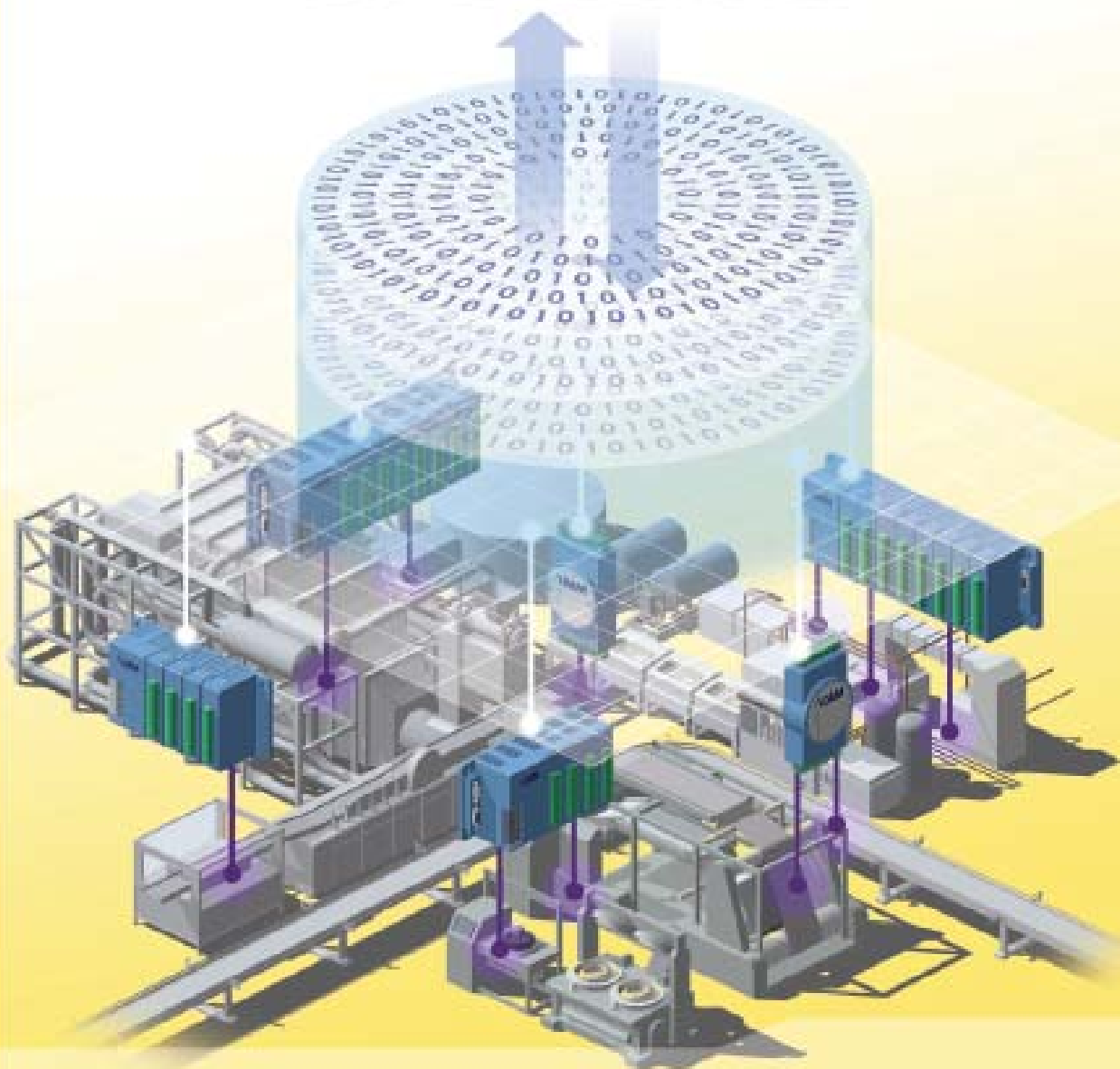


OPC Server



ADVANTECH
eAutomation

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Product Warranty (2 years)

Advantech warrants to you, the original purchaser, that each of its products will be free from defects in materials and workmanship for two years from the date of purchase. This warranty does not apply to any products which have been repaired or altered by persons other than repair personnel authorized by Advantech, or which have been subject to misuse, abuse, accident or improper installation. Advantech assumes no liability under the terms of this warranty as a consequence of such events. Because of Advantech's high quality-control standards and rigorous testing, most of our customers never need to use our repair service. If an Advantech product is defective, it will be repaired or replaced at no charge during the warranty period. For out of-warranty repairs, you will be billed according to the cost of replacement materials, service time and freight. Please consult your dealer for more details.

