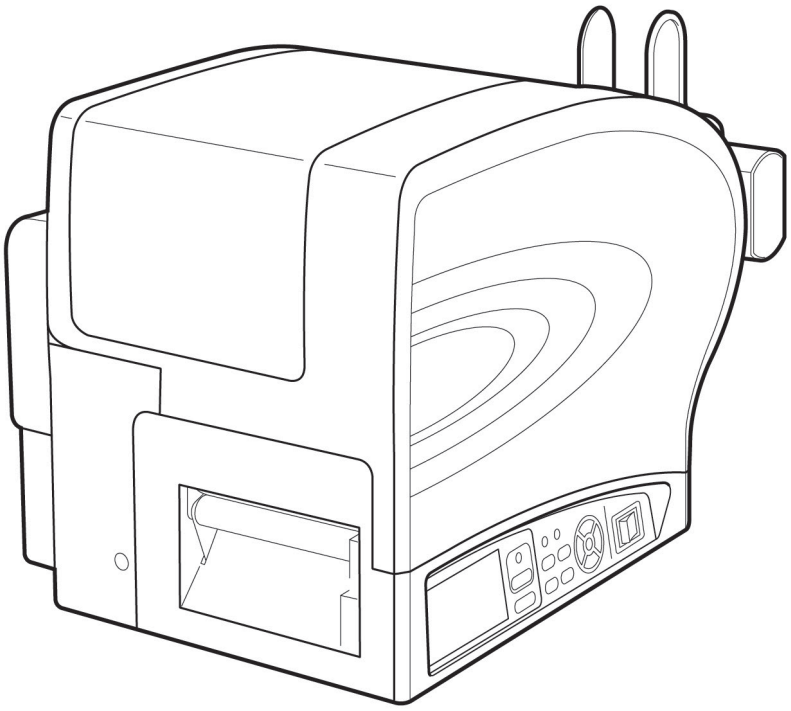
SATO
DCS & Labelling Worldwide

Programming Reference

For printer model:

TG3 Series



www.satoworldwide.com

Version: GBS-TG3-01rB-12-03-12PR

Table of Contents

1. Initial Value of Operation Setting

The following are the initial value for operation settings.

Item	TG308	TG312
Print speed	6inch/sec (150mm/sec) [Range: 2, 3, 4, 5, 6, 7, 8, 9, 10]	6inch/sec [Range: 2, 3, 4, 5, 6, 7, 8, 9, 10]
Print darkness range	A	A
Print darkness	2 [Range: 1, 2, 3]	2 [Range: 1, 2, 3]
Base reference point offset	+0	+0
Zero slash	YES	YES
Kanji code	JIS	JIS
Character pitch	Proportional pitch	Proportional pitch

2. Font

When using the internal fonts, specify ESC+(Command of font type).

Font	Font type	Pitch
OA(8dot/mm)	Bitmap [OCR-A] 15×22 dots	Fixed
OB(8dot/mm)	Bitmap [OCR-B] 20×24 dots	Fixed
OA(12dot/mm)	Bitmap [OCR-A] 28×33 dots	Fixed
OB(12dot/mm)	Bitmap [OCR-B] 30×36 dots	Fixed
XU	Bitmap [XU] 5×9 dots	Fixed/Proportional
XS	Bitmap [XS] 17×17dots	Fixed/Proportional
XM	Bitmap [XM] 24×24 dots	Fixed/Proportional
XB	Bitmap [XB] 48×48 dots	Fixed/Proportional
XL	Bitmap [XL] 48×48 dots	Fixed/Proportional
X70	Bitmap [X70] 32×48 dots	Fixed/Proportional
X71	Bitmap [X71] 40×60 dots	Fixed/Proportional
X72	Bitmap [X72] 48×72 dots	Fixed/Proportional
X73	Bitmap [X73] 64×96 dots	Fixed/Proportional
X74	Bitmap [X74] 32×48 dots	Fixed/Proportional
X75	Bitmap [X75] 40×60 dots	Fixed/Proportional
X76	Bitmap [X76] 48×72 dots	Fixed/Proportional
X77	Bitmap [X77] 64×96 dots	Fixed/Proportional
XCS	Bitmap [XCS] 32×24 dots	Fixed
XCL	Bitmap [XCL] 48×36 dots	Fixed
$(Designation of shape) $=(Designation of print)	Outline	Fixed/Proportional
RD	CG [CG Times]	Fixed/Proportional
	CG [CG Triumvirate]	Fixed/Proportional

Font Enlargement

Internal font and internal bitmap font can be enlarged up to twelvefold.

For instance, if standard size font of 5dots(width) x 9dots(height) multiplied by 3 equals 15dots x 27dots.

Parameter writing method of printed character is as follows:

Width x Enlargement rate = Width parameter setting value

Height x Enlargement rate = Height parameter setting value

Enlargement specification <L> controls the font enlargement and its parameter can be specified in ratio.

If specifying <L>0304, the font size will be enlarged three times the width and four times the height as that of its standard size.

With the specification of font enlargement, character pitch will be automatically widened.

Fixed Pitch and Proportional Pitch

Print of Fixed Pitch and Proportional Pitch are available for XU~XL font, X70~X77 font, Outline font and CG font.

To select Proportional Pitch, specify Proportional Pitch <PS> or Release of Proportional Pitch <PR>, or go to the User Mode through printer LCD display.

Proportional pitch may vary depending on the font type. Katakana will not be affected by proportional pitch; however, the width of alphanumeric characters will be narrow if proportional pitch is specified.

Fixed pitch will be adjusted to the width of characters based on the individual font size.

Difference between Outline Font and Bitmap Font

For Bitmap font, its height and width are already fixed and installed in the printer. Actual height of bitmap font is slightly larger than its width.

Bitmap font is the largest size of font matrix.

For the font type and size, refer to [2. Font].

Setting the height and width of outline font correctly will enable you to create font mostly well-balanced, which is done by means of a function of smooth-scaling algorithm in the printer. Different font style, such as outline characters, character decoration, and shaded italic, can also be selected.

3. Supported Commands

○:Supported / x: Not available

Category	Command name		TG308	Restriction
Control	Start Code	<A>	○	
	Stop Code	<Z>	○	
	Print Quantity	<Q>	○	
	Job Store ID	<ID>	○	
	Job Name	<WK>	○	
Print position	Horizontal Print Position	<H>	○	
	Vertical Print Position	<V>	○	
Modification	Character Pitch	<P>	○	
	Character Expansion	<L>	○	
	Character Proportional Spacing	<PS>	○	
	Release of Proportional Pitch	<PR>	○	
	Rotate (Fixed Base Reference Point)	<%>	○	
	Sequential Numbering	<F>	○	
	Printing Lines & Boxes	<FW>	○	
	Print Circles	<FC>	○	
	Print Triangles	<FT>	○	
	Reverse Image	<(>	○	
	Kanji Code	<KC>	○	
	Store Form Overlay	<&>	○	
	Recall Form Overlay	</>	○	
	Replace Data (Partial Edit)	<0>	○	
	Copy Image Area (Partial Copy)	<WD>	○	
	Journal Printing	<J>	×	
	Recall and Print of Font & Logo	<RF>	○	
	Mirror Image	<RM>	○	
	Small Label Size Specification	<PD>	×	
	Small Label Start	<_F>	×	
	Format Specification	<_N>	×	
	Variable Data Specification	<_D>	×	
	Print Quantity	<_Q>	×	
	Label Size	<RI>	×	
	Sheet Unit Copy Quantity	<RW>	×	
	Sheet Unit Cut Quantity	<RC>	×	
	Print Order	<RT>	×	
	Telegraphic Message End Specification	<RE>	×	
	Sheet Sending Specification	<RS>	×	
Font	X20 Font	<X20>	×	
	X21 Font	<X21>	×	
	X22 Font	<X22>	×	
	X23 Font	<X23>	×	
	X24 Font	<X24>	×	
	XU Font	<XU>	○	
	XS Font	<XS>	○	
	XM Font	<XM>	○	
	XB Font	<XB>	○	
	XL Font	<XL>	○	
	OCR-A Font	<OA>	○	
	OCR-B Font	<OB>	○	

Category	Command name		TG308	Restriction
Font	Outline Font	<$>	○	
	Outline Font Print	<$=>	○	
	CG Font	<RD>	○	
	22×22dots horizontal flow Kanji	<K3>	×	
	32×32dots horizontal flow Kanji	<K4>	×	
	40×40dots horizontal flow Kanji	<K5>	×	
	22×22dots horizontal flow 1&2-byte Kanji	<KA>	×	
	32×32dots horizontal flow 1&2-byte Kanji	<KB>	×	
	40×40dots horizontal 1&2-byte Kanji	<KD>	×	
	22×22dots vertical flow Kanji	<k3>	×	
	32×32dots vertical flow Kanji	<k4>	×	
	40×40dots vertical flow Kanji	<k5>	×	
	22×22dots vertical flow 1&2-byte Kanji	<kA>	×	
	32×32dots vertical flow 1&2-byte Kanji	<kB>	×	
	40×40dots vertical flow 1&2-byte Kanji	<kC>	×	
	Store 16×16dots External Character	<T1>	○	
	Store 24×24dots External Character	<T2>	○	
	Store 22×22dots External Character	<T3>	×	
	Store 32×32dots External Character	<T4>	×	
	Store 40×40dots External Character	<T5>	×	
	Recall Vertical Flow External Character	<K1> <K2> <K3> <K4> <K5>	○	<K1> and <K2> only
	Recall Horizontal Flow External Character	<k1> <k2> <k3> <k4> <k5>	○	<k1> and <k2> only
	X1 Font	<X1>	×	
	X2 Font	<X2>	×	
	X3 Font	<X3>	×	

Category	Command name		TG308	
Font	X70 Font	<X70>	○	
	X71 Font	<X71>	○	
	X72 Font	<X72>	○	
	X73 Font	<X73>	○	
	X74 Font	<X74>	○	
	X75 Font	<X75>	○	
	X76 Font	<X76>	○	
	X77 Font	<X77>	○	
	WL Font	<WL>	○	
	WB Font	<WB>	○	
	X80 Font	<X80>	×	
	X81 Font	<X81>	×	
	X82 Font	<X82>	×	
	X83 Font	<X83>	×	
	X84 Font	<X84>	×	
	X85 Font	<X85>	×	
	X86 Font	<X86>	×	
	X87 Font	<X87>	×	
	X88 Font	<X88>	×	
	X89 Font	<X89>	×	
	X90 Font	<X90>	×	
	X91 Font	<X91>	×	
	X92 Font	<X92>	×	
	X93 Font	<X93>	×	
	XCS Font	<XCS>	○	
	XCL Font	<XCL>	○	
Barcode	Barcode (Ratio 1:3)	<B>	○	
	Barcode (Ratio 1:2)	<D>	○	
	Barcode (HRI)	<D> ~<d>	○	
	Barcode (Ratio 2:5)	<BD>	○	
	Variable Ratio Barcodes	<BT>	○	
	Print Variable Ratio Barcodes	<BW>	○	
	GS1-128(UCC/EAN128)	<BI>	○	
	CODE93 Barcode	<BC>	○	
	CODE128 Barcode	<BG>	○	
	POSTNET	<BP>	○	
	BOOKLAND	<BF>	○	
	GS1 DataBar Composite Symbol	<EU>	○	
	UPC-A Barcode (without HRI)	<BL>	○	
	UPC-A Barcode (HRI)	<BL> ~<d>	○	
	UPC-A Barcode (HRI)	<BM>	○	
2D code	PDF417	<BK>	○	
	MAXI Code	<BV>	○	

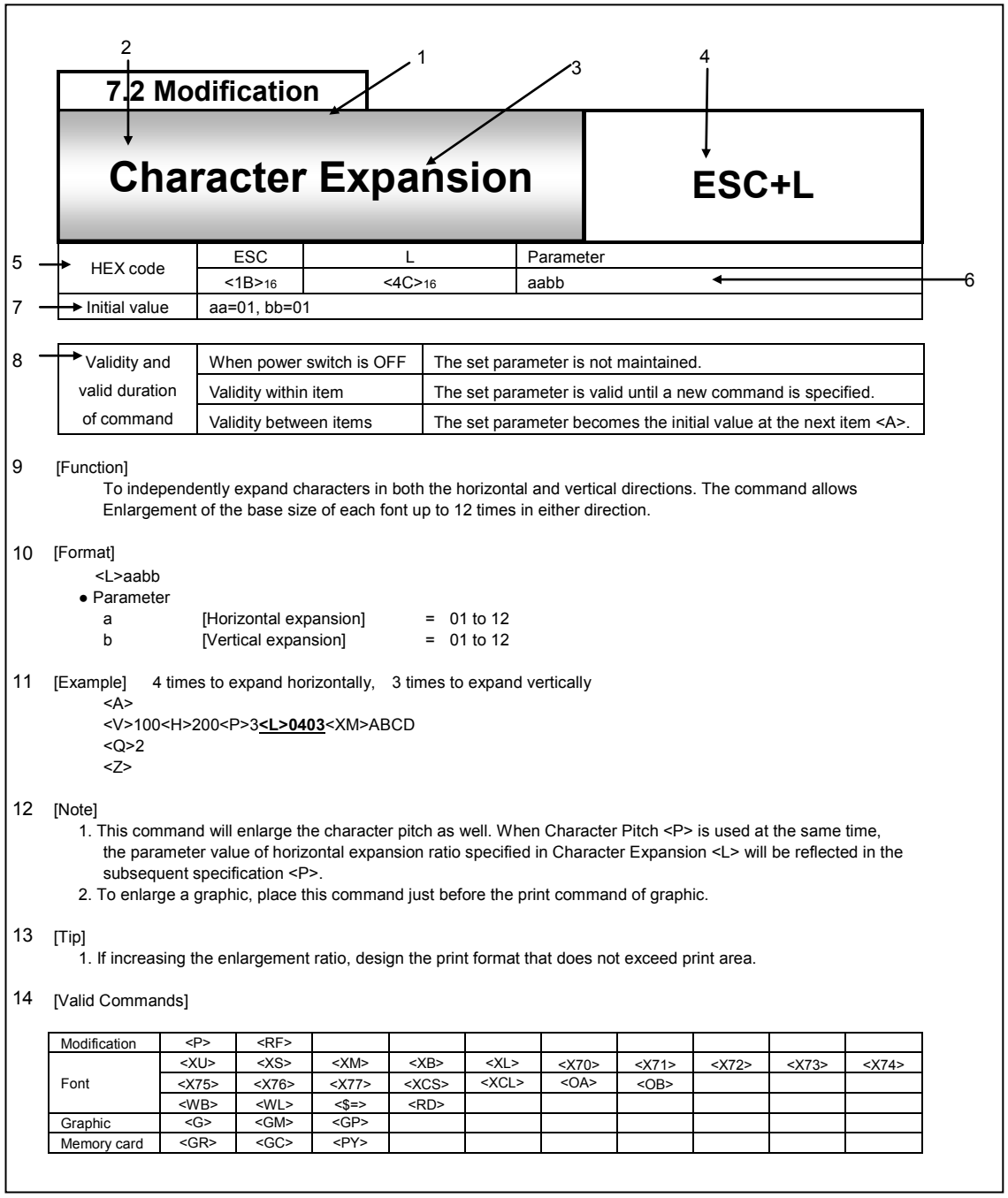
○: Supported / x: Not available

Category	Command name		TG308	
2D code	QR Code	<BQ>	○	
	GS1 Data Matrix	<BX>	○	
	GS1 Data Matrix Code Data	<DC>	○	
	GS1 Data Matrix Code-Sequential Number	<FX>	○	
Graphic	Custom Graphics	<G>	○	
	BMP File	<GM>	○	
	PCX File	<GP>	○	
System	Print Speed	<CS>	○	TG series: 2 to 10
	Print Darkness	<#E>	○	
	Media Size (dots)	<A1>	○	
	Media Size (mm)	<A1>	○	
	Base Reference Point Offset	<A3>	○	Up to H±792dots, W±792dots
	Reference Position	<#>	○	Up to ±400 dots
	Print Area Enlargement	<AX>	×	
	Standard Print Area	<AR>	×	
	Print End Position	<EP>	○	
	Multiple Cuts	<~>	○	
	Label Cut	<~A>	○	
	Media Ejection and Cut Motion	<NC>	×	
	Media Ejection and Cut Motion	<~B>	×	
	Media Ejection	<EJ>	○	
	Batch Separator	<I>	○	1: Batch separator 2: Separator
	Clear	<*>	○	
	Offline	<@>	○	
	Repeat Label	<C>	○	
	Printer Motion Register Specification	<PG>	○	
	Printer Motion Register Specification	<PC>	○	
	Line Feed	<E>	○	
	Two-Color Print Range Specification	<2S>	×	
	Two-Color Print Specification?	<2C>	×	
	Offset Specification	<PO>	×	
	Sensor Type Selection	<IG>	×	
	Print Mode Selection	<PM>	×	
	Label Specification	<YE>	×	
	User Download	<LD>	○	
	Control Code	<CO>	×	
	IEEE1284	<I1>	×	
	Serial Interface	<I2>	×	
	LAN Interface	<I3>	×	

Category	Command name		TG308	Restriction
System	PIN Code	<I6>	×	
	Authentication Mode	<I7>	×	
	Device Name	<I8>	×	
	Bluetooth Mode	<BS>	×	
	IP Address	<W1>	×	
	Subnet Mask	<W2>	×	
	Default Gateway	<W3>	×	
	IP Address Setting	<WI>	×	
	RARP	<WM>	×	
	Media Ejection and Cut Operation Mode	<CX>	×	
	Forced Tear-Off Operation	<TK>	×	
	Battery Power Mode	<TB>	×	
	Optional Operation Standby	<TW>	×	
	Media Type Selection	<FR>	×	
	CR/LF Deletion	<CL>	○	
Memory card	Card Slot	<CC>	○	TG series <CC>0: Printer memory <CC>1: Flash ROM <CC>2: Flash ROM
	Format Memory Card	<BJF>	○	
	Print Memory Card Status	<BJS>	○	
	Memory Area Enlarge Specification	<EX>	×	
	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>	○	
	Store PCX File	<PI>	○	
	Recall PCX File	<PY>	○	
	Store 16x16 dots External Character	<T1>	○	
	Store 24x24 dots External Character	<T2>	○	
	Horizontal Flow Kanji	<K1> <K2>	○	
	Vertical Flow Kanji	<k1> <k2>	○	
	Kanji Outline Font Specification	<$>	×	
	Print Kanji Outline Font	<$=>	×	

Category	Command name		TG308	Restriction
Memory card	Clear (Memory Card)	<*>	○	
	Store True Type Font	<BJ> <BJD>	○	
	Recall True Type Font	<BJT>	○	
Calendar	Calendar Configuration	<WT>	○	Calendar IC required
	Calendar Increment	<WP>	○	Calendar IC required
	Calendar Printing	<WA>	○	Calendar IC required
Intelligent command	Media Feed Control	<IK>	x	
	LCD Display	<IM>	x	
	Internal Buffer, Manual Store	<IF>	x	
	Recall Internal Buffer Data	<IB>	x	
	Internal Buffer, Data Comparison	<IC>	x	
	Internal Buffer, Data Print	<I*>	x	
	Key Lock	<I#>	x	
	Key Entry	<IZ>	x	
	Data Reception	<IR>	x	
	Data Transmission	<IT>	x	
	External Signal Input/Output	<IO>	x	
	Print Time Delay	<IW>	x	
	Audible Buzzer (Enable/Disable)	<IU>	x	
	Internal Buffer, Initialization	<I@>	x	
	Exclusive Use of Display, Initiation/Termination	<IY>	x	

4. Example of Command Reference



2
1
3
4
7.2 Modification
Character Expansion
ESC+L

5	HEX code	ESC	L	Parameter
		<1B>16	<4C>16	aabb
7	Initial value	aa=01, bb=01		

6

8	Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
		Validity within item	The set parameter is valid until a new command is specified.
		Validity between items	The set parameter becomes the initial value at the next item <A>.

9 [Function]

To independently expand characters in both the horizontal and vertical directions. The command allows Enlargement of the base size of each font up to 12 times in either direction.

10 [Format]

<L>aabb

● Parameter

a [Horizontal expansion] = 01 to 12

b [Vertical expansion] = 01 to 12

11 [Example] 4 times to expand horizontally, 3 times to expand vertically

<A>
<V>100<H>200<P>3**<L>0403**<XM>ABCD
<Q>2
<Z>

12 [Note]

1. This command will enlarge the character pitch as well. When Character Pitch <P> is used at the same time, the parameter value of horizontal expansion ratio specified in Character Expansion <L> will be reflected in the subsequent specification <P>.
2. To enlarge a graphic, place this command just before the print command of graphic.

13 [Tip]

1. If increasing the enlargement ratio, design the print format that does not exceed print area.

14 [Valid Commands]

Modification	<P>	<RF>								
Font	<XU>	<XS>	<XM>	<XB>	<XL>	<X70>	<X71>	<X72>	<X73>	<X74>
	<X75>	<X76>	<X77>	<XCS>	<XCL>	<OA>	<OB>			
	<WB>	<WL>	<$=>	<RD>						
Graphic	<G>	<GM>	<GP>							
Memory card	<GR>	<GC>	<PY>							

1. Indicates the types of commands such as:
   [Control], [Print Position], [Modification], [Font], [Barcode], [2D Code], [Graphic], [System], [Memory Card], and [Calendar].

2. Indicates command name.

3. Indicates command code.

4. Indicates command in Hexadecimal code.

5. Indicates parameter to be described in command. The value inside ( ) is omissible.

6. Indicates initial value for command.

7. Indicates valid duration of command.
   When power switch is OFF;
   1) The set parameter is maintained.
   2) The set parameter is not maintained.
   3) The set command is not maintained.

   Validity within item;
   1) The set parameter is valid until a new command is specified.
   2) The set parameter becomes invalid.
   3) The set command becomes invalid.

   Validity between items
   1) The set parameter becomes the initial value at the next item <A>.
   2) The set parameter is valid until a new command is specified.
   3) The set parameter becomes invalid.
   4) The set command becomes invalid.

8. Explains the function of command.

9. Explains the command and required parameter.
   <L>aabb indicates the command ESC+L($<1B>_{16}<4C>_{16}$) and two types of parameters such as “aa” and “bb”.

10. Shows the example of how the command is used.
    This is the coding example programmed in BASIC output to the printer connected with RS-232C.

```
 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$ ; “XMABCD” ;
 70  PRINT  #1,  ESC$ ; “Q2” ;
 80  PRINT  #1,  ESC$ ; “Z” ;
 90  CLOSE  #1
100  END
```

11. Provides the information of command function and parameter.

12. Provides points of concern and restrictions for the use of command.

13. Shows the commands to be affected by the use of particular command.

5. Control Commands

5.1 Control

Start Code	ESC+A

HEX code	ESC	A	Parameter
	<1B>16	<41>16	Nil
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set command is not maintained.
	Validity within item	The set command becomes invalid.
	Validity between items	The set command becomes invalid.

[Function]
Specifies the start of data transmission.

[Format]
<A>

[Example]
<A>
<V>100<H>200<P>2<L>0202<XM>ABCD
<Q>2
<Z>

[Note]
1. This command indicates the start of data and must be followed by the data to be printed.
2. For all print jobs, the Start Code <A> command must precede the data and the Stop Code <Z> command must follow.

[Tip]
1. All the command setting values except some part of system commands will be the initial value.
2. No print operation will occur if not specifying this command.

5.2 Control

Stop Code	ESC+Z

HEX code	ESC	Z	Parameter
	<1B>16	<5A>16	Nil
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set command is not maintained.
	Validity within item	The set command becomes invalid.
	Validity between items	The set command becomes invalid.

[Function]
Specifies the end of data transmission.

[Format]
<Z>

[Example]
<A>
<V>100<H>200<P>2<L>0202<XM>ABCD
<Q>2
<Z>

[Note]
1. This command indicates the end of data and must be placed at the end of data.
2. For all print jobs, the Start Code <A> command must precede the data and the Stop Code <Z> command must follow.

[Tip]
1. No print operation will occur if not specifying this command.

5.3 Control

Print Quantity

ESC+Q

HEX code	ESC	Q	Parameter
	<1B>16	<51>16	aaaaaa
Initial value	aaaaaa=1		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]

Specifies the total quantity of tags or labels to print for a given print job.

[Format]

<Q>aaaaaa

●Parameter

a [Total number of tags/labels to print] = 1 to 999999

[Example] Total number of tags/labels to print: 2

<A>

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

<u><Q>2</u>

<Z>

[Note]

1. The data placed between the Start Code <A> and the Stop Code <Z> commands will be counted as 1 tag/label when specifying the number of reprints.
2. This command must be immediately followed by the Stop Code <Z> command.

[Tip]

1. Reprint will be performed based on the specified print quantity. When used with the Sequential Numbering <F> command, the print quantity value should be equal to the total number of tags/labels to be printed.
2. When used with the Multiple Cuts <~> command, the multiplication of the specified print quantity and the cut quantity should be equal to the total number of tags/labels to be printed.

5.4 Control

Job Store ID

ESC+ID

HEX code	ESC	ID	Parameter
	<1B>16	<49>16<44>16	aa
Initial value	aa=<20>16		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter is valid until a new command is specified.
	Validity between items	The set parameter becomes invalid.

[Function]
Specifies the job ID number for status return.

[Format]
<ID>aa
●Parameter
a [Job Store ID] = 00 to 99

[Example] Job Store ID: 01
<A>
<u><ID>01</u>
<V>200<H>100<P>0<$>B,100,100,6
<$=>SATOPRINTER
<Q>2
<Z>

[Note]
1. When using the status return for communication protocol, the job ID number can be set to the status telegram.
2. Status can be checked sending status request (ENQ).
3. Use this command within the data placed between the Start Code <A> command and the Stop Code <Z> command.

[Tip]
1. In status return communication protocol, this command becomes valid when status request (ENQ) is received while printing (including when QTY≠0, and in both offline and error state).
2. In status return communication protocol, if status request (ENQ) is received when printing is not in progress (QTY=0, No received data when powered on), space (20H) will be set to the status and returned.
3. If more than one Job Store ID number is sent in a single job, the last number transmitted will be valid.
4. For more details, refer to the Interface Specifications.

5.5 Control

Job Name	ESC+WK

HEX code	ESC	WK	Parameter
	<1B>16	<57>16<4B>16	aaaaaaaaaaaaaaaa
Initial value	aaaaaaaaaaaaaaaa=<20>16		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter is valid until a new command is specified.
	Validity between items	The set parameter becomes invalid.

[Function]
Specifies the job name for status return.

[Format]
<WK>aaaaaaaaaaaaaaaa
●Parameter
a [Job Name] = 16 ASCII characters, 8 Shift JIS Kanji characters

[Example] Job Name: SATO
<A>
<WK>SATO
<V>200<H>100<P>0<$>B,100,100,6
<$=>SATOPRINTER
<Q>2
<Z>

[Note]
1. When STATUS4 is used for communication protocol, job name can be set to the status telegram.
2. Status can be checked sending status request (ENQ).
3. Use this command within the data placed between the Start Code <A> command and the Stop Code <Z> command.
4. This command can be used in combination with the Job Store ID <ID> command.

[Tip]
1. In status return communication protocol, this command becomes valid when status request (ENQ) is received while printing (including when QTY≠0, and in both offline and error state).
2. In status return communication protocol, if status request (ENQ) is received when printing is not in progress (QTY=0, No received data when powered on), space (20H) will be set to the status and returned.
3. If more than one Job Name is sent in a single job, the last name transmitted will be valid.
4. For more details, refer to the Interface Specifications.

6. Print Position Commands

6.1 Print Position

Horizontal Print Position	ESC+H

HEX code	ESC	H	Parameter
	<1B>16	<48>16	aaaa
Initial value	aaaa=1		

Validity and valid duration of command		
	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter is valid until a new command is specified.
	Validity between items	The set parameter becomes the initial value at the next item <A>.

[Function]
Specifies horizontal print position from its base point in dots.

[Format]
<H>aaaa
●Parameter
a [Horizontal Print Position] = See the table below.

[Example] Horizontal Print Position: 200 dots
<A>
<V>100**<H>200**<P>2<L>0202<XM>ABCD
<Q>2
<Z>

[Note]
1. Specifying the start of horizontal position for printing text, barcodes, lines and graphics.

[Tip]
1. Any contents such as text, barcodes and graphics, exceed printable area will not print.

[Initial Value and Validity of Parameter]

Model	Initial value	Validity in dots	
		Print area compatibility = Invalid	Print area compatibility = Valid
TG308	1	1 to 640	1 to 800
TG312	1	1 to 960	1 to 1200

[Valid Commands]

Modification	<WD>	<FW>	<(>	<RF>	<FC>	<FT>	<RM>			
Font	<XU>	<XS>	<XM>	<XB>	<XL>	<X70>	<X71>	<X72>	<X73>	<X74>
	<X75>	<X76>	<X77>	<XCS>	<XCL>	<OA>	<OB>			
	<WB>	<WL>	<$=>	<RD>						
Barcode	<B>	<BC>	<BG>	<BI>	<BP>	<D>	<D><d>	<BD>	<BT>	<BW>
	<BF>	<BL>	<BL><d>	<BM>						
2D code	<BK>	<BQ>	<BV>	<BX>	<VC>					
Composite symbol	<EU>									
Graphic	<G>	<GM>	<GP>							
Memory card	<GR>	<GC>	<PY>							

6.2 Print Position

Vertical Print Position — ESC+V

HEX code	ESC	V	Parameter
	<1B>16	<56>16	aaaa
Initial value	aaaa=1		

Validity and valid duration of command		
	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter is valid until a new command is specified.
	Validity between items	The set parameter becomes the initial value at the next item <A>.

[Function]
Specifies vertical print position from its base point in dots.

[Format]
<V>aaaa
●Parameter
a [Vertical Print Position] = See the table below.

[Example] Vertical Print Position: 100 dots
<A>
<V>100<H>200<P>2<L>0202<XM>ABCD
<Q>2
<Z>

[Note]
1. Specifying the start of vertical position for printing text, barcodes, lines and graphics.

[Tip]
1. Any contents such as text, barcodes and graphics, exceed printable area will not print.

[Initial Value and Validity of Parameter]

Model	Initial value	Validity (dots)
TG308	1	1 to 2400
TG312	1	1 to 2880

[Valid Commands]

Modification	<WD>	<FW>	<(>	<RF>	<FC>	<FT>	<RM>			
Font	<XU>	<XS>	<XM>	<XB>	<XL>	<X70>	<X71>	<X72>	<X73>	<X74>
	<X75>	<X76>	<X77>	<XCS>	<XCL>	<OA>	<OB>			
	<WB>	<WL>	<$=>	<RD>						
Barcode	<B>	<BC>	<BG>	<BI>	<BP>	<D>	<D><d>	<BD>	<BT>	<BW>
	<BF>	<BL>	<BL><d>	<BM>						
2D code	<BK>	<BQ>	<BV>	<BX>	<VC>					
Composite symbol	<EU>									
Graphic	<G>	<GM>	<GP>							
Memory card	<GR>	<GC>	<PY>							

.

7. Modification Commands

7.1 Modification

Character Pitch	ESC+P

HEX code	ESC	P	Parameter
	<1B>16	<50>16	aa
Initial value	aa=2		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter is valid until a new command is specified.
	Validity between items	The set parameter becomes the initial value at the next item <A>.

[Function]

Specifies the amount of spacing (in dots) between characters.

[Format]

<P>aa

●Parameter

a [Number of dots between characters] = 00 to 99 dots

[Example] Number of dots between characters: 10

<A>
<V>100<H>200**<P>10**<L>0202<XM>ABCD
<Q>2
<Z>

[Note]

1. Character pitch is a spacing between characters and fonts when selecting fonts and barcodes.
2. This command is affected by the Character Expansion <L> command.
3. Even if the linefeed code [CR] is specified by the Linefeed <E> command, it does not revert to the initial value. Use the Start Code <A> command to revert to the initial value.
4. By specifying this command just before the barcode specification, the pitch command becomes valid for barcode module.
   Object barcode: CODABAR(NW-7) / CODE39 / Industrial 2of5 / Matrix 2of5
   For more details, refer to (3) Intercharacter Gap in [9. Barcode Specification (3) Intercharacter gap].
5. Data specification except numeric value or specification of over-digit will revert to the initial value.

[Valid Commands]

Modification	<RF>									
Font	<XU>	<XS>	<XM>	<XB>	<XL>	<X70>	<X71>	<X72>	<X73>	<X74>
	<X75>	<X76>	<X77>	<XCS>	<XCL>	<OA>	<OB>			
	<WB>	<WL>	<$=>	<RD>						
Barcode	<B>	<D>	<D><d>	<BD>	<BT>	<BW>	<BF>	<BM>	<BL>	
Composite symbol	<EU>									

7.2 Modification

Character Expansion

ESC+L

HEX code	ESC	L	Parameter
	<1B>16	<4C>16	aabb
Initial value	aa=01、bb=01		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter is valid until a new command is specified.
	Validity between items	The set parameter becomes the initial value at the next item <A>.

[Function]

Specifies the enlargement ratio of font to be printed.

[Format]

<L>aabb

●Parameter

a [Multiple to expand horizontally] = 01 to 12

b [Multiple to expand vertically] = 01 to 12

[Example] Multiple to expand horizontally: 4 times, Multiple to expand vertically: 3 times

<A>

<V>100<H>200<P>3**<L>0403**<XM>ABCD

<Q>2

<Z>

[Note]

1. This command will affect character pitch. When the Character Pitch <P> command is used with this command, the parameter for horizontal enlargement ratio specified by this command will affect the subsequent Character Pitch <P> command.
2. To expand graphic, place this command just before the command of printing graphic.

[Tip]

1. When increasing the enlargement ratio, design the print format that does not exceed print area.

[Valid Commands]

Modification	<P>	<RF>								
Font	<XU>	<XS>	<XM>	<XB>	<XL>	<X70>	<X71>	<X72>	<X73>	<X74>
	<X75>	<X76>	<X77>	<XCS>	<XCL>	<OA>	<OB>			
	<WB>	<WL>	<$=>	<RD>						
Graphic	<G>	<GM>	<GP>							
Memory card	<GR>	<GC>	<PY>							

7.3 Modification

Character Proportional Spacing

ESC+PS

HEX code	ESC	PS	Parameter
	<1B>16	<50>16<53>16	Nil
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set command is not maintained.
	Validity within item	The set command is valid until a new command is specified.
	Validity between items	The set command becomes valid.

[Function]
Specifies the printing of proportional spacing.

[Format]
<PS>

[Example]
<A>
<PS>
<V>100<H>200<P>2<L>0202<XM>ABCD
<Q>2
<Z>

[Note]
1. Using this command will make the width of alphanumeric narrower.
2. The printing of proportional spacing will not occur when specifying the data other than specified.
3. In the printer initial state, the default value is [Proportional Pitch]. Go to the User Mode through printer LCD display to select either [Fixed] or [Proportional Pitch] as the default value.

[Valid Commands]

Modification	<RF>									
Font	<XU>	<XS>	<XM>	<XB>	<XL>	<X70>	<X71>	<X72>	<X73>	<X74>
	<X75>	<X76>	<X77>	<RD>						

7.4 Modification

Release of Proportional Pitch	ESC+PR

HEX code	ESC	PR	Parameter
	<1B>16	<50>16<52>16	Nil
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set command is not maintained.
	Validity within item	The set command is valid until a new command is specified.
	Validity between items	The set command becomes valid.

[Function]
Cancels the printing of proportional spacing.

[Format]
<PR>

[Example]
<A>
<PR>
<V>100<H>200<P>2<L>0202<XM>ABCD
<Q>2
<Z>

[Note]
1. In the printer initial state, the default value is [Proportional Pitch]. Go to the User Mode through printer LCD display to select either [Fixed] or [Proportional Pitch] as the default value.

[Valid Commands]

Modification	<RF>									
Font	<XU>	<XS>	<XM>	<XB>	<XL>	<X70>	<X71>	<X72>	<X73>	<X74>
	<X75>	<X76>	<X77>	<RD>						

7.5 Modification

Rotate (Fixed Base Reference Point)

ESC+%

HEX code	ESC	%	Parameter
	<1B>16	<25>16	a
Initial value	a=0		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter is valid until a new command is specified.
	Validity between items	The set parameter becomes the initial value at the next item <A>.

[Function]

Rotates fonts and barcodes in the counterclockwise direction.

[Format]

<%>a

●Parameter

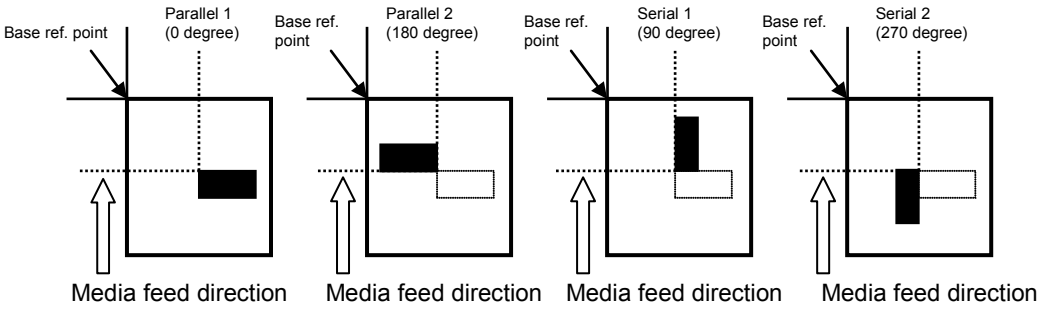
a [Rotation Direction] = 0: Parallel 1 (0º) 1: Serial 1 (90º)
2: Parallel 2 (180º) 3: Serial 2 (270º)

[Example] Font rotation: 180-degree Barcode rotation: Serial 1

```
<A>
<%>2
<V>100<H>400<P>3<L>0403<XM>ABCD
<%>1
<V>400<H>200<BD>103160*123*
<Q>2
<Z>
```

[Note]

1. The positions specified by Vertical Print Position <V> and Horizontal Print Position <H> commands are based on the absolute value from its base point.
2. When the parameter “a” is set between 4 and 9, this will cause a command error and will be ignored. When the value other than numeric is specified, this will be ignored and printing by [Parallel 1 (0º)].
3. Print of barcode using Serial 1 (0º) or Serial 2 (180º) may cause an ink blur.
   Drop the print speed when printing with Serial 1 (90º) or Serial 2(270º) for better performance.



[Valid Commands]

Modification	<RF>									
Font	<XU>	<XS>	<XM>	<XB>	<XL>	<X70>	<X71>	<X72>	<X73>	<X74>
	<X75>	<X76>	<X77>	<XCS>	<XCL>	<OA>	<OB>			
	<WB>	<WL>	<$=>	<RD>						
Barcode	<B>	<BC>	<BG>	<BI>	<BP>	<D>	<D><d>	<BD>	<BT>	<BW>
	<BF>	<BL>	<BL><d>	<BM>						
2D code	<BK>	<BQ>	<BV>							
Composite symbol	<EU>									
Graphic	<G>	<GM>	<GP>							
System	<E>									
Memory card	<GR>	<GC>	<PY>							

7.5 Modification

Sequential Numbering

ESC+F

HEX code	ESC	F	Parameter
	<1B>16	<46>16	aaaabcccc(,dd,ee,f)
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]

Prints sequential fields (font or barcode) where all incrementing is done within the printer.

[Format]

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

●Parameter

a [Number of times to repeat the same data] = 1 to 9999

b [Plus or minus symbol] = + (for increments)

= - (for decrements)

c [Value of step for sequence] = 1 to 9999

d [Sequential numbering digit quantity] = 1 to 99 (If digits are left out, the default is 8)

e [Number of digits free from sequential numbering starting with the right most position

= 1 to 99 (If digits are left out, the default is 0)

f [Decimal/HEX sequential numbering] = 0 to 99 (If digits are left out, the default is 0)

0: Decimal count

1: Hexadecimal base

[Example] Number of times to repeat the same data: 1, Plus or minus symbol: +

Value of step for sequence: 1, Sequential numbering digit quantity: 5

Number of digits free from sequential numbering: 0

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

[Note]

1. Up to eight different sequential fields can be specified per tag.
2. The Reverse Image <(> command cannot be used for sequential numbered data.
3. The Linefeed <E> command is not available for this command.

