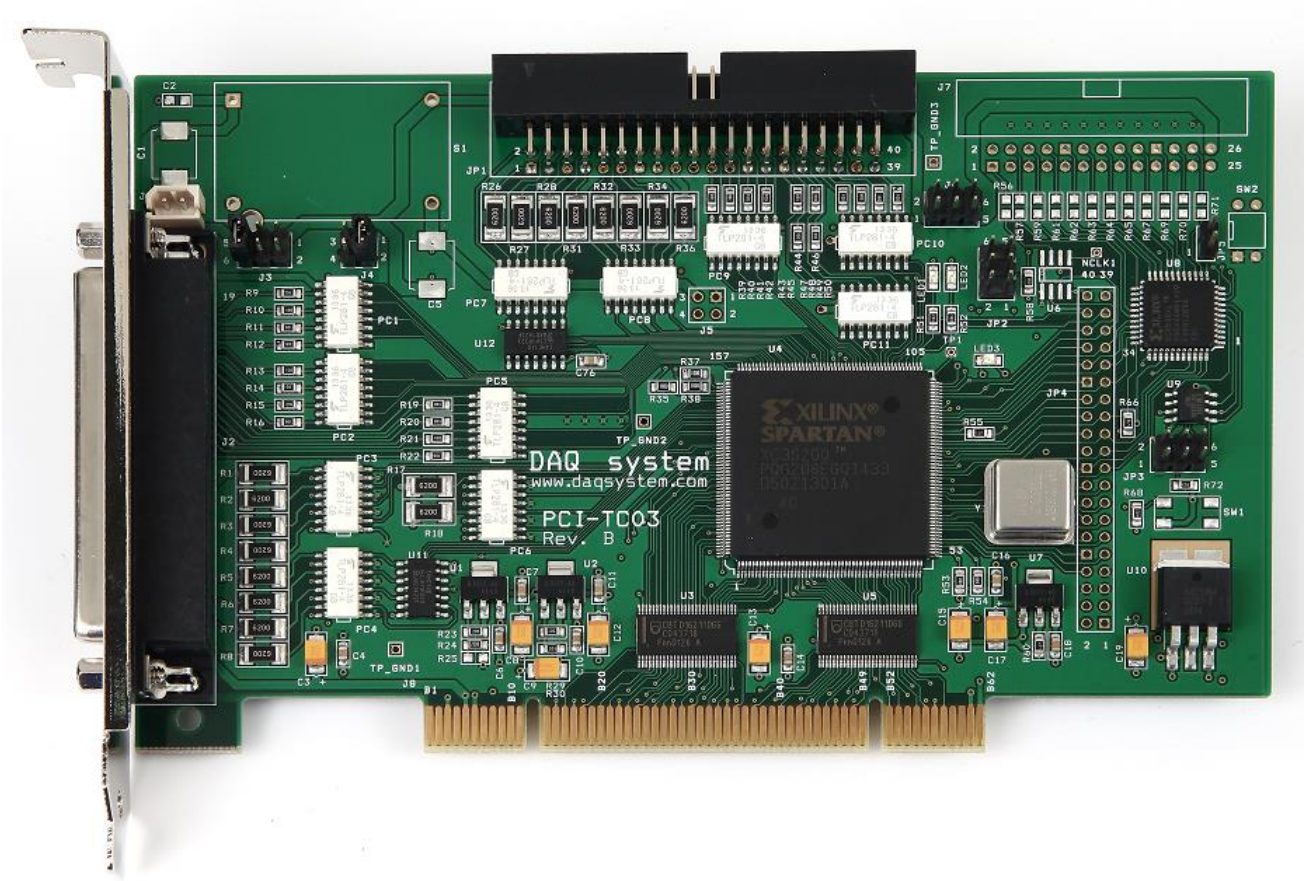
PCI-TC03

API Manual

Version 1.0



DAQ SYSTEM
Measurement & Automation

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Board Level API Functions

Overview

BOOL **OpenDAQDevice (viod)**

BOOL **ResetBoard (int nBoard)**

BOOL **CloseDAQDevice (void)**

OpenDAQDevice

This function opens the device. In the program using the PCI-TC03 board, the device must be opened by calling the function once at the beginning.

BOOL **OpenDAQDevice (void)**

Parameters:

Return Value:

If device open is successful, the number of devices currently installed in the system (PC) is returned. In case of failure, "-1" is returned.