If you think you have a defective product, follow these steps:

1. Collect all the information about the problem encountered. (For example, CPU speed, Advantech products used, other hardware and software used, etc.) Note anything abnormal and list any onscreen messages you get when the problem occurs.
2. Call your dealer and describe the problem. Please have your manual, product, and any helpful information readily available.
3. If your product is diagnosed as defective, obtain an RMA (return merchandise authorization) number from your dealer. This allows us to process your return more quickly.
4. Carefully pack the defective product, a fully-completed Repair and Replacement Order Card and a photocopy proof of purchase date (such as your sales receipt) in a shippable container. A product returned without proof of the purchase date is not eligible for warranty service.
5. Write the RMA number visibly on the outside of the package and ship it prepaid to your dealer.

Technical Support and Assistance

1. Visit the Advantech web site at www.advantech.com/support where you can find the latest information about the product.
2. Contact your distributor, sales representative, or Advantech's customer service center for technical support if you need additional assistance. Please have the following information ready before you call:
 - Product name and serial number
 - Description of your peripheral attachments
 - Description of your software (operating system, version, application software, etc.)
 - A complete description of the problem
 - The exact wording of any error messages

Warnings, Cautions and Notes

Warning! Warnings indicate conditions, which if not observed, can cause personal injury!

Caution! Cautions are included to help you avoid damaging hardware or losing data. e.g.

There is a danger of a new battery exploding if it is incorrectly installed. Do not attempt to recharge, force open, or heat the battery. Replace the battery only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.

Note! Notes provide optional additional information.

Document Feedback

To assist us in making improvements to this manual, we would welcome comments and constructive criticism.

Please send all such - in writing to: support@advantech.com

Safety Instructions

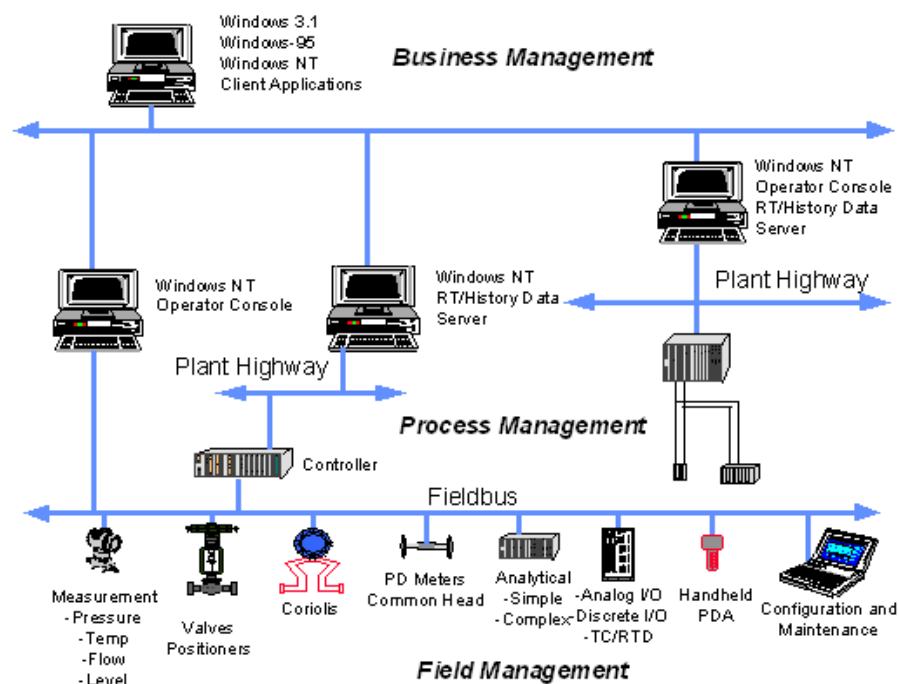
1. Read these safety instructions carefully.
2. Keep this User Manual for later reference.
3. Disconnect this equipment from any AC outlet before cleaning. Use a damp cloth. Do not use liquid or spray detergents for cleaning.
4. For plug-in equipment, the power outlet socket must be located near the equipment and must be easily accessible.
5. Keep this equipment away from humidity.
6. Put this equipment on a reliable surface during installation. Dropping it or letting it fall may cause damage.
7. The openings on the enclosure are for air convection. Protect the equipment from overheating. **DO NOT COVER THE OPENINGS.**
8. Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.
9. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
10. All cautions and warnings on the equipment should be noted.
11. If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient overvoltage.
12. Never pour any liquid into an opening. This may cause fire or electrical shock.
13. Never open the equipment. For safety reasons, the equipment should be opened only by qualified service personnel.
14. If one of the following situations arises, get the equipment checked by service personnel:
15. The power cord or plug is damaged.
16. Liquid has penetrated into the equipment.
17. The equipment has been exposed to moisture.
18. The equipment does not work well, or you cannot get it to work according to the user's manual.
19. The equipment has been dropped and damaged.
20. The equipment has obvious signs of breakage.
21. **DO NOT LEAVE THIS EQUIPMENT IN AN ENVIRONMENT WHERE THE STORAGE TEMPERATURE MAY GO BELOW -20° C (-4° F) OR ABOVE 60° C (140° F). THIS COULD DAMAGE THE EQUIPMENT. THE EQUIPMENT SHOULD BE IN A CONTROLLED ENVIRONMENT.**
22. **CAUTION: DANGER OF EXPLOSION IF BATTERY IS INCORRECTLY REPLACED. REPLACE ONLY WITH THE SAME OR EQUIVALENT TYPE RECOMMENDED BY THE MANUFACTURER, DISCARD USED BATTERIES ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.**
23. The sound pressure level at the operator's position according to IEC 704-1:1982 is no more than 70 dB (A).

