



SII Print Class Library for iOS Application Programmer's Guide

Rev.14

[Products]

RP-F10 Series

Seiko Instruments Inc.

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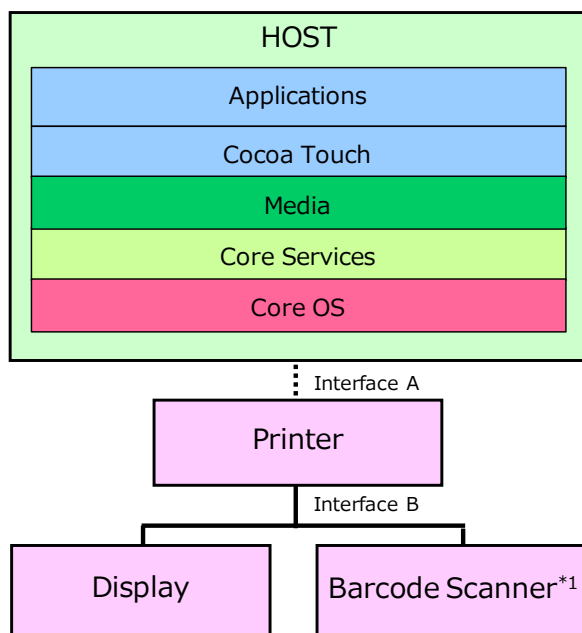
INTRODUCTION

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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Appendix C Open Source Software License

C.1 MIT License	C-1
C.2 Apache License 2.0	C-2

Chapter 1

Product Overview

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

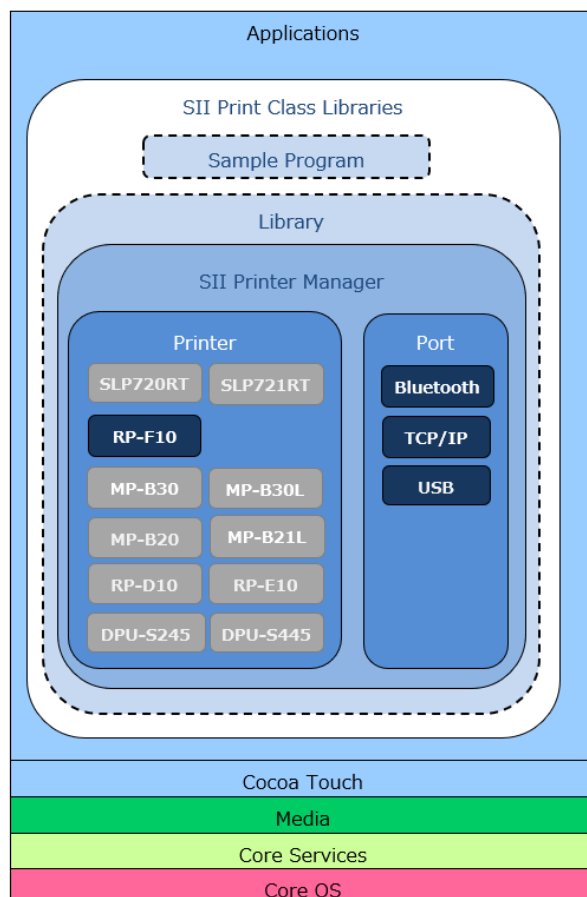
1.1 Functions Provided by SII Print Class Library

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
- Outputting a log file

*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>(NOTE) • RP-F10 does not support the APIs relating to label printing function. • See "RP-F10 SERIES Thermal Printer USER'S GUIDE" for details of the recommended barcode scanner and the barcode scanner setting.</p>

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 16 to 16.7.1
- iPadOS 16 to 16.7.1
- iOS 17 to 17.6.1
- iPadOS 17 to 17.6.1
- iOS 18 to 18.2.1
- iPadOS 18 to 18.2.1

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 Printer 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 ^{*1} (Scanner Auto Status Back)	0: Enable ^{*2}
39-1	iOS Auto Connection (Auto Connection)	1: Disable 0: Enable ^{*3}

*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 ^{*1} (Scanner Auto Status Back)	0: Enable ^{*2}

*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* ¹ (Scanner Auto Status Back)	0: Enable* ²

*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.

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 12.0 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.

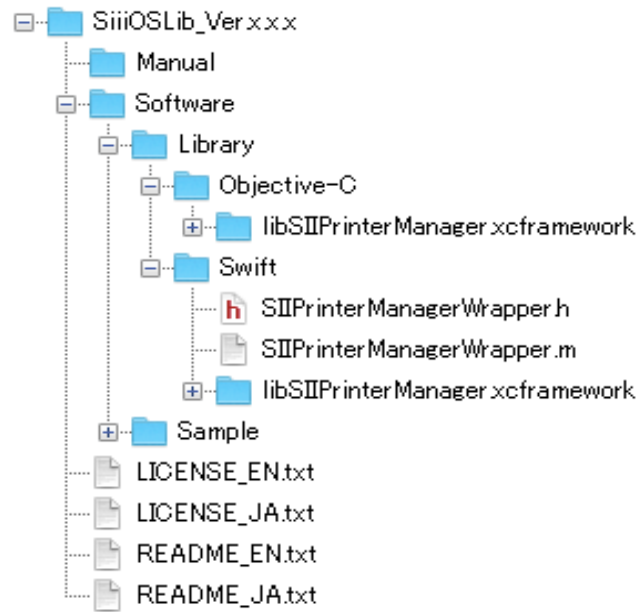


Figure 3-1

The file format of the library is XCFramework. The file name of the library is libSIIPrinterManager.xcframework.

3.3 Build Library into Xcode Project

Using the project of the sample program (SiiLibSample) 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.

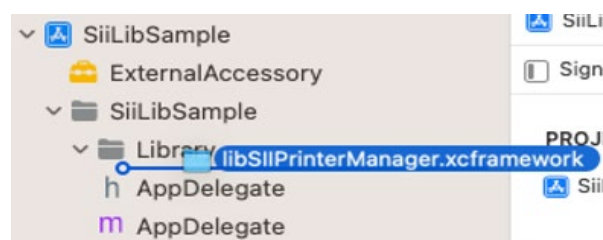
Development Language	Description
Objective-C	See "3.3.1 Objective-C" for details to build the library as Objective-C.
Swift	See "3.3.2 Swift" for details to build the library as Swift.

(NOTE) If the following libraries provided SII Print Class Library for iOS Ver. 3.8.0 or earlier versions are included in the target project, delete them all.

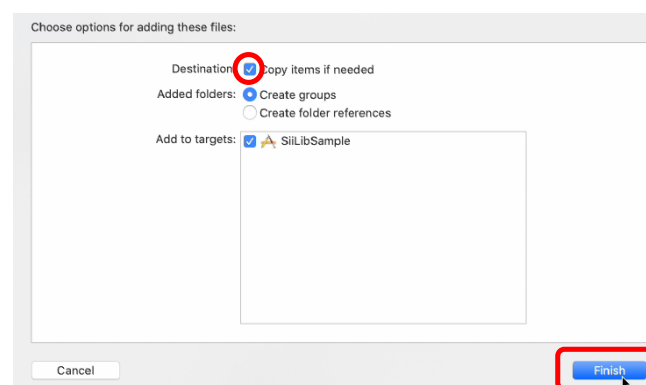
- libSiiPrinterManager.a
- SiiPrinterEnum.h
- SiiPrinterException.h
- SiiPrinterManager.h
- SiiSmartLabelManager.h

3.3.1 Objective-C

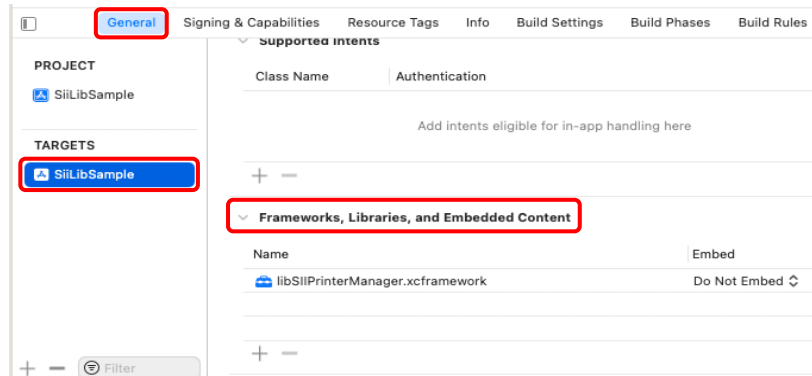
- (1) Open the Xcode project.
- (2) Drag the following files to any hierarchy in the target project in the [Project Navigator] of the navigator window.
 - libSiiPrinterManager.xcframework



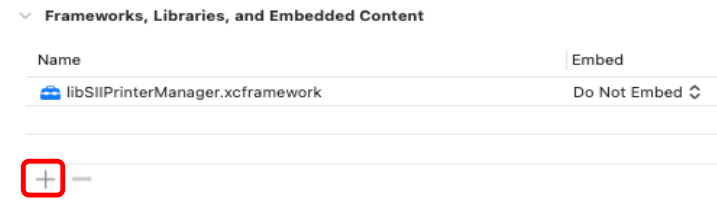
- (3) Check the box [Copy items if needed], and click the [Finish] button.



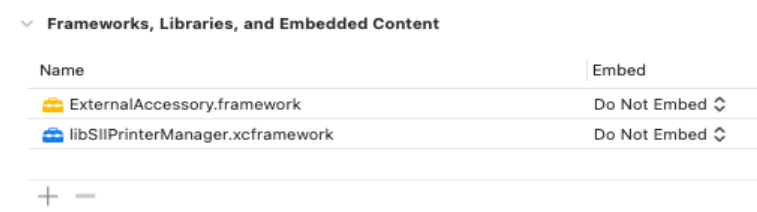
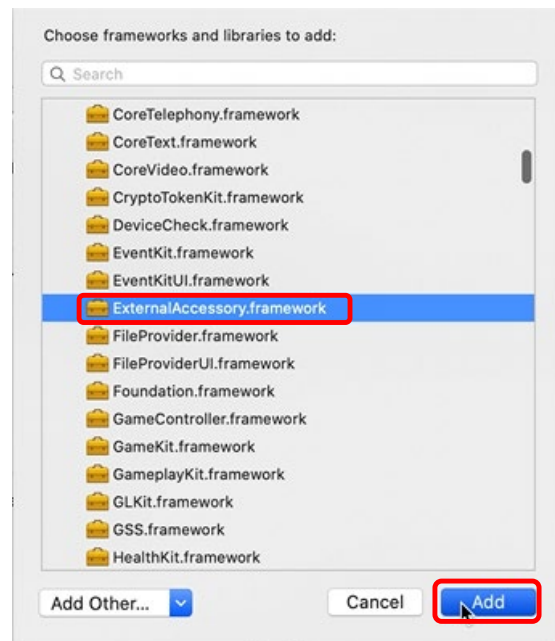
- (4) Build the ExternalAccessory.framework into the project.
Select the target project in the [TARGETS], and open the [General] - [Frameworks, Libraries and Embedded Content].



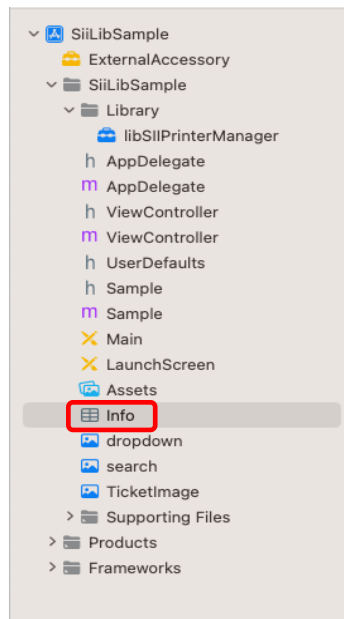
- (5) Click the [+] button opened the [Frameworks, Libraries and Embedded Content].



- (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 property list (.plist) in the [Project Navigator].



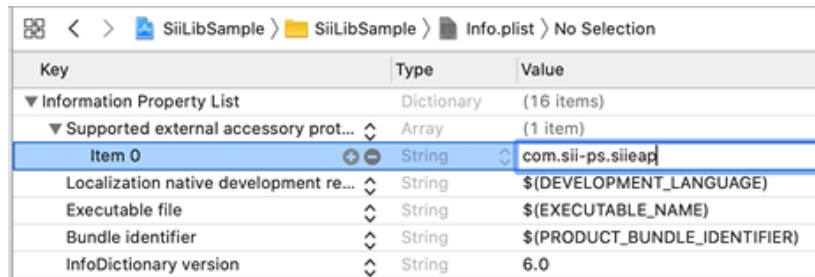
- (8) Select the [Information Property List] - ⊕.

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.



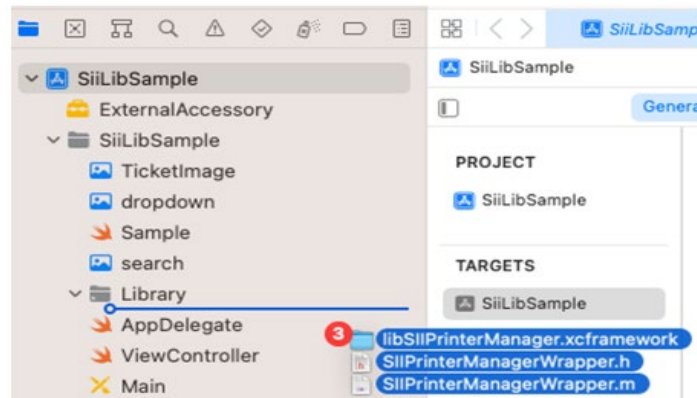
Key	Type	Value
Information Property List	Dictionary	(16 items)
Supported external accessory protocols	Array	(1 item)
Item 0	String	com.sii-ps.sieap
Localization native development region	String	\$(DEVELOPMENT_LANGUAGE)
Executable file	String	\$(EXECUTABLE_NAME)
Bundle identifier	String	\$(PRODUCT_BUNDLE_IDENTIFIER)
InfoDictionary version	String	6.0

Use the following import statement when importing libraries.
#import <SIIPrinterManager/SIIPrinterManager.h>

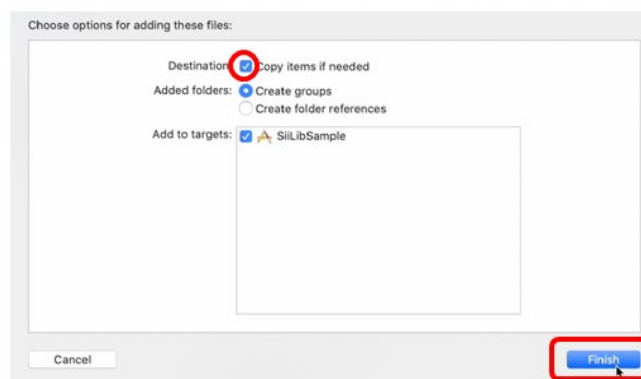
By completing these procedures, the library function becomes available.

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.xcframework
 - SiiPrinterManagerWrapper.h
 - SiiPrinterManagerWrapper.m



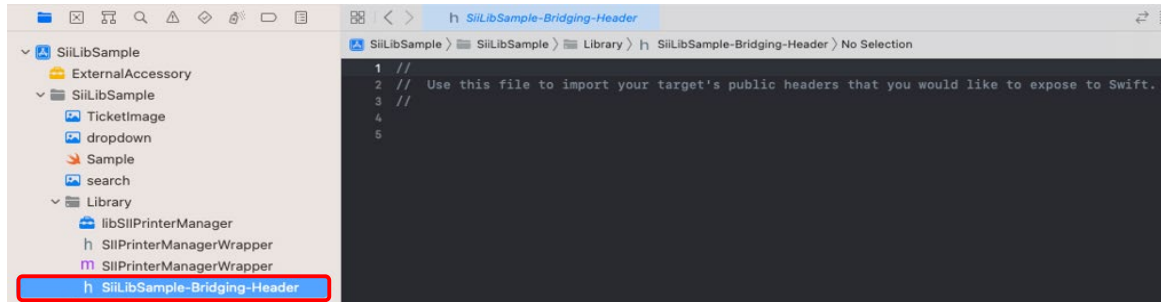
- (3) Check the box [Copy items if needed], click the [Finish] button.



