



SII SDK for Xamarin Application Programmer's Guide

Rev.03

[Products]

SLP720RT Series

RP-F10 Series

RP-G10 Series

RP-E10 Series

RP-D10 Series

MP-B30 Series

MP-B30L Series

MP-B20 Series

DSP-A01 Series

Seiko Instruments Inc.

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INTRODUCTION

This manual describes "SII SDK for Xamarin" (hereinafter referred to as "SDK") provided by Seiko Instruments Inc. (hereinafter referred to as "SII").

Target Devices

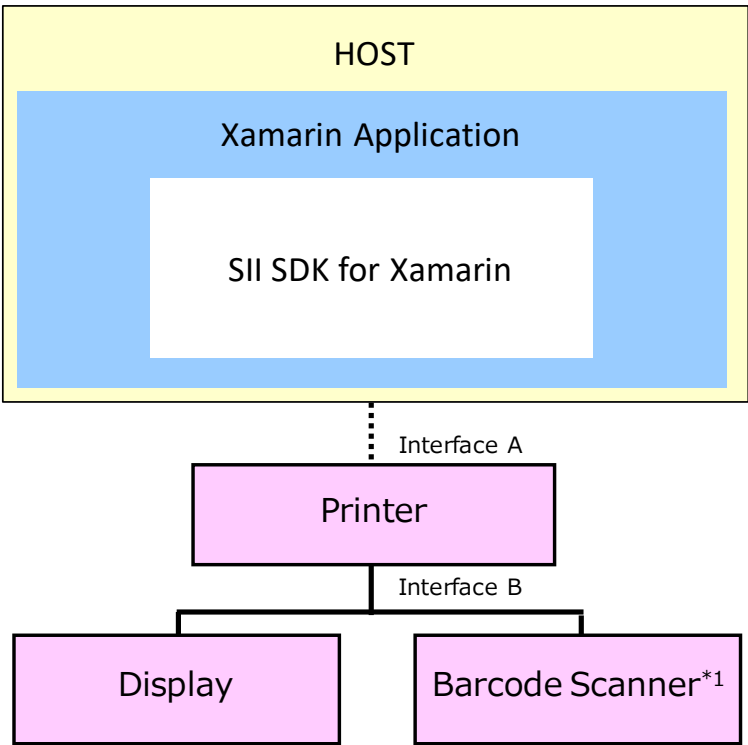
The printers supported by SDK are listed below.

iOS

Printer	Interface A	Display	Interface B
SLP720RT Series	TCP/IP	-	-
RP-F10 Series	Bluetooth	DSP-A01 Series	USB
	USB		
	TCP/IP		
RP-E10 Series	Bluetooth	-	-
	TCP/IP*1		
RP-D10 Series	Bluetooth		
	TCP/IP*2		
MP-B30 Series MP-B30L Series	Bluetooth		
	TCP/IP		
MP-B20 Series	Bluetooth		

*1: Use main firmware version 1.11, LAN interface firmware version 1.13.01 or later.

*2: Use main firmware version 1.05, LAN interface firmware version 1.13.01 or later.



Configuration Image

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

Android

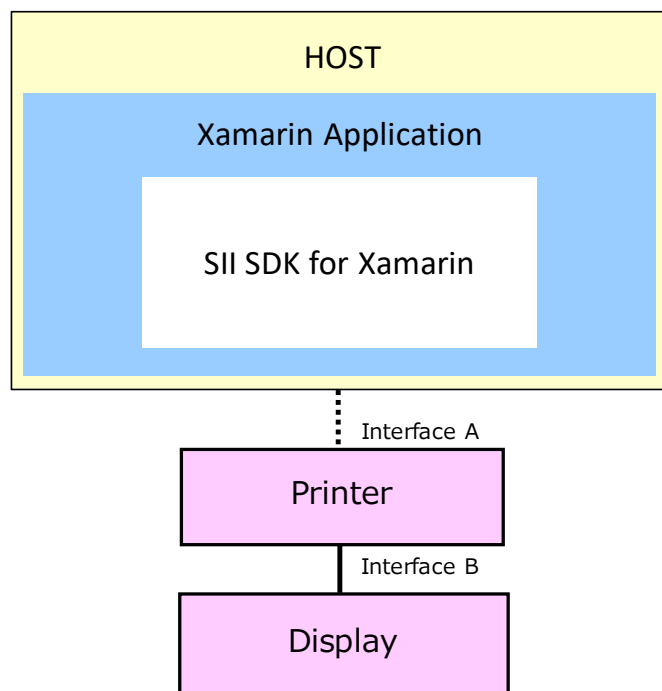
(1) When the display is used by connecting to SII printer.

Printer	Interface A	Display	Interface B
SLP720RT Series	USB	-	-
	TCP/IP		
RP-F10 Series	Bluetooth	DSP-A01 Series*1	USB
	USB		
	TCP/IP		
RP-G10 Series	USB	-	-
RP-E10 Series	Bluetooth		
	USB		
	TCP/IP*2		
RP-D10 Series	Bluetooth		
	USB		
	TCP/IP*3		
MP-B30 Series MP-B30L Series	Bluetooth		
	USB		
	TCP/IP		
MP-B20 Series	Bluetooth		
	USB		

*1: When the display is used by connecting to SII printer, it is described as "DSP-A01 via the printer".

*2: Use main firmware version 1.11, LAN interface firmware version 1.13.01 or later.

*3: Use main firmware version 1.05, LAN interface firmware version 1.13.01 or later.

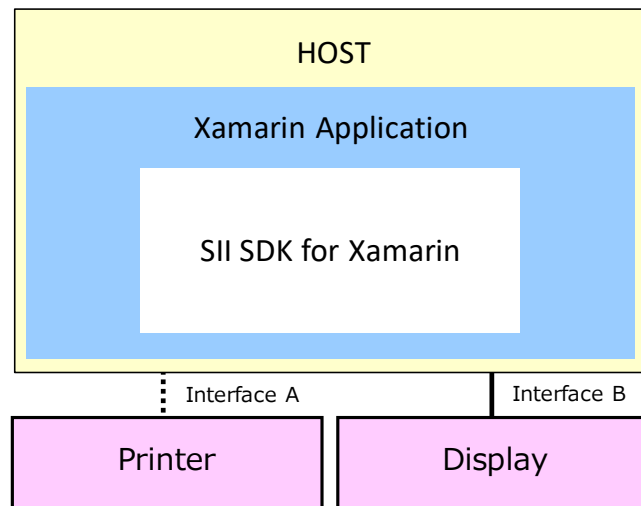


Configuration Image

(2) When the display is used alone.

Printer	Interface A	Display	Interface B
-	-	DSP-A01 series ^{*1}	USB

^{*1}: When the display is used alone, it is described as "DSP-A01 alone".



Configuration Image

Terms

The terms used in this manual are described below.

Printer

Term	Description
Technical Reference for Printer	The following technical reference. ·SLP720RT SERIES THERMAL PRINTER TECHNICAL REFERENCE ·RP-F10 SERIES THERMAL PRINTER TECHNICAL REFERENCE ·RP-F10/G10 SERIES THERMAL PRINTER TECHNICAL REFERENCE ·RP-E10 SERIES THERMAL PRINTER TECHNICAL REFERENCE ·RP-D10 SERIES THERMAL PRINTER TECHNICAL REFERENCE ·MP-B30 SERIES THERMAL PRINTER TECHNICAL REFERENCE ·MP-B30L SERIES THERMAL PRINTER TECHNICAL REFERENCE ·MP-B20 SERIES THERMAL PRINTER TECHNICAL REFERENCE
Printer command	Command for controlling the printer described in "Technical Reference for Printer".
USER'S GUIDE	The following user's guide. ·SLP720RT SERIES THERMAL PRINTER USER'S GUIDE ·RP-F10 SERIES THERMAL PRINTER USER'S GUIDE ·RP-F10/G10 SERIES THERMAL PRINTER USER'S GUIDE ·RP-E10 SERIES THERMAL PRINTER USER'S GUIDE ·RP-D10 SERIES THERMAL PRINTER USER'S GUIDE ·MP-B30 SERIES THERMAL PRINTER USER'S GUIDE ·MP-B30L SERIES THERMAL PRINTER USER'S GUIDE ·MP-B20 SERIES THERMAL PRINTER USER'S GUIDE

Display

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

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Chapter 1

Product Overview

This chapter describes the overview of the SDK.

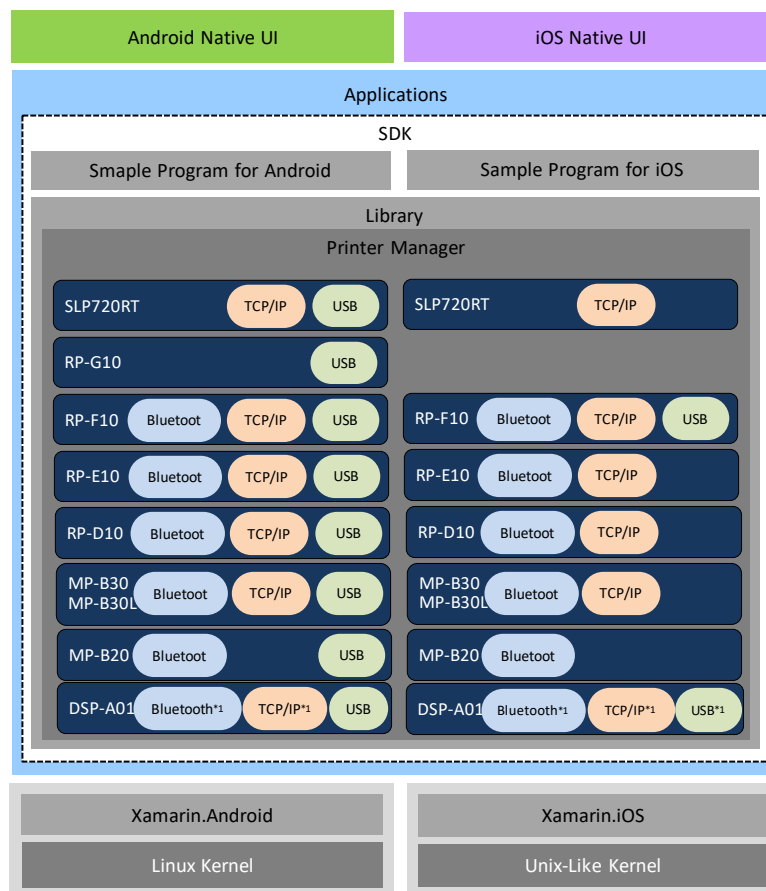
1.1 Functions Provided by SDK

The SDK including the library and the sample programs provides the functions to use SII printer (hereinafter referred to as "printer") described in "Target Printers" in "INTRODUCTION". Moreover, the SDK provides the library sample programs in Xamarin.Forms in Visual Studio.

1.2 SDK Overview

1.2.1 SDK Configuration

The library and the sample programs in the SDK are indicated with dashed lines in the figure below.



*1 : It is valid only when using the display via the printer.

1.2.2 Functions Provided by Library

The applications of iOS or Android to be developed by Xamarin can easily send print data and printer commands to a printer through the communication port (Bluetooth, USB, or TCP/IP) on an iOS or Android device.

Also, the applications can get the printer status.

The library provides the following functions.

The functions to be provided differ depending on the devices. See "Chapter 4 Library Functions of Printer Library" or "Chapter 5 Library Functions of Display" for the functions to be provided.

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

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

(NOTE) See "RP-F10 SERIES THERMAL PRINTER USER'S GUIDE" for details of the recommended barcode scanner and the barcode scanner setting.
--

1.2.3 Development of Application that Performs Bluetooth Communication or USB Communication with SII Printer

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

1.2.4 Registered Data of Display at the Shipping

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

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

Chapter 2

Product Specifications

This chapter describes the product specifications of the library.

2.1 Operating Environment

2.1.1 iOS

(1) Applicable iOS Devices

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

(a) SLP720RT

iPhone models

- iPhone 12
- iPhone 12 Pro
- iPhone 12 Pro Max
- iPhone 12 mini
- iPhone SE (2nd generation)
- iPhone 11
- iPhone 11 Pro
- iPhone 11 Pro Max
- iPhone XR
- iPhone XS
- iPhone XS Max
- iPhone X
- iPhone 8
- iPhone 8 Plus
- iPhone 7
- iPhone 7 Plus
- iPhone SE
- iPhone 6s
- iPhone 6s Plus

iPad models

- iPad (8th generation)
- iPad Pro 11-inch (2nd generation)
- iPad Pro 12.9-inch (4th generation)
- iPad (7th generation)
- iPad Pro 11-inch
- iPad Pro 12.9-inch (3rd generation)
- iPad (6th generation)
- iPad Pro 12.9-inch (2nd generation)
- iPad Pro 10.5-inch
- iPad (5th generation)

- iPad Pro 9.7-inch
- iPad Pro 12.9-inch (1st generation)
- iPad mini (5th generation)
- iPad mini 4

iPod models

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

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

iPhone models

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

iPad models

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

iPod models

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

(c) RP-F10-x27J1-4 (Bluetooth + USB host model), MP-B30

iPhone models

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

- iPhone 6s
- iPhone 6s Plus

iPad models

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

iPod models

- iPod touch (6th generation)

(d) MP-B30L

iPhone models

- iPhone 12
- iPhone 12 Pro
- iPhone 12 Pro Max
- iPhone 12 mini
- iPhone SE (2nd generation)
- iPhone 11
- iPhone 11 Pro
- iPhone 11 Pro Max
- iPhone XR
- iPhone XS
- iPhone XS Max
- iPhone X
- iPhone 8
- iPhone 8 Plus
- iPhone 7
- iPhone 7 Plus
- iPhone SE
- iPhone 6s
- iPhone 6s Plus

iPad models

- iPad (8th generation)
- iPad Pro 11-inch (2nd generation)
- iPad Pro 12.9-inch (4th generation)
- iPad (7th generation)
- iPad Pro 11-inch
- iPad Pro 12.9-inch (3rd generation)
- iPad (6th generation)
- iPad Pro 12.9-inch (2nd generation)
- iPad Pro 10.5-inch
- iPad (5th generation)
- iPad Pro 9.7-inch
- iPad Pro 12.9-inch (1st generation)
- iPad mini 4

iPod models

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

(e) RP-E10, RP-D10, MP-B20

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) 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 15.2
- iPadOS 13.1 to 13.7
- iPadOS 14.0 to 14.8
- iPadOS 15.0 to 15.2

2.1.2 Android

(1) Applicable OS

Applicable OSs for the library are shown in the following list.

Android 5.0 (API 21) to Android 12.0 (API 31)

2.2 Printer Settings

Set the memory switches of the printer to [Value] in the following table when using the library.
See "USER'S GUIDE" for details of the memory switches and the factory default settings.

2.2.1 iOS

(1) SLP720RT

MS	Function	Value
1-2	Taken Mode Selection (Taken Mode)	0: Enable ^{*1} 1: Disable ^{*2}
1-3	Mark Mode Selection (Mark Mode)	0: Enable ^{*3} 1: Disable ^{*4}
4-6	Paper Auto Detection Selection (Paper Auto Detection)	0: Enable ^{*3} 1: Disable ^{*3*4}
5-1	Automatic Status Response Selection (Auto Status Back)	0: Enable
5-2	Initialized Response Selection (Init. Response)	0: Enable
5-3	Data Discard Selection When Error Occurs (Error Through)	0: Enable
5-4	Data Discard Selection When Output Buffer Full Occurs (Response Data Discarding)	1: Disable
7	Thermal Paper Selection (Thermal Paper)	00B: Receipt 01B: Linerless label 10B: SLP Label
13-3	Realtime Command Selection (Realtime Command)	1: Enable

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

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

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

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

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

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

In addition, select the paper to use as follows.

- For marked linerless label:

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

- For SLP Label:

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

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

(2) RP-F10

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

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

^{*2}: Select "Enable" when using the barcode scanner.

See "USER'S GUIDE" for details about the combination of peripherals.

^{*3}: Only for Bluetooth connection.

^{*4}: Select "Enable" when using ResetPrinter.

(3) RP-E10, RP-D10

MS	Function	Value
5-2	Initialized Response Selection (Init. Response)	0: Enable
5-3	Data Discard Selection When Error Occurs (Error Through)	0: Enable
39-1 ^{*1}	iOS Auto Connection (Auto Connection)	1: Disable 0: Enable ^{*2}

^{*1}: Only for Bluetooth connection.

^{*2}: Select "Enable" when using ResetPrinter.

(4) MP-B30

- Memory switch

MS	Function	Value
1-1	Communication Selection (Interface)	1: USB/Wireless
1-6	Data Discard Selection When Error Occurs (Error Through)	0: Enable
1-8	Data Discard Selection When Output Buffer Full Occurs (Response Data Discarding)	1: Disable
2-2	Realtime Command Selection (Realtime Command)	0: Enable
9-1	Automatic Status Response Selection (Auto Status Back)	0: Enable
9-2	Initialized Response Selection (Init. Response)	0: Enable

- Bluetooth communication setting

See the printer command "Set Bluetooth Communication" described in "MP-B30 SERIES THERMAL PRINTER TECHNICAL REFERENCES" for the Bluetooth communication setting.

Function	Value
iOS Auto Connection Selection (Auto Connection)	1: Enable ^{*1} 0: Disable

^{*1}: Select "Enable" when using ResetPrinter.

(5) MP-B30L

- Memory switch

MS	Function	Value
1-1	Communication Selection (Interface)	1: USB/Wireless
1-3 to 5	Command System Selection (Command System)	000B: ESC/POS
1-6	Data Discard Selection When Error Occurs (Error Through)	0: Enable
1-8	Data Discard Selection When Output Buffer Full Occurs (Response Data Discarding)	1: Disable
2-1	Initialization Performance Selection After Paper Setting (Paper Set Handle)	0: Form Feed
2-2	Realtime Command Selection (Realtime Command)	0: Enable
2-7	Paper Form Feed Selection by Feed Switch (SW Paper Form Feed)	1: Cut Position Form Feed (Cut Position)
9-1	Automatic Status Response Selection (Auto Status Back)	0: Enable
9-2	Initialized Response Selection (Init. Response)	0: Enable

- Bluetooth communication setting

See the printer command "Set Bluetooth Communication" described in "MP-B30L SERIES THERMAL PRINTER TECHNICAL REFERENCES" for the Bluetooth communication setting.

Function	Value
iOS Auto Connection Selection (Auto Connection)	1: Enable* ¹ 0: Disable

*1: Select "Enable" when using ResetPrinter.

(6) MP-B20

- Memory switch

MS	Function	Value
1-1	Communication 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" described in "MP-B20 SERIES THERMAL PRINTER TECHNICAL REFERENCES" for the Bluetooth communication setting.

Function	Value
iOS Auto Connection Selection (iOS Auto Connection)	1: Enable* ¹ 0: Disable

*1: Select "Enable" when using ResetPrinter.

2.2.2 Android

(1) SLP720RT

MS	Function	Value
1-2	Taken Mode Selection (Taken Mode)	0 : Enable ^{*1} 1 : Disable ^{*2}
1-3	Mark Mode Selection (Mark Mode)	0 : Enable ^{*3} 1 : Disable ^{*4}
4-6	Paper Auto Detection Selection (Paper Auto Detection)	0 : Enable ^{*3} 1 : Disable ^{*3*4}
5-1	Automatic Status Response Selection (Auto Status Back)	0 : Enable
5-2	Initialized Response Selection (Init. Response)	0 : Enable
5-3	Data Discard Selection When Error Occurs (Error Through)	0 : Enable
5-4	Data Discard Selection When Output Buffer Full Occurs (Response Data Discarding)	1 : Disable
7	Thermal Paper Selection (Thermal Paper)	00B : Receipt 01B : Linerless label 10B : SLP Label
13-3	Realtime Command Selection (Realtime Command)	1 : Enable

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

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

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

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

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

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

In addition, select the paper to use as follows.

- For marked linerless label:

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

- For SLP Label:

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

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

(2) RP-F10, RP-G10

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

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

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

See "USER'S GUIDE" for details about the combination of peripherals.

(3) RP-E10, RP-D10

MS	Function	Value
5-2	Initialized Response Selection (Init. Response)	0: Enable

(4) MP-B30

MS	Function	Value
1-1	Communication Selection (Interface)	1: USB/Wireless* ¹ 0: USB* ²
1-6	Data Discard Selection When Error Occurs (Error Through)	0: Enable
1-8	Data Discard Selection When Output Buffer Full Occurs (Response Data Discarding)	1: Disable
2-2	Realtime Command Selection (Realtime Command)	0: Enable
9-1	Automatic Status Response Selection (Auto Status Back)	0: Enable
9-2	Initialized Response Selection (Init. Response)	0: Enable

*1: Select "USB/Wireless" when using Bluetooth connection or TCP/IP connection.

*2: Select "USB" when using USB connection.

(5) MP-B30L

MS	Function	Value
1-1	Communication Selection (Interface)	1: USB/Wireless* ¹ 0: USB* ²
1-3 to 5	Command System Selection (Command System)	000B: ESC/POS
1-6	Data Discard Selection When Error Occurs (Error Through)	0: Enable
1-8	Data Discard Selection When Output Buffer Full Occurs (Response Data Discarding)	1: Disable
2-1	Initialization Performance Selection After Paper Setting (Paper Set Handle)	0: Form Feed
2-2	Realtime Command Selection (Realtime Command)	0: Enable
2-7	Paper Form Feed Selection by Feed Switch (SW Paper Form Feed)	1: Cut Position Form Feed (Cut Position)
9-1	Automatic Status Response Selection (Auto Status Back)	0: Enable
9-2	Initialized Response Selection (Init. Response)	0: Enable

*1: Select "USB/Wireless" when using Bluetooth connection or TCP/IP connection.

*2: Select "USB" when using USB connection.

(6) MP-B20

MS	Function	Value
1-1	Communication Selection (Interface)	1: Wireless* ¹ 0: USB* ²
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
3-5	Data Discard Selection When Output Buffer Full Occurs (Response Data Discarding)	1: Disable

*1: Select "Wireless" when using Bluetooth connection.

*2: Select "USB" when using USB connection.

2.3 Precaution

2.3.1 iOS

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

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

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

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

2.3.2 Android

When using Bluetooth, it is necessary that the connection has been established by SPP (Serial Port Profile).

When using USB, it is necessary that the Android device has supported the USB host function.

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

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

Chapter 3

How to Use Library

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

3.1 iOS or Android Application Development Environment

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

- iOS and Android

Windows: Visual Studio 2019

Mac: Visual Studio 2019 for Mac

- iOS

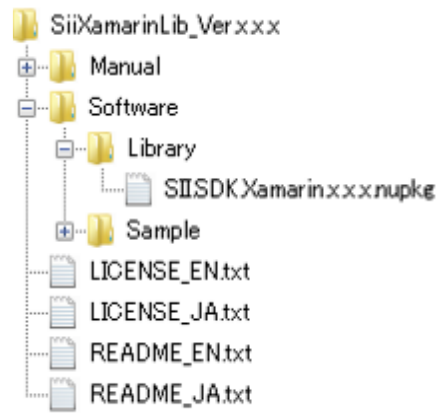
Mac: Xcode12 or later

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

(NOTE) The Xcode is required to have been installed on Mac to build an iOS application.
--

3.2 Provided Files

The file configuration of the SDK is as follows.



The file format of the library is NuGet package. The file name of the library is `SII.SDK.Xamarin.x.x.x.nupkg`.

3.3 Build Library into Visual Studio

Using the project of the sample program (Sample) included in SDK as an example, this section describes how to build the library into the project.

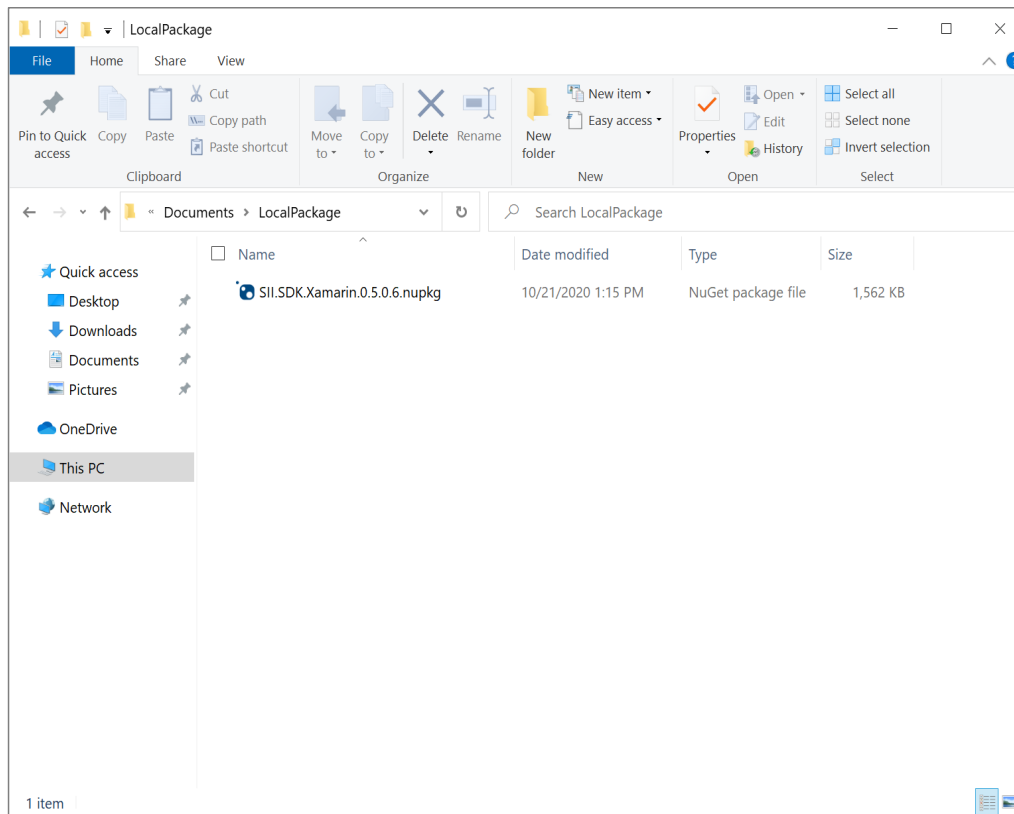
See "Chapter 6 Sample Program" for the sample program included in the SDK.

3.3.1 Windows

(1) Common to iOS and Android

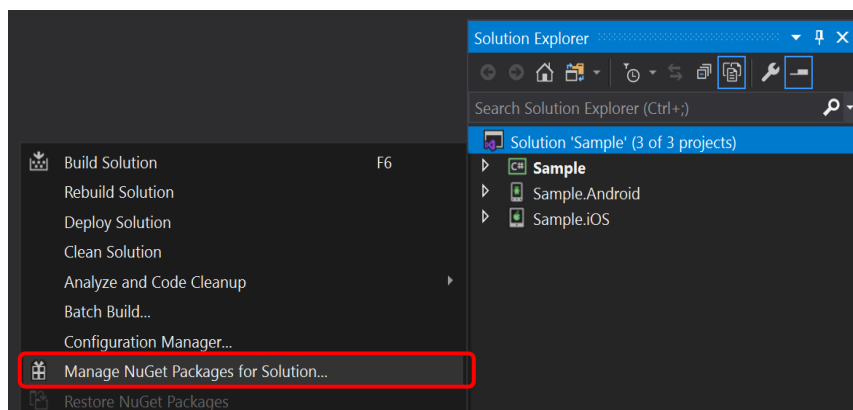
(a) Allocate the library to an arbitrary folder.

As an example, create the "LocalPackage" folder and allocate SII.SDK.Xamarin.x.x.x.nupkg in the folder.

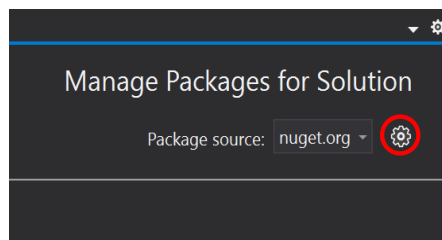


(b) Open Visual Studio

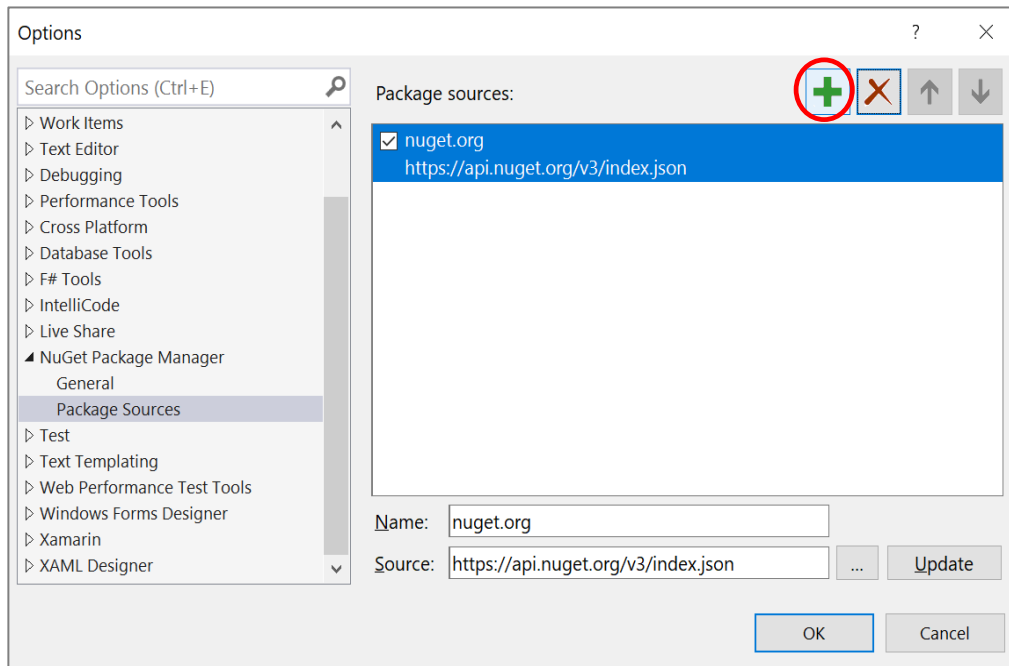
(c) Select [Manage NuGet Packages for Solution...] from the right-click menu of the [Solution 'Sample'] in the Solution Explorer.



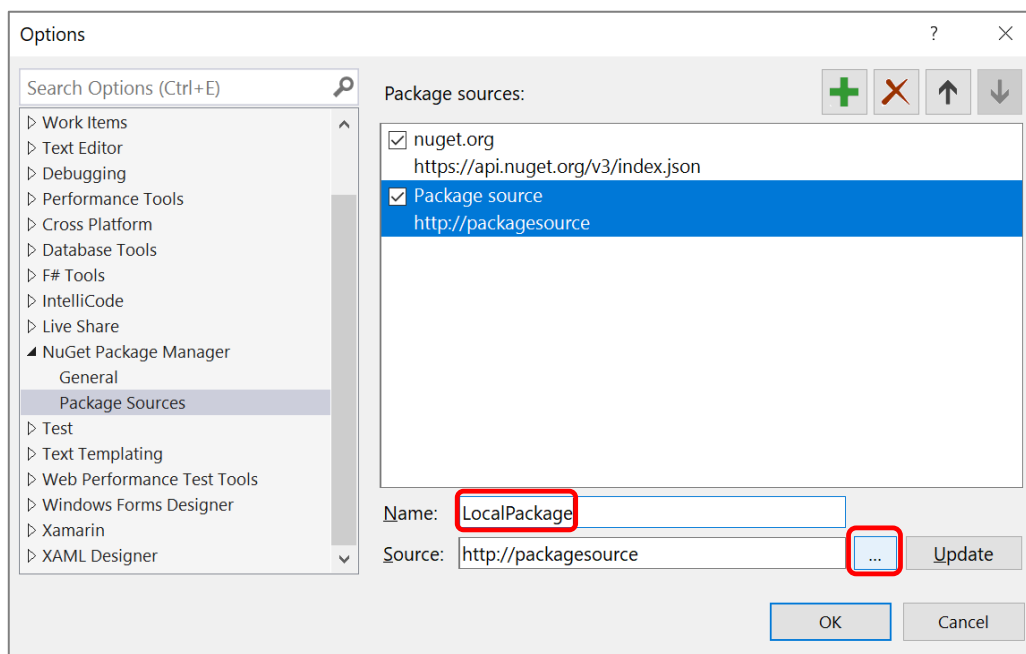
(d) Click the gear icon on the [Manage Packages for Solution].



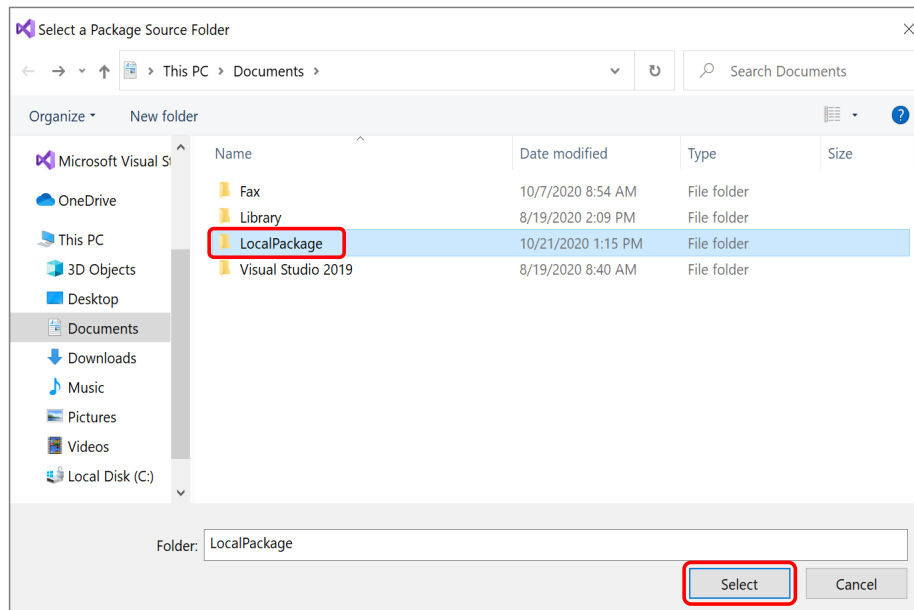
(e) Click the [+] button on the "Options" dialog.



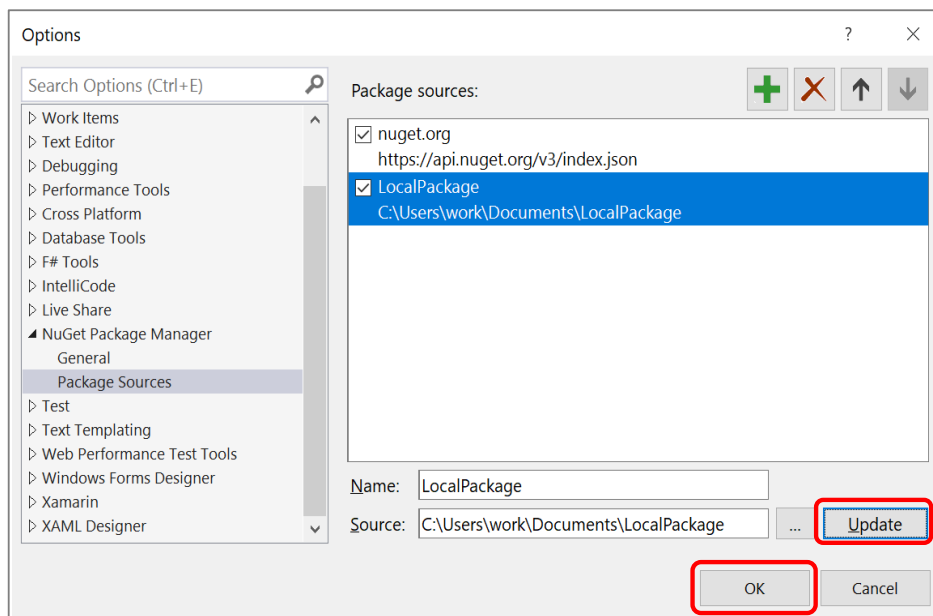
(f) Change the name in the "Name" to LocalPackage and click the [...] button.



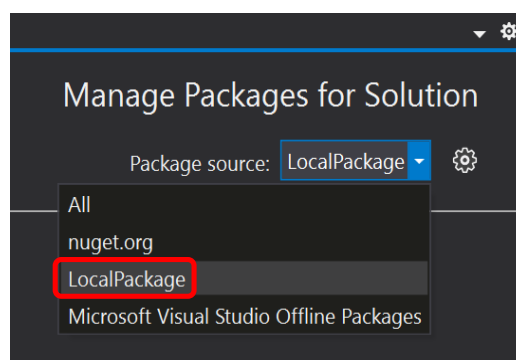
- (g) On the "Select a Package Source Folder" dialog, select the "LocalPackage" folder created in the process (a) and click the [Select] button.



- (h) The "Options" dialog is displayed. Click the [Update] button and then click the [OK] button.



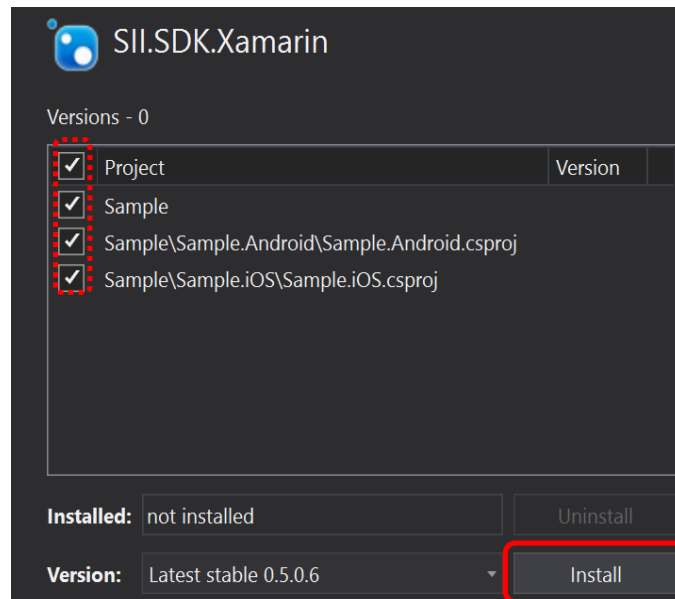
- (i) Select [LocalPackage] in the pulldown menu on the "Manage Packages for Solution" - "Package source".



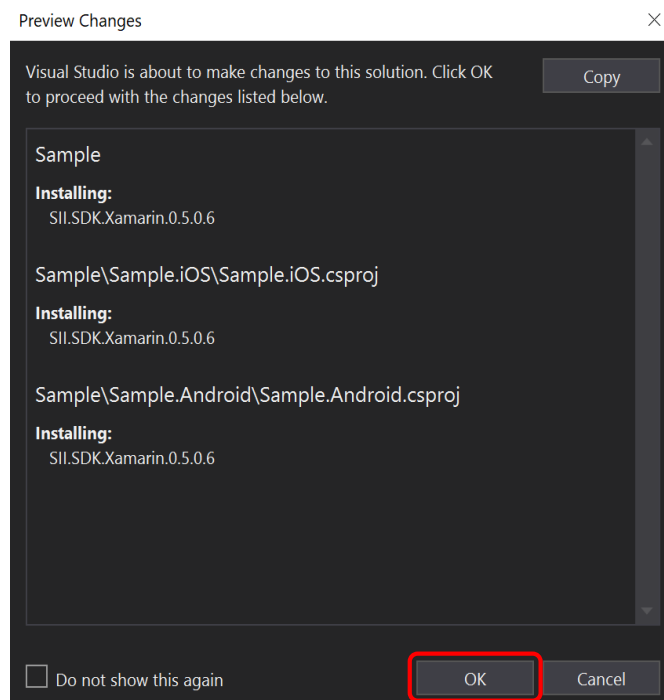
- (j) Select the [SII.SDK.Xamarin].



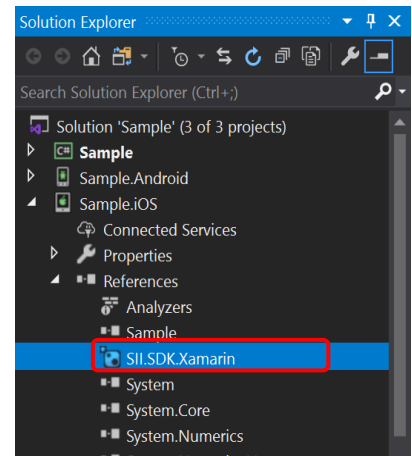
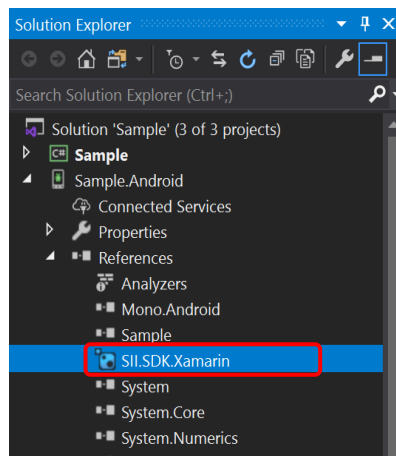
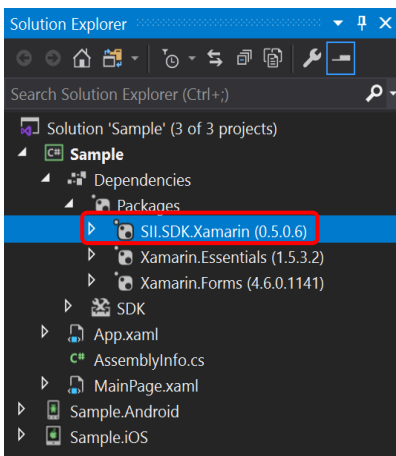
- (k) Check the boxes of necessary projects on the [SII.SDK.Xamarin] property panel and then click the [Install] button.



- (l) After the "Preview Changes" dialog is displayed, click the [OK] button.



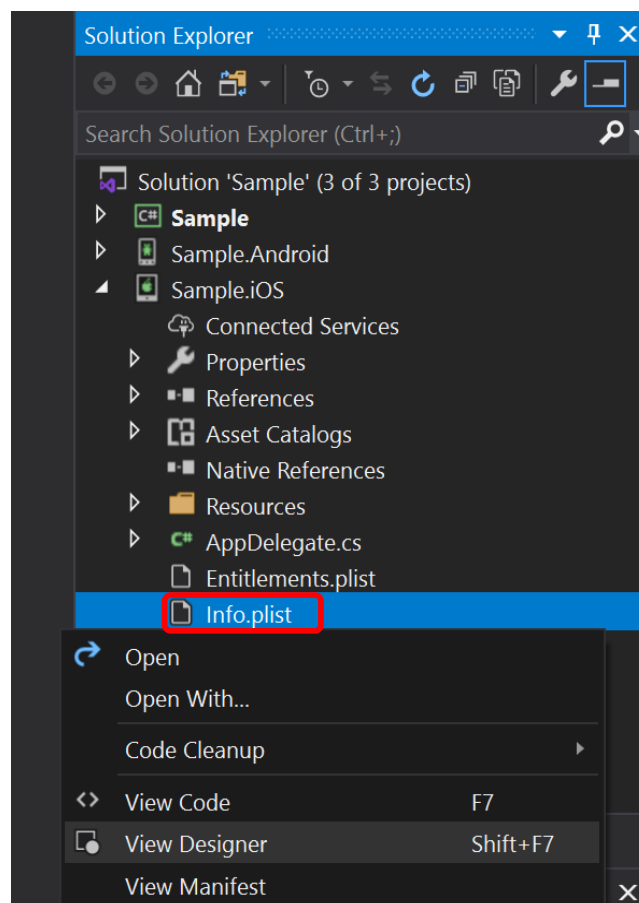
(m) Confirm that the project has been installed.



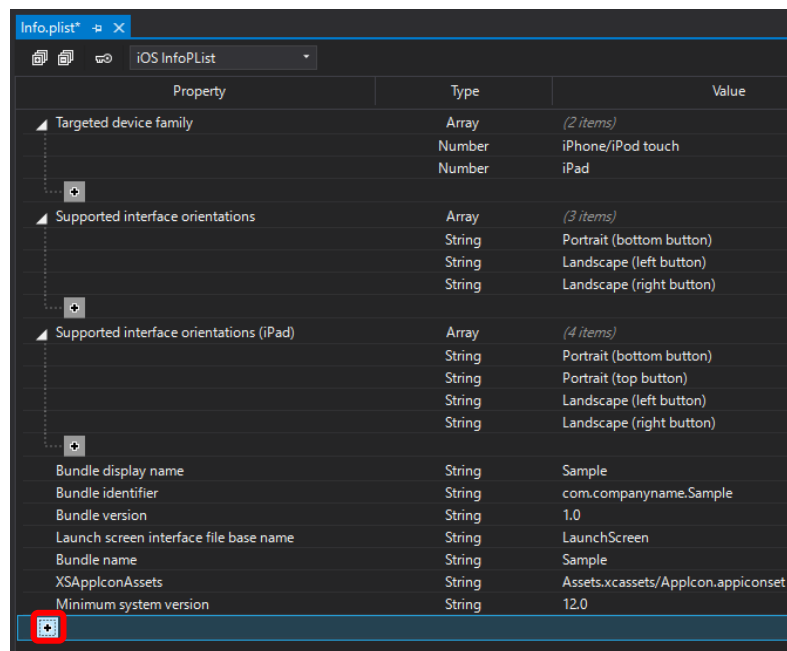
The following steps differ depending on the platform. See "3.3.1(2) iOS" for iOS. See "3.3.1(3) Android" for Android.

