StarPRNT Android SDK User’s Manual

January 26, 2018

Abstract

This paper provides information about the StarPRNT Android SDK.

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

Version History

Release Date	Update
Aug 11, 2016	Release
Nov 18, 2016	Added the uploadData method to the AllReceipts class. Revised the description about onAccessoryConnectSuccess and onAccessoryConnectFailure methods. Added how to set the condition for printer busy when using BSC10 with USB interface.
Apr 17, 2017	Supports BlackMark and PageMode.
Sep 6, 2017	Added the API reference of class included in StarIO library. Added the StarBluetoothManagerFactory class. Added the API reference of the peripherals (barcode reader / customer display / scale).
Jan. 26, 2018	Added the appendHorizontalTabPosition method to the ICommandBuilder interface.

About this Manual:

This manual is designed to help you understand StarPRNT SDK for Android application. It is important to understand the basics of the Java language.
Although this SDK is for Android, there are SDKs available for many different operating systems and programming languages at our Global Support Site.
Check the Developers Section of our site for the newest SDKs, technical documentation, FAQs, and many more additional resources.

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Contents

1 Getting Started

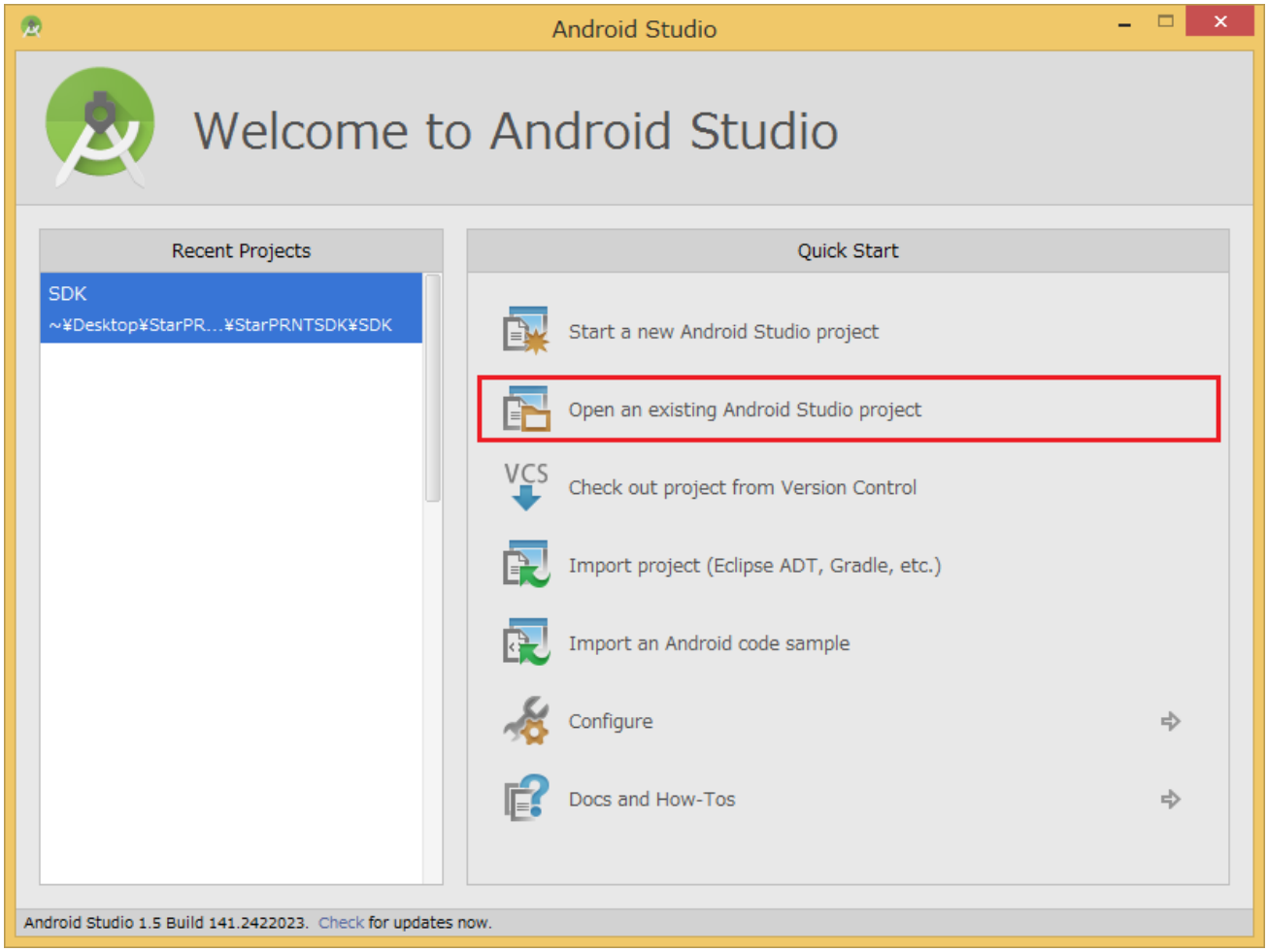
1.1 To build an Android project, Android Studio are needed.

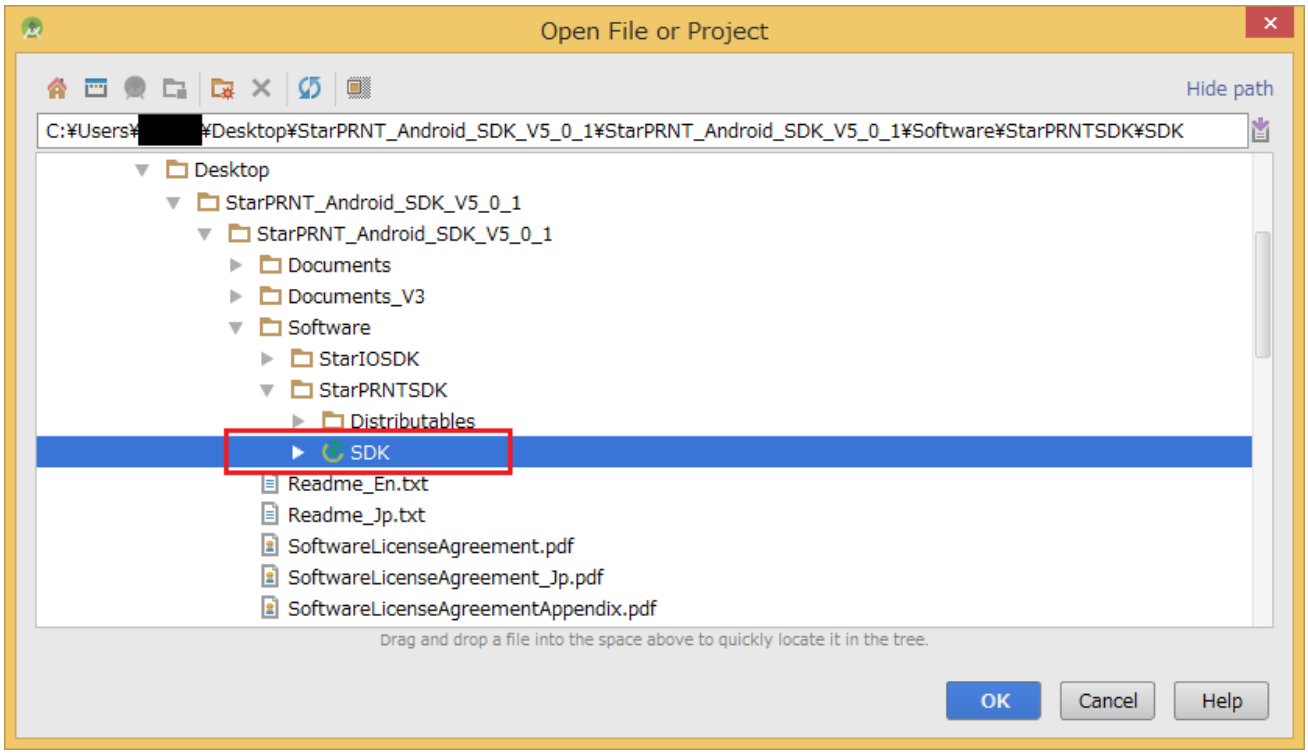
These tools are available in one package from the Android Studio – Official Site.
It is assumed Android Studio have already been installed on your PC at this point. Should you need assistance or additional information, visit the Android Studio – Official Site.

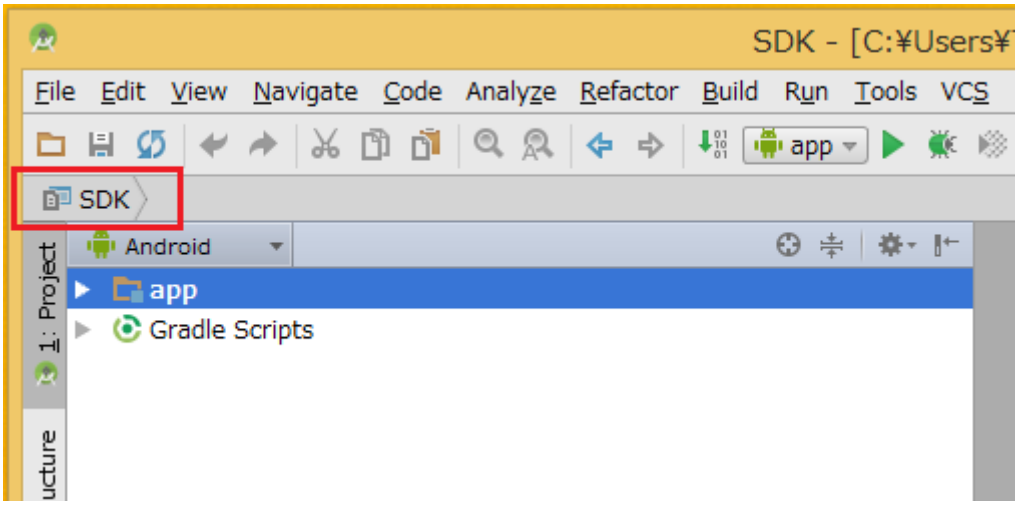
How to open the StarPRNT SDK project in Android Studio

1. Unzip the StarPRNT SDK package.

2. Execute Sndroid Studio and open StarPRNT SDK.

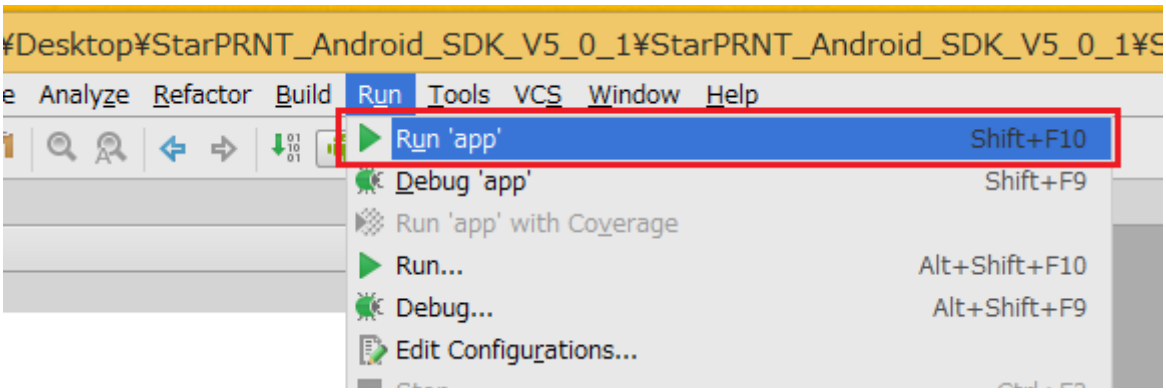




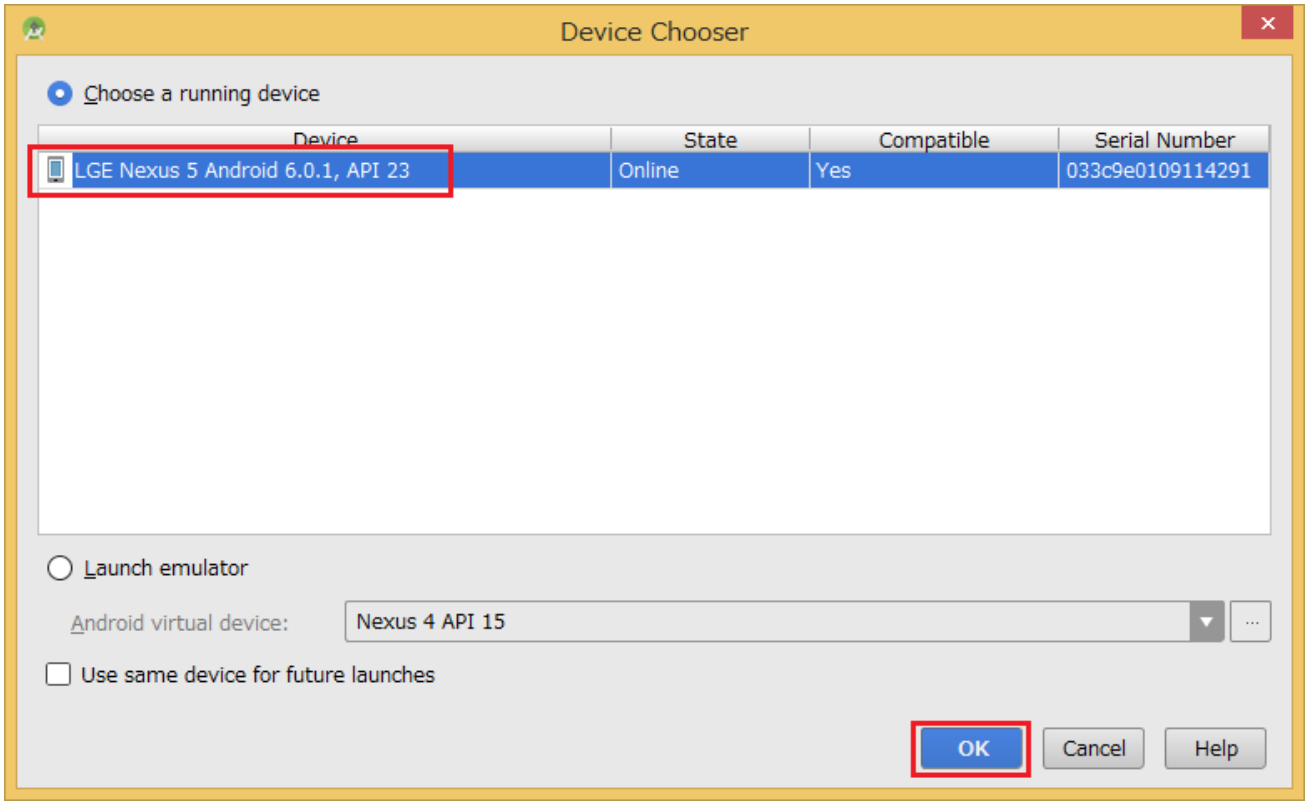


Running the project

1.Click “Run” in the top menu bar and then select “Run ‘app’”.



2.Choose Device.



1.2 Printer

	Printer	F/W Version	Interface	Emulation
POS Printer	mPOP	1.0 or later	Bluetooth USB	StarPRNT
	FVP10	1.2 or later	Bluetooth Ethernet USB	StarLine
	TSP100IIIW	1.0 or later	Wireless LAN	StarGraphic
	TSP100IIILAN	1.0 or later	Ethernet	StarGraphic
	TSP100IIIBI	1.0 or later	Bluetooth *2	StarGraphic
	TSP100IIIU	1.0 or later	USB	StarGraphic
	TSP100ECO	2.0 or later	USB	StarGraphic
	TSP100U	2.0 or later	USB	StarGraphic
	TSP100GT	2.0 or later	USB	StarGraphic
	TSP100LAN	2.0 or later	Ethernet	StarGraphic
	TSP650II	1.0 or later	Bluetooth *2 Ethernet USB	StarLine
	TSP700II	3.0 or later	Bluetooth *2 Ethernet USB	StarLine
	TSP800II	1.2 or later	Bluetooth *2 Ethernet USB	StarLine
	BSC10 LAN	1.0 or later	Ethernet	ESC/POS
	BSC10 *1	1.0 or later	USB	
	SP700	3.0 or later	Bluetooth (EU / USOnly) Ethernet USB	StarDotImpact
Mobile Printer	SM-S210i	2.4 or later	Bluetooth	StarPRNT *3 / EscPosMobile
	SM-S220i	2.0 or later	Bluetooth	StarPRNT *3 / EscPosMobile
	SM-S230i	1.0 or later	Bluetooth	StarPRNT / EscPosMobile
			USB	StarPRNT
	SM-T300i	2.4 or later	Bluetooth	StarPRNT *3 / EscPosMobile
	SM-T300	1.1 or later	Bluetooth	StarPRNT *3 / EscPosMobile
	SM-T400i	2.4 or later	Bluetooth	StarPRNT *3 / EscPosMobile

	Printer	F/W Version	Interface	Emulation
	SM-L200	1.0 or later	Bluetooth	StarPRNT / StarPRNTL*4
	SM-L300	1.0 or later	Bluetooth	StarPRNT / StarPRNTL

* 1: BSC10 setting with for USB I/F
  Please set busy condition to "Reception Buffer Full". (MSW #7, bit4 set to ON)
* 2: Support timeout value setting of data timeout function.
  TSP100IIIBI: Firmware version 1.0 or later.
  TSP650II, TSP800II: Firmware version 2.0 or later.
  TSP700II: Firmware version 5.0 or later.
* 3: Support for StarPRNT emulation is
  SM-S210i, SM-S220i, SM-T300i and SM-T400i: firmware version 3.0 or later.
  SM-T300(DB): firmware version 4.0 or later.
* 4: Support for StarPRNTL emulation is firmware version 2.0 or later.

❖ Portable Printer

When using StarPRNT emulation:

To use the StarPRNT emulation, set the emulation setting of the printer to “StarPRNT”. To change the emulation, proceed as follows. (For SM-L200 and SM-L300, it does not need to switch the emulation.)

◆ Switching over between StarPRNT and ESC/POS emulation

1. Turn the printer power and open the printer cover.

2. Press and hold the POWER button and the FEED button simultaneously. As soon as the ERROR lamp flashes five times, release the buttons. The emulation switchover takes place automatically.

3. After setting a paper, close the printer cover. The set emulation is printed out.
   ESC/POS : EMU = ESC/POS
   StarPRNT : EMU = StarPRNT

   If the emulation is not switched correctly, repeat the above steps 1 to 3.
   At that time, in step 2, make sure not to release the buttons until the lamp completes the 5th flash.

4. Please reboot the printer after switching the emulation. *It will be valid after rebooting the printer.

1.3 Connecting a Star POS Printer to an Android Device

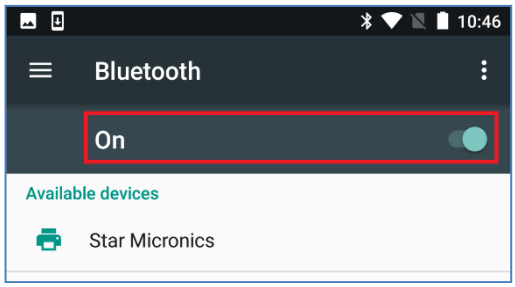
Bluetooth

All Star Bluetooth devices have each initial device name as a factory default setting, such as "Star Micronics" and "DK-AirCash". When using multiple devices, which have same device name, it is useful to change the device name for identifying each device easily.

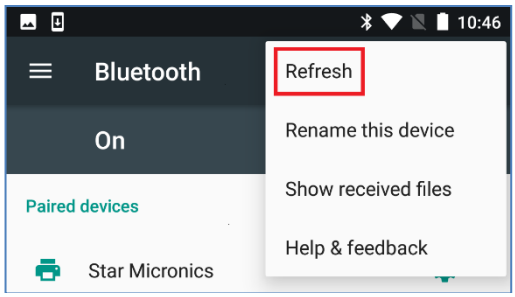
You can change the LAN/Bluetooth settings of the Star POS device, such as changing the Bluetooth device name, use mPOP Utility for mPOP, TSP 100III Utility for TSP100IIILAN, TSP100IIIW, TSP100LAN and TSP100IIIBI, and for other models use Star Setting Utility. Please download it from Google play.

- Pairing of a Star POS device with your Android Device

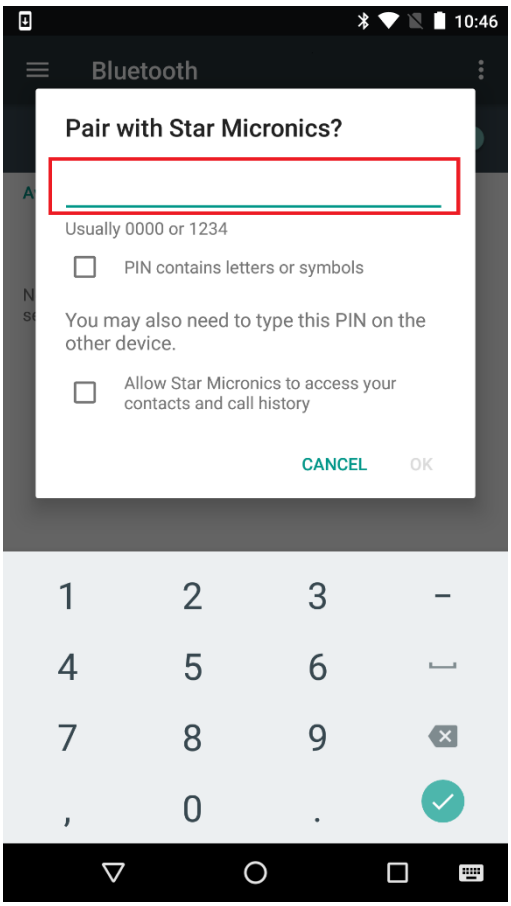
1. Ensure Bluetooth is enabled and the Star POS Device is powered on.
   When the security setting of the Star POS device is set to SSP, press the PAIR button for more than 5 seconds to make it available for pairing.
2. Tap Settings.
3. Tap Bluetooth to ON.



4. Tap Search for Devices.
   Find the Star POS Device you wish to connect to and tap it to pair.



5. If use the “PIN Code”, enter the PIN number. The factory default for standard Star POS Device is “1234”. (If use the “SPP”, do not need this operation.)



Network Interface

Assign an IP Address to the Star Printer and connect it to the network. Standard Star Printers do not ship with an IP Address pre-assigned; this can set by a DHCP network.

Use Star POS Printers with the #9100 Multi Session disabled. The setting can be confirmed by Test Print which can be executed by holding down the printer's feed button while turning the printer on.

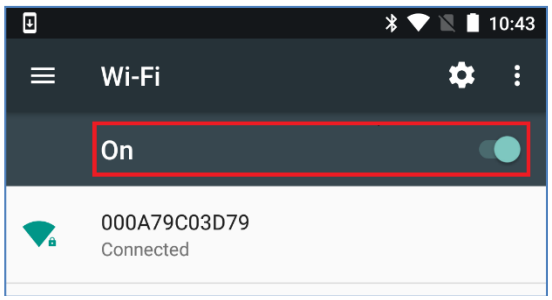
Refer to "guidelines-ethernet_en.pdf” for how to confirm and change the #9100 Multi Session setting and how to set the Static IP Address.

You can set up your POS Printers which can connect to TCP/IP by using Star Setting Utility*(except for TSP100 Series) or TSP100III Utility*(TSP100 and TSP100III).
Please download it from Google play.

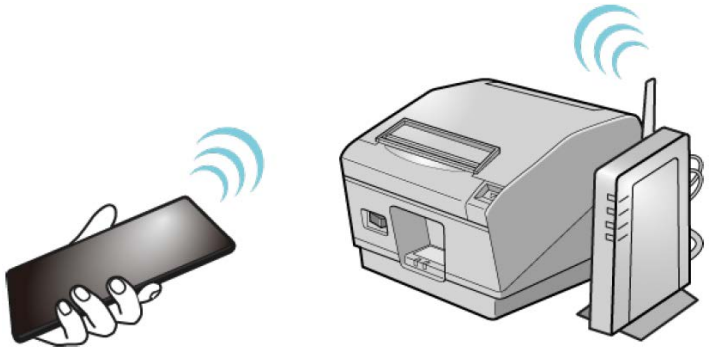
* Star Setting Utility and TSP100III Utility do not support printers which are not assigned an IP Address. (IP Address: 0.0.0.0)

Network Access Permission

1. Assign an IP Address to the Star POS Devices and connect it to the network.
2. Tap Settings.
3. Ensure Wi-Fi is ON.



4. Connect to the same network the Star POS Device is on.



Wireless LAN Interface (TSP100IIIW)

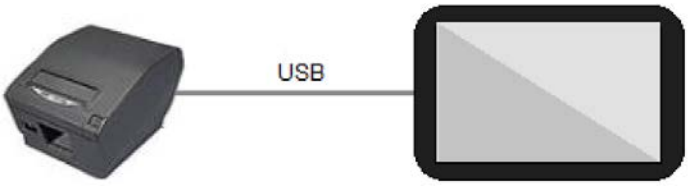
Connecting Tablet/PC
See the Online manual (Setup - Connect Tablet/PC).
For other points, refer to the item of Ethernet interface.

USB Interface

1. No specific Star Micronics driver or printer software needs to be installed on the Android device.

2. The USB cable needed can vary by tablet. Most Android tablets do not support the common A to B USB cable. Some require mini/micro USB cables or adapters/docks. Review the specifications for your tablet to ensure the correct cable is being used; there is no specific pin out for Star USB Printers.

3. When connecting, multiple devices using a USB hub, the recommended cascade connection is maximum one stage.
   The maximum number of devices which can be connected at the same time is 4.



USB Access Permission

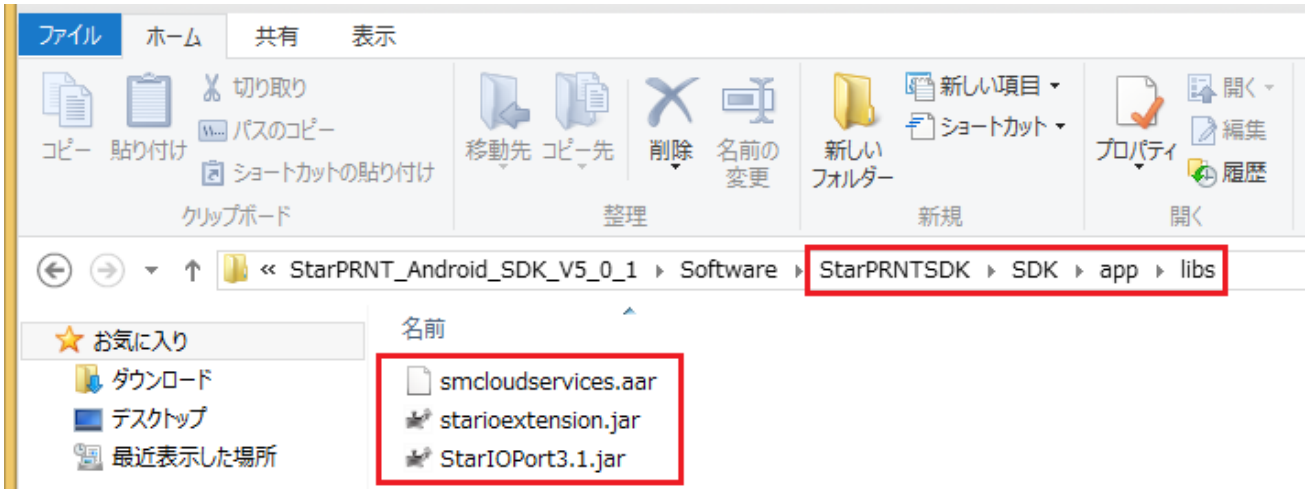
Refer to "Edit AndroidManifest.xml" and "Edit device_filter.xml".

2 How to configuration StarPRNT Application

The Library (StarIOPort3.1.jar / starioextension.jar / smcloudservices.aar) is already included when the StarPRNT SDK is loaded; there's no need to include it again when testing our SDK.
When you are building your own application, it is necessary to add the library into it.

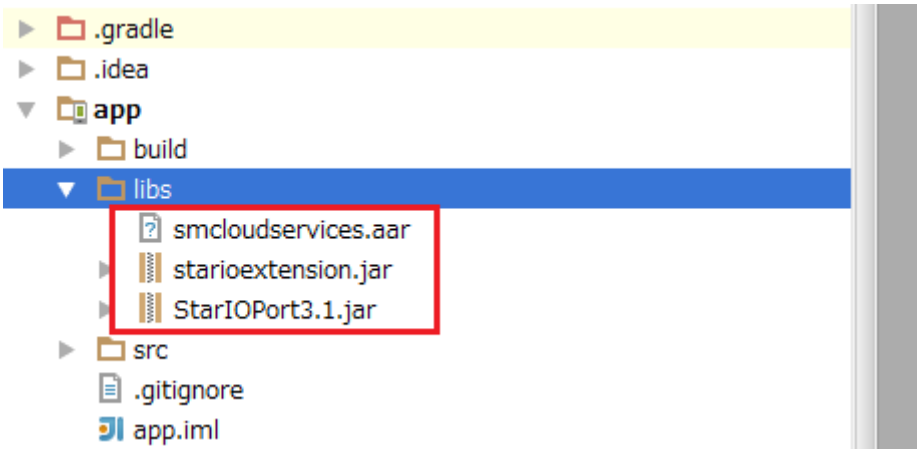
2.1 Add library

1. Select the library in the libs folder of StarPRNT SDK.



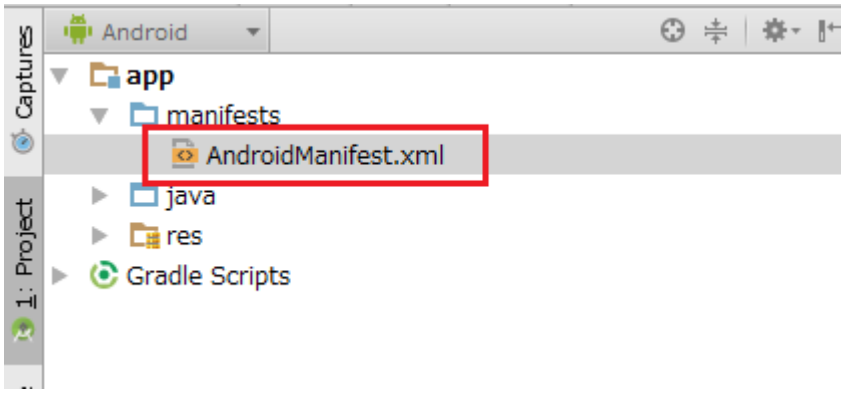
-smcloudservices.aar-
You need to add when using Star Cloud Services (AllReceipts, etc.) in the application.

