

Software Developer's Manual
P-touch Template Command Reference
PT-P900/PT-P900W/P950NW
Version 1.03

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Introduction

This material provides the necessary information for directly controlling the templates transferred to PT-P9XX. This information is provided assuming that the user has full understanding of the operating system being used and basic mastery of programming in a developer's environment.

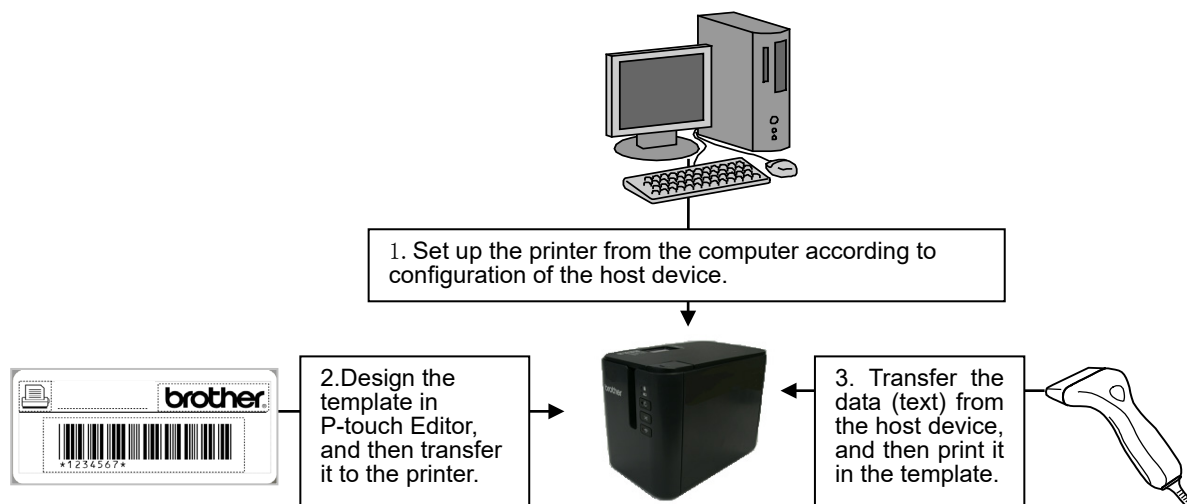
Read the model names that appear in the screens in this manual as the name of your printer.

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What is P-touch Template?

P-touch Template is a tool for transferring ASCII text and binary data from a host device to a template transferred to the printer. This transferred data is inserted into text objects or bar code objects in the template.



This allows the user to develop a printing system that connects directly from the host device. Compatible host devices are listed below.

- Scale/measurement devices
- Medical devices
- Bar code readers
- Control devices in any system environment

Note

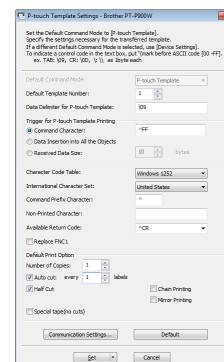
- * The host device should be equipped with a connector for a serial cable (RS-232C) or USB-A cable in order to transfer the data.
- * P-touch Template is not compatible with some hosts.

1. Using P-touch Template

(1) Set up the printer.

Using the P-touch Template Settings tool, specify the initial printer settings according to the host system environment or the host that the printer is connected to.

(Please refer to [“2. P-touch Template Settings Tool User's Guide”](#))

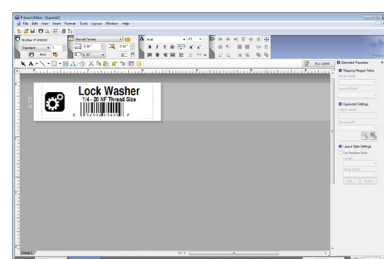


The printer driver must first be installed via a USB connection.

(2) Design the template.

Using P-touch Editor, design the template to be transferred to the printer.

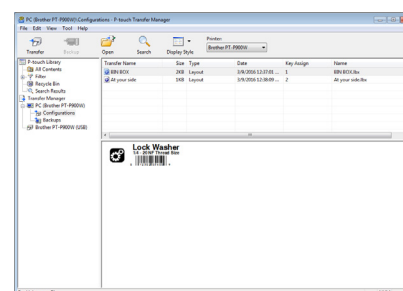
(Please refer to [“4. P-touch Template Limitations”](#))



(3) Transfer the templates.

Using P-touch Transfer Manager, transfer the templates to the printer.

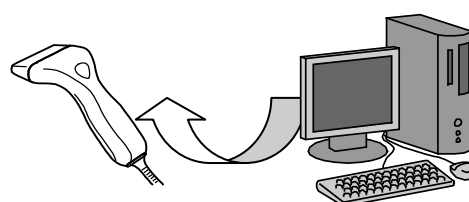
(Please refer to the PT-900 Series Software User's Guide.)



(4) Program using P-touch Template commands.

If any special commands are required to control the printer, change the terminal program in accordance with the P-touch Template commands.

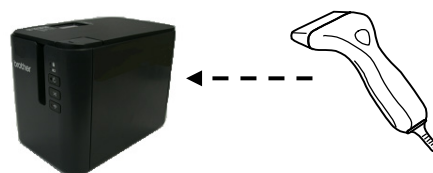
(Please refer to [“6. Control Code Lists”](#))



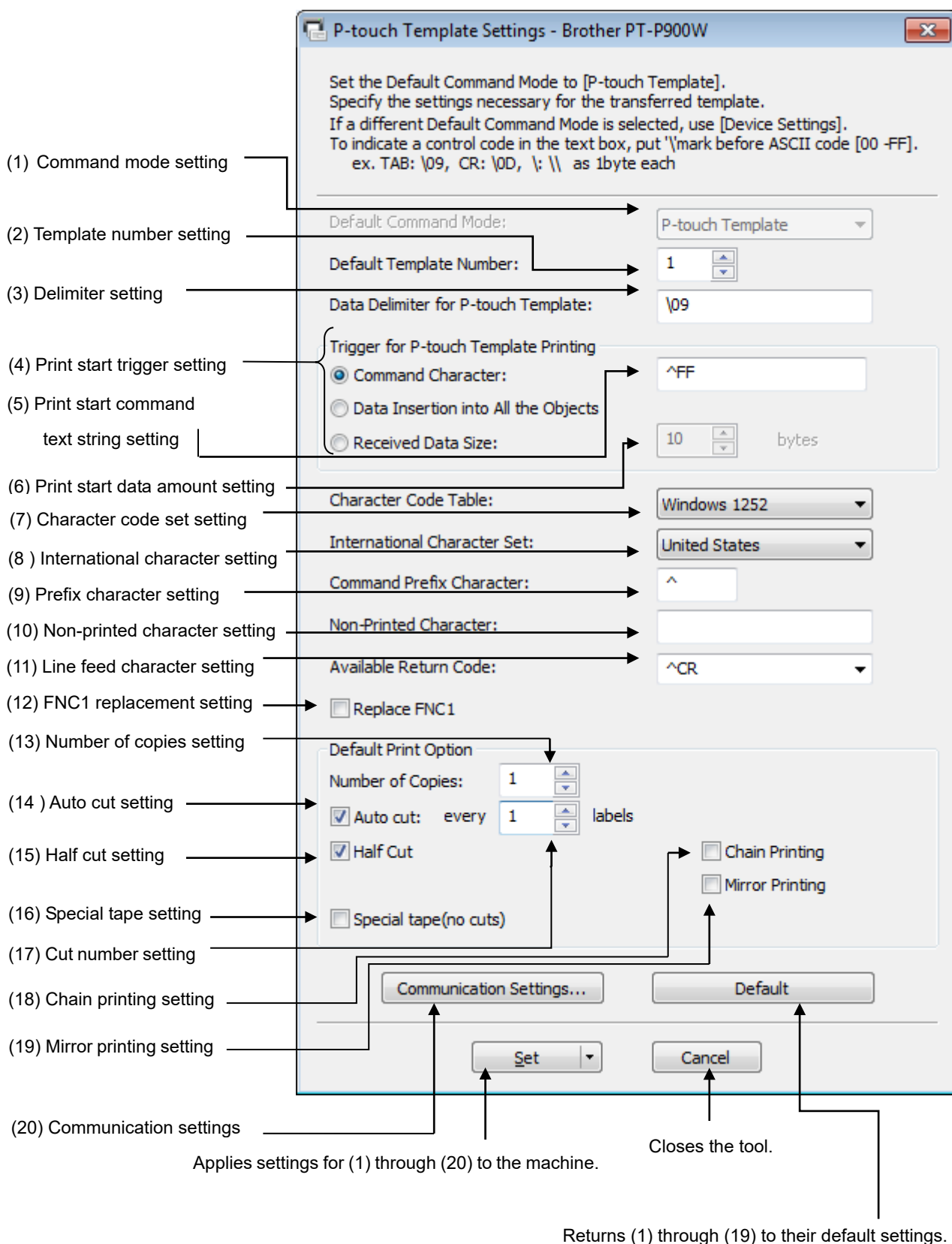
(5) Connect the printer with the host and print slips etc.

Connect the printer to the host device by using a serial cable (RS-232C) or USB-A cable.

Transfer the data, such as ASCII text, from the host device to templates on the machine, and print the labels



2. P-touch Template Settings Tool User's Guide



(1) Command mode setting

- P-touch Template mode (Fixed)

To use P-touch Template, select the P-touch Template mode.

(2) Template number setting

Specify the template number selected as the default when the machine is turned on.

However, if any template has been set to not be transferred to the machine, the number of that template cannot be specified.

(3) Delimiter setting

A delimiter is the symbol used to indicate when to move to the next object in data that is being sent.

Between 1 and 20 characters can be specified.

(4) Print start trigger setting

Select one of the following three options for the print start trigger.

- Command Character

(Printing starts when the command character specified in (5) is received.)

- Data Insertion into All the Objects

(Printing starts when the delimiter for the last object is received.)

- Received Data Size

(Printing starts when the number of characters specified in (6) is received. However, delimiters are not counted in the number of characters.)

(5) Print start command text string setting

Specify 1 to 20 characters.

(6) Print start data amount setting

The amount of data that must be received before printing can begin can be set between 1 and 999.

(7) Character code set setting

Select one of the following three character codes. For details on the character code tables, refer to the character code tables in the P-touch Template Command Reference.

Windows 1252

Windows 1250

Brother standard

(8) International character setting

Select one of the following as the character set of the country.

- USA
- France
- Germany
- UK
- Denmark
- Sweden
- Italy
- Spain
- Japan
- Norway
- Denmark II
- Spain II
- Latin America
- Korea
- Legal

The following 12 codes are switched depending on the country selected from those listed above.

23h 24h 40h 5Bh 5Ch 5Dh 5Eh 60h 7Bh 7Ch 7Dh 7Eh

For the characters that are switched, refer to the "[International character set table](#)" in "Appendix B: Character Code Tables".

(9) Prefix character setting

Change the prefix character code. Specify as a one-character character code.

The prefix character is the code for the first character that identifies commands that can be used in P-touch Template mode.

(10) Non-printed character setting

The characters specified here are not printed when data is received. Specify 1 to 20 characters.

(11) Line feed character setting

The line feed code is used when feeding data to indicate that the following data should be moved to the next line in a text object. One of the following four line feed codes can be selected, or 1 to 20 characters can be specified as the line feed code.

1. ^CR
2. \0D\0A
3. \0A
4. \0D

(12) FNC1 replacement setting

This setting selects whether or not GS codes, which are included in bar code protocols such as GS1-128 (UCC/EAN-128), are replaced with FNC1 codes.

If the check box is selected, a received GS code is replaced with the FNC1 code. If the check box is cleared, a received GS code is outputted as is.

(13) Number of copies setting

Specify the number of copies. A number between 1 and 99 can be specified.

(14) Auto cut setting

If auto cutting is selected, the cut operation will be performed after the number of labels specified in (17).

(15) Half cut setting

Specifies half cutting. If the check box is selected, half cuts are made. If the check box is cleared, half cuts are not made.

(16) Special tape setting

Specifies the special tape (no cut) setting. If the check box is selected, the special tape setting is enabled, and the auto cut and chain printing settings are disabled (same as being turned off). If the check box is cleared, the special tape setting is disabled, and the operations for the auto cut and chain printing settings are performed as specified.

(17) Cut number setting

A number between 1 and 99 can be specified.

(18) Chain printing setting

Specifies chain printing. If the check box is selected, chain printing is enabled, and the tape is not fed or automatically cut after the last label is printed. If the check box is cleared, chain printing is disabled, and the tape is fed and automatically cut after the last label is printed.

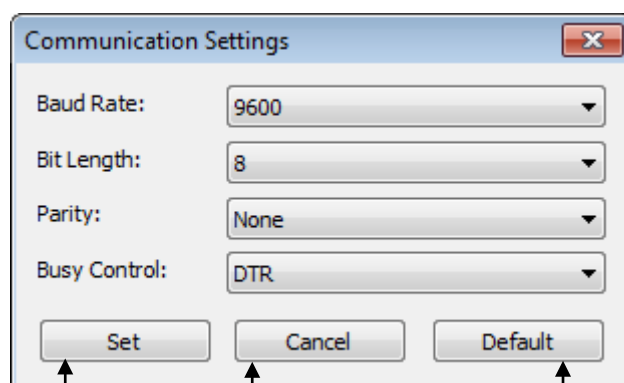
(19) Mirror printing setting

Specifies mirror printing. If the check box is selected, mirror printing is enabled. If the check box is cleared, mirror printing is disabled.

(20) Communication settings

Settings can be specified for the following parameters for serial communication.

Baud rate	115200 bps, 57600 bps, 38400 bps, 31250 bps, 28800 bps, 19200 bps, 14400 bps, 9600 bps, 4800 bps, 2400 bps, 1200 bps, 600 bps
Bit length (bits)	8 bit, 7 bit
Parity	None, Odd, Even
Busy control	DTR, XON/XOFF



Closes the Communication Settings dialog box.

Applies the four settings to the printer.

Returns the four parameters to their default settings.

Others

•ini file

After the **[Set]** button (in the main dialog box or the Communications Settings dialog box) is clicked, the settings are saved and the dialog box is closed.

C: \Users\ (user_account_name) \AppData\Roaming\Brother\Printer Settings\ptsXX30.ini

Note: A name of file “ptsXX30.ini” varies depending on printers like below.

- PT-P900W pts6F30.ini
- PT-P950NW pts7030ini

Note: A file path above might be different depending on OS.

•Entering text in text boxes (3), (5), (9) and (10)

Characters that can be entered as text can be typed in, and control codes can be entered as ASCII codes (00 to FF) with \ in front of them.

Example: PRINT : [PRINT]
 TAB control code : [\09]
 Return control code : [\0D]
 \ : [\]

3. Examples for Using Commands

3.1 Example for using P-touch Template

Here is the label that will be made.

