Star mPOP iOS SDK User's Manual

Aug 24, 2015

Abstract

This paper provides information about the Star mPOP iOS SDK.

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

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Version History

Release Date	Update
Aug 24, 2015	1st Release

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About this Manual

This manual is designed to help you understand StarIO.framework, StarIO_Extension.framework and how to build an iOS application to interact with mPOP.
When you'd like to know StarIO.framework details, download StarIO iOS SDK, and refer to the document.
It is important to understand the basics of the Objective-C language. Although this SDK is for iOS, there are SDKs available for many different operating systems and programming languages at our website in the Developers section. Check the Developers section of our site for the newest SDKs, technical documentation, FAQs, and many more additional resources.

CAUTION

- The information in this manual is subject to change without notice.
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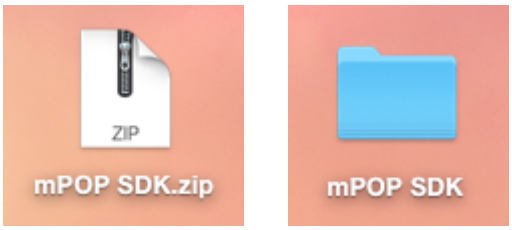
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1 Getting Started

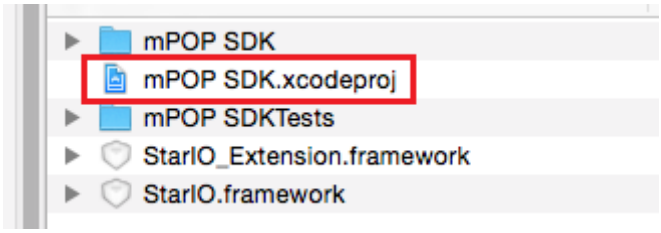
To build an iOS project, Xcode are needed. These tools are available in one package from the Apple Developer Site or Mac App Store. It is important to note that in order to produce applications that will actually run on an iOS device, you must be part of the Apple Developer Program, which requires a yearly subscription. While it is possible to obtain these tools from Mac App Store as stated above, your application will only be able to run in the iOS Simulator and will not install on an actual device.
It is assumed Xcode have already been installed on your Mac at this point. Should you need assistance or additional information, visit the Resources section of the Apple Developer Site.

How to open the Star mPOP iOS SDK project in Xcode

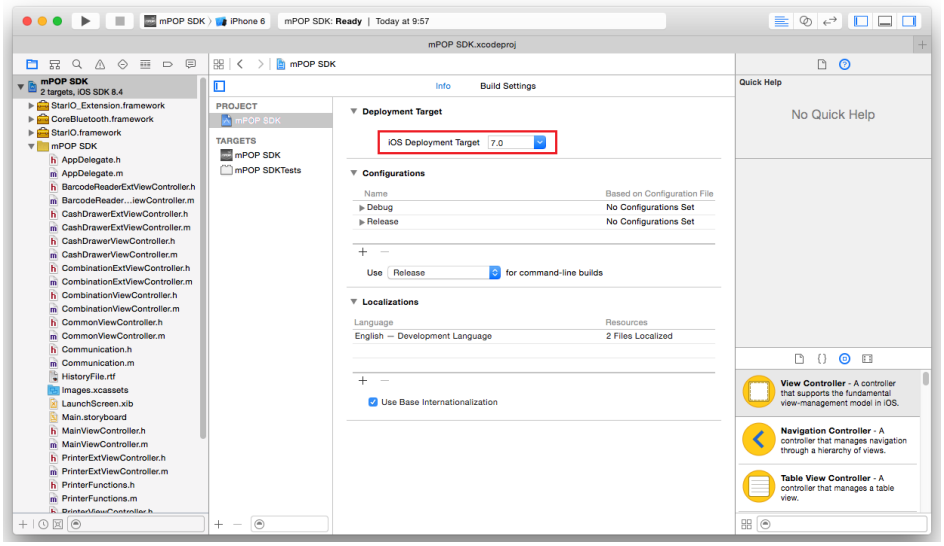
1. Unzip the Star iOS SDK folder and open it.



2. Open mPOP SDK.xcodeproj.



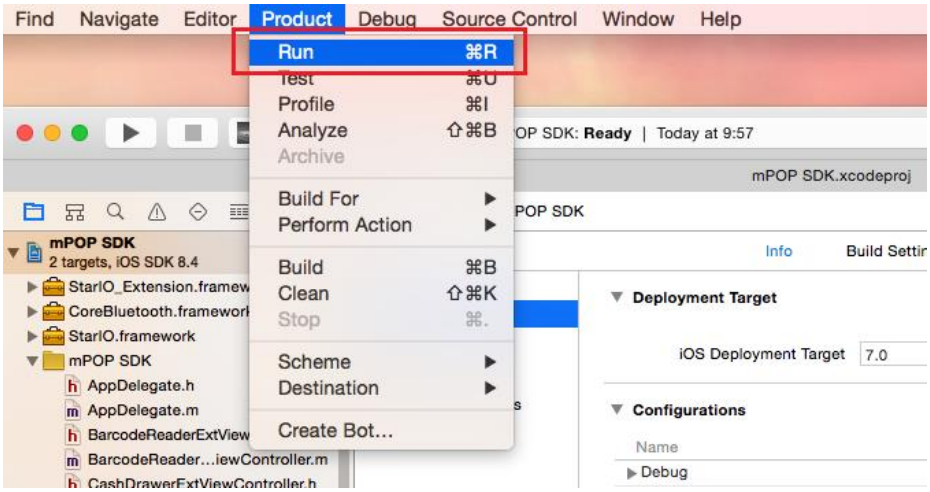
3. Set the iOS Deployment Target to 7.0 or later.



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Running the project

1.Use the shortcut ⌘R or click Product in the top menu bar and then Run.



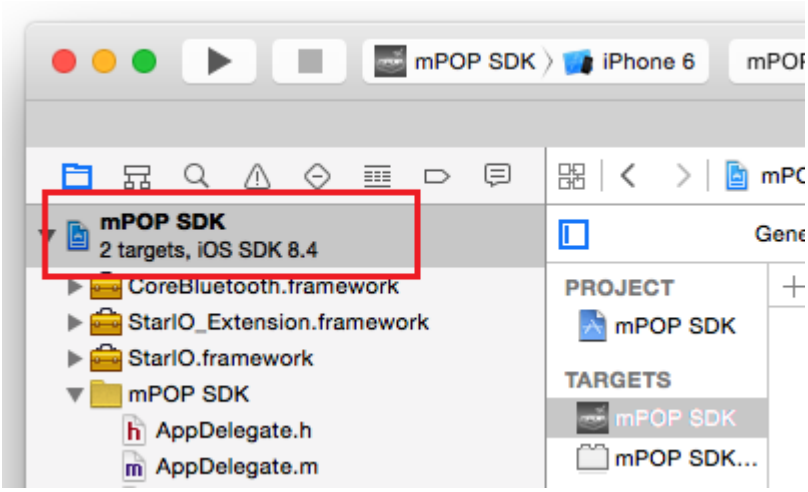
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2 How to configuration mPOP Application