[Valid Commands]

Font	<XU>	<XS>	<XM>	<XB>	<XL>	<X70>	<X71>	<X72>	<X73>	<X74>
	<X75>	<X76>	<X77>	<OA>	<OB>				<WB>	<WL>
	<$=>	<RD>								
Barcode	<B>	<BC>	<BG>	<BI>	<BP>	<D>	<D><d>	<BD>	<BT>	<BW>
	<BF>	<BL>	<BL><d>	<BM>						
Composite symbol	<EU>									

7.6 Modification

Printing Lines & Boxes

ESC+FW

HEX code	ESC	FW	Parameter
	<1B>16	<46>16<57>16	Lines aabcccc Boxes aabbVccccHdddd
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]

Prints horizontal/vertical lines and boxes.

[Format]

<FW>aabcccc Print of lines

●Parameter

a [Line width] = 02 to 99 dots

b [Line orientation] = H: Horizontal line
V: Vertical line

c [Line length] = See the table below.

<FW>aabbVccccHdddd Print of boxes

●Parameter

a [Width of vertical side] = 02 to 99 dots

b [Width of horizontal side] = 02 to 99 dots

c [Length of vertical side] = See the table below.

d [Length of horizontal side] = See the table below.

[Example] Print of lines Line width: 4, Horizontal line and Line length: 400
Print of boxes Width of vertical side: 8, Width of horizontal side: 8
Length of vertical side: 300, Length of horizontal side: 400

<A>
<V>100<H>200**<FW>04H400**
<V>300<H>200**<FW>0808V300H400**
<Q>2
<Z>

[Validity]

Model	Printable area	Validity (dots)	
		Line length	Length of horizontal side
TG308	Invalid	1 to 2400	1 to 640
	Valid	1 to 2400	1 to 800
TG312	Invalid	1 to 2880	1 to 960
	Valid	1 to 2880	1 to 1200

[Note]

1. When the print start position is outside of printable area, printing will not be performed due to command error.
2. Set the line width to 02 dots or higher to make the width of horizontal side wider than 0.166mm.
3. If setting the vertical line width wider, it will be widened to the right side against media feed direction. If setting the horizontal line width wider, it will be widened to the lower side against media feed direction.
4. If setting the line width of box wider, it will be widened to the inside box.

7.7 Modification

Print Circles	ESC+FC

HEX code	ESC	FC	Parameter
	<1B>16	<46>16<43>16	,aaa,bbb(,c,d)
Initial value	c=0, d=0		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

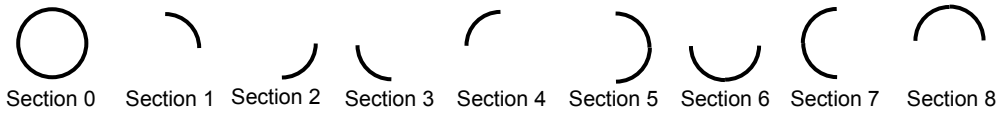
[Function]
Specifies the printing of circles.

[Format]
<FC>,aaa,bbb(,c,d)

●Parameter

a [Radius] = 5 to 999 dots
b [Line width] = 1 to 999 dots
c [Section number] = 0 to 8 (Omissible. If digit is left out, the default is 0)
For more details, see the section number below.
d [Pattern] = 0 to 3 (Omissible. If digit is left out, the default is 0)
0: Solid black line
1: Gray 1
2: Gray 2
3: Gray 3

●Section number

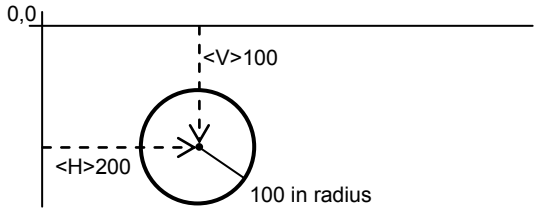


[Example] Solid line circle of 100 dots in radius, 8 dots in line width.

```
<A>
<V>100<H>200<FC>,100,8,0,0
<Q>2
<Z>
```

[Note]

1. When a sectional number value outside of the range is specified, it will be processed as “0”. (Command error will not occur)
2. When the pattern designation value is outside of the range is specified, it will be processed as “0”. (Command error will not occur)
3. When the print start position is outside of the printable area, printing will not be performed due to command error.
4. This command sets the base reference point to the center of a circle.



5. This command can be registered to the format.
6. If setting the line width wider, it will be widened to the inside circle.

7.8 Modification

Print Triangles	ESC+FT

HEX code	ESC	FT	Parameter
	<1B>16	<46>16<54>16	,aaaa,bbbb(,cccc,d)
Initial value	d=0		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]
Specifies the printing of triangles.

[Format]
<FT>,aaaa,bbbb(,cccc,d)

●Parameter

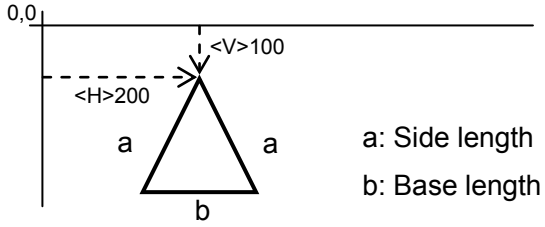
a	[Side length]	=	10 to 2000 dots
b	[Line width]	=	1 to 1000 dots
c	[Base length]	=	10 to 2000 (Omissible. If digits are left out, its value will be equal to the length of sides)
d	[Pattern]	=	0 to 3 (Omissible. If digit is left out, the default is 0)

0: Solid black line
1: Gray 1
2: Gray 2
3: Gray 3

[Example] Side length: 100 dots, Line width: 8 dots, Base length: 100 dots

```
<A>
<V>100<H>200<FT>,100,8,100,0
<Q>2
<Z>
```

[Note]
1. When the patter designation value is outside of the range is specified, it will be processed as “0”. (Command error will not occur)
2. When the print start position is outside of the printable area, printing will not be performed due to command error.
3. When the length of base length is not equal to the length of sides, printing will not be performed due to command error.
4. This command sets the base reference point to the apex of the triangle.



5. This command can be registered to the format.
6. If setting the line width, it will be widened to the inside triangle.
7. Setting an odd number to the base length, 1 will be added to the base length automatically.

7.9 Modification

Reverse Image	ESC+(

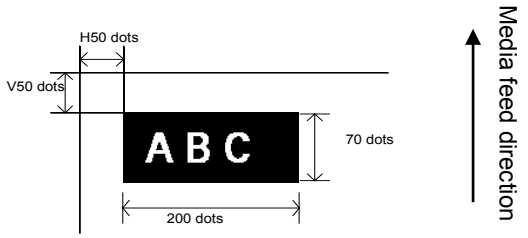
HEX code	ESC	(	Parameter
	<1B>16	<28>16	aaaa,bbbb
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]
Reverses an image area from black to white and vice versa.

[Format]
<(>aaaa,bbbb
●Parameter
a [Horizontal length in dots of reverse image area] = See the table below.
b [Vertical height in dots of reverse image area] = See the table below.

[Example] Horizontal length in dots of reverse image area: 200, Vertical height in dots of reverse image area: 70
<A>
<V>50<H>50<P>2<L>0202<XM>ABC
<V>50<H>50**<(>200,70**
<Q>2
<Z>



[Note]
1. As for the print start position, place the Horizontal Print Position <H> and the Vertical Print Position <V> commands prior to this command.
2. When the print start position is outside of the printable area, printing will not be performed due to command error.

[Tip]
1. Keep the black print area under 30% of overall tag/label.

[Validity]

Model	Printable area	Validity (dots)	
		Reverse image area in vertical direction	Reverse image area in horizontal direction
TG308	Invalid	8 to 2400	8 to 640
	Valid	8 to 2400	8 to 800
TG312	Invalid	8 to 2880	8 to 960
	Valid	8 to 2880	8 to 1200

7.10 Modification

Store Form Overlay

ESC+&

HEX code	ESC	&	Parameter
	<1B>16	<26>16	Nil
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set command is not maintained.
	Validity within item	The set command is valid until a new command is specified.
	Validity between items	The set command is valid until a new command is specified.

[Function]

Stores a tag/label image in the volatile form overlay memory.

[Format]

<&>(aab~b)

●Parameter

a [Registration key] = 01 to 99 (Omissible)

b [Comment] = Up to 16 bytes (Omissible)

[Example]

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

[Note]

1. This command stores fixed print contents to the printer and then, the Recall Form Overlay </> command combines the contents with drawing of general data to print out.
2. Place this command at the end of data string that is to be stored. Valid area for storing drawing to the form overlay memory is equal to the printable area of the printer.
3. Only one tag/label image can be stored with this command. As for registration key, use random code within the range of 1 to 99.
4. To change the stored data, specify the Clear Form Overlay <*&> command, and then store new data.
5. Invoke stored data by the Recall Form Overlay </> command.
6. When specifying the Media Size <A1> command, it will be extracted in the specified area.

[Valid Commands]

Print position	<V>	<H>								
Modification	<WD>	<FW>	<(>	<RF>	<FC>	<FT>	<RM>			
Font	<XU>	<XS>	<XM>	<XB>	<XL>	<X70>	<X71>	<X72>	<X73>	<X74>
	<X75>	<X76>	<X77>	<XCS>	<XCL>	<OA>	<OB>			
	<WB>	<WL>	<$=>	<RD>						
Barcode	<B>	<BC>	<BG>	<BI>	<BP>	<D>	<D><d>	<BD>	<BT>	<BW>
	<BF>	<BL>	<BL><d>	<BM>						
2D code	<BK>	<BQ>	<BV>	<BX>						
Composite symbol	<EU>									
Graphic	<G>	<GM>	<GP>							

7.11 Modification

Recall Form Overlay	ESC+/

HEX code	ESC	/	Parameter
	<1B>16	<2F>16	(aa)
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set command is not maintained.
	Validity within item	The set command is valid until a new command is specified.
	Validity between items	The set command is valid until a new command is specified.

[Function]
Recalls the tag/label image from the form overlay memory for printing.

[Format]
</>(aa)
● Parameter
a [Registration key] = 01 to 99 (Omissible)

[Example]
<A>
</>
<V>200<H>100<P>0<$>B,100,100,6
<$=>SATOPRINTER
<V>720<H>150<B>102100*95000012345*
<Q>2
<Z>

[Note]
1. This command recalls the data stored by the Store Form Overlay <&> command for printing.
2. When detecting this command in general print data, this data will be printed with the drawing stored in form overlay memory.

7.12 Modification

Replace Data (Partial Edit)	ESC+0

HEX code	ESC	0	Parameter
	<1B>16	<30>16	Nil
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set command is not maintained.
	Validity within item	The set command becomes invalid.
	Validity between items	The set command becomes invalid.

[Function]
Replaces a specified area of the previous tag/label with new data.

[Format]
<0>

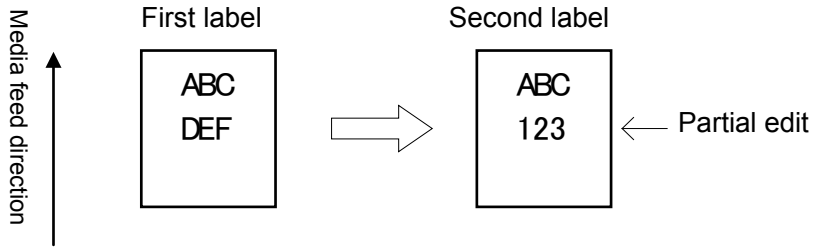
[Example] [DEF], a part of print data, is changed to [123].

```
<A>
<V>100<H>200<P>2<L>0202<XM>ABC
<V>200<H>200<P>2<L>0202<XM>DEF
<Q>1
<Z>
```

} First label

```
<A>
<0>
<V>200<H>200<P>2<L>0202<XM>123
<Q>1
<Z>
```

} Second label



[Note]
1. Use this command to edit only one part of the previous print data.
2. Use this command to recall the previous print data for partial editing and printing. Specify the print position to be changed in the previous data before sending the data to be replaced.
3. Specified area in the previous data will be cleared.
4. If the Rotate <%> command is placed in the specified editing portion, keep this command for partial editing.
5. Use this command with fixed proportional pitch, same font and same digit number.

7.13 Modification

Copy Image Area (Partial Copy) — ESC+WD

HEX code	ESC	WD	Parameter
	<1B>16	<57>16<44>16	VaaaaHbbbbYccccXdddd
Initial value	Nil		

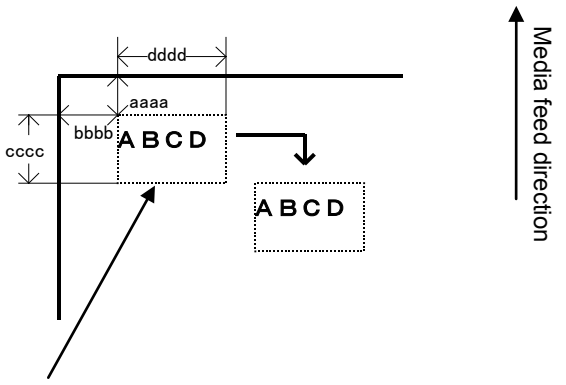
Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]
Copies an image from one location to another on the same tag/label.

[Format]
<WD>VaaaaHbbbbYccccXdddd
●Parameter
a [Vertical position of the top left corner of the area] = See the table below.
b [Horizontal position of the top left corner of the area] = See the table below.
c [Vertical length of the image area to be copied] = See the table below.
d [Horizontal length of the image area to be copied] = See the table below.

[Example] Vertical position of the top left corner of the area: 50, Horizontal position of the top left corner of the area: 50
Vertical length of the image area to be copied: 200, Horizontal length of the image area to be copied: 400

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



Dotted line part indicates the area to be copied.
"ABCD" will be printed.

[Note]
1. To locate the destination of copy, specify the Vertical Print Position <V> and the Horizontal Print Position <H> commands prior to this command.
2. Position of the new target area must not be inside the original image.
3. If the reference area of the target image exceeds the print area, printing will not be performed due to command error.

[Validity]

Model	Printable area	Validity (dots)	
		Horizontal position of the top left corner of the area Horizontal length of the image area to be copied	Vertical position of the top left corner of the area Vertical length of the image area to be copied
TG308	Invalid	1 to 640	1 to 2400
	Valid	1 to 800	1 to 2400
TG312	Invalid	1 to 960	1 to 2880
	Valid	1 to 1200	1 to 2880

7.14 Modification

Recall and Print of Font & Logo	ESC+RF

HEX code	ESC	RF	Parameter
	<1B>16	<52>16<46>16	aabbbb, n~n
Initial value	aa=01, bbbb=1		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]
Calls and prints fonts and logos downloaded with the exclusive tool.

[Format]
<RF>aabbbb,n~n
●Parameter
a [Font ID number] = 01 to 99
b [Print digit] = 1 to 9999
n [Print data]

[Example 1] When [AB] is printed in one-byte character with this command [Font ID number: 01, Print digit: 4]
(Unicode A: <0041>16, B: <0042>16)
<A>
<PS>
<V>100<H>100<L>0101
<RF>010004,<0041>16<0042>16
<Z>

[Example 2] When calling and printing logos [Font ID number: 02, Print digit: 2]
<A>
<V>100<H>100<L>0101**<RF>020002,<826B>16**
<Z>

[Note]
1. Specify the value of Unicode for print data.
2. When calling and printing a log, specify [Print digit: 0002], [Print data: <826B>16].
(Note that <826B>16 is the value of Shift JIS code of L)
3. Use [Font design tool], [Logo design tool] and [Download tool] on the accompanied CD-ROM to register/delete fonts and logos.
4. As for the font ID number corresponded to downloaded font and logo, refer to [Font ID number] in the dialog.
To display this dialog, select the [Maintenance] menu of [Font design tool], [Logo design tool] or [Download tool] → [Download logo/font maintenance]
5. As for the use of each tool, refer to [Font design tool manual], [Logo design manual] and [Download tool manual] on the accompanied CD-ROM.

7.15 Modification

Mirror Image

ESC+RM

HEX code	ESC	RM	Parameter
	<1B>16	<52>16<4D>16	aaaa,bbbbb
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]
Allows mirror image printing of data.

[Format]
<H>hhhh<V>vvvvv<RM>aaaa,bbbbb

●Parameter

h	[Horizontal start position for mirror image]	=	See the table below
v	[Vertical start position for mirror image]	=	See the table below
a	[Horizontal length of mirror image area]	=	8 to 9999
b	[Vertical length of mirror image area]	=	8 to 9999

[Example 1] When specifying the mirror image area.
<A>
<H>100<V>100<XM>12345
<H>100<V>100<RM>0200,0080
<Q>1
<Z>

[Example 2] When not specifying the mirror image area.
<A>
<H>100<V>100<XM>12345
<RM>
<Q>1
<Z>

[Note]
1. When the parameter “aaaabbb” is not specified, all print data specified prior to this command will be mirrored.
2. Any data outside the print area will not be mirrored.
3. If specifying this command for the item that does not contain print data, a command error will occur.
4. This command cannot be used in combination with the commands that involve reediting of print data (such as Sequential Numbering <F>, Copy Image Area (Partial Copy) <WD> and Calendar Printing<WA>). In the same manner, the data registration commands such as Store Graphic <GI> and Store Format <YS> do not work with this command.
5. This command should not be specified more than once in any single job.

[Validity of mirror image start position]

Model	Printable area	Validity (dots)	
		Horizontal start position	Vertical start position
TG308	Invalid	1 to 640	1 to 2400
	Valid	1 to 800	1 to 2400
TG312	Invalid	1 to 960	1 to 2880
	Valid	1 to 1200	1 to 2880

[Validity of mirror image area]

Model	Printable area	Validity (dots)	
		Horizontal length of mirror image area	Vertical length of mirror image area
TG308	Invalid	8 to 640	8 to 2400
	Valid	8 to 800	8 to 2400
TG312	Invalid	8 to 960	8 to 2880
	Valid	8 to 1200	8 to 2880

8. Font Commands

8.1 Font

XU Font (Basic Size 5x9 dots)	ESC+XU

HEX code	ESC	XU	Parameter
	<1B>16	<58>16<55>16	n~n
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]

Specifies the characters in default font size of W5 x H9 dots.

[Format]

<XU>n~n

●Parameter

n [Print data] = Data

[Example]

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

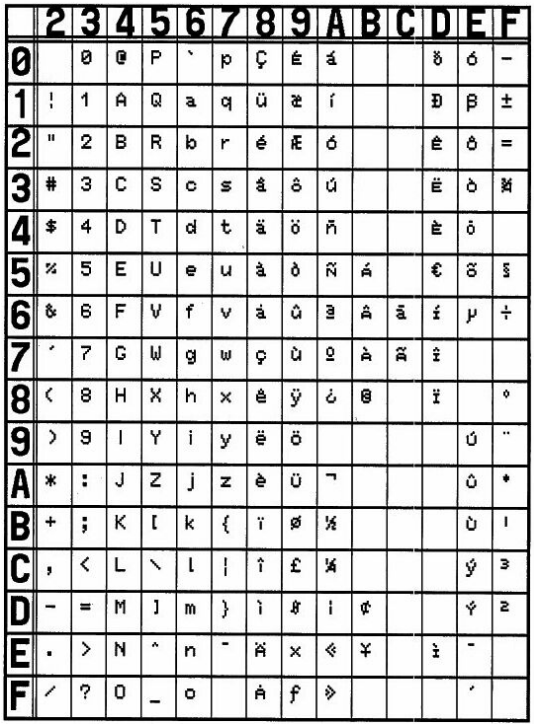
[Note]

1. XU font can be set to either fixed pitch or proportional pitch.
2. To set up fixed and proportional pitch, use the command or go to the User Mode through the printer LCD display.

[Valid Commands]

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

XU Font character set



	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	ß	±
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	á	û	ª	Â	ã	í	µ	÷
7	´	7	G	W	g	w	ç	ù	º	À	Ã	ì		
8	(	8	H	X	h	x	ê	ÿ	¿	©		ï		°
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	ƒ	»				´	

Above is a print sample in W5 x H9 dots, threefold in height/width.

8.2 Font

XS Font (Basic Size 17x17 dots)

ESC+XS

HEX code	ESC	XS	Parameter
	<1B>16	<58>16<53>16	n~n
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]
Specifies the characters in default font size of W17 x H17 dots.

[Format]
<XS>n~n
●Parameter
n [Print data] = Data

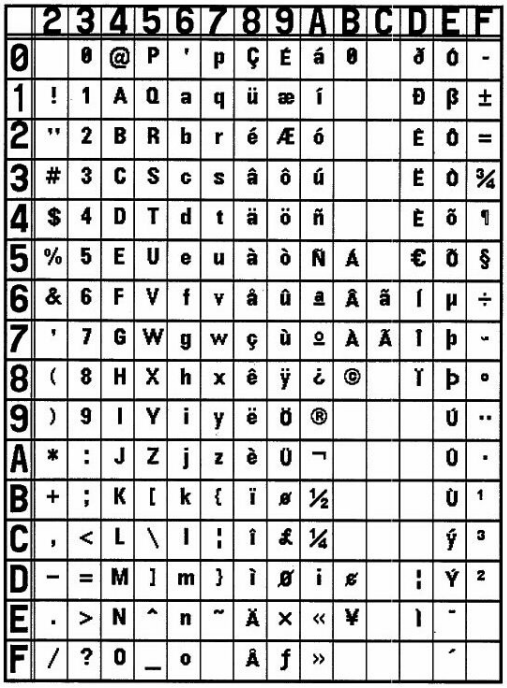
[Example]
<A>
<V>100<H>200<P>2<L>0304**<XS>ABCDE**
<Q>2
<Z>

[Note]
1. XS font can be set to either fixed pitch or proportional pitch.
2. To set up fixed and proportional pitch, use the command or go to the User Mode through the printer LCD display.

[Valid Commands]

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

XS Font Character Set



	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	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	Þ	°
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	ƒ	»				´	

Above is a print sample in W17 x H17 dots, twofold in height/width.

8.3 Font

XM Font (Basic Size 24x24 dots)

ESC+XM

HEX code	ESC	XM	Parameter
	<1B>16	<58>16<4D>16	n~n
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]
Specifies the characters in default font size of W24 x H24 dots.

[Format]
<XM>n~n
●Parameter
n [Print data] = Data

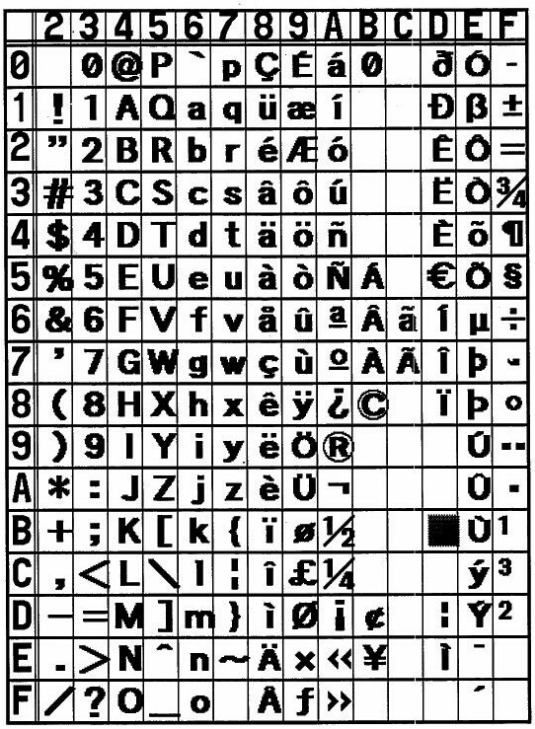
[Example]
<A>
<V>100<H>200<P>2<L>0304**<XM>ABCDE**
<Q>2
<Z>

[Note]
1. XM font can be set to either fixed pitch or proportional pitch.
2. To set up fixed and proportional pitch, use the command or go to the User Mode through the printer LCD display.

[Valid Commands]

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

XM Font Character Set



Above is a print sample in W24 x H24 dots, twofold in height/width.

8.4 Font

XB Font (Basic Size 48x48 dots)

ESC+XB

HEX code	ESC	XB	Parameter
	<1B>16	<58>16<42>16	an~n
Initial value	a=0		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]

Specifies the characters in default font size of W48 x H48 dots.

[Format]

<XB>an~n

●Parameter

a [Smoothing] = 0: Auto-smoothing of font is disabled
1: Auto-smoothing of font is enabled
(When the Character Expansion <L> command is set between threefold and ninefold)

n [Print data] = Data

[Example]

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

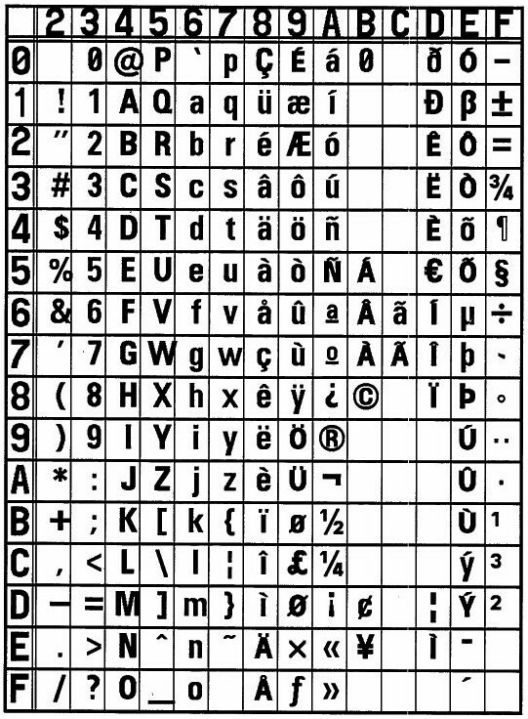
[Note]

1. XB font can be set to either fixed pitch or proportional pitch.
2. To set up fixed and proportional pitch, use the command or go to the User Mode through the printer LCD display.
3. Auto-smoothing is only effective if the Character Expansion <L> command is at least three times in each direction.

[Valid Commands]

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

XB Font Character Set



	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	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	Þ	°
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	ƒ	»				´	

Above is a print sample in W48 x H48 dots.

8.5 Font

XL Font (Basic Size 48x48 dots)

ESC+XL

HEX code	ESC	XL	Parameter
	<1B>16	<58>16<4C>16	an~n
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]

Specifies the characters in default font size of W48 x H48 dots.

[Format]

<XL>an~n

●Parameter

a [Smoothing] = 0: Auto-smoothing of font is disabled
1: Auto-smoothing of font is enabled
(When the Character Expansion <L> command is set between threefold and ninefold)

n [Print data] = Data

[Example]

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

[Note]

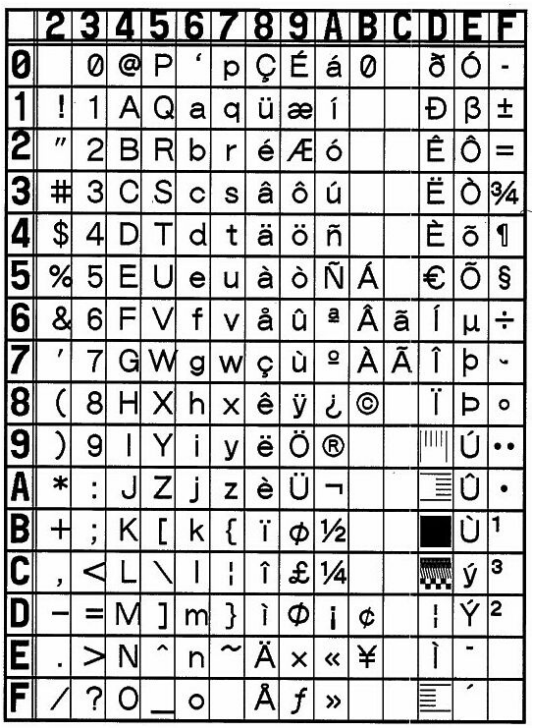
1. XL font can be set to either fixed pitch or proportional pitch.
2. To set up fixed and proportional pitch, use the command or go to the User Mode through the printer LCD display.
3. Auto-smoothing is only effective if the Character Expansion <L> command is at least three times in each direction.

[Valid Commands]

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

XL Font Character Set

Characters in default font size of W48 x H48 dots.



Above is a print sample in W48 x H48 dots.

8.6 Font

OCR-A Font	ESC+OA

HEX code	ESC	OA	Parameter
	<1B>16	<4F>16<41>16	n~n
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]
Specifies OCR-A font.

[Format]
<OA>n~n
●Parameter
n [Print data] = Data

[Example]
<A>
<V>100<H>100<P>2<L>0202**<OA>ABC**
<Q>2
<Z>

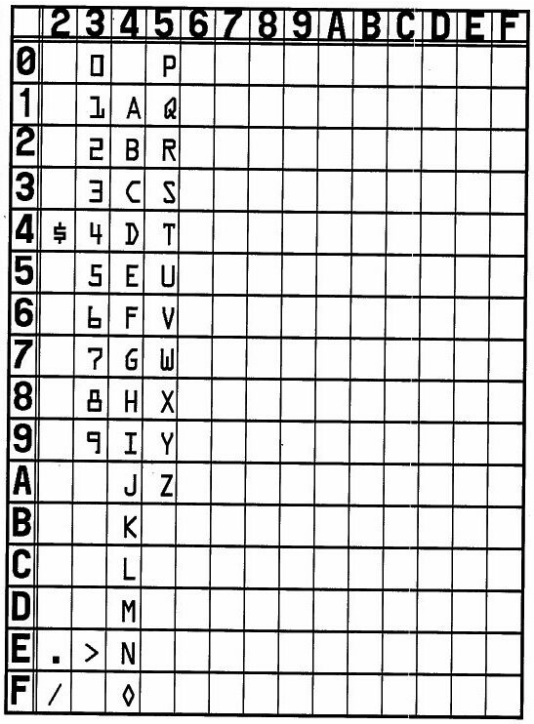
[Font Size]

Model	Font size in dots
TG308	W15 x H22
TG312	W22 x H33

[Valid Commands]

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

OCR-A Font Character Set



	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	/		◊											

Above is a print sample in W15 x H22 dots.

8.7 Font

OCR-B Font

ESC+OB

HEX code	ESC	OB	Parameter
	<1B>16	<4F>16<42>16	n~n
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]
Specifies OCR-B font.

[Format]
<OB>n~n
●Parameter
n [Print data] = Data

[Example]
<A>
<V>100<H>100<P>2<L>0202**<OB>ABC**
<Q>2
<Z>

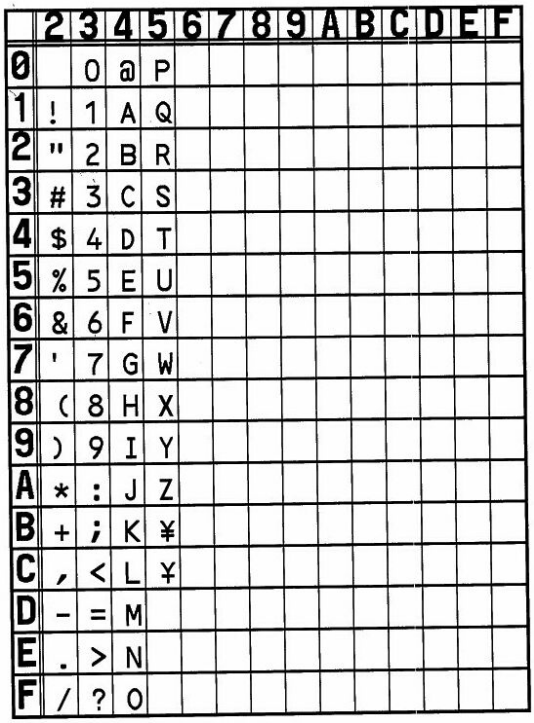
[Font Size]

Model	Font size in dots
TG308	W20 x H24
TG312	W30 x H36

[Valid Commands]

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

OCR-B Font Character Set



	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											

Above is a print sample in W20 x H24 dots.

8.8 Font

Outline Font — ESC+$

HEX code	ESC	$	Parameter
	<1B>16	<24>16	a,bbb,ccc,d
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter is valid until a new command is specified.
	Validity between items	The set parameter becomes the initial value at the next item <A>.

[Function]
Specifies the font type, size, and shape of font.

[Format]
<$>a,bbb,ccc,d
●Parameter
a [Font type] = A: Helvetica bold (Proportional)
B: Helvetica bold (Fixed character pitch)
b [Font width] = 24 to 999 dots
c [Font height] = 24 to 999 dots
d [Font shape] = 0: Standard font (Black)
1: Outline font
2: Gray font (Pattern 1)
3: Gray font (Pattern 2)
4: Gray font (Pattern 3)
5: Shaded font
6: Outline and shaded font
7: Mirror image font
8: Standard Italic font
9: Outline, shaded, and Italic font

[Example] Font type : A Font width : 100 dots
Font height : 100 dots Font shape : 1

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

[Note]
1. Shape of Italic font is inclined 15-degree within font width specification
2. Specify this command prior to the Outline Font Print <$=> command.
3. If specified dots in “1 ~ 9” of [Font shape] are small, they may be unreadable.
4. Small font width and height may be unreadable.

[Valid Commands]

Modification	<$=>									

8.9 Font

Outline Font Print

ESC+$=

HEX code	ESC	$=	Parameter
	<1B>16	<24>16<3D>16	n~n
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]
Specifies the print of outline font.

[Format]
<$=>n~n
●Parameter
n [Print data] = Data

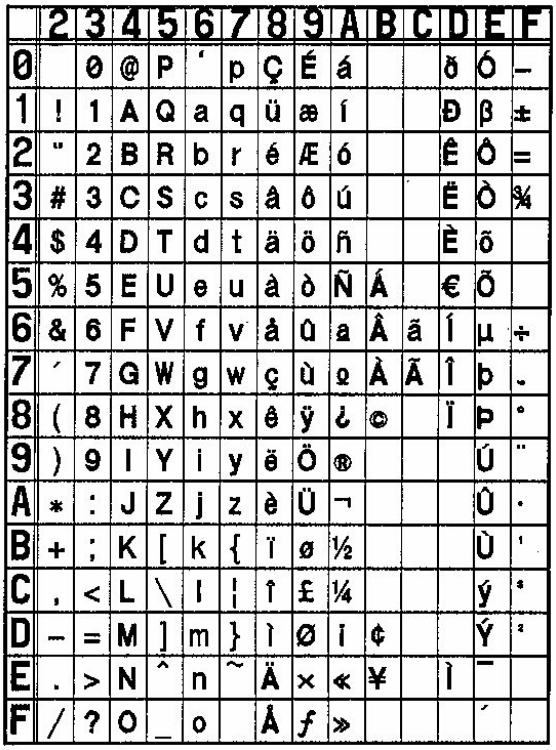
[Example] Print data: SATO
<A>
<V>100<H>100<P>2
<$>A,100,100,1**<$=>SATO**
<Q>2
<Z>

[Note]
1. Specify the Outline Font <$> command prior to this command.
2. Font height specification includes ascender and descender areas. For proportional pitch, letter size width of outline font varies depending on the individual font.
3. Use the Character Pitch <P> command to specify font pitch.
4. Shape of Italic font is inclined 15-degree within font width specification. Font height specification includes ascender and descender areas.
5. If specified dots in “1 ~ 9” of [Font shape] are small, they may be unreadable.
6. If specifying small font width and height for the Outline Font <$> command, some fonts may be unreadable.

[Valid Commands]

Print position	<V>	<H>								
Modification	<P>	<%>	<$>	<F>						
Calendar	<WA>									

Outline Font Character Set



	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	ß	±
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	Þ	°
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	ƒ	»				´	

Above is a print sample in W50 x H50 dots.

8.10 Font

CG Font

ESC+RD

HEX code	ESC	RD	Parameter
	<1B>16	<52>16<44>16	abc,ddd,eee,n~n
Initial value	Nil		

Validity and valid duration of command		
	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]
Specifies the CG font type, font size and print data.

[Format]

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

●Parameter

a	[Font type]	=	A [CG Times]	*Available for Japanese and international models
			B [CG Triumvirate]	*Available for Japanese and international models
			J [HG Gothic]	*1
			j [HG Mincho]	*1
			C [MKaiSO-Medium-U (Traditional Chinese)]	*1
			c [MHeiS-Bold-U (Simplified Chinese)]	*1
			K [HY Round Gothic]	*1
			T [AngsanaUPC]	*1
			F [Futura II Book]	*1
			P [CG Palacio]	*1
			S [CG Century Schoolbook]	*1
			G [CG Triumvirate Condensed]	*1
			V [Univers Medium]	*1
			t [CG Times]	*1
b	[Character set]	=	0 : No character set	
			1 : [Latin1]	ISO 8859/1 Latin1
			2 : [Latin2]	ISO 8859/2 Latin2
			3 : [Latin5]	ISO 8859/9 Latin5
			4 : [Grk]	CP-737 DOSGreek
			5 : [Cyr]	CP-855 DOSCyrillic
			6 : [Arb]	CP-864 DOSArabic
			7 : [Codepage874]	CP-874 Thai
			8 : [CP-850]	CP-850 Multilingual
c	[Font style]	=	0 : [Standard]	Medium
d	[Width]	=	004 to 999 dots	
			P02 to P99 points	
e	[Height]	=	004 to 999 dots	
			P02 to P99 points	
n	[Print data]	=	Data	

*1. Available font type may differ from country to country. Refer to the tables on the following page.

[Example 1] Font type: CG Times

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

[Note]

1. Specify the font size in dots or points.
2. Dot size may vary depending on the printer model. See the table below.

Model	Dot size
TG308	0.125mm
TG312	0.083mm

3. 1 point is equal to 0.35mm.

4. Refer to the following table for possible combinations of font type and character set.

Character set	Font type	Remarks
CP-850	F: Futura II Book	—
	P: CG Palacio	—
	S: CG Century Schoolbook	—
	G: CG Triumvirate Condensed	—
	V: Univers Medium	—
Codepage874	T: AngsanaUPC	—
Latin1	V: Univers Medium	—
	t: CG Times	—
Latin2	V: Univers Medium	—
	t: CG Times	—
Latin5	V: Univers Medium	—
	t: CG Times	—
Grk	V: Univers Medium	—
	t: CG Times	—
Cyr	V: Univers Medium	—
	t: CG Times	—
Arb	t: CG Times	—
No specification (Character sets shown in "Remarks" are used for font type)	C: MKaiSO-Medium-U (Traditional Chinese)	GB2312
	c: MHeiS-Bold-U (Simplified Chinese)	BIG5
	K: HY Round Gothic	KSC5601
	J: HG Gothic	JIS/SJIS
	j: HG Mincho	JIS/SJIS
	Others	SATO standard

5. Refer to the following table for available font types in different countries.

Destination	Font type
Chinese version	C: MKaiSO-Medium-U (Traditional Chinese) c: MHeiS-Bold-U (Simplified Chinese)
Korean version	K: HY Round Gothic
English version	F: Futura Ⅱ Book P: CG Palacio S: CG Century Schoolbook G: CG Triumvirate Condensed V: Univers Medium t: CG Times
European version	V: Univers Medium t: CG Times

[Valid Commands]

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

CG Times Font Character Set

Specification of CG Times Font.

	0	1	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	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	Þ	°
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	¡	ç		¦	Ý	
E			.	>	N		n		Ä	×	«	¥		Ì	¯	
F			/	?	O	_	o		Å	*f*	»				´	

CG Triumvirate Font Character Set

Specification of CG Triumvirate font.

	0	1	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	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	Þ	°
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	
E			.	>	N	^	n	~	Ä	×	«	¥		Ì		
F			/	?	O	_	o		Å	ƒ	»				´	

8.11 Font

X70 Font (Basic Size 32x48 dots)

ESC+X70

HEX code	ESC	X70	Parameter
	<1B>16	<58>16<37>16<30>16	,n~n
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]

Specifies the characters in default font size of W32 x H48 dots.

[Format]

<X70>,n~n

●Parameter

n [Print data] = Data

[Example]

<A>
<V>100<H>200<P>2<L>0304**<X70>,￥420**
<Q>2
<Z>

[Note]

1. X70 font can be set to either fixed pitch or proportional pitch.
2. To set up fixed and proportional pitch, use the command or go to the User Mode through the printer LCD display.

[Valid Commands]

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

X70 Font Character Set

	2	3	4	5	6	7	8	9
0		0						
1		1						
2		2						
3		3						
4	$	4						
5		5						
6		6						
7		7						
8		8						
9		9						
A								
B								
C	,			¥				
D	–							

Above is a print sample in W32 x H48 dots.

