



SII Print Class Library for iOS Application Programmer's Guide

Rev.08

[Products]

MP-B20 Series

Seiko Instruments Inc.

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INTRODUCTION

This document describes the "SII Print Class Library for iOS" for MP-B20 series (hereinafter referred to as "SII print class library") provided by Seiko Instruments Inc. (hereinafter referred to as "SII").

Target Printer

This section lists the printer supported by SII print class library.

Printer	Interface
MP-B20 Series	Bluetooth

Terms

This section describes terms used in this manual.

Terms	Description
Printer Command	Command for controlling the printer described in "MP-B20 SERIES THERMAL PRINTER TECHNICAL REFERENCE".

Table of Contents

Chapter 1	Product Overview	1-1
1.1	Function Provided by SII Print Class Library.....	1-1
1.2	SII Print Class Library Overview.....	1-1
1.2.1	SII Print Class Library Configuration.....	1-1
1.2.2	Function Provided by Library.....	1-2
1.2.3	Development of Application that Performs Bluetooth Communication with SII Printer.....	1-2
Chapter 2	Product Specification	2-1
2.1	Operating Environment	2-1
2.1.1	Applicable iOS Devices.....	2-1
2.1.2	Applicable iOS Versions.....	2-1
2.2	Operating Conditions.....	2-2
2.3	Precaution.....	2-2
Chapter 3	How to Use library	3-1
3.1	Developmental Environment for iOS Application.....	3-1
3.2	Provided Files	3-2
3.3	Build Library into Xcode Project	3-3
3.3.1	Objective-C.....	3-3
3.3.2	Swift.....	3-7
Chapter 4	Function of Library	4-1
4.1	API Reference.....	4-1
4.1.1	SIIPrinterManager Class.....	4-2
(1)	Method List	4-2
(2)	Property List.....	4-3
(3)	Constant List.....	4-3
①	Printer model	4-3
②	Port type	4-3
③	Response type	4-4
④	Battery remaining capacity level	4-4
⑤	International character set.....	4-4
⑥	Codepage	4-5
⑦	Barcode or PDF417	4-6
(4)	Constant List of Enumerated Type	4-7
①	Bold print (CharacterBold).....	4-7
②	Underline (CharacterUnderline).....	4-7
③	Reverse print (CharacterReverse).....	4-7
④	Inversion print (CharacterInversion)	4-7

⑤Character font (CharacterFont)	4-8
⑥Character Scale (CharacterScale).....	4-8
⑦Alignment (PrintAlignment)	4-9
⑧Barcode symbol (BarcodeSymbol)	4-9
⑨Module size (ModuleSize)	4-10
⑩HRI character print position (HriPosition).....	4-12
⑪N:W ratio (NwRatio).....	4-12
⑫Error correction level (ErrorCorrection).....	4-12
⑬PDF417 symbol (Pdf417Symbol)	4-13
⑭QR Code Model (QrModel)	4-13
⑮Data Matrix Module (DataMatrixModule).....	4-13
⑯MaxiCode Mode (MaxiCodeMode)	4-14
⑰Cutting method (CuttingMethod)	4-14
⑱Dithering (Dithering).....	4-15
⑲Batch processing selection (TransactionFunction).....	4-15
(5)Method Details	4-16
init Instance	4-16
connect Start communicating with printer	4-16
disconnect Stop communicating with printer	4-16
sendText Send text data	4-17
sendTextEx Send format specified text data	4-17
printBarcode Print barcode.....	4-18
printPDF417 Print PDF417	4-21
printQRcode Print QR Code.....	4-22
printDataMatrix Print Data Matrix	4-23
printMaxiCode Print MaxiCode	4-23
printGS1DataBarStacked Print GS1 Databar Stacked	4-24
printGS1DataBarStackedOmnidirectional Print GS1 Databar Stacked Omni-directional....	4-24
printGS1DataBarExpandedStacked Print GS1 Databar Expanded Stacked.....	4-25
printAztecCode Print Aztec Code	4-25
cutPaper Cut paper	4-25
feedPosition Paper form feed	4-26
openDrawer Open cash drawer	4-26
buzzer Sound buzzer	4-26
externalBuzzer Sound external buzzer	4-26
sendBinary Send binary data	4-26
sendDataFile Send specified file.....	4-27
getStatus Get printer status.....	4-28
abort Abort waiting state of printer.....	4-29
registerLogo Register logo	4-29
printLogo Print logo.....	4-29
unregisterLogo Delete registered logo	4-30
registerStyleSheet Register style sheet.....	4-30

unregisterStyleSheet	Delete registered style sheet	4-30
resetPrinter	Reset printer	4-30
getPrinterResponse	Get various responses from printer.....	4-31
startDiscoveryPrinter	Start printer search (Bluetooth).....	4-32
startDiscoveryPrinter	Start printer search (TCP/IP)	4-32
cancelDiscoveryPrinter	Cancel printer search	4-33
getFoundPrinter	Get found printer information.....	4-33
getVersion	Get SDK version	4-33
printSmartLabelImageData	Print label.....	4-33
controlTransaction	Start/End batch processing.....	4-34
(6)Property Details		4-35
sendTimeout	Get/Set send timeout period.....	4-35
receiveTimeout	Get/Set receive timeout period.....	4-35
internationalCharacter	Get/Set international character set	4-35
codePage	Get/Set codepage	4-36
printerModel	Get printer model	4-36
portType	Get connecting port type	4-36
isConnect	Verify connection state with printer	4-36
socketKeepingTime	Get/Set socket keeping time.....	4-37
delegate	Register delegate	4-37
4.1.2 SIIPrinterInfo Class		4-38
4.1.3 SIIPrinterException Class.....		4-39
(1)Method List		4-39
(2)Property List.....		4-39
(3)Constant List.....		4-39
①Error code		4-39
(4)Method Details		4-41
SIIPrinterException Constructor		4-41
(5)Property Details		4-41
errorCode	Get error codes	4-41
errorMessage	Get error message	4-41
4.1.4 SIIPrinterManagerDelegate Protocol		4-42
(1)Method List		4-42
(2)Method Details.....		4-42
didStatusChange	Notify printer status	4-42

Chapter 5	Sample Program	5-1
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5.1	Screen Layout	5-1
5.2	Precaution.....	5-2

Chapter 6	Disclaimer	6-1
<hr/>		
Appendix A	Character Set	A-1
<hr/>		
	A-1 Codepage Table (Character Code Table)	A-1
	A-2 International Character Set.....	A-11
Appendix B	Open Source Software License	B-1
<hr/>		
	B.1 MIT License	B-1
	B.2 Apache License 2.0.....	B-2

Chapter 1

Product Overview

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

1.1 Function Provided by SII Print Class Library

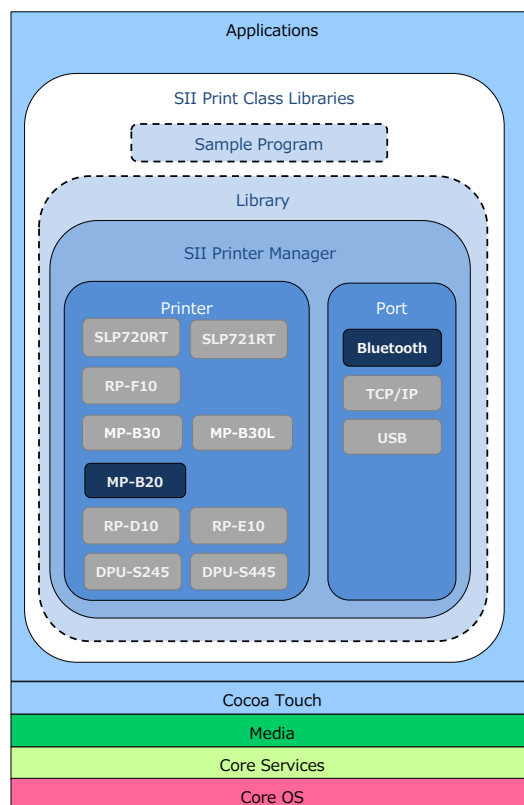
The SII print class library including the library and the sample programs provides the functions to use SII printer MP-B20 series (hereinafter referred to as "printer") in iOS applications.

Moreover, SII print class library provides Xcode projects as a sample program for SII print class library.

1.2 SII Print Class Library Overview

1.2.1 SII Print Class Library Configuration

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



1.2.2 Function Provided by Library

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

^{*1}: Commands that reads the response from the printer are not available. In order to read responses from a printer, use `getStatus` or `getPrinterResponse`.

(NOTE) MP-B20 does not support the APIs of page mode, Display, or the barcode scanner, or relating to label printing function.

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 Specification

This chapter describes the product specification of the library.

2.1 Operating Environment

2.1.1 Applicable iOS Devices

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

iPhone models

- iPhone X
- iPhone 8
- iPhone 8 Plus
- iPhone 7
- iPhone 7 Plus
- iPhone SE
- iPhone 6s
- iPhone 6s Plus
- iPhone 6
- iPhone 6 Plus

iPad models

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

iPod models

- iPod touch (6th generation)

2.1.2 Applicable iOS Versions

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

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

2.2 Operating Conditions

This section describes the operating conditions for the library.

Set the Function Setting and Bluetooth Communication Setting of the printer from [Value] in the following table before using the library.

See "MP-B20 SERIES THERMAL PRINTER USER'S GUIDE" for details about Function Setting, Bluetooth Communication Setting and the factory default settings.

- Function Setting

MS	Function	Value
1-1	Interface Selection (Interface)	1: Wireless
3-1	Automatic Status Response Selection (Auto Status Back)	0: Enable
3-2	Initialized Response Selection (Init. Response)	0: Enable
3-3	Realtime Command Selection (Realtime Command)	0: Enable
3-4	Data Discard Selection When Error Occurs (Error Through)	0: Enable

- Bluetooth Communication Setting

See the printer command "Set Bluetooth Communication" in "MP-B20 SERIES THERMAL PRINTER TECHNICAL REFERENCE" for details about Bluetooth communication setting.

Function	Value
iOS Auto Connection	1: Enable* ¹ 0: Disable

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

2.3 Precaution

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

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 development environment for iOS application and how to use the library.