The media size is 0.70 inches

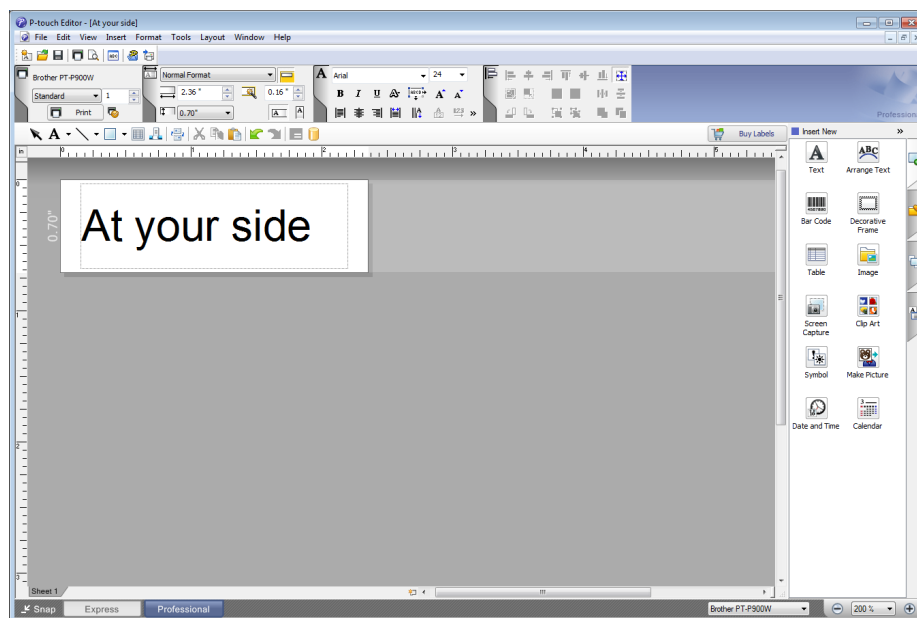


Steps

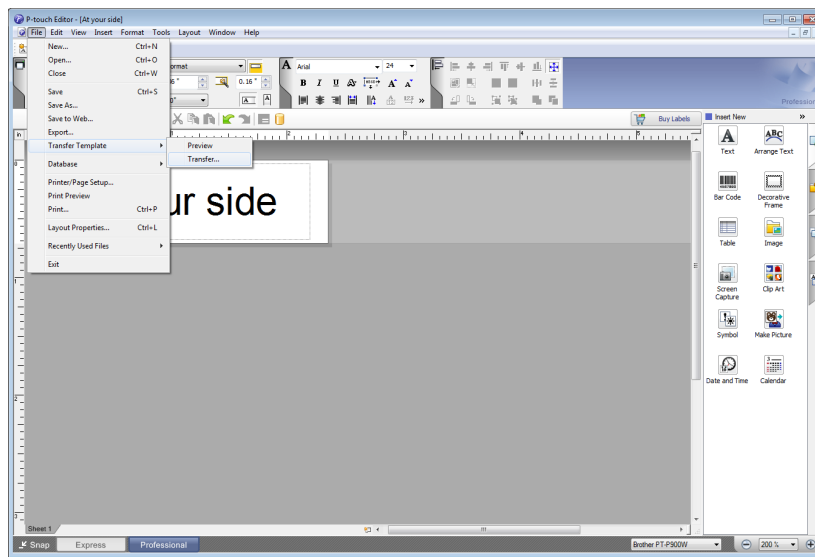
1. Make a template with P-touch Editor.
2. Transfer the template to Transfer Manager.
3. Transfer the template from Transfer Manager to the printer.
4. Use P-touch Template commands for printing.

Step 1: Make a template with P-touch Editor.

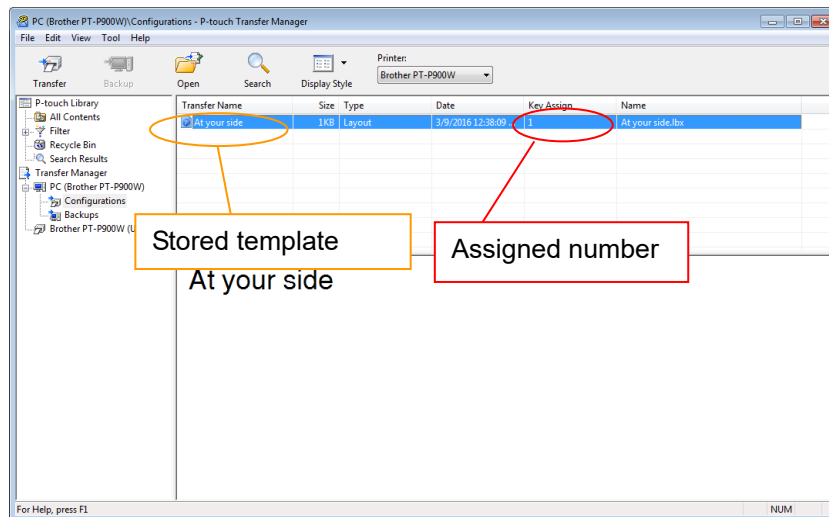
Start the P-touch Editor and make a label.



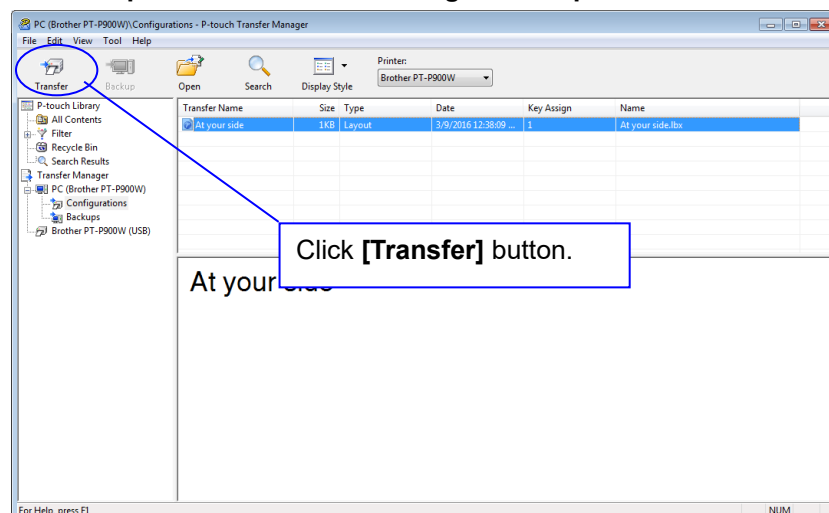
Step 2: Transfer the template to Transfer Manager.



The template sent in step 2 is stored in Transfer Manager, as shown below.



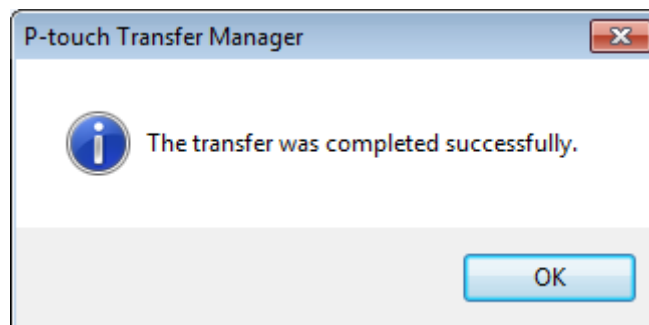
Step 3: Transfer the template from Transfer Manager to the printer.



Note

Make sure that the printer is turned on and hooked up to the PC with a USB cable before using Transfer Manager. Also, make sure that the printer communication setting is always bidirectional communication when Transfer Manager is used.

When the template is transferred to the printer, the following message appears.

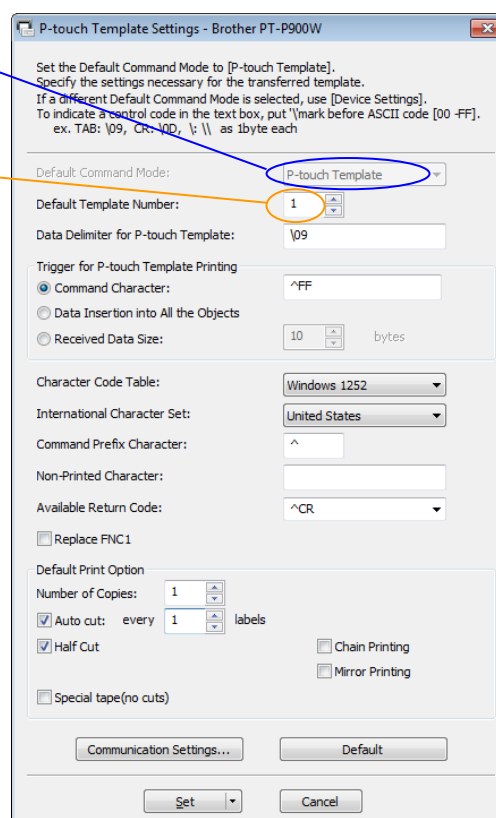
**Step 4: Use P-touch Template commands for printing.**

When using P-touch Template commands, at least these four commands are required.

However, two out of the four can be set by using the P-touch Template Settings tool.

(1) Select the P-touch Template mode (Fixed)

(2) Choose the assigned number



After setting (1) and (2) with the P-touch Template Settings tool, the other two commands must be sent to the printer.

(3) Initialize P-touch Template

^II Initialize

ASCII:	^	I	I
Decimal:	94	73	73
Hexadecimal:	5E	49	49

Parameters

None

Entered command

^II

(4) Print Start

^FF Start printing

ASCII:	^	F	F
Decimal:	94	70	70
Hexadecimal:	5E	46	46

Parameters

None

Entered command

^FF

When the printer receives the command above, the label below is printed.



3.2 Example for printing logo/external characters in P-touch Template

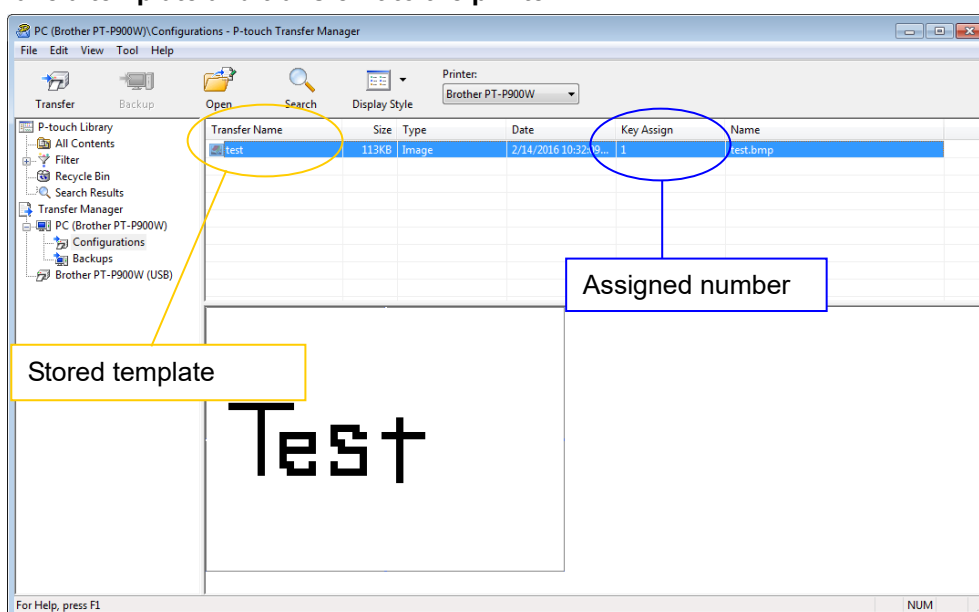
Here is the label to be printed.



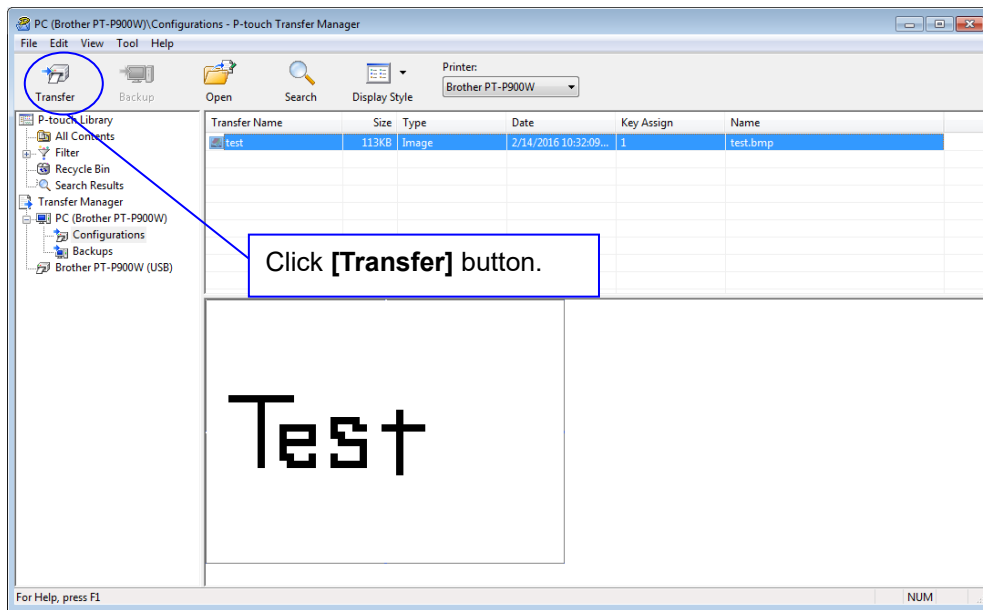
Steps

1. Make a template and transfer it to the printer.
2. Store the logo/external characters as a bitmap file, and drag & drop it to Transfer Manager.
3. Transfer the bitmap file from Transfer Manager to the printer.
4. In the P-touch Template Settings tool, select the assigned number for the stored template.
5. With the P-touch Template commands, select the assigned number for the bitmap file.

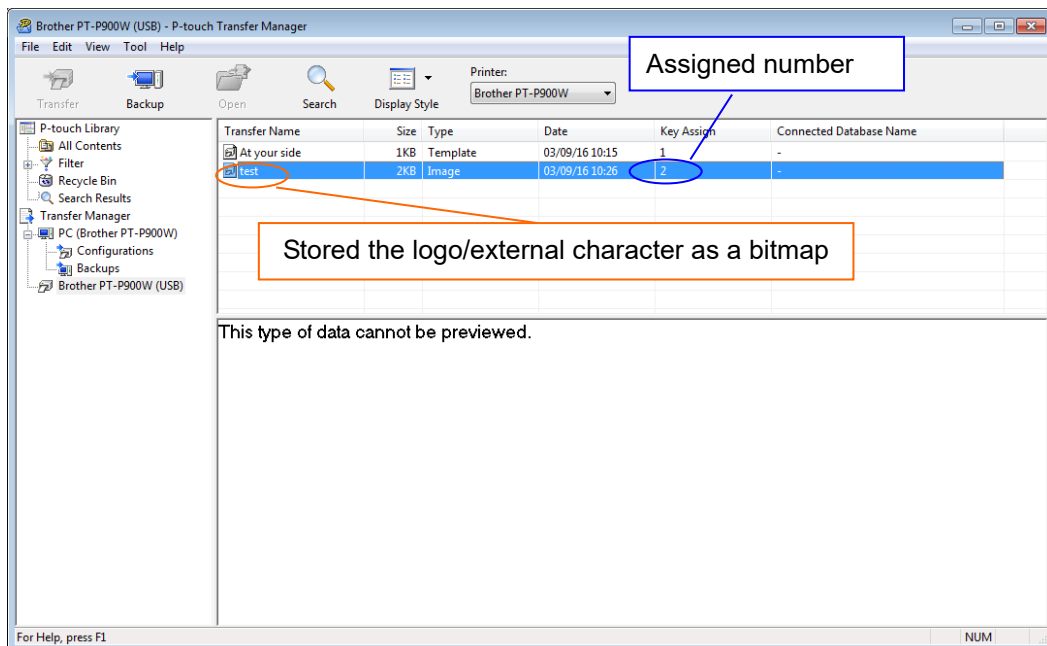
Step 1: Make a template and transfer it to the printer.



Step 2: Store the logo/external characters as a bitmap file, and drag & drop it to Transfer Manager.



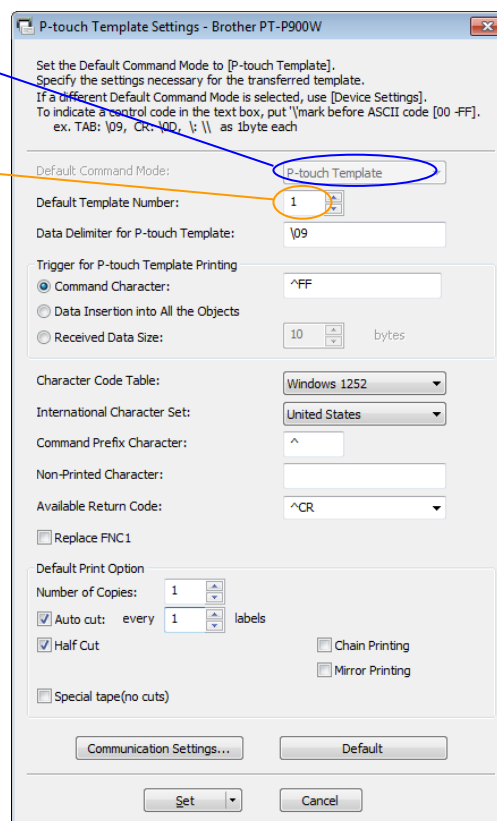
Step 3: Transfer the bitmap file from Transfer Manager to the printer.



