XXXX,YYYYYYYYYY X: Registration count Y: Number of registered bytes
	Registration number of SBPL format SLOT1	SBPL_FMT_SLOT1_No	XXX (,XXX,XXX...) X: Registration No., * Repeated as many times as the registration numbers * If the registration count is zero, the value is ignored.
	Number of registered counts, number of registered bytes of SBPL graphic SLOT1	SBPL_GRA_SLOT1	XXXX,YYYYYYYYYY X: Registration count Y: Number of registered bytes
	Registration number of SBPL graphic SLOT1	SBPL_GRA_SLOT1_No	XXX (,XXX,XXX...) X: Registration No., * Repeated as many times as the registration numbers * If the registration count is zero, the value is ignored.
	Number of registered counts, number of registered bytes of SBPL BMP file SLOT1	SBPL_BMP_SLOT1	XXXX,YYYYYYYYYY X: Registration count Y: Number of registered bytes
	Registration number of SBPL BMP file SLOT1	SBPL_BMP_SLOT1_No	XXX (,XXX,XXX...) X: Registration No., * Repeated as many times as the registration numbers * If the registration count is zero, the value is ignored.
	Number of registered counts, number of registered bytes of SBPL PCX file SLOT1	SBPL_PCX_SLOT1	XXXX,YYYYYYYYYY X: Registration count Y: Number of registered bytes
	Registration number of SBPL PCX file SLOT1	SBPL_PCX_SLOT1_No	XXX (,XXX,XXX...) X: Registration No., * Repeated as many times as the registration numbers * If the registration count is zero, the value is ignored.
	Number of registered counts, number of registered bytes of SBPL TrueType font SLOT1	SBPL_TTF_SLOT1	XXXX,YYYYYYYYYY X: Registration count Y: Number of registered bytes
	Registration number of SBPL TrueType font SLOT1	SBPL_TTF_SLOT1_No	XXX (,XXX,XXX...) X: Registration No., * Repeated as many times as the registration numbers * If the registration count is zero, the value is ignored.
	Printer Serial	PR_SN	XXXXXXXX X: alphanumeric

[Precautions during use]

- The printer device information update cycle must be five seconds or longer. When sending this command in continuation, be sure to set an interval of five seconds or more.
- When a USB memory is used, only the available space of the memory connected first is returned even when a connection is established via the HUB.
- It takes more than one second to create the return data immediately after the startup in order to obtain the checksum of the module.
- It takes more time to create the return data when there are a lot of registrations by SBPL command. (It takes approx. 1.5 seconds to register 10000 data.)

[Sequence]



16.4 [DC2+PD] Each Sensor Information Acquisition

Command	DC2	PD	Parameter
Hexadecimal code	<12> ₁₆	<50> ₁₆ <44> ₁₆	None
Initial value	None		

Valid range and term of command	When the power is OFF	-
	Valid range	-
	Printer operation in progress	The command can be received even during the printer operation.
	When acquiring label sensor information	Commands are not accepted while acquiring sensor information. ([NAK] return)
	Error	The command can be received even if an error is occurring.

[Function]

Acquiring the information of each sensor. The sensor information corresponds to the information immediately after the reception of the command.

[Format]

[DC2]PD

[Return data format (normal)]

[STX]a...a,b...b:c...c,(d...d:e...e) ... [ETX]

Symbol	Parameter name	Valid range
a	Total number of data byte * This is the total number of bytes after parameter b. The delimiting comma between parameters a and b, and the ETX are not included.	Data size from the first identifier until before [ETX]
b(d)	Sensor information name * Text format	Refer to the sensor information data list.
c(e)	Sensor information data * Text format	Refer to the sensor information data list.

Data Example)

[STX]xx,IM:0.2/SL1.5,GAP:0.9/SL1.0...[ETX]

[Return data format (when a command error occurs)]

[NAK]<15>₁₆

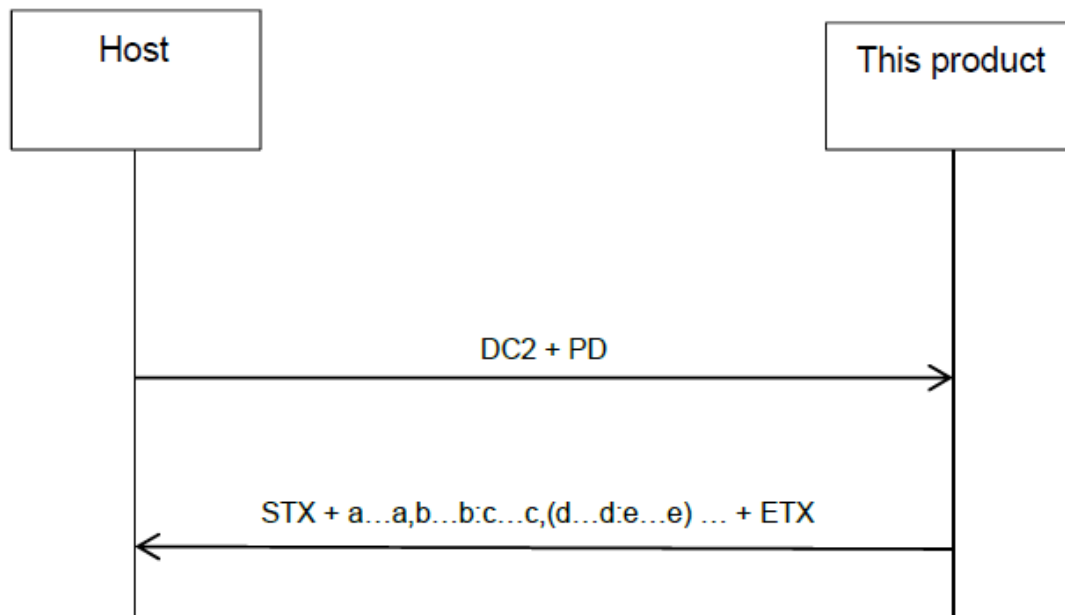
[Sensor information data list]