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



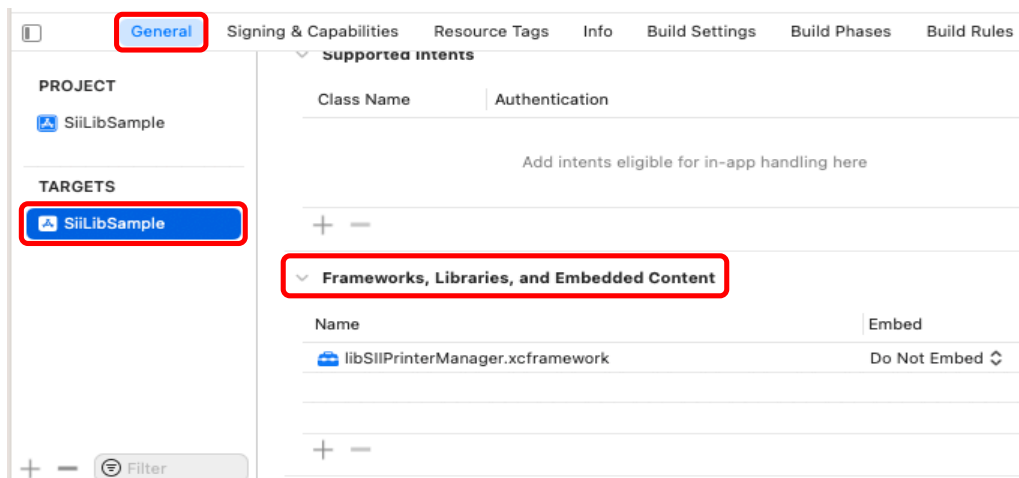
- (5) Select the created xxxxxxxx-Bridging-Header.h.



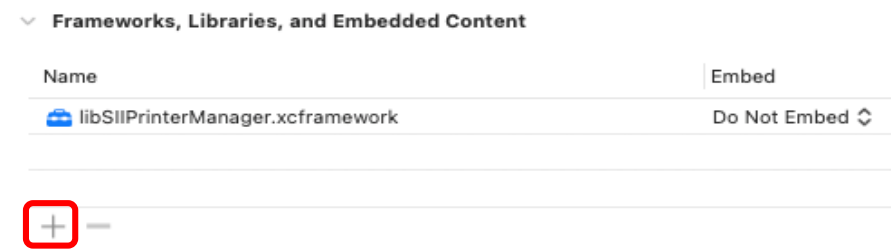
- (6) Import the SIIPrinterManager.h and the SIIPrinterManagerWrapper.h into the xxxxxxxx-Bridging-Header.h.

```
1 //
2 // Use this file to import your target's public headers that you would like to expose to Swift.
3 //
4
5 #import <SIIPrinterManager/SIIPrinterManager.h>
6 #import "SIIPrinterManagerWrapper.h"
7
```

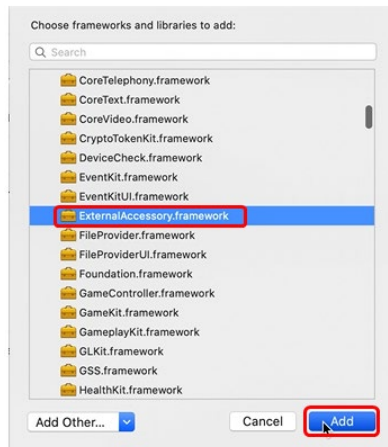
- (7) Build ExternalAccessory.framework.
Select the target project in the [TARGETS], and open the [General] - [Frameworks, Libraries and Embedded Content].



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



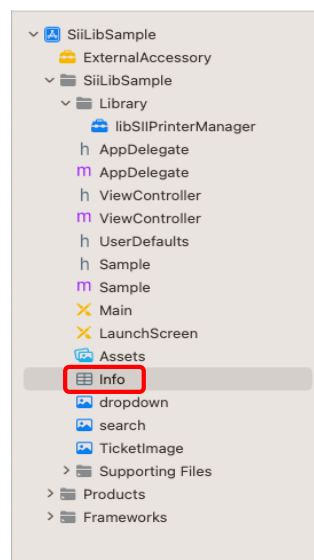
(9) Select the ExternalAccessory.framework from the list and click the [Add] button.



Frameworks, Libraries, and Embedded Content

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

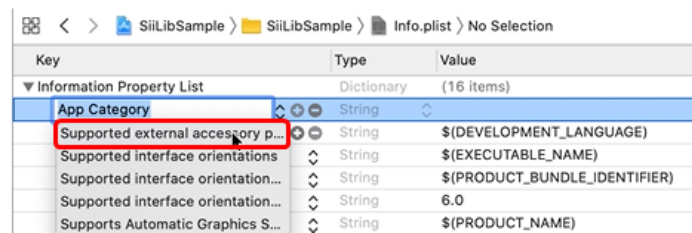
(10) Set the protocol name to use in the ExternalAccessory.framework. Select the property list (.plist) in the [Project Navigator].



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

SiiLibSample > SiiLibSample > Info.plist > No Selection		
Key	Type	Value
▼ Information Property List	\oplus 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

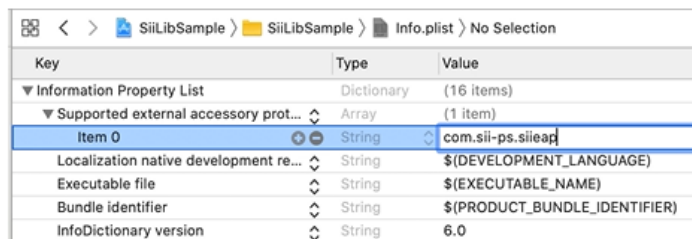
(12) Select the [Supported external accessory protocols] from the list.



Key	Type	Value
App Category	String	
Supported external accessory 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)

(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
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

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

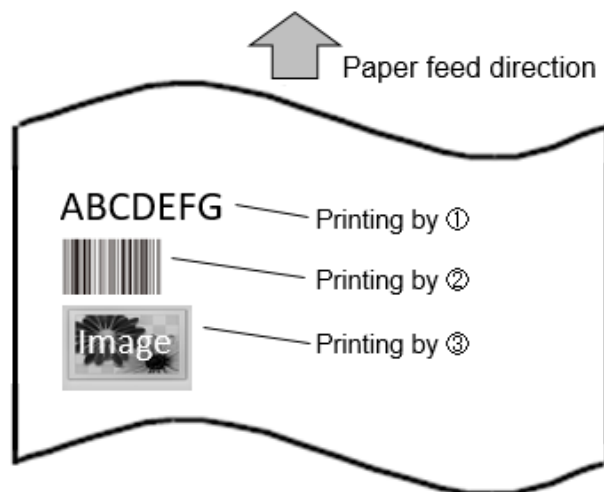
There are two printing modes "Standard mode" and "Page mode" in the library.
The "Standard mode" and "Page mode" are described below.

(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

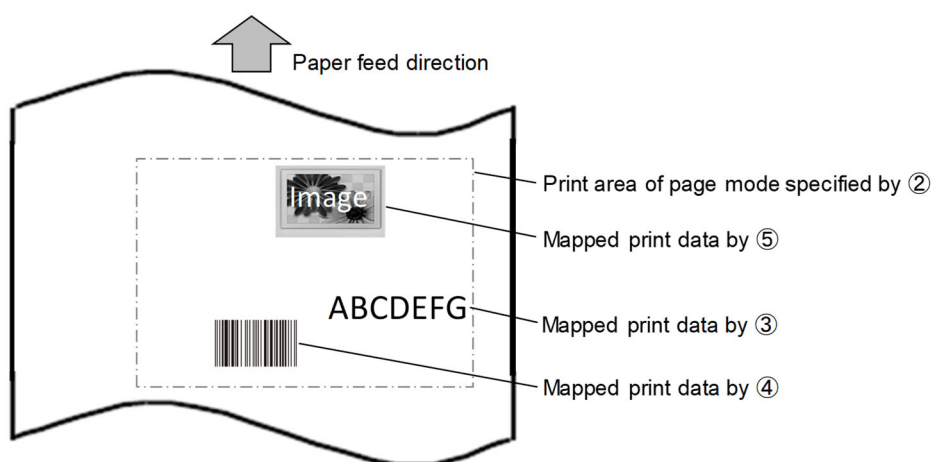
Page mode is the mode to perform the printing on a per-page basis.

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

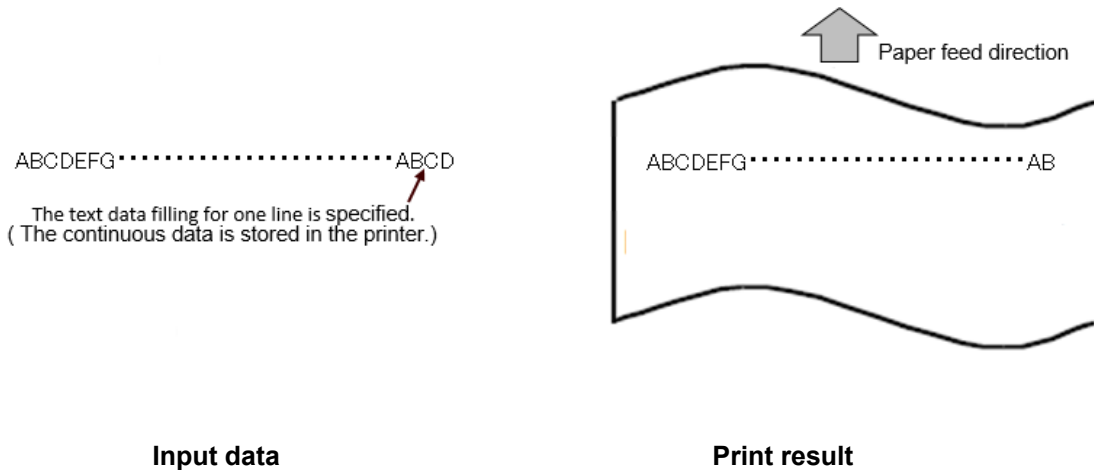
The text data in standard mode is printed each one line.

The text data is stored in the printer when the text data less than one line is specified.

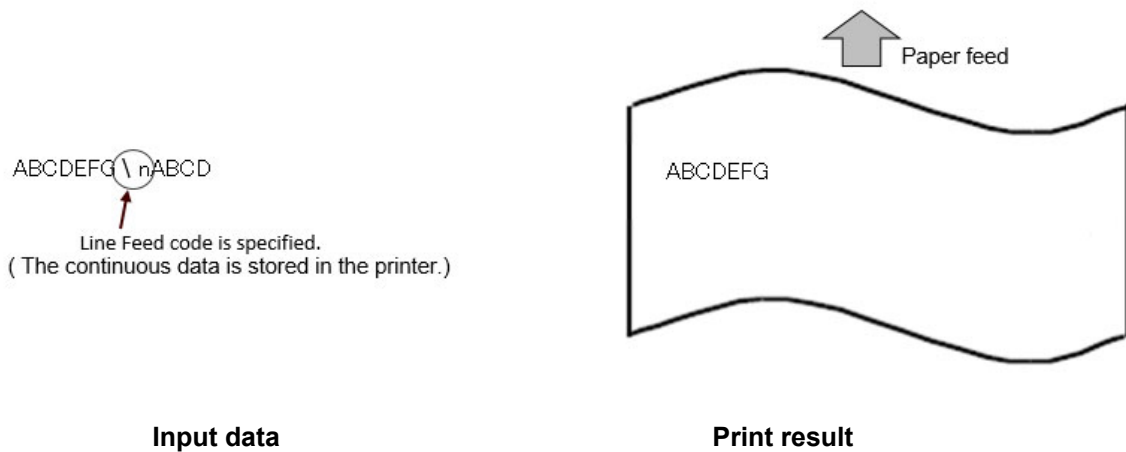
The stored text data is printed by either the following conditions.

- 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

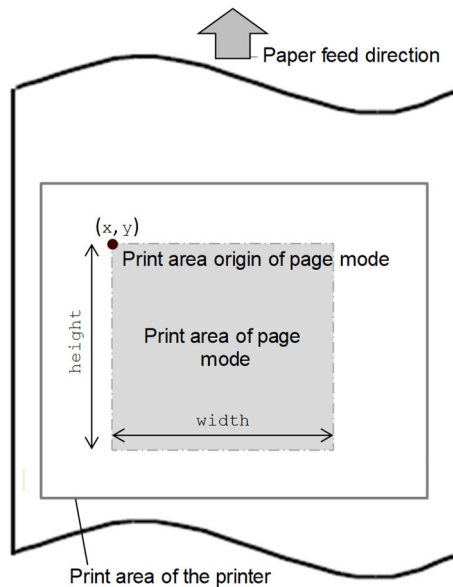
In page mode, the mapping position of print data is determined by print area, print direction, and reference point.

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.

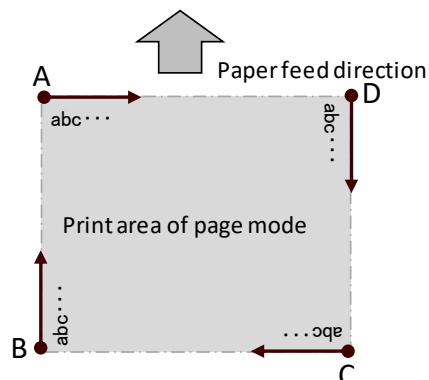


(2) Print direction

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.

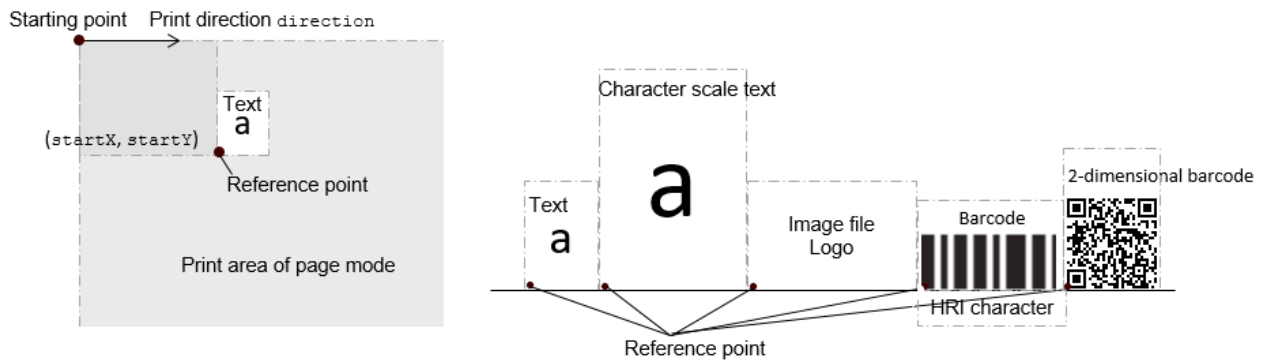
The relation between the print direction and the starting point is shown in the figure below.



- | | |
|--|---------------------------------|
| • 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.

