mPay Reader HID_VCOM DLL SDK
User Manual

V1.3

2017.05.02

1. Adopt mPay DLL to your software project

1.1 C# Project

Copy \DLL\mPayVC6.dll to the path of *.EXE. In your C# project, add the following declaration as the demo project: Please refer to demo project \DLL_Test_C#201x_Demo for details.

```
// Import mPayVC6.dll service
using System.Runtime.InteropServices;

// Import mPayVC6.dll API refer to the declaration in mPAY_VC6.h
[DllImport("mPayVC6.dll", EntryPoint = "mPay_Connect", CharSet = CharSet.Ansi, CallingConvention = CallingConvention.StdCall)]
public static extern int mPay_Connect(int iComNo, int iHIDIndex);
[DllImport("mPayVC6.dll", EntryPoint = "mPay_Disconnect", CharSet = CharSet.Ansi, CallingConvention = CallingConvention.StdCall)]
public static extern int mPay_Disconnect(int iHIDIndex);
[DllImport("mPayVC6.dll", EntryPoint = "mPay_GetTerminalVersion", CharSet = CharSet.Ansi, CallingConvention = CallingConvention.StdCall)]
public static extern int mPay_GetTerminalVersion(StringBuilder sVersion);

[DllImport("mPayVC6.dll", EntryPoint = "mPay_ICCPowerOn", CharSet = CharSet.Ansi, CallingConvention = CallingConvention.StdCall)]
public static extern int mPay_ICCPowerOn(StringBuilder ATR);
[DllImport("mPayVC6.dll", EntryPoint = "mPay_ICCPowerOff", CharSet = CharSet.Ansi, CallingConvention = CallingConvention.StdCall)]
public static extern int mPay_ICCPowerOff();
[DllImport("mPayVC6.dll", EntryPoint = "mPay_ICCSendApdu", CharSet = CharSet.Ansi, CallingConvention = CallingConvention.StdCall)]
public static extern int mPay_ICCSendApdu(string cmd, StringBuilder recv);

[DllImport("mPayVC6.dll", EntryPoint = "mPay_SAMPowerOn", CharSet = CharSet.Ansi, CallingConvention = CallingConvention.StdCall)]
public static extern int mPay_SAMPowerOn(StringBuilder ATR);
[DllImport("mPayVC6.dll", EntryPoint = "mPay_SAMPowerOff", CharSet = CharSet.Ansi, CallingConvention = CallingConvention.StdCall)]
public static extern int mPay_SAMPowerOff();
[DllImport("mPayVC6.dll", EntryPoint = "mPay_SAMSendApdu", CharSet = CharSet.Ansi, CallingConvention = CallingConvention.StdCall)]
public static extern int mPay_SAMSendApdu(string cmd, StringBuilder recv);

[DllImport("mPayVC6.dll", EntryPoint = "mPay_PICCActivate", CharSet = CharSet.Ansi, CallingConvention = CallingConvention.StdCall)]
public static extern int mPay_PICCActivate(StringBuilder cardNo);
[DllImport("mPayVC6.dll", EntryPoint = "mPay_PICCDeactivate", CharSet = CharSet.Ansi, CallingConvention = CallingConvention.StdCall)]
public static extern int mPay_PICCDeactivate();
[DllImport("mPayVC6.dll", EntryPoint = "mPay_PICCGetCardATS", CharSet = CharSet.Ansi, CallingConvention = CallingConvention.StdCall)]
public static extern int mPay_PICCGetCardATS(StringBuilder ATS);
[DllImport("mPayVC6.dll", EntryPoint = "mPay_PICCSendApdu", CharSet = CharSet.Ansi, CallingConvention = CallingConvention.StdCall)]
public static extern int mPay_PICCSendApdu(string cmd, StringBuilder recv);

[DllImport("mPayVC6.dll", EntryPoint = "mPay_MifareAuth", CharSet = CharSet.Ansi, CallingConvention = CallingConvention.StdCall)]
public static extern int mPay_MifareAuth(int KeyType, int Sector, string Key);
[DllImport("mPayVC6.dll", EntryPoint = "mPay_MifareReadBlock", CharSet = CharSet.Ansi, CallingConvention = CallingConvention.StdCall)]
public static extern int mPay_MifareReadBlock(int Block, StringBuilder ReadData);
[DllImport("mPayVC6.dll", EntryPoint = "mPay_MifareWriteBlock", CharSet = CharSet.Ansi, CallingConvention = CallingConvention.StdCall)]
public static extern int mPay_MifareWriteBlock(int Block, string WriteData);
```

