

80088505-001-A

SmartPIN B100

JPOS User Manual

Revision History

Revision	Description	Date	Ву
А	Initial Release	1/17/2014	СН

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1. Introduction

This document provides information for using JPOS Service Object (SO) for SmartPIN B100 Device.

2. System Requirements

This JPOS Service Object is for Windows XP, Windows Vista and Windows 7.

3. Reference Document

1. Unified POS Retail Peripheral Architecture Version 1.13

2. International Standard for Implementation of Point Of Service Peripherals

4. Environment Build

Install Sun JRE 1.5 or JDK 5.0, JRE 6 or JDK 6, JRE 7 or JDK 7:

Download the newest JRE 1.5 installation package from: <u>http://java.sun.com/j2se/1.5.0/download.jsp</u>, then click: <u>Download JDK 5.0 Update</u> and select a proper platform JDK version to download. Install the package and make sure the "java" command functions properly. There may be a need to add the JRE bin directory into the system environments variables by following steps:

For Microsoft Windows XP

- 1. Right click "My Computer" in the desktop
- 2. Select the "properties" menu item
- 3. Select "Advanced" tab
- 4. Click button "Environment Variables"
- 5. Select "Path" and insert the JRE bin directory.

When Java is working, following can be observed:

🛤 Command Prompt	
C: \>java	
Usage: java [-options] class [args]	
(to execute a class)	
or java [-options] -jar jarfile [args]	
(to execute a jar file)	
where options include:	
-client to select the "client" VM	
-server to select the "server" VM	
-hotspot is a synonym for the "client" VM [deprecated]	
The default VM is client.	
-cp <class and="" directories="" files="" jar="" of="" path="" search="" zip=""></class>	
where options include: -client to select the "client" UM -server to select the "server" UM -hotspot is a synonym for the "client" UM [deprecated] The default UM is client. -cp <class and="" directories="" files="" jar="" of="" path="" search="" zip=""></class>	

Enter DOS command shell, and enter java. It shows information about how to use. FILELISTS:

Below frame structure comes from the IDE -eclipse:



jpinK100so.jar - JPOS device service control for SmartPIN B100 Device

com_idtech_connector_PINConnector.dll - PINPad JNI DLL

SmartPINB100_SDK.dll – SmartPIN B100 SDK, extension DLL to access USBHID or RS232

 $cfg_SmartPINB100_Interface.xml-\\ Interface \ configure \ file.$

The .DLL and .XML files should be located in the directory in the PATH environment specified. For example, if the current working directory is included in the PATH variable:

PATH=%PATH%;

So, the files can be moved to current directory.

jpos.xml – jpos configure file, jpos register file. There are several entries in this file, with entry name: logicalName

"defaultPINPad"

"SmartPIN_B100_USBHID"

"SmartPIN_B100_RS232"

Specific properties in the jpos.xml:

"DeviceClass" – specify the class of current using device;

"DeviceName" - specify the interface of current using device;

"SDK" – specify the communication SDK of current using device.

"defaultPINPad"- this entry is a copy of one of other entry as the default name for POSTest program. "SmartPIN_B100_USBHID" -

"DeviceClass": "PINPad"

"DeviceName": "USBHID"

"SDK": "SmartPINB100_SDK.dll"

"SmartPIN_B100_RS232" -

"DeviceClass": "PINPad"

"DeviceName": "RS232"

"SDK": "SmartPINB100_SDK.dll"

Jpos/res/jpos.properties – jpos configure file, this specifies jpos.xml

This file specify which configure file is used. By default, it specifies the "jpos.xml" as the one.

Add jsignpayso.jar to your CLASSPATH or specify it in the javac / java command.

set CLASSPATH=%CLASSPATH%;yourDir\jsignpayso.jar

For example: jsignpayso.jar is placed in c:\so,

it should set CLASSPATH=%CLASSPATH%;c:\so\jsignpayso.jar

5. Properties, Methods, Events

Properties:

Please see OPOS PINPad Spec if the detailed information is wanted.

