ActiveX Control

For Visual Basic 2005.NET

[版本: 1.0]

1 安裝 Windows 驅動程式

請依照下列步驟:

1. 執行 **Windows** 驅動程式安裝程式。(*此範例爲 PIO-DIO*)

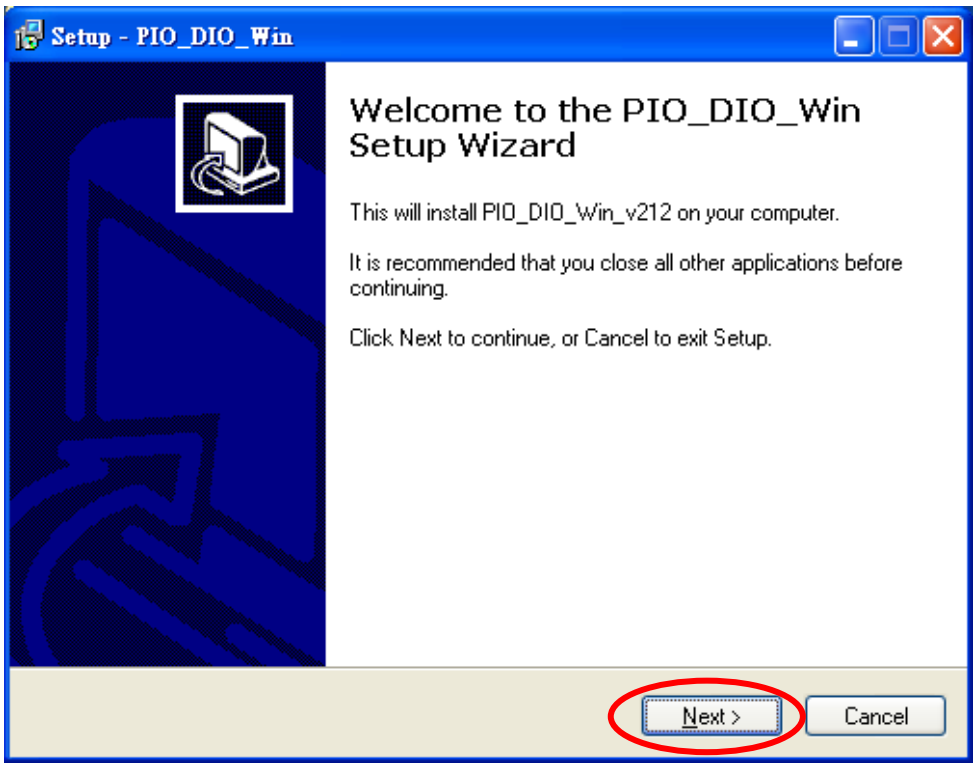
   驅動程式位置:

   CD:\NAPDOS\PCI\PIO-DIO\dll_ocx\Driver

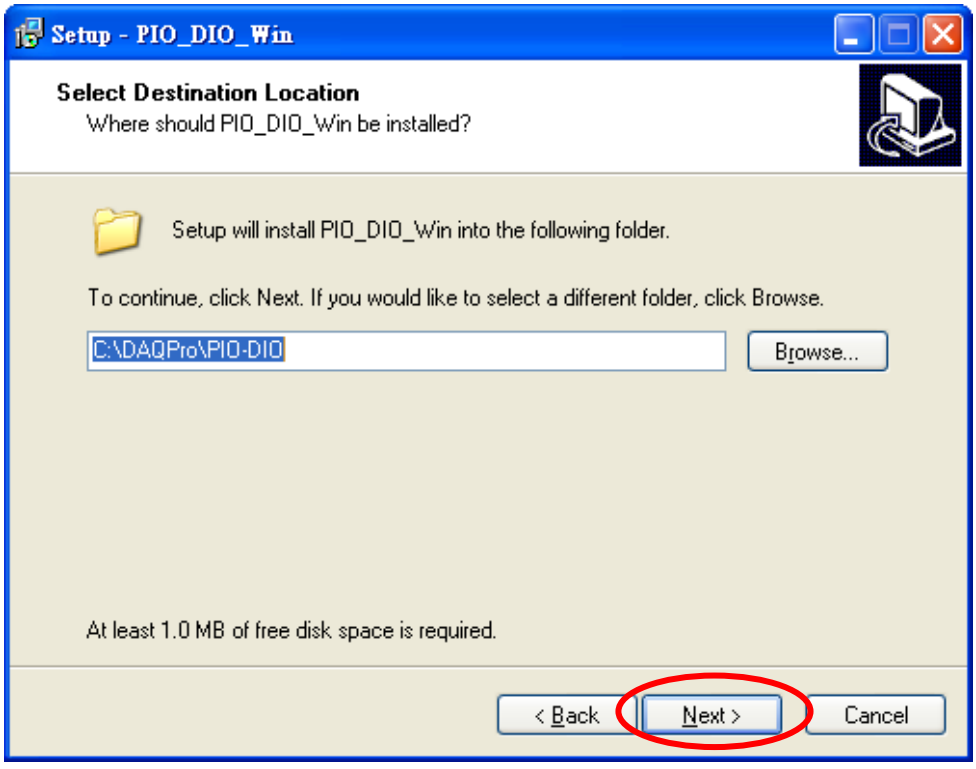
   http://ftp.icpdas.com/pub/cd/iocard/pci/napdos/pci/pio-dio/dll_ocx/driver/