Step 4: In the P-touch Template Settings tool, select the assigned number for the stored template.

(1) Select the P-touch Template mode (Fixed)

(2) Choose the assigned number

**Step 5: With the P-touch Template commands, select the assigned number for the bitmap file.**

After using the P-touch Template Settings tool in Step 4, the remaining three commands must be sent to the printer.

(1) Initialize P-touch Template

^|| Initialize

ASCII:	^		
Decimal:	94	73	73
Hexadecimal:	5E	49	49

Parameters

None

Entered command

^||

(2) Select the bitmap file to be printed.

In order to select the bitmap file, enter a specific character “\” and the value one less than the assigned number for the bitmap file that is shown in Step 3.
For example, if the assigned number for the bitmap file is 2, enter \01 as shown right.

The command \01 is written in Hexadecimal : **5C 30 31**

Entered command

\01

(3) Start printing.

^FF Start printing

ASCII:	^	F	F
Decimal:	94	70	70
Hexadecimal:	5E	46	46

Entered command

^FF

Parameters

None

When the printer receives the command above, the label below is printed.

Test

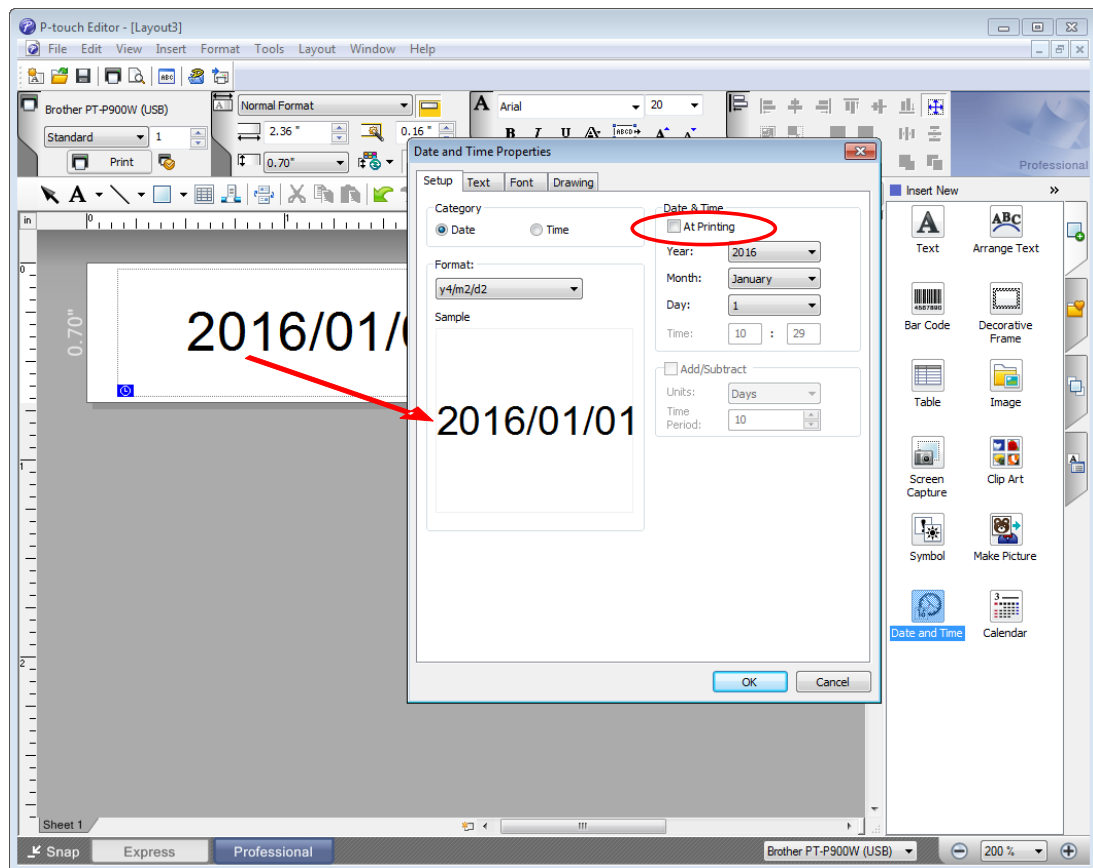
4. P-touch Template Limitations

4.1 Relating to text objects

4.1.1 Font, size, etc.

Please also refer to "[5.2 Relationship between the P-touch Editor settings and the printer image](#)" on page 28

- Fonts specified in P-touch Editor are converted to Helsinki, Letter Gothic or Brussels, depending on the font shape, when the data is sent to the machine.
(The font is converted according to the following rules: fixed pitch: Letter Gothic; serif: Brussels; san serif: Helsinki. Symbol fonts are converted to text objects if text input mode has been entered, and fonts are divided into three categories, as described above. If the text input mode has been exited, they are converted to image objects and the selected font is not converted.)
- Character sizes specified in P-touch Editor are converted to the closest built-in character size when the data is sent to the printer.
- Character sizes specified in P-touch Editor are all made the same size within an object.
- Depending on the language of the computer used for transferring, either the Western European or the Eastern European character set is used for characters within text objects.
- "\\" is used as control character for an external character. When "\" has to be used as a data, input "\\".
- When "At Printing" check box is NOT checked, the time and date when editing P-touch Editor is applied and printed. When "At Printing" check box is checked, if the TDU is connected, the time and date printed is the same as TDU and if the TDU is not connected, time and date is not printed.



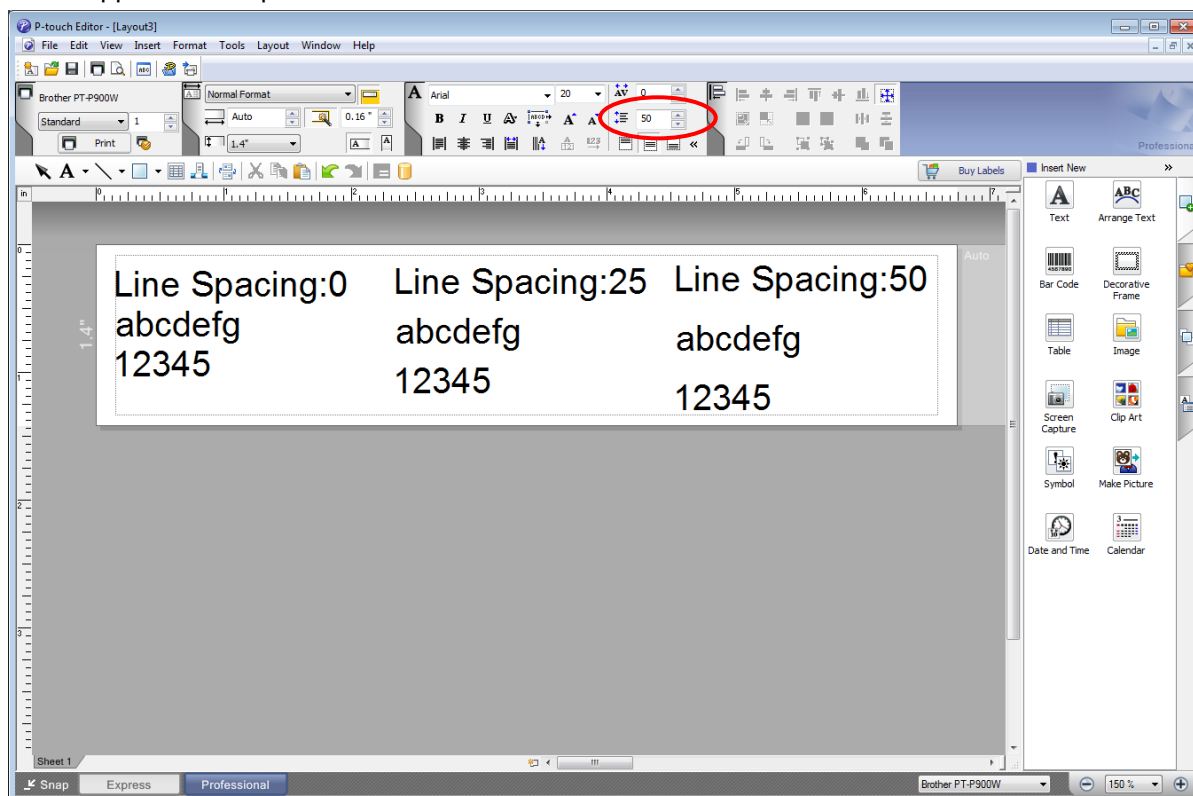
“At Printing” setting

To cancel the “At Printing” setting for a date/time in P-touch Editor, display the properties for the Date and Time object, and then clear the “At Printing” check box.

4.1.2 Character alignment

- Horizontal alignment settings (“Justify” or “Equal Length”) specified in P-touch Editor are changed to the left alignment setting.
- The setting for line feed with a line feed specified with the P-touch Editor can be set between 0 and 255 dots.

A negative line spacing setting cannot be used in P-touch Editor. In addition, since there is an upper limit for the line width with the printer, a line spacing setting larger than this limit specified in P-touch Editor will not be applied on the printer.



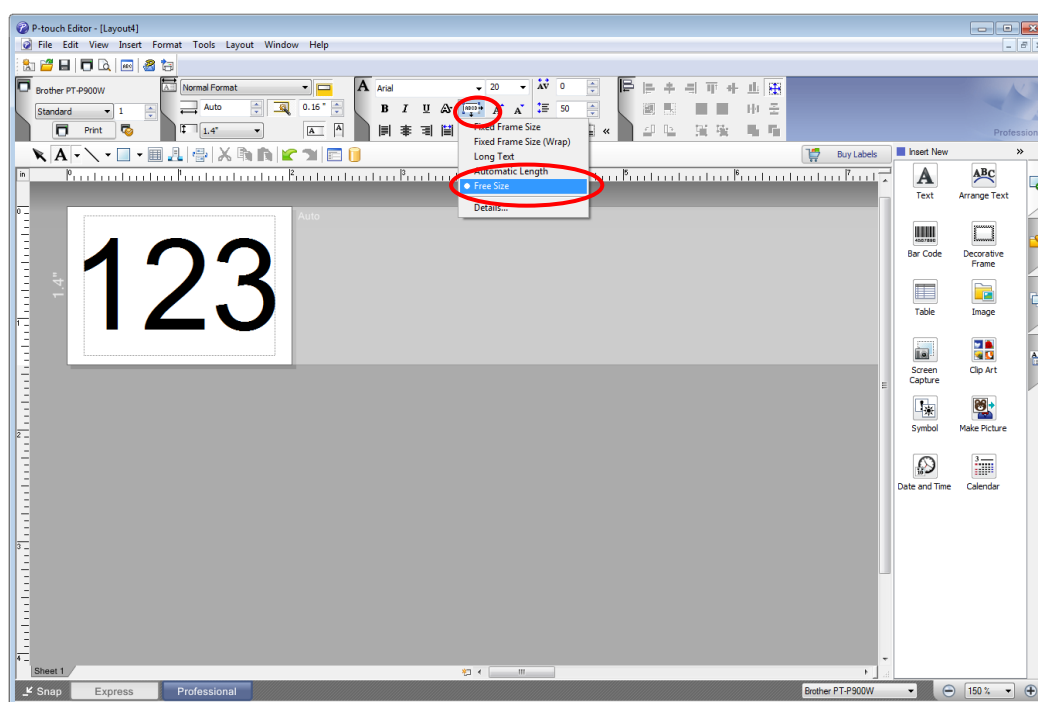
Specifying the line spacing setting in P-touch Editor

4.1.3 Text Layout settings

- Character styles specified in P-touch Editor all become the same style within an object.
- If the “Long text” is selected under “Text Layout” in P-touch Editor, the text is always aligned at top left.
- If the “Long Text” setting is selected under “Text Layout” in P-touch Editor and continuous length tape is used, the print length is increased to fit the text.
- If the “Fixed Frame Size (Wrap)” setting is selected under “Text Layout” in P-touch Editor, the object size does not change, and the text size is reduced.

“Fixed Frame Size (Wrap)” is a setting that was added for inserting long text. Since it is possible that the text size may become extremely small if the wrapping feature is no longer applied, we recommend that “Fixed Frame Size” be selected when die-cut labels or a fixed length is specified in P-touch Editor, or that “Automatic Length” be selected when an automatic media length is specified.

Shrink to Fit	The text object size is fixed, and the text size is changed depending on the text length.
Clip Text	The text object size is fixed, and the text size is fixed. If the text is too long, the text is not printed.
Long Text	The text object width is fixed, and the text size is fixed. If the text is too long, the text object height is increased.
Automatic Length	The text object height is fixed, and the text size is fixed. If the text is too long, the text object width is increased.
Free Size	The text size is fixed. If the text is too long, the text object width is increased. If a new line is started, the text height is increased.



Specifying a Text Layout setting

Click the button circled in red to display a drop-down list, and then select the desired option.

4.2 Relating to barcodes

4.2.1 Barcodes

- When trying to transfer a template containing a barcode that is not compatible with the printer, an error will occur while transferring and the template cannot be transferred to the printer.

The following barcodes are compatible with the PT-P9XX.

1D barcodes	CODE39, ITF (I-2/5), UPC-A, UPC-E, EAN-13, EAN-8, CODABAR, CODE128, GS1-128 (UCC/EAN-128) , RSS, POSTNET
2D barcodes	PDF417, QR Code, Data Matrix, MaxiCode, AztecCode

- If data containing characters incompatible with the protocol are fed into the barcode object, that barcode object is not printed.
- The barcode size may differ from that in the print result with P-touch Editor.
- Since CODE128 and GS1-128(UCC/EAN-128) can easily be printed slightly larger, we recommend leaving larger margins when creating templates in P-touch Editor.
- If data fed into a barcode in a template created with P-touch Editor causes an extremely long barcode, the barcode may not be fully printed.
- Do not insert line feed immediately before or immediately after the barcode data. Otherwise, it will be considered as part of the barcode data. In that case, the barcode will be created containing the line feed code, or the barcode will not be printed since data incompatible with the barcode protocol is entered.
- A delimiter or print start text string should be entered immediately after the barcode data.

4.2.2 1D barcodes

- A barcode wider than 22.5 cm will not be printed.
- A 1D barcode taller than 454 dots is converted to 454dots.
- The number of characters that can be entered for each protocol is shown below.

CODE39	1 to 50 characters (not including “*” on both sides) When feeding data, the asterisks (*) at the beginning and end of the data are skipped.
ITF (I-2/5)	1 to 64 characters The bearer bar setting specified in P-touch Editor is invalid.
EAN-8	7 characters
EAN-13	12 characters
UPC-A	11 characters
UPC-E	6 characters
CODABAR	3 to 64 characters (with “A”, “B”, “C” or “D” at the beginning and end)
CODE128	1 to 64 characters
GS1-128 (UCC/EAN-128)	1 to 64 characters
RSS-14	3 to 15 characters (begins with “01”)
RSS Limited	3 to 15 characters (begins with “01”; third digit is “0” or “1”)
RSS Expanded	1 to 64 numbers or 1 to 40 letters*
POSTNET	5, 9 or 11 characters

* ISO646 characters can be printed.

<<numbers, letters, spaces, !, ", %, &, ', (,), *, +, ,, -, ., /, :, ;, <, =, >, ? and _>>

When trying to transfer data exceeding the ranges described above, an error will occur while transferring. If the data that is fed does not meet the minimum limit, the barcode is not printed. If the data exceeds the maximum limit, only the data to the maximum limit is applied. However, if the data exceeds 64 characters, the barcode is not printed.

