

# StarPRNT iOS SDK User's Manual

Apr 01, 2016

## **Abstract**

---

This paper provides information about the StarPRNT iOS SDK.

It provides guidelines for our customers to build the StarPRNT application.

## Version History

Release Date	Update
Apr 01, 2016	Release

## Contents

1	How to configure iOS StarPRNT Project .....	6
1.1	Add iOS StarPRNT SDK to Project .....	6
1.2	Add following frameworks to Project.....	6
1.3	Edit information property list.....	6
2	StarIOExt class included in the StarIO_Extension.framework.....	7
2.1	createCommandBuilder Method.....	7
2.2	StarIOExtEmulation Constants .....	8
2.3	Model : portSetting and StarIOExtEmulation .....	9
3	ISCBBuilder interface included in the StarIO_Extension.framework.....	10
3.1	Model : ISCBBuilder interface Method.....	13
3.2	beginDocument Method .....	17
3.3	endDocument Method .....	18
3.4	appendInitialization Method .....	19
3.5	appendData Method .....	20
3.6	appendRawData Method .....	21
3.7	appendFontStyle Method.....	22
3.8	appendCodePage Method.....	23
3.9	appendInternational Method.....	26
3.10	appendLineFeed Method .....	28
3.11	appendUnitFeed Method .....	29
3.12	appendCharacterSpace Method.....	30
3.13	appendLineSpace Method.....	31
3.14	appendEmphasis Method.....	32
3.15	appendInvert Method .....	33
3.16	appendMultiple Method .....	34
3.17	appendUnderLine Method .....	36
3.18	appendLogo Method .....	37
3.19	appendAbsolutePosition Method .....	38
3.20	appendAlignment Method .....	39
3.21	appendCutPaper Method.....	40
3.22	appendPeripheral Method .....	41
3.23	appendSound Method.....	42
3.24	appendBarcodeData Method .....	43
3.25	appendBarcodeDataWithAbsolutePosition Method.....	45
3.26	appendBarcodeDataWithAlignment Method .....	47
3.27	appendPdf417Data Method.....	49
3.28	appendPdf417DataWithAbsolutePosition Method .....	51
3.29	appendPdf417DataWithAlignment Method .....	53
3.30	appendQrCodeData Method .....	55
3.31	appendQrCodeDataWithAbsolutePosition Method .....	56
3.32	appendQrCodeDataWithAlignment Method .....	57
3.33	appendBitmap Method .....	59
3.34	appendBitmapWithAbsolutePosition Method.....	61
3.35	appendBitmapWithAlignment Method.....	63
3.36	commands Property .....	65
3.37	SCBInitializationType Constants .....	66
3.38	SCBFontStyleType Constants .....	66
3.39	SCBCodePageType Constants.....	67
3.40	SCBInternationalType Constants .....	69
3.41	SCBLogoSize Constants.....	70

3.42	SCBAlignmentPosition Constants .....	70
3.43	SCBCutPaperAction Constants .....	71
3.44	SCBPeripheralChannel Constants .....	71
3.45	SCBSoundChannel Constants .....	72
3.46	SCBBarcodeSymbology Constants .....	72
3.47	SCBBarcodeWidth Constants .....	73
3.48	SCBPdf417Level Constants .....	74
3.49	SCBQRCodeModel Constants .....	74
3.50	SCBQRCodeLevel Constants .....	75
3.51	SCBBitmapConverterRotation Constants .....	75
4	StarIoExtManager class included in the StarIO_Extension.framework .....	76
4.1	initWithType Method .....	77
4.2	connect Method .....	78
4.3	disconnect Method .....	79
4.4	port Property .....	79
4.5	lock Property .....	80
4.6	delegate Property .....	80
4.7	printerStatus Property .....	81
4.8	printerPaperStatus Property .....	81
4.9	printerCoverStatus Property .....	82
4.10	cashDrawerStatus Property .....	82
4.11	barcodeReaderStatus Property .....	83
4.12	cashDrawerOpenActiveHigh Property .....	83
4.13	StarIoExtManagerType Constants .....	84
4.14	StarIoExtManagerPrinterStatus Constants .....	84
4.15	StarIoExtManagerPrinterPaperStatus Constants .....	85
4.16	StarIoExtManagerPrinterCoverStatus Constants .....	85
4.17	StarIoExtManagerCashDrawerStatus Constants .....	86
4.18	StarIoExtManagerBarcodeReaderStatus Constants .....	86
5	StarIoExtManagerDelegate class included in the StarIO_Extension.framework .....	87
5.1	didPrinterImpossible Method .....	87
5.2	didPrinterOnline Method .....	88
5.3	didPrinterOffline Method .....	88
5.4	didPrinterPaperReady Method .....	89
5.5	didPrinterPaperNearEmpty Method .....	89
5.6	didPrinterPaperEmpty Method .....	90
5.7	didPrinterCoverOpen Method .....	90
5.8	didPrinterCoverClose Method .....	91
5.9	didCashDrawerOpen Method .....	91
5.10	didCashDrawerClose Method .....	92
5.11	didBarcodeReaderImpossible Method .....	92
5.12	didBarcodeReaderConnect Method .....	93
5.13	didBarcodeReaderDisconnect Method .....	93
5.14	didBarcodeDataReceive Method .....	94
5.15	didAccessoryConnectSuccess Method .....	95
5.16	didAccessoryConnectFailure Method .....	95
5.17	didAccessoryDisconnect Method .....	96
5.18	didStatusUpdate Method .....	97
6	StarPRNT iOS SDK Sample .....	98
6.1	Communication .....	98
7	API expanded for Swift support included in the StarIO.framework .....	101

8	SMCloudServices class included in the SMCloudServices.framework.....	102
8.1	showRegistrationView Method .....	102
8.2	isRegistered Method .....	103
9	SMCSAllReceipts class included in the SMCloudServices.framework .....	104
9.1	Model : SMCSAllReceipts class Method .....	104
9.2	uploadBitmap Method .....	105
9.3	updateStatus Method.....	106
9.4	generateAllReceipts Method.....	107
	Appendix A. How to use AllReceipts™ (Guides for Retailers).....	109

## 1 How to configure iOS StarPRNT Project

### 1.1 Add iOS StarPRNT SDK to Project.

- Add StarIO.framework to “Link Binary With Libraries” on the “Build Phases” tab.
- Add StarIO\_Extension.framework to “Link Binary With Libraries” on the “Build Phases” tab.
- Add SMCloudServices.framework to “Link Binary With Libraries” on the “Build Phases” tab.
- Add SMCloudServicesResources.bundle in the SMCloudServices.framework folder to “Copy Bundle Resources” on the “Build Phases” tab.

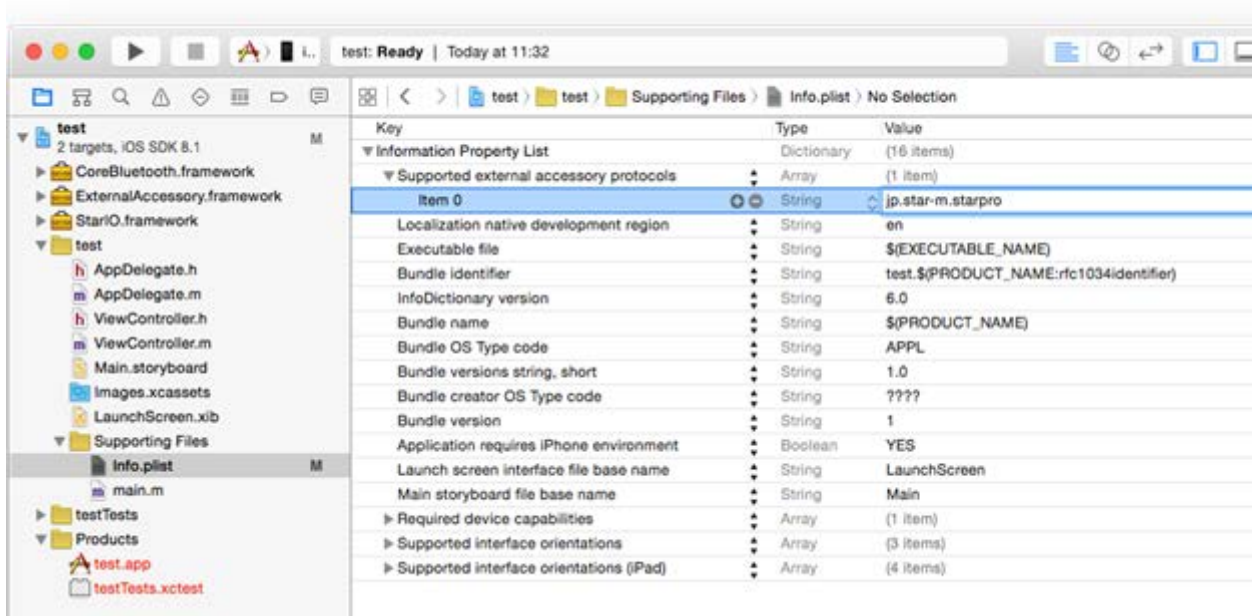
### 1.2 Add following frameworks to Project.

- CoreBluetooth.framework
- ExternalAccessory.framework

### 1.3 Edit information property list.

**Note: Please do not apply this, if you are not using Bluetooth interface.**

1. Click on the information property list file (default : “Info.plist”).
2. Add the “Supported external accessory protocols” Key.
3. Click the triangle of this key and set the value for the “Item 0” to “jp.star-m.starpro”.



## 2 StarloExt class included in the StarIO\_Extension.framework

### Method

Name	Description
createCommandBuilder	Creates the ISCBBuilder object.

### Constants

Name	Description
StarloExtEmulation	Emulation type constants.

### 2.1 createCommandBuilder Method

Creates the ISCBBuilder object.

### Declaration

```
+ (ISCBBuilder *)createCommandBuilder:(StarloExtEmulation)emulation;
```

### Parameter

Name	Description	Object type
emulation	Emulation type. <ul style="list-style-type: none"> <li>StarloExtEmulationStarPRNT ... StarPRNT emulation.</li> <li>StarloExtEmulationStarLine ... STAR Line Mode emulation.</li> <li>StarloExtEmulationStarGraphic ... STAR Graphic Mode emulation.</li> <li>StarloExtEmulationEscPos ... ESC/POS emulation.</li> <li>StarloExtEmulationEscPosMobile ... ESC/POS Mobile emulation.</li> <li>StarloExtEmulationStarDotImpact ... STAR Dot Impact emulation.</li> </ul>	StarloExtEmulation

### Return value

Description	Object type
ISCBBuilder object.	ISCBBuilder

### Example

```
+ (NSData *)createCommandImage:(StarloExtEmulation)emulation image:(UIImage *)image {
    ISCBBuilder *builder = [StarloExt createCommandBuilder:emulation];

    [builder beginDocument];

    [builder appendBitmap:image diffusion:NO];

    [builder appendCutPaper:SCBCutPaperActionPartialCutWithFeed];

    [builder endDocument];

    return [builder.commands copy];
}
```

Refer to *PrinterFunctions.m*.

## 2.2 StarloExtEmulation Constants

Emulation type constants.

### Declaration

```
typedef NS_ENUM(NSInteger, StarloExtEmulation) {
    StarloExtEmulationNone = 0,
    StarloExtEmulationStarPRNT,
    StarloExtEmulationStarLine,
    StarloExtEmulationStarGraphic,
    StarloExtEmulationEscPos,
    StarloExtEmulationEscPosMobile,
    StarloExtEmulationStarDotImpact
};
```

### Constants

Name	Description
StarloExtEmulationStarPRNT	StarPRNT emulation.
StarloExtEmulationStarLine	STAR Line Mode emulation.
StarloExtEmulationStarGraphic	STAR Graphic Mode emulation.
StarloExtEmulationEscPos	ESC/POS emulation.
StarloExtEmulationEscPosMobile	ESC/POS Mobile emulation.
StarloExtEmulationStarDotImpact	STAR Dot Impact emulation.



## 2.3 Model : portSetting and StarloExtEmulation

Strings of “portSettings” and Constants of “StarloExtEmulation” for each model.

Model	portSettings	StarloExtEmulation
mPOP	“”	StarloExtEmulationStarPRNT
FVP10	“”	StarloExtEmulationStarLine
TSP100	“”	StarloExtEmulationStarGraphic
TSP650II	“”	StarloExtEmulationStarLine
TSP700II	“”	StarloExtEmulationStarLine
TSP800II	“”	StarloExtEmulationStarLine
SM-S210i	“mini”	StarloExtEmulationEscPosMobile
SM-S220i	“mini”	StarloExtEmulationEscPosMobile
SM-S230i	“mini”	StarloExtEmulationEscPosMobile
SM-T300i	“mini”	StarloExtEmulationEscPosMobile
SM-T400i	“mini”	StarloExtEmulationEscPosMobile
BSC10	“escpos”	StarloExtEmulationEscPos
SM-S210i StarPRNT	"Portable"	StarloExtEmulationStarPRNT
SM-S220i StarPRNT	"Portable"	StarloExtEmulationStarPRNT
SM-S230i StarPRNT	"Portable"	StarloExtEmulationStarPRNT
SM-T300i StarPRNT	"Portable"	StarloExtEmulationStarPRNT
SM-T400i StarPRNT	"Portable"	StarloExtEmulationStarPRNT
SM-L200	"Portable"	StarloExtEmulationStarPRNT
SP700	“”	StarloExtEmulationStarDotImpact

portSettings is used for getPort Method of SMPort class included in the StarIO.framework or initWithType method of StarloExtManager class included in the StarIO\_Extension.framework.

StarloExtEmulation is used for createCommandBuilder method of StarloExt class included in the StarIO\_Extension.framework.

### 3 ISCBBuilder interface included in the StarIO\_Extension.framework

#### Method

Name	Description
beginDocument	Begin document command is generated and added to the commands property.
endDocument	End document command is generated and added to the commands property.
appendInitialization	Initialization command is generated and added to the commands property.
appendByte	Data is added to the commands property.
appendData	
appendBytes	
appendRawByte	Raw data is added to the commands property.
appendRawData	
appendRawBytes	
appendFontStyle	Select command of the font style is generated and added to the commands property.
appendCodePage	Select command of the code page is generated and added to the commands property.
appendInternational	Select command of the international character mode is generated and added to the commands property.
appendLineFeed	Line feed command is generated and added to the commands property.
appendDataWithLineFeed	
appendBytesWithLineFeed	
appendUnitFeed	Unit feed command is generated and added to the commands property.
appendDataWithUnitFeed	
appendBytesWithUnitFeed	
appendCharacterSpace	Set command of the character space is generated and added to the commands property.
appendLineSpace	Set command of the line space is generated and added to the commands property.
appendEmphasis	Select command of the emphasis mode is generated and added to the commands property.
appendDataWithEmphasis	
appendBytesWithEmphasis	
appendInvert	Select command of the invert mode is generated and added to the commands property.
appendDataWithInvert	
appendBytesWithInvert	
appendMultiple	Select command of the multiple mode is generated and added to the commands property.
appendDataWithMultiple	
appendBytesWithMultiple	
appendMultipleHeight	
appendDataWithMultipleHeight	
appendBytesWithMultipleHeight	
appendMultipleWidth	
appendDataWithMultipleWidth	
appendBytesWithMultipleWidth	
appendUnderLine	Select command of the under line mode is generated and added to the commands property.
appendDataWithUnderLine	
appendBytesWithUnderLine	
appendLogo	Print command of the logo is generated and added to the commands property.

Name	Description
appendAbsolutePosition	Absolute position command is generated and added to the commands property.
appendDataWithAbsolutePosition	
appendBytesWithAbsolutePosition	
appendAlignment	Alignment command is generated and added to the commands property.
appendDataWithAlignment	
appendBytesWithAlignment	
appendCutPaper	Paper cut command is generated and added to the commands property.
appendPeripheral	Peripheral command is generated and added to the commands property.
appendSound	Sound command is generated and added to the commands property.
appendBarcodeData	Print command of the barcode is generated and added to the commands property.
appendBarcodeBytes	
appendBarcodeDataWithAbsolutePosition	Print command of the absolute position barcode is generated and added to the commands property.
appendBarcodeBytesWithAbsolutePosition	
appendBarcodeDataWithAlignment	Print command of the alignment barcode is generated and added to the commands property.
appendBarcodeBytesWithAlignment	
appendPdf417Data	Print command of the PDF417 is generated and added to the commands property.
appendPdf417Bytes	
appendPdf417DataWithAbsolutePosition	Print command of the absolute position PDF417 is generated and added to the commands property.
appendPdf417BytesWithAbsolutePosition	
appendPdf417DataWithAlignment	Print command of the alignment PDF417 is generated and added to the commands property.
appendPdf417BytesWithAlignment	
appendQRCodeData	Print command of the QR code is generated and added to the commands property.
appendQRCodeBytes	
appendQRCodeDataWithAbsolutePosition	Print command of the absolute position QR code is generated and added to the commands property.
appendQRCodeBytesWithAbsolutePosition	
appendQRCodeDataWithAlignment	Print command of the alignment QR code is generated and added to the commands property.
appendQRCodeBytesWithAlignment	
appendBitmap	Print command of the bitmap is generated and added to the commands property.
appendBitmapWithAbsolutePosition	Print command of the absolute position bitmap is generated and added to the commands property.
appendBitmapWithAlignment	Print command of the alignment bitmap is generated and added to the commands property.

### Property

Name	Description
commands	Generated commands.

## Constants

Name	Description
SCBInitializationType	Initialization constants.
SCBFontStyleType	Font style constants.
SCBCodePageType	Code Page constants.
SCBInternationalType	International character constants.
SCBLogoSize	Logo size constants.
SCBAlignmentPosition	Alignment position constants.
SCBCutPaperAction	Paper cut constants.
SCBPeripheralChannel	Peripheral channel constants.
SCBSoundChannel	Sound channel constants.
SCBBarcodeSymbology	Barcode symbology constants.
SCBBarcodeWidth	Barcode width constants.
SCBPdf417Level	PDF417 ECC (security level) constants.
SCBQRCodeModel	QR code model constants.
SCBQRCodeLevel	QR code mistake correction level constants.
SCBBitmapConverterRotation	Bitmap rotation constants.

### 3.1 Model : ISCBBuilder interface Method

Supported Method for each models.

Function	Method	mPOP	FVP10	TSP100	TSP650II	TSP700II	TSP800II	SM-S210i	SM-S220i	SM-S230i	SM-T300i	SM-T400i	BSC10	SM-S210i StarPRNT	SM-S220i StarPRNT	SM-S230i StarPRNT	SM-T300i StarPRNT	SM-T400i StarPRNT	SM-L200	SP700
Document control	beginDocument	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	endDocument	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Initialization	appendInitialization	✓	✓	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Data (Text and Command)	appendByte	✓	✓	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	appendData	✓	✓	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	appendBytes	✓	✓	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Raw data (Text and Command)	appendRawByte	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	appendRawData	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	appendRawBytes	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Font style	appendFontStyle	✓	✓	-	✓	✓	✓	-	-	-	-	-	✓	✓	✓	✓	✓	✓	✓	✓
Code page	appendCodePage	✓	✓	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
International	appendInternational	✓	✓	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Line feed	appendLineFeed	✓	✓	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	appendDataWithLineFeed	✓	✓	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	appendBytesWithLineFeed	✓	✓	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Unit feed	appendUnitFeed	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	appendDataWithUnitFeed	✓	✓	*1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	appendBytesWithUnitFeed	✓	✓	*1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Character space	appendCharacterSpace	✓	✓	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Line space	appendLineSpace	✓	✓	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

- : ignored.

\*1 : Do not append data, append unit feed command only.

