MP-B21L SERIES
THERMAL PRINTER
CPCL COMMAND REFERENCE

Rev.01

Seiko Instruments Inc.

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PREFACE

This technical reference describes CPCL command in MP-B21L SERIES THERMAL PRINTER (hereinafter referred to as "printer").
The CPCL command is referred to as “command” in this manual.

[Contents]

TABLE OF CONTENTS

TABLES

FIGURES

CHAPTER 1
TERMS USED IN THIS MANUAL

This chapter describes the terms used in this manual.

- **Notation in the Technical Reference**

  Hexadecimal: the character 'H' which indicates hexadecimal is added behind a number.
  Example: 0AH

  Character: a character is enclosed in single quotation marks.
  Example: 'G'

- **Character Spacing**

  Character spacing is the space between each character in the horizontal direction (See Figure 1-1).

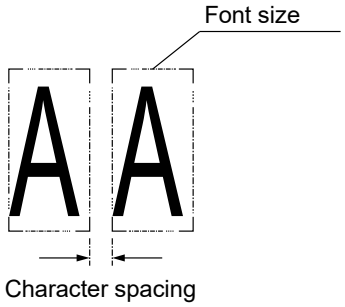


Figure 1-1 Character Spacing

- **Command Line**

  Command line is a data line which begins with '!' or a string indicating the command, followed by the specified parameter and terminates with the specified terminator.
  For example, when the terminator is set as "use both 0DH(CR) and 0AH(LF)", the command line such as "! 0 200 200 210 1[CR/LF]" or "SETMAG 2 2[CR/LF]" can be considered.

- **Label File**

  The command which begins with '!', followed by setting horizontal offset, vertical and horizontal resolutions, label length, quantity of labels to print and terminates with the specified terminator is referred to as PRINTER command.
  Label file is a data line which begins with the PRINTER command and ends with the PRINT command. See "Chapter 2 Command Functions" for details of the PRINTER command and PRINT command.

- **Page**

  Page is the memory space to map the received characters or data following the command.

- **Control Session of Label Mode**

  Control session of label mode is the sequential control that conducts command analysis and execution as label mode. The control session of label mode is started by executing the PRINTER command and ended by executing the PRINT command.
  See "Chapter 2 Command Functions" for details of the PRINTER command and PRINT command.

- **Utility Session**

  Utility session is the sequential control that conducts command analysis and execution as line print mode. This session is started by executing "! UTILITIES" command or "! U" command and ended by "PRINT".

CHAPTER 2
COMMAND FUNCTIONS

2.1 COMMAND SYSTEM

This printer supports 3 command systems: ESC/POS, CPCL, and ZPL II. One of these systems is selected to create print data.
The command system of this printer at the factory is ESC/POS. In order to use CPCL, the command system needs to be changed. See "2.5.12 Command System Control Commands" for details about the response and change of the command system.

2.2 FLASH MEMORY AND FLASH FILE SYSTEM

This printer's FLASH memory can store the files describing groups of commands to create print data, or binary data files. The area in the FLASH memory to store these files is referred to as "flash file system". By reading out the stored files, the groups of commands described in the files can be executed.
Use the DEFINE-FORMAT command, DEFINE-FILE command or SII SAVE-BIN-FILE command to store files.

Total capacity of the flash file system is 1463040 bytes. When using a command to store files, it is necessary to know the remaining capacity beforehand. There are methods for checking the remaining capacity; executing "DIR utility", reading out "file.dir" or "memory.flash_free".

The maximum rewritable number of the FLASH memory is approximately 100000 times. Do not turn off the printer while the command on writing or invalidation into the FLASH memory is executed. When doing so, operational malfunctioning may occur. In order to confirm the completion of access to the FLASH memory, execute a command involving response such as getvar command and confirm the printer has responded.

2.3 LABEL MODE AND LINE PRINT MODE

In CPCL, the "Label Mode" and "Line Print Mode" can be used. This section describes about each mode.

2.3.1 Label Mode

Label mode is a mode to print on each label.
When printing in label mode, set a command in the "label file" which begins with the PRINTER command and ends with the PRINT command. The PRINTER command specifies the horizontal offset, vertical and horizontal resolutions, label length, and quantity of labels to print, and then starts a control session of label mode. The PRINT command prints according to the command placed in the label file and ends the control session of label mode.
In label mode, the print data, such as text, barcodes or graphics, is mapped by specifying the coordinates to be mapped for each data.
This mode is effective for printing in a definite format such as the label and the marked paper. It is also able to print ruled lines and frame lines easily.

2.3.2 Line Print Mode

Line print mode is a mode to map the characters corresponding to the received ASCII code on the page sequentially and print.
Printing is performed when the following conditions are established.

- Data is not received for a certain period of time while the print data is mapped on the page
  Printing is automatically performed when the data is not received after a period of time specified by the SETLP-TIMEOUT command has passed since the last data was received.

- Data exceeding the length of 1 page is mapped
  When the data exceeding the length of 1 page is mapped, the print data mapped in 1 page is printed, and then the subsequent print data is mapped in the page sequentially. The length of 1 page is 2400 dots (300mm).

- The PRINTER command is received while the print data is mapped on the page
  After printing the print data mapped in line print mode, printing is performed according to the command which is placed in the label file.

- 0CH (FF) is sent while the print data is mapped on the page
  After printing the print data mapped in line print mode, the paper is fed until one of the following conditions is satisfied.
  ・The paper has reached the next mark position.
  ・The paper has been fed the length specified by the PAGE-HEIGHT command.
  ・The paper has reached the top of the form specified by the SETFF command or SET-TOF command.

In line print mode, each print data such as text, barcodes, or graphics is mapped after automatically calculating the coordinates to be mapped.
This mode is effective for printing when its length is not determined, such as receipts.

2.4 COMMAND SUMMARY

Table 2-1 shows the command summary.
"Compatibility" in the table shows the comparison with the original CPCL (PROMAN-CPCL Rev.Y April 2011). The '✓' sign stands for "CPCL compatible", and the '-' sign stands for "unsupported". The '*' sign in "Command" means that the command is for multiple use.

Table 2-1 Command Summary

Category	Command (Abbreviation in parenthesis)	Description	Compatibility
Printer	!	Starts the control session of label mode (PRINTER command)	✓
	PRINT	Performs printing and terminates the control session of label mode	✓
	END	Terminates command processing without printing	-
	ABORT	Terminates the control session of label mode without printing	-
	ENCODING	Selects character encoding from "ASCII", "UTF-8" or "GB18030"	-
	FORM	Performs form feed	✓
	JOURNAL	Disables mark detection function while printing	✓
	IN-INCHES *	Specifies the unit system	✓
	IN-CENTIMETERS *		
	IN-MILLIMETERS *		
	IN-DOTS *		
Text	TEXT(T)	Prints text	✓
	VTEXT(VT)		
	TEXT90(T90)		
	TEXT180(T180)		
	TEXT270(T270)		
	FONT-GROUP(FG)	Groups fonts	✓
	CONCAT *	Prints the text using different styles of font	✓
	VCONCAT *		
	MULTILINE(ML)	Prints the text in multiple lines using the same font	✓
	COUNT *	Specifies the value of numeric text / data to be added or subtracted when printing multiple labels	✓
	SETMAG	Specifies the magnification of font	✓
Scalable Text	SCALE-TEXT	Specifies the point size of scalable text.	-
	VSCALE-TEXT		

Category	Command (Abbreviation in parenthesis)	Description	Compatibility
Scalable Text	SCALE-TO-FIT	Fits scalable text in the specified frame size	-
	VSCALE-TO-FIT		
	CONCAT *	Prints text using different styles of font	-
	VCONCAT *		
	ROTATE	Rotates scalable text	-
Barcodes	BARCODE(B) * VBARCODE(VB)	UPC-A	✓
		UPC-E	✓
		EAN/JAN-13	✓
		EAN/JAN-8	✓
		Code 39	✓
		Code 93/Ext. 93	✓
		Interleaved 2 of 5	✓
		Interleaved 2 of 5 with checksum	-
		German Post Code	-
		Code 128 (Auto)	✓
		UCC EAN 128	-
		Codabar	✓
		MSI/Plessy	-
		Postnet	-
		FIM	-
		GS1 Databar (RSS)	Partially compatible
		PDF417	✓
		MAXICODE	Partially compatible
		QR Code	✓
		AZTEC	✓
	BARCODE-TEXT(BT)	Prints HRI characters	✓
	COUNT *	Specifies the value of numeric text / data to be added or subtracted when printing multiple labels	✓
Graphics	BOX	Prints rectangular shapes	✓
	LINE(L)	Prints straight lines	✓
	INVERSE-LINE(IL)	Prints straight lines in black-and-white inversion	✓
	PATTERN	Specifies patterns of straight line or scalable font	✓
	EXPANDED-GRAPHICS(EG)	Prints bitmap graphics	✓
	VEXPANDED-GRAPHICS(VEG)		✓
	COMPRESSED-GRAPHICS(CG)		✓

Category	Command (Abbreviation in parenthesis)	Description	Compatibility
Graphics	VCOMPRESSED-GRAPHICS(VCG)	Prints bitmap graphics	✓
	PCX *	Prints PCX formatted graphics data	✓
Advanced Commands	CONTRAST	Specifies the print density in 4 levels	✓
	TONE	Specifies the print density level in the range of -100 to 200	✓
	CENTER	Specifies the alignment	✓
	LEFT		
	RIGHT		
	PAGE-WIDTH(PW) *	Specifies the print area width	✓
	PACE	Enables the function that each press of FEED switch prints 1 label when printing multiple labels	✓
	AUTO-PACE	Enables 1 label to be printed automatically after removing previous printout	-
	NO-PACE	Disables the function of the PACE command or AUTO-PACE command	✓
	WAIT	Specifies a delay time after printing	✓
	REWIND	Turns the label rewinder on	-
	TENSION	Adjusts the tension of the label rewinder	-
	SPEED	Specifies the print speed	✓
	SETSP *	Specifies the character spacing	✓
	UNDERLINE	Underlines characters	-
	ON-OUT-OF-PAPER	Specifies the operation when an error occurs while printing	✓
	ON-FEED	Specifies the operation when the FEED switch is pressed or 0CH(FF) is received	Partially compatible
	PREFEED	Specifies the paper feeding length prior to printing	✓
	POSTFEED	Specifies the paper feeding length after printing	✓
	PRESENT-AT *	Enables the label to move to the tear bar position	✓
	COUNTRY *	Specifies the character set	✓
	DEFINE-FORMAT(DF) *	Stores the label's format file in the flash file system	✓

Category	Command (Abbreviation in parenthesis)	Description	Compatibility
Advanced Commands	USE-FORMAT(UF)	Reads out and executes the format file stored in the flash file system	✓
	BEEP *	Sounds the buzzer for the specified time length	-
	CUT	Performs full-cut	-
	PARTIAL-CUT	Performs partial-cut	-
	CUT-AT	Backfeed the paper the specified distance after cutting	-
	MCR	Command for Magnetic Card Reader	-
Line Print Mode	BEGIN-PAGE	Starts line print mode after clearing mapped print data	-
	END-PAGE	Ends line print mode and prints the content of mapped print data	-
	! UTILITIES (! U1)	Utility commands Used with the following sub commands of line print mode	✓
	LP-ORIENT	Specifies mapping orientation in line print mode	✓
	IN-INCHES *	Specifies the unit system	✓
	IN-CENTIMETERS *		
	IN-MILLIMETERS *		
	IN-DOTS *		
	SETLP	Specifies the font to use in line print mode	✓
	SETLF	Specifies the line spacing in line print mode	✓
	X	Specifies the print position in line print mode	✓
	Y		
	XY		
	RX		
	RY		
	RXY		
	LMARGIN	Specifies the left margin in line print mode	✓
	SETBOLD	Specifies the character thickness in line print mode	✓
	SETSP *	Specifies the character spacing	✓
	PAGE-WIDTH(PW) *	Specifies the print area width	✓
	PAGE-HEIGHT(PH)	Specifies the length of a print range in line print mode	✓
	Special Code 0x0C	Performs form feed	✓

Category	Command (Abbreviation in parenthesis)	Description	Compatibility
Line Print Mode	Special Code 0x08	Performs backspace	-
	SETFF	Specifies the maximum paper feeding length until mark detection and correction amount of form feed position	✓
	SET-TOF	Specifies the form feed position	✓
	PRESENT-AT *	Enables the print end to move to the tear bar position	✓
	CUT-AT	Feeds paper until the print end comes to cut position, and cuts the paper	-
	CUT	Performs full-cut	-
	PARTIAL-CUT	Performs partial-cut	-
	BARCODE *	Prints barcodes	✓
	PCX *	Prints PCX formatted graphics data	✓
	SETLP-TIMEOUT	Specifies the time until the printer automatically prints in line print mode	✓
Advanced Utilities	! UTILITIES (! U1)	Use to control the flash file system, retrieve / set the printer information, etc. Use with the following sub commands	✓
	VERSION	Responds with the firmware version	✓
	CHECKSUM	Responds with the checksum	✓
	DEL	Deletes specified files	✓
	DIR	Responds with the file directory	✓
	DF *	Stores files in the flash file system	✓
	TYPE	Responds with the content of the file stored in the flash file system	✓
	BAUD	Specifies the baud rate of the serial port	-
	COUNTRY *	Specifies the character set	✓
	CHAR-SET	Same as the COUNTRY command	✓
	ANNOUNCE	Makes the programmed sound	-
	TIMEOUT	Specifies the auto power off time	✓
	BEEP *	Specifies a time length of the buzzer sound	-

Category	Command (Abbreviation in parenthesis)	Description	Compatibility
Advanced Utilities	OLB	Specifies the printer's behavior when the battery is at low voltage	Partially compatible
	LT	Specifies the code to indicate the terminator of command line	✓
	SET-TIME	Sets the time of real-time clock	-
	GET-TIME	Responds with the time of real-time clock	-
	SET-DATE	Sets the date of real-time clock	-
	GET-DATE	Responds with the date of real-time clock	-
	PAPER-JAM	Specifies the response of paper jam	-
	MCR	Uses the function of Magnetic Card Reader	-
	MCR-QUERY	Sets the query mode of the MCR function	-
	MCR-CAN	Cancels the MCR function and transmits cancel of the error message	-
	S-CARD	Uses Smart Card	-
	GAP-SENSE	Specifies the sensor and threshold used for detecting form feed position (GAP)	✓
	BAR-SENSE	Specifies the sensor and threshold used for detecting form feed position (BAR)	✓
DENSO-BHT Command	DENSO-BHT Command	Command to control DENSO Barcode Handy Terminal	-
SII Commands	SAVE-ROOT-CERT	Sets the root certificate	SII original command
	SAVE-BIN-FILE	Stores binary files in the flash file system	SII original command
PRINTER ESCAPE Commands	ESC } W 1 n	Specifies the CCL code	✓
	ESC } R 1	Responds with the CCL code	✓
	ESC h	Responds with the printer status	✓
	ESC N	Clears the printer reset status	✓
	ESC v	Responds with the printer information	✓
	ESC i	Responds with the extended printer status	✓
	ESC JRU	Responds with the total number of printed labels	✓

Category	Command (Abbreviation in parenthesis)	Description	Compatibility
PRINTER ESCAPE Commands	ESC JWaccNVMU	Resets the total number of printed labels	✓
	ESC p	Turns the printer power off	✓
Command System Control Commands	SYN ESC CMDS p1 p2 p3 p4 0	Responds with the command system	SII original command
	SYN ESC CMDS p1 p2 p3 p4 1 n	Selects the command system	SII original command
Wireless LAN Command	LAN	Command to set / control the wireless LAN	-
Display Programming	Display Programming	Command to set / control the display	-
Configuration / Control Commands	! U1 setvar	Setting change and control command	✓
	! U1 getvar		
	! U1 do		

2.5 FUNCTION CODE DESCRIPTION

This section describes the commands in each function.

Format	Indicates the format of the command. The following indication rules are used for each parameter. { } Necessary parameter to be specified for each command [ ] Optional parameter for each command ( ) Abbreviation of the command Parameters are separated by one character space unless otherwise specified.
Definition Range	Indicates the setting range available for each parameter. As for parameters which are affected by the UNITS command, the definition range is shown in a unit of dot. When using other units, specify the value based on the definition range converted from dots to the unit to use.
Default	Describes the default for the command with parameter.
Function	Describes the function of the command.
Notes	Describes notes about the command as needed.
Related Commands	Describes commands related to this command operation.

The meanings of the terms are described below.

- -empty-
  This means no character string (0 characters) for the default and the value at the factory.
- Print area width
  This is the maximum width printable in a horizontal direction which is set with the PAGE-WIDTH command. The print area width can be set according to the setting value of sii.media.width.
- Ignore
  This is the state of discarding the command and not doing anything.
- Inch
  Unit of length. 1 inch = 25.4 mm approx.
- LSB/MSB
  LSB is the least significant bit and MSB is the most significant bit.
- Distance between the sensor and heat element
  This means the distance between the sensor for detecting form feed position and the heat element. The distance between the mark sensor and the heat element is 103 dots. The distance between the gap sensor and the heat element is 105 dots.
- CCL code
  This is a code to indicate the start of each session. The initial value is an exclamation mark '!'.

2.5.1 Printer Commands

PRINTER command

Format ! {offset} 200 200 {height} {qty}

Definition Range
0 ≤ offset ≤ 65535
1 ≤ height ≤ 65535
1 ≤ qty ≤ 1024

Function Specifies the horizontal offset, vertical / horizontal resolution, label length, and quantity of labels to be printed and starts a control session of label mode.
offset : Specify the horizontal offset of the label.
height : Specify the length of the label.
qty : Specify the number of labels.
The vertical and horizontal resolutions are fixed at 200. This printer operates setting 8 dots to 1 mm and 203 dots approximately to 1 inch.

Notes When the offset value exceeds the print area width specified by the PAGE-WIDTH command, the value that 1 dot from the right end of the print area secured is determined as the offset value.

When the height value exceeds the maximum length of 1 label, the maximum length of 1 label is the height value. The maximum length of 1 label in this printer is 2400 dots (300 mm).

The unit system specified by the UNITS command applies to offset and height. Normally the value is applied after the UNITS command is declared, but in the PRINTER command, the unit system of the UNITS command specified next after the PRINTER command is applied.

Related Commands UNITS command, PAGE-WIDTH command

PRINT command

Format PRINT

Function Performs printing according to the command placed between the PRINTER command and PRINT command and terminates the control session of label mode.

FORM command

Format FORM

Function Performs form feed after printing a label.

Notes The SETFF command can specify the mark detection maximum feeding length and the paper feeding length after reaching the form feed position.
The form feed position can be specified by the SET-TOF command.

Related Commands SETFF command, SET-TOF command

JOURNAL command

Format JOURNAL

Default The default value changes as follows depending on the value of media.type.
media.type = label : The mark detection function during printing is enabled.
media.type = journal : The mark detection function during printing is disabled.

Function When printing in label mode, the mark detection is carried out even while printing. When the printer detects the mark while printing, it stops printing. When printing multiple labels, the printer starts printing the next label.
By using this command, the above mark detection during printing is temporarily disabled.

Notes At the moment that the control session of label mode ends, the mark detection function during printing is enabled. In order to constantly disable the mark detection function during printing, set the media.type to journal.
The value of media.type is not changed by this command.

Related Commands media.type

UNITS command

Format (1) IN-INCHES
(2) IN-CENTIMETERS
(3) IN-MILLIMETERS
(4) IN-DOTS

Default IN-DOTS (in a unit of dot)

Function Specifies the unit system. The relation of each command and unit system is as shown in the following table.

Command	Unit System
IN-INCHES	Selects the unit of inch
IN-CENTIMETERS	Selects the unit of centimeter
IN-MILLIMETERS	Selects the unit of millimeter
IN-DOTS	Selects the unit of dot

When this command is used, the unit of the coordinates, widths and lengths for all subsequent commands is changed to the specified unit system. For example, when 0.25 is specified for the x parameter in the TEXT command after selecting the unit of millimeter by this command, this 0.25 means "0.25 millimeters".
The coordinates, widths and lengths can be specified to the fourth decimal place. However, values smaller than 1 dot are rounded off.

The unit system selected by the UNIT command is common setting for label mode and line print mode.

Notes When applying the unit system other than dot to the horizontal offset and label length in the PRINTER command, execute this command right after the PRINTER command.

