

Star JavaPOS Driver

for StarPRNT

- *Software Manual* -

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1. Getting Started

Star JavaPOS driver offers full compliance with the JavaPOS Ver. 1.13.

This manual supports the following Star JavaPOS driver packages.

- starjavapos_mCollection_1.13.x*_windows_32bit.zip
 - starjavapos_mCollection_1.13.x*_windows_64bit.zip
 - starjavapos_mCollection_1.13.x*_linux_32bit.zip
 - starjavapos_mCollection_1.13.x*_linux_64bit.zip
 - starjavapos_mCollection_1.13.x*_mac.zip
- * x : Version No.

This manual describes the setup procedures, specifications, and limitations of the Star JavaPOS driver, which is used to run Star mCollection printers and peripheral devices.

This manual is intended for developers who design application systems that use JavaPOS devices. The manual assumes that the reader is familiar with the following topics.

- General specifications of the JavaPOS 1.13.
- General specifications of the Star POS Printers.
- Java terminology and architecture.
- The host operating system.

◆ Target Model and Firmware Versions

Target Model	Printer F/W
MCP30	Ver 2.0 or later
MCP31LB, MCP31L	Ver 1.0 or later
MCP31CB, MCP31C	Ver 3.0 or later
MCP20, MCP20B	Ver 1.0 or later
MCP21LB	Ver 1.0 or later
POP10	Ver 1.0 or later

Target Model	Printer F/W
SM-L200	Ver 1.0 or later
SM-L300	Ver 1.0 or later
SM-S220i	Ver 3.0 or later
SM-S230i	Ver 1.0 or later
SM-T300	Ver 4.0 or later
SM-T300i	Ver 3.0 or later
SM-T400i	Ver 3.0 or later

◆ This is software of StarPRNT emulation exclusive use.

To use the StarPRNT emulation, use the printer with "StarPRNT".

◆ Simple method of switching over between ESC/POS and StarPRNT emulation modes

< SM-S220i, SM-S230i, SM-T300, SM-T300i, SM-T400i >

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 mode is printed out.

ESC/POS mode: EMU = ESC/POS

StarPRNT mode: EMU = StarPRNT

If the emulation mode 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 between StarPRNT and ESC/POS.

*It will be valid after rebooting the printer.

2. Operating Environment

2.1 Operating System

This software supports the following operating systems.

- Windows 10* 32-bit and 64-bit (except Windows 10 Mobile and Windows 10 IoT Core)
Windows 8.1* 32-bit and 64-bit (except Windows RT 8.1)
Windows 7 32-bit and 64-bit

* Limitation for Windows 8.1/10

- Windows UI (Modern UI) do not support.

- Linux 32-bit and 64-bit*

- Red Hat Enterprise Linux
- openSUSE
- Fedora
- ubuntu
- CentOS

* The latest evaluation environment, please check the readme_en.txt .

Some models are not supported. For details, refer to "2.3 Supported Models".

- macOS 10.15
- macOS 10.14
- macOS 10.13
- macOS 10.12
- Mac OS X 10.11

2.2 Java Operation Environment

This driver is compatible with Java Runtime Environment (JRE) Ver. 1.4.2 and later, but we recommend that you use Java Runtime Environment (JRE) Ver. 1.5 or later.

On Windows OS, set the PATH variable if you want to be able to conveniently run the JDK executables (javac.exe, java.exe, javadoc.exe, etc.) from any directory without having to type the full path of the command. To set the PATH permanently, add the full path of the following directory to the PATH variable.

<JDK installation directory>\bin

Example: C:\Program Files\Java\jdk1.6.0_18\bin

2.3 Supported Models

The driver supports the operating systems and interfaces listed below.

Models	Linux OS	Windows OS	Mac OS
MCP30 (MCP30)	USB / Ethernet	USB / Ethernet	USB / Ethernet
MCP31LB (MCP31)	USB / Ethernet / Bluetooth ^{*1}	USB / Ethernet / Bluetooth ^{*1}	USB / Ethernet / Bluetooth ^{*1}
MCP31L (MCP31)	USB / Ethernet	USB / Ethernet	USB / Ethernet
MCP31CB (MCP31)	USB / Ethernet / Bluetooth ^{*1}	USB / Ethernet / Bluetooth ^{*1}	USB / Ethernet / Bluetooth ^{*1}
MCP31C (MCP31)	USB / Ethernet	USB / Ethernet	USB / Ethernet
MCP20 (MCP20)	USB / Ethernet	USB / Ethernet	Ethernet
MCP20B (MCP20)	USB / Ethernet / Bluetooth ^{*1}	USB / Ethernet / Bluetooth ^{*1}	Ethernet / Bluetooth ^{*1}
MCP21LB (MCP21)	USB / Ethernet / Bluetooth ^{*1}	USB / Ethernet / Bluetooth ^{*1}	USB / Ethernet / Bluetooth ^{*1}
POP10	USB / Bluetooth ^{*1}	USB / Bluetooth ^{*1}	USB / Bluetooth ^{*1}
SM-L200	-	USB ^{*2} / Bluetooth ^{*1}	USB ^{*2} / Bluetooth ^{*1}
SM-L300	-	USB / Bluetooth ^{*1}	USB / Bluetooth ^{*1}
SM-S220i	-	Serial / Bluetooth ^{*1}	Bluetooth ^{*1}
SM-S230i	-	USB	USB
SM-T300	-	Serial / Bluetooth ^{*1}	Bluetooth ^{*1}
SM-T300i	-	Serial / Bluetooth ^{*1}	Bluetooth ^{*1}
SM-T400i	-	Serial / Bluetooth ^{*1}	Bluetooth ^{*1}

^{*1} The communication of Bluetooth interface is "SPP".