Function	Method	mPOP	FVP10	TSP100	TSP650II	TSP700II	TSP800II	SM-S210i	SM-S220i	SM-S230i	SM-T300i	SM-T400i	BSC10	SM-S210i StarPRNT	SM-S220i StarPRNT	SM-S230i StarPRNT	SM-T300i StarPRNT	SM-T400i StarPRNT	SM-L200	SP700
Emphasis	appendEmphasis	✓	✓	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	appendDataWithEmphasis	✓	✓	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	appendBytesWithEmphasis	✓	✓	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Invert	appendInvert	✓	✓	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	appendDataWithInvert	✓	✓	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	appendBytesWithInvert	✓	✓	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Multiple	appendMultiple	✓	✓	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	appendDataWithMultiple	✓	✓	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	appendBytesWithMultiple	✓	✓	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	appendMultipleHeight	✓	✓	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	appendDataWithMultipleHeight	✓	✓	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	appendBytesWithMultipleHeight	✓	✓	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	appendMultipleWidth	✓	✓	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	appendDataWithMultipleWidth	✓	✓	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	appendBytesWithMultipleWidth	✓	✓	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Under line	appendUnderLine	✓	✓	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	appendDataWithUnderLine	✓	✓	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	appendBytesWithUnderLine	✓	✓	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Logo	appendLogo	✓	✓	-	✓	✓	✓	*2	*2	*2	*2	*2	✓	✓	✓	✓	✓	✓	✓	✓
Absolute position	appendAbsolutePosition	✓	✓	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	appendDataWithAbsolutePosition	✓	✓	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	appendBytesWithAbsolutePosition	✓	✓	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Alignment	appendAlignment	✓	✓	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	appendDataWithAlignment	✓	✓	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	appendBytesWithAlignment	✓	✓	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

- : ignored.

\*2 : Always print from normal size.

Function	Method	mPOP	FVP10	TSP100	TSP650II	TSP700II	TSP800II	SM-S210i	SM-S220i	SM-S230i	SM-T300i	SM-T400i	BSC10	SM-S210i StarPRNT	SM-S220i StarPRNT	SM-S230i StarPRNT	SM-T300i StarPRNT	SM-T400i StarPRNT	SM-L200	SP700
Cut paper	appendCutPaper	✓	✓	✓	✓	✓	✓	*3	*3	*3	*3	*3	✓	*3	*3	*3	*3	*3	*3	✓
Peripheral	appendPeripheral	✓	✓	✓	✓	✓	✓	-	-	-	-	-	✓	-	-	-	-	-	-	✓
Sound	appendSound	✓	✓	✓	✓	✓	✓	-	-	-	-	-	✓	-	-	-	-	-	-	✓
Barcode	appendBarcodeData	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-
	appendBarcodeBytes	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-
	appendBarcodeDataWithAbsolutePosition	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-
	appendBarcodeBytesWithAbsolutePosition	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-
	appendBarcodeDataWithAlignment	✓	✓	*4	✓	✓	✓	*4	*4	*4	*4	*4	✓	✓	✓	✓	✓	✓	✓	-
	appendBarcodeBytesWithAlignment	✓	✓	*4	✓	✓	✓	*4	*4	*4	*4	*4	✓	✓	✓	✓	✓	✓	✓	-
PDF417	appendPdf417Data	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-
	appendPdf417Bytes	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-
	appendPdf417DataWithAbsolutePosition	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-
	appendPdf417BytesWithAbsolutePosition	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-
	appendPdf417DataWithAlignment	✓	✓	*4	✓	✓	✓	*4	*4	*4	*4	*4	✓	✓	✓	✓	✓	✓	✓	-
	appendPdf417BytesWithAlignment	✓	✓	*4	✓	✓	✓	*4	*4	*4	*4	*4	✓	✓	✓	✓	✓	✓	✓	-

- : ignored.

\*3 : Without paper cut.

\*4 : Always print from left side.

Function	Method	mPOP	FVP10	TSP100	TSP650II	TSP700II	TSP800II	SM-S210i	SM-S220i	SM-S230i	SM-T300i	SM-T400i	BSC10	SM-S210i StarPRNT	SM-S220i StarPRNT	SM-S230i StarPRNT	SM-T300i StarPRNT	SM-T400i StarPRNT	SM-L200	SP700
QR code	appendQrCodeData	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-
	appendQrCodeBytes	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-
	appendQrCodeDataWithAbsolutePosition	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-
	appendQrCodeBytesWithAbsolutePosition	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-
	appendQrCodeDataWithAlignment	✓	✓	*4	✓	✓	✓	*4	*4	*4	*4	*4	✓	✓	✓	✓	✓	✓	✓	-
	appendQrCodeBytesWithAlignment	✓	✓	*4	✓	✓	✓	*4	*4	*4	*4	*4	✓	✓	✓	✓	✓	✓	✓	-
Bitmap	appendBitmap	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	appendBitmapWithAbsolutePosition	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	appendBitmapWithAlignment	✓	✓	*4	✓	✓	✓	*4	*4	*4	*4	*4	✓	✓	✓	✓	✓	✓	✓	✓

- : ignored.

\*4 : Always print from left side.



## 3.2 beginDocument Method

Begin document command is generated and added to the commands property.

### Declaration

- (void)beginDocument;

### Parameter

Name	Description	Object type
-	-	-

### Return value

Description	Object type
-	-

### Example

```
+ (NSData *)createData:(StarloExtEmulation)emulation {
    NSData *otherData = [@"Hello World.\n" dataUsingEncoding:NSUTF8StringEncoding];

    ISCBBuilder *builder = [StarloExt createCommandBuilder:emulation];

    [builder beginDocument];

    [builder appendData:otherData];

    [builder appendCutPaper:SCBCutPaperActionPartialCutWithFeed];

    [builder endDocument];

    return [builder.commands copy];
}
```

Refer to *ApiFunctions.m*.

### 3.3 endDocument Method

End document command is generated and added to the commands property.

#### Declaration

- (void)endDocument;

#### Parameter

Name	Description	Object type
-	-	-

#### Return value

Description	Object type
-	-

#### Example

```
+ (NSData *)createData:(StarloExtEmulation)emulation {
    NSData *otherData = [@"Hello World.\n" dataUsingEncoding:NSUTF8StringEncoding];

    ISCBBuilder *builder = [StarloExt createCommandBuilder:emulation];

    [builder beginDocument];

    [builder appendData:otherData];

    [builder appendCutPaper:SCBCutPaperActionPartialCutWithFeed];

    [builder endDocument];

    return [builder.commands copy];
}
```

Refer to *ApiFunctions.m*.

### 3.4 appendInitialization Method

Initialization command is generated and added to the commands property.

#### Declaration

- (void)appendInitialization:(SCBInitializationType)type;

#### Parameter

Name	Description	Object type
type	Initialization type. <ul style="list-style-type: none"> <li>SCBInitializationTypeCommand ... Command initialization.</li> <li><del>SCBInitializationTypeReset ... Reset printer.</del></li> <li><del>SCBInitializationTypeResetWithPrint ... Reset printer (execute self print).</del></li> </ul>	SCBInitializationType

#### Return value

Description	Object type
-	-

#### Example

```
+ (NSData *)createData:(StarloExtEmulation)emulation {
    NSData *otherData = [@"Hello World.\n" dataUsingEncoding:NSUTF8StringEncoding];

    ISCBBuilder *builder = [StarloExt createCommandBuilder:emulation];

    [builder beginDocument];

    [builder appendUnderLine:YES];
    [builder appendMultiple:2 height:2];
    [builder appendData:otherData];

    [builder appendInitialization:SCBInitializationTypeCommand];

    [builder appendData:otherData];

    [builder appendCutPaper:SCBCutPaperActionPartialCutWithFeed];

    [builder endDocument];

    return [builder.commands copy];
}
```

Refer to *ApiFunctions.m*.

### 3.5 appendData Method

Data (Text and Command) is added to the commands property.

#### Declaration

- (void)appendByte:(unsigned char)data;
- (void)appendData:(NSData \*)otherData;
- (void)appendBytes:(const void \*)bytes length:(NSUInteger)length;

#### Parameter

Name	Description	Object type
data	Data (Text and Command).	unsigned char
otherData		NSData
bytes		const void *
length		NSUInteger

#### Return value

Description	Object type
-	-

#### Example

```
+ (NSData *)createData:(StarIoExtEmulation)emulation {
    NSData *otherData = [@"Hello World." dataUsingEncoding:NSUTF8StringEncoding];

    unsigned char bytes[] = {0x48, 0x65, 0x6c, 0x6c, 0x6f, 0x20, 0x57, 0x6f, 0x72, 0x6c, 0x64, 0x2e};

    NSUInteger length = sizeof(bytes);

    ISCBBuilder *builder = [StarIoExt createCommandBuilder:emulation];

    [builder beginDocument];

    [builder appendData:otherData];
    [builder appendByte:@"\n"];

    [builder appendBytes:bytes length:length];
    [builder appendByte:@"\n"];

    [builder appendCutPaper:SCBCutPaperActionPartialCutWithFeed];

    [builder endDocument];

    return [builder.commands copy];
}
```

Refer to *ApiFunctions.m* and each Command Specifications.

### 3.6 appendRawData Method

Raw data (Text and Command) is added to the commands property.

#### Declaration

- (void)appendRawByte:(unsigned char)data;
- (void)appendRawData:(NSData \*)otherData;
- (void)appendRawBytes:(const void \*)bytes length:(NSUInteger)length;

#### Parameter

Name	Description	Object type
data	Raw data (Text and Command).	unsigned char
otherData		NSData
bytes		const void *
length		NSUInteger

#### Return value

Description	Object type
-	-

#### Example

```
+ (NSData *)createData:(StarIoExtEmulation)emulation image:(UIImage *)image {
    NSString *urlString = [SMCSAllReceipts uploadBitmap:image completion:nil];

    ISCBBuilder *builder = [StarIoExt createCommandBuilder:emulation];

    [builder beginDocument];

    [builder appendBitmap:image diffusion:NO];

    NSData *data = [SMCSAllReceipts generateAllReceipts:urlString emulation:emulation info:YES qrCode:YES];

    [builder appendRawData:data];

    [builder appendCutPaper:SCBCutPaperActionPartialCutWithFeed];

    [builder endDocument];

    return [builder.commands copy];
}
```

Refer to *AllReceiptsFunctions.m* and each Command Specifications.

### 3.7 appendFontStyle Method

Select command of the font style is generated and added to the commands property.

#### Declaration

- (void)appendFontStyle:(SCBFontStyleType)type;

#### Parameter

Name	Description	Object type
type	Font style. <ul style="list-style-type: none"> <li>SCBFontStyleTypeA ... Font-A (12 x 24 dots) / Specify 7 x 9 font (half dots)</li> <li>SCBFontStyleTypeB ... Font-B (9 x 24 dots) / Specify 5 x 9 font (2P-1)</li> </ul>	SCBFontStyleType

#### Return value

Description	Object type
-	-

#### Example

```
+ (NSData *)createData:(StarloExtEmulation)emulation {
    NSData *otherData = [@"Hello World.\n" dataUsingEncoding:NSUTF8StringEncoding];

    ISCBBuilder *builder = [StarloExt createCommandBuilder:emulation];

    [builder beginDocument];

    [builder appendFontStyle:SCBFontStyleTypeA];
    [builder appendData:otherData];
    [builder appendFontStyle:SCBFontStyleTypeB];
    [builder appendData:otherData];

    [builder appendCutPaper:SCBCutPaperActionPartialCutWithFeed];

    [builder endDocument];

    return [builder.commands copy];
}
```

Refer to *ApiFunctions.m* and each Command Specifications.

### 3.8 appendCodePage Method

Select command of the code page is generated and added to the commands property.

#### Declaration

- (void)appendCodePage:(SCBCodePageType)type;

#### Parameter

Name	Description	Object type
type	<p>Code Page.</p> <ul style="list-style-type: none"> <li>• SCBCodePageTypeCP437 ... CodePage437 (USA, Std. Europe).</li> <li>• SCBCodePageTypeCP737 ... Codepage 737 (Greek).</li> <li>• SCBCodePageTypeCP772 ... Codepage 772 (Lithuanian).</li> <li>• SCBCodePageTypeCP774 ... Codepage 774 (Lithuanian).</li> <li>• SCBCodePageTypeCP851 ... Codepage 851 (Greek).</li> <li>• SCBCodePageTypeCP852 ... Codepage 852 (Latin-2).</li> <li>• SCBCodePageTypeCP855 ... Codepage 855 (Cyrillic Bulgarian).</li> <li>• SCBCodePageTypeCP857 ... Codepage 857 (Turkey).</li> <li>• SCBCodePageTypeCP858 ... Codepage 858 (Multilingual).</li> <li>• SCBCodePageTypeCP860 ... Codepage 860 (Portuguese).</li> <li>• SCBCodePageTypeCP861 ... Codepage 861 (Icelandic).</li> <li>• SCBCodePageTypeCP862 ... Codepage 862 (Israel (Hebrew)).</li> <li>• SCBCodePageTypeCP863 ... Codepage 863 (Canadian French).</li> <li>• SCBCodePageTypeCP864 ... Codepage 864 (Arabic).</li> <li>• SCBCodePageTypeCP865 ... Codepage 865 (Nordic).</li> <li>• SCBCodePageTypeCP866 ... Codepage 866 (Cyrillic Russian).</li> <li>• SCBCodePageTypeCP869 ... Codepage 869 (Greek).</li> <li>• SCBCodePageTypeCP874 ... Codepage 874 (Thai).</li> <li>• SCBCodePageTypeCP928 ... Codepage 928 (Greek).</li> </ul>	SCBCodePageType

Name	Description	Object type
type	<ul style="list-style-type: none"> <li>• SCBCodePageTypeCP932 ... Katakana.</li> <li>• SCBCodePageTypeCP998 ... Normal.</li> <li>• SCBCodePageTypeCP999 ... Codepage 1252 (Windows Latin-1).</li> <li>• SCBCodePageTypeCP1001 ... Codepage 1001 (Arabic).</li> <li>• SCBCodePageTypeCP1250 ... Codepage 1250 (Windows Latin-2).</li> <li>• SCBCodePageTypeCP1251 ... Codepage 1251 (Windows Cyrillic).</li> <li>• SCBCodePageTypeCP1252 ... Codepage 1252 (Windows Latin-1).</li> <li>• SCBCodePageTypeCP2001 ... Codepage 2001 (Lithuanian-KBL).</li> <li>• SCBCodePageTypeCP3001 ... Codepage 3001 (Estonian-1).</li> <li>• SCBCodePageTypeCP3002 ... Codepage 3002 (Estonian-2).</li> <li>• SCBCodePageTypeCP3011 ... Codepage 3011 (Latvian-1).</li> <li>• SCBCodePageTypeCP3012 ... Codepage 3012 (Latvian-2).</li> <li>• SCBCodePageTypeCP3021 ... Codepage 3021 (Bulgarian).</li> <li>• SCBCodePageTypeCP3041 ... Codepage 3041 (Maltese).</li> <li>• SCBCodePageTypeCP3840 ... Codepage 3840 (IBM-Russian).</li> <li>• SCBCodePageTypeCP3841 ... Codepage 3841 (Gost).</li> <li>• SCBCodePageTypeCP3843 ... Codepage 3843 (Polish).</li> <li>• SCBCodePageTypeCP3844 ... Codepage 3844 (CS2).</li> <li>• SCBCodePageTypeCP3845 ... Codepage 3845 (Hungarian).</li> <li>• SCBCodePageTypeCP3846 ... Codepage 3846 (Turkish).</li> <li>• SCBCodePageTypeCP3847 ... Codepage 3847 (Brazil-ABNT).</li> <li>• SCBCodePageTypeCP3848 ... Codepage 3848 (Brazil-ABICOMP).</li> <li>• SCBCodePageTypeUTF8 ... UTF-8.</li> <li>• SCBCodePageTypeBlank ... User Setting Blank Code Page.</li> </ul>	SCBCodePageType



## Return value

Description	Object type
-	-

## Example

```
+ (NSData *)createData:(StarloExtEmulation)emulation {
    unsigned char bytes8[] = {0x80, 0x81, 0x82, 0x83, 0x84, 0x85, 0x86, 0x87, 0x88, 0x89, 0x8a, 0x8b, 0x8c, 0x8d, 0x8e,
0x8f, 0x0a};
    unsigned char bytes9[] = {0x90, 0x91, 0x92, 0x93, 0x94, 0x95, 0x96, 0x97, 0x98, 0x99, 0x9a, 0x9b, 0x9c, 0x9d, 0x9e,
0x9f, 0x0a};
    unsigned char bytesA[] = {0xa0, 0xa1, 0xa2, 0xa3, 0xa4, 0xa5, 0xa6, 0xa7, 0xa8, 0xa9, 0xaa, 0xab, 0xac, 0xad, 0xae,
0xaf, 0x0a};
    unsigned char bytesB[] = {0xb0, 0xb1, 0xb2, 0xb3, 0xb4, 0xb5, 0xb6, 0xb7, 0xb8, 0xb9, 0xba, 0xbb, 0xbc, 0xbd, 0xbe,
0xbf, 0x0a};
    unsigned char bytesC[] = {0xc0, 0xc1, 0xc2, 0xc3, 0xc4, 0xc5, 0xc6, 0xc7, 0xc8, 0xc9, 0xca, 0xcb, 0xcc, 0xcd, 0xce,
0xcf, 0x0a};
    unsigned char bytesD[] = {0xd0, 0xd1, 0xd2, 0xd3, 0xd4, 0xd5, 0xd6, 0xd7, 0xd8, 0xd9, 0xda, 0xdb, 0xdc, 0xdd, 0xde,
0xdf, 0x0a};
    unsigned char bytesE[] = {0xe0, 0xe1, 0xe2, 0xe3, 0xe4, 0xe5, 0xe6, 0xe7, 0xe8, 0xe9, 0xea, 0xeb, 0xec, 0xed, 0xee,
0xef, 0x0a};
    unsigned char bytesF[] = {0xf0, 0xf1, 0xf2, 0xf3, 0xf4, 0xf5, 0xf6, 0xf7, 0xf8, 0xf9, 0xfa, 0xfb, 0xfc, 0xfd, 0xfe, 0xff,
0x0a};

    NSUInteger length = sizeof(bytes8);

    ISCBBuilder *builder = [StarloExt createCommandBuilder:emulation];

    [builder beginDocument];

    [builder appendCodePage:SCBCodePageTypeCP932];

    [builder appendBytes:bytes8 length:length];
    [builder appendBytes:bytes9 length:length];
    [builder appendBytes:bytesA length:length];
    [builder appendBytes:bytesB length:length];
    [builder appendBytes:bytesC length:length];
    [builder appendBytes:bytesD length:length];
    [builder appendBytes:bytesE length:length];
    [builder appendBytes:bytesF length:length];

    [builder appendCutPaper:SCBCutPaperActionPartialCutWithFeed];

    [builder endDocument];

    return [builder.commands copy];
}
```

Refer to *ApiFunctions.m* and each Command Specifications.

### 3.9 appendInternational Method

Select command of the international character mode is generated and added to the commands property.