ResetBoard

This function initializes the device currently installed in the system (PC).

BOOL **ResetBoard (int nBoard)**

Parameters:

nBoard : Shows the board number currently installed in the system.
The board number is set using the DIP switch of the board.

Return Value:

If the function call fails, "FALSE" is returned.

If the function call succeeds, "TRUE" is returned.

CloseDAQDevice

This function closes all open PCI-TC03 device. When the use of the device is finished, be sure to close the device so that other programs can use it.

BOOL CloseDAQDevice (void)

Parameters:

Return Value:

If the function call fails, "FALSE" is returned.

If the function call succeeds, "TRUE" is returned.

Counter API Functions

Overview

BOOL **Counter_Init (int num)**
BOOL **Counter_Enable (int num)**
BOOL **Counter_Disable (int num)**
BOOL **Counter_Clear (int num)**
BOOL **Counter_ReadPresent (int num, DWORD *dwVal)**
BOOL **Counter_ReadTarget (int num, DWORD *dwVal)**
BOOL **Counter_WriteTarget (int num, DWORD dwVal)**

Conter_Init

This function initializes the counter.

BOOL **Counter_Init (int num)**

Parameters :

num : Select the counter number. (0 ~ 7)

Return Value :

If the function call fails, "FALSE" is returned.

If the function call succeeds, "TRUE" is returned.

Count_Enable

This function enables the counter.

BOOL **Counter_Enable (int num)**

Parameters :

num : Select the counter number. (0 ~ 7)

Return Value :

If the function call fails, "FALSE" is returned.

If the function call succeeds, "TRUE" is returned.

Count_Disable

This function disables the counter.

BOOL Counter_Disable (int num)

Parameters :

num : Select the counter number. (0 ~ 7)

Return Value :

If the function call fails, "FALSE" is returned.

If the function call succeeds, "TRUE" is returned.

Count _Clear

This function clears the counter value.

BOOL Counter_Clear (int num)

Parameters :

num : Select the counter number. (0 ~ 7)

Return Value :

If the function call fails, "FALSE" is returned.

If the function call succeeds, "TRUE" is returned.

Count_ReadPresent

This function reads the current value of the corresponding counter.

BOOL Counter_ReadPresent (int num, DWORD *dwVal)

Parameters :

num : Select the counter number. (0 ~ 7)

*dwVal : It is a variable from which to read the current value of the input counter.

Return Value:

If the function call fails, "FALSE" is returned.

If the function call succeeds, "TRUE" is returned.

Count_ReadTarget

This function reads the current value of the target counter.

BOOL Counter_ReadTarget (int num, DWORD *dwVal)

Parameters :

num : Select the counter number. (0 ~ 7)

*dwVal : It is a variable from which to read the value of the target counter.

Return Value:

If the function call fails, "FALSE" is returned.

If the function call succeeds, "TRUE" is returned.

Count_WriteTarget

This function outputs the target value to the output port.

BOOL Counter_WriteTarget (int num, DWORD dwVal)

Parameters :

num : Select the counter number. (0 ~ 7)

*dwVal : The value to write to the output port of the target counter.

Return Value:

If the function call fails, "FALSE" is returned.

If the function call succeeds, "TRUE" is returned.

DIO(Digital Input Output) API Functions

Overview

BOOL DIO_ReadInput (DWORD *dwVal)

BOOL DIO_ReadOutput (DWORD *dwVal)

BOOL DIO_WriteOutput (DWORD dwVal)

DIO_ReadInput

This function reads the digital value of the input port.

BOOL DIO_ReadInput (DWORD *dwVal)

Parameters:

dwVal : It is a variable from which to read the current value of the input port.

Return Value:

If the function call fails, "FALSE" is returned.

If the function call succeeds, "TRUE" is returned.

DIO_ReadOutput

This function reads the digital input value of the output port.

BOOL DIN_ReadOutput (DWORD *dwVal)

Parameters:

*dwVal : It is a pointer variable from which to read the current value of the input port.

Return Value:

If the function call fails, "FALSE" is returned.

If the function call succeeds, "TRUE" is returned.

DOUT_WriteOutput

This function outputs a digital value to the output port.

BOOL DIO_WriteOutput (DWORD dwVal)

Parameters:

dwVal : The value to write to the output port.