Windows 驅動程式只支援 windows 98/NT/2000 及 XP/2003/Vista 32-bit 版本

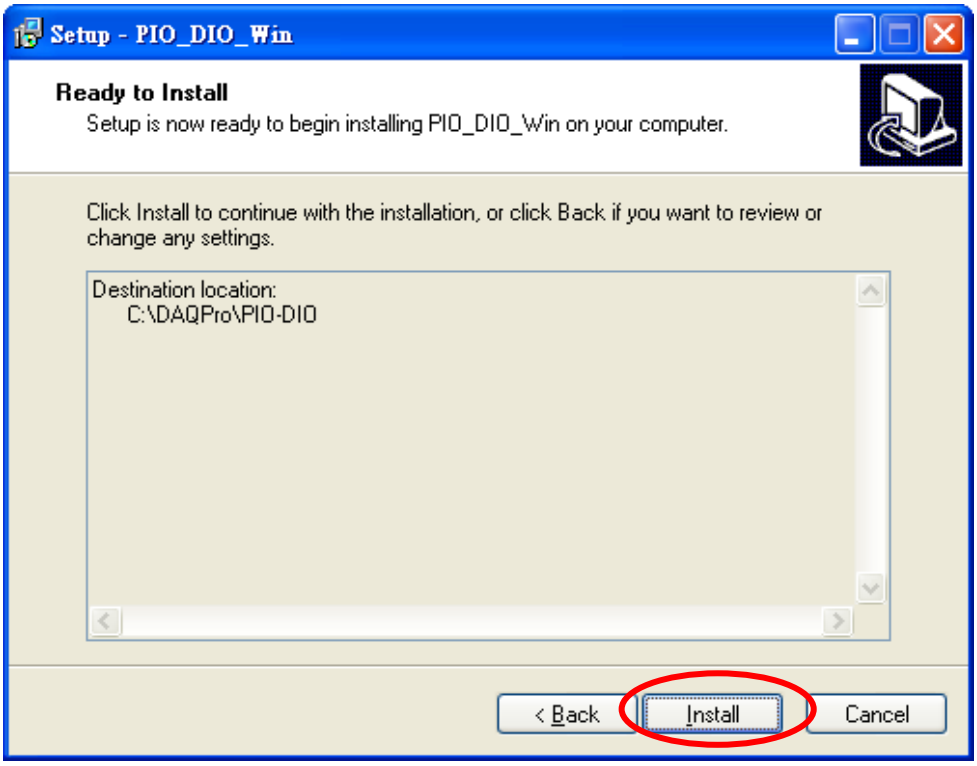
2. 按 “Next >” 按鈕並開始安裝。



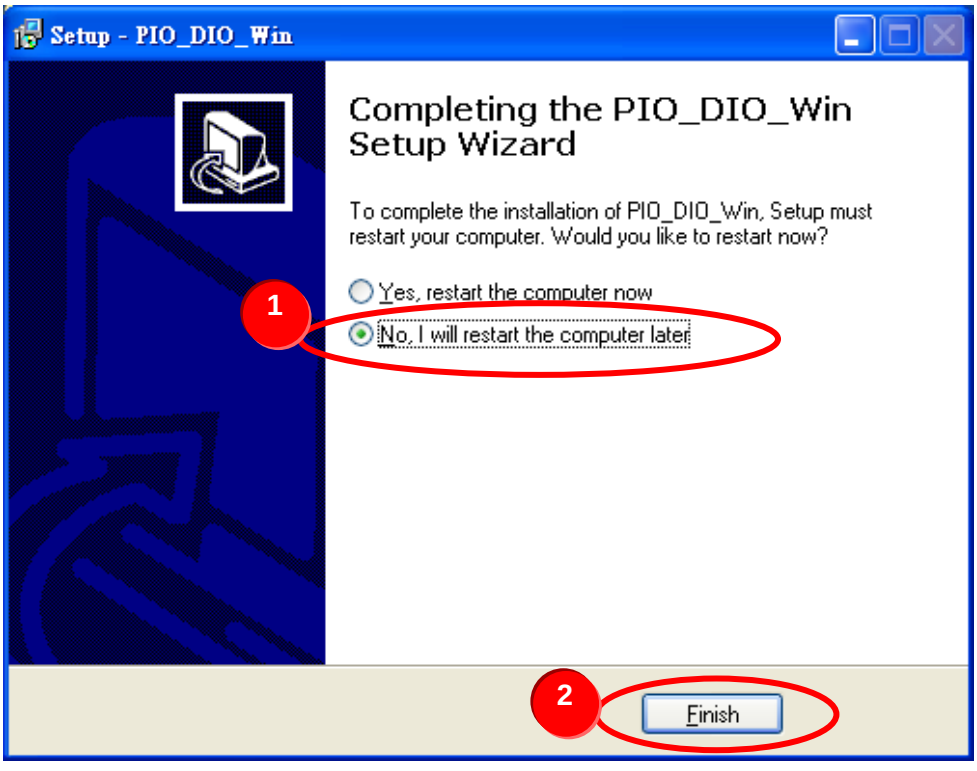
3. 按 “Next >” 按鈕並選擇安裝路徑。



4. 按 **“Install”** 按鈕繼續安裝程序。



5. 選擇 **“No, I will restart the computer later”** 並且按 **“Finish”** 按鈕。



2 安裝硬體裝置

請依照下列步驟:

1. 關掉電腦電源
2. 打開電腦機殼
3. 選擇未使用的 **PCI** 插槽，並移除保護裝置
4. 小心插入板卡至 **PCI** 插槽中，並以螺絲固定住
5. 裝回電腦機殼
6. 啓動電腦電源