(2) iOS

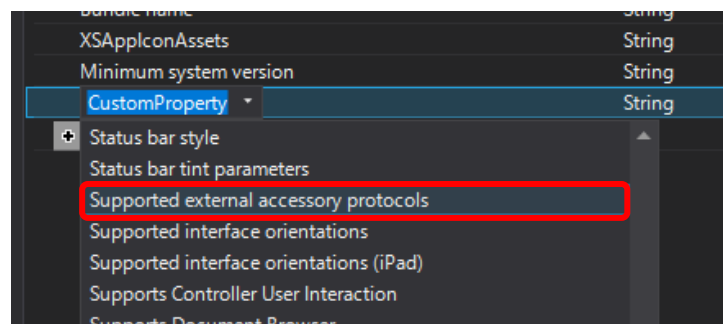
(n) Select [View Designer] from the right-click menu of the [Sample.iOS] - [Info.plist] on the Solution Explorer.



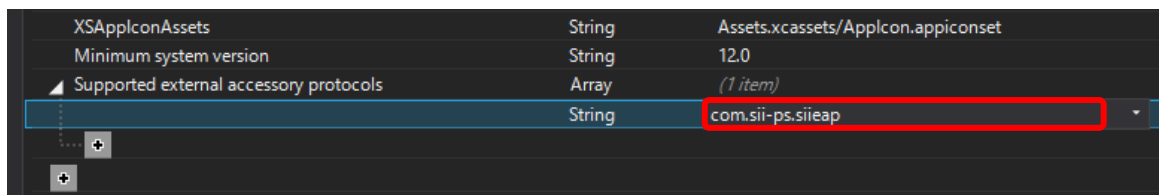
- (o) Click the [+] on the [Info.plist] to expand the list.



- (p) Select the [Supported external accessory protocols] in the list.



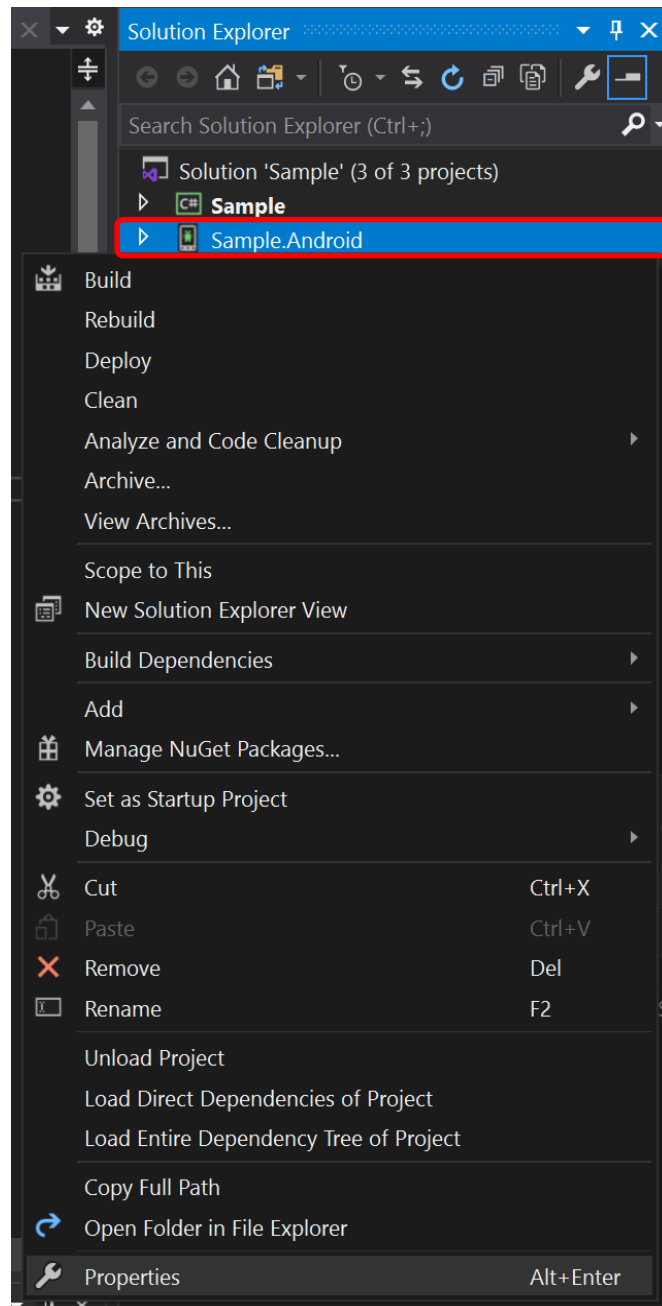
- (q) Enter com.sii-ps.siiheap in the expanded [Supported external accessory protocols] as a value.



By completing these procedures, the library function becomes available.

(3) Android

(n) Select [Properties] from the right-click menu of [Sample.Android] in the Solution Explorer.



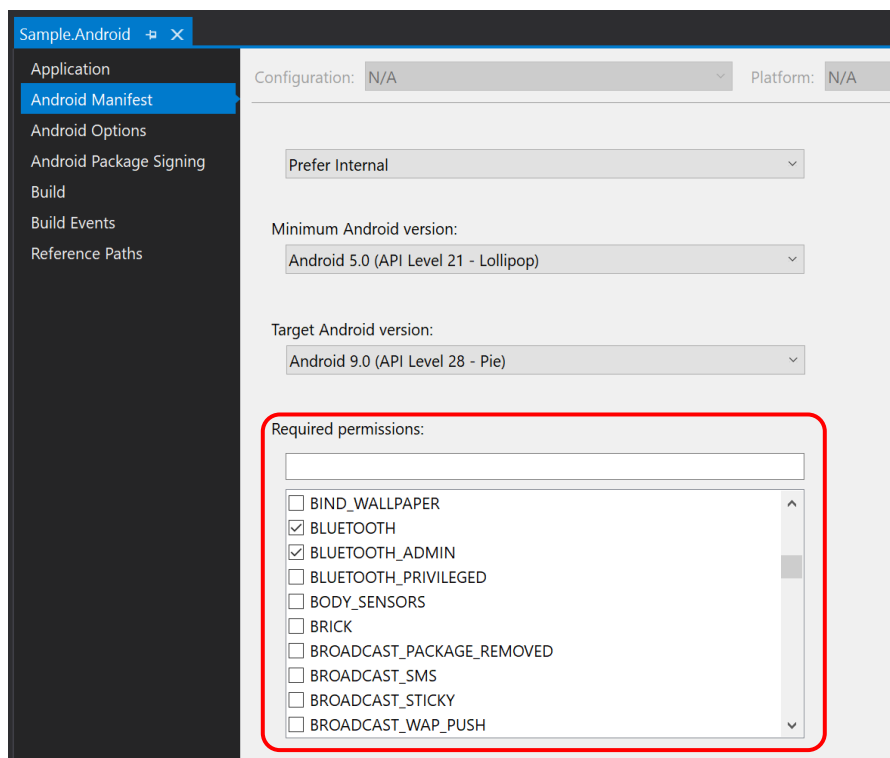
(o) Select the [Android Manifest] and check the boxes on the "Required permissions" the following items.

[When using Bluetooth]

- ACCESS_FINE_LOCATION
- ACCESS_COARSE_LOCATION
- BLUETOOTH
- BLUETOOTH_ADMIN
- BLUETOOTH_CONNECT
- BLUETOOTH_SCAN

[When using TCP/IP]

- ACCESS_WIFI_STATE
- CHANGE_WIFI_STATE
- INTERNET



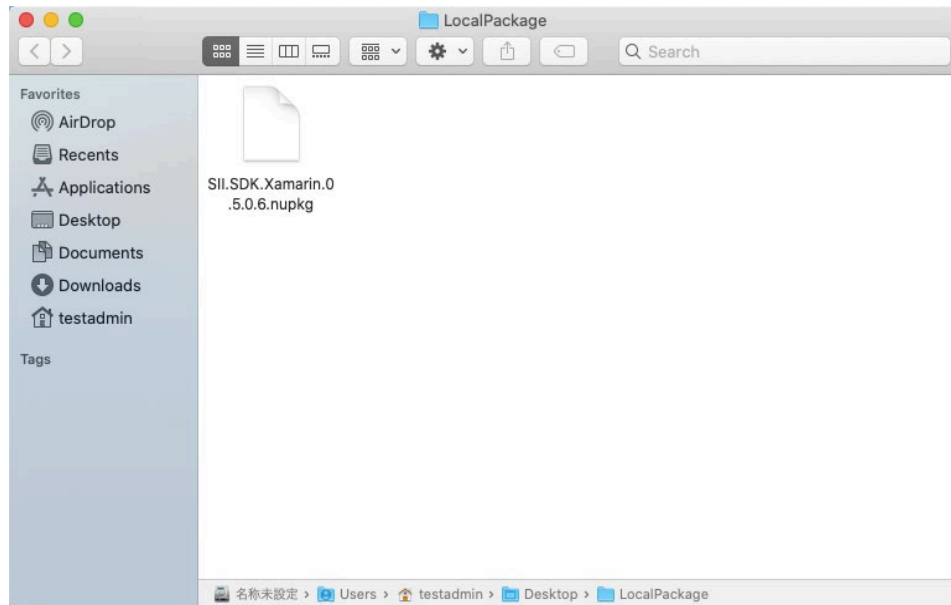
By completing these procedures, the library function becomes available.

3.3.2 Mac

(1) Common to iOS and Android

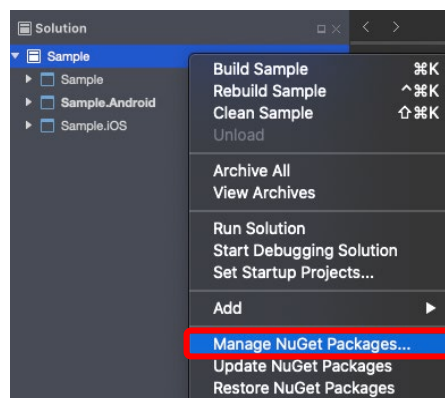
(a) Allocate the library to an arbitrary folder.

As an example, create the "LocalPackage" folder and allocate SII.SDK.Xamarin.x.x.x.nupkg in the folder.

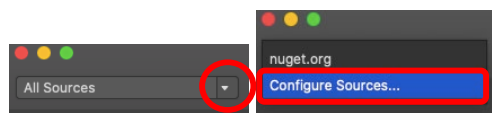


(b) Open Visual Studio.

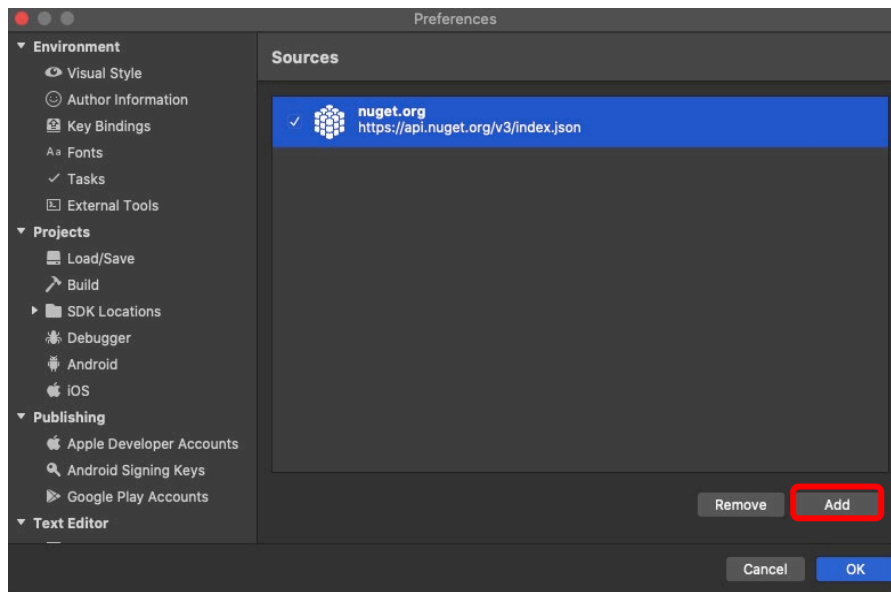
(c) Select [Manage NuGet Packages...] from the right-click menu of "Sample" in Solution Explorer.



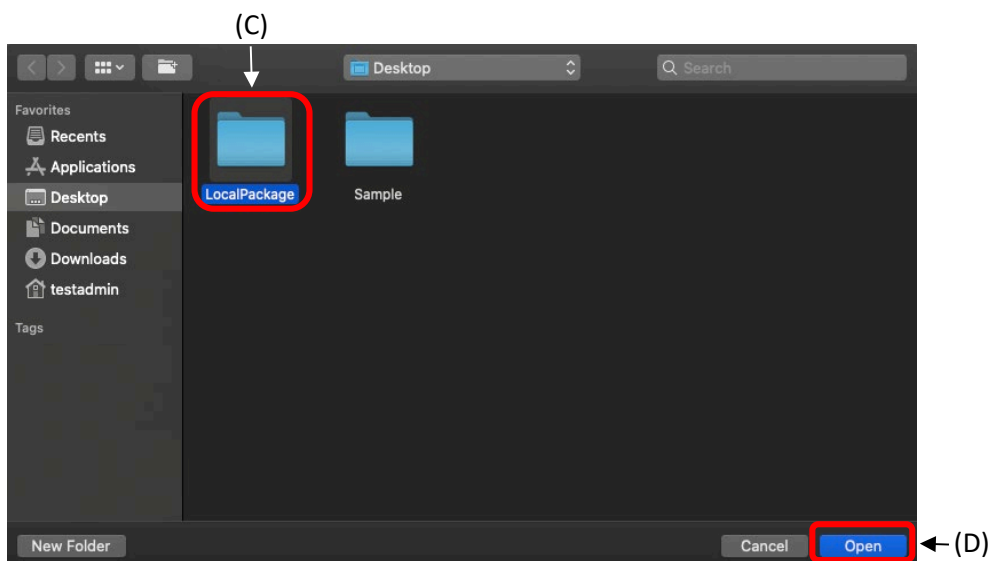
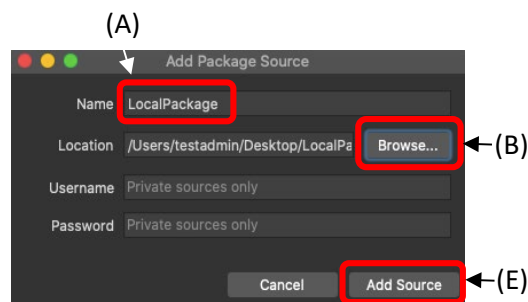
(d) Select [Configure Sources...] from the drop down menu in [All Sources].



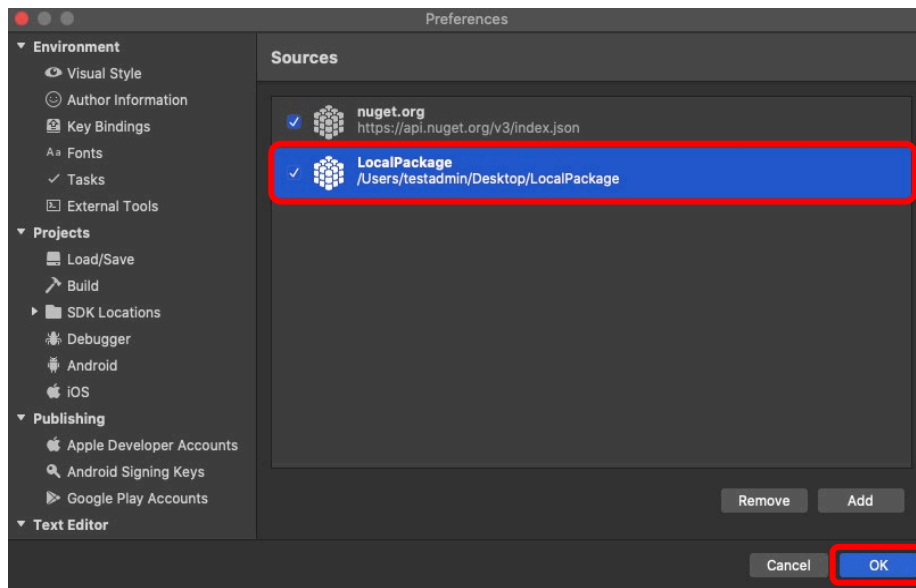
- (e) Click the [Add] button on the "Preferences" dialog.



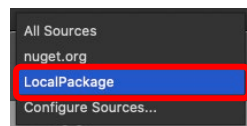
- (f) Enter LocalPackage in the "Name" on the "Add Package Source" dialog (A) and click the [Browse...] button (B).
Select the "LocalPackage" folder created in the process (a) on the "Select a Package Source Folder" dialog (C) and click the [Open] button (D).
The "Add Package Source" dialog is displayed. Click the [Add Source] button (E).



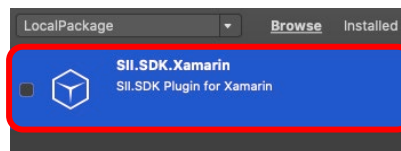
(g) Confirm the "Preferences" dialog that the "LocalPackage" has been added and click the [OK] button.



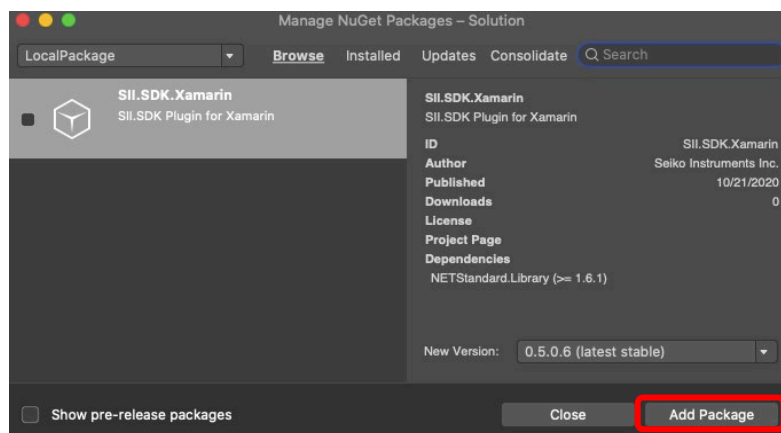
(h) Select [LocalPackage] from the drop-down menu on "All sources".



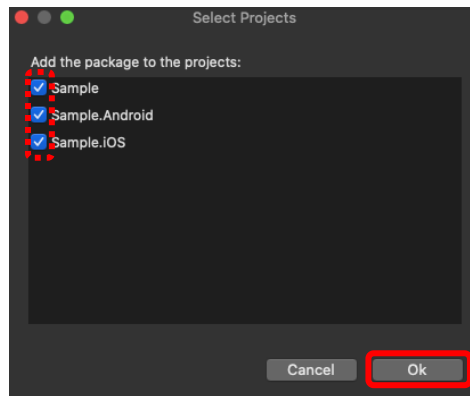
(i) Select the [SII.SDK.Xamarin].



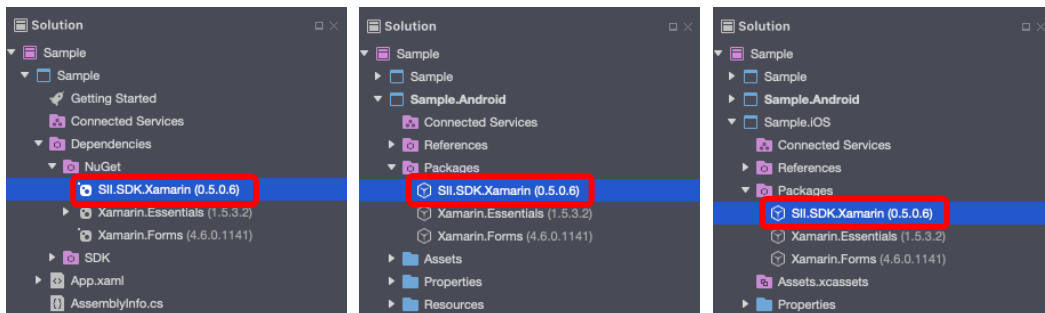
(j) Click the [Add Package] button.



- (k) Check the boxes of necessary projects on the "Select Projects" dialog to add and then click the [OK] button.



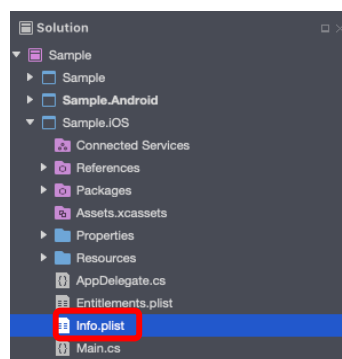
- (l) Confirm that the projects have been installed.



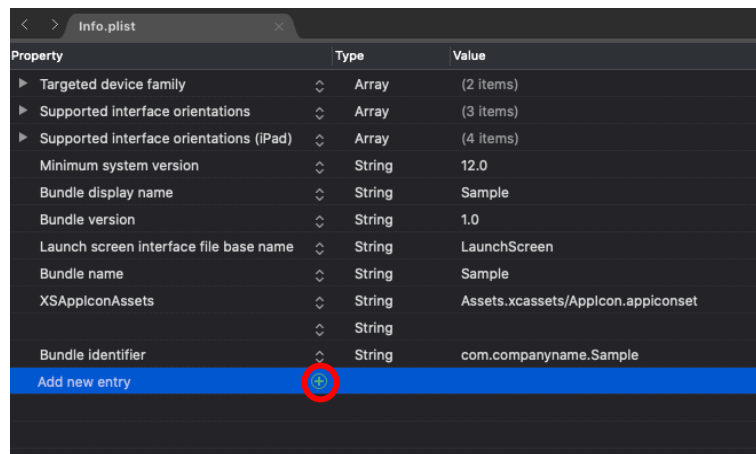
The following steps differ depending on the platform. See "3.3.2(2) iOS" for iOS. See "3.3.2(3) Android" for Android.

- (2) iOS

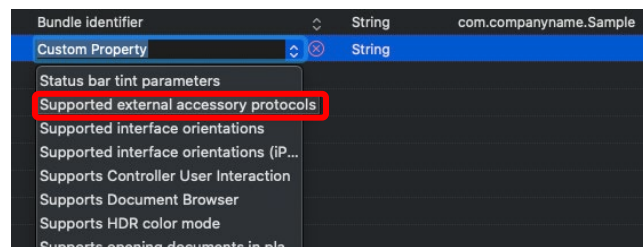
- (m) Select the [Sample.iOS] - [Info.plist] in the Solution Explorer.



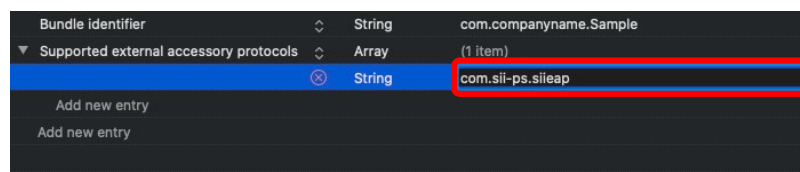
(n) Select the ⊕ of "Property" – "Add new entry".



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



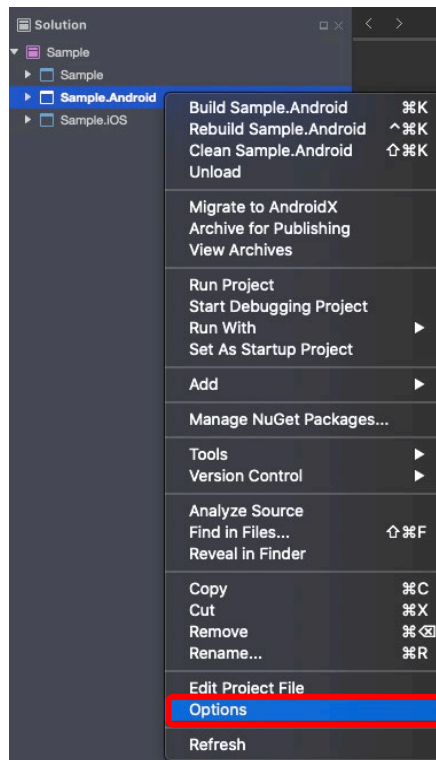
(p) Enter com.sii-ps.sileap in the expanded [Supported external accessory protocols] as a value.



By completing these procedures, the library function becomes available.

(3) Android

(m) Select the [Options] from the right-click menu of [Sample.Android] on Solution Explorer.



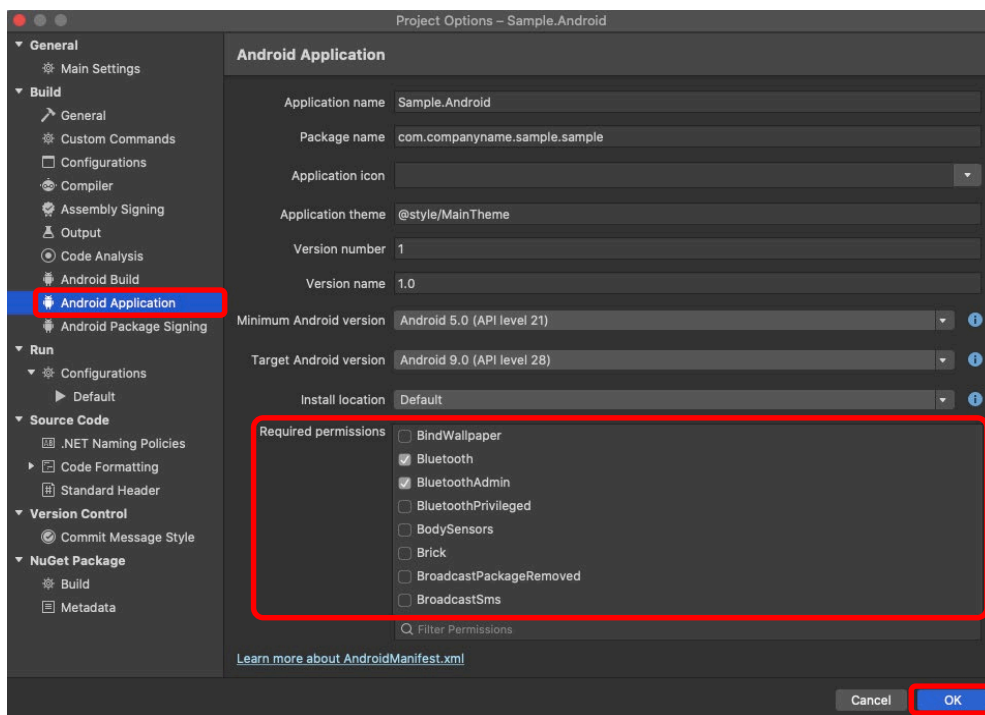
- (n) Select the "Android Application" and check the boxes on the "Required permissions" the following items. Click the [OK] button after checking the boxes.

[When using Bluetooth]

- AccessFineLocation
- AccessCoarseLocation
- Bluetooth
- BluetoothAdmin
- BluetoothConnect
- BluetoothScan

[When using TCP/IP]

- AccessWifiState
- ChangeWifiState
- Internet



By completing these procedures, the library function becomes available.

3.4 Precautions

- **About Scoped Storage**

"Scoped Storage" that is introduced in Android 10 distinguishes between app-specific storage and external storage.

When targeting Android 10 (API 29) or later, files that do not correspond to media files in the external storage cannot be handled directly. Files that do not correspond to media files can be handled by using the "Storage Access Framework".

See below for details of Scoped Storage.

- Data and file storage overview
<https://developer.android.com/training/data-storage>

Chapter 4

Library Functions of Printer

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

4.1 Standard Mode and Page Mode

4.1.1 Basic Operation

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

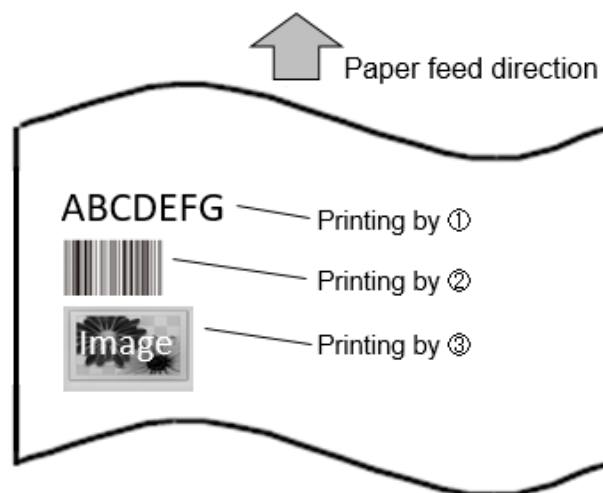
"Page mode" is not supported in SLP720RT and MP-B20.

(1) Standard mode

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

Sample print command

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



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

(2) Page mode

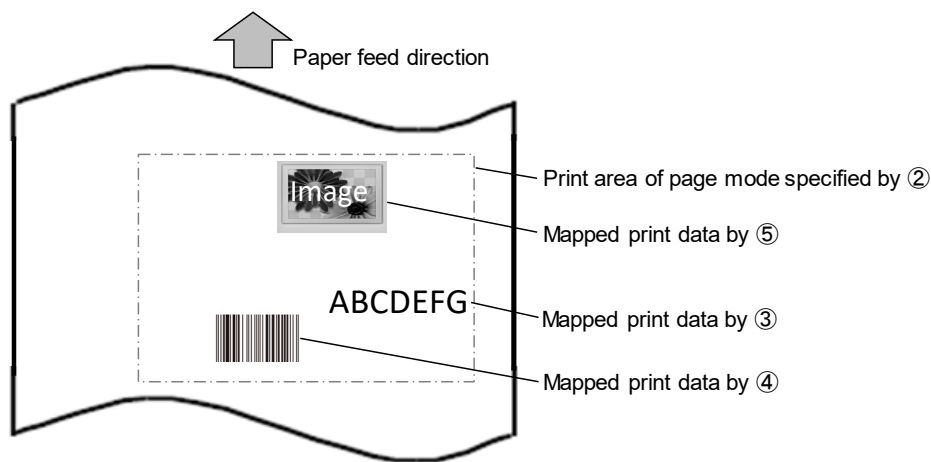
Page mode is the mode to perform the printing on a per-page basis.

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

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

Sample print command

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



Page mode suits the printing for the followings.

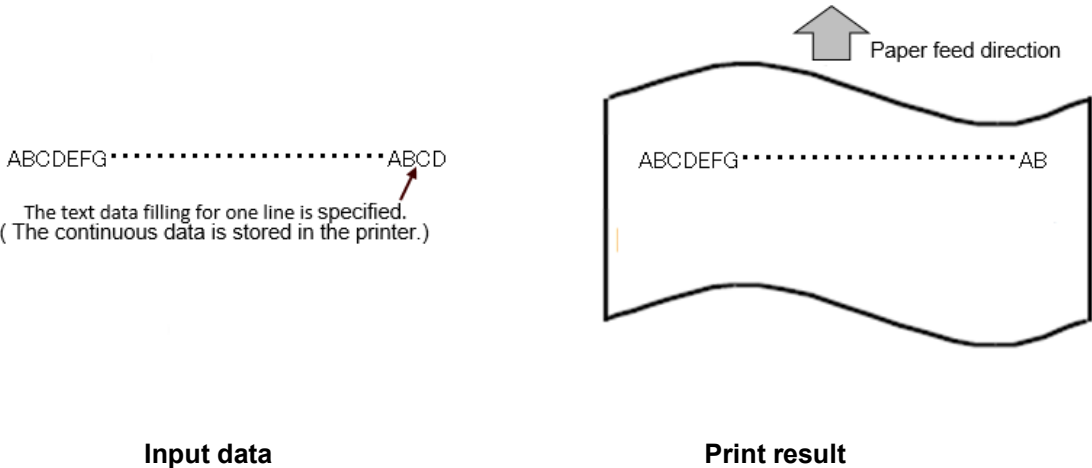
- The printing with a fixed length.
- The printing with the coordinate determination of the character starting position or the ruled line print position.

4.1.2 Text Data Printing in Standard Mode

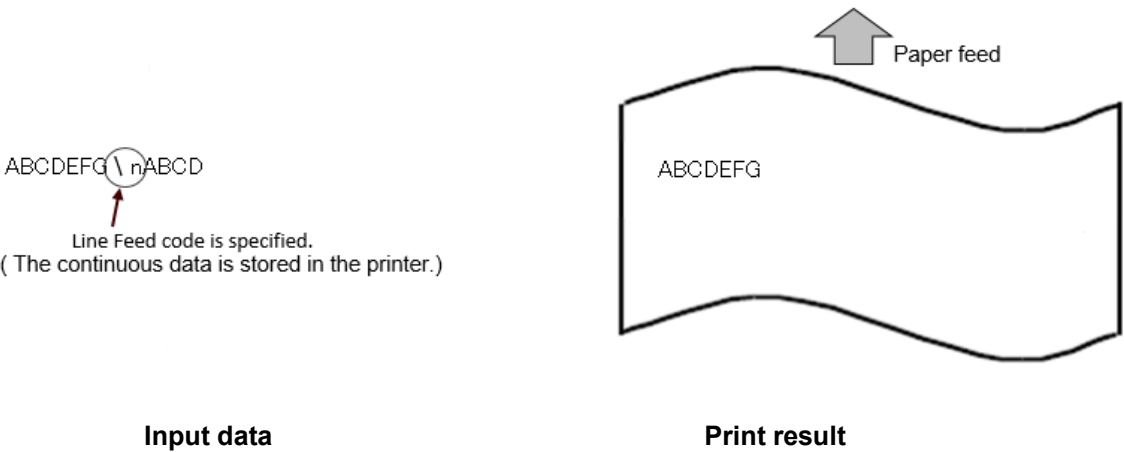
The text data in standard mode is printed each one line.

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

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



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



4.1.3 Mapping Position of Print Data in Page Mode

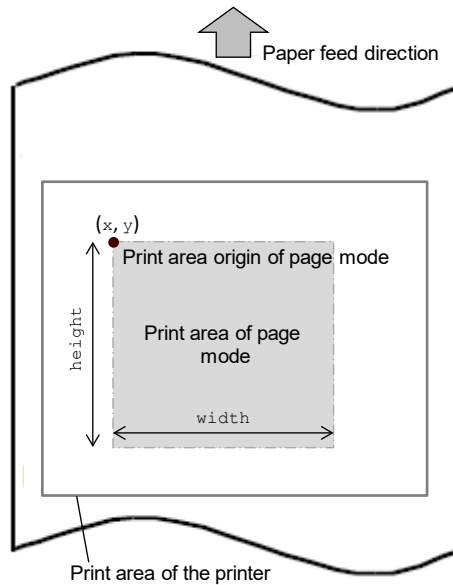
In page mode, the mapping position of print data is determined by print area, print direction, and reference point.

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

(1) Print area of page mode

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

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

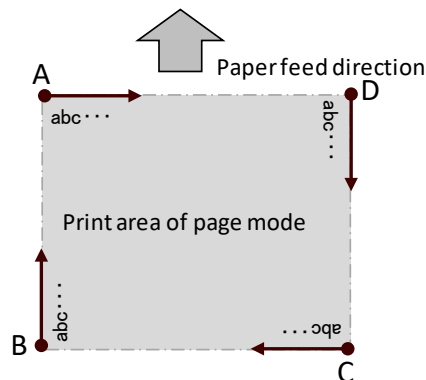


(2) Print direction

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

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

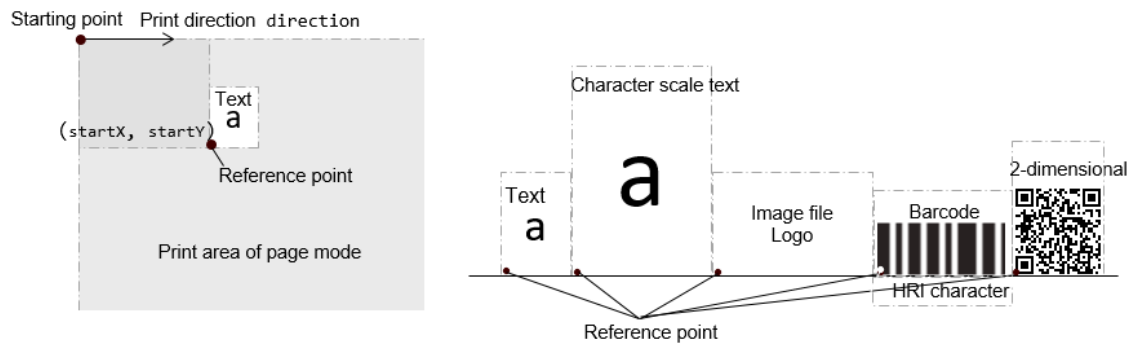
The relation between the print direction and the starting point is shown in the figure below.



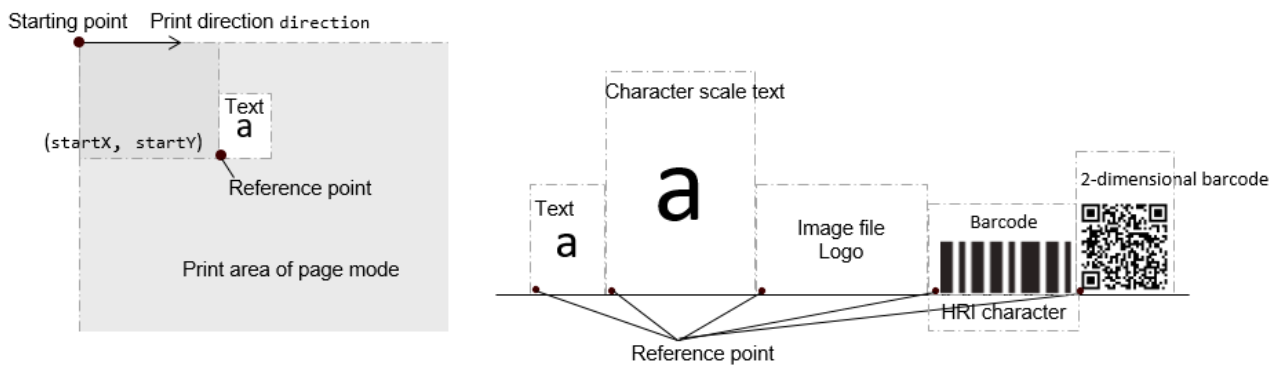
- | | |
|--|---------------------------------|
| • Starting point: Upper left (A on the figure), | Print direction: Left to Right |
| • Starting point: Left below (B on the figure), | Print direction: Below to Upper |
| • Starting point: Right below (C on the figure), | Print direction: Right to Left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

(3) Reference point

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



Relation Between Reference Point and Each Printing Element of RP-F10, RP-G10, MP-B30, and MP-B30L





Relation Between Reference Point and Each Printing Element of RP-E10 and RP-D10

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

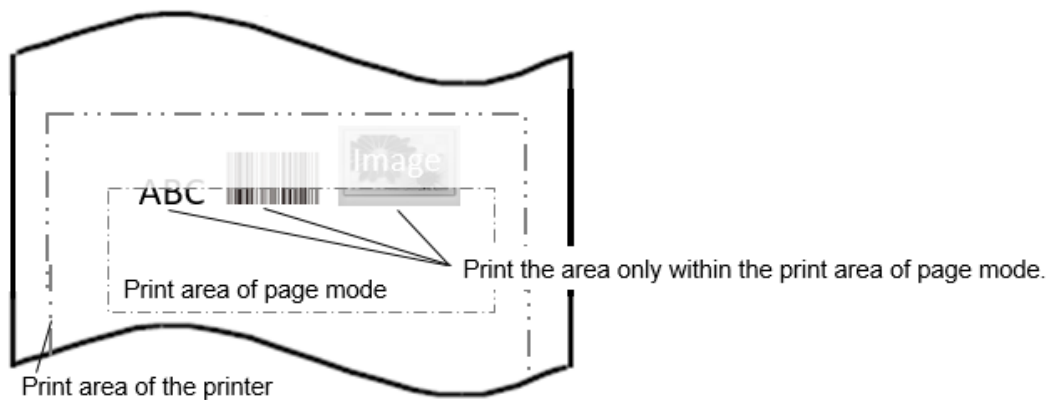
4.1.4 Print Data Process at Out of Print Area of Page Mode

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

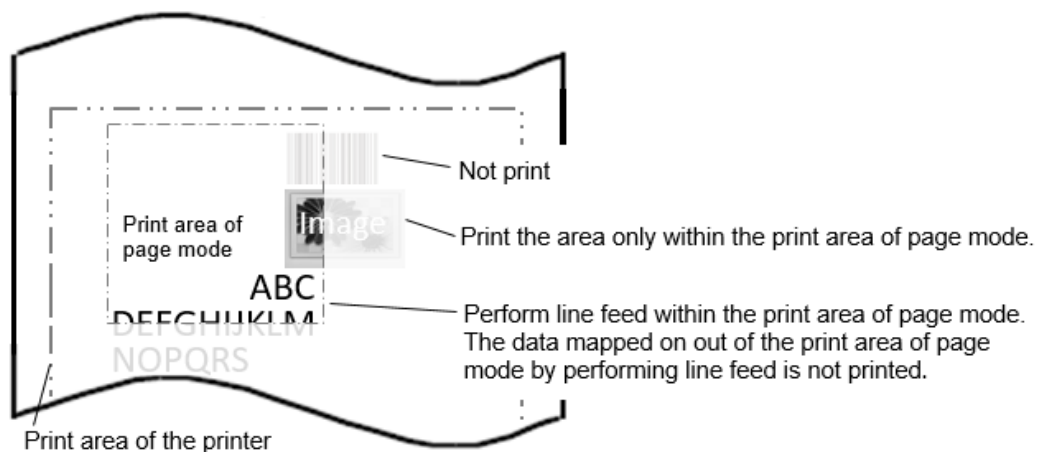
Type of Print Data

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

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



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



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

4.2 API Reference

This library includes the following classes and protocol.

✓ : Supported, - : Not supported

Name	Description	SLP720RT	RP-F10 RP-G10	RP-E10 RP-D10	MP-B30 MP-B30L MP-B20
PrinterManager	Provides the APIs used for communication with the printer and for printing. See "4.2.2 PrinterManager Class". See "4.2.1 Enumerated Constant List" for enumerated constants necessary for APIs provided in the PrinterManager class.	✓	✓	✓	✓
DeviceInfo	Stores the device information found by StartDiscoveryPrinter. See "4.2.3 DeviceInfo Class". See "4.2.1 Enumerated Constant List" for enumerated constants necessary for APIs provided in the DeviceInfo class.	✓	✓	✓	✓
PrinterException	Exception class that is thrown at API call. See "4.2.4 PrinterException Class".	✓	✓	✓	✓

Reference See "Chapter 5 Library Functions of Display" for the API reference when using DSP-A01 via the printer or alone.

The following is the description of the described contents in each class of the methods and properties.

The outline of the method or property is described.

Target The supported platform and device are described.

- Platform

	Supported All Platforms	Supported Different Device Depending on Platform
Description in "Target"	All Platforms	iOS
		Android

- Device

	Supported Multiple Devices		Supported Individual Device
Description in "Target"	All devices	All printers	SLP720RT
			RP-F10
			RP-G10
			RP-E10
			RP-D10
			MP-B30
			MP-B30L
			MP-B20
		-	DSP-A01 via the printer
			DSP-A01 alone

Syntax Describe syntax.

Parameter Parameter and the description of the parameter are described.

Valid range The valid range is described when there is a valid range.

Error The description of when an error occurred is described.

Initial value The initial value is described when there is an initial value.

Description Description of the method is described.

Return value The return value is described when there is a return value.

4.2.1 Enumerated Constant List

Constants of enumerated type are described in the following.

① Device model (DeviceModel)

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

Constant Name	Description
DEVICE_MODEL_RP_D10	RP-D10
DEVICE_MODEL_RP_E10	RP-E10
DEVICE_MODEL_MP_B20	MP-B20
DEVICE_MODEL_MP_B30	MP-B30
DEVICE_MODEL_MP_B30L	MP-B30L
DEVICE_MODEL_RP_F10	RP-F10/RP-G10 ^{*1}
DEVICE_MODEL_SLP720RT	SLP720RT

^{*1}: Support only Android.

② Port type (PortType)

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

Constant Name	Description
PORT_TYPE_BLUETOOTH	Bluetooth
PORT_TYPE_USB	USB
PORT_TYPE_TCP	TCP/IP

③ Drawer number (DrawerNum)

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

Constant Name	Description
DRAWER_1	Drawer 1
DRAWER_2	Drawer 2

④ Pulse width (PulseWidth)

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

Constant Name	Description
ON_OFF_TIME_100	ON/OFF time 100 milliseconds
ON_OFF_TIME_200	ON/OFF time 200 milliseconds
ON_OFF_TIME_300	ON/OFF time 300 milliseconds
ON_OFF_TIME_400	ON/OFF time 400 milliseconds
ON_OFF_TIME_500	ON/OFF time 500 milliseconds
ON_OFF_TIME_600	ON/OFF time 600 milliseconds
ON_OFF_TIME_700	ON/OFF time 700 milliseconds
ON_OFF_TIME_800	ON/OFF time 800 milliseconds

⑤ Buzzer pattern (BuzzerPattern)

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

Constant Name	Description
BUZZER_PATTERN_1	Pattern 1
BUZZER_PATTERN_2	Pattern 2
BUZZER_PATTERN_3	Pattern 3
BUZZER_PATTERN_4	Pattern 4

⑥ Dithering (Dithering)

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

Constant Name	Description
DITHERING_DISABLE	Dithering is disabled
DITHERING_ERRORDIFFUSION	Dithering is enabled

⑦ Printer response type (PrinterResponseId)

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

Constant Name	Description
PRINTER_RESPONSE_REQUEST	Execution response request
PRINTER_RESPONSE_USER_AREA	Send remaining capacity of user area
PRINTER_RESPONSE_ARRANGE_USER_AREA	Send remaining capacity of user area after defragment
PRINTER_RESPONSE_NV_GRAPHICS	Send NV graphics memory capacity
PRINTER_RESPONSE_KEY_CODE	Send key code list of defined NV graphics
PRINTER_RESPONSE_BATTERY_STATUS*1	Battery remaining capacity level

*1: Supported only in MP-B30, MP-B30L, and MP-B20.

