Software Developer's Manual

P-touch Template 2.0 Command Reference

PJ-822/823/862/863/883

Version 1.00

brother

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Introduction

This material provides the necessary information for directly controlling the templates transferred to your printer.

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 2.0?

P-touch Template 2.0 helps the user develop a printing system that connects directly from the host and has following functions:

● Transfers the template data from P-touch Editor to the printer (2)

● Transfers the ASCII text and binary data from a host to the template in the printer (3)

   ("Host" includes medias such as barcode readers, smartphones or mobile terminals.)

● Prints the transferred data (3)

   (See the figure shown below.)

P-touch Template 2.0 commands consist of a prefix character and a two-character text string.

When the prefix character is sent, the printer begins the analysis of the P-touch Template 2.0 command, and performs the specified process if the following two-character text string corresponds to a command.

There are two types of command, "static command" and "dynamic command". Items set with the dynamic command are retained until the printer is turned off. On the other hand, the items set with the static command are stored in the non-volatile ROM in the printer.

Note

*P-touch Template 2.0 is not compatible with some hosts.

*These hosts should have an interface to transfer the data.

*ZPL Ⅱ emulation is supported by P-touch Template 2.0.

1. Using P-touch Template 2.0

(1) Specify the printer settings.

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.
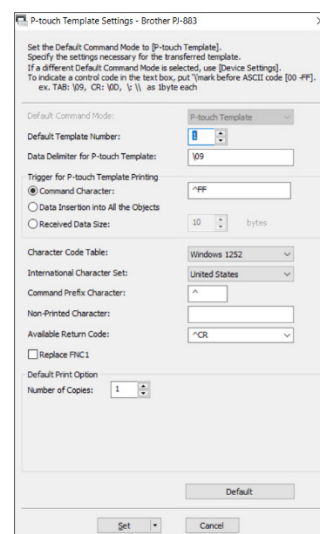
(2) Design the template.

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

(Please refer to "4. P-touch Template 2.0 Limitations".)
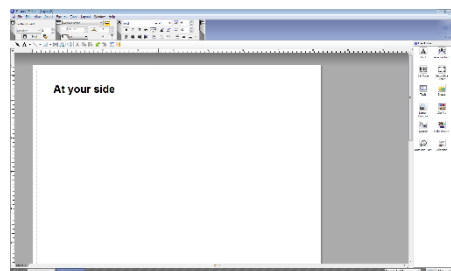
(3) Transfer the templates.

Using P-touch Transfer Manager, transfer the templates to the printer.
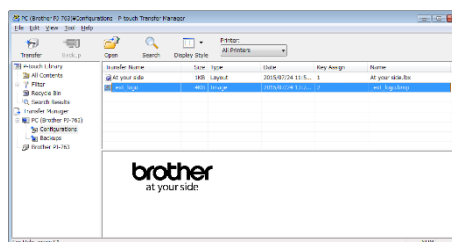
(4) Program using P-touch Template 2.0 commands.

If any special commands are required to control the printer, change the terminal program in accordance with the P-touch Template 2.0 commands.

(Please refer to "6. Control Code Lists".)
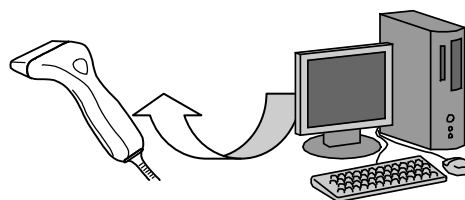
(5) Connect the printer with the host and print slips etc.

Transfer the data such as ASCII text from the host to templates in the printer, and print the slips etc.

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

P-touch Template Settings - Brother PJ-883   ✕

Set the Default Command Mode to [P-touch Template].
Specify the settings necessary for the transferred template.
If a different Default Command Mode is selected, use [Device Settings].
To indicate a control code in the text box, put '\'mark before ASCII code [00 -FF].
   ex. TAB: \09, CR: \0D, \: \\   as 1byte each

Default Command Mode: P-touch Template   ◄── **(1) Command mode setting (fixed)**

Default Template Number: 1 ◄── **(2) Template number setting**

Data Delimiter for P-touch Template: \09 ◄── **(3) Delimiter setting**

Trigger for P-touch Template Printing ◄── **(4) Print start trigger setting**

◉ Command Character: ^FF   **(5) Print start command text string setting**

◯ Data Insertion into All the Objects

◯ Received Data Size: 10   bytes ◄── **(6) Print start data amount setting**

Character Code Table: Windows 1252   ◄── **(7) Character code set setting**

International Character Set: United States   ◄── **(8) International character set setting**

Command Prefix Character: ^ ◄── **(9) Prefix character setting**

Non-Printed Character: ◄── **(10) Non-printed character setting**

Available Return Code: ^CR   ◄── **(11) Line feed character setting**

☐ Replace FNC1 ◄── **(12) FNC1 replacement setting**

Default Print Option

Number of Copies: 1 ◄── **(13) Number of copies setting**

Default

Set ▾   Cancel

Applies settings for (1)

through (13) to the printer.

Closes the tool.

Returns (1) through (13) to their default settings.

*Available items depend on the printer models.

(1) Command mode setting

- P-touch Template mode

  To use P-touch Template 2.0, select the P-touch Template mode.

(2) Template number setting

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

However, if any template has been set to not be transferred to the printer, 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 the 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 code sets. For character code tables, refer to "Appendix B: Character Code

Tables".

- Windows1252

- Windows1250

- Brother standard

- Windows 1251

- Unicode (UTF-8)

(8) International character set setting

Select one of the following countries for the character set.

- USA

- France

- Germany

- Britain

- Denmark I

- Sweden

- Italy

- Spain I

- Japan

- Norway

- Denmark II

- Spain II

- Latin America

- South 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 if GS codes, which are included in barcode 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.

Others

Typing text into text boxes (3), (5), (9), (10) and (11)

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
Line feed control code	\0D
\	\\

3. Examples for Using Commands

3.1 Example for using P-touch Template 2.0

Target label is following.

At your side

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 2.0 commands for printing.

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

Start the P-touch Editor and make a label.

In this example, P-touch Editor operates in Professional mode.
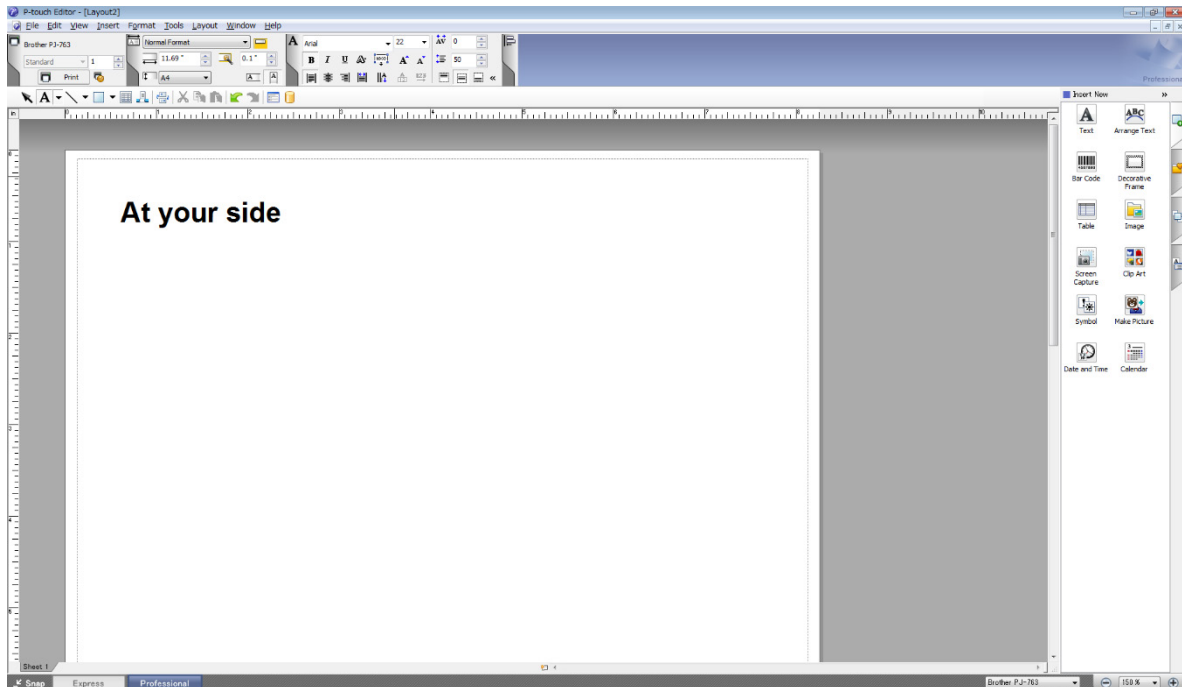
Step 2: Transfer the template to Transfer Manager.
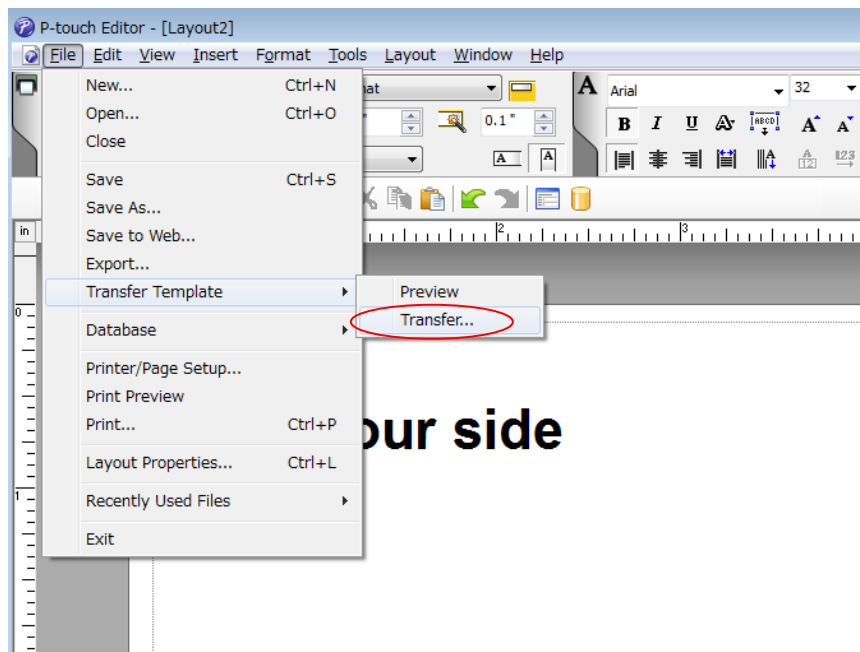
The template sent in step 2 is stored in Transfer Manager, as shown below.
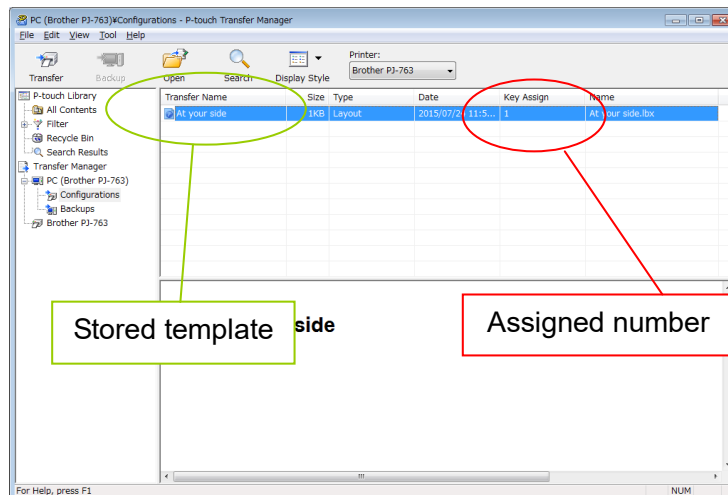
Step 3: Transfer the template from Transfer Manager to the printer.
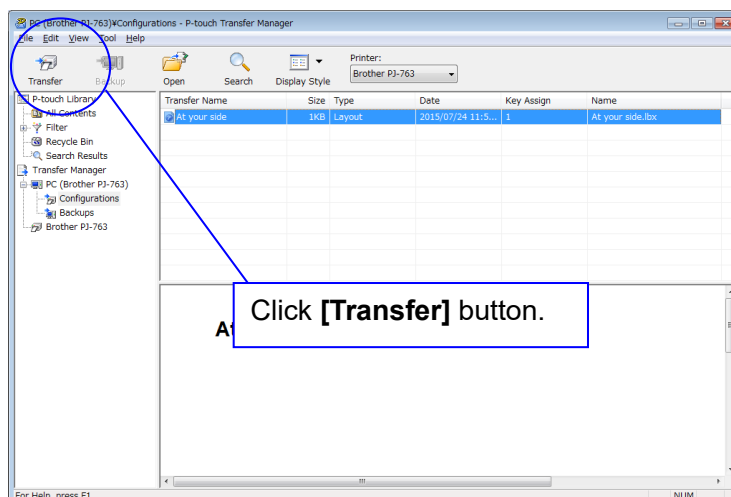
Note