8.12 Font

X71 Font (Basic Size 40x60 dots)

ESC+X71

HEX code	ESC	X71	Parameter
	<1B>16	<58>16<37>16<31>16	,n~n
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]

Specifies the characters in default font size of W40 x H60 dots.

[Format]

<X71>,n~n

●Parameter

n [Print data] = Data

[Example]

<A>
<V>100<H>200<P>2<L>0304**<u><X71>,¥1,000</u>**
<Q>2
<Z>

[Note]

1. X71 font can be set to either fixed pitch or proportional pitch.
2. To set up fixed and proportional pitch, use the command or go to the User Mode through the printer LCD display.

[Valid Commands]

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

X71 Font Character Set

	2	3	4	5	6	7	8	9
0		0						
1		1						
2		2						
3		3						
4	$	4						
5		5						
6		6						
7		7						
8		8						
9		9						
A								
B								
C	,			¥				
D	-							

Above is a print sample in W40 x H60 dots.

8.13 Font

X72 Font (Basic Size 48x72 dots)

ESC+X72

HEX code	ESC	X72	Parameter
	<1B>16	<58>16<37>16<32>16	,n~n
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]

Specifies the characters in default font size of W48 x H72 dots.

[Format]

<X72>,n~n

●Parameter

n [Print data] = Data

[Example]

<A>
<V>100<H>200<P>2<L>0304**<u><X72>,¥530-</u>**
<Q>2
<Z>

[Note]

1. X72 font can be set to either fixed pitch or proportional pitch.
2. To set up fixed and proportional pitch, use the command or go to the User Mode through the printer LCD display.

[Valid Commands]

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

X72 Font Character Set

	2	3	4	5	6	7	8	9
0		0						
1		1						
2		2						
3		3						
4	$	4						
5		5						
6		6						
7		7						
8		8						
9		9						
A								
B								
C	,		¥					
D	–							

Above is a print sample in W48 x H72 dots.

8.14 Font

X73 Font (Basic Size 64x96 dots)

ESC+X73

HEX code	ESC	X73	Parameter
	<1B>16	<58>16<37>16<33>16	,n~n
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]

Specifies the characters in default font size of W64 x H96 dots.

[Format]

<X73>,n~n

●Parameter

n [Print data] = Data

[Example]

<A>
<V>100<H>200<P>2<L>0304**<u><X73>,¥3000</u>**
<Q>2
<Z>

[Note]

1. X73 font can be set to either fixed pitch or proportional pitch.
2. To set up fixed and proportional pitch, use the command or go to the User Mode through the printer LCD display.

[Valid Commands]

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

X73 Font Character Set

	2	3	4	5	6	7	8	9
0		0						
1		1						
2		2						
3		3						
4	$	4						
5		5						
6		6						
7		7						
8		8						
9		9						
A								
B								
C	,			¥				
D	–							

Above is a print sample in W64 x H96 dots.

8.15 Font

X74 Font (Basic Size 32x48 dots)

ESC+X74

HEX code	ESC	X74	Parameter
	<1B>16	<58>16<37>16<34>16	,n~n
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]

Specifies the characters in default font size of W32 x H48 dots.

[Format]

<X74>,n~n

●Parameter

n [Print data] = Data

[Example]

<A>
<V>100<H>200<P>2<L>0304**<X74>,￥6,500**
<Q>2
<Z>

[Note]

1. X74 font can be set to either fixed pitch or proportional pitch.
2. To set up fixed and proportional pitch, use the command or go to the User Mode through the printer LCD display.

[Valid Commands]

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

X74 Font Character Set

	2	3	4	5	6	7	8	9
0		0						
1		1						
2		2						
3		3						
4	$	4						
5		5						
6		6						
7		7						
8		8						
9		9						
A								
B								
C	‧			¥				
D	–							

Above is a print sample in W32 x H48 dots.

8.16 Font

X75 Font (Basic Size 40x60 dots)

ESC+X75

HEX code	ESC	X75	Parameter
	<1B>16	<58>16<37>16<35>16	,n~n
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]

Specifies the characters in default font size of W40 x H60 dots.

[Format]

<X75>,n~n

●Parameter

n [Print data] = Data

[Example]

<A>
<V>100<H>200<P>2<L>0304**<u><X75>,¥750</u>**
<Q>2
<Z>

[Note]

1. X75 font can be set to either fixed pitch or proportional pitch.
2. To set up fixed and proportional pitch, use the command or go to the User Mode through the printer LCD display.

[Valid Commands]

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

X75 Font Character Set

	2	3	4	5	6	7	8	9
0		0						
1		1						
2		2						
3		3						
4	$	4						
5		5						
6		6						
7		7						
8		8						
9		9						
A								
B								
C	,			¥				
D	–							

Above is a print sample in W40 x H60 dots.

8.17 Font

X76 Font (Basic Size 48x72 dots)

ESC+X76

HEX code	ESC	X76	Parameter
	<1B>16	<58>16<37>16<36>16	,n~n
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]

Specifies the characters in default font size of W48 x H72 dots.

[Format]

<X76>,n~n

●Parameter

n [Print data] = Data

[Example]

<A>
<V>100<H>200<P>2<L>0304**<X76>,￥1,500-**
<Q>2
<Z>

[Note]

1. X76 font can be set to either fixed pitch or proportional pitch.
2. To set up fixed and proportional pitch, use the command or go to the User Mode through the printer LCD display.

[Valid Commands]

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

X76 Font Character Set

	2	3	4	5	6	7	8	9
0		0						
1		1						
2		2						
3		3						
4	$	4						
5		5						
6		6						
7		7						
8		8						
9		9						
A								
B								
C	,			¥				
D	–							

Above is a print sample in W48 x H72 dots.

8.18 Font

X77 Font (Basic Size 64x96 dots)

ESC+X77

HEX code	ESC	X77	Parameter
	<1B>16	<58>16<37>16<37>16	,n~n
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]

Specifies the characters in default font size of W64 x H96 dots.

[Format]

<X77>,n~n

●Parameter

n [Print data] = Data

[Example]

<A>
<V>100<H>200<P>2<L>0304**<u><X77>,¥770</u>**
<Q>2
<Z>

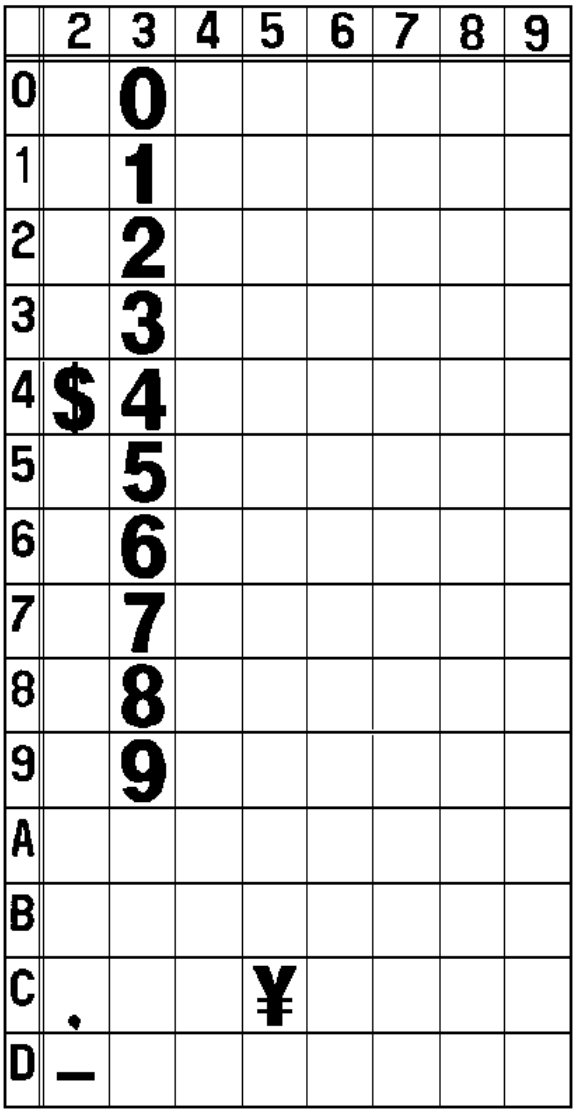
[Note]

1. X77 font can be set to either fixed pitch or proportional pitch.
2. To set up fixed and proportional pitch, use the command or go to the User Mode through the printer LCD display.

[Valid Commands]

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

X77 Font Character Set



Above is a print sample in W64 x H96 dots.

8.19 Font

WB Font (Basic Size 18x30 dots)

ESC+WB

HEX code	ESC	WB	Parameter
	<1B>16	<57>16<42>16	an~n
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]

Specifies the characters in default font size of W18 x H30 dots.

[Format]

<WB>an~n

●Parameter

a [Smoothing] = 0: Auto-smoothing of font is disabled
1: Auto-smoothing of font is enabled
(When the Character Expansion <L> command is set between threefold and twelvefold)

n [Print data] = Data

[Example]

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

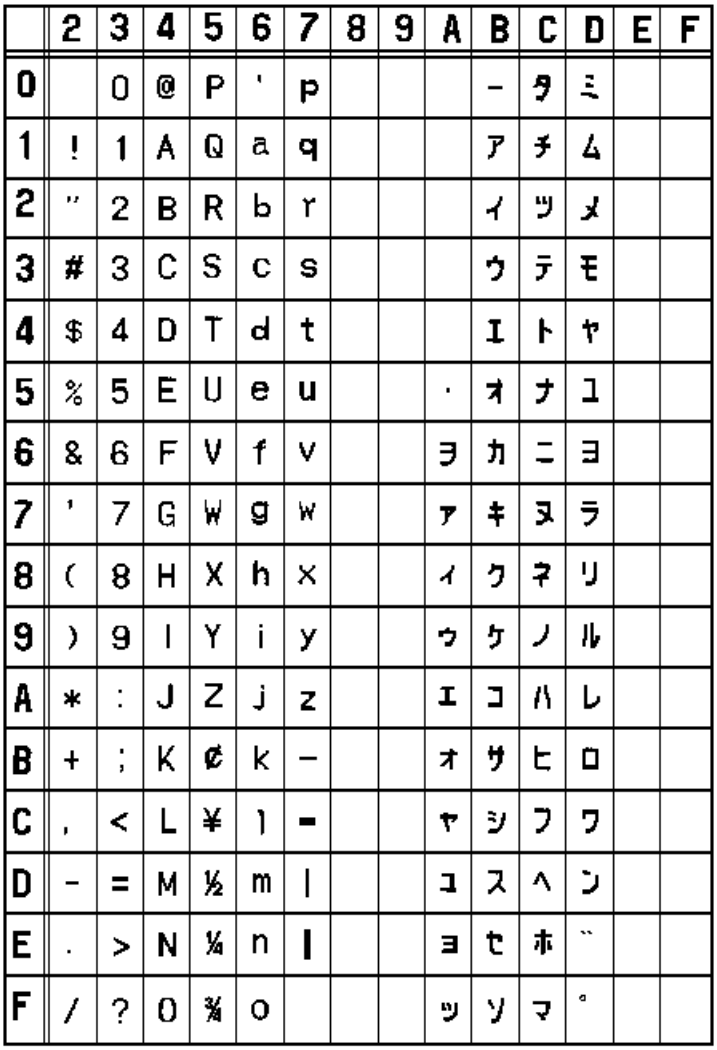
[Note]

1. WB font can be set to fixed pitch only.
2. Auto-smoothing is only effective if the Character Expansion <L> command is at least three times in each direction.

[Valid Commands]

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

WB Font Character Set



	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0		0	@	P	'	p				-	タ	ミ		
1	!	1	A	Q	a	q				ア	チ	ム		
2	"	2	B	R	b	r				イ	ツ	メ		
3	#	3	C	S	c	s				ウ	テ	モ		
4	$	4	D	T	d	t				エ	ト	ヤ		
5	%	5	E	U	e	u			・	オ	ナ	ユ		
6	&	6	F	V	f	v			ヲ	カ	ニ	ヨ		
7	'	7	G	W	g	w			ァ	キ	ヌ	ラ		
8	(	8	H	X	h	x			ィ	ク	ネ	リ		
9	)	9	I	Y	i	y			ゥ	ケ	ノ	ル		
A	*	:	J	Z	j	z			ェ	コ	ハ	レ		
B	+	;	K	¢	k	-			ォ	サ	ヒ	ロ		
C	,	<	L	¥	l	▬			ャ	シ	フ	ワ		
D	-	=	M	½	m	|			ュ	ス	ヘ	ン		
E	.	>	N	¼	n	▌			ョ	セ	ホ	゛		
F	/	?	O	¾	o				ッ	ソ	マ	°		

Above is a print sample in W18 x H30 dots.

8.20 Font

WL Font (Basic Size 28x52 dots)

ESC+WL

HEX code	ESC	WL	Parameter
	<1B>16	<57>16<4C>16	an~n
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]

Specifies the characters in default font size of W28 x H52 dots.

[Format]

<WL>an~n

●Parameter

a [Smoothing] = 0: Auto-smoothing of font is disabled
1: Auto-smoothing of font is enabled
(When the Character Expansion <L> command is set between threefold and twelvefold)

n [Print data] = Data

[Example]

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

[Note]

1. WL font can be set to fixed pitch only.
2. Auto-smoothing is only effective if the Character Expansion <L> command is at least three times in each direction.

[Valid Commands]

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

WL Font Character Set

Above is a print sample in W28 x H52 dots.

8.21 Font

XCS Font (Basic Size 32x24 dots)

ESC+XCS

HEX code	ESC	XCS	Parameter
	<1B>16	<58>16<43>16<53>16	,n~n
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]

Specifies the characters in default font size of W32 x H24 dots.

[Format]

<XCS>,n~n

●Parameter

n [Print data] = Data

[Example]

<A>
<V>100<H>200<P>2<L>0304**<XCS>,012345**
<Q>2
<Z>

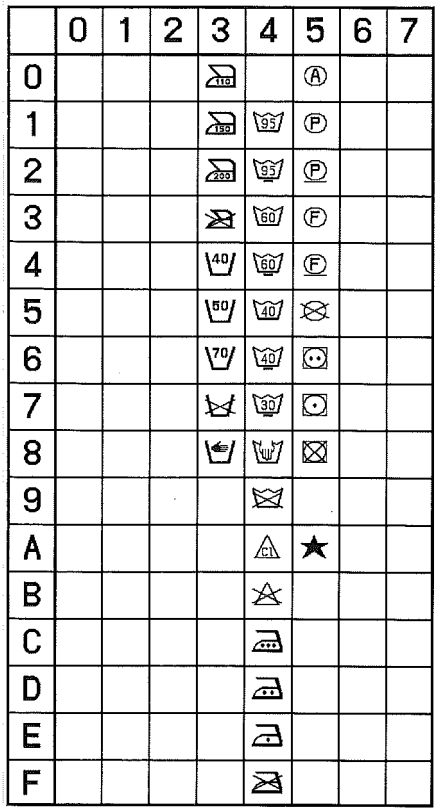
[Note]

1. XCS font can be set to fixed pitch only.

[Valid Commands]

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

XCS Font Character Set



Above is a print sample in W32 x H24 dots.

8.22 Font

XCL Font (Basic Size 48x36 dots)

ESC+XCL

HEX code	ESC	XCL	Parameter
	<1B>16	<58>16<43>16<4C>16	,n~n
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]

Specifies the characters in default font size of W48 x H36 dots.

[Format]

<XCL>,n~n

●Parameter

n [Print data] = Data

[Example]

<A>
<V>100<H>200<P>2<L>0304**<XCL>.012345**
<Q>2
<Z>

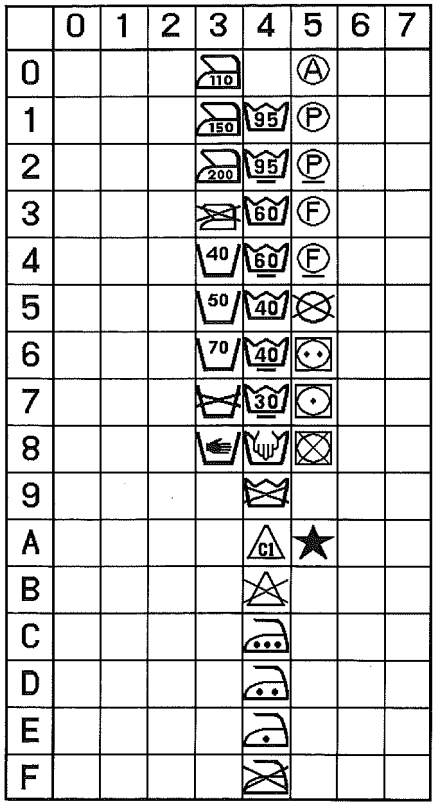
[Note]

1. XCL font can be set to fixed pitch only.

[Valid Commands]

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

XCL Font Character Set



Above is a print sample in W48 x H36 dots.

8.23 Font

Store 16x16 dots External Character

ESC+T1

HEX code	ESC	T1	Parameter
	<1B>16	<54>16<31>16	abbn~n
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]

Specifies the registration of external character in W16 x H16 dots.

[Format]

<T1>abbn~n

●Parameter

a [Selection of registered data type] = H: Registered data in hexadecimal character
= B: Registered data in binary code

b [Registered font code address]

<JIS code specification>
H: Within the range from 21 to 7F, up to 95 addresses can be registered.
B: Within the range from 21H to 7FH, up to 95 addresses can be registered.

<Shift JIS specification>
H: Within the range from 40 to 9E, up to 95 addresses can be registered.
B: Within the range from 40H to 9EH, up 95 addresses can be registered.

n [External character registered data]

[Example 1] Registered data in hexadecimal character of JIS

<A>
<T1>H21
00FF ・・・・・・・・・・FF00
<Z>

<A>
<V>100<H>200<K1>H9021
<Q>2
<Z>

[Example 2] Registered data in binary code of Shift JIS

<A>
<T1>B<40>16
<00FF ・・・・・・・・・・FF00>16
<Z>

<A>
<V>100<H>200<K1>B<90>16<40>16
<Q>2
<Z>

[Example 3] When registering data to user memory

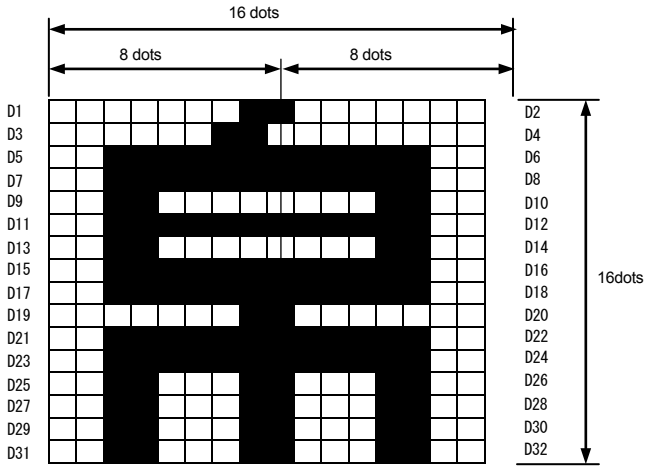
<A>
<CC2>
<T1>B<40>16
<00FF ・・・・・・・・・・FF00>16
<Z>

[Note]

1. Registers W16 x H16 dots external character to internal memory.
2. Code for registered font code address needs to be set to either JIS code or Shift JIS code set up in the printer.
3. Re-entry to the registered area is allowed.
4. Refer to the data registration procedure below.
5. Registered contents in the printer memory will be cleared by turning off the printer. Register new data again.

External character file [16x16]

D1	D2
D3	D4
D5	D6
D31	D32



D1 and D2 are respectively consisted of [00000001] and [10000000]. To register the above external character, consider D1 data as $<01>_{16}$ and D2 data as $<80>_{16}$.
In the same manner, D3 as $<03>_{16}$, D4 as $<00>_{16}$, D5 as $<3F>_{16}$, and D6 as $<FC>_{16}$, so that the specification of external character registered data will be $<018003003FFC\cdots\cdots>_{16}$ and up to D32.

8.24 Font

Store 24x24 dots External Character

ESC+T2

HEX code	ESC	T2	Parameter
	<1B>16	<54>16<32>16	abbn~n
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]

Specifies the registration of external character in W24 x H24 dots.

[Format]

<T2>abbn~n

●Parameter

a [Selection of registered data type] = H: Registered data in hexadecimal character
= B: Registered data in binary code

b [Registered font code address]

<JIS code specification>
H: Within the range from 21 to 7F, up to 95 addresses can be registered.
B: Within the range from 21H to 7FH, up to 95 addresses can be registered.

<Shift JIS specification>
H: Within the range from 40 to 9E, up to 95 addresses can be registered.
B: Within the range from 40H to 9EH, up 95 addresses can be registered.

n [External character registered data]

[Example 1] Registered data in hexadecimal character of JIS

```
<A>
<T2>H21
00FF ・・・・・・・・・・FF00
<Z>

<A>
<V>100 <H>200 <K2>H9021
<Q>2
<Z>
```

[Example 2] Registered data in binary code of Shift JIS

```
<A>
<T2>B<40>16
00FF ・・・・・・・・・・FF00
<Z>

<A>
<V>100 <H>200 <K2>B<F0>16<40>16
<Q>2
<Z>
```

[Example 3] When registering data to user memory

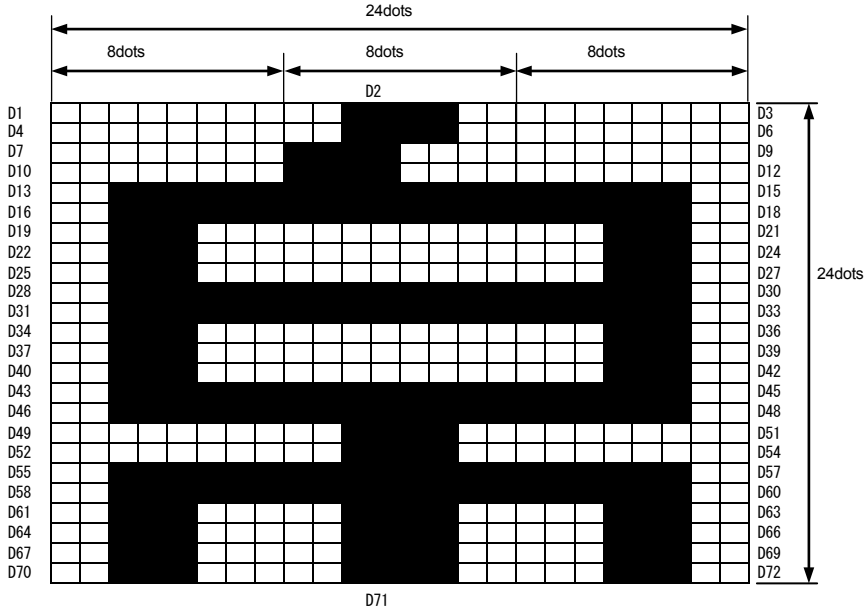
```
<A>
<CC2>
<T2>B<41>16
<00FF ・・・・・・・・・・FF00>16
<Z>
```

[Note]

1. Registers W24 x H24 dots external character to internal memory.
2. Code for registered font code address needs to be set to either JIS code or Shift JIS code set up in the printer.
3. Re-entry to the registered area is allowed.
4. Refer to the data registration procedure below.
5. Registered contents in the printer memory will be cleared by turning off the printer. Register new data again.

External character file [24x24]

D1	D2	D3
D4	D5	D6
D7	D8	D9
⎪	⎪	⎪
D70	D71	D72



D1, D2 and D3 are respectively consisted of [00000000], [00111100] and [00000000]; therefore, to register the above external character, consider D1 data as $<00>_{16}$, D2 data as $<3C>_{16}$ and D3 data as $<00>_{16}$.
In the same manner, D4 as $<00>_{16}$, D5 as $<3C>_{16}$, D6 as $<00>_{16}$, so that the specification of external character registered data will be $<003C00003C00\cdots\cdots>_{16}$ and up to D72.

[Tip]

1. Registered contents in user memory will not be cleared by turning off the printer.
2. Internal memory and user memory cannot be specified at the same time.

8.25 Font

Recall Horizontally Written External Character

ESC+K1(K2)

HEX code	ESC	K1(K2)	Parameter
	<1B>16	<4B>16<31>16(<4B>16<32>16)	ab~b
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]

Recalls and prints the horizontally written external character registered in the printer memory.

[Format]

<K1>ab~b

<K2>ab~b

●Parameter

a [External character specification mode] = H: Hexadecimal character
B: Binary code
I: Smoothing function by Hexadecimal character
C: Smoothing function by Binary code
J: Highlight function by Hexadecimal character
D: Highlight function by Binary code
K: Smoothing and highlight functions by Hexadecimal character
E: Smoothing and highlight functions by Binary code

b [Registration code]
<JIS code specification>
H, I, J, K : "9021" to "907F"
B, C, D, E : 9021H to 907FH
<Shift JIS code specification>
H, I, J, K : "F040" to "F09E"
B, C, D, E : F040H to F09EH

[Example 1] Recalls 16 x 16 external character, Registered data in hexadecimal character of JIS

```
<A>
<T1>H21
00FF ・・・・・・・・・・FF00
<Z>

<A>
<V>100<H>200<K1>H9021
<Q>2
<Z>
```

[Example 2] Recalls 24 x 24 external character, Registered data in Binary code of Shift JIS

```
<A>
<T2>B<40>16
00FF ・・・・・・・・・・FF00
<Z>

<A>
<V>100<H>200<K2>B<F0>16<40>16
<Q>2
<Z>
```

[Note]

1. If a print error occurs, register again.

8.26 Font

Recall Vertically Written External Character

ESC+k1(k2)

HEX code	ESC	k1(k2)	Parameter
	<1B>16	<6B>16<31>16(<6B>16<32>16)	ab~b
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]

Recalls and prints the vertically written external character registered in the printer memory.

[Format]

<k1>ab~b

<k2>ab~b

●Parameter

a [External character specification mode] = H: Hexadecimal character
B: Binary code
I: Smoothing function by Hexadecimal character
C: Smoothing function by Binary code
J: Highlight function by Hexadecimal character
D: Highlight function by Binary code
K: Smoothing and highlight functions by Hexadecimal character
E: Smoothing and highlight functions by Binary code

b [Registration code]
<JIS code specification>
H, I, J, K : "9021" to "907F"
B, C, D, E : 9021H to 907FH
<Shift JIS code specification>
H, I, J, K : "F040" to "F09E"
B, C, D, E : F040H to F09EH

[Example 1] Recalls 16 x 16 external character, Registered data in hexadecimal character of JIS

```
<A>
<T1>H21
00FF ・・・・・・・・・・FF00
<Z>

<A>
<V>100<H>200<k1>H9021
<Q>2
<Z>
```

[Example 2] Recalls 24 x 24 external character, Registered data in Binary code of Shift JIS

```
<A>
<T2>B<40>16
00FF ・・・・・・・・・・FF00
<Z>

<A>
<V>100<H>200<k2>B<F0>16<40>16
<Q>2
<Z>
```

[Note]

1. If a print error occurs, register again.

9. Barcode Specification

In barcode specification, print of various barcodes, change of bar width ratio, and print of guard bar or human-readable information can be performed by designating (B, D, BD) after ESC.

This and next page should be read closely and followed.

Refer to the table below for the specification of B, D, and BD.

[Specification of Bar Width Ratio]

Barcode specification parameter	Barcode	<B>	<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) Bar width ratio

Barcode is composed of Narrow Bar, Wide Bar, Narrow Space and Wide Space. Bar width ratio is the proportion of Narrow Bar and Wide Bar.

Bar width ratio (Ratio 1 : 3) <B>
This barcode is composed of Narrow Bar [1] and Wide Bar [3].
Bar width ratio (Ratio 1 : 2) <D>
This barcode is composed of Narrow Bar [1] and Wide Bar [2].
Bar width ratio (Ratio 2 : 5) <BD>
This barcode is composed of Narrow Bar [2] and Wide Bar [5].

If specifying bar width ratio for your own convenience, register the ratio with the Variable Ratio Barcodes <BT> command and print tags/labels with the Print Variable Ratio Barcodes <BW> command.

(2) Width of narrow bar and height of barcode

Narrow bar indicates the narrow bar width, and bar height indicates the height of barcode.
For instance, printing narrow bar for 1 dot in head density of 8 dots/mm, the narrow bar width will be 0.125mm and barcode scanner may have a reading problem. To avoid this problem, set the narrow bar to 2 dots so that the narrow bar width will be 0.25mm and this will improve the scanner reading performance.
There is a necessity to set the narrow bar width based on the printer head density or performance of barcode scanner.
In bar width ratio, [Narrow bar width] specification sets the width of bar.
e.g.) When bar width ratio = 1 : 3 and narrow bar width is 3 dots, bar width ratio becomes 3 : 9.
Bar height is to specify the height of barcode, and proper height can be set based on the scanner type.

(3) Intercharacter gap

Intercharacter gap is the space between two adjacent barcode characters in a discrete barcode.
To specify and enable intercharacter gap, insert the Character Pitch <P> command right before barcode specification such as <B>,<D> and <BD> or the Print Variable Ratio Barcodes <BW> command. If not, the initial value (2 dots) will be set.

Intercharacter gap is designable for the following barcodes.
1) CODABAR(NW-7)
2) CODE39
3) Industrial 2of5
4) Matrix 2of5

Intercharacter gap is the multiplier of values specified with the Character Pitch <P> command and narrow bar width.
e.g.) When the Character Pitch <P> command is 3 and narrow bar width is 2 dots:
Intercharacter gap = 3 x 2 = 6 (dots)

(4) Designation of human readable information (HRI) and guard bar

For UPC-A and JAN/EAN8 and 13 digits barcodes, availability of human-readable information (hereinafter HRI) and guard bar can be specified.

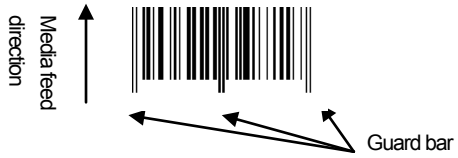
Barcode specification parameter	Barcode	<B>	<D>	<BD>
3	JAN/EAN13	HRI : Nil Guard bar : Nil	HRI : Nil Guard bar : Available	HRI : Available Guard bar : Available
4	JAN/EAN8	HRI : Nil Guard bar : Nil	HRI : Nil Guard bar : Available	HRI : Available Guard bar : Available
H	UPC-A	HRI : Nil Guard bar : Nil	HRI : Nil Guard bar : Available	HRI : Available Guard bar : Available

(1) Specification of <B> (No HRI, No guard bar)

If specifying <B>, the following barcode will be printed.

(2) Specification of <D> (No HRI, with Guard bar)

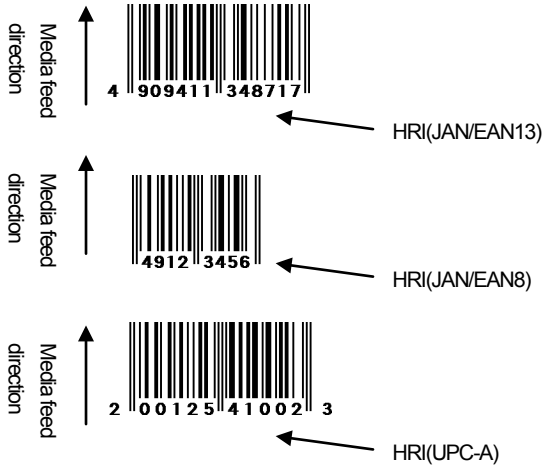
If specifying <D>, the following barcode will be printed.



[Note] HRI is printable specifying <Character Type> data subsequently to <D>.
For more information, refer to the Barcode (HRI) <D>~<d> command.

(3) Specification of <BD> (HRI and guard bar available)

If specifying <BD>, the following barcode will be printed.



[Barcode Specification Only]

Barcode specification parameter	Barcode	<B>
C	CODE93	Barcode only
E	UPC-E	Barcode only
G	CODE128	Barcode only
I	GS1-128(UCC/EAN128) for standard carton ID	Barcode only

[Important]

In this case, barcode will not have Bar Width Ratio and HRI.

(4) Composition of check digit

Refer to the table below for check digit in each barcode.

[Composition of C/D]

Barcode specification parameter	Barcode	Input digit No.	Print digit number and contents
3	JAN/EAN13	12-digit	13-digit (Input data of barcode + C/D) C/D is calculated by modulus10.
		13-digit	13-digit (Input data of barcode) C/D is not checked.
4	JAN/EAN8	7-digit	8-digit (Input data of barcode + C/D) C/D is calculated by modulus10.
		8-digit	8-digit (Input data of barcode) C/D is not checked.
C	CODE93	Max.99-digit	C/D is calculated by modulus47.
E	UPC-E	6-digit only	C/D is calculated by modulus10.
G	CODE128	-	C/D is calculated by modulus103.
H	UPC-A	11-digit only	12-digit (Input data of barcode + C/D) C/D is calculated by modulus10.
I	GS1-128(UCC/EAN128) for standard carton ID	17-digit only	C/D is calculated by modulus 103.

[Note] C/D stands for “Check Digit”.

Print Direction of Barcode

Print direction of barcode can be rotated. Note that when specifying Serial 1 and Serial 2 for barcode rotation, it may cause blurring due to barcode enlargement ratio.

Parallel 1 : Forward feed print

Parallel 2 : Backfeed print at 180-degree rotation

[Note] Forward feed:
Prints horizontally to media feed direction

Serial 1 : Forward feed print at 90-degree rotation

Serial 2 : Forward feed print at 270-degree rotation

1) To print with Parallel1 and Parallel2, specify proper enlargement ratio of bar width to make a narrow bar 2 dots and upwards.
(“L” indicates the enlargement ratio to the bar width ratio.)

	Head density	
	8dot/mm	12dot/mm
Bar width ratio 1:2	2L or more	2L or more
Bar width ratio 1:3	2L or more	2L or more
Bar width ratio 2:5	1L or more	1L or more
UPC-A, JAN/EAN	2L or more	2L or more

2) To print with Serial1 and Serial2, specify proper enlargement ratio of bar width to make a narrow bar 3 dots and upwards.
3) To print with Serial1 and Serial2, drop print speed.

	Head density	
	8dot/mm	12dot/mm
Bar width ratio 1:2	3L or more	3L or more
Bar width ratio 1:3	3L or more	3L or more
Bar width ratio 2:5	2L or more	2L or more
UPC-A, JAN/EAN	3L or more	3L or more

9.1 Barcode

Barcode (Ratio 1:3) — ESC+B

HEX code	ESC	B	Parameter
	<1B>16	<42>16	abbcccn~n
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]

Specifies the barcode of narrow and wide bar width ratio 1:3.

[Format]

<B>abbcccn~n

- Parameter

a [Barcode symbology] = Refer to the table below.
b [Narrow bar width] = 01 to 12 dots
c [Height of barcode] = 001 to 999 dots
n [Print data] = Data

Barcode symbology (Ratio of module composition may not be available depending on the barcode symbology.)

a	Barcode symbology	Descriptions	Ratio
0	CODABAR(NW-7)	Set print data including Start/Stop characters. Start/Stop Characters are [A,B,C,D,E,N,T,a,b,c,d,e,n,t]. e.g.) When barcode print data is [123], specify [A123A]. Barcode character pitch is enabled. Refer to the CODABAR(NW-7) code table for print data.	1:3
1	CODE39	Set print data including Start/Stop Characters. Start/Stop Characters are indicated as [*]. e.g.) When barcode print data is [12345], specify [*12345*]. Barcode character pitch is enabled. Refer to the CODE39 code table for print data.	1:3
2	ITF	Specify print data in even-numbered digit. If specifying in odd-numbered digit, “0” will be added to the head of print data. Refer to the Interleaved 2of5 code table for print data.	1:3
3	JAN/EAN13	Barcode will have no guard bar and HRI. Refer to the JAN/EAN13 code table for print data.	Fixed
4	JAN/EAN8	Barcode will have no guard bar and HRI. Refer to the JAN/EAN8 code table for print data.	Fixed
5	Industrial 2of5	Barcode character pitch is enabled. Refer to the Industrial 2of5 code table for print data.	1:3
6	Matrix 2of5	Barcode character pitch is enabled. Refer to the Matrix 2of5 code table for print data.	1:3
7	SATOC CODABAR(NW-7)	Bar width ratio of narrow and wide bars, and the width of space are as follows. Bar width ratio = 1:3, Width of space = 3:6 Set print data Including Start/Stop Characters. Start/Stop Characters are [A, B, C, D, E, N, T, a, b, c, d, e, n, t]. e.g.) When barcode print data is [123], specify [A123A].	Fixed
A	MSI	Print data can be specified up to 13-digit. Refer to the MSI code table for print data.	Fixed
C	CODE93	Refer to the CODE93<BC>.	Fixed
E	UPC-E	Specify 6-digit number for print data. Refer to the UPC-E code table for print data.	Fixed
F	BOOKLAND	Refer to BOOKLAND<BF>.	Fixed
G	CODE128	Refer to the CODE128<BG> for print data.	Fixed
H	UPC-A	Barcode will have no guard bar and HRI. Refer to the UPC-A code table for print data.	Fixed
I	GS1-128(UCC/EAN128)	Refer to GS1-128(UCC/EAN128)<BI>.	Fixed
P	POSTNET	Refer to POSTNET<BP>.	Fixed

[Example 1] Barcode symbology: CODE39, Narrow bar width: 03, Height of barcode:120, Print data: *1234AB*

```
<A>
<V>100<H>100<B>103120*1234AB*
<Q>2
<Z>
```

[Example 2] Barcode symbology: JAN8, Narrow bar width: 02, Height of barcode: 080, Print data: 4912345

```
<A>
<V>100<H>100<B>4020804912345
<Q>2
<Z>
```

[Note]

1. 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 as same as narrow space width.
   e.g.) Character pitch specification (Nil or 0, 1) x Narrow bar width (2dots) = Character pitch (2dots)
   Character pitch specification (2) x Narrow bar width (3dots) = Character pitch (6dots)

[Tip]

1. If 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> command or the Print Darkness <#E> command 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/EAN13 or JAN/EAN8, set the correct calculated value. Barcode will be printed even when the data includes improper check digit; however, scanner can not read it.
8. Barcode outside the printable area will not be printed.

9.2 Barcode

Barcode (Ratio 1:2) — ESC+D

HEX code	ESC	D	Parameter
	<1B>16	<44>16	abbcccn~n
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]
Specifies the barcode of narrow and wide bar width ratio 1:2.

[Format]
<D>abbcccn~n
●Parameter
a [Barcode symbology] = Refer to the table below
b [Narrow bar width] = 01 to 12 dots
c [Height of barcode] = 001 to 999 dots
n [Print data] = Data

Barcode symbology (Ratio of module composition may not be available depending on the barcode symbology.)

a	Barcode symbology	Description	Ratio
0	CODABAR(NW-7)	Set print data including Start/Stop Characters. Start/Stop Characters are [A,B,C,D,E,N,T,a,b,c,d,e,n,t]. e.g.) When barcode print data is [123], specify [A123A]. Barcode character pitch is enabled. Refer to the CODABAR(NW-7) code table for print data.	1:2
1	CODE39	Set print data including Start/Stop Characters. Start/Stop Characters are indicated as [*]. e.g.) When barcode print data is [12345], specify [*12345*]. Barcode character pitch is enabled. Refer to the CODE39 code table for print data.	1:2
2	ITF	Specify print data in even-numbered digit. If specifying in odd-numbered digit, “0” will be added to the head of print data. Refer to the Interleaved 2of5 code table for print data.	1:2
3	JAN/EAN13	Barcode will have guard bar, but no HRI. Refer to the JAN/EAN13 code table for print data.	Fixed
4	JAN/EAN8	Barcode will have guard bar, but no HRI. Refer to the JAN/EAN8 code table for print data.	Fixed
5	Industrial 2of5	Barcode character pitch is enabled. Refer to the Industrial 2of5 code table for print data.	1:2
6	Matrix 2of5	Barcode character pitch is enabled. Refer to the Matrix 2of5 code table for print data.	1:2
7	Condensed CODABAR(NW-7)	Bar width ratio of narrow and wide bars, and the width of space are as follows. Bar width ratio = 2:5, Width of space = 1:3 Set print data Including Start/Stop Characters. Start/Stop Characters are [A, B, C, D, E, N, T, a, b, c, d, e, n, t]. e.g.) When barcode print data is [123], specify [A123A].	Fixed
H	UPC-A	Barcode will have guard bar, but no HRI. Refer to the UPC-A code table for print data.	Fixed

[Example 1] Barcode symbology: CODABAR(NW-7), Narrow bar width: 03, Height of barcode: 120, Print data: A1234A
<A>
<V>100<H>100**<D>003120A1234A**
<Q>2
<Z>

[Example 2] Barcode symbology: ITF, Narrow bar width: 04, Height of barcode: 240, Print data: 98002345678163

```
<A>
<V>100<H>100<D>20424098002345678163
<Q>2
<Z>
```

[Example 3] Barcode symbology: UPC-A, Narrow bar width: 02, Height of barcode: 120, Print data: 20123948573

```
<A>
<V>240<H>100<D>H0212020123948573
<Q>2
<Z>
```

[Note]

1. 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 as same as narrow space width.
   e.g.) Character pitch specification (Nil or 0, 1) x Narrow bar width (2dots) = Character pitch (2dots)
   Character pitch specification (2) x Narrow bar width (3dots) = Character pitch (6dots)

[Tip]

1. If 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 codes 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/EAN13 or JAN/EAN8, set the correct calculated value. Barcode will be printed even when the data includes improper check digit; however, scanner can not read it.
8. Barcode outside the printable area will not be printed.

