



# SII Print Class Library for iOS Application Programmer's Guide

Rev.09

[Products]

RP-F10 Series

Seiko Instruments Inc.

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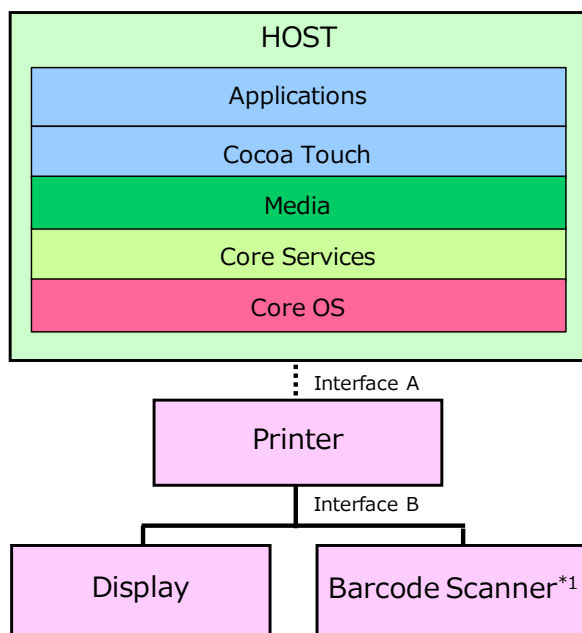
## INTRODUCTION

This manual describes "SII Print Class Library for iOS" (hereinafter referred to as "SII print class library") provided by Seiko Instruments Inc. (hereinafter referred to as "SII").

### Target Printers

The printers supported by SII print class library are listed below.

Printer	Interface A	Display	Interface B
RP-F10 Series	Bluetooth	DSP-A01 Series	USB
	USB		
	TCP/IP		



\*1: See "RP-F10 SERIES THERMAL PRINTER USER'S GUIDE" for details about the combination of peripherals including the barcode scanner.

## Terms

The terms used in this manual are described below.

### Printer

Term	Description
Technical reference for Printer	The following technical reference. ·RP-F10 SERIES THERMAL PRINTER TECHNICAL REFERENCE
Printer command	Command for controlling the printer described in "Technical Reference for Printer".

### Display

Term	Description
Technical Reference for Display	The following technical reference. ·DSP-A01 SERIES CUSTOMER DISPLAY TECHNICAL REFERENCE
Display command	Command for controlling Display described in "Technical Reference for Display".
Slide	The image data of the screen size (Width 480 px × Height 272 px). Displays as a standby screen and as a backscreen superimposed on a template.
Template	The stylized form having elements that can set attributes such as drawing areas and mapping positions. The elements include text elements (text data), img elements (image data), barcode elements (barcode data), and qr elements (QR Code data). To register templates, define a map ID each for an element to place. Registered image data or text data is shown on the display by updating the screen after selecting a template and specifying its map ID. The data in the template is required to be specified XML file format. The maximum size of template data is width 480 px × height 272 px.
Map ID	An ID defined to an element which is holding positional information or modification information when a template is registered.
Macro	A function to register multiple APIs in order of execution, and execute automatically when an event occurs.
Event	An event which is defined by "Event notification" in Display commands.

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# Chapter 1

## Product Overview

This chapter describes the product overview of SII print class library.

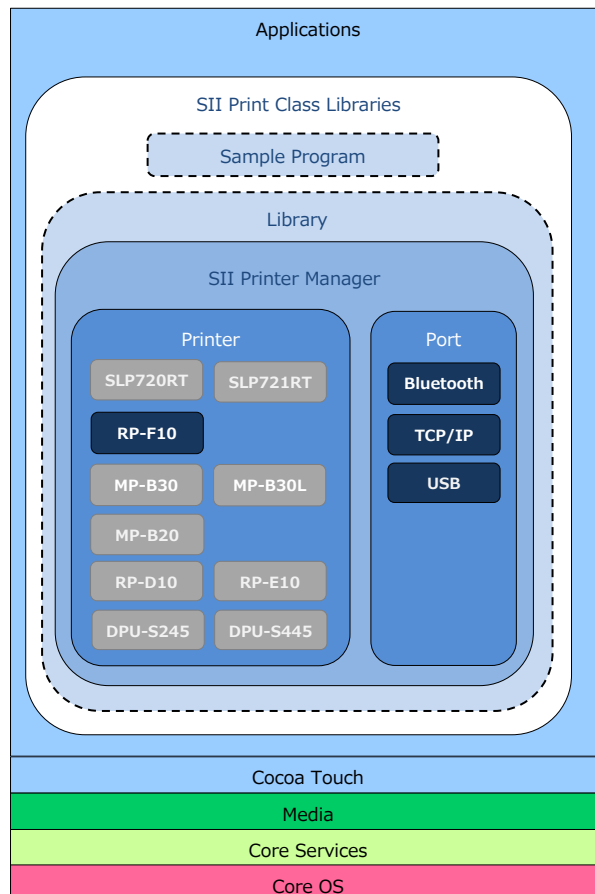
### 1.1 Functions Provided by SII Print Class Library

The SII print class library including the library and the sample program provides the functions to use SII printer RP-F10 Series (hereinafter referred to as "printer") in iOS applications. Moreover, the SII print class library provides the library sample program in Xcode project.

### 1.2 SII Print Class Library Overview

#### 1.2.1 SII Print Class Library Configuration

The library and the sample program in the SII print class library are indicated with dashed lines in the figure below.



### 1.2.2 Functions Provided by Library

By using the library, iOS applications can easily send print data and printer commands to a printer through the communication port (Bluetooth, USB, or TCP/IP) on an iOS device. Also, the applications can get the printer status.

The library provides the following functions:

- Connecting to / disconnecting from a printer
- Sending data to a printer (print data and/or printer commands\*1)
- Printing barcode and 2-dimensional barcode
- Sending a data file to a printer (print data and/or printer commands\*1)
- Cutting paper
- Getting the printer status
- Aborting the waiting state of a printer
- Getting various responses from a printer
- Bulk registration of print commands
- Registering a printer status call back function
- Searching the printer by TCP/IP
- Printer hardware reset
- Drawer operation control
- Buzzer beeping control
- Screen display control
- Registering a barcode scanner call back function

\*1: Commands that read the response from the printer are not supported.  
In order to read responses from the printer, use **getStatus** or **getPrinterResponse**.

<p><b>(NOTE)</b> See "RP-F10 SERIES THERMAL PRINTER USER'S GUIDE" for details of the recommended barcode scanner and the barcode scanner setting.</p>
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### 1.2.3 Development of Application that Performs Bluetooth Communication or USB Communication with SII Printer

To register the application that communicates with the printer through Bluetooth or USB to App Store, the pre-application to Apple from SII is necessary. For details, please contact SII.

### 1.2.4 Registered Data in Display at Shipping

Registered data in Display at the shipping, such as templates, may be added or changed without prior notice for the quality improvement.

A template which is specified appropriate encode is required to use depending on language settings or character codes to specify. See SII's Website for details about the data to be registered at the shipping.  
<https://www.sii-ps.com/dspa01/>

## **Chapter 2**

### **Product Specifications**

This chapter describes the product specifications of the library.

## **2.1 Operating Environment**

### **2.1.1 Applicable iOS Devices**

Applicable iOS devices for the library are shown in the following list.

- (1) RP-F10-x27J1-5 (USB Type-C + Bluetooth + USB host model)

iPhone models

- iPhone 11
- iPhone 11 Pro
- iPhone 11 Pro Max
- iPhone XR
- iPhone XS
- iPhone XS Max
- iPhone X
- iPhone 8
- iPhone 8 Plus
- iPhone 7
- iPhone 7 Plus
- iPhone SE
- iPhone 6s
- iPhone 6s Plus

iPad models

- iPad (7th generation)
- iPad (6th generation)
- iPad Pro 12.9-inch (2nd generation)
- iPad Pro 10.5-inch
- iPad (5th generation)
- iPad Pro 9.7-inch
- iPad Pro 12.9-inch (1st generation)
- iPad Air (3rd generation)
- iPad mini (5th generation)
- iPad mini 4

iPod models

- iPod touch (7th generation)
- iPod touch (6th generation)

(2) RP-F10-x27J1-4 (Bluetooth + USB host model)

iPhone models

- iPhone XR
- iPhone XS
- iPhone XS Max
- iPhone X
- iPhone 8
- iPhone 8 Plus
- iPhone 7
- iPhone 7 Plus
- iPhone SE
- iPhone 6s
- iPhone 6s Plus

iPad models

- iPad Pro 11-inch
- iPad Pro 12.9-inch (3rd generation)
- iPad (6th generation)
- iPad Pro 12.9-inch (2nd generation)
- iPad Pro 10.5-inch
- iPad (5th generation)
- iPad Pro 9.7-inch
- iPad Pro 12.9-inch (1st generation)
- iPad mini 4

iPod models

- iPod touch (6th generation)

### 2.1.2 Applicable iOS Versions

Applicable iOS versions for the library are shown in the following list.

- iOS 13.0 to 13.7
- iOS 14.0 to 14.8
- iOS 15.0 to 15.7
- iPadOS 13.1 to 13.7
- iPadOS 14.0 to 14.8
- iPadOS 15.0 to 15.7

## 2.2 Printer Settings

Set the memory switches of the printer to [Value] in the following table when using the library.  
The memory switch of the printer can be changed in the iOS app "SII RP Utility" on the App Store.

See "RP-F10 SERIES THERMAL PRINTER USER'S GUIDE" for details about the memory switches and the factory default settings.

- For Bluetooth connection

MS	Function	Value
5-1	Automatic Status Response Selection (Auto Status Back)	0: Enable
5-2	Initialized Response Selection (Init. Response)	0: Enable
5-3	Data Discard Selection When Error Occurs (Error Through)	0: Enable
5-4	Data Discard Selection When Output Buffer Full Occurs (Response Data Discarding)	1: Disable
13-3	Realtime Command Selection (Realtime Command)	1: Enable
38-1	Scanner Automatic Status Response Selection* <sup>1</sup> (Scanner Auto Status Back)	0: Enable* <sup>2</sup>
39-1	iOS Auto Connection (Auto Connection)	1: Disable 0: Enable* <sup>3</sup>

\*1: The firmware of the printer to support the barcode scanner is Ver.1.10 or later.

\*2: Select "Enable" when using the barcode scanner.

See "RP-F10 SERIES THERMAL PRINTER USER'S GUIDE" for details about the combination of peripherals.

\*3: Select "Enable" when using `resetPrinter`.

- For USB connection

MS	Function	Value
5-1	Automatic Status Response Selection (Auto Status Back)	0: Enable
5-2	Initialized Response Selection (Init. Response)	0: Enable
5-3	Data Discard Selection When Error Occurs (Error Through)	0: Enable
5-4	Data Discard Selection When Output Buffer Full Occurs (Response Data Discarding)	1: Disable
13-3	Realtime Command Selection (Realtime Command)	1: Enable
38-1	Scanner Automatic Status Response Selection* <sup>1</sup> (Scanner Auto Status Back)	0: Enable* <sup>2</sup>

\*1: The firmware of the printer to support the barcode scanner is Ver.1.10 or later.

\*2: Select "Enable" when using the barcode scanner.

See "RP-F10 SERIES THERMAL PRINTER USER'S GUIDE" for details about the combination of peripherals.



- For TCP/IP connection

MS	Function	Value
5-1	Automatic Status Response Selection (Auto Status Back)	0: Enable
5-2	Initialized Response Selection (Init. Response)	0: Enable
5-3	Data Discard Selection When Error Occurs (Error Through)	0: Enable
5-4	Data Discard Selection When Output Buffer Full Occurs (Response Data Discarding)	1: Disable
13-3	Realtime Command Selection (Realtime Command)	1: Enable
38-1	Scanner Automatic Status Response Selection <sup>*1</sup> (Scanner Auto Status Back)	0: Enable <sup>*2</sup>

<sup>\*1</sup>: The firmware of the printer to support the barcode scanner is Ver.1.10 or later.

<sup>\*2</sup>: Select "Enable" when using the barcode scanner.

See "RP-F10 SERIES THERMAL PRINTER USER'S GUIDE" for details about the combination of peripherals.

## 2.3 Precaution

This library is not thread safe. When this library is used on multiple threads, abnormal termination may occur.

When TCP/IP connection is used, the communication port cannot be shared with printer drivers or other libraries in this library.

When TCP/IP connection is used, wireless LAN access point which the iOS device is connected to and the printer need to be connected to the same network.

This library does not support a concurrent connection from multiple apps to one printer when multiple apps are started simultaneously by the Multitasking function for the iPad with iPadOS.

## **Chapter 3**

### **How to Use Library**

This chapter describes the development environment of iOS application and how to use the library.

#### **3.1 iOS Application Development Environment**

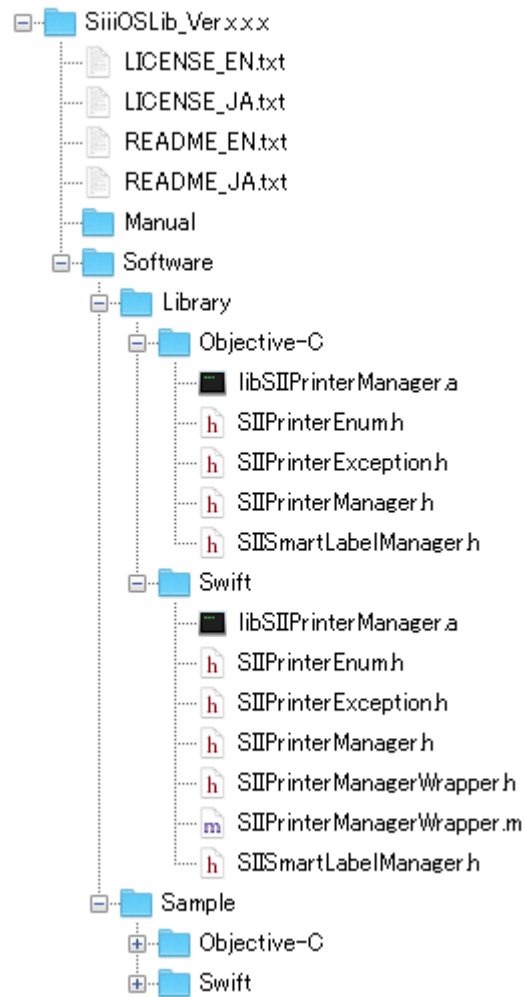
In order to develop iOS applications, the following tools are required.

- Xcode 9.0 or later

The description in and after this chapter is on the premise that the environment where each tool is available is prepared.

### 3.2 Provided Files

The file configuration of the SII print class library is as follows.



**Figure 3-1**

The file format of the library is Static Library. The file name of the library is libSIIPrinterManager.a.

### 3.3 Build Library into Xcode Project

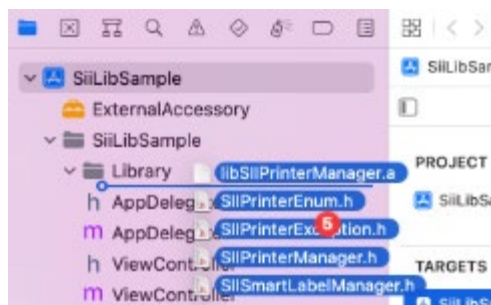
Using the project of the sample program (SILibSample) included in the SII print class library as an example, this section describes by development language how to build the library into the project.

See "Chapter 5 Sample Program" for the sample program included in the SII print class library.

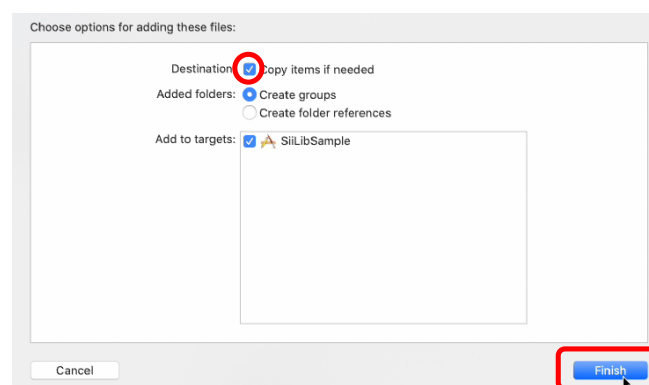
Development Language	Description
Objective-C	See "3.3.1 Objective-C" for details to build the library as Objective-C.
Swift	See "3.3.2 Swift" for details to build the library as Swift.

#### 3.3.1 Objective-C

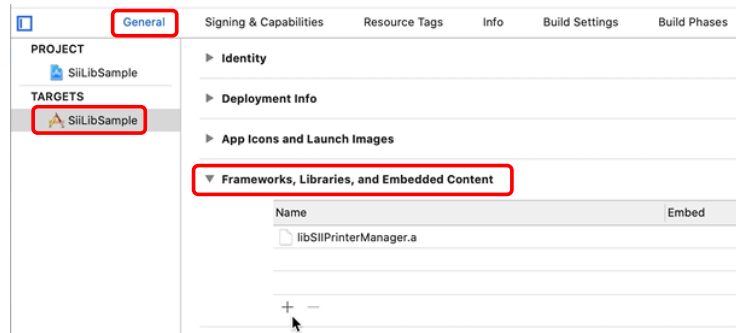
- (1) Open the Xcode project.
- (2) Drag the following files to any hierarchy in the target project in the [Project Navigator] of the navigator window.
  - libSIIPrinterManager.a
  - SIIPrinterEnum.h
  - SIIPrinterException.h
  - SIIPrinterManager.h
  - SIISmartLabelManager.h



- (3) Check the box [Copy items if needed], and click the [Finish] button.



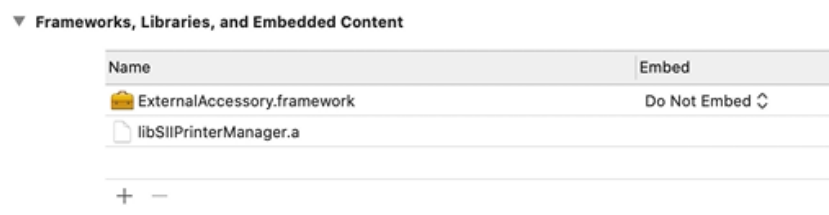
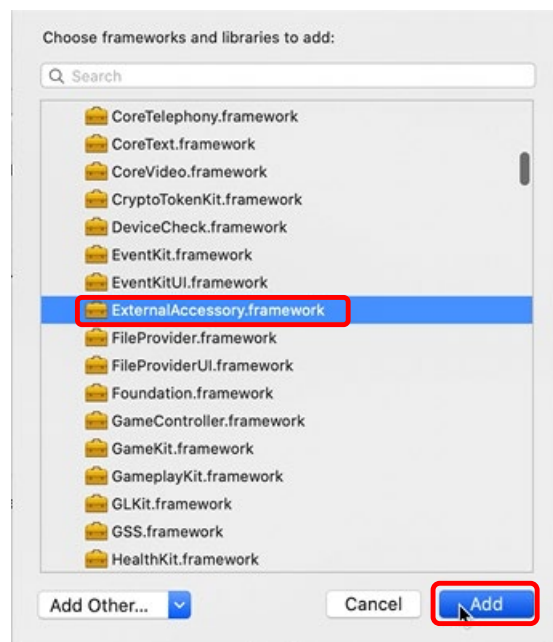
- (4) Build the ExternalAccessory.framework into the project.  
Select the target project in the [TARGETS], and open the [General] - [Frameworks, Libraries and Embedded Content].



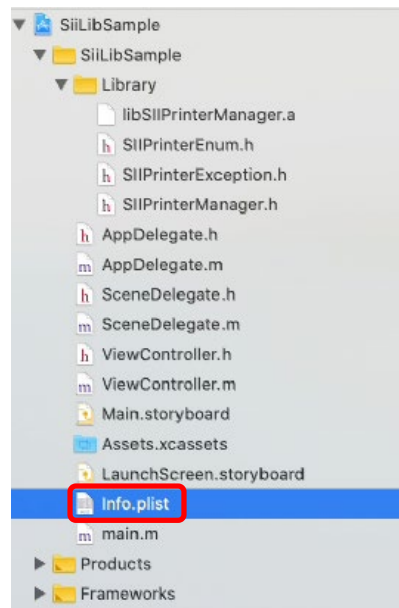
- (5) Click the [+] button opened the [Frameworks, Libraries and Embedded Content].



- (6) Select the ExternalAccessory.framework from the list and click the [Add] button.



- (7) Set the protocol name to use in the ExternalAccessory.framework. Select xxxx.plist in the [Project Navigator].



- (8) Select the [Information Property List] - ⊕.

SiiLibSample > SiiLibSample > Info.plist > No Selection		
Key	Type	Value
▼ Information Property List	Dictionary (15 items)	
Localization native development re...	String	\$(DEVELOPMENT_LANGUAGE)
Executable file	String	\$(EXECUTABLE_NAME)
Bundle identifier	String	\$(PRODUCT_BUNDLE_IDENTIFIER)
InfoDictionary version	String	6.0

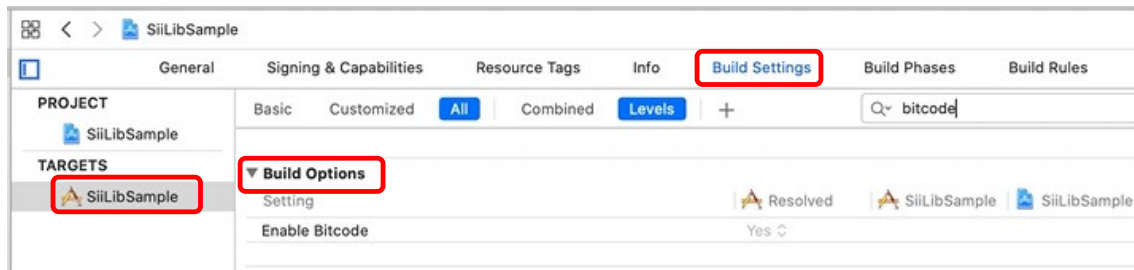
- (9) Select the [Supported external accessory protocols] from the list.

SiiLibSample > SiiLibSample > Info.plist > No Selection		
Key	Type	Value
▼ Information Property List	Dictionary (16 items)	
App Category	String	
Supported external accessory p...	String	\$(DEVELOPMENT_LANGUAGE)
Supported interface orientations	String	\$(EXECUTABLE_NAME)
Supported interface orientation...	String	\$(PRODUCT_BUNDLE_IDENTIFIER)
Supported interface orientation...	String	6.0
Supports Automatic Graphics S...	String	\$(PRODUCT_NAME)
Supports Controller User Intera...	String	\$(PRODUCT_BUNDLE_PACKAGE_TYPE)
Supports Document Browser	String	1.0
Supports HDR color mode	String	1

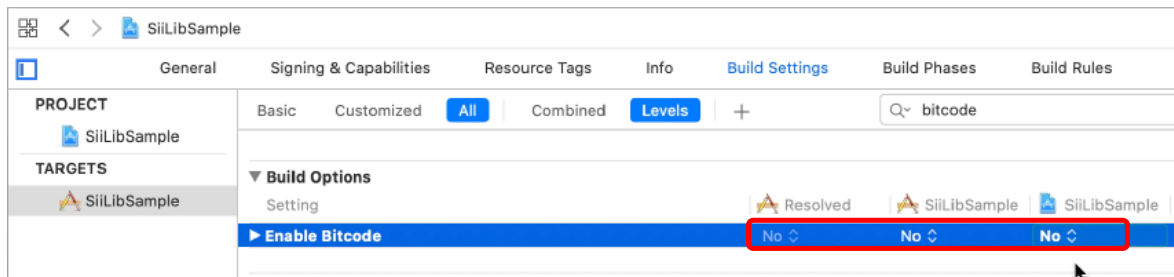
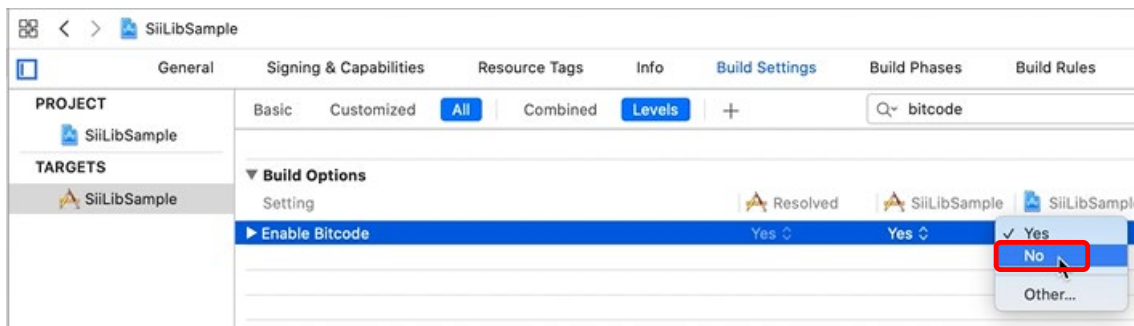
- (10) Open the added [Supported external accessory protocols].  
The [Item 0] displayed in the opened [Supported external accessory protocols], enter com.sii-ps.sieap as the Value.

SiiLibSample > SiiLibSample > Info.plist > No Selection		
Key	Type	Value
▼ Information Property List	Dictionary (16 items)	
▼ Supported external accessory prot...	Array (1 item)	
Item 0	String	com.sii-ps.sieap
Localization native development re...	String	\$(DEVELOPMENT_LANGUAGE)
Executable file	String	\$(EXECUTABLE_NAME)
Bundle identifier	String	\$(PRODUCT_BUNDLE_IDENTIFIER)
InfoDictionary version	String	6.0

(11) Select the target project in the [TARGETS], and open the [Build Settings] - [Build Options].



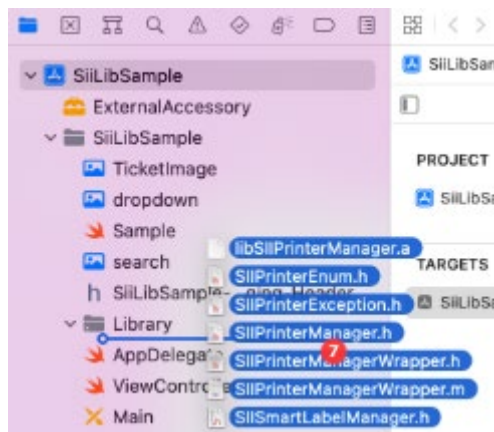
(12) Select the Enable Bitcode in the opened [Build Options], and select the No in the menu.



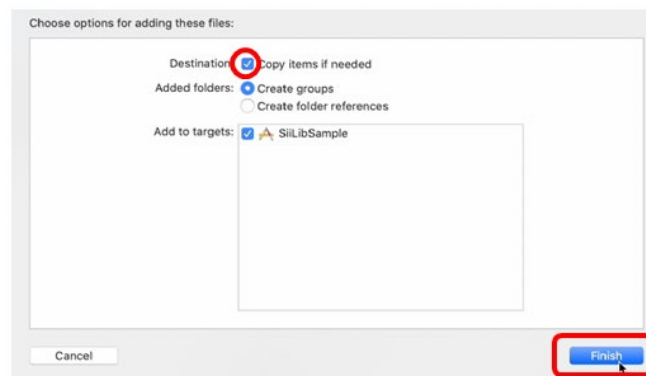
By completing these procedures, the library function becomes available.

### 3.3.2 Swift

- (1) Open the Xcode project.
- (2) Drag the following files to any hierarchy in the target project in [Project Navigator] of the navigator window.
  - libSiiPrinterManager.a
  - SiiPrinterEnum.h
  - SiiPrinterException.h
  - SiiPrinterManager.h
  - SiiPrinterManagerWrapper.h
  - SiiPrinterManagerWrapper.m
  - SiiSmartLabelManager.h



- (3) Check the box [Copy items if needed], click the [Finish] button.

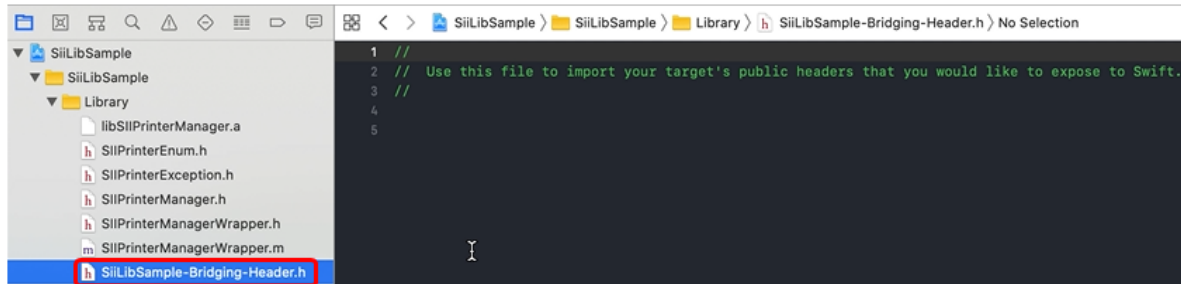


- (4) The dialog is displayed. Select the [Create Bridging Header] button and create xxxxxxxx-Bridging-Header.h.

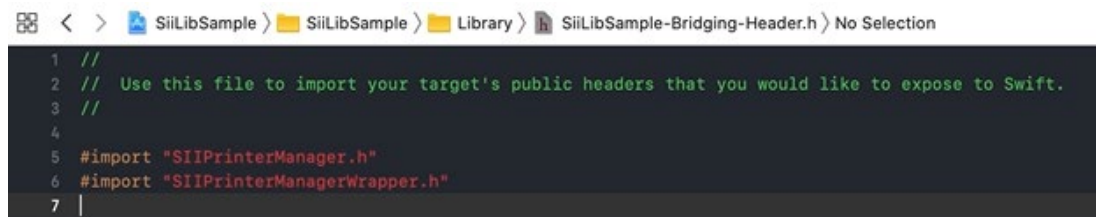




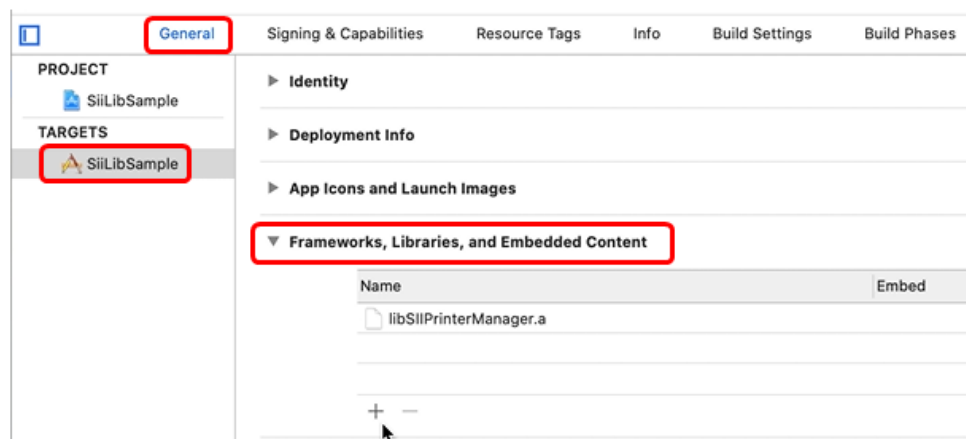
- (5) Select the created xxxxxxxx-Bridging-Header.h.



- (6) Import the SiiPrinterManager.h and the SiiPrinterManagerWrapper.h into the xxxxxxxx-Bridging-Header.h.



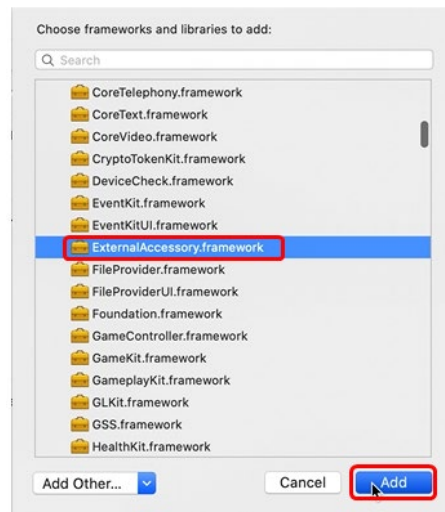
- (7) Build ExternalAccessory.framework.  
Select the target project in the [TARGETS], and open the [General] - [Frameworks, Libraries and Embedded Content].



- (8) Click the [+] button opened the [Frameworks, Libraries and Embedded Content].



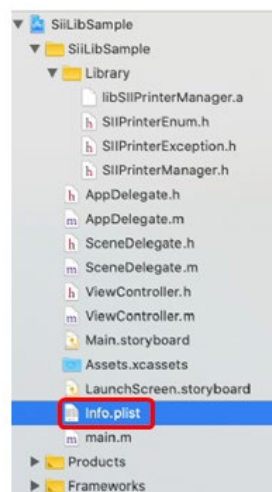
(9) Select the ExternalAccessory.framework from the list and click the [Add] button.



▼ Frameworks, Libraries, and Embedded Content

Name	Embed
ExternalAccessory.framework	Do Not Embed ↕
libSiiPrinterManager.a	

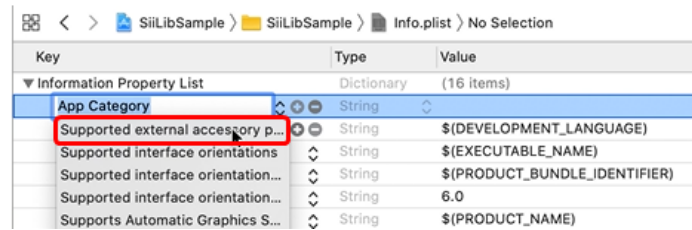
(10) Set the protocol name to use in the ExternalAccessory.framework. Select the xxxx.plist in the [Project Navigator].



(11) Select the [Information Property List] - ⊕.

SiiLibSample > SiiLibSample > Info.plist > No Selection		
Key	Type	Value
▼ Information Property List	⊕ Dictionary	(15 items)
Localization native development re...	String	\$(DEVELOPMENT_LANGUAGE)
Executable file	String	\$(EXECUTABLE_NAME)
Bundle identifier	String	\$(PRODUCT_BUNDLE_IDENTIFIER)
InfoDictionary version	String	6.0

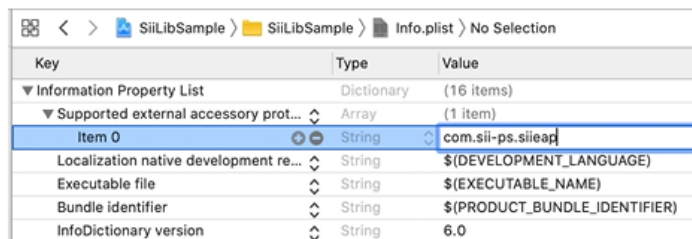
(12) Select the [Supported external accessory protocols] from the list.



Key	Type	Value
App Category	String	
Supported external accessory protocols	String	\$(DEVELOPMENT_LANGUAGE)
Supported interface orientations	String	\$(EXECUTABLE_NAME)
Supported interface orientation...	String	\$(PRODUCT_BUNDLE_IDENTIFIER)
Supported interface orientation...	String	6.0
Supports Automatic Graphics S...	String	\$(PRODUCT_NAME)

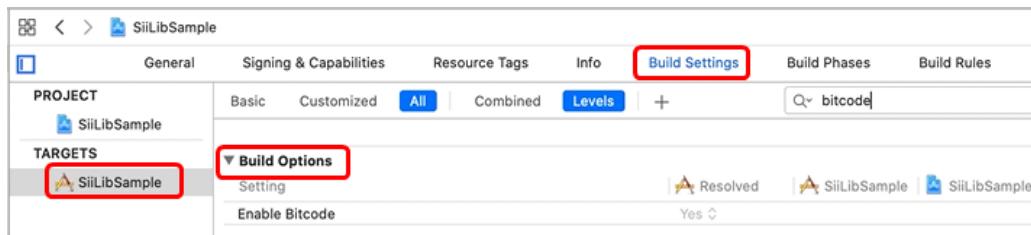
(13) Open the added [Supported external accessory protocols].

