PCIS-OCX

32-bit ActiveX controls for
NuDAQ PCI Data Acquisition Cards

Programmer's Guide

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Manual Rev: 2.30: November 15, 2001

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	NuPRO	nupro@adlink.com.tw	
	Software	sw@adlink.com.tw	
	AMB	amb@adlink.com.tw	
TEL	+886-2-82265877	FAX	+886-2-82265717
Address	9F, No. 166, Jian Yi Road, Chungho City, Taipei, 235 Taiwan, R.O.C.		

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Table of Contents

NuDAQ PCI Configuration 1

Register NuDAQ cards for Windows NT 2

Configure NuDAQ cards for Windows 98 or Windows 2000 3

Define device 4

ActiveX Controls Function Reference 6

Pci6208 ActiveX Control 7

Properties 7

Methods 8

Events 11

Pci6308 ActiveX Control 13

Properties 13

Methods 16

Events 19

Pci7200 ActiveX Control 20

Properties 20

Methods 25

Events 30

Pci7230 ActiveX Control 32

Properties 32

Methods 33

Events 35

Pci7233 ActiveX Control 36

Properties 36

Methods 37

Events 38

Pci7234 ActiveX Control 40

Properties 40

Methods 40

Events 41

Pci7248 ActiveX Control 43

Properties 43

Methods 47

Events 52

Pci7249 ActiveX Control 53

Properties 53

Methods 57

Events 62

Pci7250 ActiveX Control 63

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

Properties 63
Methods 63
Events 66
Pci7252 ActiveX Control 68
Properties 68
Methods 68
Events 71
Pci7296 ActiveX Control 73
Properties 73
Methods 79
Events 84
Pci7300 ActiveX Control 86
Properties 86
Methods 93
Events 98
Pci7396 ActiveX Control 100
Properties 100
Methods 109
Events 115
Pci7432 ActiveX Control 116
Properties 116
Methods 117
Events 119
Pci7433 ActiveX Control 120
Properties 120
Methods 121
Events 123
Pci7434 ActiveX Control 124
Properties 124
Methods 124
Events 125
Pci8554 ActiveX Control 127
Properties 127
Methods 129
Events 132
Pci9111 ActiveX Control 134
Properties 134
Methods 139
Events 143
Pci9112 ActiveX Control 146

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Properties 146
Methods 150
Events 156
Pci9113 ActiveX Control 158
Properties 158
Methods 162
Events 165
Pci9114 ActiveX Control 168
Properties 168
Methods 172
Events 177
Pci9116 ActiveX Control 180
Properties 180
Methods 191
Events 197
Pci9118 ActiveX Control 199
Properties 199
Methods 209
Events 216
Pci9812 ActiveX Control 218
Properties 218
Methods 224
Events 226
Appendix Data File Format 229

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How to Use This Guide

This manual is designed to help you use the NuDAQ PCI ActiveX controls to control NuDAQ PCI data acquisition cards.

The *Programmer's Guide* is organized as follows:

Part 1, *"NuDAQ Configuration"*, describes how you can use the NuDAQ Configuraton Utility to register NuDAQ cards on Widnows 98/NT/2000 and define local or remote devices.

Part 2, *"ActiveX Controls Function Reference"*, contains the detailed descriptions of each NuDAQ PCI ActiveX controls.

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NuDAQ PCI Configuration

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Before you begin your NuDAQ PCI application development, you must configure your NuDAQ devices. NuDAQ PCI ActiveX controls need the device configuration information to program your hardware properly.

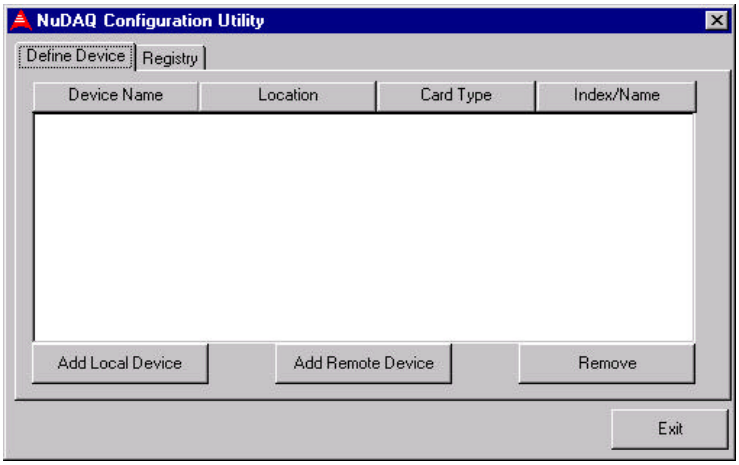
In most cases you follow the same general steps:

1. If your platform is Windows 98 or Windows 2000, you have to install DAQ hardware device when you play NuDAQ card and enter Windows. Please refer to *NuDAQ PCI and NuIPC CompactPCI DAQ cards software Installation Guide* for the detailed information.
2. Configure your device using the *NuDAQ Configuration Utility*.
3. Define your device using the *NuDAQ Configuration Utility*.
4. For the information of ActiveX programming, please refer to *DAQBench User's Guide*. You can find the manual on ADLINK All in One CD.

Using the *NuDAQ Configuration Utility*, you can:

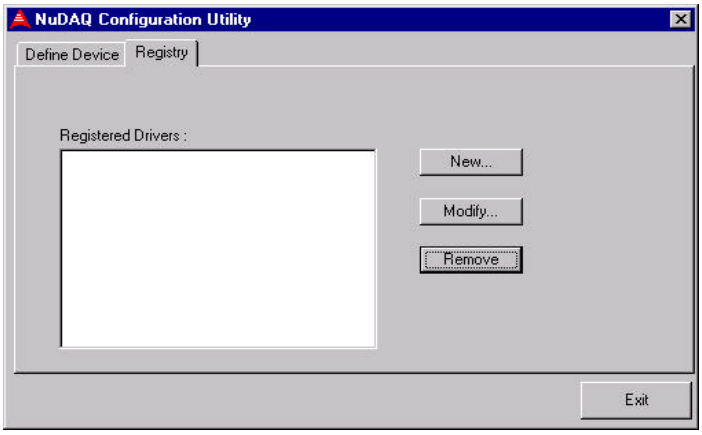
1. Registry NuDAQ device drivers to Windows in your system (NT only).
2. Configure the Continuous AI/AO/DI/DO buffers of NuDAQ cards.
3. Define NuDAQ devices that may be local or remote device in your system.
4. Save the NuDAQ device configuration to the configuration file.

The utility, NuDAQCfg.EXE, is installed in your PCIS-OCX\PCIDAQ directory.



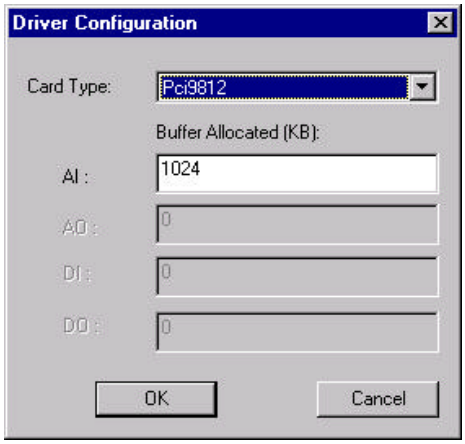
Register NuDAQ cards for Windows NT

The NuDAQ devices must be registered at Window Registry before the NuDAQ applications are run. You can use *NuDAQ Configuration Utility* to do the registry of NuDAQ cards. On *NuDAQ Configuration Utility* window, Select "**Registry**" panel and view the window as below.



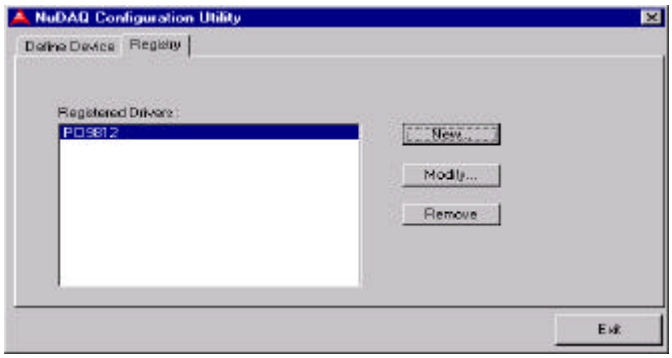
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This Panel is used for users to ***make the registry*** of local NuDAQ PCI device drivers, ***remove*** installed drivers and ***modify*** the allocated buffer sizes of AI, AO, DI and DO. Click "**New**" or "**Modify**" button and popup a Driver Configuration dialog for specifying the allocated buffers as below.



The allocated buffer sizes of AI, AO, DI, DO represent the sizes of contiguous Initially Allocated memory for continuous analog input, analog output, digital input, digital output respectively. Its unit is *KB*, i.e. 1024 bytes. Device driver will try to allocate these sizes of memory at system startup time. The size of initially allocated memory is the maximum memory size that continuous AI/AO/DI/DO can be performed on this type of cards plugged on this local machine. It will induce an unexpected result in that the data size of continuous operation exceeds the initially allocated size.

After the device configurations of the driver you select is finished, click "OK" to register the driver and return to the *NuDAQCfg* main window. The driver you just registered will be shown on the registered driver list as the following figure:

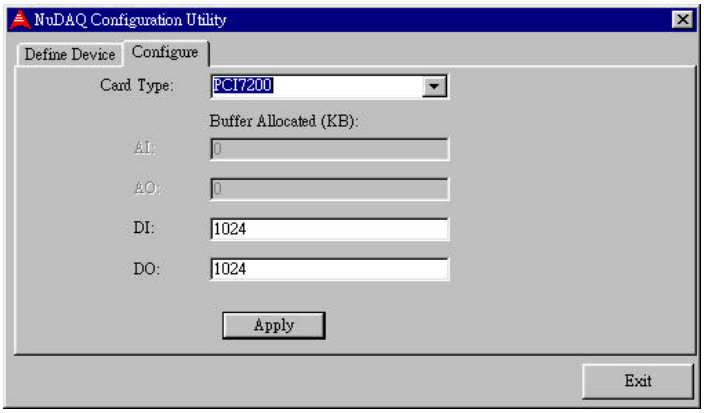


Then you can Click "Exit" button to exit the driver registry utility. To make the registered drivers work, you have to restart Windows NT system.

Configure NuDAQ cards for Windows 98 or Windows 2000

Windows 98/2000 and NuDAQ PCI cards work very well together because Windows 98/2000 includes Plug and Play capabilities and standard drivers for PCI card devices. On Windows 98/2000, NuDAQ cards don't need to do registry work but they must allocate memory buffer for continuous operation. You can use NuDAQ Configuration Utility to specify the size of contiguous Initially Allocated Memory for analog input, analog output, digital input and digital output. On NuDAQ Configuration Utility window, Select "**Configure**" panel and view the window as below.

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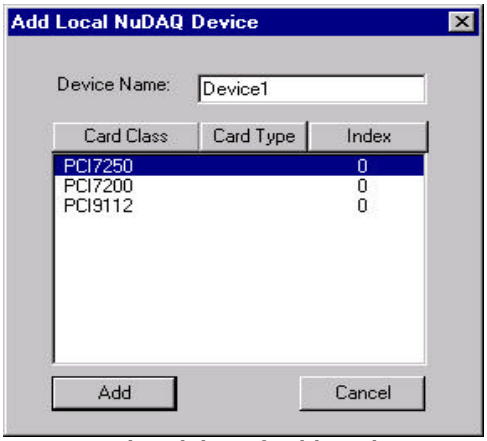


The allocated buffer sizes of AI, AO, DI, DO represent the sizes of contiguous Initially Allocated memory for continuous analog input, analog output, digital input, digital output respectively. Its unit is *KB*, i.e. 1024 bytes. Device driver will try to allocate these sizes of memory at system startup time. The size of initially allocated memory is the maximum memory size that continuous AI/AO/DI/DO can be performed on this type of cards plugged on this local machine. It will induce an unexpected result in that the data size of continuous operation exceeds the initially allocated size.

After the device configurations of the driver you select is finished, click “Apply” to register the driver.

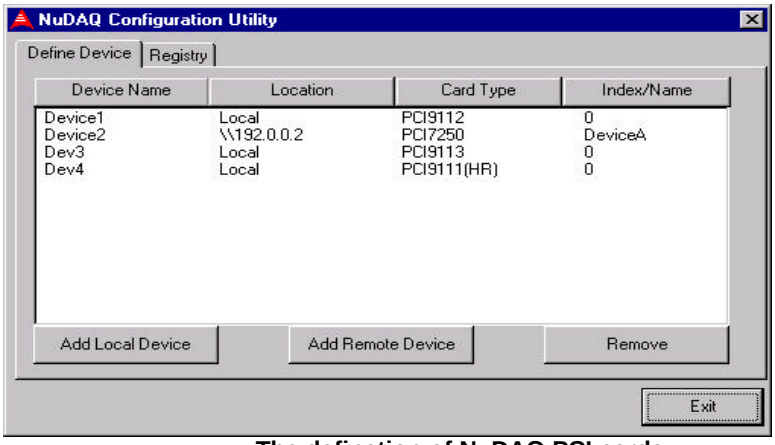
Define device

You can click **Add Local Device** button and will popup one dialog box. In the list box of Add Local NuDAQ Device dialog, you can find some ADLINK NuDAQ cards that are currently installed on this machine. Then, you can select one card and enter its device name. Click **Add** button and this local NuDAQ card is defined and added in the list box of Define Device Panel.



The Dialog of Add Device

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The defination of NuDAQ PCI cards

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ActiveX Controls Function Reference

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Pci6208 ActiveX Control

The PCI-6208/16 is a PCI-bus analog output card. The Pci6208 ActiveX control is an software component that provides the interface for user to control PCI6208V / 6216V / 6208A cards.

Properties

DeviceName Property

Returns/sets a string that indicates the device name of a PCI-6208 card that was defined in NuDAQCfg Utility.

Syntax

*object***.DeviceName** [= string]

Remarks

The device name of NuDAQ cards must be defined in NuDAQCfg Utility. The indicated NuDAQ card by device name may be a local device or a remote device on remote machine. The device name of PCI6208 ActiveX Control must be specified to a PCI-6208 card defined in NuDAQCfg Utility.

Data Type

String

CardType Property

Returns/sets a value that indicates the card type for programming Pci6208 ActiveX control.

Syntax

*object***.CardType** [= number]

Settings

Number	Card Type	Analog output channel
6	PCI-6208V	0 ~ 7
7	PCI-6216V	0 ~ 15
8	PCI-6208A	0 ~ 7

Remarks

This property will be automatically set value when the device name be specified and the device information be retrieved successfully.

Data Type

Integer

VoltageCurrentMode Property

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Returns/sets a value that indicates the output current for programming Pci6208 ActiveX control.

Syntax

object.**VoltageCurrentMode** [= number]

Settings

Number	Output Current
0	0 ~ 20 mA
1	5 ~ 25 mA
2	4 ~ 20 mA

Remarks

This will be valid only when the card type is PCI-6208A.

Data Type

Integer

OpenMode Property

Returns/sets a value that determines the mode of opening device .

Syntax

object.**OpenMode** [= number]

Settings

Value	Description
0	Automatically open device when the control was created
1	Don't open device when the control was created. Must call the Open method to open device. (Manual)

Data Type

Integer.

Methods

Open Method

Syntax

Function *object*.**Open (***[ErrMsgBox As Variant]***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

[ErrMsgBox As Variant]

It is optional and boolean type. Default value is False

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True, It will popup error message dialog box when the opening device is failed.

False, It will fire DAQError event instead of popping up dialog when the opening device is failed.

Remarks

This method will be use when the OpenMode property is Manual.

Note

In VC++, *ErrMsgBox* is a VARIANT of VT_I2**.**

ReadDILine Method

Syntax

Function *object*.**ReadDILine (***line As Integer, value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

line As Integer

Selects one line number from the indicated port: from 0 to 3(4-bit port).

value As Variant

Returns the data input from PCI-6208 card.

Remarks

Users can read data from the indicated digital input line of PCI-6208 card.

Note

In VC++, *value* is a VARIANT of VT_UI1

ReadDIPort Method

Syntax

Function **ReadDIPort** (*value As Variant*) As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

value As Variant

The digital data read from the digital input port.

Remarks

You can read data from the digital input port.

Note

In VC++, *value* is a VARIANT of VT_I4

WriteDOPort Method

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Syntax

Function *object*.**WriteDOPort (***value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

value as Variant

4-bit data that will be written to the digital output port.

Remarks

Users can write data to the PCI-6208 digital output port.

Note

In VC++, *value* is a VARIANT of VT_I4.

WriteSingleAO Method

Syntax

Function object.**WriteSingleAO**(*channel as Integer, value As Variant*) As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

channel as integer

6208V / 6208A: 0~7; 6216V: 0~15

value As Variant

The data will be written to analog output.

The range is 6208A: 0~10V; 6208V / 6216V: -10V~10V

Note

In VC++, *value* is a VARIANT of VT_R8.

WriteDOLine Method

Syntax

Function *object*.**WriteDOLine(***line As Integer, value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

line As Integer

Selects one line number from the indicated port from 0 to 3.

value As Variant

Sets 0 or 1 to the indicated line.

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Note

In VC++, *value* is a VARIANT of VT_I4.

ReadBackDOPort Method

Reads back data from the digital output port.

Syntax

Function *object*.**ReadBackDOPort (***value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

value As Variant

Data that is read back from the port.

Note

In VC++, *value* is a VARIANT of VT_I4.

ReadBackDOLine Method

Reads back data from the indicated digital output line of the digital output port.

Syntax

Function *object*.**ReadBackDOLine(***line As Integer, value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

line As Integer

Selects one line number from the indicated port from 0 to 3.

value As Variant

Data that is read back from the indicated line.

Note

In VC++, *value* is a VARIANT of VT_UI1.

Events

DAQError Event

Syntax

sub *ControlName*_**DAQError (** *ErrString As String* **)**

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Arguments

ErrString As String

The string of error reasion

Remarks

This event will occur when some error occur in control

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Pci6308 ActiveX Control

The PCI-6308 is a PCI-bus analog output card. The Pci6308 ActiveX control is an software component that provides the interface for user to control PCI6308V / 6308A cards.

Properties

DeviceName Property

Returns/sets a string that indicates the device name of a PCI-6308 card that was defined in NuDAQCfg Utility.

Syntax

*object***.DeviceName** [= string]

Remarks

The device name of NuDAQ cards must be defined in NuDAQCfg Utility. The indicated NuDAQ card by device name may be a local device or a remote device on remote machine. The device name of PCI6308 ActiveX Control must be specified to a PCI-6308 card defined in NuDAQCfg Utility.

Data Type

String

CardType Property

Returns/sets a value that indicates the card type for programming Pci6308 ActiveX control.

Syntax

*object***.CardType** [= number]

Settings

Number	Card Type	Analog output channel
6	PCI-6308V	0 ~ 7
8	PCI-6308A	0 ~ 7

Remarks

This property will be automatically set value when the device name be specified and the device information be retrieved successfully.

Data Type

Integer.

CH03Polarity Property

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Returns/sets a value that indicates the voltage polarity of channel 0~3 in Pci6308 ActiveX control.

Syntax

object.**CH03Polarity** [= number]

Settings

Number	Polarity
0	Unipolar
1	Bipolar

Remarks

This property is available on PCI-6308V.

Data Type

Integer

CH47Polarity Property

Returns/sets a value that indicates the voltage polarity of channel 4~7 in Pci6308 ActiveX control.

Syntax

object.**CH47Polarity** [= number]

Settings

Number	Polarity
0	Unipolar
1	Bipolar

Remarks

This property is available on PCI-6308V.

Data Type

Integer

CH03RefVoltage Property

Returns/sets a value that indicates the reference voltage of channel 0~3 in Pci6308 ActiveX control.

Syntax

object.**CH03RefVoltage** [= double]

Settings

The range is 0 ~ 10V

Remarks

This property is available when the CH03Polarity property is unipolar on PCI-6308V.

Data Type

Double

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CH47RefVoltage Property

Returns/sets a value that indicates the reference voltage of channel 4~7 in Pci6308 ActiveX control.

Syntax

object.**CH47RefVoltage** [= double]

Settings

The range is 0 ~ 10V

Remarks

This property is available when the CH47Polarity property is unipolar on PCI-6308V.

Data Type

Integer

OpenMode Property

Returns/sets a value that determines the mode of opening device .

Syntax

object.**OpenMode** [= number]

Settings

Value	Description
0	Automatically open device when the control was created
1	Don't open device when the control was created. Must call the Open method to open device. (Manual)

Data Type

Integer.

VoltageCurrentMode Property

Returns/sets a value that indicates the output current for programming PCI6308 ActiveX control.

Syntax

object.**VoltageCurrentMode** [= number]

Settings

Number	Output Current
0	0 ~ 20 mA
1	5 ~ 25 mA
2	4 ~ 20 mA

Remarks

This will be valid only when the card type is PCI-6308A.

Data Type

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Integer

Methods

Open Method

Syntax

Function *object*.**Open (***[ErrMsgBox As Variant]***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

[ErrMsgBox As Variant]

It is optional and boolean type. Default value is False

True, It will popup error message dialog box when the opening device is failed.

False, It will fire DAQError event instead of popping up dialog when the opening device is failed.

Remarks

This method will be use when the OpenMode property is Manual.

Note

In VC++, *ErrMsgBox* is a VARIANT of VT_I2**.**

ReadDILine Method

Syntax

Function *object*.**ReadDILine (***line As Integer, value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

line As Integer

Selects one line number from the indicated port: from 0 to 3(4-bit port).

value As Variant

Returns the data input from PCI-6308 card.

Remarks

Users can read data from the indicated digital input line of PCI-6308 card.

Note

In VC++, *value* is a VARIANT of VT_UI1

ReadDIPort Method

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Syntax

Function **ReadDIPort** (*value As Variant*) As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

value As Variant

The digital data read from the digital input port.

Remarks

You can read data from the digital input port.

Note

In VC++, *value* is a VARIANT of VT_I4

WriteDOPort Method

Syntax

Function *object*.**WriteDOPort (***value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

value as Variant

4-bit data that will be written to the digital output port.

Remarks

Users can write data to the PCI-6308 digital output port.

Note

In VC++, *value* is a VARIANT of VT_I4.

WriteSingleAO Method

Syntax

Function object.**WriteSingleAO**(*channel as Integer, value As Variant*) As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

channel as integer

6308V / 6308A: 0~7.

value As Variant

The data will be written to analog output.

The range is 6308A: 0~10V; 6308V: -10V~10V

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WriteDOLine Method

Syntax

Function *object.***WriteDOLine(***line As Integer, value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

line As Integer

Selects one line number from the indicated port from 0 to 3.

value As Variant

Sets 0 or 1 to the indicated line.

Note

In VC++, *value* is a VARIANT of VT_I4.

ReadBackDOPort Method

Reads back data from the digital output port.

Syntax

Function *object.***ReadBackDOPort (***value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

value As Variant

Data that is read back from the port.

Note

In VC++, *value* is a VARIANT of VT_I4.

ReadBackDOLine Method

Reads back data from the indicated digital output line of the digital output port.

Syntax

Function *object.***ReadBackDOLine(***line As Integer, value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

line As Integer

Selects one line number from the indicated port from 0 to 3.

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value As Variant

Data that is read back from the indicated line.

Note

In VC++, *value* is a VARIANT of VT_UI1.

Events

DAQError Event

Syntax

sub *ControlName*_**DAQError (** *ErrString As String* **)**

Arguments

ErrString As String

The string of error reasion

Remarks

This event will occur when some error occur in control

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Pci7200 ActiveX Control

The PCI-7200 is a PCI-bus high speed DI/O card. The Pci7200 ActiveX control is a software component that provides the interface for users to control PCI-7200 card.

Properties

DeviceName Property

Returns/sets a string that indicates the device name of a PCI-7200 card that is defined in NuDAQCfg Utility.

Syntax

object.**DeviceName** [= string]

Remarks

The device name of NuDAQ cards must be defined in NuDAQCfg Utility. The indicated NuDAQ card by device name may be a local device or a remote device on remote machine. The device name of PCI7200 ActiveX Control must be specified to a PCI-7200 card defined in NuDAQCfg Utility.

Data Type

String.

DIClockSource Property

Returns/sets a value that determines the clock source of DI.

Syntax

object.**DIClockSource** [= number]

Settings

Value	Description
0	Internal Trigger
1	External Trigger
2	Handshaking

Data Type

Integer.

DIDoubleBufferMode Property

Sets a value that determines whether it is double-buffer mode or not.

Syntax

object.**DIDoublebufferMode** [= boolean]

Settings

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Value	Description
True	During DMA Mode, the buffer will be divided into two parts. When either part is full of data, it will get DIHalfReady event.
False	The buffer is single, when it is full of data, it will get DIComplete event.

Data Type

Boolean

DINPatterns Property

Sets a value that indicates the total number of patterns of DMA digital input or circular buffer size.

Syntax

object.**DINPatterns** [= number]

Remarks

If double buffer mode is disabled, this value is the number of DMA digital input to be performed. If Double-buffer Mode value is True, this is the size (in patterns) of the circular buffer and its value must be a multiple of 2.

Data Type

Long.

DIREQPolarity Property

Returns/sets a value that determines the I_REQ signal polarity.

Syntax

object.**DIREQPolarity** [= number]

Settings

Value	Description
0	I_REQ is falling edge active.
1	I_REQ is rising edge active.

Data Type

Integer.

DIScanRate Property

Returns/sets a value that determines the patterns per second of DMA digital input.

Syntax

object.**DIScanRate** [= number]

Settings

The range of DIScanRate is between 0 and 2MHz. This property is used only when the DIClockSource

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property is set to Internal Trigger.

Data Type

Long.

DITriggerPolarity Property

Returns/sets a value that determines the I_TRG trigger polarity.

Syntax

object.**DITriggerPolarity** [= number]

Settings

Value	Description
0	Falling edge trigger.
1	Rising edge trigger.

Data Type

Integer.

DITriggerWaiting Property

Returns/sets a value that determines the waiting status of the trigger of DI operation.

Syntax

object.**DITriggerWaiting** [= Boolean]

Settings

Value	Description
False	The input samples will start immediately.
True	The input samples will wait rising or faling edge trigger I_TRG to start digital input.

