



Product Solutions Group



*Team***PoS 3000/7000 Fujitsu JavaPOS User's Guide**

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**Fujitsu JavaPOS 1.10 User's Guide
(For Windows and Linux)**

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1. Introduction

This document gives an overview of the Fujitsu JavaPOS package for Fujitsu *TeamPoS* 3000, 36xx and 7000 devices and documents the installation and configuration process. The Fujitsu JavaPOS package is a test environment that can be used to validate the device connection and JavaPOS service configuration. It does not integrate the Fujitsu services into the POS Application, but it does supply the JAR file for the Fujitsu services and a jpos.xml that contains the JposEntry for each of the Fujitsu devices.

This release is based on the “Java for Retail POS Programming Guide Version 1.7” with JavaPOS 1.10 extensions for the D25 MSR and TeamMSR. The CT10 and CT11 printers are based on JavaPOS 1.5.

Refer to the Java for Retail POS Programming Guide Version 1.7 and JavaPOS 1.10 for details on the JavaPOS API. This document can be found at the JavaPOS website, www.javapos.com.

This package contains the latest versions of the JAVA environment, but the Fujitsu JavaPOS service classes may be used with some earlier versions of JAVA and the JavaPOS components as long as the components are compatible with each other.

Developer Notes:

Below are the recommended default paths for the components that you will need to integrate the Fujitsu device services into a JavaPOS application. The test files can be placed in any folder and executed.

Windows:

| | |
|-----------------------|------------------------------------------------|
| Default Install path: | C:\Fujitsu\JavaPOS |
| Jpos.xml file: | C:\Fujitsu\JavaPOS\FjJpos |
| Jar file: | C:\Fujitsu\JavaPOS\FjJpos\FjJpos110.jar |
| Test Program: | C:\Fujitsu\JavaPOS\FjJpos\PosTest.bat |
| Lib File: | C:\Fujitsu\JavaPOS\FjJpos\lib\nativeportio.dll |

Linux:

| | |
|-----------------------|--------------------------------------------------|
| Default Install path: | /opt/Fujitsu/JavaPOS |
| Jpos.xml file: | /opt/Fujitsu/JavaPOS/FjJpos |
| Jar file: | /opt/Fujitsu/JavaPOS/FjJpos/FjJpos110.jar |
| Test Program: | /opt/Fujitsu/JavaPOS/FjJpos/PosTest.bat |
| Lib File: | /opt/Fujitsu/JavaPOS/FjJpos/lib/nativeportio.dll |

Linux Additional LIBs and Drivers Required:

The USB Fujitsu devices (TeamMSR, VF35, VF70, and CT11) require libusb-1.0 to be installed on Linux. If the **libusb-1.0** is not installed a generic version of the LIB file is supplied in the Fujitsu package.

The TeamPoS 36xx cash drawer requires **Silicon Labs Bridge** driver to be installed.

The 92U keyboard requires the **FTDI VCOM bridge** driver to be installed.

The TeamPoS 7000 cash drawer requires that the Linux Kernel have the **HIDRAW** option elected.

2. Release History

Release 1.10.1 Initial release.

Release 1.10.2 The 92U Keyboard VFD service was added.
The 92U devices added to the jpos.xml file and document.



Release 1.10.3 CT10 Service updated to fix a timeout issue when using synchronous printing.

Release 1.10.4

- Fujitsu Frontech North America Release and Copyright updated
- FTXSJpos110.jar renamed to FjJpos110.jar
- New subfolder “FjJpos” contains the FjJpos110.jar file and Postest.bat file
- D25MSR service has a fix to parse the expiration date on track II if there is no data after the expiration date on the card
- POSPower added to POSTest (FJ Power utility removed)
- Fj.bmp added to release files for printer test
- Power Notify handling corrected in POSPower SO
- CT10 bitmap file name preparation for Windows added (handles: “file:C:\...” and %20 and other special character possible in file names used by POSTest)
- POSTest updated to handle “O/C/E” and “Info” properly for service version and version compliant messages.