⑧ Device type (DeviceType)

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

Constant Name	Description
TYPE_PRINTER	Printer
TYPE_DISPLAY	Display

⑨ Batch processing selection (TransactionFunction)

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

Constant Name	Description
TRANSACTION_CLEAR	Cancel batch processing
TRANSACTION_START	Start batch processing
TRANSACTION_PRINT	Finish batch printing and batch processing

⑩ 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
ALIGNMENT_LEFT	Aligned left
ALIGNMENT_CENTER	Centered
ALIGNMENT_RIGHT	Aligned right

⑪ Bold character (CharacterBold)

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

Constant Name	Description
BOLD_CANCEL	Cancel bold character
BOLD	Specify bold character

⑫ Underline (CharacterUnderline)

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

Constant Name	Description
UNDERLINE_CANCEL	Cancel underline print
UNDERLINE_1	Specify 1-dot width underline print
UNDERLINE_2	Specify 2-dot width underline print

⑬ Character scale (CharacterScale)

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

Constant Name	Description
VERTICAL_1_HORIZONTAL_1	Height × 1 and width × 1
VERTICAL_1_HORIZONTAL_2	Height × 1 and width × 2
VERTICAL_1_HORIZONTAL_3	Height × 1 and width × 3
VERTICAL_1_HORIZONTAL_4	Height × 1 and width × 4
VERTICAL_2_HORIZONTAL_1	Height × 2 and width × 1
VERTICAL_2_HORIZONTAL_2	Height × 2 and width × 2
VERTICAL_2_HORIZONTAL_3	Height × 2 and width × 3
VERTICAL_2_HORIZONTAL_4	Height × 2 and width × 4
VERTICAL_2_HORIZONTAL_6	Height × 2 and width × 6
VERTICAL_3_HORIZONTAL_1	Height × 3 and width × 1
VERTICAL_3_HORIZONTAL_2	Height × 3 and width × 2
VERTICAL_3_HORIZONTAL_3	Height × 3 and width × 3
VERTICAL_3_HORIZONTAL_4	Height × 3 and width × 4
VERTICAL_4_HORIZONTAL_1	Height × 4 and width × 1
VERTICAL_4_HORIZONTAL_2	Height × 4 and width × 2
VERTICAL_4_HORIZONTAL_3	Height × 4 and width × 3
VERTICAL_4_HORIZONTAL_4	Height × 4 and width × 4
VERTICAL_4_HORIZONTAL_6	Height × 4 and width × 6
VERTICAL_4_HORIZONTAL_8	Height × 4 and width × 8
VERTICAL_6_HORIZONTAL_2	Height × 6 and width × 2
VERTICAL_6_HORIZONTAL_4	Height × 6 and width × 4

Constant Name	Description
VERTICAL_6_HORIZONTAL_6	Height × 6 and width × 6
VERTICAL_6_HORIZONTAL_8	Height × 6 and width × 8
VERTICAL_8_HORIZONTAL_4	Height × 8 and width × 4
VERTICAL_8_HORIZONTAL_6	Height × 8 and width × 6
VERTICAL_8_HORIZONTAL_8	Height × 8 and width × 8

⑭ Character font (CharacterFont)

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

Constant Name	Description
FONT_A	Font A (24 × 12)
FONT_B	Font B (16 × 8)

⑮ Module size (ModuleSize)

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

Constant Name	Description	Method to Use
BARCODE_MODULE_WIDTH_2	Fine element 2 dots Module width 0.250 mm	<ul style="list-style-type: none"> ● printBarcode ● printPageModeBarcode
BARCODE_MODULE_WIDTH_3	Fine element 3 dots Module width 0.375 mm	
BARCODE_MODULE_WIDTH_4	Fine element 4 dots Module width 0.500 mm	
BARCODE_MODULE_WIDTH_5	Fine element 5 dots Module width 0.625 mm	
BARCODE_MODULE_WIDTH_6	Fine element 6 dots Module width 0.750 mm	
PDF417_MODULE_WIDTH_2	Nominal fine element width 2 dots	<ul style="list-style-type: none"> ● printPDF417 ● printPageModePDF417
PDF417_MODULE_WIDTH_3	Nominal fine element width 3 dots	
PDF417_MODULE_WIDTH_4	Nominal fine element width 4 dots	
PDF417_MODULE_WIDTH_5* ¹	Nominal fine element width 5 dots	
PDF417_MODULE_WIDTH_6* ¹	Nominal fine element width 6 dots	
PDF417_MODULE_WIDTH_7* ¹	Nominal fine element width 7 dots	
PDF417_MODULE_WIDTH_8* ¹	Nominal fine element width 8 dots	

Constant Name	Description	Method to Use
QR_MODULE_SIZE_2	2 dots	<ul style="list-style-type: none"> ● printQRcode ● printPageModeQRcode
QR_MODULE_SIZE_3	3 dots	
QR_MODULE_SIZE_4	4 dots	
QR_MODULE_SIZE_5	5 dots	
QR_MODULE_SIZE_6	6 dots	
QR_MODULE_SIZE_7	7 dots	
QR_MODULE_SIZE_8	8 dots	
QR_MODULE_SIZE_9	9 dots	
QR_MODULE_SIZE_10	10 dots	
QR_MODULE_SIZE_11	11 dots	
QR_MODULE_SIZE_12*1	12 dots	
QR_MODULE_SIZE_13*1	13 dots	
QR_MODULE_SIZE_14*1	14 dots	
QR_MODULE_SIZE_15*1	15 dots	
QR_MODULE_SIZE_16*1	16 dots	
DATAMATRIX_MODULE_SIZE_2	2 dots	<ul style="list-style-type: none"> ● printDataMatrix ● printPageModeDataMatrix
DATAMATRIX_MODULE_SIZE_3	3 dots	
DATAMATRIX_MODULE_SIZE_4	4 dots	
DATAMATRIX_MODULE_SIZE_5	5 dots	
DATAMATRIX_MODULE_SIZE_6	6 dots	
DATAMATRIX_MODULE_SIZE_7	7 dots	
DATAMATRIX_MODULE_SIZE_8	8 dots	
DATAMATRIX_MODULE_SIZE_9	9 dots	
DATAMATRIX_MODULE_SIZE_10	10 dots	
DATAMATRIX_MODULE_SIZE_11	11 dots	
DATAMATRIX_MODULE_SIZE_12*1	12 dots	
DATAMATRIX_MODULE_SIZE_13*1	13 dots	
DATAMATRIX_MODULE_SIZE_14*1	14 dots	
DATAMATRIX_MODULE_SIZE_15*1	15 dots	
DATAMATRIX_MODULE_SIZE_16*1	16 dots	
GS1DATABAR_MODULE_SIZE_2*1	2 dots	<ul style="list-style-type: none"> ● PrintGS1DataBarStacked ● PrintGS1DataBarStackedOmnidirectional ● PrintGS1DataBarExpandedStacked ● PrintPageModeGS1DataBarStacked ● PrintPageModeGS1DataBarStackedOmnidirectional ● PrintPageModeGS1DataBarExpandedStacked
GS1DATABAR_MODULE_SIZE_3*1	3 dots	
GS1DATABAR_MODULE_SIZE_4*1	4 dots	
GS1DATABAR_MODULE_SIZE_5*1	5 dots	
GS1DATABAR_MODULE_SIZE_6*1	6 dots	
GS1DATABAR_MODULE_SIZE_7*1	7 dots	
GS1DATABAR_MODULE_SIZE_8*1	8 dots	
GS1DATABAR_MODULE_SIZE_9*1	9 dots	

Constant Name	Description	Method to Use
GS1DATABAR_MODULE_SIZE_10 ^{*1}	10 dots	<ul style="list-style-type: none"> ● PrintGS1DataBarStacked ● PrintGS1DataBarStackedOmnidirectional ● PrintGS1DataBarExpandedStacked ● PrintPageModeGS1DataBarStacked ● PrintPageModeGS1DataBarStackedOmnidirectional ● PrintPageModeGS1DataBarExpandedStacked
GS1DATABAR_MODULE_SIZE_11 ^{*1}	11 dots	
GS1DATABAR_MODULE_SIZE_12 ^{*1}	12 dots	
GS1DATABAR_MODULE_SIZE_13 ^{*1}	13 dots	
GS1DATABAR_MODULE_SIZE_14 ^{*1}	14 dots	
GS1DATABAR_MODULE_SIZE_15 ^{*1}	15 dots	
GS1DATABAR_MODULE_SIZE_16 ^{*1}	16 dots	<ul style="list-style-type: none"> ● PrintAzteccode ● PrintPageModeAzteccode
AZTECCODE_MODULE_SIZE_2 ^{*2}	2 dots	
AZTECCODE_MODULE_SIZE_3 ^{*2}	3 dots	
AZTECCODE_MODULE_SIZE_4 ^{*2}	4 dots	
AZTECCODE_MODULE_SIZE_5 ^{*2}	5 dots	
AZTECCODE_MODULE_SIZE_6 ^{*2}	6 dots	
AZTECCODE_MODULE_SIZE_7 ^{*2}	7 dots	
AZTECCODE_MODULE_SIZE_8 ^{*2}	8 dots	
AZTECCODE_MODULE_SIZE_9 ^{*2}	9 dots	
AZTECCODE_MODULE_SIZE_10 ^{*2}	10 dots	
AZTECCODE_MODULE_SIZE_11 ^{*2}	11 dots	
AZTECCODE_MODULE_SIZE_12 ^{*2}	12 dots	
AZTECCODE_MODULE_SIZE_13 ^{*2}	13 dots	
AZTECCODE_MODULE_SIZE_14 ^{*2}	14 dots	
AZTECCODE_MODULE_SIZE_15 ^{*2}	15 dots	
AZTECCODE_MODULE_SIZE_16 ^{*2}	16 dots	

*1: Not supported in RP-E10 nor RP-D10.

*2: Supported only in MP-B30L.

⑩ Error correction level (ErrorCorrection)

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

Constant Name	Description	Method to Use
PDF417_ERROR_CORRECTION_0	Error correction level 0	<ul style="list-style-type: none"> ● printPDF417 ● printPageModePDF417
PDF417_ERROR_CORRECTION_1	Error correction level 1	
PDF417_ERROR_CORRECTION_2	Error correction level 2	
PDF417_ERROR_CORRECTION_3	Error correction level 3	
PDF417_ERROR_CORRECTION_4	Error correction level 4	
PDF417_ERROR_CORRECTION_5	Error correction level 5	
PDF417_ERROR_CORRECTION_6	Error correction level 6	
PDF417_ERROR_CORRECTION_7	Error correction level 7	
PDF417_ERROR_CORRECTION_8	Error correction level 8	

Constant Name	Description	Method to Use
QR_ERROR_CORRECTION_L	Error correction level L	<ul style="list-style-type: none"> ● printQRcode ● printPageModeQRcode
QR_ERROR_CORRECTION_M	Error correction level M	
QR_ERROR_CORRECTION_H	Error correction level H	
QR_ERROR_CORRECTION_Q	Error correction level Q	

⑰ Reverse print (CharacterReverse)

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

Constant Name	Description
REVERSE_CANCEL	Cancel reverse print
REVERSE	Specify reverse print

⑱ 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
INVERSION_CANCEL	Cancel inversion print
INVERSION	Specify inversion print

⑲ Barcode symbol (BarcodeSymbol)

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

Constant Name	Description	Syntax ^{*1}
BARCODE_UPC_A	UPC-A	(a)
BARCODE_UPC_E	UPC-E	(a)
BARCODE_EAN13	EAN13	(a)
BARCODE_JAN13	JAN13	(a)
BARCODE_EAN8	EAN8	(a)
BARCODE_JAN8	JAN8	(a)
BARCODE_CODE39	CODE39	(a), (b)
BARCODE_CODE93	CODE93	(c)
BARCODE_CODE128	CODE128	(c)
BARCODE_ITF	ITF	(a), (b)
BARCODE_CODABAR	CODABAR	(a), (b)
BARCODE_EAN13_ADDON	EAN13 add-on	(a)
BARCODE_JAN13_ADDON	JAN13 add-on	(a)
BARCODE_GS1_OMNI_DIRECTIONAL ^{*2}	GS1 Databar Omni-directional	(a)

Constant Name	Description	Syntax ^{*1}
BARCODE_GS1_TRUNCATED ^{*2}	GS1 Databar Truncated	(a)
BARCODE_GS1_LIMITED ^{*2}	GS1 Databar Limited	(a)
BARCODE_GS1_EXPANDED ^{*2}	GS1 Databar Expanded	(a)

*1: See PrintBarcode or PrintPageModeBarcode for details of syntax.

*2: Not supported in RP-E10 nor RP-D10.

⑳ HRI character print position (HriPosition)

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

Constant Name	Description
HRI_NONE	Not printed
HRI_POSITION_ABOVE	Above barcode
HRI_POSITION_BELOW	Below barcode
HRI_POSITION_ABOVE_BELOW	Above and below barcode (both)

㉑ N:W ratio (NwRatio)

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

Constant Name	Description
NWRATIO_1T02	1:2
NWRATIO_1T02_5	1:2.5
NWRATIO_1T03	1:3

㉒ PDF417 symbol (Pdf417Symbol)

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

Constant Name	Description
PDF417_STANDARD	PDF417
PDF417_COMPACT	Compact PDF417

㉓ QR Code Model (QrModel)

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

Constant Name	Description
QR_MODEL_1	QR Code Model 1
QR_MODEL_2	QR Code Model 2

②④ Data Matrix module (DataMatrixModule)

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

Constant Name	Description
DATA_MATRIX_AUTO	Number of modules: Automatic
DATA_MATRIX_10_10	Number of modules: 10 × 10
DATA_MATRIX_12_12	Number of modules: 12 × 12
DATA_MATRIX_14_14	Number of modules: 14 × 14
DATA_MATRIX_16_16	Number of modules: 16 × 16
DATA_MATRIX_18_18	Number of modules: 18 × 18
DATA_MATRIX_20_20	Number of modules: 20 × 20
DATA_MATRIX_22_22	Number of modules: 22 × 22
DATA_MATRIX_24_24	Number of modules: 24 × 24
DATA_MATRIX_26_26	Number of modules: 26 × 26
DATA_MATRIX_32_32	Number of modules: 32 × 32
DATA_MATRIX_36_36	Number of modules: 36 × 36
DATA_MATRIX_40_40	Number of modules: 40 × 40
DATA_MATRIX_44_44	Number of modules: 44 × 44
DATA_MATRIX_48_48	Number of modules: 48 × 48
DATA_MATRIX_52_52	Number of modules: 52 × 52
DATA_MATRIX_64_64	Number of modules: 64 × 64
DATA_MATRIX_72_72	Number of modules: 72 × 72
DATA_MATRIX_80_80	Number of modules: 80 × 80
DATA_MATRIX_88_88	Number of modules: 88 × 88
DATA_MATRIX_96_96	Number of modules: 96 × 96
DATA_MATRIX_104_104	Number of modules: 104 × 104
DATA_MATRIX_120_120	Number of modules: 120 × 120
DATA_MATRIX_132_132	Number of modules: 132 × 132
DATA_MATRIX_144_144	Number of modules: 144 × 144
DATA_MATRIX_8_18	Number of modules: 8 × 18
DATA_MATRIX_8_32	Number of modules: 8 × 32
DATA_MATRIX_12_26	Number of modules: 12 × 26
DATA_MATRIX_12_36	Number of modules: 12 × 36
DATA_MATRIX_16_36	Number of modules: 16 × 36
DATA_MATRIX_16_48	Number of modules: 16 × 48

②⑤ MaxiCode Mode (MaxiCodeMode)

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

Constant Name	Description
MAXI_CODE_2	Mode2
MAXI_CODE_3	Mode3
MAXI_CODE_4	Mode4
MAXI_CODE_5	Mode5

②⑥ Aztec symbol (AztecSymbol)

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

Constant Name	Description
AZTECCODE_FULLRANGE	Full-range mode
AZTECCODE_COMPACT	Compact mode

②⑦ Cutting method (CuttingMethod)

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

Constant Name	Description
CUT_FULL ^{*1}	Paper feed operation to the paper cut position Full cut
CUT_PARTIAL ^{*1}	Paper feed operation to the paper cut position Partial cut
CUT_NONE ^{*2}	No cut

^{*1}: For MP-B30, MP-B30L, or MP-B20, whichever constant of enumerated type is specified, the printer only feeds the paper to the paper cut position without cutting.

^{*2}: Supported only by PrintPageMode.

②⑧ Form feed position (FeedPosition)

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

Constant Name	Description
FEED_CUTTER ^{*1}	After detecting the mark or gap, feeds the paper to the cutting position. The paper feed length is the length of the memory switches ^{*2*3} of the printer.
FEED_NEXT_TOF ^{*4}	After detecting the next mark or next gap, feeds the paper to the print position. The paper feed length is the length of the memory switches ^{*5} of the printer.

*1: Supported only by SLP720RT and MP-B30L.

*2: For SLP720RT, the paper feed length is the length of the memory switches MS 8 to 9 (Mark Position Correction) of the printer. The default of the paper feed is 58 dots (7.25 mm).

*3: For MP-B30L, the paper feed length is the length of the memory switches MS 21 to 22 (Mark Detection Cut Position Correction) of the printer. The default of the paper feed is 125 dots (15.6 mm).

*4: Supported only by MP-B30L.

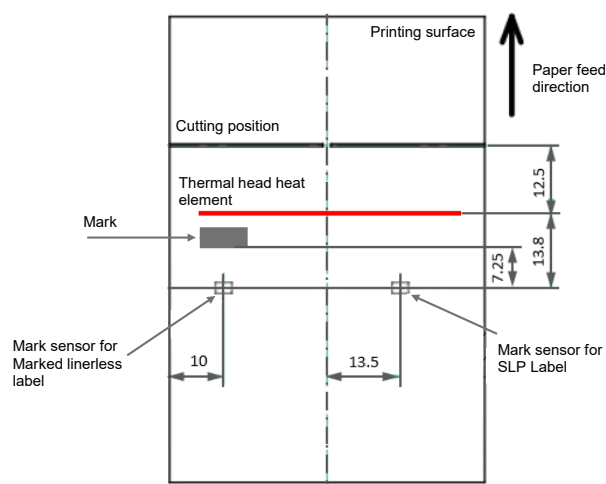
*5: For MP-B30L, the paper feed length is the length of the memory switches MS 26 to 27 (Mark Detection Print Position Correction) of the printer. The default of the paper feed is 125 dots (15.6 mm).

Reference

See "USER'S GUIDE" for the details of the memory switch of the printer.

The memory switch of the printer can be changed in the iOS app "SII Printer Utility" on the App Store and the Android app "SII Printer Utility" on the Google Play.

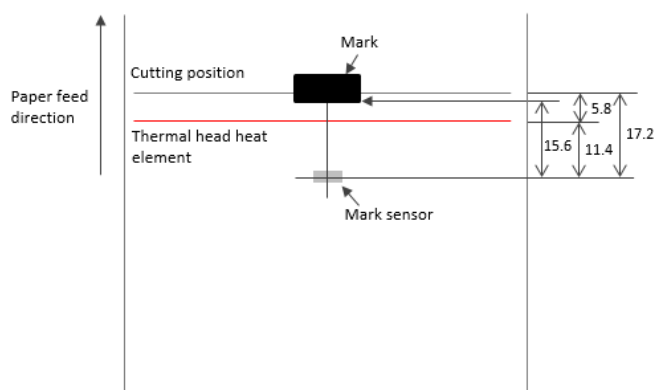
In the SLP720RT, the relation between the sensor position and the defaults of memory switches MS 8 to 9 (Mark Correction) of the printer is shown in the following figure.



Unit: mm

In the MP-B30L, the relation between the sensor position and the defaults of memory switches MS 21 to 22 (Mark Detection Cut Position Correction) of the printer and memory switches MS 26 to 27 (Mark Detection Print Position Correction) of the printer are shown in the following figure.

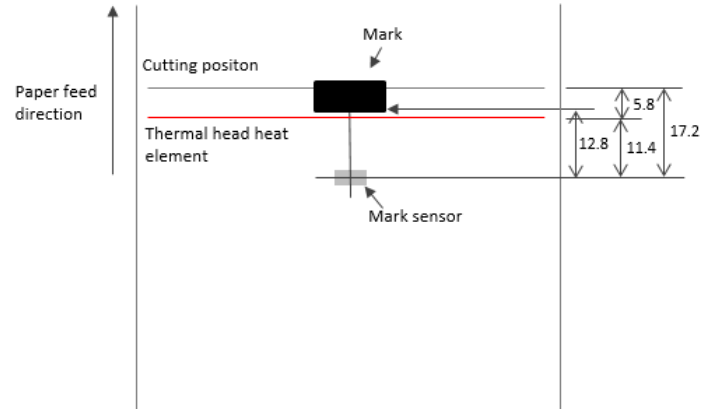
When the memory switch of the printer is set to the default, the cutting position of FEED_CUTTER and the next print position of FEED_NEXT_TOF is the same paper feed length.



Unit: mm

To set to shorter the next print position for the mark to save paper, set the values of the memory switches MS 26 to 27 (Mark Detection Print Position Correction) of the printer shorter.

As an example, the relation of the sensor position when the values of the memory switches MS 26 to 27 of the printer are set to 103 dots (12.8 mm) and paper form feed is performed with specifying FEED_NEXT_TOF is shown in the following figure.



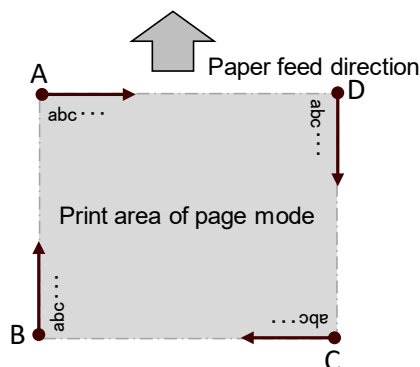
Unit: mm

Notes When using label in MP-B30L, set the values of the memory switches MS 26 to 27 (Mark Detection Print Position Correction) of the printer so that the print position can be inside the label.

②⑨ Print direction (Direction)

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

Constant Name	Description
DIRECTION_LEFT_TO_RIGHT	Starting point: Upper left (A on the figure), Print direction: Left to Right
DIRECTION_BOTTOM_TO_TOP	Starting point: Left below (B on the figure), Print direction: Below to Upper
DIRECTION_RIGHT_TO_LEFT	Starting point: Right below (C on the figure), Print direction: Right to Left
DIRECTION_TOP_TO_BOTTOM	Starting point: Upper right (D on the figure), Print direction: Upper to Below



③⑩ Line style (LineStyle)

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

Constant Name	Description
LINESTYLE_THIN	Thin solid line (2 dots)
LINESTYLE_MEDIUM	Medium solid line (4 dots)
LINESTYLE_THICK	Thick solid line (8 dots)

③⑪ International character set (InternationalCharacter)

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

Constant Name	Description
COUNTRY_USA	USA
COUNTRY_FRANCE	France
COUNTRY_GERMANY	Germany
COUNTRY_ENGLAND	England
COUNTRY_DENMARK_1	Denmark I
COUNTRY_SWEDEN	Sweden
COUNTRY_ITALY	Italy
COUNTRY_SPAIN	Spain I
COUNTRY_JAPAN	Japan
COUNTRY_NORWAY	Norway
COUNTRY_DENMARK_2	Denmark II
COUNTRY_SPAIN_2	Spain II
COUNTRY_LATIN_AMERICA	Latin America
COUNTRY_ARABIA	Arabia

② Codepage (CodePage)

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

Constant Name	Description
CODE_PAGE_437	USA, Standard Europe (Code Page437)
CODE_PAGE_KATAKANA	Katakana
CODE_PAGE_850	Multilingual (Code Page850)
CODE_PAGE_860	Portuguese (Code Page860)
CODE_PAGE_863	Canadian-French (Code page863)
CODE_PAGE_865	Nordic (Code Page865)
CODE_PAGE_857 ^{*1*2}	Turkish (Code Page857)
CODE_PAGE_737 ^{*2}	Greek (Code Page737)
CODE_PAGE_1252	Latin (Code Page1252)
CODE_PAGE_866 ^{*2}	Russian (Code Page866)
CODE_PAGE_852	Eastern Europe (Code Page852)
CODE_PAGE_858	Euro (Code Page858)
CODE_PAGE_855 ^{*2}	Cyrillic (Code Page855)
CODE_PAGE_864 ^{*1*3}	Arabic (Code Page864)
CODE_PAGE_1250	Central European (Code Page1250)
CODE_PAGE_1251	Cyrillic (Code Page1251)
CODE_PAGE_1253 ^{*4}	Greek (Code Page1253)
CODE_PAGE_1254	Turkish (Code Page1254)

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

*2: Not supported in RP-E10 nor RP-D10.

*3: Font B cannot be printed or displayed.

*4: 00AAh of the Unicode cannot be printed or displayed.

4.2.2 PrinterManager Class

(1) Method List

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

Method	Description
Common method to standard mode and page mode	The valid methods in standard mode and page mode. See "4.2.2(1)① Common method to standard mode and page mode" for the methods.
Dedicated method for standard mode	The valid methods in standard mode. See "4.2.2(1)② Dedicated method for standard mode" for the methods.
Dedicated method for page mode	The valid methods in page mode. See "4.2.2(1)③ Dedicated method for page mode" for the methods.

① Common method to standard mode and page mode

Methods provided by the common method to standard mode and page mode are shown in the following table. See "4.2.2(4)① Common method to standard mode and page mode" for details of the common methods.

✓ : Supported, - : Not supported

Name	Description	SLP720RT	RP-F10 RP-G10	RP-E10 RP-D10	MP-B30 MP-B30L MP-B20
PrinterManager	Constructor	✓	✓	✓	✓
Connect	Start communicating with device	✓	✓	✓	✓
Disconnect	Stop communicating with device	✓	✓	✓	✓
OpenDrawer	Open cash drawer	-	✓	✓	-
Buzzer	Sound buzzer	-	-	✓	-
ExternalBuzzer	Sound external buzzer	-	✓	-	-
GetStatus	Get printer status	✓	✓	✓	✓
Abort	Abort waiting state of printer	✓	✓	✓	✓
RegisterLogo	Register logo	✓	✓	✓	✓
UnregisterLogo	Delete registered logo	✓	✓	✓	✓
RegisterStyleSheet	Register style sheet	-	-	✓	-
UnregisterStyleSheet	Delete registered style sheet	-	-	✓	-
ResetPrinter	Reset printer	✓	✓	✓	✓
GetPrinterResponse	Get various responses from printer	✓	✓	✓	✓
StartDiscoveryDevice	Start device search	✓	✓	✓	✓
CancelDiscoveryDevice	Cancel device search	✓	✓	✓	✓
GetFoundDevice	Get found device information list	✓	✓	✓	✓
ControlTransaction	Start/Finish batch processing	✓	✓	✓	✓
SetStatusChangedEventHandler	Start/Finish call back of printer status change	✓	✓	✓	✓

Name	Description	SLP720RT	RP-F10 RP-G10	RP-E10 RP-D10	MP-B30 MP-B30L MP-B20
SetBarcodeScannerReadData EventHandler	Start/Finish call back of receiving barcode data	–	✓ ^{*1}	–	–
SetBarcodeScannerChangedO nlineEventHandler	Start/Finish call back of barcode scanner connection	–	✓ ^{*1}	–	–
SetBarcodeScannerChangedO fflineEventHandler	Start/Finish call back of barcode scanner disconnection	–	✓ ^{*1}	–	–

*1: Not supported in RP-G10.

② Dedicated method for standard mode

Methods provided by the dedicated method for standard mode are shown in the following table.
See "4.2.2(4)② Dedicated method for standard mode" for details of the specified methods.

✓ : Supported, – : Not supported

Name	Description	SLP720RT	RP-F10 RP-G10	RP-E10 RP-D10	MP-B30 MP-B30L MP-B20
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	✓	✓	–	✓
PrintGS1DataBarStackedOmni directional	Print GS1 Databar Stacked Omni-directional	✓	✓	–	✓
PrintGS1DataBarExpandedSta cked	Print GS1 Databar Expanded Stacked	✓	✓	–	✓
PrintAztecCode	Print Aztec Code	–	–	–	✓ ^{*1}
CutPaper	Cut paper	✓	✓	✓	✓ ^{*2}
Feed Position	Paper form feed	✓	–	–	✓ ^{*1}
SendBinary	Send binary data	✓	✓	✓	✓
SendDataFile	Send specified file	✓	✓	✓	✓
PrintLogo	Print logo	✓	✓	✓	✓

*1: Supported only in MP-B30L.

*2: Only the paper feed operation to the paper cut position is performed.

③ Dedicated method for page mode

Methods provided by the dedicated method for page mode are shown in the following table.

See "4.2.2(4)③ Dedicated method for page modeDedicated method for page mode" for details of the specified methods.

✓ : Supported, - : Not supported

Name	Description	SLP720RT	RP-F10 RP-G10	RP-E10 RP-D10	MP-B30 MP-B30L	MP-B20
EnterPageMode	Start page mode	-	✓	✓	✓	-
ExitPageMode	End page mode	-	✓	✓	✓	-
SetPageModeArea	Specify print area of page mode	-	✓	✓	✓	-
SetPageModeDirection	Specify print direction of page mode	-	✓	✓	✓	-
SetPageModeLineSpacing	Specify line spacing of page mode	-	✓	✓	✓	-
PrintPageMode	Print page mode	-	✓	✓	✓	-
PrintPageModeText	Send text data of page mode	-	✓	✓	✓	-
PrintPageModeTextEx	Send format specified text data of page mode	-	✓	✓	✓	-
PrintPageModeBarcode	Print barcode of page mode	-	✓	✓	✓	-
PrintPageModePDF417	Print PDF417 of page mode	-	✓	✓	✓	-
PrintPageModeQRcode	Print QR Code of page mode	-	✓	✓	✓	-
PrintPageModeDataMatrix	Print Data Matrix of page mode	-	✓	✓	✓	-
PrintPageModeMaxiCode	Print MaxiCode of page mode	-	✓	✓	✓	-
PrintPageModeGS1DataBar Stacked	Print GS1 Databar Stacked of page mode	-	✓	✓	✓	-
PrintPageModeGS1DataBar StackedOmniDirectional	Print GS1 Databar Stacked Omni-directional of page mode	-	✓	✓	✓	-
PrintPageModeGS1DataBar ExpandedStacked	Print GS1 Databar Expanded Stacked of page mode	-	✓	✓	✓	-
PrintPageModeAztecCode	Print Aztec Code of page mode	-	-	-	✓*1	-
SendPageModeBinary	Send binary data of page mode	-	✓	✓	✓	-
PrintPageModeImageFile	Draw image file of page mode	-	✓	✓	✓	-
PrintPageModeRectangle	Draw rectangle image of page mode	-	✓	✓	✓	-
PrintPageModeLine	Print ruled line of page mode	-	✓	✓	✓	-
PrintPageModeLogo	Print logo of page mode	-	✓	✓	✓	-

*1: Supported only in MP-B30L.

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

Properties provided by PrinterManager class are shown in the following table.

✓ : Supported, - : Not supported

Name	Access	Description	SLP720RT	RP-F10 RP-G10	RP-E10 RP-D10	MP-B30 MP-B30L MP-B20
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	✓	✓	✓	✓
DeviceModel	R	Get device model	✓	✓	✓	✓
PortType	R	Get connecting port type	✓	✓	✓	✓
IsConnect	R	Verify connection state with printer	✓	✓	✓	✓
SocketKeepingTime	R/W	Get/Set socket keeping time	✓	✓	✓	✓ ^{*1}

*1: Not supported in MP-B20.

(3) Constant List

① Barcode and PDF417

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

Constant Name	Description	Value
BARCODE_HEIGHT_DEFAULT	Default value of barcode height	162
PDF417_MODULE_HEIGHT_DEFAULT	Default value of PDF417 height	10
PDF417_ROW_AUTO	Automatic selection of the number of rows	0
PDF417_COLUMN_AUTO	Automatic selection of the number of columns	0

② Battery remaining capacity level

Constants used for battery remaining capacity level are shown in the following table.

Constant Name	Description	Value
BATTERY_STATUS_FULL	Battery remaining capacity: approx. 80%	0
BATTERY_STATUS_MIDDLE	Battery remaining capacity: approx. 40%	1
BATTERY_STATUS_LOW	Battery remaining capacity: approx. 10%	2
BATTERY_STATUS_EMPTY	No battery	3

(4) Method Details

① Common method to standard mode and page mode

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

PrinterManager

Constructor

Constructor for SII.SDK.Xamarin.PrinterManager class.

Target	All platforms	All devices
Syntax	<code>public PrinterManager(object context)</code>	
Parameter	context	Context For iOS: Specify null. For Android: Specify application context to call this method. Example: MainActivity.this

Connect

Start communicating with device

Starts communicating with the device.

Target	All platforms	All devices
Syntax	(a) <code>public void Connect(DeviceModel deviceModel, DeviceInfo deviceInfo);</code> (b) <code>public void Connect(DeviceModel deviceModel, PortType portType, string param);</code>	
Parameter	deviceModel	Device model See "4.2.1① Device model (DeviceModel)" for available constants.
	deviceInfo	Device information Specify the object of the DeviceInfo class. The object of DeviceInfo class can be retrieved from StartDiscoveryDevice and GetFoundDevice.
	portType	Port type See "4.2.1② Port type (PortType)" for available constants.
	param	Depends on the setting of the portType. See the "Target devices" described in "INTRODUCTION" for the corresponding interface.

- portType is **PORT_TYPE_BLUETOOTH**
Specify the Bluetooth address or Bluetooth device name (Bluetooth Accessory).
Example: "00:11:22:AA:BB:CC", "RP-F10"
- portType is **PORT_TYPE_USB**
For iOS:
Specify the printer name.
Example: "RP-F10"
For Android:
Specify null.
- portType is **PORT_TYPE_TCP**
Specify the IP address of the printer.
Example: "192.168.0.190", "192.168.0.1"

Error PrinterException is thrown when an error occurs while this method is being called.
See "4.2.4 PrinterException Class" for details on the error.

Description Call this method before using other PrinterManager class methods.
In order to make this library work properly, this method may change the printer settings when connecting.

For Bluetooth connection:

In iOS, communication with a printer paired with iOS device starts through Bluetooth connection.

Connect to the paired Bluetooth address or Bluetooth device (Bluetooth Accessory) specified by param.

In Android, connect the printer specified by deviceModel to the Bluetooth address specified by param.

For USB connection:

In iOS, communication with a printer connected with the device through the USB cable starts through the USB connection.

In Android, connect the printer specified by deviceModel.

For TCP/IP connection:

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

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

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

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

Note

In iOS, this method does not support a concurrent connection from multiple apps to one printer.

Disconnect

Stop communicating with device

Finishes communicating with the device.

Target All platforms All devices

Syntax `public void Disconnect();`

Error `PrinterException` is thrown when an error occurs while this method is being called.
See "4.2.4 `PrinterException` Class" for details on the error.

Note

It is recommended to get execution response by **PRINTER_RESPONSE_REQUEST** of `GetPrinterResponse` before executing this method. If not, the following problems may occur.

- The communication is disconnected before the print data sending from device to the printer is completed, and a part of the data may be lost.
- In Bluetooth connection, when either `Disconnect` or `Connect` is executed while the printer is in the buffer full state^{*1}, the communication between the device and the printer may be disconnected.

^{*1}: The state of buffer full means that the buffer of the printer is filled with print data. The size to be in buffer full state is approximately 4KB.

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

OpenDrawer

Open cash drawer

Opens the specified cash drawer.

Target All platforms RP-F10, RP-G10, RP-E10, RP-D10

Syntax `public void OpenDrawer(DrawerNum drawerNum, PulseWidth onOffTime);`

Parameter `drawerNum` Drawer number
See "4.2.1③ Drawer number (`DrawerNum`)" for available constants.

`onOffTime` Pulse width
See "4.2.1④ Pulse width (`PulseWidth`)" for available constants.

Error `PrinterException` is thrown when an error occurs while this method is being called.
See "4.2.4 `PrinterException` Class" for details on the error.

Buzzer

Sound buzzer

Sounds the buzzer.

Target All platforms RP-E10, RP-D10

Syntax `public void Buzzer(int onTime, int offTime);`

Parameter `onTime` Buzzer On time (millisecond)
Set the time the buzzer on.
The valid range is 0 to 510.

Error	PrinterException is thrown when an error occurs while this method is being called. See "4.2.4 PrinterException Class" for details on the error.
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Sound external buzzer

Error	PrinterException is thrown when an error occurs while this method is being called. See "4.2.4 PrinterException Class" for details on the error.
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Get printer status

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 ^{*1}	No error	Error
1	Hardware error ^{*1}	No error	Error
2	Head temperature error ^{*1}	No error	Error
3	Autocutter error ^{*2*3*4}	No error ^{*9}	Error

Bit	Function	Value	
		0	1
4	Out-of-paper error ^{*1}	No error	Error
5	Near end sensor error ^{*3}	No error ^{*9}	Error
6	Jam error at mark detection ^{*3*5*8} Jam error at mark and gap detection ^{*6}	No error ^{*9}	Error
7	Cover open error ^{*2*3*4*5*6*8}	No error ^{*9}	Error
8	FEED Switch status ^{*1}	OFF	ON
9	Reserved	Fixed	-
10	Paper feed status ^{*1}	Stop	Operating
11	Return-waiting status ^{*1}	Not waiting	Waiting
12	Reserved	Fixed	-
13	Taken sensor status ^{*8}	Paper removed	Paper removal waiting
13	Reserved	-	Fixed
14	Reserved	-	Fixed
15	Drawer switch input status ^{*2*3*4}	Low ^{*10}	High ^{*11}
16	FLASH memory rewriting ^{*1}	Not rewriting	Rewriting
17	Peripherals selection ^{*2*3*4}	Printer	Others
17	Reserved	Fixed ^{*10}	Fixed ^{*11}
18	Reserved	Fixed ^{*12}	Fixed ^{*13}
19	Reserved	-	Fixed
20 to 22	Battery remaining capacity level ^{*5*6*7}	000: No battery 001: Low (Battery remaining capacity: approx. 10%) 011: Middle (Battery remaining capacity: approx. 40%) 111: Full (Battery remaining capacity: approx. 80%) The [Value] of the printer that does not support [Function] is fixed to 1.	
23	Battery error ^{*5*6*7}	No error	Error ^{*11}
24 to 31	Reserved	-	Fixed

*1: Supported in all printers.

*2: Supported in RP-F10 and RP-G10.

*3: Supported in RP-E10.

*4: Supported in RP-D10.

*5: Supported in MP-B30.

*6: Supported in MP-B30L.

*7: Supported in MP-B20.

*8: Supported in SLP720RT.

*9: The [Value] of the printer that does not support [Function] is fixed to 0.

*10: The [Value] of SLP720RT is fixed to 0.

*11: The [Value] of the printer that does not support [Function] is fixed to 1.

*12: The [Value] of SLP720RT, RP-F10, and RP-G10 is fixed to 0.

*13: The [Value] of RP-E10, RP-D10, MP-B30, MP-B30L, and MP-B20 is fixed to 0.

Abort	Abort waiting state of printer
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Abort	Abort waiting state of printer
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Aborts the waiting state of the printer.

Target	All platforms	All printers
Syntax	<code>public void Abort();</code>	
Error	PrinterException is thrown when an error occurs while this method is being called. See "4.2.4 PrinterException Class" for details on the error.	
Description	When sending of image file by <code>SendDataFile</code> is interrupted, the printer does not accept other processes until the specified image file is received completely. (Methods and transmission data are misinterpreted and recognized as a part of the image file.) To solve this situation, use this method to abort the waiting state of the printer. Note that when this method is executed, a part of unprinted image file may be printed.	

RegisterLogo Register logo

RegisterLogo Register logo

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

Target	All platforms	All printers
Syntax	<pre>public void RegisterLogo(string fileName, string logoId, Dithering dithering);</pre>	
Parameter	fileName	<p>File path of image file to be registered as a logo The formats that can be entered are described below.</p> <ul style="list-style-type: none"> • Absolute path string handled by Java standard class "java.io.File" When targeting Android 10 (API 29) or later, please note that some files cannot be handled directly. See "3.4 Precautions - About Scoped Storage" for details. • URI string of the following scheme name handled by the class "android.net.Uri" prepared for Android <ul style="list-style-type: none"> • file:// • content:// It is necessary to specify the URI string obtained from "Storage Access Framework" for this parameter. Please note that URI created without being obtained from "Storage Access Framework" may not be able to open the file. <p>Supported image file extensions are .bmp, .jpg, .jpeg, and .png. Colored image is converted to monochrome image by binarization and registered.</p>
	logoId	<p>ID of the logo to be registered (key code) Specify the ID of the logo to be registered as a two-character string. Valid characters are ASCII character codes from 20h (space) to 7Eh (tilde) such as alphanumeric ('0' to '9', 'A' to 'Z', 'a' to 'z').</p>
	dithering	<p>Dithering See "4.2.1⑥ Dithering (Dithering)" for available constants.</p>

Error	PrinterException is thrown when an error occurs while this method is being called. See "4.2.4 PrinterException Class" for details on the error.
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UnregisterLogo	Delete registered logo
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Deletes the registered logo.

Target	All platforms	All printers
Syntax	<code>public void UnregisterLogo(string logoId);</code>	
Parameter	logoId	ID of the logo to be deleted (key code) Specify the ID of the registered logo as a character string.
Error	PrinterException is thrown when an error occurs while this method is being called. See "4.2.4 PrinterException Class" for details on the error.	

RegisterStyleSheet	Register style sheet
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Registers CSS file to the printer as a style sheet.

Target	All platforms	RP-E10, RP-D10
Syntax	<code>public void RegisterStyleSheet(string fileName, int cssId);</code>	
Parameter	filename	File path of CSS file to be registered as a style sheet The formats that can be entered are described below. <ul style="list-style-type: none"> • Absolute path string handled by Java standard class "java.io.File" When targeting Android 10 (API 29) or later, please note that some files cannot be handled directly. See "3.4 Precautions - About Scoped Storage" for details. • URI string of the following scheme name handled by the class "android.net.Uri" prepared for Android <ul style="list-style-type: none"> • file:// • content:// It is necessary to specify the URI string obtained from "Storage Access Framework" for this parameter. Please note that URI created without being obtained from "Storage Access Framework" may not be able to open the file. Supported image file extension is .css.
	cssId	ID of the style sheet to be registered Set the ID of the style sheet to be registered. The valid range is 1 to 4.
Error	PrinterException is thrown when an error occurs while this method is being called. See "4.2.4 PrinterException Class" for details on the error.	
Description	Write the style sheets in CSS (cascading style sheets) language. The number of the registerable style sheet is a maximum of 4. The number of the registerable style in a single CSS file is a maximum of 64.	

UnregisterStyleSheet

Delete registered style sheet

Deletes the registered style sheet.

Target	All platforms	RP-E10, RP-D10
Syntax	<pre>public void UnregisterStyleSheet(int cssId);</pre>	
Parameter	cssId	ID of the style sheet to be deleted Specify the ID of the registered style sheet
Error	PrinterException is thrown when an error occurs while this method is being called. See "4.2.4 PrinterException Class" for details on the error.	

ResetPrinter

Reset printer

Performs a hardware reset of the printer.

Target	All platforms	All printers
Syntax	<pre>public void ResetPrinter();</pre>	
Error	PrinterException is thrown when an error occurs while this method is being called. See "4.2.4 PrinterException Class" for details on the error.	
Description	<p>For Bluetooth connection: The printer hardware reset is performed by the printer command "Printer Reset". For iOS (RP-F10, RP-E10 and RP-D10), enable the printer memory switch "iOS Auto Connection" before executing this method. For iOS (MP-B30, MP-B30L, and MP-B20), enable the iOS Auto Connection by the printer command "Bluetooth communication setting" before executing this method. When it is disabled, this method fails to reconnect after reset and PrinterException 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.</p> <p>For USB connection: For iOS, the printer hardware reset is performed by the printer command "Printer Reset". For Android, the printer reset is performed by the SOFT_RESET function in the USB printer class.</p> <p>For TCP/IP connection: The reset is performed to the connected printer by our proprietary command (reset request) to TCP port 26100.</p> <p>The connection with the printer is retained even after this method is executed.</p>	

Gets response data from the printer.

Target	All platforms	All printers
Syntax	<pre>public void GetPrinterResponse<T>(PrinterResponseId responseId, object param, out T[] response);</pre>	
Parameter	responseId	Response type constant See "4.2.1⑦ Printer response type (PrinterResponseId)" for available constants.
	param	Command parameter The value to be specified varies with the response type constant. See the following table for description of the value to be specified.
	response	Buffer for storing the retrieved response data The buffer type varies with the response type constant. See the following table for the buffer type.

Response Type Constant	
Parameter	Description
PRINTER_RESPONSE_REQUEST (Execution response request)	
param	Specify 0 to 15 (00h to 0Fh) in an int type.
response	Specify an int type array. When the response is retrieved successfully, the response code of the execution response request is stored with 128 to 143 (80h to 8Fh).
PRINTER_RESPONSE_USER_AREA (Send remaining capacity of user area)	
param	Specify null.
response	Specify an int type array. When the response is retrieved successfully, the remaining capacity (unit: byte) of the user area is stored numerically.
PRINTER_RESPONSE_ARRANGE_USER_AREA (Send remaining capacity of user area after defragment)	
param	Specify null.
response	Specify an int type array. When the response is retrieved successfully, the remaining capacity (unit: byte) of the user area after defragment is stored numerically.
PRINTER_RESPONSE_NV_GRAPHICS (Send NV graphics memory capacity)	
param	Specify null.
response	Specify an int type array. When the response is retrieved successfully, the NV graphics memory capacity (unit: byte) is stored numerically.
PRINTER_RESPONSE_KEY_CODE (Send key code list of defined NV graphics)	
param	Specify null.
response	Specify a string type array. When the response is retrieved successfully, the key code of NV graphics is stored in an array of strings.

Response Type Constant	
Parameter	Description
PRINTER_RESPONSE_BATTERY_STATUS (Battery remaining capacity level)	
param	Specify null.
response	<p>Supported only in MP-B30, MP-B30L, and MP-B20. Specify an int type array. When the response is retrieved successfully, the battery remaining capacity level is stored numerically. See "4.2.2(3)② Battery remaining capacity level" for details of the value. Battery remaining capacity level</p> <p>BATTERY_STATUS_FULL : Full (Battery remaining capacity: approx. 80%) BATTERY_STATUS_MIDDLE : Middle (Battery remaining capacity: approx. 40%) BATTERY_STATUS_LOW : Low (Battery remaining capacity: approx. 10%) BATTERY_STATUS_EMPTY : No battery</p>

Error PrinterException is thrown when an error occurs while this method is being called.
See" 4.2.4 PrinterException Class" for details on the error.

