

# PISO-DIO

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## Software Manual [For Windows 95/98/NT/2000]

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# 1.Introduction

The software is a collection of digital I/O subroutines for PISO-DIO series add-on cards for Windows 95/98, NT 4.0 and Windows 2000 Applications. These subroutines are written with C language and perform a variety of digital I/O operations.

The subroutines in PISODIO.DLL are easy understanding as its name standing for. It provides powerful, easy-to-use subroutine for developing your data acquisition application. Your program can call these DLL functions by VC++, VB, Delphi, and BORLAND C++ Builder easily. To speed-up your developing process, some demonstration source program are provided.

Please refer to the following user manuals:

- **PnPInstall.pdf:**  
Install the PnP (Plug and Play) driver for PCI card under Windows 95/98.
- **SoftInst.pdf:**  
Install the software package under Windows 95/98/NT.
- **CallDll.pdf:**  
Call the DLL functions with VC++5, VB5, Delphi3 and Borland C++ Builder 3.
- **ResCheck.pdf:**  
Check the resources I/O Port address, IRQ number and DMA number for add-on cards under Windows 95/98/NT.
- **PISO3232.pdf:**  
The Hardware Manual for PISO-P32C32, PISO-C64 and PISO-P64.

## 2. Declaration Files

--\Driver	← some device driver
--\BCB3	← for Borland C++ Builder 3
--\PISODIO.H	← Header file
+--\PISODIO.LIB	← Linkage library for BCB3 only
--\Delphi3	← for Delphi 3
+--\PISODIO.PAS	← Declaration file
--\VB5	← for Visual Basic 5
+--\PISODIO.BAS	← Declaration file
+--\VC5	← for Visual C++ 5
--\PISODIO.H	← Header file
+--\PISODIO.LIB	← Linkage library for VC5 only

## 2.1 PISODIO.H

```
#ifndef __cplusplus
    #define EXPORTS extern "C" __declspec (dllimport)
#else
    #define EXPORTS
#endif

// return code
#define PISODIO_NoError          0
#define PISODIO_DriverOpenError  1
#define PISODIO_DriverNoOpen     2
#define PISODIO_GetDriverVersionError 3
#define PISODIO_InstallIrqError  4
#define PISODIO_ClearIntCountError 5
#define PISODIO_GetIntCountError  6
#define PISODIO_RegisterApcError   7
#define PISODIO_RemoveIrqError    8
#define PISODIO_FindBoardError    9
#define PISODIO_ExceedBoardNumber 10
#define PISODIO_ResetError        11

// to trigger a interrupt when high -> low
#define PISODIO_ActiveLow         0
// to trigger a interrupt when low -> high
#define PISODIO_ActiveHigh       1

// ID
#define PISO_C64                  0x800800 // for PISO-C64
#define PISO_P64                  0x800810 // for PISO-P64
#define PISO_P32C32              0x800820 // for PISO-P32C32
#define PISO_P8R8                0x800830 // for PISO-P8R8
#define PISO_P8SSR8AC            0x800830 // for PISO-P8SSR8AC
#define PISO_P8SSR8DC            0x800830 // for PISO-P8SSR8DC
#define PISO_730                  0x800840 // for PISO-730

// Test functions
EXPORTS float    CALLBACK PISODIO_FloatSub(float fA, float fB);
EXPORTS short    CALLBACK PISODIO_ShortSub(short nA, short nB);
EXPORTS WORD     CALLBACK PISODIO_GetDllVersion(void);
```

```
// Driver functions
EXPORTS WORD    CALLBACK PISODIO_DriverInit(void);
EXPORTS void    CALLBACK PISODIO_DriverClose(void);
EXPORTS WORD    CALLBACK PISODIO_SearchCard(WORD *wBoards,
      DWORD dwPIOCardID);
EXPORTS WORD    CALLBACK PISODIO_GetDriverVersion(
      WORD *wDriverVersion);
EXPORTS WORD    CALLBACK PISODIO_GetConfigAddressSpace(
      WORD wBoardNo, DWORD *wAddrBase, WORD *wIrqNo,
      WORD *wSubVendor, WORD *wSubDevice, WORD *wSubAux,
      WORD *wSlotBus, WORD *wSlotDevice);
EXPORTS WORD    CALLBACK PISODIO_ActiveBoard( WORD wBoardNo );
EXPORTS WORD    CALLBACK PISODIO_WhichBoardActive(void);

// DIO functions
EXPORTS void    CALLBACK PISODIO_OutputWord(DWORD wPortAddress,
      DWORD wOutData);
EXPORTS void    CALLBACK PISODIO_OutputByte(DWORD wPortAddr,
      WORD bOutputValue);
EXPORTS DWORD   CALLBACK PISODIO_InputWord(
      DWORD wPortAddress);
EXPORTS WORD    CALLBACK PISODIO_InputByte(DWORD wPortAddr);

// Interrupt functions
EXPORTS WORD    CALLBACK PISODIO_IntInstall(WORD wBoardNo,
      HANDLE *hEvent, WORD wInterruptSource, WORD wActiveMode);
EXPORTS WORD    CALLBACK PISODIO_IntRemove(void);
EXPORTS WORD    CALLBACK PISODIO_IntGetCount(
      DWORD *dwIntCount);
EXPORTS WORD    CALLBACK PISODIO_IntResetCount(void);
```