Data Type

Boolean.

DOClockSource Property

Returns/sets a value that determines the clock source of DO.

Syntax

object.**DOClockSource** [= number]

Settings

Value	Description
0	Internal
1	Handshaking

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Data Type

Integer.

DOIterations Property

Returns/sets a value that indicates the iteration of data output.

Syntax

object.**DOIterations** [= number]

Remarks

The value range is 0 ~ 65535.

Iteration property means the number of times the data in buffer to output to channel in continuous DMA digital output operation. A value of 0 means that digital output operation proceeds indefinitely.

Data Type

Integer.

DONPatterns Property

Returns/sets a value that indicates the total number of patterns of DMA digital output.

Syntax

object.**DONPatterns** [= number]

Remarks

This value is the number of DMA digital output to be performed.

Data Type

Long.

DOREQEnable Property

Returns/sets a value that determines the output REQ status for the card.

Syntax

object.**DOREQEnable** [= boolean]

Settings

Value	Description
True	O_REQ enable, an O_REQ strobe is generated after output data
False	O_REQ disable

Data Type

Boolean.

DOScanRate Property

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Returns/sets a value that determines the patterns per second of DMA digital output.

Syntax

object.**DOScanRate** [= number]

Settings

The range of DOScanRate is between 0 and 2MHz. This property is used only when the DOClockSource property is set to Internal.

Data Type

Long.

DOTriggerSignal Property

Returns/sets a value that determines the O_TRIG signal.

Syntax

object.**DOTriggerSiginal** [= number]

Settings

Value	Description
0	O_TRIG signal goes low
1	O_TRIG signal goes high

Data Type

Integer.

OpenMode Property

Returns/sets a value that determines the mode of opening device .

Syntax

object.**OpenMode** [= number]

Settings

Value	Description
0	Automatically open device when the control was created
1	Don't open device when the control was created. You have to call the *Open* method to open device.

Data Type

Integer.

StreamToFile Property

Returns/sets a value that determines if the control is enabled the function of streaming data to disk file.

Syntax

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object.**StreamToFile** [= boolean]

Settings

Value	Description
False	Disable the function of streaming data to disk file
True	Enable the function of streaming data to disk file

Data Type

Boolean.

Methods

CheckContDI Method

Syntax

Function object**.CheckContDI(***AccessCount as long, stop as Integer***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

AccessCount as long

Number of digital input data that has been transferred.

stop as Integer

Current state: 1 = stop, 0 = running

Remarks

You can request DMA analog input status.

CheckContDO Method

Syntax

Function object.**CheckContDO(***AccessCount as long, stop as Integer***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

AccessCount as long

Number of digital input data that has been transferred.

stop as Integer

Current state: 1 = stop, 0 = running

Remarks

You can request DMA analog output status.

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Open Method

Syntax

Function *object*.**Open (***[ErrMsgBox As Variant]***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

[ErrMsgBox As Variant]

It is optional and boolean type. Default value is False

True, It will popup error message dialog box when the opening device is failed.

False, It will fire DAQError event instead of popping up dialog when the opening device is failed.

Remarks

This method will be use when the OpenMode property is Manual.

Note

In VC++, *ErrMsgBox* is a VARIANT of VT_I2.

ReadDILine Method

Syntax

Function *object*.**ReadDILine (***line As Integer, value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

line As Integer

Selects one line number from the indicated port: from 0 to 31 (32-bit port).

value As Variant

Returns the data input from PCI-7200 card.

Remarks

Users can read data from the indicated digital input line of PCI-7200 card.

Note

In VC++, *value* is a VARIANT of VT_UI1.

ReadDIPort Method

Syntax

Function object.**ReadDIPort** (*value As Variant*) As Boolean

Return Value

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True if the function is successful; otherwise False.

Arguments

value As Variant

Sets one value buffer for retrieving 32-bit input data from PCI-7200 card.

Remarks

Users can read 32-bit digital input data from PCI-7200 card.

Note

In VC++, *value* is a VARIANT of VT_I4.

StartContDI Method

Syntax

Function *object*.**StartContDI (***[FileName as Variant]***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

[FileName as String]

It is optional and String type. Default value is NULL. FileName specified the file name of streaming data to disk.

Remarks

You can use this method to start the DMA digital input function of PCI-7200 card. If the StreamToFile property is True then the DMA data will be write the file specified by FileName. Otherwise, the FileName parameter will be ignored.

The data file is written in binary format. DAQBench provides a convenient tool DAQCvt to convert the binary file to the file format read easily. See *DAQBench User's Guide* for the usage of the utility. If you want to handle the data by yourself, please refer to Appendix *Data File Format* for the file structure.

Note

In VC++, FileName is a VARIANT of VT_BSTR.

StartContDO Method

Syntax

Function *object*.**StartContDO(***Buffer as Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

Buffer as Variant

A buffer data or a array of buffer data, data type can be byte, integer, long, float, double

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Remarks

You can use this method to start the DMA digital output function of PCI-7200 card.

Note

In VC++, Buffer is a VARIANT of VT_ARRAY | VT_I2, VT_ARRAY | VT_I4, VT_ARRAY | VT_R4, VT_ARRAY | VT_R8, VT_ARRAY | VT_UI1.

StopContDI Method

Syntax

Function *object*.**StopContDI ()** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

None

Remarks

You can use this method to stop DMA digital input.

StopContDO Method

Syntax

Function *object*.**StopContDO ()** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

None

Remarks

You can use this method to stop DMA digital output.

WriteDOPort Method

Syntax

Function *object*.**WriteDOPort (***value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

value as Variant

32-bit data that will be written to the digital output port.

Remarks

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Users can write data to the PCI-7200 digital output port.

Note

In VC++, *value* is a VARIANT of VT_I4.

WriteDOLine Method

Syntax

Function *object*.**WriteDOLine(***line As Integer, value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

line As Integer

Selects one line number from the indicated port from 0 to 31.

value As Variant

Sets 0 or 1 to the indicated line.

Note

In VC++, *value* is a VARIANT of VT_I4.

ReadBackDOPort Method

Reads back data from the indicated digital output port.

Syntax

Function *object*.**ReadBackDOPort (***value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

value As Variant

Data that is read back from the port.

Note

In VC++, *value* is a VARIANT of VT_I4.

ReadBackDOLine Method

Reads back data from the indicated digital output line of the digital output port.

Syntax

Function *object*.**ReadBackDOLine(***line As Integer, value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

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Arguments

line As Integer

Selects one line number from the indicated port from 0 to 31.

value As Variant

Data that is read back from the indicated line.

Note

In VC++, *value* is a VARIANT of VT_UI1.

Events

DiComplete Event

Syntax

sub *ControlName*_**DiComplete (** *WaveForm As Variant* **)**

Arguments

WaveForm As Variant

The data that retrieved from DMA buffer

Remarks

This event will occur when digital input DMA function have completed

Note

In VC++, *WaveForm* is a VARIANT of VT_ARRAY | VT_I4.

DiHalfReady Event

Syntax

sub *ControlName*_**DoHalfReady (** *WaveForm As Variant* **)**

Arguments

WaveForm As Variant

The data that retrieved from one half-buffer of the circular buffer.

Remarks

This event will occur when one half-buffer is full at double-buffered digital input DMA function.

Note

In VC++, *WaveForm* is a VARIANT of VT_ARRAY | VT_I4.

DoComplete Event

Syntax

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sub *ControlName*_**DoComplete ()**

Arguments

None

Remarks

This event will occur when digital output DMA function have completed

DAQError Event

Syntax

sub *ControlName*_**DAQError (** *ErrString As String* **)**

Arguments

ErrString As String

The string of error reason

Remarks

This event will occur when some error occur in control

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Pci7230 ActiveX Control

The PCI-7230 is a PCI-bus digital I/O card. The Pci7230 ActiveX control is a software component that provides the interface for user to control PCI-7230 card.

Properties

DeviceName Property

Returns/sets a string that indicates the device name of a PCI-7230 card that is defined in NuDAQCfg Utility.

Syntax

object.**DeviceName** [= string]

Remarks

The device name of NuDAQ cards must be defined in NuDAQCfg Utility. The indicated NuDAQ card by device name may be a local device or a remote device on remote machine. The device name of PCI7230 ActiveX Control must be specified to a PCI-7230 card defined in NuDAQCfg Utility.

Data Type

String.

INT1Mode Property

Returns/sets a value that determines the interrupt mode of INT1.

Syntax

object.**INT1Mode** [= Mode]

Settings

Value	Description
0	Disable
1	Enable

Remarks

Enable**:** event occurred on the rising edge of digital input channel 0

Data Type

Integer.

INT2Mode Property

Returns/sets a value that determines the interrupt mode of INT2.

Syntax

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object.**INT2Mode** [= Mode]

Settings

Value	Description
0	Disable
1	Enable

Remarks

Enable**:** event occurred on the rising edge of digital input channel 1

Data Type

Integer.

OpenMode Property

Returns/sets a value that determines the mode of opening device .

Syntax

object.**OpenMode** [= number]

Settings

Value	Description
0	Automatically open device when the control was created
1	Don't open device when the control was created. Must call the Open method to open device. (Manual)

Data Type

Integer.

Methods

Open Method

Syntax

Function *object*.**Open (***[ErrMsgBox As Variant]***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

[ErrMsgBox As Variant]

It is optional and boolean type. Default value is False

True: It will popup error message dialog box when the opening device is failed.

False: It will fire DAQError event instead of popping up dialog when the opening device is failed.

Remarks

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This method will be use when the OpenMode property is Manual.

Note

In VC++, ErrMsgBox is a VARIANT of VT_I2.

ReadDIPort Method

Syntax

Function object.**ReadDIPort (***value as Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

value As Variant

Sets one value buffer for retrieving 16-bit input data from PCI-7230 card.

Remarks

Users can read 16-bit digital input data from PCI-7230 card.

Note

In VC++, *value* is a VARIANT of VT_I4.

ReadDILine Method

Syntax

Function *object*.**ReadDILine (***line As Integer, value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

line As Integer

Selects one line number from the indicated port: from 0 to 15 (16-bit port).

value As Variant

Returns the data input from PCI-7230 card.

Remarks

Users can read data from the indicated digital input line of PCI-7230 card.

Note

In VC++, *value* is a VARIANT of VT_UI1.

WriteDOPort Method

Syntax

Function *object*.**WriteDOPort (***value As Variant***)** As Boolean

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Return Value

True if the function is successful; otherwise False.

Arguments

value as Variant

16-bit data that will be written to the digital output port.

Remarks

Users can write data to the PCI-7230 digital output port.

Note

In VC++, *value* is a VARIANT of VT_I4.

Events

Interrupt Event

Syntax

sub *ControlName*_**Interrupt (** *EvtNo as Integer* **)**

Arguments

EvtNo as Integer

0: interrupt 1 occurred

1: interrupt 2 occurred

Remarks

If an interrupt is generated by this card, this event will be generated by this ActiveX control.

DAQError Event

Syntax

sub *ControlName*_**DAQError (** *ErrString As String* **)**

Arguments

ErrString As String

The string of error reason

Remarks

This event will occur when some error occur in control

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Pci7233 ActiveX Control

The PCI-7233 is a 32-bit PCI-bus digital input card. The Pci7233 ActiveX control is a software component that provides the interface for user to control PCI-7233 card.

Properties

DeviceName Property

Returns/sets a string that indicates the device name of a PCI-7233 card that was defined in NuDAQCfg Utility.

Syntax

object.**DeviceName** [= string]

Remarks

The device name of NuDAQ cards must be defined in NuDAQCfg Utility. The indicated NuDAQ card by device name may be a local device or a remote device on remote machine. The device name of PCI7233 ActiveX Control must be specified to a PCI-7233 card defined in NuDAQCfg Utility.

Data Type

String.

INT1Mode Property

Returns/sets a value that determines the interrupt mode of INT1.

Syntax

object.**INT1Mode** [= Mode]

Settings

Value	Description
0	Disable
1	Enable

Remarks

Enable**:** event occurred on the rising edge of digital input channel 0

Data Type

Integer.

INT2Mode Property

Returns/sets a value that determines the interrupt mode of INT2.

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Syntax

object.**INT2Mode** [= Mode]

Settings

Value	Description
0	Disable
1	Enable

Remarks

Enable**:** event occurred on the rising edge of digital input channel 1

Data Type

Integer.

OpenMode Property

Returns/sets a value that determines the mode of opening device .

Syntax

object.**OpenMode** [= number]

Settings

Value	Description
0	Automatically open device when the control was created
1	Don't open device when the control was created. Must call the Open method to open device. (Manual)

Data Type

Integer.

Methods

Open Method

Syntax

Function *object*.**Open (***[ErrMsgBox As Variant]***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

[ErrMsgBox As Variant]

It is optional and boolean type. Default value is False

True, It will popup error message dialog box when the opening device is failed.

False, It will fire DAQError event instead of popping up dialog when the opening device is failed.

Remarks

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This method will be used when the OpenMode property is Manual.

Note

In VC++, *ErrMsgBox* is a VARIANT of VT_I2.

ReadDIPort Method

Syntax

Function object.**ReadDIPort (***value as Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

value As Variant

Sets one value buffer for retrieving 32-bit input data from PCI-7233 card.

Remarks

Users can read 32-bit digital input data from PCI-7233 card.

Note

In VC++, *value* is a VARIANT of VT_I4

ReadDILine Method

Syntax

Function *object*.**ReadDILine (***line As Integer, value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

line As Integer

Selects one line number from the indicated port: from 0 to 31 (32-bit port).

value As Variant

Returns the data input from PCI-7233 card.

Remarks

Users can read data from the indicated digital input line of PCI-7233 card.

Note

In VC++, *value* is a VARIANT of VT_UI1

Events

DAQError Event

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Syntax

sub *ControlName*_**DAQError (** *ErrString As String* **)**

Arguments

ErrString As String

The string of error reason

Remarks

This event will occur when some error occur in control

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Pci7234 ActiveX Control

The PCI-7234 is a 32-bit PCI-bus digital output card. The Pci7234 ActiveX control is a software component that provides the interface for user to control PCI-7234 card.

Properties

DeviceName Property

Returns/sets a string that indicates the device name of a PCI-7234 card that was defined in NuDAQCfg Utility.

Syntax

*object***.DeviceName** [= string]

Remarks

The device name of NuDAQ cards must be defined in NuDAQCfg Utility. The indicated NuDAQ card by device name may be a local device or a remote device on remote machine. The device name of PCI7234 ActiveX Control must be specified to a PCI-7234 card defined in NuDAQCfg Utility.

Data Type

String

OpenMode Property

Returns/sets a value that determines the mode of opening device .

Syntax

*object***.OpenMode** [= number]

Settings

Value	Description
0	Automatically open device when the control was created
1	Don't open device when the control was created. Must call the Open method to open device. (Manual)

Data Type

Integer

Methods

Open Method

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Syntax

Function *object*.**Open (***[ErrMsgBox As Variant]***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

[ErrMsgBox As Variant]

It is optional and boolean type. Default value is False

True: It will popup error message dialog box when the opening device is failed.

False: It will fire DAQError event instead of popping up dialog when the opening device is failed.

Remarks

This method will be used when the OpenMode property is Manual.

Note

In VC++, *ErrMsgBox* is a VARIANT of VT_I2.

WriteDOPort Method

Syntax

Function *object*.**WriteDOPort (***value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

value As Variant

32-bit data that will be written to the digital output port.

Remarks

Users can write data to the PCI-7234 digital output port.

Note

In VC++, *value* is a VARIANT of VT_I4.

Events

DAQError Event

Syntax

sub *ControlName*_**DAQError (** *ErrString As String* **)**

Arguments

ErrString As String

The string of error reason

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Remarks

This event will occur when some error occur in control

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Pci7248 ActiveX Control

The PCI-7248 is a PCI-bus digital I/O card. The Pci7248 ActiveX control is an software component that provides the interface for users to control PCI-7248 card.

Properties

DeviceName Property

Returns/sets a string that indicates the device name of a PCI-7248 card that is defined in NuDAQCfg Utility.

Syntax

object.**DeviceName** [= string]

Remarks

The device name of NuDAQ cards must be defined in NuDAQCfg Utility. The indicated NuDAQ card by device name may be a local device or a remote device on remote machine. The device name of PCI7248 ActiveX Control must be specified to a PCI-7248 card defined in NuDAQCfg Utility.

Data Type

String.

INT1Mode Property

Returns/sets a value that determines the interrupt mode of INT1.

Syntax

object.**INT1Mode** [= Mode]

Settings

Value	Description
0	Disable
1	falling edge of P1C0
2	rising edge of P1C0 or P1C3
3	event counter down to 0

Data Type

Integer.

INT2Mode Property

Returns/sets a value that determines the interrupt mode of INT2.

Syntax

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object.**INT2Mode** [= Mode]

Settings

Value	Description
0	Disable
1	falling edge of P2C0
2	rising edge of P2C0 or P2C3
3	event counter down to 0

Data Type

Integer.

OpenMode Property

Returns/sets a value that determines the mode of opening device .

Syntax

object.**OpenMode** [= number]

Settings

Value	Description
0	Automatically open device when the control was created
1	Don't open device when the control was created. Must call the Open method to open device. (Manual)

Data Type

Integer.

P1Adir Property

Returns/sets a value that determines P1A port direction.

Syntax

object.**P1ADir** [= Direction]

Settings

Value	Description
0	Direction: Input_Port.
1	Direction: Output_Port.

Data Type

Integer.

P1Bdir Property

Returns/sets a value that determines P1B port direction.

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Syntax

object.**P1BDir** [= Direction]

Settings

Value	Description
0	Direction: Input_Port.
1	Direction: Output_Port.

Data Type

Integer.

P1CLowerdir Property

Returns/sets a value that determines P1C lower port direction.

Syntax

object.**P1CLowerDir** [= Direction]

Settings

Value	Description
0	Direction: Input_Port.
1	Direction: Output_Port.

Data Type

Integer.

P1CUpperdir Property

Returns/sets a value that determines P1C upper port direction.

Syntax

object.**P1CUpperDir** [= Direction]

Settings

Value	Description
0	Direction: Input_Port.
1	Direction: Output_Port.

Data Type

Integer.

P2Adir Property

Returns/sets a value that determines P2A port direction.

Syntax

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object.**P2ADir** [= Direction]

Settings

Value	Description
0	Direction: Input_Port
1	Direction: Output_Port

Data Type

Integer.

P2Bdir Property

Returns/sets a value that determines P2B port direction.

Syntax

object.**P2BDir** [= Direction]

Settings

Value	Description
0	Direction: Input_Port
1	Direction: Output_Port

Data Type

Integer.

P2CLowerdir Property

Returns/sets a value that determines P2C lower port direction.

Syntax

object.**P2CLowerDir** [= Direction]

Settings

Value	Description
0	Direction: Input_Port
1	Direction: Output_Port

Data Type

Integer.

P2CUpperdir Property

Returns/sets a value that determines P2C upper port direction.

Syntax

object.**P2CUpperDir** [= Direction]

Settings

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Value	Description
0	Direction: Input_Port
1	Direction: Output_Port

Data Type

Integer.

Methods

Open Method

Syntax

Function *object*.**Open (***[ErrMsgBox As Variant]***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

[ErrMsgBox As Variant]

It is optional and boolean type. Default value is False

True: It will popup error message dialog box when the opening device is failed.

False: It will fire DAQError event instead of popping up dialog when the opening device is failed.

Remarks

This method will be used when the OpenMode property is Manual.

Note

In VC++, *ErrMsgBox* is a VARIANT of VT_I2.

ReadCounter Method

Syntax

Function *object*.**ReadCounter (***index As Integer, CtlValue As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

index As Integer

Selects one counter number: 0~2.

CtlValue As Variant

Returns the content from the indicated counter.

Remarks

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You can read the current contents from the selected counter without disturbing the counting process.

Note

In VC++, *CtlValue* is a VARIANT of VT_I4.

ReadDIPort Method

Syntax

*Function object***.ReadDIPort (***port As Integer, value as Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

Port As Integer

Selects one port for inputting digital data, number: 0~7.

0: P1A	1: P1B	2: P1CLower	3: P1CUpper
4: P2A	5: P2B	6: P2Clower	7: P2CUpper

value As Variant

The digital data read from the indicated digital input port.

Remarks

You can read data from the digital input port.

Note

In VC++, *value* is a VARIANT of VT_I2.

ReadDILine Method

Syntax

Function *object***.ReadDILine (***port As Integer, line As Integer, value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

Port As Integer

Selects one port for inputting digital data, number: 0~7.

0: P1A	1: P1B	2: P1CLower	3: P1CUpper
4: P2A	5: P2B	6: P2Clower	7: P2CUpper

line As Integer

Selects one line number from the indicated port: from 0 to 7 (8-bit port).

value As Variant

Returns the data input from PCI-7248 card.

Remarks

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Users can read data from the indicated digital input line of PCI-7248 card.

Note

In VC++, *value* is a VARIANT of VT_UI1.

StartCounter Method

Syntax

Function *object*.**StartCounter(*index As Integer, CtrMode As Integer, CtrValue As Variant, BinBcd As Intger*)**

As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

index As Integer

Selects one counter number: 0~2.

CtrMode As Integer

0: Toggle output from low to high on terminal count

1: Programmable one-shot

2: Rate generator

3: Square wave rate generator

4: Software-triggered strobe

5: Hardware-triggered strobe

CtrValue as Variant

Set the start value to the indicated counter.

binbcd As Integer

0: 16-bit binary counter, 1: 4-decade BCD counter.

Remarks

You can start the indicated counter to operate in the specified mode.

Note

In VC++, *CtrValue* is a VARIANT of VT_I4.

StopCounter Method

Syntax

Function *object*.**StopCounter(***index As Integer, State As Integer***)** As

Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

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index As Integer

Selects one counter number: 0~2.

State As Integer

The logic state to which the counter is to be stopped, number: 0 or 1.

Remarks

You can stop the indicated counter and set the specified state.

WriteDOPort Method

Syntax

Function *object*.**WriteDOPort (***port As Integer, value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

port As Integer

Selects one port for inputting digital data, number: 0~7.

0: P1A	1: P1B	2: P1CLower	3: P1CUpper
4: P2A	5: P2B	6: P2Clower	7: P2CUpper

value as Variant

8-bit data that will be written to the digital output port.

Remarks

Users can write data to the PCI-7248 digital output port.

Note

In VC++, *value* is a VARIANT of VT_I4.

WriteDOLine Method

Syntax

Function *object*.**WriteDOLine(***port As Integer, line As Integer, value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

port As Integer

Selects one port for outputting digital data, number: 0~7.

0: P1A	1: P1B	2: P1CLower	3: P1CUpper
4: P2A	5: P2B	6: P2Clower	7: P2CUpper

line As Integer

Selects one line number from the indicated port: from 0 to 7 (8-bit port).

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value As Variant

Sets 0 or 1 to the indicated line.

Note

In VC++, *value* is a VARIANT of VT_I4.

ReadBackDOPort Method

Reads back data from the indicated digital output port.

Syntax

Function *object*.**ReadBackDOPort (***port As Integer, value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

port As Integer

Selects one port for outputting digital data, number: 0~7.

0: P1A	1: P1B	2: P1CLower	3: P1CUpper
4: P2A	5: P2B	6: P2Clower	7: P2CUpper

value As Variant

Data that is read back from the indicated port.

Note

In VC++, *value* is a VARIANT of VT_I4.

ReadBackDOLine Method

Reads back data from the indicated digital output line of the indicated digital output port.

Syntax

Function *object*.**ReadBackDOLine(***port As Integer, line As Integer, value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

port As Integer

Selects one port for outputting digital data, number: 0~7.

0: P1A	1: P1B	2: P1CLower	3: P1CUpper
4: P2A	5: P2B	6: P2Clower	7: P2CUpper

line As Integer

Selects one line number from the indicated port: from 0 to 7 (8-bit port).

value As Variant

Data that is read back from the indicated line.

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Note

In VC++, *value* is a VARIANT of VT_UI1.

Events

Interrupt Event

Syntax

sub *ControlName*_**Interrupt (** *EvtNo as Integer* **)**

Arguments

EvtNo as Integer

0: interrupt 1 occurred

1: interrupt 2 occurred

Remarks

If an interrupt is generated by this card, this event will be generated by this ActiveX control.

DAQError Event

Syntax

sub *ControlName*_**DAQError (** *ErrString As String* **)**

Arguments

ErrString As String

The string of error reason

Remarks

This event will occur when some error occur in control

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Pci7249 ActiveX Control

The cPCI-7249 is a CompactPCI digital I/O card. The Pci7249 ActiveX control is an software component that provides the interface for users to control cPCI-7249 card.

Properties

DeviceName Property

Returns/sets a string that indicates the device name of a cPCI-7249 card that is defined in NuDAQCfg Utility.

Syntax

object.**DeviceName** [= string]

Remarks

The device name of NuDAQ cards must be defined in NuDAQCfg Utility. The indicated NuDAQ card by device name may be a local device or a remote device on remote machine. The device name of PCI7249 ActiveX Control must be specified to a cPCI-7249 card defined in NuDAQCfg Utility.

Data Type

String

INT1Mode Property

Returns/sets a value that determines the interrupt mode of INT1.

Syntax

object.**INT1Mode** [= Mode]

Settings

Value	Description
0	Disable
1	falling edge of P1C0
2	rising edge of P1C0 or P1C3
3	event counter down to 0

Data Type

Integer

INT2Mode Property

Returns/sets a value that determines the interrupt mode of INT2.

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Syntax

object.**INT2Mode** [= Mode]

Settings

Value	Description
0	Disable
1	falling edge of P2C0
2	rising edge of P2C0 or P2C3
3	event counter down to 0

Data Type

Integer

OpenMode Property

Returns/sets a value that determines the mode of opening device .

Syntax

object.**OpenMode** [= number]

Settings

Value	Description
0	Automatically open device when the control was created
1	Don't open device when the control was created. Must call the Open method to open device. (Manual)

Data Type

Integer

P1Adir Property

Returns/sets a value that determines P1A port direction.

Syntax

object.**P1ADir** [= Direction]

Settings

Value	Description
0	Direction: Input_Port.
1	Direction: Output_Port.