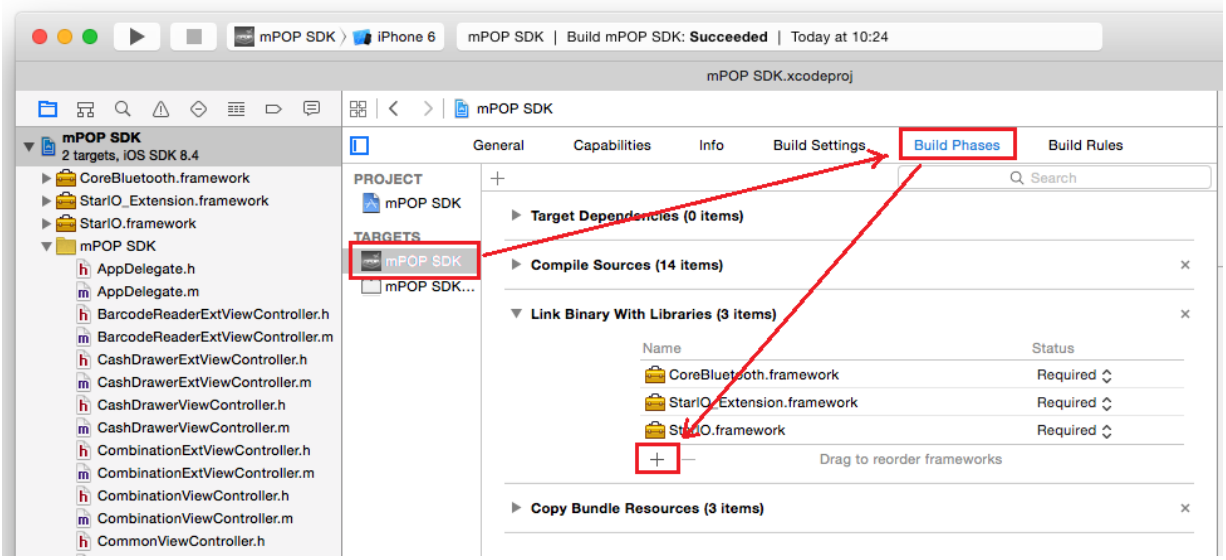
The StarIO.framework and StarIO_Extension.framework is already included when the Star mPOP iOS SDK is loaded in Xcode; there's no need to include it again when testing our SDK. However, when you are building your own application, it is necessary to add the framework into it.

2.1 Add StarIO_Extension.framework

1. Click on the project.

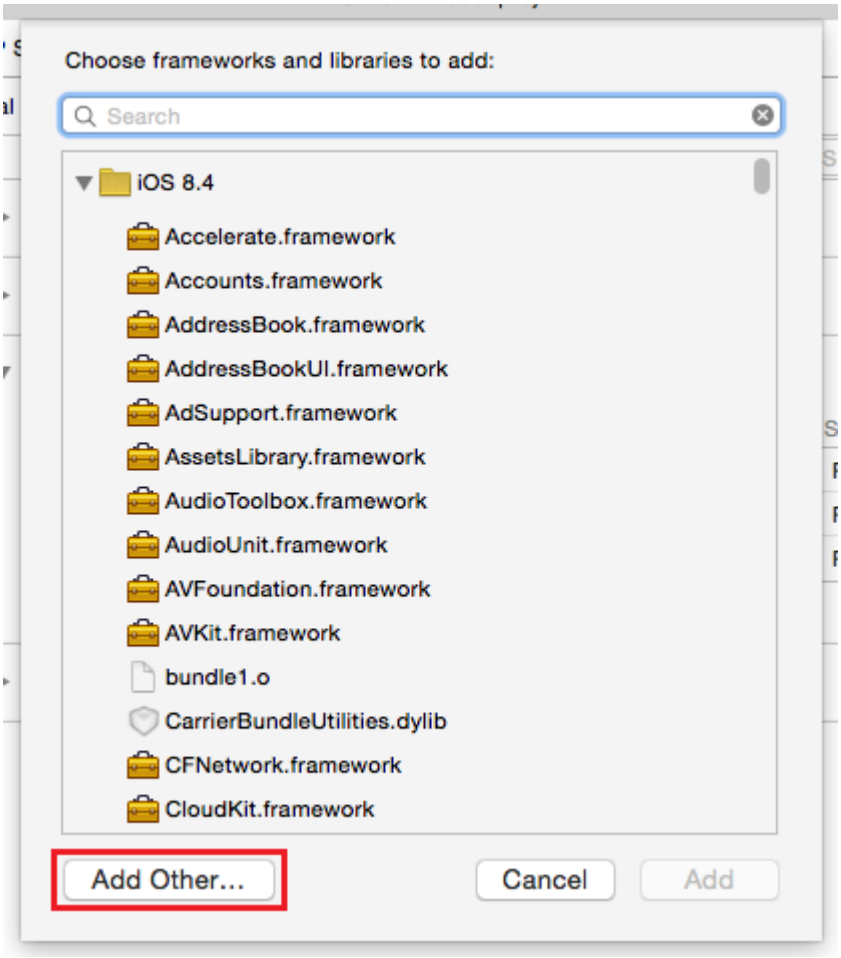


2. Open a target. Click the Build Phases tab and click the +.

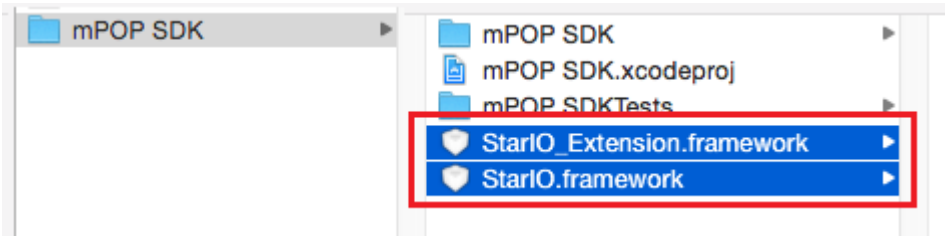


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3. Click the Add Other… button.



4. Browse to the location of where the Star mPOP iOS SDK was unzipped and select StarIO.framework and StarIO_Extension.framework. Then click Open.

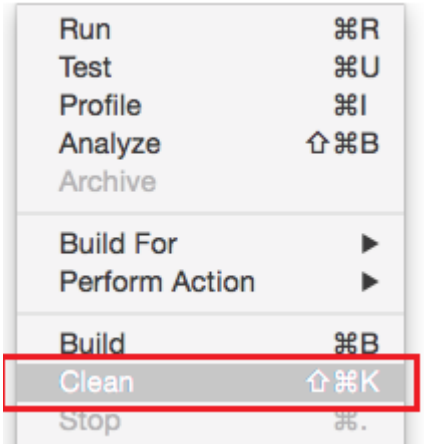


5. The framework is added to the project.

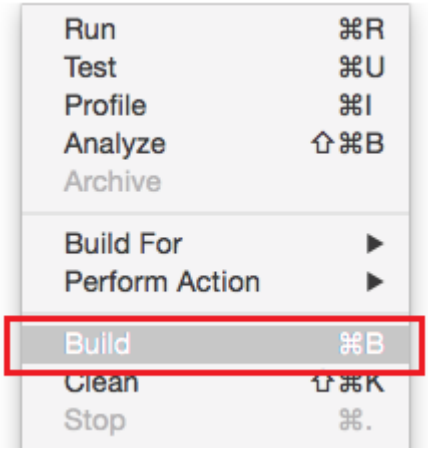
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★Version up of StarIO.framework and StarIO_Extension.framework

1. Delete StarIO.framework and StarIO_Extension.framework from your project.
2. Copy new StarIO.framework and StarIO_Extension.framework
3. Clean the Xcode project.



