



SII Print Class Library for iOS Application Programmer's Guide

Rev.06

[Products]

SLP720RT Series

SLP721RT 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 |
|-----------------|-----------|
| SLP720RT Series | TCP/IP |
| SLP721RT Series | Bluetooth |
| | TCP/IP |

Terms

The terms used in this manual are described below.

| Term | Description |
|---------------------|---|
| Technical Reference | Technical Reference shown as follows: · SLP720RT SERIES THERMAL PRINTER TECHNICAL REFERENCE · SLP721RT SERIES THERMAL PRINTER TECHNICAL REFERENCE |
| User's Guide | User's Guide shown as follows: · SLP720RT SERIES Thermal Printer USER'S GUIDE · SLP721RT SERIES Thermal Printer USER'S GUIDE |
| Printer command | Command for controlling the printer described in "Technical Reference" |

Supported Paper and Names in This Manual

The supported paper by the SII print class library and their names in this manual are listed below.

| All Type | By type | By function | Abbreviation | Support |
|----------|-----------------|------------------------|--------------|---------|
| Paper | Receipt | Receipt | Receipt | ✓ |
| | Linerless label | Linerless label | Label | ✓ |
| | | Marked linerless label | Marked paper | ✓ |
| | SLP Label | SLP Label | Label | ✓ |

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|-------------------|-------------------------------------|------------|
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| | | |
|-----|--------------------------|-----|
| 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.

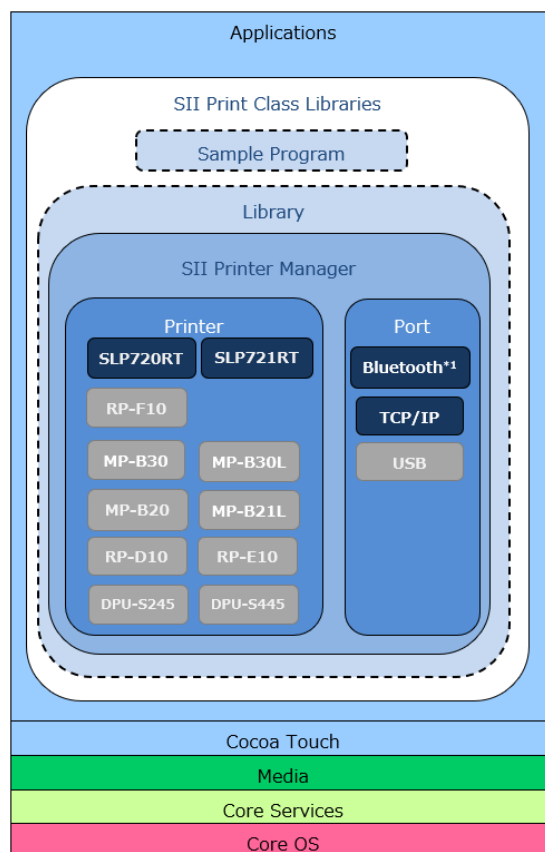
1.1 Functions Provided by SII Print Class Library

The SII print class library including the library and the sample program provides the functions to use SII printer SLP720RT/SLP721RT 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: Supported only by SLP721RT.

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 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})
- 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 Bluetooth or TCP/IP
- Drawer operational control
- Buzzer sounding control
- Printing a label file
- Replacing object data in a label file
- 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`.

| |
|--|
| (NOTE) SLP720RT/SLP721RT do not support the APIs of page mode, Display, or the barcode scanner. |
|--|

1.2.3 Development of Application that Performs Bluetooth Communication with SII Printer

When registering an application that performs Bluetooth communication with a printer to App Store, advance application from SII to Apple is necessary. For details, please contact SII.

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 versions for the library are shown in the following list.

(1) iPhone models

- iPhone 15 Pro Max
- iPhone 15 Pro
- iPhone 15 Plus
- iPhone 15
- iPhone 14 Pro Max
- iPhone 14 Pro
- iPhone 14 Plus
- iPhone 14
- iPhone SE (3rd generation)
- iPhone 13 Pro Max
- iPhone 13 Pro
- iPhone 13
- iPhone 13 mini
- iPhone 12 Pro Max
- iPhone 12 Pro
- iPhone 12
- iPhone 12 mini
- iPhone SE (2nd generation)
- iPhone 11 Pro Max
- iPhone 11 Pro
- iPhone 11
- iPhone XS Max
- iPhone XS
- iPhone XR

(2) iPad models

- iPad Pro 12.9-inch (6th generation)
- iPad Pro 11inch (4th generation)
- iPad (10th generation)
- iPad Air (5th generation)
- iPad mini (6th generation)
- iPad (9th generation)
- iPad Pro 12.9inch (5th generation)
- iPad Pro 11inch (3rd generation)

- iPad Air (4th generation)
- iPad (8th generation)
- iPad Pro 12.9inch (4th generation)
- iPad Pro 11inch (2nd generation)
- iPad (7th generation)
- iPad Air (3rd generation)
- iPad mini (5th generation)
- iPad Pro 12.9inch (3rd generation)
- iPad (6th generation)
- iPad Pro 12.9inch (2nd generation)

2.1.2 Applicable iOS Versions

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

- iOS 15 to 15.7.8
- iPadOS 15 to 15.7.8
- iOS 16 to 16.7.1
- iPadOS 16 to 16.7.1
- iOS 17 to 17.4
- iPadOS 17 to 17.4

2.2 Printer Settings

Set the memory switches and the Bluetooth communication setting of the printer to [Value] in the following table when using the library.

The printer memory switches and the Bluetooth communication setting can be set in the iOS app "SII Printer Utility" on the App Store.

See User's Guide for details about the memory switches and the factory default settings.

Memory Switch

| MS | Function | Value |
|------|---|--|
| 1-2 | Taken Mode Selection (Taken Mode) | 0: Enable ^{*1} 1: Disable ^{*2} |
| 1-3 | Mark Mode Selection (Mark Mode) | 0: Enable ^{*3} 1: Disable ^{*4} |
| 4-6 | Paper Auto Detection Selection (Paper Auto Detection) | 0: Enable ^{*3} 1: Disable ^{*3*4} |
| 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 |
| 7 | Thermal Paper Selection (Thermal Paper) | 00B: Receipt 01B: Linerless label 10B: SLP Label |
| 13-3 | Realtime Command Selection (Realtime Command) | 1: Enable |
| 17-3 | Feed Backward Setting After Paper Cutting (Backfeed After Cut) | 0: Enable 1: Disable ^{*5} |

*1: When printing continuously on linerless label, set this value to "Enable".

The status response of the taken sensor is responded when this value is set to "Enable".

*2: When printing continuously on receipt or SLP Label, set this value to "Disable".

*3: When using **feedPosition**, one of the following settings is necessary.

- To automatically detect paper, set the memory switch MS 4-6 (Paper Auto Detection Selection) of the printer to "Enable".

- To specify the paper, set MS 4-6 (Paper Auto Detection Selection) to "Disable" and set MS 1-3 (Mark Mode Selection) to "Enable".

In addition, select the paper to use as follows.

- For marked linerless label:

- Set MS 7 (Thermal Paper Selection) to "Linerless label".

- For SLP Label:

- Set MS 7 (Thermal Paper Selection) to "SLP Label".

*4: Set this value to "Disable" and select the paper to be used in the memory switch MS 7 (Thermal Paper Selection) of the printer when using the receipt (other than marked paper) or the Linerless label (other than the marked paper).

*5: When executing **cutPaper** under the following conditions and using **printSmartLabelImageData** immediately after, set this value to "Disable".

- MS1-3 (Mark Mode Selection) is set to "Disable".

- **SII_PM_CUT_FULL** is specified to **cuttingMethod** of **cutPaper**, or MS1-2 (Taken Mode Selectoin) is set to "Enable" and **SII_PM_CUT_PARTIAL** is specified to **cuttingMethod**.

Bluetooth Communication Setting

| Function | Value |
|---------------------|---------------------------------|
| iOS Auto Connection | Enable* ¹ Disable |

*1: Select "Enable" when using `resetPrinter`.

2.3 Precaution

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

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

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

A concurrent connection from multiple apps to one printer is not supported when multiple apps are worked simultaneously by Multitasking on 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.

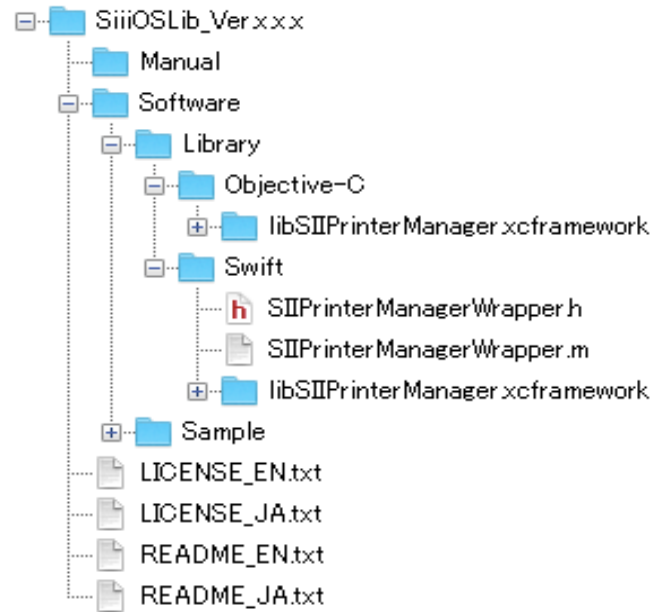


Figure 3-1

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.

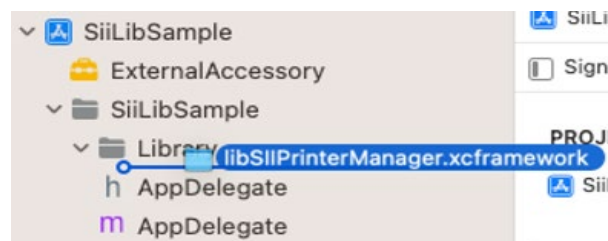
| Development Language | Description |
|----------------------|--|
| Objective-C | See "3.3.1 Objective-C" for details to build the library as Objective-C. |
| Swift | See "3.3.2 Swift" for details to build the library as Swift. |

(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.

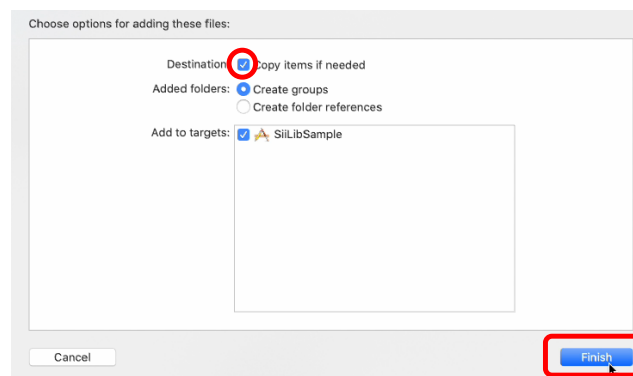
- libSiiPrinterManager.a
- SiiPrinterEnum.h
- SiiPrinterException.h
- SiiPrinterManager.h
- SiiSmartLabelManager.h

3.3.1 Objective-C

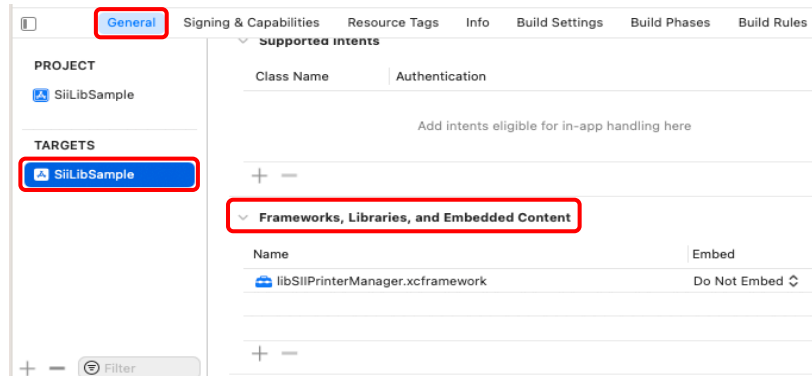
- (1) Open the Xcode project.
- (2) Drag the following files to any hierarchy in the target project in [Project Navigator] of the navigator window.
 - libSiiPrinterManager.xcframework



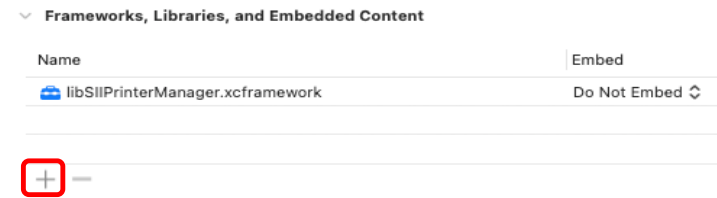
- (3) Check the box [Copy items if needed], and click the [Finish] button.