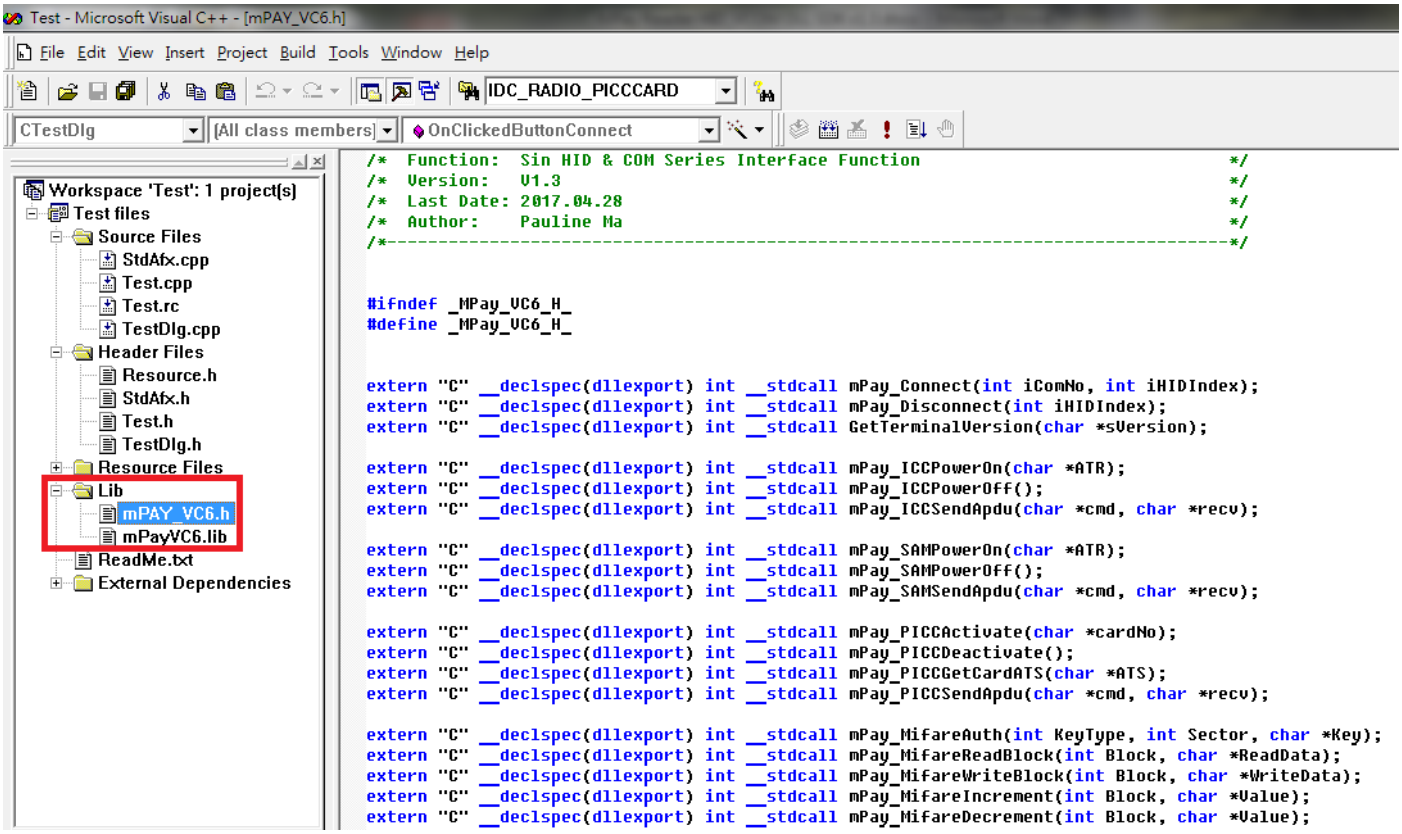
```
[DllImport("mPayVC6.dll", EntryPoint = "mPay_MifareIncrement", CharSet = CharSet.Ansi, CallingConvention = CallingConvention.StdCall)]
public static extern int mPay_MifareIncrement(int Block, string Value);
[DllImport("mPayVC6.dll", EntryPoint = "mPay_MifareDecrement", CharSet = CharSet.Ansi, CallingConvention = CallingConvention.StdCall)]
public static extern int mPay_MifareDecrement(int Block, string Value);
```

1.2 VC++ Project

Copy \DLL*.dll, *.lib and *.h to the path of your VC++ project. Add the following line in your *.cpp files.

```
#include "mPAY_VC6.h"
```

For details, please refer to a demo project under \DLL_Test_VC6_Demo



2. API Declaration

2.1 Connect a plugged reader

Declaration： int mPay_Connect(int iComNo, int iHIDIndex);

Explanation： Connect a plugged HID or VCOM reader (VID_273A PID_0131).

Parameter：iComNo：0: Auto-scan HID and COM 1~30, n>0 open COM n and then connect the reader plugged; iHIDIndex：to identify multiple HID readers plugged on the same system.

Return：0：Fail；-1 HID reader connected successfully；n>0 VCOM reader connected successfully.