2. Copy the library to the libs folder of project.

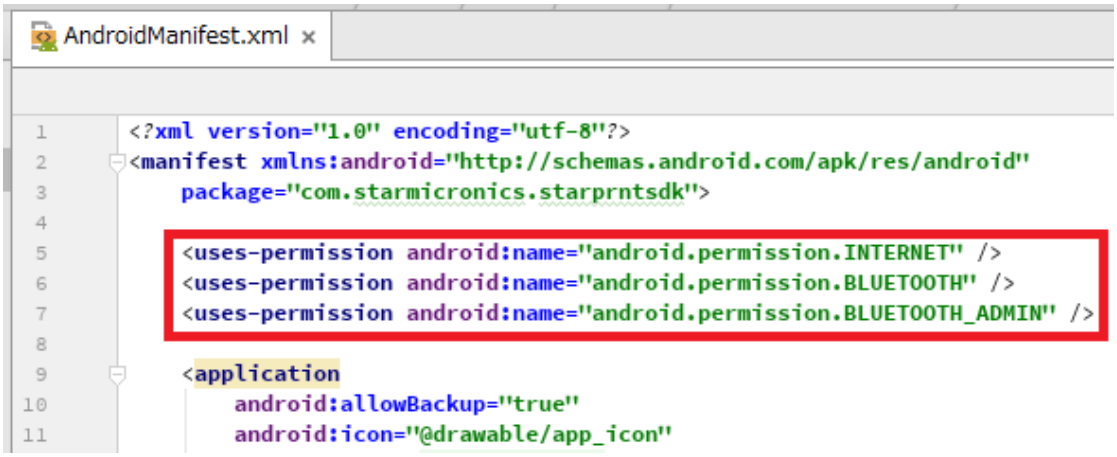


2.2 Edit AndroidManifest.xml

1. Double Click on the AndroidManifest.xml file.



2. In case of TCP/IP connection, add about use of TCP/IP connection.
   In case of Bluetooth connection, add about use of Bluetooth connection.




```
<uses-permission android:name="android.permission.INTERNET" />
<uses-permission android:name="android.permission.BLUETOOTH" />
<uses-permission android:name="android.permission.BLUETOOTH_ADMIN" />
```

3. In case of USB connection, add about use of USB connection.

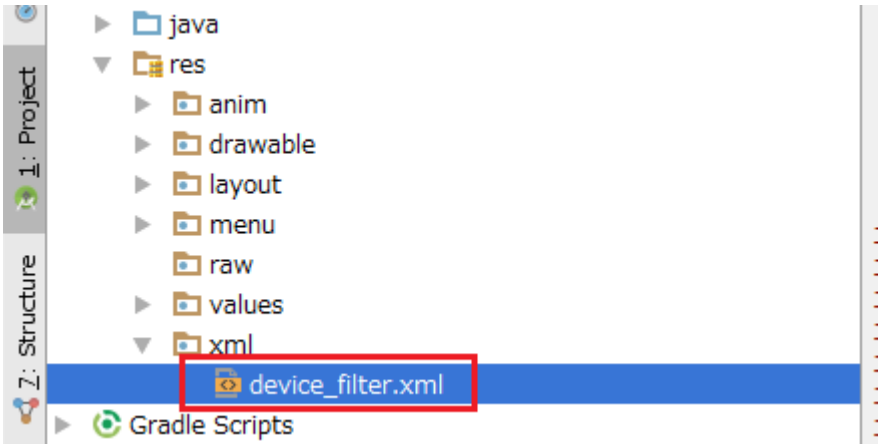
```
13
14      <activity
15          android:name=".TitleActivity"
16          android:theme="@style/TitleTheme"
17          android:hardwareAccelerated="false"
18          android:configChanges="orientation|screenSize"
19          android:screenOrientation="portrait">
20
21          <meta-data android:name="android.hardware.usb.action.USB_DEVICE_ATTACHED" android:resource="@xml/device_filter" />
22
23          <intent-filter>
24              <action android:name="android.intent.action.MAIN" />
25              <category android:name="android.intent.category.LAUNCHER" />
26              <action android:name="android.hardware.usb.action.USB_DEVICE_ATTACHED" />
27          </intent-filter>
28      </activity>
29
```

```
<meta-data android:name="android.hardware.usb.action.USB_DEVICE_ATTACHED"
android:resource="@xml/device_filter" />
```

```
<action android:name="android.hardware.usb.action.USB_DEVICE_ATTACHED" />
```

2.3 Edit device_filter.xml

1. Double Click on the device_filter.xml file.



2. In case of USB connection, add about use of USB connection.

```
<?xml version="1.0" encoding="utf-8"?>
<resources>
    <usb-device class="255" subclass="66" protocol="1" />
    <usb-device vendor-id="1305" product-id="0001" />   <!--IFBD-HU05/06, IFBD-HU07/08 - printerClass-->
    <usb-device vendor-id="1305" product-id="0002" />   <!--IFBD-HU05/06, IFBD-HU07/08 - vendorClass-->
    <usb-device vendor-id="1305" product-id="0003" />   <!--TSP100U/ECO/IIIU  - printerClass-->
    <usb-device vendor-id="1305" product-id="0004" />   <!--TSP100U/ECO       - vendorClass-->
    <usb-device vendor-id="1305" product-id="0005" />   <!--TSP100GT/IIIU     - printerClass-->
    <usb-device vendor-id="1305" product-id="0006" />   <!--TSP100GT         - vendorClass-->
    <usb-device vendor-id="1305" product-id="0009" />   <!--FVP10           - printerClass-->
    <usb-device vendor-id="1305" product-id="0010" />   <!--FVP10           - vendorClass-->
    <usb-device vendor-id="1305" product-id="0011" />   <!--BSC10           - printerClass-->
    <usb-device vendor-id="1305" product-id="0012" />   <!--BSC10           - vendorClass-->
    <usb-device vendor-id="1305" product-id="0017" />   <!--BSC10BR         - printerClass-->
    <usb-device vendor-id="1305" product-id="0067" />   <!--SM-S210i/230i    - mobile printer-->
    <usb-device vendor-id="1305" product-id="0023" />   <!--mPOP-->
</resources>
```

```
<usb-device class="255" subclass="66" protocol="1" />
<usb-device vendor-id="1305" product-id="****" />          <!-- Target printer -->
```

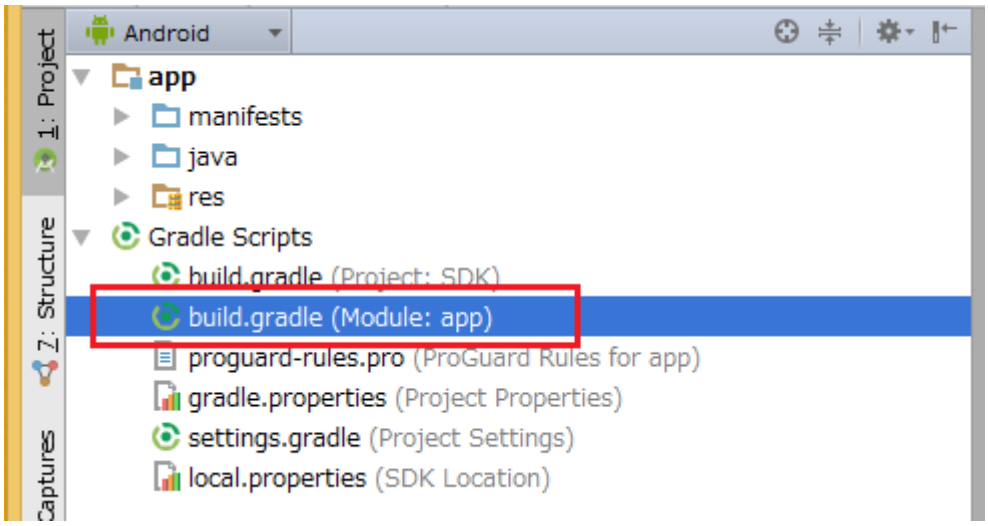
Note 1: About Star USB printers listed in device_filter.xml.

If a user checks on the checkbox of connection permission dialog, then the dialog will not be displayed even if the cable is inserted or removed unless the application is reinstalled. In addition, the sample application will automatically launch when you insert the cable.

Note 2: TSP100IIIU can change product-id same as TSP100U/ECO or TSP100GT by memory switch setting. Memory switch setting can be done from TSP100III Utility. Please download it from Google play.

2.4 Edit build.gradle (Module: app)

1. Double Click on the build.gradle (Module: app).



2. Add about use of the library.

```
dependencies {
    compile files('libs/StarIOPort3.1.jar')
    compile files('libs/starioextension.jar')
    compile (name:'smcloudservices', ext:'aar')
    compile 'com.android.support:appcompat-v7:23.4.0'
    compile 'com.android.support:support-v4:23.4.0'
    compile 'com.google.zxing:core:3.2.1'
}
```

```
compile files('libs/StarIOPort3.1.jar')
compile files('libs/starioextension.jar')
```

3. When printing of QR code / PDF417 on TSP100 series, add about use of the library.

```
dependencies {
    compile files('libs/StarIOPort3.1.jar')
    compile files('libs/starioextension.jar')
    compile (name:'smcloudservices', ext:'aar')
    compile 'com.android.support:appcompat-v7:23.4.0'
    compile 'com.android.support:support-v4:23.4.0'
    compile 'com.google.zxing:core:3.2.1'
}
```

compile 'com.google.zxing:core:3.2.1'

4. When using Star Cloud Services (AllReceipts, etc.) in the application, add about use of the library. In addition, when printing the AllReceipts QR code with TSP100 series printers, add about use of the library that generates QR codes.

```
dependencies {
    compile files('libs/StarIOPort3.1.jar')
    compile files('libs/starioextension.jar')
    compile (name:'smcloudservices', ext:'aar')
    compile 'com.android.support:appcompat-v7:23.4.0'
    compile 'com.android.support:support-v4:23.4.0'
    compile 'com.google.zxing:core:3.2.1'
}
```

compile (name:'smcloudservice', ext:'aar')

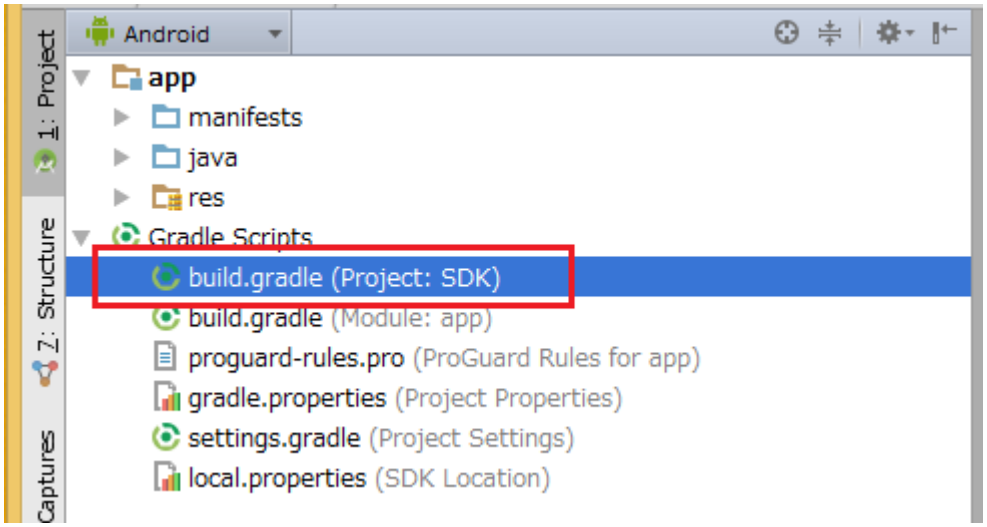
compile 'com.android.support:support-v4:23.4.0'

Printing the AllReceipts QR codes with TSP100 series printers

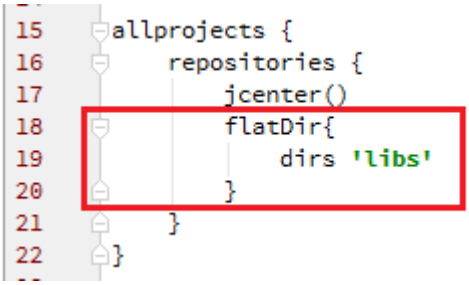
compile 'com.google.zxing:core:3.2.1'

2.5 Edit build.gradle (Project: SDK)

1. Double Click on the build.gradle (Project: SDK).



2. When using Star Cloud Services (AllReceipts, etc.) in the application, add about use of the library.




```
flatDir{
    dirs 'libs'
}
```

3 StarIOPort class (StarIOPort3.1.jar)

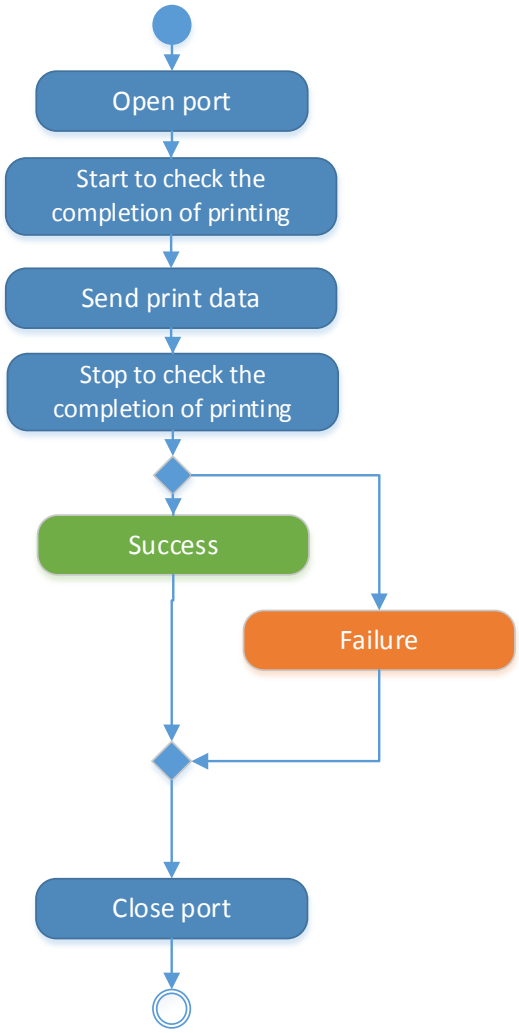
A StarIOPort class is the class to communicate with a printer.

Method

Name	Description
getPort	Creates a StarIOPort object and opens a port for communicating with the printer.
releasePort	Creates a StarIOPort object and closes a port for communicating with the printer.
searchPrinter	Search for printers that can connect to Android devices.
writePort	Write data to the printer.
readPort	Read data from the printer.
retreiveStatus	Get printer status.
beginCheckedBlock	Starts to check completion of printing
endCheckedBlock	Terminates to check completion of printing
setEndCheckedBlockTimeoutMillis	Set the timeout value for starting to check completion of printing.
getFirmwareInformation	Gets printer model name and firmware version
getPortName	Get the portName when the port is opened.
getPortSettings	Get the portSettings when the port is opened.
getStarIOVersion	Get the version number of the StarIO library.

3.1 Printing flow using a StarIOPort class

Using the StarIOPort class, print per the following procedure.




```
StarIOPort port = null;

try {
    // Port open
    port = StarIOPort.getPort(portName, portSettings, 10000, context);

    // Print end monitoring -Start
    StarPrinterStatus status = port.beginCheckedBlock();

    byte[] command = PrinterFunctions.createTextReceiptData(emulation, localizeReceipts, false);

    // Send print data
    port.writePort(command, 0, command.length);

    // Print end monitoring -Endt
    status = port.endCheckedBlock();


    // Status judgment during printing completion monitoring
    if (status.offline == false) {
        // Print successful end (Printer OnLine)
    }
    else {
        // Printing is abnormal termination (no paper, printer cover open etc)
        // Notify user
    }
}
catch (StarIOPortException e) {
    // Error
}
finally {
    try {
        // Port close
        StarIOPort.releasePort(port);
    }
    catch (StarIOPortException e) {}
}
```

Refer to Communication.java.

3.2 Model: StarIOPort class

Supported method for each model.

Method	mPOP	FVP10	TSP100	TSP650II	TSP700II	TSP800II	SM-S210i	SM-S220i	SM-S230i	SM-T300i/T300	SM-T400i	BSC10	SM-S210i StarPRNT	SM-S220i StarPRNT	SM-S230i StarPRNT	SM-T300i/T300 StarPRNT	SM-T400i StarPRNT	SM-L200	SM-L300	SP700
getPort	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
releasePort	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
searchPrinter	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
writePort	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
readPort	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
retreiveStatus	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
beginCheckedBlock	✔	✔	✔	✔	*1	✔	✔	*3	✔	*3	✔	✔	✔	✔	✔	✔	✔	✔	✔	*1
endCheckedBlock	✔	✔	✔	✔	*1	✔	✔	*3	✔	*3	✔	✔	✔	✔	✔	✔	✔	✔	✔	*1
setEndCheckedBlockTimeoutMillis	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
getFirmwareInformation	✔	*4	*2 *4	*4	*4	*4	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	*4
getPortName	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
getPortSetting	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
getStarIOVersion	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔

-: igrored

*1: Frmware version 3.0 or later is required

*2: The model name of TSP100IIIU, TSP100U, TSP100GT and TSP100ECO is TSP100.
The model name of TSP100IIIW, TSP100IIILAN and TSP100LAN is TSP100LAN.
It is impossible to get the firmware version of TSP100IIIU, TSP100U, TSP100GT, TSP100ECO, TSP100IIIW, TSP100IIILAN and TSP100LAN.

*3: When using SM-S200i with firmware Ver 2.1 or earlier, the following limitation exists.
When using SM-T300 with firmware Ver 2.4 or earlier, the following limitation exists.
You can confirm the completion of transmission of print data but cannot confirm the completion of printing.

*4: When using Apple AirMac Express with a USB printer, it returns an empty string.

3.3 getPort Method

Creates a StarIOPort object and opens a port for communicating with the printer.

Declaration

public static StarIOPort getPort(String portName, String portSettings, int timoutMillis, Context context) throws StarIOPortException;

@Deprecated
public static StarIOPort getPort(String portName, String portSettings, int timout) throws StarIOPortException;

Parameter

Name	Description	Object type
portName	Acquires the printer port name.	String
portSettings	Specifies connection setting information. ・Emulation type ・Retry ・Data timeout	String
ioTimeoutMillis	Acquires and specifies the timeout time for internal control and API. (unit: millisecond)	int
context	Context	android.content.Context

Return value

Description	Object type
StarIOPort Object	com.starmicronics.stario.StarIOPort

Exception

Description	Object type
When port open fails. When an incorrect portName is passed.	com.starmicronics.stario.StarIOPortException

Refer to the printing process flow using a StarIOPort class.

1. portName Parameter

Interface	portName	Description	Example
Bluetooth	BT:	Communicates with the first Star printer found. Pair only one Star printer.	BT:
	BT: Device Name	To specify the Bluetooth device name	BT:Star Micronics
	BT: MAC address	To specify the MAC address in Bluetooth	BT:00:12:F3:1E:2B:72
Ethernet/ Wireless LAN	TCP:IP address	To specify the IP address	TCP:192.168.1.130
USB	USB:	Communicates with the first Star printer found. Connect only one Star USB printer with .	USB:
	USB:SN: Serial Number	To specify the USB printer that is enabled a serial number.	USB:1234ABCD
	USB: search result	PortName obtained by searching with the searchPrinter method. It can be obtained by getPortName method of PortInfo class.	USB:1-3

2. portSettings Parameter

Specify the portSettings string in the following format.

- Emulation type
- Emulation type character string + option type character string separated by ";".

Emulation	Emulation type
StarLine	“”
StarPRNT	“Portable”
StarGraphic	“”
StarDotImpct	“”
EscPos	“escpos”
EscPosMobile	“mini” “Portable;escpos”

Connection options (Bluetooth I/F only)	Option type
Retry ON	“l”
Data timeout function	“d[value]” Ex: “d10”

Connection options (Only when using AirPort)	Option type
Port number	“[Port number]” Ex: “9100”

*** Data timeout function** (Bluetooth I/F only, Support status refer to Printer.)

In case an error occurs while printing or no data is sent to the printer during a predetermined time, the data canceling function will be executed.
To set the time value, specify from 0 to 255 (unit: second) in [value]. Default timeout value is 3 second.
This function will be invalid when 0 is specified or any appropriate value is not specified.
This function prevents next print data from being printed incorrectly when the Bluetooth connection is disconnected during data transmission.

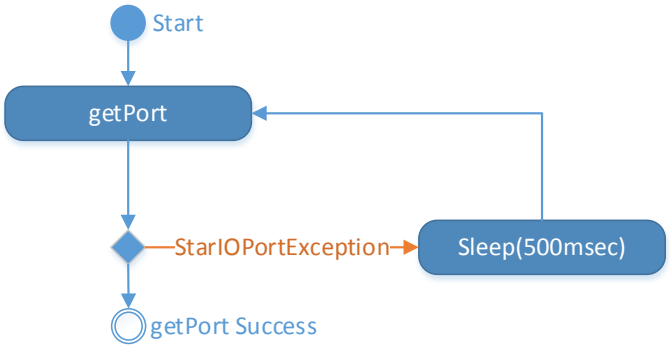
PortSettings Argument specification example

Printer connection environment	portSettings
Uses the POS printer of the StarLine emulation as the default setting.	“”
Uses the mobile printer of the StarPRNT emulation with retry enabled.	“Portable;l”
If data is not sent for 10 seconds during printing with the POS printer of the StarLine emulation, it operates the data canceling function.	“;d10”

3. getPort Retry Flow

In case your application prints to bluetooth printers, the getPort method may sometimes fail to get status or print as the result of failing to connect with the bluetooth device depending on devices and a use environment.

When getPort fails a StarIOPortException is thrown. Please repeat the operations mentioned in article II and III below.



I. getPort fails
(StarIOPortException is thrown).

II. Wait for certain time (e.g. 500ms)

III. Execute getPort again

IV. When getPort is successful, go to procedures such as printing or getting status.

* The number of attempts to execute getPort to obtain a port handle depends on the Host device(Android Device). Some devices have a higher failure rate than others, and may require additional attempts to getPort. Please decide based on tests conducted with your Android device.

4. ioTimeoutMillis Parameter

timeout is a ioTimeoutMillis timeout controlled internally and is used for communication in the APIs This parameter guarantees that all of the below APIs will complete in a bounded amount of time, but does NOT guarantee the exact timeout length.

5. Use share printer function with Apple AirPort Express

Set AirPort Express IP Address for **portName**.

Ex. TCP:192.168.1.2

Set port number for **portSettings**.

Increase the port number in sequential order from 9100 to 9109 until communication is successful.

Ex. 9100

3.4 releasePort Method

Discards the StarIOPort object and closes the port for communication with the printer.

Declaration
public static void releasePort(StarIOPort port);

Parameter

Name	Description	Object type
port	A StarIOPort object previously created by the getPort method	com.starmicronics.stario.StarIOPort

Return value

Description	Object type
-	-

Refer to the printing process flow using a StarIOPort class.

1. Notes
   When do not send the data, release (close) ports.
   Leaving a port open will cause future calls to open the port to fail.

2. For Ethernet Interface:
   The getPort method may fail if you run it just after running releasePort.
   You must run the getPort method after 500msec from releasePort.

3.5 searchPrinter Method

Search the Star printer and return search results in ArrayList <PortInfo>.

Declaration

public static ArrayList<PortInfo> searchPrinter(String target, Contect context) throws StarIOPortException;
public static ArrayList<PortInfo> searchPrinter(String target) throws StarIOPortException;

Parameter

Name	Description		Object type
target	Specify the interface type of the Star printer to be searched.		com.starmicronics.stario.StarIOPort
	Bluetooth I/F	"BT:"	
	Ethernet / Wireless LAN I/F	"TCP:"	
	USB I/F	"USB:"	
context	context Required when specifying "USB:" for target.		android.content.Context

Return value

Description	Object type
Search result of Star printer Refer to PortInfo class.	ArrayList<com.starmicronics.stario.PortInfo>

Exception

Description	Object type
When port open fails. When an incorrect target is passed.	com.starmicronics.stario.StarIOPortException

1. When reconnecting the USB printer
   When reconnecting the USB printer, re-execute the searchPrinter method and get the latest printer information.

2. Restrictions
   This API do not guarantee the discovery of devices.

3. In Android 7.0 or higher, portName which is got by searchPriner method, (for example, USB:1-3) has some limitations. It changes everytime the USB printer is connected. Set portName to "USB:" to use only one printer and "USB:SN:serial number" to use multiple printers.

Example

```
try {
   //Searches for an Ethernet / Wireless LAN interface Star printer on the same network.
   List<PortInfo> portList = StarIOPort.searchPrinter("TCP:");

   for (PortInfo port : portList) {
      Log.i ("LOG", "Port Name: " + port.getPortName());
      Log.i ("LOG", "MAC Address: " + port.getMacAddress());
      Log.i ("LOG", "Model Name: " + port.getModelName());
   }
}
catch (StarIOPortException e) {
   // Error
}
```

Refer to SearchPortFragment.java.

3.6 writePort Method

Write data to the printer.

Declaration

public void writePort(byte[] writeBuffer, int offset, int size) throws StarIOPortException;

Parameter

Name	Description	Object type
writeBuffer	Contains the output data in a byte array.	byte[]
offset	Specifies where to begin pulling data from writeBuffer.	int
size	Number of bytes to write.	int

Return value

Description	Object type
-	-

Exception

Description	Object type
when a communication failure occurs	com.starmicronics.stario.StarIOPortException

Refer to the printing process flow using a StarIOPort class.

3.7 readPort Method

Read data from the printer. Please use it only when it is necessary to read Raw byte from the printer.

Declaration

public int readPort(byte[] readBuffer, int offset, int size) throws StarIOPortException;

Parameter

Name	Description	Object type
readBuffer	A Byte Array buffer into which data is read.	byte[]
offset	specifies where to begin writing data into the readBuffer	int
size	Total number of bytes to read.	int

Return value

Description	Object type
The number of bytes that were read. Under some interface types, this function will succeed even when no data was read in. Your application should call this function a limited number of times until the expected data has been read in or until an application determined retry threshold has been reached.	int

Exception

Description	Object type
when a communication failure occurs	com.starmicronics.stario.StarIOPortException

1. Restrictions

Do not use this method to read raw status. Use retreiveStatus for getting status.

3.8 retreiveStatus Method

Get printer status.

Declaration

public StarPrinterStatus retreiveStatus() throws StarIOPortException;

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
Current device status Refer to StarPrinterStatus class.	com.starmicronics.stario.StarPrinterStatus

Exception

Description	Object type
when a communication failure occurs	com.starmicronics.stario.StarIOPortException

Example

```
StarPrinterStatus status = port.retreiveStatus();

if (status.offline == false) {
    // Printer OnLine
    if (status.blackMarkError == true) {
        // BlackMark Error
    }
    if (status.compulsionSwitch == true) {
        // Cashdrawer Open
    }
    else {
        // Cashdrawer Close
    }
}
else {
    // Printer Offline
}
```

Refer to Communication.java.

3.9 beginCheckedBlock Method

This method is used in combination with endCheckedBlock and checks the completion of printing. To check if the whole data is completely printed, you need to run this method just before sending print data and endCheckedBlock just after sending print data.

Declaration

public StarPrinterStatus beginCheckedBlock() throws StarIOPortException;

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
-	-

Exception

Description	Object type
when a communication failure occurs when the printer is off line	com.starmicronics.stario.StarIOPortException

Refer to the printing process flow using a StarIOPort class about the procedure of the print end monitoring process by beginCheckedBlock / endCheckedBlock.

3.10 endCheckedBlock Method

This method is used together with the beginCheckedBlock method as a pair.
This method monitors printer status and when the transferred data is printed completely, it returns control to the application.
If this method is used with other data other than print data(ex. retrieveStatus), once that data is processed by the printer, this method returns control to the application.

Declaration

public StarPrinterStatus endCheckedBlock() throws StarIOPortException;

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
-	-

Exception

Description	Object type
when a communication failure occurs No response for the completion of printing from a printer within the timeout	com.starmicronics.stario.StarIOPortException

Refer to the printing process flow using a StarIOPort class about the procedure of the print end monitoring process by beginCheckedBlock / endCheckedBlock.

3.11 setEndCheckedBlockTimeoutMillis Method

This method sets the endCheckedBlock method's timeout value [unit: ms]
If it takes a long time to print, please increase this value to allow for enough time to complete the print job.

Declaration

public void setEndCheckedBlockTimeoutMillis(int endCheckedBlockTimeoutMillis);

Parameter

Name	Description	Object type
endCheckedBlockTimeoutMillis	Sets the endCheckedBlock method's timeout value [unit: ms]	int

Return value

Description	Object type
-	-

1. endCheckedBlockTimeoutMillis parameter

Default value of endCheckedBlock method timeout value is the timeout value designated by getPort method.
Timeout length is 10 seconds if specified less than 10 seconds.
When [Data timeout function setting] is used in the portSetting parameter of the getPort method, it should be at least 3 seconds longer than the time specified for the data timeout function. If it is set to less than 3 seconds, it will be controlled internally to be 3 seconds longer automatically.

3.12 getFirmwareInformation Method

This method gets a model name and firmware version of the printer.

Declaration

public Map<String, String> getFirmwareInformation() throws StarIOPortException;

Parameter

Name	Description	Object type
port	A StarIOPort object previously created by the getPort method	com.starmicronics.stario.StarIOPort

Return value

Description	Object type
The Map object of the firmware information acquisition result The return value can get the model name by setting the Map object key of the return value to "ModelName" and get the firmware version by setting "FirmwareVersion".	Map

Exception

Description	Object type
when a communication failure occurs	com.starmicronics.stario.StarIOPortException

Example

```
try {
   Map<String, String> firmwareInformationMap = port.getFirmwareInformation();

   Log.i (“LOG”, “Model Name: ” + firmwareInformationMap.get(“ModelName”));
   Log.i (“LOG”, “Firmware Version: “ + firmwareInformationMap.get(“FirmwareVersion”));
}
catch (StarIOPortException e) {
   // Error
}
```

Refer to DeviceStatusFragment.java and Communication.java.