^{*2} USB communication will be supported with firmware version 2.0 or later.

3. Installation

Install the 32-bit or 64-bit driver, whichever is appropriate for your Java runtime environment.

1. Uncompress this package.
2. Files which are existed in unzipped package is able to put on a particular place.

Files : "class libraries(jar file)"

"file of JavaPOS driver settings (jpos.xml)"

"files which are related to test application(java , gif, dll file(Windows), dylib file(Mac))"

* If do not need to put on particular place, be able to place files at same package)

* Library file(dll, dylib) needs to put on a folder which exists test application or a folder which is added path environment.

ex. Particular place :

<Windows>

jar file - "C:\Program Files\JavaPOS\lib"

xml, java, gif, dll - "C:\Program Files\JavaPOS\bin"

<Linux> <Mac>

jar file - "/usr/local/javapos/lib"

xml, java, gif, dylib(Mac) - "/usr/local/javapos/bin"

* (Only Linux) Need to install StarIO. Run "install.sh" which is in

"StarIOPort_Install_x32(64)" folder of the unzipped package by administrator authority.

Refer to readme.txt for detail.

On 64-bit operating systems, you can use either the 32-bit or the 64-bit Java runtime environment. Install the appropriate version of the Star JavaPOS driver for your Java runtime environment.

Example :

When using the 32-bit Java runtime environment on a 32-bit OS:	Use the 32-bit driver.
When using the 32-bit Java runtime environment on a 64-bit OS:	Use the 32-bit driver.
When using the 64-bit Java runtime environment on a 64-bit OS:	Use the 64-bit driver.

4. JavaPOS Driver Settings

The Star JavaPOS Driver uses the JCL - Java Configuration Loader system for configuring the provided services. The file `jpos.xml` contained in this package has been prepared with device entries for Star's printer products.

Refer to the followings and adjust `jpos.xml` to fit the environment of use.

The following is a setting example of MCP31POSPrinter and CashDrawer.

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE JposEntries PUBLIC "-//JavaPOS//DTD//EN" "jpos/res/jcl.dtd">
<JposEntries>
  <JposEntry logicalName="POSPrinter_windows_Bluetooth">

    <creation factoryClass="com.starmicronics.starjavapos.ServiceInstanceFactory"
      serviceClass="com.starmicronics.starjavapos.POSPrinterService" />
    <vendor name="Star Micronics" url="www.star-m.jp/eng/index.htm" />
    <jpos category="POSPrinter" version="1.13" />
    <product description="Star receipt printer">
      name="Star Micronics POSPrinter controller"
      url="www.star-m.jp/eng/index.htm" />

    <prop name="model" type="String" value="MCP31" />           ... ①
    <prop name="portName" type="String" value="BT:COM10" />     ... ②
    <prop name="portSettings" type="String" value="" />         ... ③
    <prop name="ioTimeoutMillis" type="Integer" value="5000" /> ... ④

  </JposEntry>

  <JposEntry logicalName="CashDrawer_Windows_Bluetooth">

    <creation factoryClass="com.starmicronics.starjavapos.ServiceInstanceFactory"
      serviceClass="com.starmicronics.starjavapos.CashDrawerService" />
    <vendor name="Star Micronics" url="www.star-m.jp/eng/index.htm" />
    <jpos category="CashDrawer" version="1.13" />
    <product description="Printer controlled cash drawer">
      name="Star Micronics cash drawer controller"
      url="www.star-m.jp/eng/index.htm" />

    <prop name="portName" type="String" value="BT:COM10" />
    <prop name="portSettings" type="String" value="" />
    <prop name="capStatus" type="Boolean" value="True" />
    <prop name="signalLevelHighWhenDrawerOpen" type="Boolean" value="True" />

  </JposEntry>
</JposEntries>
```

4.1 Common Settings

Enter the following settings according to the connection method of your device.

■ Model Name Setting ... ①

ex. `<prop name="model" type="String" value="MCP31" />`

Please input the appropriate model name which you would like to use.

Supported model names are as following.

MCP30, MCP31, MCP20, MCP21, POP10

SM-T300i(same as SM-T301i), SM-T300(same as SM-T301), SM-T400i(same as SM-T401i),

SM-S210i(same as SM-S214i), SM-S220i, SM-S230i(same as SM-S234i),

SM-L200(same as SM-L204), SM-L300(same as SM-L304)

Note: You do not have to enter this property on cash drawer devices.

■ Port Name / Port Settings ... ②

ex. `<prop name="portName" type="String" value="usbprn:Star MCP31" />`
`<prop name="portSettings" type="String" value="" />`

Enter the printer's port name and port settings that are appropriate for your operating system and interface.

【 Ethernet 】

This software uses TCP communication port 9100, TCP communication port 9101, UDP communication port 22222.

[portName]

The port name parameter is formed by combining "TCP:" with your printer's IP address.

For example, if your printer is established on the 192.168.1.102 address then you would pass

`"tcp:192.168.1.102"`

[portSettings]

The port settings parameter must be an empty string.

[USB - Printer Class]**[portName]**

Two different port name parameter forms are accepted.

1. Do not specify the port name
2. Specifying USB serial number *Windows not supported

The "1." is useful when you are using only one printer and your printer does not have a USB serial number set (which is the default setting). The "2." is useful when you are using multiple printers.

1. Do not specify the port name

<Windows>

The port name parameter is formed by combining "usbprn:" with your printer's Windows printer queue name. For the sample program attached, the printer queue name was created with 1 byte character however, two byte characters also can be used.

For example, when you want to specify a Windows queue name as "Star MCP31", you may create it as:

```
"usbprn:Star MCP31"
```

<Linux> <Mac>

The port name parameter is formed by combining "usbprn:" with your printer's model name.

For example, when you want to specify a model name as "MCP31", you may create it as:

```
"usbprn:MCP31"
```

2. Specifying USB serial number * Windows not supported.