Return Value:

If the function call fails, "FALSE" is returned.

If the function call succeeds, "TRUE" is returned.

TMR(Timer) API Functions

Overview

BOOL Timer_Init (int num)

BOOL Timer_SetControl (int num, DWORD dwVal)

BOOL Timer_Read (int num, DWORD *dwVal)

BOOL Timer_GetControl (int num, DWORD *dwVal)

BOOL Timer_ReadSet (int num, DWORD *dwVal)

BOOL Timer_WriteSet (int num, DWORD dwVal)

Timer_Init

This function initializes the timer.

BOOL Timer_Init (int num)

Parameters :

num : Select a timer number. (0 ~ 7)

Return Value :

If the function call fails, "FALSE" is returned.

If the function call succeeds, "TRUE" is returned.

Timer _SetControl

This function sets the COMMAND register for timer operation.

(TMR_CMD register setting)

BOOL Timer_SetControl (int num, DWORD dwVal)

Parameters :

num : Select a timer number. (0 ~ 7)

dwVal : As a register setting value, the register setting bits are as follows.

TMR_CMD Register Bit Position & Usage								
31	7	6	5	4	3	2	1	0
Reserved	Used							

Bit	Name	Description	Default
0	Enable	When it is '1', the timer operates. (Up-Counter)	'0'
1	Clear	When it is '1', the current count (TMR_CUR) value is initialized to "0x00000000".	'0'
2	Auto	When it is '0', it generates One-Shot output, and when it is '1', when a timeout occurs, the timer value is automatically reloaded to the TMR_SET value and operates. When Auto ='1', Alt='0', the frequency is output as frequency = 5M/(TMR_SET+1) When Auto = '1', Alt = '1', the frequency is output as frequency = 10M/(TMR_SET+1).	'0'
3	Alt	As a bit for Alternative operation, when it is '0', the output value is inverted whenever a timeout occurs. When it is '1', '1' is output as many as the count set in ALT_CNT, and '0' is output until timeout occurs.	'0'
4	OutSel	When it is '1', the timer output is set to IO and output as "OutVal" value, and when it is '0', it is output as timer operation.	'0'
5	OutVal	This is the output value when the timer output is IO.	'0'
6		clear time over flag	'0'
31-8	-	For Future Use	All '0'

Return Value :

If the function call fails, "FALSE" is returned.

If the function call succeeds, "TRUE" is returned.

Timer_Read

This function reads the input value of the current timer.

BOOL Timer_Read (int num, DWORD *dwVal)

Parameters :

num : Select a timer number. (0 ~ 7)

*dwVal : Variable from which to read the current value of the input timer.

Return Value:

If the function call fails, "FALSE" is returned.

If the function call succeeds, "TRUE" is returned.

Timer _GetControl

This function outputs the COMMAND register for timer operation.

BOOL Timer_GetControl (int num, DWORD *dwVal)

Parameters :

num : Select a timer number. (0 ~ 7)

*dwVal : Variable from which to read the current value of the input timer.

Return Value :

If the function call fails, "FALSE" is returned.

If the function call succeeds, "TRUE" is returned.

Timer_ReadSet

This function gets the register value that shows the operation status.
(Check the TMR_STA register)

BOOL Timer_ReadSet (int num, DWORD *dwVal)

Parameters :

num : Select a timer number. (0 ~ 7)

*dwVal : It is a variable pointer from which to read the register value. The bit usage of the register is as follows.

TMR_STA STATUS Register Bit Position & Usage		
31 16	15 1	0
Use	Reserved	Use

Bit	Name	Description	Default
0	TimeOut	When a timeout occurs (TMR_CUR>=TMR_SET), it becomes '1'.	'1'
15 - 1	-	For Future Use	All '0'
31 - 16	ALT_CNT	The 10Mhz clock count value for the output that is '1' used in the alternative operation. The minimum value is 1.	All '0'

Return Value:

If the function call fails, "FALSE" is returned.
If the function call succeeds, "TRUE" is returned.

Timer_WriteSet

This function outputs a register value that shows the operating status.

BOOL Timer_WriteSet (int num, DWORD dwVal)

Parameters :

num : Select a timer number. (0 ~ 7)

dwVal : It means the hex value of the timer.

Return Value:

If the function call fails, "FALSE" is returned.
If the function call succeeds, "TRUE" is returned.

Memo

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