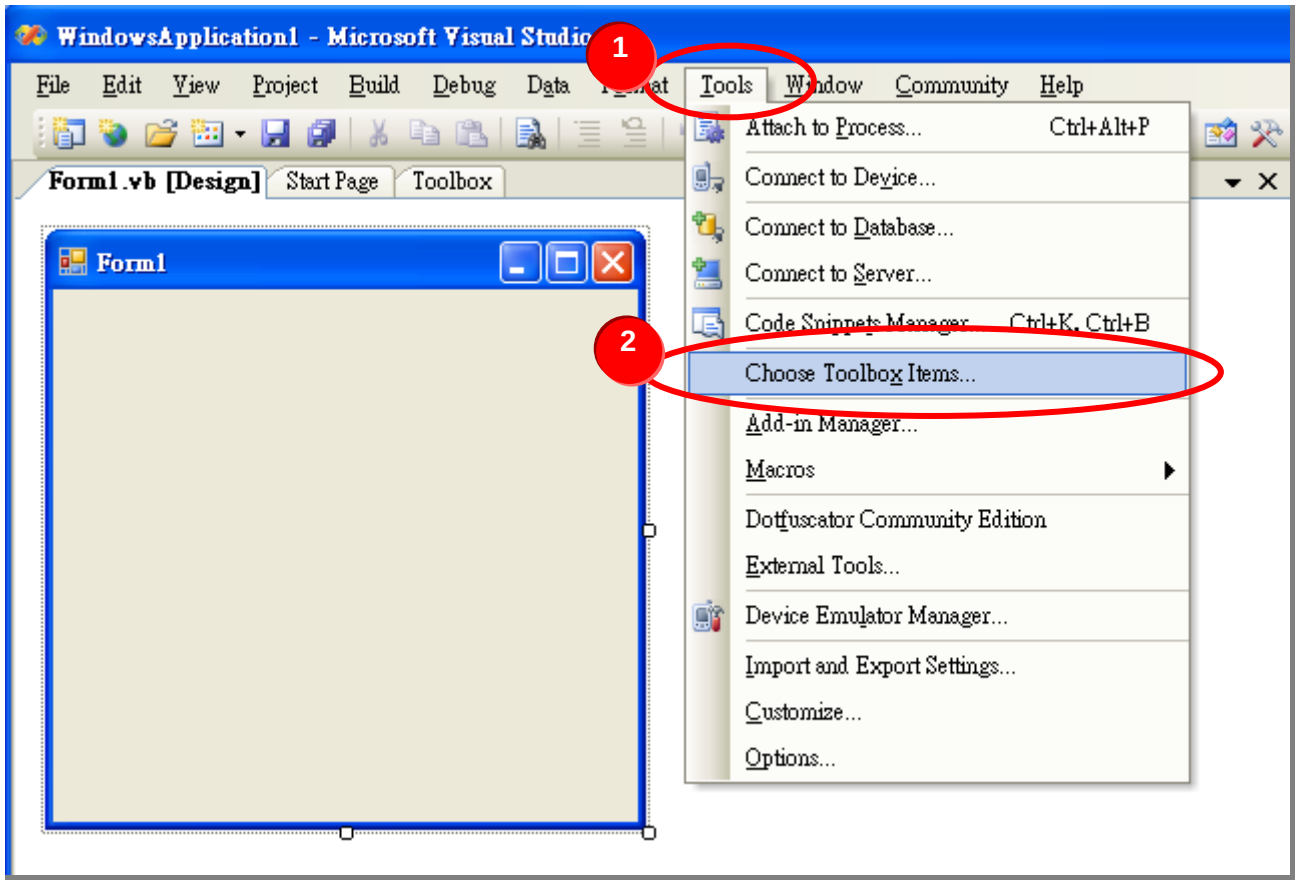
進入 **Windows** 後，請依照提示訊息完成 **Plug & Play**。

3 使用 ActiveX Control (OCX)