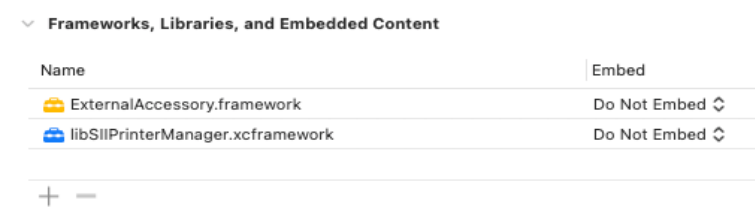
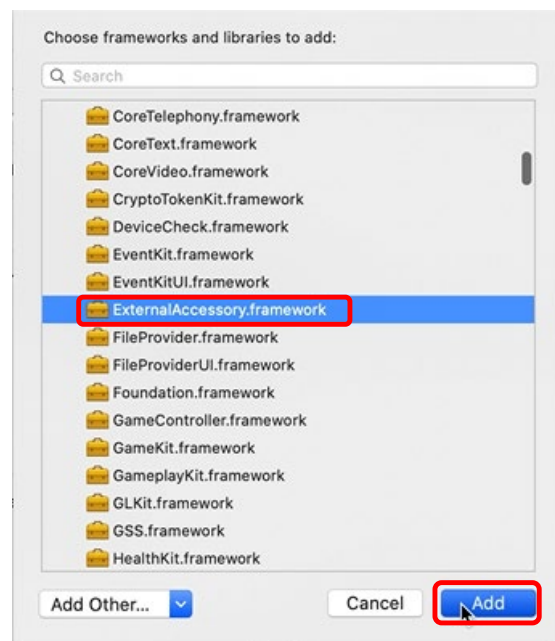
- (4) Build the ExternalAccessory.framework into the project.
Select the target project in the [TARGETS], and open the [General] - [Frameworks, Libraries and Embedded Content].



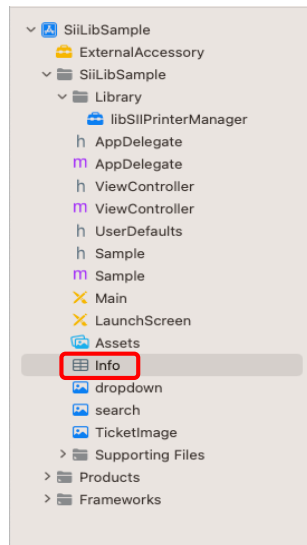
- (5) Click the [+] button opened the [Frameworks, Libraries and Embedded Content].



- (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] - ⓘ.

| 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.

| Key | Type | Value |
|------------------------------------|------------|---------------------------------|
| Information Property List | Dictionary | (16 items) |
| App Category | String | \$(DEVELOPMENT_LANGUAGE) |
| Supported external accessory p... | String | \$(EXECUTABLE_NAME) |
| Supported interface orientations | String | \$(PRODUCT_BUNDLE_IDENTIFIER) |
| Supported interface orientation... | String | 6.0 |
| Supported interface orientation... | String | \$(PRODUCT_NAME) |
| Supports Automatic Graphics S... | String | \$(PRODUCT_BUNDLE_PACKAGE_TYPE) |
| Supports Controller User Intera... | String | 1.0 |
| Supports Document Browser | String | 1 |
| Supports HDR color mode | String | |

- (10) Open the added [Supported external accessory protocols].
The [Item 0] displayed in the opened [Supported external accessory protocols], enter com.sii-ps.siiexp 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.siiexp |
| Localization native development re... | String | \$(DEVELOPMENT_LANGUAGE) |
| Executable file | String | \$(EXECUTABLE_NAME) |
| Bundle identifier | String | \$(PRODUCT_BUNDLE_IDENTIFIER) |
| InfoDictionary version | String | 6.0 |

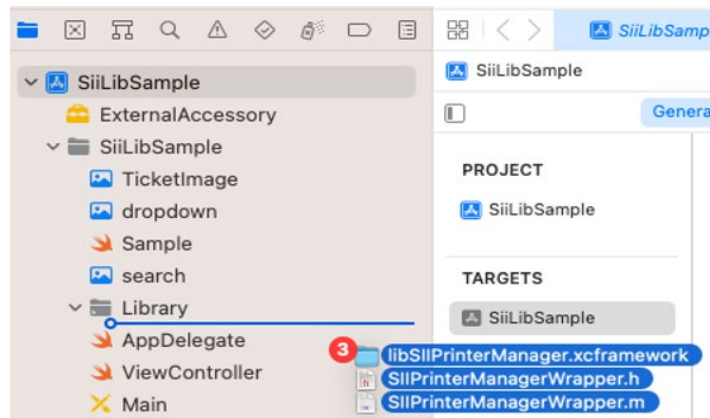
Use the following import statement when importing libraries.

```
#import <SIIPrinterManager/SIIPrinterManager.h>
```

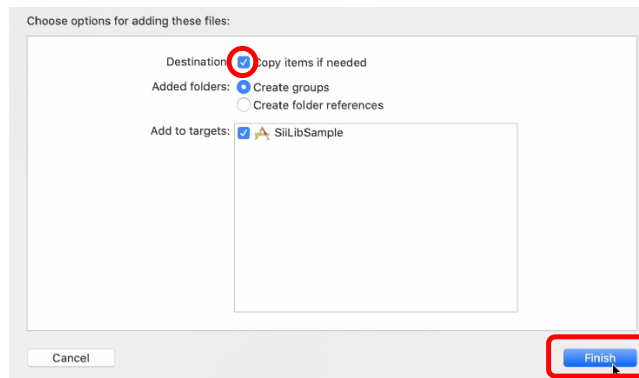
By completing these procedures, the library function becomes available.

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



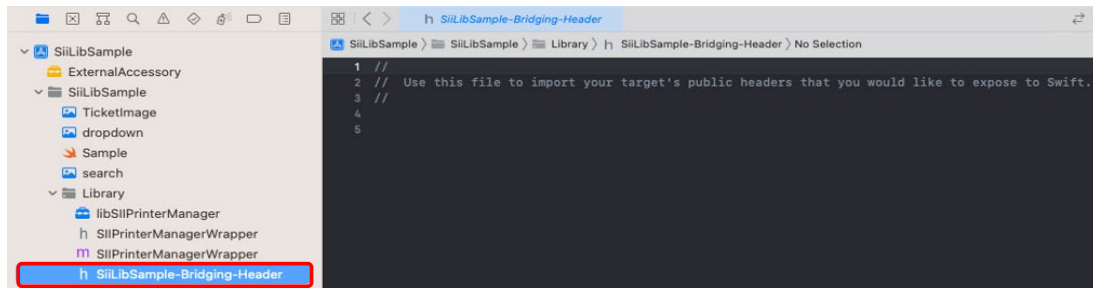
- (3) Check the box [Copy items if needed], click the [Finish] button.



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



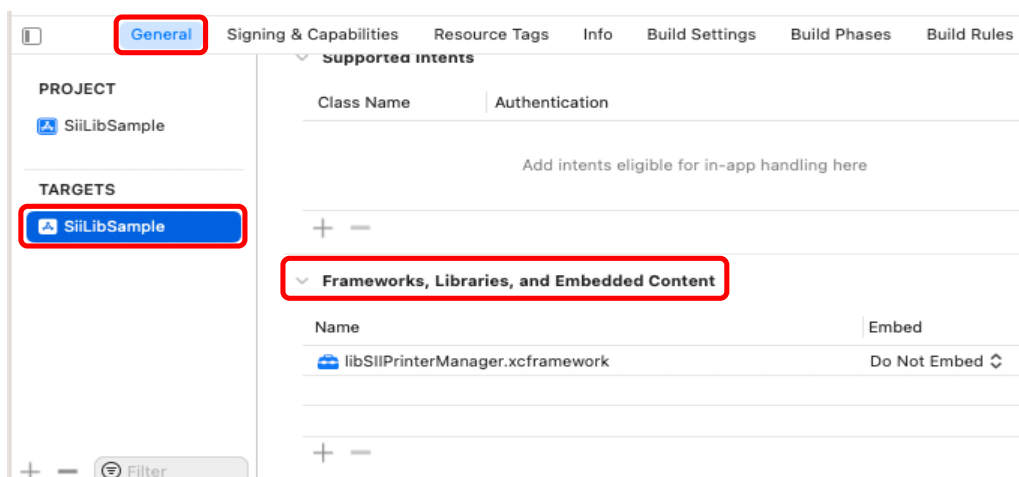
- (5) Select the created xxxxxxxx-Bridging-Header.h.



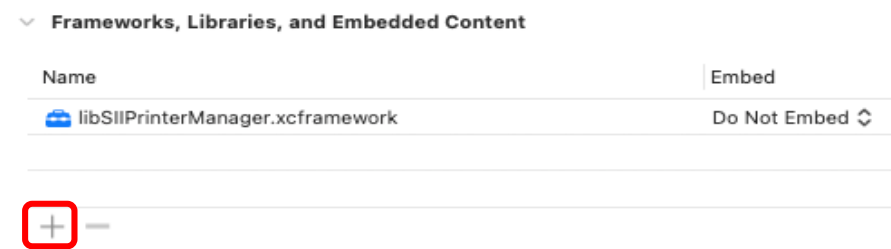
- (6) Import the SIIPrinterManager.h and the SIIPrinterManagerWrapper.h into the xxxxxxxx-Bridging-Header.h.

```
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
```

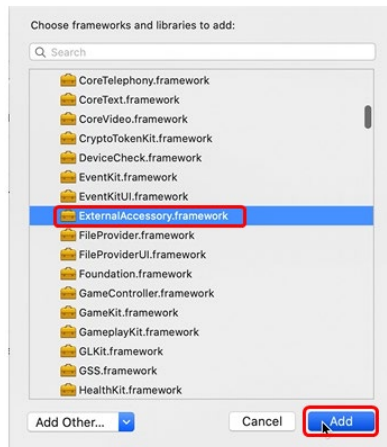
- (7) Build ExternalAccessory.framework.
Select the target project in the [TARGETS], and open the [General] - [Frameworks, Libraries and Embedded Content].



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



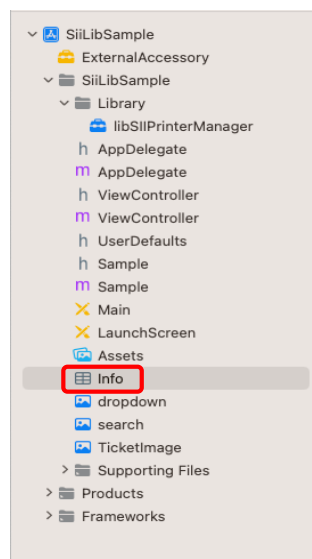
- (9) Select the ExternalAccessory.framework from the list and click the [Add] button.



▼ 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].

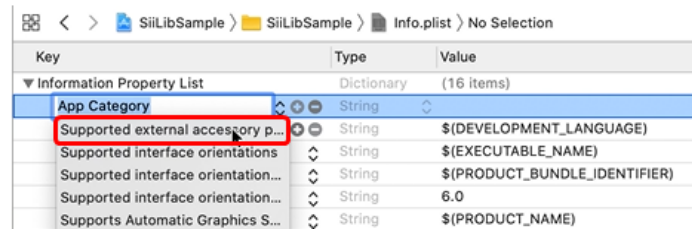


- (11) Select the [Information Property List] - ⓘ.

SiiLibSample > SiiLibSample > Info.plist > No Selection

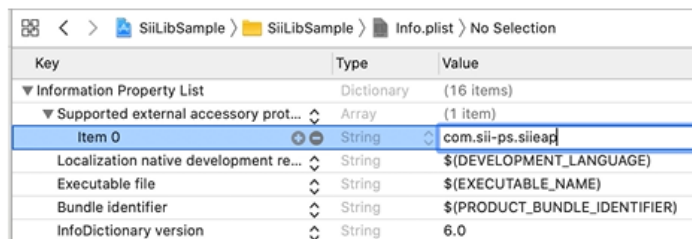
| Key | Type | Value |
|---------------------------------------|------------|-------------------------------|
| ▼ Information Property List ⓘ | Dictionary | (15 items) |
| Localization native development re... | String | \$(DEVELOPMENT_LANGUAGE) |
| Executable file | String | \$(EXECUTABLE_NAME) |
| Bundle identifier | String | \$(PRODUCT_BUNDLE_IDENTIFIER) |
| InfoDictionary version | String | 6.0 |

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



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

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



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

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 Printing Label Function

The label files (*.sl) created using Smart Label Creator and SII Layout Editor can be printed using the library.

It also provides the function to replace text data, image data, or barcode data using the label file and print.

Smart Label Creator or SII Layout Editor is software that can create labels.

In this manual, when describing both Smart Label Creator and SII Layout Editor, they are referred to as the "app".

If an individual description is required, the name of the product will be provided.

The app can be downloaded from the following web page.

- SLP720RT/SLP721RT series download page
<https://www.sii-ps.com/slp720rt/>

In addition, directed to the store directly depending on the app and the app can be installed.

iOS or Android

By scanning a QR code below with the smartphone, redirected to the store and the app can be installed.

- iOS



Smart Label Creator



SII Layout Editor

- Android



Smart Label Creator



SII Layout Editor

Windows

SII Layout Editor

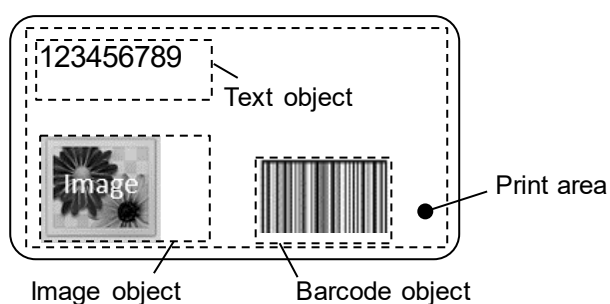
By clicking on the URL below or inputting it into a web browser to go to the store, the app can be installed.

<https://www.microsoft.com/store/apps/9P5G2R1PS76W>

- Reference
- "Smart Label Creator" and "SII Layout Editor" can also be searched and installed in App Store or Google Play.
 - "SII Layout Editor" can also be searched and installed in Microsoft Store.

4.1.1 Structure of Label File

The label file is the file where objects are mapped within the print area for the label.