No.	Sensor information name	Description	Sensor information data
	IM	Reflective sensor	X.X/SLY X.X = 0.0 to 3.3: Sensor level Y = 0 to 7: Slice level
	GAP	Gap sensor	X.X/SLY X.X = 0.0 to 3.3: Sensor level Y = 0 to 7: Slice level
	HEAD OPEN	Head open	0: Close, 1: Open
	CUTTER OPEN	Cutter open	0: Close, 1: Open (0: OFF, 1: ON)
	DISPENSER	Dispense sensor	0: Without label, 1: With label (0: OFF, 1: ON)
	HEAD TEMP	Head thermistor	-XX to XX: Thermistor temperature
	RIBBON	Ribbon slit sensor	0: Slit ON, 1: Slit OFF

[Supplementary information]

- When sending this command in continuation, be sure to set a fixed interval (100 msec or more).
- If the sensor information acquisition processing for each sensor does not finish within 100 msec, a timeout is thought to have occurred, and [NAK] is returned. A timeout may occur during the product operation.
- SENSOR HIGH, SENSOR LOW is the value of the last label that passed through the sensor. Therefore it may sometimes be different from test printing results (the value is measured with the label before printing).
- If the sensor type is set to NONE, the SENSOR HIGH and SENSOR LOW values return as 0.0.

[Sequence]



16.5 [DC2+PG] Printer Status Information Acquisition

Command	DC2	PG	Parameter
Hexadecimal code	<12> ₁₆	<50> ₁₆ <47> ₁₆	None
Initial value	None		

Valid range and term of command	When the power is OFF	-
	Valid range	-
	Printer operation in progress	The command can be received even during the printer operation.
	When acquiring label sensor information	Commands are not accepted while acquiring sensor information. ([NAK] return)
	Error	The command can be received even if an error is occurring.

[Function]

Returning the status of this product.

[Format]

[DC2]PG

[Return data format (normal)]

[STX]a...a,b...bc,d...de,...[ETX] * There is no ", (comma)" before ETX

Symbol	Parameter name	Valid range
a	Total number of data byte * This is the total number of bytes after parameter b. The delimiting comma between parameters a and b, and the ETX are not included.	Data size from the first identifier until before [ETX]
b(d)	Printer status information name * Text format	Refer to the printer status information data list.
c(e)	Printer status information data * Text format	Refer to the printer status information data list.

Data Example)

[STX]32,PSO,RSO,REO,PEO,ENOO,BTO,Q000000[ETX]

[Printer status information data list]

No.	Description	Printer status information name	Printer status information data
	Printer Status	PS	0: Standby (waiting for receiving data) 1: Waiting for dispensing 2: Analyzing 3: Printing 4: Offline 5: Error
	Receive buffer status	RS	0: Buffer available 1: Buffer near full 2: Buffer full
	Ribbon status * Monitoring can be performed during printing and feeding. The correct value cannot be acquired when the operation has stopped.	RE	0: Ribbon present 1: No ribbon 2: Direct thermal model
	Media status * Monitoring can be performed during printing and feeding. The correct value cannot be acquired when the operation has stopped	PE	0: Media present (including during startup) 1: No media
	Error No. *1	EN	00: Online * Not an error. Return is performed.

		01: Offline * Not an error. Return is performed. 02: Machine error 03: Memory error 04: Program error 05: Setting information error (FLASHROM error) 06: Setting information error (EE-PROM error) 07: Download error 08: Parity error 09: Over run 10: Framing error 11: LAN timeout error 12: Buffer over 13: Head open 14: Paper end 15: Ribbon end 16: Media error 17: Sensor error 18: Printhead error 19: Cover open error 20: Memory/Card type error 21: Memory/Card read/write error 22: Memory/Card full error 23: Memory/Card no battery error 24: Ribbon saver error 25: Cutter error 26: Cutter sensor error 27: Stacker full error 28: Command error 29: Sensor error at Power-On 31: Interface card error 32: Rewinder error 33: Other error 35: Head density error 36: Kanji data error 37: Calendar error 38: Item No error 40: Cutter cover open error 41: Ribbon rewind non-lock error 42: Communication timeout error 43: Lid latch open error 44: No media error at Power-On 47: Head lift error 48: Head overheat error 49: SNTP time correction error 50: CRC error 51: Cutter motor error 53: Scanner reading error 54: Scanner checking error 55: Scanner connection error 56: Bluetooth Module error 57: EAP authentication error (EAP failed) 58: EAP authentication error (Time Out) 59: Battery error 60: Low Battery error 61: Low Battery error (Charging) 65: Motor temperature error 66: Inside chassis temperature error 67: Jam error 68: SIPL Field full error 69: Power off error while charging 70: WLAN module error
--	--	--

			71: Option inconsistency error
	Remaining number of print	Q	000000 to 999999: 6-digit remaining number of print

*1 Described error numbers contain errors which will never occur on this product.

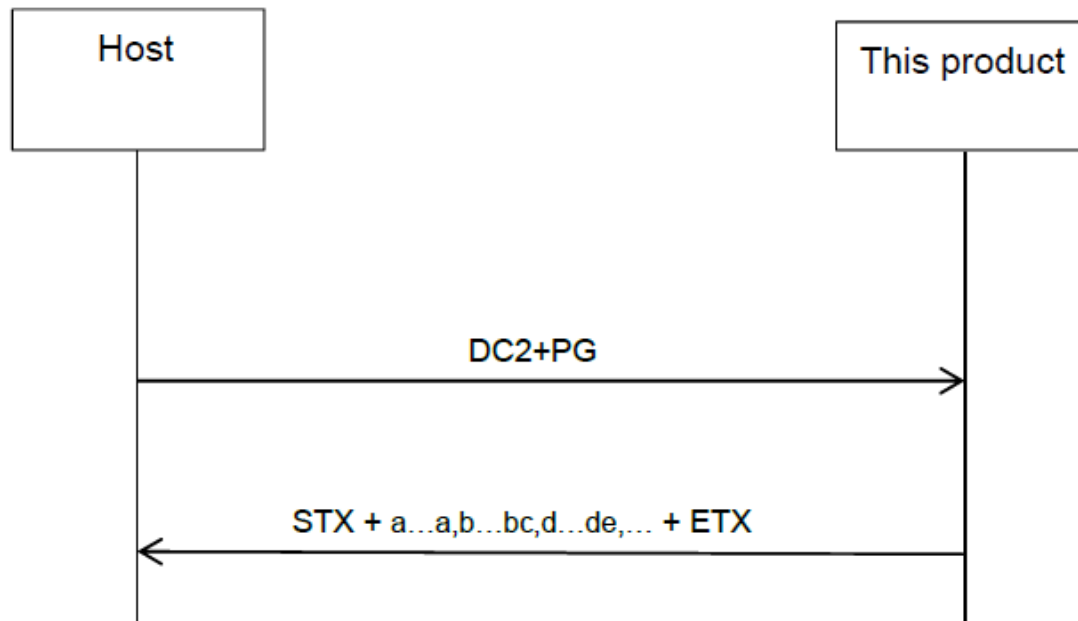
[Return data format (when a command error occurs)]