## 2.2 PISODIO.BAS

Attribute VB\_Name = "PISODIO"

```
Global Const PISODIO_NoError = 0
Global Const PISODIO_DriverOpenError = 1
Global Const PISODIO_DriverNoOpen = 2
Global Const PISODIO_GetDriverVersionError = 3
Global Const PISODIO_InstallIrqError = 4
Global Const PISODIO_ClearIntCountError = 5
Global Const PISODIO_GetIntCountError = 6
Global Const PISODIO_RegisterApcError = 7
Global Const PISODIO_RemoveIrqError = 8
Global Const PISODIO_FindBoardError = 9
Global Const PISODIO_ExceedBoardNumber = 10
Global Const PISODIO_ResetError = 11
```

```
' to trigger a interrupt when high -> low
Global Const PISODIO_ActiveLow = 0
' to trigger a interrupt when low -> high
Global Const PISODIO_ActiveHigh = 1
```

```
' ID
Global Const PISO_C64 = &H800800 ' for PISO-C64
Global Const PISO_P64 = &H800810 ' for PISO-P64
Global Const PISO_P32C32 = &H800820 ' for PISO-P32C32
Global Const PISO_P8R8 = &H800830 ' for PISO-P8R8
Global Const PISO_P8SSR8AC = &H800830 ' for PISO-P8SSR8AC
Global Const PISO_P8SSR8DC = &H800830 ' for PISO-P8SSR8DC
Global Const PISO_730 = &H800840 ' for PISO-730
```

```
' The Test functions
Declare Function PISODIO_ShortSub Lib "PISODIO.dll" (ByVal a As Integer,
    ByVal b As Integer) As Integer
Declare Function PISODIO_FloatSub Lib "PISODIO.dll" (ByVal a As Single,
    ByVal b As Single) As Single
Declare Function PISODIO_GetDllVersion Lib "PISODIO.dll" () As Integer
```

' The Driver functions

```
Declare Function PISODIO_DriverInit Lib "PISODIO.dll" () As Integer
Declare Sub PISODIO_DriverClose Lib "PISODIO.dll" ()
Declare Function PISODIO_SearchCard Lib "PISODIO.dll" (
    wBoards As Integer, ByVal dwPIOPISOCardID As Long) As Integer
Declare Function PISODIO_GetDriverVersion Lib "PISODIO.dll"
    (wDriverVersion As Integer) As Integer
Declare Function PISODIO_GetConfigAddressSpace Lib "PISODIO.dll" ( _
    ByVal wBoardNo As Integer, wAddrBase As Long, wIrqNo As Integer, _
    wSubVendor As Integer, wSubDevice As Integer, wSubAux As Integer, _
    wSlotBus As Integer, wSlotDevice As Integer) As Integer

Declare Function PISODIO_ActiveBoard Lib "PISODIO.dll" (
    ByVal wBoardNo As Integer) As Integer
Declare Function PISODIO_WhichBoardActive Lib "PISODIO.dll" () As Integer
```