Data Type

Integer

P1Bdir Property

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Returns/sets a value that determines P1B port direction.

Syntax

object.**P1BDir** [= Direction]

Settings

Value	Description
0	Direction: Input_Port.
1	Direction: Output_Port.

Data Type

Integer

P1CLowerdir Property

Returns/sets a value that determines P1C lower port direction.

Syntax

object.**P1CLowerDir** [= Direction]

Settings

Value	Description
0	Direction: Input_Port.
1	Direction: Output_Port.

Data Type

Integer

P1CUpperdir Property

Returns/sets a value that determines P1C upper port direction.

Syntax

object.**P1CUpperDir** [= Direction]

Settings

Value	Description
0	Direction: Input_Port.
1	Direction: Output_Port.

Data Type

Integer

P2Adir Property

Returns/sets a value that determines P2A port direction.

Syntax

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object.**P2ADir** [= Direction]

Settings

Value	Description
0	Direction: Input_Port.
1	Direction: Output_Port.

Data Type

Integer

P2Bdir Property

Returns/sets a value that determines P2B port direction.

Syntax

object.**P2BDir** [= Direction]

Settings

Value	Description
0	Direction: Input_Port.
1	Direction: Output_Port.

Data Type

Integer

P2CLowerdir Property

Returns/sets a value that determines P2C lower port direction.

Syntax

object.**P2CLowerDir** [= Direction]

Settings

Value	Description
0	Direction: Input_Port.
1	Direction: Output_Port.

Data Type

Integer

P2CUpperdir Property

Returns/sets a value that determines P2C upper port direction.

Syntax

object.**P2CUpperDir** [= Direction]

Settings

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Value	Description
0	Direction: Input_Port.
1	Direction: Output_Port.

Data Type

Integer

Methods

Open Method

Syntax

Function *object*.**Open (***[ErrMsgBox As Variant]***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

[ErrMsgBox As Variant]

It is optional and boolean type. Default value is False

True: It will popup error message dialog box when the opening device is failed.

False: It will fire DAQError event instead of popping up dialog when the opening device is failed.

Remarks

This method will be used when the OpenMode property is Manual.

Note

In VC++, *ErrMsgBox* is a VARIANT of VT_I2.

ReadCounter Method

Syntax

Function *object*.**ReadCounter (***index As Integer, CtlValue As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

index As Integer

Selects one counter number: 0~2.

CtlValue As Variant

Returns the content from the indicated counter.

Remarks

You can read the current contents from the selected counter without disturbing the counting process.

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Note

In VC++, *CtlValue* is a VARIANT of VT_I4.

ReadDIPort Method

Syntax

Function *object*.**ReadDIPort (***port As Integer, value as Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

Port As Integer

Selects one port for inputting digital data, number: 0~7.

0: P1A 1: P1B 2: P1CLower 3: P1CUpper

4: P2A 5: P2B 6: P2CLower 7: P2CUpper

value As Variant

The digital data read from the indicated digital input port.

Remarks

You can read data from the digital input port.

Note

In VC++, *value* is a VARIANT of VT_I2.

ReadDILine Method

Syntax

Function *object*.**ReadDILine (***port As Integer, line As Integer, value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

Port As Integer

Selects one port for inputting digital data, number: 0~7.

0: P1A 1: P1B 2: P1CLower 3: P1CUpper

4: P2A 5: P2B 6: P2CLower 7: P2CUpper

line As Integer

Selects one line number from the indicated port: from 0 to 7 (8-bit port).

value As Variant

Returns the data input from cPCI-7249 card.

Remarks

Users can read data from the indicated digital input line of cPCI-7249 card.

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Note

In VC++, *value* is a VARIANT of VT_UI1.

StartCounter Method

Syntax

Function *object*.**StartCounter(*index As Integer, CtrMode As Integer, CtrValue As Variant, BinBcd As Intger*)**

As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

index As Integer

Selects one counter number: 0~2.

CtrMode As Integer

0: Toggle output from low to high on terminal count

1: Programmable one-shot

2: Rate generator

3: Square wave rate generator

4: Software-triggered strobe

5: Hardware-triggered strobe

CtrValue as Variant

Set the start value to the indicated counter.

binbcd As Integer

0: 16-bit binary counter, 1: 4-decade BCD counter.

Remarks

You can start the indicated counter to operate in the specified mode.

Note

In VC++, *CtlValue* is a VARIANT of VT_I4.

StopCounter Method

Syntax

Function *object*.**StopCounter(***index As Integer, State As Integer***)** As

Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

index As Integer

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Selects one counter number: 0~2.

State As Integer

The logic state to which the counter is to be stopped, number: 0 or 1.

Remarks

You can stop the indicated counter and set the specified state.

WriteDOPort Method

Syntax

Function *object*.**WriteDOPort (***port As Integer, value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

port As Integer

Selects one port for inputting digital data, number: 0~7.

0: P1A 1: P1B 2: P1CLower 3: P1CUpper

4: P2A 5: P2B 6: P2CLower 7: P2CUpper

value as Variant

8-bit data that will be written to the digital output port.

Remarks

Users can write data to the cPCI-7249 digital output port.

Note

In VC++, *value* is a VARIANT of VT_I4.

WriteDOLine Method

Syntax

Function *object.***WriteDOLine(***port As Integer, line As Integer, value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

port As Integer

Selects one port for outputting digital data, number: 0~7.

0: P1A 1: P1B 2: P1CLower 3: P1CUpper

4: P2A 5: P2B 6: P2CLower 7: P2CUpper

line As Integer

Selects one line number from the indicated port: from 0 to 7 (8-bit port).

value As Variant

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Sets 0 or 1 to the indicated line.

Note

In VC++, *value* is a VARIANT of VT_I4.

ReadBackDOPort Method

Reads back data from the indicated digital output port.

Syntax

Function *object*.**ReadBackDOPort (***port As Integer, value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

port As Integer

Selects one port for outputting digital data, number: 0~7.

0: P1A 1: P1B 2: P1CLower 3: P1CUpper

4: P2A 5: P2B 6: P2CLower 7: P2CUpper

value As Variant

Data that is read back from the indicated port.

Note

In VC++, *value* is a VARIANT of VT_I4.

ReadBackDOLine Method

Reads back data from the indicated digital output line of the indicated digital output port.

Syntax

Function *object*.**ReadBackDOLine(***port As Integer, line As Integer, value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

port As Integer

Selects one port for outputting digital data, number: 0~7.

0: P1A 1: P1B 2: P1CLower 3: P1CUpper

4: P2A 5: P2B 6: P2CLower 7: P2CUpper

line As Integer

Selects one line number from the indicated port: from 0 to 7 (8-bit port).

value As Variant

Data that is read back from the indicated line.

Note

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In VC++, *value* is a VARIANT of VT_UI1.

Events

Interrupt Event

Syntax

sub *ControlName*_**Interrupt (** *EvtNo as Integer* **)**

Arguments

EvtNo as Integer

0: interrupt 1 occurred

1: interrupt 2 occurred

Remarks

If an interrupt is generated by this card, this event will be generated by this ActiveX control.

DAQError Event

Syntax

sub *ControlName*_**DAQError (** *ErrString As String* **)**

Arguments

ErrString As String

The string of error reason.

Remarks

This event will occur when some error occur in control

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Pci7250 ActiveX Control

The PCI-7250/51 is a PCI-bus digital I/O card. The Pci7250 ActiveX control is an software component that provides the interface for user to control PCI-7250/51 card.

Properties

DeviceName Property

Returns/sets a string that indicates the device name of a PCI-7250 card that was defined in NuDAQCfg Utility.

Syntax

*object***.DeviceName** [= string]

Remarks

The device name of NuDAQ cards must be defined in NuDAQCfg Utility. The indicated NuDAQ card by device name may be a local device or a remote device on remote machine. The device name of PCI7250 ActiveX Control must be specified to a PCI-7250 card defined in NuDAQCfg Utility.

Data Type

String

OpenMode Property

Returns/sets a value that determines the mode of opening device .

Syntax

*object***.OpenMode** [= number]

Settings

Value	Description
0	Automatically open device when the control was created
1	Don't open device when the control was created. Must call the Open method to open device. (Manual)

Data Type

Integer.

Methods

Open Method

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Syntax

Function *object*.**Open (***[ErrMsgBox As Variant]***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

[ErrMsgBox As Variant]

It is optional and boolean type. Default value is False

True: It will popup error message dialog box when the opening device is failed.

False: It will fire DAQError event instead of popping up dialog when the opening device is failed.

Remarks

This method will be use when the OpenMode property is Manual.

Note

In VC++, *ErrMsgBox* is a VARIANT of VT_I2.

ReadDIPort Method

Syntax

Function *object*.**ReadDIPort (***port As Integer, value as Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

Port As Integer

Selects one port number from 0 to 3.

value As Variant

Sets one value buffer for retrieving 8-bit input data from PCI-7250 card.

Remarks

Users can read 8-bit digital input data from PCI-7250/51 card.

Note

In VC++, *value* is a VARIANT of VT_I4.

ReadDILine Method

Syntax

Function *object*.**ReadDILine (***port As Integer, line As Integer, value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

Port As Integer

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Selects one port number from 0 to 3.

line As Integer

Selects one line number from the indicated port: from 0 to 7 (8-bit port).

value As Variant

Returns the data input from PCI-7250/51 card.

Remarks

Users can read data from the indicated digital input line of PCI-7250/51 card.

Note

In VC++, *value* is a VARIANT of VT_UI1.

WriteDOPort Method

Syntax

Function *object*.**WriteDOPort (***port As Integer, value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

port As Integer

Selects one port number from 0 to 3.

value as Variant

8-bit data that will be written to the digital output port.

Remarks

Users can write data to the PCI-7250/51 digital output port.

Note

In VC++, *value* is a VARIANT of VT_I4.

WriteDOLine Method

Syntax

Function *object.***WriteDOLine(***port As Integer, line As Integer, value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

port As Integer

Selects one port number from 0 to 3.

line As Integer

Selects one line number from the indicated port from 0 to 7.

value As Variant

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Sets 0 or 1 to the indicated line.

Note

In VC++, *value* is a VARIANT of VT_I4.

ReadBackDOPort Method

Reads back data from the indicated digital output port.

Syntax

Function *object*.**ReadBackDOPort (***port As Integer, value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

port As Integer

Select one port number from 0 to 3.

value As Variant

Data that is read back from the indicated port.

Note

In VC++, *value* is a VARIANT of VT_I4.

ReadBackDOLine Method

Reads back data from the indicated digital output line of the indicated digital output port.

Syntax

Function *object*.**ReadBackDOLine(***port As Integer, line As Integer, value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

port As Integer

Selects one port number from 0 to 3.

line As Integer

Selects one line number from the indicated port from 0 to 7.

value As Variant

Data that is read back from the indicated line.

Note

In VC++, *value* is a VARIANT of VT_UI1.

Events

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DAQError Event

Syntax

sub *ControlName*_**DAQError (** *ErrString As String* **)**

Arguments

ErrString As String

The string of error reason

Remarks

This event will occur when some error occur in control

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Pci7252 ActiveX Control

The cPCI-7252 is a CompactPCI digital I/O card. The Pci7252 ActiveX control is a software component that provides the interface for user to control cPCI-7252 card.

Properties

DeviceName Property

Returns/sets a string that indicates the device name of a cPCI-7252 card that was defined in NuDAQCfg Utility.

Syntax

*object***.DeviceName** [= string]

Remarks

The device name of NuDAQ cards must be defined in NuDAQCfg Utility. The indicated NuDAQ card by device name may be a local device or a remote device on remote machine. The device name of PCI7252 ActiveX Control must be specified to a cPCI-7252 card defined in NuDAQCfg Utility.

Data Type

String

OpenMode Property

Returns/sets a value that determines the mode of opening device .

Syntax

*object***.OpenMode** [= number]

Settings

Value	Description
0	Automatically open device when the control was created
1	Don't open device when the control was created. Must call the Open method to open device. (Manual)

Data Type

Integer

Methods

Open Method

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Syntax

Function *object*.**Open (***[ErrMsgBox As Variant]***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

[ErrMsgBox As Variant]

It is optional and boolean type. Default value is False

True, It will popup error message dialog box when the opening device is failed.

False, It will fire DAQError event instead of popping up dialog when the opening device is failed.

Remarks

This method will be used when the OpenMode property is Manual.

Note

In VC++, *ErrMsgBox* is a VARIANT of VT_I2.

ReadDIPort Method

Syntax

Function *object*.**ReadDIPort (***port As Integer, value as Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

Port As Integer

This field can only be 0.

value As Variant

Sets one value buffer for retrieving 8-bit input data from cPCI-7252 card.

Remarks

Users can read 16-bit digital input data from cPCI-7252 card.

Note

In VC++, *value* is a VARIANT of VT_I2.

ReadDILine Method

Syntax

Function *object*.**ReadDILine (***port As Integer, line As Integer, value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

Port As Integer

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This field can only be 0.

line As Integer

Selects one line number from the indicated port: from 0 to 15 (16-bit port).

value As Variant

Returns the data input from cPCI-7252 card.

Remarks

Users can read data from the indicated digital input line of cPCI-7252 card.

Note

In VC++, *value* is a VARIANT of VT_UI1.

WriteDOPort Method

Syntax

Function *object*.**WriteDOPort (***port As Integer, value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

port As Integer

This field can only be 0.

value as Variant

8-bit data that will be written to the digital output port.

Remarks

Users can write data to the cPCI-7252 digital output port.

Note

In VC++, *value* is a VARIANT of VT_I4.

WriteDOLine Method

Syntax

Function *object.***WriteDOLine(***port As Integer, line As Integer, value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

port As Integer

This field can only be 0.

line As Integer

Selects one line number from the indicated port from 0 to 7.

value As Variant

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Sets 0 or 1 to the indicated line.

Note

In VC++, *value* is a VARIANT of VT_I4.

ReadBackDOPort Method

Reads back data from the indicated digital output port.

Syntax

Function *object*.**ReadBackDOPort (***port As Integer, value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

port As Integer

This field can only be 0.

value As Variant

Data that is read back from the indicated port.

Note

In VC++, *value* is a VARIANT of VT_I2.

ReadBackDOLine Method

Reads back data from the indicated digital output line of the indicated digital output port.

Syntax

Function *object*.**ReadBackDOLine(***port As Integer, line As Integer, value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

port As Integer

This field can only be 0.

line As Integer

Selects one line number from the indicated port from 0 to 7.

value As Variant

Data that is read back from the indicated line.

Note

In VC++, *value* is a VARIANT of VT_UI1

Events

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DAQError Event

Syntax

sub *ControlName*_**DAQError (** *ErrString As String* **)**

Arguments

ErrString As String

The string of error reason

Remarks

This event will occur when some error occur in control

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Pci7296 ActiveX Control

The PCI-7296 is a PCI-bus digital I/O card. The Pci7296 ActiveX control is an software component that provides the interface for users to control PCI-7296 card.

Properties

DeviceName Property

Returns/sets a string that indicates the device name of a PCI-7296 card that was defined in NuDAQCfg Utility.

Syntax

*object***.DeviceName** [= string]

Remarks

The device name of NuDAQ cards must be defined in NuDAQCfg Utility. The indicated NuDAQ card by device name may be a local device or a remote device on remote machine. The device name of PCI7296 ActiveX Control must be specified to a PCI-7296 card defined in NuDAQCfg Utility.

Data Type

String

INT1Mode Property

Returns/sets a value that determines the interrupt mode of INT1.

Syntax

*object***.INT1Mode** [= Mode]

Settings

Value	Description
0	Disable
1	falling edge of P1C0
2	rising edge of P1C0 or P1C3
3	event counter down to 0

Data Type

Integer

INT2Mode Property

Returns/sets a value that determines the interrupt mode of INT2.

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Syntax

object.**INT2Mode** [= Mode]

Settings

Value	Description
0	Disable
1	falling edge of P2C0
2	rising edge of P2C0 or P2C3
3	event counter down to 0

Data Type

Integer

OpenMode Property

Returns/sets a value that determines the mode of opening device .

Syntax

object.**OpenMode** [= number]

Settings

Value	Description
0	Automatically open device when the control was created
1	Don't open device when the control was created. Must call the Open method to open device. (Manual)

Data Type

Integer

P1Adir Property

Returns/sets a value that determines P1A port direction.

Syntax

object.**P1ADir** [= Direction]

Settings

Value	Description
0	Direction: Input_Port.
1	Direction: Output_Port.

Data Type

Integer

P1Bdir Property

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Returns/sets a value that determines P1B port direction.

Syntax

object.**P1BDir** [= Direction]

Settings

Value	Description
0	Direction: Input_Port.
1	Direction: Output_Port.

Data Type

Integer

P1CLowerdir Property

Returns/sets a value that determines P1C lower port direction.

Syntax

object.**P1CLowerDir** [= Direction]

Settings

Value	Description
0	Direction: Input_Port.
1	Direction: Output_Port.

Data Type

Integer

P1CUpperdir Property

Returns/sets a value that determines P1C upper port direction.

Syntax

object.**P1CUpperDir** [= Direction]

Settings

Value	Description
0	Direction: Input_Port.
1	Direction: Output_Port.

Data Type

Integer

P2Adir Property

Returns/sets a value that determines P2A port direction.

Syntax

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object.**P2ADir** [= Direction]

Settings

Value	Description
0	Direction: Input_Port.
1	Direction: Output_Port.

Data Type

Integer

P2Bdir Property

Returns/sets a value that determines P2B port direction.

Syntax

object.**P2BDir** [= Direction]

Settings

Value	Description
0	Direction: Input_Port.
1	Direction: Output_Port.

Data Type

Integer

P2CLowerdir Property

Returns/sets a value that determines P2C lower port direction.

Syntax

object.**P2CLowerDir** [= Direction]

Settings

Value	Description
0	Direction: Input_Port.
1	Direction: Output_Port.

Data Type

Integer

P2CUpperdir Property

Returns/sets a value that determines P2C upper port direction.

Syntax

object.**P2CUpperDir** [= Direction]

Settings

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Value	Description
0	Direction: Input_Port.
1	Direction: Output_Port.

Data Type

Integer

P3Adir Property

Returns/sets a value that determines P3A port direction.

Syntax

object.**P3ADir** [= Direction]

Settings

Value	Description
0	Direction: Input_Port.
1	Direction: Output_Port.

Data Type

Integer

P3Bdir Property

Returns/sets a value that determines P3B port direction.

Syntax

object.**P3BDir** [= Direction]

Settings

Value	Description
0	Direction: Input_Port.
1	Direction: Output_Port.

Data Type

Integer

P3CLowerdir Property

Returns/sets a value that determines P3C lower port direction.

Syntax

object.**P3CLowerDir** [= Direction]

Settings

Value	Description
0	Direction: Input_Port.

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1	Direction: Output_Port.

Data Type

Integer

P3CUpperdir Property

Returns/sets a value that determines P3C upper port direction.

Syntax

object.**P3CUpperDir** [= Direction]

Settings

Value	Description
0	Direction: Input_Port.
1	Direction: Output_Port.

Data Type

Integer

P4Adir Property

Returns/sets a value that determines P4A port direction.

Syntax

object.**P4ADir** [= Direction]

Settings

Value	Description
0	Direction: Input_Port.
1	Direction: Output_Port.

Data Type

Integer

P4Bdir Property

Returns/sets a value that determines P4B port direction.

Syntax

object.**P4BDir** [= Direction]

Settings

Value	Description
0	Direction: Input_Port.
1	Direction: Output_Port.

Data Type

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Integer.

P4CLowerdir Property

Returns/sets a value that determines P4C lower port direction.

Syntax

object.**P4CLowerDir** [= Direction]

Settings

Value	Description
0	Direction: Input_Port.
1	Direction: Output_Port.

Data Type

Integer

P4CUpperdir Property

Returns/sets a value that determines P4C upper port direction.

Syntax

object.**P4CUpperDir** [= Direction]

Settings

Value	Description
0	Direction: Input_Port.
1	Direction: Output_Port.

Data Type

Integer

Methods

Open Method

Syntax

Function *object*.**Open (***[ErrMsgBox As Variant]***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

[ErrMsgBox As Variant]

It is optional and boolean type. Default value is False

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True, It will popup error message dialog box when the opening device is failed.

False, It will fire DAQError event instead of popping up dialog when the opening device is failed.

Remarks

This method will be use when the OpenMode property is Manual.

Note

In VC++, *ErrMsgBox* is a VARIANT of VT_I2.

ReadCounter Method

Syntax

Function *object*.**ReadCounter (***index As Integer, CtlValue As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

index As Integer

Selects one counter number: 0~2.

CtlValue As Variant

Returns the content from the indicated counter.

Remarks

You can read the current contents from the selected counter without disturbing the counting process.

Note

In VC++, *CtlValue* is a VARIANT of VT_I4.

ReadDIPort Method

Syntax

Function *object***.ReadDIPort (***port As Integer, value as Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

Port As Integer

Selects one port for inputting digital data, number: 0~15.

0: P1A	1: P1B	2: P1CLower	3: P1CUpper
4: P2A	5: P2B	6: P2CLower	7: P2CUpper
8: P3A	9: P3B	10: P3CLower	11: P3CUpper
12: P4A	13: P4B	14: P4CLower	15: P4CUpper

value As Variant

The digital data read from the indicated digital input port.

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Remarks

You can read data from the digital input port.

Note

In VC++, *value* is a VARIANT of VT_I2.

ReadDILine Method

Syntax

Function *object*.**ReadDILine (***port As Integer, line As Integer, value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

Port As Integer

Selects one port for inputting digital data, number: 0~15.

0: P1A	1: P1B	2: P1CLower	3: P1CUpper
4: P2A	5: P2B	6: P2CLower	7: P2CUpper
8: P3A	9: P3B	10: P3CLower	11: P3CUpper
12: P4A	13: P4B	14: P4CLower	15: P4CUpper

line As Integer

Selects one line number from the indicated port: from 0 to 7 (8-bit port).

value As Variant

Returns the data input from PCI-7296 card.

Remarks

Users can read data from the indicated digital input line of PCI-7296 card.

Note

In VC++, *value* is a VARIANT of VT_UI1.

StartCounter Method

Syntax

Function *object*.**StartCounter(*index** As Integer, CtrMode As Integer, CtrValue as Variant, BinBcd as Intger***)**

As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

index As Integer

Selects one counter number: 0~2.

CtrMode As Integer

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0: Toggle output from low to high on terminal count

1: Programmable one-shot

2: Rate generator

3: Square wave rate generator

4: Software-triggered strobe

5: Hardware-triggered strobe

CtrValue as Variant

Set the start value to the indicated counter.

binbcd As Integer

0: 16-bit binary counter, 1: 4-decade BCD counter.

Remarks

You can start the indicated counter to operate in the specified mode.

Note

In VC++, *CtrValue* is a VARIANT of VT_I4.

StopCounter Method

Syntax

Function *object*.**StopCounter(***index As Integer, State As Integer***)** As

Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

index As Integer

Selects one counter number: 0~2.

State As Integer

The logic state to which the counter is to be stopped, number: 0 or 1.

Remarks

You can stop the indicated counter and set the specified state.

WriteDOPort Method

Syntax

Function *object*.**WriteDOPort (***port As Integer, value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

port As Integer

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Selects one port for inputting digital data, number: 0~15.

0: P1A	1: P1B	2: P1CLower	3: P1CUpper
4: P2A	5: P2B	6: P2CLower	7: P2CUpper
8: P3A	9: P3B	10: P3CLower	11: P3CUpper
12: P4A	13: P4B	14: P4CLower	15: P4CUpper

value as Variant

8-bit data that will be written to the digital output port.

Remarks

Users can write data to the PCI-7296 digital output port.

Note

In VC++, *value* is a VARIANT of VT_I4.

WriteDOLine Method

Syntax

Function *object.***WriteDOLine(***port As Integer, line As Integer, value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

port As Integer

Selects one port for outputting digital data, number: 0~15.

0: P1A	1: P1B	2: P1CLower	3: P1CUpper
4: P2A	5: P2B	6: P2CLower	7: P2CUpper
8: P3A	9: P3B	10: P3CLower	11: P3CUpper
12: P4A	13: P4B	14: P4CLower	15: P4CUpper

line As Integer

Selects one line number from the indicated port: from 0 to 7 (8-bit port).

value As Variant

Sets 0 or 1 to the indicated line.

Note

In VC++, *value* is a VARIANT of VT_I4.

ReadBackDOPort Method

Reads back data from the indicated digital output port.

Syntax

Function *object.***ReadBackDOPort (***port As Integer, value As Variant***)** As Boolean

Return Value

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True if the function is successful; otherwise False.

Arguments

port As Integer

Selects one port for outputting digital data, number: 0~15.

0: P1A	1: P1B	2: P1CLower	3: P1CUpper
4: P2A	5: P2B	6: P2CLower	7: P2CUpper
8: P3A	9: P3B	10: P3CLower	11: P3CUpper
12: P4A	13: P4B	14: P4CLower	15: P4CUpper

value As Variant

Data that is read back from the indicated port.

Note

In VC++, *value* is a VARIANT of VT_I4.

ReadBackDOLine Method

Reads back data from the indicated digital output line of the indicated digital output port.

Syntax

Function *object*.**ReadBackDOLine(***port As Integer, line As Integer, value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

port As Integer

Selects one port for outputting digital data, number: 0~15.

0: P1A	1: P1B	2: P1CLower	3: P1CUpper
4: P2A	5: P2B	6: P2CLower	7: P2CUpper
8: P3A	9: P3B	10: P3CLower	11: P3CUpper
12: P4A	13: P4B	14: P4CLower	15: P4CUpper

line As Integer

Selects one line number from the indicated port: from 0 to 7 (8-bit port).

value As Variant

Data that is read back from the indicated line.

Note

In VC++, *value* is a VARIANT of VT_UI1.

Events

Interrupt Event

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Syntax

sub *ControlName*_**Interrupt (** *EvtNo as Integer* **)**

Arguments

EvtNo as Integer

0: interrupt 1 occurred

1: interrupt 2 occurred

Remarks

If an interrupt is generated by this card, this event will be generated by this ActiveX control.