[NAK]<15>₁₆

[Supplementary Explanation]

- In the case of power supply, the battery status is always returned as 0: Normal.
- The media status is returned as "Media present" unless paper end has reached during printing.
- The correct value will be returned for receive buffer, ribbon end, media status, and battery when the error is updated.

[Sequence]



16.6 [DC2+PH] Cancel Request

Command	DC2	PH	Parameter
Hexadecimal code	<12> ₁₆	<50> ₁₆ <48> ₁₆	None
Initial value	None		

Valid range and term of command	When the power is OFF	-
	Valid range	-
	Printer operation in progress	The command can be received even during the printer operation.
	Error	The command can be received even if an error is occurring.

[Function]

Canceling print jobs and clears the entire contents of receive buffer.

[Format]

[DC2]PH

[Return data format (normal)]

[ACK]<06>₁₆

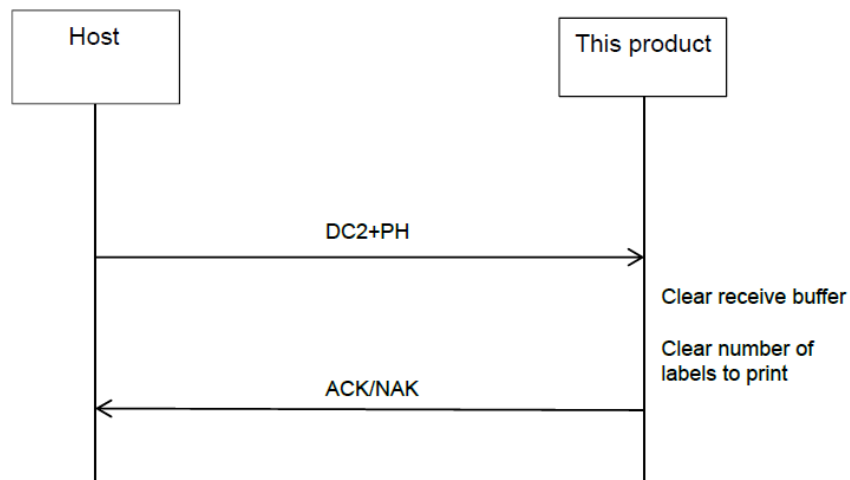
[Return data format (when a command error occurs)]

[NAK]<15>₁₆

[Supplementary Explanation]

- The response data is returned after the cancel processing ends.
- After sending the cancel request command, wait for response reception before sending the next data.

[Sequence]



16.7 [DC2+PI] Application Change

Command	DC2	PI	Parameter
Hexadecimal code	<12> ₁₆	<50> ₁₆ <49> ₁₆	.aa
Initial value	None		

Valid range and term of command	When the power is OFF	-
	Valid range	-
	Printer operation in progress	The command cannot be received during the printer operation. ([NAK] return)
	When acquiring label sensor information	Commands are not accepted while acquiring sensor information. ([NAK] return)
	Error	Commands cannot be received even if an error is occurring. ([NAK] return)
	Others	Commands cannot be received other than when the screen is Online or Offline. ([NAK] return)

[Function]

This command is used to switch applications such as SBPL and SZPL.

[Format]

[DC2]PI,aa

[Parameter]

Symbol	Parameter name	Valid range	Acquisition method
aa	Identifier	OO: AUTO SB: SBPL SZ: SZPL SI: SIPL	Two characters fixed acquisition

[Return data format (normal)]

[ACK] <06>₁₆

[Return data format (when a command error occurs)]

[NAK] <15>₁₆

[Exception processing]

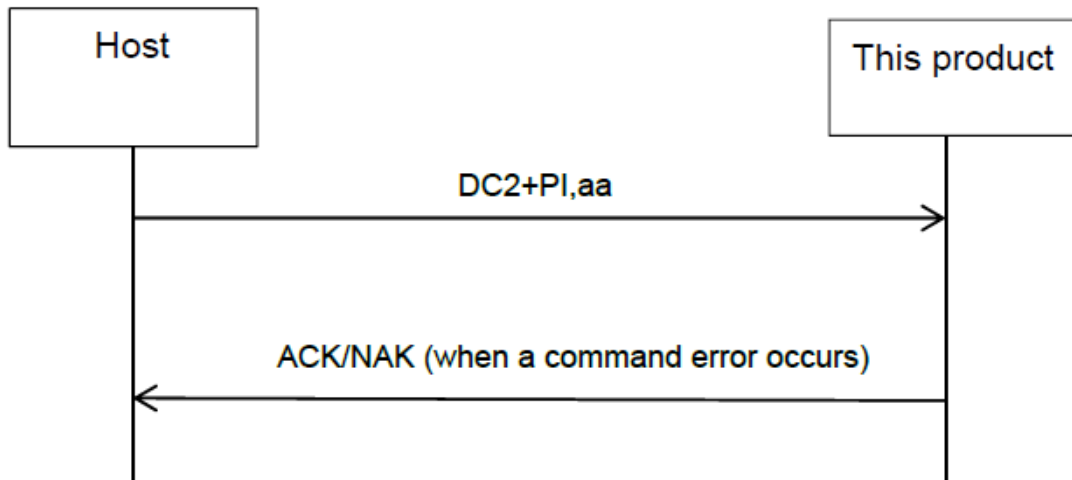
Parameter name	Exception condition	
	A value outside the range is specified	The specified size and received size are different
Identifier	Command error	Invalid receive data

Terminology	Contents
Command error	The data received after a command error is determined is not considered as a parameter of this command.
Invalid receive data	The data corresponding to Byte 2 and thereafter of the identifier is ignored.