4. Build the Xcode project.

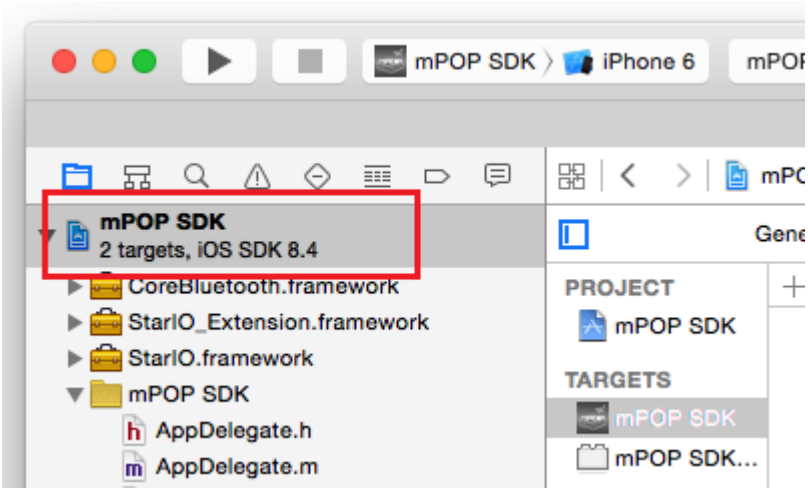


To refer to the new StarIO.framework and StarIO_Extension.framework without deleting the existing StarIO.framework and StarIO_Extension.framework, surely confirm the "framework search path" setting of the Xcode project.
If the old path of the StarIO.framework StarIO_Extension.framework remains in front of the "framework serach path", the previous StarIO.framework and StarIO_Extension.framework will be used.

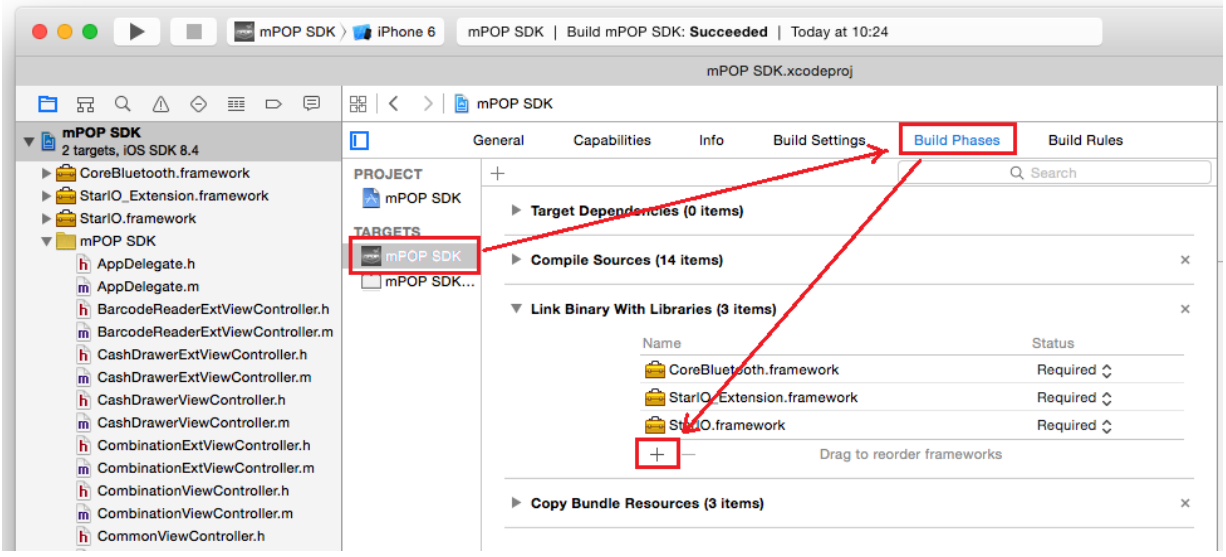
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2.2 Add CoreBluetooth.framework

1. Click on the project.

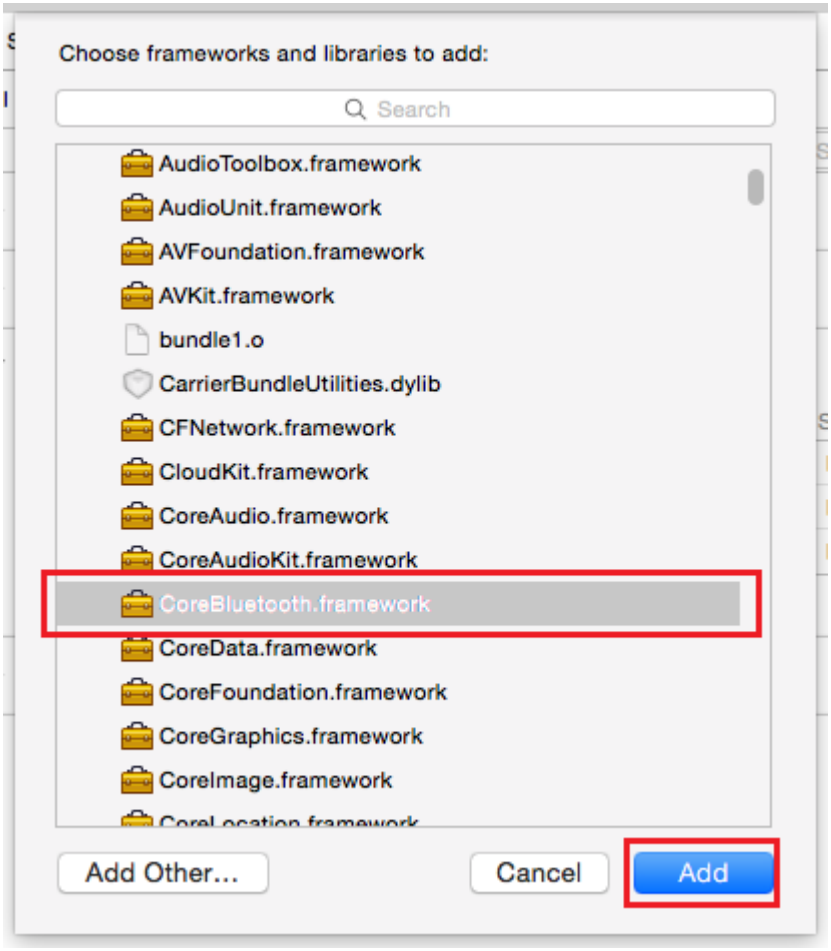


2. Open a target. Click the Build Phases tab and click the +.



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3. Select CoreBluetooth.framework and click the Add button.