3.1 Developmental Environment for iOS Application

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

- Xcode 9.0 or later

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

3.2 Provided Files

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

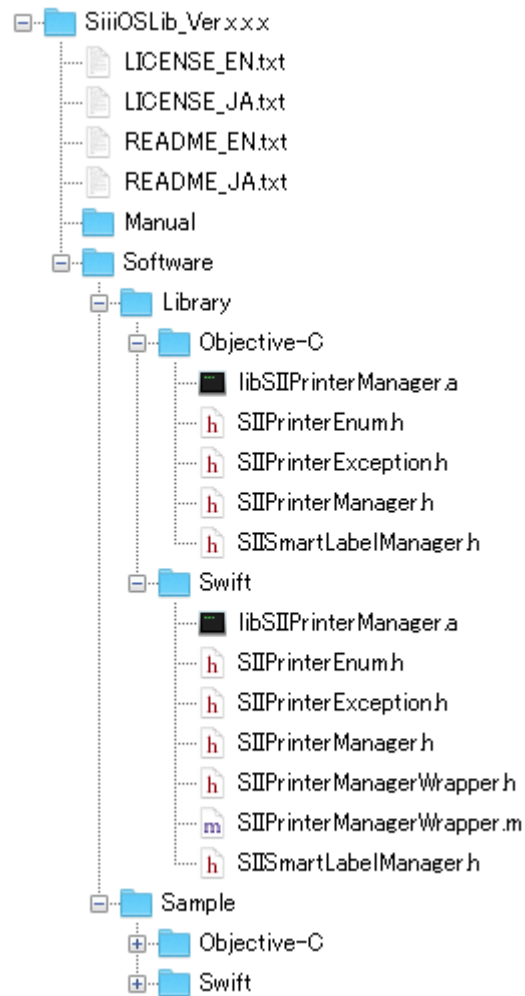


Figure 3-1

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

3.3 Build Library into Xcode Project

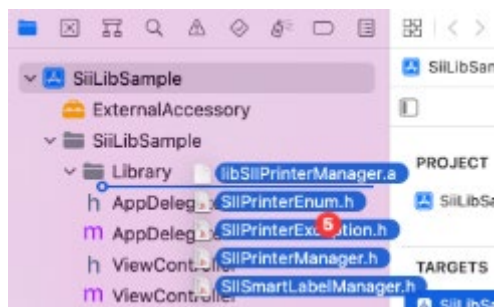
Using the project of the sample program (SiiLibSample) included in the SII print class library as an example, this section describes by development language how to build the library into the project.

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

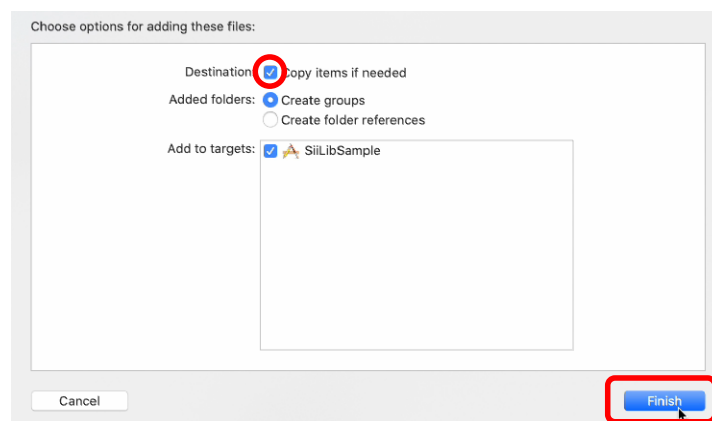
Development language	Description
Objective-C	See "3.3.1 Objective-C" for details to build the library as Objective-C.
Swift	See "3.3.2 Swift" for details to build the library as Swift.

3.3.1 Objective-C

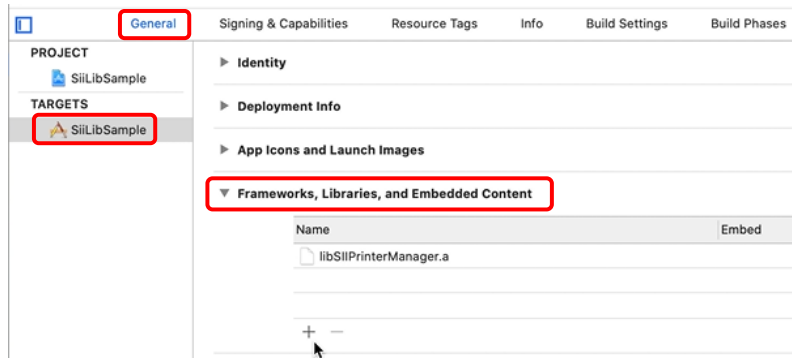
- (1) Open the Xcode project.
- (2) Drag the following files to any hierarchy in the target project in the [Project Navigator] of the navigation window.
 - libSiiPrinterManager.a
 - SiiPrinterEnum.h
 - SiiPrinterException.h
 - SiiPrinterManager.h
 - SiiSmartLabelManager.h



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



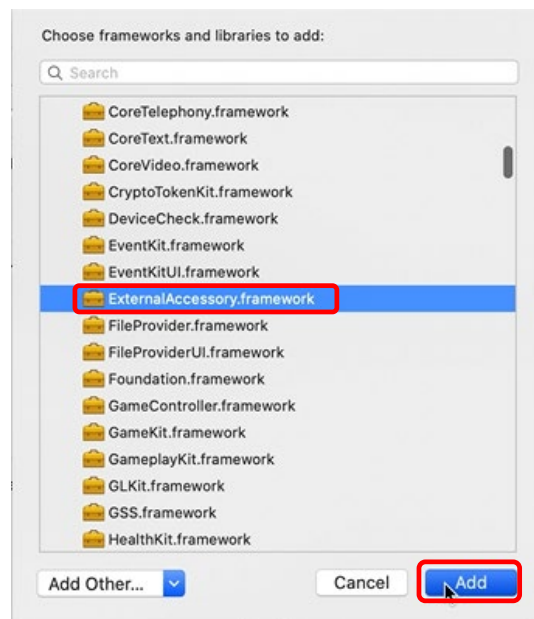
- (4) Build the ExternalAccessory.framework.
Select the target project in the [TARGETS], and open the [General] - [Frameworks, Libraries and Embedded Content].



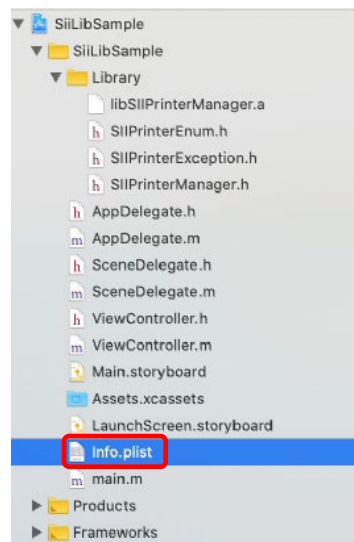
- (5) Click the [+] button opened the [Frameworks, Libraries and Embedded Content].



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



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



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

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

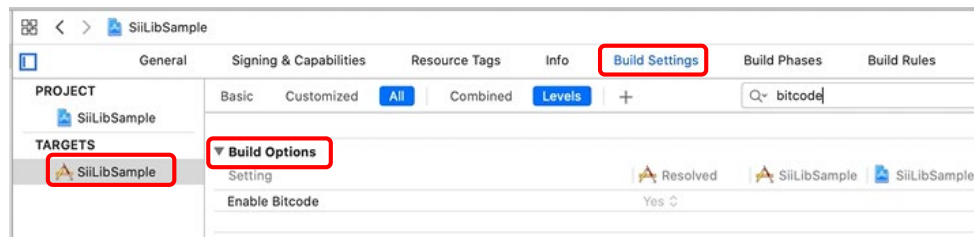
- (9) Select the [Supported external accessory protocols] from the list.

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

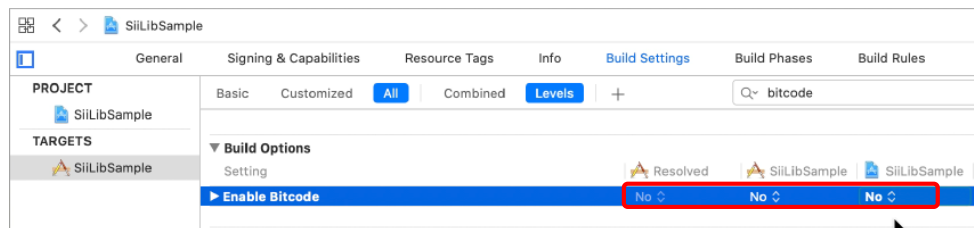
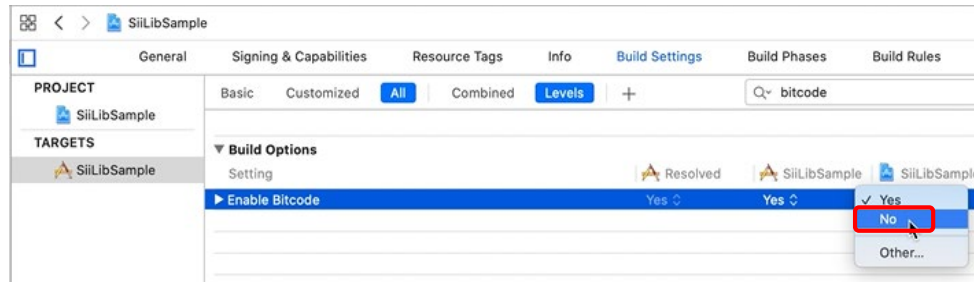
- (10) Open the added [Supported external accessory protocols].
The [Item 0] displayed in the opened [Supported external accessory protocols], enter com.sii-ps.sileap as the Value.

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

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



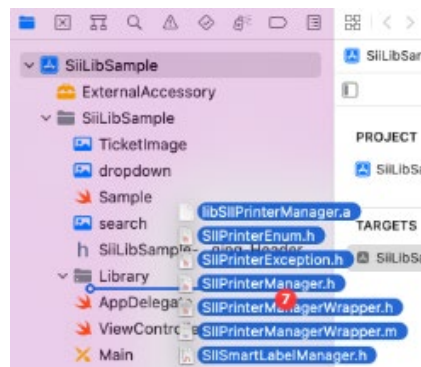
(12) Select the Enable Bitcode in the opened [Build Options], and select the No in the menu.