StartDiscoveryDevice	Start device search
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Searches the device.

Target	All platforms	All devices
Syntax	<pre>public void StartDiscoveryDevice(DeviceType deviceType, PortType portType, int timeout, Action completion);</pre>	
Parameter	deviceType	<p>Device Type See "4.2.1⑧ Device type (DeviceType)" for available constants. For iOS, only TYPE_PRINTER is available.</p>
	portType	<p>Port type See "4.2.1② Port type (PortType)" for available constants.</p>
	timeout	<p>Search timeout period (millisecond: ms) Sets the timeout period per search. The valid range is 3000 to 60000. When the value is specified less than 3000, the period is set to 3000 ms. When the value is specified more than 60000, the period is set to 60000 ms.</p> <ul style="list-style-type: none"> ● For PORT_TYPE_TCP Each time the local broadcast packet is sent, this method waits for a response from the printer until the period specified by timeout elapses. ● For PORT_TYPE_BLUETOOTH When the device is being searched, this method searches the device until the period specified by timeout elapses. When the device search is completed, the search is completed without waiting for the period of timeout. For iOS, specifying of timeout is ignored.

- For **PORT_TYPE_USB**
Specifying of timeout is ignored.

	completion	The block executed when completing the device search
Error	PrinterException is thrown when an error occurs while this method is being called.	
Description	This method searches for the device. The device information of the discovered device can be retrieved by <code>GetFoundDevice</code> .	

CancelDiscoveryDevice

Cancel device search

Cancels `StartDiscoveryDevice` under execution.

Target	All platforms	All printers
Syntax	<code>public void CancelDiscoveryDevice();</code>	
Description	The cancellation of the search is notified as an event to the block set to completion of <code>StartDiscoveryPrinter</code> .	

GetFoundDevice

Get found device information list

Gets the device information list found by `StartDiscoveryDevice` from the destination `DeviceInfo` class.

Target	All platforms	All printers
Syntax	<code>public DeviceInfo[] GetFoundDevice();</code>	
Description	For the Bluetooth connection on iOS, only the device information of the paired printer can be retrieved.	
Return value	See "4.2.3 DeviceInfo Class".	

ControlTransaction

Start/Finish batch processing

Starts or finishes batch processing.

Target	All platforms	All printers
Syntax	<code>public void ControlTransaction(TransactionFunction control);</code>	
Parameter	<code>control</code>	Batch processing selection See "4.2.1⑨ Batch processing selection (TransactionFunction)" for available constants.
Error	PrinterException is thrown when an error occurs while this method is being called. See "4.2.4 PrinterException Class" for details on the error.	
Description	The procedure of batch processing is as follows: (1) Starts batch processing. Specify TRANSACTION_START . (2) Executes the method. In the case of the batch processing target method, buffering of transmission data is started. The transmission data of the batch processing target method executed during buffering is buffered in the transmission buffer without being sent to the printer. The maximum size of transmission data to be buffered is system dependent.	

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

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

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

(3) Finishes batch processing.

When **TRANSACTION_PRINT** is specified, the buffered transmission data is sent to the printer. The buffered transmission data is retained even after sent to the printer.

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

- Specify **TRANSACTION_CLEAR**
- Specify **TRANSACTION_START**
- Execute Disconnect

The batch processing target methods are as follows:

- SendText
- SendTextEx
- PrintBarcode
- PrintPDF417
- PrintQRcode
- PrintDataMatrix
- PrintMaxiCode
- PrintGS1DataBarStacked
- PrintGS1DataBarStackedOmnidirectional
- PrintGS1DataBarExpandedStacked
- PrintAztecCode
- CutPaper
- FeedPosition
- OpenDrawer
- Buzzer
- ExternalBuzzer
- SendBinary
- SendDataFile
- PrintLogo^{*1}
- EnterPageMode
- ExitPageMode
- SetPageModeArea
- SetPageModeDirection
- SetPageModeLineSpacing
- PrintPageMode
- PrintPageModeText
- PrintPageModeTextEx
- PrintPageModeBarcode
- PrintPageModePDF417
- PrintPageModeQRcode
- PrintPageModeDataMatrix
- PrintPageModeMaxiCode
- PrintPageModeGS1DataBarStacked
- PrintPageModeGS1DataBarStackedOmnidirectional
- PrintPageModeGS1DataBarExpandedStacked
- PrintPageModeAztecCode
- SendPageModeBinary
- PrintPageModeImageFile
- PrintPageModeRectangle
- PrintPageModeLine
- PrintPageModeLogo^{*1}

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

SetStatusChangedEventHandler

Start/Finish call back of printer status change

Starts or finishes the call back of printer status change.

Target	All platforms	All printers
Syntax	<pre>public void SetStatusChangedEventHandler(Action<int> statusChangedEventHandler)</pre>	
Parameter	<pre>statusChangedEventHandler</pre> <p>Delegate object to receive notification of printer status change</p>	
Description	<p>Starts to notify printer status change by executing this method after specifying the enabled delegate object other than null in statusChangedEventHandler.</p> <p>The printer status change is notified only when IsConnect is true.</p> <p>This method is called the latest status at the following timing.</p> <ul style="list-style-type: none">·When the printer status is changed.·When this method is executed after specifying the enabled delegate object other than null in statusChangedEventHandler. <p>The notification of the printer status change finishes at the following timing.</p> <ul style="list-style-type: none">·When Disconnect is executed.·When this method is executed by specifying null in statusChangedEventHandler. <p>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.</p> <p>See GetStatus for description of the printer status.</p> <p>Do not execute the APIs of PrinterManager class in the delegate object to specify in statusChangeEventHandler.</p>	

SetBarcodeScannerReadDataEventHandler

Start/Finish call back of receipt barcode data

Starts or finishes the call back of receipt of the barcode data.

Target	All platforms	RP-F10
Syntax	<pre>public void SetBarcodeScannerReadDataEventHandler(Action<byte[]> barcodeScannerReadDataEventHandler)</pre>	
Parameter	<pre>barcodeScannerReadDataEventHandler</pre> <p>Delegate object to receive notification of barcode data receipt</p>	
Description	<p>The delegate object specified in the barcodeScannerReadDataEventHandler is called when the barcode scanner connected to the printer scans a barcode.</p> <p>Receipt of barcode data is notified when IsConnect is true and communicating with the printer.</p> <p>The receipt of barcode data finishes at the following timing.</p> <ul style="list-style-type: none">·When Disconnect is executed.·When this method is executed by specifying null in barcodeScannerReadDataEventHandler.	

Do not execute the APIs of PrinterManager class in the delegate object to specify in barcodeScannerReadDataEventHandler.

SetBarcodeScannerChangedOnlineEventHandler

Start/Finish call back of barcode scanner connection

Notifies the connection of the barcode scanner.

Target	All platforms	RP-F10
Syntax	<pre>public void SetBarcodeScannerChangedOnlineEventHandler(Action barcodeScannerChangedOnlineEventHandler)</pre>	
Parameter	<pre>barcodeScannerChangedOnlineEventHandler</pre> <p>Delegate object to receive the notification of barcode scanner connection</p>	

Description This method is called at the following timing.

- When the barcode scanner is connected with the printer and this method is executed after specifying the enabled delegate object other than null in barcodeScannerChangedOnlineEventHandler.
- When the barcode scanner is connected to the printer.

The connection of the barcode scanner is notified when IsConnect is true and the printer is connecting.

The call back of the barcode scanner finishes at the following timing.

- When Disconnect is executed.
- When this method is executed by specifying null in barcodeScannerChangedOnlineEventHandler.

Do not execute the APIs of PrinterManager class in the delegate object to specify in barcodeScannerChangedOnlineEventHandler.

SetBarcodeScannerChangedOfflineEventHandler

Start/Finish call back of barcode scanner disconnection

Notifies the disconnection of the barcode scanner.

Target	All platforms	RP-F10
Syntax	<pre>public void SetBarcodeScannerChangedOfflineEventHandler(Action barcodeScannerChangedOfflineEventHandler)</pre>	
Parameter	<pre>barcodeScannerChangedOfflineEventHandler</pre> <p>Delegate object to receive the notifications of barcode scanner disconnection</p>	

Description This method is called at the following timing.

- When the barcode scanner is not connected to the printer and this method is executed after specifying the enabled delegate object other than null in barcodeScannerChangedOfflineEventHandler.
- When the barcode scanner is disconnected from the printer.

The disconnection of the barcode scanner is notified when IsConnect is true.

The call back of barcode scanner disconnection finishes at the following timing.

- When Disconnect is executed.
- When this method is executed by specifying null in barcodeScannerChangedOfflineEventHandler.

Do not execute the APIs of PrinterManager class in the delegate object to specify in barcodeScannerChangedOfflineEventHandler.

② Dedicated method for standard mode

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

SendText Send text data

Sends text data.

Target	All platforms	All printers
Syntax	<code>public void SendText(string text);</code>	
Parameter	text	Text data to send to the printer Data size that can be specified at one time is 16 KB (16384 bytes).
Error	<code>PrinterException</code> is thrown when an error occurs while this method is being called. See "4.2.4 <code>PrinterException</code> Class" for details on the error.	
Description	This method encodes the specified text data to printable text data based on <code>InternationalCharacter</code> and <code>CodePage</code> , and sends it to the printer. This method does not add a line feed code at the end of the text data. In order to print to the end, add a line feed code to the end of the text data.	

SendTextEx Send format specified text data

Sends formatted text data to the printer.

Target	All platforms	All printers
Syntax	(a) <code>public void SendTextEx(string text, CharacterBold bold, CharacterUnderline underline, CharacterReverse reverse, CharacterFont font, CharacterScale scale, PrintAlignment alignment);</code> (b) <code>public void SendTextEx(string text, CharacterBold bold, CharacterUnderline underline, CharacterReverse reverse, CharacterInversion inversion, CharacterFont font, CharacterScale scale, PrintAlignment alignment);</code>	
Parameter	text	Text data to send to the printer Data size that can be specified at 1 time is 16 KB (16384 bytes).
	bold	Bold character See "4.2.1⑪ Bold character (<code>CharacterBold</code>)" for available constants.
	underline	Underline See "4.2.1⑫ Underline (<code>CharacterUnderline</code>)" for available constants.

reverse	Reverse print See "4.2.1 ¹⁷ Reverse print (CharacterReverse)" for available constants.
font	Character font See "4.2.1 ¹⁴ Character font (CharacterFont)" for available constants.
inversion	Inversion print See "4.2.1 ¹⁸ Inversion print (CharacterInversion)" for available constants.
scale	Character scale See "4.2.1 ¹³ Character scale (CharacterScale)" for available constants.
alignment	Alignment See "4.2.1 ¹⁰ Alignment (PrintAlignment)" for available constants.
Error	PrinterException is thrown when an error occurs while this method is being called. See "4.2.4 PrinterException Class" for details on the error.
Description	This method encodes the specified text data to printable text data based on InternationalCharacter and CodePage, and sends it to the printer. This method does not add a line feed code at the end of the text data. In order to print to the end, add a line feed code to the end of the text data.

PrintBarcode

Print barcode

Prints the barcode.

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

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

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

Target	All platforms	All printers
Syntax	<pre>(a) public void PrintBarcode(BarcodeSymbol barcodeSymbol, string text, ModuleSize moduleSize, int moduleHeight, HriPosition hriPosition, CharacterFont hriFont, PrintAlignment alignment); (b) public void PrintBarcode(BarcodeSymbol barcodeSymbol, string text, ModuleSize moduleSize, int moduleHeight, HriPosition hriPosition, CharacterFont hriFont, PrintAlignment alignment, NwRatio nwRatio);</pre>	

```
(c) public void PrintBarcode(BarcodeSymbol barcodeSymbol,
                             byte[] data,
                             ModuleSize moduleSize,
                             int moduleHeight,
                             HriPosition hriPosition,
                             CharacterFont hriFont,
                             PrintAlignment alignment);
```

Parameter	barcodeSymbol	Barcode symbol See "4.2.1 ¹⁹ Barcode symbol (BarcodeSymbol)" for available constants and corresponding syntax.
	text(data)	Barcode data to send to the printer
	moduleSize	Barcode width See "4.2.1 ¹⁵ Module size (ModuleSize)" for available constants.
	moduleHeight	Barcode height (dot)

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

BARCODE_UPC_A
BARCODE_UPC_E
BARCODE_EAN13
BARCODE_JAN13
BARCODE_EAN8
BARCODE_JAN8
BARCODE_CODE39
BARCODE_CODE93
BARCODE_CODE128
BARCODE_ITF
BARCODE_CODABAR
BARCODE_EAN13_ADDON
BARCODE_JAN13_ADDON

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

barcodeSymbol		
	moduleSize	Valid Range
BARCODE_GS1_OMNI_DIRECTIONAL		
	BARCODE_MODULE_WIDTH_2	66 to 255
	BARCODE_MODULE_WIDTH_3	99 to 255
	BARCODE_MODULE_WIDTH_4	132 to 255
	BARCODE_MODULE_WIDTH_5	165 to 255
	BARCODE_MODULE_WIDTH_6	198 to 255
BARCODE_GS1_TRUNCATED		
	BARCODE_MODULE_WIDTH_2	26 to 255
	BARCODE_MODULE_WIDTH_3	39 to 255
	BARCODE_MODULE_WIDTH_4	52 to 255
	BARCODE_MODULE_WIDTH_5	65 to 255
	BARCODE_MODULE_WIDTH_6	78 to 255

barcodeSymbol		
moduleSize	Valid Range	
BARCODE_GS1_LIMITED		
BARCODE_MODULE_WIDTH_2	20 to 255	
BARCODE_MODULE_WIDTH_3	30 to 255	
BARCODE_MODULE_WIDTH_4	40 to 255	
BARCODE_MODULE_WIDTH_5	50 to 255	
BARCODE_MODULE_WIDTH_6	60 to 255	
BARCODE_GS1_EXPANDED		
BARCODE_MODULE_WIDTH_2	68 to 255	
BARCODE_MODULE_WIDTH_3	102 to 255	
BARCODE_MODULE_WIDTH_4	136 to 255	
BARCODE_MODULE_WIDTH_5	170 to 255	
BARCODE_MODULE_WIDTH_6	204 to 255	

hriPosition	HRI character print position See "4.2.1 ²⁰ HRI character print position (HriPosition)" for available constants.
hriFont	HRI character font See "4.2.1 ¹⁴ Character font (CharacterFont)" for available constants.
alignment	Alignment See "4.2.1 ¹⁰ Alignment (PrintAlignment)" for available constants
nwRatio	N:W ratio See "4.2.1 ²¹ N:W ratio (NwRatio)" for available constants. Depending on the specified nwRatio and moduleSize, the width of the wide element is set as shown in the following table.

moduleSize	nwRatio		
	NWRATIO_1T02	NWRATIO_1T02_5	NWRATIO_1T03
BARCODE_MODULE_WIDTH_2	0.500 mm (4 dots)	0.625 mm (5 dots)	0.750 mm (6 dots)
BARCODE_MODULE_WIDTH_3	0.750 mm (6 dots)	1.000 mm (8 dots)	1.125 mm (9 dots)
BARCODE_MODULE_WIDTH_4	1.000 mm (8 dots)	1.250 mm (10 dots)	1.500 mm (12 dots)
BARCODE_MODULE_WIDTH_5	1.250 mm (10 dots)	1.625 mm (13 dots)	1.875 mm (15 dots)
BARCODE_MODULE_WIDTH_6	1.500 mm (12 dots)	1.875 mm (15 dots)	2.250 mm (18 dots)

Error PrinterException is thrown when an error occurs while this method is being called.
See "4.2.4 PrinterException Class" for details on the error.

Notes	In SLP720RT, RP-F10, RP-G10, MP-B30, and MP-B30L, the quiet zone is not secured. Set the quiet zone in accordance with the standard of the barcode symbol.
Reference	See "Appendix B Barcode Size List" for details of the barcode size.

PrintPDF417

Print PDF417

Prints PDF417.

Target	All platforms	All printers
Syntax	<pre>public void PrintPDF417(string text, ErrorCorrection errorCorrection, int row, int column, ModuleSize moduleSize, int moduleHeight, PrintAlignment alignment, Pdf417Symbol pdf417Symbol);</pre>	
Parameter	text	Barcode data to send to the printer
	errorCorrection	Error correction level See "4.2.1⑩ Error correction level (ErrorCorrection)" for available constants.
	row	Number of rows (row) The valid range is 0, 3 to 90. When 0 is specified, the number of rows is automatically set.
	column	Number of columns in data area The valid range is 0 to 30. When 0 is specified, the number of columns in the data area is automatically set.
	moduleSize	Nominal fine element width See "4.2.1⑮ Module size (ModuleSize)" for available constants.
	moduleHeight	Module height (dot) The valid range is 2 to 127. When the module height is set smaller, some barcode scanners may not read it. Set 3 or more for normal use.
	alignment	Alignment See "4.2.1⑩ Alignment (PrintAlignment)" for available constants.
	pdf417Symbol	PDF417 symbol See "4.2.1⑳ PDF417 symbol (Pdf417Symbol)" for available constants.
Error	PrinterException is thrown when an error occurs while this method is being called. See "4.2.4 PrinterException Class" for details on the error.	
Notes	In SLP720RT, RP-F10, RP-G10, MP-B30, and MP-B30L, the quiet zone is not secured. Set the quiet zone in accordance with the standard of the barcode symbol.	
Reference	See "Appendix B Barcode Size List" for details of the barcode size.	

Prints QR Code.

Target	All platforms	All printers
Syntax	<pre>public void PrintQRcode(string text, ErrorCorrection errorCorrection, ModuleSize moduleSize, PrintAlignment alignment, QrModel model);</pre>	
Parameter	text	Barcode data to send to the printer The version is automatically set depending on the number of data bytes set with text.
	errorCorrection	Error correction level See "4.2.1⑩ Error correction level (ErrorCorrection)" for available constants.
	moduleSize	Module size See "4.2.1⑮ Module size (ModuleSize)" for available constants.
	alignment	Alignment See "4.2.1⑩ Alignment (PrintAlignment)" for available constants.
	model	QR Code Model See "4.2.1⑲ QR Code Model (QrModel)" for available constants.
Error	PrinterException is thrown when an error occurs while this method is being called. See "4.2.4 PrinterException Class" for details on the error.	
<u>Notes</u>	In SLP720RT, RP-F10, RP-G10, MP-B30, and MP-B30L, the quiet zone is not secured. Set the quiet zone in accordance with the standard of the barcode symbol.	
Reference	See "Appendix B Barcode Size List" for details of the barcode size.	

Prints Data Matrix.

Target	All platforms	All printers
Syntax	<pre>public void PrintDataMatrix(string text, DataMatrixModule dataMatrixModule, ModuleSize moduleSize, PrintAlignment alignment);</pre>	
Parameter	text	Barcode data to send to the printer
	dataMatrixModule	Number of Data Matrix modules See "4.2.1⑳ Data Matrix module (DataMatrixModule)" for available constants.
	moduleSize	Module size See "4.2.1⑮ Module size (ModuleSize)" for available constants.

	alignment	Alignment See "4.2.1 ¹⁰ Alignment (PrintAlignment)" for available constants.
Error	PrinterException is thrown when an error occurs while this method is being called. See "4.2.4 PrinterException Class" for details on the error.	
<u>Notes</u>	In SLP720RT, RP-F10, RP-G10, MP-B30, and MP-B30L, the quiet zone is not secured. Set the quiet zone in accordance with the standard of the barcode symbol.	
Reference	See "Appendix B Barcode Size List" for details of the barcode size.	

PrintMaxiCode	Print MaxiCode
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Prints MaxiCode.

Target	All platforms	All printers
Syntax	<pre>public void PrintMaxiCode(string text, MaxiCodeMode maxiCodeMode, PrintAlignment alignment);</pre>	
Parameter	text	Barcode data to send to the printer
		<ul style="list-style-type: none"> When maxiCodeMode is MAXI_CODE_2: Add service class (3 digits), country code (3 digits), and postal code (9 digits) to the beginning of the data. When maxiCodeMode is MAXI_CODE_3: Add service class (3 digits), country code (3 digits), and postal code (6 digits) to the beginning of the data.
	maxiCodeMode	MaxiCode Mode See "4.2.1 ²⁵ MaxiCode Mode (MaxiCodeMode)" for available constants.
	alignment	Alignment See "4.2.1 ¹⁰ Alignment (PrintAlignment)" for available constants.
Error	PrinterException is thrown when an error occurs while this method is being called. See "4.2.4 PrinterException Class" for details on the error.	
<u>Notes</u>	In SLP720RT, RP-F10, RP-G10, MP-B30, and MP-B30L, the quiet zone is not secured. Set the quiet zone in accordance with the standard of the barcode symbol.	
Reference	See "Appendix B Barcode Size List" for details of the barcode size.	

PrintGS1DataBarStacked

Print GS1 Databar Stacked

Prints GS1 Databar Stacked.

Target	All platforms	SLP720RT, RP-F10, RP-G10, MP-B30, MP-B30L, MP-B20
Syntax	<pre>public void PrintGS1DataBarStacked(string text, ModuleSize moduleSize, PrintAlignment alignment);</pre>	
Parameter	text	Barcode data to send to the printer Enter 13 characters from '0' to '9'. The leading '01' is automatically added by the printer. The check digit is automatically calculated by the printer.
	moduleSize	Module size See "4.2.1 ¹⁵ Module size (ModuleSize)" for available constants.
	alignment	Alignment See "4.2.1 ¹⁰ Alignment (PrintAlignment)" for available constants.
Error	PrinterException is thrown when an error occurs while this method is being called. See "4.2.4 PrinterException Class" for details on the error.	
Reference	See "Appendix B Barcode Size List" for details of the barcode size.	

PrintGS1DataBarStackedOmnidirectional

Print GS1 Databar Stacked Omni-directional

Prints GS1 Databar Stacked Omni-directional.

Target	All platforms	SLP720RT, RP-F10, RP-G10, MP-B30, MP-B30L, MP-B20
Syntax	<pre>public void PrintGS1DataBarStackedOmnidirectional(string text, int moduleHeight, ModuleSize moduleSize, PrintAlignment alignment);</pre>	
Parameter	text	Barcode data to send to the printer Enter 13 characters from '0' to '9'. The leading '01' is automatically added by the printer. The check digit is automatically calculated by the printer.
	moduleHeight	Barcode module height (number of modules) The valid range is 33 to 255.
	moduleSize	Module size See "4.2.1 ¹⁵ Module size (ModuleSize)" for available constants.
	alignment	Alignment See "4.2.1 ¹⁰ Alignment (PrintAlignment)" for available constants.
Error	PrinterException is thrown when an error occurs while this method is being called. See "4.2.4 PrinterException Class" for details on the error.	
Reference	See "Appendix B Barcode Size List" for details of the barcode size.	

Prints GS1 Databar Expanded Stacked.

Target	All platforms	SLP720RT, RP-F10, RP-G10, MP-B30, MP-B30L, MP-B20
Syntax	<pre>public void PrintGS1DataBarExpandedStacked(string text, int column, ModuleSize moduleSize, PrintAlignment alignment);</pre>	
Parameter	text	Barcode data to send to the printer Enter any number of characters using the following: ' ', '!', '"', '%', '&', '(', ')', '*', '+', ',', '-', '.', '/', ':', ';', '<', '=', '>', '?', '_', '0' to '9', 'A' to 'Z', 'a' to 'z' Enter '{1' for FNC1.
	column	Number of columns Specify the number of segments in 1 line. An even number from 2 to 20 is valid.
	moduleSize	Module size See "4.2.1 ⁽¹⁵⁾ Module size (ModuleSize)" for available constants.
	alignment	Alignment See "4.2.1 ⁽¹⁰⁾ Alignment (PrintAlignment)" for available constants.
Error	PrinterException is thrown when an error occurs while this method is being called. See "4.2.4 PrinterException Class" for details on the error.	
Reference	See "Appendix B Barcode Size List" for details of the barcode size.	

Prints Aztec Code.

Target	All platforms	MP-B30L
Syntax	<pre>public void PrintAztecCode(string text, int layer, int errorCorrection ModuleSize moduleSize, AztecSymbol aztecSymbol, PrintAlignment alignment);</pre>	
Parameter	text	Barcode data to send to the printer Encodes the data to binary in UTF-8 and sends to the printer. When the data to be sent cannot be specified as a string, it can be specified using the following escape sequence.

Escape sequence	Description
\u00nn	Control code (Specify nn as a hexadecimal number)
\\	Backslash

	<p>To specify FNC1, enter "\u001b\u0030" in the data.</p> <p>To specify 1Bh, enter "\u001b\u001b" in the data.</p>
layer	<p>Number of layer</p> <p>The valid range of full-range mode is 0, 4 to 32.</p> <p>The valid range of compact mode is 0, 1 to 4.</p> <p>When 0 is specified, layer is automatically set.</p>
errorCorrection	<p>Error correction level (%)</p> <p>The valid range is 0, 5 to 95.</p> <p>When 0 is specified, the level is 23%.</p>
moduleSize	<p>Module size</p> <p>See "4.2.1¹⁵ Module size (ModuleSize)" for available constants.</p>
aztecSymbol	<p>Aztec symbol</p> <p>See "4.2.1²⁶ Aztec symbol (AztecSymbol)" for available constants.</p>
alignment	<p>Alignment</p> <p>See "4.2.1¹⁰ Alignment (PrintAlignment)" for available constants.</p>
Error	<p>PrinterException is thrown when an error occurs while this method is being called.</p> <p>See "4.2.4 PrinterException Class" for details on the error.</p>
Reference	<p>See "Appendix B Barcode Size List" for details of the barcode size.</p>

CutPaper	Cut paper
-----------------	------------------

Feeds the paper to the paper cut position and cuts the paper.

Target	All platforms	All printers
Syntax	public void CutPaper(CuttingMethod cuttingMethod);	
Parameter	cuttingMethod	<p>Cutting method</p> <p>See "4.2.1²⁷ Cutting method (CuttingMethod)" for available constants.</p>
Error	<p>PrinterException is thrown when an error occurs while this method is being called.</p> <p>See "4.2.4 PrinterException Class" for details on the error.</p>	
Description	<p>For MP-B30, MP-B30L, or MP-B20, the paper is not cut and the paper is fed to the paper cut position.</p>	

FeedPosition	Paper form feed
---------------------	------------------------

Performs the paper form feed of marked paper or label.

Target	All platforms	SLP720RT, MP-B30L
Syntax	public void FeedPosition(FeedPosition feedPosition);	
Parameter	feedPosition	<p>Form feed position</p> <p>See "4.2.1²⁸ Form feed position (FeedPosition)" for available constants.</p>
Error	<p>PrinterException is thrown when an error occurs while this method is being called.</p> <p>See "4.2.4 PrinterException Class" for details on the error.</p>	

Description	The paper form feed is not performed when this method is executed at the form feed position of the marked paper or the label.
-------------	---

SendBinary	Send binary data
-------------------	-------------------------

Sends binary data to the printer.

Target	All platforms	All devices
Syntax	<code>public void SendBinary(byte[] data);</code>	
Parameter	data	Binary data to send to the printer Data size that can be specified at one time is 256 KB (262144 bytes).
Error	PrinterException is thrown when an error occurs while this method is being called. See "4.2.4 PrinterException Class" for details on the error.	
Description	<p>This method sends the specified binary data to the printer without conversion.</p> <p>By sending printer command as binary data by this method, printer functions not supported in the library become available. However, this method does not support commands to get the response from the printer.</p>	

SendDataFile	Send specified file
---------------------	----------------------------

Sends file data.

Target	All platforms	All devices
Syntax	<code>public void SendDataFile(string fileName, PrintAlignment alignment, Dithering dithering);</code>	
Parameter	fileName	<p>File path of the data to send to the printer The formats that can be entered are described below.</p> <ul style="list-style-type: none"> • Absolute path string handled by Java standard class "java.io.File" When targeting Android 10 (API 29) or later, please note that some files cannot be handled directly. See "3.4 Precautions - About Scoped Storage" for details. • URI string of the following scheme name handled by the class "android.net.Uri" prepared for Android <ul style="list-style-type: none"> ▪ file:// ▪ content:// It is necessary to specify the URI string obtained from "Storage Access Framework" for this parameter. Please note that URI created without being obtained from "Storage Access Framework" may not be able to open the file. <p>The file size that can be specified is maximum 1 MB (1048576 bytes). The file extensions that can be sent and the file transmission are described below.</p>

- .bmp, .jpg, .jpeg, .png
Data is sent to the printer as image file. Colored image file is converted to monochrome image by binarization and sent to the printer. Printing is performed in batch after mapping the image file on the memory of the printer.
- .txt
Data is sent to the printer as text data. Text data format supports UTF-8. This method encodes the text data to printable text data based on `InternationalCharacter` and `CodePage`, and then sends it to the printer.
This method does not add a line feed code at the end of the text data. In order to print to the end, add a line feed code at the end of the text data.
- .bin, .dat
Data is sent to the printer as binary data without conversion.
- .htm, .html
Supported only in RP-E10 and RP-D10.
Data is sent to the printer as html data without conversion.

alignment	Alignment It is valid when the extension of the file specified by <code>fileName</code> is .bmp, .jpg, .jpeg, .png, or .txt. See "4.2.1⑩ Alignment (<code>PrintAlignment</code>)" for available constants.
dithering	Dithering It is valid when the extension of the file specified by <code>fileName</code> is .bmp, .jpg, .jpeg, or .png. See "4.2.1⑥ Dithering (<code>Dithering</code>)" for available constants.

Error `PrinterException` is thrown when an error occurs while this method is being called.
See "4.2.4 `PrinterException` Class" for details on the error.

PrintLogo

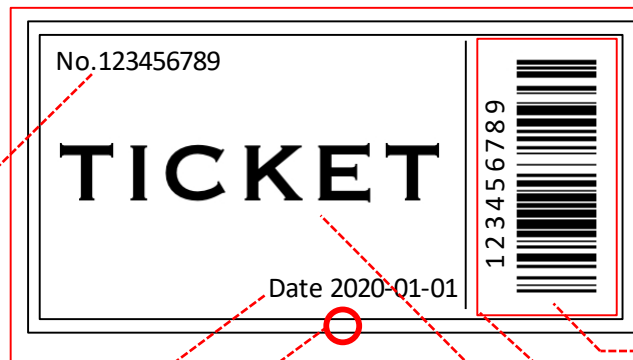
Print logo

Prints the registered logo.

Target	All platforms	All printers
Syntax	<code>public void PrintLogo(string logoId, PrintAlignment alignment);</code>	
Parameter	logoId	ID of the logo to be printed (key code) Specify the ID of the registered logo as a character string.
	alignment	Alignment See "4.2.1⑩ Alignment (<code>PrintAlignment</code>)" for available constants.
Error	<code>PrinterException</code> is thrown when an error occurs while this method is being called. See "4.2.4 <code>PrinterException</code> Class" for details on the error.	

③ Dedicated method for page mode

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



① Start page mode

```
printerManager.EnterPageMode();
```

② Specify print area of page mode

```
printerManager.SetPageModeArea(0, 0, 576, 355);
```

③ Specify a rectangle and a ruled line

```
printerManager.PrintPageModeRectangle(0, 0, 575, 344, LineStyle.LINESTYLE_THIN);  
printerManager.PrintPageModeRectangle(7, 7, 567, 336, LineStyle.LINESTYLE_THIN);  
printerManager.PrintPageModeLine(404, 11, 404, 334, LineStyle.LINESTYLE_THIN);
```

④ Specify a character

```
printerManager.PrintPageModeText(21, 37, "NO.123456789");  
printerManager.PrintPageModeText(212, 330, "Date 2020-01-01");
```

⑤ Specify an image file

```
string folderPath = Environment.GetFolderPath(Environment.SpecialFolder.MyDocuments);  
string filePath = Path.Combine(folderPath, "TicketImage.jpg");  
printerManager.PrintPageModeImageFile(10, 212, filePath, Dithering.DITHERING_DISABLE);
```

⑥ Specify print area of page mode

```
printerManager.SetPageModeArea(404, 9, 163, 327);
```

⑦ Specify print direction

```
printerManager.SetPageModeDirection(Direction.DIRECTION_BOTTOM_TO_TOP);
```

⑧ Specify a barcode

```
byte[] data = System.Text.Encoding.ASCII.GetBytes("{B123456789}");  
printerManager.PrintPageModeBarcode(20, 132, BarcodeSymbol.BARCODE_CODE128, data,  
ModuleSize.BARCODE_MODULE_WIDTH_2, 80, HriPosition.HRI_POSITION_ABOVE, CharacterFont.FONT_A);
```

⑨ Print in page mode

```
printerManager.PrintPageMode(CuttingMethod.CUT_PARTIAL);
```

⑩ Ends page mode

```
printerManager.ExitPageMode();
```

EnterPageMode**Start page mode**

Starts page mode.

Target	All platforms	RP-F10, RP-G10, RP-E10, RP-D10, MP-B30, MP-B30L
Syntax	<code>public void EnterPageMode();</code>	
Error	PrinterException is thrown when an error occurs while this method is being called. See "4.2.4 PrinterException Class" for details on the error.	
Description	This method starts page mode. The dedicated method for page mode and common methods to standard mode and page mode can be used after this method execution. Executing ExitPageMode discards the print data kept in the page data buffer and changes the mode to standard mode. Executing PrintPageMode prints the print data kept in the page data buffer.	

ExitPageMode**End page mode**

Ends page mode and changes the mode to standard mode.

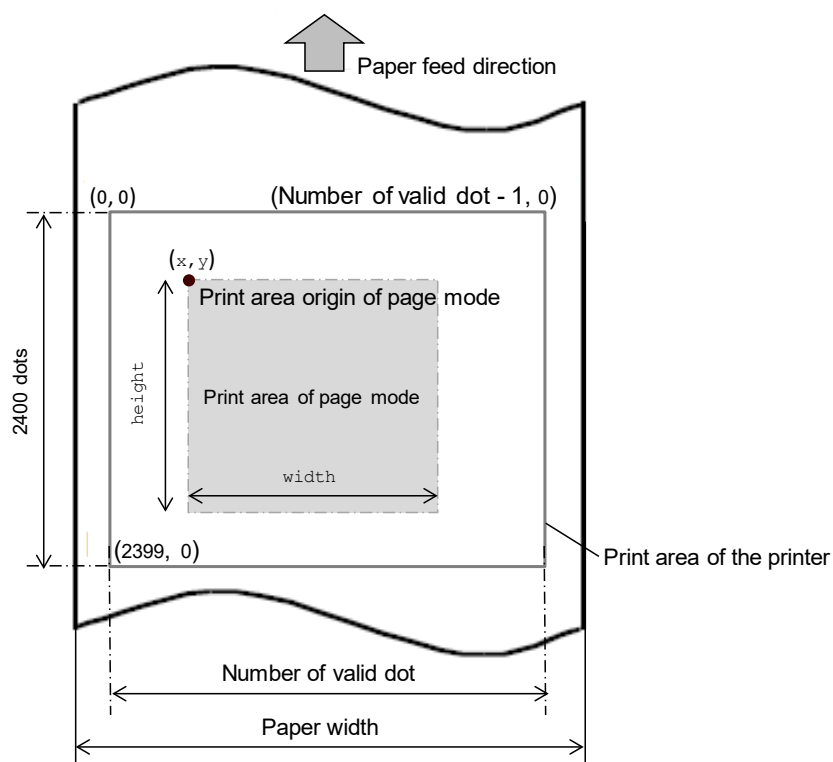
Target	All platforms	RP-F10, RP-G10, RP-E10, RP-D10, MP-B30, MP-B30L
Syntax	<code>public void ExitPageMode();</code>	
Error	PrinterException is thrown when an error occurs while this method is being called. See "4.2.4 PrinterException Class" for details on the error.	
Description	Discards the print data kept in the page data buffer and changes the mode to standard mode.	

SetPageModeArea**Specify print area of page mode**

Specifies print area of page mode.

Target	All platforms	RP-F10, RP-G10, RP-E10, RP-D10, MP-B30, MP-B30L
Syntax	<code>public void SetPageModeArea(int x, int y, int width, int height);</code>	
Parameter	x	The horizontal origin (dot) of the print area of page mode 0 represents the left edge on the print area of the printer. The valid range of RP-F10, RP-G10, RP-E10 and RP-D10 is described later in this method. The valid range of MP-B30 and MP-B30L is 0 to 575.
	y	The vertical origin (dot) of the print area of page mode The valid range is 0 to 2399. 0 represents the position where paper feed has not been performed.
	width	The print area width (dot) of page mode
	height	The print area height (dot) of page mode The valid range is 1 to (2400-y).

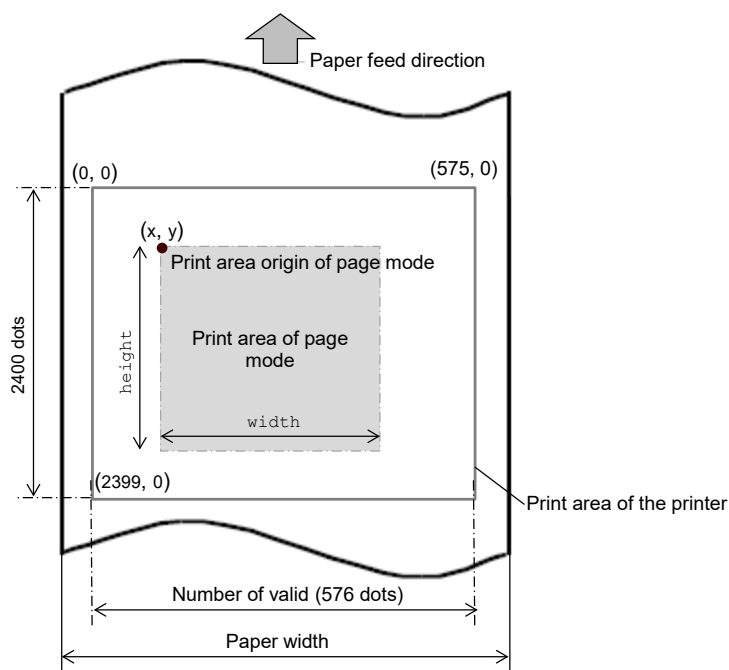
The x and width valid range of RP-F10, RP-G10, RP-E10, and RP-D10 is shown in the figure below.



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

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

The relation between the print area in page mode of MP-B30 and MP-B30L and the print area of the printer is shown in figure below.



Error PrinterException is thrown when an error occurs while this method is being called.
See "4.2.4 PrinterException Class" for details on the error.

Description Start page mode by EnterPageMode before executing this method.

Starting page mode by EnterPageMode, and executing this method after the dedicated method for page mode is executed, the print area of page mode can be additionally specified. The data that has been mapped is kept.

The data of the dedicated method for page mode is mapped to the print area of page mode added by this method after executing this method.

The print area of page mode is $x = 0$, $y = 0$, $width = \text{number of a valid dot}$, $height = 2400$ after executing EnterPageMode.

SetPageModeDirection

Specify print direction of page mode

Specifies print direction of page mode.

Target All platforms RP-F10, RP-G10, RP-E10, RP-D10, MP-B30, MP-B30L

Syntax `public void SetPageModeDirection(Direction direction);`

Parameter direction Print direction
See "4.2.1⑨ Print direction (Direction)" for available constants.

Error PrinterException is thrown when an error occurs while this method is being called.
See "4.2.4 PrinterException Class" for details on the error.

Description Start page mode by EnterPageMode before executing this method.

The print direction is left to right after executing EnterPageMode.

SetPageModeLineSpacing

Specify line spacing of page mode

Specifies line spacing of page mode.

Target	All platforms	RP-F10, RP-G10, RP-E10, RP-D10, MP-B30, MP-B30L
Syntax	<code>public void SetPageModeLineSpacing(int lineSpacing);</code>	
Parameter	lineSpacing	Line spacing (dot) of page mode The valid range is 0 to 255.
Error	PrinterException is thrown when an error occurs while this method is being called. See "4.2.4 PrinterException Class" for details on the error.	
Description	Start page mode by EnterPageMode before executing this method. The line spacing is 34 dots after executing EnterPageMode.	

PrintPageMode

Print page mode

Prints the print data kept in page data buffer.

Target	All platforms	RP-F10, RP-G10, RP-E10, RP-D10, MP-B30, MP-B30L
Syntax	<code>public void PrintPageMode(CuttingMethod cuttingMethod);</code>	
Parameter	cuttingMethod	Cutting method See "4.2.1⑦ Cutting method (CuttingMethod)" for available constants.
Error	PrinterException is thrown when an error occurs while this method is being called. See "4.2.4 PrinterException Class" for details on the error.	
Description	The print data is kept after printing. The print data is discarded at the timing of the following: <ul style="list-style-type: none">•Execute EnterPageMode•Execute Disconnect•Execute ExitPageMode	

PrintPageModeText

Send text data of page mode

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

Target	All platforms	RP-F10, RP-G10, RP-E10, RP-D10, MP-B30, MP-B30L
Syntax	<code>public void PrintPageModeText(int startX, int startY, string text);</code>	
Parameter	startX	The horizontal reference point (dot) from the starting point The valid range is 0 to 2399.
	startY	The vertical reference point (dot) from the starting point The valid range is 0 to 2399.
	text	Text data Data size that can be specified at 1 time is 16 KB (16384 bytes).
Error	PrinterException is thrown when an error occurs while this method is being called. See "4.2.4 PrinterException Class" for details on the error.	

Description This method encodes the specified text data to printable text data based on InternationalCharacter and CodePage.

Start page mode by EnterPageMode before executing this method.

PrintPageModeTextEx	Send format specified text data of page mode
----------------------------	---

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

Target All platforms RP-F10, RP-G10, RP-E10, RP-D10, MP-B30, MP-B30L

Syntax

```
public void PrintPageModeTextEx(int startX,
                                int startY,
                                string text,
                                CharacterBold bold,
                                CharacterUnderline underline,
                                CharacterReverse reverse,
                                CharacterFont font,
                                CharacterScale scale);
```

Parameter	startX	The horizontal reference point (dot) from the starting point The valid range is 0 to 2399.
	startY	The vertical reference point (dot) from the starting point The valid range is 0 to 2399.
	text	Text data Data size that can be specified at 1 time is 16 KB (16384 bytes).
	bold	Bold character See "4.2.1⑪ Bold character (CharacterBold)" for available constants.
	underline	Underline See "4.2.1⑫ Underline (CharacterUnderline)" for available constants.
	reverse	Reverse print See "4.2.1⑬ Reverse print (CharacterReverse)" for available constants.
	font	Font See "4.2.1⑭ Character font (CharacterFont)" for available constants.
	scale	Character scale See "4.2.1⑮ Character scale (CharacterScale)" for available constants.

Error PrinterException is thrown when an error occurs while this method is being called.
See "4.2.4 PrinterException Class" for details on the error.

Description This method encodes the specified text data to printable text data based on InternationalCharacter and CodePage.

Start page mode by EnterPageMode before executing this method.

Maps the barcode on the print area of page mode.

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

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

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

Target	All platforms	RP-F10, RP-G10, RP-E10, RP-D10, MP-B30, MP-B30L
--------	---------------	---

Syntax	<pre>(a) public void PrintPageModeBarcode(int startX, int startY, BarcodeSymbol barcodeSymbol, string text, ModuleSize moduleSize, int moduleHeight, HriPosition hriPosition, CharacterFont hriFont);</pre>
--------	--

```
(b) public void PrintPageModeBarcode(int startX,
                                     int startY,
                                     BarcodeSymbol barcodeSymbol,
                                     string text,
                                     ModuleSize moduleSize,
                                     int moduleHeight,
                                     HriPosition hriPosition,
                                     CharacterFont hriFont,
                                     NwRatio nwRatio);
```

```
(c) public void PrintPageModeBarcode(int startX,
                                     int startY,
                                     BarcodeSymbol barcodeSymbol,
                                     byte[] data,
                                     ModuleSize moduleSize,
                                     int moduleHeight,
                                     HriPosition hriPosition,
                                     CharacterFont hriFont);
```

Parameter	startX	The horizontal reference point (dot) from the starting point The valid range is 0 to 2399.
-----------	--------	---

	startY	The vertical reference point (dot) from the starting point The valid range is 0 to 2399.
--	--------	---

	barcodeSymbol	BarcodeSymbol
--	---------------	---------------

See "4.2.1^{①⑨} Barcode symbol (BarcodeSymbol)" for available constants and correspondent syntax.

	text(data)	Barcode data
--	------------	--------------

	moduleSize	Barcode width See "4.2.1 ^{①⑤} Module size (ModuleSize)" for available constants.
--	------------	--

moduleHeight

Barcode height (dot)

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

BARCODE_UPC_A
 BARCODE_UPC_E
 BARCODE_EAN13
 BARCODE_JAN13
 BARCODE_EAN8
 BARCODE_JAN8
 BARCODE_CODE39
 BARCODE_CODE93
 BARCODE_CODE128
 BARCODE_ITF
 BARCODE_CODABAR
 BARCODE_EAN13_ADDON
 BARCODE_JAN13_ADDON

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

barcodeSymbol		
	moduleSize	Valid Range
BARCODE_GS1_OMNI_DIRECTIONAL		
	BARCODE_MODULE_WIDTH_2	66 to 255
	BARCODE_MODULE_WIDTH_3	99 to 255
	BARCODE_MODULE_WIDTH_4	132 to 255
	BARCODE_MODULE_WIDTH_5	165 to 255
	BARCODE_MODULE_WIDTH_6	198 to 255
BARCODE_GS1_TRUNCATED		
	BARCODE_MODULE_WIDTH_2	26 to 255
	BARCODE_MODULE_WIDTH_3	39 to 255
	BARCODE_MODULE_WIDTH_4	52 to 255
	BARCODE_MODULE_WIDTH_5	65 to 255
	BARCODE_MODULE_WIDTH_6	78 to 255
BARCODE_GS1_LIMITED		
	BARCODE_MODULE_WIDTH_2	20 to 255
	BARCODE_MODULE_WIDTH_3	30 to 255
	BARCODE_MODULE_WIDTH_4	40 to 255
	BARCODE_MODULE_WIDTH_5	50 to 255
	BARCODE_MODULE_WIDTH_6	60 to 255
BARCODE_GS1_EXPANDED		
	BARCODE_MODULE_WIDTH_2	68 to 255
	BARCODE_MODULE_WIDTH_3	102 to 255
	BARCODE_MODULE_WIDTH_4	136 to 255
	BARCODE_MODULE_WIDTH_5	170 to 255
	BARCODE_MODULE_WIDTH_6	204 to 255

hriPosition HRI character print position
See "4.2.1⑳ HRI character print position (HriPosition)" for available constants.

hriFont HRI character font
See "4.2.1⑭ Character font (CharacterFont)" for available constants.

nwRatio N:W ratio
See "4.2.1㉑ N:W ratio (NwRatio)" for available constants.
Depending on specified nwRatio and moduleSize, the wide element width is set as shown in the following table.

moduleSize	nwRatio		
	NWRATIO_1T02	NWRATIO_1T02_5	NWRATIO_1T03
BARCODE_MODULE_WIDTH_2	0.500 mm (4 dots)	0.625 mm (5 dots)	0.750 mm (6 dots)
BARCODE_MODULE_WIDTH_3	0.750 mm (6 dots)	1.000 mm (8 dots)	1.125 mm (9 dots)
BARCODE_MODULE_WIDTH_4	1.000 mm (8 dots)	1.250 mm (10 dots)	1.500 mm (12 dots)
BARCODE_MODULE_WIDTH_5	1.250 mm (10 dots)	1.625 mm (13 dots)	1.875 mm (15 dots)
BARCODE_MODULE_WIDTH_6	1.500 mm (12 dots)	1.875 mm (15 dots)	2.250 mm (18 dots)

Error PrinterException is thrown when an error occurs while this method is being called.
See "4.2.4 PrinterException Class" for details on the error.