2.2 Disconnect a plugged reader

Declaration： mPay_Disconnect(int iHIDIndex);

Explanation：Disconnect a plugged HID or VCOM reader.
Parameter：iHIDIndex：to identify multiple HID readers plugged on the same system.
Return：0：Fail；1：Succeed

2.3 Get the firmware version

Declaration：int mPay_GetTerminalVersion(char *sVersion);
Explanation：Get the firmware version of a plugged reader.
Parameter：sVersion：Out parameter for a version string (e.g. “Card Reader MR5 V01.00.07”)。
Return：0：Fail；1：Succeed

2.4 Power on the contact IC card

Declaration：int mPay_ICCPowerOn(char *ATR);
Explanation：Power on the contact IC card.
Parameter：ATR：IC Card responds its ATR data after power on successfully.
Return：0：Fail；1：Succeed

2.5 Power off the contact IC card

Declaration：int mPay_ICCPowerOff();
Explanation：Power off the contact IC card.
Parameter：None.
Return：0：Fail；1：Succeed

2.6 Send APDU command to the contact IC card

Declaration：int mPay_ICCSendApdu(char *cmd, char *recv);
Explanation：Send APDU command to the contact IC card and then get card response back.
Parameter：cmd：APDU command (e.g. “00A40000023F00”), please refer to card’s specification.
recv：card response (e.g. ”A3DF4B469000”), please refer to card’s specification.
Return：0：Fail；1：Succeed

2.7 Power on the PSAM card

Declaration：int mPay_SAMPowerOn(char *ATR);
Explanation：Power on the inserted PSAM card.
Parameter：ATR：PSAM Card responds its ATR data after power on successfully.
Return：0：Fail；1：Succeed

2.8 Power off the PSAM card

Declaration：int mPay_SAMPowerOff();
Explanation：Power off the inserted PSAM card.
Parameter：None.

Return：0：Fail；1：Succeed

2.9 Send APDU command to the PSAM card

Declaration：int mPay_SAMSendApdu(char *cmd, char *recv);
Explanation：Send APDU command to the inserted PSAM card and then get card response back.
Parameter：cmd：APDU command (e.g. “00A40000023F00”), please refer to card’s specification.
recv：card response (e.g. ”A3DF4B469000”), please refer to card’s specification.
Return：0：Fail；1：Succeed

2.10 Activate the PICC card

Declaration：int mPay_PICCActivate(char *cardNo);
Explanation：Activate the contactless PICC card above the reader.
Parameter：cardNo：Get this PICC card’s card number after activating it successfully.
Return：0：Fail；1：Succeed

2.11 Deactivate the PICC card

Declaration：int mPay_PICCDeactivate();
Explanation：Deactivate the contactless PICC card above the reader.
Parameter：None.
Return：0：Fail；1：Succeed

2.12 Get the PICC card’ s ATS data

Declaration：int mPay_PICCGetCardATS(char *ATS);
Explanation：Get the PICC card’s ATS data.
Parameter：ATS：PICC card’s ATS data
Return：0：Fail；1：Succeed

2.13 Send APDU command to the PICC card

Declaration：int mPay_PICCSendApdu(char *cmd, char *recv);
Explanation：Send APDU command to the PICC card and then get card response back.
Parameter：cmd：APDU command (e.g. “00A40000023F00”), please refer to card’s specification.
recv：card response (e.g. ”A3DF4B469000”), please refer to card’s specification.
Return：0：Fail；1：Succeed

2.14 Authenticate the MIFARE/M1 card

Declaration：int mPay_MifareAuth(int KeyType, int Sector, char *Key);
Explanation：Authenticate the MIFARE/M1 card above the reader.
Parameter：KeyType：KeyA = 0x41; KeyB = 0x42。
Sector： Sector0 = 0 ~ Sector15 = 15。

Key: 6 bytes key in hexadecimal string format，e.g. ”112233445566”

Return：0：Fail；1：Succeed

2.15 Read block from the MIFARE/M1 card

Declaration：int mPay_MifareReadBlock(int Block, char *ReadData);

Explanation：Read block from the MIFARE/M1 card.

Parameter：Block：Block = Sector n * 4 + Block (0~3)。

ReadData ： Read block data 16 bytes in hexadecimal string format ，e.g. ”00112233445566778899AABBCCDDEEFF”

Return：0：Fail；1：Succeed

2.16 Write block into the MIFARE/M1 card

Declaration：int mPay_MifareWriteBlock(int Block, char *WriteData);

Explanation：Write Block into the MIFARE/M1 card.

Parameter：Block：Block = Sector n * 4 + Block (0~3)。

WriteData ： Write block data 16 bytes in hexadecimal string format ，e.g. ”00112233445566778899AABBCCDDEEFF”

Return：0：Fail；1：Succeed

2.17 Increment value into the MIFARE/M1 card

Declaration：int mPay_MifareIncrement(int Block, char *Value);

Explanation：Increment value into the MIFARE/M1 card.

Parameter：Block：Block = Sector n * 4 + Block (0~3)。

Value：Increment value 4 bytes in hexadecimal string format，e.g. ”11223344”。

Return：0：Fail；1：Succeed

2.18 Decrement value into the MIFARE/M1 card

Declaration：int mPay_MifareDecrement(int Block, char *Value);

Explanation：Decrement value into the MIFARE/M1 card.

Parameter：Block：Block = Sector n * 4 + Block (0~3)。

Value：Decrement value 4 bytes in hexadecimal string format，e.g. ”11223344”。

Return：0：Fail；1：Succeed