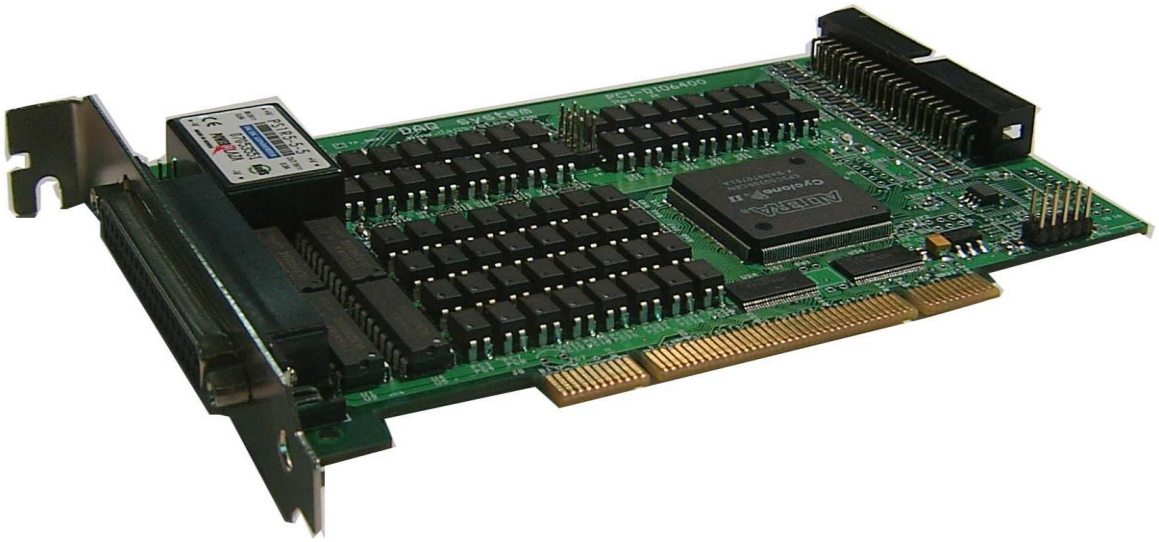
(c)PCI(e)-DIO64xx Series API Programming (Rev 1.0)



API

This chapter explains API (Application Programming Interface) to use a (c)PCI(e)-DIO6400.

Currently it supports API as follows.

```
//////////////////////////////////////////////////////////////////////////////
//  (c) 2007 DAQ system
//////////////////////////////////////////////////////////////////////////////
#define MAX_MODEL   5                       // Maximum number of Device Model
#define MAX_DEVICE  5                       // Maximum number of Device to find

#define PCI_DIO6400     0
#define PCI_DIO6401     1
#define PCI_DIO6402     2
#define PCI_DIO6403     3
#define PCI_DIO6404     4
                                            // Board level API functions
extern "C" __declspec(dllimport) BOOL   __stdcall    OpenDAQDevice(int nModel, int nBoard);
extern "C" __declspec(dllimport) BOOL   __stdcall    ResetBoard(int nModel, int nBoard);
extern "C" __declspec(dllimport) BOOL   __stdcall    CloseDAQDevice(int nModel, int nBoard);

                                            // digital input/output
extern "C" __declspec(dllimport) BOOL   __stdcall    DIN_Read(int nModel, int nBoard, int nReg, DWORD *dwVal);
extern "C" __declspec(dllimport) BOOL   __stdcall    DOUT_Read(int nModel, int nBoard, int nReg, DWORD *dwVal);
extern "C" __declspec(dllimport) BOOL   __stdcall    DOUT_Write(int nModel, int nBoard, int nReg, DWORD  dwVal);

extern "C" __declspec(dllimport) BOOL   __stdcall    Set_LED_Mode(int nModel, int nBoard, int nReg, int nMode);
```

Board Level API Functions

Overview

BOOL **OpenDAQDevice (int nModel, int nBoard)**

BOOL **ResetBoard (int nModel, int nBoard)**

BOOL **CloseDAQDevice (int nModel, int nBoard)**

OpenDAQDevice

BOOL OpenDAQDevice (int nModel, int nBoard)

It opens a device. You may call this function at the very first time you run the program and some suspicious operation.

Parameters:

nModel : It writes down the PCI-DIO6400 model number. (0 ~ 3)

nBoard : It informs a board number at currently equipped system.
The board number set up by DIP switch.