```
"usbprn:XXXXXXXX"
```

"usbprn:" causes StarIO to open the printer with the serial number you've specified.

This is useful in two scenarios:

- To avoid new ports being created when the printer is connected to the computer's different USB ports.
- When you have multiple printers connected simultaneously, your printer can be identified.

Note: Star's printers do not have USB serial numbers configured from the factory default. You will have to write a serial number into the device in order to use this functionality.

[portSettings]

The port settings parameter must be an empty string.

【 Bluetooth 】

Pairing with the printer device in advance. Also after pairing, make sure that as following.

<Windows>

Make sure that is showed the "Standard Serial over Bluetooth link (COM X)"(X is number) at "Computer"(right click) > manage > Device Manager > "Ports (COM & LPT)".

<Linux>

At "Terminal", perform the following command.

hcitool scan (Search a Bluetooth Device, Check a MAC Adress of a Bluetooth Device)

As administrator authority, run the following commands.

rfcomm -S bind X <Bluetooth Device MAC Address>

(Create a device file which is "/dev/rfcommX")

chmod u+x /dev/rfcommX

chown <Owner name> /dev/rfcommX

There is the possibility of unintended printing occurring after pairing with the printer.
This is caused by ModemManager. Disable it or take other suitable action.

<Mac>

At "Terminal", perform the following command.

ls /dev/ | grep "tty\."

(Check a device file which is /dev/tty.XXXXXXXXX-SPP(XXX is string.))

[portName]**<Windows>**

Two different port name parameter forms are accepted.

1. Specifying virtual COM port number

Specifying the COM port number like "BT:COM10" or "BT:COM11".

Refer to above for how to determine a COM port number.

2. Specifying Bluetooth MAC address

Specifying the Bluetooth MAC address like "BT:00:12:f3:1b:d8:04".

The Bluetooth MAC address can be confirmed by self-printing.

<Linux>

Specifying the rfcomm port name like "/dev/rfcommX"(X is number).

<Mac>

Specifying the port name like "/dev/tty.XXXXXXXXX".

[portSettings]

The port settings parameter must be an empty string.

Notes about using Bluetooth (Linux only)

Many Linux operating systems require administrator privileges to use Bluetooth devices. If you are logged on as a user without administrator privileges, perform the following configuration, to access a Star Bluetooth device.

1. Open the file *49-starusbprn.rules* that is in the JavaPOS driver folder, and enter the user name for the *OWNER* parameter.
2. Place this file in the */etc/udev/rules.d* directory.

Note : 1) You may need administrator privileges to access the directory.
2) RHEL and CentOS do not support this method for using USB devices.

【 Serial 】**[portName]**

<Windows>

Specifying the serial port name like "COM1" or "COM2".

[portSettings]

These fields are assembled with 'baudRate', 'parity', 'dataBits', 'stopBits', 'flowControl'.

Each fields are a comma-separated string described with 'baudRate', 'parity', 'dataBits', 'stopBits', 'flowControl'.

(For example: "57600,n,8,1,x")

Baud rates:

This field can be one of: "115200", "57600", "38400", "19200", "9600".

Parity:

This field can be one of: "n", "e", "o".

n : For none.

e : For even.

o : For odd.

Data bit :

This field can be one of "7" or "8".

Stop bit :

This field is set to "1".

FlowControl :

This field can be one of: "n", "x" or "c".

n : For no flow control.

x : For software flow control (Xon/Xoff).

c : For hardware flow control.

* Do not set ASB function to "Enabled". (Keep default setting "Disabled")

■ Communications Timeout Setting ... ③

ex. `<prop name="ioTimeoutMillis" type="Integer" value="5000" />`

The value set here establishes a timeout period used to affect communications within this software. If you do not specify this property, its default value (5000 ms) takes effect.

Adjust Communications Timeout Setting depending on your environment and amount of printing data.

4.2 POS Printer Connection Settings

■ ETB Counter Setting

ex. `<prop name="doCheckedBlockPrinting" type="Boolean" value="True" />`

By setting this property to "True," you can check whether print data is sent properly to the printer. If you do not specify this property, its default value (True) takes effect.

■ 2-byte Characters Setting

ex. `<prop name="DBCS" type="String" value="SJIS" />`

Setting for when 2-byte characters are used. The following values are available.

SJIS , GB2312^{*1} , GB18030^{*1} , Big5^{*1} , EUC_KR^{*1}

^{*1} Portable printers (SM-L200, SM-L300, SM-S220i, SM-S230i, SM-T300, SM-T300i, SM-T400i) only support SJIS.

- Depending on the printer model that you are using, enable the memory switch's 2-byte character set property.
- If the 2-byte character set is enabled, you cannot change the code page to any character set other than the one that you are using.

■ NV Logo Print Setting

ex. `<prop name="useNVBitImage" type="Boolean" value="True" />`

By setting this property to "True," you can use NV Logo printing by escape sequence (ESC|#B). If you do not specify this property, its default value (False) takes effect.

■ CodePage Setting

ex. `<prop name="codePage" type="Integer" value="437" />`

Setting for when codePage is used. The following values are available.

437,737,852,855,857,858,860,861,862,863,864,865,866,869,874,928,932,998,999,1250,1251,1252

4.3 CashDrawer Connection Settings

If you do not specify these items, the default value is valid.

■ Configuration - CashDrawer Circuit

ex. `<prop name="controlPrimaryDrawer" type="Boolean" value="True" />`

You can set the Cash Draw Circuit you want to use. To use peripheral drive 1 for connecting the cash drawer, set this property to "True". To use peripheral device 2, set this property to "False". The default value is "True".

■ Configuration - On Pulse Width

ex. `<prop name="firePulseWidth" type="Long" value="200" />`

This property controls how long the "On pulse" is fired for. The default value is "200" milliseconds.

* The pulse width for Peripheral Unit 2 is fixed at 200 milliseconds.

■ Configuration - Off Pulse Width

ex. `<prop name="sleepPulseWidth" type="Long" value="200" />`

This property controls how long of a pause there will be between pulses. The default value is "200" milliseconds.

* The pulse width for Peripheral Unit 2 is fixed at 200 milliseconds.

■ Configuration - Drawer Status

ex. `<prop name="capStatus" type="Boolean" value="True" />`

If your cash drawer supports status reporting, you may get the drawer open/closed status reports by setting the option to 'True'. The default value is "False".

* This feature is only valid when the cash drawer that you are using supports an open-close detector switch.

■ Configuration - Status Signal

ex. `<prop name="signalLevelHighWhenDrawerOpen" type="Boolean" value="True" />`

Configure the status signal according to the specification of your cash drawer.

'True': Open/Close detection SW set to High when the cash drawer is open.

'False': Open/Close detection SW set to Low when the cash drawer is open.

The default value is "True".

5. Sample Program

The sample program is available in "StarReceiptTest.java", "StarSlipTest.java", "StarCashDrawerTest.java" and "StarMICRTest.java".

Use them as references for developing your applications.

The following is the reference of "StarReceiptTest.java" for the print test.

1. Open the "StarReceiptTest.java". Specify "location of jpos.xml" at "System.setProperty method". The "location of jpos.xml" is "Full(Relative) Path + jpos.xml" or "jpos.xml" (if jpos.xml and running application are in the same package).

ex. Full Path :

<Windows>

"C:\Program Files\JavaPOS\bin\jpos.xml"

<Linux> <Mac>

"/usr/local/javapos/bin/jpos.xml"


<StarReceiptTest.java>