4.2.3 2D barcodes

QR Code	<p>The version setting for a QR Code specified in P-touch Editor is invalid. The version setting must be turned off.</p> <p>The Structured Append settings specified in P-touch Editor are invalid.</p>
PDF417	<p>Since the error correction levels for PDF417 specified in P-touch Editor are inconsistent with those on the printer, the size of the barcode may change when it is printed with P-touch Template.</p> <p>The Structured Append settings specified in P-touch Editor are invalid.</p>
Data Matrix	<p>The Structured Append settings specified in P-touch Editor are invalid.</p> <p>Macro settings specified in P-touch Editor are invalid</p>
MaxiCode	<p>The Structured Append settings specified in P-touch Editor are invalid.</p> <p>The barcode is partitioned when too much data is entered.</p> <p>When specifying the country code and service class with P-touch Editor, the number is entered at the beginning if the maximum number of characters is not reached. However, with the printer, the number is entered at the end.</p> <p>Example: "2" is specified.</p> <p>P-touch Editor: "200"; Printer: "002"</p>
AztecCode	<p>The Remove Character setting specified in P-touch Editor is invalid.</p> <p>When the Number of Parts in the Set Structured Append setting is specified as Auto, the number of appended blocks becomes 2.</p> <p>The Code Spacing and Join Vertically in the Set Structured Append settings specified in P-touch Editor are invalid.</p>

4.3 Relating to images

- If a template containing overlapping images is transferred with P-touch Editor, all image data will be overlapping. (P-touch Editor displays the image created last on top.)

4.4 Relating to Numbering

- A single object contains a single Numbering field.
- A Numbering field can contain a maximum of 15 digits. If the field contains more than 15 digits, Numbering will only be performed with the last 15 digits.
- Only Numbering fields will be saved in Numbering objects when printing is finished.
- If the number of characters that was fed in is less than the number of characters in the Numbering object, it may not be printed correctly.
- If a line feed exists in the numbering area, characters after line feed are deleted.

Note

Numbering objects refer to text objects or barcode objects that have the Numbering function applied.

4.5 Relating to Database

- When a database is transferred, it is named using the file name + sheet name (when created in Excel).
- The file name can contain up to 15 bytes of characters (15 one-byte characters or 7 two-byte characters).
- A maximum of 99 databases can be transferred. However, the transfer cannot be completed if the amount of data being transferred exceeds 7MByte.
- If there is a line feed in a cell containing text to be replaced, only the string of characters before the line feed will be replaced.
- The text to be replaced can contain up to 256 characters.
- The maximum number of database line is 65000 lines including the title. If the database is over 65000 lines, the only lines over 65000 are deleted.
- A database can contain a maximum of 100 columns. If a database containing more than 100 columns is transferred, all data after the 100th column will be deleted.
- If there is no database linked to the template being printed, or if the corresponding string of characters to be replaced cannot be found, an error occurs.
- If columns linked to the template being printed are not in the database, the objects related to those columns remain as they were when the template was transferred.
- Depending on the language of the computer used for transferring, either the Western European or the Eastern European character set is used for characters within databases.

4.6 Others

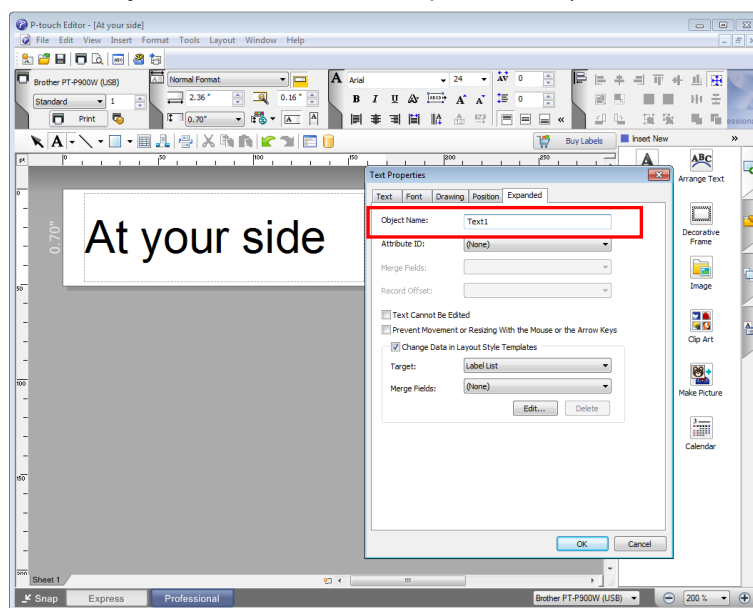
4.6.1 Transferring templates

- A maximum of 99 templates can be transferred. The transfer cannot be completed if the amount of data being transferred exceeds 7MByte.
- A single template can contain a maximum of 50 objects. When trying to transfer more than 50 objects, an error will occur and the transfer cannot be completed.
- When print data is fed, the command mode should be the P-touch Template mode.
- When a template is transferred to the printer, all values specified with dynamic commands are initialized.
- This is not compatible with split labels.
- After printing from P-touch Editor, the command mode changes to raster mode. In order to print a template, select the P-touch Template mode in the P-touch Template Settings tool or, if the previous mode in the P-touch Template Settings tool was the P-touch Template mode, turn the printer off, then on again to enter P-touch Template mode.

4.6.2 About objects in a template

- The line feed codes (0D0A, 0D and 0A) in print data are read, then discarded. However, when specified as special data, such as delimiters, print start text strings or line feed commands, they are applied.
- The order of the objects is determined only by the last four-digit number of the object name. Objects with no numbers in their names will be at the end of the order. If objects have the same number, the order is determined in the following order: text, 1D barcodes, then 2D barcodes. If the objects are of the same type, the object created first is first in the order. We recommend that the numbers indicating the order be added at the end of the object name.

(To specify the name of an object in P-touch Editor, display the properties of the text or barcode object, and then specify the name in the “Object Name” box on the Expanded tab.)



Specifying the object name

5. Precautions

5.1 Notes for printers with Bluetooth interface

If the printer is connected using Bluetooth, the printer may not be ready immediately after the port is opened. When sending print data, wait at least 500 msec after the port has been opened before starting to send the data.

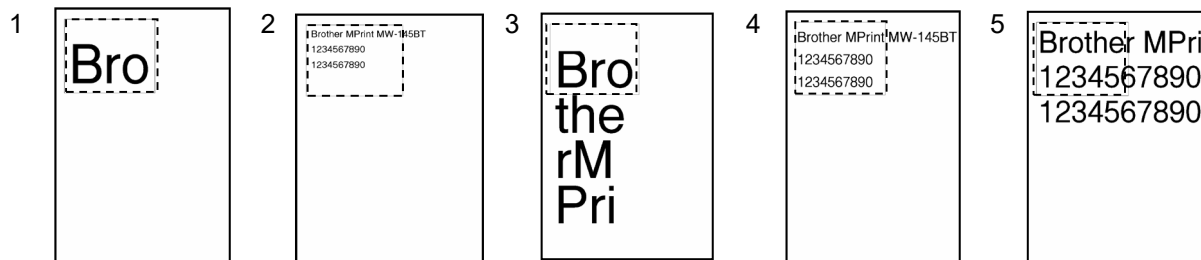
In addition, if the port is continuously opened and closed, for example, when printing multiple pages, wait at least 500 msec after the port is closed before opening the port the next time.

Once the print data for one page has been sent, do not close the Bluetooth port until printing is finished.

5.2 Relationship between the P-touch Editor settings and the printer image

P-touch Editor setting Text options (Text Layout settings)			Printer image				Printed image
			Width		Height		
Text Layout	Details-Options	Wrap Text	Frame Size	Text Size	Frame Size	Text Size	
Fixed Frame Size	Clip Text		Fixed If the text is too long, the overflow text is not printed.	Fixed	Fixed If the text is too long, the overflow text is not printed.	Fixed	1 (See below.)
	Shrink to Fit		Fixed If the text is too long, even with the minimum text size, the overflow text is printed outside the frame.	Auto The text is automatically maximized to fit the frame size.	Fixed If the text is too long, even with the minimum text size, the overflow text is printed outside the frame.	Auto The text is automatically maximized to fit the frame size.	2 (See below.)
	Clip Text	Selected					
	Shrink to Fit	Selected					
Fixed Frame Size (Wrap)	—						
Long Text	—		Fixed The overflow text is automatically sent to the new line.	Fixed	Even the overflow text is printed outside the frame.	Fixed	3 (See below.)
Automatic Length	—		Even the overflow text is printed outside the frame.	Fixed	Fixed If the text is too long, even with the minimum text size, the overflow text is printed outside the frame.	Auto The text is automatically maximized to fit the frame size.	4 (See below.)
Free Size	—		Even the overflow text is printed outside the frame.	Fixed	Even the overflow text is printed outside the frame.	Fixed	5 (See below.)

Printed image



5.3 Making a template in order to save time before starting to print

- Perform the following operation to convert permanent objects into images.
 - In the **Text Properties** dialog box, select the **Expanded** tab, and then select the “**Text Cannot Be Edited**” check box.
 - If the **Expanded** tab of the **Text Properties** dialog box is not displayed, click [**Options**] on the **Tools** menu, and then select the “**Display Expanded Tabs of Object Properties**” check box on the **General** tab.
- Specify the text options (Text Layout settings) so that the text size is fixed.

6. Control Code Lists

6.1 Setting and retrieving commands for P-touch Template mode

With static commands, settings specified with a command are saved and stored in the memory.

With dynamic commands, settings specified with a command are temporarily saved and applied until the machine is turned off.

ASCII Code	Binary Code	Static/Dynamic	Description
^PT	5E 50 54	Dynamic	Select print start trigger
^FF	5E 46 46		Start printing
^PS	5E 50 53	Dynamic	Specify print start command text string
^PC	5E 50 43	Dynamic	Specify print start received character count
^SS	5E 53 53	Dynamic	Specify delimiter
^TS	5E 54 53	Dynamic	Select template
^LS	5E 4C 53		Specify line spacing with line feed
^CC	5E 43 43	Dynamic	Change prefix character
^RC	5E 52 43	Dynamic	Specify line feed command text string
^CN	5E 43 4E		Specify number of copies
^NN	5E 4E 4E		Specify number of Numbering copies
^ID	5E 49 44		Initialize template data
^QV	5E 51 56	Dynamic	Specify QR Code version
^FC	5E 46 43	Dynamic	FNC1 replacement setting
^CF	5E 43 46	Dynamic	Full cut setting
^CH	5E 43 48	Dynamic	Half cut setting
^CP	5E 43 50	Dynamic	Chain printing setting
^MP	5E 4D 50	Dynamic	Mirror printing setting
^II	5E 49 49		Initialize
^OP	5E 4F 50		Perform machine operations (feed/cut)
^SR	5E 53 52		Status request

ASCII Code	Binary Code	Static/Dynamic	Description
^VR	5E 56 52		Retrieve version Information
^CR	5E 43 52		Line feed in object
^OS	5E 4F 53		Select object (object number)
^ON	5E 4F 4E		Select object (object name)
^DI	5E 44 49		Directly insert object
ESC ia	1B 69 61	Dynamic	Specify command mode

Note

- * The commands listed above must be used in P-touch Template mode.
- * These commands (except ESC ia) cannot be used in raster mode or ESC/P mode.
- * With dynamic commands, settings specified with a command are temporarily saved and applied until the printer is turned off.

6.2 Setting and retrieving commands for raster mode

ASCII Code	Binary Code	Static/Dynamic	Description
ESC iXT2	1B 69 58 54 32	Static	Select print start trigger
ESC iXP2	1B 69 58 50 32	Static	Specify print start command text string
ESC iXr2	1B 69 58 72 32	Static	Specify print start received character count
ESC iXD2	1B 69 58 44 32	Static	Specify delimiter
ESC iXa2	1B 69 58 61 32	Static	Specify non-printed text strings
ESC iXi2	1B 69 58 69 32	Static	Specify command mode
ESC iXn2	1B 69 58 6E 32	Static	Select template
ESC iXf2	1B 69 58 66 32	Static	Change prefix character
ESC iXc2	1B 69 58 63 32	Static	Specify printer settings (full cut option ON/OFF)
ESC iXy2	1B 69 58 79 32	Static	Specify printer settings (full cut option—specify cutting after specified number of labels)
ESC iXH2	1B 69 58 48 32	Static	Half cut setting
ESC iXM2	1B 69 58 4D 32	Static	Mirror printing setting
ESC iXs2	1B 69 58 73 32	Static	Special tape setting
ESC iXm2	1B 69 58 6D 32	Static	Select character code set
ESC iXj2	1B 69 58 6A 32	Static	Specify international character set
ESC iXR2	1B 69 58 52 32	Static	Specify line feed command text string
ESC iXC2	1B 69 58 43 32	Static	Specify number of copies
ESC iXN2	1B 69 58 4E 32	Static	Specify number of Numbering copies
ESC iXF2	1B 69 58 46 32	Static	FNC1 replacement setting
ESC iXT1	1B 69 58 54 31		Retrieve select print start trigger items
ESC iXP1	1B 69 58 50 31		Retrieve print start command setting text string
ESC iXr1	1B 69 58 72 31		Retrieve print start received character count
ESC iXD1	1B 69 58 44 31		Retrieve delimiter
ESC iXa1	1B 69 58 61 31		Retrieve non-printed text strings

ASCII Code	Binary Code	Static/Dynamic	Description
ESC iXi1	1B 69 58 69 31		Retrieve command mode
ESC iXn1	1B 69 58 6E 31		Retrieve template selection number
ESC iXc1	1B 69 58 63 31		Retrieve printer settings (full cut option ON/OFF)
ESC iXy1	1B 69 58 79 31		Retrieve machine settings (full cut option—specify cutting after specified number)
ESC iXH1	1B 69 58 48 31		Retrieve half cut setting
ESC iXM1	1B 69 58 4D 31		Retrieve mirror printing setting
ESC iXs1	1B 69 58 73 31		Retrieve special tape setting
ESC iXm1	1B 69 58 6D 31		Retrieve character code set setting
ESC iXj1	1B 69 58 6A 31		Retrieve international character set setting
ESC iXf1	1B 69 58 66 31		Retrieve prefix setting character
ESC iXR1	1B 69 58 52 31		Retrieve line feed command setting text string
ESC iXC1	1B 69 58 43 31		Retrieve number of copies setting
ESC iXN1	1B 69 58 4E 31		Retrieve number of Numbering copies setting
ESC iXF1	1B 69 58 46 31		Retrieve FNC1 replacement setting

Note

- * The commands listed above must be used in raster mode.
- * These commands cannot be used in ESC/P mode or P-touch Template mode.
- * With static commands, settings specified with a command are saved and stored in the memory.

7. Control Command Details

^PT **Select print start trigger**

ASCII:	^	P	T	n
Decimal:	94	80	84	nd
Hexadecimal:	5E	50	54	nh

Parameters

$1 \leq n \leq 3$

Description

- Selects the print start trigger type.
 - n=1: When the specified text string is received (default)
 - n=2: When all objects are filled
(Prints with the delimiter at the end of the data.)
 - n=3: When the specified number of characters is received
(not including delimiters)
- This command is a dynamic command.

Remarks

- Invalid if n is a value other than 1 through 3

Example

- When the print start trigger is “when all objects are filled”:

^ P T 2
(5Eh 50h 54h 32h)

^FF Start printing

ASCII:	^	F	F
Decimal:	94	70	70
Hexadecimal:	5E	46	46

Parameters

None

Description

- Starts printing.
- However, the print start trigger must be “when the specified text string is received”.
(Refer to “^PT” and “ESC iXT2”.)
- The text string for the print start command can be changed.
(Refer to “^PS” and “ESC iXP2”.)

Example

- To print template number 3:

```
^ T S 0 0 3 ^ F F
(5Eh 54h 53h 30h 30h 33h 5Eh 46h 46h)
```

^PS Specify print start command text string

ASCII:	^	P	S	n1	n2	data
Decimal:	94	80	83	nd1	nd2	datad
Hexadecimal:	5E	50	53	nh1	nh2	datah

Parameters
 $0 \leq n1 \leq 2$
 $0 \leq n2 \leq 9$
 $00h \leq data \leq FFh$
Description

- Specifies the text string for the print start command.
 (n1*10)+n2: Length of the text string (can be set between 1 and 20)
 data: Text string (The maximum number of characters that can be set is 20 characters (bytes).)
- The default text string for the print start command is “^FF”.
- This command is a dynamic command.