The [Item 0] displayed in the opened [Supported external accessory protocols], enter com.sii-ps.sieap as the Value.



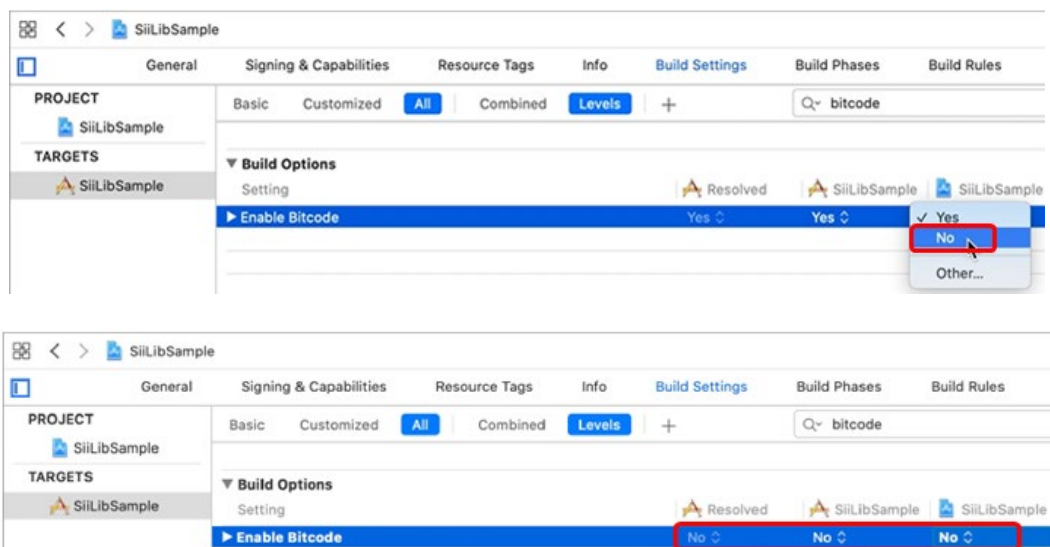
Key	Type	Value
Supported external accessory protocols	Array	(1 item)
Item 0	String	com.sii-ps.sieap
Localization native development re...	String	\$(DEVELOPMENT_LANGUAGE)
Executable file	String	\$(EXECUTABLE_NAME)
Bundle identifier	String	\$(PRODUCT_BUNDLE_IDENTIFIER)
InfoDictionary version	String	6.0

(14) Select the target project in the [TARGETS], and open the [Build Settings] - [Build Options].



Target	Setting	Resolved	SiiLibSample	SiiLibSample
SiiLibSample	Enable Bitcode	Yes		

(15) Select the Enable Bitcode in the opened [Build Options], and select the No in the menu.



Target	Setting	Resolved	SiiLibSample	SiiLibSample
SiiLibSample	Enable Bitcode	Yes	Yes	No

By completing these procedures, the library function becomes available.

## Chapter 4

### Functions of Library

This chapter describes the APIs of each class and protocol implemented in the library.

#### 4.1 Standard Mode and Page Mode

##### 4.1.1 Basic Operation

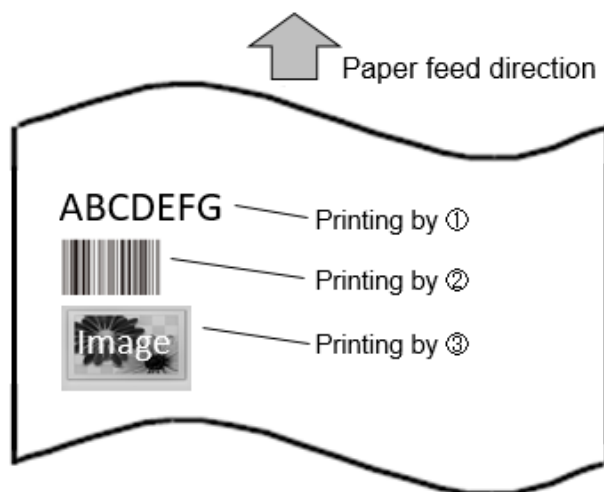
There are two printing modes "Standard mode" and "Page mode" in the library. The "Standard mode" and "Page mode" are described below.

###### (1) Standard mode

Standard mode is the mode to perform the printing in sequence.

Sample print command

- ① Send text data
- ② Print barcode
- ③ Send specified file (Specify an image file)



Standard mode suits the printing with an unfixed length such as a receipt.

## (2) Page mode

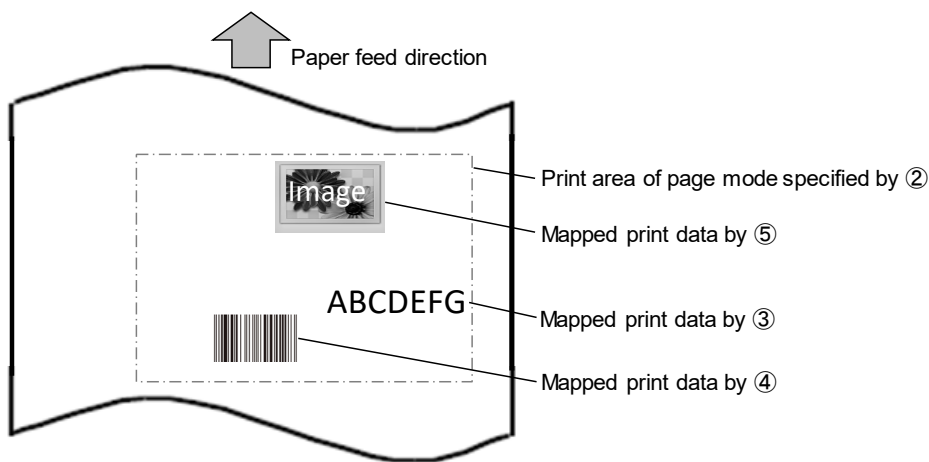
Page mode is the mode to perform the printing on a per-page basis.

In page mode, the print area of page mode is allocated at first, and then print data is mapped on an arbitrary position of the print area.

The mapped print data is printed by the print method of page mode.

Sample print command

- ① Start page mode
- ② Specify print area of page mode
- ③ Send text data of page mode
- ④ Print barcode of page mode
- ⑤ Draw image file of page mode
- ⑥ Print page mode (print the data of ③④⑤ on the print area of ②)
- ⑦ End page mode



Page mode suits the printing for the followings.

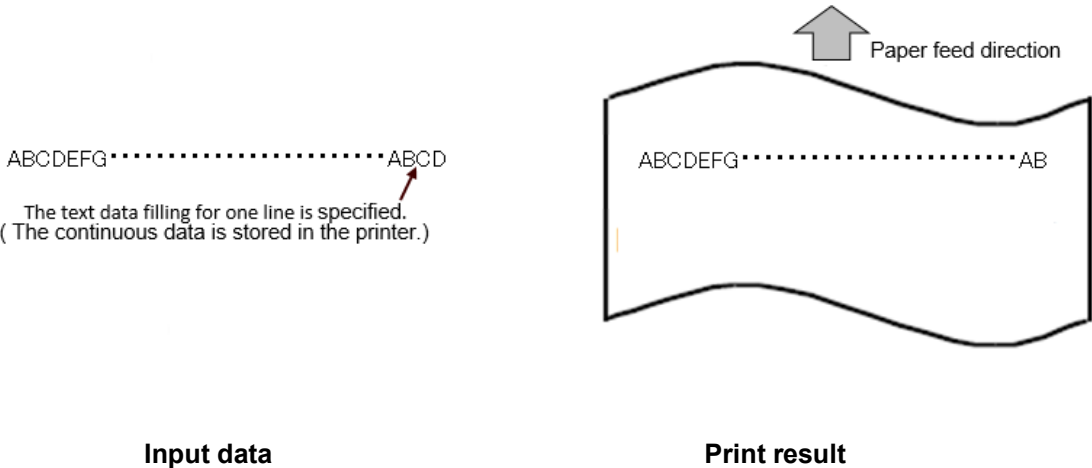
- The printing with a fixed length.
- The printing with the coordinate determination of the character starting position or the ruled line printing position.

**4.1.2 Text Data Printing in Standard Mode**

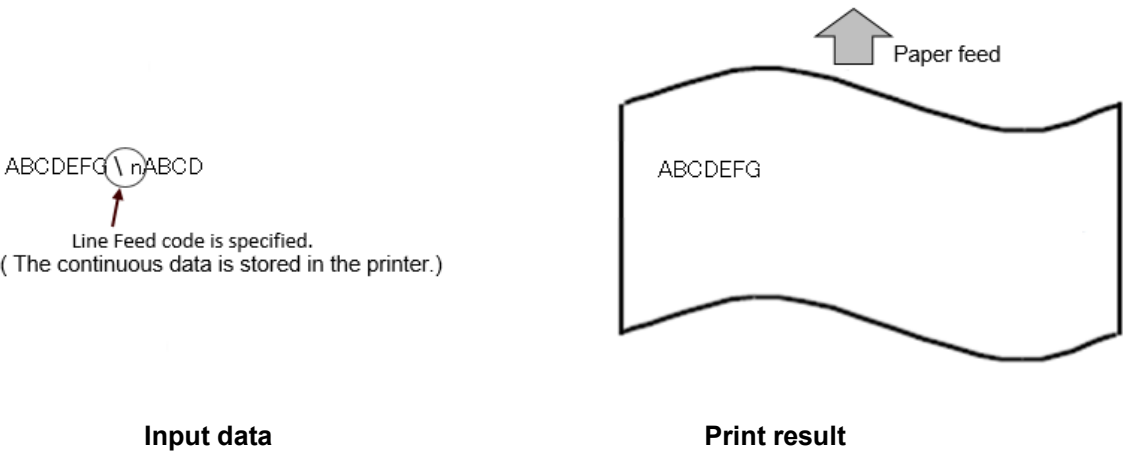
The text data in standard mode is printed each one line.

The text data is stored in the printer when the text data less than one line is specified.  
The stored text data is printed by either the following conditions.

- The text data filling for one line is specified.
  - Line Feed code is specified.
- **The print process when the text data filling for one line is specified.**



- **The print process when Line Feed code is specified.**



### 4.1.3 Mapping Position of Print Data in Page Mode

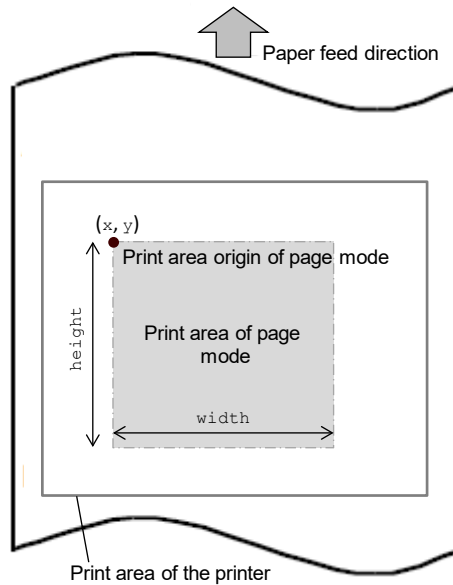
In page mode, the mapping position of print data is determined by print area, print direction, and reference point.

This section describes the print area, print direction, and reference point.

#### (1) Print area of page mode

The print area of page mode is specified against the print area of the printer by the print area origin, and the width and the height of page mode. The view of the print area is shown in the following figures.

The print area of page mode can be specified more than one.

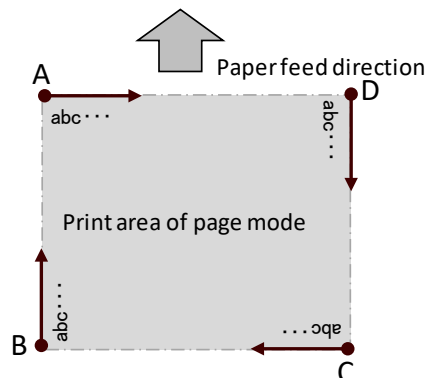


#### (2) Print direction

Specify the print direction at setting the print area of page mode.

The starting point is changed depending on specifying the print direction for each direction.

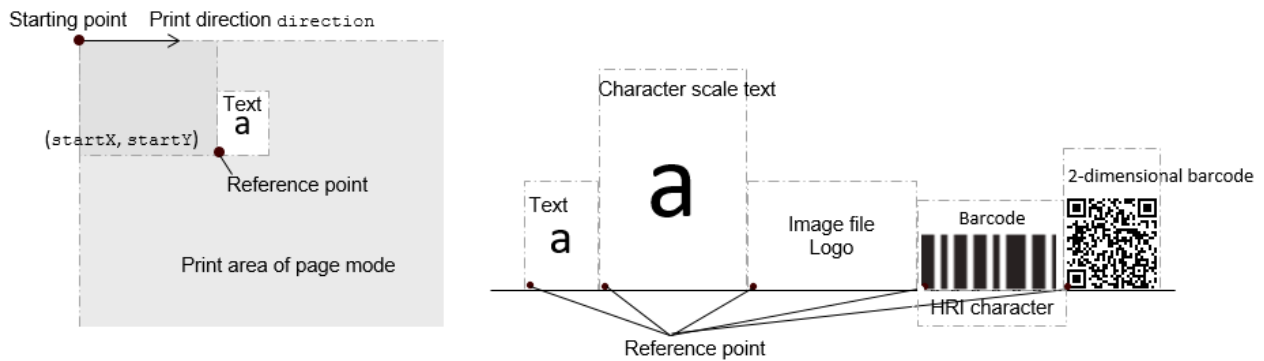
The relation between the print direction and the starting point is shown in the figure below.



- |  |                                 |
|--|---------------------------------|
| • Starting point: Upper left (A on the figure),  | Print direction: Left to Right  |
| • Starting point: Left below (B on the figure),  | Print direction: Below to Upper |
| • Starting point: Right below (C on the figure), | Print direction: Right to Left  |
| • Starting point: Upper right (D on the figure), | Print direction: Upper to Below |

### (3) Reference point

The relation between the reference point for mapping data and each print element (text, image file, logo, and barcode, etc.) is shown in the figures below.



**(NOTE) The reference point cannot be specified out of the print area of page mode.**



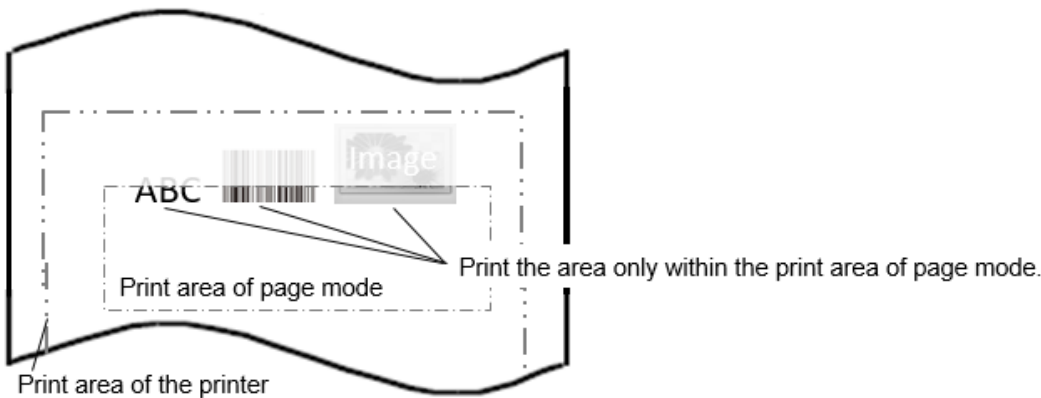
4.1.4 Print Data Process at Out of Print Area of Page Mode

This section describes the process when mapped data is to be mapped on out of the print area of page mode.

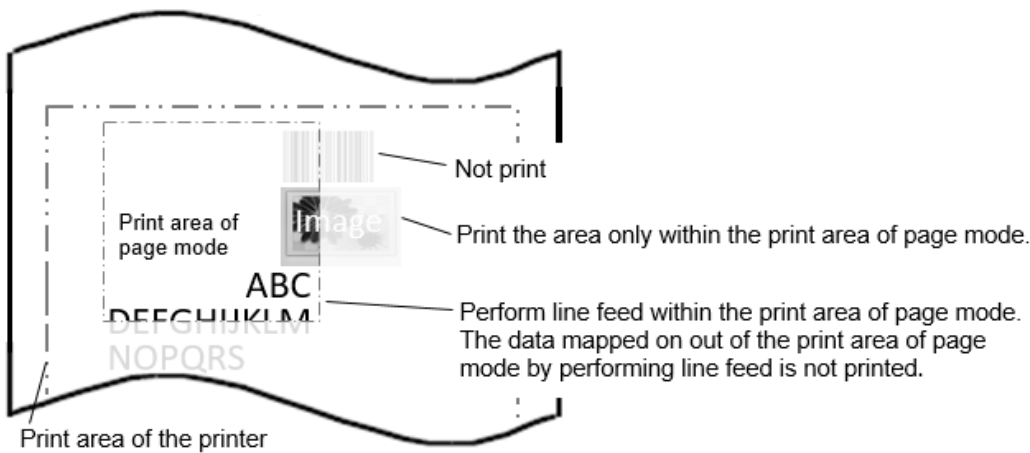
Type of Print Data

Text	Barcode, 2-dimensional Barcode	Image File, Logo, Rectangle, Ruled Line
ABC		

(1) The print data is mapped on the upper of the print area of page mode.



(2) The print data is mapped on the right of print area of page mode.



**(NOTE)** Read error or incorrect reading may occur when the part of mapped barcode data is on out of the print area of page mode.

## 4.2 API Reference

This library includes the following classes and protocol.

Name	Description	Supported <sup>*1</sup>
<b>SIIPrinterManager</b>	Provides the APIs used for communication with the printer and for printing. See " <b>4.2.1 SIIPrinterManager Class</b> " for details.	✓
<b>SIIPrinterInfo</b>	Stores the printer information found by <b>startDiscoveryPrinter</b> .	✓
<b>SIIPrinterException</b>	Exception class that is thrown at API call. See " <b>4.2.3 SIIPrinterException Class</b> " for details.	✓
<b>SIIPrinterManagerDelegate</b>	Provides the API to get notice from the printer. See " <b>4.2.4 SIIPrinterManagerDelegate Protocol</b> " for details.	✓
<b>SIISmartLabelManager</b>	Provides the API to specify label files or replace data. See " <b>4.2.5 SIISmartLabelManager Class</b> " for details.	–

\*1: ✓ : Supported, – : Not supported in RP-F10

## 4.2.1 SIIPrinterManager Class

### (1) Method List

Methods provided by the **SIIPrinterManager** class are shown in the following table.  
"Standard mode" or "Page mode" can be selected in the **SIIPrinterManager** class.

Method	Description
Common method to standard mode and page mode	The valid methods in standard mode and page mode. See "4.2.1(1)① Common method to standard mode and page mode" for the methods.
Dedicated method for standard mode	The valid methods in standard mode. See "4.2.1(1)② Dedicated method for standard mode" for the methods.
Dedicated method for page mode	The valid methods in page mode. See "4.2.1(1)③ Dedicated method for page mode" for the methods.

#### ① Common method to standard mode and page mode

Methods provided by the common method to standard mode and page mode are shown in the following table. See "4.2.1(5)① Common method to standard mode and page mode" for details of the common methods.

Name	Description	Supported *1
<b>init</b>	Instance	✓
<b>connect</b>	Start communicating with printer	✓
<b>disconnect</b>	Stop communicating with printer	✓
<b>openDrawer</b>	Open cash drawer	✓
<b>buzzer</b>	Sound buzzer	-
<b>externalBuzzer</b>	Sound external buzzer	✓
<b>getStatus</b>	Get printer status	✓
<b>abort</b>	Abort waiting state of printer	✓
<b>registerLogo</b>	Register logo	✓
<b>unregisterLogo</b>	Delete registered logo	✓
<b>registerStyleSheet</b>	Register style sheet	-
<b>unregisterStyleSheet</b>	Delete registered style sheet	-
<b>resetPrinter</b>	Reset printer	✓
<b>getPrinterResponse</b>	Get various responses from printer	✓
<b>startDiscoveryPrinter</b>	Start printer search (Bluetooth)	✓
<b>startDiscoveryPrinter</b>	Start printer search (TCP/IP)	✓
<b>cancelDiscoveryPrinter</b>	Cancel printer search	✓
<b>getFoundPrinter</b>	Get found printer information	✓
<b>getVersion</b>	Get SDK version	✓
<b>controlTransaction</b>	Start/End batch processing	✓
<b>defragment</b>	Optimize memory area	✓

Name	Description	Supported *1
<b>initializeMemoryArea</b>	Initialize memory area	✓
<b>showTemplate</b>	Display template	✓
<b>showSlide</b>	Display slide	✓
<b>enterStandbyMode</b>	Display standby	✓
<b>executeMacro</b>	Execute macro	✓
<b>turnOnScreen</b>	Turn on/off screen	✓
<b>selectTemplate</b>	Select template	✓
<b>setTemplateImageData</b>	Set image data	✓
<b>selectTemplateTextObject</b>	Select text element	✓
<b>setTemplateTextAlignment</b>	Alignment of text data	✓
<b>setTemplateTextLeftMargin</b>	Set left margin of text data	✓
<b>setTemplateTextLineSpacing</b>	Set line spacing of text data	✓
<b>setTemplateTextBold</b>	Set bold character of text data	✓
<b>setTemplateTextUnderline</b>	Set underline of text data	✓
<b>setTemplateTextSize</b>	Set character size of text data	✓
<b>setTemplateTextFont</b>	Set character font of text data	✓
<b>setTemplateTextRegisteredFont</b>	Set registered font of text data	✓
<b>setTemplateTextRightSpacing</b>	Set right space of text data	✓
<b>setTemplateTextColor</b>	Set character color of text data	✓
<b>setTemplateTextData</b>	Input text data	✓
<b>setTemplateBarcodeData</b>	Input barcode data	✓
<b>setTemplateQrCodeData</b>	Input QR Code data	✓
<b>registerTemplate</b>	Register template	✓
<b>unregisterTemplate</b>	Delete template	✓
<b>registerImageData</b>	Register image data	✓
<b>unregisterImageData</b>	Delete image data	✓
<b>registerSlideData</b>	Register slide data	✓
<b>unregisterSlideData</b>	Delete slide data	✓
<b>registerUserDefinedCharacter</b>	Register user-defined character	✓
<b>unregisterUserDefinedCharacter</b>	Delete user-defined character	✓
<b>registerOptionFont</b>	Register optional font	✓
<b>unregisterOptionFont</b>	Delete optional font	✓
<b>controlMacroRegistration</b>	Start/End macro registration	✓
<b>getDisplayResponse</b>	Get various responses from Display	✓

\*1: ✓: Supported, -: Not supported in RP-F10

② Dedicated method for standard mode

Methods provided by the dedicated method for standard mode are shown in the following table.  
See "4.2.1(5)② Dedicated method for standard mode" for details of the specified methods.

Name	Description	Supported *1
<b>sendText</b>	Send text data	✓
<b>sendTextEx</b>	Send format specified text data	✓
<b>printBarcode</b>	Print barcode	✓
<b>printPDF417</b>	Print PDF417	✓
<b>printQRcode</b>	Print QR Code	✓
<b>printDataMatrix</b>	Print Data Matrix	✓
<b>printMaxiCode</b>	Print MaxiCode	✓
<b>printGS1DataBarStacked</b>	Print GS1 Databar Stacked	✓
<b>printGS1DataBarStackedOmnidirectional</b>	Print GS1 Databar Stacked Omni-directional	✓
<b>printGS1DataBarExpandedStacked</b>	Print GS1 Databar Expanded Stacked	✓
<b>printAztecCode</b>	Print Aztec Code	–
<b>cutPaper</b>	Cut paper	✓
<b>feedPosition</b>	Paper form feed	–
<b>sendBinary</b>	Send binary data	✓
<b>sendDataFile</b>	Send specified file	✓
<b>printLogo</b>	Print logo	✓
<b>printSmartLabelImageData</b>	Print label	–

\*1: ✓: Supported, –: Not supported in RP-F10

③ Dedicated method for page mode

Methods provided by the dedicated method for page mode are shown in the following table.  
See "4.2.1(5)③ Dedicated method for page mode" for details of the specified methods.

Name	Description	Supported *1
<b>enterPageMode</b>	Start page mode	✓
<b>exitPageMode</b>	End page mode	✓
<b>setPageModeArea</b>	Specify print area of page mode	✓
<b>setPageModeDirection</b>	Specify print direction of page mode	✓
<b>setPageModeLineSpacing</b>	Specify line spacing of page mode	✓
<b>printPageMode</b>	Print page mode	✓
<b>printPageModeText</b>	Send text data of page mode	✓
<b>printPageModeTextEx</b>	Send format specified text data of page mode	✓
<b>printPageModeBarcode</b>	Print barcode of page mode	✓
<b>printPageModePDF417</b>	Print PDF417 of page mode	✓
<b>printPageModeQRcode</b>	Print QR Code of page mode	✓
<b>printPageModeDataMatrix</b>	Print Data Matrix of page mode	✓

Name	Description	Supported *1
<code>printPageModeMaxiCode</code>	Print MaxiCode of page mode	✓
<code>printPageModeGS1DataBarStacked</code>	Print GS1 Databar Stacked of page mode	✓
<code>printPageModeGS1DataBarStackedOmniDirectional</code>	Print GS1 Databar Stacked Omni-directional of page mode	✓
<code>printPageModeGS1DataBarExpandedStacked</code>	Print GS1 Databar Expanded Stacked of page mode	✓
<code>printPageModeAztecCode</code>	Print Aztec Code of page mode	-
<code>sendPageModeBinary</code>	Send binary data of page mode	✓
<code>printPageModeImageFile</code>	Draw image file of page mode	✓
<code>printPageModeRectangle</code>	Draw rectangle image of page mode	✓
<code>printPageModeLine</code>	Print ruled line of page mode	✓
<code>printPageModeLogo</code>	Print logo of page mode	✓

\*1: ✓: Supported, -: Not supported in RP-F10

## (2) Common property list to standard mode and page mode

Properties provided by `SIIPrinterManager` class are shown in the following table.

Name	Access	Description	Supported*1
<code>sendTimeout</code>	R/W	Get/Set send timeout period	✓
<code>receiveTimeout</code>	R/W	Get/Set receive timeout period	✓
<code>internationalCharacter</code>	R/W	Get/Set international character set	✓
<code>codePage</code>	R/W	Get/Set codepage	✓
<code>printerModel</code>	R	Get printer model	✓
<code>portType</code>	R	Get connecting port type	✓
<code>isConnect</code>	R	Verify connection state with printer	✓
<code>socketKeepingTime</code>	R/W	Get/Set socket keeping time	✓
<code>delegate</code>	R/W	Register delegate	✓

\*1: ✓: Supported, -: Not supported in RP-F10

### (3) Constant List

#### ① Printer model

Constants used for starting communication with the printer and getting the printer model are shown in the following table.

Constant Name	Description	Value
<b>SII_PM_PRINTER_MODEL_RP_F10</b>	RP-F10	301

#### ② Port type

Constants used for starting communication with the printer and getting the connection port type are shown in the following table.

Constant Name	Description	Value
<b>SII_PM_PRINTER_PORT_TYPE_BLUETOOTH</b>	Bluetooth	0
<b>SII_PM_PRINTER_PORT_TYPE_USB</b>	USB	1
<b>SII_PM_PRINTER_PORT_TYPE_TCP</b>	TCP/IP	2

#### ③ Printer response type

Constants used for getting various responses from the printer are shown in the following table.

Constant Name	Description	Value
<b>SII_PM_PRINTER_RESPONSE_REQUEST</b>	Execution response request	0
<b>SII_PM_PRINTER_RESPONSE_USER_AREA</b>	Send remaining capacity of user area	1
<b>SII_PM_PRINTER_RESPONSE_ARRANGE_USER_AREA</b>	Send remaining capacity of user area after defragment	2
<b>SII_PM_PRINTER_RESPONSE_NV_GRAPHICS</b>	Send NV graphics memory capacity	3
<b>SII_PM_PRINTER_RESPONSE_KEY_CODE</b>	Send key code list of defined NV graphics	4

④ Display response type

Constants used for getting various responses from Display are shown in the following table.

Constant Name	Description	Value
SII_PM_PRINTER_RESPONSE_REQUEST	Execution response request	0
SII_PM_PRINTER_RESPONSE_USER_AREA	Send remaining capacity of user area	1
SII_PM_DISPLAY_RESPONSE_TEMPLATE_ID_LIST	Send template ID	2
SII_PM_DISPLAY_RESPONSE_IMAGE_ID_LIST	Send image ID	3
SII_PM_DISPLAY_RESPONSE_SLIDE_ID_LIST	Send slide ID	4
SII_PM_DISPLAY_RESPONSE_TEMPLATE_LABEL	Send template name	5
SII_PM_DISPLAY_RESPONSE_IMAGE_LABEL	Send image name	6
SII_PM_DISPLAY_RESPONSE_SLIDE_LABEL	Send slide name	7

⑤ International character set

Constants used for setting/getting the international character set are shown in the following table.

Constant Name	Description	Value
SII_PM_COUNTRY_USA	USA	0
SII_PM_COUNTRY_FRANCE	France	1
SII_PM_COUNTRY_GERMANY	Germany	2
SII_PM_COUNTRY_ENGLAND	United Kingdom	3
SII_PM_COUNTRY_DENMARK_1	Denmark I	4
SII_PM_COUNTRY_SWEDEN	Sweden	5
SII_PM_COUNTRY_ITALY	Italy	6
SII_PM_COUNTRY_SPAIN	Spain I	7
SII_PM_COUNTRY_JAPAN	Japan	8
SII_PM_COUNTRY_NORWAY	Norway	9
SII_PM_COUNTRY_DENMARK_2	Denmark II	10
SII_PM_COUNTRY_SPAIN_2	Spain II	11
SII_PM_COUNTRY_LATIN_AMERICA	Latin America	12
SII_PM_COUNTRY_ARABIA	Arabia	17



## ⑥ Codepage

Constants used for setting/getting the codepage are shown in the following table.

Constant Name	Description	Value
SII_PM_CODE_PAGE_437	USA, Standard Europe (Code Page437)	0
SII_PM_CODE_PAGE_KATAKANA	Katakana	1
SII_PM_CODE_PAGE_850	Multilingual (Code Page850)	2
SII_PM_CODE_PAGE_860	Portuguese (Code Page860)	3
SII_PM_CODE_PAGE_863	Canadian-French (Code page863)	4
SII_PM_CODE_PAGE_865	Nordic (Code Page865)	5
SII_PM_CODE_PAGE_857 <sup>*1</sup>	Turkish (Code Page857)	13
SII_PM_CODE_PAGE_737	Greek (Code Page737)	14
SII_PM_CODE_PAGE_1252	Latin (Code Page1252)	16
SII_PM_CODE_PAGE_866	Russian (Code Page866)	17
SII_PM_CODE_PAGE_852	Eastern Europe (CodePage 852)	18
SII_PM_CODE_PAGE_858	Euro (Code Page858)	19
SII_PM_CODE_PAGE_855	Cyrillic (Code Page855)	34
SII_PM_CODE_PAGE_864 <sup>*1*2</sup>	Arabic (Code Page864)	37
SII_PM_CODE_PAGE_1250	Central European (Code Page1250)	45
SII_PM_CODE_PAGE_1251	Cyrillic (Code Page1251)	46
SII_PM_CODE_PAGE_1253 <sup>*3</sup>	Greek (Code Page1253)	47
SII_PM_CODE_PAGE_1254	Turkish (Code Page1254)	48

\*1: 20ACh of the Unicode cannot be printed or displayed.

\*2: Font B cannot be printed or displayed.

\*3: 00AAh of the Unicode cannot be printed or displayed.

## ⑦ Barcode and PDF417

Constants used for printing barcodes and PDF417 are shown in the following table.

Constant Name	Description	Value
SII_PM_BARCODE_HEIGHT_DEFAULT	Default value of barcode height	162
SII_PM_PDF417_MODULE_HEIGHT_DEFAULT	Default value of PDF417 height	10
SII_PM_PDF417_ROW_AUTO	Automatic selection of the number of rows	0
SII_PM_PDF417_COLUMN_AUTO	Automatic selection of the number of columns	0

#### (4) Enumerated Constant List

##### ① Dithering (Dithering)

Constants of enumerated type used for dithering are shown in the following table.

Constant Name	Description
SII_PM_DITHERING_DISABLE	Dithering is disabled
SII_PM_DITHERING_ERRORDIFFUSION	Dithering is enabled

##### ② Batch processing selection (TransactionFunction)

Constants of enumerated type used for batch processing selection are shown in the following table.

Constant Name	Description
SII_PM_TRANSACTION_CLEAR	Cancel batch processing
SII_PM_TRANSACTION_START	Start batch processing
SII_PM_TRANSACTION_PRINT	Finish batch printing and batch processing

##### ③ Bold print (CharacterBold)

Constants of enumerated type used for bold character are shown in the following table.

Constant Name	Description
SII_PM_BOLD_CANCEL	Cancel bold print
SII_PM_BOLD	Specify bold print

##### ④ Underline (CharacterUnderline)

Constants of enumerated type used for underline are shown in the following table.

Constant Name	Description
SII_PM_UNDERLINE_CANCEL	Cancel underline print
SII_PM_UNDERLINE_1	Specify 1-dot width underline print
SII_PM_UNDERLINE_2 <sup>*1</sup>	Specify 2-dot width underline print

<sup>\*1</sup>: Supported only the printer.

⑤ Reverse print (CharacterReverse)

Constants of enumerated type used for reverse print are shown in the following table.

Constant Name	Description
SII_PM_REVERSE_CANCEL	Cancel reverse print
SII_PM_REVERSE	Specify reverse print

⑥ Inversion print (CharacterInversion)

Constants of enumerated type used for inversion print are shown in the following table.  
Inversion print cannot be added to the text data before inserting a new line feed.

Constant Name	Description
SII_PM_INVERSION_CANCEL	Cancel inversion print
SII_PM_INVERSION	Specify inversion print

⑦ Character font (CharacterFont)

Constants of enumerated type used for character fonts are shown in the following table.

Constant Name	Description
SII_PM_FONT_A	Font A (24 × 12)
SII_PM_FONT_B	Font B (16 × 8)

⑧ Character scale (CharacterScale)

Constants of enumerated type used for character scale are shown in the following table.

Constant Name	Description
SII_PM_VERTICAL_1_HORIZONTAL_1	Height × 1 and width × 1
SII_PM_VERTICAL_1_HORIZONTAL_2	Height × 1 and width × 2
SII_PM_VERTICAL_1_HORIZONTAL_3	Height × 1 and width × 3
SII_PM_VERTICAL_1_HORIZONTAL_4	Height × 1 and width × 4
SII_PM_VERTICAL_2_HORIZONTAL_1	Height × 2 and width × 1
SII_PM_VERTICAL_2_HORIZONTAL_2	Height × 2 and width × 2
SII_PM_VERTICAL_2_HORIZONTAL_3	Height × 2 and width × 3
SII_PM_VERTICAL_2_HORIZONTAL_4	Height × 2 and width × 4
SII_PM_VERTICAL_2_HORIZONTAL_6 <sup>*1</sup>	Height × 2 and width × 6
SII_PM_VERTICAL_3_HORIZONTAL_1	Height × 3 and width × 1
SII_PM_VERTICAL_3_HORIZONTAL_2	Height × 3 and width × 2

Constant Name	Description
SII_PM_VERTICAL_3_HORIZONTAL_3	Height × 3 and width × 3
SII_PM_VERTICAL_3_HORIZONTAL_4	Height × 3 and width × 4
SII_PM_VERTICAL_4_HORIZONTAL_1	Height × 4 and width × 1
SII_PM_VERTICAL_4_HORIZONTAL_2	Height × 4 and width × 2
SII_PM_VERTICAL_4_HORIZONTAL_3	Height × 4 and width × 3
SII_PM_VERTICAL_4_HORIZONTAL_4	Height × 4 and width × 4
SII_PM_VERTICAL_4_HORIZONTAL_6 <sup>*1</sup>	Height × 4 and width × 6
SII_PM_VERTICAL_4_HORIZONTAL_8 <sup>*1</sup>	Height × 4 and width × 8
SII_PM_VERTICAL_6_HORIZONTAL_2 <sup>*1</sup>	Height × 6 and width × 2
SII_PM_VERTICAL_6_HORIZONTAL_4 <sup>*1</sup>	Height × 6 and width × 4
SII_PM_VERTICAL_6_HORIZONTAL_6 <sup>*1</sup>	Height × 6 and width × 6
SII_PM_VERTICAL_6_HORIZONTAL_8 <sup>*1</sup>	Height × 6 and width × 8
SII_PM_VERTICAL_8_HORIZONTAL_4 <sup>*1</sup>	Height × 8 and width × 4
SII_PM_VERTICAL_8_HORIZONTAL_6 <sup>*1</sup>	Height × 8 and width × 6
SII_PM_VERTICAL_8_HORIZONTAL_8 <sup>*1</sup>	Height × 8 and width × 8

\*1: Supported only the printer.