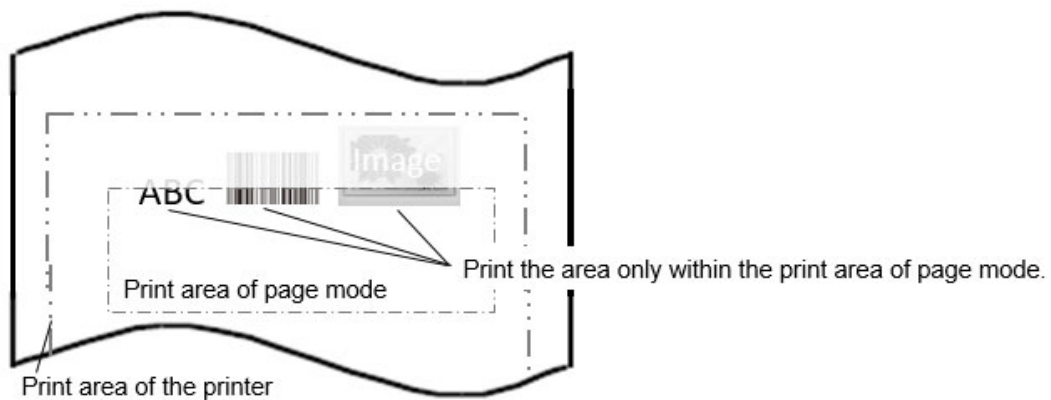
4.1.4 Print Data Process at Out of Print Area of Page Mode

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

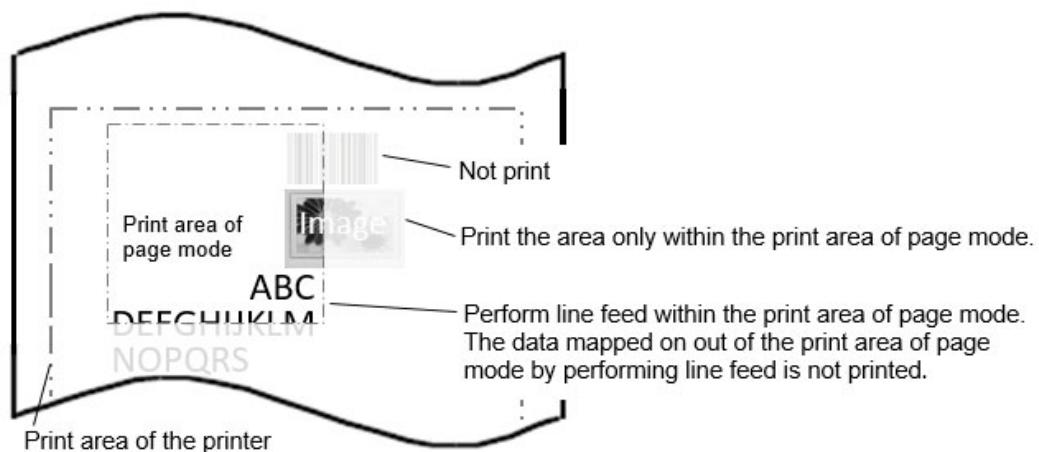
Type of Print Data

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 Log File Output Function

The logs can be retrieved and the log files can be output using the library.

4.2.1 How to Set Log Output

Log output settings can be configured by adding the config.ini file with the following content to the specific directory of the ios application that incorporates the library.

```
config.ini  
  
LOGLEVEL=x  
LOGSIZEMAX=xMB  
LOGOUTPUT=x
```

Reference: See "4.2.2 Log Output Settings" for details on the settings for x.

4.2.2 Log Output Settings

Item	Description	Settings
LOGLEVEL	Log level	0 : Not record the log. 1 : Records an error log when PrinterException occurs. 2 : Records API execution history.
LOGSIZEMAX	Log file maximum size	1MB : Log file maximum size is 1 MB 5MB : Log file maximum size is 5 MB 10MB : Log file maximum size is 10 MB 50MB : Log file maximum size is 50 MB
LOGOUTPUT	Console output enabled/disabled	0 : Console output is disabled 1 : Console output is enabled

4.2.3 Log File

Log files are saved as local files in the Android application that incorporates the library.

Log file name : PrinterManagerX.log (range of X is 0 to 4)

The 1st log file is created as PrinterManager0.log. If the log file maximum size is exceeded, changes the file name to PrinterManager1.log and creates a new PrinterManager0.log.

Up to 5 log files can be created.

4.3 API Reference

This library includes the following classes and protocol.

Name	Description	Supported* ¹
SIIPrinterManager	Provides the APIs used for communication with the printer and for printing. See " 4.3.1 SIIPrinterManager Class " for details.	✓
SIIPrinterInfo	Stores the printer information found by startDiscoveryPrinter . See " 4.3.2 SIIPrinterInfo Class " for details.	✓
SIIPrinterException	Exception class that is thrown at API call. See " 4.3.3 SIIPrinterException Class " for details.	✓
SIIPrinterManagerDelegate	Provides the API to get notice from the printer. See " 4.3.4 SIIPrinterManagerDelegate Protocol " for details.	✓
SIISmartLabelManager	Provides the API to specify label files or replace data.	–

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

(NOTE) RP-F10 does not support the APIs relating to label printing function.

4.3.1 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 "4.3.1(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 "4.3.1(1)② Dedicated method for standard mode" for the methods.
Dedicated method for page mode	The valid methods in page mode. See "4.3.1(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 "4.3.1(5)① Common method to standard mode and page mode" for details of the common methods.

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

Name	Description	Supported *1
initializeMemoryArea	Initialize memory area	✓
showTemplate	Display template	✓
showSlide	Display slide	✓
enterStandbyMode	Display standby	✓
executeMacro	Execute macro	✓
turnOnScreen	Turn on/off screen	✓
selectTemplate	Select template	✓
setTemplateImageData	Set image data	✓
selectTemplateTextObject	Select text element	✓
setTemplateTextAlignment	Alignment of text data	✓
setTemplateTextLeftMargin	Set left margin of text data	✓
setTemplateTextLineSpacing	Set line spacing of text data	✓
setTemplateTextBold	Set bold character of text data	✓
setTemplateTextUnderline	Set underline of text data	✓
setTemplateTextSize	Set character size of text data	✓
setTemplateTextFont	Set character font of text data	✓
setTemplateTextRegisteredFont	Set registered font of text data	✓
setTemplateTextRightSpacing	Set right space of text data	✓
setTemplateTextColor	Set character color of text data	✓
setTemplateTextData	Input text data	✓
setTemplateBarcodeData	Input barcode data	✓
setTemplateQrCodeData	Input QR Code data	✓
registerTemplate	Register template	✓
unregisterTemplate	Delete template	✓
registerImageData	Register image data	✓
unregisterImageData	Delete image data	✓
registerSlideData	Register slide data	✓
unregisterSlideData	Delete slide data	✓
registerUserDefinedCharacter	Register user-defined character	✓
unregisterUserDefinedCharacter	Delete user-defined character	✓
registerOptionFont	Register optional font	✓
unregisterOptionFont	Delete optional font	✓
controlMacroRegistration	Start/End macro registration	✓
getDisplayResponse	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 "4.3.1(5)② Dedicated method for standard mode" for details of the specified methods.

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

*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 "4.3.1(5)③ Dedicated method for page mode" for details of the specified methods.

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

Name	Description	Supported ^{*1}
printPageModeMaxiCode	Print MaxiCode of page mode	✓
printPageModeGS1DataBarStacked	Print GS1 Databar Stacked of page mode	✓
printPageModeGS1DataBarStackedOmniDirectional	Print GS1 Databar Stacked Omni-directional of page mode	✓
printPageModeGS1DataBarExpandedStacked	Print GS1 Databar Expanded Stacked of page mode	✓
printPageModeAztecCode	Print Aztec Code of page mode	-
sendPageModeBinary	Send binary data of page mode	✓
printPageModeImageFile	Draw image file of page mode	✓
printPageModeRectangle	Draw rectangle image of page mode	✓
printPageModeLine	Print ruled line of page mode	✓
printPageModeLogo	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}
sendTimeout	R/W	Get/Set send timeout period	✓
receiveTimeout	R/W	Get/Set receive timeout period	✓
internationalCharacter	R/W	Get/Set international character set	✓
codePage	R/W	Get/Set codepage	✓
printerModel	R	Get printer model	✓
portType	R	Get connecting port type	✓
isConnect	R	Verify connection state with printer	✓
socketKeepingTime	R/W	Get/Set socket keeping time	✓
delegate	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
SII_PM_PRINTER_MODEL_RP_F10	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
SII_PM_PRINTER_PORT_TYPE_BLUETOOTH	Bluetooth	0
SII_PM_PRINTER_PORT_TYPE_USB	USB	1
SII_PM_PRINTER_PORT_TYPE_TCP	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
SII_PM_PRINTER_RESPONSE_REQUEST	Execution response request	0
SII_PM_PRINTER_RESPONSE_USER_AREA	Send remaining capacity of user area	1
SII_PM_PRINTER_RESPONSE_ARRANGE_USER_AREA	Send remaining capacity of user area after defragment	2
SII_PM_PRINTER_RESPONSE_NV_GRAPHICS	Send NV graphics memory capacity	3
SII_PM_PRINTER_RESPONSE_KEY_CODE	Send key code list of defined NV graphics	4
SII_PM_PRINTER_RESPONSE_FIRMWARE_VERSION	Send firmware version	6

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 ^{*1}	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 ^{*1*2}	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 ^{*3}	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 ^{*1}	Specify 2-dot width underline print

^{*1}: 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 ^{*1}	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_VARTICAL_3_HORIZONTAL_3	Height × 3 and width × 3
SII_PM_VARTICAL_3_HORIZONTAL_4	Height × 3 and width × 4
SII_PM_VARTICAL_4_HORIZONTAL_1	Height × 4 and width × 1
SII_PM_VARTICAL_4_HORIZONTAL_2	Height × 4 and width × 2
SII_PM_VARTICAL_4_HORIZONTAL_3	Height × 4 and width × 3
SII_PM_VARTICAL_4_HORIZONTAL_4	Height × 4 and width × 4
SII_PM_VARTICAL_4_HORIZONTAL_6 ^{*1}	Height × 4 and width × 6
SII_PM_VARTICAL_4_HORIZONTAL_8 ^{*1}	Height × 4 and width × 8
SII_PM_VARTICAL_6_HORIZONTAL_2 ^{*1}	Height × 6 and width × 2
SII_PM_VARTICAL_6_HORIZONTAL_4 ^{*1}	Height × 6 and width × 4
SII_PM_VARTICAL_6_HORIZONTAL_6 ^{*1}	Height × 6 and width × 6
SII_PM_VARTICAL_6_HORIZONTAL_8 ^{*1}	Height × 6 and width × 8
SII_PM_VARTICAL_8_HORIZONTAL_4 ^{*1}	Height × 8 and width × 4
SII_PM_VARTICAL_8_HORIZONTAL_6 ^{*1}	Height × 8 and width × 6
SII_PM_VARTICAL_8_HORIZONTAL_8 ^{*1}	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 ^{*1}
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 ^{*1}
SII_PM_BARCODE_CODE39	CODE39	(a), (b)
SII_PM_BARCODE_CODE93	CODE93	(c)
SII_PM_BARCODE_CODE128	CODE128	(c)
SII_PM_BARCODE_ITF	ITF	(a), (b)
SII_PM_BARCODE_CODABAR	CODABAR	(a), (b)
SII_PM_BARCODE_EAN13_ADDON	EAN13 add-on	(a)
SII_PM_BARCODE_JAN13_ADDON	JAN13 add-on	(a)
SII_PM_BARCODE_GS1_OMNI_DIRECTIONAL	GS1 Databar Omni-directional	(a)
SII_PM_BARCODE_GS1_TRUNCATED	GS1 Databar Truncated	(a)
SII_PM_BARCODE_GS1_LIMITED	GS1 Databar Limited	(a)
SII_PM_BARCODE_GS1_EXPANDED	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
SII_PM_BARCODE_MODULE_WIDTH_2	Fine element 2 dots Module width 0.250 mm	<ul style="list-style-type: none"> ● <code>printBarcode</code> ● <code>printPageModeBarcode</code>
SII_PM_BARCODE_MODULE_WIDTH_3	Fine element 3 dots Module width 0.375 mm	
SII_PM_BARCODE_MODULE_WIDTH_4	Fine element 4 dots Module width 0.500 mm	
SII_PM_BARCODE_MODULE_WIDTH_5	Fine element 5 dots Module width 0.625 mm	
SII_PM_BARCODE_MODULE_WIDTH_6	Fine element 6 dots Module width 0.750 mm	
SII_PM_PDF417_MODULE_WIDTH_2	Nominal fine element width 2 dots	<ul style="list-style-type: none"> ● <code>printPDF417</code> ● <code>printPageModePDF417</code>
SII_PM_PDF417_MODULE_WIDTH_3	Nominal fine element width 3 dots	
SII_PM_PDF417_MODULE_WIDTH_4	Nominal fine element width 4 dots	
SII_PM_PDF417_MODULE_WIDTH_5	Nominal fine element width 5 dots	
SII_PM_PDF417_MODULE_WIDTH_6	Nominal fine element width 6 dots	
SII_PM_PDF417_MODULE_WIDTH_7	Nominal fine element width 7 dots	
SII_PM_PDF417_MODULE_WIDTH_8	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"> ● <code>printQRcode</code> ● <code>setTemplateQrCodeData</code> ● <code>printPageModeQRcode</code>
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"> ● <code>printDataMatrix</code> ● <code>printPageModeDataMatrix</code>
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"> ● <code>printGS1DataBarStacked</code> ● <code>printGS1DataBarStackedOmnidirectional</code> ● <code>printGS1DataBarExpandedStacked</code> ● <code>printPageModeGS1DataBarStacked</code> ● <code>printPageModeGS1DataBarStackedOmnidirectional</code> ● <code>printPageModeGS1DataBarExpandedStacked</code>
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"> ● <code>printPDF417</code> ● <code>printPageModePDF417</code>
<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"> ● <code>printQRcode</code> ● <code>setTemplateQrCodeData</code> ● <code>printPageModeQRcode</code>
<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
<code>SII_PM_QRDATAMODE_NUMERIC</code>	Numeric mode
<code>SII_PM_QRDATAMODE_ALPHANUMERIC</code>	Alphanumeric mode
<code>SII_PM_QRDATAMODE_8BITBYTE</code>	8-bit byte mode
<code>SII_PM_QRDATAMODE_KANJI</code>	Kanji mode
<code>SII_PM_QRDATAMODE_MIXTURE</code>	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
<code>SII_PM_QRQUIETZONE_EXIST</code>	Set QR quiet zone on
<code>SII_PM_QRQUIETZONE_NONE</code>	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
<code>SII_PM_MACRO_REGISTRATION_CLEAR</code>	Cancel macro registration processing
<code>SII_PM_MACRO_REGISTRATION_START</code>	Start macro registration processing
<code>SII_PM_MACRO_REGISTRATION_REGIST</code>	Finish macro registration and macro registration processing

㉘ Image rotation direction (`Rotate`)

Constants of enumerated type used for image rotation direction are shown in the following table.

Constant Name	Description
<code>SII_PM_ROTATE_NONE</code>	No rotation
<code>SII_PM_ROTATE_180</code>	Rotate 180 degrees

②⑨ Image scaling (ImageScale)

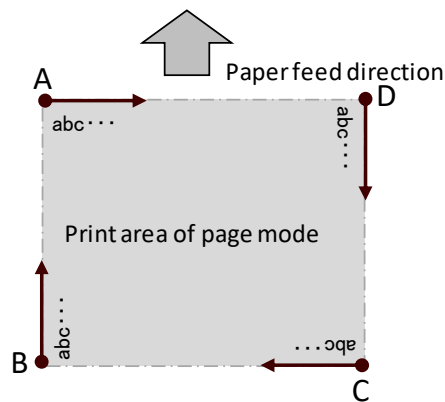
Constants of enumerated type used for image scaling are shown in the following table.

Constant Name	Description
SII_PM_IMAGE_SCALE_NONE	No scaling
SII_PM_IMAGE_SCALE_WIDTH_FIT	Scale to fit print width

③⑩ Print direction (Direction)

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

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



③⑪ Line style (LineStyle)

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

Constant Name	Description
SII_PM_LINESTYLE_THIN	Thin solid line (2 dots)
SII_PM_LINESTYLE_MEDIUM	Medium solid line (4 dots)
SII_PM_LINESTYLE_THICK	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) init ;	
Description	This method initializes the instance of SIIPrinterManager class.	
Return value	When succeeded, the initialized instance of SIIPrinterManager class is returned. When failed, nil is returned.	
Example of use	<pre>SIIPrinterManager *printerManager = [[SIIPrinterManager alloc] init];</pre>	

connect Start communicating with printer

Starts communicating with the printer.