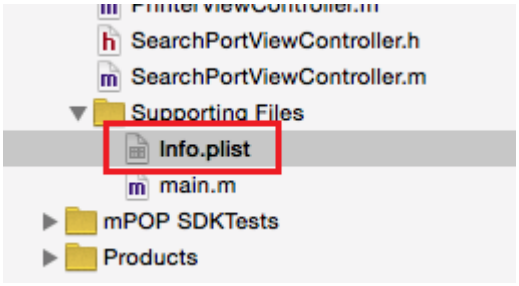


4. The framework is added to the project.

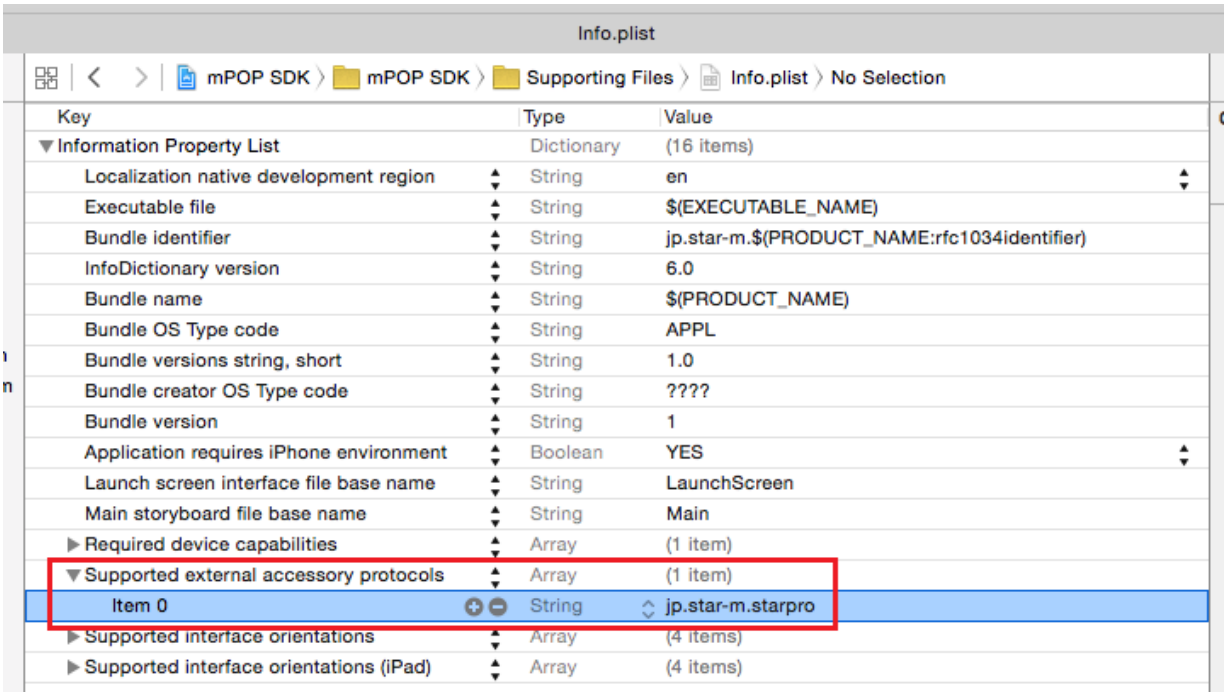
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2.3 Edit information property list

1. Click on the information property list file.



2. Add the Supported external accessory protocols key. Then click the triangle of this key and set the value for the Item * to jp.star-m.starpro.



3. You have finished editing the information property list.

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3 StarIoExtManager

Method

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

Property

Name	Description
port	StarIOPort object. * *readonly*
printerOnlineStatus	Printer Online status. * *readonly*
printerPaperReadyStatus	Printer paper ready status. * *readonly*
printerCoverOpenStatus	Printer cover open status. * *readonly*
cashDrawerOpenStatus	Cash drawer open status. * readonly
barcodeReaderConnectStatus	Barcode reader connection status. * *readonly*
cashDrawerOpenActiveHigh	Mode of cash drawer open sensor active.
lock	Exclusive access control object of communication by port property. * *readonly*
delegate	Delegate of the StarIoExtManager.

Constants

Name	Description
StarIoExtManagerType	Manager type constants.
StarIoExtManagerStatus	Status constants.

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3.1 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	Maneger type. • StarIoExtManagerTypeStandard … Management of the printer and the cash drawer. • StarIoExtManagerTypeWithBarcodeReader … Management of the printer, cash drawer and the barcode reader. • StarIoExtManagerTypeOnlyBarcodeReader … Management of the barcode reader.	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, download StarIO iOS SDK, and refer to the document.

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3.2 connect Method

Management start.

Declaration

- (BOOL)connect;

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
Result. • YES … Success • NO … Failure	BOOL

Example

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

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

    if ([_starIoExtManager 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.

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3.3 disconnect Method

Management stop.

Declaration

- (BOOL)disconnect;

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
Result. • YES … Success • NO … Failure	BOOL

Example

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

    [_starIoExtManager disconnect];
}
```

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

3.4 port Property

StarIOPort object. * *readonly*

Declaration

@property (readonly, nonatomic) SMPort *port;

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

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3.5 printerOnlineStatus Property

Printer Online status. * *readonly*

Declaration

@property (readonly, nonatomic) StarIoExtManagerStatus printerOnlineStatus;

Value

Description	Object type
Printer Online status. • StarIoExtManagerStatusInvalid … Invalid. • StarIoExtManagerStatusImpossible … Equipment impossible. • StarIoExtManagerStatusPrinterOnline … Printer online detection. • StarIoExtManagerStatusPrinterOffline … Printer offline detection.	StarIoExtManagerStatus

3.6 printerPaperReadyStatus Property

Printer paper ready status. * *readonly*

Declaration

@property (readonly, nonatomic) StarIoExtManagerStatus printerPaperReadyStatus;

Value

Description	Object type
Printer paper ready status. • StarIoExtManagerStatusInvalid … Invalid. • StarIoExtManagerStatusImpossible … Equipment impossible. • StarIoExtManagerStatusPrinterPaperReady … Printer paper ready detection. • StarIoExtManagerStatusPrinterPaperNearEmpty … Printer paper near end detection. • StarIoExtManagerStatusPrinterPaperEmpty … Printer paper empty detection.	StarIoExtManagerStatus

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3.7 printerCoverOpenStatus Property

Printer cover open status. * *readonly*

Declaration

@property (readonly, nonatomic) StarIoExtManagerStatus printerCoverOpenStatus;

Value

Description	Object type
Printer cover open status. • StarIoExtManagerStatusInvalid … Invalid. • StarIoExtManagerStatusImpossible … Equipment impossible. • StarIoExtManagerStatusPrinterCoverOpen … Printer cover open detection. • StarIoExtManagerStatusPrinterCoverClose … Printer cover close detection.	StarIoExtManagerStatus

3.8 cashDrawerOpenStatus Property

Cash drawer open status. * *readonly*

Declaration

@property (readonly, nonatomic) StarIoExtManagerStatus cashDrawerOpenStatus;

Value

Description	Object type
Cash drawer open status. • StarIoExtManagerStatusInvalid … Invalid. • StarIoExtManagerStatusImpossible … Equipment impossible. • StarIoExtManagerStatusCashDrawerOpen … Cash drawer open detection. • StarIoExtManagerStatusCashDrawerClose … Cash drawer close detection.	StarIoExtManagerStatus

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3.9 barcodeReaderConnectStatus Property

Barcode reader connection status. * *readonly*

Declaration

@property (readonly, nonatomic) StarIoExtManagerStatus barcodeReaderConnectStatus;

Value

Description	Object type
Barcode reader connection status. • StarIoExtManagerStatusInvalid … Invalid. • StarIoExtManagerStatusImpossible … Equipment impossible. • StarIoExtManagerStatusBarcodeReaderConnect … Barcode reader connection detection. • StarIoExtManagerStatusBarcodeReaderDisconnect … Barcode reader disconnection detection.	StarIoExtManagerStatus

3.10 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. • YES … Active high. mPOP. • NO … Active low. **** Be the default value (YES) for mPOP.***	BOOL

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3.11 lock Property

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

Declaration

@property (readonly, nonatomic) NSRecursiveLock *lock;

Example

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

    …

    [_starIoExtManager.lock lock];

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

    [_starIoExtManager.lock unlock];

    …

}
```

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

3.12 delegate Property

Delegate of the StarIoExtManager.