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 bi-directional communication when Transfer Manager is used.

When the template is transferred to the printer, the following message appears.
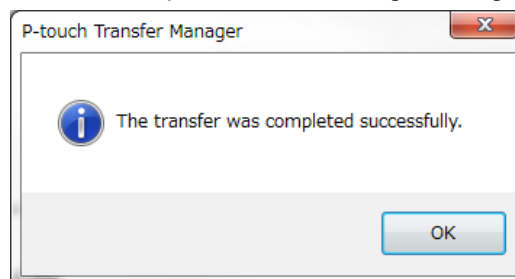
Step 4: Use P-touch Template 2.0 commands for printing.

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.

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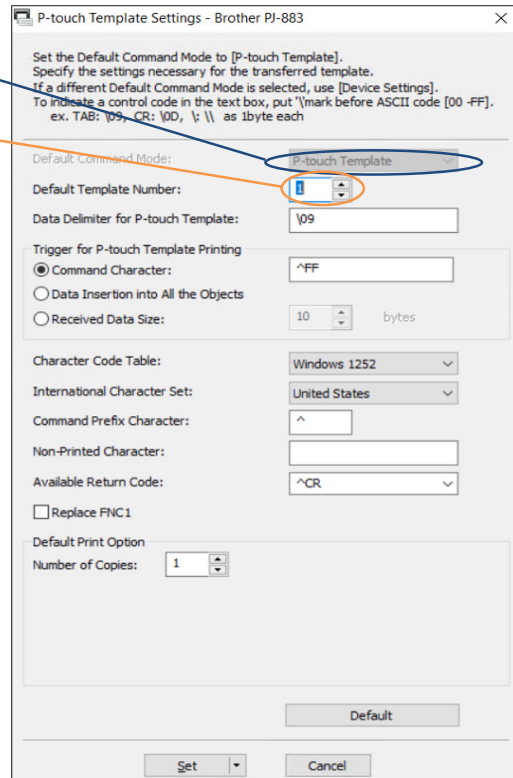
After setting (1) and (2) with the P-touch Template Settings tool, the other two commands must be sent to the printer.

(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 document below is printed.

At your side

3.2 Example for using ZPL II in P-touch Template 2.0

Here is the label that will be made.

406 dots (2 inches)

Example:
A case 203dpi printer is used

290 dots

80 dots

At your side

Font is outline font, and size is 50, 50 dots.

609 dots (3 inches)
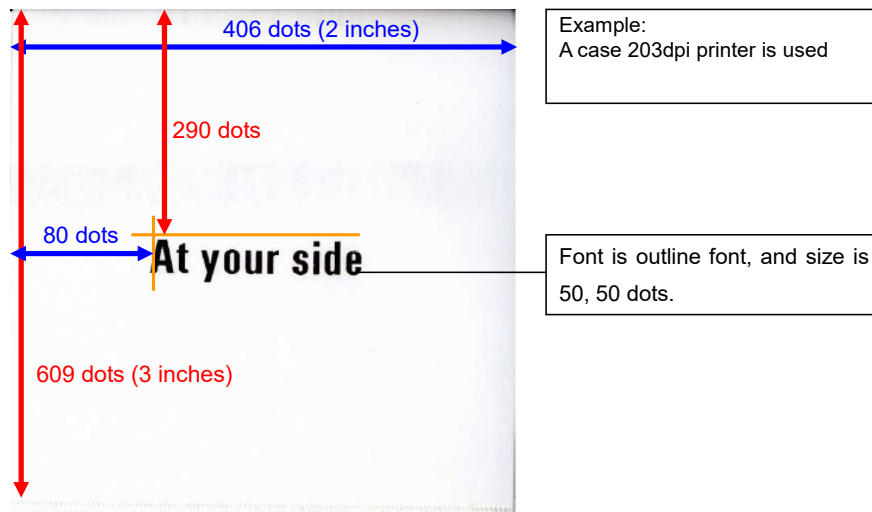
Steps

1. Change the mode to P-touch Template mode.

2. Set the label length with ^LL.

3. Set the label width with ^PW.

4. Send other ZPL II command.

Step 1: Change the mode to P-touch Template mode.

P-touch Template mode can be selected by using the P-touch Template Settings tool shown below.

Select P-touch Template mode.

P-touch Template Settings - Brother RJ-4230B

Set the Default Command Mode to [P-touch Template].
Specify the settings necessary for the transferred template.
If a different Default Command Mode is selected, use [Device Settings].
To indicate a control code in the text box, put ¥mark before ASCII code [00 -FF].
    ex. TAB: ¥09, CR: ¥0D, ¥: ¥¥ as 1byte each

Default Command Mode: P-touch Template
Default Template Number: 1
Data Delimiter for P-touch Template: ¥09
Trigger for P-touch Template Printing
  ○ Command Character: ^FF
  ○ Data Insertion into All the Objects
  ○ Received Data Size: 10   bytes

Character Code Table: Windows 1251
International Character Set: Japan
Command Prefix Character: ^
Non-Printed Character:
Available Return Code: ^CR
  □ Replace FNC1
Default Print Option
Number of Copies: 1

  □ Inverted 180 Degrees

                               Default

          Set   Cancel

Step 2: Set the label length with ^LL.

The label length is 609 dots.

Entered command

```
^LL609
```

Step 3: Set the label width with ^PW.

The label width is 406 dots.

Entered command

```
^PW406
```

Step 4: Send other ZPL II commands.

The orientation of the text is 80, 290.

The font is outline font and size is 50, 50.

The text is "At your side."

Entered command

```
^FO80,290
^A0N,50,50
^FDAt your side
```

Summary -all commands to be sent to make the label-

```
^XA
^LL609
^PW406
^FO80,290
^A0N,50,50
^FDAt your side
^XZ
```

Note

"^XZ" is the command required at the end of format with ZPL II commands.

With those commands above, the label below is printed.
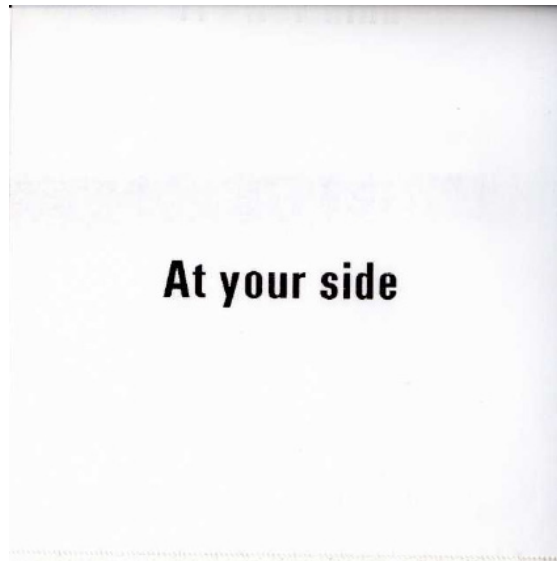
3.3 Example for printing logo/external characters in P-touch Template 2.0

Here is the label to be printed.

brother
at your side

Steps

1. Make a template and transfer it to the printer.
2. Store the logo/external characters as a bitmap file.
3. Transfer the bitmap file from Transfer Manager to the printer.
4. Use P-touch Template commands for printing.