#### ⑨ Alignment (PrintAlignment)

Constants of enumerated type used for alignment are shown in the following table.  
Alignment cannot be added to the text data before inserting a new line feed.

Constant Name	Description
SII_PM_ALIGNMENT_LEFT	Aligned left
SII_PM_ALIGNMENT_CENTER	Centered
SII_PM_ALIGNMENT_RIGHT	Aligned right

#### ⑩ Barcode symbol (BarcodeSymbol)

Constants of enumerated type used for barcode symbols are shown in the following table.

Constant Name	Description	Syntax <sup>*1</sup>
SII_PM_BARCODE_UPC_A	UPC-A	(a)
SII_PM_BARCODE_UPC_E	UPC-E	(a)
SII_PM_BARCODE_EAN13	EAN13	(a)
SII_PM_BARCODE_JAN13	JAN13	(a)
SII_PM_BARCODE_EAN8	EAN8	(a)
SII_PM_BARCODE_JAN8	JAN8	(a)

Constant Name	Description	Syntax <sup>*1</sup>
<b>SII_PM_BARCODE_CODE39</b>	CODE39	(a), (b)
<b>SII_PM_BARCODE_CODE93</b>	CODE93	(c)
<b>SII_PM_BARCODE_CODE128</b>	CODE128	(c)
<b>SII_PM_BARCODE_ITF</b>	ITF	(a), (b)
<b>SII_PM_BARCODE_CODABAR</b>	CODABAR	(a), (b)
<b>SII_PM_BARCODE_EAN13_ADDON</b>	EAN13 add-on	(a)
<b>SII_PM_BARCODE_JAN13_ADDON</b>	JAN13 add-on	(a)
<b>SII_PM_BARCODE_GS1_OMNI_DIRECTIONAL</b>	GS1 Databar Omni-directional	(a)
<b>SII_PM_BARCODE_GS1_TRUNCATED</b>	GS1 Databar Truncated	(a)
<b>SII_PM_BARCODE_GS1_LIMITED</b>	GS1 Databar Limited	(a)
<b>SII_PM_BARCODE_GS1_EXPANDED</b>	GS1 Databar Expanded	(a)

\*1: See `printBarcode` or `printPageModeBarcode` for details of syntax.

#### ⑪ Module size (`ModuleSize`)

Constants of enumerated type used for width, nominal fine element width, and module size of barcode are shown in the following table.

Constant Name	Description	Method to Use
<b>SII_PM_BARCODE_MODULE_WIDTH_2</b>	Fine element 2 dots Module width 0.250 mm	<ul style="list-style-type: none"> <li>● <code>printBarcode</code></li> <li>● <code>printPageModeBarcode</code></li> </ul>
<b>SII_PM_BARCODE_MODULE_WIDTH_3</b>	Fine element 3 dots Module width 0.375 mm	
<b>SII_PM_BARCODE_MODULE_WIDTH_4</b>	Fine element 4 dots Module width 0.500 mm	
<b>SII_PM_BARCODE_MODULE_WIDTH_5</b>	Fine element 5 dots Module width 0.625 mm	
<b>SII_PM_BARCODE_MODULE_WIDTH_6</b>	Fine element 6 dots Module width 0.750 mm	
<b>SII_PM_PDF417_MODULE_WIDTH_2</b>	Nominal fine element width 2 dots	<ul style="list-style-type: none"> <li>● <code>printPDF417</code></li> <li>● <code>printPageModePDF417</code></li> </ul>
<b>SII_PM_PDF417_MODULE_WIDTH_3</b>	Nominal fine element width 3 dots	
<b>SII_PM_PDF417_MODULE_WIDTH_4</b>	Nominal fine element width 4 dots	
<b>SII_PM_PDF417_MODULE_WIDTH_5</b>	Nominal fine element width 5 dots	
<b>SII_PM_PDF417_MODULE_WIDTH_6</b>	Nominal fine element width 6 dots	
<b>SII_PM_PDF417_MODULE_WIDTH_7</b>	Nominal fine element width 7 dots	
<b>SII_PM_PDF417_MODULE_WIDTH_8</b>	Nominal fine element width 8 dots	

Constant Name	Description	Method to Use
SII_PM_QR_MODULE_SIZE_2	2 dots	<ul style="list-style-type: none"> <li>● <code>printQRcode</code></li> <li>● <code>setTemplateQrCodeData</code></li> <li>● <code>printPageModeQRcode</code></li> </ul>
SII_PM_QR_MODULE_SIZE_3	3 dots	
SII_PM_QR_MODULE_SIZE_4	4 dots	
SII_PM_QR_MODULE_SIZE_5	5 dots	
SII_PM_QR_MODULE_SIZE_6	6 dots	
SII_PM_QR_MODULE_SIZE_7	7 dots	
SII_PM_QR_MODULE_SIZE_8	8 dots	
SII_PM_QR_MODULE_SIZE_9	9 dots	
SII_PM_QR_MODULE_SIZE_10	10 dots	
SII_PM_QR_MODULE_SIZE_11	11 dots	
SII_PM_QR_MODULE_SIZE_12	12 dots	
SII_PM_QR_MODULE_SIZE_13	13 dots	
SII_PM_QR_MODULE_SIZE_14	14 dots	
SII_PM_QR_MODULE_SIZE_15	15 dots	
SII_PM_QR_MODULE_SIZE_16	16 dots	
SII_PM_DATAMATRIX_MODULE_SIZE_2	2 dots	<ul style="list-style-type: none"> <li>● <code>printDataMatrix</code></li> <li>● <code>printPageModeDataMatrix</code></li> </ul>
SII_PM_DATAMATRIX_MODULE_SIZE_3	3 dots	
SII_PM_DATAMATRIX_MODULE_SIZE_4	4 dots	
SII_PM_DATAMATRIX_MODULE_SIZE_5	5 dots	
SII_PM_DATAMATRIX_MODULE_SIZE_6	6 dots	
SII_PM_DATAMATRIX_MODULE_SIZE_7	7 dots	
SII_PM_DATAMATRIX_MODULE_SIZE_8	8 dots	
SII_PM_DATAMATRIX_MODULE_SIZE_9	9 dots	
SII_PM_DATAMATRIX_MODULE_SIZE_10	10 dots	
SII_PM_DATAMATRIX_MODULE_SIZE_11	11 dots	
SII_PM_DATAMATRIX_MODULE_SIZE_12	12 dots	
SII_PM_DATAMATRIX_MODULE_SIZE_13	13 dots	
SII_PM_DATAMATRIX_MODULE_SIZE_14	14 dots	
SII_PM_DATAMATRIX_MODULE_SIZE_15	15 dots	
SII_PM_DATAMATRIX_MODULE_SIZE_16	16 dots	

Constant Name	Description	Method to Use
SII_PM_GS1DATABAR_MODULE_SIZE_2	2 dots	<ul style="list-style-type: none"> <li>● <code>printGS1DataBarStacked</code></li> <li>● <code>printGS1DataBarStackedOmnidirectional</code></li> <li>● <code>printGS1DataBarExpandedStacked</code></li> <li>● <code>printPageModeGS1DataBarStacked</code></li> <li>● <code>printPageModeGS1DataBarStackedOmnidirectional</code></li> <li>● <code>printPageModeGS1DataBarExpandedStacked</code></li> </ul>
SII_PM_GS1DATABAR_MODULE_SIZE_3	3 dots	
SII_PM_GS1DATABAR_MODULE_SIZE_4	4 dots	
SII_PM_GS1DATABAR_MODULE_SIZE_5	5 dots	
SII_PM_GS1DATABAR_MODULE_SIZE_6	6 dots	
SII_PM_GS1DATABAR_MODULE_SIZE_7	7 dots	
SII_PM_GS1DATABAR_MODULE_SIZE_8	8 dots	
SII_PM_GS1DATABAR_MODULE_SIZE_9	9 dots	
SII_PM_GS1DATABAR_MODULE_SIZE_10	10 dots	
SII_PM_GS1DATABAR_MODULE_SIZE_11	11 dots	
SII_PM_GS1DATABAR_MODULE_SIZE_12	12 dots	
SII_PM_GS1DATABAR_MODULE_SIZE_13	13 dots	
SII_PM_GS1DATABAR_MODULE_SIZE_14	14 dots	
SII_PM_GS1DATABAR_MODULE_SIZE_15	15 dots	
SII_PM_GS1DATABAR_MODULE_SIZE_16	16 dots	

⑫ HRI character print position (`HriPosition`)

Constants of enumerated type used for HRI character print position are shown in the following table.

Constant Name	Description
SII_PM_HRI_NONE	Not printed
SII_PM_HRI_POSITION_ABOVE	Above barcode
SII_PM_HRI_POSITION_BELOW	Below barcode
SII_PM_HRI_POSITION_ABOVE_BELOW	Above and below barcode (both)

⑬ N:W ratio (`NwRatio`)

Constants of enumerated type used for N:W ratio are shown in the following table.

Constant Name	Description
SII_PM_NWRATIO_1TO2	1:2
SII_PM_NWRATIO_1TO2_5	1:2.5
SII_PM_NWRATIO_1TO3	1:3

⑭ Error correction level (`ErrorCorrection`)

Constants of enumerated type used for error correction level are shown in the following table.

Constant Name	Description	Method to Use
<code>SII_PM_PDF417_ERROR_CORRECTION_0</code>	Error correction level 0	<ul style="list-style-type: none"> <li>● <code>printPDF417</code></li> <li>● <code>printPageModePDF417</code></li> </ul>
<code>SII_PM_PDF417_ERROR_CORRECTION_1</code>	Error correction level 1	
<code>SII_PM_PDF417_ERROR_CORRECTION_2</code>	Error correction level 2	
<code>SII_PM_PDF417_ERROR_CORRECTION_3</code>	Error correction level 3	
<code>SII_PM_PDF417_ERROR_CORRECTION_4</code>	Error correction level 4	
<code>SII_PM_PDF417_ERROR_CORRECTION_5</code>	Error correction level 5	
<code>SII_PM_PDF417_ERROR_CORRECTION_6</code>	Error correction level 6	
<code>SII_PM_PDF417_ERROR_CORRECTION_7</code>	Error correction level 7	
<code>SII_PM_PDF417_ERROR_CORRECTION_8</code>	Error correction level 8	
<code>SII_PM_QR_ERROR_CORRECTION_L</code>	Error correction level L	<ul style="list-style-type: none"> <li>● <code>printQRcode</code></li> <li>● <code>setTemplateQrCodeData</code></li> <li>● <code>printPageModeQRcode</code></li> </ul>
<code>SII_PM_QR_ERROR_CORRECTION_M</code>	Error correction level M	
<code>SII_PM_QR_ERROR_CORRECTION_H</code>	Error correction level H	
<code>SII_PM_QR_ERROR_CORRECTION_Q</code>	Error correction level Q	

⑮ PDF417 symbol (`Pdf417Symbol`)

Constants of enumerated type used for PDF417 symbols are shown in the following table.

Constant Name	Description
<code>SII_PM_PDF417_STANDARD</code>	PDF417
<code>SII_PM_PDF417_COMPACT</code>	Compact PDF417

⑯ QR Code Model (`QrModel`)

Constants of enumerated type used for QR Code Model are shown in the following table.

Constant Name	Description
<code>SII_PM_QR_MODEL_2</code>	QR Code Model 2



⑰ Data Matrix module (DataMatrixModule)

Constants of enumerated type used for Data Matrix module are shown in the following table.

Constant Name	Description
SII_PM_DATA_MATRIX_AUTO	Number of modules: Automatic
SII_PM_DATA_MATRIX_10_10	Number of modules: 10 × 10
SII_PM_DATA_MATRIX_12_12	Number of modules: 12 × 12
SII_PM_DATA_MATRIX_14_14	Number of modules: 14 × 14
SII_PM_DATA_MATRIX_16_16	Number of modules: 16 × 16
SII_PM_DATA_MATRIX_18_18	Number of modules: 18 × 18
SII_PM_DATA_MATRIX_20_20	Number of modules: 20 × 20
SII_PM_DATA_MATRIX_22_22	Number of modules: 22 × 22
SII_PM_DATA_MATRIX_24_24	Number of modules: 24 × 24
SII_PM_DATA_MATRIX_26_26	Number of modules: 26 × 26
SII_PM_DATA_MATRIX_32_32	Number of modules: 32 × 32
SII_PM_DATA_MATRIX_36_36	Number of modules: 36 × 36
SII_PM_DATA_MATRIX_40_40	Number of modules: 40 × 40
SII_PM_DATA_MATRIX_44_44	Number of modules: 44 × 44
SII_PM_DATA_MATRIX_48_48	Number of modules: 48 × 48
SII_PM_DATA_MATRIX_52_52	Number of modules: 52 × 52
SII_PM_DATA_MATRIX_64_64	Number of modules: 64 × 64
SII_PM_DATA_MATRIX_72_72	Number of modules: 72 × 72
SII_PM_DATA_MATRIX_80_80	Number of modules: 80 × 80
SII_PM_DATA_MATRIX_88_88	Number of modules: 88 × 88
SII_PM_DATA_MATRIX_96_96	Number of modules: 96 × 96
SII_PM_DATA_MATRIX_104_104	Number of modules: 104 × 104
SII_PM_DATA_MATRIX_120_120	Number of modules: 120 × 120
SII_PM_DATA_MATRIX_132_132	Number of modules: 132 × 132
SII_PM_DATA_MATRIX_144_144	Number of modules: 144 × 144
SII_PM_DATA_MATRIX_8_18	Number of modules: 8 × 18
SII_PM_DATA_MATRIX_8_32	Number of modules: 8 × 32
SII_PM_DATA_MATRIX_12_26	Number of modules: 12 × 26
SII_PM_DATA_MATRIX_12_36	Number of modules: 12 × 36
SII_PM_DATA_MATRIX_16_36	Number of modules: 16 × 36
SII_PM_DATA_MATRIX_16_48	Number of modules: 16 × 48

⑱ MaxiCode Mode (`MaxiCodeMode`)

Constants of enumerated type used for MaxiCode Mode are shown in the following table.

Constant Name	Description
<code>SII_PM_MAXI_CODE_2</code>	Mode2
<code>SII_PM_MAXI_CODE_3</code>	Mode3
<code>SII_PM_MAXI_CODE_4</code>	Mode4
<code>SII_PM_MAXI_CODE_5</code>	Mode5

⑲ Cutting method (`CuttingMethod`)

Constants of enumerated type used for the cutting method are shown in the following table.

Constant Name	Description	
	Paper Feed to Cut Position	Cutting Method
<code>SII_PM_CUT_FULL</code>	Enabled	Full cut
<code>SII_PM_CUT_FULL_NO_FEED</code>	Disabled	
<code>SII_PM_CUT_PARTIAL</code>	Enabled	Partial cut
<code>SII_PM_CUT_PARTIAL_NO_FEED</code>	Disabled	
<code>SII_PM_CUT_NONE</code> *1	Disabled	No cut

\*1: Supported only by `printPageMode`.

⑳ Drawer number (`DrawerNum`)

Constants of enumerated type used for the drawer number are shown in the following table.

Constant Name	Description
<code>SII_PM_DRAWER_1</code>	Drawer 1
<code>SII_PM_DRAWER_2</code>	Drawer 2

⑳ Pulse width (PulseWidth)

Constants of enumerated type used for the pulse width are shown in the following table. As for the drawer control time, follow the specifications of your drawer.

Constant Name	Description
SII_PM_ON_OFF_TIME_100	ON/OFF time 100 milliseconds
SII_PM_ON_OFF_TIME_200	ON/OFF time 200 milliseconds
SII_PM_ON_OFF_TIME_300	ON/OFF time 300 milliseconds
SII_PM_ON_OFF_TIME_400	ON/OFF time 400 milliseconds
SII_PM_ON_OFF_TIME_500	ON/OFF time 500 milliseconds
SII_PM_ON_OFF_TIME_600	ON/OFF time 600 milliseconds
SII_PM_ON_OFF_TIME_700	ON/OFF time 700 milliseconds
SII_PM_ON_OFF_TIME_800	ON/OFF time 800 milliseconds

㉑ Buzzer pattern (BuzzerPattern)

Constants of enumerated type used for the buzzer pattern of the external buzzer are shown in the following table.

Constant Name	Description
SII_PM_BUZZER_PATTERN_1	Pattern 1
SII_PM_BUZZER_PATTERN_2	Pattern 2
SII_PM_BUZZER_PATTERN_3	Pattern 3
SII_PM_BUZZER_PATTERN_4	Pattern 4

㉒ Memory area (MemoryArea)

Constants of enumerated type used for operating memory area are shown in the following table.

Constant Name	Description
SII_PM_MEMORY_DISPLAY_USERMEMORY	User area

㉓ Registered font (RegisteredFont)

Constants of enumerated type used for registered font are shown in the following table.

Constant Name	Description
SII_PM_FONT_STANDARD	Standard font
SII_PM_FONT_OPTION	Optional font

②⑤ QR data mode (QrDataMode)

Constants of enumerated type used for QR data mode are shown in the following table.

Constant Name	Description
SII_PM_QRDATAMODE_NUMERIC	Numeric mode
SII_PM_QRDATAMODE_ALPHANUMERIC	Alphanumeric mode
SII_PM_QRDATAMODE_8BITBYTE	8-bit byte mode
SII_PM_QRDATAMODE_KANJI	Kanji mode
SII_PM_QRDATAMODE_MIXTURE	Mixed mode

②⑥ QR quiet zone (QrQuietZone)

Constants of enumerated type used for QR quiet zone are shown in the following table.

Constant Name	Description
SII_PM_QRQUIETZONE_EXIST	Set QR quiet zone on
SII_PM_QRQUIETZONE_NONE	Set QR quiet zone off

②⑦ Macro registration processing (MacroRegistrationFunction)

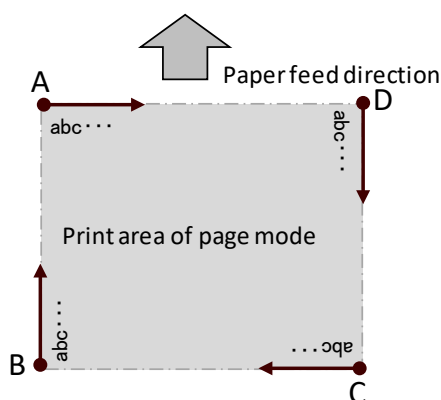
Constants of enumerated type used for macro registration processing are shown in the following table.

Constant Name	Description
SII_PM_MACRO_REGISTRATION_CLEAR	Cancel macro registration processing
SII_PM_MACRO_REGISTRATION_START	Start macro registration processing
SII_PM_MACRO_REGISTRATION_REGIST	Finish macro registration and macro registration processing

②⑧ Print direction (*Direction*)

Constants of enumerated type used for print direction in page mode are shown in the following table.

Constant Name	Description
<b>SII_PM_DIRECTION_LEFT_TO_RIGHT</b>	Starting point: Upper left (A on the figure), Print direction: Left to Right
<b>SII_PM_DIRECTION_BOTTOM_TO_TOP</b>	Starting point: Left below (B on the figure), Print direction: Below to Upper
<b>SII_PM_DIRECTION_RIGHT_TO_LEFT</b>	Starting point: Right below (C on the figure), Print direction: Right to Left
<b>SII_PM_DIRECTION_TOP_TO_BOTTOM</b>	Starting point: Upper right (D on the figure), Print direction: Upper to Below



②⑨ Line style (*LineStyle*)

Constants of enumerated type used for line style in page mode are shown in the following table.

Constant Name	Description
<b>SII_PM_LINestyle_THIN</b>	Thin solid line (2 dots)
<b>SII_PM_LINestyle_MEDIUM</b>	Medium solid line (4 dots)
<b>SII_PM_LINestyle_THICK</b>	Thick solid line (8 dots)

## (5) Method Details

① Common method to standard mode and page mode

The following methods are valid in standard mode and page mode. Standard mode is set immediately after **connect** is executed.

	init	Instance
Syntax	- (id) <b>init</b> ;	
Description	This method initializes the instance of <b>SIIPrinterManager</b> class.	
Return value	When succeeded, the initialized instance of <b>SIIPrinterManager</b> class is returned. When failed, nil is returned.	
Example of use	<pre><b>SIIPrinterManager *printerManager =</b> <b>[[SIIPrinterManager alloc] init];</b></pre>	

connect Start communicating with printer

Starts communicating with the printer.

Syntax	<pre> - (void) <b>connect</b>: (NSInteger)printerModel                   address: (NSString)address                   portType: (NSInteger)portType; </pre>	
Parameter	printerModel	Printer model constant. See "4.2.1(3)① Printer model" for available constants.
	address	Depends on the setting of portType. • For <b>SIIPM_PRINTER_PORT_TYPE_BLUETOOTH</b> : Specify the Bluetooth device name (Bluetooth Accessory). Example: "RP-F10" • For <b>SIIPM_PRINTER_PORT_TYPE_USB</b> : Specify the printer name Example: "RP-F10" • For <b>SIIPM_PRINTER_PORT_TYPE_TCP</b> : Specify the IP address of the printer. Example: "192.168.0.190"
	portType	Port type See "4.2.1(3)② Port type" for available constants.
Error	<b>SIIPrinterException</b> is thrown when an error occurs while this method is being called. See " <b>4.2.3 SIIPrinterException Class</b> " for details on the error.	
Description	Call this method before using other class methods. In order to make this library work properly, this method may change the printer settings when connecting.  For Bluetooth connection: Communication with a printer paired with iOS device starts through Bluetooth connection. Connection is made to the paired Bluetooth device (Bluetooth accessory) specified by address.  For USB connection: Communication with a printer connected with the iOS device through the USB cable starts through the USB connection.	

Communication with a printer connected to the same network as the iOS device starts through TCP/IP connection. Connection is made to the IP address specified by `address`. TCP port 9100 and 26100 are used for communication.

After **connect**, the library retains the created socket until **disconnect**. And connecting to the same printer from other applications is not possible until **disconnect**.

Based on the completion of data transmission to the printer, the socket is once discarded after elapsing the socket keeping time set by `socketKeepingTime`. Then the new socket is created immediately and used for the next connection. If the printer is receiving a connection request from another host on the same network at the time of discarding the socket, the printer establishes communication with that host, so the reconnection may fail.

**Note** This method does not support a concurrent connection from multiple apps to one printer.

Stop communicating with printer

Syntax - (void) **disconnect;**

Error `SIIPrinterException` is thrown when an error occurs while this method is being called.  
See "[4.2.3 SIIPrinterException Class](#)" for details on the error.

**Note** It is recommended to get execution response by **SII\_PM\_PRINTER\_RESPONSE\_REQUEST** of **getPrinterResponse** before executing this method. If not, the following problems may occur:

- The communication is disconnected before the print data sending from iOS device to the printer is completed, and a part of the data may be lost.
  - In Bluetooth connection, when either **disconnect** or **connect** is executed while the printer is in the buffer full state\*1, the communication between iOS device and the printer may be disconnected.
- \*1: The state of buffer full means that the buffer of the printer is filled with print data. The size to be in buffer full state is approximately 4K bytes.

If you do not execute `getPrinterResponse` in your program, please fully evaluate your program to confirm no problems arise.

Open cash drawer

```
Syntax      - (void) openDrawer: (DrawerNum) drawerNum
              onOffTime: (PulseWidth) onOffTime;
```

Parameter	drawerNum	Drawer number See "4.2.1(4)Ⓣ Drawer number (DrawerNum)" for available constants.
-----------	-----------	---

`onOffTime`      **Pulse width**  
See "4.2.1(4)② Pulse width (PulseWidth)" for available constants.

Error **SIIPrinterException** is thrown when an error occurs while this method is being called.  
See "**4.2.3 SIIPrinterException Class**" for details on the error.

## buzzer

## Sound buzzer

This method is not supported. When this method is executed, **SIIPrinterException** is thrown.

Syntax - (void) **buzzer:** (NSInteger) onTime  
offTime: (NSInteger) offTime;

## externalBuzzer

## Sound external buzzer

Sounds the external buzzer.

Syntax - (void) **externalBuzzer:** (BuzzerPattern) buzzerPattern  
buzzerCount: (NSInteger) buzzerCount;

Parameter buzzerPattern Buzzer pattern  
See "4.2.1(4) Buzzer pattern (BuzzerPattern)" for available constants.  
The external buzzer sound stops under one of the following conditions:

- Sounding for the number of times set by buzzerCount
- Opening the cover
- Executing the printer command "Stop External Buzzer"

buzzerCount Buzzer sound count (times)  
The external buzzer sounds for the number of times set by buzzerCount.  
The valid range is 1 to 255.

Error **SIIPrinterException** is thrown when an error occurs while this method is being called.  
See "**4.2.3 SIIPrinterException Class**" for details on the error.

## getStatus

## Get printer status

Gets the latest printer status.

Syntax - (void) **getStatus:** (NSInteger[]) buf;

Parameter buf Status retrieved from the printer

Error **SIIPrinterException** is thrown when an error occurs while this method is being called.  
See "**4.2.3 SIIPrinterException Class**" for details on the error.

Description The status retrieved from the printer is stored in an NSInteger array.



The printer status is shown below.

When the connection failed, the printer status is shown in 0x80000000.

Bit	Function	Value	
		0	1
0	Voltage error	No error	Error
1	Hardware error	No error	Error
2	Head temperature error	No error	Error
3	Reserved	No error	Error
4	Out-of-paper error	No error	Error
5	Reserved	Fixed	-
6	Reserved	Fixed	-
7	Cover open error	No error	Error
8	FEED Switch status	OFF	ON
9	Reserved	Fixed	-
10	Paper feed status	Stop	Operating
11	Return-waiting status	Not waiting	Waiting
12	Reserved	Fixed	-
13	Reserved	-	Fixed
14	Reserved	-	Fixed
15	Drawer switch input status	Low	High
16	FLASH memory rewriting	Not rewriting	Rewriting
17	Reserved	Printer	Others
18	Reserved	Fixed	-
19	Reserved	-	Fixed
20 to 31	Reserved	-	Fixed

## abort

## Abort waiting state of printer

Aborts the waiting state of the printer.

**Syntax** - (void) **abort**;

**Error** **SIIPrinterException** is thrown when an error occurs while this method is being called.  
See "**4.2.3 SIIPrinterException Class**" for details on the error.

**Description** When sending of image file by **sendDataFile** is interrupted, the printer does not accept other processes until the specified image file is received completely. (Methods and transmission data are misinterpreted and recognized as a part of the image file.) To solve this situation, use this method to abort the waiting state of the printer.  
Note that when this method is executed, a part of unprinted image file may be printed.

Registers image file to the NV graphics memory in the printer as a logo.

The method of syntax (a), dithering can be specified.

The method of syntax (b), dithering is fixed to be disabled.

Syntax	(a) - (void) <b>registerLogo:</b> (NSString *)fileName logoId: (NSString *)logoId dithering: (Dithering)dithering;  (b) - (void) <b>registerLogo:</b> (NSString *)fileName logoId: (NSString *)logoId;						
Parameter	<table><tr><td>fileName</td><td>File path of image file to be registered as a logo Supported image file extensions are .bmp, .jpg, .jpeg, and .png. Colored image is converted to monochrome image by binarization and registered.</td></tr><tr><td>logoId</td><td>ID of the logo to be registered (key code) Specify the ID of the logo to be registered as a two-character string. Valid characters are ASCII character codes from 20h (space) to 7Eh (tilde) such as alphanumeric ('0' to '9', 'A' to 'Z', 'a' to 'z').</td></tr><tr><td>dithering</td><td>Dithering See "4.2.1(4)① Dithering (Dithering)" for available constants.</td></tr></table>	fileName	File path of image file to be registered as a logo Supported image file extensions are .bmp, .jpg, .jpeg, and .png. Colored image is converted to monochrome image by binarization and registered.	logoId	ID of the logo to be registered (key code) Specify the ID of the logo to be registered as a two-character string. Valid characters are ASCII character codes from 20h (space) to 7Eh (tilde) such as alphanumeric ('0' to '9', 'A' to 'Z', 'a' to 'z').	dithering	Dithering See "4.2.1(4)① Dithering (Dithering)" for available constants.
fileName	File path of image file to be registered as a logo Supported image file extensions are .bmp, .jpg, .jpeg, and .png. Colored image is converted to monochrome image by binarization and registered.						
logoId	ID of the logo to be registered (key code) Specify the ID of the logo to be registered as a two-character string. Valid characters are ASCII character codes from 20h (space) to 7Eh (tilde) such as alphanumeric ('0' to '9', 'A' to 'Z', 'a' to 'z').						
dithering	Dithering See "4.2.1(4)① Dithering (Dithering)" for available constants.						
Error	<b>SIIPrinterException</b> is thrown when an error occurs while this method is being called. See " <b>4.2.3 SIIPrinterException Class</b> " for details on the error.						

Deletes the registered logo.

Syntax	- (void) <b>unregisterLogo:</b> (NSString *)logoId;	
Parameter	logoId	ID of the logo to be deleted (key code) Specify the ID of the registered logo as a character string.
Error	<b>SIIPrinterException</b> is thrown when an error occurs while this method is being called. See " <b>4.2.3 SIIPrinterException Class</b> " for details on the error.	

This method is not supported. When this method is executed, **SIIPrinterException** is thrown.

Syntax	- (void) <b>registerSytleSheet:</b> (NSString *)fileName cssId: (NSInteger)cssId;
--------	--

This method is not supported. When this method is executed, **SIIPrinterException** is thrown.

Syntax	- (void) <b>unregisterStyleSheet:</b> (NSInteger)cssId;
--------	---

Performs a hardware reset of the printer.

Syntax      - (void) **resetPrinter**;

Error	<code>SIIPrinterException</code> is thrown when an error occurs while this method is being called.
-------	--

See "4.2.3 SIIPrinterException Class" for details on the error.

Description	For Bluetooth connection:
-------------	---------------------------

The printer hardware reset is performed by the printer command "Printer Reset". When using this method, enable iOS Auto Connection in the iOS app "SII RP Utility" on the App Store. When it is disabled, this method fails to reconnect after reset and **SIIPrinterException** is thrown.

This method takes about 10 seconds to complete reconnection with the printer after performing the reset. Use this method after setting a sufficient receive timeout period.

For USB connection:

The hardware reset is not supported by USB communication.

When this method is executed in USB communication, the iOS device may not recognize the printer.

When reconnection with the printer fails after executing this method, disconnect the USB cable and then reconnect.

For TCP/IP connection:

The reset is performed to the connected printer by our proprietary command (reset request) to TCP port 26100.

The connection with the printer is retained even after this method is executed.

Gets response data from the printer.

```
Syntax      - (void) getPrinterResponse: (NSInteger) responseId
              param: (NSObject *)param
              response: (void *)response;
```

Parameter	<code>responseId</code>	Response type constant See "4.2.1(3)③ Printer response type" for available constants.
-----------	-------------------------	--

param	Command parameter The value to be specified varies with the response type constant. See the following table for description of the value to be specified.
-------	---

Buffer for storing the retrieved response data  
The buffer type varies with the response type constant.  
See the following table for the buffer type.

Response Type Constant	
Parameter	Description
<b>SII_PM_PRINTER_RESPONSE_REQUEST</b> (Execution response request)	
param	Specify 0 to 15 (00h to 0Fh) in NSData type.
response	Specify an NSInteger array of length 1. When the response is retrieved successfully, the response code of the execution response request is stored with 128 to 143 (80h to 8Fh).
<b>SII_PM_PRINTER_RESPONSE_USER_AREA</b> (Send remaining capacity of user area)	
param	Specify nil.
response	Specify an NSInteger array of length 1. When the response is retrieved successfully, the remaining capacity of the user area is stored as a numerical value in bytes.
<b>SII_PM_PRINTER_RESPONSE_ARRANGE_USER_AREA</b> (Send remaining capacity of user area after defragment)	
param	Specify nil.
response	Specify an NSInteger array of length 1. When the response is retrieved successfully, the remaining capacity of the user area after defragment is stored as a numerical value in bytes.
<b>SII_PM_PRINTER_RESPONSE_NV_GRAPHICS</b> (Send NV graphics memory capacity)	
param	Specify nil.
response	Specify an NSInteger array of length 1. When the response is retrieved successfully, the NV graphics memory capacity is stored as a numerical value in bytes.
<b>SII_PM_PRINTER_RESPONSE_KEY_CODE</b> (Send key code list of defined NV graphics)	
param	Specify nil.
response	Specify an NSMutableArray array. When the response is retrieved successfully, the key code of NV graphics is stored as a string array.

Error `SIIPrinterException` is thrown when an error occurs while this method is being called.  
See "[4.2.3 SIIPrinterException Class](#)" for details on the error.

```
startDiscoveryPrinter
```

```
Start printer search (Bluetooth)
```

Searches for the Bluetooth device (Bluetooth accessory).

Syntax

```
- (void)startDiscoveryPrinter:(NSPredicate *)predicate  
completion:(EABluetoothAccessoryPickerCompletion)completion;
```

Parameter	predicate	Specify nil.
-----------	-----------	--------------

completion	Completion event of <b>EABluetoothAccessoryPickerCompletion</b> Specify <code>^(NSError *error)</code> to receive the completion event of <b>EABluetoothAccessoryPickerCompletion</b> .
Error	<b>SIIPrinterException</b> is thrown when an error occurs while this method is being called.
Description	This method searches for the Bluetooth device (Bluetooth accessory). This method is calling <code>showBluetoothAccessoryPickerWithNameFilter</code> of <b>EAAccessoryManager</b> internally. Pairing with the Bluetooth device can be performed in the window displayed at execution of this method.  Example when specifying <code>^(NSError *error)</code> (Statement of <b>EABluetoothAccessoryPickerCompletion</b> )  <pre>typedef void(^EABluetoothAccessoryPickerCompletion)(NSError *error);</pre>

<b>startDiscoveryPrinter</b>	<b>Start printer search (TCP/IP)</b>
------------------------------	--------------------------------------

Searches for SII printer connecting to the same network.

Syntax	<pre>- (void) <b>startDiscoveryPrinter</b>: (NSInteger) retryCount     timeout: (NSInteger) timeout     completion: (SIIDiscoveryPrinterCompletion) completion;</pre>	
Parameter	retryCount	Retry count (times) Sends the local broadcast packet the number of times set by <code>retryCount</code> . The valid range is 1 to 5. When the value is specified less than 1, the number is set to 1. When the value is specified more than 5, the number is set to 5.
	timeout	Search timeout period (millisecond: ms) Sets the timeout period per search. Each time the local broadcast packet is sent, this method waits for a response from the printer until the period specified by <code>timeout</code> elapses. The valid range is 3000 to 60000. When the value is specified less than 3000, the period is set to 3000 ms. When the value is specified more than 60000, the period is set to 60000 ms.
	completion	Printer search completion event Notifies the block set by <code>completion</code> as an event.
Error	<b>SIIPrinterException</b> is thrown when an error occurs while this method is being called.	
Description	This method searches for SII printers. The printer information of the found printer can be retrieved by <code>getFoundPrinter</code> .  The definition of <b>SIIDiscoveryPrinterCompletion</b> is as follows: <pre>typedef void(^SIIDiscoveryPrinterCompletion)(NSArray *printerList);</pre>	

Cancels **startDiscoveryPrinter** (TCP/IP) under execution.