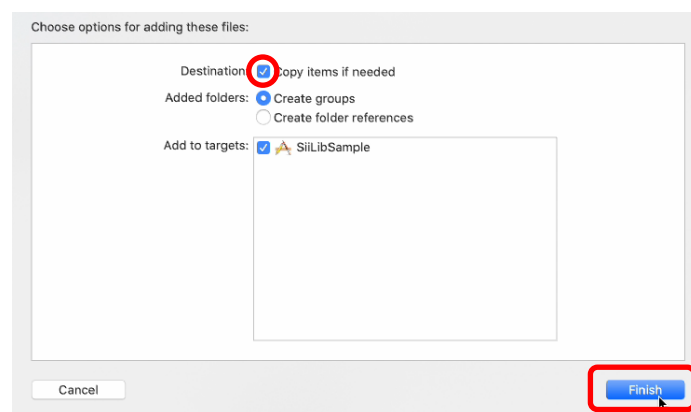
By completing these procedures, the library function becomes available.

3.3.2 Swift

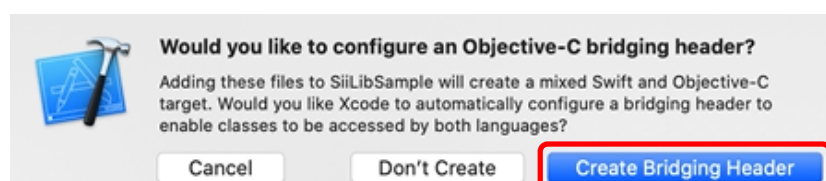
- (1) Open the Xcode project.
- (2) Drag the following files to any hierarchy in the target project in [Project Navigator] of the navigator window.
 - libSiiPrinterManager.a
 - SiiPrinterEnum.h
 - SiiPrinterException.h
 - SiiPrinterManager.h
 - SiiPrinterManagerWrapper.h
 - SiiPrinterManagerWrapper.m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



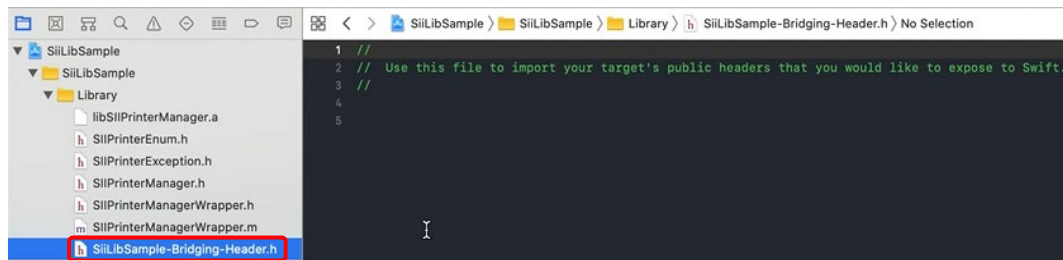
- (3) Check the box [Copy items if needed], click the [Finish] button.



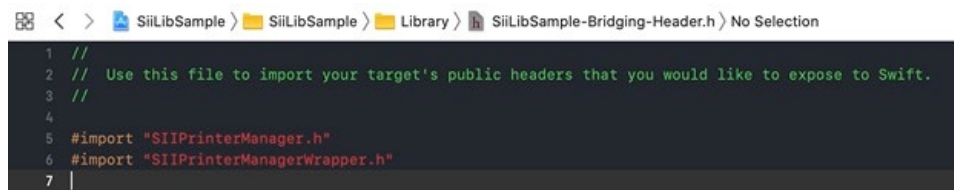
- (4) The dialog is displayed. Select the [Create Bridging Header] button and create xxxxxxxx-Bridging-Header.h.



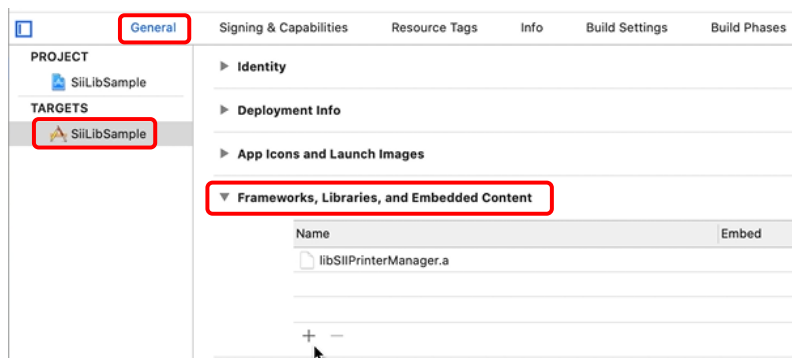
- (5) Select the created xxxxxxxx-Bridging-Header.h.



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



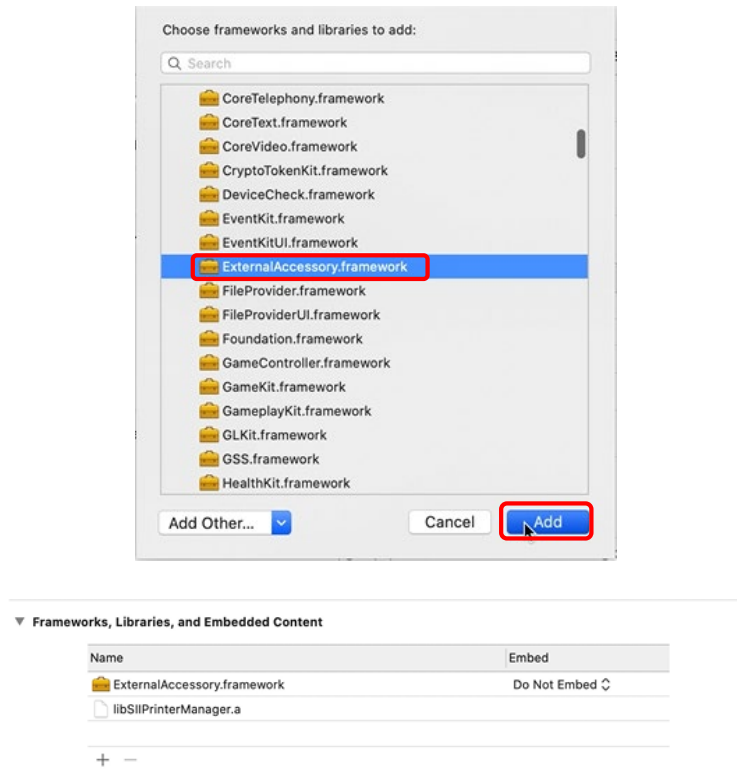
- (7) Build the ExternalAccessory.framework.
Select the target project in the [TARGETS], and open the [General] - [Frameworks, Libraries and Embedded Content].



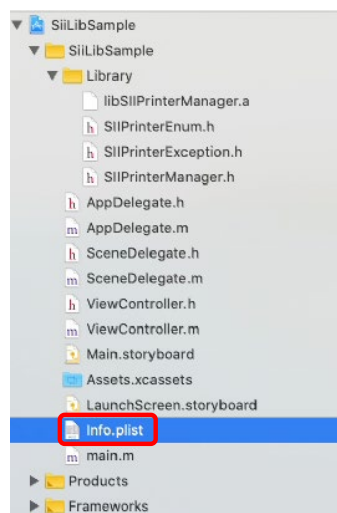
- (8) Click the [+] button opened the [Frameworks, Libraries and Embedded Content].



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



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

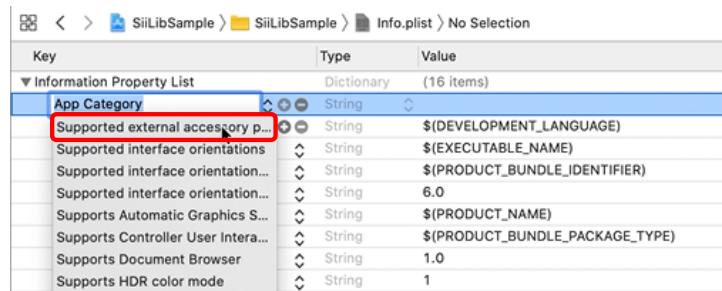


- (11) Select the [Information Property List] - ⊕.

SiiLibSample > SiiLibSample > Info.plist > No Selection

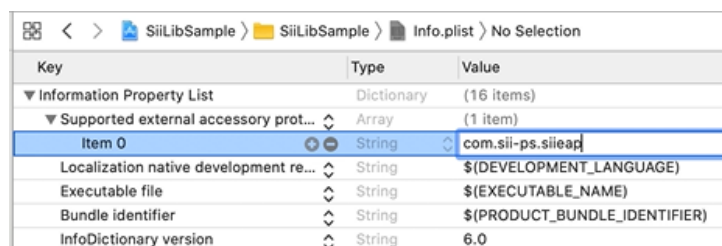
Key	Type	Value
▼ Information Property List	Dictionary	(15 items)
Localization native development re...	String	\$(DEVELOPMENT_LANGUAGE)
Executable file	String	\$(EXECUTABLE_NAME)
Bundle identifier	String	\$(PRODUCT_BUNDLE_IDENTIFIER)
InfoDictionary version	String	6.0

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



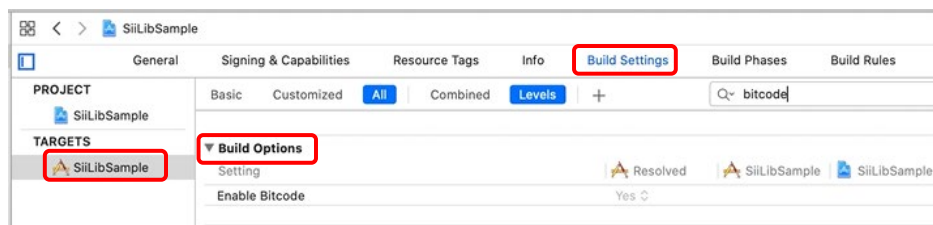
Key	Type	Value
App Category	String	
Supported external accessory p...	String	\$(DEVELOPMENT_LANGUAGE)
Supported interface orientations	String	\$(EXECUTABLE_NAME)
Supported interface orientation...	String	\$(PRODUCT_BUNDLE_IDENTIFIER)
Supported interface orientation...	String	6.0
Supports Automatic Graphics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