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

Assigned number

Stored template

Click**[Transfer]** button.
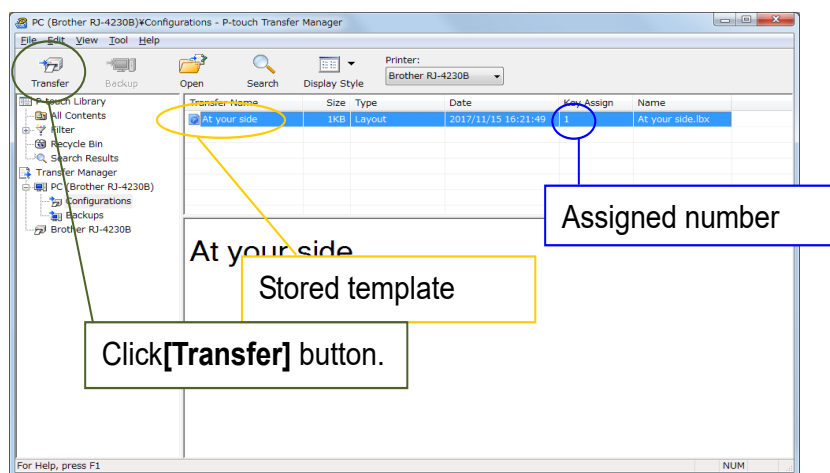
Step 2: Store the loge/external characters as a bitmap file. The file name should be started from "_ext_",, and drag & drop it to Transfer Manager.
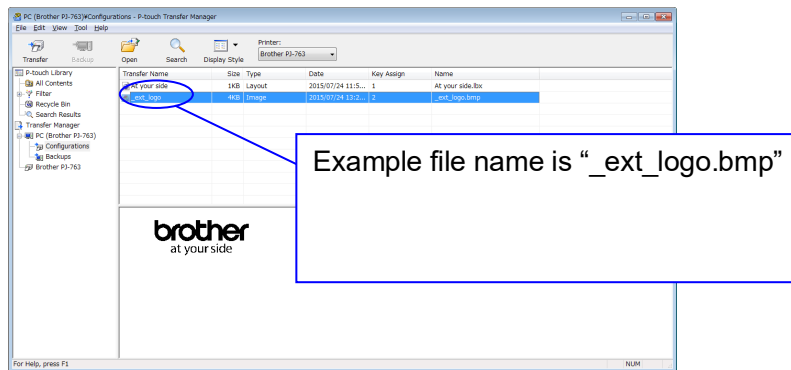
Example file name is "_ext_logo.bmp"

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

Assigned number

Click **[Transfer]** button.
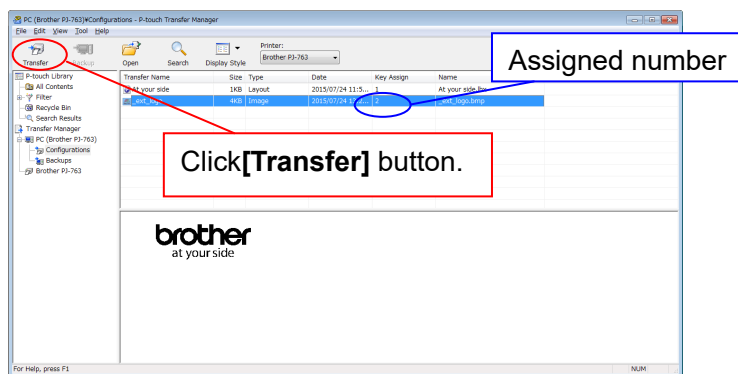
Step 4: Use P-touch Template commands for printing.

(1) Initialize P-touch Template

^II   Initialize

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

Parameters
     None

Entered command

^II

(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.

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.

4. P-touch Template 2.0 Limitations

4.1 Relating to text objects

4.1.1 Font, size, etc.

Please also refer to "5.3 Relationship between the P-touch Editor settings and the printer image" on page 30

- When a template is transferred to a printer, a font specified in P-touch Editor is changed to most similar resident font in the printer.
- 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, time and date is not printed.
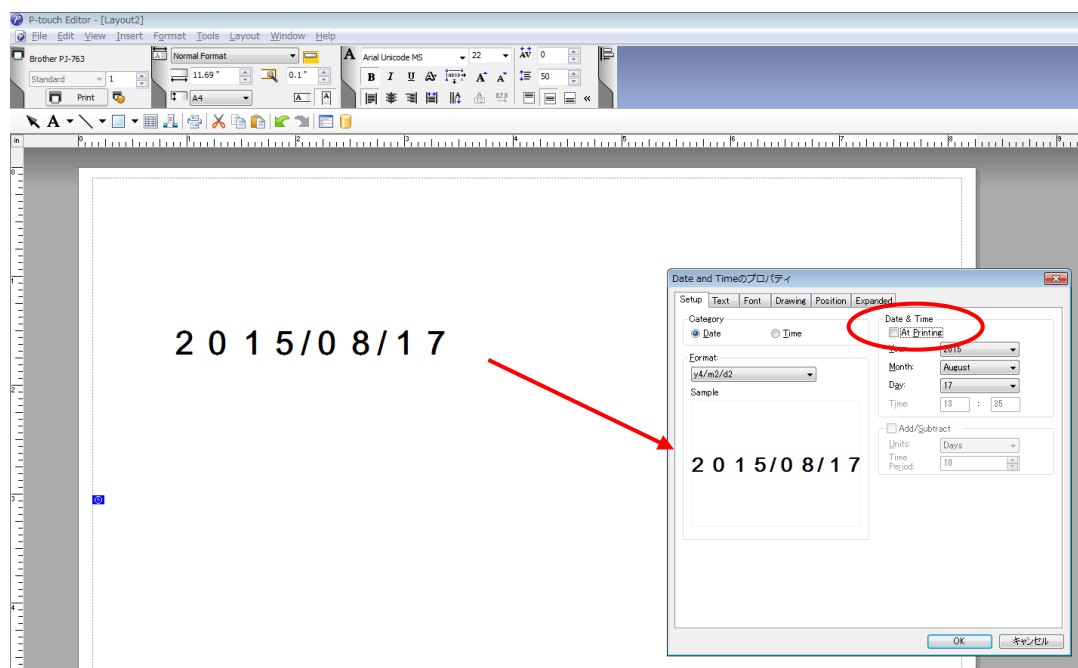
"At Printing" setting

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.
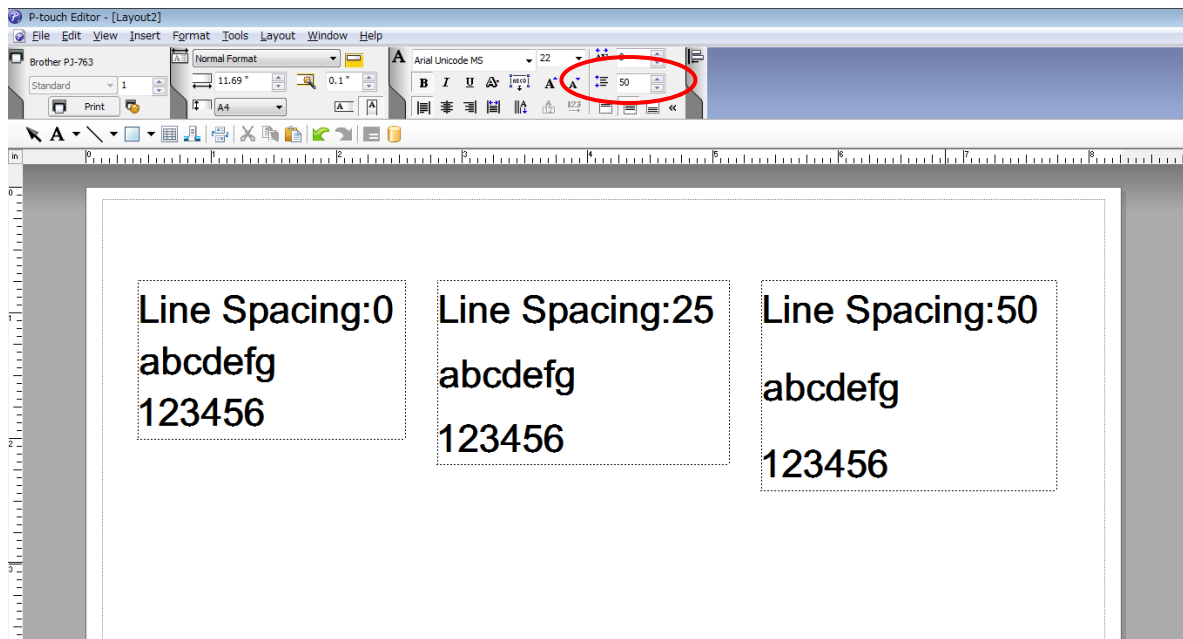
Specifying the line spacing setting in P-touch Editor