Description Start page mode by EnterPageMode before executing this method.

Note Map the print data of the barcode not to overlap the other print data.
In RP-F10, RP-G10, MP-B30, and MP-B30L, the quiet zone is not secured.
Set the quiet zone in accordance with the standard of the barcode symbol.

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

PrintPageModePDF417

Print PDF417 of page mode

Maps PDF417 on the print area of page mode.

Target All platforms RP-F10, RP-G10, RP-E10, RP-D10, MP-B30, MP-B30L

Syntax

```
public void PrintPageModePDF417(int startX,
                                int startY,
                                string text,
                                ErrorCorrection errorCorrection,
                                int row,
                                int column,
                                ModuleSize moduleSize,
                                int moduleHeight,
                                Pdf417Symbol pdf417Symbol);
```

Parameter	startX	The horizontal reference point (dot) from the starting point The valid range is 0 to 2399.
	startY	The vertical reference point (dot) from the starting point The valid range is 0 to 2399.
	text	Barcode data
	errorCorrection	Error correction level See "4.2.1⑩ Error correction level (ErrorCorrection)" for available constants.
	row	The number of rows (row) The valid range is 0, 3 to 90. When 0 is specified, the number of rows is automatically set.
	column	The number of columns in data area The valid range is 0 to 30. When 0 is specified, the number of columns in the data area is automatically set.
	moduleSize	Barcode width See "4.2.1⑮ Module size (ModuleSize)" for available constants.
	moduleHeight	Module height (dot) The valid range is 2 to 127. When the module height is set smaller, some barcode scanners may not read it. Set 3 or more for normal use.
	pdf417Symbol	Symbol of PDF417 See "4.2.1⑳ PDF417 symbol (Pdf417Symbol)" for available constants.
Error	PrinterException is thrown when an error occurs while this method is being called. See "4.2.4 PrinterException Class" for details on the error.	
Description	Start page mode by EnterPageMode before executing this method.	
Note	Map the print data of the barcode not to overlap the other print data. In RP-F10, RP-G10, MP-B30, and MP-B30L, the quiet zone is not secured. Set the quiet zone in accordance with the standard of the barcode symbol.	
Reference	See "Appendix B Barcode Size List" for details of the barcode size.	

PrintPageModeQRcode

Print QR Code of page mode

Maps QR Code on the print area of page mode.

Target	All platforms	RP-F10, RP-G10, RP-E10, RP-D10, MP-B30, MP-B30L
Syntax	<pre>public void PrintPageModeQRcode(int startX, int startY, string text, ErrorCorrection errorCorrection, ModuleSize moduleSize, QrModel model);</pre>	
Parameter	startX	The horizontal reference point (dot) from the starting point The valid range is 0 to 2399.

startY	The vertical reference point (dot) from the starting point The valid range is 0 to 2399.
text	Barcode data The version is automatically set depending on the number of data specified on text.
errorCorrection	Error correction level See "4.2.1⑩ Error correction level (ErrorCorrection)" for available constants.
moduleSize	Barcode width See "4.2.1⑮ Module size (ModuleSize)" for available constants.
model	QR Code Model See "4.2.1⑳ QR Code Model (QrModel)" for available constants.
Error	PrinterException is thrown when an error occurs while this method is being called. See "4.2.4 PrinterException Class" for details on the error.
Description	Start page mode by EnterPageMode before executing this method.
Note	Map the print data of the barcode not to overlap the other print data. In RP-F10, RP-G10, MP-B30, and MP-B30L, the quiet zone is not secured. Set the quiet zone in accordance with the standard of the barcode symbol.
Reference	See "Appendix B Barcode Size List" for details of the barcode size.

PrintPageModeDataMatrix

Print Data Matrix of page mode

Maps Data Matrix on the print area of page mode.

Target	All platforms	RP-F10, RP-G10, RP-E10, RP-D10, MP-B30, MP-B30L
Syntax	<pre>public void PrintPageModeDataMatrix(int startX, int startY, string text, DataMatrixModule dataMatrixModule, ModuleSize moduleSize);</pre>	
Parameter	startX	The horizontal reference point (dot) from the starting point The valid range is 0 to 2399.
	startY	The vertical reference point (dot) from the starting point The valid range is 0 to 2399.
	text	Barcode data
	dataMatrixModule	The number of Data Matrix modules See "4.2.1㉔ Data Matrix module (DataMatrixModule)" for available constants.
	moduleSize	Barcode width See "4.2.1⑮ Module size (ModuleSize)" for available constants.
Error	PrinterException is thrown when an error occurs while this method is being called. See "4.2.4 PrinterException Class" for details on the error.	
Description	Start page mode by EnterPageMode before executing this method.	

Note	Map the print data of the barcode not to overlap the other print data. In RP-F10, RP-G10, MP-B30, and MP-B30L, the quiet zone is not secured. Set the quiet zone in accordance with the standard of the barcode symbol.
Reference	See "Appendix B Barcode Size List" for details of the barcode size.

PrintPageModeMaxiCode	Print MaxiCode of page mode
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Maps MaxiCode on the print area of page mode.

Target	All platforms	RP-F10, RP-G10, RP-E10, RP-D10, MP-B30, MP-B30L
Syntax	<pre>public void PrintPageModeMaxiCode(int startX, int startY, string text, MaxiCodeMode maxiCodeMode);</pre>	
Parameter	startX	The horizontal reference point (dot) from the starting point The valid range is 0 to 2399.
	startY	The vertical reference point (dot) from the starting point The valid range is 0 to 2399.
	text	Barcode data <ul style="list-style-type: none"> When maxiCodeMode is MAXI_CODE_2: Add the service class (3 digits), the country code (3 digits), and the postal code (9 digits) to the beginning of the data. When maxiCodeMode is MAXI_CODE_3: Add the service class (3 digits), the country code (3 digits), and the postal code (6 digits) to the beginning of the data.
	maxiCodeMode	MaxiCode Mode See "4.2.1 ^㉕ MaxiCode Mode (MaxiCodeMode)" for available constants.
Error	PrinterException is thrown when an error occurs while this method is being called. See "4.2.4 PrinterException Class" for details on the error.	
Description	Start page mode by EnterPageMode before executing this method.	
Note	Map the print data of the barcode not to overlap the other print data. In RP-F10, RP-G10, MP-B30, and MP-B30L, the quiet zone is not secured. Set the quiet zone in accordance with the standard of the barcode symbol.	
Reference	See "Appendix B Barcode Size List" for details of the barcode size.	

PrintPageModeGS1DataBarStacked	Print GS1 Databar Stacked of page mode
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Maps GS1 Databar Stacked on the print area of page mode.

Target	All platforms	RP-F10, RP-G10, MP-B30, MP-B30L
Syntax	<pre>public void PrintPageModeGS1DataBarStacked(int startX, int startY, string text, ModuleSize moduleSize);</pre>	

Parameter	startX	The horizontal reference point (dot) from the starting point The valid range is 0 to 2399.
	startY	The vertical reference point (dot) from the starting point The valid range is 0 to 2399.
	text	Barcode data Enter 13 characters from '0' to '9'. The leading '01' is automatically added by the printer. The check digit is automatically calculated by the printer.
	moduleSize	Barcode width See "4.2.1 ¹⁵ Module size (ModuleSize)" for available constants.
Error	PrinterException is thrown when an error occurs while this method is being called. See "4.2.4 PrinterException Class" for details on the error.	
Description	Start page mode by EnterPageMode before executing this method.	
Note	Map the print data of the barcode not to overlap the other print data.	
Reference	See "Appendix B Barcode Size List" for details of the barcode size.	

PrintPageModeGS1DataBarStackedOmnidirectional

Print GS1 Databar Stacked Omni-directional of page mode

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

Target	All platforms	RP-F10, RP-G10, MP-B30, MP-B30L
Syntax	<pre>public void PrintPageModeGS1DataBarStackedOmnidirectional(int startX, int startY, string text, int moduleHeight, ModuleSize moduleSize);</pre>	
Parameter	startX	The horizontal reference point (dot) from the starting point The valid range is 0 to 2399.
	startY	The vertical reference point (dot) from the starting point The valid range is 0 to 2399.
	text	Barcode data Enter 13 characters from '0' to '9'. The leading '01' is automatically added by the printer. The check digit is automatically calculated by the printer.
	moduleHeight	Barcode module height (the number of the modules) The valid range is 33 to 255.
	moduleSize	Module size See "4.2.1 ¹⁵ Module size (ModuleSize)" for available constants.
Error	PrinterException is thrown when an error occurs while this method is being called. See "4.2.4 PrinterException Class" for details on the error.	
Description	Start page mode by EnterPageMode before executing this method.	
Note	Map the print data of the barcode not to overlap the other print data.	
Reference	See "Appendix B Barcode Size List" for details of the barcode size.	

PrintPageModeGS1DataBarExpandedStacked

Print GS1 Databar Expanded Stacked of page mode

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

Target	All platforms	RP-F10, RP-G10, MP-B30, MP-B30L
Syntax	<pre>public void PrintPageModeGS1DataBarExpandedStacked(int startX, int startY, string text, int column, ModuleSize moduleSize);</pre>	
Parameter	startX	The horizontal reference point (dot) from the starting point The valid range is 0 to 2399.
	startY	The vertical reference point (dot) from the starting point The valid range is 0 to 2399.
	text	Barcode data Enter any number of characters using the following: ' ', '!', '""', '%', '&', '"', '(', ')', '*', '+', ',', '-', '.', '/', ':', ';', '<', '=', '>', '?', '_', '0' to '9', 'A' to 'Z', 'a' to 'z'. Enter '{' to FNC1.
	column	The number of columns Specifies the number of the segments in 1 line. The valid range is the even number from 2 to 20.
	moduleSize	Barcode width See "4.2.1 ¹⁵ Module size (ModuleSize)" for available constants.
Error	PrinterException is thrown when an error occurs while this method is being called. See "4.2.4 PrinterException Class" for details on the error.	
Description	Start page mode by EnterPageMode before executing this method.	
Note	Map the print data of the barcode not to overlap the other print data.	
Reference	See "Appendix B Barcode Size List" for details of the barcode size.	

PrintPageModeAztecCode

Print Aztec Code of page mode

Maps Aztec Code on the print area of page mode.

Target	All platforms	MP-B30L
Syntax	<pre>public void PrintPageModeAztecCode(int startX, int startY, string text, int layer, int errorCorrection ModuleSize moduleSize, AztecSymbol aztecSymbol);</pre>	
Parameter	startX	The horizontal reference point (dot) from the starting point The valid range is 0 to 2399.

startY The vertical reference point (dot) from the starting point
The valid range is 0 to 2399.

text Barcode data
Encodes the data to binary in UTF-8 and sends to the printer.
When the data to be sent cannot be specified as a string, it can be specified using the following escape sequence.

Escape sequence	Description
\u00nn	Control code (Specify nn as a hexadecimal number)
\\	Backslash

To specify FNC1, enter "\u001b\u0030" in the data.
To specify 1Bh, enter "\u001b\u001b" in the data.

layer Number of layer
The valid range of full-range mode is 0, 4 to 32.
The valid range of compact mode is 0, 1 to 4.
When 0 is specified, layer is automatically set.

errorCorrection Error correction level (%)
The valid range is 0, 5 to 95.
When 0 is specified, the level is 23%.

moduleSize Module size
See "4.2.1⑮ Module size (ModuleSize)" for available constants.

aztecSymbol Aztec symbol
See "4.2.1⑳ Aztec symbol (AztecSymbol)" for available constants.

Error PrinterException is thrown when an error occurs while this method is being called.
See "4.2.4 PrinterException Class" for details on the error.

Description Start page mode by EnterPageMode before executing this method.

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

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

SendPageModeBinary	Send binary data of page mode
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Maps binary data on the print area of page mode.

Target All platforms RP-F10, RP-G10, RP-E10, RP-D10, MP-B30, MP-B30L

Syntax `public void SendPageModeBinary(byte[] data);`

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

Error PrinterException is thrown when an error occurs while this method is being called.
See "4.2.4 PrinterException Class" for details on the error.

Description Start page mode by EnterPageMode before executing this method.

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

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

Note

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

PrintPageModeImageFile

Draw Image file of page mode

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

Target	All platforms	RP-F10, RP-G10, RP-E10, RP-D10, MP-B30, MP-B30L
Syntax	<pre>public void PrintPageModeImageFile(int startX, int startY, string fileName, Dithering dithering);</pre>	
Parameter	startX	The horizontal reference point (dot) from the starting point The valid range is 0 to 2399.
	startY	The vertical reference point (dot) from the starting point The valid range is 0 to 2399.
	fileName	File path of the data The formats that can be entered are described below.
		<ul style="list-style-type: none"> • Absolute path string handled by Java standard class "java.io.File" When targeting Android 10 (API 29) or later, please note that some files cannot be handled directly. See "3.4 Precautions - About Scoped Storage" for details. • URI string of the following scheme name handled by the class "android.net.Uri" prepared for Android <ul style="list-style-type: none"> ▪ file:// ▪ content:// It is necessary to specify the URI string obtained from "Storage Access Framework" for this parameter. Please note that URI created without being obtained from "Storage Access Framework" may not be able to open the file. <p>The maximum file size that can be specified is 1 MB (1048576 bytes). The image files that can be sent are .bmp, .jpg, .jpeg, .png. Colored image file is converted to monochrome image by binarization and registered.</p>
	dithering	Dithering See "4.2.1⑥ Dithering (Dithering)" for available constants.
Error	PrinterException is thrown when an error occurs while this method is being called. See "4.2.4 PrinterException Class" for details on the error.	
Description	Start page mode by EnterPageMode before executing this method.	

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

Target All platforms RP-F10, RP-G10, RP-E10, RP-D10, MP-B30, MP-B30L

Syntax `public void PrintPageModeRectangle(int startX,
int startY,
int endX,
int endY,
LineStyle lineStyle);`

startX The horizontal reference point (dot) from the starting point
The valid range is 0 to 2399.

startY The vertical reference point (dot) from the starting point
The valid range is 0 to 2399.

endX The horizontal reference point (dot) from the ending point
The valid range is 0 to 2399.

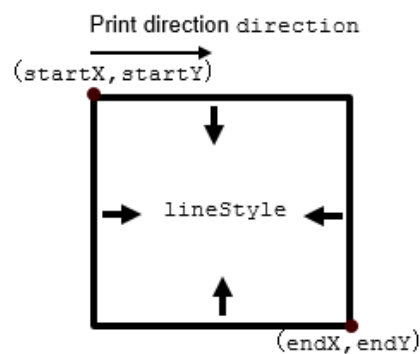
endY The vertical reference point (dot) from the ending point
The valid range is 0 to 2399.

lineStyle Line style
See "4.2.1③④ Line style (LineStyle)" for available constants.

Error PrinterException is thrown when an error occurs while this method is being called.
See "4.2.4 PrinterException Class" for details on the error.

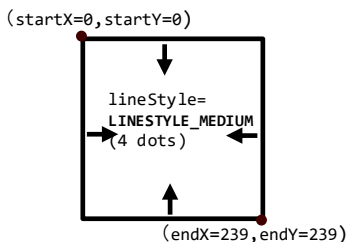
Description Start page mode by EnterPageMode before executing this method.

The rectangle is mapped to the direction of SetPageModeDirection as shown in the figure below.



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

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

Image	Parameter
 <p>(startX=0, startY=0)</p> <p>lineStyle= LINESTYLE_MEDIUM (4 dots)</p> <p>(endX=239, endY=239)</p>	<pre>startX 0 startY 0 endX 239 endY 239 lineStyle LINESTYLE_MEDIUM</pre>

PrintPageModeLine

Print ruled line of page mode

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

Target All platforms RP-F10, RP-G10, RP-E10, RP-D10, MP-B30, MP-B30L

Syntax

```
public void PrintPageModeLine(int startX,
                              int startY,
                              int endX,
                              int endY,
                              LineStyle lineStyle);
```

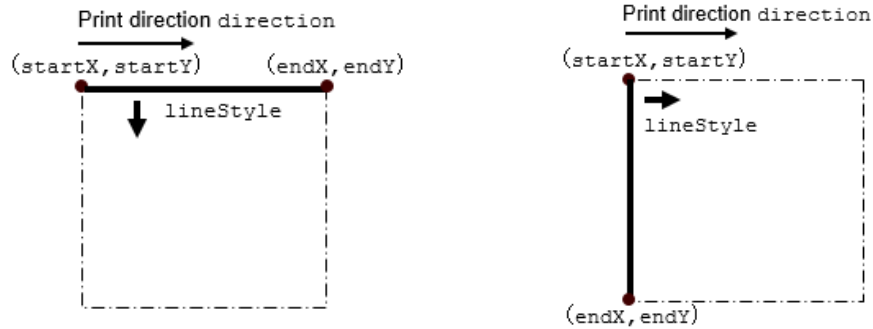
Parameter

startX	The horizontal reference point (dot) from the starting point The valid range is 0 to 2399.
startY	The vertical reference point (dot) from the starting point The valid range is 0 to 2399.
endX	The horizontal reference point (dot) from the ending point The valid range is 0 to 2399.
endY	The vertical reference point (dot) from the ending point The valid range is 0 to 2399.
lineStyle	Line style See "4.2.1③⑩ Line style (LineStyle)" for available constants.

Error PrinterException is thrown when an error occurs while this method is being called.
See "4.2.4 PrinterException Class" for details on the error.

Description Start page mode by EnterPageMode before executing this method.
A diagonal stroke cannot be drawn by this method.

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



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

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

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

Image	Parameter
	① startX 0 startY 0 endX 239 endY 0 lineStyle LINESYLE_MEDIUM ② startX 0 startY 236 endX 239 endY 236 lineStyle LINESYLE_MEDIUM

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

Image	Parameter
	① startX 0 startY 0 endX 0 endY 239 lineStyle LINESYLE_MEDIUM ② startX 236 startY 0 endX 236 endY 239 lineStyle LINESYLE_MEDIUM

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

Target	All platforms	RP-F10, RP-G10, RP-E10, RP-D10, MP-B30, MP-B30L
Syntax	<pre>public void PrintPageModeLogo(int startX, int startY, string logoId);</pre>	
Parameter	startX	The horizontal reference point (dot) from the starting point The valid range is 0 to 2399.
	startY	The vertical reference point (dot) from the starting point The valid range is 0 to 2399.
	logoId	Logo ID to print (key code) Specify the ID of the registered logo as a character string
Error	PrinterException is thrown when an error occurs while this method is being called. See "4.2.4 PrinterException Class" for details on the error.	
Description	Start page mode by EnterPageMode before executing this method.	

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

SendTimeout

Get/Set send timeout period

Gets or sets the timeout period in sending data.

Target	All platforms	All devices
Syntax	<code>public int SendTimeout {get; set;}</code>	
Valid range	For iOS: 100 to 300000 (millisecond: ms) When the value is specified less than 100, the period is set to 100 ms. When the value is specified more than 300000, the period is set to 300000 ms. For Android: 100 to 900000 (millisecond: ms) When the value is specified out of the range, the period is set to 10000 ms.	
Default	10000	
Description	Getting or setting is possible by this property regardless of whether IsConnect is true or false. The set timeout period becomes effective at the next data sending.	

ReceiveTimeout

Get/Set receive timeout period

Gets or sets the timeout period in receiving data.

Target	All platforms	All devices
Syntax	<code>public int ReceiveTimeout {get; set;}</code>	
Valid range	For iOS: 100 to 300000 (millisecond: ms) When the value is specified less than 100, the period is set to 100 ms. When the value is specified more than 300000, the period is set to 300000 ms. For Android: 100 to 900000 (millisecond: ms) When the value is specified out of the range, the period is set to 10000 ms.	
Default	10000	
Description	Getting or setting is possible by this property regardless of whether IsConnect is true or false. The set timeout period becomes effective at the next data receiving.	

InternationalCharacter

Get/Set international character set

Gets or sets the value of international character set.

Target	All platforms	All devices
Syntax	<code>public InternationalCharacter {get; set;}</code>	
Description	<p>See "4.2.1③① International character set (InternationalCharacter)" for configurable constants. When an invalid value is specified, it is ignored.</p> <p>When this property is not set, the international character set is as follows depending on the language setting of device.</p> <p>When the language setting of the device is Japanese: COUNTRY_JAPAN</p> <p>When the language setting of the device is other than Japanese: COUNTRY_USA</p> <p>When text data is sent by <code>SendText</code>, <code>SendTextEx</code>, <code>SendDataFile</code>, <code>PrintPageModeText</code>, or <code>PrintPageModeTextEx</code>, the print result of the following character codes varies. See "Appendix A Character Set" for details of the characters to be printed.</p> <p>Character codes with the varying print result depending on the configuration of the international character:</p> <p>0x23, 0x24, 0x40, 0x5B, 0x5C, 0x5D, 0x5E, 0x60, 0x7B, 0x7C, 0x7D, 0x7E</p>	

CodePage

Get/Set codepage

Gets or sets the value of codepage.

Target	All platforms	All devices
Syntax	<code>public CodePage CodePage {get; set;}</code>	
Description	<p>See "4.2.1③② Codepage (CodePage)" for configurable constants. When an invalid value is specified, it is ignored.</p> <p>When this property is not set, the codepage follows depending on the language setting of device.</p> <p>When the language setting of the device is Japanese: CODE_PAGE_KATAKANA</p> <p>When the language setting of the device is other than Japanese: CODE_PAGE_1252</p> <p>The encoder used for sending the text data by <code>SendText</code>, <code>SendTextEx</code>, <code>SendDataFile</code>, <code>PrintPageModeText</code>, or <code>PrintPageModeTextEx</code> is changed. See "Appendix A Character Set" for characters to be printed.</p>	

DeviceModel

Get device model

Gets the value of the connecting printer model.

Target	All platforms	All devices
Syntax	<code>public DeviceModel DeviceModel {get;}</code>	
Default	<code>DeviceModel.DEVICE_MODEL_RP_E10</code>	
Return value	See "4.2.1① Device model (DeviceModel)" for available constants.	

PortType

Get connecting port type

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

Target	All platforms	All printers
Syntax	<code>public PortType PortType {get;}</code>	
Default	<code>PortType.PORT_TYPE_BLUETOOTH</code>	
Return value	See "4.2.1② Port type (PortType)" for available constants.	

IsConnect

Verify connection state with printer

Verifies connection state with the printer.

Target	All platforms	All devices				
Syntax	<code>public bool IsConnect {get;}</code>					
Return value	<table><tr><td>true</td><td>Connected to the printer</td></tr><tr><td>false</td><td>Not connected to the printer</td></tr></table>		true	Connected to the printer	false	Not connected to the printer
true	Connected to the printer					
false	Not connected to the printer					
Description	This property retains the Connect state as a BOOL value. When Connect succeeds, this property is true. After Connect, when Disconnect succeeds, this property becomes false.					

SocketKeepingTime

Get/Set socket keeping time

Gets or sets the socket keeping time.

Target	All platforms	SLP720RT, RP-F10, RP-G10, RP-E10, RP-D10, MP-B30, MP-B30L
Syntax	<code>public int SocketKeepingTime {get; set;}</code>	
Valid range	60000 to 300000 (millisecond: ms) When the value is specified less than 60000, the time is set to 60000 ms. When the value is specified more than 300000, the time is set to 300000 ms.	
Default	300000	
Description	Getting or setting is possible by this property regardless of whether IsConnect is true or false. For the socket keeping time, specify a time equal to Receive Timeout of the printer to be connected. The setting of Receive Timeout can be changed in the iOS app "SII Printer Utility" on the App Store and the Android app "SII Printer Utility" on the Google Play. The set socket keeping time becomes effective at the next Connect execution.	

4.2.3 DeviceInfo Class

This class stores the device information found by printer searching method. See "4.2.3(2) Property List" for device information to be able to get.

(1) Method List

Methods provided by DeviceInfo class are shown in the following table.

Name	Description
DeviceInfo	Constructor of the device information class

(2) Property List

Properties provided by DeviceInfo class are shown in the following table.

Name	Access	Description
PortType	R	Get connecting port type
DeviceName	R	Get device name (printer model name)
BluetoothAddress	R	Get Bluetooth address
MacAddress	R	Get MAC address
IpAddress	R	Get IP address
IsBonded	R	Get pairing state
DevicePath	R	Get device path

(3) Method Details

DeviceInfo

Constructor

The method of syntax (a) is a constructor in the device information class to use in the Bluetooth connection.
The method of syntax (b) is a constructor in the device information class to use in the TCP/IP connection.
The method of syntax (c) is a constructor in the device information class to use in the USB connection.

Target	All platforms	All devices
Syntax	<pre>(a) public DeviceInfo(PortType portType, string deviceName, string bluetoothAddress, bool isBonded); (b) public DeviceInfo(PortType portType, string deviceName, string macAddress, string ipAddress); (c) public DeviceInfo(PortType portType, string deviceName, string devicePath);</pre>	
Description	This method stores the printer information found by StartDiscoveryPrinter.	

(4) Property Details

PortType Get connecting port type

Target	All platforms	All devices
Syntax	<code>public PortType PortType {get;}</code>	
Description	This property gets the connecting port type from the device information found by <code>StartDiscoveryDevice</code> .	

DeviceName Get device name (printer model name)

Target	All platforms	All devices
Syntax	<code>public string DeviceName {get;}</code>	
Description	This property gets the device name (printer model name) from the device information found by <code>StartDiscoveryDevice</code> .	

BluetoothAddress Get Bluetooth address

Target	All platforms	All printers
Syntax	<code>public string BluetoothAddress {get;}</code>	
Description	This property gets the Bluetooth address from the printer information found by <code>StartDiscoveryDevice</code> .	

MacAddress Get MAC address

Target	All platforms	All printers
Syntax	<code>public string MacAddress {get;}</code>	
Description	This property gets the MAC address from the device information found by <code>StartDiscoveryDevice</code> .	

IpAddress Get IP address

Target	All platforms	All printers
Syntax	<code>public string IpAddress {get;}</code>	
Description	This property gets the IP address from the device information found by <code>StartDiscoveryDevice</code> .	

IsBonded	Get paring state
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Target	All platforms	All printers
Syntax	public bool IsBonded {get;}	
Description	This property gets the paring state from the device information found by StartDiscoveryDevice. In iOS, this property always returns true.	

DevicePath	Get device path
------------	-----------------

Target	Android	All printers
Syntax	public string DevicePath {get;}	
Description	This property gets the USB device file path string from the device information found by StartDiscoveryDevice.	

4.2.4 PrinterException Class

(1) Method List

Methods provided by PrinterException class are shown in the following table.

Name	Description
PrinterException	Constructor

(2) Property List

Properties provided by PrinterException class are shown in the following table.

Name	Access	Description
HResult	R	Get error code
Message	R	Get error message

(3) Constant List

① Error code

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

Constant Name	Description	Value
ERROR_ACCESS_DENIED	Failed to get the handle.* ¹	-1
	An unavailable port was specified.	
	An unsupported method was specified.	
ERROR_SHARING_VIOLATION	An already opened port was specified.	-11
ERROR_PORT_NOT_OPENED	The port is not open.	-12
ERROR_DEVICE_NOT_CONNECTED	There is a problem with the Bluetooth connection.	-21
	There is a problem with the USB connection	
	The printer with the specified IP address does not present.	
ERROR_OFFLINE	Disconnected state or the printer is offline.	-22
ERROR_EXTERNAL_DEVICE_NOT_CONNECTED	Display is not connected.	-23
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
ERROR_DATA_SIZE_ZERO	0-byte data was specified.	-101
ERROR_OVER_MAX_DATA_SIZE	Maximum data size is exceeded.	-102
ERROR_DATA_SIZE_INVALID	Data size is invalid.	-103
ERROR_ENCODE_FAILED	An error occurred in encoding text data.* ¹	-111

Constant Name	Description	Value
ERROR_TIMEOUT	Send timeout occurred.	-201
	Receive timeout occurred.	
ERROR_FILE_NOT_FOUND	The specified file is not found.	-301
ERROR_FILE_USED	The specified file is in use by another process.	-302
ERROR_FILE_INVALID	The specified file is invalid.	-303
ERROR_LOW_MEMORY	Memory shortage occurred when loading image file.	-311
ERROR_OVER_MAX_IMAGE	Either or both of width and height of image file exceeds the number of printable maximum dots.	-312
ERROR_LOGO_NOT_DEFINED	The logo is not registered.	-313
ERROR_LOW_USER_AREA	Remaining user area is insufficient.	-401
ERROR_LOW_EXTERNAL_RAM	Remaining RAM capacity is insufficient.	-402
ERROR_NOT_REGISTERD	The template is not registered. The image data is not registered. The slide data is not registered. The optional font is not registered. The user-defined character is not registered.	-403
ERROR_NOT_UNREGISTERD	The template is not deleted. The image data is not deleted. The slide data is not deleted. The optional font is not deleted. The user-defined character is not deleted.	-404
ERROR_INVALID_NO	The specified value for the logo ID is invalid.	-501
ERROR_OVER_STYLE_NUM	The number of style registered in the specified file exceeds rated value (64).	-502
ERROR_INVALID_DATA	The specified data is invalid.	-503
ERROR_PAGE_MODE_SPECIFIED	Page mode is specified.	-511
ERROR_PAGE_MODE_NOT_SPECIFIED	Page mode is not specified.	-512
ERROR_INVALID_PARAM	The specified parameter is invalid.	-9999

*1: Abnormal processing might have occurred.

(4) Method Details

PrinterException

Constructor

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

Syntax `public PrinterException(int code, string message);`

(5) Property Details

HResult

Get error code

Target	All platforms	All printers
Syntax	<code>public int HResult {get;}</code>	
Description	This property gets the error code in an int type.	
Return value	See "4.2.4(3) Constant List".	

Message

Get error message

Target	All platforms	All printers
Syntax	<code>public string Message {get;}</code>	
Description	This property gets a string that supplements the contents of the HResult.	

Chapter 5

Library Functions of Display

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

5.1 API Reference

This library includes the following classes and protocol.

✓ : Supported, - : Not supported

Name	Description	Support
PrinterManager	Provides the APIs used for communication with the device. See "5.1.2 PrinterManager Class". See "5.1.1 Enumerated Constant List" for enumerated constants necessary for APIs provided in PrinterManager class.	✓
DeviceInfo	Stores the device information found by StartDiscoveryDevice. See "5.1.3 Device Info Class". See "5.1.1 Enumerated Constant List" for enumerated constants necessary for APIs provided in DeviceInfo class.	✓
PrinterException	Exception class that is thrown at API call. See "5.1.4 PrinterException Class".	✓

(NOTE) See "Target Devices" in "INTRODUCTION" and confirm the device combination for each platform.

The following is the description of the described contents in each class of the method and properties.

Method or Property	Method name or property name
--------------------	------------------------------

The outline of the method or property is described.

Target The supported platform and device are described.

- Platform

	Supported All Platforms	Supported Different Device Depending on Platform
Description in "Target"	All platforms	iOS
		Android

- Device

	Supported Multiple Devices		Supported Individual Device
Description in "Target"	All devices	All printers	SLP720RT
			RP-F10
			RP-G10
			RP-E10
			RP-D10
			MP-B30
			MP-B30L
			MP-B20
		-	DSP-A01 via the printer
			DSP-A01 alone

Syntax Describe syntax.

Parameter Parameter and the description of the parameter are described.

Valid range The valid range is described when there is a valid range.

Error The description of when an error occurred is described.

Initial value The initial value is described when there is an initial value.

Description Description of the method is described.

Return value The return value is described when there is a return value.

5.1.1 Enumerated Constant List

Constants of enumerated type are described in the following.

① Device model (DeviceModel)

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

Constant Name	Description
DEVICE_MODEL_RP_F10*1	RP-F10
DEVICE_MODEL_DSP_A01	DSP-A01

*1: This is available only when using via the printer.

② Port type (PortType)

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

Constant Name	Description
PORT_TYPE_BLUETOOTH*1	Bluetooth
PORT_TYPE_USB	USB
PORT_TYPE_TCP*1	TCP/IP

*1: This is available for only when using via the printer on Android.

③ Printer response type (PrinterResponseId)

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

Constant Name	Description
PRINTER_RESPONSE_REQUEST	Execution response request
PRINTER_RESPONSE_USER_AREA	Send remaining capacity of user area
PRINTER_RESPONSE_ARRANGE_USER_AREA	Send remaining capacity of user area after defragment
PRINTER_RESPONSE_NV_GRAPHICS	Send NV graphics memory capacity
PRINTER_RESPONSE_KEY_CODE	Send key code list of defined NV graphics

④ Device type (DeviceType)

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

Constant Name	Description
TYPE_PRINTER	Printer
TYPE_DISPLAY	Display

⑤ Memory area (MemoryArea)

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

Constant Name	Description
MEMORY_DISPLAY_USERMEMORY	User area

⑥ Alignment (PrintAlignment)

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

Constant Name	Description
ALIGNMENT_LEFT	Aligned left
ALIGNMENT_CENTER	Centered
ALIGNMENT_RIGHT	Aligned right

⑦ Bold character (CharacterBold)

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

Constant Name	Description
BOLD_CANCEL	Cancel bold character
BOLD	Specify bold character

⑧ Underline (CharacterUnderline)

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

Constant Name	Description
UNDERLINE_CANCEL	Cancel underline print
UNDERLINE_1	Specify 1-dot width underline print

⑨ Character scale (CharacterScale)

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

Constant Name	Description
VERTICAL_1_HORIZONTAL_1	Height × 1 and width × 1
VERTICAL_1_HORIZONTAL_2	Height × 1 and width × 2
VERTICAL_1_HORIZONTAL_3	Height × 1 and width × 3
VERTICAL_1_HORIZONTAL_4	Height × 1 and width × 4
VERTICAL_2_HORIZONTAL_1	Height × 2 and width × 1

Constant Name	Description
VERTICAL_2_HORIZONTAL_2	Height × 2 and width × 2
VERTICAL_2_HORIZONTAL_3	Height × 2 and width × 3
VERTICAL_2_HORIZONTAL_4	Height × 2 and width × 4
VERTICAL_3_HORIZONTAL_1	Height × 3 and width × 1
VERTICAL_3_HORIZONTAL_2	Height × 3 and width × 2
VERTICAL_3_HORIZONTAL_3	Height × 3 and width × 3
VERTICAL_3_HORIZONTAL_4	Height × 3 and width × 4
VERTICAL_4_HORIZONTAL_1	Height × 4 and width × 1
VERTICAL_4_HORIZONTAL_2	Height × 4 and width × 2
VERTICAL_4_HORIZONTAL_3	Height × 4 and width × 3
VERTICAL_4_HORIZONTAL_4	Height × 4 and width × 4

⑩ Character font (CharacterFont)

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

Constant Name	Description
FONT_A	Font A (24 × 12)
FONT_B	Font B (16 × 8)

⑪ Registered font (RegisterdFont)

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

Constant Name	Description
FONT_STANDARD	Standard font
FONT_OPTION	Optional font

⑫ Module size (ModuleSize)

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

Constant Name	Description	Method to Use
QR_MODULE_SIZE_2	2 dots	SetTemplateQRCodeData
QR_MODULE_SIZE_3	3 dots	
QR_MODULE_SIZE_4	4 dots	
QR_MODULE_SIZE_5	5 dots	
QR_MODULE_SIZE_6	6 dots	
QR_MODULE_SIZE_7	7 dots	
QR_MODULE_SIZE_8	8 dots	

Constant Name	Description	Method to Use
QR_MODULE_SIZE_9	9 dots	SetTemplateQRCodeData
QR_MODULE_SIZE_10	10 dots	
QR_MODULE_SIZE_11	11 dots	

⑬ Error correction level (ErrorCorrection)

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

Constant Name	Description	Method to Use
QR_ERROR_CORRECTION_L	Error correction level L	SetTemplateQRCodeData
QR_ERROR_CORRECTION_M	Error correction level M	
QR_ERROR_CORRECTION_H	Error correction level H	
QR_ERROR_CORRECTION_Q	Error correction level Q	

⑭ QR data mode (QrDataMode)

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

Constant Name	Description
QRDATAMODE_NUMERIC	Numeric mode
QRDATAMODE_ALPHANUMERIC	Alphanumeric mode
QRDATAMODE_8BITBYTE	8-bit byte mode
QRDATAMODE_KANJI	Kanji mode
QRDATAMODE_MIXTURE	Mixed mode

⑮ QR quiet zone (QrQuietZone)

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

Constant Name	Description
QRQUIETZONE_EXIST	Set QR quiet zone on
QRQUIETZONE_NONE	Set QR quiet zone off

⑩ Macro registration processing (MacroRegistrationFunction)

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

Constant Name	Description
MACRO_REGISTRATION_CLEAR	Cancel macro registration processing
MACRO_REGISTRATION_START	Start macro registration processing
MACRO_REGISTRATION_REGIST	Finish macro registration and macro registration processing

⑪ Display response type (DisplayResponseId)

Constants used for display response type are shown in the following table.

Constant Name	Description
DISPLAY_RESPONSE_REQUEST	Execution response request
DISPLAY_RESPONSE_USER_AREA	Send remaining capacity of user area
DISPLAY_RESPONSE_TEMPLATE_ID_LIST	Send template ID
DISPLAY_RESPONSE_IMAGE_ID_LIST	Send image ID
DISPLAY_RESPONSE_SLIDE_ID_LIST	Send slide ID
DISPLAY_RESPONSE_TEMPLATE_LABEL	Send template name
DISPLAY_RESPONSE_IMAGE_LABE	Send image name
DISPLAY_RESPONSE_SLIDE_LABEL	Send slide name

⑫ International character set (InternationalCharacter)

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

Constant Name	Description
COUNTRY_USA	USA
COUNTRY_FRANCE	France
COUNTRY_GERMANY	Germany
COUNTRY_ENGLAND	England
COUNTRY_DENMARK_1	Denmark I
COUNTRY_SWEDEN	Sweden
COUNTRY_ITALY	Italy
COUNTRY_SPAIN	Spain I
COUNTRY_JAPAN	Japan
COUNTRY_NORWAY	Norway
COUNTRY_DENMARK_2	Denmark II
COUNTRY_SPAIN_2	Spain II
COUNTRY_LATIN_AMERICA	Latin America
COUNTRY_ARABIA	Arabia

⑩ Codepage (CodePage)

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

Constant Name	Description
CODE_PAGE_437	USA, Standard Europe (Code Page437)
CODE_PAGE_KATAKANA	Katakana
CODE_PAGE_850	Multilingual (Code Page850)
CODE_PAGE_860	Portuguese (Code Page860)
CODE_PAGE_863	Canadian-French (Code page863)
CODE_PAGE_865	Nordic (Code Page865)
CODE_PAGE_857 ^{*1}	Turkish (Code Page857)
CODE_PAGE_737	Greek (Code Page737)
CODE_PAGE_1252	Latin (Code Page1252)
CODE_PAGE_866	Russian (Code Page866)
CODE_PAGE_852	Eastern Europe (Code Page852)
CODE_PAGE_858	Euro (Code Page858)
CODE_PAGE_855	Cyrillic (Code Page855)
CODE_PAGE_864 ^{*1*2}	Arabic (Code Page864)
CODE_PAGE_1250	Central European (Code Page1250)
CODE_PAGE_1251	Cyrillic (Code Page1251)
CODE_PAGE_1253 ^{*3}	Greek (Code Page1253)
CODE_PAGE_1254	Turkish (Code Page1254)

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

*2: Font B cannot be printed or displayed.

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

5.1.2 PrinterManager Class

(1) Method List

Methods provided by the PrinterManager class are shown in the following table.
See "5.1.2(3) Method Details" for details of the methods.

✓: Supported, -: Not supported

Name	Description	Support
PrinterManager	Constructor	✓
Connect	Start communicating with device	✓
Disconnect	Stop communicating with device	✓
GetPrinterResponse	Get various responses from printer	✓
StartDiscoveryDevice	Start device search	✓
CancelDiscoveryDevice	Cancel device search	✓
GetFoundDevice	Get found device information list	✓
Defragment	Optimize memory area	✓
InitializeMemoryArea	Initialize memory area	✓
ShowTemplate	Display template	✓
ShowSlide	Display slide	✓
EnterStandbyMode	Display standby	✓
ExecuteMacro	Execute macro	✓
TurnOnScreen	Turn on/off screen	✓
SelectTemplate	Select template	✓
SetTemplateImageData	Set image data	✓
SelectTemplateTextObject	Select text element	✓
SetTemplateTextAlignment	Alignment of text data	✓
SetTemplateTextLeftMargin	Set left margin of text data	✓
SetTemplateTextLineSpacing	Set line spacing of text data	✓
SetTemplateTextBold	Set bold character of text data	✓
SetTemplateTextUnderline	Set underline of text data	✓
SetTemplateTextSize	Set character size of text data	✓
SetTemplateTextFont	Set character font of text data	✓
SetTemplateTextRegisteredFont	Set registered font of text data	✓
SetTemplateTextRightSpacing	Set right space of text data	✓
SetTemplateTextColor	Set character color of text data	✓
SetTemplateTextData	Input text data	✓
SetTemplateBarcodeData	Input barcode data	✓
SetTemplateQRCodeData	Input QR Code data	✓
RegisterTemplate	Register template	✓
UnregisterTemplate	Delete template	✓
RegisterImageData	Register image data	✓
UnregisterImageData	Delete image data	✓
RegisterSlideData	Register slide data	✓

Name	Description	Support
UnregisterSlideData	Delete slide data	✓
RegisterUserDefinedCharacter	Register user-defined character	✓
UnregisterUserDefinedCharacter	Delete user-defined character	✓
RegisterOptionFont	Register optional font	✓
UnregisterOptionFont	Delete optional font	✓
ControlMacroRegistration	Start/Finish of macro registration	✓
GetDisplayResponse	Get various responses from the display	✓
SetStatusChangedEventHandler	Start/Finish call back of printer status change	✓
SendBinary	Send binary data	✓
SendDataFile	Send specified file	✓

(2) Property list

Properties provided by PrinterManager class are shown in the following table.

✓ : Supported, - : Not supported

Name	Access	Description	Support
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	✓
DeviceModel	R	Get device model	✓
PortType	R	Get connecting port type	✓
IsConnect	R	Verify connection state with printer	✓
SocketKeepingTime	R/W	Get/Set socket keeping time	✓

(3) Method Details

PrinterManager

Constructor

Constructor for `SII.SDK.Xamarin.PrinterManager` class.

Target	All platforms	All devices
Syntax	<code>public PrinterManager(object context)</code>	
Parameter	context	Context For iOS: Specify null. For Android: Specify application context to call this method. Example: <code>MainActivity.this</code>

Connect

Start communicating with device

Starts communicating with the device.

Target	All platforms	All devices
Syntax	(a) <code>public void Connect(DeviceModel deviceModel, DeviceInfo deviceInfo);</code> (b) <code>public void Connect(DeviceModel deviceModel, PortType portType, string param);</code>	
Parameter	deviceModel	Device model See "5.1.1① Device model (DeviceModel)" for available constants.
	deviceInfo	Device information Specify the object of DeviceInfo class. The object of DeviceInfo class can be retrieved from StartDiscoveryDevice and GetFoundDevice.
	portType	Port type See "5.1.1② Port type (PortType)" for available constants.
	param	Depends on the setting of portType. See the "Target Devices" described in "INTRODUCTION" for the corresponding interface. · portType is PORT_TYPE_BLUETOOTH Specify the Bluetooth address or Bluetooth device name (Bluetooth Accessary). Example: "00:11:22:AA:BB:CC", "RP-F10" · portType is PORT_TYPE_USB For iOS: Specify the printer name. Example: "RP-F10" For Android: Specify null. · portType is PORT_TYPE_TCP Specify the IP address of the printer. Example: "192.168.0.190", "192.168.0.1"

Error	PrinterException is thrown when an error occurs while this method is being called. See "5.1.4 PrinterException Class" for details on the error.
Description	<p>Call this method before using other PrinterManager class methods. In order to make this library work properly, this method may change the printer settings when connecting.</p> <p>For Bluetooth connection: Connect to the paired Bluetooth address or Bluetooth device (Bluetooth Accessory) specified by param only when using the display via the printer. In iOS, communication with the printer paired with an iOS device starts through the Bluetooth connection. In Android, connect the printer specified by deviceModel to the Bluetooth address specified by param.</p> <p>For USB connection: In iOS, communication with a printer connected with the iOS device through the USB cable starts through the USB connection. In Android, connect to the printer specified by deviceModel when using the display via the printer. Connect to the display specified by deviceModel when using the display alone.</p> <p>For TCP/IP connection: Communication with the printer connected to the same network as the device starts through TCP/IP connection only when using the display via the printer. In both iOS and Android, connection is made to the IP address specified by param.</p> <p>• Creating/discarding of socket in TCP/IP connection of the library</p> <p>After Connect, the library retains the created socket until Disconnect. And connecting to the same printer from other applications is not possible until Disconnect.</p> <p>Based on the completion of data transmission to the printer, the socket is once discarded after elapsing the socket keeping time set by SocketKeepingTime. Then the new socket is created immediately and used for the next connection. If the printer is receiving a connection request from another host on the same network at the time of discarding the socket, the printer establishes communication with that host, so the reconnection may fail.</p> <p>Note In iOS, this method does not support a concurrent connection from multiple apps to one printer.</p>

Disconnect	Stop communicating with device
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Finishes communicating with the device.