Syntax - (void) **cancelDiscoveryPrinter**;

Description This method is available only when `portType` of **connect** is **SII\_PM\_PRINTER\_PORT\_TYPE\_TCP**.

The cancellation of the search is notified as an event to the block set to `completion` of **startDiscoveryPrinter**.

Returns the printer information found by **startDiscoveryPrinter** (TCP/IP) in NSArray type.

Syntax - (NSArray \*) **getFoundPrinter**;

Description This method is available only when `portType` of **connect** is **SII\_PM\_PRINTER\_PORT\_TYPE\_TCP**.

See "4.2.2 SIIPrinterInfo Class" for details of the printer information.

Return value NSArray type printer information

Gets the SDK version as a character string.

Syntax - (NSString \*) **getVersion**;

Return value SDK version character string (Example: When the SDK version is Ver.1.0.0, the return value is "1.0.0")

Description This method can get the SDK version regardless of whether **isConnect** is YES or NO.

Starts or ends batch processing.

Syntax - (void) **controlTransaction:** (TransactionFunction) **control**;

Parameter **control** Batch processing selection  
See "4.2.1(4)② Batch processing selection (TransactionFunction)" for available constants.

Error **SIIPrinterException** is thrown when an error occurs while this method is being called.  
See "4.2.3 SIIPrinterException Class" for details on the error.

Description The procedure of batch processing is as follows:  
(1) Starts batch processing.  
Specify **SII\_PM\_TRANSACTION\_START**.  
(2) Executes the method.  
In the case of the batch processing target method, buffering of transmission data is started.  
The transmission data of the batch processing target method executed during

buffering is buffered in the transmission buffer without being sent to the printer.

The maximum size of transmission data to be buffered is system dependent.

If the buffered transmission data exceeds the maximum size, the batch processing target method at the time of exceeding becomes an error. If an error occurs, the transmission data up to the error is retained.

As for the retained transmission data, finish the batch processing in step (3).

In the case of a method other than the batch processing target method, transmission data is immediately executed without being buffered.

(3) Finishes batch processing.

When **SII\_PM\_TRANSACTION\_PRINT** is specified, the buffered transmission data is sent to the printer. The buffered transmission data is retained even after sent to the printer.

The retained transmission data is discarded by any of the following:

- Specify **SII\_PM\_TRANSACTION\_CLEAR**
- Specify **SII\_PM\_TRANSACTION\_START**
- Execute **disconnect**

The batch processing target methods are as follows:

- **sendText**
- **sendTextEx**
- **printBarcode**
- **printPDF417**
- **printQRcode**
- **printDataMatrix**
- **printMaxiCode**
- **printGS1DataBarStacked**
- **printGS1DataBarStackedOmnidirectional**
- **printGS1DataBarExpandedStacked**
- **cutPaper**
- **openDrawer**
- **externalBuzzer**
- **sendBinary**
- **sendDataFile**
- **printLogo**<sup>\*1</sup>
- **enterPageMode**
- **exitPageMode**
- **setPageModeArea**
- **setPageModeDirection**
- **setPageModeLineSpacing**
- **printPageMode**
- **printPageModeText**
- **printPageModeTextEx**
- **printPageModeBarcode**
- **printPageModePDF417**
- **printPageModeQRcode**
- **printPageModeDataMatrix**
- **printPageModeMaxiCode**
- **printPageModeGS1DataBarStacked**
- **printPageModeGS1DataBarStackedOmnidirectional**
- **printPageModeGS1DataBarExpandedStacked**
- **sendPageModeBinary**
- **printPageModeImageFile**
- **printPageModeRectangle**
- **printPageModeLine**
- **printPageModeLogo**<sup>\*1</sup>

\*1: The method under batch processing does not notify the error even when the registered logo does not exist.

Optimizes the memory area.

Syntax	- (void) <b>defragment</b> : (MemoryArea)memoryArea;	
Parameter	memoryArea	Memory area See "4.2.1(4)㉓ Memory area (MemoryArea)" for available constants.
Error	<b>SIIPrinterException</b> is thrown when an error occurs while this method is being called. See " <b>4.2.3 SIIPrinterException Class</b> " for details on the error.	
Description	It may take several minutes for optimization. Do not turn the printer power off during optimization. Display is changed to Standby mode when this method is executed. A selecting template is deselected.  This method is ignored when Display is not connected to the printer.	

Initializes the memory area.

Syntax	- (void) <b>initializeMemoryArea</b> : (MemoryArea)memoryArea;	
Parameter	memoryArea	Memory area See "4.2.1(4)㉓ Memory area (MemoryArea)" for available constants.
Error	<b>SIIPrinterException</b> is thrown when an error occurs while this method is being called. See " <b>4.2.3 SIIPrinterException Class</b> " for details on the error.	
Description	It may take several minutes for initialization. Do not turn the printer power off during the initialization. Display is changed to Standby mode when this method is executed. A selecting template is deselected.  This method is ignored when Display is not connected to the printer.	
<b><u>Note</u></b>	Registered data in following methods is deleted when the memory area is initialized after specifying <b>SH_PM_MEMORY_DISPLAY_USERMEMORY</b> . <ul style="list-style-type: none"> <li>▪ <b>registerTemplate</b></li> <li>▪ <b>registerImageData</b></li> <li>▪ <b>controlMacroRegistration</b></li> <li>▪ <b>registerUserDefinedCharacter</b></li> <li>▪ <b>registerOptionFont</b></li> </ul>	

**In addition, part of data which is registered at the shipping to use for the system is deleted either. Therefore Display becomes impossible to change to Guide mode when an error occurs in the printer.**

The used memory can be reused after executing **defragment**.



Displays the template on the screen.

**Syntax** - (void) **showTemplate:** (NSInteger)time\_ms;

**Parameter** time\_ms Display time (ms: millisecond)  
Specify display time on the screen with time\_ms (ms)  
The valid range is 0 to 25500.  
When the value exceeds 0 and less than 100 is specified, the time is set to 100 ms.  
When the value exceeding 25500 is specified, the time is set to 25500 ms.

For macro registration:

When 0 is specified with time\_ms, the template is shown continuously.

When other than 0 is specified with time\_ms, a next template is shown after the display time is elapsed.

For other than macro registration:

When 0 is specified with time\_ms, the template is shown continuously.

When other than 0 is specified with time\_ms, the template returns to a previous template after the display time is elapsed.

In case of the previous screen has been updated with the display time other than 0, the screen is traced back to the template which was updated with the display time 0.

**Error** **SIIPrinterException** is thrown when an error occurs while this method is being called.  
See "4.2.3 SIIPrinterException Class" for details on the error.

**Description** Updates the screen, and displays data being specified with the following methods.

- selectTemplate
- setTemplateImageData
- selectTemplateTextObject
- setTemplateTextAlignment
- setTemplateTextLeftMargin
- setTemplateTextLineSpacing
- setTemplateTextBold
- setTemplateTextUnderline
- setTemplateTextSize
- setTemplateTextFont
- setTemplateTextRightSpacing
- setTemplateTextColor
- setTemplateTextData
- setTemplateBarcodeData
- setTemplateQrCodeData

This method is ignored when Display is not connected to the printer.

Displays the slide on the screen.

Syntax	- (void) <b>showslide</b> : (NSInteger) slideID; time_ms: (NSInteger) time_ms;	
Parameter	slideID	Slide ID Specify the ID of the slide data which is registered at <b>registerSlideData</b> . The valid range is 0 to 91. This method is ignored when slide data is not registered in the specified ID.
	time_ms	Display time (ms: millisecond) Specify display time on the screen with <code>time_ms</code> (ms) The valid range is 0 to 25500. When the value exceeds 0 and less than 100 is specified, the display time is set to 100 ms. When the value exceeds 25500 is specified, the display time is set to 25500 ms.  For macro registration: When 0 is specified with <code>time_ms</code> , the slide is shown continuously. When other than 0 is specified with <code>time_ms</code> , a next slide is shown after the display time is elapsed. For other than macro registration: When 0 is specified with <code>time_ms</code> , the slide is shown continuously. When other than 0 is specified with <code>time_ms</code> , the slide returns to a previous slide after the display time is elapsed. In case of the previous screen has been updated with the display time other than 0, the screen is traced back to the slide which was updated with the display time 0.
Error	<b>SIIPrinterException</b> is thrown when an error occurs while this method is being called. See " <b>4.2.3 SIIPrinterException Class</b> " for details on the error.	
Description	A selecting template is deselected.  This method is ignored when Display is not connected to the printer.	

Changes Display to Standby mode.

Syntax	- (void) <b>enterStandbyMode</b> ;	
Error	<b>SIIPrinterException</b> is thrown when an error occurs while this method is being called. See " <b>4.2.3 SIIPrinterException Class</b> " for details on the error.	
Description	This method is ignored during Standby mode or Guide mode is being displayed. A selecting template is deselected.  This method is ignored when Display is not connected to the printer.	

Executes the macro.

Syntax	- (void) <b>executeMacro:</b> (NSInteger) macroID repeatCount: (NSInteger) repeatCount;	
Parameter	macroID	Macro ID Specify the macro ID which is registered at <b>controlMacroRegistration</b> . The valid range is 0 to 127. This method is ignored when the macro is not registered in the specified ID.
	repeatCount	The number of execution times Specify times to execute the macro. The valid range is 0 to 255. Continues the repeating when 0 is specified.
Error	<b>SIIPrinterException</b> is thrown when an error occurs while this method is being called. See " <b>4.2.3 SIIPrinterException Class</b> " for details on the error.	
Description	A selecting template is deselected.  This method is ignored when Display is not connected to the printer.	

Sets the screen backlight on/off.

Syntax	- (void) <b>turnOnScreen:</b> (BOOL) isOn;	
Parameter	isOn	Screen status Specify the screen status from following. Yes: backlight on No: backlight off
Error	<b>SIIPrinterException</b> is thrown when an error occurs while this method is being called. See " <b>4.2.3 SIIPrinterException Class</b> " for details on the error.	
Description	This method is ignored when Display is not connected to the printer.	

Selects the template to show on Display.

The method of syntax (a) selects slide data to be used for the template or the template background.

The method of syntax (b) selects a template.

Syntax	(a) - (void) <b>selectTemplate:</b> (NSInteger) templateID slideID: (NSInteger) slideID;	
	(b) - (void) <b>selectTemplate:</b> (NSInteger) templateID;	

Parameter	<code>templateID</code>	<p>Template ID</p> <p>Specify the ID of template to select.</p> <p>The valid range is 0 to 127.</p> <p>This method is ignored when the template is not registered in the specified ID.</p>
	<code>slideID</code>	<p>Slide ID</p> <p>Specify the ID of slide data to use for the background of the template.</p> <p>The valid range is 0 to 91.</p> <p>This method is ignored when slide data is not registered in the specified ID.</p>
Error	<p><b>SIIPrinterException</b> is thrown when an error occurs while this method is being called.</p> <p>See "<b>4.2.3 SIIPrinterException Class</b>" for details on the error.</p>	
Description	<p>The data on the template is cleared when this method is executed.</p> <p>The selected template is displayed to the screen when <b>showTemplate</b> is executed.</p> <p>The selecting template is deselected when <b>showSlide</b>, <b>enterStandbyMode</b>, or <b>executeMacro</b> is executed.</p> <p>The selecting template is deselected when the specified display time is executed at <b>showTemplate</b>.</p> <p>Use following templates depends on the values of <b>codePage</b> when characters other than 20h to 7Eh of ASCII character are input with <b>setTemplateTextData</b>.</p> <ul style="list-style-type: none"> <li>·When <b>codePage</b> is <b>CODE_PAGE_KATAKANA</b>: Use the template which encoding specifying is Shift_JIS.</li> <li>·When <b>codePage</b> is other than <b>SII_PM_CODE_PAGE_KATAKANA</b>: Use the template which encoding specifying is ISO-2022-JP.</li> </ul> <p>This method is ignored when Display is not connected to the printer.</p>	

## setTemplateImageData

## Set image data

Sets image data to show on a selecting template.

Syntax	<pre>– (void) setTemplateImageData: (NSInteger) mapID                         imageID: (NSInteger) imageID;</pre>	
Parameter	<code>mapID</code>	<p>Map ID</p> <p>The valid range is 0 to 63.</p> <p>This method is ignored when a specified map ID is not defined in the template.</p>
	<code>imageID</code>	<p>Image ID</p> <p>Specify the ID of image data which was registered at <b>registerImageData</b>.</p> <p>The valid range is 0 to 63.</p> <p>This method is ignored when image data is not registered in the specified ID.</p>
Error	<p><b>SIIPrinterException</b> is thrown when an error occurs while this method is being called.</p> <p>See "<b>4.2.3 SIIPrinterException Class</b>" for details on the error.</p>	
Description	<p>After specifying the map ID of the selecting template with this method, specify the image ID to map.</p> <p>The specified image data is displayed to the screen when <b>showTemplate</b> is executed.</p>	

- When `selectTemplate` is executed.
- When other than 0 is specified at `time_ms` of `showTemplate`, and the specified display time has elapsed.
- When `showTemplate` registered in `executeMacro` is executed.

This method is ignored when Display is not connected to the printer.

## Select text element

Syntax - (void) **selectTemplateTextObject**: (NSInteger)mapID;

Error `SIIPrinterException` is thrown when an error occurs while this method is being called.  
See "[4.2.3 SIIPrinterException Class](#)" for details on the error.

- When **selectTemplate** is executed.
- When **showTemplate** is executed.

This method is ignored when Display is not connected to the printer.

## Alignment of text data

Syntax      - (void) **setTemplateTextAlignment**: (PrintAlignment) alignment;

Error **SIIPrinterException** is thrown when an error occurs while this method is being called.  
See "**4.2.3 SIIPrinterException Class**" for details on the error.

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Specify the map ID at **selectTemplateTextObject** before executing this method,  
 Input text data at **setTemplateTextDat** after executing this method,  
 The input text data is displayed to the screen when **showTemplate** is executed.

This method setting is cleared under the following conditions.

- When **selectTemplate** is executed.
- When other than 0 is specified at **time\_ms** of **showTemplate**, and the specified display time has elapsed.
- When **showtTemplate** registered in **executeMacro** is executed.

This method is ignored when Display is not connected to the printer.

## setTemplateTextLeftMargin

## Set left margin of text data

Sets left margin to text data shown on Display.

Syntax - (void) **setTemplateTextLeftMargin**: (NSInteger)margin;

Parameter margin Left margin (pixel: px)  
 The valid range is 0 to 479.

Error **SIIPrinterException** is thrown when an error occurs while this method is being called.  
 See "4.2.3 **SIIPrinterException Class**" for details on the error.

Description The left margin setting is valid only as following conditions.  
 ·Text data is not entered in a specified map ID at **selectTemplateTextObject**.  
 ·Text data entered in a map ID which is specified at **selectTemplateTextObject** is registered right after a line feed.

Specify the map ID at **selectTemplateTextObject** before executing this method.  
 Input text data at **selectTemplateTextData** after executing this method.  
 The input text data is displayed to the screen when **showTemplate** is executed.

This method setting is cleared under the following conditions.

- When **selectTemplate** is executed.
- When other than 0 is specified at **time\_ms** of **showTemplate**, and the specified display time has elapsed.
- When **showtTemplate** registered in **executeMacro** is executed.

This method is ignored when Display is not connected to the printer.

## setTemplateTextLineSpacing

## Set line spacing of text data

Sets line spacing to text data shown on Display.

Syntax - (void) **setTemplateTextLineSpacing**: (NSInteger)spacing;

Parameter spacing Line spacing (pixel: px)  
 The valid range is 0 to 255.

Error **SIIPrinterException** is thrown when an error occurs while this method is being called.  
 See "4.2.3 **SIIPrinterException Class**" for details on the error.

Description The line spacing setting is valid only as following cases.  
 ·Text data is not entered in a specified map ID at **selectTemplateTextObject**.  
 ·Text data entered in a map ID which is specified at **selectTemplateTextObject** is registered right after a line feed.

When a scroll is set to a text element of the specified mapID, the line spacing to text data is not reflected.

Specify the map ID at **selectTemplateTextObject** before executing this method.  
Input text data at **selectTemplateTextData** after executing this method.  
The input text data is displayed to the screen when **showTemplate** is executed.

This method setting is cleared under the following conditions.

- When **selectTemplate** is executed.
- When other than 0 is specified at **time\_ms** of **showTemplate**, and the specified display time has elapsed.
- When **showTemplate** registered in **executeMacro** is executed.

This method is ignored when Display is not connected to the printer.

## setTemplateTextBold

## Set bold character of text data

Sets bold characters to text data shown on Display.

Syntax	- (void) <b>setTemplateTextBold</b> : (CharacterBold)bold;	
Parameter	bold	Bold character See "4.2.1(4)③ Bold character (CharacterBold)" for available constants.
Error	<b>SIIPrinterException</b> is thrown when an error occurs while this method is being called. See "4.2.3 SIIPrinterException Class" for details on the error.	
Description	From text data after this method is executed, the bold characters are applied. The bold character can be set one by one.  Specify the map ID at <b>selectTemplateTextObject</b> before executing this method. Input text data at <b>selectTemplateTextData</b> after executing this method. The input text data is displayed to the screen when <b>showTemplate</b> is executed.  This method setting is cleared under the following conditions. ·When <b>selectTemplate</b> is executed. ·When other than 0 is specified at <b>time_ms</b> of <b>showTemplate</b> , and the specified display time has elapsed. ·When <b>showTemplate</b> registered in <b>executeMacro</b> is executed.  This method is ignored when Display is not connected to the printer.	

## setTemplateTextUnderline

## Set underline of text data

Sets underline to text data shown on Display.

Syntax	- (void) <b>setTemplateTextUnderline</b> : (CharacterUnderline)underline;	
Parameter	underline	Underline See "4.2.1(4)④ Underline (CharacterUnderline)" for available constants.
Error	<b>SIIPrinterException</b> is thrown when an error occurs while this method is being called. See "4.2.3 SIIPrinterException Class" for details on the error.	
Description	From text data after this method is executed, the underlines are applied. The underline can be set one by one.	

Specify the map ID at **selectTemplateTextObject** before executing this method.  
 Input text data at **selectTemplateTextData** after executing this method.  
 The input text data is displayed to the screen when **showTemplate** is executed.

This method setting is cleared under the following conditions.

- When **selectTemplate** is executed.
- When other than 0 is specified at **time\_ms** of **showTemplate**, and the specified display time has elapsed.
- When **showTemplate** registered in **executeMacro** is executed.

This method is ignored when Display is not connected to the printer.

## setTemplateTextSize

## Set character size of text data

Sets character size to text data shown on Display.

Syntax	- (void) <b>setTemplateTextSize</b> : (CharacterScale) scale;	
Parameter	scale	Character scale See "4.2.1(4)⑧ Character scale (CharacterScale)" for available constants.
Error	<b>SIIPrinterException</b> is thrown when an error occurs while this method is being called. See "4.2.3 SIIPrinterException Class" for details on the error.	
Description	From text data after this method is executed, the character sizes are applied. The character size can be set one by one.	

Specify the map ID at **selectTemplateTextObject** before executing this method.  
 Input text data at **selectTemplateTextData** after executing this method.  
 The input text data is displayed to the screen when **showTemplate** is executed.

This method setting is cleared under the following conditions.

- When **selectTemplate** is executed.
- When other than 0 is specified at **time\_ms** of **showTemplate**, and the specified display time has elapsed.
- When **showTemplate** registered in **executeMacro** is executed.

This method is ignored when Display is not connected to the printer.

## setTemplateTextFont

## Set character font of text data

Sets a character font to text data shown on Display.

Syntax	- (void) <b>setTemplateTextFont</b> : (CharacterFont) font;	
Parameter	font	Character font See "4.2.1(4)⑦ Character font (CharacterFont)" for available constants.
Error	<b>SIIPrinterException</b> is thrown when an error occurs while this method is being called. See "4.2.3 SIIPrinterException Class" for details on the error.	
Description	From text data after this method is executed, the character fonts are applied. The character font can be set one by one.	



Specify the map ID at **selectTemplateTextObject** before executing this method.  
 Input text data at **selectTemplateTextData** after executing this method.  
 The input text data is displayed to the screen when **showTemplate** is executed.

This method setting is cleared under the following conditions.

- When **selectTemplate** is executed.
- When other than 0 is specified at **time\_ms** of **showTemplate**, and the specified display time has elapsed.
- When **showTemplate** registered in **executeMacro** is executed.

This method is ignored when Display is not connected to the printer.

## setTemplateTextRegisteredFont

## Set registered font of text data

Sets the registered font used for text data shown on Display.

Syntax - (void) **setTemplateTextRegisteredFont**: (RegisteredFont) font;

Parameter font Registered font  
 See "4.2.1(4)② Registered font (RegisteredFont)" for available constants.  
 This registered font is ignored when the optional font is not registered.

Error **SIIPrinterException** is thrown when an error occurs while this method is being called.  
 See "4.2.3 **SIIPrinterException Class**" for details on the error.

Description From text data after this method is executing, the registered fonts are applied.  
 The registered fonts can be set one by one.

Input text data with **setTemplateTextData** after executing this method.  
 The input text data is displayed to the screen when **showTemplate** is executed.

This method setting is cleared under the following conditions.

- When **selectTemplate** is executed.
- When other than 0 is specified at **time\_ms** of **showTemplate**, and the specified display time has elapsed.
- When **showTemplate** registered in **executeMacro** is executed.

This method is ignored when Display is not connected to the printer.

## setTemplateTextRightSpacing

## Set right space of text data

Sets the amount of right space to text data shown on Display.

Syntax - (void) **setTemplateTextRightSpacing**: (NSInteger) spacing;

Parameter spacing The amount of character space (pixel: px)  
 The valid range is 0 to 255.

Error **SIIPrinterException** is thrown when an error occurs while this method is being called.  
 See "4.2.3 **SIIPrinterException Class**" for details on the error.

Description From text data after this method is executed, the amount of character right space is applied.  
 The amount of right space can be set one by one.

Specify the map ID at **selectTemplateTextObject** before executing this method.  
 Input text data at **selectTemplateTextData** after executing this method.  
 The input text data is displayed to the screen when **showTemplate** is executed.

This method setting is cleared under the following conditions.

- When **selectTemplate** is executed.
- When other than 0 is specified at **time\_ms** of **showTemplate**, and the specified display time has elapsed.
- When **showTemplate** registered in **executeMacro** is executed.

This method is ignored when Display is not connected to the printer.

## setTemplateTextColor

## Set character color of text data

Sets the character color used for text data shown on Display.

Syntax	- (void) <b>setTemplateTextColor</b> : (NSInteger) color;	
Parameter	color	Character color The valid range is 0 to 0xffffffff.
Error	<b>SIIPrinterException</b> is thrown when an error occurs while this method is being called. See " <b>4.2.3 SIIPrinterException Class</b> " for details on the error.	
Description	This method can set character colors to text data. The character colors can be set in RGB24 bit color. The set color is displayed in the color converted to 16 bit RGB555.	

From text data after this method is executed, the character colors are applied.  
 The character color can be set one by one.

Specify the map ID at **selectTemplateTextObject** before executing this method.  
 Input text data at **selectTemplateTextData** after executing this method.  
 The input text data is displayed to the screen when **showTemplate** is executed.

This method setting is cleared under the following conditions.

- When **selectTemplate** is executed.
- When other than 0 is specified at **time\_ms** of **showTemplate**, and the specified display time has elapsed.
- When **showTemplate** registered in **executeMacro** is executed.

This method is ignored when Display is not connected to the printer.

## setTemplateTextData

## Input text data

Inputs text data to show on Display.

Syntax	- (void) <b>setTemplateTextData</b> : (NSString *) text	
Parameter	text	Text data to show on Display Data size which is able to be specified it once is 1 to 1020 bytes.
Error	<b>SIIPrinterException</b> is thrown when an error occurs while this method is being called. See " <b>4.2.3 SIIPrinterException Class</b> " for details on the error.	
Description	This method encodes input text data into text data which is enable to show on the basis of settings at <b>internationalCharacter</b> or <b>codePage</b> , and displays.	

After specifying a map ID of the selecting template with `selectTemplateTextObject`, input text data with this method.

The input text data is cleared under the following conditions.

This method is ignored when Display is not connected to the printer.

```
setTemplateBarcodeData
```

Inputs a map ID of the barcode element on the selecting template, and inputs barcode data.

The method of syntax (b) inputs data with byte arrays to display barcode.

Syntax (a) - (void) **setTemplateBarcodeData:** (NSInteger)mapID  
text:(NSString \*)text;

Error `SIIPrinterException` is thrown when an error occurs while this method is being called.  
See "[4.2.3 SIIPrinterException Class](#)" for details on the error.

The input barcode data is cleared on following conditions.

This method is ignored when a template is not selected.

Specifies a map ID of a qr element on a selecting template, and inputs QR Code data.

The method of syntax (a) inputs QR Code data with character strings.

The method of syntax (b) inputs QR Code data with character strings. The setting of selecting template is reflected to `moduleSize`, `errorCorrection`, `mode`, and `qrQuietZone`.

The method of syntax (c) inputs QR Code data with byte array.

The method of syntax (e) inputs QR Code data with byte array. The setting of selecting template is reflected to `moduleSize`, `errorCorrection`, `mode`, and `qrQuietZone`.

```
Syntax      (a) - (void) setTemplateBarcodeData: (NSInteger)mapID
                                moduleSize: (ModuleSize)moduleSize
                                errorCorrection: (ErrorCorrection)errorCorrection
                                mode: (QrDataMode)mode
                                qrQuietZone: (QrQuietZone)qrQuietZone
                                text: (String *)text;

            (b) - (void) setTemplateQRCodeData: (NSInteger)mapID
                                text: (String *)text;

            (c) - (void) setTemplateQRCodeData: (NSInteger)mapID
                                moduleSize: (ModuleSize)moduleSize
                                errorCorrection: (ErrorCorrection)errorCorrection
                                mode: (QrDataMode)mode
                                qrQuietZone: (QrQuietZone)qrQuietZone
                                data: (NSData *)data;

            (d) - (void) setTemplateQRCodeData: (NSInteger)mapID
                                data: (NSData *)data;
```

Parameter	mapID	Map ID The valid range is 0 to 7. This method is ignored when the specified map ID is not defined in the selecting template.
	moduleSize	Module size See "4.2.1(4)⑪ Module size ( <code>ModuleSize</code> )" for available constants.
	errorCorrection	Error correction level See "4.2.1(4)⑭ Error correction level ( <code>ErrorCorrection</code> )" for available constants.
	mode	Data mode See "4.2.1(4)⑵ QR data mode ( <code>QrDataMode</code> )" for available constants.
	qrQuietZone	Quiet zone See "4.2.1(4)⑶ QR quiet zone ( <code>QrQuietZone</code> )" for available constants.

text	<p>QR Code data</p> <p>The characters that can be input are as follows.</p> <ul style="list-style-type: none"> <li>·ASCII character codes from 20h (space) to 7Eh (tilde) alphanumeric ('0' to '9', 'A' to 'Z', 'a' to 'z').</li> <li>·8 bits Latin / Katakana based on JIS X 0201</li> <li>·Shift_JIS code based on JIS X 0208</li> </ul> <p>The available data size is 1 to 3909 bytes.</p> <p>QR Code data which is not complied with QR Code specification is ignored.</p>
data	<p>QR Code data</p> <p>QR Code data shown on Display.</p> <p>The values that can be input is 00h to FFh.</p> <p>The available number of data is 1 to 3909.</p> <p>QR Code data which is not complied with QR Code specification is ignored.</p>
Error	<p><b>SIIPrinterException</b> is thrown when an error occurs while this method is being called.</p> <p>See "<b>4.2.3 SIIPrinterException Class</b>" for details on the error.</p>
Description	<p>After specifying a map ID of the selecting template with this method, input QR Code data. The input QR Code data is displayed to the screen when <b>showTemplate</b> is executed.</p> <p>The input QR Code data is cleared on following conditions.</p> <ul style="list-style-type: none"> <li>·When <b>selectTemplate</b> is executed.</li> <li>·When other than 0 is specified at <b>time_ms</b> of <b>showTemplate</b>, and the specified display time has elapsed.</li> <li>·When <b>showtTemplate</b> registered in <b>executeMacro</b> is executed.</li> </ul> <p>This method is ignored when a template is not registered.</p> <p>This method is ignored when Display is not connected to the printer.</p>

## registerTemplate

## Register template

Registers a template in Display.

Syntax	<pre> - (void) <b>registerTemplate</b>: (NSInteger) templateID                         label: (NSString *) label                         fileName: (NSString *) fileName; </pre>	
Parameter	templateID	<p>Template ID</p> <p>Specify the ID of template to register.</p> <p>The valid range is 0 to 127.</p> <p>Do not specify the template ID of 127 because it is being used for the system.</p>
	label	<p>Template name</p> <p>A name for identification can be specified to the template to be registered.</p> <p>The characters that can be specified are ASCII code characters 20h (space) to 7Eh (tilde) such as alphanumeric characters ('0' to '9', 'A' to 'Z', 'a' to 'z').</p> <p>Do not use Unicode 00A5h (¥).</p> <p>The available number of characters is 0 to 32.</p> <p>This <b>label</b> is optional. Specify nil when the template name is not registered.</p> <p>The specified template name can be retrieved with <b>getDisplayResponse</b>.</p>

fileName                      File path of the template data to register in Display  
Supported file extension is .xml.  
The maximum data size that can be registered is 8192 bytes.  
See "Technical Reference for Display" for details on registration of the template data.

Error                      **SIIPrinterException** is thrown when an error occurs while this method is being called.  
See "**4.2.3 SIIPrinterException Class**" for details on the error.

Description              Display is changed to Standby mode when this method is executed. A selecting template is deselected.

This method is ignored when Display is not connected to the printer.

**Note**                      **Registered data at the shipping may be added or changed without prior notice for quality improvement.**

## unregisterTemplate Delete template

Deletes the registered template in Display.

Syntax                      - (void) **unregisterTemplate**: (NSInteger) templateID;

Parameter                  templateID                      Template ID  
Specify the ID of template to delete.  
The valid range is 0 to 127.  
This method is ignored when a template is not registered in the specified ID.

Error                      **SIIPrinterException** is thrown when an error occurs while this method is being called.  
See "**4.2.3 SIIPrinterException Class**" for details on the error.

Description              Display is changed to Standby mode when this method is executed. A selecting template is deselected.

Used memory is not released even the template is deleted. The used memory can be reused after executing **defragment**.

This method is ignored when Display is not connected to the printer.

## registerImageData Register image data

Registers image data in Display.

Syntax                      - (void) **registerImageData**: (NSInteger) imageID  
   label: (NSString \*) label  
   fileName: (NSString \*) fileName;

Parameter                  imageID                      Image ID  
The valid range is 0 to 63.  
Do not select image IDs 49 to 63 because they are being used for the system.

label	<p>Image name</p> <p>A name for identification can be specified to image data to be registered.</p> <p>The characters that can be specified are ASCII code characters 20h (space) to 7Eh (tilde) such as alphanumeric characters ('0' to '9', 'A' to 'Z', 'a' to 'z').</p> <p>Do not use Unicode 00A5h ('¥').</p> <p>The available number of characters is 0 to 32.</p> <p>This label is optional. Specify nil when the template name is not registered.</p> <p>The specified image name can be retrieved at <b>getDisplayResponse</b>.</p>
fileName	<p>File path</p> <p>Specify the file name of image data to register.</p> <p>Supported file extensions are .jpg, .jpeg, and .png.</p> <p>However, even the supported extensions may not be registered depending on the format.</p> <p>The maximum file size that can be registered is 786432 bytes.</p> <p>The maximum data size that can be registered is 480 horizontal × 272 vertical pixels(px).</p>
Error	<p><b>SIIPrinterException</b> is thrown when an error occurs while this method is being called.</p> <p>See "<b>4.2.3 SIIPrinterException Class</b>" for details on the error.</p>
Description	<p>Display is changed to Standby mode when this method is executed. A selecting template is deselected.</p> <p>This method is ignored when Display is not connected to the printer.</p>
<b>Note</b>	<p><b><u>Registered data at the shipping may be added or changed without prior notice for quality improvement.</u></b></p>

## unregisterImageData

## Delete image data

Deletes registered image data in Display.

**Syntax**      - (void)**unregisterImageData:** (NSInteger) imageID;

**Parameter**    imageID                      Image ID

The valid range is 0 to 63.

This method is ignored when image data is not registered in the specified ID.

**Error**            **SIIPrinterException** is thrown when an error occurs while this method is being called.

See "**4.2.3 SIIPrinterException Class**" for details on the error.

**Description**    Display is changed to Standby mode when this method is executed. A selecting template is deselected.

Used memory is not released even image data is deleted. The used memory can be reused after executing **defragment**.

This method is ignored when Display is not connected to the printer.

Registers slide data in Display.

Syntax	<pre> - (void) <b>registerSlideData:</b> (NSInteger) imageID                         label: (NSString *) label                         fileName: (NSString *) fileName; </pre>	
Parameter	slideID	<p>Slide ID</p> <p>The valid range is 0 to 91.</p> <p>Do not specify slide IDs of 80 to 90 because they are being used for the system.</p>
	label	<p>Slide name</p> <p>A name for identification can be specified to slide data to be registered.</p> <p>The characters that can be specified are ASCII code characters 20h (space) to 7Eh (tilde) such as alphanumeric characters ('0' to '9', 'A' to 'Z', 'a' to 'z').</p> <p>Do not use Unicode 00A5h ('¥').</p> <p>The available number of characters is 0 to 32.</p> <p>This <code>label</code> is optional. Specify nil when the template name is not registered.</p> <p>The specified slide name can be retrieved by <b>getDisplayResponse</b>.</p>
	fileName	<p>File path</p> <p>Specify the file name of slide data to register.</p> <p>Supported file name extensions are .jpg, jpeg, and .png.</p> <p>However, even the supported extensions may not be registered depending on the format.</p> <p>The maximum file size that can be registered is 786432 bytes.</p> <p>The maximum data size that can be registered is 480 horizontal × 272 vertical pixels (px).</p>
Error	<p><b>SIIPrinterException</b> is thrown when an error occurs while this method is being called.</p> <p>See "<b>4.2.3 SIIPrinterException Class</b>" for details on the error.</p>	
Description	<p>Display is changed to Standby mode when this method is executed. A selecting template is deselected.</p> <p>Execute <b>showSlide</b> to show registered slide data.</p> <p>Specify the slide ID at <b>showSlide</b> to use a registered slide data as a backscreen of the template.</p> <p>This method is ignored when Display is not connected to the printer.</p>	
<b>Note</b>	<p><b><u>Registered data at the shipping may be added or changed without prior notice for quality improvement.</u></b></p>	



Deletes registered slide data in Display.

Syntax	- (void) <b>unregisterSlideData:</b> (NSInteger) slideID;	
Parameter	slideID	Slide ID The valid range is 0 to 91. This method is ignored when slide data is not registered in a specified ID.
Error	<b>SIIPrinterException</b> is thrown when an error occurs while this method is being called. See " <b>4.2.3 SIIPrinterException Class</b> " for details on the error.	
Description	Display is changed to Standby mode when this method is executed. A selecting template is deselected. This method is ignored when Display is not connected to the printer.	

Registers user-defined characters in Display.

Syntax	- (void) <b>registerUserDefinedCharacter:</b> (NSString *) fileName;	
Parameter	fileName	File path Specify the file name of the user-defined characters to register. Supported file extension is .bin. See "Register User-Defined Character" of the display command in "Technical Reference for Display" for details on the user-defined character data.
Error	<b>SIIPrinterException</b> is thrown when an error occurs while this method is being called. See " <b>4.2.3 SIIPrinterException Class</b> " for details on the error.	
Description	Display is changed to Standby mode when this method is executed. A selecting template is deselected.  Use a template which encoding specifying is Shift_JIS for displaying user-defined characters. Specify <b>SII_PM_CODE_PAGE_KATAKANA</b> for <b>codePage</b> before user-defined characters are displayed. Specify character codes that can be specified for <b>text</b> of <b>SetTemplateTextData</b> before user-defined characters are displayed. The character codes that can be specified are 0xE000 to 0xE05D  This method is ignored when Display is not connected to the printer.	