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.
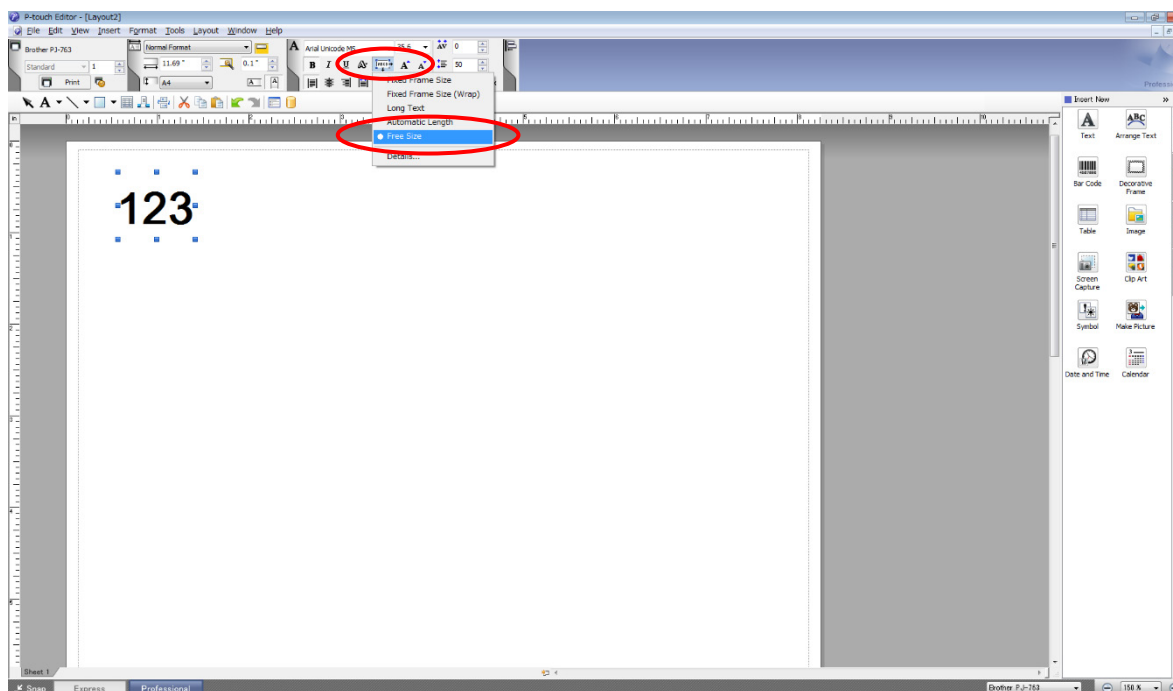
Specifying a Text Layout setting

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

- It is possible to decorate specific text by surrounding text data with decoration tags.

  The specification of the tag is as follows.

Type	Decoration tag*	
	Start tag	End tag
Bold	\<b\>	\</b\>
Underline	\<u\>	\</u\>

  *These are default values.

  Ex) When the text "AAA\<b\>BBB\</b\>\<u\>CCC\</u\>" is inserted to a text object:

   Output： AAA**BBB**<u>CCC</u>

- Decoration tags are required for each line. If a line break occurs inside the decorative tag, the text after the line feed is not decorated.

- Decoration tag is available only for text object.

- Numbering field is not supported for decoration.

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 printer.

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

- 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 1164 dots is converted to 1164dots.

- 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
GS1 Databar (RSS-14)	3 to 15 characters (begins with "01")
GS1 Databar (RSS Limited)	3 to 15 characters (begins with "01"; third digit is "0" or "1")
GS1 Databar (RSS Expanded)	1 to 64 numbers or 1 to 40 letters*
POSTNET	5, 9 or 11 characters
Intelligent Mail Barcode	20 characters, 25 characters, 29 characters, 31 characters (second digit is "0"-"4")

* 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.

4.2.3 2D barcodes

● Margin setting in the P-touch Editor is ignored. It is only changed by Barcode margin setting command (ESC iXE2).

● Other limitations are as follows.

QR Code	The version setting for a QR Code specified in P-touch Editor is invalid. The version setting must be turned off. The Structured Append settings specified in P-touch Editor are invalid.
PDF417	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 2.0. The Structured Append settings specified in P-touch Editor are invalid.
Data Matrix	The Structured Append settings specified in P-touch Editor are invalid. Macro settings specified in P-touch Editor are invalid
Maxi Code	The Structured Append settings specified in P-touch Editor are invalid. The barcode is partitioned when too much data is entered. 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. Example: "2" is specified. P-touch Editor: "200"; Printer: "002"
Aztec	The Remove Character setting specified in P-touch Editor is invalid. The Code Spacing and Join Vertically in the Set Structured Append settings specified in P-touch Editor are invalid. When inserting data, please add "00" in between the message ID and the data. If the message ID is not included, please add "00" to the beginning of the data.
GS1 Databar Composite	Following models are supported. - GS1 Databar Omni CC-A/CC-B - GS1 Databar Truncated CC-A/CC-B - GS1 Databar Stacked CC-A/CC-B - GS1 Databar Stacked Omni CC-A/CC-B - GS1 Databar Limited CC-A/CC-B - GS1 Databar Expanded CC-A/CC-B - GS1 Databar Expanded Stacked CC-A/CC-B When inserting data, please add the data "01" to the beginning of data. The setting "Add 01 on the head of data" of the P-touch Editor is not affected. In addition, 1D barcode data and 2D code data must be separated by '|'. Ex) 1D barcode data is "12345", 2D code data is "67890": Please insert "0112345|67890".

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.
- 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 Others

4.5.1 Transferring templates

- A maximum of 255 templates can be transferred. The transfer cannot be completed if the amount of data being transferred exceeds user area of the flash memory.
- A single template can contain a maximum of 255 objects.
- 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 ESC/P Legacy / 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.

4.5.2 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.)
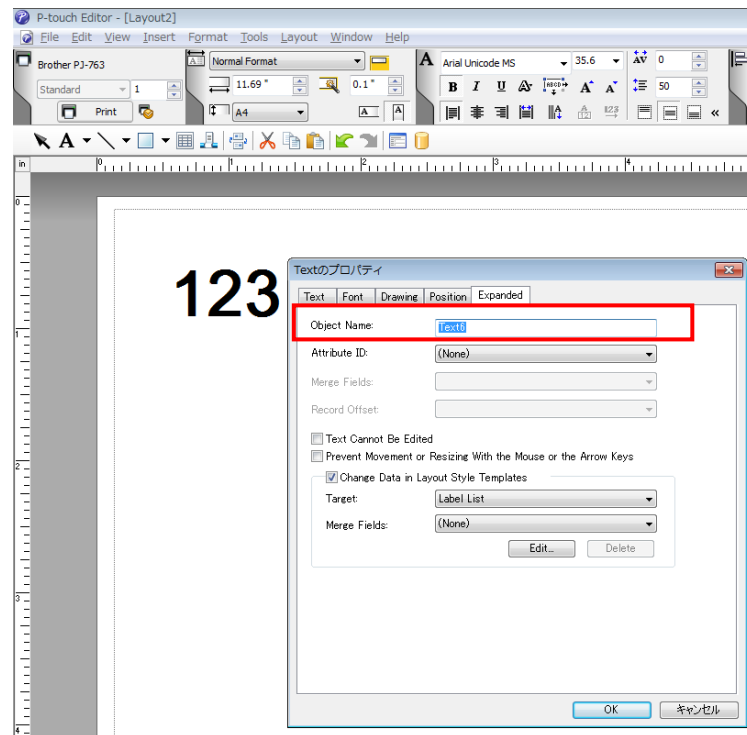
Specifying the object name

5. Precautions

5.1 Notes on using static commands

Some static commands are only executed in raster mode. When using these static commands, change the command mode to raster mode before sending the command.

(1) Switch to raster mode.

ESC i a 00h   (1Bh 69h 61h 00h)

(2) Send static commands.

(3) Switch to P-touch Template mode.

ESC i a 03h   (1Bh 69h 61h 03h)

*Please refer to 6.3 Raster commands.

5.2 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.

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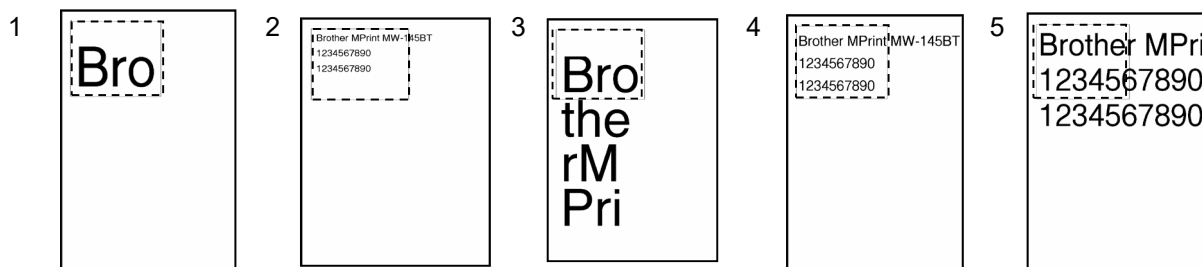
5.4 Making a template in order to save time before starting to print

- 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 Command Lists

6.1 P-touch Template commands

Commands	Description	Note
^II	Initialize	
^TS	Select template	
^FF	Start printing	
^CN	Specify number of copies	
^NN	Specify number of numbering copies	
^ID	Initialize template data	
^PT	Select print start trigger	
^PS	Specify print start command text string	
^PC	Specify print start received character count	
^SS	Specify delimiter	
^LS	Specify line spacing with line feed	
^CC	Change the prefix character	
^RC	Specify line feed command text string	
^QV	Specify QR Code version	
^FC	FNC1 replacement setting	
^OP	Perform printer operation (feed)	
^SR	Status request	
^VR	Retrieve version information	
^CR	Line feed in object	
^OS	Select object (object number)	
^ON	Select object (object name)	
^DI	Directly insert object	

Note

* The commands listed above must be used in P-touch Template mode.

* These commands cannot be used in ESC/P Legacy / Raster mode or ESC/P Brother mode.

6.2 Setting and retrieving commands

Commands	Description	Note
ESC iXT	Select print start trigger	
ESC iXP	Specify print start command text string	
ESC iXr	Specify print start received character count	
ESC iXD	Specify delimiter	
ESC iXa	Specify non-printed text string	
ESC iXi	Select command mode	
ESC iXn	Select template	
ESC iXf	Change prefix character	
ESC iXm	Select character code set	
ESC iXj	Select international character set	
ESC iXR	Specify line feed command text string	
ESC iXC	Specify number of copies	
ESC iXN	Specify number of numbering copies	
ESC iXF	FNC1 replacement setting	
ESC iXE	Specify barcode margin setting	
ESC iXh	Specify rotated print	
ESC iX^	Specify print stop position	
ESC iXv (08h)	Specify WLAN communication mode of Raw port	

6.3 Setting and retrieving commands (Raster mode)

Commands	Description	Note
ESC iOUe	Specify decoration tag string	

Note

* These commands are only available in raster mode.