```

/*
 * If you want to place the jpos.xml file elsewhere on
 * system then uncomment the following line and specify
 * jpos.xml.
 *
 * If you want to place the jpos.xml file on a webserver for access over
 * the internet then uncomment the second System.setProperty line below
 * and specify the full URL to jpos.xml.
 */
System.setProperty( JposPropertiesConst. JPOS_POPULATOR_FILE_PROP_NAME, "jpos.xml");

```

"C:\Program Files\JavaPOS\bin\jpos.xml",
"/usr/local/javapos/bin/jpos.xml",
"/bin/jpos.xml",
"jpos.xml", etc...



2. Put the "logicalName" in "the jpos.xml" to the argument of "open method" in the "StarReceiptTest.java". Also "logicalName" can put any name.

<jpos.xml>

```

<JposEntry logicalName="POSPrinter_windows_usb_printer_class">
  <creation factoryClass="com.star_micronics.starjavapos.ServiceInstanceFactory" serviceClass="
  <vendor name="Star Micronics" url="www.star-m.jp/eng/index.htm" />


```

<StarReceiptTest.java>

```

// open the printer object according to the entry names defined in jpos.xml
printer.open("POSPrinter_windows_usb_printer_class");
// claim exclusive usage of the printer object
printer.claim(1);
// enable the device for input and output
printer.setDeviceEnabled(true);

```



3. Save the StarReceiptTest.java. In Command Prompt(Terminal), run the following commands by administrator authority for checking a "sample receipt printing".

*In this example, run the commands by administrator authority due to a place of directory.

- i) Change to the directory of running application.

```
cd "Place of performing Java application"
```

- ii) The "javac" command compiles a "java file" and create a "class file".

<Windows>

```
javac -classpath .;jarFile1.jar;jarFile2.jar;...;jarFileN.jar StarReceiptTest.java
```

<Linux><Mac>

```
javac -classpath .:jarFile1.jar:jarFile2.jar:...:jarFileN.jar StarReceiptTest.java
```

- iii) The "java" command run the "class file".

<Windows>

```
java -classpath .;jarFile1.jar;jarFile2.jar;...;jarFileN.jar StarReceiptTest
```

<Linux><Mac>

```
java -classpath .:jarFile1.jar:jarFile2.jar:...:jarFileN.jar StarReceiptTest
```

**"jarFileN.jar" is "Full(Relative) Path + jar file name" or "jar file name".

<Windows>

