

Star JavaPOS Driver

- *Software Manual* -

Table of Contents

1. Getting Started	1
2. Operating Environment	1
2.1 Operating System.....	1
2.2 Java Operation Environment	2
2.3 Supported Models.....	2
3. Installation.....	3
4. JavaPOS Driver Settings.....	4
4.1 Common Settings.....	5
4.2 POSPrinter Connection Settings	12
4.3 CashDrawer Connection Settings	13
4.4 MICR Connection Settings	14
5. Sample Program	15
6. Service Objects	19
6.1 POSPrinter	19
6.2 Cash Drawer.....	25
6.3 MICR.....	26
7. Version History.....	28

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_1.13.x*_windows_32bit.zip
 - starjavapos_1.13.x*_windows_64bit.zip
 - starjavapos_1.13.x*_linux_32bit.zip
 - starjavapos_1.13.x*_linux_64bit.zip
 - starjavapos_1.13.x*_mac.zip
- * x : Version No.

Star JavaPOS driver is an implementation of JavaPOS providing POSPrinter and CashDrawer services for all Star printer products. This software provides a Java class framework through which applications can easily interface with Star printers.

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

2. Operating Environment

2.1 Operating System

This software supports the following operating systems.

- Windows 8 * 32-bit and 64-bit / Windows 7 32-bit and 64-bit / Vista 32-bit and 64-bit / XP

* except Windows RT

- Linux 32-bit and 64-bit*

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

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

- Mac OS X 10.8 / 10.7 / 10.6 32-bit and 64-bit / 10.5 32-bit

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
FVP10	Serial / Parallel / USB / Ethernet	Serial / Parallel / USB / Ethernet	USB / Ethernet
TSP100 Series	USB or Ethernet *1	- *2	- *2
TSP700II	Serial / Parallel / USB / Ethernet	Serial / Parallel / USB / Ethernet	USB / Ethernet
TSP650	Serial / Parallel / USB / Ethernet	Serial / Parallel / USB / Ethernet	USB / Ethernet
TSP650II	Serial / Parallel / USB / Ethernet / Bluetooth*3	Serial / Parallel / USB / Ethernet / Bluetooth*3	USB / Ethernet / Bluetooth*3
TSP800II	Serial / Parallel / USB / Ethernet	Serial / Parallel / USB / Ethernet	USB / Ethernet
TSP1000	Serial / Parallel / USB / Ethernet	Serial / Parallel / USB / Ethernet	USB / Ethernet
HSP7000	Serial / Parallel / USB / Ethernet	Serial / Parallel / USB / Ethernet	USB / Ethernet
TUP500	Serial / Parallel / USB / Ethernet	Serial / Parallel / USB / Ethernet	USB / Ethernet
TUP900	Serial / Parallel / USB / Ethernet	Serial / Parallel / USB / Ethernet	USB / Ethernet
SP500	Serial / Parallel / USB / Ethernet	Serial / Parallel / USB / Ethernet	USB / Ethernet
SP700	Serial / Parallel / USB / Ethernet	Serial / Parallel / USB / Ethernet	USB / Ethernet

*1 If you use TSP100 Series, you need Xerces-C++ Version 2.7.0 on your Linux system. Please download Xerces-C++ Version 2.7.0 from the package archive homepage of each Linux system. For the TSP100 series, the use of JavaPOS drivers is not supported on Linux 64-bit.

*2 This driver cannot be used when you are using the TSP100 series on a Windows operating system. Use the JavaPOS driver that is included in the CD that comes with the printer. For the TSP100 series, the use of JavaPOS drivers is not supported on the Mac OS.

*3 The communication of Bluetooth interface is "SPP".
The Bluetooth interface is not support to Mac OS X 10.5 and open SUSE.

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

Files : "class libraries (jar file)"

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

"files which are related to test applications (java, gif, dylib file (only Mac))".

ex. Particular place :

<Windows>

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

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

<Linux> <Mac>

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

xml, java, gif - "/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.

The following is a setting example of POSPrinter and CashDrawer.

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

    <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="TSP743II" /> .....①
    <prop name="portName" type="String" value="LPT1" /> .....②
    <prop name="portSettings" type="String" value="" /> .....③
    <prop name="ioTimeoutMillis" type="Integer" value="5000" /> ...④
  </JposEntry>

  <JposEntry logicalName="CashDrawer_windows_parallel">

    <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="LPT1" />
    <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="TSP743II" />

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

Supported model names are as following.