' DIO functions

```
Declare Sub PISODIO_OutputByte Lib "PISODIO.dll" ( _
    ByVal address As Long, ByVal dataout As Integer)
Declare Sub PISODIO_OutputWord Lib "PISODIO.dll" ( _
    ByVal address As Long, ByVal dataout As Long)
Declare Function PISODIO_InputByte Lib "PISODIO.dll" ( _
    ByVal address As Long) As Integer
Declare Function PISODIO_InputWord Lib "PISODIO.dll" ( _
    ByVal address As Long) As Long
```

' Interrupt functions

```
Declare Function PISODIO_IntInstall Lib "PISODIO.dll" (
    ByVal wBoard As Integer, hEvent As Long, _
    ByVal wInterruptSource As Integer, ByVal wActiveMode As Integer) _
    As Integer
Declare Function PISODIO_IntRemove Lib "PISODIO.dll" () As Integer
Declare Function PISODIO_IntGetCount Lib "PISODIO.dll" ( _
    dwIntCount As Long) As Integer
Declare Function PISODIO_IntResetCount Lib "PISODIO.dll" () As Integer
```



## 2.3 PISODIO.PAS

```
unit PISODIO;      { PISODIO.dll interface unit }

interface

const
  PISODIO_NoError           =0;
  PISODIO_DriverOpenError  =1;
  PISODIO_DriverNoOpen     =2;
  PISODIO_GetDriverVersionError =3;
  PISODIO_InstallIrqError  =4;
  PISODIO_ClearIntCountError =5;
  PISODIO_GetIntCountError =6;
  PISODIO_RegisterApcError  =7;
  PISODIO_RemoveIrqError   =8;
  PISODIO_FindBoardError   =9;
  PISODIO_ExceedBoardNumber =10;
  PISODIO_ResetError       =11;

  // to trigger a interrupt when high -> low
  PISODIO_ActiveLow        =0;
  // to trigger a interrupt when low -> high
  PISODIO_ActiveHigh      =1;

  // ID
  PISO_C64          = $800800; // for PISO-C64
  PISO_P64          = $800810; // for PISO-P64
  PISO_P32C32      = $800820; // for PISO-P32C32
  PISO_P8R8        = $800830; // for PISO-P8R8
  PISO_P8SSR8AC    = $800830; // for PISO-P8SSR8AC
  PISO_P8SSR8DC    = $800830; // for PISO-P8SSR8DC
  PISO_730         = $800840; // for PISO-730

  // Test functions
function PISODIO_ShortSub(nA : smallint; nB : smallint) : smallint; StdCall;
function PISODIO_FloatSub(fA : single; fB : single) : single; StdCall;
function PISODIO_GetDllVersion : word; StdCall;
```

```
// Driver functions
function PISODIO_DriverInit                : word; StdCall;
procedure PISODIO_DriverClose              ; StdCall;
function PISODIO_SearchCard(var wBoards:WORD;
    dwPIOPISOCardID:LongInt):WORD; StdCall;
function PISODIO_GetDriverVersion(var wDriverVer: word) : word; StdCall;
function PISODIO_GetConfigAddressSpace(
    wBoardNo:word; var wAddrBase:LongInt; var wIrqNo:word;
    var wSubVerdor:word; var wSubDevice:word; var wSubAux:word;
    var wSlotBus:word; var wSlotDevice:word ) : word; StdCall;
function PISODIO_ActiveBoard(wBoardNo:Word) : WORD; StdCall;
function PISODIO_WhichBoardActive         : WORD; StdCall;

// DIO functions
procedure PISODIO_OutputByte(wPortAddr : LongInt; bOutputVal : Word)
    ; StdCall;
procedure PISODIO_OutputWord(wPortAddr : LongInt; wOutputVal : LongInt)
    ; StdCall;
function PISODIO_InputByte(wPortAddr : LongInt ) : word; StdCall;
function PISODIO_InputWord(wPortAddr : LongInt ) : LongInt; StdCall;

// Interrupt functions
function PISODIO_IntInstall(wBoard:Word; var hEvent:LongInt;
    wInterruptSource:Word; wActiveMode:Word) : WORD; StdCall;
function PISODIO_IntRemove : WORD; StdCall;
function PISODIO_IntGetCount(var dwIntCount:LongInt) : WORD; StdCall;
function PISODIO_IntResetCount : WORD; StdCall;

implementation

// Test functions
function PISODIO_ShortSub;                external 'PISODIO.dll' name
    'PISODIO_ShortSub';
function PISODIO_FloatSub;                external 'PISODIO.dll' name
    'PISODIO_FloatSub';
function PISODIO_GetDllVersion;          external 'PISODIO.dll' name
    'PISODIO_GetDllVersion';
```

```
// Driver functions
function PISODIO_DriverInit;                external 'PISODIO.dll' name
    'PISODIO_DriverInit';
procedure PISODIO_DriverClose;             external 'PISODIO.dll' name
    'PISODIO_DriverClose';
function PISODIO_SearchCard;              external 'PISODIO.dll' name
    'PISODIO_SearchCard';
function PISODIO_GetDriverVersion;        external 'PISODIO.dll' name
    'PISODIO_GetDriverVersion';
function PISODIO_GetConfigAddressSpace;   external 'PISODIO.dll' name
    'PISODIO_GetConfigAddressSpace';

function PISODIO_ActiveBoard;             external 'PISODIO.dll' name
    'PISODIO_ActiveBoard';
function PISODIO_WhichBoardActive;        external 'PISODIO.dll' name
    'PISODIO_WhichBoardActive';

// DIO functions
procedure PISODIO_OutputByte;             external 'PISODIO.dll' name
    'PISODIO_OutputByte';
procedure PISODIO_OutputWord;            external 'PISODIO.dll' name
    'PISODIO_OutputWord';
function PISODIO_InputByte;              external 'PISODIO.dll' name
    'PISODIO_InputByte';
function PISODIO_InputWord;              external 'PISODIO.dll' name
    'PISODIO_InputWord';

// Interrupt functions
function PISODIO_IntInstall;             external 'PISODIO.dll' name
    'PISODIO_IntInstall';
function PISODIO_IntRemove;              external 'PISODIO.dll' name
    'PISODIO_IntRemove';
function PISODIO_IntGetCount;            external 'PISODIO.dll' name
    'PISODIO_IntGetCount';
function PISODIO_IntResetCount;          external 'PISODIO.dll' name
    'PISODIO_IntResetCount';

end.
```