```
C:\Windows\System32> cd C:\Program Files\Java\jre6\bin
C:\Program Files\Java\jre6\bin> javac -classpath "C:\Program Files\Java\jre6\lib\jpos113-controls.jar";"C:\Program Files\Java\jre6\lib\jcl.jar" StarReceiptTest.java
C:\Program Files\Java\jre6\bin> java -classpath .;"C:\Program Files\Java\jre6\lib\jpos113-controls.jar";"C:\Program Files\Java\jre6\lib\jcl.jar";"C:\Program Files\Java\jre6\lib\stario.jar";"C:\Program Files\Java\jre6\lib\stariavapos.jar";"C:\Program Files\Java\jre6\lib\xercesimpl.jar";"C:\Program Files\Java\jre6\lib\xml-apis.jar";"C:\Program Files\Java\jre6\lib\CommandEmulator.jar" StarReceiptTest
Async transaction print submitted: time = 1355368062172 output id = 1
OutputCompleteEvent received: time = 1355368063794 output id = 1
StarReceiptTest finished.
```

<Linux>

```

dev4@dev4-A0D: i) ~$ cd /usr/local/JavaPOS/bin/
dev4@dev4-A0D270:/usr/local/JavaPOS/b ii) sudo javac -classpath "/usr/local/JavaP
OS/lib/jpos113-controls.jar":"/usr/local/JavaPOS/lib/jcl.jar" StarReceiptTest.ja
va
dev4@dev4-A0D270:/usr/local/JavaPOS/b iii) sudo java -classpath .:"/usr/local/Java
POS/lib/starjavapos.jar":"/usr/local/JavaPOS/lib/stario.jar":"/usr/local/JavaPOS
/lib/commandemulator.jar":"/usr/local/JavaPOS/lib/jpos113-controls.jar":"/usr/lo
cal/JavaPOS/lib/jcl.jar":"/usr/local/JavaPOS/lib/xercesimpl.jar":"/usr/local/Jav
aPOS/lib/xml-apis.jar" StarReceiptTest
Async transaction print submitted: time = 1355382755333 output id = 1
OutputCompleteEvent received: time = 1355382756830 output id = 1
StarReceiptTest finished.
dev4@dev4-A0D270:/usr/local/JavaPOS/bin$

```

<Mac>

```

satsuki-no-MacBook:~ satsuki i) cd /usr/local/JavaPOS/bin/
satsuki-no-MacBook:bin satsuki ii) sudo javac -classpath "/usr/local/JavaPOS/lib/jp
os113-controls.jar":"/usr/local/JavaPOS/lib/jcl.jar" StarReceiptTest.java
satsuki-no-MacBook:bin satsuki iii) sudo java -classpath .:"/usr/local/JavaPOS/lib/s
tarjavapos.jar":"/usr/local/JavaPOS/lib/stario.jar":"/usr/local/JavaPOS/lib/jpos
113-controls.jar":"/usr/local/JavaPOS/lib/jcl.jar":"/usr/local/JavaPOS/lib/xerce
simpl.jar":"/usr/local/JavaPOS/lib/xml-apis.jar" StarReceiptTest
Async transaction print submitted: time = 1355374123514 output id = 1
OutputCompleteEvent received: time = 1355374124364 output id = 1
StarReceiptTest finished.
satsuki-no-MacBook:bin satsuki$

```

*** About a "-classpath" option of "javac" or "java" command.**

At "-classpath", specify the required "jar files" to compile and run applications.

In addition to the above example, if there are in the same directory the "application executable file" (.class) and "jar files", can specify only "jar file name"(not need file path).

ex. Particular place :

<Windows>

jar file, xml, java, gif - "C:\Program Files\JavaPOS"

<Linux> <Mac>

jar file, xml, java, gif - "/usr/local/javapos"

Commands for a java application :

<Windows>

```
javac -classpath jpos113-controls.jar;jcl.jar StarReceiptTest.java
java -classpath .;starjavapos.jar;stario.jar;jpos113-controls.jar;
    jcl.jar;xercesimpl.jar;xml-apis.jar StarReceiptTest
```

<Linux>

```
javac -classpath jpos113-controls.jar;jcl.jar StarReceiptTest.java
java -classpath .:starjavapos.jar:stario.jar:commandemulator.jar:
    jpos113-controls.jar;jcl.jar:xercesimpl.jar:xml-apis.jar StarReceiptTest
```

<Mac>