Release 1.10.5

- D25MSR and other MSR services fixed to parse the last field on each track correctly
- Manifest information added to JAR file with a main entry to display version, copyright information using the version.bat file (java -jar FjJpos110.jar)
- VF60 Character table enable and selection added to the jpos.xml and service
- VF60 fix for ESC sequence that caused hang
- CT10 barcode rotation issues corrected
- Postest – Key lock: added message box for Jpos exception; removed claim from “O,C,E” action processor
- D25 Keylock service now returns 107 (NOHARDWARE) exception if lock not present
- Legacy MSR changed not to set DataEventEnable=false on an error event
- CT10 Bar code corrections for: Code128 Code B as default, partial print before barcode, Odd digit issue on 128 Code C, Added a jpos.xml parameter “Code128CodeCDefault={true/false}”.
- CT10 – Cut command now different for Synchronous and Asynchronous printing (response request caused hang on synchronous print but needed on asynchronous print).
- CT10 – On sync print complete – re-sync command count.
- Fjnativect10handler – added Boolean method to return command queue empty status.
- Support for the 36xx Cash Drawer Option Card has been added to the TP15 cash drawer service.
- 36xx and TP15 (XL and XL²) modified to allow drawer opening mechanism to settle before processing the drawer open/close status.

Release 1.10.6 (Part 1)

- TeamMSR (TeamPoS 7000 device) support added
- VF35 (TeamPoS 7000 device) support added

Release 1.10.6 (Part 2)

- VF70 (TeamPoS 7000 device) support added
- CT11 (TeamPoS 7000 device) support added
- TP17 Cash Drawer (TeamPoS 7000 device) support added

Release 1.10.7 (Windows and Linux)

- TeamMSR (TeamPoS 7000 device) support added
- VF35 (TeamPoS 7000 device) support added
- VF70 (TeamPoS 7000 device) support added
- CT11 (TeamPoS 7000 device) support added



- TP17 Cash Drawer (TeamPoS 7000 device) support added

Release 1.10.8 (Linux)

- TeamPoS MSRm (MagTek) service added

3. Fujitsu JavaPOS Overview

Fujitsu JavaPOS Release 1.10.x is a set of POS device drivers for the Fujitsu *TeamPoS* 3000 POS devices and is compliant with the JavaPOS 1.7 specification. The D25 MSR is compliant with JavaPOS 1.10. This release supports the Windows (Windows 7, POSReady 7, POSReady 2009, Windows XP SP2, Windows XPe, WePOS) platforms.

The target device classes supported by FjJpos include the following:

- POSPrinter (CT11) – single station thermal printer (TeamPoS 7000)
- CashDrawer (CT11) – up to two cash drawers (TeamPoS 7000)
- LineDisplay (VF70) – Customer and Operator 2-Line Display (TeamPoS 7000)
- LineDisplay (VF35) – Small Customer 2-Line Display (TeamPoS 7000)
- TeamMSR – Magnetic Strip Reader (TeamPoS 7000)
- MSRm – Magnetic Strip Reader (Magtek smaller MSR) (TeamPoS 7000 AIO)
- CashDrawer (TP17) – up to two cash drawers (TeamPoS 7000)
- LineDisplay (VF60) – Customer and Operator display (Windows only)
- CashDrawer (TP15) – up to two cash drawers (TeamPoS 36XX)
- CashDrawer (TP15) – up to two cash drawers (TeamPoS 3000) (Windows only)
- MSR – Magnetic Strip Reader (D25)
- Keylock (D25)
- POSPower (TeamPoS 3000)
- POSPrinter (CT10) – single station thermal printer (Windows only)
- CashDrawer (CT10) – up to two cash drawers (Windows only)
- 92U Fujitsu Utility Keyboard
 - POSKeyboard
 - MSR
 - Keylock
 - ToneIndicator
 - LineDisplay

Included in the Fujitsu JavaPOS Release is a test utility to test each device class to validate the installation and configuration of JavaPOS and the Fujitsu POS devices.

The test utility:

- POSTest v1.10.0 – an open source JavaPOS test utility (POSPower has been added by Fujitsu)

JavaPOS support for third party devices (e.g. Epson printers, Preh 133UQ keyboard, Cherry K110 keyboard, etc.) must be acquired directly from the hardware provider.