## 3. FUNCTION DESCRIPTINOS

In this chapter, we use some keywords to indicate the attribute of Parameters.

Keyword	Setting parameter by user before calling this function ?	Get the data/value from this parameter after calling this function ?
[Input]	Yes	No
[Output]	No	Yes
[Input, Output]	Yes	Yes

Note: All of the parameters need to be allocated spaces by the user.

---

## 3.1 FUNCTIONS OF TEST

---

### 3.1.1 PISODIO\_GetDllVersion

- **Description:**  
To get the version number of PISODIO.DLL
- **Syntax:**  
WORD PISODIO\_GetDllVersion(void)
- **Parameter:**  
None
- **Return:**  
200(hex) for version 2.00

### 3.1.2 PISODIO\_ShortSub

- **Description:**  
To perform the subtraction as  $nA - nB$  in short data type. This function is provided for testing DLL linkage purpose.
- **Syntax:**  
short PISODIO\_ShortSub(short nA, short nB)
- **Parameter:**  
nA : [Input] 2 bytes short data type value  
nB : [Input] 2 bytes short data type value
- **Return:**  
The value of  $nA - nB$

---

### 3.1.3 PISODIO\_FloatSub

- **Description:**  
To perform the subtraction as  $fA - fB$  in float data type. This function is provided for testing DLL linkage purpose.
- **Syntax:**  
float PISODIO\_FloatSub(float fA, float fB)
- **Parameter:**  
fA : [Input] 4 bytes floating point value  
fB : [Input] 4 bytes floating point value
- **Return:**  
The value of  $fA - fB$