```
javac -classpath jpos113-controls.jar;jcl.jar StarReceiptTest.java
java -classpath .:starjavapos.jar:stario.jar;jpos113-controls.jar:
    jcl.jar;xercesimpl.jar:xml-apis.jar StarReceiptTest
```

* About commands for running, if files are in the same folder, refer to the beginning of the StarReceiptTest.java.

6. Service Objects

The following tables list this driver's supporting status of JavaPOS service objects.

Please refer to the *Java for Retail POS Programming Guide* about the specifications of the Service Objects.

6.1 POS Printer

The Service Objects of POSPrinter is supported in StarPRNT Mode.

■ Properties

Property	Supporting status		Remarks
AutoDisable	-		Not applicable JavaPOS
CapCompareFirmwareVersion	<input type="radio"/>	FALSE	
CapPowerReporting	<input type="radio"/>		StarPRNT : JPOS_PR_ADVANCED
CapStatisticsReporting	<input type="radio"/>	FALSE	
CapUpdateFirmware	<input type="radio"/>	FALSE	
CapUpdateStatistics	<input type="radio"/>	FALSE	
CheckHealthText	<input type="radio"/>		
Claimed	<input type="radio"/>		
DataCount	-		Not applicable JavaPOS
DataEventEnabled	-		Not applicable JavaPOS
DeviceEnabled	<input type="radio"/>		
FreezeEvents	<input type="radio"/>		
OutputID	<input type="radio"/>		The initial value is zero. The value is incremented for every asynchronous output. The value range is 1 to 10000.
PowerNotify	<input type="radio"/>		
PowerState	<input type="radio"/>		
State	<input type="radio"/>		
DeviceControlDescription	<input type="radio"/>		
DeviceControlVersion	<input type="radio"/>	1013000	
DeviceServiceDescription	<input type="radio"/>	"Star Micronics JavaPOS POSPrinter Service Driver"	
DeviceServiceVersion	<input type="radio"/>	1013012	
PhysicalDeviceDescription	<input type="radio"/>	"Star Micronics ***** (Model Name)"	
PhysicalDeviceName	<input type="radio"/>	"Star Micronics single station thermal printer"	
CapCharacterSet	<input type="radio"/>	PTR_CCS_ASCII	
CapConcurrentJrnRec	<input type="radio"/>	FALSE	
CapConcurrentJrnSlp	<input type="radio"/>	FALSE	
CapConcurrentPageMode	<input type="radio"/>	FALSE	
CapConcurrentRecSlp	<input type="radio"/>	FALSE	
CapCoverSensor	<input type="radio"/>		
CapMapCharacterSet	<input type="radio"/>	FALSE	
CapTransaction	<input type="radio"/>	TRUE	
CapJrnPresent	<input type="radio"/>	FALSE	
CapJrn2Color	<input type="radio"/>	FALSE	
CapJrnBold	<input type="radio"/>	FALSE	
CapJrnDhigh	<input type="radio"/>	FALSE	
CapJrnDwide	<input type="radio"/>	FALSE	
CapJrnDwideDhigh	<input type="radio"/>	FALSE	
CapJrnEmptySensor	<input type="radio"/>	FALSE	
CapJrnItalic	<input type="radio"/>	FALSE	
CapJrnNearEndSensor	<input type="radio"/>	FALSE	

Property	Supporting status		Remarks
CapJrnUnderline	<input type="radio"/>	FALSE	
CapJrnCartridgeSensor	<input type="radio"/>	0	
CapJrnColor	<input type="radio"/>	0	
CapRecPresent	<input type="radio"/>	TRUE	
CapRec2Color	<input type="radio"/>	FALSE	
CapRecBarCode	<input type="radio"/>		
CapRecBitmap	<input type="radio"/>	TRUE	
CapRecBold	<input type="radio"/>	TRUE	
CapRecDhigh	<input type="radio"/>	TRUE	
CapRecDwide	<input type="radio"/>	TRUE	
CapRecDwideDhigh	<input type="radio"/>	TRUE	
CapRecEmptySensor	<input type="radio"/>	TRUE	
CapRecItalic	<input type="radio"/>	FALSE	
CapRecLeft90	<input type="radio"/>	FALSE	
CapRecNearEndSensor	<input type="radio"/>		Model dependence
CapRecPapercut	<input type="radio"/>		Model dependence
CapRecRight90	<input type="radio"/>	FALSE	
CapRecRotate180	<input type="radio"/>	TRUE	
CapRecStamp	<input type="radio"/>	FALSE	
CapRecUnderline	<input type="radio"/>	TRUE	
CapRecCartridgeSensor	<input type="radio"/>	0	
CapRecColor	<input type="radio"/>		Model dependence
CapRecMarkFeed	<input type="radio"/>	0	
CapRecPageMode	<input type="radio"/>	FALSE	
CapRecRuledLine	<input type="radio"/>	0	