Remarks

- Invalid if more than 20 characters have been specified

Example

- To change the text string for the print start command to “START”:
 Since the text string to be specified (data), “START”, contains 5 characters, n1=0 and n2=5. Therefore, the command will be as follows.

```
^ P S 0 5 S T A R T
(5Eh 50h 53h 30h 35h 53h 54h 41h 52h 54h)
```

^PC Specify print start received character count

ASCII:	^	P	C	n1	n2	n3
Decimal:	94	80	67	nd1	nd2	nd3
Hexadecimal:	5E	50	43	nh1	nh2	nh3

Parameters
 $0 \leq n1 \leq 9$
 $0 \leq n2 \leq 9$
 $0 \leq n3 \leq 9$
Description

- Specifies the number of characters to be received in order to start printing.
($n1 \times 100$) + ($n2 \times 10$) + $n3$: Print start received character count (bytes) (1 to 999)
- The default print start received character count is 10.
- This command is a dynamic command.
- One full-width character is treated as 2 bytes, and one half-width character is treated as 1 byte.

Example

- To change the print start received character count to 100 characters:

Since $n1=1$, $n2=0$ and $n3=0$, the command will be as follows.

```
^ P C 1 0 0
(5Eh 50h 43h 31h 30h 30h)
```

^SS Specify delimiter

ASCII:	^	S	S	n1	n2	data
Decimal:	94	83	83	nd1	nd2	datad
Hexadecimal:	5E	53	53	nh1	nh2	datah

Parameters
 $0 \leq n1 \leq 2$
 $0 \leq n2 \leq 9$
 $00h \leq datah \leq FFh$
Description

- The delimiter is used to indicate when to move to the next object in data that is being sent.
- Specifies the text string for the delimiter.
 (n1*10)+n2: Length of the text string (between 1 and 20)
 data: Text string (The maximum number of characters that can be set is 20 characters (bytes).)
- The default text string for the delimiter is "09h" (Tab code).
- A text string that will not appear in the print data should be specified.
- This command is a dynamic command.

Remarks

- Invalid if more than 20 characters have been specified

Example

- To change the delimiter to "," (0x2C):
 Since the text string contains one character, n1=1 and n2=1 and, with the text string (datah) ",", the command will be as follows.

```
^ S S 0 1 ,  
(5Eh 53h 53h 30h 31h 2Ch)
```

^TS Select template

ASCII:	^	T	S	n1	n2	n3
Decimal:	94	84	83	nd1	nd2	nd3
Hexadecimal:	5E	54	53	nh1	nh2	nh3

Parameters

n1: 0 (Fixed)

$0 \leq n2 \leq 9$

$0 \leq n3 \leq 9$

Description

- Specifies the number of the template selected from the machine.
($n2 \times 10 + n3$): Template number (1 to 99)
- The default selection number is 1.
- This command is a dynamic command.

Remarks

- The template numbers that can be set are between 1 and 99.
This command becomes invalid if any other value has been specified or if the number that has been specified is for a template not transferred to the machine.
- All data already fed in, selected objects and the search text are initialized.

Example

- To select template number 99:

Since $n2=9$ and $n3=9$, the command will be as follows.

```
^ T S 0 9 9
(5Eh 54h 53h 30h 39h 39h)
```

^LS Specify line spacing with line feed

ASCII:	^	L	S	n1	n2	n3
Decimal:	94	76	83	nd1	nd2	nd3
Hexadecimal:	5E	4C	53	nh1	nh2	nh3

Parameters
 $0 \leq n1 \leq 2$
 $0 \leq n2 \leq 9$
 $0 \leq n3 \leq 9$
Description

- Specifies the number of dots for the line spacing when a line feed is entered.
($n1 \times 100$) + ($n2 \times 10$) + $n3$: Number of dots for the line spacing (0 to 255)
- The default number of dots for the line spacing when a line feed is entered is the number of dots determined when the template is created in P-touch Editor.

Remarks

- The number of dots for the line spacing can be between 0 and 255. This command becomes invalid if any other value has been specified.
1 dot = 1/360 inch
1 dot \approx 0.071 mm

Example

- To set the line spacing to 10 dots:

```
^ L S 0 1 0
(5Eh 4Ch 53h 30h 31h 30h)
```

^CC Change the prefix character

ASCII:	^	C	C	n
Decimal:	94	67	67	nd
Hexadecimal:	5E	43	43	nh

Parameters

00h≤nh≤FFh

Description

- Changes the prefix character code.
n: Character code
- The default text string for the prefix character is “^”.
- This command is a dynamic command.

Example

- To change the prefix character from “^” to “_”, send the command shown below.

^ C C 5Fh
(5Eh 43h 43h 5Fh) (5Fh stands for “_” in ASCII code)

- However, since the prefix character remains set to “_” if the machine is not later turned off, then on, the initialize command, for example, will be “_II” instead of “^II”.

^RC Specify line feed command text string

ASCII:	^	R	C	n1	n2	data
Decimal:	94	82	67	nd1	nd2	datad
Hexadecimal:	5E	52	43	nh1	nh2	datah

Parameters

$0 \leq n1 \leq 2$

$0 \leq n2 \leq 9$

$00h \leq datah \leq FFh$

Description

- Specifies the text string for the line feed command.
 (n1*10)+n2: Length of the text string (can be set between 1 and 20)
 data: Text string (The maximum number of characters that can be set is 20 characters (bytes).)
- The default text string for the line feed command is “^CR”.
- This command is a dynamic command.

Remarks

- Invalid if more than 20 characters are specified

Example

- To change the text string for the line feed command to “0Dh 0Ah”:
 Since the text string to be specified (data) contains 2 characters, n1=0 and n2=2. Therefore, the command will be as follows.

^ R C 0 2 0Dh 0Ah
 (5Eh 52h 43h 30h 32h 0Dh 0Ah)

^CN Specify number of copies

ASCII:	^	C	N	n1	n2	n3
Decimal:	94	67	78	nd1	nd2	nd3
Hexadecimal:	5E	43	4E	nh1	nh2	nh3

Parameters
 $0 \leq n1 \leq 9$
 $0 \leq n2 \leq 9$
 $0 \leq n3 \leq 9$
Description

- Specifies the number of copies to be printed.
($n1 \times 100 + n2 \times 10 + n3$): Number of copies (bytes) (1 to 999)
- The default number of copies is 1.

Remarks

- When printing is finished, the number of copies specified with this command returns to the number of copies (static value) specified from the machine.

Example

- To change the number of copies to 100:
Since $n1=1$, $n2=0$ and $n3=0$, the command will be as follows.

```
^ C N 1 0 0
(5Eh 43h 4Eh 31h 30h 30h)
```

^NN Specify number of Numbering copies

ASCII:	^	N	N	n1	n2	n3
Decimal:	94	78	78	nd1	nd2	nd3
Hexadecimal:	5E	4E	4E	nh1	nh2	nh3

Parameters
 $0 \leq n1 \leq 9$
 $0 \leq n2 \leq 9$
 $0 \leq n3 \leq 9$
Description

- Specifies the number of copies to be printed with Numbering.
($n1 \times 100 + n2 \times 10 + n3$): Number of Numbering copies (bytes) (1 to 999)
- The default number of copies printed with Numbering is 1.

Remarks

- When printing is finished, the number of copies specified with this command returns to the number of copies (static value) specified from the machine.

Example

- To change the number of Numbering copies to 100:
Since $n1=1$, $n2=0$ and $n3=0$, the command will be as follows.

```
^ N N 1 0 0
(5Eh 4Eh 4Eh 31h 30h 30h)
```

^ID Initialize template data

ASCII:	^	I	D
Decimal:	94	73	68
Hexadecimal:	5E	49	44

Parameters

None

Description

- Returns the data in the selected template to what it was when the template was transferred.

^QS Select print options

ASCII:	^	Q	S	n
Decimal:	94	81	83	nd
Hexadecimal:	5E	51	53	nh

Parameters

n: 0, 1

Description

- Selects the print options.
 - n=0: Priority given to print speed
 - n=1: Priority given to print quality
- The default value for the print options is "0" (priority given to print speed).
- This command is a dynamic command.

Example

- To set the print options to give priority to print quality:

Since n=1, the command will be as follows.

```
^ Q S 1
(5Eh 51h 53h 31h)
```

^QV Specify QR Code version

ASCII:	^	Q	V	n1	n2
Decimal:	94	81	86	nd1	nd2
Hexadecimal:	5E	51	56	nh1	nh2

Parameters
 $0 \leq n1 \leq 4$
 $0 \leq n2 \leq 9$
Description

- Specifies the QR code version.
($n1 \times 10 + n2$): Version number (between 0 and 40)
- The default QR Code version is 0.
- This command becomes invalid if a value other than those that can be set (between 0 and 40) has been specified.
- This command is a dynamic command.
- If the print range is exceeded, the bar code is not printed.

Example

- To change the version to 10:

Since $n1=1$ and $n2=0$, the command will be as follows.

```
^ Q V 1 0
(5Eh 51h 56h 31h 30h)
```

^FC FNC1 replacement setting

ASCII:	^	F	C	n
Decimal:	94	70	67	nd
Hexadecimal:	5E	46	43	nh

Parameters
 $0 \leq n \leq 1$
Description

- This command selects whether or not GS codes, which are included in bar code protocols such as GS1-128 (UCC/EAN-128), are replaced with FNC1 codes.
n: FNC1 replacement setting
(ON: 1; OFF: 0 (default))
- This command is a dynamic command.

Remarks

- Invalid if n is a value other than 1 or 0

Example

- To disable FNC1 replacement:

Since FNC1 replacement will be disabled, n=0. Therefore, the command will be as follows.

```
^ F C 0
(5Eh 46h 43h 30h)
```

^CF **Full cut setting**

ASCII:	^	C	F	n1	n2
Decimal:	94	67	70	nd1	nd2
Hexadecimal:	5E	43	46	nh1	nh2

Parameters

$0 \leq n1 \leq 9$

$0 \leq n2 \leq 9$

Description

- Specifies whether or not full cut is used, and specifies the number of copies.
 (n1*10)+n2: Full cut and number of copies settings
 (00: OFF; 01 to 99: Number of copies) (Default value: 01)
- This command is a dynamic command.

Remarks

- The full cut label number setting can be between 1 and 99. This command becomes invalid if any other value has been specified.

Example

- To cut after every two labels:

Since the auto cut label number will be set to 2, n1=0 and n2=2. Therefore, the command will be as follows.

^ C F 0 2
 (5Eh 43h 46h 30h 32h)

^CH Half cut setting

ASCII:	^	C	H	n
Decimal:	94	67	72	nd
Hexadecimal:	5E	43	48	nh

Parameters
 $0 \leq n \leq 1$
Description

- Specifies whether or not half cut is used.
n: Half cut setting
(ON: 1 (default); OFF: 0)
- This command is a dynamic command.

Remarks

- Invalid if n is a value other than 1 or 0

Example

- To make half cuts:

Since half cuts will be enabled, n=1. Therefore, the command will be as follows.

```
^ C H 1
(5Eh 43h 48h 31h )
```


^CP Chain printing setting

ASCII:	^	C	P	n
Decimal:	94	67	80	nd
Hexadecimal:	5E	43	50	nh

Parameters
 $0 \leq n \leq 1$
Description

- Specifies whether or not chain printing is applied.
n: Chain printing setting
(OFF: 0 (default); ON: 1)
- This command is a dynamic command.

Remarks

- Invalid if n is a value other than 1 or 0

Example

- To use chain printing:

Since chain printing will be enabled, n=1. Therefore, the command will be as follows.

```
^ C P 1
(5Eh 43h 50h 31h )
```

^MP Mirror printing setting

ASCII:	^	M	P	n
Decimal:	94	77	80	nd
Hexadecimal:	5E	4D	50	nh

Parameters
 $0 \leq n \leq 1$
Description

- Specifies whether or not mirror printing is applied.

n: Mirror printing setting
(OFF: 0 (default); ON: 1)

- This command is a dynamic command.

Remarks

- Invalid if n is a value other than 1 or 0

Example

- To use mirror printing:

Since mirror printing will be enabled, n=1. Therefore, the command will be as follows.

^ M P 1
(5Eh 4Dh 50h 31h)

^II Initialize

ASCII:	^	I	I
Decimal:	94	73	73
Hexadecimal:	5E	49	49

Parameters

None

Description

- Reverts all dynamic settings to the machine settings.
 - (1) Select print start trigger
 - (2) Specify print start command text string
 - (3) Specify print start received character count
 - (4) Delimiter setting
 - (5) Select template
 - (6) Full cut setting
 - (7) Half cut setting
 - (8) Chain printing setting
 - (9) Mirror printing setting
 - (10) Special tape setting
 - (11) Change prefix character
 - (12) Specify line feed command text string
 - (13) Specify number of copies
 - (14) Specify QR Code version
 - (15) FNC1 replacement setting

Remarks

- All data already fed in, selected objects and the search text are initialized.

^OP Perform machine operations (feed/cut)

ASCII:	^	O	P	n
Decimal:	94	79	80	nd
Hexadecimal:	5E	4F	50	nh

Parameters

n = 4

Description

- Causes the machine to perform a feed and cut operation.

n=4 Performs the feed and cut operation

Remarks

- Invalid if n is a value other than 4

Example

- To specify that the machine performs a feed and cut operation:

^ O P 4
(5Eh 4Fh 50h 34h)

^SR Status request

ASCII:	^	S	R
Decimal:	94	83	82
Hexadecimal:	5E	53	52

Parameters

None

Description

- The printer status is returned.

The printer status consists of 32 bytes.

Number	Offset	Size	Name	Value/Reference
1	0	1	Print head mark	Fixed at 80h
2	1	1	Size	Fixed at 20h
3	2	1	Brother code	Fixed at "B" (42h)
4	3	1	Series code	Fixed at "0" (30h)
5	4	1	Model code	"o" (6Fh) : P900W "p" (70h) : P950NW "q" (71h) : P900
6	5	1	Country code	Fixed at "0" (30h)
7	6	1	Battery level information	Refer to table (11) below.
8	7	1	Extended error	Refer to table (10) below.
9	8	1	Error information 1	Refer to table (1) below.
10	9	1	Error information 2	Refer to table (2) below.
11	10	1	Media width	Refer to table (3) below.
12	11	1	Media type	Refer to table (4) below.
13	12	1	Number of colors	Fixed at 00h
14	13	1	Internal font information	Fixed at 00h
15	14	1	Internal Japanese font information	Fixed at 00h
16	15	1	Mode	Fixed at 00h
17	16	1	Density	Fixed at 00h
18	17	1	Media length	Refer to table (3) below.
19	18	1	Status type	Refer to table (5) below.
20	19	1	Phase type	Refer to table (6) below.
21	20	1	Phase number (higher order bytes)	Fixed at 00h
22	21	1	Phase number (lower order bytes)	Fixed at 00h
23	22	1	Notification number	Refer to table (7) below.
24	23	1	Expansion area (number of bytes)	Fixed at 00h

Number	Offset	Size	Name	Value/Reference
25	24	1	Media color information	Refer to table (8) below.
26	25	1	Ribbon color information	Refer to table (9) below.
27	26	6	Not used	Fixed at 00h

(1) Error information 1

Flag	Mask	Definition
Bit 0	01h	Not used
Bit 1	02h	Not used
Bit 2	04h	“Cutter jam” error
Bit 3	08h	Low battery
Bit 4	10h	Not used
Bit 5	20h	Not used
Bit 6	40h	Not used
Bit 7	80h	Not used

(2) Error information 2

Flag	Mask	Definition
Bit 0	01h	Not used
Bit 1	02h	Not used
Bit 2	04h	Not used
Bit 3	08h	Not used
Bit 4	10h	“Cover open” error
Bit 5	20h	High temperature error
Bit 6	40h	Feed error
Bit 7	80h	System error

(3) Media width, Media length

Media type	Media width	Media length
No tape	00h	00h
3.5-mm-wide tape	04h	00h
6-mm-wide tape	06h	00h
9-mm-wide tape	09h	00h
12-mm-wide tape	0Ch	00h
18-mm-wide tape	12h	00h
24-mm-wide tape	18h	00h
36-mm-wide tape	24h	00h
HS 5.8-mm-wide tape	06h	00h
HS 8.8-mm-wide tape	09h	00h
HS 11.7-mm-wide tape	0Ch	00h
HS 17.7-mm-wide tape	12h	00h
HS 23.6-mm-wide tape	18h	00h
HSE 5.2-mm-wide tape	05h	00h
HSE 9.0-mm-wide tape	09h	00h
HSE 11.2-mm-wide tape	0Bh	00h
HSE 21.0-mm-wide tape	15h	00h
HSE 31.0-mm-wide tape	1Fh	00h
FLe 21mm x 45mm-wide tape	15h	2Dh