## 3.2 FUNCTIONS OF I/O

---

### 3.2.1 PISODIO\_OutputByte

- **Description :**  
This subroutine will send the 8 bits data to the desired I/O port.
- **Syntax :**  
void PISODIO\_OutputByte(DWORD wPortAddr, WORD bOutputVal);
- **Parameter :**  
wPortAddr : [Input] I/O port addresses, please refer to function PISODIO\_GetConfigAddressSpace.  
Only the low WORD is valid.  
bOutputVal : [Input] 8 bit data send to I/O port.  
Only the low BYTE is valid.
- **Return:**  
None

---

### 3.2.2 PISODIO\_InputByte

- **Description :**  
This subroutine will input the 8 bit data from the desired I/O port.
- **Syntax :**  
WORD PISODIO\_InputByte(DWORD wPortAddr);
- **Parameter :**  
wPortAddr : [Input] I/O port addresses, please refer to function PISODIO\_GetConfigAddressSpace().  
Only the low WORD is valid.
- **Return:**  
16 bits data with the leading 8 bits are all 0.  
(Only the low BYTE is valid.)

### 3.2.3 PISODIO\_OutputWord

- **Description :**  
This subroutine will send the 16 bits data to the desired I/O port.
- **Syntax :**  
void PISODIO\_OutputWord(DWORD wPortAddr, DWORD wOutputVal);
- **Parameter :**  
wPortAddr : [Input] I/O port addresses, please refer to function PISODIO\_GetConfigAddressSpace().  
Only the low WORD is valid.  
wOutputVal : [Input] 16 bit data send to I/O port.  
Only the low WORD is valid.
- **Return:**  
None

---

### 3.2.4 PISODIO\_InputWord

- **Description :**  
This subroutine will input the 16 bit data from the desired I/O port.
- **Syntax :**  
DWORD PISODIO\_InputWord(DWORD wPortAddr);
- **Parameter :**  
wPortAddr : [Input] I/O port addresses, please refer to function PISODIO\_GetConfigAddressSpace().  
Only the low WORD is valid.
- **Return:**  
16 bit data. Only the low WORD is valid.

## 3.3 FUNCTIONS OF DRIVER

---

### 3.3.1 PISODIO\_GetDriverVersion

- **Description :**  
This subroutine will read the version number of PISODIO driver.
- **Syntax :**  
WORD PISODIO\_GetDriverVersion(WORD \*wDriverVersion);
- **Parameter :**  
wDriverVersion : [Output] address of wDriverVersion
- **Return:**  
PISODIO\_NoError : OK  
PISODIO\_DriverNoOpen : The PISODIO driver no open  
PISODIO\_GetDriverVersionError : Read driver version error

---

### 3.3.2 PISODIO\_DriverInit

- **Description :**  
This subroutine will open the PISODIO driver and allocate the resource for the device. This function must be called once before calling other PISODIO functions.
- **Syntax :**  
WORD PISODIO\_DriverInit();
- **Parameter :**  
None
- **Return:**  
PISODIO\_NoError : OK  
PISODIO\_DriverOpenError : open PISODIO Driver error



### 3.3.3 PISODIO\_DriverClose

- **Description :**  
This subroutine will close the PISODIO Driver and release the resource from the device. This function must be called once before exit the user's application.
- **Syntax :**  
void PISODIO\_DriverClose();
- **Parameter :**  
None
- **Return:**  
None

---

### 3.3.4 PISODIO\_GetConfigAddressSpace

- **Description :**  
Get the I/O address of PISODIO board n.
- **Syntax :**  
WORD PISODIO\_GetConfigAddressSpace  
( WORD wBoardNo, DWORD \*wAddrBase, WORD \*wIrqNo,  
WORD \*wSubVendor, WORD \*wSubDevice, WORD \*wSubAux,  
WORD \*wSlotBus, WORD \*wSlotDevice);
- **Parameter :**  
wBoardNo : [Input] PISODIO board number  
wAddrBase : [Output] The base address of PISODIO board.  
Only the low WORD is valid.  
wIrqNo : [Output] The IRQ number that the PISODIO board using.  
wSubVendor : [Output] Sub Vendor ID.  
wSubDevice : [Output] Sub Device ID.  
wSubAux : [Output] Sub Aux ID.  
wSlotBus : [Output] Slot Bus number.  
wSlotDevice : [Output] Slot Device ID.
- **Return:**  
PISODIO\_NoError : OK  
PISODIO\_FindBoardError : handshake check error  
PISODIO\_ExceedBoardError : wBoardNo is invalidated