Declaration

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

Example

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

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

    _starIoExtManager.delegate = self;
}
```

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

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3.13 StarIoExtManagerType Constants

Manager type constants.

Declaration

```
typedef NS_ENUM(NSUInteger, StarIoExtManagerType) {
    StarIoExtManagerTypeStandard = 0,
    StarIoExtManagerTypeWithBarcodeReader,
    StarIoExtManagerTypeOnlyBarcodeReader,
};
```

Constants

Name	Description
StarIoExtManagerTypeStandard	Management of the printer and the cash drawer.
StarIoExtManagerTypeWithBarcodeReader	Management of the printer, cash drawer and the barcode reader.
StarIoExtManagerTypeOnlyBarcodeReader	Management of the barcode reader.

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3.14 StarIoExtManagerStatus Constants

Status constants.

Declaration

```
typedef NS_ENUM(NSUInteger, StarIoExtManagerStatus) {
    StarIoExtManagerStatusInvalid = 0,
    StarIoExtManagerStatusImpossible,
    StarIoExtManagerStatusPrinterOnline,
    StarIoExtManagerStatusPrinterOffline,
    StarIoExtManagerStatusPrinterPaperReady,
    StarIoExtManagerStatusPrinterPaperNearEmpty,
    StarIoExtManagerStatusPrinterPaperEmpty,
    StarIoExtManagerStatusPrinterCoverOpen,
    StarIoExtManagerStatusPrinterCoverClose,
    StarIoExtManagerStatusCashDrawerOpen,
    StarIoExtManagerStatusCashDrawerClose,
    StarIoExtManagerStatusBarcodeReaderConnect,
    StarIoExtManagerStatusBarcodeReaderDisconnect
};
```

Constants

Name	Description
StarIoExtManagerStatusInvalid	Invalid.
StarIoExtManagerStatusImpossible	Equipment impossible.
StarIoExtManagerStatusPrinterOnline	Printer online detection.
StarIoExtManagerStatusPrinterOffline	Printer offline detection.
StarIoExtManagerStatusPrinterPaperReady	Printer paper ready detection.
StarIoExtManagerStatusPrinterPaperNearEmpty	Printer paper near end detection.
StarIoExtManagerStatusPrinterPaperEmpty	Printer paper empty detection.
StarIoExtManagerStatusPrinterCoverOpen	Printer cover open detection.
StarIoExtManagerStatusPrinterCoverClose	Printer cover close detection.
StarIoExtManagerStatusCashDrawerOpen	Cash drawer open detection.
StarIoExtManagerStatusCashDrawerClose	Cash drawer close detection.
StarIoExtManagerStatusBarcodeReaderConnect	Barcode reader connection detection.
StarIoExtManagerStatusBarcodeReaderDisconnect	Barcode reader disconnection detection.

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4 StarIoExtManagerDelegate

Method

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

4.1 didPrinterImpossible Delegate

Tells the delegate the printer impossible. * *optional*

Declaration

- (void)didPrinterImpossible;

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
-	-

Example

```
- (void)didPrinterImpossible {
    _commentLabel.text = @"Printer Impossible.";

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

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

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4.2 didPrinterOnline Delegate

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

Declaration

- (void)didPrinterOnline;

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
-	-

Example

```
- (void)didPrinterOnline {
    _commentLabel.text = @"Printer Online.";

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

Refer to PrinterExtViewController.m and CombinationExtViewController.m.

4.3 didPrinterOffline Delegate

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

Declaration

- (void)didPrinterOffline;

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
-	-

Example

```
- (void)didPrinterOffline {
    _commentLabel.text = @"Printer Offline.";

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

Refer to PrinterExtViewController.m and CombinationExtViewController.m.

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4.4 didPrinterPaperReady Delegate

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

Declaration

- (void)didPrinterPaperReady;

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
-	-

Example

```
- (void)didPrinterPaperReady {
    _commentLabel.text = @"Printer Paper Ready.";

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

Refer to PrinterExtViewController.m and CombinationExtViewController.m.

4.5 didPrinterPaperNearEmpty Delegate

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

Declaration

- (void)didPrinterPaperNearEmpty;

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
-	-

Example

```
- (void)didPrinterPaperNearEmpty {
    _commentLabel.text = @"Printer Paper Near Empty.";

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

Refer to PrinterExtViewController.m and CombinationExtViewController.m.

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4.6 didPrinterPaperEmpty Delegate

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

Declaration

- (void)didPrinterPaperEmpty;

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
-	-

Example

```
- (void)didPrinterPaperEmpty {
    _commentLabel.text = @"Printer Paper Empty.";

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

Refer to PrinterExtViewController.m and CombinationExtViewController.m.

4.7 didPrinterCoverOpen Delegate

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

Declaration

- (void)didPrinterCoverOpen;

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
-	-

Example

```
- (void)didPrinterCoverOpen {
    _commentLabel.text = @"Printer Cover Open.";

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

Refer to PrinterExtViewController.m and CombinationExtViewController.m.

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4.8 didPrinterCoverClose Delegate

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

Declaration

- (void)didPrinterCoverClose;

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
-	-

Example

```
- (void)didPrinterCoverClose {
    _commentLabel.text = @"Printer Cover Close.";

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

Refer to PrinterExtViewController.m and CombinationExtViewController.m.

4.9 didCashDrawerOpen Delegate

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

Declaration

- (void)didCashDrawerOpen;

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
-	-

Example

```
- (void)didCashDrawerOpen {
    _commentLabel.text = @"Cash Drawer Open.";

//  _commentLabel.textColor = [UIColor redColor];
    _commentLabel.textColor = [UIColor magentaColor];
}
```

Refer to CashDrawerExtViewController.m and CombinationExtViewController.m.

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4.10 didCashDrawerClose Delegate

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

Declaration

- (void)didCashDrawerClose;

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
-	-

Example

```
- (void)didCashDrawerClose {
    _commentLabel.text = @"Cash Drawer Close.";

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

Refer to CashDrawerExtViewController.m and CombinationExtViewController.m.

4.11 didBarcodeReaderImpossible Delegate

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

Declaration

- (void)didBarcodeReaderImpossible;

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
-	-

Example

```
- (void)didBarcodeReaderImpossible {
    _commentLabel.text = @"Barcode Reader Impossible.";

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

Refer to BarcodeReaderExtViewController.m and CombinationExtViewController.m.

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4.12 didBarcodeReaderConnect Delegate

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

Declaration

- (void)didBarcodeReaderConnect;

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
-	-

Example

```
- (void)didBarcodeReaderConnect {
    _commentLabel.text = @"Barcode Reader Connect.";

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

Refer to BarcodeReaderExtViewController.m and CombinationExtViewController.m.

4.13 didBarcodeReaderDisconnect Delegate

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

Declaration

- (void)didBarcodeReaderDisconnect;

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
-	-

Example

```
- (void)didBarcodeReaderDisconnect {
    _commentLabel.text = @"Barcode Reader Disconnect.";

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

Refer to BarcodeReaderExtViewController.m and CombinationExtViewController.m.

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4.14 didBarcodeDataReceive Delegate

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

Declaration

- (void)didBarcodeDataReceive:(NSData *)data;

Parameter

Name	Description	Object type
Data	Received barcode data.	NSData

Return value

Description	Object type
-	-

Example

```
- (void)didBarcodeDataReceive:(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.