Target	All platforms	All devices
Syntax	public void Disconnect();	
Error	PrinterException is thrown when an error occurs while this method is being called. See "5.1.4 PrinterException Class" for details on the error.	
Note	It is recommended to get execution response by PRINTER_RESPONSE_REQUEST of GetPrinterResponse before executing this method. If not, the communication is disconnected before completing to be sent the data of the iOS or Android device to the device, and part of the data may be lost. If you do not execute GetPrinterResponse or GetDisplayResponse in your program, please fully evaluate your program to confirm no problems arise.	

Gets response data from the printer.

Target	iOS Android	All printers, DSP-A01 via the printer All devices
Syntax	<pre>public void GetPrinterResponse<T>(PrinterResponseId responseId, object param, out T[] response);</pre>	
Parameter	responseId	Response type constant See "5.1.1③ Printer response type (PrinterResponseId)" for available constants.
	param	Command parameter The value to be specified varies with the response type constant. See the following table for description of the value to be specified.
	response	Buffer for storing the retrieved response data The buffer type varies with the response type constant. See the following table for the buffer type.

Response Type Constant	
Parameter	Description
PRINTER_RESPONSE_REQUEST (Execution response request)	
param	Specify 0 to 15 (00h to 0Fh) in an int type.
response	Specify an int type array. When the response is retrieved successfully, the response code of the execution response request is stored with 128 to 143 (80h to 8Fh).
PRINTER_RESPONSE_USER_AREA (Send remaining capacity of user area)	
param	Specify null.
response	Specify an int type array. When the response is retrieved successfully, the remaining capacity (unit: byte) of the user area is stored numerically.
PRINTER_RESPONSE_ARRANGE_USER_AREA (Send remaining capacity of user area after defragment)	
param	Specify null.
response	Specify an int type array. When the response is retrieved successfully, the remaining capacity (unit: byte) of the user area after defragment is stored numerically.
PRINTER_RESPONSE_NV_GRAPHICS (Send NV graphics memory capacity)	
param	Specify null.
response	Specify an int type array. When the response is retrieved successfully, the NV graphics memory capacity (unit: byte) is stored numerically.

Response Type Constant	
Parameter	Description
PRINTER_RESPONSE_KEY_CODE (Send key code list of defined NV graphics)	
param	Specify null.
response	Specify a string type array. When the response is retrieved successfully, the key code of NV graphics is stored in a character string.

Error PrinterException is thrown when an error occurs while this method is being called.
See "5.1.4 PrinterException Class" for details on the error.

StartDiscoveryDevice	Start device search
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Searches the device.

Target	iOS Android	All printers, DSP-A01 via the printer All devices
Syntax	<pre>public void StartDiscoveryDevice(DeviceType deviceType, PortType portType, int timeout, Action completion);</pre>	
Parameter	deviceType	Device Type See "5.1.1④ Device type (DeviceType)" for available constants. For iOS, only TYPE_PRINTER is available.
	portType	Port type See "5.1.1② Port type (PortType)" for available constants.
	timeout	Search timeout period (millisecond: ms) Sets the timeout period per search. The valid range is 3000 to 60000. When the value is specified less than 3000, the period is set to 3000 ms. When the value is specified more than 60000, the period is set to 60000 ms. <ul style="list-style-type: none"> ● For PORT_TYPE_TCP Each time the local broadcast packet is sent, this method waits for a response from the printer until the period specified by timeout elapses. ● For PORT_TYPE_BLUETOOTH When the device is being searched, this method searches the device until the period specified by timeout elapses. When the device search is completed, the search is completed without waiting for the period of timeout. For iOS, specifying of timeout is ignored. ● For PORT_TYPE_USB Specifying of timeout is ignored.
	completion	The block executed when completing the device search
Error	PrinterException is thrown when an error occurs while this method is being called.	

Description	This method searches for the device. The device information of the discovered device can be retrieved by <code>GetFoundDevice</code> .	
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CancelDiscoveryDevice Cancel device search

Cancels `StartDiscoveryDevice` under execution.

Target	All platforms	All printers, DSP-A01 via the printer
Syntax	<code>public void CancelDiscoveryDevice();</code>	
Description	The cancellation of the search is notified as an event to the block set to completion of <code>StartDiscoveryDevice</code> .	

GetFoundDevice Get found device information list

Gets the device information list found by `StartDiscoveryDevice` from the destination `DeviceInfo` class.

Target	iOS Android	All printers, DSP-A01 via the printer All devices
Syntax	<code>public DeviceInfo[] GetFoundDevice();</code>	
Return value	See "5.1.3 DeviceInfo Class".	

Defragment Optimize memory area

Optimizes the memory area.

Target	iOS Android	DSP-A01 via the printer DSP-A01 via the printer, DSP-A01 alone
Syntax	<code>public void Defragment(MemoryArea memoryArea);</code>	
Parameter	memoryArea	Memory area See "5.1.1⑤ Memory area (MemoryArea)" for available constants.
Error	<code>PrinterException</code> is thrown when an error occurs while this method is being called. See "5.1.4 PrinterException Class" for details on the error.	
Description	It may take several minutes for optimization. Do not turn the printer power off during optimization. The display is changed to Standby mode when this method is executed. A selecting template is deselected.	

InitializeMemoryArea Initialize memory area

Initializes the memory area.

Target	iOS Android	DSP-A01 via the printer DSP-A01 via the printer, DSP-A01 alone
Syntax	<code>public void InitializeMemoryArea(MemoryArea memoryArea);</code>	
Parameter	memoryArea	Memory area See "5.1.1⑤ Memory area (MemoryArea)" for available constants.

Error	PrinterException is thrown when an error occurs while this method is being called. See "5.1.4 PrinterException Class" for details on the error.
Description	It may take several minutes for initialization. Do not turn the printer power off during the initialization. The display is changed to Standby mode when this method is executed. A selecting template is deselected.
<u>Notes</u>	Registered data in following methods is deleted when the memory area is initialized after specifying MEMORY_DISPLAY_USERMEMORY . <ul style="list-style-type: none"> •RegisterTemplate •RegisterImageData •ControlMacroRegistration •RegisterUserDefinedCharacter •RegisterOptionFont <p><u>In addition, part of data which is registered at the shipping to use for the system is deleted either. Therefore the display becomes impossible to change to Guide mode when an error occurs in the printer.</u></p> <p>The used memory can be reused after executing Defragment.</p>

ShowTemplate		Display template
Displays the template on the screen.		
Target	iOS Android	DSP-A01 via the printer DSP-A01 via the printer, DSP-A01 alone
Syntax	public void ShowTemplate(int time_ms);	
Parameter	time_ms	<p>Display time (ms: millisecond) Specify display time on the screen with time_ms (ms) The valid range is 0 to 25500. When the value exceeds 0 and less than 100 is specified, the time is set to 100 ms. When the value exceeding 25500 is specified, the time is set to 25500 ms.</p> <p>For macro registration: When 0 is specified with time_ms, the template is shown continuously. When other than 0 is specified with time_ms, a next template is shown after the display time is elapsed.</p> <p>For other than macro registration: When 0 is specified with time_ms, the template is shown continuously. When other than 0 is specified with time_ms, the template returns to a previous template after the display time is elapsed. In case of the previous screen has been updated with the display time other than 0, the screen is traced back to the template which was updated with the display time 0.</p>
Error	PrinterException is thrown when an error occurs while this method is being called. See "5.1.4 PrinterException Class" for details on the error.	

Description	<p>Updates the screen, and displays data being specified by the following methods.</p> <ul style="list-style-type: none"> •SelectTemplate •SetTemplateImageData •SelectTemplateTextObject •SetTemplateTextAlignment •SetTemplateTextLeftMargin •SetTemplateTextLineSpacing •SetTemplateTextBold •SetTemplateTextUnderline •SetTemplateTextSize •SetTemplateTextFont •SetTemplateTextRightSpacing •SetTemplateTextColor •SetTemplateTextData •SetTemplateBarcodeData •SetTemplateQrCodeData
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ShowSlide	Display slide
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Displays the slide on the screen.

Target	<p>iOS DSP-A01 via the printer</p> <p>Android DSP-A01 via the printer, DSP-A01 alone</p>
Syntax	<code>public void ShowSlide(int slideID, int time_ms);</code>
Parameter	<p><code>slideID</code> Slide ID</p> <p>Specify the ID of the slide data which is registered at RegisterSlideData.</p> <p>The valid range is 0 to 91.</p> <p>This method is ignored when slide data is not registered in the specified ID.</p> <p><code>time_ms</code> Display time (ms: millisecond)</p> <p>Specify display time on the screen with <code>time_ms</code> (ms)</p> <p>The valid range is 0 to 25500.</p> <p>When the value exceeds 0 and less than 100 is specified, the display time is set to 100 ms.</p> <p>When the value exceeds 25500 is specified, the display time is set to 25500 ms.</p> <p>For macro registration:</p> <p>When 0 is specified with <code>time_ms</code>, the slide is shown continuously.</p> <p>When other than 0 is specified with <code>time_ms</code>, a next slide is shown after the display time is elapsed.</p> <p>For other than macro registration:</p> <p>When 0 is specified with <code>time_ms</code>, the slide is shown continuously.</p> <p>When other than 0 is specified with <code>time_ms</code>, the slide returns to a previous slide after the display time is elapsed.</p> <p>In case of the previous screen has been updated with the display time other than 0, the screen is traced back to the slide which was updated with the display time 0.</p>
Error	<p>PrinterException is thrown when an error occurs while this method is being called.</p> <p>See "5.1.4 PrinterException Class" for details on the error.</p>
Description	A selecting template is deselected.

EnterStandbyMode

Display standby

Changes the display to Standby mode.

Target	iOS	DSP-A01 via the printer
	Android	DSP-A01 via the printer, DSP-A01 alone
Syntax	<code>public void EnterStandbyMode();</code>	
Error	PrinterException is thrown when an error occurs while this method is being called. See "5.1.4 PrinterException Class" for details on the error.	
Description	This method is ignored during Standby mode or Guide mode is being displayed. A selecting template is deselected.	

ExecuteMacro

Execute macro

Executes the macro.

Target	iOS	DSP-A01 via the printer
	Android	DSP-A01 via the printer, DSP-A01 alone
Syntax	<code>public void ExecuteMacro(int macroID, int repeatCount);</code>	
Parameter	macroID	Macro ID Specify the macro ID which is registered at ControlMacroRegistration. The valid range is 0 to 127. This method is ignored when the macro is not registered in the specified ID.
	repeatCount	The number of execution times Specify times to execute the macro. The valid range is 0 to 255. Continues the repeating when 0 is specified.
Error	PrinterException is thrown when an error occurs while this method is being called. See "5.1.4 PrinterException Class" for details on the error.	
Description	A selecting template is deselected.	

TurnOnScreen

Turn on/off screen

Sets the screen backlight on/off.

Target	iOS	DSP-A01 via the printer
	Android	DSP-A01 via the printer, DSP-A01 alone
Syntax	<code>public void TurnOnScreen(bool isOn);</code>	
Parameter	isOn	Screen status Specify the screen status from following. true: backlight on false: backlight off
Error	PrinterException is thrown when an error occurs while this method is being called. See "5.1.4 PrinterException Class" for details on the error.	

Selects the template to show on the display.

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

The method of syntax (b) selects a template.

Target	iOS	DSP-A01 via the printer
	Android	DSP-A01 via the printer, DSP-A01 alone
Syntax	(a) <code>public void SelectTemplate(int templateID, int slideID);</code>	
	(b) <code>public void SelectTemplate(int templateID);</code>	
Parameter	templateID	Template ID Specify the ID of template to select. The valid range is 0 to 127. This method is ignored when the template is not registered in the specified ID.
	slideID	Slide ID Specify the ID of slide data to use for the background of the template. The valid range is 0 to 91. This method is ignored when slide data is not registered in the specified ID.
Error	PrinterException is thrown when an error occurs while this method is being called. See "5.1.4 PrinterException Class" for details on the error.	
Description	The data on the template is cleared when this method is executed. The selected template is displayed to the screen when ShowTemplate is executed.	
	The selecting template is deselected when ShowSlide, EnterStandbyMode, or ExecuteMacro is executed.	
	The selecting template is deselected when the specified display time is executed at ShowTemplate.	
	Use following templates depends on the values of CodePage when characters other than 20h to 7Eh of ASCII character are input by SetTemplateTextData. <ul style="list-style-type: none"> ·When CodePage is CODE_PAGE_KATAKANA: Use the template which encoding specifying is Shift_JIS. ·When CodePage is other than CODE_PAGE_KATAKANA: Use the template which encoding specifying is ISO-2022-JP. 	

Sets image data to show on a selecting template.

Target	iOS	DSP-A01 via the printer
	Android	DSP-A01 via the printer, DSP-A01 alone
Syntax	<code>public void SetTemplateImageData(int mapID, int imageID);</code>	
Parameter	mapID	Map ID The valid range is 0 to 63. This method is ignored when a specified map ID is not defined in the template.

imageID	Image ID Specify the ID of image data which was registered at RegisterImageData. The valid range is 0 to 63. This method is ignored when image data is not registered in the specified ID.
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Error	PrinterException is thrown when an error occurs while this method is being called. See "5.1.4 PrinterException Class" for details on the error.
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Description	After specifying the map ID of the selecting template by this method, specify the image ID to map. The specified image data is displayed to the screen when ShowTemplate is executed.
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This method setting is cleared under the following conditions.

- When SelectTemplate is executed.
- When other than 0 is specified at time_ms of ShowTemplate, and the specified display time has elapsed.
- When ShowTemplate registered in ExecuteMacro is executed.

This method is ignored when a template is not selected.

SelectTemplateTextObject

Select text element

Selects the text element to start editing.

Target	iOS Android	DSP-A01 via the printer DSP-A01 via the printer, DSP-A01 alone
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Syntax	<code>public void SelectTemplateTextObject(int mapID);</code>
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Parameter	mapID	Map ID The valid range is 0 to 63. This method is ignored when a specified map ID is not defined in the template.
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Error	PrinterException is thrown when an error occurs while this method is being called. See "5.1.4 PrinterException Class" for details on the error.
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Description	After specifying a map ID of the selecting template by this method, start to edit characters.
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When a scroll is set with the text element of the specified map ID and this method is executed after ShowTemplate, the scroll is executed.

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

This method setting is cleared under the following conditions.

- When SelectTemplate is executed.
- When ShowTemplate is executed.

This method is ignored when a template is not selected.

Sets alignment to text data shown on the display.

Target	iOS Android	DSP-A01 via the printer DSP-A01 via the printer, DSP-A01 alone
Syntax	<code>public void SetTemplateTextAlignment(PrintAlignment alignment);</code>	
Parameter	alignment	Alignment See "5.1.1⑥ Alignment (PrintAlignment)" constants.
Error	PrinterException is thrown when an error occurs while this method is being called. See "5.1.4 PrinterException Class" for details on the error.	
Description	<p>Alignment is valid only as following cases.</p> <ul style="list-style-type: none"> ·Text data is not entered in the specified map ID at SelectTemplateTextObject. ·Text data entered in the map ID which is specified at SelectTemplateTextObject is registered right after a line feed. <p>Specify the map ID at SelectTemplateTextObject before executing this method. Input text data at SetTemplateTextData after executing this method. The input text data is displayed to the screen when ShowTemplate is executed.</p> <p>This method setting is cleared under the following conditions.</p> <ul style="list-style-type: none"> ·When SelectTemplate is executed. ·When other than 0 is specified at time_ms of ShowTemplate, and the specified display time has elapsed. ·When ShowTemplate registered in ExecuteMacro is executed. 	

Sets left margin to text data shown on the display.

Target	iOS Android	DSP-A01 via the printer DSP-A01 via the printer, DSP-A01 alone
Syntax	<code>public void SetTemplateTextLeftMargin(int margin);</code>	
Parameter	margin	Left margin (pixel: px) The valid range is 0 to 479.
Error	PrinterException is thrown when an error occurs while this method is being called. See "5.1.4 PrinterException Class" for details on the error.	
Description	<p>The left margin setting is valid only as following conditions.</p> <ul style="list-style-type: none"> ·Text data is not entered in a specified map ID at SelectTemplateTextObject. ·Text data entered in a map ID which is specified at SelectTemplateTextObject is registered right after a line feed. <p>Specify the map ID at SelectTemplateTextObject before executing this method. Input text data at SelectTemplateTextData after executing this method. The input text data is displayed to the screen when ShowTemplate is executed.</p> <p>This method setting is cleared under the following conditions.</p> <ul style="list-style-type: none"> ·When SelectTemplate is executed. ·When other than 0 is specified at time_ms of ShowTemplate, and the specified display time has elapsed. ·When ShowTemplate registered in ExecuteMacro is executed. 	

SetTemplateTextLineSpacing

Set line spacing of text data

Sets line spacing to text data shown on the display.

Target	iOS Android	DSP-A01 via the printer DSP-A01 via the printer, DSP-A01 alone
Syntax	<code>public void SetTemplateTextLineSpacing(int spacing);</code>	
Parameter	spacing	Line spacing (pixel: px) The valid range is 0 to 255.
Error	PrinterException is thrown when an error occurs while this method is being called. See "5.1.4 PrinterException Class" for details on the error.	
Description	<p>The line spacing setting is valid only as following cases.</p> <ul style="list-style-type: none">·Text data is not entered in a specified map ID at SelectTemplateTextObject.·Text data entered in a map ID which is specified at SelectTemplateTextObject is registered right after a line feed. <p>When a scroll is set to a text element of the specified map ID, the line spacing to text data is not reflected.</p> <p>Specify the map ID at SelectTemplateTextObject before executing this method. Input text data at SelectTemplateTextData after executing this method. The input text data is displayed to the screen when ShowTemplate is executed.</p> <p>This method setting is cleared under the following conditions.</p> <ul style="list-style-type: none">·When SelectTemplate is executed.·When other than 0 is specified at time_ms of ShowTemplate, and the specified display time has elapsed.·When ShowTemplate registered in ExecuteMacro is executed.	

SetTemplateTextBold

Set bold character of text data

Sets bold characters to text data shown on the display.

Target	iOS Android	DSP-A01 via the printer DSP-A01 via the printer, DSP-A01 alone
Syntax	<code>public void SetTemplateTextBold(CharacterBold bold);</code>	
Parameter	bold	Bold character See "5.1.1⑦ Bold character (CharacterBold)" for available constants.
Error	PrinterException is thrown when an error occurs while this method is being called. See "5.1.4 PrinterException Class" for details on the error.	
Description	<p>From text data after this method is executed, the bold characters are applied. The bold character can be set one by one.</p> <p>Specify the map ID at SelectTemplateTextObject before executing this method. Input text data at SelectTemplateTextData after executing this method. The input text data is displayed to the screen when ShowTemplate is executed.</p>	

This method setting is cleared under the following conditions.

- When `SelectTemplate` is executed.
- When other than 0 is specified at `time_ms` of `ShowTemplate`, and the specified display time has elapsed.
- When `ShowTemplate` registered in `ExecuteMacro` is executed.

SetTemplateTextUnderline

Set underline of text data

Sets underline to text data shown on the display.

Target	iOS Android	DSP-A01 via the printer DSP-A01 via the printer, DSP-A01 alone
Syntax	<code>public void SetTemplateTextUnderline(CharacterUnderline underline);</code>	
Parameter	<code>underline</code>	Underline See "5.1.1⑧ Underline (CharacterUnderline)" for available constants.
Error	PrinterException is thrown when an error occurs while this method is being called. See "5.1.4 PrinterException Class" for details on the error.	
Description	<p>From text data after this method is executed, the underlines are applied. The underline can be set one by one.</p> <p>Specify the map ID at <code>SelectTemplateTextObject</code> before executing this method. Input text data at <code>SelectTemplateTextData</code> after executing this method. The input text data is displayed to the screen when <code>ShowTemplate</code> is executed.</p> <p>This method setting is cleared under the following conditions.</p> <ul style="list-style-type: none"> •When <code>SelectTemplate</code> is executed. •When other than 0 is specified at <code>time_ms</code> of <code>ShowTemplate</code>, and the specified display time has elapsed. •When <code>ShowTemplate</code> registered in <code>ExecuteMacro</code> is executed. 	

SetTemplateTextSize

Set character size of text data

Sets character size to text data shown on the display.

Target	iOS Android	DSP-A01 via the printer DSP-A01 via the printer, DSP-A01 alone
Syntax	<code>public void SetTemplateTextSize(CharacterScale scale);</code>	
Parameter	<code>scale</code>	Character scale See "5.1.1⑨ Character scale (CharacterScale)" for available constants.
Error	PrinterException is thrown when an error occurs while this method is being called. See "5.1.4 PrinterException Class" for details on the error.	
Description	<p>From text data after this method is executed, the character sizes are applied. The character size can be set one by one.</p> <p>Specify the map ID at <code>SelectTemplateTextObject</code> before executing this method. Input text data at <code>SelectTemplateTextData</code> after executing this method. The input text data is displayed to the screen when <code>ShowTemplate</code> is executed.</p>	

This method setting is cleared under the following conditions.

- When SelectTemplate is executed.
- When other than 0 is specified at time_ms of ShowTemplate, and the specified display time has elapsed.
- When ShowtTemplate registered in ExecuteMacro is executed.

SetTemplateTextFont

Set character font of text data

Sets a character font to text data shown on the display.

Target	iOS Android	DSP-A01 via the printer DSP-A01 via the printer, DSP-A01 alone
Syntax	<code>public void SetTemplateTextFont(CharacterFont font);</code>	
Parameter	font	Character font See "5.1.1⑩ Character font (CharacterFont)" for available constants.
Error	PrinterException is thrown when an error occurs while this method is being called. See "5.1.4 PrinterException Class" for details on the error.	
Description	<p>From text data after this method is executed, the character fonts are applied. The character font can be set one by one.</p> <p>Specify the map ID at SelectTemplateTextObject before executing this method. Input text data at SelectTemplateTextData after executing this method. The input text data is displayed to the screen when ShowTemplate is executed.</p> <p>This method setting is cleared under the following conditions.</p> <ul style="list-style-type: none"> •When SelectTemplate is executed. •When other than 0 is specified at time_ms of ShowTemplate, and the specified display time has elapsed. •When ShowtTemplate registered in ExecuteMacro is executed. 	

SetTemplateTextRegisteredFont

Set registered font of text data

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

Target	iOS Android	DSP-A01 via the printer DSP-A01 via the printer, DSP-A01 alone
Syntax	<code>public void SetTemplateTextRegisteredFont(RegisteredFont font);</code>	
Parameter	font	Registered font See "5.1.1⑪ Registered font (RegisteredFont)" for available constants. This registered font is ignored when the optional font is not registered.
Error	PrinterException is thrown when an error occurs while this method is being called. See "5.1.4 PrinterException Class" for details on the error.	
Description	<p>From text data after this method is executing, the registered fonts are applied. The registered fonts can be set one by one.</p> <p>Input text data by SetTemplateTextData after executing this method. The input text data is displayed to the screen when ShowTemplate is executed.</p>	

This method setting is cleared under the following conditions.

- When SelectTemplate is executed.
- When other than 0 is specified at time_ms of ShowTemplate, and the specified display time has elapsed.
- When ShowTemplate registered in ExecuteMacro is executed.

SetTemplateTextRightSpacing

Set right space of text data

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

Target	iOS	DSP-A01 via the printer
	Android	DSP-A01 via the printer, DSP-A01 alone
Syntax	<code>public void SetTemplateTextRightSpacing(int spacing);</code>	
Parameter	spacing	The amount of character space (pixel: px) The valid range is 0 to 255.
Error	PrinterException is thrown when an error occurs while this method is being called. See "5.1.4 PrinterException Class" for details on the error.	
Description	From text data after this method is executed, the amount of character right space is applied. The amount of right space can be set one by one.	

Specify the map ID at SelectTemplateTextObject before executing this method.
Input text data at SelectTemplateTextData after executing this method.
The input text data is displayed to the screen when ShowTemplate is executed.

This method setting is cleared under the following conditions.

- When SelectTemplate is executed.
- When other than 0 is specified at time_ms of ShowTemplate, and the specified display time has elapsed.
- When ShowTemplate registered in ExecuteMacro is executed.

SetTemplateTextColor

Set character color of text data

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

Target	iOS	DSP-A01 via the printer
	Android	DSP-A01 via the printer, DSP-A01 alone
Syntax	<code>public void SetTemplateTextColor(int color);</code>	
Parameter	color	Character color The valid range is 0 to 0xffffffff.
Error	PrinterException is thrown when an error occurs while this method is being called. See "5.1.4 PrinterException Class" for details on the error.	
Description	This method can set character colors to text data. The character colors can be set in RGB24 bit color. The set color is displayed in the color converted to 16 bit RGB555.	

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

Specify the map ID at SelectTemplateTextObject before executing this method.
Input text data at SelectTemplateTextData after executing this method.
The input text data is displayed to the screen when ShowTemplate is executed.

This method setting is cleared under the following conditions.

- When SelectTemplate is executed.
- When other than 0 is specified at time_ms of ShowTemplate, and the specified display time has elapsed.
- When ShowTemplate registered in ExecuteMacro is executed.

SetTemplateTextData

Input text data

Inputs text data to show on the display.

Target	iOS Android	DSP-A01 via the printer DSP-A01 via the printer, DSP-A01 alone
Syntax	<code>public void SetTemplateTextData(string text);</code>	
Parameter	text	Text data to show on the display Data size which is able to be specified it once is 1 to 1020 bytes.
Error	PrinterException is thrown when an error occurs while this method is being called. See "5.1.4 PrinterException Class" for details on the error.	
Description	<p>This method encodes input text data into text data which is enable to show on the basis of settings at InternationalCharacter or CodePage, and displays.</p> <p>After specifying a map ID of the selecting template by SelectTemplateTextObject, input text data by this method. This method is ignored when a map ID is not specified in SelectTemplateTextObject. The input text data is displayed to the screen when ShowTemplate is executed.</p> <p>The input text data is cleared under the following conditions.</p> <ul style="list-style-type: none"> •When SelectTemplate is executed. •When other than 0 is specified at time_ms of ShowTemplate, and the specified display time has elapsed. •When ShowTemplate registered in ExecuteMacro is executed. 	

SetTemplateBarcodeData

Input barcode data

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

The method of syntax (a) inputs data with character strings to display barcode.

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

Target	iOS Android	DSP-A01 via the printer DSP-A01 via the printer, DSP-A01 alone
Syntax	(a) <code>public void SetTemplateBarcodeData(int mapID, string text);</code> (b) <code>public void SetTemplateBarcodeData(int mapID, byte[] data);</code>	
Parameter	mapID	Map ID The valid range is 0 to 7. This method is ignored when the specified map ID is not defined in the selecting template.

text	Barcode data The characters that can be input are ASCII characters 20h (space) to 7Eh (tilde) such as alphanumeric characters ('0' to '9', 'A' to 'Z', 'a' to 'z'). The available number of characters is 1 to 150. Barcode data which is not complying with barcode specification is ignored.
data	Barcode data The value that can be input is 00h to 7Fh. The available number of data is 1 to 150. Barcode data which is not comply with barcode specification is ignored.
Error	PrinterException is thrown when an error occurs while this method is being called. See "5.1.4 PrinterException Class" for details on the error.
Description	After specifying a map ID of the selecting template by this method, input barcode data. The input barcode data is displayed to the screen when ShowTemplate is executed. The input barcode data is cleared under the following conditions. <ul style="list-style-type: none"> ·When SelectTemplate is executed. ·When other than 0 is specified at time_ms of ShowTemplate, and the specified display time has elapsed. ·When ShowtTemplate registered in ExecuteMacro is executed. This method is ignored when a template is not selected.

SetTemplateQRCodeData	Input QR Code data
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Specifies a map ID of a qr element on a selecting template, and inputs QR Code data.
The method of syntax (a) inputs QR Code data with character strings.
The method of syntax (b) inputs QR Code data with character strings. The setting of selecting template is reflected to moduleSize, errorCorrection, mode, and qrQuietZone.
The method of syntax (c) inputs QR Code data with byte array.
The method of syntax (d) inputs QR Code data with byte array. The setting of selecting template is reflected to moduleSize, errorCorrection, mode, and qrQuietZone.

Target	iOS Android	DSP-A01 via the printer DSP-A01 via the printer, DSP-A01 alone
Syntax	<pre>(a) public void SetTemplateQRCodeData(int mapID, ModuleSize moduleSize, ErrorCorrection errorCorrection, QrDataMode mode, QrQuietZone qrQuietZone, string text); (b) public void SetTemplateQRCodeData(int mapID, string text); (c) public void SetTemplateQRCodeData(int mapID, ModuleSize moduleSize, ErrorCorrection errorCorrection, QrDataMode mode, QrQuietZone qrQuietZone, byte[] data); (d) public void SetTemplateQRCodeData(int mapID, byte[] data);</pre>	

Parameter	mapID	Map ID The valid range is 0 to 7. This method is ignored when the specified map ID is not defined in the selecting template.
	moduleSize	Module size See "5.1.1 ^⑫ Module size (ModuleSize)" for available constants.
	errorCorrection	Error correction level See "5.1.1 ^⑬ Error correction level (ErrorCorrection)" for available constants.
	mode	Data mode See "5.1.1 ^⑭ QR data mode (QrDataMode)" for available constants.
	qrQuietZone	Quiet zone See "5.1.1 ^⑮ QR quiet zone (QrQuietZone)" for available constants.
	text	QR Code data The characters that can be input are as follows. <ul style="list-style-type: none"> ·ASCII character codes from 20h (space) to 7Eh (tilde) such as alphanumeric ('0' to '9', 'A' to 'Z', 'a' to 'z'). ·8 bits Latin / Katakana based on JIS X 0201 ·Shift_JIS code based on JIS X 0208 The available data size is 1 to 3909 bytes. QR Code data which is not complied with QR Code specification is ignored.
	data	QR Code data QR Code data shown on the display. The values that can be input is 00h to FFh. The available number of data is 1 to 3909. QR Code data which is not complied with QR Code specification is ignored.
Error	PrinterException is thrown when an error occurs while this method is being called. See "5.1.4 PrinterException Class" for details on the error.	
Description	<p>After specifying a map ID of the selecting template by this method, input QR Code data. The input QR Code data is displayed to the screen when ShowTemplate is executed.</p> <p>The input QR Code data is cleared under the following conditions.</p> <ul style="list-style-type: none"> ·When SelectTemplate is executed. ·When other than 0 is specified at time_ms of ShowTemplate, and the specified display time has elapsed. ·When ShowtTemplate registered in ExecuteMacro is executed. <p>This method is ignored when a template is not registered.</p>	

Registers a template in the display.

Target	iOS Android	DSP-A01 via the printer DSP-A01 via the printer, DSP-A01 alone
Syntax	<pre>public void RegisterTemplate(int templateID, string label, string fileName);</pre>	
Parameter	templateID	<p>Template ID</p> <p>Specify the ID of template to register.</p> <p>The valid range is 0 to 127.</p> <p>Do not specify the template ID of 127 because it is being used for the system.</p>
	label	<p>Template name</p> <p>A name for identification can be specified to the template to be registered.</p> <p>The characters that can be specified are ASCII code characters 20h (space) to 7Eh (tilde) such as alphanumeric characters ('0' to '9', 'A' to 'Z', 'a' to 'z').</p> <p>Do not use Unicode 00A5h ('¥').</p> <p>The available number of characters is 0 to 32.</p> <p>This label is optional. Specify null when the template name is not registered.</p> <p>The specified template name can be retrieved by <code>GetDisplayResponse</code>.</p>
	fileName	<p>File path of the template data to register in the display</p> <p>The formats that can be entered are described below.</p> <ul style="list-style-type: none"> • Absolute path string handled by Java standard class <code>"java.io.File"</code> When targeting Android 10 (API 29) or later, please note that some files cannot be handled directly. See "3.4 Precautions - About Scoped Storage" for details. • URI string of the following scheme name handled by the class <code>"android.net.Uri"</code> prepared for Android <ul style="list-style-type: none"> ▪ <code>file://</code> ▪ <code>content://</code> <p>It is necessary to specify the URI string obtained from "Storage Access Framework" for this parameter. Please note that URI created without being obtained from "Storage Access Framework" may not be able to open the file.</p> <p>Supported file extension is <code>.xml</code>.</p> <p>The maximum data size that can be registered is 8192 bytes.</p> <p>See "Technical Reference for Display" for details on registration of the template data.</p>
Error	<p><code>PrinterException</code> is thrown when an error occurs while this method is being called.</p> <p>See "5.1.4 <code>PrinterException</code> Class" for details on the error.</p>	
Description	<p>The display is changed to Standby mode when this method is executed. A selecting template is deselected.</p>	

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

Delete template

Target	iOS Android	DSP-A01 via the printer DSP-A01 via the printer, DSP-A01 alone
Syntax	<code>public void UnregisterTemplate(int templateID);</code>	
Parameter	templateID	Template ID Specify the ID of template to delete. The valid range is 0 to 127. This method is ignored when a template is not registered in the specified ID.
Error	PrinterException is thrown when an error occurs while this method is being called. See "5.1.4 PrinterException Class" for details on the error.	
Description	The display is changed to Standby mode when this method is executed. A selecting template is deselected. Used memory is not released even the template is deleted. The used memory can be reused after executing Defragment.	

Register image data

Target	iOS	DSP-A01 via the printer
	Android	DSP-A01 via the printer, DSP-A01 alone
Syntax	<pre>public void RegisterImageData(int imageID, string label, string fileName);</pre>	
Parameter	imageID	<p>Image ID</p> <p>The valid range is 0 to 63.</p> <p>Do not select image IDs 49 to 63 because they are being used for the system.</p>
	label	<p>Image name</p> <p>A name for identification can be specified to image data to be registered.</p> <p>The characters that can be specified are ASCII code characters 20h (space) to 7Eh (tilde) such as alphanumeric characters ('0' to '9', 'A' to 'Z', 'a' to 'z').</p> <p>Do not use Unicode 00A5h (¥).</p> <p>The available number of characters is 0 to 32.</p> <p>This label is optional. Specify null when the template name is not registered.</p> <p>The specified image name can be retrieved at <code>GetDisplayResponse</code>.</p>

fileName	<p>File path</p> <p>Specify the file name of image data to register. The formats that can be entered are described below.</p> <ul style="list-style-type: none"> • Absolute path string handled by Java standard class "java.io.File" When targeting Android 10 (API 29) or later, please note that some files cannot be handled directly. See "3.4 Precautions - About Scoped Storage" for details. • URI string of the following scheme name handled by the class "android.net.Uri" prepared for Android <ul style="list-style-type: none"> ▪ file:// ▪ content:// It is necessary to specify the URI string obtained from "Storage Access Framework" for this parameter. Please note that URI created without being obtained from "Storage Access Framework" may not be able to open the file. <p>Supported file extensions are .jpg, .jpeg, and .png. However, even the supported extensions may not be registered depending on the format. The maximum file size that can be registered is 786432 bytes. The maximum data size that can be registered is 480 horizontal × 272 vertical pixels(px).</p>
Error	<p>PrinterException is thrown when an error occurs while this method is being called. See "5.1.4 PrinterException Class" for details on the error.</p>
Description	<p>The display is changed to Standby mode when this method is executed. A selecting template is deselected.</p>
<u>Note</u>	<p><u>Registered data at the shipping may be added or changed without prior notice for quality improvement.</u></p>

UnregisterImageData

Delete image data

Deletes registered image data in the display.

Target	iOS	DSP-A01 via the printer
	Android	DSP-A01 via the printer, DSP-A01 alone
Syntax	<pre>public void UnregisterImageData(int imageID);</pre>	
Parameter	imageID	Image ID
		The valid range is 0 to 63. This method is ignored when image data is not registered in the specified ID.
Error	PrinterException is thrown when an error occurs while this method is being called. See "5.1.4 PrinterException Class" for details on the error.	
Description	The display is changed to Standby mode when this method is executed. A selecting template is deselected.	
	Used memory is not released even image data is deleted. The used memory can be reused after executing Defragment.	

RegisterSlideData

Register slide data

Registers slide data in the display.

Target	iOS	DSP-A01 via the printer
	Android	DSP-A01 via the printer, DSP-A01 alone
Syntax	<pre>public void RegisterSlideData(int slideID, string label, string fileName);</pre>	
Parameter	slideID	Slide ID The valid range is 0 to 91. Do not specify slide IDs of 80 to 90 because they are being used for the system.
	label	Slide name A name for identification can be specified to slide data to be registered. The characters that can be specified are ASCII code characters 20h (space) to 7Eh (tilde) such as alphanumeric characters ('0' to '9', 'A' to 'Z', 'a' to 'z'). Do not use Unicode 00A5h ('¥'). The available number of characters is 0 to 32. This label is optional. Specify null when the template name is not registered. The specified slide name can be retrieved by GetDisplayResponse.

fileName	<p>File path Specify the file name of slide data to register. The formats that can be entered are described below.</p> <ul style="list-style-type: none"> • Absolute path string handled by Java standard class "java.io.File" When targeting Android 10 (API 29) or later, please note that some files cannot be handled directly. See "3.4 Precautions - About Scoped Storage" for details. • URI string of the following scheme name handled by the class "android.net.Uri" prepared for Android <ul style="list-style-type: none"> ▪ file:// ▪ content:// It is necessary to specify the URI string obtained from "Storage Access Framework" for this parameter. Please note that URI created without being obtained from "Storage Access Framework" may not be able to open the file. <p>Supported file name extensions are .jpg, jpeg, and .png. However, even the supported extensions may not be registered depending on the format. The maximum file size that can be registered is 786432 bytes. The maximum data size that can be registered is 480 horizontal × 272 vertical pixels (px).</p>
Error	PrinterException is thrown when an error occurs while this method is being called. See "5.1.4 PrinterException Class" for details on the error.
Description	<p>The display is changed to Standby mode when this method is executed. A selecting template is deselected.</p> <p>Execute ShowSlide to show registered slide data. Specify the slide ID at SelectTemplate to use a registered slide data as a backscreen of the template.</p>
Note	<u>Registered data at the shipping may be added or changed without prior notice for quality improvement.</u>

UnregisterSlideData	Delete slide data
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Deletes registered slide data in the display.

Target	iOS Android	DSP-A01 via the printer DSP-A01 via the printer, DSP-A01 alone
Syntax	public void UnregisterSlideData(int slideID);	
Parameter	slideID	Slide ID The valid range is 0 to 91. This method is ignored when slide data is not registered in a specified ID.
Error	PrinterException is thrown when an error occurs while this method is being called. See "5.1.4 PrinterException Class" for details on the error.	
Description	The display is changed to Standby mode when this method is executed. A selecting template is deselected.	

RegisterUserDefinedCharacter

Register user-defined character

Registers user-defined characters in the display.

Target	iOS Android	DSP-A01 via the printer DSP-A01 via the printer, DSP-A01 alone
Syntax	<pre>public void RegisterUserDefinedCharacter(string fileName);</pre>	
Parameter	fileName	<p>File path Specify the file name of the user-defined characters to register. The formats that can be entered are described below.</p> <ul style="list-style-type: none">• Absolute path string handled by Java standard class "java.io.File" When targeting Android 10 (API 29) or later, please note that some files cannot be handled directly. See "3.4 Precautions - About Scoped Storage" for details.• URI string of the following scheme name handled by the class "android.net.Uri" prepared for Android<ul style="list-style-type: none">▪ file://▪ content://It is necessary to specify the URI string obtained from "Storage Access Framework" for this parameter. Please note that URI created without being obtained from "Storage Access Framework" may not be able to open the file. <p>Supported file extension is .bin. See "Register User-Defined Character" of the display command in "Technical Reference for Display" for details on the user-defined character data.</p>
Error	PrinterException is thrown when an error occurs while this method is being called. See "5.1.4 PrinterException Class" for details on the error.	
Description	<p>The display is changed to Standby mode when this method is executed. A selecting template is deselected. User-defined characters are overwritten when this method is executed with user-defined character registered status.</p> <p>Use a template which encoding specifying is Shift_JIS for displaying user-defined characters. Specify CODE_PAGE_KATAKANA for CodePage before user-defined characters are displayed. Specify character codes that can be specified for text of SetTemplateTextData before user-defined characters are displayed. The character codes that can be specified are 0xE000 to 0xE05D.</p>	

UnregisterUserDefinedCharacter

Delete user-defined character

Deletes registered user-defined characters in the display.

Target	iOS Android	DSP-A01 via the printer DSP-A01 via the printer, DSP-A01 alone
Syntax	<pre>public void UnregisterUserDefinedCharacter();</pre>	
Error	PrinterException is thrown when an error occurs while this method is being called. See "5.1.4 PrinterException Class" for details on the error.	

Description	<p>The display is changed to Standby mode when this method is executed. A selecting template is deselected.</p> <p>All registered user-defined characters are deleted.</p> <p>Used memory is not released even the user-defined characters are deleted. The used memory can be reused after executing Defragment.</p>
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RegisterOptionFont	Register optional font
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Registers optional fonts in the display.

Target	iOS Android	DSP-A01 via the printer DSP-A01 via the printer, DSP-A01 alone
Syntax	<pre>public void RegisterOptionFont(int startCode, int endCode, int width, int height, string fileName);</pre>	
Parameter	startCode	Character code for registration starting The valid range is 20h to FFh of ASCII character code.
	endCode	Character code for registration finishing The valid range is 20h to FFh of ASCII character code.
	width	Character width (pixel: px) The valid range is 1 to 255.
	height	Character height (pixel: px) The valid range is 1 to 255.
	fileName	File path Specify the file name of the optional font to register. The formats that can be entered are described below. <ul style="list-style-type: none"> • Absolute path string handled by Java standard class "java.io.File" When targeting Android 10 (API 29) or later, please note that some files cannot be handled directly. See "3.4 Precautions - About Scoped Storage" for details. • URI string of the following scheme name handled by the class "android.net.Uri" prepared for Android <ul style="list-style-type: none"> ▪ file:// ▪ content:// It is necessary to specify the URI string obtained from "Storage Access Framework" for this parameter. Please note that URI created without being obtained from "Storage Access Framework" may not be able to open the file. <p>Supported file name extension is .bin. See "Register Optional Font" of the display command in "Technical Reference for Display" for details on optional font data.</p>
Error	PrinterException is thrown when an error occurs while this method is being called. See "5.1.4 PrinterException Class" for details on the error.	
Description	The display is changed to Standby mode when this method is executed. A selecting template is deselected.	

When this method is executed with optional font registered status, the registered optional fonts are deleted, and a new memory area is allocated to register optional fonts. Used memory is not released even the registered optional fonts are deleted. The used memory can be reused after executing Defragment.

UnregisterOptionFont	Delete optional font
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Deletes registered optional fonts in the display.

Target	iOS Android	DSP-A01 via the printer DSP-A01 via the printer, DSP-A01 alone
Syntax	<code>public void UnregisterOptionFont();</code>	
Error	PrinterException is thrown when an error occurs while this method is being called. See "5.1.4 PrinterException Class" for details on the error.	
Description	The display is changed to Standby mode when this method is executed. A selecting template is deselected. All registered optional fonts are deleted. Used memory is not released even the optional fonts are deleted. The used memory can be reused after executing Defragment.	

ControlMacroRegistration	Start/Finish of macro registration
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Specifies start or finish of macro registration to use in the display.

Target	iOS Android	DSP-A01 via the printer DSP-A01 via the printer, DSP-A01 alone
Syntax	<code>public void ControlMacroRegistration(int macroID, MacroRegistrationFunction control);</code>	
Parameter	macroID	Macro ID The valid range is -1 to 127. Do not select macro IDs of 120 to 126 because they are being used for the system.
	control	Macro registration processing See "5.1.1⑩ Macro registration processing (MacroRegistrationFunction)" for available constants.
Error	PrinterException is thrown when an error occurs while this method is being called. See "5.1.4 PrinterException Class" for details on the error.	
Description	The procedures of the macro registration processing are as follows: (1) Starts macro registration processing. Specify -1 for macroID. Specify MACRO_REGISTRATION_START for control.	

(2) Executes methods.

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

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

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

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

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

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

Methods for the macro registration processing target are shown below.

- ShowTemplate
- ShowSlide
- SelectTemplate
- SetTemplateImageData
- SelectTemplateTextObject
- SetTemplateTextAlignment
- SetTemplateTextLeftMargin
- SetTemplateTextLineSpacing
- SetTemplateTextBold
- SetTemplateTextUnderline
- SetTemplateTextSize
- SetTemplateTextFont
- SetTemplateTextRegisteredFont
- SetTemplateTextRightSpacing
- SetTemplateTextColor
- SetTemplateTextData
- SetTemplateBarcodeData
- SetTemplateQrCodeData

(3) Finishes macro registration processing.