FVP10, TSP743II, TSP651, TSP654, TSP650II(same as TSP654II), TSP847II,
TSP1000 (same as TSP1045), TSP1043, TSP1045,
TUP500, TUP900, HSP7000, SP512, SP542, SP712, SP742, SP717, SP747,
TSP100* (same as TSP143), TSP113*, TSP143*,
TSP100GT* (same as TSP143GT), TSP113GT*, TSP143GT*,
TSP100LAN* (same as TSP143LAN), TSP113LAN*, TSP143LAN*

* Linux 32bit Only

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="LPT1" />
 <prop name="portSettings" type="String" value="" />

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

【 Serial 】

[portName]

<Windows>

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

<Linux>

Specifying the serial port name like "/dev/ttyS0" or "/dev/ttyS1".

[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: "9600,n,8,1,n")

Baud rates:

This field can be one of: "38400", "19200", "9600", "4800".

Parity:

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

n : For none.

e : For even.

o : For odd.

Data bit :

This field is set to "8".

Stop bit :

This field is set to "1".

FlowControl :

This field can be one of: "n" or "e".

n : For no flow control.

h : For hardware flow control.

* It is recommended that you configure your printer for 38400 baud with hardware flow control.

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

【 Parallel 】

- Set NSB to "Enable" as follows when you use these models.

-FVP10, TSP700II, TSP650, TSP650II, TSP800II, TSP1000, HSP7000

Setting Printer DIP SW1	DIPSW 1-8 = off
-------------------------	-----------------

-TUP500

Setting Printer Memory Switch	MSW 7-8 = on
-------------------------------	--------------

-TUP900

Setting Printer Memory Switch	MSW 7-8 = on (F/W version 4.4 or earlier)
-------------------------------	---

Setting Printer Memory Switch	MSW 7-8 = off (F/W version 5.0 or later)
-------------------------------	--

-SP700, SP500

Setting Printer Memory Switch	MSW 4-7 = on
-------------------------------	--------------

[portName]

<Windows>

Specify the parallel port name like "LPT1" or "LPT2".

<Linux>

Specify the parallel port name like "/dev/parport0" or "/dev/parport1".

[portSettings]

The port settings parameter must be an empty string.

【USB - Printer Class】

- Set to "USB Printer Class mode" as follows when you use these models.

-Excluding HSP7000 series

Setting Printer DIP SW1 DIPSW 1-5 = on (Factory Default)

-HSP7000 series

Setting Printer DIP SW1 DIPSW 1-5 = off

[portName]

Two different port name parameter forms are accepted.

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

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 TSP800II (TSP847II)", you may create it as:

"usbprn:Star TSP800II (TSP847II)"

<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 "TSP743II", you may create it as:

"usbprn:TSP743II"

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.

【USB - Vendor Class】

- Set to "USB Vendor Class mode" as follows when you use these models.
 - Excluding HSP7000 series

Setting Printer DIP SW1	DIPSW 1-5 = off
-------------------------	-----------------
 - HSP7000 series

Setting Printer DIP SW1	DIPSW 1-5 = on (Factory Default)
-------------------------	------------------------------------
- Set NSB to "Enable" as follows when you use these models.
 - FVP10, TSP700II, TSP650, TSP650II, TSP800II, TSP1000, HSP7000

Setting Printer DIP SW1	DIPSW 1-8 = off
-------------------------	-----------------
 - TUP500

Setting Printer Memory Switch	MSW 7-8 = on
-------------------------------	--------------
 - TUP900

Setting Printer Memory Switch	MSW 7-8 = on (F/W version 4.4 or earlier)
Setting Printer Memory Switch	MSW 7-8 = off (F/W version 5.0 or later)
 - SP700, SP500

Setting Printer Memory Switch	MSW 4-7 = on
-------------------------------	--------------
- Install Star Vendor Class USB Driver. * Only Windows

Install Star Vendor Class USB Driver in "USBVendorClassDriver" folder.

Please refer to *usb-vendor-class-driver_im_en.pdf* for details.

[portName]

Three different port name parameter forms are accepted.

1. Do not specify the port name
2. Specifying USB serial number
3. Specifying COM port name

This 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).

1. Do not specify the port name

"usbven:"

usbven:" instructs StarIO to open the first Star USB Vendor Class device it finds.

When there is no USB serial number set, connecting your printer to different USB ports on the computer will cause it to be assigned varying COM port names - and this would otherwise complicate the use of OpenPort.

2. Specifying USB serial number * Mac not supported.

"usbven:XXXXXXXX"

"usbven:" 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.