DAQError Event

Syntax

sub *ControlName*_**DAQError (** *ErrString As String* **)**

Arguments

ErrString As String

The string of error reason

Remarks

This event will occur when some error occur in control

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Pci7300 ActiveX Control

The PCI-7300 is a PCI-bus high speed DI/O card. The Pci7300 ActiveX control is an software component that provides the interface for users to control PCI-7300 card.

Properties

DeviceName Property

Returns/sets a string that indicates the device name of a PCI-7300 card that was defined in NuDAQCfg Utility.

Syntax

*object***.DeviceName** [= string]

Remarks

The device name of NuDAQ cards must be defined in NuDAQCfg Utility. The indicated NuDAQ card by device name may be a local device or a remote device on remote machine. The device name of PCI7300 ActiveX Control must be specified to a PCI-7300A card defined in NuDAQCfg Utility.

Data Type

String

DIClearFIFO Property

Returns/sets a value that determines if clear FIFO function of digital input

Syntax

*object***.DIClearFIFO** [= boolean]

Settings

Value	Description
False	not clear FIFO at digital input
True	clear FIFO at digital input

Data Type

Boolean

DIClockSource Property

Returns/sets a value that determines the clock source of digital input.

Syntax

*object***.DIClockSource** [= number]

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Settings

Value	Description
0	Internal pacer timer 0
1	External Trigger
2	Handshaking
3	Internal 10MHz clock
4	Internal 20MHz clock

Data Type

Integer

DIDisableAfterDMA Property

Returns/sets a value that determines if disable DI after DMA complete.

Syntax

object.**DIDisableAfterDMA** [= boolean]

Settings

Value	Description
False	not disable DI after DMA complete
True	disable DI after DMA complete

Data Type

Boolean

DINPatterns property

Sets a value that indicates the total number of patterns of DMA digital input or circular buffer size.

Syntax

object.**DINPatterns** [= number]

Remarks

If double buffer mode is disabled, this value is the number of DMA digital input to be performed. If Double-buffer Mode value is True, this is the size (in samples) of the circular buffer and its value must be a multiple of 8.

Data Type

Long

DIScanRate Property

Returns/sets a value that determines the samples per second of DMA digital input.

Syntax

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object.**DIScanRate** [= number]

Settings

The range of DIScanRate is between 0 and 20MHz.

Remarks

This value is used only when the DIClockSource property is set to “Internal pacer timer0”

Data Type

Long

DISignalPolarity Property

Returns/sets a value that determines the I_REQ , I_ACK, I_TRIG signal polarity. This function only works with PCI-7300A Revision B.

Syntax

object.**DISignalPolarity** [= number]

Settings

The setting is a value formed by addition from one or more of the following values.

Value	Description
0	I_REQ is rising edge active.
1	I_REQ is falling edge active.
0	I_ACK is rising edge active.
2	I_ACK is falling edge active.
0	I_TRIG is rising edge active.
4	I_TRIG is falling edge active.

Data Type

Integer

DITerminator property

Returns/sets a value that determines the PortA Terminator On/Off,.

Syntax

object.**DITerminator** [= boolean]

Settings

Value	Description
True	PortA terminator on.
False	PortA terminator off.

Data Type

Boolean

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DITriggerWait Property

Returns/sets a value that determines the DI Wait Trigger Status.

Syntax

object.**DITriggerWait** [= number]

Settings

Value	Description
0	No Wait, input sampling starts immediately.
1	Wait Trigger, input sampling waits rising or falling edge of I_TRG to start DI.

Data Type

Integer

DOClockSource Property

Returns/sets a value that determines the clock source of digital output.

Syntax

object.**DOClockSource** [= number]

Settings

Card revision A:

Value	Description
0	Internal pacer timer 1
1	External Trigger
2	Internal 10MHz clock
3	Internal 20MHz clock

Card revision B:

Value	Description
0	Internal pacer timer 1
1	External Trigger
2	Internal 10MHz clock
3	Internal 20MHz clock
4	Burst handshaking mode by using timer1 output as output clock
5	Burst handshaking mode by using 10MHz clock as output clock
6	Burst handshaking mode by using 20MHz clock as output clock

Data Type

Integer

DOFIFOThreshold Property

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Returns/sets a value that determines the FIFO threshold value of DO

Syntax

object.**DOFIFOThreshold** [= number]

Settings

The range is between 0 and the size of FIFO

Data Type

Long

DOIterations Property

Returns/sets a value that indicates the iterations of digital output.

Syntax

object.**DOIterations** [= number]

Remarks

The value range is 0 ~ 65535.

Iterations property means the number of times the data in buffer to output to channel in continuous DMA digital output operation. A value of 0 means that digital output operation proceeds indefinitely.

Data Type

Integer

DONPatterns Property

Sets a value that indicates the total number of patterns of DMA digital output.

Syntax

object.**DONPatterns** [= number]

Remarks

This value is the total number of patterns of DMA digital output to be performed.

Data Type

Long

DOScanRate Property

Returns/sets a value that determines the samples per second of DMA digital output.

Syntax

object.**DOScanRate** [= number]

Settings

The range of DOScanRate is between 0 and 20MHz.

Remarks

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This value is used only when the DOClockSource property is set to “Internal pacer timer1”

Data Type

Long

DOSignalPolarity Property

Returns/sets a value that determines the O_REQ, O_ACK, O_TRIG signal polarity. This function only works with PCI-7300A Revision B.

Syntax

object.**DOSignalPolarity** [= number]

Settings

The setting is a value formed by addition from one or more of the following values.

Value	Description
0	O_REQ is rising edge active.
8	O_REQ is falling edge active.
0	O_ACK is rising edge active.
16	O_ACK is falling edge active.
0	O_TRIG is rising edge active.
32	O_TRIG is falling edge active.

Data Type

Integer

DOTerminator Property

Returns/sets a value that determines the PortB Terminator On/Off,.

Syntax

object.**DOTerminator** [= boolean]

Settings

Value	Description
True	PortB terminator on.
False	PortB terminator off.

Data Type

Boolean

DOTriggerWait Property

Returns/sets a value that determines the DO Wait Trigger Status.

Syntax

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object.**DOTriggerWait** [= number]

Settings

Value	Description
0	No Wait, digital output starts immediately.
1	Wait Trigger, digital output waits rising or falling edge of O_TRG to start.

Data Type

Integer

OpenMode Property

Returns/sets a value that determines the mode of opening device .

Syntax

object.**OpenMode** [= number]

Settings

Value	Description
0	Automatically open device when the control was created
1	Don't open device when the control was created. Must call the Open method to open device. (Manual)

Data Type

Integer

PortWidth Property

Returns/sets a value that determines the width of digital input and digital output port.

Syntax

object.**PortWidth** [= number]

Settings

Value	Description
0	DI32
1	DO32
2	DI8DO8
3	DI16DO16
4	DI8DO16
5	DI16DO8

Data Type

Integer.

StreamToFile Property

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Returns/sets a value that determines if the control is enabled the function of streaming data to disk file.

Syntax

object.**StreamToFile** [= boolean]

Settings

Value	Description
False	Disable the function of streaming data to disk file
True	Enable the function of streaming data to disk file

Data Type

Boolean.

Methods

CheckContDI Method

Syntax

Function *object*.**CheckContDI(***AccessCount as long, stop as Integer***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

AccessCount as long

Number of digital input data that has been transferred.

stop as Integer

Current state: 1 = stop, 0 = running

Remarks

You can request DMA analog input status.

CheckContDO Method

Syntax

Function *object*.**CheckContDO(***AccessCount as long, stop as Integer***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

AccessCount as long

Number of digital input data that has been transferred.

stop as Integer

Current state: 1 = stop, 0 = running

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Remarks

You can request DMA analog output status.

Open Method

Syntax

Function *object*.**Open (***[ErrMsgBox As Variant]***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

[ErrMsgBox As Variant]

It is optional and boolean type. Default value is False

True, It will popup error message dialog box when the opening device is failed.

False, It will fire DAQError event instead of popping up dialog when the opening device is failed.

Remarks

This method will be used when the OpenMode property is Manual.

Note

In VC++, *ErrMsgBox* is a VARIANT of VT_I2.

ReadAuxDILine Method

Syntax

Function *object*.**ReadAuxDILine (***line As Integer, value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

line As Integer

Selects one line number from the indicated port: from 0 to 7 (8-bit port).

value As Variant

Returns the data input from PCI-7300 card.

Remarks

Users can read data from the indicated digital input line of PCI-7300 card.

Note

In VC++, *value* is a VARIANT of VT_UI1

ReadAuxDIPort Method

Syntax

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Function **ReadAuxDIPort** (*value As Variant*) As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

value As Variant

The digital data read from the digital input port.

Remarks

You can read data from the digital input port.

Note

In VC++, *value* is a VARIANT of VT_UI1

StartContDI Method

Syntax

Function *object*.**StartContDI ((***[FileName as Variant]***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

[FileName as String]

It is optional and String type. Default value is NULL

FileName specified the file name of streaming data to disk.

Remarks

Start the DMA digital input function of PCI-7300 card. If the StreamToFile property is True then the DMA data will be write the file specified by FileName. Otherwise, the FileName parameter will be ignored.

The data file is written in binary format. DAQBench provides a convenient tool DAQCvt to convert the binary file to the file format read easily. See DAQBench User's Guide for the usage of the utility. If you want to handle the data by yourself, please refer to Appendix Data File Format for the file structure.

Note

In VC++, FileName is a VARIANT of VT_BSTR.

StartContDO Method

Syntax

Function *object*.**StartContDO(***Buffer as Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

Buffer as Variant

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A buffer data or a array of buffer data, data type can be byte, integer, long, float, double

Remarks

You can use this method to start the DMA digital output function of PCI-7300 card.

Note

In VC++, Buffer is a VARIANT of VT_ARRAY | VT_I2, VT_ARRAY | VT_I4, VT_ARRAY | VT_R4, VT_ARRAY | VT_R8, VT_ARRAY | VT_UI1.

StopContDI Method

Syntax

Function *object*.**StopContDI ()** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

None

Remarks

You can use this method to stop DMA digital input.

StopContDO Method

Syntax

Function *object*.**StopContDO ()** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

None

Remarks

You can use this method to stop DMA digital output.

WriteAuxDOPort Method

Syntax

Function *object*.**WriteAuxDOPort (***value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

value as Variant

8-bit data that will be written to the digital output port.

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Remarks

Users can write data to the PCI-7300 digital output port.

Note

In VC++, *value* is a VARIANT of VT_I4.

WriteAuxDOLine Method

Syntax

Function *object.***WriteAuxDOLine(***line As Integer, value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

line As Integer

Selects one line number from the auxiliary port: from 0 to 3.

value As Variant

Sets 0 or 1 to the indicated line.

Note

In VC++, *value* is a VARIANT of VT_I4.

ReadBackAuxDOPort Method

Reads back data from the auxiliary digital output port.

Syntax

Function *object.***ReadBackDOPort (***value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

value As Variant

Data that is read back from the auxiliary ouput port.

Note

In VC++, *value* is a VARIANT of VT_I4.

ReadBackAuxDOLine Method

Reads back data from the indicated digital output line of the auxiliary digital output port.

Syntax

Function *object.***ReadBackAuxDOLine(***line As Integer, value As Variant***)** As Boolean

Return Value

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True if the function is successful; otherwise False.

Arguments

line As Integer

Selects one line number from the indicated port: from 0 to 3.

value As Variant

Data that is read back from the indicated line.

Note

In VC++, *value* is a VARIANT of VT_UI1.

Events

DiComplete Event

Syntax

sub *ControlName*_**DiComplete (** *WaveForm As Variant* **)**

Arguments

WaveForm As Variant

The data that retrieved from DMA buffer

Remarks

This event will occur when digital input DMA function have completed

Note

In VC++, *WaveForm* is a VARIANT of VT_ARRAY | VT_UI1, VT_ARRAY | VT_I2, VT_ARRAY | VT_I2, according to the PortWidth property.

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DoComplete Event

Syntax

sub *ControlName*_**DoComplete ()**

Arguments

None

Remarks

This event will occur when digital output DMA function have completed

DAQError Event

Syntax

sub *ControlName*_**DAQError (** *ErrString As String* **)**

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Arguments

ErrString As String

The string of error reasion

Remarks

This event will occur when some error occur in control

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Pci7396 ActiveX Control

The PCI-7396 is a PCI-bus digital I/O card. The Pci7396 ActiveX control is a software component that provides the interface for users to control PCI-7396 card.

Properties

DeviceName Property

Returns/sets a string that indicates the device name of a PCI-7396 card that was defined in NuDAQCfg Utility.

Syntax

object.**DeviceName** [= string]

Remarks

The device name of NuDAQ cards must be defined in NuDAQCfg Utility. The indicated NuDAQ card by device name may be a local device or a remote device on remote machine. The device name of PCI7396 ActiveX Control must be specified to a PCI-7396 card difined in NuDAQCfg Utility.

Data Type

String

COSINTP1A Property

Returns/sets a value that determines COSINT function of port 1A.

Syntax

object.**COSINTP1A** [= boolean]

Settings

Value	Description
False	Disable
True	Enable

Remarks

Change of state of port 1A will rise INT1 notification.

Data Type

Boolean

COSINTP1B Property

Returns/sets a value that determines COSINT function of port 1B.

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Syntax

object.**COSINTP1B** [= boolean]

Settings

Value	Description
False	Disable
True	Enable

Remarks

Change of state of port 1B will rise INT1 notification.

Data Type

Boolean

COSINTP1C Property

Returns/sets a value that determines COSINT function of port 1C.

Syntax

object.**COSINTP1C** [= boolean]

Settings

Value	Description
False	Disable
True	Enable

Remarks

Change of state of port 1C will rise INT1 notification.

Data Type

Boolean

COSINTP2A Property

Returns/sets a value that determines COSINT function of port 2A.

Syntax

object.**COSINTP2A** [= boolean]

Settings

Value	Description
False	Disable
True	Enable

Remarks

Change of state of port 2A will rise INT1 notification.

Data Type

Boolean

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COSINTP2B Property

Returns/sets a value that determines COSINT function of port 2B.

Syntax

*object***.COSINTP2B** [= boolean]

Settings

Value	Description
False	Disable
True	Enable

Remarks

Change of state of port 2B will rise INT1 notification.

Data Type

Boolean

COSINTP2C Property

Returns/sets a value that determines COSINT function of port 2C.

Syntax

*object***.COSINTP2C** [= boolean]

Settings

Value	Description
False	Disable
True	Enable

Remarks

Change of state of port 2C will rise INT1 notification.

Data Type

Boolean

COSINTP3A Property

Returns/sets a value that determines COSINT function of port 3A.

Syntax

*object***.COSINTP3A** [= boolean]

Settings

Value	Description
False	Disable
True	Enable

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Remarks

Change of state of port 3A will rise INT2 notification.

Data Type

Boolean

COSINTP3B Property

Returns/sets a value that determines COSINT function of port 3B.

Syntax

object.**COSINTP3B** [= boolean]

Settings

Value	Description
False	Disable
True	Enable

Remarks

Change of state of port 3B will rise INT2 notification.

Data Type

Boolean

COSINTP3C Property

Returns/sets a value that determines COSINT function of port 3C.

Syntax

object.**COSINTP3C** [= boolean]

Settings

Value	Description
False	Disable
True	Enable

Remarks

Change of state of port 3C will rise INT2 notification.

Data Type

Boolean

COSINTP4A Property

Returns/sets a value that determines COSINT function of port 4A.

Syntax

object.**COSINTP4A** [= boolean]

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Settings

Value	Description
False	Disable
True	Enable

Remarks

Change of state of port 4A will rise INT2 notification.

Data Type

Boolean

COSINTP4B Property

Returns/sets a value that determines COSINT function of port 4B.

Syntax

object.**COSINTP4B** [= boolean]

Settings

Value	Description
False	Disable
True	Enable

Remarks

Change of state of port 4B will rise INT2 notification.

Data Type

Boolean

COSINTP4C Property

Returns/sets a value that determines COSINT function of port 4C.

Syntax

object.**COSINTP4C** [= boolean]

Settings

Value	Description
False	Disable
True	Enable

Remarks

Change of state of port 4C will rise INT2 notification.

Data Type

Boolean

INT1Mode Property

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Returns/sets a value that determines the interrupt mode of INT1.

Syntax

object.**INT1Mode** [= Mode]

Settings

Value	Description
0	Disable
1	falling edge of P1C0
2	rising edge of P1C0 or P1C3
3	event counter down to 0

Data Type

Integer

INT2Mode Property

Returns/sets a value that determines the interrupt mode of INT2.

Syntax

object.**INT2Mode** [= Mode]

Settings

Value	Description
0	Disable
1	falling edge of P2C0
2	rising edge of P2C0 or P2C3
3	event counter down to 0

Data Type

Integer

OpenMode Property

Returns/sets a value that determines the mode of opening device .

Syntax

object.**OpenMode** [= number]

Settings

Value	Description
0	Automatically open device when the control was created
1	Don’t open device when the control was created. Must call the Open method to open device. (Manual)

Data Type

Integer

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P1Adir Property

Returns/sets a value that determines P1A port direction.

Syntax

object.**P1ADir** [= Direction]

Settings

Value	Description
0	Direction: Input_Port.
1	Direction: Output_Port.

Data Type

Integer

P1Bdir Property

Returns/sets a value that determines P1B port direction.

Syntax

object.**P1BDir** [= Direction]

Settings

Value	Description
0	Direction: Input_Port.
1	Direction: Output_Port.

Data Type

Integer.

P1Cdir Property

Returns/sets a value that determines P1C port direction.

Syntax

object.**P1CDir** [= Direction]

Settings

Value	Description
0	Direction: Input_Port.
1	Direction: Output_Port.

Data Type

Integer

P2Adir Property

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Returns/sets a value that determines P2A port direction.

Syntax

object.**P2ADir** [= Direction]

Settings

Value	Description
0	Direction: Input_Port.
1	Direction: Output_Port.

Data Type

Integer

P2Bdir Property

Returns/sets a value that determines P2B port direction.

Syntax

object.**P2BDir** [= Direction]

Settings

Value	Description
0	Direction: Input_Port.
1	Direction: Output_Port.

Data Type

Integer

P2Cdir Property

Returns/sets a value that determines P2C port direction.

Syntax

object.**P2CDir** [= Direction]

Settings

Value	Description
0	Direction: Input_Port.
1	Direction: Output_Port.

Data Type

Integer

P3Adir Property

Returns/sets a value that determines P3A port direction.

Syntax

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object.**P3ADir** [= Direction]

Settings

Value	Description
0	Direction: Input_Port.
1	Direction: Output_Port.

Data Type

Integer

P3Bdir Property

Returns/sets a value that determines P3B port direction.

Syntax

object.**P3BDir** [= Direction]

Settings

Value	Description
0	Direction: Input_Port.
1	Direction: Output_Port.

Data Type

Integer

P3Cdir Property

Returns/sets a value that determines P3C port direction.

Syntax

object.**P3CDir** [= Direction]

Settings

Value	Description
0	Direction: Input_Port.
1	Direction: Output_Port.

Data Type

Integer

P4Adir Property

Returns/sets a value that determines P4A port direction.

Syntax

object.**P4ADir** [= Direction]

Settings

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Value	Description
0	Direction: Input_Port.
1	Direction: Output_Port.

Data Type

Integer

P4Bdir Property

Returns/sets a value that determines P4B port direction.

Syntax

object.**P4BDir** [= Direction]

Settings

Value	Description
0	Direction: Input_Port.
1	Direction: Output_Port.

Data Type

Integer

P4Cdir Property

Returns/sets a value that determines P4C port direction.

Syntax

object.**P4CDir** [= Direction]

Settings

Value	Description
0	Direction: Input_Port.
1	Direction: Output_Port.

Data Type

Integer

Methods

Open Method

Syntax

Function *object*.**Open (***[ErrMsgBox As Variant]***)** As Boolean

Return Value

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True if the function is successful; otherwise False.

Arguments

[ErrMsgBox As Variant]

It is optional and boolean type. Default value is False

True, It will popup error message dialog box when the opening device is failed.

False, It will fire DAQError event instead of popping up dialog when the opening device is failed.

Remarks

This method will be use when the OpenMode property is Manual.

Note

In VC++, *ErrMsgBox* is a VARIANT of VT_I2.

ReadCounter Method

Syntax

Function *object*.**ReadCounter (***index As Integer, CtlValue As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

index As Integer

Selects one counter number: 0~2.

CtlValue As Variant

Returns the content from the indicated counter.

Remarks

You can read the current contents from the selected counter without disturbing the counting process.

Note

In VC++, *CtlValu*e is a VARIANT of VT_I4.

ReadDIPort Method

Syntax

Function *object***.ReadDIPort (***port As Integer, value as Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

Port As Integer

Selects one port for inputting digital data, number: 0~11.

0: P1A 1: P1B 2: P1C

3: P2A 4: P2B 5: P2C

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6: P3A 7: P3B 8: P3C

9: P4A 10: P4B 11: P4C

value As Variant

The digital data read from the indicated digital input port.

Remarks

You can read data from the digital input port.

Note

In VC++, *valu*e is a VARIANT of VT_I2.

ReadDILine Method

Syntax

Function *object*.**ReadDILine (***port As Integer, line As Integer, value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

Port As Integer

Selects one port for inputting digital data, number: 0~11.

0: P1A 1: P1B 2: P1C

3: P2A 4: P2B 5: P2C

6: P3A 7: P3B 8: P3C

9: P4A 10: P4B 11: P4C

line As Integer

Selects one line number from the indicated port: from 0 to 7 (8-bit port).

value As Variant

Returns the data input from PCI-7396 card.

Remarks

Users can read data from the indicated digital input line of PCI-7396 card.

Note

In VC++, *valu*e is a VARIANT of VT_UI1.

StartCounter Method

Syntax

Function *object*.**StartCounter(*index** As Integer, CtrMode As Integer, CtrValue as Variant, BinBcd as Intger***)**

As Boolean

Return Value

True if the function is successful; otherwise False.

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Arguments

index As Integer

Selects one counter number: 0~2.

CtrMode As Integer

0: Toggle output from low to high on terminal count

1: Programmable one-shot

2: Rate generator

3: Square wave rate generator

4: Software-triggered strobe

5: Hardware-triggered strobe

CtrValue as Variant

Set the start value to the indicated counter.

binbcd As Integer

0: 16-bit binary counter, 1: 4-decade BCD counter.

Remarks

You can start the indicated counter to operate in the specified mode.

Note

In VC++, *CtrValue* is a VARIANT of VT_I4.

StopCounter Method

Syntax

Function *object*.**StopCounter(***index As Integer, State As Integer***)** As

Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

index As Integer

Selects one counter number: 0~2.

State As Integer

The logic state to which the counter is to be stopped, number: 0 or 1.

Remarks

You can stop the indicated counter and set the specified state.

WriteDOPort Method

Syntax

Function *object***.WriteDOPort (***port As Integer, value As Variant***)** As Boolean

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Return Value

True if the function is successful; otherwise False.

Arguments

Port As Integer

Selects one port for inputting digital data, number: 0~11.

0: P1A	1: P1B	2: P1C
3: P2A	4: P2B	5: P2C
6: P3A	7: P3B	8: P3C
9: P4A	10: P4B	11: P4C

value as Variant

8-bit data that will be written to the digital output port.

Remarks

Users can write data to the PCI-7396 digital output port.

Note

In VC++, *valu*e is a VARIANT of VT_I4

WriteDOLine Method

Syntax

Function *object.***WriteDOLine(***port As Integer, line As Integer, value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

port As Integer

Selects one port for outputting digital data, number: 0~11.

0: P1A	1: P1B	2: P1C
3: P2A	4: P2B	5: P2C
6: P3A	7: P3B	8: P3C
9: P4A	10: P4B	11: P4C

line As Integer

Selects one line number from the indicated port: from 0 to 7 (8-bit port).

value As Variant

Sets 0 or 1 to the indicated line.

Note

In VC++, *value* is a VARIANT of VT_I4.

ReadBackDOPort Method

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Reads back data from the indicated digital output port.

Syntax

Function *object*.**ReadBackDOPort (***port As Integer, value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

port As Integer

Selects one port for outputting digital data, number: 0~11.

0: P1A	1: P1B	2: P1C
3: P2A	4: P2B	5: P2C
6: P3A	7: P3B	8: P3C
9: P4A	10: P4B	11: P4C

value As Variant

Data that is read back from the indicated port.

Note

In VC++, *value* is a VARIANT of VT_I4.

ReadBackDOLine Method

Reads back data from the indicated digital output line of the indicated digital output port.

Syntax

Function *object*.**ReadBackDOLine(***port As Integer, line As Integer, value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

port As Integer

Selects one port for outputting digital data, number: 0~11.

0: P1A	1: P1B	2: P1C
3: P2A	4: P2B	5: P2C
6: P3A	7: P3B	8: P3C
9: P4A	10: P4B	11: P4C

line As Integer

Selects one line number from the indicated port: from 0 to 7 (8-bit port).

value As Variant

Data that is read back from the indicated line.

Note

In VC++, *value* is a VARIANT of VT_UI1.

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Events

Interrupt Event

Syntax

sub *ControlName*_**Interrupt (** *EvtNo as Integer* **)**

Arguments

EvtNo as Integer

0: interrupt 1 occurred

1: interrupt 2 occurred

Remarks

If an interrupt is generated by this card, this event will be generated by this ActiveX control.

DAQError Event

Syntax

sub *ControlName*_**DAQError (** *ErrString As String* **)**

Arguments

ErrString As String

The string of error reason

Remarks

This event will occur when some error occur in control

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Pci7432 ActiveX Control

The PCI-7432 is a PCI-bus digital I/O card. The Pci7432 ActiveX control is an software component that provides the interface for user to control PCI-7432 card.

Properties

DeviceName Property

Returns/sets a string that indicates the device name of a PCI-7432 card that was defined in NuDAQCfg Utility.

Syntax

*object***.DeviceName** [= string]

Remarks

The device name of NuDAQ cards must be defined in NuDAQCfg Utility. The indicated NuDAQ card by device name may be a local device or a remote device on remote machine. The device name of PCI7432 ActiveX Control must be specified to a PCI-7432 card defined in NuDAQCfg Utility.

Data Type

String

INT1Mode Property

Returns/sets a value that determines the interrupt mode of INT1.