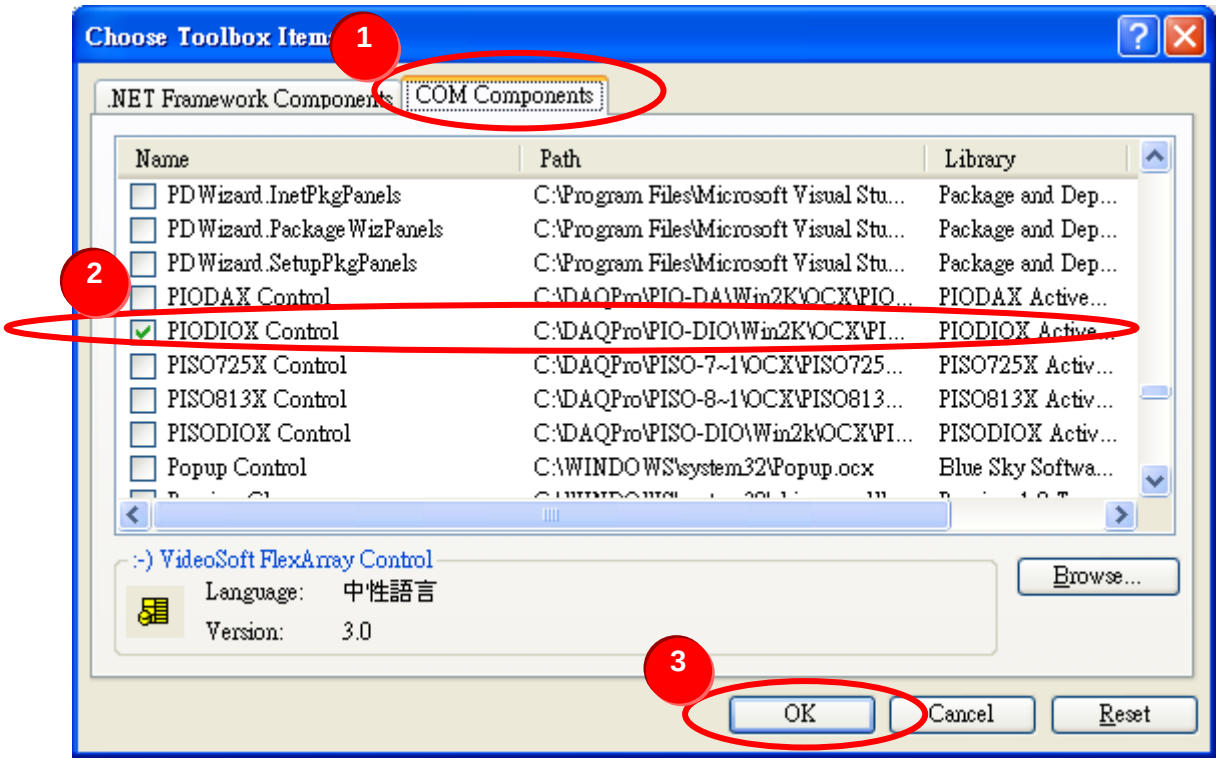
在 **VB.NET 2005** 上使用**ActiveX Control**，
請依照下列步驟:

1. 新增 ActiveX Control (OCX) 到 VB.NET 2005 工具列上。

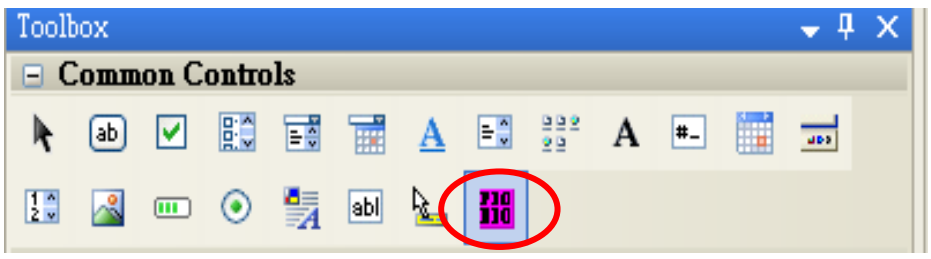
在功能選單上，選擇 **“Tools/ Choose Toolbox Items...”**。



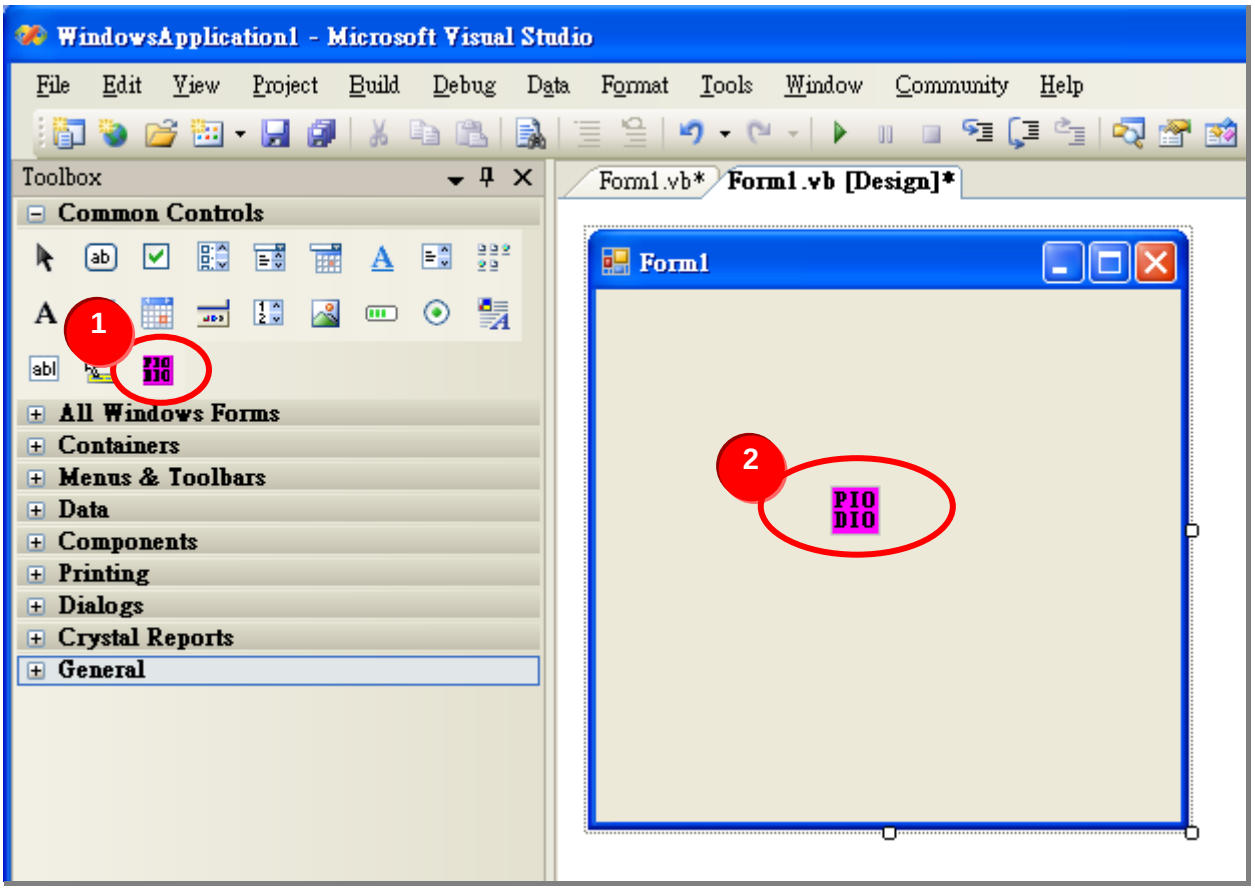
2. 點選 **“COM Components”** 對話框列表裡的 **“PIODIOX Control”** 並且按 **“OK”** 按鈕。