Name	Туре	Mutability	Supported?
AutoDisable	boolean	read-write	not support
CapCompareFirmwareVersion	boolean	read-only	not support
CapPowerReporting	int32	read-only	not support
CapStatisticsReporting	boolean	read-only	not support
CapUpdateFirmware	boolean	read-only	not support
CapUpdateStatistics	boolean	read-only	not support
CheckHealthText	string	read-only	support
Claimed	boolean	read-only	support
DataCount	int32	read-only	support
DataEventEnabled	boolean	read-write	support
DeviceEnabled	boolean	read-write	support
FreezeEvents	boolean	read-write	support
OutputID	int32	read-only	not support
PowerNotify	int32	read-write	not support
PowerState	int32	read-only	not support
State	int32	read-only	support
DeviceControlDescription	string	read-only	support
DeviceControlVersion	int32	read-only	support
DeviceServiceDescription	string	read-only	support
DeviceServiceVersion	int32	read-only	support
PhysicalDeviceDescription	string	read-only	support
PhysicalDeviceName	string	read-only	support
CapDisplay	int32	read-only	support
Capkeyboard	boolean	read-only	support
CapLanguage	int32	read-only	support
CapMACCalculation	boolean	read-only	not support

CapTone	boolean	read-only	support		
AccountNumber	string	read-write	support		
AdditionalSecurityinformation	string	read-only	support		
Amount	currency	read-write	support		
AvailableLanguagesList	string	read-only	Not support		
AvailablePromptsList	string	read-only	not support		
EncryptedPIN	string	read-only	support		
MaximumPINLength	int32	read-write	support		
MinimumPINLength	int32	read	support		
MerchantID	string	read-only	support		
PINEntryEnabled	boolean	read-only	support		
Prompt	int32	read-only	Not support		
PromptLanguage	nls	read-only	Not support		
TerminalID	string	read- write	support		
Track1Data	binary	read-write	not support		
Track2Data	binary	read-write	not support		
Track3Data	binary	read-write	not support		
Track4Data	binary	read-write	not support		
TransactionType	string	read-only	support		

Methods:

Please see OPOS PINPad Spec if the detailed information is wanted.

Name	Supported?
Open	support
Close	support
Claim	support
Release	support
Checkhealth	support
clearInput	support
clearOutput	not support
Direction	support
compareFirmwareVersion	not support
resetStatistics	not support
retrivevStatistics	not support
updateFirmware	not support
updateStatistics	not support
beginEFTTransaction	support
СарМАС	not support
enablePINEntry	support
endEFTTransaction	support
updateKey	not support

verifyMAC	not support

Open (LPCTSTR DeviceName)

Parameter: DeviceName, the "SmartPIN_B100_RS232" for RS232 interface device, and the "SmartPIN_B100_USBHID" for USBHID interface device.

Return: OPOS_SUCCESS if every thing works, or OPOS error code (see UPOS Specification).

Events:

These events are fired by the Service Object when it is necessary. The following functions are, in fact, the event-handlers that can be added into the applications. Then the applications can receive these events and do some processing accordingly. Please see OPOS PINPad Spec if the detailed information is wanted.

Name	Usage
DataEvent	support
ErrorEvent	support
DirectIOEvent	support
OutputCompleteEvent	not support
StatusUpdateEvent	not support

6. Run POSTest

It's the official recommended JPOS compatible test program. The release version includes the program or it can be gotten from http://sourceforge.net/projects/postest/

1. Unzip file "SmartPINB100_JPOS.zip" to a directory. Such as c:\temp, The Directory is like the following:



Enter "c:\temp"Postest directory under the DOS command shell

```
C:\WINDOWS\System32\cmd.exe
                                                                               _ 🗆 🗙
C:\temp>dir
Volume in drive C is NEW SYS
Volume Serial Number is AC64-BBF1
Directory of C:\temp
03/21/2006
            11:06 AM
                         <DIR>
03/21/2006
            11:06 AM
                         <DIR>
                                         - -
05/16/2006
            11:04 AM
                         <DIR>
                                        dest
05/16/2006
            11:04 AM
                         <DIR>
                                        ext
05/16/2006
            11:04 AM
                         <DIR>
                                        lib
05/16/2006
            11:04 AM
                        <DIR>
                                        POStest
                                       0 bytes
               Ø File(s)
               6 Dir(s)
                          5,738,045,440 bytes free
C:∖temp>
```

Then enter subdirctory "POStest"

```
C:\WINDOWS\System32\cmd.exe
                                                                           _ 🗆 🗙
C:∖temp>dir
Volume in drive C is NEW SYS
Volume Serial Number is AC64-BBF1
Directory of C:\temp
03/21/2006 11:06 AM
                       <DIR>
03/21/2006 11:06 AM
                       <DIR>
05/16/2006 11:04 AM
                       <DIR>
                                      dest
05/16/2006 11:04 AM
                       <DIR>
                                      ext
05/16/2006 11:04 AM
                       <DIR>
                                      lib
05/16/2006 11:04 AM
                       <DIR>
                                      POStest
              Ø File(s)
                                     0 bytes
              6 Dir(s) 5,738,045,440 bytes free
C:\temp>cd postest
C:\temp\POStest>
```