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4.15 didAccessoryConnectSuccess Delegate

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

Declaration

- (void)didAccessoryConnectSuccess;

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
-	-

Example

```
- (void)didAccessoryConnectSuccess {
    _commentLabel.text = @"Accessory Connect Success.";

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

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

4.16 didAccessoryConnectFailure Delegate

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

Declaration

- (void)didAccessoryConnectFailure;

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
-	-

Example

```
- (void)didAccessoryConnectFailure {
    _commentLabel.text = @"Accessory Connect Failure.";

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

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

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4.17 didAccessoryDisconnect Delegate

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

Declaration

- (void)didAccessoryDisconnect;

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
-	-

Example

```
- (void)didAccessoryDisconnect {
    _commentLabel.text = @"Accessory Disconnect.";

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

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

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5 StarIoExt

Method

Name	Description
createCommandBuilder	Creates the ISCBBuilder object.

Constants

Name	Description
SCBFactoryEmulation	Emulation type constants.

5.1 createCommandBuilder Method

Creates the ISCBBuilder object.

Declaration

+ (ISCBBuilder *)createCommandBuilder:(SCBFactoryEmulation)emulation;

Parameter

Name	Description	Object type
emulation	Emulation type. • SCBFactoryEmulationStar … Star Emulation • ~~SCBFactoryEmulationEscPos … ESC/POS Emulation~~	SCBFactoryEmulation

Return value

Description	Object type
ISCBBuilder object.	ISCBBuilder

Example

```
+ (NSData *)createCommandsRasterModeCoupon {
    NSMutableData *commands = [[NSMutableData alloc] init];

    UIImage *image = [UIImage imageNamed:@"CouponImage"];

    ISCBBuilder *builder = [StarIoExt createCommandBuilder:SCBFactoryEmulationStar];

    [builder appendBitmap:image diffusion:NO width:384 bothScale:NO rotation:SCBBitmapConverterRotationRight90];

    [commands appendData:builder.commands];

    return commands;
}
```

Refer to PrinterFunctions.m.

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5.2 SCBFactoryEmulation Constants

Emulation type constants.

Declaration

```
typedef NS_ENUM(NSUInteger, SCBFactoryEmulation) {
    SCBFactoryEmulationStar,
    SCBFactoryEmulationEscPos
};
```

Constants

Name	Description
SCBFactoryEmulationStar	Star emulation.
~~SCBFactoryEmulationEscPos~~	~~ESC/POS emulation.~~

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6 ISCBBuilder

Method

Name	Description
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
SCBAlignmentPosition	Alignment position constants.
SCBBitmapConverterRotation	Rotation constants.

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6.1 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 width:(NSInteger)width 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 width:(NSInteger)width;

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

Parameter

Name	Description	Object type
image	Source bitmap object.	UIImage
diffusion	Random dither. • YES … Valid • NO … Invalid	BOOL
width	Bitmap width after conversion. (Units : Dots)	NSInteger
bothScale	Height is changed according to the conversion rate of the width property. • YES … Valid. • NO … Invalid.	BOOL
rotation	Rotation. • SCBBitmapConverterRotationNormal …Rotated 0. • SCBBitmapConverterRotationRight90 …Rotated 90. • SCBBitmapConverterRotationLeft90 …Rotated 270. • SCBBitmapConverterRotationRotate180 … Rotated 180.	SCBBitmapConverterRotation

Return value

Description	Object type
-	-

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Example

```
+ (NSData *)createCommandsRasterModeCoupon {
    NSMutableData *commands = [[NSMutableData alloc] init];

    UIImage *image = [UIImage imageNamed:@"CouponImage"];

    ISCBBuilder *builder = [StarIoExt createCommandBuilder:SCBFactoryEmulationStar];

    [builder appendBitmap:image diffusion:NO width:384 bothScale:NO
rotation:SCBBitmapConverterRotationRight90];

    [commands appendData:builder.commands];

    return commands;
}
```

Refer to PrinterFunctions.m.

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6.2 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 width:(NSInteger)width 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 width:(NSInteger)width position:(NSInteger)position;

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

Parameter

Name	Description	Object type
image	Source bitmap object.	UIImage
diffusion	Random dither. • YES … Valid • NO … Invalid	BOOL
width	Bitmap width after conversion. (Units : Dots)	NSInteger
bothScale	Height is changed according to the conversion rate of the width property. • YES … Valid. • NO … Invalid.	BOOL
rotation	Rotation. • SCBBitmapConverterRotationNormal …Rotated 0. • SCBBitmapConverterRotationRight90 …Rotated 90. • SCBBitmapConverterRotationLeft90 …Rotated 270. • SCBBitmapConverterRotationRotate180 … Rotated 180.	SCBBitmapConverterRotation
position	Absolute position. (Units : Dots)	NSInteger

Return value

Description	Object type
-	-

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Example

```
+ (NSData *)createCommandsRasterModeCoupon {
    NSMutableData *commands = [[NSMutableData alloc] init];

    UIImage *image = [UIImage imageNamed:@"CouponImage"];

    ISCBBuilder *builder = [StarIoExt createCommandBuilder:SCBFactoryEmulationStar];

    [builder appendBitmapWithAbsolutePosition:image diffusion:NO width:384 bothScale:NO
rotation:SCBBitmapConverterRotationRight90 position:100];

    [commands appendData:builder.commands];

    return commands;
}
```


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6.3 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 width:(NSInteger)width 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 width:(NSInteger)width position:(SCBAlignmentPosition)position;

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

Parameter

Name	Description	Object type
image	Source bitmap object.	UIImage
diffusion	Random dither. • YES … Valid • NO … Invalid	BOOL
Width	Bitmap width after conversion. (Units : Dots)	NSInteger
bothScale	Height is changed according to the conversion rate of the width property. • YES … Valid. • NO … Invalid.	BOOL
rotation	Rotation. • SCBBitmapConverterRotationNormal …Rotated 0. • SCBBitmapConverterRotationRight90 …Rotated 90. • SCBBitmapConverterRotationLeft90 …Rotated 270. • SCBBitmapConverterRotationRotate180 … Rotated 180.	SCBBitmapConverterRotation
position	Alignment position. • SCBAlignmentPositionLeft … Left alignment. • SCBAlignmentPositionCenter … Center alignment. • SCBAlignmentPositionRight … Right alignment.	SCBAlignmentPosition

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Return value

Description	Object type
-	-

Example

```
+ (NSData *)createCommandsRasterModeCoupon {
    NSMutableData *commands = [[NSMutableData alloc] init];

    UIImage *image = [UIImage imageNamed:@"CouponImage"];

    ISCBBuilder *builder = [StarIoExt createCommandBuilder:SCBFactoryEmulationStar];

    [builder appendBitmapWithAlignment:image diffusion:NO width:384 bothScale:NO
rotation:SCBBitmapConverterRotationRight90 position:SCBAlignmentPositionRight];

    [commands appendData:builder.commands];

    return commands;
}
```

6.4 commands Property

Generated commands.

Declaration

@property (nonatomic, readonly) NSMutableData *commands;

Value

Description	Object type
Generated commands.	NSMutableData

Example

```
+ (NSData *)createCommandsRasterModeCoupon {
    NSMutableData *commands = [[NSMutableData alloc] init];

    UIImage *image = [UIImage imageNamed:@"CouponImage"];

    ISCBBuilder *builder = [StarIoExt createCommandBuilder:SCBFactoryEmulationStar];

    [builder appendBitmap:image diffusion:NO width:384 bothScale:NO rotation:SCBBitmapConverterRotationRight90];