CapSlpPresent	<input type="radio"/>	FALSE	
CapSlpFullslip	<input type="radio"/>	FALSE	
CapSlp2Color	<input type="radio"/>	FALSE	
CapSlpBarCode	<input type="radio"/>	FALSE	
CapSlpBitmap	<input type="radio"/>	FALSE	
CapSlpBold	<input type="radio"/>	FALSE	
CapSlpDhigh	<input type="radio"/>	FALSE	
CapSlpDwide	<input type="radio"/>	FALSE	
CapSlpDwideDhigh	<input type="radio"/>	FALSE	
CapSlpEmptySensor	<input type="radio"/>	FALSE	
CapSlpItalic	<input type="radio"/>	FALSE	
CapSlpLeft90	<input type="radio"/>	FALSE	
CapSlpNearEndSensor	<input type="radio"/>	FALSE	
CapSlpRight90	<input type="radio"/>	FALSE	
CapSlpRotate180	<input type="radio"/>	FALSE	
CapSlpUnderline	<input type="radio"/>	FALSE	
CapSlpBothSidesPrint	<input type="radio"/>	FALSE	
CapSlpCartridgeSensor	<input type="radio"/>	0	
CapSlpColor	<input type="radio"/>	0	
CapSlpPageMode	<input type="radio"/>	FALSE	
CapSlpRuledLine	<input type="radio"/>	0	
AsyncMode	<input type="radio"/>		
CartridgeNotify	<input type="radio"/>	PTR_CN_DISABLED	
CharacterSet	<input type="radio"/>		
CharacterSetList	<input type="radio"/>		
CoverOpen	<input type="radio"/>		

Property	Supporting status		Remarks
ErrorLevel	○	○	
ErrorStation	○	○	
ErrorString	○	○	
FontTypefaceList	○	""	
FlagWhenIdle	○	○	
MapCharacterSet	○	FALSE	
MapMode	○		
PageModeArea	○	""	
PageModeDescriptor	○	0	
PageModeHorizontalPosition	○	0	
PageModePrintArea	○	""	
PageModePrintDirection	○	0	
PageModeStation	○	0	
PageModeVerticalPosition	○	0	
RotateSpecial	○		
JrnLineChars	○	0	
JrnLineCharsList	○	""	
JrnLineHeight	○	0	
JrnLineSpacing	○	0	
JrnLineWidth	○	0	
JrnLetterQuality	○		
JrnEmpty	○	FALSE	
JrnNearEnd	○	FALSE	
JrnCartridgeState	○	PTR_CART_UNKNOWN	
JrnCurrentCartridge	○	0	
RecLineChars	○		
RecLineCharsList	○		
RecLineHeight	○		
RecLineSpacing	○		
RecLineWidth	○		
RecLetterQuality	○		
RecEmpty	○		
RecNearEnd	○		Model dependence
RecSidewaysMaxLines	○	0	
RecSidewaysMaxChars	○	0	
RecLinesToPaperCut	○		
RecBarCodeRotationList	○	0,180	
RecBitmapRotationList	○	0,180	
RecCartridgeState	○	PTR_CART_UNKNOWN	
RecCurrentCartridge	○	0	
SlpLineChars	○	0	
SlpLineCharsList	○	""	
SlpLineHeight	○	0	
SlpLineSpacing	○	0	
SlpLineWidth	○	0	
SlpLetterQuality	○		
SlpEmpty	○	FALSE	
SlpNearEnd	○	FALSE	
SlpSidewaysMaxLines	○	0	
SlpSidewaysMaxChars	○	0	
SlpMaxLines	○	0	

Property	Supporting status		Remarks
SlpLinesNearEndToEnd	<input type="radio"/>	0	
SlpBarCodeRotationList	<input type="radio"/>	""	
SlpBitmapRotationList	<input type="radio"/>	""	
SlpPrintSide	<input type="radio"/>	PTR_PS_UNKNOWN	
SlpCartridgeState	<input type="radio"/>	PTR_CART_UNKNOWN	
SlpCurrentCartridge	<input type="radio"/>	0	

■ Methods

Method	Supporting status	Remarks
Open	○	
Close	○	
Claim	○	
Release	○	
CheckHealth	○	
ClearInput	-	Not applicable JavaPOS
ClearInputProperties	-	Not applicable JavaPOS
ClearOutput	○	
CompareFirmwareVersion	×	
DirectIO	×	
ResetStatistics	×	
RetrieveStatistics	×	
UpdateFirmware	×	
UpdateStatistics	×	
PrintNormal	○	
PrintTwoNormal	×	
PrintImmediate	○	
BeginInsertion	○	
EndInsertion	○	
BeginRemoval	○	
EndRemoval	○	
CutPaper	○	
RotatePrint	○	
PrintBarCode	○	Refer to the following Note
PrintBitmap	○	
TransactionPrint	○	
ValidateData	○	
SetBitmap	○	
SetLogo	○	
ChangePrintSide	×	
MarkFeed	×	
ClearPrintArea	×	
PageModePrint	×	
PrintMemoryBitmap	×	
DrawRuledLine	×	

PrintBarCode Method Notes :

- The symbology parameter can be set to the following values (supported barcodes).
PTR_BCS_UPCA, PTR_BCS_UPCE, PTR_BCS_JAN8, PTR_BCS_JAN13, PTR_BCS_ITF, PTR_BCS_Codabar,
PTR_BCS_Code39, PTR_BCS_Code93, PTR_BCS_Code128, PTR_BCS_Code128_Parsed, PTR_BCS_QRCODE*,
PTR_BCS_PDF417*
* For details on 2D codes, refer to 3).
- The height parameter can be set to the following values.
1 to 255 (When the MapMode property is set to PTR_MM_DOTS)

3) Parameter settings for 2D codes (QR code, PDF417).

ex.