6.4 Printer control commands

Commands	Description	Note
ESC ia	Select command mode	
ESC iUx	Reboot	

7. P-touch Template Command Details

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^II   Initialize

ASCII:		^	I	I
Hexadecimal:	5E	49	49	

Parameters

    None

Description

● Reverts all dynamic settings to the printer settings.

    (1)   Print start trigger setting

    (2)   Print start command text string

    (3)   Print start received character count

    (4)   Delimiter

    (5)   Selected template number

    (6)   Prefix character

    (7)   Line feed command text string

    (8)   Number of copies setting

    (9)   QR Code version setting

    (10) Number of serialize

    (11) FNC1 replacement setting

^TS   Select template

ASCII:		^	T	S	n1	n2	n3
Hexadecimal:	5E	54	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 the template selected from the printer.

       $(n1*100)+(n2*10)+n3$: Template number (1 to 255)

● The default selection number is 1.

● This command is a dynamic command.

Remarks

● The template numbers that can be set are between 1 and 255.

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 printer.

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)
```

^FF   Start printing

ASCII:	^	F	F
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)

^CN   Specify number of copies

ASCII:	^	C	N	n1	n2	n3
Hexadecimal:	5E	43	4E	nh1	nh2	nh3

Parameters

$0 \le n1 \le 9$

$0 \le n2 \le 9$

$0 \le n3 \le 9$

Description

- Specifies the number of copies to be printed.

    $(n1*100)+(n2*10)+n3$:   Number of copies (bytes) (1 to 999)

- The default number of copies is 1.

- This command is a dynamic command.

Remarks

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

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
Hexadecimal:	5E	4E	4E	nh1	nh2	nh3

Parameters

  $0 \le n1 \le 9$

  $0 \le n2 \le 9$

  $0 \le n3 \le 9$

Description

● Specifies the number of copies to be printed with Numbering.

  $(n1*100)+(n2*10)+n3$:   Number of Numbering copies (bytes) (1 to 999)

● The default number of copies printed with Numbering is 1.

● This command is a static command.

Remarks

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

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 numbering data

ASCII:	^	I	D
Hexadecimal:	5E	49	44

Parameters

  None

Description

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

^PT   Select print start trigger

ASCII:	^	P	T	n
Hexadecimal: 5E	50	54	nh	

Parameters

     1≤n≤3

Description

- Selects the type of print start trigger.

    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)

^PS   Specify print start command text string

ASCII:	^	P	S	n1	n2	data
Hexadecimal:	5E	50	53	nh1	nh2	datah

Parameters

0≤n1≤2

0≤n2≤9

00h≤datah≤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
Hexadecimal:	5E	50	43	nh1	nh2	nh3	

Parameters

0≤n1≤9

0≤n2≤9

0≤n3≤9

Description

● Specifies the number of characters to be received in order to start printing.

(n1*100)+(n2*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.

● If Unicode(UTF-8) mode is used, 1-4 bytes are used as 1 character.

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
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 "," (2Ch):

Since the text string contains one character, n1=0 and n2=1. In addition, with the text string (datah) ","

(2Ch), the command will be as follows.

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

^LS   Specify line spacing with line feed

ASCII:		^	L	S	n1	n2	n3
Hexadecimal:	5E	4C	53	nh1	nh2	nh3	

Parameters

      0≤n1≤2

      0≤n2≤9

      0≤n3≤9

Description

● Specifies the number of dots for the line spacing when a line feed is entered.

      $(n1*100)+(n2*10)+n3$:   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.

● This command is a dynamic command.

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.

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
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 "_":

> ^ C C 5Fh
>
> (5Eh 43h 43h 5Fh) (5Fh stands for "_" in ASCII code)

● However, if the printer is later not turned off, then on again, the prefix character remains set to "_", and the initialize command, for example, will be "_II" instead of "^II".

^RC   Specify line feed command text string

ASCII:	^	R	C	n1	n2	data
Hexadecimal:	5E	52	43	nh1	nh2	datah

Parameters

> 0≤n1≤2
>
> 0≤n2≤9
>
> 00h≤datah≤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 have been 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)

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^QV　　　　Specify QR Code version

ASCII:	^	Q	V	n1	n2
Hexadecimal:	5E	51	56	nh1	nh2

Parameters

　　　　0≤n1≤4

　　　　0≤n2≤9

Description

● Specifies the QR Code version.

　　　(n1*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.

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
Hexadecimal:	5E	46	43	nh

Parameters

   0≤n≤1

Description

● Selects whether or not GS codes, which are included in barcode 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)

^OP   Perform printer operation (feed)

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

Parameters

n: 0 (Fixed)

Description

● Causes the printer to perform a feed operation.

Example

● To specify that the printer performs a feed operation:

^ O P 0

(5Eh 4Fh 50h 30h)

^SR   Status request

ASCII:	^	S	R
Hexadecimal:	5E	53	52

Parameters

    None

Description

● Returns the printer status. The printer status consists of 32 bytes. The printer does not return status during the printing operation.

Offset	Name	Value/Standard
0	Print head mark	Fixed at 80h
1	Size	Fixed at 20h
2	Brother code	Fixed at "B" (42h)
3	Series code	Fixed at "6" (36h)
4	Model code	PJ-822: Fixed at "C" (43h) PJ-823: Fixed at "D" (44h) PJ-862: Fixed at "E" (45h) PJ-863: Fixed at "F" (46h) PJ-883: Fixed at "G" (47h)
5	Country code	Fixed at "0" (30h)
6	Battery level information	Refer to table (5) below.
7	Not used	Fixed at 00h
8	Error information 1	Refer to table (1) below.
9	Error information 2	Refer to table (2) below.
10	Media width	Refer table (6) below.
11	Media type	Refer table (3) below.
12	Number of colors	Fixed at 00h
13	Media length (higher order bytes)	Fixed at 00h
14	Media sensor value	Fixed at 00h
15	Mode	Fixed at 01h
16	Density	Fixed at 00h
17	Media length (lower order bytes)	Fixed at 00h
18	Status type	Refer to table (4) below.
19	Phase type	Refer table (7) below.
20	Phase number (higher order bytes)	Fixed at 00h
21	Phase number (lower order bytes)	Fixed at 00h
22	Notification number	Not used
23	Expansion area (number of bytes)	Fixed at 00h
24-31	Reserved	Fixed at 00h

(1) Error information 1

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	Printer in use
Bit 5	20h	Printer turned off
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	Communication error
Bit 3	08h	Not used
Bit 4	10h	Not used
Bit 5	20h	Not used
Bit 6	40h	Not used
Bit 7	80h	Not used

(3) Media type

Media Type	Value	Remarks
No Paper	00h	
Loaded Paper	01h	

(4) Status type

Status Type	Value	Remarks
No Error	00h	
(Not used)	01h	
Error occurred	02h	
(Not used)	03h to FFh	

(5) Power status

Value	Battery level	AC adapter
20h	Full	Not connected
22h	Half	Not connected
23h	Low	Not connected
24h	Charging required	Not connected
30h	Full	Connected
32h	Half	Connected
33h	Low	Connected
34h	Charging required	Connected
37h	No battery	Connected
Other	Undefined	Undefined

(6) Media width

Series	Value	Remarks
No Paper	00h	
Loaded Paper	D2h	

^VR   Retrieve version information

ASCII:	^	V	R	- 53 -
Hexadecimal: 5E	56	52		

Parameters

None

Description

● Retrieves the version information for the printer as a 8-character text string.

^CR   Line feed in object

ASCII:	^	C	R
Hexadecimal:	5E	43	52

Parameters

> None

Description

- Adds a line feed to the next line in the text object.
- Command characters are modifiable.

    (Refer to ^RC, ESC iXR2)

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	n3
Hexadecimal:	5E	4F	53	nh1	nh2	nh3

Parameters

$0 \le n1 \le 2$

$0 \le n2 \le 9$

$0 \le n3 \le 9$

Description

● Selects an object by its object number.

(n1*100)+(n2*10)+n3: Object number (1 to 255)

Remarks

● The object number can be set between 1 and 255.

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 0 3 3

(5Eh 4Fh 53h 30h 33h 33h)

^ON   Select object (object name)

ASCII:	^	O	N	data	00
Hexadecimal:	5E	4F	4E	datah	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
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.
(Even if a print command or delimiter is within the specified number of characters, they are treated as data.)

      (nh2*256)+nh1: Specified number of characters

      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, easily print "A" 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

8. Setting and Retrieving Command Details

ESC iXT2   Select print start trigger

ASCII:		ESC	i	X	T	2	01h	00h	n1
Hexadecimal:	1B	69	58	54	32	01	00	nh1	

Parameters

  00h≤nh1≤02h

Description

● Selects the type of print start trigger.

  nh1=00h: When the specified text string is received (default)