(4) Media type

Media type	Value
No tape	00h
Laminated tape	01h
Non-laminated tape	03h
Fabric tape	04h
Heat-shrink Tube	11h
FLe tape	13h
Flexible ID tape	14h
Satin tape	15h
Heat-shrink Tube E	17h
Incompatible tape	FFh

(5) Status type

Status type	Value
Reply to status request	00 h
Not use	01 h
Error occurred	02 h
Not use	03 h
Not use	04 h
Notification	05 h
Phase change	06 h
(Not used)	07h to 20h
Usage prohibited	21h to FFh

(6) Phase type, number

Phase type	Value
(Reception possible) Edit	00h
Printing	01h

Edit

Phase	number (Dec)	higher order bytes	lower order bytes
(Reception possible)Edit	0	00h	00h
Feed	1	00h	01h

Printing

Phase	number (Dec)	higher order bytes	lower order bytes
Printing	0	00h	00h
Not use	10	00h	0Ah
Cover opened while receiving data	20	00h	14h
Not use	25	00h	19h

(7) Notification number

Notification	Value
(No notification)	00h
Cover open	01h
Cover close	02h
Cooling started	03h
Cooling finished	04h

(8) Media color information

Media color	Media color ID	Remarks
White	01h	
Other	02h	
Clear	03h	
Red	04h	
Blue	05h	
Yellow	06h	
Green	07h	
Black	08h	
Clear	09h	
Matte White	20h	
Matte Clear	21h	
Matte Silver	22h	
Satin Gold	23h	
Satin Silver	24h	
Blue	30h	TZe-535(12mm) TZe-545(18mm) TZe-555(24mm)
Red	31h	TZe-435(12mm)
Fluorescent Orange	40h	
Fluorescent Yellow	41h	
Berry Pink	50h	TZe-MQP35
Light Gray	51h	TZe-MQL35
Lime Green	52h	TZe-MQG35
Yellow	60h	
Pink	61h	
Blue	62h	
Heat-shrink Tube	70h	
Heat-shrink Tube E	71h	

Media color	Media color ID	Remarks
White(Flex. ID)	90h	
Yellow(Flex. ID)	91h	
Cleaning	F0h	
Stencil	F1h	
Cooling finished	FFh	

(9) Ribbon color information

Ribbon color	Ribbon color ID
White	01h
Red	04h
Blue	05h
Black	08h
Gold	0Ah
Blue	62h
Cleaning	F0h
Stencil	F1h
Other	02h
Incompatible	FFh

(10) Extended error information

Error information	Value
High resolution/High- speed printing error	1Dh
Power switching error	1Eh
Battery error	1Fh
Incompatible media error	21h

(11) Battery level information

Battery level	Value
Full battery	00h
Half battery	01h
Low battery	02h
Changing required	03h
AC adapter in use	04h
Undetectable	FFh

^VR Retrieve version information

ASCII:	^	V	R
Decimal:	94	86	82
Hexadecimal:	5E	56	52

Parameters

None

Description

- Retrieves the version information for the machine as a 16-character text string.

^CR Line feed in object

ASCII:	^	C	R
Decimal:	94	67	82
Hexadecimal:	5E	43	52

Parameters

None

Description

- Adds a return to the next line in the text object.
- Valid even if the text string for the line feed command has been changed

Example

- To print three lines:

Code: 1 ^ C R 2 ^ C R 3 ^ F F

(31h 5Eh 43h 52h 32h 5Eh 43h 52h 33h 5Eh 46h 46h)

Print result:

1
2
3

^OS Select object (object number)

ASCII:	^	O	S	n1	n2
Decimal:	94	79	83	nd1	nd2
Hexadecimal:	5E	4F	53	nh1	nh2

Parameters
 $0 \leq n1 \leq 5$
 $0 \leq n2 \leq 9$
Description

- Selects an object by its object number.
($n1 \times 10 + n2$): Object number (1 to 50)

Remarks

- The object number can be set between 1 and 50.
This command becomes invalid if any other value has been specified.
- Use this command to insert data starting with an intermediary object.

Example

- To select the 33rd object:

^ O S 3 3
(5Eh 4Fh 53h 33h 33h)

^ON Select object (object name)

ASCII:	^	O	N	data	00
Decimal:	94	79	78	data	00
Hexadecimal:	5E	4F	4E	data	00

Parameters

None

Description

- Selects an object by its object name.

data: Text string (object name)

Remarks

- The maximum length of text that can be set is 20 characters. If text longer than this has been specified, the command becomes invalid. In addition, the command becomes invalid if no text has been specified.
- "00h" should be added at the end of the text. This indicates the end of the text.
- Use this command to insert data starting with an intermediary object.

Example

- To select an object with the name "TEXT1":

```
^ O N T E X T 1 00h
(5Eh 4Fh 4Eh 54h 45h 58h 54h 31h 00h)
```

^DI Directly insert object

ASCII:	^	D	I	n1	n2	data
Decimal:	94	68	73	nd1	nd2	datad
Hexadecimal:	5E	44	49	nh1	nh2	datah

Parameters

00h≤nh1≤FFh

00h≤nh2≤FEh

Description

- Inserts a text string for the specified number of characters into the object selected in the selected template.
(If even a print command or delimiter is within the specified number of characters, they are treated as data.)
(nh2*256)+nh1: Specified number of characters (bytes)
data: Text string

Example

- If "A" is specified as the print start text string, and the print start trigger is specified as the print start text string, simply print "A" by printing with the following command.

Code: ^ D I 03h 00h 1 A 2 A

(5Eh 44h 49h 03h 00h 31h 41h 32h 41h)

Print result:

1A2

ESC i a Specify command mode

ASCII:	ESC	i	a	n
Decimal:	27	105	97	nd
Hexadecimal:	1B	69	61	nh

Parameters

nh=00h 01h 03h 30h 31h 33h

Description

- Switches the mode.

nh=00h or 30h:	ESC/P mode
nh=01h or 31h:	Raster mode
nh=03h or 33h:	P-touch Template mode (default)
- This command is a dynamic command.

Remarks

- If the specified value is one other than those that can be set, raster mode will be entered.

ESC iXT2 Select print start trigger

ASCII:	ESC	i	X	T	2	n1	n2	n3
Decimal:	27	105	88	84	50	nd1	nd2	nd3
Hexadecimal:	1B	69	58	54	32	nh1	nh2	nh3

Parameters

nh1=01h (Fixed)

nh2=00h (Fixed)

00h≤nh3≤02h

Description

- Selects the print start trigger type.
 - nh3=00h: When the specified text string is received (default)
 - nh3=01h: When all objects are filled
(Prints with the delimiter at the end of the data)
 - nh3=02h: When the specified number of characters is received
(not including delimiters)
- This command is a static command.

Remarks

- Invalid if nh3 is a value other than 00h through 02h

Example

- When the print start trigger is “when all objects are filled”

ESC i X T 2 01h 00h 01h
 (1Bh 69h 58h 54h 32h 01h 00h 01h)

ESC iXP2 Specify print start command text string

ASCII:	ESC	i	X	P	2	n1	n2	data
Decimal:	27	105	88	80	50	nd1	nd2	datad
Hexadecimal:	1B	69	58	50	32	nh1	nh2	datah

Parameters

01h ≤ nh1 ≤ 14h

nh2: 00h (Fixed)

00h ≤ datah ≤ FFh

Description

- Specifies the text string for the print start command.
 nh1+(nh2*256): Length of the text string (can be set between 1 and 20)
 data: Text string (The maximum number of characters that can be set is 20 characters (bytes).)
- The default text string for the print start command is “^FF”.
- This command is a static command.

Remarks

- Invalid if more than 20 characters are specified

Example

- To change the text string for the print start command to “START”:
 Since the text string to be specified (data), “START”, contains 5 characters, nh1=05h and nh2=00h.
 Therefore, the command will be as follows.

ESC i X P 2 05h 00h S T A R T
 (1Bh 69h 58h 50h 32h 05h 00h 53h 54h 41h 52h 54h)

ESC iXr2 Specify print start received character count

ASCII:	ESC	i	X	r	2	n1	n2	n3	n4
Decimal:	27	105	88	114	50	nd1	nd2	nd3	nd4
Hexadecimal:	1B	69	58	72	32	nh1	nh2	nh3	nh4

Parameters

nh1: 02h (Fixed)

nh2: 00h (Fixed)

00h≤nh3≤FFh

00h≤nh4≤03h

Description

- Specifies the number of characters to be received in order to start printing.
nh3+(nh4*256): Print start received character count (bytes) (1 to 999)
- The default print start received character count is 10.
- This command is a static command.

Example

- To change the print start received character count to 100 characters:

Since nh3=64h and nh4=00h, the command will be as follows.

ESC i X r 2 02h 00h 64h 00h
(1Bh 69h 58h 72h 32h 02h 00h 64h 00h)

ESC iXD2 Specify delimiter

ASCII:	ESC	i	X	D	2	n1	n2	data
Decimal:	27	105	88	68	50	nd1	nd2	datad
Hexadecimal:	1B	69	58	44	32	nh1	nh2	datah

Parameters

01h≤nh1≤14h

nh2: 00h (Fixed)

00h≤datah≤FFh

Description

- The delimiter is used to indicate when to move to the next object in data that is being sent.
- Specifies the text string for the delimiter.
 nh1+(nh2*256): Length of the text string (between 1 and 20)
 data: Text string (The maximum number of characters that can be set is 20 characters (bytes).)
- The default text string for the delimiter is "09h" (TAB code).
- This command is a static command.

Remarks

- Invalid if more than 20 characters are specified

Example

- To change the delimiter to "," (2Ch):
 Since the text string contains one character, nh1=01h and nh2=00h and, with the text string (datah) ",", (2Ch), the command will be as follows.

ESC i X D 2 01h 00h 2Ch
 (1Bh 69h 58h 44h 32h 01h 00h 2Ch)

ESC iXa2 Specify non-printed text strings

ASCII:	ESC	i	X	a	2	n1	n2	n3	data
Decimal:	27	105	88	97	50	nd1	nd2	nd3	datad
Hexadecimal:	1B	69	58	61	32	nh1	nh2	nh3	datah

Parameters

01h≤nh1≤15h

nh2: 00h (Fixed)

nh3: 01h (Fixed)

00h≤datah≤FFh

Description

- Specifies the non-printed text string.

nh1+(nh2*256): Length of the text string (0 to 20) + 1

data: Text string (The maximum number of characters that can be set is 20 characters (bytes).)

- This command is a static command.

Remarks

- Invalid if more than 20 characters are specified

Example

- To specify the non-printed text string as "ABCD":

Since the text string contains four characters, nh1=05h and nh2=00h, and then the command will be as follows.

ESC i X a 2 05h 00h 01h A B C D
(1Bh 69h 58h 61h 32h 05h 00h 01h 41h 42h 43h 44h)

ESC iXi2 Specify command mode

ASCII:	ESC	i	X	i	2	n1	n2	n3
Decimal:	27	105	88	105	50	nd1	nd2	nd3
Hexadecimal:	1B	69	58	69	32	nh1	nh2	nh3

Parameters

nh1: 01h (Fixed)

nh2: 00h (Fixed)

nh3: 00h 01h 03h

Description

- Switches the mode.
 - nh3=00h: ESC/P mode
 - nh3=01h: Raster mode
 - nh3=03h: P-touch Template mode (default)
- This command is a static command.

Remarks

- Invalid if the specified value is any other than those that can be set

ESC iXn2 Select template

ASCII:	ESC	i	X	n	2	n1	n2	n3
Decimal:	27	105	88	110	50	nd1	nd2	nd3
Hexadecimal:	1B	69	58	6E	32	nh1	nh2	nh3

Parameters

nh1: 01h (Fixed)

nh2: 00h (Fixed)

01h≤nh3≤63h

Description

- Specifies the number of the template selected from the machine.

n3: Template number (1 to 99)

- The default selection number is 1.
- This command is a static command.

Remarks

- The template numbers that can be set are between 1 and 99.

This command becomes invalid if any other value has been specified or if the number that has been specified is of a template not transferred to the machine.

Example

- To select template number 99:

Since nh3=63h, the command will be as follows.

```
ESC i X n 2 01h 00h 63h
(1Bh 69h 58h 6Eh 32h 01h 00h 63h)
```

ESC iXf2 Change the prefix character

ASCII:	ESC	i	X	f	2	n1	n2	n3
Decimal:	27	105	88	102	50	nd1	nd2	nd3
Hexadecimal:	1B	69	58	66	32	nh1	hn2	nh3

Parameters

nh1: 01h (Fixed)

nh2: 00h (Fixed)

00h≤nh3≤FFh

Description

- Changes the prefix character code.
n3: Character code
- The default text string for the prefix character is “^”.
- This command is a static command.

Example

- To change the prefix character to “_”:

ESC i X f 2 01h 00h 5Fh (“_”)

(1Bh 69h 58h 66h 32h 01h 00h 5Fh) (5Fh stands for “_” in ASCII code)

ESC iXc2 Select printer settings (cut options)

ASCII:	ESC	i	X	c	2	n1	n2	n3
Decimal:	27	105	88	99	50	nd1	nd2	nd3
Hexadecimal:	1B	69	58	63	32	nh1	nh2	nh3

Parameters

nh1: 01h (Fixed)

nh2: 00h (Fixed)

nh3: 00h 01h 08h 09h

Description

- Specifies the various cut options.
 - nh3=00h: Full cut setting OFF, chain printing setting ON
 - nh3=01h: Full cut setting ON, chain printing setting ON
 - nh3=08h: Full cut setting OFF, chain printing setting OFF
 - nh3=09h: Full cut setting ON, chain printing setting OFF
- This command is a static command.

Example

- To select full cut setting ON and chain printing setting ON:

ESC i X c 2 01h 00h 01h
 (1Bh 69h 58h 63h 32h 01h 00h 01h)

ESC iXy2 Select printer settings (cut options—specifying number of labels)

ASCII:	ESC	i	X	y	2	n1	n2	n3
Decimal:	27	105	88	121	50	nd1	nd2	nd3
Hexadecimal:	1B	69	58	79	32	nh1	nh2	nh3

Parameters

nh1: 01h (Fixed)

nh2: 00h (Fixed)

01h≤nh3≤63h

Description

- Specifies that the tape will be cut after the specified number of labels. (If the full cut setting is ON, the tape will be cut after the number of labels specified with this setting.)
nh3: Makes a full cut after a specified number of labels (01h to 63h)
- This command is a static command.

Remarks

- The full cut label number setting can be between 1 and 99. This command becomes invalid if any other value has been specified.

Example

- To cut after every five labels (However, the full cut setting must be ON.) :

ESC i X y 2 01h 00 05h
(1Bh 69h 58h 79h 32h 01h 00h 05h)

ESC iXH2 Half cut setting

ASCII:	ESC	i	X	H	2	n1	n2	n3
Decimal:	27	105	88	72	50	nd1	nd2	nd3
Hexadecimal:	1B	69	58	48	32	nh1	nh2	nh3

Parameters

nh1: 01h (Fixed)

nh2: 00h (Fixed)

nh3:00h 01h

Description

- Specifies whether or not half cut is used.

nh3=00h: Half cut setting OFF

nh3=01h: Half cut setting ON

- This command is a static command.

Example

- To make half cuts:

ESC i XH2 01h 00h 01h

(1Bh 69h 58h 48h 32h 01h 00h 01h)

ESC iXM2 Mirror printing setting

ASCII:	ESC	i	X	M	2	n1	n2	n3
Decimal:	27	105	88	77	50	nd1	nd2	nd3
Hexadecimal:	1B	69	58	4D	32	nh1	nh2	nh3

Parameters

nh1: 01h (Fixed)

nh2: 00h (Fixed)

nh3:00h 01h

Description

- Specifies whether or not mirror printing is applied.

nh3=00h: Mirror printing setting OFF

nh3=01h: Mirror printing setting ON

- This command is a static command.