DISCLAIMER: This set of instructions is given according to IEC 704-1. Advantech disclaims all responsibility for the accuracy of any statements contained herein.

1. Key Feature

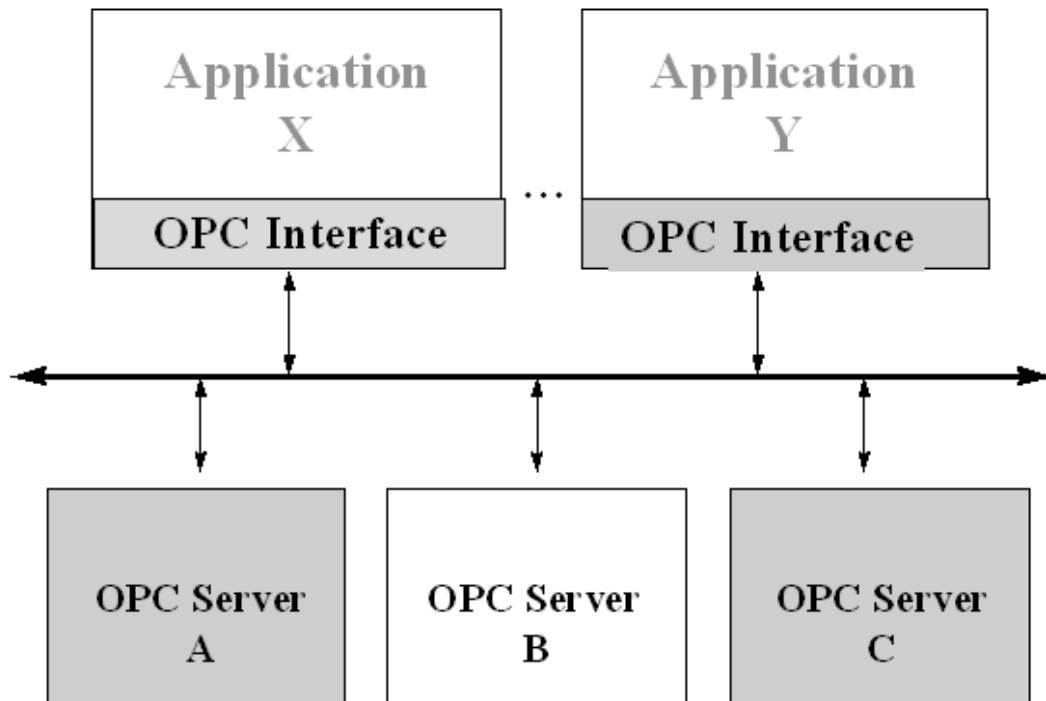
- Support Modbus/RTU, Modbus/TCP, and ADAM protocol.
- Compliant with the latest OPC Data Access 1.0, 2.04, 2.05 and 3.0 standards.
- Compliant with the latest OPC Alarm and Events 1.0 and 1.2 standards.
- Built-in OPC tag simulation and value conversion.
- Wizards to create OPC Server tags about ADAM series quickly.
- Compatible with OPC client compliant application software
- Provides OPC custom interface.
- Online configuration capability; Add new signals and tags during runtime.
- OPC servers for any Microsoft operating win32 system.