9.3 Barcode

Barcode (HRI)

ESC+D ~ ESC+d

HEX code	ESC	D ~ d	Parameter
	<1B>16	<44>16 ~ character type	abbcccn~n + <d>n~n
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]

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

[Format]

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

●Parameter

a	[Barcode symbology]	=	3 : JAN/EAN13
			4 : JAN/EAN8
			H : UPC-A
b	[Narrow bar width]	=	01 to 12 dots
c	[Height of barcode]	=	001 to 999 dots
n	[Print data]	=	Barcode data
d	[Character type specification]	=	XU
			XS
			XM
			XB
			XL
			OA
			OB
n	[Print data]	=	HRI data

[Example] Barcode symbology: JAN/EAN13, Narrow bar width: 02, Height of barcode: 120
Barcode data: 4902471006795, Character type: XS, HRI data: 4902471006795

<A>

<V>100<H>200**<D>3021204902471006795**

<XS>4902471006795

<Q>2

<Z>

[Tip]

1. Adds HRI in specified character type.
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 may be overlapped with each other.
3. Printer will lay out HRI properly.
4. For HRI of JAN/EAN8, JAN/EAN13 and UPC-A, [02] and [03] would be proper value for narrow bar width.

9.4 Barcode

Barcode (Ratio 2:5)

ESC+BD

HEX code	ESC	BD	Parameter
	<1B>16	<42>16<44>16	abbcccn~n
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]
Specifies the barcode of narrow and wide bar width ratio 2:5.

[Format]
<BD>abbcccn~n
●Parameter

a	[Barcode symbology]	=	Refer to the table below
b	[Narrow bar width]	=	01 to 12 dots
c	[Height of barcode]	=	001 to 999 dots
n	[Print data]	=	Data

Barcode symbology (Ratio of module composition may not be available depending on the barcode symbology.)

a	Barcode symbology	Descriptions	Ratio
0	CODABAR(NW-7)	Set print data including Start/Stop Characters. Start/Stop Characters are [A,B,C,D,E,N,T,a,b,c,d,e,n,t]. e.g.) When barcode print data is [123], specify [A123A]. Barcode character pitch is enabled. Refer to the CODABAR(NW-7) code table for print data.	2:5
1	CODE39	Set print data including Start/Stop Character. Start/Stop Characters are [*]. e.g.) When barcode print data is [12345], specify [*12345*]. Barcode character pitch is enabled. Refer to the CODE39 code table for print data.	2:5
2	ITF	Specify print data in even-numbered digit. If specifying in odd-numbered digit, “0” will be added to the head of print data. Refer to the Interleaved 2of5 code table for print data.	2:5
3	JAN/EAN13	Barcode will have guard bar and HRI. Refer to the JAN/EAN13 code table for print data.	Fixed
4	JAN/EAN8	Barcode will have guard bar and HRI. Refer to the JAN/EAN8 code table for print data.	Fixed
5	Industrial 2of5	Barcode character pitch is enabled. Refer to the Industrial 2of5 code table for print data.	2:5
6	Matrix 2of5	Barcode character pitch is enabled. Refer to the Matrix 2of5 code table for print data.	2:5
7	Condensed CODABAR(NW-7)	Bar width ratio of narrow and wide bars, and the width of space are as follows. Bar width ratio = 2:5, Width of space = 1:3 Set print data Including Start/Stop Characters. Start/Stop Characters are [A, B, C, D, E, N, T, a, b, c, d, e, n, t]. e.g.) When barcode print data is [123], specify [A123A].	Fixed
H	UPC-A	Barcode will have guard bar and HRI. Refer to the UPC-A code table for print data.	Fixed

[Example 1] Barcode symbology: CODABAR(NW-7), Narrow bar width: 03, Height of barcode: 120, Print data: A1234A
<A>
<V>100<H>100**<BD>003120A1234A**
<Q>2
<Z>

[Example 2] Barcode symbology: ITF, Narrow bar width: 04, Height of barcode: 240, Print data: 98002345678163

```
<A>
<V>100<H>100<BD>20424098002345678163
<Q>2
<Z>
```

[Example 3] Barcode symbology: UPC-A, Narrow bar width: 02, Height of barcode: 120, Print data: 20123948573

```
<A>
<V>240<H>100<BD>H0212020123948573
<Q>2
<Z>
```

[Note]

1. Barcode character pitch is available for CODABAR(NW-7), CODE39, Industrial 2of5 and Matrix 2of5.
   To specify barcode character pitch, insert Character Pitch <P> right before barcode symbology.
   e.g.) Character pitch specification (Nil or 0, 2) x Narrow bar width (2dots) = Character pitch (4dots)
   Character pitch specification (1) x Narrow bar width (3dots) = Character pitch (3dots)
   Character pitch specification (3) x Narrow bar width (3dots) = Character pitch (9dots)
2. For HRI of JAN/EAN-8, JAN/EAN-13 and UPC-A, [02] and [03] would be proper value for narrow bar width.

[Tip]

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/EAN13 or JAN/EAN8, set the correct calculated value. Barcode will be printed even when the data includes improper check digit; however, scanner can not read it.

9.5 Barcode

Variable Ratio Barcodes

ESC+BT

HEX code	ESC	BT	Parameter
	<1B>16	<42>16<54>16	abbccddee
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]
Specifies the bar width ratio of narrow and wide bars.

[Format]
<BT>abbccddee
●Parameter

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

[Example] Barcode symbology: CODE39 Narrow space: 03 Wide space: 06
Narrow bar: 03 Wide bar: 06

```
<A>
<BT>103060306
<V>100<H>200<BW>01233*ABCD*
<Q>2
<Z>
```

[Note]
1. To print barcode with specified ratio, insert Print of Barcode with the Print Variable Ratio Barcodes <BW> command 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.

9.6 Barcode

Print Variable Ratio Barcodes

ESC+BW

HEX code	ESC	BW	Parameter
	<1B>16	<42>16<57>16	aabbbn~n
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]
Specifies the barcode registered with the Variable Ratio Barcodes <BT> command.

[Format]
<BW>aabbbn~n
●Parameter
a [Narrow bar width] = Valid range: 01 to 12 dots
b [Height of barcode] = Valid range: 001 to 999 dots
n [Print data] = Barcode data

[Example] Narrow bar width: 02 Height of barcode: 120
<A>
<BT>103060306
<V>100<H>200**<BW>02120*ABCD***
<Q>2
<Z>

[Note]
1. 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 (Nil 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)
2. 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.
3. For print data of barcode symbology, refer to the code table of each barcode.

[Tip]
1. If the value other than valid range is set, command error will occur and barcode will not to 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, the print of barcode will be performed; however, scanner cannot read it.
7. Barcode outside the printable area will not be printed.

CODABAR(NW-7) 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												
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	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											

9.7 Barcode

GS1-128(UCC/EAN128) <for Standard Carton ID>

ESC+BI

HEX code	ESC	BI	Parameter
	<1B>16	<42>16<49>16	aabbbcn~n
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

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

[Format]
<BI>aabbbcn~n
●Parameter

a	[Narrow bar width]	= 01 to 12 dots
b	[Height of barcode]	= 001 to 999 dots
c	[HRI font]	= 0 : No HRI 1 : HRI is available (Top of barcode) 2 : HRI is available (Bottom of barcode)
n	[Print data]	= Barcode data (Fixed 17 digits)

For barcode data, refer to the GS1-128(UCC/EAN128) code table.
EAN128 (Barcode for Standard Carton ID) fixed 18 digits.
- Identifier of a continuous code for freight packaging
- Type of packaging
- Country/manufacturer code
- Serial No. for shipping container
- Check digit

Note that check digit is automatically added; therefore, specify data in 17 digits excluding check digit.

[Example] Narrow bar width: 02 Height of barcode: 150 HRI: Available (Bottom of barcode)
Print data: 12345678901234567

<V>100<H>200**<BI>03150012345678901234567**
<Q>2
<Z>

[Note]
1. UCC128 code is exclusive to Standard Carton ID. When printing in EAN128, designed for the markets in the medical, fresh food, or flowers and plants, use the CODE128 Barcode <BG> command to specify print data with application identification or separator that matches each specification.
2. Start character code, function character, end character code, and identification code (corresponds to [00] only) are added automatically.
3. Modulus 10 check character and modulus 103 check character are automatically generated.
4. Sequential number of barcode data is available.
5. Line pitch between barcode and HRI font is fixed at 10 dots.
6. If the width of HRI font is wider than that of barcode, it starts printing from the print start position of barcode.
7. If the width of HRI font is narrower than that of barcode, HRI font will be aligned to the center of barcode for printing.
8. Prints HRI font in OCR-B.
9. If HRI font is outside of print area, it will not be printed. When selecting [HRI is available], specify the Vertical Print Position <V> and Horizontal Print Position <H> commands in consideration of print of HRI font.

ITF
Matrix 2of5
Industrial 2of5
UPC-A, JAN/EAN8
JAN/EAN13, 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**																

9.8 Barcode

CODE93 Barcode

ESC+BC

HEX code	ESC	BC	Parameter
	<1B>16	<42>16<43>16	aabbbccn~n
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]

Specifies CODE93 barcode.

[Format]

<BC>aabbbccn~n

●Parameter

a	[Narrow bar width]	= 01 to 12 dots
b	[Height of barcode]	= 001 to 999 dots
c	[Digit No. of data]	= 01 to 99
n	[Print data]	= Barcode data (Refer to the CODE93 Code Table)

[Example] Narrow bar width: 02 Height of barcode: 120 Digit No.: 12 Print data: ABCD123456xy

<A>

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

<Q>2

<Z>

[Note]

1. C/D is an auto-generation.
2. Maximum entry digit number of data is 99.
3. [Digit No. of data] and No. of input data have to be equal.
4. Command error will occur when No. of input data and [Digit No. of data] are not equal.

CODE93 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								

CODE93 is settable within the range of 00H to 7FH.

9.9 Barcode

CODE128 Barcode

ESC+BG

HEX code	ESC	BG	Parameter
	<1B>16	<42>16<47>16	aabbbn~n
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]
Specifies CODE128 barcode.

[Format]
<BG>aabbbn～n
●Parameter
a [Narrow bar width] = 01 to 12 dots
b [Height of barcode] = 001 to 999 dots
n [Print data] = Barcode data (Refer to the CODE128 Code Table)

[Example] Narrow bar width: 02, Height of barcode: 120, Print data: ABCD123456(START CODE A)
<A>
<V>100<H>200**<BG>03120>GABCD123456**
<Q>2
<Z>

[Note]
1. Specify [START CODE] at the head of print data.
(1) START CODE A = [>G]
(2) START CODE B = [>H]
(3) START CODE C = [>I]
2. C/D is an auto-generation.
3. (1) When using “START CODE C”, specify print data in even-numbered digit.
(2) When “START CODE C” is set to print data in odd-number digit, specify “START CODE A” or “B” to change the first one character of print data. And then specify the rest of data with “Code Set Character C” to change it to even-numbered digit.
e.g.1)15 digits [123456789012345] : <B>1<C>23456789012345
e.g.2)9 digits / Alphanumeric 6 digits [123456789ABC123] : <C>12345678<B>9ABC123
(3) If using “START CODE C” to specify odd-numbered digit, “0” will be added to the tail of print data before printing.
(4) When START CODE is omitted, data will be printed with START CODE B.

CODE128 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	> (Note 4)	> (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		

[Note]

1. Send [START CODE] by all means.
2. [STOP CODE] will be automatically added in the internal printer.
3. For the specification of code higher than Value 64 in Code A and Code B, specify it as two-character code with the addition of [>].
4. [>] is described as [>J].

9.10 Barcode

BOOKLAND	ESC+BF

HEX code	ESC	BF	Parameter
	<1B>16	<42>16<46>16	aabbn~n
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]
Specifies BOOKLAND barcode.

[Format]
<BF>aabbn~n
●Parameter
a [Narrow bar width] = 01 to 03 dots
b [Height of barcode] = 001 to 999 dots
n [Print data] = Barcode data (Refer to the BOOKLAND Code Table)

[Example]
<A>
<V>725<H>325<BD>3031500+927721123
<V>760<H>640**<BF>0313021826**
<Q>2
<Z>

[Note]
1. Only numeric can be specified as print data.
2. 2 to 5 digits can be entered for data.

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**																

9.11 Barcode

POSTNET	ESC+BP

HEX code	ESC	BP	Parameter
	<1B>16	<42>16<50>16	n~n
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]
Specifies Postnet barcode.

[Format]
<BP>n~n
●Parameter
n = Print data (Refer to the POSTNET Code Table)
* Do not specify the value other than listed below.
- 5 digits (POSTNET-32 format)
- 6 digits (POSTNET-37 format)
- 9 digits (POSTNET-52 format)
- 11 digits (POSTNET-62 Delivery Point format)

[Example] Post code 11-digit: 01234567890
<A>
<V>100<H>200**<BP>01234567890**
<Q>2
<Z>

[Note]
1. If specifying the value other than 5, 6, 9, and 11 digits for print data, it will be ignored.
2. Only numeric can be specified as 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**																

9.12 Barcode

UPC-A Barcode (Without HRI)

ESC+BL

HEX code	ESC	BL	Parameter
	<1B>16	<42>16<4C>16	abbcccn~n
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]
Adjusts the character barcode height of the first and the last digit to the same as that of guard bar.

[Format 1]
<BL>abbcccn~n

●Parameter

a	[Barcode symbology]	=	H : UPC-A('H' fixed)
b	[Narrow bar width]	=	01 to 12 dots
c	[Height of barcode]	=	001 to 999 dots
n	[Print data]	=	Data : Fixed 11 digits

[Example] Barcode symbology: UPC-A Narrow bar width: 03 Height of barcode: 120 Print data: 01234567890

<A>
<H>100<V>100**<BL>H0312001234567890**
<Q>2
<Z>

[Note]
1. This command supports UPC-A only. When setting [Barcode symbology] to the value other than 'H', command error will occur.
2. Settings for guard bar, HRI and Ratio are as follows.

Guard bar	HRI	Ratio
Available	Not available	Fixed

3. Printer behavior when specifying the parameter outside the range will not be supported.

9.13 Barcode

UPC-A Barcode (HRI)

ESC+BL ~ ESC+d

HEX code	ESC	BL~d	Parameter
	<1B>16	<42>16<4C>16~Font type	abbcccn~n~<d>n~n
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]
Adjusts the character barcode height of the first and the last digits to the same as that of guard bar.

[Format 1]
<BL>abbcccn~n~<d>n~n

●Parameter

a	[Barcode symbology]	=	H: UPC-A('H' fixed)
b	[Narrow bar width]	=	01 to 12 dots
c	[Height of barcode]	=	001 to 999 dots
n	[Print data]	=	Barcode data: Fixed 11 digits
d	[Font type]	=	XU XS XM XB XL OA OB
n	[Print data]	=	HRI data: Fixed 12 digits

[Example] Barcode symbology: UPC-A Narrow bar width: 02, Height of barcode: 120
Print data: 01234567890 Font type: XS HRI data: 01234567890

<A>
<H>100<V>100**<BL>H0212001234567890**
<XS>01234567890
<Q>2
<Z>

[Notes]
1. This command supports UPC-A only. When setting [Barcode symbology] to the value other than 'H', command error will occur.
2. For HRI, [02] or [03] is suitable for narrow bar width.
3. Use Modulus 10 to produce calculated value for a check digit, the 12th digit of HRI.
4. Settings for guard bar, HRI and Ratio are as follows.

Guard bar	HRI	Ratio
Available	Available	Fixed

5. Printer behavior when specifying the parameter outside the range will not be supported.

9.14 Barcode

UPC-A Barcode (HRI)

ESC+BM

HEX code	ESC	BM	Parameter
	<1B>16	<42>16<4D>16	abbcccn~n
Initial value	Nil		

Validity and valid duration of command		
	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]
Adjusts the character barcode height of the first and the last digits to the same as that of guard bar.

[Format 1]
<BM>abbcccn~n

●Parameter

a	[Barcode symbology]	=	H: UPC-A('H' fixed)
b	[Narrow bar width]	=	01 to 12 dots
c	[Height of barcode]	=	001 to 999 dots
n	[Print data]	=	Data: Fixed 11 digits.

[Example] Barcode symbology: UPC-A Narrow bar width: 02 Height of barcode: 120 Print data: 20123948573

<A>
<H>100<V>100**<BM>H0212020123948573**
<Q>2
<Z>

[Note]
1. This command supports UPC-A only. When setting [Barcode symbology] to the value other than 'H', command error will occur.
2. For HRI, [02] or [03] is suitable for narrow bar width.
3. Settings for guard bar, HRI and Ratio are as follows.

Guard bar	HRI	Ratio
Available	Available	Fixed

4. Printer behavior when specifying the parameter outside the range will not be supported.

10. 2D Code Commands

10.1 2D Code

QR Code — ESC+BQ

	ESC	BQ	Parameter
HEX code	<1B>16	<42>16<51>16	Manual setting abcc,(ddeeff,)g(hhhh)n Automatic setting abcc,(ddeeff,)n
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]
Specifies QR code of 2D code.

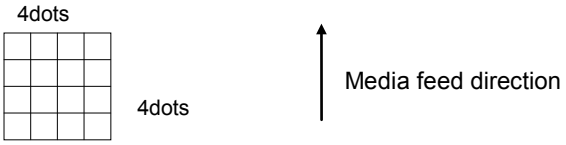
[Format]
[Manual setting] <BQ>abcc,(ddeeff,)g(hhhh)n
[Automatic setting] <BQ>abcc,(ddeeff,)n

●Parameter

a [Error correction level] = 1: 7% High density (L)
2: 15% Standard (M)
3: 30% Super-high reliability (H)
4: 25% High reliability (Q)

b [Concentration mode] = 0: Normal mode
1: Concentration mode

c [Cell size] = 01 to 32 dots
e.g.) cc=04



d [Number of partitions by concentration mode] = 01 to 16
e [Sequential number partitioned by concentration mode] = 01 to 16
f [Concentration mode parity data] = 00 to FF
g [Character mode] = 1: Numeric mode
2: Alphanumeric mode
3: Binary mode
4: Kanji mode
h [Data number] = 0001 to 7366
n [Print data] = Data

[Example] Error correction level: 30% Concentration mode: Normal mode Cell size: 10

```
<A>
<V>100<H>200<BQ>3010,112345
<Q>2
<Z>
```

[Note]
1. Carry out XOR logic operation of all the partitioned print data of the QR code and then, specify this operation data in hexadecimal character. This is referred to as parity data.
2. When the character mode is set to other than binary mode, it is not necessary to set the data number parameter.

QR data size (Model 1)

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

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

QR Code Table (Numeric mode)

					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 Table (Alphanumeric mode)

					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 Table (Binary mode)

					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								

QR Code(Binary Mode) is settable within the range of [00H to 7FH] and [A0H to DFH].

QR Code Table (Kanji mode)

	Shift JIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
Symbol	813F		SP	、	。	,	.	・	:	;	?	!	゛	°	´	`	¨
	814F	^	￣	_	ヽ	ヾ	ゝ	ゞ	〃	仝	々	〆	〇	ー	-	-	/
	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		ぁ	あ	ぃ	い	ぅ	う	ぇ	え	ぉ	お	か	が	き	ぎ	く
	82AE	ぐ	け	げ	こ	ご	さ	ざ	し	じ	す	ず	せ	ぜ	そ	ぞ	た
	82BE	だ	ち	ぢ	っ	つ	づ	て	で	と	ど	な	に	ぬ	ね	の	は
	82CE	ば	ぱ	ひ	び	ぴ	ふ	ぶ	ぷ	へ	べ	ぺ	ほ	ぼ	ぽ	ま	み
	82DE	む	め	も	ゃ	や	ゅ	ゆ	ょ	よ	ら	り	る	れ	ろ	ゎ	わ
	82EE	ゐ	ゑ	を	ん												
Katakana	833F		ァ	ア	ィ	イ	ゥ	ウ	ェ	エ	ォ	オ	カ	ガ	キ	ギ	ク
	834F	グ	ケ	ゲ	コ	ゴ	サ	ザ	シ	ジ	ス	ズ	セ	ゼ	ソ	ゾ	タ
	835F	ダ	チ	ヂ	ッ	ツ	ヅ	テ	デ	ト	ド	ナ	ニ	ヌ	ネ	ノ	ハ
	836F	バ	パ	ヒ	ビ	ピ	フ	ブ	プ	ヘ	ベ	ペ	ホ	ボ	ポ	マ	ミ
	8380	ム	メ	モ	ャ	ヤ	ュ	ユ	ョ	ヨ	ラ	リ	ル	レ	ロ	ヮ	ワ
	8390	ヰ	ヱ	ヲ	ン	ヴ	ヵ	ヶ									
Greek Alphabet	839E		Α	Β	Γ	Δ	Ε	Ζ	Η	Θ	Ι	Κ	Λ	Μ	Ν	Ξ	Ο
	83AE	Π	Ρ	Σ	Τ	Υ	Φ	Χ	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 Alphabet	843F		А	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	唖	娃	阿	哀	愛	挨	姶	逢	葵	茜	穐	悪	握	渥
	88AE	旭	葦	芦	鯵	梓	圧	斡	扱	宛	姐	虻	飴	絢	綾	鮎	或
	88BE	粟	袷	安	庵	按	暗	案	闇	鞍	杏						
イ	88BE											以	伊	位	依	偉	囲
	88CE	夷	委	威	尉	惟	意	慰	易	椅	為	畏	異	移	維	緯	胃
	88DE	萎	衣	謂	違	遺	医	井	亥	域	育	郁	磯	一	壱	溢	逸
	88EE	稲	茨	芋	鰯	允	印	咽	員	因	姻	引	飲	淫	胤	蔭	
	893F		院	陰	隠	韻	吋										
ウ	893F							右	宇	烏	羽	迂	雨	卯	鵜	窺	丑
	894F	碓	臼	渦	嘘	唄	欝	蔚	鰻	姥	厩	浦	瓜	閏	噂	云	運
	895F	雲															
エ	895F		荏	餌	叡	営	嬰	影	映	曳	栄	永	泳	洩	瑛	盈	穎
	896F	頴	英	衛	詠	鋭	液	疫	益	駅	悦	謁	越	閲	榎	厭	円
	8980	園	堰	奄	宴	延	怨	掩	援	沿	演	炎	焔	煙	燕	猿	縁
	8990	艶	苑	薗	遠	鉛	鴛	塩									
オ	8990								於	汚	甥	凹	央	奥	往	応	
	899E		押	旺	横	欧	殴	王	翁	襖	鴬	鴎	黄	岡	沖	荻	億
	89AE	屋	憶	臆	桶	牡	乙	俺	卸	恩	温	穏	音				
カ	89AE													下	化	仮	何
	89BE	伽	価	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	芽	蛾	賀	雅	餓	駕
	89EE	介	会	解	回	塊	壊	廻	快	怪	悔	恢	懐	戒	拐	改	
	8A3F		魁	晦	械	海	灰	界	皆	絵	芥	蟹	開	階	貝	凱	劾
	8A4F	外	咳	害	崖	慨	概	涯	碍	蓋	街	該	鎧	骸	浬	馨	蛙
	8A5F	垣	柿	蛎	鈎	劃	嚇	各	廓	拡	撹	格	核	殻	獲	確	穫
	8A6F	覚	角	赫	較	郭	閣	隔	革	学	岳	楽	額	顎	掛	笠	樫
	8A80	橿	梶	鰍	潟	割	喝	恰	括	活	渇	滑	葛	褐	轄	且	鰹
	8A90	叶	椛	樺	鞄	株	兜	竈	蒲	釜	鎌	噛	鴨	栢	茅	萱	
	8A9E		粥	刈	苅	瓦	乾	侃	冠	寒	刊	勘	勧	巻	喚	堪	姦
	8AAE	完	官	寛	干	幹	患	感	慣	憾	換	敢	柑	桓	棺	款	歓
	8ABE	汗	漢	澗	潅	環	甘	監	看	竿	管	簡	緩	缶	翰	肝	艦
	8ACE	莞	観	諌	貫	還	鑑	間	閑	関	陥	韓	館	舘	丸	含	岸
	8ADE	巌	玩	癌	眼	岩	翫	贋	雁	頑	顔	願					

	Shift JIS	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	
	8B3F		機	帰	毅	気	汽	畿	祈	季	稀	紀	徽	規	記	貴	起
	8B4F	軌	輝	飢	騎	鬼	亀	偽	儀	妓	宜	戯	技	擬	欺	犠	疑
	8B5F	祇	義	蟻	誼	議	掬	菊	鞠	吉	吃	喫	桔	橘	詰	砧	杵
	8B6F	黍	却	客	脚	虐	逆	丘	久	仇	休	及	吸	宮	弓	急	救
	8B80	朽	求	汲	泣	灸	球	究	窮	笈	級	糾	給	旧	牛	去	居
	8B90	巨	拒	拠	挙	渠	虚	許	距	鋸	漁	禦	魚	亨	享	京	
	8B9E		供	侠	僑	兇	競	共	凶	協	匡	卿	叫	喬	境	峡	強
	8BAE	彊	怯	恐	恭	挟	教	橋	況	狂	狭	矯	胸	脅	興	蕎	郷
	8BBE	鏡	響	饗	驚	仰	凝	尭	暁	業	局	曲	極	玉	桐	粁	僅
	8BCE	勤	均	巾	錦	斤	欣	欽	琴	禁	禽	筋	緊	芹	菌	衿	襟
	8BDE	謹	近	金	吟	銀											
ク	8BDE						九	倶	句	区	狗	玖	矩	苦	躯	駆	駈
	8BEE	駒	具	愚	虞	喰	空	偶	寓	遇	隅	串	櫛	釧	屑	屈	
	8C3F		掘	窟	沓	靴	轡	窪	熊	隈	粂	栗	繰	桑	鍬	勲	君
	8C4F	薫	訓	群	軍	郡											
ケ	8C4F						卦	袈	祁	係	傾	刑	兄	啓	圭	珪	型
	8C5F	契	形	径	恵	慶	慧	憩	掲	携	敬	景	桂	渓	畦	稽	系
	8C6F	経	継	繋	罫	茎	荊	蛍	計	詣	警	軽	頚	鶏	芸	迎	鯨
	8C80	劇	戟	撃	激	隙	桁	傑	欠	決	潔	穴	結	血	訣	月	件
	8C90	倹	倦	健	兼	券	剣	喧	圏	堅	嫌	建	憲	懸	拳	捲	
	8C9E		検	権	牽	犬	献	研	硯	絹	県	肩	見	謙	賢	軒	遣
	8CAE	鍵	険	顕	験	鹸	元	原	厳	幻	弦	減	源	玄	現	絃	舷
	8CBE	言	諺	限													
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	呉	吾	娯	後	御	悟	梧	檎	瑚	碁	語	誤	護	醐
	8CEE	乞	鯉	交	佼	侯	候	倖	光	公	功	効	勾	厚	口	向	
	8D3F		后	喉	坑	垢	好	孔	孝	宏	工	巧	巷	幸	広	庚	康
	8D4F	弘	恒	慌	抗	拘	控	攻	昂	晃	更	杭	校	梗	構	江	洪
	8D5F	浩	港	溝	甲	皇	硬	稿	糠	紅	紘	絞	綱	耕	考	肯	肱
	8D6F	腔	膏	航	荒	行	衡	講	貢	購	郊	酵	鉱	砿	鋼	閤	降
	8D80	項	香	高	鴻	剛	劫	号	合	壕	拷	濠	豪	轟	麹	克	刻

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

	Shift JIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
シ	904F	唇	娠	寝	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	靭						
ス	906F											笥	諏	須	酢	図	厨
	9080	逗	吹	垂	帥	推	水	炊	睡	粋	翠	衰	遂	酔	錐	錘	随
	9090	瑞	髄	崇	嵩	数	枢	趨	雛	据	杉	椙	菅	頗	雀	裾	
	909E		澄	摺	寸												
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	斉	税	脆	隻	席	惜	戚	斥	昔	析
	90CE	石	積	籍	績	脊	責	赤	跡	蹟	碩	切	拙	接	摂	折	設
	90DE	窃	節	説	雪	絶	舌	蝉	仙	先	千	占	宣	専	尖	川	戦
	90EE	扇	撰	栓	栴	泉	浅	洗	染	潜	煎	煽	旋	穿	箭	線	
	913F		繊	羨	腺	舛	船	薦	詮	賤	践	選	遷	銭	銑	閃	鮮
	914F	前	善	漸	然	全	禅	繕	膳	糎							
ソ	914F										噌	塑	岨	措	曾	曽	楚
	915F	狙	疏	疎	礎	祖	租	粗	素	組	蘇	訴	阻	遡	鼠	僧	創
	916F	双	叢	倉	喪	壮	奏	爽	宋	層	匝	惣	想	捜	掃	挿	掻
	9180	操	早	曹	巣	槍	槽	漕	燥	争	痩	相	窓	糟	総	綜	聡
	9190	草	荘	葬	蒼	藻	装	走	送	遭	鎗	霜	騒	像	増	憎	
	919E		臓	蔵	贈	造	促	側	則	即	息	捉	束	測	足	速	俗
	91AE	属	賊	族	続	卒	袖	其	揃	存	孫	尊	損	村	遜		
タ	91AE															他	多
	91BE	太	汰	詑	唾	堕	妥	惰	打	柁	舵	楕	陀	駄	騨	体	堆
	91CE	対	耐	岱	帯	待	怠	態	戴	替	泰	滞	胎	腿	苔	袋	貸
	91DE	退	逮	隊	黛	鯛	代	台	大	第	醍	題	鷹	滝	瀧	卓	啄
	91EE	宅	托	択	拓	沢	濯	琢	託	鐸	濁	諾	茸	凧	蛸	只	
	923F		叩	但	達	辰	奪	脱	巽	竪	辿	棚	谷	狸	鱈	樽	誰
	924F	丹	単	嘆	坦	担	探	旦	歎	淡	湛	炭	短	端	箪	綻	耽
	925F	胆	蛋	誕	鍛	団	壇	弾	断	暖	檀	段	男	談			
チ	925F														値	知	地
	926F	弛	恥	智	池	痴	稚	置	致	蜘	遅	馳	築	畜	竹	筑	蓄
	9280	逐	秩	窒	茶	嫡	着	中	仲	宙	忠	抽	昼	柱	注	虫	衷
	9290	註	酎	鋳	駐	樗	瀦	猪	苧	著	貯	丁	兆	凋	喋	寵	

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チ	929E		帖	帳	庁	弔	張	彫	徴	懲	挑	暢	朝	潮	牒	町	眺
	92AE	聴	脹	腸	蝶	調	諜	超	跳	銚	長	頂	鳥	勅	捗	直	朕
	92BE	沈	珍	賃	鎮	陳											
ツ	92BE						津	墜	椎	槌	追	鎚	痛	通	塚	栂	掴
	92CE	槻	佃	漬	柘	辻	蔦	綴	鍔	椿	潰	坪	壺	嬬	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	逓	
	933F		邸	鄭	釘	鼎	泥	摘	擢	敵	滴	的	笛	適	鏑	溺	哲
	934F	徹	撤	轍	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	梼	棟
	9390	盗	淘	湯	涛	灯	燈	当	痘	祷	等	答	筒	糖	統	到	
	939E		董	蕩	藤	討	謄	豆	踏	逃	透	鐙	陶	頭	騰	闘	働
	93AE	動	同	堂	導	憧	撞	洞	瞳	童	胴	萄	道	銅	峠	鴇	匿
	93BE	得	徳	涜	特	督	禿	篤	毒	独	読	栃	橡	凸	突	椴	届
	93CE	鳶	苫	寅	酉	瀞	噸	屯	惇	敦	沌	豚	遁	頓	呑	曇	鈍
ナ	93DE	奈	那	内	乍	凪	薙	謎	灘	捺	鍋	楢	馴	縄	畷	南	楠
	93EE	軟	難	汝													
ニ	93EE				二	尼	弐	迩	匂	賑	肉	虹	廿	日	乳	入	
	943F		如	尿	韮	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	廼	之	埜	嚢	悩	濃	納	能	脳	膿
	945F	農	覗	蚤													
ハ	945F				巴	把	播	覇	杷	波	派	琶	破	婆	罵	芭	馬
	946F	俳	廃	拝	排	敗	杯	盃	牌	背	肺	輩	配	倍	培	媒	梅
	9480	楳	煤	狽	買	売	賠	陪	這	蝿	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	硲	箸	肇	筈	櫨	幡	肌	畑	畠	八	鉢	溌	発
	94AE	醗	髪	伐	罰	抜	筏	閥	鳩	噺	塙	蛤	隼	伴	判	半	反

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

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モ	96DE	尤	戻	籾	貰	問	悶	紋	門	匁							
ヤ	96DE										也	冶	夜	爺	耶	野	弥
	96EE	矢	厄	役	約	薬	訳	躍	靖	柳	薮	鑓					
ユ	96EE												愉	愈	油	癒	
	973F		諭	輸	唯	佑	優	勇	友	宥	幽	悠	憂	揖	有	柚	湧
	974F	涌	猶	猷	由	祐	裕	誘	遊	邑	郵	雄	融	夕			
ヨ	974F														予	余	与
	975F	誉	輿	預	傭	幼	妖	容	庸	揚	揺	擁	曜	楊	様	洋	溶
	976F	熔	用	窯	羊	耀	葉	蓉	要	謡	踊	遥	陽	養	慾	抑	欲
	9780	沃	浴	翌	翼	淀											
ラ	9780						羅	螺	裸	来	莱	頼	雷	洛	絡	落	酪
	9790	乱	卵	嵐	欄	濫	藍	蘭	覧								
リ	9790									利	吏	履	李	梨	理	璃	
	979E		痢	裏	裡	里	離	陸	律	率	立	葎	掠	略	劉	流	溜
	97AE	琉	留	硫	粒	隆	竜	龍	侶	慮	旅	虜	了	亮	僚	両	凌
	97BE	寮	料	梁	涼	猟	療	瞭	稜	糧	良	諒	遼	量	陵	領	力
	97CE	緑	倫	厘	林	淋	燐	琳	臨	輪	隣	鱗	麟				
ル	97CE													瑠	塁	涙	累
	97DE	類															
レ	97DE		令	伶	例	冷	励	嶺	怜	玲	礼	苓	鈴	隷	零	霊	麗
	97EE	齢	暦	歴	列	劣	烈	裂	廉	恋	憐	漣	煉	簾	練	聯	
	983F		蓮	連	錬												
ロ	983F					呂	魯	櫓	炉	賂	路	露	労	婁	廊	弄	朗
	984F	楼	榔	浪	漏	牢	狼	篭	老	聾	蝋	郎	六	麓	禄	肋	録
	985F	論															
ワ	985F		倭	和	話	歪	賄	脇	惑	枠	鷲	亙	亘	鰐	詫	藁	蕨
	986F	椀	湾	碗	腕												

	Shift JIS	0 1 2 3	4 5 6 7	8 9 A B	C D E F
一	989E	弋 丐 丕			
丨	989E		个 丳		
丶	989E		丶 丼		
丿	989E			丿 乂 乖 乘	
乙	989E				亂
亅	989E				亅 豫 事
	98AE	舒			
二	98AE	弍 于 亞	亟		
亠	98AE		亠 亢 亰	亳 亶	
人	98AE			从 仍	仄 仆 仂 仗
	98BE	仞 伃 仟 价	伉 佚 估 佛	佝 佗 佇 佶	侈 侏 侘 佻
	98CE	佩 佰 侑 佯	來 侖 儘 俔	俟 俎 俘 俛	俑 俚 俐 俤
	98DE	俥 倚 倨 倔	倪 倥 倅 伜	俶 倡 倩 倬	俾 俯 們 倆
	98EE	偃 假 會 偕	偬 偈 做 偖	偬 偸 傀 傚	傅 傴 傲
	993F	僉 僭 傳	僂 僖 僞 僥	僣 僣 僮 價	僵 儉 儁 儂
	994F	儖 儕 儔 儚	儡 儺 儷 儼	儻	
儿	994F			儿 兀 兒	兌 兔 兢 競
入	995F	兩 兪			
八	995F	兮 冀			
冂	995F		冂 冋 冊 冉	冏 冑 冓 冕	
冖	995F				冖 冤 冠 冢
	996F	冩 冪			
冫	996F	冫 决	冱 冲 冰 况	冽 凅 凉 凛	
几	996F				几 處 凩 凭
	9980	凰			
凵	9980	凵 函			
刀	9980	刃	刋 刔 刎 刧	刪 刮 刳 刹	剏 剄 剋 剌
	9990	剞 剔 剪 剴	剩 剳 剿 剽	劍 劒 劔 劔	劈 劑 辨
	999E	辦			
力	999E	劬 劭	劼 劵 勁 勍	勗 勞 勣 勦	飭 勠 勳 勵
	99AE	勸			
勹	99AE	勹 匆 匈	甸 匍 匐 匏		
匕	99AE			匕	
匚	99AE			匚 匣 匯	匱 匳

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匸	99AE															匸	區
十	99BE	卆	卅	丗	卉	卍	準										
卜	99BE							卞									
卩	99BE								卩	卮	夘	卻	卷				
厂	99BE													厂	厖	厠	厦
	99CE	厥	厮	厰													
厶	99CE				厶	參	簒										
又	99CE							雙	叟	曼	燮						
口	99CE											叮	叨	叭	叺	吁	吽
	99DE	呀	听	吭	吼	吮	吶	吩	吝	呎	咏	呵	咎	呟	呱	呷	呰
	99EE	咒	呻	咀	呶	咄	咐	咆	哇	咢	咸	咥	咬	哄	哈	咨	
	9A3F		咫	哂	咤	咾	咼	哘	哥	哦	唏	唔	哽	哮	哭	哺	哢
	9A4F	唹	啀	啣	啌	售	啜	啅	啖	啗	唸	唳	啝	喙	喀	咯	喊
	9A5F	喟	啻	啾	喘	喞	單	啼	喃	喩	喇	喨	嗚	嗅	嗟	嗄	嗜
	9A6F	嗤	嗔	嘔	嗷	嘖	嗾	嗽	嘛	嗹	噎	噐	營	嘴	嘶	嘲	嘸
	9A80	噫	噤	嘯	噬	噪	嚆	嚀	嚊	嚠	嚔	嚏	嚥	嚮	嚶	嚴	囂
	9A90	嚼	囁	囃	囀	囈	囎	囑	囓								
囗	9A90									囗	囮	囹	圀	囿	圄	圉	
	9A9E		圈	國	圍	圓	團	圖	嗇	圜							
土	9A9E										圦	圷	圸	坎	圻	址	坏
	9AAE	坩	埀	垈	坡	坿	垉	垓	垠	垳	垤	垪	垰	埃	埆	埔	埒
	9ABE	埓	堊	埖	埣	堋	堙	堝	塲	堡	塢	塋	塰	毀	塒	堽	塹
	9ACE	墅	墹	墟	墫	墺	壞	墻	墸	墮	壅	壓	壑	壗	壙	壘	壥
	9ADE	壜	壤	壟													
士	9ADE				壯	壺	壹	壻	壼	壽							
夂	9ADE										夂						
夊	9ADE											夊	夐				
夕	9ADE													夛	梦	夥	
大	9ADE																夬
	9AEE	夭	夲	夸	夾	奇	奕	奐	奎	奚	奘	奢	奠	奧	奬	奩	
女	9B3F		奸	妁	妝	佞	侫	妣	妲	姆	姨	姜	妍	姙	姚	娥	娟
	9B4F	娑	娜	娉	娚	婀	婬	婉	娵	娶	婢	婪	媚	媼	媾	嫋	嫂
	9B5F	媽	嫣	嫗	嫦	嫩	嫖	嫺	嫻	嬌	嬋	嬖	嬲	嫐	嬪	嬶	嬾
	9B6F	孃	孅	孀													