3. Specifying COM port name * Linux/Mac not supported. (Windows only)

"usbven:comX"

"usbven:" causes StarIO to open communications with the printer based on the COM port name it's been natively assigned.

You can determine what name this is by looking in the Windows Device Manager.

Note: If the printer you are using does not have a USB serial number, each time it gets connected to a different USB port it will be assigned a new COM port name. In this case, you need to change the specified COM port name.

[portSettings]

The port settings parameter must be an empty string.

Notes about using USB Printer Class and USB Vendor Class modes (Linux only)

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

【 Ethernet 】

[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.

【 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

<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]

Refer to above for how to determine a COM number.

<Windows>

Specifying the port name like "BT:COM10" or "BT:COM11".

<Linux>

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

<Mac>

Specifying the port name like "/dev/tty.XXXXXXXX-SPP".

[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.

■ 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.

4.2 POSPrinter 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.

■ TSP100 Series Setting

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

Setting for when a TSP100ECO / GT / LAN / U / PUSB series is used.

■ 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 , GB18030 , Big5, EUC_KR

- * 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.

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".

4.4 MICR Connection Settings

■ MICR Format Setting

ex. <prop name="format" type="String" value="E13B" />

To use the E-13B MICR format (as defined by the ANSI MICR), set this property to "E13B". To use the CMC-7 MICR format (as defined by the ISO), set this property to "CMC7".

Note: 1) Only HS7000 is supported.
2) USB Printer Class is not supported.

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> i) cd C:\Program Files\JavaPOS\bin
C:\Program Files\JavaPOS\bin> ii) javac -classpath "C:\Program Files\JavaPOS\lib\ipos113-controls.jar";"C:\Program Files\JavaPOS\lib\jcl.jar" StarReceiptTest.java
C:\Program Files\JavaPOS\bin> iii) java -classpath .;"C:\Program Files\JavaPOS\lib\ipos113-controls.jar";"C:\Program Files\JavaPOS\lib\jcl.jar";"C:\Program Files\JavaPOS\lib\stario.jar";"C:\Program Files\JavaPOS\lib\stariavapos.jar";"C:\Program Files\JavaPOS\lib\xercesimpl.jar";"C:\Program Files\JavaPOS\lib\xml-apis.jar";"C:\Program Files\JavaPOS\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:~ satsu i) cd /usr/local/JavaPOS/bin/
satsuki-no-MacBook:bin satsu ii) sudo javac -classpath "/usr/local/JavaPOS/lib/jp
os113-controls.jar":"/usr/local/JavaPOS/lib/jcl.jar" StarReceiptTest.java
satsuki-no-MacBook:bin satsu 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 POSPrinter

The Service Objects of POSPrinter is supported in Star Line Mode.

■ Properties

Property	Supporting status	Remarks
AutoDisable	-	Not applicable JavaPOS
CapCompareFirmwareVersion	○ FALSE	
CapPowerReporting	○	Star Line : JPOS_PR_ADVANCED
CapStatisticsReporting	○ FALSE	
CapUpdateFirmware	○ FALSE	
CapUpdateStatistics	○ FALSE	
CheckHealthText	○	
Claimed	○	
DataCount	-	Not applicable JavaPOS
DataEventEnabled	-	Not applicable JavaPOS
DeviceEnabled	○	
FreezeEvents	○	
OutputID	○	The initial value is zero. The value is incremented for every asynchronous output. The value range is 1 to 10000.
PowerNotify	○	
PowerState	○	
State	○	
DeviceControlDescription	○	
DeviceControlVersion	○ 1013000	
DeviceServiceDescription	○ "Star Micronics JavaPOS POSPrinter Service Driver"	
DeviceServiceVersion	○ 1013004	
PhysicalDeviceDescription	○ "Star Micronics ***** (Model Name)"	
PhysicalDeviceName	○ Thermal Printer : "Star Micronics single station thermal printer" Dot Printer : "Star Micronics single station dot printer" Hybrid Printer : "Star Micronics hybrid printer"	
CapCharacterSet	○ PTR_CCS_ASCII	
CapConcurrentJrnRec	○ FALSE	
CapConcurrentJrnSlp	○ FALSE	
CapConcurrentPageMode	○ FALSE	
CapConcurrentRecSlp	○ FALSE	
CapCoverSensor	○	SP500 : FALSE
CapMapCharacterSet	○ FALSE	
CapTransaction	○ TRUE	
CapJrnPresent	○ FALSE	
CapJrn2Color	○ FALSE	
CapJrnBold	○ FALSE	
CapJrnDhigh	○ FALSE	
CapJrnDwide	○ FALSE	
CapJrnDwideDhigh	○ FALSE	
CapJrnEmptySensor	○ FALSE	