2. To run POSTest just like following:

C:\WINDOWS\System32\cmd.exe		
		_
G:∖temp>cd postest		
C:\temp\POStest>dir		
Volume in drive C is NEW SYS	S	
Volume Serial Number is AC6 [.]	4–BBF1	
Directory of C:\temp\POStes	t	
05/19/2006 08:53 AM <dir< td=""><td>> .</td><td></td></dir<>	> .	
05/19/2006 08:53 AM <dir< td=""><td>></td><td></td></dir<>	>	
05/16/2006 11:04 AM	761 jposps2.xml	
05/16/2006 11:04 AM	799 jposserial.xml	
05/16/2006 11:04 AM	774 jposusbhid.xml	
05/16/2006 11:04 AM	773 jposusbkb.xml	
05/16/2006 01:38 PM	186 POStest.bat	
05/16/2006 11:04 AM	322,874 POStest.jar	
05/16/2006 11:04 AM <dir< td=""><td>> jpos</td><td></td></dir<>	> jpos	
05/16/2006 11:04 AM	128 vssver.scc	
05/16/2006 11:04 AM	187 POStest.bat.bak	
8 File(s)	326,482 bytes	
3 Dir(s) 5,	738,045,440 bytes free	
C:\temn\POStest\nostest		-

Then a POStester program screen is shown.

🖆 JavaPOStester in Progress		
File		
RemoteOrderDisplay Scale Scanner SignatureCapture SmartCardRW To	oneIndicator Exit	
MSR PINPad PointCardRW POSKeyboard	POSPower	POSPrinter
ElectronicJournal FiscalPrinter HardTotals Keylock	LineDisplay MICR	MotionSensor
About Configured Devices Biometrics Bump/Bar CashChanger Cash	hDrawer CAT CheckScanr	ner CoinDispenser
POSTest The JavaPOS Device Te v1.10.0 POStest is a community project under the direction of the Original code donated by 360 Comme Contributors: Jeff Lange - Ultimate Technology Corpor Rory K. Shaw - IBM/Raleigh RSS Drivers and William White - IBM/Raleigh Retail Store S Bracci A. Sistemi Digitali s.r.l. Pisa (fi	e JavaPOS working group. erce. oration Diagnostics Solutions taly)	

3. Click "PINPad" Tab

🍰 Javal	POSt	iester i	n Prog	res	s																\mathbf{X}
File																					
Remote	Orde	rDisplay	Scale	Sc	canner	Sign	ature	Capture	Sr	nartC	ardRW	Т	FoneIn	dicato	r Exi	t					
MSR PINPa			Pad	-	Poir	ntCard	RW			POS	Keybo	ard		7	POSE	owe	эг		POS	Printer	
Elec	tron	icJournal		Fise	calPrinte	F	Н	HardTotals			Keylock		ck LineD		isplay	r	MICR	7	Moti	onSensor	
About	C	onfigured [Devices	TB	Biometric	:s	Bump	/Bar	Casl	hChan	nger	Cas	shDra	wer	CAT	CI	heckScar	nner	Co	inDispense	er
		Logical na	me: defa	ultPl	INPad									JP	os_s_c	LOS	SED				
		Open	Clair	m	Rele	ease	0	Close	In	nfo	o Sta		tatistics Firm		Firmware		O/C/E	E	ат		
			Begir	n EF1	T Transa	ction		End EF1	Tran	sactio	n	Update Key enableF					NEntry				
🗖 Data e	event	enabled	Accou	ınt n	umber:																
Device	e ena	bled	Amou	nt:																	
		nto	Merch	ant	ID:																
	e eve		Termi	nallE):																
Clear II	nput		Track	1 Da	ata:																
Clear li	nput	Properties	Track	2 Da	ata:																
-			Track	3 Da	ata:																
			Track	4 Da	ata:																
			Trans	actio	on Type:																
			PINPa	d Sy	/stem:																
			Trans	actio	on host:																
			Comp	letio	n code:																
			Key nu	umb	er:																
			Key:																		
			Encry	pted	PIN:																
			Additi	onal	Security	Inform	nation:														
			Prom	ot:																	
			Prom	otLa	nguage:																
			Direct	IOE\	/entNum	er:															
			Data (Coun	it:							C	lear Fi	ields	Ref	resh	Fields				

The logical name is the entry name in the jpos.xml file. Click "Open" button, and "Claim", and check choices "Data event enabled", "Device enabled":