## 3.4 INTERRUPT FUNCTION

---

### 3.4.1 PISODIO\_IntResetCount

- **Description:**  
This subroutine will reset the **dwIntCount** defined in device-driver.
- **Syntax:**  
WORD PISODIO\_IntResetCount(void);
- **Parameter:**  
None
- **Return:**  
PISODIO\_NoError : OK  
PISODIO\_DriverNoOpen : the device driver no open  
PISODIO\_ClearIntCountError : **dwIntCount** clear error

---

### 3.4.2 PISODIO\_IntGetCount

- **Description:**  
This subroutine will read the **dwIntCount** defined in device driver.
- **Syntax :**  
WORD PISODIO\_IntGetCount(WDORD \*dwIntCount);
- **Parameter:**  
dwIntCount : [Output] Address of dwIntCount, which will stores the counter value of interrupt.
- **Return:**  
PISODIO\_NoError : OK  
PISODIO\_GetIntCountError : **dwIntCount** read error

### 3.4.3 PISODIO\_IntInstall

- **Description:**  
This subroutine will install the IRQ service routine.
- **Syntax:**  
WORD PISODIO\_IntInstall(WORD wBoardNo, HANDLE \*hEvent, WORD wInterruptSource, WORD wActiveMode);
- **Parameter:**
  - wBoardNo : [Input] Which board to be used.
  - hEvent : [Input] Address of an Event handle. The user's program must call the Windows API function "CreateEvent()" to create the event-object.
  - wInterruptSource : [Input] What the Interrupt-Source to be used ? Please refer to hardware's manual for the detail information.

Card No.	wInterruptSource	Description
PISO-730	0	DI0
	1	DI1

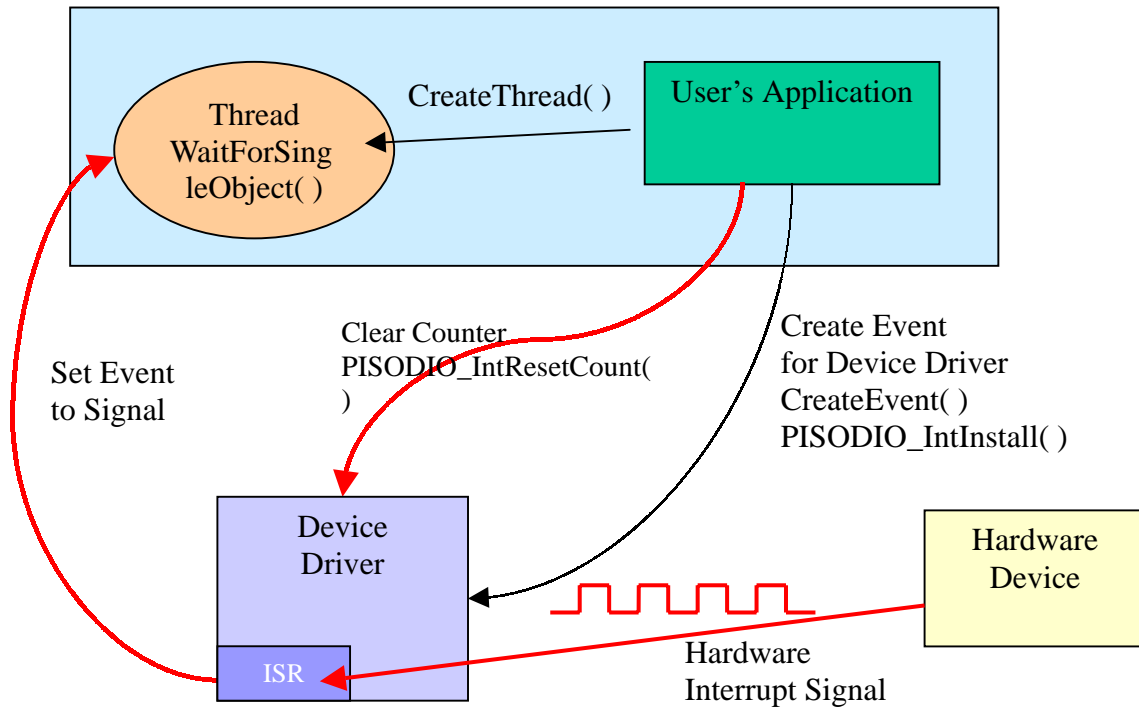
  - wActiveMode : [Input] When to trigger the interrupt ? This can be PISODIO\_ActiveHigh or PISODIO\_ActiveLow.
- **Return:**
  - PISODIO\_NoError : OK
  - PISODIO\_InstallIrqError : IRQ installation error