Property	Supporting status		Remarks
CapJrnItalic	<input type="radio"/>	FALSE	
CapJrnNearEndSensor	<input type="radio"/>	FALSE	
CapJrnUnderline	<input type="radio"/>	FALSE	
CapJrnCartridgeSensor	<input type="radio"/>	0	
CapJrnColor	<input type="radio"/>	0	
CapRecPresent	<input type="radio"/>	TRUE	
CapRec2Color	<input type="radio"/>		Model dependence
CapRecBarCode	<input type="radio"/>		Dot Printer : FALSE
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"/>		Non HSP7000: FALSE, HSP7000 : TRUE
CapSlpFullslip	<input type="radio"/>	FALSE	
CapSlp2Color	<input type="radio"/>	FALSE	
CapSlpBarCode	<input type="radio"/>	FALSE	
CapSlpBitmap	<input type="radio"/>		Non HSP7000: FALSE, HSP7000 : TRUE
CapSlpBold	<input type="radio"/>		Non HSP7000: FALSE, HSP7000 : TRUE
CapSlpDhigh	<input type="radio"/>		Non HSP7000: FALSE, HSP7000 : TRUE
CapSlpDwide	<input type="radio"/>		Non HSP7000: FALSE, HSP7000 : TRUE
CapSlpDwideDhigh	<input type="radio"/>		Non HSP7000: FALSE, HSP7000 : TRUE
CapSlpEmptySensor	<input type="radio"/>		Non HSP7000: FALSE, HSP7000 : TRUE
CapSlpItalic	<input type="radio"/>	FALSE	
CapSlpLeft90	<input type="radio"/>	FALSE	
CapSlpNearEndSensor	<input type="radio"/>	FALSE	
CapSlpRight90	<input type="radio"/>	FALSE	
CapSlpRotate180	<input type="radio"/>		Non HSP7000: FALSE, HSP7000 : TRUE
CapSlpUnderline	<input type="radio"/>		Non HSP7000: FALSE, HSP7000 : TRUE
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"/>		

Property	Supporting status		Remarks
CharacterSetList	○		
CoverOpen	○		SP500 : FALSE
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	○	TRUE	
RecNearEnd	○		Model dependence
RecSidewaysMaxLines	○	0	
RecSidewaysMaxChars	○	0	
RecLinesToPaperCut	○		
RecBarCodeRotationList	○	0,180	
RecBitmapRotationList	○	0,180	
RecCartridgeState	○	PTR_CART_UNKNOWN	
RecCurrentCartridge	○	0	
SlpLineChars	○		Non HSP7000: 0
SlpLineCharsList	○		Non HSP7000: ""
SlpLineHeight	○		Non HSP7000: 0, HSP7000: 9
SlpLineSpacing	○		Non HSP7000: 0, HSP7000: Can be set to a value between 9 and 85
SlpLineWidth	○		Non HSP7000: 0, HSP7000: 270
SlpLetterQuality	○		
SlpEmpty	○		Non HSP7000: FALSE, HSP7000: TRUE

Property	Supporting status		Remarks
SlpNearEnd	<input type="radio"/>		Non HSP7000: FALSE, HSP7000: TRUE
SlpSidewaysMaxLines	<input type="radio"/>	0	
SlpSidewaysMaxChars	<input type="radio"/>	0	
SlpMaxLines	<input type="radio"/>		Non HSP7000: 0
SlpLinesNearEndToEnd	<input type="radio"/>	0	
SlpBarCodeRotationList	<input type="radio"/>	""	
SlpBitmapRotationList	<input type="radio"/>		Non HSP7000: "", HSP7000: 0,180
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 :

- 1) 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
- 2) The height parameter can be set to the following values.
1 to 255 (When the MapMode property is set to PTR_MM_DOTS)

■ 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	○	Valid only when this is performed at the beginning of a line
ESC sP	Feed, Paper cut, and Stamp	×	
ESC sL	Fire stamp	×	
ESC #B	Print bitmap	○	Can use NV Logo Print (Refer to "4.2 POSPrinter Connection Settings")
ESC tL	Print top logo	○	
ESC bL	Print bottom logo	○	
ESC [#]IF	Feed lines	○	
ESC [#]uF	Feed units	○	[#] can be set to the following values in unit of dots. StarLine Dot Printer : 1 - 255 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	○	StarLine Dot Printer : Up to 6 times StarLine Thermal Printer : Up to 2 times
ESC #vC	Scale vertically	○	StarLine Dot Printer : Up to 6 times StarLine Thermal 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 Star Line Mode.