#### Declaration

- (void)appendInternational:(SCBInternationalType)type;

#### Parameter

Name	Description	Object type
type	International character. <ul style="list-style-type: none"> <li>• SCBInternationalTypeUSA ... USA.</li> <li>• SCBInternationalTypeFrance ... France.</li> <li>• SCBInternationalTypeGermany ... Germany.</li> <li>• SCBInternationalTypeUK ... UK.</li> <li>• SCBInternationalTypeDenmark ... Denmark.</li> <li>• SCBInternationalTypeSweden ... Sweden.</li> <li>• SCBInternationalTypeItaly ... Italy.</li> <li>• SCBInternationalTypeSpain ... Spain.</li> <li>• SCBInternationalTypeJapan ... Japan.</li> <li>• SCBInternationalTypeNorway ... Norway.</li> <li>• SCBInternationalTypeDenmark2 ... Denmark   .</li> <li>• SCBInternationalTypeSpain2 ... Spain   .</li> <li>• SCBInternationalTypeLatinAmerica ... Latin America.</li> <li>• SCBInternationalTypeKorea ... Korea.</li> <li>• SCBInternationalTypeIreland ... Ireland.</li> <li>• SCBInternationalTypeLegal ... Legal.</li> </ul>	SCBInternationalType

#### Return value

Description	Object type
-	-

### Example

```
+ (NSData *)createData:(StarIoExtEmulation)emulation {
    unsigned char bytes[] = {0x23, 0x24, 0x40, 0x58, 0x5a, 0x5b, 0x5c, 0x5d, 0x5e, 0x60, 0x7b, 0x7c, 0x7d, 0x7e, 0x0a};

    NSUInteger length = sizeof(bytes);

    ISCBBuilder *builder = [StarIoExt createCommandBuilder:emulation];

    [builder beginDocument];

    [builder appendInternational:SCBInternationalTypeUSA];
    [builder appendBytes:bytes length:length];

    [builder appendInternational:SCBInternationalTypeJapan];
    [builder appendBytes:bytes length:length];

    [builder appendCutPaper:SCBCutPaperActionPartialCutWithFeed];

    [builder endDocument];

    return [builder.commands copy];
}
```

*Refer to ApiFunctions.m and each Command Specifications.*

### 3.10 appendLineFeed Method

Line feed command is generated and added to the commands property.

#### Declaration

- (void)appendLineFeed;
- (void)appendDataWithLineFeed:(NSData \*)otherData;
- (void)appendBytesWithLineFeed:(const void \*)bytes length:(NSUInteger)length;
- (void)appendLineFeed:(NSInteger)line;
- (void)appendDataWithLineFeed:(NSData \*)otherData line:(NSInteger)line;
- (void)appendBytesWithLineFeed:(const void \*)bytes length:(NSUInteger)length line:(NSInteger)line;

#### Parameter

Name	Description	Object type
unit	Paper feed units. (Units : Lines)	NSInteger
otherData	Data (Text and Command).	NSData
bytes		const void *
length		NSUInteger

#### Return value

Description	Object type
-	-

#### Example

```
+ (NSData *)createData:(StarloExtEmulation)emulation {
    NSData *otherData = [@"Hello World." dataUsingEncoding:NSUTF8StringEncoding];

    ISCBBuilder *builder = [StarloExt createCommandBuilder:emulation];

    [builder beginDocument];

    [builder appendData:otherData];
    [builder appendLineFeed];

    [builder appendDataWithLineFeed:otherData];

    [builder appendData:otherData];
    [builder appendLineFeed:2];

    [builder appendDataWithLineFeed:otherData line:2];

    [builder appendCutPaper:SCBCutPaperActionPartialCutWithFeed];

    [builder endDocument];

    return [builder.commands copy];
}
```

Refer to *ApiFunctions.m*.

### 3.11 appendUnitFeed Method

Unit feed command is generated and added to the commands property.

#### Declaration

- (void)appendUnitFeed:(NSInteger)unit;
- (void)appendDataWithUnitFeed:(NSData \*)otherData unit:(NSInteger)unit;
- (void)appendBytesWithUnitFeed:(const void \*)bytes length:(NSUInteger)length unit:(NSInteger)unit;

#### Parameter

Name	Description	Object type
unit	Paper feed units. (Units : Dots)	NSInteger
otherData	Data (Text and Command).	NSData
bytes		const void *
length		NSUInteger

#### Return value

Description	Object type
-	-

#### Example

```
+ (NSData *)createData:(StarloExtEmulation)emulation {
    NSData *otherData = [@"Hello World." dataUsingEncoding:NSUTF8StringEncoding];

    ISCBBuilder *builder = [StarloExt createCommandBuilder:emulation];

    [builder beginDocument];

    [builder appendData:otherData];
    [builder appendUnitFeed:64];

    [builder appendDataWithUnitFeed:otherData unit:64];

    [builder appendCutPaper:SCBCutPaperActionPartialCutWithFeed];

    [builder endDocument];

    return [builder.commands copy];
}
```

Refer to *ApiFunctions.m*.

### 3.12 appendCharacterSpace Method

Set command of the character space is generated and added to the commands property.

#### Declaration

- (void)appendCharacterSpace:(NSInteger)space;

#### Parameter

Name	Description	Object type
space	Character spaces. (Units : Dots)	NSInteger

#### Return value

Description	Object type
-	-

#### Example

```
+ (NSData *)createData:(StarloExtEmulation)emulation {
    NSData *otherData = [@"Hello World.\n" dataUsingEncoding:NSUTF8StringEncoding];

    ISCBBuilder *builder = [StarloExt createCommandBuilder:emulation];

    [builder beginDocument];

    [builder appendCharacterSpace:0];
    [builder appendData:otherData];
    [builder appendCharacterSpace:4];
    [builder appendData:otherData];

    [builder appendCutPaper:SCBCutPaperActionPartialCutWithFeed];

    [builder endDocument];

    return [builder.commands copy];
}
```

Refer to *ApiFunctions.m*.

### 3.13 appendLineSpace Method

Set command of the line space is generated and added to the commands property.

#### Declaration

- (void)appendLineSpace:(NSInteger)lineSpace;

#### Parameter

Name	Description	Object type
lineSpace	Line spaces. (Units : Dots)	NSInteger

#### Return value

Description	Object type
-	-

#### Example

```
+ (NSData *)createData:(StarloExtEmulation)emulation {
    NSData *otherData = [@"Hello World.\n" dataUsingEncoding:NSUTF8StringEncoding];

    ISCBBuilder *builder = [StarloExt createCommandBuilder:emulation];

    [builder beginDocument];

    [builder appendLineSpace:32];
    [builder appendData:otherData];
    [builder appendData:otherData];
    [builder appendData:otherData];
    [builder appendLineSpace:24];
    [builder appendData:otherData];
    [builder appendData:otherData];
    [builder appendData:otherData];

    [builder appendCutPaper:SCBCutPaperActionPartialCutWithFeed];

    [builder endDocument];

    return [builder.commands copy];
}
```

Refer to *ApiFunctions.m* and each Command Specifications.

### 3.14 appendEmphasis Method

Select command of the emphasis mode is generated and added to the commands property.

#### Declaration

- (void)appendEmphasis:(BOOL)emphasis;
- (void)appendDataWithEmphasis:(NSData \*)otherData;
- (void)appendBytesWithEmphasis:(const void \*)bytes length:(NSUInteger)length;

#### Parameter

Name	Description	Object type
emphasis	Emphasis. <ul style="list-style-type: none"> <li>YES ... Valid</li> <li>NO ... Invalid</li> </ul>	BOOL
otherData	Data (Text and Command).	NSData
bytes		const void *
length		NSUInteger

#### Return value

Description	Object type
-	-

#### Example

```
+ (NSData *)createData:(StarloExtEmulation)emulation {
    NSData *otherData = [@"Hello World.\n" dataUsingEncoding:NSUTF8StringEncoding];
    NSData *otherDataHalf0 = [@"Hello " dataUsingEncoding:NSUTF8StringEncoding];
    NSData *otherDataHalf1 = [@"World.\n" dataUsingEncoding:NSUTF8StringEncoding];

    ISCBBuilder *builder = [StarloExt createCommandBuilder:emulation];

    [builder beginDocument];

    [builder appendData:otherData];
    [builder appendEmphasis:YES];
    [builder appendData:otherData];
    [builder appendData:otherData];
    [builder appendEmphasis:NO];
    [builder appendData:otherData];

    [builder appendDataWithEmphasis:otherData];
    [builder appendData:otherData];

    [builder appendDataWithEmphasis:otherDataHalf0];
    [builder appendData:otherDataHalf1];

    [builder appendCutPaper:SCBCutPaperActionPartialCutWithFeed];

    [builder endDocument];

    return [builder.commands copy];
}
```

Refer to *ApiFunctions.m*.



### 3.15 appendInvert Method

Select command of the invert mode is generated and added to the commands property.

#### Declaration

- (void)appendInvert:(BOOL)invert;
- (void)appendDataWithInvert:(NSData \*)otherData;
- (void)appendBytesWithInvert:(const void \*)bytes length:(NSUInteger)length;

#### Parameter

Name	Description	Object type
invert	Invert. <ul style="list-style-type: none"> <li>• YES ... Valid</li> <li>• NO ... Invalid</li> </ul>	BOOL
otherData	Data (Text and Command).	NSData
bytes		const void *
length		NSUInteger

#### Return value

Description	Object type
-	-

#### Example

```
+ (NSData *)createData:(StarloExtEmulation)emulation {
    NSData *otherData = [@"Hello World.\n" dataUsingEncoding:NSUTF8StringEncoding];
    NSData *otherDataHalf0 = [@"Hello " dataUsingEncoding:NSUTF8StringEncoding];
    NSData *otherDataHalf1 = [@"World.\n" dataUsingEncoding:NSUTF8StringEncoding];

    ISCBBuilder *builder = [StarloExt createCommandBuilder:emulation];

    [builder beginDocument];

    [builder appendData:otherData];
    [builder appendInvert:YES];
    [builder appendData:otherData];
    [builder appendData:otherData];
    [builder appendInvert:NO];
    [builder appendData:otherData];

    [builder appendDataWithInvert:otherData];
    [builder appendData:otherData];

    [builder appendDataWithInvert:otherDataHalf0];
    [builder appendData:otherDataHalf1];

    [builder appendCutPaper:SCBCutPaperActionPartialCutWithFeed];

    [builder endDocument];

    return [builder.commands copy];
}
```

Refer to *ApiFunctions.m*.

### 3.16 appendMultiple Method

Select command of the multiple mode is generated and added to the commands property.

#### Declaration

- (void)appendMultiple:(NSInteger)width height:(NSInteger)height;
- (void)appendDataWithMultiple:(NSData \*)otherData width:(NSInteger)width height:(NSInteger)height;
- (void)appendBytesWithMultiple:(const void \*)bytes length:(NSUInteger)length width:(NSInteger)width height:(NSInteger)height;
- (void)appendMultipleHeight:(NSInteger)height;
- (void)appendDataWithMultipleHeight:(NSData \*)otherData height:(NSInteger)height;
- (void)appendBytesWithMultipleHeight:(const void \*)bytes length:(NSUInteger)length height:(NSInteger)height;
- (void)appendMultipleWidth:(NSInteger)width;
- (void)appendDataWithMultipleWidth:(NSData \*)otherData width:(NSInteger)width;
- (void)appendBytesWithMultipleWidth:(const void \*)bytes length:(NSUInteger)length width:(NSInteger)width;

#### Parameter

Name	Description	Object type
width	Expanded width.	NSInteger
height	Expanded height.	NSInteger
otherData	Data (Text and Command).	NSData
bytes		const void *
length		NSUInteger

#### Return value

Description	Object type
-	-

## Example

```
+ (NSData *)createData:(StarIoExtEmulation)emulation {
    NSData *otherData = [@"Hello World.\n" dataUsingEncoding:NSUTF8StringEncoding];
    NSData *otherDataHalf0 = [@"Hello " dataUsingEncoding:NSUTF8StringEncoding];
    NSData *otherDataHalf1 = [@"World.\n" dataUsingEncoding:NSUTF8StringEncoding];

    ISCBBuilder *builder = [StarIoExt createCommandBuilder:emulation];

    [builder beginDocument];

    [builder appendData:otherData];

    [builder appendMultiple:2 height:2];
    [builder appendData:otherData];
    [builder appendData:otherData];
    [builder appendMultiple:1 height:1];
    [builder appendData:otherData];

    [builder appendDataWithMultiple:otherData width:2 height:2];
    [builder appendData:      otherData];

    [builder appendDataWithMultiple:otherDataHalf0 width:2 height:2];
    [builder appendData:      otherDataHalf1];

    [builder appendData:otherDataHalf0];
    [builder appendDataWithMultiple:otherDataHalf1 width:2 height:2];

    [builder appendMultipleHeight:2];
    [builder appendData:otherData];
    [builder appendData:otherData];
    [builder appendMultipleHeight:1];
    [builder appendData:otherData];

    [builder appendDataWithMultipleHeight:otherDataHalf0 height:2];
    [builder appendData:otherDataHalf1];

    [builder appendData:otherDataHalf0];
    [builder appendDataWithMultipleHeight:otherDataHalf1 height:2];

    [builder appendMultipleWidth:2];
    [builder appendData:otherData];
    [builder appendData:otherData];
    [builder appendMultipleWidth:1];
    [builder appendData:otherData];

    [builder appendDataWithMultipleWidth:otherDataHalf0 width:2];
    [builder appendData:otherDataHalf1];

    [builder appendData:otherDataHalf0];
    [builder appendDataWithMultipleWidth:otherDataHalf1 width:2];

    [builder appendCutPaper:SCBCutPaperActionPartialCutWithFeed];

    [builder endDocument];

    return [builder.commands copy];
}
```

Refer to *ApiFunctions.m* and each Command Specifications.

### 3.17 appendUnderLine Method

Select command of the under line mode is generated and added to the commands property.

#### Declaration

- (void)appendUnderLine:(BOOL)underLine;
- (void)appendDataWithUnderLine:(NSData \*)otherData;
- (void)appendBytesWithUnderLine:(const void \*)bytes length:(NSUInteger)length;

#### Parameter

Name	Description	Object type
underLine	Under line. <ul style="list-style-type: none"> <li>YES ... Valid</li> <li>NO ... Invalid</li> </ul>	BOOL
otherData	Data (Text and Command).	NSData
bytes		const void *
length		NSUInteger

#### Return value

Description	Object type
-	-

#### Example

```
+ (NSData *)createData:(StarloExtEmulation)emulation {
    NSData *otherData = [@"Hello World.\n" dataUsingEncoding:NSUTF8StringEncoding];
    NSData *otherDataHalf0 = [@"Hello " dataUsingEncoding:NSUTF8StringEncoding];
    NSData *otherDataHalf1 = [@"World.\n" dataUsingEncoding:NSUTF8StringEncoding];

    ISCBBuilder *builder = [StarloExt createCommandBuilder:emulation];

    [builder beginDocument];

    [builder appendData:otherData];

    [builder appendUnderLine:YES];
    [builder appendData:otherData];
    [builder appendData:otherData];
    [builder appendUnderLine:NO];
    [builder appendData:otherData];

    [builder appendDataWithUnderLine:otherData];
    [builder appendData:otherData];

    [builder appendDataWithUnderLine:otherDataHalf0];
    [builder appendData:otherDataHalf1];

    [builder appendCutPaper:SCBCutPaperActionPartialCutWithFeed];

    [builder endDocument];

    return [builder.commands copy];
}
```

Refer to *ApiFunctions.m*.

### 3.18 appendLogo Method

Print command of the logo is generated and added to the commands property.

#### Declaration

- (void)appendLogo:(SCBLogoSize)size number:(NSInteger)number;

#### Parameter

Name	Description	Object type
number	Logo size. <ul style="list-style-type: none"> <li>SCBLogoSizeNormal ... Normal.</li> <li>SCBLogoSizeDoubleWidth ... Double Width.</li> <li>SCBLogoSizeDoubleHeight ... Double Height.</li> <li>SCBLogoSizeDoubleWidthDoubleHeight ... Double Width / Height.</li> </ul>	SCBLogoSize

#### Return value

Description	Object type
-	-

#### Example

```
+ (NSData *)createData:(StarIoExtEmulation)emulation {
    ISCBBuilder *builder = [StarIoExt createCommandBuilder:emulation];

    [builder beginDocument];

    [builder appendLogo:SCBLogoSizeNormal number:1];
    [builder appendLogo:SCBLogoSizeDoubleWidth number:1];
    [builder appendLogo:SCBLogoSizeDoubleHeight number:1];
    [builder appendLogo:SCBLogoSizeDoubleWidthDoubleHeight number:1];

    [builder appendCutPaper:SCBCutPaperActionPartialCutWithFeed];

    [builder endDocument];

    return [builder.commands copy];
}
```

Refer to *ApiFunctions.m* and each Command Specifications.

### 3.19 appendAbsolutePosition Method

Absolute position command is generated and added to the commands property.

#### Declaration

- (void)appendAbsolutePosition:(NSInteger)position;
- (void)appendDataWithAbsolutePosition:(NSData \*)otherData position:(NSInteger)position;
- (void)appendBytesWithAbsolutePosition:(const void \*)bytes length:(NSUInteger)length position:(NSInteger)position;

#### Parameter

Name	Description	Object type
position	Absolute position. (Units : Dots)	NSInteger
otherData	Data (Text and Command).	NSData
bytes		const void *
length		NSUInteger

#### Return value

Description	Object type
-	-

#### Example

```
+ (NSData *)createData:(StarloExtEmulation)emulation {
    NSData *otherData = [@"Hello World.\n" dataUsingEncoding:NSUTF8StringEncoding];

    ISCBBuilder *builder = [StarloExt createCommandBuilder:emulation];

    [builder beginDocument];

    [builder appendData:otherData];

    [builder appendAbsolutePosition:40];
    [builder appendData:otherData];
    [builder appendData:otherData];

    [builder appendDataWithAbsolutePosition:otherData position:40];
    [builder appendData:otherData];

    [builder appendCutPaper:SCBCutPaperActionPartialCutWithFeed];

    [builder endDocument];

    return [builder.commands copy];
}
```

Refer to *ApiFunctions.m*.

## 3.20 appendAlignment Method

Alignment command is generated and added to the commands property.

### Declaration

- (void)appendAlignment:(SCBAlignmentPosition)position;
- (void)appendDataWithAlignment:(NSData \*)otherData position:(SCBAlignmentPosition)position;
- (void)appendBytesWithAlignment:(const void \*)bytes length:(NSUInteger)length position:(SCBAlignmentPosition)position;

### Parameter

Name	Description	Object type
position	Alignment position. <ul style="list-style-type: none"> <li>SCBAlignmentPositionLeft ... Left alignment.</li> <li>SCBAlignmentPositionCenter ... Center alignment.</li> <li>SCBAlignmentPositionRight ... Right alignment.</li> </ul>	SCBAlignmentPosition
otherData	Data (Text and Command).	NSData
bytes		const void *
length		NSUInteger

### Return value

Description	Object type
-	-

### Example

```
+ (NSData *)createData:(StarloExtEmulation)emulation {
    NSData *otherData = [@"Hello World.\n" dataUsingEncoding:NSUTF8StringEncoding];

    ISCBBuilder *builder = [StarloExt createCommandBuilder:emulation];

    [builder beginDocument];

    [builder appendData:otherData];

    [builder appendAlignment:SCBAlignmentPositionRight];
    [builder appendData:otherData];
    [builder appendData:otherData];
    [builder appendAlignment:SCBAlignmentPositionLeft];
    [builder appendData:otherData];
    [builder appendData:otherData];

    [builder appendDataWithAlignment:otherData position:SCBAlignmentPositionRight];
    [builder appendData:otherData];

    [builder appendCutPaper:SCBCutPaperActionPartialCutWithFeed];

    [builder endDocument];

    return [builder.commands copy];
}
```

Refer to *ApiFunctions.m* and each Command Specifications.

### 3.21 appendCutPaper Method

Paper cut command is generated and added to the commands property.

#### Declaration

- (void)appendCutPaper:(SCBCutPaperAction)action;

#### Parameter

Name	Description	Object type
action	Paper cut action. <ul style="list-style-type: none"> <li>SCBCutPaperActionFullCut ... Full Cut.</li> <li>SCBCutPaperActionPartialCut ... Partial Cut.</li> <li>SCBCutPaperActionFullCutWithFeed ... Full Cut with Feed.</li> <li>SCBCutPaperActionPartialCutWithFeed ... Partial Cut with Feed.</li> </ul>	SCBCutPaperAction

#### Return value

Description	Object type
-	-

#### Example

```
+ (NSData *)createData:(StarloExtEmulation)emulation {
    NSData *otherData = [@"Hello World.\n" dataUsingEncoding:NSUTF8StringEncoding];

    ISCBBuilder *builder = [StarloExt createCommandBuilder:emulation];

    [builder beginDocument];

    [builder appendData:otherData];
    [builder appendData:otherData];
    [builder appendData:otherData];
    [builder appendData:otherData];
    [builder appendData:otherData];

    [builder appendCutPaper:SCBCutPaperActionPartialCutWithFeed];

    [builder endDocument];

    return [builder.commands copy];
}
```

Refer to *ApiFunctions.m*.