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

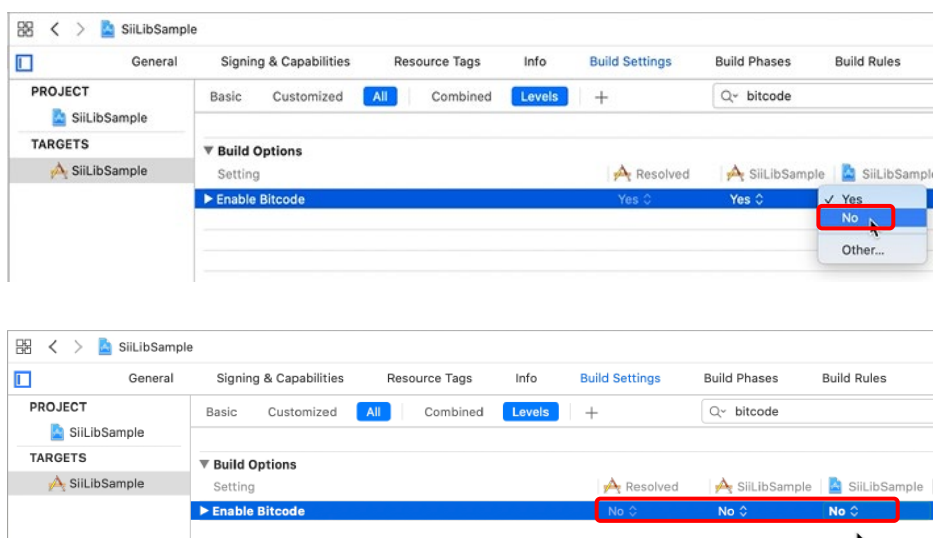


Key	Type	Value
Information Property List	Dictionary	(16 items)
Supported external accessory prot...	Array	(1 item)
Item 0	String	com.sii-ps.sieap
Localization native development re...	String	\$(DEVELOPMENT_LANGUAGE)
Executable file	String	\$(EXECUTABLE_NAME)
Bundle identifier	String	\$(PRODUCT_BUNDLE_IDENTIFIER)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

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



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



By completing these procedures, the library function becomes available.

Chapter 4

Function of Library

This chapter describes the APIs for each class implemented in the library.

4.1 API Reference

This library includes the following classes.

Class Name	Description	Supported* ¹
SIIPrinterManager	Provides the API used for communication with the printer and for printing. See " 4.1.1 SIIPrinterManager Class " for more details.	✓
SIIPrinterInfo	Stores the printer information searched by startDiscoveryPrinter .	-
SIIPrinterException	Exception class that is thrown at API call. See " 4.1.3 SIIPrinterException Class " for more details.	✓
SIIPrinterManagerDelegate	Provides the API to get notice from the printer. See " 4.1.4 SIIPrinterManagerDelegate Protocol " for details.	✓
SIISmartLabelManager	Provides the API to specify label files or replace data. See " 4.1.5 SIISmartLabelManager Class " for details.	-

*1: ✓ : Supported, - : not supported in MP-B20

(NOTE) MP-B20 does not support the APIs of page mode, Display, or the barcode scanner, or relating to label printing function.

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 ^{*2}	✓
feedPosition	Paper form feed	-
openDrawer	Open cash drawer	-
buzzer	Sound buzzer	-
externalBuzzer	Sound external buzzer	-
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)	✓
startDiscoveryPrinter	Start printer search (TCP/IP)	-
cancelDiscoveryPrinter	Cancel printer search	-

Name	Description	Supported*1
getFoundPrinter	Get found printer information	-
getVersion	Get SDK version	✓
printSmartLabelImageData	Print label	-
controlTransaction	Start/End batch processing	✓

*1: ✓ : Supported, - : not supported in MP-B20

*2: Feeds the paper to the paper cut position.

(2) Property List

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

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

*1: ✓ : Supported, - : not supported in MP-B20

(3) Constant List

① Printer model

Constant used for starting communication with a printer or getting printer model is shown in the following table.

Constant Name	Description	Value
SII_PM_PRINTER_MODEL_MP_B20	MP-B20	298

② Port type

Constant used for starting communication with a printer or getting the connecting port type is shown in the following table.

Constant Name	Description	Value
SII_PM_PRINTER_PORT_TYPE_BLUETOOTH	Bluetooth	0

③ Response type

Constants used for getting various responses from a 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_BATTERY_STATUS	Battery remaining capacity level	5

④ Battery remaining capacity level

Constants used for getting battery remaining capacity level various responses from a printer are shown in the following table.

Constant Name	Description	Value
SII_PM_BATTERY_STATUS_FULL	Battery remaining capacity: approx. 80%	0
SII_PM_BATTERY_STATUS_MIDDLE	Battery remaining capacity: approx. 40%	1
SII_PM_BATTERY_STATUS_LOW	Battery remaining capacity: approx. 10%	2
SII_PM_BATTERY_STATUS_EMPTY	No battery	3

⑤ International character set

Constants used for setting / getting 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	England	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

Constant Name	Description	Value
SII_PM_COUNTRY_JAPAN	Japan	8
SII_PM_COUNTRY_NORWAY	Norway	9
SII_PM_COUNTRY_DENMARK_2	Denmark II	10
SII_PM_COUNTRY_SPAIN_2	Spain II	11
SII_PM_COUNTRY_LATIN_AMERICA	Latin America	12
SII_PM_COUNTRY_ARABIA	Arabia	17

⑥ Codepage

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

Constant Name	Description	Value
SII_PM_CODE_PAGE_437	USA, Standard Europe (Code Page 437)	0
SII_PM_CODE_PAGE_KATAKANA	Katakana	1
SII_PM_CODE_PAGE_850	Multilingual (Code Page 850)	2
SII_PM_CODE_PAGE_860	Portuguese (Code Page 860)	3
SII_PM_CODE_PAGE_863	Canadian-French (Code page 863)	4
SII_PM_CODE_PAGE_865	Nordic (Code Page 865)	5
SII_PM_CODE_PAGE_857 ^{*1}	Turkish (Code Page 857)	13
SII_PM_CODE_PAGE_737	Greek (Code Page 737)	14
SII_PM_CODE_PAGE_1252	Latin (Code Page 1252)	16
SII_PM_CODE_PAGE_866	Russian (Code Page 866)	17
SII_PM_CODE_PAGE_852	Eastern Europe (CodePage 852)	18
SII_PM_CODE_PAGE_858	Euro (Code Page 858)	19
SII_PM_CODE_PAGE_855	Cyrillic (Code Page 855)	34
SII_PM_CODE_PAGE_864 ^{*1*2}	Arabic (Code Page 864)	37
SII_PM_CODE_PAGE_1250	Central European (Code Page 1250)	45
SII_PM_CODE_PAGE_1251	Cyrillic (Code Page 1251)	46
SII_PM_CODE_PAGE_1253 ^{*3}	Greek (Code Page 1253)	47
SII_PM_CODE_PAGE_1254	Turkish (Code Page 1254)	48

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

*2: Font B cannot be printed.

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

⑦ Barcode or PDF417

Constants used for printing barcode or 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) Constant List of Enumerated Type

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	Release bold print
SII_PM_BOLD	Specify bold print

② Underline (`CharacterUnderline`)

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

Constant Name	Description
SII_PM_UNDERLINE_CANCEL	Release 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 the reverse print are shown in the following table.

Constant Name	Description
SII_PM_REVERSE_CANCEL	Release 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 the character font 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_VERTICAL_1_HORIZONTAL_1	Height × 1 and width × 1
SII_PM_VERTICAL_1_HORIZONTAL_2	Height × 1 and width × 2
SII_PM_VERTICAL_1_HORIZONTAL_3	Height × 1 and width × 3
SII_PM_VERTICAL_1_HORIZONTAL_4	Height × 1 and width × 4
SII_PM_VERTICAL_2_HORIZONTAL_1	Height × 2 and width × 1
SII_PM_VERTICAL_2_HORIZONTAL_2	Height × 2 and width × 2
SII_PM_VERTICAL_2_HORIZONTAL_3	Height × 2 and width × 3
SII_PM_VERTICAL_2_HORIZONTAL_4	Height × 2 and width × 4
SII_PM_VERTICAL_2_HORIZONTAL_6	Height × 2 and width × 6
SII_PM_VERTICAL_3_HORIZONTAL_1	Height × 3 and width × 1
SII_PM_VERTICAL_3_HORIZONTAL_2	Height × 3 and width × 2
SII_PM_VERTICAL_3_HORIZONTAL_3	Height × 3 and width × 3
SII_PM_VERTICAL_3_HORIZONTAL_4	Height × 3 and width × 4
SII_PM_VERTICAL_4_HORIZONTAL_1	Height × 4 and width × 1
SII_PM_VERTICAL_4_HORIZONTAL_2	Height × 4 and width × 2
SII_PM_VERTICAL_4_HORIZONTAL_3	Height × 4 and width × 3
SII_PM_VERTICAL_4_HORIZONTAL_4	Height × 4 and width × 4
SII_PM_VERTICAL_4_HORIZONTAL_6	Height × 4 and width × 6
SII_PM_VERTICAL_4_HORIZONTAL_8	Height × 4 and width × 8
SII_PM_VERTICAL_6_HORIZONTAL_2	Height × 6 and width × 2
SII_PM_VERTICAL_6_HORIZONTAL_4	Height × 6 and width × 4
SII_PM_VERTICAL_6_HORIZONTAL_6	Height × 6 and width × 6
SII_PM_VERTICAL_6_HORIZONTAL_8	Height × 6 and width × 8
SII_PM_VERTICAL_8_HORIZONTAL_4	Height × 8 and width × 4
SII_PM_VERTICAL_8_HORIZONTAL_6	Height × 8 and width × 6
SII_PM_VERTICAL_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
SII_PM_ALIGNMENT_LEFT	Left aligned
SII_PM_ALIGNMENT_CENTER	Align center
SII_PM_ALIGNMENT_RIGHT	Right aligned

⑧ Barcode symbol (`BarcodeSymbol`)