Related Commands PRINTER command

Comments

Format	; [Arbitrary comments]
Function	Comments can be added between the PRINTER command and PRINT command. A comment can be added by starting the command line with a semicolon ';'. All of the text from the semicolon to the end of the line is ignored. Use both of 0DH(CR) and 0AH(LF) for the end of the comment regardless of the terminator setting specified by the LT command.
Notes	Comments cannot be used between the CONCAT/VCONCAT command and ENDCONCAT command.
Related Commands	LT command, TEXT CONCATENATION command (CONCAT/VCONCAT)

2.5.2 Text

TEXT command

Format

(1) TEXT(T) {font} {size} {x} {y} {data}
(2) VTEXT(VT) {font} {size} {x} {y} {data}
(3) TEXT90(T90) {font} {size} {x} {y} {data}
(4) TEXT180(T180) {font} {size} {x} {y} {data}
(5) TEXT270(T270) {font} {size} {x} {y} {data}

Definition Range

font = 0 to 7, 55, 56, 0 ≤ size ≤ 7 (When specifying the font)
font = FG, 0 ≤ size ≤ 9 (When using the font group)
0 ≤ x ≤ 65535
0 ≤ y ≤ 65535
data = Arbitrary number of text data

Function

Prints text on a label. The relation of each command and the print direction is as shown in the following table.

Command	Print Direction
TEXT(T)	Prints text horizontally.
VTEXT(VT)	Prints text rotated 90 degrees counterclockwise.
TEXT90(T90)	The same print direction as VTEXT.
TEXT180(T180)	Prints text rotated 180 degrees counterclockwise.
TEXT270(T270)	Prints text rotated 270 degrees counterclockwise.

The value to specify for font and size is as follows.
[When specifying the font]
font : Specify the font number. See "Table A-1 Font Size" for values available for each font.
size : Specify the font size.

[When using the font group]
font : Specify "FG".
size : Specify the font group number.

x : Specify the horizontal starting position.
y : Specify the vertical starting position.
data : Specify the text to be printed.

This command is available for label mode only.

Notes

The unit system specified by the UNITS command applies to x and y.

Related Commands

FONT-GROUP(FG) command, UNITS command

FONT-GROUP(FG) command

Format FG {fg} {fn fs} [fn fs] …

Definition Range
0 ≤ fg ≤ 9
fn = 0 to 7, 55, 56
0 ≤ fs ≤ 7

Default There is no font group formed by grouping.

Function Forms 1 font group by grouping font number / font size pairs.
When using the font group in the TEXT command, TEXT CONCATENATION command and MULTILINE(ML) command, the printer automatically selects the font number / font size pair that fits within the print area width and also has the largest string width from the pairs registered in the font group, and then prints the text.
fg : Specify the font group number.
fn : Specify the font number.
fs : Specify the font size. See "Table A-1 Font Size" for values available for each font.

This command is the command to register (set) the font group. The font group can be registered in label mode or print mode. However, the printing using the font group can be only available in label mode.

Up to 10 font groups can be made. Up to 10 font number / font size pairs can be registered in 1 font group.

Notes When using a font group in the TEXT command, TEXT CONCATNATION command and MULTILINE(ML) command, specify "'FG" for font and the font group number to use for size.

Related Commands TEXT command, TEXT CONCATENATION(CONCAT/VCONCAT) command, MULTILINE(ML) command

TEXT CONCATENATION command (CONCAT/VCONCAT)

Format (1) CONCAT {x} {y}
{font} {size} {offset} {data}
.....
{font} {size} {offset} {data}
ENDCONCAT

(2) VCONCAT {x} {y}
{font} {size} {offset} {data}
.....
{font} {size} {offset} {data}
ENDCONCAT

Definition Range
0 ≤ x ≤ 65535
0 ≤ y ≤ 65535
font = 0 to 7, 55, 56, 0 ≤ size ≤ 7 (When specifying the font)
font = FG, 0 ≤ size ≤ 9 (When using the font group)
0 ≤ offset ≤ 65535
data = Arbitrary number of text data

Function Prints the text that contains different styles of font. The relation of each command and the print direction is as shown in the following table.

Command	Print Direction
CONCAT	Combines text horizontally
VCONCAT	Combines text rotated 90 degrees counterclockwise

x : Specify the horizontal starting position.
y : Specify the vertical starting position.

The value to specify for font and size is as follows.
[When specifying the font]
font : Specify the font number. See "Table A-1 Font Size" for values available for each font.
size : Specify the font size.

[When using the font group]
font : Specify "FG".
size : Specify the font group number.

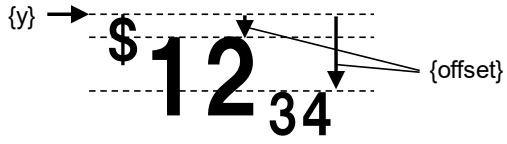
offset : Specify an amount to offset the text from the starting position. It is used to align individual text position or to print superscript / subscript characters.
data : Specify the text to be printed. Add the terminator specified by the LT command at the end of data.
Use the ENDCONCAT command to terminate the CONCAT/VCONCAT command.

This command is available for label mode only.

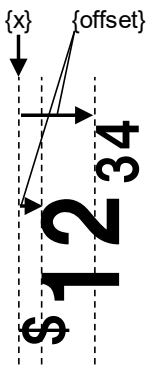
Notes The unit system specified by the UNITS command applies to x, y, and offset.

Comments cannot be used between the CONCAT/VCONCAT command and ENDCONCAT command.

Related Commands FONT-GROUP(FG) command, Comments, UNITS command



[CONCAT]



[VCONCAT]

MULTILINE(ML) command

Format
MULTILINE(ML) {height}
{text} {font} {size} {x} {y}
{data}
.....
{data}
ENDMULTILINE(ENDML)

Definition Range
0 ≤ height ≤ 65535
text = TEXT(T), VTEXT(VT), TEXT90(T90), TEXT180(T180), TEXT270(T270)
font = 0 to 7, 55, 56, 0 ≤ size ≤ 7 (When specifying the font)
font = FG, 0 ≤ size ≤ 9 (When using the font group)
0 ≤ x ≤ 65535
0 ≤ y ≤ 65535
data = Arbitrary number of text data

Function Prints multiple lines of text in the same font and height.
height : Specify the line height in which the text is printed.
text : Specify the TEXT command (TEXT, VTEXT, and so on).

[When specifying the font]
font : Specify the font number. See "Table A-1 Font Size" for values available for each font.
size : Specify the font size.

[When using the font group]
font : Specify "FG".
size : Specify the font group number.

x : Specify the horizontal starting position.
y : Specify the vertical starting position.
data : Specify the text to be printed. Add the terminator specified by the LT command at the end of data.
Use the ENDMULTILINE(ENDML) command to terminate the MULTILINE(ML) command.

This command is available for label mode only.

When using the font group, the maximum number of lines in the text data to specify is 40.

Notes The unit system specified by the UNITS command applies to height, x and y.

Related Commands UNITS command, FONT-GROUP(FG) command

COUNT command

Format COUNT {numeric value}

Definition Range numeric value = Any signs and integer values up to 20 characters

Function This command is used for printing multiple labels when adding or subtracting the numeric text / data every time a label is printed.
The numeric text / data includes:
- Numeric text mapped by the TEXT command
- Numeric data encoded in a barcode

Using this command, specify the value to add or subtract the numeric text / data while printing multiple labels for numeric value.

This command is available for label mode only.

When adding / subtracting the numeric text / data by this command, the numeric text / data must be contained in the TEXT command or BARCODE command as the last characters of the data.
Use this command right after the TEXT command or BARCODE command that contains the numeric text / data to be added / subtracted.

For numeric value, any integer values up to 20 characters can be specified as the adding / subtracting value.
To subtract, precede the value by a minus sign '-'. The '-' sign is included in 20 characters. The addition / subtraction cannot be performed through '0'.

When the numeric text / data is preceded by '0', this '0' is retained in the operation and output.

Up to 3 COUNT commands can be used in 1 label file.

Related Commands TEXT command, BARCODE command

SETMAG command

Format SETMAG {w} {h}

Definition Range 0 ≤ w ≤ 16
0 ≤ h ≤ 16

Default w = 0, h = 0

Function Specifies the magnification of the font.
w : Specify the horizontal magnification of the font.
h : Specify the vertical magnification of the font.

This command is available for label mode and line print mode. When using the command in line print mode, use it in combination with "! UTILITIES(! U)" command or "! U1" command.

The magnification changed by this command is effective until the initialization stated in "Chapter 3 Initialization" is executed, or the magnification is changed again by this command. To return the magnification to the default, specify the argument with 0. ("SETMAG 0 0")

2.5.3 Barcode

BARCODE command

Format (1) BARCODE(B) {type} {width} {ratio} {height} {x} {y} {data}
(2) VBARCODE(VB) {type} {width} {ratio} {height} {x} {y} {data}

Definition Range type = UPCA, UPCE, EAN13, EAN132, EAN135, EAN8, 39, 93, I2OF5, 128, CODABAR
0 ≤ width ≤ 254
0 ≤ ratio ≤ 4, 20 ≤ ratio ≤ 30
0 ≤ height ≤ 65535
0 ≤ x ≤ 65535
0 ≤ y ≤ 65535

Function Prints barcodes. The relation of each command and the print direction is as shown in the following table.

Command	Print Direction
BARCODE(B)	Prints the barcode horizontally.
VBARCODE(VB)	Prints the barcode rotated 90 degrees counterclockwise.

type : Specify the symbology. Select the value from the following table.

type	Symbology
UPCA	UPC-A
UPCE	UPC-E
EAN13	EAN/JAN-13
EAN132	EAN/JAN-13 add-on 2
EAN135	EAN/JAN-13 add-on 5
EAN8	EAN/JAN-8
39	Code 39
93	Code 93
I2OF5	Interleaved 2 of 5
128	Code 128 (Auto)
CODABAR	Codabar

width : Specify the width of the narrow element. The width 1 dot more than width is printed.
ratio : Specify the ratio of the wide element against the narrow element. Select the value from the following table.

ratio	W:N
0	1.5:1
1	2.0:1
2	2.5:1
3	3.0:1
4	3.5:1

ratio	W:N
20	2.0:1
21	2.1:1
22	2.2:1
23	2.3:1
24	2.4:1
25	2.5:1

ratio	W:N
26	2.6:1
27	2.7:1
28	2.8:1
29	2.9:1
30	3.0:1

height : Specify the height of the barcode.
x : Specify the horizontal starting position.
y : Specify the vertical starting position.
data : Specify the barcode data.

This command is available for label mode and line print mode. When using the command in line print mode, use it in combination with "! UTILITIES(! U)" command or "! U1" command. When printing barcodes in line print mode, see also "BARCODE command" in "2.5.8 Line Print Mode".

[UPC-A]
Specify data with 11 or 12 digits. Usable characters are '0' to '9'.
When specified with 11 digits, the check digit is calculated automatically and added to the 12th digit.
When specified with 12 digits, the 12th digit is ignored. The check digit is calculated automatically and added to the 12th digit.

[UPC-E]
Specify data with 6, 7 or 11 digits. Usable characters are '0' to '9'.
When specified with 6 digits, the data is preceded by 0. The check digit is calculated automatically and added to the 8th digit.
When specified with 7 digits, the check digit is calculated automatically and added to the 8th digit. Unless the first digit is '0', printing is not performed.
When specified with 11 digits, the data to be input is as follows.
When the original code is 0 - ABCDE - VWXYZ,
1. 0 - ABCDE - 0000Z (Z is 5 to 9)
2. 0 - ABCD0 - 0000Z
3. 0 - ABC00 - 000YZ (C is 3 to 9)
4. 0 - ABC00 - 00XYZ (C is 0 to 2)

[EAN/JAN-13]
Specify data with 12 or 13 digits. Usable characters are '0' to '9'.
When specified with 12 digits, the check digit is calculated automatically and added to 13th digit.
When specified with 13 digits, the 13th digit is ignored. The check digit is calculated automatically and added to the 13th digit.

[EAN/JAN-13 add-on 2 and add-on 5]
Specify data by the following format.
- Specify the barcode data with 12 or 13 digits. Usable characters are '0' to '9'.
- Insert 1 space character to separate the barcode data and add-on portion.
- Specify the add-on portion with 2 or 5 digits. Usable characters are '0' to '9'.

When specified the barcode data with 12 digits, the check digit is calculated automatically and added to the 13th digit.
When specified the barcode data with 13 digits, the 13th digit is ignored. The check digit is calculated automatically and added to the 13th digit.

[EAN/JAN-8]
Specify data with 6, 7 or 8 digits. Usable characters are '0' to '9'.
When specified with 6 digits, the data is preceded by 0. The check digit is calculated automatically and added to the 8th digit.
When specified with 7 digits, the check digit is calculated automatically and added to the 8th digit.
When specified with 8 digits, the 8th digit is ignored. The check digit is calculated automatically and added to the 8th digit.

[Code 39]
Specify data with any number of digits. Usable characters are ' (space)', '$', '%', '+', '-', '.', '/', '0' to '9', and 'A' to 'Z'.

[Code 93]
Specify data with any number of digits. Usable characters are 01H to 7FH of the ASCII character code (except 0AH and 0DH). The input ASCII character code is automatically converted to the Code 93 code set, and the barcode is printed.

[Interleaved 2 of 5]
Specify data with any even number of digits. Usable characters are '0' to '9'.
When specified with an odd number of digits, the data is preceded by '0'.

[Code 128(Auto)]
Specify data with any number of digits. Usable characters are 01H to 7FH (except 0AH and 0DH) and 80H to 89H (except 83H) of the ASCII character codes.
The relation of 80H to 89H and the data is as shown in the following table. The input data is automatically converted to the Code 128 code set, and the barcode is printed with its minimum length.

Input	Data
80H	FUNC3
81H	FUNC2
82H	SHIFT
83H	N/A
84H	FUNC4 after changed to codeset B
85H	FUNC4 after changed to codeset A
86H	FUNC1
87H	NUL
88H	LF
89H	CR

[Codabar]
Specify data by the following format.
- Specify 1 start character from 'A' to 'D'.
- Specify the data of any number of digits.
  Usable characters are '0' to '9', '+', '.', '/', ':', '$' and '-'.
- Specify 1 stop character from 'A' to 'D'.

Notes The unit system specified by the UNITS command applies to width, height, x and y.

Related Commands UNITS command

BARCODE-TEXT command

Format BARCODE-TEXT(BT) {font number} {font size} {offset}

Definition Range font number = 0 to 7, 55, 56
0 ≤ font size ≤ 7
0 ≤ offset ≤ 999

Function Starts printing HRI (Human Readable Interpretation) characters.
font number : Specify the font number used for HRI character printing.
font size : Specify the font size used for HRI character printing. See "Table A-1 Font Size" for values available for each font.
offset : Specify the margin between the barcode and HRI characters.

This command is available for label mode and line print mode. When using the command in line print mode, use it in combination with "! UTILITIES(! U)" command or "! U1" command.

This command is used when adding HRI characters of the barcode under the mapped barcode. It allows printing HRI characters without using the TEXT command. In order to terminate printing HRI characters, use "BARCODE-TEXT OFF(BT OFF)".

Use this command before using the BARCODE command that contains the barcode data to print HRI characters.

Notes The unit system specified by the UNITS command applies to offset.

Related Commands UNITS command

COUNT command

Format COUNT {numeric value}

Definition Range numeric value = Any signs and integer values up to 20 characters

Function This command is used for multiple prints when adding or subtracting the numeric text / data every time a label is printed.
The numeric text / data includes:
- Numeric text mapped by the TEXT command
- Numeric data encoded in a bar code

Using this command, specify the value to add or subtract the numeric text / data while printing multiple labels for numeric value.

This command is available for label mode only.

When adding / subtracting the numeric text / data by this command, the numeric text / data must be contained in the TEXT command or BARCODE command as the last characters of the data.
Use this command right after the TEXT command or BARCODE command that contains the numeric text / data to be added / subtracted.

For numeric value, any integer values up to 20 characters can be specified.
To subtract, precede the value by a minus sign '-'. The '-' sign is included in 20 characters. The addition / subtraction cannot be performed through '0'.

When the numeric text / data is preceded by '0', this '0' is retained in the operation and output.

Up to 3 COUNT commands can be used in 1 label file.

Related Commands TEXT command, BARCODE command

2.5.4 GS1 Databar (Reduced Space Symbology)

RSS command

Format

(1) BARCODE(B) RSS {x} {y} {width} {lin_height} {sep_height} {segments} {subtype} {linear_data}
(2) VBARCODE(VB) RSS {x} {y} {width} {lin_height} {sep_height} {segments} {subtype} {linear_data}

Definition Range

0 ≤ x ≤ 65535
0 ≤ y ≤ 65535
1 ≤ width ≤ 255
1 ≤ lin_height ≤ 65535
1 ≤ sep_height ≤ 32767
2 ≤ segments ≤ 20 (Even numbers only)
1 ≤ subtype ≤ 6

Function

Prints GS1 Databar (Reduced Space Symbology). The relation of each command and the print direction is as shown in the following table.

Command	Print Direction
BARCODE(B)	Prints the barcode horizontally.
VBARCODE(VB)	Prints the barcode rotated 90 degrees counterclockwise.

x : Specify the horizontal starting position.
y : Specify the vertical starting position.
width : Specify the width of the narrow element.
lin_height : Specify the height of the barcode.
sep_height : Specify the height of 1 module separation.
segments : Specify the number of segments in 1 line. It is available only when subtype = 6.
subtype : Specify the symbology. Select the value from the following table.

subtype	Function
1	GS1 Databar Omni-directional
2	GS1 Databar Truncated
3	GS1 Databar Stacked
4	GS1 Databar Stacked Omni-directional
5	GS1 Databar Limited
6	GS1 Databar Expanded / Expanded Stacked

linear_data : Specify the barcode data.

This command is available for label mode and line print mode. When using the command in line print mode, use it in combination with "! UTILITIES(! U)" command or "! U1" command. When printing barcodes in line print mode, see also "BARCODE command" in "2.5.8 Line Print Mode".

[For the functions except GS1 Databar Expanded / Expanded Stacked]
Specify linear_data with 13 digits or less. Usable characters are '0' to '9'.
When the number of digits is less than 13, add '0' to the beginning of the parameter to make it 13 digits.
AI("01") is added to the beginning of the barcode data automatically.
The check character is calculated automatically and added behind linear_data.

[For GS1 Databar Expanded / Expanded Stacked]
Specify linear_data with any number of digits. Usable characters are ' (space)', '!', '"', '%', '&', ''', '(', ')', '*', '+', ',', '-', '.', '/', ':', ';', '<', '>', '=', '?', '_', '0' to '9', 'A' to 'Z', 'a' to 'z'. Input '{1' in FNC1. Note that the AI and check character are not added automatically. Be sure to input them.

Notes

The unit system specified by the UNITS command applies to x, y, width, lin_height and sep_height.

Related Commands

UNITS command

2.5.5 Two-Dimensional Barcode

PDF417(PORTABLE DATA FILE)

Format

(1) BARCODE(B) PDF-417 {x} {y} [XD xd] [YD yd] [C c] [S s]
{data}
ENDPDF

(2) VBARCODE(VB) PDF-417 {x} {y} [XD xd] [YD yd] [C c] [S s]
{data}
ENDPDF

Definition Range

0 ≤ x ≤ 65535
0 ≤ y ≤ 65535
1 ≤ x d ≤ 32
1 ≤ yd ≤ 32
1 ≤ c ≤ 30
0 ≤ s ≤ 8
data = Arbitrary barcode data

Default

When each option parameter is not used, the following default values are set.
xd = 2
yd = 6
c = 3
s = 1

Function

Prints PDF417. The relation of each command and the print direction is as shown in the following table.

Command	Print Direction
BARCODE(B)	Prints the barcode horizontally.
VBARCODE(VB)	Prints the bardode rotated 90 degrees counterclockwise.

x : Specify the horizontal starting position.
y : Specify the vertical starting position.
xd : Specify the unit-width of the narrowest element.
yd : Specify the unit-height of the narrowest element.
c : Specify the number of columns.
s : Specify the security level (the maximum of errors to be detected or corrected).
data : Specify any barcode data.
Use the ENDPDF command to terminate the BARCODE(B)/VBARCODE(VB) command.
Example: When specifying xd = 3, yd = 7,
BARCODE PDF-417 0 0 XD 3 YD 7

This command is available for label mode and line print mode. When using the command in line print mode, use it in combination with "! UTILITIES(! U)" command. When printing barcodes in line print mode, see also "BARCODE command" in "2.5.8 Line Print Mode".

Add 0DH(CR) and 0AH(LF) in the following places regardless of the terminator setting specified by the LT command.
- End of the option parameter (Right behind y unless the option parameter is used)
- End of data

Notes

The unit system specified by the UNITS command applies to x and y.

Related Commands

UNITS command

MAXICODE

Format

BARCODE(B) MAXICODE {x} {y}
{tag} {options}
.....
{tag} {options}
ENDMAXICODE

Definition Range

0 ≤ x ≤ 65535
0 ≤ y ≤ 65535
tag = POST, CC, SC, MSG

Default

When each tag is not used, the following default values are set.

tag	Default Value
POST	-empty-
CC	840 (USA)
SC	1
MSG	04H (EOT)

Function

Prints MAXICODE.
x : Specify the horizontal starting position.
y : Specify the vertical starting position.
tag : Specify the tag to use. Specify the value corresponding to tag for options which is behind the tag.
Use the ENDMAXICODE command to terminate the BARCODE(B) command.