  nh1=01h: When all objects are filled
        (Prints with the delimiter at the end of the data.)

  nh1=02h: When the specified number of characters is received
        (not including delimiters)

● This command is a static command.

Remarks

● Invalid if nh1 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 iXT1   Retrieve print start trigger setting

ASCII:	ESC	i	X	T	1	00h	00h
Hexadecimal:	1B	69	58	54	31	00	00

Parameters

   None

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 printer 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 iXP2   Specify print start command text string

ASCII:	ESC	i	X	P	2	n1	n2	data
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 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, 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 iXP1   Retrieve print start command setting text string

ASCII:	ESC	i	X	P	1	00h	00h
Hexadecimal:	1B	69	58	50	31	00	00

Parameters

  None

Description

● Retrieves the text string specified for the print start command.

● 3- to 22-byte data is returned from the printer. (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 iXr2   Specify print start received character count

ASCII:	ESC	i	X	r	2	02h	00h	n1	n2
Hexadecimal:	1B	69	58	72	32	02	00	nh1	nh2

Parameters

00h≤nh1≤FFh

00h≤nh2≤03h

Description

● Specifies the number of characters to be received in order to start printing.

nh1+(nh2*256):   Print start received character count (1 to 999)

● The default print start received character count is 10.

● This command is a static command.

● If Unicode (UTF-8) mode is being used, maximum 4 bytes are used as 1 character.

Example

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

Since nh1=64h and nh2=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 iXr1   Retrieve print start received character count

ASCII:		ESC	i	X	r	1	00h	00h
Hexadecimal:	1B	69	58	72	31	00	00	

Parameters

　　　None

Description

● Retrieves the number of characters specified to be received in order to start printing.

● 4-byte data is returned from the printer.

　　[1]:　　02h (Fixed)

　　[2]:　　00h (Fixed)

　　[3,4]:　nh1 nh2 settings
　　　　　　nh1+(nh2*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+1*256=F4h+01h*256=500 characters)

ESC iXD2   Specify delimiter

ASCII:	ESC	i	X	D	2	n1	n2	data
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 have been specified

Example

● To change the delimiter to "," (2Ch):

Since the text string contains one character, nh1=01h and nh2=00h. In addition, 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 iXD1   Retrieve delimiter

ASCII:	ESC	i	X	D	1	00h	00h
Hexadecimal: 1B	69	58	44	31	00	00	

Parameters

    None

Description

- Retrieves the text string specified for the delimiter.

- 3- to 22-byte data is returned from the printer. (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 iXa2　Specify non-printed text strings

ASCII:	ESC	i	X	a	2	n1	n2	n3	data
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 have been specified

Example

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

Since the text string contains four characters, nh1=05h and nh2=00h. Therefore, 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 iXa1   Retrieve non-printed text strings

ASCII:	ESC	i	X	a	1	01h	00h	01h
Hexadecimal:	1B	69	58	61	31	01	00	01

Parameters

　　　None

Description

● Retrieves the specified non-printed text string.

● 2- to 22-byte data is returned from the printer. (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:

　The following command is sent to the printer.

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 iXi2　　Select command mode

ASCII:	ESC	i	X	i	2	01h	00h	n1
Hexadecimal:	1B	69	58	69	32	01	00	nh1

Parameters

　　　　nh1: 00h 01h 03h 04h 05h

Description

● Switches the mode.

　　　nh3=00h:　Raster /ESC/P Legacy mode(default)

　　　nh3=03h:　P-touch Template mode /ZPL II emulation mode

　　　nh3=04h:　ESC/P Brother mode

● This command is a static command.

Remarks

● Invalid if nh1 is a value outside of the available range.

ESC iXi1   Retrieve command mode setting

ASCII:	ESC	i	X	i	1	00h	00h
Hexadecimal:	1B	69	58	69	31	00	00

Parameters

    None

Description

● Retrieves the setting for the command mode.

● 3-byte data is returned from the printer.

    [1]: 01h (Fixed)

    [2]: 00h (Fixed)

    [3]: Setting
        00h: Raster /ESC/P Legacy mode
        03h: P-touch Template mode /ZPL II emulation mode
        04h: ESC/P Brother 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 00h

ESC iXn2　Select template

ASCII:	ESC	i	X	n	2	01h	00h	n1
Hexadecimal:	1B	69	58	6E	32	01	00	nh1

Parameters

01h≤nh1≤FFh

Description

● Selects the number of the template selected from the printer.

n1:　Template number (1 to 255)

● The default selection number is 1.

● This command is a static command.

Remarks

● The template numbers that can be set are between 1 and 255.

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 printer.

Example

● To select template number 99:

Since nh1=63h, the command will be as follows.

ESC i X n 2 01h 00h 63h

(1Bh 69h 58h 6Eh 32h 01h 00h 63h)

ESC iXn1   Retrieve number of selected template

ASCII:	ESC	i	X	n	1	00h	00h
Hexadecimal:	1B	69	58	6E	31	00	00

Parameters

     None

Description

● Retrieves the template number selected from the printer.

● 3-byte data is returned from the printer.

    [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 iXf2　Change the prefix character

ASCII:		ESC	i	X	f	2	01h	00h	n1
Hexadecimal:	1B	69	58	66	32	01	00	nh1	

Parameters

　　　00h≤nh1≤FFh

Description

● Changes the prefix character code.

　　n1:　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" is "_" in ASCII code.)

ESC iXf1   Retrieve prefix character

ASCII:	ESC	i	X	f	1	00h	00h
Hexadecimal:	1B	69	58	66	31	00	00

Parameters

  None

Description

● Retrieves the prefix character code.

● 3-byte data is returned from the printer.

  [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 5Fh (5Fh stands for "_" in ASCII code)

ESC iXm2 Select character code set

ASCII:		ESC	i	X	m	2	01h	00h	n1
Hexadecimal:	1B	69	58	6D	32	01	00	nh1	

Parameters

      00h≤nh1≤04h, 10h

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".)

    nh1=00h: Brother standard

    nh1=01h: Windows1250 (Eastern Europe)

    nh1=02h: Windows1252 (Western Europe)

    nh1=03h: ZPL II Emulation

    nh1=04h: Japan

    nh3=0Ch: Windows 1251 (Cyrill)

    nh1=10h: Unicode (UTF-8)

● Invalid if n1 is a value outside of the allowable range

● 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 iXm1   Retrieve character code set setting

ASCII:	ESC	i	X	m	1	00h	00h
Hexadecimal:	1B	69	58	6D	31	00	00

Parameters

    None

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)
        03h: ZPL II Emulation
        04h: Japan
        0Ch: Windows 1251 (Cyrill)
        10h: Unicode(UTF-8)

● 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 iXj2   Select international character set

ASCII:		ESC	i	X	j	2	01h	00h	n1	
Hexadecimal:	1B	69	58	6A	32	01	00	nh1		

Parameters

    00h≤nh1≤0Dh, 40h

Description

- Selects the character set according to the country selected, and switches some character codes in the code table according to the value for nh1.

    nh1=00h: USA

    nh1=01h: France

    nh1=02h: Germany

    nh1=03h: Britain

    nh1=04h: Denmark I

    nh1=05h: Sweden

    nh1=06h: Italy

    nh1=07h: Spain I

    nh1=08h: Japan

    nh1=09h: Norway

    nh1=0Ah: Denmark II

    nh1=0Bh: Spain II

    nh1=0Ch: Latin America

    nh1=0Dh: South Korea

    nh1=40h: Legal

- The following 12 codes are switched.

    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 nh1=00h (USA).

- This command is a static command.

Example

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

    ESC i X j 2 01h 00h 08h

    (1Bh 69h 58h 6Ah 32h 01h 00h 08h)

ESC iXj1   Retrieve international character set setting

ASCII:	ESC	i	X	j	1	00h	00h
Hexadecimal:	1B	69	58	6A	31	00	00

Parameters

　　None

Description

● Retrieves the international character set setting.

● 3-byte data is returned from the printer.

　　[1]: 01h (Fixed)

　　[2]: 00h (Fixed)

　　[3]: Setting

　　　　00h: USA

　　　　01h: France

　　　　02h: Germany

　　　　03h: Britain

　　　　04h: Denmark I

　　　　05h: Sweden

　　　　06h: Italy

　　　　07h: Spain I

　　　　08h: Japan

　　　　09h: Norway

　　　　0Ah: Denmark II

　　　　0Bh: Spain II

　　　　0Ch: Latin America

　　　　0Dh: South Korea

　　　　40h: Legal

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

Example

● When the international character set is that for Japan:

> Code: ESC i X j 1 00h 00h
>
> 　　　(1Bh 69h 58h 6Ah 31h 00h 00h)
>
> Returned value: 01h 00h 08h

ESC iXR2   Specify line feed command text string

ASCII:	ESC	i	X	R	2	n1	n2	data
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 have been 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 iXR1   Retrieve line feed command setting text string

ASCII:	ESC	i	X	R	1	00h	00h
Hexadecimal:	1B	69	58	52	31	00	00

Parameters

None

Description

● Retrieves the text string specified for the line feed command.