Deletes registered user-defined characters in Display.

Syntax	- (void) <b>unregisterUserDefinedCharacter;</b>
Error	<b>SIIPrinterException</b> is thrown when an error occurs while this method is being called. See " <b>4.2.3 SIIPrinterException Class</b> " for details on the error.
Description	Display is changed to Standby mode when this method is executed. A selecting template is deselected.  All registered user-defined characters are deleted. Used memory is not released even the user-defined characters are deleted. The used memory can be reused after executing <b>defragment</b> .  This method is ignored when Display is not connected to the printer.

Registers optional fonts in Display.

Syntax	<pre> - (void) <b>registerOptionalFont</b>: (NSInteger) startCode                                 endCode: (NSInteger) endCode                                 width: (NSInteger) width                                 height: (NSInteger) height                                 fileName: (NSString *) fileName; </pre>	
Parameter	startCode	Character code for registration starting The valid range is 20h to FFh of ASCII character code.
	endCode	Character code for registration finishing The valid range is 20h to FFh of ASCII character code.
	width	Character width (pixel: px) The valid range is 1 to 255.
	height	Character height (pixel: px) The valid range is 1 to 255.
	fileName	File path Specify the file name of the optional font to register. Supported file name extension is .bin. See "Register Optional Font" of the display command in "Technical Reference for Display" for details on optional font data.
Error	<b>SIIPrinterException</b> is thrown when an error occurs while this method is being called. See " <b>4.2.3 SIIPrinterException Class</b> " for details on the error.	
Description	<p>Display is changed to Standby mode when this method is executed. A selecting template is deselected.</p> <p>When this method is executed with optional font registered status, the registered optional fonts are deleted, and a new memory area is allocated to register optional fonts. Used memory is not released even the registered optional fonts are deleted. The used memory can be reused after executing <b>defragment</b>.</p>	

This method is ignored when Display is not connected to the printer.

```
unregisterOptionFont
```

## Delete optional font

Deletes registered optional fonts in Display.

Syntax - (void) **unregisterOptionFont**;

Error `SIIPrinterException` is thrown when an error occurs while this method is being called.  
See "[4.2.3 SIIPrinterException Class](#)" for details on the error.

Description	Display is changed to Standby mode when this method is executed. A selecting template is deselected
-------------	---

All registered optional fonts are deleted.

Used memory is not released even the optional fonts are deleted. The used memory can be reused after executing **defragment**.

This method is ignored when Display is not connected to the printer.

## controlMacroRegistration

### Start/End of macro registration

Specifies start or end of macro registration to use in Display.

```
Syntax      - (void) controlMacroRegistration:(NSInteger)macroID
              control:(MacroRegistrationFunction)control;
```

Parameter	macroID	Macro ID The valid range is -1 to 127. Do not select macro IDs of 120 to 126 because they are being used for the system.
-----------	---------	--

control Macro registration processing  
See "4.2.1(4)<sup>27</sup> Macro registration processing  
(MacroRegistrationFunction)" for available  
constants.

Error **SIIPrinterException** is thrown when an error occurs while this method is being called.  
See "**4.2.3 SIIPrinterException Class**" for details on the error.

Description	<p>The procedures of the macro registration processing are as follows:</p> <p>(1) Starts macro registration processing.</p> <p>Specify -1 for <code>macroID</code>.</p> <p>Specify <b>SII PM MACRO REGISTRATION START</b> for <code>control</code>.</p>
-------------	---

(2) Executes methods.

Starts buffering of transmit data when methods are targeted in macro registration processing.

Transmit data of a macro registration processing target method which is executed during the buffering is not sent to the printer, buffered in macro data buffer. The maximum transmit data size to be able to buffer is 1024 bytes.

When the buffered transmit data exceeds the maximum size, the macro registration processing target method at the point of exceeding is to be error.

When the error occurs, data under the registration is discarded and canceled the macro mode.

Regarding transmit data which is held, finish the macro registration processing by procedure (3).

When a method is out of the macro registration processing target, it is executed immediately without buffering the transmit data.

Methods for the macro registration processing target are shown below.

- **showTemplate**
- **showSlide**
- **selectTemplate**
- **setTemplateImageData**
- **selectTemplateTextObject**
- **setTemplateTextAlignment**
- **setTemplateTextLeftMargin**
- **setTemplateTextLineSpacing**
- **setTemplateTextBold**
- **setTemplateTextUnderline**
- **setTemplateTextSize**
- **setTemplateTextFont**
- **setTemplateTextRegisteredFont**
- **setTemplateTextRightSpacing**
- **setTemplateTextColor**
- **setTemplateTextData**
- **setTemplateBarcodeData**
- **setTemplateQrCodeData**

(3) Finishes macro registration processing.

Specify the macro ID (0 to 127) to register at **macroID**.

When **SII\_PM\_MACRO\_REGISTRATION\_REGIST** is specified at **control**, buffered transmit data is sent to the printer. The buffered transmit data is held even after transmitting to the printer. Display is changed to Standby mode when this method is executed.

A selecting template is being deselected.

The holding transmit data is discarded by following processes.

- Specify **SII\_PM\_MACRO\_REGISTRATION\_CLEAR**
- Specify **SII\_PM\_MACRO\_REGISTRATION\_START**
- Execute **disconnect**

The registered macro can be executed at **executeMacro**.

A process to delete the registered macro is as follow.

Specify **SII\_PM\_MACRO\_REGISTRATION\_START** at **control** and specify -1 for **macroID** to call this method.

Specify **SII\_PM\_MACRO\_REGISTRATION\_START** at **control** and specify the macro ID to delete, and then call this method.

Display is changed to Standby mode when this method is executed. A selecting template is being deselected.

This method is ignored when Display is not connected to the printer.

**Note**

**Registered data at the shipping may be added or changed without prior notice for quality improvement.**

**getDisplayResponse****Get various response from Display**

Gets response data from Display.

Syntax            - (void) **getDisplayResponse:** (NSInteger) responseId  
    param: (NSObject \*) param  
    response: (void \*) response;

Parameter        responseId        Display response type constant  
    See "4.2.1(3)④ Display response type" for available constants.

   param        Command parameter  
    A value to be specified varies depending on Display response type constant.  
    See the following table for description of the value to be specified.

   response        Buffer for storing the retrieved response data  
    A buffer type varies with Display response type constant.  
    See the following table for the buffer type.

Response Type Constant	
Parameter	Description
<b>SII_PM_DISPLAY_RESPONSE_REQUEST</b> (Execution response request)	
param	Specify 0 to 15 (00h to 0Fh) in NSData type.
response	Specify an NSInteger array of length 1. When the response is retrieved successfully, the response code of the execution response request is stored with 64 to 79 (40h to 4Fh).
<b>SII_PM_DISPLAY_RESPONSE_USER_AREA</b> (Send remaining capacity of user area)	
param	Specify nil.
response	Specify an NSInteger array of length 1. When the response is retrieved successfully, the remaining capacity of the user area is stored as a numerical value in bytes.
<b>SII_PM_DISPLAY_RESPONSE_TEMPLATE_ID_LIST</b> (Send template ID)	
param	Specify nil.
response	Specify an NSMutableArray. When the response is retrieved successfully, the registered template ID is stored as an NSInteger array.
<b>SII_PM_DISPLAY_RESPONSE_IMAGE_ID_LIST</b> (Send image ID)	
param	Specify nil.
response	Specify an NSMutableArray. When the response is retrieved successfully, the registered image ID is stored as an NSInteger array.

Response Type Constant		
	Parameter	Description
<b>SII_PM_DISPLAY_RESPONSE_TEMPLATE_LABEL</b> (Send slide ID)		
	param	Specify nil.
	response	Specify an NSMutableArray. When the response is retrieved successfully, the registered slide ID is stored as an NSInteger array.
<b>SII_PM_DISPLAY_RESPONSE_SLIDE_LABEL</b> (Send template name)		
	param	Specify 0 to 127 (00h to 7Fh) in NSData type.
	response	Specify an NSMutableArray. When the response is retrieved successfully, the template name specified at template registration is stored as a character string.
<b>SII_PM_DISPLAY_RESPONSE_IMAGE_LABEL</b> (Send image name)		
	param	Specify 0 to 63 (00h to 3Fh) in NSData type.
	response	Specify an NSMutableArray. When the response is retrieved successfully, the image name specified at image data registration is stored as a character string.
<b>SII_PM_DISPLAY_RESPONSE_SLIDE_LABEL</b> (Send slide name)		
	param	Specify 0 to 91 (00h to 5bh) in NSData type.
	response	Specify an NSMutableArray. When the response is retrieved successfully, the slide name specified at slide data registration is stored as a character string.

Error      **SIIPrinterException** is thrown when an error occurs while this method is being called.  
See "**4.2.3 SIIPrinterException Class**" for details on the error.

## ② Dedicated method for standard mode

The following methods are valid in standard mode. **SIIPrinterException** is thrown when the dedicated method for standard mode are executed in page mode.

### sendText

### Send text data

Sends text data.

Syntax	- (void) <b>sendText:</b> (NSString *)text;
Parameter	text Text data to send to the printer Data size that can be specified at one time is 16 KB (16384 bytes).
Error	<b>SIIPrinterException</b> is thrown when an error occurs while this method is being called. See " <b>4.2.3 SIIPrinterException Class</b> " for details on the error.
Description	This method encodes the specified text data to printable text data based on <b>internationalCharacter</b> and <b>codePage</b> , and sends it to the printer.  This method does not add a line feed code at the end of the text data. In order to print to the end, add a line feed code to the end of the text data.

### sendTextEx

### Send format specified text data

Sends format specified text data to the printer.

The method of syntax (a) can specify bold character, underline, reverse print, font, character scale and alignment to text data.

The method of syntax (b) can specify bold character, underline, font and character scale to text data.

The method of syntax (c) can specify bold character, underline, inversion print, reverse print, font, character scale, and alignment to text data.

Syntax	(a) - (void) <b>sendTextEx:</b> (NSString *)text bold: (CharacterBold) bold underline: (CharacterUnderline) underline reverse: (CharacterReverse) reverse font: (CharacterFont) font scale: (CharacterScale) scale alignment: (PrintAlignment) alignment;  (b) - (void) <b>sendTextEx:</b> (NSString *)text bold: (CharacterBold) bold underline: (CharacterUnderline) underline font: (CharacterFont) font scale: (CharacterScale) scale;  (c) - (void) <b>sendTextEx:</b> (NSString *)text bold: (CharacterBold) bold underline: (CharacterUnderline) underline reverse: (CharacterReverse) reverse inversion: (CharacterInversion) inversion font: (CharacterFont) font scale: (CharacterScale) scale alignment: (PrintAlignment) alignment;
Parameter	text Text data to send to the printer Data size that can be specified at 1 time is 16 KB (16384 bytes).

<code>bold</code>	Bold character See "4.2.1(4)③ Bold character ( <code>CharacterBold</code> )" for available constants.
<code>underline</code>	Underline See "4.2.1(4)④ Underline ( <code>CharacterUnderline</code> )" for available constants.
<code>reverse</code>	Reverse print See "4.2.1(4)⑤ Reverse print ( <code>CharacterReverse</code> )" for available constants.
<code>inversion</code>	Inversion print See "4.2.1(4)⑥ Inversion print ( <code>CharacterInversion</code> )" for available constants.
<code>font</code>	Character font See "4.2.1(4)⑦ Character font ( <code>CharacterFont</code> )" for available constants.
<code>scale</code>	Character scale See "4.2.1(4)⑧ Character scale ( <code>CharacterScale</code> )" for available constants.
<code>alignment</code>	Alignment See "4.2.1(4)⑨ Alignment ( <code>PrintAlignment</code> )" for available constants.
Error	<b><code>SIIPrinterException</code></b> is thrown when an error occurs while this method is being called. See " <b>4.2.3 <code>SIIPrinterException</code> Class</b> " for details on the error.
Description	This method encodes the specified text data to printable text data based on <b><code>internationalCharacter</code></b> and <b><code>codePage</code></b> , and sends it to the printer.  This method does not add a line feed code at the end of the text data. In order to print to the end, add a line feed code to the end of the text data.

## `printBarcode`

## Print barcode

Prints the barcode.

The method of syntax (a) specifies the barcode data by character string.

The method of syntax (b) specifies the barcode data by character string, and specifies the alignment and N:W ratio of the barcode.

The method of syntax (c) specifies the barcode data by byte array and specifies the alignment of the barcode.

```
Syntax      (a) - (void) printBarcode: (BarcodeSymbol)barcodeSymbol
                                text: (NSString *)text
                                moduleSize: (ModuleSize)moduleSize
                                moduleHeight: (NSInteger)moduleHeight
                                hriPosition: (HriPosition)hriPosition
                                hriFont: (CharacterFont)hriFont
                                alignment: (PrintAlignment)alignment;
```



```
(b) - (void) printBarcode: (BarcodeSymbol)barcodeSymbol
        text: (NSString *)text
        moduleSize: (ModuleSize)moduleSize
        moduleHeight: (NSInteger)moduleHeight
        hriPosition: (HriPosition)hriPosition
        hriFont: (CharacterFont)hriFont
        alignment: (PrintAlignment)alignment
        nwRatio: (NwRatio)nwRatio;
```

```
(c) - (void) printBarcode: (BarcodeSymbol)barcodeSymbol
        data: (NSData*)data
        moduleSize: (ModuleSize)moduleSize
        moduleHeight: (NSInteger)moduleHeight
        hriPosition: (HriPosition)hriPosition
        hriFont: (CharacterFont)hriFont
        alignment: (PrintAlignment)alignment;
```

Parameter      barcodeSymbol      Barcode symbol  
See "4.2.1(4)⑩ Barcode symbol (BarcodeSymbol)" for available constants and corresponding syntax.

text (data)      Barcode data to send to the printer

moduleSize      Barcode width  
See "4.2.1(4)⑪ Module size (ModuleSize)" for available constants.

moduleHeight      Barcode height (dot)

- When barcodeSymbol is below, the valid range is 1 to 255.

**SII\_PM\_BARCODE\_UPC\_A**  
**SII\_PM\_BARCODE\_UPC\_E**  
**SII\_PM\_BARCODE\_EAN13**  
**SII\_PM\_BARCODE\_JAN13**  
**SII\_PM\_BARCODE\_EAN8**  
**SII\_PM\_BARCODE\_JAN8**  
**SII\_PM\_BARCODE\_CODE39**  
**SII\_PM\_BARCODE\_CODE93**  
**SII\_PM\_BARCODE\_CODE128**  
**SII\_PM\_BARCODE\_ITF**  
**SII\_PM\_BARCODE\_CODABAR**  
**SII\_PM\_BARCODE\_EAN13\_ADDON**  
**SII\_PM\_BARCODE\_JAN13\_ADDON**

- When barcodeSymbol is below, the valid range varies depending on barcodeSymbol and moduleSize.

barcodeSymbol		
	moduleSize	Valid Range
<b>SII_PM_BARCODE_GS1_OMNI_DIRECTIONAL</b>		
	<b>SII_PM_BARCODE_MODULE_WIDTH_2</b>	66 to 255
	<b>SII_PM_BARCODE_MODULE_WIDTH_3</b>	99 to 255
	<b>SII_PM_BARCODE_MODULE_WIDTH_4</b>	132 to 255
	<b>SII_PM_BARCODE_MODULE_WIDTH_5</b>	165 to 255
	<b>SII_PM_BARCODE_MODULE_WIDTH_6</b>	198 to 255

barcodeSymbol		
	moduleSize	<b>Valid Range</b>
<b>SII_PM_BARCODE_GS1_TRUNCATED</b>		
	SII_PM_BARCODE_MODULE_WIDTH_2	26 to 255
	SII_PM_BARCODE_MODULE_WIDTH_3	39 to 255
	SII_PM_BARCODE_MODULE_WIDTH_4	52 to 255
	SII_PM_BARCODE_MODULE_WIDTH_5	65 to 255
	SII_PM_BARCODE_MODULE_WIDTH_6	78 to 255
<b>SII_PM_BARCODE_GS1_LIMITED</b>		
	SII_PM_BARCODE_MODULE_WIDTH_2	20 to 255
	SII_PM_BARCODE_MODULE_WIDTH_3	30 to 255
	SII_PM_BARCODE_MODULE_WIDTH_4	40 to 255
	SII_PM_BARCODE_MODULE_WIDTH_5	50 to 255
	SII_PM_BARCODE_MODULE_WIDTH_6	60 to 255
<b>SII_PM_BARCODE_GS1_EXPANDED</b>		
	SII_PM_BARCODE_MODULE_WIDTH_2	68 to 255
	SII_PM_BARCODE_MODULE_WIDTH_3	102 to 255
	SII_PM_BARCODE_MODULE_WIDTH_4	136 to 255
	SII_PM_BARCODE_MODULE_WIDTH_5	170 to 255
	SII_PM_BARCODE_MODULE_WIDTH_6	204 to 255

hriPosition	HRI character print position See "4.2.1(4)⑫ HRI character print position (HriPosition)" for available constants.
hriFont	HRI character font See "4.2.1(4)⑦ Character font (CharacterFont)" for available constants.
alignment	Alignment See "4.2.1(4)⑨ Alignment (PrintAlignment)" for available constants.

nwRatio

N:W ratio

See "4.2.1(4)⑬ N:W ratio (nwRatio)" for available constants.

Depending on the specified nwRatio and moduleSize, the width of the wide element is set as shown in the following table.

moduleSize	nwRatio		
	SII_PM_ NWRATIO_1TO2	SII_PM_ NWRATIO_1TO2_5	SII_PM_ NWRATIO_1TO3
SII_PM_BARCODE_MODULE_WIDTH_2	0.500 mm (4 dots)	0.625 mm (5 dots)	0.750 mm (6 dots)
SII_PM_BARCODE_MODULE_WIDTH_3	0.750 mm (6 dots)	1.000 mm (8 dots)	1.125 mm (9 dots)
SII_PM_BARCODE_MODULE_WIDTH_4	1.000 mm (8 dots)	1.250 mm (10 dots)	1.500 mm (12 dots)
SII_PM_BARCODE_MODULE_WIDTH_5	1.250 mm (10 dots)	1.625 mm (13 dots)	1.875 mm (15 dots)
SII_PM_BARCODE_MODULE_WIDTH_6	1.500 mm (12 dots)	1.875 mm (15 dots)	2.250 mm (18 dots)

Error **SIIPrinterException** is thrown when an error occurs while this method is being called.

See "4.2.3 SIIPrinterException Class" for details on the error.

**Note**

The quiet zone is not secured. Set the quiet zone in accordance with the standard of the barcode symbol.

Reference See "Appendix B Barcode Size List" for details of the barcode size.

printPDF417

Print PDF417

Prints PDF417.

The method of syntax (a) specifies the PDF417 symbol.

The method of syntax (b) is fixed to standard PDF417.

Syntax

```
(a) - (void) printPDF417: (NSString *)text
        errorCorrection: (ErrorCorrection)errorCorrection
        row: (NSInteger)row
        column: (NSInteger)column
        moduleSize: (ModuleSize)moduleSize
        moduleHeight: (NSInteger)moduleHeight
        alignment: (PrintAlignment)alignment
        pdf417Symbol: (Pdf417Symbol)pdf417Symbol;

(b) - (void) printPDF417: (NSString *)text
        errorCorrection: (ErrorCorrection)errorCorrection
        row: (NSInteger)row
        column: (NSInteger)column
        moduleSize: (ModuleSize)moduleSize
        moduleHeight: (NSInteger)moduleHeight
        alignment: (PrintAlignment)alignment;
```

Parameter	text	Barcode data to send to the printer
	errorCorrection	Error correction level See "4.2.1(4)⑭ Error correction level (ErrorCorrection)" for available constants.
	row	Number of rows (row) The valid range is 0, 3 to 90. When 0 is specified, the number of rows is automatically set.
	column	Number of columns in data area The valid range is 0 to 30. When 0 is specified, the number of columns in the data area is automatically set.
	moduleSize	Nominal fine element width See "4.2.1(4)⑪ Module size (ModuleSize)" for available constants.
	moduleHeight	Module height (dot) The valid range is 2 to 127. When the module height is set smaller, some barcode scanners may not read it. Set 3 or more for normal use.
	alignment	Alignment See "4.2.1(4)⑨ Alignment (PrintAlignment)" for available constants.
	pdf417Symbol	PDF417 symbol See "4.2.1(4)⑮ PDF417 symbol (Pdf417Symbol)" for available constants.
Error	<b>SIIPrinterException</b> is thrown when an error occurs while this method is being called. See "4.2.3 SIIPrinterException Class" for details on the error.	
<b>Note</b>	The quiet zone is not secured. Set the quiet zone in accordance with the standard of the barcode symbol.	
Reference	See "Appendix B Barcode Size List" for details of the barcode size.	

## printQRcode

## Print QR Code

Prints QR Code.

The method of syntax (a) specifies QR Code Model.

The method of syntax (b) is fixed to QR Code Model 2.

Syntax	(a) - (void) <b>printQRcode:</b> (NSString *)text errorCorrection (ErrorCorrection) errorCorrection moduleSize: (ModuleSize) moduleSize alignment: (PrintAlignment) alignment model: (QrModel) model;
	(b) - (void) <b>printQRcode:</b> (NSString *)text errorCorrection: (ErrorCorrection) errorCorrection moduleSize: (ModuleSize) moduleSize alignment: (PrintAlignment) alignment;
Parameter	text Barcode data to send to the printer The version is automatically set depending on the number of data bytes set with text in either syntax (a) and (b).

errorCorrection	Error correction level See "4.2.1(4)⑭ Error correction level (ErrorCorrection)" for available constants.
moduleSize	Module size See "4.2.1(4)⑪ Module size (ModuleSize)" for available constants.
alignment	Alignment See "4.2.1(4)⑨ Alignment (PrintAlignment)" for available constants.
model	QR Code Model See "4.2.1(4)⑯ QR Code Model (QrModel)" for available constants.
Error	<b>SIIPrinterException</b> is thrown when an error occurs while this method is being called. See " <b>4.2.3 SIIPrinterException Class</b> " for details on the error.
<b>Note</b>	The quiet zone is not secured. Set the quiet zone in accordance with the standard of the barcode symbol.
Reference	See "Appendix B Barcode Size List" for details of the barcode size.

<code>printDataMatrix</code>	Print Data Matrix
------------------------------	-------------------

Prints Data Matrix.

Syntax	<pre> - (void) <b>printDataMatrix</b>: (NSString *)text                         dataMatrixModule: (DataMatrixModule) dataMatrixModule                         moduleSize: (ModuleSize) moduleSize                         alignment: (PrintAlignment) alignment; </pre>	
Parameter	text	Barcode data to send to the printer
	dataMatrixModule	Number of Data Matrix modules See "4.2.1(4)⑰ Data Matrix module (DataMatrixModule)" for available constants.
	moduleSize	Module size See "4.2.1(4)⑪ Module size (ModuleSize)" for available constants.
	alignment	Alignment See "4.2.1(4)⑨ Alignment (PrintAlignment)" for available constants.
Error	<b>SIIPrinterException</b> is thrown when an error occurs while this method is being called. See " <b>4.2.3 SIIPrinterException Class</b> " for details on the error.	
<b>Note</b>	The quiet zone is not secured. Set the quiet zone in accordance with the standard of the barcode symbol.	
Reference	See "Appendix B Barcode Size List" for details of the barcode size.	

Prints MaxiCode.

Syntax	- (void) <b>printMaxiCode:</b> (NSString *)text maxiCodeMode:(MaxiCodeMode)maxiCodeMode alignment:(PrintAlignment)alignment;	
Parameter	text	Barcode data to send to the printer
		<ul style="list-style-type: none"> <li>• When <code>maxiCodeMode</code> is <b>SII_PM_MAXI_CODE_2</b>: Add service class (3 digits), country code (3 digits), and postal code (9 digits) to the beginning of the data.</li> <li>• When <code>maxiCodeMode</code> is <b>SII_PM_MAXI_CODE_3</b>: Add service class (3 digits), country code (3 digits), and postal code (6 digits) to the beginning of the data.</li> </ul>
	maxiCodeMode	MaxiCode Mode See "4.2.1(4)⑩ MaxiCode Mode (MaxiCodeMode)" for available constants.
	alignment	Alignment See "4.2.1(4)⑨ Alignment (PrintAlignment)" for available constants.
Error	<b>SIIPrinterException</b> is thrown when an error occurs while this method is being called. See "4.2.3 SIIPrinterException Class" for details on the error.	
<b>Note</b>	The quiet zone is not secured. Set the quiet zone in accordance with the standard of the barcode symbol.	
Reference	See "Appendix B Barcode Size List" for details of the barcode size.	

Prints GS1 Databar Stacked.

Syntax	- (void) <b>printGS1DataBarStacked:</b> (NSString *)text moduleSize:(ModuleSize)moduleSize alignment:(PrintAlignment)alignment;	
Parameter	text	Barcode data to send to the printer Enter 13 characters from '0' to '9'. The leading '01' is automatically added by the printer. The check digit is automatically calculated by the printer.
	moduleSize	Module size See "4.2.1(4)⑪ Module size (ModuleSize)" for available constants.
	alignment	Alignment See "4.2.1(4)⑨ Alignment (PrintAlignment)" for available constants.
Error	<b>SIIPrinterException</b> is thrown when an error occurs while this method is being called. See "4.2.3 SIIPrinterException Class" for details on the error.	

Reference See "Appendix B Barcode Size List" for details of the barcode size.

`printGS1DataBarStackedOmnidirectional`

Print GS1 Databar Stacked Omni-directional

Prints GS1 Databar Stacked Omni-directional.

Syntax	- (void) <b>printGS1DataBarStackedOmnidirectional:</b> (NSString *)text moduleHeight: (NSInteger)moduleHeight moduleSize: (ModuleSize)moduleSize alignment: (PrintAlignment)alignment;	
Parameter	text	Barcode data to send to the printer Enter 13 characters from '0' to '9'. The leading '01' is automatically added by the printer. The check digit is automatically calculated by the printer.
	moduleHeight	Barcode module height (number of modules) The valid range is 33 to 255.
	moduleSize	Module size See "4.2.1(4)⑪ Module size (ModuleSize)" for available constants.
	alignment	Alignment See "4.2.1(4)⑨ Alignment (PrintAlignment)" for available constants.
Error	<b>SIIPrinterException</b> is thrown when an error occurs while this method is being called. See "4.2.3 SIIPrinterException Class" for details on the error.	
Reference	See "Appendix B Barcode Size List" for details of the barcode size.	

`printGS1DataBarExpandedStacked`

Print GS1 Databar Expanded Stacked

Prints GS1 Databar Expanded Stacked.

Syntax	- (void) <b>printGS1DataBarExpandedStacked:</b> (NSString *)text column: (NSInteger)column moduleSize: (ModuleSize)moduleSize alignment: (PrintAlignment)alignment;	
Parameter	text	Barcode data to send to the printer Enter any number of characters using the following: ' ', '!', '"', '%', '&', ' ', '(', ')', '*', '+', ',', '-', '.', '/', ':', ';', '<', '=', '>', '?', '_', '0' to '9', 'A' to 'Z', 'a' to 'z' Enter '{' for FNC1. Be sure to input the check digit because it is not automatically calculated by the printer.
	column	Number of columns Specify the number of columns in 1 line. An even number from 2 to 20 is valid.
	moduleSize	Module size See "4.2.1(4)⑪ Module size (ModuleSize)" for available constants.

alignment	Alignment See "4.2.1(4)⑨ Alignment (PrintAlignment)" for available constants.
-----------	--

Error	<b>SIIPrinterException</b> is thrown when an error occurs while this method is being called. See "4.2.3 SIIPrinterException Class" for details on the error.
-------	---

Reference	See "Appendix B Barcode Size List" for details of the barcode size.
-----------	---

<b>printAztecCode</b>	<b>Print Aztec Code</b>
-----------------------	-------------------------

This method is not supported. When this method is executed, **SIIPrinterException** is thrown.

Syntax	- (void) <b>printAztecCode:</b> (NSString *)text layer: (NSInteger)layer errorCorrection (NSInteger)errorCorrection moduleSize: (ModuleSize)moduleSize aztecSymbol (AztecSymbol)aztecSymbol alignment: (PrintAlignment)alignment;
--------	--

<b>cutPaper</b>	<b>Cut paper</b>
-----------------	------------------

Selects enabled/disabled of the paper feed to the cut position and cuts the paper.

Syntax	- (void) <b>cutPaper:</b> (CuttingMethod)cuttingMethod;
--------	---

Parameter	cuttingMethod	Cutting method See "4.2.1(4)⑱ Cutting method (CuttingMethod)" for available constants.
-----------	---------------	---

Error	<b>SIIPrinterException</b> is thrown when an error occurs while this method is being called. See "4.2.3 SIIPrinterException Class" for details on the error.
-------	---

<b>feedPosition</b>	<b>Paper form feed</b>
---------------------	------------------------

This method is not supported. When this method is executed, **SIIPrinterException** is thrown.

Syntax	- (void) <b>feedPosition:</b> (FeedPosition)feedPosition;
--------	---

<b>sendBinary</b>	<b>Send binary data</b>
-------------------	-------------------------

Sends binary data to the printer.

Syntax	- (void) <b>sendBinary:</b> (NSData*)data;
--------	--

Parameter	data	Binary data to send to the printer Data size that can be specified at one time is 256 KB (262144 bytes).
-----------	------	---

Error	<b>SIIPrinterException</b> is thrown when an error occurs while this method is being called. See "4.2.3 SIIPrinterException Class" for details on the error.
-------	---

Description	This method sends the specified binary data to the printer without conversion.
-------------	--



By sending printer command as binary data with this method, printer functions not supported in the library become available. However, this method does not support commands to get the response from the printer.

## sendDataFile

## Send specified file

Sends file data.

The method of syntax (a), dithering can be specified.

The method of syntax (b), dithering is fixed to be disabled.

Syntax	(a) - (void) <b>sendDataFile:</b> (NSString *)fileName alignment: (PrintAlignment)alignment dithering: (Dithering)dithering;
	(b) - (void) <b>sendDataFile:</b> (NSString *)fileName alignment: (PrintAlignment)alignment;
Parameter	<p>fileName</p> <p>File path of the data to send to the printer The file size that can be specified is maximum 1 MB (1048576 bytes). The file extensions that can be sent and the file transmission are described below.</p> <ul style="list-style-type: none"> <li>• .bmp, .jpg, .jpeg, .png Data is sent to the printer as image file. Colored image file is converted to monochrome image by binarization and sent to the printer. Printing is performed in batch after mapping the image file on the memory of the printer.</li> <li>• .txt Data is sent to the printer as text data. Text data format supports UTF-8. This method encodes the text data to printable text data based on <b>internationalCharacter</b> and <b>codePage</b>, and then sends it to the printer. This method does not add a line feed code at the end of the text data. In order to print to the end, add a line feed code at the end of the text data.</li> <li>• .bin, .dat Data is sent to the printer as binary data without conversion.</li> </ul> <p>alignment</p> <p>Alignment It is valid when the extension of the file specified by <b>fileName</b> is .bmp, .jpg, .jpeg, .png, or .txt. See "4.2.1(4)⑨ Alignment (PrintAlignment)" for available constants.</p> <p>dithering</p> <p>Dithering It is valid when the extension of the file specified by <b>fileName</b> is .bmp, .jpg, .jpeg, or .png. See "4.2.1(4)① Dithering (Dithering)" for available constants.</p>
Error	<p><b>SIIPrinterException</b> is thrown when an error occurs while this method is being called. See "4.2.3 SIIPrinterException Class" for details on the error.</p>

Prints the registered logo.

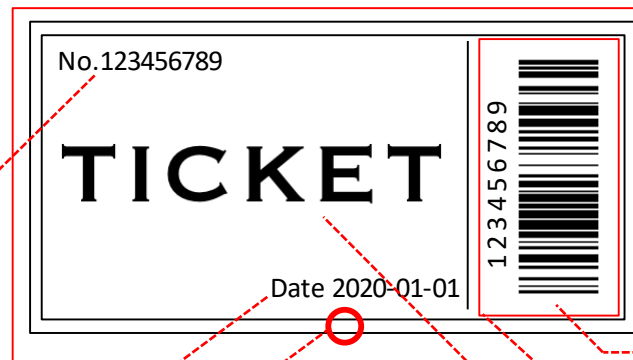
Syntax	- (void) <b>printLogo:</b> (NSString *)logoId alignment (PrintAlignment)alignment;	
Parameter	logoId	ID of the logo to be printed (key code) Specify the ID of the registered logo as a character string.
	alignment	Alignment See "4.2.1(4)⑨ Alignment (PrintAlignment)" for available constants.
Error	<b>SIIPrinterException</b> is thrown when an error occurs while this method is being called. See "4.2.3 SIIPrinterException Class" for details on the error.	

This method is not supported. When this method is executed, **SIIPrinterException** is thrown.

Syntax	- (void *) <b>printSmartLabelImageData:</b> (SIISmartLabelManager *)labelManager;	
--------	--	--

### ③ Dedicated method for page mode

The following methods are dedicated methods to use page mode. An example for the print process in page mode is shown below.



#### ① Start page mode

```
[printerManager enterPageMode];
```

#### ② Specify print area of page mode

```
[printerManager setPageModeArea:0 y:0 width:576 height:355];
```

#### ③ Specify a rectangle and a ruled line

```
[printerManager printPageModeRectangle:0 startY:0 endX:575 endY:344 lineStyle:SII_PM_LINestyle_THIN];  
[printerManager printPageModeRectangle:7 startY:7 endX:567 endY:336 lineStyle:SII_PM_LINestyle_THIN];  
[printerManager printPageModeLine:404 startY:11 endX:404 endY:334 lineStyle:SII_PM_LINestyle_THIN];
```

#### ④ Specify a character

```
[printerManager printPageModeText:21 startY:37 text:@"NO.123456789"];  
[printerManager printPageModeText:212 startY:330 text:@"Date 2020-01-01"];
```

#### ⑤ Specify an image file

```
[NSString *filePath = [[NSBundle mainBundle] pathForResource:@"TicketImage" ofType:@"jpg"];  
[printerManager printPageModeImageFile:10 startY:212 fileName:filePath  
dithering:SII_PM_DITHERING_DISABLE];
```

#### ⑥ Specify print area of page mode

```
[printerManager setPageModeArea:404 y:9 width:163 height:327];
```

#### ⑦ Specify print direction

```
[printerManager setPageModeDirection:SII_PM_DIRECTION_BOTTOM_TO_TOP];
```

#### ⑧ Specify a barcode

```
[printerManager printPageModeBarcode:20 startY:132 barcodeSymbol:SII_PM_BARCODE_CODE128  
data:[@"{B123456789" dataUsingEncoding:NSUTF8StringEncoding]  
moduleSize:SII_PM_BARCODE_MODULE_WIDTH_2 moduleHeight:80  
hriPosition:SII_PM_HRI_POSITION_ABOVE hriFont:SII_PM_FONT_A];
```

#### ⑨ Print in page mode

```
[printerManager printPageMode:SII_PM_CUT_PARTIAL];
```

#### ⑩ Ends page mode

```
[printerManager exitPageMode];
```

Starts page mode.

Syntax	- (void) <b>enterPageMode</b> ;
Error	<b>SIIPrinterException</b> is thrown when an error occurs while this method is being called. See " <b>4.2.3 SIIPrinterException Class</b> " for details on the error.
Description	This method starts page mode. The dedicated method for page mode and common methods to standard mode and page mode can be used after this method execution.  Executing <b>exitPageMode</b> discards the print data kept in the page data buffer and changes the mode to standard mode. Executing <b>printPageMode</b> prints the print data kept in the page data buffer.