## 3.22 appendPeripheral Method

Peripheral command is generated and added to the commands property.

### Declaration

- (void)appendPeripheral:(SCBPeripheralChannel)channel;
- (void)appendPeripheral:(SCBPeripheralChannel)channel time:(NSInteger)time;

### Parameter

Name	Description	Object type
channel	Peripheral channel. <ul style="list-style-type: none"> <li>SCBPeripheralChannelNo1 ... Channel1.</li> <li>SCBPeripheralChannelNo2 ... Channel2.</li> </ul>	SCBPeripheralChannel
time	Drive time. (Units : mSec) * Peripheral channel1 only.	NSInteger

### Return value

Description	Object type
-	-

### Example

```
+ (NSData *)createData:(StarloExtEmulation)emulation {
    ISCBBuilder *builder = [StarloExt createCommandBuilder:emulation];

    [builder beginDocument];

    [builder appendPeripheral:SCBPeripheralChannelNo1];
    [builder appendPeripheral:SCBPeripheralChannelNo2];
    [builder appendPeripheral:SCBPeripheralChannelNo1 time:2000];
    [builder appendPeripheral:SCBPeripheralChannelNo2 time:2000];

    [builder endDocument];

    return [builder.commands copy];
}
```

Refer to *ApiFunctions.m* and each Command Specifications.

### 3.23 appendSound Method

Sound command is generated and added to the commands property.

#### Declaration

- (void)appendSound:(SCBSoundChannel)channel;
- (void)appendSound:(SCBSoundChannel)channel repeat:(NSInteger)repeat;

#### Parameter

Name	Description	Object type
channel	Sound channel. <ul style="list-style-type: none"> <li>SCBSoundChannelNo1 ... Channel1.</li> <li>SCBSoundChannelNo2 ... Channel2.</li> </ul>	SCBSoundChannel
repeat	Repeat count.	NSInteger

#### Return value

Description	Object type
-	-

#### Example

```
+ (NSData *)createData:(StarloExtEmulation)emulation {
    ISCBBuilder *builder = [StarloExt createCommandBuilder:emulation];

    [builder beginDocument];

    [builder appendSound:SCBSoundChannelNo1];
    [builder appendSound:SCBSoundChannelNo2];
    [builder appendSound:SCBSoundChannelNo1 repeat:3];
    [builder appendSound:SCBSoundChannelNo2 repeat:3];

    [builder endDocument];

    return [builder.commands copy];
}
```

Refer to *ApiFunctions.m* and each Command Specifications.

### 3.24 appendBarcodeData Method

Print command of the barcode is generated and added to the commands property.

#### Declaration

- (void)appendBarcodeData:(NSData \*)otherData symbology:(SCBBarcodeSymbology)symbology width:(SCBBarcodeWidth)width height:(NSInteger)height hri:(BOOL)hri;

- (void)appendBarcodeBytes:(const void \*)bytes length:(NSUInteger)length symbology:(SCBBarcodeSymbology)symbology width:(SCBBarcodeWidth)width height:(NSInteger)height hri:(BOOL)hri;

#### Parameter

Name	Description	Object type
otherData	Barcode data.	NSData
bytes		const void *
length		NSUInteger
symbology	Barcode symbology. <ul style="list-style-type: none"> <li>SCBBarcodeSymbologyUPCE ... UPC-E.</li> <li>SCBBarcodeSymbologyUPCA ... UPC-A.</li> <li>SCBBarcodeSymbologyJAN8 ... JAN/EAN8.</li> <li>SCBBarcodeSymbologyJAN13 ... JAN/EAN13.</li> <li>SCBBarcodeSymbologyCode39 ... Code39.</li> <li>SCBBarcodeSymbologyITF ... ITF.</li> <li>SCBBarcodeSymbologyCode128 ... Code128.</li> <li>SCBBarcodeSymbologyCode93 ... Code93.</li> <li>SCBBarcodeSymbologyCodabar ... Codabar.</li> <li>SCBBarcodeSymbologyNW7 ... NW7.</li> </ul>	SCBBarcodeSymbology
width	Barcode width. <ul style="list-style-type: none"> <li>SCBBarcodeWidthMode1 ... Mode1.</li> <li>SCBBarcodeWidthMode2 ... Mode2.</li> <li>SCBBarcodeWidthMode3 ... Mode3.</li> <li>SCBBarcodeWidthMode4 ... Mode4.</li> <li>SCBBarcodeWidthMode5 ... Mode5.</li> <li>SCBBarcodeWidthMode6 ... Mode6.</li> <li>SCBBarcodeWidthMode7 ... Mode7.</li> <li>SCBBarcodeWidthMode8 ... Mode8.</li> <li>SCBBarcodeWidthMode9 ... Mode9.</li> </ul>	SCBBarcodeWidth
height	Barcode height. (Units : Dots)	NSInteger
hri	Under-bar characters. <ul style="list-style-type: none"> <li>YES ... Valid</li> <li>NO ... Invalid</li> </ul>	BOOL

#### Return value

Description	Object type
-	-

### Example

```
+ (NSData *)createData:(StarloExtEmulation)emulation {
    NSData *otherDataCode128 = [@"{B0123456789" dataUsingEncoding:NSUTF8StringEncoding];

    ISCBBuilder *builder = [StarloExt createCommandBuilder:emulation];

    [builder beginDocument];

    [builder appendBarcodeData:otherDataCode128 symbology:SCBBarcodeSymbologyCode128
    width:SCBBarcodeWidthMode1 height:40 hri:YES];
    [builder appendUnitFeed:32];

    [builder appendCutPaper:SCBCutPaperActionPartialCutWithFeed];

    [builder endDocument];

    return [builder.commands copy];
}
```

Refer to *ApiFunctions.m* and each Command Specifications.

### 3.25 appendBarcodeDataWithAbsolutePosition Method

Print command of the absolute position barcode is generated and added to the commands property.

#### Declaration

```
- (void)appendBarcodeDataWithAbsolutePosition:(NSData *)otherData
symbology:(SCBBarcodeSymbology)symbology width:(SCBBarcodeWidth)width
height:(NSInteger)height hri:(BOOL)hri position:(NSInteger)position;
```

```
- (void)appendBarcodeBytesWithAbsolutePosition:(const void *)bytes length:(NSUInteger)length
symbology:(SCBBarcodeSymbology)symbology width:(SCBBarcodeWidth)width
height:(NSInteger)height hri:(BOOL)hri position:(NSInteger)position;
```

#### Parameter

Name	Description	Object type
position	Absolute position. (Units : Dots)	NSInteger
otherData	Barcode data.	NSData
bytes		const void *
length		NSUInteger
symbology	Barcode symbology. <ul style="list-style-type: none"> <li>SCBBarcodeSymbologyUPCE ... UPC-E.</li> <li>SCBBarcodeSymbologyUPCA ... UPC-A.</li> <li>SCBBarcodeSymbologyJAN8 ... JAN/EAN8.</li> <li>SCBBarcodeSymbologyJAN13 ... JAN/EAN13.</li> <li>SCBBarcodeSymbologyCode39 ... Code39.</li> <li>SCBBarcodeSymbologyITF ... ITF.</li> <li>SCBBarcodeSymbologyCode128 ... Code128.</li> <li>SCBBarcodeSymbologyCode93 ... Code93.</li> <li>SCBBarcodeSymbologyCodabar ... Codabar.</li> <li>SCBBarcodeSymbologyNW7 ... NW7.</li> </ul>	SCBBarcodeSymbology
width	Barcode width. <ul style="list-style-type: none"> <li>SCBBarcodeWidthMode1 ... Mode1.</li> <li>SCBBarcodeWidthMode2 ... Mode2.</li> <li>SCBBarcodeWidthMode3 ... Mode3.</li> <li>SCBBarcodeWidthMode4 ... Mode4.</li> <li>SCBBarcodeWidthMode5 ... Mode5.</li> <li>SCBBarcodeWidthMode6 ... Mode6.</li> <li>SCBBarcodeWidthMode7 ... Mode7.</li> <li>SCBBarcodeWidthMode8 ... Mode8.</li> <li>SCBBarcodeWidthMode9 ... Mode9.</li> </ul>	SCBBarcodeWidth
height	Barcode height. (Units : Dots)	NSInteger
hri	Under-bar characters. <ul style="list-style-type: none"> <li>YES ... Valid</li> <li>NO ... Invalid</li> </ul>	BOOL

## Return value

Description	Object type
-	-

## Example

```
+ (NSData *)createData:(StarloExtEmulation)emulation {
    NSData *otherDataCode128 = [@"{B0123456789" dataUsingEncoding:NSUTF8StringEncoding];

    ISCBBuilder *builder = [StarloExt createCommandBuilder:emulation];

    [builder beginDocument];

    [builder appendBarcodeDataWithAbsolutePosition:otherDataCode128
    symbology:SCBBarcodeSymbologyCode128 width:SCBBarcodeWidthMode1 height:40 hri:YES position:40];
    [builder appendUnitFeed:32];

    [builder appendCutPaper:SCBCutPaperActionPartialCutWithFeed];

    [builder endDocument];

    return [builder.commands copy];
}
```

Refer to *ApiFunctions.m* and each Command Specifications.

### 3.26 appendBarcodeDataWithAlignment Method

Print command of the alignment barcode is generated and added to the commands property.

#### Declaration

```
- (void)appendBarcodeDataWithAlignment:(NSData *)otherData
symbology:(SCBBarcodeSymbology)symbology width:(SCBBarcodeWidth)width
height:(NSInteger)height hri:(BOOL)hri position:(SCBAlignmentPosition)position;
```

```
- (void)appendBarcodeBytesWithAlignment:(const void *)bytes length:(NSUInteger)length
symbology:(SCBBarcodeSymbology)symbology width:(SCBBarcodeWidth)width
height:(NSInteger)height hri:(BOOL)hri position:(SCBAlignmentPosition)position;
```

#### Parameter

Name	Description	Object type
position	Alignment position. <ul style="list-style-type: none"> <li>SCBAlignmentPositionLeft ... Left alignment.</li> <li>SCBAlignmentPositionCenter ... Center alignment.</li> <li>SCBAlignmentPositionRight ... Right alignment.</li> </ul>	SCBAlignmentPosition
otherData	Barcode data.	NSData
bytes		const void *
length		NSUInteger
symbology	Barcode symbology. <ul style="list-style-type: none"> <li>SCBBarcodeSymbologyUPCE ... UPC-E.</li> <li>SCBBarcodeSymbologyUPCA ... UPC-A.</li> <li>SCBBarcodeSymbologyJAN8 ... JAN/EAN8.</li> <li>SCBBarcodeSymbologyJAN13 ... JAN/EAN13.</li> <li>SCBBarcodeSymbologyCode39 ... Code39.</li> <li>SCBBarcodeSymbologyITF ... ITF.</li> <li>SCBBarcodeSymbologyCode128 ... Code128.</li> <li>SCBBarcodeSymbologyCode93 ... Code93.</li> <li>SCBBarcodeSymbologyCodabar ... Codabar.</li> <li>SCBBarcodeSymbologyNW7 ... NW7.</li> </ul>	SCBBarcodeSymbology
width	Barcode width. <ul style="list-style-type: none"> <li>SCBBarcodeWidthMode1 ... Mode1.</li> <li>SCBBarcodeWidthMode2 ... Mode2.</li> <li>SCBBarcodeWidthMode3 ... Mode3.</li> <li>SCBBarcodeWidthMode4 ... Mode4.</li> <li>SCBBarcodeWidthMode5 ... Mode5.</li> <li>SCBBarcodeWidthMode6 ... Mode6.</li> <li>SCBBarcodeWidthMode7 ... Mode7.</li> <li>SCBBarcodeWidthMode8 ... Mode8.</li> <li>SCBBarcodeWidthMode9 ... Mode9.</li> </ul>	SCBBarcodeWidth
height	Barcode height. (Units : Dots)	NSInteger

Name	Description	Object type
hri	Under-bar characters. <ul style="list-style-type: none"> <li>YES ... Valid</li> <li>NO ... Invalid</li> </ul>	BOOL

### Return value

Description	Object type
-	-

### Example

```
+ (NSData *)createData:(StarIoExtEmulation)emulation {
    NSData *otherDataCode128 = [@"{B0123456789" dataUsingEncoding:NSUTF8StringEncoding];

    ISCBBuilder *builder = [StarIoExt createCommandBuilder:emulation];

    [builder beginDocument];

    [builder appendBarcodeDataWithAlignment:otherDataCode128 symbology:SCBBarcodeSymbologyCode128
width:SCBBarcodeWidthMode1 height:40 hri:YES position:SCBAlignmentPositionCenter];
    [builder appendUnitFeed:32];

    [builder appendBarcodeDataWithAlignment:otherDataCode128 symbology:SCBBarcodeSymbologyCode128
width:SCBBarcodeWidthMode1 height:40 hri:YES position:SCBAlignmentPositionRight];
    [builder appendUnitFeed:32];

    [builder appendCutPaper:SCBCutPaperActionPartialCutWithFeed];

    [builder endDocument];

    return [builder.commands copy];
}
```

Refer to *ApiFunctions.m* and each Command Specifications.



### 3.27 appendPdf417Data Method

Print command of the PDF417 is generated and added to the commands property.

#### Declaration

- (void)appendPdf417Data:(NSData \*)otherData line:(NSInteger)line column:(NSInteger)column level:(SCBPdf417Level)level module:(NSInteger)module aspect:(NSInteger)aspect;

- (void)appendPdf417Bytes:(const void \*)bytes length:(NSUInteger)length line:(NSInteger)line column:(NSInteger)column level:(SCBPdf417Level)level module:(NSInteger)module aspect:(NSInteger)aspect;

#### Parameter

Name	Description	Object type
otherData	PDF417 data.	NSData
bytes		const void *
length		NSUInteger
line	Number of lines.	NSInteger
column	Number of columns.	NSInteger
level	PDF417 ECC (security level). <ul style="list-style-type: none"> <li>• SCBPdf417LevelECC0 ... Level0.</li> <li>• SCBPdf417LevelECC1 ... Level1.</li> <li>• SCBPdf417LevelECC2 ... Level2.</li> <li>• SCBPdf417LevelECC3 ... Level3.</li> <li>• SCBPdf417LevelECC4 ... Level4.</li> <li>• SCBPdf417LevelECC5 ... Level5.</li> <li>• SCBPdf417LevelECC6 ... Level6.</li> <li>• SCBPdf417LevelECC7 ... Level7.</li> <li>• SCBPdf417LevelECC8 ... Level8.</li> </ul>	SCBPdf417Level
module	Module X direction size.	NSInteger
aspect	Module aspect ratio.	NSInteger

#### Return value

Description	Object type
-	-

### Example

```
+ (NSData *)createData:(StarloExtEmulation)emulation {
    NSData *otherData = [@"Hello World." dataUsingEncoding:NSUTF8StringEncoding];

    ISCBBuilder *builder = [StarloExt createCommandBuilder:emulation];

    [builder beginDocument];

    [builder appendPdf417Data:otherData line:0 column:1 level:SCBPdf417LevelECC0 module:2 aspect:2];
    [builder appendUnitFeed:32];

    [builder appendCutPaper:SCBCutPaperActionPartialCutWithFeed];

    [builder endDocument];

    return [builder.commands copy];
}
```

*Refer to ApiFunctions.m and each Command Specifications.*

### 3.28 appendPdf417DataWithAbsolutePosition Method

Print command of the absolute position PDF417 is generated and added to the commands property.

#### Declaration

```
- (void)appendPdf417DataWithAbsolutePosition:(NSData *)otherData line:(NSInteger)line
column:(NSInteger)column level:(SCBPdf417Level)level module:(NSInteger)module
aspect:(NSInteger)aspect position:(NSInteger)position;
```

```
- (void)appendPdf417BytesWithAbsolutePosition:(const void *)bytes length:(NSUInteger)length
line:(NSInteger)line column:(NSInteger)column level:(SCBPdf417Level)level
module:(NSInteger)module aspect:(NSInteger)aspect position:(NSInteger)position;
```

#### Parameter

Name	Description	Object type
position	Absolute position. (Units : Dots)	NSInteger
otherData	PDF417 data.	NSData
bytes		const void *
length		NSUInteger
line		NSInteger
column	Number of columns.	NSInteger
level	PDF417 ECC (security level). <ul style="list-style-type: none"> <li>SCBPdf417LevelECC0 ... Level0.</li> <li>SCBPdf417LevelECC1 ... Level1.</li> <li>SCBPdf417LevelECC2 ... Level2.</li> <li>SCBPdf417LevelECC3 ... Level3.</li> <li>SCBPdf417LevelECC4 ... Level4.</li> <li>SCBPdf417LevelECC5 ... Level5.</li> <li>SCBPdf417LevelECC6 ... Level6.</li> <li>SCBPdf417LevelECC7 ... Level7.</li> <li>SCBPdf417LevelECC8 ... Level8.</li> </ul>	SCBPdf417Level
module	Module X direction size.	NSInteger
aspect	Module aspect ratio.	NSInteger

#### Return value

Description	Object type
-	-

### Example

```
+ (NSData *)createData:(StarloExtEmulation)emulation {
    NSData *otherData = [@"Hello World." dataUsingEncoding:NSUTF8StringEncoding];

    ISCBBuilder *builder = [StarloExt createCommandBuilder:emulation];

    [builder beginDocument];

    [builder appendPdf417DataWithAbsolutePosition:otherData line:0 column:1 level:SCBPdf417LevelECC0
    module:2 aspect:2 position:40];
    [builder appendUnitFeed:32];

    [builder appendCutPaper:SCBCutPaperActionPartialCutWithFeed];

    [builder endDocument];

    return [builder.commands copy];
}
```

Refer to *ApiFunctions.m* and each Command Specifications.

### 3.29 appendPdf417DataWithAlignment Method

Print command of the alignment PDF417 is generated and added to the commands property.

#### Declaration

- (void)appendPdf417DataWithAlignment:(NSData \*)otherData line:(NSInteger)line  
column:(NSInteger)column level:(SCBPdf417Level)level module:(NSInteger)module  
aspect:(NSInteger)aspect position:(SCBAlignmentPosition)position;

- (void)appendPdf417BytesWithAlignment:(const void \*)bytes length:(NSUInteger)length  
line:(NSInteger)line column:(NSInteger)column level:(SCBPdf417Level)level  
module:(NSInteger)module aspect:(NSInteger)aspect position:(SCBAlignmentPosition)position;

#### Parameter

Name	Description	Object type
position	Alignment position. <ul style="list-style-type: none"> <li>SCBAlignmentPositionLeft ... Left alignment.</li> <li>SCBAlignmentPositionCenter ... Center alignment.</li> <li>SCBAlignmentPositionRight ... Right alignment.</li> </ul>	SCBAlignmentPosition
otherData		NSData
bytes	PDF417 data.	const void *
length		NSUInteger
line	Number of lines.	NSInteger
column	Number of columns.	NSInteger
level	PDF417 ECC (security level). <ul style="list-style-type: none"> <li>SCBPdf417LevelECC0 ... Level0.</li> <li>SCBPdf417LevelECC1 ... Level1.</li> <li>SCBPdf417LevelECC2 ... Level2.</li> <li>SCBPdf417LevelECC3 ... Level3.</li> <li>SCBPdf417LevelECC4 ... Level4.</li> <li>SCBPdf417LevelECC5 ... Level5.</li> <li>SCBPdf417LevelECC6 ... Level6.</li> <li>SCBPdf417LevelECC7 ... Level7.</li> <li>SCBPdf417LevelECC8 ... Level8.</li> </ul>	SCBPdf417Level
module	Module X direction size.	NSInteger
aspect	Module aspect ratio.	NSInteger

#### Return value

Description	Object type
-	-

### Example

```
+ (NSData *)createData:(StarloExtEmulation)emulation {
    NSData *otherData = [@"Hello World." dataUsingEncoding:NSUTF8StringEncoding];

    ISCBBuilder *builder = [StarloExt createCommandBuilder:emulation];

    [builder beginDocument];

    [builder appendPdf417DataWithAlignment:otherData line:0 column:1 level:SCBPdf417LevelECC0 module:2
    aspect:2 position:SCBAlignmentPositionCenter];
    [builder appendUnitFeed:32];

    [builder appendPdf417DataWithAlignment:otherData line:0 column:1 level:SCBPdf417LevelECC0 module:2
    aspect:2 position:SCBAlignmentPositionRight];
    [builder appendUnitFeed:32];

    [builder appendCutPaper:SCBCutPaperActionPartialCutWithFeed];

    [builder endDocument];

    return [builder.commands copy];
}
```

*Refer to ApiFunctions.m and each Command Specifications.*

### 3.30 appendQrCodeData Method

Print command of the QR code is generated and added to the commands property.