Example of label file (*.sl)

(1) Types of objects and support in the library

Supported objects in the library are shown in the following table.

| Object | Description | Label File (*.sl) Source | | | | Supported in Library |
|------------------------------|--|--------------------------|---------|---------------------|---------|----------------------|
| | | SII Layout Editor | | Smart Label Creator | | |
| | | iOS/Android | Windows | iOS/Android | Windows | |
| Text object | Handle text data | ✓ | ✓ | ✓ | ✓ | ✓ |
| Image object | Handle image data | ✓ | ✓ | ✓ | ✓ | ✓ |
| Barcode object | Handle barcode data | ✓ | ✓ | ✓ | ✓ | ✓ |
| Drawing (rectangle) object | Handle the drawn data of a figures (rectangle) | ✓ | ✓ | – | ✓ | ✓ |
| Drawing (circle/oval) object | Handle the drawn data of a figures (circle/oval) | ✓ | ✓ | – | ✓ | ✓ |
| Drawing (line) object | Handle the drawn data of a figures (line) | ✓ | ✓ | – | ✓ | ✓ |
| Frame object | Handle the drawn data of a decorative frame | – | – | – | ✓ | – |

| Object | Description | Label File (*.sl) Source | | | | Supported in Library |
|-----------------------|--|--------------------------|---------|---------------------|---------|----------------------|
| | | SII Layout Editor | | Smart Label Creator | | |
| | | iOS/Android | Windows | iOS/Android | Windows | |
| Contact object | Retrieve data from the device contact book | ✓ | – | ✓ | – | ✓ |
| DateTime object | Handle the data of the date and time | ✓ | ✓ | ✓ | ✓ | ✓ |
| Return Address object | Handle the data of the sender | – | – | – | ✓ | ✓ |
| Group object | Grouping multiple objects | – | – | – | ✓ | ✓ |

(2) Precautions for printing the label file using the library

Printing the label file using the app may differ from printing the label file using the library. Verify the performance with your actual device in advance.

Note the following when printing label files using the library.

① All object

- The drawing object mapped outside the print area is not supported.

② Text object

App

- The "Serialization" is not supported.
- When the same font as the app is to be used, add a custom font to the Xcode project. If the custom font is not in the Xcode project, the text data will be printed in the system standard font.

Windows Smart Label Creator

- The "Zip code" is not supported.
- The "Field Link" is not supported.
- It is not supported that the function to clear decorations or add different decorations or font sizes to the portions of text. The decorations and font size given to the 1st character are the decoration of the entire text.

③ Image object

App

- When the setting of dithering is set to "Burkes" or "Bayer", the "Floyd–Steinberg" is used in the library.

Windows Smart Label Creator

- When the image source is "Link to File", the image object cannot be printed using the library.
- When the image source, the image object cannot be printed using the library.
- The "Brightness" or "Contrast" are not supported.

④ Barcode object

App

- Among the barcodes supported by the app, the following barcodes are supported by the library.
 - CODE39
 - CODE128
 - UPC-A
 - EAN13
 - CODABAR
 - UPC-E
 - EAN8
 - PDF417
 - Data Matrix
 - QR Code
 -
- The "Serialization" is not supported.
- The barcode setting shown in the following is not reflected.
 - Ratio of bar width
- The barcode image created using the app and the barcode image created by the library may not become the same barcode image.
- If the height of the barcode object is specified to be lower than the bar height using the app, the barcode will be reduced to fit within the object in the library and printed.
- When the security of the PDF417 is set to "-1" using the app, it is fixed to "0" in the library and the object is drawn.
- When the same font as the app is to be used, add a custom font to the Xcode project. If the custom font is not in the Xcode project, the text data will be printed in the system standard font.

Windows Smart Label Creator

- The "Field Link" is not supported.
- The barcode settings shown in the following are not reflected.
 - Mode of PDF417
 - Security of Data Matrix
 - Mode of QR Code
- When the mode of the Data Matrix is set to "1" (rectangle), the barcode is drawn in the middle of the object in the library.
- Regardless of the "horizontal alignment" setting of the format, HRI characters are always drawn centered on the left and right in the library.

⑤ Drawing object

SII Layout Editor and Windows Smart Label Creator

- When "Line Width" is too thin, dashed, long dashed, or double lines may be squished.
- The drawing position of the drawing object may differ between the app and the library.

⑥ Contact object

App

- When the same font as the app is to be used, add a custom font to the Xcode project. If the custom font is not in the Xcode project, the text data will be printed in the system standard font.

⑦ DateTime object

App

- When the same font as the app is to be used, add a custom font to the Xcode project. If the custom font is not in the Xcode project, the text data will be printed in the system standard font.

⑧ Group object

Windows Smart Label Creator

- Grouped objects are ungrouped in the library.
- The drawing position of ungrouped objects may differ between Smart Label Creator and the library.

4.1.2 Method for using label file

The printing method using the label file is described below.

(1) Print the label file as it is from the library

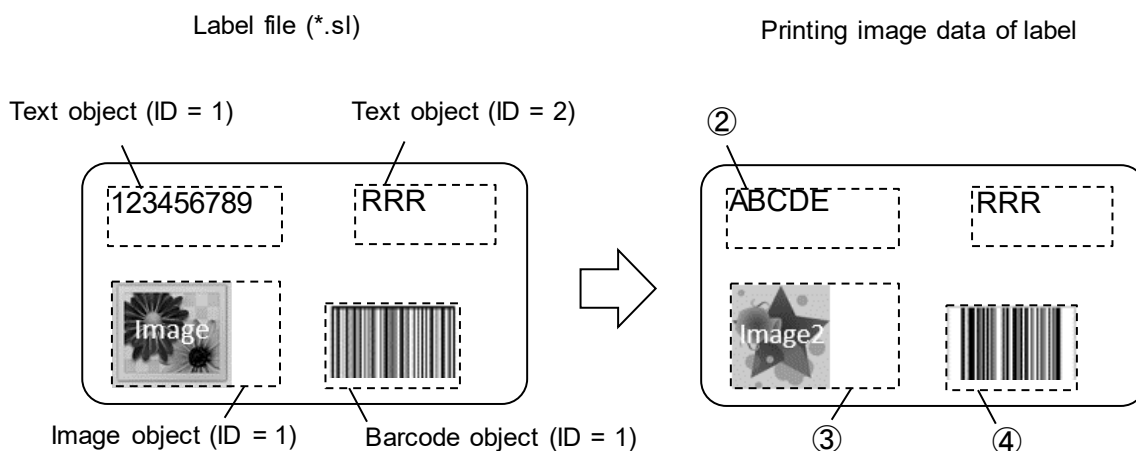
Print command example

- ① Specify label file
- ② Print label

(2) Replace the object data in the label file and prints

Print command example

- ① Specify label file
- ② Replace text data of label (text object ID = 1)
- ③ Replace image data of label (image object ID = 1)
- ④ Replace barcode data of label (barcode object ID = 1)
- ⑤ Print label



4.2 Log File Output Function

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

4.1.1 How to Set Log Output

Log output settings can be configured by adding the config.ini file with the following content to the Documents folder 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.

4.2.1 Log Output Settings

| Item | Description | Settings |
|------------|--------------------------------|--|
| LOGLEVEL | Log level | 0 : Not record the log. 1 : Records an error log when SIIPrinterException is thrown. 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 | Logcat output enabled/disabled | 0 : Logcat output is disabled 1 : Logcat output is enabled |

4.2.2 Log File

Log files are saved as local files in the iOS 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 . | ✓ |
| 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. See " 4.3.5 SIISmartLabelManager Class " for details. | ✓ |

*1: ✓: Supported, -: Not supported

| |
|--|
| (NOTE) SLP720RT/SLP721RT do not support the APIs of page mode, Display, or the barcode scanner. |
|--|

4.1.1 SIIPrinterManager Class

(1) Method List

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

| Name | Description | Supported ^{*1} |
|--|--|-------------------------|
| init | Instance | ✓ |
| connect | Start communicating with printer | ✓ |
| disconnect | Stop communicating with printer | ✓ |
| 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 | ✓ |
| openDrawer | Open cash drawer | ✓ ^{*2} |
| buzzer | Sound buzzer | - |
| externalBuzzer | Sound external buzzer | ✓ ^{*2} |
| sendBinary | Send binary data | ✓ |
| sendDataFile | Send specified file | ✓ |
| getStatus | Get printer status | ✓ |
| abort | Abort waiting state of printer | ✓ |
| registerLogo | Register logo | ✓ |
| printLogo | Print 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) | ✓ ^{*2} |
| startDiscoveryPrinter | Start printer search (TCP/IP) | ✓ |
| cancelDiscoveryPrinter | Cancel printer search | ✓ |
| getFoundPrinter | Get found printer information | ✓ |
| getVersion | Get SDK version | ✓ |
| printSmartLabelImageData | Print label | ✓ |

| Name | Description | Supported ^{*1} |
|---------------------------|----------------------------|-------------------------|
| controlTransaction | Start/End batch processing | ✓ |

*1: ✓: Supported, -: Not supported

*2: Supported only by SLP721RT.

(2) Property List

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 | ✓ |
| printSmartLabelMode | R/W | Get/Set paper when printing label file | ✓ |

*1: ✓: Supported, -: Not supported

(3) Constant List

① Printer model

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

| Constant Name | Description | Value |
|-------------------------------|-------------------|-------|
| SII_PM_PRINTER_MODEL_SLP720RT | SLP720RT/SLP721RT | 305 |

② 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 |

③ 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 |

| Constant Name | Description | Value |
|------------------------------|---------------|-------|
| SII_PM_COUNTRY_LATIN_AMERICA | Latin America | 12 |
| SII_PM_COUNTRY_ARABIA | Arabia | 17 |

④ 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.

*2: Font B cannot be printed.

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

⑤ 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 ^{*1} | Bluetooth | 0 |
| SII_PM_PRINTER_PORT_TYPE_TCP | TCP/IP | 2 |

*1: Supported only by SLP721RT.

⑥ Paper selection with or without mark when printing label file

Constants used for selecting the paper when printing label file.

| Constant Name | Description | Value |
|---|--------------------|-------|
| SII_PM_PRINTSMARTLABEL_MODE_MARK | Marked paper | 0 |
| SII_PM_PRINTSMARTLABEL_MODE_NONEMARK | Paper without mark | 1 |

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 Bold print (`CharacterBold`)

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

| Constant Name | Description |
|---------------------------|--------------------|
| SII_PM_BOLD_CANCEL | Cancel bold print |
| SII_PM_BOLD | Specify bold print |

② 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 | Specify 2-dot width underline print |

③ 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 |

④ 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 |

⑤ 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) |

⑥ Character scale (CharacterScale)

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

| Constant Name | Description |
|--------------------------------|--------------------------|
| SII_PM_VARTICAL_1_HORIZONTAL_1 | Height × 1 and width × 1 |
| SII_PM_VARTICAL_1_HORIZONTAL_2 | Height × 1 and width × 2 |
| SII_PM_VARTICAL_1_HORIZONTAL_3 | Height × 1 and width × 3 |
| SII_PM_VARTICAL_1_HORIZONTAL_4 | Height × 1 and width × 4 |
| SII_PM_VARTICAL_2_HORIZONTAL_1 | Height × 2 and width × 1 |
| SII_PM_VARTICAL_2_HORIZONTAL_2 | Height × 2 and width × 2 |
| SII_PM_VARTICAL_2_HORIZONTAL_3 | Height × 2 and width × 3 |
| SII_PM_VARTICAL_2_HORIZONTAL_4 | Height × 2 and width × 4 |
| SII_PM_VARTICAL_2_HORIZONTAL_6 | Height × 2 and width × 6 |
| SII_PM_VARTICAL_3_HORIZONTAL_1 | Height × 3 and width × 1 |
| SII_PM_VARTICAL_3_HORIZONTAL_2 | Height × 3 and width × 2 |
| 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 | Height × 4 and width × 6 |
| SII_PM_VARTICAL_4_HORIZONTAL_8 | Height × 4 and width × 8 |
| SII_PM_VARTICAL_6_HORIZONTAL_2 | Height × 6 and width × 2 |
| SII_PM_VARTICAL_6_HORIZONTAL_4 | Height × 6 and width × 4 |
| SII_PM_VARTICAL_6_HORIZONTAL_6 | Height × 6 and width × 6 |
| SII_PM_VARTICAL_6_HORIZONTAL_8 | Height × 6 and width × 8 |
| SII_PM_VARTICAL_8_HORIZONTAL_4 | Height × 8 and width × 4 |
| SII_PM_VARTICAL_8_HORIZONTAL_6 | Height × 8 and width × 6 |
| SII_PM_VARTICAL_8_HORIZONTAL_8 | Height × 8 and width × 8 |

⑦ 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 |
|--------------------------------------|---------------|
| <code>SII_PM_ALIGNMENT_LEFT</code> | Aligned left |
| <code>SII_PM_ALIGNMENT_CENTER</code> | Centered |
| <code>SII_PM_ALIGNMENT_RIGHT</code> | Aligned right |

⑧ Barcode symbol (`BarcodeSymbol`)

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

| Constant Name | Description | Syntax ^{*1} |
|--|------------------------------|----------------------|
| <code>SII_PM_BARCODE_UPC_A</code> | UPC-A | (a) |
| <code>SII_PM_BARCODE_UPC_E</code> | UPC-E | (a) |
| <code>SII_PM_BARCODE_EAN13</code> | EAN13 | (a) |
| <code>SII_PM_BARCODE_JAN13</code> | JAN13 | (a) |
| <code>SII_PM_BARCODE_EAN8</code> | EAN8 | (a) |
| <code>SII_PM_BARCODE_JAN8</code> | JAN8 | (a) |
| <code>SII_PM_BARCODE_CODE39</code> | CODE39 | (a), (b) |
| <code>SII_PM_BARCODE_CODE93</code> | CODE93 | (c) |
| <code>SII_PM_BARCODE_CODE128</code> | CODE128 | (c) |
| <code>SII_PM_BARCODE_ITF</code> | ITF | (a), (b) |
| <code>SII_PM_BARCODE_CODABAR</code> | CODABAR | (a), (b) |
| <code>SII_PM_BARCODE_EAN13_ADDON</code> | EAN13 add-on | (a) |
| <code>SII_PM_BARCODE_JAN13_ADDON</code> | JAN13 add-on | (a) |
| <code>SII_PM_BARCODE_GS1_OMNI_DIRECTIONAL</code> | GS1 Databar Omni-directional | (a) |
| <code>SII_PM_BARCODE_GS1_TRUNCATED</code> | GS1 Databar Truncated | (a) |
| <code>SII_PM_BARCODE_GS1_LIMITED</code> | GS1 Databar Limited | (a) |
| <code>SII_PM_BARCODE_GS1_EXPANDED</code> | GS1 Databar Expanded | (a) |

*1: See `printBarcode` for details of syntax.