3. 工具列將會顯示 **PIODIO** (PCI Card OCX) 的元件圖示。



4. 產生一個新的專案。並且新增 **PIODIO** (PCI Card OCX) 元件到此專案中。



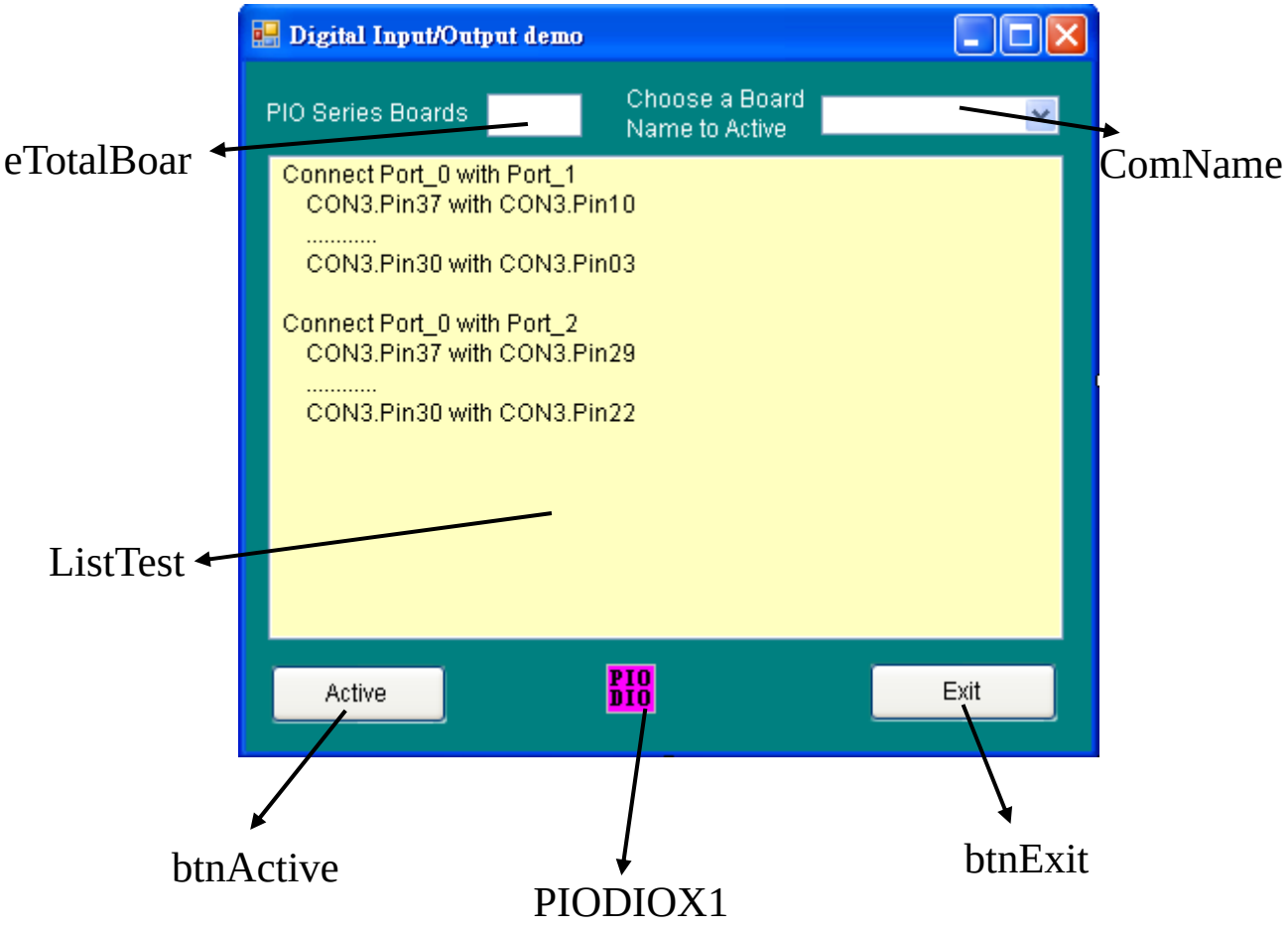
注意:

請注意, 在 .NET 環境上，所有 OCX 控制元件不能正確處理 Array 型態的參數。因爲它們是不同的子系統。
在 .NET 環境使用 Array 型態的參數時，你必須直接呼叫 Win32 DLL 函式來代替使用 OCX 控制元件。

4 撰寫 DIO 程式範例

設計 **DIO** 程式，在程式中呼叫 **OCX** 函式。
請依照下列步驟**:**

1. 設計介面**:**



2. PIODIOX 函式列表，如下:

property	BSTR ErrorString;
property	short ErrorCode;
property	short ActiveBoard;
method	short DriverInit();
method	long GetConfigAddressSpace(short nAddrNum);
method	short GetDllVersion();
method	short GetDriverVersion();
method	short InputByte(long lBaseAddr);
method	long InputWord(long lBaseAddr);
method	void OutputByte(long lBaseAddr, short nOutputData);
method	void OutputWord(long lBaseAddr, long lOutputData);
method	short DigitalIn(short nPort);
method	void DigitalOut(short nPort, short nOutputValue);
method	void SetCounter(short nCounterNo, short nCounterMOde, long nCounterVal);
method	long ReadCounter(short nCounterNo, short nCounterMOde);
method	long ResetIrqCount();
method	void Installlrq(long* hEvent, short nlrqSource, short nActiveMode);
method	void Removelrq();
method	void GetlrqCount();
method	long D48Freq();
method	void D48Installlrq(long* lHandle, short nlrqMask, short nActiveMode);
method	void D48Removelrq();
method	long D48Getlrqcount();
method	void SavelrqActiveFlag();
method	short GetlrqActiveFlag(short FlagNum);
method	void DriverClose();

更詳細 **“OCX 函式”** 資訊。 請參考:
ActiveX Control for PCI series boards User's Manual
http://ftp.icpdas.com/pub/cd/iocard/pci/napdos/pci/manual/ocx%28activex%29_manual_for_pci_pio_piso_cards.pdf

3. 函式使用:

Form1_Load

```
Private Sub Form1_Load(ByVal sender As System.Object, ByVal e As System.EventArgs)
Handles MyBase.Load

        Dim i As Integer, wTotalBoards As Integer, iBoards As Integer
        Dim wSubAux As Long

       ' Initialize the driver and get the total boards
        wTotalBoards = PIODIOX1.DriverInit
        btnActive.Text = "Active"

        eTotalBoards.Text = wTotalBoards
        iBoards = 0
        For i = 0 To (wTotalBoards - 1)
            PIODIOX1.ActiveBoard = i    ' Set the active board
            wSubAux = PIODIOX1.GetConfigAddressSpace(4) ' Get the AddrBase
            If 64 = wSubAux Then
                ComName.Items.Add(Str(i) & ":PIO-D24/56")
                iBoards = iBoards + 1
            End If
        Next i

        If iBoards = 0 Then
            ComName.Items.Add("No Device")
            btnActive.Enabled = False
        Else
            btnActive.Enabled = True
        End If
        ComName.SelectedIndex = 0

    End Sub
```

btnEXit

```
Private Sub btnExit_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles
btnExit.Click

        PIODIOX1.DriverClose() ' Release the device resource
       Me.Close()

End Sub
```

btnActive

```
Private Sub btnActive_Click(ByVal sender As System.Object, ByVal e As System.EventArgs)
Handles btnActive.Click

    Dim InVal1, InVal2, InVal3  As Integer
    Dim i As Long

    PIODIOX1.ActiveBoard = 0
    ListTest.Items.Clear()


    ListTest.Items.Add("Setting Port 0 to Output-Mode and Port 1,2 to Input-mode")
    ListTest.Items.Add(" ")
     Thread.Sleep(10)
    i = 1
    While i <= &H80
       PIODIOX1.DigitalOut(0, i) '// Port 0 digital output value
       ListTest.Items.Add("Output Port 0    (Hex)=  " + Hex(i))

       Thread.Sleep(100)
       InVal2 = PIODIOX1.DigitalIn(1) '// Port 1 digital input value
       InVal3 = PIODIOX1.DigitalIn(2) '// Port 2 digital input value
       ListTest.Items.Add(" Input Port 2, 1 (Hex)=  " _
                        + Hex(InVal3) + " " _
                        + Hex(InVal2))

       ListTest.Items.Add("  ")
       Application.DoEvents()
       Thread.Sleep(100)
       i = i * 2
    End While

    PIODIOX1.DigitalIn(0) ' Port 0, Back to input mode

                        …
                        …
                        …
                        …
                        …
                        …

     ListTest.Items.Add( "   The End  " )

End Sub
```

AxPIODIOX1_OnError

```
Private Sub AxPIODIOX1_OnError(ByVal sender As System.Object, ByVal e As
AxPIODIOXLib._DPIODIOXEvents_OnErrorEvent) Handles PIODIOX1.OnError

    ' Get the error massage
     MsgBox("Error Code:" + Str(PIODIOX1.ErrorCode) + Chr(13) + "Error Message:" +
     PIODIOX1.ErrorString)

End Sub
```

Form1_FormClosed

```
Private Sub Form1_FormClosed(ByVal sender As Object, ByVal e As
System.Windows.Forms.FormClosedEventArgs) Handles Me.FormClosed

    PIODIOX1.DriverClose() ' Release the device resource

End Sub
```

5 參考資訊

- ✓ ActiveX Control for PCI series boards User's Manual
  http://ftp.icpdas.com/pub/cd/iocard/pci/napdos/pci/manual/ocx%28activex%29_manual_for_pci_pio_piso_cards.pdf
- ✓ PCI1800X, PCI1602X, PCI1202X ActiveX Control User's Manual
  http://ftp.icpdas.com/pub/cd/iocard/pci/napdos/pci/manual/ocx%28activex%29_manual_for_pci_1002_1202_1602_1800_1802.pdf
- ✓ ActiveX Control (OCX) Installation in VB, Delphi and BCB Manual
  http://ftp.icpdas.com/pub/cd/iocard/pci/napdos/pci/manual/ocx%28activex%29_installation_in_vb_delphi_bcb.pdf