2. Architecture



Process Control Architectures

3.Application Working Chart



AdamOPC Browser

View About

Browser

Data Access 2000

Local Servers

- Advantech.ADAM
- Advantech.Modbus
- Advantech.ModbusRtuDA
- Advantech.ModbusTCPDA
- Advantech.RuntimeDA
- Advantech.RuntimeDA
- Advantech.CoLtd.OPCRuntimeDA
- Advantech.CoLtd.OPCRuntimeDA
- Fastwel.Adamopc
- ICONICS.MbRtuRun1DA
- ICONICS.MbTcpRun1DA
- ICONICS.Inc.IniFileRuntimeDA
- KEPware.KEPServerEx.V4
- IGT.OPCRuntimeDA

Monitor

- OPC Item Monitor
- Advantech.ModbusTCPDA
 - \$Group_1
 - ADAM-5000TCP

Item ID	Value	Data Type	Timestamp	Quality	Subquality	Limit	Result	Active
ADAM_5000TCP.S0_Adam5081.Cnt 0	111	UInt16	2007/10/11 下午 05:29:25	Good	Not-specific	Not Limited	S_OK	True
ADAM_5000TCP.S0_Adam5081.Cnt 1	0	UInt16	2007/10/11 下午 05:29:25	Good	Not-specific	Not Limited	S_OK	True
ADAM_5000TCP.S0_Adam5081.Cnt 2	222	UInt16	2007/10/11 下午 05:29:25	Good	Not-specific	Not Limited	S_OK	True
ADAM_5000TCP.S1_Adam5051.DI 0	True	Boolean	2007/10/11 下午 05:29:25	Good	Not-specific	Not Limited	S_OK	True
ADAM_5000TCP.S1_Adam5051.DI 1	True	Boolean	2007/10/11 下午 05:29:25	Good	Not-specific	Not Limited	S_OK	True
ADAM_5000TCP.S1_Adam5051.DI 2	True	Boolean	2007/10/11 下午 05:29:25	Good	Not-specific	Not Limited	S_OK	True
ADAM_5000TCP.S1_Adam5051.DI 3	True	Boolean	2007/10/11 下午 05:29:25	Good	Not-specific	Not Limited	S_OK	True
ADAM_5000TCP.S2_Adam5017.AI 0	0	UInt16	2007/10/11 下午 05:29:25	Good	Not-specific	Not Limited	S_OK	True
ADAM_5000TCP.S2_Adam5017.AI 1	0	UInt16	2007/10/11 下午 05:29:25	Good	Not-specific	Not Limited	S_OK	True
ADAM_5000TCP.S2_Adam5017.AI 2	0	UInt16	2007/10/11 下午 05:29:25	Good	Not-specific	Not Limited	S_OK	True
ADAM_5000TCP.S3_Adam5018.AI 6	0	UInt16	2007/10/11 下午 05:29:25	Good	Not-specific	Not Limited	S_OK	True
ADAM_5000TCP.S3_Adam5018.AI 5	0	UInt16	2007/10/11 下午 05:29:25	Good	Not-specific	Not Limited	S_OK	True
ADAM_5000TCP.S4_Adam5024.AO 0	2727	UInt16	2007/10/11 下午 05:29:25	Good	Not-specific	Not Limited	S_OK	True
ADAM_5000TCP.S4_Adam5024.AO 1	800	UInt16	2007/10/11 下午 05:29:25	Good	Not-specific	Not Limited	S_OK	True
ADAM_5000TCP.S5_Adam5056.DO 0	False	Boolean	2007/10/11 下午 05:29:25	Good	Not-specific	Not Limited	S_OK	True
ADAM_5000TCP.S5_Adam5056.DO 1	False	Boolean	2007/10/11 下午 05:29:25	Good	Not-specific	Not Limited	S_OK	True
ADAM_5000TCP.S5_Adam5056.DO 2	False	Boolean	2007/10/11 下午 05:29:25	Good	Not-specific	Not Limited	S_OK	True
ADAM_5000TCP.S5_Adam5056.DO 3	False	Boolean	2007/10/11 下午 05:29:25	Good	Not-specific	Not Limited	S_OK	True
ADAM_5000TCP.S6_Adam5068.DO 0	False	Boolean	2007/10/11 下午 05:29:25	Good	Not-specific	Not Limited	S_OK	True
ADAM_5000TCP.S6_Adam5068.DO 1	False	Boolean	2007/10/11 下午 05:29:25	Good	Not-specific	Not Limited	S_OK	True
ADAM_5000TCP.S6_Adam5068.DO 2	False	Boolean	2007/10/11 下午 05:29:25	Good	Not-specific	Not Limited	S_OK	True
ADAM_5000TCP.S7_Adam5052.DI 0	False	Boolean	2007/10/11 下午 05:29:25	Good	Not-specific	Not Limited	S_OK	True
ADAM_5000TCP.S7_Adam5052.DI 1	False	Boolean	2007/10/11 下午 05:29:25	Good	Not-specific	Not Limited	S_OK	True
ADAM_5000TCP.S7_Adam5052.DI 6	False	Boolean	2007/10/11 下午 05:29:25	Good	Not-specific	Not Limited	S_OK	True
ADAM_5000TCP.S7_Adam5052.DI 7	False	Boolean	2007/10/11 下午 05:29:25	Good	Not-specific	Not Limited	S_OK	True
ADAM_5000TCP.S7_Adam5052.DI 3	False	Boolean	2007/10/11 下午 05:29:25	Good	Not-specific	Not Limited	S_OK	True