Syntax	<pre> - (void) connect: (NSInteger)printerModel address: (NSString)address portType: (NSInteger)portType; </pre>	
Parameter	printerModel	<p>Printer model constant. See "4.3.1(3) ① Printer model" for available constants.</p>
	address	<p>Depends on the setting of portType.</p> <ul style="list-style-type: none"> For SIIPM_PRINTER_PORT_TYPE_BLUETOOTH: Specify the Bluetooth device name (Bluetooth Accessory). Example: "RP-F10" For SIIPM_PRINTER_PORT_TYPE_USB: Specify the printer name Example: "RP-F10" For SIIPM_PRINTER_PORT_TYPE_TCP: Specify the IP address of the printer. Example: "192.168.0.190"
	portType	<p>Port type See "4.3.1(3) ② Port type" for available constants.</p>
Error	<p>SIIPrinterException is thrown when an error occurs while this method is being called. See "4.3.3 SIIPrinterException Class" for details on the error.</p>	
Description	<p>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.</p> <p>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.</p> <p>For USB connection: Communication with a printer connected with the iOS device through the USB cable starts through the USB connection.</p>	

For TCP/IP 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.

• **Creating/discarding of socket in TCP/IP connection of the library**

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.

disconnect

Stop communicating with printer

Stops communicating with the printer.

Syntax - (void) **disconnect**;

Error **SIIPrinterException** is thrown when an error occurs while this method is being called.
See "4.3.3 **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.

openDrawer

Open cash drawer

Opens the specified cash drawer.

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

Parameter drawerNum Drawer number
See "4.3.1(4) ㉔ Drawer number (DrawerNum)" for available constants.

onOffTime Pulse width
See "4.3.1(4) ㉕ Pulse width (PulseWidth)" for available constants.

Error **SIIPrinterException** is thrown when an error occurs while this method is being called.
See "**4.3.3 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 "4.3.1(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 "**4.3.3 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 "**4.3.3 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	Peripheral device selection	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 "**4.3.3 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) registerLogo: (NSString *)fileName logoId: (NSString *)logoId dithering: (Dithering)dithering; (b) - (void) registerLogo: (NSString *)fileName logoId: (NSString *)logoId;
Parameter	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 "4.3.1(4)① Dithering (Dithering)" for available constants.
Error	SIIPrinterException is thrown when an error occurs while this method is being called. See " 4.3.3 SIIPrinterException Class " for details on the error.

Deletes the registered logo.

Syntax	- (void) unregisterLogo: (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	SIIPrinterException is thrown when an error occurs while this method is being called. See " 4.3.3 SIIPrinterException Class " for details on the error.	

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

Syntax	- (void) registerSytleSheet: (NSString *)fileName cssId: (NSInteger)cssId;
--------	--

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

Syntax	- (void) unregisterStyleSheet: (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 "4.3.3 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 Printer 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 "4.3.1(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.

response	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
SII_PM_PRINTER_RESPONSE_REQUEST (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).

Response Type Constant	
Parameter	Description
SII_PM_PRINTER_RESPONSE_USER_AREA (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.
SII_PM_PRINTER_RESPONSE_ARRANGE_USER_AREA (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.
SII_PM_PRINTER_RESPONSE_NV_GRAPHICS (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.
SII_PM_PRINTER_RESPONSE_KEY_CODE (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.
SII_PM_PRINTER_RESPONSE_FIRMWARE_VERSION (Send firmware version)	
param	Specify nil.
Response	Specify an NSMutableArray array. When the response is retrieved successfully, the firmware version is stored as a string array.

Error **SIIPrinterException** is thrown when an error occurs while this method is being called.
See "4.3.3 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 **EABluetoothAccessoryPickerCompletion**
Specify ^(NSError *error) to receive the completion event of **EABluetoothAccessoryPickerCompletion**.

Error **SIIPrinterException** 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 `showBluetoothAccessoryPickerWithNameFilter` of `EAAccessoryManager` internally. Pairing with the Bluetooth device can be performed in the window displayed at execution of this method.

Example when specifying `^(NSError *error)`
(Statement of `EABluetoothAccessoryPickerCompletion`)

```
typedef
void(^EABluetoothAccessoryPickerCompletion) (NSError *error);
```

startDiscoveryPrinter

Start printer search (TCP/IP)

Searches for SII printer connecting to the same network.

Syntax - (void) **startDiscoveryPrinter:** (NSInteger) retryCount
timeout: (NSInteger) timeout
completion: (SIIDiscoveryPrinterCompletion) completion;

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 **SIIPrinterException** 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 `getFoundPrinter`.

The definition of `SIIDiscoveryPrinterCompletion` is as follows:
typedef void(^SIIDiscoveryPrinterCompletion) (NSArray *printerList);

cancelDiscoveryPrinter

Cancel printer search

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 "4.3.2 **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 "4.3.1(4) ②
Batch processing selection (TransactionFunction)" for available constants.

Error **SIIPrinterException** is thrown when an error occurs while this method is being called.
See "4.3.3 **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
·printPDF
·printLogo*1
·enterPageMode
·exitPageMode
·setPageModeArea
·setPageModeDirection
·setPageModeLineSpacing
·printPageMode
·printPageModeText
·printPageModeTextEx
·printPageModeBarcode
·printPageModePDF417
·printPageModeQRcode
·printPageModeDataMatrix
·printPageModeMaxiCode
·printPageModeGS1DataBarStacked
·printPageModeGS1DataBarStackedOmnidirectional
·printPageModeGS1DataBarExpandedStacked
·sendPageModeBinary
·printPageModeImageFile
·printPageModeRectangle
·printPageModeLine
·printPageModeLogo*1
```

*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) defragment : (MemoryArea)memoryArea;	
Parameter	memoryArea	Memory area See "4.3.1(4)㉓ Memory area (MemoryArea)" for available constants.
Error	SIIPrinterException is thrown when an error occurs while this method is being called. See " 4.3.3 SIIPrinterException Class " 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) initializeMemoryArea : (MemoryArea)memoryArea;	
Parameter	memoryArea	Memory area See "4.3.1(4)㉓ Memory area (MemoryArea)" for available constants.
Error	SIIPrinterException is thrown when an error occurs while this method is being called. See " 4.3.3 SIIPrinterException Class " 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.	
Note	Registered data in following methods is deleted when the memory area is initialized after specifying SH_PM_MEMORY_DISPLAY_USERMEMORY . <ul style="list-style-type: none"> ▪ registerTemplate ▪ registerImageData ▪ controlMacroRegistration ▪ registerUserDefinedCharacter ▪ registerOptionFont <p><u>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.</u></p> <p>The used memory can be reused after executing defragment.</p>	

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 "4.3.3 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) showslide : (NSInteger) slideID; time_ms: (NSInteger) time_ms;	
Parameter	slideID	Slide ID Specify the ID of the slide data which is registered at registerSlideData . 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	SIIPrinterException is thrown when an error occurs while this method is being called. See " 4.3.3 SIIPrinterException Class " 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) enterStandbyMode ;	
Error	SIIPrinterException is thrown when an error occurs while this method is being called. See " 4.3.3 SIIPrinterException Class " 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) executeMacro: (NSInteger) macroID repeatCount: (NSInteger) repeatCount;	
Parameter	macroID	Macro ID Specify the macro ID which is registered at controlMacroRegistration . 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	SIIPrinterException is thrown when an error occurs while this method is being called. See " 4.3.3 SIIPrinterException Class " 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) turnOnScreen: (BOOL) isOn;	
Parameter	isOn	Screen status Specify the screen status from following. Yes: backlight on No: backlight off
Error	SIIPrinterException is thrown when an error occurs while this method is being called. See " 4.3.3 SIIPrinterException Class " 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) selectTemplate: (NSInteger) templateID slideID: (NSInteger) slideID;	
	(b) - (void) selectTemplate: (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>SIIPrinterException is thrown when an error occurs while this method is being called.</p> <p>See "4.3.3 SIIPrinterException Class" 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 showTemplate is executed.</p> <p>The selecting template is deselected when showSlide, enterStandbyMode, or executeMacro is executed.</p> <p>The selecting template is deselected when the specified display time is executed at showTemplate.</p> <p>Use following templates depends on the values of codePage when characters other than 20h to 7Eh of ASCII character are input with setTemplateTextData.</p> <ul style="list-style-type: none"> ·When codePage is CODE_PAGE_KATAKANA: Use the template which encoding specifying is Shift_JIS. ·When codePage is other than SII_PM_CODE_PAGE_KATAKANA: Use the template which encoding specifying is ISO-2022-JP. <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 registerImageData.</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>SIIPrinterException is thrown when an error occurs while this method is being called.</p> <p>See "4.3.3 SIIPrinterException Class" 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 showTemplate is executed.</p>	

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 a template is not selected.

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

selectTemplateTextObject

Select text element

Selects the text element to start editing.

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

Parameter mapID Map ID
The valid range is 0 to 63.
This method is ignored when a specified map ID is not defined in the template.

Error **SIIPrinterException** is thrown when an error occurs while this method is being called.
See "**4.3.3 SIIPrinterException Class**" for details on the error.

Description After specifying a map ID of the selecting template with this method, start to edit characters.

When a scroll is set with the text element of the specified map ID and this method is executed after **showTemplate**, the scroll is executed.

When a scroll is not set with the text element of the set map ID and this method is executed after **showTemplate**, input text data is discarded.

This method setting is cleared under the following conditions.

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

This method is ignored when a template is not selected.

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

setTemplateTextAlignment

Alignment of text data

Sets alignment to text data shown on Display.

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

Parameter alignment Alignment
See "**4.3.1(4) ⑨ Alignment (PrintAlignment)**" for available constants.

Error **SIIPrinterException** is thrown when an error occurs while this method is being called.
See "**4.3.3 SIIPrinterException Class**" for details on the error.

Description Alignment is valid only as following cases.
·Text data is not entered in the specified map ID at **selectTemplateTextObject**.
·Text data entered in the 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 **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 "4.3.3 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 "4.3.3 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) setTemplateTextBold : (CharacterBold)bold;
Parameter	bold Bold character See "4.3.1(4)③ Bold print (CharacterBold)" for available constants.
Error	SIIPrinterException is thrown when an error occurs while this method is being called. See "4.3.3 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 **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.

setTemplateTextUnderline

Set underline of text data

Sets underline to text data shown on Display.

Syntax	- (void) setTemplateTextUnderline : (CharacterUnderline)underline;
Parameter	underline Underline See "4.3.1(4)④ Underline (CharacterUnderline)" for available constants.
Error	SIIPrinterException is thrown when an error occurs while this method is being called. See "4.3.3 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 **showtTemplate** 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) setTemplateTextSize : (CharacterScale) scale;	
Parameter	scale	Character scale See "4.3.1(4)⑧ Character scale (CharacterScale)" for available constants.
Error	SIIPrinterException is thrown when an error occurs while this method is being called. See "4.3.3 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 **showtTemplate** 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) setTemplateTextFont : (CharacterFont) font;	
Parameter	font	Character font See "4.3.1(4)⑦ Character font (CharacterFont)" for available constants.
Error	SIIPrinterException is thrown when an error occurs while this method is being called. See "4.3.3 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 "4.3.1(4) 24 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 "4.3.3 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 "4.3.3 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) setTemplateTextColor : (NSInteger) color;	
Parameter	color	Character color The valid range is 0 to 0xffffffff.
Error	SIIPrinterException is thrown when an error occurs while this method is being called. See " 4.3.3 SIIPrinterException Class " 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) setTemplateTextData : (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	SIIPrinterException is thrown when an error occurs while this method is being called. See " 4.3.3 SIIPrinterException Class " 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 internationalCharacter or codePage , 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;

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.
-----------	-------	--

data	Barcode data The value that can be input is 00h to 7Fh. The available number of data is 1 to 150. Barcode data which is not comply with barcode specification is ignored.
------	--

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 "4.3.1(4) ⑪ Module size (<code>ModuleSize</code>)" for available constants.
	errorCorrection	Error correction level See "4.3.1(4) ⑭ Error correction level (<code>ErrorCorrection</code>)" for available constants.
	mode	Data mode See "4.3.1(4) ⑵ QR data mode (<code>QrDataMode</code>)" for available constants.
	qrQuietZone	Quiet zone See "4.3.1(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"> ·ASCII character codes from 20h (space) to 7Eh (tilde) alphanumeric ('0' to '9', 'A' to 'Z', 'a' to 'z'). ·8 bits Latin / Katakana based on JIS X 0201 ·Shift_JIS code based on JIS X 0208 <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>SIIPrinterException is thrown when an error occurs while this method is being called.</p> <p>See "4.3.3 SIIPrinterException Class" 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 showTemplate is executed.</p> <p>The input QR Code data is cleared on following conditions.</p> <ul style="list-style-type: none"> ·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. <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) registerTemplate: (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 label is optional. Specify nil when the template name is not registered.</p> <p>The specified template name can be retrieved with getDisplayResponse.</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 " 4.3.3 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 " 4.3.3 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
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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 getDisplayResponse.</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>SIIPrinterException is thrown when an error occurs while this method is being called.</p> <p>See "4.3.3 SIIPrinterException Class" 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>
Note	<p>Registered data at the shipping may be added or changed without prior notice for quality improvement.</p>

unregisterImageData

Delete image data

Deletes registered image data in Display.

Syntax	- (void) unregisterImageData : (NSInteger) imageID;	
Parameter	imageID	<p>Image ID</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>SIIPrinterException is thrown when an error occurs while this method is being called.</p> <p>See "4.3.3 SIIPrinterException Class" 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>Used memory is not released even image data is deleted. The used memory can be reused after executing defragment.</p> <p>This method is ignored when Display is not connected to the printer.</p>	

Registers slide data in Display.

Syntax	<pre> - (void) registerSlideData: (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 <code>nil</code> when the template name is not registered.</p> <p>The specified slide name can be retrieved by getDisplayResponse.</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>SIIPrinterException is thrown when an error occurs while this method is being called.</p> <p>See "4.3.3 SIIPrinterException Class" 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 showSlide to show registered slide data.</p> <p>Specify the slide ID at showSlide 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>	
Note	<p>Registered data at the shipping may be added or changed without prior notice for quality improvement.</p>	

Deletes registered slide data in Display.

Syntax	- (void) unregisterSlideData: (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	SIIPrinterException is thrown when an error occurs while this method is being called. See " 4.3.3 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.	

Registers user-defined characters in Display.

Syntax	- (void) registerUserDefinedCharacter: (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	SIIPrinterException is thrown when an error occurs while this method is being called. See " 4.3.3 SIIPrinterException Class " for details on the error.	
Description	Display is changed to Standby mode when this method is executed. A selecting template is deselected. Use a template which encoding specifying is Shift_JIS for displaying user-defined characters. Specify SII_PM_CODE_PAGE_KATAKANA for codePage before user-defined characters are displayed. Specify character codes that can be specified for text of SetTemplateTextData 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.	

Delete user-defined character

Syntax	- (void) unregisterUserDefinedCharacter;
Error	SIIPrinterException is thrown when an error occurs while this method is being called. See " 4.3.3 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 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 defragment . This method is ignored when Display is not connected to the printer.

Register optional font

Syntax	<pre>- (void) registerOptionalFont: (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	<p>SIIPrinterException is thrown when an error occurs while this method is being called. See "4.3.3 SIIPrinterException Class" 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>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 defragment.</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 " 4.3.3 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 "4.3.1(4) Macro registration processing (MacroRegistrationFunction)" for available constants.
Error	SIIPrinterException is thrown when an error occurs while this method is being called. See " 4.3.3 SIIPrinterException Class " for details on the error.	
Description	The procedures of the macro registration processing are as follows: (1) Starts macro registration processing. Specify -1 for macroID. Specify SH_PM_MACRO_REGISTRATION_START for control.	

(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 "4.3.1(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
SII_PM_DISPLAY_RESPONSE_REQUEST (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).
SII_PM_DISPLAY_RESPONSE_USER_AREA (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.
SII_PM_DISPLAY_RESPONSE_TEMPLATE_ID_LIST (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.
SII_PM_DISPLAY_RESPONSE_IMAGE_ID_LIST (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
SII_PM_DISPLAY_RESPONSE_TEMPLATE_LABEL (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.
SII_PM_DISPLAY_RESPONSE_SLIDE_LABEL (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.
SII_PM_DISPLAY_RESPONSE_IMAGE_LABEL (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.
SII_PM_DISPLAY_RESPONSE_SLIDE_LABEL (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 "**4.3.3 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) sendText: (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	SIIPrinterException is thrown when an error occurs while this method is being called. See " 4.3.3 SIIPrinterException Class " for details on the error.
Description	This method encodes the specified text data to printable text data based on internationalCharacter and codePage , 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) sendTextEx: (NSString *)text bold: (CharacterBold)bold underline: (CharacterUnderline)underline reverse: (CharacterReverse)reverse font: (CharacterFont)font scale: (CharacterScale)scale alignment: (PrintAlignment)alignment; (b)- (void) sendTextEx: (NSString *)text bold: (CharacterBold)bold underline: (CharacterUnderline)underline font: (CharacterFont)font scale: (CharacterScale)scale; (c)- (void) sendTextEx: (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 "4.3.1(4) ③ Bold print (<code>CharacterBold</code>)" for available constants.
<code>underline</code>	Underline See "4.3.1(4) ④ Underline (<code>CharacterUnderline</code>)" for available constants.
<code>reverse</code>	Reverse print See "4.3.1(4) ⑤ Reverse print (<code>CharacterReverse</code>)" for available constants.
<code>inversion</code>	Inversion print See "4.3.1(4) ⑥ Inversion print (<code>CharacterInversion</code>)" for available constants.
<code>font</code>	Character font See "4.3.1(4) ⑦ Character font (<code>CharacterFont</code>)" for available constants.
<code>scale</code>	Character scale See "4.3.1(4) ⑧ Character scale (<code>CharacterScale</code>)" for available constants.
<code>alignment</code>	Alignment See "4.3.1(4) ⑨ Alignment (<code>PrintAlignment</code>)" for available constants.
Error	<code>SIIPrinterException</code> is thrown when an error occurs while this method is being called. See " 4.3.3 <code>SIIPrinterException</code> Class " for details on the error.
Description	This method encodes the specified text data to printable text data based on <code>internationalCharacter</code> and <code>codePage</code> , 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.

The method of syntax (d) is not supported.

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