[Supplementary Explanation]

- Setting value of this product will be switched when switching the application. So, obtaining and saving the setting of the application before switching, then switching it, and then put it back to the original application, after that set it by previously saved settings, and it performs the operation before switching it.
e.g.) When switching the application such as SBPL -> STCL -> SBPL
 1. Obtain and save the setting value of SBPL state (obtain the setting value by AIOT, [DC2]PB[EOT] and so on).
 2. Switch the application to STCL.
 3. Switch the application to SBPL.
 4. Set the setting value obtained and saved in the step 1).
- Please send this command in a state which this product is not working anything in Offline or Online standby state waiting state. The result of this command sent in pause status during cancellation is not guaranteed. In such case, restart this product.
- AUTO mode will not be available unless you reboot after switching to AUTO mode. This product works with the application before the change until it reboots.

[Sequence]



16.8 [DC2+PN] Request to Return Label Pitch Size

Command	DC2	PN	Parameter
Hexadecimal code	<12> ₁₆	<50> ₁₆ <4E> ₁₆	None
Initial value	None		

Valid range and term of command	When the power is OFF	-
	Valid range	-
	Printer operation in progress	The command cannot be received during the printer operation.
	During an error	The command is accepted during an error occurs.
	Error	The command can be received even if an error is occurring.

[Function]

Returning the result of label pitch measurement by each label by request from host.

[Format]

[DC2]PN

[Return data format (normal)]

[STX]a...a,bbb,cccc[ETX]

Data Example)

[STX]10,300,000956[ETX]

Symbol	Parameter name	Valid range
a	Total number of data byte * This is the total number of bytes after parameter b. The delimiting comma between parameters a and b, and the ETX are not included	Size of data from b to before [ETX]
b	Head density	203: 203 dpi 300: 300 dpi
c	Label pitch size (dots)	<u>Fixed 6 digits</u>

[Return data format (when a command error occurs)]

[NAK]<15>₁₆

[Supplementary Explanation]

- Reflective and Gap needs to pass over the sensor twice in order to measure the length of label gap. See below for the conditions to detect:
 - Feed 2 labels by running <IK>O command more than 2 times.
 - Press FEED key on this product twice to feed 2 labels.
- 000000(0x30, 0x30, 0x30, 0x30, 0x30, 0x30) is returned if the label pitch size for invalid sensor is not finalized for the 1st feed right after power on, right after head open/close and after sensor type switching.
- The label length to be returned includes the gap between labels.
- The label pitch size to be returned will show the value of last label that passes over the sensor. Therefore label will exist in between head and sensor with a short pitch label, and it may not be equal to the printed/ejected label's pitch size. The minimum label length would be 70 mm.
- This is available only when sensor is enabled. Returns "000000" when sensor is disabled.
- If there is a missing label in the roll in using gap sensor, the valid label length and the distance for the missing label are added together to be returned depending on sensor level.
- The label length detected by this product includes around the same amount of tolerance as print precision.
- Print speed and print darkness gives little or no affect to the detected label length. However it may vary if you change print speed depending on the sensitivity of the sensor.

- Label length is measured once again at FEED when the sensor type is switched from LCD menu. When you send DC2+PN command the label length before switching is returned. Then, this product returns the unfinalized 0 dot in the first FEED, followed by the re-measured label length at the 2nd FEED. And label length may vary depending on the characteristic of the sensor.

[Usage example]

Get label length by feeding 2 labels

<A>

<IK>0 Feed 1st label

<Z>

<A>

<IK>0 Feed 2nd label

<Z>

Feed completed ← Label length is finalized here

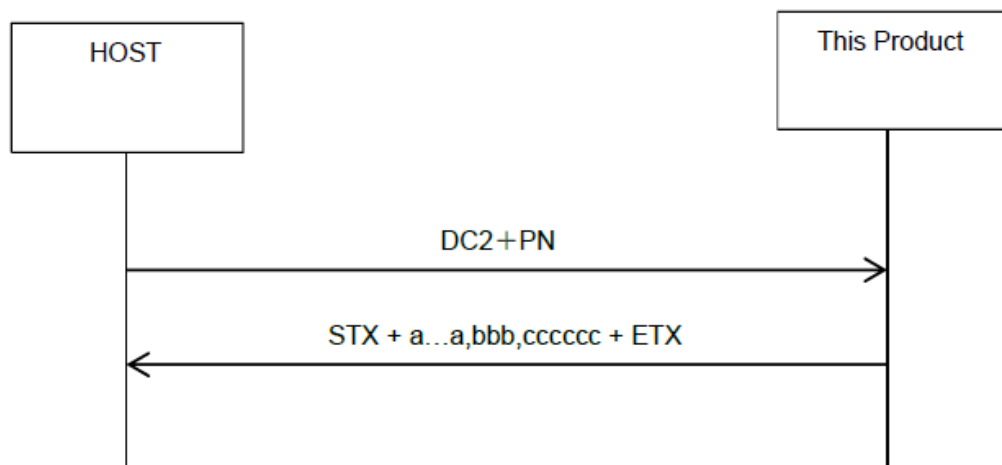
DC2+PN Request label length

Feeding necessary number of labels has been completed ← Label length is measured by each label and then finalized

DC2+PN Request for label length ← You can get the latest label length

The correct label length is returned if you feed twice manually and request with DC2+PN after setting label, even without using <IK>0 command.