Syntax

*object***.INT1Mode** [= Mode]

Settings

Value	Description
0	Disable
1	Enable

Remarks

Enable**:** event occurred on the rising edge of digital input channel 0

Data Type

Integer

INT2Mode Property

Returns/sets a value that determines the interrupt mode of INT2.

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Syntax

object.**INT2Mode** [= Mode]

Settings

Value	Description
0	Disable
1	Enable

Remarks

Enable**:** event occurred on the rising edge of digital input channel 1

Data Type

Integer

OpenMode Property

Returns/sets a value that determines the mode of opening device .

Syntax

object.**OpenMode** [= number]

Settings

Value	Description
0	Automatically open device when the control was created
1	Don't open device when the control was created. Must call the Open method to open device. (Manual)

Data Type

Integer

Methods

Open Method

Syntax

Function *object*.**Open (***[ErrMsgBox As Variant]***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

[ErrMsgBox As Variant]

It is optional and boolean type. Default value is False

True, It will popup error message dialog box when the opening device is failed.

False, It will fire DAQError event instead of popping up dialog when the opening device is failed.

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Remarks

This method will be use when the OpenMode property is Manual.

Note

In VC++, *ErrMsgBox* is a VARIANT of VT_I2**.**

ReadDIPort Method

Syntax

Function *object***.ReadDIPort (***value as Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

value As Variant

Sets one value buffer for retrieving 32-bit input data from PCI-7432 card.

Remarks

Users can read 32-bit digital input data from PCI-7432 card.

Note

In VC++, *value* is a VARIANT of VT_I4.

ReadDILine Method

Syntax

Function *object***.ReadDILine (***line As Integer, value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

line As Integer

Selects one line number from the indicated port: from 0 to 31 (32-bit port).

value As Variant

Returns the data input from PCI-7432 card.

Remarks

Users can read data from the indicated digital input line of PCI-7432 card.

Note

In VC++, *value* is a VARIANT of VT_UI1.

WriteDOPort Method

Syntax

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Function *object*.**WriteDOPort (***value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

value as Variant

32-bit data that will be written to the digital output port.

Remarks

Users can write data to the PCI-7432 digital output port.

Note

In VC++, *value* is a VARIANT of VT_I4.

Events

Interrupt Event

Syntax

sub *ControlName*_**Interrupt (** *EvtNo as Integer* **)**

Arguments

EvtNo as Integer

0: interrupt 1 occurred

1: interrupt 2 occurred

Remarks

If an interrupt is generated by this card, this event will be generated by this ActiveX control.

DAQError Event

Syntax

sub *ControlName*_**DAQError (** *ErrString As String* **)**

Arguments

ErrString As String

The string of error reason

Remarks

This event will occur when some error occur in control

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Pci7433 ActiveX Control

The PCI-7433 is a 64-bit PCI-bus digital input card. The Pci7433 ActiveX control is an software component that provides the interface for user to control PCI-7433 card.

Properties

DeviceName Property

Returns/sets a string that indicates the device name of a PCI-7433 card that was defined in NuDAQCfg Utility.

Syntax

object.**DeviceName** [= string]

Remarks

The device name of NuDAQ cards must be defined in NuDAQCfg Utility. The indicated NuDAQ card by device name may be a local device or a remote device on remote machine. The device name of PCI7433 ActiveX Control must be specified to a PCI-7433 card defined in NuDAQCfg Utility.

Data Type

String

INT1Mode Property

Returns/sets a value that determines the interrupt mode of INT1.

Syntax

object.**INT1Mode** [= Mode]

Settings

Value	Description
0	Disable
1	Enable

Remarks

Enable**:** event occurred on the rising edge of digital input channel 0

Data Type

Boolean

INT2Mode Property

Returns/sets a value that determines the interrupt mode of INT2.

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Syntax

object.**INT2Mode** [= Mode]

Settings

Value	Description
0	Disable
1	Enable

Remarks

Enable**:** event occurred on the rising edge of digital input channel 1

Data Type

Boolean

OpenMode Property

Returns/sets a value that determines the mode of opening device .

Syntax

object.**OpenMode** [= number]

Settings

Value	Description
0	Automatically open device when the control was created
1	Don't open device when the control was created. Must call the Open method to open device. (Manual)

Data Type

Integer

Methods

Open Method

Syntax

Function *object*.**Open (***[ErrMsgBox As Variant]***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

[ErrMsgBox As Variant]

It is optional and boolean type. Default value is False

True, It will popup error message dialog box when the opening device is failed.

False, It will fire DAQError event instead of popping up dialog when the opening device is failed.

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Remarks

This method will be use when the OpenMode property is Manual.

Note

In VC++, *ErrMsgBox* is a VARIANT of VT_I2**.**

ReadDIPort Method

Syntax

Function *object***.ReadDIPort (***port as integer, value as Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

port as integer

Selects one port number from 0 to 1.

value As Variant

Sets one value buffer for retrieving 32-bit input data from PCI-7433 card.

Remarks

Users can read 32-bit digital input data from PCI-7433 card.

Note

In VC++, *value* is a VARIANT of VT_I4**.**

ReadDILine Method

Syntax

Function *object***.ReadDILine(***port as integer, line As Integer, value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

port as integer

Selects one port number from 0 to 1.

line As Integer

Selects one line number from the indicated port: from 0 to 31 (32-bit port).

value As Variant

Returns the data input from PCI-7433 card.

Remarks

Users can read data from the indicated digital input line of PCI-7433 card.

Note

In VC++, *value* is a VARIANT of VT_UI1**.**

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Events

Interrupt Event

Syntax

sub *ControlName*_**Interrupt (** *EvtNo as Integer* **)**

Arguments

EvtNo as Integer

0: interrupt 1 occurred

1: interrupt 2 occurred

Remarks

If an interrupt is generated by this card, this event will be generated by this ActiveX control.

DAQError Event

Syntax

sub *ControlName*_**DAQError (** *ErrString As String* **)**

Arguments

ErrString As String

The string of error reason

Remarks

This event will occur when some error occur in control

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Pci7434 ActiveX Control

The PCI-7434 is a 64-bits PCI-bus digital output card. The Pci7434 ActiveX control is an software component that provides the interface for user to control PCI-7434 card.

Properties

DeviceName Property

Returns/sets a string that indicates the device name of a PCI-7434 card that was defined in NuDAQCfg Utility.

Syntax

object.**DeviceName** [= string]

Remarks

The device name of NuDAQ cards must be defined in NuDAQCfg Utility. The indicated NuDAQ card by device name may be a local device or a remote device on remote machine. The device name of PCI7434 ActiveX Control must be specified to a PCI-7434 card defined in NuDAQCfg Utility.

Data Type

String

OpenMode Property

Returns/sets a value that determines the mode of opening device .

Syntax

object.**OpenMode** [= number]

Settings

Value	Description
0	Automatically open device when the control was created
1	Don't open device when the control was created. Must call the Open method to open device. (Manual)

Data Type

Integer

Methods

Open Method

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Syntax

Function *object*.**Open (***[ErrMsgBox As Variant]***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

[ErrMsgBox As Variant]

It is optional and boolean type. Default value is False

True, It will popup error message dialog box when the opening device is failed.

False, It will fire DAQError event instead of popping up dialog when the opening device is failed.

Remarks

This method will be use when the OpenMode property is Manual.

Note

In VC++, *ErrMsgBox* is a VARIANT of VT_I2**.**

WriteDOPort Method

Syntax

Function *object*.**WriteDOPort (***port as integer, value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

port as integer

Selects one port number from 0 to 1.

value As Variant

32-bit data that will be written to the digital output port.

Remarks

Users can write data to the PCI-7434 digital output port.

Note

In VC++, value is a VARIANT of VT_I4.

Events

DAQError Event

Syntax

sub *ControlName*_**DAQError (** *ErrString As String* **)**

Arguments

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ErrString As String

The string of error reason

Remarks

This event will occur when some error occur in control

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Pci8554 ActiveX Control

The PCI-8554 is a PCI-bus data general-purpose counter / timer and digital I/O card. The Pci8554 ActiveX control is a software component that provides the interface for users to control PCI-8554 card.

Properties

DeviceName Property

Returns/sets a string that indicates the device name of a PCI-8554 card that is defined in NuDAQCfg Utility.

Syntax

object.**DeviceName** [= string]

Remarks

The device name of NuDAQ cards must be defined in NuDAQCfg Utility. The indicated NuDAQ card by device name may be a local device or a remote device on remote machine. The device name of PCI8554 ActiveX Control must be specified to a PCI-8554 card defined in NuDAQCfg Utility.

Data Type

String

CK1Source Property

Returns/sets a value that determines CK1 source.

Syntax

object.**CK1Source** [= number]

Settings

Value	Description
0	Fixed 8MHz
1	Output of COUT11

Data Type

Integer

CounterClockSource Property

Returns/sets a array value that determines clock source of count1 ~ counter10.

Syntax

object.**CounterClockSource(***index As Integer***)** [= number]

Parameter

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index As Integer

Counter number is between 0 and 9

Settings

Value	Description
0	external clock source
1	cascaded counter output of COUT(n-1)
2	CK1
3	output of COUT10

Data Type

Integer

DeBounceSource Property

Returns/sets a value that determines DeBounce source.

Syntax

object.**DeBounceSource** [= number]

Settings

Value	Description
0	output of COUT11
1	2MHz

Data Type

Integer

INT1Mode Property

Returns/sets a value that determines the interrupt mode of INT1.

Syntax

object.**INT1Mode** [= Mode]

Settings

Value	Description
0	Disable
1	Enable: COUT12

Remarks

Enable**:** event occurred on the clock of COUT12

Data Type

Integer

INT2Mode Property

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Returns/sets a value that determines the interrupt mode of INT2.

Syntax

object.**INT2Mode** [= Mode]

Settings

Value	Description
0	Disable
1	Enable: External signal EXTINT

Remarks

Enable**:** event occurred on the clock of EXTINT

Data Type

Integer

OpenMode Property

Returns/sets a value that determines the mode of opening device .

Syntax

object.**OpenMode** [= number]

Settings

Value	Description
0	Automatically open device when the control was created
1	Don't open device when the control was created. Must call the Open method to open device. (Manual)

Data Type

Integer.

Methods

Open Method

Syntax

Function *object*.**Open (***[ErrMsgBox As Variant]***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

[ErrMsgBox As Variant]

It is optional and boolean type. Default value is False

True, It will popup error message dialog box when the opening device is failed.

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False, It will fire DAQError event instead of popping up dialog when the opening device is failed.

Remarks

This method will be use when the OpenMode property is Manual.

Note

In VC++, *ErrMsgBox* is a VARIANT of VT_I2**.**

ReadCounter Method

Syntax

Function *object*.**ReadCounter (***index As Integer, CtlValue As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

index As Integer

Selects one counter number: 0~9.

CtlValue As Varinant

Returns the content from the indicated counter.

Remarks

You can read the current contents from the selected counter without disturbing the counting process.

Note

In VC++, *CtlValue* is a VARIANT of VT_I4**.**

ReadDILine Method

Syntax

Function *object***.ReadDILine (** *line As Integer, value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

line As Integer

Selects one line number from the indicated port: from 0 to 7 (8-bit port).

value As Variant

Returns the data input from PCI-8554 card.

Remarks

Users can read data from the indicated digital input line of PCI-8554card.

Note

In VC++, *value* is a VARIANT of VT_UI1**.**

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ReadDIPort Method

Syntax

Function *object*.**ReadDIPort (***value as Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

value As Variant

The digital data read from the indicated digital input port.

Remarks

You can read data from the digital input port.

Note

In VC++, *value* is a VARIANT of VT_I4**.**

StartCounter Method

Syntax

Function *object*.**StartCounter(*index** As Integer, CtrMode As Integer, CtrValue As Variant, BinBcd As Intger***)**

As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

index As Integer

Selects one counter number: 0~9.

CtrMode As Integer

0: Toggle output from low to high on terminal count

1: Programmable one-shot

2: Rate generator

3: Square wave rate generator

4: Software-triggered strobe

5: Hardware-triggered strobe

CtrValue as Variant

Set the start value to the indicated counter.

binbcd As Integer

0: 16-bit binary counter, 1: 4-decade BCD counter.

Remarks

You can start the indicated counter to operate in the specified mode.

Note

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In VC++, *CtrValue* is a VARIANT of VT_I4**.**

StopCounter Method

Syntax

Function *object*.**StopCounter(***index As Integer, State As Integer***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

index As Integer

Selects one counter number: 0~9.

State As Integer

The logic state to which the counter is to be stopped, number: 0 or 1.

Remarks

You can stop the indicated counter and set the specified state.

WriteDOPort Method

Syntax

Function *object***.WriteDOPort (** *value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

value as Variant

8-bit data that will be written to the digital output port.

Remarks

Users can write data to the PCI-8554 digital output port.

Note

In VC++, *value* is a VARIANT of VT_I4**.**

Events

Interrupt Event

Syntax

sub *ControlName*_**Interrupt (** *EvtNo as Integer* **)**

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Arguments

EvtNo as Integer

0: interrupt 1 occurred

1: interrupt 2 occurred

Remarks

If an interrupt is generated by this card, this event will be generated by this ActiveX control.

DAQError Event

Syntax

sub *ControlName*_**DAQError (** *ErrString As String* **)**

Arguments

ErrString As String

The string of error reason

Remarks

This event will occur when some error occur in control

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Pci9111 ActiveX Control

The PCI-9111 is a PCI-bus multi-function data acquisition card. The Pci9111 ActiveX control is a software component that provides the interface for users to control PCI-9111 card. The properties and methods allow users to perform analog I/O and digital I/O.

Properties

DeviceName Property

Returns/sets a string that indicates the device name of a PCI-9111 card that was defined in NuDAQCfg Utility.

Syntax

object.**DeviceName** [= string]

Remarks

The device name of NuDAQ cards must be defined in NuDAQCfg Utility. The indicated NuDAQ card by device name may be a local device or a remote device on remote machine. The device name of PCI9111 ActiveX Control must be specified to a PCI-9111 card defined in NuDAQCfg Utility.

Data Type

String

AIRange Property

Sets a range for interrupt analog input.

Syntax

object.**AIRange** [= number]

Settings

Value	Description
0	±10V
1	±5V
2	±2.5V
3	±1.25V
4	±0.625V

Data Type

Integer

AutoScan Property

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Returns/sets a value that determines whether the analog input operate in auto scan mode or not.

Syntax

object.**AutoScan** [= boolean]

Settings

Value	Description
True	automatically scan channels to read analog data. The scan is in ascending order. For example, if Channel property set to 3, the channels scanned are 0, 1, 2, 3, 0, 1, 2, 3, …
False	only read data from the indicated channel.

Data Type

Boolean

CardType Property

Returns/sets a value that indicates the card type for programming Pci9111 ActiveX control.

Syntax

object.**CardType** [= number]

Settings

Number	Card Type	Resolution
1	PCI-9111DG	12-bit signed data
2	PCI-9111HR	16-bit signed data

Remarks

This property will be automatically set when the device name be specified and the device information be retrieved successfully.

Data Type

Integer

Channel Property

Sets the selected analog input channel for interrupt data transfer.

Syntax

object.**Channel** [= number]

Settings

Channel number is from 0 to 15.

Data Type

Integer

ClockSource Property

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Returns/sets a value that determines the A/D clock source.

Syntax

object.**ClockSource** [= number]

Settings

Value	Setting
0	Internal timer pacer
1	External signal trigger

Data Type

Integer

DoubleBufferMode Property

Returns/Sets a value that determines whether it is double-buffer mode or not.

Syntax

object.**DoublebufferMode** [= boolean]

Settings

Value	Description
True	During interrupt analog input mode, the buffer is divided into two parts. When either part is full of data, it will get AiHalfReady event.
False	The buffer is single, when it is full of data, it will get AiComplete Event.

Data Type

Boolean

EDOMode Property

Returns/sets a value that determines the mode of the extended digital output channels.

Syntax

object.**EDOMode** [= number]

Settings

Value	Desciption
0	Input
1	Output EDO
2	Output channel

Data Type

Integer

NumOfScan Property

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Sets a value that indicates the total number of scans to acquired.

Syntax

object.**NumOfScan** [= number]

Remarks

Non-double-buffer mode

This value multiply the total number of scan channels is the total number of A/D conversions to be performed. It must be the multiple of 512.

Double-buffer-mode

This value multiply the total number of scan channels is the size (in sample) of the circular buffer. It must be the multiple of 1024.

Data Type

Long

OpenMode Property

Returns/sets a value that determines the mode of opening device .

Syntax

object.**OpenMode** [= number]

Settings

Value	Description
0	Automatically open device when the control was created
1	Don't open device when the control was created. Must call the Open method to open device. (Manual)

Data Type

Integer

PreTrigger Property

Returns/sets a value that determines the pre-trigger mode.

Syntax

object.**PreTrigger** [= boolean]

Settings

Value	Description
True	Pre-trigger enable
False	Pre-trigger disable

Remarks

When PreTrigger is True, the hardware is continuously acquiring A/D data and waiting for Pre-Trigger Signal. Before the Pre-Trigger is inserted, the software must read the FIFO data to prevent the FIFO full. When

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Pre-Trigger is inserted, the counter is starting to count down from the initial counter value N (ScansAfterPreTrigger Property). The A/D trigger will be disable automatically when the counter value reaches zero.

Data Type

Boolean

ReturnType Property

Returns/sets a value that determines the return data type of analog input when AiComplete or AiHalfReady event would occur.

Syntax

object.**ReturnType** [= number]

Settings

PCI-9111DG

Value	Description
0	Scaled data only
1	Binary codes with channel only
2	Binary codes without channel only
3	Scaled data and binary codes with channel
4	Scaled data and binary codes without channel
5	No data return

PCI-9111HR

Value	Description
0	Scaled data only
1	Binary codes only
2	Scaled data and binary codes
3	No data return

Data Type

Integer

ScanRate Property

Returns/sets a value that determines the scan rate (scans per second) of continuous analog input.

Syntax

object.**ScanRate** [= number]

Settings

The range of (ScanRate * total number of scan channels) must be between 0 and 100KHz.

Remarks

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This property is used only when the Clocksource property is set to Internal timer pacer.

Data Type

Double

ScansAfterPreTrigger Property

Returns/sets a value that determines the total number of scans will be acquired after the trigger event happens.

Syntax

object.**ScansAfterPreTrigger** [= number]

Remarks

The value that ScansAfterPreTrigger multiply the total number of scan channels must be less than 65535.

The timer #0 is used as the pre-trigger counter after the pre-trigger is inserted. The lock source of counter 0 is from A/D trigger source so that 8254 can count the A/D trigger number.

Data Type

Long

StreamToFile Property

Returns/sets a value that determines if the control is enabled the function of streaming data to disk file.

Syntax

object.**StreamToFile** [= boolean]

Settings

Value	Description
False	Disable the function of streaming data to disk file
True	Enable the function of streaming data to disk file

Data Type

Boolean

Methods

CheckContAI Method

Syntax

Function *object*.**CheckContAI(***AccessCount as long, stop as Integer***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

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AccessCount as long

Number of analog input data that has been transferred.

stop as Integer

Current state: 1 = stop, 0 = running

Remarks

You can request DMA analog input status.

Open Method

Syntax

Function *object*.**Open (***[ErrMsgBox As Variant]***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

[ErrMsgBox As Variant]

It is optional and boolean type. Default value is False

True, It will popup error message dialog box when the opening device is failed.

False, It will fire DAQError event instead of popping up dialog when the opening device is failed.

Remarks

This method will be use when the OpenMode property is Manual.

Note

In VC++, *ErrMsgBox* is a VARIANT of VT_I2**.**

ReadDILine Method

Syntax

Function *object*.**ReadDILine (***line As Integer, value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

line As Integer

Selects one line number from the indicated port: from 0 to 15 (16-bit port).

value As Variant

Returns the data input from PCI-9111 card.

Remarks

Users can read data from the indicated digital input line of PCI-9111 card.

Note

In VC++, *value* is a VARIANT of VT_UI1

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ReadDIPort Method

Syntax

Function object.**ReadDIPort** (*value As Variant*) As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

value As Variant

Sets one value buffer for retrieving 16-bit input data from PCI-9111 card.

Remarks

Users can read 16-bit digital input data from PCI-9111 card.

Note

In VC++, *value* is a VARIANT of VT_I4

ReadSingleAI Method

Syntax

Function object.**ReadSingleAI** (*channel As Integer, range As Integer, value As Variant*) As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

channel As Integer

Analog input channel number 0 ~ 15.

range As Integer

Range of analog input.

Value	Description
0	±10V
1	±5V
2	±2.5V
3	±1.25V
4	±0.625V

value As Variant

The analog data read from analog input channel (already scaled to voltage).

Remarks

You can read one data from one analog input channel.

Note

In VC++, *value* is a VARIANT of VT_R8

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StartContAI Method

Syntax

Function object.**StartContAI** (**(***[FileName as Variant]*) As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

[FileName as String]

It is optional and String type. Default value is NULL

FileName specified the file name of streaming data to disk.

Remarks

Start the continuous analog input function of PCI-9111 card. If the StreamToFile property is True then the data will be written to the file specified by FileName. Otherwise, the FileName parameter will be ignored.

The data file is written in binary format, with the lower byte first (little endian). Data type is "Binary codes with channel". DAQBench provides a convenient tool DAQCvt to convert the binary file to the file format read easily. See DAQBench User's Guide for the usage of the utility. If you want to handle the data by yourself, please refer to Appendix Data File Format for the file structure.

Note

In VC++, FileName is a VARIANT of VT_BSTR

StopContAI Method

Syntax

Function object.**StopContAI** () As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

None

Remarks

You can use this method to stop continuous analog input.

WriteDOPort Method

Syntax

Function *object***.WriteDOPort (***value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

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Arguments

value as Variant

16-bit data that will be written to the digital output port.

Remarks

Users can write data to the PCI-9111 digital output port.

Note

In VC++, *value* is a VARIANT of VT_I4.

WriteSingleAO Method

Syntax

Function *object*.**WriteSingleAO (***range As integer***,** *value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

range As Integer

Range of analog output.

Value	Description
0	0 ~ 10V
1	-10 ~ 10V

value As Variant

Sets one value to writing to analog output of PCI-9111 card, the range will depend on *range* parameter.

Remarks

Users can write data to analog output channel of PCI-9111 card. The range value must be same with the AO jumper setting of PCI-9111 card.

Note

In VC++, *value* is a VARIANT of VT_R8.

Events

AiComplete Event

Syntax

sub *ControlName*_**AiComplete(** *ScaledData as Variant, BinaryCodes As Variant* **)**

Arguments

ScaledData as Variant

The analog input data array that have been translated to the engineering data (voltage) according to

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AIRange property.

BinaryCodes As Variant

The analog input data array with digital format.

Remarks

This event occurs when continuous analog input function is completed.

Whether *ScaledData* or *BinaryCodes* contains data depends on *ReturnType* property setting.

PCI-9111DG

"*BinaryCodes with channel*" format:

Range -32768 to +32767. The least significant 4 bits are channel number.

"*BinaryCodes without channel*" format:

Range -2048 to +2047.

PCI-9111HR

"*BinaryCodes*" format:

Range -32768 to +32767.

Note

In VC++, *ScaledData* is a VARIANT of VT_ARRAY | VT_R4, *BinaryCodes* is a VARIANT of VT_ARRAY | VT_I4 (with channel) or VT_ARRAY | VT_I2 (without channel).

AiHalfReady Event

Syntax

sub *ControlName*_**AiHalfReady(** *ScaledData as Variant, BinaryCodes As Variant* **)**

Arguments

ScaledData as Variant

The analog input data array that have been translated to the engineering data (voltage) according to AIRange property.

BinaryCodes As Variant

The analog input data array with digital format.

Remarks

This event occurs when one half-buffer of the circular buffer is full at continuous analog input operation.

Whether *ScaledData* or *BinaryCodes* contains data depends on *ReturnType* property setting.

PCI-9111DG

"*BinaryCodes with channel*" format:

Range -32768 to +32767. The least significant 4 bits are channel number.

"*BinaryCodes without channel*" format:

Range -2048 to +2047.

PCI-9111HR

"*BinaryCodes*" format:

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Range -32768 to +32767.

Note

In VC++, *ScaledData* is a VARIANT of VT_ARRAY | VT_R4, *BinaryCodes* is a VARIANT of VT_ARRAY | VT_I4 (with channel) or VT_ARRAY | VT_I2 (without channel).

DAQError Event

Syntax

sub *ControlName*_**DAQError (** *ErrString As String* **)**

Arguments

ErrString As String

The string of error reasion

Remarks

This event will occur when some error occur in control

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Pci9112 ActiveX Control

The PCI-9112 is a PCI-bus multi-function data acquisition card. The Pci9112 ActiveX control is a software component that provides the interface for users to control PCI-9112 card. The properties and methods allow users to perform analog I/O and digital I/O.

Properties

DeviceName Property

Returns/sets a string that indicates the device name of a PCI-9112 card that was defined in NuDAQCfg Utility.

Syntax

object.**DeviceName** [= string]

Remarks

The device name of NuDAQ cards must be defined in NuDAQCfg Utility. The indicated NuDAQ card by device name may be a local device or a remote device on remote machine. The device name of PCI9112 ActiveX Control must be specified to a PCI-9112 card defined in NuDAQCfg Utility.

Data Type

String

AIRange Property

Sets a range for interrupt analog input.

Syntax

object.**AIRange** [= number]

Settings

Value	Description
0	±5V
1	±2.5V
2	±1.25V
3	±0.625V
4	0~10V
5	0~5V
6	0~2.5V
7	0~1.25V
8	±10V

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Data Type

Integer

AutoScan Property

Returns/sets a value that determines whether the analog input operate in auto scan mode or not.

Syntax

object.**AutoScan** [= boolean]

Settings

Value	Description
True	automatically scan channels to read analog data. The scan is in descending order. For example, if Channel property set to 3, the channels scanned are 3, 2, 1, 0, 3, 2, 1, 0, …
False	only read data from the indicated channel.

Data Type

Boolean

Channel Property

Sets the selected analog input channel for continuous analog input operation.

Syntax

object.**Channel** [= number]

Settings

Channel number is from 0 to 15.

Data Type

Integer

ClockSource Property

Returns/sets a value that determines the A/D clock source.

