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Chapter 1 What is TCPDAQ ActiveX Control?

TCPDAQ.OCX is a collection of ActiveX controls for performing I/O operations within any compatible ActiveX control container, such as Visual Basic, Delphi, etc. You can easily perform the I/O operations through properties, events and methods. Specific information about the properties, methods, and events of the TCPDAQ ActiveX controls can be found later in this manual.

With TCPDAQ ActiveX Control, you can perform versatile I/O operations to control your Inlog EDAM-9000 module series.

The TCPDAQ ActiveX Control setup program installs TCPDAQ.OCX through a process that may take several minutes. Installing the necessary software to use the TCPDAQ.OCX in your application involves two main steps:

Installing the TCPDAQ ActiveX Control

Using the Inlog EDAM-9000 utility to configure the modules that is attached to your computer.

You can use these ActiveX controls in any development tool that supports them, including Microsoft Visual C++, Microsoft Visual Basic, Borland C++ Builder, Borland Delphi

1.1 Installing the TCPDAQ ActiveX Controls

Before using the TCPDAQ ActiveX Control, you must install the TCPDAQ.OCX first

- Insert the TCPDAQ installation CD-ROM disc into your computer.
- The installation program should start automatically. If autorun is not enabled on your computer, use your Windows Explorer or the Windows Run command to execute Setup.exe on the TCPDAQ installation CD-ROM disc (assume "d" is the letter of your CD-ROM disc drive):

D: \Setup.exe

Chapter 2 Building TCPDAQ ActiveX Control with Various Tools

This chapter describes how you can use the TCPDAQ ActiveX Control with the following development tools:

- Microsoft Visual C++ version 6.0 (SP5)
- Microsoft Visual Basic version 6.0 (SP5)
- Borland Delphi version 4.0 (with the Delphi 6 Update Pack fixes for ActiveX installed)
- Borland C++ Builder version 5.0

This chapter assumes that you are familiar with the basic concepts of using Visual Basic, Delphi, Borland C++ Builder, and Visual C++, including selecting the type of application, designing the form, placing the control on the form, configuring the properties of the control, creating the code (event handler routines) for this control.

Note: For Borland Delphi 6, the Delphi 6 Update Pack fixes for ActiveX must be installed.

2.1 Building TCPDAQ Applications with Visual Basic

Start Visual Basic.

Ne	w Proj	ect						?	\mathbf{X}
ſ	Aew	Exist	Mi ting Rece		t al E	Bas	ic	S	
	Stand EXI	ard E	ActiveX EXE	ActiveX DLL	ActiveX Control	VB Applicati	VB Wizard Manager	ActiveX Docume	
	Activ	èx	Addin	Data Project	DHTML		VB	~	
								開啓(<u>○</u>) 取消 說明(<u>H</u>)	
Г	Don'ts	show ti	his dialog ii	n the f <u>u</u> ture					

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• Select **Standard EXE** icon and press the **Open** button. A new project is created. Click on **Components...** from the **Project** menu. The Components dialog box is loaded as shown below:

Components	
Controls Designers Insertable Objects	1
 RDCClientHost 1.0 Type Library Recording ActiveX Control module Ref Edit Control Shockwave ActiveX Control Shockwave Flash Switch ActiveX System Monitor Control TCPDAQ ActiveX Control module trialoc 1.0 Type Library VB 6 Application Wizard VB 6 Data Form Wizard 	
VB 6 MSChart Wizard	Browse
	Selected Items Only
TCPDAQ ActiveX Control module Location: C:\WINDOWS\system32\tcpdaq.ocx	
確定	取消 套用(A)

- Place a **TCPDAQ** control from the Toolbox on the form. Use the default name.
- Your form should look similar to the one shown below:

-		
	🐃 Formi	
3		•

2.2 Building TCPDAQ Applications with Delphi

- Start Delphi, Delphi will launch as shown below:
- Select Import ActiveX Control... from the Component menu. The Import ActiveX dialog box loads:
- Select the <u>TCPDAQ ActiveX Control Module</u> and press the Install... button. A dialog box is displayed as follows:

Inport Actives			
Switch Active System Monit Tabular Data TCPDAQ Act trialoc 1.0 Typ	X (Version 1.0) or Control (Version 2 Control 1.1 Type Li iveX Control module be Library (Version 2	3.6) ibrary (Version 1.1) e (Version 1.0) 1.0)	
TrueReuse A TSHOOT 3.1	ctiveX Control mod Type Library (Versi	ule (Version 1.0) ion 1.0)	~
C:\WINDOW	S\system32\tcpda	q.ocx	
~	77.000.40	<u>A</u> dd	<u>R</u> emove
<u>L</u> lass names:	TTCPDAQ		<u>∼</u>
<u>P</u> alette page:	ActiveX	•	
Unit <u>d</u> ir name:	C:\Program Files\	Borland\Delphi5\Imp	oorts\
<u>S</u> earch path:	\$(DELPHI)\Lib;\$((DELPHI)\Bin;\$(DELI	PHI)\Impor