⑨ 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 | printBarcode |
| 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 | printPDF417 |
| 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 | printQRcode |
| SII_PM_QR_MODULE_SIZE_2 | 2 dots | |
| 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 | |

| Constant Name | Description | Method to Use |
|----------------------------------|-------------|--|
| SII_PM_DATAMATRIX_MODULE_SIZE_2 | 2 dots | printDataMatrix |
| 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 | |
| SII_PM_GS1DATABAR_MODULE_SIZE_2 | 2 dots | <ul style="list-style-type: none"> ● printGS1DataBarStacked ● printGS1DataBarStackedOmnidirectional ● printGS1DataBarExpandedStacked |
| 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 | |

⑩ HRI character print position (`HriPosition`)

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

| Constant Name | Description |
|--|--------------------------------|
| <code>SII_PM_HRI_NONE</code> | Not printed |
| <code>SII_PM_HRI_POSITION_ABOVE</code> | Above barcode |
| <code>SII_PM_HRI_POSITION_BELOW</code> | Below barcode |
| <code>SII_PM_HRI_POSITION_ABOVE_BELOW</code> | Above and below barcode (both) |

⑪ N:W ratio (`NwRatio`)

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

| Constant Name | Description |
|------------------------------------|-------------|
| <code>SII_PM_NWRATIO_1TO2</code> | 1:2 |
| <code>SII_PM_NWRATIO_1TO2_5</code> | 1:2.5 |
| <code>SII_PM_NWRATIO_1TO3</code> | 1:3 |

⑫ 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 | printPDF417 |
| <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 | printQRcode |
| <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 | |

⑬ PDF417 symbol (Pdf417Symbol)

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

| Constant Name | Description |
|------------------------|----------------|
| SII_PM_PDF417_STANDARD | PDF417 |
| SII_PM_PDF417_COMPACT | Compact PDF417 |

⑭ QR Code Model (QrModel)

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

| Constant Name | Description |
|-------------------|-----------------|
| SII_PM_QR_MODEL_2 | QR Code Model 2 |

⑮ 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 |

| Constant Name | Description |
|----------------------------|------------------------------|
| 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 |

⑩ MaxiCode Mode (MaxiCodeMode)

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

| Constant Name | Description |
|--------------------|-------------|
| SII_PM_MAXI_CODE_2 | Mode2 |
| SII_PM_MAXI_CODE_3 | Mode3 |
| SII_PM_MAXI_CODE_4 | Mode4 |
| SII_PM_MAXI_CODE_5 | Mode5 |

⑪ 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 |
| SII_PM_CUT_FULL | Enabled | Full cut |
| SII_PM_CUT_FULL_NO_FEED | Disabled | |
| SII_PM_CUT_PARTIAL | Enabled | Partial cut |
| SII_PM_CUT_PARTIAL_NO_FEED | Disabled | |

⑱ Form feed position (FeedPosition)

Constants of enumerated type used for the form feed position of marked paper or label are shown in the following table.

| Constant Name | Description |
|---------------------------|--|
| SII_PM_FEED_CUTTER | After detecting the mark or gap, feeds the paper to the cut position. The paper feed length is the length of the memory switches MS 8 to 9 (Mark Position Correction) of the printer. The default of the paper feed length is 58 dots (7.25 mm). |

⑲ Drawer number (DrawerNum)

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

| Constant Name | Description |
|------------------------|-------------|
| SII_PM_DRAWER_1 | Drawer 1 |
| SII_PM_DRAWER_2 | Drawer 2 |

⑳ Pulse width (PulseWidth)

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

| 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 |

⑳ 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 |
|--------------------------------------|-------------|
| <code>SII_PM_BUZZER_PATTERN_1</code> | Pattern 1 |
| <code>SII_PM_BUZZER_PATTERN_2</code> | Pattern 2 |
| <code>SII_PM_BUZZER_PATTERN_3</code> | Pattern 3 |
| <code>SII_PM_BUZZER_PATTERN_4</code> | Pattern 4 |

㉑ Dithering (`Dithering`)

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

| Constant Name | Description |
|--|------------------------|
| <code>SII_PM_DITHERING_DISABLE</code> | Dithering is disabled. |
| <code>SII_PM_DITHERING_ERRORDIFFUSION</code> | Dithering is enabled. |

㉒ Batch processing selection (`TransactionFunction`)

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

| Constant Name | Description |
|---------------------------------------|--|
| <code>SII_PM_TRANSACTION_CLEAR</code> | Cancel batch processing |
| <code>SII_PM_TRANSACTION_START</code> | Start batch processing |
| <code>SII_PM_TRANSACTION_PRINT</code> | Finish batch printing and batch processing |

(5) Method Details

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

connect

Start communicating with printer

Starts communicating with the printer.

| | |
|-------------|--|
| Syntax | - (void) connect : (NSInteger)printerModel address: (NSString)address portType: (NSInteger)portType; |
| Parameter | <p>printerModel Printer model constant. See "4.3.1(3)① Printer model" for available constants.</p> <p>address Depends on the setting of portType. ·For SIIPM_PRINTER_PORT_TYPE_BLUETOOTH: Specify the Bluetooth device name (Bluetooth Accessory). Example: "SLP721RT" ·For SIIPM_PRINTER_PORT_TYPE_TCP: Specify the IP address of the printer. Example: "192.168.0.190"</p> <p>portType Port type See "4.3.1(3)⑤ Port type" for available constants.</p> |
| Error | <p>SIIPPrinterException is thrown when an error occurs while this method is being called. See "4.3.3 SIIPPrinterException Class" for details on the error.</p> |
| Description | <p>Call this method before using other SIIPPrinterManager 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 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.</p> <p>• Creating/discarding of socket in TCP/IP connection of the library</p> <p>After connect, the library retains the created socket until disconnect. And connecting to the same printer from other applications is not possible until disconnect.</p> |

Based on the completion of data transmission to the printer, the socket is once discarded after elapsing 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 A concurrent connection from multiple apps to one printer is not supported.

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 **SIIPM_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.

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.

Sends format specified text data to the printer.

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

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

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

| | | |
|-----------|---|---|
| Syntax | <pre> (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; </pre> | |
| Parameter | text | Text data to send to the printer Data size that can be specified at 1 time is 16 KB (16384 bytes). |
| | bold | Bold print See "4.3.1(4)① Bold print (CharacterBold)" for available constants. |
| | underline | Underline See "4.3.1(4)② Underline (CharacterUnderline)" for available constants. |
| | reverse | Reverse print See "4.3.1(4)③ Reverse print (CharacterReverse)" for available constants. |
| | inversion | Inversion print See "4.3.1(4)④ Inversion print (CharacterInversion)" for available constants. |
| | font | Character font See "4.3.1(4)⑤ Character font (CharacterFont)" for available constants. |
| | scale | Character scale See "4.3.1(4)⑥ Character scale (CharacterScale)" for available constants. |

| | |
|-----------|--|
| alignment | Alignment See "4.3.1(4)⑦ 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 | 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.

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 | <pre>(a) - (void) printBarcode: (BarcodeSymbol)barcodeSymbol text: (NSString *)text moduleSize: (ModuleSize)moduleSize moduleHeight: (NSInteger)moduleHeight hriPosition: (HriPosition)hriPosition hriFont: (CharacterFont)hriFont alignment: (PrintAlignment)alignment; (b) - (void) printBarcode: (BarcodeSymbol)barcodeSymbol text: (NSString *)text moduleSize: (ModuleSize)moduleSize moduleHeight: (NSInteger)moduleHeight hriPosition: (HriPosition)hriPosition hriFont: (CharacterFont)hriFont alignment: (PrintAlignment)alignment nwRatio: (NwRatio)nwRatio; (c) - (void) printBarcode: (BarcodeSymbol)barcodeSymbol data: (NSData*)data moduleSize: (ModuleSize)moduleSize moduleHeight: (NSInteger)moduleHeight hriPosition: (HriPosition)hriPosition hriFont: (CharacterFont)hriFont alignment: (PrintAlignment)alignment; (d) - (void) printBarcode: (BarcodeSymbol)barcodeSymbol text: (NSString *)text moduleSize: (ModuleSize)moduleSize alignment: (PrintAlignment)alignment;</pre> |
|--------|--|

| | | |
|-----------|---------------|--|
| Parameter | barcodeSymbol | Barcode symbol See "4.3.1(4)⑧ 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' | |
| 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)⑨ Module size (ModuleSize)" for available constants.

moduleHeight

Barcode height (dot)

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

SII_PM_BARCODE_UPC_A
 SII_PM_BARCODE_UPC_E
 SII_PM_BARCODE_EAN13
 SII_PM_BARCODE_JAN13
 SII_PM_BARCODE_EAN8
 SII_PM_BARCODE_JAN8
 SII_PM_BARCODE_CODE39
 SII_PM_BARCODE_CODE93
 SII_PM_BARCODE_CODE128
 SII_PM_BARCODE_ITF
 SII_PM_BARCODE_CODABAR
 SII_PM_BARCODE_EAN13_ADDON
 SII_PM_BARCODE_JAN13_ADDON

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

| barcodeSymbol | | |
|--|-------------------------------|-------------|
| | moduleSize | Valid Range |
| 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 |

| | | |
|------------------------------------|--------------------------------------|-------------|
| barcodeSymbol | | |
| | moduleSize | Valid Range |
| 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 |

| | |
|-------------|---|
| hriPosition | HRI character print position See "4.3.1(4)⑩ HRI character print position (HriPosition)" for available constants. |
| hriFont | HRI character font See "4.3.1(4)⑤ Character font (CharacterFont)" for available constants. |
| alignment | Alignment See "4.3.1(4)⑦ Alignment (PrintAlignment)" for available constants. |
| nwRatio | N:W ratio See "4.3.1(4)⑪ 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. |

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)⑫ 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)⑨ 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)⑦ Alignment (PrintAlignment)" for available constants. |
| | pdf417Symbol | PDF417 symbol See "4.3.1(4)⑬ 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). |
| | errorCorrection | Error correction level See "4.3.1(4)⑫ Error correction level (ErrorCorrection)" for available constants. |
| | moduleSize | Module size See "4.3.1(4)⑨ Module size (ModuleSize)" for available constants. |
| | alignment | Alignment See "4.3.1(4)⑦ Alignment (PrintAlignment)" for available constants. |
| | model | QR Code Model See "4.3.1(4)⑭ QR Code Model (QrModel)" 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. | |

printDataMatrix

Print Data Matrix

Prints Data Matrix.

| | | |
|-----------|--|-------------------------------------|
| Syntax | - (void) printDataMatrix: (NSString *)text dataMatrixModule: (DataMatrixModule)dataMatrixModule moduleSize: (ModuleSize)moduleSize alignment: (PrintAlignment)alignment; | |
| Parameter | text | Barcode data to send to the printer |

| | |
|-------------------------------|---|
| <code>dataMatrixModule</code> | Number of Data Matrix modules See "4.3.1(4)⑮ Data Matrix module (<code>DataMatrixModule</code>)" for available constants. |
| <code>moduleSize</code> | Module size See "4.3.1(4)⑨ Module size (<code>ModuleSize</code>)" for available constants. |
| <code>alignment</code> | Alignment See "4.3.1(4)⑦ 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 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. |

| | |
|----------------------------|----------------|
| <code>printMaxiCode</code> | Print MaxiCode |
|----------------------------|----------------|

Prints MaxiCode.

| | | |
|-----------|---|--|
| Syntax | <pre> - (void) printMaxiCode: (NSString *)text maxiCodeMode: (MaxiCodeMode)maxiCodeMode alignment: (PrintAlignment)alignment; </pre> | |
| Parameter | <code>text</code> | Barcode data to send to the printer <ul style="list-style-type: none"> When <code>maxiCodeMode</code> is <code>SII_PM_MAXI_CODE_2</code>: 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 <code>SII_PM_MAXI_CODE_3</code>: Add service class (3 digits), country code (3 digits), and postal code (6 digits) to the beginning of the data. |
| | <code>maxiCodeMode</code> | MaxiCode Mode See "4.3.1(4)⑯ MaxiCode Mode (<code>MaxiCodeMode</code>)" for available constants. |
| | <code>alignment</code> | Alignment See "4.3.1(4)⑦ 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 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)⑨ Module size (ModuleSize)" for available constants. |
| | alignment | Alignment See "4.3.1(4)⑦ 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. | |

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)⑨ Module size (ModuleSize)" for available constants. |
| | alignment | Alignment See "4.3.1(4)⑦ 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. | |

Prints GS1 Databar Expanded Stacked.