3.13 getPortName Method

Get the portName when the port is opened.

Declaration

public String getPortName();

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
The portName parameter passed to the getPort method.	String

3.14 getPortSettings Method

Get the portSettings when the port is opened.

Declaration
public String getPortSettings();

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
The portSettings parameter passed to the getPort method.	String

3.15 getStarIOVersion Method

Get the version number of the StarIO library.

Declaration
public String getStarIOVersion();

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
StarIO library version	String

4 StarPrinterStatus class (StarIOPort3.1.jar)

Class to hold the printer status.
Holds the printer status in both the boolean datatype and binary (raw field) formats.
For status types that can be acquired, refer to the field list.

Field

Member name	Contents	Type	Detail
blackMarkError	Black Mark Error	boolean	" true " : Black mark error occurs. " false " : Black mark error does not occur. When you set printer to Black mark, and print to not Black mark paper, this error occurs.
compulsionSwitch	Compulsion SW	boolean	You can check status of Cash Drawer (Open or Close) " true " : Compulsion SW is pressed. " false " : Compulsion SW is not pressed.
coverOpen	Cover Status	boolean	You can check status of Cover " true " : Cover is opened. " false " : Cover is closed.
cutterError	Auto-cutter Error	boolean	You can check status of Cutter " true " : Cutter error occurs. " false " : Cutter error does not occur.
etbAvailable	ETB available or not	boolean	" true " : available to use " false " : not available to use
etbCounter	ETB Counter	int	You can get current value of ETB
headThermistorError	Head Thermistor Error	boolean	You can check status of Head Thermistor. " true " : Head thermistor detects an abnormal value. " false " : Head thermistor does not detect an abnormal value.
offline	ONLINE/OFFLINE Status	boolean	You can check status of Online or offline. " true " : Printer is Offline. " false " : Printer is Online
overTemp	Stopped by high head temperature	boolean	" true " : Printer is stopped by head temperature. " false " : Printer is not stopped by head temperature.
raw	Byte column of status	byte[63]	Byte column of status (example : HEX 23 86 00 00 00 00 00 00)
rawLength	raw length	int	raw length
receiptPaperEmpty	Paper end	boolean	" true " : Paper end. " false " : Paper does not end.
receiptPaperNearEmptyInner	Paper Near-end (Inner Side)	boolean	" true " : Paper near-end. " false " : Paper does not near-end.
receiveBufferOverflow	Receive Buffer Overflow	boolean	You can check status of received Buffer. " true " : Received buffer is full. " false " : Received buffer is not full.
unrecoverableError	Non-recoverable Error	boolean	" true " : Unrecoverable error occurs. " false " : Unrecoverable error does not occur. Unrecoverable error : Head Thermistor Error, Auto-cutter Error, Electric Voltage Error and etc.)

voltageError	Electric Voltage Error	boolean	" true " : Printers detects an abnormal power supply voltage. " false " : Printers does not detect an abnormal power supply voltage.

4.1 Model: StarPrinterStatus class

Supported field for each model.

Field	mPOP	FVP10	TSP100	TSP650II	TSP700II	TSP800II	SM-S210i	SM-S220i	SM-S230i	SM-T300i/T300	SM-T400i	BSC10	SM-S210i StarPRNT	SM-S220i StarPRNT	SM-S230i StarPRNT	SM-T300i/T300 StarPRNT	SM-T400i StarPRNT	SM-L200	SM-L300	SP700
blackMarkError	-	✔	-	-	✔	✔	-	-	-	-	-	-	✔	✔	✔	✔	✔	✔	✔	✔
compulsionSwitch	✔	✔	✔	✔	✔	✔	-	-	-	-	-	✔	-	-	-	-	-	-	-	✔
coverOpen	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
cutterError	✔	✔	✔	✔	✔	✔	-	-	-	-	-	-	-	-	-	-	-	-	-	✔
etbAvailable	✔	✔	✔	✔	✔	✔	-	-	-	-	-	-	✔	✔	✔	✔	✔	✔	✔	✔
etbCounter	✔	✔	✔	✔	✔	✔	-	-	-	-	-	-	✔	✔	✔	✔	✔	✔	✔	✔
headThermistorError	✔	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
offline	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
overTemp	✔	✔	✔	✔	✔	✔	-	-	-	-	-	-	✔	✔	✔	✔	✔	✔	✔	✔
raw	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-	✔	✔	✔	✔	✔	✔	✔	✔
rawLength	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-	✔	✔	✔	✔	✔	✔	✔	✔
receiptPaperEmpty	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
receiptPaperNearEmptyInner	-	✔	-	✔	✔	✔	-	-	-	-	-	-	-	-	-	-	-	-	-	✔
receiveBufferOverflow	-	✔	-	✔	✔	✔	-	-	-	-	-	-	-	-	-	-	-	-	-	✔
unrecoverableError	✔	✔	✔	✔	✔	✔	-	-	-	-	-	-	-	-	-	-	-	-	-	✔
voltageError	✔	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

-: ignored.

5 PortInfo class (StarIOPort3.1.jar)

This class holds information and model information for connecting to the Star printer.

Method

Name	Description
getPortName	Get the portName of the printer.
getMacAddress	Get the Mac address of the printer.
getModelName	Get the model name of the printer.
getUSBSerialNumber	Get the USB serial number of the printer of the USB interface.

5.1 getPortName Method

Get the portName of the printer.

Declaration

public String getPortName();

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
Character string to specify the port for communication with the printer. Can be used to specify the printer connection with the getPort method.	String

5.2 getMacAddress Method

Get the Mac address of the printer.

Declaration

public String getMacAddress();

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
Character string that indicates the printer's MAC address. If connecting to the printer via a Bluetooth interface, it can be used to specify the printer connection with the getPort method. If connecting to the printer via a USB interface, it will be an empty string.	String

5.3 getModelName Method

Get the model name of the printer.

Declaration

public String getModelName();

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
Model name When connecting using the Bluetooth interface, it returns an empty string.	String

5.4 getUSBSerialNumber Method

Get the USB serial number of the USB interface printer.

Declaration

public String getUSBSerialNumber();

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
USB printer serial number If connecting to the printer via a USB interface, it can be used to specify the printer connection with the getPort method.	String

6 StarBluetoothManager class (StarIOPort3.1.jar)

StarBluetoothManager Class specifies various settings of the Bluetooth interface.
It can not be used with StarIOPort Class at the sime time.

Constructor

Name	Description
StarBluetoothManager	Initialize StarButtonManager.

Method

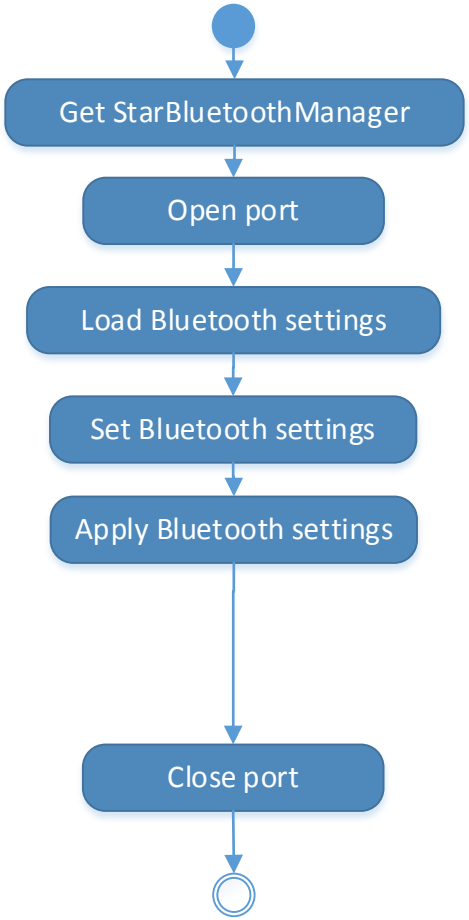
Name	Description
open	This method is used to open connection to the star Bluetooth device.
loadSetting	This method gets the value specified from the star Bluetooth device.
close	This method is used to close communication with the star Bluetooth device.
apply	StarBluetooth device is set to the value specified by the following methods.
getBluetoothDeviceNameCapability	This method gets the setting enable / disable information of the Bluetooth device name.
getBluetoothDeviceName	This method gets the Bluetooth device name
setBluetoothDeviceName	This method sets the Bluetooth device name
getiOSPortNameCapability	This method gets the setting enable / disable information of the iOSPort name.
getiOSPortName	This method gets the iOS port name
setiOSPortName	This method sets the iOS port name
getPinCodeCapability	This method gets the setting enable / disable information of the PinCode.
getPinCode	This method gets the PIN code
setPinCode	This method sets the PIN code
getAutoConnectCapability	This method gets the setting enable / disable information of the Auto Connection.
getAutoConnect	This method gets the value specified of Auto Connection
setAutoConnect	This method sets the Auto Connection
getSecurityTypeCapability	This method gets the setting enable / disable information of the Bluetooth security type.
getSecurityType	This method gets the Bluetooth security type
setSecurityType	This method sets the Bluetooth security type
getPortName	This method gets the port name specified by the StarBluetoothManager constructor.
getPortSettings	This method gets the port setting specified by the StarBluetoothManager constructor.
getTimeoutMillis	This method gets the TimeoutMillis specified by the StarBluetoothManager constructor.
getDeviceType	This method gets the star Device type specified by the StarBluetoothManager constructor.
isOpened	This method acquires the port status.

Constants

Name	Description
StarDeviceType	Constants of Printer Type
StarBluetoothSecurity	Constants of Bluetooth security type.
StarBluetoothSettingCapability	Constants of enable / disable information of the Bluetooth security type.

6.1 Bluetooth setting change flow using StarBluetoothManager

Using the StarBluetoothManager class, follow the steps below to change the printer's Bluetooth settings.




```
StarBluetoothManager manager = null;

try {
    // Get StarBluetoothManager
    manager = StarBluetoothManagerFactory.getManager(portName, portSettings, 10000, emulation);

    // Port open
    manager.open();


    // Loading Bluetooth settings
    manager.loadSetting();

    // Set Bluetooth settings
    // Example) When setting the device name to "Star Micronics"
    manager.setBluetoothDeviceName(“Star Micronics”);

    // Apply Bluetooth settings
    manager.apply();
}
catch (StarIOPortException e) {
    // Error
}
finally {
    if (manager.isOpened()) {
        try {
            // Port close
            manager.close();
        }
        catch (StarIOPortException e) {}
    }
}
```

Refer to BluetoothSettingFragment.java.

6.2 Model: StarBluetoothManager class

Supported Method for each model.

Method	mPOP	FVP10	TSP100 (only TSP100IIIBI)	TSP650II	TSP700II	TSP800II	SM-S210i *1	SM-S220i *1	SM-S230i *1	SM-T300i/T300 *1	SM-T400i *1	~~BSC10~~	SM-S210i StarPRNT	SM-S220i StarPRNT	SM-S230i StarPRNT	SM-T300i/T300 StarPRNT	SM-T400i StarPRNT	SM-L200	SM-L300	SP700
open	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-	✔	✔	✔	✔	✔	✔	✔	✔
loadSetting	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-	✔	✔	✔	✔	✔	✔	✔	✔
close	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-	✔	✔	✔	✔	✔	✔	✔	✔
apply	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-	✔	✔	✔	✔	✔	✔	✔	✔
getBluetoothDeviceNameCapability	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-	✔	✔	✔	✔	✔	✔	✔	✔
getBluetoothDeviceName	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-	✔	✔	✔	✔	✔	✔	✔	✔
setBluetoothDeviceName	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-	✔	✔	✔	✔	✔	✔	✔	✔
getiOSPortNameCapability	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-	✔	✔	✔	✔	✔	✔	✔	✔
getiOSPortName	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-	✔	✔	✔	✔	✔	-	-	✔
setiOSPortName	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-	✔	✔	✔	✔	✔	-	-	✔
getPinCodeCapability	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-	✔	✔	✔	✔	✔	✔	✔	✔
getPinCode	-	✔	-	✔	✔	✔	✔	✔	✔	✔	✔	-	✔	✔	✔	✔	✔	✔	✔	✔
setPinCode	-	✔	-	✔	✔	✔	✔	✔	✔	✔	✔	-	✔	✔	✔	✔	✔	✔	✔	✔
getAutoConnectCapability	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-	✔	✔	✔	✔	✔	✔	✔	✔
getAutoConnect	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-	✔	✔	✔	✔	✔	-	-	✔
setAutoConnect	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-	✔	✔	✔	✔	✔	-	-	✔
getSecurityTypeCapability	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-	✔	✔	✔	✔	✔	✔	✔	✔
getSecurityType	-	*2	-	*2	*2	*2	*3	*3	*3	*3	*3	-	*3	*3	*3	*3	*3	*3	*3	*2
setSecurityType	-	*2	-	*2	*2	*2	*3	*3	*3	*3	*3	-	*3	*3	*3	*3	*3	*3	*3	*2
getPortName	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-	✔	✔	✔	✔	✔	✔	✔	✔
getPortSetting	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-	✔	✔	✔	✔	✔	✔	✔	✔
getTimeoutMillis	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-	✔	✔	✔	✔	✔	✔	✔	✔
getDeviceType	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-	✔	✔	✔	✔	✔	✔	✔	✔
isOpened	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-	✔	✔	✔	✔	✔	✔	✔	✔

- : ignored.
*1: F/W Version 3.0 or later is required.
*2: The SecurityType that can be set and acquired is PIN code or SSP
*3: SecurityType that can be set and retrieved is PIN code or Disable

6.3 StarBluetoothManager Constructor

Initialize StarBluetoothManager.

Declaration

StarBluetoothManager(String portName, String portSetting, int ioTimeoutMillis, StarBluetoothManager.StarDeviceType starDeviceType);

Parameter

Name	Description	Object type
portName	Printer port name It is the same as the portName of the getPort method of the StarIOPort class.	String
portSettings	Port setting It is the same as the portSettings of the getPort method of the StarIOPort class.	String
ioTimeoutMillis	Timeout value for internal control and API.	int
starDeviceType	Constant of printer type When using mPOP or TSP100IIIBI, set StarDeviceTypePortablePrinter.	com.starmicronics.stario.StarBluetoothManager.StarDeviceType

Return value

Description	Object type
StarBluetoothManager object	com.starmicronics.stario.StarBluetoothManager

Exception

Description	Object type
When port open fails	com.starmicronics.stario.StarIOPortException

Refer to Bluetooth setting change flow using StarBluetoothManager about the procedure for changing the Bluetooth setting.

1. StarBluetoothManagerFactory class
   StarBluetoothManagerFactory class can get the appropriate StarBluetoothManager object for the printer emulation.

6.4 open Method

This method is used to open connection to the star Bluetooth device.
Get the current settings by loadSetting method after conducting open method.

Declaration
public void open();

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
-	-

Exception

Description	Object type
when a communication failure occurs	com.starmicronics.stario.StarIOPortException

Refer to Bluetooth setting change flow using StarBluetoothManager about the procedure for changing the Bluetooth setting.

6.5 loadSetting Method

This method gets the value specified from the star Bluetooth device.

Declaration
public void loadSetting();

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
-	-

Exception

Description	Object type
when a communication failure occurs	com.starmicronics.stario.StarIOPortException

Refer to Bluetooth setting change flow using StarBluetoothManager about the procedure for changing the Bluetooth setting.

6.6 close Method

This method is used to close communication with the star Bluetooth device.

Declaration
public void close();

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
-	-

Exception

Description	Object type
when a communication failure occurs	com.starmicronics.stario.StarIOPortException

Refer to Bluetooth setting change flow using StarBluetoothManager about the procedure for changing the Bluetooth setting.

6.7 apply Method

StarBluetooth device is set to the value specified by the following methods.

- setBluetoothDevice
- setiOSPortName
- setAutoConnect
- setPinCode
- setSecurityType

Declaration
public void apply();

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
-	-

Exception

Description	Object type
when a communication failure occurs	com.starmicronics.stario.StarIOPortException

Refer to Bluetooth setting change flow using StarBluetoothManager about the procedure for changing the Bluetooth setting.

6.8 getBluetoothDeviceNameCapability Method

This method gets the setting enable / disable information of the Bluetooth device name.

Declaration

public StarBluetoothManager.StarBluetoothSettingCapability getBluetoothDeviceNameCapability();

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
enable / disable information of the Bluetooth device name	StarBluetoothManager.StarBluetoothSettingCapability

6.9 getBluetoothDeviceName Method

This method gets the Bluetooth device name which was acquired by the loadSetting method or specified by the setBluetoothDeviceName method. Use this method after calling the loadSetting method or the setBluetoothDeviceName method.

Declaration

public String getBluetoothDeviceName();

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
Bluetooth device name	String

6.10 setBluetoothDeviceName Method

This method sets the iOS port name.
To change the iOS port name, execute the apply method after the setiOSPortName method.

Declaration

public void setBluetoothDeviceName(String bluetoothDeviceName);

Parameter

Name	Description	Object type
bluetoothDeviceName	Bluetooth Device Name	String

Return value

Description	Object type
-	-

Exception

Description	Object type
when any invalid characters are used when the length of the set character string is not valid number of characters.	com.starmicronics.stario.StarIOPortException

1. Valid characters:
   0-9 a-z A-Z ; : ! ? # $ % & , . @ _ - = Space / * + ~ ^ [{ ( ] }) | \

2. Valid number of characters
   between 1 to 16 characters

6.11 getiOSPortNameCapability Method

This method gets the setting enable / disable information of the iOS Port Name.

Declaration

public StarBluetoothManager.StarBluetoothSettingCapability getiOSPortName();

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
enable / disable information of the iOS Port Name	StarBluetoothManager.StarBluetoothSettingCapability

6.12 getiOSPortName Method

This method gets the iOS port name which was acquired by the loadSetting method or specified by the setiOSPortName method. Use this method after calling the loadSetting method or the setiOSPortName method.

Declaration

public String getiOSPortName();

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
iOS Port Name	String

6.13 setiOSPortName Method

This method sets the iOS port name.
To change the iOS port name, execute the apply method after the setiOSPortName method.

Declaration

public void setiOSPortName(String iOSPortName);

Parameter

Name	Description	Object type
iOSPortName	iOS Port Name	String

Return value

Description	Object type
-	-

Exception

Description	Object type
- when any invalid characters are used - when the length of the set character string is not valid number of characters.	com.starmicronics.stario.StarIOPortException

1. Valid characters:
   0-9 a-z A-Z ; : ! ? # $ % & , . @ _ - = Space / * + ~ ^ [{ ( ] }) | \

2. Valid number of characters
   between 1 to 16 characters

6.14 getPinCodeCapability Method

This method gets the setting enable / disable information of the Pin Code.

Declaration

public StarBluetoothManager.StarBluetoothSettingCapability getPinCodeCapability();

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
enable / disable information of the Pin Code	StarBluetoothManager.StarBluetoothSettingCapability

6.15 getPinCode Method

This method gets the PIN code which was specified by the setPinCode method. Use this method after calling the set PinCode method.

Declaration

public String getPinCode();

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
Pin Code	String

6.16 setPinCode Method

The method sets the PIN code of the Star Bluetooth devices.
To change the PIN code, execute the apply method after the setPinCode method.

Declaration

public void setPinCode(String pinCode);

Parameter

Name	Description	Object type
	-	String

Return value

Description	Object type
-	-

Exception

Description	Object type
- when any invalid characters are used - when the length of the set character string is not valid number of characters.	com.starmicronics.stario.StarIOPortException

1. Valid characters:
- 0-9 (SM-L200, SM-L300)
- 0-9 a-z A-Z (other models)

2. Valid number of characters
- 4 characters (SM-L200, SM-L300)
- between 4 to 16 characters (other models)

6.17 getAutoConnectCapability Method

This method gets the setting enable / disable information of the AutoConnection.

Declaration

public StarBluetoothManager.StarBluetoothSettingCapability getAutoConnectCapability();

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
enable / disable information of the AutoConnection	StarBluetoothManager.StarBluetoothSettingCapability

6.18 getAutoConnect Method

This method gets the value specified of Auto Connection which was acquired by the loadSetting method or specified by the setAutoConnect method. Use this method after calling the loadSetting method or the setAutoConnect method.

Declaration

public boolean getAutoConnect();

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
AutoConnection setting true - when AutoConnection setting is ON false - when AutoConnection setting is OFF	boolean

6.19 setAutoConnect Method

This method sets the Auto Connection of Star Bluetooth Device.
To change the Auto Connection, execute the apply method after the setAutoConnect method.

Declaration

public void setAutoConnect(boolean autoConnect);

Parameter

Name	Description	Object type
autoConnect	AutoConnection setting true - when AutoConnection setting is ON false - when AutoConnection setting is OFF	boolean

Return value

Description	Object type
-	-

6.20 getSecurityTypeCapability Method

This method gets the setting enable / disable information of the Bluetooth security type.

Declaration

public StarBluetoothManager.StarBluetoothSettingCapability getSecurityTypeCapability();

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
enable / disable information of the Bluetooth security type	StarBluetoothManager.StarBluetoothSettingCapability

6.21 getSecurityType Method

This method gets the Bluetooth security type which was acquired by the loadSetting method or specified by the setSecurityType method. Use this method after calling the loadSetting method or the setSeurityType method.

Declaration

public StarBluetoothManager.StarBluetoothSecurity getSecurityType();

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
Bluetooth security type	com.starmicronics.stario.StarBluetoothManager.StarBluetoothSecurity

6.22 setSecurityType Method

This method sets the Bluetooth security type of star Bluetooth device.
To change the Bluetooth security type, execute the apply method after the setSecurityType method.

Declaration

public void setSecurityType(StarBluetoothManager.StarBluetoothSecurity securityType);

Parameter

Name	Description	Object type
securityType	Bluetooth security type	com.starmicronics.stario.StarBluetoothManager.StarBluetoothSecurity

Return value

Description	Object type
-	-

6.23 getPortName Method

This method gets the portName when the port is opened.

Declaration

public String getPortName();

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
the port name specified by the getPort method.	String

6.24 getPortSettings Method

This method gets the portSettings when the port is opened.

Declaration

public String getPortSettings();

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
the portSettings specified by the getPort method.	String

6.25 getTimeoutMillis Method

This method gets the TimeoutMillis specified by the StarBluetoothManager constructor.

Declaration

public int getTimeoutMillis();

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
TimeoutMillis specified by the StarBluetoothManager constructor	int

6.26 getDeviceType Method

This method gets the star Device type specified by the StarBluetoothManager constructor.

Declaration

public StarBluetoothManager.StarDeviceType getDeviceType();

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
star Device type specified by the StarBluetoothManager constructor	StarBluetoothManager.StarDeviceType

6.27 isOpened Method

This method acquires the port status.

Declaration

public boolean isOpened();

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
port status true - The port is opened. false - The port is Closed.	boolean

6.28 StarDeviceType Constants

Constants of Printer Type

Declaration

```
public enum StarDeviceType {
    StarDeviceTypeDesktopPrinter,
    StarDeviceTypePortablePrinter
}
```

Constants

Name	Description
StarDeviceTypeDesktopPrinter	Desktop Printer
StarDeviceTypePortablePrinter	Portable Printer When using mPOP or TSP100IIIBI Please specify StarDeviceTypePortablePrinter.

6.29 StarBluetoothSecurity Constants

Constants of Bluetooth security type.

Declaration

```
public enum StarBluetoothSecurity {
    PINCODE,
    SSP,
    DISABLE
}
```

Constants

Name	Description
PINCODE	Security by entering PIN code
SSP	Security by pressing the interface card button
DISABLE	No security

6.30 StarBluetoothSettingCapability Constants

Constants of enable / disable information of the Bluetooth setting.

Declaration

```
public enum StarBluetoothSecurity {
    SUPPORT,
    NOSUPPORT
}
```

Constants

Name	Description
SUPPORT	Indicates the items and functions can be set for the printer that is currently connected.
NOSUPPORT	Indicates the items and functions can not be set for the printer that is currently connected.

7 StarIoExt class included in the starioextension.jar

Method

Name	Description
createCommandBuilder	Creates the command builder object.
createDisplayCommandBuilder	Creates the customer display command builder object.
createScaleCommandBuilder	Creates the scale command builder object.
createBcrConnectParser	Creates a barcode reader connection status command response analysis object.
createDisplayConnectParser	Creates a customer display connection status command response analysis object.
createScaleConnectParser	Creates a scale connection status command response analysis object.
createScaleWeightParser	Creates a scale weight command response analysis object.

Constants

Name	Description
Emulation	Emulation type constants.
CharacterCode	Character Code constants
BcrModel	Barcode Reader Model constants
ScaleModel	Scale Model constants
DisplayModel	Customer Display Model constants

7.1 createCommandBuilder Method

Creates the ICommandBuilder object.

Declaration

public static ICommandBuilder createCommandBuilder(Emulation emulation);

Parameter

Name	Description	Object type
emulation	Emulation type. • StarPRNT … StarPRNT emulation. • StarPRNTL … StarPRNTL emulation • StarLine … STAR Line Mode emulation. • StarGraphic … STAR Graphic Mode emulation. • EscPos … ESC/POS emulation. • EscPosMobile … ESC/POS Mobile emulation. • StarDotImpact … STAR Dot Impact emulation.	com.starmicronics.starioextension. StarIoExt.Emulation

Return value

Description	Object type
ICommandBuilder object.	com.starmicronics.starioextension.ICommandBuilder

Example

```
public static byte[] createCommandsImage(Emulation emulation, Bitmap bitmap) {
    ICommandBuilder builder = StarIoExt.createCommandBuilder(emulation);

    builder.beginDocument();

    builder.appendBitmap(bitmap, false);

    builder.appendCutPaper(CutPaperAction.PartialCutWithFeed);

    builder.endDocument();

    return builder.getCommands();
}
```

Refer to PrinterFunctions.java.

7.2 createDisplayCommandBuilder Method

Creates the customer display command builder object.

Declaration

public static IDisplayCommandBuilder createDisplayCommandBuilder(DisplayModel model);

Parameter

Name	Description	Object type
model	Customer display constants • SCD222	com.starmicronics.starioextension. StarIoExt.DisplayModel

Return value

Description	Object type
IDisplayCommandBuilder object	com.starmicronics.starioextension. IDisplayCommandBuilder

Example

```
public static byte[] createTextPattern(int number) {
    IDisplayCommandBuilder builder = StarIoExt.createDisplayCommandBuilder(DisplayModel.SCD222);

    builder.appendClearScreen();
    builder.appendCursorMode(CursorMode.Off);
    builder.appendHomePosition();

    byte[] pattern;

    ...

    builder.append(pattern);

    return builder.getPassThroughCommands();
}
```

Refer to DisplayFunctions.java.

7.3 createScaleCommandBuilder Method

Creates the scale command builder object.

Declaration

public static IScaleCommandBuilder createScaleCommandBuilder(ScaleModel model);

Parameter

Name	Description	Object type
model	Scale Model constants • APS10 • APS12 • APS20	com.starmicronics.starioextension. StarIoExt.ScaleModel

Return value

Description	Object type
IScaleCommandBuilder object	com.starmicronics.starioextension. IScaleCommandBuilder

Example

```
public static byte[] createZeroClear() {
    IScaleCommandBuilder builder = StarIoExt.createScaleCommandBuilder(ScaleModel.APS10);
//  IScaleCommandBuilder builder = StarIoExt.createScaleCommandBuilder(ScaleModel.APS12);
//  IScaleCommandBuilder builder = StarIoExt.createScaleCommandBuilder(ScaleModel.APS20);

    builder.appendZeroClear();

    return builder.getPassThroughCommands();
}
```

Refer to ScaleFunctions.java.

7.4 createBcrConnectParser Method

Creates a barcode reader connection status command response analysis object.

Declaration

public static IPeripheralConnectParser createBcrConnectParser(BcrModel model);

Parameter

Name	Description	Object type
model	Barcode Reader Model constants. • POP1	com.starmicronics.starioextension. StarIoExt.BcrModel

Return value

Description	Object type
IPeripheralConnectParser object	com.starmicronics.starioextension. IPeripheralConnectParser

7.5 createDisplayConnectParser Method

Creates a customer display connection status command response analysis object.

Declaration

public static IPeripheralConnectParser createDisplayConnectParser(DisplayModel model);

Parameter

Name	Description	Object type
model	Customer display constants • SCD222	com.starmicronics.starioextension. StarIoExt.DisplayModel

Return value

Description	Object type
IPeripheralConnectParser object	com.starmicronics.starioextension. IPeripheralConnectParser

Example

```
public void onItemClick(final AdapterView<?> parent, View view, final int position, long id) {
    super.onItemClick(parent, view, position, id);

    CommonAlertDialogFragment dialog = null;

    if (position == 1) {
        mProgressDialog.show();

        PrinterSetting setting = new PrinterSetting(getActivity());

        final IPeripheralConnectParser parser = StarIoExt.createDisplayConnectParser(DisplayModel.SCD222);

        Communication.parseDoNotCheckCondition(DisplayFragment.class, parser, setting.getPortName(),
setting.getPortSettings(), 10000, getActivity(), new Communication.SendCallback() {
            @Override
            public void onStatus(boolean result, Communication.Result communicateResult) {
                …

                String msg;
                String title;

                if (result) {
                    title = "Check Status";

                    if (parser.isConnected()) {
                        msg = "Display Connect";
                    }
                    else {
                        msg = "Display Disconnect";
                    }
                }
                else {
                    title = "Communication Result";
                    msg   = "Printer Impossible";
                }

                …
            }
        });
    }
    ...
}
```

Refer to DisplayFragment.java/DisplayExtFragment.java.

7.6 createScaleConnectParser Method

Creates a scale connection status command response analysis object.

Declaration

public static IPeripheralConnectParser createScaleConnectParser(ScaleModel model);

Parameter

Name	Description	Object type
model	Scale Model constants • APS10 • APS12 • APS20	com.starmicronics.starioextension. StarIoExt.ScaleModel

Return value

Description	Object type
IPeripheralConnectParser object	com.starmicronics.starioextension. IPeripheralConnectParser

Example

```
public void onItemClick(final AdapterView<?> parent, View view, final int position, long id) {
    super.onItemClick(parent, view, position, id);

    if (1 <= position && position <= 4) {
        mProgressDialog.show();

        PrinterSetting setting = new PrinterSetting(getActivity());

        final IPeripheralConnectParser parser = StarIoExt.createScaleConnectParser(ScaleModel.APS10);
//      final IPeripheralConnectParser parser = StarIoExt.createScaleConnectParser(ScaleModel.APS12);
//      final IPeripheralConnectParser parser = StarIoExt.createScaleConnectParser(ScaleModel.APS20);

        Communication.parseDoNotCheckCondition(DisplayFragment.class, parser, setting.getPortName(),
setting.getPortSettings(), 10000, getActivity(), new Communication.SendCallback() {
            @Override
            public void onStatus(boolean result, Communication.Result communicateResult) {
                ...
            }
        });
    }
    ...
}
```

Refer to ScaleFragment.java/ScaleExtFragment.java.