```
(d) - (void) printBarcode: (BarcodeSymbol)barcodeSymbol
      text: (NSString *)text
      moduleSize: (ModuleSize)moduleSize
      alignment: (PrintAlignment)alignment;
```

Parameter barcodeSymbol Barcode symbol
See "4.3.1(4) ⑩ Barcode symbol (BarcodeSymbol)" for available constants and corresponding syntax.

text (data) Barcode data to send to the printer
The input conditions for barcode are as follows.

Barcode	Number of Data	Inputtable Data Character String (Data)	Remarks
UPC-A	11 to 12 characters	'0' to '9'	
UPC-E	11 to 12 characters	'0' to '9'	
EAN13 JAN13	12 to 13 characters '	'0' to '9'	
EAN8 JAN8	7 to 8 characters	'0' to '9'	
CODE39	1 to 150 characters	'0' to '9' 'A' to 'Z' ' ', '\$', '%', '+', '-', '.', '/'	Start code and stop code ('*') are automatically added.
CODE93	1 to 150 bytes	(0x00 to 0x2E)	Input data with 0x2F or more at the end.
CODE128	2 to 150 bytes	(0x00 to 0x66)	When inputting the start code (0x67 to 0x69) of the CODE128 code set. Input data with 0x67 or more at the end.
		(0x00 to 0x7F)	When starting with a CODE128 special code start code ("A", "B", "C").
ITF	2 to 150 characters (However, an even number)	'0' to '9'	

Barcode	Number of Data	Inputtable Data Character String (Data)	Remarks
CODABAR	1 to 150 characters	'0' to '9' '\$', '+', '-', '.', '/', ':'	It is needed to specify one of 'A' to 'D' at the beginning and end.
EAN13 add-on JAN13 add-on	Add-on 2: 14 to 15 characters Add-on 5: 17 to 18 characters	'0' to '9'	
Customer Bar Code_JP	-	-	Not supported.
GS1 Databar Omni-directional	13 characters	'0' to '9'	Check digit is automatically added.
GS1 Databar Truncated	13 characters	'0' to '9'	Check digit is automatically added.
GS1 Databar Limited	13 characters	'0' to '9'	Check digit is automatically added.
GS1 Databar Expanded	2 to 255 characters	' ' to '"' '%' to '?' 'A' to 'Z' '_' 'a' to 'z' '{'	

`moduleSize`

Barcode width

See "4.3.1(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`.

<code>barcodeSymbol</code>		
	<code>moduleSize</code>	Valid Range
SII_PM_BARCODE_GS1_OMNI_DIRECTIONAL		
	SII_PM_BARCODE_MODULE_WIDTH_2	66 to 255
	SII_PM_BARCODE_MODULE_WIDTH_3	99 to 255
	SII_PM_BARCODE_MODULE_WIDTH_4	132 to 255
	SII_PM_BARCODE_MODULE_WIDTH_5	165 to 255
	SII_PM_BARCODE_MODULE_WIDTH_6	198 to 255
SII_PM_BARCODE_GS1_TRUNCATED		
	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
SII_PM_BARCODE_GS1_LIMITED		
	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
SII_PM_BARCODE_GS1_EXPANDED		
	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

<code>hriPosition</code>	HRI character print position See "4.3.1(4) ⑫ HRI character print position (<code>HriPosition</code>)" for available constants.
<code>hriFont</code>	HRI character font See "4.3.1(4) ⑦ Character font (<code>CharacterFont</code>)" for available constants.
<code>alignment</code>	Alignment See "4.3.1(4) ⑨ Alignment (<code>PrintAlignment</code>)" for available constants.

nwRatio

N:W ratio

See "4.3.1(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 "4.3.3 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 "4.3.1(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 "4.3.1(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 "4.3.1(4) ⑨ Alignment (PrintAlignment)" for available constants.
	pdf417Symbol	PDF417 symbol See "4.3.1(4) ⑮ PDF417 symbol (Pdf417Symbol)" for available constants.
Error	SIIPrinterException is thrown when an error occurs while this method is being called. See "4.3.3 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.	

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) printQRcode: (NSString *)text errorCorrection (ErrorCorrection) errorCorrection moduleSize: (ModuleSize) moduleSize alignment: (PrintAlignment) alignment model: (QrModel) model;
	(b) - (void) printQRcode: (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).

<code>errorCorrection</code>	Error correction level See "4.3.1(4) ⑭ Error correction level (<code>ErrorCorrection</code>)" for available constants.
<code>moduleSize</code>	Module size See "4.3.1(4) ⑪ Module size (<code>ModuleSize</code>)" for available constants.
<code>alignment</code>	Alignment See "4.3.1(4) ⑨ Alignment (<code>PrintAlignment</code>)" for available constants.
<code>model</code>	QR Code Model See "4.3.1(4) ⑯ QR Code Model (<code>QrModel</code>)" for available constants.
Error	<code>SIIPrinterException</code> is thrown when an error occurs while this method is being called. See " 4.3.3 <code>SIIPrinterException</code> 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.

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

Prints Data Matrix.

Syntax	<pre> - (void) printDataMatrix: (NSString *)text dataMatrixModule: (DataMatrixModule) dataMatrixModule moduleSize: (ModuleSize) moduleSize alignment: (PrintAlignment) alignment; </pre>	
Parameter	<code>text</code>	Barcode data to send to the printer
	<code>dataMatrixModule</code>	Number of Data Matrix modules See "4.3.1(4) ⑰ Data Matrix module (<code>DataMatrixModule</code>)" for available constants.
	<code>moduleSize</code>	Module size See "4.3.1(4) ⑪ Module size (<code>ModuleSize</code>)" for available constants.
	<code>alignment</code>	Alignment See "4.3.1(4) ⑨ Alignment (<code>PrintAlignment</code>)" for available constants.
Error	<code>SIIPrinterException</code> is thrown when an error occurs while this method is being called. See " 4.3.3 <code>SIIPrinterException</code> 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.	

Prints MaxiCode.

```
Syntax      - (void) printMaxiCode:(NSString *)text
              maxiCodeMode:(MaxiCodeMode)maxiCodeMode
              alignment:(PrintAlignment)alignment;
```

Parameter	text	Barcode data to send to the printer
		<ul style="list-style-type: none"> When <code>maxiCodeMode</code> is SII_PM_MAXI_CODE_2: Add service class (3 digits), country code (3 digits), and postal code (9 digits) to the beginning of the data. When <code>maxiCodeMode</code> is SII_PM_MAXI_CODE_3: Add service class (3 digits), country code (3 digits), and postal code (6 digits) to the beginning of the data.

maxiCodeMode	MaxiCode Mode See "4.3.1(4) ⑱ MaxiCode Mode (MaxiCodeMode)" for available constants.
--------------	--

alignment Alignment
See "4.3.1(4) ⑨ Alignment (PrintAlignment)" for available constants.

Error `SIIPrinterException` is thrown when an error occurs while this method is being called.
See "[4.3.3 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.

Prints GS1 Databar Stacked.

```
Syntax      - (void) printGS1DataBarStacked:(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 "4.3.1(4) ⑪ Module size (ModuleSize)" for available constants.

alignment Alignment
See "4.3.1(4) ⑨ Alignment (PrintAlignment)" for available constants.

Error `SIIPrinterException` is thrown when an error occurs while this method is being called.
See "[4.3.3 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) printGS1DataBarStackedOmnidirectional: (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 "4.3.1(4) ⑪ Module size (ModuleSize)" for available constants.
	alignment	Alignment See "4.3.1(4) ⑨ Alignment (PrintAlignment)" for available constants.
Error	SIIPrinterException is thrown when an error occurs while this method is being called. See " 4.3.3 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) printGS1DataBarExpandedStacked: (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 '{1' 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 "4.3.1(4) ⑪ Module size (ModuleSize)" for available constants.

alignment	Alignment See "4.3.1(4) ⑨ Alignment (PrintAlignment)" for available constants.
Error	SIIPrinterException is thrown when an error occurs while this method is being called. See "4.3.3 SIIPrinterException Class" for details on the error.
Reference	See "Appendix B Barcode Size List" for details of the barcode size.

printAztecCode

Print Aztec Code

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

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

cutPaper

Cut paper

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

Syntax	- (void) cutPaper: (CuttingMethod)cuttingMethod;
Parameter	cuttingMethod Cutting method See "4.3.1(4) ⑱ Cutting method (CuttingMethod)" for available constants.
Error	SIIPrinterException is thrown when an error occurs while this method is being called. See "4.3.3 SIIPrinterException Class" for details on the error.

feedPosition

Paper form feed

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

Syntax	- (void) feedPosition: (FeedPosition)feedPosition;
--------	---

sendBinary

Send binary data

Sends binary data to the printer.

Syntax	- (void) sendBinary: (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	SIIPrinterException is thrown when an error occurs while this method is being called. See "4.3.3 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) sendDataFile: (NSString *)fileName alignment: (PrintAlignment) alignment dithering: (Dithering) dithering;
	(b) - (void) sendDataFile: (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"> • .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. • .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 internationalCharacter and codePage, 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. • .bin, .dat Data is sent to the printer as binary data without conversion. <p>alignment</p> <p>Alignment It is valid when the extension of the file specified by <i>fileName</i> is .bmp, .jpg, .jpeg, .png, or .txt. See "4.3.1(4)⑨ Alignment (PrintAlignment)" for available constants.</p> <p>dithering</p> <p>Dithering It is valid when the extension of the file specified by <i>fileName</i> is .bmp, .jpg, .jpeg, or .png. See "4.3.1(4)① Dithering (Dithering)" for available constants.</p>
Error	<p>SIIPrinterException is thrown when an error occurs while this method is being called. See "4.3.3 SIIPrinterException Class" for details on the error.</p>

Prints the specified page of the selected PDF file.

Syntax	<pre> - (void) printPDF: (NSString *)fileName startIndex: (NSInteger)startIndex endIndex: (NSInteger)endIndex rotate: (Rotate)rotate imageScale: (ImageScale)imageScale bottomMargin: (NSInteger)bottomMargin alignment: (PrintAlignment)alignment dithering: (Dithering)dithering; </pre>	
Parameter	fileName	<p>Path of the PDF file</p> <p>The file extension for supporting PDF is .pdf.</p> <p>The maximum file size that can be specified is 1 MB (1048576 bytes).</p>
	startIndex	<p>Start number of the printed page</p> <p>The range is -1, 1 to the number of pages in the PDF file.</p> <p>When -1 is specified for <code>startIndex</code>, all pages are printed.</p> <p>When -1 is specified for <code>startIndex</code>, the value of <code>endIndex</code> is ignored.</p> <p>When 1 or more is specified for <code>startIndex</code>, pages from the page number specified in <code>startIndex</code> to the page number specified in <code>endIndex</code> are printed.</p> <p>When a value more than the value specified for <code>endIndex</code> is specified for <code>startIndex</code>, an error occurs.</p> <p>When an out-of-range value is specified for <code>startIndex</code> or <code>endIndex</code>, an error occurs.</p>
	endIndex	<p>End number of the printed page</p> <p>The range is 1 to 2147483647.</p> <p>When a value more than the number of pages in the PDF file is specified for <code>endIndex</code>, pages from the page number specified in <code>startIndex</code> to the last page of the PDF file are printed.</p>
	rotate	<p>Rotation direction of the image</p> <p>See "4.3.1(4)⑳ Image rotation direction (<code>Rotate</code>)" for available constants.</p>
	imageScale	<p>Image scaling</p> <p>See "4.3.1(4)㉑ Image scaling (<code>ImageScale</code>)" for available constants.</p> <p>When <code>SII_PM_IMAGE_SCALE_WIDTH_FIT</code> is specified for <code>imageScale</code>, the image width is converted to the print width of the printer while maintaining the aspect ratio.</p>
	bottomMargin	<p>Bottom margin (dot)</p> <p>The range is -1, 0 to 2400.</p> <p>When -1 is specified for <code>bottomMargin</code>, the image is created and printed while maintaining the bottom margin.</p> <p>When a value between 0 and 2400 is specified for <code>bottomMargin</code>, the bottom margin is changed to the specified size.</p> <p>When a value between 0 and 2400 is specified for <code>bottomMargin</code>, blank pages are not printed.</p>
	dithering	<p>Dithering</p> <p>See "4.3.1(4)㉒ Dithering (<code>Dithering</code>)" for available constants.</p>

alignment	Alignment (PrintAlignment)" for available constants.
Error	SIIPrinterException is thrown when an error occurs while this method is being called. See " 4.3.3 SIIPrinterException Class " for details on the error.
Description	PDF is converted to printable format for the printer and is sent to the printer. The color image data is converted to monochrome image by binarization.
Note	No guarantee of printing operation when more than 100 pages are printed at a time.

Error `SIIPrinterException` is thrown when an error occurs while this method is being called.
See "[4.3.3 SIIPrinterException Class](#)" for details on the error.

Description	PDF is converted to printable format for the printer and is sent to the printer. The color image data is converted to monochrome image by binarization.
-------------	--

Note No guarantee of printing operation when more than 100 pages are printed at a time.

```
printLogo
```

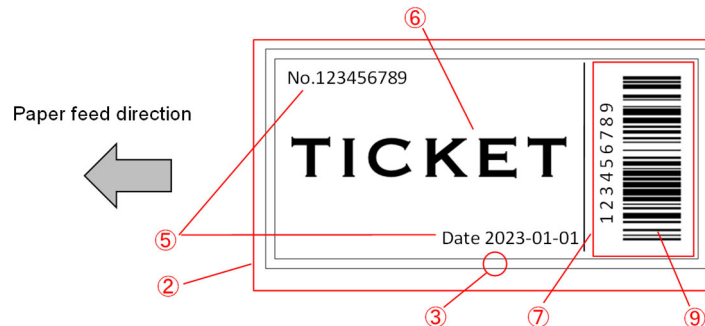
Print logo

Prints the registered logo.

