



Value through Innovation

User's Manual

SmartPIN B100 OPOS

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Revision History

Version	Description	By	Date
A	Initial Release	Candy H	11/18/2013

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1. Introduction

OPOS is an OLE implementation of UPOS, it featured in supplying a programming interface and architecture to make the user application easy to use the device, and make the user's application is independent from any specified device. This document describes the features and limitation of PINPad class and MSR class for ID TECH SmartPIN B100 device. The OPOS share the communication settings in the Windows Registry.

All OPOS are compatible with UPOS v1.13.

2. Abbreviation

POS	Point of Service
UPOS	Unified POS
OPOS	OLE for Point of Service
COM	Component Object Model
OLE	Object Linking and Embedding
CO	Control Object
SO	Service Object
USB	Universal Serial Bus
PIN	Personal Identification Number
R/W	Reader/Writer
SC	Smart Card
DUKPT	Derived Unique Key Per Transaction
M/S	Mater and Session Key

3. Reference & Standard

Unified POS Retail Peripheral Architecture Version 1.13

International Standard for Implementation of Point Of Service Peripherals

4. Change Communication Settings

All OPOS for SmartPIN B100 share the communication setting of serial port or USBHID, that is stored in xml file "cfg_SmartPINB100_Interface.xml" at the install directory of PinPad_SO_Common.dll:

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```
<?xml version="1.0" encoding="UTF-8" ?>
<Interface>
  <USBHID type="USBHID" PID="1030" VID="0acd" EncryptedMode="TDES"/>
  <RS232 type="RS232" PortNumber="1" BaudRate="38400" ByteSize="8" StopBits="1" Parity="None" EncryptedMode="TDES"/>
</Interface>
```

And EncryptedMode can be changed to “AES” from “TDES” here, if needed.

5. PINPAD OPOS

5.1 Description

The documentation describes the properties, methods, and events of OPOS PINPad component for IDTECH SmartPIN B100. The component includes two parts: a Control Object running on the upper level, which is an ActiveX control, and a Service Control running on the lower level, which is an automation server. The properties, methods, and events are exposed by the Control Object. For example, when the Control Object is imported into your project as an ActiveX control, you will see all the properties, methods, and events.

5.2 Target Device

SmartPIN B100, interface: RS232 or USBHID.

5.3 Target Host System

Microsoft Windows 7 32bit, Vista 32bit, XP 32bit, 2000, 98.

Microsoft Windows 7 64bit, Vista 64bit.

Service Object and Control Object:

Service Object Version: 1.0.1.0 Dll File Version: 1.0.0

Control Object Version:1.13.001

5.4 Installation

Just double click the setup program and follow the installation wizard. The device's USB driver should be installed, if the device is USB interface. Modify the default value of communication settings. The default setting is installed after setup. If the firmware's default value is changed, the settings must be modified correspondingly. Modify setting by Regedit.exe. See "[Change Communication Settings](#)"

5.5 Properties, Methods and Events

This section describes methods, properties, and events.

Properties

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

Name	Type	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

IDTECH OPOS Service Object Reference for SmartPIN B100 device

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 needed.

Name	Supported?
Open	support
Close	support
Claim	support
Release	support
Checkhealth	support
clearInput	support
clearOutput	not support

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Direction	support
compareFirmwareVersion	not support
resetStatistics	not support
retrivevStatistics	not support
updateFirmware	not support
updateStatistics	not support
beginEFTTtransaction	support
CapMAC	not support
enablePINEntry	support
endEFTTtransaction	support
updateKey	not support
verifyMAC	not support

Open (LPCTSTR DeviceName)

Parameter: DeviceName, the “SmartPIN_B100_RS232” for RS232 interface device, and the “SmartPIN_B100_HID” for USBHID interface device.

Return: OPOS_SUCCESS if everything 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 needed.

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

5.6 Example in Visual C++ 6.0

Create a Dialog based MFC application. And then click VC IDE menu “Project/Add to Project/Components and Controls...” to the OPOS PINPad ActiveX control to the project. The following code shows the simple example.

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```
void CTestDlg::OnDataEventPinpad1(long Status)
{
    TRACE("PIN %s\n", m_pinpad.GetEncryptedPIN());
    TRACE("Security Information %s\n", m_pinpad.GetAdditionalSecurityInformation() );
    if (m_pinpad.EndEFTTransaction(1) != OPOS_SUCCESS) {
        // fail
        return;
    }
}

void CTestDlg::OnButton1()
{
    if (m_pinpad.Open("SecurePIN_SmartPIN B100-RS232 ") != OPOS_SUCCESS) {
        // "Fail to open pinpad"
        return ;
    }
    if ( m_pinpad.ClaimDevice(1000) != OPOS_SUCCESS) {
        // Fail to claim
        return ;
    }
    m_pinpad.SetDeviceEnabled(TRUE);
    if (m_pinpad.GetResultCode() != OPOS_SUCCESS) {
        // fail to claim.
        return;
    }
    m_pinpad.SetDataEventEnabled(TRUE);
    if (m_pinpad.GetResultCode() != OPOS_SUCCESS) {
        // fail to claim.
        return;
    }
    m_pinpad.SetAccountNumber("1234567890123456");
    if ( m_pinpad.GetResultCode() != OPOS_SUCCESS) {
        // fail to set account number
        return;
    }
    if (m_pinpad.BeginEFTTransaction("DUKPT", 1) != OPOS_SUCCESS) {
        // fail
    }
}
```

```
        return;
    }
    if (m_pinpad.EnablePINEntry() != OPOS_SUCCESS) {
        // fail
        return;
    }
}

void CTestDlg::OnButton2()
{
    // TODO: Add your control notification handler code here

    m_pinpad.Close();
}
```