• The <u>TCPDAQ control</u> is loaded into the **Component Palette**. You can check it by clicking on **Install Package...** from the **Component** menu. A dialog box is shown as below.

existing pa	kage Into new package		
ile name:	TCPDAQ		<u>B</u> rowse
<u>)</u> escription:	TCPDAQ ActiveX Control		

- Switch to the form and select the ActiveX tab from the **Component Palette**.
- Place a <u>TCPDAQ</u> control from the Component Palette on the form. Use the default names TCPDAQ1.
- · Your form should look similar to the one shown below:



2.3 Building TCPDAQ Applications with Visual C++

- Start Visual C++ program.
- Select Add to Project... -> Components and Controls from the Project menu, and double-click on Registered ActiveX Controls. The result should be as below:

Components and Controls Gallery		?				
Choose a component to insert into your project:						
搜尋位置(I): 🔂 Registered ActiveX	Controls 💽 🗢 🗈 📸					
名稱 🔺	大小 類型	修 🔼				
🚰 System Information	1 KB 捷徑	20(
👼 Tabular Data Control	1 KB 捷徑	20(
🗾 TaskSymbol Class	1 KB 捷徑	20(
TCPDAQ Control	1 KB 捷徑	20(
🔤 ThumbCtl Class	1 KB 捷徑	20(🔽				
<u><</u>		>				
檔案名稱(N):「TCPDAQ Control.lnk	I	ngert				
TCPDAQ Control		<u>C</u> lose				
		<u>M</u> ore Info				
Path to control:						
C:\WINDOWS\system32\tcpc	laq.ocx					

 Scroll down to the <u>TCPDAQ Control</u> and press the **Insert** button. A Class Confirm dialog box is displayed, Press **OK** button.

Confirm Classes		? 🛛
The checked <u>c</u> lass(es) will b the ActiveX Control. Click or browse or edit its attributes.	e generated from n a class name to	OK Cancel
CTCPDAQ		The selected class has already been generated. Click OK to update the class.
Class <u>n</u> ame: CTCPDAQ	Base class: CWnd	
Header <u>f</u> ile: tcpdaq.h <u>Implementation file:</u> tcpdaq.cpp		

- The **<u>TCPDAQ</u>** control will be showed in Visual C++ Toolbar.
- Place a **<u>TCPDAQ</u>** control from the Controls Toolbar on the dialog-based form.

dd	
	L .
	OK L
	+
	CANCEL
· · · · · · · · · · · · · · · · · · ·	
• • • • • • • • • • • • • • • • • • • •	
· · · · · · · · · · · · · · · · · · ·	

2.4 Building TCPDAQ Applications with Borland C++ Builder

- Start Borland C++ Builder (BCB), BCB will launch as shown below:
- Select Import ActiveX Control... from the Component menu. The Import ActiveX dialog box loads:
- Select the **<u>TCPDAQ Control</u>** and press the **Install...** button. A dialog box is displayed as follows:

aport ActiveA		
Import ActiveX		
Shockwave A	activeX Control (Version 1.0)	
Shockwave F	lash (Version 1.0)	<u> </u>
Switch Active	X (Version 1.0) or Control Mersion 3.6)	
Tabular Data	Control 1.1 Type Library (Version 1.1)	_
TCPDAQ Acti	veX Control module (Version 1.0)	-
	Character 20ther days and	
C:\WINDOW	5 \system32 \tcpdaq.ocx	
	<u>A</u> dd <u>R</u> em	ove
<u>U</u> lass names:		
	~	
Palette page:	ActiveX	
Unit dir name:	C:\Program Files\Borland\CBuilder5\Imports\	- 1
onk <u>a</u> n name.		
Search path:	\$(BCB)\Lib;\$(BCB)\Bin;\$(BCB)\Imports;\$(BCB)	\F
Ins	stall Create Unit Cancel	Help

- Enter "TCPDAQ" into the File name field under the **Into new package** tab, and press **OK** button. A Confirm dialog box is displayed. press **Yes** button.
- The <u>TCPDAQ control</u> is loaded into the **Component Palette**. You can check it by clicking on **Install Package...** from the **Component** menu. A dialog box is shown as below.

Object Inspector 🛛 🛛 🗙	😽 Form1
TCPDAQ1: TTCPDAQ 🗾	
Properties Events	* ▲ *
AlAverageValu 0 🛛 🔥	
AlBurnOutState 0	
AlChannelInde: 0	
AlHighAlarmSta 0	
AlLowAlarmSta 0	
AlMaximumValı 0	
AlMinimumValu 0	
AlNormaMalue 0	
AOChannelInd: 0	
AOValue 0	
ASCIICommand	
ASCIICommand	
ColdJunctionTe 0	
Cursor crDefault	
DIChannelInde 0	
DICounterValue 0	
DILatchStatus 0	
DIStartCount false	
DIStatus 0	
DOChannelIndi 0	
DOCounts 0	
DOStatus 0	
EventTriggerEr false	
Height 28	
HelpContext 0	
Hint	
LastError -11	