This command is available for label mode and line print mode. When using the command in line print mode, use it in combination with "! UTILITIES(! U)" command. When printing barcodes in line print mode, see also "BARCODE command" in "2.5.8 Line Print Mode".

Only Mode2 is supported.
The tags related to UPS5 are not supported.

Add 0DH(CR) and 0AH(LF) at the end of options regardless of the terminator setting specified by the LT command.

Tags can be used in any order.
The description of each tag and the value that can be specified for options are as follows.

[tag = POST]
Specify the postal code with 9 digits or less. Usable characters are '0' to '9'.
When the number of digits is less than 9, add '0' to the end of the parameter to make it 9 digits.

[tag = CC]
Specify the country code (conformed to ISO3166) with 3 digits or less. Usable characters are '0' to '9'.
When the number of digits is less than 3, add '0' to the beginning of the parameter to make it 3 digits.

[tag = SC]
Specify the service class with 3 digits or less. Usable characters are '0' to '9'.
When the number of digits is less than 3, add '0' to the beginning of the parameter to make it 3 digits.

[tag = MSG]
Specify the secondary message in 138 characters or shorter.

Notes

The unit system specified by the UNITS command applies to x and y.

Related Commands | UNITS command

QR Code

Format

(1) BARCODE(B) QR {x} {y} [M m] [U u]
{data}
ENDQR

(2) VBARCODE(VB) QR {x} {y} [M m] [U u]
{data}
ENDQR

Definition Range

0 ≤ x ≤ 65535
0 ≤ y ≤ 65535
1 ≤ m ≤ 2
1 ≤ u ≤ 32

Default

When each option parameter is not used, the following default values are set.
m = 2
u = 6

Function

Prints QR Code. The relation of each command and the print direction is as shown in the following table.

Command	Print Direction
BARCODE(B)	Prints the barcode horizontally.
VBARCODE(VB)	Prints the barcode rotated 90 degrees counterclockwise.

x : Specify the horizontal starting position.
y : Specify the vertical starting position.
m : Specify the QR Code model number.
u : Specify the unit-width / unit-height of the module.
data : Specify any barcode data. Add 0DH(CR) and 0AH(LF) at the beginning and the end of data regardless of the terminator setting specified by the LT command.
Use the ENDQR command to terminate the BARCODE(B)/VBARCODE(VB) command.
Example: When specifying m = 3, u = 7,
BARCODE QR 0 0 M 3 U 7

This command is available for label mode and line print mode. When using the command in line print mode, use it in combination with "! UTILITIES(! U)" command. When printing barcodes in line print mode, see also "BARCODE command" in "2.5.8 Line Print Mode".

Add 0DH(CR) and 0AH(LF) in the following places regardless of the terminator setting specified by the LT command.
- End of the option parameter (Right behind y unless the option parameter is used)
- End of data

For data, specify the barcode data including the error correction level, data input format and data input mode.
Select the error correction level from L, M, Q or H. The L is the lowest correction level and the H is the highest correction level.
For the data input mode, select A when the data format is automatically selected and select M when the data format is manually selected.
When manually selecting the data format, select the input mode from the following table.

Symbol for Input Mode	Function
N	Numeric mode
A	Alphanumeric mode
Bxxxx	8-bit-byte mode Specify the number of barcode data with 4-digit characters ('0' to '9') for xxxx.
K	Kanji mode

When automatically selecting the data format, the character code 80H to 9FH and E0H to FFH cannot be used.

[When the data format is automatically selected]
The format of data is as follows.
<Error correction level><Data input mode><,><Barcode data>

An example of specifying data is shown below.
Error correction level : M
Data input format : A (Data format automatically selected)
Barcode data : QR Code 123
When printing the above QR Code, specify "MA,QR Code 123" for data.

[When the data format is manually selected]
The format of data is as follows.
<Error correction level><Data input mode)><,><Input mode 1><Barcode data 1><,><Input mode 2><Barcode data 2><,> .... <Input mode n><Barcode data n>

An example of specifying data is shown below.
Error correction level : L
Data input format : M (Data format manually selected)
Input mode 1 : N (Numeric mode)
Barcode data 1 : 123
Input mode 2 : A (Alphanumeric mode)
Barcode data 2 : ABC456
Input mode 3 : B (8-bit-byte mode)
Barcode data 3 : qrcode (Number of barcode data is 6)
When printing the above QR Code, specify "LM,N123,AABC456,B0006qrcode" for data.

Notes The unit system specified by the UNITS command applies to x and y.

The mask number is automatically set.

Related Commands UNITS command

Aztec Code

Format

(1) BARCODE(B) AZTEC {x} {y} [XD u] [EC e]
{data}
ENDAZTEC

(2) VBARCODE(VB) AZTEC {x} {y} [XD u] [EC e]
{data}
ENDAZTEC

Definition Range

0 ≤ x ≤ 65535
0 ≤ y ≤ 65535
1 ≤ u ≤ 32
5 ≤ e ≤ 95, e = 0

Default

When each option parameter is not used, the following default values are set.
u = 6
e = 0

Function

Prints Aztec Code. The relation of each command and the print direction is as shown in the following table.

Command	Print Direction
BARCODE(B)	Prints the barcode horizontally.
VBARCODE(VB)	Prints the barcode rotated 90 degrees counterclockwise.

x : Specify the horizontal starting position.
y : Specify the vertical starting position.
u : Specify the unit-width / unit-height of the module.
e : Specify ECC percent. When 0 is specified, the specified value (23%) is set
data : Specify any barcode data. Add 0DH(CR) and 0AH(LF) at the beginning and the end of data regardless of the terminator setting specified by the LT command.
Use the ENDAZTEC command to terminate the BARCODE(B)/VBARCODE(VB) command.
Example: When specifying u=4, e=50,
BARCODE AZTEC 0 0 XD 4 EC 50

This command is available for label mode and line print mode. When using the command in line print mode, use it in combination with "! UTILITIES(! U)" command. When printing barcodes in line print mode, see also "BARCODE command" in "2.5.8 Line Print Mode".

Add 0DH(CR) and 0AH(LF) in the following places regardless of the terminator setting specified by the LT command.
- End of the option parameter (Right behind y unless the option parameter is used)
- End of data

Notes

The unit system specified by the UNITS command applies to x and y.

Related Commands

UNITS command

2.5.6 Graphics

BOX command

Format BOX {x0} {y0} {x1} {y1} {width}

Definition Range
0 ≤ x0 ≤ 65535
0 ≤ y0 ≤ 65535
0 ≤ x1 ≤ 65535
0 ≤ y1 ≤ 65535
0 ≤ width ≤ 65535

Function Prints rectangular shapes.
x0 : Specify the X-coordinate of the top-left corner.
y0 : Specify the Y-coordinate of the top-left corner.
x1 : Specify the X-coordinate of the bottom-right corner.
y1 : Specify the Y-coordinate of the bottom-right corner.
width : Specify the line thickness of the rectangular shape. The rectangular shape is printed with the line thickness 1 dot more than width. The line becomes thicker towards the inside of the rectangular shape.

This command is available for label mode only.

Notes The unit system specified by the UNITS command applies to x0, y0, x1, y1 and width.

Related Commands UNITS command

LINE command

Format LINE(L) {x0} {y0} {x1} {y1} {width}

Definition Range
0 ≤ x0 ≤ 65535
0 ≤ y0 ≤ 65535
0 ≤ x1 ≤ 65535
0 ≤ y1 ≤ 65535
0 ≤ width ≤ 65535

Function Prints lines.
x0 : Specifies the X-coordinate of the start point.
y0 : Specifies the Y-coordinate of the start point.
x1 : Specifies the X-coordinate of the end point.
y1 : Specifies the Y-coordinate of the end point.
width : Specify the thickness of the line. The line is printed with the thickness 1 dot more than width. When the line is horizontal, it becomes thicker downward. When the line is vertical or slanting, it becomes thicker to the right.

This command is available for label mode only.

Notes The unit system specified by the UNITS command applies to x0, y0, x1, y1 and width.

Related Commands UNITS command

INVERSE-LINE command

Format INVERSE-LINE(IL) {x0} {y0} {x1} {y1} {width}

Definition Range
0 ≤ x0 ≤ 65535
0 ≤ y0 ≤ 65535
0 ≤ x1 ≤ 65535
0 ≤ y1 ≤ 65535
0 ≤ width ≤ 65535

Function Prints lines inverted in colors of black and white.
Previously mapped data which is within the area specified by this command is inverted in colors of black and white.
x0 : Specifies the X-coordinate of the start point.
y0 : Specifies the Y-coordinate of the start point.
x1 : Specifies the X-coordinate of the end point.
y1 : Specifies the Y-coordinate of the end point.
width : Specify the thickness of the line. The line is printed with the thickness 1 dot more than width. When the line is horizontal, it becomes thicker downward. When the line is vertical or slanting, it becomes thicker to the right.

This command is available for label mode only.

Notes The unit system specified by the UNITS command applies to x0, y0, x1, y1 and width.

Related Commands UNITS command

PATTERN command

Format PATTERN {pattern number}

Definition Range 100 ≤ pattern number ≤ 106

Default pattern number = 100

Function Specifies the pattern of the rectangular shape and lines.
pattern number : Specify the pattern number. Select the value from the following table.

pattern number	Pattern
100	Filled in black
101	Horizontal lines
102	Vertical lines
103	Right rising diagonal lines
104	Left rising diagonal lines
105	Square pattern
106	Cross hatch pattern

This command is available for label mode only.

Notes The pattern specified by this command does not apply to the diagonal lines that have been mapped using the LINE command.

Related Commands BOX command, LINE command

GRAPHICS command

Format

(1) EXPANDED-GRAPHICS(EG) {width} {height} {x} {y} {data}
(2) VEXPANDED-GRAPHICS(VEG) {width} {height} {x} {y} {data}
(3) COMPRESSED-GRAPHICS(CG) {width} {height} {x} {y} {data}
(4) VCOMPRESSED-GRAPHICS(VCG) {width} {height} {x} {y} {data}

Definition Range

1 ≤ width ≤ 9999
1 ≤ height ≤ 65535
0 ≤ x ≤ 65535
0 ≤ y ≤ 65535

Function

Prints bitmapped graphics. The relation of each command and the data format / print direction is as shown in the following table.

Command	Data Format / Print Direction
EXPANDED-GRAPHICS(or EG)	Prints expanded graphics horizontally.
VEXPANDED-GRAPHICS(or VEG)	Prints expanded graphics rotated 90 degrees counterclockwise.
COMPRESSED-GRAPHICS(or CG)	Prints compressed graphics horizontally.
VCOMPRESSED-GRAPHICS(or VCG)	Prints compressed graphics rotated 90 degrees counterclockwise.

width : Specify the byte-width of the image.
height : Specify the dot-height of the image.
x : Specify the horizontal starting position.
y : Specify the vertical starting position.
data : Specify the graphics data.

This command is available for label mode only.

When printing horizontally, map the bitmapped graphics of which the (x, y) specified by the command is the upper-left coordinate.
When rotating 90 degrees counterclockwise, map the bitmapped graphics of which the (x, y) specified by the command is the lower-left coordinate.
In the graphics data, MSB comes to the left end or bottom end. The bit that corresponds to the dot to be printed is 1. The bit that corresponds to the dot not to be printed is 0.

When using expanded graphics, use ASCII codes '0' to '9' and 'A' to 'F' for data. For example, when printing the bitmap data representing AAH,55H, specify 'A'(41H), 'A'(41H), '5'(35H) and '5'(35H).
When using compressed graphics, use hexadecimal binary data for data. For example, when printing the graphics data representing AAH,55H, specify AAH and 55H.
By using compressed graphics, the graphics data size can be reduced to one half of expanded graphics.

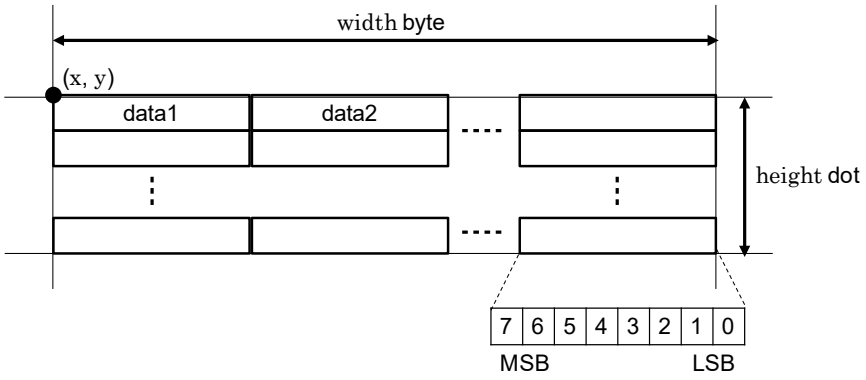
Notes

The unit system specified by the UNITS command applies to width, height, x and y.

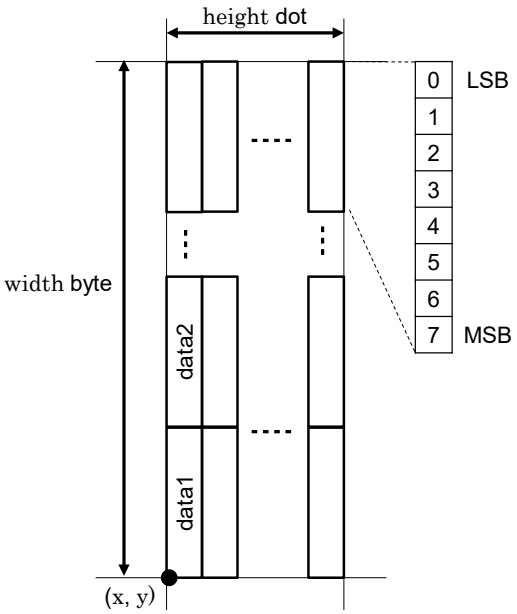
Related Commands

UNITS command

[Horizontal Direction]



[Rotated 90 Degrees Counterclockwise]



PCX command (Specifying the data in the command)

Format PCX {x} {y} {data}

Definition Range
0 ≤ x ≤ 65535
0 ≤ y ≤ 65535
data = PCX graphics data

Function Prints .PCX formatted graphics which is encoded as a black and white image.
x : Specify the X-coordinate of top-left corner.
y : Specify the Y-coordinate of top-left corner.
data : Specify the PCX graphics data.

This command is available for label mode and line print mode. When using the command in line print mode, use it in combination with "! UTILITIES(! U)" command. When printing PCX graphics data in line print mode, see also "PCX command" in "2.5.8 Line Print Mode".

Notes The unit system specified by the UNITS command applies to x and y.

Related Commands UNITS command

PCX command (Reading out a file from the flash file system)

Format PCX {x} {y} !<{filename.PCX}

Definition Range
0 ≤ x ≤ 65535
0 ≤ y ≤ 65535
filename.PCX = .PCX formatted file

Function Prints .PCX formatted graphics which is encoded as a black and white image.
x : Specify the X-coordinate of top-left corner.
y : Specify the Y-coordinate of top-left corner.
filename.PCX : Specify the .PCX formatted file.

This command is available for label mode and line print mode. When using the command in line print mode, use it in combination with "! UTILITIES(! U)" command or "! U1" command. When printing PCX graphics data in line print mode, see also "PCX command" in "2.5.8 Line Print Mode".

Notes The unit system specified by the UNITS command applies to x and y.

When printing PCX graphics by using this command, the .PCX formatted file needs to be saved in the flash file system beforehand.
By using the SII SAVE-BIN-FILE command, the .PCX formatted file can be saved in the flash file system.

Related Commands SII SAVE-BIN-FILE command, UNITS command

2.5.7 Advanced Commands

CONTRAST command

Format: CONTRAST {level}

Definition Range: 0 ≤ level ≤ 3

Default: Print density is not specified by the CONTRAST command

Function: Specifies the print density in 4 levels.
level : Specify the print density. Select the value from the following table.

level	Print Density
0	Standard
1	Middle
2	Dark
3	Very dark

This command is available for label mode and line print mode. When using the command in line print mode, use it in combination with "! UTILITIES(! U)" command or "! U1" command.

The print density needs to be specified for each print.
Several levels of the print density cannot be specified within the same print.

When this command or the TONE command is not used, the value of print.tone is used as the print density.

Notes: The value of print.tone is not changed by this command.

Related Commands: TONE command, print.tone

TONE command

Format: TONE {level}

Definition Range: -100 ≤ level ≤ 200

Default: level = print.tone

Function: Specifies the print density within the range of -100 to 200.
level : Specify the print density.

This command is available for label mode and line print mode. When using the command in line print mode, use it in combination with "! UTILITIES(! U)" command or "! U1" command.

The print density needs to be specified for each print.
Several levels of the print density cannot be specified within the same print.

The relation of the setting value of the CONTRAST command and that of the TONE command is as shown in the following table.

CONTRAST	TONE
0	0
1	100
2	200
3	No equivalent value

When this command or the CONTRAST command is not used, the value of print.tone is used as the print density.

Notes The value of print.tone is not changed by this command.

Related Commands CONTRAST command, print.tone

JUSTIFICATION command

Format (1) CENTER [end]
(2) LEFT [end]
(3) RIGHT [end]

Definition Range 0 ≤ end ≤ 65535

Default Left justification, end = Print area width - 1 dot

Function Aligns the mapping data at the specified position. The relation of each command and the specification of the position is as shown in the following table.

Command	Specification of Position
CENTER	Selects center justification
LEFT	Selects left justification
RIGHT	Selects right justification

end : Indicate the end point of the justification.
When this command is used, all of the subsequent mapping data is aligned at the specified position.

This command is available for label mode and line print mode. When using the command in line print mode, use it in combination with "! UTILITIES(! U)" command or "! U1" command. In line print mode, however, the command is available only when printing barcodes and PCX graphics.

When the end is omitted, the following values are used.
- When the data is printed horizontally, print area width - 1 dot is used. (Specify the print area width by the PAGE-WIDTH command)
- When the data is printed vertically, 0 is used. (Form feed position of the label)

Notes The unit system specified by the UNITS command applies to end.

Related Commands UNITS command

PAGE-WIDTH command

Format: PAGE-WIDTH(PW) {width}

Definition Range: 1 ≤ width ≤ 65535

Default: width = value of sii.media.width × 8 - 64

Function: Specifies the print area width.
width : Specify the print area width.

This command is available for label mode and line print mode. When using the command in line print mode, use it in combination with "! UTILITIES(! U)" command or "! U1" command. When using the command in line print mode, see "PAGE-WIDTH command" in "2.5.8 Line Print Mode".

Use this command before mapping the print data such as text, barcodes, graphics and so on.

The maximum value available for width is [the value of sii.media.width × 8 - 64] dots. When a value exceeding the maximum is set in the width, the maximum value is determined as the print area width.

The print area width specified by the PAGE-WIDTH command is a common value in label mode and line print mode.

Notes: The unit system specified by the UNITS command applies to width.

Related Commands: UNITS command, sii.media.width

PACE command

Format: PACE

Default: Prints all labels in a batch when printing multiple labels.

Function: When printing multiple labels, the command specifies that the printer prints 1 label each time the FEED switch is pressed.

This command is available for label mode and line print mode. When using the command in line print mode, use it in combination with "! UTILITIES(! U)" command or "! U1" command. However, the printer is not affected by this command while being in line print mode and operates the internal flag only.

When this command is used, the FEED switch must be pressed until the remaining count of labels becomes 0.
After the remaining count of labels becomes 0, the printer can start new printing.

Use the NO-PACE command to disable the PACE command function.

Related Commands: NO-PACE command

NO-PACE command

Format: NO-PACE

Function: Disables the PACE command function.

This command is available for label mode and line print mode. When using the command in line print mode, use it in combination with "! UTILITIES(! U)" command or "! U1" command. However, the printer is not affected by this command while being in line print mode and operates the internal flag only.

Related Commands PACE command

WAIT command

Format WAIT {delay-time}

Definition Range 0 ≤ delay-time ≤ 65535

Default delay-time = 0

Function Specifies the delay time to be inserted after printing.
delay-time : Specify the delay time in 1/8 seconds. For example, specify 80 in order to insert the delay time of 10 seconds.

This command is available for label mode only.

SPEED command

Format SPEED {speed level}

Definition Range 0 ≤ speed level ≤ 2

Default Default is the speed level equivalent to the value of media.speed.

Function Specifies the print speed in 3 levels.
speed level : Specify the speed level. The larger number increases the speed.