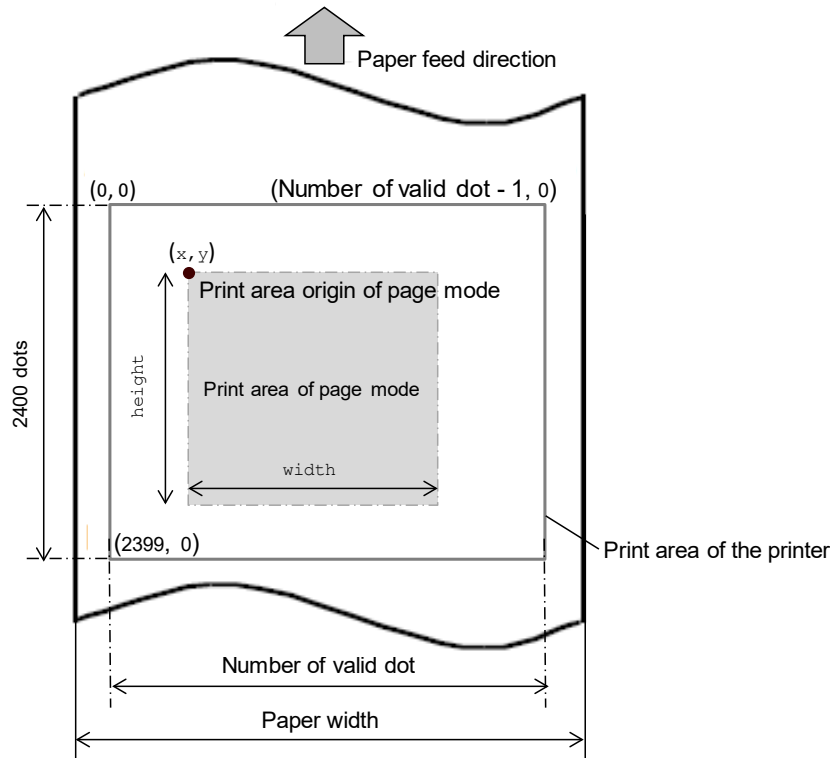
Ends page mode and changes the mode to standard mode.

Syntax	- (void) <b>exitPageMode</b> ;
Error	<b>SIIPrinterException</b> is thrown when an error occurs while this method is being called. See " <b>4.2.3 SIIPrinterException Class</b> " for details on the error.
Description	Discards the print data kept in the page data buffer and changes the mode to standard mode.

Specifies print area of page mode.

Syntax	- (void) <b>setPageModeArea</b> : (NSInteger)x y: (NSInteger)y width: (NSInteger)width height: (NSInteger)height;	
Parameter	x	The horizontal origin (dot) of the print area of page mode 0 represents the left edge on the print area of the printer.
	y	The vertical origin (dot) of the print area of page mode The valid range is 0 to 2399. 0 represents the position where paper feed has not been performed.
	width	The print area width (dot) of page mode
	height	The print area height (dot) of page mode The valid range is 1 to (2400-y).

The valid range of `x` and `width` is shown in the figure below.



Memory Switch Setting of Printer		Number of Valid Dot	setPageModeArea	
MS4-4 (Paper Width)	MS4-5 (Number of Effective Dots)		x	width
80 mm	576	576	0 to 575	1 to 576
	512	512	0 to 511	1 to 512
58 mm	432	432	0 to 431	1 to 432
	360	360	0 to 359	1 to 360

The number of valid dots differs depending on the memory switch setting.  
See "RP-F10 SERIES THERMAL PRINTER USER'S GUIDE" for details of memory switch and the setting at shipping.

**Error** **SIIPrinterException** is thrown when an error occurs while this method is being called.  
See "**4.2.3 SIIPrinterException Class**" for details on the error.

**Description** Start page mode by **enterPageMode** before executing this method.

The print area of page mode can be specified when page mode is started by **enterPageMode** and then this method is executed after executing the dedicated method for page mode. The data that has been mapped is kept.  
The data of the dedicated method for page mode is mapped to the print area of page mode added by this method after executing this method.

The print area of page mode is `x = 0`, `y = 0`, `width = number of a valid dot`, `height = 2400` after executing **enterPageMode**.

Specifies print direction of page mode.

Syntax	- (void) <b>setPageModeDirection:</b> (Direction)direction;	
Parameter	direction	Print direction See "4.2.1(4)⑳ Print direction (Direction)" for available constants.
Error	<b>SIIPrinterException</b> is thrown when an error occurs while this method is being called. See " <b>4.2.3 SIIPrinterException Class</b> " for details on the error.	
Description	Start page mode by <b>enterPageMode</b> before executing this method.  The print direction is left to right after executing <b>enterPageMode</b> .	

Specifies line spacing of page mode.

Syntax	- (void) <b>setPageModeLineSpacing:</b> (NSInteger)lineSpacing;	
Parameter	lineSpacing	Line spacing (dot) of page mode The valid range is 0 to 255.
Error	<b>SIIPrinterException</b> is thrown when an error occurs while this method is being called. See " <b>4.2.3 SIIPrinterException Class</b> " for details on the error.	
Description	Start page mode by <b>enterPageMode</b> before executing this method.  The line spacing is 34 dots after executing <b>enterPageMode</b> .	

Prints the print data kept in page data buffer.

Syntax	- (void) <b>printPageMode:</b> (CuttingMethod)CuttingMethod;	
Parameter	cuttingMethod	Cutting method See "4.2.1(4)㉑ Cutting method (CuttingMethod)" for available constants.
Error	<b>SIIPrinterException</b> is thrown when an error occurs while this method is being called. See " <b>4.2.3 SIIPrinterException Class</b> " for details on the error.	
Description	The print data is kept after printing. The print data is discarded at the timing of the following: <ul style="list-style-type: none"> <li>•Execute <b>enterPageMode</b></li> <li>•Execute <b>disconnect</b></li> <li>•Execute <b>exitPageMode</b></li> </ul>	

Maps the text data on the print area of page mode.

Syntax	- (void) <b>printPageModeText:</b> (NSInteger) startX startY: (NSInteger) startY text: (NSString *) text;	
Parameter	startX	The horizontal reference point (dot) from the starting point The valid range is 0 to 2399.
	startY	The vertical reference point (dot) from the starting point The valid range is 0 to 2399.
	text	Text data Data size that can be specified at 1 time is 16 KB (16384 bytes).
Error	<b>SIIPrinterException</b> is thrown when an error occurs while this method is being called. See " <b>4.2.3 SIIPrinterException Class</b> " for details on the error.	
Description	This method encodes the specified text data to printable text data based on <b>internationalCharacter</b> and <b>codePage</b> .  Start page mode by <b>enterPageMode</b> before executing this method.	

Maps the format specified text data on the print area of page mode.

Syntax	- (void) <b>printPageModeTextEx:</b> (NSInteger) startX startY: (NSInteger) startY text: (NSString *) text bold: (CharacterBold) bold underline: (CharacterUnderline) underline reverse: (CharacterReverse) reverse font: (CharacterFont) font scale: (CharacterScale) scale;	
Parameter	startX	The horizontal reference point (dot) from the starting point The valid range is 0 to 2399.
	startY	The vertical reference point (dot) from the starting point The valid range is 0 to 2399.
	text	Text data Data size that can be specified at 1 time is 16 KB (16384 bytes).
	bold	Bold character See "4.2.1(4)③ Bold character (CharacterBold)" for available constants.
	underline	Underline See "4.2.1(4)④ Underline (CharacterUnderline)" for available constants.

reverse	Reverse print See "4.2.1(4)⑤ Reverse print (CharacterReverse)" for available constants.
font	Font See "4.2.1(4)⑦ Character font (CharacterFont)" for available constants.
scale	Character scale See "4.2.1(4)⑧ Character scale (CharacterScale)" for available constants.
Error	<b>SIIPrinterException</b> is thrown when an error occurs while this method is being called. See " <b>4.2.3 SIIPrinterException Class</b> " for details on the error.
Description	This method encodes the specified text data to printable text data based on <b>internationalCharacter</b> and <b>codePage</b> .  Start page mode by <b>enterPageMode</b> before executing this method.

## printPageModeBarcode

## Print barcode of page mode

Maps the barcode on the print area of page mode.

The method of syntax (a) specifies the barcode data by character string.

The method of syntax (b) specifies the barcode data by character string and specifies N:W ratio of the barcode.

The method of syntax (c) specifies the barcode data by the array of bytes.

Syntax	<p>(a) - (void) <b>printPageModeBarcode</b>: (NSInteger) startX  startY: (NSInteger) startY  barcodeSymbol: (BarcodeSymbol) barcodeSymbol  text: (NSString *) text  moduleSize: (ModuleSize) moduleSize  moduleHeight: (NSInteger) moduleHeight  hriPosition: (HriPosition) hriPosition  hriFont: (CharacterFont) hriFont;</p> <p>(b) - (void) <b>printPageModeBarcode</b>: (NSInteger) startX  startY: (NSInteger) startY  barcodeSymbol: (BarcodeSymbol) barcodeSymbol  text: (NSString *) text  moduleSize: (ModuleSize) moduleSize  moduleHeight: (NSInteger) moduleHeight  hriPosition: (HriPosition) hriPosition  hriFont: (CharacterFont) hriFont  nwRatio: (NwRatio) nwRatio;</p> <p>(c) - (void) <b>printPageModeBarcode</b>: (NSInteger) startX  startY: (NSInteger) startY  barcodeSymbol: (BarcodeSymbol) barcodeSymbol  data: (NSData*) data  moduleSize: (ModuleSize) moduleSize  moduleHeight: (NSInteger) moduleHeight  hriPosition: (HriPosition) hriPosition  hriFont: (CharacterFont) hriFont;</p>
--------	---



Parameter	startX	The horizontal reference point (dot) from the starting point The valid range is 0 to 2399.
	startY	The vertical reference point (dot) from the starting point The valid range is 0 to 2399.
	barcodeSymbol	BarcodeSymbol See "4.2.1(4)⑩ Barcode symbol (BarcodeSymbol) for available constants and correspondent syntax.
	text (data)	Barcode data
	moduleSize	Barcode width See "4.2.1(4)⑪ Module size (ModuleSize)" for available constants.
	moduleHeight	Barcode height (dot)

- When `barcodeSymbol` is set to the following, the valid range is 1 to 255.

**SII\_PM\_BARCODE\_SYMBOL\_UPC\_A**  
**SII\_PM\_BARCODE\_SYMBOL\_UPC\_E**  
**SII\_PM\_BARCODE\_SYMBOL\_EAN13**  
**SII\_PM\_BARCODE\_SYMBOL\_JAN13**  
**SII\_PM\_BARCODE\_SYMBOL\_EAN8**  
**SII\_PM\_BARCODE\_SYMBOL\_JAN8**  
**SII\_PM\_BARCODE\_SYMBOL\_CODE39**  
**SII\_PM\_BARCODE\_SYMBOL\_CODE93**  
**SII\_PM\_BARCODE\_SYMBOL\_CODE128**  
**SII\_PM\_BARCODE\_SYMBOL\_ITF**  
**SII\_PM\_BARCODE\_SYMBOL\_CODABAR**  
**SII\_PM\_BARCODE\_SYMBOL\_EAN13\_ADDON**  
**SII\_PM\_BARCODE\_SYMBOL\_JAN13\_ADDON**

- When `barcodeSymbol` is set to the following, the valid range is different by `barcodeSymbol` and `moduleSize`.

barcodeSymbol		
	moduleSize	Valid Range
<b>SII_PM_BARCODE_SYMBOL_GS1_OMNI_DIRECTIONAL</b>		
	<b>SII_PM_BARCODE_MODULE_WIDTH_2</b>	66 to 255
	<b>SII_PM_BARCODE_MODULE_WIDTH_3</b>	99 to 255
	<b>SII_PM_BARCODE_MODULE_WIDTH_4</b>	132 to 255
	<b>SII_PM_BARCODE_MODULE_WIDTH_5</b>	165 to 255
	<b>SII_PM_BARCODE_MODULE_WIDTH_6</b>	198 to 255
<b>SII_PM_BARCODE_SYMBOL_GS1_TRUNCATED</b>		
	<b>SII_PM_BARCODE_MODULE_WIDTH_2</b>	26 to 255
	<b>SII_PM_BARCODE_MODULE_WIDTH_3</b>	39 to 255
	<b>SII_PM_BARCODE_MODULE_WIDTH_4</b>	52 to 255
	<b>SII_PM_BARCODE_MODULE_WIDTH_5</b>	65 to 255
	<b>SII_PM_BARCODE_MODULE_WIDTH_6</b>	78 to 255

barcodeSymbol		
	moduleSize	Valid Range
<b>SII_PM_SYMBOL_GS1_LIMITED</b>		
	<b>SII_PM_BARCODE_MODULE_WIDTH_2</b>	20 to 255
	<b>SII_PM_BARCODE_MODULE_WIDTH_3</b>	30 to 255
	<b>SII_PM_BARCODE_MODULE_WIDTH_4</b>	40 to 255
	<b>SII_PM_BARCODE_MODULE_WIDTH_5</b>	50 to 255
	<b>SII_PM_BARCODE_MODULE_WIDTH_6</b>	60 to 255
<b>SII_PM_BARCODE_SYMBOL_GS1_EXPANDED</b>		
	<b>SII_PM_BARCODE_MODULE_WIDTH_2</b>	68 to 255
	<b>SII_PM_BARCODE_MODULE_WIDTH_3</b>	102 to 255
	<b>SII_PM_BARCODE_MODULE_WIDTH_4</b>	136 to 255
	<b>SII_PM_BARCODE_MODULE_WIDTH_5</b>	170 to 255
	<b>SII_PM_BARCODE_MODULE_WIDTH_6</b>	204 to 255

**hriPosition** HRI character print position  
See "4.2.1(4)⑫ HRI character print position (HriPosition)" for available constants.

**hriFont** HRI character font  
See "4.2.1(4)⑦ Character font (CharacterFont)" for available constants.

**nwRatio** N:W ratio  
See "4.2.1(4)⑬ N:W ratio (NwRatio)" for available constants.  
Depending on specified **nwRatio** and **moduleSize**, the wide element width is set as shown in the following table.

moduleSize	nwRatio		
	<b>SII_PM_NWRATIO_1TO2</b>	<b>SII_PM_NWRATIO_1TO2_5</b>	<b>SII_PM_NWRATIO_1TO3</b>
<b>SII_PM_BARCODE_MODULE_WIDTH_2</b>	0.500 mm (4 dots)	0.625 mm (5 dots)	0.750 mm (6 dots)
<b>SII_PM_BARCODE_MODULE_WIDTH_3</b>	0.750 mm (6 dots)	1.000 mm (8 dots)	1.125 mm (9 dots)
<b>SII_PM_BARCODE_MODULE_WIDTH_4</b>	1.000 mm (8 dots)	1.250 mm (10 dots)	1.500 mm (12 dots)
<b>SII_PM_BARCODE_MODULE_WIDTH_5</b>	1.250 mm (10 dots)	1.625 mm (13 dots)	1.875 mm (15 dots)
<b>SII_PM_BARCODE_MODULE_WIDTH_6</b>	1.500 mm (12 dots)	1.875 mm (15 dots)	2.250 mm (18 dots)

**Error** **SIIPrinterException** is thrown when an error occurs while this method is being called.  
See "4.2.3 **SIIPrinterException Class**" for details on the error.

**Description** Start page mode by **enterPageMode** before executing this method.

**Note** Map the print data of the barcode not to overlap the other print data.  
The quiet zone is not secured. Set the quiet zone in accordance with the standard of the barcode symbol.

## printPageModePDF417

## Print PDF417 of page mode

Maps PDF417 on the print area of page mode.

The method of syntax (a) specifies PDF417 symbol.

The method of syntax (b) is fixed to standard PDF417.

Syntax (a) - (void) **printPageModePDF417:** (NSInteger) startX  
startY: (NSInteger) startY  
text: (NSString \*)text  
errorCorrection: (ErrorCorrection)errorCorrection  
row: (NSInteger) row  
column: (NSInteger) column  
moduleSize: (ModuleSize)moduleSize  
moduleHeight: (NSInteger)moduleHeight  
pdf417Symbol: (Pdf417Symbol)pdf417Symbol;

(b) - (void) **printPageModePDF417:** (NSInteger) startX  
startY: (NSInteger) startY  
text: (NSString \*)text  
errorCorrection: (ErrorCorrection)errorCorrection  
row: (NSInteger) row  
column: (NSInteger) column  
moduleSize: (ModuleSize)moduleSize  
moduleHeight: (NSInteger)moduleHeight;

Parameter	startX	The horizontal reference point (dot) from the starting point The valid range is 0 to 2399.
	startY	The vertical reference point (dot) from the starting point The valid range is 0 to 2399.
	text	Barcode data
	errorCorrection	Error correction level See "4.2.1(4)⑭ Error correction level (ErrorCorrection)" for available constants.
	row	The number of rows (row) The valid range is 0, 3 to 90. When 0 is specified, the number of rows is automatically set.
	column	The number of columns in data area The valid range is 0 to 30. When 0 is specified, the number of columns in the data area is automatically set.
	moduleSize	Nominal fine element width See "4.2.1(4)⑪ Module size (ModuleSize)" for available constants.
	moduleHeight	Module height (dot) The valid range is 2 to 127. When the module height is set smaller, some barcode scanners may not read it. Set 3 or more for normal use.
	pdf417Symbol	Symbol of PDF417 See "4.2.1(4)⑮ PDF417 symbol (Pdf417Symbol)" for available constants.

Error	<b>SIIPrinterException</b> is thrown when an error occurs while this method is being called. See "4.2.3 SIIPrinterException Class" for details on the error.
Description	Start page mode by <b>enterPageMode</b> before executing this method.
<b>Note</b>	Map the print data of the barcode not to overlap the other print data. The quiet zone is not secured. Set the quiet zone in accordance with the standard of the barcode symbol.
Reference	See "Appendix B Barcode Size List" for details of the barcode size.

## printPageModeQRcode

## Print QR Code of page mode

Maps QR Code on the print area of page mode.  
The method of syntax (a) specifies QR Code Model.  
The method of syntax (b) is fixed to QR Code Model 2.

Syntax	<pre> (a) - (void) <b>printPageModeQRcode</b>: (NSInteger) startX       startY: (NSInteger) startY       text: (NSString *)text       errorCorrection: (ErrorCorrection)errorCorrection       moduleSize: (ModuleSize)moduleSize       model: (QrModel)model;  (b) - (void) <b>printPageModeQRcode</b>: (NSInteger) startX       startY: (NSInteger) startY       text: (NSString *)text       errorCorrection: (ErrorCorrection)errorCorrection       moduleSize: (ModuleSize)moduleSize; </pre>	
Parameter	startX	The horizontal reference point (dot) from the starting point The valid range is 0 to 2399.
	startY	The vertical reference point (dot) from the starting point The valid range is 0 to 2399.
	text	Barcode data The version for either syntax (a) or (b) is automatically set depending on the number of data specified on text.
	errorCorrection	Error correction level See "4.2.1(4)⑭ Error correction level (ErrorCorrection)" for available constants.
	moduleSize	Module size See "4.2.1(4)⑪ Module size (ModuleSize)" for available constants.
	model	QR Code Model See "4.2.1(4)⑯ QR Code Model (QrModel)" for available constants.
Error	<b>SIIPrinterException</b> is thrown when an error occurs while this method is being called. See "4.2.3 SIIPrinterException Class" for details on the error.	
Description	Start page mode by <b>enterPageMode</b> before executing this method.	

<b>Note</b>	Map the print data of the barcode not to overlap the other print data. The quiet zone is not secured. Set the quiet zone in accordance with the standard of the barcode symbol.
Reference	See "Appendix B Barcode Size List" for details of the barcode size.

## printPageModeDataMatrix Print Data Matrix of page mode

Maps Data Matrix on the print area of page mode.

Syntax	<pre> - (void) <b>printPageModeDataMatrix:</b> (NSInteger) startX     startY: (NSInteger) startY     text: (NSString *) text     dataMatrixModule: (DataMatrixModule) dataMatrixModule     moduleSize: (ModuleSize) moduleSize; </pre>	
Parameter	startX	The horizontal reference point (dot) from the starting point The valid range is 0 to 2399.
	startY	The vertical reference point (dot) from the starting point The valid range is 0 to 2399.
	text	Barcode data
	dataMatrixModule	The number of Data Matrix modules See "4.2.1(4)⑪ Data Matrix module (DataMatrixModule)" for available constants.
	moduleSize	Module size See "4.2.1(4)⑪ Module size (ModuleSize)" for available constants.
Error	<b>SIIPrinterException</b> is thrown when an error occurs while this method is being called. See " <b>4.2.3 SIIPrinterException Class</b> " for details on the error.	
Description	Start page mode by <b>enterPageMode</b> before executing this method.	
<b>Note</b>	Map the print data of the barcode not to overlap the other print data. The quiet zone is not secured. Set the quiet zone in accordance with the standard of the barcode symbol.	
Reference	See "Appendix B Barcode Size List" for details of the barcode size.	

## printPageModeMaxiCode Print MaxiCode of page mode

Maps MaxiCode on the print area of page mode.

Syntax	<pre> - (void) <b>printPageModeMaxiCode:</b> (NSInteger) startX     startY: (NSInteger) startY     text: (NSString *) text     maxiCodeMode: (MaxiCodeMode) maxiCodeMode; </pre>	
Parameter	startX	The horizontal reference point (dot) from the starting point The valid range is 0 to 2399.
	startY	The vertical reference point (dot) from the starting point The valid range is 0 to 2399.
	text	Barcode data

- When **maxiCodeMode** is **SII\_PM\_MAXI\_CODE\_2**  
Add the service class (3 digits), the country code (3 digits), and the postal code (9 digits) to the beginning of the data.
- When **maxiCodeMode** is **SII\_PM\_MAXI\_CODE\_3**  
Add the service class (3 digits), the country code (3 digits), and the postal code (6 digits) to the beginning of the data.

**maxiCodeMode**      **MaxiCode Mode**  
See "4.2.1(4)⑩ MaxiCode Mode (**MaxiCodeMode**)" for available constants.

**Error**      **SIIPrinterException** is thrown when an error occurs while this method is being called.  
See "**4.2.3 SIIPrinterException Class**" for details on the error.

**Description**      Start page mode by **enterPageMode** before executing this method.

**Note**      Map the print data of the barcode not to overlap the other print data.  
The quiet zone is not secured. Set the quiet zone in accordance with the standard of the barcode symbol.

**Reference**      See "Appendix B Barcode Size List" for details of the barcode size.

<b>printPageModeGS1DataBarStacked</b>	<b>Print GS1 Databar Stacked of page mode</b>
---------------------------------------	---

Maps GS1 Databar Stacked on the print area of page mode.

**Syntax**      - (void) **printPageModeGS1DataBarStacked:** (NSInteger) startX  
startY: (NSInteger) startY  
text: (NSString \*) text  
moduleSize: (ModuleSize) moduleSize;

<b>Parameter</b>	startX	The horizontal reference point (dot) from the starting point The valid range is 0 to 2399.
	startY	The vertical reference point (dot) from the starting point The valid range is 0 to 2399.
	text	Barcode data Enter 13 characters from '0' to '9'. The leading '01' is automatically added by the printer. The check digit is automatically calculated by the printer.
	moduleSize	Module size See "4.2.1(4)⑪ Module size ( <b>ModuleSize</b> )" for available constants.

**Error**      **SIIPrinterException** is thrown when an error occurs while this method is being called.  
See "**4.2.3 SIIPrinterException Class**" for details on the error.

**Description**      Start page mode by **enterPageMode** before executing this method.

**Note**      Map the print data of the barcode not to overlap the other print data.

**Reference**      See "Appendix B Barcode Size List" for details of the barcode size.

## printPageModeGS1DataBarStackedOmniDirectional

### Print GS1 Databar Stacked Omni-directional of page mode

Maps GS1 Databar Stacked Omni-directional on the print area of page mode.

Syntax	<pre>- (void) <b>printPageModeGS1DataBarStackedOmniDirectional:</b>                                      (NSInteger) startX                                      startY: (NSInteger) startY                                      text: (NSString *)text                                      moduleHeight: (ModuleHeight)moduleHeight                                      moduleSize: (ModuleSize)moduleSize;</pre>	
Parameter	startX	The horizontal reference point (dot) from the starting point The valid range is 0 to 2399.
	startY	The vertical reference point (dot) from the starting point The valid range is 0 to 2399.
	text	Barcode data Enter 13 characters from '0' to '9'. The leading '01' is automatically added by the printer. The check digit is automatically calculated by the printer.
	moduleHeight	Barcode module height (the number of the modules) The valid range is 33 to 255.
	moduleSize	Module size See "4.2.1(4)⑪ Module size (ModuleSize)" for available constants.
Error	<b>SIIPrinterException</b> is thrown when an error occurs while this method is being called. See " <b>4.2.3 SIIPrinterException Class</b> " for details on the error.	
Description	Start page mode by <b>enterPageMode</b> before executing this method.	
<b>Note</b>	Map the print data of the barcode not to overlap the other print data.	
Reference	See "Appendix B Barcode Size List" for details of the barcode size.	

## printPageModeGS1DataBarExpandedStacked

### Print GS1 Databar Expanded Stacked of page mode

Maps GS1 Databar Expanded Stacked on the print area of page mode.

Syntax	<pre>- (void) <b>printPageModeGS1DataBarExpandedStacked:</b> (NSInteger) startX                                      startY: (NSInteger) startY                                      text: (NSString *)text                                      column: (NSInteger)column                                      moduleSize: (ModuleSize)moduleSize;</pre>	
Parameter	startX	The horizontal reference point (dot) from the starting point The valid range is 0 to 2399.
	startY	The vertical reference point (dot) from the starting point The valid range is 0 to 2399.

text	Barcode data Enter any number of characters using the following: ' ', '!', '""', '%', '&', '(', ')', '*', '+', ',', '-', '.', '/', ':', ';', '<', '=', '>', '?', '_ ', '0' to '9', 'A' to 'Z', 'a' to 'z'. Enter '{1' to FNC1. Be sure to input the check digit because it is not automatically calculated by the printer.
column	The number of columns Specifies the number of the columns in 1 line. The valid range is the even number from 2 to 20.
moduleSize	Module size See "4.2.1(4)⑪ Module size (ModuleSize)" for available constants.
Error	<b>SIIPrinterException</b> is thrown when an error occurs while this method is being called. See " <b>4.2.3 SIIPrinterException Class</b> " for details on the error.
Description	Start page mode by <b>enterPageMode</b> before executing this method.
<b>Note</b>	Map the print data of the barcode not to overlap the other print data.
Reference	See "Appendix B Barcode Size List" for details of the barcode size.

```
printPageModeAztecCode
```

## Print Aztec Code of page mode

This method is not supported. When this method is executed, **SIIPrinterException** is thrown.

```
Syntax      - (void) printPageModeAztecCode: (NSInteger) startX
              startY: (NSInteger) startY
              text: (NSString *) text
              layer: (NSInteger) layer
              errorCorrection (NSInteger) errorCorrection
              moduleSize: (ModuleSize) moduleSize
              aztecSymbol (AztecSymbol) aztecSymbol;
```

```
sendPageModeBinary
```

Send binary data of page mode

Maps binary data on the print area of page mode.

Syntax	- (void) <b>sendPageModeBinary:</b> (NSData*) data;				
Parameter	<table border="0"><tr><td>binary</td><td>Binary data</td></tr><tr><td></td><td>Data size that can be specified at 1 time is 16 KB (16384 bytes).</td></tr></table>	binary	Binary data		Data size that can be specified at 1 time is 16 KB (16384 bytes).
binary	Binary data				
	Data size that can be specified at 1 time is 16 KB (16384 bytes).				
Error	<p><b>SIIPrinterException</b> is thrown when an error occurs while this method is being called.</p> <p>See "<b>4.2.3 SIIPrinterException Class</b>" for details on the error.</p>				
Description	<p>Start page mode by <b>enterPageMode</b> before executing this method.</p> <p>This method sends the specified binary data to the printer without conversion.</p> <p>By sending printer commands as binary data with this method, printer functions which are not supported in the library become available.</p>				
<b><u>Note</u></b>	<p>This method may execute unexpected performance depending on the data to send.</p> <p>Please ensure the performance with your actual device in advance.</p>				



Maps the image file on the print area of page mode.

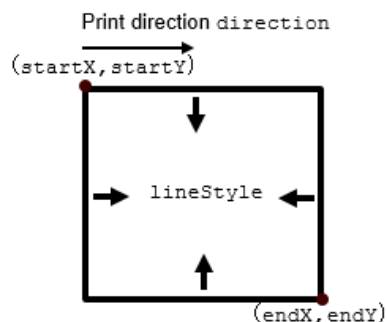
Syntax	<pre> - (void) <b>printPageModeImageFile:</b> (NSInteger) startX                                 startY: (NSInteger) startY                                 fileName: (NSString *) fileName                                 dithering: (Dithering) dithering; </pre>	
Parameter	startX	The horizontal reference point (dot) from the starting point The valid range is 0 to 2399.
	startY	The vertical reference point (dot) from the starting point The valid range is 0 to 2399.
	fileName	File path of the data The maximum file size that can be specified is 1 MB (1048576 bytes). The image files that can be sent are .bmp, .jpg, .jpeg, .png Colored image file is converted to monochrome image by binarization and registered.
	dithering	Dithering See "4.2.1(4)① Dithering (Dithering)" for available constants.
Error	<b>SIIPrinterException</b> is thrown when an error occurs while this method is being called. See " <b>4.2.3 SIIPrinterException Class</b> " for details on the error.	
Description	Start page mode by <b>enterPageMode</b> before executing this method.	

Maps the rectangle image on the print area of page mode.

Syntax	<pre> - (void) <b>printPageModeRectangle:</b> (NSInteger) startX                                 startY: (NSInteger) startY                                 endX: (NSInteger) endX                                 endY: (NSInteger) endY                                 lineStyle: (LineStyle) lineStyle; </pre>	
	startX	The horizontal reference point (dot) from the starting point The valid range is 0 to 2399.
	startY	The vertical reference point (dot) from the starting point The valid range is 0 to 2399.
	endX	The horizontal reference point (dot) from the ending point The valid range is 0 to 2399.
	endY	The vertical reference point (dot) from the ending point The valid range is 0 to 2399.
	lineStyle	Line style See "4.2.1(4)②⑨ Line style (LineStyle)" for available constants.
Error	<b>SIIPrinterException</b> is thrown when an error occurs while this method is being called. See " <b>4.2.3 SIIPrinterException Class</b> " for details on the error.	

Description Start page mode by **enterPageMode** before executing this method.

The rectangle is mapped to `direction` of **setPageModeDirection** as shown in the figure below.



The example of the parameter setting to the image is shown below.

Example: Draw a square with a medium solid line (4 dots) at 240 dots (30 mm) from the starting point.

Image	Parameter
	<pre> startX      0 startY      0 endX        239 endY        239 lineStyle    SH_PM_LINestyle_MEDIUM           </pre>

## printPageModeLine

## Print ruled line of page mode

Maps the ruled line on the print area of page mode.

Syntax	<pre> - (void) <b>printPageModeLine</b>: (NSInteger) startX                                 startY: (NSInteger) startY                                 endX: (NSInteger) endX                                 endY: (NSInteger) endY                                 lineStyle: (LineStyle) lineStyle;           </pre>	
Parameter	startX	The horizontal reference point (dot) from the starting point The valid range is 0 to 2399.
	startY	The vertical reference point (dot) from the starting point The valid range is 0 to 2399.
	endX	The horizontal reference point (dot) from the ending point The valid range is 0 to 2399.
	endY	The vertical reference point (dot) from the ending point The valid range is 0 to 2399.
	lineStyle	Line style See "4.2.1(4) <sup>29</sup> Line style (LineStyle)" for available constants.

- Error

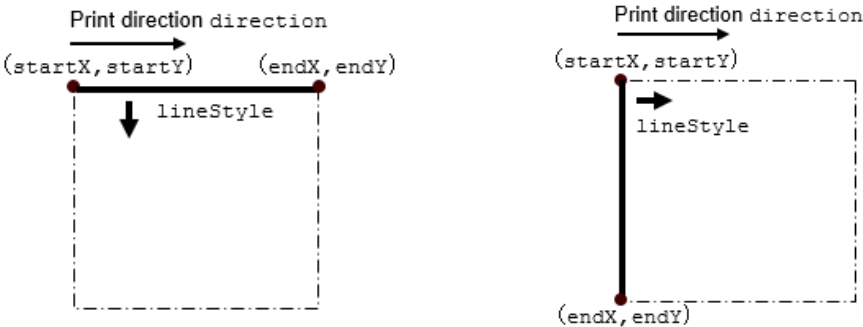
**SIIPrinterException** is thrown when an error occurs while this method is being called.

See "4.2.3 SIIPrinterException Class" for details on the error.
- Description

Start page mode by **enterPageMode** before executing this method.

A diagonal stroke cannot be drawn by this method.

The ruled line is mapped to the direction of **setPageModeDirection** as shown in the figure below.



Mapping direction of horizontal ruled line

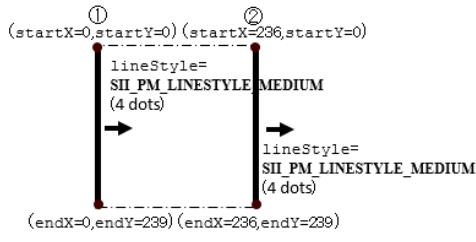
Mapping direction of vertical ruled line

The setting example of the parameter to the image is shown below.

Example: Draw a horizontal ruled line of a square with a medium solid line (4 dots) at 240 dots (30 mm) from the starting point.

Image	Parameter
<div> <div> <div>(startX=0,startY=0)(endX=239,endY=0)</div> <div>①</div> <div> <div>↓</div> <div>lineStyle=</div> <div>SII_PM_LINestyle_MEDIUM</div> <div>(4 dots)</div> </div> </div> <div> <div>(startX=0,startY=236)(endX=239,endY=236)</div> <div>②</div> <div> <div>↓</div> <div>lineStyle=</div> <div>SII_PM_LINestyle_MEDIUM</div> <div>(4 dots)</div> </div> </div> </div>	<div>①</div> <div> <div>startX0</div> <div>startY0</div> <div>endX239</div> <div>endY0</div> <div>lineStyleSII_PM_LINestyle_MEDIUM</div> </div> <div>②</div> <div> <div>startX0</div> <div>startY236</div> <div>endX239</div> <div>endY236</div> <div>lineStyleSII_PM_LINestyle_MEDIUM</div> </div>

Example: Draw a vertical ruled line of a square with a medium solid line (4 dots) at 240 dots (30 mm) from the starting point.

Image	Parameter
	<b>①</b> startX 0 startY 0 endX 0 endY 239 lineStyle <b>SII_PM_LINestyle_MEDIUM</b>
	<b>②</b> startX 236 startY 0 endX 236 endY 239 lineStyle <b>SII_PM_LINestyle_MEDIUM</b>

<code>printPageModeLogo</code>	Print logo of page mode
--------------------------------	-------------------------

Maps the registered logo on the print area of page mode.

Syntax	- (void) <b>printPageModeLogo</b> : (NSInteger) startX startY: (NSInteger) startY logoId: (NSString *) logoId;	
Parameter	startX	The horizontal reference point (dot) from the starting point The valid range is 0 to 2399.
	startY	The vertical reference point (dot) from the starting point The valid range is 0 to 2399.
	logoId	Logo ID to print (key code) Specify the ID of the registered logo as a character string
Error	<b>SIIPrinterException</b> is thrown when an error occurs while this method is being called. See " <b>4.2.3 SIIPrinterException Class</b> " for details on the error.	
Description	Start page mode by <b>enterPageMode</b> before executing this method.	

(6) Common property detail to standard mode and page mode

**sendTimeout**

**Get/Set send timeout period**

Gets or sets the timeout period in sending data.

Syntax	@property NSInteger <b>sendTimeout</b> ;
Valid range	100 to 300000 (millisecond: ms) When a value is specified less than 100, the period is set to 100 ms. When the value is specified more than 300000, 300000 ms is set.
Default	10000
Description	This method can get or set the timeout period regardless of whether <b>isConnect</b> is YES or NO. The set timeout period becomes effective at the next data sending.