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子	9B6F				孑	孕	孚	孛	孥	孩	孰	孳	孵	學	斈	孺	
宀	9B6F																宀
	9B80	它	宦	宸	寃	寇	寉	寔	寐	寤	實	寢	寞	寥	寫	寰	寶
	9B90	寳															
寸	9B90		尅	將	專	對											
小	9B90						尓	尠									
尢	9B90								尢	尨							
尸	9B90										尸	尹	屁	屆	屎	屓	
	9B9E		屐	屏	孱	屬											
屮	9B9E						屮										
山	9B9E							乢	屶	屹	岌	岑	岔	妛	岫	岻	岶
	9BAE	岼	岷	峅	岾	峇	峙	峩	峽	峺	峭	嶌	峪	崋	崕	崗	嵜
	9BBE	崟	崛	崑	崔	崢	崚	崙	崘	嵌	嵒	嵎	嵋	嵬	嵳	嵶	嶇
	9BCE	嶄	嶂	嶢	嶝	嶬	嶮	嶽	嶐	嶷	嶼	巉	巍	巓	巒	巖	
巛	9BCE																巛
工	9BDE	巫															
已	9BDE		已	巵													
巾	9BDE				帋	帚	帙	帑	帛	帶	帷	幄	幃	幀	幎	幗	幔
	9BEE	幟	幢	幤	幇												
干	9BEE					幵	并										
幺	9BEE							幺	麼								
广	9BEE									广	庠	廁	廂	廈	廐	廏	
	9C3F		廖	廣	廝	廚	廛	廢	廡	廨	廩	廬	廱	廳	廰		
廴	9C3F															廴	廸
廾	9C4F	廾	弃	弉	彝	彜											
弋	9C4F						弋	弑									
弓	9C4F								弖	弩	弭	弸	彁	彈	彌	彎	弯
彑	9C5F	彑	彖	彗	彙												
彡	9C5F					彡	彭										
彳	9C5F							彳	彷	徃	徂	彿	徊	很	徑	徇	從
	9C6F	徙	徘	徠	徨	徭	徼										
心	9C6F							忖	忻	忤	忸	忱	忝	悳	忿	怡	恠
	9C80	怙	怐	怩	怎	怱	怛	怕	怫	怦	怏	怺	恚	恁	恪	恷	恟
	9C90	恊	恆	恍	恣	恃	恤	恂	恬	恫	恙	悁	悍	惧	悃	悚	

	Shift JIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
心	9C9E		悄	悛	悖	悗	悃	悋	悋	惡	悸	惠	悗	悴	怵	悽	惆
	9CAE	悵	惘	慍	愕	愆	惶	惷	愀	惴	惺	愃	愡	惻	惱	愍	愎
	9CBE	慇	愾	慤	愧	慊	愿	愼	慝	慥	慱	慟	慄	慳	慷	慘	慙
	9CCE	慚	慫	慴	慯	慥	慱	慟	慝	慓	慵	慠	慦	憩	憬	憔	憚
	9CDE	憊	憑	憫	憮	懌	懊	應	懷	懈	懃	懆	憺	懋	罹	懍	懦
	9CEE	懣	懶	懺	懴	懿	懽	懼	懾	戀							
戈	9CEE										戈	戉	戍	戍	戛	戞	
	9D3F		戞	戡	截	戮	戰	戲	戳								
戸	9D3F									扁							
手	9D3F										扎	扞	扣	扛	扠	扨	扼
	9D4F	抂	抉	找	抒	抓	抖	拔	抃	抔	拗	拑	抻	挙	拿	拆	擔
	9D5F	拈	拜	拌	拊	拂	拇	抛	拉	挌	拮	拱	挧	挂	挈	拯	拵
	9D6F	捐	挾	捍	搜	捏	掖	掎	掀	掫	捶	掣	掏	掉	掟	掄	捫
	9D80	捩	掾	揩	揀	揆	揣	揉	插	揶	揄	搖	搴	搆	搓	搦	搶
	9D90	攝	搗	搦	搏	搓	摯	搏	摎	攪	撕	撓	撥	撩	撈	撼	
	9D9E		據	擒	擅	擇	撻	擘	擂	擱	擧	舉	擠	擡	抬	擣	擯
	9DAE	攬	攄	擴	擲	擺	攀	攙	攘	攜	攅	攤	攣	攫			
攴	9DAE														攴	攵	攷
	9DBE	收	攸	畋	效	敖	敕	敍	敘	敞	敝	敲	數	斂	斃	變	
斗	9DBE																斛
	9DCE	斟															
斤	9DCE		斫	斷													
方	9DCE				旆	旆	旁	旄	旌	旒	旛	旙					
无	9DCE												无	旡			
日	9DCE														旱	杲	昊
	9DDE	昃	昊	杳	昵	昶	昴	昜	晏	晄	晉	晁	晞	晝	晤	晧	晨
	9DEE	晟	晢	晰	暃	暈	暎	暉	暄	暘	暝	暨	暹	曉	曖	曙	
	9E3F		曄	暸	曖	曚	曠	昿	曦	曩							
曰	9E3F										曰	曳	曷				
月	9E3F													朏	朖	朞	朦
	9E4F	朧	霸														
木	9E4F			朮	朿	朵	杁	朽	朷	杆	杞	杠	杙	杣	杤	枉	杰
	9E5F	枩	杼	杪	枌	枋	枦	枡	枅	枷	柯	枴	柬	枳	柩	枸	柤
	9E6F	柞	柝	柢	柮	枹	柎	柆	柧	檜	栞	框	栩	桀	桍	栲	桎

	Shift JIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
木	9E80	梳	栫	桙	档	桷	桿	梟	梏	梭	梔	條	梛	梃	檮	梹	桴
	9E90	梵	梠	梺	椏	梍	桾	椁	棊	椈	棘	椢	椦	棡	椌	棍	
	9E9E		棔	棧	棕	椶	椒	椄	棗	棣	椥	棹	棠	棯	椨	椪	椚
	9EAE	椣	椡	棆	楹	楷	楜	楸	楫	楔	楾	楮	椹	楴	椽	楙	椰
	9EBE	楡	楞	楝	榁	楪	榲	榮	槐	榿	槁	槓	榾	槎	寨	槊	槝
	9ECE	榻	槃	榧	樮	榑	榠	榜	榕	榴	槞	槨	樂	樛	槿	權	槹
	9EDE	槲	槧	樅	榱	樞	槭	樔	槫	樊	樒	櫁	樣	樓	橄	樌	橲
	9EEE	樶	橸	橇	橢	橙	橦	橈	樸	樢	檐	檍	檠	檄	檢	檣	
	9F3F		檗	蘗	檻	櫃	櫂	檸	檳	檬	櫞	櫑	櫟	檪	櫚	櫪	櫻
	9F4F	欅	蘖	櫺	欒	欖	鬱	欟									
欠	9F4F								欸	欷	盜	欹	飮	歇	歃	歉	歐
	9F5F	歙	歔	歛	歟	歡											
止	9F5F						歸										
歹	9F5F							歹	歿	殀	殄	殃	殍	殘	殕	殞	殤
	9F6F	殪	殫	殯	殲	殱											
殳	9F6F						殳	殷	殼	毆							
毋	9F6F										毋	毓					
毛	9F6F												毟	毬	毫	毳	毯
	9F80	麾	氈														
氏	9F80			氓													
气	9F80				气	氛	氤	氣									
水	9F80								汞	汕	汢	汪	沂	沍	沚	沁	沛
	9F90	汾	汨	汳	沒	沐	泄	泱	泓	沽	泗	泅	泝	沮	沱	沾	
	9F9E		沺	泛	泯	泙	泪	洟	衍	洶	洫	洽	洸	洙	洵	洳	洒
	9FAE	洌	浣	涓	浤	浚	浹	浙	涎	涕	濤	涅	淹	渕	渊	涵	淇
	9FBE	淦	涸	淆	淬	淞	淌	淨	淒	淅	淺	淙	淤	淕	淪	淮	渭
	9FCE	湮	渮	渙	湲	湟	渾	渣	湫	渫	湶	湍	渟	湃	渺	湎	渤
	9FDE	滿	渝	游	溂	溪	溘	滉	溷	滓	溽	溯	滄	溲	滔	滕	溏
	9FEE	溥	滂	溟	潁	漑	灌	滬	滸	滾	漿	滲	漱	滯	漲	滌	
	E03F		漾	漓	滷	澆	潺	潸	澁	澀	潯	潛	濳	潭	澂	潼	潘
	E04F	澎	澑	濂	潦	澳	澣	澡	澤	澹	濆	澪	濟	濕	濬	濔	濘
	E05F	濱	濮	濛	瀉	瀋	濺	瀑	瀁	瀏	濾	瀛	瀚	潴	瀝	瀘	瀟
	E06F	瀰	瀾	瀲	灑	灣											
火	E06F						炙	炒	炯	烱	炬	炸	炳	炮	烟	烋	烝

	Shift JIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
火	E080	烙	焉	烽	焜	焙	煥	煕	熙	煦	煢	煌	煖	煬	熏	燻	熄
	E090	燠	燬	燹	燗	熹	熾	燒	燉	燔	燎	燠	燬	燧	燵	燼	
	E09E		燹	燿	爍	爐	爛	爨									
爪	E09E								爭	爬	爰	爲					
爻	E09E												爻	爼			
爿	E09E														爿	牀	牆
	E0AE	牋	牘														
牛	E0AE			牴	牾	犂	犁	犇	犒	犖	犢	犠					
犬	E0AE												犹	狄	狃	狆	狄
	E0BE	狎	狒	狢	狠	狡	狹	狷	倏	猗	猊	猜	猖	猝	猴	猯	猩
	E0CE	猥	猾	獎	獏	默	獗	獪	獨	獰	獣	獵	獻	獺			
王	E0CE														珈	珙	珖
	E0DE	玻	珀	珥	珮	珞	璢	琅	瑯	琥	琶	琲	琺	瑕	瑾	瑟	瑙
	E0EE	瑁	瑜	瑩	瑰	瑣	瑪	瑶	瑾	璋	璞	璧	瓊	瓏	瓔	珱	
瓜	E13F		瓠	瓣													
瓦	E13F				瓧	瓩	瓮	瓲	瓰	瓱	瓸	瓷	甄	甕	甌	甎	
	E14F	甍	甕	甓													
甘	E14F				甞												
生	E14F					甦											
用	E14F						甬										
田	E14F							畚	畠	畋	畊	畉	畛	畝	畚	畎	畤
	E15F	畧	畫	畛	畸	當	疆	疇	畴	疊	疊	疊					
疒	E15F												疔	疚	疝	疥	疣
	E16F	痂	疳	痃	疵	疽	疸	疼	疱	痍	痊	痒	痙	痣	痞	痾	痿
	E180	痼	痰	痺	痲	痲	痳	瘋	瘍	瘉	瘟	瘧	瘠	瘡	瘢	瘤	瘴
	E190	瘰	瘻	癇	癈	癆	癌	癘	癡	癢	癨	癩	癪	癰	癬	癲	
	E19E		癲														
癶	E19E			癶	癸	發											
白	E19E						皂	皃	皈	皋	皎	皖	皓	皙	皚		
皮	E19E															皰	皺
	E1AE	皹	皹	皺													
皿	E1AE				盂	盍	盖	盒	盞	盡	盥	盧	盪	蘯			
目	E1AE														盼	眈	眇
	E1BE	眄	眩	眤	眞	眥	眦	眛	眷	眸	睇	睚	睨	睫	睛	睥	睿

	Shift JIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
目	E1CE	睾	睹	瞎	瞋	瞑	瞠	瞞	瞰	瞶	瞹	瞿	瞼	瞽	瞻	矇	矍
	E1DE	矗	矚														
矛	E1DE			矜													
矢	E1DE				矣	矮											
石	E1DE						矼	砌	砒	礦	砠	礪	硅	碎	硴	碆	硼
	E1EE	碚	碌	碣	碵	碪	碯	磑	磆	磋	磔	碾	碼	磅	磊	磬	
	E23F		磧	磚	磽	磴	礇	礒	礑	礙	礬	礫					
示	E23F												祀	祠	祗	祟	祚
	E24F	祕	祓	祺	祿	禊	禝	禧	齋	禪	禮	禳					
禺	E24F												禹	禺			
禾	E24F														秉	秕	秧
	E25F	秬	秡	秣	稈	稍	稘	稙	稠	稟	禀	稱	稻	稾	稷	穃	穗
	E26F	穉	穡	穢	穩	龝	穰										
穴	E26F							穹	穽	窈	窗	窕	窘	窖	窩	竈	窰
	E280	窶	竅	竄	窿	邃	竇	竊									
立	E280								竍	竏	竕	竓	站	竚	竝	竡	竢
	E290	竦	竭	竰													
竹	E290				笂	笏	笊	笆	笳	笘	笙	笞	笵	笨	笶	筐	
	E29E		筺	笄	筍	笋	筌	筅	筵	筥	筴	筧	筰	筱	筬	筮	箝
	E2AE	箘	箟	箍	箜	箚	箋	箒	箏	筝	箙	篋	篁	篌	篏	箴	篆
	E2BE	篝	篩	簑	簔	篦	篥	籠	簀	簇	簓	篳	篷	簗	簍	篶	簣
	E2CE	簧	簪	簟	簷	簫	簽	籌	籃	籔	籏	籀	籐	籘	籟	籤	籖
	E2DE	籥	籬														
米	E2DE			籵	粃	粐	粤	粭	粢	粫	粡	粨	粳	粲	粱	粮	粹
	E2EE	粽	糀	糅	糂	糘	糒	糜	糢	鬻	糯	糲	糴	糶			
糸	E2EE														糺	紆	
	E33F		紂	紜	紕	紊	絅	絋	紮	紲	紿	紵	絆	絳	絖	絎	絲
	E34F	絨	絮	絏	絣	經	綉	絛	綏	絽	綛	綺	綮	綣	綵	緇	綽
	E35F	綫	總	綢	綯	緜	綸	綟	綰	緘	緝	緤	緞	緻	緲	緡	縅
	E36F	縊	縣	縡	縒	縱	縟	縉	縋	縢	繆	繦	縻	縵	縹	繃	縷
	E380	縲	縺	繧	繝	繖	繞	繙	繚	繹	繪	繩	繼	繻	纃	緕	繽
	E390	辮	繿	纈	纉	續	纒	纐	纓	纔	纖	纎	纛	纜			
缶	E390														缸	缺	
	E39E		罅	罌	罍	罎	罐										

	Shift JIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
网	E39E							网	罕	罔	罘	罟	罠	罨	罩	罧	罸
	E3AE	羂	羆	羃	羈	羇											
羊	E3AE						羌	羔	羞	羝	羚	羣	羯	羲	羹	羮	羶
	E3BE	羸	譱														
羽	E3BE			翅	翆	翊	翕	翔	翡	翦	翩	翳	翹	飜			
老	E3BE														耆	耄	耋
耒	E3CE	耒	耘	耙	耜	耡	耨										
耳	E3CE							耿	耻	聊	聆	聒	聘	聚	聟	聢	聨
	E3DE	聳	聲	聰	聶	聹	聽										
聿	E3DE							聿	肄	肆	肅						
肉	E3DE											肛	肓	肚	肭	冐	肬
	E3EE	胛	胥	胙	胝	胄	胚	胖	脉	胯	胱	脛	脩	脣	脯	腋	
	E43F		隋	腆	脾	腓	腑	胼	腱	腮	腥	腦	腴	膃	膈	膊	膀
	E44F	膂	膠	膕	膤	膣	腟	膓	膩	膰	膵	膾	膸	膽	臀	臂	膺
	E45F	臉	臍	臑	臙	臘	臈	臚	臟	臠							
臣	E45F										臧						
至	E45F											臺	臻				
臼	E45F													臾	舁	舂	舅
	E46F	與	舊														
舌	E46F			舍	舐	舖											
舟	E46F						舩	舫	舸	舳	艀	艙	艘	艝	艚	艟	艤
	E480	艢	艨	艪	艫	舮											
艮	E480						艱										
色	E480							艷									
艸	E480								艸	艾	芍	芒	芫	芟	芻	芬	苡
	E490	苣	苟	苒	苴	苳	苺	莓	范	苻	苹	苞	茆	苜	茉	苙	
	E49E		茵	茴	茖	茲	茱	荀	茹	荐	荅	茯	茫	茗	茘	莅	莚
	E4AE	莪	莟	莢	莖	茣	莎	莇	莊	荼	莵	荳	荵	莠	莉	莨	菴
	E4BE	萓	菫	菎	菽	萃	菘	萋	菁	菷	萇	菠	菲	萍	萢	萠	莽
	E4CE	萸	蔆	菻	葭	萪	萼	蕚	蒄	葷	葫	蒭	葮	蒂	葩	葆	萬
	E4DE	葯	葹	萵	蓊	葢	蒹	蒿	蒟	蓙	蓍	蒻	蓚	蓐	蓁	蓆	蓖
	E4EE	蒡	蔡	蓿	蓴	蔗	蔘	蔬	蔟	蔕	蔔	蓼	蕀	蕣	蕘	蕈	
	E53F		蕁	蘂	蕋	蕕	薀	薤	薈	薑	薊	薨	蕭	薔	薛	藪	薇
	E54F	薜	蕷	蕾	薐	藉	薺	藏	薹	藐	藕	藝	藥	藜	藹	蘊	蘓

	Shift JIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
艸	E55F	蘋	藾	藺	蘆	蘢	蘚	蘰	蘿								
虍	E55F									虍	虒	虔	號	虧			
虫	E55F														虱	蚓	蚣
	E56F	蚩	蚪	蚋	蚌	蚶	蚯	蛄	蛆	蛔	蛉	蠣	蛹	蛔	蛞	蛩	蛬
	E580	蛟	蛛	蛯	蛭	蛻	蛾	蜀	蜃	蜺	蜚	蜉	蜍	蛹	蜊	蜴	蜿
	E590	蜷	蜻	蜥	蜩	蜚	蝠	蝟	蝸	蝌	蝎	蝴	蝗	蝨	蝮	蝙	
	E59E		蝓	蝣	蝪	蠅	螢	螟	螂	螯	螋	螽	蟀	蟐	雖	螯	蟄
	E5AE	螳	蟇	蟆	螻	蟯	蟲	蟠	蠏	蠍	蟾	蟶	蟷	蠣	蠖	蠑	蠖
	E5BE	蠕	蠢	蠡	蠱	蠶	蠹	蠧	蠻								
血	E5BE									衄	衂						
行	E5BE											銜	衙	衛	衢		
衣	E5BE															衫	袁
	E5CE	衾	衰	衵	衽	衹	衲	袂	衿	袒	袮	袹	袢	袍	袤	袈	袿
	E5DE	袱	袴	袵	裔	裘	裙	裝	裏	裟	裼	裴	裨	裲	裾	裡	裙
	E5EE	裞	裹	裰	褥	褪	褫	褶	襄	褻	褶	褸	褝	禪	襠	襞	
	E63F		襦	襤	襪	襪	襯	襴	襷								
襾	E63F									襾	覃	覈	覊				
見	E63F													覓	覗	覡	覩
	E64F	覦	覬	覲	覯	覺	覽	覿	觀								
角	E64F									觚	觜	觝	觧	觴	觸		
言	E64F															訃	訖
	E65F	訐	訌	訛	訝	訥	訶	詁	詛	詒	詆	詈	詼	詭	詬	詢	詆
	E66F	誂	誄	誨	誡	誑	誥	誦	誚	誣	諄	諍	諂	諚	諫	諳	諧
	E680	諤	諱	謔	諠	諢	諷	諞	諛	謌	謇	謚	謦	謨	謗	謠	
	E690	謳	鞫	謦	謫	謾	謨	譁	譌	譏	譎	證	譖	譜	譚	譫	
	E69E		譟	譬	譯	譴	譽	讀	讌	讎	讒	讓	讖	讙	讚		
谷	E69E															谺	豁
	E6AE	谿															
豆	E6AE		豈	豌	豎	豐											
豕	E6AE						豕	豢	豬								
豸	E6AE									豸	豺	貂	貉	貊	貊	貍	貎
	E6BE	貔	貘	貘													
貝	E6BE				貶	貭	貪	貽	貲	貳	貳	貶	賈	賁	賤	賣	賚
	E6CE	賽	賺	賻	贄	贅	贊	贇	贏	贍	贔	齎	贓	賍	贔	贖	

	Shift JIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
赤	E6CE																赧
	E6DE	赭															
走	E6DE		赱	赳	趁	趙											
足	E6DE						跂	趾	趺	跏	跚	跖	跌	跛	跋	跪	跫
	E6EE	跟	跣	跼	踈	踉	跿	踝	踞	踐	踟	蹂	踵	踰	踴	蹊	
	E73F		蹇	蹉	蹌	蹐	蹈	蹙	蹤	蹠	踪	蹣	蹕	蹶	蹲	蹼	躁
	E74F	躇	躅	躄	躋	躊	躓	躑	躔	躙	躪	躡					
身	E74F												躬	躰	軆	躱	躾
	E75F	軅	軈														
車	E75F			軋	軛	軣	軼	軻	軫	軾	輊	輅	輕	輒	輙	輓	輜
	E76F	輟	輛	輌	輦	輳	輻	輹	轅	轂	輾	轌	轉	轆	轎	轗	轜
	E780	轢	轣	轤													
辛	E780				辜	辟	辣	辭	辯								
辶	E780									辷	迚	迥	迢	迪	迯	邇	迴
	E790	逅	迹	迺	逑	逕	逡	逍	逞	逖	逋	逧	逶	逵	逹	迸	
	E79E		遏	遐	遑	遒	逎	遉	逾	遖	遘	遞	遨	遯	遶	隨	遲
	E7AE	邂	遽	邁	邀	邊	邉	邏									
邑	E7AE								邨	邯	邱	邵	郢	郤	扈	郛	鄂
	E7BE	鄒	鄙	鄲	鄰												
酉	E7BE					酊	酖	酘	酣	酥	酩	酳	酲	醋	醉	醂	醢
	E7CE	醫	醯	醪	醵	醴	醺	釀	釁								
釆	E7CE									釉	釋						
里	E7CE											釐					
金	E7CE												釖	釟	釡	釛	釼
	E7DE	釵	釶	鈞	釿	鈔	鈬	鈕	鈑	鉞	鉗	鉅	鉉	鉤	鉈	銕	鈿
	E7EE	鉋	鉐	銜	銖	銓	銛	鉚	鋏	銹	銷	鋩	錏	鋺	鍄	錮	
	E83F		錙	錢	錚	錣	錺	錵	錻	鍜	鍠	鍼	鍮	鍖	鎰	鎬	鎭
	E84F	鎔	鎹	鏖	鏗	鏨	鏥	鏘	鏃	鏝	鏐	鏈	鏤	鐚	鐔	鐓	鐃
	E85F	鐇	鐐	鐶	鐫	鐵	鐡	鐺	鑁	鑒	鑄	鑛	鑠	鑢	鑞	鑪	鈩
	E86F	鑰	鑵	鑷	鑽	鑚	鑼	鑾	钁	鑿							
門	E86F										閂	閇	閊	閔	閖	閘	閙
	E880	閠	閨	閧	閭	閼	閻	閹	閾	闊	濶	闃	闍	闌	闕	闔	闖
	E890	關	闡	闥	闢												
阜	E890					阡	阨	阮	阯	陂	陌	陏	陋	陷	陜	陞	

	Shift JIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
阜	E89E		陝	陟	陦	陲	陬	隍	隘	隕	隗	險	隧	隱	隲	隰	隴
隶	E8AE	隶	隸														
隹	E8AE			隹	睢	雋	雉	雍	襍	雜	霍	雕					
雨	E8AE												雹	霄	霆	霈	霓
	E8BE	霎	霑	霏	霖	霙	霤	霪	霰	霹	霽	霾	靄	靆	靈	靂	靉
青	E8CE	靜															
非	E8CE		靠														
面	E8CE			靤	靦	靨											
革	E8CE						勒	靱	靭	靹	鞅	靼	鞁	靺	鞆	鞋	鞏
	E8DE	鞐	鞜	鞨	鞦	鞳	鞴	鞹	鞾	鞻	鞿						
韋	E8DE											韋	韜				
韭	E8DE													韭	韲	韮	
音	E8DE																竟
	E8EE	韶	韵														
頁	E8EE			頇	頌	頸	頤	頡	頷	頽	顆	顏	顋	顫	顯	顰	
	E93F		顱	顴	顳												
風	E93F					颪	颯	颱	颶	飄	飃	飆					
食	E93F												飩	飥	飩	餃	餉
	E94F	餔	餘	餡	餉	餞	餤	餅	餬	餮	餽	餾	饂	饉	饅	饐	饋
	E95F	饑	饒	饌	饗												
首	E95F					馗	馘										
香	E95F							馥									
馬	E95F								馭	馮	馼	馴	馹	駝	駘	駑	駭
	E96F	駮	駱	駟	駸	駻	駾	騏	騅	騈	騙	騫	騒	驅	驂	驀	驃
	E980	驟	驕	驍	驛	驗	驟	驢	驤	驤	驩	驫	驪				
骨	E980													骭	骰	骼	髀
	E990	髏	髑	髓	體												
高	E990					髜											
髟	E990						髟	髫	髣	髦	髯	髫	髮	髴	髷	髻	
	E99E		髷	鬆	鬘	鬚	鬟	鬢	鬣								
鬥	E99E									鬥	鬧	鬨	鬩	鬮	鬯		
鬯	E99E															鬯	
鬲	E99E																鬲
鬼	E9AE	魄	魅	魏	魍	魎	魑	魘									

	Shift JIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
魚	E9AE								魴	鮓	鮃	鮑	鮖	鮗	鮟	鮠	鮨
	E9BE	鮴	鯀	鯊	鮹	鯆	鯏	鯑	鯒	鯣	鯢	鯤	鯔	鯡	鰺	鯲	鯱
	E9CE	鯰	鰕	鰔	鰉	鰓	鰌	鰆	鰈	鰒	鰊	鰄	鰮	鰛	鰥	鰤	鰡
	E9DE	鰰	鱇	鰲	鱆	鰾	鱚	鱠	鱧	鱶	鱸						
鳥	E9DE											鳧	鳬	鳰	鴉	鴈	鳫
	E9EE	鴃	鴆	鴪	鴦	鶯	鴣	鴟	鵄	鴕	鴒	鵁	鴿	鴾	鵆	鵈	
	EA3F		鵝	鵞	鵤	鵑	鵐	鵙	鵲	鶉	鶇	鶫	鵯	鵺	鶚	鶤	鶩
	EA4F	鶲	鷄	鷁	鶻	鶸	鶺	鷆	鷏	鷂	鷙	鷓	鷸	鷦	鷭	鷯	鷽
	EA5F	鸚	鸛	鸞													
鹵	EA5F				鹵	鹹	鹽										
鹿	EA5F							麁	麈	麋	麌	麒	麕	麑	麝		
麥	EA5F															麥	麩
	EA6F	麸	麪	麭													
麻	EA6F				靡												
黄	EA6F					黌											
黍	EA6F						黎	黏	黐								
黒	EA6F									黔	黜	點	黝	黠	黥	黨	黯
	EA80	黴	黶	黷													
黹	EA80				黹	黻	黼										
黽	EA80							黽	鼇	鼈							
皷	EA80										皷	鼕					
鼠	EA80												鼡	鼬			
鼻	EA80														鼾		
齊	EA80															齊	
齒	EA80																齒
	EA90	齔	齣	齟	齠	齡	齦	齧	齬	齪	齷	齲	齶				
龍	EA90													龕			
龜	EA90														龜		
龠	EA90															龠	

10.2 2D Code

MAXI Code

ESC+BV

HEX code	ESC	BV	Parameter
	<1B>16	<42>16<56>16	a,b,c,ddddddddd,eee,fff,n~n
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]

Specifies MAXI code of 2D code.

[Format]

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

●Parameter

a	[Symbol number]	=	1 to 8
b	[Symbol digit number]	=	1 to 8
c	[Mode]	=	2: for delivery 3: for delivery 4: Standard symbol 6: for reader
d	[Zip code]	=	0 to 999999999 (Mode 2) 000000 to 999999 (Mode 3) *Mode 2: Up to 9 numeric digits *Mode 3: Fixed 6 digits (When using alphabet, use capital letter only)
e	[Country code]	=	001 to 999
f	[Service class]	=	001 to 999
n	[Low priority message]	=	Alphanumeric / Symbol

Mode	Service class	Country code	Zip code	Max number of print data	
				Numeric only	Alphanumeric
2	Fixed 3 numeric digits	Fixed 3 numeric digits	Up to 9 digits	123	84
3			Fixed 6 digits (Alphanumeric)		
4	Omitted			138	93
6					

[Example]

<A>
<V>100<H>200**<BV>1,1,2,123456789,001,002,SAHTHA**
<Q>2
<Z>

[Note]

1. Size of MAXI code to be printed by the number of data will not change.
2. When designating the parameter other than specified or when the number of print data is not equal, printing will not be performed.
3. Set Number of print data to 12 or higher when selecting Mode 4 or 6. If not, the printed MAXI code cannot be read with a scanner.

MAXI 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								

MAXI code is settable within the range of [01H ~ FFH].

10.3 2D Code

PDF417

ESC+BK

HEX code	ESC	BK	Parameter
	<1B>16	<42>16<4B>16	aabbcddeeffffg~g(,h)
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]

Specifies PDF417 of 2D code.

[Format]

<BK>aabbcddeeffffg~g(,h)

● Parameter

a	[Minimum module width]	=	01 to 09 dots
b	[Minimum module height]	=	01 to 24 dots
c	[Security level]	=	0 to 8
d	[Number of data code words per digit] (cols)	=	01 to 30 00 : Automatic (Width depends on data number specified)
e	[Digit number per symbol] (rows)	=	03 to 90 00 : Automatic (Height depends on data number specified)
f	[Data digit number]	=	0001 to 2681
g	[Print data]	=	Data
h	[PDF code type]	=	When omitted : PDF417 T : Truncated scale M : Micro PDF

[Example] Minimum module width: 03 dots Minimum module height : 09 dots Security level : 3
Number of data code words per digit : 03 Digit number per symbol : 18

<A>
<V>100<H>200**<BK>0309303180010PDF1234567**
<Q>2
<Z>

[Note]

1. [Minimum module width] can be set to 01 and 02; however, this may not be read properly.
2. 01, 02, and 03 are designable for [Minimum module height]; however, it may cause a reading problem.
3. If specifying 00 for both [Number of data code words per digit] and [Digit number per symbol], the size of height to width (aspect ratio) will be at 1:2 based on the number of print data.
4. If increasing the security level, it is necessary to specify higher value for [Digit number per symbol] or [Number of data code words per digit].
5. Maximum data digit number is 2681; however, it may vary depending on the specification of minimum module size, security level, and print data type.
6. If the parameter or number of data is not matching, printing will not be properly performed.
7. When selecting [Micro PDF] in [PDF code type], digit number per symbol will be set based on the specification of the number of data code words per digit. This will also set the maximum value of [Data digit number]. For details, refer to the next page [MicroPDF Symbol Size and Data Digit Number].
8. When selecting [Micro PDF] in [PDF code type], [Security level] will be disabled.

[Tip]

1. Sequential number is disabled.
2. Print position cannot be designated by auto linefeed.
3. Designation of print for 00H ~ FFH is available.
4. Registration of format is available.
5. For higher print quality, increase the minimum module size.
6. For higher read rate, increase the security level.
7. Height of print may differ when printing the data consists of alphabet-only, numeric- only or alphanumeric.

* Symbol size of Micro PDF is as follows (Fixed 34 types).

[Micro PDF Symbol Size and Data Digit Number]

Symbol size		Maximum data digit number	
cols(d)	rows(e)	Alphabet(A~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
	26	72	105
3	6	10	14
	8	18	26
	10	26	38
	12	34	49
	15	46	67
	20	66	96
	26	90	132
	32	114	167
	38	138	202
	44	162	237
4	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

* When the data includes alphabet(Uppercase/Lowercase letters), numeric and control codes, the above values may differ depending on the number of characters to be combined.

PDF417 Code Table (including Micro PDF)

					S								S							
				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								

PDF417(Including Micro PDF) is settable within the range of 00H to FFH.

GS1 Data Matrix Code Table (When <DC> is specified)

					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 Matrix is settable within the range of 20H to FFH.
To select 7EH, specify [7EH,7EH].

10.4 2D Code

PDF417

ESC+2D10

HEX code	ESC	2D10	Parameter
	<1B>$_{16}$	<32>$_{16}$<44>$_{16}$<31>$_{16}$<30>$_{16}$	,aa,bb,c,dd,ee(,f)
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]
Specifies PDF417 of 2D code.

[Format] Setting portion
<2D10>,aa,bb,c,dd,ee(,f)
●Parameter

a	[Minimum module width]	=	01 to 09 dots
b	[Minimum module height]	=	01 to 24 dots
c	[Security level]	=	0 to 8
d	[No. of data code words per line (cols)]	=	01 to 30 00 : Automatic (Width may vary depending on the No. of data specified)
e	[No. of rows per symbol (rows)]	=	03 to 90 00 : Automatic (Height may vary depending on the No. of data specified)
f	[Code type]	=	0 : Standard (Omissible) 1 : Truncated

[Format] Data portion

<DN>mmmm,n~n
●Parameter

m	[Data number]	=	1 to 2681 bytes
n	[Print data]	=	Data

[Example 1] Minimum module width : 03 dots Minimum module height : 09 dots Security level : 3
No. of data code words per line : 03 No. of rows per symbol : 18

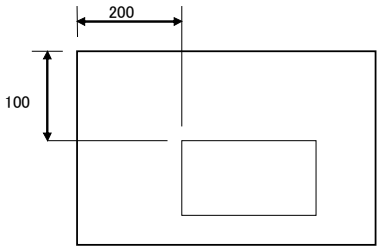
<A>
<V>100<H>200**<2D10>,03,09,3,03,18**
<DN>0010,0123456789
<Q>2
<Z>

[Example 2] Minimum module width : 03 dots Minimum module height : 09 dots Security level : 3
No. of data code words per line : 03 No. of rows per symbol : 18 Code type : Truncated

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

[Note]

1. Use the Vertical Print Position <V> and the Horizontal Print Position <H> commands to set the base reference point for printing.
   <V>100<H>200<2D10>*** · · · · · · · **



2. When d=e=00, the size of height to width (aspect ratio) will be at 1:2 based on the number of print data.
3. If the parameter setting of “d” and “e” are not equal to data number, printing may not be performed.
4. If increasing the security level, it is necessary to specify higher value for “d” or “e”.
5. [Minimum module width] can be set to 01 and 02; however, this may not be read properly.
6. 01, 02, and 03 are designable for [Minimum module height]; however, it may cause a reading problem.
7. If [Data number] is set to the maximum value, a command error may occur depending on the printer data pattern or the security level setting.

Compression mode	Data format	Max. number of data
Byte compression mode	Binary (00H ~ FFH)	1108
Text compression mode	Alphanumeric	1850
Numeric compression mode	Numeric only	2681

* The above table shows the maximum number of data when the security level is set to zero.
* For the mixture of alphabet (lowercase/uppercase), numeric and control code, the maximum number of data may change.

[Tip]

1. Sequential number is disabled.
2. Print position cannot be designated by auto linefeed.
3. Designation of print for 00H ~ FFH is available.
4. Registration of format is available.
5. For higher print quality, increase the minimum module size.
6. For higher read rate, increase the security level.
7. Height of print may differ when printing the data of alphabet-only, numeric- only or alphanumeric.

PDF417 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								

PDF417 is settable within the range of 00H to FFH.

10.5 2D Code

MicroPDF

ESC+2D12

HEX code	ESC	2D12	Parameter
	<1B>16	<32>16<44>16<31>16<32>16	,aa,bb,c,dd(,e)
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]
Specifies MicroPDF of 2D code.

[Format] Setting portion
<2D12>,aa,bb,c,dd(,e)
●Parameter
a [Minimum module width] = 01 to 09 dots
b [Minimum module height] = 01 to 24 dots
c [No. of data code words per line (cols)] = 1 to 4
d [No. of rows per symbol (rows)] = 2 digits
e [Binary mode] = 0 : Standard
*Becomes “0” when omitting. This parameter is omissible.
1 : Binary mode

[Format] Data portion
<DN>mmmm,n~n : When [Binary mode] is set to [1: Binary mode]
<DS>n~n : When [Binary mode] is set to [0: Standard]
●Parameter
m [Data number] = 0001 to 0366 bytes
n [Print data] = Data

[Example] Minimum module width: 02 dots Minimum module height: 04 dots
No. of data code words per line: 1 No. of rows per symbol: 14

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

[Note]
1. The number of rows per symbol will be determined by the number of data code words per line. For details, refer to the next page MicroPDF Symbol Size and Data Number].

* Symbol size of MicroPDF is as follows (Fixed 34 types).

[MicroPDF Symbol Size and Data Number]

Symbol size		Maximum data number		
Cols(c)	Rows(d)	Alphabet(A~Z)only	Numeric only	Binary mode
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

* When the data includes alphabet(Uppercase/Lowercase letters), numeric and control codes, the above values may differ depending on the number of characters to be combined.

					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								

MicroPDF is settable within the range of 00H to FFH.

10.6 2D Code

MAXI Code

ESC+2D20

HEX code	ESC	2D20	Parameter
	$<1B>_{16}$	$<32>_{16}<44>_{16}<32>_{16}<30>_{16}$	,a(,bbb,ccc,d~d)
Initial value	Nil		

	When power switch is OFF	The set parameter is not maintained.
		The set parameter becomes invalid.
		The set parameter becomes invalid.

[Function]
Specifies Maxi code of 2D code.

[Format] Setting portion
<2D20>,a(,bbb,ccc,d~d)
●Parameter

a	[Mode]	=	2 : Delivery only (Numeric only) 3 : Delivery only (Alphanumeric only) 4 : Standard symbol 6 : Reader only * The following parameters are needed when setting [Mode] to “2” or “3”. Omit the following parameters when setting [Mode] to “4” or “6”.
b	[Service class]	=	001 to 999
c	[Country code]	=	001 to 999
d	[Postal code]	=	0 to 999999999 (Mode 2) 000000 to 999999 (Mode 3) *In Mode 2, up to 9-digit (Numeric only) *In Mode 3, fixed 6-digit (English capital letter only)

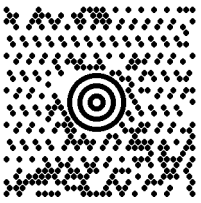
[Format] Data portion
<DN>mmmm,n~n
●Parameter

m	[Data number]	=	0001 to 0138
n	[Print data]	=	Data *00H cannot be specified.

Mode	Service class	Country code	Postal code	Max. number of print data	
				Numeric	Alphanumeric
2	Fixed 3-digit (Numeric only)	Fixed 3-digit (Numeric only)	Up to 9-digit	123	84
3			Fixed 6-digit (Alphanumeric)		
4	-			138	93
6					

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

<A>
<V>100<H>200**<2D20>,2,003,081,123456789**
<DN>0010,0123456789
<Q>2
<Z>



[Note]
1. Size of MAXI code to be printed by the number of data will not change.
2. When designating the parameter other than specified or when the number of print data is not matching, printing will not be performed.
3. Set Number of print data to 12 or higher when selecting Mode 4 or 6. If not, the printed MAXI code cannot be read with a scanner.
4. Depending on the print data pattern, switching code of code set [A ~ E] will be added and because of this you may not be able to specify the maximum number of print data. Be careful when you spepcify the maximum number for [Data number].

MAXI 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								

MAXI code is settable within the range of 01H to FFH.

10.7 2D Code

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)
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]
Specifies QR code (Model 2) of 2D code.