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

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

*1: See "4.1.1(5) Method Details `printBarcode` " for more 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	Using Method
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	Using Method
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	•printGS1DataBarStacked •printGS1DataBarStacked Omnidirectional •printGS1DataBarExpanded Stacked
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>	Do not print
<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 the 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	Using Method
<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_1	QR Code Model 1
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	Module numbers: Automatic
SII_PM_DATA_MATRIX_10_10	Module numbers: 10 × 10
SII_PM_DATA_MATRIX_12_12	Module numbers: 12 × 12
SII_PM_DATA_MATRIX_14_14	Module numbers: 14 × 14
SII_PM_DATA_MATRIX_16_16	Module numbers: 16 × 16
SII_PM_DATA_MATRIX_18_18	Module numbers: 18 × 18
SII_PM_DATA_MATRIX_20_20	Module numbers: 20 × 20
SII_PM_DATA_MATRIX_22_22	Module numbers: 22 × 22
SII_PM_DATA_MATRIX_24_24	Module numbers: 24 × 24
SII_PM_DATA_MATRIX_26_26	Module numbers: 26 × 26
SII_PM_DATA_MATRIX_32_32	Module numbers: 32 × 32
SII_PM_DATA_MATRIX_36_36	Module numbers: 36 × 36
SII_PM_DATA_MATRIX_40_40	Module numbers: 40 × 40
SII_PM_DATA_MATRIX_44_44	Module numbers: 44 × 44
SII_PM_DATA_MATRIX_48_48	Module numbers: 48 × 48
SII_PM_DATA_MATRIX_52_52	Module numbers: 52 × 52
SII_PM_DATA_MATRIX_64_64	Module numbers: 64 × 64
SII_PM_DATA_MATRIX_72_72	Module numbers: 72 × 72
SII_PM_DATA_MATRIX_80_80	Module numbers: 80 × 80

Constant Name	Description
SII_PM_DATA_MATRIX_88_88	Module numbers: 88 × 88
SII_PM_DATA_MATRIX_96_96	Module numbers: 96 × 96
SII_PM_DATA_MATRIX_104_104	Module numbers: 104 × 104
SII_PM_DATA_MATRIX_120_120	Module numbers: 120 × 120
SII_PM_DATA_MATRIX_132_132	Module numbers: 132 × 132
SII_PM_DATA_MATRIX_144_144	Module numbers: 144 × 144
SII_PM_DATA_MATRIX_8_18	Module numbers: 8 × 18
SII_PM_DATA_MATRIX_8_32	Module numbers: 8 × 32
SII_PM_DATA_MATRIX_12_26	Module numbers: 12 × 26
SII_PM_DATA_MATRIX_12_36	Module numbers: 12 × 36
SII_PM_DATA_MATRIX_16_36	Module numbers: 16 × 36
SII_PM_DATA_MATRIX_16_48	Module numbers: 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 cutting method are shown in the following table.

Constant Name	Description
SII_PM_CUT_FULL	No cut
SII_PM_CUT_PARTIAL	Paper feed to cut position

⑱ Dithering (Dithering)

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

Constant Name	Description
SII_PM_DITHERING_DISABLE	Dithering is disable
SII_PM_DITHERING_ERRORDIFFUSION	Dithering is enable

⑲ Batch processing selection (TransactionFunction)

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

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

(5) Method Details

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

connect		Start communicating with printer
Starts communication with a printer.		
Syntax	<pre>(void) connect: (NSInteger)printerModel address: (NSString)address portType: (NSInteger)portType;</pre>	
Parameter	printerModel	Printer model constant. See "4.1.1(3)① Printer model" for available constants.
	address	Bluetooth device name (Bluetooth Accessory) Example: "MP-B20"
	portType	Port type constant Specify SII_PM_PRINTER_PORT_TYPE_BLUETOOTH .
Error	SIIPrinterException is thrown when an error occurs while calling the method. See " 4.1.3 SIIPrinterException Class " for details of error.	
Description	<p>This method starts communication with a paired printer with iOS device through Bluetooth connection. Call this method before using other SIIPrinterManager class methods.</p> <p>This method connects to the paired Bluetooth device (Bluetooth accessory) specified by address.</p> <p>In order to operate a printer properly, printer settings may be changed at the connection in this method.</p>	
Note	A concurrent connection from multiple apps to one printer is not supported.	

disconnect	Stop communicating with printer
Stops communication with the printer.	
Syntax	- (void) disconnect ;
Error	SIIPrinterException is thrown when an error occurs while calling the method. See " 4.1.3 SIIPrinterException Class " for details of error.
Note	It is recommended to get execution response by SII_PM_PRINTER_RESPONSE_REQUEST of getPrinterResponse before executing this method. If not, the following problems may be occurred:

- The printer is stopped communication by this method before the print data sending from iOS device to the printer is completed, and a part of the data may be deleted.
- In Bluetooth communication, when either **disconnect** or **connect** is executed while the printer is in buffer full state^{*1}, the printer is stopped communication between iOS device and the printer.

^{*1}: Buffer full state means the printer buffer is full state with the print data.

The size becoming buffer full state is approx. 4K bytes.

When this method is executed without executing **getPrinterResponse** in your program, evaluate your program to confirm no problems arise.

sendText

Send text data

Sends the text data.

Syntax	- (void) sendText: (NSString *)text;
Parameter	text Text data to send to the printer Data size that can be specified at 1 time is 16 KB (16384 bytes).
Error	SIIPrinterException is thrown when an error occurs while calling the method. See " 4.1.3 SIIPrinterException Class " for details of error.
Description	This method encodes the specified text data to printable text data based on the settings of internationalCharacter and codePage , and then sends it to a printer. This method does not add any line feed code in the last of the text data. In order to print to the last of the text data, add a line feed code to the last of the text data.

sendTextEx

Send format specified text data

Sends 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	(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;
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Parameter	text	Text data to send to the printer Data size that can be specified at 1 time is 16KB (16384 bytes).
	bold	Bold print See "4.1.1(4)① Bold print (CharacterBold)" for available constants.
	underline	Underline See "4.1.1(4)② Underline (CharacterUnderline)" for available constants.
	reverse	Reverse print See "4.1.1(4)③ Reverse print (CharacterReverse)" for available constants.
	inversion	Inversion print See "4.1.1(4)④ Inversion print (CharacterInversion)" for available constants.
	font	Character font See "4.1.1(4)⑤ Character font (CharacterFont)" for available constants.
	scale	Character scale See "4.1.1(4)⑥ Character Scale (CharacterScale)" for available constants.
	alignment	Alignment See "4.1.1(4)⑦ Alignment (PrintAlignment)" for available constants.
Error	SIIPrinterException is thrown when an error occurs while calling the method. See "4.1.3 SIIPrinterException Class" for details of error.	
Description	<p>This method encodes format specified text data to printable text data based on the settings of internationalCharacter and codePage, and then sends it to a printer.</p> <p>This method does not add any line feed code in the last of the text data. In order to print to the last of the text data, add a line feed code to the last of the text data.</p>	

printBarcode

Print barcode

Prints 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, aligning barcode and N:W ratio.

The method of syntax (c) specifies the barcode data with the array of bytes and aligning barcode.

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

```

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

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

```

Parameter	barcodeSymbol	Barcode symbol See "4.1.1(4)⑧ Barcode symbol (BarcodeSymbol)" for available constants and corresponding syntax.
	text (data)	Barcode data to send to the printer
	moduleSize	Barcode width See "4.1.1(4)⑨ Module size (ModuleSize)" for available constants.
	moduleHeight	Barcode height

- When `barcodeSymbol` is set to the followings, 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 set to the followings, the valid range is different by `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

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

<code>hriPosition</code>	HRI character print position See "4.1.1(4)⑩ HRI character print position (<code>HriPosition</code>)" for available constants.
<code>hriFont</code>	HRI character font See "4.1.1(4)⑤ Character font (<code>CharacterFont</code>)" for available constants.
<code>alignment</code>	Alignment See "4.1.1(4)⑦ Alignment (<code>PrintAlignment</code>)" for available constants.
<code>nwRatio</code>	N:W ratio See "4.1.1(4)⑪ N:W ratio (<code>NwRatio</code>)" for available constants. Depending on specified <code>nwRatio</code> and <code>moduleSize</code> , the wide element width is set 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)

moduleSize	nwRatio		
	SII_PM_ NWRATIO_1TO2	SII_PM_ NWRATIO_1TO2_5	SII_PM_ NWRATIO_1TO3
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 calling the method.
See "4.1.3 SIIPrinterException Class" for details of error.

printPDF417

Print PDF417

Prints PDF417.

The method of syntax (a) specifies 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:(ModuleHeight)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:(ModuleHeight)moduleHeight
alignment:(PrintAlignment)alignment;

Parameter	text	Barcode data to send to the printer
	errorCorrection	Error correction level See "4.1.1(4)⑫ Error correction level (ErrorCorrection)" for available constants.
	row	The number of row The valid range is 0 to 90. When 0 is specified, the number of row is automatically set.
	column	The number of columns in data area The valid range is 0 to 30. When 0 is specified, the number of column in the data area is automatically set.
	moduleSize	Nominal fine element width See "4.1.1(4)⑨ Module size (ModuleSize)" for available constants.

<code>moduleHeight</code>	Module height The valid range is 2 to 127. When the module height is set smaller, some barcode scanners may not read it. Set 3 or more for normal use.
<code>alignment</code>	Alignment See "4.1.1(4)⑦ Alignment (<code>PrintAlignment</code>)" for available constants.
<code>pdf417Symbol</code>	PDF417 symbol See "4.1.1(4)⑬ PDF417 symbol (<code>Pdf417Symbol</code>)" for available constants.
Error	SIIPrinterException is thrown when an error occurs while calling the method. See " 4.1.3 SIIPrinterException Class " for details of error.

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	<div> <div>text</div> <div>Barcode data to send to the printer The version for either syntax (a) or (b) is automatically set depending on the number of data specified on <code>text</code>.</div> </div> <div> <div>errorCorrection</div> <div>Error correction level See "4.1.1(4)⑫ Error correction level (<code>ErrorCorrection</code>)" for available constants.</div> </div> <div> <div>moduleSize</div> <div>Module Size See "4.1.1(4)⑨ Module size (<code>ModuleSize</code>)" for available constants.</div> </div> <div> <div>alignment</div> <div>Alignment See "4.1.1(4)⑦ Alignment (<code>PrintAlignment</code>)" for available constants.</div> </div> <div> <div>model</div> <div>QR Code Model See "4.1.1(4)⑭ QR Code Model (<code>QrModel</code>)" for available constants.</div> </div>
Error	SIIPrinterException is thrown when an error occurs while calling the method. See " 4.1.3 SIIPrinterException Class " for details of error.

Prints Data Matrix.