Syntax	<pre>- (void) printLogo: (NSString *)logoId alignment(PrintAlignment)alignment;</pre>	
Parameter	logoId	<p>ID of the logo to be printed (key code) Specify the ID of the registered logo as a character string.</p>
	alignment	<p>Alignment See "4.3.1(4) ⑨ Alignment (PrintAlignment)" for available constants.</p>
Error	<p>SIIPrinterException is thrown when an error occurs while this method is being called. See "4.3.3 SIIPrinterException Class" for details on the error.</p>	

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:355 height:576];
```

③ Specify a rectangle and a ruled line

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

④ Specify print direction of page mode

```
[printerManager setPageModeDirection: SII_PM_DIRECTION_TOP_TO_BOTTOM];
```

⑤ Specify a character

```
[printerManager printPageModeText:21 startY:47 text:@"NO.123456789"];  
[printerManager printPageModeText:212 startY:340 text:@"Date 2023-01-01"];
```

⑥ Specify an image file

```
[NSString *filePath = [[NSBundle mainBundle] pathForResource:@"TicketImage" ofType:@"jpg"];  
[printerManager printPageModeImageFile:10 startY:222 fileName:filePath  
dithering:SII_PM_DITHERING_DISABLE];
```

⑦ Specify print area of page mode

```
[printerManager setPageModeArea:0 y:404 width:345 height:163];
```

⑧ Specify print direction

```
[printerManager setPageModeDirection:SII_PM_DIRECTION_LEFT_TO_RIGHT];
```

⑨ 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];
```

⑩ Print in page mode

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

⑪ Ends page mode

```
[printerManager exitPageMode];
```

Start page mode

Syntax	- (void) enterPageMode ;
Error	SIIPrinterException is thrown when an error occurs while this method is being called. See " 4.3.3 SIIPrinterException Class " 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 exitPageMode discards the print data kept in the page data buffer and changes the mode to standard mode. Executing printPageMode prints the print data kept in the page data buffer.

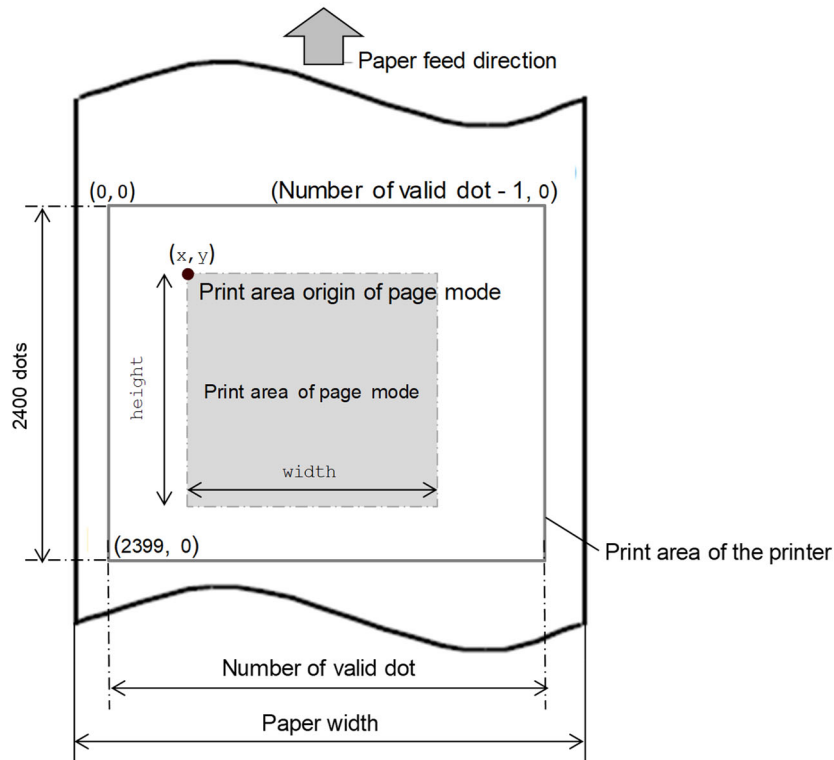
End page mode

Syntax	- (void) exitPageMode ;
Error	SIIPrinterException is thrown when an error occurs while this method is being called. See " 4.3.3 SIIPrinterException Class " for details on the error.
Description	Discards the print data kept in the page data buffer and changes the mode to standard mode.

Specify print area of page mode

Syntax	-	(void) setPageModeArea: (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 "**4.3.3 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) setPageModeDirection: (Direction)direction;	
Parameter	direction	Print direction See "4.3.1(4)③⑩ Print direction (Direction)" for available constants.
Error	SIIPrinterException is thrown when an error occurs while this method is being called. See " 4.3.3 SIIPrinterException Class " for details on the error.	
Description	Start page mode by enterPageMode before executing this method. The print direction is left to right after executing enterPageMode .	

Specifies line spacing of page mode.

Syntax	- (void) setPageModeLineSpacing: (NSInteger)lineSpacing;	
Parameter	lineSpacing	Line spacing (dot) of page mode The valid range is 0 to 255.
Error	SIIPrinterException is thrown when an error occurs while this method is being called. See " 4.3.3 SIIPrinterException Class " for details on the error.	
Description	Start page mode by enterPageMode before executing this method. The line spacing is 34 dots after executing enterPageMode .	

Prints the print data kept in page data buffer.

Syntax	- (void) printPageMode: (CuttingMethod)CuttingMethod;	
Parameter	cuttingMethod	Cutting method See "4.3.1(4)⑱ Cutting method (CuttingMethod)" for available constants.
Error	SIIPrinterException is thrown when an error occurs while this method is being called. See " 4.3.3 SIIPrinterException Class " 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"> •Execute enterPageMode •Execute disconnect •Execute exitPageMode 	

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

Syntax	- (void) printPageModeText: (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	SIIPrinterException is thrown when an error occurs while this method is being called. See "4.3.3 SIIPrinterException Class" for details on the error.	
Description	This method encodes the specified text data to printable text data based on internationalCharacter and codePage . Start page mode by enterPageMode before executing this method.	

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

Syntax	- (void) printPageModeTextEx: (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 "4.3.1(4)③ Bold print (CharacterBold)" for available constants.
	underline	Underline See "4.3.1(4)④ Underline (CharacterUnderline)" for available constants.

reverse	Reverse print See "4.3.1(4) ⑤ Reverse print (CharacterReverse)" for available constants.
font	Font See "4.3.1(4) ⑦ Character font (CharacterFont)" for available constants.
scale	Character scale See "4.3.1(4) ⑧ Character scale (CharacterScale)" for available constants.
Error	SIIPrinterException is thrown when an error occurs while this method is being called. See " 4.3.3 SIIPrinterException Class " for details on the error.
Description	This method encodes the specified text data to printable text data based on internationalCharacter and codePage . Start page mode by enterPageMode 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.

The method of syntax (d) is not supported.

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

```
(d) - (void) printPageModeBarcode: (NSInteger) startX
      startY: (NSInteger) startY
      barcodeSymbol: (BarcodeSymbol) barcodeSymbol
      barcodeSymbol: (BarcodeSymbol) barcodeSymbol
      text: (NSString *) text
      moduleSize: (ModuleSize) moduleSize;
```

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 "4.3.1(4) ⑩ Barcode symbol (BarcodeSymbol) for available constants and correspondent syntax.
	text (data)	Barcode data to send to the printer The input conditions for barcode are as follows.

Barcode	Number of Data	Inputtable Data Character String (Data)	Remarks
UPC-A	11 to 12 characters	'0' to '9'	
UPC-E	11 to 12 characters	'0' to '9'	
EAN13 JAN13	12 to 13 characters '	'0' to '9'	
EAN8 JAN8	7 to 8 characters	'0' to '9'	
CODE39	1 to 150 characters	'0' to '9' 'A' to 'Z' ' ', '\$', '%', '+', '-', '.', '/'	Start code and stop code ('*') are automatically added.
CODE93	1 to 150 bytes	(0x00 to 0x2E)	Input data with 0x2F or more at the end.
CODE128	2 to 150 bytes	(0x00 to 0x66)	When inputting the start code (0x67 to 0x69) of the CODE128 code set. Input data with 0x67 or more at the end.
		(0x00 to 0x7F)	When starting with a CODE128 special code start code ("A", "B", "C").
ITF	2 to 150 characters (However, an even number)	'0' to '9'	
CODABAR	1 to 150 characters	'0' to '9' \$', '+', '-', '.', '/', ' ', '	It is needed to specify one of 'A' to 'D' at the beginning and end.
EAN13 add-on JAN13 add-on	Add-on 2: 14 to 15 characters Add-on 5: 17 to 18 characters	'0' to '9'	
Customer Bar Code_JP	-	-	Not supported.

Barcode	Number of Data	Inputtable Data Character String (Data)	Remarks
GS1 Databar Omni-directional	13 characters	'0' to '9'	Check digit is automatically added.
GS1 Databar Truncated	13 characters	'0' to '9'	Check digit is automatically added.
GS1 Databar Limited	13 characters	'0' to '9'	Check digit is automatically added.
GS1 Databar Expanded	2 to 255 characters	' ' to '" '%' to '?' 'A' to 'Z' '_' 'a' to 'z' '{'	

`moduleSize`

Barcode width

See "4.3.1(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`.

<code>barcodeSymbol</code>		
	<code>moduleSize</code>	Valid Range
SII_PM_BARCODE_SYMBOL_GS1_OMNI_DIRECTIONAL		
	<code>SII_PM_BARCODE_MODULE_WIDTH_2</code>	66 to 255
	<code>SII_PM_BARCODE_MODULE_WIDTH_3</code>	99 to 255
	<code>SII_PM_BARCODE_MODULE_WIDTH_4</code>	132 to 255
	<code>SII_PM_BARCODE_MODULE_WIDTH_5</code>	165 to 255
	<code>SII_PM_BARCODE_MODULE_WIDTH_6</code>	198 to 255

barcodeSymbol		
	moduleSize	Valid Range
SII_PM_BARCODE_SYMBOL_GS1_TRUNCATED		
	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
SII_PM_SYMBOL_GS1_LIMITED		
	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
SII_PM_BARCODE_SYMBOL_GS1_EXPANDED		
	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 "4.3.1(4) ⑫ HRI character print position (HriPosition)" for available constants.

hriFont HRI character font
See "4.3.1(4) ⑦ Character font (CharacterFont)" for available constants.

nwRatio N:W ratio
See "4.3.1(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		
	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 " 4.3.3 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.

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	<pre> (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; </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
	errorCorrection	Error correction level See "4.3.1(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 "4.3.1(4)⑪ Module size (ModuleSize)" for available constants.

<code>moduleHeight</code>	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.
<code>pdf417Symbol</code>	Symbol of PDF417 See "4.3.1(4) ⑮ PDF417 symbol (<code>Pdf417Symbol</code>)" for available constants.
Error	<code>SIIPrinterException</code> is thrown when an error occurs while this method is being called. See " 4.3.3 <code>SIIPrinterException</code> Class " for details on the error.
Description	Start page mode by <code>enterPageMode</code> 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.

`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	(a) - (void) <code>printPageModeQRcode</code> : (NSInteger) startX startY: (NSInteger) startY text: (NSString *) text errorCorrection: (ErrorCorrection) errorCorrection moduleSize: (ModuleSize) moduleSize model: (QrModel) model; (b) - (void) <code>printPageModeQRcode</code> : (NSInteger) startX startY: (NSInteger) startY text: (NSString *) text errorCorrection: (ErrorCorrection) errorCorrection moduleSize: (ModuleSize) moduleSize;
Parameter	<div> <div><code>startX</code></div> <div>The horizontal reference point (dot) from the starting point The valid range is 0 to 2399.</div> </div> <div> <div><code>startY</code></div> <div>The vertical reference point (dot) from the starting point The valid range is 0 to 2399.</div> </div> <div> <div><code>text</code></div> <div>Barcode data The version for either syntax (a) or (b) is automatically set depending on the number of data specified on <code>text</code>.</div> </div> <div> <div><code>errorCorrection</code></div> <div>Error correction level See "4.3.1(4) ⑭ Error correction level (<code>ErrorCorrection</code>)" for available constants.</div> </div> <div> <div><code>moduleSize</code></div> <div>Module size See "4.3.1(4) ⑪ Module size (<code>ModuleSize</code>)" for available constants.</div> </div> <div> <div><code>model</code></div> <div>QR Code Model See "4.3.1(4) ⑯ QR Code Model (<code>QrModel</code>)" for available constants.</div> </div>

Error	SIIPrinterException is thrown when an error occurs while this method is being called. See " 4.3.3 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.

printPageModeDataMatrix

Print Data Matrix of page mode

Maps Data Matrix on the print area of page mode.

Syntax	<pre> - (void) printPageModeDataMatrix: (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 "4.3.1(4)⑪ Data Matrix module (DataMatrixModule)" for available constants.
	moduleSize	Module size See "4.3.1(4)⑪ Module size (ModuleSize)" for available constants.
Error	SIIPrinterException is thrown when an error occurs while this method is being called. See " 4.3.3 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.	

printPageModeMaxiCode

Print MaxiCode of page mode

Maps MaxiCode on the print area of page mode.

Syntax	<pre> - (void) printPageModeMaxiCode: (NSInteger) startX startY: (NSInteger) startY text: (NSString *)text maxiCodeMode: (MaxiCodeMode) maxiCodeMode; </pre>	
--------	---	--

Parameter	<code>startX</code>	The horizontal reference point (dot) from the starting point The valid range is 0 to 2399.
	<code>startY</code>	The vertical reference point (dot) from the starting point The valid range is 0 to 2399.
	<code>text</code>	Barcode data <ul style="list-style-type: none"> • When <code>maxiCodeMode</code> is <code>SII_PM_MAXI_CODE_2</code> Add the service class (3 digits), the country code (3 digits), and the postal code (9 digits) to the beginning of the data. • When <code>maxiCodeMode</code> is <code>SII_PM_MAXI_CODE_3</code> Add the service class (3 digits), the country code (3 digits), and the postal code (6 digits) to the beginning of the data.
	<code>maxiCodeMode</code>	MaxiCode Mode See "4.3.1(4)⑩ MaxiCode Mode (<code>MaxiCodeMode</code>)" for available constants.
Error	<code>SIIPrinterException</code> is thrown when an error occurs while this method is being called. See "4.3.3 <code>SIIPrinterException</code> Class " for details on the error.	
Description	Start page mode by <code>enterPageMode</code> 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.	