Syntax

object.**ClockSource** [= number]

Settings

Value	Setting
0	Internal timer pacer
1	External signal trigger

Data Type

Integer

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DoubleBufferMode Property

Returns/Sets a value that determines whether it is double-buffer mode or not.

Syntax

object.**DoublebufferMode** [= boolean]

Settings

Value	Description
True	During interrupt analog input mode, the buffer is divided into two parts. When either part is full of data, it will get AiHalfReady event.
False	The buffer is single, when it is full of data, it will get AiComplete Event.

Data Type

Boolean

NumOfScan Property

Sets a value that indicates the total number of scans to acquired.

Syntax

object.**NumOfScan** [= number]

Remarks

Non-double-buffer mode

This value multiply the total number of scan channels is the total number of A/D conversions to be performed. It must be the multiple of 2.

Double-buffer-mode

This value multiply the total number of scan channels is the size (in sample) of the circular buffer. It must be the multiple of 4.

Data Type

Long

OpenMode Property

Returns/sets a value that determines the mode of opening device .

Syntax

object.**OpenMode** [= number]

Settings

Value	Description
0	Automatically open device when the control was created
1	Don't open device when the control was created. Must call the Open method to open device.

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(Manual)

Data Type

Integer.

ReturnType Property

Returns/sets a value that determines the return data type of analog input when AiComplete or AiHalfReady event would occur.

Syntax

object.**ReturnType** [= number]

Settings

Value	Description
0	Scaled data only
1	Binary codes with channel only
2	Binary codes without channel only
3	Scaled data and binary codes with channel
4	Scaled data and binary codes without channel
5	No data return

Data Type

Integer

ScanRate Property

Returns/sets a value that determines the scan rate (scans per second) of continuous analog input.

Syntax

object.**ScanRate** [= number]

Settings

The range of (ScanRate * total number of scan channels) must be between 0 and 110KHz.

Remarks

This property is used only when the ClockSource Property is set to Internal timer pacer.

Data Type

Double

StreamToFile Property

Returns/sets a value that determines if the control is enabled the function of streaming data to disk file.

Syntax

object.**StreamToFile** [= boolean]

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Settings

Value	Description
False	Disable the function of streaming data to disk file
True	Enable the function of streaming data to disk file

Data Type

Boolean

Methods

CheckContAI Method

Syntax

Function *object*.**CheckContAI(***AccessCount as long, stop as Integer***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

AccessCount as long

Number of analog input data that has been transferred.

stop as Integer

Current state: 1 = stop, 0 = running

Remarks

You can request DMA analog input status.

Open Method

Syntax

Function *object*.**Open (***[ErrMsgBox As Variant]***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

[ErrMsgBox As Variant]

It is optional and boolean type. Default value is False

True, It will popup error message dialog box when the opening device is failed.

False, It will fire DAQError event instead of popping up dialog when the opening device is failed.

Remarks

This method will be use when the OpenMode property is Manual.

Note

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In VC++, *ErrMsgBox* is a VARIANT of VT_I2**.**

ReadCounter0 Method

Syntax

Function *object***.ReadCounter0 (***value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

value As Variant

Returns the current counter value from PCI-9112 card.

Remarks

You can read the value from Timer Counter #0.

Note

In VC++, *value* is a VARIANT of VT_I4**.**

ReadDILine Method

Syntax

Function *object***.ReadDILine (***line As Integer, value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

line As Integer

Selects one line number from the indicated port: from 0 to 15 (16-bit port).

value As Variant

Returns the data input from PCI-9112 card.

Remarks

Users can read data from the indicated digital input line of PCI-9112 card.

Note

In VC++, *value* is a VARIANT of VT_UI1**.**

ReadDIPort Method

Syntax

Function *object*.**ReadDIPort** (*value As Variant*) As Boolean

Return Value

True if the function is successful; otherwise False.

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Arguments

value As Variant

Sets one value buffer for retrieving 16-bit input data from PCI-9112 card.

Remarks

Users can read 16-bit digital input data from PCI-9112 card.

Note

In VC++, *value* is a VARIANT of VT_I4**.**

ReadSingleAI Method

Syntax

Function *object*.**ReadSingleAI** (*channel As Integer, range As Integer, value As Variant*) As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

channel As Integer

Analog input channel number 0 ~ 15.

range As Integer

Range of analog input.

Value	Description
0	±5V
1	±2.5V
2	±1.25V
3	±0.625V
4	0~10V
5	0~5V
6	0~2.5V
7	0~1.25V
8	±10V

value As Variant

The analog data read from analog input channel (already scaled to voltage).

Remarks

You can read one data from one analog input channel.

Note

In VC++, *value* is a VARIANT of VT_R8**.**

StartContAI Method

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Syntax

Function *object*.**StartContAI** (*[FileName as Variant]*) As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

[FileName as String]

It is optional and String type. Default value is NULL

FileName specified the file name of streaming data to disk.

Remarks

You can use this method to start the continuous analog input function of PCI-9112 card. If the StreamToFile property is True then the data will be written to the file specified by FileName. Otherwise, the FileName parameter will be ignored.

The data file is written in binary format, with the lower byte first (little endian). Data type is “Binary codes with channel”. DAQBench provides a convenient tool DAQCvt to convert the binary file to the file format read easily. See DAQBench User’s Guide for the usage of the utility. If you want to handle the data by yourself, please refer to Appendix Data File Format for the file structure.

Note

In VC++, FileName is a VARIANT of VT_BSTR.

StartCounter0 Method

Syntax

Function *object*.**StartCounter0** (*CtrMode As Integer, CtrValue As Variant, BinBcd As Integer*) As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

CtrMode As Integer

0: Toggle output from low to high on terminal count

1: Programmable one-shot

2: Rate generator

3: Square wave rate generator

4: Software-triggered strobe

5: Hardware-triggered strobe

CtrValue as Variant

Set the start value to the indicated counter.

binbcd As Integer

0: 16-bit binary counter, 1: 4-decade BCD counter.

Remarks

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You can start the indicated counter to operate in the specified mode.

Note

In VC++, *CtrValue* is a VARIANT of VT_I4**.**

StopContAI Method

Syntax

Function *object*.**StopContAI** () As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

None

Remarks

You can use this method to stop continuous analog input.

StopCounter0 Method

Syntax

Function *object*.**StopCounter0**(*State As Integer*) As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

State As Integer

The logic state to which the timer counter0 is to be stopped, number: 0 or 1.

Remarks

You can stop the timer counter0 and set the specified state.

WriteDOPort Method

Syntax

Function *object***.WriteDOPort (***value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

value as Variant

16-bit data that will be written to the digital output port.

Remarks

Users can write data to the PCI-9112 digital output port.

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Note

In VC++, *value* is a VARIANT of VT_I4**.**

WriteSingleAO Method

Syntax

Function *object***.WriteSingleAO (***channel As Integer, range As integer***,** *value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

channel As Integer

Analog output channel number 0 ~ 1.

range As Integer

Range of analog output.

Value	Description
0	0 ~ 5V
1	0 ~ 10V

value As Variant

Sets one value to writing to analog output of PCI-9112 card, the range will depend on *range* parameter.

Remarks

Users can write data to analog output channel of PCI-9112 card. The range value must be same with the D/A jumper setting of internal reference at PCI-9112 card.

Note

In VC++, *value* is a VARIANT of VT_R8**.**

WriteSingleAOBinary Method

Syntax

Function *object***.WriteSingleAOBinary (***channel As Integer***,** *value As Integer***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

channel As Integer

Analog output channel number 0 ~ 1.

value As Integer

Sets the binary value to writing to analog output of PCI-9112 card, the range is between 0 and 4095.

Remarks

Users can write binary data to analog output channel of PCI-9112 card.

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Events

AiComplete Event

Syntax

sub *ControlName*_**AiComplete(** *ScaledData as Variant, BinaryCodes As Variant* **)**

Arguments

ScaledData as Variant

The analog input data array that have been translated to the engineering data (voltage) according to AIRange property.

BinaryCodes As Variant

The analog input data array with digital format.

Remarks

This event occurs when continuous analog input function is completed.

Whether *ScaledData* or *BinaryCodes* contains data depends on *ReturnType* property setting.

Although the auto-scan is in descending order, the data in ScaledData and BinaryData have been re-ordered to ascending order.

"*BinaryCodes with channel*" format:

Range 0 to +65535. The least significant 4 bits are channel number.

"*BinaryCodes without channel*" format:

Range 0 to +4095.

Note

In VC++, *ScaledData* is a VARIANT of VT_ARRAY | VT_R4, *BinaryCodes* is a VARIANT of VT_ARRAY | VT_I4 (with channel) or VT_ARRAY | VT_I2 (without channel).

AiHalfReady Event

Syntax

sub *ControlName*_**AiHalfReady(** *ScaledData as Variant, BinaryCodes As Variant* **)**

Arguments

ScaledData as Variant

The analog input data array that have been translated to the engineering data (voltage) according to AIRange property.

BinaryCodes As Variant

The analog input data array with digital format.

Remarks

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This event occurs when one half-buffer of the circular buffer is full at continuous analog input operation.

Whether *ScaledData* or *BinaryCodes* contains data depends on *ReturnType* property setting.

Although the auto-scan is in descending order, the data in ScaledData and BinaryData have been re-ordered to ascending order.

"*BinaryCodes with channel*" format:

Range 0 to +65535. The least significant 4 bits are channel number.

"*BinaryCodes without channel*" format:

Range 0 to +4095.

Note

In VC++, *ScaledData* is a VARIANT of VT_ARRAY | VT_R4, *BinaryCodes* is a VARIANT of VT_ARRAY | VT_I4 (with channel) or VT_ARRAY | VT_I2 (without channel).

DAQError Event

Syntax

sub *ControlName*_**DAQError (** *ErrString As String* **)**

Arguments

ErrString As String

The string of error reason

Remarks

This event will occur when some error occur in control

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Pci9113 ActiveX Control

The PCI-9113 is a PCI-bus multi-function data acquisition card. The Pci9113 ActiveX control is a software component that provides the interface for users to control PCI-9113 card. The properties and methods allow users to perform analog I/O and digital I/O.

Properties

DeviceName Property

Returns/sets a string that indicates the device name of a PCI-9113 card that was defined in NuDAQCfg Utility.

Syntax

object.**DeviceName** [= string]

Remarks

The device name of NuDAQ cards must be defined in NuDAQCfg Utility. The indicated NuDAQ card by device name may be a local device or a remote device on remote machine. The device name of PCI9113 ActiveX Control must be specified to a PCI-9113 card defined in NuDAQCfg Utility.

Data Type

String

AIRange Property

Sets a range for interrupt analog input.

Syntax

object.**AIRange** [= number]

Settings

Value	Description
0	±10V
1	±5V
2	±0.5V
3	±0.05V
4	±1V
5	±0.1V
6	0~10V
7	0~1V
8	0~0.1V

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Data Type

Integer

AutoScan Property

Returns/sets a value that determines whether the analog input operate in auto scan mode or not.

Syntax

object.**AutoScan** [= boolean]

Settings

Value	Description
True	automatically scan channels to read analog data. The scan is in ascending order. For example, if Channel property set to 3, the channels scanned are 0, 1, 2, 3, 0, 1, 2, 3, …
False	only read data from the indicated channel.

Data Type

Boolean

Channel Property

Sets the selected analog input channel for interrupt data transfer.

Syntax

object.**Channel** [= number]

Settings

Channel number is from 0 to 31.

Data Type

Integer

ClockSource Property

Returns/sets a value that determines the A/D clock source.

Syntax

object.**ClockSource** [= number]

Settings

Value	Setting
0	Internal timer pacer
1	External signal trigger

Data Type

Integer

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DoubleBufferMode Property

Returns/Sets a value that determines whether it is double-buffer mode or not.

Syntax

object.**DoublebufferMode** [= boolean]

Settings

Value	Description
True	During interrupt analog input mode, the buffer is divided into two parts. When either part is full of data, it will get AiHalfReady event.
False	The buffer is single, when it is full of data, it will get AiComplete Event.

Data Type

Boolean

NumOfScan Property

Sets a value that indicates the total number of scans to acquired.

Syntax

object.**NumOfScan** [= number]

Remarks

Non-double-buffer mode

This value multiply the total number of scan channels is the total number of A/D conversions to be performed. It must be the multiple of 512.

Double-buffer-mode

This value multiply the total number of scan channels is the size (in sample) of the circular buffer. It must be the multiple of 1024.

Data Type

Long

OpenMode Property

Returns/sets a value that determines the mode of opening device .

Syntax

object.**OpenMode** [= number]

Settings

Value	Description
0	Automatically open device when the control was created
1	Don't open device when the control was created. Must call the Open method to open device. (Manual)

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Data Type

Integer.

ReturnType Property

Returns/sets a value that determines the return data type of analog input when AiComplete or AiHalfReady event would occur.

Syntax

object.**ReturnType** [= number]

Settings

Value	Description
0	Scaled data only
1	Binary codes with channel only
2	Binary codes without channel only
3	Scaled data and binary codes with channel
4	Scaled data and binary codes without channel
5	No data return

Data Type

Integer

ScanRate Property

Returns/sets a value that determines the scan rate (scans per second) of continuous analog input.

Syntax

object.**ScanRate** [= number]

Settings

The range of (ScanRate * total number of scan channels) must be between 0 and 60KHz.

Remarks

This property is used only when the ClockSource property os set to Internal timer pacer.

Data Type

Double

StreamToFile Property

Returns/sets a value that determines if the control is enabled the function of streaming data to disk file.

Syntax

object.**StreamToFile** [= boolean]

Settings

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Value	Description
False	Disable the function of streaming data to disk file
True	Enable the function of streaming data to disk file

Data Type

Boolean

Methods

CheckContAI Method

Syntax

Function *object*.**CheckContAI(***AccessCount as long, stop as Integer***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

AccessCount as long

Number of analog input data that has been transferred.

stop as Integer

Current state: 1 = stop, 0 = running

Remarks

You can request DMA analog input status.

Open Method

Syntax

Function *object*.**Open (***[ErrMsgBox As Variant]***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

[ErrMsgBox As Variant]

It is optional and boolean type. Default value is False

True, It will popup error message dialog box when the opening device is failed.

False, It will fire DAQError event instead of popping up dialog when the opening device is failed.

Remarks

This method will be use when the OpenMode property is Manual.

Note

In VC++, *ErrMsgBox* is a VARIANT of VT_I2**.**

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ReadCounter0 Method

Syntax

Function *object*.**ReadCounter0 (***value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

value As Variant

Returns the current counter value from PCI-9112 card.

Remarks

You can read the value from Timer Counter #0.

Note

In VC++, *value* is a VARIANT of VT_I4**.**

ReadSingleAI Method

Syntax

Function object.**ReadSingleAI** (*channel As Integer, range As Integer, value As Variant*) As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

channel As Integer

Analog input channel number 0 ~ 31.

range As Integer

Range of analog input.

Value	Description
0	±10V
1	±5V
2	±0.5V
3	±0.05V
4	±1V
5	±0.1V
6	0~10V
7	0~1V
8	0~0.1V

value As Variant

The analog data read from analog input channel (already scaled to voltage).

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Remarks

You can read one data from one analog input channel.

Note

In VC++, *ErrMsgBox* is a VARIANT of VT_R8**.**

StartContAI Method

Syntax

Function object.**StartContAI** (**(***[FileName as Variant]*) As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

[FileName as String]

It is optional and String type. Default value is NULL

FileName specified the file name of streaming data to disk.

Remarks

You can use this method to start the continuous analog input function of PCI-9113 card. If the StreamToFile property is True then the data will be written to the file specified by FileName. Otherwise, the FileName parameter will be ignored.

The data file is written in binary format, with the lower byte first (little endian). Data type is “Binary codes with channel” (4 bytes). DAQBench provides a convenient tool DAQCvt to convert the binary file to the file format read easily. See DAQBench User’s Guide for the usage of the utility. If you want to handle the data by yourself, please refer to Appendix Data File Format for the file structure.

Note

In VC++, FileName is a VARIANT of VT_BSTR.

StartCounter0 Method

Syntax

Function object.**StartCounter0**(*CtrMode As Integer, CtrValue As Variant, BinBcd As Integer*) As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

CtrMode As Integer

0: Toggle output from low to high on terminal count

1: Programmable one-shot

2: Rate generator

3: Square wave rate generator

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4: Software-triggered strobe

5: Hardware-triggered strobe

CtrValue as Variant

Set the start value to the indicated counter.

binbcd As Integer

0: 16-bit binary counter, 1: 4-decade BCD counter.

Remarks

You can start the timer counter0 to operate in the specified mode.

Note

In VC++, *CtrValue* is a VARIANT of VT_I4**.**

StopContAI Method

Syntax

Function object.**StopContAI** () As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

None

Remarks

You can use this method to stop DMA analog input.

StopCounter0 Method

Syntax

Function object.**StopCounter0**(*State As Integer*) As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

State As Integer

The logic state to which the timer counter0 is to be stopped, number: 0 or 1.

Remarks

You can stop the timer counter0 and set the specified state.

Events

AiComplete Event

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Syntax

sub *ControlName*_**AiComplete(** *ScaledData as Variant, BinaryCodes As Variant* **)**

Arguments

ScaledData as Variant

The analog input data array that have been translated to the engineering data (voltage) according to AIRange property.

BinaryCodes As Variant

The analog input data array with digital format.

Remarks

This event occurs when continuous analog input function is completed.

Whether *ScaledData* or *BinaryCodes* contains data depends on *ReturnType* property setting.

"*BinaryCodes with channel*" format:

B31… B21 C4 C3 C2 C1 C0 B15 … B12 D11 D10 ... D1 D0

where D11 D10 ... D0 : A/D converted data (range 0 to +4095)

C4 C3 C2 C1 C0 : converted channel no.

B31 ~ B21 & B15 ~ B12: don't care

"*BinaryCodes without channel*" format:

Range 0 to +4095.

Note

In VC++, *ScaledData* is a VARIANT of VT_ARRAY | VT_R4, *BinaryCodes* is a VARIANT of VT_ARRAY | VT_I4 (with channel) or VT_ARRAY | VT_I2 (without channel).

AiHalfReady Event

Syntax

sub *ControlName*_**AiHalfReady(** *ScaledData as Variant, BinaryCodes As Variant* **)**

Arguments

ScaledData as Variant

The analog input data array that have been translated to the engineering data (voltage) according to AIRange property.

BinaryCodes As Variant

The analog input data array with digital format.

Remarks

This event occurs when one half-buffer of the circular buffer is full at continuous analog input operation.

Whether *ScaledData* or *BinaryCodes* contains data depends on *ReturnType* property setting.

"*BinaryCodes with channel*" format:

B31… B21 C4 C3 C2 C1 C0 B15 … B12 D11 D10 ... D1 D0

where D11 D10 ... D0 : A/D converted data (range 0 to +4095)

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C4 C3 C2 C1 C0 : converted channel no.

B31 ~ B21 & B15 ~ B12: don't care

"*BinaryCodes without channel*" format:

Range 0 to +4095.

Note

In VC++, *ScaledData* is a VARIANT of VT_ARRAY | VT_R4, *BinaryCodes* is a VARIANT of VT_ARRAY | VT_I4 (with channel) or VT_ARRAY | VT_I2 (without channel).

DAQError Event

Syntax

sub *ControlName*_**DAQError (** *ErrString As String* **)**

Arguments

ErrString As String

The string of error reason

Remarks

This event will occur when some error occur in control

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Pci9114 ActiveX Control

The PCI-9114 is a PCI-bus multi-function data acquisition card. The Pci9114 ActiveX control is a software component that provides the interface for users to control PCI-9114 card. The properties and methods allow users to perform analog I/O and digital I/O.

Properties

DeviceName Property

Returns/sets a string that indicates the device name of a PCI-9114 card that was defined in NuDAQCfg Utility.

Syntax

object.**DeviceName** [= string]

Remarks

The device name of NuDAQ cards must be defined in NuDAQCfg Utility. The indicated NuDAQ card by device name may be a local device or a remote device on remote machine. The device name of PCI9114 ActiveX Control must be specified to a PCI-9114 card defined in NuDAQCfg Utility.

Data Type

String

AIRange Property

Sets a range for interrupt analog input.

Syntax

object.**AIRange** [= number]

Settings

PCI-9114HG:

Value	Description
0	±10V
1	±1V
2	±100mV
3	±10mV

PCI-9114DG:

Value	Description
0	±10V
1	±5V

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2	±2.5V
3	±1.25V

Data Type

Integer

AutoScan Property

Returns/sets a value that determines whether the analog input operate in auto scan mode or not.

Syntax

object.**AutoScan** [= boolean]

Settings

Value	Description
True	automatically scan channels to read analog data. The scan is in ascending order. For example, if Channel property set to 3, the channels scanned are 0, 1, 2, 3, 0, 1, 2, 3, …
False	only read data from the indicated channel.

Data Type

Boolean

CardType Property

Returns/sets a value that indicates the card type for programming Pci9114 ActiveX control.

Syntax

object.**CardType** [= number]

Settings

Number	Card Type	Analog input range
1	PCI-9114DG	±10V, ±5V, ±2.5V, ±1.25V
2	PCI-9114 HG	±10V, ±1V, ±100mV, ±10mV

Remarks

This property will be automatically set value when the device name be specified and the device information be retrieved successfully.

Data Type

Integer

Channel Property

Sets the selected analog input channel for continuous analog input.

Syntax

object.**Channel** [= number]

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Settings

Channel number is from 0 to 31.

Data Type

Integer

ClockSource Property

Returns/sets a value that determines the A/D clock source.

Syntax

object.**ClockSource** [= number]

Settings

Value	Setting
0	Internal timer pacer
1	External signal trigger

Data Type

Integer

DoubleBufferMode Property

Returns/Sets a value that determines whether it is double-buffer mode or not.

Syntax

object.**DoublebufferMode** [= boolean]

Settings

Value	Description
True	During interrupt analog input mode, the buffer is divided into two parts. When either part is full of data, it will get AiHalfReady event.
False	The buffer is single, when it is full of data, it will get AiComplete Event.

Data Type

Boolean

NumOfScan Property

Sets a value that indicates the total number of scans to acquired.

Syntax

object.**NumOfScan** [= number]

Remarks

Non-double-buffer mode

This value multiply the total number of scan channels is the total number of A/D conversions to be performed.

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It must be the multiple of 512.

Double-buffer-mode

This value multiply the total number of scan channels is the size (in sample) of the circular buffer. It must be the multiple of 1024.

Data Type

Long

OpenMode Property

Returns/sets a value that determines the mode of opening device .

Syntax

object.**OpenMode** [= number]

Settings

Value	Description
0	Automatically open device when the control was created
1	Don't open device when the control was created. Must call the Open method to open device. (Manual)

Data Type

Integer

ReturnType Property

Returns/sets a value that determines the return data type of analog input when AiComplete or AiHalfReady event would occur.

Syntax

object.**ReturnType** [= number]

Settings

Value	Description
0	Scaled data only
1	Binary codes with channel only
2	Binary codes without channel only
3	Scaled data and binary codes with channel
4	Scaled data and binary codes without channel
5	No data return

Data Type

Integer

ScanRate Property

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Returns/sets a value that determines the scan rate (scans per second) of continuous analog input.

Syntax

object.**ScanRate** [= number]

Settings

The range of (ScanRate * total number of scan channels) must be between 0 and 100KHz.

Remarks

This property is used only when the ClockSource property is set to Internal timer pacer.

Data Type

Double

StreamToFile Property

Returns/sets a value that determines if the control is enabled the function of streaming data to disk file.

Syntax

object.**StreamToFile** [= boolean]

Settings

Value	Description
False	Disable the function of streaming data to disk file
True	Enable the function of streaming data to disk file

Data Type

Boolean

Methods

CheckContAI Method

Syntax

Function *object*.**CheckContAI(***AccessCount as long, stop as Integer***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

AccessCount as long

Number of analog input data that has been transferred.

stop as Integer

Current state: 1 = stop, 0 = running

Remarks

You can request DMA analog input status.

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Open Method

Syntax

Function *object*.**Open (***[ErrMsgBox As Variant]***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

[ErrMsgBox As Variant]

It is optional and boolean type. Default value is False

True, It will popup error message dialog box when the opening device is failed.

False, It will fire DAQError event instead of popping up dialog when the opening device is failed.

Remarks

This method will be use when the OpenMode property is Manual.

Note

In VC++, *ErrMsgBox* is a VARIANT of VT_I2**.**

ReadCounter0 Method

Syntax

Function *object*.**ReadCounter0 (***value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

value As Variant

Returns the current counter value from PCI-9114 card.

Remarks

You can read the value from Timer Counter #0.

Note

In VC++, *value* is a VARIANT of VT_I4**.**

ReadDILine Method

Syntax

Function *object*.**ReadDILine (***line As Integer, value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

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line As Integer

Selects one line number from the indicated port: from 0 to 15 (16-bit port).

value As Variant

Returns the data input from PCI-9114 card.

Remarks

Users can read data from the indicated digital input line of PCI-9114 card.

Note

In VC++, *value* is a VARIANT of VT_UI1**.**

ReadDIPort Method

Syntax

Function object.**ReadDIPort** (*value As Variant*) As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

value As Variant

Sets one value buffer for retrieving 16-bit input data from PCI-9114 card.

Remarks

Users can read 16-bit digital input data from PCI-9114 card.

Note

In VC++, *value* is a VARIANT of VT_I4**.**

ReadSingleAI Method

Syntax

Function object.**ReadSingleAI** (*channel As Integer, range As Integer, value As Variant*) As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

channel As Integer

Analog input channel number 0 ~ 31.

range As Integer

Range of analog input.

PCI-9114HG:

Value	Description
0	±10V
1	±1V

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2	±100mV
3	±10mV

PCI-9114DG:

Value	Description
0	±10V
1	±5V
2	±2.5V
3	±1.25V

value As Variant

The analog data read from analog input channel (already scaled to voltage).

Remarks

You can read one data from one analog input channel.

Note

In VC++, *value* is a VARIANT of VT_R8**.**

StartContAI Method

Syntax

Function object.**StartContAI (***[FileName as Variant]*) As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

[FileName as String]

It is optional and String type. Default value is NULL

FileName specified the file name of streaming data to disk.