Ready

0 Object(s)

Advantech AdamOPC Configurator Ver 3.01 - [C:\Documents and Settings\Tim.Lin\My Documents\ModbusRTU1.mdb]

File Tools About

Address Space

- NewPort
- ADAM_5000
 - S0_Adam5050
 - S1_Adam5051
 - S2_Adam5013
 - AI 0
 - AI 1
 - AI 2
 - S3_Non
- Conversions
 - None (to/from float)
 - Default Linear
 - Default Square Root
- Device Parameters
 - Simple
 - Ideal
 - Swap Bits
- Simulation Signals
- Alarm Definitions
 - Default Limit Alarm (0-10-90-100)
 - Demo Limit Alarm
 - Faster Limit Alarm (0-10-90-100)
 - Default Digital Alarm (on TRUE)
 - Demo Digital Alarm
 - Faster Digital Alarm (on TRUE)
- Templates

Name	Simulate	Simple Template	Parameterized ...	Location Type	Starting Address	Modbus Type
S0_Adam5050	No					
S1_Adam5051	No					
S2_Adam5013	No					
S3_Non	No					

Name: ADAM_5000

Simulate: ☐ Address: 1

Device Type

Type: Micro 84 Parameters: <Not Assigned>

Optimizations

Bits: 160 Words: 5

The numbers indicate how much unused data can be transferred in one message to merge together address that are close but not adjacent.

Timeouts (ms)

Read: 1000 Write: 1000

Timeouts to suspend: 3 Suspend period: 60000

Use template

Simple template: <Not Assigned>

Parameterized template: <Not Assigned>

Start address base: 0

Ready

4 Object(s)

Advantech AdamOPC Configurator Ver 3.01 - [C:\Documents and Settings\Tim Lin\My Documents\ModbusTCP1.mdb]

File Tools About

Address Space

- ADAM_5000TCP
- S0_Adam5081
- S1_Adam5051
- S2_Adam5017
- AI 0
- AI 1
- AI 2
- AI 3
- AI 4
- AI 5
- AI 6
- AI 7
- S3_Adam5018
- S4_Adam5024
- S5_Adam5056
- S6_Adam5068
- S7_Adam5052

Conversions

- None (to/from float)

Device Parameters

Simulation Signals

Name	Simulate	Simple Template	Parameterized ...	Location Type	Starting Address	Modbus Type
DI 0	No			Coil (bit, r/w)	17	BOOL
DI 1	No			Coil (bit, r/w)	18	BOOL
DI 2	No			Coil (bit, r/w)	19	BOOL
DI 3	No			Coil (bit, r/w)	20	BOOL
DI 4	No			Coil (bit, r/w)	21	BOOL
DI 5	No			Coil (bit, r/w)	22	BOOL
DI 6	No			Coil (bit, r/w)	23	BOOL