`printPageModeGS1DataBarStacked` Print GS1 Databar Stacked of page mode

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

Syntax	<pre> - (void) printPageModeGS1DataBarStacked: (NSInteger) startX startY: (NSInteger) startY text: (NSString *)text moduleSize: (ModuleSize)moduleSize; </pre>	
Parameter	<code>startX</code>	The horizontal reference point (dot) from the starting point The valid range is 0 to 2399.
	<code>startY</code>	The vertical reference point (dot) from the starting point The valid range is 0 to 2399.
	<code>text</code>	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.
	<code>moduleSize</code>	Module size See "4.3.1(4)⑪ Module size (<code>ModuleSize</code>)" for available constants.
Error	<code>SIIPrinterException</code> is thrown when an error occurs while this method is being called. See "4.3.3 <code>SIIPrinterException</code> Class " for details on the error.	
Description	Start page mode by <code>enterPageMode</code> 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	- (void) printPageModeGS1DataBarStackedOmniDirectional: <div style="text-align: right;">(NSInteger) startX startY: (NSInteger) startY text: (NSString *) text moduleHeight: (ModuleHeight) moduleHeight moduleSize: (ModuleSize) moduleSize;</div>	
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 "4.3.1(4) ⑪ Module size (ModuleSize)" for available constants.
Error	SIIPrinterException is thrown when an error occurs while this method is being called. See " 4.3.3 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.	