Example

- To apply mirror printing:

ESC i XM2 01h 00h 01h

(1Bh 69h 58h 4Dh 32h 01h 00h 01h)

ESC iXs2 Special tape setting

ASCII:	ESC	i	X	s	2	n1	n2	n3
Decimal:	27	105	88	115	50	nd1	nd2	nd3
Hexadecimal:	1B	69	58	73	32	nh1	nh2	nh3

Parameters

nh1: 01h (Fixed)

nh2: 00h (Fixed)

nh3: 00h 01h

Description

- Specifies whether or not the special tape setting is enabled.

When the special tape setting is ON, the cut settings and chain printing setting are not available (same as being OFF). When the special tape setting is OFF, the cut settings and chain printing setting are applied as specified.

nh3=00h: Special tape setting OFF

nh3=01h: Special tape setting ON

- This command is a static command.

Example

- To use the special tape setting:

```
ESC i Xs2 01h 00h 01h
(1Bh 69h 58h 73h 32h 01h 00h 01h )
```

ESC iXm2 Select character code set

ASCII:	ESC	i	X	m	2	n1	n2	n3
Decimal:	27	105	88	109	50	nd1	nd2	nd3
Hexadecimal:	1B	69	58	6D	32	nh1	nh2	nh3

Parameters

nh1: 01h (Fixed)

nh2: 00h (Fixed)

nh3: 00h 01h 02h

Description

- Selects the character code set. (For details on the character code sets, refer to the character code tables in [“Appendix B: Character Code Tables”](#).)
 - nh3=00h: Brother standard
 - nh3=01h: Windows 1250 (Eastern Europe)
 - nh3=02h: Windows 1252 (Western Europe)
- Invalid if nh3 is set to a value other than 00h through 02h.
- This command is a static command.

Example

- To set the character code set to the Brother standard:

ESC i X m 2 01h 00h 00h
 (1Bh 69h 58h 6Dh 32h 01h 00h 00h)

ESC iXj2 Select international character set

ASCII:	ESC	i	X	j	2	n1	n2	n3
Decimal:	27	105	88	106	50	nd1	nd2	nd3
Hexadecimal:	1B	69	58	6A	32	nh1	nh2	nh3

Parameters

nh1: 01h (Fixed)
 nh2: 00h (Fixed)
 00h≤nh3≤0Dh, 40h

Description

- Selects the character set for the country, and switches some character codes in the code table according to the value of nh3.

nh3=00h: USA
 nh3=01h: France
 nh3=02h: Germany
 nh3=03h: UK
 nh3=04h: Denmark
 nh3=05h: Sweden
 nh3=06h: Italy
 nh3=07h: Spain
 nh3=08h: Japan
 nh3=09h: Norway
 nh3=0Ah: Denmark II
 nh3=0Bh: Spain II
 nh3=0Ch: Latin America
 nh3=0Dh: Korea
 nh3=40h: Legal

- The following 12 codes are changed.

23h 24h 40h 5Bh 5Ch 5Dh 5Eh 60h 7Bh 7Ch 7Dh 7Eh

(For the characters that are switched, refer to "[International character set table](#)".)

- The default setting is nh3=00h (USA).
- This command is a static command.

Example

- To change the international character setting to that for Japan:

ESC i X j 2 01h 00h 08h
 (1Bh 69h 58h 6Ah 32h 01h 00h 08h)

ESC iXR2 Specify line feed command text string

ASCII:	ESC	i	X	R	2	n1	n2	data
Decimal:	27	105	88	82	50	nd1	nd2	datad
Hexadecimal:	1B	69	58	52	32	nh1	nh2	datah

Parameters

01h ≤ nh1 ≤ 14h

nh2: 00h (Fixed)

00h ≤ datah ≤ FFh

Description

- Specifies the text string for the line feed command.
 - nh1+(nh2*256): Length of the text string (can be set between 1 and 20)
 - data: Text string (The maximum number of characters that can be set is 20 characters (bytes).)
- The default text string for the line feed command is “^CR”.
- This command is a static command.

Remarks

- Invalid if more than 20 characters are specified

Example

- To change the text string for the line feed command to “0Dh 0Ah”:

Since the text string to be specified (data), contains 2 characters, nh1=02h and nh2=00h. Therefore, the command will be as follows.

ESC i X R 2 02h 00h 0Dh 0Ah
(1Bh 69h 58h 52h 32h 02h 00h 0Dh 0Ah)

ESC iXC2 Specify number of copies

ASCII:	ESC	i	X	C	2	n1	n2	n3	n4
Decimal:	27	105	88	67	50	nd1	nd2	nd3	nd4
Hexadecimal:	1B	69	58	43	32	nh1	nh2	nh3	nh4

Parameters

nh1: 02h (Fixed)

nh2: 00h (Fixed)

00h≤nh3≤FFh

00h≤nh4≤03h

Description

- Specifies the number of copies to be printed.
nh3+(nh4*256): Number of copies (bytes) (1 to 999)
- The default number of copies is 1.
- This command is a static command.

Example

- To change the number of copies to 100:
Since nh3=64h and nh4=00h, the command will be as follows.

ESC i X C 2 02h 00h 64h 00h
(1Bh 69h 58h 43h 32h 02h 00h 64h 00h)

ESC iXN2 Specify number of Numbering copies

ASCII:	ESC	i	X	N	2	n1	n2	n3	n4
Decimal:	27	105	88	78	50	nd1	nd2	nd3	nd4
Hexadecimal:	1B	69	58	4E	32	nh1	nh2	nh3	nh4

Parameters

nh1: 02h (Fixed)

nh2: 00h (Fixed)

00h≤nh3≤FFh

00h≤nh4≤03h

Description

- Specifies the number of copies to be printed with Numbering.
nh3+(nh4*256): Number of Numbering copies (bytes) (1 to 999)
- The default number of copies printed with Numbering is 1.
- This command is a static command.

Example

- To change the number of Numbering copies to 100:
Since nh3=64h and nh4=00h, the command will be as follows.

ESC i X N 2 02h 00h 64h 00h
(1Bh 69h 58h 4Eh 32h 02h 00h 64h 00h)

ESC iXF2 FNC1 replacement setting

ASCII:	ESC	i	X	F	2	n1	n2	n3
Decimal:	27	105	88	70	50	nd1	nd2	nd3
Hexadecimal:	1B	69	58	46	32	nh1	nh2	nh3

Parameters

nh1: 01h (Fixed)

nh2: 00h (Fixed)

nh3: 00h 01h

Description

- This command selects whether or not GS codes, which are included in bar code protocols such as GS1-128 (UCC/EAN-128), are replaced with FNC1 codes.
 nh3=00h: FNC1 replacement setting OFF
 nh3=01h: FNC1 replacement setting ON
- This command is a static command.

Example

- To disable FNC1 replacement:

ESC i X F 2 01h 00h 00h
 (1Bh 69h 58h 46h 32h 01h 00h 00h)

ESC iXq2 Select print options

ASCII:	ESC	i	X	q	2	n1	n2	n3
Decimal:	27	105	88	113	50	nd1	nd2	nd3
Hexadecimal:	1B	69	58	71	32	nh1	nh2	nh3

Parameters

nh1: 01h (Fixed)

nh2: 00h (Fixed)

nh3: 00h, 01h

Description

- Selects the print options.
 - nh3=00h: Priority given to print speed
 - nh3=01h: Priority given to print quality
- The default value for the print options is "00h" (priority given to print speed).
- This command is a static command.

Example

- To set the print options to priority given to print quality:

Since nh3=01h, the command will be as follows.

ESC i X q 2 01h 00h 01h
 (1Bh 69h 58h 71h 32h 01h 00h 01h)

ESC iXT1 Retrieve select print start trigger items

ASCII:	ESC	i	X	T	1	n1	n2
Decimal:	27	105	88	84	49	nd1	nd2
Hexadecimal:	1B	69	58	54	31	nh1	nh2

Parameters

nh1=00h (Fixed)

nh2=00h (Fixed)

Description

- The print start trigger is returned as 3-byte data.
 - [1]: 01h (Fixed)
 - [2]: 00h (Fixed)
 - [3]: Setting
 - 00h: When the specified text string is received
 - 01h: When all objects are filled
 - 02h: When the specified number of characters is received
- The retrieved value is a value specified by a static command.

Example

- The print start trigger specified for the machine is retrieved. When the setting is “When the specified text string is received”:

Code: ESC i X T 1 00h 00h
 (1Bh 69h 58h 54h 31h 00h 00h)
 Returned value: 01h 00h 00h

ESC iXP1 Retrieve print start command setting text string

ASCII:	ESC	i	X	P	1	n1	n2
Decimal:	27	105	88	80	49	nd1	nd2
Hexadecimal:	1B	69	58	50	31	nh1	nh2

Parameters

nh1: 00h (Fixed)

nh2: 00h (Fixed)

Description

- Retrieves the text string specified for the print start command.
- 3- to 22-byte data is returned from the machine. (Varies depending on the length of the text string)
 - [1, 2]: nh1 nh2 (number of characters) nh1 + (nh2*256)
 - [3 and later]: Text string
- The retrieved value is a value specified by a static command.

Example

- When the text string for the print start command is specified as "START":

Code: ESC i X P 1 00h 00h
 (1Bh 69h 58h 50h 31h 00h 00h)

Returned value: 05h 00h S T A R T
 (05h 00h 53h 54h 41h 52h 54h)

ESC iXr1 Retrieve print start received character count

ASCII:	ESC	i	X	r	1	n1	n2
Decimal:	27	105	88	114	49	nd1	nd2
Hexadecimal:	1B	69	58	72	31	nh1	nh2

Parameters

nh1: 00h (Fixed)

nh2: 00h (Fixed)

Description

- Retrieves the number of characters specified to be received to start printing.
- 4-byte data is returned from the machine.
 - [1]: 02h (Fixed)
 - [2]: 00h (Fixed)
 - [3, 4]: nh3 nh4 settings
nh3+(nh4*256): Print start received character count
- The retrieved value is a value specified by a static command.

Example

- For a print start received character count of 500 characters:

Code: ESC i X r 1 00h 00h

(1Bh 69h 58h 72h 31h 00h 00h)

Returned value: 02h 00h F4h 01h 244(F4h)+(1(01h)*256)=500 characters

ESC iXD1 Retrieve delimiter

ASCII:	ESC	i	X	D	1	n1	n2
Decimal:	27	105	88	68	49	nd1	nd2
Hexadecimal:	1B	69	58	44	31	nh1	nh2

Parameters

nh1: 00h (Fixed)

nh2: 00h (Fixed)

Description

- Retrieves the text string specified for the delimiter.
- 3- to 22-byte data is returned from the machine. (Varies depending on the length of the text string)
 - [1, 2]: nh1 nh2 (number of characters)
 nh1+(nh2*256)
 - [3 and later] Text string
- The retrieved value is a value specified by a static command.

Example

- When the delimiter is set as “,” (2Ch):

Code: ESC i X D 1 00h 00h
 (1Bh 69h 58h 44h 31h 00h 00h)

Returned value: 01h 00h ,
 (01h 00h 2Ch)

ESC iXa1 Retrieve non-printed text strings

ASCII:	ESC	i	X	a	1	n1	n2	n3
Decimal:	27	105	88	97	49	nd1	nd2	nd3
Hexadecimal:	1B	69	58	61	31	nh1	nh2	nh3

Parameters

nh1: 01h (Fixed)

nh2: 00h (Fixed)

nh3: 01h (Fixed)

Description

- Retrieves the specified non-printed text string.
- 2- to 22-byte data is returned from the machine. (Varies depending on the length of the text string)
 - [1, 2]: nh1 nh2 (number of characters)
 nh1+(nh2*256)
 - [3 and later]: Text string
- The retrieved value is a value specified by a static command.

Example

- When "ABCD" is specified as the non-printed text string:

Code: ESC i X a 1 01h 00h 01h
 (1Bh 69h 58h 61h 31h 01h 00h 01h)

Returned value: 04h 00h A B C D
 (04h 00h 41h 42h 43h 44h)

ESC iXi1 Retrieve command mode setting

ASCII:	ESC	i	X	i	1	n1	n2
Decimal:	27	105	88	105	49	nd1	nd2
Hexadecimal:	1B	69	58	69	31	nh1	nh2

Parameters

nh1: 00h (Fixed)

nh2: 00h (Fixed)

Description

- Retrieves the setting for the command mode.
- 3-byte data is returned from the machine.
 - [1]: 01h (Fixed)
 - [2]: 00h (Fixed)
 - [3]: Setting
 - 00h: ESC/P mode
 - 01h: Raster mode
 - 03h: P-touch Template mode
- The retrieved value is a value specified by a static command.

Example

- When the setting is for raster mode:

Code: ESC i X i 1 00h 00h
 (1Bh 69h 58h 69h 31h 00h 00h)
 Returned value: 01h 00h 01h

ESC iXn1 Retrieve template selection number

ASCII:	ESC	i	X	n	1	n1	n2
Decimal:	27	105	88	110	49	nd1	nd2
Hexadecimal:	1B	69	58	6E	31	nh1	nh2

Parameters

nh1: 00h (Fixed)

nh2: 00h (Fixed)

Description

- Retrieves the template number selected from the machine.
- 3-byte data is returned from the machine.
 - [1]: 01h (Fixed)
 - [2]: 00h (Fixed)
 - [3]: Setting
- The retrieved value is a value specified by a static command.

Example

- When template number 99 is selected:

Code: ESC i X n 1 00h 00h
 (1Bh 69h 58h 6Eh 31h 00h 00h)
 Returned value: 01h 00h 63h

ESC iXc1 Retrieve printer settings (cut options)

ASCII:	ESC	i	X	c	1	n1	n2
Decimal:	27	105	88	99	49	nd1	nd2
Hexadecimal:	1B	69	58	63	31	nh1	nh2

Parameters

nh1: 00h (Fixed)

nh2: 00h (Fixed)

Description

- Retrieves the various cut settings.
- 3-byte data is returned from the machine.
 - [1]: 01h (Fixed)
 - [2]: 00h (Fixed)
 - [3]: Setting
 - 00h: Full cut setting OFF, chain printing setting ON
 - 01h: Full cut setting ON, chain printing setting ON
 - 08h: Full cut setting OFF, chain printing setting OFF
 - 09h: Full cut setting ON, chain printing setting OFF
- The retrieved value is a value specified by a static command.

Example

- When the full cut setting is ON and the chain printing setting is ON:

Code: ESC i X c 1 00h 00h
 (1Bh 69h 58h 63h 31h 00h 00h)
 Returned value: 01h 00h 01h

ESC iXy1 Retrieve printer settings (cut options—specifying number of labels)

ASCII:	ESC	i	X	y	1	n1	n2
Decimal:	27	105	88	121	49	nd1	nd2
Hexadecimal:	1B	69	58	79	31	nh1	nh2

Parameters

nh1: 00h (Fixed)

nh2: 00h (Fixed)

Description

- Retrieves the setting for full cutting after a specified number of labels.
- 3-byte data is returned from the machine.
 - [1]: 01h (Fixed)
 - [2]: 00h (Fixed)
 - [3]: Setting
- The retrieved value is a value specified by a static command.

Example

- When a full cut is specified for every five labels:

Code: ESC i X y 1 00h 00h
 (1Bh 69h 58h 79h 31h 00h 00h)
 Returned value: 01h 00h 05h

ESC iXH1 Retrieve half cut setting

ASCII:	ESC	i	X	H	1	n1	n2
Decimal:	27	105	88	72	49	nd1	nd2
Hexadecimal:	1B	69	58	48	31	nh1	nh2

Parameters

nh1: 00h (Fixed)

nh2: 00h (Fixed)

Description

- Retrieves the half cut setting.
- 3-byte data is returned from the machine.
 - [1]: 01h (Fixed)
 - [2]: 00h (Fixed)
 - [3]: Setting
 - 00h: Half cut setting OFF
 - 01h: Half cut setting ON
- The retrieved value is a value specified by a static command.