| | |
|-----------|--|
| Syntax | - (void) printGS1DataBarExpandedStacked: (NSString *)text column: (NSInteger) column moduleSize: (ModuleSize) moduleSize alignment: (PrintAlignment) alignment; |
| Parameter | <p>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.</p> <p>column Number of columns Specify the number of columns in 1 line. An even number from 2 to 20 is valid.</p> <p>moduleSize Module size See "4.3.1(4)⑨ Module size (ModuleSize)" for available constants.</p> <p>alignment Alignment See "4.3.1(4)⑦ Alignment (PrintAlignment)" for available constants.</p> |
| 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. |

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; |
|--------|---|

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

| | |
|-----------|--|
| Syntax | - (void) cutPaper: (CuttingMethod) cuttingMethod; |
| Parameter | <p>cuttingMethod Cutting method See "4.3.1(4)⑪ Cutting method (CuttingMethod)" for available constants.</p> |
| 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. |

Performs the paper form feed of marked paper or label to the cut position.

| | | |
|-----------|--|--|
| Syntax | - (void) feedPosition: (FeedPosition) feedPosition; | |
| Parameter | feedPosition | Form feed position See "4.3.1(4)⑩ Form feed position (FeedPosition)" 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 paper form feed is not performed when this method is executed at the form feed position of the marked paper or the label. | |

Opens the specified cash drawer.
Supported only by SLP721RT.

| | | |
|-----------|--|---|
| Syntax | - (void) openDrawer: (DrawerNum) drawerNum onOffTime: (PulseWidth) onOffTime; | |
| Parameter | drawerNum | Drawer number See "4.3.1(4)⑩ Drawer number (DrawerNum)" for available constants. |
| | onOffTime | Pulse width See "4.3.1(4)⑩ 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. | |

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

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

Sounds the external buzzer.
Supported only by SLP721RT.

| | | |
|-----------|---|--|
| Syntax | - (void) externalBuzzer: (BuzzerPattern)buzzerPattern buzzerCount: (NSInteger)buzzerCount; | |
| Parameter | buzzerPattern | Buzzer pattern See "4.3.1(3)② Buzzer pattern (BuzzerPattern)" for available constants. The external buzzer sound stops under one of the following conditions: <ul style="list-style-type: none"> · 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. | |

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. | |

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>Name of data file to send to the printer The maximum file size that can be specified is 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 the settings of 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)⑦ 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)② 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> |

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 | Cutter error | No error | Error |
| 4 | Out-of-paper error | No error | Error |
| 5 | Reserved | Fixed | - |
| 6 | Paper jam error while detecting mark | No error | Error |
| 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 | Taken sensor status | Paper removed | Paper removal waiting |
| 14 | Reserved | - | Fixed |
| 15 | Drawer switch input status | Low ^{*1} | High |
| 16 | FLASH memory rewriting | Not rewriting | Rewriting |
| 17 to 18 | Reserved | Fixed | - |
| 19 to 31 | Reserved | - | Fixed |

*1: Low is fixed in SLP720RT.

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 executing this method, 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 | <pre> (a) - (void) registerLogo: (NSString *) fileName logoId: (NSString *) logoId dithering: (Dithering) dithering; (b) - (void) registerLogo: (NSString *) fileName logoId: (NSString *) logoId; </pre> | |
| Parameter | fileName | <p>File name 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.</p> |
| | logoId | <p>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').</p> |
| | dithering | <p>Dithering See "4.3.1(4)② 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> | |

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)</p> <p>Specify the ID of the registered logo as a character string.</p> |
| | alignment | <p>Alignment</p> <p>See "4.3.1(4)⑦ Alignment (PrintAlignment)" for available constants.</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> | |

Delete registered logo

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. |

Register style sheet

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

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

Delete registered style sheet

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

Syntax - (void) **unregisterStyleSheet**: (NSInteger)cssId;

Performs a hardware reset of the printer.

Syntax - (void) **resetPrinter**;

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 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 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 responseId Response type constant
 See "4.3.1(3)② 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). |
| 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. |

| Response Type Constant | |
|---|---|
| Parameter | Description |
| 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 <code>SIIDiscoveryPrinterCompletion</code> is as follows: <pre>typedef void(^SIIDiscoveryPrinterCompletion) (NSArray *printerList);</pre> | |

cancelDiscoveryPrinter

Cancel printer search

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

| | |
|-------------|---|
| Syntax | - (void) cancelDiscoveryPrinter ; |
| Description | This method is available only when <code>portType</code> of <code>connect</code> is SII_PM_PRINTER_PORT_TYPE_TCP . The cancellation of the search is notified as an event to the block set to <code>completion</code> of startDiscoveryPrinter . |
| | |

Get found printer information

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

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

| | |
|--------------|----------------------------------|
| Return value | NSArray type printer information |
|--------------|----------------------------------|

| | |
|-------------|---|
| Description | This method is available only when <code>portType</code> of <code>connect</code> is SII_PM_PRINTER_PORT_TYPE_TCP . |
|-------------|---|

See "4.3.2 SIIPrinterInfo Class" for details of the printer information.

Get SDK version

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 be executed regardless of whether isConnect is YES or NO. |
|-------------|--|

Print label

Prints labels.

```
Syntax      - (void)printSmartLabelImageData:
              (SIISmartLabelManager *)labelManager;
```

| | | |
|-----------|---------------------------|--|
| Parameter | <code>labelManager</code> | The class to provide the function in which converts the label file into the printable data 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 | See " 4.3.5 SIISmartLabelManager Class " for the print example using this method. |
|-------------|---|

Start/End batch processing

Starts or ends batch processing.

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

| | | |
|-----------|---------|---|
| Parameter | control | Batch processing selection See "4.3.1(4)㉓ Batch processing selection" 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) Start batch processing. |
|-------------|---|

Specify **SII_PM_TRANSACTION_START**.

(2) Execute 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) Finish 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  
·feedPosition  
·sendBinary  
·sendDataFile  
·printLogo*1  
·printSmartLabelImageData
```

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

(6) Common Property Details

`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 the value is specified less than 100, the period is set to 100 ms. When the value is specified more than 300000, the period is set to 300000 ms. |
| Default | 10000 |
| Description | This property 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 the value is specified less than 100, the period is set to 100 ms. When the value is specified more than 300000, the period is set to 300000 ms. |
| Default | 10000 |
| Description | This property 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)③ International character set" 4.3.1(3)① 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, or sendDataFile, 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 | See "4.3.1(3)④ Codepage" for configurable constants. When an invalid value is specified, it is ignored. When this property is not set, the codepage is as follows depending on the language setting of iOS device. When the language setting of iOS device is Japanese: SII_PM_CODE_PAGE_KATAKANA When the language setting of iOS device is other than Japanese: SII_PM_CODE_PAGE_1252 The encoder used for sending the text data by sendText , sendTextEx , or sendDataFile , is changed. See "Appendix A Character Set" for characters to be printed. |

Gets the value of the connecting printer model.

| | |
|--------------|--|
| Syntax | @property(readonly) NSInteger printerModel ; |
| Default | -1 |
| Return value | See "4.3.1(3)① Printer model" for available constants. When isConnect is NO, -1 is returned. |

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

| | |
|--------------|--|
| Syntax | @property(readonly) NSInteger portType ; |
| Default | -1 |
| Return value | See "4.3.1(3)⑤ Port type" for available constants. When isConnect is NO, -1 is returned. |

Verifies connection state with the printer.

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

Gets or sets the socket keeping time.

| | |
|-------------|--|
| Syntax | @property NSInteger socketKeepingTime ; |
| Valid range | 60000 to 300000 (millisecond: ms) When the value is specified less than 60000, the time is set to 60000 ms. When the value is specified more than 300000, the time is set to 300000 ms. |
| Default | 300000 |
| Description | This property 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 | @property(weak, nonatomic) id<SIIPrinterManagerDelegate> delegate ; |
| 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 notification of the printer status is stopped. |

Gets or sets the paper when printing label file.

| | |
|-------------|--|
| Syntax | @property NSInteger printSmartLabelMode ; |
| Description | See "4.3.1(3)⑥ Paper selection with or without mark when printing label file" for details of the value. When an invalid value is specified, it is ignored. When this property is not set, SII_PM_PRINTSMARTLABEL_MODE_MARK is set. This property can get or set the paper regardless of whether isConnect is YES or NO. When specifying the marked paper, feeds the paper to the print start position with feeding the paper backward at printSmartLabelImageData execution. When specifying the paper without the mark, the paper is not fed to the print start position at printSmartLabelImageData execution. |

4.3.2 SIIPrinterInfo Class

SIIPrinterInfo 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_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_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 |
| SII_PM_ERROR_INVALID_NO | The specified value for the logo ID is invalid. | -501 |
| SII_PM_ERROR_LABEL_FILE_NOT_SELECTED | The label file is not selected. | -521 |
| SII_PM_ERROR_GET_LABEL_IMAGE | Failed to create the label image. | -522 |
| 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 |

(NOTE) SLP720RT/SLP721RT do not support the APIs of the barcode scanner.

(2) Method Details

```
didStatusChange                                Notify printer status
```

Notifies changes in the 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.

4.3.5 SIISmartLabelManager Class

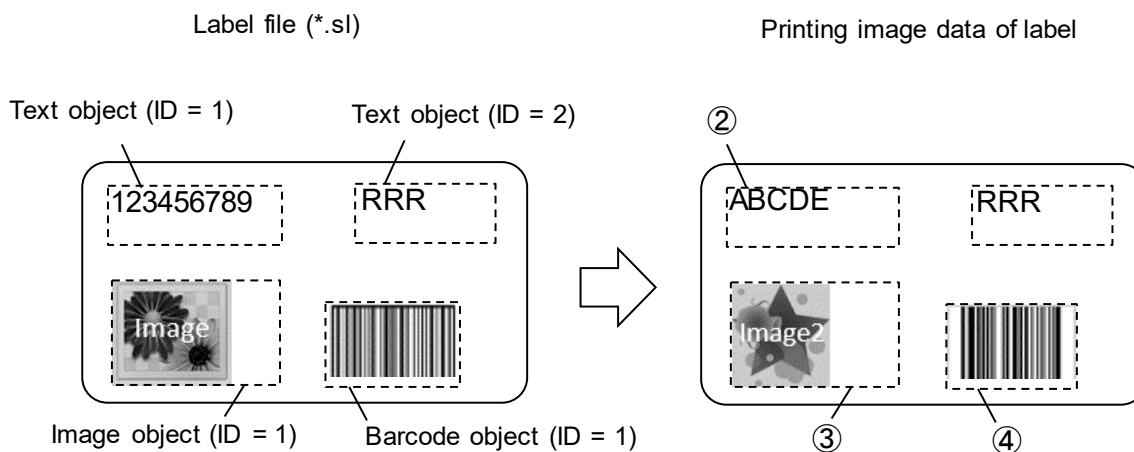
SIISmartLabelManager class provides the function to convert the label file (*.sl) created using the app into the printable data from the printer.

(1) Method List

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

| Name | Description |
|-------------------------------------|-------------------------------|
| selectSmartLabelFile | Specify label file |
| replaceSmartLabelTextData | Replace text data of label |
| replaceSmartLabelImageData | Replace image data of label |
| replaceSmartLabelBarcodeData | Replace barcode data of label |

The example of the procedure for replacing and printing data using the label file is described below.



- ① Specify a label file to print or replace data.

```
[labelManager selectSmartLabelFile:filePath];
```

- ② Replace text data.

```
[labelManager replaceSmartLabelTextData:1 text:@"ABCDE"];
```

- ③ Replace image data.

```
[labelManager replaceSmartLabelImageData:1 image:SeasonImage];
```

- ④ Replace barcode data.

```
[labelManager replaceSmartLabelBarcodeData:1 text:@"123456789"];
```

- ⑤ Print labels.

```
[printerManager printSmartLabelImageData:labelManager];
```

(2) Method Details

```
selectSmartLabelFile
```

Specify label file

Specifies a label file (*.sl).

Syntax - (void) **selectSmartLabelFile:**(NSString *)fileName;

| | | |
|-----------|-----------------------|--|
| Parameter | <code>fileName</code> | Name of label file (*.sl) to use Specify the label file created in the app. |
|-----------|-----------------------|--|

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 specified label file (*.sl) is retained internally. After specifying the label file, the data of each object can be replaced. |
|-------------|--|

The label files that can be used are restricted. See "4.1.1 Structure of Label File" for restrictions.

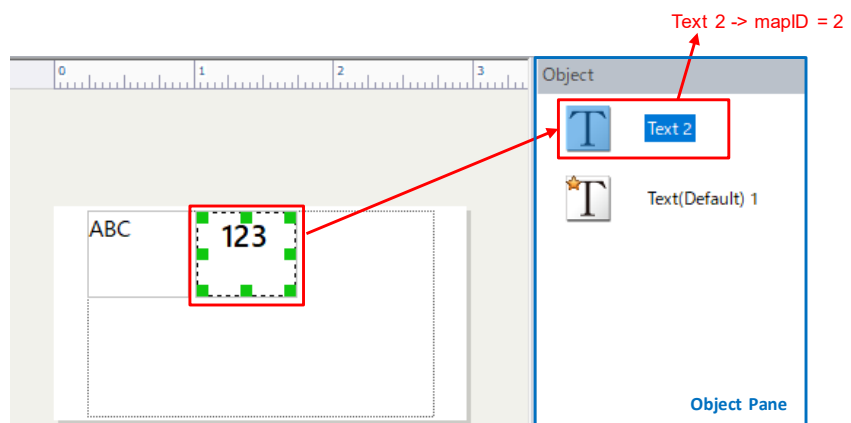
```
replaceSmartLabelTextData
```

Replace text data of label

Replaces the value of the text object of the label file (*.sl).