Remarks

You can use this method to start the continuous analog input function of PCI-9114 card. If the StreamToFile property is True then the data will be wirrer to the file specified by FileName. Otherwise, the FileName parameter will be ignored.

The data file is written in binary format, with the lower byte first (little endian). Data type is “Binary codes with channel” (4 bytes). DAQBench provides a convenient tool DAQCvt to convert the binary file to the file format read easily. See DAQBench User’s Guide for the usage of the utility. If you want to handle the data by yourself, please refer to Appendix Data File Format for the file structure.

Note

In VC++, FileName is a VARIANT of VT_BSTR.

StartCounter0 Method

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Syntax

Function object.**StartCounter0**(*CtrMode As Integer, CtrValue As Variant, BinBcd As Integer*) As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

CtrMode As Integer

0: Toggle output from low to high on terminal count

1: Programmable one-shot

2: Rate generator

3: Square wave rate generator

4: Software-triggered strobe

5: Hardware-triggered strobe

CtrValue as Variant

Set the start value to the indicated counter.

binbcd As Integer

0: 16-bit binary counter, 1: 4-decade BCD counter.

Remarks

You can start the timer counter0 to operate in the specified mode.

Note

In VC++, *CtrValue* is a VARIANT of VT_I4**.**

StopContAI Method

Syntax

Function object.**StopContAI** () As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

None

Remarks

You can use this method to stop continuous analog input.

StopCounter0 Method

Syntax

Function object.**StopCounter0**(*State As Integer*) As Boolean

Return Value

True if the function is successful; otherwise False.

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Arguments

State As Integer

The logic state to which the timer counter0 is to be stopped, number: 0 or 1.

Remarks

You can stop the timer counter0 and set the specified state.

WriteDOPort Method

Syntax

Function *object*.**WriteDOPort (***value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

value as Variant

16-bit data that will be written to the digital output port.

Remarks

Users can write data to the PCI-9114 digital output port.

Note

In VC++, *value* is a VARIANT of VT_I4**.**

Events

AiComplete Event

Syntax

sub *ControlName*_**AiComplete(** *ScaledData as Variant, BinaryCodes As Variant* **)**

Arguments

ScaledData as Variant

The analog input data array that have been translated to the engineering data (voltage) according to AIRange property.

BinaryCodes As Variant

The analog input data array with digital format.

Remarks

This event occurs when continuous analog input function is completed.

Whether *ScaledData* or *BinaryCodes* contains data depends on *ReturnType* property setting.

"*BinaryCodes with channel*" format:

B31… B21 C4 C3 C2 C1 C0 D15 D14... D1 D0

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where D15 D14... D1 D0 : A/D converted data (signed, range -32768 to +32767)

C4 C3 C2 C1 C0 : converted channel no.

B31 ~ B21: don't care

"*BinaryCodes without channel*" format:

Range -32768 to +32767.

Note

In VC++, *ScaledData* is a VARIANT of VT_ARRAY | VT_R4, *BinaryCodes* is a VARIANT of VT_ARRAY | VT_I4 (with channel) or VT_ARRAY | VT_I2 (without channel).

AiHalfReady Event

Syntax

sub *ControlName*_**AiHalfReady(** *ScaledData as Variant, BinaryCodes As Variant* **)**

Arguments

ScaledData as Variant

The analog input data array that have been translated to the engineering data (voltage) according to AIRange property.

BinaryCodes As Variant

The analog input data array with digital format.

Remarks

This event occurs when one half-buffer of the circular buffer is full at continuous analog input operation.

Whether *ScaledData* or *BinaryCodes* contains data depends on *ReturnType* property setting.

"*BinaryCodes with channel*" format:

B31… B21 C4 C3 C2 C1 C0 D15 D14... D1 D0

where D15 D14... D1 D0 : A/D converted data (signed, range -32768 to +32767)

C4 C3 C2 C1 C0 : converted channel no.

B31 ~ B21: don't care

"*BinaryCodes without channel*" format:

Range -32768 to +32767.

Note

In VC++, *ScaledData* is a VARIANT of VT_ARRAY | VT_R4, *BinaryCodes* is a VARIANT of VT_ARRAY | VT_I4 (with channel) or VT_ARRAY | VT_I2 (without channel).

DAQError Event

Syntax

sub *ControlName*_**DAQError (** *ErrString As String* **)**

Arguments

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ErrString As String

The string of error reason

Remarks

This event will occur when some error occur in control

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Pci9116 ActiveX Control

The cPCI-9116 is a CompactPCI multi-function data acquisition card. The Pci9116 ActiveX control is a software component that provides the interface for users to control cPCI-9116 card. The properties and methods allow users to perform analog I/O and digital I/O.

Properties

DeviceName Property

Returns/sets a string that indicates the device name of a PCI-9116 card that is defined in NuDAQCfg Utility.

Syntax

*object***.DeviceName** [= string]

Remarks

The device name of NuDAQ cards must be defined in NuDAQCfg Utility. The indicated NuDAQ card by device name may be a local device or a remote device on remote machine. The device name of PCI9116 ActiveX Control must be specified to a PCI-9116 card defined in NuDAQCfg Utility.

Data Type

String

AutoMode Property

Returns/sets a value that determines whether the scan order of channel was contiguous or discrete.

Syntax

*object***.AutoMode** [= number]

Settings

Value	Description
0	Contiguous: The scan order of channels is from *StartChannel* to *EndChannel*. For example, if *StartChannel* set to 1 and *EndChannel*. Set to 3, the channels scanned are 1, 2, 3, 1, 2, 3, …
1	Discrete: The scan order of channel can be customized by users. You can customize the *DiscreteChannel* array and *DiscreteRange* array and *DiscreteNum*.

Data Type

Integer

ClockSource Property

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Returns/sets a value that determines the A/D clock source.

Syntax

object.**ClockSource** [= number]

Settings

Value	Setting
0	Internal timer pacer
1	External signal trigger

Data Type

Integer

CommonMode Property

Returns/sets a value that determines the common mode.

Syntax

object.**CommonMode** [= number]

Settings

Value	Setting
0	Local Ground of PCI-9116
1	User defined Common Mode

Data Type

Integer

DelaySource Property

Returns/sets a value that determines delay source.

Syntax

object.**CommonMode** [= number]

Settings

Value	Setting
0	Sample Interval
1	Internal time base

Data Type

Integer

DiscreteChannel Property

Returns/sets a array value that indicates channels for discrete scanning of Pci9116 ActiveX control.

Syntax

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object.**DiscreteChannel(***index As Integer***)** [= number]

Parameter

index As Integer

the index of Discrete channel array

Settings

Channel number is from 0 to 63.

Data Type

Integer

DiscreteRange Property

Returns/sets a array value that indicates ranges of channel for discrete scanning of Pci9116 ActiveX control.

Syntax

object.**DiscreteRange(***index As Integer***)** [= number]

Parameter

index As Integer

the index of Discrete range array

Settings

Polarity is Bipolar

Value	Description
0	±5V
1	±2.5V
2	±1.25V
3	±0.625V

Polarity is Unipolar

Value	Description
0	0~10V
1	0~5V
2	0~2.5V
3	0~1.25V

Data Type

Integer

DiscreteNum Property

Returns/sets a value that indicates the number of Discrete channel array.

Syntax

object.**DiscreteNum** [= number]

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Settings

Number of Discrete channel array from 1 to 512

Data Type

Integer

DoubleBufferMode Property

Returns/Sets a value that determines whether it is double-buffer mode or not.

Syntax

object.**DoublebufferMode** [= boolean]

Settings

Value	Description
True	During interrupt analog input mode, the buffer is divided into two parts. When either part is full of data, it will get AiHalfReady event.
False	The buffer is single, when it is full of data, it will get AiComplete Event.

Data Type

Boolean

EndChannel Property

Returns/sets a value that indicates end channel of contiguous scanning of Pci9116 ActiveX control.

Syntax

object.**EndChannel** [= number]

Settings

channel number is from 0 to 63.

Data Type

Integer

GateSource Property

Returns/sets a value that determines the counter gate source.

Syntax

object.**GateSource** [= number]

Settings

Value	Setting
0	gate is controlled by software
1	gate is controlled by GP_TC_GATE pin

Data Type

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Integer

GPTCEnable Property

Enabled/Disables GPTC(general purpose time/counter).

Syntax

object.**GPTCMode** [= boolean]

Settings

Value	Setting
True	Enables GPTC
False	Disables GPTC

Data Type

Boolean

GPTCMode Property

Returns/sets a value that determines GPTC(general purpose time/counter) mode.

Syntax

object.**GPTCMode** [= number]

Settings

Value	Setting
0	General counter
1	Generation of pulse

Data Type

Integer

GPTCSource Property

Returns/sets a value that determines GPTC(general purpose time/counter) source.

Syntax

object.**GPTCSource** [= number]

Settings

Value	Setting
0	internal time base
1	external time base from GP_TC_CLK pin

Data Type

Integer

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InputMode Property

Returns/sets a value that determines the mode of analog input.

Syntax

object.**InputMode** [= number]

Settings

Value	Description
0	Single ended
1	Differential

Data Type

Integer

NumOfScan Property

Sets a value that indicates the total number of scans to acquired.

Syntax

object.**NumOfScan** [= number]

Remarks

Non-double-buffer mode

This value multiply the total number of scan channels is the total number of A/D conversions to be performed. It must be the multiple of 2.

Double-buffer-mode

This value multiply the total number of scan channels is the size (in sample) of the circular buffer. It must be the multiple of 4.

Data Type

Long

MCount Property

The counter value of MCounter . This argument is only valid for Pre-trigger and Middle trigger mode

Syntax

object.**MCount** [= number]

Settings

The value range is 0~65535.

Data Type

Long

MCounterEnable Property

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Enables/Disables MCounter.

Syntax

object.**MCounter** [= boolean]

Settings

Value	Setting
True	Enables Mcounter and the trigger signal is ignore before M terminal count is reached(see Mcount).
False	Disables MCounter

Data Type

Boolean

OpenMode Property

Returns/sets a value that determines the mode of opening device .

Syntax

object.**OpenMode** [= number]

Settings

Value	Description
0	Automatically open device when the control was created
1	Don't open device when the control was created. Must call the Open method to open device. (Manual)

Data Type

Integer.

Polarity Property

Returns/sets a value that determines the polarity type of analog input.

Syntax

object.**Polarity** [= number]

Settings

Value	Description
0	Bipolar
1	Unipolar

Remarks

Polarity is Bipolar:

Input range is ±5V, ±2.5V, ±1.25V, ±0.625V

Polarity is Unipolar:

Input range is 0~10V, 0~5V, 0~2.5V, 0~1.25V

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Data Type

Integer

PostCount Property

Returns/sets a value that determines the number of sample data that will be acquired after the trigger event happens.

Syntax

object.**PostCount** [= number]

Settings

The value range is 0~65535.

Data Type

Long

Range Property

Sets a range for interrupt analog input at contiguous scanning of Pci9116.

Syntax

object.**Range** [= number]

Settings

Polarity is Bipolar

Value	Description
0	±5V
1	±2.5V
2	±1.25V
3	±0.625V

Polarity is Unipolar

Value	Description
0	0~10V
1	0~5V
2	0~2.5V
3	0~1.25V

Data Type

Integer

RetrigCount Property

The accepted trigger times in an acquisition. This argument is only valid for Delay trigger and Post trigger

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mode.

Syntax

object.**RetrigCount** [= number]

Settings

The value range is 0~65535.

Data Type

Long

RetrigEnable Property

Returns/Sets re-trigger.

Syntax

object.**RetrigEnable** [= boolean]

Settings

Value	Setting
True	Enables re-trigger
False	Disables re-trigger

Data Type

Boolean

ReturnType Property

Returns/sets a value that determines the return data type of analog input when AiComplete or AiHalfReady event would occur.

Syntax

object.**ReturnType** [= number]

Settings

Value	Description
0	Scaled data only
1	Binary codes only
2	Scaled data and binary codes
3	No data return

Data Type

Integer

SampleRate Property

Returns/sets a value that determines the sample rate (the frequency of each A/D conversion within a scan

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sequence) of contiguous analog input

Syntax

object.**SampleRate** [= number]

Settings

The range is between 384 and 200KHz.

Remarks

This property is used only when the ClockSource property is set to Internal timer pacer.

Data Type

Double

ScanRate Property

Returns/sets a value that determines the scan rate (scans per second) of contiguous analog input

Syntax

object.**ScanRate** [= number]

Settings

The range of (ScanRate * total number of scan channels) is between 2 and 200KHz.

Remarks

This property is used only when the ClockSource property is set to Internal timer pacer.

Data Type

Double

StartChannel Property

Returns/sets a value that indicates start channel of contiguous scanning of Pci9116 ActiveX control.

Syntax

object.**StartChannel** [= number]

Settings

channel number is from 0 to 63.

Data Type

Integer

StreamToFile Property

Returns/sets a value that determines if the control is enabled the function of streaming data to disk file.

Syntax

object.**StreamToFile** [= boolean]

Settings

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Value	Description
False	Disable the function of streaming data to disk file
True	Enable the function of streaming data to disk file

Data Type

Boolean

TriggerMode Property

Returns/sets a value that determines trigger mode of analog input

Syntax

object.**TriggerMode** [= number]

Settings

Value	Description
0	Disable
1	Post trigger
2	Delay trigger
3	Pre trigger
4	Middle trigger

Remarks

Use post trigger acquisition in application where you want to collect data after the start condition.

Use delay trigger acquisition in application where you want to collect data after the start condition plus specified time.

Use pre trigger acquisition in application where you want to collect data before the start condition.

Use middle trigger acquisition in application where you want to collect data before and after a specific trigger event.

Data Type

Integer

TriggerPolarity Property

Returns/sets a value that determines the active type of digital trigger.

Syntax

object.**TriggerPolarity** [= number]

Settings

Value	Description
0	Positive
1	Negative

Remarks

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TriggerPolarity is valid only when TriggerMode is not disable(software trigger).

Data Type

Integer

UpdownSource Property

Returns/sets a value that determines the counter up-down source.

Syntax

object.**UpdownSource** [= number]

Settings

Value	Setting
0	Up/Down controlled by software
1	Up/Down controlled by GP_TC_UPDN pin

Data Type

Integer

UpdownControl Property

Returns/sets a value that determines the counter up-down control source.

Syntax

object.**UpdownControl** [= number]

Settings

Value	Setting
0	counting direction is down
1	counting direction is up

Data Type

Integer

Methods

CheckContAI Method

Syntax

Function *object*.**CheckContAI(***AccessCount as long, stop as Integer***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

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AccessCount as long

Number of analog input data that has been transferred.

stop as Integer

Current state: 1 = stop, 0 = running

Remarks

You can request DMA analog input status.

Open Method

Syntax

Function *object*.**Open (***[ErrMsgBox As Variant]***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

[ErrMsgBox As Variant]

It is optional and boolean type. Default value is False

True, It will popup error message dialog box when the opening device is failed.

False, It will fire DAQError event instead of popping up dialog when the opening device is failed.

Remarks

This method will be use when the OpenMode property is Manual.

Note

In VC++, *ErrMsgBox* is a VARIANT of VT_I2**.**

ReadDILine Method

Syntax

Function *object*.**ReadDILine (***line As Integer, value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

line As Integer

Selects one line number from the indicated port: from 0 to 7 (8-bit port).

value As Variant

Returns the data input from PCI-9116 card.

Remarks

Users can read data from the indicated digital input line of PCI-9116 card.

Note

In VC++, *value* is a VARIANT of VT_UI1**.**

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ReadDIPort Method

Syntax

Function object.**ReadDIPort** (*value As Variant*) As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

value As Variant

Sets one value buffer for retrieving 8-bit input data from PCI-9116 card.

Remarks

Users can read 8-bit digital input data from PCI-9116 card.

Note

In VC++, *value* is a VARIANT of VT_I4**.**

ReadSingleAI Method

Syntax

Function object.**ReadSingleAI** (*channel As Integer, range As Integer, value As Variant*) As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

channel As Integer

Analog input channel number 0 ~ 63.

range As Integer

Range of analog input.

Polarity is Bipolar

Value	Description
0	±5V
1	±2.5V
2	±1.25V
3	±0.625V

Polarity is Unipolar

Value	Description
0	0~10V
1	0~5V
2	0~2.5V
3	0~1.25V

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value As Variant

The analog data read from analog input channel (already scaled to voltage).

Remarks

You can read one data from one analog input channel.

Note

In VC++, *value* is a VARIANT of VT_R8**.**

StartContAI Method

Syntax

Function object.**StartContAI** (*[FileName as Variant]*) As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

[FileName as String]

It is optional and String type. Default value is NULL

FileName specified the file name of streaming data to disk.

Remarks

You can use this method to start the continuous analog input function of PCI-9116 card. If the StreamToFile property is True then the data will be written to the file specified by FileName. Otherwise, the FileName parameter will be ignored.

The data file is written in binary format, with the lower byte first (little endian). Data type is “Binary codes with channel”. DAQBench provides a convenient tool DAQCvt to convert the binary file to the file format read easily. See DAQBench User’s Guide for the usage of the utility. If you want to handle the data by yourself, please refer to Appendix Data File Format for the file structure.

Note

In VC++, FileName is a VARIANT of VT_BSTR.

StopContAI Method

Syntax

Function object.**StopContAI** () As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

None

Remarks

You can use this method to stop DMA analog input.

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WriteDOLine Method

Syntax

Function *object*.**WriteDOLine(***line As Integer, value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

line As Integer

Selects one line number from the indicated port from 0 to 7.

value As Variant

Sets 0 or 1 to the indicated line.

Note

In VC++, *value* is a VARIANT of VT_I4.

WriteDOPort Method

Syntax

Function *object***.WriteDOPort (***value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

value as Variant

8-bit data that will be written to the digital output port.

Remarks

Users can write data to the PCI-9116 digital output port.

Note

In VC++, *value* is a VARIANT of VT_I4**.**

ReadBackDOLine Method

Reads back data from the indicated digital output line of the digital output port.

Syntax

Function *object*.**ReadBackDOLine(***line As Integer, value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

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Arguments

line As Integer

Selects one line number from the indicated port from 0 to 7.

value As Variant

Data that is read back from the indicated line.

Note

In VC++, *value* is a VARIANT of VT_UI1.

ReadBackDOPort Method

Reads back data from the digital output port.

Syntax

Function *object*.**ReadBackDOPort (***value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

value As Variant

Data that is read back from the port.

Note

In VC++, *value* is a VARIANT of VT_I4.

ReadGCTR0 Method

Reads the GCTR (global counter) value.

Syntax

Function *object*.**ReadGCTR0(***value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

value As Variant

the counter value of the specified general-purpose timer/counter.

Range: 0 through 65536

Note

In VC++, *value* is a VARIANT of VT_I4.

StartGCTR0 Method

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Start the GCTR (global counter) value.

Syntax

Function *object*.**StartGCTR0(***value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

value As Variant

the counter value of the specified general-purpose timer/counter.

Range: 0 through 65536

Note

In VC++, *value* is a VARIANT of VT_I4.

StopGCTR0 Method

Stops the GCTR (global counter) .

Syntax

Function *object*.**StopGCTR0** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

None

Events

AiComplete Event

Syntax

sub *ControlName*_**AiComplete(** *ScaledData as Variant, BinaryCodes As Variant* **)**

Arguments

ScaledData as Variant

The analog input data array that have been translated to the engineering data (voltage) according to AIRange property.

BinaryCodes As Variant

The analog input data array with digital format.

Remarks

This event occurs when continuous analog input function is completed.

Whether *ScaledData* or *BinaryCodes* contains data depends on *ReturnType* property setting.

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"*BinaryCodes*" format:

Range -32768 to +32767.

Note

In VC++, *ScaledData* is a VARIANT of VT_ARRAY | VT_R4, *BinaryCodes* is a VARIANT of VT_ARRAY | VT_I4 (with channel) or VT_ARRAY | VT_I2 (without channel).

AiHalfReady Event

Syntax

sub *ControlName*_**AiHalfReady(** *ScaledData as Variant, BinaryCodes As Variant* **)**

Arguments

ScaledData as Variant

The analog input data array that have been translated to the engineering data (voltage) according to AIRange property.

BinaryCodes As Variant

The analog input data array with digital format.

Remarks

This event occurs when one half-buffer of the circular buffer is full at continuous analog input operation.

Whether *ScaledData* or *BinaryCodes* contains data depends on *ReturnType* property setting.

"*BinaryCodes*" format:

Range -32768 to +32767.

Note

In VC++, *ScaledData* is a VARIANT of VT_ARRAY | VT_R4, *BinaryCodes* is a VARIANT of VT_ARRAY | VT_I4 (with channel) or VT_ARRAY | VT_I2 (without channel).

DAQError Event

Syntax

sub *ControlName*_**DAQError (** *ErrString As String* **)**

Arguments

ErrString As String

The string of error reason

Remarks

This event will occur when some error occur in control

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Pci9118 ActiveX Control

The PCI-9118 is a PCI-bus multi-function data acquisition card. The Pci9118 ActiveX control is a software component that provides the interface for users to control PCI-9118 card. The properties and methods allow users to perform analog I/O and digital I/O.

Properties

DeviceName Property

Returns/sets a string that indicates the device name of a PCI-9118 card that is defined in NuDAQCfg Utility.

Syntax

*object***.DeviceName** [= string]

Remarks

The device name of NuDAQ cards must be defined in NuDAQCfg Utility. The indicated NuDAQ card by device name may be a local device or a remote device on remote machine. The device name of PCI9118 ActiveX Control must be specified to a PCI-9118 card defined in NuDAQCfg Utility.

Data Type

String

AutoMode Property

Returns/sets a value that determines whether the scan order of channel was contiguous or discrete.

Syntax

*object***.AutoMode** [= number]

Settings

Value	Description
0	Contiguous: The scan order of channels is from *StartChannel* to *EndChannel*. For example, if *StartChannel* set to 1 and *EndChannel*. Set to 3, the channels scanned are 1, 2, 3, 1, 2, 3, …
1	Discrete: The scan order of channel can be customized by users. You can customize the *DiscreteChannel* array and *DiscreteRange* array and *DiscreteNum*.

Data Type

Integer

BurstCount Property

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Returns/sets a value that determines the valid burst number when Burst Mode is Enable.

Syntax

object.**BurstCount** [= number]

Settings

The value range is 0~65535.

Data Type

Long

BurstMode Property

Returns/sets a value that determines the A/D burst mode.

Syntax

object.**BurstMode** [= number]

Settings

Value	Description
0	Disable
1	Burst
2	Burst with sample & hold

Remarks

This property is for you to accurately control the period between conversions of individual channels in a scan, and the period between conversions of the entire scan.

Data Type

Integer

CardType Property

Returns/sets a value that indicates the card type for programming Pci9118 ActiveX control.

Syntax

object.**CardType** [= number]

Settings

Number	Card Type	Resolution
1	PCI-9118DG	12-bits
2	PCI-9118HG	12-bits
3	PCI-9118HR	16-bits

Remarks

This property will be automatically set when the device name be specified and the device information be retrieved successfully.

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Data Type

Integer

ClockSource Property

Returns/sets a value that determines the A/D clock source.

Syntax

object.**ClockSource** [= number]

Settings

Value	Setting
0	Internal timer pacer
1	External signal trigger

Data Type

Integer

DiscreteChannel Property

Returns/sets a array value that indicates channels for discrete scanning of Pci9118 ActiveX control.

Syntax

object.**DiscreteChannel(***index As Integer***)** [= number]

Parameter

index As Integer

the index of Discrete channel array

Settings

Channel number is from 0 to 15.

Data Type

Integer

DiscreteRange Property

Returns/sets a array value that indicates ranges of channel for discrete scanning of Pci9118 ActiveX control.

Syntax

object.**DiscreteRange(***index As Integer***)** [= number]

Parameter

index As Integer

the index of Discrete channel array

Settings

PCI-9118DG/HR:

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Polarity is Bipolar

Value	Description
0	±5V
1	±2.5V
2	±1.25V
3	±0.625V

Polarity is Unipolar

Value	Description
0	0~10V
1	0~5V
2	0~2.5V
3	0~1.25V

PCI-9118HG:

Polarity is Bipolar

Value	Description
0	±5V
1	±0.5V
2	±0.05V
3	±0.005V

Polarity is Unipolar

Value	Description
0	0~10V
1	0~1V
2	0~0.1V
3	0~0.01V

Data Type

Integer

DiscreteNum Property

Returns/sets a value that indicates the number of Discrete channel array.

Syntax

object.**DiscreteNum** [= number]

Settings

Number of Discrete channel array from 1 to 255.

Data Type

Integer

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DoubleBufferMode Property

Returns/Sets a value that determines whether it is double-buffer mode or not.

Syntax

object.**DoublebufferMode** [= boolean]

Settings

Value	Description
True	During interrupt analog input mode, the buffer is divided into two parts. When either part is full of data, it will get AiHalfReady event.
False	The buffer is single, when it is full of data, it will get AiComplete Event.

Data Type

Boolean

EndChannel Property

Returns/sets a value that indicates end channel of contiguous scanning of Pci9118 ActiveX control.

Syntax

object.**EndChannel** [= number]

Settings

channel number is from 0 to 15.

Data Type

Boolean

ExtGate Propeerty

Returns/Sets a value that determines whether external gate is enable or disable.

Syntax

object.**ExtGate**[= boolean]

Settings

Value	Description
True	Enable **t**he function of external gate.
False	Disable **t**he function of external gate.

Remarks

Users can specify the A/D control as external gate control or software gate control.

Data Type

Boolean

ExtTriggerPolarity Property

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Returns/Sets a value that determines whether external trigger polarity is positive or negative.

Syntax

object.**ExtTriggerPolarity**[= number]

Settings

Value	Description
0	positive trigger.
1	negative trigger.

Remark

ExtTriggerPolarity is valid only when *ClockSource* is External

Data Type

Integer

InputMode Property

Returns/sets a value that determines the mode of analog input.

Syntax

object.**InputMode** [= number]

Settings

Value	Description
0	Single ended
1	Differential

Data Type

Integer

NumOfScan Property

Sets a value that indicates the total number of scans to acquired.

Syntax

object.**NumOfScan** [= number]

Remarks

Non-double-buffer mode

This value multiply the total number of scan channels is the total number of A/D conversions to be performed. It must be the multiple of 2.