불 JavaPOS	tester in	Progr	ess										
File													
RemoteOrde	erDisplay	Scale	Sca	nner S	ignature	Capture	e Smar	CardR	W Tone	elndicato	r Exit		
MSR	PINP	d PointCardRW					PC	SKeyt	oard		POSPo	wer	POSPrinter
Electror	nicJournal		Fisca	alPrinter		HardTot	als	Keyl	ock	LineD	isplay	MICR	MotionSensor
About C	onfigured De	evices	Bio	ometrics	Bump)/Bar	CashCh	anger	CashD	rawer	CAT	CheckScar	nner CoinDispenser
	Logical nan	ne: defa	ultPIN	IPad							JPOS_S	_IDLE	
	Open	Clair	n	Releas	e i	Close	Info	5	tatistics	Firi	пware	O/C/E	EXIT
													1
		Begir	EFT	Transactio	on	End EF	[Transac	ion	Update	e Key	enable	ePINEntry	
🖌 Data event	t enabled	Accou	nt nu	mber:		01234	56789123	156					
Device ena	abled	Amou	nt:			1							
Ereeze eve	ents	Merch	ant IE):									
Class laws		Termi	nallD:			12345	678						
Clear Input		Track	1 Dat	a:									
Clear Input	Properties	Track	2 Dat	a:									
		Track	3 Dat	a:									
		Track	4 Dat	a:									
		Transa	actior	n Type:									
		PINPa	d Sys	tem:		DUKP-	Г						
		Transa	action	i host:		1							
		Compi	etion	code:		1							
		Key nu	impe	r:		<u> </u>							
		Frey:	stod F										
Encrypted Pin:													
Audutonaisecui ityinformation:													
Prompti anguago:					0								
Direct/OEventNumer													
		Data C	ount	0		I]
		D'dia C							Clear	Fields	Refre	esh Fields	

"Begin EFT Transaction" and "enablePINEntry", and then enter the PIN through the device:

🛓 JavaPOStester in Progress							
File							
RemoteOrderDisplay	Scale	Scanner Signatur	eCapture SmartCa	ardRW Tone	Indicator Exit		
MSR PINPa	d	PointCardRW	POS	Keyboard	POSPo	ower	POSPrinter
ElectronicJournal		FiscalPrinter	HardTotals	Keylock	LineDisplay	MICR	MotionSensor
About Configured Devices		Biometrics Bun	np/Bar CashChan	ger CashDr	awer CAT	CheckScan	ner CoinDispenser
Logical name: defaultPINPad JPOS_S_IDLE							
Open	Clair	n Release	Close Info	Statistics	Firmware	O/C/E	EXIT
l	Begin	EFT Transaction	End EFT Transactio	n Update	Key enabl	ePINEntry	
Data event enabled Account number:		nt number:	012345678912345	6			
Device enabled Amount:			1				
Freeze events		ant ID:					
Clear Input		nallD:	12345678				
Track 1 Data:							
Clear Input Properties Tra		2 Data:					
	Track 3 Data:						
Track Trans PINPa Trans Comp Key nu Key nu Key: Encry		4 Data:					
		action Type:					
		a system:	DUKPT				
		action nost:	1				
		mbor	1				
		ited PIN:	250011CCCAD73P	01			
AdditionalSecurityInformation Prompt:			n:111111111111111	00084			
			0	5550A			
	Рготр	tLanguage:	-				
DirectlOEventNumer: Data Count: 0							
				Clear	Fields Rofr	eh Fielde	
				Ciedi	neids Kent	con ricius	

Click "End EFT Transaction", and click "Release" or "Close" to release or close the JPOS,

NOTE: This should be done to make sure the device returns to normal state.

Click "EXIT" to quit the program.

For more detail please check the http://www.javapos.com and the release help files.

7. Sample Code

The following code is the sample of PINPad:

```
import jpos.*;
import jpos.config.*;
import jpos.config.simple.*;
import jpos.loader.*;
import jpos.loader.simple.*;
import jpos.profile.*;
import jpos.services.*;
import jpos.util.*;
import jpos.util.tracing.*;
public class YourClass{
     public static void main(String [] args){
          PINPad pin=new PINPad(); /* new an instance */
         try{
                pin.open(logicalName);
                pin.claim(100);
                pin.setDeviceEnabled (true);
         }catch(JposException e){
               System.err.print(e);
          }
          /**
              Do something here.
           */
         try{
            pin.release();
            pin.close();
         }catch(JposException e){
               System.err.print(e);
         }
     }
```