Syntax	<pre> - (void) printDataMatrix: (NSString *)text dataMatrixModule: (DataMatrixModule) dataMatrixModule moduleSize: (ModuleSize) moduleSize alignment: (PrintAlignment) alignment; </pre>	
Parameter	text	Barcode data to send to the printer
	dataMatrixModule	The number of the Data Matrix modules See "4.1.1(4)⑮ Data Matrix Module (DataMatrixModule)" for available constants.
	moduleSize	Module Size See "4.1.1(4)⑨ Module size (ModuleSize)" for available constants.
	alignment	Alignment See "4.1.1(4)⑦ Alignment (PrintAlignment)" for available constants.
Error	SIIPrinterException is thrown when an error occurs while calling the method. See "4.1.3 SIIPrinterException Class" for details of error.	

Prints MaxiCode.

Syntax	<pre> - (void) printMaxiCode: (NSString *)text maxiCodeMode: (MaxiCodeMode) maxiCodeMode alignment: (PrintAlignment) alignment; </pre>	
Parameter	text	Barcode data to send to the printer
		<ul style="list-style-type: none"> When <code>maxiCodeMode</code> is SII_PM_MAXI_CODE_2: Add the service class (3 digits), the country code (3 digits), and the postal code (9 digits) in the beginning of data. When <code>maxiCodeMode</code> is SII_PM_MAXI_CODE_3: Add the service class (3 digits), the country code (3 digits), and the postal code (6 digits) in the beginning of data.
	maxiCodeMode	MaxiCode mode See "4.1.1(4)⑩ MaxiCode Mode (MaxiCodeMode)" for available constants.
	alignment	Alignment See "4.1.1(4)⑦ Alignment (PrintAlignment)" for available constants.
Error	SIIPrinterException is thrown when an error occurs while calling the method. See "4.1.3 SIIPrinterException Class" for details of error.	

Prints GS1 Databar Stacked.

Syntax	<pre> - (void) printGS1DataBarStacked: (NSString *)text moduleSize: (ModuleSize)moduleSize alignment: (PrintAlignment)alignment; </pre>	
Parameter	text	Barcode data to send to the printer Input 13 characters from '0' to '9'. The top of '01' is automatically added by the printer. Check digits are automatically calculated by the printer.
	moduleSize	Module Size See "4.1.1(4)⑨ Module size (ModuleSize)" for available constants.
	alignment	Alignment See "4.1.1(4)⑦ Alignment (PrintAlignment)" for available constants.
Error	SIIPrinterException is thrown when an error occurs while calling the method. See " 4.1.3 SIIPrinterException Class " for details of error.	

Prints GS1 Databar Stacked Omni-directional.

Syntax	<pre> - (void) printGS1DataBarStackedOmnidirectional: (NSString *)text moduleHeight: (NSInteger)moduleHeight moduleSize: (ModuleSize)moduleSize alignment: (PrintAlignment)alignment; </pre>	
Parameter	text	Barcode data to send to the printer Input 13 characters from '0' to '9'. The top of '01' is automatically added by the printer. Check digits are automatically calculated by the printer.
	moduleHeight	Barcode module height (the number of the modules) The valid range is 33 to 255.
	moduleSize	Module Size See "4.1.1(4)⑨ Module size (ModuleSize)" for available constants.
	alignment	Alignment See "4.1.1(4)⑦ Alignment (PrintAlignment)" for available constants.
Error	SIIPrinterException is thrown when an error occurs while calling the method. See " 4.1.3 SIIPrinterException Class " for details of error.	

Print GS1 Databar Expanded Stacked

Prints GS1 Databar Expanded Stacked.

```
Syntax      - (void) printGS1DataBarExpandedStacked: (NSString *)text
              column: (NSInteger) column
              moduleSize: (ModuleSize) moduleSize
              alignment: (PrintAlignment) alignment;
```

Parameter	text	Barcode data to send to the printer Input any number of characters using the following: ' ', '!', '"', '%', '&', "'", '(', ')', '*', '+', ',', '-', '.', '/', ':', ';', '<', '=', '>', '?', '_ ', '0' to '9', 'A' to 'Z', 'a' to 'z'. Input '{1' to FNC1. Be sure to input the check digit because it is not automatically calculated by the printer.
-----------	------	---

column	<p>The number of columns</p> <p>Specify the number of columns in 1 line.</p> <p>The valid range is the even number from 2 to 20.</p>
--------	--

moduleSize	Module Size See "4.1.1(4)⑨ Module size (ModuleSize)" for available constants.
------------	---

alignment Alignment
See "4.1.1(4)⑦ Alignment (PrintAlignment)" for available constants.

Error **SIIPrinterException** is thrown when an error occurs while calling the method. See "**4.1.3 SIIPrinterException Class**" for details of error.

Print Aztec Code

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

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

Cut paper

Feeds the paper to the paper cut position. The paper cut is not executed.

Syntax - (void) **cutPaper**: (CuttingMethod) cuttingMethod;

Parameter	cuttingMethod	Cutting method. See "4.1.1(4)⑰ Cutting method (CuttingMethod)" for available constants.
-----------	----------------------	---

Error **SIIPrinterException** is thrown when an error occurs while calling the method. See "**4.1.3 SIIPrinterException Class**" for details of error.

Paper form feed

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

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

Open cash drawer

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

Syntax

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

Sound buzzer

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

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

Sound external buzzer

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

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

Send binary data

Sends binary data to the printer.

Syntax - (void) **sendBinary**: (NSData*) data;

Parameter	data	Binary data to send to a printer Data size that can be specified at 1 time is 256 KB (262144 bytes).
-----------	------	---

Error **SIIPrinterException** is thrown when an error occurs while calling the method. See "**4.1.3 SIIPrinterException Class**" for details of error.

Description	In this method, specified binary data is sent to a printer without conversion.
-------------	--

By sending printer command as binary data with this method, printer functions which are not supported in the library become available. However, this method does not support commands which get responses from a 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 capable of sending and sending the file are describes below.</p> <ul style="list-style-type: none"> • .bmp, .jpg, .jpeg, .png Data is sent to the printer as image data. Colored image data is converted to monochrome image by binarization and sent to the printer. Printing is executed at one time after mapping the image data in 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 any line feed code in the last of text data. In order to print to the last of the text data, add a line feed code to the last of the text data. • .bin, .dat Data is sent to the printer as the binary data without conversion. <p>alignment</p> <p>Alignment The alignment is valid only when the file extension specified on fileName is .bmp, .jpg, .jpeg, .png, or .txt. See "4.1.1(4)⑦ Alignment (PrintAlignment)" for available constants.</p> <p>dithering</p> <p>Dithering The alignment is valid only when the file extension specified on fileName is .bmp, .jpg, .jpeg, .png, or .txt. See "4.1.1(4)⑩ Dithering (Dithering)" for available constants.</p>
Error	<p>SIIPrinterException is thrown when an error occurs while calling the method. See "4.1.3 SIIPrinterException Class" for details of error.</p>

Gets the latest printer status.

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

Parameter buf Status retrieved from a printer

Error **SIIPrinterException** is thrown when an error occurs while calling the method. See "**4.1.3 SIIPrinterException Class**" for details of error.

Description Status retrieved from a printer is stored to 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	OK	Error
1	Hardware error	OK	Error
2	Head temperature error	OK	Error
3	Reserved	Fixed	-
4	Out-of-paper error	OK	Error
5	Reserved	Fixed	-
6	Reserved	Fixed	-
7	Reserved	Fixed	-
8	FEED Switch status	OFF	ON
9	Reserved	Fixed	-
10	Paper feed status	Stop	Operating
11	Return-waiting status	No	Yes
12	Reserved	Fixed	-
13	Reserved	-	Fixed
14	Reserved	-	Fixed
15	Reserved	-	Fixed
16	FLASH memory rewriting	No	Yes
17	Reserved	-	Fixed
18	Reserved	-	Fixed
19	Reserved	-	Fixed
20 to 22	Battery remaining capacity level	000: No battery 001: Low (Battery remaining capacity: approx. 10%) 011: Middle (Battery remaining capacity: approx. 40%) 111: Full (Battery remaining capacity: approx. 80%)	
23	Battery error	No	Yes
24 to 31	Reserved	-	Fixed

Aborts the waiting state of a printer.

Syntax - (void) **abort**;

Error **SIIPrinterException** is thrown when an error occurs while calling the method.
See "4.1.3 **SIIPrinterException Class**" for details of error.

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

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

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

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

Syntax (a) - (void) **registerLogo**: (NSString *)fileName
 logoId: (NSString *)logoId
 dithering: (Dithering) dithering;

 (b) - (void) **registerLogo**: (NSString *)fileName
 logoId: (NSString *)logoId;

Parameter fileName File name of image data to register as logo
 The file extensions for supporting image data are .bmp, .jpg, .jpeg, and .png. When the image data is colored, it is converted to monochrome image by binarization and sent to the printer.

 logoId Logo ID to register (key code)
 Specify the logo ID to register to a printer by character string of 2 characters.
 The valid characters are ASCII character code from 20h (space) to 7Eh (tilde) such as alphanumeric ('0' to '9', 'A' to 'Z', 'a' to 'z').

 dithering Dithering
 See "4.1.1(4)⑩ Dithering (Dithering)" for available constants.

Error **SIIPrinterException** is thrown when an error occurs while calling the method.
See "4.1.3 **SIIPrinterException Class**" for details of error.

Prints the registered logo.

Syntax - (void) **printLogo**: (NSString *)logoId
 alignment (PrintAlignment) alignment;

Parameter logoId Logo ID to print (key code)
 Specify registered logo ID by character strings.

 alignment Alignment
 See "4.1.1(4)⑦ Alignment (PrintAlignment)" for available constants.

Error **SIIPrinterException** is thrown when an error occurs while calling the method.
See "**4.1.3 SIIPrinterException Class**" for details of error.

unregisterLogo

Delete registered logo

Deletes the registered logo.

Syntax - (void) **unregisterLogo:** (NSString *)logoId;

Parameter logoId Logo ID to delete (key code)
Specify registered logo ID by character strings.

Error **SIIPrinterException** is thrown when an error occurs while calling the method.
See "**4.1.3 SIIPrinterException Class**" for details of error.

registerStyleSheet

Register style sheet

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

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

unregisterStyleSheet

Delete registered style sheet

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

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

resetPrinter

Reset printer

Resets the printer hardware.

Syntax - (void) **resetPrinter;**

Error **SIIPrinterException** is thrown when an error occurs while calling the method.
See "**4.1.3 SIIPrinterException Class**" for details of error.

Description The printer hardware reset is performed by the printer command "Printer Reset". When using this method, enable iOS Auto Connection with the printer command "Set Bluetooth Communication". 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.