[Sequence]



16.9 [DC2+DB] Initialization

Command	DC2	DB	Parameter
Hexadecimal code	<12> ₁₆	<44> ₁₆ <42> ₁₆	,aa
Initial value	None		

Valid range and term of command	When the power is OFF	-
	Valid range	-
	Printer operation in progress	The command cannot be received during the printer operation. ([NAK] return)
	When acquiring label sensor information	Commands are not accepted while acquiring sensor information. ([NAK] return)
	Error	Commands cannot be received even if an error is occurring. ([NAK] return)

[Function]

Initializing this product settings.

[Format]

[DC2]DB,aa

[Parameter]

Symbol	Parameter name	Valid range	Initialization target		Acquisition method
a	Identifier	CA: Common settings initialization	[PRINTER] section		Two characters fixed acquisition
		CB: Warning function initialization	[COUNT] section		
		IR: RS-232C settings initialization	[RS-232C] section		
		IL: LAN settings initialization	[LAN] section		
		IU: USB settings initialization	[USB] section		
		IW: WLAN settings initialization	[WLAN] section		
		IB: Bluetooth settings initialization	[BLUETOOTH] section		
		SB: SBPL settings initialization	[SBPL] section		
		SZ: SZPL settings initialization	[SZPL] section		
		SI: SIPL settings initialization	[SIPL] section		
		CX: Registration information initialization	SBPL, SZPL,	Download font	
			SIPL, SDPL, STCL	TrueType	
			SBPL	BMP	
				Overlay	
				Format	
				PCX	
				Graphic	
				TrueType	
				BJD	

[Return data format (normal)]

[ACK]<06>₁₆

[Return data format (when a command error occurs)]

[NAK]<15>₁₆

[Exception processing]

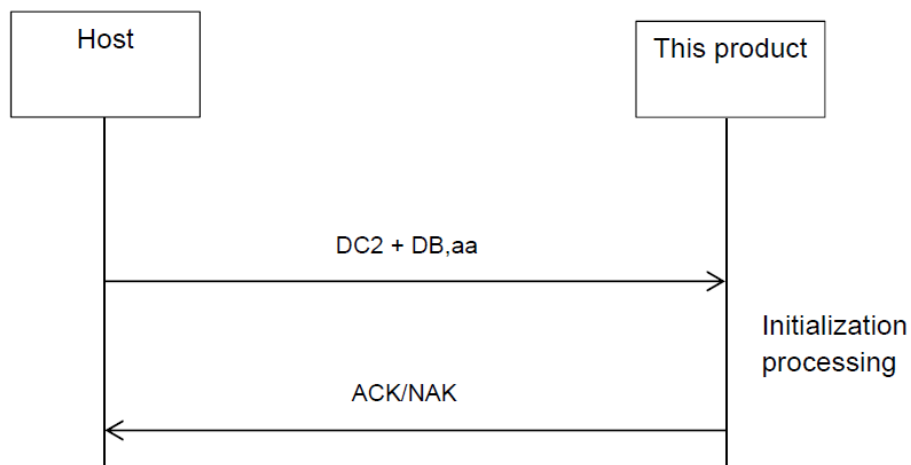
Parameter name	Exception condition	
	A value outside the range is specified	The specified size and received size are different
Identifier	Command error	Invalid receive data

Terminology	Description
Command error	Initialization is not performed. The data received after a command error is determined is not considered as a parameter of this command.
Invalid receive data	The data corresponding to Byte 2 and thereafter is ignored.

[Supplementary Explanation]

- Refer to "[DC2+PA] Printer setting command" in this document for the items to be initialized in each identifier.
- If you initialize the interface settings, a response may not be returned.

[Sequence]



16.10[DC2+DC] Reset

Command	DC2	DC	Parameter
Hexadecimal code	<12> ₁₆	<44> ₁₆ <43> ₁₆	None
Initial value	None		

Valid range and term of command	When the power is OFF	-
	Valid range	-
	Printer operation in progress	The command cannot be received during the printer operation. ([NAK] return)
	When acquiring label sensor information	Commands are not accepted while acquiring sensor information.
	Error	Commands cannot be received even if an error is occurring.

[Function]

Restarting this product.

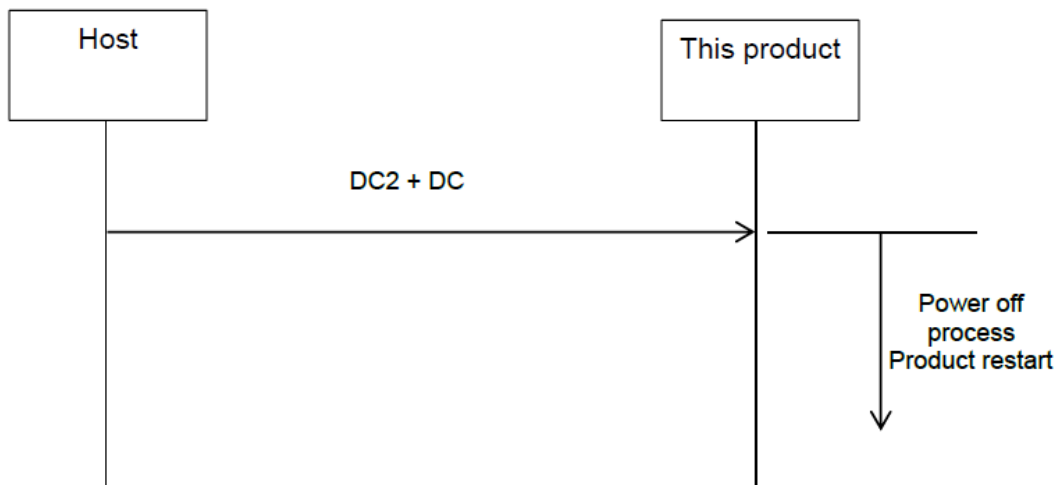
[Format]

[DC2]DC

[Response (only during printing)]

[NAK]<15>₁₆

[Sequence]



16.11[DC2+DE] File Download

Command	DC2	DE	Parameter
Hexadecimal code	<12> ₁₆	<44> ₁₆ <45> ₁₆	,aa,b,c...c,d...d,e...e
Initial value	None		

Valid range and term of command	When the power is OFF	The file is maintained.
	Valid range	-
	Printer operation in progress	The command cannot be received during the printer operation. ([NAK] return)
	When acquiring label sensor information	Commands are not accepted while acquiring sensor information. ([NAK] return)
	Error	Commands cannot be received even if an error is occurring.