#### Declaration

- (void)appendQrCodeData:(NSData \*)otherData model:(SCBQrCodeModel)model level:(SCBQrCodeLevel)level cell:(NSInteger)cell;

- (void)appendQrCodeBytes:(const void \*)bytes length:(NSUInteger)length model:(SCBQrCodeModel)model level:(SCBQrCodeLevel)level cell:(NSInteger)cell;

#### Parameter

Name	Description	Object type
otherData	QR code data.	NSData
bytes		const void *
length		NSUInteger
model	QR code model. • SCBQrCodeModelNo1 ... Model1. • SCBQrCodeModelNo2 ... Model2.	SCBQrCodeModel
level	QR code mistake correction level. • SCBQrCodeLevelL ... Level L. • SCBQrCodeLevelM ... Level M. • SCBQrCodeLevelQ ... Level Q. • SCBQrCodeLevelH ... Level H.	SCBQrCodeLevel
cell	QR code cell size.	NSInteger

#### Return value

Description	Object type
-	-

#### Example

```
+ (NSData *)createData:(StarIoExtEmulation)emulation {
    NSData *otherData = [@"Hello World." dataUsingEncoding:NSUTF8StringEncoding];

    ISCBBuilder *builder = [StarIoExt createCommandBuilder:emulation];

    [builder beginDocument];

    [builder appendQrCodeData:otherData model:SCBQrCodeModelNo2 level:SCBQrCodeLevelL cell:4];
    [builder appendUnitFeed:32];

    [builder appendCutPaper:SCBCutPaperActionPartialCutWithFeed];

    [builder endDocument];

    return [builder.commands copy];
}
```

Refer to *ApiFunctions.m* and each Command Specifications.

### 3.31 appendQrCodeDataWithAbsolutePosition Method

Print command of the absolute position QR code is generated and added to the commands property.

#### Declaration

```
- (void)appendQrCodeDataWithAbsolutePosition:(NSData *)otherData
model:(SCBQrCodeModel)model level:(SCBQrCodeLevel)level cell:(NSInteger)cell
position:(NSInteger)position;
```

```
- (void)appendQrCodeBytesWithAbsolutePosition:(const void *)bytes length:(NSUInteger)length
model:(SCBQrCodeModel)model level:(SCBQrCodeLevel)level cell:(NSInteger)cell
position:(NSInteger)position;
```

#### Parameter

Name	Description	Object type
position	Absolute position. (Units : Dots)	NSInteger
otherData	QR code data.	NSData
bytes		const void *
length		NSUInteger
model	QR code model. • SCBQrCodeModelNo1 ... Model1. • SCBQrCodeModelNo2 ... Model2.	SCBQrCodeModel
level	QR code mistake correction level. • SCBQrCodeLevelL ... Level L. • SCBQrCodeLevelM ... Level M. • SCBQrCodeLevelQ ... Level Q. • SCBQrCodeLevelH ... Level H.	SCBQrCodeLevel
cell	QR code cell size.	NSInteger

#### Return value

Description	Object type
-	-

#### Example

```
+ (NSData *)createData:(StarloExtEmulation)emulation {
    NSData *otherData = [@"Hello World." dataUsingEncoding:NSUTF8StringEncoding];

    ISCBBuilder *builder = [StarloExt createCommandBuilder:emulation];

    [builder beginDocument];

    [builder appendQrCodeDataWithAbsolutePosition:otherData model:SCBQrCodeModelNo2
level:SCBQrCodeLevelL cell:4 position:40];
    [builder appendUnitFeed:32];

    [builder appendCutPaper:SCBCutPaperActionPartialCutWithFeed];

    [builder endDocument];

    return [builder.commands copy];
}
```

Refer to *ApiFunctions.m* and each Command Specifications.



### 3.32 appendQrCodeDataWithAlignment Method

Print command of the alignment QR code is generated and added to the commands property.

#### Declaration

```
- (void)appendQrCodeDataWithAlignment:(NSData *)otherData model:(SCBQrCodeModel)model
level:(SCBQrCodeLevel)level cell:(NSInteger)cell position:(SCBAlignmentPosition)position;
```

```
- (void)appendQrCodeBytesWithAlignment:(const void *)bytes length:(NSUInteger)length
model:(SCBQrCodeModel)model level:(SCBQrCodeLevel)level cell:(NSInteger)cell
position:(SCBAlignmentPosition)position;
```

#### Parameter

Name	Description	Object type
position	Alignment position. <ul style="list-style-type: none"> <li>SCBAlignmentPositionLeft ... Left alignment.</li> <li>SCBAlignmentPositionCenter ... Center alignment.</li> <li>SCBAlignmentPositionRight ... Right alignment.</li> </ul>	SCBAlignmentPosition
otherData	QR code data.	NSData
bytes		const void *
length		NSUInteger
model	QR code model. <ul style="list-style-type: none"> <li>SCBQrCodeModelNo1 ... Model1.</li> <li>SCBQrCodeModelNo2 ... Model2.</li> </ul>	SCBQrCodeModel
level	QR code mistake correction level. <ul style="list-style-type: none"> <li>SCBQrCodeLevelL ... Level L.</li> <li>SCBQrCodeLevelM ... Level M.</li> <li>SCBQrCodeLevelQ ... Level Q.</li> <li>SCBQrCodeLevelH ... Level H.</li> </ul>	SCBQrCodeLevel
cell	QR code cell size.	NSInteger

#### Return value

Description	Object type
-	-

### Example

```
+ (NSData *)createData:(StarIoExtEmulation)emulation {
    NSData *otherData = [@"Hello World." dataUsingEncoding:NSUTF8StringEncoding];

    ISCBBuilder *builder = [StarIoExt createCommandBuilder:emulation];

    [builder beginDocument];

    [builder appendQrCodeDataWithAlignment:otherData model:SCBQrCodeModelNo2 level:SCBQrCodeLevelL
    cell:4 position:SCBAlignmentPositionCenter];
    [builder appendUnitFeed:32];

    [builder appendQrCodeDataWithAlignment:otherData model:SCBQrCodeModelNo2 level:SCBQrCodeLevelL
    cell:4 position:SCBAlignmentPositionRight];
    [builder appendUnitFeed:32];

    [builder appendCutPaper:SCBCutPaperActionPartialCutWithFeed];

    [builder endDocument];

    return [builder.commands copy];
}
```

Refer to *ApiFunctions.m* and each Command Specifications.

### 3.33 appendBitmap Method

Print command of the bitmap is generated and added to the commands property.

#### Declaration

- (void)appendBitmap:(UIImage \*)image diffusion:(BOOL)diffusion width:(NSInteger)width bothScale:(BOOL)bothScale rotation:(SCBBitmapConverterRotation)rotation;

- (void)appendBitmap:(UIImage \*)image diffusion:(BOOL)diffusion rotation:(SCBBitmapConverterRotation)rotation;

- (void)appendBitmap:(UIImage \*)image diffusion:(BOOL)diffusion width:(NSInteger)width bothScale:(BOOL)bothScale;

- (void)appendBitmap:(UIImage \*)image diffusion:(BOOL)diffusion;

#### Parameter

Name	Description	Object type
image	Source bitmap object.	UIImage
diffusion	Random dither. <ul style="list-style-type: none"> <li>YES ... Valid</li> <li>NO ... Invalid</li> </ul>	BOOL
width	Bitmap width after conversion. (Units : Dots)	NSInteger
bothScale	Height is changed according to the conversion rate of the width property. <ul style="list-style-type: none"> <li>YES ... Valid.</li> <li>NO ... Invalid.</li> </ul>	BOOL
rotation	Rotation. <ul style="list-style-type: none"> <li>SCBBitmapConverterRotationNormal ... Rotated 0.</li> <li>SCBBitmapConverterRotationRight90 ... Rotated 90.</li> <li>SCBBitmapConverterRotationLeft90 ... Rotated 270.</li> <li>SCBBitmapConverterRotationRotate180 ... Rotated 180.</li> </ul>	SCBBitmapConverterRotation

#### Return value

Description	Object type
-	-

### Example

```
+ (NSData *)createData:(StarloExtEmulation)emulation width:(NSInteger)width {
    UIImage *starLogoImage = [UIImage imageNamed:@"StarLogoImage"];

    ISCBBuilder *builder = [StarloExt createCommandBuilder:emulation];

    [builder beginDocument];

    [builder appendData:@"\nNormal\n" dataUsingEncoding:NSUTF8StringEncoding];
    [builder appendBitmap:starLogoImage diffusion:YES];

    [builder appendData:@"\nwidth:Full, bothScale:YES\n" dataUsingEncoding:NSUTF8StringEncoding];
    [builder appendBitmap:starLogoImage diffusion:YES width:width bothScale:YES];
    [builder appendData:@"\nwidth:Full, bothScale:NO\n" dataUsingEncoding:NSUTF8StringEncoding];
    [builder appendBitmap:starLogoImage diffusion:YES width:width bothScale:NO];

    [builder appendData:@"\nRotate180\n" dataUsingEncoding:NSUTF8StringEncoding];
    [builder appendBitmap:starLogoImage diffusion:YES rotation:SCBBitmapConverterRotationRotate180];

    [builder appendCutPaper:SCBCutPaperActionPartialCutWithFeed];

    [builder endDocument];

    return [builder.commands copy];
}
```

Refer to *ApiFunctions.m*.

### 3.34 appendBitmapWithAbsolutePosition Method

Print command of the absolute position bitmap is generated and added to the commands property.

#### Declaration

- (void)appendBitmapWithAbsolutePosition:(UIImage \*)image diffusion:(BOOL)diffusion width:(NSInteger)width bothScale:(BOOL)bothScale rotation:(SCBBitmapConverterRotation)rotation position:(NSInteger)position;

- (void)appendBitmapWithAbsolutePosition:(UIImage \*)image diffusion:(BOOL)diffusion rotation:(SCBBitmapConverterRotation)rotation position:(NSInteger)position;

- (void)appendBitmapWithAbsolutePosition:(UIImage \*)image diffusion:(BOOL)diffusion width:(NSInteger)width bothScale:(BOOL)bothScale position:(NSInteger)position;

- (void)appendBitmapWithAbsolutePosition:(UIImage \*)image diffusion:(BOOL)diffusion position:(NSInteger)position;

#### Parameter

Name	Description	Object type
position	Absolute position. (Units : Dots)	NSInteger
image	Source bitmap object.	UIImage
diffusion	Random dither. <ul style="list-style-type: none"> <li>YES ... Valid</li> <li>NO ... Invalid</li> </ul>	BOOL
width	Bitmap width after conversion. (Units : Dots)	NSInteger
bothScale	Height is changed according to the conversion rate of the width property. <ul style="list-style-type: none"> <li>YES ... Valid.</li> <li>NO ... Invalid.</li> </ul>	BOOL
rotation	Rotation. <ul style="list-style-type: none"> <li>SCBBitmapConverterRotationNormal ... Rotated 0.</li> <li>SCBBitmapConverterRotationRight90 ... Rotated 90.</li> <li>SCBBitmapConverterRotationLeft90 ... Rotated 270.</li> <li>SCBBitmapConverterRotationRotate180 ... Rotated 180.</li> </ul>	SCBBitmapConverterRotation

#### Return value

Description	Object type
-	-

### Example

```
+ (NSData *)createData:(StarIoExtEmulation)emulation width:(NSInteger)width {
    UIImage *starLogoImage = [UIImage imageNamed:@"StarLogoImage"];

    ISCBBuilder *builder = [StarIoExt createCommandBuilder:emulation];

    [builder beginDocument];

    [builder appendData:@"\nNormal, AbsolutePosition:40*\n" dataUsingEncoding:NSUTF8StringEncoding];
    [builder appendBitmapWithAbsolutePosition:starLogoImage diffusion:YES position:40];

    [builder appendData:@"\nwidth:Full, bothScale:YES, AbsolutePosition:40*\n"
dataUsingEncoding:NSUTF8StringEncoding];
    [builder appendBitmap:starLogoImage diffusion:YES width:width bothScale:YES position:40];
    [builder appendData:@"\nwidth:Full, bothScale:NO, AbsolutePosition:40*\n"
dataUsingEncoding:NSUTF8StringEncoding];
    [builder appendBitmap:starLogoImage diffusion:YES width:width bothScale:NO position:40];

    [builder appendData:@"\nRotate180, AbsolutePosition:40*\n" dataUsingEncoding:NSUTF8StringEncoding];
    [builder appendBitmapWithAbsolutePosition:starLogoImage diffusion:YES
rotation:SCBBitmapConverterRotationRotate180 position:40];

    [builder appendCutPaper:SCBCutPaperActionPartialCutWithFeed];

    [builder endDocument];

    return [builder.commands copy];
}
```

Refer to *ApiFunctions.m*.

### 3.35 appendBitmapWithAlignment Method

Print command of the alignment bitmap is generated and added to the commands property.

#### Declaration

- (void)appendBitmapWithAlignment:(UIImage \*)image diffusion:(BOOL)diffusion  
width:(NSInteger)width bothScale:(BOOL)bothScale rotation:(SCBBitmapConverterRotation)rotation  
position:(SCBAlignmentPosition)position;

- (void)appendBitmapWithAlignment:(UIImage \*)image diffusion:(BOOL)diffusion  
rotation:(SCBBitmapConverterRotation)rotation position:(SCBAlignmentPosition)position;

- (void)appendBitmapWithAlignment:(UIImage \*)image diffusion:(BOOL)diffusion  
width:(NSInteger)width bothScale:(BOOL)bothScale position:(SCBAlignmentPosition)position;

- (void)appendBitmapWithAlignment:(UIImage \*)image diffusion:(BOOL)diffusion  
position:(SCBAlignmentPosition)position;

#### Parameter

Name	Description	Object type
position	Alignment position. <ul style="list-style-type: none"> <li>SCBAlignmentPositionLeft ... Left alignment.</li> <li>SCBAlignmentPositionCenter ... Center alignment.</li> <li>SCBAlignmentPositionRight ... Right alignment.</li> </ul>	SCBAlignmentPosition
image	Source bitmap object.	UIImage
diffusion	Random dither. <ul style="list-style-type: none"> <li>YES ... Valid</li> <li>NO ... Invalid</li> </ul>	BOOL
Width	Bitmap width after conversion. (Units : Dots)	NSInteger
bothScale	Height is changed according to the conversion rate of the width property. <ul style="list-style-type: none"> <li>YES ... Valid.</li> <li>NO ... Invalid.</li> </ul>	BOOL
rotation	Rotation. <ul style="list-style-type: none"> <li>SCBBitmapConverterRotationNormal ... Rotated 0.</li> <li>SCBBitmapConverterRotationRight90 ... Rotated 90.</li> <li>SCBBitmapConverterRotationLeft90 ... Rotated 270.</li> <li>SCBBitmapConverterRotationRotate180 ... Rotated 180.</li> </ul>	SCBBitmapConverterRotation

#### Return value

Description	Object type
-	-

### Example

```
+ (NSData *)createData:(StarloExtEmulation)emulation width:(NSInteger)width {
    UIImage *starLogoImage = [UIImage imageNamed:@"StarLogoImage"];

    ISCBBuilder *builder = [StarloExt createCommandBuilder:emulation];

    [builder beginDocument];

    [builder appendData:@"\nNormal, Alignment:Center*\n" dataUsingEncoding:NSUTF8StringEncoding];
    [builder appendBitmapWithAlignment:starLogoImage diffusion:YES position:SCBAlignmentPositionCenter];

    [builder appendData:@"\nwidth:Full, bothScale:YES, Alignment:Center*\n"
    dataUsingEncoding:NSUTF8StringEncoding];
    [builder appendBitmapWithAlignment:starLogoImage diffusion:YES width:width bothScale:YES
    position:SCBAlignmentPositionCenter];

    [builder appendData:@"\nwidth:Full, bothScale:NO, Alignment:Center*\n"
    dataUsingEncoding:NSUTF8StringEncoding];
    [builder appendBitmapWithAlignment:starLogoImage diffusion:YES width:width bothScale:NO
    position:SCBAlignmentPositionCenter];

    [builder appendData:@"\nRotate180, Alignment:Center*\n" dataUsingEncoding:NSUTF8StringEncoding];
    [builder appendBitmapWithAlignment:starLogoImage diffusion:YES
    rotation:SCBBitmapConverterRotationRotate180 position:SCBAlignmentPositionCenter];

    [builder appendCutPaper:SCBCutPaperActionPartialCutWithFeed];

    [builder endDocument];

    return [builder.commands copy];
}
```

Refer to *ApiFunctions.m*.



### 3.36 commands Property

Generated commands.

#### Declaration

@property (nonatomic, readonly) NSMutableData \*commands;

#### Value

Description	Object type
Generated commands.	NSMutableData

#### Example

```
+ (NSData *)createData:(StarIoExtEmulation)emulation {
    NSData *otherData = [@"Hello World.\n" dataUsingEncoding:NSUTF8StringEncoding];

    ISCBBuilder *builder = [StarIoExt createCommandBuilder:emulation];

    [builder beginDocument];

    [builder appendData:otherData];

    [builder appendCutPaper:SCBCutPaperActionPartialCutWithFeed];

    [builder endDocument];

    return [builder.commands copy];
}
```

Refer to *ApiFunctions.m*.

### 3.37 SCBInitializationType Constants

Initialization constants.

#### Declaration

```
typedef NS_ENUM(NSUInteger, SCBInitializationType) {
    SCBInitializationTypeCommand
// SCBInitializationTypeReset,
// SCBInitializationTypeResetWithPrint
};
```

#### Constants

Name	Description
SCBInitializationTypeCommand	Command initialization.
SCBInitializationTypeReset	Reset printer.
SCBInitializationTypeResetWithPrint	Reset printer (execute self print).

Refer to *ApiFunctions.m*.

### 3.38 SCBFontStyleType Constants

Font style constants.

#### Declaration

```
typedef NS_ENUM(NSUInteger, SCBFontStyleType) {
    SCBFontStyleTypeA,
    SCBFontStyleTypeB
};
```

#### Constants

Name	Description
SCBFontStyleTypeA	Font-A (12 x 24 dots) / Specify 7 x 9 font (half dots)
SCBFontStyleTypeB	Font-B (9 x 24 dots) / Specify 5 x 9 font (2P-1)

Refer to *ApiFunctions.m* and each *Command Specifications*.

### 3.39 SCBCodePageType Constants

Code Page constants.