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

Gets responses from the printer.

Syntax	- (void) getPrinterResponse: (NSInteger) responseId param: (NSObject *)param response: (void *)response;	
Parameter	responseId	Response type constant See "4.1.1(3)③ Response type" for available constants.
	param	Command parameter The values for specifying varies depending on the response type constant. See the following table for possible values.
	response	Buffer that stores retrieved response data Buffer type varies depending on the response type constant. See the following table for buffer types.

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.
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.

Response Type Constant	
Parameter	Description
SII_PM_PRINTER_RESPONSE_BATTERY_STATUS (Battery remaining capacity level)	
param	Specify nil.
Response	<p>Specify an NSInteger array of length 1. When the response is retrieved successfully, battery remaining capacity level is stored in value. See "4.1.1(3)④ Battery remaining capacity level" for details of value. Battery remaining capacity level:</p> <p>SII_PM_BATTERY_STATUS_FULL : Full (Battery remaining capacity: approx. 80%) SII_PM_BATTERY_STATUS_MIDDLE: Middle (Battery remaining capacity: approx. 40%) SII_PM_BATTERY_STATUS_LOW: Low (Battery remaining capacity: approx. 10%) SII_PM_BATTERY_STATUS_EMPTY: No battery</p>

Error **SIIPrinterException** is thrown when an error occurs while calling the method.
See "4.1.3 SIIPrinterException Class" for details of error.

startDiscoveryPrinter Start printer search (Bluetooth)

Searches Bluetooth device (Bluetooth accessory).

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

Parameter predicate Specify nil.

completion Event completion of
EABluetoothAccessoryPickerCompletion
Specify ^(NSError *error) to receive event completion of
EABluetoothAccessoryPickerCompletion.

Error **SIIPrinterException** is thrown when an error occurs while calling the method.

Description This method searches Bluetooth device (Bluetooth accessory). This method calls showBluetoothAccessoryPickerWithNameFilter of EAAccessoryManager internally. When executing this method, pairing with Bluetooth device is enable in the displayed window.

Example for specifying ^(NSError *error)
(Statement of EABluetoothAccessoryPickerCompletion)

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

startDiscoveryPrinter Start printer search (TCP/IP)

This method is not supported. When executing this method, it searches SII printer other than MP-B20.

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

Cancel printer search

This method is not supported. When executing this method, it cancels executing `startDiscoveryPrinter` (TCP/IP).

Syntax - (void) **cancelDiscoveryPrinter**;

Get found printer information

This method is not supported. When executing this method, it returns the printer information searched by **startDiscoveryPrinter** (TCP/IP) as NSArray type.

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

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

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

[illegible]

Starts or ends batch processing.

Syntax	- (void) controlTransaction: (TransactionFunction) control;
Parameter	control Batch processing selection See "4.1.1(4)①⑨ Batch processing selection (TransactionFunction)" for available constants.
Error	SIIPrinterException is thrown when an error occurs while calling this method. See " 4.1.3 SIIPrinterException Class " for details on the error.
Description	<p>The procedure of batch processing is as follows:</p> <ol style="list-style-type: none"> (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: <ul style="list-style-type: none"> • Specify SII_PM_TRANSACTION_CLEAR • Specify SII_PM_TRANSACTION_START • Execute disconnect <p>The batch processing target methods are as follows:</p> <ul style="list-style-type: none"> • sendText • sendTextEx • printBarcode • printPDF417 • printQRcode • printDataMatrix • printMaxiCode • printGS1DataBarStacked • printGS1DataBarStackedOmnidirectional • printGS1DataBarExpandedStacked • cutPaper • sendBinary • sendDataFile • printLogo^{*1}

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

(6) Property Details

`sendTimeout`

Get/Set send timeout period

Gets or sets the send timeout period.

Syntax	<code>@property NSInteger sendTimeout;</code>
Effective range	100 to 300000 (millisecond: ms) When the set value is below 100, the value is set to 100 ms. When the set value exceeds 300000, the value is set to 300000 ms.
Default	10000
Description	This method can get or set the send timeout period regardless of whether <code>isConnect</code> is Yes or No. The set timeout period becomes enabled at the next data sending.

`receiveTimeout`

Get/Set receive timeout period

Gets or sets the receive timeout period.

Syntax	<code>@property NSInteger receiveTimeout;</code>
Effective range	100 to 300000 (millisecond: ms) When the set value is below 100, the value is set to 100 ms. When the set value exceeds 300000, the value is set to 300000 ms.
Default	10000
Description	This method can get or set the receive timeout period regardless of whether <code>isConnect</code> is Yes or No. The set timeout period becomes enabled at the next data receiving.

`internationalCharacter`

Get/Set international character set

Gets or sets the value of international character set.

Syntax	<code>@property NSInteger internationalCharacter;</code>
Description	See "4.1.1(3)⑤ International character set" for settable constants. When invalid value is set, it is ignored. When this property is not set, it is initialized to following state depending on a language setting of an iOS device.

When a language setting of an iOS device is Japanese:

SH_PM_COUNTRY_JAPAN

When a language setting of an iOS device is other languages than Japanese:

SH_PM_COUNTRY_USA

When the text data is sent by `sendText`, `sendTextEx`, or `sendDataFile`, the print result for the following character differs depending on this property setting.

The character code differs depending on this property setting:

0x23, 0x24, 0x40, 0x5B, 0x5C, 0x5D, 0x5E, 0x60, 0x7B, 0x7C, 0x7D, 0x7E

Gets or sets the value of codepage.

Syntax	@property NSInteger codePage ;
Description	See "4.1.1(3)⑥ Codepage" for settable constants. When invalid value is set, it is ignored. When this property is not set, it is initialized to following codepage depending on a language setting of an iOS device. When a language setting of an iOS device is Japanese: SII_PM_CODE_PAGE_KATAKANA When a language setting of an iOS device is other languages than Japanese: SII_PM_CODE_PAGE_1252 The encoder used for sending text data by sendText method, sendTextEx method, or sendDataFile method is changed depends on this property setting.

Gets the value of the connecting printer model.

Syntax	@property(readonly) NSInteger printerModel ;
Default	-1
Return value	See "4.1.1(3)① Printer model" for available constants. When isConnect is NO, -1 is returned.

Gets the port type used for connecting with the printer.

Syntax	@property(readonly) NSInteger portType ;
Default	-1
Return value	See "4.1.1(3)② Port type" for available constant. 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.

Do not use this property since this property is not supported.

Syntax @property NSInteger **socketKeepingTime**;

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 specifying nil for this property, the notification of the printer status is stopped.

4.1.2 SIIPrinterInfo Class

This class stores the printer information searched by printer searching method for TCP/IP.
Do not use this class since this class is not supported.

4.1.3 SIIPrinterException Class

(1) Method List

Method provided by **SIIPrinterException** class is 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 codes
errorMessage	R	Get error message

(3) Constant List

① Error code

Constants used for getting error codes are shown in 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 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

Constant Name	Description	Value
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 data file.	-311
SII_PM_ERROR_OVER_MAX_IMAGE	Either or both of width and height of image data 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_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 for **SIIPrinterManager** class is called.

Syntax **SIIPrinterException**

(5) Property Details

errorCode

Get error codes

Gets error code for thrown exception.

Syntax @property NSInteger **errorCode**;

Return value See "4.1.3(3) Constant List" for more details.

errorMessage

Get error message

Gets error message for thrown exception.

Syntax @property NSString ***errorMessage**;

Description Character string to complement **errorCode** property can be retrieved.

4.1.4 SIIPrinterManagerDelegate Protocol

(1) Method List

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

Name	Description
didStatusChange	Notify printer status

(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.

4.1.5 SIISmartLabelManager Class

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

Do not use this class because it is not supported.

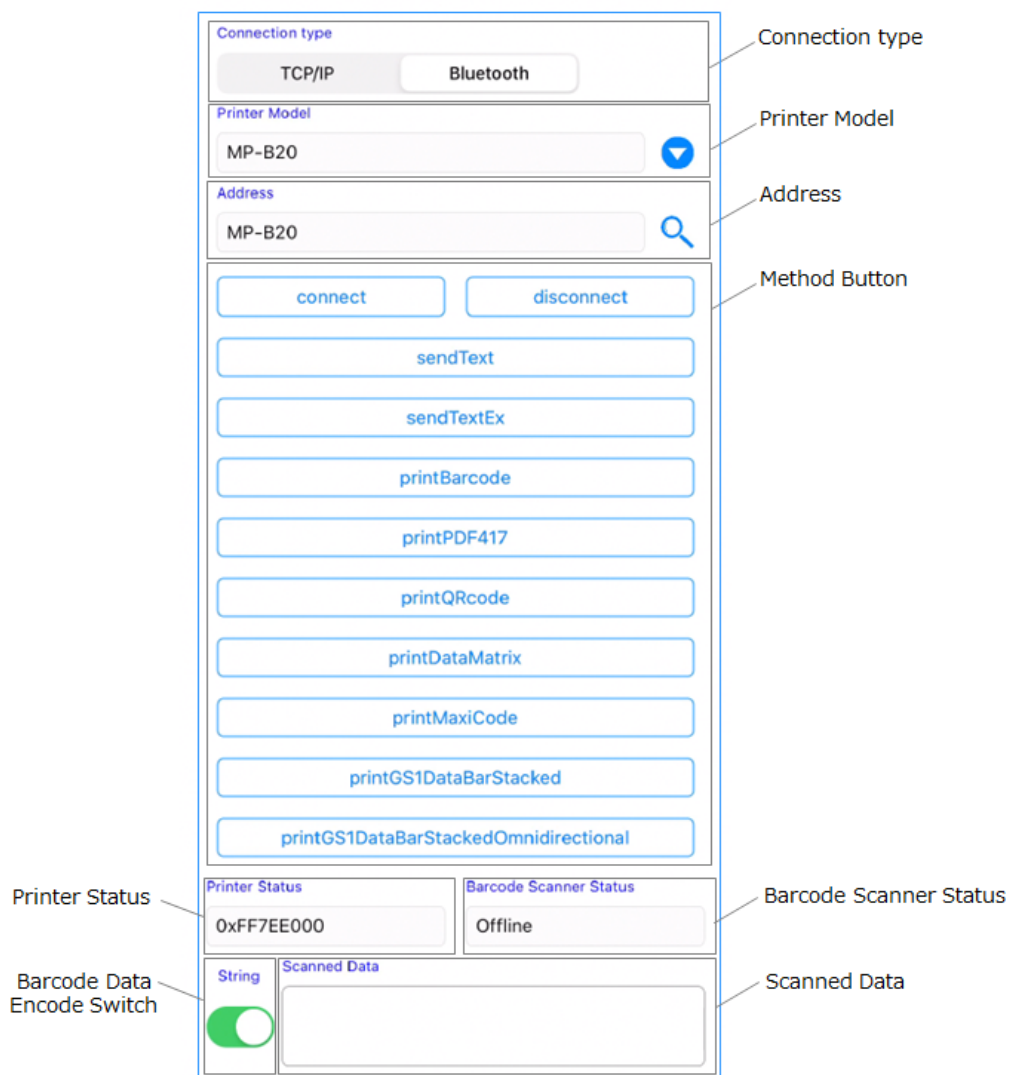
Chapter 5



Sample Program

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

5.1 Screen Layout

SII print class library includes SiiLibSample as the sample program with Xcode project format. This section describes the screen of SiiLibSample.