Summary of Fujitsu JavaPOS Release content:

- Fujitsu JavaPOS Device Services and jpos.xml entries for each device
- Fujitsu JavaPOS User's Guide (this document)
- POSTest v1.10.0
- Other JavaPOS support JARs



4. Operating Environment

The FUJITSU JavaPOS release operates in the environment defined below.

Note: An attempt has been made to remain compatible with older and newer versions of the JRE. JRE Version 1.6.0_30 was the version used for the primary device testing.

4.1 Host Computers

TeamPoS 3000
TeamPoS 36xx
TeamPoS 7000-X00

4.2 Operating Systems (Note: Only 32-bit applications are supported on 64-bit platforms)

Windows 7
POSReady 7
POSReady 2009
Windows XP Pro SP3
WePOS

SUSE Linux SLED 11 SP2

4.3 Java Environments

- SUN Java2 SDK or JRE, Standard Edition Version 1.6.0_30 for Windows
- Xerces version 2.11.0
- JCL Editor 2.3.0
- JPOS 1.11.0 Controls

4.4 Linux Environments

- Libusb-1.0 is required on Linux installations that use any of the TeamPoS 7000 USB devices
- Hidraw option is required for TeamPoS 7000 cash drawer

4.5 Windows Environments

5. Installation

5.1 Operating System Installation and Configuration

It is the responsibility of the user to correctly install the correct target operating system, device drivers and properly configure the devices per the applicable instructions. Operating System and driver installation instructions are not included in this document.

This installation does not integrate the Fujitsu devices into the user's POS Application. The user is responsible for this process. This installation does provide the JavaPOS components that can be used for integration process.

5.2 Platform Prerequisites (Required Platform Packages)



The Fujitsu JavaPOS1.10 requires the following:

5.2.1 List of Required Packages and Drivers (if device to be used)

- Java 2 Runtime Environment, Standard Edition Version 1.6.0_30 (used for validation testing).
- Xerces (XML Parser) - (included in the FjJpos installation package)
- JavaPOS 1.11.0 (included in the FjJpos installation package)
- JCL 2.3 (included in the FjJpos installation package)
- POSTest 1.10 (included in the FjJpos installation package)
- Fujitsu VF60 Line Display Driver ANK1
- Fujitsu VF60 Line Display Driver ANK2 (if using two VF60 displays)
- Fujitsu Cash Drawer and IO Driver (TeamPoS 3000)
- Team Keyboard Driver (D25 MSR/Keylock)
- Fujitsu POS Power Driver (TeamPoS 3000)
- Fujitsu CT10 POS Printer Driver
- 92U Keyboard Port Driver
- Silicon Labs CP2102 USB to UART Bridge Drive (36XX Cash Drawer)
- Libusb-1.0 for Linux (one is included in package if needed)
- Hidraw option in Linux

5.2.2 Obtaining the Required packages and Drivers

- Java2 SDK, Standard Edition Version 1.6.0_30, It can be downloaded from <http://java.sun.com/javase/downloads/index.jsp>
- Xerces (Java XML parser) - Version 2.11.0 is included in the FjJpos installation package but this package can also be downloaded from <http://xerces.apache.org/>
- JavaPOS 1.11.0 <http://www.javapos.com/samplecode.html>
- JCL 2.3 <http://sourceforge.net/projects/jposloader>
- POSTest 1.10 <http://postest.sourceforge.net/download.html>
- Fujitsu *TeamPoS* 3000 device drivers are usually preinstalled but can be downloaded from <http://www.fujitsu.com/us/services/retailing/support/drivers/>
- Silicon Labs CP2102 USB to UART Bridge Drive for Linux: <http://www.silabs.com/support/pages/support.aspx?productfamily=usb+bridges&partnumber=cp2102>

5. 3 Fujitsu JavaPOS Installation and Configuration of Test Environment

5.3.1 Installation Guide for FjJpos – Windows and Linux

[Components]