This command is available for label mode and line print mode. When using the command in line print mode, use it in combination with "! UTILITIES(! U)" command or "! U1" command.

This command changes the value of media.speed. It sets the print speed (in inch/s) which is equivalent to the setting value of speed level in media.speed. The value of media.speed changed by this command is retained even when the printer power is turned off.

Related Commands media.speed

SETSP command

Format SETSP {spacing}

Definition Range 0 ≤ spacing ≤ 255

Default spacing = 0

Function Specifies the character spacing.
spacing : Specify the character spacing.

This command can specify individual values in label mode and line print mode respectively.

This command is available for label mode and line print mode. When using the command in line print mode, use it in combination with "! UTILITIES(! U)" command or "! U1" command.

Notes The unit system specified by the UNITS command applies to spacing.

Related Commands UNITS command

ON-OUT-OF-PAPER command

Format ON-OUT-OF-PAPER {action} {number of tries}

Definition Range action = PURGE, WAIT
1 ≤ number of tries ≤ 65535

Default action = PURGE, number of tries = 2 (sii.device.error_through = yes)
action = WAIT, number of tries = 2 (sii.device.error_through = no)

Function Specifies the operation when an error occurs while printing.
action : Select the value from the following table.

action	Function
PURGE	When the specified number of prints is performed, and the printing does not end normally, the print data is discarded.
WAIT	When the specified number of prints is executed, and even the printing does not end normally, the print data is not discarded.

number of tries : Specify the number of times of print.

This command is available for label mode and line print mode. When using the command in line print mode, use it in combination with "! UTILITIES(! U)" command or "! U1" command. However, the printer is not affected by this command while being in line print mode and operates the internal flag only.

Notes The value of sii.device.error_through is not changed by this command.

Related Commands sii.device.error_through

ON-FEED command

Format ON-FEED {action}

Definition Range action = IGNORE, FEED, REPRINT, FEED2

Default action = FEED

Function Specifies the action when the FEED switch is pressed or when 0CH(FF) is received.
action : Select the value from the following table.

action	Function
IGNORE	No action
FEED	Performs form feed.
REPRINT	Reprints the last printed label.
FEED2	· When the FEED switch is pressed, the printer feeds the paper 1 mm (8 dots) in the forward direction and then stops for 0.5 seconds. After that, the printer continues feeding the paper by 1 mm until the FEED switch is released. · When 0CH(FF) is received, the printer performs form feed.

This command is available for label mode and line print mode. When using the command in line print mode, use it in combination with "! UTILITIES(! U)" command or "! U1" command. However, when printing in line print mode, the printer does not reprint even when selecting REPRINT.

PREFEED command

Format PREFEED {length}

Definition Range -28 ≤ length ≤ 4000

Default length = 0

Function Specifies the paper feeding length prior to printing.
length : Specify the paper feeding length prior to printing.

This command is available for label mode and line print mode. When using the command in line print mode, use it in combination with "! UTILITIES(! U)" command or "! U1" command. However, the printer is not affected by this command while being in line print mode and operates the internal flag only.

The paper feeding by this command is performed every time 1 label is printed.

Notes The unit system specified by the UNITS command applies to length.

When using this command together with the PRESENT-AT command, specify the length of this command and length of the PRESENT-AT command that the total backfeeding length prior to printing by both commands will not exceed 28 dots.

Related Commands UNITS command, PRESENT-AT command

POSTFEED command

Format POSTFEED {length}

Definition Range -28 ≤ length ≤ 4000

Default length = 0

Function Specifies the paper feeding length after printing.
length : Specify the paper feeding length after printing.

This command is available for label mode and line print mode. When using the command in line print mode, use it in combination with "! UTILITIES(! U)" command or "! U1" command. However, the printer is not affected by this command while being in line print mode and operates the internal flag only.

The paper feeding by this command is performed every time 1 label is printed.

Notes The unit system specified by the UNITS command applies to length.

Related Commands UNITS command

PRESENT-AT command

Format PRESENT-AT {length} {delay}

Definition Range 0 ≤ length ≤ 28
0 ≤ delay ≤ 65535

Default length=0
delay=0

Function This is a command to move the desired cutting place of the paper to the tear bar. For example, it moves the release paper area between labels to the tear bar location.
- length : Specify the paper feeding length after printing and the paper backfeeding length before next printing.
- delay : Specify the delay time from the end of printing to the execution of paper feeding after printing in 1/8 seconds. For example, specify 80 in order to insert the delay time of 10 seconds.

This command is available for label mode and line print mode. When using the command in line print mode, use it in combination with "! UTILITIES(! U)" command or "! U1" command.

When the function of this command is executed, the paper is retracted the specified distance of length and the label is printed. Then, the printer waits for the specified period of time of delay and feeds the paper specified distance of length. This sequence is operated once for printing 1 label file, not for each label. When the printer receives next print data during the delay time, it starts printing without retracting the paper specified distance of length.

The length and delay are common values in label mode and line print mode.

Notes The unit system specified by the UNITS command is applied to length.

When using this command together with the PREFEED command, specify the length of this command and length of the PREFEED command that the total backfeeding length prior to printing by both commands will not exceed 28 dots.

Related Commands UNITS command, PREFEED command

COUNTRY/CODE PAGE command

Format COUNTRY {name}

Definition Range name = USA, GERMANY, FRANCE, SWEDEN, SPAIN, NORWAY, ITALY, CP850, UK, JAPAN-S

Default name = USA

Function Specifies the character set.
name : Specify the character set.

This command is available for label mode and line print mode. When using the command in line print mode, use it in combination with "! UTILITIES(! U)" command or "! U1" command.

Figure A-9 in "Appendix A Font Information" shows Character Code Table (Font7 Size0, USA). The character code shown in Figure A-10 varies depending on the specified character set. However, when specifying CP850 for name, the character set is changed as shown in Figure A-11.

When printing Japanese characters, specify each parameter as follows.
- Specify JAPAN-S by this command.
- Specify 55 or 56 for the font number of the TEXT command or other commands.
- Specify the character string by using Shift JIS.

At the factory, the font size corresponding to the font number 55 and 56 is as shown in the following table

Font Number	Font Size (Height × Width, Single-byte)
55	24 dots × 12 dots
56	16 dots × 8 dots

The font size of the font number 55 and 56 can be switched by changing the setting of sii.device.kanji_size. See "sii.device.kanji_size" for details.

The name is a common value in label mode and line print mode.

Related Commands sii.device.kanji_size

DEFINE-FORMAT

Format
! DEFINE-FORMAT(DF) {filename.ext}
{data}
PRINT

Function
Stores a label format file in the flash file system.
By reading out the stored format file and sending variable data, the same format can be used repeatedly. Use USE-FORMAT to read out a format file.
filename.ext : Specify the format file name.
data : Specify the file data.

When specifying a format file name that already exists for filename.ext, the file is overwritten with a new file.
For filename.ext, specify a format file name that consists of 8 characters or shorter for the file name and 3 characters or shorter for the file extension.
The format file name with 0 characters for the file name and file extension cannot be used. Moreover, the format file name that has 1 asterisk '*' for the file name and file extension ("*.*") cannot be used.
When the format file name contains lowercase characters, the characters are converted to uppercase automatically.

Use the ASCII character code in data.
Using double-backslash "\\" in data enables the data to be replaced with the variable data which is specified when using USE-FORMAT. See "USE-FORMAT" for an example.
Use both 0DH(CR) and 0AH(LF) at the end of each command line of data regardless of the terminator setting specified by the LT command.

The "PRINT" after data means the PRINT command, and it is used as the terminator of the file. When the PRINT command is arranged in data, the subsequent data is not included in the format file.

Notes
Use the DEL command to delete stored files.

Related Commands
USE-FORMAT, LT command, DEL command

USE-FORMAT

Format

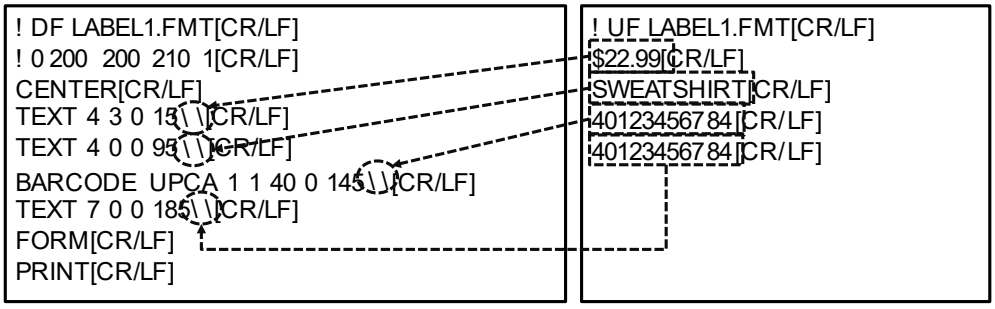
! USE-FORMAT(UF) {filename.ext}
{data}
.....
{data}

Function

Reads out the format file that has been stored in the flash file system by DEFINE-FORMAT and executes it.
When the data stored in the format file contains double-backslash "\\", the data is replaced with the variable data specified by this command.
filename.ext : Specify the format file name.
data : Specify the variable data to replace "\\".

For filename.ext, specify a format file name that consists of 8 characters or shorter for the file name and 3 characters or shorter for the file extension. When the format file name contains lowercase characters, the characters are converted to uppercase before reading out.

Use both 0DH(CR) and 0AH(LF) at the end of data regardless of the terminator setting specified by the LT command.
Specify the same number of the variable data as the number of the double-backslashes used.



Related Commands DEFINE-FORMAT, LT command

2.5.8 Line Print Mode

Line print mode is a mode to map the received characters corresponding to the ASCII character code in pages sequentially and print. Utility commands such as "Specify the font to use in line print mode" or "Specify the print area width" can be used during line print mode.
There are 2 ways to use the utility command: using "'! UTILITIES(! U)" command or using "! U1" command.

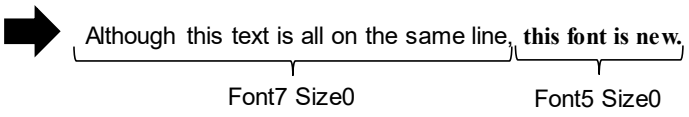
[How to use "! UTILITIES(! U)" command]
Place the utility command in the utility session between "! UTILITIES(! U) " command and "PRINT".
Terminate the utility session with "PRINT". Use both 0DH(CR) and 0AH(LF) to terminate "PRINT".

```
! UTILITIES[CR/LF]
SETLP 7 0 24[CR/LF]
PAGE-WIDTH 576[CR/LF]
PRINT[CR/LF]
```

```
! U[CR/LF]
SETLP 7 0 24[CR/LF]
PAGE-WIDTH 576[CR/LF]
PRINT[CR/LF]
```

[How to use "! U1" command]
Use "! U1" command when executing 1 utility command.
"! U1" command can be used at any position except the control session of label mode and utility session.
Terminate "! U1" by using both 0DH(CR) and 0AH(LF).

```
! U1 SETLP 7 0 24[CR/LF]
Although this text is all on the same line, ! U1 SETLP 5 0 24[CR/LF]
this font is new.
```



LP-ORIENT command

Format
(1) LP-ORIENT 0
(2) LP-ORIENT 270

Default
Text is printed horizontally. ("LP-ORIENT 0")

Function
Specifies the print direction in line print mode.
When executing the format (1), the text is printed horizontally.
When executing the format (2), the text is rotated 270 degrees counterclockwise and printed.

Regardless of the print direction, the characters corresponding to the ASCII character code is printed in the order that the data is received.

UNITS command

Format

(1) IN-INCHES
(2) IN-CENTIMETERS
(3) IN-MILLIMETERS
(4) IN-DOTS

Default

IN-DOTS is selected.

Function

Specifies the unit system. The relation of each command and the unit system is as shown in the following table.

Command	Unit System
IN-INCHES	Selects the unit of inch
IN-CENTIMETERS	Selects the unit of centimeter
IN-MILLIMETERS	Selects the unit of millimeter
IN-DOTS	Selects the unit of dot

When this command is used, the units of coordinates, width and length of all subsequent commands are changed to the specified unit system. For example, when 0.25 is specified for the x parameter in the TEXT command after selecting the unit of millimeter in this command, this 0.25 means "0.25 millimeters".
The coordinates, width and length can be specified to the fourth decimal place. However, values smaller than 1 dot are rounded off.
When selecting the unit of dot, 1 dot is 0.125 mm.

The unit system selected by the UNITS command is common for label mode and line print mode.

SETLP command

Format

SETLP {font} {size} {unit height}

Definition Range

font = 0 to 7, 55, 56
0 ≤ size ≤ 7
0 ≤ unit height ≤ 65535

Default

font = 7
size = 0
unit height = 24

Function

Specifies the font to use in line print mode.
font : Specify the font number.
size : Specify the font size. See "Table A-1 Font Size" for values available for each font.
unit height : Specify the vertical movement amount when receiving 0DH(CR).

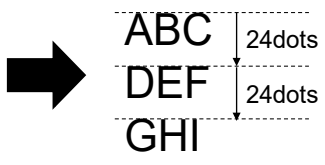
Notes

The unit system specified by the UNITS command applies to unit height.

Related Commands

UNITS command, SETLF command

```
! U1 IN-DOTS[CR/LF]
! U1 SETLP 7 0 24[CR/LF]
ABC[CR]
DEF[CR]
GHI
```



SETLF command

Format SETLF {unit height}

Definition Range 0 ≤ unit height ≤ 65535

Default unit height = 10

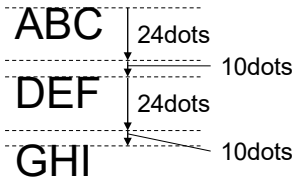
Function Specifies the vertical movement amount for unit height when receiving 0AH(LF) in line print mode.

When the text has been rotated 270 degrees counterclockwise (using "LP-ORIENT 270") to print, the vertical movement amount when receiving 0AH(LF) is 0. When the SETLF command is used at this time, only internal variables are operated.

Notes The unit system specified by the UNITS command applies to unit height.

Related Commands UNITS command, SETLP command

```
! U1 IN-DOTS[CR/LF]
! U1 SETLP 7 0 24[CR/LF]
! U1 SETLF 10[CR/LF]
ABC[CR/LF]
DEF[CR/LF]
GHI
```



Specifying Print Position with X and Y Coordinates

Format
(1) ! U1 X {x unit value}
(2) ! U1 Y {y unit value}
(3) ! U1 XY {x unit value} {y unit value}
(4) ! U1 RX {unit x value to move relative to present position}
(5) ! U1 RY {unit y value to move relative to present position}
(6) ! U1 RXY {unit x value to move relative to present position} {unit y value to move relative to present position}

Definition Range
0 ≤ x unit value ≤ 65535
0 ≤ y unit value ≤ 65535
-32767 ≤ unit x value to move relative to present position ≤ 32767
-32767 ≤ unit y value to move relative to present position ≤ 32767

Default x unit value = 0, y unit value = 0

Function Specifies the print data mapping position in line print mode.
This command is used to print the data at an arbitrary position in line print mode.
x unit value : Specify the absolute X coordinate.
y unit value : Specify the absolute Y coordinate.
unit x value to move relative to present position : Specify the value that the relative coordinate moves in X-direction to the present coordinate.
unit y value to move relative to present position : Specify the value that the relative coordinate moves in Y-direction to the present coordinate.

When the coordinate of x unit value exceeds the print area width, the printer operates as x unit value = [Print area width - 1 dot] is specified.
When the coordinate of y unit value exceeds the length of 1 page, the printer operates as y unit value = 0 is specified.

When the X coordinate is negative as a result of using the RX command or RXY command, X coordinate=0 is the mapping position. Moreover, when the X coordinate exceeds the print area width, X coordinate=[Print area width - 1 dot] is the mapping position.

When the Y coordinate is negative as a result of using the RY command or RXY command, or the Y coordinate exceeds 1 page length, Y coordinate=0 is the mapping position.

Notes The unit system specified by the UNITS command applies to x unit value, y unit value, unit x value to move relative to present position, and unit y value to move relative to present position.

Related Commands UNITS command

LMARGIN command

Format LMARGIN {offset from left}

Definition Range 0 ≤ offset from left ≤ 65535

Default offset from left = 0

Function Specifies the left margin in line print mode.
offset from left : Specify the left margin.

When the value of offset from left exceeds the print area width specified by the PAGE-WIDTH command or [value of sii.media.width × 8 - 64], the value that 1 dot from the right end of the print area secured is the value of offset from left.

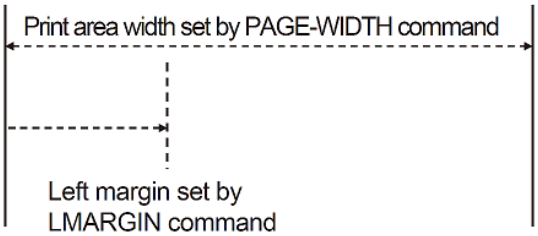
When the print area width to map 1 character cannot be secured by this command, the area for mapping the character is extended from the right end to the left.

When the text has been rotated 270 degrees counterclockwise (using "LP-ORIENT 270") to print, the left margin is 0. When the LMARGIN command is used at this time, only internal variables are operated.

Notes The unit system specified by the UNITS command applies to offset from left.

This command can be used with the PAGE-WIDTH command.
When using with the PAGE-WIDTH command, the print area width is set, and the left margin is secured within the print area width. (See the figure below.)

Related Commands PAGE-WIDTH command, UNITS command



SETBOLD command

Format SETBOLD {value}

Definition Range 0 ≤ value ≤ 5

Default value = 0

Function Specifies the bold print in line print mode.
value : Specify the character thickness.
Use "! U1 SETBOLD 0" to cancel bolding.

Notes The unit system specified by the UNITS command applies to value.

Related Commands UNITS command

SETSP command

Format SETSP {spacing}

Definition Range 0 ≤ spacing ≤ 255

Default spacing = 0

Function Specifies the character spacing.
spacing : Specify the character spacing.

This command can specify individual values in label mode and line print mode respectively.

When the text has been rotated 270 degrees counterclockwise (using "LP-ORIENT 270") to print, the character spacing is 0. When the SETSP command is used at this time, only internal variables are operated.

Notes The unit system specified by the UNITS command applies to spacing.

Related Commands UNITS command

PAGE-WIDTH command

Format PAGE-WIDTH(PW) {width}

Definition Range 1 ≤ width ≤ 65535

Default width = sii.media.width × 8 - 64

Function Specifies the print area width.
width : Specify the print area width.

Use this command before mapping the print data such as text, barcodes and graphics.

The maximum value available for width is [value of sii.media.width × 8 - 64] dots. When a value exceeding the maximum is set in width, the maximum value is set as the print area width.

When the print area width to map 1 character cannot be secured by this command, the area for mapping the character is extended from the left end to the right. However, when the area width cannot be secured at the right side due to the LMARGIN command, the area for mapping the character is extended from the right end to the left.

The print area width specified by the PAGE-WIDTH command is a common value in label mode and line print mode.

Notes The unit system specified by the UNITS command is applied to width.

Related Commands UNITS command, sii.media.width, LMARGIN command

PAGE-HEIGHT command

Format PAGE-HEIGHT(PH) {height}

Definition Range 0 ≤ height ≤ 65535

Default height = 0

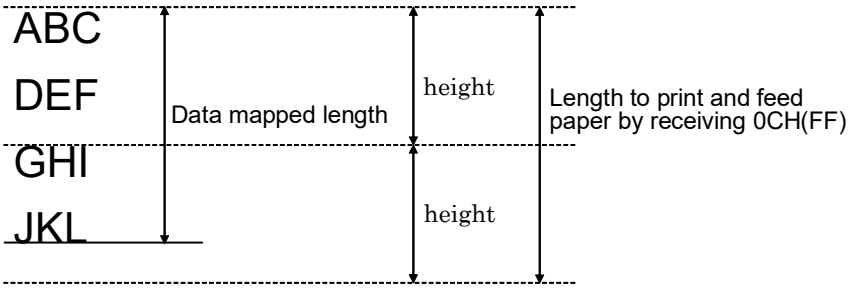
Function Specifies the length of the print range in line print mode. The command is used when the print data length is constant, and the paper in which the top of the form is not detected by marks.
height : Specify the length of the print range.

When the value of height exceeds the length of 1 page, the length of 1 page is the value of height.

When 0CH(FF) is received right after completing the data mapping, the printer prints and feeds paper the length of height. When height=0, the printer performs form feed.
When the data mapped length exceeds the length of height specified by this command, the length is extended by height before printing and paper feeding. (See the figure below.)

Notes The unit system specified by the UNITS command applies to height.