**receiveTimeout**

**Get/Set receive timeout period**

Gets or sets the timeout period in receiving data.

Syntax	@property NSInteger <b>receiveTimeout</b> ;
Valid range	100 to 300000 (millisecond: ms) When a value is specified less than 100, the period is set to 100 ms. When the value is specified more than 300000, 300000 ms is set.
Default	10000
Description	This method can get or set the timeout period regardless of whether <b>isConnect</b> is YES or NO. The set timeout period becomes effective at the next data receiving.

**internationalCharacter**

**Get/Set international character set**

Gets or sets the value of international character set.

Syntax	@property NSInteger <b>internationalCharacter</b> ;
Description	See "4.2.1(3)⑤ International character set" for configurable constants. When an invalid value is specified, it is ignored. When this property is not set, the international character set is as follows depending on the language setting of iOS device.  When the language setting of iOS device is Japanese: <b>SII_PM_COUNTRY_JAPAN</b> When the language setting of iOS device is other than Japanese: <b>SII_PM_COUNTRY_USA</b>  When text data is sent by <b>sendText</b> , <b>sendTextEx</b> , <b>sendDataFile</b> , <b>printPageModeText</b> , or <b>printPageModeTextEx</b> , the print result of the following character codes varies. See "Appendix A Character Set" for details of the characters to be printed. Character codes with the varying print result depending on the configuration of the international character: 0x23, 0x24, 0x40, 0x5B, 0x5C, 0x5D, 0x5E, 0x60, 0x7B, 0x7C, 0x7D, 0x7E

Gets or sets the value of codepage.

Syntax	@property NSInteger <b>codePage</b> ;
Description	<p>See "4.2.1(3)⑥ Codepage" for configurable constants. When an invalid value is specified, it is ignored.</p> <p>When this property is not set, the codepage is as follows depending on the language setting of iOS device.</p> <p>When the language setting of iOS device is Japanese:  <b>SH_PM_CODE_PAGE_KATAKANA</b></p> <p>When the language setting of iOS device is other than Japanese:  <b>SH_PM_CODE_PAGE_1252</b></p> <p>The encoder used for sending the text data by <b>sendText</b>, <b>sendTextEx</b>, <b>sendDataFile</b>, <b>printPageModeText</b>, or <b>printPageModeTextEx</b> is changed. See "Appendix A Character Set" for characters to be printed.</p>

Gets the value of the connecting printer model.

Syntax	@property(readonly) NSInteger <b>printerModel</b> ;
Default	-1
Return value	<p>See "4.2.1(3)① Printer model" for available constants.</p> <p>When <b>isConnect</b> is NO, -1 is returned.</p>

Gets the value of the port type used for connection with the printer.

Syntax	@property(readonly) NSInteger <b>portType</b> ;
Default	-1
Return value	<p>See "4.2.1(3)② Port type" for available constants.</p> <p>When <b>isConnect</b> is NO, -1 is returned.</p>

Verifies connection state with the printer.

Syntax	@property(readonly) BOOL <b>isConnect</b> ;
Return value	<p>YES     Connected to the printer</p> <p>NO      Not connected to the printer</p>
Description	<p>This property retains the <b>connect</b> state as a BOOL value.</p> <p>When <b>connect</b> succeeds, this property is YES. After <b>connect</b>, when <b>disconnect</b> succeeds, this property becomes NO.</p>

Gets or sets the socket keeping time.

Syntax	@property NSInteger <b>socketKeepingTime</b> ;
Valid range	60000 to 300000 (millisecond: ms) When a value is specified less than 60000, time is set to 60000 ms. When a value is specified more than 300000, time is set to 300000 ms.
Default	300000
Description	This method can get or set the socket keeping time regardless of whether <b>isConnect</b> is YES or NO.  For the socket keeping time, specify a time equal to Receive Timeout of the printer to be connected. The setting of Receive Timeout can be changed in "SII RP Utility" with the iOS app on the App Store.  The set socket keeping time becomes effective at the next <b>connect</b> execution.

Registers a delegate object that receives notifications from the printer.

Syntax	@property(weak, nonatomic) id<SIIPrinterManagerDelegate> <b>delegate</b> ;
Description	Specify an object conforming to <b>SIIPrinterManagerDelegate</b> protocol. When this property is executed with the delegate object registered, the already registered delegate object becomes disabled, and a new delegate object is registered.  When nil is specified for this property, the notifications of the printer status and barcode data are stopped.

### 4.2.2 SIIPrinterInfo Class

This class stores the printer information found by printer searching method. It gets the printer model name, MAC address, and IP address from the found printer information.

#### (1) Method List

Methods provided by **SIIPrinterInfo** class are shown in the following table.

Name	Description
<b>SIIPrinterInfo</b>	Constructor of the printer information class

#### (2) Property List

Properties provided by **SIIPrinterInfo** class are shown in the following table.

Name	Access	Description
<b>name</b>	R	Get printer model name
<b>mac</b>	R	Get MAC address
<b>ip</b>	R	Get IP address

#### (3) Method Details

<b>SIIPrinterInfo</b>	<b>Constructor</b>
-----------------------	--------------------

Syntax      **SIIPrinterInfo**

Description      This method stores the printer information found by **startDiscoveryPrinter**.



#### (4) Property Details

name	Get printer model name
------	------------------------

Syntax      @property NSString **\*name**;

Description      This property gets the printer model name from the printer information found by **startDiscoveryPrinter**.

mac	Get MAC address
-----	-----------------

Syntax      @property NSString **\*mac**;

Description      This property gets the MAC address from the printer information found by **startDiscoveryPrinter**.

ip	Get IP address
----	----------------

Syntax      @property NSString **\*ip**;

Description      This property gets the IP address from the printer information found by **startDiscoveryPrinter**.

### 4.2.3 SIIPrinterException Class

#### (1) Method List

Methods provided by **SIIPrinterException** class are shown in the following table.

Name	Description
<b>SIIPrinterException</b>	Constructor

#### (2) Property List

Properties provided by **SIIPrinterException** class are shown in the following table.

Name	Access	Description
<b>errorCode</b>	R	Get error code
<b>errorMessage</b>	R	Get error message

### (3) Constant List

#### ① Error code

Constants used for getting error codes are shown in the following table.

Constant Name	Description	Value
SII_PM_ERROR_ACCESS_DENIED	Failed to get the handle.* <sup>1</sup>	-1
	An unavailable port was specified.	
	An unsupported method was specified.	
SII_PM_ERROR_SHARING_VIOLATION	An already opened port was specified.	-11
SII_PM_ERROR_PORT_NOT_OPENED	The port is not open.	-12
SII_PM_ERROR_DEVICE_NOT_CONNECTED	There is a problem with the Bluetooth connection between the iOS device and the printer.	-21
SII_PM_ERROR_OFFLINE	Disconnected state or the printer is offline.	-22
SII_PM_ERROR_EXTERNAL_DEVICE_NOT_CONNECTED	Display is not connected.	-23
SII_PM_ERROR_DEVICE_INITIALIZE_FAILED	Failed to change the printer settings. Data sending to the printer is not completed within the send timeout period, or data receiving from the printer is not completed within the receive timeout period.	-31
SII_PM_ERROR_DATA_SIZE_ZERO	0-byte data was specified.	-101
SII_PM_ERROR_OVER_MAX_DATA_SIZE	Maximum data size is exceeded.	-102
SII_PM_ERROR_DATA_SIZE_INVALID	Data size is invalid.	-103
SII_PM_ERROR_ENCODE_FAILED	An error occurred in encoding text data.* <sup>1</sup>	-111
SII_PM_ERROR_TIMEOUT	Send timeout occurred.	-201
	Receive timeout occurred.	
SII_PM_ERROR_FILE_NOT_FOUND	The specified file is not found.	-301
SII_PM_ERROR_FILE_USED	The specified file is in use by another process.	-302
SII_PM_ERROR_FILE_INVALID	The specified file is invalid.	-303
SII_PM_ERROR_LOW_MEMORY	Memory shortage occurred when loading image file.	-311
SII_PM_ERROR_OVER_MAX_IMAGE	Either or both of width and height of image file exceeds the number of printable maximum dots.	-312
SII_PM_ERROR_LOGO_NOT_DEFINED	The logo is not registered.	-313
SII_PM_ERROR_LOW_USER_AREA	Remaining user area is insufficient.	-401
SII_PM_ERROR_LOW_EXTERNAL_RAM	Remaining RAM capacity is insufficient.	-402

Constant Name	Description	Value
<b>SII_PM_ERROR_NOT_REGISTERD</b>	The template is not registered. The image data is not registered. The slide data is not registered. The optional font is not registered. The user-defined character is not registered.	-403
<b>SII_PM_ERROR_NOT_UNREGISTERD</b>	The template is not deleted. The image data is not deleted. The slide data is not deleted. The optional font is not deleted. The user-defined character is not deleted.	-404
<b>SII_PM_ERROR_INVALID_NO</b>	The specified value for the logo ID is invalid.	-501
<b>SII_PM_ERROR_INVALID_DATA</b>	The specified data is invalid.	-503
<b>SII_PM_ERROR_PAGE_MODE_SPECIFIED</b>	Page mode is specified.	-511
<b>SII_PM_ERROR_PAGE_MODE_NOT_SPECIFIED</b>	Page mode is not specified.	-512
<b>SII_PM_ERROR_INVALID_PARAM</b>	The specified parameter is invalid.	-9999

\*1: Abnormal processing might have occurred.

#### (4) Method Details

### `SIIPrinterException`

### Constructor

This is the exception class that is thrown when API of `SIIPrinterManager` class is called.

Syntax      `SIIPrinterException`

#### (5) Property Details

### `errorCode`

### Get error code

Gets the error code of the thrown exception.

Syntax      `@property NSInteger errorCode;`

Return value    See "4.2.3(3) Constant List".

### `errorMessage`

### Get error message

Gets the error message of the thrown exception.

Syntax      `@property NSString *errorMessage;`

Description    A character string that supplements the contents of `errorCode` can be retrieved.

#### 4.2.4 SIIPrinterManagerDelegate Protocol

## (1) Method List

Methods provided by `SIIPrinterManagerDelegate` protocol are shown in the following table.

Name	Description
didStatusChange	Notify printer status
didBarcodeScannerReadData	Receipt notify of barcode data
didBarcodeScannerChangedOnline	Connection notify of barcode scanner
didBarcodeScannerChangedOffline	Disconnection notify of barcode scanner

## (2) Method Details

didStatusChange	Notify printer status
-----------------	-----------------------

Notifies changes in printer status.

```
Syntax      - (void) didStatusChange:(SIIPrinterManager *)printerManager
              status:(NSInteger)status;
```

Parameter	printerManager	Calling SIIPrinterManager object
	status	Printer status

Description	<p>This method is called the latest status at the following timing.</p> <ul style="list-style-type: none"> <li>·When <b>connect</b> is executed.</li> <li>·When the printer status is changed.</li> </ul>
-------------	---

This method is called when `isConnect` is YES.

The notification of the printer status is stopped by `disconnect`.

The notification of the printer status is stopped by setting nil to `delegate`.

When communication with the printer is disconnected, this method notifies 0x80000000. After disconnection from the printer, the library attempts to resume communication with the printer until **disconnect** is executed. When communication with the printer becomes possible, this method notifies the latest printer status. See **getStatus** for description of the printer status.

Do not execute the APIs of `SIIPrinterManager` within this method.

Notifies the receipt of the barcode data.

Syntax	- (void) <b>didBarcodeScannerReadData</b> :(SIIPrinterManager *)printerManagerdata:(NSData *)data;
Parameter	printerManager    Calling SIIPrinterManager object data                      Received barcode data
Description	This method is called when the barcode scanner connected to the printer scans a barcode.  Receipt of barcode data is notified when <b>isConnect</b> is YES and the printer is connecting.  Do not execute the APIs of SIIPrinterManager within this method.

Notifies the connection of the barcode scanner.

Syntax	- (void) <b>didBarcodeScannerChangedOnline</b> :(SIIPrinterManager *)printerManager;
Parameter	printerManager    Calling SIIPrinterManager object
Description	This method is called at the following timing. ·When the barcode scanner is in connected state with the printer and <b>connect</b> is executed. ·When the barcode scanner is connected to the printer.  The connection of the barcode scanner is notified when <b>isConnect</b> is YES and the printer is connecting.  Do not execute the APIs of SIIPrinterManager within this method.

Notifies the disconnection of the barcode scanner.

Syntax	- (void) <b>didBarcodeScannerChangedOffline</b> :(SIIPrinterManager *)printerManager;
Parameter	printerManager    Calling SIIPrinterManager object
Description	This method is called at the following timing. ·When the barcode scanner is in unconnected state with the printer and <b>connect</b> is executed. ·When the barcode scanner is disconnected from the printer.  The disconnection of the barcode scanner is notified when <b>isConnect</b> is YES.  Do not execute the APIs of SIIPrinterManager within this method.

#### **4.2.5 SIISmartLabelManager Class**

**SIISmartLabelManager** class provides the function to covert the label file (\*.sl) created using Smart Label Creator into the printable data from the printer.

Do not use this class because it is not supported.



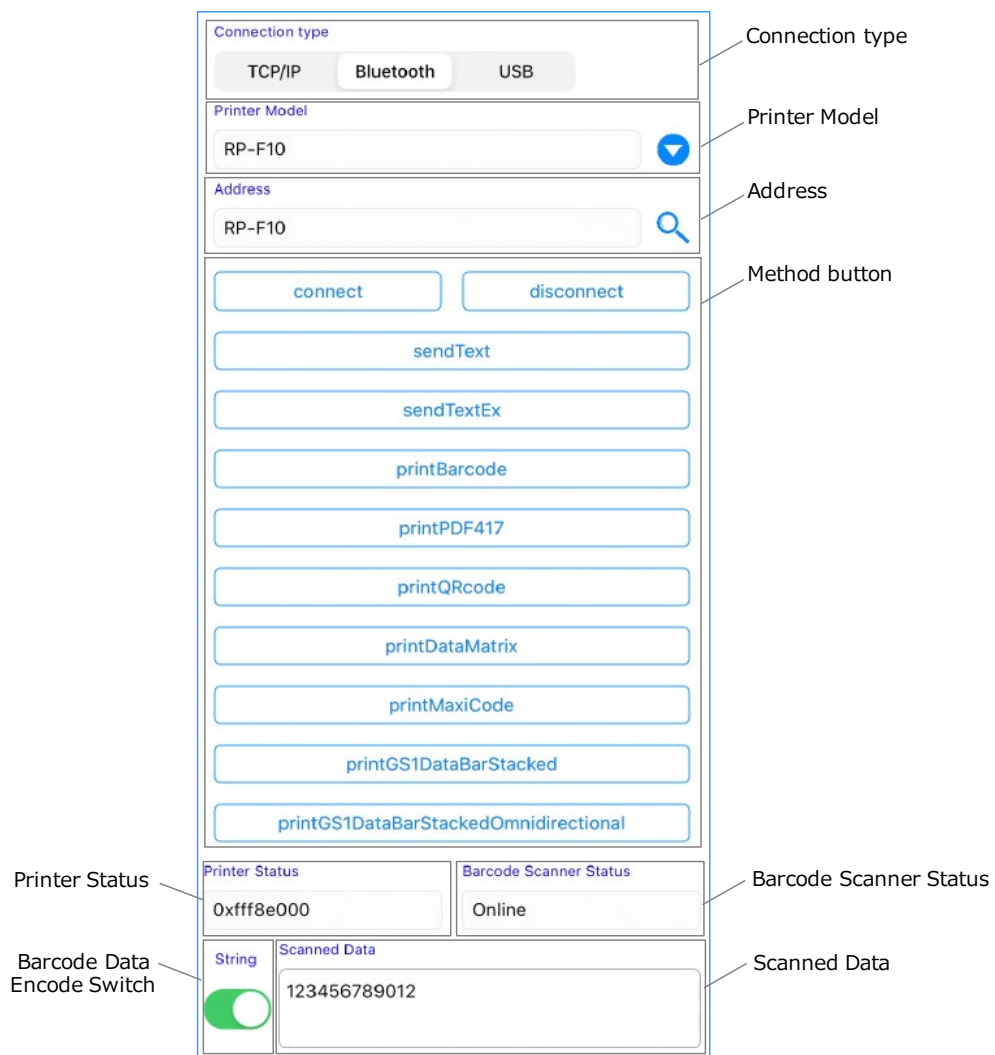
## Chapter 5





### Sample Program

This chapter describes the sample program provided by SII print class library.

#### 5.1 Screen Layout

SII print class library includes SiiLibSample, a sample program in Xcode project format. This section describes the screen of SiiLibSample.



Item	Description
Connection type	Selects connection type to the printer.
Printer Model	Specifies the printer model. After tapping  , a list of printer models is displayed. By selecting from the list, the printer model can be entered.
Address	Used to specify the printer address. For Bluetooth connection: After tapping  , a list of paired Bluetooth device names is displayed. By selecting a Bluetooth device name from the list, the printer address can be selected. For USB connection: After tapping  , the printer name is displayed. By selecting the printer name, the printer address can be selected. For TCP/IP connection: After tapping  , a list of the connectable printer IP address is displayed. By selecting a printer IP address from the list, the printer address can be selected.
Method Button	These buttons are for executing each method. In SiiLibSample, methods and properties of "4.1.1 <b>SIIPrinterManager</b> Class" are arranged. As the screen is scrolled, methods and properties not displayed can be seen. See "Chapter 4 Functions of the Library" for details of each method.
Printer Status	Displays the printer status. When <b>connect</b> succeeds, the latest status is displayed.
Barcode Scanner Status	Displays the connection status of the barcode scanner. Online: The barcode scanner is connected. Offline: The barcode scanner is unconnected.
Barcode Data Encode Switch	Selects the barcode data encoded by the barcode scanner. On: Encodes the scanned binary value into the character strings and displays. Off: Displays the scanned binary value as it is.
Scanned Data	Displays the barcode data scanned through the barcode scanner.

## 5.2 Precaution

The sample program is subject to change without notice.

No guarantee of proper operation and support are provided for the sample program.

## Appendix A

### Character Set

#### A.1 Codepage Table (Character Code Table)

The codepages when **SII\_PM\_COUNTRY\_USA** is set for the international character set are shown below. Print results of the specific character codes or display results vary depending on the setting of the international character set.

See "A.2 International Character Set" for the specific character codes.

	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	Ç	ü	é	â	ä	à	å	ç	ê	ë	è	ï	î	ì	Ä	Å
90	É	æ	Æ	ô	ö	ò	û	ù	ÿ	Ö	Ü	φ	£	¥	℔	ƒ
A0	á	í	ó	ú	ñ	Ñ	ä	ö	¿	¬	½	¼	¾	¼	¾	¾
B0	☐	☐	☐													
C0	⌞	⌞	⌞	⌞	⌞	⌞	⌞	⌞	⌞	⌞	⌞	⌞	⌞	⌞	⌞	⌞
D0	⌞	⌞	⌞	⌞	⌞	⌞	⌞	⌞	⌞	⌞	⌞	⌞	⌞	⌞	⌞	⌞
E0	α	β	γ	π	Σ	σ	μ	τ	φ	θ	Ω	δ	∞	φ	ε	∩
F0	≡	±	≥	≤		J	÷	≈	°	•	•	√	n	2	■	■

Figure A-1 SII\_PM\_CODE\_PAGE\_437 (USA, Standard Europe)

	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																
90																
A0	。	「	」	、	・	ヲ	ア	イ	ウ	エ	オ	ヤ	ユ	ヨ	ッ	
B0	ー	ア	イ	ウ	エ	オ	カ	キ	ク	ケ	コ	サ	シ	ス	セ	ソ
C0	タ	チ	ツ	テ	ト	ナ	ニ	ヌ	ネ	ノ	ハ	ヒ	フ	ヘ	ホ	マ
D0	ミ	ム	メ	モ	ヤ	ユ	ヨ	ラ	リ	ル	レ	ロ	ワ	ン	ゝ	。
E0																
F0																

Figure A-2 SH\_PM\_CODE\_PAGE\_KATAKANA

	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	Ç	ü	é	â	ä	à	â	ç	ê	ë	è	ï	î	ì	Ä	Å
90	É	æ	Æ	ô	ö	ò	û	ù	ÿ	Ö	Ü	ø	£	Ø	×	f
A0	á	í	ó	ú	ñ	Ñ	ä	ö	¿	®	¬	½	¼	¡	«	»
B0	☐	☐	☐			Á	Â	À	©	¶	¶	¶	¶	¢	¥	₱
C0	⊥	⊥	⊥	⊥	⊥	ã	Ã	ℓ	ℓ	ℓ	ℓ	ℓ	ℓ	ℓ	ℓ	α
D0	ð	Đ	Ê	Ë	È	Í	Î	Ï	⌋	⌋	■	■	■	■	■	■
E0	ó	β	ô	ò	õ	Ö	μ	þ	þ	Ú	Û	Ü	ý	Ý	-	´
F0	-	±	=	¾	¶	§	÷	,	°	…	.	¹	³	²	■	

Figure A-3 SH\_PM\_CODE\_PAGE\_850 (Multilingual)

	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	Ç	ü	é	â	ã	à	Á	ç	ê	Ê	è	Í	Ô	ì	Ã	Â
90	É	À	È	ô	õ	ò	Ú	ù	Ì	Õ	Ü	¢	£	Ù	Þ	Ó
A0	á	í	ó	ú	ñ	Ñ	ä	ö	ï	ò	¬	½	¼	¡	«	»
B0	▒	▒	▒													
C0	L	L	T		+	+	+	+	+	+	+	+	+	+	+	+
D0	⌌	⌌	⌌	⌌	⌌	⌌	⌌	⌌	⌌	⌌	⌌	⌌	⌌	⌌	⌌	⌌
E0	α	β	Γ	π	Σ	σ	μ	τ	φ	θ	Ω	δ	∞	φ	ε	∩
F0	≡	±	≥	≤			÷	≈	°	•	•	√	n	2	■	

Figure A-4 SII\_PM\_CODE\_PAGE\_860 (Portuguese)

	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	Ç	ü	é	â	À	à	¶	ç	ê	ë	è	ï	î	≡	À	§
90	É	È	Ê	ô	Ë	Ï	Ô	Ù	⌘	Ô	Ü	¢	£	Ù	Û	f
A0		'	ó	ú	¨	³	-	î	¬	¬	½	¼	¾	«	»	
B0	▒	▒	▒													
C0	L	L	T		+	+	+	+	+	+	+	+	+	+	+	+
D0	⌌	⌌	⌌	⌌	⌌	⌌	⌌	⌌	⌌	⌌	⌌	⌌	⌌	⌌	⌌	⌌
E0	α	β	Γ	π	Σ	σ	μ	τ	φ	θ	Ω	δ	∞	φ	ε	∩
F0	≡	±	≥	≤			÷	≈	°	•	•	√	n	2	■	

Figure A-5 SII\_PM\_CODE\_PAGE\_863 (Canadian-French)

	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	Ç	ü	é	â	ä	à	å	ç	ê	ë	è	ï	î	ì	Ä	Å
90	É	æ	Æ	ô	ö	ò	û	ù	ÿ	Ö	Ü	ø	£	Ø	ƒ	
A0	á	í	ó	ú	ñ	Ñ	ä	ö	í	í	½	¼	¿	«	»	
B0	☐	☐	☐													
C0	L	L	T													
D0	⌌	⌌	⌌	⌌	⌌	⌌	⌌	⌌	⌌	⌌	⌌	⌌	⌌	⌌	⌌	⌌
E0	α	β	Γ	π	Σ	σ	μ	τ	φ	θ	Ω	δ	∞	φ	ε	∩
F0	≡	±	≥	≤		J	÷	≈	°	.	.	√	n	2	■	

Figure A-6 SII\_PM\_CODE\_PAGE\_865 (Nordic)

	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	Ç	ü	é	â	ä	à	å	ç	ê	ë	è	ï	î	ì	Ä	Å
90	É	æ	Æ	ô	ö	ò	û	ù	ÿ	Ö	Ü	ø	£	Ø	ƒ	
A0	á	í	ó	ú	ñ	Ñ	Ğ	ğ	ı	®	¬	½	¼	¿	«	»
B0	☐	☐	☐													
C0	L	L	T													
D0	⌌	⌌	⌌	⌌	⌌	⌌	⌌	⌌	⌌	⌌	⌌	⌌	⌌	⌌	⌌	⌌
E0	ó	β	ô	ò	õ	õ	μ	×	ú	û	ü	ì	ÿ	-	'	
F0	-	±	¾	¶	§	÷	,	°	..	.	1	3	2	■		

Figure A-7 SII\_PM\_CODE\_PAGE\_857 (Turkish)

	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	A	B	Γ	Δ	E	Z	H	Θ	I	K	Λ	M	N	Ξ	O	Π
90	P	Σ	T	Υ	Φ	X	Ψ	Ω	α	β	γ	δ	ε	ζ	η	θ
A0	ι	κ	λ	μ	ν	ξ	ο	π	ρ	σ	ς	τ	υ	φ	χ	ψ
B0	⋈	⋈	⋈		†	‡		π	‡			π			‡	‡
C0	L	⊥	T	†	†	†	†	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥
D0	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥
E0	ω	ά	έ	ή	ϊ	ί	ό	ύ	ϋ	ώ	Ά	Έ	Ή	Ί	Ό	Υ
F0	Ω	±	≥	≤	İ	ÿ	÷	≈	°	.	.	√	n	2		

Figure A-8 SHI\_PM\_CODE\_PAGE\_737 (Greek)

	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	€	‘	’	“	”	•	-	-	~	™	š	<	Œ		ž	
90											š	>	œ		ž	ÿ
A0	ı	¢	£	¤	¥	¦	§	¨	©	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 SHI\_PM\_CODE\_PAGE\_1252 (Latin)

	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	А	Б	В	Г	Д	Е	Ж	З	И	Й	К	Л	М	Н	О	П
90	Р	С	Т	У	Ф	Х	Ц	Ч	Ш	Щ	Ъ	Ы	Ь	Э	Ю	Я
A0	а	б	в	г	д	е	ж	з	и	й	к	л	м	н	о	п
B0	␣	␣	␣													
C0	␣	␣	␣	␣	␣	␣	␣	␣	␣	␣	␣	␣	␣	␣	␣	␣
D0	␣	␣	␣	␣	␣	␣	␣	␣	␣	␣	␣	␣	␣	␣	␣	␣
E0	р	с	т	у	ф	х	ц	ч	ш	щ	ъ	ы	ь	э	ю	я
F0	Ё	ё	Є	є	İ	ı	Ÿ	ÿ	°	•	•	√	№	α	■	

Figure A-10 SII\_PM\_CODE\_PAGE\_866 (Russian)

	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	Ç	ü	é	â	ä	û	ç	ł	ë	ő	ö	î	ž	Ä	Ć	
90	É	Í	í	ô	ö	Ĺ	ĺ	Š	š	Ö	Ü	ř	ť	Ł	×	č
A0	á	í	ó	ú	À	à	Ž	ž	Ę	ę	¬	ž	Č	š	«	»
B0	␣	␣	␣			Á	Â	Ě	Š					Ž	ž	
C0	␣	␣	␣	␣	␣	Ā	ā	Ľ	ľ	␣	␣	␣	␣	␣	␣	␣
D0	đ	Đ	Ď	Ě	ď	Ň	í	î	ě	Ĵ	␣	␣	␣	␣	␣	␣
E0	ó	ß	ô	ń	ň	š	š	ř	ú	ř	Ů	ý	Ý	ť	'	
F0	-	"	˘	˘	˘	§	÷	˘	˘	˘	Ů	Ř	ř	■		

Figure A-11 SII\_PM\_CODE\_PAGE\_852 (Eastern Europe)



	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	Ç	ü	é	â	ä	à	â	ç	ê	ë	è	ï	î	ì	Ä	Å
90	É	æ	Æ	ô	ö	ò	û	ü	Ö	Ü	ø	£	Ø	×	ƒ	
A0	á	í	ó	ú	ñ	Ñ	ä	ö	¿	®	¬	½	¼	¡	«	»
B0	☐	☐	☐			Á	Â	À	©	¶	¶	¶	¶	¶	¥	₱
C0	Ł	Ł	Ł	Ł	Ł	Ł	Ł	Ł	Ł	Ł	Ł	Ł	Ł	Ł	Ł	Ł
D0	đ	Đ	Ê	Ë	È	€	Í	Î	Ï	Ј	Г	■	■	■	■	■
E0	Ó	β	Ô	Ò	Õ	μ	ρ	ρ	Ú	Ů	Ù	ý	Ý	-	'	
F0	-	±	=	¾	¶	§	÷	,	°	..	.	1	3	2	■	

Figure A-12 SII\_PM\_CODE\_PAGE\_858 (Euro)

	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	ђ	Ђ	ѓ	Ѓ	ё	Ё	є	Є	ѕ	Ѕ	і	І	ї	Ї	ј	Ј
90	љ	Љ	њ	Њ	ћ	Ћ	ќ	Ќ	џ	Џ	џ	џ	џ	џ	џ	џ
A0	а	А	б	Б	в	В	г	Г	д	Д	е	Е	ф	Ф	г	Г
B0	☐	☐	☐			х	Х	и	И	¶	¶	¶	¶	¶	й	Й
C0	Ł	Ł	Ł	Ł	Ł	Ł	Ł	Ł	Ł	Ł	Ł	Ł	Ł	Ł	Ł	Ł
D0	л	Л	м	М	н	Н	о	О	п	П	г	■	■	■	■	■
E0	я	Р	р	с	С	т	Т	у	У	ж	Ж	в	В	ь	ь	№
F0	-	ы	Ы	э	Э	ш	Ш	э	Э	щ	Щ	ч	Ч	§	■	

Figure A-13 SII\_PM\_CODE\_PAGE\_855 (Cyrillic)

	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	°	•	•	√	■	-		+	+	+	+	+	+	+	+	+
90	β	∞	φ	±	½	¼	≈	«	»	لَا	لَا	لَا	لَا	لَا	لَا	لَا
A0	-	ل	ل	ل	ل	ل	ل	ل	ل	ل	ل	ل	ل	ل	ل	ل
B0	•	١	٢	٣	٤	٥	٦	٧	٨	٩	ف	س	س	س	س	س
C0	¢	ء	آ	أ	ؤ	ع	ئ	ب	ا	ة	ث	ج	ح	خ	د	ذ
D0	ذ	ر	ز	س	ش	ص	ض	ط	ظ	ع	غ	ف	ق	ك	م	ن
E0	-	ف	ق	ك	م	ن	ه	و	ي	ي	ي	ي	ي	ي	ي	ي
F0	-	ن	ه	و	ي	ي	ي	ي	ي	ي	ي	ي	ي	ي	ي	ي

Figure A-14 SII\_PM\_CODE\_PAGE\_864 (Arabic)

	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	€	‘	’	“	”	•	-	-	™	š	Š	š	Š	š	Š	š
90	‘	’	“	”	•	-	-	™	š	Š	š	Š	š	Š	š	Š
A0	˘	˘	Ł	ł	Ą	ą	Ś	ś	©	§	«	»	®	Ž	ž	
B0	°	±	ł	ł	μ	¶	•	•	•	•	•	•	•	•	•	•
C0	Ř	Á	Ā	Ă	Ä	Á	Č	Č	Č	É	É	É	É	Í	Î	Ď
D0	Đ	Ń	Ń	Ó	Ô	Ö	Ö	×	Ř	Ů	Ú	Ú	Ú	Ý	Ť	ß
E0	ř	á	â	ă	ä	í	č	č	é	é	é	é	é	í	î	ď
F0	đ	ń	ń	ó	ô	ö	ö	÷	ř	ů	ú	ú	ú	ý	ť	·

Figure A-15 SII\_PM\_CODE\_PAGE\_1250 (Central European)

	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	ђ	ѓ	;	ѓ	„	...	†	‡	€	‰	Љ	<	Њ	ќ	ћ	џ
90	ђ	‘	;	“	”	•	-	-	™	Љ	>	њ	ќ	ћ	џ	
A0	ÿ	ÿ	Ј	Ѡ	Г	І	Š	Ě	©	©	«	¬	-	®	İ	
B0	°	±	І	і	г	μ	¶	•	ё	№	е	»	ј	š	s	ı
C0	А	Б	В	Г	Д	Е	Ж	З	И	Й	К	Л	М	Н	О	П
D0	Р	С	Т	У	Ф	Х	Ц	Ч	Ш	Щ	Ъ	Ы	Ь	Э	Ю	Я
E0	а	б	в	г	д	е	ж	з	и	й	к	л	м	н	о	п
F0	р	с	т	у	ф	х	ц	ч	ш	щ	ъ	ы	ь	э	ю	я

Figure A-16 SH\_PM\_CODE\_PAGE\_1251 (Cyrillic)

	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	„	...	†	‡	‰		<					
90		‘	;	“	”	•	-	-	™		>					
A0	ˆ	ˆ	ˆ	ˆ	ˆ	ˆ	ˆ	ˆ	ˆ	ˆ	ˆ	ˆ	ˆ	ˆ	ˆ	ˆ
B0	°	±	²	³	´	μ	¶	•	ˆ	ˆ	ˆ	ˆ	ˆ	ˆ	ˆ	ˆ
C0	ı	Α	Β	Γ	Δ	Ε	Ζ	Η	Θ	Ι	Κ	Λ	Μ	Ν	Ξ	Ο
D0	Π	Ρ		Σ	Τ	Υ	Φ	Χ	Ψ	Ω	İ	ÿ	ά	έ	ή	ί
E0	ύ	α	β	γ	δ	ε	ζ	η	θ	ι	κ	λ	μ	ν	ξ	ο
F0	π	ρ	ς	σ	τ	υ	φ	χ	ψ	ω	ï	ÿ	ό	ύ	ώ	

Figure A-17 SH\_PM\_CODE\_PAGE\_1253 (Greek)

	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	€	‘	’	“	”	…	†	‡	^	‰	Š	‹	Œ			
90		‚	‚	„	„	•	-	-	~	™	š	›	œ			ÿ
A0	ı	¢	£	¤	¥	¦	§	¨	©	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	Ğ	Ñ	Ò	Ó	Ô	Õ	Ö	×	Ø	Ù	Ú	Û	Ü	İ	Ş	ß
E0	à	á	â	ã	ä	å	æ	ç	è	é	ê	ë	ì	í	î	ï
F0	ğ	ñ	ò	ó	ô	õ	ö	÷	ø	ù	ú	û	ü	ı	ş	ÿ

Figure A-18 SII\_PM\_CODE\_PAGE\_1254 (Turkish)

## A.2 International Character Set

Print results of the specific character codes or display results vary depending on the setting of the international character set.

The following table shows the specific character codes and their print results.