Double-buffer-mode

This value multiply the total number of scan channels is the size (in sample) of the circular buffer. It must be the multiple of 4.

Data Type

Long

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OpenMode Property

Returns/sets a value that determines the mode of opening device .

Syntax

object.**OpenMode** [= number]

Settings

Value	Description
0	Automatically open device when the control was created
1	Don't open device when the control was created. Must call the Open method to open device. (Manual)

Data Type

Integer.

Polarity Property

Returns/sets a value that determines the polarity type of analog input.

Syntax

object.**Polarity** [= number]

Settings

Value	Description
0	Bipolar
1	Unipolar

Remarks

Polarity is Bipolar:

Input range of 9118DG/HR is ±5V, ±2.5V, ±1.25V, ±0.625V

Input range of 9118HG is ±5V, ±0.5V, ±0.05V, ±0.005V

Polarity is Unipolar:

Input range of 9118DG/HR is 0~10V, 0~5V, 0~2.5V, 0~1.25V

Input range of 9118HG is 0~10V, 0~1V, 0~0.1V, 0~0.01V

Data Type

Integer

PostCount Property

Returns/sets a value that determines the number of sample data that will be acquisited, after the trigger event happens.

Syntax

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object.**PostCount** [= number]

Settings

The value range is 0~65535.

Data Type

Long

Range Property

Sets a range for interrupt analog input at contiguous scanning of Pci9118.

Syntax

object.**Range** [= number]

Settings

PCI-9118DG/HR:

Polarity is Bipolar

Value	Description
0	±5V
1	±2.5V
2	±1.25V
3	±0.625V

Polarity is Unipolar

Value	Description
0	0~10V
1	0~5V
2	0~2.5V
3	0~1.25V

PCI-9118HG:

Polarity is Bipolar

Value	Description
0	±5V
1	±0.5V
2	±0.05V
3	±0.005V

Polarity is Unipolar

Value	Description
0	0~10V
1	0~1V
2	0~0.1V
3	0~0.01V

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Data Type

Integer

ReturnType Property

Returns/sets a value that determines the return data type of analog input when AiComplete or AiHalfReady event would occur.

Syntax

object.**ReturnType** [= number]

Settings

PCI-9118DG/HG

Value	Description
0	Scaled data only
1	Binary codes with channel only
2	Binary codes without channel only
3	Scaled data and binary codes with channel
4	Scaled data and binary codes without channel
5	No data return

PCI-9118HR

Value	Description
0	Scaled data only
1	Binary codes only
2	Scaled data and binary codes
3	No data return

Data Type

Integer

ScanRate Property

Returns/sets a value that determines the scan rate (scans per second) of confinuous analog input

Syntax

object.**ScanRate** [= number]

Settings

For PCI-9118DG/HG, The range of (ScanRate * total number of scan channels) is between 0 and 330KHz.

For PCI-9118HR, The range of (ScanRate * total number of scan channels) is between 0 and 100KHz.

Remarks

This property is used only when the ClockSource property is set to Internal timer pacer.

Data Type

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Double

StartChannel Property

Returns/sets a value that indicates start channel of contiguous scanning of Pci9118 ActiveX control.

Syntax

object.**StartChannel** [= number]

Settings

channel number is from 0 to 15.

Data Type

Integer

StreamToFile Property

Returns/sets a value that determines if the control is enabled the function of streaming data to disk file.

Syntax

object.**StreamToFile** [= boolean]

Settings

Value	Description
False	Disable the function of streaming data to disk file
True	Enable the function of streaming data to disk file

Data Type

Boolean

TriggerMode Property

Returns/sets a value that determines trigger mode of analog input

Syntax

object.**TriggerMode** [= number]

Settings

Value	Description
0	Disable
1	Post trigger
2	About trigger

Remarks

Use post trigger acquisition in application where you want to collect data after the start condition.

Use about trigger acquisition in application where you want to collect data before and after a specific trigger event.

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Data Type

Integer

TriggerPolarity Property

Returns/sets a value that determines the active type of digital trigger.

Syntax

object.**TriggerPolarity** [= number]

Settings

Value	Description
0	Positive
1	Negative

Remark

TriggerPolarity is valid only when TriggerMode is Post or About

Data Type

Integer

Methods

CheckContAI Method

Syntax

Function *object*.**CheckContAI(***AccessCount as long, stop as Integer***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

AccessCount as long

Number of analog input data that has been transferred.

stop as Integer

Current state: 1 = stop, 0 = running

Remarks

You can request DMA analog input status.

Open Method

Syntax

Function *object*.**Open (***[ErrMsgBox As Variant]***)** As Boolean

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Return Value

True if the function is successful; otherwise False.

Arguments

[ErrMsgBox As Variant]

It is optional and boolean type. Default value is False

True, It will popup error message dialog box when the opening device is failed.

False, It will fire DAQError event instead of popping up dialog when the opening device is failed.

Remarks

This method will be use when the OpenMode property is Manual.

Note

In VC++, *ErrMsgBox* is a VARIANT of VT_I2**.**

ReadCounter0 Method

Syntax

Function *object***.ReadCounter0 (***value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

value As Variant

Returns the current counter value from PCI-9118 card.

Remarks

You can read the value from Timer Counter #0.

Note

In VC++, *value* is a VARIANT of VT_I4**.**

ReadDILine Method

Syntax

Function *object***.ReadDILine (***line As Integer, value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

line As Integer

Selects one line number from the indicated port: from 0 to 3 (4-bit port).

value As Variant

Returns the data input from PCI-9118 card.

Remarks

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Users can read data from the indicated digital input line of PCI-9118 card.

Note

In VC++, *value* is a VARIANT of VT_UI1**.**

ReadDIPort Method

Syntax

Function object.**ReadDIPort** (*value As Variant*) As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

value As Variant

Sets one value buffer for retrieving 4-bit input data from PCI-9118 card.

Remarks

Users can read 4-bit digital input data from PCI-9118 card.

Note

In VC++, *value* is a VARIANT of VT_I4**.**

ReadSingleAI Method

Syntax

Function object.**ReadSingleAI** (*channel As Integer, range As Integer, value As Variant*) As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

channel As Integer

Analog input channel number 0 ~ 15.

range As Integer

Range of analog input.

PCI-9118DG/HR

Polarity is Bipolar

Value	Description
0	±5V
1	±2.5V
2	±1.25V
3	±0.625V

Polarity is Unipolar

Value	Description

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0	0~10V
1	0~5V
2	0~2.5V
3	0~1.25V

PCI-9118HG

Polarity is Bipolar

Value	Description
0	±5V
1	±0.5V
2	±0.05V
3	±0.005V

Polarity is Unipolar

Value	Description
0	0~10V
1	0~1V
2	0~0.1V
3	0~0.01V

value As Variant

The analog data read from analog input channel (already scaled to voltage).

Remarks

You can read one data from one analog input channel.

Note

In VC++, *value* is a VARIANT of VT_R8**.**

StartContAI Method

Syntax

Function object.**StartContAI** (*[FileName as Variant]*) As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

[FileName as String]

It is optional and String type. Default value is NULL

FileName specified the file name of streaming data to disk.

Remarks

You can use this method to start the continuous analog input function of PCI-9118 card. If the StreamToFile property is True then the data will be written to the file specified by FileName. Otherwise, the FileName parameter will be ignored.

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The data file is written in binary format, with the lower byte first (little endian). Data type is “Binary codes with channel”. DAQBench provides a convenient tool DAQCvt to convert the binary file to the file format read easily. See DAQBench User’s Guide for the usage of the utility. If you want to handle the data by yourself, please refer to Appendix Data File Format for the file structure.

Note

In VC++, FileName is a VARIANT of VT_BSTR.

StartCounter0 Method

Syntax

Function object.**StartCounter0**(*CtrMode As Integer, CtrValue As Variant, BinBcd As Integer*) As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

CtrMode As Integer

0: Toggle output from low to high on terminal count

1: Programmable one-shot

2: Rate generator

3: Square wave rate generator

4: Software-triggered strobe

5: Hardware-triggered strobe

CtrValue as Variant

Set the start value to the indicated counter.

binbcd As Integer

0: 16-bit binary counter, 1: 4-decade BCD counter.

Remarks

You can start the timer counter0 to operate in the specified mode.

Note

In VC++, *CtrValue* is a VARIANT of VT_I4**.**

StopContAI Method

Syntax

Function object.**StopContAI** () As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

None

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Remarks

You can use this method to stop DMA analog input.

StopCounter0 Method

Syntax

Function object.**StopCounter0**(*State As Integer*) As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

State As Integer

The logic state to which the timer counter0 is to be stopped, number: 0 or 1.

Remarks

You can stop the timer counter0 and set the specified state.

WriteDOPort Method

Syntax

Function *object***.WriteDOPort (***value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

value as Variant

4-bit data that will be written to the digital output port.

Remarks

Users can write data to the PCI-9118 digital output port.

Note

In VC++, *value* is a VARIANT of VT_I4**.**

WriteSingleAO Method

Syntax

Function *object***.WriteSingleAO (***channel As integer***,** *value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

channel As Integer

Channel number is 0 or 1.

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value As Variant

Sets one value to writing to analog output of PCI-9118 card, the value range is between –10V and 10V.

Remarks

Users can write data to analog output channel of PCI-9118 card.

Note

In VC++, *value* is a VARIANT of VT_R8**.**

WriteDOLine Method

Syntax

Function *object.***WriteDOLine(***line As Integer, value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

line As Integer

Selects one line number from the indicated port from 0 to 3.

value As Variant

Sets 0 or 1 to the indicated line.

Note

In VC++, *value* is a VARIANT of VT_I4.

ReadBackDOPort Method

Reads back data from the digital output port.

Syntax

Function *object.***ReadBackDOPort (***value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

value As Variant

Data that is read back from the port.

Note

In VC++, *value* is a VARIANT of VT_I4.

ReadBackDOLine Method

Reads back data from the indicated digital output line of the digital output port.

Syntax

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Function *object*.**ReadBackDOLine(***line As Integer, value As Variant***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

line As Integer

Selects one line number from the indicated port from 0 to 3.

value As Variant

Data that is read back from the indicated line.

Note

In VC++, *value* is a VARIANT of VT_UI1.

Events

AiComplete Event

Syntax

sub *ControlName*_**AiComplete(** *ScaledData as Variant, BinaryCodes As Variant* **)**

Arguments

ScaledData as Variant

The analog input data array that have been translated to the engineering data (voltage) according to AIRange property.

BinaryCodes As Variant

The analog input data array with digital format.

Remarks

This event occurs when continuous analog input function is completed.

Whether *ScaledData* or *BinaryCodes* contains data depends on *ReturnType* property setting.

PCI-9118DG/HG

"*BinaryCodes with channel*" format:

Range 0 to +65535. The least significant 4 bits are channel number.

"*BinaryCodes without channel*" format:

Range 0 to +4095.

PCI-9118HR

"*BinaryCodes*" format:

Range -32768 to +32767.

Note

In VC++, *ScaledData* is a VARIANT of VT_ARRAY | VT_R4, *BinaryCodes* is a VARIANT of VT_ARRAY | VT_I4 (with channel) or VT_ARRAY | VT_I2 (without channel).

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AiHalfReady Event

Syntax

sub *ControlName*_**AiHalfReady(** *ScaledData as Variant, BinaryCodes As Variant* **)**

Arguments

ScaledData as Variant

The analog input data array that have been translated to the engineering data (voltage) according to AIRange property.

BinaryCodes As Variant

The analog input data array with digital format.

Remarks

This event occurs when one half-buffer of the circular buffer is full at continuous analog input operation.

Whether *ScaledData* or *BinaryCodes* contains data depends on *ReturnType* property setting.

PCI-9118DG/HG

"*BinaryCodes with channel*" format:

Range 0 to +65535. The least significant 4 bits are channel number.

"*BinaryCodes without channel*" format:

Range 0 to +4095.

PCI-9118HR

"*BinaryCodes*" format:

Range -32768 to +32767.

Note

In VC++, *ScaledData* is a VARIANT of VT_ARRAY | VT_R4, *BinaryCodes* is a VARIANT of VT_ARRAY | VT_I4 (with channel) or VT_ARRAY | VT_I2 (without channel).

DAQError Event

Syntax

sub *ControlName*_**DAQError (** *ErrString As String* **)**

Arguments

ErrString As String

The string of error reason

Remarks

This event will occur when some error occur in control

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Pci9812 ActiveX Control

The PCI-9812 is a PCI-bus multi-function data acquisition card. The Pci9812 ActiveX control is a software component that provides the interface for users to control PCI-9812 card. The properties and methods allow users to perform analog I/O and digital I/O.

Properties

DeviceName Property

Returns/sets a string that indicates the device name of a PCI-9812 card that was defined in NuDAQCfg Utility.

Syntax

object.**DeviceName** [= string]

Remarks

The device name of NuDAQ cards must be defined in NuDAQCfg Utility. The indicated NuDAQ card by device name may be a local device or a remote device on remote machine. The device name of PCI9812 ActiveX Control must be specified to a PCI-9812 card defined in NuDAQCfg Utility.

Data Type

String

AIRange Property

Sets a range for interrupt analog input.

Syntax

object.**AIRange** [= number]

Settings

Value	Description
0	±1V
1	±5V

Data Type

Integer

CardType Property

Returns/sets a value that indicates the card type for programming Pci9812 ActiveX control.

Syntax

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object.**CardType** [= number]

Settings

Number	Card Type	Resolution
4	PCI-9812	12-bits
5	PCI-9810	10-bits

Remarks

This property will be automatically set value when the device name be specified and the device information be retrieved successfully.

Data Type

Integer

Channel Property

Returns/sets a value that determines the analog input channel for DMA data transfer.

Syntax

object.**Channel** [= number]

Settings

Value	Description
1	DMA analog input will only read data from channel 0.
2	DMA analog input will read data from channel 0 and channel 1. The sequence of channel scan is 0, 1, 0, 1,……
3	It is invalid.
3	DMA analog input will read data from aoo four channels. The seguence of channel scan is 0, 1, 2, 3, 0, 1, 2, 3,…...

Data Type

Integer

ClockFreq Property

Returns/sets a value that determines the clock frequence.

Syntax

object.**ClockFreq** [= number]

Settings

Value	Description
0	The frequence is smaller than PCI Bus frequency.
1	The frequence is bigger than PCI Bus frequency.

Data Type

Integer

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ClockSource Property

Returns/sets a value that determines the A/D clock source.

Syntax

object.**ClockSource** [= number]

Settings

Value	Setting
0	Internal timer pacer
1	External – Sin
2	External – Square

Remarks

If the ClockSource property is set to External Sin or External Square, the frequency divider is set to 2 by Pci9812 ActiveX control. Hence, the scan rate is: Frequency of external trigger source/2)

Data Type

Integer

DoubleBufferMode Property

Returns/Sets a value that determines whether it is double-buffer mode or not.

Syntax

object.**DoublebufferMode** [= boolean]

Settings

Value	Description
True	During interrupt analog input mode, the buffer is divided into two parts. When either part is full of data, it will get AiHalfReady event.
False	The buffer is single, when it is full of data, it will get AiComplete Event.

Data Type

Boolean

NumOfScan Property

Sets a value that indicates the total number of scans to be acquired.

Syntax

object.**NumOfScan** [= number]

Remarks

Non-double-buffer mode

This value multiply the total number of scan channels is the total number of A/D conversions to be performed.

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It must be the multiple of 2.

Double-buffer-mode

This value multiply the total number of scan channels is the size (in sample) of the circular buffer. It must be the multiple of 4.

Data Type

Long

OpenMode Property

Returns/sets a value that determines the mode of opening device .

Syntax

object.**OpenMode** [= number]

Settings

Value	Description
0	Automatically open device when the control was created
1	Don't open device when the control was created. Must call the Open method to open device. (Manual)

Data Type

Integer.

PostCount Property

Returns/sets a value that determines the number of sample data that will be acquisited, after the trigger event happens.

Syntax

object.**PostCount** [= number]

Settings

The value range is 0~65535.

Remarks

PostCount is valid only when the *TriggerMode* is Delay trigger or Middle trigger

Data Type

Integer

ReturnType Property

Returns/sets a value that determines the return data type of analog input when AiComplete or AiHalfReady event would occur.

Syntax

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object.**ReturnType** [= number]

Settings

Value	Description
0	Scaled data only
1	Binary codes with miscellaneous data
2	Binary codes without miscellaneous data
3	Scaled data and binary codes with miscellaneous data
4	Scaled data and binary codes without miscellaneous data
5	No data return

Data Type

Integer

ScanRate Property

Returns/sets a value that determines the scan rate (scans per second)of continuous analog input.

Syntax

object.**ScanRate** [= number]

Settings

The range of (ScanRate * total number of scan channels) must be between 0 and 20MHz.

Remarks

This property is used only when the ClockSource property is set to Internal timer pacer.

Data Type

Double

StreamToFile Property

Returns/sets a value that determines if the control is enabled the function of streaming data to disk file.

Syntax

object.**StreamToFile** [= boolean]

Settings

Value	Description
False	Disable the function of streaming data to disk file
True	Enable the function of streaming data to disk file

Data Type

Boolean

TriggerLevel Property

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Returns/sets a value that determines the value for the trigger level.

Syntax

object.**TriggerLevel** [= number]

Settings

The value range is 0~255.

Remarks

The trigger event occurs when the trigger signal changes from a voltage. It could be less than the trigger level to a voltage or greater than the specified trigger level.

The trigger level is set as a reference voltage for trigger event.

Data Type

Integer

TriggerMode Property

Returns/sets a value that determines trigger mode of analog input

Syntax

object.**TriggerMode** [= number]

Settings

Value	Description
0	Software Trigger
1	Post Trigger
2	Pre-Trigger
3	Delay Trigger
4	Middle Trigger

Remarks

Use post trigger acquisition in application where you want to collect data after the start condition.

Data Type

Integer

TriggerPolarity Property

Returns/sets a value that determines the active type of digital trigger.

Syntax

object.**TriggerPolarity** [= number]

Settings

Value	Description
0	Positive
1	Negative

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Remark

TriggerPolarity is valid only when TriggerMode is not Software trigger

Data Type

Integer

TriggerSource Property

Returns/sets a value that determines the trigger source for retrieving the trigger signal.

Syntax

object.**TriggerSource** [= number]

Settings

Value	Description
0	Channel 0
1	Channel 1
2	Channel 2
3	Channel 3
4	Ext-Digital

Data Type

Integer

Methods

CheckContAI Method

Syntax

Function *object*.**CheckContAI(***AccessCount as long, stop as Integer***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

AccessCount as long

Number of analog input data that has been transferred.

stop as Integer

Current state: 1 = stop, 0 = running

Remarks

You can request DMA analog input status.

Open Method

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Syntax

Function *object*.**Open (***[ErrMsgBox As Variant]***)** As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

[ErrMsgBox As Variant]

It is optional and boolean type. Default value is False

True, It will popup error message dialog box when the opening device is failed.

False, It will fire DAQError event instead of popping up dialog when the opening device is failed.

Remarks

This method will be use when the OpenMode property is Manual.

Note

In VC++, *ErrMsgBox* is a VARIANT of VT_I2**.**

StartContAI Method

Syntax

Function object.**StartContAI** (*[FileName as Variant]*) As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

[FileName as String]

It is optional and String type. Default value is NULL

FileName specified the file name of streaming data to disk.

Remarks

You can use this method to start the DMA analog input function of PCI-9812 card. If the StreamToFile property is True then the DMA data will be written to the file specified by FileName. Otherwise, the FileName parameter will be ignored.

The data file is written in binary format, with the lower byte first (little endian). Data type is “Binary codes with miscellaneous data”. DAQBench provides a convenient tool DAQCvt to convert the binary file to the file format read easily. See DAQBench User’s Guide for the usage of the utility. If you want to handle the data by yourself, please refer to Appendix Data File Format for the file structure.

Note

In VC++, FileName is a VARIANT of VT_BSTR.

StopContAI Method

Syntax

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Function object.**StopContAI** () As Boolean

Return Value

True if the function is successful; otherwise False.

Arguments

None

Remarks

You can use this method to stop DMA analog input.

Events

AiComplete Event

Syntax

sub *ControlName*_**AiComplete(** *ScaledData as Variant, BinaryCodes As Variant* **)**

Arguments

ScaledData as Variant

The analog input data array that have been translated to the engineering data (voltage) according to AIRange property.

BinaryCodes As Variant

The analog input data array with digital format.

Remarks

This event occurs when continuous analog input function is completed.

Whether *ScaledData* or *BinaryCodes* contains data depends on *ReturnType* property setting.

PCI-9812

"*BinaryCodes with miscellaneous data*" format:

Range -32768 to +32767.

bit 15~4: A/D data (-2048 to 2047)

bit 3: trigger detection flag

bit 2~0: digital input data from DI2, DI1, DI0

"*BinaryCodes without miscellaneous data*" format:

Range -2048 to +2047.

PCI-9810

"*BinaryCodes with miscellaneous data*" format:

Range -32768 to +32767.

bit 15~6: A/D data (-512 to 511)

bit 5~4: don't care

bit 3: trigger detection flag

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bit 2~0: digital input data from DI2, DI1, DI0

"*BinaryCodes without miscellaneous data*" format:

Range -512 to +511.

Note

In VC++, *ScaledData* is a VARIANT of VT_ARRAY | VT_R4, *BinaryCodes* is a VARIANT of VT_ARRAY | VT_I4 (with miscellaneous data) or VT_ARRAY | VT_I2 (without miscellaneous data).

AiHalfReady Event

Syntax

sub *ControlName*_**AiHalfReady(** *ScaledData as Variant, BinaryCodes As Variant* **)**

Arguments

ScaledData as Variant

The analog input data array that have been translated to the engineering data (voltage) according to AIRange property.

BinaryCodes As Variant

The analog input data array with digital format.

Remarks

This event occurs when one half-buffer of the circular buffer is full at continuous analog input operation.

Whether *ScaledData* or *BinaryCodes* contains data depends on *ReturnType* property setting.

PCI-9812

"*BinaryCodes with miscellaneous data*" format:

Range -32768 to +32767.

bit 15~4: A/D data (-2048 to 2047)

bit 3: trigger detection flag

bit 2~0: digital input data from DI2, DI1, DI0

"*BinaryCodes without miscellaneous data*" format:

Range -2048 to +2047.

PCI-9810

"*BinaryCodes with miscellaneous data*" format:

Range -32768 to +32767.

bit 15~6: A/D data (-512 to 511)

bit 5~4: don't care

bit 3: trigger detection flag

bit 2~0: digital input data from DI2, DI1, DI0

"*BinaryCodes without miscellaneous data*" format:

Range -512 to +511.

Note

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In VC++, *ScaledData* is a VARIANT of VT_ARRAY | VT_R4, *BinaryCodes* is a VARIANT of VT_ARRAY | VT_I4 (with miscellaneous data) or VT_ARRAY | VT_I2 (without miscellaneous data).

DAQError Event

Syntax

sub *ControlName*_**DAQError (** *ErrString As String* **)**

Arguments

ErrString As String

The string of error reason

Remarks

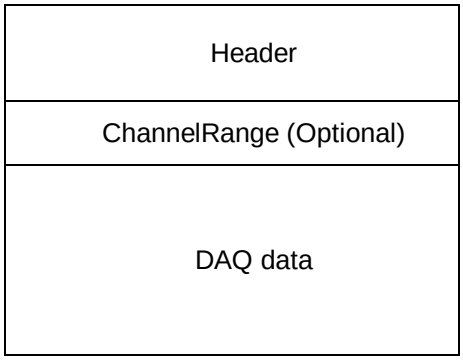
This event will occur when some error occur in control

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Appendix Data File Format

This appendix describes the file format of the data files generated by the stream to file functions.

The data file includes three parts, Header, ChannelRange (optional) and Data block. The file structure is as the figure below:



Header

The *header* part records the information related to the stored data and its total length is 60 bytes. The data structure of the file header is as follows:

Header			*Total Length: 60 bytes*
Elements	**Type**	**Size (bytes)**	**Comments**
ID	char	10	file ID *ex. ADLinkDAQ1*
card_type	short	2	card Type *ex. Pci7250, Pci9112*
num_of_channel	short	2	number of scanned channels *ex. 1, 2*
channel_no	unsigned char	1	channel number where the data read from (only available as the num_of_channel is 1) *ex. 0, 1*
num_of_scan	long	4	the number of scan for each channel (total count / num_of_channel)
data_width	short	2	the data width 0: 8 bits, 1: 16 bits, 2: 32 bits
channel_order	short	2	the channel scanned sequence 0: normal (ex. 0-1-2-3)

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			1: reverse (ex. 3-2-1-0) 2: custom* (ex. 0, 1, 3)
ad_range	short	2	the AI range code Please refer to Appexdix B *ex. 0 (AD_B_5V)*
scan_rate	double	8	The scanning rate of each channel (total sampling rate / num_of_channel)
num_of_channel_range	short	2	The number of ChannelRange* structure
start_date	char	8	The starting date of data acquisition *ex. 12/31/99*
start_time	char	8	The starting time of data acquisition *ex. 18:30:25*
start_millisec	char	3	The starting millisecond of data acquisition *ex. 360*
reserved	char	6	not used

∗ If the *num_of_channel_range* is 0, the *ChannelRange* block won't be included in the data file.

∗ The *channel_order* is set to "custom" only when the card supports variant channel scanning order.

ChannelRange

The *ChannelRange* part records the channel number and data range information related to the stored data. This part consists of several channel & range units. The length of each unit is 2 bytes. The total length depends on the value of *num_of_channel_range* (one element of the file header) and is calculated as the following formula:

Total Length = *2* * num_of_channel_range bytes

The data structure of each ChannelRange unit is as follows:

ChannelRange Unit *Length: 2 bytes*			
Elements	**Type**	**Size (bytes)**	**Comments**
channel	char	1	scanned channel number *ex. 0, 1*
range	char	1	the AI range code of *channel* Please refer to Appexdix B *ex. 0 (AD_B_5V)*

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Data Block

The last part is the data block. The data is written to file in 16-bit binary format, with the lower byte first (little endian). For example, the value 0x1234 is written to disk with 34 first followed by 12. The total length of the data block depends on the data width and the total data count.

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