Example

- When the half cut setting is ON:

Code: ESC i X H 1 00h 00h
 (1Bh 69h 58h 48h 31h 00h 00h)
 Returned value: 01h 00h 01h

ESC iXM1 Retrieve mirror printing setting

ASCII:	ESC	i	X	M	1	n1	n2
Decimal:	27	105	88	77	49	nd1	nd2
Hexadecimal:	1B	69	58	4D	31	nh1	nh2

Parameters

nh1: 00h (Fixed)

nh2: 00h (Fixed)

Description

- Retrieves the mirror printing setting.
- 3-byte data is returned from the machine.
 - [1]: 01h (Fixed)
 - [2]: 00h (Fixed)
 - [3]: Setting
 - 00h: Mirror printing setting OFF
 - 01h: Mirror printing setting ON
- The retrieved value is a value specified by a static command.

Example

- When the mirror printing setting is ON:

Code: ESC i X M 1 00h 00h
 (1Bh 69h 58h 4Dh 31h 00h 00h)
 Returned value: 01h 00h 01h

ESC iXs1 Retrieve special tape setting

ASCII:	ESC	i	X	s	1	n1	n2
Decimal:	27	105	88	115	49	nd1	nd2
Hexadecimal:	1B	69	58	73	31	nh1	nh2

Parameters

nh1: 00h (Fixed)

nh2: 00h (Fixed)

Description

- Retrieves the special tape setting.
- 3-byte data is returned from the machine.
 - [1]: 01h (Fixed)
 - [2]: 00h (Fixed)
 - [3]: Setting
 - 00h: Special tape setting OFF
 - 01h: Special tape setting ON
- The retrieved value is a value specified by a static command.

Example

- When the special tape setting is ON:

Code: ESC i X s 1 00h 00h
 (1Bh 69h 58h 73h 31h 00h 00h)
 Returned value: 01h 00h 01h

ESC iXm1 Retrieve character code set setting

ASCII:	ESC	i	X	m	1	n1	n2
Decimal:	27	105	88	109	49	nd1	nd2
Hexadecimal:	1B	69	58	6D	31	nh1	nh2

Parameters

nh1: 00h (Fixed)

nh2: 00h (Fixed)

Description

- Retrieves the specified character code set.
(For details on the character code sets, refer to "[Appendix B: Character Code Tables](#)".)
- 3-byte data is returned from the printer.
 - [1]: 01h (Fixed)
 - [2]: 00h (Fixed)
 - [3]: Setting
 - 00h: Brother standard
 - 01h: Windows1250 (Eastern Europe)
 - 02h: Windows1252 (Western Europe)
- The retrieved value is a value specified by a static command.

Example

- When the character code set is the Brother standard:

Code: ESC i X m 1 00h 00h
 (1Bh 69h 58h 6Dh 31h 00h 00h)
 Returned value: 01h 00h 00h

ESC iXj1 Retrieve international character set setting

ASCII:	ESC	i	X	j	1	n1	n2
Decimal:	27	105	88	106	49	nd1	nd2
Hexadecimal:	1B	69	58	6A	31	nh1	nh2

Parameters

nh1: 00h (Fixed)

nh2: 00h (Fixed)

Description

- Retrieves the international character set setting.
- 3-byte data is returned from the machine.

[1]: 01h (Fixed)

[2]: 00h (Fixed)

[3]: Setting

00h: USA

01h: France

02h: Germany

03h: UK

04h: Denmark

05h: Sweden

06h: Italy

07h: Spain

08h: Japan

09h: Norway

0Ah: Denmark II

0Bh: Spain II

0Ch: Latin America

0Dh: Korea

40h: Legal

- The retrieved value is a value specified by a static command.

Example

- When the international character setting is set to that for Japan:

Code: ESC i X j 1 00h 00h

(1Bh 69h 58h 6Ah 31h 00h 00h)

Returned value: 01h 00h 08h

ESC iXf1 Retrieve the prefix character

ASCII:	ESC	i	X	f	1	n1	n2
Decimal:	27	105	88	102	49	nd1	nd2
Hexadecimal:	1B	69	58	66	31	nh1	nh2

Parameters

nh1: 00h (Fixed)

nh2: 00h (Fixed)

Description

- Retrieves the prefix character code.
- 3-byte data is returned from the machine.
 - [1]: 01h (Fixed)
 - [2]: 00h (Fixed)
 - [3]: Specified character
- The retrieved value is a value specified by a static command.

Example

- When the prefix character is set to “_”:

Code: ESC i X f 1 00h 00h

(1Bh 69h 58h 66h 31h 00h 00h)

Returned value: 01h 00h _

(01h 00h 5Fh) (5Fh stands for “_” in ASCII code)

ESC iXR1 Retrieve line feed command setting text string

ASCII:	ESC	i	X	R	1	n1	n2
Decimal:	27	105	88	82	49	nd1	nd2
Hexadecimal:	1B	69	58	52	31	nh1	nh2

Parameters

nh1: 00h (Fixed)

nh2: 00h (Fixed)

Description

- Retrieves the text string specified for the line feed command.
- 2- to 22-byte data is returned from the machine. (Varies depending on the length of the text string)

[1, 2]: nh1 nh2 (number of characters)
 nh1+(nh2*256)

[3 and later] Text string

- The retrieved value is a value specified by a static command.

Example

- When the text string for the line feed command is specified as "0Dh 0Ah":

Code: ESC i X R 1 00h 00h
 (1Bh 69h 58h 52h 31h 00h 00h)
 Returned value: 02h 00h 0Dh 0Ah

ESC iXC1 Retrieve number of copies setting

ASCII:	ESC	i	X	C	1	n1	n2
Decimal:	27	105	88	67	49	nd1	nd2
Hexadecimal:	1B	69	58	43	31	nh1	nh2

Parameters

nh1: 00h (Fixed)

nh2: 00h (Fixed)

Description

- Retrieves the number of copies specified to be printed.
- 4-byte data is returned from the machine.
 - [1]: 02h (Fixed)
 - [2]: 00h (Fixed)
 - [3, 4]: nh3 nh4 settings
nh3+(nh4*256): Number of copies
- The retrieved value is a value specified by a static command.

Example

- When the number of copies is set to 500:

Code: ESC i X C 1 00h 00h

(1Bh 69h 58h 43h 31h 00h 00h)

Returned value: 02h 00h F4h 01h $244(F4h) + (1(01h) * 256) = 500$ characters

ESC iXN1 Retrieve number of Numbering copies setting

ASCII:	ESC	i	X	N	1	n1	n2
Decimal:	27	105	88	78	49	nd1	nd2
Hexadecimal:	1B	69	58	4E	31	nh1	nh2

Parameters

nh1: 00h (Fixed)

nh2: 00h (Fixed)

Description

- Retrieves the number of copies specified to be printed with Numbering.
- 4-byte data is returned from the machine.
 - [1]: 02h (Fixed)
 - [2]: 00h (Fixed)
 - [3, 4]: nh3 nh4 settings
nh3+(nh4*256): Number of Numbering copies
- The retrieved value is a value specified by a static command.

Example

- When the number of Numbering copies is set to 500:

Code: ESC i X N 1 00h 00h

(1Bh 69h 58h 4Eh 31h 00h 00h)

Returned value: 02h 00h F4h 01h $244(F4h) + (1(01h) * 256) = 500$ characters

ESC iXF1 Retrieve FNC1 replacement setting

ASCII:	ESC	i	X	F	1	n1	n2
Decimal:	27	105	88	70	49	nd1	nd2
Hexadecimal:	1B	69	58	46	31	nh1	nh2

Parameters

nh1: 00h (Fixed)

nh2: 00h (Fixed)

Description

- Retrieves the FNC1 replacement setting.
- 3-byte data is returned from the machine.
 - [1]: 01h (Fixed)
 - [2]: 00h (Fixed)
 - [3]: Setting
 - 00h: FNC1 replacement setting OFF
 - 01h: FNC1 replacement setting ON
- The retrieved value is a value specified by a static command.

Example

- When the FNC1 replacement setting is OFF:

Code: ESC i X F 1 00h 00h
 (1Bh 69h 58h 46h 31h 00h 00h)
 Returned value: 01h 00h 00h

ESC iXq1 Retrieve print options

ASCII:	ESC	i	X	q	1	n1	n2
Decimal:	27	105	88	113	49	nd1	nd2
Hexadecimal:	1B	69	58	71	31	nh1	nh2

Parameters

nh1: 00h (Fixed)

nh2: 00h (Fixed)

Description

- Retrieves the print options setting.
- 3-byte data is returned from the printer.
 - [1]: 01h (Fixed)
 - [2]: 00h (Fixed)
 - [3]: nh3 Settings
- The retrieved value is a value specified by a static command.

Example

- When the print options are set to priority given to print quality:

Code: ESC i X q 1 00h 00h
 (1Bh 69h 58h 71h 31h 00h 00h)
 Returned value: 01h 00h 01h

Appendix A: Specifications

BROTHER PT-P900W/P950NW P-touch Template specifications

Printing	Printing method		Raster printing (PCBP mode) ESC/P printing <u>P-touch Template printing</u>
	Maximum print length		1 meter
	Resolution (dpi)		360 dpi × 360 dpi
	Text	Font	Bitmap fonts: Helsinki, Letter Gothic Outline fonts: Helsinki, Letter Gothic, Brussels
		Size (dots)	Bitmap fonts: 21, 28dots Outline fonts: 35 to 450dots (Size: 23) characters below barcode 360dpi: 20, 40dots
		Character style	None, Bold, Italics, Outline, Shadow, Shadow + Outline
		Underline	-
		Character width	-
		Horizontal alignment	Left, Center, Right
		Rotate	Portrait, landscape
	Bar-code	Protocols	CODE39, ITF (I-2/5), EAN-13, EAN-8, UPC-A, UPC-E, CODABAR, CODE128, GS1-128 (UCC/EAN-128), QR Code, PDF417, Data Matrix, MaxiCode, RSS-14(Standard, Truncated, Stacked, Stacked Omni), RSS-Limited, RSS Expanded(Standard, Stacked), POSTNET, AztecCode
		Width	Large, Medium, Small, Minimum
Transmission	RS	Baud rate (bps)	300, 600, 1200, 2400, 4800, <u>9600</u> , 14400, 19200, 28800, 31250, 38400, 57600, 115200
		Busy	<u>DTR</u> , Xon/Xoff
		Bit length	7, <u>8</u>
		Parity	<u>NONE</u> , ODD, EVEN
		Stop bit	1bit

Settings that appear in **bold** and underlined are the default settings.

Appendix B: Character Code Tables

(1) Windows1252 (Western Europe)

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

Note

* "■" indicates that a space is printed.

* "■" indicates that the character will change if the international character set is switched.

(2) Windows1250 (Eastern Europe)

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0			SP	0	@	P		p	€	ť		°	Ř	Đ	ř	ď
1			!	1	A	Q	a	q	À	‘	˘	±	Á	Ň	á	ň
2			"	2	B	R	b	r	,	’	˘	˙	Â	Ň	â	ň
3			#	3	C	S	c	s	L’	“	Ł	ł	Ă	Ó	ă	ó
4			\$	4	D	T	d	t	„	”	¤	’	Ä	Ô	ä	ô
5			%	5	E	U	e	u	...	•	Ą	μ	Í	Õ	í	õ
6			&	6	F	V	f	v	†	—		¶	Ć	Ö	ć	ö
7			'	7	G	W	g	w	‡	—	§	·	Ç	×	ç	÷
8			(8	H	X	h	x	ł		˙	˙	Č	Ř	č	ř
9)	9	I	Y	i	y	‰	™	©	ą	É	Ů	é	ů
A			*	:	J	Z	j	z	Š	š	Ş	ş	Ę	Ú	ę	ú
B			+	;	K	[k	{	<	>	«	»	Ě	Ů	ě	ů
C			,	<	L	\	l		Ś	ś	¬	Ł	Ě	Ü	ę	ü
D			—	=	M]	m	}	ř	ť	—	”	Í	Ý	í	ý
E			.	>	N	^	n	~	Ž	ž	®	ł	Î	Ť	î	ť
F			/	?	O	_	o	DEL	Ž	ž	Ž	ž	Ď	ß	ď	·

Note

* “■” indicates that a space is printed.

* “■” indicates that the character will change if the international character set is switched.

(3) Brother standard

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0			SP	0	@	P		p	Ç	É	á		L		α	
1			!	1	A	Q	a	q	ü	æ	í		⊥		β	±
2			"	2	B	R	b	r	é	Æ	ó		⊥			
3			#	3	C	S	c	s	â	ô	ú		⊥			¾
4			\$	4	D	T	d	t	ä	ö	ñ	⊥	—			
5			%	5	E	U	e	u	à	ò	Ñ		⊥			§
6			&	6	F	V	f	v	å	û	ª				μ	÷
7			'	7	G	W	g	w	ç	ù	º					
8			(8	H	X	h	x	ê	ÿ	¿	©	ℓ			°
9)	9	I	Y	i	y	ë	Ö	®	¶	¶	⌋		.
A			*	:	J	Z	j	z	è	Ü	€	¶	⊥	⌈	Ω	
B			+	;	K	[k	{	ï	ø	½	¶	¶	✓	δ	
C			,	<	L	\	l		î	£	¼	¶	¶	☑		³
D			-	=	M]	m	}	ì	¥	¡	TEL	=		ø	²
E			.	>	N	^	n	~	Ä	Pts	«	FAX	¶			
F			/	?	O	_	o	DEL	Å	f	»	⌈		□		

Note

* "■" indicates that a space is printed.

* "■" indicates that the character will change if the international character set is switched.

International character set table

Compatible characters in each language when the international character set is switched

n		23	24	40	5B	5C	5D	5E	60	7B	7C	7D	7E
0	United States	#	\$	@	[\]	^	`	{		}	~
1	France	#	\$	à	°	ç	§	^	`	é	ù	è	¨
2	Germany	#	\$	§	Ä	Ö	Ü	^	`	ä	ö	ü	ß
3	Britain	£	\$	@	[\]	^	`	{		}	~
4	Denmark I	#	\$	@	Æ	Ø	Å	^	`	æ	ø	å	~
5	Sweden	#	¤	É	Ä	Ö	Å	Ü	é	ä	ö	å	ü
6	Italy	#	\$	@	°	\	é	^	ù	à	ò	è	ì
7	Spain I	Pt	\$	@	í	Ñ	¿	^	`	¨	ñ	}	~
8	Japan	#	\$	@	[¥]	^	`	{		}	~
9	Norway	#	¤	É	Æ	Ø	Å	Ü	é	æ	ø	å	ü
10	Denmark II	#	\$	É	Æ	Ø	Å	Ü	é	æ	ø	å	ü
11	Spain II	#	\$	á	í	Ñ	¿	é	`	í	ñ	ó	ú
12	Latin America	#	\$	á	í	Ñ	¿	é	ü	í	ñ	ó	ú
13	Korea	#	\$	@	[₩]	^	`	{		}	~
64	Legal	#	\$	§	°	'	"	¶	`	©	®	†	TM

Appendix C: Troubleshooting

If printing does not begin (main most frequent cause)

- (1) The communication settings are incorrect.
- (2) The command mode is not in the P-touch Template mode.
- (3) The conditions for the print start trigger are not met.

The following three types of print start triggers exists, but the current selection is incorrect.

- When the specified text string is received
- When all objects are filled
- When the specified number of characters is received

If the settings described above are incorrect, use the P-touch Template Settings tool to specify the settings.

If a template linked to a database is not printed

- (1) A delimiter character must be entered after the search text.
- (2) The print start trigger must be “when the specified text string is received”.

To search for the key code (333333333333) for “Chocolate”, then print:

	A	B	C
1	Key code	Product	Price
2	111111111111	Cake	1.5
3	222222222222	Candy	1
4	333333333333	Chocolate	2.5
5	444444444444	Cookie	1.5
6	555555555555	Pie	4.5

333333333333 09h ^ F F



Appendix D: Introducing the Brother Developer Center

Useful information for developers, such as applications, tools, SDKs as well as FAQs, are provided in the Brother Developer Center.

<https://www.brother.com/product/dev/index.htm>

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