7.7 createScaleWeightParser Method

Creates a scale weight command response analysis object.

Declaration

public static IScaleWeightParser createScaleWeightParser(ScaleModel model);

Parameter

Name	Description	Object type
model	Scale Model constants • APS10 • APS12 • APS20	com.starmicronics.starioextension.StarIoExt.ScaleModel

Return value

Description	Object type
IScaleWeightParser object	com.starmicronics.starioextension.IScaleWeightParser

Example

```
public void onItemClick(final AdapterView<?> parent, View view, final int position, long id) {
    super.onItemClick(parent, view, position, id);

    ...

    final IScaleWeightParser parser = StarIoExt.createScaleWeightParser(ScaleModel.APS10);
//  final IScaleWeightParser parser = StarIoExt.createScaleWeightParser(ScaleModel.APS12);
//  final IScaleWeightParser parser = StarIoExt.createScaleWeightParser(ScaleModel.APS20);

    ScaleCommunication.parseDoNotCheckCondition(ScaleFragment.class, parser, setting.getPortName(),
setting.getPortSettings(), 10000, getActivity(), new Communication.SendCallback() {
        @Override
        public void onStatus(boolean result, Communication.Result communicateResult) {
            ...
        }
    });
    ...
}
```

Refer to ScaleFragment.java/ScaleExtFragment.java.

7.8 Emulation Constants

Emulation type constants.

Declaration

```
public enum Emulation {
    None,
    StarPRNT,
    StarPRNTL,
    StarLine,
    StarGraphic,
    EscPos,
    EscPosMobile,
    StarDotImpact
}
```

Constants

Name	Description
StarPRNT	StarPRNT emulation.
StarPRNTL	StarPRNTL emulation.
StarLine	STAR Line Mode emulation.
StarGraphic	STAR Graphic Mode emulation.
EscPos	ESC/POS emulation.
EscPosMobile	ESC/POS Mobile emulation.
StarDotImpact	STAR Dot Impact emulation.

1. StarPRNTL emulation
   StarPRNTL emulation reduces the command size with the appendBitmap-type method that generates a raster image printing command.
   The time it takes to send the raster image command is reduced.
   StarPRNTL emulation can only be selected on some supported models. For usable models, refer to the supported printers.

7.9 CharacterCode Constants

Character code type constants.

Declaration

```
public enum CharacterCode {
    None,
    Standard,
    Japanese,
    SimplifiedChinese,
    TraditionalChinese
}
```

Constants

Name	Description
Standard	Standard character code.
Japanese	Japanese character code.
SimplifiedChinese	Simplified chinese character code.
TraditionalChinese	Traditional chinese character code.

7.10 BcrModel Constants

Barcode Reader Model constants.

Declaration

```
public enum BcrModel {
    None,
    POP1,
}
```

Constants

Name	Description
POP1	Designated barcode reader for mPOP : BCR-POP1

7.11 ScaleModel Constants

Scale Model constants.

Declaration

```
public enum CharacterCode {
    None,
    APS10,
    APS12,
    APS20,
}
```

Constants

Name	Description
APS10	Scale for mPOP APS10 * U.S. Only
APS12	Scale for mPOP APS12 * U.S. Only
APS20	Scale for mPOP APS20 * U.S. Only

7.12 DisplayModel Constants

Customer Display Model constants.

```
public enum CharacterCode {
    None,
    SCD222,
}
```

Constants

Name	Description
SCD222	Designated customer display for mPOP: SCD222U

7.13 Model : portSetting and Emulation

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

Model	portSettings	Emulation
mPOP	“”	StarPRNT
FVP10	“”	StarLine
TSP100	“”	StarGraphic
TSP650II	“”	StarLine
TSP700II	“”	StarLine
TSP800II	“”	StarLine
SM-S210i	“mini”	EscPosMobile
SM-S220i	“mini”	EscPosMobile
SM-S230i	“mini”	EscPosMobile
SM-T300i/T300	“mini”	EscPosMobile
SM-T400i	“mini”	EscPosMobile
BSC10	“escpos”	EscPos
SM-S210i StarPRNT	"Portable"	StarPRNT
SM-S220i StarPRNT	"Portable"	StarPRNT
SM-S230i StarPRNT	"Portable"	StarPRNT
SM-T300i/T300 StarPRNT	"Portable"	StarPRNT
SM-T400i StarPRNT	"Portable"	StarPRNT
SM-L200	"Portable"	StarPRNT
SM-L300	"Portable"	StarPRNTL
SP700	“”	StarDotImpact

portSettings is used for getPort Method of StarIOPort class included in the StarIOPort.jar or constractor of StarIoExtManager class included in the starioextension.jar.

Emulation is used for createCommandBuilder method of StarIoExt class included in the starioextension.jar.

8 ICommandBuilder interface included in the starioextension.jar

Method

Name	Description
beginDocument	Begin document command is generated and added to the command buffer.
endDocument	End document command is generated and added to the command buffer.
appendInitialization	Initialization command is generated and added to the command buffer.
append	Data is added to the command buffer.
appendRaw	Raw data is added to the command buffer.
appendFontStyle	Select command of the font style is generated and added to the command buffer.
appendCodePage	Select command of the code page is generated and added to the command buffer.
appendInternational	Select command of the international character mode is generated and added to the command buffer.
appendLineFeed	Line feed command is generated and added to the command buffer.
appendUnitFeed	Unit feed command is generated and added to the command buffer.
appendCharacterSpace	Set command of the character space is generated and added to the command buffer.
appendLineSpace	Set command of the line space is generated and added to the command buffer.
appendEmphasis	Select command of the emphasis mode is generated and added to the command buffer.
appendInvert	Select command of the invert mode is generated and added to the command buffer.
appendMultiple appendMultipleHeight appendMultipleWidth	Select command of the multiple mode is generated and added to the command buffer.
appendUnderLine	Select command of the underline mode is generated and added to the command buffer.
appendLogo	Print command of the logo is generated and added to the command buffer.
appendAbsolutePosition	Absolute position command is generated and added to the command buffer.
appendAlignment	Alignment command is generated and added to the command buffer.
appendHorizontalTabPosition	Horizontal tab set/clear command is generated and added to the command buffer.
appendCutPaper	Paper cut command is generated and added to the command buffer.
appendPeripheral	Peripheral command is generated and added to the command buffer.
appendSound	Sound command is generated and added to the command buffer.
appendBarcode	Print command of the barcode is generated and added to the command buffer.
appendBarcodeWithAbsolutePosition	Print command of the absolute position barcode is generated and added to the command buffer.
appendBarcodeWithAlignment	Print command of the alignment barcode is generated and added to the command buffer.
appendPdf417	Print command of the PDF417 is generated and added to the command buffer.
appendPdf417WithAbsolutePosition	Print command of the absolute position PDF417 is generated and added to the command buffer.
appendPdf417WithAlignment	Print command of the alignment PDF417 is generated and added to the command buffer.

Name	Description
appendQrCode	Print command of the QR code is generated and added to the command buffer.
appendQrCodeWithAbsolutePosition	Print command of the absolute position QR code is generated and added to the command buffer.
appendQrCodeWithAlignment	Print command of the alignment QR code is generated and added to the command buffer.
appendBitmap	Print command of the bitmap is generated and added to the command buffer.
appendBitmapWithAbsolutePosition	Print command of the absolute position bitmap is generated and added to the command buffer.
appendBitmapWithAlignment	Print command of the alignment bitmap is generated and added to the command buffer.
appendBlackMark	Black mark command is generated and added to the command buffer.
beginPageMode	Begin page mode command is generated and added to the command buffer.
endPageMode	End page mode command is generated and added to the command buffer.
appendPageModeVerticalAbsolutePosition	Vertical absolute position in page mode command is generated and added to the command buffer.
appendPageModeRotation	Print direction in page mode command is generated and added to the command buffer.
getCommands	Gets the command buffer.

Constants

Name	Description
InitializationType	Initialization constants.
FontStyleType	Font style constants.
CodePageType	Code Page constants.
InternationalType	International character constants.
LogoSize	Logo size constants.
AlignmentPosition	Alignment position constants.
CutPaperAction	Paper cut constants.
PeripheralChannel	Peripheral channel constants.
SoundChannel	Sound channel constants.
BarcodeSymbology	Barcode symbology constants.
BarcodeWidth	Barcode width constants.
Pdf417Level	PDF417 ECC (security level) constants.
QrCodeModel	QR code model constants.
QrCodeLevel	QR code mistake correction level constants.
BitmapConverterRotation	Bitmap rotation constants.
BlackMarkType	Black mark constants.

8.1 Model : ICommandBuilder interface Method

Supported Method for each model.

Function	Method	mPOP	FVP10	TSP100	TSP650II	TSP700II	TSP800II	SM-S210i	SM-S220i	SM-S230i	SM-T300i/T300	SM-T400i	BSC10	SM-S210i StarPRNT	SM-S220i StarPRNT	SM-S230i StarPRNT	SM-T300i/T300 StarPRNT	SM-T400i StarPRNT	SM-L200	SM-L300	SP700
Document control	beginDocument	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	endDocument	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Initialization	appendInitialization	✔	✔	-	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Data (Text and Command)	append	✔	✔	-	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Raw data (Text and Command)	appendRaw	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Font style	appendFontStyle	✔	✔	-	✔	✔	✔	-	-	-	-	-	✔	✔	✔	✔	✔	✔	✔	✔	✔
Code page	appendCodePage	✔	✔	-	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
International	appendInternational	✔	✔	-	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Line feed	appendLineFeed	✔	✔	-	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Unit feed	appendUnitFeed	✔	✔	*1	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Character space	appendCharacterSpace	✔	✔	-	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Line space	appendLineSpace	✔	✔	-	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Emphasis	appendEmphasis	✔	✔	-	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Invert	appendInvert	✔	✔	-	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Multiple	appendMultiple	✔	✔	-	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	appendMultipleHeight	✔	✔	-	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	appendMultipleWidth	✔	✔	-	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Under line	appendUnderLine	✔	✔	-	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔

-: 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/T300	SM-T400i	BSC10	SM-S210i StarPRNT	SM-S220i StarPRNT	SM-S230i StarPRNT	SM-T300i/T300 StarPRNT	SM-T400i StarPRNT	SM-L200	SM-L300	SP700
Logo	appendLogo	✔	✔	-	✔	✔	✔	*2	*2	*2	*2	*2	✔	✔	✔	✔	✔	✔	✔	✔	✔
Absolute position	appendAbsolutePosition	✔	✔	-	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Alignment	appendAlignment	✔	✔	-	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Horizontal Tab position	appendHorizontalTabPosition	✔	✔	-	✔	✔	✔	-	-	-	-	-	✔	✔	✔	✔	✔	✔	✔	✔	✔
Cut paper	appendCutPaper	✔	✔	✔	✔	✔	✔	*3	*3	*3	*3	*3	✔	*3	*3	*3	*3	*3	*3	*3	✔
Peripheral	appendPeripheral	✔	✔	✔	✔	✔	✔	-	-	-	-	-	✔	-	-	-	-	-	-	-	✔
Sound	appendSound	✔	✔	✔	✔	✔	✔	-	-	-	-	-	✔	-	-	-	-	-	-	-	✔
Barcode	appendBarcode	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-
	appendBarcodeWithAbsolutePosition	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-
	appendBarcodeWithAlignment	✔	✔	*4	✔	✔	✔	*4	*4	*4	*4	*4	✔	✔	✔	✔	✔	✔	✔	✔	-
PDF417	appendPdf417	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-
	appendPdf417WithAbsolutePosition	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-
	appendPdf417WithAlignment	✔	✔	*4	✔	✔	✔	*4	*4	*4	*4	*4	✔	✔	✔	✔	✔	✔	✔	✔	-
QR code	appendQrCode	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-
	appendQrCodeWithAbsolutePosition	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-
	appendQrCodeWithAlignment	✔	✔	*4	✔	✔	✔	*4	*4	*4	*4	*4	✔	✔	✔	✔	✔	✔	✔	✔	-
Bitmap	appendBitmap	✔	✔	✔	✔	✔	✔	*5	*5	*5	*5	*5	✔	✔	✔	✔	✔	✔	✔	✔	✔
	appendBitmapWithAbsolutePosition	✔	✔	✔	✔	✔	✔	*5	*5	*5	*5	*5	✔	✔	✔	✔	✔	✔	✔	✔	✔
	appendBitmapWithAlignment	✔	✔	*4	✔	✔	✔	*4 *5	*4 *5	*4 *5	*4 *5	*4 *5	✔	✔	✔	✔	✔	✔	✔	✔	✔

-: ignored.
*2: Always print from normal size.
*3: Without paper cut.
*4: Always print from left side.
*5: The maximum vertical direction printing area is 30cm (2400 dot).

Function	Method	mPOP	FVP10	TSP100	TSP650II	TSP700II	TSP800II	SM-S210i	SM-S220i	SM-S230i	SM-T300i/T300	SM-T400i	BSC10	SM-S210i StarPRNT	SM-S220i StarPRNT	SM-S230i StarPRNT	SM-T300i/T300 StarPRNT	SM-T400i StarPRNT	SM-L200	SM-L300	SP700
Black mark	appendBlackMark	-	✔	-	-	✔	✔	*5	*5	*5	*5	*5	-	*5	*5	*5	*5	*5	*5	*5	✔
Page mode	beginPageMode	✔	✔	-	✔	-	-	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-
	endPageMode	✔	✔	-	✔	-	-	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-
	appendPageModeVerticalAbsolutePosition	✔	✔	-	✔	-	-	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-
	appendPageModeRotation	✔	✔	-	✔	-	-	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-

-: ignored.

*5: Need to change printer setting to “BM Valid”.
Refer to User’s manual for how to change.

8.2 beginDocument Method

Begin document command is generated and added to the command buffer.

Declaration

void beginDocument();

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
-	-

Example

```
public static byte[] createData(Emulation emulation) {
    byte[] data = "Hello World.\n".getBytes();

    ICommandBuilder builder = StarIoExt.createCommandBuilder(emulation);

    builder.beginDocument();

    builder.append(data);

    builder.appendCutPaper(CutPaperAction.PartialCutWithFeed);

    builder.endDocument();

    return builder.getCommands();
}
```

Refer to ApiFunctions.java.

8.3 endDocument Method

End document command is generated and added to the command buffer.

Declaration

void endDocument();

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
-	-

Example

```
public static byte[] createData(Emulation emulation) {
    byte[] data = "Hello World.\n".getBytes();

    ICommandBuilder builder = StarIoExt.createCommandBuilder(emulation);

    builder.beginDocument();

    builder.append(data);

    builder.appendCutPaper(CutPaperAction.PartialCutWithFeed);

    builder.endDocument();

    return builder.getCommands();
}
```

Refer to ApiFunctions.java.

8.4 appendInitialization Method

Initialization command is generated and added to the command buffer.

Declaration

void appendInitialization(InitializationType type);

Parameter

Name	Description	Object type
type	Initialization type. • Command … Command initialization. • ~~Reset … Reset printer.~~ • ~~ResetWithPrint … Reset printer (execute self print).~~	com.starmicronics.stario extension.ICommandBuilder.InitializationType

Return value

Description	Object type
-	-

Example

```
public static byte[] createData(Emulation emulation) {
    byte[] data = "Hello World.\n".getBytes();

    ICommandBuilder builder = StarIoExt.createCommandBuilder(emulation);

    builder.beginDocument();

    builder.appendUnderLine(true);
    builder.appendMultiple(2, 2);
    builder.append(data);

    builder.appendInitialization(InitializationType.Command);

    builder.append(data);

    builder.appendCutPaper(CutPaperAction.PartialCutWithFeed);

    builder.endDocument();

    return builder.getCommands();
}
```

Refer to ApiFunctions.java.

8.5 append Method

Data (Text and Command) is added to the command buffer.

Declaration

void append(byte data);

void append(byte[] data);

Parameter

Name	Description	Object type
data	Data (Text and Command).	byte byte[]

Return value

Description	Object type
-	-

Example

```
public static byte[] createData(Emulation emulation) {
    byte[] data = "Hello World.".getBytes();

    bytes[] data = new byte[] {0x48, 0x65, 0x6c, 0x6c, 0x6f, 0x20, 0x57, 0x6f, 0x72, 0x6c, 0x64, 0x2e};

    ICommandBuilder builder = StarIoExt.createCommandBuilder(emulation);

    builder.beginDocument();

    builder.append(data);
    builder.append((byte) 0x0a);

    builder.appendCutPaper(CutPaperAction.PartialCutWithFeed);

    builder.endDocument();

    return builder.getCommands();
}
```

Refer to ApiFunctions.java and each Command Specifications.

8.6 appendRaw Method

Raw data (Text and Command) is added to the command buffer.

Declaration

void appendRaw(byte data);

void appendRaw(byte[] data);

Parameter

Name	Description	Object type
data	Raw data (Text and Command).	byte
		byte[]

Return value

Description	Object type
-	-

Example

```
public static byte[] createData(Context context, Emulation emulation, Bitmap bitmap, RequestCallback callback) {
    String urlString = AllReceipts.uploadBitmap(context, bitmap, callback);

    ICommandBuilder builder = StarIoExt.createCommandBuilder(emulation);

    builder.beginDocument();

    builder.appendBitmap(bitmap, false);

    byte[] data = AllReceipts.generateAllReceipts(context, urlString, emulation, true, true);

    builder.appendRaw(data);

    builder.appendCutPaper(CutPaperAction.PartialCutWithFeed);

    builder.endDocument();

    return builder.getCommands();
}
```

Refer to AllReceiptsFunctions.java and each Command Specifications.

8.7 appendFontStyle Method

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

Declaration

void appendFontStyle(FontStyleType type);

Parameter

Name	Description	Object type
type	Font style. • A … Font-A (12 x 24 dots) / Specify 7 x 9 font (half dots) • B … Font-B (9 x 24 dots) / Specify 5 x 9 font (2P-1)	com.starmicronics.staroextension.ICommandBuilder.FontStyleType

Return value

Description	Object type
-	-

Example

```
public static byte[] createData(Emulation emulation) {
    byte[] data = "Hello World.\n".getBytes();

    ICommandBuilder builder = StarIoExt.createCommandBuilder(emulation);

    builder.beginDocument();

    builder.appendFontStyle(FontStyleType.A);
    builder.append(data);
    builder.appendFontStyle(FontStyleType.B);
    builder.append(data);

    builder.appendCutPaper(CutPaperAction.PartialCutWithFeed);

    builder.endDocument();

    return builder.getCommands();
}
```

Refer to ApiFunctions.java and each Command Specifications.

8.8 appendCodePage Method

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

Declaration

void appendCodePage(CodePageType type);

Parameter

Name	Description	Object type
type	Code Page. • CP437 … CodePage437 (USA, Std. Europe). • CP737 … Codepage 737 (Greek). • CP772 … Codepage 772 (Lithuanian). • CP774 … Codepage 774 (Lithuanian). • CP851 … Codepage 851 (Greek). • CP852 … Codepage 852 (Latin-2). • CP855 … Codepage 855 (Cyrillic Bulgarian). • CP857 … Codepage 857 (Turkey). • CP858 … Codepage 858 (Multilingual). • CP860 … Codepage 860 (Portuguese). • CP861 … Codepage 861 (Icelandic). • CP862 … Codepage 862 (Israel (Hebrew)). • CP863 … Codepage 863 (Canadian French). • CP864 … Codepage 864 (Arabic). • CP865 … Codepage 865 (Nordic). • CP866 … Codepage 866 (Cyrillic Russian). • CP869 … Codepage 869 (Greek). • CP874 … Codepage 874 (Thai). • CP928 … Codepage 928 (Greek). • CP932 … Katakana. • CP998 … Normal. • CP999 … Codepage 1252 (Windows Latin-1). • CP1001 … Codepage 1001 (Arabic). • CP1250 … Codepage 1250 (Windows Latin-2). • CP1251 … Codepage 1251 (Windows Cyrillic). • CP1252 … Codepage 1252 (Windows Latin-1). • CP2001 … Codepage 2001 (Lithuanian-KBL). • CP3001 … Codepage 3001 (Estonian-1). • CP3002 … Codepage 3002 (Estonian-2). • CP3011 … Codepage 3011 (Latvian-1). • CP3012 … Codepage 3012 (Latvian-2). • CP3021 … Codepage 3021 (Bulgarian). • CP3041 … Codepage 3041 (Maltese). • CP3840 … Codepage 3840 (IBM-Russian).	com.starmicronics.starioextension.ICommandBuilder.CodePageType

Name	Description	Object type
type	• CP3841 … Codepage 3841 (Gost). • CP3843 … Codepage 3843 (Polish). • CP3844 … Codepage 3844 (CS2). • CP3845 … Codepage 3845 (Hungarian). • CP3846 … Codepage 3846 (Turkish). • CP3847 … Codepage 3847 (Brazil-ABNT). • CP3848 … Codepage 3848 (Brazil-ABICOMP). • UTF8 … UTF-8. • Blank … User Setting Blank Code Page.	com.starmicronics.stario extension.ICommandBuilder.CodePageType

Return value

Description	Object type
-	-

Example

```
public static byte[] createData(Emulation emulation) {
    byte[] data8 = new byte[] {0x80, 0x81, 0x82, 0x83, 0x84, 0x85, 0x86, 0x87, 0x88, 0x89, 0x8a, 0x8b, 0x8c, 0x8d, 0x8e,
0x8f, 0x0a};
    byte[] data9 = new byte[] {0x90, 0x91, 0x92, 0x93, 0x94, 0x95, 0x96, 0x97, 0x98, 0x99, 0x9a, 0x9b, 0x9c, 0x9d, 0x9e,
0x9f, 0x0a};
    byte[] dataA = new byte[] {0xa0, 0xa1, 0xa2, 0xa3, 0xa4, 0xa5, 0xa6, 0xa7, 0xa8, 0xa9, 0xaa, 0xab, 0xac, 0xad, 0xae,
0xaf, 0x0a};
    byte[] dataB = new byte[] {0xb0, 0xb1, 0xb2, 0xb3, 0xb4, 0xb5, 0xb6, 0xb7, 0xb8, 0xb9, 0xba, 0xbb, 0xbc, 0xbd, 0xbe,
0xbf, 0x0a};
    byte[] dataC = new byte[] {0xc0, 0xc1, 0xc2, 0xc3, 0xc4, 0xc5, 0xc6, 0xc7, 0xc8, 0xc9, 0xca, 0xcb, 0xcc, 0xcd, 0xce,
0xcf, 0x0a};
    byte[] dataD = new byte[] {0xd0, 0xd1, 0xd2, 0xd3, 0xd4, 0xd5, 0xd6, 0xd7, 0xd8, 0xd9, 0xda, 0xdb, 0xdc, 0xdd, 0xde,
0xdf, 0x0a};
    byte[] dataE = new byte[] {0xe0, 0xe1, 0xe2, 0xe3, 0xe4, 0xe5, 0xe6, 0xe7, 0xe8, 0xe9, 0xea, 0xeb, 0xec, 0xed, 0xee,
0xef, 0x0a};
    byte[] dataF = new byte[] {0xf0, 0xf1, 0xf2, 0xf3, 0xf4, 0xf5, 0xf6, 0xf7, 0xf8, 0xf9, 0xfa, 0xfb, 0xfc, 0xfd, 0xfe, 0xff,
0x0a};

    ICommandBuilder builder = StarIoExt.createCommandBuilder(emulation);

    builder.beginDocument();

    builder.appendCodePage(CodePageType.CP932);

    builder.append(data8);
    builder.append(data9);
    builder.append(dataA);
    builder.append(dataB);
    builder.append(dataC);
    builder.append(dataD);
    builder.append(dataE);
    builder.append(dataF);

    builder.appendCutPaper(CutPaperAction.PartialCutWithFeed);

    builder.endDocument();

    return builder.getCommands();
}
```

Refer to ApiFunctions.java and each Command Specifications.

8.9 appendInternational Method

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

Declaration

void appendInternational(InternationalType type);

Parameter

Name	Description	Object type
type	International character. • USA … USA. • France … France. • Germany … Germany. • UK … UK. • Denmark … Denmark. • Sweden … Sweden. • Italy … Italy. • Spain … Spain. • Japan … Japan. • Norway … Norway. • Denmark2 … Denmark ||. • Spain2 … Spain ||. • LatinAmerica … Latin America. • Korea … Korea. • Ireland … Ireland. • Legal … Legal.	com.starmicronics.starioextension.ICommandBuilder.InternationalType

Return value

Description	Object type
-	-

Example

```
public static byte[] createData(Emulation emulation) {
    bytes[] data = new byte[] {0x23, 0x24, 0x40, 0x58, 0x5a, 0x5b, 0x5c, 0x5d, 0x5e, 0x60, 0x7b, 0x7c, 0x7d, 0x7e, 0x0a};

    ICommandBuilder builder = StarIoExt.createCommandBuilder(emulation);

    builder.beginDocument();

    builder.appendInternational(InternationalType.USA);
    builder.append(data);

    builder.appendInternational(InternationalType.Japan);
    builder.append(data);

    builder.appendCutPaper(CutPaperAction.PartialCutWithFeed);

    builder.endDocument();

    return builder.getCommands();
}
```

Refer to ApiFunctions.java and each Command Specifications.

8.10 appendLineFeed Method

Line feed command is generated and added to the command buffer.

Declaration

void appendLineFeed();

void appendLineFeed(byte[] data);

void appendLineFeed(int line);

void appendLineFeed(byte[] data, int line);

Parameter

Name	Description	Object type
line	Paper feed units. (Units : Lines)	int
data	Data (Text and Command).	byte[]

Return value

Description	Object type
-	-

Example

```
public static byte[] createData(Emulation emulation) {
    byte[] data = "Hello World.".getBytes();

    ICommandBuilder builder = StarIoExt.createCommandBuilder(emulation);

    builder.beginDocument();

    builder.append(data);
    builder.appendLineFeed);

    builder.appendLineFeed(data);

    builder.append(data);
    builder.appendLineFeed(2);

    builder.appendLineFeed(data, 2);

    builder.appendCutPaper(CutPaperAction.PartialCutWithFeed);

    builder.endDocument();

    return builder.getCommands();
}
```

Refer to ApiFunctions.java.

8.11 appendUnitFeed Method

Unit feed command is generated and added to the command buffer.

Declaration

void appendUnitFeed(int unit);

void appendUnitFeed(byte[] data, int unit);

Parameter

Name	Description	Object type
unit	Paper feed units. (Units : Dots)	int
data	Data (Text and Command).	byte[]

Return value

Description	Object type
-	-

Example

```
public static byte[] createData(Emulation emulation) {
    byte[] data = "Hello World.".getBytes();

    ICommandBuilder builder = StarIoExt.createCommandBuilder(emulation);

    builder.beginDocument();

    builder.append(data);
    builder.appendUnitFeed(64);

    builder.appendUnitFeed(data, 64);

    builder.appendCutPaper(CutPaperAction.PartialCutWithFeed);

    builder.endDocument();

    return builder.getCommands();
}
```

Refer to ApiFunctions.java.

8.12 appendCharacterSpace Method

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

Declaration

void appendCharacterSpace(int space);

Parameter

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

Return value

Description	Object type
-	-

1. Notes

In Japanese, Simplified Chinese, Traditional Chinese, and Korean (DBCS), the character space is to be twice.

Example

```
public static byte[] createData(Emulation emulation) {
    byte[] data = "Hello World.\n".getBytes();

    ICommandBuilder builder = StarIoExt.createCommandBuilder(emulation);

    builder.beginDocument();

    builder.appendCharacterSpace(0);
    builder.append(data);
    builder.appendCharacterSpace(4);
    builder.append(data);

    builder.appendCutPaper(CutPaperAction.PartialCutWithFeed);

    builder.endDocument();

    return builder.getCommands();
}
```

Refer to ApiFunctions.java.

8.13 appendLineSpace Method

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

Declaration

void appendLineSpace(int lineSpace);

Parameter

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

Return value

Description	Object type
-	-

Example

```
public static byte[] createData(Emulation emulation) {
    byte[] data = "Hello World.\n".getBytes();

    ICommandBuilder builder = StarIoExt.createCommandBuilder(emulation);

    builder.beginDocument();

    builder.appendLineSpace(32);
    builder.append(data);
    builder.append(data);
    builder.append(data);
    builder.appendLineSpace(24);
    builder.append(data);
    builder.append(data);
    builder.append(data);

    builder.appendCutPaper(CutPaperAction.PartialCutWithFeed);

    builder.endDocument();

    return builder.getCommands();
}
```

Refer to ApiFunctions.java and each Command Specifications.

8.14 appendEmphasis Method

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

Declaration

void appendEmphasis(boolean emphasis);

void appendEmphasis(byte[] data);

Parameter

Name	Description	Object type
emphasis	Emphasis. • true … Valid • false … Invalid	boolean
data	Data (Text and Command).	byte[]

Return value

Description	Object type
-	-

Example

```
public static byte[] createData(Emulation emulation) {
    byte[] data = "Hello World.\n".getBytes();
    byte[] dataHalf0 = "Hello ".getBytes();
    byte[] dataHalf1 = "World.\n".getBytes();

    ICommandBuilder builder = StarIoExt.createCommandBuilder(emulation);

    builder.beginDocument();

    builder.append(data);
    builder.appendEmphasis(true);
    builder.append(data);
    builder.append(data);
    builder.appendEmphasis(false);
    builder.append(data);

    builder.appendEmphasis(data);
    builder.append(data);

    builder.appendEmphasis(dataHalf0);
    builder.append(dataHalf1);

    builder.appendCutPaper(CutPaperAction.PartialCutWithFeed);

    builder.endDocument();

    return builder.getCommands();
}
```

Refer to ApiFunctions.java.