[Function]

Downloading the specified file.

[Format]

DC2(12H)+DE,aa,b,c...c,d...d,e...e

[Parameters]

Symbol	Parameter name	Valid range	Acquisition method
a	Identifier	SB: SBPL setting SZ: SZPL settings SI: SIPL settings CA: Common settings (when specifying other than font logo and TrueType fonts)	Two characters fixed acquisition
b(e...)	File type	0: Font 1: TrueType Font 2: Wireless LAN certificate (Wi-Fi Root CA) 3: Wireless LAN certificate (Wi-Fi Client Certificate) 4: Wireless LAN certificate (Wi-Fi Private Key)	One character fixed Acquisition
c	File name	Data within 12 characters including the following character groups. • Alphabet • Numeral • Hyphen ("-") • Underscore (" _") • Period (".")	Acquire until ","
d	File size	0 to 999999999 (bytes)	Data sized of setting information
e	File data	Binary Data	Equivalent to file size

[Return data format (normal)]

[ACK]<06>₁₆

[Return data format (when a command error occurs)]

[NAK]<15>₁₆

[Return data format (when the same file name error occurs)]

1<31>₁₆

[Exception processing]

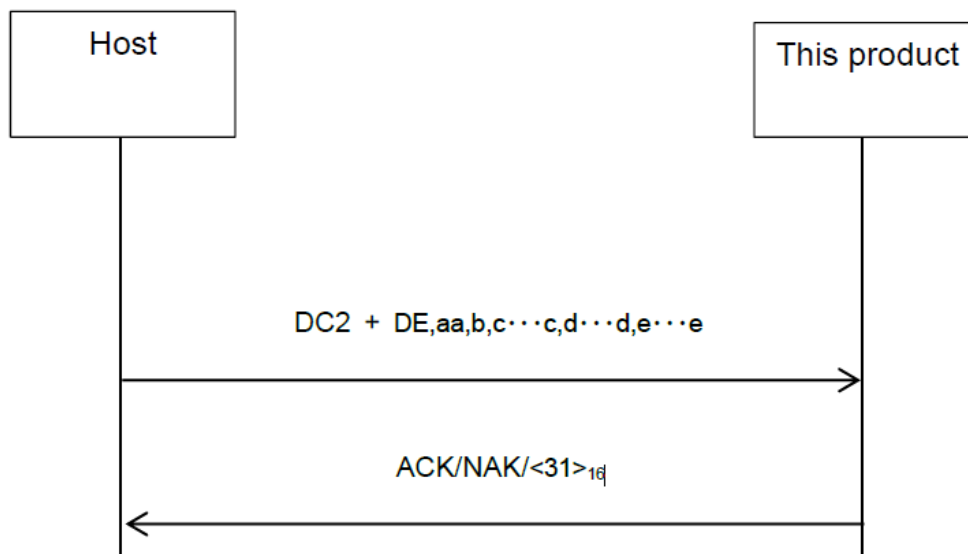
Parameter name	Exception condition		
	A value outside the range is specified	The specified size and received size are different	When the same file name When the same file name
Identifier	Command error	Command error	-
File type	Command error	Command error	-
File name	Command error	-	Same file name error
File size	Command error	-	-
File data	-	Invalid receive data	-

Terminology	Description
Command error	Downloading is not performed. The data received after a command error is determined is not considered as a parameter of this command.
Same file name error	The file is not saved.
Invalid receive data	The data exceeding the file size is ignored.

[Supplementary Explanation]

- Send this command when printing has stopped. The content of the response data is not guaranteed even when this command is received during printing.
- When you specify SZPL for "Parameter a: Identifier," "0: Font/logo," "1: TrueType font" settings of "Parameter b: File type" will be ignored.

[Sequence]



16.12[DC2+DF] File Name Information Acquisition

Command	DC2	DF	Parameter
Hexadecimal code	<12> ₁₆	<44> ₁₆ <46> ₁₆	,aa,b
Initial value	None		

Valid range and term of command	When the power is OFF	-
	Valid range	-
	Printer operation in progress	The command cannot be received during the printer operation. ([NAK] return)
	When acquiring label sensor information	Commands are not accepted while acquiring sensor information. ([NAK] return)
	Error	The command can be received even if an error is occurring.

[Function]

Returning a list of file names of the specified folder..

[Format]

[DC2]DF,aa,b

[Parameters]

Symbol	Parameter name	Valid range	Acquisition method
a	Language	SB: SBPL setting SZ: SZPL settings SI: SIPL settings	Two characters fixed acquisition
b	File type	0: Font 1: TrueType Font	One character fixed acquisition

[Return data format (normal, data exists)]

[STX]a...a,b...b(,c...c)[ETX]

Data example) [STX]xxxx,SBPL_001.dfl, SBPL_002.dfl[ETX]

Symbol	Parameter name	Valid range
a	Total number of data byte. * This is the total number of bytes after parameter b. The delimiting comma between parameters a and b, and the ETX are not included.	Data size from the first identifier until before [ETX]
b(c)	File name	

[Return data format (normal, no file)]

[STX]0[ETX]

[Return data format (when a command error occurs)]

[NAK]<15>₁₆

[Exception processing]

Parameter name	Exception condition	
	A value outside the range is specified	The specified size and received size are different
Language	Command error	Command error
File type	Command error	Invalid receive data