    [commands appendData:builder.commands];

    return commands;
}
```

Refer to PrinterFunctions.m.

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6.5 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.

6.6 SCBBitmapConverterRotation Constants

Rotation constants.

Declaration

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

Constants

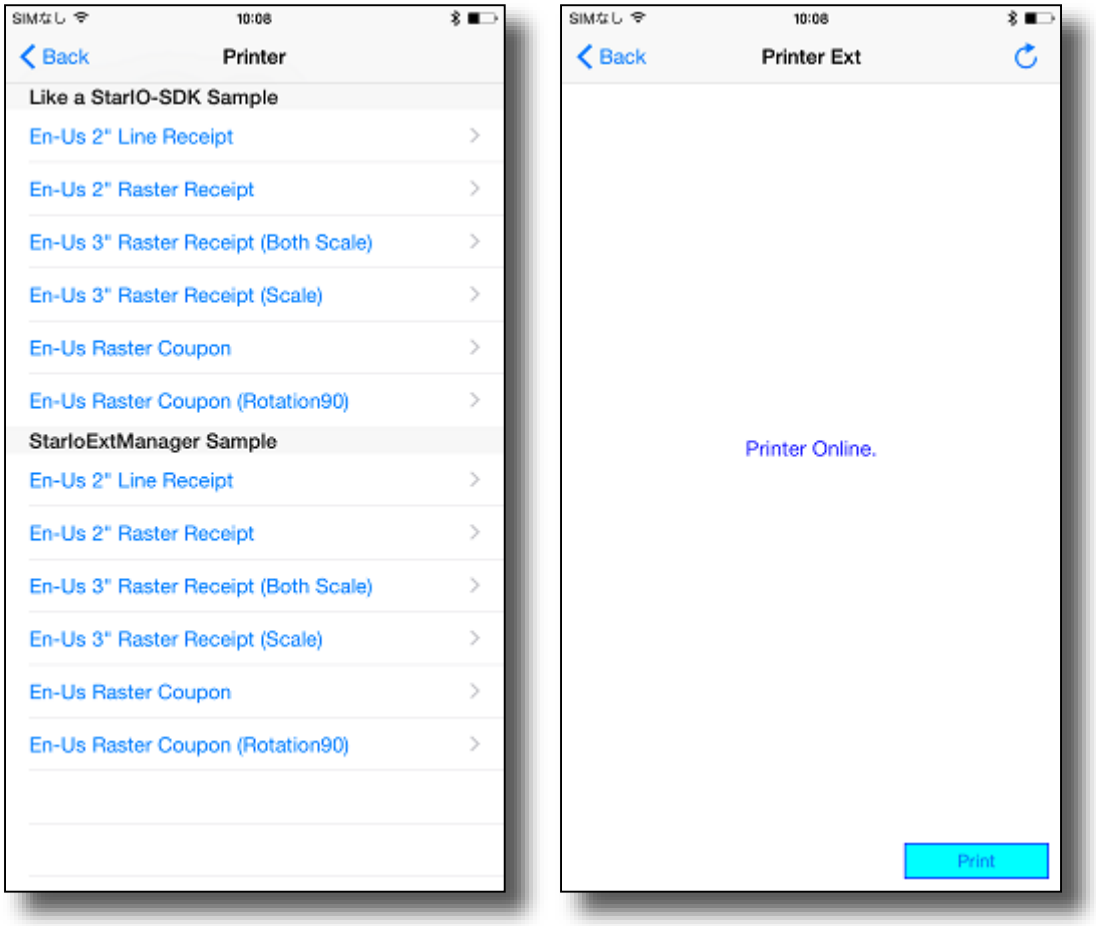
Name	Description
SCBBitmapConverterRotationNormal	Rotated 0.
SCBBitmapConverterRotationRight90	Rotated 90.
SCBBitmapConverterRotationLeft90	Rotated 270.
SCBBitmapConverterRotationRotate180	Rotated 180.

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7 Star mPOP iOS SDK Functionality

7.1 PrinterViewController / PrinterExtViewController

Receipt sample is chosen in PrintViewController.
And PrinterExtViewController does print and watche with StarIoExtManager object of StarIoExtManagerTypeStandard-type.



Initialize of StarIoExtManager

```
- (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;

    …

}
```


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Connect

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

    [self refreshPrinter];

    …

}

- (void)refreshPrinter {

    …

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

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

        [alert show];
    }

    …

}
```

Disconnect

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

    …

    [_starIoExtManager disconnect];

    …

}
```

Send Data (Print)

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

    …

    [_starIoExtManager.lock lock];

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

    [_starIoExtManager.lock unlock];

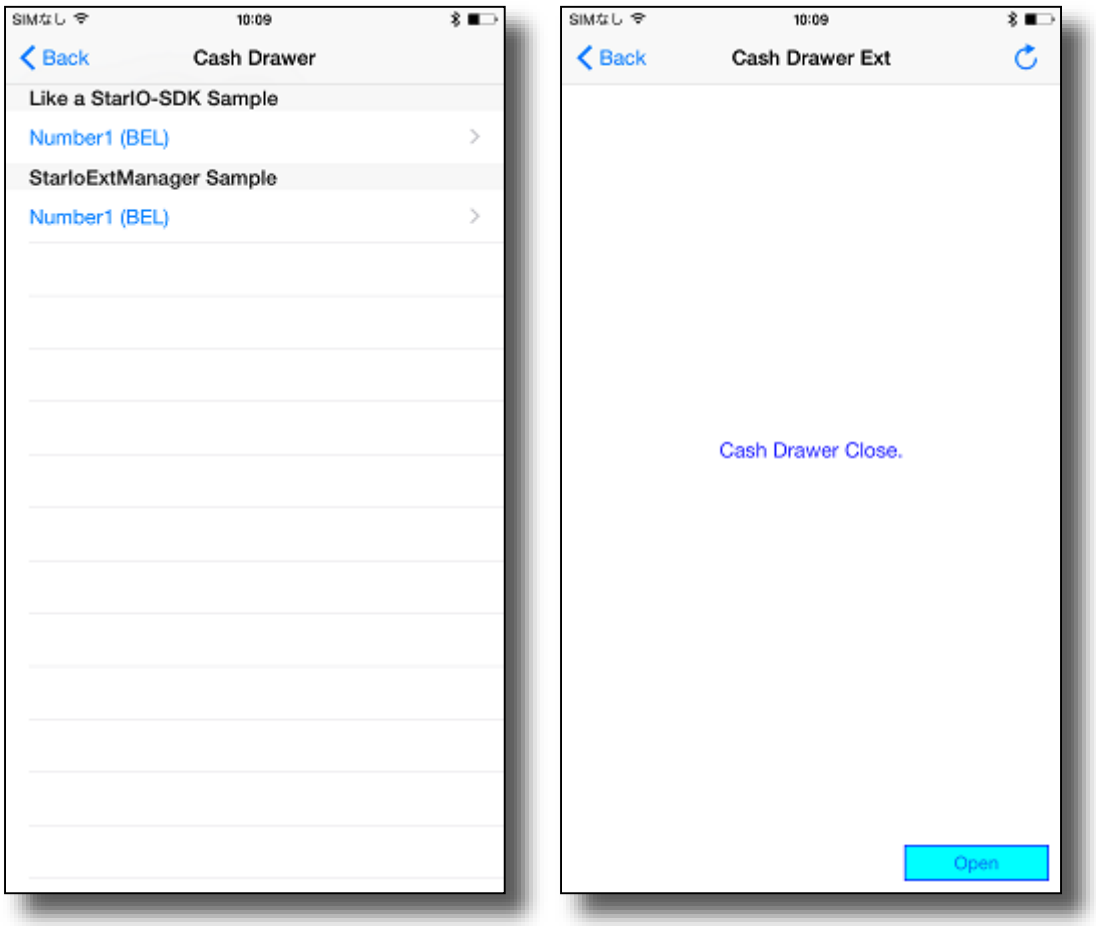
    …

}
```


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7.2 CashDrawerViewController / CashDrawerExtViewController

CashDrawerExtViewController does open cash drawer and watche with StarIoExtManager object of StarIoExtManagerTypeStandard-type.