---

### 3.4.4 PISODIO\_IntRemove

- **Description:**  
This subroutine will remove the IRQ service routine.
- **Syntax:**  
WORD PISODIO\_IntRemove( void );
- **Parameter:**  
None
- **Return:**
  - PISODIO\_NoError : OK

### 3.4.5 Architecture of Interrupt mode



Please refer to the following Windows API functions:

The following portion description of these functions was copied from MSDN. For the detailed and completely information, please refer to MSDN.

#### CreateEvent()

The CreateEvent function creates or opens a named or unnamed event object.

```
HANDLE CreateEvent(
    // pointer to security attributes
    LPSECURITY_ATTRIBUTES lpEventAttributes,
    BOOL bManualReset,    // flag for manual-reset event
    BOOL bInitialState,  // flag for initial state
    LPCTSTR lpName       // pointer to event-object name
);
```

## CreateThread( )

The CreateThread function creates a thread to execute within the virtual address space of the calling process.

To create a thread that runs in the virtual address space of another process, use the CreateRemoteThread function.

```
HANDLE CreateThread(  
    // pointer to security attributes  
    LPSECURITY_ATTRIBUTES lpThreadAttributes,  
    DWORD dwStackSize,      // initial thread stack size  
    // pointer to thread function  
    LPTHREAD_START_ROUTINE lpStartAddress,  
    LPVOID lpParameter,     // argument for new thread  
    DWORD dwCreationFlags,  // creation flags  
    LPDWORD lpThreadId      // pointer to receive thread ID  
);
```