Chapter 3 **Properties of TCPDAQ ActiveX Control**

Name	Туре	Description	Avaliable Model(s)
AIChannelIndex	short	Specifies the analog input channel to perform	9015,9017,9019
		other AI properties read/write operation.	
AINrmalValue	double	Normal voltage of specifies the analog	9015,9017,9019
		channel	
AIAveragevalue	double	Average voltage value of the channels that	9015,9017,9019
		are in average	
AlMaximumValue	double	Maximal voltage of specifies the analog	9015,9017,9019
		channel	
AlMinimumValue	double	Minimal voltage of specifies the analog	9015,9017,9019
		channel	
AILowAlarmStatus	short	Return the low alarm status of specifies the	9015,9017,9019
		analog channel (1=Alarm occurred, 0=No	
		alarm)	
AlHighAlarmStatus	short	Return the high alarm status of specifies the	9015,9017,9019
		analog channel (1=Alarm occurred, 0=No	
		alarm)	
AlBurnOutStatus	short	Return the Burnout status of specifies the	9015 and 9019
		analog channel (1=open, 0=normal)	
AOChannelIndex	short	Specifies the analog output channel to	Reserved for Ver 1.0
		perform other properties read/write	
		operation.	
AOValue	double	Set the analog output voltage	All models
ASCIICommandReceive	string	Return the ASCII response message from	All models
		module	
ASCIICommandSend	string	Send the ASII command message to module	All models
ColdJunctionTemperature	double	Return the cold junction temperature	9019
DIChannelIndex	short	Specifies the digital input channel to perform	9050,9051,9052
		other DI properties read/write operation.	
DlounterValue	long	Return the counting value for the specified DI	9050,9051,9052
		channel which functions in "Count/Frequency	
		mode"	
DILatchStatus	short	Return the latch status for the specified DI	9050,9051,9052
		channel which functions in "Lo-Hi/Hi-Lo latch	
		mode" (1=Latched, 0=No latched)	
DIStartCount	boolean	Start/stop counting for the specified DI	9050,9051,9052
		channel which functions in	
		"Count/Frequency mode" (True=Start,	
		0=Stop)	
DIStatus	short	Return the status for the specified DI channel	9050,9051,9052
		which functions in "DI mode" (1=Active,	
		0=Inactive)	
DOChannelIndex	short	Specifies the digital output channel to	9017,9019,9050,9051,9052
		perform other DO properties read/write	
		operation.	
DOCount	long	Set the output count value for the specified	9050,9051,9052

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		DO channel which functions in "Pulse output	
		mode"	
DOStatus short		Return/set the status for the specified DO	9017,9019,9050,9051,9052
		channel which functions in "D/O mode"	
		(1=Active, 0=Inactive)	
EventTriggerEnable	boolean	Enable/disable event trigger mode	All models
		(True=Enable, False=Disable)	
LastError	short	Return the Error code of operation	All models
MoudleIDNo	short	Return the module ID number	All models
ModuleIP	string	Set the remote module IP address	All models
ModuelName	string	Return the module name	All models
TCPTimeOut	long	Return/set the TCP/IP Timeout (ms)	All models
UpdateTimeInterval	long	Return/set data update time interval(ms) All models	

Chapter 4 Methods of TCPDAQ ActiveX Control

Name	Arguments	Returned type	Description
Open	None	None	Open TCPDAQ.OCX to start operation (Must
			be called before accessing properties at run
			time)
Close	None	None	Close TCPDAQ.OCX(Must be called before
			terminating the APP)
ModBusReadCoil	short Startaddress	None	Read coil data from remote module, and stored
	short Counts		into coildata[] buffer
	short coildata[]		
ModBusWriteCoil	shot StartAddress		Write coil data stored in coildata[] buffer to
	short Counts		remote module
	short coildata[]		
ModBusReadReg	short Startaddress	None	Read holding register data from remote
	short Counts		module, and stored into regdata[] buffer
	short regdata[]		
ModBusWriteReg	shot StartAddress		Write register data stored in regdata[] buffer to
	short Counts		remote module
	short regdata[]		

Chapter 5 Events of TCPDAQ ActiveX Control

Name	Arguments	Returned type	Description
OnError	short ErrCode(out)	None	be called when error occurred
	string Errmsg(out)		
EventDataArrival	string Datetime(out)	None	be called when received an event data
	short EventChannel(out)		from the remote module (*)
	short EventType(out)		
	short EventStatus(out)		
	short EventValue(out)		

(*): Please see TCPDAQ_Data_Structure.pdf file to understand the means of parameters

5.1 Building TCPDAQ ActiveX Applications with Various Development Tools

The demo programs of TCPDAQ AvtiveX control module are included in the provided DISC. The Installed folders include the demo programs for various development tools.

Microsoft Visual C++ version 6.0 (SP5)

Microsoft Visual Basic version 6.0 (SP5)

Borland Delphi version 6.0 (with the Delphi 6 Update Pack fixes for ActiveX installed)

Borland C++ Builder version 6.0