#### *Declaration*

```
typedef NS_ENUM(NSUInteger, SCBCodePageType) {
    SCBCodePageTypeCP437,
    SCBCodePageTypeCP737,
    SCBCodePageTypeCP772,
    SCBCodePageTypeCP774,
    SCBCodePageTypeCP851,
    SCBCodePageTypeCP852,
    SCBCodePageTypeCP855,
    SCBCodePageTypeCP857,
    SCBCodePageTypeCP858,
    SCBCodePageTypeCP860,
    SCBCodePageTypeCP861,
    SCBCodePageTypeCP862,
    SCBCodePageTypeCP863,
    SCBCodePageTypeCP864,
    SCBCodePageTypeCP865,
    SCBCodePageTypeCP866,
    SCBCodePageTypeCP869,
    SCBCodePageTypeCP874,
    SCBCodePageTypeCP928,
    SCBCodePageTypeCP932,
    SCBCodePageTypeCP998,
    SCBCodePageTypeCP999,
    SCBCodePageTypeCP1001,
    SCBCodePageTypeCP1250,
    SCBCodePageTypeCP1251,
    SCBCodePageTypeCP1252,
    SCBCodePageTypeCP2001,
    SCBCodePageTypeCP3001,
    SCBCodePageTypeCP3002,
    SCBCodePageTypeCP3011,
    SCBCodePageTypeCP3012,
    SCBCodePageTypeCP3021,
    SCBCodePageTypeCP3041,
    SCBCodePageTypeCP3840,
    SCBCodePageTypeCP3841,
    SCBCodePageTypeCP3843,
    SCBCodePageTypeCP3844,
    SCBCodePageTypeCP3845,
    SCBCodePageTypeCP3846,
    SCBCodePageTypeCP3847,
    SCBCodePageTypeCP3848,
    SCBCodePageTypeUTF8,
    SCBCodePageTypeBlank
};
```

## Constants

Name	Description
SCBCodePageTypeCP437	CodePage437 (USA, Std. Europe).
SCBCodePageTypeCP737	Codepage 737 (Greek).
SCBCodePageTypeCP772	Codepage 772 (Lithuanian).
SCBCodePageTypeCP774	Codepage 774 (Lithuanian).
SCBCodePageTypeCP851	Codepage 851 (Greek).
SCBCodePageTypeCP852	Codepage 852 (Latin-2).
SCBCodePageTypeCP855	Codepage 855 (Cyrillic Bulgarian).
SCBCodePageTypeCP857	Codepage 857 (Turkey).
SCBCodePageTypeCP858	Codepage 858 (Multilingual).
SCBCodePageTypeCP860	Codepage 860 (Portuguese).
SCBCodePageTypeCP861	Codepage 861 (Icelandic).
SCBCodePageTypeCP862	Codepage 862 (Israel (Hebrew)).
SCBCodePageTypeCP863	Codepage 863 (Canadian French).
SCBCodePageTypeCP864	Codepage 864 (Arabic).
SCBCodePageTypeCP865	Codepage 865 (Nordic).
SCBCodePageTypeCP866	Codepage 866 (Cyrillic Russian).
SCBCodePageTypeCP869	Codepage 869 (Greek).
SCBCodePageTypeCP874	Codepage 874 (Thai).
SCBCodePageTypeCP928	Codepage 928 (Greek).
SCBCodePageTypeCP932	Katakana.
SCBCodePageTypeCP998	Normal.
SCBCodePageTypeCP999	Codepage 1252 (Windows Latin-1).
SCBCodePageTypeCP1001	Codepage 1001 (Arabic).
SCBCodePageTypeCP1250	Codepage 1250 (Windows Latin-2).
SCBCodePageTypeCP1251	Codepage 1251 (Windows Cyrillic).
SCBCodePageTypeCP1252	Codepage 1252 (Windows Latin-1).
SCBCodePageTypeCP2001	Codepage 2001 (Lithuanian-KBL).
SCBCodePageTypeCP3001	Codepage 3001 (Estonian-1).
SCBCodePageTypeCP3002	Codepage 3002 (Estonian-2).
SCBCodePageTypeCP3011	Codepage 3011 (Latvian-1).
SCBCodePageTypeCP3012	Codepage 3012 (Latvian-2).
SCBCodePageTypeCP3021	Codepage 3021 (Bulgarian).
SCBCodePageTypeCP3041	Codepage 3041 (Maltese).
SCBCodePageTypeCP3840	Codepage 3840 (IBM-Russian).
SCBCodePageTypeCP3841	Codepage 3841 (Gost).
SCBCodePageTypeCP3843	Codepage 3843 (Polish).
SCBCodePageTypeCP3844	Codepage 3844 (CS2).
SCBCodePageTypeCP3845	Codepage 3845 (Hungarian).
SCBCodePageTypeCP3846	Codepage 3846 (Turkish).
SCBCodePageTypeCP3847	Codepage 3847 (Brazil-ABNT).
SCBCodePageTypeCP3848	Codepage 3848 (Brazil-ABICOMP).
SCBCodePageTypeUTF8	UTF-8.
SCBCodePageTypeBlank	User Setting Blank Code Page.

Refer to *ApiFunctions.m* and each Command Specifications.

### 3.40 SCBInternationalType Constants

International character constants.

#### Declaration

```
typedef NS_ENUM(NSUInteger, SCBInternationalType) {
    SCBInternationalTypeUSA,
    SCBInternationalTypeFrance,
    SCBInternationalTypeGermany,
    SCBInternationalTypeUK,
    SCBInternationalTypeDenmark,
    SCBInternationalTypeSweden,
    SCBInternationalTypeItaly,
    SCBInternationalTypeSpain,
    SCBInternationalTypeJapan,
    SCBInternationalTypeNorway,
    SCBInternationalTypeDenmark2,
    SCBInternationalTypeSpain2,
    SCBInternationalTypeLatinAmerica,
    SCBInternationalTypeKorea,
    SCBInternationalTypeIreland,
    SCBInternationalTypeLegal
};
```

#### Constants

Name	Description
SCBInternationalTypeUSA	USA.
SCBInternationalTypeFrance	France.
SCBInternationalTypeGermany	Germany.
SCBInternationalTypeUK	UK.
SCBInternationalTypeDenmark	Denmark.
SCBInternationalTypeSweden	Sweden.
SCBInternationalTypeItaly	Italy.
SCBInternationalTypeSpain	Spain.
SCBInternationalTypeJapan	Japan.
SCBInternationalTypeNorway	Norway.
SCBInternationalTypeDenmark2	Denmark   .
SCBInternationalTypeSpain2	Spain   .
SCBInternationalTypeLatinAmerica	Latin America.
SCBInternationalTypeKorea	Korea.
SCBInternationalTypeIreland	Ireland.
SCBInternationalTypeLegal	Legal.

Refer to *ApiFunctions.m* and each Command Specifications.

### 3.41 SCBLogoSize Constants

Logo size constants.

#### Declaration

```
typedef NS_ENUM(NSUInteger, SCBLogoSize) {
    SCBLogoSizeNormal,
    SCBLogoSizeDoubleWidth,
    SCBLogoSizeDoubleHeight,
    SCBLogoSizeDoubleWidthDoubleHeight
};
```

#### Constants

Name	Description
SCBLogoSizeNormal	Normal.
SCBLogoSizeDoubleWidth	Double Width.
SCBLogoSizeDoubleHeight	Double Height.
SCBLogoSizeDoubleWidthDoubleHeight	Double Width / Height.

Refer to *ApiFunctions.m* and each Command Specifications.

### 3.42 SCBAlignmentPosition Constants

Alignment position constants.

#### Declaration

```
typedef NS_ENUM(NSUInteger, SCBAlignmentPosition) {
    SCBAlignmentPositionLeft,
    SCBAlignmentPositionCenter,
    SCBAlignmentPositionRight
};
```

#### Constants

Name	Description
SCBAlignmentPositionLeft	Left alignment.
SCBAlignmentPositionCenter	Center alignment.
SCBAlignmentPositionRight	Right alignment.

Refer to *ApiFunctions.m* and each Command Specifications.

### 3.43 SCBCutPaperAction Constants

Paper cut constants.

#### Declaration

```
typedef NS_ENUM(NSInteger, SCBCutPaperAction) {
    SCBCutPaperActionFullCut,
    SCBCutPaperActionPartialCut,
    SCBCutPaperActionFullCutWithFeed,
    SCBCutPaperActionPartialCutWithFeed
};
```

#### Constants

Name	Description
SCBCutPaperActionFullCut	Full Cut.
SCBCutPaperActionPartialCut	Partial Cut.
SCBCutPaperActionFullCutWithFeed	Full Cut with Feed.
SCBCutPaperActionPartialCutWithFeed	Partial Cut with Feed.

Refer to *ApiFunctions.m* and each Command Specifications.

### 3.44 SCBPeripheralChannel Constants

Peripheral channel constants.

#### Declaration

```
typedef NS_ENUM(NSInteger, SCBPeripheralChannel) {
    SCBPeripheralChannelNo1,
    SCBPeripheralChannelNo2
};
```

#### Constants

Name	Description
SCBPeripheralChannelNo1	Channel1.
SCBPeripheralChannelNo2	Channel2.

Refer to *ApiFunctions.m*.

### 3.45 SCBSoundChannel Constants

Sound channel constants.

#### Declaration

```
typedef NS_ENUM(NSInteger, SCBSoundChannel) {
    SCBSoundChannelNo1,
    SCBSoundChannelNo2
};
```

#### Constants

Name	Description
SCBSoundChannelNo1	Channel1.
SCBSoundChannelNo2	Channel2.

Refer to *ApiFunctions.m*.

### 3.46 SCBBarcodeSymbology Constants

Barcode symbology constants.

#### Declaration

```
typedef NS_ENUM(NSUInteger, SCBBarcodeSymbology) {
    SCBBarcodeSymbologyUPCE,
    SCBBarcodeSymbologyUPCA,
    SCBBarcodeSymbologyJAN8,
    SCBBarcodeSymbologyJAN13,
    SCBBarcodeSymbologyCode39,
    SCBBarcodeSymbologyITF,
    SCBBarcodeSymbologyCode128,
    SCBBarcodeSymbologyCode93,
    // SCBBarcodeSymbologyCodabar,
    SCBBarcodeSymbologyNW7
};
```

#### Constants

Name	Description
SCBBarcodeSymbologyUPCE	UPC-E.
SCBBarcodeSymbologyUPCA	UPC-A.
SCBBarcodeSymbologyJAN8	JAN/EAN8.
SCBBarcodeSymbologyJAN13	JAN/EAN13.
SCBBarcodeSymbologyCode39	Code39.
SCBBarcodeSymbologyITF	ITF.
SCBBarcodeSymbologyCode128	Code128.
SCBBarcodeSymbologyCode93	Code93.
SCBBarcodeSymbologyCodabar	Codabar.
SCBBarcodeSymbologyNW7	NW7.

Refer to *ApiFunctions.m* and each Command Specifications.



### 3.47 SCBBarcodeWidth Constants

Barcode width constants.

#### Declaration

```
typedef NS_ENUM(NSUInteger, SCBBarcodeWidth) {
    SCBBarcodeWidthMode1,
    SCBBarcodeWidthMode2,
    SCBBarcodeWidthMode3,
    SCBBarcodeWidthMode4,
    SCBBarcodeWidthMode5,
    SCBBarcodeWidthMode6,
    SCBBarcodeWidthMode7,
    SCBBarcodeWidthMode8,
    SCBBarcodeWidthMode9
};
```

#### Constants

Name	Description
SCBBarcodeWidthMode1	Mode1.
SCBBarcodeWidthMode2	Mode2.
SCBBarcodeWidthMode3	Mode3.
SCBBarcodeWidthMode4	Mode4.
SCBBarcodeWidthMode5	Mode5.
SCBBarcodeWidthMode6	Mode6.
SCBBarcodeWidthMode7	Mode7.
SCBBarcodeWidthMode8	Mode8.
SCBBarcodeWidthMode9	Mode9.

Refer to *ApiFunctions.m* and each *Command Specifications*.

### 3.48 SCBPdf417Level Constants

PDF417 ECC (security level) constants.

#### Declaration

```
typedef NS_ENUM(NSUInteger, SCBPdf417Level) {
    SCBPdf417LevelECC0,
    SCBPdf417LevelECC1,
    SCBPdf417LevelECC2,
    SCBPdf417LevelECC3,
    SCBPdf417LevelECC4,
    SCBPdf417LevelECC5,
    SCBPdf417LevelECC6,
    SCBPdf417LevelECC7,
    SCBPdf417LevelECC8
};
```

#### Constants

Name	Description
SCBPdf417LevelECC0	Level0.
SCBPdf417LevelECC1	Level1.
SCBPdf417LevelECC2	Level2.
SCBPdf417LevelECC3	Level3.
SCBPdf417LevelECC4	Level4.
SCBPdf417LevelECC5	Level5.
SCBPdf417LevelECC6	Level6.
SCBPdf417LevelECC7	Level7.
SCBPdf417LevelECC8	Level8.

Refer to *ApiFunctions.m* and each Command Specifications.

### 3.49 SCBQRCodeModel Constants

QR code model constants.

#### Declaration

```
typedef NS_ENUM(NSUInteger, SCBQRCodeModel) {
    SCBQRCodeModelNo1,
    SCBQRCodeModelNo2
};
```

#### Constants

Name	Description
SCBQRCodeModelNo1	Model1.
SCBQRCodeModelNo2	Model2.

Refer to *ApiFunctions.m* and each Command Specifications.

### 3.50 SCBQrCodeLevel Constants

QR code mistake correction level constants.

#### Declaration

```
typedef NS_ENUM(NSUInteger, SCBQrCodeLevel) {
    SCBQrCodeLevelL,
    SCBQrCodeLevelM,
    SCBQrCodeLevelQ,
    SCBQrCodeLevelH
};
```

#### Constants

Name	Description
SCBQrCodeLevelL	Level L.
SCBQrCodeLevelM	Level M.
SCBQrCodeLevelQ	Level Q.
SCBQrCodeLevelH	Level H.

Refer to *ApiFunctions.m* and each Command Specifications.

### 3.51 SCBBitmapConverterRotation Constants

Bitmap rotation constants.

#### Declaration

```
typedef NS_ENUM(NSUInteger, SCBBitmapConverterRotation) {
    SCBBitmapConverterRotationNormal,
    SCBBitmapConverterRotationRight90,
    SCBBitmapConverterRotationLeft90,
    SCBBitmapConverterRotationRotate180
};
```

#### Constants

Name	Description
SCBBitmapConverterRotationNormal	Rotated 0.
SCBBitmapConverterRotationRight90	Rotated 90.
SCBBitmapConverterRotationLeft90	Rotated 270.
SCBBitmapConverterRotationRotate180	Rotated 180.

Refer to *ApiFunctions.m*.

## 4 StarIoExtManager class included in the StarIO\_Extension.framework

### Method

Name	Description
initWithType	Initializes the StarIoManager object.
connect	Management start.
disconnect	Management stop.

### Property

Name	Description
port	StarIoPort object. * <i>readonly</i>
lock	Exclusive access control object of communication by port property. * <i>readonly</i>
delegate	Delegate of the StarIoExtManager.
printerStatus	Printer status. * <i>readonly</i>
printerPaperStatus	Printer paper status. * <i>readonly</i>
printerCoverStatus	Printer cover status. * <i>readonly</i>
cashDrawerStatus	Cash drawer status. * <i>readonly</i>
barcodeReaderStatus	Barcode reader status. * <i>readonly</i>
cashDrawerOpenActiveHigh	Mode of cash drawer open sensor active.

### Constants

Name	Description
StarIoExtManagerType	Manager type constants.
StarIoExtManagerPrinterStatus	Printer status constants.
StarIoExtManagerPrinterPaperStatus	Printer paper status constants.
StarIoExtManagerPrinterCoverStatus	Printer cover status constants.
StarIoExtManagerCashDrawerStatus	Cash drawer status constants.
StarIoExtManagerBarcodeReaderStatus	Barcode reader status constants.

## 4.1 initWithType Method

Initializes the StarIoManager object.

### Declaration

```
- (id)initWithType:(StarIoExtManagerType)type portName:(NSString *)portName
portSettings:(NSString *)portSettings ioTimeoutMillis:(NSUInteger)ioTimeoutMillis;
```

### Parameter

Name	Description	Object type
type	Manager type. <ul style="list-style-type: none"> <li>StarIoExtManagerTypeStandard ... Management of the printer and the cash drawer.</li> <li>StarIoExtManagerTypeWithBarcodeReader ... Management of the printer, cash drawer and the barcode reader.</li> <li>StarIoExtManagerTypeOnlyBarcodeReader ... Management of the barcode reader.</li> </ul>	StarIoExtManagerType
portName	Printer port name.	NSString
portSettings	Port settings.	NSString
ioTimeoutMillis	Timeout value for internal control and API.	NSUInteger

### Return value

Description	Object type
StarIoExtManager object.	StarIoExtManager

### Example

```
- (void)viewDidLoad {
    [super viewDidLoad];
    // Do any additional setup after loading the view.

    _starIoExtManager = [[StarIoExtManager alloc] initWithType:StarIoExtManagerTypeStandard
                                                             portName:[AppDelegate getPortName]
                                                             portSettings:[AppDelegate getPortSettings]
                                                             ioTimeoutMillis:10000]; // 10000mS!!!

    _starIoExtManager.delegate = self;
}
```

Refer to *PrinterExtViewController.m*, *CashDrawerExtViewController.m*, *BarcodeReaderExtViewController.m* and *CombinationExtViewController.m*.

◆ When you'd like to know portName, portSettings and ioTimeoutMills details, refer to the StarIO iOS SDK document.

## 4.2 connect Method

Management start.

### Declaration

- (BOOL)connect;

### Parameter

Name	Description	Object type
-	-	-

### Return value

Description	Object type
Result.	
<ul style="list-style-type: none"> <li>YES ... Success</li> <li>NO ... Failure</li> </ul>	BOOL

### Example

```
- (void)viewWillAppear:(BOOL)animated {
    [super viewWillAppear:animated];

    if (_starloExtManager.port != nil) {
        [_starloExtManager disconnect];
    }

    if ([_starloExtManager connect] == NO) {
        UIAlertView *alert = [[UIAlertView alloc] initWithTitle:@"Fail to Open Port."
                                                             message:@""
                                                             delegate:self
                                                             cancelButtonTitle:@"OK"
                                                             otherButtonTitles:nil];

        [alert show];
    }
}
```

Refer to *PrinterExtViewController.m*, *CashDrawerExtViewController.m*, *BarcodeReaderExtViewController.m* and *CombinationExtViewController.m*.

### 4.3 disconnect Method

Management stop.

#### Declaration

- (BOOL)disconnect;

#### Parameter

Name	Description	Object type
-	-	-

#### Return value

Description	Object type
Result.	
<ul style="list-style-type: none"> <li>YES ... Success</li> <li>NO ... Failure</li> </ul>	BOOL

#### Example

```
- (void)viewWillDisappear:(BOOL)animated {
    [super viewWillDisappear:animated];

    [_starIoExtManager disconnect];
}
```

Refer to *PrinterExtViewController.m*, *CashDrawerExtViewController.m*, *BarcodeReaderExtViewController.m* and *CombinationExtViewController.m*.

### 4.4 port Property

StarIOPort object. \* *readonly*

#### Declaration

@property (readonly, nonatomic) SMPort \*port;

◆When you'd like to know StarIO object details, refer to the StarIO iOS SDK document.

## 4.5 lock Property

Exclusive access control object of communication by port property. \* *readonly*

### Declaration

@property (readonly, nonatomic) NSRecursiveLock \*lock;

### Example

```
- (IBAction)touchUpInsidePrintButton:(id)sender {
    ...

    [_starloExtManager.lock lock];

    [Communication sendCommands:commands port:[_starloExtManager port]];

    [_starloExtManager.lock unlock];

    ...
}
```

Refer to *PrinterExtViewController.m*, *CashDrawerExtViewController.m* and *CombinationExtViewController.m*.

## 4.6 delegate Property

Delegate of the StarloExtManager.