```
Syntax      - (void) replaceSmartLabelTextData: (NSInteger)mapID
                                     text: (NSString *)text;
```

| | | |
|-----------|-------|---|
| Parameter | mapID | ID of text object Specify the ID of the text object mapped on the label file (*.sl) of the app. The ID of the text object can be confirmed on the UI display of the app. |
|-----------|-------|---|



UI display of Smart Label Creator



UI display of SII Layout Editor

text

Text data to replace

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.

```
replaceSmartLabelImageData
```

Replace image data of label

Replaces the image object of the label file (*.sl).

Syntax

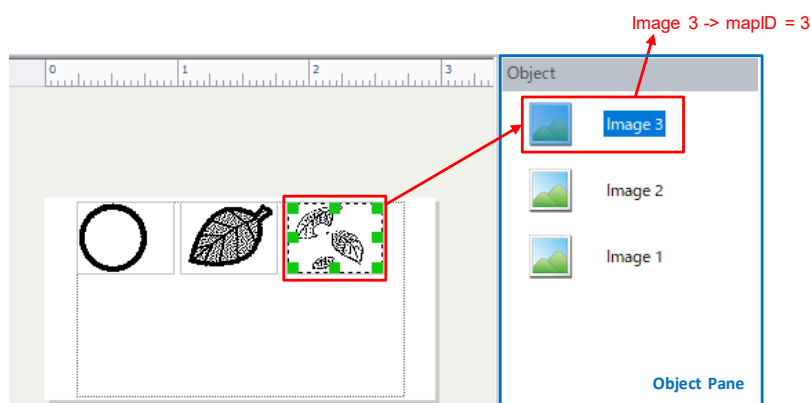
```
- (void)replaceSmartLabelImageData: (NSInteger)mapID
                                image: (UIImage *)image;
```

Parameter

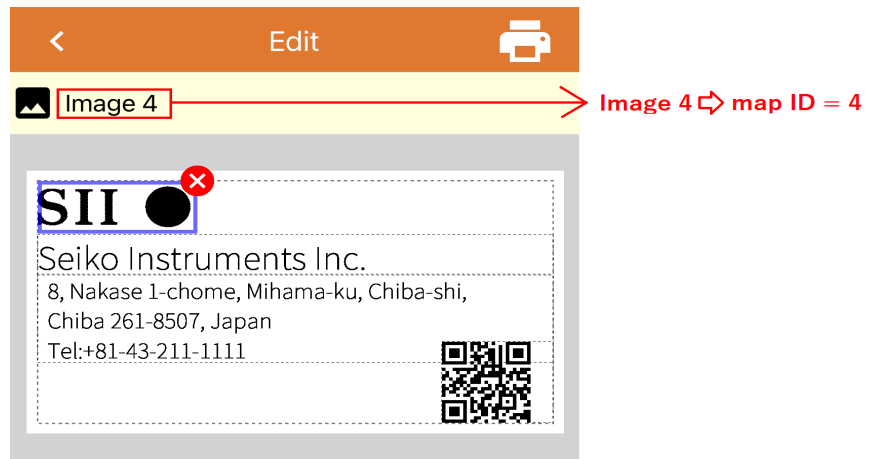
mapID

ID of the image object

Specify the ID of the image object mapped on the label file (*.sl) of the app. The ID of the image object can be confirmed on the UI display of the app.



UI display of Smart Label Creator



UI display of SII Layout Editor

image Image data to replace

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.

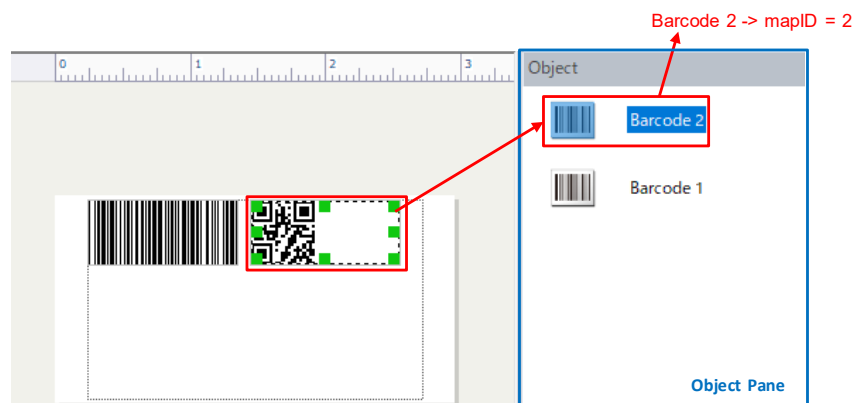
`replaceSmartLabelBarcodeData`

Replace barcode data of label

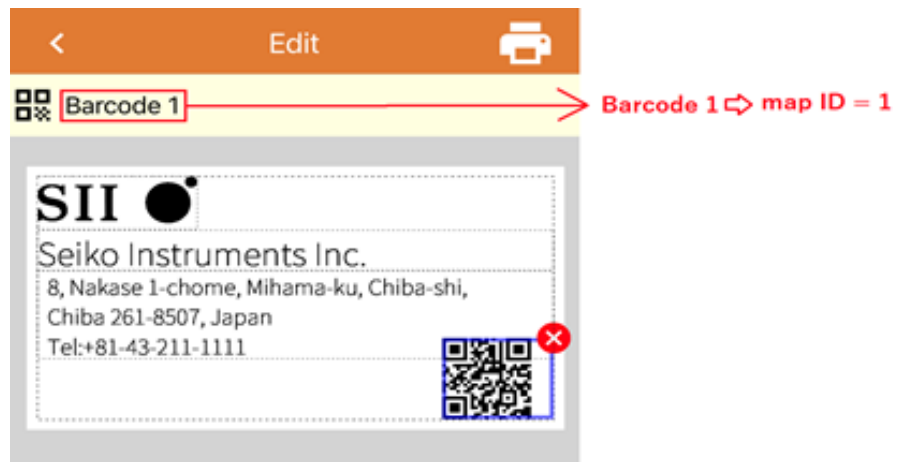
Replaces the value of the barcode object of the label file (*.sl).

Syntax - (void) **replaceSmartLabelBarcodeData**: (NSInteger)mapID
text: (NSString *)text

Parameter mapID ID of the barcode object
Specify the ID of the barcode object mapped on the label file (*.sl) of the app. The ID of the barcode object can be confirmed on the UI display of the app.



UI display of Smart Label Creator



UI display of Layout Editor

text Text data to replace
 Even if the text data to be replaced is invalid barcode data, an error is not caused. Make sure that the barcode data is valid before specifying it.

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.

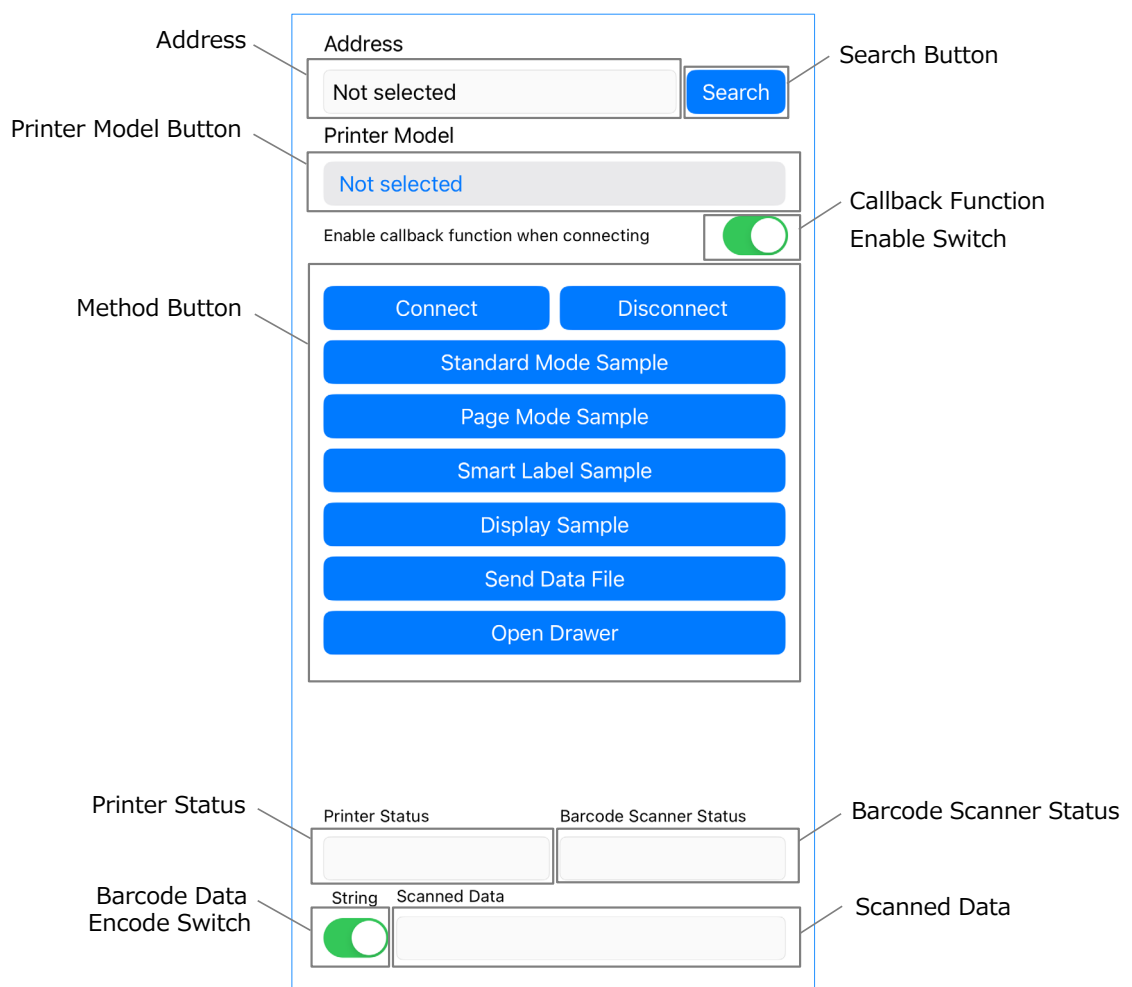
Chapter 5

Sample Program

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

5.1 Screen Layout

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



| Item | Description |
|---------------------------------|--|
| 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 view. A list of the searched printers is displayed. The printer is selected by tapping the searched printer and returns to the main view. |
| 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. SLP720RT/SLP721RT do not support the barcode scanner. |
| Barcode Data Encode Switch | Selects the conversion of barcode data read by the barcode scanner. SLP720RT/SLP721RT do not support the barcode scanner. |
| Scanned Data | Displays the barcode data read by the barcode scanner. SLP720RT/SLP721RT do not support the barcode scanner. |

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

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 **SIH_PM_COUNTRY_USA** is set for the international character set are shown below. Print results of the specific character codes 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 | L | L | T | T | T | T | T | T | T | T | T | T | T | T | T | T |
| D0 | ⌌ | ⌌ | ⌌ | ⌌ | ⌌ | ⌌ | ⌌ | ⌌ | ⌌ | ⌌ | ⌌ | ⌌ | ⌌ | ⌌ | ⌌ | ⌌ |
| E0 | α | β | Γ | π | Σ | σ | μ | τ | φ | θ | Ω | δ | ∞ | φ | ε | ∩ |
| F0 | ≡ | ± | ≥ | ≤ | | J | ÷ | ≈ | ° | • | • | √ | n | 2 | ■ | |

Figure A-1 SIH_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 SHI_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 | α |
| D0 | ð | Ð | Ê | Ë | È | Í | Î | Ï | ⌋ | ⌋ | ■ | ■ | ■ | ■ | ■ | ■ |
| E0 | Ó | β | Ô | Ò | Õ | μ | þ | þ | Ú | Û | Ü | ý | Ý | - | ' | |
| F0 | - | ± | = | ¾ | ¶ | § | ÷ | , | ° | … | . | ¹ | ³ | ² | ■ | |

Figure A-3 SHI_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 | ☐ | ☐ | ☐ | | † | ‡ | | π | ¶ | | | ¶ | ¶ | ¶ | ¶ | ¶ |
| C0 | L | ⊥ | T | ⊥ | ⊥ | ⊥ | ⊥ | ⊥ | ⊥ | ⊥ | ⊥ | ⊥ | ⊥ | ⊥ | ⊥ | ⊥ |
| D0 | ⊥ | ⊥ | ⊥ | ⊥ | ⊥ | ⊥ | ⊥ | ⊥ | ⊥ | ⊥ | ⊥ | ⊥ | ⊥ | ⊥ | ⊥ | ⊥ |
| E0 | α | β | Γ | π | Σ | σ | μ | τ | φ | θ | Ω | δ | ∞ | φ | ε | Π |
| F0 | ≡ | ± | ≥ | ≤ | ∫ | J | ÷ | ≈ | ° | • | • | √ | n | 2 | ■ | |

Figure A-4 SII_PM_CODE_PAGE_860 (Portuguese)

| | | | | | | | | | | | | | | | | |
|----|---|---|---|----|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | A | B | C | D | E | F |
| 20 | ! | " | # | \$ | % | & | ' | (|) | * | + | , | - | . | / | |
| 30 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | : | ; | < | = | > | ? |
| 40 | @ | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O |
| 50 | P | Q | R | S | T | U | V | W | X | Y | Z | [| \ |] | ^ | _ |
| 60 | ` | a | b | c | d | e | f | g | h | i | j | k | l | m | n | o |
| 70 | p | q | r | s | t | u | v | w | x | y | z | { | | } | ~ | |
| 80 | Ç | ü | é | â | À | à | ¶ | ç | ê | ë | è | ï | î | ⊥ | À | § |
| 90 | É | È | Ê | ô | Ë | Ï | Ô | Ù | ⊥ | Ô | Ü | ¢ | £ | Ù | Ù | f |
| A0 | í | ó | ú | ¨ | ³ | - | î | ¬ | ¬ | ½ | ¼ | ¾ | « | » | | |
| B0 | ☐ | ☐ | ☐ | | † | ‡ | | π | ¶ | | | ¶ | ¶ | ¶ | ¶ | ¶ |
| C0 | L | ⊥ | T | ⊥ | ⊥ | ⊥ | ⊥ | ⊥ | ⊥ | ⊥ | ⊥ | ⊥ | ⊥ | ⊥ | ⊥ | ⊥ |
| D0 | ⊥ | ⊥ | ⊥ | ⊥ | ⊥ | ⊥ | ⊥ | ⊥ | ⊥ | ⊥ | ⊥ | ⊥ | ⊥ | ⊥ | ⊥ | ⊥ |
| E0 | α | β | Γ | π | Σ | σ | μ | τ | φ | θ | Ω | δ | ∞ | φ | ε | Π |
| F0 | ≡ | ± | ≥ | ≤ | ∫ | J | ÷ | ≈ | ° | • | • | √ | n | 2 | ■ | |

Figure A-5 SII_PM_CODE_PAGE_863 (Canadian-French)

| | | | | | | | | | | | | | | | | |
|----|---|---|---|----|---|---|---|---|---|---|---|---|---|---|----|---|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | A | B | C | D | E | F |
| 20 | ! | " | # | \$ | % | & | ' | (|) | * | + | , | - | . | / | |
| 30 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | : | ; | < | = | > | ? |
| 40 | @ | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O |
| 50 | P | Q | R | S | T | U | V | W | X | Y | Z | [| \ |] | ^ | _ |
| 60 | ` | a | b | c | d | e | f | g | h | i | j | k | l | m | n | o |
| 70 | p | q | r | s | t | u | v | w | x | y | z | { | | } | ~ | |
| 80 | Ç | ü | é | â | ä | à | å | ç | ê | ë | è | ï | î | ï | Ä | Å |