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

When **MACRO_REGISTRATION_REGIST** is specified at control, buffered transmit data is sent to the printer. The buffered transmit data is held even after transmitting to the printer. The display is changed to Standby mode when this method is executed.

A selecting template is being deselected.

The holding transmit data is discarded by following processes.

- Specify **MACRO_REGISTRATION_CLEAR**
- Specify **MACRO_REGISTRATION_START**
- Execute Disconnect

The registered macro can be executed at ExecuteMacro.

A process to delete the registered macro is as follow.

Specify **MACRO_REGISTRATION_START** at control and specify -1 for macroID to call this method.

Specify **MACRO_REGISTRATION_START** at control and specify the macro ID to delete, and then call this method.

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

Note

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

Gets response data from the display.

Target	iOS	DSP-A01 via the printer
	Android	DSP-A01 via the printer, DSP-A01 alone
Syntax	<pre>public void GetDisplayResponse<T>(DisplayResponseId responseId, object param, out T[] response);</pre>	
Parameter	responseId	Display response type constant See "5.1.1⑰ Display response type (DisplayResponseId)" for available constants.
	param	Command parameter The value to be specified varies with on the display response type constant. See the following table for description of the value to be specified.
	response	Buffer for storing the retrieved response data The buffer type varies with the display response type constant. See the following table for the buffer type.

Response Type Constant	
Parameter	Description
DISPLAY_RESPONSE_REQUEST (Execution response request)	
param	Specify 0 to 15 (00h to 0Fh) in an int type.
response	Specify an int type array. When the response is retrieved successfully, the response code of the execution response request is stored with 64 to 79 (40h to 4Fh).
DISPLAY_RESPONSE_USER_AREA (Send remaining capacity of user area)	
param	Specify null.
response	Specify an int type array. When the response is retrieved successfully, the remaining capacity (unit: byte) of the user area is stored numerically.
DISPLAY_RESPONSE_TEMPLATE_ID_LIST (Send template ID)	
param	Specify null.
response	Specify an int type array. When the response is retrieved successfully, the registered template ID is stored in an array of NSInteger.
DISPLAY_RESPONSE_IMAGE_ID_LIST (Send image ID)	
param	Specify null.
response	Specify an int type array. When the response is retrieved successfully, the registered image ID is stored in an array of NSInteger.

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 PrinterManager class in the delegate object to specify in statusChangeEventHandler.

SendBinary

Send binary data

Sends binary data to the printer.

Target	All platforms	All devices
Syntax	<code>public void SendBinary(byte[] data);</code>	
Parameter	data	Binary data to send to the printer Data size that can be specified at one time is 256 KB (262144 bytes).
Error	PrinterException is thrown when an error occurs while this method is being called. See "5.1.4 PrinterException Class" for details on the error.	
Description	<p>This method sends the specified binary data to the printer without conversion.</p> <p>By sending display command as binary data by this method, display functions not supported in the library become available. However, this method does not support commands to get the response from the display.</p>	

SendDataFile

Send specified file

Sends file data.

Target	All platforms	All devices
Syntax	<code>public void SendDataFile(string fileName, PrintAlignment alignment, Dithering dithering);</code>	
Parameter	fileName	<p>File path of the data to send to the device The formats that can be entered are described below.</p> <ul style="list-style-type: none"> • Absolute path string handled by Java standard class "java.io.File" When targeting Android 10 (API 29) or later, please note that some files cannot be handled directly. See "3.4 Precautions - About Scoped Storage" for details. • URI string of the following scheme name handled by the class "android.net.Uri" prepared for Android <ul style="list-style-type: none"> ▪ file:// ▪ content:// It is necessary to specify the URI string obtained from "Storage Access Framework" for this parameter. Please note that URI created without being obtained from "Storage Access Framework" may not be able to open the file.

The file size that can be specified is maximum 1 MB (1048576 bytes).

The file extensions that can be sent and the file transmission are described below.

- .bin, .dat
Data is sent to the device as binary data without conversion.

alignment

Alignment

The alignment is not reflected to the display function.

dithering

Dithering

The dithering is not reflected to the display function.

Error

PrinterException is thrown when an error occurs while this method is being called.
See "5.1.4 PrinterException Class" for details on the error.

(4) Property Details

SendTimeout

Get/Set send timeout period

Gets or sets the timeout period in sending data.

Target	All platforms	All devices
Syntax	<code>public int SendTimeout {get; set;}</code>	
Valid range	For iOS: 100 to 300000 (millisecond: ms) When the value is specified less than 100, the period is set to 100 ms. When the value is specified more than 300000, the period is set to 300000 ms. For Android: 100 to 900000 (millisecond: ms) When the value is specified out of the range, the period is set to 10000 ms.	
Default	10000	
Description	Getting or setting is possible by this property regardless of whether IsConnect is true or false. The set timeout period becomes effective at the next data sending.	

ReceiveTimeout

Get/Set receive timeout period

Gets or sets the timeout period in receiving data.

Target	All platforms	All devices
Syntax	<code>public int ReceiveTimeout {get; set;}</code>	
Valid range	For iOS: 100 to 300000 (millisecond: ms) When the value is specified less than 100, the period is set to 100 ms. When the value is specified more than 300000, the period is set to 300000 ms. For Android: 100 to 900000 (millisecond: ms) When the value is specified out of the range, the period is set to 10000 ms.	
Default	10000	
Description	Getting or setting is possible by this property regardless of whether IsConnect is true or false. The set timeout period becomes effective at the next data receiving.	

InternationalCharacter

Get/Set international character set

Gets or sets the value of international character set.

Target	All platforms	All devices
Syntax	<code>public InternationalCharacter InternationalCharacter {get; set;}</code>	
Description	See "5.1.1 ^⑩ International character set (InternationalCharacter)" for configurable constants. When an invalid value is specified, it is ignored.	

When this property is not set, the international character set is as follows depending on the language setting of device.

When the language setting of device is Japanese: **COUNTRY_JAPAN**
When the language setting of device is other than Japanese: **COUNTRY_USA**

When text data is sent by `SendDataFile` or `SetTemplateTextData`, the display result of the following character codes varies. See "Appendix A Character Set" for details of the characters to be printed.

Character codes with the varying display result depending on the configuration of the international character:
0x23, 0x24, 0x40, 0x5B, 0x5C, 0x5D, 0x5E, 0x60, 0x7B, 0x7C, 0x7D, 0x7E

CodePage

Get/Set codepage

Gets or sets the value of codepage.

Target	All platforms	All devices
Syntax	<code>public CodePage CodePage {get; set;}</code>	
Description	See "5.1.1① Codepage (CodePage)" for configurable constants. When an invalid value is specified, it is ignored. When this property is not set, the codepage follows depending on the language setting of device. When the language setting of device is Japanese: CODE_PAGE_KATAKANA When the language setting of device is other than Japanese: CODE_PAGE_1252 The encoder used for sending the text data by <code>SendDataFile</code> or <code>SetTemplateTextData</code> is changed. See "Appendix A Character Set" for characters to be displayed.	

DeviceModel

Get device model

Gets the value of the connecting printer model.

Target	All platforms	All devices
Syntax	<code>public DeviceModel DeviceModel {get;}</code>	
Default	<code>DeviceModel.DEVICE_MODEL_RP_E10</code>	
Return value	See "5.1.1① Device model (DeviceModel)" for available constants.	

PortType

Get connecting port type

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

Target	All platforms	All devices
Syntax	<code>public PortType PortType {get;}</code>	
Default	<code>PortType.PORT_TYPE_BLUETOOTH</code>	
Return value	See "5.1.1② Port type (PortType)" for available constants.	

IsConnect

Verify connection state with printer

Verifies connection state with the printer.

Target	All platforms	All devices
Syntax	<code>public bool IsConnect {get;}</code>	
Return value	true	Connected to the printer
	false	Not connected to the printer
Description	This property retains the Connect state as a BOOL value. When Connect succeeds, this property is true. After Connect, when Disconnect succeeds, this property becomes false.	

SocketKeepingTime

Get/Set socket keeping time

Gets or sets the socket keeping time.

Target	iOS	DSP-A01 via the printer
	Android	DSP-A01 via the printer
Syntax	<code>public int SocketKeepingTime {get; set;}</code>	
Valid range	60000 to 300000 (millisecond: ms) When the value is specified less than 60000, the time is set to 60000 ms. When the value is specified more than 300000, the time is set to 300000 ms.	
Default	300000	
Description	Getting or setting is possible by this property regardless of whether IsConnect is true or false. For the socket keeping time, specify a time equal to Receive Timeout of the printer to be connected. The setting of Receive Timeout can be changed in the iOS app "SII Printer Utility" on the App Store and the Android app "SII Printer Utility" on the Google Play. The set socket keeping time becomes effective at the next Connect execution.	

5.1.3 DeviceInfo Class

This class stores the device information found by printer searching method. See "5.1.3(2) Property List" for device information to be able to get.

(1) Method List

Methods provided by DeviceInfo class are shown in the following table.

Name	Description
DeviceInfo	Constructor of the device information class

(2) Property List

Properties provided by DeviceInfo class are shown in the following table.

Name	Access	Description
PortType	R	Get connecting port type
DeviceName	R	Get device name (printer model name)
BluetoothAddress	R	Get Bluetooth address
MacAddress	R	Get MAC address
IpAddress	R	Get IP address
IsBonded	R	Get pairing state
DevicePath	R	Get device path

DeviceInfo**Constructor**

The method of syntax (a) is a constructor in the device information class to use in the Bluetooth connection.
 The method of syntax (b) is a constructor in the device information class to use in the TCP/IP connection.
 The method of syntax (c) is a constructor in the device information class to use in the USB connection.

Target	All platforms	All devices
Syntax	<pre>(a) public DeviceInfo(PortType portType, string deviceName, string bluetoothAddress, bool isBonded); (b) public DeviceInfo(PortType portType, string deviceName, string macAddress, string ipAddress); (c) public DeviceInfo(PortType portType, string deviceName, string devicePath);</pre>	
Description	<p>This method stores the printer information found by <code>StartDiscoveryDevice</code>.</p> <p>In iOS, the syntax (a) and (b) are valid.</p> <p>In Android, the syntax (a), (b) and (c) are valid when using DSP-A01 via the printer. When using DSP-A01 alone, only the syntax (c) is valid.</p>	

(4) Property Details

PortType Get connecting port type

Target	All platforms	All devices
Syntax	<code>public PortType PortType {get;}</code>	
Description	This property gets the connecting port type from the device information found by <code>StartDiscoveryDevice</code> .	

DeviceName Get device name (printer model name)

Target	All platforms	All devices
Syntax	<code>public string DeviceName {get;}</code>	
Description	This property gets the device name (printer model name) from the device information found by <code>StartDiscoveryDevice</code> .	

BluetoothAddress Get Bluetooth address

Target	All platforms	All printers, DSP-A01 via the printer
Syntax	<code>public string BluetoothAddress {get;}</code>	
Description	This property gets the Bluetooth address from the printer information found by <code>StartDiscoveryDevice</code> .	

MacAddress Get MAC address

Target	All platforms	All printers, DSP-A01 via the printer
Syntax	<code>public string MacAddress {get;}</code>	
Description	This property gets the MAC address from the device information found by <code>StartDiscoveryDevice</code> .	

IpAddress Get IP address

Target	All platforms	All printers, DSP-A01 via the printer
Syntax	<code>public string IpAddress {get;}</code>	
Description	This property gets the IP address from the device information found by <code>StartDiscoveryDevice</code> .	

IsBonded	Get pairing state
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Target	All platforms	All printers, DSP-A01 via the printer
Syntax	<code>public bool IsBonded {get;}</code>	
Description	This property gets the pairing state from the device information found by <code>StartDiscoveryDevice</code> . In iOS, this property always returns true.	

DevicePath	Get device path
-------------------	------------------------

Target	All platforms	DSP-A01 via the printer, DSP-A01 alone
Syntax	<code>public string DevicePath {get;}</code>	
Description	This property gets the USB device file path string from the device information found by <code>StartDiscoveryDevice</code> .	

5.1.4 PrinterException Class

(1) Method List

Methods provided by PrinterException class are shown in the following table.

Name	Description
PrinterException	Constructor

(2) Property List

Properties provided by PrinterException class are shown in the following table.

Name	Access	Description
HResult	R	Get error code
Message	R	Get error message

(3) Constant List

① Error code

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

Constant Name	Description	Value
ERROR_ACCESS_DENIED	Failed to get the handle.* ¹	-1
	An unavailable port was specified.	
	An unsupported method was specified.	
ERROR_SHARING_VIOLATION	An already opened port was specified.	-11
ERROR_PORT_NOT_OPENED	The port is not open.	-12
ERROR_DEVICE_NOT_CONNECTED	There is a problem with the Bluetooth connection.	-21
	There is a problem with the USB connection.	
	The printer with the specified IP address does not present.	
ERROR_OFFLINE	Disconnected state or the printer is offline.	-22
ERROR_EXTERNAL_DEVICE_NOT_CONNECTED	The display is not connected.	-23
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
ERROR_DATA_SIZE_ZERO	0-byte data was specified.	-101
ERROR_OVER_MAX_DATA_SIZE	Maximum data size is exceeded.	-102
ERROR_DATA_SIZE_INVALID	Data size is invalid.	-103
ERROR_ENCODE_FAILED	An error occurred in encoding text data.* ¹	-111

Constant Name	Description	Value
ERROR_TIMEOUT	Send timeout occurred.	-201
	Receive timeout occurred.	
ERROR_FILE_NOT_FOUND	The specified file is not found.	-301
ERROR_FILE_USED	The specified file is in use by another process.	-302
ERROR_FILE_INVALID	The specified file is invalid.	-303
ERROR_LOW_MEMORY	Memory shortage occurred when loading image file.	-311
ERROR_OVER_MAX_IMAGE	Either or both of width and height of image file exceeds the number of printable maximum dots.	-312
ERROR_LOGO_NOT_DEFINED	The logo is not registered.	-313
ERROR_LOW_USER_AREA	Remaining user area is insufficient.	-401
ERROR_LOW_EXTERNAL_RAM	Remaining RAM capacity is insufficient.	-402
ERROR_NOT_REGISTERD	The template is not registered. The image data is not registered. The slide data is not registered. The optional font is not registered. The user-defined character is not registered.	-403
ERROR_NOT_UNREGISTERD	The template is not deleted. The image data is not deleted. The slide data is not deleted. The optional font is not deleted. The user-defined character is not deleted.	-404
ERROR_INVALID_NO	The specified value for the logo ID is invalid.	-501
ERROR_OVER_STYLE_NUM	The number of style registered in the specified file exceeds rated value (64).	-502
ERROR_INVALID_DATA	The specified data is invalid.	-503
ERROR_PAGE_MODE_SPECIFIED	Page mode is specified.	-511
ERROR_PAGE_MODE_NOT_SPECIFIED	Page mode is not specified.	-512
ERROR_INVALID_PARAM	The specified parameter is invalid.	-9999

*1: Abnormal processing might have occurred.

(4) Method Details

PrinterException

Constructor

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

Syntax `public PrinterException(int code, string message);`

(5) Property Details

HResult

Get error code

Target iOS DSP-A01 via the printer
 Android DSP-A01 via the printer, DSP-A01 alone

Syntax `public int HResult {get;}`

Description This property gets the error code in int type.

Return value See "5.1.4(3) Constant List".

Message

Get error message

Target iOS DSP-A01 via the printer
 Android DSP-A01 via the printer, DSP-A01 alone

Syntax `public string Message {get;}`

Description This property gets a string that supplements the contents of the HResult.

Chapter 6

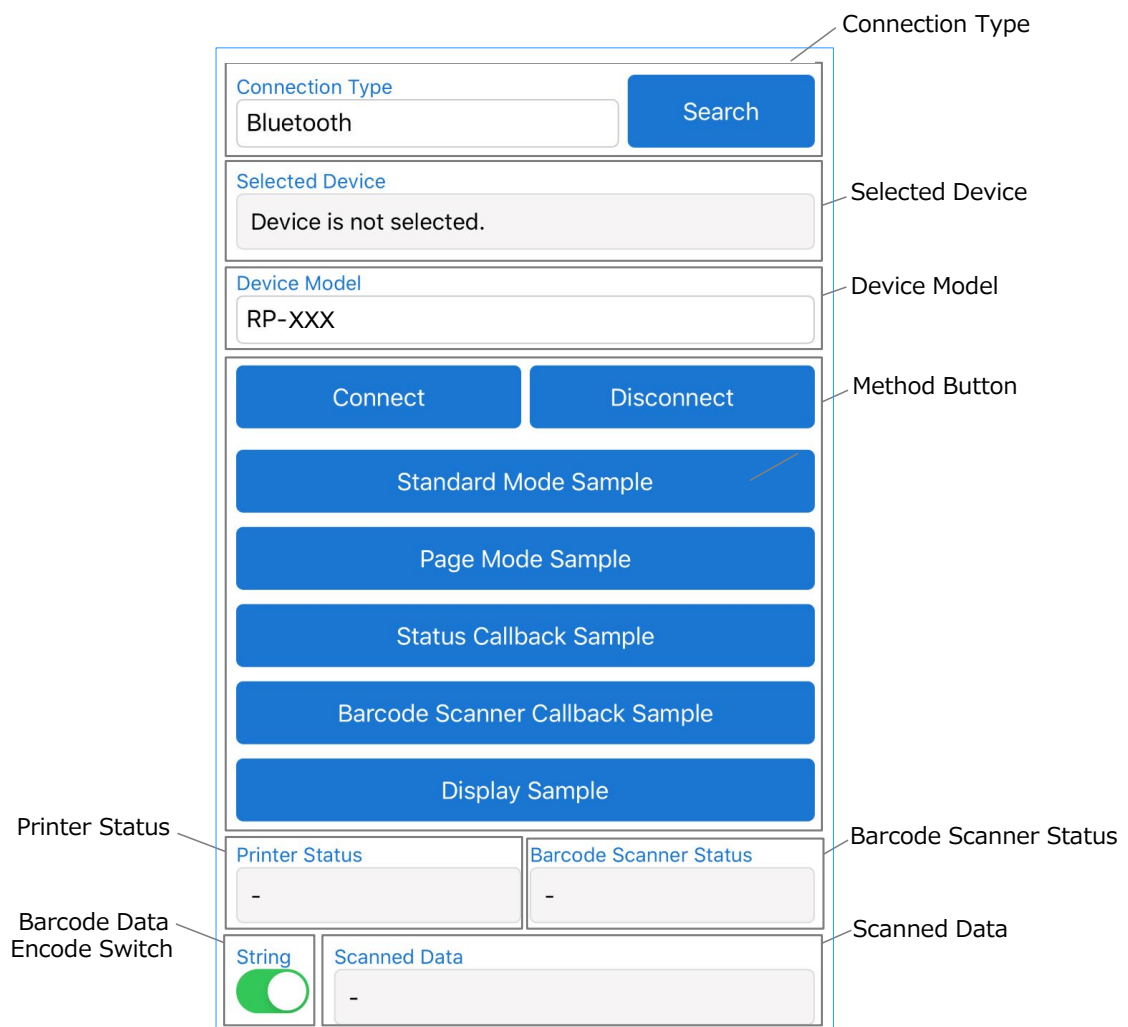
Sample Program

This chapter describes the sample program provided by the SDK.

6.1 Screen Layout

The SDK includes a sample program in Xamarin.Forms project format. This section describes the sample screen.

- iOS



- Android

The screenshot shows an Android application interface with the following components and labels:

- Connection Type:** A dropdown menu showing "Bluetooth" and a "Search" button.
- Selected Device:** A text field displaying "Device is not selected."
- Device Model:** A text field displaying "RP-XXX".
- Method Button:** Two buttons labeled "Connect" and "Disconnect".
- Sample Buttons:** Five blue buttons stacked vertically: "Standard Mode Sample", "Page Mode Sample", "Status Callback Sample", "Barcode Scanner Callback Sample", and "Display Sample".
- Printer Status:** A text field displaying "-".
- Barcode Scanner Status:** A text field displaying "-".
- Barcode Data Encode Switch:** A toggle switch labeled "String" with a red indicator.
- Scanned Data:** A text field displaying "-".

Item	Description
Connection type	<p>Displays connection type to the device.</p> <p>Tap the field to select the connection type to search.</p> <p>Starts to search the selected device after tapping the [Search].</p> <p>A list of detected devices is displayed after completing the search.</p> <p>By tapping the device from the list, the device can be selected.</p> <p>For Bluetooth connection:</p> <p>A list of Bluetooth connection device is displayed.</p> <p>For iOS, only a paired Bluetooth device is displayed.</p> <p>For USB connection:</p> <p>The device connected to the USB is displayed.</p> <p>For TCP/IP connection:</p> <p>A list of the TCP/IP connectable device is displayed.</p>
Selected Device	The selecting device is displayed.

Item	Description
Device Model	The device to connect is displayed. Tap the field to connect the device type to connect.
Method Button	In addition to the method buttons to execute Connect and Disconnect, sample printing combined with each method and acquisition of their status can be executed.
Printer Status	Displays the printer status. Tap [Status Callback Sample]. The latest status is displayed after succeeding.
Barcode Scanner Status	Displays the connection status of the barcode scanner. Online: The barcode scanner is connected. Offline: The barcode scanner is unconnected. The device not support the barcode scanner is not displayed.
Barcode Data Encode Switch	Selects the barcode data encoded by the barcode scanner. On: Encodes the scanned binary value into the character strings and displays. Off: Displays the scanned binary value as it is. The device not support the barcode scanner is not displayed.
Scanned Data	Displays the barcode data scanned through the barcode scanner. The device not support the barcode scanner is not displayed.

6.2 Precaution

The sample program is subject to change without notice.

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

Appendix A

Character Set

A.1 Codepage Table (Character Code Table)

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

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

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

Figure A-1 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 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	Ý	Ý	Ý
F0	-	±	=	¾	¶	§	÷	,	°	…	.	¹	³	²	■	

Figure A-3 CODE_PAGE_850 (Multilingual)

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

Figure A-4 CODE_PAGE_860 (Portuguese)

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

Figure A-5 CODE_PAGE_863 (Canadian-French)

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
20	!	"	#	\$	%	&	'	()	*	+	,	-	.	/	
30	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
40	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
50	P	Q	R	S	T	U	V	W	X	Y	Z	[\]	^	_
60	`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
70	p	q	r	s	t	u	v	w	x	y	z	{		}	~	
80	Ç	ü	é	â	ä	à	å	ç	ê	ë	è	ï	î	ï	Ä	Å
90	É	æ	Æ	ô	ö	ò	û	ù	ÿ	Ö	Ü	ø	£	Ø	Pt	f
A0	á	í	ó	ú	ñ	Ñ	ä	ö	í	í	½	¼	í	«	»	
B0	☐	☐	☐													
C0	L	L	T	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 CODE_PAGE_865 (Nordic)

CODE_PAGE_857 is not supported in RP-E10 nor RP-D10.

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
20	!	"	#	\$	%	&	'	()	*	+	,	-	.	/	
30	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
40	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
50	P	Q	R	S	T	U	V	W	X	Y	Z	[\]	^	_
60	`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
70	p	q	r	s	t	u	v	w	x	y	z	{		}	~	
80	Ç	ü	é	â	ä	à	å	ç	ê	ë	è	ï	î	ï	Ä	Å
90	É	æ	Æ	ô	ö	ò	û	ù	ÿ	Ö	Ü	ø	£	Ø	Ş	ş
A0	á	í	ó	ú	ñ	Ñ	Ğ	ğ	ı	®	¬	½	¼	ı	«	»
B0	☐	☐	☐			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	õ	μ	×	ú	û	ü	ì	ÿ	-	'	
F0	-	±	¾	¶	§	÷	,	°	..	.	1	3	2	■		

Figure A-7 CODE_PAGE_857 (Turkish)

CODE_PAGE_737 is not supported in RP-E10 nor RP-D10.

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
20	!	"	#	\$	%	&	'	()	*	+	,	-	.	/	
30	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
40	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
50	P	Q	R	S	T	U	V	W	X	Y	Z	[\]	^	_
60	`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
70	p	q	r	s	t	u	v	w	x	y	z	{		}	~	
80	A	B	Γ	Δ	E	Z	H	Θ	I	K	Λ	M	N	Ξ	O	Π
90	P	Σ	T	Υ	Φ	X	Ψ	Ω	α	β	γ	δ	ε	ζ	η	θ
A0	ι	κ	λ	μ	ν	ξ	ο	π	ρ	σ	ς	τ	υ	φ	χ	ψ
B0	⌘	⌘	⌘		†	‡	§	¶	⌘	⌘	⌘	⌘	⌘	⌘	⌘	⌘
C0	L	⌘	⌘	⌘	⌘	⌘	⌘	⌘	⌘	⌘	⌘	⌘	⌘	⌘	⌘	⌘
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 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	€	‚	ƒ	„	…	†	‡	^	‰	Š	<	Œ		Ž		
90		‘	’	“	”	•	-	-	~	™	š	>	œ	ž	ÿ	
A0	ı	ϕ	£	¤	¥	¦	§	¨	©	ª	«	¬	®	¯		
B0	°	±	²	³	´	µ	¶	·	¸	¹	º	»	¼	½	¾	¿
C0	À	Á	Â	Ã	Ä	Å	Æ	Ç	È	É	Ê	Ë	Ì	Í	Î	Ï
D0	Ð	Ñ	Ò	Ó	Ô	Õ	Ö	×	Ø	Ù	Ú	Û	Ü	Ý	Þ	ß
E0	à	á	â	ã	ä	å	æ	ç	è	é	ê	ë	ì	í	î	ï
F0	ð	ñ	ò	ó	ô	õ	ö	÷	ø	ù	ú	û	ü	ý	þ	ÿ

Figure A-9 CODE_PAGE_1252 (Latin)

CODE_PAGE_866 is not supported in RP-E10 nor RP-D10.

	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 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	Ą	ą	Ž	ž	Ę	ę	¬	ž	Č	š	«	»
B0	␣	␣	␣		†	‡	§	¶	§	¶	§	¶	§	¶	§	¶
C0	␣	␣	␣		†	‡	§	¶	§	¶	§	¶	§	¶	§	¶
D0	đ	Đ	Ď	Ě	ď	Ň	í	î	ě	Ĵ	␣	␣	Ť	Ů	■	
E0	Ó	ß	Ô	Ň	ň	ň	Š	š	Ř	Ú	ř	Ú	ý	Ý	ť	'
F0	-	"	˘	˘	˘	§	÷	˘	˘	˘	˘	Ú	Ř	ř	■	

Figure A-11 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	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥
D0	ð	Ð	Ê	Ë	È	€	Í	Î	Ï	⌋	⌋	■	■	■	■	■
E0	ó	ß	ô	ò	õ	ö	μ	þ	þ	ú	û	ü	ý	ÿ	-	'
F0	-	±	=	¾	¶	§	÷	,	°	·	·	·	·	·	·	■

Figure A-12 CODE_PAGE_858 (Euro)

CODE_PAGE_855 is not supported in RP-E10 nor RP-D10.

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
20	!	"	#	\$	%	&	'	()	*	+	,	-	.	/	
30	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
40	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
50	P	Q	R	S	T	U	V	W	X	Y	Z	[\]	^	_
60	`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
70	p	q	r	s	t	u	v	w	x	y	z	{		}	~	
80	ђ	Ђ	ѓ	Ѓ	ё	Ё	є	Є	ѕ	Ѕ	і	І	ї	Ї	ј	Ј
90	љ	Љ	њ	Њ	ћ	Ћ	ќ	Ќ	џ	џ	џ	џ	џ	џ	џ	џ
A0	а	А	б	Б	в	В	г	Г	д	Д	е	Е	ф	Ф	г	Г
B0	☐	☐	☐			х	Х	и	И			¶	¶	й	Й	₱
C0	L	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥	⊥
D0	л	Л	м	М	н	Н	о	О	п	⌋	⌋	■	■	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 CODE_PAGE_855 (Cyrillic)

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

Figure A-14 CODE_PAGE_864 (Arabic)

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
20	!	"	#	\$	%	&	'	()	*	+	,	-	.	/	
30	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
40	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
50	P	Q	R	S	T	U	V	W	X	Y	Z	[\]	^	_
60	`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
70	p	q	r	s	t	u	v	w	x	y	z	{		}	~	
80	€	‘	’	“	”	•	-	-	™	š	Š	š	Š	š	Š	š
90	˘	˘	˘	˘	˘	˘	˘	˘	˘	˘	˘	˘	˘	˘	˘	˘
A0	˘	˘	˘	˘	˘	˘	˘	˘	˘	˘	˘	˘	˘	˘	˘	˘
B0	˘	˘	˘	˘	˘	˘	˘	˘	˘	˘	˘	˘	˘	˘	˘	˘
C0	Á	Á	Á	Á	Á	Á	Á	Á	Á	Á	Á	Á	Á	Á	Á	Á
D0	Đ	Đ	Đ	Đ	Đ	Đ	Đ	Đ	Đ	Đ	Đ	Đ	Đ	Đ	Đ	Đ
E0	á	á	á	á	á	á	á	á	á	á	á	á	á	á	á	á
F0	đ	đ	đ	đ	đ	đ	đ	đ	đ	đ	đ	đ	đ	đ	đ	đ

Figure A-15 CODE_PAGE_1250 (Central European)

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

Figure A-16 CODE_PAGE_1251 (Cyrillic)

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

Figure A-17 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	ϕ	£	¤	¥	¦	§	¨	©	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 CODE_PAGE_1254 (Turkish)

A.2 International Character Set

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

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

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

Figure A-19 International Character Set

Appendix B

Barcode Size List

B.1 Barcode Size List (SLP720RT, RP-F10, RP-G10, MP-B30, MP-B30L)

B.1.1 PrintBarcode, PrintPageModeBarcode



(1) Height of the barcode image

hriFont	hriPosition	Length from Top of Barcode Height from Reference Point	Height of Barcode Image
FONT_A	HRI_NONE	moduleHeight	moduleHeight
	HRI_POSITION_ABOVE	moduleHeight + 32	moduleHeight + 32
	HRI_POSITION_BELOW	moduleHeight	moduleHeight + 32
	HRI_POSITION_ABOVE_BELOW	moduleHeight + 64	moduleHeight + 64
FONT_B	HRI_NONE	moduleHeight	moduleHeight
	HRI_POSITION_ABOVE	moduleHeight + 24	moduleHeight + 24
	HRI_POSITION_BELOW	moduleHeight	moduleHeight + 24
	HRI_POSITION_ABOVE_BELOW	moduleHeight + 48	moduleHeight + 48

(2) Width of the barcode image

barcodeSymbol	moduleSize	Width of Barcode Image
BARCODE_UPC_A	BARCODE_MODULE_WIDTH_2	190
	BARCODE_MODULE_WIDTH_3	285
	BARCODE_MODULE_WIDTH_4	380
	BARCODE_MODULE_WIDTH_5	475
	BARCODE_MODULE_WIDTH_6	570
BARCODE_UPC_E	BARCODE_MODULE_WIDTH_2	102
	BARCODE_MODULE_WIDTH_3	153
	BARCODE_MODULE_WIDTH_4	204
	BARCODE_MODULE_WIDTH_5	255
	BARCODE_MODULE_WIDTH_6	306
BARCODE_EAN13	BARCODE_MODULE_WIDTH_2	190
	BARCODE_MODULE_WIDTH_3	285
	BARCODE_MODULE_WIDTH_4	380
	BARCODE_MODULE_WIDTH_5	475
	BARCODE_MODULE_WIDTH_6	570
BARCODE_JAN13	BARCODE_MODULE_WIDTH_2	190
	BARCODE_MODULE_WIDTH_3	285
	BARCODE_MODULE_WIDTH_4	380
	BARCODE_MODULE_WIDTH_5	475
	BARCODE_MODULE_WIDTH_6	570
BARCODE_EAN8	BARCODE_MODULE_WIDTH_2	134
	BARCODE_MODULE_WIDTH_3	201
	BARCODE_MODULE_WIDTH_4	268
	BARCODE_MODULE_WIDTH_5	335
	BARCODE_MODULE_WIDTH_6	402
BARCODE_JAN8	BARCODE_MODULE_WIDTH_2	134
	BARCODE_MODULE_WIDTH_3	201
	BARCODE_MODULE_WIDTH_4	268
	BARCODE_MODULE_WIDTH_5	335
	BARCODE_MODULE_WIDTH_6	402
BARCODE_CODE93	BARCODE_MODULE_WIDTH_2	18 × number of barcode data + 56
	BARCODE_MODULE_WIDTH_3	27 × number of barcode data + 84
	BARCODE_MODULE_WIDTH_4	36 × number of barcode data + 112
	BARCODE_MODULE_WIDTH_5	45 × number of barcode data + 140
	BARCODE_MODULE_WIDTH_6	54 × number of barcode data + 168
BARCODE_CODE128	BARCODE_MODULE_WIDTH_2	22 × number of barcode data + 26
	BARCODE_MODULE_WIDTH_3	33 × number of barcode data + 39
	BARCODE_MODULE_WIDTH_4	44 × number of barcode data + 52

barcodeSymbol	moduleSize	Width of Barcode Image
BARCODE_CODE128	BARCODE_MODULE_WIDTH_5	55 × number of barcode data + 65
	BARCODE_MODULE_WIDTH_6	66 × number of barcode data + 78
BARCODE_GS1_OMNI_DIRECTIONAL	BARCODE_MODULE_WIDTH_2	192
	BARCODE_MODULE_WIDTH_3	288
	BARCODE_MODULE_WIDTH_4	384
	BARCODE_MODULE_WIDTH_5	480
	BARCODE_MODULE_WIDTH_6	576
BARCODE_GS1_TRUNCATED	BARCODE_MODULE_WIDTH_2	192
	BARCODE_MODULE_WIDTH_3	288
	BARCODE_MODULE_WIDTH_4	384
	BARCODE_MODULE_WIDTH_5	480
	BARCODE_MODULE_WIDTH_6	576
BARCODE_GS1_LIMITED	BARCODE_MODULE_WIDTH_2	158
	BARCODE_MODULE_WIDTH_3	237
	BARCODE_MODULE_WIDTH_4	316
	BARCODE_MODULE_WIDTH_5	395
	BARCODE_MODULE_WIDTH_6	474
BARCODE_GS1_EXPANDED* ¹	BARCODE_MODULE_WIDTH_2	number of barcode module × 2
	BARCODE_MODULE_WIDTH_3	number of barcode module × 3
	BARCODE_MODULE_WIDTH_4	number of barcode module × 4
	BARCODE_MODULE_WIDTH_5	number of barcode module × 5
	BARCODE_MODULE_WIDTH_6	number of barcode module × 6

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

barcodeSymbol	nwRatio	moduleSize	Width of Barcode Image
BARCODE_CODE39	NWRATIO_1T02	BARCODE_MODULE_WIDTH_2	26 × number of barcode data + 50
		BARCODE_MODULE_WIDTH_3	39 × number of barcode data + 75
		BARCODE_MODULE_WIDTH_4	52 × number of barcode data + 100
		BARCODE_MODULE_WIDTH_5	65 × number of barcode data + 125
		BARCODE_MODULE_WIDTH_6	78 × number of barcode data + 150
	NWRATIO_1T02_5	BARCODE_MODULE_WIDTH_2	29 × number of barcode data + 56
		BARCODE_MODULE_WIDTH_3	45 × number of barcode data + 87
		BARCODE_MODULE_WIDTH_4	58 × number of barcode data + 112
		BARCODE_MODULE_WIDTH_5	74 × number of barcode data + 143
		BARCODE_MODULE_WIDTH_6	87 × number of barcode data + 168
	NWRATIO_1T03	BARCODE_MODULE_WIDTH_2	32 × number of barcode data + 62
		BARCODE_MODULE_WIDTH_3	48 × number of barcode data + 93
		BARCODE_MODULE_WIDTH_4	64 × number of barcode data + 124
		BARCODE_MODULE_WIDTH_5	80 × number of barcode data + 155
		BARCODE_MODULE_WIDTH_6	96 × number of barcode data + 186
BARCODE_ITF	NWRATIO_1T02	BARCODE_MODULE_WIDTH_2	14 × number of barcode data + 16
		BARCODE_MODULE_WIDTH_3	21 × number of barcode data + 24
		BARCODE_MODULE_WIDTH_4	28 × number of barcode data + 32
		BARCODE_MODULE_WIDTH_5	35 × number of barcode data + 40
		BARCODE_MODULE_WIDTH_6	42 × number of barcode data + 48
	NWRATIO_1T02_5	BARCODE_MODULE_WIDTH_2	16 × number of barcode data + 17
		BARCODE_MODULE_WIDTH_3	25 × number of barcode data + 26
		BARCODE_MODULE_WIDTH_4	32 × number of barcode data + 34

barcodeSymbol	nwRatio	moduleSize	Width of Barcode Image
BARCODE_ITF	NWRATIO_1T02_5	BARCODE_MODULE_WIDTH_5	$41 \times \text{number of barcode data} + 43$
		BARCODE_MODULE_WIDTH_6	$48 \times \text{number of barcode data} + 51$
	NWRATIO_1T03	BARCODE_MODULE_WIDTH_2	$18 \times \text{number of barcode data} + 18$
		BARCODE_MODULE_WIDTH_3	$27 \times \text{number of barcode data} + 27$
		BARCODE_MODULE_WIDTH_4	$36 \times \text{number of barcode data} + 36$
		BARCODE_MODULE_WIDTH_5	$45 \times \text{number of barcode data} + 45$
BARCODE_CODABAR* ¹	NWRATIO_1T02	BARCODE_MODULE_WIDTH_2	$20 \times \text{number of data} + 2 \times (2 + \text{number of wide data}) - 2$
		BARCODE_MODULE_WIDTH_3	$30 \times \text{number of data} + 3 \times (2 + \text{number of wide data}) - 3$
		BARCODE_MODULE_WIDTH_4	$40 \times \text{number of data} + 4 \times (2 + \text{number of wide data}) - 4$
		BARCODE_MODULE_WIDTH_5	$50 \times \text{number of data} + 5 \times (2 + \text{number of wide data}) - 5$
		BARCODE_MODULE_WIDTH_6	$60 \times \text{number of data} + 6 \times (2 + \text{number of wide data}) - 6$
	NWRATIO_1T02_5	BARCODE_MODULE_WIDTH_2	$22 \times \text{number of data} + 3 \times (2 + \text{number of wide data}) - 2$
		BARCODE_MODULE_WIDTH_3	$34 \times \text{number of data} + 5 \times (2 + \text{number of wide data}) - 3$
		BARCODE_MODULE_WIDTH_4	$44 \times \text{number of data} + 6 \times (2 + \text{number of wide data}) - 4$
		BARCODE_MODULE_WIDTH_5	$56 \times \text{number of data} + 8 \times (2 + \text{number of wide data}) - 5$
		BARCODE_MODULE_WIDTH_6	$66 \times \text{number of data} + 9 \times (2 + \text{number of wide data}) - 6$
	NWRATIO_1T03	BARCODE_MODULE_WIDTH_2	$24 \times \text{number of data} + 4 \times (2 + \text{number of wide data}) - 2$
		BARCODE_MODULE_WIDTH_3	$36 \times \text{number of data} + 6 \times (2 + \text{number of wide data}) - 3$
		BARCODE_MODULE_WIDTH_4	$48 \times \text{number of data} + 8 \times (2 + \text{number of wide data}) - 4$
		BARCODE_MODULE_WIDTH_5	$60 \times \text{number of data} + 10 \times (2 + \text{number of wide data}) - 5$
		BARCODE_MODULE_WIDTH_6	$72 \times \text{number of data} + 12 \times (2 + \text{number of wide data}) - 6$

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

barcodeSymbol	Number of Data	moduleSize	Width of Barcode Image
BARCODE_EAN13_ADDON	14 or 15	BARCODE_MODULE_WIDTH_2	244
		BARCODE_MODULE_WIDTH_3	366
		BARCODE_MODULE_WIDTH_4	488
		BARCODE_MODULE_WIDTH_5	610
		BARCODE_MODULE_WIDTH_6	732
	17 or 18	BARCODE_MODULE_WIDTH_2	298
		BARCODE_MODULE_WIDTH_3	447
		BARCODE_MODULE_WIDTH_4	596
		BARCODE_MODULE_WIDTH_5	745
		BARCODE_MODULE_WIDTH_6	894
BARCODE_JAN13_ADDON	14 or 15	BARCODE_MODULE_WIDTH_2	244
		BARCODE_MODULE_WIDTH_3	366
		BARCODE_MODULE_WIDTH_4	488
		BARCODE_MODULE_WIDTH_5	610
		BARCODE_MODULE_WIDTH_6	732
	17 or 18	BARCODE_MODULE_WIDTH_2	298
		BARCODE_MODULE_WIDTH_3	447
		BARCODE_MODULE_WIDTH_4	596
		BARCODE_MODULE_WIDTH_5	745
		BARCODE_MODULE_WIDTH_6	894

B.1.2 PrintPDF417, PrintPageModePDF417



(1) Height of the barcode image

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

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

*2: row ≠ 0

(2) Width of the barcode image

When pdf417Symol is **PDF417_STANDARD**:

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

*1: column ≠ 0

When pdf417Symol is **PDF417_COMPACT**:

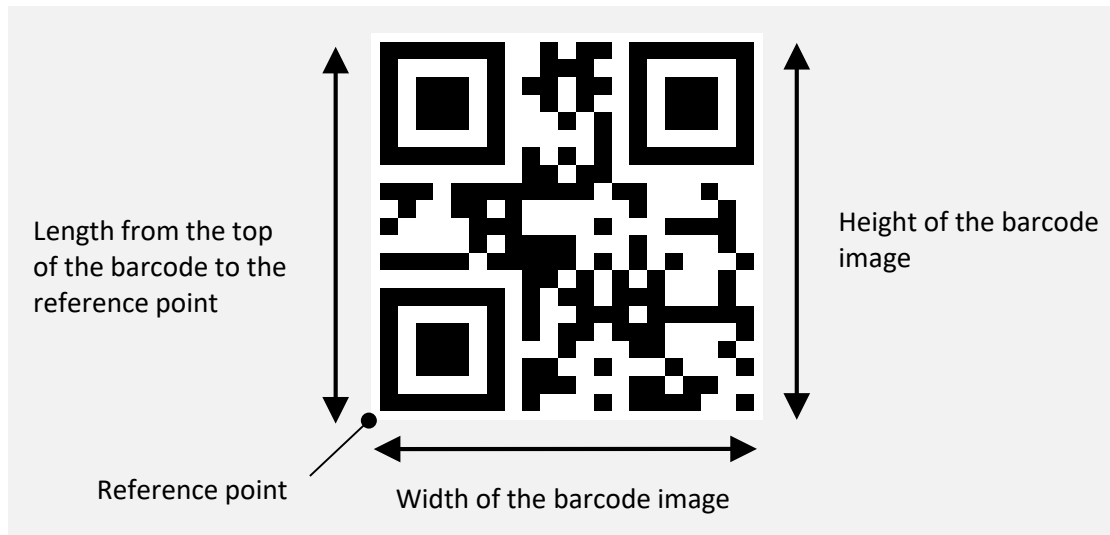
$$\text{Width of the barcode image} = (17 \times \text{column}^{*1} + 35) \times \text{module size value}$$

*1: column ≠ 0

Module Size Value

moduleSize	Module Size Value
PDF417_MODULE_WIDTH_2	2
PDF417_MODULE_WIDTH_3	3
PDF417_MODULE_WIDTH_4	4
PDF417_MODULE_WIDTH_5	5
PDF417_MODULE_WIDTH_6	6
PDF417_MODULE_WIDTH_7	7
PDF417_MODULE_WIDTH_8	8

B.1.3 PrintQRCode, PrintPageModeQRCode



(1) Height and width of the barcode image

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

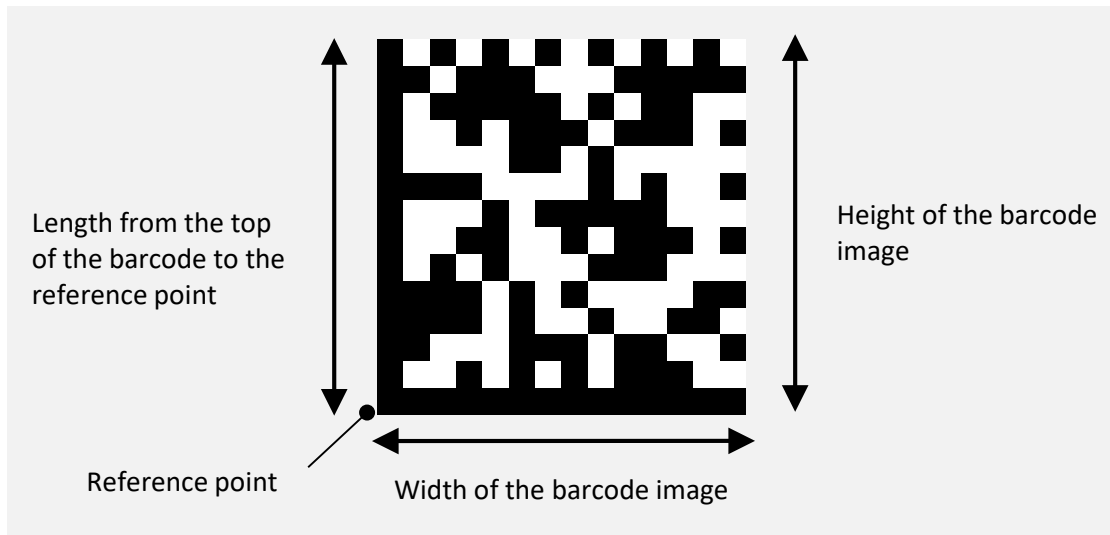
*1: Height of the barcode image = Length from the top of the barcode to the reference point

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

Module Size Value

moduleSize	Module Size Value
QR_MODULE_SIZE_2	2
QR_MODULE_SIZE_3	3
QR_MODULE_SIZE_4	4
QR_MODULE_SIZE_5	5
QR_MODULE_SIZE_6	6
QR_MODULE_SIZE_7	7
QR_MODULE_SIZE_8	8
QR_MODULE_SIZE_9	9
QR_MODULE_SIZE_10	10
QR_MODULE_SIZE_11	11
QR_MODULE_SIZE_12	12
QR_MODULE_SIZE_13	13
QR_MODULE_SIZE_14	14
QR_MODULE_SIZE_15	15
QR_MODULE_SIZE_16	16