Related Commands UNIT command, ASCII special characters (Form Feed)



ASCII Special Characters (Form Feed)

Format 0CH

Function Feeds paper the following lengths.
- To the next mark position
- Length specified by the PAGE-HEIGHT command
- To the top of the form specified by the SETFF command or SET-TOF command

Related Commands PAGE-HEIGHT command, SETFF command, SET-TOF command

SETFF command

Format SETFF {max-feed} {skip-length}

Definition Range 1 ≤ max-feed ≤ 65535
0 ≤ skip-length ≤ 50

Default max-feed = media.feed_length
skip-length = 0

Function Specifies the maximum feeding length until mark detection and the correction amount of form feed position.
max-feed : Specify the maximum feeding length until mark detection.
skip-length : Specify the the correction amount of form feed position.

When the value of max-feed exceeds the maximum value of 1 page length, the maximum value of 1 page length is the value of max-feed.

After the printer detects the mark, it feeds paper the length of [(distance between sensor and heat element) - (d in SET-TOF command) + (skip-length)].
When the value of [(distance between sensor and heat element) - (d in SET-TOF command) + (skip-length)] exceeds the length of 1 page, the printer feeds paper the length of 1 page.

Notes The unit system specified by the UNITS command applies to max-feed and skip-length.

The value of media.feed_length is changed to the value of max-feed by this command. However, when the power is turned off, the change made by this command is discarded. In order for the changed value to be retained after the power is turned off, change the value of media.feed_length by using the setvar command.

Related Commands UNITS command, media.feed_length, SET-TOF command

SET-TOF command

Format SET-TOF {d}

Definition Range -2296 ≤ value ≤ 103

Default d = media.tof

Function Specifies the form feed position.
d : Specify the distance between the form feed position and lower end of the next mark, or the distance between the lower end of the mark and form feed position.

When d is positive, the distance is between the form feed position and lower end of the next mark. The maximum value of d is the distance between the sensor and heat element.
When d is negative, the distance is between the lower end of the mark and form feed position. The minimum value of d is the value multiplied by -1 to the value of [(length of 1 page) - (distance between sensor and heat element)].

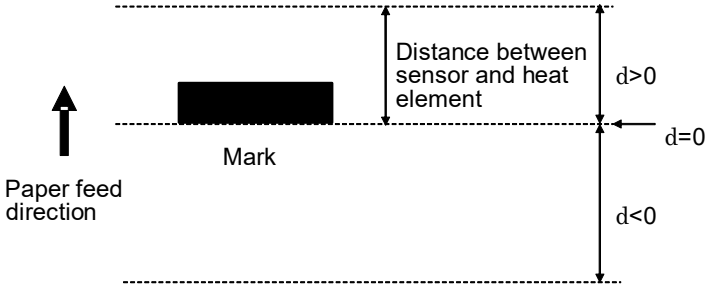
After the printer detects the mark, it feeds paper the length of [(distance between sensor and heat element) - d + (skip-length in SETFF command)].
When the value of [(distance between sensor and heat element) - d + (skip-length in SETFF command)] exceeds the length of 1 page, the printer feeds paper the length of 1 page.

Notes The unit system specified by the UNITS command applies to d.

value of the definition range is in dots. When other than IN-DOTS is specified with the UNITS command, make sure that the value converted from d to dots is within the definition range.

The value of media.tof is changed to the value of d by this command. However, when the power is turned off, the change made by this command is discarded. When the changed value needs to be retained after turning the power off, use the setvar command to change the value of media.tof.

Related Commands: UNITS command, media.tof, SETFF command



PRESENT-AT command

Format: PRESENT-AT {length} {delay}

Definition Range: 0 ≤ length ≤ 28
0 ≤ delay ≤ 65535

Default: length=0
delay=0

Function: This is a command to move the desired cutting place of the paper to the tear bar. For example, it moves the release paper area between labels to the tear bar location.
- length : Specify the paper feeding length after printing and the paper backfeeding length before next printing.
- delay : Specify the delay time from the end of printing to the execution of paper feeding after printing in 1/8 seconds. For example, specify 80 in order to insert the delay time of 10 seconds.

When the function of this command is executed, the paper is retracted the specified distance of length, and the mapped print data is printed. Then, the printer waits for the specified period of time of delay and feeds paper the specified distance of length. When the printer receives next print data during the delay time, it starts printing without retracting paper the specified distance of length.

The length and delay are common values in label mode and line print mode.

Notes: The unit system specified by the UNITS command applies to length.

Related Commands: UNITS command

BARCODE command

Format: (1) BARCODE(B) {type} {width} {ratio} {height} {x} {y} {data}
(2) VBARCODE(VB) {type} {width} {ratio} {height} {x} {y} {data}

Function: Prints barcodes.

Barcodes can be printed only in the horizontal direction even when "LP-ORIENT 270" has been specified by the LP-ORIENT command.

Barcodes can be aligned in the specified position by using the JUSTIFICATION command.

The maximum height of a barcode is the length of 1 page.

[Barcode] [GS1 Databar (Reduced Space Symbology)]
When printing a barcode or GS1 Databar (Reduced Space Symbology), "! UTILITIES (! U)" command or "! U1" command can be used.
See "2.5.3 Barcode" and "2.5.4 GS1 Databar (Reduced Space Symbology)" for details of the command. However, the horizontal starting position x and the vertical starting position y are ignored.

[Two-Dimensional Barcode]
When printing a two-dimensional barcode, only "! UTILITIES(! U)" command can be used.
See "2.5.5 Two-Dimensional Barcode" for details of the command. However, the horizontal starting position x and the vertical starting position y are ignored.

Related Commands: "2.5.3 Barcode", "2.5.4 GS1 Databar (Reduced Space Symbology)", "2.5.5 Two-Dimensional Barcode", JUSTIFICATION command

PCX command

Format: (1) PCX {x} {y} {data}
(2) PCX {x} {y} !<{filename.PCX}

Function: Prints .PCX formatted graphics which is encoded as a black and white image.
(1) is used when specifying the .PCX formatted data within the command.
(2) is used when reading out the .PCX formatted data file from the flash file system.

The maximum height of PCX graphics is the length of 1 page.

[(1) When specifying the data within the command]
Only "! UTILITIES(! U)" command can be used.
See "PCX command (Specifying the data in the command)" for details of the command.
However, the horizontal starting position x and the vertical starting position y are ignored.

[(2) When reading out a file from the flash file system]
"! UTILITIES(! U)" command or "! U1" command can be used.
See "PCX command (Reading out a file from the flash file system)" for details of the command.
However, the horizontal starting position x and the vertical starting position y are ignored.

Notes: PCX graphics can be aligned in the specified position by using the JUSTIFICATION command.

Related Commands: PCX command (Specifying the data in the command), PCX command (Reading out a file from the flash file system), JUSTIFICATION command

SETLP-TIMEOUT command

Format: SETLP-TIMEOUT {time}

Definition Range: 0 ≤ time ≤ 255

Default: time = 1

Function: In line print mode, the printer operates automatically when the specified period of time has passed with no data receiving since the last data was received. This command specifies a period of time for the receive timeout in line print mode.
- time : Specify the receive timeout in 1/8 seconds. For example, specify 80 in order to set the receive timeout of 10 seconds.

When specifying 0 for time, the printer prints every time it receives 0CH(CR) or 0AH(LF).

2.5.9 Advanced Utilities

When using advanced utilities (except the DEFINE-FILE(DF) utility), there are 2 ways to use the utility command: using "'! UTILITIES(! U)" command or using "! U1" command.

[How to use "! UTILITIES(! U)" command]
Place the utility command in the utility session between "! UTILITIES(! U) " command and "PRINT". Terminate the utility session with "PRINT". Use both 0DH(CR) and 0AH(LF) to terminate "PRINT".

[How to use "! U1" command]
Use "! U1" command when executing 1 utility command.
"! U1" command can be used at any position except the control session of label mode and the utility session. Terminate "! U1" by using both 0DH(CR) and 0AH(LF).

When using the DEFINE-FILE(DF) utility, use "! DF" command. See "DEFINE-FILE(DF) utility" for details.

VERSION utility

Format	VERSION
Function	Responds with the firmware version (main). The firmware version is represented as "Vx.xx.xx" format with 8 bytes, and 00H(NUL) is added behind and responded.

CHECKSUM utility

Format	CHECKSUM
Function	Responds with the firmware checksum (main). 2-byte checksum is represented in 4-byte ASCII character code, and 00H(NUL) is added behind and responded.

DEL utility

Format	DEL {name.ext}
Function	Deletes the specified format file stored in the flash file system. name.ext : Specify the format file name to delete. For name.ext, specify a format file name that consists of 8 characters or shorter for the file name and 3 characters or shorter for the file extension. When the format file name contains lowercase characters, the characters are converted to uppercase, and then the file is deleted. When specifying the format file name that both the file name and file extension are 1 asterisk '*' ("*.*") for name.ext, all files stored in the flash file system are deleted. It takes about 30 seconds to delete all files.
Notes	Use the DEFINE-FORMAT, DEFINE-FILE utility or SII SAVE-BIN-FILE command to save files.
Related Commands	DEFINE-FORMAT, DEFINE-FILE utility, SII SAVE-BIN-FILE command

DIR utility

Format: DIR

Function: Responds with all names and sizes of format files stored in the flash file system. The remaining capacity of the FLASH memory used as the flash file system is responded lastly. The response when the TEST.FMT file of 60024 bytes is stored is shown below.

```
Directory
 TEST      .FMT      60024
 1402560 Bytes Free
```

TYPE utility

Format: TYPE {name.ext}

Function: Responds with the content of the file stored in the flash file system.
name.ext : Specify the file of which content is responded.

For name.ext, specify a format file name that consists of 8 characters or shorter for the file name and 3 characters or shorter for the file extension. When the format file name contains lowercase characters, the characters are converted to uppercase before being responded.

When the file with the specified name is not registered, 'File Not Found[CR/LF]' is responded.

COUNTRY/CODE PAGE utility
CHAR-SET/CODE PAGE utility

Format: COUNTRY(CHAR-SET) {name}

Definition Range: name = USA, GERMANY, FRANCE, SWEDEN, SPAIN, NORWAY, ITALY, CP850, UK, JAPAN-S

Default: name = USA

Function: Specifies the character set.
- name : Specify the character set.

Figure A-9 in "Appendix A Font Information" shows Character Code Table (Font7 Size0, USA). The character code shown in Figure A-10 varies depending on the specified character set. However, when specifying CP850 for name, the character set is changed as shown in Figure A-11.

When printing Japanese characters, specify each parameter as follows.
- Specify JAPAN-S by this command.
- Specify 55 or 56 for the font number of the TEXT command or other commands.
- Specify the character string by using Shift JIS.

At the factory, the font size corresponding to the font number 55 and 56 is as follows.

Font Number	Font Size (height × width, Single-byte)
55	24 dots × 12 dots
56	16 dots × 8 dots

The font size of the font number 55 and 56 can be switched by changing the setting of sii.device.kanji_size. See "sii.device.kanji_size" for details.

The name is a common value in label mode and line print mode.

Related Commands: sii.device.kanji_size

TIMEOUT utility

Format: TIMEOUT {time}

Definition Range: 0 ≤ time ≤ 65535

Default: time = power.inactivity_timeout

Function: Specifies the auto power off time.
time : Specify the auto power off time in 1/8 seconds.
For example, in order to turn the powe off 2 minutes after the last data was received, specify 960 (60×2×8).
The printer automatically turns the power off when the period of time specified for time has passed with no data receiving since the last data was received.

The value less than 1 second is rounded off for the result of time/8.
When 0 is specified for time, the automatic power off is disabled.

Notes: The value of power.inactivity_timeout is changed to the value of time/8 by this command. However, when the power is turned off, the change made by this command is discarded. When the changed value needs to be retained after turning the power off, use the setvar command to change the value of power.inactivity_timeout.

Related Commands: power.inactivity_timeout

ON-LOW-BATTERY command

Format: OLB ALERT "{data}"

Default: data is empty.

Function: Specifies an arbitrary massage to respond with when the battery voltage drops.
data : Specify the message.

Enclose the data in double quotations. Specify the massage within 98 characters.

The printer responds with the message specified for data every time the battery voltage falls below the value of power.low_battery_warning.

LT command

Format | LT {mode}

Definition Range | mode = CR, LF, CR-LF, CR-X-LF

Default | mode = CR-LF

Function | Specifies the code to indicate the command line terminator.

mode : Specify the code to indicate the terminator. Select from the following table.

mode	Terminator
CR	0DH(CR) is used as command line terminator.
LF	0AH(LF) is used as command line terminator.
CR-LF	Both 0DH(CR) and 0AH(LF) are used as command line terminator.
CR-X-LF	0DH(CR), arbitrary number of characters, 0AH(LF) are used as command line terminator in this order. The arbitrary number of characters between 0DH(CR) and 0AH(LF) are discarded.

BAR-SENSE command

Format | BAR-SENSE [#]

Definition Range | 1 ≤ # ≤ 254

Default | # = sii.media.mark_threshold

Function | Changes the setting to the form feed position detection by marks and specifies the mark detection threshold value.
: Specify the threshold value.

The smaller value of # increases the sensor's sensitivity.
When # is omitted, the threshold value is not changed.

Notes | The value of sii.media.mark_threshold is changed to the value of # by this command. However, when the power is turned off, the change made by this command is discarded. When the changed value needs to be retained after turning the power off, use the setvar command to change the value of sii.media.mark_threshold.

Related Commands | sii.media.mark_threshold

GAP-SENSE command

Format | GAP-SENSE [#]

Definition Range | 1 ≤ # ≤ 254

Default | # = sii.media.gap_threshold

Function | Changes the setting to the form feed position detection by the gap and specifies the gap detection threshold value.
: Specify the threshold value.

The larger value of # increases the sensor's sensitivity.
When # is omitted, the threshold value is not changed.

Notes The value of sii.media.gap_threshold is changed to the value of # by this command. However, when the power is turned off, the change made by this command is discarded. When the changed value needs to be retained after turning the power off, use the setvar command to change the value of sii.media.gap_threshold.

Related Commands sii.media.gap_threshold

DEFINE-FILE(DF) utility

Format
! DF {filename.ext}
{data}
{terminator}

Definition Range terminator = PRINT, END

Function Stores format files in the flash file system.
filename.ext : Specify the format file name.
data : Specify the file data.
terminator : Specify the terminator of the file. Select from the following table.

terminator	Function
PRINT	Terminator "PRINT" is also written in the file.
END	Terminator "END" is not written in the file.

When specifying a format file name that already exists for filename.ext, the file is overwritten with a new file.
For filename.ext, specify a file name that consists of 8 characters or shorter for the file name and 3 characters or shorter for the file extension.
The format file name consisting of 0 characters for the file name and file extension cannot be used. Moreover, the format file name that has 1 asterisk '*' for the file name and file extension ("*.*") cannot be used.
When the format file name contains lowercase characters, the characters are converted to uppercase automatically.

Use the ASCII character code for data.
Moreover, do not use the keyword that is used as terminator in data.
Use both 0DH(CR) and 0AH(LF) at the end of each command line of data regardless of the terminator setting specified by the LT command.

Notes Use the DEL command to delete the stored file.

Related Commands LT command, DEL command

2.5.10 SII Commands

SII commands are SII's extended commands which do not exist in the original CPCL. The command format is as follows.

Format SII {operation} [options] [options] … [options]

See each command description for the values to specify for operation and options.

Use 1 character space ' ' to separate "SII" and operation, operation and options, and options and options. Use the terminator specified by the LT command for the command line terminator.

SAVE-ROOT-CERT

Format SII SAVE-ROOT-CERT {data size} {data}

Definition Range data = Root certificate data in binary format

Function Saves the root certificate for wireless LAN communication.
data size : Specify the number of root certificate data.
data : Specify the root certificate data.

For data size, specify the number of data to specify for data in ASCII hexadecimal characters. Usable characters are '0' to '9' and 'A' to 'F'.
Example: When specifying 676 bytes of data
SII SAVE-ROOT-CERT 2A4 {data}

Use this command combining with "! UTILITIES(! U)" command or "! U1" command.

SAVE-BIN-FILE

Format SII SAVE-BIN-FILE {filename.ext} {data size} {checksum} {data}

Definition Range data = Binary formatted file data

Function Saves binary formatted file data in the flash file system. This command is used mainly to save .PCX formatted graphics data.
filename.ext : Specify an arbitrary file name.
data size : Specify the number of file data.
checksum : Specify 2's complement of the 2-byte checksum of the file data.
data : Specify the file data.

When specifying a format file name that already exists for filename.ext, the file is overwritten with a new file.
For filename.ext, specify a format file name that consists of 8 characters or shorter for the file name and 3 characters ro shorter for the file extension.
The format file name consisting of 0 characters for the file name and file extension cannot be used. Moreover, the format file name that has 1 asterisk '*' for the file name and file extension ("*.*") cannot be used.
When the format file name contains lowercase characters, the characters are converted to uppercase automatically.

For data size and checksum, specify the values in ASCII hexadecimal characters. Usable characters are '0' to '9' and 'A' to 'F'.

Use this command in the combination with "! UTILITIES(! U)" command or "! U1" command.

Notes Use the DEL command to delete the file saved by this command.

Related Commands DEL command

2.5.11 PRINTER ESCAPE Commands

By using the PRINTER ESCAPE command, each setting value is responded and changed.
This command cannot be used in a control session of label mode and in an utility session.

ESC '}' 'W' '1' n — CCL Code Specify

Format: 1BH 7DH 57H 31H n

Definition Range: 1 ≤ n ≤ 255

Default: n = 33('!')

Function: Specifies the CCL code.
n : Specify the CCL code after change.
Use this command in order to change the CCL code from the exclamation mark '!'.

ESC '}' 'R' '1' — CCL Code Response

Format: 1BH 7DH 52H 31H

Function: Responds with the current CCL code by 1 byte.

ESC 'h' — Printer Status Response

Format: 1BH 68H

Function: Responds with the printer status in 1 byte.
The function of each bit is as shown in the following table.

Bit	Function	Value		Default Value
		0	1	
0	Print state	Stop	Print	0
1	Out-of-paper error	Paper present	Out of paper	0
2	Paper cover open error	Close	Open	0
3	Battery voltage state	Normal	Low voltage or no battery set	0
4	Printer reset state	Reset cleared	Reset state	1
5	Reserved	-	-	0
6	Reserved	-	-	0
7	Reserved	-	-	0

Notes: Bit 4 is cleared by Printer Reset Clear (ESC 'N'). A user can clear it optionally.

Related Commands: Printer Reset Clear (ESC 'N')

ESC 'N' Printer Reset Clear

Format 1BH 4EH

Function Clears the Bit 4 of the printer status.
Bit 4 of the printer status is a flag indicating reset history. It is set automatically when the printer is in a state of reset but not cleared automatically. It is cleared only by this command. This flag does not affect the printer operation except indicate the history.
This command is used, for example, when the host completes printer initialization.

Related Commands Printer Status Response (ESC 'h')

ESC 'v' Printer Information Response

Format 1BH 76H

Function Responds with the printer information. The information contains the followings.
- Manufacturer
- Model name
- Firmware version (main)
- Firmware release date
- Firmware checksum (main)
- Serial number

Responded items are separated by 20H (space). 00H(NUL) is added to the end of the responded string.

ESC 'i' Extended Printer Status Response

Format 1BH 69H

Function Responds with the extended printer status with 1 byte.
The function of each bit is as shown in the following table.

Bit	Function	Value		Default Value
		0	1	
0	Reserved	-	-	0
1	Reserved	-	-	0
2	Reserved	-	-	0
3	Reserved	-	-	0
4	Paper jam error while detecting mark	No jam	Paper jam	0
5	Reserved	-	-	0
6	Reserved	-	-	0
7	Reserved	-	-	0

ESC 'J' 'R' 'U' Total Label Count Response

Format 1BH 4AH 52H 55H

Function Responds with the total number of printed labels.

The response consists of 2-byte data. For example, when the total number of printed labels is 20368, the 2-byte data is responded in the order of 4FH, 90H.

The number of printed labels can be returned to 0 by User Label Count Reset (ESC 'J' 'W' 'a' 'c' 'c' 'N' 'V' 'M' 'U').

The value responded by this command is the same as the value of odometer.user_label_count.

Related Commands User Label Count Reset (ESC 'J' 'W' 'a' 'c' 'c' 'N' 'V' 'M' 'U'), odometer.user_label_count

ESC 'J' 'W' 'a' 'c' 'c' 'N' 'V' 'M' 'U' Total Label Count Reset

Format 1BH 4AH 57H 61H 63H 63H 4EH 56H 4DH 55H

Function Resets the total number of printed labels to 0.
The value of odometer.user_label_count is also reset to 0.

Related Commands User Label Count Response (ESC 'J' 'R' 'U'), odometer.user_label_count

ESC 'p' Power Off Command

Format 1BH 70H

Function Turns the printer power off.