| 90 | É | æ | Æ | ô | ö | ò | û | ù | ÿ | Ö | Ü | ø | £ | Ø | Pt | f |
| A0 | á | í | ó | ú | ñ | Ñ | ä | ö | í | í | ½ | ¼ | í | « | » | |
| 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 | ï | 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 | ı | ® | ¬ | ½ | ¼ | ı | « | » |
| B0 | ☐ | ☐ | ☐ | | | | | | | | | | | | | |
| C0 | L | L | T | | | | | | | | | | | | | |
| D0 | ⌌ | ⌌ | ⌌ | ⌌ | ⌌ | ⌌ | ⌌ | ⌌ | ⌌ | ⌌ | ⌌ | ⌌ | ⌌ | ⌌ | ⌌ | ⌌ |
| E0 | ó | β | ô | ò | õ | õ | μ | | × | ú | û | ü | ı | 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 | ⌘ | ⌘ | ⌘ | | | | | | | | | | | | | |
| C0 | L | L | T | | | | | | | | | | | | | |
| D0 | ⌘ | ⌘ | ⌘ | ⌘ | ⌘ | ⌘ | ⌘ | ⌘ | ⌘ | ⌘ | ⌘ | ⌘ | ⌘ | ⌘ | ⌘ | ⌘ |
| E0 | ω | ά | έ | ή | ï | í | ó | ý | ÿ | ώ | À | É | Η | Ι | Ο | Υ |
| F0 | Ω | ± | ≥ | ≤ | İ | ÿ | ÷ | ≈ | ° | . | . | √ | n | 2 | | |

Figure A-8 SII_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 SII_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 SH_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 | ␣ | ␣ | ␣ | | | Á | Â | Ě | Š | | | | | Ž | ž | |
| C0 | ␣ | ␣ | ␣ | ␣ | ␣ | Ä | ä | Ł | ł | Ł | ł | Ł | ł | Ł | Ł | Ł |
| D0 | đ | Đ | Ď | Ě | ď | Ň | í | î | ě | Ĵ | Ĵ | ■ | ■ | Ť | Ů | ■ |
| E0 | Ó | ß | Ô | Ň | ň | ň | Š | š | Ř | Ú | ř | Ů | ý | Ý | ť | ' |
| F0 | - | " | ˘ | ˘ | ˘ | Š | ÷ | ˘ | ˘ | ˘ | ˘ | Ů | Ř | ř | ■ | |

Figure A-11 SH_PM_CODE_PAGE_852 (Eastern Europe)

| | | | | | | | | | | | | | | | | |
|----|---|---|---|----|---|---|---|---|---|----|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | A | B | C | D | E | F |
| 20 | ! | " | # | \$ | % | & | ' | (|) | * | + | , | - | . | / | |
| 30 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | : | ; | < | = | > | ? |
| 40 | @ | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O |
| 50 | P | Q | R | S | T | U | V | W | X | Y | Z | [| \ |] | ^ | _ |
| 60 | ` | a | b | c | d | e | f | g | h | i | j | k | l | m | n | o |
| 70 | p | q | r | s | t | u | v | w | x | y | z | { | | } | ~ | |
| 80 | Ç | ü | é | â | ä | à | â | ç | ê | ë | è | ï | î | ì | Ä | Å |
| 90 | É | æ | Æ | ô | ö | ò | û | ü | ö | Ü | ø | £ | Ø | × | f | |
| A0 | á | í | ó | ú | ñ | Ñ | ä | ö | ¿ | ® | ¬ | ½ | ¼ | ¡ | « | » |
| B0 | ☐ | ☐ | ☐ | | | Á | Â | Ã | © | | | ¶ | ¶ | ¢ | ¥ | ₱ |
| C0 | L | L | T | | | ã | Ã | ℓ | ℓ | ℓ | ℓ | ℓ | ℓ | = | ℓ | α |
| D0 | ð | Ð | Ê | Ë | È | € | Í | Î | Ï | Ј | Г | ■ | ■ | І | İ | ■ |
| E0 | ó | β | ô | ò | õ | õ | μ | þ | þ | ú | û | ü | ý | ý | - | ' |
| F0 | - | ± | = | ¾ | ¶ | § | ÷ | , | ° | .. | . | 1 | 3 | 2 | | ■ |

Figure A-12 SII_PM_CODE_PAGE_858 (Euro)

| | | | | | | | | | | | | | | | | |
|----|---|---|---|----|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | A | B | C | D | E | F |
| 20 | ! | " | # | \$ | % | & | ' | (|) | * | + | , | - | . | / | |
| 30 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | : | ; | < | = | > | ? |
| 40 | @ | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O |
| 50 | P | Q | R | S | T | U | V | W | X | Y | Z | [| \ |] | ^ | _ |
| 60 | ` | a | b | c | d | e | f | g | h | i | j | k | l | m | n | o |
| 70 | p | q | r | s | t | u | v | w | x | y | z | { | | } | ~ | |
| 80 | ђ | Ђ | ѓ | Ѓ | ё | Ё | є | Є | ѕ | Ѕ | і | І | ї | Ї | ј | Ј |
| 90 | љ | Љ | њ | Њ | ћ | Ћ | ќ | Ќ | џ | Џ | џ | џ | џ | џ | џ | џ |
| A0 | а | А | б | Б | в | В | г | Г | д | Д | е | Е | ф | Ф | г | Г |
| B0 | ☐ | ☐ | ☐ | | | х | Х | и | И | | | ¶ | ¶ | й | Й | ₱ |
| C0 | L | L | T | | | к | К | ℓ | ℓ | ℓ | ℓ | ℓ | ℓ | = | ℓ | α |
| D0 | л | Л | м | М | н | Н | о | О | п | П | г | ■ | ■ | П | я | ■ |
| E0 | Я | р | Р | с | С | т | Т | у | У | ж | Ж | в | В | ь | ь | № |
| F0 | - | ы | Ы | э | Э | ш | Ш | э | Э | щ | Щ | ч | Ч | § | | ■ |

Figure A-13 SII_PM_CODE_PAGE_855 (Cyrillic)

| | | | | | | | | | | | | | | | | |
|----|---|---|---|----|---|---|---|---|---|-----|-----|-----|-----|-----|-----|-----|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | A | B | C | D | E | F |
| 20 | ! | " | # | \$ | % | & | ' | (|) | * | + | , | - | . | / | |
| 30 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | : | ; | < | = | > | ? |
| 40 | @ | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O |
| 50 | P | Q | R | S | T | U | V | W | X | Y | Z | [| \ |] | ^ | _ |
| 60 | ` | a | b | c | d | e | f | g | h | i | j | k | l | m | n | o |
| 70 | p | q | r | s | t | u | v | w | x | y | z | { | | } | ~ | |
| 80 | ° | • | • | √ | ■ | - | | + | + | + | + | + | + | + | + | + |
| 90 | β | ∞ | φ | ± | ½ | ¼ | ≈ | « | » | لَا | لَا | لَا | لَا | لَا | لَا | لَا |
| A0 | - | ل | ل | ل | ل | ل | ل | ل | ل | ل | ل | ل | ل | ل | ل | ل |
| B0 | • | ١ | ٢ | ٣ | ٤ | ٥ | ٦ | ٧ | ٨ | ٩ | ف | س | س | س | س | س |
| C0 | ¢ | ء | آ | أ | ؤ | ع | ئ | ب | ا | ة | ث | ج | ح | خ | د | ذ |
| D0 | ذ | ر | ز | س | ش | ص | ض | ط | ظ | ع | غ | ف | ق | ك | م | ن |
| E0 | - | ف | ق | ك | م | ن | ه | و | ي | ي | ي | ي | ي | ي | ي | ي |
| F0 | - | ن | ه | و | ي | ي | ي | ي | ي | ي | ي | ي | ي | ي | ي | ي |

Figure A-14 SII_PM_CODE_PAGE_864 (Arabic)

| | | | | | | | | | | | | | | | | |
|----|---|---|---|----|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | A | B | C | D | E | F |
| 20 | ! | " | # | \$ | % | & | ' | (|) | * | + | , | - | . | / | |
| 30 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | : | ; | < | = | > | ? |
| 40 | @ | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O |
| 50 | P | Q | R | S | T | U | V | W | X | Y | Z | [| \ |] | ^ | _ |
| 60 | ` | a | b | c | d | e | f | g | h | i | j | k | l | m | n | o |
| 70 | p | q | r | s | t | u | v | w | x | y | z | { | | } | ~ | |
| 80 | € | ‘ | ’ | “ | ” | • | - | - | ™ | š | Š | š | š | š | š | š |
| 90 | ˘ | ˘ | ˘ | ˘ | ˘ | ˘ | ˘ | ˘ | ˘ | ˘ | ˘ | ˘ | ˘ | ˘ | ˘ | ˘ |
| 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 | á | á | á | á | á | á | á | á | á | á | á | á | á | á | á | á |
| 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 | Š | Ě | © | € | « | ¬ | - | ® | İ | |
| B0 | ° | ± | İ | ı | г | μ | ¶ | • | ё | № | е | » | ј | Š | s | ı |