Item	Description
Connection Type	Selects connection type to a printer.
Printer Model	Specifies printer model. After tapping  , a list of printer model is displayed. By selecting from the list, printer model name can be entered.
Address	Specifies printer address. After tapping  , a list of the paired Bluetooth device name is displayed. By selecting a Bluetooth device name from the list, the printer address can be selected.
Methods Button	These buttons are for executing each method. In SiiLibSample, methods and properties of "4.1.1 SIIPrinterManager Class " are disposed. By scrolling the window, methods or properties not displayed can be found. See "Chapter 4 Function of the Library" for details of each method.
Printer Status	Displays the printer status. When connect succeeds, the latest status is displayed.
Barcode Scanner Status	Displays the connection status of the barcode scanner. MP-B20 does not support the barcode scanner.
Barcode Data Encode Switch	Selects the barcode data encoded by the barcode scanner. MP-B20 does not support the barcode scanner.
Scanned Data	Displays the barcode data scanned through the barcode scanner. MP-B20 does not support the barcode scanner.

5.2 Precaution

The sample program is subject to change without notice.

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

Chapter 6

Disclaimer

We closely monitor the development of SII print class library in order to avoid problems. However, we are not responsible for any damages arising out of the use of SII print class library.

Appendix A

Character Set

A.1 Codepage Table (Character Code Table)

The codepages when **SII_PM_COUNTRY_USA** is set for the international character set are shown below. Print results of the specific character codes 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	í	¬	½	¼	¿	«	»	
B0	☐	☐	☐		†	‡	§	¶	§							
C0	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥
D0	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥
E0	α	β	Γ	π	Σ	σ	μ	τ	φ	θ	Ω	δ	∞	φ	ε	∩
F0	≡	±	≥	≤	∫	∫	÷	≈	°	•	•	√	n	2	■	

Figure A-1 SII_PM_CODE_PAGE_437 (USA, Standard Europe)

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
20	!	"	#	\$	%	&	'	()	*	+	,	-	.	/	
30	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
40	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
50	P	Q	R	S	T	U	V	W	X	Y	Z	[\]	^	_
60	`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
70	p	q	r	s	t	u	v	w	x	y	z	{		}	~	
80																
90																
A0	。	「	」	、	・	ヲ	ア	イ	ウ	エ	オ	ヤ	ユ	ヨ	ッ	
B0	ー	ア	イ	ウ	エ	オ	カ	キ	ク	ケ	コ	サ	シ	ス	セ	ソ
C0	タ	チ	ツ	テ	ト	ナ	ニ	ヌ	ネ	ノ	ハ	ヒ	フ	ヘ	ホ	マ
D0	ミ	ム	メ	モ	ヤ	ユ	ヨ	ラ	リ	ル	レ	ロ	ワ	ン	ゝ	。
E0																
F0																

Figure A-2 SII_PM_CODE_PAGE_KATAKANA

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

Figure A-3 SII_PM_CODE_PAGE_850 (Multilingual)

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

Figure A-7 SII_PM_CODE_PAGE_857 (Turkish)

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
20	!	"	#	\$	%	&	'	()	*	+	,	-	.	/	
30	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
40	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
50	P	Q	R	S	T	U	V	W	X	Y	Z	[\]	^	_
60	`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
70	p	q	r	s	t	u	v	w	x	y	z	{		}	~	
80	A	B	Γ	Δ	E	Z	H	Θ	I	K	Λ	M	N	Ξ	O	Π
90	P	Σ	T	Υ	Φ	X	Ψ	Ω	α	β	γ	δ	ε	ζ	η	θ
A0	ι	κ	λ	μ	ν	ξ	ο	π	ρ	σ	ς	τ	υ	φ	χ	ψ
B0	⋈	⋈	⋈		†	‡		π	‡			π			‡	‡
C0	L	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥
D0	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥
E0	ω	ά	έ	ή	ϊ	ί	ό	ύ	ϋ	ώ	Ά	Έ	Ή	Ί	Ό	Υ
F0	Ω	±	≥	≤	İ	ÿ	÷	≈	°	.	.	√	n	2		

Figure A-8 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	ı	ı	ı	ı	ı	ı	ı	ı	ı	ı	ı	ı	ı	ı	ı
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 SII_PM_CODE_PAGE_866 (Russian)

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
20	!	"	#	\$	%	&	'	()	*	+	,	-	.	/	
30	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
40	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
50	P	Q	R	S	T	U	V	W	X	Y	Z	[\]	^	_
60	`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
70	p	q	r	s	t	u	v	w	x	y	z	{		}	~	
80	Ç	ü	é	â	ä	û	ç	ł	ë	ő	ö	î	ž	Ä	Ć	
90	É	Í	í	ô	ö	Ł	ł	Ś	ś	Ö	Ü	Ť	ť	Ł	×	č
A0	á	í	ó	ú	À	à	Ž	ž	Ę	ę	¬	ž	Č	š	«	»
B0	␣	␣	␣			Á	Â	Ě	Š					Ž	ž	
C0	␣	␣	␣	␣	␣	Ā	ā	Ľ	ľ	␣	␣	␣	␣	␣	␣	␣
D0	đ	Đ	Ď	Ě	ď	Ň	í	î	ě	Ĵ	␣	␣	␣	␣	␣	␣
E0	ó	ß	ô	ń	ň	š	š	ř	ú	ř	Ů	ý	Ý	ť	'	
F0	-	"	˘	˘	˘	§	÷	˚	˚	˚	Ů	Ř	ř	■		

Figure A-11 SII_PM_CODE_PAGE_852 (Eastern Europe)

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
20	!	"	#	\$	%	&	'	()	*	+	,	-	.	/	
30	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
40	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
50	P	Q	R	S	T	U	V	W	X	Y	Z	[\]	^	_
60	`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
70	p	q	r	s	t	u	v	w	x	y	z	{		}	~	
80	Ç	ü	é	â	ä	à	â	ç	ê	ë	è	ï	î	ì	Ä	Å
90	É	æ	Æ	ô	ö	ò	û	ù	ÿ	Ö	Ü	ø	£	Ø	×	f
A0	á	í	ó	ú	ñ	Ñ	ä	ö	¿	®	¬	½	¼	¡	«	»
B0	☐	☐	☐			Á	Â	Ã	©			¶	¶	¢	¥	₱
C0	L	⊥	T	└	└	└	ã	Ã	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	☐	☐	☐			x	X	и	И			¶	¶	й	Й	₱
C0	L	⊥	T	└	└	└	к	К	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	ř	ř	ř	ř	ř	ř	ř	ř	ř	ř	ř	ř	ř	ř	ř	ř
F0	đ	đ	đ	đ	đ	đ	đ	đ	đ	đ	đ	đ	đ	đ	đ	đ

Figure A-15 SII_PM_CODE_PAGE_1250 (Central European)

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
20	!	"	#	\$	%	&	'	()	*	+	,	-	.	/	
30	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
40	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
50	P	Q	R	S	T	U	V	W	X	Y	Z	[\]	^	_
60	`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
70	p	q	r	s	t	u	v	w	x	y	z	{		}	~	
80	Ѡ	ѡ	Ѣ	ѣ	Ѥ	ѥ	Ѧ	ѧ	Ѩ	ѩ	Ѫ	ѫ	Ѭ	ѭ	Ѯ	ѯ
90	Ѱ	ѱ	Ѳ	ѳ	Ѵ	ѵ	Ѷ	ѷ	Ѹ	ѹ	Ѻ	ѻ	Ѽ	ѽ	Ѿ	ѿ
A0	Ѡ	ѡ	Ѣ	ѣ	Ѥ	ѥ	Ѧ	ѧ	Ѩ	ѩ	Ѫ	ѫ	Ѭ	ѭ	Ѯ	ѯ
B0	Ѱ	ѱ	Ѳ	ѳ	Ѵ	ѵ	Ѷ	ѷ	Ѹ	ѹ	Ѻ	ѻ	Ѽ	ѽ	Ѿ	ѿ
C0	Ѡ	ѡ	Ѣ	ѣ	Ѥ	ѥ	Ѧ	ѧ	Ѩ	ѩ	Ѫ	ѫ	Ѭ	ѭ	Ѯ	ѯ
D0	Ѱ	ѱ	Ѳ	ѳ	Ѵ	ѵ	Ѷ	ѷ	Ѹ	ѹ	Ѻ	ѻ	Ѽ	ѽ	Ѿ	ѿ
E0	Ѡ	ѡ	Ѣ	ѣ	Ѥ	ѥ	Ѧ	ѧ	Ѩ	ѩ	Ѫ	ѫ	Ѭ	ѭ	Ѯ	ѯ
F0	Ѱ	ѱ	Ѳ	ѳ	Ѵ	ѵ	Ѷ	ѷ	Ѹ	ѹ	Ѻ	ѻ	Ѽ	ѽ	Ѿ	ѿ

Figure A-16 SII_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	€	‘	’	“	”	•	-	-	™							
90																
A0	“	À	£	¤	¥	¦	§	¨	©	ª	«	¬	®	¯		
B0	°	±	²	³	´	µ	¶	·	¸	¹	º	»	¼	½	¾	
C0	í	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	Ϊ	Ϋ	ά	έ	ή	ί	
E0	ΰ	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	ϊ	ϋ	ό	ύ	ώ	

Figure A-17 SII_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

Open Source Software License

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

B.1 MIT License

- **SSZipArchive**

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