Name: S1_Adam5051

Simulate: ☐

Use template

- Simple template: <Not Assigned>
- Parameterized template: <Not Assigned>

Start address base: 0

Item ID	Value	Timestamp	Quality	Subquality	Limit
ADAM_5000TCP S1_Adam5051 DI 0	True	2007/10/11 下午 05:21:53	Good	Not-specific	Not Limited
ADAM_5000TCP S1_Adam5051 DI 1	True	2007/10/11 下午 05:21:53	Good	Not-specific	Not Limited
ADAM_5000TCP S1_Adam5051 DI 2	True	2007/10/11 下午 05:21:53	Good	Not-specific	Not Limited
ADAM_5000TCP S1_Adam5051 DI 3	True	2007/10/11 下午 05:21:53	Good	Not-specific	Not Limited
ADAM_5000TCP S1_Adam5051 DI 4	True	2007/10/11 下午 05:21:53	Good	Not-specific	Not Limited
ADAM_5000TCP S1_Adam5051 DI 5	True	2007/10/11 下午 05:21:53	Good	Not-specific	Not Limited
ADAM_5000TCP S1_Adam5051 DI 6	True	2007/10/11 下午 05:21:53	Good	Not-specific	Not Limited
ADAM_5000TCP S1_Adam5051 DI 7	True	2007/10/11 下午 05:21:53	Good	Not-specific	Not Limited
ADAM_5000TCP S1_Adam5051 DI 8	True	2007/10/11 下午 05:21:53	Good	Not-specific	Not Limited
ADAM_5000TCP S1_Adam5051 DI 9	True	2007/10/11 下午 05:21:53	Good	Not-specific	Not Limited
ADAM_5000TCP S1_Adam5051 DI 10	True	2007/10/11 下午 05:21:53	Good	Not-specific	Not Limited
ADAM_5000TCP S1_Adam5051 DI 11	True	2007/10/11 下午 05:21:53	Good	Not-specific	Not Limited
ADAM_5000TCP S1_Adam5051 DI 12	True	2007/10/11 下午 05:21:53	Good	Not-specific	Not Limited
ADAM_5000TCP S1_Adam5051 DI 13	True	2007/10/11 下午 05:21:53	Good	Not-specific	Not Limited
ADAM_5000TCP S1_Adam5051 DI 14	True	2007/10/11 下午 05:21:53	Good	Not-specific	Not Limited
ADAM_5000TCP S1_Adam5051 DI 15	True	2007/10/11 下午 05:21:53	Good	Not-specific	Not Limited

Ready

[16 Object(s)]