8.15 appendInvert Method

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

Declaration

void appendInvert(boolean invert);

void appendInvert(byte[] data);

Parameter

Name	Description	Object type
invert	Invert. • true … Valid • false … Invalid	boolean
data	Data (Text and Command).	byte[]

Return value

Description	Object type
-	-

Example

```
public static byte[] createData(Emulation emulation) {
    byte[] data = "Hello World.\n".getBytes();
    byte[] dataHalf0 = "Hello ".getBytes();
    byte[] dataHalf1 = "World.\n".getBytes();

    ICommandBuilder builder = StarIoExt.createCommandBuilder(emulation);

    builder.beginDocument();

    builder.append(data);
    builder.appendInvert(true);
    builder.append(data);
    builder.append(data);
    builder.appendInvert(false);
    builder.append(data);

    builder.appendInvert(data);
    builder.append(data);

    builder.appendInvert(dataHalf0);
    builder.append(dataHalf1);

    builder.appendCutPaper(CutPaperAction.PartialCutWithFeed);

    builder.endDocument();

    return builder.getCommands();
}
```

Refer to ApiFunctions.java.

8.16 appendMultiple Method

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

Declaration

void appendMultiple(int width, int height);

void appendMultiple(byte[] data, int width, int height);

void appendMultipleHeight(int height);

void appendMultipleHeight(byte[] data, int height);

void appendMultipleWidth(int width);

void appendMultipleWidth(byte[] data, int width);

Parameter

Name	Description	Object type
width	Expanded width.	int
height	Expanded height.	int
data	Data (Text and Command).	byte[]

Return value

Description	Object type
-	-

Example

```
public static byte[] createData(Emulation emulation) {
    byte[] data = "Hello World.\n".getBytes();
    byte[] dataHalf0 = "Hello ".getBytes();
    byte[] dataHalf1 = "World.\n".getBytes();

    ICommandBuilder builder = StarIoExt.createCommandBuilder(emulation);

    builder.beginDocument();

    builder.append(data);

    builder.appendMultiple(2, 2);
    builder.append(data);
    builder.append(data);
    builder.appendMultiple(1, 1);
    builder.append(data);

    builder.appendMultiple(data, 2, 2);
    builder.append(data);

    builder.appendMultiple(dataHalf0, 2, 2);
    builder.append(dataHalf1);

    builder.append(dataHalf0);
    builder.appendMultiple(dataHalf1, 2, 2);

    builder.appendMultipleHeight(2);
    builder.append(data);
    builder.append(data);
    builder.appendMultipleHeight(1);
    builder.append(data);

    builder.appendMultipleHeight(dataHalf0, 2);
    builder.append(dataHalf1);

    builder.append(dataHalf0);
    builder.appendMultipleHeight(dataHalf1, 2);

    builder.appendMultipleWidth(2);
    builder.append(data);
    builder.append(data);
    builder.appendMultipleWidth(1);
    builder.append(data);

    builder.appendMultipleWidth(dataHalf0, 2);
    builder.append(dataHalf1);

    builder.append(dataHalf0);
    builder.appendMultipleWidth(dataHalf1, 2);

    builder.appendCutPaper(CutPaperAction.PartialCutWithFeed);

    builder.endDocument();

    return builder.getCommands();
}
```

Refer to ApiFunctions.java and each Command Specifications.

8.17 appendUnderLine Method

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

Declaration

void appendUnderLine(boolean underLine);

void appendUnderLine(byte[] data);

Parameter

Name	Description	Object type
underLine	Under line. • true … Valid • false … Invalid	boolean
data	Data (Text and Command).	byte[]

Return value

Description	Object type
-	-

Example

```
public static byte[] createData(Emulation emulation) {
    byte[] data = "Hello World.\n".getBytes();
    byte[] dataHalf0 = "Hello ".getBytes();
    byte[] dataHalf1 = "World.\n".getBytes();

    ICommandBuilder builder = StarIoExt.createCommandBuilder(emulation);

    builder.beginDocument();

    builder.append(data);

    builder.appendUnderLine(true);
    builder.append(data);
    builder.append(data);
    builder.appendUnderLine(false);
    builder.append(data);

    builder.appendUnderLine(data);
    builder.append(data);

    builder.appendUnderLine(dataHalf0);
    builder.append(dataHalf1);

    builder.appendCutPaper(CutPaperAction.PartialCutWithFeed);

    builder.endDocument();

    return builder.getCommands();
}
```

Refer to ApiFunctions.java.

8.18 appendLogo Method

Print command of the logo is generated and added to the command buffer.

Declaration

void appendLogo(LogoSize size, int number);

Parameter

Name	Description	Object type
number	Logo size. • Normal … Normal. • DoubleWidth … Double Width. • DoubleHeight … Double Height. • DoubleWidthDoubleHeight … Double Width / Height.	com.starmicronics.stario extension.ICommandBuilder.LogoSize
number	Logo number.	int

Return value

Description	Object type
-	-

Example

```
public static byte[] createData(Emulation emulation) {
    ICommandBuilder builder = StarIoExt.createCommandBuilder(emulation);

    builder.beginDocument();

    builder.appendLogo(LogoSize.Normal, 1);

    builder.appendLogo(LogoSize.DoubleWidth, 1);

    builder.appendLogo(LogoSize.DoubleHeight, 1);

    builder.appendLogo(LogoSize.DoubleWidthDoubleHeight, 1);

    builder.appendCutPaper(CutPaperAction.PartialCutWithFeed);

    builder.endDocument();

    return builder.getCommands();
}
```

Refer to ApiFunctions.java and each Command Specifications.

8.19 appendAbsolutePosition Method

Absolute position command is generated and added to the command buffer.

Declaration

void appendAbsolutePosition(int position);

void appendAbsolutePosition(byte[] data, int position);

Parameter

Name	Description	Object type
position	Absolute position. (Units : Dots)	int
data	Data (Text and Command).	byte[]

Return value

Description	Object type
-	-

Example

```
public static byte[] createData(Emulation emulation) {
    byte[] data = "Hello World.\n".getBytes();

    ICommandBuilder builder = StarIoExt.createCommandBuilder(emulation);

    builder.beginDocument();

    builder.append(data);

    builder.appendAbsolutePosition(40);
    builder.append(data);
    builder.append(data);

    builder.appendAbsolutePosition(data, 40);
    builder.append(data);

    builder.appendCutPaper(CutPaperAction.PartialCutWithFeed);

    builder.endDocument();

    return builder.getCommands();
}
```

Refer to ApiFunctions.java.

8.20 appendAlignment Method

Alignment command is generated and added to the command buffer.

Declaration

void appendAlignment(AlignmentPosition position);

void appendAlignment(byte[] data, AlignmentPosition position);

Parameter

Name	Description	Object type
position	Alignment position. • Left … Left alignment. • Center … Center alignment. • Right … Right alignment.	com.starmicronics.starioextension.ICommandBuilder.AlignmentPosition
data	Data (Text and Command).	byte[]

Return value

Description	Object type
-	-

Example

```
public static byte[] createData(Emulation emulation) {
    byte[] data = "Hello World.\n".getBytes();

    ICommandBuilder builder = StarIoExt.createCommandBuilder(emulation);

    builder.beginDocument();

    builder.append(data);

    builder.appendAlignment(AlignmentPosition.Right);
    builder.append(data);
    builder.append(data);
    builder.appendAlignment(AlignmentPosition.Left);
    builder.append(data);
    builder.append(data);

    builder.appendAlignment(data, AlignmentPosition.Right);
    builder.append(data);

    builder.appendCutPaper(CutPaperAction.PartialCutWithFeed);

    builder.endDocument();

    return builder.getCommands();
}
```

Refer to ApiFunctions.java and each Command Specifications.

8.21 appendHorizontalTabPosition Method

Horizontal tab set/clear command is generated and added to the command buffer.

Declaration

void appendHorizontalTabPosition(int[] positions);

Parameter

Name	Description	Object type
position	Array of horizontal tab positions (Units: ANK character pitch) Specifying null or empty array deletes all currently set horizontal tab positions.	int[]

Return value

Description	Object type
-	-

Example

```
public static byte[] createHorizontalTabData(Emulation emulation) {
    byte[] data1 = "QTY\tITEM\tTOTAL\n".getBytes();
    byte[] data2 = "1\tApple\t1.50\n".getBytes();
    byte[] data3 = "2\tOrange\t2.00\n".getBytes();
    byte[] data4 = "5\tBanana\t3.00\n".getBytes();

    ICommandBuilder builder = StarIoExt.createCommandBuilder(emulation);

    builder.beginDocument();

    builder.appendHorizontalTabPosition(new int[] {5, 27});

    builder.append("*Tab Position:5, 27*\n".getBytes());
    builder.append(data1);
    builder.append(data2);
    builder.append(data3);
    builder.append(data4);

    builder.appendCutPaper(CutPaperAction.PartialCutWithFeed);

    builder.endDocument();

    return builder.getCommands();
}
```

Refer to ApiFunctions.java.

8.22 appendCutPaper Method

Paper cut command is generated and added to the command buffer.

Declaration

void appendCutPaper(CutPaperAction action);

Parameter

Name	Description	Object type
action	Paper cut action. • FullCut … Full Cut. • PartialCut … Partial Cut. • FullCutWithFeed … Full Cut with Feed. • PartialCutWithFeed … Partial Cut with Feed.	com.starmicronics.starioextension.ICommandBuilder.CutPaperAction

Return value

Description	Object type
-	-

Example

```
public static byte[] createData(Emulation emulation) {
    byte[] data = "Hello World.\n".getBytes();

    ICommandBuilder builder = StarIoExt.createCommandBuilder(emulation);

    builder.beginDocument();

    builder.append(data);
    builder.append(data);
    builder.append(data);
    builder.append(data);
    builder.append(data);

    builder.appendCutPaper(CutPaperAction.PartialCutWithFeed);

    builder.endDocument();

    return builder.getCommands();
}
```

Refer to ApiFunctions.java.

8.23 appendPeripheral Method

Peripheral command is generated and added to the command buffer.

Declaration

void appendPeripheral(PeripheralChannel channel);

void appendPeripheral(PeripheralChannel channel, int time);

Parameter

Name	Description	Object type
channel	Peripheral channel. • No1 … Channel1. • No2 … Channel2.	com.starmicronics.starioextension.ICommandBuilder.PeripheralChannel
time	Drive time. (Units : mSec) * Peripheral channel1 only.	int

Return value

Description	Object type
-	-

Example

```
public static byte[] createData(Emulation emulation) {
    ICommandBuilder builder = StarIoExt.createCommandBuilder(emulation);

    builder.beginDocument();

    builder.appendPeripheral(PeripheralChannel.No1);
    builder.appendPeripheral(PeripheralChannel.No2);
    builder.appendPeripheral(PeripheralChannel.No1, 2000);
    builder.appendPeripheral(PeripheralChannel.No2, 2000);

    builder.endDocument();

    return builder.getCommands();
}
```

Refer to ApiFunctions.java and each Command Specifications.

8.24 appendSound Method

Sound command is generated and added to the command buffer.

Declaration

void appendSound(SoundChannel channel);

void appendSound(SoundChannel channel, int repeat);

Parameter

Name	Description	Object type
channel	Sound channel. • No1 … Channel1. • No2 … Channel2.	com.starmicronics.starioextension.ICommandBuilder.SoundChannel
repeat	Repeat count.	int

Return value

Description	Object type
-	-

Example

```
public static byte[] createData(Emulation emulation) {
    ICommandBuilder builder = StarIoExt.createCommandBuilder(emulation);

    builder.beginDocument();

    builder.appendSound(SoundChannel.No1);
    builder.appendSound(SoundChannel.No2);
    builder.appendSound(SoundChannel.No1, 3);
    builder.appendSound(SoundChannel.No2, 3);

    builder.endDocument();

    return builder.getCommands();
}
```

Refer to ApiFunctions.java and each Command Specifications.

8.25 appendBarcode Method

Print command of the barcode is generated and added to the command buffer.

Declaration

void appendBarcode(byte[] data, BarcodeSymbology symbology, BarcodeWidth width, int height, boolean hri);

Parameter

Name	Description	Object type
data	Barcode data.	byte[]
symbology	Barcode symbology. • UPCE … UPC-E. • UPCA … UPC-A. • JAN8 … JAN/EAN8. • JAN13 … JAN/EAN13. • Code39 … Code39. • ITF … ITF. • Code128 … Code128. • Code93 … Code93. • ~~Codabar … Codabar.~~ • NW7 … NW7.	com.starmicronics.stario extension.ICommandBuilder.BarcodeSymbology
width	Barcode width. • Mode1 … Mode1. • Mode2 … Mode2. • Mode3 … Mode3. • Mode4 … Mode4. • Mode5 … Mode5. • Mode6 … Mode6. • Mode7 … Mode7. • Mode8 … Mode8. • Mode9 … Mode9.	com.starmicronics.stario extension.ICommandBuilder.BarcodeWidth
height	Barcode height. (Units : Dots)	int
hri	Under-bar characters. • true … Valid • false … Invalid	boolean

Return value

Description	Object type
-	-

Example

```
public static byte[] createData(Emulation emulation) {
    byte[] dataCode128 = "{B0123456789".getBytes();

    ICommandBuilder builder = StarIoExt.createCommandBuilder(emulation);

    builder.beginDocument();

    builder.appendBarcode(dataCode128, BarcodeSymbology.Code128, BarcodeWidth.Mode1, 40, true);
    builder.appendUnitFeed(32);

    builder.appendCutPaper(CutPaperAction.PartialCutWithFeed);

    builder.endDocument();

    return builder.getCommands();
}
```

Refer to ApiFunctions.java and each Command Specifications.

8.26 appendBarcodeWithAbsolutePosition Method

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

Declaration

void appendBarcodeWithAbsolutePosition(byte[] data, BarcodeSymbology symbology, BarcodeWidth width, int height, boolean hri, int position);

Parameter

Name	Description	Object type
position	Absolute position. (Units : Dots)	int
data	Barcode data.	byte[]
symbology	Barcode symbology. • UPCE … UPC-E. • UPCA … UPC-A. • JAN8 … JAN/EAN8. • JAN13 … JAN/EAN13. • Code39 … Code39. • ITF … ITF. • Code128 … Code128. • Code93 … Code93. • ~~Codabar … Codabar.~~ • NW7 … NW7.	com.starmicronics.stario extension.ICommandBuilder.BarcodeSymbology
width	Barcode width. • Mode1 … Mode1. • Mode2 … Mode2. • Mode3 … Mode3. • Mode4 … Mode4. • Mode5 … Mode5. • Mode6 … Mode6. • Mode7 … Mode7. • Mode8 … Mode8. • Mode9 … Mode9.	com.starmicronics.stario extension.ICommandBuilder.BarcodeWidth
height	Barcode height. (Units : Dots)	int
hri	Under-bar characters. • true … Valid • false … Invalid	boolean

Return value

Description	Object type
-	-

Example

```
public static byte[] createData(Emulation emulation) {
    byte[] dataCode128 = "{B0123456789".getBytes();

    ICommandBuilder builder = StarIoExt.createCommandBuilder(emulation);

    builder.beginDocument();

    builder.appendBarcodeWithAbsolutePosition(dataCode128, BarcodeSymbology.Code128,
BarcodeWidth.Mode1, 40, true, 40);
    builder.appendUnitFeed(32);

    builder.appendCutPaper(CutPaperAction.PartialCutWithFeed);

    builder.endDocument();

    return builder.getCommands();
}
```

Refer to ApiFunctions.java and each Command Specifications.

8.27 appendBarcodeWithAlignment Method

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

Declaration

void appendBarcodeWithAlignment(byte[] data, BarcodeSymbology symbology, BarcodeWidth width, int height, boolean hri, AlignmentPosition position);

Parameter

Name	Description	Object type
position	Alignment position. • Left … Left alignment. • Center … Center alignment. • Right … Right alignment.	com.starmicronics.starioextension.ICommandBuilder.AlignmentPosition
data	Barcode data.	byte[]
symbology	Barcode symbology. • UPCE … UPC-E. • UPCA … UPC-A. • JAN8 … JAN/EAN8. • JAN13 … JAN/EAN13. • Code39 … Code39. • ITF … ITF. • Code128 … Code128. • Code93 … Code93. • ~~Codabar … Codabar.~~ • NW7 … NW7.	com.starmicronics.starioextension.ICommandBuilder.BarcodeSymbology
width	Barcode width. • Mode1 … Mode1. • Mode2 … Mode2. • Mode3 … Mode3. • Mode4 … Mode4. • Mode5 … Mode5. • Mode6 … Mode6. • Mode7 … Mode7. • Mode8 … Mode8. • Mode9 … Mode9.	com.starmicronics.starioextension.ICommandBuilder.BarcodeWidth
height	Barcode height. (Units : Dots)	int
hri	Under-bar characters. • true… Valid • false … Invalid	boolean

Return value

Description	Object type
-	-

Example

```
public static byte[] createData(Emulation emulation) {
    byte[] dataCode128 = "{B0123456789".getBytes();

    ICommandBuilder builder = StarIoExt.createCommandBuilder(emulation);

    builder.beginDocument();

    builder.appendBarcodeWithAlignment(dataCode128, BarcodeSymbology.Code128, BarcodeWidth.Mode1, 40,
true, AlignmentPosition.Center);
    builder.appendUnitFeed(32);

    builder.appendBarcodeWithAlignment(dataCode128, BarcodeSymbology.Code128, BarcodeWidth.Mode1, 40,
true, AlignmentPosition.Right);
    builder.appendUnitFeed(32);

    builder.appendCutPaper(CutPaperAction.PartialCutWithFeed);

    builder.endDocument();

    return builder.getCommands();
}
```

Refer to ApiFunctions.java and each Command Specifications.

8.28 appendPdf417 Method

Print command of the PDF417 is generated and added to the command buffer.

Declaration

void appendPdf417(byte[] data, int line, int column, Pdf417Level level, int module, int aspect);

Parameter

Name	Description	Object type
data	PDF417 data.	byte[]
line	Number of lines.	int
column	Number of columns.	int
level	PDF417 ECC (security level). • ECC0 … Level0. • ECC1 … Level1. • ECC2 … Level2. • ECC3 … Level3. • ECC4 … Level4. • ECC5 … Level5. • ECC6 … Level6. • ECC7 … Level7. • ECC8 … Level8.	com.starmicronics.starioextension.ICommandBuilder.Pdf417Level
module	Module X direction size.	int
aspect	Module aspect ratio.	int

Return value

Description	Object type
-	-

Example

```
public static byte[] createData(Emulation emulation) {
    byte[] data = "Hello World.".getBytes();

    ICommandBuilder builder = StarIoExt.createCommandBuilder(emulation);

    builder.beginDocument();

    builder.appendPdf417(data, 0, 1, Pdf417Level.ECC0, 2, 2);
    builder.appendUnitFeed(32);

    builder.appendCutPaper(CutPaperAction.PartialCutWithFeed);

    builder.endDocument();

    return builder.getCommands();
}
```

Refer to ApiFunctions.java and each Command Specifications.

8.29 appendPdf417WithAbsolutePosition Method

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

Declaration

void appendPdf417WithAbsolutePosition(byte[] data, int line, int column, Pdf417Level level, int module, int aspect, int position);

Parameter

Name	Description	Object type
position	Absolute position. (Units : Dots)	int
data	PDF417 data.	byte[]
line	Number of lines.	int
column	Number of columns.	int
level	PDF417 ECC (security level). • ECC0 … Level0. • ECC1 … Level1. • ECC2 … Level2. • ECC3 … Level3. • ECC4 … Level4. • ECC5 … Level5. • ECC6 … Level6. • ECC7 … Level7. • ECC8 … Level8.	com.starmicronics.starioextension.ICommandBuilder.Pdf417Level
module	Module X direction size.	int
aspect	Module aspect ratio.	int

Return value

Description	Object type
-	-

Example

```
public static byte[] createData(Emulation emulation) {
    byte[] data = "Hello World.".getBytes();

    ICommandBuilder builder = StarIoExt.createCommandBuilder(emulation);

    builder.beginDocument();

    builder.appendPdf417WithAbsolutePosition(data, 0, 1, Pdf417Level.ECC0, 2, 2, 40);
    builder.appendUnitFeed(32);

    builder.appendCutPaper(CutPaperAction.PartialCutWithFeed);

    builder.endDocument();

    return builder.getCommands();
}
```

Refer to ApiFunctions.java and each Command Specifications.

8.30 appendPdf417WithAlignment Method

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

Declaration

void appendPdf417WithAlignment(byte[] data, int line, int column, Pdf417Level level, int module, int aspect, AlignmentPosition position);

Parameter

Name	Description	Object type
position	Alignment position. • Left … Left alignment. • Center … Center alignment. • Right … Right alignment.	com.starmicronics.starioextension.ICommandBuilder.AlignmentPosition
data	PDF417 data.	byte[]
line	Number of lines.	int
column	Number of columns.	int
level	PDF417 ECC (security level). • ECC0 … Level0. • ECC1 … Level1. • ECC2 … Level2. • ECC3 … Level3. • ECC4 … Level4. • ECC5 … Level5. • ECC6 … Level6. • ECC7 … Level7. • ECC8 … Level8.	com.starmicronics.starioextension.ICommandBuilder.Pdf417Level
module	Module X direction size.	int
aspect	Module aspect ratio.	int

Return value

Description	Object type
-	-

Example

```
public static byte[] createData(Emulation emulation) {
    byte[] data = "Hello World.".getBytes();

    ICommandBuilder builder = StarIoExt.createCommandBuilder(emulation);

    builder.beginDocument();

    builder.appendPdf417WithAlignment(data, 0, 1, Pdf417Level.ECC0, 2, 2, AlignmentPosition.Center);
    builder.appendUnitFeed(32);

    builder.appendPdf417WithAlignment(data, 0, 1, Pdf417Level.ECC0, 2, 2, AlignmentPosition.Right);
    builder.appendUnitFeed(32);

    builder.appendCutPaper(CutPaperAction.PartialCutWithFeed);

    builder.endDocument();

    return builder.getCommands();
}
```

Refer to ApiFunctions.java and each Command Specifications.

8.31 appendQrCode Method

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

Declaration

void appendQrCode(byte[] data, QrCodeModel model, QrCodeLevel level, int cell);

Parameter

Name	Description	Object type
data	QR code data.	byte[]
model	QR code model. • No1 … Model1. • No2 … Model2.	com.starmicronics.stario extension.ICommandBuilder.QrCodeModel
level	QR code mistake correction level. • L … Level L. • M … Level M. • Q … Level Q. • H … Level H.	com.starmicronics.stario extension.ICommandBuilder.QrCodeLevel
cell	QR code cell size.	int

Return value

Description	Object type
-	-

Example

```
public static byte[] createData(Emulation emulation) {
    byte[] data = "Hello World.".getBytes();

    ICommandBuilder builder = StarIoExt.createCommandBuilder(emulation);

    builder.beginDocument();

    builder.appendQrCode(data, QrCodeModel.No2, QrCodeLevel.L, 4);
    builder.appendUnitFeed(32);

    builder.appendCutPaper(CutPaperAction.PartialCutWithFeed);

    builder.endDocument();

    return builder.getCommands();
}
```

Refer to ApiFunctions.java and each Command Specifications.

8.32 appendQrCodeWithAbsolutePosition Method

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

Declaration

void appendQrCodeWithAbsolutePosition(byte[] data, QrCodeModel model, QrCodeLevel level, int cell, int position);

Parameter

Name	Description	Object type
position	Absolute position. (Units : Dots)	int
data	QR code data.	byte[]
model	QR code model. • No1 … Model1. • No2 … Model2.	com.starmicronics.stario extension.ICommandBuilder.QrCodeModel
level	QR code mistake correction level. • L … Level L. • M … Level M. • Q … Level Q. • H … Level H.	com.starmicronics.stario extension.ICommandBuilder.QrCodeLevel
cell	QR code cell size.	int

Return value

Description	Object type
-	-

Example

```
public static byte[] createData(Emulation emulation) {
    byte[] data = "Hello World.".getBytes();

    ICommandBuilder builder = StarIoExt.createCommandBuilder(emulation);

    builder.beginDocument();

    builder.appendQrCodeWithAbsolutePosition(data, QrCodeModel.No2, QrCodeLevel.L, 4, 40);
    builder.appendUnitFeed(32);

    builder.appendCutPaper(CutPaperAction.PartialCutWithFeed);

    builder.endDocument();

    return builder.getCommands();
}
```

Refer to ApiFunctions.java and each Command Specifications.

8.33 appendQrCodeWithAlignment Method

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

Declaration

void appendQrCodeWithAlignment(byte[] data, QrCodeModel model, QrCodeLevel level, int cell, AlignmentPosition position);

Parameter

Name	Description	Object type
position	Alignment position. • Left … Left alignment. • Center … Center alignment. • Right … Right alignment.	com.starmicronics.starioextension.ICommandBuilder.AlignmentPosition
data	QR code data.	byte[]
model	QR code model. • No1 … Model1. • No2 … Model2.	com.starmicronics.starioextension.ICommandBuilder.QrCodeModel
level	QR code mistake correction level. • L … Level L. • M … Level M. • Q … Level Q. • H … Level H.	com.starmicronics.starioextension.ICommandBuilder.QrCodeLevel
cell	QR code cell size.	int

Return value

Description	Object type
-	-

Example

```
public static byte[] createData(Emulation emulation) {
    byte[] data = "Hello World.".getBytes();

    ICommandBuilder builder = StarIoExt.createCommandBuilder(emulation);

    builder.beginDocument();

    builder.appendQrCodeWithAlignment(data, QrCodeModel.No2. QrCodeLevel.L, 4, AlignmentPosition.Center);
    builder.appendUnitFeed(32);

    builder.appendQrCodeWithAlignment(data, QrCodeModel.No2, QrCodeLevel.L, 4, AlignmentPosition.Right);
    builder.appendUnitFeed(32);

    builder.appendCutPaper(CutPaperAction.PartialCutWithFeed);

    builder.endDocument();

    return builder.getCommands();
}
```

Refer to ApiFunctions.java and each Command Specifications.

8.34 appendBitmap Method

Print command of the bitmap is generated and added to the command buffer.

Declaration

void appendBitmap(Bitmap bitmap, boolean diffusion, int width, boolean bothScale, BitmapConverterRotation rotation);

void appendBitmap(Bitmap bitmap, boolean diffusion, BitmapConverterRotation rotation);

void appendBitmap(Bitmap bitmap, boolean diffusion, int width, boolean bothScale);

void appendBitmap(Bitmap bitmap, boolean diffusion);

Parameter

Name	Description	Object type
bitmap	Source bitmap object.	android.graphics.Bitmap
diffusion	Random dither. • true … Valid • false … Invalid	boolean
width	Bitmap width after conversion. (Units : Dots)	int
bothScale	Height is changed according to the conversion rate of the width property. • true … Valid. • false … Invalid.	boolean
rotation	Rotation. • Normal … Rotated 0. • Right90 … Rotated 90. • Left90 … Rotated 270. • Rotate180 … Rotated 180.	com.starmicronics.starioextension.ICommandBuilder.BitmapConverterRotation

Return value

Description	Object type
-	-

Example

```
public static byte[] createData(Emulation emulation, int width, Context context) {
    Bitmap starLogoBitmap = BitmapFactory.decodeResource(context.getResources(), R.drawable.star_logo_image);

    ICommandBuilder builder = StarIoExt.createCommandBuilder(emulation);

    builder.beginDocument();

    builder.append("\n*Normal*\n".getBytes());
    builder.appendBitmap(starLogoBitmap, true);

    builder.append("\n*width:Full, bothScale:true*\n".getBytes());
    builder.appendBitmap(starLogoBitmap, true, width, true);
    builder.append("\n*width:Full, bothScale:false*\n".getBytes());
    builder.appendBitmap(starLogoBitmap, true, width, false);

    builder.append("\n*Rotate180*\n".getBytes());
    builder.appendBitmap(starLogoBitmap, true, BitmapConverterRotation.Rotate180);

    builder.appendCutPaper(CutPaperAction.PartialCutWithFeed);

    builder.endDocument();

    return builder.getCommands();
}
```

Refer to ApiFunctions.java .

8.35 appendBitmapWithAbsolutePosition Method

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

Declaration

void appendBitmapWithAbsolutePosition(Bitmap bitmap, boolean diffusion, int width, boolean bothScale, BitmapConverterRotation rotation, int position);

void appendBitmapWithAbsolutePosition(Bitmap bitmap, boolean diffusion, BitmapConverterRotation rotation, int position);

void appendBitmapWithAbsolutePosition(Bitmap bitmap, boolean diffusion, int width, boolean bothScale, int position);

void appendBitmapWithAbsolutePosition(Bitmap bitmap, boolean diffusion, int position);

Parameter

Name	Description	Object type
position	Absolute position. (Units : Dots)	int
bitmap	Source bitmap object.	android.graphics.Bitmap
diffusion	Random dither. • true … Valid • false … Invalid	boolean
width	Bitmap width after conversion. (Units : Dots)	int
bothScale	Height is changed according to the conversion rate of the width property. • true … Valid. • false … Invalid.	boolean
rotation	Rotation. • Normal … Rotated 0. • Right90 … Rotated 90. • Left90 … Rotated 270. • Rotate180 … Rotated 180.	com.starmicronics.starioextension.ICommandBuilder.BitmapConverterRotation

Return value

Description	Object type
-	-

Example

```
public static byte[] createData(Emulation emulation, int width, Context context) {
    Bitmap starLogoBitmap = BitmapFactory.decodeResource(context.getResources(), R.drawable.star_logo_image);

    ICommandBuilder builder = StarIoExt.createCommandBuilder(emulation);

    builder.beginDocument();

    builder.append("\n*Normal, AbsolutePosition:40*\n".getBytes());
    builder.appendBitmapWithAbsolutePosition(starLogoBitmap, true, 40);

    builder.append("\n*width:Full, bothScale:true, AbsolutePosition:40*\n".getBytes());
    builder.appendBitmap(starLogoBitmap, true, width, true, 40);
    builder.append("\n*width:Full, bothScale:false, AbsolutePosition:40*\n".getBytes());
    builder.appendBitmap(starLogoBitmap, true, width, false, 40);

    builder.append("\n*Rotate180, AbsolutePosition:40*\n".getBytes());
    builder.appendBitmapWithAbsolutePosition(starLogoBitmap, true, BitmapConverterRotation.Rotate180, 40);

    builder.appendCutPaper(CutPaperAction.PartialCutWithFeed);

    builder.endDocument();

    return builder.getCommands();
}
```

Refer to ApiFunctions.java.