	23	24	40	5B	5C	5D	5E	60	7B	7C	7D	7E
COUNTRY_USA	#	\$	@	[	\	]	^	`	{		}	~
COUNTRY_FRANCE	#	\$	à	°	ç	§	^	`	é	ù	è	..
COUNTRY_GERMANY	#	\$	§	Ä	Ö	Ü	^	`	ä	ö	ü	ß
COUNTRY_ENGLAND	£	\$	@	[	\	]	^	`	{		}	~
COUNTRY_DENMARK_1	#	\$	@	Æ	Ø	Å	^	`	æ	ø	å	~
COUNTRY_SWEDEN	#	α	É	Ä	Ö	Å	Ü	é	ä	ö	å	ü
COUNTRY_ITALY	#	\$	@	°	\	é	^	ù	à	ò	è	ì
COUNTRY_SPAIN	ℙ	\$	@	ı	Ñ	ı	^	`	..	ñ	}	~
COUNTRY_JAPAN	#	\$	@	[	¥	]	^	`	{		}	~
COUNTRY_NORWAY	#	α	É	Æ	Ø	Å	Ü	é	æ	ø	å	ü
COUNTRY_DENMARK_2	#	\$	É	Æ	Ø	Å	Ü	é	æ	ø	å	ü
COUNTRY_SPAIN_2	#	\$	á	ı	Ñ	ı	é	`	í	ñ	ó	ú
COUNTRY_LATIN_AMERICA	#	\$	á	ı	Ñ	ı	é	ü	í	ñ	ó	ú
COUNTRY_ARABIA	#	\$	@	[	\	]	^	`	{		}	~

Figure A-19 International Character Set

## Appendix B

### Barcode Size List

#### B.1 Barcode Size List

##### B.1.1 printBarcode, printPageModeBarcode



##### (1) Height of the barcode image

hriFont	hriPosition	Length from Top of Barcode to Reference Point	Height of Barcode Image
SII_PM_FONT_A	SII_PM_HRI_NONE	moduleHeight	moduleHeight
	SII_PM_HRI_POSITION_ABOVE	moduleHeight + 32	moduleHeight + 32
	SII_PM_HRI_POSITION_BELOW	moduleHeight	moduleHeight + 32
	SII_PM_HRI_POSITION_ABOVE_BELOW	moduleHeight + 64	moduleHeight + 64
SII_PM_FONT_B	SII_PM_HRI_NONE	moduleHeight	moduleHeight
	SII_PM_HRI_POSITION_ABOVE	moduleHeight + 24	moduleHeight + 24
	SII_PM_HRI_POSITION_BELOW	moduleHeight	moduleHeight + 24
	SII_PM_HRI_POSITION_ABOVE_BELOW	moduleHeight + 48	moduleHeight + 48

(2) Width of the barcode image

barcodeSymbol	moduleSize	Width of Barcode Image
SII_PM_BARCODE_UPC_A	SII_PM_BARCODE_MODULE_WIDTH_2	190
	SII_PM_BARCODE_MODULE_WIDTH_3	285
	SII_PM_BARCODE_MODULE_WIDTH_4	380
	SII_PM_BARCODE_MODULE_WIDTH_5	475
	SII_PM_BARCODE_MODULE_WIDTH_6	570
SII_PM_BARCODE_UPC_E	SII_PM_BARCODE_MODULE_WIDTH_2	102
	SII_PM_BARCODE_MODULE_WIDTH_3	153
	SII_PM_BARCODE_MODULE_WIDTH_4	204
	SII_PM_BARCODE_MODULE_WIDTH_5	255
	SII_PM_BARCODE_MODULE_WIDTH_6	306
SII_PM_BARCODE_EAN13	SII_PM_BARCODE_MODULE_WIDTH_2	190
	SII_PM_BARCODE_MODULE_WIDTH_3	285
	SII_PM_BARCODE_MODULE_WIDTH_4	380
	SII_PM_BARCODE_MODULE_WIDTH_5	475
	SII_PM_BARCODE_MODULE_WIDTH_6	570
SII_PM_BARCODE_JAN13	SII_PM_BARCODE_MODULE_WIDTH_2	190
	SII_PM_BARCODE_MODULE_WIDTH_3	285
	SII_PM_BARCODE_MODULE_WIDTH_4	380
	SII_PM_BARCODE_MODULE_WIDTH_5	475
	SII_PM_BARCODE_MODULE_WIDTH_6	570
SII_PM_BARCODE_EAN8	SII_PM_BARCODE_MODULE_WIDTH_2	134
	SII_PM_BARCODE_MODULE_WIDTH_3	201
	SII_PM_BARCODE_MODULE_WIDTH_4	268
	SII_PM_BARCODE_MODULE_WIDTH_5	335
	SII_PM_BARCODE_MODULE_WIDTH_6	402
SII_PM_BARCODE_JAN8	SII_PM_BARCODE_MODULE_WIDTH_2	134
	SII_PM_BARCODE_MODULE_WIDTH_3	201
	SII_PM_BARCODE_MODULE_WIDTH_4	268
	SII_PM_BARCODE_MODULE_WIDTH_5	335
	SII_PM_BARCODE_MODULE_WIDTH_6	402
SII_PM_BARCODE_CODE93	SII_PM_BARCODE_MODULE_WIDTH_2	18 × number of barcode data + 56
	SII_PM_BARCODE_MODULE_WIDTH_3	27 × number of barcode data + 84
	SII_PM_BARCODE_MODULE_WIDTH_4	36 × number of barcode data + 112
	SII_PM_BARCODE_MODULE_WIDTH_5	45 × number of barcode data + 140
	SII_PM_BARCODE_MODULE_WIDTH_6	54 × number of barcode data + 168
SII_PM_BARCODE_CODE128	SII_PM_BARCODE_MODULE_WIDTH_2	22 × number of barcode data + 26
	SII_PM_BARCODE_MODULE_WIDTH_3	33 × number of barcode data + 39
	SII_PM_BARCODE_MODULE_WIDTH_4	44 × number of barcode data + 52

barcodeSymbol	moduleSize	Width of Barcode Image
<b>SII_PM_BARCODE_CODE128</b>	<b>SII_PM_BARCODE_MODULE_WIDTH_5</b>	55 × number of barcode data + 65
	<b>SII_PM_BARCODE_MODULE_WIDTH_6</b>	66 × number of barcode data + 78
<b>SII_PM_BARCODE_GS1_OMNI_DIRECTIONAL</b>	<b>SII_PM_BARCODE_MODULE_WIDTH_2</b>	192
	<b>SII_PM_BARCODE_MODULE_WIDTH_3</b>	288
	<b>SII_PM_BARCODE_MODULE_WIDTH_4</b>	384
	<b>SII_PM_BARCODE_MODULE_WIDTH_5</b>	480
	<b>SII_PM_BARCODE_MODULE_WIDTH_6</b>	576
<b>SII_PM_BARCODE_GS1_TRUNCATED</b>	<b>SII_PM_BARCODE_MODULE_WIDTH_2</b>	192
	<b>SII_PM_BARCODE_MODULE_WIDTH_3</b>	288
	<b>SII_PM_BARCODE_MODULE_WIDTH_4</b>	384
	<b>SII_PM_BARCODE_MODULE_WIDTH_5</b>	480
	<b>SII_PM_BARCODE_MODULE_WIDTH_6</b>	576
<b>SII_PM_BARCODE_GS1_LIMITED</b>	<b>SII_PM_BARCODE_MODULE_WIDTH_2</b>	158
	<b>SII_PM_BARCODE_MODULE_WIDTH_3</b>	237
	<b>SII_PM_BARCODE_MODULE_WIDTH_4</b>	316
	<b>SII_PM_BARCODE_MODULE_WIDTH_5</b>	395
	<b>SII_PM_BARCODE_MODULE_WIDTH_6</b>	474
<b>SII_PM_BARCODE_GS1_EXPANDED<sup>*1</sup></b>	<b>SII_PM_BARCODE_MODULE_WIDTH_2</b>	number of barcode module × 2
	<b>SII_PM_BARCODE_MODULE_WIDTH_3</b>	number of barcode module × 3
	<b>SII_PM_BARCODE_MODULE_WIDTH_4</b>	number of barcode module × 4
	<b>SII_PM_BARCODE_MODULE_WIDTH_5</b>	number of barcode module × 5
	<b>SII_PM_BARCODE_MODULE_WIDTH_6</b>	number of barcode module × 6

\*1: The number of barcode module is determined by the barcode data to be specified.



barcodeSymbol	nwRatio	moduleSize	Width of Barcode Image
SII_PM_BARCODE_CODE39	SII_PM_NWRATIO_1TO2	SII_PM_BARCODE_MODULE_WIDTH_2	26 × number of barcode data + 50
		SII_PM_BARCODE_MODULE_WIDTH_3	39 × number of barcode data + 75
		SII_PM_BARCODE_MODULE_WIDTH_4	52 × number of barcode data + 100
		SII_PM_BARCODE_MODULE_WIDTH_5	65 × number of barcode data + 125
		SII_PM_BARCODE_MODULE_WIDTH_6	78 × number of barcode data + 150
	SII_PM_NWRATIO_1TO2_5	SII_PM_BARCODE_MODULE_WIDTH_2	29 × number of barcode data + 56
		SII_PM_BARCODE_MODULE_WIDTH_3	45 × number of barcode data + 87
		SII_PM_BARCODE_MODULE_WIDTH_4	58 × number of barcode data + 112
		SII_PM_BARCODE_MODULE_WIDTH_5	74 × number of barcode data + 143
		SII_PM_BARCODE_MODULE_WIDTH_6	87 × number of barcode data + 168
	SII_PM_NWRATIO_1TO3	SII_PM_BARCODE_MODULE_WIDTH_2	32 × number of barcode data + 62
		SII_PM_BARCODE_MODULE_WIDTH_3	48 × number of barcode data + 93
		SII_PM_BARCODE_MODULE_WIDTH_4	64 × number of barcode data + 124
		SII_PM_BARCODE_MODULE_WIDTH_5	80 × number of barcode data + 155
		SII_PM_BARCODE_MODULE_WIDTH_6	96 × number of barcode data + 186
SII_PM_BARCODE_ITF	SII_PM_NWRATIO_1TO2	SII_PM_BARCODE_MODULE_WIDTH_2	14 × number of barcode data + 16
		SII_PM_BARCODE_MODULE_WIDTH_3	21 × number of barcode data + 24
		SII_PM_BARCODE_MODULE_WIDTH_4	28 × number of barcode data + 32
		SII_PM_BARCODE_MODULE_WIDTH_5	35 × number of barcode data + 40
		SII_PM_BARCODE_MODULE_WIDTH_6	42 × number of barcode data + 48
	SII_PM_NWRATIO_1TO2_5	SII_PM_BARCODE_MODULE_WIDTH_2	16 × number of barcode data + 17
		SII_PM_BARCODE_MODULE_WIDTH_3	25 × number of barcode data + 26
		SII_PM_BARCODE_MODULE_WIDTH_4	32 × number of barcode data + 34

barcodeSymbol	nwRatio	moduleSize	Width of Barcode Image
SII_PM_BARCODE_ITF	SII_PM_NWRATIO_1TO2_5	SII_PM_BARCODE_MODULE_WIDTH_5	41 × number of barcode data + 43
		SII_PM_BARCODE_MODULE_WIDTH_6	48 × number of barcode data + 51
	SII_PM_NWRATIO_1TO3	SII_PM_BARCODE_MODULE_WIDTH_2	18 × number of barcode data + 18
		SII_PM_BARCODE_MODULE_WIDTH_3	27 × number of barcode data + 27
		SII_PM_BARCODE_MODULE_WIDTH_4	36 × number of barcode data + 36
		SII_PM_BARCODE_MODULE_WIDTH_5	45 × number of barcode data + 45
SII_PM_BARCODE_CODABAR* <sup>1</sup>	SII_PM_NWRATIO_1TO2	SII_PM_BARCODE_MODULE_WIDTH_2	20 × number of data + 2 × (2 + number of wide data) - 2
		SII_PM_BARCODE_MODULE_WIDTH_3	30 × number of data + 3 × (2 + number of wide data) - 3
		SII_PM_BARCODE_MODULE_WIDTH_4	40 × number of data + 4 × (2 + number of wide data) - 4
		SII_PM_BARCODE_MODULE_WIDTH_5	50 × number of data + 5 × (2 + number of wide data) - 5
		SII_PM_BARCODE_MODULE_WIDTH_6	60 × number of data + 6 × (2 + number of wide data) - 6
	SII_PM_NWRATIO_1TO2_5	SII_PM_BARCODE_MODULE_WIDTH_2	22 × number of data + 3 × (2 + number of wide data) - 2
		SII_PM_BARCODE_MODULE_WIDTH_3	34 × number of data + 5 × (2 + number of wide data) - 3
		SII_PM_BARCODE_MODULE_WIDTH_4	44 × number of data + 6 × (2 + number of wide data) - 4
		SII_PM_BARCODE_MODULE_WIDTH_5	56 × number of data + 8 × (2 + number of wide data) - 5
		SII_PM_BARCODE_MODULE_WIDTH_6	66 × number of data + 9 × (2 + number of wide data) - 6
	SII_PM_NWRATIO_1TO3	SII_PM_BARCODE_MODULE_WIDTH_2	24 × number of data + 4 × (2 + number of wide data) - 2
		SII_PM_BARCODE_MODULE_WIDTH_3	36 × number of data + 6 × (2 + number of wide data) - 3
		SII_PM_BARCODE_MODULE_WIDTH_4	48 × number of data + 8 × (2 + number of wide data) - 4
		SII_PM_BARCODE_MODULE_WIDTH_5	60 × number of data + 10 × (2 + number of wide data) - 5
		SII_PM_BARCODE_MODULE_WIDTH_6	72 × number of data + 12 × (2 + number of wide data) - 6

\*1: The number of data is the number of all characters except for the start and stop characters.  
The wide data is the number of " : / . + ".

barcodeSymbol	Number of Data	moduleSize	Width of Barcode Image
SII_PM_BARCODE_EAN13_ADDON	14 or 15	SII_PM_BARCODE_MODULE_WIDTH_2	244
		SII_PM_BARCODE_MODULE_WIDTH_3	366
		SII_PM_BARCODE_MODULE_WIDTH_4	488
		SII_PM_BARCODE_MODULE_WIDTH_5	610
		SII_PM_BARCODE_MODULE_WIDTH_6	732
	17 or 18	SII_PM_BARCODE_MODULE_WIDTH_2	298
		SII_PM_BARCODE_MODULE_WIDTH_3	447
		SII_PM_BARCODE_MODULE_WIDTH_4	596
		SII_PM_BARCODE_MODULE_WIDTH_5	745
		SII_PM_BARCODE_MODULE_WIDTH_6	894
SII_PM_BARCODE_JAN13_ADDON	14 or 15	SII_PM_BARCODE_MODULE_WIDTH_2	244
		SII_PM_BARCODE_MODULE_WIDTH_3	366
		SII_PM_BARCODE_MODULE_WIDTH_4	488
		SII_PM_BARCODE_MODULE_WIDTH_5	610
		SII_PM_BARCODE_MODULE_WIDTH_6	732
	17 or 18	SII_PM_BARCODE_MODULE_WIDTH_2	298
		SII_PM_BARCODE_MODULE_WIDTH_3	447
		SII_PM_BARCODE_MODULE_WIDTH_4	596
		SII_PM_BARCODE_MODULE_WIDTH_5	745
		SII_PM_BARCODE_MODULE_WIDTH_6	894

## B.1.2 printPDF417, printPageModePDF417



### (1) Height of the barcode image

$$\text{Height of the barcode image}^{*1} = \text{moduleHeight} \times \text{row}^{*2}$$

\*1: Height of the barcode image = Length from the top of the barcode to the reference point

\*2:  $\text{row} \neq 0$

### (2) Width of the barcode image

When `pdf417Symol` is `SII_PM_PDF417_STANDARD`:

$$\text{Width of the barcode image} = (17 \times \text{column}^{*1} + 69) \times \text{module size value}$$

\*1:  $\text{column} \neq 0$

When `pdf417Symol` is `SII_PM_PDF417_COMPACT`:

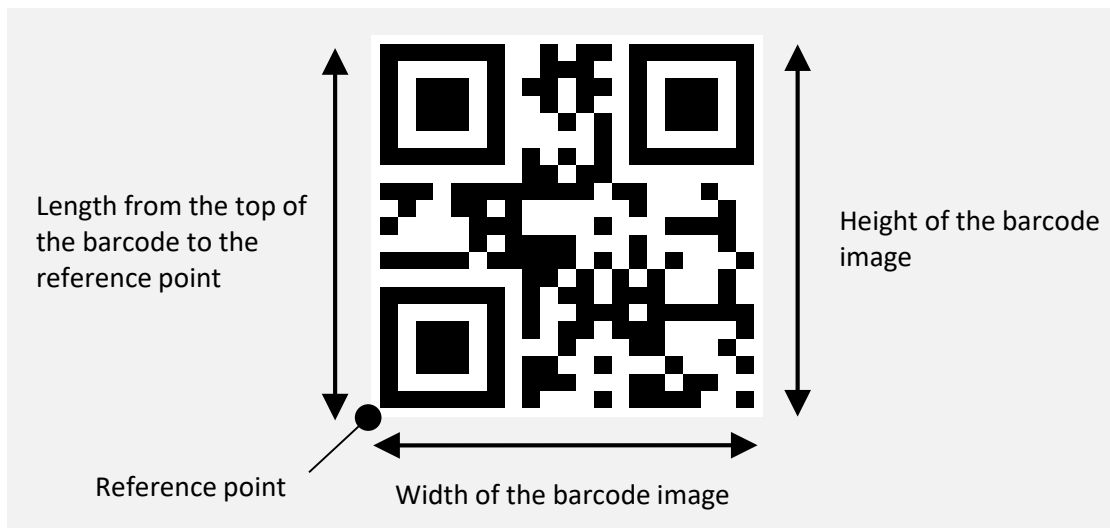
$$\text{Width of the barcode image} = (17 \times \text{column}^{*1} + 35) \times \text{module size value}$$

\*1:  $\text{column} \neq 0$

### Module Size Value

moduleSize	Module Size Value
<code>SII_PM_PDF417_MODULE_WIDTH_2</code>	2
<code>SII_PM_PDF417_MODULE_WIDTH_3</code>	3
<code>SII_PM_PDF417_MODULE_WIDTH_4</code>	4
<code>SII_PM_PDF417_MODULE_WIDTH_5</code>	5
<code>SII_PM_PDF417_MODULE_WIDTH_6</code>	6
<code>SII_PM_PDF417_MODULE_WIDTH_7</code>	7
<code>SII_PM_PDF417_MODULE_WIDTH_8</code>	8

### B.1.3 printQRCode, printPageModeQRCode



#### (1) Height and width of the barcode image

Height\*<sup>1</sup> and width of the barcode image =  $(4 \times \text{version}^{*2} + 17) \times \text{module size value}$

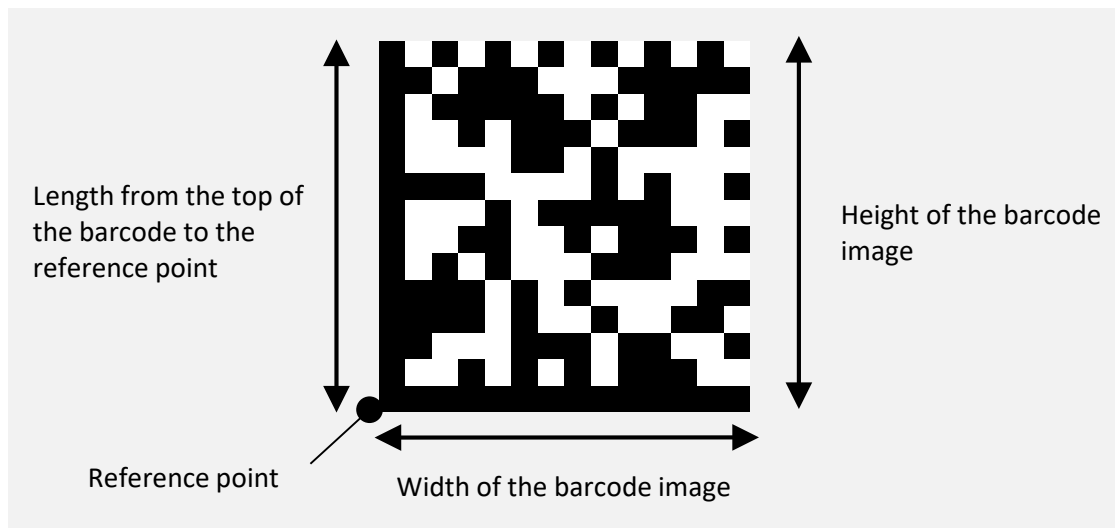
\*1: Height of the barcode image = Length from the top of the barcode to the reference point

\*2: The version is determined by the content of the barcode data and the error correction level.

#### Module Size Value

moduleSize	Module Size Value
SII_PM_QR_MODULE_SIZE_2	2
SII_PM_QR_MODULE_SIZE_3	3
SII_PM_QR_MODULE_SIZE_4	4
SII_PM_QR_MODULE_SIZE_5	5
SII_PM_QR_MODULE_SIZE_6	6
SII_PM_QR_MODULE_SIZE_7	7
SII_PM_QR_MODULE_SIZE_8	8
SII_PM_QR_MODULE_SIZE_9	9
SII_PM_QR_MODULE_SIZE_10	10
SII_PM_QR_MODULE_SIZE_11	11
SII_PM_QR_MODULE_SIZE_12	12
SII_PM_QR_MODULE_SIZE_13	13
SII_PM_QR_MODULE_SIZE_14	14
SII_PM_QR_MODULE_SIZE_15	15
SII_PM_QR_MODULE_SIZE_16	16

#### B.1.4 printDataMatrix, printPageModeDataMatrix



##### (1) Height and width of the barcode image

Height of the barcode image = number of vertical module × module size value

Width of the barcode image = number of horizontal module × module size value

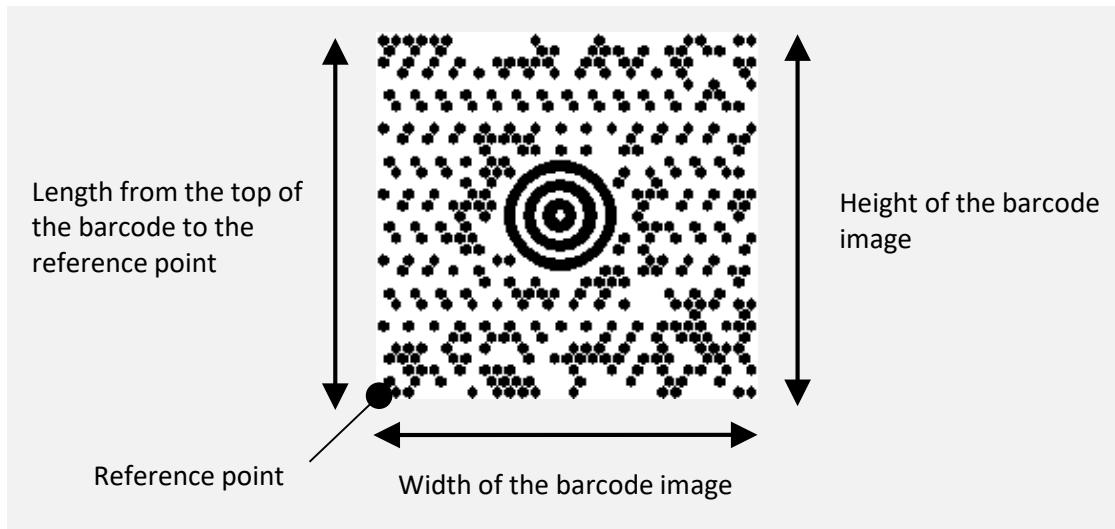
dataMatrixModule	Number of Vertical Module	Number of Horizontal Module
SII_PM_DATA_MATRIX_10_10	10	10
SII_PM_DATA_MATRIX_12_12	12	12
SII_PM_DATA_MATRIX_14_14	14	14
SII_PM_DATA_MATRIX_16_16	16	16
SII_PM_DATA_MATRIX_18_18	18	18
SII_PM_DATA_MATRIX_20_20	20	20
SII_PM_DATA_MATRIX_22_22	22	22
SII_PM_DATA_MATRIX_24_24	23	23
SII_PM_DATA_MATRIX_26_26	26	26
SII_PM_DATA_MATRIX_32_32	32	32
SII_PM_DATA_MATRIX_36_36	36	36
SII_PM_DATA_MATRIX_40_40	40	40
SII_PM_DATA_MATRIX_44_44	44	44
SII_PM_DATA_MATRIX_48_48	48	48
SII_PM_DATA_MATRIX_52_52	52	52
SII_PM_DATA_MATRIX_64_64	64	64
SII_PM_DATA_MATRIX_72_72	72	72
SII_PM_DATA_MATRIX_80_80	80	80
SII_PM_DATA_MATRIX_88_88	88	88
SII_PM_DATA_MATRIX_96_96	96	96
SII_PM_DATA_MATRIX_104_104	104	104
SII_PM_DATA_MATRIX_120_120	120	120

dataMatrixModule	Number of Vertical Module	Number of Horizontal Module
SII_PM_DATA_MATRIX_132_132	132	132
SII_PM_DATA_MATRIX_144_144	144	144
SII_PM_DATA_MATRIX_8_18	8	18
SII_PM_DATA_MATRIX_8_32	8	32
SII_PM_DATA_MATRIX_12_26	12	26
SII_PM_DATA_MATRIX_12_36	12	36
SII_PM_DATA_MATRIX_16_36	16	36
SII_PM_DATA_MATRIX_16_48	16	48

#### Module Size Value

moduleSize	Module Size Value
SII_PM_DATAMATRIX_MODULE_SIZE_2	2
SII_PM_DATAMATRIX_MODULE_SIZE_3	3
SII_PM_DATAMATRIX_MODULE_SIZE_4	4
SII_PM_DATAMATRIX_MODULE_SIZE_5	5
SII_PM_DATAMATRIX_MODULE_SIZE_6	6
SII_PM_DATAMATRIX_MODULE_SIZE_7	7
SII_PM_DATAMATRIX_MODULE_SIZE_8	8
SII_PM_DATAMATRIX_MODULE_SIZE_9	9
SII_PM_DATAMATRIX_MODULE_SIZE_10	10
SII_PM_DATAMATRIX_MODULE_SIZE_11	11
SII_PM_DATAMATRIX_MODULE_SIZE_12	12
SII_PM_DATAMATRIX_MODULE_SIZE_13	13
SII_PM_DATAMATRIX_MODULE_SIZE_14	14
SII_PM_DATAMATRIX_MODULE_SIZE_15	15
SII_PM_DATAMATRIX_MODULE_SIZE_16	16

### B.1.5 printMaxicode, printPageModeMaxicode



(1) Height of the barcode image

Height of the barcode image<sup>\*1</sup> = 200

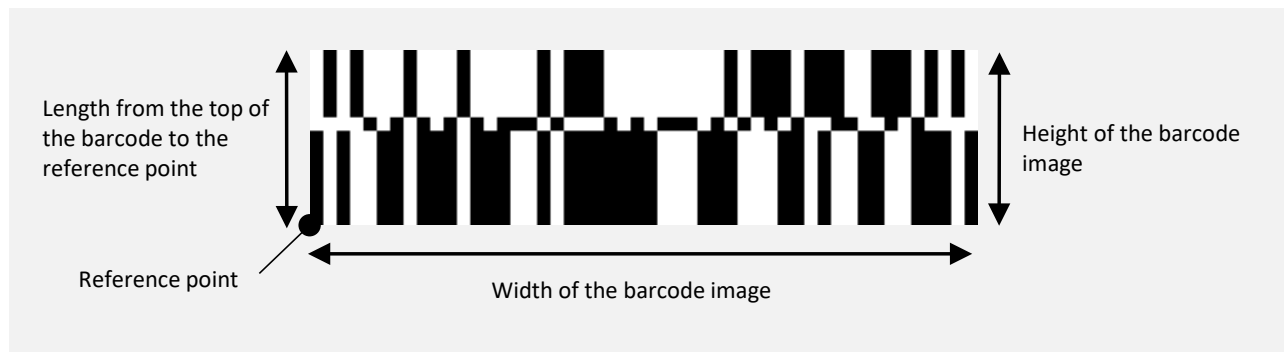
<sup>\*1</sup>: Height of the barcode image = Length from the top of the barcode to the reference point

(2) Width of the barcode image

Width of the barcode image = 210



## B.1.6 printGS1DataBarStacked, printPageModeGS1DataBarStacked



### (1) Height and width of the barcode image

Height of the barcode image<sup>\*1</sup> = 13 × module size value

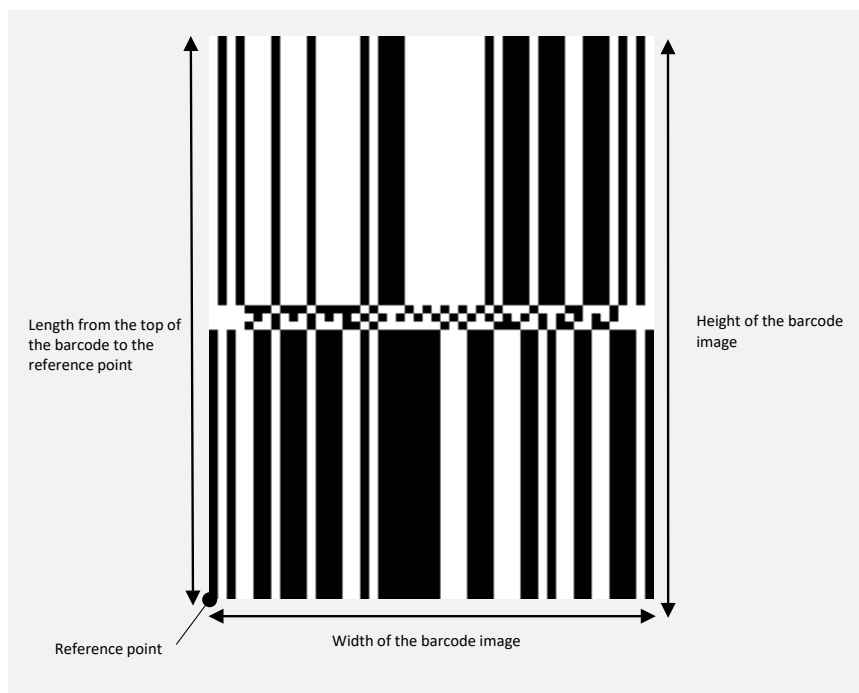
<sup>\*1</sup>: Height of the barcode image = Length from the top of the barcode to the reference point

Width of the barcode image = 50 × module size value

#### Module Size Value

moduleSize	Module Size Value
SII_PM_GS1DATABAR_MODULE_SIZE_2	2
SII_PM_GS1DATABAR_MODULE_SIZE_3	3
SII_PM_GS1DATABAR_MODULE_SIZE_4	4
SII_PM_GS1DATABAR_MODULE_SIZE_5	5
SII_PM_GS1DATABAR_MODULE_SIZE_6	6
SII_PM_GS1DATABAR_MODULE_SIZE_7	7
SII_PM_GS1DATABAR_MODULE_SIZE_8	8
SII_PM_GS1DATABAR_MODULE_SIZE_9	9
SII_PM_GS1DATABAR_MODULE_SIZE_10	10
SII_PM_GS1DATABAR_MODULE_SIZE_11	11
SII_PM_GS1DATABAR_MODULE_SIZE_12	12
SII_PM_GS1DATABAR_MODULE_SIZE_13	13
SII_PM_GS1DATABAR_MODULE_SIZE_14	14
SII_PM_GS1DATABAR_MODULE_SIZE_15	15
SII_PM_GS1DATABAR_MODULE_SIZE_16	16

**B.1.7** `printGS1DataBarStackedOmnidirectional,`  
`printPageModeGS1DataBarStackedOmnidirectional`



(1) Height and width of the barcode image

Height of the barcode image<sup>\*1</sup> = (moduleHeight × 2 + 3) × module size value

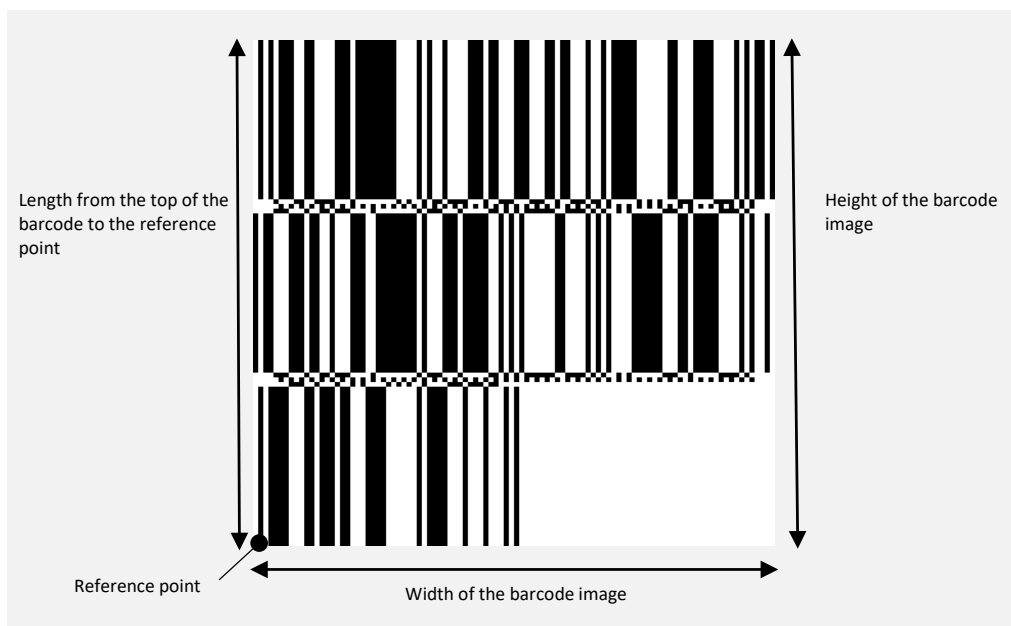
<sup>\*1</sup>: Height of the barcode image = Length from the top of the barcode to the reference point

Width of the barcode image = 50 × module size value

**Module Size Value**

moduleSize	Module Size Value
SII_PM_GS1DATABAR_MODULE_SIZE_2	2
SII_PM_GS1DATABAR_MODULE_SIZE_3	3
SII_PM_GS1DATABAR_MODULE_SIZE_4	4
SII_PM_GS1DATABAR_MODULE_SIZE_5	5
SII_PM_GS1DATABAR_MODULE_SIZE_6	6
SII_PM_GS1DATABAR_MODULE_SIZE_7	7
SII_PM_GS1DATABAR_MODULE_SIZE_8	8
SII_PM_GS1DATABAR_MODULE_SIZE_9	9
SII_PM_GS1DATABAR_MODULE_SIZE_10	10
SII_PM_GS1DATABAR_MODULE_SIZE_11	11
SII_PM_GS1DATABAR_MODULE_SIZE_12	12
SII_PM_GS1DATABAR_MODULE_SIZE_13	13
SII_PM_GS1DATABAR_MODULE_SIZE_14	14
SII_PM_GS1DATABAR_MODULE_SIZE_15	15
SII_PM_GS1DATABAR_MODULE_SIZE_16	16

### B.1.8 `printGS1DataBarExpandedStacked`, `printPageModeGS1DataBarExpandedStacked`



#### (1) Height and width of the barcode image

Height of the barcode image<sup>\*1</sup> =  $((34 + 3) \times \text{number of row}^{\text{*2}} + 34) \times \text{module size value}$

\*1: Height of the barcode image = Length from the top of the barcode to the reference point

\*2: The number of row is determined by the barcode data.

Width of the barcode image =  $(4 + 49 \times \text{column} / 2) \times \text{module size value}$

#### Module Size Value

moduleSize	Module Size Value
<code>SII_PM_GS1DATABAR_MODULE_SIZE_2</code>	2
<code>SII_PM_GS1DATABAR_MODULE_SIZE_3</code>	3
<code>SII_PM_GS1DATABAR_MODULE_SIZE_4</code>	4
<code>SII_PM_GS1DATABAR_MODULE_SIZE_5</code>	5
<code>SII_PM_GS1DATABAR_MODULE_SIZE_6</code>	6
<code>SII_PM_GS1DATABAR_MODULE_SIZE_7</code>	7
<code>SII_PM_GS1DATABAR_MODULE_SIZE_8</code>	8
<code>SII_PM_GS1DATABAR_MODULE_SIZE_9</code>	9
<code>SII_PM_GS1DATABAR_MODULE_SIZE_10</code>	10
<code>SII_PM_GS1DATABAR_MODULE_SIZE_11</code>	11
<code>SII_PM_GS1DATABAR_MODULE_SIZE_12</code>	12
<code>SII_PM_GS1DATABAR_MODULE_SIZE_13</code>	13
<code>SII_PM_GS1DATABAR_MODULE_SIZE_14</code>	14
<code>SII_PM_GS1DATABAR_MODULE_SIZE_15</code>	15
<code>SII_PM_GS1DATABAR_MODULE_SIZE_16</code>	16

## **Appendix C**

### **Open Source Software License**

This chapter describes the License of open source software used in the library.

#### **C.1 MIT License**

- **SSZipArchive**

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## C.2 Apache License 2.0

- **zxingify-objc**

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(Specifications are subject to change without notice.)