| C0 | А | Б | В | Г | Д | Е | Ж | З | И | Й | К | Л | М | Н | О | П |
| D0 | Р | С | Т | У | Ф | Х | Ц | Ч | Ш | Щ | Ъ | Ы | Ь | Э | Ю | Я |
| E0 | а | б | в | г | д | е | ж | з | и | й | к | л | м | н | о | п |
| F0 | р | с | т | у | ф | х | ц | ч | ш | щ | ъ | ы | ь | э | ю | я |

Figure A-16 SH_PM_CODE_PAGE_1251 (Cyrillic)

| | | | | | | | | | | | | | | | | |
|----|---|---|---|----|---|-----|---|---|---|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | A | B | C | D | E | F |
| 20 | ! | " | # | \$ | % | & | ' | (|) | * | + | , | - | . | / | |
| 30 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | : | ; | < | = | > | ? |
| 40 | @ | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O |
| 50 | P | Q | R | S | T | U | V | W | X | Y | Z | [| \ |] | ^ | _ |
| 60 | ` | a | b | c | d | e | f | g | h | i | j | k | l | m | n | o |
| 70 | p | q | r | s | t | u | v | w | x | y | z | { | | } | ~ | |
| 80 | € | ‘ | ; | ƒ | „ | ... | † | ‡ | ‰ | | < | | | | | |
| 90 | | ‘ | ; | “ | ” | • | - | - | ™ | | > | | | | | |
| A0 | “ | À | £ | ¤ | ¥ | ¦ | § | ¨ | © | | « | ¬ | - | ® | - | |
| B0 | ° | ± | ² | ³ | ´ | μ | ¶ | · | ¸ | ¹ | » | ¼ | ½ | ¾ | ¿ | |
| C0 | ı | Α | Β | Γ | Δ | Ε | Ζ | Η | Θ | Ι | Κ | Λ | Μ | Ν | Ξ | Ο |
| D0 | Π | Ρ | | Σ | Τ | Υ | Φ | Χ | Ψ | Ω | İ | ÿ | ά | έ | ή | ί |
| E0 | ύ | α | β | γ | δ | ε | ζ | η | θ | ι | κ | λ | μ | ν | ξ | ο |
| F0 | π | ρ | ς | σ | τ | υ | φ | χ | ψ | ω | ï | ÿ | ό | ύ | ώ | |

Figure A-17 SH_PM_CODE_PAGE_1253 (Greek)

| | | | | | | | | | | | | | | | | |
|----|---|---|---|----|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | A | B | C | D | E | F |
| 20 | ! | " | # | \$ | % | & | ' | (|) | * | + | , | - | . | / | |
| 30 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | : | ; | < | = | > | ? |
| 40 | @ | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O |
| 50 | P | Q | R | S | T | U | V | W | X | Y | Z | [| \ |] | ^ | _ |
| 60 | ` | a | b | c | d | e | f | g | h | i | j | k | l | m | n | o |
| 70 | p | q | r | s | t | u | v | w | x | y | z | { | | } | ~ | |
| 80 | € | ‘ | ’ | “ | ” | • | - | - | ~ | ™ | š | < | Œ | | | |
| 90 | | ‘ | ’ | “ | ” | • | - | - | ~ | ™ | š | > | œ | | | ÿ |
| A0 | ı | ¢ | £ | ¤ | ¥ | ¦ | § | ¨ | © | ª | « | ¬ | ® | ¯ | | |
| B0 | ° | ± | ² | ³ | ´ | µ | ¶ | · | ¸ | ¹ | º | » | ¼ | ½ | ¾ | ¿ |
| C0 | À | Á | Â | Ã | Ä | Å | Æ | Ç | È | É | Ê | Ë | Ì | Í | Î | Ï |
| D0 | Ğ | Ñ | Ò | Ó | Ô | Õ | Ö | × | Ø | Ù | Ú | Û | Ü | İ | Ş | ß |
| E0 | à | á | â | ã | ä | å | æ | ç | è | é | ê | ë | ì | í | î | ï |
| F0 | ğ | ñ | ò | ó | ô | õ | ö | ÷ | ø | ù | ú | û | ü | ı | ş | ÿ |

Figure A-18 SII_PM_CODE_PAGE_1254 (Turkish)

A.2 International Character Set

Print results of the specific character codes 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



(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 | $18 \times \text{number of barcode data} + 56$ |
| | SII_PM_BARCODE_MODULE_WIDTH_3 | $27 \times \text{number of barcode data} + 84$ |
| | SII_PM_BARCODE_MODULE_WIDTH_4 | $36 \times \text{number of barcode data} + 112$ |
| | SII_PM_BARCODE_MODULE_WIDTH_5 | $45 \times \text{number of barcode data} + 140$ |
| | SII_PM_BARCODE_MODULE_WIDTH_6 | $54 \times \text{number of barcode data} + 168$ |
| SII_PM_BARCODE_CODE128 | SII_PM_BARCODE_MODULE_WIDTH_2 | $22 \times \text{number of barcode data} + 26$ |
| | SII_PM_BARCODE_MODULE_WIDTH_3 | $33 \times \text{number of barcode data} + 39$ |
| | SII_PM_BARCODE_MODULE_WIDTH_4 | $44 \times \text{number of barcode data} + 52$ |
| | SII_PM_BARCODE_MODULE_WIDTH_5 | $55 \times \text{number of barcode data} + 65$ |
| | SII_PM_BARCODE_MODULE_WIDTH_6 | $66 \times \text{number of barcode data} + 78$ |

| barcodeSymbol | moduleSize | Width of Barcode Image |
|---|-------------------------------|------------------------------|
| 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



(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 pdf417Symol 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 pdf417Symol is **SII_PM_PDF417_COMPACT**:

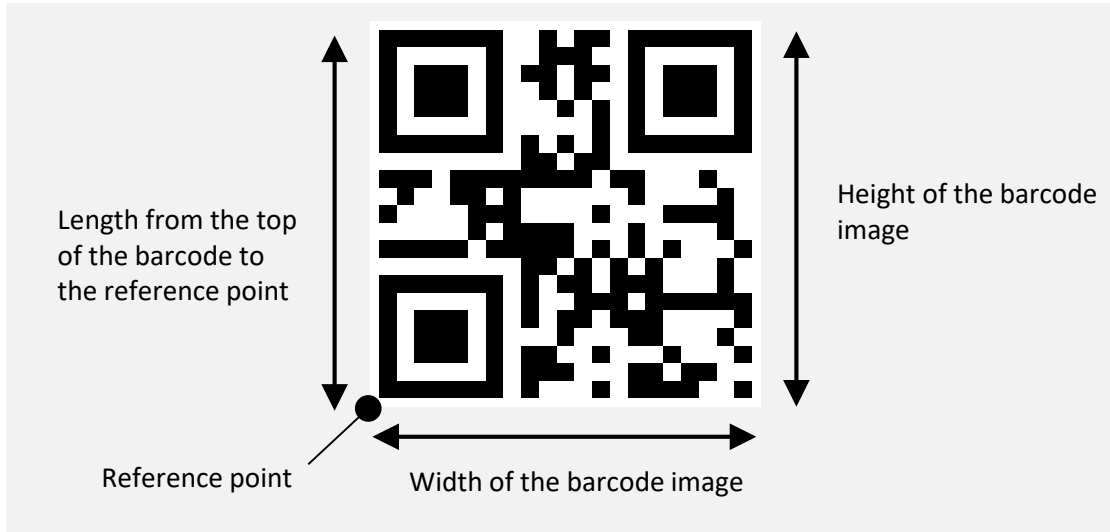
$$\text{Width of the barcode image} = (17 \times \text{column}^{*1} + 35) \times \text{module size value}$$

*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



(1) Height and width of the barcode image

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

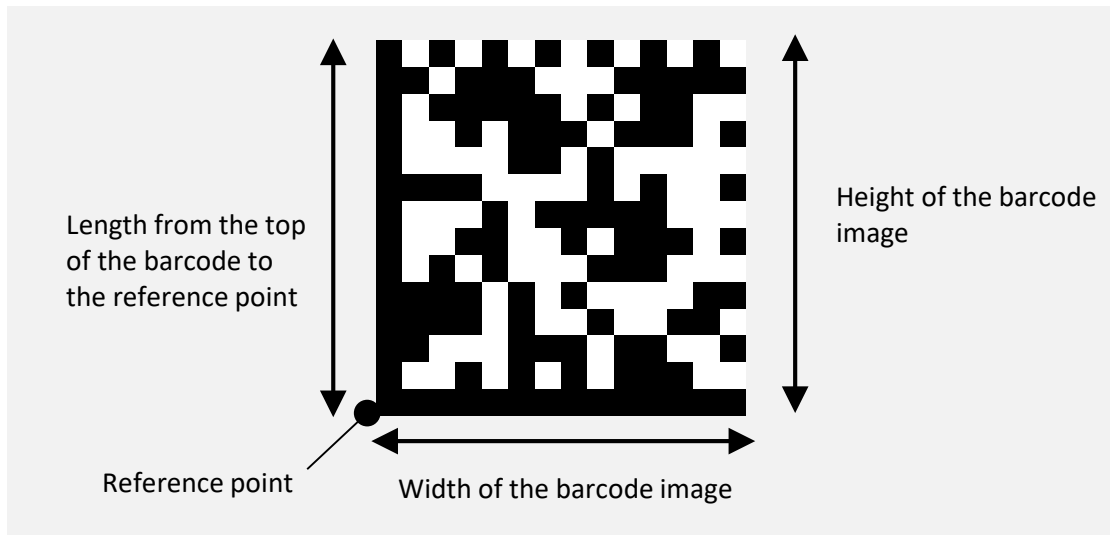
*1: Height of the barcode image = Length from the top of the barcode to the reference point

*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



(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

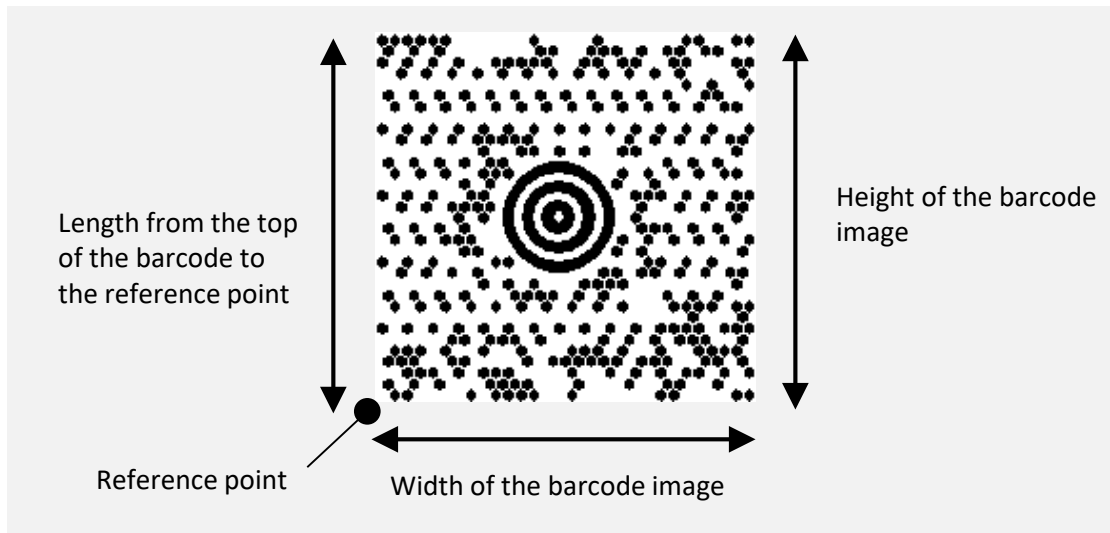
| dataMatrixModule | Number of Vertical Module | Number of Horizontal Module |
|----------------------------|---------------------------|-----------------------------|
| SII_PM_DATA_MATRIX_10_10 | 10 | 10 |
| SII_PM_DATA_MATRIX_12_12 | 12 | 12 |
| SII_PM_DATA_MATRIX_14_14 | 14 | 14 |
| SII_PM_DATA_MATRIX_16_16 | 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



(1) Height of the barcode image

$$\text{Height of the barcode image}^{*1} = 200$$

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

(2) Width of the barcode image

$$\text{Width of the barcode image} = 210$$

B.1.6 printGS1DataBarStacked



(1) Height and width of the barcode image

Height of the barcode image^{*1} = 13 × module size value

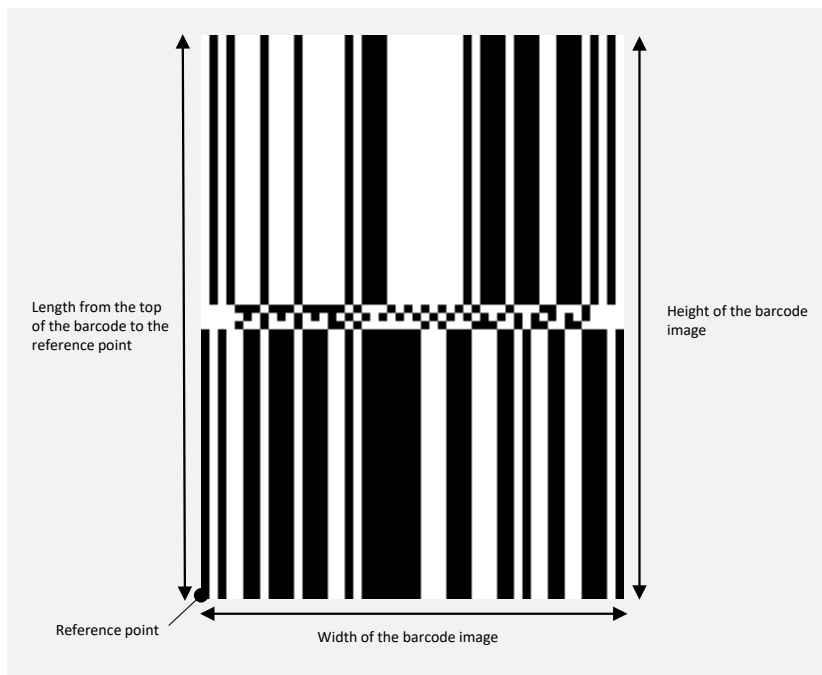
^{*1}: Height of the barcode image = Length from the top of the barcode to the reference point

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



(1) Height and width of the barcode image

Height of the barcode image^{*1} = (moduleHeight × 2 + 3) × module size value

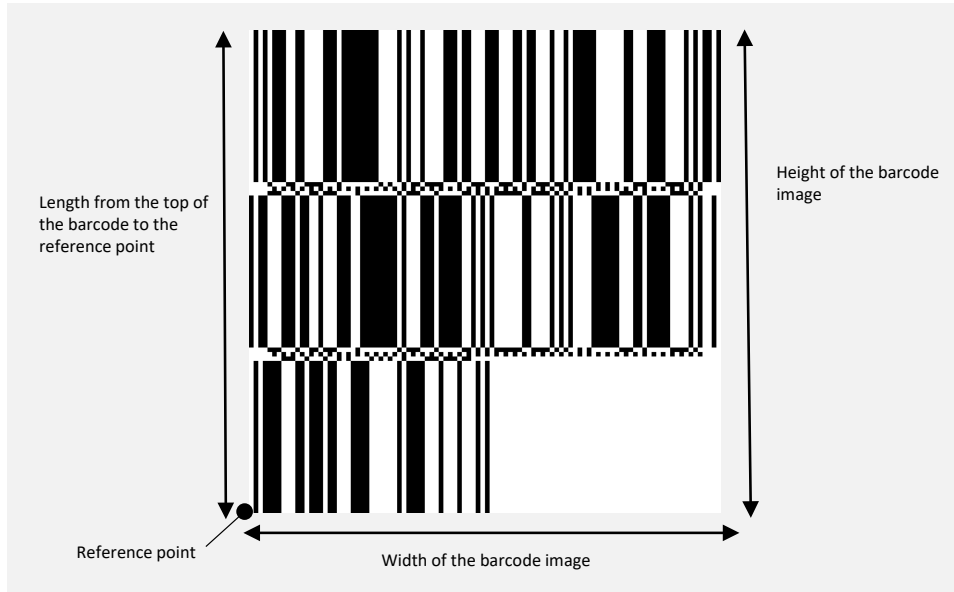
*1: Height of the barcode image = Length from the top of the barcode to the reference point

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



(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 |
|----------------------------------|-------------------|
| 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 |

Appendix C

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