8.36 appendBitmapWithAlignment Method

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

Declaration

void appendBitmapWithAlignment(Bitmap bitmap, boolean diffusion, int width, boolean bothScale, BitmapConverterRotation rotation, AlignmentPosition position);

void appendBitmapWithAlignment(Bitmap bitmap, boolean diffusion, BitmapConverterRotation rotation, AlignmentPosition position);

void appendBitmapWithAlignment(Bitmap bitmap, boolean diffusion, int width, boolean bothScale, AlignmentPosition position);

void appendBitmapWithAlignment(Bitmap bitmap, boolean diffusion, AlignmentPosition position);

Parameter

Name	Description	Object type
position	Alignment position. • Left … Left alignment. • Center … Center alignment. • Right … Right alignment.	com.starmicronics.starioextension.ICommandBuilder.AlignmentPosition
bitmap	Source bitmap object.	android.graphics.Bitmap
diffusion	Random dither. • true … Valid • false … Invalid	boolean
Width	Bitmap width after conversion. (Units : Dots)	int
bothScale	Height is changed according to the conversion rate of the width property. • true … Valid. • false … Invalid.	boolean
rotation	Rotation. • Normal … Rotated 0. • Right90 … Rotated 90. • Left90 … Rotated 270. • Rotate180 … Rotated 180.	com.starmicronics.starioextension.ICommandBuilder.BitmapConverterRotation

Return value

Description	Object type
-	-

Example

```
public static byte[] createData(Emulation emulation, int width, Context context) {
    Bitmap starLogoBitmap = BitmapFactory.decodeResource(context.getResources(), R.drawable.star_logo_image);

    ICommandBuilder builder = StarIoExt.createCommandBuilder(emulation);

    builder.beginDocument();

    builder.append("\n*Normal, Alignment:Center*\n".getBytes());
    builder.appendBitmapWithAlignment(starLogoBitmap, true, AlignmentPosition.Center);

    builder.append("\n*width:Full, bothScale:true, Alignment:Center*\n".getBytes());
    builder.appendBitmapWithAlignment(starLogoBitmap, true, width, true, AlignmentPosition.Center);
    builder.append("\n*width:Full, bothScale:false, Alignment:Center*\n".getBytes());
    builder.appendBitmapWithAlignment(starLogoBitmap, true, width, false, AlignmentPosition.Center);

    builder.append("\n*Rotate180, Alignment:Center*\n".getBytes());
    builder.appendBitmapWithAlignment(starLogoBitmap, true, BitmapConverterRotation.Rotate180,
AlignmentPosition.Center);

    builder.appendCutPaper(CutPaperAction.PartialCutWithFeed);

    builder.endDocument();

    return builder.getCommands();
}
```

Refer to ApiFunctions.java.

8.37 appendBlackMark Method

Black mark command is generated and added to the command buffer.

Declaration

void appendBlackMark(BlackMarkType type);

Parameter

Name	Description	Object type
type	Black mark. • Invalid … Black mark invalid. • Valid … Black mark valid. • ValidWithDetection … Black mark valid with detection.	com.starmicronics.stario extension.ICommandBuilder.BlackMarkType

Return value

Description	Object type
-	-

Example

```
public static byte[] createData(Emulation emulation) {
    byte[] data = "Hello World.\n".getBytes();

    ICommandBuilder builder = StarIoExt.createCommandBuilder(emulation);

    builder.beginDocument();

    builder.appendBlackMark(BlackMarkType.Valid);

    builder.append(data);

    builder.appendCutPaper(CutPaperAction.PartialCutWithFeed);

//  builder.appendBlackMark(BlackMarkType.Invalid);

    builder.endDocument();

    return builder.getCommands();
}
```

Refer to ApiFunctions.java.

8.38 beginPageMode Method

Begin page mode command is generated and added to the command buffer.

Declaration

void beginPageMode(Rect rect, BitmapConverterRotation rotation);

Parameter

Name	Description	Object type
rect	Location and size. (Units : Dots)	android.graphics.Rect
rotation	Print direction. • Normal … Rotated 0. • Right90 … Rotated 90. • Left90 … Rotated 270. • Rotate180 … Rotated 180.	com.starmicronics.starioextension.ICommandBuilder.BitmapConverterRotation

Return value

Description	Object type
-	-

Example

```
public static byte[] createData(Emulation emulation, int width) {
    byte[] data = "Hello World.\n".getBytes();

    int left = 0;
    int top = 0;
    int height = 30 * 8;     // 30mm!!!

    ICommandBuilder builder = StarIoExt.createCommandBuilder(emulation);

    builder.beginDocument();

    builder.append("\n*Rotate180 Text*\n".getBytes());

    Rect rect = new Rect(left, top, left + width, top + height);

    builder.beginPageMode(rect, BitmapConverterRotation.Rotate180);

    builder.appendPageModeVerticalAbsolutePosition(height / 2);

    builder.appendAbsolutePosition(data, width / 2);

    builder.endPageMode();

    builder.appendCutPaper(CutPaperAction.PartialCutWithFeed);

    builder.endDocument();

    return builder.getCommands();
}
```

Refer to ApiFunctions.java.

8.39 endPageMode Method

End page mode command is generated and added to the command buffer.

Declaration

void endPageMode();

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
-	-

Example

```
public static byte[] createData(Emulation emulation, int width) {
    byte[] data = "Hello World.\n".getBytes();

    int left = 0;
    int top = 0;
    int height = 30 * 8;     // 30mm!!!

    ICommandBuilder builder = StarIoExt.createCommandBuilder(emulation);

    builder.beginDocument();

    builder.append("\n*Rotate180 Text*\n".getBytes());

    Rect rect = new Rect(left, top, left + width, top + height);

    builder.beginPageMode(rect, BitmapConverterRotation.Rotate180);

    builder.appendPageModeVerticalAbsolutePosition(height / 2);

    builder.appendAbsolutePosition(data, width / 2);

    builder.endPageMode();

    builder.appendCutPaper(CutPaperAction.PartialCutWithFeed);

    builder.endDocument();

    return builder.getCommands();
}
```

Refer to ApiFunctions.java.

8.40 appendPageModeVerticalAbsolutePosition Method

Vertical absolute position in page mode command is generated and added to the command buffer.

Declaration

void appendPageModeVerticalAbsolutePosition(int position);

Parameter

Name	Description	Object type
position	Vertical absolute position in page mode. (Units : Dots)	int

Return value

Description	Object type
-	-

Example

```
public static byte[] createData(Emulation emulation, int width) {
    byte[] data = "Hello World.\n".getBytes();

    int left = 0;
    int top = 0;
    int height = 30 * 8;     // 30mm!!!

    ICommandBuilder builder = StarIoExt.createCommandBuilder(emulation);

    builder.beginDocument();

    builder.append("\n*Rotate180 Text*\n".getBytes());

    Rect rect = new Rect(left, top, left + width, top + height);

    builder.beginPageMode(rect, BitmapConverterRotation.Normal);

    builder.appendPageModeVerticalAbsolutePosition(height / 2);

    builder.appendAbsolutePosition(data, width / 2);

    builder.endPageMode();

    builder.appendCutPaper(CutPaperAction.PartialCutWithFeed);

    builder.endDocument();

    return builder.getCommands();
}
```

Refer to ApiFunctions.java.

8.41 appendPageModeRotation Method

Print direction in page mode command is generated and added to the command buffer.

Declaration

void appendPageModeRotation(BitmapConverterRotation rotation);

Parameter

Name	Description	Object type
rotation	Print direction. • Normal … Rotated 0. • Right90 … Rotated 90. • Left90 … Rotated 270. • Rotate180 … Rotated 180.	com.starmicronics.stario extension.ICommandBuilder.BitmapConverterRotation

Return value

Description	Object type
-	-

Example

```
public static byte[] createData(Emulation emulation, int width) {
    byte[] data = "Hello World.\n".getBytes();

    int left = 0;
    int top = 0;
    int height = 30 * 8;     // 30mm!!!

    ICommandBuilder builder = StarIoExt.createCommandBuilder(emulation);

    builder.beginDocument();

    builder.append("\n*Mixed Text*\n".getBytes());

    Rect rect = new Rect(left, top, left + width, top + height);

    builder.beginPageMode(rect, BitmapConverterRotation.Normal);

    builder.appendPageModeVerticalAbsolutePosition(height / 2);

    builder.appendAbsolutePosition(data, width / 2);

    builder.appendPageModeRotation(BitmapConverterRotation.Rotate180);

    builder.appendPageModeVerticalAbsolutePosition(height / 2);

    builder.appendAbsolutePosition(data, width / 2);

    builder.endPageMode();

    builder.appendCutPaper(CutPaperAction.PartialCutWithFeed);

    builder.endDocument();

    return builder.getCommands();
}
```

Refer to ApiFunctions.java.

8.42 getCommands Method

Gets the command buffer.

Declaration

byte[] getCommands();

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
The command buffer.	byte[]

Example

```
public static byte[] createData(Emulation emulation) {
    byte[] data = "Hello World.\n".getBytes();

    ICommandBuilder builder = StarIoExt.createCommandBuilder(emulation);

    builder.beginDocument();

    builder.append(data);

    builder.appendCutPaper(CutPaperAction.PartialCutWithFeed);

    builder.endDocument();

    return builder.getCommands();
}
```

Refer to ApiFunctions.java.

8.43 InitializationType Constants

Initialization constants.

Declaration

```
enum InitializationType {
    Command
//  Reset,
//  ResetWithPrint
}
```

Constants

Name	Description
Command	Command initialization.
~~Reset~~	~~Reset printer.~~
~~ResetWithPrint~~	~~Reset printer (execute self print).~~

Refer to ApiFunctions.java.

8.44 FontStyleType Constants

Font style constants.

Declaration

```
enum FontStyleType {
    A,
    B
}
```

Constants

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

Refer to ApiFunctions.java and each Command Specifications.

8.45 CodePageType Constants

Code Page constants.

Declaration

```
enum CodePageType {
    CP437,
    CP737,
    CP772,
    CP774,
    CP851,
    CP852,
    CP855,
    CP857,
    CP858,
    CP860,
    CP861,
    CP862,
    CP863,
    CP864,
    CP865,
    CP866,
    CP869,
    CP874,
    CP928,
    CP932,
    CP998,
    CP999,
    CP1001,
    CP1250,
    CP1251,
    CP1252,
    CP2001,
    CP3001,
    CP3002,
    CP3011,
    CP3012,
    CP3021,
    CP3041,
    CP3840,
    CP3841,
    CP3843,
    CP3844,
    CP3845,
    CP3846,
    CP3847,
    CP3848,
    UTF8,
    Blank
}
```

Constants

Name	Description
CP437	CodePage437 (USA, Std. Europe).
CP737	Codepage 737 (Greek).
CP772	Codepage 772 (Lithuanian).
CP774	Codepage 774 (Lithuanian).
CP851	Codepage 851 (Greek).
CP852	Codepage 852 (Latin-2).
CP855	Codepage 855 (Cyrillic Bulgarian).
CP857	Codepage 857 (Turkey).
CP858	Codepage 858 (Multilingual).
CP860	Codepage 860 (Portuguese).
CP861	Codepage 861 (Icelandic).
CP862	Codepage 862 (Israel (Hebrew)).
CP863	Codepage 863 (Canadian French).
CP864	Codepage 864 (Arabic).
CP865	Codepage 865 (Nordic).
CP866	Codepage 866 (Cyrillic Russian).
CP869	Codepage 869 (Greek).
CP874	Codepage 874 (Thai).
CP928	Codepage 928 (Greek).
CP932	Katakana.
CP998	Normal.
CP999	Codepage 1252 (Windows Latin-1).
CP1001	Codepage 1001 (Arabic).
CP1250	Codepage 1250 (Windows Latin-2).
CP1251	Codepage 1251 (Windows Cyrillic).
CP1252	Codepage 1252 (Windows Latin-1).
CP2001	Codepage 2001 (Lithuanian-KBL).
CP3001	Codepage 3001 (Estonian-1).
CP3002	Codepage 3002 (Estonian-2).
CP3011	Codepage 3011 (Latvian-1).
CP3012	Codepage 3012 (Latvian-2).
CP3021	Codepage 3021 (Bulgarian).
CP3041	Codepage 3041 (Maltese).
CP3840	Codepage 3840 (IBM-Russian).
CP3841	Codepage 3841 (Gost).
CP3843	Codepage 3843 (Polish).
CP3844	Codepage 3844 (CS2).
CP3845	Codepage 3845 (Hungarian).
CP3846	Codepage 3846 (Turkish).
CP3847	Codepage 3847 (Brazil-ABNT).
CP3848	Codepage 3848 (Brazil-ABICOMP).
UTF8	UTF-8.
Blank	User Setting Blank Code Page.

Refer to ApiFunctions.java and each Command Specifications.

8.46 InternationalType Constants

International character constants.

Declaration

```
enum InternationalType {
    USA,
    France,
    Germany,
    UK,
    Denmark,
    Sweden,
    Italy,
    Spain,
    Japan,
    Norway,
    Denmark2,
    Spain2,
    LatinAmerica,
    Korea,
    Ireland,
    Legal
}
```

Constants

Name	Description
USA	USA.
France	France.
Germany	Germany.
UK	UK.
Denmark	Denmark.
Sweden	Sweden.
Italy	Italy.
Spain	Spain.
Japan	Japan.
Norway	Norway.
Denmark2	Denmark ||.
Spain2	Spain ||.
LatinAmerica	Latin America.
Korea	Korea.
Ireland	Ireland.
Legal	Legal.

Refer to ApiFunctions.java and each Command Specifications.

8.47 LogoSize Constants

Logo size constants.

Declaration

```
enum LogoSize {
    Normal,
    DoubleWidth,
    DoubleHeight,
    DoubleWidthDoubleHeight
}
```

Constants

Name	Description
Normal	Normal.
DoubleWidth	Double Width.
DoubleHeight	Double Height.
DoubleWidthDoubleHeight	Double Width / Height.

Refer to ApiFunctions.java and each Command Specifications.

8.48 AlignmentPosition Constants

Alignment position constants.

Declaration

```
enum AlignmentPosition {
    Left,
    Center,
    Right
}
```

Constants

Name	Description
Left	Left alignment.
Center	Center alignment.
Right	Right alignment.

Refer to ApiFunctions.java and each Command Specifications.

8.49 CutPaperAction Constants

Paper cut constants.

Declaration

```
enum CutPaperAction {
    FullCut,
    PartialCut,
    FullCutWithFeed,
    PartialCutWithFeed
}
```

Constants

Name	Description
FullCut	Full Cut.
PartialCut	Partial Cut.
FullCutWithFeed	Full Cut with Feed.
PartialCutWithFeed	Partial Cut with Feed.

Refer to ApiFunctions.java and each Command Specifications.

8.50 PeripheralChannel Constants

Peripheral channel constants.

Declaration

```
enum PeripheralChannel {
    No1,
    No2
}
```

Constants

Name	Description
No1	Channel1.
No2	Channel2.

Refer to ApiFunctions.java.

8.51 SoundChannel Constants

Sound channel constants.

Declaration

```
enum SoundChannel {
    No1,
    No2
}
```

Constants

Name	Description
No1	Channel1.
No2	Channel2.

Refer to ApiFunctions.java.

8.52 BarcodeSymbology Constants

Barcode symbology constants.

Declaration

```
enum BarcodeSymbology {
    UPCE,
    UPCA,
    JAN8,
    JAN13,
    Code39,
    ITF,
    Code128,
    Code93,
//  Codabar,
    NW7
}
```

Constants

Name	Description
UPCE	UPC-E.
UPCA	UPC-A.
JAN8	JAN/EAN8.
JAN13	JAN/EAN13.
Code39	Code39.
ITF	ITF.
Code128	Code128.
Code93	Code93.
~~Codabar~~	~~Codabar.~~
NW7	NW7.

Refer to ApiFunctions.java and each Command Specifications.

8.53 BarcodeWidth Constants

Barcode width constants.

Declaration

```
enum BarcodeWidth {
    Mode1,
    Mode2,
    Mode3,
    Mode4,
    Mode5,
    Mode6,
    Mode7,
    Mode8,
    Mode9
}
```

Constants

Name	Description
Mode1	Mode1.
Mode2	Mode2.
Mode3	Mode3.
Mode4	Mode4.
Mode5	Mode5.
Mode6	Mode6.
Mode7	Mode7.
Mode8	Mode8.
Mode9	Mode9.

Refer to ApiFunctions.java and each Command Specifications.

8.54 Pdf417Level Constants

PDF417 ECC (security level) constants.

Declaration

```
enum Pdf417Level {
    ECC0,
    ECC1,
    ECC2,
    ECC3,
    ECC4,
    ECC5,
    ECC6,
    ECC7,
    ECC8
}
```

Constants

Name	Description
ECC0	Level0.
ECC1	Level1.
ECC2	Level2.
ECC3	Level3.
ECC4	Level4.
ECC5	Level5.
ECC6	Level6.
ECC7	Level7.
ECC8	Level8.

Refer to ApiFunctions.java and each Command Specifications.

8.55 QrCodeModel Constants

QR code model constants.

Declaration

```
enum QrCodeModel {
    No1,
    No2
}
```

Constants

Name	Description
No1	Model1.
No2	Model2.

Refer to ApiFunctions.java and each Command Specifications.

8.56 QrCodeLevel Constants

QR code mistake correction level constants.

Declaration

```
enum QrCodeLevel {
    L,
    M,
    Q,
    H
}
```

Constants

Name	Description
L	Level L.
M	Level M.
Q	Level Q.
H	Level H.

Refer to ApiFunctions.java and each Command Specifications.

8.57 BitmapConverterRotation Constants

Bitmap rotation constants.

Declaration

```
enum BitmapConverterRotation {
    Normal,
    Right90,
    Left90,
    Rotate180
}
```

Constants

Name	Description
Normal	Rotated 0.
Right90	Rotated 90.
Left90	Rotated 270.
Rotate180	Rotated 180.

Refer to ApiFunctions.java.

8.58 BlackMarkType Constants

Black mark constants.

Declaration

```
enum BlackMarkType {
    Invalid,
    Valid,
    ValidWithDetection
}
```

Constants

Name	Description
Invalid	Black mark invalid.
Valid	Black mark valid.
ValidWithDetection	Black mark valid with detection.

Refer to ApiFunctions.java and each Command Specifications.

9 IDisplayCommandBuilder Interface (starioextension.jar)

An interface to provide functions to generate commands for the customer display control.

Method

Name	Description
append	Adds data (text or command) to the command buffer.
appendBackSpace	Generates a backspace command, and then adds it to the command buffer.
appendHorizontalTab	Generates a horizontal tab command, and then adds it to the command buffer.
appendLineFeed	Generates a line feed command, and then adds it to the command buffer.
appendCarriageReturn	Generates a carriage-return command, and then adds it to the command buffer.
appendBitmap	Generates a graphic display command, and then adds it to the command buffer.
appendInternational	Generates an international character specification command, and then adds it to the command buffer.
appendCodePage	Generates a code page specification command, and then adds it to the command buffer.
appendDeleteToEndOfLine	Generates a command to clear the screen until the end of the line, and then adds it to the command buffer.
appendClearScreen	Generates a command to clear the screen, and then adds it to the command buffer.
appendHomePosition	Generates a command to move the cursor to the home position, and then adds it to the command buffer.
appendTurnOn	Generates a command to turn on/off the backlight, and then adds it to the command buffer.
appendSpecifiedPosition	Generates a command to move the cursor to the specified position, and then adds it to the command buffer.
appendCursorMode	Generates a command to change the cursor mode, and then adds it to the command buffer.
appendContrastMode	Generates a command to change the contrast mode, and then adds it to the command buffer.
appendUserDefinedCharacter	Generates a command to register user-defined characters (SBCS), and then adds it to the command buffer.
appendUserDefinedDbcsCharacter	Generates a command to register user-defined characters (DBCS), and then adds it to the command buffer.
getCommands	Gets the command buffer (generated command).
getPassThroughCommands	Gets a command sequence with the pass-through command to the printer added at the beginning of the command buffer (generated command).

Constants

Name	Description
InternationalType	International character constants.
CodePageType	Code Page constants.
CursorMode	Cursor Mode constants.
ContrastMode	ContrastMode constants.

9.1 Model : IDisplayCommandBuilder Interface

The IDisplayCommandBuilder interface is for mPOP/TSP100IIIU only.

9.2 append Method

Adds data (text or command) to the command buffer.

Declaration

void append(byte data);

void append(byte[] data);

Parameter

Name	Description	Object type
data	Data (Text,Command)	byte byte[]

Return value

Description	Object type
-	-

Example

```
public static byte[] createTextPattern(int number) {
    IDisplayCommandBuilder builder = StarIoExt.createDisplayCommandBuilder(DisplayModel.SCD222);

    builder.appendClearScreen();
    builder.appendCursorMode(CursorMode.Off);
    builder.appendHomePosition();

    byte[] pattern;

    ...

    builder.append(pattern);

    return builder.getPassThroughCommands();
}
```

Refer to DisplayFunctions.java.

9.3 appendBackSpace Method

Generates a backspace command, and then adds it to the command buffer.

Declaration

void appendBackSpace();

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
-	-

9.4 appendHorizontalTab Method

Generates a horizontal tab command, and then adds it to the command buffer.

Declaration

void appendHorizontalTab();

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
-	-

9.5 appendLineFeed Method

Generates a line feed command, and then adds it to the command buffer.

Declaration

void appendLineFeed();

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
-	-

9.6 appendCarriageReturn Method

Generates a carriage-return command, and then adds it to the command buffer.

Declaration

void appendCarriageReturn();

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
-	-

9.7 appendBitmap Method

Generates a graphic display command, and then adds it to the command buffer.

Declaration

void appendBitmap(Bitmap bitmap, boolean diffusion);

Parameter

Name	Description	Object type
bitmap	Image you want to display Specify the instance of the 160 × 40 dots monochrome Bitmap class. If a different sized Bitmap is specified, it is resized to 160 × 40 dots. The Bitmap pixels are automatically converted to monochrome value.	Bitmap
diffusion	Random dither. • true … Valid • false … Invalid	boolean

Return value

Description	Object type
-	-

Example

```
public static byte[] createGraphicPattern(int number, Resources resources) {
    IDisplayCommandBuilder builder = StarIoExt.createDisplayCommandBuilder(DisplayModel.SCD222);

    builder.appendClearScreen();
    builder.appendCursorMode(CursorMode.Off);
//  builder.appendHomePosition();

    Bitmap bitmap;

    switch (number) {
        default:
        case 0:
            bitmap = BitmapFactory.decodeResource(resources, R.drawable.display_image_1);
            break;
        case 1:
            bitmap = BitmapFactory.decodeResource(resources, R.drawable.display_image_2);
            break;
        case 2:
            bitmap = BitmapFactory.decodeResource(resources, R.drawable.display_image_3);
            break;
        case 3:
            bitmap = BitmapFactory.decodeResource(resources, R.drawable.display_image_4);
            break;
    }

    builder.appendBitmap(bitmap, false);

    return builder.getPassThroughCommands();
}
```

Refer to DisplayFunctions.java.

9.8 appendInternational Method

Generates an international character specification command, and then adds it to the command buffer.

Declaration

void appendInternational(InternationalType internationalType);

Parameter

Name	Description	Object type
internationalType	International character constants.	com.starmicronics.starioextension.IDisplayCommandBuilder.InternationalType

Return value

Description	Object type
-	-

Example

```
public static byte[] createCharacterSet(InternationalType internationalType, CodePageType codePageType) {
    IDisplayCommandBuilder builder = StarIoExt.createDisplayCommandBuilder(DisplayModel.SCD222);

    builder.appendClearScreen();
    builder.appendCursorMode(CursorMode.Off);
    builder.appendHomePosition();

    builder.appendInternational(internationalType);
    builder.appendCodePage(codePageType);

    ...

    switch (codePageType) {
        default:                builder.append(pattern1);   break;      //
CP437,Katakana,CP850,CP860,CP863,CP865,CP1252,CP866,CP852,CP858
        case Japanese:          builder.append(pattern2);   break;
        case SimplifiedChinese:     builder.append(pattern3);   break;
        case TraditionalChinese:    builder.append(pattern4);   break;
        case Hangul:            builder.append(pattern5);   break;
    }

    return builder.getPassThroughCommands();
}
```

Refer to DisplayFunctions.java.

9.9 appendCodePage Method

Generates a code page specification command, and then adds it to the command buffer.

Declaration

void appendCodePage(CodePageType codePageType);

Parameter

Name	Description	Object type
codePageType	Code page constants.	com.starmicronics.starioextension.IDisplayCommandBuilder.CodePageType

Return value

Description	Object type
-	-

Example

```
public static byte[] createCharacterSet(InternationalType internationalType, CodePageType codePageType) {
    IDisplayCommandBuilder builder = StarIoExt.createDisplayCommandBuilder(DisplayModel.SCD222);

    builder.appendClearScreen();
    builder.appendCursorMode(CursorMode.Off);
    builder.appendHomePosition();

    builder.appendInternational(internationalType);
    builder.appendCodePage(codePageType);

    ...

    switch (codePageType) {
        default:                builder.append(pattern1);   break;      //
CP437,Katakana,CP850,CP860,CP863,CP865,CP1252,CP866,CP852,CP858
        case Japanese:          builder.append(pattern2);   break;
        case SimplifiedChinese:     builder.append(pattern3);   break;
        case TraditionalChinese:    builder.append(pattern4);   break;
        case Hangul:            builder.append(pattern5);   break;
    }

    return builder.getPassThroughCommands();
}
```

Refer to DisplayFunctions.java.

9.10 appendDeleteToEndOfLine Method

Generates a command to clear the screen until the end of the line, and then adds it to the command buffer.

Declaration

void appendDeleteToEndOfLine();

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
-	-

9.11 appendClearScreen Method

Generates a command to clear the screen, and then adds it to the command buffer.

Declaration

void appendClearScreen();

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
-	-

Example

```
public static byte[] createTextPattern(int number) {
    IDisplayCommandBuilder builder = StarIoExt.createDisplayCommandBuilder(DisplayModel.SCD222);

    builder.appendClearScreen();
    builder.appendCursorMode(CursorMode.Off);
    builder.appendHomePosition();

    byte[] pattern;

    ...

    builder.append(pattern);

    return builder.getPassThroughCommands();
}
```

Refer to DisplayFunctions.java.

9.12 appendHomePosition Method

Generates a command to move the cursor to the home position, and then adds it to the command buffer.

Declaration

void appendHomePosition();

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
-	-

Example

```
public static byte[] createTextPattern(int number) {
    IDisplayCommandBuilder builder = StarIoExt.createDisplayCommandBuilder(DisplayModel.SCD222);

    builder.appendClearScreen();
    builder.appendCursorMode(CursorMode.Off);
    builder.appendHomePosition();

    byte[] pattern;

    ...

    builder.append(pattern);

    return builder.getPassThroughCommands();
}
```

Refer to DisplayFunctions.java.

9.13 appendTurnOn Method

Generates a command to turn on/off the backlight, and then adds it to the command buffer.

Declaration

void appendTurnOn(boolean turnOn);

Parameter

Name	Description	Object type
turnOn	Backlight ON/OFF	boolean

Return value

Description	Object type
-	-

Example

```
public static byte[] createTurnOn(boolean isTurnOn) {
    IDisplayCommandBuilder builder = StarIoExt.createDisplayCommandBuilder(DisplayModel.SCD222);

    ...

    builder.appendTurnOn(isTurnOn);

    return builder.getPassThroughCommands();
}
```

Refer to DisplayFunctions.java.

9.14 appendSpecifiedPosition Method

Generates a command to move the cursor to the specified position, and then adds it to the command buffer.

Declaration

void appendSpecifiedPosition(int x, int y);

Parameter

Name	Description	Object type
x	Digit position (Leftmost digit is 1)	int
y	Line position (top line is 1)	int

Return value

Description	Object type
-	-

Example

```
public static byte[] createCursorMode(CursorMode mode) {
    IDisplayCommandBuilder builder = StarIoExt.createDisplayCommandBuilder(DisplayModel.SCD222);

    builder.appendClearScreen();
    builder.appendCursorMode(CursorMode.Off);
    builder.appendHomePosition();

    byte[] pattern = {'S', 't', 'a', 'r', ' ', 'M', 'i', 'c', 'r', 'o', 'n', 'i', 'c', 's', ' ', ' ', ' ', ' ', ' ', ' ',
                      'T', 'o', 't', 'a', 'l', ' ', ':', ' ', ' ', ' ', ' ', ' ', ' ', ' ', ' ', ' ', '1', '2', '3', '4', '5'};

    builder.append(pattern);

    builder.appendSpecifiedPosition(20, 2);

    builder.appendCursorMode(mode);

    return builder.getPassThroughCommands();
}
```

Refer to DisplayFunctions.java.

9.15 appendCursorMode Method

Generates a command to change the cursor mode, and then adds it to the command buffer.

Declaration

void appendCursorMode(CursorMode cursorMode);

Parameter

Name	Description	Object type
cursorMode	Cursor mode constants.	com.starmicronics.starioextension.IDisplayCommandBuilder.CursorMode

Return value

Description	Object type
-	-

Example

```
public static byte[] createCursorMode(CursorMode mode) {
    IDisplayCommandBuilder builder = StarIoExt.createDisplayCommandBuilder(DisplayModel.SCD222);

    builder.appendClearScreen();
    builder.appendCursorMode(CursorMode.Off);
    builder.appendHomePosition();

    byte[] pattern = {'S', 't', 'a', 'r', ' ', 'M', 'i', 'c', 'r', 'o', 'n', 'i', 'c', 's', ' ', ' ', ' ', ' ', ' ', ' ',
                      'T', 'o', 't', 'a', 'l', ' ', ':', ' ', ' ', ' ', ' ', ' ', ' ', ' ', ' ', ' ', '1', '2', '3', '4', '5'};

    builder.append(pattern);

    builder.appendSpecifiedPosition(20, 2);

    builder.appendCursorMode(mode);

    return builder.getPassThroughCommands();
}
```

Refer to DisplayFunctions.java.

9.16 appendContrastMode Method

Generates a command to change the contrast mode, and then adds it to the command buffer.