[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 [Cell size] = 01 to 32 dots
c [Data setting mode] = 0 : Manual
1 : Automatic
*This setting affects the specification of print data.
d [Concentration mode] = 0 : Normal mode
1 : Concentration mode

Specify the following parameters when setting [Concentration mode] to [1: Concentration mode].
In normal mode, omit the following parameters.
e [Number of partitions by concentration mode] = 01 to 16
*This is to specify how many QR codes, partitioned by concentration mode, to connect.

f [Sequential number partitioned by concentration mode] = 01 to 16
*This is to specify the number of QR code partitioned by concentration mode.

g [Concentration mode parity data] = 00 to FF
*Carry out XOR logic operation of all the partitioned print data of QR code and then, specify this operation data in hexadecimal character. This is referred to as parity data.

[Format] Data portion
<DS>k,n~n
<DN>mmmm,n~n
●Parameter
k [Input mode] = 1 : Numeric mode
2 : Alphanumeric mode
3 : Kanji mode (Shift JIS Kanji code)
*This setting is needed only when setting [Data setting mode] to [0: Manual].
*Binary specification is available for this setting, but the data specification command is different.

m [Data number] = 0001 to 2953
*This setting is needed when setting [Data setting mode] to [1: Automatic], or selecting Binary in manual setting.

n [Print data] = Data

[Example] Error correction level: 7% Cell size: 05
Data setting mode: Manual Concentration mode: Normal mode

<A>
<V>100<H>200**<2D30>,L,05,0,0**
<DS>1,012345
<Q>2
<Z>

[Note]
1. When designating the parameter other than specified or when the number of print data is not matching, printing will not be performed.
2. For data portion, the data specification command may differ depending on the parameter settings or specified data contents.

Automatic setting (Data setting mode)
<DN>mmmm,n~n

[Tip 1]
1. If using Kanji in this specification, specify “number of Kanji characters x 2”.
2. The data of [80H to 9FH] and [E0H to FFH] will be handled as Kanji mode. It cannot be specified as Binary.

Binary specification in manual setting (Data setting mode)
<DN>mmmm,n~n

Manual setting (Data setting mode) using other than Binary specification
<DS>1,n~n (Input mode: Numeric)
<DS>2,n~n (Input mode: Alphanumeric)
<DS>3,n~n (Input mode: Kanji)

Multiple data specification in manual setting (Data setting mode)
In manual setting, the data of input mode (numeric, alphanumeric, Kanji, Binary), specified in data portion, can be specified consecutively.

<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>

[Tip 2]
1. Parameter portion is followed by data portion. Data portion is followed by other data portion consecutively. If the data is not specified consecutively, printing may not be performed properly.
2. Keep the total data number(n) under 7,000 bytes. The number of blocks for data portion to be specified consecutively is up to 200 blocks.

QR Data Size (Model 2)

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

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

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

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

10.8 2D Code

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)
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]
Specifies QR code (Model 1) of 2D code.

[Format] Setting portion
<2D31>,a,bb,c,d(,ee,ff,gg)
●Parameter
a [Error correction level] = L : 7%
M : 15%
Q : 25%
H : 30%
b [Cell size] = 01 to 32 dots
c [Data setting mode] = 0 : Manual
1 : Automatic
*This setting affects the specification of print data.
d [Concentration mode] = 0 : Normal mode
1 : Concentration mode

Specify the following parameters when setting [Concentration mode] to [1: Concentration mode].
In normal mode, omit the following parameters.
e [Number of partitions by concentration mode] = 01 to 16
*This is to specify how many QR codes, partitioned by concentration mode, to connect.

f [Sequential number partitioned by concentration mode] = 01 to 16
*This is to specify the number of QR code partitioned by concentration mode.

g [Concentration mode parity data] = 00 to FF
*Carry out XOR logic operation of all the partitioned print data of QR code and then, specify this operation data in hexadecimal character. This is referred to as parity data.

[Format] Data portion
<DS>k,n~n
<DN>mmmm,n~n
●Parameter
k [Input mode] = 1 : Numeric mode
2 : Alphanumeric mode
3 : Kanji mode (Shift JIS Kanji code)
*This setting is needed only when setting [Data setting mode] to [0: Manual].
*Binary specification is available for this setting, but the data specification command is different.
m [Data number] = 0001 to 0486
*This setting is needed when setting [Data setting mode] to [1: Automatic], or selecting Binary in manual setting.

n [Print data] = Data

[Example] Data setting mode: Manual Concentration mode: Normal mode

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

[Note]

1. When designating the parameter other than specified or when the number of print data is not matching, printing will not be performed.
2. For data portion, the data specification command may differ depending on the parameter settings or specified data contents.

Automatic setting (Data setting mode)

<DN>mmmm,n~n

[Tip 1]

1. If using Kanji in this specification, specify “number of Kanji characters x 2”.
2. The data of [80H to 9FH] and [E0H to FFH] will be handled as Kanji mode. It cannot be specified as Binary.

Binary specification in manual setting (Data setting mode)

<DN>mmmm,n~n

Manual setting (Data setting mode) using other than Binary specification

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

Multiple data specification in manual setting (Data setting mode)

In manual setting, the data of input mode (numeric, alphanumeric, Kanji, Binary), specified in data portion, can be specified consecutively.

<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>

[Tip 2]

1. Parameter portion is followed by data portion. Data portion is followed by other data portion consecutively. If the data is not specified consecutively, printing may not be performed properly.

QR Data Size (Model 1)

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

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

10.9 2D Code

MicroQR

ESC＋2D32

HEX code	ESC	2D32	Parameter
	<1B>16	<32>16<44>16<33>16<32>16	,a,bb,c
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]
Specifies QR code (MicorQR) of 2D code.

[Format] Setting portion
<2D32>,a,bb,c
●Parameter
a [Error correction level] = L : 7%
M : 15%
Q : 25%
b [Cell size] = 01 to 32 dots
c [Data setting mode] = 0 : Manual
1 : Automatic

[Format] Data portion
<DS>k,n~n
<DN>mmmm,n~n
●Parameter
k [Input mode] = 1 : Numeric mode
2 : Alphanumeric mode
3 : Kanji mode (Shift JIS Kanji code)
*Binary specification is available for this setting, but the data specification command is different.

m [Data number] = 0001 to 0015
*This setting is needed when specifying Binary.

n [Print data] = Data

[Example] Error correction level: 7% Cell size: 04
<A>
<V>100<H>200**<2D32>,L,04**
<DS>1,012345
<Q>2
<Z>

[Note]
1. When designating the parameter other than specified or when the number of print data is not matching, printing will not be performed.
2. For data portion, the data specification command may differ depending on the parameter settings or specified data contents.

Automatic setting (Data setting mode)

<DN>mmmm,n~n

[Tip 1]

1. If using Kanji in this specification, specify “number of Kanji characters x 2”.
2. The data of [80H to 9FH] and [E0H to FFH] will be handled as Kanji mode. It cannot be specified as Binary.

Binary specification

<DN>mmmm,n~n

Specifications other than Binary

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

Multiple data specification

The data of input mode (numeric, alphanumeric, Kanji, Binary), specified in data portion, can be specified consecutively.

<A>
<V>100<H>100
<2D32>,a,b
<DS>3,n～n
<DN>mmmm,n~n
<DS>1,n~n
<Q1>
<Z>

[Tip 2]

1. Parameter portion is followed by data portion. Data portion is followed by other data portion consecutively. If the data is not specified consecutively, printing may not be performed properly.

MicroQR Data Size

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

QR Code Table (Numeric Mode)

					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 Table (Alphanumeric Mode)

					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 Table (Binary Mode)

					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								

QR code (Binary mode) is settable within the range of 00H to 7FH, and A0H to DFH.

QR Code Table (Kanji Mode)

	Shift JIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
Symbol	813F		SP	、	。	,	.	・	:	;	?	!	゛	°	´	`	¨
	814F	^	￣	＿	ヽ	ヾ	ゝ	ゞ	〃	仝	々	〆	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		ぁ	あ	ぃ	い	ぅ	う	ぇ	え	ぉ	お	か	が	き	ぎ	く
	82AE	ぐ	け	げ	こ	ご	さ	ざ	し	じ	す	ず	せ	ぜ	そ	ぞ	た
	82BE	だ	ち	ぢ	っ	つ	づ	て	で	と	ど	な	に	ぬ	ね	の	は
	82CE	ば	ぱ	ひ	び	ぴ	ふ	ぶ	ぷ	へ	べ	ぺ	ほ	ぼ	ぽ	ま	み
	82DE	む	め	も	ゃ	や	ゅ	ゆ	ょ	よ	ら	り	る	れ	ろ	ゎ	わ
	82EE	ゐ	ゑ	を	ん												
Katakana	833F		ァ	ア	ィ	イ	ゥ	ウ	ェ	エ	ォ	オ	カ	ガ	キ	ギ	ク
	834F	グ	ケ	ゲ	コ	ゴ	サ	ザ	シ	ジ	ス	ズ	セ	ゼ	ソ	ゾ	タ
	835F	ダ	チ	ヂ	ッ	ツ	ヅ	テ	デ	ト	ド	ナ	ニ	ヌ	ネ	ノ	ハ
	836F	バ	パ	ヒ	ビ	ピ	フ	ブ	プ	ヘ	ベ	ペ	ホ	ボ	ポ	マ	ミ
	8380	ム	メ	モ	ャ	ヤ	ュ	ユ	ョ	ヨ	ラ	リ	ル	レ	ロ	ヮ	ワ
	8390	ヰ	ヱ	ヲ	ン	ヴ	ヵ	ヶ									
Greek	839E		Α	Β	Γ	Δ	Ε	Ζ	Η	Θ	Ι	Κ	Λ	Μ	Ν	Ξ	Ο
	83AE	Π	Ρ	Σ	Τ	Υ	Φ	Χ	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		А	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	唖	娃	阿	哀	愛	挨	姶	逢	葵	茜	穐	悪	握	渥
	88AE	旭	葦	芦	鯵	梓	圧	斡	扱	宛	姐	虻	飴	絢	綾	鮎	或
	88BE	粟	袷	安	庵	按	暗	案	闇	鞍	杏						
イ	88BE											以	伊	位	依	偉	囲
	88CE	夷	委	威	尉	惟	意	慰	易	椅	為	畏	異	移	維	緯	胃
	88DE	萎	衣	謂	違	遺	医	井	亥	域	育	郁	磯	一	壱	溢	逸
	88EE	稲	茨	芋	鰯	允	印	咽	員	因	姻	引	飲	淫	胤	蔭	
	893F		院	陰	隠	韻	吋										
ウ	893F							右	宇	烏	羽	迂	雨	卯	鵜	窺	丑
	894F	碓	臼	渦	嘘	唄	欝	蔚	鰻	姥	厩	浦	瓜	閏	噂	云	運
	895F	雲															
エ	895F		荏	餌	叡	営	嬰	影	映	曳	栄	永	泳	洩	瑛	盈	穎
	896F	頴	英	衛	詠	鋭	液	疫	益	駅	悦	謁	越	閲	榎	厭	円
	8980	園	堰	奄	宴	延	怨	掩	援	沿	演	炎	焔	煙	燕	猿	縁
	8990	艶	苑	薗	遠	鉛	鴛	塩									
オ	8990								於	汚	甥	凹	央	奥	往	応	
	899E		押	旺	横	欧	殴	王	翁	襖	鴬	鴎	黄	岡	沖	荻	億
	89AE	屋	憶	臆	桶	牡	乙	俺	卸	恩	温	穏	音				
カ	89AE													下	化	仮	何
	89BE	伽	価	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	芽	蛾	賀	雅	餓	駕
	89EE	介	会	解	回	塊	壊	廻	快	怪	悔	恢	懐	戒	拐	改	
	8A3F		魁	晦	械	海	灰	界	皆	絵	芥	蟹	開	階	貝	凱	劾
	8A4F	外	咳	害	崖	慨	概	涯	碍	蓋	街	該	鎧	骸	浬	馨	蛙
	8A5F	垣	柿	蛎	鈎	劃	嚇	各	廓	拡	撹	格	核	殻	獲	確	穫
	8A6F	覚	角	赫	較	郭	閣	隔	革	学	岳	楽	額	顎	掛	笠	樫
	8A80	橿	梶	鰍	潟	割	喝	恰	括	活	渇	滑	葛	褐	轄	且	鰹
	8A90	叶	椛	樺	鞄	株	兜	竃	蒲	釜	鎌	噛	鴨	栢	茅	萱	
	8A9E		粥	刈	苅	瓦	乾	侃	冠	寒	刊	勘	勧	巻	喚	堪	姦
	8AAE	完	官	寛	干	幹	患	感	慣	憾	換	敢	柑	桓	棺	款	歓
	8ABE	汗	漢	澗	潅	環	甘	監	看	竿	管	簡	緩	缶	翰	肝	艦
	8ACE	莞	観	諌	貫	還	鑑	間	閑	関	陥	韓	館	舘	丸	含	岸
	8ADE	巌	玩	癌	眼	岩	翫	贋	雁	頑	顔	願					

	Shift JIS	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	
	8B3F		機	帰	毅	気	汽	畿	祈	季	稀	紀	徽	規	記	貴	起
	8B4F	軌	輝	飢	騎	鬼	亀	偽	儀	妓	宜	戯	技	擬	欺	犠	疑
	8B5F	祇	義	蟻	誼	議	掬	菊	鞠	吉	吃	喫	桔	橘	詰	砧	杵
	8B6F	黍	却	客	脚	虐	逆	丘	久	仇	休	及	吸	宮	弓	急	救
	8B80	朽	求	汲	泣	灸	球	究	窮	笈	級	糾	給	旧	牛	去	居
	8B90	巨	拒	拠	挙	渠	虚	許	距	鋸	漁	禦	魚	亨	享	京	
	8B9E		供	侠	僑	兇	競	共	凶	協	匡	卿	叫	喬	境	峡	強
	8BAE	彊	怯	恐	恭	挟	教	橋	況	狂	狭	矯	胸	脅	興	蕎	郷
	8BBE	鏡	響	饗	驚	仰	凝	尭	暁	業	局	曲	極	玉	桐	粁	僅
	8BCE	勤	均	巾	錦	斤	欣	欽	琴	禁	禽	筋	緊	芹	菌	衿	襟
	8BDE	謹	近	金	吟	銀											
ク	8BDE						九	倶	句	区	狗	玖	矩	苦	躯	駆	駈
	8BEE	駒	具	愚	虞	喰	空	偶	寓	遇	隅	串	櫛	釧	屑	屈	
	8C3F		掘	窟	沓	靴	轡	窪	熊	隈	粂	栗	繰	桑	鍬	勲	君
	8C4F	薫	訓	群	軍	郡											
ケ	8C4F						卦	袈	祁	係	傾	刑	兄	啓	圭	珪	型
	8C5F	契	形	径	恵	慶	慧	憩	掲	携	敬	景	桂	渓	畦	稽	系
	8C6F	経	継	繋	罫	茎	荊	蛍	計	詣	警	軽	頚	鶏	芸	迎	鯨
	8C80	劇	戟	撃	激	隙	桁	傑	欠	決	潔	穴	結	血	訣	月	件
	8C90	倹	倦	健	兼	券	剣	喧	圏	堅	嫌	建	憲	懸	拳	捲	
	8C9E		検	権	牽	犬	献	研	硯	絹	県	肩	見	謙	賢	軒	遣
	8CAE	鍵	険	顕	験	鹸	元	原	厳	幻	弦	減	源	玄	現	絃	舷
	8CBE	言	諺	限													
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	呉	吾	娯	後	御	悟	梧	檎	瑚	碁	語	誤	護	醐
	8CEE	乞	鯉	交	佼	侯	候	倖	光	公	功	効	勾	厚	口	向	
	8D3F		后	喉	坑	垢	好	孔	孝	宏	工	巧	巷	幸	広	庚	康
	8D4F	弘	恒	慌	抗	拘	控	攻	昂	晃	更	杭	校	梗	構	江	洪
	8D5F	浩	港	溝	甲	皇	硬	稿	糠	紅	紘	絞	綱	耕	考	肯	肱
	8D6F	腔	膏	航	荒	行	衡	講	貢	購	郊	酵	鉱	砿	鋼	閤	降
	8D80	項	香	高	鴻	剛	劫	号	合	壕	拷	濠	豪	轟	麹	克	刻

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

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チ	929E		帖	帳	庁	弔	張	彫	徴	懲	挑	暢	朝	潮	牒	町	眺
	92AE	聴	脹	腸	蝶	調	諜	超	跳	銚	長	頂	鳥	勅	捗	直	朕
	92BE	沈	珍	賃	鎮	陳											
ツ	92BE						津	墜	椎	槌	追	鎚	痛	通	塚	栂	掴
	92CE	槻	佃	漬	柘	辻	蔦	綴	鍔	椿	潰	坪	壷	嬬	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	逓	
	933F		邸	鄭	釘	鼎	泥	摘	擢	敵	滴	的	笛	適	鏑	溺	哲
	934F	徹	撤	轍	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	梼	棟
	9390	盗	淘	湯	涛	灯	燈	当	痘	祷	等	答	筒	糖	統	到	
	939E		董	蕩	藤	討	謄	豆	踏	逃	透	鐙	陶	頭	騰	闘	働
	93AE	動	同	堂	導	憧	撞	洞	瞳	童	胴	萄	道	銅	峠	鴇	匿
	93BE	得	徳	涜	特	督	禿	篤	毒	独	読	栃	橡	凸	突	椴	届
	93CE	鳶	苫	寅	酉	瀞	噸	屯	惇	敦	沌	豚	遁	頓	呑	曇	鈍
ナ	93DE	奈	那	内	乍	凪	薙	謎	灘	捺	鍋	楢	馴	縄	畷	南	楠
	93EE	軟	難	汝													
ニ	93EE				二	尼	弐	迩	匂	賑	肉	虹	廿	日	乳	入	
	943F		如	尿	韮	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	廼	之	埜	嚢	悩	濃	納	能	脳	膿
	945F	農	覗	蚤													
ハ	945F				巴	把	播	覇	杷	波	派	琶	破	婆	罵	芭	馬
	946F	俳	廃	拝	排	敗	杯	盃	牌	背	肺	輩	配	倍	培	媒	梅
	9480	楳	煤	狽	買	売	賠	陪	這	蝿	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	硲	箸	肇	筈	櫨	幡	肌	畑	畠	八	鉢	溌	発
	94AE	醗	髪	伐	罰	抜	筏	閥	鳩	噺	塙	蛤	隼	伴	判	半	反

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

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モ	96DE	尤	戻	籾	貰	問	悶	紋	門	匁							
ヤ	96DE										也	冶	夜	爺	耶	野	弥
	96EE	矢	厄	役	約	薬	訳	躍	靖	柳	薮	鑓					
ユ	96EE												愉	愈	油	癒	
	973F		諭	輸	唯	佑	優	勇	友	宥	幽	悠	憂	揖	有	柚	湧
	974F	涌	猶	猷	由	祐	裕	誘	遊	邑	郵	雄	融	夕			
ヨ	974F														予	余	与
	975F	誉	輿	預	傭	幼	妖	容	庸	揚	揺	擁	曜	楊	様	洋	溶
	976F	熔	用	窯	羊	耀	葉	蓉	要	謡	踊	遥	陽	養	慾	抑	欲
	9780	沃	浴	翌	翼	淀											
ラ	9780						羅	螺	裸	来	莱	頼	雷	洛	絡	落	酪
	9790	乱	卵	嵐	欄	濫	藍	蘭	覧								
リ	9790									利	吏	履	李	梨	理	璃	
	979E		痢	裏	裡	里	離	陸	律	率	立	葎	掠	略	劉	流	溜
	97AE	琉	留	硫	粒	隆	竜	龍	侶	慮	旅	虜	了	亮	僚	両	凌
	97BE	寮	料	梁	涼	猟	療	瞭	稜	糧	良	諒	遼	量	陵	領	力
	97CE	緑	倫	厘	林	淋	燐	琳	臨	輪	隣	鱗	麟				
ル	97CE													瑠	塁	涙	累
	97DE	類															
レ	97DE		令	伶	例	冷	励	嶺	怜	玲	礼	苓	鈴	隷	零	霊	麗
	97EE	齢	暦	歴	列	劣	烈	裂	廉	恋	憐	漣	煉	簾	練	聯	
	983F		蓮	連	錬												
ロ	983F					呂	魯	櫓	炉	賂	路	露	労	婁	廊	弄	朗
	984F	楼	榔	浪	漏	牢	狼	篭	老	聾	蝋	郎	六	麓	禄	肋	録
	985F	論															
ワ	985F		倭	和	話	歪	賄	脇	惑	枠	鷲	亙	亘	鰐	詫	藁	蕨
	986F	椀	湾	碗	腕												

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一	989E			弋	丐	丕											
丨	989E					个	丱										
丶	989E							丶	丼								
丿	989E									丿	乂	乖	乘				
乙	989E													亂			
亅	989E														亅	豫	事
	98AE	舒															
二	98AE			弐	于	亞											
亠	98AE							亠	亢	亰	亳	亶					
人	98AE											从	仍	仄	仆	仂	仗
	98BE	仞	仭	仟	价	伉	佚	估	佛	佝	佗	佇	佶	侈	侏	侘	佻
	98CE	佩	佰	侑	佯	來	侖	儘	俔	俟	俎	俘	俛	俑	俚	俐	俤
	98DE	俥	倚	倨	倔	倪	倥	倅	伜	俶	倡	倩	倬	俾	俯	們	倆
	98EE	偃	假	會	偕	偐	偈	做	俸	偬	偸	傀	傚	傅	傴	傲	
	993F		僉	僊	傳	僂	僖	僞	僥	僭	僣	僮	價	僵	儉	儁	儂
	994F	儖	儕	儔	儚	儡	儺	儷	儼	儻							
儿	994F										儿	兀	兒	兌	兔	兢	競
入	995F	兩	俞														
八	995F				兮	冀											
冂	995F						冂	冋	册	冉	冏	冑	冓	冕			
冖	995F													冖	冤	冦	冢
	996F	冩	冪														
冫	996F				冫	决	冱	冲	冰	况	冽	凅	凉	凜			
几	996F													几	處	凩	凭
	9980	凰															
凵	9980			凵	函												
刀	9980				刃	刋	刦	刎	刧	刪	刮	刳	刹	剏	剄	剋	剌
	9990	剞	剔	剪	剴	剩	剳	剿	剽	劍	劒	劔	劔	劈	劑	辨	
	999E		辦														
力	999E				劭	劭	劼	劵	勁	勍	勗	勞	勣	勦	飭	勠	勳	勵
	99AE	勸															
勹	99AE			勹	匆	匈	甸	甫	甽	匏							
匕	99AE										匕						
匚	99AE											匚	匣	匯	匱	匳	

	Shift JIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
匸	99AE															匸	區
十	99BE	卆	卅	卋	卉	卍	凖										
卜	99BE							卞									
卩	99BE								卩	卮	夘	卻	卷				
厂	99BE													厂	厖	厠	厦
	99CE	厥	厮	厰													
厶	99CE				厶	參	簒										
又	99CE							雙	叟	曼	燮						
口	99CE											叮	叨	叭	叺	吁	吽
	99DE	呀	听	吭	吼	吮	吶	吩	吝	呎	咏	呵	咎	呟	呱	呷	呰
	99EE	咒	呻	咀	呶	咄	咐	咆	哇	咢	咸	咥	咬	哄	哈	咨	
	9A3F		咫	哂	咤	咾	咼	哘	哥	哦	唏	唔	哽	哮	哭	哺	哢
	9A4F	唹	啀	啣	啌	售	啜	啅	啖	啗	唸	唳	啝	喙	喀	咯	喊
	9A5F	喟	啻	啾	喘	喞	單	啼	喃	喩	喇	喨	嗚	嗅	嗟	嗄	嗜
	9A6F	嗤	嗔	嘔	嗷	嘖	嗾	嗽	嘛	嗹	噎	噐	營	嘴	嘶	嘲	嘸
	9A80	噫	噤	嘯	噬	噪	嚆	嚀	嚊	嚠	嚔	嚏	嚥	嚮	嚶	嚴	囂
	9A90	嚼	囁	囃	囀	囈	囎	囑	囓								
囗	9A90									囗	囮	囹	圀	囿	圄	圉	
	9A9E		圈	國	圍	圓	團	圖	嗇	圜							
土	9A9E										圦	圷	圸	坎	圻	址	坏
	9AAE	坩	埀	垈	坡	坿	垉	垓	垠	垳	垤	垪	垰	埃	埆	埔	埒
	9ABE	埓	堊	埖	埣	堋	堙	堝	塲	堡	塢	塋	塰	毀	塒	堽	塹
	9ACE	墅	墹	墟	墫	墺	壞	墻	墸	墮	壅	壓	壑	壗	壙	壘	壥
	9ADE	壜	壤	壟													
士	9ADE				壯	壺	壹	壻	壼	壽							
夂	9ADE										夂						
夊	9ADE											夊	夐				
夕	9ADE													夛	梦	夥	
大	9ADE																夬
	9AEE	夭	夲	夸	夾	竒	奕	奐	奎	奚	奘	奢	奠	奧	奬	奩	
女	9B3F		奸	妁	妝	佞	侫	妣	妲	姆	姨	姜	妍	姙	姚	娥	娟
	9B4F	娑	娜	娉	娚	婀	婬	婉	娵	娶	婢	婪	媚	媼	媾	嫋	嫂
	9B5F	媽	嫣	嫗	嫦	嫩	嫖	嫺	嫻	嬌	嬋	嬖	嬲	嫐	嬪	嬶	嬾
	9B6F	孃	孅	孀													

	Shift JIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
子	9B6F				孑	孕	孚	孛	孥	孩	孰	孳	孵	學	孝	孺	
宀	9B6F																宀
	9B80	它	宦	宸	寃	寇	寉	寔	寐	寤	實	寢	寞	寥	寫	寰	寶
	9B90	寳															
寸	9B90		尅	將	專	對											
小	9B90						尒	尠									
尤	9B90								尢	尨							
尸	9B90										尸	尹	屁	屆	屎	屓	
	9B9E		屐	屏	孱	屬											
屮	9B9E						屮										
山	9B9E							屺	岑	屹	岌	岑	岔	妛	岫	岼	岶
	9BAE	岾	岷	峅	岾	峇	峙	峩	峡	峺	峭	嶌	峪	崋	崕	崗	嵜
	9BBE	崟	崛	崑	崔	崢	崚	崙	崘	嵌	嵒	嵎	嵋	嵬	嵳	嵼	嶇
	9BCE	嶄	嶂	嶢	嶝	嶬	嶮	嶽	嶾	嶷	嶼	嶲	巍	巓	巒	巖	
巛	9BCE																巛
工	9BDE	巫															
巳	9BDE		巳	巵													
巾	9BDE				帋	帚	帙	帑	帛	帶	帷	幄	幃	幀	幎	幗	幔
	9BEE	幟	幢	幣	幇												
干	9BEE					幵	并										
幺	9BEE							幺	麼								
广	9BEE									广	庠	廁	廂	廈	廏	廄	
	9C3F		廖	廣	廝	廚	廛	廢	廡	廨	廩	廬	廱	廳	廰		
廴	9C3F															廴	廸
廾	9C4F	廾	弃	弉	彝	彜											
弋	9C4F						弋	弍									
弓	9C4F								弖	弩	弭	弸	弼	彈	彌	彎	弯
彑	9C5F	彑	彖	彗	彙												
彡	9C5F					彡	彭										
彳	9C5F							彳	彷	徃	徂	彿	徊	很	徑	徇	從
	9C6F	徙	徘	徠	徨	徭	徼										
心	9C6F							忖	忻	忤	忸	忱	忝	悳	忿	怡	恠
	9C80	怙	怐	怩	怎	怱	怛	怕	怫	怦	怏	怺	恚	恁	恪	恣	悁
	9C90	悒	悧	悩	悤	悖	悈	悔	悟	悶	悽	悁	悍	惧	惃	悚	

	Shift JIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
心	9C9E		悄	悛	悖	悗	悒	悧	悋	惡	悸	惠	惓	悴	忰	悽	惆
	9CAE	悵	惘	慍	愕	愆	惶	惷	愀	惴	惺	愃	愡	惻	惱	愍	愎
	9CBE	慇	愾	愨	愧	慊	愿	愼	愬	愴	愽	慂	慄	慳	慷	慘	慙
	9CCE	慚	慫	慴	慯	慥	慱	慟	慝	慓	慵	憙	憖	憇	憬	憔	憚
	9CDE	憊	憑	憫	憮	懌	懊	應	懷	懈	懃	懆	憺	懋	罹	懍	懦
	9CEE	懣	懶	懺	懴	懿	懽	懼	懾	戀							
戈	9CEE										戈	戉	戍	戌	戔	戛	
	9D3F		戞	戡	截	戮	戰	戲	戳								
戸	9D3F									扁							
手	9D3F										扎	扞	扣	扛	扠	扨	扼
	9D4F	抂	抉	找	抒	抓	抖	拔	抃	抔	拗	拑	抻	拏	拿	拆	擔
	9D5F	拈	拜	拌	拊	拂	拇	抛	拉	挌	拮	拱	挧	挂	挈	拯	拵
	9D6F	捐	挾	捍	搜	捏	掖	掎	掀	掫	捶	掣	掏	掉	掟	掵	捫
	9D80	捩	掾	揩	揀	揆	揣	揉	插	揶	揄	搖	搴	搆	搓	搦	搶
	9D90	攝	搗	搨	搏	摧	摯	摶	摎	攪	撕	撓	撥	撩	撈	撼	
	9D9E		據	擒	擅	擇	撻	擘	擂	擱	擧	舉	擠	擡	抬	擣	擯
	9DAE	攬	擶	擴	擲	擺	攀	擽	攘	攜	攅	攤	攣	攫			
攴	9DAE														攴	攵	攷
	9DBE	收	攸	畋	效	敖	敕	敍	敘	敞	敝	敲	數	斂	斃	變	
斗	9DBE																斛
	9DCE	斟															
斤	9DCE		斫	斷													
方	9DCE				旃	旆	旁	旄	旌	旒	旛	旙					
无	9DCE												无	旡			
日	9DCE														旱	杲	昊
	9DDE	昃	旻	杳	昵	昶	昴	昜	晏	晄	晉	晁	晞	晝	晤	晧	晨
	9DEE	晟	晢	晰	暃	暈	暎	暉	暄	暘	暝	曁	暹	曉	暾	暼	
	9E3F		曄	暸	曖	曚	曠	昿	曦	曩							
曰	9E3F										曰	曵	曷				
月	9E3F													朏	朖	朞	朦
	9E4F	朧	霸														
木	9E4F			朮	朿	朶	杁	朸	朷	杆	杞	杠	杙	杣	杤	枉	杰
	9E5F	枩	杼	杪	枌	枋	枦	枡	枅	枷	柯	枴	柬	枳	柩	枸	柤
	9E6F	柞	柝	柢	柮	枹	柎	柆	柧	檜	栞	框	栩	桀	桍	栲	桎

	Shift JIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
木	9E80	梳	栫	桙	档	桷	桿	梟	梏	梭	梔	條	梛	梃	檮	梹	桴
	9E90	梵	梠	梺	椏	梍	桾	椁	棊	椈	棘	椢	椦	棡	椌	棍	
	9E9E		棔	棧	棕	椶	椒	椄	棗	棣	椥	棹	棠	棯	椨	椪	椚
	9EAE	椣	椡	棆	楹	楷	楜	楸	楫	楔	楾	楮	椹	楴	椽	楙	椰
	9EBE	楡	楞	楝	榁	楪	榲	榮	槐	榿	槁	槓	榾	槎	寨	槊	槝
	9ECE	榻	槃	榧	樮	榑	榠	榜	榕	榴	槞	槨	樂	樛	槿	權	槹
	9EDE	槲	槧	樅	榱	樞	槭	樔	槫	樊	樒	櫁	樣	樓	橄	樌	橲
	9EEE	樶	橸	橇	橢	橙	橦	橈	樸	樢	檐	檍	檠	檄	檢	檣	
	9F3F		檗	蘗	檻	櫃	櫂	檸	檳	檬	櫞	櫑	櫟	檪	櫚	櫪	櫻
	9F4F	欅	蘖	櫺	欒	欖	鬱	欟									
欠	9F4F								欸	欷	盜	欹	飮	歇	歃	歉	歐
	9F5F	歙	歔	歛	歟	歡											
止	9F5F						歸										
歹	9F5F							歹	歿	殀	殄	殃	殍	殘	殕	殞	殤
	9F6F	殪	殫	殯	殲	殱											
殳	9F6F						殳	殷	殼	毆							
毋	9F6F										毋	毓					
毛	9F6F												毟	毬	毫	毳	毯
	9F80	麾	氈														
氏	9F80			氓													
气	9F80				气	氛	氤	氣									
水	9F80								汞	汕	汢	汪	沂	沍	沚	沁	沛
	9F90	汾	汨	汳	沒	沐	泄	泱	泓	沽	泗	泅	泝	沮	沱	沾	
	9F9E		沺	泛	泯	泙	泪	洟	衍	洶	洫	洽	洸	洙	洵	洳	洒
	9FAE	洌	浣	涓	浤	浚	浹	浙	涎	涕	濤	涅	淹	渕	渊	涵	淇
	9FBE	淦	涸	淆	淬	淞	淌	淨	淒	淅	淺	淙	淤	淕	淪	淮	渭
	9FCE	湮	渮	渙	湲	湟	渾	渣	湫	渫	湶	湍	渟	湃	渺	湎	渤
	9FDE	滿	渝	游	溂	溪	溘	滉	溷	滓	溽	溯	滄	溲	滔	滕	溏
	9FEE	溥	滂	溟	潁	漑	灌	滬	滸	滾	漿	滲	漱	滯	漲	滌	
	E03F		漾	漓	滷	澆	潺	潸	澁	澀	潯	潛	濳	潭	澂	潼	潘
	E04F	澎	澑	濂	潦	澳	澣	澡	澤	澹	濆	澪	濟	濕	濬	濔	濘
	E05F	濱	濮	濛	瀉	瀋	濺	瀑	瀁	瀏	濾	瀛	瀚	潴	瀝	瀘	瀟
	E06F	瀰	瀾	瀲	灑	灣											
火	E06F						炙	炒	炯	烱	炬	炸	炳	炮	烟	烋	烝

	Shift JIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
火	E080	烙	焉	烽	焜	焙	煥	煕	熙	煦	煢	煌	煖	煬	熏	燻	熄
	E090	熕	熨	熬	燗	熹	熾	燒	燉	燔	燎	燠	燬	燧	燵	燼	
	E09E		燹	燿	爍	爐	爛	爨									
爪	E09E								爭	爬	爰	爲					
爻	E09E												爻	爼			
爿	E09E														爿	牀	牆
	E0AE	牋	牘														
牛	E0AE			牴	牾	犂	犁	犇	犒	犖	犢	犠					
犬	E0AE												犹	犲	狃	狆	狄
	E0BE	狎	狒	狢	狠	狡	狭	狷	倏	猗	猊	猜	猖	猝	猴	猯	猩
	E0CE	猥	猾	獎	獏	默	獗	獪	獨	獰	獣	獵	獻	獺			
王	E0CE														珈	珙	珖
	E0DE	玻	珀	珥	珮	珞	璢	琅	瑯	琥	琣	琲	琺	瑕	瑾	瑟	瑙
	E0EE	瑁	瑜	瑩	瑰	瑣	瑪	瑶	瑾	璋	璞	璧	瓊	瓏	瓔	珱	
瓜	E13F		瓠	瓣													
瓦	E13F				瓧	瓩	甕	甦	甬	甭	甮	甯	甎	甕	甕	甌	甎
	E14F	甍	甕	甓													
甘	E14F				甞												
生	E14F					甦											
用	E14F						甬										
田	E14F							畚	畠	畋	畊	畉	畛	畝	畚	畝	畤
	E15F	畧	畫	畛	畸	當	疆	疇	畴	疊	疊	疊					
疒	E15F												疔	疚	疝	疥	疣
	E16F	痂	疳	痃	疵	疽	疸	疼	疱	痍	痊	痒	痙	痣	痞	痾	痿
	E180	痼	痰	痺	痲	痲	痳	瘋	瘍	瘉	瘟	瘧	瘠	瘡	瘢	瘤	瘴
	E190	瘰	瘻	癇	癈	癆	癌	癘	癡	癢	癨	癩	癪	癰	癬	癲	
	E19E		癪														
癶	E19E			癶	癸	發											
白	E19E						皂	皃	皈	皋	皎	皖	皓	皙	皚		
皮	E19E															皰	皺
	E1AE	皹	皹	皺													
皿	E1AE				盂	盍	盖	盒	盞	盡	盥	盧	盪	蘯			
目	E1AE														盼	眈	眇
	E1BE	眄	眩	眤	眞	眥	眦	眛	眷	眸	睇	睚	睨	睫	睛	睥	睿

	Shift JIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
目	E1CE	睾	睹	瞎	瞋	瞑	瞠	瞞	瞰	瞶	瞹	瞿	瞼	瞽	瞻	瞳	瞿
	E1DE	矗	矚														
矛	E1DE			矜													
矢	E1DE				矣	矮											
石	E1DE						砿	砌	砒	礦	砠	礪	硅	碎	砽	碪	硼
	E1EE	碚	碌	碣	碵	碪	磑	磴	磆	磋	磔	碾	碼	磅	磊	磬	
	E23F		磧	磚	磽	磴	磲	礒	礑	礙	礬	礫					
示	E23F												祀	祠	祇	祟	祚
	E24F	祕	祓	祺	祿	禊	禍	禧	齋	禪	禮	禳					
禺	E24F												禹	禺			
禾	E24F														秉	秕	秧
	E25F	秬	秡	秣	稈	稍	稘	稙	稠	稟	禀	稱	稻	稾	稷	稼	穂
	E26F	穉	穡	穢	穩	龝	穰										
穴	E26F							穹	窄	窈	窗	窕	窘	窖	窩	竈	窰
	E280	窶	窺	竄	窿	邃	竇	竊									
立	E280								竚	竡	竚	竰	竕	竚	竝	竡	竢
	E290	竦	竭	竰													
竹	E290				笂	笏	笊	笆	笳	笘	笙	笞	笵	笨	笶	筐	
	E29E		筺	笄	筍	笋	筌	筅	筵	筥	筴	筧	筰	筱	筬	筮	箝
	E2AE	箘	箙	箍	箜	箒	箸	箭	箏	筝	箙	箙	篁	篌	篏	箴	篆
	E2BE	篝	篩	簔	簔	篦	篥	籠	簀	簇	簑	篳	篷	簗	簍	篶	簀
	E2CE	簧	簪	簟	簷	簫	簽	籌	籃	籔	簇	籀	籐	籐	籟	籤	籤
	E2DE	籥	籬														
米	E2DE			粁	粗	粕	粤	粭	粢	粨	粡	粨	粳	粲	粱	粮	粹
	E2EE	粽	糀	糅	糘	糘	糯	糜	糢	鬻	糯	糲	糶	糶			
糸	E2EE														糺	紆	
	E33F		紂	紜	紕	紊	絅	紘	紮	絏	紿	紂	絆	絳	絖	絎	絲
	E34F	絨	絮	絏	絣	經	綉	絛	綏	絽	綛	綺	綮	綣	綵	緇	綽
	E35F	綫	總	綢	綯	縣	綸	綟	綰	緘	緝	緤	緞	緻	緲	緡	縅
	E36F	縊	縣	縡	縒	縱	縟	縉	縋	縢	繆	繩	縻	縵	縹	繃	縷
	E380	繆	繻	繧	繝	繖	繞	繙	繚	繹	繪	繩	繼	繻	繧	繚	繽
	E390	辮	繿	纈	纉	續	纒	纈	纡	纔	纖	纎	纛	纜			
缶	E390														缸	缺	
	E39E		罅	罌	罍	罐	罐										