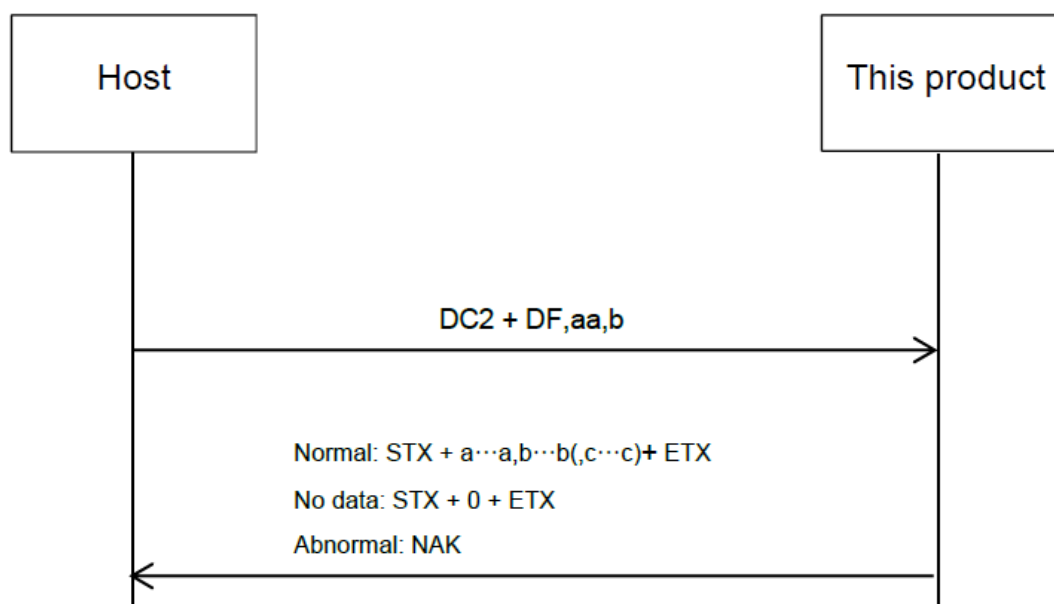
Conditions	Exception condition
When directory of the specified parameter does not exist. (Condition: Never registered in the past and so on.)	Command error

Terminology	Description
Command error	The file name list is not returned. The data received after a command error is determined is not considered as a parameter of this command.
Invalid receive data	The subsequent data is ignored.

[Supplementary Explanation]

- Send this command when printing has stopped. The content of the response data is not guaranteed even when this command is received during printing.
- When you specify SZPL for "Parameter a: Identifier," "0: Font/logo," "1: TrueType font" settings of "Parameter b: File type" will be ignored. So all file names registered with SZPL will return.

[Sequence]



16.13[DC2+DG] File Information Acquisition

Command	DC2	DG	Parameter
Hexadecimal code	<12> ₁₆	<44> ₁₆ <47> ₁₆	,aa,b,cccccc,ddddddd
Initial value	None		

Valid range and term of command	When the power is OFF	-
	Valid range	-
	Printer operation in progress	The command cannot be received during the printer operation. ([NAK] return)
	When acquiring label sensor information	Commands are not accepted while acquiring sensor information. ([NAK] return)
	Error	The command can be received even if an error is occurring.

[Function]

Returning the specified file data information.

[Format]

DC2(12H)+DG,aa,b,cccccc,ddddddd

[Parameters]

Symbol	Parameter name	Valid range	Acquisition method
a	Language	SB: SBPL setting SZ: SZPL settings SI: SIPL settings	Two characters fixed acquisition
b	File type	0: Font 1: TrueType Font	One character fixed acquisition
c	File name size (byte)	1 to 12	Acquire up to ","
d	File name *1 Only the file name is specified.	Data including the following character groups • Alphabet • Numeral • Hyphen ("-") • Underscore ("_") • Period (".")	Acquired up to the file name size

[Return data format (normal, data exists)]

[STX]a...a,b...b[ETX]

Symbol	Parameter name	Valid range
a	Total number of data byte. * This is the total number of bytes after parameter b. The delimiting comma between parameters a and b, and the ETX are not included.	Data size from the first identifier until before [ETX]
b	File data	

[Return data format (normal, no data)]

[STX]0[ETX]

[Return data format (when a command error occurs)]

[NAK]<15>₁₆

[Exception processing]

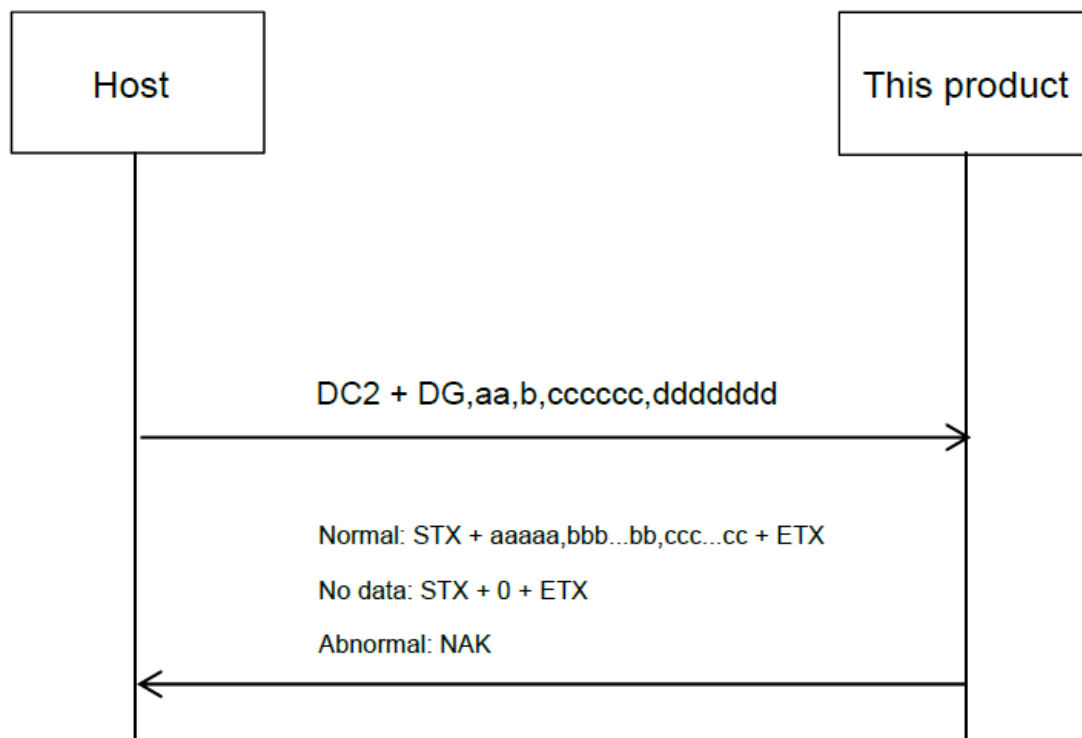
Parameter name	Exception condition	
	A value outside the range is specified	The specified size and received size are different
Language	Command error	Invalid receive data
File type	Command error	Command error
File name size	Command error	Excessively small: Command error, Excessively large: Remaining data standby
File name	Command error	Excessively small: Remaining data standby, Excessively large: Command error