Initialize of StarIoExtManager

```
- (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;

    …

}
```


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Connect

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

    [self refreshCashDrawer];

    …

}

- (void)refreshCashDrawer {

    …

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

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

        [alert show];
    }

    …

}
```

Disconnect

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

    …

    [_starIoExtManager disconnect];

    …

}
```

Send Data (Open Cash Drawer)

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

    …

    [_starIoExtManager.lock lock];

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

    [_starIoExtManager.lock unlock];

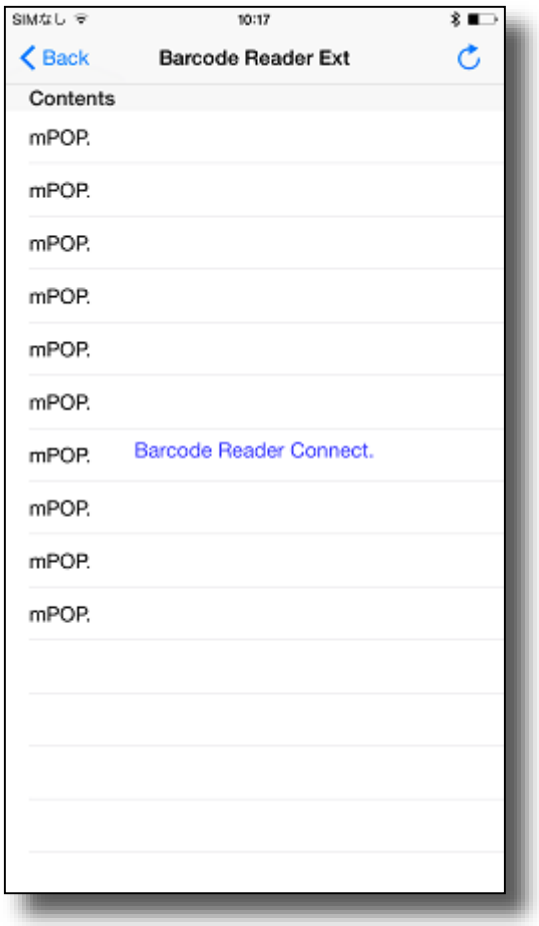
    …

}
```


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7.3 BarcodeReaderExtViewController

BarcodeReaderExtViewController does read barcode and watche with StarIoExtManager object of StarIoExtManagerTypeOnlyBarcodeReader-type.



Initialize of StarIoExtManager

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

    …

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

    _starIoExtManager.delegate = self;

    …

}
```


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Connect

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

    …

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

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

        [alert show];
    }

    …

}
```

Disconnect

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

    …

    [_starIoExtManager disconnect];

    …

}
```

Receive Barcode Data Delegate

```
- (void)didBarcodeDataReceive:(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:@""];
        }
    }

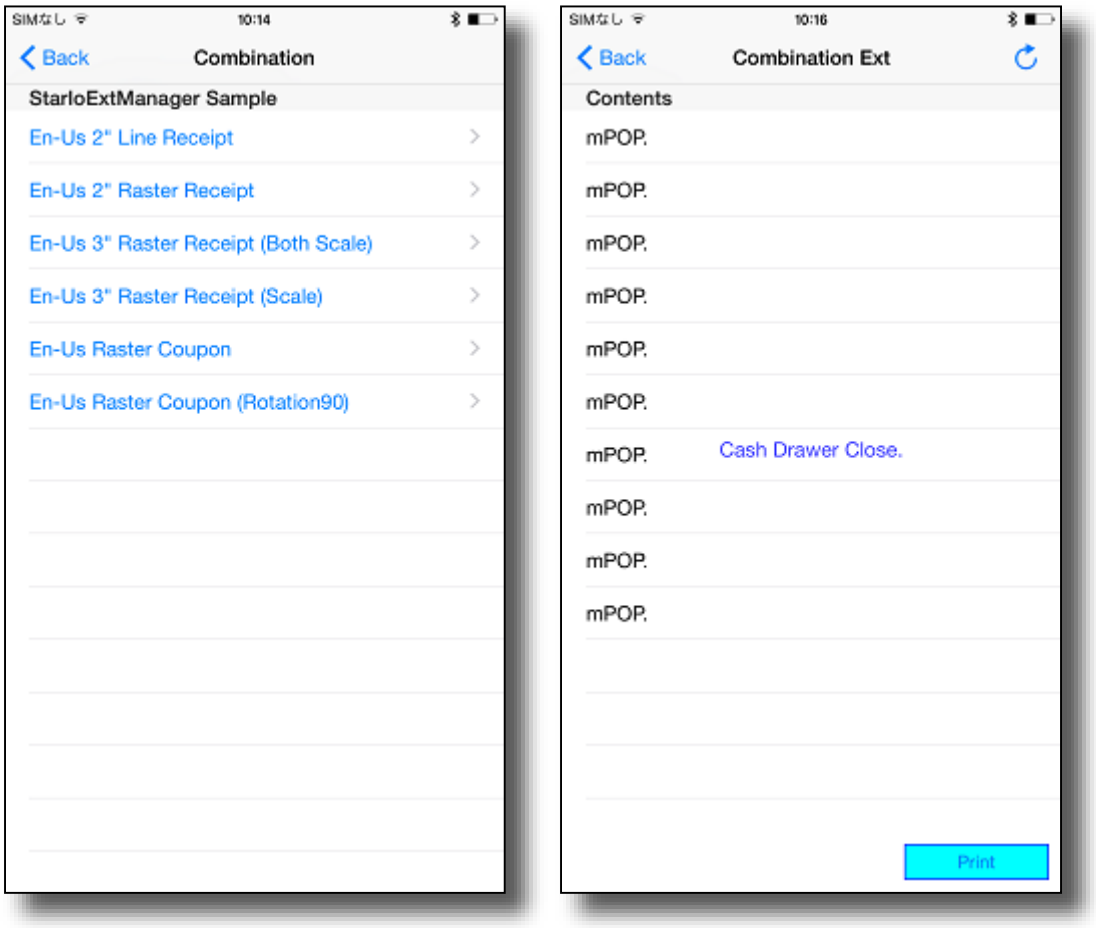
    …

}
```


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7.4 CombinationViewController / CombinationExtViewController

Receipt sample is chosen in CombinationViewController.
And CombinationExtViewController does print, open cash drawer, read barcode and watche with StarIoExtManager object of StarIoExtManagerTypeWithBarcodeReader-type.



Initialize of StarIoExtManager

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

    …

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

    _starIoExtManager.delegate = self;

    …

}
```


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Connect

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

    …

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

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

        [alert show];
    }

    …

}
```

Disconnect

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

    …

    [_starIoExtManager disconnect];

    …

}
```

Send Data (Print and Open Cash Drawer)

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

    …

    [_starIoExtManager.lock lock];

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

    [_starIoExtManager.lock unlock];

    …

}
```


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Receive Barcode Data Delegate

```
- (void)didBarcodeDataReceive:(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:@""];
        }
    }

    …

}
```


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7.5 Communication

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

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;
        }
```


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```
    }
    @catch (PortException *exc) {

        …

    }

    …

    return result;
}
```

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;
            }
```


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```
        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;
}
```

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

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