## WaitForSingleObject( )

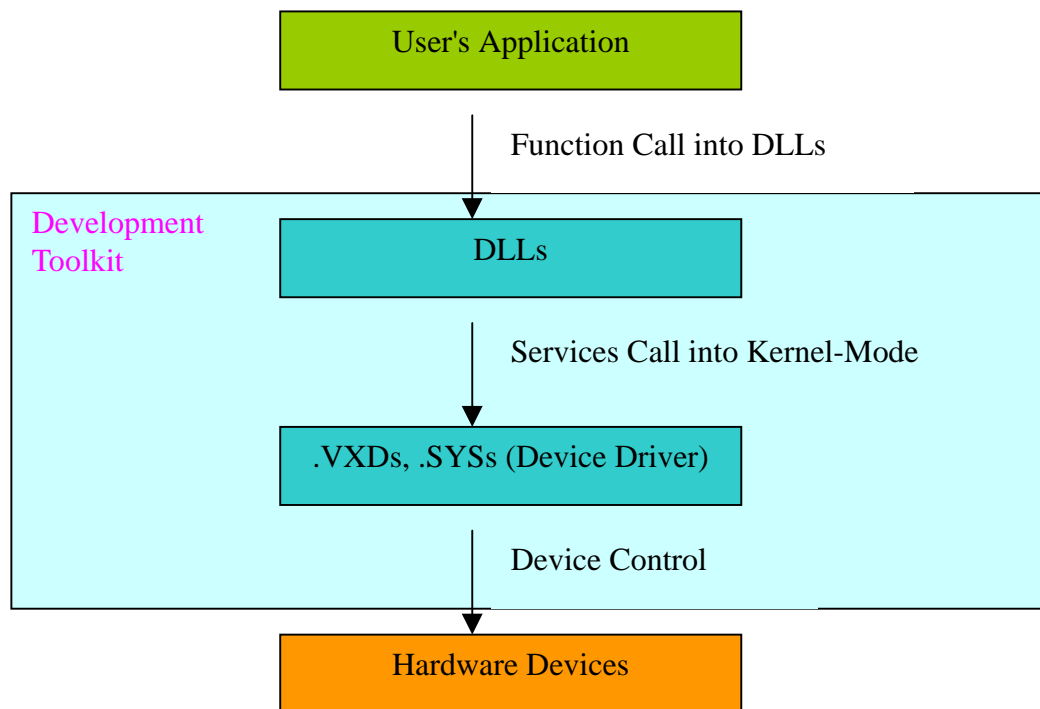
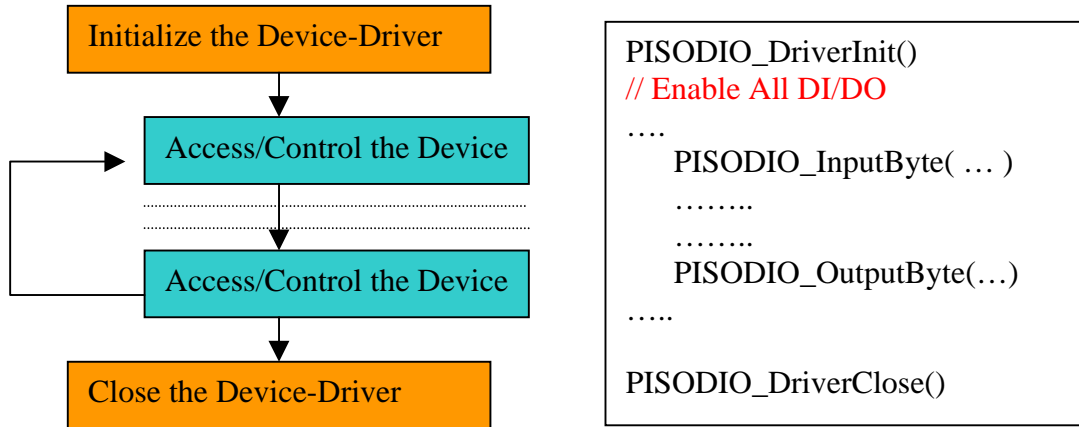
The WaitForSingleObject function returns when one of the following occurs:

- The specified object is in the signaled state.
- The time-out interval elapses.

To enter an alertable wait state, use the WaitForSingleObjectEx function. To wait for multiple objects, use the WaitForMultipleObjects.

```
DWORD WaitForSingleObject(  
    HANDLE hHandle,        // handle to object to wait for  
    DWORD dwMilliseconds  // time-out interval in  
    milliseconds  
);
```

## 4. Program Architecture



## 5. Problems Report

Technical support is available at no charge as described below. The best way to report problems is to send electronic mail to

[icpdas@ms8.hinet.net](mailto:icpdas@ms8.hinet.net)  
[Service@icpdas.com](mailto:Service@icpdas.com)

on the Internet.

When reporting problems, please include the following information:

- 1) Is the problem reproducible? If so, how?
- 2) What kind and version of **platform** that you using? For example, Windows 3.1, Windows 95, or Windows NT 4.0, etc.
- 3) What kinds of our **products** that you using? Please see the product's manual.
- 4) If a dialog box with an **error message** was displayed, please include the full text of the dialog box, including the text in the title bar.
- 5) If the problem involves **other programs** or **hardware devices**, what devices or version of the failing programs that you using?
- 6) **Other comments** relative to this problem or **any suggestions** will be welcomed.

After we had received your comments, we will take about two business days to test the problems that you said. And then reply as soon as possible to you. Please check that if we had received your comments? And please keeps contact with us.

**ICP DAS**

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