ADAM- Wizard

Port: COM1

Device Type

- ☒ ADAM-4000
- ☐ ADAM-5000/485
- ☐ ADAM-5000E

ADAM-4000 Module

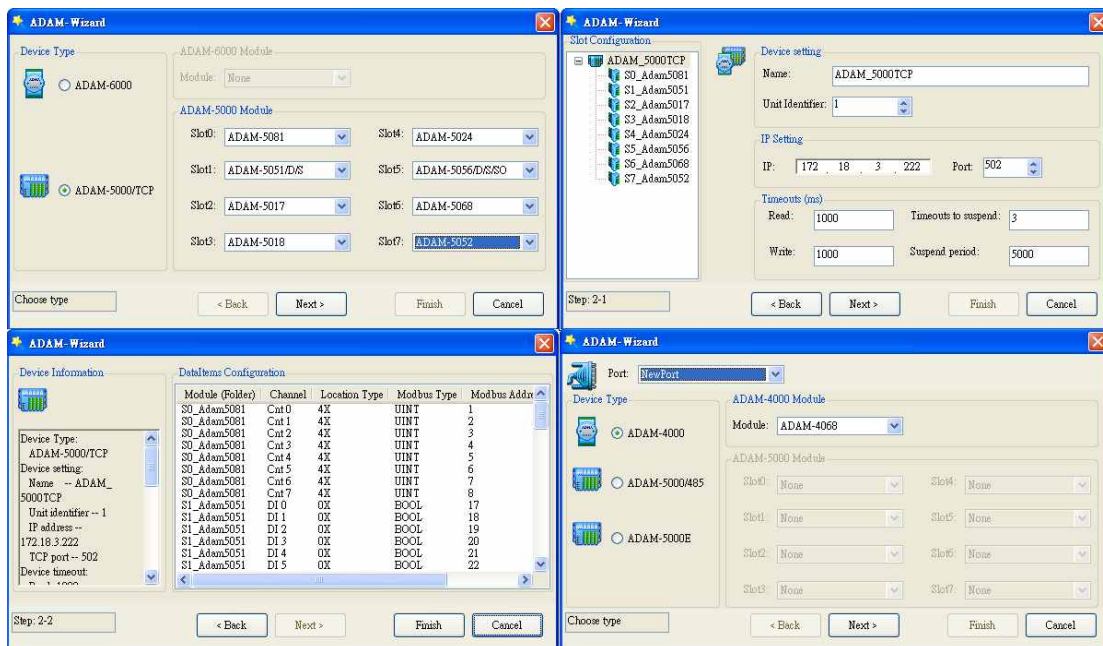
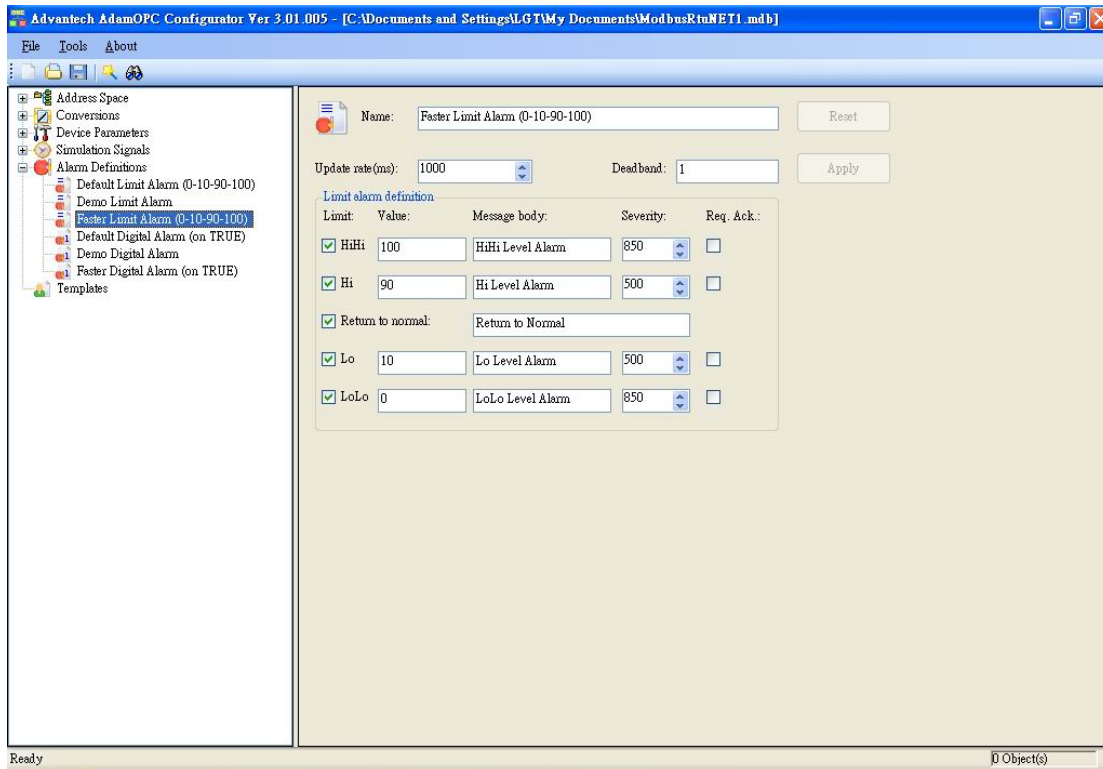
Module: ADAM-4117

ADAM-5000 Module

Slot	Value
Slot0	None
Slot1	None
Slot2	None
Slot3	None
Slot4	None
Slot5	None
Slot6	None
Slot7	None

Choose type

< Back Next > Finish Cancel



AdamOPC Browser

View About

Browser

Data Access 2.XXX

- Advantech.ModbusRtuDA
 - COM1
 - ADAM_4068
 - BaudRate
 - ByteSize
 - FileName
 - OutCtsFlow
 - ParityChecking
 - ParityScheme
 - RtsControl
 - StopBits
- Advantech.ModbusTCPDA
- ICONICS.ModbusOPCServer3
- LGT.OPCRtuDA
- OPC.DaWrapper
- OPCSample.NET.DaServer.Wra
- OPCSample.OpcDa20Server
- OPCSample.OpcDaServer
- Local Network

Monitor

- OPC Item Monitor
 - Advantech.ModbusTCPDA
 - \$Group_1
 - Advantech.ModbusRtuDA
 - 4068