Terminology	Description
Command error	The file name list is not returned. The data received after a command error is determined is not considered as a parameter of this command.
Invalid receive data	The subsequent data is ignored.

[Supplementary Explanation]

- When a file name is bigger than the size of the file name and still the file name is valid, it operates and finishes normally.
- When you specify SZPL for "Parameter a: Language," "0: Font/logo," "1: TrueType font" settings of "Parameter b: File type" will be ignored.

[Sequence]



16.14[DC2+DH] File Deletion

Command	DC2	DH	Parameter
Hexadecimal code	<12> ₁₆	<44> ₁₆ <48> ₁₆	aa,b,c,dddd,eeee
Initial value	None		

Valid range and term of command	When the power is OFF	-
	Valid range	-
	Printer operation in progress	The command cannot be received during the printer operation. ([NAK] return)
	When acquiring label sensor information	Commands are not accepted while acquiring sensor information. ([NAK] return)
	Error	The command can be received even if an error is occurring.

[Function]

Deleting the registered files.

[Format]

[DC2]DH,aa,b,c,(dddd,eeee)

[Parameters]

Symbol	Parameter name	Valid range	Acquisition method
a	Language	SB: SBPL setting SZ: SZPL settings SI: SIPL settings	Two characters fixed acquisition
b	File type	0: Font 1: TrueType Font	One character fixed acquisition
c	Deletion type	0: File specification 1: All files	One character fixed acquisition
d	File name size (byte)	1 to 12	Acquire up to ","
e	File name *1 Only the file name is specified.	Data including the following character groups • Alphabet • Numeral • Hyphen ("-") • Underscore ("_") • Period (".")	Acquired up to the file name size

[Return data format (normal)]

[ACK]<06>₁₆

[Return data format (when a command error occurs)]

[NAK]<15>₁₆

[Exception processing]

Parameter name	Exception condition	
	A value outside the range is specified	The specified size and received size are different
Language	Command error	Command error
File type	Command error	Command error
Deletion type	Command error	0: Command error 1: Invalid receive data*1
File name size	Command error	Command error
File name	Command error	

*1 Note that all data will be deleted even though subsequent data is not appropriate when specifying deleting all the files.

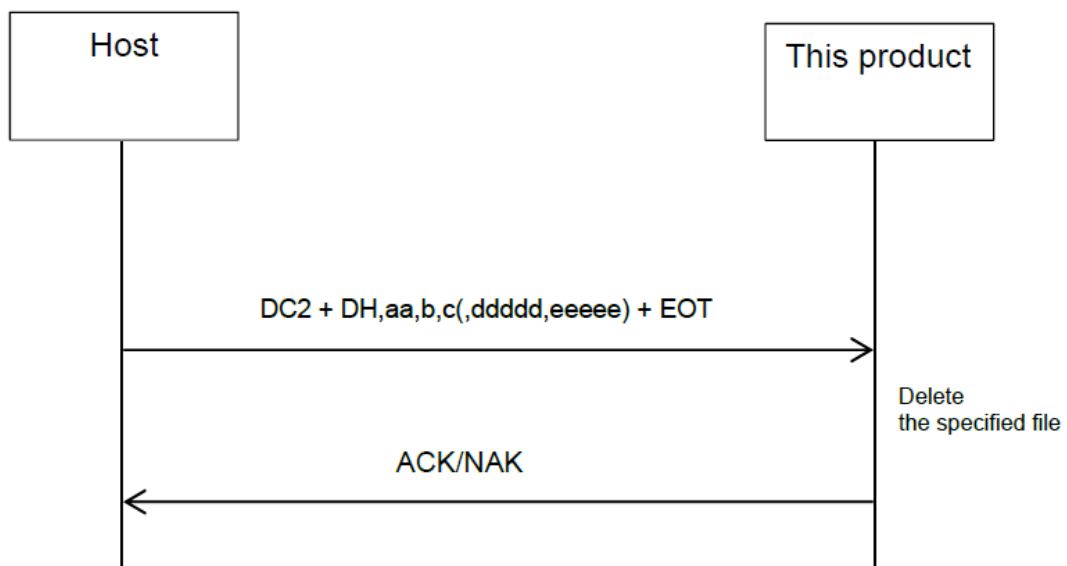
Terminology	Description
Command error	The file name list is not returned. The data received after a command error is determined is not

	considered as a parameter of this command.
Invalid receive data	The subsequent data is ignored.

[Supplementary Explanation]

- Do not specify the parameter d and e when the parameter c specifies 1 (delete all files). When specified, the parameter d and e are not handled as data of this command.
- When a file name is bigger than the size of the file name and still the file name is valid, it operates and finishes normally.
- When you specify SZPL for "Parameter a: Language," "0: Font/logo," "1: TrueType font" settings of "Parameter b: File type" will be ignored. Beware that all files registered with SZPL will be deleted if you specify "1: All files" in "Parameter c: Deletion type."

[Sequence]



Change List

Version	List
V0.3	- Add [DC2]PA,CA / [DC2]PA,SB some commands (for driver to use). - Conform some commands parameters.
V0.4	- Add all DC2 commands.
V0.5	- Modify <RD> and <CW> commands
V0.6	- Fix some commands' parameters.
V1.0	- First release