1. JRE or JDK 1.6.0_30
2. Xerces (Java XML parser) - Version 2.11.0(XercesImpl.jar and xml_apis.jar included in FjJpos110.zip and FjJpos110.tar.gz)
3. JavaPOS 1.11.0 (jpos111.jar included in FjJpos110.zip and FjJpos110.tar.gz)
4. JCL 2.2 (included in FjJpos110.zip, a JCL editor batch file is also provided)
 - a. JCL Class files:
 1. Jcl.jar
 2. Jcl_editor.jar
 - b. JCL Editor Batch File:
Editor.bat



5. POSTest 1.10 (postest.jar – with POSPower added is included in FjJpos110.zip and FjJpos110.tar.gz)
6. FjJpos (included in FjJpos110.zip and FjJpos110.tar.gz)
 - a. Java Class files:
FjJpos110.jar
 - b. LIB files:
.\lib\nativeportio.dll (Windows)
./lib/libnativeportio.so.2.0.0 libnativeportio.so (Linux link)

[Installation]

The installation consists of expanding the compressed file into a folder with subfolders. In the FjJpos folder is a test program to validate that the Fujitsu devices are connected and function properly. The components needed to integrate the Fujitsu devices into the JavaPOS POS system are contained in the install folder and subfolders. The key file needed for the Fujitsu devices are: FjJpos110.jar, the JposEntry for the device from the jpos(xxx).xml file, and the nativeportio library file from the FjJpos-lib folder.

Step 1: Install JRE package

Step 2: Extract FjJpos110.zip or FjJpos110.tar.gz

Extract files and subfolders to the desired folder

JavaPOS folder will be created and contain the following folders

- FjJpos folder contains FjJpos110.jar (FJ device services); supporting files; POSTest; and the jpos(Windows).xml and the jpos(Linux).xml files
- JCL_Editor contains the JCL editor to edit the JPOS.XML file used by POSTest
- libusb-1.0 folder is to be used in a Linux installation if libusb-1.0 is not currently installed in this Linux system

Step 3: Linux only- Install libusb-1.0 package if needed

The tar.gz compressed file contains a folder with the libusb-1.0 files. Lib files can be installed into the /usr/local/lib folder. Insure that the link file libusb-1.0.so links to the libusb-1.0.so.1.0.0.0.

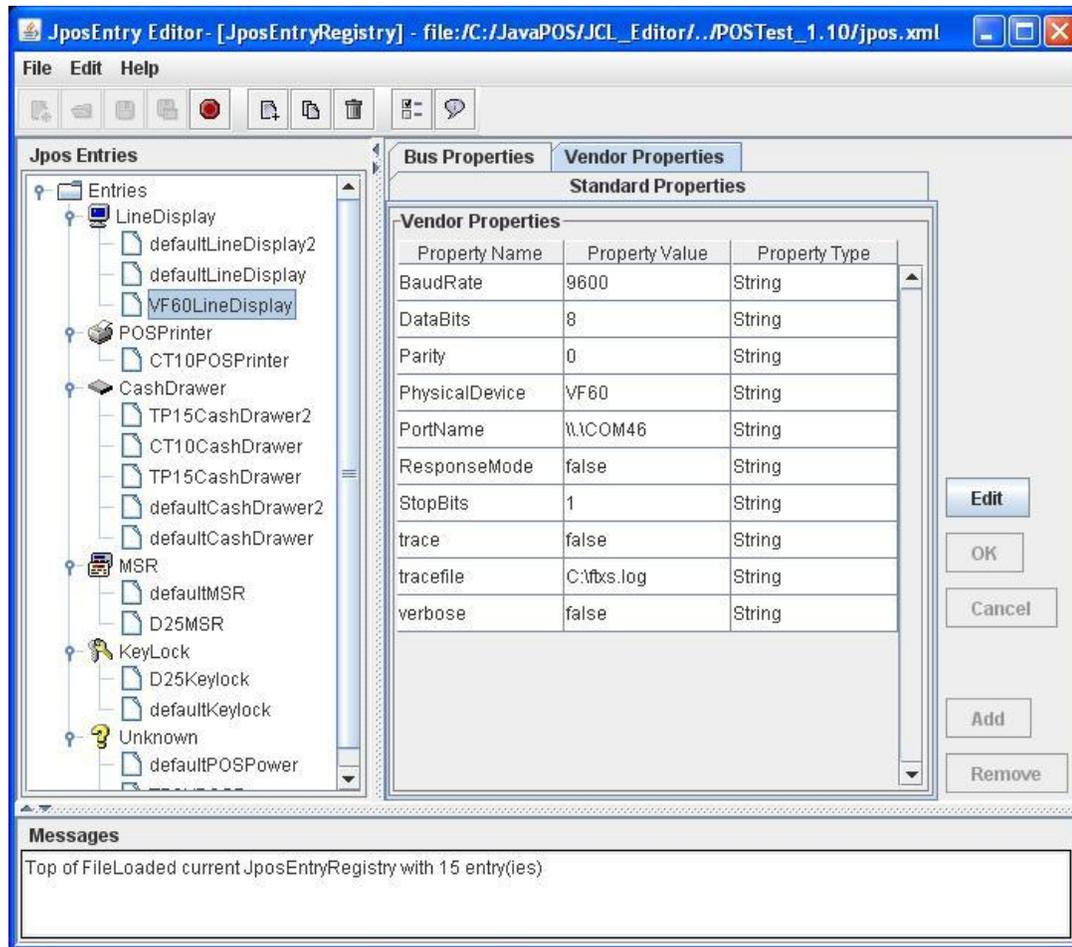
In the lib folder under the FjJpos folder insure that the libnativeportio.so link file links correctly the shared library libnativeportio.so.2.0.0.