● 2- to 22-byte data is returned from the printer. (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 iXC2　Specify number of copies

ASCII:	ESC	i	X	C	2	02h	00h	n1	n2
Hexadecimal:	1B	69	58	43	32	02	00	nh1	nh2

Parameters

00h≤nh1≤FFh

00h≤nh2≤03h

Description

● Specifies the number of copies to be printed.

nh1+(nh2*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 nh1=64h and nh2=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)

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ESC iXC1   Retrieve number of copies setting

ASCII:	ESC	i	X	C	1	00h	00h
Hexadecimal:	1B	69	58	43	31	00	00

Parameters

　　　None

Description

● Retrieves the number of copies specified to be printed.

● 4-byte data is returned from the printer.

　　[1]:　　02h (Fixed)

　　[2]:　　00h (Fixed)

　　[3, 4]:　nh1 nh2 settings
　　　　　　nh1+(nh2*256): Print start received character count

● 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 (F4h+01h*256=244+256=500)

ESC iXN2   Specify number of Numbering copies

ASCII:	ESC	i	X	N	2	02h	00h	n1	n2
Hexadecimal:	1B	69	58	4E	32	02	00	nh1	nh2

Parameters

00h≤nh1≤FFh

00h≤nh2≤03h

Description

● Specifies the number of copies to be printed with Numbering.

nh1+(nh2*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 nh1=64h and nh2=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 iXN1   Retrieve number of Numbering copies setting

ASCII:	ESC	i	X	N	1	00h	00h
Hexadecimal:	1B	69	58	4E	31	00	00

Parameters

    None

Description

● Retrieves the number of copies specified to be printed with Numbering.

● 4-byte data is returned from the printer.

    [1]:   02h (Fixed)

    [2]:   00h (Fixed)

    [3, 4]: nh1 nh2 settings
        nh1+(nh2*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 (F4h+01h*256=244+256=500)

ESC iXF2   FNC1 replacement setting

ASCII:	ESC	i	X	F	2	01h	00h	n1
Hexadecimal:	1B	69	58	46	32	01	00	nh1

Parameters

nh1: 00h, 01h

Description

● Selects whether or not GS codes, which are included in barcode protocols such as GS1-128 (UCC/EAN-128), are replaced with FNC1 codes.

nh1=00h: FNC1 replacement setting OFF

nh1=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 iXF1   Retrieve FNC1 replacement setting

ASCII:	ESC	i	X	F	1	00h	00h
Hexadecimal:	1B	69	58	46	31	00	00

Parameters

None

Description

● Retrieves the FNC1 replacement setting.

● 3-byte data is returned from the printer.

[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 iXE2　Specify barcode margin setting

ASCII:	ESC	i	X	E	2	01h	00h	n1
Hexadecimal:	1B	69	58	45	32	01	00	n1

Parameters

　　n1: 00h, 01h

Description

● Specify barcode margin setting.

　　n1=00h:　Disable

　　n1=01h:　Enable

● Default value is 01h (Enable).

● This command is a static command.

● This setting affects only for 2D codes.

Example

● For setting barcode margin to disable:

Since n1=00h, the command will be as follows

ESC i X E 2 01h 00h 00h

(1Bh 69h 58h 45h 32h 01h 00h 00h)

ESC iXE1　Retrieve barcode margin setting

ASCII:		ESC	i	X	E	1	00h	00h
Hexadecimal:	1B	69	58	45	31	00	00	

Parameters

    None

Description

● Retrieve barcode margin setting.

● 3-byte data is returned from the printer.

    [1]:　01h（Fixed）

    [2]:　00h（Fixed）

    [3]:　Settings
         00h: Disable
         01h: Enable

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

● This setting is available only for 2D codes.

Example

● When the barcode margin is set to enable:

Code: ESC i X E 1 00h 00h

(1Bh 69h 58h 45h 31h 00h 00h)

Returned value: 01h 00h 01h

ESC iXh2   Specify rotated print

ASCII:	ESC	i	X	h	2	01h	00h	n1
Hexadecimal:	1B	69	58	68	32	01	00	nh1

Parameters

nh1: 00h, 01h

Description

● Select rotate setting.

nh1=00h: No rotation

nh1=01h: 180 degrees rotation

● The default value for the rotate setting is "00h" (No rotation).

● This command is a static command.

Example

● To set the rotate setting to 180 degrees rotation:

Since nh1=01h, the command will be as follows.

ESC i X h 2 01h 00h 01h

(1Bh 69h 58h 68h 32h 01h 00h 01h)

ESC iXh1   Retrieve rotated print setting

ASCII:	ESC	i	X	h	1	00h	00h
Hexadecimal:	1B	69	58	68	31	00	00

Parameters

    None

Description

- Retrieve rotated print setting.

- 3-byte data is returned from the printer.

    [1]:   01h (Fixed)

    [2]:   00h (Fixed)

    [3]:   Settings
           00h: No rotate
           01h: Rotate 180 degrees

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

Example

- When the rotate setting is set to 180 degrees rotation:

Code: ESC i X h 1 00h 00h

     (1Bh 69h 58h 68h 31h 00h 00h)

Returned value: 01h 00h 01h

ESC iX^2   Specify print stop position

ASCII:	ESC	i	X	^	2	01h	00h	n1
Hexadecimal:	1B	69	58	5E	32	01	00	nh1

Parameters

    nh1: 00h, 01h

Description

● Select print stop position.

    nh1=00h: Tear-bar

    nh1=01h: Head

● The default value is "00h" (Tear-bar).

● This command is a static command.

Example

● To set the print stop position to head:

  Since nh1=01h, the command will be as follows.

> ESC i X ^ 2 01h 00h 01h
>
> (1Bh 69h 58h 5Eh 32h 01h 00h 01h)

ESC iX^1 Retrieve print stop position

ASCII:	ESC	i	X	^	1	00h	00h
Hexadecimal:	1B	69	58	5E	31	00	00

Parameters

None

Description

● Retrieve print stop position.

● 3-byte data is returned from the printer.

[1]: 01h (Fixed）

[2]: 00h (Fixed）

[3]: Settings
00h: Tear-bar
01h: Head

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

Example

● When the print stop position is set to tear-bar (00h):

Code: ESC i X ^ 1 00h 00h

(1Bh 69h 58h 5Eh 31h 00h 00h)

Retuned value: 01h 00h 00h

ESC iXv2 (08h) Specify Network Raw port bi-directional communication

ASCII:	ESC	i	X	v	2	03h	00h	00h	08h	n1
Hexadecimal:	1B	69	58	76	32	03	00	00	08	nh1

Parameters

     nh1: 00h, 07h

Description

● Enable or disable the bi-directional communication setting for during Network Raw port communication.

     nh1=00h: Disable (Default)

     nh1=07h: Enable

● The default value is 00h (Disable).

● Specifying 07h (Enable) will allow the printer to return a response during Network Raw port communication.

● This command is a static command.

Example

● For when bi-directional communication (response from the printer) with the Raw port is enabled.

● Since the value will be n1=07h, the command will be as follows.

ESC i X v 2 03h 00h 00h 08h 07h

(1Bh 69h 58h 76h 32h 03h 00h 00h 08h 07h)

ESC iXv1 (08h) Retrieve a Network Raw port bi-directional communication setting

ASCII:	ESC	i	X	v	1	03h	00h	00h	08h	00h
Hexadecimal:	1B	69	58	76	31	03	00	00	08	00

Parameters

   None

Description

● Retrieve a bi-directional communication (response from the printer) setting for during Network Raw port communication.

● 3-byte data is returned from the printer.

   [1]:   01h (Fixed)

   [2]:   00h (Fixed)

   [3]:   Settings
          00h: Disabled
          07h: Enabled

● The retrieved value is a value set by static command.

Example

● For when Enable is set.

   Code: ESC i X v 1 03h 00h 00h 08h 00h

          (1Bh 69h 58h 76h 31h 03h 00h 00h 08h 00h)

   Returned value: 01h 00h 07h

9. Setting and Retrieving Command Details (Raster mode)

ESC iOUe1   Specify the string of text decoration tags

ASCII:	ESC	i	O	U	e	1	n1	n2	n3	data
Hexadecimal:	1B	69	4F	55	65	31	n1	n2	n3	data

Parameters

    00h≤n1≤03h

    01h≤n2≤08h

    n3: 00h (Fixed)

    00h≤data≤FFh

Description

● Specify the string of text decoration tags.

    n1=00h: Bold start (Default: "")

    n1=01h: Bold end (Default: "")

    n1=02h: Underline start (Default: "<u>")

    n1=03h: Underline end (Default: "</u>")

    n2+(n3*256):   Length of the text string   (can be set between 1 and 8)

    data: Text string (The maximum number of characters that can be set is 8 characters (bytes).)

● This command is a static command.

Example

● To modify "Bold start" tag string to "&b":

    Since the length of the string is 2 (n3=02h), the command will be as follows.

> ESC i O U e 1 00h 02h 00h 26h 62h
>
> (1Bh 69h 4Fh 55h 65h 31h 00h 02h 00h 26h 62h)

● To modify "Bold end" tag string to "&&b" :

    Since the length of the string is 3 (n3=03h), the command will be as follows

> ESC i O U e 1 01h 03h 00h 26h 26h 62h
>
> (1Bh 69h 4Fh 55h 65h 31h 01h 03h 00h 26h 26h 62h)

ESC iOUe0   Retrieve the string of text decoration tags

ASCII:	ESC	i	O	U	e	0	n1	n2	n3
Hexadecimal:	1B	69	4F	55	65	30	n1	n2	n3

Parameters

      00h≤n1≤03h

      n2: 00h (Fixed)

      n3: 00h (Fixed)

Description

● Retrieve the text string of selected decoration tags.

      n1=00h: Bold start

      n1=01h: Bold end

      n1=02h: Underline start

      n1=03h: Underline end

● 2- to 10-byte data is returned from the printer. (Varies depending on the length of the text string)

      [1, 2]:   n1 n2 (number of characters)
                      n1+(n2*256)

      [3 and later]:   Text string

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

Example

● When the text string for the Bold start is specified as "&b" :

Code: ESC i O U e 0 00h 00h 00h

      (1Bh 69h 4Fh 55h 65h 30h 00h 00h 00h)

Returned value: 02h 00h 26h 62h

● When the text string for the Bold end is specified as "&&b":

Code: ESC i O U e 0 01h 00h 00h