### Declaration

@property (weak, nonatomic) id<StarloExtManagerDelegate> delegate;

### Example

```
- (void)viewDidLoad {
    [super viewDidLoad];
    // Do any additional setup after loading the view.

    _starloExtManager = [[StarloExtManager alloc] initWithType:StarloExtManagerTypeOnlyBarcodeReader
                                                             portName:[AppDelegate getPortName]
                                                             portSettings:[AppDelegate getPortSettings]
                                                             ioTimeoutMillis:10000]; // 10000mS!!!

    _starloExtManager.delegate = self;
}
```

Refer to *PrinterExtViewController.m*, *CashDrawerExtViewController.m*, *BarcodeReaderExtViewController.m* and *CombinationExtViewController.m*.



## 4.7 printerStatus Property

Printer Online status. \* *readonly*

### Declaration

@property (readonly, nonatomic) StarloExtManagerPrinterStatus printerStatus;

### Value

Description	Object type
Printer status. <ul style="list-style-type: none"> <li>StarloExtManagerPrinterStatusInvalid ... Invalid.</li> <li>StarloExtManagerPrinterStatusImpossible ... Impossible to use printer.</li> <li>StarloExtManagerPrinterStatusOnline ... Detect online.</li> <li>StarloExtManagerPrinterStatusOffline ... Detect offline.</li> </ul>	StarloExtManagerPrinterStatus

## 4.8 printerPaperStatus Property

Printer paper status. \* *readonly*

### Declaration

@property (readonly, nonatomic) StarloExtManagerPrinterPaperStatus printerPaperStatus;

### Value

Description	Object type
Printer paper status. <ul style="list-style-type: none"> <li>StarloExtManagerPrinterPaperStatusInvalid ... Invalid.</li> <li>StarloExtManagerPrinterPaperStatusImpossible ... Impossible to use Equipment.</li> <li>StarloExtManagerPrinterPaperStatusReady ... Detect paper ready.</li> <li>StarloExtManagerPrinterPaperStatusNearEmpty ... Detect paper near end.</li> <li>StarloExtManagerPrinterPaperStatusEmpty ... Detect paper empty.</li> </ul>	StarloExtManagerPrinterPaperStatus

## 4.9 printerCoverStatus Property

Printer cover status. \* *readonly*

### Declaration

@property (readonly, nonatomic) StarloExtManagerPrinterCoverStatus printerCoverStatus;

### Value

Description	Object type
Printer cover status. <ul style="list-style-type: none"> <li>StarloExtManagerPrinterCoverStatusInvalid ... Invalid.</li> <li>StarloExtManagerPrinterCoverStatusImpossible ... Impossible to use Equipment.</li> <li>StarloExtManagerPrinterCoverStatusOpen ... Detect cover open.</li> <li>StarloExtManagerPrinterCoverStatusClose ... Detect cover close.</li> </ul>	StarloExtManagerPrinterCoverStatus

## 4.10 cashDrawerStatus Property

Cash drawer status. \* *readonly*

### Declaration

@property (readonly, nonatomic) StarloExtManagerCashDrawerStatus cashDrawerStatus;

### Value

Description	Object type
Cash drawer status. <ul style="list-style-type: none"> <li>StarloExtManagerCashDrawerStatusInvalid ... Invalid.</li> <li>StarloExtManagerCashDrawerStatusImpossible ... Impossible to use Equipment.</li> <li>StarloExtManagerCashDrawerStatusOpen ... Detect Cash drawer open.</li> <li>StarloExtManagerCashDrawerStatusClose ... Detect Cash drawer close.</li> </ul>	StarloExtManagerCashDrawerStatus

## 4.11 barcodeReaderStatus Property

Barcode reader status. \* *readonly*

### Declaration

@property (readonly, nonatomic) StarloExtManagerBarcodeReaderStatus barcodeReaderStatus;

### Value

Description	Object type
Barcode reader status. <ul style="list-style-type: none"><li>StarStarloExtManagerBarcodeReaderStatusInvalid ... Invalid.</li><li>StarloExtManagerBarcodeReaderStatusImpossible ... Impossible to use Equipment.</li><li>StarloExtManagerBarcodeReaderStatusConnect ... Detect Barcode reader connection.</li><li>StarloExtManagerBarcodeReaderStatusDisconnect ... Detect Barcode reader disconnection.</li></ul>	StarloExtManagerBarcodeReaderStatus

## 4.12 cashDrawerOpenActiveHigh Property

Mode of cash drawer open sensor active.

### Declaration

@property (nonatomic) BOOL cashDrawerOpenActiveHigh;

### Value

Description	Object type
Mode of a cash drawer open sensor active. <ul style="list-style-type: none"><li>YES ... Active high.</li><li>NO ... Active low.</li></ul>	BOOL

## 4.13 StarloExtManagerType Constants

Manager type constants.

### Declaration

```
typedef NS_ENUM(NSUInteger, StarloExtManagerType) {
    StarloExtManagerTypeStandard = 0,
    StarloExtManagerTypeWithBarcodeReader,
    StarloExtManagerTypeOnlyBarcodeReader,
};
```

### Constants

Name	Description
StarloExtManagerTypeStandard	Management of the printer and the cash drawer.
StarloExtManagerTypeWithBarcodeReader	Management of the printer, cash drawer and the barcode reader.
StarloExtManagerTypeOnlyBarcodeReader	Management of the barcode reader.

## 4.14 StarloExtManagerPrinterStatus Constants

Printer status constants.

### Declaration

```
typedef NS_ENUM(NSUInteger, StarloExtManagerPrinterStatus) {
    StarloExtManagerPrinterStatusInvalid = 0,
    StarloExtManagerPrinterStatusImpossible,
    StarloExtManagerPrinterStatusOnline,
    StarloExtManagerPrinterStatusOffline
};
```

### Constants

Name	Description
StarloExtManagerPrinterStatusInvalid	Invalid.
StarloExtManagerPrinterStatusImpossible	Impossible to use printer.
StarloExtManagerPrinterStatusPrinterOnline	Detect Printer online.
StarloExtManagerPrinterStatusPrinterOffline	Detect Printer offline.

## 4.15 StarloExtManagerPrinterPaperStatus Constants

Printer paper status constants.

### Declaration

```
typedef NS_ENUM(NSInteger, StarloExtManagerPrinterPaperStatus) {
    StarloExtManagerPrinterPaperStatusInvalid = 0,
    StarloExtManagerPrinterPaperStatusImpossible,
    StarloExtManagerPrinterPaperStatusReady,
    StarloExtManagerPrinterPaperStatusNearEmpty,
    StarloExtManagerPrinterPaperStatusEmpty
};
```

### Constants

Name	Description
StarloExtManagerPrinterPaperStatusInvalid	Invalid.
StarloExtManagerPrinterPaperStatusImpossible	Impossible to use Printer.
StarloExtManagerPrinterPaperStatusReady	Detect Printer paper ready.
StarloExtManagerPrinterPaperStatusNearEmpty	Detect Printer paper near end.
StarloExtManagerPrinterPaperStatusEmpty	Detect Printer paper empty.

## 4.16 StarloExtManagerPrinterCoverStatus Constants

Printer cover status constants.

### Declaration

```
typedef NS_ENUM(NSInteger, StarloExtManagerPrinterCoverStatus) {
    StarloExtManagerPrinterCoverStatusInvalid = 0,
    StarloExtManagerPrinterCoverStatusImpossible,
    StarloExtManagerPrinterCoverStatusOpen,
    StarloExtManagerPrinterCoverStatusClose
};
```

### Constants

Name	Description
StarloExtManagerPrinterCoverStatusInvalid	Invalid.
StarloExtManagerPrinterCoverStatusImpossible	Impossible to use Printer.
StarloExtManagerPrinterCoverStatusOpen	Detect Printer cover open.
StarloExtManagerPrinterCoverStatusClose	Detect Printer cover close.

## 4.17 StarloExtManagerCashDrawerStatus Constants

Cash drawer status constants.

### Declaration

```
typedef NS_ENUM(NSInteger, StarloExtManagerCashDrawerStatus) {
    StarloExtManagerCashDrawerStatusInvalid = 0,
    StarloExtManagerCashDrawerStatusImpossible,
    StarloExtManagerCashDrawerStatusOpen,
    StarloExtManagerCashDrawerStatusClose
};
```

### Constants

Name	Description
StarloExtManagerCashDrawerStatusInvalid	Invalid.
StarloExtManagerCashDrawerStatusImpossible	Impossible to use Cash drawer.
StarloExtManagerCashDrawerStatusOpen	Detect Cash drawer open.
StarloExtManagerCashDrawerStatusClose	Detect Cash drawer close.

## 4.18 StarloExtManagerBarcodeReaderStatus Constants

Barcode reader status constants.

### Declaration

```
typedef NS_ENUM(NSInteger, StarloExtManagerBarcodeReaderStatus) {
    StarloExtManagerBarcodeReaderStatusInvalid = 0,
    StarloExtManagerBarcodeReaderStatusImpossible,
    StarloExtManagerBarcodeReaderStatusConnect,
    StarloExtManagerBarcodeReaderStatusDisconnect
};
```

### Constants

Name	Description
StarloExtManagerBarcodeReaderStatusInvalid	Invalid.
StarloExtManagerBarcodeReaderStatusImpossible	Impossible to use Barcode reader.
StarloExtManagerBarcodeReaderStatusConnect	Detect Barcode reader connection.
StarloExtManagerBarcodeReaderStatusDisconnect	Detect Barcode reader disconnection.

## 5 StarloExtManagerDelegate class included in the StarIO\_Extension.framework

### Method

Name	Description
didPrinterImpossible	Tells the delegate the printer impossible. <i>* optional</i>
didPrinterOnline	Tells the delegate the printer has come online. <i>* optional</i>
didPrinterOffline	Tells the delegate the printer has come offline. <i>* optional</i>
didPrinterPaperReady	Tells the delegate the printer has come paper ready. <i>* optional</i>
didPrinterPaperNearEmpty	Tells the delegate the printer has come paper near end. <i>* optional</i>
didPrinterPaperEmpty	Tells the delegate the printer has come paper empty. <i>* optional</i>
didPrinterCoverOpen	Tells the delegate the printer has come cover open. <i>* optional</i>
didPrinterCoverClose	Tells the delegate the printer has come cover close. <i>* optional</i>
didCashDrawerOpen	Tells the delegate the cash drawer has come open. <i>* optional</i>
didCashDrawerClose	Tells the delegate the cash drawer has come close. <i>* optional</i>
didBarcodeReaderImpossible	Tells the delegate the barcode reader impossible. <i>* optional</i>
didBarcodeReaderConnect	Tells the delegate the barcode reader connected. <i>* optional</i>
didBarcodeReaderDisconnect	Tells the delegate the barcode reader disconnected. <i>* optional</i>
didBarcodeDataReceive	Tells the delegate the barcode data received. <i>* optional</i>
didAccessoryConnectSuccess	Tells the delegate the bluetooth accessory connection succeeded. <i>* optional</i>
didAccessoryConnectFailure	Tells the delegate the bluetooth accessory connection failed. <i>* optional</i>
didAccessoryDisconnect	Tells the delegate the bluetooth accessory disconnected. <i>* optional</i>
didStatusUpdate	Tells the delegate the status updated. <i>* optional</i>

### 5.1 didPrinterImpossible Method

Tells the delegate the printer impossible. *\* optional*

#### Declaration

- (void)didPrinterImpossible;
- (void)didPrinterImpossible:(StarloExtManager \*)manager;

#### Parameter

Name	Description	Object type
manager	A StarloExtManager object informing the delegate.	StarloExtManager

#### Return value

Description	Object type
-	-

#### Example

```
- (void)didPrinterImpossible:(StarloExtManager *)manager {
    _commentLabel.text = @"Printer Impossible.";
    _commentLabel.textColor = [UIColor redColor];
}
```

Refer to PrinterExtViewController.m, CashDrawerExtViewController.m and CombinationExtViewController.m.

## 5.2 didPrinterOnline Method

Tells the delegate the printer has come online. \* *optional*

### Declaration

- (void)didPrinterOnline;
- (void)didPrinterOnline:(StarloExtManager \*)manager;

### Parameter

Name	Description	Object type
manager	A StarloExtManager object informing the delegate.	StarloExtManager

### Return value

Description	Object type
-	-

### Example

```
- (void)didPrinterOnline:(StarloExtManager *)manager {
    _commentLabel.text = @"Printer Online.";
    _commentLabel.textColor = [UIColor blueColor];
}
```

Refer to *PrinterExtViewController.m* and *CombinationExtViewController.m*.

## 5.3 didPrinterOffline Method

Tells the delegate the printer has come offline. \* *optional*

### Declaration

- (void)didPrinterOffline;
- (void)didPrinterOffline:(StarloExtManager \*)manager;

### Parameter

Name	Description	Object type
manager	A StarloExtManager object informing the delegate.	StarloExtManager

### Return value

Description	Object type
-	-

### Example

```
- (void)didPrinterOffline:(StarloExtManager *)manager {
    _commentLabel.text = @"Printer Offline.";
    _commentLabel.textColor = [UIColor redColor];
}
```

Refer to *PrinterExtViewController.m* and *CombinationExtViewController.m*.



## 5.4 didPrinterPaperReady Method

Tells the delegate the printer has come paper ready. \* optional

### Declaration

- (void)didPrinterPaperReady;
- (void)didPrinterPaperReady:(StarloExtManager \*)manager;

### Parameter

Name	Description	Object type
manager	A StarloExtManager object informing the delegate.	StarloExtManager

### Return value

Description	Object type
-	-

### Example

```
- (void)didPrinterPaperReady:(StarloExtManager *)manager {
    _commentLabel.text = @"Printer Paper Ready.";
    _commentLabel.textColor = [UIColor blueColor];
}
```

Refer to PrinterExtViewController.m and CombinationExtViewController.m.

## 5.5 didPrinterPaperNearEmpty Method

Tells the delegate the printer has come paper near end. \* optional

### Declaration

- (void)didPrinterPaperNearEmpty;
- (void)didPrinterPaperNearEmpty:(StarloExtManager \*)manager;

### Parameter

Name	Description	Object type
manager	A StarloExtManager object informing the delegate.	StarloExtManager

### Return value

Description	Object type
-	-

### Example

```
- (void)didPrinterPaperNearEmpty:(StarloExtManager *)manager {
    _commentLabel.text = @"Printer Paper Near Empty.";
    _commentLabel.textColor = [UIColor orangeColor];
}
```

Refer to PrinterExtViewController.m and CombinationExtViewController.m.

## 5.6 didPrinterPaperEmpty Method

Tells the delegate the printer has come paper empty. \* *optional*

### Declaration

- (void)didPrinterPaperEmpty;
- (void)didPrinterPaperEmpty:(StarloExtManager \*)manager;

### Parameter

Name	Description	Object type
manager	A StarloExtManager object informing the delegate.	StarloExtManager

### Return value

Description	Object type
-	-

### Example

```
- (void)didPrinterPaperEmpty:(StarloExtManager *)manager {
    _commentLabel.text = @"Printer Paper Empty.";
    _commentLabel.textColor = [UIColor redColor];
}
```

Refer to *PrinterExtViewController.m* and *CombinationExtViewController.m*.

## 5.7 didPrinterCoverOpen Method

Tells the delegate the printer has come cover open. \* *optional*

### Declaration

- (void)didPrinterCoverOpen;
- (void)didPrinterCoverOpen:(StarloExtManager \*)manager;

### Parameter

Name	Description	Object type
manager	A StarloExtManager object informing the delegate.	StarloExtManager

### Return value

Description	Object type
-	-

### Example

```
- (void)didPrinterCoverOpen:(StarloExtManager *)manager {
    _commentLabel.text = @"Printer Cover Open.";
    _commentLabel.textColor = [UIColor redColor];
}
```

Refer to *PrinterExtViewController.m* and *CombinationExtViewController.m*.

## 5.8 didPrinterCoverClose Method

Tells the delegate the printer has come cover close. \* *optional*

### Declaration

- (void)didPrinterCoverClose;
- (void)didPrinterCoverClose:(StarloExtManager \*)manager;

### Parameter

Name	Description	Object type
manager	A StarloExtManager object informing the delegate.	StarloExtManager

### Return value

Description	Object type
-	-

### Example

```
- (void)didPrinterCoverClose:(StarloExtManager *)manager {
    _commentLabel.text = @"Printer Cover Close.";
    _commentLabel.textColor = [UIColor blueColor];
}
```

Refer to *PrinterExtViewController.m* and *CombinationExtViewController.m*.

## 5.9 didCashDrawerOpen Method

Tells the delegate the cash drawer has come open. \* *optional*

### Declaration

- (void)didCashDrawerOpen;
- (void)didCashDrawerOpen:(StarloExtManager \*)manager;

### Parameter

Name	Description	Object type
manager	A StarloExtManager object informing the delegate.	StarloExtManager

### Return value

Description	Object type
-	-

### Example

```
- (void)didCashDrawerOpen:(StarloExtManager *)manager {
    _commentLabel.text = @"Cash Drawer Open.";
    // _commentLabel.textColor = [UIColor redColor];
    _commentLabel.textColor = [UIColor magentaColor];
}
```

Refer to *CashDrawerExtViewController.m* and *CombinationExtViewController.m*.

## 5.10 didCashDrawerClose Method

Tells the delegate the cash drawer has come close. \* *optional*

### Declaration

- (void)didCashDrawerClose;
- (void)didCashDrawerClose:(StarloExtManager \*)manager;

### Parameter

Name	Description	Object type
manager	A StarloExtManager object informing the delegate.	StarloExtManager

### Return value

Description	Object type
-	-

### Example

```
- (void)didCashDrawerClose:(StarloExtManager *)manager {
    _commentLabel.text = @"Cash Drawer Close.";
    _commentLabel.textColor = [UIColor blueColor];
}
```

Refer to *CashDrawerExtViewController.m* and *CombinationExtViewController.m*.

## 5.11 didBarcodeReaderImpossible Method

Tells the delegate the barcode reader impossible. \* *optional*

### Declaration

- (void)didBarcodeReaderImpossible;
- (void)didBarcodeReaderImpossible:(StarloExtManager \*)manager;

### Parameter

Name	Description	Object type
manager	A StarloExtManager object informing the delegate.	StarloExtManager

### Return value

Description	Object type
-	-

### Example

```
- (void)didBarcodeReaderImpossible:(StarloExtManager *)manager {
    _commentLabel.text = @"Barcode Reader Impossible.";
    _commentLabel.textColor = [UIColor redColor];
}
```

Refer to *BarcodeReaderExtViewController.m* and *CombinationExtViewController.m*.

## 5.12 didBarcodeReaderConnect Method

Tells the delegate the barcode reader connected. \* *optional*

### Declaration

- (void)didBarcodeReaderConnect;
- (void)didBarcodeReaderConnect:(StarloExtManager \*)manager;

### Parameter

Name	Description	Object type
manager	A StarloExtManager object informing the delegate.	StarloExtManager

### Return value

Description	Object type
-	-

### Example

```
- (void)didBarcodeReaderConnect:(StarloExtManager *)manager {
    _commentLabel.text = @"Barcode Reader Connect.";
    _commentLabel.textColor = [UIColor blueColor];
}
```

Refer to *BarcodeReaderExtViewController.m* and *CombinationExtViewController.m*.

## 5.13 didBarcodeReaderDisconnect Method

Tells the delegate the barcode reader disconnected. \* *optional*

### Declaration

- (void)didBarcodeReaderDisconnect;
- (void)didBarcodeReaderDisconnect:(StarloExtManager \*)manager;

### Parameter

Name	Description	Object type
manager	A StarloExtManager object informing the delegate.	StarloExtManager

### Return value

Description	Object type
-	-

### Example

```
- (void)didBarcodeReaderDisconnect:(StarloExtManager *)manager {
    _commentLabel.text = @"Barcode Reader Disconnect.";
    _commentLabel.textColor = [UIColor redColor];
}
```

Refer to *BarcodeReaderExtViewController.m* and *CombinationExtViewController.m*.