Note: FjJpos110.zip and FjJpos110.tar.gz can be extracted to a folder other than the recommended and the tests programs should run without changes.

[JCL Editor]

- * **Note:** Insure that the correct **jpos.properties** is being used in JCL_Editor\jpos\res folder:
jpos.properties(Linux) for Linux and **jpos.properties(Windows)** for windows
- * To edit the JPOS JCL configuration file FjJpos\jpos(Windows/Linux).xml, run JCL
- * Insure that the jpos properties file selects the correct xml file for the installed OS
- * To run the JCL Editor:

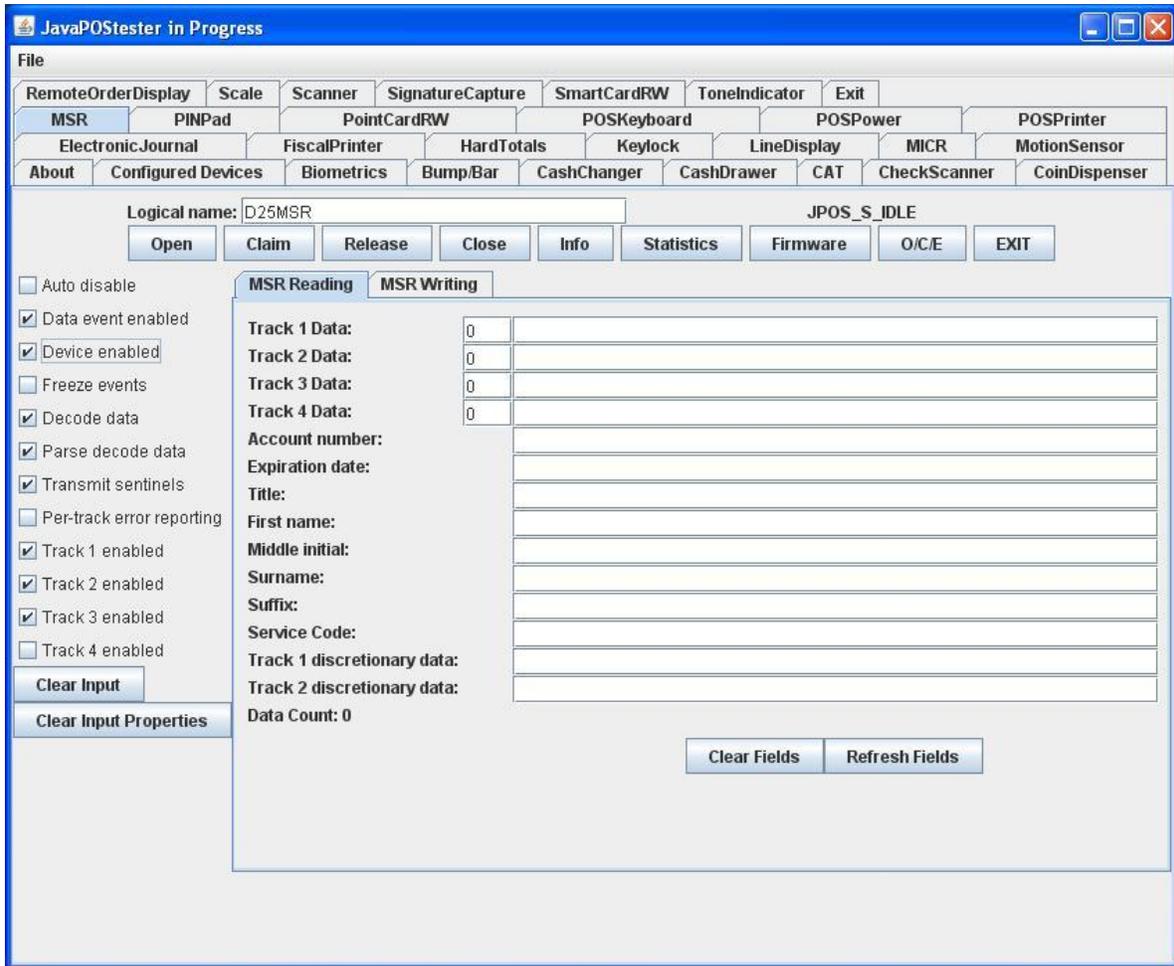
Run editor.bat (Windows) or editor.sh (Linux)