Return Value:

If the function succeeds, it returns the number of boards which were detected.

If the function fails, the return value is -1, it means there is no device in the system.

ResetBoard

BOOL ResetBoard (int nModel, int nBoard)

It initializes a device at currently equipped system (PC).

Parameters:

nModel : It writes down the PCI-DIO6400 model number. (0 ~ 3)

nBoard : It informs a board number at currently equipped system.
The board number set up by DIP switch.

Return Value:

If the function fail to reset, it returns “FALSE”.

If the function succeed to reset, it returns “TRUE”.

CloseDAQDevice

BOOL CloseDAQDevice (int nModel, int nBoard)

The CloseDAQDevice function closes all opened devices (boards). If use of device is finished, it can certainly close a device for making it other programs so as usable.

Parameters:

nModel : It writes down the PCI-DIO6400 model number. (0 ~ 3)

nBoard : It informs a board number at currently equipped system.
The board number set up by DIP switch.

Return Value:

If the function fail to close, it returns “FALSE”.

If the function succeed to close, it returns “TRUE”.

DIO(Digital Input Output) API Functions

Overview

BOOL DIN_Read (int nModel, int nBoard, int nReg, DWORD *dwVal)

BOOL DOUT_Write (int nModel, int nBoard, int nReg, DWORD dwVal)

BOOL DOUT_Read (int nModel, int nBoard, int nReg, DWORD *dwVal)

BOOL Set_LED_Mode (int nModel, int nBoard, int nReg, int nMode)

DIN_Read

BOOL DIN_Read (int nModel, int nBoard, int nReg, DWORD *dwVal)

It reads 32bit or 64bit Digital Input value. (for PCI-DIO6400 or PCI-DIO6401)

Parameters:

nModel : It writes down the PCI-DIO6400 model number. (0 ~ 3)

nBoard : It informs a board number at currently equipped system.

The board number set up by DIP switch.

nReg : It ready for future.

It is not used currently, but you must setup ‘0’.

*wVal : It is a pointer of currently value to get from input port.

Return Value:

If the function call fails, it returns “FALSE”.

If the function call succeeds, it returns “TRUE”.

DOUT_Write

BOOL DOUT_Write (int nModel, int nBoard, int nReg, DWORD dwVal)

It prints out 32bit or 64bit Digital value at output port. (for PCI-DIO6400 or PCI-DIO6402)

Parameters:

nModel : It writes down the PCI-DIO6400 model number. (0 ~ 3)

nBoard : It informs a board number at currently equipped system.

The board number set up by DIP switch.

nReg : : It ready for future.

It is not used currently, but you must setup ‘0’.

wVal : The value to record to an output port.

Return Value:

If the function call fails, it returns “FALSE”.

If the function call succeeds, it returns “TRUE”.

DOUT_Read

BOOL DOUT_Read (int nModel, int nBoard, int nReg, DWORD *dwVal)

It reads a currently output value with 32 or 64bits. (for PCI-DIO6400 or PCI-DIO6402)

Parameters:

nModel : It writes down the PCI-DIO6400 model number. (0 ~ 3)

nBoard : It informs a board number at currently equipped system.

The board number set up by DIP switch.

nReg : : It ready for future.

It is not used currently, but you must setup '0'.

*dwVal : It is a pointer of currently value to get from output port.

Return Value:

If the function call fails, it returns "FALSE".

If the function call succeeds, it returns "TRUE".

Set_LED_Mode

BOOL Set_LED_Mode (int nModel, int nBoard, int nReg, int nMode)

It marks a current value of input/output to LED on a front panel. It can set up to display what kind of value. (for cPCI-DIO6400)

Parameters:

nModel : It writes down the PCI-DIO6400 model number. (0 ~ 3)

nBoard : It informs a board number at currently equipped system.

The board number set up by DIP switch.

nReg : : It ready for future.

It is not used currently, but you must setup '0'.

nMode : It sets up a value to be displayed to LED.

0 : Input from 15 to 0

1 : Input from 31 to 16

2 : Output from 15 to 0

3 : Output from 31 to 16.

(Notice) It is not defined the above value, don't use it.

Return Value:

If the function call fails, it returns "FALSE".

If the function call succeeds, it returns "TRUE".