2.5.12 Command System Control Commands

Command system control commands are specific commands for this printer, not existing in the original CPCL. By using this command, the current command system can be responded and changed.
This command cannot be used in a control session of label mode and in a utility session.

SYN ESC 'C' 'M' 'D' 'S' p1 p2 p3 p4 0 — Command System Response

Format: 16H 1BH 43H 4DH 44H 53H p1 p2 p3 p4 00H

Definition Range: p1 = 1, p2 = 0, p3 = 0, p4 = 0

Function: Responds with the command system currently selected. The relation of the responded value and command system is as shown in the following table.

Response Byte	Command System
0	ESC/POS
4	CPCL
5	ZPL II

This command is available even when the command system being selected is ESC/POS or ZPL II.

The data format to be responded is start code (0EH), lower code of HEX code, upper code of HEX code and termination code (00H). Response identifier is added to the upper 4 bits respectively for the lower code of HEX code and upper code of HEX code. ExH is responded for the lower code of HEX code and FxH for the upper code of HEX code.
For example, when 0EH E4H F0H 00H is responded by using this command, "E4H F0H" means 04H (CPCL is being selected).

SYN ESC 'C' 'M' 'D' 'S' p1 p2 p3 p4 1 n — Command System Selection

Format: 16H 1BH 43H 4DH 44H 53H p1 p2 p3 p4 01H n

Definition Range: p1 = 2, p2 = 0, p3 = 0, p4 = 0
n = 0, 4, 5

Default: The default is the value that the command system set in device.languages is converted into a number.

Function: Selects the command system.
n : Specify the command system to be selected. Select the value from the following table.

n	Command System
0	ESC/POS
4	CPCL
5	ZPL II

This command is available even when the command system being selected is ESC/POS or ZPL II.

Using this command initializes the items shown in "Table 3-1 Setting Values after Initialization". However, the content saved in the FLASH memory by the setvar command is not initialized. See "CHAPTER 7 INITIALIZATION" in "MP-B21L SERIES THERMAL PRINTER TECHNICAL REFERENCE" for the initialization items for ESC/POS. See "CHAPTER 3 INITIALIZATION" in "MP-B21L SERIES THERMAL PRINTER ZPL II COMMAND REFERENCE" for the initialization items for ZPL II.

Notes

The value of device.languages is not changed by this command.
When using CPCL next time immediately after turning the power on, change the command system to CPCL and then change the value of device.languages to "line_print".

Related Commands device.languages

2.5.13 Configuration / Control Commands

(1) set/get/do Command

This printer can set the default values of selectable items beforehand, such as the communication method after turning on the power and type of thermal paper. This section describes commands for setting those and for executing several control functions. There are the following groups of commands which are referred to as "set/get/do command" for the commands.

- "setvar command" : Sets the parameter to the specified value.
- "getvar command" : Responds with the value of the parameter.
- "do command" : Executes the decided control function.

Use lower case characters for the set/get/do command and parameter name. The parameter name is divided by a period '.' in the format "xxx.xxx", such as "appl.date". See from "(2) Application Parameters (appl)" to "(15) SII Original Parameters (sii)" in this section for the specific parameter names.

Use both 0DH(CR) and 0AH(LF) for the end of a command line regardless of the terminator setting specified by the LT command.

Use the set/get/do command in the combination with "! U1" command.

When the set/get/do command is used for setting, execute software reset or hardware reset to enable the setting. See "Chapter 3 Initialization" for the executing method of software reset and hardware reset.

Using the setvar command frequently may cause damage in the FLASH memory.
Use this command only during the installation of the printer, and do not use in the regular operation.

When the setting value of parameter is responded by the getvar command, it is enclosed in double quotation marks. (Example: "120")
If the parameter name that does not exist is specified by the getvar command, ""?"" will be responded. For some parameters, ""*"" is responded from the perspective of security.

(2) Application Parameters (appl)

appl.date

Format	! U1 getvar "appl.date"
Function	Responds with the release date of the firmware. The response format is ""mm/dd/yyyy"".

appl.name

Format	! U1 getvar "appl.name"
Function	Responds with the model name of the printer enclosed in double quotations.

appl.version

Format	! U1 getvar "appl.version"
Function	Responds with the firmware version (main). The response format is ""Vx.xx.xx"".

(3) Bluetooth Parameters (bluetooth)

The parameters in this section are available for Bluetooth models. When accessing the parameters in this section by wireless LAN models, the operation is as follows.

- Responds with ""?"" when using the getvar command.
- Ignores the command when using the setvar command.

bluetooth.address

Format ! U1 getvar "bluetooth.address"

Function Responds with the address of the Bluetooth device.
The response format is ""XX:XX:XX:XX:XX:XX"".

bluetooth.minimum_security_mode

Format (1) ! U1 getvar "bluetooth.minimum_security_mode"
(2) ! U1 setvar "bluetooth.minimum_security_mode" "{value}"

Definition Range value = 2

Function (1) Responds with the security mode of Bluetooth enclosed in double quotations.

(2) Specifies the security mode of Bluetooth.
Only 2 (PIN Code) is available to set in this printer. When the setting value is 2, connect SSP (Simple Secure Pairing) to the Bluetooth host which supports SSP. When the Bluetooth host does not support SSP, connect with the host by using the PIN Code. When the Bluetooth standard version is 2.1 or above, the Bluetooth device is supporting SSP.
The value at the factory of this parameter is 2.

bluetooth.bluetooth_pin

Format ! U1 setvar "bluetooth.bluetooth_pin" "{value}"

Function Specifies the PIN Code of Bluetooth.
The value at the factory of this parameter is "0000".

Specify value with 4 to 16 characters. Usable characters are as follows.
'0 to 9', 'a to z', 'A to Z', '+', '-', '_', '#', '*', ' '(space:20H)
When a character other than above is contained, the command is ignored.

Notes When specifying the name of this parameter by the getvar command, ""*"" is responded.

bluetooth.date

Format ! U1 getvar "bluetooth.date"

Function Responds with the release date of the Bluetooth device.
The response format is ""mm/dd/yyyy"".

bluetooth.discoverable

Format
(1) ! U1 getvar "bluetooth.discoverable"
(2) ! U1 setvar "bluetooth.discoverable" "{value}"

Definition Range
value = on, off

Function
(1) Responds with the Bluetooth inquiry response mode enclosed in double quotations.
The response data is as shown in the table below.

(2) Specifies the Bluetooth inquiry response mode. Select the value from the following table.
The value at the factory of this parameter is "off".

Setting Value	Function
on	Always
off	Pairing Mode

When "on" (Always) is selected, the search from the Bluetooth host is always responded, and pairing is possible at any time.
When "off" (Pairing Mode) is selected, the printer starts the Pairing Mode when holding the power switch down for 5 seconds or more while in power off state.
Pairing with the Bluetooth host is possible during the Pairing Mode.

bluetooth.friendly_name

Format
(1) ! U1 getvar "bluetooth.friendly_name"
(2) ! U1 setvar "bluetooth.friendly_name" "{value}"

Function
(1) Responds with the Bluetooth name enclosed in double quotations.

(2) Specifies the Bluetooth name.
The value at the factory of this parameter is "MP-B21L".

Specify value with 2 to 30 characters. Usable characters are as follows.
'0 to 9', 'a to z', 'A to Z', '+', '-', '_', '#', '*', ' '(space:20H)
When a character other than above is contained, the command is ignored.

Notes
This parameter is the same setting as bluetooth.local_name.

Related Commands
bluetooth.local_name

bluetooth.local_name

Format
! U1 getvar "bluetooth.local_name"

Function
Responds with the Bluetooth local name enclosed in double quotations.

Notes
This parameter is the same setting as bluetooth.friendly_name.

Related Commands
bluetooth.friendly_name

bluetooth.version

Format
! U1 getvar "bluetooth.version"

Function
Responds with the Bluetooth standard version enclosed in double quotations.

(4) Device Parameters (device)

device.friendly_name

Format
(1) ! U1 getvar "device.friendly_name"
(2) ! U1 setvar "device.friendly_name" "{value}"

Function
(1) Responds with the printer name enclosed in double quotations.

(2) Specifies the printer name.
The value at the factory of this parameter is the same as the serial number.

Notes
Specify value with16 characters or shorter. When no setting, the serial number is set as the printer name.

device.reset

Format
! U1 do "device.reset" ""

Function
Resets the hardware.

device.languages

Format
(1) ! U1 getvar "device.languages"
(2) ! U1 setvar "device.languages" "{value}"

Definition Range
value = esc_pos, line_print

Function
(1) Responds with the command system enclosed in double quotations.
The response data is as shown in the table below.

(2) Specifies the command system. Select the value from the following table.
The value at the factory of this parameter is "esc_pos".

Setting Value	Command System
esc_pos	ESC/POS
line_print	CPCL
zpl	ZPL II

Notes
The command system available immediately after turning on the power is the one which is set in this parameter.

By using (2), the command system currently used is also changed.
Example: When "! U1 setvar "device.languages" "esc_pos"" is executed, the command system is changed to ESC/POS.
The command system is changed right after executing the processing of the command.

device.restore_defaults

Format
! U1 do "device.restore_defaults" "{parameter}"

Definition Range
parameter = bluetooth, power, wlan, all

Function
[When specifying bluetooth, power or wlan for parameter]
Restores all parameter settings related to the specified category to the settings at the factory.

[When specifying all for parameter]
Restores all parameter settings to the settings at the factory, with the exception of all parameters stated in "2.5.13 (9) Odometer Parameters (odometer)" and sii.device.iserial.

device.user_p1

Format

(1) ! U1 getvar "device.user_p1"
(2) ! U1 setvar "device.user_p1" "{value}"

Function

(1) Responds with the user parameter 1 enclosed in double quotations.

(2) Specifies the user parameter 1.
User parameter 1 is a parameter that can be freely used by a user.
The value at the factory of this parameter is empty.
Specify value with 20 characters or shorter.

device.user_p2

Format

(1) ! U1 getvar "device.user_p2"
(2) ! U1 setvar "device.user_p2" "{value}"

Function

(1) Responds with the user parameter 2 enclosed in double quotations.

(2) Specifies the user parameter 2.
User parameter 2 is a parameter that can be freely used by a user.
The value at the factory of this parameter is empty.
Specify value with 20 characters or shorter.

device.unique_id

Format

! U1 getvar "device.unique_id"

Function

Responds with the serial number of the printer enclosed in double quotations.

(5) File Parameters (file)

file.delete

Format ! U1 do "file.delete" "{parameter}"

Function Deletes the specified file stored in the flash file system.
parameter : Specify the file to delete.

For parameter, specify a format file name that consists of 8 characters or shorter and 3 characters or shorter for the file extension. When the format file name contains lowercase characters, the characters are converted to uppercase, and then the file is deleted.
When specifying the format file name that both the file name and file extension are 1 asterisk '*' ("*.*") for parameter, all files stored in the flash file system are deleted. It takes about 30 seconds to delete all files.

Notes Use DEFINE-FORMAT, DEFINE-FILE utility, or SII SAVE-BIN-FILE command to save files.

Related Commands DEFINE-FORMAT, DEFINE-FILE utility, SII SAVE-BIN-FILE command

file.dir

Format ! U1 getvar "file.dir"

Function Responds with all names and sizes of format files stored in the flash file system. The remaining capacity of the FLASH memory used as the flash file system is responded lastly.

file.print

Format ! U1 do "file.print" "{parameter}"

Function Prints the content of the specified file in strings.
parameter : Specify the file to print.

For parameter, specify a format file name that consists of 8 characters or shorter for the file name and 3 characters or shorter for the file extension. When the format file name contains lowercase characters, the characters are converted to uppercase before printing.

When the file with the specified name is not registered, "File Not Found" is printed.

file.rename

Format ! U1 do "file.rename" "{parameter} {parameter2}"

Function Changes the name of the specified file.
parameter : Specify the original format file name.
parameter2 : Specify the format file name after change.

For parameter and parameter2, specify a format file name that consists of 8 characters or shorter for the file name and 3 characters or shorter for the file extension. When the format file name contains lowercase characters, the characters are converted to uppercase.

For parameter2, the file name that has 0 characters for both the file name and file extension cannot be used. Moreover, the format file name that has 1 asterisk '*' for both the file name and file extension ("*.*") cannot be used.
When the file that has the same name as specified format file name for parameter2 already exists, the file is overwritten.

Separate parameter and parameter2 by 1 character space ' '.

file.run

Format ! U1 do "file.run" "{parameter}"

Function Reads out the file stored in the flash file system and executes the command stated in the file.
parameter : Specify the file to execute.

For parameter, specify a format file name that consists of 8 characters or shorter for the file name and 3 characters or shorter for the file extension. When the file name contains lowercase characters, the characters are converted to uppercase.

file.type

Format ! U1 do "file.type" "{parameter}"

Function Responds with the content of the file stored in the flash file system.

For parameter, specify a format file name that consists of 8 characters or shorter for the file name and 3 characters or shorter for the file extension. When the format file name contains lowercase characters, the characters are converted to uppercase, and then the file is read.

When the file with the specified name is not registered, "File Not Found[CR/LF]" is responded.

(6) Printer Mechanism Parameters (head, media)

head.latch

Format ! U1 getvar "head.latch"

Function Responds with the paper cover status enclosed in double quotations.
The response data is as shown in the following table.

State	Description
open	Paper cover opened
ok	Paper cover closed

head.latch_closed_feed

Format (1) ! U1 getvar "head.latch_closed_feed"
(2) ! U1 setvar "head.latch_closed_feed" "{value}"

Definition Range value = on, off

Function (1) Responds with the initialization operation after paper setting enclosed in double quotations.
The response data is as shown in the table below.

(2) Specifies the the initialization operation after paper setting. Select from the following table.
The value at the factory of this parameter is "off".

Setting Value	Function
on	Form Feed execution after setting the paper
off	No Form Feed execution after setting the paper

media.speed

Format (1) ! U1 getvar "media.speed"
(2) ! U1 setvar "media.speed" "{value}"

Definition Range 1.0 ≤ value ≤ 5.0

Function (1) Responds with the print speed (in inch/s) enclosed in double quotations.

(2) Specifies the print speed (in inch/s).
The value at the factory of this parameter is 4.0.

The value can be specified to the first decimal place.

The relation of value and Print Quality Selection is as shown in the following table. See "4.2 FUNCTION SETTING (MS)" in "MP-B21L SERIES THERMAL PRINTER TECHNICAL REFERENCE" for details of Print Quality Selection.

value	Print Quality Selection
1.0≤value≤2.4	Quality 2
2.5≤value≤3.4	Quality 1
3.5≤value≤5.0	Standard

Notes	This parameter value can be also changed by the SPEED command. In the SPEED command, the print speed is specified in 3 levels. In that case, each speed level is changed to inch/s and set in this parameter.

Related Commands	SPEED command

(7) Media Parameters (media)

media.feed_length

Format
(1) ! U1 getvar "media.feed_length"
(2) ! U1 setvar "media.feed_length" "{value}"

Definition Range
1 ≤ value ≤ 2400

Function
(1) Responds with the mark detection maximum feeding length (in dots) enclosed in double quotations.

(2) Specifies the mark detection maximum feeding length (in dots).
The value at the factory of this parameter is 2400.

Notes
This parameter value can be also changed by the SETFF command. In that case, the unit that has been selected by the UNITS command is changed to dot and set in this parameter. The value changed by the SETFF command is discarded after the power is turned off.

Related Commands
SETFF command

media.sense_mode

Format
(1) ! U1 getvar "media.sense_mode"
(2) ! U1 setvar "media.sense_mode" "{value}"

Definition Range
value = bar, gap

Function
(1) Responds with the mode used for detecting the form feed position enclosed in double quotations.

(2) Specifies the mode used for detecting the form feed position.
When bar is specified as value, mark detection is performed at the form feed. When gap is specified as value, gap detection is performed at the form feed.

media.status

Format
! U1 getvar "media.status"

Function
Responds with the paper state enclosed in double quotations.
The response data is as shown in the following table.

State	Description
ok	Paper is set
out	Out of paper

media.tof

Format
(1) ! U1 getvar "media.tof"
(2) ! U1 setvar "media.tof" "{value}"

Definition Range -2296 ≤ value ≤ 103

Function (1) Responds with the form feed position (in dots) enclosed in double quotations.

(2) Specifies the form feed position (in dots).
For value, specify the distance between the form feed position and the lower end of the next mark, or the lower end of the mark and the form feed position.
The value at the factory of this parameter is -19.

Notes This parameter value can be also changed by the SET-TOF command. In that case, the unit that has been selected by the UNITS command is changed to dot and set in this parameter. The value changed by the SET-TOF command is discarded after the power is turned off.

Related Commands SET-TOF command

media.type

Format
(1) ! U1 getvar "media.type"
(2) ! U1 setvar "media.type" "{value}"

Definition Range value = label, journal

Function (1) Responds with the media type enclosed in double quotations.
The response data is as shown in the table below.

(2) Specifies the media type. Select from the following table.
The value at the factory of this parameter is "label".

Setting Value	Function
label	Form feed position alignment by sensor while printing
journal	No form feed position alignment by sensor while printing

Notes This parameter is not changed by the JOURNAL command.

Related Commands JOURNAL command

(8) Memory Parameters (memory)

memory.flash_size

Format ! U1 getvar "memory.flash_size"

Function Responds with the total capacity of the FLASH memory used as the flash file system.
The response format is ""xxxxxx Bytes"".

memory.flash_free

Format ! U1 getvar "memory.flash_free"

Function Responds with the remaining capacity of the FLASH memory used as the flash file system.
The response format is ""xxxxxx Bytes Free"".

memory.ram_size

Format ! U1 getvar "memory.ram_size"

Function Responds with the total capacity of the external RAM.
The response format is ""xxxxxx Bytes"".

memory.ram_free

Format ! U1 getvar "memory.ram_free"

Function Responds with the remaining capacity of the external RAM.
The response format is ""xxxxxx Bytes Free"".

(9) Odometer Parameters (odometer)

odometer.label_dot_length

Format	! U1 getvar "odometer.label_dot_length"
Function	Responds with the paper length previously printed (in dots) enclosed in double quotations.
Notes	This parameter value is 0 right after turning the power on.

odometer.latch_open_count

Format	(1) ! U1 getvar "odometer.latch_open_count" (2) ! U1 setvar "odometer.latch_open_count" "{value}"
Definition Range	0 ≤ value ≤ 65535
Function	(1) Responds with the number of paper cover open times enclosed in double quotations. (2) Specifies the number of paper cover open times.
Notes	When the parameter value exceeds the maximum value of the definition range, it returns to 0.

odometer.media_marker_count

Format	(1) ! U1 getvar "odometer.media_marker_count" (2) ! U1 setvar "odometer.media_marker_count" "{value}"
Definition Range	0 ≤ value ≤ 65535
Function	(1) Responds with the number of mark detection times enclosed in double quotations. (2) Specifies the number of mark detection times.
Notes	When the parameter value exceeds the maximum value of the definition range, it returns to 0.

odometer.user_label_count

Format	(1) ! U1 getvar "odometer.user_label_count" (2) ! U1 setvar "odometer.user_label_count" "{value}"
Definition Range	0 ≤ value ≤ 65535
Function	(1) Responds with the total number of printed labels enclosed in double quotations. (2) Specifies the total number of printed labels.
Notes	When the parameter value exceeds the maximum value of the definition range, it returns to 0. This parameter can be also responded by using User Label Count Response (ESC 'J' 'R' 'U') of the PRINTER ESCAPE command. Moreover, this parameter can be also reset to 0 by using User Label Count Reset (ESC 'J' 'W' 'a' 'c' 'c' 'N' 'V' 'M' 'U').
Related Commands	User Label Count Response (ESC 'J' 'R' 'U'), User Label Count Reset (ESC 'J' 'W' 'a' 'c' 'c' 'N' 'V' 'M' 'U')

odometer.total_print_length

Format ! U1 getvar "odometer.total_print_length"

Function Responds with the total length of paper feed (summation).
The response format is ""xxxxxx mm"".

odometer.media_marker_count1

Format (1) ! U1 getvar "odometer.media_marker_count1"
(2) ! U1 setvar "odometer.media_marker_count1" "0"

Function (1) Responds with the total length of paper feed 1.
The response format is ""xxxxxx mm"".

(2) Resets the total length of paper feed 1 to 0.

odometer.media_marker_count2

Format (1) ! U1 getvar "odometer.media_marker_count2"
(2) ! U1 setvar "odometer.media_marker_count2" "0"

Function (1) Responds with the total length of paper feed 2.
The response format is ""xxxxxx mm"".

(2) Resets the total length of paper feed 2 to 0.

odometer.headclean

Format (1) ! U1 getvar "odometer.headclean"
(2) ! U1 setvar "odometer.headclean" "0"

Function (1) Responds with the total length of paper feed after head cleaning.
The response format is ""xxxxxx mm"".