	Shift JIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
网	E39E							网	罕	罔	罘	罟	罠	罨	罩	罧	罸
	E3AE	羂	羆	羃	羈	羇											
羊	E3AE						羌	羔	羞	羝	羚	羣	羯	羲	羹	羮	羶
	E3BE	羸	譱														
羽	E3BE			翅	翆	翊	翕	翔	翡	翦	翩	翳	翹	飜			
老	E3BE														耆	耄	耋
耒	E3CE	耒	耘	耙	耜	耡	耨										
耳	E3CE							耿	耻	聊	聆	聒	聘	聚	聟	聢	聨
	E3DE	聳	聲	聰	聶	聹	聽										
聿	E3DE							聿	肄	肆	肅						
肉	E3DE											肛	肓	肚	肭	冐	肬
	E3EE	胛	胥	胙	胝	胄	胚	胖	脉	胯	胱	脛	脩	脣	脯	腋	
	E43F		隋	腆	脾	腓	腑	胼	腱	腮	腥	腦	腴	膃	膈	膊	膀
	E44F	膂	膠	膕	膤	膣	腟	膓	膩	膰	膵	膾	膸	膽	臀	臂	膺
	E45F	臉	臍	臑	臙	臘	臈	臚	臟	臠							
臣	E45F										臧						
至	E45F											臺	臻				
臼	E45F													臾	舁	舂	舅
	E46F	與	舊														
舌	E46F			舍	舐	舖											
舟	E46F						舩	舫	舸	舳	艀	艙	艘	艝	艚	艟	艤
	E480	艢	艨	艪	艫	舮											
艮	E480						艱										
色	E480							艷									
艸	E480								艸	艾	芍	芒	芫	芟	芻	芬	苡
	E490	苣	苟	苒	苴	苳	苺	莓	范	苻	苹	苞	茆	苜	茉	苙	
	E49E		茵	茴	茖	茲	茱	荀	茹	荐	荅	茯	茫	茗	茘	莅	莚
	E4AE	莪	莟	莢	莖	茣	莎	莇	莊	荼	莵	荳	荵	莠	莉	莨	菴
	E4BE	萓	菫	菎	菽	萃	菘	萋	菁	菷	萇	菠	菲	萍	萢	萠	莽
	E4CE	萸	蔆	菻	葭	萪	萼	蕚	蒄	葷	葫	蒭	葮	蒂	葩	葆	萬
	E4DE	葯	葹	萵	蓊	葢	蒹	蒿	蒟	蓙	蓍	蒻	蓚	蓐	蓁	蓆	蓖
	E4EE	蒡	蔡	蓿	蓴	蔗	蔘	蔬	蔟	蔕	蔔	蓼	蕀	蕣	蕘	蕈	
	E53F		蕁	蘂	蕋	蕕	薀	薤	薈	薑	薊	薨	蕭	薔	薛	藪	薇
	E54F	薜	蕷	蕾	薐	藉	薺	藏	薹	藐	藕	藝	藥	藜	藹	蘊	蘓

	Shift JIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
艸	E55F	蘋	藾	蘭	蘆	蘢	蘇	蘊	蘿								
虍	E55F									虍	虒	虔	號	虧			
虫	E55F														虱	蚓	蚣
	E56F	蚩	蚪	蚋	蚌	蚶	蚯	蛄	蛆	蛐	蛉	蠣	蛹	蛔	蛞	蛩	蛰
	E580	蛟	蛛	蛯	蜒	蜆	蜈	蜀	蜃	蛻	蜑	蜉	蜍	蛹	蜊	蜴	蜿
	E590	蜷	蜻	蜥	蜩	蜚	蝠	蝟	蝸	蝌	蝎	蝴	蝗	蝨	蝮	蝙	
	E59E		蝓	蝣	蝪	蠅	螢	螟	螂	螯	蟋	蟲	蟀	蟐	雖	螫	蟄
	E5AE	螳	蟇	蟆	螻	蟯	蟲	蟠	蠏	蠍	蟾	蟶	蟷	蠑	蠖	蠍	蠖
	E5BE	蠕	蠢	蠡	蠱	蠶	蠹	蠭	蠻								
血	E5BE									衄	衂						
行	E5BE											銜	衙	衛	衢		
衣	E5BE															衫	袁
	E5CE	衾	衰	袒	衽	袹	衲	袂	袗	袒	袮	袹	袢	袍	袤	袈	袿
	E5DE	袱	袴	衍	裔	裘	裙	裝	裹	褂	裼	裴	裨	裲	褄	褌	褊
	E5EE	褓	褒	褞	褥	褪	褫	襠	襄	褻	褶	褸	褌	褝	襠	襞	
	E63F		襦	襤	襁	襪	襷	襴	襷								
覀	E63F									覀	覃	覈	覊				
見	E63F													覓	覗	覡	覩
	E64F	覦	覬	覲	覯	覺	覽	覿	觀								
角	E64F									觚	觜	觝	觧	觴	觸		
言	E64F															訃	訖
	E65F	訐	訌	訛	訝	訥	訶	詁	詛	詒	詆	詈	詼	詭	詬	詢	詆
	E66F	誂	誄	誨	誡	誑	誥	誦	誚	誣	諄	諍	諂	諚	諫	諳	諧
	E680	諤	諱	謔	諠	諢	諷	諞	諛	謌	謇	謚	謦	謏	謐	謗	謠
	E690	謳	鞫	謦	謫	謾	謨	譁	譌	譏	譎	證	譖	譖	譚	譫	
	E69E		譟	譬	譯	譴	譽	讀	讌	讎	讒	讓	讖	讙	讚		
谷	E69E															豸	豁
	E6AE	谿															
豆	E6AE		豈	豌	豎	豐											
豕	E6AE						豕	豢	豬								
豸	E6AE									豸	豺	貂	貉	貊	貘	貍	貎
	E6BE	貔	貅	貘													
貝	E6BE				賊	賃	貪	貽	貲	貳	貳	貶	賈	賁	賤	賣	賚
	E6CE	賽	賺	賻	贄	贅	贊	贇	贏	贍	贔	齎	贓	賍	贔	贖	

	Shift JIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
赤	E6CE																赧
	E6DE	赭															
走	E6DE		赱	赳	趁	趙											
足	E6DE						跂	趾	趺	跏	跚	跖	跌	跛	跋	跪	跫
	E6EE	跟	跣	跼	踈	踉	跿	踝	踞	踐	踟	蹂	踵	踰	踴	蹊	
	E73F		蹇	蹉	蹌	蹐	蹈	蹙	蹤	蹠	踪	蹣	蹕	蹶	蹲	蹼	躁
	E74F	躇	躅	躄	躋	躊	躓	躑	躔	躙	躪	躡					
身	E74F												躬	躰	軆	躱	躾
	E75F	軅	軈														
車	E75F			軋	軛	軣	軼	軻	軫	軾	輊	輅	輕	輒	輙	輓	輜
	E76F	輟	輛	輌	輦	輳	輻	輹	轅	轂	輾	轌	轉	轆	轎	轗	轜
	E780	轢	轣	轤													
辛	E780				辜	辟	辣	辭	辯								
辶	E780									辷	迚	迥	迢	迪	迯	邇	迴
	E790	逅	迹	迺	逑	逕	逡	逍	逞	逖	逋	逧	逶	逵	逹	迸	
	E79E		遏	遐	遑	遒	逎	遉	逾	遖	遘	遞	遨	遯	遶	隨	遲
	E7AE	邂	遽	邁	邀	邊	邉	邏									
邑	E7AE								邨	邯	邱	邵	郢	郤	扈	郛	鄂
	E7BE	鄒	鄙	鄲	鄰												
酉	E7BE					酊	酖	酘	酣	酥	酩	酳	酲	醋	醉	醂	醢
	E7CE	醫	醯	醪	醵	醴	醺	釀	釁								
采	E7CE									釉	釋						
里	E7CE											釐					
金	E7CE												釖	釟	釡	釛	釼
	E7DE	釵	釶	鈞	釿	鈔	鈬	鈕	鈑	鉞	鉗	鉅	鉉	鉤	鉈	銕	鈿
	E7EE	鉋	鉐	銜	銖	銓	銛	鉚	鋏	銹	銷	鋩	錏	鋺	鍄	錮	
	E83F		錙	錢	錚	錣	錺	錵	錻	鍜	鍠	鍼	鍮	鍖	鎰	鎬	鎭
	E84F	鎔	鎹	鏖	鏗	鏨	鏥	鏘	鏃	鏝	鏐	鏈	鏤	鐚	鐔	鐓	鐃
	E85F	鐇	鐐	鐶	鐫	鐵	鐡	鐺	鑁	鑒	鑄	鑛	鑠	鑢	鑞	鑪	鈩
	E86F	鑰	鑵	鑷	鑽	鑚	鑼	鑾	钁	鑿							
門	E86F										閂	閇	閊	閔	閖	閘	閙
	E880	閠	閨	閧	閭	閼	閻	閹	閾	闊	濶	闃	闍	闌	闕	闔	闖
	E890	關	闡	闥	闢												
阜	E890					阡	阨	阮	阯	陂	陌	陏	陋	陷	陜	陞	

	Shift JIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
阜	E89E		陜	陟	陦	陲	陬	隍	隘	隕	隗	險	隧	隱	隲	隰	隴
隶	E8AE	隶	隸														
隹	E8AE			隹	雎	雋	雉	雍	襍	雜	霍	雕					
雨	E8AE												雹	霄	霆	霈	霓
	E8BE	霎	霑	霏	霖	霙	霤	霪	霰	霹	霽	霾	靄	靆	靈	靂	靉
青	E8CE	靜															
非	E8CE		靠														
面	E8CE			靤	靦	靨											
革	E8CE						勒	靫	靱	靹	鞅	靼	鞁	靺	鞆	鞋	鞏
	E8DE	鞐	鞜	鞨	鞦	鞣	鞳	鞴	韃	韆	韈						
韋	E8DE											韋	韜				
韭	E8DE													韭	齏	韲	
音	E8DE																竟
	E8EE	韶	韵														
頁	E8EE			頏	頌	頸	頤	頡	頷	頽	顆	顏	顋	顫	顯	顰	
	E93F		顱	顴	顳												
風	E93F					颪	颯	颱	颶	飄	飃	飆					
食	E93F												飩	飫	餃	餉	餒
	E94F	餔	餘	餡	餝	餞	餤	餠	餬	餮	餽	餾	饂	饉	饅	饐	饋
	E95F	饑	饒	饌	饕												
首	E95F					馗	馘										
香	E95F							馥									
馬	E95F								馭	馮	馼	駟	駛	駝	駘	駑	駭
	E96F	駮	駱	駲	駻	駸	騁	騏	騅	駢	騙	騫	騷	驅	驂	驀	驃
	E980	騾	驕	驍	驛	驗	驟	驢	驥	驤	驩	驫	驪				
骨	E980													骭	骰	骼	髀
	E990	髏	髑	髓	體												
高	E990					髞											
髟	E990						髟	髢	髣	髦	髯	髫	髮	髴	髱	髷	
	E99E		髻	鬆	鬘	鬚	鬟	鬢	鬣								
鬥	E99E									鬥	鬧	鬨	鬩	鬪	鬮		
鬯	E99E															鬯	
鬲	E99E																鬲
鬼	E9AE	魄	魃	魏	魍	魎	魑	魘									

	Shift JIS	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
魚	E9AE								魴	鮓	鮃	鮑	鮖	鮗	鮟	鮠	鮨
	E9BE	鮴	鮹	鯊	鯏	鯑	鯒	鯓	鯔	鯣	鯢	鯤	鯀	鯵	鯴	鯫	鯱
	E9CE	鯰	鯱	鯷	鯵	鰓	鰌	鰆	鰈	鰒	鰕	鰹	鰛	鰥	鰤	鰡	鰰
	E9DE	鰌	鰊	鰲	鰾	鰾	鱚	鱠	鱧	鱶	鱸						
鳥	E9DE											鳧	鳬	鳰	鳳		
	E9EE	鳳	鴃	鴆	鴦	鴛	鴣	鴟	鵄	鴕	鴒	鵁	鵠	鵜	鵡		
	EA3F		鵝	鵞	鵩	鵑	鵐	鵙	鵲	鶉	鶇	鶫	鶚	鶺	鶯	鶲	鶴
	EA4F	鶲	鶏	鷁	鶻	鶸	鶺	鷆	鷏	鷂	鷙	鷓	鷸	鷦	鷭	鷯	鷲
	EA5F	鸚	鸛	鸞													
鹵	EA5F				鹵	鹹	鹽										
鹿	EA5F							麁	麈	麋	麕	麒	麕	麗	麝		
麥	EA5F															麥	麩
	EA6F	麸	麺	麭													
麻	EA6F				靡												
黄	EA6F					黌											
黍	EA6F						黎	黏	黝								
黒	EA6F									黔	黜	點	黝	黠	黟	黨	黯
	EA80	黴	黶	黷													
黹	EA80				黹	黻	黼										
黽	EA80							黽	鼇	鼈							
皷	EA80										皷	鼕					
鼠	EA80												鼬	鼬			
鼻	EA80														鼾		
齊	EA80															齊	
齒	EA80																齒
	EA90	齔	齣	齟	齠	齢	齦	齧	齬	齪	齷	齲	齶				
龍	EA90													龕			
龜	EA90														龜		
龠	EA90															龠	

10.10 2D Code

GS1 DataMatrix (ECC200)

ESC+2D50

HEX code	ESC	2D50	Parameter
	<1B>16	<32>16<44>16<35>16<30>16	,aa,bb,ccc,ddd
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]
Specifies GS1 DataMatrix (ECC200) of 2D code.

[Format] Setting portion
<2D50>,aa,bb,ccc,ddd
●Parameter
a [Cell width] = 01 to 16 dots
b [Cell pitch] = 01 to 16 dots
c [Number of cells per line] = 000 fixed
d [Number of cell line] = 000 fixed

[Format] Data portion
<DN>mmmm,n~n
●Parameter
m [Data number] = 0001 to 3116

n [Print data] = Data
When selecting [7EH], make sure to specify [7EH,7EH].
* When designating the parameter other than specified or when the number of print data is not matching, printing will not be performed.

[Example] Cell width: 3 dots Cell pitch: 3 dots
<A>
<V>100<H>200**<2D50>,03,03,000,000**
<DN>0010,0123456789
<Z>

[Note]
1. When designating the parameter other than specified or when the number of print data is not matching, printing will not be performed.
2. When specifying the print format, make sure to have more than 2mm margins all around GS1 DataMatrix (ECC200) to be read with
a scanner.
3. When print data is [7EH], specify [7EH,7EH]. Data number becomes [0002].
4. Setting [Data number] to its maximum value may cause a command error depending on the pattern of print data.

	Data format	Data number
Data format	Numeric	3116
	Alphanumeric	2335
	Binary (01H to FFH)	1556

					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								

GS1 DataMatrix (ECC200) is settable within the range of 01H to FFH.
When selecting [7EH], specify [7EH, 7EH].

11. Composite Symbol Commands

11.1 Composite Symbol

Composite Symbol	ESC+EU

HEX code	ESC	EU	Parameter
	<1B>16	<45>16<55>16	aabb(cc)(ddd)n~n
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]
Specifies composite symbol.

[Format 1]
<EU>aabbccn~n

●Parameter

a [1D barcode symbology] = 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 Composite(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 [Minimum bar width] = 01 to 12 dots

c [Segment width] = 02 to 22 dots
(Supporting GS1 DataBar Expanded Composite(CC-A/CC-B) only. Omit others.)

n [Print data] = Barcode data

Designable maximum digit number for 1D data

GS1 DataBar Composite(CC-A/CC-B)	13-digit
GS1 DataBar Truncated Composite(CC-A/CC-B)	13-digit
GS1 DataBar Stacked Composite(CC-A/CC-B)	13-digit
GS1 DataBar Stacked Omni-Directional Composite(CC-A/CC-B)	13-digit
GS1 DataBar Limited Composite (CC-A/CC-B)	13-digit
GS1 DataBar Expanded Composite(CC-A/CC-B)	74-digit
UPC-A Composite(CC-A/CC-B)	11-digit
UPC-E Composite(CC-A/CC-B) Specify 1D data in the format of ”XX00000XXX”(X is variable portion)	Fixed 10-digit
EAN-13 Composite(CC-A/CC-B)	12-digit
EAN-8 Composite(CC-A/CC-B)	7-digit

[Note]
1. Check digit is automatically calculated and added.
2. To specify the print of composite symbol, delimit 1D data and 2D data with '｜'(7CH).
   e.g.) Data = 1D data ｜ 2D data
3. Specify 1D data from the 1st to the 16th digit of GS1 DataBar Expanded Composite(CC-A/CC-B).
4. For GS1 DataBar Expanded Composite(CC-A/CC-B), up to 74-digit of numeric including 1D data, and 41-digit of alphabet can be entered.
   (Up to 41-digit of alphanumeric including 1D data can be entered)
5. If the digit number specified is smaller than the maximum digit number for 1D data, this value will be zero filled at the front end. (Except GS1 DataBar Expanded Composite(CC-A/CC-B))
6. In 2D data, up to 338-digit can be entered. Depending on the barcode symbologies, maximum digit number can be entered may vary.

[Format 2]
<EU>aabbdddn~n

● Parameter

a [1D barcode symbology] = 11 : GS1-128 Composite (CC-A/CC-B)
12 : GS1-128 Composite (CC-C)

b [Minimum bar width] = 01 to 12 dots

ddd [Height of barcode] = 001 to 500 dots
Specify the value of [Height of barcode] when setting [Minimum bar width] to [01].
For example, if setting [Minimum bar width] to [03] and [Height of barcode] is [100],
[Height of barcode] will be 300 dots.

n [Print data] = Data

Designable maximum digit number for the sum of 1D and 2D data (Constraints on maximum digit number of 1D data)

GS1-128 Composite (CC-A/CC-B)	338-digit
GS1-128 Composite (CC-C)	2361-digit

Designable maximum digit number for 1D data

GS1-128 Composite (CC-A/CC-B)	48-digit
GS1-128 Composite (CC-C)	48-digit

* To specify the print of composite symbol, delimit 1D data and 2D data with '|'(7CH).
e.g.) Data = 1D data | 2D data
* To specify FNC1(GS) of GS1-128 Composite (CC-C)(PDF417 specification) as data, use '#'(23H).

[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 Composite(CC-A/CC-B/CC-C)(EU11,EU12) only.
2. If the correct value for 1D barcode symbology is not 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 minimum 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.

12. Graphic Commands

12.1 Graphic

Custom Graphics — ESC+G

HEX code	ESC	G	Parameter
	<1B>16	<47>16	abbbcccn~n
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]
Prints graphic images.

[Format]
<G>abbbcccn~n
●Parameter
a [Data specification by HEX and BIN]
H: HEX data Divide 8 bits data into 4 bits , and output it as HEX code corresponding to ASCII.
B: Binary data Outputs 8 bits data as one font data all at once.
b [Crosswise graphic area per byte] See the table below
c [Lengthwise graphic area per byte] See the table below
n [Graphic data]

[Example]
<A>
<V>50<H>50**<G>H02000288888888…8888**
<Q>2
<Z>

[Note]
1. Specification of “B” has a longer program description than that of “H”; on the other hand, its transfer data length is 50% shorter.
2. The Rotate <%> and Character Expansion <L> commands are enabled.

[Parameter Initial Value and Specified Range]

Model	Printable area	Max. bytes in crosswise direction	Max. bytes in lengthwise direction
TG308	Standard	80	300
	Expansion	100	300
TG312	Standard	120	360
	Expansion	150	360

12.2 Graphic

BMP File

ESC+GM

HEX code	ESC	GM	Parameter
	<1B>16	<47>16<4D>16	aaaaa,n~n
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]

Specifies the print or BMP file created by such as Paint Brush of Windows.

[Format]

<GM>aaaaa,n~n

● Parameter

a [Total bytes of BMP file]

n [Data]

[Example]

<A>

<V>50<H>50**<GM>04500,2000288888888…8888**

<Q>2

<Z>

[Note]

1. Data is sent in binary data (Outputs 8-bit data as 1 font data all at once). (BMP file size becomes the total bytes and BMP file data becomes the data.)
2. In BMP file, first 62-byte data is for the header part and the rest of data is compressed.
3. When [Total bytes of BMP 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. BMP 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 BMP compressed file.
   Make sure that the file extension is set to [BMP] before printing.
6. The Rotate <%> and Character Expansion <L> commands are enabled.
7. The Character Expansion <L> command must be sent right before this command.
8. Place the Rotation <%> command followed by the Character Expansion <L> command when using with this <GM> command.

12.3 Graphic

PCX File

ESC+GP

HEX code	ESC	GP	Parameter
	<1B>16	<47>16<50>16	aaaaa,n~n
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]
Specifies the print of PCX file created by such as Paint Brush of Windows.

[Format]
<GP>aaaaa,n~n
● Parameter
a [Total bytes of PCX file]
n [Data]

[Example]
<A>
<V>50<H>50**<GP>04500,XXXXXXXXXXXX**
<Q>2
<Z>

[Note]
1. Data is sent in binary data (Outputs 8-bit data as 1 font data all at once). (PCX file size becomes the total bytes and PCX file data becomes the data.)
2. In PCX file, first 128-byte data is for the header part and the rest of data is compressed.
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. The Rotate <%> and Character Expansion <L> commands are enabled.
7. Place the Character Expansion <L> command right before this <GP> command.
8. Place the Rotation <%> command followed by the Character Expansion <L> command when using with this <GP> command.

13.1 System

Print Speed

ESC+CS

HEX code	ESC	CS	Parameter
	<1B>16	<43>16<53>16	aa
Initial value	See the table below		

Validity and valid duration of command	When power switch is OFF	The set parameter is maintained.
	Validity within item	The set parameter is valid until a new command is specified.
	Validity between items	The set parameter is valid until a new command is specified.

[Function]
Specifies print speed.

[Format]
<CS>aa
● Parameter
a [Print speed] = See the table below

[Example]
<A>
<CS>3
<Z>

[Note]
1. Print speed specified by this command or by the setting through the printer LCD will be maintained.

[Tip]
1. If the value other than setting range is specified, command error will occur and print speed will not be changed.
2. Initial value is settable by default setting operation of the printer.

[Parameter Initial Value and Specified Range]

Model	Initial value	Parameter valid range	Print speed corresponding to parameter
TG308	6	2,3,4,5,6,7,8,9,10	2 : 2 inch/sec 3 : 3 inch/sec 4 : 4 inch/sec 5 : 5 inch/sec 6 : 6 inch/sec 7 : 7 inch/sec 8 : 8 inch/sec 9 : 9 inch/sec 10 : 10 inch/sec
TG312	6	2,3,4,5,6,7,8,9,10	

13.2 System

Print Darkness

ESC+#E

HEX code	ESC	#E	Parameter
	<1B>16	<23>16<45>16	ab
Initial value	See the table below		

Validity and valid duration of command	When power switch is OFF	The set parameter is maintained.
	Validity within item	The set parameter is valid until a new command is specified.
	Validity between items	The set parameter is valid until a new command is specified.

[Function]

Specifies the darkness level of print.

[Format]

<#E>ab

● Parameter

a	[Print darkness level]	=	1 to 3
b	[Print darkness]	=	A to F (Omissible) Use [A] under normal conditions. As for [Print darkness], choose from [A~F] depending on the media to be used.

[Example]

<A>

<#E>3

<Z>

[Note]

1. Print darkness specified by this command or by the setting through the printer LCD will be maintained.

[Tip]

1. If the value other than setting range is specified, command error will occur and print darkness will not be changed.
2. Initial value is settable by default setting operation of the printer.

[Initial Value and Specified Range of Parameter [a]]

Initial value	2 :	Normal
Parameter valid range	1 :	Light
	2 :	Normal
	3 :	Dark

13.3 System

Media Size (dots)

ESC+A1

HEX code	ESC	A1	Parameter
	<1B>16	<41>16<31>16	aaaabbbb
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter is valid until a new command is specified.
	Validity between items	The set parameter is valid until a new command is specified.

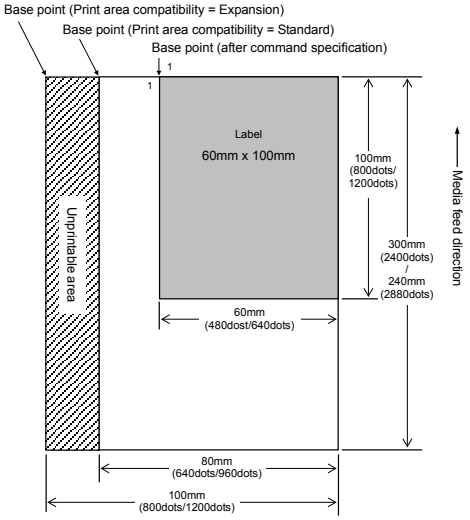
[Function]
Specifies the size of label.

[Format]
<A1>aaaabbbb
- Parameter

a [Height of label] = See the table below
b [Width of label] = See the table below

[Example]
<A>
<A1>08000640
<Z>

[Note]
1. If using the label smaller than the printhead width, use this command for specifying the label size and adjust the base reference point corresponding to the label size.
2. For specifying the label size, include the size of backing paper.
3. When the printable area is set to expansion in Service Mode, the width of label will be 100mm. Since the thermal head size is 80mm, 20mm on the left-hand side will be blank.



[Validity]

Model	Printable area	Height of label in dots	Width of label in dots
TG308	Standard	1 to 2400	1 to 640
	Expansion	1 to 2400	1 to 800
TG312	Standard	1 to 2880	1 to 960
	Expansion	1 to 2880	1 to 1200

13.4 System

Media Size (mm) ESC+A1

HEX code	ESC	A1	Parameter
	<1B>16	<41>16<31>16	aabbbccc
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter is valid until a new command is specified.
	Validity between items	The set parameter is valid until a new command is specified.

[Function]
Specifies the media size.

[Format]
<A1>aabbbccc

● Parameter

a	[Media type]	=	0T : Tag (Center hole tag, Side hole tag, Notched tag, I-mark tag, Not sensor) 0L : Label (I-mark label, Gap label, Not sensor)
b	[Height of media in mm]	=	See the table below
c	[Width of media in mm]	=	See the table below

[Example]
<A>
<A1>0T060042
<Z>
<A>
<I1>
<V>100<H>200<P>2<L>0304<XS>ABCDE
<Q>2
<Z>

[Note]
1. For specifying the media size, include the size of backing paper.
2. If the media setting on the printer side and [Media type] are not equal, a command error will occur.
3. If [Media size check] in expansion setting is enabled, the validity of setting on the printer side and the setting specified by the Media Size <A1> command will be checked. If their settings are not equal, a pitch size error will occur.
4. If a pitch size error occurs, the data received by the printer will be cleared. Check the Media Size <A1> command again and send the print data. The Media Size <A1> command can be omitted, but this command is required when printing multiple media.
5. When the use of sensor is prohibited, this command will be valid whether you select tag or label for [Media type].

[Validity]

Model	Media type	Print area compatibility	Height of media in mm	Width of media in mm
TG308	Tag	Standard	025 to 300	032 to 080
		Expansion	025 to 300	032 to 100
	Label	Standard	019 to 300	025 to 080
		Expansion	019 to 300	025 to 100
TG312	Tag	Standard	025 to 240	032 to 080
		Expansion	025 to 240	032 to 100
	Label	Standard	019 to 240	025 to 080
		Expansion	019 to 240	025 to 100

13.5 System

Base Reference Point Offset

ESC+A3

HEX code	ESC	A3	Parameter
	<1B>16	<41>16<33>16	VabbbbHcdddd
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is maintained.
	Validity within item	The set parameter is valid until a new command is specified.
	Validity between items	The set parameter is valid until a new command is specified.

[Function]

Establishes a new base reference point position for the current media. Go to the Advanced Mode through printer LCD for setting.

[Format]

<A3>VabbbbHcdddd

● Parameter

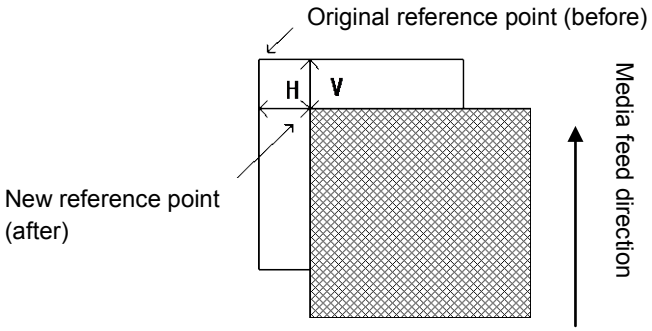
a	[Vertical reference point offset sign]	= ＋, － *Omissible
b	[Vertical reference point offset (No. of dots)]	= See the table below
c	[Horizontal reference point offset sign]	= ＋, － *Omissible
d	[Horizontal reference point offset (No. of dots)]	= See the table below

[Example]

<A>

<A3>V10H10

<Z>



[Note]

1. If changing the reference point and if it is located outside of printable area, printing may not be performed.
2. When changing the reference point through multiple label formats, correction will be made to all the formats.

[Tip]

1. If using this command while the base reference point is executed by Advanced Mode through the printer LCD, the value specified by this command will become effective.
2. Base reference point specified by this command will be stored in Advanced Mode of the printer LCD. As a result, the specified value will be maintained after turning off the printer.

[Specified Range]

Model	Print area compatibility	Horizontal reference point in dots	Vertical reference point in dots
TG308	Standard	1 to 640	1 to 2400
	Expansion	1 to 800	
TG312	Standard	1 to 960	1 to 2880
	Expansion	1 to 1200	

13.6 System

Reference Position

ESC+#

HEX code	ESC	#	Parameter
	<1B>16	<23>16	abbb
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is maintained.
	Validity within item	The set parameter is valid until a new command is specified.
	Validity between items	The set parameter is valid until a new command is specified.

[Function]

Specifies the reference position of print in vertical direction.

[Format]

<#>abbb

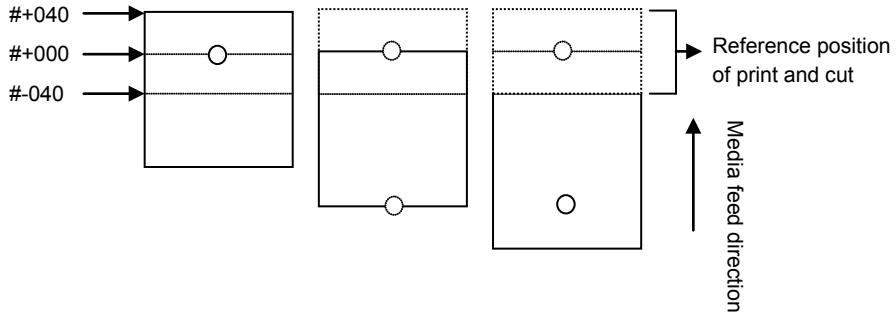
● Parameter

a [Moving direction] = + : Moves to media feed direction
- : Moves to the opposite side of media feed direction

b [Number of dots to move] = 000 to 400 dots

[Example]

<A>
<#>+040
<Z>



[Note]

1. For the tag (Center hole tag, Side hole tag and I-mark tag), the reference position of cut will be moved by changing the reference position.
2. This command can be specified for each media such as center hole tag, side hole tag and label.

13.7 System

Print End Position

ESC+EP

HEX code	ESC	EP	Parameter
	<1B>16	<45>16<50>16	Nil
Initial value	Nil		

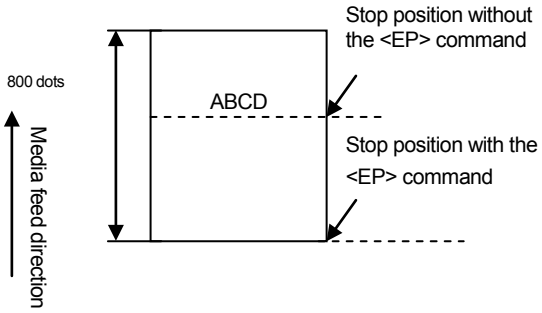
Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

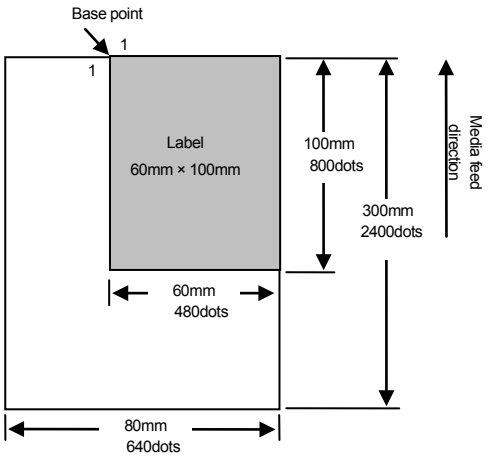
[Function]
Specifies the media stop position in the sensor invalid mode.

[Format]
<EP>

[Example]
<A>
<A1>08000480
<Z>
<A>
<V>100<H>200<P>2<L>0202<XM>ABCD
<Q>2
<EP>
<Z>

Example)





[Note]
1. Use this command in the sensor invalid mode.
2. Use this command in combination with the Media Size command <A1> (dots or mm specification).
3. When the Media Size <A1> command is specified in the Store Format <YS> command and the Store Form Overlay <&S> command: Make sure to use this <EP> command when specifying the Recall Format <YR> command and the Recall Form Overlay <&R> command.

13.8 System

Multiple Cuts

ESC+~(NULL)

HEX code	ESC	~ (NULL)	Parameter
	<1B>16	<7E>16 (<00>16)	aaaa
Initial value	aaaa=1		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter is valid until a new command is specified.
	Validity between items	The set parameter becomes the initial value at the next item <A>.

[Function]

Cuts a multi-part label at a specified interval within a print job.

[Format]

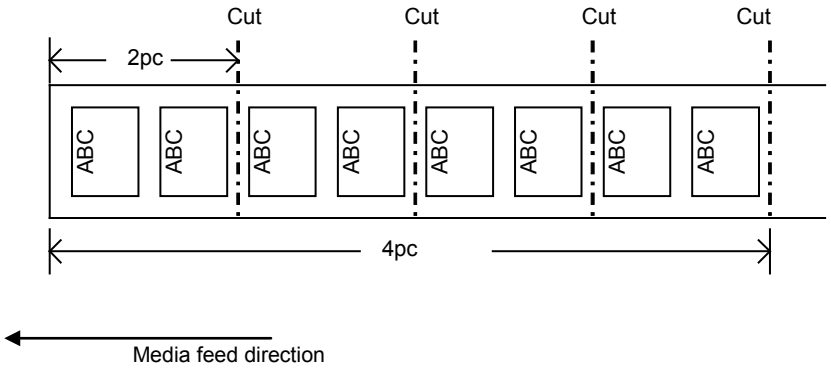
<~(NULL)>aaaa

- Parameter

a [Print quantity between each cut] = 0 to 9999

[Example]

<A>
<V>100<H>200<P>2<L>0202<XM>ABC
<Q>4
<~>2
<Z>



[Note]

1. The optional cutter must be installed and the printer configured for its use for this function to be valid.
2. If not using this command in Cutter Mode, the cut value will be 1.
3. If the cut value is a=0, the cutter is inactive.
4. Make sure that the product of the print quantity and the cut value does not exceed the maximum print quantity (999999).
5. Specify this command after the Print Quantity <Q> command. The Print Quantity <Q> command can specify the pieces to be cut.
6. This command cannot be used in combination with the Label Cut <~A> command.

13.9 System

Label Cut

ESC+~A

HEX code	ESC	~A	Parameter
	<1B>16	<7E>16<41>16	aaaa
Initial value	aaaa=1		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter is valid until a new command is specified.
	Validity between items	The set parameter becomes the initial value at the next item <A>.

[Function]

Cuts a multi-part label at a specified interval within a print job. It differs from the <ESC>~ command in that it does not interact with the quantity command.

[Format]

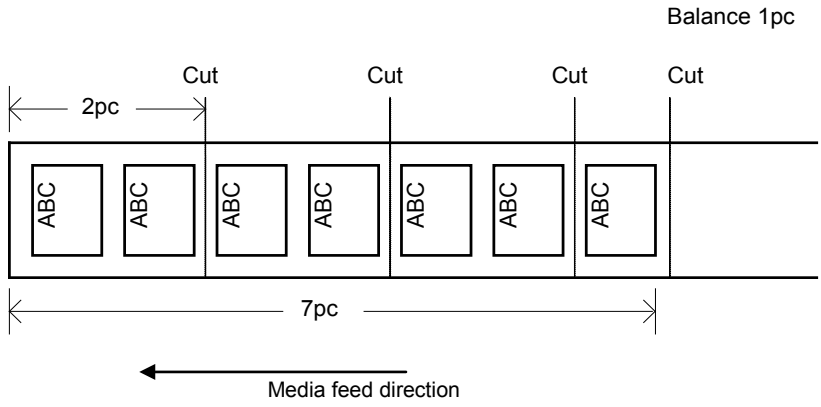
<~A>aaaa

● Parameter

a [Print quantity between each cut] = 0 to 9999

[Example]

<A>
<V>100<H>200<P>2<L>0202<XM>ABC
<~A>2
<Q>7
<Z>



[Note]

1. The optional cutter must be installed and the printer configured for its use for this function to be valid.
2. If not using this command in Cutter Mode, the cut value will be 1.
3. If the cut value is a=0, the cutter is inactive.
4. Specify this command before the Print Quantity <Q> command.
5. This command cannot be used in combination with the Multiple Cuts <~> command.

13.10 System

Media Ejection

ESC+EJ

HEX code	ESC	EJ	Parameter
	<1B>16	<45>16<4A>16	Nil
Initial value	Nil		

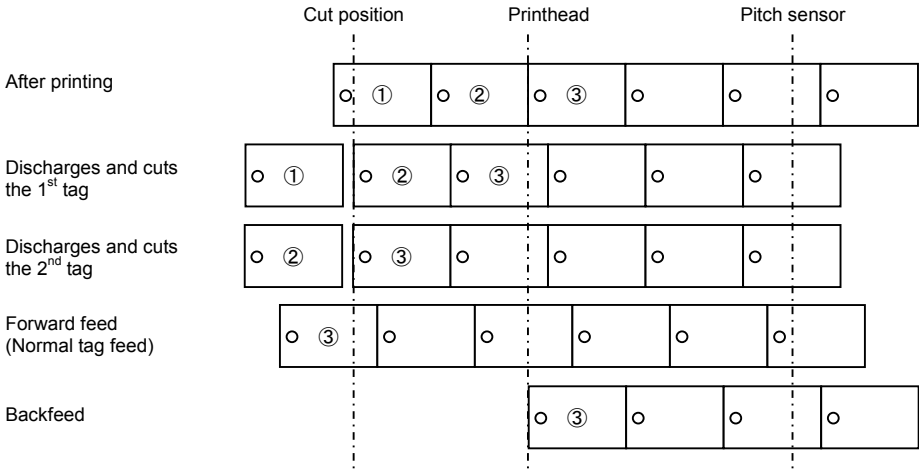
Validity and valid duration of command	When power switch is OFF	The set command is not maintained.
	Validity within item	The set command becomes invalid.
	Validity between items	The set command becomes invalid.

[Function]
Ejects the printed tag from the inside printer after print operation.

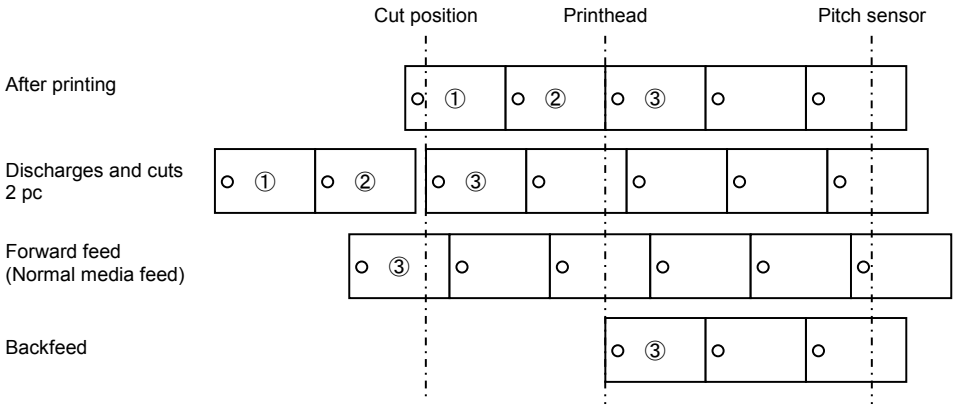
[Format]
<EJ>

[Example]
<A>
<EJ>
<Z>

Cutting motion enabled



Cutting motion disabled



[Note]
1. Place this command between the Start Code <A> and the Stop Code <Z> commands.
2. This command cannot be used in combination with other commands.
3. This command is enabled when the tag is remained inside the printer after print operation.
4. Media discharging motion may vary depending on the validity of cutting motion.

13.11 System

Batch Separator

ESC+I

HEX code	ESC	I	Parameter
	<1B>16	<49>16	a
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set command is not maintained.
	Validity within item	The set command is not maintained.
	Validity between items	The set command is not maintained.

[Function]

Generates a batch separator with an ink mark on the side of the first tag for easy sorting.