Declaration

void appendContrastMode(ContrastMode contrastMode);

Parameter

Name	Description	Object type
contrastMode	Contrast mode constants.	com.starmicronics.starioextension.IDisplayCommandBuilder.ContrastMode

Return value

Description	Object type
-	-

Example

```
public static byte[] createContrastMode(ContrastMode contrastMode) {
    IDisplayCommandBuilder builder = StarIoExt.createDisplayCommandBuilder(DisplayModel.SCD222);

//  builder.appendClearScreen();
//  builder.appendCursorMode(CursorMode.Off);
//  builder.appendHomePosition();
//
//  byte[] pattern = {'S', 't', 'a', 'r', ' ', 'M', 'i', 'c', 'r', 'o', 'n', 'i', 'c', 's', ' ', ' ', ' ', ' ', ' ', ' ',
//                    ' ', ' ', ' ', ' ', ' ', ' ', ' ', 'S', 't', 'a', 'r', ' ', 'M', 'i', 'c', 'o', 'n', 'i', 'c', 's'};
//
//  builder.append(pattern);

    builder.appendContrastMode(contrastMode);

    return builder.getPassThroughCommands();
}
```

Refer to DisplayFunctions.java.

9.17 appendUserDefinedCharacter Method

Generates a command to register user-defined characters (SBCS), and then adds it to the command buffer.

Declaration

void appendUserDefinedCharacter(int index, int code, byte[] font);

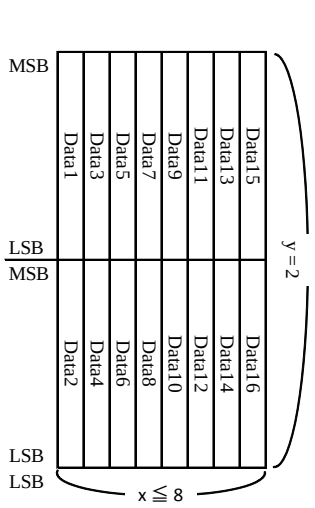
Parameter

Name	Description	Object type
index	Font number 00h ≦ index ≦ 1Fh	int
code	Character code of user-defined character. 20h ≦ code ≦ 7Fh If CodePageType.Japanese is specified with the appendCharacterSet method and the appendCharacterSetCodePage method, the following range is also supported. A0h ≦ code ≦ DFh	int
font	16-byte font data Refer to the font data format of the user-defined characters. Specifying null deletes the user-defined characters of the specified font No.	byte[]

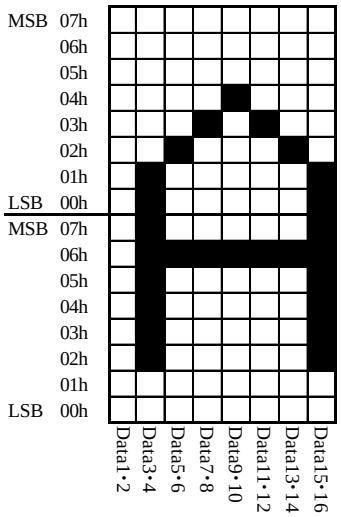
Return value

Description	Object type
-	-

Format of user-defined character font data

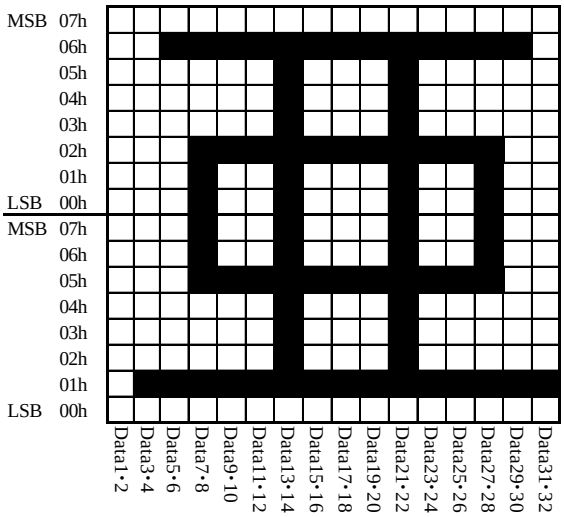


user-defined character (SBCD)



Byte	1	3	5	7	9	11	13	15
Data	00h	03h	04h	08h	10h	08h	04h	03h
Byte	2	4	6	8	10	12	14	16
Data	00h	FCh	40h	40h	40h	40h	40h	FCh

user-defined character (DBCS)



Byte	1	3	5	7	9	11	13	15	17	19	21	23	25	27	29	31
Data	00h	00h	40h	47h	44h	44h	7Fh	44h	44h	44h	7Fh	44h	44h	47h	44h	00h
Byte	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32
Data	00h	02h	02h	E2h	22h	22h	FEh	22h	22h	22h	FEh	22h	22h	E2h	22h	02h

Example

```
public static byte[] createUserDefinedCharacter(boolean set) {
    IDisplayCommandBuilder builder = StarIoExt.createDisplayCommandBuilder(DisplayModel.SCD222);

    builder.appendClearScreen();
    builder.appendCursorMode(CursorMode.Off);
    builder.appendHomePosition();

    builder.appendInternational(InternationalType.USA);
    builder.appendCodePage(CodePageType.Japanese);

    if (set) {
        byte[] font     = {
                (byte) 0x00, (byte) 0x00, (byte) 0x32, (byte) 0x00, (byte) 0x49, (byte) 0x00, (byte) 0x49, (byte) 0x7f, (byte) 0x26,
(byte) 0x48, (byte) 0x00, (byte) 0x48, (byte) 0x00, (byte) 0x30, (byte) 0x00, (byte) 0x00
        };
        byte[] dbcsFont = {
                (byte) 0x00, (byte) 0x00, (byte) 0x00, (byte) 0x00, (byte) 0x00, (byte) 0x00, (byte) 0x00, (byte) 0x00, (byte) 0x03,
(byte) 0x20, (byte) 0x04, (byte) 0x90, (byte) 0x04, (byte) 0x90, (byte) 0x02, (byte) 0x60,
                (byte) 0x00, (byte) 0x00, (byte) 0x07, (byte) 0xf0, (byte) 0x04, (byte) 0x80, (byte) 0x04, (byte) 0x80, (byte) 0x03,
(byte) 0x00, (byte) 0x00, (byte) 0x00, (byte) 0x00, (byte) 0x00, (byte) 0x00, (byte) 0x00
        };
        builder.appendUserDefinedCharacter(0, 0x20, font);
        builder.appendUserDefinedDbcsCharacter(0, 0x8140, dbcsFont);
    }
    else {
        builder.appendUserDefinedCharacter(0, 0x20, null);
        builder.appendUserDefinedDbcsCharacter(0, 0x8140, null);
    }

    byte[] pattern = {
            (byte) 0x5b,(byte) 0x20,(byte) 0x20,(byte) 0x53,(byte) 0x74,(byte) 0x61,(byte) 0x72,(byte) 0x20,(byte) 0x4d,(byte)
0x69,(byte) 0x63,(byte) 0x72,(byte) 0x6f,(byte) 0x6e,(byte) 0x69,(byte) 0x63,(byte) 0x73,(byte) 0x20,(byte) 0x20,(byte)
0x5d,
            (byte) 0x5b,(byte) 0x81,(byte) 0x40,(byte) 0x81,(byte) 0x40,(byte) 0x83,(byte) 0x58,(byte) 0x83,(byte) 0x5e,(byte)
0x81,(byte) 0x5b,(byte) 0x90,(byte) 0xb8,(byte) 0x96,(byte) 0xa7,(byte) 0x81,(byte) 0x40,(byte) 0x81,(byte) 0x40,(byte)
0x5d,
    };
    builder.append(pattern);

    return builder.getPassThroughCommands();
}
```

Refer to DisplayFunctions.java.

9.18 appendUserDefinedDbcsCharacter Method

Generates a command to register user-defined characters (DBCS), and then adds it to the command buffer.

Declaration

void appendUserDefinedDbcsCharacter(int index, int code, byte[] font);

Parameter

Name	Description	Object type
index	Font number 00h ≦ index ≦ 0Fh	int
code	Character code of user-defined character. 20h ≦ code ≦ 7Fh If CodePageType.Japanese is specified with the appendCharacterSet method and the appendCharacterSetCodePage method, the following range is also supported. 80 00h ≦ code ≦ FF FFh	int
font	32-byte font data Refer to the font data format of the user-defined characters. Specifying null deletes the user-defined characters of the specified font No.	byte[]

Return value

Description	Object type
-	-

Example

```
public static byte[] createUserDefinedCharacter(boolean set) {
    IDisplayCommandBuilder builder = StarIoExt.createDisplayCommandBuilder(DisplayModel.SCD222);

    builder.appendClearScreen();
    builder.appendCursorMode(CursorMode.Off);
    builder.appendHomePosition();

    builder.appendInternational(InternationalType.USA);
    builder.appendCodePage(CodePageType.Japanese);

    if (set) {
        byte[] font     = {
                (byte) 0x00, (byte) 0x00, (byte) 0x32, (byte) 0x00, (byte) 0x49, (byte) 0x00, (byte) 0x49, (byte) 0x7f, (byte) 0x26,
(byte) 0x48, (byte) 0x00, (byte) 0x48, (byte) 0x00, (byte) 0x30, (byte) 0x00, (byte) 0x00
        };
        byte[] dbcsFont = {
                (byte) 0x00, (byte) 0x00, (byte) 0x00, (byte) 0x00, (byte) 0x00, (byte) 0x00, (byte) 0x00, (byte) 0x00, (byte) 0x03,
(byte) 0x20, (byte) 0x04, (byte) 0x90, (byte) 0x04, (byte) 0x90, (byte) 0x02, (byte) 0x60,
                (byte) 0x00, (byte) 0x00, (byte) 0x07, (byte) 0xf0, (byte) 0x04, (byte) 0x80, (byte) 0x04, (byte) 0x80, (byte) 0x03,
(byte) 0x00, (byte) 0x00, (byte) 0x00, (byte) 0x00, (byte) 0x00, (byte) 0x00, (byte) 0x00
        };
        builder.appendUserDefinedCharacter(0, 0x20, font);
        builder.appendUserDefinedDbcsCharacter(0, 0x8140, dbcsFont);
    }
    else {
        builder.appendUserDefinedCharacter(0, 0x20, null);
        builder.appendUserDefinedDbcsCharacter(0, 0x8140, null);
    }

    byte[] pattern = {
            (byte) 0x5b,(byte) 0x20,(byte) 0x20,(byte) 0x53,(byte) 0x74,(byte) 0x61,(byte) 0x72,(byte) 0x20,(byte) 0x4d,(byte)
0x69,(byte) 0x63,(byte) 0x72,(byte) 0x6f,(byte) 0x6e,(byte) 0x69,(byte) 0x63,(byte) 0x73,(byte) 0x20,(byte) 0x20,(byte)
0x5d,
            (byte) 0x5b,(byte) 0x81,(byte) 0x40,(byte) 0x81,(byte) 0x40,(byte) 0x83,(byte) 0x58,(byte) 0x83,(byte) 0x5e,(byte)
0x81,(byte) 0x5b,(byte) 0x90,(byte) 0xb8,(byte) 0x96,(byte) 0xa7,(byte) 0x81,(byte) 0x40,(byte) 0x81,(byte) 0x40,(byte)
0x5d,
    };
    builder.append(pattern);

    return builder.getPassThroughCommands();
}
```

Refer to DisplayFunctions.java.

9.19 getCommands Method

Gets the command buffer (generated command).

Declaration

byte[] getCommands();

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
Cmmand buffer (generated command)	byte[]

9.20 getPassThroughCommands Method

Gets a command sequence with the pass-through command to the printer added at the beginning of the command buffer (generated command).

Declaration

byte[] getPassThroughCommands();

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
Cmmand buffer (generated command)	byte[]

Example

```
public static byte[] createTextPattern(int number) {
    IDisplayCommandBuilder builder = StarIoExt.createDisplayCommandBuilder(DisplayModel.SCD222);

    builder.appendClearScreen();
    builder.appendCursorMode(CursorMode.Off);
    builder.appendHomePosition();

    byte[] pattern;

    ...

    builder.append(pattern);

    return builder.getPassThroughCommands();
}
```

Refer to DisplayFunctions.java.

9.21 InternationalType Constants

International character constants.

Declaration

```
enum InternationalType {
    USA,
    France,
    Germany,
    Germany,
    Denmark,
    Sweden,
    Italy,
    Spain,
    Japan,
    Norway,
    Denmark2,
    Spain2,
    LatinAmerica,
    Korea
}
```

Constants

Name	Description
USA	USA
France	France
Germany	Germany
UK	UK.
Denmark	Denmark
Sweden	Sweden
Italy	Italy.
Spain	Spain.
Japan	Japan.
Norway	Norway.
Denmark2	Denmark ||.
Spain2	Spain ||.
LatinAmerica	Latin America.
Korea	Korea.

9.22 CodePageType Constants

Code page constants.

Declaration

```
enum CodePageType {
    CP437,
    Katakana,
    CP850,
    CP860,
    CP863,
    CP865,
    CP1252,
    CP866,
    CP852,
    CP858,
    Japanese,
    SimplifiedChinese,
    TraditionalChinese,
    Hangul
}
```

Constants

Name	Description
CP437	CodePage437 (USA, Std. Europe).
Katakana	Katakana.
CP850	PC850 (Multilingual)
CP860	PC860 (Portuguese)
CP863	PC863 (Canadian-French)
CP865	PC865 (Norwegian)
CP1252	WPC1252
CP866	PC866 [Cyrillic #2]
CP852	PC852 [Latin 2]
CP858	Page 19 [PC858]
Japanese	Japanese font (shift JIS)
SimplifiedChinese	Simplified Chinese (GB2312)
TraditionalChinese	Traditional Chinese (Big5)
Hangul	Hangul (KSC5601)

9.23 CursorMode Constants

Cursor mode constants.

Declaration

```
enum CursorMode {
    Off,
    Blink,
    On,
}
```

Constants

Name	Description
Off	Cursor off
Blink	Cursor blinking
On	Cursor lighting

9.24 ContrastMode Constants

Contrast mode constants.

Declaration

```
enum ContrastMode {
    Minus3,
    Minus2,
    Minus1,
    Default,
    Plus1,
    Plus2,
    Plus3,
}
```

Constants

Name	Description
Minus3	Contrast: -3
Minus2	Contrast: -2
Minus1	Contrast: -1
Default	Default
Plus1	Contrast: +1
Plus2	Contrast: +2
Plus3	Contrast: +3

10 IScaleCommandBuilder Interface (starioextension.jar)

An interface to provide functions that generate commands for the scale.

Method

Name	Description
append	Adds data (command) to the command buffer.
appendZeroClear	Generates a command to zero-clear the weight of the scale, and adds it to the command buffer.
appendUnitChange	Generates a command to switch the unit of the scale, and adds it to the command buffer.
getCommands	Gets the command buffer (generated command).
getPassThroughCommands	Gets a command sequence with the pass-through command to the printer added at the beginning of the command buffer (generated command).

10.1 Model : IScaleCommandBuilder Interface

The IScaleCommandBuilder interface is for mPOP only.

10.2 append Method

Adds data (command) to the command buffer.

Declaration

void append(byte data);

void append(byte[] data);

Parameter

Name	Description	Object type
data	Data (Command)	byte byte[]

Return value

Description	Object type
-	-

10.3 appendZeroClear Method

Generates a command to zero-clear the weight of the scale, and adds it to the command buffer.

Declaration

void appendZeroClear();

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
-	-

Example

```
public static byte[] createZeroClear() {
    IScaleCommandBuilder builder = StarIoExt.createScaleCommandBuilder(ScaleModel.APS10);
//  IScaleCommandBuilder builder = StarIoExt.createScaleCommandBuilder(ScaleModel.APS12);
//  IScaleCommandBuilder builder = StarIoExt.createScaleCommandBuilder(ScaleModel.APS20);

    builder.appendZeroClear();

    return builder.getPassThroughCommands();
}
```

Refer to ScaleFunctions.java.

10.4 appendUnitChange Method

Generates a command to switch the unit of the scale, and adds it to the command buffer.

Declaration

void appendUnitChange();

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
-	-

Example

```
public static byte[] createUnitChange() {
    IScaleCommandBuilder builder = StarIoExt.createScaleCommandBuilder(ScaleModel.APS10);
//  IScaleCommandBuilder builder = StarIoExt.createScaleCommandBuilder(ScaleModel.APS12);
//  IScaleCommandBuilder builder = StarIoExt.createScaleCommandBuilder(ScaleModel.APS20);

    builder.appendUnitChange();

    return builder.getPassThroughCommands();
}
```

Refer to ScaleFunctions.java.

10.5 getCommands Method

Gets the command buffer (generated command).

Declaration

byte[] getCommands();

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
command buffer (generated command).	byte[]

10.6 getPassThroughCommands Method

Gets a command sequence with the pass-through command to the printer added at the beginning of the command buffer (generated command).

Declaration

byte[] getPassThroughCommands();

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
command buffer (generated command).	byte[]

Example

```
public static byte[] createZeroClear() {
    IScaleCommandBuilder builder = StarIoExt.createScaleCommandBuilder(ScaleModel.APS10);
//  IScaleCommandBuilder builder = StarIoExt.createScaleCommandBuilder(ScaleModel.APS12);
//  IScaleCommandBuilder builder = StarIoExt.createScaleCommandBuilder(ScaleModel.APS20);

    builder.appendZeroClear();

    return builder.getPassThroughCommands();
}
```

Refer to ScaleFunctions.java.

11 IPeripheralCommandParser Interface (starioextension.jar)

An interface to provide functions to generate commands for the barcode reader control.

Method

Name	Description
createSendCommands	Generates a command to receive the response from the peripheral (barcode reader / customer display / scale).
createReceiveCommands	Generates a command to receive the response from the scale.
parse	Analyzes the response of the command (command generated with the createSendCommands or createReceiveCommands) for the peripheral (barcode reader / customer display / scale) control.

Constant

Name	Description
ParseResult	Parse result constants.

11.1 Model : IPeripheralCommandParser interface

IPeripheralCommandParser interface is for mPOP/TSP100IIIU only.

11.2 createSendCommands Method

Generates a command to receive the response from the peripheral (barcode reader / customer display / scale).

Declaration

byte[] createSendCommands();

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
Generated command.	byte[]

Example

```
public void run() {
    Communication.Result communicateResult = Communication.Result.ErrorOpenPort;
    boolean result = false;

    synchronized (mLock) {
        try {
            ...

            byte[] requestWeightToScaleCommand     = mParser.createSendCommands();
            byte[] receiveWeightFromPrinterCommand = mParser.createReceiveCommands();

            ...

            while(!isScaleDataReceived) {
                mPort.writePort(requestWeightToScaleCommand, 0, requestWeightToScaleCommand.length);    // Write the
command requesting weight to the scale via the printer.

                ...

                while (!isScaleDataReceived) {
                    ...

                    mPort.writePort(receiveWeightFromPrinterCommand, 0, receiveWeightFromPrinterCommand.length);    //
Write the command to the printer to receive the weight data in the buffer of the printer.

                    ...

                    while (true) {
                        ...

                        int receiveSize = mPort.readPort(receiveBuffer, amount, receiveBuffer.length - amount);

                        if (0 < receiveSize) {
                            amount += receiveSize;
                        }

                        parseResult = mParser.parse(receiveBuffer, amount);

                        if (parseResult == Success) {
                            result           = true;
                            communicateResult = Communication.Result.Success;

                            isScaleDataReceived = true;

                            break;
                        }
                        else if (parseResult == Failure) {
                            break;
                        }

                        if (250 < (System.currentTimeMillis() - startReceiveWeight)) {
                            break;
                        }
                    }

                    ...
                }

                ...
            }
        }
        ...
    }
}
```

Refer to ScaleCommunication.java.

11.3 createReceiveCommands Method

Generates a command to receive the response from the scale.

Declaration

byte[] createReceiveCommands();

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
Generated command.	byte[]

Example

Refer to the example of the createSendCommands method.

11.4 parse Method

Analyzes the response of the command (command generated with the createSendCommands or createReceiveCommands) for the peripheral (barcode reader / customer display / scale) control.

Declaration

ParseResult parse(byte[] response, int length);

Parameter

Name	Description	Object type
response	Command response.	byte[]
length	Length of the command response.	int

Return value

Description	Object type
Parse result.	com.starmicronics.starioextension.IPeripheralCommandParser.ParseResult

Example

Refer to the example of the createSendCommands method.

11.5 ParseResult Constant

Parse result constants.

Declaration

```
enum ParseResult {
    Invalid,
    Success,
    Failure,
}
```

Constants

Name	Description
Invalid	Parse invalid.
Success	Parse success.
Failure	Parse failure.

12 IPeripheralConnectParser Interface (starioextension.jar)

An interface to provide functions to get the connection/disconnection status of the peripherals (barcode reader / customer display / scale).

Declaration
public interface IPeripheralConnectParser extends IPeripheralCommandParser

Method

Name	Description
isConnected	Gets the connection/disconnection status of the peripherals (barcode reader / customer display / scale).

12.1 Model : IPeripheralConnectParser Interface

The IPeripheralConnectParser interface is for mPOP/TSP100IIIU only.

12.2 isConnected Method

Gets the connection/disconnection status of the peripherals (barcode reader / customer display / scale).
Executes after the parse method returns ParseResult.Success.

Declaration

boolean isConnected();

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
The connection/disconnection status of the peripheral.	boolean

Example

```
Communication.parseDoNotCheckCondition(DisplayFragment.class, parser, setting.getPortName(),
setting.getPortSettings(), 10000, getActivity(), new Communication.SendCallback() {
   @Override
   public void onStatus(boolean result, Communication.Result communicateResult) {
      if (!mIsForeground) {
         return;
      }

      String msg;
      String title;

      if (result) {
         title = "Check Status";

         if (parser.isConnected()) {
            msg = "Display Connect";
         }
         else {
            msg = "Display Disconnect";
         }
      }
      else {
         title = "Communication Result";
         msg   = "Printer Impossible";
      }

      ...
   }
});
```

Refer to DisplayFragment.java / DisplayExtFragment.java / ScaleFragment.java / ScaleExtFragment.java.

13 IScaleWeightParser Interface (starioextension.jar)

An interface to analyze the command response for the scale control and to provide functions to get displayed weight data.

Declaration
public interface IScaleWeightParser extends IPeripheralCommandParser

Method

Name	Description
getWeight	Gets the displayed weight of the scale.
getStatus	Gets the measurement state of the scale.

Constants

Name	Description
DisplayedWeightStatus	Weight measurement state constants

13.1 Model : IScaleWeightParser Interface

The IScaleWeightParser interface is for mPOP only.

13.2 getWeight Method

Gets the displayed weight of the scale.
Executes after the parse method returns ParseResult.Success.

Declaration

String getWeight();

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
Displayed weight of the scale	String

Example

```
ScaleCommunication.parseDoNotCheckCondition(ScaleExtFragment.class, parser, mPort, new
Communication.SendCallback() {
    public void onStatus(boolean result, Communication.Result communicateResult) {
        if (!mIsForeground) {
            mWaitCallback = false;
            return;
        }

        if (result) {
            mScaleStatus = PeripheralStatus.Connect;
            switch (parser.getStatus()) {
                case Zero:
                    mComment.setTextColor(Color.GREEN);
                    break;
                case Motion:
                    mComment.setTextColor(Color.RED);
                    break;
                case NotInMotion:
                    mComment.setTextColor(Color.BLUE);
                    break;
            }

            mComment.clearAnimation();
            mComment.setText(parser.getWeight());
            mWaitCallback = false;
        }
        ...
    }
});
```

Refer to ScaleFragment.java / ScaleExtFragment.java.

13.3 getStatus Method

Gets the measurement state of the scale.
Executes after the parse method returns ParseResult.Success.

Declaration

DisplayedWeightStatus getStatus();

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
Measurement state of the scale	com.starmicronics.starioextension.IScaleWeightParser.DisplayedWeightStatus

Example

Refer to the example of the getWeight method.

13.4 DisplayedWeightStatus Constant

Weight measurement state constants

Declaration

```
enum DisplayedWeightStatus {
    Invalid,
    Zero,
    NotInMotion,
    Motion,
}
```

Constants

Name	Description
Invalid	Invalid
Zero	Zero clear
NotInMotion	Measurement complete state
Motion	Measuring

14 StarPRNT Android SDK Sample

14.1 Communication

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

-StarIoExtManager-
If using a StarIoExtManager, between devices will be the always-on connection. Therefore, if you shared with other applications and other terminal and the device, also when the transition to the transition and the sleep state to the other applications are envisioned, it will require consideration on the implementation on the connection status of the device.

Example (Using StarIoExtManager object)

```
public static Result sendCommands(byte[] commands, StarIOPort port, Context context) {
    Result result = Result.ErrorUnknown;

    try {
        if (port == null) {
            result = Result.ErrorOpenPort;
            return result;
        }

        StarPrinterStatus status;

        result = Result.ErrorBeginCheckedBlock;

        status = port.beginCheckedBlock();

        if (status.offline) {
            throw new StarIOPortException("A printer is offline");
        }

        result = Result.ErrorWritePort;

        port.writePort(commands, 0, commands.length);

        result = Result.ErrorEndCheckedBlock;

        port.setEndCheckedBlockTimeoutMillis(30000);     // 30000mS!!!

        status = port.endCheckedBlock();

        if (status.coverOpen) {
            throw new StarIOPortException("Printer cover is open");
        }
        else if (status.receiptPaperEmpty) {
            throw new StarIOPortException("Receipt paper is empty");
        }
        else if (status.offline) {
            throw new StarIOPortException("Printer is offline");
        }

        result = Result.Success;
    }
```

```
    catch (StarIOPortException e) {

        ...

    }

    return result;
}
```

15 StarIoExtManager class included in the starioextension.jar

Constractor

Name	Description
StarIoExtManager	Initializes the StarIoManager object.

Method

Name	Description
connect	Management start.
disconnect	Management stop.
getPort	Gets the StarIOPort object.
getPrinterStatus	Gets the printer status.
getPrinterPaperStatus	Gets the printer paper status.
getPrinterCoverStatus	Gets the printer cover status.
getCashDrawerStatus	Gets the cash drawer status.
getBarcodeReaderStatus	Gets the barcode reader status.
getCashDrawerOpenActiveHigh	Get the mode of cash drawer open sensor active.
setCashDrawerOpenActiveHigh	Sets the mode of cash drawer open sensor active.
setListener	Sets the listener object of the StarIoExtManager.

Constants

Name	Description
Type	Manager type constants.
PrinterStatus	Printer status constants.
PrinterPaperStatus	Printer paper status constants.
PrinterCoverStatus	Printer cover status constants.
CashDrawerStatus	Cash drawer status constants.
BarcodeReaderStatus	Barcode reader status constants.

-BSC10 setting with USB I/F-
Please set busy condition to "Reception Buffer Full". (MSW #7, bit4 set to ON)

-Auto Power Down function with USB connection-
Please use SM-S and SM-T series in Auto Power Down function "NO USE" setting (default setting).

15.1 StarIoExtManager Constractor

Initializes the StarIoManager object.

Declaration

StarIoExtManager(Type type, String portName, String portSetting, int ioTimeoutMillis, Context context);

Parameter

Name	Description	Object type
type	Maneger type. • Standard … Management of the printer and the cash drawer. • WithBarcodeReader … Management of the printer, cash drawer and the barcode reader. • OnlyBarcodeReader … Management of the barcode reader.	com.starmicronics.starioextension.StarIoExtManager.Type
portName	Printer port name. It is the same as the portName of the getPort method of the StarIOPort class.	String
portSettings	Port settings. It is the same as the portSettings of the getPort method of the StarIOPort class.	String
ioTimeoutMillis	Timeout value for internal control and API.	int
context	Context.	android.content.Context

Return value

Description	Object type
StarIoExtManager object.	com.starmicronics.starioextension.StarIoExtManager

Example

```
public void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);

    PrinterSetting setting = new PrinterSetting(getContext());

    mStarIoExtManager = new StarIoExtManager(StarIoExtManager.Type.Standard, setting.getPortName(),
setting.getPrinterType(), 10000, getContext());     // 10000mS!!!

    mStarIoExtManager.setListener(mStarIoExtManagerListener);
}
```

Refer to PrinterExtFragment.java, CashDrawerExtFragment.java, BarcodeReaderExtFragment.java and CombinationExtFragment.java.

15.2 connect Method

Management start.

Declaration

public void connect(final IConnectionCallback callback);

Parameter

Name	Description	Object type
callback	When the connect is completed, check connection result as onConnected method parameter. -result- • Connection result.	com.starmicronics.stario extension.IConnectionCallback

Return value

Description	Object type
-	-

Example

```
public class PrinterExtFragment extends Fragment implements IConnectionCallback {

    …

    @Override
    public void onStart() {
        super.onStart();

        …

        mStarIoExtManager.connect(this);
    }

    …

    @Override
    public void onConnected() {
        Log.d("PrinterExtFragment", "onConnected " + result);

        …

    }

    …

}
```

Refer to PrinterExtFragment.java, CashDrawerExtFragment.java, BarcodeReaderExtFragment.java and CombinationExtFragment.java.

15.3 disconnect Method

Management stop.

Declaration

public void disconnect(IConnectionCallback callback);

Parameter

Name	Description	Object type
callback	When the disconnect is completed, check disconnected result as onDisconnected method.	com.starmicronics.starioextension.IConnectionCallback

Return value

Description	Object type

Example

```
public class PrinterExtFragment extends Fragment implements IConnectionCallback {

    …

    @Override
    public void onStop() {
        super.onStop();

        …

        mStarIoExtManager.disconnect(this);
    }

    …

    @Override
    public void onDisconnected() {
        Log.d("PrinterExtFragment", "onDisconnected");

        …

    }

    …

}
```

Refer to PrinterExtFragment.java, CashDrawerExtFragment.java, BarcodeReaderExtFragment.java and CombinationExtFragment.java.

15.4 getPort Method

Gets the StarIOPort object.

Declaration

StarIOPort getPort();

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
StarIOPort object.	com.starmicronics.stario.StarIOPort

15.5 getPrinterStatus Method

Gets the printer Online status.

Declaration

PrinterStatus getPrinterStatus();

Parameter

Name	Description	Object type
-	-	-

Value

Description	Object type
Printer status. • Invalid … Invalid. • Impossible … Impossible to use printer. • Online … Detect online. • Offline … Detect offline.	com.starmicronics.starioextension.StarIoExtManager.PrinterStatus

15.6 getPrinterPaperStatus Method

Gets the printer paper status.