(2) Resets the total length of paper feed to 0 after head cleaning.
Reset this parameter to 0 after head cleaning.

odometer.headnew

Format (1) ! U1 getvar "odometer.headnew"
(2) ! U1 setvar "odometer.headnew" "0"

Function (1) Responds with the total length of paper feed after replacing the head.
The response format is ""xxxxxx mm"".

(2) Resets the total length of paper feed to 0 after replacing the head.
Reset this parameter to 0 after replacing the head.

(10) Power Paramters (power)

power.inactivity_timeout

Format

(1) ! U1 getvar "power.inactivity_timeout"
(2) ! U1 setvar "power.inactivity_timeout" "{value}"

Definition Range

0 ≤ value ≤ 65535

Function

(1) Responds with the auto power off time (in seconds).
The response format is ""xxxxx Seconds"".

(2) Specifies the auto power off time (in seconds).
The value at the factory of this parameter is 0.

The printer automatically turns off the power when no data has been received for the time specified in this parameter since the last data was received.
When this parameter is 0, the automatic power off is disabled.

Notes

This parameter value can be also changed by the TIMEOUT command. The value changed by the TIMEOUT command is discarded after the power is turned off.

Related Commands

TIMEOUT command

power.low_battery_shutdown

Format

! U1 getvar "power.low_battery_shutdown"

Function

Responds with the voltage value of auto power off in a low voltage condition of the battery pack.
The response format is ""x.xxV"".

power.low_battery_warning

Format

! U1 getvar "power.low_battery_warning"

Function

Responds with the warning voltage value in a low voltage condition of the battery pack.
The response format is ""x.xxV"".
Responds with ""-"" while an AC adapter is connected.

power.percent_full

Format

! U1 getvar "power.percent_full"

Function

Responds with the remaining capacity of the battery pack.
The response format is ""xx%"".

power.status

Format ! U1 getvar "power.status"

Function Responds with the current power supply or print status enclosed in double quotations.
The response data is as shown in the following table.

Power Supplied By	Battery Pack Installed		Battery Pack Not Installed
	Remaining capacity sufficient	Remaining capacity lowered	
AC adapter Car charger	ok	low	out
Battery Pack	ok	low	N/A

power.voltage

Format ! U1 getvar "power.voltage"

Function Responds with the current battery pack voltage value.
The response format is ""x.xxV"".

When the battery pack is not installed, ""0.00V"" is responded.

print.tone

Format

(1) ! U1 getvar "print.tone"
(2) ! U1 setvar "print.tone" "{value}"

Definition Range

-100 ≤ value ≤ 200

Function

(1) Responds with the print density enclosed in double quotation.

(2) Specifies the print density.
The value at the factory of this parameter is 0.

The larger value results in higher print density.

Notes

This parameter is not changed by the CONTRAST command or TONE command.

Related Commands

CONTRAST command, TONE command

(12) Test Function Parameters (test)

test.feed

Format	! U1 do "test.feed" ""
Function	Performs form feed.

test.print_diags

Format	! U1 do "test.print_diags" ""
Function	Prints the default values of selectable items, such as the communication method and type of thermal paper. A print example is as follows.

```
Mobile Printer
MP-B21L [ VX.XX.XX ]
  MM/DD/YYYY
Copyright(C):SII

* CPCL Info. *
CCL Key: '!'[21]

* Device Info. *
Friendly Name: XXXXXXXX
Languages: CPCL
Unique ID: XXXXXXXX
Auto Status Back: Disable
Init Response: Disable
Error Through: Enable
Response Data Discarding:
  Disable
Interface: USB/Wireless
iSerial: XXXXXXXX
Kanji Size:
  Font55(24dots)/Font56(16dots)
Realtime Command: Enable

* Head Info. *
Latch Closed Feed: Disable

* Media Info. *
Speed: 4.0[ips]
Feed Length: 2400[dots]
Sense Mode: bar
Tof: -24
Type: label
Width: 48[mm]
Thermal Paper: TF50KS-EY
Mark Threshold: 128

* Power Info. *
Inactivity Timeout:
  0[sec]

* Print Info. *
Tone: 0

* WLAN Info. *
Operating Mode: Simple AP
Radio: 802.11b/g/n
Country: US
Channel: Auto
eSSID: SII-Printer
Security: None
DHCP Server: Enable
MAC Address:
  XX:XX:XX:XX:XX:XX
IP Address:
  192.168.0.1
Subnet Mask:
  255.255.255.0
Gateway Address:
  0.0.0.0
Firmware Version: VXXXX

* Font Info. *
   Font Sizes Chars
   ---- ----- -----
      0 0-  6 20-FF
      1 0     20-80
      2 0-  1 20-7E
      4 0-  7 20-FF
      5 0-  3 20-FF
      6 0     20-44
      7 0-  1 20-FF
     55 0-127 20-FF
     56 0-127 20-FF

* File Info. *
   File         Size
   ------------ ---------
   TEST1   .FMT        25
  1462560 Bytes Free

End of report.
```

test.report_diags

Format	! U1 do "test.report_diags" ""
Function	Responds with the content to be printed by test.print_diags.

(13) USB Parameters (usb)

usb.device.device_id_string

Format	! U1 getvar "usb.device.device_id_string"
Function	Responds with the IEEE1284 string enclosed in double quotations. Example: "MFG:SII;CMD:SIIMP-B21L;MDL:MP-B21L;CLS:PRINTER;DES:SII MP-B21L;CID:SIIMP-B21L;"

usb.device.device_version

Format	! U1 getvar "usb.device.device_version"
Function	Responds with the USB version. The response format is ""x.x"".

usb.device.manufacturer_string

Format	! U1 getvar "usb.device.manufacturer_string"
Function	Responds with the USB manufacturer string. ""Seiko Instruments Inc."" is responded.

usb.device.product_id

Format	! U1 getvar "usb.device.product_id"
Function	Responds with the USB product ID. The response format is ""0xXXXX"".

usb.device.product_string

Format	! U1 getvar "usb.device.product_string"
Function	Responds with the USB product string enclosed in double quotations. Example: "SII MP-B21L Series."

usb.device.serial_string

Format	! U1 getvar "usb.device.serial_string"
Function	Responds with iSerialNumber enclosed in double quotations.
Notes	This parameter value is the same as sii.device.iserial. Change the value of sii.device.iserial in order to change iSerialNumber.
Related Commands	sii.device.iserial

usb.device.vendor_id

Format	! U1 getvar "usb.device.vendor_id"
Function	Responds with the USB vender ID. ""0x0619"" is responded.

(14) WLAN Parameters (wlan)

The parameters in this section are available in wireless LAN (WLAN) models. When accessing the parameters in this section by Bluetooth models, the operation is as follows.

- Responds with ""?"" when using the getvar command.
- Ignores the command when using the setvar command.

wlan.associated

Format ! U1 getvar "wlan.associated"

Function Responds with the connection status of wireless communication enclosed in double quotations. The response data is as shown in the following table.

State	Description
yes	Connected
no	Not connected

wlan.encryption_index

Format (1) ! U1 getvar "wlan.encryption_index"
(2) ! U1 setvar "wlan.encryption_index" "{value}"

Definition Range 1 ≤ value ≤ 4

Function (1) Responds with the WLAN WEP key index enclosed in double quotations.

(2) Specifies the WLAN WEP key index.

Notes This parameter value is the same as wlan.wep.index.

Related Commands wlan.wep.index

wlan.encryption_key1 to 4

Format (1) ! U1 getvar "wlan.encryption_key1"
(2) ! U1 setvar "wlan.encryption_key1" "{value}"
(3) ! U1 getvar "wlan.encryption_key2"
(4) ! U1 setvar "wlan.encryption_key2" "{value}"
(5) ! U1 getvar "wlan.encryption_key3"
(6) ! U1 setvar "wlan.encryption_key3" "{value}"
(7) ! U1 getvar "wlan.encryption_key4"
(8) ! U1 setvar "wlan.encryption_key4" "{value}"

Function (1) Responds with the WLAN WEP key1 enclosed in double quotations.

(2) Specifies the WLAN WEP key1.

(3) Responds with the WLAN WEP key2 enclosed in double quotations.

(4) Specifies the WLAN WEP key2.

(5) Responds with the WLAN WEP key3 enclosed in double quotations.

(6) Specifies the WLAN WEP key3.

(7) Responds with the WLAN WEP key4 enclosed in double quotations.

(8) Specifies the WLAN WEP key4.

The values at the factory of all these parameters are empty.

Specify 16 hexadecimal string or ASCII printable characters for value. The relation of the WLAN WEP mode, WLAN WEP key specification method and the number of characters to specify is as shown in the following table.

WLAN WEP Mode	WLAN WEP Key Specification Method	
	16 Hexadecimal String	ASCII Printable Characters
WEP 40-bit	5 characters	10 characters
WEP 128-bit	13 characters	26 characters

The ASCII printable character 22H("), 24H($) and 60H(`) are not available. Moreover, do not specify value in order to cancel the registration.

Notes When specifying this parameter name by getvar command, ""*"" is responded.

This parameter value is the same as wlan.wep.key1 to 4.

Related Commands wlan.wep.key1 to 4

wlan.encryption_mode

Format (1) ! U1 getvar "wlan.encryption_mode"
(2) ! U1 setvar "wlan.encryption_mode" "{value}"

Definition Range value = off, 40-bit, 128-bit

Function (1) Responds with the WLAN WEP mode enclosed in double quotations.
The response data is as shown in the table below.

(2) Specifies the WLAN WEP mode. Select from the following table.
Either "40-bit" or "128-bit" can be set in WEP.
The number of bits follows the registered WEP key.
The value at the factory of this parameter is "off".

Setting Value	Function
off	No security
40-bit	WEP 40-bit, Enabled only in Client mode
128-bit	WEP 128-bit, Enabled only in Client mode

The setting value of this parameter affects the value of wlan.security.
The relation of the value specified by wlan.encryption_mode and the value of wlan.security is as shown in the following table.

wlan.encryption_mode Setting Value	wlan.security Setting Value
off	1
40-bit	128
128-bit	128

When the setting value of wlan.security is changed, it affects this parameter. When specifying 1 to 128 for the value of wlan.security, the value of wlan.encryption_mode follows the table above. When specifying any number other than 1 to 128, the value of wlan.encryption_mode is "off".

Related Commands wlan.security

wlan.essid

Format
(1) ! U1 getvar "wlan.essid"
(2) ! U1 setvar "wlan.essid" "{value}"

Function
(1) Responds with the WLAN eSSID enclosed in double quotations.

(2) Specifies the WLAN eSSID.
The value at the factory of this parameter is "SII-Printer".

Specify ASCII printable characters for value. However, 22H("), 60H(`), 24H($) and 5CH(\) are not available. Specify within 32 characters.

wlan.operating_mode

Format
(1) ! U1 getvar "wlan.operating_mode"
(2) ! U1 setvar "wlan.operating_mode" "{value}"

Definition Range value = simple ap, client

Function
(1) Responds with the setting of Client / Simple AP enclosed in double quotations.
The response data is as shown in the table below.

(2) Sets Client / Simple AP. Select the setting value from the following table.
The value at the factory of this parameter is "simple ap".

Setting Value	Function
simple ap	Simple AP
client	Client

wlan.firmware_version

Format
! U1 getvar "wlan.firmware_version"

Function
Responds with the WLAN firmware version.
The response format is ""Vxx.xx.xx"".

wlan.wpa.psk

Format
! U1 setvar "wlan.wpa.psk" "{value}"

Function
Specifies the WLAN encryption key.
The value at the factory of this parameter is empty.

Specify 16 hexadecimal string or ASCII printable characters for value. When using 16 hexadecimal string, specify with 64 characters. When using ASCII printable characters, specify with 8 to 63 characters. However, 22H(") is not available.

Notes
When specifying this parameter name by getvar command, ""*"" is responded.

wlan.ip.addr

Format
(1) ! U1 getvar "wlan.ip.addr"
(2) ! U1 setvar "wlan.ip.addr" "{value}"

Function
(1) Responds with the WLAN IP address enclosed in double quotations.

(2) Specifies the WLAN IP address.
The value at the factory of this parameter is 192.168.0.1.

Specify the IP address in xxx.xxx.xxx.xxx form for value.

When specifying this parameter by getvar command, the current IP address is responded.

wlan.ip.netmask

Format
(1) ! U1 getvar "wlan.ip.netmask"
(2) ! U1 setvar "wlan.ip.netmask" "{value}"

Function
(1) Responds with the WLAN subnet mask enclosed in double quotations.

(2) Specifies the WLAN subnet mask.
The value at the factory of this parameter is 255.255.255.0.

Specify the subnet mask for value in xxx.xxx.xxx.xxx form.

wlan.ip.gateway

Format
(1) ! U1 getvar "wlan.ip.gateway"
(2) ! U1 setvar "wlan.ip.gateway" "{value}"

Function
(1) Responds with the WLAN gateway address enclosed in double quotations.

(2) Specifies the WLAN gateway address.
The value at the factory of this parameter is 0.0.0.0.

Specify the gateway address for value in xxx.xxx.xxx.xxx form.

wlan.ip.dhcp.request_timeout

Format
(1) ! U1 getvar "wlan.ip.dhcp.request_timeout"
(2) ! U1 setvar "wlan.ip.dhcp.request_timeout" "{value}"

Definition Range
1 ≤ value ≤ 300

Function
(1) Responds with the WLAN DHCP timeout period (in seconds) enclosed in double quotations.

(2) Specifies the WLAN DHCP timeout period (in seconds).
The value at the factory of this parameter is 11.

wlan.ip.protocol

Format
(1) ! U1 getvar "wlan.ip.protocol"
(2) ! U1 setvar "wlan.ip.protocol" "{value}"

Definition Range value = dhcp, permanent

Function
(1) Responds with the setting of WLAN DHCP enclosed in double quotations.
The response data is as shown in the table below.

(2) Sets the WLAN DHCP. Select the setting value from the following table.
The value at the factory of this parameter is "dhcp".

Setting Value	Function
dhcp	DHCP enabled
permanent	DHCP disabled

wlan.ip.timeout.value

Format
(1) ! U1 getvar "wlan.ip.timeout.value"
(2) ! U1 setvar "wlan.ip.timeout.value" "{value}"

Definition Range 60 ≤ value ≤ 300

Function
(1) Responds with the WLAN receive timeout (in seconds) enclosed in double quotations.

(2) Specifies the WLAN receive timeout (in seconds).
The value at the factory of this parameter is 300.

wlan.wep.index

Format
(1) ! U1 getvar "wlan.wep.index "
(2) ! U1 setvar "wlan.wep.index" "{value}"

Definition Range 1 ≤ value ≤ 4

Function
(1) Responds with the WLAN WEP key index enclosed in double quotations.

(2) Specifies the WLAN WEP key index.

Notes This parameter value is the same as wlan.encryption_index.

Related Commands wlan.encryption_index

wlan.wep.key1 to 4

Format
(1) ! U1 getvar "wlan.wep.key1"
(2) ! U1 setvar "wlan.wep.key1" "{value}"
(3) ! U1 getvar "wlan.wep.key2"
(4) ! U1 setvar "wlan.wep.key2" "{value}"
(5) ! U1 getvar "wlan.wep.key3"
(6) ! U1 setvar "wlan.wep.key3" "{value}"
(7) ! U1 getvar "wlan.wep.key4"
(8) ! U1 setvar "wlan.wep.key4" "{value}"

Function
(1) Responds with the WLAN WEP key1 enclosed in double quotations.

(2) Specifies the WLAN WEP key1.

(3) Responds with the WLAN WEP key2 enclosed in double quotations.

(4) Specifies the WLAN WEP key2.

(5) Responds with the WLAN WEP key3 enclosed in double quotations.

(6) Specifies the WLAN WEP key3.

(7) Responds with the WLAN WEP key4 enclosed in double quotations.

(8) Specifies the WLAN WEP key4.

The values at the factory of all these parameters are empty.

Specify 16 hexadecimal string or ASCII printable characters for value. The relation of the WLAN WEP mode, WLAN WEP key specification method and the number of characters to specify is as shown in the following table.

WLAN WEP Mode	WLAN WEP Key Specification Method	
	16 Hexadecimal String	ASCII Printable Characters
WEP 40-bit	5 characters	10 characters
WEP 128-bit	13 characters	26 characters

The ASCII printable character 22H("), 24H($) and 60H(`) are not available. Moreover, do not specify value in order to cancel the registration.

Notes When specifying this parameter name by getvar command, ""*"" is responded.

This parameter value is the same as wlan.encryption_key1 to 4.

Related Commands wlan.encryption_key1 to 4

wlan.security

Format (1) ! U1 getvar "wlan.security"
(2) ! U1 setvar "wlan.security" "{value}"

Definition Range value = 128, 129, 130, 131, 132, 133, 134, 135, 136, none, wep, wpa psk(tkip), wpa psk(aes), wpa2 psk(tkip), wpa2 psk(aes), wpa enterprise peap, wpa enterprise ttls, wpa2 enterprise peap, wpa2 enterprise ttls

Function (1) Responds with the WLAN WEP security. Responds with the numeral setting value enclosed in double quotations.
The response data is as shown in the table below.

(2) Specifies the WLAN WEP security. Select from the following table.
The value at the factory of this parameter is 1.

Setting Value	Function
1 or none	No security
128 or wep	WEP
129 or wpa psk(tkip)	WPA PSK(TKIP)
130 or wpa psk(aes)	WPA PSK(AES)
131 or wpa2 psk(tkip)	WPA2 PSK(TKIP)
132 or wpa2 psk(aes)	WPA2 PSK(AES)
133 or wpa enterprise peap	WPA Enterprise PEAP

Setting Value	Function
134 or wpa enterprise ttls	WPA Enterprise TTLS
135 or wpa2 enterprise peap	WPA2 Enterprise PEAP
136 or wpa2 enterprise ttls	WPA2 Enterprise TTLS

The setting value of this parameter affects the value of wlan.security.
See "wlan.encryption_mode" for details.

Related Commands wlan.encryption_mode

wlan.username

Format ! U1 setvar "wlan.username" "{value}"

Function Specifies the WLAN user name.
The value at the factory of this parameter is empty.

Specify ASCII printable characters for value. However, 22H(") is not available. Specify within 16 characters.

Notes When specifying this parameter name by getvar command, ""*"" is responded.

wlan.password

Format ! U1 setvar "wlan.password" "{value}"

Function Specifies the WLAN password.
The value at the factory of this parameter is empty.

Specify the ASCII printable characters for value. However, 22H(") is not available. Specify within 16 characters.

Notes When specifying this parameter name by getvar command, ""*"" is responded.

wlan.mac_addr

Format ! U1 getvar "wlan.mac_addr"

Function Responds with the WLAN MAC address.
The response format is ""xx:xx:xx:xx:xx:xx"".

wlan.mac_raw

Format ! U1 getvar "wlan.mac_raw"

Function Responds with the WLAN MAC address without the colon enclosed in double quotations.

(15) SII Original Parameters (sii)

SII original parameters do not exist in the original CPCL, and these parameters have this printer's original specifications.

sii.device.auto_status_back

Format
(1) ! U1 getvar "sii.device.auto_status_back"
(2) ! U1 setvar "sii.device.auto_status_back" "{value}"

Definition Range
value = yes, no

Function
(1) Responds with the setting of the automatic status response enclosed in double quotations. The response data is as shown in the table below.

(2) Sets the automatic status response function. Select the setting value from the following table.
The value at the factory of this parameter is "no".

Setting Value	Function
yes	Automatic status response enabled
no	Automatic status response disabled

The automatic status response is a function to respond with the status in 8 bytes when the specified status bit is changed.
See "6.5 RESPONSE DATA" and "AUTOMATIC STATUS BACK ENABLE/DISABLE" command (GS 'a' n) in "MP-B21L SERIES THERMAL PRINTER TECHNICAL REFERENCE" for the content of the response data by this function.

Related Commands
"Response Data", GS 'a' n

sii.device.error_through

Format
(1) ! U1 getvar "sii.device.error_through"
(2) ! U1 setvar "sii.device.error_through" "{value}"

Definition Range
value = yes, no

Function
(1) Responds with the setting of the data discard function when an error occurs, enclosed in double quotations.
The response data is as shown in the table below.

(2) Sets the data discard function when an error occurs. Select the setting value from the following table.
The value at the factory of this parameter is "yes".

Setting Value	Function
yes	When printing twice and the operation does not end normally, the print data is discarded. It has the same meaning as the setting of "ON-OUT-OF-PAPER PURGE 2".
no	When printing twice and even the operation does not end normally, the print data is not discarded. It has the same meaning as the setting of "ON-OUT-OF-PAPER WAIT 2".

Notes The default value of the ON-OUT-OF-PAPER command can be specified by this parameter.