[Format]

<I>a

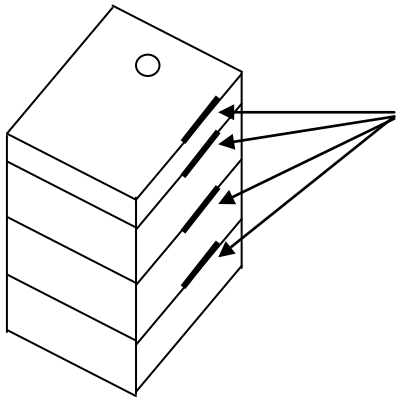
● Parameter

a [Batch separator] = 1 : Prints a black ink mark on the side of the first tag.
2 : The size of the first cut tag differs from the second cut tag.

[Example]

(1) For <I>1

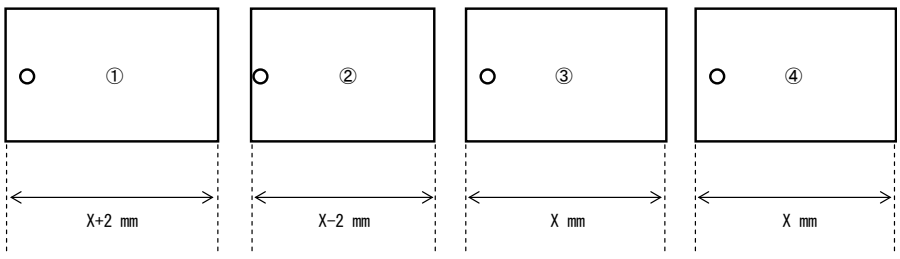
<A>
<I>1
<V>100<H>200<P>2<L>0202<XM>,ABCD
<Q>5
<Z>



Batch separator
(An ink mark is printed on the side of the first tag)

(2) For <I>2

<A>
<I>2
<V>100<H>200<P>2<L>0202<XM>,ABCD
<Q>5
<Z>



[Note]

1. For <I>1: When the Print Quantity <Q> command is set to [2] or more, only the first tag will be printed with batch separator.
2. For <I>2: It is impossible to issue a longer tag for the second tag. Do not specify the print quantity as [1] continuously.
3. For <I>2: 2mm from the end of the tag will be an unprintable area.
4. Pressing the feed key during sorting operation will not discharge the tag.
5. If an error (e.g. paper end error) occurs during sorting operation, the tags may not be sorted properly.

13.12 System

Clear

ESC+*

HEX code	ESC	*	Parameter
	<1B>16	<2A>16	a
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]
Clears individual memory and buffer.

[Format]
<*>a
● Parameter

a	[Memory section to be cleared]	=	Not specified	:	Single item receive buffer, editing buffer (No reprint) Multi item buffer, editing buffer (Clears JOB while printing)
			T	:	External character registration area
			&	:	Form overlay
			X	:	Clears all memory and buffers (Note) JOB is not cleared while printing.

[Example 1] Clears receive buffer and editing buffer
<A>
<*>
<Z>

[Example 2] Clears all memory and buffers
<A>
<*>X
<Z>

[Example 3] Clears external character registration area
<A>
<*>T
<Z>

[Note]
1. Place this command between the Start Code <A> command and the Stop Code <Z> command.
2. Sending [a=X] will clear all the data sent before the execution of this clear command. And also, registration of external character and form overlay will be cleared. In this case, the data that was analyzed while printing can not be cleared.

[Tip]
1. To send the next data, wait more than 100ms after sending this command.
2. Specification of this command while printing will not stop the print operation.

13.13 System

Offline	ESC+@

HEX code	ESC	@	Parameter
	<1B>16	<40>16	Nil
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]
Changes the printer from online to offline status.

[Format]
<@>

[Example]
<A>
<@>
<Z>

[Note]
1. Place this command between the Start Code <A> command and the Stop Code <Z> command.
2. In receive mode of the printer, specify single-item buffer mode.

13.14 System

Repeat	ESC+C

HEX code	ESC	C	Parameter
	<1B>16	<43>16	Nil
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set command is not maintained.
	Validity within item	The set command becomes invalid.
	Validity between items	The set command becomes invalid.

[Function]
Prints a duplicate of the last tag or label printed.

[Format]
<C>

[Example]
<A>
<C>
<Z>

[Note]
1. Turning off the printer will clear the print data; therefore, a duplicate of the previous label or tag will not be printed with this command.

[Tip]
1. To print a duplicate of format including the field of Sequential Numbering <F> command, the print data previously issued will be printed.

13.15 System

EEPROM Setup

ESC+PG

HEX code	ESC	PG	Parameter
	<1B>16	<50>16<47>16	abcdefghhijklmnooppqqrrstuvwxy
Initial value	See the table on the following page		

Validity and valid duration of command	When power switch is OFF	The set parameter is maintained.
	Validity within item	The set parameter is valid until a new command is specified.
	Validity between items	The set parameter is valid until a new command is specified.

[Function]
Registers the operation of the printer in EEPROM.

[Format]
<PG>abcdefghhijklmnooppqqrrstuvwxy
● Parameter
See the table on the following page.

[Example]
<A>
<PG><00 00 02 00 00 00 00 41 01 00 00 00 00 00 00 0C 80 03 40 00 00 00 00 00 00 00 00 00 00 00>16
<Z>

Parameter is described in HEX <00>16<00>16<02>16・・・・・・<00>16

[Note]
1. This command is not necessary in the normal print operation.
2. Printer operation settings specified by this command will remain in effect after turning off the printer.

[Tip]
1. Printer operation can be specified in the Service Mode through the printer LCD without using this command.

No	Item	Contents
a	Not used	00H Fixed
b	Not used	00H Fixed
c	Print speed (Initial value: 04H)	00H 2 inch/sec 01H 3 inch/sec 02H 4 inch/sec 03H 5 inch/sec 04H 6 inch/sec 05H 7 inch/sec 06H 8 inch/sec 07H 9 inch/sec 08H 10 inch/sec
d	Not used	00H Fixed
e	Not used	00H Fixed
f	Not used	00H Fixed
g	Not used	00H Fixed
h	Print darkness (Initial value: 41H)	41H A 42H B (Not used) 43H C (Not used) 44H D (Not used) 45H E (Not used) 46H F (Not used)
h	Print darkness level (Initial value: 02H)	01H Light 02H Normal 03H Dark
i	Not used	00H Fixed
j	Zero slash (Initial value: 00H)	00H Disable 01H Enable
k	Kanji code (Initial value: 00H)	00H JIS code 01H Shift JIS code
l	Not used	00H Fixed
m	Online feed (Initial value: 00H)	00H Disable 01H Enable
n	Character pitch (Initial value: 00H)	00H Fixed pitch 01H Proportional pitch
o	Height of media in dots	TG308 (Label) : [98H - 780H] (152 to 1920) (Tag) : [C8H - 780H] (200 to 1920) TG312 (Label) : [E4H - B40H] (228 to 2880) (Tag) : [12CH - B40H] (300 to 2880)
p	Width of media in dots	TG308 (Label) : [C8H - 280H] (200 to 640) (Tag) : [100H - 280H] (256 to 640) TG312 (Label) : [12CH - 3C0H] (300 to 960) (Tag) : [180H - 3C0H] (384 to 960)
q	Vertical print offset in dots (2-byte)	[00H,00H - 01H,90H] (0 to 400) [FFH,FFH - FEH,70H] (-1 to -400)
r	Horizontal print offset in dots (2-byte)	[00H,00H - 01H,90H] (0 to 400) [FFH,FFH - FEH,70H] (-1 to -400)
s	Not used	00H Fixed
t	Not used	00H Fixed
u	Not used	00H Fixed
v	Not used	00H Fixed
w	Not used	00H Fixed
x	Not used	00H Fixed
y	Buzzer (Initial value: 00H)	00H Yes 01H No

13.16 System

Flash ROM Setup

ESC+PC

HEX code	ESC	PC	Parameter
	<1B>16	<50>16<43>16	1) [a, b, c, d, ・・・y, z], 2) [aa, b]
Initial value	See the table on the following page		

Validity and valid duration of command		
	When power switch is OFF	The set parameter is maintained.
	Validity within item	The set parameter is valid until a new command is specified.
	Validity between items	The set parameter is valid until a new command is specified.

[Function]

Registers the operation of the printer in EEPROM.

[Format 1] When setting all the items

<PC>a,b,c,d,e,f,g,h,i1,i2,j,k,l,m,n,o,pppp,qqqq,rrrr,ssss,t,u,v,w,x,y,z

● Parameter

a [Setting item number] = F : Sets all the items

b・・・z [Setting contents] = See the table on the following page

[Format 2] When setting the specified items

<PC>aa,b

● Parameter

a [Setting item number] = 1 to 26

b [Setting contents] = See the table on the following page

[Example 1] When setting all the items

<A>

<PC>F,,,2,,,,,A,4,,1,0,,1,1,3000,2400,,,,,,,,1

<Z>

[Example 2] When setting the specified items

<A>

<PC>26,1

<Z>

[Note]

1. Go to the Service Mode through the printer LCD for configuration.
2. Printer operation settings specified by this command will remain in effect after turning off the printer.
3. The entire or partial parameter entries is omissible by using commas for total settings. Any commas that are omitted will result in those settings remaining as default.

No	Item No.	Item	Contents
b	1	Not used	0 Fixed
c	2	Not used	0 Fixed
d	3	Print speed (Initial value: 4)	0 2 inch/sec 1 3 inch/sec 2 4 inch/sec 3 5 inch/sec 4 6 inch/sec 5 7 inch/sec 6 8 inch/sec 7 9 inch/sec 8 10 inch/sec
e	4	Not used	0 Fixed
f	5	Not used	0 Fixed
g	6	Not used	0 Fixed
h	7	Not used	0 Fixed
i1	8	Print darkness (Initial value: A)	A B (Not used) C (Not used) D (Not used) E (Not used) F (Not used)
i2	9	Print darkness level (Initial value: 2)	1 Light 2 Normal 3 Dark
j	10	Not used	0 Fixed
k	11	Zero slash (Initial value: 1)	0 Disable 1 Enable
l	12	Kanji code (Initial value: 0)	0 JIS code 1 Shift JIS code
m	13	Not used	0 Fixed
n	14	Online feed (Initial value: 0)	0 Disable 1 Enable
o	15	Character pitch (Initial value: 1)	0 Fixed pitch 1 Proportional pitch
p	16	Height of media in dots	TG308 (Label) : 152 to 1920 (Tag) : 200 to 1920 TG312 (Label) : 228 to 2880 (Tag) : 300 to 2880
q	17	Width of media in dots	TG308 (Label) : 200 to 640 (Tag) : 256 to 640 TG312 (Label) : 300 to 960 (Tag) : 384 to 960
r	18	Vertical print offset in dots	0 to 400 -1 to -400
s	19	Horizontal print offset in dots	0 to 400 -1 to -400
t	20	Not used	0 Fixed
u	21	Not used	0 Fixed
v	22	Not used	0 Fixed
w	23	Not used	0 Fixed
x	24	Not used	0 Fixed
y	25	Not used	0 Fixed
z	26	Buzzer (Initial value: 0)	0 Yes 1 No

13.17 System

Line Feed	ESC+E

HEX code	ESC	E	Parameter
	<1B>16	<45>16	aaa
Initial value	aaa=0		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]
Specifies the line pitch and linefeed.

[Format]
<E>aaa
● Parameter
a [Number of dots between each line] = 0 to 999 dots

[Example]
<A>
<E>10
<V>100<H>200<P>2<L>0304<XM>ABCDE+CR
FGHIJ+CR
<Q>2
<Z>

[Note]
1. When CR(0DH) is specified, line feed based on line pitch will be performed.
2. The Rotate <%> command is enabled.
3. Line pitch can be changed with this command within item.
4. Specify this command before designating the consecutive print of 1-line.
5. Performing auto linefeed by the designation of CR(0DH), print start position of linefeed will be determined based on the pitch specified with <E> and the value specified with the Horizontal Print Position <H> command designated after <E>.
In case that <H> is specified several times after <E>, return position by CR (0DH) will be at the last <H>.

13.18 System

User Download	ESC+LD

HEX code	ESC	LD	Parameter
	<1B>16	<4C>16<44>16	, a, b, c, d, e, f, g, h, i, j
Initial value	See the table below.		

Validity and valid duration of command	When power switch is OFF	The set parameter is maintained.
	Validity within item	The set parameter is valid until a new command is specified.
	Validity between items	The set parameter is valid until a new command is specified.

[Function]

Allows the user to define custom protocol command codes.

[Format]

<LD>,a,b,c,d,e,f,g,h,i,j

● Parameter

See the following table.

Function	Parameter	Contents	Default	
			Standard	Nonstandard
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

[Example]

<A>

<LD>,{,},%,#,&,=,~,0,0,<FF>16

<Z>

[Note]

1. Place this command between the Start Code <A> and the Stop Code <Z> commands.
2. The entire or partial parameter entries is omissible by using commas. Any commas that are omitted will result in those settings remaining as default.
3. If more or less than 10 commas is included in the command, the entire command sequences will be ignored.

13.19 System

CR/LF Deletion

ESC+CL

HEX code	ESC	CL	Parameter
	<1B>16	<50>16<4D>16	a
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set command is not maintained.
	Validity within item	The set command is valid until a new command is specified.
	Validity between items	The set command is valid until a new command is specified.

[Function]
Configures the deletion function of CR/LF.

[Format]
<CL>a = 0 : Off
1 : On

[Example] A flag of CR/LF deletion is on
<A>
<u><CL>1</u>
<Z>

[Note]
1. Place this command between the Start Code <A> and the Stop Code <Z> commands.
2. This command cannot be used in combination with other commands.

13.20 System

Print Direction

ESC+RL

HEX code	ESC	RL	Parameter
	<1B>16	<52>16<4C>16	a
Initial value	a = 0		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter is valid until a new command is specified.
	Validity between items	The set parameter becomes the initial value at the next item <A>.

[Function]

Specifies the print direction of Hebrew.

[Format]

<RL>a

●Parameter

a [Print direction] = 0 : Normal print direction (prints text from left to right)

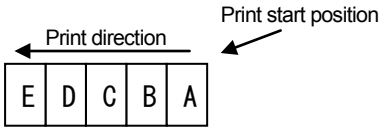
1 : Prints Hebrew from right to left

[Example]

```
<A>
<RL>1
<V>100<H>100<RD>t60,040,040,SATO
<Z>
```

[Note]

1. This command is available only when using the font type [CG Times] and the character set [Arb].
2. Use this command again to change the print direction.
3. This command cannot be used in combination with Sequential Numbering and Store Format commands.
4. Character pitch is added to the left side of font.
5. Vertical and horizontal print positions can specify the position of start character in print data.



6. To print barcode with HRI, make sure to select normal print direction.

13.21 System

Communication Protocol

ESC+PL

HEX code	ESC	PL	Parameter
	<1B>16	<50>16<4C>16	a
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is maintained.
	Validity within item	The set parameter is valid until a new command is specified.
	Validity between items	The set parameter is valid until a new command is specified.

[Function]

Specifies the communication protocol.

[Format]

<OF>a

● Parameter

a [Communication protocol] = 0 : READY/BUSY
1 : XON/XOFF
2 : STATUS2
3 : STATUS3
4 : STATUS4
5 : STATUS5

[Example] When changing the communication protocol to STATUS4.

<A>
<PL>4
<Z>

[Note]

1. Place this command between the Start Code <A> and the Stop Code <Z> commands.
2. This command will be invalid when you specify the protocol unsupported in the currently used interface.
3. Restart the printer when the communication protocol is changed by this command in LAN/Wireless LAN interface. If not, you cannot send or receive the data properly.

14.1 Memory Card

Card Slot Specification — ESC+CC

HEX code	ESC	CC	Parameter
	<1B>16	<43>16<43>16	a
Initial value	a=2		

Validity and valid duration of command		
	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter is valid until a new command is specified.
	Validity between items	The set parameter is valid until a new command is specified.

[Function]

Specifies the card slot number to be used.

[Format]

<CC>a

●Parameter

a [Slot number] = 0 : Printer memory
1 : User memory
2 : User memory

[Example]

<A>
<CC>1
<GI>H003003001FF000000~000000FF
<Z>

[Note]

1. User memory indicates Flash ROM of the printer.
2. This printer is not compatible with the card slot. If selecting the parameter [1], user memory will be enabled.
3. It may take some time to access to the user memory (Flash ROM) when selecting the parameter [1] and [2].

14.2 Memory Card

Format Memory Card

ESC+BJF

HEX code	ESC	BJF	Parameter
	<1B>16	<42>16<4A>16<45>16	aaaaaaaa
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]
Specifies the format (initialization) of user memory.

[Format]
<BJF>aaaaaaaa
● Parameter
a [User ID] = Up to 8 bytes of alphanumeric and symbols

[Example]
<A>
<CC>1
<BJF>satocard
<Z>

[Note]
1. Make sure to specify the card slot number specified with the Card Slot <CC> command before the <BJF> command.
2. The Format Memory Card <FM> command (for Japanese model) is used for initializing the user memory of Flash ROM and this command cannot be used in combination with other commands.
3. If formatting a memory card by accident, registered data will be erased.
4. It may take some time to format the memory card. Do not issue any commands while formatting the memory card.

14.3 Memory Card

Print Memory Card Status

ESC+BJS

HEX code	ESC	BJS	Parameter
	<1B>16	<42>16<4A>16<53>16	Nil
Initial value	Nil		

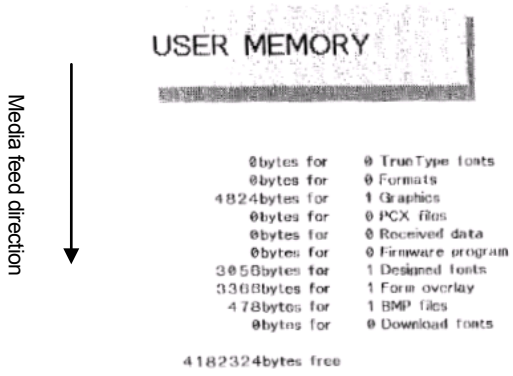
Validity and valid duration of command	When power switch is OFF	The set command is not maintained.
	Validity within item	The set command becomes invalid.
	Validity between items	The set command becomes invalid.

[Function]
Prints the status of user memory.

[Format]
<BJS>

[Example]
<A>
<CC>1
<BJS>
<Z>

[Note]
1. This command is for printing the memory card status and cannot be used in combination with other commands.
2. The status can be checked with the media of W68mm and H90mm.



14.4 Memory Card

Store Form Overlay

ESC+&S

HEX code	ESC	&S	Parameter
	<1B>16	<26>16<53>16	,aa,bbbb,cccc
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The stored data becomes valid.
	Validity within item	The stored data is valid until a new command is specified.
	Validity between items	The stored data is valid until a new command is specified.

[Function]
Stores fixed print contents to the user memory.

[Format]
<&S>,aa,bbbb,cccc
● Parameter
a [Store number] = 1 to 99
b [Horizontal size of window] = 1 to 640 dots (Omissible) (TG308)
1 to 960 dots (Omissible) (TG312)
c [Vertical size of window] = 1 to 1920 dots (Omissible) (TG308)
1 to 2880 (Omissible) (TG312)

[Example]
<A>
<V>100<H>100<XM>MODEL
<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 Custom Graphics<G>, BMP File <GM> and PCX File <GP> can be 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.
7. This command cannot be used without a memory card.

[Valid Commands]

Print position	<V>	<H>								
Modification	<WD>	<FW>	<(>	<RF>						
Font	<XU>	<XS>	<XM>	<XB>	<XL>	<X70>	<X71>	<X72>	<X73>	<X74>
	<X75>	<X76>	<X77>	<XCS>	<XCL>	<OA>	<OB>			
	<WB>	<WL>	<$=>	<RD>						
Barcode	<B>	<BC>	<BG>	<BI>	<BP>	<D>	<D><d>	<BD>	<BT>	<BW>
	<BF>	<BL>	<BL><d>	<BM>						
2D code	<BK>	<BQ>	<BV>	<BX>						
Composite symbol	<EU>									
Graphic	<G>	<GM>	<GP>							

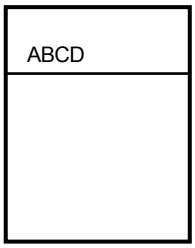
In general, this command is used for [Store number] only. By specifying the horizontal and vertical window sizes, the label image can be moved by using the <V> and <H> position commands when recalling the label image. If the repositioned label image exceeds the printable area, the image will be truncated.

See the following examples.

(1) Normal operation

```
<A>
<V>100<H>100<P>2<L>0202
<XM>ABCD
<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>ABCD
<V>60<H>60
<FW>0808V800H400
<V>320<H>60
<FW>04H400
<CC>1
<&S>,1
<V>200<H>100<OB>12345
<Z>
```

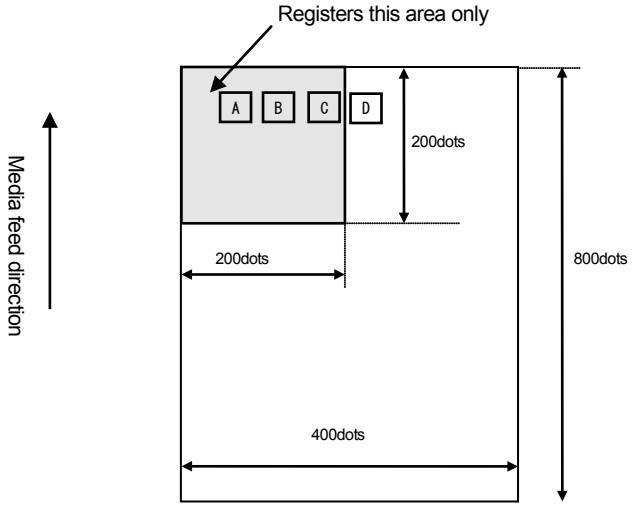
Anything specified prior to the <&S> command will be stored as form overlay

← Prints

(3) When window size is specified.

Media size specification <A1>800400 Horizontal size of window: 200 Vertical size of window: 200

```
<A>
<A1>800400
<V>100<H>00<P>2<L>0202
<XM>ABCD
<CC>1
<&S>,1,200,200
<Z>
```



14.5 Memory Card

Recall Form Overlay

ESC+&R

HEX code	ESC	&R	Parameter
	<1B>16	<26>16<52>16	,aa
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]

Recalls the tag or label image from stored in the user memory.

[Format]

<&R>,aa

- Parameter

a [Storage 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. Make sure to specify the card slot number [2] in the <CC> command.
2. Several images stored under different storage numbers can be printed with this command.
3. If a storage number is not specified, this command will be ignored.
4. A read/write error will occur if an unused storage 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 V1 and H1 (start position of drawing area) will be determined.
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.

14.6 Memory Card

Store Format	ESC+YS

HEX code	ESC	YS	Parameter
	<1B>16	<59>16<53>16	,aaa
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter is valid until a new command is specified.
	Validity between items	The set parameter is valid until a new command is specified.

[Function]
Stores a format field description.

[Format]
<YS>,aaa
● Parameter
a [Format number to be stored] = 1 to 999

[Example]
<A>
<CC>1
<YS>,1
</N>,3,3
<%>0<V>100<H>200<P>2<L>0101<XM>ABC
<Z>

[Note]
1. When storing multiple formats, enter the Start Code <A> and the Stop Code <Z> commands with one format.
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 targeted content will be printed.

[Valid Commands]

Print position	<V>	<H>								
Modification	<WD>	<FW>	<(>	<RF>						
Font	<XU>	<XS>	<XM>	<XB>	<XL>	<X70>	<X71>	<X72>	<X73>	<X74>
	<X75>	<X76>	<X77>	<XCS>	<XCL>	<OA>	<OB>			
	<WB>	<WL>	<$=>	<RD>						
Barcode	<B>	<BC>	<BG>	<BI>	<BP>	<D>	<D><d>	<BD>		
2D code	<BK>	<BQ>	<BV>	<BX>						
Graphic	<G>	<GM>	<GP>							

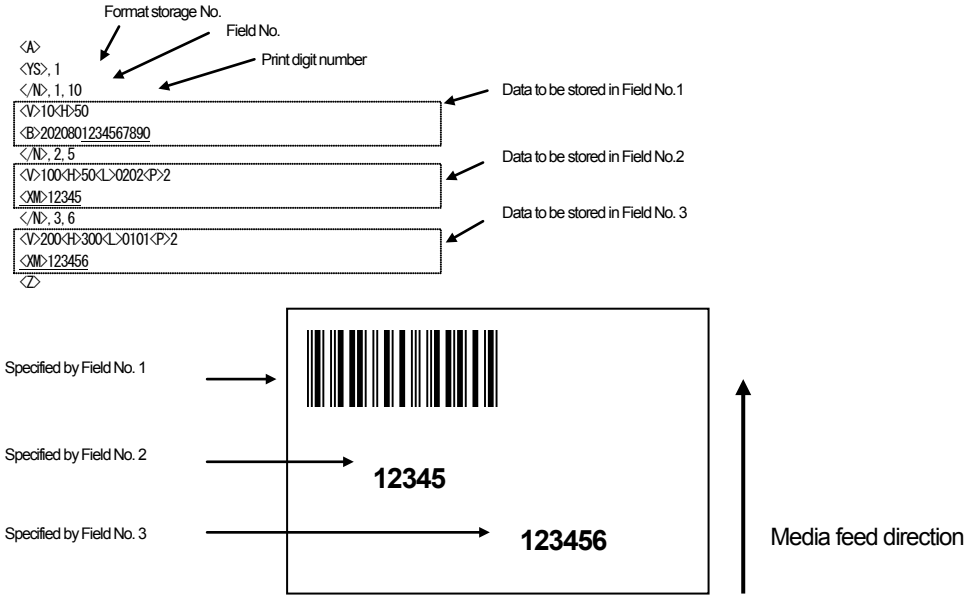
[Tip]

1. Details on the registration of format

A group of commands can be registered to an user memory. 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 format.

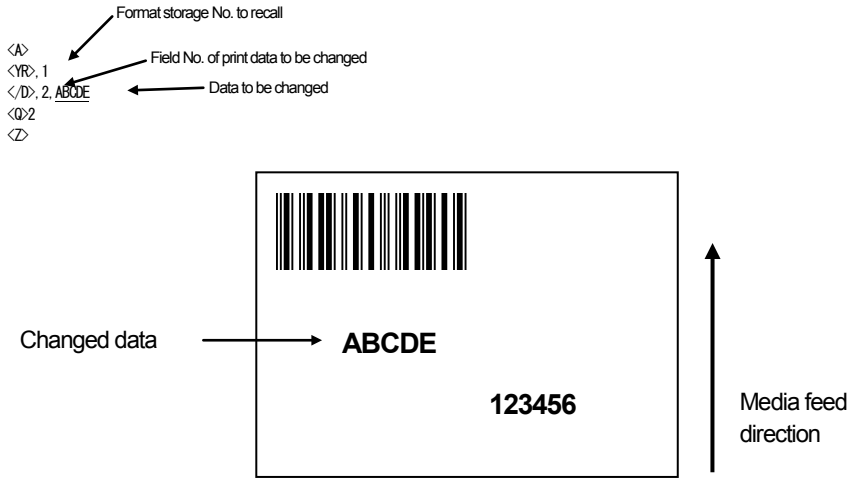
Commands for the registration of format.
One format consists of a set of commands from the Start Code <A> command to the Stop Code command <Z>, and specify the Store Format <YS> command right after the <A> command. For the <YS> command, specify [Format number to be stored] between 1 and 999. And then, 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.

[Call Example]



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
	<0>	Replace Data (Partial Edit)
	<RM>	Mirror Image
Font	<T1>	Store 16x16 dots External Character
	<T2>	Store 24x24 dots External Character
Barcode	<BT>	Variable Ratio Barcodes
2D code	<BQ>	QR Code
	<BV>	MAXI Code
	<BK>	PDF417
Graphic	<G>	Custom Graphics
	<GM>	BMP File
	<GP>	PCX File
System	<CS>	Print Speed
	<#E>	Print Darkness
	<~>	Multiple Cuts
	<C>	Repeat Label
	<*>	Clear
	<@>	Offline
	<OL>	Online
Memory card	<BJF>	Format Memory Card
	<GI>	Store Graphic
	<GT>	Store BMP File
	<PI>	Store PCX File
	</D>	Print Field
	<BJS>	Print Memory Card Status

14.7 Memory Card

Store Field	ESC+/N

HEX code	ESC	/N	Parameter
	<1B>16	<2F>16<4E>16	,aa,bb
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter is valid until a new command is specified.
	Validity between items	The set parameter is valid until a new command is specified.

[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

[Example]
<A>
<CC>1
<YS>,01
</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>

[Note]
1. Specify the field number in ascending order.
2. Specify the <V> and <H> position commands for each field. If not, default value will be set.
3. 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.
4. Set the value other than [00] to the storage digit number of fixed field.
5. Use this command in conjunction with the Store Format <YS> command.
6. Due to the memory capacity limit, it may not save up to 99 registries.

[Valid Commands for the Change of Print]

Font	<XU>	<XS>	<XM>	<XB>	<XL>	<X70>	<X71>	<X72>	<X73>	<X74>
	<X75>	<X76>	<X77>	<XCS>	<XCL>	<OA>	<OB>			
	<WB>	<WL>	<$=>	<RD>						
Barcode	<B>	<BC>	<BG>	<BI>	<BP>	<D>	<D><d>	<BD>	<BT>	<BW>
	<BL>	<BL><d>								

14.8 Memory Card

Recall Format	ESC+YR

HEX code	ESC	YR	Parameter
	<1B>16	<59>16<52>16	,aaa
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter is valid until a new command is specified.
	Validity between items	The set parameter is valid until a new command is specified.

[Function]
Recalls and prints the format stored by the Store Format <YS> command.

[Format]
<YR>,aaa
●Parameter
a [Format storage number] = 1 to 999

[Example]
<A>
<CC>1
<YR>,01
</D>,1,DEF
</D>,2,78901
</D>,3,49000238
<Q>2
<Z>

[Note]
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.

14.9 Memory Card

Print Field	ESC+/D

HEX code	ESC	/D	Parameter
	<1B>16	<2F>16<44>16	,aa,n~n
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter is valid until a new command is specified.
	Validity between items	The set parameter is valid until a new command is specified.

[Function]

Recalls the field specified by the Store Field </N> command and selects the data.

[Format]

</D>,aa,n~n

●Parameter

a [Field No.] = 1 to 99

n [Data] = Data to be changed

[Example]

<A>
<CC>1
<YR>,01
</D>,1,DEF
</D>,2,78901
</D>,3,49000238
<Q>2
<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.

14.10 Memory Card

Store Graphic

ESC+GI

HEX code	ESC	GI	Parameter
	<1B>16	<47>16<49>16	abbbcccdddn~n
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]
Stores the graphic pattern data.

[Format]
<GI>abbbcccdddn~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	[Storage number] (identification number when recalling)	=	See the table below
n	[Data]	=	Graphic data

[Example]
<A>
<CC>1
<u><GI>H003003001n~n</u>
<Z>

[Note]
1. Specify the storage data only.
2. To change the stored content, clear it with the Clear <*> 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	Print area compatibility	Max. bytes in crosswise direction	Max. bytes in lengthwise direction
TG308	Standard	80	300
	Expansion	100	300
TG312	Standard	120	360
	Expansion	150	360

14.11 Memory Card

Recall Graphic

ESC+GR

HEX code	ESC	GR	Parameter
	<1B>16	<47>16<52>16	aaa
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[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.
4. The Character Expansion <L> command must be sent right before this command.
5. Place the Rotation <%> command followed by the Character Expansion <L> command when using with this <GR> command.

14.12 Memory Card

Store BMP File

ESC+GT

HEX code	ESC	GT	Parameter
	<1B>16	<47>16<54>16	aaa,bbbbb,n~n
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]
Stores a graphic file in a BMP format.

[Format]
<GT>aaa,bbbbb,n~n
● Parameter
a [Storage number] = 1 to 999
b [Size of BMP file in bytes] = 1 to 99999
Specify the BMP file size for total bytes.
n [Data] = BMP file data
Send Binary data (outputs 8 bits as 1 font data).

[Example]
<A>
<CC>1
<u><GT>001,12345,n~n</u>
<Z>

[Note]
1. Data must be sent in binary format (outputs 8 bits as 1 font data). (BMP file size is the total bytes, BMP file data is the 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.
7. Reregistering data with storage number which was already taken will cause an error, but the reregistered data will be printed.

14.13 Memory Card

Recall BMP File

ESC+GC

HEX code	ESC	GC	Parameter
	<1B>16	<47>16<43>16	aaa
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[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

[Example]

<A>
<V>100<H>100
<CC>1
<GC>001
<Q>2
<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.
3. Place the Rotation <%> command followed by the Character Expansion <L> command when using with this <GC> command.
4. The Card Slot <CC> command must be sent prior to this command.

14.14 Memory Card

Store PCX File

ESC+PI

HEX code	ESC	PI	Parameter
	<1B>16	<50>16<49>16	aaa,bbbbb,n~n
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]
Stores a graphic file in a PCX format.

[Format]
<PI>aaa,bbbbb,n~n
● Parameter
a [Storage number] = 1 to 999
b [Size of PCX file in bytes] = 1 to 99999
Specify the PCX file size for total bytes.
n [Data] = PCX file data
Send Binary data (outputs 8 bits as 1 font data).

[Example]
<A>
<CC>1
<PI>001,12345,n~n
<Z>

[Note]
1. Data must be sent in binary format (outputs 8 bits as 1 font data). (PCX file size is the total bytes, PCX file data is the data)
2. The first 128 bytes of the PCX file is used for the header and the remainder is the PCX image data.
3. If the total bytes of PCX 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 PCX files can be stored. Color PCX file will cause an error. Make sure to check the file extension is [PCX] before printing.
6. The Card Slot <CC> command must be sent prior to this command.

14.15 Memory Card

Recall PCX File

ESC+PY

HEX code	ESC	PY	Parameter
	<1B>16	<50>16<59>16	aaa
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]
Recalls and prints a graphic file previously stored by the Store PCX File <PI> command.

[Format]
<PY>aaa
●Parameter
a [Storage number] = 1 to 999

[Example]
<A>
<V>100<H>100
<CC>1
<PY>001
<Q>2
<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.

14.16 Memory Card

Clear (Memory Card)

ESC+*

HEX code	ESC	*	Parameter
	<1B>16	<2A>16	a,bbb
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]
Clears the entire contents in user memory.

[Format]
<*>a,bbb
● Parameter
a [Item to be cleared] = G : SATO Graphic
(Clearing graphic registered with Store Graphic <GI>)
P : PCX file
(Clearing PCX file registered with Store PCX File <PI>)
M : BMP file
(Clearing BMP file registered with Store BMP File <GT>)
F : Format
(Clearing format registered with Store Format <YS>)
O : True Type font
(Clearing True Type font registered with Store True Type Font <BJ>)
R : Form Overlay
(Clearing form overlay registered with Store Form Overlay <&S>)

b [Storage number] = 000 to 999 (Omissible) True Type font
001 to 999 (Omissible) Except True Type font
(When omitting Registration number, all the registered data will be cleared.)

[Example 1] Clearing 001 of SATO graphic
<A>
<CC>2
<*>G,001
<Z>

[Example 2] Clearing 002 of PCX file
<A>
<CC>2
<*>P,002
<Z>

[Example 3] Clearing Form Overlay entirely
<A>
<CC>2
<*>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 [2] to be used for the Card Slot <CC> command prior to this command.

[Tip]
1. To clear all data of user memory, use the Format Memory Card <BJF> command.

14.17 Memory Card

Store True Type Font

ESC+BJ
ESC+BJD

HEX code	ESC	BJD	Parameter
	<1B>16	<42>16<4A>16<44>16	(a・・・ab・・b
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]
Stores True Type font.

[Format]
<BJ>(a・・・ab・・・b
<BJD>c・・・cdddde・・・e
<BJ>)

● Parameter

a	[Font description]	=	Specification of 40 bytes font
b	[Date]	=	10 bytes date data
c	[Memory offset]	=	5 bytes memory offset (HEX specification)
d	[Quantity of data bytes]	=	0001 to 2000
e	[Font data to download]	=	0001 to 2000

[Example]
<A>
<CC>2
<BJ>(abcdefghijkabcdefghijkabcdefghijkabcdefghijk29-08-2000
<BJD>00000002203001A00490020・・・・・・・・・・0000000
<BJ>)
<Z>

[Note]
1. Make sure to specify the slot number [2] to be used for the Card Slot <CC> command prior to this command.

14.18 Memory Card

Recall True Type Font

ESC+BJT

HEX code	ESC	BJT	Parameter
	<1B>16	<42>16<4A>16<54>16	,aa,bb,cc,dd,ee,ffff,n~n
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]

Recalls True Type font.

[Format]

<BJT>,aa,bb,cc,dd,ee,ffff,n~n

●Parameter

a	[Font ID]	:	00 to 99
b	[Expansion rate in horizontal direction]	:	01 to 12
c	[Expansion rate in vertical direction]	:	01 to 12
d	[Character pitch]	:	01 to 99
e	[Reserved]	:	00 fixed
f	[Number of characters to print]	:	0000 to 9999
n	[Data]		

[Example]

<A>
<V>100<H>200<CC>2
<BJT>,01,02,02,01,00,0004,SATO
<Q>
<Z>

[Note]

1. Make sure to specify the slot number [2] to be used for the Card Slot <CC> command prior to this command.

15. Calendar Commands

15.1 Calendar

Calendar Configuration

ESC+WT

HEX code	ESC	WT	Parameter
	<1B>16	<57>16<54>16	aabbccddee
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is maintained.
	Validity within item	The set parameter is valid until a new command is specified.
	Validity between items	The set parameter is valid until a new command is specified.

[Function]

Sets the time and date of the printer's internal calendar.

[Format]

<WT>aabbccddee

●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

[Example] 2020, January 1, 1:13pm 00(sec)

<A>

<WT>2001011313

<Z>

[Note]

1. This command requires optional calendar IC. Note that the command can not be used without the calendar IC.

15.2 Calendar

Calendar Increment — ESC+WP

HEX code	ESC	WP	Parameter
	<1B>16	<57>16<50>16	abbb
Initial value	Nil		

Validity and valid duration of command		
	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter is valid until a new command is specified.
	Validity between items	The set parameter becomes invalid.

[Function]

Specifies the data and/or time field from the printer's internal clock.

[Format]

<WP>abbb

● Parameter

a [Date and time] = Y (Year)
M (Month)
D (Date)
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

[Example] Prints the date 3 months from today

```
<A>
<WP>M03
<V>100<H>200
<XM><WA>DD/MM/YY
<Q>2
<Z>
```

[Note]

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 specifying the week number (W), only the week specified by the Calendar Printing (ESC+WA) command will be added.

15.3 Calendar

Calendar Printing — ESC+WA

HEX code	ESC	WA	Parameter
	<1B>16	<57>16<41>16	a・・・a
Initial value	Nil		

Validity and valid duration of command	When power switch is OFF	The set parameter is not maintained.
	Validity within item	The set parameter becomes invalid.
	Validity between items	The set parameter becomes invalid.

[Function]

Prints the date and/or time field.

[Format]

<WP>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

[Example] Prints the date and time 3 months from today

<A>
<WP>M03
<V>100<H>200
<XM>**<WA>DD/MM/YYhh : mm**
<Q>2
<Z>

[Note]

1. This command requires optional calendar IC. Note that the command can not be used without the calendar IC.
2. When QTY=100, 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. 0 week in [WW] indicates Monday through Sunday including the 1st of January.
6. 1st week in [ww] indicates Monday through Sunday including the 1st of January.

Indication of week [WW/ww]

e.g.) January 2008

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

WW	ww
0 week	1st week
1st week	2nd week
2nd week	3rd week
3rd week	4th week
4th week	5th week

e.g.1) For [2007/12/31], WW(Week) prints out [0 week]. (ww(Week) prints out [1st week])

e.g.2) For [2008/01/25], WW(Week) prints out [3rd week]. (ww(Week) prints out [4th week])

e.g.3) For [2008/01/28], WW(Week) prints out [4th week]. (ww(Week) prints out [5th week])

e.g.4) For [2008/02/03], WW(Week) prints out [4th week]. (ww(Week) prints out [5th week])

Extensive contact information of worldwide SATO operations can be found on the Internet at http://www.satoworldwide.com

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