Item ID	Value	Data Type	Timestamp	Quality	Subquality	Limit	Result	Active
COM1.ADAM_4068.DO 0	False	Boolean	2007/9/11 下午 05:11:33	Good	Not-specific	Not Limited	S_OK	True
COM1.ADAM_4068.DO 1	False	Boolean	2007/9/11 下午 05:11:33	Good	Not-specific	Not Limited	S_OK	True
COM1.ADAM_4068.DO 2	False	Boolean	2007/9/11 下午 05:11:33	Good	Not-specific	Not Limited	S_OK	True
COM1.ADAM_4068.DO 3	False	Boolean	2007/9/11 下午 05:11:33	Good	Not-specific	Not Limited	S_OK	True
COM1.ADAM_4068.DO 4	False	Boolean	2007/9/11 下午 05:11:33	Good	Not-specific	Not Limited	S_OK	True
COM1.ADAM_4068.DO 5	False	Boolean	2007/9/11 下午 05:11:33	Good	Not-specific	Not Limited	S_OK	True
COM1.ADAM_4068.DO 6	False	Boolean	2007/9/11 下午 05:11:33	Good	Not-specific	Not Limited	S_OK	True
COM1.ADAM_4068.DO 7	False	Boolean	2007/9/11 下午 05:11:33	Good	Not-specific	Not Limited	S_OK	True
COM1.BaudRate	9600	Int32	2007/9/11 下午 05:11:33	Good	Not-specific	Not Limited	S_OK	True
COM1.ByteSize	8	Int16	2007/9/11 下午 05:11:33	Good	Not-specific	Not Limited	S_OK	True
COM1.FileName	\\VCOM1	String	2007/9/11 下午 05:11:33	Good	Not-specific	Not Limited	S_OK	True
COM1.OutCtsFlow	False	Boolean	2007/9/11 下午 05:11:33	Good	Not-specific	Not Limited	S_OK	True
COM1.ParityChecking	False	Boolean	2007/9/11 下午 05:11:33	Good	Not-specific	Not Limited	S_OK	True
COM1.ParityScheme	0	Int16	2007/9/11 下午 05:11:33	Good	Not-specific	Not Limited	S_OK	True
COM1.RtsControl	0	Int16	2007/9/11 下午 05:11:33	Good	Not-specific	Not Limited	S_OK	True
COM1.StopBits	0	Int16	2007/9/11 下午 05:11:33	Good	Not-specific	Not Limited	S_OK	True

Ready

0 Object(s)

Advantech AdamOPC Configurator Ver 3.01.005 - [C:\Documents and Settings\LGT\My Documents\ModbusRtuNET1.mdb]

File Tools About

Conversions

Device Parameters

Simulation Signals

- ReadCount
- WriteCount
- Random
- Ramp(T)
- Sine(T)
- Square(T)
- Triangle(T)
- Step(T)
- 100*Ramp(T)
- 100*Random
- 100*Sine(T)
- 100*Square(T)
- 100*Step(T)
- 100*Triangle(T)
- 100*Square(T) * 100
- Alarm Definitions

Name: Sine(T)

Reset

Type

- ☐ Read Count
- ☐ Write Count
- ☐ Random
- ☐ Ramp
- ☒ Sine
- ☐ Square
- ☐ Triangle
- ☐ Step

Parameters

Position: 0

Amplitude: 1

Period: 1

Phase (deg): 0

Ratio: 0.3333333333333333

of step: 3

Apply

Ready

0 Object(s)

Advantech AdamOPC Configurator Ver 3.01.005 - [C:\Documents and Settings\LGT\My Documents\ModbusRtuNET1.mdb]

File Tools About

Address Space

Conversions

- None (to/from float)
- Default Linear
- Default Square Root

Device Parameters

Simulation Signals

Alarm Definitions

Templates

Name: Default Linear

Reset

Type of conversion

- ☐ None (make float)
- ☒ Linear
- ☐ Square root

Apply

Conversion Parameters

EU

High: 100.00

Low: 0.00

IR

High: 10000.00

Low: 0.00

Clamping

- ☐ None
- ☒ Clamp on EU
- ☐ As specified

Clamping Parameters

High: 100.00

Low: 0.00

Ready

0 Object(s)

System Requirements:

- CPU: Intel Pentium processor 200MHz or higher
- OS: Microsoft Windows 32 platform
- RAM: 64 MB RAM or higher
- Disk: 10 MB of free local hard disk space
- Microsoft .NET Framework 2.0