This parameter is not changed by the ON-OUT-OF-PAPER command.

Related Commands ON-OUT-OF-PAPER command

sii.device.init_response

Format (1) ! U1 getvar "sii.device.init_response"
(2) ! U1 setvar "sii.device.init_response" "{value}"

Definition Range value = yes, no

Function (1) Responds with the setting of the initialized response enclosed in double quotations. The response data is as shown in the table below.

(2) Sets the initialized response function. Select the setting value from the following table. The value at the factory of this parameter is "no".

Setting Value	Function
yes	Initialized response enabled
no	Initialized response disabled

The initialized response function is a function to notify the completion of initialization by responding with 1 byte code.
See "6.5 RESPONSE DATA" in "MP-B21L SERIES THERMAL PRINTER TECHNICAL REFERENCE" for the content of the response data by this function.

Related Commands "Response Data"

sii.device.interface

Format (1) ! U1 getvar "sii.device.interface"
(2) ! U1 setvar "sii.device.interface" "{value}"

Definition Range 0 ≤ value ≤ 1

Function (1) Responds with the setting of the interface enclosed in double quotations. The response data is as shown in the table below.

(2) Sets the interface. Select the setting value from the following table. The value at the factory of this parameter is 0.

Setting Value	Function
0	USB/Wireless
1	USB

sii.device.iserial

Format
(1) ! U1 getvar "sii.device.iserial"
(2) ! U1 setvar "sii.device.iserial" "{value}"

Function
(1) Responds with the iSerialNumber enclosed in double quotations.

(2) Specifies the iSerialNumber.
The value at the factory of this parameter is empty.

The value can be specified with alphanumeric characters. Specify with 1 to 10 characters.

Notes
This parameter value is the same as usb.device.serial_string.

When more than one printer uses the same iSerialNumber, do not connect the printers to the host at the same time.

Related Commands
usb.device.serial_string

sii.device.kanji_size

Format
(1) ! U1 getvar "sii.device.kanji_size"
(2) ! U1 setvar "sii.device.kanji_size" "{value}"

Definition Range
0 ≤ value ≤ 1

Function
(1) Responds with the Kanji character size selection enclosed in double quotations.

(2) Selects the Kanji character size.
The value at the factory of this parameter is 0.

[When sii.device.kanji_size is 0]
The font number and corresponding font size are as shown in the following table.

Font Number	Font Size (Height × Width, Single-byte)
55	24 dots × 12 dots
56	16 dots × 8 dots

[When sii.device.kanji_size is 1]
The font number and corresponding font size are as shown in the following table.

Font Number	Font Size (Height × Width, Single-byte)
55	16 dots × 8 dots
56	24 dots × 12 dots

Notes
When printing Japanese characters, specify JAPAN-S in the COUNTRY/CODE PAGE command, COUNTRY/CODE PAGE utility, or CHAR-SET/CODE PAGE utility.

Related Commands
COUNTRY/CODE PAGE command, COUNTRY/CODE PAGE utility, CHAR-SET/CODE PAGE utility

sii.device.realtime_command

Format
(1) ! U1 getvar "sii.device.realtime_command"
(2) ! U1 setvar "sii.device.realtime_command" "{value}"

Definition Range
value = yes, no

Function
(1) Responds with the setting of the realtime command processing enclosed in double quotations.
The response data is as shown in the table below.

(2) Sets the realtime command processing. Select the setting value from the following table.
The value at the factory of this parameter is "no".

Setting Value	Function
yes	Realtime command processing enabled
no	Realtime command processing disabled

The realtime command is a command to execute processing at the time of data reception. The data (character codes, commands) sent from the host is stored in the printer's input buffer. Then the printer retrieves the data which has been stored in the input buffer, and when the data is a normal command, it is immediately processed after being retrieved. On the other hand, the realtime command executes processing when the data is stored in the input buffer from the host.

When yes (enable) is selected, the following commands are available.
'Buffer Clear on Error' command (DC3 '(' 'c' 'l' 'r' ')')
'Printer Reset' command (DC3 '(' 'r' 'e' 's' 'e' 't' DC3 'r' 'e' 's' 'e' 't' ')')
For the commands above, see the section of each command in "MP-B21L SERIES THERMAL PRINTER TECHNICAL REFERENCE".

Notes
When the image data contains the code line that matches the code constituting the realtime command, disable the realtime command processing.

Related Commands
DC3 '(' 'c' 'l' 'r' ')', DC3 '(' 'r' 'e' 's' 'e' 't' DC3 'r' 'e' 's' 'e' 't' ')'

sii.device.response_data_discarding

Format
(1) ! U1 getvar "sii.device.response_data_discarding"
(2) ! U1 setvar "sii.device.response_data_discarding" "{value}"

Definition Range
value = yes, no

Function
(1) Responds with the setting of data discard function when output buffer full occurs, enclosed in double quotations.
The response data is as shown in the table below.

(2) Sets the data discard function when output buffer full occurs. Select the setting value from the following table.
The value at the factory of this parameter is "no".

Setting Value	Function
yes	Data discard function when output buffer full occurs enabled
no	Data discard function when output buffer full occurs disabled

The data discard when output buffer full occurs is a function to discard all subsequent data when the response data of the printer is not received to the host and its data size exceeds the capacity of output buffer in the printer (256 bytes). When the host does not receive the data from the printer, enable this setting.

Notes When the host uses the response data from the printer, enabling the data discard may cause the data to be missed at output buffer full, so receive the data regularly.

sii.media.mark_threshold

Format (1) ! U1 getvar "sii.media.mark_threshold"
(2) ! U1 setvar "sii.media.mark_threshold" "{value}"

Definition Range 1 ≤ value ≤ 254

Function (1) Responds with the mark detection threshold value enclosed in double quotations.

(2) Specifies the mark detection threshold value.
The value at the factory of this parameter is 128.

The smaller value in this parameter increases the sensor's sensitivity.

Notes This parameter value is also able to be changed by the BAR-SENSE command. The value changed by BAR-SENSE command is discarded after turning the power off.

Related Commands BAR-SENSE command

sii.media.gap_threshold

Format (1) ! U1 getvar "sii.media.gap_threshold"
(2) ! U1 setvar "sii.media.gap_threshold" "{value}"

Definition Range 1 ≤ value ≤ 254

Function (1) Responds with the gap detection threshold value enclosed in double quotations.

(2) Specifies the gap detection threshold value.
The value at the factory of this parameter is 153.

The larger value in this parameter increases the sensor's sensitivity.

Notes This parameter value is also able to be changed by the GAP-SENSE command. The value changed by GAP-SENSE command is discarded after turning the power off.

Related Commands GAP-SENSE command

sii.media.thermal_paper

Format (1) ! U1 getvar "sii.media.thermal_paper"
(2) ! U1 setvar "sii.media.thermal_paper" "{value}"

Definition Range 0 ≤ value ≤ 8

Function (1) Responds with the setting of the thermal paper enclosed in double quotations.
The response data is as shown in the table below.

(2) Sets the thermal paper. Select the setting value from the following table.
The value at the factory of this parameter is 0.

Setting Value	Thermal Paper
0	TF50KS-EY
1	PD160R
2	P220VBB-1
3	Alpha400-2.1
4	KT48PF
5	P5046
6	HW76LX
7	KIP370
8	KLS46

Notes Excessive energy may cause shortening the life of thermal head or may cause a failure in paper feed, so set the thermal paper selection and print density selection accurately. When the thermal paper to use is different from the thermal paper selection, and the print density is set other than print.tone = 0, the reliability of the product specification may not be satisfied.

sii.media.width

Format (1) ! U1 getvar "sii.media.width"
(2) ! U1 setvar "sii.media.width" "{value}"

Definition Range 21 ≤ value ≤ 48

Function (1) Responds with the paper width.
The response format is ""xxx mm"".

(2) Specifies the paper width (in mm).
The value at the factory of this parameter is 48.

The maximum value available for width of the PAGE-WIDTH command is determined by this parameter. The maximum value available for width is [value of sii.media.width × 8] dots.

Related Commands PAGE-WIDTH command

sii.wlan.dhcp_save

Format (1) ! U1 getvar "sii.wlan.dhcp_save"
(2) ! U1 setvar "sii.wlan.dhcp_save" "{value}"

Definition Range value = no

Function (1) Responds with the setting of storing the IP address value obtained by WLAN DHCP enclosed in double quotations.
This printer always responds "no".

(2) Sets whether to store the IP address value obtained by WLAN DHCP. In this printer, only "no" shown in the table below can be set.

Setting Value	Function
yes	Storing of IP address value obtained by DHCP enabled
no	Storing of IP address value obtained by DHCP disabled

sii.wlan.radio

Format

(1) ! U1 getvar "sii.wlan.radio"
(2) ! U1 setvar "sii.wlan.radio" "{value}"

Definition Range

0 ≤ value ≤ 2

Function

(1) Responds with the Wireless LAN Standard enclosed in double quotations.
The response data is as shown in the table below.

(2) Specifies the Wireless LAN Standard. Select the setting value from the following table.
The value at the factory of this parameter is 1.

Setting Value	Function
1	IEEE802.11b/g/n
2	IEEE802.11a/n

2.6 COMMAND LIST

CHAPTER 3
INITIALIZATION

3.1 INITIALIZATION

Initializations in CPCL are as follows:

(1) Initialization by software resetting

- "Printer Reset" command (DC3 '(' 'r' 'e' 's' 'e' 't' DC3 'r' 'e' 's' 'e' 't' ')')

(2) Initialization by hardware resetting

- device.reset
- Power on by the POWER Switch

(3) Initialization by selecting command system

- "Command System Selection" command (SYN ESC 'C' 'M' 'D' 'S' p1 p2 p3 p4 1 n)
- device.languages

By initialization of (1) to (3), the following items are initialized. See the "CHAPTER 7 INITIALIZATION" in "MP-B21L SERIES THERMAL PRITNER TECHNICAL REFERENCE" for the initialization items for ESC/POS. See "CHAPTER 3 INITIALIZATION" in "MP-B21L SERIES THERMAL PRINTER ZPL II COMMAND REFERENCE" for the initialization items for ZPL II.

Table 3-1 Setting Value After Initialization

Item	Setting Value	Command
Mark detection function while printing	Depends on the value of media.type	JOURNAL command
Unit system	IN-DOTS (in a unit of dot)	UNITS command
Font group registration	No font group registered	FONT-GROUP(FG) command
Font magnification (height/width)	Cancel	SETMAG command
Pattern of rectangular shapes and lines	100 (Filled in black)	PATTERN command
Print density	Depends on the value of print.tone	CONTRAST command TONE command
Alignment	End point of left justification is print area width - 1 dot	JUSTIFICATION command
Print area width	Depends on the value of sii.media.width	PAGE-WIDTH command
Function that each press of the FEED switch prints 1 label when printing multiple labels	Disabled	PACE command
Delay time inserted after printing	0 seconds	WAIT command
Print speed	Depends on the value of media.speed	SPEED command
Character spacing	0 dots	SETSP command
Operation when an error occurs while printing and number of times of print	Depends on the value of sii.device.error_through	ON-OUT-OF-PAPER command
Operation when the FEED switch is pressed or 0CH(FF) is received	FEED (Performs form feed)	ON-FEED command
Paper feeding length before printing	0 dots	PREFEED command
Paper feeding length after printing	0 dots	POSTFEED command
Paper feeding length after printing and paper back feeding length before next printing / Delay time from the end of printing until paper feed after printing	0 dots / 0 seconds	PRESENT-AT command
Character set	USA	COUNTRY/CODE PAGE command COUNTRY/CODE PAGE utility CHAR-SET/CODE PAGE utility
Print direction in line print mode	0 degrees	LP-ORIENT command
Font to use in line print mode	Font number 7, Font size 0	SETLP command
Vertical movement amount when receiving 0DH(CR) or the height of the font to use in line print mode	24 dots	SETLP command

Item	Setting Value	Command
Vertical movement amount when receiving 0AH(LF) in line print mode	10 dots	SETLP command
Print data mapping position in line print mode	(X coordinate, Y coordinate) = (0, 0)	Specifying Print Position with X and Y Coordinates
Left margin in line print mode	0 dots	LMARGIN command
Bold print specification in line print mode	0 dots	SETBOLD command
Length of the print range in line print mode	0 (Performs form feed)	PAGE-HEIGHT command
Maximum paper feeding length until mark detection	Depends on the value of media.feed_length	SETFF command
Correction amount of form feed position	0 dots	SETFF command
Distance between form feed position and the lower end of next mark or between the lower end of mark and form feed position	Depends on the value of media.tof	SET-TOF command
Time until the printer automatically prints in line print mode	1 (1/8 seconds)	SETLP-TIMEOUT command
Auto power off time	Depends on the value of power.inactivity_timeout	TIMEOUT utility
Any message responded when the battery voltage drops	Empty	ON-LOW-BATTERY command
Code indicating the terminator of command line	Use both 0DH(CR) and 0AH(LF) for the terminator of command line	LT command
Mark detection threshold value	Depends on the value of sii.media.mark_threshold	BAR-SENSE command
Gap detection threshold value	Depends on the value of sii.media.gap_threshold	GAP-SENSE command
CCL code	33('!')	ESC '}' 'W' '1' n
Each parameter value set by setvar command	Each parameter value stored in the flash memory	Configuration / control commands

In addition to the above items, the following items are initialized by software resetting and hardware resetting.

Table 3-2 Setting Value After Software Resetting and Hardware Resetting

Item	Setting Value	Command
Input buffer	Clear	-
Output buffer	Clear	-

Each communication is initialized at the timing shown in the following table. The communication is disconnected by the initialization.

Table 3-3 Initialization Timing for Each Communication

Communication	Timing
Bluetooth	Software reset, hardware reset
USB, Wireless LAN	Hardware reset

APPENDIX A
FONT INFORMATION

A.1 FONT SIZE

Table A-1 Font Size

Font No.	Font Size (Height × Width in dots)							
	0	**1**	**2**	**3**	**4**	**5**	**6**	**7**
0	9 × 8	9 × 16	18 × 8	18 × 16	18 × 32	36 × 16	36 × 32	-
1*1	48	-	-	-	-	-	-	-
2	12 × 20*2	24 × 20	-	-	-	-	-	-
4*1	47	94	45	90	180	270	360	450
5*1	24	48	46	92	-	-	-	-
6	27 × 28	-	-	-	-	-	-	-
7	24 × 12	48 × 12	-	-	-	-	-	-
55*3	24 × 12	-	-	-	-	-	-	-
56*3	16 × 8	-	-	-	-	-	-	-

*1: The width is omitted due to proportional font.
*2: The font may not be read by the OCR reader. Evaluate sufficiently before use.
*3: It shows the font size of 1-byte characters when sii.media.kanji_size=0. For 2-byte characters, the width is doubled.

A.2 FONT SAMPLE

Font0 Size0 :

AaBbCc $350.68¢

Font0 Size1 :

AaBbCc $350.68¢

Font0 Size2 :

AaBbCc $350.68¢

Font0 Size3 :

AaBbCc $350.68¢

Font0 Size4 :

AaBbCc $350.68¢

Font0 Size5 :

AaBbCc $350.68¢

Font0 Size6 :

AaBbCc $350.68¢

Figure A-1 Font Number 0

Font1 Size0 :

ABC $350.68

Figure A-2 Font Number 1

Font2 Size0 :

A B C $ 3 5 0 . 6 8

Font2 Size1 :

ABC $350.68

Figure A-3 Font Number 2

Font4 Size0 :

AaBbCc $350.68¢

Font4 Size1 :

AaBbCc $350.68¢

Font4 Size2 :

$350.68

Font4 Size3 :

$350.68

Font4 Size4 :

$350.68

Font4 Size5 :

$350.68

Font4 Size6 :

$350.68

Font4 Size7 :

$350.68

Figure A-4 Font Number 4

Font5 Size0 :

AaBbCc $350.68¢

Font5 Size1 :

AaBbCc $350.68¢

Font5 Size2 :

$350.68¢

Font5 Size3 :

$350.68¢

Figure A-5 Font Number 5

Font6 Size0 :

Figure A-6 Font Number 6

Font7 Size0 :

AaBbCc $350.68¢

Font7 Size1 :

AaBbCc $350.68¢

Figure A-7 Font Number 7

Font55 Size0 :

AaBbCc $350.68 ｱあア亜

Font56 Size0 :

AaBbCc $350.68 ｱあア亜

Figure A-8 Font Number 55 / 56 (sii.media.kanji_size=0)

A.3 INTERNATIONAL CHARACTERS

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
20		!	”	#	$	%	&	’	(	)	*	+	,	-	.	/
30	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
40	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
50	P	Q	R	S	T	U	V	W	X	Y	Z	[	\	]	^	_
60	`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
70	p	q	r	s	t	u	v	w	x	y	z	{	|	}	~	¢
80	€		,	ƒ	„	…	†	‡	ˆ	‰	Š		Œ	š	Ž	Ÿ
90		‘	’	“	”	•	-	–	~	™	š	¢	œ	Œ	ž	
A0		¡	¢	£	¤	¥	¦	§	¨	©	ª	«	¬	-	®	¯
B0	°	±	²	³	´	µ	¶	·	¸	¹	º	»	¼	½	¾	¿
C0	À	Á	Â	Ã	Ä	Å	Æ	Ç	È	É	Ê	Ë	Ì	Í	Î	Ï
D0	Ð	Ñ	Ò	Ó	Ô	Õ	Ö	×	Ø	Ù	Ú	Û	Ü	Ý	Þ	ß
E0	à	á	â	ã	ä	å	æ	ç	è	é	ê	ë	ì	í	î	ï
F0	ð	ñ	ò	ó	ô	õ	ö	÷	ø	ù	ú	û	ü	ý	þ	ÿ

Figure A-9 Character Code Table (Font7 Size0, USA)

	23	24	40	5B	5C	5D	5E	60	7B	7C	7D	7E
USA	#	$	@	[	\	]	^	`	{	|	}	~
GERMANY	#	$	§	Ä	Ö	Ü	^	`	ä	ö	ü	ß
FRANCE	£	$	à	°	ç	§	^	µ	é	ù	è	¨
SWEDEN	#	¤	É	Ä	Ö	Å	Ü	é	ä	ö	å	ü
SPAIN	£	$	§	¡	Ñ	¿	^	`	°	ñ	ç	~
NORWAY	#	$	@	Æ	Ø	Å	^	`	æ	ø	å	¯
ITALY	£	$	§	°	ç	é	^	ù	à	ò	è	ì
UK	£	$	@	[	\	]	^	`	{	|	}	¯
JAPAN-S	#	$	@	[	¥	]	^	`	{	|	}	~

Figure A-10 International Characters

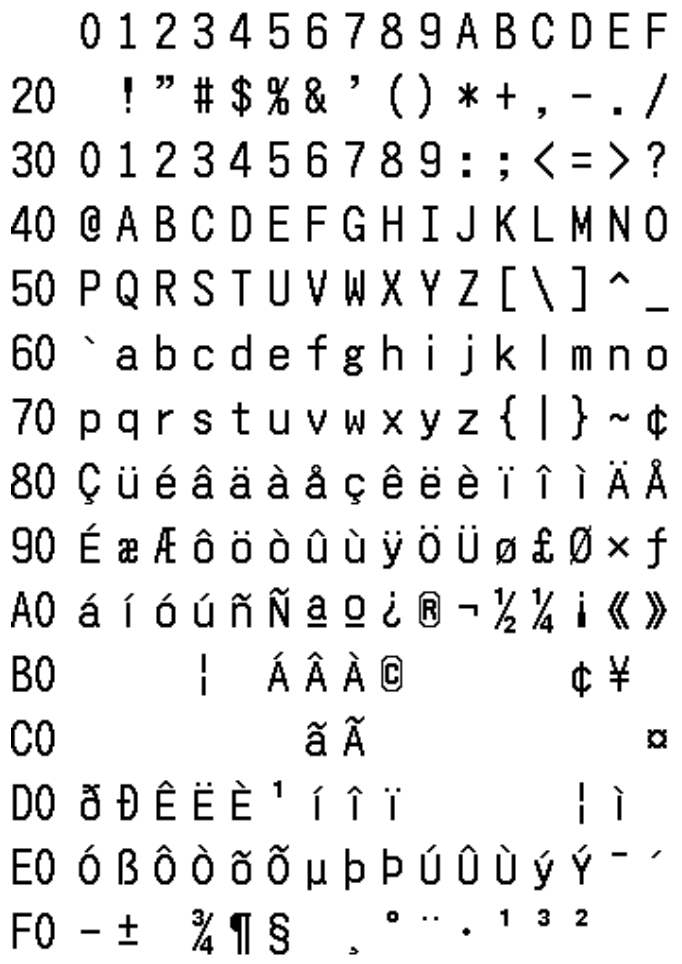


Figure A-11 CP850