■ Properties

Property	Supporting status		Remarks
AutoDisable	-		Not applicable JavaPOS
CapCompareFirmwareVersion	○	FALSE	
CapPowerReporting	○		Star Line : OS_PR_ADVANCED
CapStatisticsReporting	○	FALSE	
CapUpdateFirmware	○	FALSE	
CapUpdateStatistics	○	FALSE	
CheckHealthText	○		
Claimed	○		
DataCount	-		Not applicable JavaPOS
DataEventEnabled	-		Not applicable JavaPOS
DeviceEnabled	○		
FreezeEvents	○		
OutputID	-		Not applicable JavaPOS
PowerNotify	○		
PowerState	○		
State	○		
DeviceControlDescription	○	"JavaPOS CashDrawer Device Control"	
DeviceControlVersion	○	1013000	
PhysicalDeviceServiceDescription	○	"Star Micronics JavaPOS CashDrawer Service Driver"	
DeviceServiceVersion	○	1013004	
PhysicalDeviceDescription	○	"Printer controlled cash drawer"	
PhysicalDeviceName	○	"Star Micronics Cash Drawer Controller"	
CapStatus	○		
CapStatusMultiDrawerDetect	○	FALSE	
DrawerOpened	○		

■ Methods

Method	Supporting status		Remarks
Open	○		
Close	○		
ClaimDevice	○		
Release	○		
CheckHealth	○		
ClearInput	-		Not applicable JavaPOS
ClearInputProperties	-		Not applicable JavaPOS
ClearOutput	-		Not applicable JavaPOS
CompareFirmwareVersion	×		
DirectIO	×		
ResetStatistics	×		
RetrieveStatistics	×		
UpdateFirmware	×		
UpdateStatistics	×		
OpenDrawer	○		
WaitForDrawerClose	○		

■ Events

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

6.3 MICR

The Service Objects of the MICR Reader are supported in Star Line Mode.

■ Properties

Property	Supporting status		Remarks
AutoDisable	○	FALSE	
CapCompareFirmwareVersion	○	FALSE	
CapPowerReporting	○	JPOS_PR_ADVANCED	
CapStatisticsReporting	○	FALSE	
CapUpdateFirmware	○	FALSE	
CapUpdateStatistics	○	FALSE	
CheckHealthText	○		
Claimed	○		
DataCount	○		
DataEventEnabled	○		
DeviceEnabled	○		
FreezeEvents	○		
OutputID	×		
PowerNotify	○		
PowerState	○		
State	○		
DeviceControlDescription	○	"JavaPOS MICR Device Control"	
DeviceControlVersion	○	1013000	
DeviceServiceDescription	○	"Star Micronics JavaPOS MICR Service Driver"	
DeviceServiceVersion	○	1013004	
PhysicalDeviceDescription	○	"MICR"	
PhysicalDeviceName	○	"Star Micronics MICR"	
AccountNumber	○		
Amount	○		
BankNumber	○		
CapValidationDevice	○	TRUE	
CheckType	○		
CountryCode	○		
EPC	○		
RawData	○		
SerialNumber	○		
TransitNumber	○		

■ Methods

Method	Supporting status		Remarks
Open	○		
Close	○		
Claim	○		
Release	○		
CheckHealth	○		
ClearInput	○		
ClearInputProperties	○		
ClearOutput	-		Not applicable JavaPOS
CompareFirmwareVersion	×		
DirectIO	×		
ResetStatistics	×		
RetrieveStatistics	×		
UpdateFirmware	×		
UpdateStatistics	×		
beginInsertion	○		
beginRemoval	○		
endInsertion	○		
endRemoval	○		

■ Events

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

7. Version History

Rev. No.	Date of Revision	Changes
Rev. 1.0	Apr . 2011	First edition.
Rev. 2.0	Nov. 2011	Error correction.
Rev. 3.0	Jun. 2012	Support to the driver packages 1.13.3. -TUP900 MSW setting(NSB) changed -Package name and support OS for Mac changed -Escape Sequence(Print Bitmap) changed -Error correction
Rev. 4.0	Dec. 2012	Support to the driver packages 1.13.4. -Add TSP650II -Add Bluetooth Interface -Add Installation Instructions -Add Sample Program

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