printPageModeGS1DataBarExpandedStacked

Print GS1 Databar Expanded Stacked of page mode

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

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

<code>startY</code>	The vertical reference point (dot) from the starting point The valid range is 0 to 2399.
<code>text</code>	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.
<code>column</code>	The number of columns Specifies the number of the columns in 1 line. The valid range is the even number from 2 to 20.
<code>moduleSize</code>	Module size See "4.3.1(4) ⑪ Module size (<code>ModuleSize</code>)" for available constants.
Error	<code>SIIPrinterException</code> is thrown when an error occurs while this method is being called. See " 4.3.3 <code>SIIPrinterException</code> Class " for details on the error.
Description	Start page mode by <code>enterPageMode</code> 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.

```
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) **sendPageModeBinary**:(NSData*)data;

Parameter	binary	Binary data Data size that can be specified at 1 time is 16 KB (16384 bytes).
-----------	--------	--

Error `SIIPrinterException` is thrown when an error occurs while this method is being called.
See "[4.3.3 SIIPrinterException Class](#)" for details on the error.

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

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

By sending printer commands as binary data with this method, printer functions which are not supported in the library become available.

Note This method may execute unexpected performance depending on the data to send.
Please ensure the performance with your actual device in advance.

printPageModeImageFile

Draw Image file of page mode

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

Syntax	<pre> - (void) printPageModeImageFile: (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 "4.3.1(4)① Dithering (Dithering)" for available constants.
Error	SIIPrinterException is thrown when an error occurs while this method is being called. See "4.3.3 SIIPrinterException Class" for details on the error.	
Description	Start page mode by enterPageMode before executing this method.	

printPageModeRectangle

Draw rectangle image of page mode

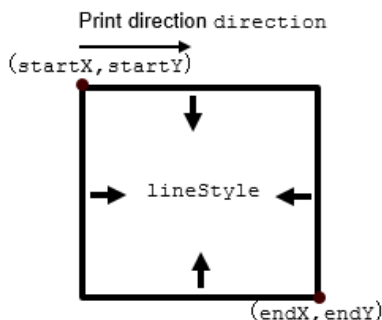
Maps the rectangle image on the print area of page mode.

Syntax	<pre> - (void) printPageModeRectangle: (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 "4.3.1(4)③ Line style (LineStyle)" for available constants.

Error **SIIPrinterException** is thrown when an error occurs while this method is being called.
See "**4.3.3 SIIPrinterException Class**" 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
<p>The diagram shows a square with a thick black border. At the top-left corner, there is a red dot labeled <code>(startX=0, startY=0)</code>. At the bottom-right corner, there is a red dot labeled <code>(endX=239, endY=239)</code>. Inside the square, there are four arrows pointing towards the center. The text <code>lineStyle= SII_PM_LINESTYLE_MEDIUM</code> is centered within the square, with <code>(4 dots)</code> written below it.</p>	<pre> startX 0 startY 0 endX 239 endY 239 lineStyle SII_PM_LINESTYLE_MEDIUM </pre>

printPageModeLine

Print ruled line of page mode

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

Syntax	- (void) printPageModeLine : (NSInteger) startX startY: (NSInteger) startY endX: (NSInteger) endX endY: (NSInteger) endY lineStyle: (LineStyle) lineStyle;
Parameter	<div>startX</div> <div>The horizontal reference point (dot) from the starting point The valid range is 0 to 2399.</div> <div>startY</div> <div>The vertical reference point (dot) from the starting point The valid range is 0 to 2399.</div> <div>endX</div> <div>The horizontal reference point (dot) from the ending point The valid range is 0 to 2399.</div> <div>endY</div> <div>The vertical reference point (dot) from the ending point The valid range is 0 to 2399.</div>

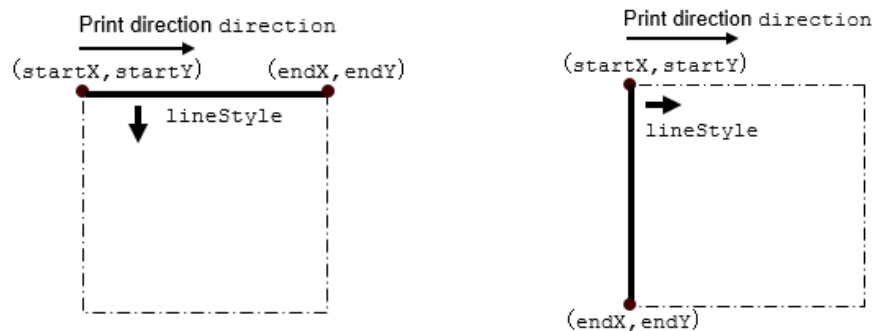
lineStyle Line style
See "4.3.1(4)③ Line style (LineStyle)" for available constants.

Error **SIIPrinterException** is thrown when an error occurs while this method is being called.
See "**4.3.3 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.

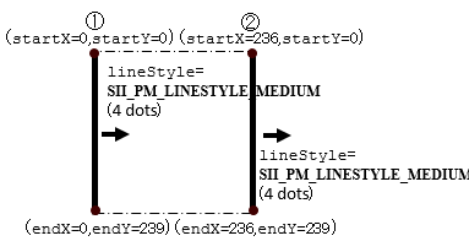


Mapping direction of horizontal ruled line Mapping direction of vertical ruled line

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
	① startX 0 startY 0 endX 239 endY 0 lineStyle SII_PM_LINestyle_MEDIUM
	② startX 0 startY 236 endX 239 endY 236 lineStyle SII_PM_LINestyle_MEDIUM

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
 <p>① (startX=0,startY=0) (startX=236,startY=0) lineStyle= SII_PM_LINestyle_MEDIUM (4 dots) → ② lineStyle= SII_PM_LINestyle_MEDIUM (4 dots) → (endX=0,endY=239) (endX=236,endY=239)</p>	<p>①</p> <pre>startX 0 startY 0 endX 0 endY 239 lineStyle SII_PM_LINestyle_MEDIUM</pre> <p>②</p> <pre>startX 236 startY 0 endX 236 endY 239 lineStyle SII_PM_LINestyle_MEDIUM</pre>

printPageModeLogo Print logo of page mode

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

Syntax	<pre>- (void) printPageModeLogo: (NSInteger) startX startY: (NSInteger) startY logoId: (NSString *) logoId;</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.
	logoId	Logo ID to print (key code) Specify the ID of the registered logo as a character string
Error	<p>SIIPrinterException is thrown when an error occurs while this method is being called. See "4.3.3 SIIPrinterException Class" for details on the error.</p>	
Description	Start page mode by enterPageMode 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 sendTimeout ;
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 isConnect 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 receiveTimeout ;
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 isConnect 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 internationalCharacter ;
Description	<p>See "4.3.1(3)⑤ International character set" for configurable constants. When an invalid value is specified, it is ignored.</p> <p>When this property is not set, the international character set is as follows depending on the language setting of iOS device.</p> <p>When the language setting of iOS device is Japanese: SII_PM_COUNTRY_JAPAN When the language setting of iOS device is other than Japanese: SII_PM_COUNTRY_USA</p> <p>When text data is sent by sendText, sendTextEx, sendDataFile, printPageModeText, or printPageModeTextEx, the print result of the following character codes varies. See "Appendix A Character Set" for details of the characters to be printed.</p> <p>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</p>

Gets or sets the value of codepage.

Syntax	@property NSInteger codePage ;
Description	<p>See "4.3.1(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: SH_PM_CODE_PAGE_KATAKANA</p> <p>When the language setting of iOS device is other than Japanese: SH_PM_CODE_PAGE_1252</p> <p>The encoder used for sending the text data by sendText, sendTextEx, sendDataFile, printPageModeText, or printPageModeTextEx 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 printerModel ;
Default	-1
Return value	<p>See "4.3.1(3)① Printer model" for available constants.</p> <p>When isConnect is NO, -1 is returned.</p>

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

Syntax	@property(readonly) NSInteger portType ;
Default	-1
Return value	<p>See "4.3.1(3)② Port type" for available constants.</p> <p>When isConnect is NO, -1 is returned.</p>

Verifies connection state with the printer.

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

Gets or sets the socket keeping time.

Syntax	<code>@property NSInteger socketKeepingTime;</code>
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 isConnect 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 Printer Utility" with the iOS app on the App Store. The set socket keeping time becomes effective at the next connect execution.

Registers a delegate object that receives notifications from the printer.

Syntax	<code>@property(weak, nonatomic) id<SIIPrinterManagerDelegate> delegate;</code>
Description	Specify an object conforming to SIIPrinterManagerDelegate 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.

4.3.2 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
SIIPrinterInfo	Constructor of the printer information class

(2) Property List

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

Name	Access	Description
name	R	Get printer model name
mac	R	Get MAC address
ip	R	Get IP address

(3) Method Details

SIIPrinterInfo	Constructor
-----------------------	--------------------

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**.

4.3.3 SIIPrinterException Class

(1) Method List

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

Name	Description
SIIPrinterException	Constructor

(2) Property List

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

Name	Access	Description
errorCode	R	Get error code
errorMessage	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.* ¹	-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.* ¹	-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
SII_PM_ERROR_NOT_REGISTERD	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
SII_PM_ERROR_NOT_UNREGISTERD	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
SII_PM_ERROR_INVALID_NO	The specified value for the logo ID is invalid.	-501
SII_PM_ERROR_INVALID_DATA	The specified data is invalid.	-503
SII_PM_ERROR_PAGE_MODE_SPECIFIED	Page mode is specified.	-511
SII_PM_ERROR_PAGE_MODE_NOT_SPECIFIED	Page mode is not specified.	-512
SII_PM_ERROR_INVALID_PARAM	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 "4.3.3(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.

4.3.4 SIIPrinterManagerDelegate Protocol

(1) Method List

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

Name	Description
<code>didStatusChange</code>	Notify printer status
<code>didBarcodeScannerReadData</code>	Receipt notify of barcode data
<code>didBarcodeScannerChangedOnline</code>	Connection notify of barcode scanner
<code>didBarcodeScannerChangedOffline</code>	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"> ·When connect is executed. ·When the printer status is changed.
-------------	---

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) didBarcodeScannerReadData :(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 isConnect 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) didBarcodeScannerChangedOnline :(SIIPrinterManager *)printerManager;
Parameter	printerManager Calling SIIPrinterManager object
Description	This method is called at the following timing. <ul style="list-style-type: none"> •When the barcode scanner is in connected state with the printer and connect is executed. •When the barcode scanner is connected to the printer. <p>The connection of the barcode scanner is notified when isConnect is YES and the printer is connecting.</p> <p>Do not execute the APIs of SIIPrinterManager within this method.</p>

Notifies the disconnection of the barcode scanner.

Syntax	- (void) didBarcodeScannerChangedOffline :(SIIPrinterManager *)printerManager;
Parameter	printerManager Calling SIIPrinterManager object
Description	This method is called at the following timing. <ul style="list-style-type: none"> •When the barcode scanner is in unconnected state with the printer and connect is executed. •When the barcode scanner is disconnected from the printer. <p>The disconnection of the barcode scanner is notified when isConnect is YES.</p> <p>Do not execute the APIs of SIIPrinterManager within this method.</p>

4.3.5 SIISmartLabelManager Class

SIISmartLabelManager class provides the function to covert the label file (*.sl, *.slex) created using SII Layout Editor into the printable data from the printer.

Do not use this class because it is not supported.

Chapter 5

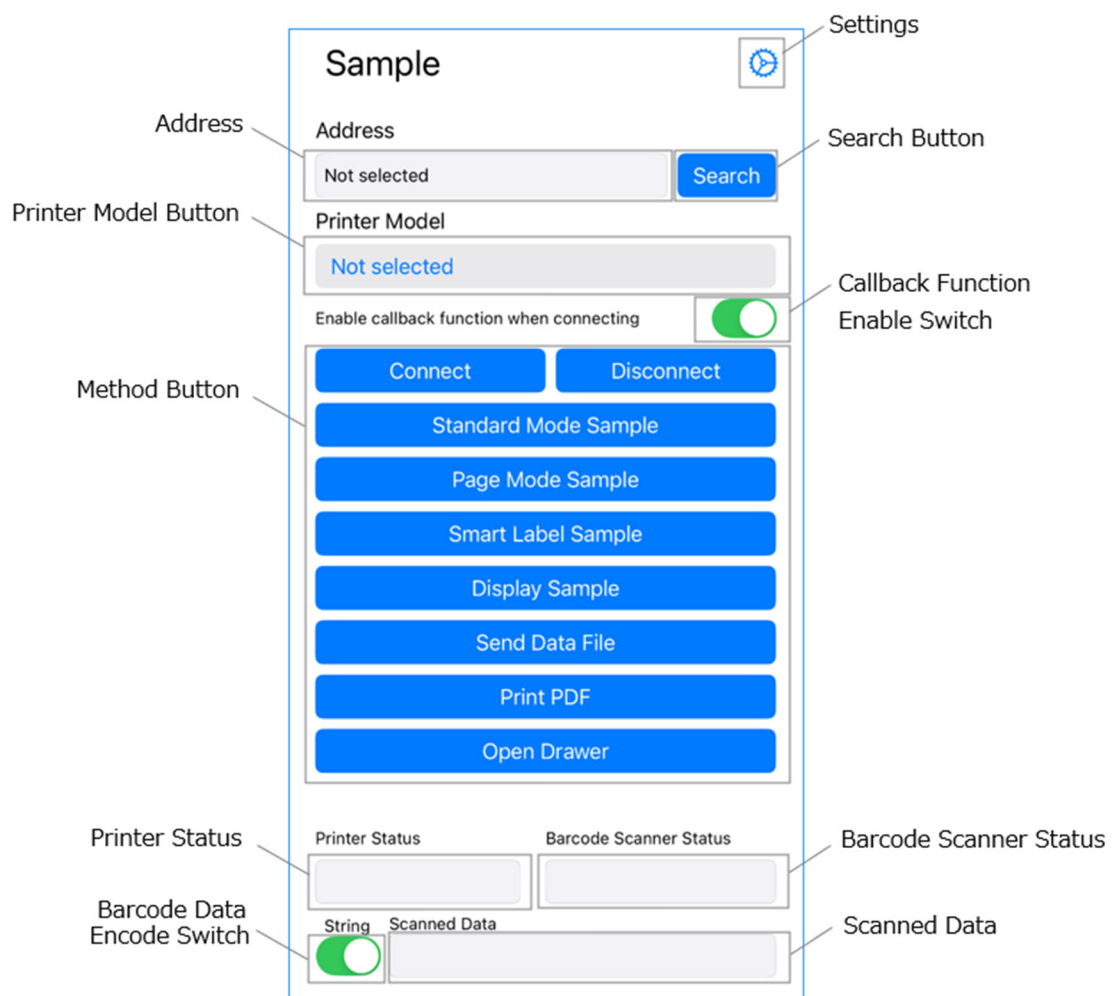
Sample Program

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.

5.1.1 Main Screen



Item	Description
Settings	Tapping the [Settings] button opens the function setting screen. In order to go back to the main screen, tap [close] on the top left of the screen.
Address	Displays the information about the selected printer.
Printer Model Button	Specifies the printer model. When tapping [Printer Model Button], a list of printer models is displayed. By selecting from the list, the printer model can be entered. When the printer is selected from the printer search screen, the printer model is automatically displayed.
Search Button	Starts searching for printers. Transits to the printer search screen. A list of the searched printers is displayed. The printer is selected by tapping the searched printer and returns to the main screen.
Callback Function Enable Switch	Select whether to enable the callback function when connecting to the printer. On : Starts the callback function when connecting. Off : The callback function does not respond.
Method Button ^{*1}	In addition to the method buttons for executing connect and disconnect , the sample by the combination of some methods can be printed and checked for the operation of peripheral devices.
Printer Status	Displays the printer status. When [Callback Function Enable Switch] is On, 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 conversion of barcode data read 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.

^{*1}: Supported functions vary by model. Only supported functions can be operated.

5.1.2 [Settings] Screen

Various setting functions are displayed in [Settings].

[close](#)

Send timeout(ms)

10000

Receive timeout(ms)

10000

Socket Keeping time(ms)

300000

Code page

Codepage 1252

International character

USA

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	Π
F0	≡	±	≥	≤	∫	∫	÷	≈	°	•	•	√	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	õ	μ	þ	þ	ú	û	ù	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 SHL_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	Â	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 SHL_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	¿	¬	½	¼	ì	«	»	
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	Ş	ş
A0	á	í	ó	ú	ñ	Ñ	Ğ	ğ	¿	®	¬	½	¼	ì	«	»
B0	☐	☐	☐			Á	Â	À	©							
C0	L	L	T			ã	Ã	⌌	⌌	⌌	⌌	⌌	⌌	⌌	⌌	⌌
D0	o	a	Ê	Ë	È	Í	Î	Ï	J	Γ	■	■		Ì	■	
E0	ó	β	ô	ò	õ	Ö	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	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥
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	Ł	ł	Ś	ś	Ö	Ü	Ť	ť	Ł	×	č
A0	á	í	ó	ú	À	à	Ž	ž	Ę	ę	¬	ž	Č	š	«	»
B0	␣	␣	␣		†	‡	§	¶	‡	§	¶	␣	␣	␣	␣	␣
C0	␣	␣	␣		†	‡	§	¶	‡	§	¶	␣	␣	␣	␣	␣
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	ù	ÿ	Ö	Ü	ø	£	Ø	×	ƒ
A0	á	í	ó	ú	ñ	Ñ	ä	ö	¿	®	¬	½	¼	¡	«	»
B0	☐	☐	☐			Á	Â	Ã	Ä	Å	⌂	⌂	⌂	⌂	⌂	⌂
C0	L	L	T	T	T	ä	Ä	Ä	Ä	Ä	Ä	Ä	Ä	Ä	Ä	Ä
D0	ð	Ð	Ê	Ë	È	€	Í	Î	Ï	Ï	Ï	Ï	Ï	Ï	Ï	Ï
E0	Ó	ß	Ô	Ò	Õ	Ö	µ	þ	þ	Ú	Û	Ü	Ý	Ý	-	'
F0	-	±	=	¾	¶	§	÷	,	°	·	·	·	·	·	·	■

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	и	и	и	и	и	и	и
C0	L	L	T	T	T	к	К	К	К	К	К	К	К	К	К	К
D0	л	Л	м	М	н	Н	о	О	п	П	п	п	п	п	п	п
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	ش	ص	ض	ظ
C0	¢	ء	آ	أ	ؤ	ع	ئ	ب	ا	ث	ة	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	ض	ع	غ	ف	ق	ك	م
F0	-	ن	ه	و	ي	ض	ع	غ	ف	ق	ك	م	ن	ه	و	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	˘	˘	˘	˘	˘	˘	˘	˘	˘	˘	˘	˘	˘	˘	˘	˘
A0	˘	˘	˘	˘	˘	˘	˘	˘	˘	˘	˘	˘	˘	˘	˘	˘
B0	˘	˘	˘	˘	˘	˘	˘	˘	˘	˘	˘	˘	˘	˘	˘	˘
C0	Á	Á	Á	Á	Á	Á	Á	Á	Á	Á	Á	Á	Á	Á	Á	Á
D0	Đ	Đ	Đ	Đ	Đ	Đ	Đ	Đ	Đ	Đ	Đ	Đ	Đ	Đ	Đ	Đ
E0	ř	ř	ř	ř	ř	ř	ř	ř	ř	ř	ř	ř	ř	ř	ř	ř
F0	đ	đ	đ	đ	đ	đ	đ	đ	đ	đ	đ	đ	đ	đ	đ	đ

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	Ѕ	Ё	©	Є	«	¬	-	®	İ	
B0	°	±	І	і	г	μ	¶	•	ё	№	є	»	ј	Ѕ	ѕ	ї
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	ˆ	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	ı	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
SII_PM_BARCODE_CODE128	SII_PM_BARCODE_MODULE_WIDTH_5	55 × number of barcode data + 65
	SII_PM_BARCODE_MODULE_WIDTH_6	66 × number of barcode data + 78
SII_PM_BARCODE_GS1_OMNI_DIRECTIONAL	SII_PM_BARCODE_MODULE_WIDTH_2	192
	SII_PM_BARCODE_MODULE_WIDTH_3	288
	SII_PM_BARCODE_MODULE_WIDTH_4	384
	SII_PM_BARCODE_MODULE_WIDTH_5	480
	SII_PM_BARCODE_MODULE_WIDTH_6	576
SII_PM_BARCODE_GS1_TRUNCATED	SII_PM_BARCODE_MODULE_WIDTH_2	192
	SII_PM_BARCODE_MODULE_WIDTH_3	288
	SII_PM_BARCODE_MODULE_WIDTH_4	384
	SII_PM_BARCODE_MODULE_WIDTH_5	480
	SII_PM_BARCODE_MODULE_WIDTH_6	576
SII_PM_BARCODE_GS1_LIMITED	SII_PM_BARCODE_MODULE_WIDTH_2	158
	SII_PM_BARCODE_MODULE_WIDTH_3	237
	SII_PM_BARCODE_MODULE_WIDTH_4	316
	SII_PM_BARCODE_MODULE_WIDTH_5	395
	SII_PM_BARCODE_MODULE_WIDTH_6	474
SII_PM_BARCODE_GS1_EXPANDED^{*1}	SII_PM_BARCODE_MODULE_WIDTH_2	number of barcode module × 2
	SII_PM_BARCODE_MODULE_WIDTH_3	number of barcode module × 3
	SII_PM_BARCODE_MODULE_WIDTH_4	number of barcode module × 4
	SII_PM_BARCODE_MODULE_WIDTH_5	number of barcode module × 5
	SII_PM_BARCODE_MODULE_WIDTH_6	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*1	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: row ≠ 0

(2) Width of the barcode image

When pdf417Symbol is **SII_PM_PDF417_STANDARD**:

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

*1: column ≠ 0

When pdf417Symbol is **SII_PM_PDF417_COMPACT**:

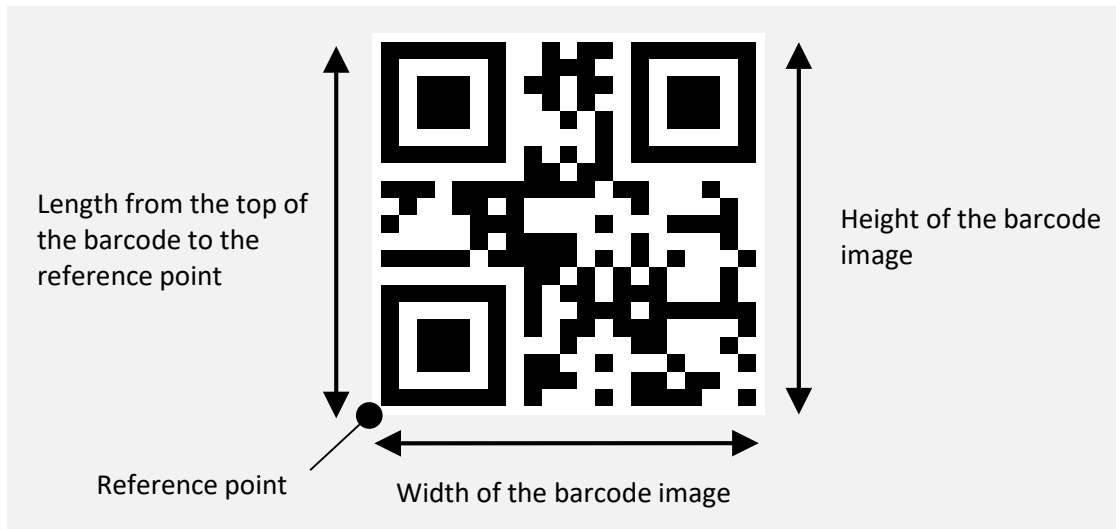
$$\text{Width of the barcode image} = (17 \times \text{column}^{*1} + 35) \times \text{module size value}$$

*1: column ≠ 0

Module Size Value

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

B.1.3 printQRCode, printPageModeQRCode



(1) Height and width of the barcode image

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

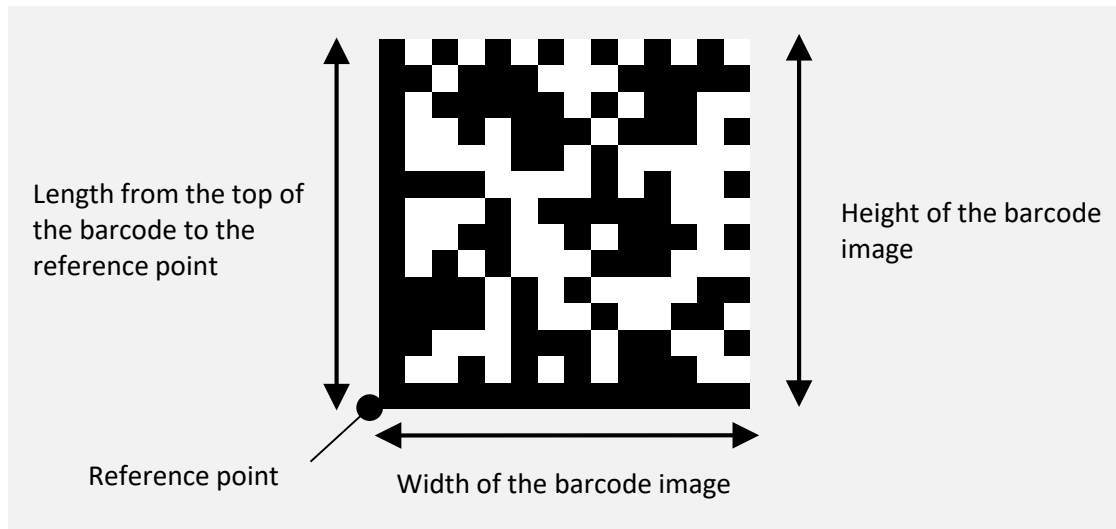
*1: Height of the barcode image = Length from the top of the barcode to the reference point

*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

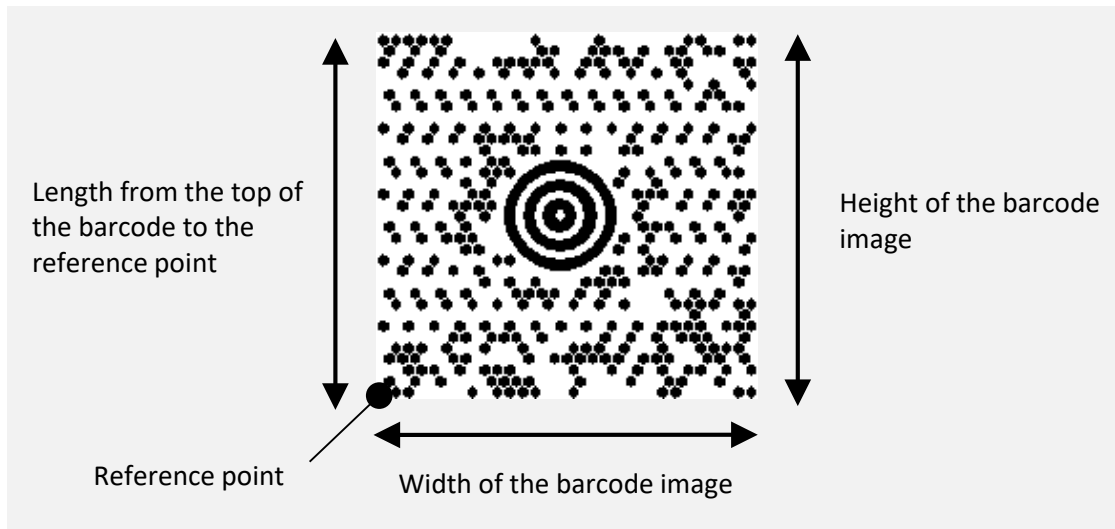
dataMatrixModule	Number of Vertical Module	Number of Horizontal Module
SII_PM_DATA_MATRIX_10_10	10	10
SII_PM_DATA_MATRIX_12_12	12	12
SII_PM_DATA_MATRIX_14_14	14	14
SII_PM_DATA_MATRIX_16_16	16	16
SII_PM_DATA_MATRIX_18_18	18	18
SII_PM_DATA_MATRIX_20_20	20	20
SII_PM_DATA_MATRIX_22_22	22	22
SII_PM_DATA_MATRIX_24_24	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*1 = 200

*1: 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^{*1} = 13 × module size value

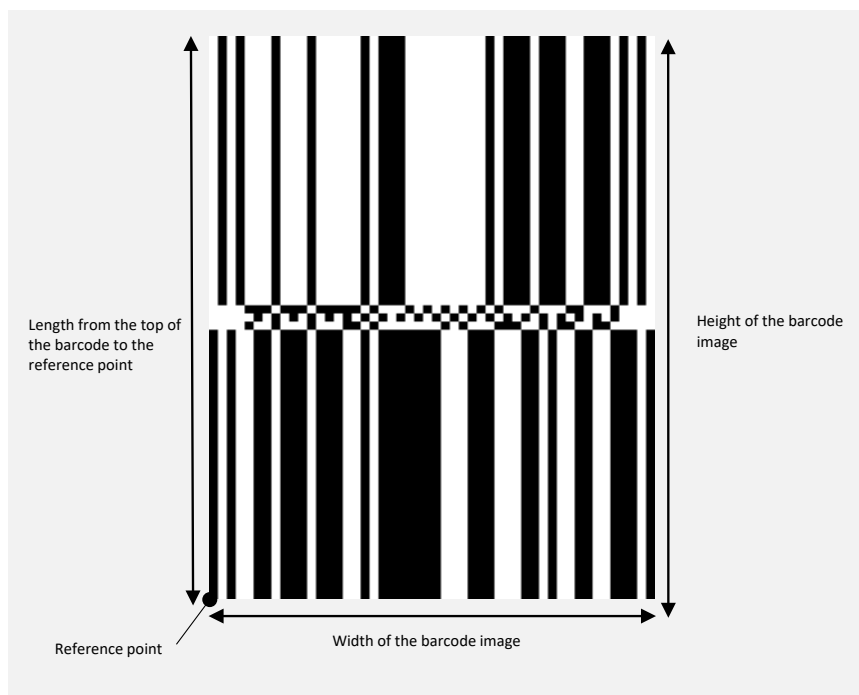
^{*1}: Height of the barcode image = Length from the top of the barcode to the reference point

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^{*1} = (moduleHeight × 2 + 3) × module size value

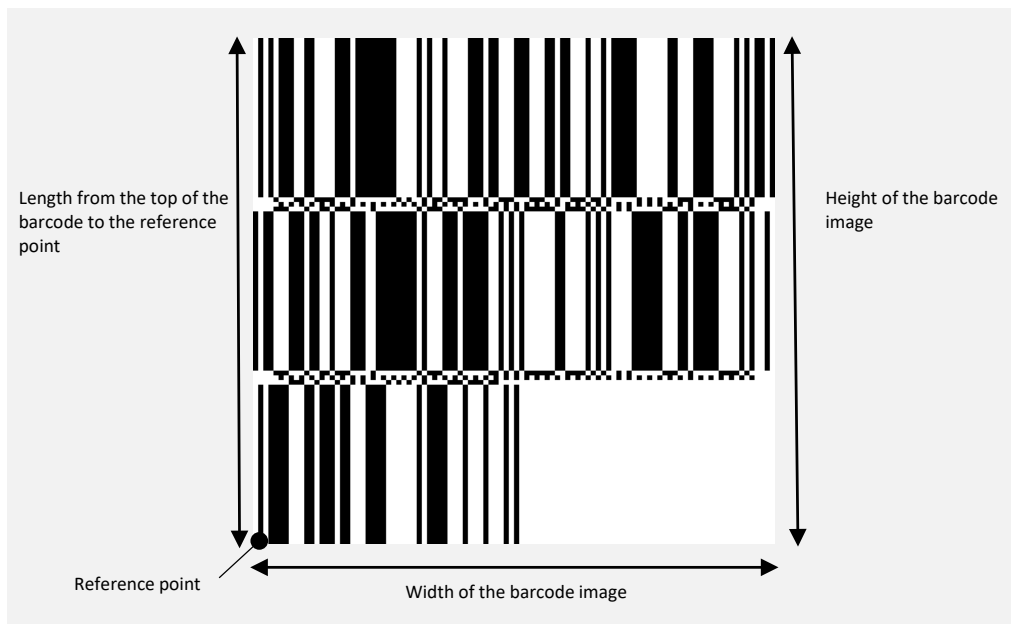
^{*1}: Height of the barcode image = Length from the top of the barcode to the reference point

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^{*1} = $((34 + 3) \times \text{number of row}^{*2} + 34) \times \text{module size value}$

*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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