B.1.4 PrintDataMatrix, PrintPageModeDataMatrix



(1) Height and width of the barcode image

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

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

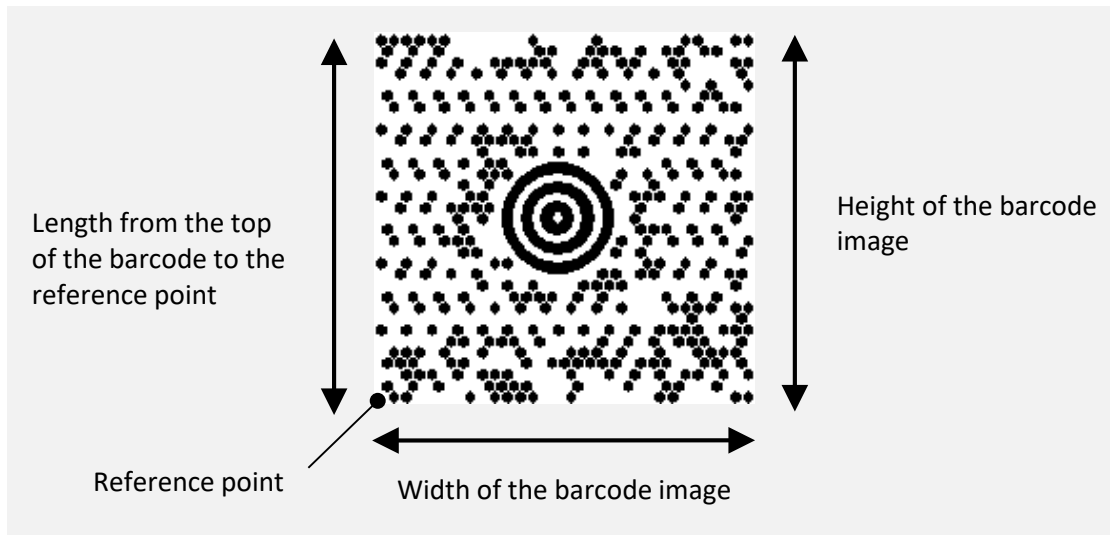
dataMatrixModule	Number of Vertical Module	Number of Horizontal Module
DATA_MATRIX_10_10	10	10
DATA_MATRIX_12_12	12	12
DATA_MATRIX_14_14	14	14
DATA_MATRIX_16_16	16	16
DATA_MATRIX_18_18	18	18
DATA_MATRIX_20_20	20	20
DATA_MATRIX_22_22	22	22
DATA_MATRIX_24_24	23	23
DATA_MATRIX_26_26	26	26
DATA_MATRIX_32_32	32	32
DATA_MATRIX_36_36	36	36
DATA_MATRIX_40_40	40	40
DATA_MATRIX_44_44	44	44
DATA_MATRIX_48_48	48	48
DATA_MATRIX_52_52	52	52
DATA_MATRIX_64_64	64	64
DATA_MATRIX_72_72	72	72
DATA_MATRIX_80_80	80	80
DATA_MATRIX_88_88	88	88
DATA_MATRIX_96_96	96	96
DATA_MATRIX_104_104	104	104
DATA_MATRIX_120_120	120	120

dataMatrixModule	Number of Vertical Module	Number of Horizontal Module
DATA_MATRIX_132_132	132	132
DATA_MATRIX_144_144	144	144
DATA_MATRIX_8_18	8	18
DATA_MATRIX_8_32	8	32
DATA_MATRIX_12_26	12	26
DATA_MATRIX_12_36	12	36
DATA_MATRIX_16_36	16	36
DATA_MATRIX_16_48	16	48

Module Size Value

moduleSize	Module Size Value
DATAMATRIX_MODULE_SIZE_2	2
DATAMATRIX_MODULE_SIZE_3	3
DATAMATRIX_MODULE_SIZE_4	4
DATAMATRIX_MODULE_SIZE_5	5
DATAMATRIX_MODULE_SIZE_6	6
DATAMATRIX_MODULE_SIZE_7	7
DATAMATRIX_MODULE_SIZE_8	8
DATAMATRIX_MODULE_SIZE_9	9
DATAMATRIX_MODULE_SIZE_10	10
DATAMATRIX_MODULE_SIZE_11	11
DATAMATRIX_MODULE_SIZE_12	12
DATAMATRIX_MODULE_SIZE_13	13
DATAMATRIX_MODULE_SIZE_14	14
DATAMATRIX_MODULE_SIZE_15	15
DATAMATRIX_MODULE_SIZE_16	16

B.1.5 PrintMaxicode, PrintPageModeMaxicode



- (1) Height of the barcode image

Height of the barcode image*1 = 200

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

- (2) Width of the barcode image

Width of the barcode image = 210

B.1.6 PrintGS1DataBarStacked, PrintPageModeGS1DataBarStacked



(1) Height and width of the barcode image

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

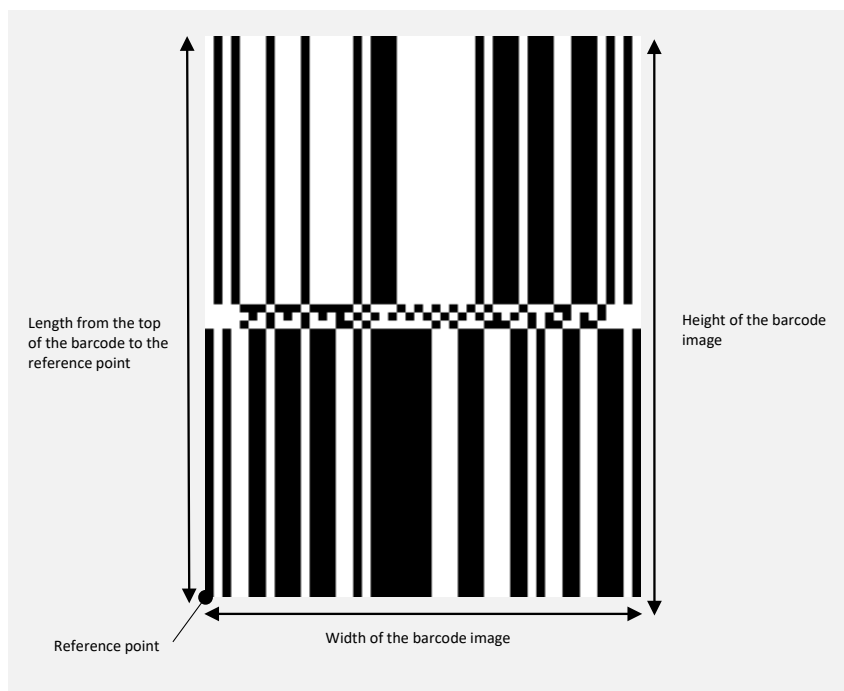
^{*1}: Height of the barcode image = Length from the top of the barcode to the reference point

Width of the barcode image = 50 × module size value

Module Size Value

moduleSize	Module Size Value
GS1DATABAR_MODULE_SIZE_2	2
GS1DATABAR_MODULE_SIZE_3	3
GS1DATABAR_MODULE_SIZE_4	4
GS1DATABAR_MODULE_SIZE_5	5
GS1DATABAR_MODULE_SIZE_6	6
GS1DATABAR_MODULE_SIZE_7	7
GS1DATABAR_MODULE_SIZE_8	8
GS1DATABAR_MODULE_SIZE_9	9
GS1DATABAR_MODULE_SIZE_10	10
GS1DATABAR_MODULE_SIZE_11	11
GS1DATABAR_MODULE_SIZE_12	12
GS1DATABAR_MODULE_SIZE_13	13
GS1DATABAR_MODULE_SIZE_14	14
GS1DATABAR_MODULE_SIZE_15	15
GS1DATABAR_MODULE_SIZE_16	16

B.1.7 PrintGS1DataBarStackedOmnidirectional, PrintPageModeGS1DataBarStackedOmnidirectional



(1) Height and width of the barcode image

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

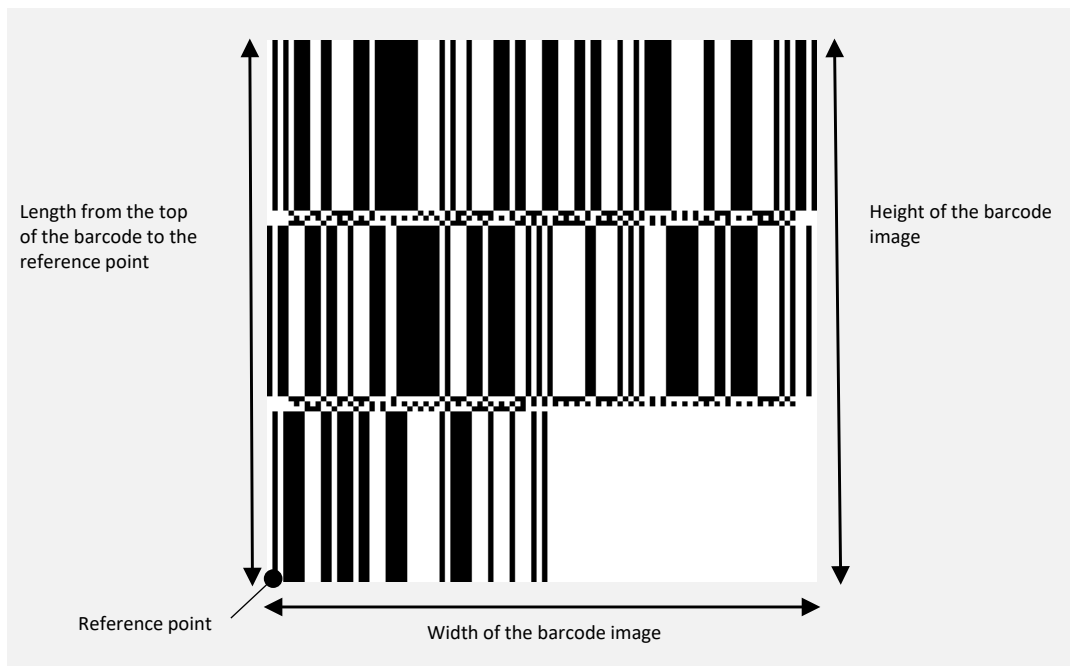
*1: Height of the barcode image = Length from the top of the barcode to the reference point

Width of the barcode image = 50 × module size value

Module Size Value

moduleSize	Module Size Value
GS1DATABAR_MODULE_SIZE_2	2
GS1DATABAR_MODULE_SIZE_3	3
GS1DATABAR_MODULE_SIZE_4	4
GS1DATABAR_MODULE_SIZE_5	5
GS1DATABAR_MODULE_SIZE_6	6
GS1DATABAR_MODULE_SIZE_7	7
GS1DATABAR_MODULE_SIZE_8	8
GS1DATABAR_MODULE_SIZE_9	9
GS1DATABAR_MODULE_SIZE_10	10
GS1DATABAR_MODULE_SIZE_11	11
GS1DATABAR_MODULE_SIZE_12	12
GS1DATABAR_MODULE_SIZE_13	13
GS1DATABAR_MODULE_SIZE_14	14
GS1DATABAR_MODULE_SIZE_15	15
GS1DATABAR_MODULE_SIZE_16	16

B.1.8 PrintGS1DataBarExpandedStacked, PrintPageModeGS1DataBarExpandedStacked



(1) Height and width of the barcode image

Height of the barcode image^{*1} = ((34 + 3) × number of row^{*2} + 34) × module size value

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

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

Width of the barcode image = (4 + 49 × column / 2) × module size value

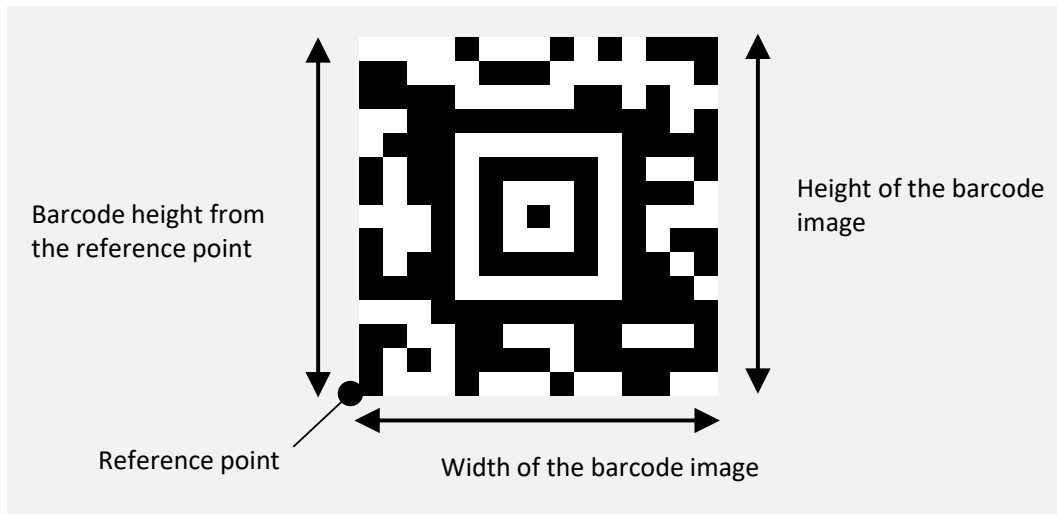
Module Size Value

moduleSize	Module Size Value
GS1DATABAR_MODULE_SIZE_2	2
GS1DATABAR_MODULE_SIZE_3	3
GS1DATABAR_MODULE_SIZE_4	4
GS1DATABAR_MODULE_SIZE_5	5
GS1DATABAR_MODULE_SIZE_6	6
GS1DATABAR_MODULE_SIZE_7	7
GS1DATABAR_MODULE_SIZE_8	8
GS1DATABAR_MODULE_SIZE_9	9
GS1DATABAR_MODULE_SIZE_10	10
GS1DATABAR_MODULE_SIZE_11	11
GS1DATABAR_MODULE_SIZE_12	12
GS1DATABAR_MODULE_SIZE_13	13
GS1DATABAR_MODULE_SIZE_14	14
GS1DATABAR_MODULE_SIZE_15	15
GS1DATABAR_MODULE_SIZE_16	16

B.2 Barcode Size List (MP-B30L)

For MP-B30L, Aztec Code can be used in addition to the barcode of "B.1 Barcode Size List (SLP720RT, RP-F10, RP-G10, MP-B30, MP-B30L)".

B.2.1 PrintAztecCode, PrintPageModeAztecCode



(1) Height and width of the barcode image

Height*¹ and width of the barcode image = number of modules + module size value

*1: Height of the barcode image = barcode height from the reference point

Sample: When aztecSymbol is **AZTECCODE_COMPACT**, layer is 1, and moduleSize is **AZTECCODE_MODULE_SIZE_6**

Height and width of the barcode image = $15 \times 6 = 90$

Number of Module

aztecSymbol	layer	Number of Module
AZTECCODE_FULLRANGE	4	31
	5	37
	6	41
	7	45
	8	49
	9	53
	10	57
	11	61
	12	67
	13	71
	14	75
	15	79
	16	83
	17	87
	18	91

aztecSymbol	layer	Number of Module
AZTECCODE_FULLRANGE	19	95
	20	101
	21	105
	22	109
	23	113
	24	117
	25	121
	26	125
	27	131
	28	135
	29	139
	30	143
	31	147
	32	151
AZTECCODE_COMPACT	1	15
	2	19
	3	23
	4	27

Module Size Value

moduleSize	Module Size Value
AZTECCODE_MODULE_SIZE_2	2
AZTECCODE_MODULE_SIZE_3	3
AZTECCODE_MODULE_SIZE_4	4
AZTECCODE_MODULE_SIZE_5	5
AZTECCODE_MODULE_SIZE_6	6
AZTECCODE_MODULE_SIZE_7	7
AZTECCODE_MODULE_SIZE_8	8
AZTECCODE_MODULE_SIZE_9	9
AZTECCODE_MODULE_SIZE_10	10
AZTECCODE_MODULE_SIZE_11	11
AZTECCODE_MODULE_SIZE_12	12
AZTECCODE_MODULE_SIZE_13	13
AZTECCODE_MODULE_SIZE_14	14
AZTECCODE_MODULE_SIZE_15	15
AZTECCODE_MODULE_SIZE_16	16

B.3 Barcode Size List (RP-E10, RP-D10, MP-B20)

B.3.1 PrintBarcode, PrintPageModeBarcode



(1) Height of the barcode image

hriFont	hriPosition	Length from Top of Barcode Height from Reference Point	Height of Barcode Image
FONT_A	HRI_NONE	moduleHeight	moduleHeight
	HRI_POSITION_ABOVE	moduleHeight + 32	moduleHeight + 32
	HRI_POSITION_BELOW	moduleHeight	moduleHeight + 32
	HRI_POSITION_ABOVE_BELOW	moduleHeight + 64	moduleHeight + 64
FONT_B	HRI_NONE	moduleHeight	moduleHeight
	HRI_POSITION_ABOVE	moduleHeight + 24	moduleHeight + 24
	HRI_POSITION_BELOW	moduleHeight	moduleHeight + 24
	HRI_POSITION_ABOVE_BELOW	moduleHeight + 48	moduleHeight + 48

(2) Width of the barcode image

barcodeSymbol	moduleSize	Width of Barcode Image
BARCODE_UPC_A	BARCODE_MODULE_WIDTH_2	226
	BARCODE_MODULE_WIDTH_3	339
	BARCODE_MODULE_WIDTH_4	452
	BARCODE_MODULE_WIDTH_5	565
	BARCODE_MODULE_WIDTH_6	678
BARCODE_UPC_E	BARCODE_MODULE_WIDTH_2	130
	BARCODE_MODULE_WIDTH_3	195
	BARCODE_MODULE_WIDTH_4	260
	BARCODE_MODULE_WIDTH_5	325
	BARCODE_MODULE_WIDTH_6	390
BARCODE_EAN13	BARCODE_MODULE_WIDTH_2	226
	BARCODE_MODULE_WIDTH_3	339
	BARCODE_MODULE_WIDTH_4	452
	BARCODE_MODULE_WIDTH_5	565
	BARCODE_MODULE_WIDTH_6	678
BARCODE_JAN13	BARCODE_MODULE_WIDTH_2	226
	BARCODE_MODULE_WIDTH_3	339
	BARCODE_MODULE_WIDTH_4	452
	BARCODE_MODULE_WIDTH_5	565
	BARCODE_MODULE_WIDTH_6	678
BARCODE_EAN8	BARCODE_MODULE_WIDTH_2	162
	BARCODE_MODULE_WIDTH_3	243
	BARCODE_MODULE_WIDTH_4	324
	BARCODE_MODULE_WIDTH_5	405
	BARCODE_MODULE_WIDTH_6	486
BARCODE_JAN8	BARCODE_MODULE_WIDTH_2	162
	BARCODE_MODULE_WIDTH_3	243
	BARCODE_MODULE_WIDTH_4	324
	BARCODE_MODULE_WIDTH_5	405
	BARCODE_MODULE_WIDTH_6	486
BARCODE_CODE93	BARCODE_MODULE_WIDTH_2	$18 \times \text{number of barcode data} + 96$
	BARCODE_MODULE_WIDTH_3	$27 \times \text{number of barcode data} + 144$
	BARCODE_MODULE_WIDTH_4	$36 \times \text{number of barcode data} + 192$
	BARCODE_MODULE_WIDTH_5	$45 \times \text{number of barcode data} + 240$
	BARCODE_MODULE_WIDTH_6	$54 \times \text{number of barcode data} + 288$

barcodeSymbol	moduleSize	Width of Barcode Image
BARCODE_CODE128	BARCODE_MODULE_WIDTH_2	22 × number of barcode data + 66
	BARCODE_MODULE_WIDTH_3	33 × number of barcode data + 99
	BARCODE_MODULE_WIDTH_4	44 × number of barcode data + 132
	BARCODE_MODULE_WIDTH_5	55 × number of barcode data + 165
	BARCODE_MODULE_WIDTH_6	66 × number of barcode data + 198

barcodeSymbol	nwRatio	moduleSize	Width of Barcode Image
BARCODE_CODE39	NWRATIO_1T02	BARCODE_MODULE_WIDTH_2	26 × number of barcode data + 90
		BARCODE_MODULE_WIDTH_3	39 × number of barcode data + 135
		BARCODE_MODULE_WIDTH_4	52 × number of barcode data + 180
		BARCODE_MODULE_WIDTH_5	65 × number of barcode data + 225
		BARCODE_MODULE_WIDTH_6	78 × number of barcode data + 270
	NWRATIO_1T02_5	BARCODE_MODULE_WIDTH_2	29 × number of barcode data + 96
		BARCODE_MODULE_WIDTH_3	45 × number of barcode data + 147
		BARCODE_MODULE_WIDTH_4	58 × number of barcode data + 192
		BARCODE_MODULE_WIDTH_5	74 × number of barcode data + 243
		BARCODE_MODULE_WIDTH_6	87 × number of barcode data + 288
	NWRATIO_1T03	BARCODE_MODULE_WIDTH_2	32 × number of barcode data + 102
		BARCODE_MODULE_WIDTH_3	48 × number of barcode data + 153
		BARCODE_MODULE_WIDTH_4	64 × number of barcode data + 204
		BARCODE_MODULE_WIDTH_5	80 × number of barcode data + 255
		BARCODE_MODULE_WIDTH_6	96 × number of barcode data + 306
BARCODE_ITF	NWRATIO_1T02	BARCODE_MODULE_WIDTH_2	14 × number of barcode data + 56
		BARCODE_MODULE_WIDTH_3	21 × number of barcode data + 84
		BARCODE_MODULE_WIDTH_4	28 × number of barcode data + 112
		BARCODE_MODULE_WIDTH_5	35 × number of barcode data + 140
		BARCODE_MODULE_WIDTH_6	42 × number of barcode data + 168
	NWRATIO_1T02_5	BARCODE_MODULE_WIDTH_2	16 × number of barcode data + 57
		BARCODE_MODULE_WIDTH_3	25 × number of barcode data + 86
		BARCODE_MODULE_WIDTH_4	32 × number of barcode data + 114
		BARCODE_MODULE_WIDTH_5	41 × number of barcode data + 143
		BARCODE_MODULE_WIDTH_6	48 × number of barcode data + 171
	NWRATIO_1T03	BARCODE_MODULE_WIDTH_2	18 × number of barcode data + 58
		BARCODE_MODULE_WIDTH_3	27 × number of barcode data + 87
		BARCODE_MODULE_WIDTH_4	36 × number of barcode data + 116
		BARCODE_MODULE_WIDTH_5	45 × number of barcode data + 145
		BARCODE_MODULE_WIDTH_6	54 × number of barcode data + 174

barcodeSymbol	nwRatio	moduleSize	Width of Barcode Image
BARCODE_CODABAR* ¹	NWRATIO_1T02	BARCODE_MODULE_WIDTH_2	$20 \times \text{number of data} + 2 \times (2 + \text{number of wide data}) + 38$
		BARCODE_MODULE_WIDTH_3	$30 \times \text{number of data} + 3 \times (2 + \text{number of wide data}) + 57$
		BARCODE_MODULE_WIDTH_4	$40 \times \text{number of data} + 4 \times (2 + \text{number of wide data}) + 76$
		BARCODE_MODULE_WIDTH_5	$50 \times \text{number of data} + 5 \times (2 + \text{number of wide data}) + 95$
		BARCODE_MODULE_WIDTH_6	$60 \times \text{number of data} + 6 \times (2 + \text{number of wide data}) + 114$
	NWRATIO_1T02_5	BARCODE_MODULE_WIDTH_2	$22 \times \text{number of data} + 3 \times (2 + \text{number of wide data}) + 38$
		BARCODE_MODULE_WIDTH_3	$34 \times \text{number of data} + 5 \times (2 + \text{number of wide data}) + 57$
		BARCODE_MODULE_WIDTH_4	$44 \times \text{number of data} + 6 \times (2 + \text{number of wide data}) + 76$
		BARCODE_MODULE_WIDTH_5	$56 \times \text{number of data} + 8 \times (2 + \text{number of wide data}) + 95$
		BARCODE_MODULE_WIDTH_6	$66 \times \text{number of data} + 9 \times (2 + \text{number of wide data}) + 114$
	NWRATIO_1T03	BARCODE_MODULE_WIDTH_2	$24 \times \text{number of data} + 4 \times (2 + \text{number of wide data}) + 38$
		BARCODE_MODULE_WIDTH_3	$36 \times \text{number of data} + 6 \times (2 + \text{number of wide data}) + 57$
		BARCODE_MODULE_WIDTH_4	$48 \times \text{number of data} + 8 \times (2 + \text{number of wide data}) + 76$
		BARCODE_MODULE_WIDTH_5	$60 \times \text{number of data} + 10 \times (2 + \text{number of wide data}) + 95$
		BARCODE_MODULE_WIDTH_6	$72 \times \text{number of data} + 12 \times (2 + \text{number of wide data}) + 114$

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

barcodeSymbol	Number of Data	moduleSize	Width of Barcode Image
BARCODE_EAN13_ADDON	14 or 15	BARCODE_MODULE_WIDTH_2	276
		BARCODE_MODULE_WIDTH_3	414
		BARCODE_MODULE_WIDTH_4	552
		BARCODE_MODULE_WIDTH_5	690
		BARCODE_MODULE_WIDTH_6	828
	17 or 18	BARCODE_MODULE_WIDTH_2	330
		BARCODE_MODULE_WIDTH_3	495
		BARCODE_MODULE_WIDTH_4	660
		BARCODE_MODULE_WIDTH_5	825
		BARCODE_MODULE_WIDTH_6	990
BARCODE_JAN13_ADDON	14 or 15	BARCODE_MODULE_WIDTH_2	276
		BARCODE_MODULE_WIDTH_3	414
		BARCODE_MODULE_WIDTH_4	552
		BARCODE_MODULE_WIDTH_5	6690
		BARCODE_MODULE_WIDTH_6	828
	17 or 18	BARCODE_MODULE_WIDTH_2	330
		BARCODE_MODULE_WIDTH_3	495
		BARCODE_MODULE_WIDTH_4	660
		BARCODE_MODULE_WIDTH_5	825
		BARCODE_MODULE_WIDTH_6	990

B.3.2 PrintPDF417, PrintPageModePDF417



(1) Height of the barcode image

moduleSize	Height of Barcode Image ^{*1}
PDF417_MODULE_WIDTH_2	$\text{moduleHeight} \times \text{row}^{*2} + 8$
PDF417_MODULE_WIDTH_3	$\text{moduleHeight} \times \text{row}^{*2} + 12$
PDF417_MODULE_WIDTH_4	$\text{moduleHeight} \times \text{row}^{*2} + 16$
PDF417_MODULE_WIDTH_5 ^{*3}	$\text{moduleHeight} \times \text{row}^{*2} + 20$
PDF417_MODULE_WIDTH_6 ^{*3}	$\text{moduleHeight} \times \text{row}^{*2} + 24$
PDF417_MODULE_WIDTH_7 ^{*3}	$\text{moduleHeight} \times \text{row}^{*2} + 28$
PDF417_MODULE_WIDTH_8 ^{*3}	$\text{moduleHeight} \times \text{row}^{*2} + 32$

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

*2: Parameter row $\neq 0$

*3: Supported in only MP-B20.

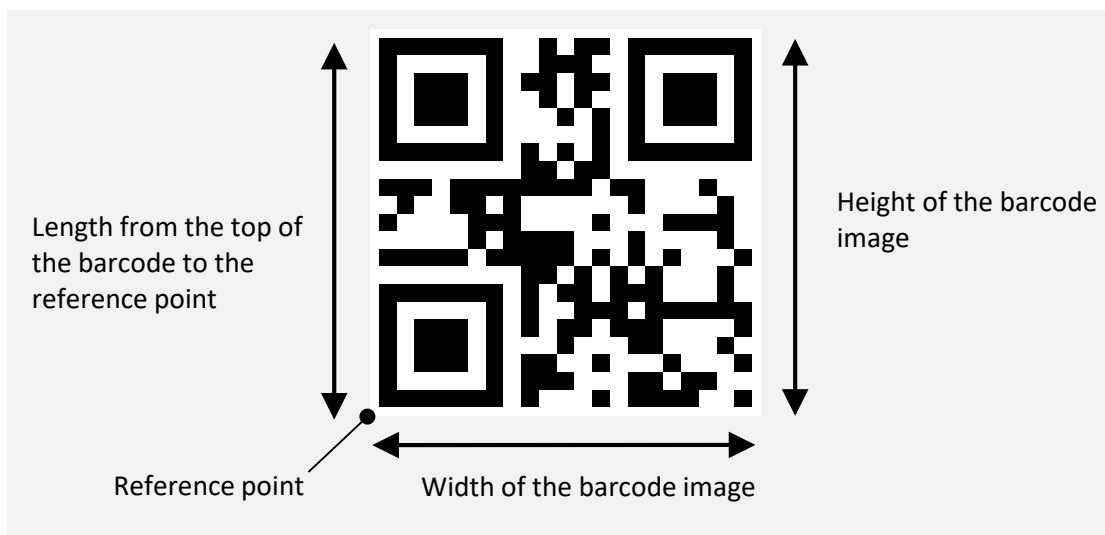
(2) Width of the barcode image

pdf417Symol	moduleSize	Width of Barcode Image
PDF417_STANDARD	PDF417_MODULE_WIDTH_2	$(17 \times \text{column}^{*1} + 69) \times 2 + 8$
	PDF417_MODULE_WIDTH_3	$(17 \times \text{column}^{*1} + 69) \times 2 + 12$
	PDF417_MODULE_WIDTH_4	$(17 \times \text{column}^{*1} + 69) \times 2 + 16$
	PDF417_MODULE_WIDTH_5 ^{*2}	$(17 \times \text{column}^{*1} + 69) \times 2 + 20$
	PDF417_MODULE_WIDTH_6 ^{*2}	$(17 \times \text{column}^{*1} + 69) \times 2 + 24$
	PDF417_MODULE_WIDTH_7 ^{*2}	$(17 \times \text{column}^{*1} + 69) \times 2 + 28$
	PDF417_MODULE_WIDTH_8 ^{*2}	$(17 \times \text{column}^{*1} + 69) \times 2 + 32$
PDF417_COMPACT	PDF417_MODULE_WIDTH_2	$(17 \times \text{column}^{*1} + 35) \times 2 + 8$
	PDF417_MODULE_WIDTH_3	$(17 \times \text{column}^{*1} + 35) \times 2 + 12$
	PDF417_MODULE_WIDTH_4	$(17 \times \text{column}^{*1} + 35) \times 2 + 16$
	PDF417_MODULE_WIDTH_5 ^{*2}	$(17 \times \text{column}^{*1} + 35) \times 2 + 20$
	PDF417_MODULE_WIDTH_6 ^{*2}	$(17 \times \text{column}^{*1} + 35) \times 2 + 24$
	PDF417_MODULE_WIDTH_7 ^{*2}	$(17 \times \text{column}^{*1} + 35) \times 2 + 28$
	PDF417_MODULE_WIDTH_8 ^{*2}	$(17 \times \text{column}^{*1} + 35) \times 2 + 32$

*1: Parameter column $\neq 0$

*2: Supported in only MP-B20.

B.3.3 PrintQRCode, PrintPageModeQRCode



(1) Height and width of the barcode image

Height*¹ and width of the barcode image = $(4 \times \text{version}^{*2} + 17 + 8) \times \text{module size value}$

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

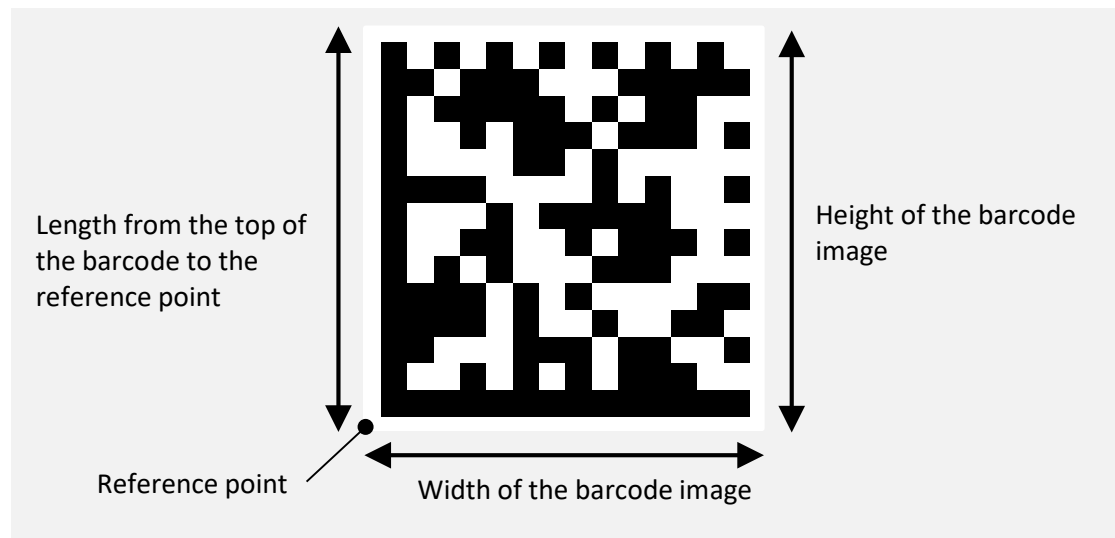
*2: The version is determined by the content of the barcode data and the error correction level.

Module Size Value

moduleSize	Module Size Value
QR_MODULE_SIZE_2	2
QR_MODULE_SIZE_3	3
QR_MODULE_SIZE_4	4
QR_MODULE_SIZE_5	5
QR_MODULE_SIZE_6	6
QR_MODULE_SIZE_7	7
QR_MODULE_SIZE_8	8
QR_MODULE_SIZE_9	9
QR_MODULE_SIZE_10	10
QR_MODULE_SIZE_11	11
QR_MODULE_SIZE_12* ¹	12
QR_MODULE_SIZE_13* ¹	13
QR_MODULE_SIZE_14* ¹	14
QR_MODULE_SIZE_15* ¹	15
QR_MODULE_SIZE_16* ¹	16

*1: Supported in only MP-B20.

B.3.4 PrintDataMatrix, PrintPageModeDataMatrix



(1) Height and width of the barcode image

Height of the barcode image = (number of vertical module + 2) × module size value

Width of the barcode image = (number of horizontal module + 2) × module size value

dataMatrixModule	Number of Vertical Module	Number of Horizontal Module
DATA_MATRIX_10_10	10	10
DATA_MATRIX_12_12	12	12
DATA_MATRIX_14_14	14	14
DATA_MATRIX_16_16	16	16
DATA_MATRIX_18_18	18	18
DATA_MATRIX_20_20	20	20
DATA_MATRIX_22_22	22	22
DATA_MATRIX_24_24	23	23
DATA_MATRIX_26_26	26	26
DATA_MATRIX_32_32	32	32
DATA_MATRIX_36_36	36	36
DATA_MATRIX_40_40	40	40
DATA_MATRIX_44_44	44	44
DATA_MATRIX_48_48	48	48
DATA_MATRIX_52_52	52	52
DATA_MATRIX_64_64	64	64
DATA_MATRIX_72_72	72	72
DATA_MATRIX_80_80	80	80
DATA_MATRIX_88_88	88	88
DATA_MATRIX_96_96	96	96
DATA_MATRIX_104_104	104	104

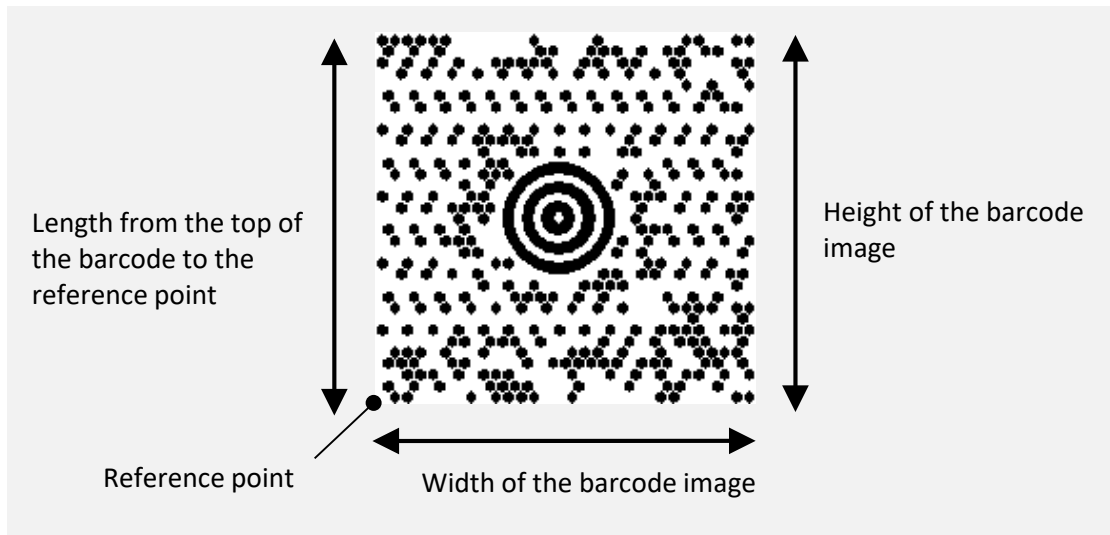
dataMatrixModule	Number of Vertical Module	Number of Horizontal Module
DATA_MATRIX_120_120	120	120
DATA_MATRIX_132_132	132	132
DATA_MATRIX_144_144	144	144
DATA_MATRIX_8_18	8	18
DATA_MATRIX_8_32	8	32
DATA_MATRIX_12_26	12	26
DATA_MATRIX_12_36	12	36
DATA_MATRIX_16_36	16	36
DATA_MATRIX_16_48	16	48

Module Size Value

moduleSize	Module Size Value
DATAMATRIX_MODULE_SIZE_2	2
DATAMATRIX_MODULE_SIZE_3	3
DATAMATRIX_MODULE_SIZE_4	4
DATAMATRIX_MODULE_SIZE_5	5
DATAMATRIX_MODULE_SIZE_6	6
DATAMATRIX_MODULE_SIZE_7	7
DATAMATRIX_MODULE_SIZE_8	8
DATAMATRIX_MODULE_SIZE_9	9
DATAMATRIX_MODULE_SIZE_10	10
DATAMATRIX_MODULE_SIZE_11	11
DATAMATRIX_MODULE_SIZE_12*1	12
DATAMATRIX_MODULE_SIZE_13*1	13
DATAMATRIX_MODULE_SIZE_14*1	14
DATAMATRIX_MODULE_SIZE_15*1	15
DATAMATRIX_MODULE_SIZE_16*1	16

*1: Supported in only MP-B20.

B.3.5 PrintMaxicode, PrintPageModeMaxicode



(1) Height of the barcode image

Height of the barcode image^{*1} = 215

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

(2) Width of the barcode image

Width of the barcode image = 225

B.3.6 PrintGS1DataBarStacked

Supported in only MP-B20.



(1) Height and width of the barcode image

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

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

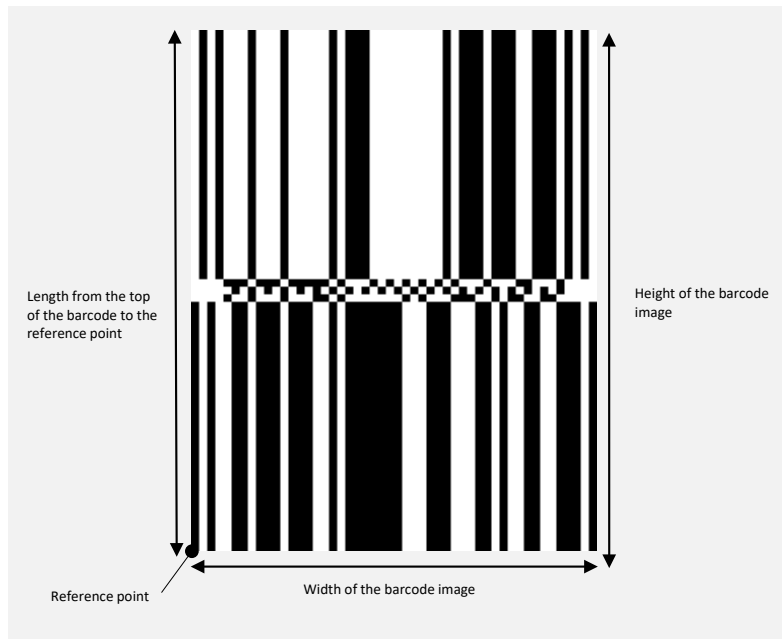
Width of the barcode image = 50 × module size value

Module Size Value

moduleSize	Module Size Value
GS1DATABAR_MODULE_SIZE_2	2
GS1DATABAR_MODULE_SIZE_3	3
GS1DATABAR_MODULE_SIZE_4	4
GS1DATABAR_MODULE_SIZE_5	5
GS1DATABAR_MODULE_SIZE_6	6
GS1DATABAR_MODULE_SIZE_7	7
GS1DATABAR_MODULE_SIZE_8	8
GS1DATABAR_MODULE_SIZE_9	9
GS1DATABAR_MODULE_SIZE_10	10
GS1DATABAR_MODULE_SIZE_11	11
GS1DATABAR_MODULE_SIZE_12	12
GS1DATABAR_MODULE_SIZE_13	13
GS1DATABAR_MODULE_SIZE_14	14
GS1DATABAR_MODULE_SIZE_15	15
GS1DATABAR_MODULE_SIZE_16	16

B.3.7 PrintGS1DataBarStackedOmnidirectional

Supported in only MP-B20.



(1) Height and width of the barcode image

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

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

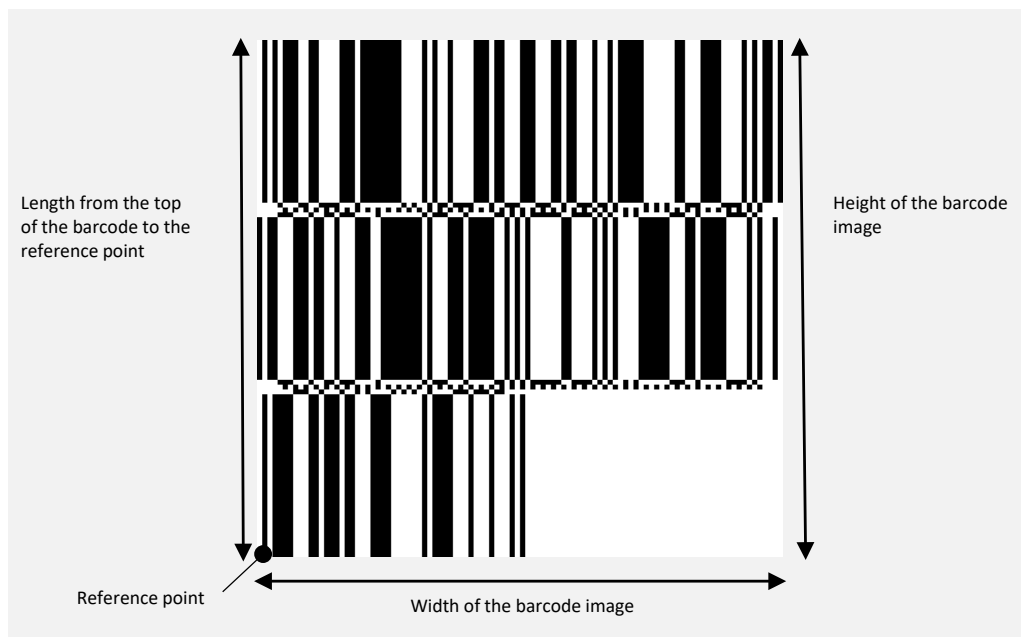
Width of the barcode image = 50 × module size value

Module Size Value

moduleSize	Module Size Value
GS1DATABAR_MODULE_SIZE_2	2
GS1DATABAR_MODULE_SIZE_3	3
GS1DATABAR_MODULE_SIZE_4	4
GS1DATABAR_MODULE_SIZE_5	5
GS1DATABAR_MODULE_SIZE_6	6
GS1DATABAR_MODULE_SIZE_7	7
GS1DATABAR_MODULE_SIZE_8	8
GS1DATABAR_MODULE_SIZE_9	9
GS1DATABAR_MODULE_SIZE_10	10
GS1DATABAR_MODULE_SIZE_11	11
GS1DATABAR_MODULE_SIZE_12	12
GS1DATABAR_MODULE_SIZE_13	13
GS1DATABAR_MODULE_SIZE_14	14
GS1DATABAR_MODULE_SIZE_15	15
GS1DATABAR_MODULE_SIZE_16	16

B.3.8 PrintGS1DataBarExpandedStacked

Supported in only MP-B20.



(1) Height and width of the barcode image

Height of the barcode image^{*1} = ((34 + 3) × number of row^{*2} + 34) × module size value

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

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

Width of the barcode image = (4 + 49 × column / 2) × module size value

Module Size Value

moduleSize	Module Size Value
GS1DATABAR_MODULE_SIZE_2	2
GS1DATABAR_MODULE_SIZE_3	3
GS1DATABAR_MODULE_SIZE_4	4
GS1DATABAR_MODULE_SIZE_5	5
GS1DATABAR_MODULE_SIZE_6	6
GS1DATABAR_MODULE_SIZE_7	7
GS1DATABAR_MODULE_SIZE_8	8
GS1DATABAR_MODULE_SIZE_9	9
GS1DATABAR_MODULE_SIZE_10	10
GS1DATABAR_MODULE_SIZE_11	11
GS1DATABAR_MODULE_SIZE_12	12
GS1DATABAR_MODULE_SIZE_13	13
GS1DATABAR_MODULE_SIZE_14	14
GS1DATABAR_MODULE_SIZE_15	15
GS1DATABAR_MODULE_SIZE_16	16

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(Specifications are subject to change without notice.)