Declaration

PrinterPaperStatus getPrinterPaperStatus();

Parameter

Name	Description	Object type
-	-	-

Value

Description	Object type
Printer paper status. • Invalid … Invalid. • Impossible … Impossible to use Equipment. • Ready … Detect paper ready. • NearEmpty … Detect paper near end. • Empty … Detect paper empty.	com.starmicronics.stario extension.StarIoExtManager.PrinterPaperStatus

15.7 getPrinterCoverStatus Method

Gets the printer cover status.

Declaration

PrinterCoverStatus getPrinterCoverStatus();

Parameter

Name	Description	Object type
-	-	-

Value

Description	Object type
Printer cover status. • Invalid … Invalid. • Impossible … Ipossible to use Equipment. • Open … Detect cover open. • Close … Detect cover close.	com.starmicronics.stario extension.StarIoExtManager.PrinterCoverStatus

15.8 getCashDrawerStatus Method

Gets the cash drawer status.

Declaration

CashDrawerStatus getCashDrawerStatus();

Parameter

Name	Description	Object type
-	-	-

Value

Description	Object type
Cash drawer status. • Invalid … Invalid. • Impossible … Impossible to use Equipment. • Open … Detect Cash drawer open. • Close … Detect Cash drawer close.	com.starmicronics.stario extension.StarIoExtManager.CashDrawerStatus

15.9 getBarcodeReaderStatus Method

Gets the barcode reader status.

Declaration

BarcodeReaderStatus getBarcodeReaderStatus();

Parameter

Name	Description	Object type
-	-	-

Value

Description	Object type
Barcode reader status. • Invalid … Invalid. • Impossible … Impossible to use Equipment. • Connect … Detect Barcode reader connection. • Disconnect … Detect Barcode reader disconnection.	com.starmicronics.stario extension.StarIoExtManager.BarcodeReaderStatus

15.10 getCashDrawerOpenActiveHigh Method

Gets the mode of cash drawer open sensor active.

Declaration

boolean getCashDrawerOpenActiveHigh();

Parameter

Name	Description	Object type
-	-	-

Value

Description	Object type
Mode of a cash drawer open sensor active. • true … Active high. • false … Active low.	boolean

15.11 setCashDrawerOpenActiveHigh Method

Sets the mode of cash drawer open sensor active.

Declaration

void getCashDrawerOpenActiveHigh(boolean isActiveHigh);

Parameter

Name	Description	Object type
isActiveHigh	Mode of a cash drawer open sensor active. • true … Active high. • false … Active low. **** Be the default value (true) for mPOP.***-	boolean

Return Value

Description	Object type
-	-

15.12 setListener Method

Sets the listener object of the StarIoExtManager.

Declaration

void setListener(StarIoExtManagerListener listener);

Parameter

Name	Description	Object type
listener	Listener object of the StarIoExtManager.	com.starmicronics.starioextension.StarIoExtManagerListener

Return value

Description	Object type
-	-

Example

```
public class PrinterExtFragment extends Fragment implements IConnectionCallback {

    …

    public void onStart() {
        super.onStart();

        …

        mStarIoExtManager.setListener(mStarIoExtManagerListener);

        …

    }

    private final StarIoExtManagerListener mStarIoExtManagerListener = new StarIoExtManagerListener() {

        …

    };
}
```

Refer to PrinterExtFragment.java, CashDrawerExtFragment.java, BarcodeReaderExtFragment.java and CombinationExtFragment.java.

15.13 Type Constants

Manager type constants.

Declaration

```
public enum Type {
    Standard,
    WithBarcodeReader,
    OnlyBarcodeReader,
}
```

Constants

Name	Description
Standard	Management of the printer and the cash drawer.
WithBarcodeReader	Management of the printer, cash drawer and the barcode reader.
OnlyBarcodeReader	Management of the barcode reader.

15.14 PrinterStatus Constants

Printer status constants.

Declaration

```
public enum PrinterStatus {
    Invalid,
    Impossible,
    Online,
    Offline
}
```

Constants

Name	Description
Invalid	Invalid.
Impossible	Impossible to use printer.
Online	Detect Printer online.
Offline	Detect Printer offline.

15.15 PrinterPaperStatus Constants

Printer paper status constants.

Declaration

```
public enum PrinterPaperStatus {
    Invalid,
    Impossible,
    Ready,
    NearEmpty,
    Empty
}
```

Constants

Name	Description
Invalid	Invalid.
Impossible	Impossible to use Printer.
Ready	Detect Printer paper ready.
NearEmpty	Detect Printer paper near end.
Empty	Detect Printer paper empty.

15.16 PrinterCoverStatus Constants

Printer cover status constants.

Declaration

```
public enum PrinterCoverStatus {
    Invalid,
    Impossible,
    Open,
    Close
}
```

Constants

Name	Description
Invalid	Invalid.
Impossible	Impossible to use Printer.
Open	Detect Printer cover open.
Close	Detect Printer cover close.

15.17 CashDrawerStatus Constants

Cash drawer status constants.

Declaration

```
public enum CashDrawerStatus {
    Invalid,
    Impossible,
    Open,
    Close
}
```

Constants

Name	Description
Invalid	Invalid.
Impossible	Impossible to use Cash drawer.
Open	Detect Cash drawer open.
Close	Detect Cash drawer close.

15.18 BarcodeReaderStatus Constants

Barcode reader status constants.

Declaration

```
public enum BarcodeReaderStatus {
    Invalid,
    Impossible,
    Connect,
    Disconnect
}
```

Constants

Name	Description
Invalid	Invalid.
Impossible	Impossible to use Barcode reader.
Connect	Detect Barcode reader connection.
Disconnect	Detect Barcode reader disconnection.

16 IConnectionCallback interface included in the starioextension.jar

Method

Name	Description
onConnected	Tells the connection result. * *Override*
onDisconnected	Tells the disconnect completed. * *Override*

Constants

Name	Description
ConnectResult	Connection result constants.

16.1 onConnected Method

Tells the connection result. * *Override*

Declaration

void onConnected(ConnectResult result);

Parameter

Name	Description	Object type
result	Connection result.	com.starmicronics.starioextension.IConnectionCallback.ConnectResult

Return value

Description	Object type
-	-

Example

```
@Override
public void onConnected(ConnectResult result) {
   Log.d("PrinterExtFragment", "onConnected " + result);

   ...

}
```

Refer to PrinterExtFragment.java, CashDrawerExtFragment.java, BarcodeReaderExtFragment.java and CombinationExtFragment.java.

16.2 onDisconnected Method

Tells the disconnect completed. * *Override*

Declaration

void onDisconnected();

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
-	-

Example

```
@Override
public void onDisconnected() {
    Log.d("PrinterExtFragment", "onDisconnected");

    …

}
```

Refer to PrinterExtFragment.java, CashDrawerExtFragment.java, BarcodeReaderExtFragment.java and CombinationExtFragment.java.

16.3 ConnectResult Constants

Connection result constants.

Declaration

```
enum ConnectResult {
    Success,
    Failure,
    AlreadyConnected
}
```

Constants

Name	Description
Success	Success.
Failure	Failure.
AlreadyConnected	Already connected.

17 StarIoExtManagerListener class included in the starioextension.jar

Method

Name	Description
onPrinterImpossible	Tells the listener the printer impossible. * *Override*
onPrinterOnline	Tells the listener the printer has come online. * *Override*
onPrinterOffline	Tells the listener the printer has come offline. * *Override*
onPrinterPaperReady	Tells the listener the printer has come paper ready. * *Override*
onPrinterPaperNearEmpty	Tells the listener the printer has come paper near end. * *Override*
onPrinterPaperEmpty	Tells the listener the printer has come paper empty. * *Override*
onPrinterCoverOpen	Tells the listener the printer has come cover open. * *Override*
onPrinterCoverClose	Tells the listener the printer has come cover close. * *Override*
onCashDrawerOpen	Tells the listener the cash drawer has come open. * *Override*
onCashDrawerClose	Tells the listener the cash drawer has come close. * *Override*
onBarcodeReaderImpossible	Tells the listener the barcode reader impossible. * *Override*
onBarcodeReaderConnect	Tells the listener the barcode reader connected. * *Override*
onBarcodeReaderDisconnect	Tells the listener the barcode reader disconnected. * *Override*
onBarcodeDataReceive	Tells the listener the barcode data received. * *Override*
onAccessoryConnectSuccess	Tells the listener the accessory (Bluetooth / USB) connection succeeded from disconnection. * *Override*
onAccessoryConnectFailure	Tells the listener the accessory (Bluetooth / USB) connection failed from disconnection. * *Override*
onAccessoryDisconnect	Tells the listener the Bluetooth/USB accessory disconnected. * *Override*
onStatusUpdate	Tells the listener the status updated. * *Override*

17.1 onPrinterImpossible Method

Tells the listener the printer impossible. * *Override*

Declaration

void onPrinterImpossible();

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
-	-

Example

```
@Override
public void onPrinterImpossible() {
    mComment.setText("Printer Impossible.");

    mComment.setTextColor(Color.RED);
}
```

Refer to PrinterExtFragment.java, CashDrawerExtFragment.java and CombinationExtFragment.java.

17.2 onPrinterOnline Method

Tells the listener the printer has come online. * *Override*

Declaration

void onPrinterOnline();

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
-	-

Example

```
@Override
void onPrinterOnline() {
   mComment.setText("Printer Online.");

   mComment.setTextColor(Color.BLUE);
}
```

Refer to PrinterExtFragment.java and CombinationExtFragment.java.

17.3 onPrinterOffline Method

Tells the listener the printer has come offline. * *Override*

Declaration

void onPrinterOffline();

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
-	-

Example

```
@Override
void onPrinterOffline() {
   mComment.setText("Printer Offline.");

   mComment.setTextColor(Color.RED);
}
```

Refer to PrinterExtFragment.java and CombinationExtFragment.java.

17.4 onPrinterPaperReady Method

Tells the listener the printer has come paper ready. * *Override*

Declaration

void onPrinterPaperReady();

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
-	-

Example

```
@Override
void onPrinterPaperReady() {
   mComment.setText("Printer Paper Ready.");

   mComment.setTextColor(Color.BLUE);
}
```

Refer to PrinterExtFragment.java and CombinationExtFragment.java.

17.5 onPrinterPaperNearEmpty Method

Tells the listener the printer has come paper near end. * *Override*

Declaration

void onPrinterPaperNearEmpty();

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
-	-

Example

```
@Override
void onPrinterPaperNearEmpty() {
   mComment.setText("Printer Paper Near Empty.");

   mComment.setTextColor(0xffffa500);     // Orange
}
```

Refer to PrinterExtFragment.java and CombinationExtFragment.java.

17.6 onPrinterPaperEmpty Method

Tells the listener the printer has come paper empty. * *Override*

Declaration

void onPrinterPaperEmpty();

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
-	-

Example

```
@Override
void onPrinterPaperEmpty() {
    mComment.setText("Printer Paper Empty.");

    mComment.setTextColor(Color.RED);
}
```

Refer to PrinterExtFragment.java and CombinationExtFragment.java.

17.7 onPrinterCoverOpen Method

Tells the listener the printer has come cover open. * *Override*

Declaration

void onPrinterCoverOpen();

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
-	-

Example

```
@Override
void onPrinterCoverOpen() {
    mComment.setText("Printer Cover Open.");

    mComment.setTextColor(Color.RED);
}
```

Refer to PrinterExtFragment.java and CombinationExtFragment.java.

17.8 onPrinterCoverClose Method

Tells the listener the printer has come cover close. * *Override*

Declaration

void onPrinterCoverClose();

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
-	-

Example

```
@Override
void onPrinterCoverClose() {
   mComment.setText("Printer Cover Close.");

    mComment.setTextColor(Color.BLUE);
}
```

Refer to PrinterExtFragment.java and CombinationExtFragment.java.

17.9 onCashDrawerOpen Method

Tells the listener the cash drawer has come open. * *Override*

Declaration

void onCashDrawerOpen();

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
-	-

Example

```
@Override
void onCashDrawerOpen() {
   mComment.setText("Cash Drawer Open.");

    mComment.setTextColor(Color.MAGENTA);
}
```

Refer to CashDrawerExtFragment.java and CombinationExtFragment.java.

17.10 onCashDrawerClose Method

Tells the listener the cash drawer has come close. * *Override*

Declaration

void onCashDrawerClose();

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
-	-

Example

```
@Override
void onCashDrawerClose() {
    mComment.setText("Cash Drawer Close.");

    mComment.setTextColor(Color.BLUE);
}
```

Refer to CashDrawerExtFragment.java and CombinationExtFragment.java.

17.11 onBarcodeReaderImpossible Method

Tells the listener the barcode reader impossible. * *Override*

Declaration

void onBarcodeReaderImpossible();

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
-	-

Example

```
@Override
void onBarcodeReaderImpossible() {
    mComment.setText("Barcode Reader Impossible.");

    mComment.setTextColor(Color.RED);
}
```

Refer to BarcodeReaderExtFragment.java and CombinationExtFragment.java.

17.12 onBarcodeReaderConnect Method

Tells the listener the barcode reader connected. * *Override*

Declaration

void onBarcodeReaderConnect();

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
-	-

Example

```
@Override
void onBarcodeReaderConnect() {
    mComment.setText("Barcode Reader Connect.");

    mComment.setTextColor(Color.BLUE);
}
```

Refer to BarcodeReaderExtFragment.java and CombinationExtFragment.java.

17.13 onBarcodeReaderDisconnect Method

Tells the listener the barcode reader disconnected. * *Override*

Declaration

void onBarcodeReaderDisconnect();

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
-	-

Example

```
@Override
void onBarcodeReaderDisconnect() {
    mComment.setText("Barcode Reader Disconnect.");

    mComment.setTextColor(Color.RED);
}
```

Refer to BarcodeReaderExtFragment.java and CombinationExtFragment.java.

17.14 onBarcodeDataReceive Method

Tells the listener the barcode data received. * *Override*

Declaration

void onBarcodeDataReceive(byte[] data);

Parameter

Name	Description	Object type
data	Received barcode data.	byte[]

Return value

Description	Object type
-	-

Example

```
@Override
public void onBarcodeDataReceive(byte[] data) {
   String[] barcodeDataArray = new String(data).split("\n");

   for(String barcodeData:barcodeDataArray) {

      …

   }
}
```

Refer to BarcodeReaderExtFragment.java and CombinationExtFragment.java.

17.15 onAccessoryConnectSuccess Method

Tells the listener the accessory (Bluetooth / USB) connection succeeded from disconnection.
* *Override*

Declaration

void onAccessoryConnectSuccess();

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
-	-

Example

```
@Override
void onAccessoryConnectSuccess() {
   mComment.setText("Accessory Connect Success.");

   mComment.setTextColor(Color.BLUE);
}
```

Refer to PrinterExtFragment.java, CashDrawerExtFragment.java, BarcodeReaderExtFragment.java and CombinationExtFragment.java.

17.16 onAccessoryConnectFailure Method

Tells the listener the accessory (Bluetooth / USB) connection failed from disconnection.
* *Override*

Declaration

void onAccessoryConnectFailure();

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
-	-

Example

```
@Override
void onAccessoryConnectFailure() {
    mComment.setText("Accessory Connect Failure.");

    mComment.setTextColor(Color.RED);
}
```

Refer to PrinterExtFragment.java, CashDrawerExtFragment.java, BarcodeReaderExtFragment.java and CombinationExtFragment.java.

17.17 onAccessoryDisconnect Method

Tells the listener the accessory (Bluetooth / USB) disconnected. * *Override*

Declaration

void onAccessoryDisconnect();

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
-	-

Example

```
@Override
void onAccessoryDisconnect() {
    mComment.setText("Accessory Disconnect.");

    mComment.setTextColor(Color.RED);
}
```

Refer to PrinterExtFragment.java, CashDrawerExtFragment.java, BarcodeReaderExtFragment.java and CombinationExtFragment.java.

17.18 onStatusUpdate Method

Tells the listener the status updated. * *Override*

Declaration

void onStatusUpdate(String status);

Parameter

Name	Description	Object type
status	Updated status. Hexdecimal digit sequence of 3rd to 6th bytes in Automatic Status (*) (ex. “28000000”) -Status update timing- • When the status changes. • Even no status change, every 5 min. * Please refer to STAR Line Mode and StarPRNT command manual for details of Automatic Status.	String

Return value

Description	Object type
-	-

Example

```
@Override
void onStatusUpdate(String status) {
    mComment.setText(status);

    mComment.setTextColor(Color.GREEN);
}
```

Refer to AllReceiptsExtFragment.java.

18 StarBluetoothManagerFactory class (starioextension.jar)

Class to get the StarBluetoothManager object by specifying the emulation.

Method

Name	Description
getManager	Gets the instance of the StarBluetoothManager class.

18.1 getManager Method

Gets the object of the StarBluetoothManager class for the emulation to be passed in the parameter.

Declaration

public static StarBluetoothManager getManager(String portName, String portSettings, int ioTimeoutMillis, Emulation emulation) throws StarIOPortException;

Parameter

Name	Description	Object type
portName	Printer port name It is the same as the portName of the getPort method of the StarIOPort class.	String
portSettings	Port setting It is the same as the portSettings of the getPort method of the StarIOPort class.	String
ioTimeoutMillis	Timeout value for internal control and API.	int
emulation	Emulation	com.starmicronics.starioextension. StarIoExt.Emulation

Return value

Description	Object type
StarIoExtManager object	com.starmicronics.stario.StarBluetoothManager

Refer to Bluetooth setting change flow using StarBluetoothManager about the procedure for changing the Bluetooth setting.

19 CloudServices class included in the smcloudservices.aar

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.

19.1 showRegistrationView Method

It displays a view of the Star Cloud Services registration.

Declaration

public synchronized static void showRegistrationView(FragmentManager fragmentManager, DialogInterface.OnDismissListener listener);

Parameter

Name	Description	Object type
fragmentManager	Fragment manager.	android.support.v4.app.FragmentManager
listener	Listener object.	android.content.DialogInterface.OnDismissListener

Return value

Description	Object type
-	-

Example

```
@Override
public void onItemClick(AdapterView<?> parent, View view, int position, long id) {
   super.onItemClick(parent, view, position, id);

   …

   CloudServices.showRegistrationView(getChildFragmentManager(), new DialogInterface.OnDismissListener() {
      @Override
      public void onDismiss(DialogInterface dialog) {

         …

      }
   });

   …

}
```

Refer to AllReceiptsFragment.java.

19.2 isRegistered Method

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

Declaration

public synchronized static boolean isRegistered(Context context);

Parameter

Name	Description	Object type
context	Context.	android.content.Context

Return value

Description	Object type
Result. • true … Registered. • false … Unregistered.	boolean

Example

```
private void updateList() {

   …

   boolean isRegistered = CloudServices.isRegistered(getContext());

   …

   if (isRegistered) {

      …

   }
   else {

      …

   }

   …

}
```

Refer to AllReceiptsFragment.java.

20 AllReceipts class included in the smcloudservices.aar

Method

Name	Description
uploadBitmap	Uploads bitmap to the Star Micronics Service.
uploadData	Uploads data 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.

20.1 Model : AllReceipts class Method

Supported Method for each models.

Function	Method	mPOP	FVP10	TSP100	TSP650II	TSP700II	TSP800II	SM-S210i	SM-S220i	SM-S230i	SM-T300i/T300	SM-T400i	BSC10	SM-S210i StarPRNT	SM-S220i StarPRNT	SM-S230i StarPRNT	SM-T300i/T300 StarPRNT	SM-T400i StarPRNT	SM-L200	SM-L300	SP700
Upload	uploadBitmap	✔	✔	✔	✔	✔	✔	-	-	-	-	-	✔	✔	✔	✔	✔	✔	✔	✔	-
	uploadData	✔	✔	-	✔	✔	✔	-	-	-	-	-	✔	✔	✔	✔	✔	✔	✔	✔	-
Update	updateStatus	✔	✔	✔	✔	✔	✔	-	-	-	-	-	✔	✔	✔	✔	✔	✔	✔	✔	-
Generate	generateAllReceipts	✔	✔	✔	✔	✔	✔	-	-	-	-	-	✔	✔	✔	✔	✔	✔	✔	✔	-

- : Not guarantee.

20.2 uploadBitmap Method

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

Declaration

public synchronized static String uploadBitmap(Context context, Bitmap bitmap, RequestCallback callback);

Parameter

Name	Description	Object type
context	Context.	android.content.Context
bitmap	Bitmap to upload.	android.graphics.Bitmap
callback	When the upload is completed, check upload result as following status. -statusCode- • HTTP status code. -error- • Error information when fails to upload data.	com.starmicronics.cloudservices.RequestCallback

Return value

Description	Object type
Uploaded URL.	String

Example

```
public static byte[] createData(Context context, Emulation emulation, Bitmap bitmap, RequestCallback callback) {
    String urlString = AllReceipts.uploadBitmap(context, bitmap, callback);

    ICommandBuilder builder = StarIoExt.createCommandBuilder(emulation);

    builder.beginDocument();

    builder.appendBitmap(bitmap, false);

    byte[] data = AllReceipts.generateAllReceipts(context, urlString, emulation, true, true);

    builder.appendRaw(data);

    builder.appendCutPaper(CutPaperAction.PartialCutWithFeed);

    builder.endDocument();

    return builder.getCommands();
}
```

Refer to AllReceiptsFunctions.java.

20.3 uploadData Method

Uploads data (byte[] object) to the Star Micronics Service.

Declaration

public synchronized static String uploadData(Context context, byte[] data, Emulation emulation, CharacterCode characterCode, int width, RequestCallback callback);

Parameter

Name	Description	Object type
context	Context.	android.content.Context
data	Data to upload.	byte[]
emulation	Emulation type. • StarIoExtEmulationStarPRNT … StarPRNT emulation. • StarIoExtEmulationStarLine … STAR Line Mode emulation. • ~~StarIoExtEmulationStarGraphic … STAR Graphic Mode emulation.~~ • StarIoExtEmulationEscPos … ESC/POS emulation. • ~~StarIoExtEmulationEscPosMobile … ESC/POS Mobile emulation.~~ • ~~StarIoExtEmulationStarDotImpact … STAR Dot Impact emulation.~~	com.starmicronics.stario extension. StarIoExt.Emulation
characterCode	Character code type constants. • StarIoExtCharacterCodeStandard … Standard character code. • StarIoExtCharacterCodeJapanese … Japanese character code. • ~~StarIoExtCharacterCodeSimplifiedChinese … Simplified chinese character code.~~ • ~~StarIoExtCharacterCodeTraditionalChinese … Traditional chinese character code.~~	com.starmicronics.stario extension. StarIoExt.CharacterCode
width	Printable width. (Units : Dots)	int
callback	When the upload is completed, check upload result as following status. -statusCode- • HTTP status code. -error- Error information when fails to upload data.	com.starmicronics.cloudservices .RequestCallback

Return value

Description	Object type
Uploaded URL.	String

Example

```
public static byte[] createData(Context context, Emulation emulation, CharacterCode characterCode, byte[] data,
RequestCallback callback) {
    ICommandBuilder uploadDataBuilder = StarIoExt.createCommandBuilder(emulation);

    uploadDataBuilder.beginDocument();

    uploadDataBuilder.append(data);

    uploadDataBuilder.appendCutPaper(CutPaperAction.PartialCutWithFeed);

    uploadDataBuilder.endDocument();

    byte[] receiptData = uploadDataBuilder.getCommands;

    String urlString = AllReceipts.uploadData(context, receiptData, emulation, characterCode, width, callback);

    ICommandBuilder printDataBuilder = StarIoExt.createCommandBuilder(emulation);

    printDataBuilder.beginDocument();

    printDataBuilder.append(data);

    byte[] allReceiptsData = AllReceipts.generateAllReceipts(context, urlString, emulation, true, true);

    printDataBuilder.appendRaw(allReceiptsData);

    printDataBuilder.appendCutPaper(CutPaperAction.PartialCutWithFeed);

    printDataBuilder.endDocument();

    return printDataBuilder.getCommands();
}
```

Refer to AllReceiptsFunctions.java.

20.4 updateStatus Method

Updates the device status information on the Star Cloud Services.

Declaration

public synchronized static void updateStatus(Context context, String status, RequestCallback callback);

Parameter

Name	Description	Object type
context	Context.	android.content.Context
status	Updated status. Hexdecimal digit sequence of 3rd to 6th bytes in Automatic Status (*) (ex. “28000000”) * Please refer to STAR Line Mode and StarPRNT command manual for details of Automatic Status.	String
callback	When the update is completed, check update result as following parameter. -statusCode- • HTTP status code. -error- • If the request fails, the error parameter contains information about the failure.	com.starmicronics.cloudservices.RequestCallback

Return value

Description	Object type
-	-

Example

```
@Override
public void onStatusUpdate(StarIoExtManager manager, String status) {
    AllReceipts.updateStatus(getContext(), status, new RequestCallback() {
        @Override
        public void onRequestResult(int statusCode, RequestError requestError) {
            String message;

            if (requestError != null) {
                message = requestError.getMessage();
            }
            else {
                message = "Status Code : " + statusCode;
            }

            Toast.makeText(getContext(), message, Toast.LENGTH_SHORT).show();
        }
    });
}
```

Refer to AllReceiptsExtFragment.java.

20.5 generateAllReceipts Method

Generates the print data for the AllReceipts™ use.

Declaration

public synchronized static byte[] generateAllReceipts(Context context, String urlString, Emulation emulation, boolean info, boolean qrCode);
public synchronized static byte[] generateAllReceipts(Context context, String urlString, Emulation emulation, boolean info, boolean qrCode, int width);

Parameter

Name	Description	Object type
context	Context.	android.content.Context
urlString	Uploaded URL.	String
emulation	Emulation type. • StarPRNT … StarPRNT emulation. • StarLine … STAR Line Mode emulation. • StarGraphic … STAR Graphic Mode emulation. • EscPos … ESC/POS emulation. • ~~EscPosMobile … ESC/POS Mobile emulation.~~ • ~~StarDotImpact … STAR Dot Impact emulation.~~	com.starmicronics.stario extension. StarIoExt.Emulation
info	Generates information logo. • true … Valid. • false … Invalid.	boolean
qrCode	Generates QR code. • true … Valid. • false … Invalid.	boolean
width	Printable width. (Units : Dots)	int

Return value

Description	Object type
Generated print data.	byte[]

Example

```
public static byte[] createData(Context context, Emulation emulation, Bitmap bitmap, int width, RequestCallback callback) {
    String urlString = AllReceipts.uploadBitmap(context, bitmap, callback);

    ICommandBuilder builder = StarIoExt.createCommandBuilder(emulation);

    builder.beginDocument();

    builder.appendBitmap(bitmap, false);

    byte[] data;

    if (emulation == Emulation.StarGraphic) {
        data = AllReceipts.generateAllReceipts(context, urlString, emulation, true, true, width);     // Support to centering in Star Graphic.
    }
    else {
        data = AllReceipts.generateAllReceipts(context, urlString, emulation, true, true);     // Non support to centering in Star Graphic.
    }

    builder.appendRaw(data);

    builder.appendCutPaper(CutPaperAction.PartialCutWithFeed);

    builder.endDocument();

    return builder.getCommands();
}
```

Refer to AllReceiptsFunctions.java.

21 RequestCallback class included in the smcloudservices.aar

Method

Name	Description
onRequestResult	To notify the completion of the asynchronous execution. * *Override*

21.1 onRequestResult Method

To notify the completion of the asynchronous execution. * *Override*

Declaration

public abstract void onRequestResult(int statusCode, RequestError error);

Parameter

Name	Description	Object type
statusCode	HTTP status code.	int
error	Error information when fails to upload data and update status.	com.starmicronics.cloudservices .RequestError

Return value

Description	Object type
-	-

Example

```
private final RequestCallback mAllReceiptsCallback = new RequestCallback() {
    @Override
    public void onRequestResult(int statusCode, RequestError error) {
        String message;

        if (error != null) {
            message = error.getMessage();
        }
        else {
            message = "Status Code : " + statusCode;
        }

        Toast.makeText(getContext(), message, Toast.LENGTH_SHORT).show();
    }
};
```

Refer to AllReceiptsFragment.java and AllReceiptsExtFragment.java.

22 RequestError class included in the smcloudservices.aar

Method

Name	Description
getMessage	gets the message about the error that occurred during asynchronous execution.
getInternalException	Gets the exception that occurred during the asynchronous execution. (For debugging)

22.1 getMessage Method

Gets the message about the error that occurred during asynchronous execution.

Declaration

public String getMessage();

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
Message about the error that occurred during asynchronous execution.	String

Example

```
private final RequestCallback mAllReceiptsCallback = new RequestCallback() {
    @Override
    public void onRequestResult(int statusCode, RequestError error) {
        String message;

        if (error != null) {
            message = error.getMessage();
        }
        else {
            message = "Status Code : " + statusCode;
        }

        Toast.makeText(getContext(), message, Toast.LENGTH_SHORT).show();
    }
};
```

Refer to AllReceiptsFragment.java and AllReceiptsExtFragment.java.

22.2 getInternalException Method

Gets the exception that occurred during the asynchronous execution. (For debugging)

Declaration

public Exception getInternalException();

Parameter

Name	Description	Object type
-	-	-

Return value

Description	Object type
Exception that occurred during the asynchronous execution.	Exception

Example

```
private final RequestCallback mAllReceiptsCallback = new RequestCallback() {
    @Override
    public void onRequestResult(int statusCode, RequestError error) {
        String message;

        if (error != null) {
            message = error.getMessage();

            Exception exception = error.getInternalException();

            if (exception != null) {
                message = exception.getMessage();
            }
        }
        else {
            message = "Status Code : " + statusCode;
        }

        Toast.makeText(getContext(), message, Toast.LENGTH_SHORT).show();
    }
};
```

Refer to AllReceiptsFragment.java and AllReceiptsExtFragment.java.

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

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

<< Star Could Services Retailer Registration site >>

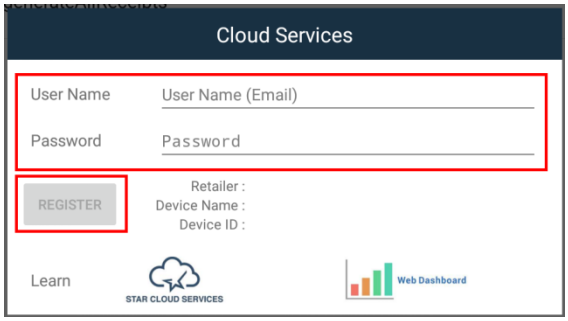
www.starcloudservices.com

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”.



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

URL: http://www.starmicronics.com/support/