```
printer.printBarCode(POSPrinterConst.PTR_S_RECEIPT, "http://StarMicronics.com", POSPrinterConst.PTR_BCS_QRCODE,
10 * 100, 60 * 100, POSPrinterConst.PTR_BC_CENTER, POSPrinterConst.PTR_BC_TEXT_BELOW);"
```

Settable parameters (*Symbology*)

QR code PTR_BCS_QRCODE

PDF417 PTR_BCS_PDF417

* When printing 2D codes, the *Height*, *Width* and *TextPosition* parameters are ignored.

For setting the parameters of 2D codes, include the following properties for jpos.xml.

If properties are not included, the printer driver will operate using the default command specifications.

<prop name="PDF417Line" type="Integer" value="0" />	Set PDF417 number of lines [0, 3 ~ 90]
<prop name="PDF417Column" type="Integer" value="0" />	Set PDF417 number of columns [0, 1 ~ 30]
<prop name="PDF417Ecc" type="Integer" value="1" />	Set PDF417 ECC (security level) [0 ~ 8]
<prop name="PDF417ModuleXdim" type="Integer" value="2" />	Set PDF417 module X direction size [1 ~ 10]
<prop name="PDF417Aspect" type="Integer" value="3" />	Set PDF417 module aspect ratio [1 ~ 10]
<prop name="QRCodeModel" type="Integer" value="2" />	Set QR code model [1, 2]
<prop name="QRCodeEcc" type="Integer" value="0" />	Set QR code mistake correction level [0 ~ 3]
<prop name="QRCodeCellSize" type="Integer" value="3" />	Set QR code cell size [1 ~ 8]

■ Events

Event	Supporting status	Remarks
DataEvent	-	Not applicable JavaPOS
DirectIOEvent	×	
ErrorEvent	○	
OutputCompleteEvent	○	
StatusUpdateEvent	○	

■ Escape Sequences

Escape Sequence	Supporting status	Remarks
ESC [#]P	○	Paper cut
ESC [#]fP	○	Feed and paper cut
ESC sP	×	Feed, Paper cut, and Stamp
ESC sL	×	Fire stamp
ESC #B	○	Print bitmap Can use NV Logo Print (Refer to "4.2 POS Printer Connection Settings")
ESC tL	○	Print top logo
ESC bL	○	Print bottom logo
ESC [#]lF	○	Feed lines
ESC [#]uF	○	Feed units [#] can be set to the following values in unit of dots. StarLine Thermal Printer : 1 - 127 dots If any other value is set, ValidateData will return JPOS_E_ILLEGAL.
ESC [#]rF	△	Feed reverse Model dependence
ESC #E	○	Pass through embedded data
ESC #R	△	Print in-line barcode Model dependence
ESC #dL	×	Print in-line ruled line
ESC #fT	×	Font typeface selection
ESC [!]bC	○	Bold
ESC [!][#]uC	○	Underline
ESC [!]iC	×	Italic
ESC [!][#]rC	×	Alternate color(Custom)
ESC [!]rvC	○	Reverse video
ESC [!][#]sC	×	Shading
ESC 1C	○	Single high and wide
ESC 2C	○	Double wide
ESC 3C	○	Double high
ESC 4C	○	Double high and wide
ESC #hC	○	Scale horizontally mCollection : Up to 6 times Portable Printer : Up to 2 times
ESC #vC	○	Scale vertically mCollection : Up to 6 times Portable Printer : Up to 2 times
ESC [!][#]fC	×	RGB Color
ESC [!]tbC	×	SubScript
ESC [!]tpC	×	SuperScript
ESC cA	○	Center
ESC rA	○	Right justify If PTR_RP_ROTATE180 is set, the alignment will be reversed.
ESC lA	○	Left justify If PTR_RP_ROTATE180 is set, the alignment will be reversed.
ESC [!][#]stC	×	Strike-through
ESC N	○	Normal

6.2 Cash Drawer

The Service Objects of Cash Drawer is supported in StarPRNT Mode.

■ Properties

Property	Supporting status		Remarks
AutoDisable	-		Not applicable JavaPOS
CapCompareFirmwareVersion	<input type="radio"/>	FALSE	
CapPowerReporting	<input type="radio"/>		StarPRNT : OS_PR_ADVANCED
CapStatisticsReporting	<input type="radio"/>	FALSE	
CapUpdateFirmware	<input type="radio"/>	FALSE	
CapUpdateStatistics	<input type="radio"/>	FALSE	
CheckHealthText	<input type="radio"/>		
Claimed	<input type="radio"/>		
DataCount	-		Not applicable JavaPOS
DataEventEnabled	-		Not applicable JavaPOS
DeviceEnabled	<input type="radio"/>		
FreezeEvents	<input type="radio"/>		
OutputID	-		Not applicable JavaPOS
PowerNotify	<input type="radio"/>		
PowerState	<input type="radio"/>		
State	<input type="radio"/>		
DeviceControlDescription	<input type="radio"/>	"JavaPOS CashDrawer Device Control"	
DeviceControlVersion	<input type="radio"/>	1013000	
PhysicalDeviceServiceDescription	<input type="radio"/>	"Star Micronics JavaPOS CashDrawer Service Driver"	
DeviceServiceVersion	<input type="radio"/>	1013012	
PhysicalDeviceDescription	<input type="radio"/>	"Printer controlled cash drawer"	
PhysicalDeviceName	<input type="radio"/>	"Star Micronics Cash Drawer Controller"	
CapStatus	<input type="radio"/>		
CapStatusMultiDrawerDetect	<input type="radio"/>	FALSE	
DrawerOpened	<input type="radio"/>		

■ Methods

Method	Supporting status		Remarks
Open	<input type="radio"/>		
Close	<input type="radio"/>		
ClaimDevice	<input type="radio"/>		
Release	<input type="radio"/>		
CheckHealth	<input type="radio"/>		
ClearInput	-		Not applicable JavaPOS
ClearInputProperties	-		Not applicable JavaPOS
ClearOutput	-		Not applicable JavaPOS
CompareFirmwareVersion	<input checked="" type="radio"/>		
DirectIO	<input checked="" type="radio"/>		
ResetStatistics	<input checked="" type="radio"/>		
RetrieveStatistics	<input checked="" type="radio"/>		
UpdateFirmware	<input checked="" type="radio"/>		
UpdateStatistics	<input checked="" type="radio"/>		
OpenDrawer	<input type="radio"/>		
WaitForDrawerClose	<input type="radio"/>		

■ Events

Event	Supporting status		Remarks
DataEvent	-		Not applicable JavaPOS
DirectIOEvent	×		
ErrorEvent	-		Not applicable JavaPOS
OutputCompleteEvent	-		Not applicable JavaPOS
StatusUpdateEvent	○		



URL: <http://www.starmicronics.com/support/>