[Running POSTest Utility: POSTest.bat (Windows) or POSTest.sh (Linux)]

Note: The POSTest run file will copy either jpos(Windows).xml or jpos(Linux).xml to jpos.xml before activating Java and running the JavaPOSTester.



6. Configuration

6.1 Windows and Linux

Note: Sample files documented below may not be identical to actual file content in the installation package. The sample files may contain modified or additional information to assist in understanding the content and usage.

6.1.1 Environment Variables

POSTest.bat and POSTest.sh set the environment variables CLASSPATH and PATH needed for the POSTest test utility.

6.1.2 Serial/USB Ports

Port driver installation is not part of the FjJpos installation. The drivers (if needed) must be installed prior to installing FjJpos.



6.2 Sample jpos.xml Entries

In the Fujitsu package (FjJPOS110.zip for Windows and FjJPOS110.tar.gz for Linux) you will find a jpos(Windows).xml and a jpos(Linux).xml. These files contain a JposEntry for each of the Fujitsu devices supported. There are some differences between the entries for Windows and Linux, mostly in the port definition and the Model. Below is a sample for the Fujitsu CT11 printer.

Windows:

```
<JposEntry logicalName="CT11POSPrinter">
  <creation factoryClass="com.ftxs.jpos.FjJposServiceInstanceFactory" serviceClass="com.ftxs.jpos.fjprinterct10.fjprinterct10"/>
  <vendor name="Fujitsu" url="http://www.fujitsu.com/us/retailing"/>
  <jpos category="POSPrinter" version="1.5"/>
  <product description="Fujitsu CT11 Printer" name="CT11" url="http://www.fujitsu.com/us/retailing"/>

  <!--Other non JavaPOS required property (mostly vendor properties and bus specific properties i.e. RS232 )-->
  <prop name="PhysicalDevice" type="String" value="CT11"/>
  <prop name="PortName" type="String" value="/USBPTR/vid_04c5+pid_12ba"/>
  <prop name="DataBits" type="String" value="8"/>
  <prop name="Parity" type="String" value="0"/>
  <prop name="StopBits" type="String" value="1"/>
  <prop name="deviceBus" type="String" value="Unknown"/>
  <prop name="BaudRate" type="String" value="19200"/>
  <prop name="Code128CodeCDefault" type="String" value="false"/>
  <prop name="Model" type="String" value="HID"/>
  <prop name="tracefile" type="String" value="FjJpos.log"/>
  <prop name="trace" type="String" value="false"/>
  <prop name="tracelargebuffer" type="String" value="false"/>
  <prop name="ResponseMode" type="String" value="false"/>
  <prop name="verbose" type="String" value="false"/>
</JposEntry>
```