      (1Bh 69h 4Fh 55h 65h 30h 01h 00h 00h)

Returned value:03h 00h 26h 26h 62h

10. Printer Control Command Details

ESC i a   Select command mode

ASCII:	ESC	i	a	n
Hexadecimal:	1B	69	61	nh

Parameters

    nh=00h 01h 03h 04h 05h 30h 31h 33h 34h 35h

Description

- Switches the mode.

    nh=00h or 30h: ESC/P Legacy / Raster mode

    nh=03h or 33h: P-touch Template mode (default) / ZPL II emulation mode

    nh=04h or 34h: ESC/P Brother mode

    nh=FFh   Switch to the initial mode (See also ESC iXi2Select command mode)

- This command is a dynamic command.

Remarks

- Invalid if n is a value outside of the allowable range.

ESC i U x   Reboot

ASCII:	ESC	i	U	x
Hexadecimal:	1B	69	55	78

Parameters

   None

Description

● Reboot the printer.

● This is a raster command. Please change the mode before sending this command. Please refer to ESC i a Select command mode.

ESC i S   Status request

ASCII:	ESC	i	S
Hexadecimal:	1B	69	53

Parameters

None

Description

● Returns the printer status. The printer status consists of 32 bytes.

● The response content of the command is the same as ^SR. Please refer to the ^SR page.

● This command does not return a response during printing.

11. ZPL Ⅱ Emulation Support Commands

ZPL Ⅱ	Description	Note
^A	Select font	
^A@	Select font	
^B0	Aztec	
^B2	Interleaved 2 of 5	
^B3	Code39	
^B7	PDF417	
^B8	EAN-8	
^B9	UPC-E	
^BA	Code93	・"□" is not added to the beginning or end of subscript.
^BC	Code128	
^BD	MaxiCode	
^BE	EAN-13	
^BF	MicroPDF417	
^BI	Industrial 2 of 5	
^BJ	Standard 2 of 5	
^BK	ANSI CodaBar	
^BM	MSI/Plessey	
^BO	Aztec	
^BQ	QR Code	・The mask pattern is fixed. ・Mixed mode is not supported.
^BR	GS1 Databar	・UPC-A, UPC-E, EAN-13, EAN-8, UCC/EAN-128 and CC-A/B, UCC/EAN-128 and CC-C are not supported.
^BS	UPC-EAN Extension	

ZPL II	Description	Note
^BU	UPC-A	・If suffixes were disabled, guard bars will be disabled. ・The size of suffixes does not change with the size of the module width.
^BX	DataMatrix	・The error correction level is fixed at 200.
^BY	Bar setting for barcodes	
^BZ	POSTAL	・Compatible with Postnet and IMB.
^CC	Change prefix ^	
~CC	Change prefix ^	
^CD	Change delimiter character	
~CD	Change delimiter character	
^CF	Change default font	
^CI	Change international character set	・Compatible with 1-byte code (international character settings) and UTF-8.
^CT	Change prefix ~	
~CT	Change prefix ~	
^CW	Name downloaded font with 1 alphanumeric character.	・TTE files are not supported.
^DB	Download bitmap font	
~DB	Download bitmap font	
^DF	Download format	
^DG	Download graphic	
~DG	Download graphic	
^EF	Clear all formats in RAM except GRF	
~EF	Clear all formats in RAM except GRF	
^EG	Clear all GRF	
~EG	Clear all GRF	
^FA	Allocate space for the field to be saved	
^FB	Set field block	
^FD	Set input data area	
^FH	Use hexadecimal character for input data	
^FN	Set data area as a number	

ZPL II	Description	Note
^FO	Set position from home position of label	
^FP	Set field parameter	・Settings for barcode suffixes are invalid. ・Vertical text settings for field blocks are invalid.
^FR	Reverse field color	
^FS	Point to last position of field	
^FT	Set position of field	
^FV	Set the number of data to be inserted in field	
^FW	Set the default orientation	
^GB	Draw box	
^GC	Graphic circle	
^GD	Graphic diagonal line	
^GE	Graphic ellipse	
^GF	Graphic field	・Compressed binary data is not supported.
^GS	GS fonts	・Supports registered trademarks, copyright marks, and trademarks.
^HG	Return graphic data to host	
~HI	Retrieve printer information	
^ID	Delete image file	
^IL	Recall image files stored with ^IS	
^IM	Recall image files	
^IS	Store image files	

ZPL II	Description	Note
~JA	Cancel format	
^JB	Initialize memory	
~JP	Clear format holding ~JP	
~JR	Initialize when printer turned on	
^KL	Set language	・Control panel language settings are not supported.
^LH	Set home position of label	
^LL	Set label length	
^LR	Reverse field data color	
^LS	Set horizontal print position	
^LT	Set vertical print position	
^MC	Clear data after printing	
^MU	Unit setting	・Resolution settings are not supported. Operation is according to the resolution of the model.
^PM	Mirror printing	
^PO	Upside-down printing	
^PQ	Copy printing	・The pause command is not supported.
^PW	Set print width	
^SF	Serialization	
^SN	Serialization	
~WC	Print printer settings	
^WD	Print list of stored files	

ZPL II	Description	Note
^XA	Command required at beginning of format	・Replacement with STX is not supported.
^XF	Recall format stored with ^DF	
^XG	Recall format stored with ^DG or ^DG	
^XZ	Command required at end of format	

Appendix A: Specifications

PJ-8XX P-touch Template 2.0 specifications

Model			PJ-822	PJ-823	PJ-862	PJ-863	PJ-883
Printing		Printing method	**<u>ESC/P Legacy / Raster printing</u>** ESC/P Brother printing P-touch Template / ZPL II emulation				
		Maximum print length	2.54 m				
		Resolution (dpi)	203 dpi × 200 dpi	300 dpi × 300 dpi	203 dpi × 200 dpi	300 dpi × 300 dpi	300 dpi × 300 dpi
	Text	Font	Outline fonts: Helsinki, Brussel, Letter Gothic, Gothic (*Japanese font) Support downloading fonts (TrueType/OpenType)				
		Size (dots)	Outline fonts: Maximum 400 dots				
		Character style	None, Bold, Italics, Outline, Shadow, Shadow + Outline				
		Horizontal alignment	Left, Center, Right				
		Rotate	Portrait, landscape				
	Bar-code	Types	CODE39, ITF (I-2/5), EAN-13, EAN-8, UPC-A, UPC-E, CODABAR, CODE128, GS1-128 (UCC/EAN-128), GS1 Databar (Omni, Truncated, Stacked, Stacked Omni, Limited, Expanded, Expanded Stacked), POSTNET, Intelligent Mail Barcode, GS1 Databar Composite, QR Code, PDF417, Data Matrix, MaxiCode, Aztec,				
		Width	Large, Medium, Small, Extra Small				
Flash ROM (user area)			42MB				
Communication Interfaces			USB	USB	USB Bluetooth	USB Bluetooth	USB Bluetooth WLAN
Options			-				

Settings that appear in **bold** and <u>underlined</u> are the default settings.

Appendix B: Character Code Tables

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	~	'	¡	±	Á	Ñ	á	ñ
2			"	2	B	R	b	r	,	'	¢	²	Â	Ò	â	ò
3			#	3	C	S	c	s	ƒ	"	£	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	ˆ	˜	¨	¸	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 switch when the international character set is changed.

(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	€	ťˇ		°	Ŕ	Đ	ŕ	đ
1			!	1	A	Q	a	q	À	'	˘	±	Á	Ń	á	ń
2			"	2	B	R	b	r	‚	'	˛	¸	Â	Ň	â	ň
3			#	3	C	S	c	s	ˇL	"	Ł	ł	Ă	Ó	ă	ó
4			$	4	D	T	d	t	„	"	¤	´	Ä	Ô	ä	ô
5			%	5	E	U	e	u	…	•	Ą	µ	Ĺ	Ő	Í	ő
6			&	6	F	V	f	v	†	–	¦	¶	Ć	Ö	ć	ö
7			'	7	G	W	g	w	‡	—	§	·	Ç	×	ç	÷
8			(	8	H	X	h	x	ľ		¨	¸	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	{	<	>	«	»	Ë	Ű	ë	ű
C			,	<	L	\	l	¦	Ś	ś	¬	Ľ	Ě	Ü	ě	ü
D			−	=	M	]	m	}	Ť	ť	–	˝	Í	Ý	í	ý
E			.	>	N	^	n	~	Ž	ž	®	ľ	Î	Ţ	î	ţ
F			/	?	O	_	o	DEL	Ź	ź	Ż	ż	Ď	ß	ď	˙

Note

" ⬛ " indicates that a space is printed.

" ⬜ " indicates that the character will switch when the international character set is changed.

(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	░	└		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	¿	©	╚			°
9			)	9	I	Y	i	y	ë	Ö	®	╣	╔	┘		·
A			*	:	J	Z	j	z	è	Ü	€	║	╩	┌	Ω	
B			+	;	K	[	k	{	ï	¢	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	ƒ	»	┐		□		

Note

" ▪ " indicates that a space is printed.

" ▪ " indicates that the character will switch when the international character set is changed.

(4) Windows 1251 (Cyrill)

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0			SP	0	@	P	`	p	Ђ	ђ		°	А	Р	а	р
1			!	1	A	Q	a	q	Ѓ	'	Ў	±	Б	С	б	с
2			"	2	B	R	B	r	,	'	ў	I	В	Т	в	т
3			#	3	C	S	C	s	ѓ	"	J	і	Г	У	г	у
4			$	4	D	T	D	t	„	"	¤	ґ	Д	Ф	д	ф
5			%	5	E	U	e	u	…	•	Ґ	µ	Е	Х	е	х
6			&	6	F	V	f	v	†	—	¦	¶	Ж	Ц	ж	ц
7			'	7	G	W	g	w	‡	—	§	·	З	Ч	з	ч
8			(	8	H	X	h	x	€		Ё	ё	И	Ш	и	ш
9			)	9	I	Y	i	y	‰	™	©	№	Й	Щ	й	щ
A			*	:	J	Z	j	z	Љ	љ	Є	є	К	Ъ	к	ъ
B			+	;	K	[	k	{	‹	›	«	»	Л	Ы	л	ы
C			,	<	L	\	l	¦	Њ	њ	¬	ј	М	Ь	м	ь
D			-	=	M	]	m	}	Ќ	ќ		S	Н	Э	н	э
E			.	>	N	^	n	~	Ћ	ћ	®	ѕ	О	Ю	о	ю
F			/	?	O	_	o		Џ	џ	Ї	ї	П	Я	п	я

" ■ " indicates that a space is printed.

" ▨ " indicates that the character will switch when the international character set is changed.

Appendix B: Character Code Tables

(5) Japan

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0			SP	0	@	P	`	p	_		SP	—	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	]	m	}			ュ	ス	ヘ	ン		
E			.	>	N	^	n	~			ョ	セ	ホ	゛		
F			/	?	O	_	o	DEL			ッ	ソ	マ	゜		

注意:

" ■ " indicates that a space is printed.

" ▨ " indicates that the character will switch when the international character set is changed.

International character set table

Corresponding characters that switch in each language when the international character set is changed

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

The barcode is not printed (common main cause)

(1) The size of the barcode is too big for the paper/the barcode is bigger than the print area

If it is determined that the barcode does not fit within the print area, the printer will not print the barcode.

Either make the barcode smaller, or correct the position and try again.

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://support.brother.com/g/s/es/dev/en/index.html?navi=offall