## 5.14 didBarcodeDataReceive Method

Tells the delegate the barcode data received. \* *optional*

### Declaration

- (void)didBarcodeDataReceive:(NSData \*)data;
- (void)didBarcodeDataReceive:(StarloExtManager \*)manager data:(NSData \*)data;

### Parameter

Name	Description	Object type
data	Received barcode data.	NSData
manager	A StarloExtManager object informing the delegate.	StarloExtManager

### Return value

Description	Object type
-	-

### Example

```
- (void)didBarcodeDataReceive:(StarloExtManager *)manager data:(NSData *)data {
    NSMutableString *text = [NSMutableString stringWithString:@""];

    const uint8_t *p = [data bytes];

    for (int i = 0; i < data.length; i++) {
        uint8_t ch = *(p + i);

        if (ch >= 0x20 && ch <= 0x7f) {
            [text appendFormat:@"%c", (char) ch];
        }
        else if (ch == 0x0d) {
            ...

            text = [NSMutableString stringWithString:@""];
        }
    }
}
```

Refer to *BarcodeReaderExtViewController.m* and *CombinationExtViewController.m*.

## 5.15 didAccessoryConnectSuccess Method

Tells the delegate the bluetooth accessory connection succeeded. \* *optional*

### Declaration

- (void)didAccessoryConnectSuccess;
- (void)didAccessoryConnectSuccess:(StarloExtManager \*)manager;

### Parameter

Name	Description	Object type
manager	A StarloExtManager object informing the delegate.	StarloExtManager

### Return value

Description	Object type
-	-

### Example

```
- (void)didAccessoryConnectSuccess:(StarloExtManager *)manager {
    _commentLabel.text = @"Accessory Connect Success.";
    _commentLabel.textColor = [UIColor blueColor];
}
```

Refer to *PrinterExtViewController.m*, *CashDrawerExtViewController.m*, *BarcodeReaderExtViewController.m* and *CombinationExtViewController.m*.

## 5.16 didAccessoryConnectFailure Method

Tells the delegate the bluetooth accessory connection failed. \* *optional*

### Declaration

- (void)didAccessoryConnectFailure;
- (void)didAccessoryConnectFailure:(StarloExtManager \*)manager;

### Parameter

Name	Description	Object type
Manager	A StarloExtManager object informing the delegate.	StarloExtManager

### Return value

Description	Object type
-	-

### Example

```
- (void)didAccessoryConnectFailure:(StarloExtManager *)manager {
    _commentLabel.text = @"Accessory Connect Failure.";
    _commentLabel.textColor = [UIColor redColor];
}
```

Refer to *PrinterExtViewController.m*, *CashDrawerExtViewController.m*, *BarcodeReaderExtViewController.m* and *CombinationExtViewController.m*.

## 5.17 didAccessoryDisconnect Method

Tells the delegate the bluetooth accessory disconnected. \* *optional*

### Declaration

- (void)didAccessoryDisconnect;
- (void)didAccessoryDisconnect:(StarloExtManager \*)manager;

### Parameter

Name	Description	Object type
manager	A StarloExtManager object informing the delegate.	StarloExtManager

### Return value

Description	Object type
-	-

### Example

```
- (void)didAccessoryDisconnect:(StarloExtManager *)manager {
    _commentLabel.text = @"Accessory Disconnect.";
    _commentLabel.textColor = [UIColor redColor];
}
```

Refer to *PrinterExtViewController.m*, *CashDrawerExtViewController.m*, *BarcodeReaderExtViewController.m* and *CombinationExtViewController.m*.



## 5.18 didStatusUpdate Method

Tells the delegate the status updated. \* *optional*

### Declaration

- (void)didStatusUpdate:(NSString \*)status;
- (void)didStatusUpdate:(StarloExtManager \*)manager status:(NSString \*)status;

### Parameter

Name	Description	Object type
status	<p>Updated status.</p> <p>Hexadecimal digit sequence of 3rd to 6th bytes in Automatic Status (*) (ex. "28000000")</p> <p>-Status update timing-</p> <ul style="list-style-type: none"> <li>• When the status changes.</li> <li>• Even no status change, every 5 min.</li> </ul> <p>* Please refer to STAR Line Mode and StarPRNT command manual for details of Automatic Status.</p>	NSString
manager	A StarloExtManager object informing the delegate.	StarloExtManager

### Return value

Description	Object type
-	-

### Example

```
- (void)didStatusUpdate:(StarloExtManager *)manager status:(NSString *)status {
    _commentLabel.text = status;

    _commentLabel.textColor = [UIColor greenColor];
}
```

Refer to *AllReceiptsExtViewController.m*.

## 6 StarPRNT iOS SDK Sample

### 6.1 Communication

An example of print data transmission of StarIO iOS SDK equivalence and An example of print data transmission with a StarIoExtManager object.

*Example (Like a StarIO iOS SDK)*

```
+ (BOOL)sendCommands:(NSData *)commands portName:(NSString *)portName portSettings:(NSString *)portSettings timeout:(NSInteger)timeout {
    BOOL result = NO;

    ...

    SMPort *port = nil;

    @try {
        while (YES) {
            port = [SMPort getPort:portName :portSettings :(uint32_t) timeout];

            if (port == nil) {

                ...

                break;
            }

            StarPrinterStatus_2 printerStatus;

            [port beginCheckedBlock:&printerStatus :2];

            if (printerStatus.offline == SM_TRUE) {

                ...

                break;
            }

            NSDate *startDate = [NSDate date];

            uint32_t total = 0;

            while (total < commandLength) {
                uint32_t written = [port writePort:commandsBytes :total :commandLength - total];

                total += written;

                if ([NSDate date] timeIntervalSinceDate:startDate] >= 30.0) { // 30000mS!!!
                    break;
                }
            }

            if (total < commandLength) {

                ...

                break;
            }

            port.endCheckedBlockTimeoutMillis = 30000; // 30000mS!!!

            [port endCheckedBlock:&printerStatus :2];
        }
    }
}
```

```

        if (printerStatus.offline == SM_TRUE) {
            ...
            break;
        }

        result = YES;
        break;
    }
}
}catch (PortException *exc) {

    ...

}
@finally {
    if (port != nil) {
        [SMPort releasePort:port];
    }
}

...

return result;
}

```

### Example (Using StarIoExtManager object)

```

+ (BOOL)sendCommands:(NSData *)commands port:(SMPort *)port {
    BOOL result = NO;

    ...

    @try {
        while (YES) {
            ...

            StarPrinterStatus_2 printerStatus;

            [port beginCheckedBlock:&printerStatus :2];

            if (printerStatus.offline == SM_TRUE) {

                ...

                break;
            }

            NSDate *startDate = [NSDate date];

            uint32_t total = 0;

            while (total < commandLength) {
                uint32_t written = [port writePort:commandsBytes :total :commandLength - total];

                total += written;

                if ([NSDate date] timeIntervalSinceDate:startDate] >= 30.0) { // 30000mS!!!
                    break;
                }
            }
        }
    }
}

```

```
if (total < commandLength) {  
    ...  
    break;  
}  
  
port.endCheckedBlockTimeoutMillis = 30000; // 30000mS!!!  
[port endCheckedBlock:&printerStatus :2];  
  
if (printerStatus.offline == SM_TRUE) {  
    ...  
    break;  
}  
  
result = YES;  
break;  
}  
}  
@catch (PortException *exc) {  
    ...  
}  
  
...  
  
return result;  
}
```

**When you'd like to know StarIO.framework details, refer to the StarIO iOS SDK document.**

## 7 API expanded for Swift support included in the StarIO.framework

API that can know the end result of the method by NSError has been prepared.

### *Declaration for Swift*

```
public func writePort(writeBuffer: UnsafePointer<UInt8>, _ offSet: UInt32, _ size: UInt32, _ error:
NSErrorPointer) -> UInt32

public func readPort(readBuffer: UnsafeMutablePointer<UInt8>, _ offSet: UInt32, _ size: UInt32, _ error:
NSErrorPointer) -> UInt32

public func getParsedStatus(starPrinterStatus: UnsafeMutablePointer<Void>, _ level: UInt32, _ error:
NSErrorPointer) -> UInt32

public func getFirmwareInformation(error: NSErrorPointer) -> [NSObject : AnyObject]!

public func getDipSwitchInformation(error: NSErrorPointer) -> [NSObject : AnyObject]!

public func getOnlineStatusWithError(error: NSErrorPointer) -> UInt32

public func beginCheckedBlock(starPrinterStatus: UnsafeMutablePointer<Void>, _ level: UInt32, _ error:
NSErrorPointer) -> UInt32

public func endCheckedBlock(starPrinterStatus: UnsafeMutablePointer<Void>, _ level: UInt32, _ error:
NSErrorPointer) -> UInt32
```

### *Declaration for Objective-c*

```
-(u_int32_t)writePort:(u_int8_t const *)writeBuffer :(u_int32_t)offSet :(u_int32_t)size :(NSError **)error;
-(u_int32_t)readPort:(u_int8_t *)readBuffer :(u_int32_t)offSet :(u_int32_t)size :(NSError **)error;
-(NSInteger)getParsedStatus:(void *)starPrinterStatus :(u_int32_t)level :(NSError **)error;
-(NSDictionary *)getFirmwareInformation:(NSError **)error;
-(NSDictionary *)getDipSwitchInformation:(NSError **)error;
-(NSInteger)getOnlineStatus:(NSError **)error;
-(NSInteger)beginCheckedBlock:(void *)starPrinterStatus :(u_int32_t)level :(NSError **)error;
-(NSInteger)endCheckedBlock:(void *)starPrinterStatus :(u_int32_t)level :(NSError **)error;
```

**When you'd like to know StarIO.framework details, refer to the StarIO iOS SDK document.**

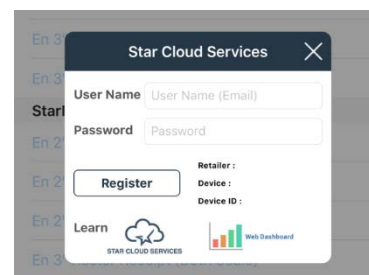
## 8 SMCloudServices class included in the SMCloudServices.framework

### Method

Name	Description
showRegistrationView	It displays a view of the Star Cloud Services registration.
isRegistered	Checks whether the application is registered with the Star Cloud Services.

### 8.1 showRegistrationView Method

It displays a view of the Star Cloud Services registration.



### Declaration

```
+ (void)showRegistrationView:(void (^)(BOOL isRegistered))completion;
```

### Parameter

Name	Description	Object type
completion	When the View is closed, check application registration status as following parameter.  -isRegistered- • YES ... Registered. • NO ... Unregistered.	void (^)(BOOL isRegistered)

### Return value

Description	Object type
-	-

### Example

```
- (void)tableView:(UITableView *)tableView didSelectRowAtIndexPath:(NSIndexPath *)indexPath {
    ...

    [SMCloudServices showRegistrationView:^(BOOL isRegistration) {
        [_tableView reloadData];
    }];

    ...
}
```

Refer to AllReceiptsViewController.m.

## 8.2 isRegistered Method

Checks whether the application is registered with the Star Cloud Services.

### Declaration

+ (BOOL)isRegistered;

### Parameter

Name	Description	Object type
-	-	-

### Return value

Description	Object type
Result.	BOOL
• YES ... Registered.	
• NO ... Unregistered.	

### Example

```
- (UITableViewCell *)tableView:(UITableView *)tableView cellForRowAtIndexPath:(NSIndexPath *)indexPath {
    ...

    BOOL userInteractionEnabled = YES;

    if ([SMCloudServices isRegistered] == NO) {
        userInteractionEnabled = NO;
    }

    ...

    return cell;
}
```

Refer to *AllReceiptsViewController.m*.

## 9 SMCSAllReceipts class included in the SMCloudServices.framework

### Method

Name	Description
uploadBitmap	Uploads bitmap to the Star Micronics Service.
updateStatus	Updates the device status information on the Star Cloud Service.
generateAllReceipts	Generates the print data for the AllReceipts™ use.

### 9.1 Model : SMCSAllReceipts class Method

Supported Method for each models.

Function	Method	mPOP	FVP10	TSP100	TSP650II	TSP700II	TSP800II	SM-S210i	SM-S220i	SM-S230i	SM-T300i	SM-T400i	BSC10	SM-S210i StarPRNT	SM-S220i StarPRNT	SM-S230i StarPRNT	SM-T300i StarPRNT	SM-T400i StarPRNT	SM-L200	SP700
Upload	uploadBitmap	✓	✓	✓	✓	✓	✓	-	-	-	-	-	✓	✓	✓	✓	✓	✓	✓	-
Update	updateStatus	✓	✓	✓	✓	✓	✓	-	-	-	-	-	✓	✓	✓	✓	✓	✓	✓	-
Generate	generateAllReceipts	✓	✓	✓	✓	✓	✓	-	-	-	-	-	✓	✓	✓	✓	✓	✓	✓	-

- : Not guarantee.



## 9.2 uploadBitmap Method

Uploads bitmap (UIImage object) to the Star Micronics Service.

### Declaration

```
+ (NSString *)uploadBitmap:(UIImage *)image completion:(void (^)(NSInteger statusCode, NSError *error))completion;
```

### Parameter

Name	Description	Object type
image	Bitmap to upload.	UIImage
completion	When the upload is completed, check upload result as following status.  -statusCode- • HTTP status code.  -error- • Error information when fails to upload data.	void (^)(NSInteger statusCode, NSError *error)

### Return value

Description	Object type
Uploaded URL.	NSString

### Example

```
+ (NSData *)createData:(StarloExtEmulation)emulation image:(UIImage *)image {
    NSString *urlString = [SMCSAllReceipts uploadBitmap:image completion:nil];

    ISCBBuilder *builder = [StarloExt createCommandBuilder:emulation];

    [builder beginDocument];

    [builder appendBitmap:image diffusion:NO];

    NSData *data = [SMCSAllReceipts generateAllReceipts:urlString emulation:emulation info:YES qrCode:YES];

    [builder appendRawData:data];

    [builder appendCutPaper:SCBCutPaperActionPartialCutWithFeed];

    [builder endDocument];

    return [builder.commands copy];
}
```

Refer to *AllReceiptsFunctions.m*.

### 9.3 updateStatus Method

Updates the device status information on the Star Cloud Services.

#### Declaration

```
+ (void)updateStatus:(NSString *)status completion:^(void (^)(NSInteger statusCode, NSError *error))completion;
```

#### Parameter

Name	Description	Object type
status	<p>Updated status.</p> <p>Hexadecimal digit sequence of 3rd to 6th bytes in Automatic Status (*) (ex. "28000000")</p> <p>* Please refer to STAR Line Mode and StarPRNT command manual for details of Automatic Status.</p>	NSString
completion	<p>When the update is completed, check update result as following parameter.</p> <p>-statusCode-</p> <ul style="list-style-type: none"> <li>HTTP status code.</li> </ul> <p>-error-</p> <ul style="list-style-type: none"> <li>If the request fails, the error parameter contains information about the failure.</li> </ul>	void (^)(NSInteger statusCode, NSError *error)

#### Return value

Description	Object type
-	-

#### Example

```
- (void)didStatusUpdate:(StarIoExtManager *)manager status:(NSString *)status {
    [SMCSAllReceipts updateStatus:status completion:^(NSInteger statusCode, NSError *error) {
        ...
    }];
}
```

Refer to *AllReceiptsExtViewController.m*.

## 9.4 generateAllReceipts Method

Generates the print data for the AllReceipts™ use.

### Declaration

```
+ (ISCBBuilder *)createCommandBuilder:(StarloExtEmulation)emulation;
```

### Parameter

Name	Description	Object type
urlString	Uploaded URL	NSString
emulation	Emulation type. <ul style="list-style-type: none"> <li>StarloExtEmulationStarPRNT ... StarPRNT emulation.</li> <li>StarloExtEmulationStarLine ... STAR Line Mode emulation.</li> <li>StarloExtEmulationStarGraphic ... STAR Graphic Mode emulation.</li> <li>StarloExtEmulationEscPos ... ESC/POS emulation.</li> <li><del>StarloExtEmulationEscPosMobile ... ESC/POS Mobile emulation.</del></li> <li><del>StarloExtEmulationStarDotImpact ... STAR Dot Impact emulation.</del></li> </ul>	StarloExtEmulation
info	Generates information logo. <ul style="list-style-type: none"> <li>YES ... Valid.</li> <li>NO ... Invalid.</li> </ul>	BOOL
qrCode	Generates QR code. <ul style="list-style-type: none"> <li>YES ... Valid.</li> <li>NO ... Invalid.</li> </ul>	BOOL

### Return value

Description	Object type
Generated print data.	NSData

### Example

```
+ (NSData *)createData:(StarloExtEmulation)emulation image:(UIImage *)image {
    NSString *urlString = [SMCSAllReceipts uploadBitmap:image completion:nil];

    ISCBBuilder *builder = [StarloExt createCommandBuilder:emulation];

    [builder beginDocument];

    [builder appendBitmap:image diffusion:NO];

    NSData *data = [SMCSAllReceipts generateAllReceipts:urlString emulation:emulation info:YES qrCode:YES];

    [builder appendRawData:data];

    [builder appendCutPaper:SCBCutPaperActionPartialCutWithFeed];

    [builder endDocument];

    return [builder.commands copy];
}
```

*Refer to AllReceiptsFunctions.m.*

## Appendix A. How to use AllReceipts™ (Guides for Retailers)

Please visit the following URL for details about “AllReceipts™”, FREE digital receipts service from Star Micronics.

[www.allreceipts.com](http://www.allreceipts.com)

You can start using our services immediately after you complete your registration from the following website.

<< **Star Cloud Services Retailer Registration site** >>

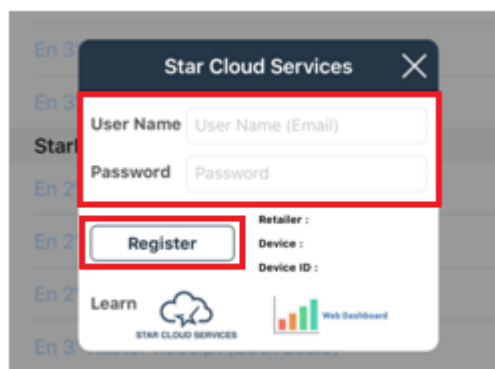
[www.starcloudservices.com](http://www.starcloudservices.com)

### 1) Device Registration

Register the device using your registered Star Cloud Services account.

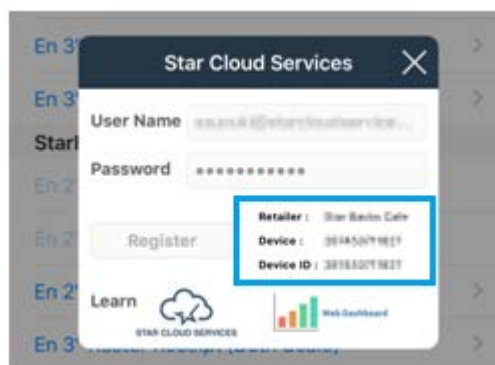
Once you have registered the device, you can use the service of uploading print data to the cloud server and manage the registered device from the Star Cloud Services dashboard.

### 2) Enter the username and the password of your registered Star Cloud Services account and click “Register Device”.



The image shows a mobile app interface for 'Star Cloud Services'. It features a registration form with the following fields: 'User Name' (with a placeholder 'User Name (Email)'), 'Password', and a 'Register' button. To the right of the form, there are labels for 'Retailer:', 'Device:', and 'Device ID:'. At the bottom, there are links for 'Learn' and 'Web Dashboard'.

### 3) When the device is registered successfully, the account information of the connected Star Cloud Services appears.



The image shows the same 'Star Cloud Services' app interface after successful registration. The 'User Name' field now contains the email 'susan.k@starcloudservices.com'. The 'Password' field is masked with dots. The 'Register' button is now disabled. A blue box highlights the account information on the right: 'Retailer: Star Seiko Cafe', 'Device: 35145071821', and 'Device ID: 38183271821'.