Linux:

```
<JposEntry logicalName="CT11POSPrinter">
  <creation factoryClass="com.ftxs.jpos.FjJposServiceInstanceFactory" serviceClass="com.ftxs.jpos.fjprinterct10.fjprinterct10"/>
  <vendor name="Fujitsu" url="http://www.fujitsu.com/us/retailing"/>
  <jpos category="POSPrinter" version="1.5"/>
  <product description="Fujitsu CT10/11 Printer Device Service" name="CT11" url="http://www.fujitsu.com/us/retailing"/>

  <!--Other non JavaPOS required property (mostly vendor properties and bus specific properties i.e. RS232 )-->
  <prop name="PhysicalDevice" type="String" value="CT11"/>
  <!-- <prop name="PortName" type="String" value="/usb/0x004c5/0x1106"/> -->
  <prop name="PortName" type="String" value="/usb/0x004c5/0x12ba"/>
  <prop name="DataBits" type="String" value="8"/>
  <prop name="Parity" type="String" value="0"/>
  <prop name="StopBits" type="String" value="1"/>
  <prop name="deviceBus" type="String" value="Unknown"/>
  <prop name="BaudRate" type="String" value="19200"/>
  <prop name="Code128CodeCDefault" type="String" value="false"/>
  <prop name="Model" type="String" value="HID"/>
  <prop name="tracefile" type="String" value="FjJpos.log"/>
  <prop name="trace" type="String" value="false"/>
  <prop name="tracelargebuffer" type="String" value="false"/>
  <prop name="ResponseMode" type="String" value="false"/>
  <prop name="verbose" type="String" value="false"/>
</JposEntry>
```

6.3 Sample POSTest (Note: Hooks for Windows & Linux support included)

POSTest.bat (Windows)



```
@echo off
copy jpos(Windows).xml jpos.xml
set oldcp=%classpath%
set classpath=postest.jar
set classpath=%classpath%;.\jpos111.jar
set classpath=%classpath%;.\xercesImpl.jar
set classpath=%classpath%;.\xml_apis.jar
set classpath=%classpath%;.
set lp=.\lib
set classpath=%classpath%;.\FjJpos110.jar
@echo on
java -cp %classpath% -Djava.library.path=%lp% com.jpos.POSTest.POSTest
```

POSTest.sh (Linux)

```
#!/bin/sh
cd .
cp "jpos(Linux).xml" jpos.xml
CLASSPATH=.
CLASSPATH=$CLASSPATH:./postest.jar
CLASSPATH=$CLASSPATH:./jpos111.jar
CLASSPATH=$CLASSPATH:./FjJpos110.jar
CLASSPATH=$CLASSPATH:./xercesImpl.jar
CLASSPATH=$CLASSPATH:./xml-apis.jar
LD_LIBRARY_PATH=.
LD_LIBRARY_PATH=$LD_LIBRARY_PATH:./lib
LIB_PATH=$LD_LIBRARY_PATH
#####
#                               #
# Add Device Specific jar's here... #
#                               #
#####
java -cp $CLASSPATH -Djava.library.path=$LD_LIBRARY_PATH com.jpos.POSTest.POSTest
```

6.4 Cash Drawer Open Audible Alarm

FTXSJpos provides the capability to sound an audible if the cash drawer has been opened longer than a specified duration. The source of the audible alarm may be the 92R/M/U Tone Indicator or the PC speaker. To specify the alarm source for the Cash Drawer Device, the “kbdtype” property of jpos.xml entry for the Cash Drawer device is set as follows:

To use the PC Speaker set `<prop name="kbdtype" value = "3"/>` (default)

To use the 92R/M/U Tone Indicator is `<prop name="kbdtype" value = "2"/>`

```
<prop name="kbdtype92r" type="String" value="false"/>
<prop name="92RPortName" value="COMn"/>
```

For all other keyboards (e.g. 133UQ) set “`<prop name="kbdtype" value = "3"/>`”, the PC Speaker will be used.